STORMWATER MANAGEMENT REPORT

Posey Solar Project

Posey County, Indiana

APRIL 2022

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Stormwater Management Report

Posey Solar Project

Posey County, Indiana

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Introduction

The purpose of this report is to summarize the proposed stormwater management for the Posey Solar Project. This report was prepared to meet local and state requirements and is intended for submittal to these agencies for permitting review and approval.

The project site is proposed on approximately 1,435 acres and is located approximately 4 miles east of the city of Mt. Vernon in Posey County, Indiana. The site's current use is agricultural row crops with limited areas of forested cover.

The proposed use of the site will be a solar facility consisting of approximately 1,404 acres of meadow grass with solar modules mounted above grade and 31 acres of new impervious surface including gravel access roads and associated solar infrastructure. The proposed site will be converted to meadow conditions below the solar modules within the fenced boundary. Panels are not considered impervious due to improvements made to the site to meet Posey County Post Construction Stormwater Management Guidelines.

Minimal grading will be proposed on site and existing drainage patterns will be maintained to the extent practical. A detention basin is proposed at the substation and additional stormwater management measures are proposed in areas with final slopes greater than 5% and localized areas where existing drainage patterns have been altered to meet the requirements of the Posey County Soil and Water Conservation District.

Data Sources

TABLE 1: DATA SOURCES

Task	Format	Source	Use
Elevation	1-foot Contours	Westwood flown on 12/03/2020	Drainage Plans
Crop Data	Shapefile	USDA 2013 Crop Data Layer	Landcover
Soils	Shapefile	USGS SSURGO Dataset	Curve Numbers
Precipitation	PDF File	NOAA Atlas 14	Design Storms
Site Boundary	KMZ	Arevon	Define Model Extents
Site Plan and Solar Layout	Shapefile	Westwood Professional Services	Drainage Plans and Model values
2014 Aerial Photography	ArcGIS Map Service	USDA FSA	Reference
FEMA Flood Zones	PDF; Shapefile	FEMA	Reference
Indiana DNR Flood Zone	Shapefile	Indiana DNR	Reference
Indiana Oil and Gas Well Record Viewer	ArcGIS Layer	Indiana DNR	Orphaned/Abandoned Wells
Karst Sinkhole Inventory	Shapefile	Indiana Geological Society	Sinkhole Locations
Legal Drains	GIS Layer	Posey County	Legal Drain Locations

Site Conditions

Site Location

The project area is located approximately 4 miles east of the city of Mt. Vernon in Posey County, Indiana.

Historical Use

A review of aerial photographs shows that the site is currently used and has historically been used for agricultural row crops with limited areas of forested cover.

Topography Description

The project acquired a ground-calibrated (LiDAR) topographic survey (1-foot contours), which is used to show the existing ground surface on the proposed plans. This dataset was used for the HydroCAD modeling, the slope analysis, to identify existing drainage infrastructure, and to prepare maps and figures. The site is generally flat with slopes around 1%-5%. A detailed review of the land slope of all drainage areas under the array was performed and includes average and maximum land slopes under the array. This review is included as Exhibit 7.

Drainage Patterns

Onsite runoff is split into 28 drainage areas based on discharge locations and existing low areas. Several drainage ditches flow through the site that generally flow south. Drainage areas are shown in Exhibits 5 and 6.

Project Watershed

The project is located north of the Ohio River, with a large majority of the project draining south via smaller ditches and creeks, ultimately discharging into the Ohio River. The site was broken up into 6 sub watersheds. Overall sub watershed discharge locations are shown in Exhibit 2C.

Streams & Floodplains

Both FEMA flood hazards and IDNR best available floodplain hazards are present within and around the project. These areas are shown on Exhibits 5 and 6. Dimensions of existing channels are shown on the existing drainage map (Exhibit 5). All existing channels will be maintained under proposed conditions and no new channels are proposed.

Wetlands

The wetlands and waters mapping is based on a field delineation. The field delineation was performed using the level two on-site routine determination method set forth in the Corps of Engineers Wetlands Delineation Manual (USACE 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region, Version 2.0 (USACE 2010). The Newburgh field office of the U.S. Army Corps of Engineers is reviewing the Project's Wetlands and Waters Delineation Report. Wetlands within and around the project are shown on Exhibits 5 and 6.

Soils

Soils data was downloaded from the Websoil Survey Data published on September 9, 2021, by the Natural Resources Conservation Service (NRCS) and can be found in Exhibit 3. The soils data was reviewed and incorporated into the analysis.

The site consists primarily of Hydrologic Soil Group (HSG) B/D and C/D soils, which behave like and have been modeled as D soils. Type B soils are also present on site with a few areas of

Type C as well. Type B soils have moderate runoff potential and infiltration rates. Type C soils have higher runoff potential and low infiltration rates. Type D soils have the highest runoff potential and very low infiltration rates.

Abandoned Wells & Sinkholes

According to the IDNR Oil and Gas Well Records Viewer, there are no orphaned/abandoned wells within the project. A 2011 sinkhole inventory created by the Indiana Geological Survey for southern Indiana and northern Kentucky shows no sinkholes located within the project area.

Legal Drains

Project infrastructure will maintain a 75-foot buffer from all legal drains located near the site. Legal drains and their 75-foot buffer are labeled and shown on Exhibit 5.

Floodplain Development and IDNR Floodway Permitting

The Project has not submitted an application for a Flood Plain Development Permit for any facilities proposed within Special Flood Hazard Areas as identified by FEMA. No facilities are proposed within a FEMA floodway. In accordance with the Posey County Solar and Wind Ordinance, prior to issuance of an Improvement Location Permit or commencement of construction, the Project will submit all federal, state, and local approvals to the Area Plan Commission, which would include a Floodplain Development Permit, if applicable.

Prior to any construction within an IDNR mapped or unmapped floodway, the Project will secure a permit for construction in compliance with the Flood Control Act (IC 14-28-1). In coordination with the IDNR, it has been determined that the construction limits of the Project will encroach on three floodways regulated by the IDNR - Dixon and Lewis Ditch, Castleberry Creek and Cypress Creek. The Project has submitted separate applications for excavation, fill, or non-residential construction within the IDNR regulated floodways associated with the Dixon and Lewis Ditch and Castleberry Creek. A non-modeling hydraulic assessment was performed for each application to demonstrate that the proposed change in Effective Cross Sectional Flow Area at the most restrictive segment of the encroachment was less than a threshold of five percent, a threshold which has been tested by the IDNR to ensure that the surcharge due to the Project would be significantly less than 0.14 feet. The Base Flood Elevations were determined using the Indiana Floodplain Information Portal. A separate application will be prepared and submitted for excavation, fill, or non-residential construction within the IDNR regulated floodways associated with Cypress Creek.

At the request of the IDNR, breakaway fencing is proposed as an option in certain locations to mitigate any potential impacts to the Base Flood Elevation in the unanticipated event that the fence is to become blocked by debris during a flood. The operation of the breakaway fence is not anticipated because the Project's perimeter security fencing is generally installed parallel to the flow of the IDNR regulated floodways, flood velocities are such that minimal debris flow is expected (< 1 foot per second) and there is limited woody vegetation or debris in these areas that could accumulate in the fencing. A detail of the proposed breakaway fencing is provided as Appendix J.

The Project performed a site-specific hydrology study to assess the maximum flooding depths (ft), peak velocities (fps) and scour impacts (ft) of the overall Project area and watershed drainage. The hydrologic modeling used FLO-2D modeling software. It was performed based on the 100-year, 24-hour storm event (NOAA Atlas 14 – 7.17 inches), considering the latest elevation data, runoff coefficients based on hydrologic soil groups and land cover and inflows

from the Ohio River and other major streams. The model was validated with a HECRAS 1-D model for the Ohio River. The results have aligned well with FEMA's mapped floodplain extents and the IDNR's mapped and unmapped floodways and associated fringe areas. The Preliminary Hydrology Study is included in this report as Appendix G.

Stormwater Management Requirements

Stormwater management for the project falls under the jurisdiction of the Posey County Soil and Water Conservation District. The following requirements need to be met for the project:

Water Quantity/Runoff Analysis

Stormwater quantity control must be provided so that proposed conditions peak runoff rates must be equal to or less than existing conditions. The 2-year, 10-year, and 100-year 24-hour stormwater events must meet these requirements.

Posey County requires the following post-construction criteria to be met in order to manage runoff from solar panels: an ungraded, uncompacted soil profile, dense and healthy vegetation over the entire surface, and management of runoff from the panels as non-erosive sheet flow.

Methodology

Existing and proposed conditions are modeled in HydroCAD software. HydroCAD is a widely accepted hydrologic and hydraulic modeling package based on TR-20 unit hydrograph equations. It models stormwater runoff discharge rates and velocities from ponds, culverts, outlet control structures, and stream reaches.

Hydrology

Curve Number Methodology, based on the NRCS-TR 55 method, was used in the modeling for predicting direct runoff. Curve numbers were assigned by reviewing the soil and land cover for each drainage area.

Time of concentrations were calculated for each drainage area in HydroCAD using the lag method. The lag method uses the hydraulic length (distance traveled by a drop of water from the most distant part of the subcatchment to the outlet point) and the average land slope (average slope of entire watershed). The overall curve number for the site along with the lag information is used to get the time of concentration for the site.

Atlas 14 precipitation and distribution data for the 2-year, 10-year, and 100-year 24-hour storm events were used as input for the analysis (Appendix A).

Existing Conditions

The existing site consists of row crops with limited areas of forested cover. Cover for the analysis was determined using the USDA 2013 Crop Data Layer and aerial photos. Curve numbers were assigned based on the land cover and soil types, see table below for summary.

TABLE 2: EXISTING CONDITIONS COVER

Cover	CN	Area [ac]
Cultivated, HSG B	78	155.90
Cultivated, HSG C	85	64.30
Cultivated, HSG D	89	1,195.88
Forest, HSG B	55	2.06
Forest, HSG D	77	17.03
Total		1,435.17

Existing Drainage Feature Review and Maintenance

During the development phase, the Project has worked directly with landowners to acquire any available maps of the existing drainage tile infrastructure. Those maps have been digitized and supplemented with a desktop analysis, which identified suspected tile locations based on signatures observed on aerial imagery from multiple years and a review of topography, former wetland areas and hydric soils. The suspected drain tile locations are shown in Exhibit 5 with corresponding confidence levels. An avoidance and minimization approach is taken during the design phase, to the extent practical.

Prior to construction, the contractor will field locate existing surface drainage outlet structures. The contractor will re-route public or mainline drain tile that services neighboring properties in accordance with the Indiana Drainage Code. Damage to any private tile that is identified during trenching activities will be repaired while it is exposed. If shallow ponding or pooling of water resulting from a damaged drain tile system impedes access or operation of the solar facility during or after construction, the system will be repaired and/or a new drainage system consisting of tile or swales will be designed and constructed to reduce the ponding. If the damaged system doesn't impede access for operations or maintenance, the repairs may be deferred until the post-Project reclamation in accordance with the terms of the lease agreement with the landowner.

This Stormwater Management Report does not consider the benefit of any of the existing drainage tiles. Drain tile has very little effect on the runoff analysis because it is typically sized to keep the fields dry after the very frequent storms (0.5" or less), while this Stormwater Management Report addresses the 2-year, 10-year and 100-year storm events, which are 3.3", 4.7" and 7.17", respectively. Vegetation established within solar array areas and any additional BMPs as needed will serve to prevent concentrated flow if the existing drainage structures are not able to be utilized.

Proposed Conditions

The use of the site will be a solar plant. The site will consist of approximately 1,404 acres of meadow grass with solar modules mounted above grade on a racking system and 31 acres of gravel access roads, electrical equipment, and a substation. The solar modules will be located above grade with meadow grass below the proposed array.

The proposed substation will be a raised pad and runoff from this area will sheet flow to a proposed swale along the border of the raised pad. This swale will route water to the proposed detention basin.

Minimal grading is proposed to meet the tolerances of the proposed solar array. See Appendix F for a conceptual array grading diagram. Drainage patterns are expected to remain materially the

same with the addition of the detention basin that outlets similar to existing conditions. The detention basin is proposed to provide rate control for the added impervious of the proposed substation.

TABLE 5: PROPOSED CONDITIONS COVER

Cover	CN	Area [ac]
Solar with Low Maintenance Grass, HSG B	58	155.82
Solar with Low Maintenance Grass, HSG C	71	64.30
Solar with Low Maintenance Grass, HSG D	78	1,183.89
Roads/Inverters/Substation	96	31.16
Total	-	1,435.17

Table 6 shows the percentage of impervious area under the proposed conditions for each of the drainage areas. See Exhibits 5 and 6 for the existing and proposed drainage maps.

TABLE 6: PROPOSED CONDITIONS IMPERVIOUS PERCENTAGE

Drainage Area	Percent Impervious	Drainage Area	Percent Impervious
1	2.18	**16**	1.28
2	2.04	**17**	2.72
3	2.07	**18**	3.15
4	1.04	**19**	1.31
5	3.14	**20**	16.78
6	2.20	**21**	4.51
7	2.82	**22**	1.06
8	2.92	**23**	2.63
9	1.37	**24**	1.80
10	1.67	**25**	0.69
11	1.09	**26**	2.41
12	1.83	**27**	2.75
13	1.9	**14**	2.88
14	2.88	**28**	0.39
15	0.84	**Whole Site**	2.17

Proposed Stormwater Management

A solar project differs greatly from other commercial or residential developments. When constructed, a solar project will include solar panels, at-grade gravel access roads, and other electrical equipment. The panels will be mounted a minimum of 18" above the ground with a low maintenance perennial meadow grass growing under the panels. Due to the area between and beneath the panels being vegetated and compliance with the minimum impervious area disconnection length, panels are not considered an impervious surface. While solar projects may require grading, the existing terrain is smoothed to accommodate array installation, rather than significant changes to grades or slopes, and the grading is designed to maintain existing drainage patterns to the extent practical. Access roads are installed at grade and allow for runoff to sheet flow through the proposed meadow cover which provides reduction in runoff. Runoff rates are reduced from pre- to post-development conditions due to the land cover's conversion from a higher runoff rate row-crop field to a lower runoff rate meadow grass.

A permanent detention basin is proposed near the substation to provide rate control from this added impervious area. The basin will have an outlet culvert at the bottom of the basin to allow water to slowly release to meet requirements. The proposed basin will not have any permanent standing water.

In addition to typical stormwater management BMPs, the recommended approach for solar projects should include the following: limit the amount of impervious surfaces to reduce runoff, minimize the amount of grading to promote sheet flow, and the planting of the meadow grass on the majority of the site to provide both runoff reduction and treatment.

Soil Decompaction

Many of the existing soils onsite belong to hydrologic soil group (HSG) D, which innately allow minimal infiltration. Due to this, compaction would have little to no impact on the runoff analysis that was performed to estimate pre-development and post-development stormwater runoff quantities.

After clearing and grubbing, in areas that require grading, the contractor(s) should strip and stockpile topsoil material for reapplication on all future permanent pervious surface areas. During development, grading and utility construction: subsoils will be compacted as necessary for construction using typical backfill techniques. During final grade, reapplication of the preserved topsoil should be completed by a wide-pad dozer and other equipment to minimize compaction of the topsoil material.

The contractor(s) should restrict vehicle and equipment use to avoid soil compaction where feasible; or techniques such as ripping the soil for decompaction should be completed prior to reseeding or other restoration activity. Heavy construction traffic will be limited to the proposed access roads, so compaction within the solar array areas is not anticipated.

Best Management Practices

During Construction

The exhibit titled Best Management Practices (Exhibit 8) describes several best management practices (BMPs) that are to be implemented in varying slope and array scenarios, as outlined on the exhibit. It also includes typical construction details for the described BMPs.

Information on tracker spacing and height and drip line widths is as follows:

- Tracker Spacing (measured pile to pile or equivalently dripline to dripline): Range of 18’ 8” to 24’ 10” (at 40% to 30% ground coverage ratio, respectively)
- Tracker Height: max height for the dripline of a standard tracker will be approximately 5’11” in the horizontal position (5’ pile reveal); a tracker located within a floodplain would be elevated based on the expected inundation level, increasing the max height up to approximately 9’ in the horizontal position.
- Drip Line Width: The drip line will move as the tracker’s orientation changes throughout the day. The effective drip line on both the east and west sides of the tracker will be approximately 22” based on the tracker’s +/- 60-degree range of motion.

Site Stabilization

Temporary or permanent erosion prevention practices should be initiated within seven (7) days of inactivity and completed by the fourteenth (14) day after construction activity soil disturbance is anticipated to be temporarily or permanently ceased for a period of at least 15 days. Although

a stormwater pollution prevention plan (SWPPP) has not yet been prepared for this project, this information will be cited in Section 8.3.1 of the SWPPP once completed.

A seed mix will be coordinated with the Posey County Extension Office to ensure it complies with the Renewable Energy Generations Systems Ordinance for Unincorporated Posey County prior to construction. The seed mix will be a combination of native forbs and grasses.

According to the Posey County Post Construction Stormwater Management Guidelines, in order to submit a Notice of Termination (NOT), the site must achieve 80% native vegetative ground cover with a clear plan for achieving 90% establishment, or other provisions must be employed until the ground cover meets the 90% threshold. Once completed, this specification will be cited in SWPPP Section 12.0.

Highly erodible soils are typically associated with steeper slopes. The SWPPP will include guidance in section 8.3.2 for steep slope stabilization timing. Timing for stabilization is recommended to be within 7 days to limit duration of exposure and potential for large rain events. The base assumption for the solar project is that areas with slopes in excess of 15% will be avoided for solar arrays. Areas of steep slopes that cannot be avoided during construction must have temporary or permanent erosion prevention practices initiated immediately (end of the same working day) after construction activity disturbing soil in an area is temporarily or permanently suspended for a period exceeding seven calendar days. The application of temporary or permanent erosion control management practices should be completed prior to the seventh day of temporarily or permanently suspending construction activity in an area of steep slopes. BMPs recommended for steeper slopes would include seed and erosion control blanket and runoff controls which would contribute to temporary sediment basins during construction. Temporary basins will include riser outlet structures and skimmer structures to allow drawdown of water below the riser structure elevation.

It is common practice for the construction contractor to pre-seed the site for stabilization prior to initiating site grading and other preparation activities, such that the scope of the restoration is limited to those areas where more significant disturbance occurs. Details of the plan will be included within the SWPPP and may vary based on the specific timing of construction.

Post Construction

The included exhibit titled Best Management Practices (Exhibit 8) identifies locations where existing slopes are 5% or greater for areas under the proposed array. In locations where the final grade is 5% or greater, additional BMPs are proposed which may include one or a combination of the following:

- Stormwater Ponds – These would be proposed at locations downstream of the slopes that are 5% or greater and designed to meet runoff rate requirements assuming that the areas directly under the panels are impervious with the areas between the panels as meadow grass.
- Level Spreaders or Slope Interrupters – These would be proposed at 100 ft intervals where slopes are 5% or greater to disperse runoff and promote sheet flow. See Exhibit 8B for the proposed level spreader design.

Micrograding

Recent innovations in solar panels and their structural racking systems have increased the grades and tolerances that are acceptable to build on, including steeper slopes and greater undulations. However, there are still instances where some grading is required to meet the

specifications of the racking system. These "micrograding" areas are determined on a pile-by-pile basis based on the structural tolerances of the equipment. In most cases, the controlling tolerances are due to undulations in the topography, which are locally smoothed, but not leveled. Also due to the small, localized nature of the micrograding it does not typically alter drainage patterns and typically reduces erosion potential and stormwater runoff by flattening or smoothing some of the steeper areas and increasing the time of concentration. Maintaining existing drainage patterns and limiting mass grading is an objective of the detailed design. The practice is imperative to the success of the construction efforts and long-term profitability of the Project.

Most grading will occur in areas with slopes greater than 10-15% and will not materially alter existing drainage patterns. In the localized areas where the cut/fill is in excess of 1 foot, the Project will separate, stockpile and respread topsoil prior to seeding and stabilization. The minimum depth of topsoil spreading will be based on the depth of the existing topsoil and the requirements for the proposed vegetation. The minimum depth would be 4 inches, but the re-application is typically 6 to 8 inches. The intent of the project is to maintain existing drainage patterns but if patterns are altered during the final grading design appropriate permanent stormwater basins or other BMPs will be utilized to meet the runoff control requirements.

Water Quantity/Runoff Analysis

Stormwater quantity calculations for the site were prepared using HydroCAD. The proposed site meets the rate control requirements of the Posey County Soil and Water Conservation District. Table 8 shows a summary of the runoff rates for each event at the site discharge locations. Calculations are included in Appendices B and C.

TABLE 8: RUNOFF RATE SUMMARY

Location	2-year Runoff (cfs)		10-year Runoff (cfs)		100-year Runoff (cfs)	
	Existing	Proposed	Existing	Proposed	Existing	Proposed
1	98.41	44.58	158.23	84.61	253.24	154.90
2	191.76	81.89	307.90	162.74	486.76	303.52
3	289.79	128.57	467.46	248.07	747.51	457.80
4	541.89	211.59	894.76	443.15	1,446.73	860.01
5	115.43	52.63	185.30	101.88	293.79	187.26
6	48.20	21.12	77.25	41.38	122.16	76.44

Stormwater Management Practices

Permanent Detention Basin

A permanent detention basin is provided near the substation to capture runoff to slow release rates. Table 9 summarizes the proposed substation basin on site. Calculations can be found in Appendix D.

TABLE 9: PROPOSED BASIN SUMMARY

Basin	Bottom Elevation	Outlet Elevation	Emergency Overflow Elev.	100-year High Water Elevation	Top Elevation
Substation	388.00	388.00	389.00	389.43	390.00

Swale Sizing

A swale is proposed to route runoff from the substation to the basin and safely outlet basin runoff from the site. The swale will be sized during the detailed design prior to the application for the Improvement Location Permit.

Proposed Culverts

Culverts are proposed below new access roads at entrances and at areas of concentrated flow to maintain existing drainage patterns through the proposed site. Culverts are sized for the 10-year 24-hour storm event with a 1-foot allowable head. Table 10 summaries the proposed culverts on site, see civil plans for culvert locations. Peak runoff rates were calculated using HydroCAD and these flow rates were then input into CulvertMaster along with the inlet and outlet elevations and approximate culvert lengths to determine the required culvert diameter.

TABLE 10: PROPOSED CULVERT SUMMARY

Crossing ID	Culvert Diameter	Length (ft)	Inlet Elevation (ft)	Outlet Elevation (ft)	Material
DC-29	2-24"	44	371.7	371.5	CMP
DC-30	1-30"	44	370.4	370.3	CMP
DC-31	3-24"	48	372.1	372	CMP
DC-34	1-18"	36	381.4	381.3	CMP
DC-51	1-24"	48	395.9	394.8	CMP
DC-52	1-30"	50	370.4	369.5	CMP
EC-01	1-18"*	92	387.7	387.1	CMP
EC-02	1-24"	94	389.5	389	CMP
EC-03	1-18"*	86	390.4	389.8	CMP
EC-04	1-18"*	102	384.6	382.7	CMP
EC-05	1-18"*	67	372.3	371.9	CMP
EC-06	1-48"	92	386	385.6	CMP
EC-07	1-18"*	83	380.7	380.6	CMP
EC-08	1-18"*	70	379.8	379.6	CMP
EC-09	1-18"*	92	379.4	377.9	CMP
EC-10	1-18"*	76	381.5	380.9	CMP
EC-11	1-24"	92	379.1	378.7	CMP
EC-12	1-18"*	95	379.5	379.3	CMP
EC-14	1-18"*	84	383.2	382.4	CMP
EC-15	1-18"*	87	379.1	379	CMP
EC-16	1-18"*	92	378.9	378.6	CMP
EC-17	2-30"	82	379.2	378.7	CMP
EC-19	1-18"*	84	380.9	380.6	CMP
EC-20	1-18"*	55	383.4	383.3	CMP
EC-21	2-42"	84	388.5	388.3	CMP
EC-29	1-18"*	84	378.4	377.7	CMP
EC-30	1-24"	90	377.2	376.7	CMP

Crossing ID	Culvert Diameter	Length (ft)	Inlet Elevation (ft)	Outlet Elevation (ft)	Material
EC-31	1-18"	86	377	376.7	CMP
EC-32	1-18"*	90	384.7	384.4	CMP
EC-33	1-18"*	90	380.3	379.4	CMP
EC-35	1-18"*	48	418.8	417.7	CMP
EC-36	1-18"*	65	431	428.6	CMP
EC-37	1-18"*	65	406	405.4	CMP
EC-39	1-18"*	44	476.5	474.5	CMP
EC-40	1-18"*	44	407.6	406.4	CMP
EC-41	1-18"*	44	372	371.9	CMP
EC-42	1-18"*	100	374.7	374.5	CMP
EC-43	1-18"*	83	369.9	359.8	CMP
EC-44	1-18"*	55	380.3	379.6	CMP
EC-45	1-18"*	58	392	391.4	CMP
EC-46	1-18"*	50	409.4	409.1	CMP
EC-47	1-18"*	58	391.9	391.4	CMP
EC-48	1-18"*	83	406.1	403.3	CMP
EC-49	1-18"*	52	435.3	434.2	CMP

*Minimal drainage to crossing: 1-18" culvert assumed

Proposed Low Water Crossings

Low water crossings are proposed across access roads at areas of concentrated flow where lack of cover renders culverts unsuitable. Crossings were sized for the 10-year 24-hour storm event and crossing types were determined by calculating the average shear stress at these areas of concentrated flow. Table 11 provides a summary of the proposed low water crossings, see civil plan for crossing locations. See Appendix G for a standard duty low water crossing detail.

TABLE 11: PROPOSED LOW WATER CROSSING SUMMARY

Crossing ID	Ditch Slope (%)	Average 10-year Shear Stress (lb/ft^2)	LWC Type	Standard Duty LWC Allowable Shear Stress (lb/ft^2)
DC-32	1.15	0.52	STANDARD DUTY	2.4
DC-33	0.31	0.31	STANDARD DUTY	
DC-35	0.33	0.46	STANDARD DUTY	
DC-36	1.30	0.65	STANDARD DUTY	
DC-46	0.38	0.15	STANDARD DUTY	

Construction Conditions

During construction conditions, higher runoff rates and volumes can be expected when compared to the fully vegetated final condition. To account for this, dewatering should be anticipated as needed until vegetation has fully established on the site. This may include pumping of temporary swales and diversions. Once the site has been stabilized, sediment will

need to be removed from any permanent basins on site. Using temporary seed/mulch at the onset of construction can greatly reduce the amount of erosion and rework on solar sites. See the Site Stabilization section of the report for additional information on temporary and permanent stabilization of the site.

Dewatering

Dewatering of turbid water (water that is visibly cloudy or brown in color) should be discharged via pump and hose or overland flow (via temporary ditch or grade cuts) to a temporary sediment basin for pretreatment. The use of riprap apron (energy dissipation) should be used for the discharge location. If riprap is not used, an alternative form of energy dissipation should be used to prevent scour and re-suspension of soil at the discharge point of the hose. If discharge to a temporary sediment basin is not feasible, the use of dewatering dumpsters, dewatering bags or other prefabricated product should be used. Appendix J includes the detail and specifications for use of dewatering bags. The use of rock checks, erosion control blanket and sumps or traps shall be considered for overland flow dewatering. After the use of BMPs, the water could be discharged through a vegetated buffer and energy dissipation. The discharge of water from the site should be visibly clear in appearance.

The discharge of accumulated water should not:

- Contain oil, grease, a sheen, odor, or concrete washout (use an oil-water separator or suitable filtration device if material is found);
- Adversely impact adjacent properties with water or sediment;
- Adversely impact waters of the state;
- Cause erosion of slopes and channels;
- Cause nuisance conditions; and
- Contribute to inundation of wetlands which negatively impact the wetlands.

Additional BMPs

The final Stormwater Pollution Prevention Plan (SWPPP) will be prepared for the submittal of the project's general construction stormwater permit. Potential BMPs include silt fence, grade breaks, erosion control blankets, fiber rolls, bonded fiber matrix (BFM), and others as deemed necessary.

Post-Construction Stormwater O&M Manual

A post-construction stormwater operations and maintenance (O&M) manual outlining the inspection methods necessary to meet the stormwater management guidelines set forth by the Posey County Soil and Water Conservation District will be prepared as part of the final construction plans.

Conclusion

The proposed site was designed to meet the requirements of the Posey County Soil and Water Conservation District for stormwater management. The proposed site consists of proposed basins, swales, and crossings, as well as additional BMPs in areas with final slopes greater than 5% and as necessary in locations where existing drainage patterns may have been altered in order to maintain existing drainage patterns and reduce runoff rates.

References Cited

National Engineering Handbook, Part 630 Hydrology. Chapter 9 Hydrologic Soil-Cover Complexes. USDA. NRCS. 210-VI-NEH, July 2004

USDA Geospatial Data Gateway, 2-meter DEM, Elevation data, Accessed March 2021, https://datagateway.nrcs.usda.gov/

Web soil survey. Retrieved November 2021, from https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

NOAA, & Service, N. W. AHPS Precipitation analysis. Retrieved March 2021, from http://water.weather.gov/precip/download.php

USGS. USGS water resources: About USGS water resources. Retrieved March 2021, from https://water.usgs.gov/GIS/huc.html

USDA 2013 Crop Data Layer, Landcover data. Retrieved March 2021, from https://www.nass.usda.gov/Research_and_Science/Cropland/SARS1a.php

Posey County, IN. Final Drainage Plan Requirements for Solar Projects Version 1.2. Adopted 11/15/2021

Indiana Geological Society. Karst Sinkhole Inventory (2011). Accessed November 2021, from https://maps.indiana.edu/previewMaps/Hydrology/Karst_Sinkhole_Inventory_2011.html

Indiana DNR. Indiana Oil and Gas Well Records Viewer. Accessed November 2021, from https://www.arcgis.com/apps/webappviewer/index.html?id=2a50bd93503e48299531dd776f211d84

FEMA Flood Insurance Rate Maps. Retrieved November 2021 from https://msc.fema.gov/portal/advanceSearch#searchresultsanchor

Indiana Department of Natural Resources. Indiana Best Available Floodplain Mapping. Retrieved November 2021 from https://www.in.gov/dnr/water/9846.htm

Exhibits

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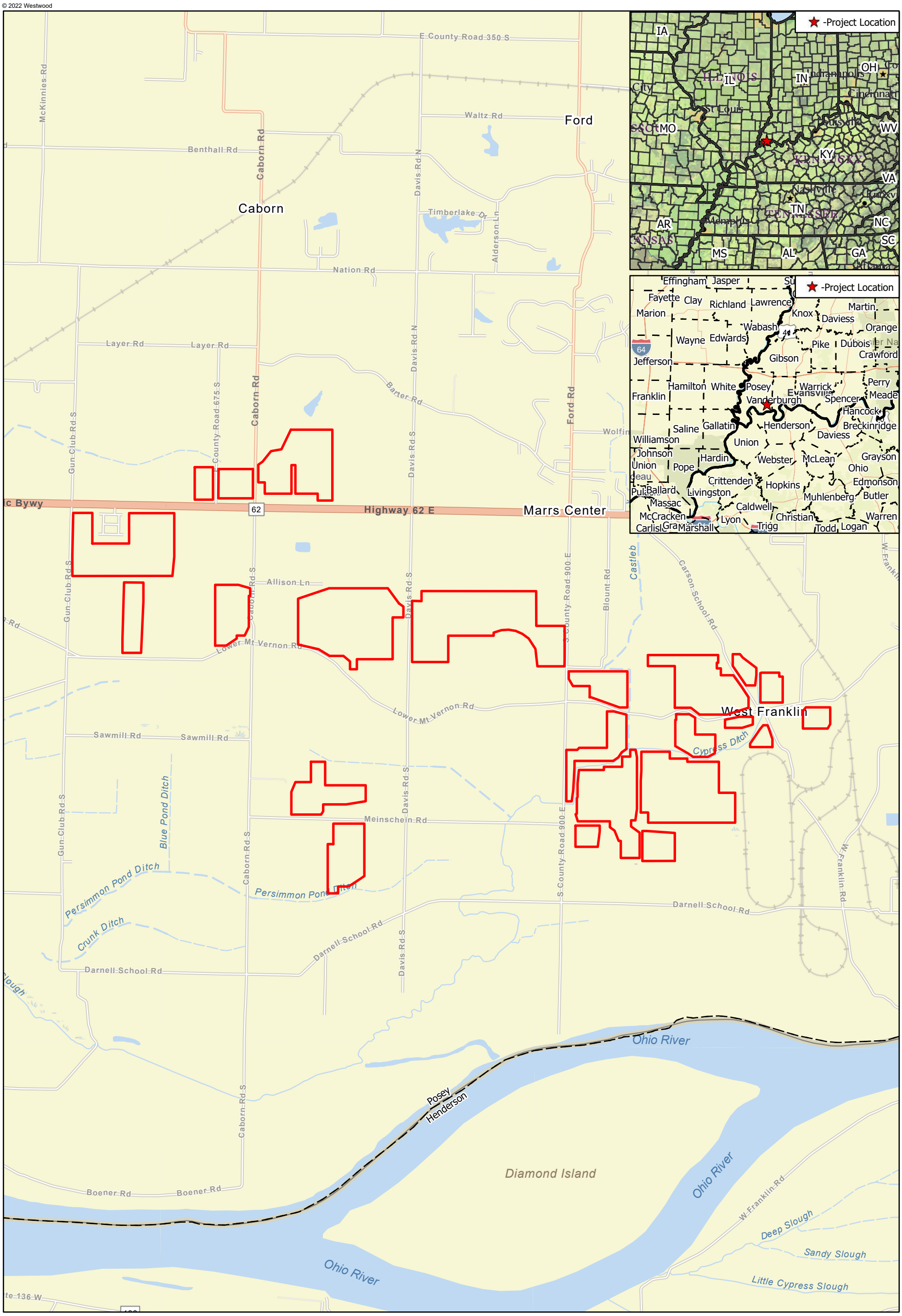
Location Map - | 2/18/2022 12:49 PM | kmzangel



Data Source(s): Westwood (2022); Esri WMS Basemap Imagery (Accessed 2022); USGS (2022); FEMA (2022); USDA (2022)

Legend

- Fenceline Boundary
- County Boundary

N

0 3,000 US Feet

Posey Solar Project

Posey County, Indiana

Exhibit 1: Location Map

February 18, 2022

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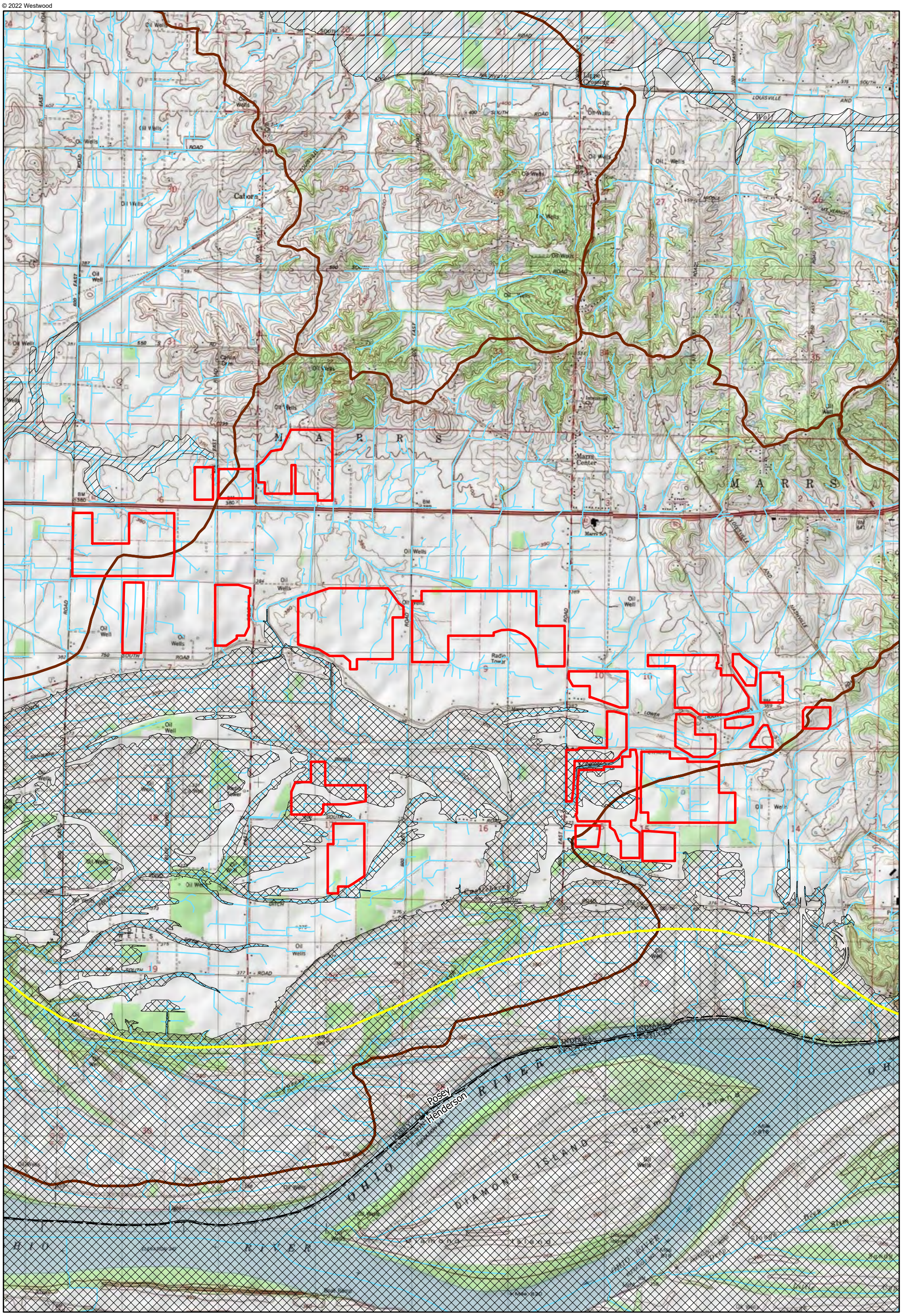

Data Source(s): Westwood (2022); Esri WMS Basemap Imagery (Accessed 2022); USGS (2022); FEMA (2022); USDA (2022)

Legend

- Fenceline Boundary
- County Boundary
- NHD Flowline
- HUC-12 Boundary
- FEMA Flood Zones
- FEMA Zone A
- FEMA Zone AE
- FEMA Floodway

N

0 — 3,000 Feet

Posey Solar Project

Posey County, Indiana

Exhibit 2A: Base Map - FEMA

March 29, 2022

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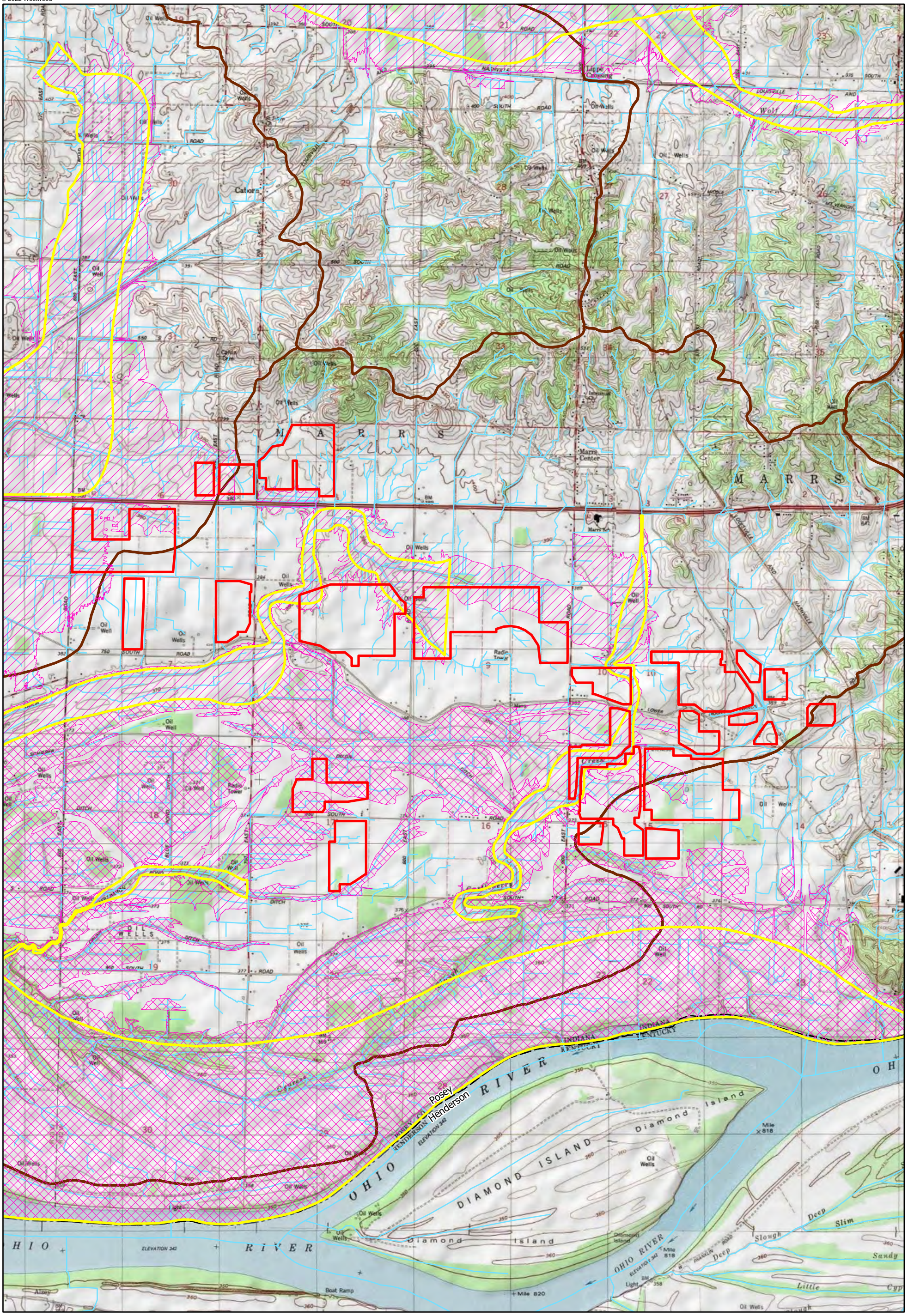
Basemap-IDNR - IDNR Base Map | 3/29/2022 1:06 PM | LJBASSETTE



Data Source(s): Westwood (2022); Esri WMS Basemap Imagery (Accessed 2022); USGS (2022); FEMA (2022); USDA (2022)

Legend

- Fenceline Boundary
- County Boundary
- NHD Flowline
- HUC-12 Boundary

Indiana DNR Flood Zones

- IDNR Zone A
- IDNR Zone AE
- IDNR Floodway or Approx. Floodway

N

0 — 3,000 US Feet

Posey Solar Project

Posey County, Indiana

Exhibit 2B: Base Map - IDNR

March 29, 2022

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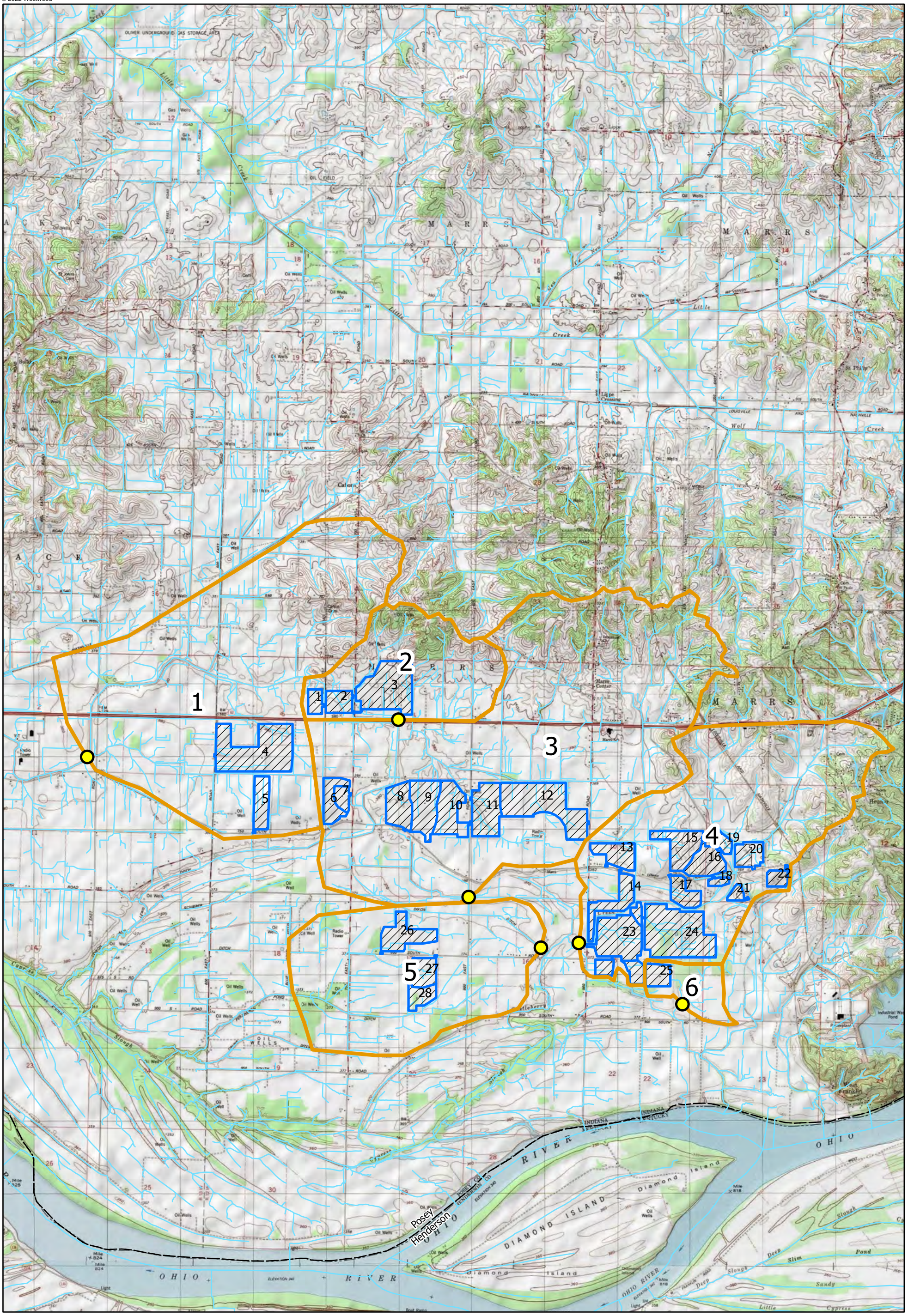

Data Source(s): Westwood (2022); Esri WMS Basemap Imagery (Accessed 2022); USGS (2022); FEMA (2022); USDA (2022)

Legend

- Fenced Areas
- County Boundary
- Onsite Drainage Areas
- NHD Flowline
- Overall Drainage Basins
- Overall Discharge Points

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Posey Solar Project

Posey County, Indiana

N

0 4,000 US Feet

Exhibit 2C: Overall Project Hydrology Map

February 18, 2022

Posey
Henderson

Data Source(s): Westwood (2022); Esri WMS Basemap Imagery (Accessed 2022); USGS (2022); FEMA (2022); USDA (2022)

Legend

- Fenceline Boundary
- County Boundary

Hydrologic Soils Group

- A
- B
- B/D
- C
- C/D
- D
- W

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Posey Solar Project

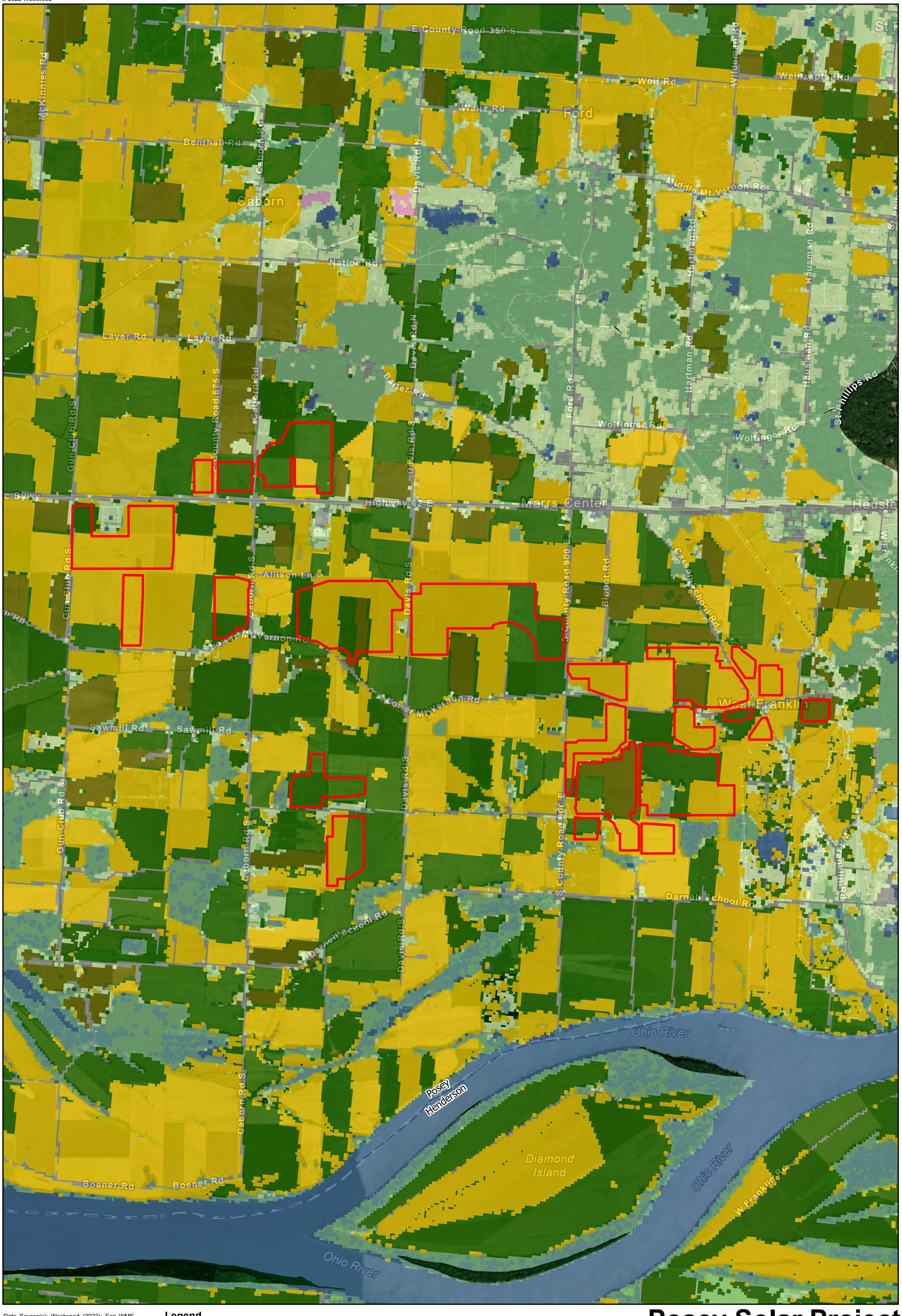
Posey County, Indiana

N

0 3,000 Feet

Exhibit 3: Soils Map

February 18, 2022



Data Source(s): Westwood (2022); Esri WMS Basemap Imagery (Accessed 2022); USGS (2022); FEMA (2022); USDA (2022)

Legend

- Fenceline Boundary
- County Boundary

Land Cover

- Alfalfa
- Dbl Crop WinWht/Soybeans
- Developed
- Forest
- Grassland/Pasture
- Wetlands
- Open Water
- Other Hay/Non Alfalfa
- Soybeans
- Corn

N

0 3,000 Feet

Posey Solar Project

Posey County, Indiana

Exhibit 4: Land Cover Map

February 18, 2022

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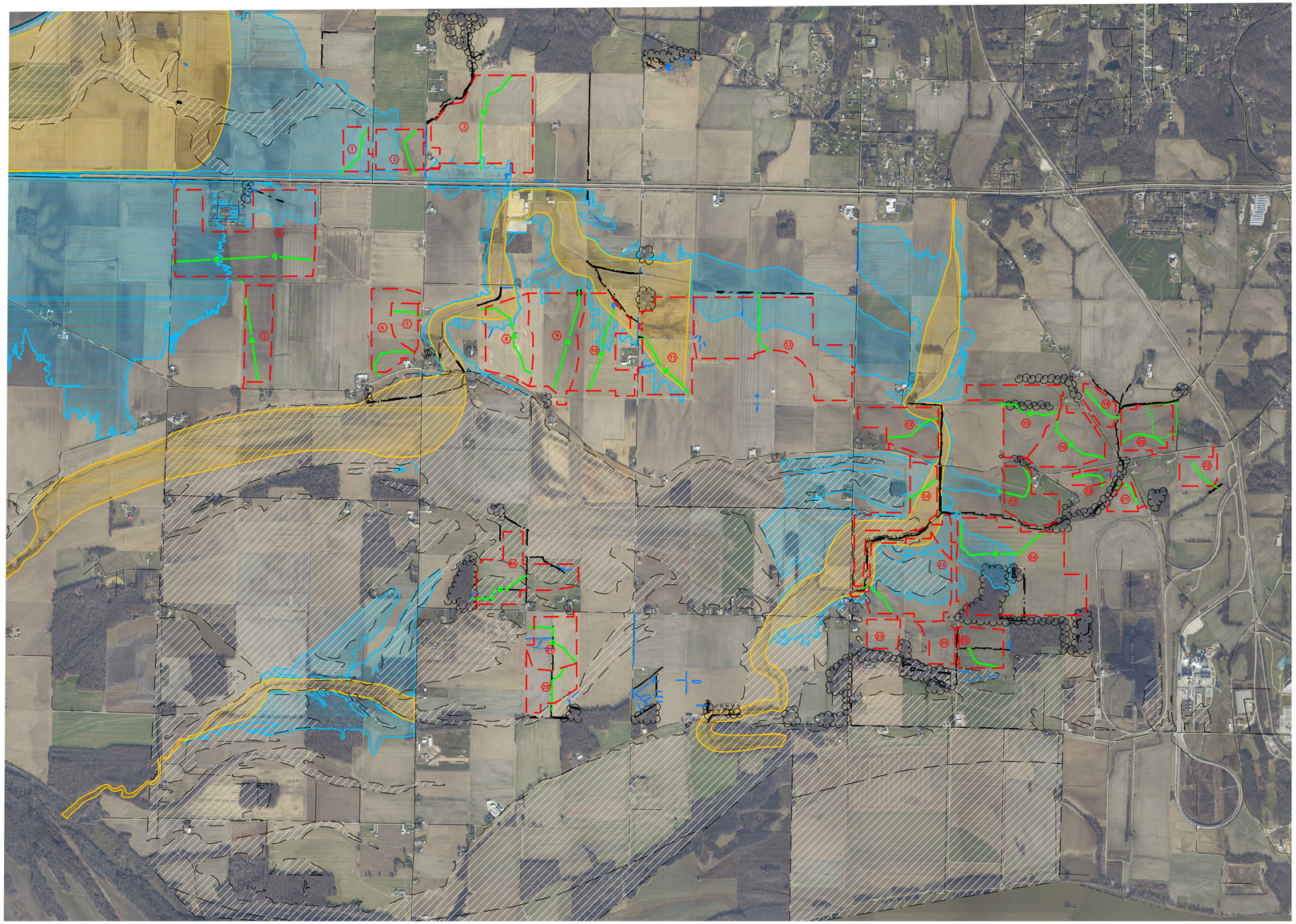

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- EX. WETLAND
- FEMA FLOOD HAZARD ZONE
- IDNR FLOODWAY
- IDNR FLOODPLAIN
- EX. ONSITE DRAINAGE AREA BOUNDARY
- EX. TIME OF CONCENTRATION LINE
- DISCHARGE LOCATION
- 1 DRAINAGE AREA LABEL

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0' 1500' 3000' 4500'

Posey Solar Project

Posey County, Indiana

Existing Dranage Map - Overall

NOT FOR CONSTRUCTION

DATE: 2/24/2022

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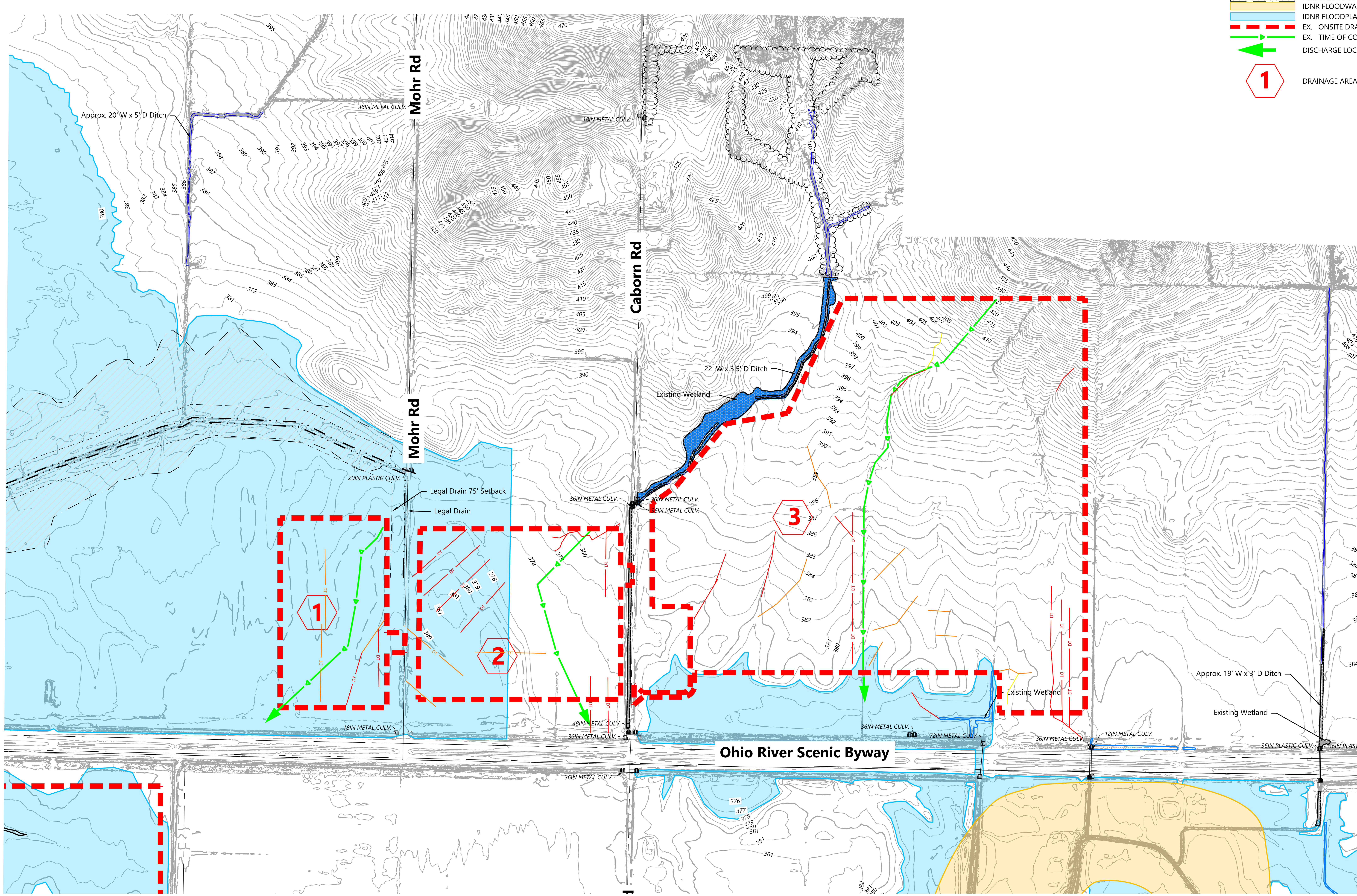

SEE SHEET 5B

SEE SHEET 5C

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0' 300 600 900

Posey Solar Project

Posey County, Indiana

Existing Dranage Map

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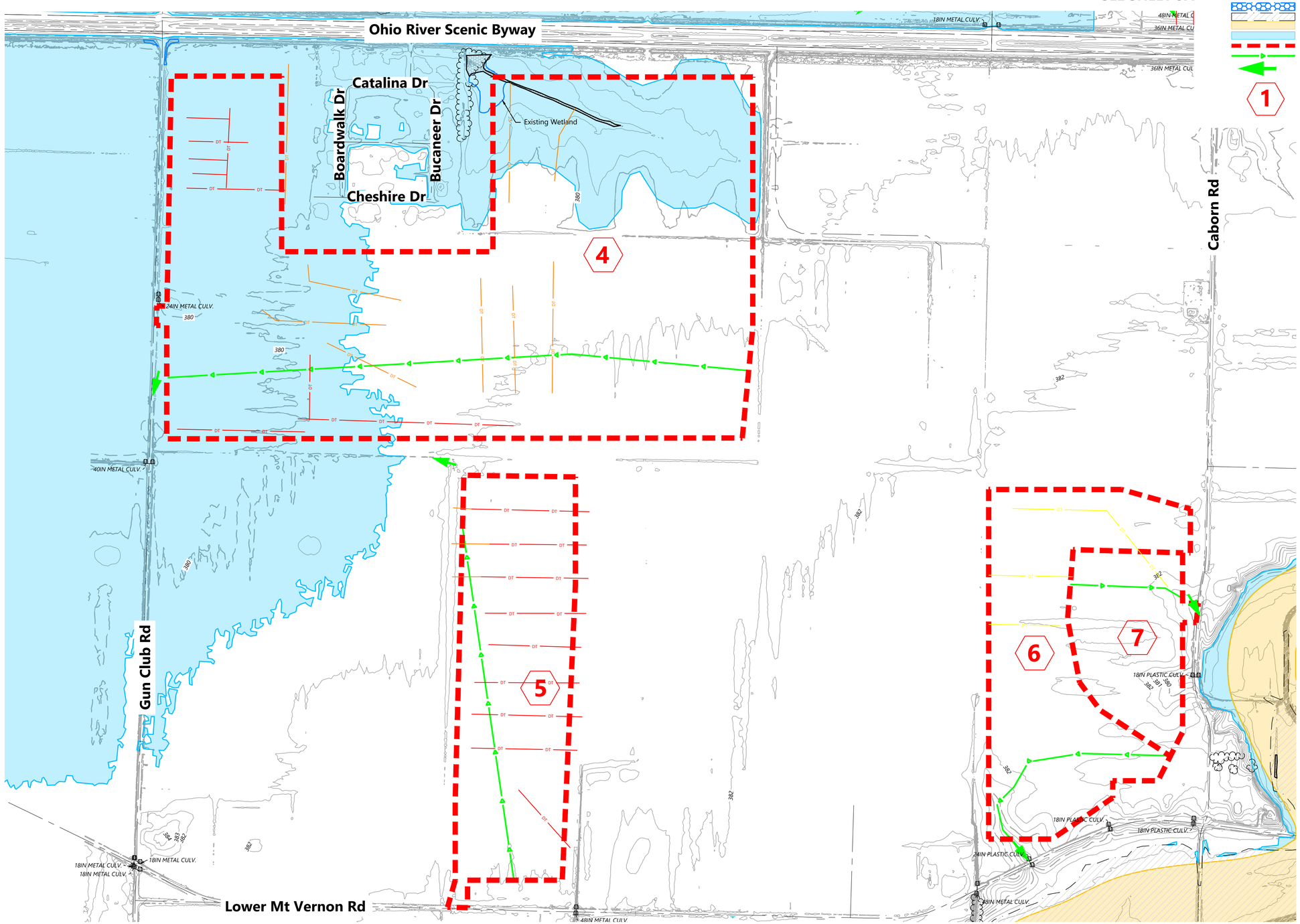
DATE: 3/29/2022

SHEET: 5A

SEE SHEET 5A



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Posey Solar Project

Posey County, Indiana

Existing Dranage Map

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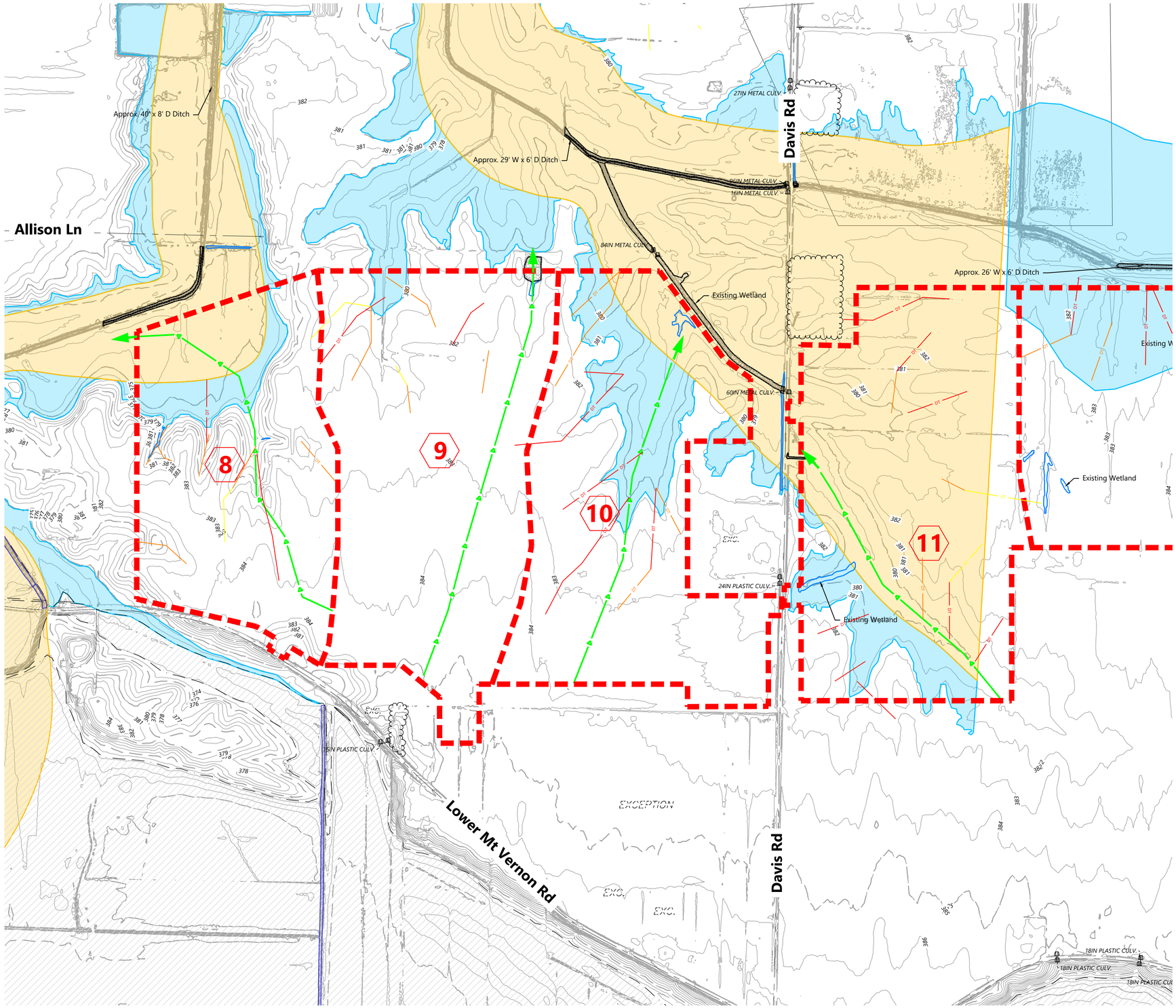

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Posey Solar Project

Posey County, Indiana

Existing Dranage Map

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DATE: 3/29/2022

SHEET: 5C

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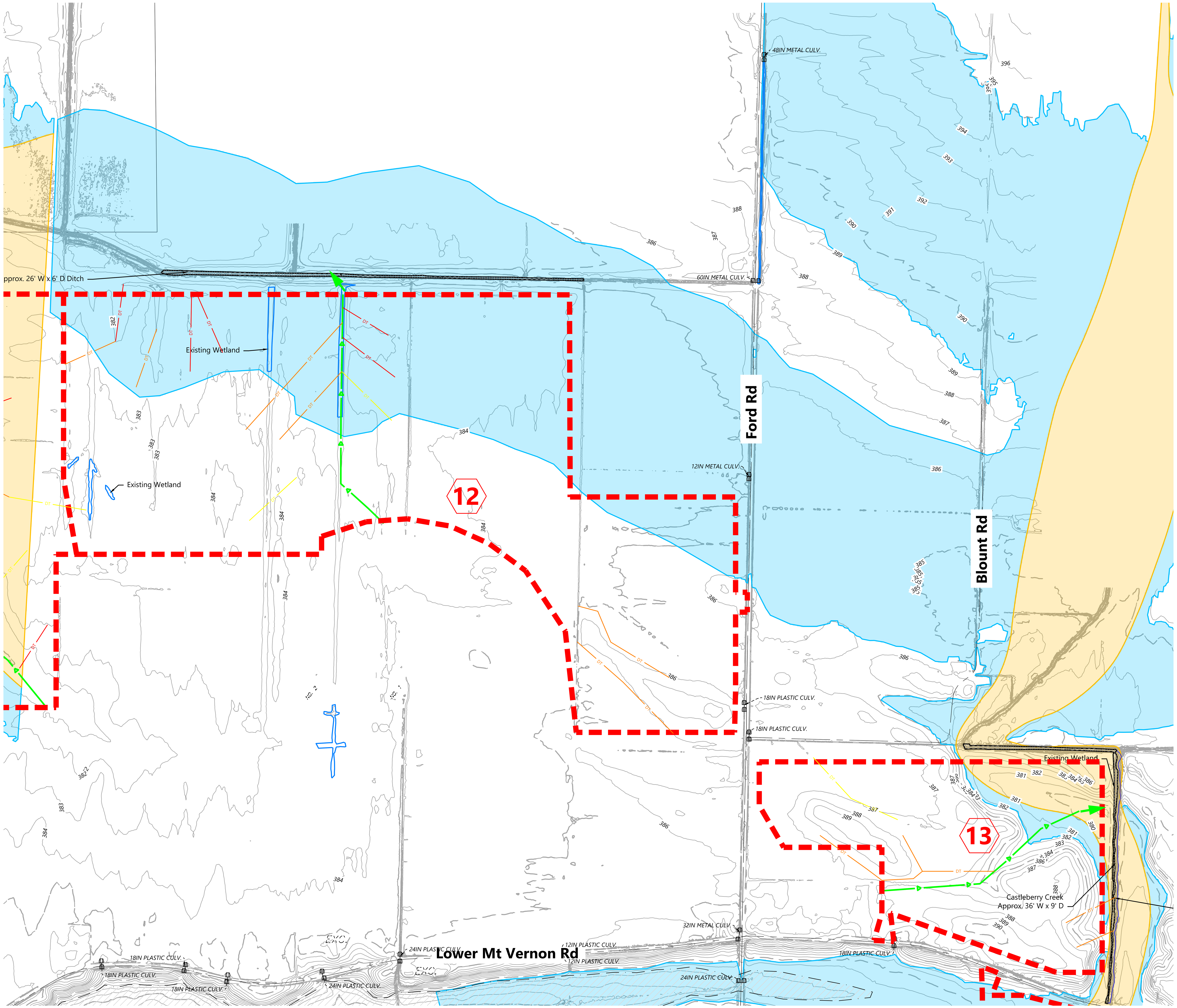

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Posey Solar Project

Posey County, Indiana

Existing Dranage Map

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DATE: 3/29/2022

SHEET: 5D

SEE SHEET 5D

Carson School Rd

12IN METAL CULV.

Approx. 24' W x 7' D Ditch

Existing Wetland

Approx. 30' W x 8' D Ditch

Existing Wetland

Cypress Ditch
Approx. 30' W x 9.5' D

Approx. 30' Bridge

36IN PLASTIC CULV.

24IN METAL CULV.

Lower Mt Vernon Rd

36IN PLASTIC CULV.

18IN PLASTIC CULV.

Existing Wetland

24IN METAL CULV.

Existing Wetland

Castleberry Creek
Approx. 36' W x 9' D

Lower Mt Vernon Rd

Existing Wetland

Castleberry Creek
Approx. 36' W x 9' D

Cypress Ditch
Approx. 40' W x 9.5' D

Existing Wetland

15 16 17 18 19 20 21 22 23 24

SEE SHEET 5F

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Posey Solar Project

Posey County, Indiana

Existing Dranage Map

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DATE: 3/29/2022

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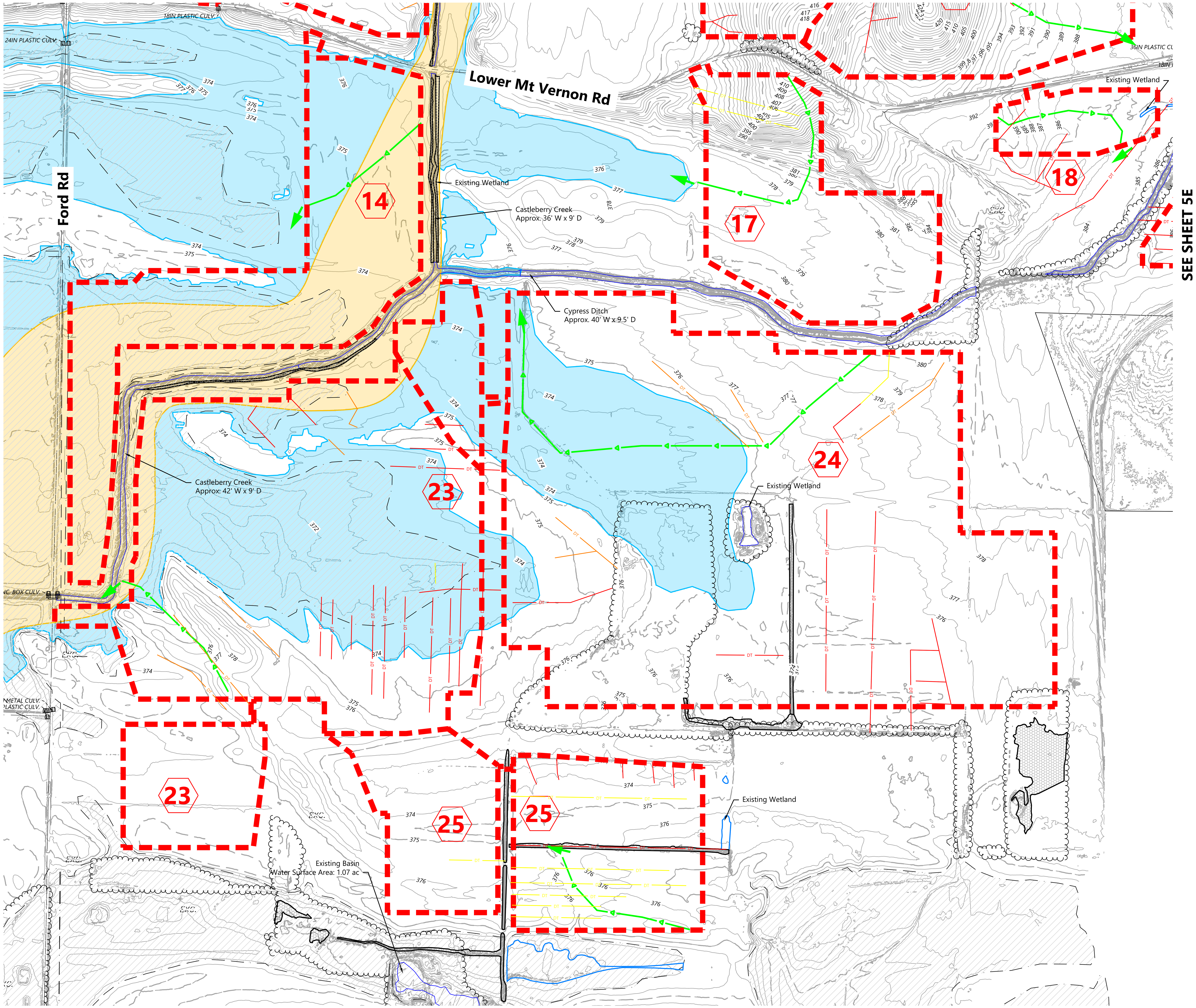

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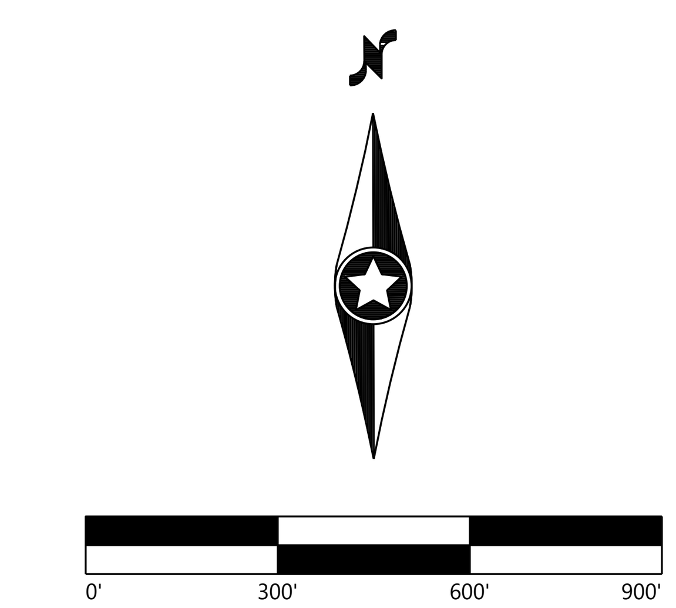

Posey Solar Project

Posey County, Indiana

Existing Dranage Map

NOT FOR CONSTRUCTION

DATE: 3/29/2022

SHEET: 5F

SEE SHEET 5C

SEE SHEET 5F

Davis Rd

Meinschein Rd

Darnell School Rd

PERSIMMON POND DITCH

Persimmon Pond Ditch
Approx. 16' W x 2.5' D

Existing Wetland

48IN METAL CULV.

15IN PLASTIC CULV.

18IN PLASTIC CULV.

24IN METAL CULV.

84IN METAL CULV.

16IN PLASTIC CULV.

26

27

28

LEGEND:

- PROJECT BOUNDARY
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Posey Solar Project

Posey County, Indiana

Existing Dranage Map

NOT FOR CONSTRUCTION

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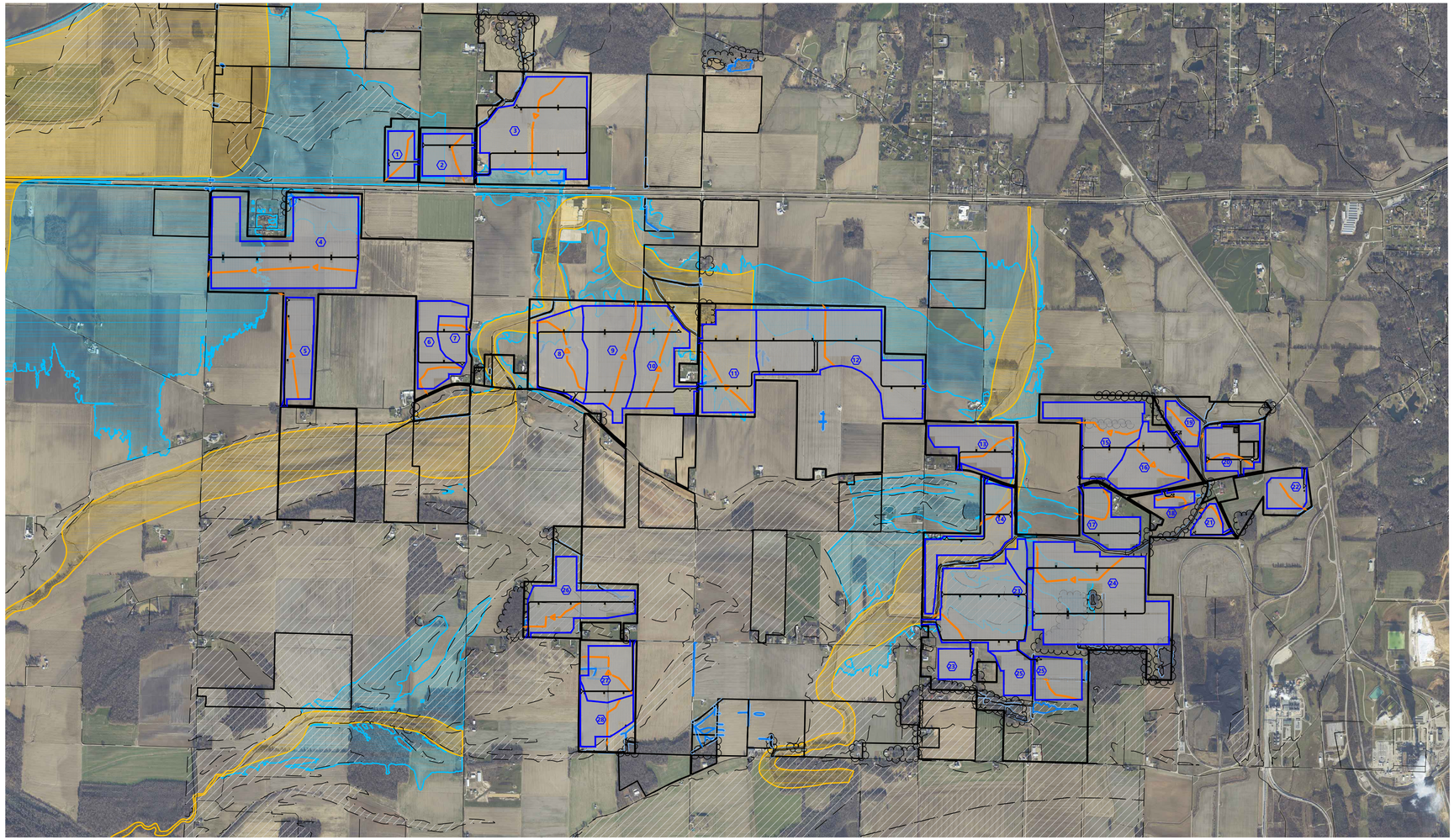

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- EX. STREAM CHANNEL
- EX. WETLAND
- FEMA FLOOD HAZARD ZONE
- IDNR FLOODWAY
- IDNR FLOODPLAIN
- PROPOSED SOLAR ARRAY
- PROPOSED ACCESS ROAD
- PROPOSED LOW WATER CROSSING
- PROPOSED SECURITY FENCE (x)
- PROPOSED ELECTRICAL EQUIPMENT
- PROPOSED LAYDOWN YARD
- PROPOSED INDEX CONTOUR (900)
- PROPOSED INTERVAL CONTOUR
- PROPOSED CULVERT
- PROPOSED STORM SEWER
- PROPOSED DRAIN TILE
- PROPOSED STORM STRUCTURE
- PROPOSED FLARED END SECTION W/RIP RAP
- PROPOSED ONSITE DRAINAGE AREA BOUNDARY
- PROPOSED TIME OF CONCENTRATION LINE
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Posey Solar Project

Posey County, Indiana

Proposed Drainage Map - Overall

NOT FOR CONSTRUCTION

DATE: 2/24/2022

SHEET: 6

Mohr Rd

Caborn Rd

Ohio River Scenic Byway

Caborn Rd

SEE SHEET 6B

SEE SHEET 6C

LEGEND:

- PROJECT BOUNDARY
- EX. INDEX CONTOUR
- EX. INTERVAL CONTOUR
- EX. TREELINE
- EX. ROAD CENTERLINE
- EX. CULVERT
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- PROPOSED STORM SEWER
- PROPOSED DRAIN TILE
- PROPOSED STORM STRUCTURE
- PROPOSED FLARED END SECTION W/RIP RAP
- PROPOSED ONSITE DRAINAGE AREA BOUNDARY
- PROPOSED TIME OF CONCENTRATION LINE
- DISCHARGE LOCATION
- DRAINAGE AREA LABEL

0' 300' 600' 900'

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PREPARED FOR:

AREVON

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8800 N. Gainey Center Dr., Suit 250
Scottsdale, AZ 85258, USA

REVISIONS:

#	DATE	COMMENT
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Posey Solar Project

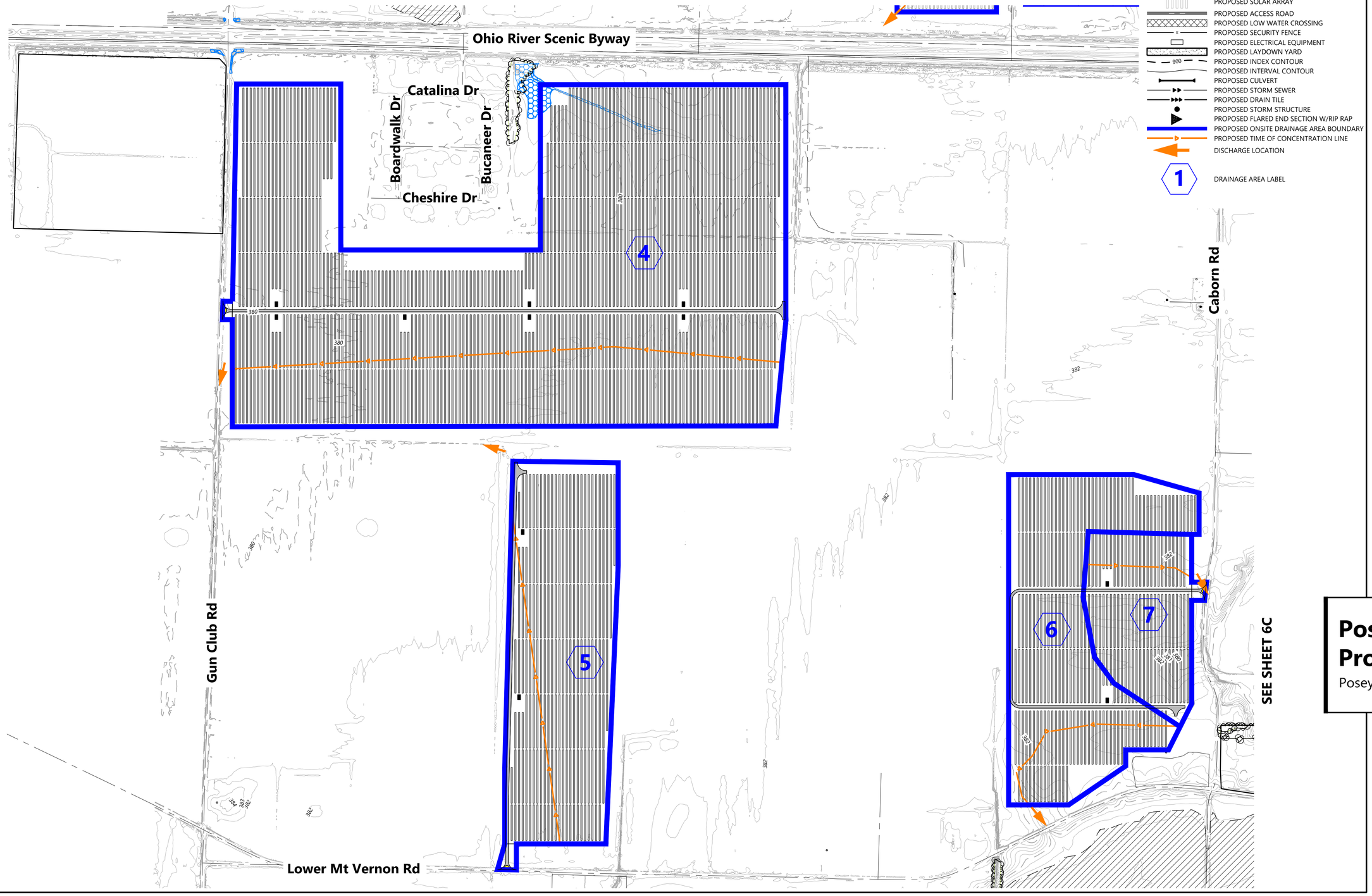
Posey County, Indiana

Proposed Drainage Map

NOT FOR CONSTRUCTION

DATE: 2/24/2022

SHEET: 6A



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Posey Solar Project

Posey County, Indiana

Proposed Drainage Map

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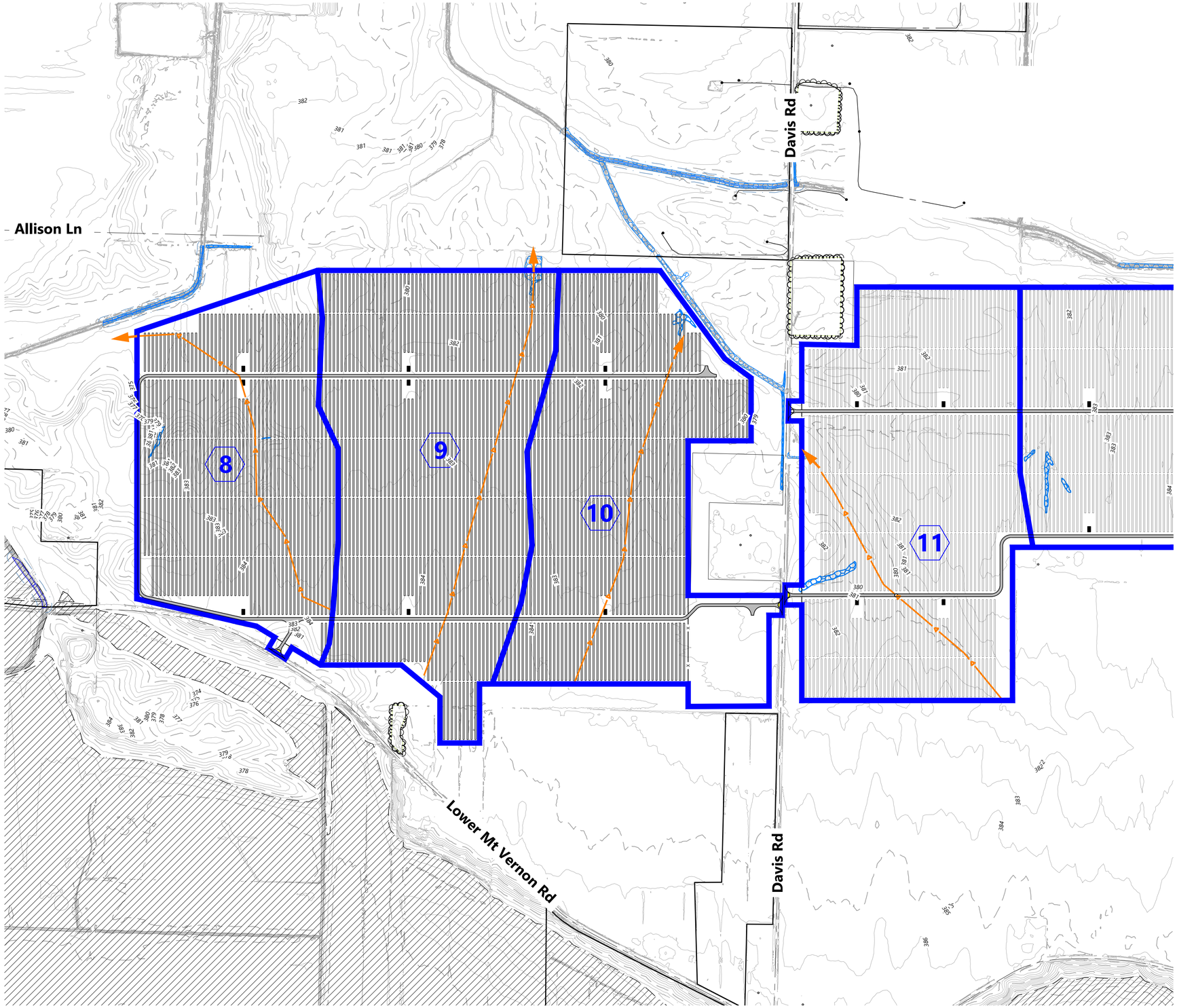
DATE: 2/24/2022

SHEET: 6B

SEE SHEET 6A



LEGEND:

- PROJECT BOUNDARY
- EX. INDEX CONTOUR
- EX. INTERVAL CONTOUR
- EX. TREELINE
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Posey Solar Project

Posey County, Indiana

Proposed Drainage Map

NOT FOR CONSTRUCTION

DATE: 2/24/2022

SHEET: 6C

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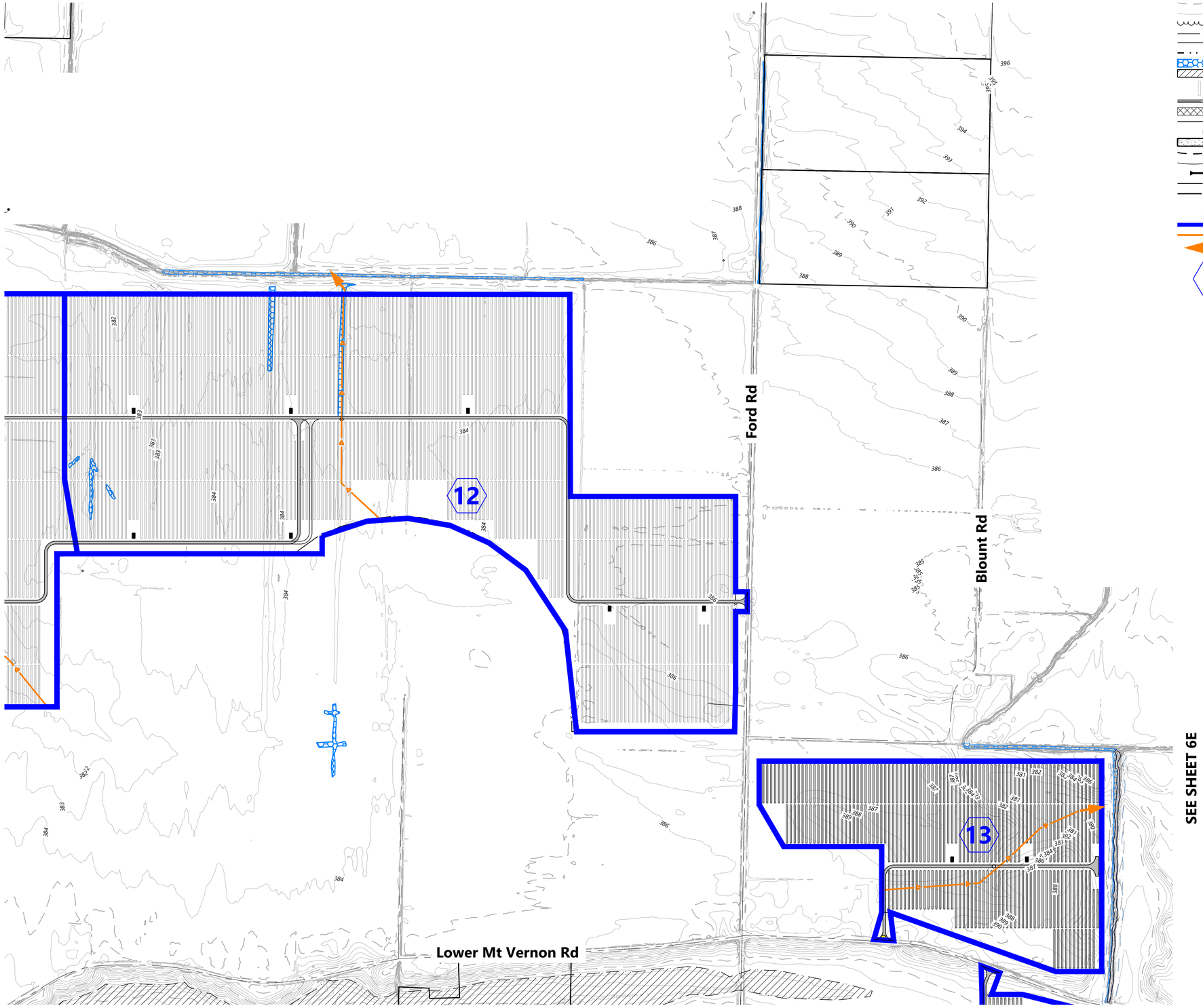

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Posey Solar Project

Posey County, Indiana

Proposed Drainage Map

NOT FOR CONSTRUCTION

DATE: 2/24/2022

SHEET: 6D

SEE SHEET 5D

Carson School Rd

EAST SUBSTATION
DETENTION BASIN

Lower Mt Vernon Rd

Lower Mt Vernon Rd

SEE SHEET 6F

LEGEND:

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- EX. INDEX CONTOUR
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SHEET: 6E

SEE SHEET 6D

SEE SHEET 6E

SEE SHEET 6G

Lower Mt Vernon Rd

Ford Rd

14

17

18

23

24

25

LEGEND:

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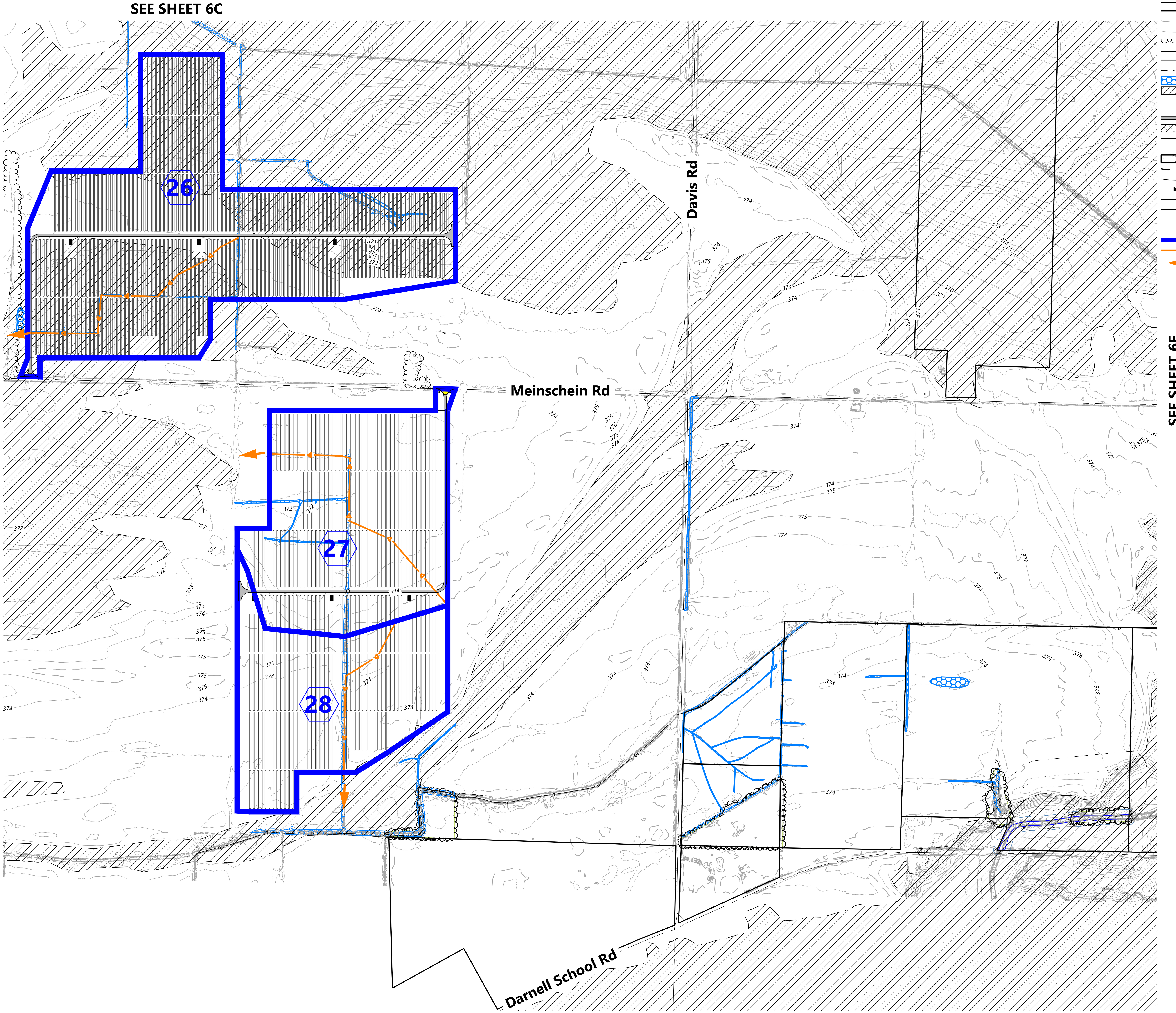

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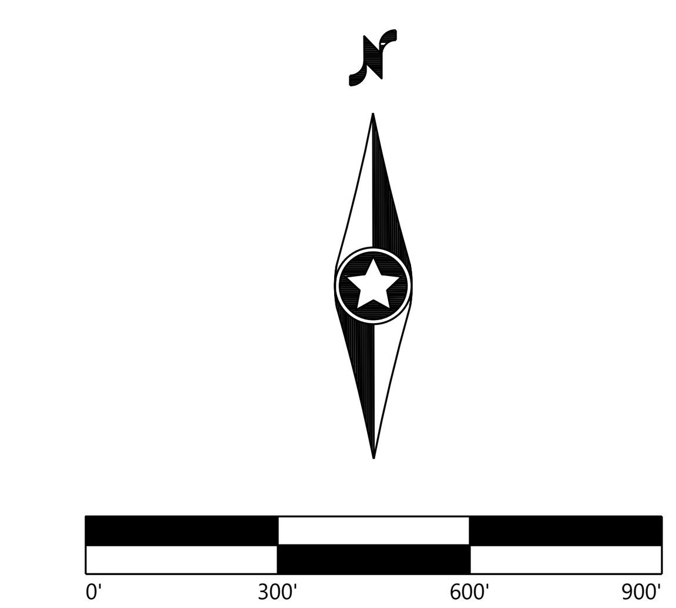

Posey Solar Project

Posey County, Indiana

Proposed Drainage Map

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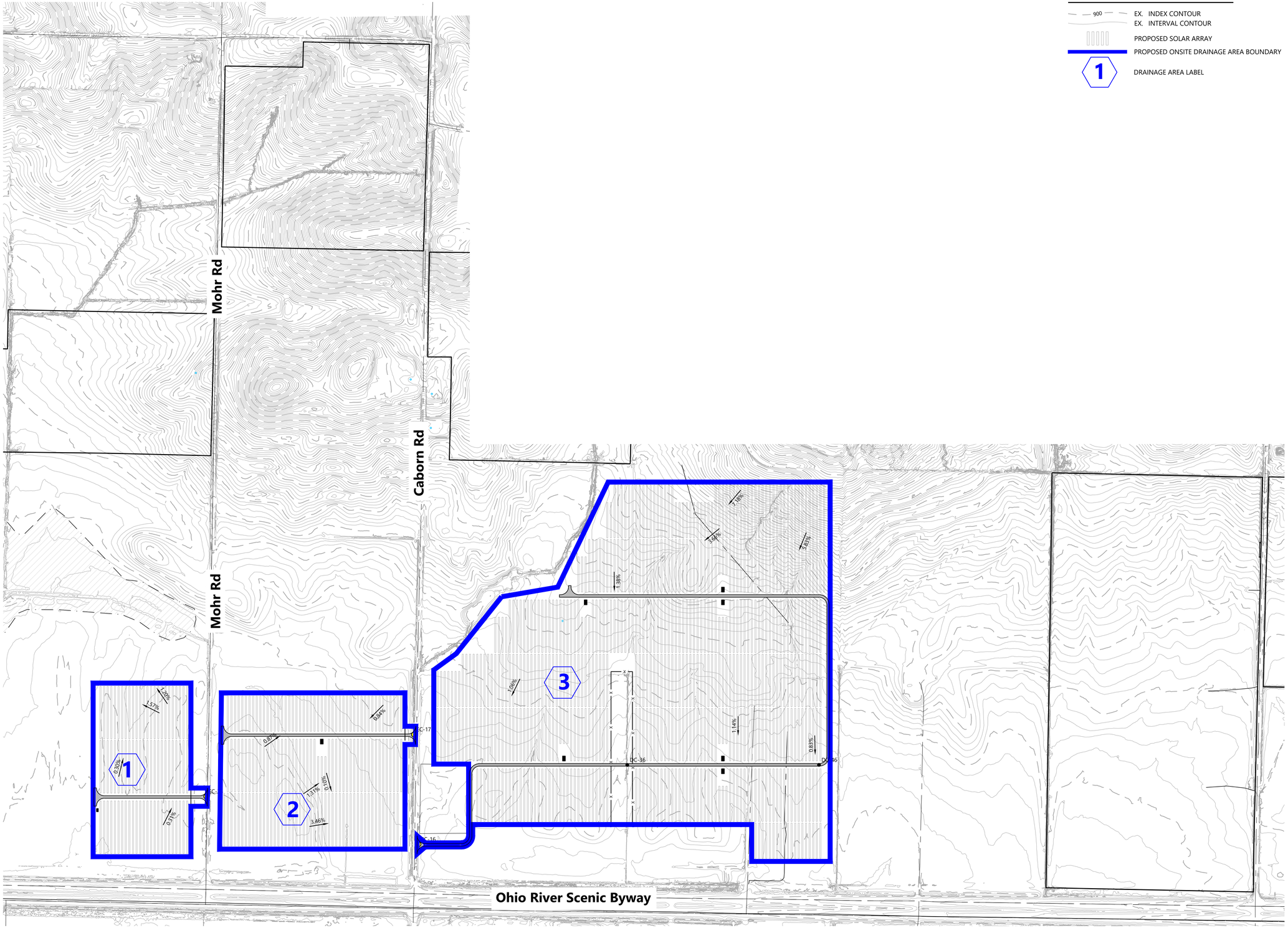

*SEE SHEET 8H FOR AVERAGE AND MAXIMUM SLOPE PER DRAINAGE AREA SUMMARY TABLE

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0' 300' 600' 900'

Posey Solar Project

Posey County, Indiana

Slope Analysis Map

NOT FOR CONSTRUCTION

DATE: 2/24/2022

SHEET: 7A

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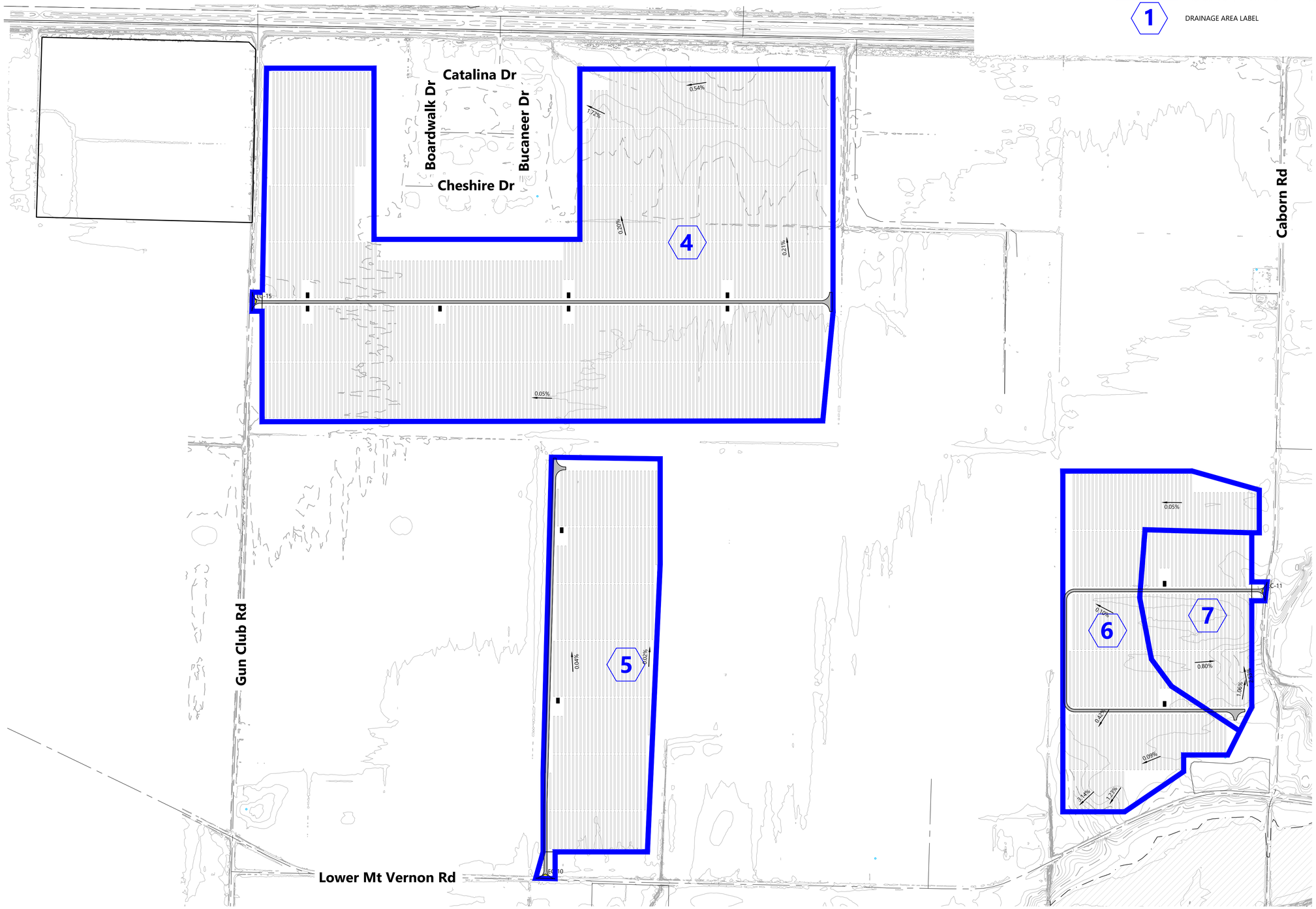

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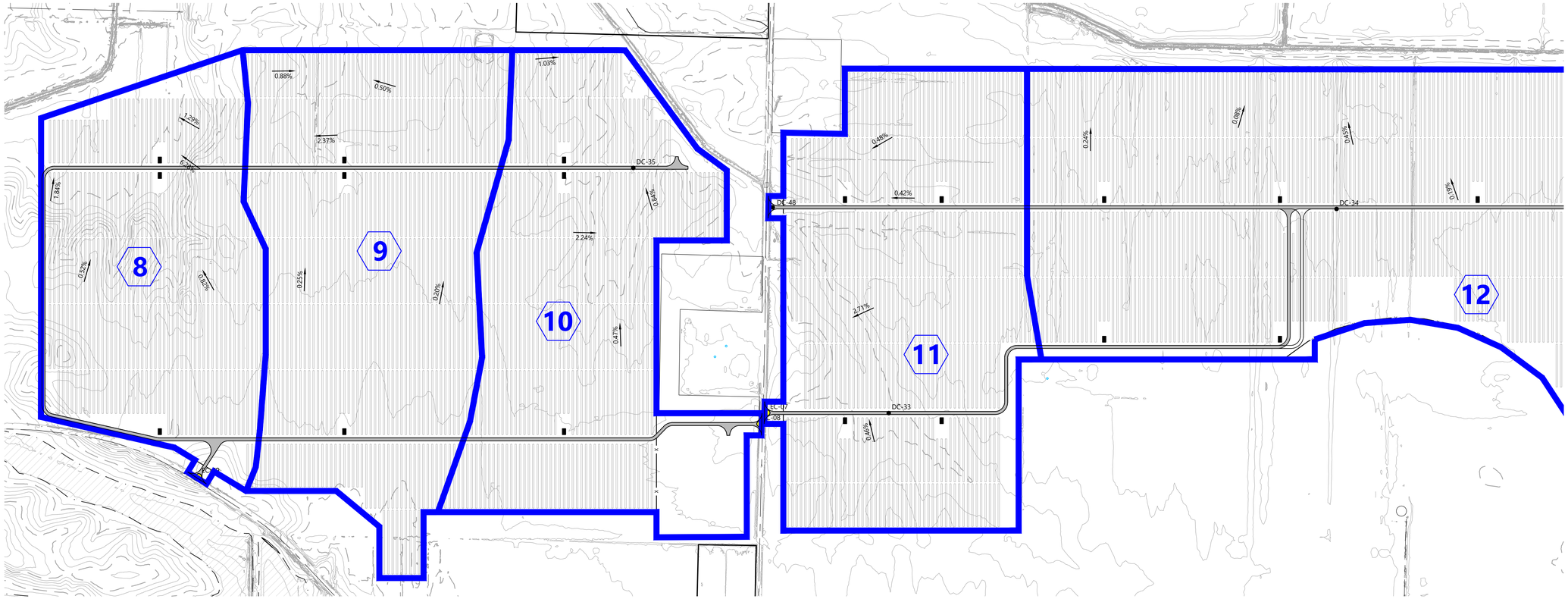

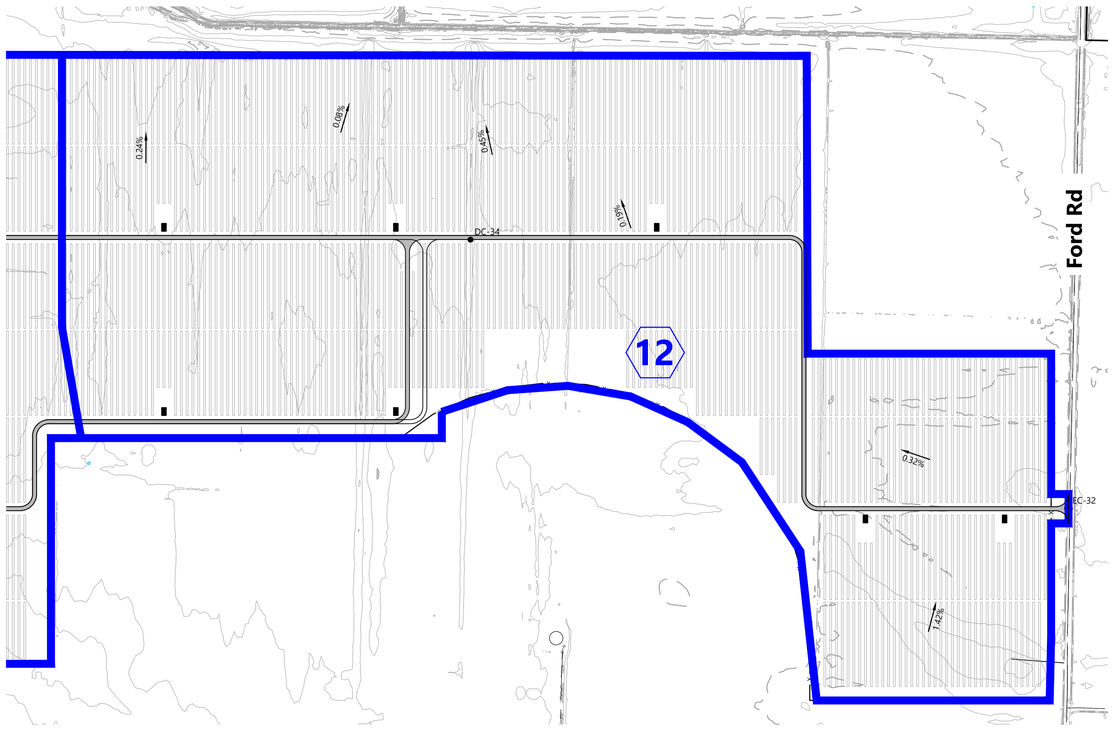

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Posey Solar Project

Posey County, Indiana

Slope Analysis Map

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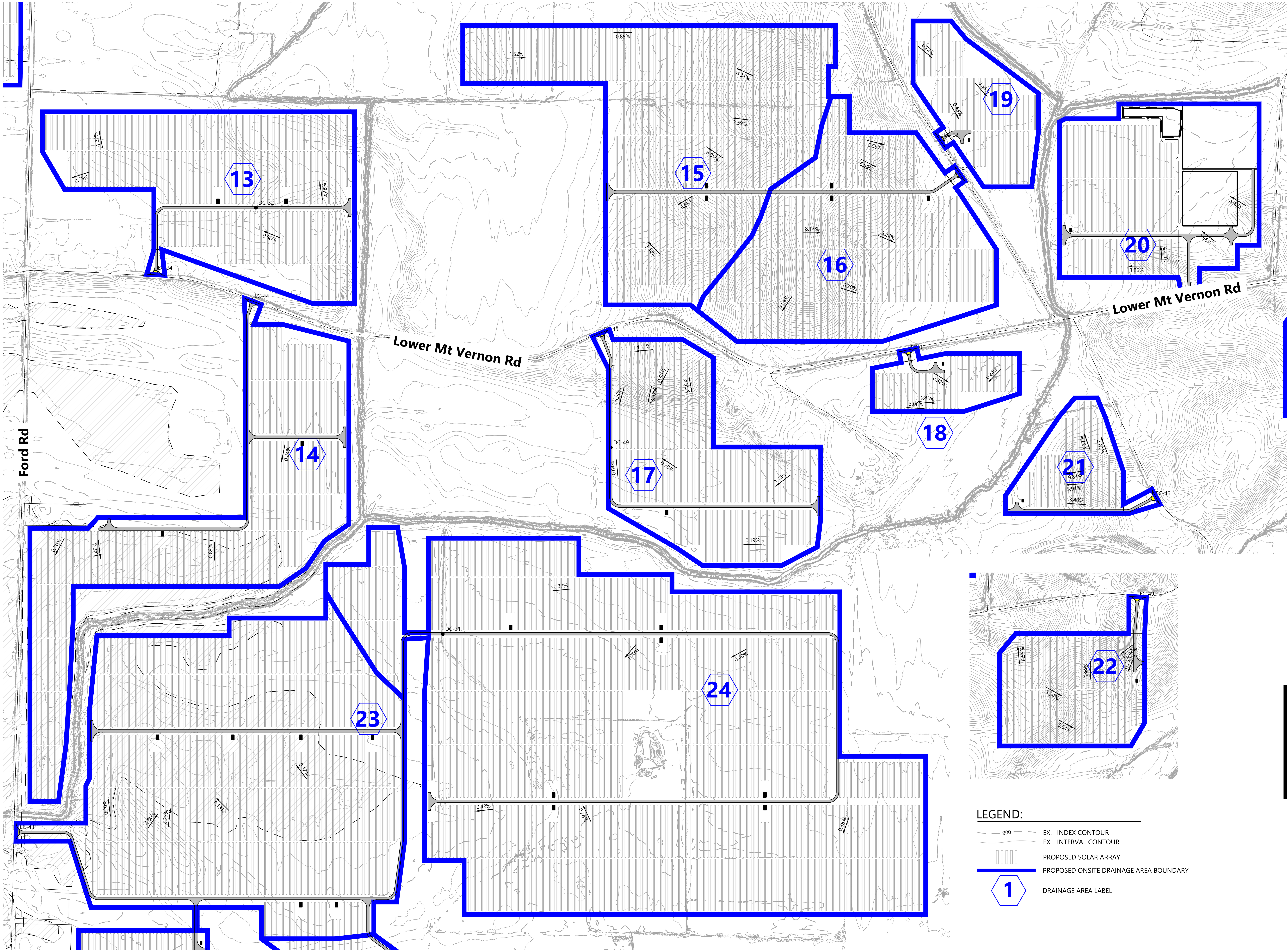

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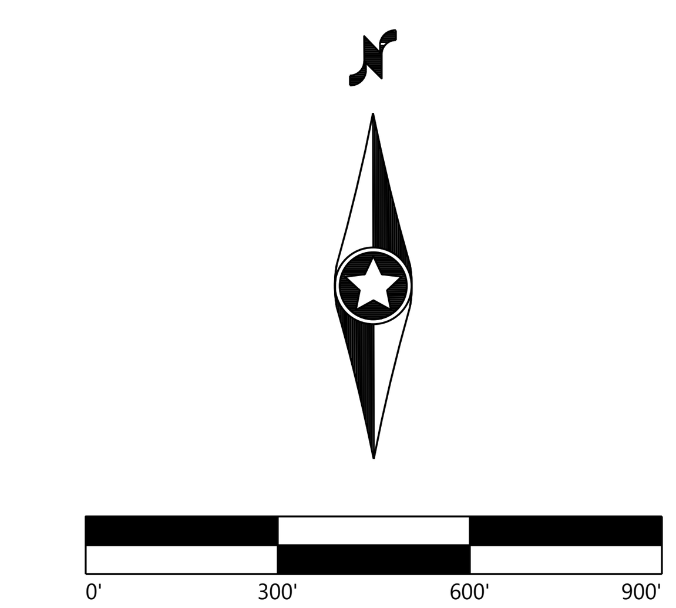

Posey Solar Project

Posey County, Indiana

Slope Analysis Map

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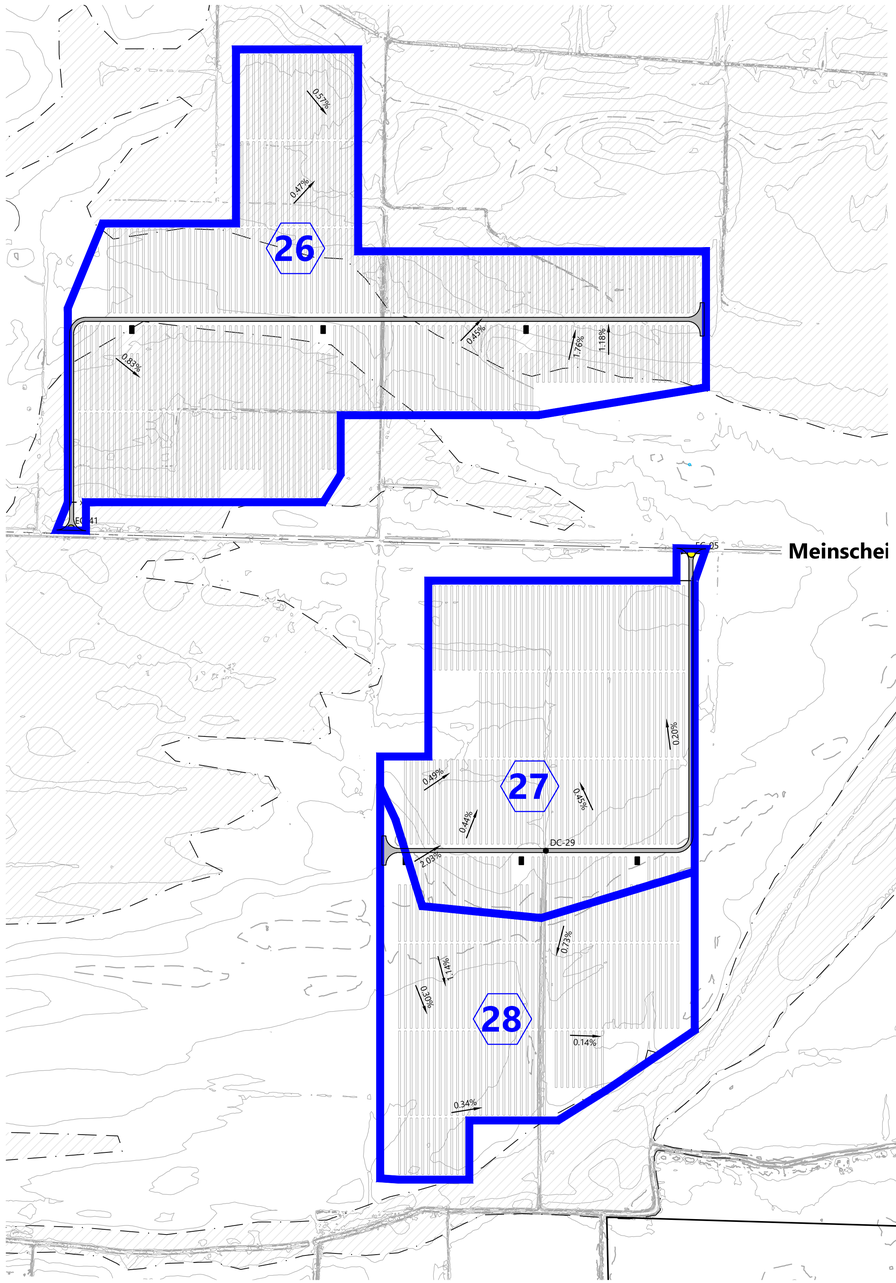

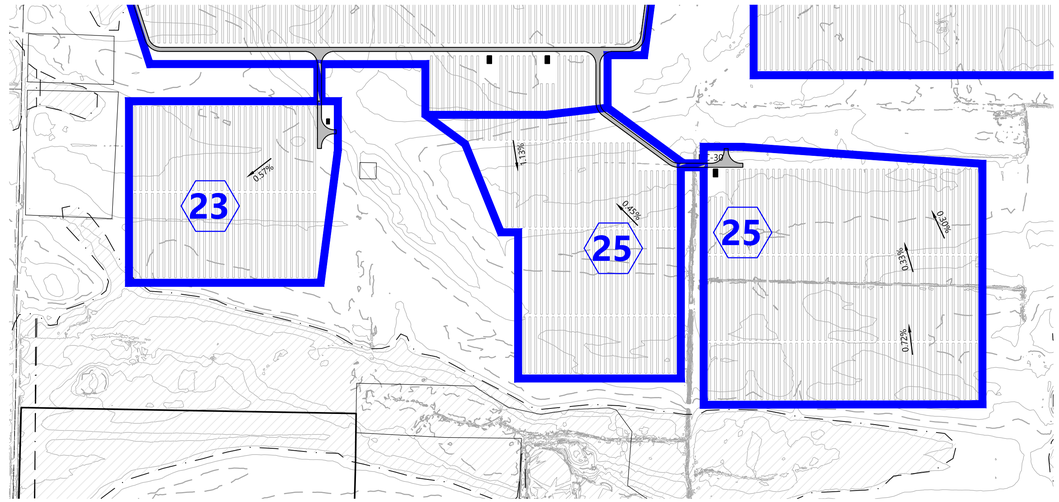

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Posey Solar Project

Posey County, Indiana

Slope Analysis Map

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SHEET: 7E

Area	Average Slope	Max Slope	Sheet
1	0.60%	1.57%	8A
2	0.75%	3.46%	8A
3	2.27%	7.18%	8A
4	0.25%	1.72%	8B
5	0.03%	0.04%	8B
6	0.38%	3.14%	8B
7	0.77%	2.53%	8B
8	1.12%	6.28%	8C
9	0.46%	2.37%	8C
10	0.66%	2.24%	8C
11	0.44%	2.71%	8C
12	0.19%	1.42%	8C
13	1.58%	4.48%	8D
14	0.63%	1.46%	8D
15	3.10%	6.65%	8D
16	4.99%	8.17%	8D
17	3.06%	13.92%	8D
18	0.74%	3.08%	8D
19	0.49%	0.72%	8D
20	2.69%	10.14%	8D
21	4.58%	9.81%	8D
22	6.02%	12.92%	8D
23	0.65%	4.80%	8D/8E
24	0.36%	1.70%	8D
25	0.69%	1.30%	8E
26	0.70%	1.76%	8E
27	0.40%	2.03%	8E
28	0.46%	1.14%	8E

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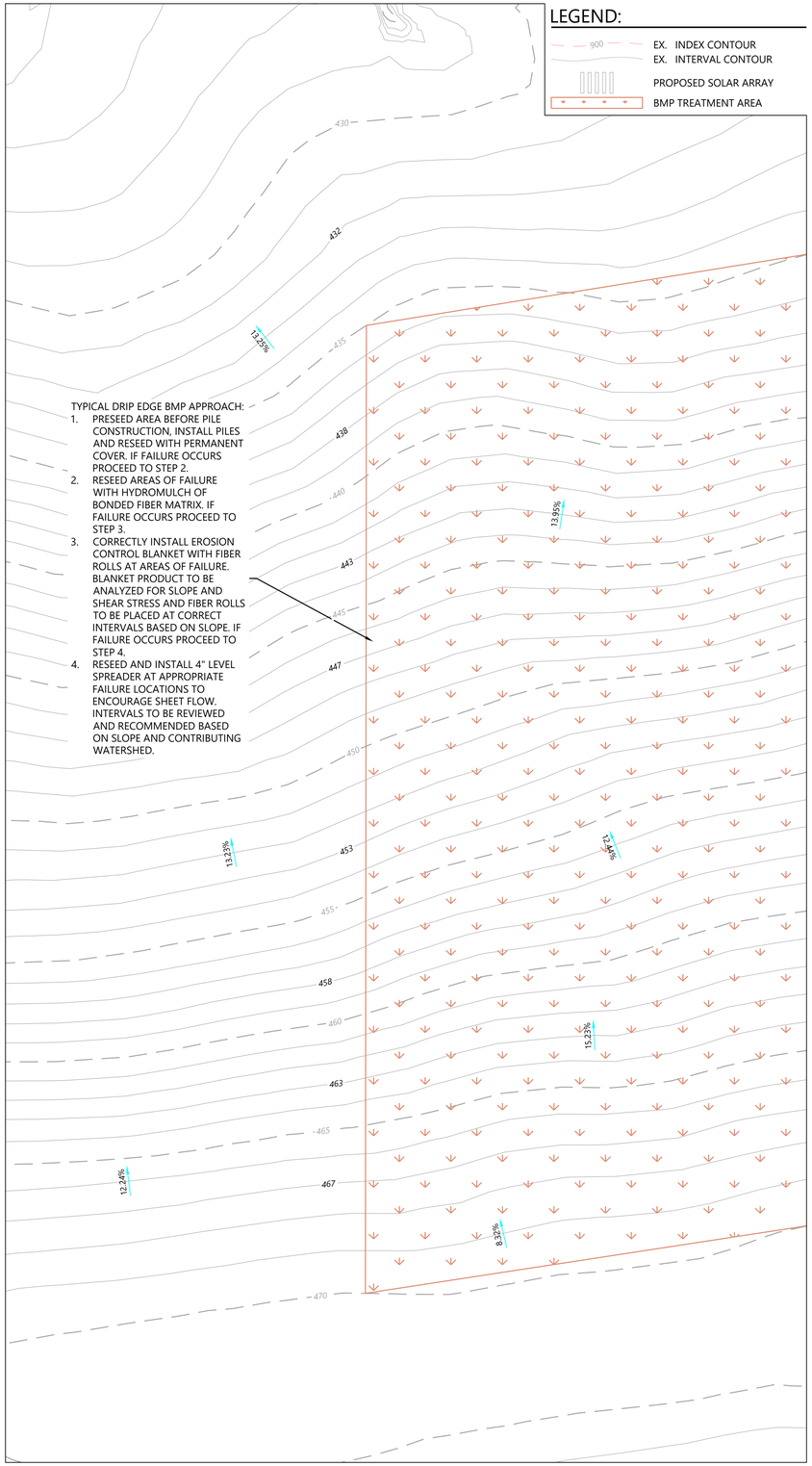
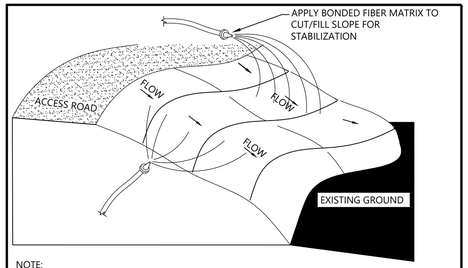
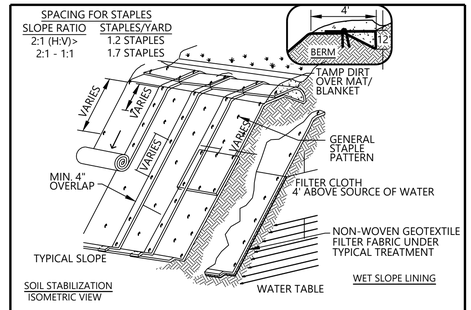




NOTE:
1. REFER TO THE PROJECT SWPPP FOR IMPLEMENTATION AND SPECIFICATION REQUIREMENTS.
2. ALL BONDED FIBER MATRIX'S SHALL BE FROM AN APPROVED PRODUCT.
3. APPLY BONDED FIBER MATRIX IN CONFORMANCE WITH BEST MANAGEMENT PRACTICES AND MANUFACTURER'S RECOMMENDATIONS.
4. APPLY BONDED FIBER MATRIX TO EXPOSED SOILS FOR STABILIZATION MEASURES. EXPOSED SOILS MAY INCLUDE ROUGH GRADED AREAS, SOIL STOCKPILES, CUT/FILL SLOPES, ETC.
5. PREPARE SOIL SURFACES PRIOR TO APPLICATION BY ROUGHENING.
6. AVOID OVER SPRAY ONTO ROADS AND EXISTING VEGETATION.
7. APPLY FROM MULTIPLE DIRECTIONS TO ADEQUATELY COVER THE SOIL.
8. ALLOW ADEQUATE TIME FOR BONDED FIBER MATRIX TO DRY. BONDED FIBER MATRIX SHOULD NOT BE APPLIED IMMEDIATELY BEFORE, DURING OR IMMEDIATELY AFTER RAINFALL OR IF THE SOIL IS SATURATED.
9. APPLY SEED PRIOR TO BFM OR MIX SEED WITH BFM PRIOR TO APPLICATION.

Westwood	TYPICAL SLOPE STABILIZATION - BONDED FIBER MATRIX	GD46

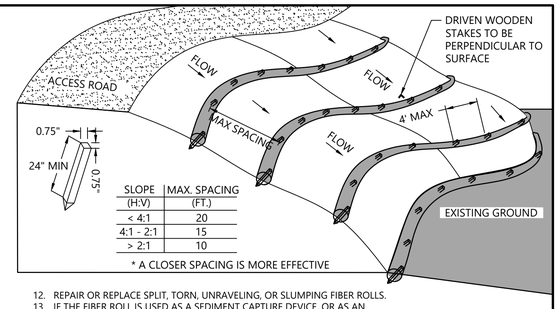


SOIL STABILIZATION
ISOMETRIC VIEW

NOTE:
1. REFER TO THE PROJECT SWPPP FOR IMPLEMENTATION REQUIREMENTS.
2. MATS/BLANKETS SHOULD BE INSTALLED VERTICALLY DOWNSLOPE.
3. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICK AND GRASS.
4. MATS/BLANKETS SHALL HAVE GOOD SOIL CONTACT.
5. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL.
6. DO NOT STRETCH.
7. BLANKET TYPE AND WEIGHT MUST BE CHOOSEN BASED ON SITE CONDITIONS AND MANUFACTURERS RECOMMENDATIONS.
8. STAPLE LENGTHS SHALL CONFORM TO MANUFACTURERS RECOMMENDATIONS.

Westwood	TEMPORARY EROSION BLANKETS TURF REINFORCEMENT MATS FOR SLOPES	GD21

NOTE:
1. FIBER ROLLS SHALL BE PREFABRICATED AND MADE FROM WEED FREE RICE STRAW, FLAX, OR A SIMILAR AGRICULTURAL MATERIAL BOUND INTO A TIGHT TUBULAR ROLL BY NETTING.
2. STAKE FIBER ROLLS INTO THE TRENCH. DRIVE STAKES AT THE END OF EACH FIBER ROLL AND SPACED 4 FEET MAXIMUM ON CENTER. USE WOOD STAKES WITH NOMINAL CLASSIFICATION OF 0.75 IN BY 0.75 IN. AND A MINIMUM LENGTH OF 24 IN.
3. PREPARE THE SLOPE BEFORE BEGINNING THE INSTALLATION.
4. DIG SMALL TRENCHES ACROSS THE SLOPE ON THE CONTOUR. THE TRENCH DEPTH SHOULD BE 1/4 TO 1/3 OF THE THICKNESS OF THE ROLL, AND THE WIDTH SHOULD EQUAL THE ROLL DIAMETER, IN ORDER TO PROVIDE AREA TO BACKFILL THE TRENCH.
5. ROLLS SHALL BE INSTALLED PERPENDICULAR TO WATER MOVEMENT, AND PARALLEL TO THE SLOPE CONTOUR.
6. START BUILDING TRENCHES AND INSTALLING ROLLS FROM THE BOTTOM OF THE SLOPE AND WORK UP.
7. TURN THE ENDS OF THE FIBER ROLLS UP SLOPE TO PREVENT RUNOFF FROM GOING AROUND THE ROLL.
8. IF MORE THAN ONE FIBER ROLL IS PLACED IN A ROW, THE ROLLS SHOULD BE OVERLAPPED, NOT ABUTTED.
9. FIBER ROLLS ENCASED WITH PLASTIC NETTING ARE USED FOR A TEMPORARY APPLICATION ONLY AND SHOULD BE REMOVED FOLLOWING STABILIZATION. FIBER ROLLS USED IN A PERMANENT APPLICATION SHALL BE ENCASED WITH A BIODEGRADABLE MATERIAL AND MAY BE LEFT IN.
10. TEMPORARY INSTALLATIONS SHOULD ONLY BE REMOVED WHEN UP GRADIENT AREAS ARE STABILIZED PER GENERAL PERMIT REQUIREMENTS, AND/OR POLLUTANT SOURCES NO LONGER PRESENT A HAZARD. BUT, THEY SHOULD ALSO BE REMOVED BEFORE VEGETATION BECOMES TOO MATURE SO THAT THE REMOVAL PROCESS DOES NOT DISTURB MORE SOIL AND VEGETATION THAN IS NECESSARY
11. FIBER ROLLS MUST BE INSPECTED IN ACCORDANCE WITH GENERAL PERMIT REQUIREMENTS FOR THE ASSOCIATED PROJECT TYPE AND RISK LEVEL. IT IS RECOMMENDED THAT A MINIMUM, THE BMPS BE INSPECTED WEEKLY, PRIOR TO FORECASTED RAIN EVENTS, DAILY DURING EXTENDED RAIN EVENTS, AND AFTER THE CONCLUSION OF RAIN EVENTS.

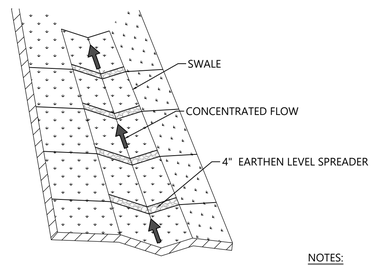


SLOPE (H:V)	MAX. SPACING (FT.)
< 4:1	20
4:1 - 2:1	15
> 2:1	10

* A CLOSER SPACING IS MORE EFFECTIVE

12. REPAIR OR REPLACE SPLIT, TORN, UNRAVELING, OR SLUMPING FIBER ROLLS.
13. IF THE FIBER ROLL IS USED AS A SEDIMENT CAPTURE DEVICE, OR AS AN EROSION CONTROL DEVICE TO MAINTAIN SHEET FLOWS, SEDIMENT THAT ACCUMULATES IN THE BMP SHOULD BE PERIODICALLY REMOVED IN ORDER TO MAINTAIN BMP EFFECTIVENESS. SEDIMENT SHOULD BE REMOVED WHEN SEDIMENT ACCUMULATION REACHES ONE-THIRD THE DESIGNATED SEDIMENT STORAGE DEPTH.
14. IF FIBER ROLLS ARE USED FOR EROSION CONTROL, SEDIMENT REMOVAL SHOULD NOT BE REQUIRED AS LONG AS THE SYSTEM CONTINUES TO CONTROL THE GRADE. SEDIMENT CONTROL BMPS WILL LIKELY BE REQUIRE IN CONJUNCTION WITH THIS TYPE OF APPLICATION.
15. REPAIR ANY RILLS OR GULLIES PROMPTLY.

Westwood	TYPICAL FIBER ROLLS	GD45



PLAN VIEW

NOTES:
1. LEVEL SPREADER TO BE USED TO CONVERT CONCENTRATED FLOW TO SHEET FLOW WHERE SPECIFIED ON PLANS

Westwood	LEVEL SPREADER	04

Westwood

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Minnetonka, MN 55343
westwoodps.com

Westwood Professional Services, Inc.

PREPARED FOR:

AREVON

Midwest Solar DevCo CEI, LLC
8800 N. Gainey Center Dr., Suit 250
Scottsdale, AZ 85258, USA

REVISIONS:

Posey Solar Project

Posey County, Indiana

BEST MANAGEMENT PRACTICES

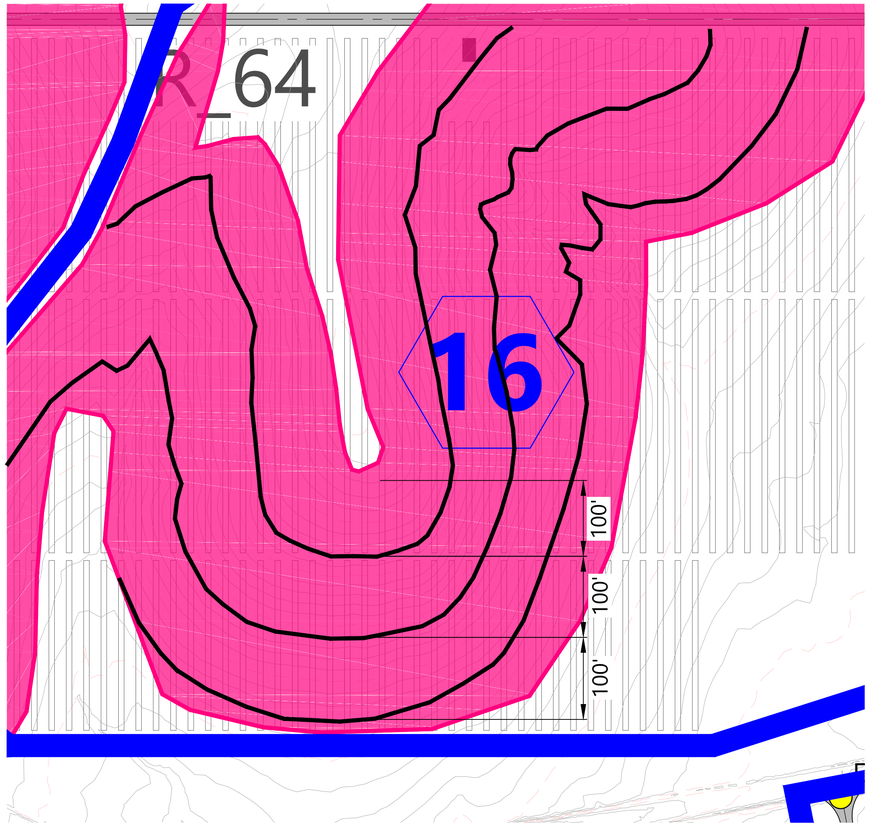
NOT FOR CONSTRUCTION

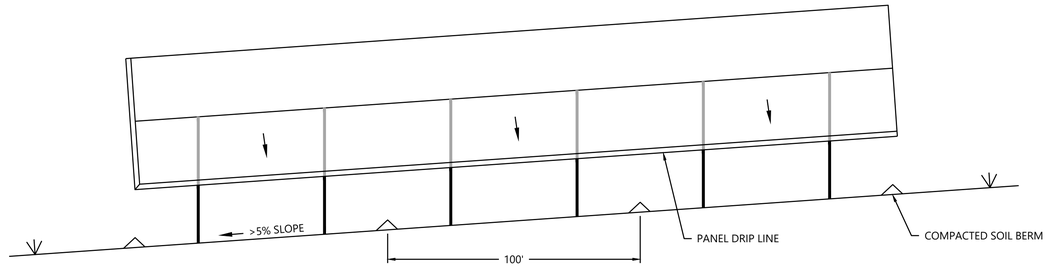
DATE: 4/14/2022

SHEET: 8A

LEGEND:

- EX. INDEX CONTOUR
- EX. INTERVAL CONTOUR
- PROPOSED SOLAR ARRAY
- PROPOSED FENCELINE
- PROPOSED LEVEL SPREADER
- SLOPES > 5%
- PROPOSED ONSITE DRAINAGE AREA BOUNDARY
- DRAINAGE AREA LABEL





LEVEL SPREADER DESIGN - PROPOSED FOR ALL AREAS WITH UNINTERRUPTED SLOPES >5% THAT ARE >100 FEET IN LENGTH

ALTERNATIVELY STORM WATER PONDS DESIGNED TO MEET RUNOFF RATE REQUIREMENTS MAY BE UTILIZED IN AREAS >5% ASSUMING AREAS UNDER THE PANELS ARE IMPERVIOUS

Westwood

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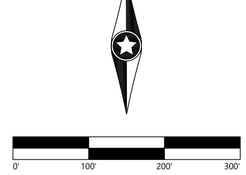
REVISIONS:



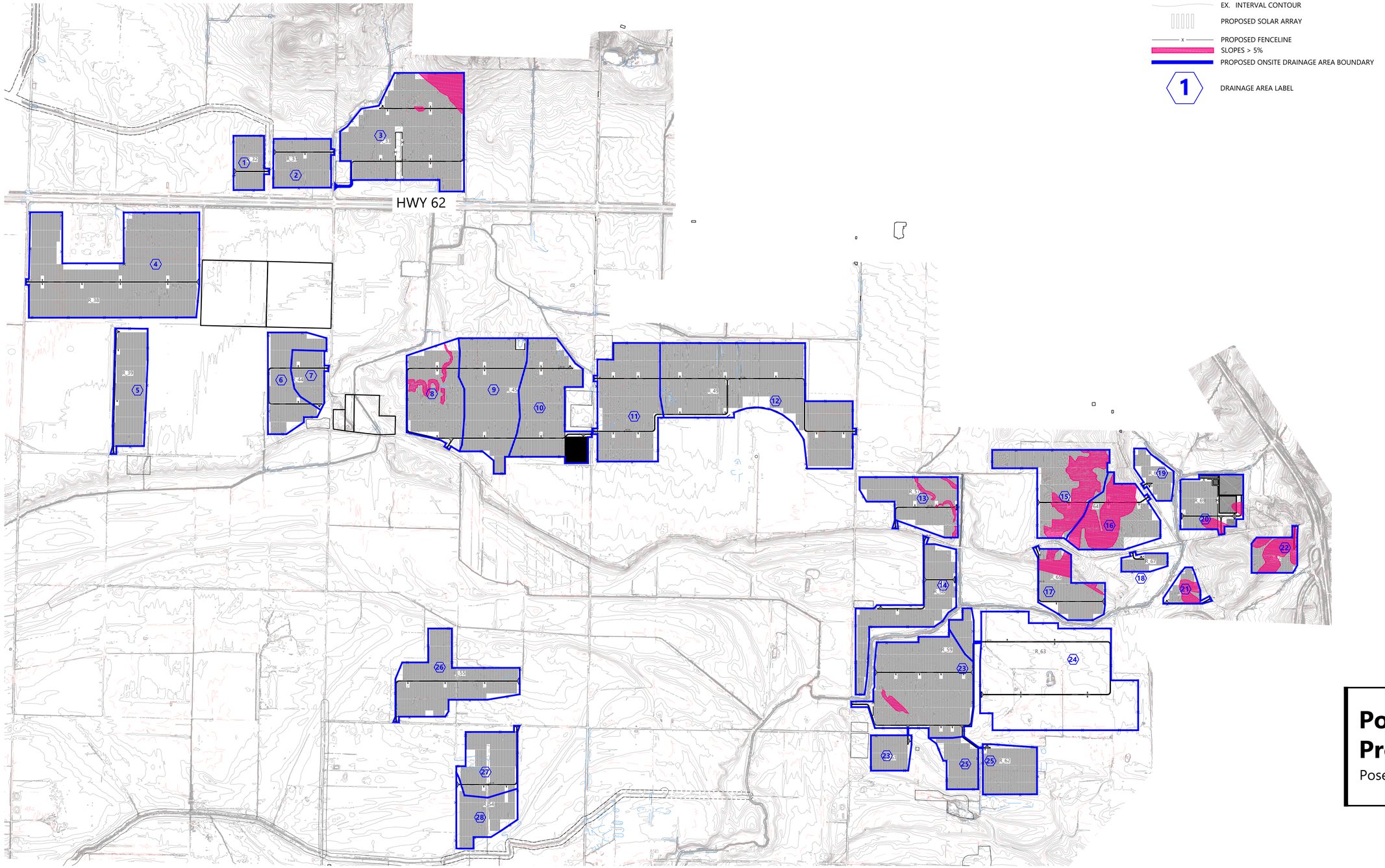
Posey Solar Project
Posey County, Indiana

BEST MANAGEMENT PRACTICES

NOT FOR CONSTRUCTION

DATE: 4/14/2022

SHEET: 8B



*AREAS SHOWN ON EXHIBIT ARE EXISTING SLOPES. FINAL DETERMINIATION WILL BE MADE BASED OFF PROPOSED GRADING.

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REVISIONS:

Posey Solar Project

Posey County, Indiana

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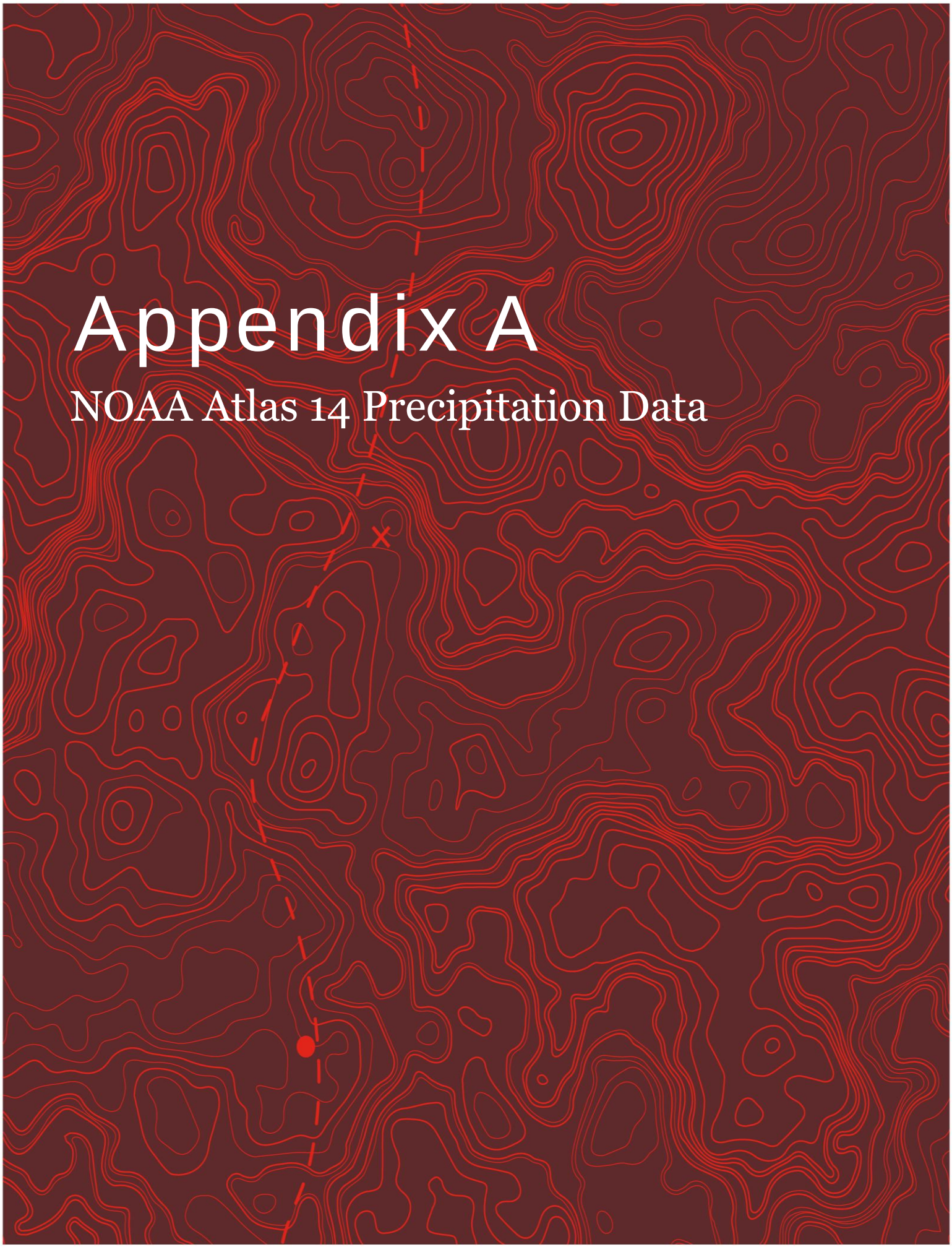
DATE: 4/14/2022

SHEET: 8C

Appendix A

NOAA Atlas 14 Precipitation Data



NOAA Atlas 14, Volume 2, Version 3
Location name: Mount Vernon, Indiana, USA*
Latitude: 37.9198°, Longitude: -87.7712°
Elevation: 369.98 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

G.M. Bonnin, D. Martin, B. Lin, T. Parzybok, M.Yekta, and D. Riley

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.395 (0.361-0.434)	0.466 (0.427-0.513)	0.552 (0.504-0.606)	0.622 (0.566-0.680)	0.710 (0.643-0.775)	0.779 (0.702-0.850)	0.847 (0.759-0.922)	0.918 (0.818-1.00)	1.01 (0.896-1.11)	1.08 (0.954-1.18)
10-min	0.614 (0.561-0.674)	0.728 (0.666-0.801)	0.858 (0.784-0.941)	0.960 (0.873-1.05)	1.09 (0.983-1.19)	1.18 (1.06-1.29)	1.27 (1.14-1.39)	1.37 (1.22-1.49)	1.49 (1.32-1.63)	1.58 (1.39-1.72)
15-min	0.752 (0.688-0.826)	0.890 (0.814-0.979)	1.05 (0.963-1.16)	1.18 (1.07-1.29)	1.34 (1.21-1.47)	1.46 (1.32-1.59)	1.58 (1.42-1.73)	1.70 (1.52-1.86)	1.86 (1.65-2.03)	1.97 (1.74-2.15)
30-min	0.995 (0.910-1.09)	1.19 (1.09-1.31)	1.44 (1.32-1.58)	1.64 (1.49-1.79)	1.89 (1.72-2.07)	2.09 (1.88-2.28)	2.29 (2.05-2.49)	2.49 (2.22-2.71)	2.75 (2.44-3.01)	2.96 (2.60-3.23)
60-min	1.22 (1.11-1.34)	1.46 (1.34-1.61)	1.81 (1.65-1.99)	2.09 (1.90-2.28)	2.46 (2.22-2.68)	2.75 (2.48-3.00)	3.06 (2.74-3.33)	3.37 (3.01-3.68)	3.81 (3.37-4.16)	4.15 (3.65-4.54)
2-hr	1.47 (1.35-1.61)	1.78 (1.63-1.95)	2.22 (2.04-2.43)	2.57 (2.35-2.81)	3.06 (2.78-3.33)	3.45 (3.13-3.75)	3.86 (3.48-4.19)	4.29 (3.84-4.66)	4.87 (4.34-5.30)	5.34 (4.72-5.81)
3-hr	1.58 (1.45-1.73)	1.91 (1.75-2.09)	2.39 (2.18-2.61)	2.78 (2.53-3.03)	3.32 (3.01-3.62)	3.76 (3.40-4.10)	4.23 (3.80-4.60)	4.72 (4.22-5.13)	5.42 (4.79-5.89)	5.98 (5.25-6.50)
6-hr	1.94 (1.78-2.12)	2.33 (2.14-2.56)	2.91 (2.66-3.19)	3.38 (3.09-3.70)	4.05 (3.68-4.42)	4.60 (4.15-5.01)	5.18 (4.66-5.64)	5.80 (5.18-6.31)	6.68 (5.90-7.27)	7.39 (6.47-8.06)
12-hr	2.29 (2.10-2.49)	2.76 (2.53-3.01)	3.42 (3.14-3.73)	3.97 (3.62-4.32)	4.73 (4.31-5.14)	5.36 (4.86-5.82)	6.02 (5.43-6.53)	6.71 (6.01-7.29)	7.70 (6.83-8.36)	8.49 (7.47-9.23)
24-hr	2.74 (2.57-2.93)	3.30 (3.09-3.53)	4.10 (3.84-4.39)	4.75 (4.45-5.08)	5.66 (5.28-6.04)	6.40 (5.94-6.82)	7.17 (6.62-7.64)	7.98 (7.33-8.51)	9.11 (8.30-9.74)	10.0 (9.06-10.7)
2-day	3.25 (3.03-3.49)	3.90 (3.64-4.20)	4.86 (4.53-5.22)	5.65 (5.25-6.06)	6.77 (6.27-7.27)	7.70 (7.10-8.27)	8.69 (7.96-9.34)	9.76 (8.88-10.5)	11.3 (10.2-12.2)	12.5 (11.2-13.6)
3-day	3.46 (3.23-3.72)	4.15 (3.87-4.46)	5.15 (4.80-5.54)	5.98 (5.56-6.43)	7.18 (6.65-7.72)	8.19 (7.55-8.80)	9.26 (8.49-9.97)	10.4 (9.49-11.2)	12.1 (10.9-13.1)	13.5 (12.0-14.6)
4-day	3.67 (3.43-3.95)	4.39 (4.10-4.73)	5.44 (5.07-5.86)	6.32 (5.88-6.80)	7.60 (7.04-8.18)	8.67 (8.00-9.34)	9.83 (9.02-10.6)	11.1 (10.1-12.0)	12.9 (11.6-14.0)	14.4 (12.9-15.7)
7-day	4.26 (3.97-4.59)	5.10 (4.75-5.51)	6.31 (5.87-6.81)	7.31 (6.79-7.89)	8.77 (8.10-9.46)	9.99 (9.19-10.8)	11.3 (10.3-12.2)	12.7 (11.5-13.7)	14.7 (13.2-16.0)	16.4 (14.6-17.9)
10-day	4.80 (4.46-5.21)	5.75 (5.35-6.24)	7.10 (6.60-7.71)	8.22 (7.62-8.92)	9.84 (9.07-10.7)	11.2 (10.3-12.1)	12.6 (11.5-13.7)	14.1 (12.8-15.4)	16.3 (14.6-17.8)	18.2 (16.1-19.8)
20-day	6.62 (6.24-7.05)	7.86 (7.40-8.37)	9.42 (8.86-10.0)	10.7 (10.0-11.4)	12.4 (11.6-13.2)	13.8 (12.9-14.7)	15.2 (14.1-16.2)	16.7 (15.4-17.8)	18.7 (17.1-20.0)	20.2 (18.4-21.7)
30-day	8.17 (7.72-8.65)	9.64 (9.12-10.2)	11.4 (10.8-12.1)	12.8 (12.1-13.5)	14.7 (13.8-15.6)	16.2 (15.2-17.2)	17.7 (16.5-18.8)	19.2 (17.9-20.5)	21.3 (19.7-22.7)	22.9 (21.0-24.5)
45-day	10.2 (9.72-10.8)	12.0 (11.4-12.7)	14.0 (13.3-14.8)	15.6 (14.8-16.5)	17.8 (16.8-18.8)	19.5 (18.4-20.5)	21.2 (19.9-22.3)	22.8 (21.4-24.2)	25.1 (23.3-26.6)	26.8 (24.8-28.5)
60-day	12.2 (11.6-12.8)	14.3 (13.6-15.1)	16.6 (15.8-17.5)	18.4 (17.5-19.4)	20.7 (19.7-21.9)	22.5 (21.3-23.8)	24.3 (22.9-25.6)	26.0 (24.4-27.5)	28.2 (26.4-29.9)	29.9 (27.8-31.8)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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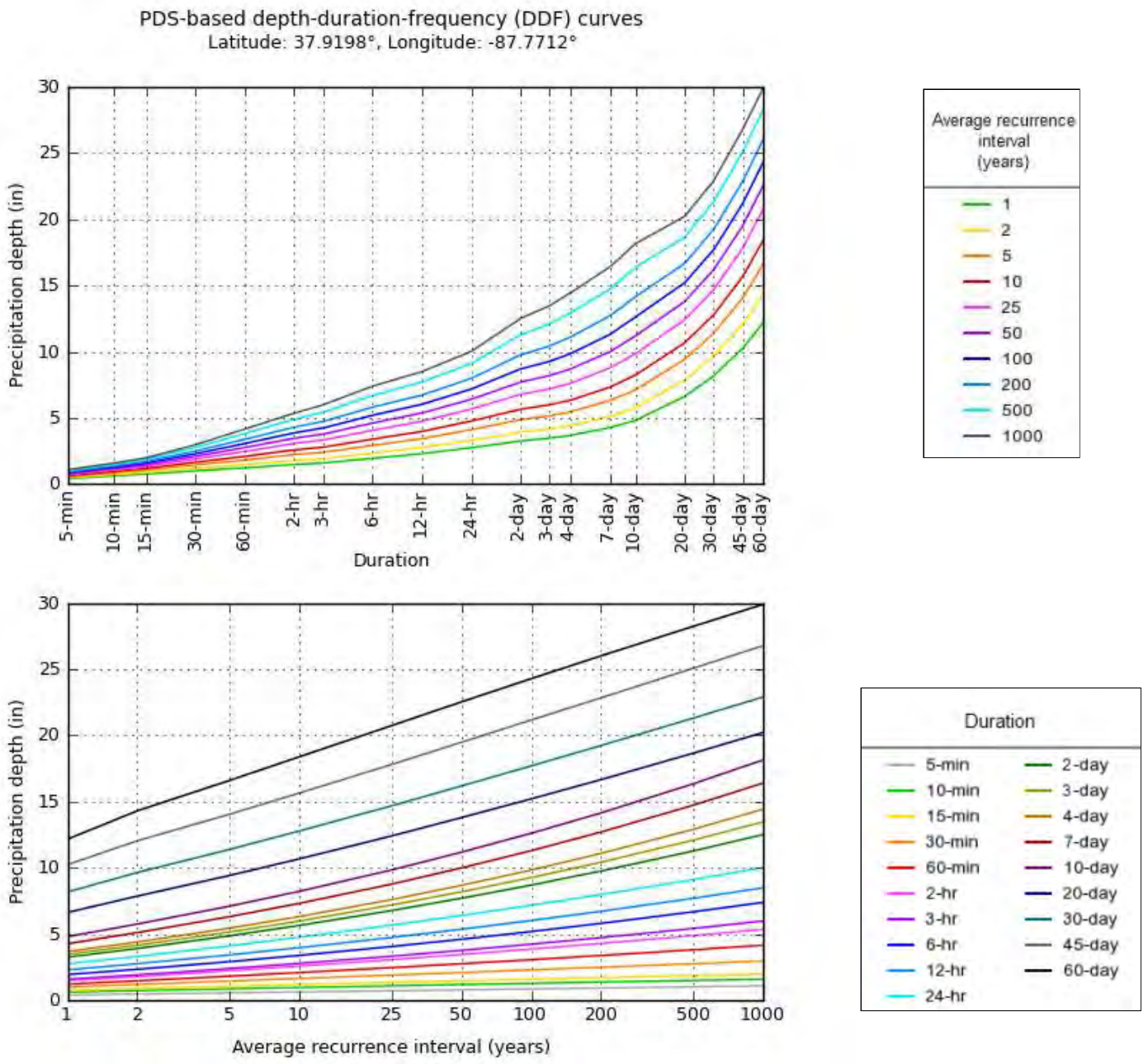
PF graphical



NOAA Atlas 14, Volume 2, Version 3

Created (GMT): Tue Jun 23 20:44:11 2020

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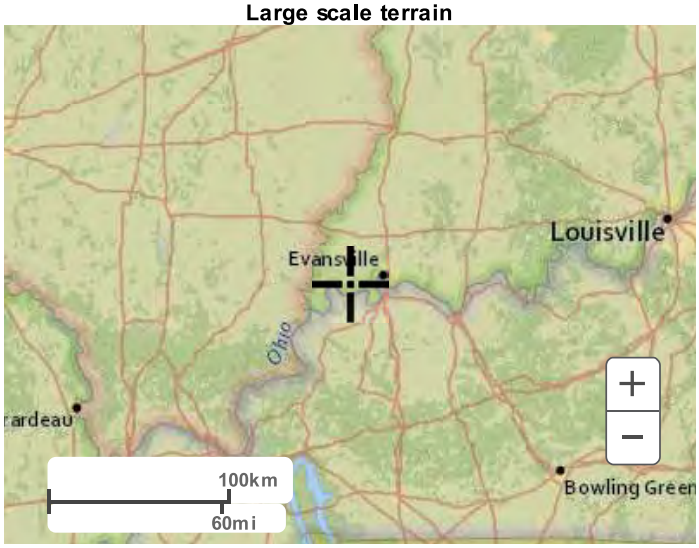
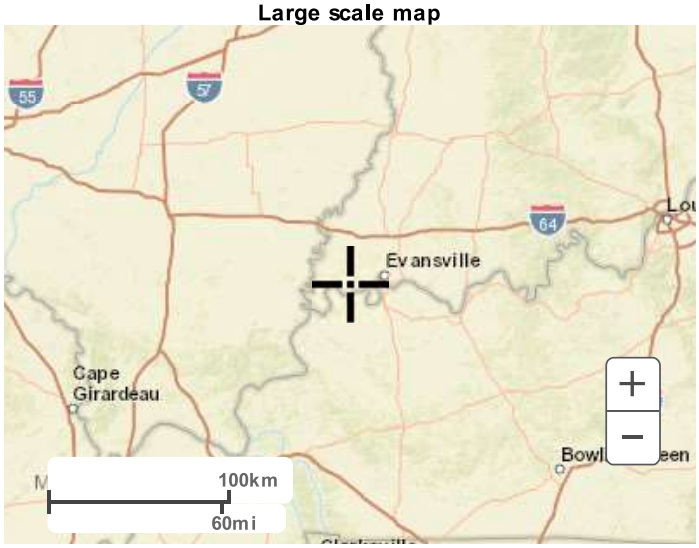
Maps & aerials

Small scale terrain

Large scale terrain



Large scale map



Large scale aerial

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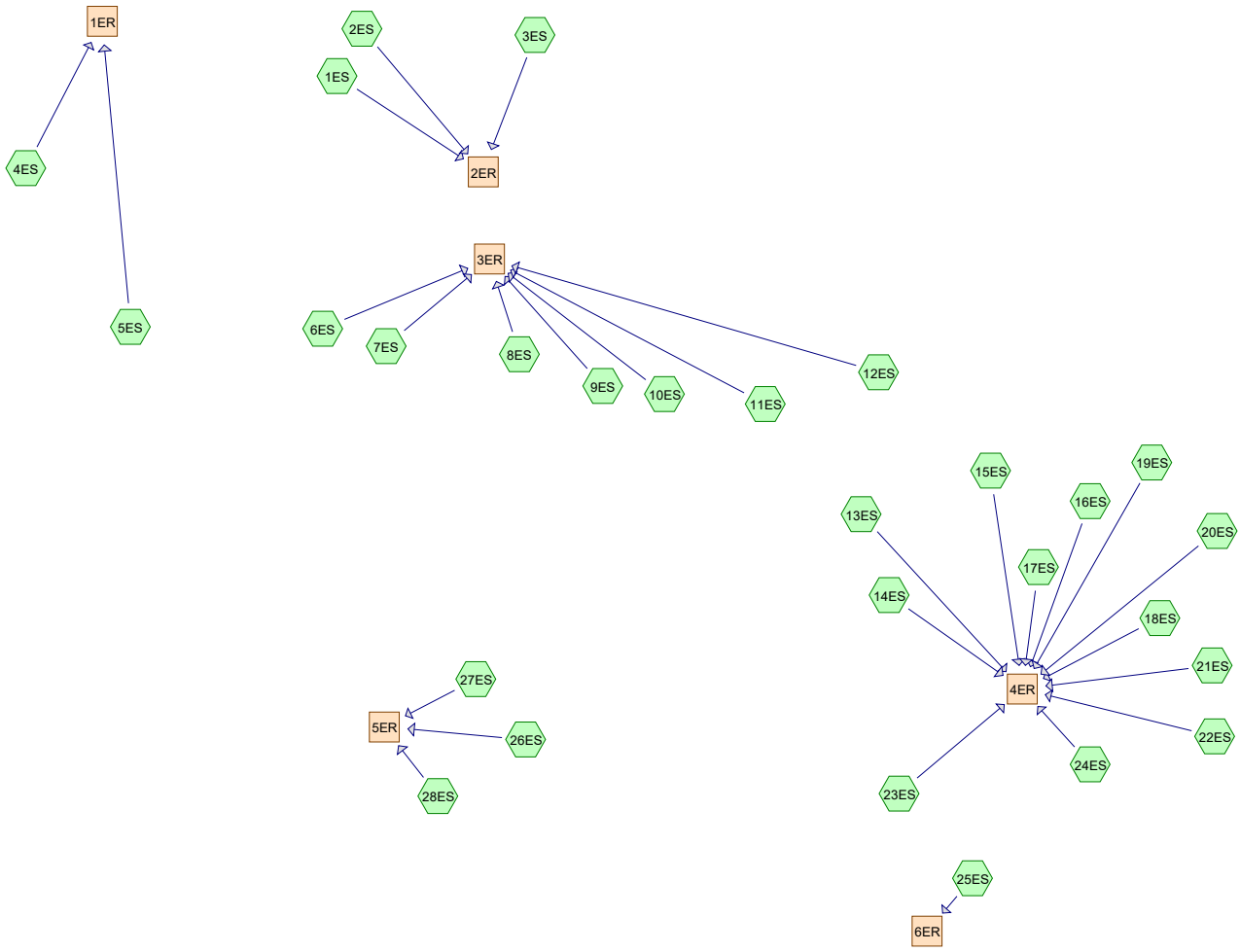
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

Appendix B

Existing HydroCAD Results

Existing Conditions



Subcat Reach Pond Link

Routing Diagram for 2022-03-23 Combined Pre-Post Model
Prepared by Westwood Professional Services, Printed 4/4/2022

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-yr	IN-Posey 24-hr S1	1-yr	Default	24.00	1	2.74	2
2	2-yr	IN-Posey 24-hr S1	2-yr	Default	24.00	1	3.30	2
3	5-yr	IN-Posey 24-hr S1	5-yr	Default	24.00	1	4.10	2
4	10-yr	IN-Posey 24-hr S1	10-yr	Default	24.00	1	4.75	2
5	25-yr	IN-Posey 24-hr S1	25-yr	Default	24.00	1	5.66	2
6	50-yr	IN-Posey 24-hr S1	50-yr	Default	24.00	1	6.40	2
7	100-yr	IN-Posey 24-hr S1	100-yr	Default	24.00	1	7.17	2

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
155.900	78	Row crops, straight row, Good, HSG B (3ES, 14ES, 15ES, 16ES, 17ES, 20ES, 21ES, 23ES, 24ES, 25ES, 27ES, 28ES)
64.300	85	Row crops, straight row, Good, HSG C (3ES, 7ES, 8ES, 10ES, 11ES, 13ES, 17ES)
1,195.880	89	Row crops, straight row, Good, HSG D (1ES, 2ES, 3ES, 4ES, 5ES, 6ES, 7ES, 8ES, 9ES, 10ES, 11ES, 12ES, 13ES, 14ES, 15ES, 16ES, 17ES, 18ES, 19ES, 20ES, 21ES, 22ES, 23ES, 24ES, 25ES, 26ES, 27ES, 28ES)
2.060	55	Woods, Good, HSG B (15ES)
17.030	77	Woods, Good, HSG D (24ES)
1,435.170	**87**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
157.960	HSG B	3ES, 14ES, 15ES, 16ES, 17ES, 20ES, 21ES, 23ES, 24ES, 25ES, 27ES, 28ES
64.300	HSG C	3ES, 7ES, 8ES, 10ES, 11ES, 13ES, 17ES
1,212.910	HSG D	1ES, 2ES, 3ES, 4ES, 5ES, 6ES, 7ES, 8ES, 9ES, 10ES, 11ES, 12ES, 13ES, 14ES, 15ES, 16ES, 17ES, 18ES, 19ES, 20ES, 21ES, 22ES, 23ES, 24ES, 25ES, 26ES, 27ES, 28ES
0.000	Other	
1,435.170		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	155.900	64.300	1,195.880	0.000	1,416.080	Row crops, straight row, Good	1ES, 2ES, 3ES, 4ES, 5ES, 6ES, 7ES, 8ES, 9ES, 10ES, 11ES, 12ES, 13ES, 14ES, 15ES, 16ES, 17ES, 18ES, 19ES, 20ES, 21ES, 22ES, 23ES, 24ES, 25ES, 26ES, 27ES, 28ES
0.000	2.060	0.000	17.030	0.000	19.090	Woods, Good	15ES, 24ES
0.000	**157.960**	**64.300**	**1,212.910**	**0.000**	**1,435.170**	**TOTAL AREA**	

Summary for Subcatchment 1ES:

Runoff = 19.19 cfs @ 12.65 hrs, Volume= 2.901 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
16.020	89	Row crops, straight row, Good, HSG D
16.020		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
51.0	1,260	0.0030	0.41		**Lag/CN Method,**

Summary for Subcatchment 2ES:

Runoff = 33.30 cfs @ 12.61 hrs, Volume= 4.875 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
26.920	89	Row crops, straight row, Good, HSG D
26.920		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
47.6	1,155	0.0030	0.40		**Lag/CN Method,**

Summary for Subcatchment 3ES:

Runoff = 142.41 cfs @ 12.48 hrs, Volume= 18.201 af, Depth= 2.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
17.940	78	Row crops, straight row, Good, HSG B
15.860	85	Row crops, straight row, Good, HSG C
75.210	89	Row crops, straight row, Good, HSG D
109.010	87	Weighted Average
109.010		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.9	2,502	0.0190	1.10		**Lag/CN Method,**

Summary for Subcatchment 4ES:

Runoff = 76.24 cfs @ 13.97 hrs, Volume= 25.296 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
139.690	89	Row crops, straight row, Good, HSG D
139.690		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
158.9	2,625	0.0010	0.28		**Lag/CN Method,**

Summary for Subcatchment 5ES:

Runoff = 23.01 cfs @ 13.74 hrs, Volume= 6.637 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
36.650	89	Row crops, straight row, Good, HSG D
36.650		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
133.2	2,106	0.0010	0.26		**Lag/CN Method,**

Summary for Subcatchment 6ES:

Runoff = 42.45 cfs @ 12.60 hrs, Volume= 6.184 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
34.150	89	Row crops, straight row, Good, HSG D
34.150		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
47.5	1,380	0.0040	0.48		**Lag/CN Method,**

Summary for Subcatchment 7ES:

Runoff = 23.20 cfs @ 12.39 hrs, Volume= 2.710 af, Depth= 2.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
2.110	85	Row crops, straight row, Good, HSG C
13.470	89	Row crops, straight row, Good, HSG D
15.580	88	Weighted Average
15.580		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
32.2	675	0.0030	0.35		**Lag/CN Method,**

Summary for Subcatchment 8ES:

Runoff = 56.82 cfs @ 12.62 hrs, Volume= 8.458 af, Depth= 2.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
14.510	85	Row crops, straight row, Good, HSG C
34.120	89	Row crops, straight row, Good, HSG D
48.630	88	Weighted Average
48.630		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
49.5	1,783	0.0060	0.60		**Lag/CN Method,**

Summary for Subcatchment 9ES:

Runoff = 51.01 cfs @ 13.26 hrs, Volume= 12.030 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
66.430	89	Row crops, straight row, Good, HSG D
66.430		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
100.1	2,271	0.0020	0.38		**Lag/CN Method,**

Summary for Subcatchment 10ES:

Runoff = 52.95 cfs @ 12.98 hrs, Volume= 10.336 af, Depth= 2.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
10.900	85	Row crops, straight row, Good, HSG C
48.530	89	Row crops, straight row, Good, HSG D
59.430	88	Weighted Average
59.430		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
75.8	1,968	0.0030	0.43		**Lag/CN Method,**

Summary for Subcatchment 11ES:

Runoff = 59.84 cfs @ 13.04 hrs, Volume= 12.084 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
5.740	85	Row crops, straight row, Good, HSG C
60.990	89	Row crops, straight row, Good, HSG D
66.730	89	Weighted Average
66.730		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
80.1	1,720	0.0020	0.36		**Lag/CN Method,**

Summary for Subcatchment 12ES:

Runoff = 77.88 cfs @ 13.65 hrs, Volume= 22.026 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
121.630	89	Row crops, straight row, Good, HSG D
121.630		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
129.2	3,125	0.0020	0.40		**Lag/CN Method,**

Summary for Subcatchment 13ES:

Runoff = 45.56 cfs @ 12.67 hrs, Volume= 7.074 af, Depth= 2.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
12.570	85	Row crops, straight row, Good, HSG C
28.100	89	Row crops, straight row, Good, HSG D
40.670	88	Weighted Average
40.670		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
52.8	1,500	0.0040	0.47		**Lag/CN Method,**

Summary for Subcatchment 14ES:

Runoff = 64.17 cfs @ 12.41 hrs, Volume= 7.675 af, Depth= 2.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
2.920	78	Row crops, straight row, Good, HSG B
41.210	89	Row crops, straight row, Good, HSG D
44.130	88	Weighted Average
44.130		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.6	852	0.0040	0.42		**Lag/CN Method,**

Summary for Subcatchment 15ES:

Runoff = 68.50 cfs @ 12.32 hrs, Volume= 7.201 af, Depth= 1.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
34.820	78	Row crops, straight row, Good, HSG B
18.940	89	Row crops, straight row, Good, HSG D
2.060	55	Woods, Good, HSG B
55.820	81	Weighted Average
55.820		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.9	1,535	0.0280	0.99		**Lag/CN Method,**

Summary for Subcatchment 16ES:

Runoff = 43.90 cfs @ 12.38 hrs, Volume= 5.005 af, Depth= 1.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
34.110	78	Row crops, straight row, Good, HSG B
6.490	89	Row crops, straight row, Good, HSG D
40.600	80	Weighted Average
40.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.9	1,600	0.0240	0.89		**Lag/CN Method,**

Summary for Subcatchment 17ES:

Runoff = 41.54 cfs @ 12.30 hrs, Volume= 4.235 af, Depth= 1.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
19.050	78	Row crops, straight row, Good, HSG B
2.610	85	Row crops, straight row, Good, HSG C
9.730	89	Row crops, straight row, Good, HSG D
31.390	82	Weighted Average
31.390		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	1,390	0.0250	0.94		**Lag/CN Method,**

Summary for Subcatchment 18ES:

Runoff = 13.61 cfs @ 12.26 hrs, Volume= 1.320 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
7.290	89	Row crops, straight row, Good, HSG D
7.290		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.8	850	0.0080	0.62		**Lag/CN Method,**

Summary for Subcatchment 19ES:

Runoff = 20.19 cfs @ 12.39 hrs, Volume= 2.347 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
12.960	89	Row crops, straight row, Good, HSG D
12.960		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.8	1,185	0.0070	0.62		**Lag/CN Method,**

Summary for Subcatchment 20ES:

Runoff = 55.00 cfs @ 12.28 hrs, Volume= 5.461 af, Depth= 2.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
2.950	78	Row crops, straight row, Good, HSG B
28.450	89	Row crops, straight row, Good, HSG D
31.400	88	Weighted Average
31.400		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.9	789	0.0070	0.55		**Lag/CN Method,**

Summary for Subcatchment 21ES:

Runoff = 16.60 cfs @ 12.12 hrs, Volume= 1.202 af, Depth= 1.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
7.130	78	Row crops, straight row, Good, HSG B
2.190	89	Row crops, straight row, Good, HSG D
9.320	81	Weighted Average
9.320		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	690	0.0360	0.95		**Lag/CN Method,**

Summary for Subcatchment 22ES:

Runoff = 35.62 cfs @ 12.16 hrs, Volume= 2.830 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
15.630	89	Row crops, straight row, Good, HSG D
15.630		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	790	0.0160	0.87		**Lag/CN Method,**

Summary for Subcatchment 23ES:

Runoff = 172.13 cfs @ 12.28 hrs, Volume= 17.131 af, Depth= 2.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
15.700	78	Row crops, straight row, Good, HSG B
86.900	89	Row crops, straight row, Good, HSG D
102.600	87	Weighted Average
102.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0	615	0.0050	0.43		**Lag/CN Method,**

Summary for Subcatchment 24ES:

Runoff = 83.57 cfs @ 13.79 hrs, Volume= 24.524 af, Depth= 2.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
7.500	78	Row crops, straight row, Good, HSG B
122.350	89	Row crops, straight row, Good, HSG D
17.030	77	Woods, Good, HSG D
146.880	87	Weighted Average
146.880		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
136.5	3,042	0.0020	0.37		**Lag/CN Method,**

Summary for Subcatchment 25ES:

Runoff = 48.20 cfs @ 12.64 hrs, Volume= 7.310 af, Depth= 2.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
5.340	78	Row crops, straight row, Good, HSG B
36.690	89	Row crops, straight row, Good, HSG D
42.030	88	Weighted Average
42.030		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
50.9	930	0.0020	0.30		**Lag/CN Method,**

Summary for Subcatchment 26ES:

Runoff = 66.51 cfs @ 12.65 hrs, Volume= 10.056 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
55.530	89	Row crops, straight row, Good, HSG D
55.530		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
51.0	1,260	0.0030	0.41		**Lag/CN Method,**

Summary for Subcatchment 27ES:

Runoff = 26.32 cfs @ 13.06 hrs, Volume= 5.463 af, Depth= 2.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
4.470	78	Row crops, straight row, Good, HSG B
28.250	89	Row crops, straight row, Good, HSG D
32.720	87	Weighted Average
32.720		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
83.1	1,635	0.0020	0.33		**Lag/CN Method,**

Summary for Subcatchment 28ES:

Runoff = 31.18 cfs @ 12.54 hrs, Volume= 4.229 af, Depth= 2.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
3.970	78	Row crops, straight row, Good, HSG B
21.360	89	Row crops, straight row, Good, HSG D
25.330	87	Weighted Average
25.330		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
42.0	1,075	0.0040	0.43		**Lag/CN Method,**

Summary for Reach 1ER:

Inflow Area = 176.340 ac, 0.00% Impervious, Inflow Depth = 2.17" for 2-yr event
Inflow = 98.41 cfs @ 13.94 hrs, Volume= 31.933 af
Outflow = 98.41 cfs @ 13.94 hrs, Volume= 31.933 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs

Summary for Reach 2ER:

Inflow Area = 151.950 ac, 0.00% Impervious, Inflow Depth = 2.05" for 2-yr event
Inflow = 191.76 cfs @ 12.51 hrs, Volume= 25.977 af
Outflow = 191.76 cfs @ 12.51 hrs, Volume= 25.977 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs

Summary for Reach 3ER:

Inflow Area = 412.580 ac, 0.00% Impervious, Inflow Depth = 2.15" for 2-yr event
Inflow = 289.79 cfs @ 12.92 hrs, Volume= 73.827 af
Outflow = 289.79 cfs @ 12.92 hrs, Volume= 73.827 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs

Summary for Reach 4ER:

Inflow Area = 538.690 ac, 0.00% Impervious, Inflow Depth = 1.92" for 2-yr event
Inflow = 541.89 cfs @ 12.31 hrs, Volume= 86.005 af
Outflow = 541.89 cfs @ 12.31 hrs, Volume= 86.005 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs

Summary for Reach 5ER:

Inflow Area = 113.580 ac, 0.00% Impervious, Inflow Depth = 2.09" for 2-yr event
Inflow = 115.43 cfs @ 12.66 hrs, Volume= 19.748 af
Outflow = 115.43 cfs @ 12.66 hrs, Volume= 19.748 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs

Summary for Reach 6ER:

Inflow Area = 42.030 ac, 0.00% Impervious, Inflow Depth = 2.09" for 2-yr event
Inflow = 48.20 cfs @ 12.64 hrs, Volume= 7.310 af
Outflow = 48.20 cfs @ 12.64 hrs, Volume= 7.310 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs

Summary for Subcatchment 1ES:

Runoff = 30.32 cfs @ 12.65 hrs, Volume= 4.716 af, Depth> 3.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
16.020	89	Row crops, straight row, Good, HSG D
16.020		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
51.0	1,260	0.0030	0.41		**Lag/CN Method,**

Summary for Subcatchment 2ES:

Runoff = 52.55 cfs @ 12.60 hrs, Volume= 7.925 af, Depth> 3.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
26.920	89	Row crops, straight row, Good, HSG D
26.920		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
47.6	1,155	0.0030	0.40		**Lag/CN Method,**

Summary for Subcatchment 3ES:

Runoff = 229.91 cfs @ 12.47 hrs, Volume= 30.272 af, Depth= 3.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
17.940	78	Row crops, straight row, Good, HSG B
15.860	85	Row crops, straight row, Good, HSG C
75.210	89	Row crops, straight row, Good, HSG D
109.010	87	Weighted Average
109.010		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.9	2,502	0.0190	1.10		**Lag/CN Method,**

Summary for Subcatchment 4ES:

Runoff = 122.79 cfs @ 13.96 hrs, Volume= 41.127 af, Depth= 3.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
139.690	89	Row crops, straight row, Good, HSG D
139.690		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
158.9	2,625	0.0010	0.28		**Lag/CN Method,**

Summary for Subcatchment 5ES:

Runoff = 36.89 cfs @ 13.74 hrs, Volume= 10.790 af, Depth> 3.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
36.650	89	Row crops, straight row, Good, HSG D
36.650		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
133.2	2,106	0.0010	0.26		**Lag/CN Method,**

Summary for Subcatchment 6ES:

Runoff = 66.98 cfs @ 12.60 hrs, Volume= 10.054 af, Depth> 3.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
34.150	89	Row crops, straight row, Good, HSG D
34.150		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
47.5	1,380	0.0040	0.48		**Lag/CN Method,**

Summary for Subcatchment 7ES:

Runoff = 36.79 cfs @ 12.39 hrs, Volume= 4.456 af, Depth> 3.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
2.110	85	Row crops, straight row, Good, HSG C
13.470	89	Row crops, straight row, Good, HSG D
15.580	88	Weighted Average
15.580		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
32.2	675	0.0030	0.35		**Lag/CN Method,**

Summary for Subcatchment 8ES:

Runoff = 91.02 cfs @ 12.62 hrs, Volume= 13.908 af, Depth> 3.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
14.510	85	Row crops, straight row, Good, HSG C
34.120	89	Row crops, straight row, Good, HSG D
48.630	88	Weighted Average
48.630		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
49.5	1,783	0.0060	0.60		**Lag/CN Method,**

Summary for Subcatchment 9ES:

Runoff = 81.65 cfs @ 13.25 hrs, Volume= 19.558 af, Depth> 3.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
66.430	89	Row crops, straight row, Good, HSG D
66.430		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
100.1	2,271	0.0020	0.38		**Lag/CN Method,**

Summary for Subcatchment 10ES:

Runoff = 85.54 cfs @ 12.96 hrs, Volume= 16.997 af, Depth= 3.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
10.900	85	Row crops, straight row, Good, HSG C
48.530	89	Row crops, straight row, Good, HSG D
59.430	88	Weighted Average
59.430		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
75.8	1,968	0.0030	0.43		**Lag/CN Method,**

Summary for Subcatchment 11ES:

Runoff = 95.35 cfs @ 13.03 hrs, Volume= 19.646 af, Depth> 3.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
5.740	85	Row crops, straight row, Good, HSG C
60.990	89	Row crops, straight row, Good, HSG D
66.730	89	Weighted Average
66.730		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
80.1	1,720	0.0020	0.36		**Lag/CN Method,**

Summary for Subcatchment 12ES:

Runoff = 124.98 cfs @ 13.64 hrs, Volume= 35.810 af, Depth> 3.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
121.630	89	Row crops, straight row, Good, HSG D
121.630		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
129.2	3,125	0.0020	0.40		**Lag/CN Method,**

Summary for Subcatchment 13ES:

Runoff = 73.08 cfs @ 12.67 hrs, Volume= 11.632 af, Depth> 3.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
12.570	85	Row crops, straight row, Good, HSG C
28.100	89	Row crops, straight row, Good, HSG D
40.670	88	Weighted Average
40.670		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
52.8	1,500	0.0040	0.47		**Lag/CN Method,**

Summary for Subcatchment 14ES:

Runoff = 101.84 cfs @ 12.41 hrs, Volume= 12.621 af, Depth> 3.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
2.920	78	Row crops, straight row, Good, HSG B
41.210	89	Row crops, straight row, Good, HSG D
44.130	88	Weighted Average
44.130		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.6	852	0.0040	0.42		**Lag/CN Method,**

Summary for Subcatchment 15ES:

Runoff = 120.10 cfs @ 12.32 hrs, Volume= 12.864 af, Depth= 2.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
34.820	78	Row crops, straight row, Good, HSG B
18.940	89	Row crops, straight row, Good, HSG D
2.060	55	Woods, Good, HSG B
55.820	81	Weighted Average
55.820		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.9	1,535	0.0280	0.99		**Lag/CN Method,**

Summary for Subcatchment 16ES:

Runoff = 78.59 cfs @ 12.37 hrs, Volume= 9.054 af, Depth= 2.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
34.110	78	Row crops, straight row, Good, HSG B
6.490	89	Row crops, straight row, Good, HSG D
40.600	80	Weighted Average
40.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.9	1,600	0.0240	0.89		**Lag/CN Method,**

Summary for Subcatchment 17ES:

Runoff = 71.56 cfs @ 12.29 hrs, Volume= 7.472 af, Depth= 2.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
19.050	78	Row crops, straight row, Good, HSG B
2.610	85	Row crops, straight row, Good, HSG C
9.730	89	Row crops, straight row, Good, HSG D
31.390	82	Weighted Average
31.390		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	1,390	0.0250	0.94		**Lag/CN Method,**

Summary for Subcatchment 18ES:

Runoff = 21.09 cfs @ 12.26 hrs, Volume= 2.146 af, Depth> 3.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
7.290	89	Row crops, straight row, Good, HSG D
7.290		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.8	850	0.0080	0.62		**Lag/CN Method,**

Summary for Subcatchment 19ES:

Runoff = 31.56 cfs @ 12.38 hrs, Volume= 3.815 af, Depth> 3.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
12.960	89	Row crops, straight row, Good, HSG D
12.960		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.8	1,185	0.0070	0.62		**Lag/CN Method,**

Summary for Subcatchment 20ES:

Runoff = 86.54 cfs @ 12.28 hrs, Volume= 8.980 af, Depth> 3.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
2.950	78	Row crops, straight row, Good, HSG B
28.450	89	Row crops, straight row, Good, HSG D
31.400	88	Weighted Average
31.400		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.9	789	0.0070	0.55		**Lag/CN Method,**

Summary for Subcatchment 21ES:

Runoff = 28.61 cfs @ 12.12 hrs, Volume= 2.148 af, Depth= 2.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
7.130	78	Row crops, straight row, Good, HSG B
2.190	89	Row crops, straight row, Good, HSG D
9.320	81	Weighted Average
9.320		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	690	0.0360	0.95		**Lag/CN Method,**

Summary for Subcatchment 22ES:

Runoff = 54.63 cfs @ 12.16 hrs, Volume= 4.600 af, Depth> 3.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
15.630	89	Row crops, straight row, Good, HSG D
15.630		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	790	0.0160	0.87		**Lag/CN Method,**

Summary for Subcatchment 23ES:

Runoff = 274.77 cfs @ 12.28 hrs, Volume= 28.492 af, Depth= 3.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
15.700	78	Row crops, straight row, Good, HSG B
86.900	89	Row crops, straight row, Good, HSG D
102.600	87	Weighted Average
102.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0	615	0.0050	0.43		**Lag/CN Method,**

Summary for Subcatchment 24ES:

Runoff = 137.77 cfs @ 13.78 hrs, Volume= 40.789 af, Depth= 3.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
7.500	78	Row crops, straight row, Good, HSG B
122.350	89	Row crops, straight row, Good, HSG D
17.030	77	Woods, Good, HSG D
146.880	87	Weighted Average
146.880		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
136.5	3,042	0.0020	0.37		**Lag/CN Method,**

Summary for Subcatchment 25ES:

Runoff = 77.25 cfs @ 12.64 hrs, Volume= 12.021 af, Depth> 3.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
5.340	78	Row crops, straight row, Good, HSG B
36.690	89	Row crops, straight row, Good, HSG D
42.030	88	Weighted Average
42.030		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
50.9	930	0.0020	0.30		**Lag/CN Method,**

Summary for Subcatchment 26ES:

Runoff = 105.08 cfs @ 12.65 hrs, Volume= 16.348 af, Depth> 3.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
55.530	89	Row crops, straight row, Good, HSG D
55.530		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
51.0	1,260	0.0030	0.41		**Lag/CN Method,**

Summary for Subcatchment 27ES:

Runoff = 43.20 cfs @ 13.04 hrs, Volume= 9.086 af, Depth= 3.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
4.470	78	Row crops, straight row, Good, HSG B
28.250	89	Row crops, straight row, Good, HSG D
32.720	87	Weighted Average
32.720		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
83.1	1,635	0.0020	0.33		**Lag/CN Method,**

Summary for Subcatchment 28ES:

Runoff = 50.44 cfs @ 12.53 hrs, Volume= 7.034 af, Depth= 3.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
3.970	78	Row crops, straight row, Good, HSG B
21.360	89	Row crops, straight row, Good, HSG D
25.330	87	Weighted Average
25.330		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
42.0	1,075	0.0040	0.43		**Lag/CN Method,**

Summary for Reach 1ER:

Inflow Area = 176.340 ac, 0.00% Impervious, Inflow Depth > 3.53" for 10-yr event
Inflow = 158.23 cfs @ 13.94 hrs, Volume= 51.918 af
Outflow = 158.23 cfs @ 13.94 hrs, Volume= 51.918 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs

Summary for Reach 2ER:

Inflow Area = 151.950 ac, 0.00% Impervious, Inflow Depth > 3.39" for 10-yr event
Inflow = 307.90 cfs @ 12.50 hrs, Volume= 42.914 af
Outflow = 307.90 cfs @ 12.50 hrs, Volume= 42.914 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs

Summary for Reach 3ER:

Inflow Area = 412.580 ac, 0.00% Impervious, Inflow Depth > 3.50" for 10-yr event
Inflow = 467.46 cfs @ 12.91 hrs, Volume= 120.429 af
Outflow = 467.46 cfs @ 12.91 hrs, Volume= 120.429 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs

Summary for Reach 4ER:

Inflow Area = 538.690 ac, 0.00% Impervious, Inflow Depth > 3.22" for 10-yr event
Inflow = 894.76 cfs @ 12.31 hrs, Volume= 144.612 af
Outflow = 894.76 cfs @ 12.31 hrs, Volume= 144.612 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs

Summary for Reach 5ER:

Inflow Area = 113.580 ac, 0.00% Impervious, Inflow Depth > 3.43" for 10-yr event
Inflow = 185.30 cfs @ 12.65 hrs, Volume= 32.469 af
Outflow = 185.30 cfs @ 12.65 hrs, Volume= 32.469 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs

Summary for Reach 6ER:

Inflow Area = 42.030 ac, 0.00% Impervious, Inflow Depth > 3.43" for 10-yr event
Inflow = 77.25 cfs @ 12.64 hrs, Volume= 12.021 af
Outflow = 77.25 cfs @ 12.64 hrs, Volume= 12.021 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs

Summary for Subcatchment 1ES:

Runoff = 47.40 cfs @ 12.64 hrs, Volume= 7.821 af, Depth> 5.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
16.020	89	Row crops, straight row, Good, HSG D
16.020		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
51.0	1,260	0.0030	0.41		**Lag/CN Method,**

Summary for Subcatchment 2ES:

Runoff = 82.07 cfs @ 12.60 hrs, Volume= 13.139 af, Depth> 5.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
26.920	89	Row crops, straight row, Good, HSG D
26.920		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
47.6	1,155	0.0030	0.40		**Lag/CN Method,**

Summary for Subcatchment 3ES:

Runoff = 364.63 cfs @ 12.47 hrs, Volume= 51.191 af, Depth> 5.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
17.940	78	Row crops, straight row, Good, HSG B
15.860	85	Row crops, straight row, Good, HSG C
75.210	89	Row crops, straight row, Good, HSG D
109.010	87	Weighted Average
109.010		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.9	2,502	0.0190	1.10		**Lag/CN Method,**

Summary for Subcatchment 4ES:

Runoff = 196.81 cfs @ 13.96 hrs, Volume= 68.355 af, Depth> 5.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
139.690	89	Row crops, straight row, Good, HSG D
139.690		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
158.9	2,625	0.0010	0.28		**Lag/CN Method,**

Summary for Subcatchment 5ES:

Runoff = 58.81 cfs @ 13.73 hrs, Volume= 17.930 af, Depth> 5.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
36.650	89	Row crops, straight row, Good, HSG D
36.650		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
133.2	2,106	0.0010	0.26		**Lag/CN Method,**

Summary for Subcatchment 6ES:

Runoff = 104.58 cfs @ 12.60 hrs, Volume= 16.668 af, Depth> 5.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
34.150	89	Row crops, straight row, Good, HSG D
34.150		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
47.5	1,380	0.0040	0.48		**Lag/CN Method,**

Summary for Subcatchment 7ES:

Runoff = 57.47 cfs @ 12.39 hrs, Volume= 7.457 af, Depth> 5.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
2.110	85	Row crops, straight row, Good, HSG C
13.470	89	Row crops, straight row, Good, HSG D
15.580	88	Weighted Average
15.580		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
32.2	675	0.0030	0.35		**Lag/CN Method,**

Summary for Subcatchment 8ES:

Runoff = 143.80 cfs @ 12.61 hrs, Volume= 23.294 af, Depth> 5.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
14.510	85	Row crops, straight row, Good, HSG C
34.120	89	Row crops, straight row, Good, HSG D
48.630	88	Weighted Average
48.630		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
49.5	1,783	0.0060	0.60		**Lag/CN Method,**

Summary for Subcatchment 9ES:

Runoff = 129.69 cfs @ 13.25 hrs, Volume= 32.484 af, Depth> 5.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
66.430	89	Row crops, straight row, Good, HSG D
66.430		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
100.1	2,271	0.0020	0.38		**Lag/CN Method,**

Summary for Subcatchment 10ES:

Runoff = 136.54 cfs @ 12.95 hrs, Volume= 28.490 af, Depth> 5.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
10.900	85	Row crops, straight row, Good, HSG C
48.530	89	Row crops, straight row, Good, HSG D
59.430	88	Weighted Average
59.430		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
75.8	1,968	0.0030	0.43		**Lag/CN Method,**

Summary for Subcatchment 11ES:

Runoff = 150.65 cfs @ 13.02 hrs, Volume= 32.614 af, Depth> 5.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
5.740	85	Row crops, straight row, Good, HSG C
60.990	89	Row crops, straight row, Good, HSG D
66.730	89	Weighted Average
66.730		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
80.1	1,720	0.0020	0.36		**Lag/CN Method,**

Summary for Subcatchment 12ES:

Runoff = 199.37 cfs @ 13.63 hrs, Volume= 59.503 af, Depth> 5.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
121.630	89	Row crops, straight row, Good, HSG D
121.630		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
129.2	3,125	0.0020	0.40		**Lag/CN Method,**

Summary for Subcatchment 13ES:

Runoff = 115.66 cfs @ 12.66 hrs, Volume= 19.483 af, Depth> 5.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
12.570	85	Row crops, straight row, Good, HSG C
28.100	89	Row crops, straight row, Good, HSG D
40.670	88	Weighted Average
40.670		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
52.8	1,500	0.0040	0.47		**Lag/CN Method,**

Summary for Subcatchment 14ES:

Runoff = 159.29 cfs @ 12.41 hrs, Volume= 21.123 af, Depth> 5.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
2.920	78	Row crops, straight row, Good, HSG B
41.210	89	Row crops, straight row, Good, HSG D
44.130	88	Weighted Average
44.130		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.6	852	0.0040	0.42		**Lag/CN Method,**

Summary for Subcatchment 15ES:

Runoff = 202.46 cfs @ 12.31 hrs, Volume= 23.088 af, Depth= 4.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
34.820	78	Row crops, straight row, Good, HSG B
18.940	89	Row crops, straight row, Good, HSG D
2.060	55	Woods, Good, HSG B
55.820	81	Weighted Average
55.820		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.9	1,535	0.0280	0.99		**Lag/CN Method,**

Summary for Subcatchment 16ES:

Runoff = 134.68 cfs @ 12.37 hrs, Volume= 16.414 af, Depth= 4.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
34.110	78	Row crops, straight row, Good, HSG B
6.490	89	Row crops, straight row, Good, HSG D
40.600	80	Weighted Average
40.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.9	1,600	0.0240	0.89		**Lag/CN Method,**

Summary for Subcatchment 17ES:

Runoff = 118.97 cfs @ 12.29 hrs, Volume= 13.277 af, Depth> 5.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
19.050	78	Row crops, straight row, Good, HSG B
2.610	85	Row crops, straight row, Good, HSG C
9.730	89	Row crops, straight row, Good, HSG D
31.390	82	Weighted Average
31.390		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5	1,390	0.0250	0.94		**Lag/CN Method,**

Summary for Subcatchment 18ES:

Runoff = 32.29 cfs @ 12.26 hrs, Volume= 3.553 af, Depth> 5.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
7.290	89	Row crops, straight row, Good, HSG D
7.290		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.8	850	0.0080	0.62		**Lag/CN Method,**

Summary for Subcatchment 19ES:

Runoff = 48.76 cfs @ 12.38 hrs, Volume= 6.320 af, Depth> 5.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
12.960	89	Row crops, straight row, Good, HSG D
12.960		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.8	1,185	0.0070	0.62		**Lag/CN Method,**

Summary for Subcatchment 20ES:

Runoff = 134.30 cfs @ 12.27 hrs, Volume= 15.022 af, Depth> 5.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
2.950	78	Row crops, straight row, Good, HSG B
28.450	89	Row crops, straight row, Good, HSG D
31.400	88	Weighted Average
31.400		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.9	789	0.0070	0.55		**Lag/CN Method,**

Summary for Subcatchment 21ES:

Runoff = 47.30 cfs @ 12.12 hrs, Volume= 3.855 af, Depth> 4.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
7.130	78	Row crops, straight row, Good, HSG B
2.190	89	Row crops, straight row, Good, HSG D
9.320	81	Weighted Average
9.320		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	690	0.0360	0.95		**Lag/CN Method,**

Summary for Subcatchment 22ES:

Runoff = 82.74 cfs @ 12.16 hrs, Volume= 7.613 af, Depth> 5.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
15.630	89	Row crops, straight row, Good, HSG D
15.630		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	790	0.0160	0.87		**Lag/CN Method,**

Summary for Subcatchment 23ES:

Runoff = 430.51 cfs @ 12.28 hrs, Volume= 48.153 af, Depth> 5.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
15.700	78	Row crops, straight row, Good, HSG B
86.900	89	Row crops, straight row, Good, HSG D
102.600	87	Weighted Average
102.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0	615	0.0050	0.43		**Lag/CN Method,**

Summary for Subcatchment 24ES:

Runoff = 224.55 cfs @ 13.78 hrs, Volume= 69.071 af, Depth> 5.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
7.500	78	Row crops, straight row, Good, HSG B
122.350	89	Row crops, straight row, Good, HSG D
17.030	77	Woods, Good, HSG D
146.880	87	Weighted Average
146.880		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
136.5	3,042	0.0020	0.37		**Lag/CN Method,**

Summary for Subcatchment 25ES:

Runoff = 122.16 cfs @ 12.63 hrs, Volume= 20.134 af, Depth> 5.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
5.340	78	Row crops, straight row, Good, HSG B
36.690	89	Row crops, straight row, Good, HSG D
42.030	88	Weighted Average
42.030		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
50.9	930	0.0020	0.30		**Lag/CN Method,**

Summary for Subcatchment 26ES:

Runoff = 164.30 cfs @ 12.64 hrs, Volume= 27.109 af, Depth> 5.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
55.530	89	Row crops, straight row, Good, HSG D
55.530		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
51.0	1,260	0.0030	0.41		**Lag/CN Method,**

Summary for Subcatchment 27ES:

Runoff = 69.87 cfs @ 13.04 hrs, Volume= 15.381 af, Depth> 5.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
4.470	78	Row crops, straight row, Good, HSG B
28.250	89	Row crops, straight row, Good, HSG D
32.720	87	Weighted Average
32.720		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
83.1	1,635	0.0020	0.33		**Lag/CN Method,**

Summary for Subcatchment 28ES:

Runoff = 80.20 cfs @ 12.53 hrs, Volume= 11.897 af, Depth> 5.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
3.970	78	Row crops, straight row, Good, HSG B
21.360	89	Row crops, straight row, Good, HSG D
25.330	87	Weighted Average
25.330		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
42.0	1,075	0.0040	0.43		**Lag/CN Method,**

Summary for Reach 1ER:

Inflow Area = 176.340 ac, 0.00% Impervious, Inflow Depth > 5.87" for 100-yr event
Inflow = 253.24 cfs @ 13.93 hrs, Volume= 86.286 af
Outflow = 253.24 cfs @ 13.93 hrs, Volume= 86.286 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs

Summary for Reach 2ER:

Inflow Area = 151.950 ac, 0.00% Impervious, Inflow Depth > 5.70" for 100-yr event
Inflow = 486.76 cfs @ 12.50 hrs, Volume= 72.151 af
Outflow = 486.76 cfs @ 12.50 hrs, Volume= 72.151 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs

Summary for Reach 3ER:

Inflow Area = 412.580 ac, 0.00% Impervious, Inflow Depth > 5.83" for 100-yr event
Inflow = 747.51 cfs @ 12.91 hrs, Volume= 200.509 af
Outflow = 747.51 cfs @ 12.91 hrs, Volume= 200.509 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs

Summary for Reach 4ER:

Inflow Area = 538.690 ac, 0.00% Impervious, Inflow Depth > 5.50" for 100-yr event
Inflow = 1,446.73 cfs @ 12.31 hrs, Volume= 246.972 af
Outflow = 1,446.73 cfs @ 12.31 hrs, Volume= 246.972 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs

Summary for Reach 5ER:

Inflow Area = 113.580 ac, 0.00% Impervious, Inflow Depth > 5.75" for 100-yr event
Inflow = 293.79 cfs @ 12.65 hrs, Volume= 54.386 af
Outflow = 293.79 cfs @ 12.65 hrs, Volume= 54.386 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs

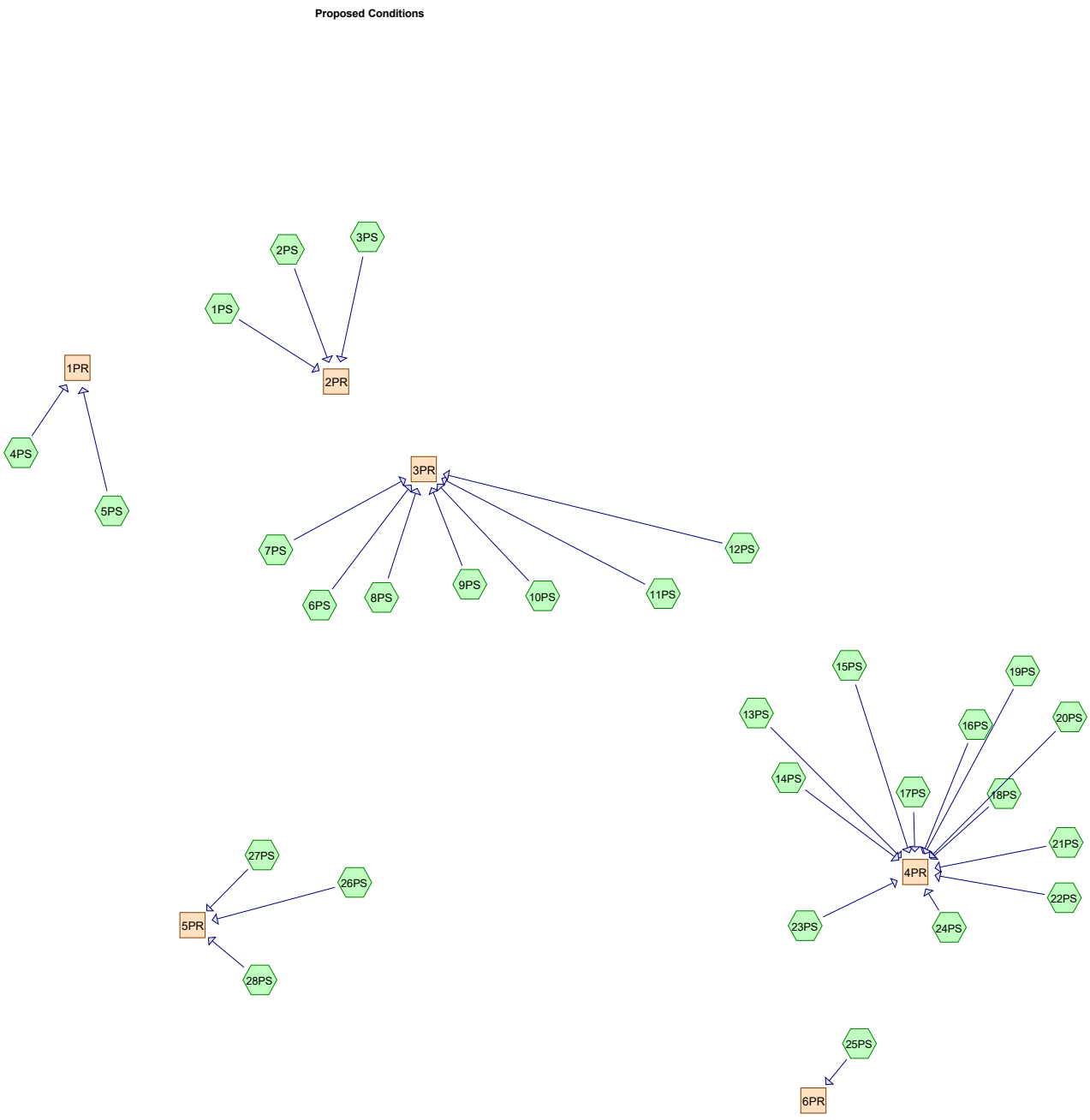
Summary for Reach 6ER:

Inflow Area = 42.030 ac, 0.00% Impervious, Inflow Depth > 5.75" for 100-yr event
Inflow = 122.16 cfs @ 12.63 hrs, Volume= 20.134 af
Outflow = 122.16 cfs @ 12.63 hrs, Volume= 20.134 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs

Appendix C

Proposed HydroCAD Results



Routing Diagram for 2022-03-23 Combined Pre-Post Model
Prepared by Westwood Professional Services, Printed 4/4/2022

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-yr	IN-Posey 24-hr S1	1-yr	Default	24.00	1	2.74	2
2	2-yr	IN-Posey 24-hr S1	2-yr	Default	24.00	1	3.30	2
3	5-yr	IN-Posey 24-hr S1	5-yr	Default	24.00	1	4.10	2
4	10-yr	IN-Posey 24-hr S1	10-yr	Default	24.00	1	4.75	2
5	25-yr	IN-Posey 24-hr S1	25-yr	Default	24.00	1	5.66	2
6	50-yr	IN-Posey 24-hr S1	50-yr	Default	24.00	1	6.40	2
7	100-yr	IN-Posey 24-hr S1	100-yr	Default	24.00	1	7.17	2

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.140	96	Gravel surface, HSG B (15PS, 16PS, 17PS, 21PS)
29.020	96	Gravel surface, HSG D (1PS, 2PS, 3PS, 4PS, 5PS, 6PS, 7PS, 8PS, 9PS, 10PS, 11PS, 12PS, 13PS, 14PS, 18PS, 19PS, 20PS, 22PS, 23PS, 24PS, 25PS, 26PS, 27PS, 28PS)
155.820	58	Meadow, non-grazed, HSG B (3PS, 14PS, 15PS, 16PS, 17PS, 20PS, 21PS, 23PS, 24PS, 25PS, 27PS, 28PS)
64.300	71	Meadow, non-grazed, HSG C (3PS, 7PS, 8PS, 10PS, 11PS, 13PS, 17PS)
1,183.890	78	Meadow, non-grazed, HSG D (1PS, 2PS, 3PS, 4PS, 5PS, 6PS, 7PS, 8PS, 9PS, 10PS, 11PS, 12PS, 13PS, 14PS, 15PS, 16PS, 17PS, 18PS, 19PS, 20PS, 21PS, 22PS, 23PS, 24PS, 25PS, 26PS, 27PS, 28PS)
1,435.170	**76**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
157.960	HSG B	3PS, 14PS, 15PS, 16PS, 17PS, 20PS, 21PS, 23PS, 24PS, 25PS, 27PS, 28PS
64.300	HSG C	3PS, 7PS, 8PS, 10PS, 11PS, 13PS, 17PS
1,212.910	HSG D	1PS, 2PS, 3PS, 4PS, 5PS, 6PS, 7PS, 8PS, 9PS, 10PS, 11PS, 12PS, 13PS, 14PS, 15PS, 16PS, 17PS, 18PS, 19PS, 20PS, 21PS, 22PS, 23PS, 24PS, 25PS, 26PS, 27PS, 28PS
0.000	Other	
1,435.170		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	2.140	0.000	29.020	0.000	31.160	Gravel surface	1PS, 2PS, 3PS, 4PS, 5PS, 6PS, 7PS, 8PS, 9PS, 10PS, 11PS, 12PS, 13PS, 14PS, 15PS, 16PS, 17PS, 18PS, 19PS, 20PS, 21PS, 22PS, 23PS, 24PS, 25PS, 26PS, 27PS, 28PS
0.000	155.820	64.300	1,183.890	0.000	1,404.010	Meadow, non-grazed	1PS, 2PS, 3PS, 4PS, 5PS, 6PS, 7PS, 8PS, 9PS, 10PS, 11PS, 12PS, 13PS, 14PS, 15PS, 16PS, 17PS, 18PS, 19PS, 20PS, 21PS, 22PS, 23PS, 24PS, 25PS, 26PS, 27PS, 28PS
0.000	**157.960**	**64.300**	**1,212.910**	**0.000**	**1,435.170**	**TOTAL AREA**	

Summary for Subcatchment 1PS:

Runoff = 9.11 cfs @ 12.99 hrs, Volume= 1.798 af, Depth= 1.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
15.670	78	Meadow, non-grazed, HSG D
0.350	96	Gravel surface, HSG D
16.020	78	Weighted Average
16.020		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
74.2	1,260	0.0030	0.28		**Lag/CN Method,**

Summary for Subcatchment 2PS:

Runoff = 15.93 cfs @ 12.93 hrs, Volume= 3.022 af, Depth= 1.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
26.370	78	Meadow, non-grazed, HSG D
0.550	96	Gravel surface, HSG D
26.920	78	Weighted Average
26.920		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
69.2	1,155	0.0030	0.28		**Lag/CN Method,**

Summary for Subcatchment 3PS:

Runoff = 57.75 cfs @ 12.80 hrs, Volume= 10.028 af, Depth= 1.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
17.940	58	Meadow, non-grazed, HSG B
15.860	71	Meadow, non-grazed, HSG C
72.950	78	Meadow, non-grazed, HSG D
2.260	96	Gravel surface, HSG D
109.010	74	Weighted Average
109.010		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
57.4	2,502	0.0190	0.73		**Lag/CN Method,**

Summary for Subcatchment 4PS:

Runoff = 34.56 cfs @ 15.16 hrs, Volume= 15.682 af, Depth= 1.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
138.240	78	Meadow, non-grazed, HSG D
1.450	96	Gravel surface, HSG D
139.690	78	Weighted Average
139.690		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
231.2	2,625	0.0010	0.19		**Lag/CN Method,**

Summary for Subcatchment 5PS:

Runoff = 11.11 cfs @ 14.45 hrs, Volume= 4.313 af, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
35.500	78	Meadow, non-grazed, HSG D
1.150	96	Gravel surface, HSG D
36.650	79	Weighted Average
36.650		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
188.1	2,106	0.0010	0.19		**Lag/CN Method,**

Summary for Subcatchment 6PS:

Runoff = 20.26 cfs @ 12.94 hrs, Volume= 3.834 af, Depth= 1.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
33.400	78	Meadow, non-grazed, HSG D
0.750	96	Gravel surface, HSG D
34.150	78	Weighted Average
34.150		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
69.1	1,380	0.0040	0.33		**Lag/CN Method,**

Summary for Subcatchment 7PS:

Runoff = 12.11 cfs @ 12.60 hrs, Volume= 1.749 af, Depth= 1.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
2.110	71	Meadow, non-grazed, HSG C
13.030	78	Meadow, non-grazed, HSG D
0.440	96	Gravel surface, HSG D
15.580	78	Weighted Average
15.580		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
45.0	675	0.0030	0.25		**Lag/CN Method,**

Summary for Subcatchment 8PS:

Runoff = 24.95 cfs @ 13.01 hrs, Volume= 4.953 af, Depth= 1.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
14.510	71	Meadow, non-grazed, HSG C
32.700	78	Meadow, non-grazed, HSG D
1.420	96	Gravel surface, HSG D
48.630	76	Weighted Average
48.630		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
73.5	1,783	0.0060	0.40		**Lag/CN Method,**

Summary for Subcatchment 9PS:

Runoff = 23.07 cfs @ 14.05 hrs, Volume= 7.457 af, Depth= 1.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
65.520	78	Meadow, non-grazed, HSG D
0.910	96	Gravel surface, HSG D
66.430	78	Weighted Average
66.430		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
145.6	2,271	0.0020	0.26		**Lag/CN Method,**

Summary for Subcatchment 10PS:

Runoff = 24.51 cfs @ 13.48 hrs, Volume= 6.358 af, Depth= 1.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
10.900	71	Meadow, non-grazed, HSG C
47.540	78	Meadow, non-grazed, HSG D
0.990	96	Gravel surface, HSG D
59.430	77	Weighted Average
59.430		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
109.2	1,968	0.0030	0.30		**Lag/CN Method,**

Summary for Subcatchment 11PS:

Runoff = 27.72 cfs @ 13.60 hrs, Volume= 7.491 af, Depth= 1.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
5.740	71	Meadow, non-grazed, HSG C
60.260	78	Meadow, non-grazed, HSG D
0.730	96	Gravel surface, HSG D
66.730	78	Weighted Average
66.730		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
116.6	1,720	0.0020	0.25		**Lag/CN Method,**

Summary for Subcatchment 12PS:

Runoff = 34.89 cfs @ 14.45 hrs, Volume= 13.654 af, Depth= 1.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
119.400	78	Meadow, non-grazed, HSG D
2.230	96	Gravel surface, HSG D
121.630	78	Weighted Average
121.630		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
188.0	3,125	0.0020	0.28		**Lag/CN Method,**

Summary for Subcatchment 13PS:

Runoff = 19.82 cfs @ 13.07 hrs, Volume= 4.142 af, Depth= 1.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
12.570	71	Meadow, non-grazed, HSG C
27.430	78	Meadow, non-grazed, HSG D
0.670	96	Gravel surface, HSG D
40.670	76	Weighted Average
40.670		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
78.4	1,500	0.0040	0.32		**Lag/CN Method,**

Summary for Subcatchment 14PS:

Runoff = 31.02 cfs @ 12.66 hrs, Volume= 4.721 af, Depth= 1.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
2.920	58	Meadow, non-grazed, HSG B
39.940	78	Meadow, non-grazed, HSG D
1.270	96	Gravel surface, HSG D
44.130	77	Weighted Average
44.130		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
48.4	852	0.0040	0.29		**Lag/CN Method,**

Summary for Subcatchment 15PS:

Runoff = 18.05 cfs @ 12.64 hrs, Volume= 3.022 af, Depth= 0.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
36.410	58	Meadow, non-grazed, HSG B
18.940	78	Meadow, non-grazed, HSG D
0.470	96	Gravel surface, HSG B
55.820	65	Weighted Average
55.820		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.8	1,535	0.0280	0.63		**Lag/CN Method,**

Summary for Subcatchment 16PS:

Runoff = 8.74 cfs @ 12.80 hrs, Volume= 1.774 af, Depth= 0.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
33.590	58	Meadow, non-grazed, HSG B
6.490	78	Meadow, non-grazed, HSG D
0.520	96	Gravel surface, HSG B
40.600	62	Weighted Average
40.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
49.2	1,600	0.0240	0.54		**Lag/CN Method,**

Summary for Subcatchment 17PS:

Runoff = 11.44 cfs @ 12.59 hrs, Volume= 1.816 af, Depth= 0.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
18.320	58	Meadow, non-grazed, HSG B
2.610	71	Meadow, non-grazed, HSG C
9.730	78	Meadow, non-grazed, HSG D
0.730	96	Gravel surface, HSG B
31.390	66	Weighted Average
31.390		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
38.8	1,390	0.0250	0.60		**Lag/CN Method,**

Summary for Subcatchment 18PS:

Runoff = 6.69 cfs @ 12.43 hrs, Volume= 0.818 af, Depth= 1.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
7.100	78	Meadow, non-grazed, HSG D
0.190	96	Gravel surface, HSG D
7.290	78	Weighted Average
7.290		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.2	850	0.0080	0.43		**Lag/CN Method,**

Summary for Subcatchment 19PS:

Runoff = 9.87 cfs @ 12.62 hrs, Volume= 1.455 af, Depth= 1.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
12.790	78	Meadow, non-grazed, HSG D
0.170	96	Gravel surface, HSG D
12.960	78	Weighted Average
12.960		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
46.3	1,185	0.0070	0.43		**Lag/CN Method,**

Summary for Subcatchment 20PS:

Runoff = 30.82 cfs @ 12.42 hrs, Volume= 3.695 af, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
2.950	58	Meadow, non-grazed, HSG B
23.180	78	Meadow, non-grazed, HSG D
5.270	96	Gravel surface, HSG D
31.400	79	Weighted Average
31.400		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
32.4	789	0.0070	0.41		**Lag/CN Method,**

Summary for Subcatchment 21PS:

Runoff = 3.84 cfs @ 12.28 hrs, Volume= 0.471 af, Depth= 0.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
6.710	58	Meadow, non-grazed, HSG B
2.190	78	Meadow, non-grazed, HSG D
0.420	96	Gravel surface, HSG B
9.320	64	Weighted Average
9.320		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.5	690	0.0360	0.59		**Lag/CN Method,**

Summary for Subcatchment 22PS:

Runoff = 17.77 cfs @ 12.27 hrs, Volume= 1.755 af, Depth= 1.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
15.380	78	Meadow, non-grazed, HSG D
0.250	96	Gravel surface, HSG D
15.630	78	Weighted Average
15.630		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.1	790	0.0160	0.60		**Lag/CN Method,**

Summary for Subcatchment 23PS:

Runoff = 76.49 cfs @ 12.48 hrs, Volume= 9.937 af, Depth= 1.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
15.700	58	Meadow, non-grazed, HSG B
84.200	78	Meadow, non-grazed, HSG D
2.700	96	Gravel surface, HSG D
102.600	75	Weighted Average
102.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.4	615	0.0050	0.29		**Lag/CN Method,**

Summary for Subcatchment 24PS:

Runoff = 39.93 cfs @ 14.55 hrs, Volume= 15.713 af, Depth= 1.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
7.500	58	Meadow, non-grazed, HSG B
136.740	78	Meadow, non-grazed, HSG D
2.640	96	Gravel surface, HSG D
146.880	77	Weighted Average
146.880		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
189.5	3,042	0.0020	0.27		**Lag/CN Method,**

Summary for Subcatchment 25PS:

Runoff = 21.12 cfs @ 13.04 hrs, Volume= 4.280 af, Depth= 1.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
5.340	58	Meadow, non-grazed, HSG B
36.400	78	Meadow, non-grazed, HSG D
0.290	96	Gravel surface, HSG D
42.030	76	Weighted Average
42.030		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
75.6	930	0.0020	0.20		**Lag/CN Method,**

Summary for Subcatchment 26PS:

Runoff = 31.58 cfs @ 12.99 hrs, Volume= 6.234 af, Depth= 1.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
54.190	78	Meadow, non-grazed, HSG D
1.340	96	Gravel surface, HSG D
55.530	78	Weighted Average
55.530		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
74.2	1,260	0.0030	0.28		**Lag/CN Method,**

Summary for Subcatchment 27PS:

Runoff = 11.98 cfs @ 13.61 hrs, Volume= 3.332 af, Depth= 1.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
4.470	58	Meadow, non-grazed, HSG B
27.350	78	Meadow, non-grazed, HSG D
0.900	96	Gravel surface, HSG D
32.720	76	Weighted Average
32.720		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
118.8	1,635	0.0020	0.23		**Lag/CN Method,**

Summary for Subcatchment 28PS:

Runoff = 13.69 cfs @ 12.86 hrs, Volume= 2.453 af, Depth= 1.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 2-yr Rainfall=3.30"

Area (ac)	CN	Description
3.970	58	Meadow, non-grazed, HSG B
21.260	78	Meadow, non-grazed, HSG D
0.100	96	Gravel surface, HSG D
25.330	75	Weighted Average
25.330		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
61.8	1,075	0.0040	0.29		**Lag/CN Method,**

Summary for Reach 1PR:

Inflow Area = 176.340 ac, 0.00% Impervious, Inflow Depth = 1.36" for 2-yr event
Inflow = 44.58 cfs @ 15.08 hrs, Volume= 19.995 af
Outflow = 44.58 cfs @ 15.08 hrs, Volume= 19.995 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs

Summary for Reach 2PR:

Inflow Area = 151.950 ac, 0.00% Impervious, Inflow Depth = 1.17" for 2-yr event
Inflow = 81.89 cfs @ 12.84 hrs, Volume= 14.849 af
Outflow = 81.89 cfs @ 12.84 hrs, Volume= 14.849 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs

Summary for Reach 3PR:

Inflow Area = 412.580 ac, 0.00% Impervious, Inflow Depth = 1.32" for 2-yr event
Inflow = 128.57 cfs @ 13.50 hrs, Volume= 45.496 af
Outflow = 128.57 cfs @ 13.50 hrs, Volume= 45.496 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs

Summary for Reach 4PR:

Inflow Area = 538.690 ac, 0.00% Impervious, Inflow Depth = 1.10" for 2-yr event
Inflow = 211.59 cfs @ 12.54 hrs, Volume= 49.319 af
Outflow = 211.59 cfs @ 12.54 hrs, Volume= 49.319 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs

Summary for Reach 5PR:

Inflow Area = 113.580 ac, 0.00% Impervious, Inflow Depth = 1.27" for 2-yr event
Inflow = 52.63 cfs @ 13.03 hrs, Volume= 12.019 af
Outflow = 52.63 cfs @ 13.03 hrs, Volume= 12.019 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs

Summary for Reach 6PR:

Inflow Area = 42.030 ac, 0.00% Impervious, Inflow Depth = 1.22" for 2-yr event
Inflow = 21.12 cfs @ 13.04 hrs, Volume= 4.280 af
Outflow = 21.12 cfs @ 13.04 hrs, Volume= 4.280 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs

Summary for Subcatchment 1PS:

Runoff = 17.23 cfs @ 12.97 hrs, Volume= 3.339 af, Depth= 2.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
15.670	78	Meadow, non-grazed, HSG D
0.350	96	Gravel surface, HSG D
16.020	78	Weighted Average
16.020		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
74.2	1,260	0.0030	0.28		**Lag/CN Method,**

Summary for Subcatchment 2PS:

Runoff = 30.06 cfs @ 12.90 hrs, Volume= 5.610 af, Depth= 2.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
26.370	78	Meadow, non-grazed, HSG D
0.550	96	Gravel surface, HSG D
26.920	78	Weighted Average
26.920		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
69.2	1,155	0.0030	0.28		**Lag/CN Method,**

Summary for Subcatchment 3PS:

Runoff = 117.31 cfs @ 12.78 hrs, Volume= 19.681 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
17.940	58	Meadow, non-grazed, HSG B
15.860	71	Meadow, non-grazed, HSG C
72.950	78	Meadow, non-grazed, HSG D
2.260	96	Gravel surface, HSG D
109.010	74	Weighted Average
109.010		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
57.4	2,502	0.0190	0.73		**Lag/CN Method,**

Summary for Subcatchment 4PS:

Runoff = 65.73 cfs @ 15.14 hrs, Volume= 29.112 af, Depth= 2.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
138.240	78	Meadow, non-grazed, HSG D
1.450	96	Gravel surface, HSG D
139.690	78	Weighted Average
139.690		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
231.2	2,625	0.0010	0.19		**Lag/CN Method,**

Summary for Subcatchment 5PS:

Runoff = 20.87 cfs @ 14.43 hrs, Volume= 7.903 af, Depth= 2.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
35.500	78	Meadow, non-grazed, HSG D
1.150	96	Gravel surface, HSG D
36.650	79	Weighted Average
36.650		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
188.1	2,106	0.0010	0.19		**Lag/CN Method,**

Summary for Subcatchment 6PS:

Runoff = 38.17 cfs @ 12.92 hrs, Volume= 7.117 af, Depth= 2.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
33.400	78	Meadow, non-grazed, HSG D
0.750	96	Gravel surface, HSG D
34.150	78	Weighted Average
34.150		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
69.1	1,380	0.0040	0.33		**Lag/CN Method,**

Summary for Subcatchment 7PS:

Runoff = 22.64 cfs @ 12.58 hrs, Volume= 3.247 af, Depth= 2.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
2.110	71	Meadow, non-grazed, HSG C
13.030	78	Meadow, non-grazed, HSG D
0.440	96	Gravel surface, HSG D
15.580	78	Weighted Average
15.580		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
45.0	675	0.0030	0.25		**Lag/CN Method,**

Summary for Subcatchment 8PS:

Runoff = 48.81 cfs @ 12.99 hrs, Volume= 9.447 af, Depth= 2.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
14.510	71	Meadow, non-grazed, HSG C
32.700	78	Meadow, non-grazed, HSG D
1.420	96	Gravel surface, HSG D
48.630	76	Weighted Average
48.630		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
73.5	1,783	0.0060	0.40		**Lag/CN Method,**

Summary for Subcatchment 9PS:

Runoff = 43.92 cfs @ 13.91 hrs, Volume= 13.844 af, Depth= 2.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
65.520	78	Meadow, non-grazed, HSG D
0.910	96	Gravel surface, HSG D
66.430	78	Weighted Average
66.430		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
145.6	2,271	0.0020	0.26		**Lag/CN Method,**

Summary for Subcatchment 10PS:

Runoff = 47.35 cfs @ 13.46 hrs, Volume= 11.962 af, Depth= 2.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
10.900	71	Meadow, non-grazed, HSG C
47.540	78	Meadow, non-grazed, HSG D
0.990	96	Gravel surface, HSG D
59.430	77	Weighted Average
59.430		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
109.2	1,968	0.0030	0.30		**Lag/CN Method,**

Summary for Subcatchment 11PS:

Runoff = 52.48 cfs @ 13.58 hrs, Volume= 13.907 af, Depth= 2.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
5.740	71	Meadow, non-grazed, HSG C
60.260	78	Meadow, non-grazed, HSG D
0.730	96	Gravel surface, HSG D
66.730	78	Weighted Average
66.730		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
116.6	1,720	0.0020	0.25		**Lag/CN Method,**

Summary for Subcatchment 12PS:

Runoff = 66.76 cfs @ 14.42 hrs, Volume= 25.348 af, Depth= 2.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
119.400	78	Meadow, non-grazed, HSG D
2.230	96	Gravel surface, HSG D
121.630	78	Weighted Average
121.630		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
188.0	3,125	0.0020	0.28		**Lag/CN Method,**

Summary for Subcatchment 13PS:

Runoff = 38.95 cfs @ 13.03 hrs, Volume= 7.900 af, Depth= 2.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
12.570	71	Meadow, non-grazed, HSG C
27.430	78	Meadow, non-grazed, HSG D
0.670	96	Gravel surface, HSG D
40.670	76	Weighted Average
40.670		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
78.4	1,500	0.0040	0.32		**Lag/CN Method,**

Summary for Subcatchment 14PS:

Runoff = 59.09 cfs @ 12.65 hrs, Volume= 8.882 af, Depth= 2.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
2.920	58	Meadow, non-grazed, HSG B
39.940	78	Meadow, non-grazed, HSG D
1.270	96	Gravel surface, HSG D
44.130	77	Weighted Average
44.130		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
48.4	852	0.0040	0.29		**Lag/CN Method,**

Summary for Subcatchment 15PS:

Runoff = 47.22 cfs @ 12.58 hrs, Volume= 6.929 af, Depth= 1.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
36.410	58	Meadow, non-grazed, HSG B
18.940	78	Meadow, non-grazed, HSG D
0.470	96	Gravel surface, HSG B
55.820	65	Weighted Average
55.820		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.8	1,535	0.0280	0.63		**Lag/CN Method,**

Summary for Subcatchment 16PS:

Runoff = 25.90 cfs @ 12.73 hrs, Volume= 4.353 af, Depth= 1.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
33.590	58	Meadow, non-grazed, HSG B
6.490	78	Meadow, non-grazed, HSG D
0.520	96	Gravel surface, HSG B
40.600	62	Weighted Average
40.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
49.2	1,600	0.0240	0.54		**Lag/CN Method,**

Summary for Subcatchment 17PS:

Runoff = 28.89 cfs @ 12.55 hrs, Volume= 4.080 af, Depth= 1.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
18.320	58	Meadow, non-grazed, HSG B
2.610	71	Meadow, non-grazed, HSG C
9.730	78	Meadow, non-grazed, HSG D
0.730	96	Gravel surface, HSG B
31.390	66	Weighted Average
31.390		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
38.8	1,390	0.0250	0.60		**Lag/CN Method,**

Summary for Subcatchment 18PS:

Runoff = 12.43 cfs @ 12.42 hrs, Volume= 1.519 af, Depth= 2.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
7.100	78	Meadow, non-grazed, HSG D
0.190	96	Gravel surface, HSG D
7.290	78	Weighted Average
7.290		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.2	850	0.0080	0.43		**Lag/CN Method,**

Summary for Subcatchment 19PS:

Runoff = 18.45 cfs @ 12.61 hrs, Volume= 2.701 af, Depth= 2.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
12.790	78	Meadow, non-grazed, HSG D
0.170	96	Gravel surface, HSG D
12.960	78	Weighted Average
12.960		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
46.3	1,185	0.0070	0.43		**Lag/CN Method,**

Summary for Subcatchment 20PS:

Runoff = 56.19 cfs @ 12.41 hrs, Volume= 6.771 af, Depth= 2.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
2.950	58	Meadow, non-grazed, HSG B
23.180	78	Meadow, non-grazed, HSG D
5.270	96	Gravel surface, HSG D
31.400	79	Weighted Average
31.400		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
32.4	789	0.0070	0.41		**Lag/CN Method,**

Summary for Subcatchment 21PS:

Runoff = 10.70 cfs @ 12.25 hrs, Volume= 1.103 af, Depth= 1.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
6.710	58	Meadow, non-grazed, HSG B
2.190	78	Meadow, non-grazed, HSG D
0.420	96	Gravel surface, HSG B
9.320	64	Weighted Average
9.320		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.5	690	0.0360	0.59		**Lag/CN Method,**

Summary for Subcatchment 22PS:

Runoff = 32.72 cfs @ 12.27 hrs, Volume= 3.257 af, Depth= 2.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
15.380	78	Meadow, non-grazed, HSG D
0.250	96	Gravel surface, HSG D
15.630	78	Weighted Average
15.630		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.1	790	0.0160	0.60		**Lag/CN Method,**

Summary for Subcatchment 23PS:

Runoff = 150.87 cfs @ 12.46 hrs, Volume= 19.221 af, Depth= 2.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
15.700	58	Meadow, non-grazed, HSG B
84.200	78	Meadow, non-grazed, HSG D
2.700	96	Gravel surface, HSG D
102.600	75	Weighted Average
102.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.4	615	0.0050	0.29		**Lag/CN Method,**

Summary for Subcatchment 24PS:

Runoff = 77.48 cfs @ 14.53 hrs, Volume= 29.563 af, Depth= 2.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
7.500	58	Meadow, non-grazed, HSG B
136.740	78	Meadow, non-grazed, HSG D
2.640	96	Gravel surface, HSG D
146.880	77	Weighted Average
146.880		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
189.5	3,042	0.0020	0.27		**Lag/CN Method,**

Summary for Subcatchment 25PS:

Runoff = 41.38 cfs @ 13.01 hrs, Volume= 8.164 af, Depth= 2.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
5.340	58	Meadow, non-grazed, HSG B
36.400	78	Meadow, non-grazed, HSG D
0.290	96	Gravel surface, HSG D
42.030	76	Weighted Average
42.030		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
75.6	930	0.0020	0.20		**Lag/CN Method,**

Summary for Subcatchment 26PS:

Runoff = 59.73 cfs @ 12.97 hrs, Volume= 11.573 af, Depth= 2.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
54.190	78	Meadow, non-grazed, HSG D
1.340	96	Gravel surface, HSG D
55.530	78	Weighted Average
55.530		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
74.2	1,260	0.0030	0.28		**Lag/CN Method,**

Summary for Subcatchment 27PS:

Runoff = 23.60 cfs @ 13.59 hrs, Volume= 6.356 af, Depth= 2.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
4.470	58	Meadow, non-grazed, HSG B
27.350	78	Meadow, non-grazed, HSG D
0.900	96	Gravel surface, HSG D
32.720	76	Weighted Average
32.720		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
118.8	1,635	0.0020	0.23		**Lag/CN Method,**

Summary for Subcatchment 28PS:

Runoff = 27.24 cfs @ 12.84 hrs, Volume= 4.745 af, Depth= 2.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
3.970	58	Meadow, non-grazed, HSG B
21.260	78	Meadow, non-grazed, HSG D
0.100	96	Gravel surface, HSG D
25.330	75	Weighted Average
25.330		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
61.8	1,075	0.0040	0.29		**Lag/CN Method,**

Summary for Reach 1PR:

Inflow Area = 176.340 ac, 0.00% Impervious, Inflow Depth = 2.52" for 10-yr event
Inflow = 84.61 cfs @ 14.91 hrs, Volume= 37.015 af
Outflow = 84.61 cfs @ 14.91 hrs, Volume= 37.015 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs

Summary for Reach 2PR:

Inflow Area = 151.950 ac, 0.00% Impervious, Inflow Depth = 2.26" for 10-yr event
Inflow = 162.74 cfs @ 12.82 hrs, Volume= 28.630 af
Outflow = 162.74 cfs @ 12.82 hrs, Volume= 28.630 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs

Summary for Reach 3PR:

Inflow Area = 412.580 ac, 0.00% Impervious, Inflow Depth = 2.47" for 10-yr event
Inflow = 248.07 cfs @ 13.44 hrs, Volume= 84.871 af
Outflow = 248.07 cfs @ 13.44 hrs, Volume= 84.871 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs

Summary for Reach 4PR:

Inflow Area = 538.690 ac, 0.00% Impervious, Inflow Depth = 2.14" for 10-yr event
Inflow = 443.15 cfs @ 12.52 hrs, Volume= 96.280 af
Outflow = 443.15 cfs @ 12.52 hrs, Volume= 96.280 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs

Summary for Reach 5PR:

Inflow Area = 113.580 ac, 0.00% Impervious, Inflow Depth = 2.40" for 10-yr event
Inflow = 101.88 cfs @ 12.99 hrs, Volume= 22.674 af
Outflow = 101.88 cfs @ 12.99 hrs, Volume= 22.674 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs

Summary for Reach 6PR:

Inflow Area = 42.030 ac, 0.00% Impervious, Inflow Depth = 2.33" for 10-yr event
Inflow = 41.38 cfs @ 13.01 hrs, Volume= 8.164 af
Outflow = 41.38 cfs @ 13.01 hrs, Volume= 8.164 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs

Summary for Subcatchment 1PS:

Runoff = 31.00 cfs @ 12.96 hrs, Volume= 6.180 af, Depth= 4.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
15.670	78	Meadow, non-grazed, HSG D
0.350	96	Gravel surface, HSG D
16.020	78	Weighted Average
16.020		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
74.2	1,260	0.0030	0.28		**Lag/CN Method,**

Summary for Subcatchment 2PS:

Runoff = 54.04 cfs @ 12.88 hrs, Volume= 10.385 af, Depth= 4.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
26.370	78	Meadow, non-grazed, HSG D
0.550	96	Gravel surface, HSG D
26.920	78	Weighted Average
26.920		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
69.2	1,155	0.0030	0.28		**Lag/CN Method,**

Summary for Subcatchment 3PS:

Runoff = 221.90 cfs @ 12.75 hrs, Volume= 38.068 af, Depth= 4.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
17.940	58	Meadow, non-grazed, HSG B
15.860	71	Meadow, non-grazed, HSG C
72.950	78	Meadow, non-grazed, HSG D
2.260	96	Gravel surface, HSG D
109.010	74	Weighted Average
109.010		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
57.4	2,502	0.0190	0.73		**Lag/CN Method,**

Summary for Subcatchment 4PS:

Runoff = 120.35 cfs @ 15.13 hrs, Volume= 53.889 af, Depth= 4.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
138.240	78	Meadow, non-grazed, HSG D
1.450	96	Gravel surface, HSG D
139.690	78	Weighted Average
139.690		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
231.2	2,625	0.0010	0.19		**Lag/CN Method,**

Summary for Subcatchment 5PS:

Runoff = 37.75 cfs @ 14.42 hrs, Volume= 14.477 af, Depth= 4.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
35.500	78	Meadow, non-grazed, HSG D
1.150	96	Gravel surface, HSG D
36.650	79	Weighted Average
36.650		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
188.1	2,106	0.0010	0.19		**Lag/CN Method,**

Summary for Subcatchment 6PS:

Runoff = 68.56 cfs @ 12.89 hrs, Volume= 13.174 af, Depth= 4.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
33.400	78	Meadow, non-grazed, HSG D
0.750	96	Gravel surface, HSG D
34.150	78	Weighted Average
34.150		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
69.1	1,380	0.0040	0.33		**Lag/CN Method,**

Summary for Subcatchment 7PS:

Runoff = 40.32 cfs @ 12.57 hrs, Volume= 6.010 af, Depth= 4.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
2.110	71	Meadow, non-grazed, HSG C
13.030	78	Meadow, non-grazed, HSG D
0.440	96	Gravel surface, HSG D
15.580	78	Weighted Average
15.580		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
45.0	675	0.0030	0.25		**Lag/CN Method,**

Summary for Subcatchment 8PS:

Runoff = 90.07 cfs @ 12.98 hrs, Volume= 17.867 af, Depth= 4.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
14.510	71	Meadow, non-grazed, HSG C
32.700	78	Meadow, non-grazed, HSG D
1.420	96	Gravel surface, HSG D
48.630	76	Weighted Average
48.630		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
73.5	1,783	0.0060	0.40		**Lag/CN Method,**

Summary for Subcatchment 9PS:

Runoff = 80.10 cfs @ 13.88 hrs, Volume= 25.627 af, Depth= 4.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
65.520	78	Meadow, non-grazed, HSG D
0.910	96	Gravel surface, HSG D
66.430	78	Weighted Average
66.430		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
145.6	2,271	0.0020	0.26		**Lag/CN Method,**

Summary for Subcatchment 10PS:

Runoff = 86.87 cfs @ 13.45 hrs, Volume= 22.380 af, Depth= 4.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
10.900	71	Meadow, non-grazed, HSG C
47.540	78	Meadow, non-grazed, HSG D
0.990	96	Gravel surface, HSG D
59.430	77	Weighted Average
59.430		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
109.2	1,968	0.0030	0.30		**Lag/CN Method,**

Summary for Subcatchment 11PS:

Runoff = 94.92 cfs @ 13.53 hrs, Volume= 25.743 af, Depth= 4.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
5.740	71	Meadow, non-grazed, HSG C
60.260	78	Meadow, non-grazed, HSG D
0.730	96	Gravel surface, HSG D
66.730	78	Weighted Average
66.730		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
116.6	1,720	0.0020	0.25		**Lag/CN Method,**

Summary for Subcatchment 12PS:

Runoff = 122.42 cfs @ 14.41 hrs, Volume= 46.922 af, Depth= 4.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
119.400	78	Meadow, non-grazed, HSG D
2.230	96	Gravel surface, HSG D
121.630	78	Weighted Average
121.630		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
188.0	3,125	0.0020	0.28		**Lag/CN Method,**

Summary for Subcatchment 13PS:

Runoff = 72.25 cfs @ 13.01 hrs, Volume= 14.943 af, Depth= 4.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
12.570	71	Meadow, non-grazed, HSG C
27.430	78	Meadow, non-grazed, HSG D
0.670	96	Gravel surface, HSG D
40.670	76	Weighted Average
40.670		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
78.4	1,500	0.0040	0.32		**Lag/CN Method,**

Summary for Subcatchment 14PS:

Runoff = 106.58 cfs @ 12.63 hrs, Volume= 16.618 af, Depth= 4.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
2.920	58	Meadow, non-grazed, HSG B
39.940	78	Meadow, non-grazed, HSG D
1.270	96	Gravel surface, HSG D
44.130	77	Weighted Average
44.130		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
48.4	852	0.0040	0.29		**Lag/CN Method,**

Summary for Subcatchment 15PS:

Runoff = 104.19 cfs @ 12.55 hrs, Volume= 15.046 af, Depth= 3.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
36.410	58	Meadow, non-grazed, HSG B
18.940	78	Meadow, non-grazed, HSG D
0.470	96	Gravel surface, HSG B
55.820	65	Weighted Average
55.820		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.8	1,535	0.0280	0.63		**Lag/CN Method,**

Summary for Subcatchment 16PS:

Runoff = 61.50 cfs @ 12.68 hrs, Volume= 9.902 af, Depth= 2.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
33.590	58	Meadow, non-grazed, HSG B
6.490	78	Meadow, non-grazed, HSG D
0.520	96	Gravel surface, HSG B
40.600	62	Weighted Average
40.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
49.2	1,600	0.0240	0.54		**Lag/CN Method,**

Summary for Subcatchment 17PS:

Runoff = 62.29 cfs @ 12.52 hrs, Volume= 8.733 af, Depth= 3.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
18.320	58	Meadow, non-grazed, HSG B
2.610	71	Meadow, non-grazed, HSG C
9.730	78	Meadow, non-grazed, HSG D
0.730	96	Gravel surface, HSG B
31.390	66	Weighted Average
31.390		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
38.8	1,390	0.0250	0.60		**Lag/CN Method,**

Summary for Subcatchment 18PS:

Runoff = 21.93 cfs @ 12.41 hrs, Volume= 2.812 af, Depth= 4.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
7.100	78	Meadow, non-grazed, HSG D
0.190	96	Gravel surface, HSG D
7.290	78	Weighted Average
7.290		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.2	850	0.0080	0.43		**Lag/CN Method,**

Summary for Subcatchment 19PS:

Runoff = 32.81 cfs @ 12.60 hrs, Volume= 5.000 af, Depth= 4.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
12.790	78	Meadow, non-grazed, HSG D
0.170	96	Gravel surface, HSG D
12.960	78	Weighted Average
12.960		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
46.3	1,185	0.0070	0.43		**Lag/CN Method,**

Summary for Subcatchment 20PS:

Runoff = 97.79 cfs @ 12.40 hrs, Volume= 12.404 af, Depth= 4.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
2.950	58	Meadow, non-grazed, HSG B
23.180	78	Meadow, non-grazed, HSG D
5.270	96	Gravel surface, HSG D
31.400	79	Weighted Average
31.400		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
32.4	789	0.0070	0.41		**Lag/CN Method,**

Summary for Subcatchment 21PS:

Runoff = 23.89 cfs @ 12.24 hrs, Volume= 2.432 af, Depth= 3.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
6.710	58	Meadow, non-grazed, HSG B
2.190	78	Meadow, non-grazed, HSG D
0.420	96	Gravel surface, HSG B
9.320	64	Weighted Average
9.320		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.5	690	0.0360	0.59		**Lag/CN Method,**

Summary for Subcatchment 22PS:

Runoff = 57.16 cfs @ 12.26 hrs, Volume= 6.030 af, Depth= 4.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
15.380	78	Meadow, non-grazed, HSG D
0.250	96	Gravel surface, HSG D
15.630	78	Weighted Average
15.630		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.1	790	0.0160	0.60		**Lag/CN Method,**

Summary for Subcatchment 23PS:

Runoff = 278.12 cfs @ 12.45 hrs, Volume= 36.761 af, Depth= 4.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
15.700	58	Meadow, non-grazed, HSG B
84.200	78	Meadow, non-grazed, HSG D
2.700	96	Gravel surface, HSG D
102.600	75	Weighted Average
102.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.4	615	0.0050	0.29		**Lag/CN Method,**

Summary for Subcatchment 24PS:

Runoff = 143.60 cfs @ 14.51 hrs, Volume= 55.311 af, Depth= 4.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
7.500	58	Meadow, non-grazed, HSG B
136.740	78	Meadow, non-grazed, HSG D
2.640	96	Gravel surface, HSG D
146.880	77	Weighted Average
146.880		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
189.5	3,042	0.0020	0.27		**Lag/CN Method,**

Summary for Subcatchment 25PS:

Runoff = 76.44 cfs @ 13.00 hrs, Volume= 15.442 af, Depth= 4.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
5.340	58	Meadow, non-grazed, HSG B
36.400	78	Meadow, non-grazed, HSG D
0.290	96	Gravel surface, HSG D
42.030	76	Weighted Average
42.030		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
75.6	930	0.0020	0.20		**Lag/CN Method,**

Summary for Subcatchment 26PS:

Runoff = 107.46 cfs @ 12.96 hrs, Volume= 21.422 af, Depth= 4.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
54.190	78	Meadow, non-grazed, HSG D
1.340	96	Gravel surface, HSG D
55.530	78	Weighted Average
55.530		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
74.2	1,260	0.0030	0.28		**Lag/CN Method,**

Summary for Subcatchment 27PS:

Runoff = 43.97 cfs @ 13.58 hrs, Volume= 12.022 af, Depth= 4.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
4.470	58	Meadow, non-grazed, HSG B
27.350	78	Meadow, non-grazed, HSG D
0.900	96	Gravel surface, HSG D
32.720	76	Weighted Average
32.720		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
118.8	1,635	0.0020	0.23		**Lag/CN Method,**

Summary for Subcatchment 28PS:

Runoff = 50.77 cfs @ 12.82 hrs, Volume= 9.076 af, Depth= 4.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
3.970	58	Meadow, non-grazed, HSG B
21.260	78	Meadow, non-grazed, HSG D
0.100	96	Gravel surface, HSG D
25.330	75	Weighted Average
25.330		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
61.8	1,075	0.0040	0.29		**Lag/CN Method,**

Summary for Reach 1PR:

Inflow Area = 176.340 ac, 0.00% Impervious, Inflow Depth = 4.65" for 100-yr event
Inflow = 154.90 cfs @ 14.88 hrs, Volume= 68.367 af
Outflow = 154.90 cfs @ 14.88 hrs, Volume= 68.367 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs

Summary for Reach 2PR:

Inflow Area = 151.950 ac, 0.00% Impervious, Inflow Depth = 4.31" for 100-yr event
Inflow = 303.52 cfs @ 12.80 hrs, Volume= 54.634 af
Outflow = 303.52 cfs @ 12.80 hrs, Volume= 54.634 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs

Summary for Reach 3PR:

Inflow Area = 412.580 ac, 0.00% Impervious, Inflow Depth = 4.59" for 100-yr event
Inflow = 457.80 cfs @ 13.36 hrs, Volume= 157.724 af
Outflow = 457.80 cfs @ 13.36 hrs, Volume= 157.724 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs

Summary for Reach 4PR:

Inflow Area = 538.690 ac, 0.00% Impervious, Inflow Depth = 4.14" for 100-yr event
Inflow = 860.01 cfs @ 12.51 hrs, Volume= 185.992 af
Outflow = 860.01 cfs @ 12.51 hrs, Volume= 185.992 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs

Summary for Reach 5PR:

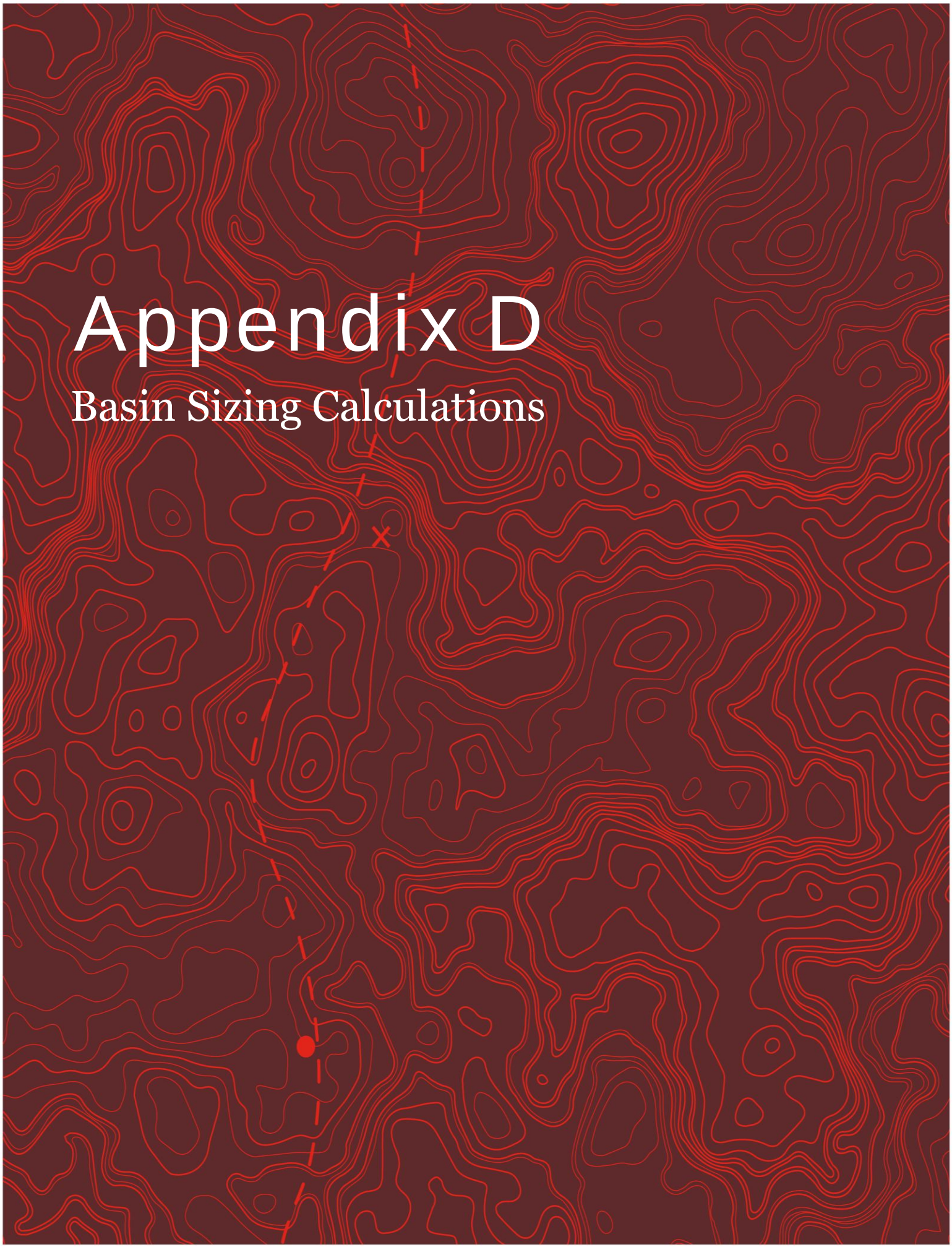
Inflow Area = 113.580 ac, 0.00% Impervious, Inflow Depth = 4.49" for 100-yr event
Inflow = 187.26 cfs @ 12.97 hrs, Volume= 42.520 af
Outflow = 187.26 cfs @ 12.97 hrs, Volume= 42.520 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs

Summary for Reach 6PR:

Inflow Area = 42.030 ac, 0.00% Impervious, Inflow Depth = 4.41" for 100-yr event
Inflow = 76.44 cfs @ 13.00 hrs, Volume= 15.442 af
Outflow = 76.44 cfs @ 13.00 hrs, Volume= 15.442 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs



Appendix D

Basin Sizing Calculations

Substation Basin

Existing Runoff

Substation Basin

Subcat Reach Pond Link

Routing Diagram for 2022-02-21 Basin Sizing
Prepared by Westwood Professional Services, Printed 2/21/2022

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
7.200	96	Gravel surface, HSG D (2PS)
4.600	78	Meadow, non-grazed, HSG D (2PS)
11.800	89	Row crops, straight row, Good, HSG D (2ES)

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
23.600	HSG D	2ES, 2PS
0.000	Other	

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	7.200	0.000	7.200	Gravel surface	2PS
0.000	0.000	0.000	4.600	0.000	4.600	Meadow, non-grazed	2PS
0.000	0.000	0.000	11.800	0.000	11.800	Row crops, straight row, Good	2ES

Summary for Subcatchment 2ES:

Runoff = 50.17 cfs @ 12.29 hrs, Volume= 5.776 af, Depth= 5.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
11.800	89	Row crops, straight row, Good, HSG D
11.800		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.7	550	0.0034	0.37		**Lag/CN Method,**

Summary for Subcatchment 2PS:

Runoff = 50.17 cfs @ 12.29 hrs, Volume= 5.776 af, Depth= 5.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 100-yr Rainfall=7.17"

Area (ac)	CN	Description
4.600	78	Meadow, non-grazed, HSG D
7.200	96	Gravel surface, HSG D
11.800	89	Weighted Average
11.800		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.7	550	0.0034	0.37		**Lag/CN Method,**

Summary for Reach 2R: Existing Runoff

Inflow Area = 11.800 ac, 0.00% Impervious, Inflow Depth = 5.87" for 100-yr event
Inflow = 50.17 cfs @ 12.29 hrs, Volume= 5.776 af
Outflow = 50.17 cfs @ 12.29 hrs, Volume= 5.776 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs

Summary for Pond 2P: Substation Basin

Inflow Area = 11.800 ac, 0.00% Impervious, Inflow Depth = 5.87" for 100-yr event
Inflow = 50.17 cfs @ 12.29 hrs, Volume= 5.776 af
Outflow = 46.52 cfs @ 12.38 hrs, Volume= 5.755 af, Atten= 7%, Lag= 5.4 min
Primary = 13.45 cfs @ 12.38 hrs, Volume= 4.235 af
Secondary = 33.07 cfs @ 12.38 hrs, Volume= 1.520 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 389.43' @ 12.38 hrs Surf.Area= 0.834 ac Storage= 1.115 af

Plug-Flow detention time= 84.7 min calculated for 5.755 af (100% of inflow)
Center-of-Mass det. time= 82.3 min (884.7 - 802.4)

Volume	Invert	Avail.Storage	Storage Description
#1	388.00'	1.605 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
388.00	0.730	0.000	0.000
389.00	0.800	0.765	0.765
390.00	0.880	0.840	1.605

Device	Routing	Invert	Outlet Devices
#1	Secondary	389.00'	**40.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#2	Primary	388.00'	**18.0" Round Culvert X 2.00** L= 50.0' Ke= 0.500 Inlet / Outlet Invert= 388.00' / 386.75' S= 0.0250 '/' Cc= 0.900 n= 0.025, Flow Area= 1.77 sf

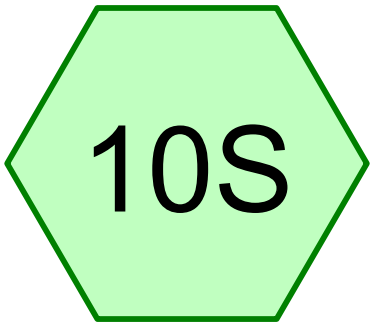
Primary OutFlow Max=13.43 cfs @ 12.38 hrs HW=389.43' (Free Discharge)
↑—**2=Culvert** (Barrel Controls 13.43 cfs @ 4.98 fps)

Secondary OutFlow Max=32.83 cfs @ 12.38 hrs HW=389.43' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 32.83 cfs @ 1.92 fps)

Stage-Area-Storage for Pond 2P: Substation Basin

Elevation (feet)	Surface (acres)	Storage (acre-feet)
388.00	0.730	0.000
388.02	0.731	0.015
388.04	0.733	0.029
388.06	0.734	0.044
388.08	0.736	0.059
388.10	0.737	0.073
388.12	0.738	0.088
388.14	0.740	0.103
388.16	0.741	0.118
388.18	0.743	0.133
388.20	0.744	0.147
388.22	0.745	0.162
388.24	0.747	0.177
388.26	0.748	0.192
388.28	0.750	0.207
388.30	0.751	0.222
388.32	0.752	0.237
388.34	0.754	0.252
388.36	0.755	0.267
388.38	0.757	0.282
388.40	0.758	0.298
388.42	0.759	0.313
388.44	0.761	0.328
388.46	0.762	0.343
388.48	0.764	0.358
388.50	0.765	0.374
388.52	0.766	0.389
388.54	0.768	0.404
388.56	0.769	0.420
388.58	0.771	0.435
388.60	0.772	0.451
388.62	0.773	0.466
388.64	0.775	0.482
388.66	0.776	0.497
388.68	0.778	0.513
388.70	0.779	0.528
388.72	0.780	0.544
388.74	0.782	0.559
388.76	0.783	0.575
388.78	0.785	0.591
388.80	0.786	0.606
388.82	0.787	0.622
388.84	0.789	0.638
388.86	0.790	0.654
388.88	0.792	0.670
388.90	0.793	0.685
388.92	0.794	0.701
388.94	0.796	0.717
388.96	0.797	0.733
388.98	0.799	0.749
389.00	0.800	0.765
389.02	0.802	0.781
389.04	0.803	0.797
389.06	0.805	0.813
389.08	0.806	0.829
389.10	0.808	0.845
389.12	0.810	0.862
389.14	0.811	0.878
389.16	0.813	0.894
389.18	0.814	0.910
389.20	0.816	0.927
389.22	0.818	0.943
389.24	0.819	0.959
389.26	0.821	0.976
389.28	0.822	0.992
389.30	0.824	1.009
389.32	0.826	1.025
389.34	0.827	1.042
389.36	0.829	1.058
389.38	0.830	1.075
389.40	0.832	1.091
389.42	0.834	1.108
389.44	0.835	1.125
389.46	0.837	1.141
389.48	0.838	1.158
389.50	0.840	1.175
389.52	0.842	1.192
389.54	0.843	1.209
389.56	0.845	1.226
389.58	0.846	1.242
389.60	0.848	1.259
389.62	0.850	1.276
389.64	0.851	1.293
389.66	0.853	1.310
389.68	0.854	1.327
389.70	0.856	1.345
389.72	0.858	1.362
389.74	0.859	1.379
389.76	0.861	1.396
389.78	0.862	1.413
389.80	0.864	1.431
389.82	0.866	1.448
389.84	0.867	1.465
389.86	0.869	1.483
389.88	0.870	1.500
389.90	0.872	1.517
389.92	0.874	1.535
389.94	0.875	1.552
389.96	0.877	1.570
389.98	0.878	1.587
390.00	**0.880**	**1.605**

Temporary Basins



Subcat Reach Pond Link

Routing Diagram for 2022-02-18 Temp Basins
Prepared by Westwood Professional Services, Printed 2/18/2022

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
28.870	86	Fallow, bare soil, HSG B (10S)
12.230	94	Fallow, bare soil, HSG D (10S)

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
28.870	HSG B	10S
0.000	HSG C	
12.230	HSG D	10S
0.000	Other	

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	28.870	0.000	12.230	0.000	41.100	Fallow, bare soil	10S

Summary for Subcatchment 10S:

Runoff = 89.41 cfs @ 12.47 hrs, Volume= 11.754 af, Depth> 3.43"

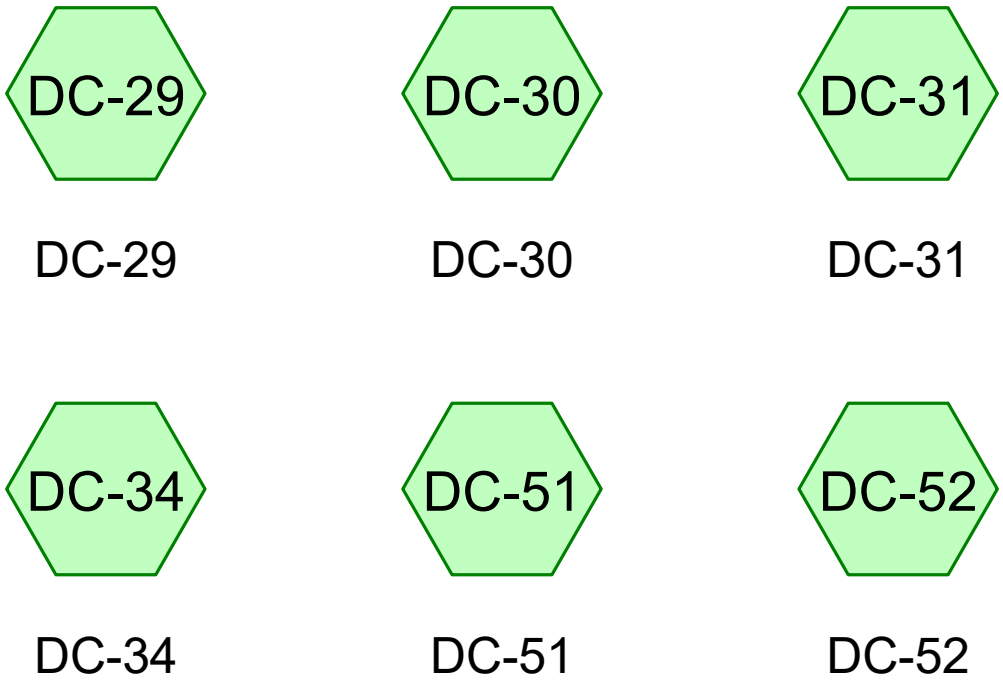
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-40.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

Area (ac)	CN	Description
12.230	94	Fallow, bare soil, HSG D
28.870	86	Fallow, bare soil, HSG B
41.100	88	Weighted Average
41.100		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.7	2,846	0.0218	1.26		**Lag/CN Method,**

Appendix E

Culvert Sizing Calculations



Subcat Reach Pond Link

Routing Diagram for 2022-02-17 Posey Culverts
Prepared by Westwood Professional Services, Printed 2/17/2022

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
10.870	58	Meadow, HSG B (DC-29, DC-30, DC-31, DC-51, DC-52)
156.520	78	Meadow, HSG D (DC-29, DC-30, DC-31, DC-34, DC-52)
11.350	78	Row Crop, HSG B (DC-29, DC-30, DC-51, DC-52)
37.920	89	Row Crop, HSG D (DC-29, DC-30, DC-31, DC-34, DC-52)

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
22.220	HSG B	DC-29, DC-30, DC-31, DC-51, DC-52
0.000	HSG C	
194.440	HSG D	DC-29, DC-30, DC-31, DC-34, DC-52
0.000	Other	

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	10.870	0.000	156.520	0.000	167.390	Meadow	DC-29, DC-30, DC-31, DC-34, DC-51, DC-52
0.000	11.350	0.000	37.920	0.000	49.270	Row Crop	DC-29, DC-30, DC-31, DC-34, DC-51, DC-52

Summary for Subcatchment DC-29: DC-29

Runoff = 16.07 cfs @ 14.69 hrs, Volume= 6.320 af, Depth= 2.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-50.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

	Area (ac)	CN	Description
*	2.860	58	Meadow, HSG B
*	23.390	78	Meadow, HSG D
*	1.480	78	Row Crop, HSG B
*	3.670	89	Row Crop, HSG D
	31.400	77	Weighted Average
	31.400		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
197.4	1,508	0.0006	0.13		**Lag/CN Method,**

Summary for Subcatchment DC-30: DC-30

Runoff = 22.22 cfs @ 13.11 hrs, Volume= 4.690 af, Depth= 2.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-50.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

	Area (ac)	CN	Description
*	3.100	58	Meadow, HSG B
*	9.540	78	Meadow, HSG D
*	0.930	78	Row Crop, HSG B
*	8.180	89	Row Crop, HSG D
	21.750	79	Weighted Average
	21.750		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
84.8	1,640	0.0033	0.32		**Lag/CN Method,**

Summary for Subcatchment DC-31: DC-31

Runoff = 40.63 cfs @ 16.09 hrs, Volume= 22.543 af, Depth= 2.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-50.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

	Area (ac)	CN	Description
*	0.660	58	Meadow, HSG B
*	101.670	78	Meadow, HSG D
*	5.840	89	Row Crop, HSG D
	108.170	78	Weighted Average
	108.170		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
307.9	3,515	0.0009	0.19		**Lag/CN Method,**

Summary for Subcatchment DC-34: DC-34

Runoff = 6.22 cfs @ 12.83 hrs, Volume= 1.103 af, Depth= 2.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-50.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

	Area (ac)	CN	Description
*	2.320	78	Meadow, HSG D
*	2.170	89	Row Crop, HSG D
	4.490	83	Weighted Average
	4.490		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
64.2	1,114	0.0024	0.29		**Lag/CN Method,**

Summary for Subcatchment DC-51: DC-51

Runoff = 14.40 cfs @ 12.20 hrs, Volume= 1.299 af, Depth= 2.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-50.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

	Area (ac)	CN	Description
*	1.770	58	Meadow, HSG B
*	5.700	78	Row Crop, HSG B
	7.470	73	Weighted Average
	7.470		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.3	989	0.0501	0.95		**Lag/CN Method,**

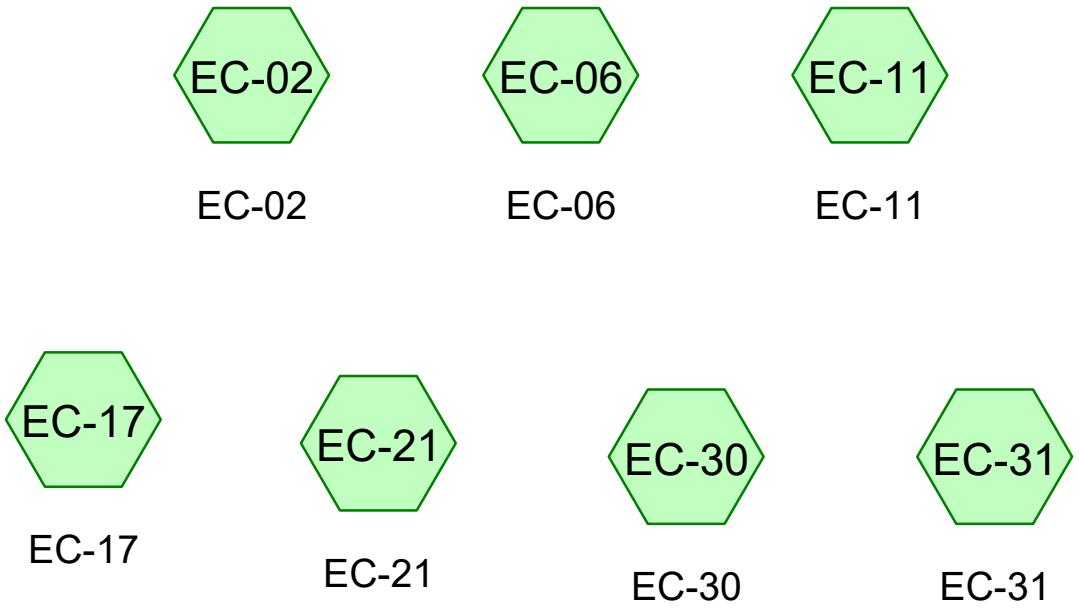
Summary for Subcatchment DC-52: DC-52

Runoff = 29.85 cfs @ 14.00 hrs, Volume= 9.997 af, Depth= 2.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-50.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

	Area (ac)	CN	Description
*	2.480	58	Meadow, HSG B
*	19.600	78	Meadow, HSG D
*	3.240	78	Row Crop, HSG B
*	18.060	89	Row Crop, HSG D
	43.380	81	Weighted Average
	43.380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
159.0	2,279	0.0014	0.24		**Lag/CN Method,**



Subcat Reach Pond Link

Routing Diagram for 2022-02-17 Posey Entrance Culverts
Prepared by Westwood Professional Services, Printed 2/17/2022

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
9.301	98	Impervious (EC-02, EC-06, EC-11, EC-17, EC-21, EC-30, EC-31)
11.250	58	Meadow, HSG B (EC-02, EC-21)
16.590	78	Meadow, HSG D (EC-02, EC-11, EC-21, EC-30, EC-31)
101.850	78	Row Crop, HSG B (EC-02, EC-17, EC-21)
0.850	85	Row Crop, HSG C (EC-17, EC-31)
38.970	89	Row Crop, HSG D (EC-02, EC-06, EC-11, EC-17, EC-21, EC-30)

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
113.100	HSG B	EC-02, EC-17, EC-21
0.850	HSG C	EC-17, EC-31
55.560	HSG D	EC-02, EC-06, EC-11, EC-17, EC-21, EC-30, EC-31
9.301	Other	EC-02, EC-06, EC-11, EC-17, EC-21, EC-30, EC-31

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.000	9.301	9.301	Impervious	EC-02, EC-06, EC-11, EC-17, EC-21, EC-30, EC-31
0.000	11.250	0.000	16.590	0.000	27.840	Meadow	EC-02, EC-11, EC-21, EC-30, EC-31
0.000	101.850	0.850	38.970	0.000	141.670	Row Crop	EC-02, EC-06, EC-11, EC-17, EC-21, EC-30, EC-31

Summary for Subcatchment EC-02: EC-02

Runoff = 13.47 cfs @ 12.41 hrs, Volume= 1.632 af, Depth= 2.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-50.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

	Area (ac)	CN	Description
*	0.283	98	Impervious
*	2.040	58	Meadow, HSG B
*	0.100	78	Meadow, HSG D
*	5.740	78	Row Crop, HSG B
*	0.550	89	Row Crop, HSG D
	8.713	75	Weighted Average
	8.430		96.75% Pervious Area
	0.283		3.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
32.1	1,431	0.0235	0.74		**Lag/CN Method,**

Summary for Subcatchment EC-06: EC-06

Runoff = 69.14 cfs @ 12.68 hrs, Volume= 11.129 af, Depth> 3.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-50.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

	Area (ac)	CN	Description
*	5.154	98	Impervious
*	31.590	89	Row Crop, HSG D
	36.744	90	Weighted Average
	31.590		85.97% Pervious Area
	5.154		14.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
53.2	2,777	0.0090	0.87		**Lag/CN Method,**

Summary for Subcatchment EC-11: EC-11

Runoff = 9.96 cfs @ 12.32 hrs, Volume= 1.075 af, Depth= 2.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-50.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

	Area (ac)	CN	Description
*	0.136	98	Impervious
*	3.110	78	Meadow, HSG D
*	1.270	89	Row Crop, HSG D
	4.516	82	Weighted Average
	4.380		96.99% Pervious Area
	0.136		3.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.2	686	0.0071	0.44		**Lag/CN Method,**

Summary for Subcatchment EC-17: EC-17

Runoff = 30.99 cfs @ 12.55 hrs, Volume= 4.304 af, Depth= 2.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-50.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

	Area (ac)	CN	Description
*	0.510	98	Impervious
*	17.810	78	Row Crop, HSG B
*	0.710	85	Row Crop, HSG C
*	0.930	89	Row Crop, HSG D
	19.960	79	Weighted Average
	19.450		97.44% Pervious Area
	0.510		2.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
42.1	2,849	0.0324	1.13		**Lag/CN Method,**

Summary for Subcatchment EC-21: EC-21

Runoff = 86.39 cfs @ 13.29 hrs, Volume= 20.366 af, Depth= 2.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-50.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

	Area (ac)	CN	Description
*	2.798	98	Impervious
*	9.210	58	Meadow, HSG B
*	8.730	78	Meadow, HSG D
*	78.300	78	Row Crop, HSG B
*	2.150	89	Row Crop, HSG D
	101.188	77	Weighted Average
	98.390		97.23% Pervious Area
	2.798		2.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
98.7	3,903	0.0110	0.66		**Lag/CN Method,**

Summary for Subcatchment EC-30: EC-30

Runoff = 11.24 cfs @ 12.50 hrs, Volume= 1.497 af, Depth= 2.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-50.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

	Area (ac)	CN	Description
*	0.090	98	Impervious
*	3.520	78	Meadow, HSG D
*	2.480	89	Row Crop, HSG D
	6.090	83	Weighted Average
	6.000		98.52% Pervious Area
	0.090		1.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
39.2	1,031	0.0057	0.44		**Lag/CN Method,**

Summary for Subcatchment EC-31: EC-31

Runoff = 4.20 cfs @ 12.22 hrs, Volume= 0.393 af, Depth= 2.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-50.00 hrs, dt= 0.05 hrs
IN-Posey 24-hr S1 10-yr Rainfall=4.75"

	Area (ac)	CN	Description
*	0.330	98	Impervious
*	1.130	78	Meadow, HSG D
*	0.140	85	Row Crop, HSG C
	1.600	83	Weighted Average
	1.270		79.38% Pervious Area
	0.330		20.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.7	655	0.0109	0.55		**Lag/CN Method,**

Culvert Design Report
DC-29

Peak Discharge Method: User-Specified			
Design Discharge	16.07 cfs	Check Discharge	0.00 cfs

Grades Model: Inverts			
Invert Upstream	371.70 ft	Invert Downstream	371.50 ft
Length	44.00 ft	Slope	0.004545 ft/ft
Drop	0.20 ft		

Headwater Model: Unspecified

Tailwater Conditions: Constant Tailwater	
Tailwater Elevation	N/A ft

	Name	Description	Discharge	HW Elev.	Velocity
x	Trial-1	2-24 inch Circular	16.07 cfs	373.44 ft	5.06 ft/s

Culvert Design Report
DC-29

Design:Trial-1

Solve For: Headwater Elevation

Culvert Summary			
Allowable HW Elevation	N/A ft	Storm Event	Design
Computed Headwater Elevation	373.44 ft	Discharge	16.07 cfs
Headwater Depth/Height	0.87	Tailwater Elevation	N/A ft
Inlet Control HW Elev.	373.27 ft	Control Type	Outlet Control
Outlet Control HW Elev.	373.44 ft		

Grades			
Upstream Invert	371.70 ft	Downstream Invert	371.50 ft
Length	44.00 ft	Constructed Slope	0.004545 ft/ft

Hydraulic Profile			
Profile	M2	Depth, Downstream	1.01 ft
Slope Type	Mild	Normal Depth	1.59 ft
Flow Regime	Subcritical	Critical Depth	1.01 ft
Velocity Downstream	5.06 ft/s	Critical Slope	0.016677 ft/ft

Section			
Section Shape	Circular	Mannings Coefficient	0.024
Section Material	CMP	Span	2.00 ft
Section Size	24 inch	Rise	2.00 ft
Number Sections	2		

Outlet Control Properties			
Outlet Control HW Elev.	373.44 ft	Upstream Velocity Head	0.19 ft
Ke	0.90	Entrance Loss	0.17 ft

Inlet Control Properties			
Inlet Control HW Elev.	373.27 ft	Flow Control	N/A
Inlet Type	Projecting	Area Full	6.3 ft²
K	0.03400	HDS 5 Chart	2
M	1.50000	HDS 5 Scale	3
C	0.05530	Equation Form	1
Y	0.54000		

Culvert Design Report
DC-30

Peak Discharge Method: User-Specified			
Design Discharge	22.22 cfs	Check Discharge	0.00 cfs

Grades Model: Inverts			
Invert Upstream	370.40 ft	Invert Downstream	370.30 ft
Length	44.00 ft	Slope	0.002273 ft/ft
Drop	0.10 ft		

Headwater Model: Unspecified

Tailwater Conditions: Constant Tailwater	
Tailwater Elevation	N/A ft

	Name	Description	Discharge	HW Elev.	Velocity
x	Trial-2	1-30 inch Circular	22.22 cfs	373.36 ft	6.68 ft/s

Culvert Design Report
DC-30

Design:Trial-2

Solve For: Headwater Elevation

Culvert Summary			
Allowable HW Elevation	N/A ft	Storm Event	Design
Computed Headwater Elevation	373.36 ft	Discharge	22.22 cfs
Headwater Depth/Height	1.18	Tailwater Elevation	N/A ft
Inlet Control HW Elev.	373.11 ft	Control Type	Outlet Control
Outlet Control HW Elev.	373.36 ft		

Grades			
Upstream Invert	370.40 ft	Downstream Invert	370.30 ft
Length	44.00 ft	Constructed Slope	0.002273 ft/ft

Hydraulic Profile			
Profile	M2	Depth, Downstream	1.60 ft
Slope Type	Mild	Normal Depth	N/A ft
Flow Regime	Subcritical	Critical Depth	1.60 ft
Velocity Downstream	6.68 ft/s	Critical Slope	0.018161 ft/ft

Section			
Section Shape	Circular	Mannings Coefficient	0.024
Section Material	CMP	Span	2.50 ft
Section Size	30 inch	Rise	2.50 ft
Number Sections	1		

Outlet Control Properties			
Outlet Control HW Elev.	373.36 ft	Upstream Velocity Head	0.34 ft
Ke	0.90	Entrance Loss	0.31 ft

Inlet Control Properties			
Inlet Control HW Elev.	373.11 ft	Flow Control	N/A
Inlet Type	Projecting	Area Full	4.9 ft²
K	0.03400	HDS 5 Chart	2
M	1.50000	HDS 5 Scale	3
C	0.05530	Equation Form	1
Y	0.54000		

Culvert Design Report
DC-31

Peak Discharge Method: User-Specified			
Design Discharge	40.63 cfs	Check Discharge	0.00 cfs

Grades Model: Inverts			
Invert Upstream	372.10 ft	Invert Downstream	372.00 ft
Length	48.00 ft	Slope	0.002083 ft/ft
Drop	0.10 ft		

Headwater Model: Unspecified

Tailwater Conditions: Constant Tailwater

Tailwater Elevation	N/A ft

Name	Description	Discharge	HW Elev.	Velocity
x Trial-1	3-24 inch Circular	40.63 cfs	374.75 ft	6.13 ft/s

Culvert Design Report
DC-31

Design:Trial-1

Solve For: Headwater Elevation

Culvert Summary					
Allowable HW Elevation	N/A	ft	Storm Event	Design	
Computed Headwater Elevation	374.75	ft	Discharge	40.63	cfs
Headwater Depth/Height	1.32		Tailwater Elevation	N/A	ft
Inlet Control HW Elev.	374.37	ft	Control Type	Outlet Control	
Outlet Control HW Elev.	374.75	ft			

Grades					
Upstream Invert	372.10	ft	Downstream Invert	372.00	ft
Length	48.00	ft	Constructed Slope	0.002083	ft/ft

Hydraulic Profile					
Profile	CompositeM2PressureProfile		Depth, Downstream	1.33	ft
Slope Type	Mild		Normal Depth	N/A	ft
Flow Regime	Subcritical		Critical Depth	1.33	ft
Velocity Downstream	6.13	ft/s	Critical Slope	0.020231	ft/ft

Section					
Section Shape	Circular		Mannings Coefficient	0.024	
Section Material	CMP		Span	2.00	ft
Section Size	24 inch		Rise	2.00	ft
Number Sections	3				

Outlet Control Properties					
Outlet Control HW Elev.	374.75	ft	Upstream Velocity Head	0.29	ft
Ke	0.90		Entrance Loss	0.26	ft

Inlet Control Properties					
Inlet Control HW Elev.	374.37	ft	Flow Control	N/A	
Inlet Type	Projecting		Area Full	9.4	ft²
K	0.03400		HDS 5 Chart	2	
M	1.50000		HDS 5 Scale	3	
C	0.05530		Equation Form	1	
Y	0.54000				

Culvert Design Report
DC-34

Peak Discharge Method: User-Specified			
Design Discharge	6.22 cfs	Check Discharge	0.00 cfs

Grades Model: Inverts			
Invert Upstream	381.40 ft	Invert Downstream	381.30 ft
Length	36.00 ft	Slope	0.002778 ft/ft
Drop	0.10 ft		

Headwater Model: Unspecified

Tailwater Conditions: Constant Tailwater	
Tailwater Elevation	N/A ft

	Name	Description	Discharge	HW Elev.	Velocity
x	Trial-1	1-18 inch Circular	6.22 cfs	383.28 ft	5.18 ft/s

Culvert Design Report
DC-34

Design:Trial-1

Solve For: Headwater Elevation

Culvert Summary					
Allowable HW Elevation	N/A	ft	Storm Event	Design	
Computed Headwater Elevation	383.28	ft	Discharge	6.22	cfs
Headwater Depth/Height	1.26		Tailwater Elevation	N/A	ft
Inlet Control HW Elev.	383.03	ft	Control Type	Outlet Control	
Outlet Control HW Elev.	383.28	ft			

Grades					
Upstream Invert	381.40	ft	Downstream Invert	381.30	ft
Length	36.00	ft	Constructed Slope	0.002778	ft/ft

Hydraulic Profile					
Profile	CompositeM2PressureProfile		Depth, Downstream	0.96	ft
Slope Type	Mild		Normal Depth	N/A	ft
Flow Regime	Subcritical		Critical Depth	0.96	ft
Velocity Downstream	5.18	ft/s	Critical Slope	0.021593	ft/ft

Section					
Section Shape	Circular		Mannings Coefficient	0.024	
Section Material	CMP		Span	1.50	ft
Section Size	18 inch		Rise	1.50	ft
Number Sections	1				

Outlet Control Properties					
Outlet Control HW Elev.	383.28	ft	Upstream Velocity Head	0.19	ft
Ke	0.90		Entrance Loss	0.17	ft

Inlet Control Properties					
Inlet Control HW Elev.	383.03	ft	Flow Control	N/A	
Inlet Type	Projecting		Area Full	1.8	ft²
K	0.03400		HDS 5 Chart	2	
M	1.50000		HDS 5 Scale	3	
C	0.05530		Equation Form	1	
Y	0.54000				

Culvert Design Report
DC-51

Peak Discharge Method: User-Specified			
Design Discharge	14.40 cfs	Check Discharge	0.00 cfs

Grades Model: Inverts			
Invert Upstream	395.90 ft	Invert Downstream	394.80 ft
Length	48.00 ft	Slope	0.022917 ft/ft
Drop	1.10 ft		

Headwater Model: Unspecified

Tailwater Conditions: Constant Tailwater	
Tailwater Elevation	N/A ft

Name	Description	Discharge	HW Elev.	Velocity
x Trial-1	1-24 inch Circular	14.40 cfs	398.44 ft	6.52 ft/s

Culvert Design Report
DC-51

Design:Trial-1

Solve For: Headwater Elevation

Culvert Summary			
Allowable HW Elevation	N/A ft	Storm Event	Design
Computed Headwater Elevation	398.44 ft	Discharge	14.40 cfs
Headwater Depth/Height	1.27	Tailwater Elevation	N/A ft
Inlet Control HW Elev.	398.26 ft	Control Type	Entrance Control
Outlet Control HW Elev.	398.44 ft		

Grades			
Upstream Invert	395.90 ft	Downstream Invert	394.80 ft
Length	48.00 ft	Constructed Slope	0.022917 ft/ft

Hydraulic Profile			
Profile	S2	Depth, Downstream	1.32 ft
Slope Type	Steep	Normal Depth	1.32 ft
Flow Regime	Supercritical	Critical Depth	1.37 ft
Velocity Downstream	6.52 ft/s	Critical Slope	0.020985 ft/ft

Section			
Section Shape	Circular	Mannings Coefficient	0.024
Section Material	CMP	Span	2.00 ft
Section Size	24 inch	Rise	2.00 ft
Number Sections	1		

Outlet Control Properties			
Outlet Control HW Elev.	398.44 ft	Upstream Velocity Head	0.62 ft
Ke	0.90	Entrance Loss	0.55 ft

Inlet Control Properties			
Inlet Control HW Elev.	398.26 ft	Flow Control	N/A
Inlet Type	Projecting	Area Full	3.1 ft²
K	0.03400	HDS 5 Chart	2
M	1.50000	HDS 5 Scale	3
C	0.05530	Equation Form	1
Y	0.54000		

Culvert Design Report
DC-52

Peak Discharge Method: User-Specified			
Design Discharge	29.85 cfs	Check Discharge	0.00 cfs

Grades Model: Inverts			
Invert Upstream	370.40 ft	Invert Downstream	369.50 ft
Length	50.00 ft	Slope	0.018000 ft/ft
Drop	0.90 ft		

Headwater Model: Unspecified

Tailwater Conditions: Constant Tailwater	
Tailwater Elevation	N/A ft

Name	Description	Discharge	HW Elev.	Velocity
x Trial-1	1-30 inch Circular	29.85 cfs	373.87 ft	7.61 ft/s

Culvert Design Report
DC-52

Design:Trial-1

Solve For: Headwater Elevation

Culvert Summary			
Allowable HW Elevation	N/A ft	Storm Event	Design
Computed Headwater Elevation	373.87 ft	Discharge	29.85 cfs
Headwater Depth/Height	1.39	Tailwater Elevation	N/A ft
Inlet Control HW Elev.	373.81 ft	Control Type	Outlet Control
Outlet Control HW Elev.	373.87 ft		

Grades			
Upstream Invert	370.40 ft	Downstream Invert	369.50 ft
Length	50.00 ft	Constructed Slope	0.018000 ft/ft

Hydraulic Profile			
Profile	M2	Depth, Downstream	1.86 ft
Slope Type	Mild	Normal Depth	2.05 ft
Flow Regime	Subcritical	Critical Depth	1.86 ft
Velocity Downstream	7.61 ft/s	Critical Slope	0.022054 ft/ft

Section			
Section Shape	Circular	Mannings Coefficient	0.024
Section Material	CMP	Span	2.50 ft
Section Size	30 inch	Rise	2.50 ft
Number Sections	1		

Outlet Control Properties			
Outlet Control HW Elev.	373.87 ft	Upstream Velocity Head	0.75 ft
Ke	0.90	Entrance Loss	0.67 ft

Inlet Control Properties			
Inlet Control HW Elev.	373.81 ft	Flow Control	N/A
Inlet Type	Projecting	Area Full	4.9 ft²
K	0.03400	HDS 5 Chart	2
M	1.50000	HDS 5 Scale	3
C	0.05530	Equation Form	1
Y	0.54000		

Culvert Design Report
EC-02

Peak Discharge Method: User-Specified			
Design Discharge	13.47 cfs	Check Discharge	0.00 cfs

Grades Model: Inverts			
Invert Upstream	389.50 ft	Invert Downstream	389.00 ft
Length	94.00 ft	Slope	0.005319 ft/ft
Drop	0.50 ft		

Headwater Model: Unspecified

Tailwater Conditions: Constant Tailwater	
Tailwater Elevation	N/A ft

Name	Description	Discharge	HW Elev.	Velocity
x Trial-1	1-24 inch Circular	13.47 cfs	392.28 ft	6.12 ft/s

Culvert Design Report
EC-02

Design:Trial-1

Solve For: Headwater Elevation

Culvert Summary					
Allowable HW Elevation	N/A	ft	Storm Event	Design	
Computed Headwater Elevation	392.28	ft	Discharge	13.47	cfs
Headwater Depth/Height	1.39		Tailwater Elevation	N/A	ft
Inlet Control HW Elev.	391.76	ft	Control Type	Outlet Control	
Outlet Control HW Elev.	392.28	ft			

Grades					
Upstream Invert	389.50	ft	Downstream Invert	389.00	ft
Length	94.00	ft	Constructed Slope	0.005319	ft/ft

Hydraulic Profile					
Profile	CompositeM2PressureProfile		Depth, Downstream	1.32	ft
Slope Type	Mild		Normal Depth	N/A	ft
Flow Regime	Subcritical		Critical Depth	1.32	ft
Velocity Downstream	6.12	ft/s	Critical Slope	0.020159	ft/ft

Section					
Section Shape	Circular		Mannings Coefficient	0.024	
Section Material	CMP		Span	2.00	ft
Section Size	24 inch		Rise	2.00	ft
Number Sections	1				

Outlet Control Properties					
Outlet Control HW Elev.	392.28	ft	Upstream Velocity Head	0.29	ft
Ke	0.90		Entrance Loss	0.26	ft

Inlet Control Properties					
Inlet Control HW Elev.	391.76	ft	Flow Control	N/A	
Inlet Type	Projecting		Area Full	3.1	ft²
K	0.03400		HDS 5 Chart	2	
M	1.50000		HDS 5 Scale	3	
C	0.05530		Equation Form	1	
Y	0.54000				

Culvert Design Report
EC-06

Peak Discharge Method: User-Specified			
Design Discharge	69.14 cfs	Check Discharge	0.00 cfs

Grades Model: Inverts			
Invert Upstream	386.00 ft	Invert Downstream	385.60 ft
Length	92.00 ft	Slope	0.004348 ft/ft
Drop	0.40 ft		

Headwater Model: Unspecified

Tailwater Conditions: Constant Tailwater	
Tailwater Elevation	N/A ft

	Name	Description	Discharge	HW Elev.	Velocity
x	Trial-1	1-48 inch Circular	69.14 cfs	390.51 ft	8.32 ft/s

Culvert Design Report
EC-06

Design:Trial-1

Solve For: Headwater Elevation

Culvert Summary					
Allowable HW Elevation	N/A	ft	Storm Event	Design	
Computed Headwater Elevation	390.51	ft	Discharge	69.14	cfs
Headwater Depth/Height	1.13		Tailwater Elevation	N/A	ft
Inlet Control HW Elev.	390.20	ft	Control Type	Outlet Control	
Outlet Control HW Elev.	390.51	ft			

Grades					
Upstream Invert	386.00	ft	Downstream Invert	385.60	ft
Length	92.00	ft	Constructed Slope	0.004348	ft/ft

Hydraulic Profile					
Profile	M2		Depth, Downstream	2.51	ft
Slope Type	Mild		Normal Depth	N/A	ft
Flow Regime	Subcritical		Critical Depth	2.51	ft
Velocity Downstream	8.32	ft/s	Critical Slope	0.015235	ft/ft

Section					
Section Shape	Circular		Mannings Coefficient	0.024	
Section Material	CMP		Span	4.00	ft
Section Size	48 inch		Rise	4.00	ft
Number Sections	1				

Outlet Control Properties					
Outlet Control HW Elev.	390.51	ft	Upstream Velocity Head	0.56	ft
Ke	0.90		Entrance Loss	0.50	ft

Inlet Control Properties					
Inlet Control HW Elev.	390.20	ft	Flow Control	N/A	
Inlet Type	Projecting		Area Full	12.6	ft²
K	0.03400		HDS 5 Chart	2	
M	1.50000		HDS 5 Scale	3	
C	0.05530		Equation Form	1	
Y	0.54000				

Culvert Design Report
EC-11

Peak Discharge Method: User-Specified			
Design Discharge	9.96 cfs	Check Discharge	0.00 cfs

Grades Model: Inverts			
Invert Upstream	379.10 ft	Invert Downstream	378.70 ft
Length	92.00 ft	Slope	0.004348 ft/ft
Drop	0.40 ft		

Headwater Model: Unspecified

Tailwater Conditions: Constant Tailwater	
Tailwater Elevation	N/A ft

	Name	Description	Discharge	HW Elev.	Velocity
x	Trial-1	1-24 inch Circular	9.96 cfs	381.18 ft	5.45 ft/s

Culvert Design Report
EC-11

Design:Trial-1

Solve For: Headwater Elevation

Culvert Summary			
Allowable HW Elevation	N/A ft	Storm Event	Design
Computed Headwater Elevation	381.18 ft	Discharge	9.96 cfs
Headwater Depth/Height	1.04	Tailwater Elevation	N/A ft
Inlet Control HW Elev.	380.91 ft	Control Type	Outlet Control
Outlet Control HW Elev.	381.18 ft		

Grades			
Upstream Invert	379.10 ft	Downstream Invert	378.70 ft
Length	92.00 ft	Constructed Slope	0.004348 ft/ft

Hydraulic Profile			
Profile	M2	Depth, Downstream	1.13 ft
Slope Type	Mild	Normal Depth	N/A ft
Flow Regime	Subcritical	Critical Depth	1.13 ft
Velocity Downstream	5.45 ft/s	Critical Slope	0.017707 ft/ft

Section			
Section Shape	Circular	Mannings Coefficient	0.024
Section Material	CMP	Span	2.00 ft
Section Size	24 inch	Rise	2.00 ft
Number Sections	1		

Outlet Control Properties			
Outlet Control HW Elev.	381.18 ft	Upstream Velocity Head	0.19 ft
Ke	0.90	Entrance Loss	0.17 ft

Inlet Control Properties			
Inlet Control HW Elev.	380.91 ft	Flow Control	N/A
Inlet Type	Projecting	Area Full	3.1 ft²
K	0.03400	HDS 5 Chart	2
M	1.50000	HDS 5 Scale	3
C	0.05530	Equation Form	1
Y	0.54000		

Culvert Design Report
EC-17

Peak Discharge Method: User-Specified			
Design Discharge	30.99 cfs	Check Discharge	0.00 cfs

Grades Model: Inverts			
Invert Upstream	379.20 ft	Invert Downstream	378.70 ft
Length	82.00 ft	Slope	0.006098 ft/ft
Drop	0.50 ft		

Headwater Model: Unspecified

Tailwater Conditions: Constant Tailwater	
Tailwater Elevation	N/A ft

	Name	Description	Discharge	HW Elev.	Velocity
x	Trial-1	2-30 inch Circular	30.99 cfs	381.48 ft	5.85 ft/s

Culvert Design Report
EC-17

Design:Trial-1

Solve For: Headwater Elevation

Culvert Summary			
Allowable HW Elevation	N/A ft	Storm Event	Design
Computed Headwater Elevation	381.48 ft	Discharge	30.99 cfs
Headwater Depth/Height	0.91	Tailwater Elevation	N/A ft
Inlet Control HW Elev.	381.29 ft	Control Type	Outlet Control
Outlet Control HW Elev.	381.48 ft		

Grades			
Upstream Invert	379.20 ft	Downstream Invert	378.70 ft
Length	82.00 ft	Constructed Slope	0.006098 ft/ft

Hydraulic Profile			
Profile	M2	Depth, Downstream	1.33 ft
Slope Type	Mild	Normal Depth	1.84 ft
Flow Regime	Subcritical	Critical Depth	1.33 ft
Velocity Downstream	5.85 ft/s	Critical Slope	0.015869 ft/ft

Section			
Section Shape	Circular	Mannings Coefficient	0.024
Section Material	CMP	Span	2.50 ft
Section Size	30 inch	Rise	2.50 ft
Number Sections	2		

Outlet Control Properties			
Outlet Control HW Elev.	381.48 ft	Upstream Velocity Head	0.27 ft
Ke	0.90	Entrance Loss	0.25 ft

Inlet Control Properties			
Inlet Control HW Elev.	381.29 ft	Flow Control	N/A
Inlet Type	Projecting	Area Full	9.8 ft²
K	0.03400	HDS 5 Chart	2
M	1.50000	HDS 5 Scale	3
C	0.05530	Equation Form	1
Y	0.54000		

Culvert Design Report
EC-21

Peak Discharge Method: User-Specified			
Design Discharge	86.39 cfs	Check Discharge	0.00 cfs

Grades Model: Inverts			
Invert Upstream	388.50 ft	Invert Downstream	388.30 ft
Length	84.00 ft	Slope	0.002381 ft/ft
Drop	0.20 ft		

Headwater Model: Unspecified

Tailwater Conditions: Constant Tailwater	
Tailwater Elevation	N/A ft

Name	Description	Discharge	HW Elev.	Velocity
x Trial-1	2-42 inch Circular	86.39 cfs	392.19 ft	7.39 ft/s

Culvert Design Report
EC-21

Design:Trial-1

Solve For: Headwater Elevation

Culvert Summary			
Allowable HW Elevation	N/A ft	Storm Event	Design
Computed Headwater Elevation	392.19 ft	Discharge	86.39 cfs
Headwater Depth/Height	1.05	Tailwater Elevation	N/A ft
Inlet Control HW Elev.	391.83 ft	Control Type	Outlet Control
Outlet Control HW Elev.	392.19 ft		

Grades			
Upstream Invert	388.50 ft	Downstream Invert	388.30 ft
Length	84.00 ft	Constructed Slope	0.002381 ft/ft

Hydraulic Profile			
Profile	M2	Depth, Downstream	2.05 ft
Slope Type	Mild	Normal Depth	N/A ft
Flow Regime	Subcritical	Critical Depth	2.05 ft
Velocity Downstream	7.39 ft/s	Critical Slope	0.015044 ft/ft

Section			
Section Shape	Circular	Mannings Coefficient	0.024
Section Material	CMP	Span	3.50 ft
Section Size	42 inch	Rise	3.50 ft
Number Sections	2		

Outlet Control Properties			
Outlet Control HW Elev.	392.19 ft	Upstream Velocity Head	0.38 ft
Ke	0.90	Entrance Loss	0.35 ft

Inlet Control Properties			
Inlet Control HW Elev.	391.83 ft	Flow Control	N/A
Inlet Type	Projecting	Area Full	19.2 ft²
K	0.03400	HDS 5 Chart	2
M	1.50000	HDS 5 Scale	3
C	0.05530	Equation Form	1
Y	0.54000		

Culvert Design Report
EC-30

Peak Discharge Method: User-Specified			
Design Discharge	11.24 cfs	Check Discharge	0.00 cfs

Grades Model: Inverts			
Invert Upstream	377.20 ft	Invert Downstream	376.70 ft
Length	90.00 ft	Slope	0.005556 ft/ft
Drop	0.50 ft		

Headwater Model: Unspecified

Tailwater Conditions: Constant Tailwater	
Tailwater Elevation	N/A ft

	Name	Description	Discharge	HW Elev.	Velocity
x	Trial-1	1-24 inch Circular	11.24 cfs	379.42 ft	5.70 ft/s

Culvert Design Report
EC-30

Design:Trial-1

Solve For: Headwater Elevation

Culvert Summary			
Allowable HW Elevation	N/A ft	Storm Event	Design
Computed Headwater Elevation	379.42 ft	Discharge	11.24 cfs
Headwater Depth/Height	1.11	Tailwater Elevation	N/A ft
Inlet Control HW Elev.	379.17 ft	Control Type	Outlet Control
Outlet Control HW Elev.	379.42 ft		

Grades			
Upstream Invert	377.20 ft	Downstream Invert	376.70 ft
Length	90.00 ft	Constructed Slope	0.005556 ft/ft

Hydraulic Profile			
Profile	M2	Depth, Downstream	1.20 ft
Slope Type	Mild	Normal Depth	N/A ft
Flow Regime	Subcritical	Critical Depth	1.20 ft
Velocity Downstream	5.70 ft/s	Critical Slope	0.018515 ft/ft

Section			
Section Shape	Circular	Mannings Coefficient	0.024
Section Material	CMP	Span	2.00 ft
Section Size	24 inch	Rise	2.00 ft
Number Sections	1		

Outlet Control Properties			
Outlet Control HW Elev.	379.42 ft	Upstream Velocity Head	0.22 ft
Ke	0.90	Entrance Loss	0.20 ft

Inlet Control Properties			
Inlet Control HW Elev.	379.17 ft	Flow Control	N/A
Inlet Type	Projecting	Area Full	3.1 ft²
K	0.03400	HDS 5 Chart	2
M	1.50000	HDS 5 Scale	3
C	0.05530	Equation Form	1
Y	0.54000		

Culvert Design Report
EC-31

Peak Discharge Method: User-Specified			
Design Discharge	4.20 cfs	Check Discharge	0.00 cfs

Grades Model: Inverts			
Invert Upstream	377.00 ft	Invert Downstream	376.70 ft
Length	86.00 ft	Slope	0.003488 ft/ft
Drop	0.30 ft		

Headwater Model: Unspecified

Tailwater Conditions: Constant Tailwater	
Tailwater Elevation	N/A ft

	Name	Description	Discharge	HW Elev.	Velocity
x	Trial-1	1-18 inch Circular	4.20 cfs	378.48 ft	4.48 ft/s

Culvert Design Report
EC-31

Design:Trial-1

Solve For: Headwater Elevation

Culvert Summary					
Allowable HW Elevation	N/A	ft	Storm Event	Design	
Computed Headwater Elevation	378.48	ft	Discharge	4.20	cfs
Headwater Depth/Height	0.99		Tailwater Elevation	N/A	ft
Inlet Control HW Elev.	378.23	ft	Control Type	Outlet Control	
Outlet Control HW Elev.	378.48	ft			

Grades					
Upstream Invert	377.00	ft	Downstream Invert	376.70	ft
Length	86.00	ft	Constructed Slope	0.003488	ft/ft

Hydraulic Profile					
Profile	M2		Depth, Downstream	0.79	ft
Slope Type	Mild		Normal Depth	N/A	ft
Flow Regime	Subcritical		Critical Depth	0.79	ft
Velocity Downstream	4.48	ft/s	Critical Slope	0.018675	ft/ft

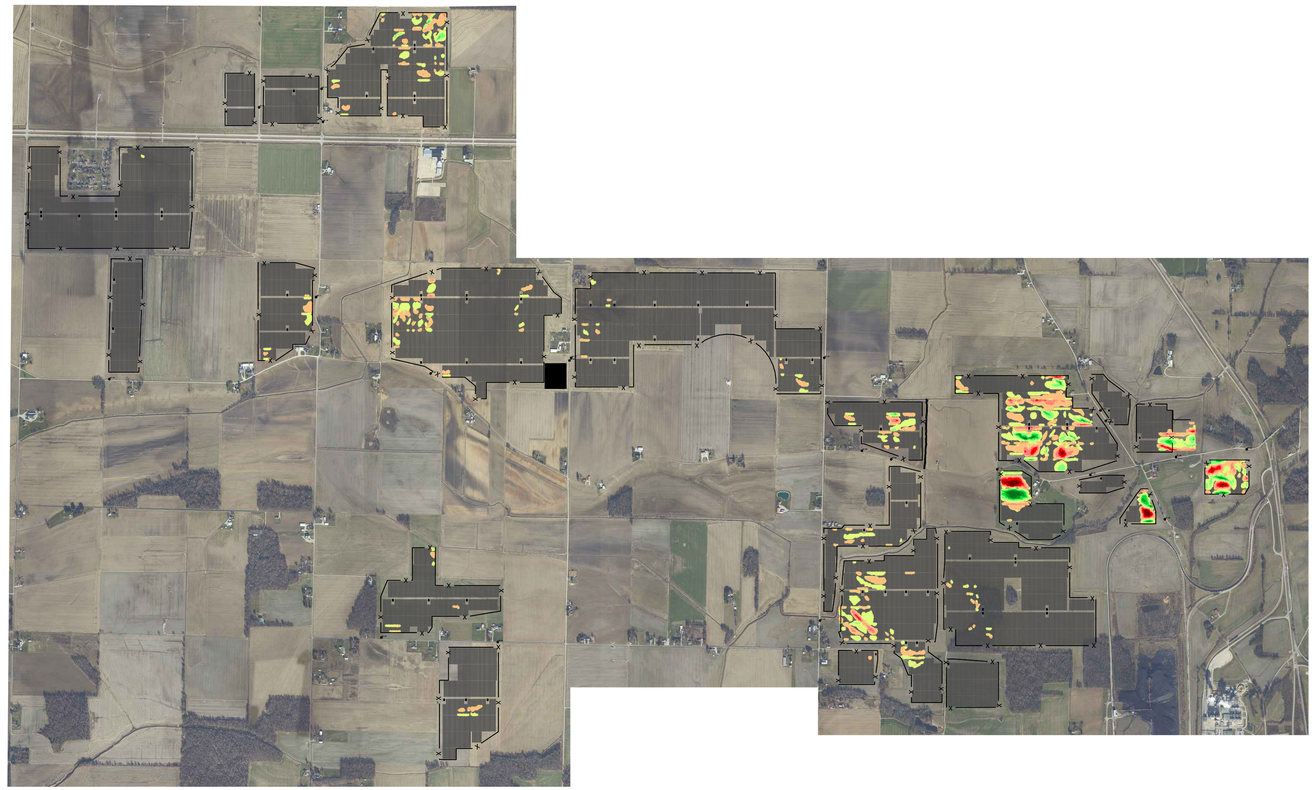
Section					
Section Shape	Circular		Mannings Coefficient	0.024	
Section Material	CMP		Span	1.50	ft
Section Size	18 inch		Rise	1.50	ft
Number Sections	1				

Outlet Control Properties					
Outlet Control HW Elev.	378.48	ft	Upstream Velocity Head	0.11	ft
Ke	0.90		Entrance Loss	0.10	ft

Inlet Control Properties					
Inlet Control HW Elev.	378.23	ft	Flow Control	N/A	
Inlet Type	Projecting		Area Full	1.8	ft²
K	0.03400		HDS 5 Chart	2	
M	1.50000		HDS 5 Scale	3	
C	0.05530		Equation Form	1	
Y	0.54000				

Appendix F

Conceptual Array Grading



LEGEND:

NON-PARTICIPATING PROPERTY

x PROPOSED FENCE

CONCEPTUAL CUT/FILL VOLUME COMPARISON

- 4' + CUT
- 3' - 4' CUT
- 2' - 3' CUT
- 1' - 2' CUT
- 0' - 1' CUT
- 0' - 1' FILL
- 1' - 2' FILL
- 2' - 3' FILL
- 3' - 4' FILL
- 4' + FILL

PROJECT QUANTITIES	
ITEM	**QUANTITY**
Solar Array Cut Volume	297,000 CY
Solar Array Fill Volume	269,000 CY

- FOR ESTIMATING ONLY, ENGINEER MAKES NO GUARANTEE OF ACCURACY
- CUT/FILL QUANTITIES LISTED ARE RAW QUANTITIES AND DO NOT ACCOUNT FOR SITE EXCAVATIONS OR ANY UTILITY EXCAVATIONS. THE QUANTITIES SHOWN WERE DETERMINED USING THE ANTICIPATED GRADES AS SHOWN ON THE SITE PLAN AND ARE FOR ESTIMATING PURPOSES ONLY.
- IN THE EVENT OF EXCESS CUT, QUANTITY TO BE SPREAD EVENLY OVER SITE.
- PROJECT COORDINATE SYSTEM IS NSRS 2011 INDIANA STATE PLANES, WEST ZONE, US FOOT

Westwood

Phone (608) 821-6600 8401 Greenway Blvd., Suite 400
Middleton, WI 53562
westwoodps.com

Westwood Professional Services, Inc.

PREPARED FOR:

..\..\Image\Logo\Arevon_Logo_CMYK_FULL.jpg

8800 N. Gainey Center Dr. Suite 250
Scottsdale, AZ 85258

REVISIONS:

#	DATE	COMMENT
A	10/11/2021	Conceptual Grading Analysis

0' ##### ##### #####

Posey Solar Project

Posey County, Indiana

Conceptual Array Grading - 1' Reveal Window

CONCEPTUAL
NOT FOR CONSTRUCTION

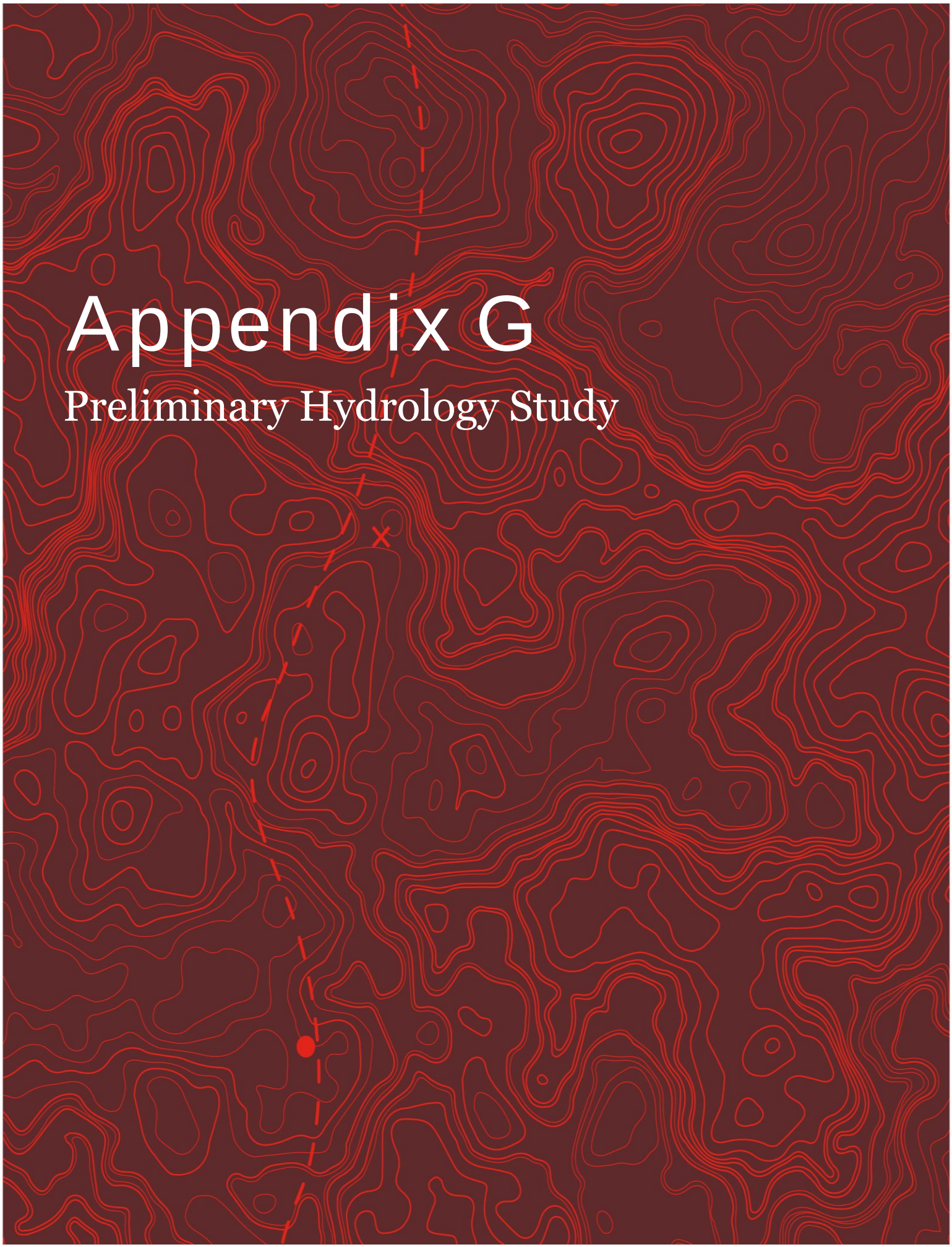
DATE: 10/11/2021

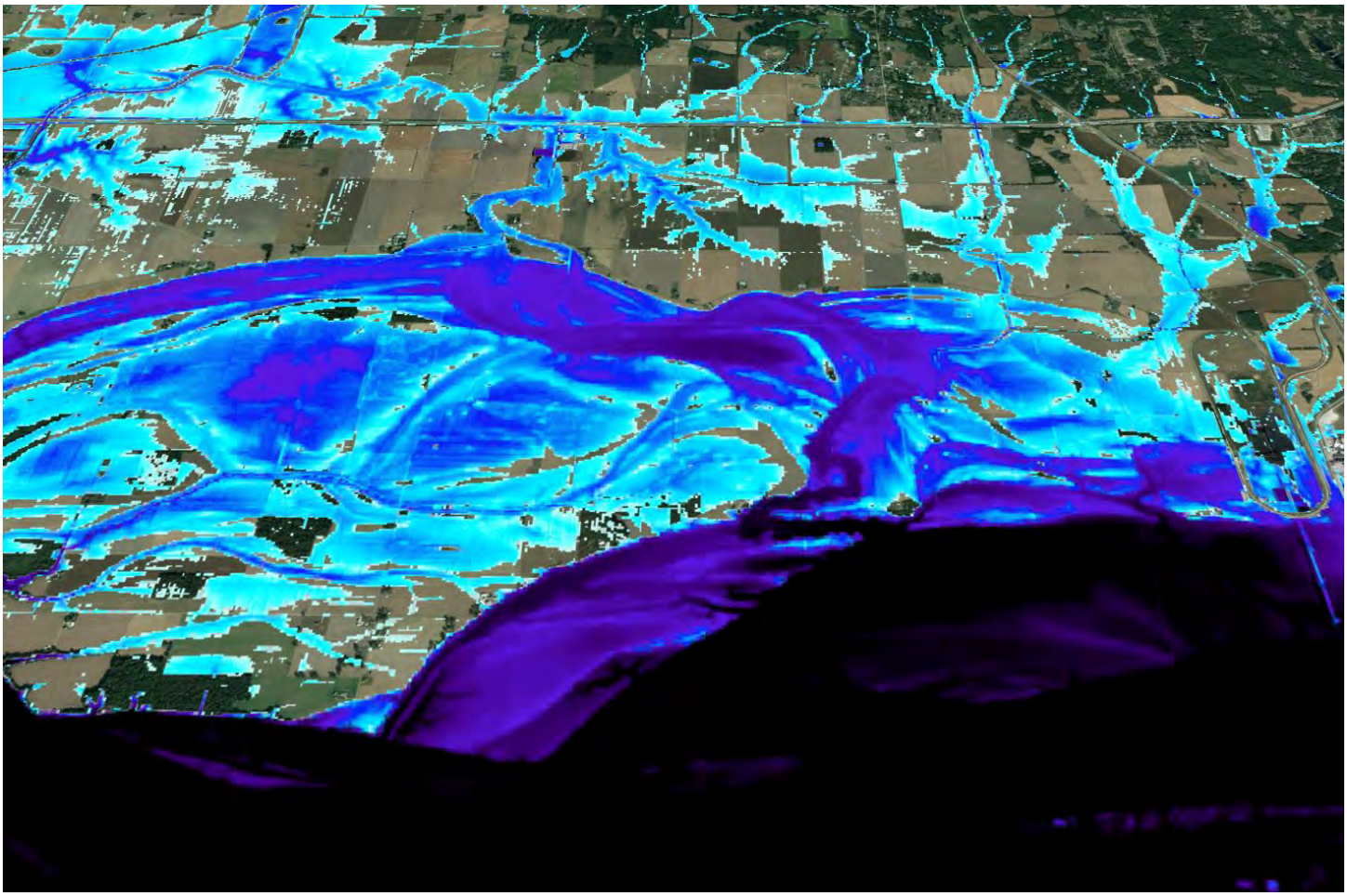
SHEET: EB.04

M:\0027306.00\Revit\WR-2021-03-14 Condensed Layout\0027306.EB.04 Conceptual Array Grading.rvt 2/24/2021 10:28 AM Kevin Zanyk

Appendix G

Preliminary Hydrology Study





PRELIMINARY HYDROLOGY STUDY

Posey Solar Project

Posey County, Indiana

JULY 2020

UPDATED APRIL 2021

PREPARED FOR:

TENASKA

PREPARED BY:

Westwood

Preliminary Hydrology Study

Posey Solar Project

Posey County, Indiana

Prepared For:

Tenaska
14302 FNB Parkway
Omaha, NE 68154

Prepared By:

Westwood
12701 Whitewater Drive, Suite 300
Minnetonka, MN 55343
(952) 937-5150

Project Number: R0027286.00
Date: July 24, 2020
Updated: April 14, 2021

Westwood

Table of Contents

Exhibits

Appendices

Executive Summary

The purpose of the study is to analyze and review the existing hydrology of the Posey Solar Project ("the project") and any impacts that the hydrology may play in the design of the proposed solar array. This report was prepared to be used by the project team in the design and layout of the project and not intended for submittal to reviewing agencies for stormwater permitting.

The project site is proposed on approximately 4,100 acres and is located roughly 4 miles east of the city of Mt Vernon in Posey County, Indiana. The site is located on relatively flat land with a few areas of steeper slopes located within the northern parcels. The total combined modeled watershed area encompasses approximately 214 square miles and generally flows to the west.

FEMA has completed a study to determine flood hazards for the selected location; the project area contains FEMA Zone A and Zone AE areas. No preliminary or pending FEMA data was located that will affect the project area. The Indiana DNR Best Available Flood Zones were also reviewed for the project area. Indiana DNR Zone A and AE areas are present within areas of the project parcels.

The majority of the proposed solar facility will consist of above ground mounted solar modules. A meadow grass will be planted below the modules and will make up a majority of the site's land cover. A small amount of impervious surface will also be added from the gravel access roads and electrical equipment pads, but typically only makes up approximately 3-5% of the total project area.

The hydrologic modeling in this report was created using FLO-2D modeling software. FLO-2D was used to review the overall watershed drainage to and through the project to determine if any overland runoff causes flooding, high velocity, or scour impacts to the site.

The analysis shows a range of water depths and velocities ranging from low to high (Exhibits 6 through 7A) across the site. Higher flood depths and velocities exist within and adjacent to the Ohio River floodplain. There are also scattered low-lying areas with localized ponding and flowpaths that contain low velocities but have flood depths greater than 0.5 feet. Minimal velocities and scour are expected on site due to the flat terrain with the exception of a few areas within the Ohio River floodplain. Based on experience with similar projects, the majority of the northern portion of the site is suitable for the planned development by avoiding or designing to areas of high flood depths.

Data Sources

TABLE 1: DATA SOURCES

Task	Format	Source	Use
Elevation	2-meter DEM	USDA Data Gateway KyGovMaps	FLO-2D Model Elevations
Elevation	5-foot DEM	Indiana Spatial Data Portal	FLO-2D Model Elevations
Crop Data	Shapefile	USDA 2013 Crop Data Layer	Landcover
Soils	Shapefile	USGS SSURGO Dataset	Curve Numbers
Precipitation	PDF File	NOAA Atlas 14	Design Storms
HUC-12 Drainage Boundary	Shapefile	USGS	Define Model Extents
Site Boundary	Posey Hydrology Study Area.kmz	Tenaska	Define Model Extents
2014 Aerial Photography	ArcGIS Map Service	USDA FSA	Reference
FEMA Flood Zones	PDF; Shapefile	FEMA	Reference
Indiana DNR Flood Zone	Shapefile	Indiana DNR	Reference
Culvert Locating and Sizing	Aerial Imagery	Google Earth	Culvert Modeling

Existing Conditions

The project area is located roughly 4 miles east of the city of Mt Vernon in Posey County, Indiana. The project site is approximately 4,100 acres and is mostly located on relatively flat terrain.

Watershed Hydrology

The total combined modeled watershed area encompasses approximately 214 square miles that generally slopes to the south and west. The Ohio River flows west to the south of the project area. According to the FEMA FIS Report for Posey County, the Ohio River rises slowly and remains out of the banks for a considerable time during flood events. Little Creek flows west and then northwest to the north of the project area before emptying into Big Creek northwest of the project.

Onsite Conditions

The project is located within and to the north of the Ohio River floodplain, with numerous creeks and ditches crossing the project that generally flow south and west. In general, the site is relatively flat, although there are some areas of steeper slopes up to around 15% within a few of the northern and eastern parcels. The land cover on the project area is primarily agricultural fields consisting of corn, winter wheat and soybeans (Exhibit 4) and has soils that belong to Hydrologic Soil Groups B, B/D, C and C/D (Exhibit 3). Areas with B soils will drain more quickly than areas with C and D soils reducing the duration of ponding. The main potential hydrologic issues on site are flooding and erosive velocities.

FEMA Flood Zones

FEMA has completed a study to determine flood hazards for the selected location; the project area is covered by panels 18129C00230C, 18129C0235C, 18129C0240C, 18129C0245C, and 18129C0265C (Appendix C). The southern portion of the site contains FEMA Zone AE areas within the Ohio River floodplain. A small northeastern corner of the northern parcels contains a FEMA Flood Zone A area where the Little Creek floodplain encroaches upon the site. A FEMA Zone A area also borders a parcel along the western edge of the project. A FEMA Floodway is present to the south of the project parcels. A FEMA Zone A flood hazard is a 100-year flood hazard with no base flood elevation determined while a Zone AE has a base flood elevation determined. No preliminary or pending FEMA changes are proposed within the project area.

Indiana Best Available Floodplain

The Indiana DNR Division of Water has published additional floodplain information of Zone A quality to include additional stream reaches not provided by FEMA on the Flood Insurance Rate Maps. This data is shown on Exhibits 2 and 6 along with the FEMA data. In addition to areas covered by FEMA, Indiana DNR Best Available Zone A areas are present through portions of the central and northwestern project parcels.

Proposed Conditions

The majority of the proposed solar facility will consist of above ground mounted solar modules. Meadow grass will be planted below the modules and will make up a majority of the land cover. A small amount of impervious surface will be added from the gravel access roads and electrical equipment pads. See the Preliminary Stormwater Management Report completed by Westwood for more information regarding the proposed stormwater management for the project.

FLO-2D Modeling

FLO-2D is a physical process model that routes rainfall runoff and flood hydrographs over flow surfaces or in channels using the dynamic wave approximation to the momentum equation. FLO-2D offers advantages over 1-D models and unit hydrograph methods by allowing for breakout flows and visualization of flows across a potential site. The primary inputs are a DTM (elevation data), curve numbers and precipitation. Major culverts impacting the site were modeled based on aerial imagery provided by Google Earth (Exhibits 6-8).

Because of the size of the modeled watershed, complex flowpaths through the project and the proximity to the Ohio River, two FLO-2D models with 50' grid cells were utilized to determine flow depths and velocities throughout the site and surrounding watersheds. A northern model was developed to model the Big Creek watershed and its impact to the site. The southern model incorporated the Ohio River and its impact to the site. The results of the two models were combined to provide one output of flood depths and velocities.

Elevation Data

The elevation data input into the FLO-2D models was 2-meter DEM data from the USDA Geospatial Data Gateway and KyGovMaps for the southern model, and 5-foot DEM data from the Indiana Spatial Data Portal for the northern model (Exhibit 5). The channel bottom of the Ohio River was created using elevation values taken from the FIS Report (Appendix D). These elevations were combined and incorporated into the DTM using the export to xyz function in Global Mapper. These XYZ files are read directly into FLO-2D.

Watershed Soils and Land Cover

USDA-NRCS SSURGO soil data provides soil types within the project boundary and full coverage of the contributing watershed. Soils are classified as Hydrologic Soil Group B, B/D, C and C/D in the project boundary (Exhibit 3). Land cover was obtained from the USDA 2013 Crop Data Layer. Exhibit 4 displays the land cover classes for the entire watershed. Curve numbers were applied to each grid cell in the FLO-2D model based on intersecting the grid with the curve numbers (Exhibit 5).

Precipitation

Precipitation data was downloaded from the NOAA Atlas 14 (Appendix A) and used for the FLO-2D analysis for the 100-year, 24-hour storm. Using the 100-year rainfall depth of 7.17 inches for this location allows for the best initial analysis in order to determine the worst areas of flooding and erosion. Rainfall inputs were distributed based on a nested Atlas 14 distribution pattern.

Inflows

The Ohio River enters the modeled watershed from the east and flows west to the south of the project area. The Flood Insurance Study for Posey County, Indiana reports a 100-year peak flood of 920,000 cfs (Appendix D). Big Creek enters the modeled watershed from the northeast and flows southwest to the north of the project area. USGS streamgage station 03378550 near Wadesville, Indiana reports a 100-year peak flood of 10,700 cfs (Appendix E). Inflow hydrographs were created using this data and added to the FLO-2D models at the points where the inflows enter the watershed (Exhibit 6).

Model confirmation

In order to verify the FLO-2D model results a HECRAS 1-D model was created for the Ohio River. The provided FLO-2d results were compared against the HECRAS model and were deemed accurate for onsite conditions in a 100-year storm event.

Flood Analysis Results

Existing Conditions Flood Analysis

The analysis shows a range of water depths and velocities ranging from low to high (Exhibits 6 through 7A) across the site. During a 100-year storm, the flood depths across the project area range from less than 0.5 feet to greater than 15 feet with velocities ranging from less than 1 foot/second to greater than 3 feet/second. See Exhibits 6 through 7A for areas within the project with higher flood depths and velocities. Overall, the FLO-2D results matched well with the flood extents provided by FEMA. Some of the results, particularly within and adjacent to the Ohio River, vary from the flood extents provided by FEMA. This can be attributed to different availability of elevation data as well as the flat nature of the terrain within the floodplain. Minimal scour is expected outside of the Ohio River floodplain (Exhibit 8). The scour depths calculated for this project consist of local scour only and are based on unarmored soils and pile bases in order to provide the most conservative local scour results.

Recommendations

Based on experience on similar projects, portions of the site are suitable for the planned development and hydrologic concerns can be addressed by either avoiding areas of high flood depths or through detailed engineering design.

Next Steps

1. Final engineering design should account for the flood depths and velocities presented in Exhibits 6-7.

2. Facilities to be elevated 1’ above the 100-year, 24-hour peak flood elevations.

3. Proposed facilities should avoid FEMA Flood Zones located onsite.

4. Stormwater management should be revisited to ensure the final design meets the local and state requirements.

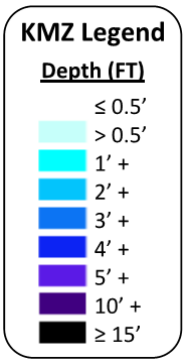
Included Output Files

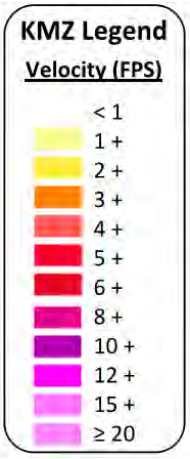
1. Shapefile of 100-year Rain Event Flow Depth
   2021-04-08_Posey_PrelimFlowDepthatCell_100yr.shp
   Attribute "ID" = Grid Cell Number
   Attribute "VAR" = Max Flow Depth (Feet)

2. KMZ of 100-year Rain Event Flow Depth
   2021-04-08_Posey _PrelimFlowDepth_100yr.kmz
   Overlay in Google Earth for graphical representation.

3. Shapefile of 100-year Rain Event Velocity
   2021-04-08_Posey _PrelimVelocityatCell_100yr.shp
   Attribute "ID" = Grid Cell Number
   Attribute "VAR" = Velocity (FPS)

4. KMZ of 100-year Rain Event Velocity
   2021-04-08_Posey _PrelimVelocity_100yr.kmz
   Overlay in Google Earth for graphical representation.





References Cited

National Engineering Handbook, Part 630 Hydrology. Chapter 9 Hydrologic Soil-Cover Complexes. USDA. NRCS. 210-VI-NEH, July 2004

Indiana Spatial Data Portal, 5-foot DEM, Elevation data, Accessed April 2021, https://gis.iu.edu/downloads/index.html

USDA Geospatial Data Gateway, 2-meter DEM, Elevation data, Accessed July 2020, https://datagateway.nrcs.usda.gov/

KyGovMaps, 2-meter DEM, Elevation data, Accessed July 2020, https://kygeonet.ky.gov/govmaps/

Web soil survey. Retrieved July 2020, from https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

NOAA Atlas 14 Point Precipitation Frequency Estimates. Retrieved July 2020 from https://hdsc.nws.noaa.gov/hdsc/pfds/

USGS. USGS water resources: About USGS water resources. Retrieved July 2020, from https://water.usgs.gov/GIS/huc.html

USDA 2013 Crop Data Layer, Landcover data. Retrieved July 2020, from https://www.nass.usda.gov/Research_and_Science/Cropland/SARS1a.php

FEMA Flood Insurance Rate Maps. Retrieved July 2020 from https://msc.fema.gov/portal/advanceSearch#searchresultsanchor

Indiana Department of Natural Resources. Indiana best Available Floodplain Mapping. Retrieved April 2021 from https://www.in.gov/dnr/water/9846.htm

Exhibits

N:\0027286.00\GIS\Hydro Exhibits\2021-04-06 Exhibits 1-5\Posey Solar Project\Posey Solar Project.aprx
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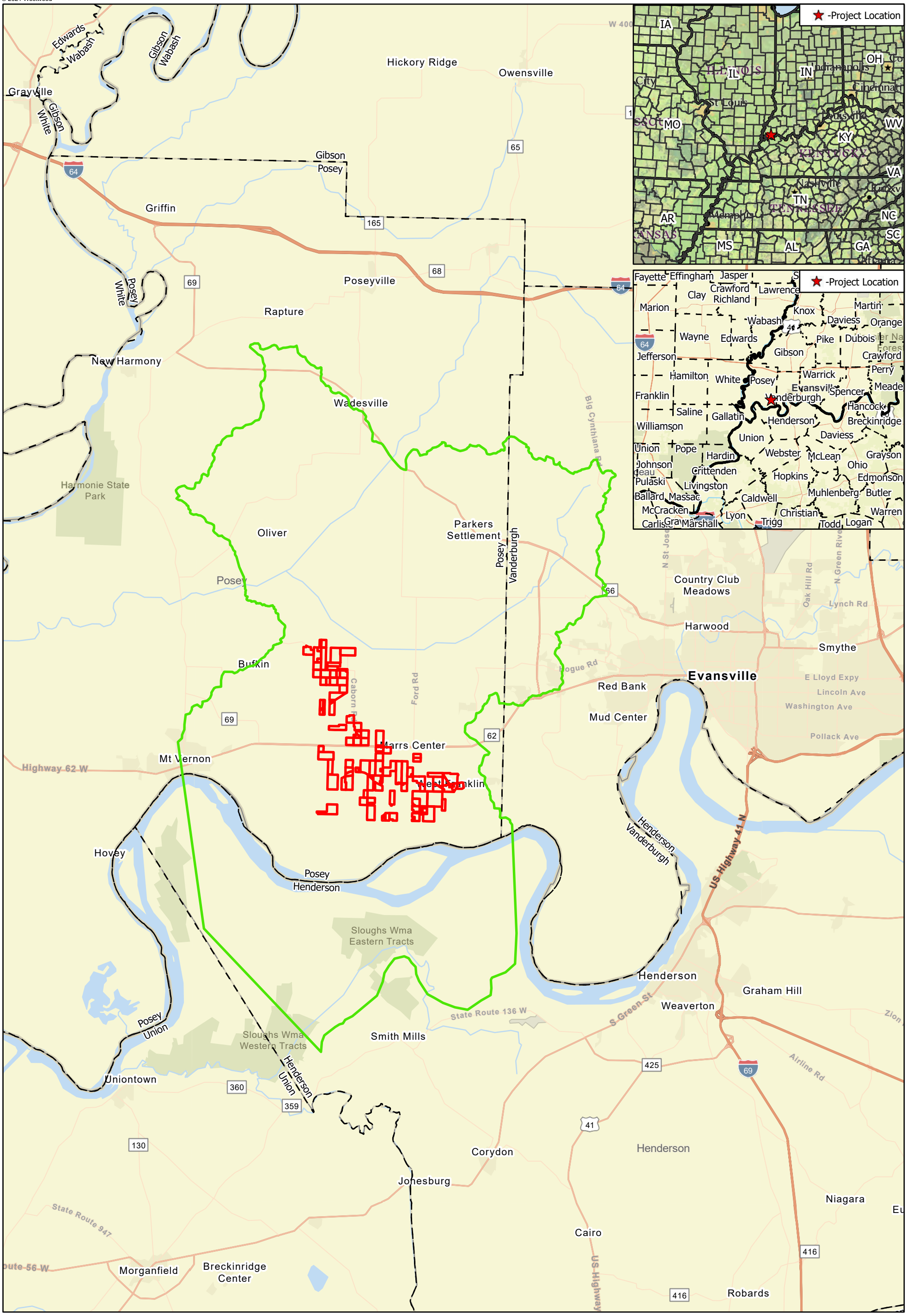

Data Source(s): Westwood (2021); Esri WMS Basemap Imagery (Accessed 2021); USGS (2021); FEMA (2021); USDA (2021)

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Legend

- Project Boundary
- Combined FLO-2D Model Boundary
- County Boundary

N

0 3 Miles

Posey Solar Project

Posey County, Indiana

Exhibit 1: Location Map

April 12, 2021

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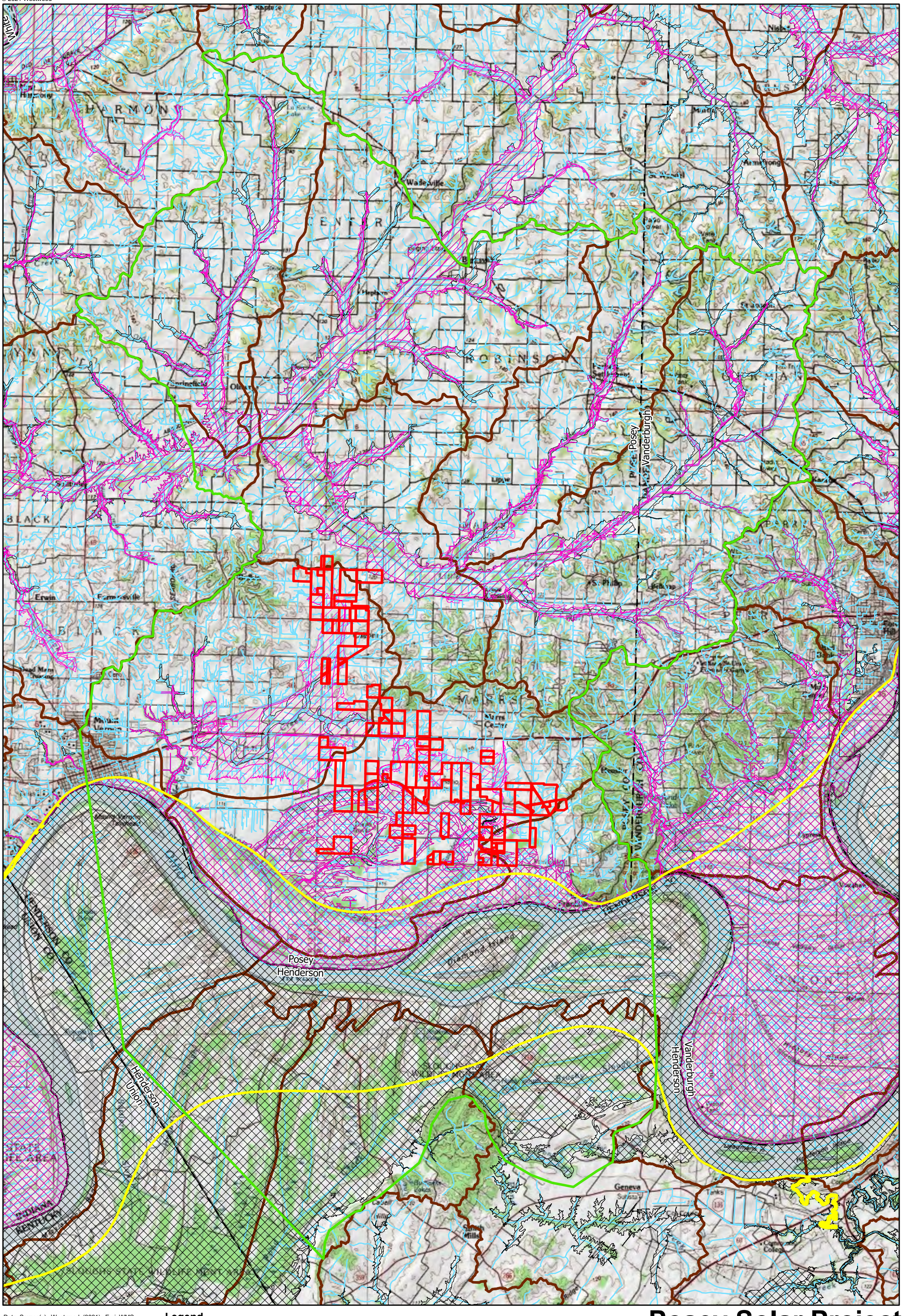
Basemap - Base Map | 4/14/2021 2:29 PM | LJBassette



Data Source(s): Westwood (2021); Esri WMS Basemap Imagery (Accessed 2021); USGS (2021); FEMA (2021); USDA (2021)

Legend

- Project Boundary
- Combined FLO-2D Model Boundary
- County Boundary
- NHD Flowline
- HUC-12 Boundary

Indiana DNR Flood Zones
- FEMA Zone A
- FEMA Zone AE

FEMA Flood Zones
- FEMA Zone A
- FEMA Zone AE
- FEMA Floodway

N

0 1.75 Miles

Posey Solar Project

Posey County, Indiana

Exhibit 2: Base Map

April 14, 2021

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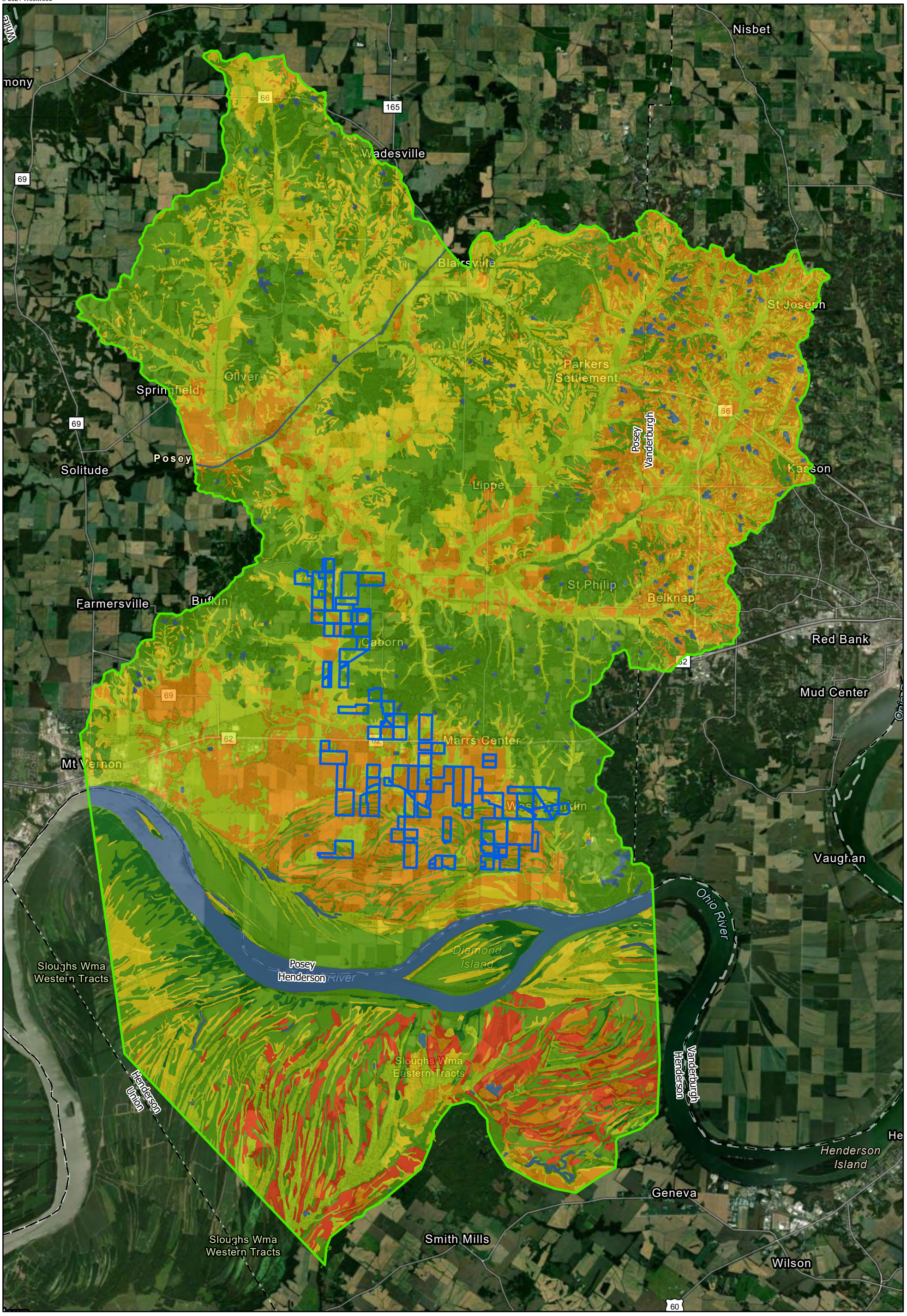
N:\0027286.00\GIS\Hydro Exhibits\2021-04-06 Exhibits 1-5\Posey Solar Project\Posey Solar Project.aprx
Soils Map - Soil Map | 4/12/2021 2:06 PM | LJBassette



Data Source(s): Westwood (2021); Esri WMS Basemap Imagery (Accessed 2021); USGS (2021); FEMA (2021); USDA (2021)

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Legend

- Project Boundary
- Combined FLO-2D Model Boundary
- County Boundary

Hydrologic Soils Group

- A
- B
- B/D
- C
- C/D
- D
- W

N

0 Miles 1.75

Posey Solar Project

Posey County, Indiana

Exhibit 3: Soils Map

April 12, 2021

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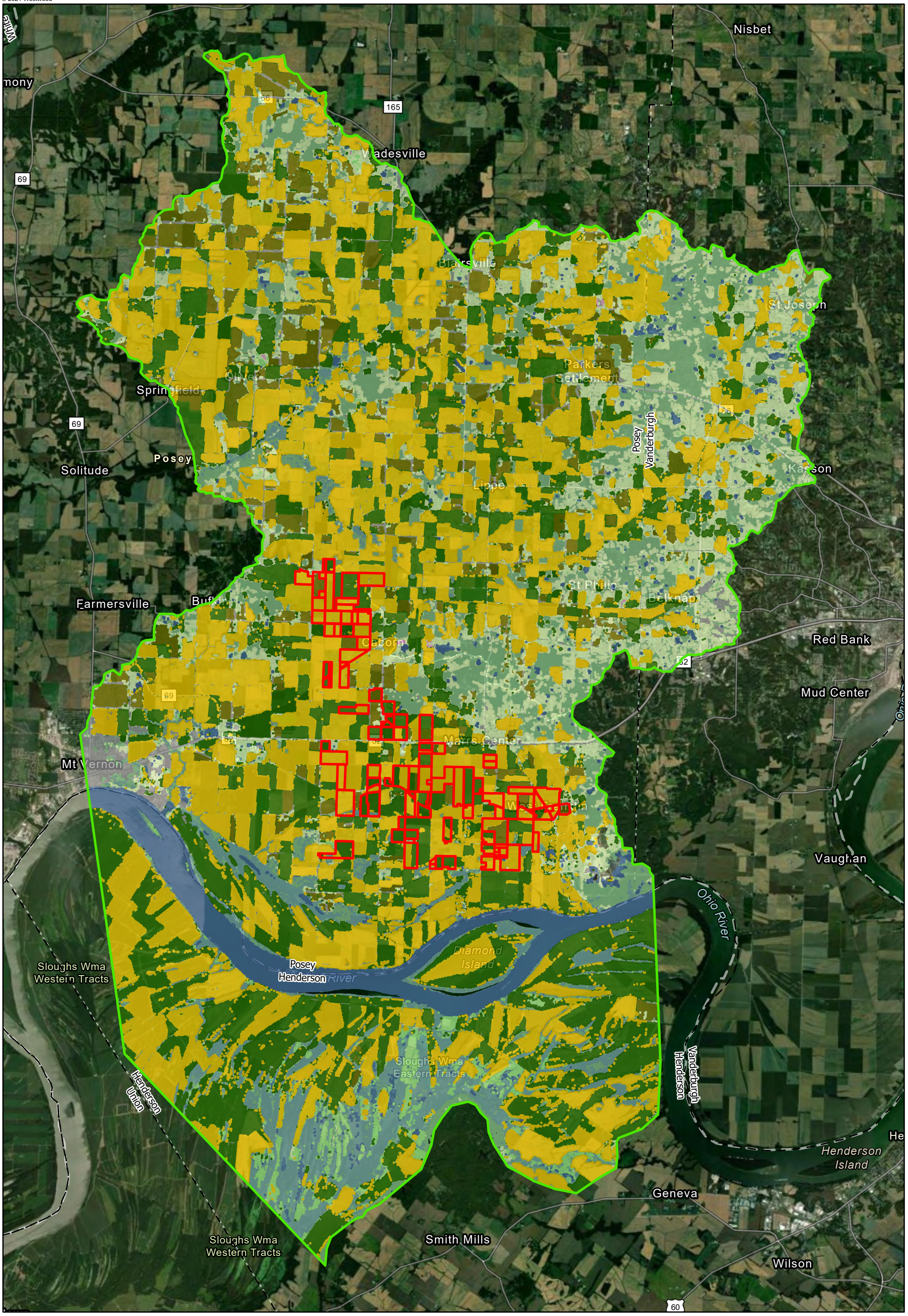
Landcover Map - Landcover Map | 4/12/2021 2:05 PM | LJBassette



Data Source(s): Westwood (2021); Esri WMS Basemap Imagery (Accessed 2021); USGS (2021); FEMA (2021); USDA (2021)

Legend

- Project Boundary
- Combined FLO-2D Model Boundary
- County Boundary

Land Cover

- Alfalfa
- Dbl Crop WinWht/Soybeans
- Developed
- Forest
- Grassland/Pasture
- Wetlands
- Open Water
- Other Hay/Non Alfalfa
- Soybeans
- Corn

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N

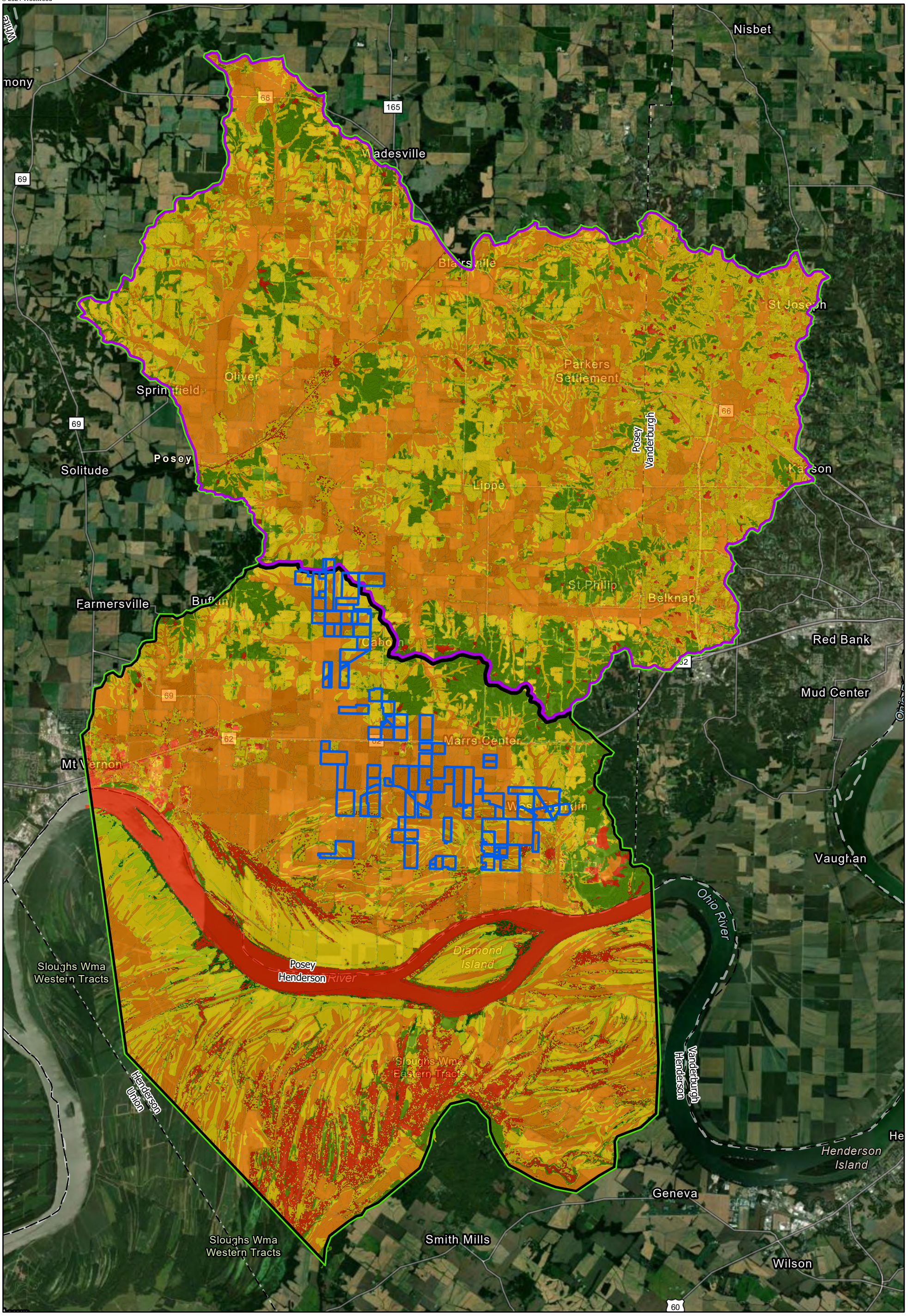
0 1.75 Miles

Posey Solar Project

Posey County, Indiana

Exhibit 4: Land Cover Map

April 12, 2021



Data Source(s): Westwood (2021); Esri WMS Basemap Imagery (Accessed 2021); USGS (2021); FEMA (2021); USDA (2021)

Legend

- Project Boundary
- Combined FLO-2D Model Boundary
- County Boundary
- 2-meter DEM Extents
- 5-foot DEM Extents

Curve Number

- 40 - 49
- 50 - 59
- 60 - 69
- 70 - 79
- 80 - 89
- 90 - 99

N

0 1.75 Miles

Posey Solar Project

Posey County, Indiana

Exhibit 5: Curve Number and Topographic Source Map

April 12, 2021

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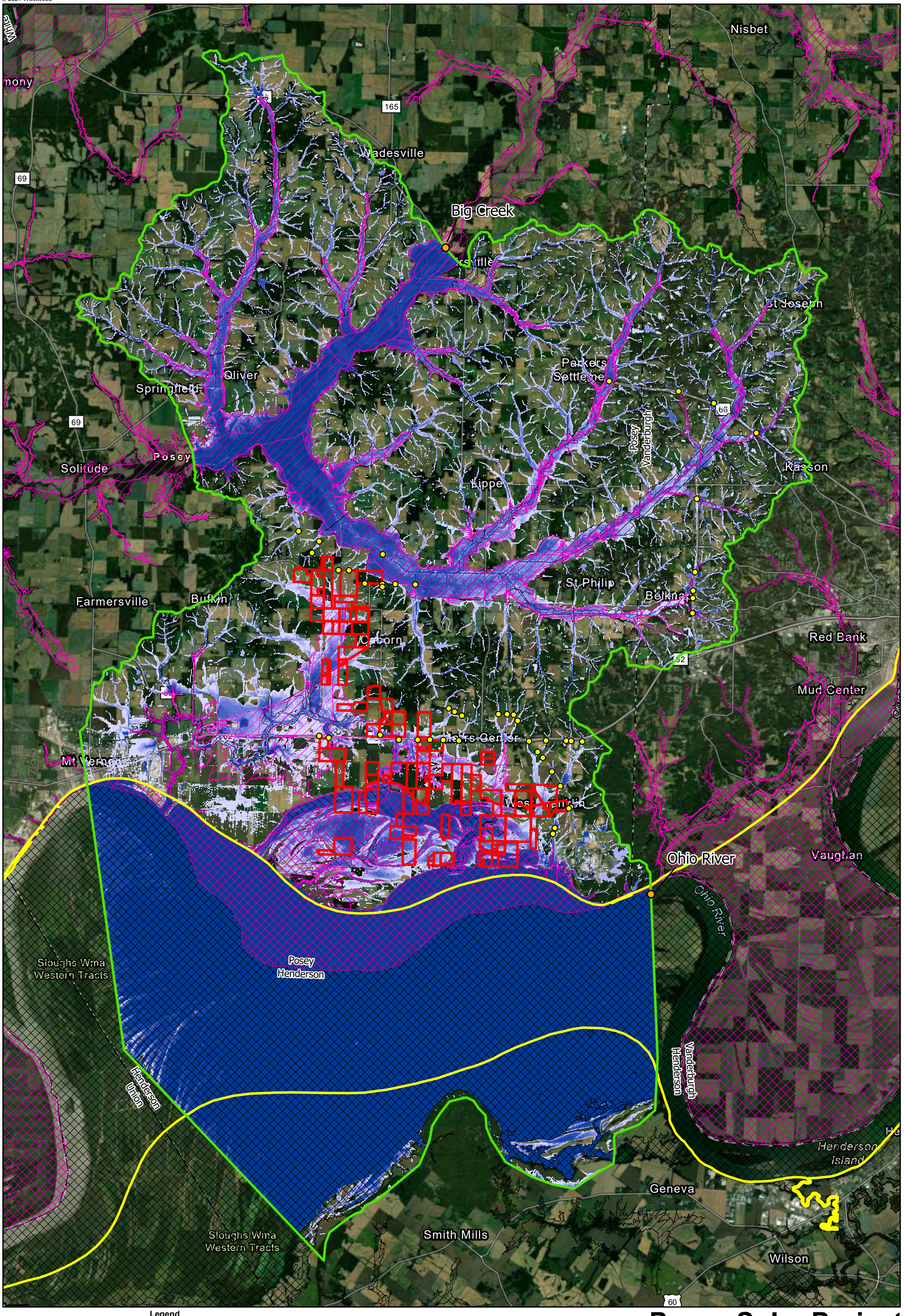
Water Depth Map - 100 Yr Water Depth Map | 4/14/2021 2:31 PM | LJBassette



Data Source(s): Westwood (2021); Esri WMS Basemap Imagery (Accessed 2021); USGS (2021); FEMA (2021); USDA (2021)

Legend

- Project Boundary
- Combined FLO-2D Model Boundary
- County Boundary
- Modeled Culvert Locations
- Model Inflow Locations

Indiana DNR Flood Zones
- FEMA Zone A
- FEMA Zone AE

FEMA Flood Zones
- FEMA Zone A
- FEMA Zone AE

- FEMA Floodway

Peak Flow Depth (ft)
- 0.50 - 1.00
- 1.01 - 1.50
- 1.51 - 2.00
- 2.01 - 2.50
- 2.51 - 3.00
- 3.01 - 4.00
- 4.01 - 6.00
- 6.01 +

N

0 Miles 1.75

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Posey Solar Project

Posey County, Indiana

Exhibit 6: 100-Year Max Water Depth Map

April 14, 2021

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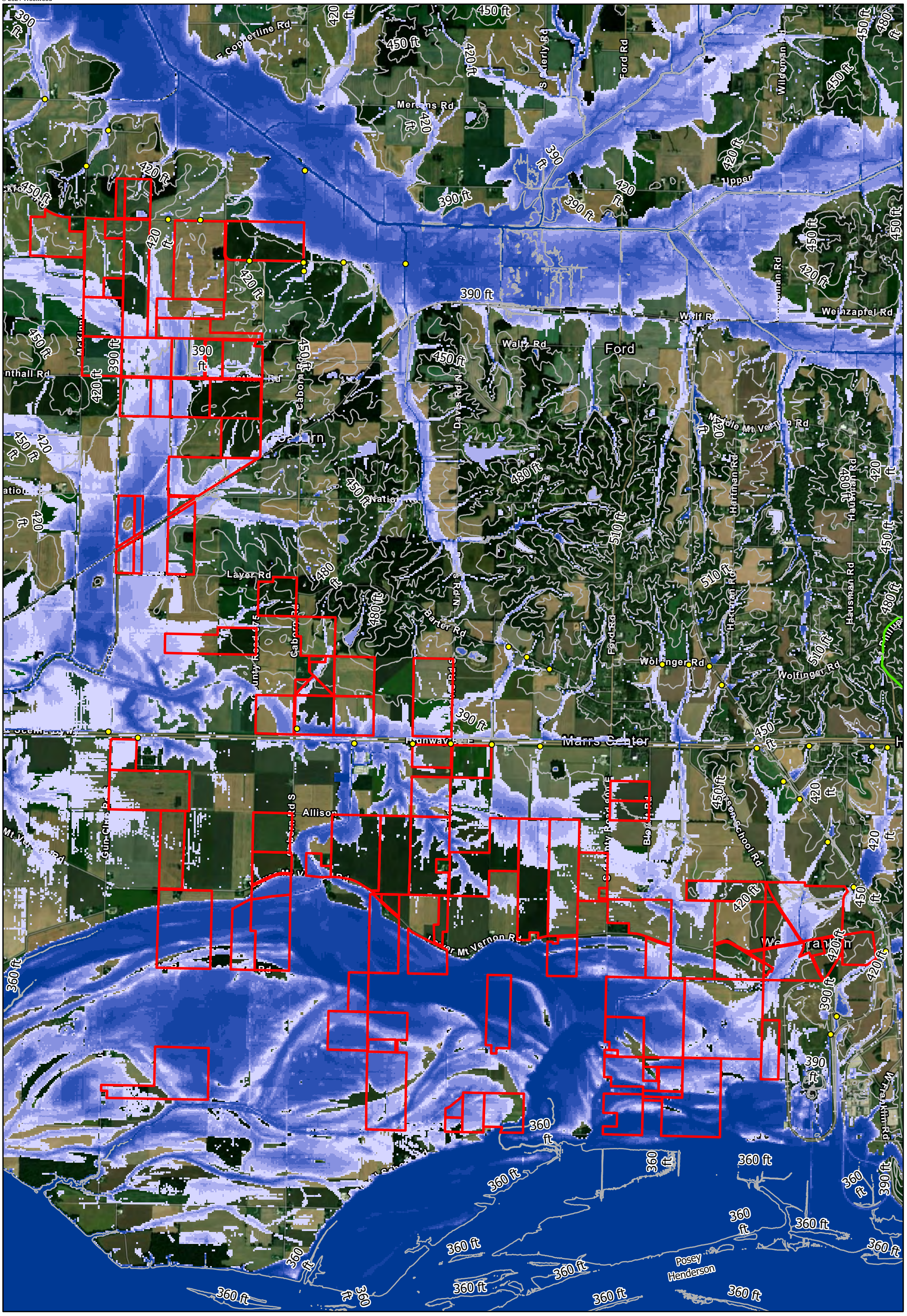
Water Depth Project Area Map - 100 Yr Water Depth Project Area | 4/12/2021 3:07 PM | LJBassette



Data Source(s): Westwood (2021); Esri WMS Basemap Imagery (Accessed 2021); USGS (2021); FEMA (2021); USDA (2021)

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Legend

- Project Boundary
- Combined FLO-2D Model Boundary
- County Boundary
- 30-foot Contours
- Modeled Culvert Locations

Peak Flow Depth (ft)

- 0.50 - 1.00
- 1.01 - 1.50
- 1.51 - 2.00
- 2.01 - 2.50
- 2.51 - 3.00
- 3.01 - 4.00
- 4.01 - 6.00
- 6.01 +

N

0 3,000 Feet

Posey Solar Project

Posey County, Indiana

Exhibit 6A: 100-Year Max Water Depth Project Area Map

April 12, 2021

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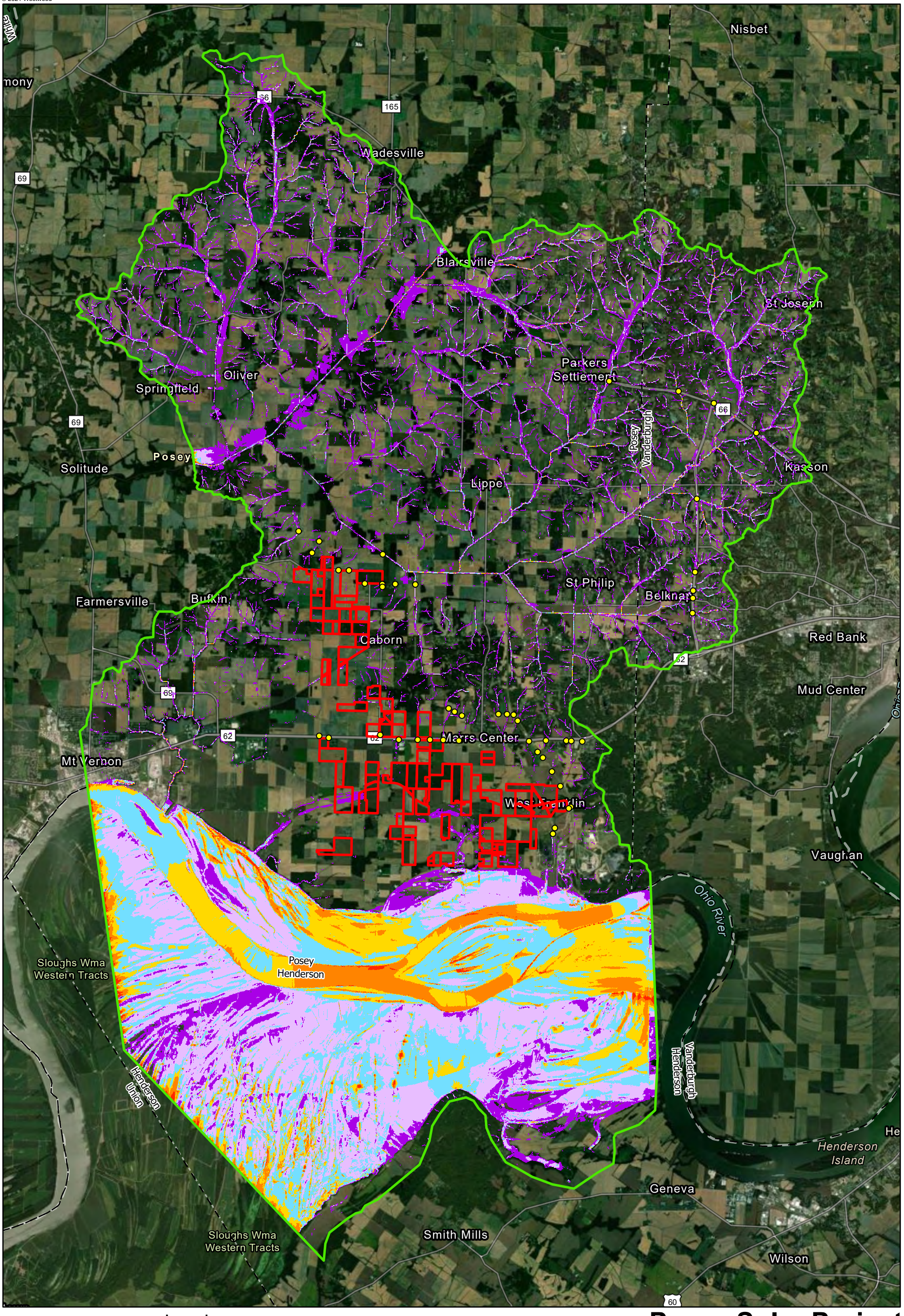
Peak Velocity Map - 100 Yr Peak Velocity map | 4/13/2021 7:37 AM | LJBassette



Data Source(s): Westwood (2021); Esri WMS Basemap Imagery (Accessed 2021); USGS (2021); FEMA (2021); USDA (2021)

Legend

- Project Boundary
- Combined FLO-2D Model Boundary
- County Boundary
- Modeled Culvert Locations

Peak Velocity (fps)

- 1.00 - 1.50
- 1.51 - 2.00
- 2.01 - 2.50
- 2.51 - 3.00
- 3.01 - 4.00
- 4.01 +

N

0 Miles 1.75

Posey Solar Project

Posey County, Indiana

Exhibit 7: 100-Year Peak Velocity Map

April 13, 2021

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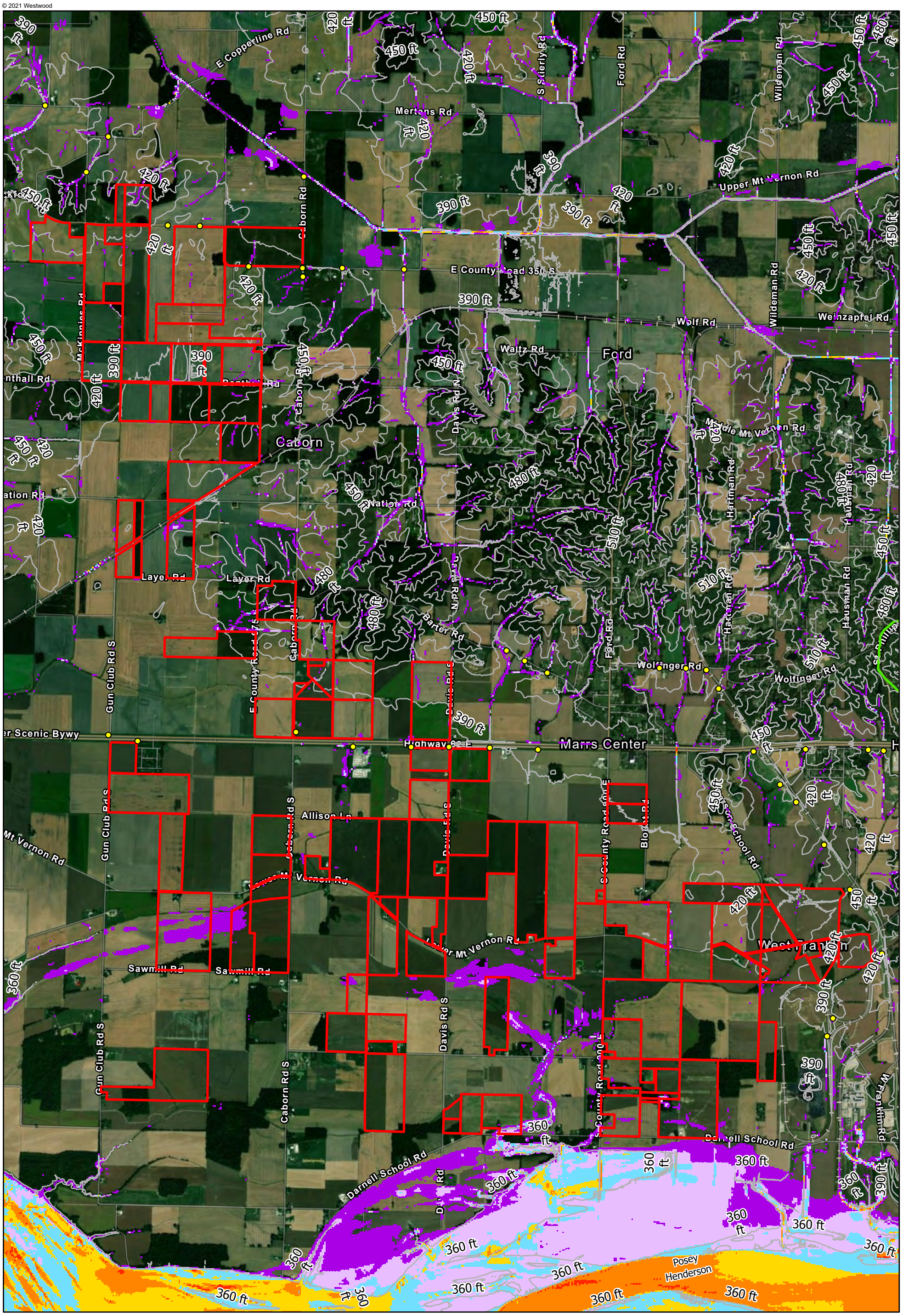
N:\0027286.00\GIS\Hydro Exhibits\2021-04-06 Exhibits 6-8\Posey Solar Project\Posey Solar Project.aprx
Peak Velocity Project Area Map - 100 Yr Peak Velocity Project Area | 4/13/2021 7:41 AM | LJBassette



Data Source(s): Westwood (2021); Esri WMS Basemap Imagery (Accessed 2021); USGS (2021); FEMA (2021); USDA (2021)

Legend

- Project Boundary
- Combined FLO-2D Model Boundary
- County Boundary
- 30-foot Contours
- Modeled Culvert Locations

Peak Velocity (fps)

- 1.00 - 1.50
- 1.51 - 2.00
- 2.01 - 2.50
- 2.51 - 3.00
- 3.01 - 4.00
- 4.01 +

N

0 3,000 Feet

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Posey Solar Project

Posey County, Indiana

Exhibit 7A: 100-Year Peak Velocity Project Area Map

April 13, 2021

N:\0027286.00\GIS\Hydro Exhibits\2021-04-06 Exhibits 6-8\Posey Solar Project\Posey Solar Project.aprx
Scour Map - 100 Yr Scour map | 4/13/2021 7:49 AM | LJBassette

Data Source(s): Westwood (2021); Esri WMS Basemap Imagery (Accessed 2021); USGS (2021); FEMA (2021); USDA (2021)

Legend

- Project Boundary
- Combined FLO-2D Model Boundary
- County Boundary
- 30-foot Contours
- Modeled Culvert Locations

Scour (ft)

- 1.00 - 1.50
- 1.51 - 2.00
- 2.01 +

N

0 3,000 Feet

Posey Solar Project

Posey County, Indiana

Exhibit 8: 100-Year Scour Map

April 13, 2021

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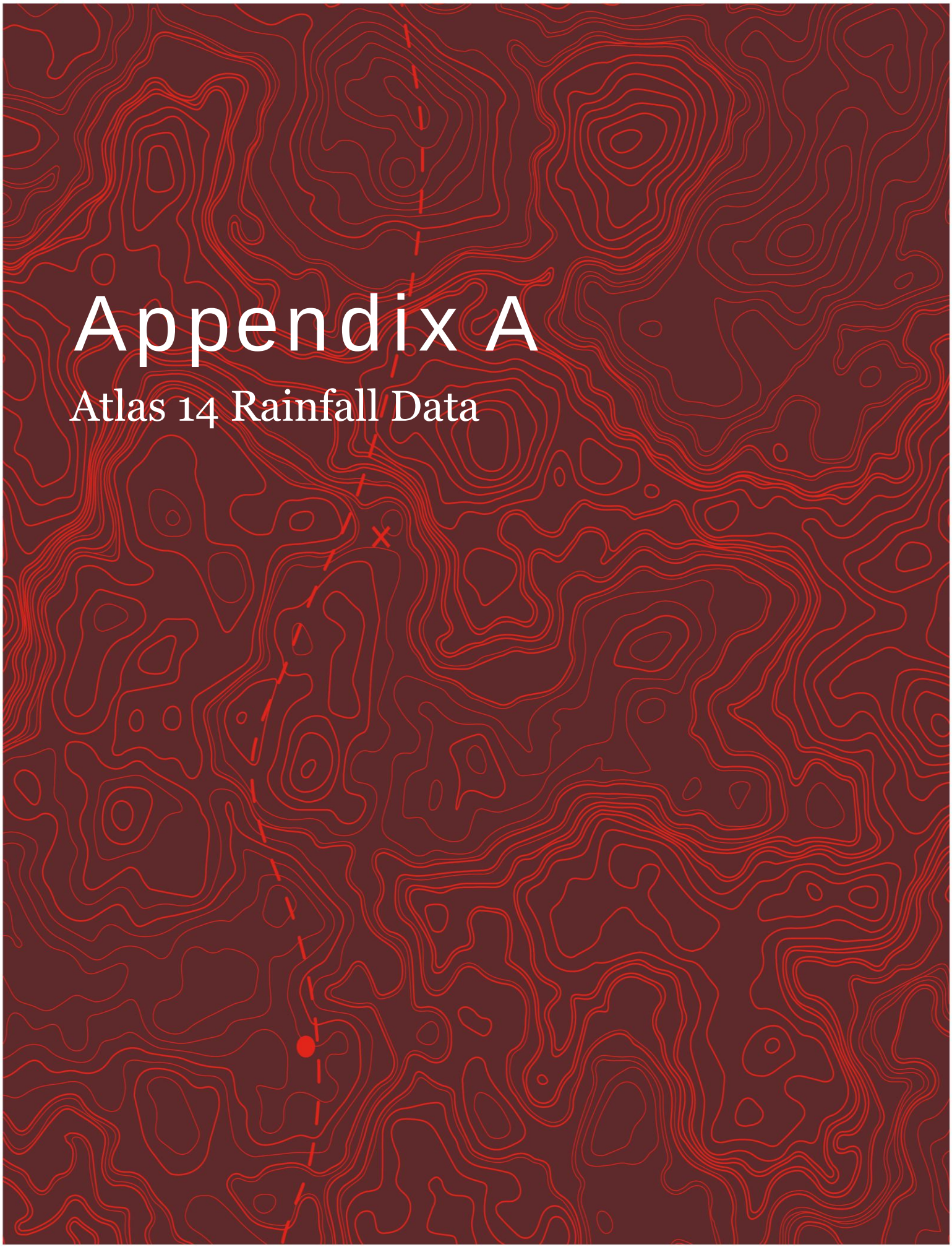
Appendix A

Atlas 14 Rainfall Data



NOAA Atlas 14, Volume 2, Version 3
Location name: Mount Vernon, Indiana, USA*
Latitude: 37.9198°, Longitude: -87.7712°
Elevation: 369.98 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

G.M. Bonnin, D. Martin, B. Lin, T. Parzybok, M.Yekta, and D. Riley

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.395** (0.361-0.434)	**0.466** (0.427-0.513)	**0.552** (0.504-0.606)	**0.622** (0.566-0.680)	**0.710** (0.643-0.775)	**0.779** (0.702-0.850)	**0.847** (0.759-0.922)	**0.918** (0.818-1.00)	**1.01** (0.896-1.11)	**1.08** (0.954-1.18)
10-min	**0.614** (0.561-0.674)	**0.728** (0.666-0.801)	**0.858** (0.784-0.941)	**0.960** (0.873-1.05)	**1.09** (0.983-1.19)	**1.18** (1.06-1.29)	**1.27** (1.14-1.39)	**1.37** (1.22-1.49)	**1.49** (1.32-1.63)	**1.58** (1.39-1.72)
15-min	**0.752** (0.688-0.826)	**0.890** (0.814-0.979)	**1.05** (0.963-1.16)	**1.18** (1.07-1.29)	**1.34** (1.21-1.47)	**1.46** (1.32-1.59)	**1.58** (1.42-1.73)	**1.70** (1.52-1.86)	**1.86** (1.65-2.03)	**1.97** (1.74-2.15)
30-min	**0.995** (0.910-1.09)	**1.19** (1.09-1.31)	**1.44** (1.32-1.58)	**1.64** (1.49-1.79)	**1.89** (1.72-2.07)	**2.09** (1.88-2.28)	**2.29** (2.05-2.49)	**2.49** (2.22-2.71)	**2.75** (2.44-3.01)	**2.96** (2.60-3.23)
60-min	**1.22** (1.11-1.34)	**1.46** (1.34-1.61)	**1.81** (1.65-1.99)	**2.09** (1.90-2.28)	**2.46** (2.22-2.68)	**2.75** (2.48-3.00)	**3.06** (2.74-3.33)	**3.37** (3.01-3.68)	**3.81** (3.37-4.16)	**4.15** (3.65-4.54)
2-hr	**1.47** (1.35-1.61)	**1.78** (1.63-1.95)	**2.22** (2.04-2.43)	**2.57** (2.35-2.81)	**3.06** (2.78-3.33)	**3.45** (3.13-3.75)	**3.86** (3.48-4.19)	**4.29** (3.84-4.66)	**4.87** (4.34-5.30)	**5.34** (4.72-5.81)
3-hr	**1.58** (1.45-1.73)	**1.91** (1.75-2.09)	**2.39** (2.18-2.61)	**2.78** (2.53-3.03)	**3.32** (3.01-3.62)	**3.76** (3.40-4.10)	**4.23** (3.80-4.60)	**4.72** (4.22-5.13)	**5.42** (4.79-5.89)	**5.98** (5.25-6.50)
6-hr	**1.94** (1.78-2.12)	**2.33** (2.14-2.56)	**2.91** (2.66-3.19)	**3.38** (3.09-3.70)	**4.05** (3.68-4.42)	**4.60** (4.15-5.01)	**5.18** (4.66-5.64)	**5.80** (5.18-6.31)	**6.68** (5.90-7.27)	**7.39** (6.47-8.06)
12-hr	**2.29** (2.10-2.49)	**2.76** (2.53-3.01)	**3.42** (3.14-3.73)	**3.97** (3.62-4.32)	**4.73** (4.31-5.14)	**5.36** (4.86-5.82)	**6.02** (5.43-6.53)	**6.71** (6.01-7.29)	**7.70** (6.83-8.36)	**8.49** (7.47-9.23)
24-hr	**2.74** (2.57-2.93)	**3.30** (3.09-3.53)	**4.10** (3.84-4.39)	**4.75** (4.45-5.08)	**5.66** (5.28-6.04)	**6.40** (5.94-6.82)	**7.17** (6.62-7.64)	**7.98** (7.33-8.51)	**9.11** (8.30-9.74)	**10.0** (9.06-10.7)
2-day	**3.25** (3.03-3.49)	**3.90** (3.64-4.20)	**4.86** (4.53-5.22)	**5.65** (5.25-6.06)	**6.77** (6.27-7.27)	**7.70** (7.10-8.27)	**8.69** (7.96-9.34)	**9.76** (8.88-10.5)	**11.3** (10.2-12.2)	**12.5** (11.2-13.6)
3-day	**3.46** (3.23-3.72)	**4.15** (3.87-4.46)	**5.15** (4.80-5.54)	**5.98** (5.56-6.43)	**7.18** (6.65-7.72)	**8.19** (7.55-8.80)	**9.26** (8.49-9.97)	**10.4** (9.49-11.2)	**12.1** (10.9-13.1)	**13.5** (12.0-14.6)
4-day	**3.67** (3.43-3.95)	**4.39** (4.10-4.73)	**5.44** (5.07-5.86)	**6.32** (5.88-6.80)	**7.60** (7.04-8.18)	**8.67** (8.00-9.34)	**9.83** (9.02-10.6)	**11.1** (10.1-12.0)	**12.9** (11.6-14.0)	**14.4** (12.9-15.7)
7-day	**4.26** (3.97-4.59)	**5.10** (4.75-5.51)	**6.31** (5.87-6.81)	**7.31** (6.79-7.89)	**8.77** (8.10-9.46)	**9.99** (9.19-10.8)	**11.3** (10.3-12.2)	**12.7** (11.5-13.7)	**14.7** (13.2-16.0)	**16.4** (14.6-17.9)
10-day	**4.80** (4.46-5.21)	**5.75** (5.35-6.24)	**7.10** (6.60-7.71)	**8.22** (7.62-8.92)	**9.84** (9.07-10.7)	**11.2** (10.3-12.1)	**12.6** (11.5-13.7)	**14.1** (12.8-15.4)	**16.3** (14.6-17.8)	**18.2** (16.1-19.8)
20-day	**6.62** (6.24-7.05)	**7.86** (7.40-8.37)	**9.42** (8.86-10.0)	**10.7** (10.0-11.4)	**12.4** (11.6-13.2)	**13.8** (12.9-14.7)	**15.2** (14.1-16.2)	**16.7** (15.4-17.8)	**18.7** (17.1-20.0)	**20.2** (18.4-21.7)
30-day	**8.17** (7.72-8.65)	**9.64** (9.12-10.2)	**11.4** (10.8-12.1)	**12.8** (12.1-13.5)	**14.7** (13.8-15.6)	**16.2** (15.2-17.2)	**17.7** (16.5-18.8)	**19.2** (17.9-20.5)	**21.3** (19.7-22.7)	**22.9** (21.0-24.5)
45-day	**10.2** (9.72-10.8)	**12.0** (11.4-12.7)	**14.0** (13.3-14.8)	**15.6** (14.8-16.5)	**17.8** (16.8-18.8)	**19.5** (18.4-20.5)	**21.2** (19.9-22.3)	**22.8** (21.4-24.2)	**25.1** (23.3-26.6)	**26.8** (24.8-28.5)
60-day	**12.2** (11.6-12.8)	**14.3** (13.6-15.1)	**16.6** (15.8-17.5)	**18.4** (17.5-19.4)	**20.7** (19.7-21.9)	**22.5** (21.3-23.8)	**24.3** (22.9-25.6)	**26.0** (24.4-27.5)	**28.2** (26.4-29.9)	**29.9** (27.8-31.8)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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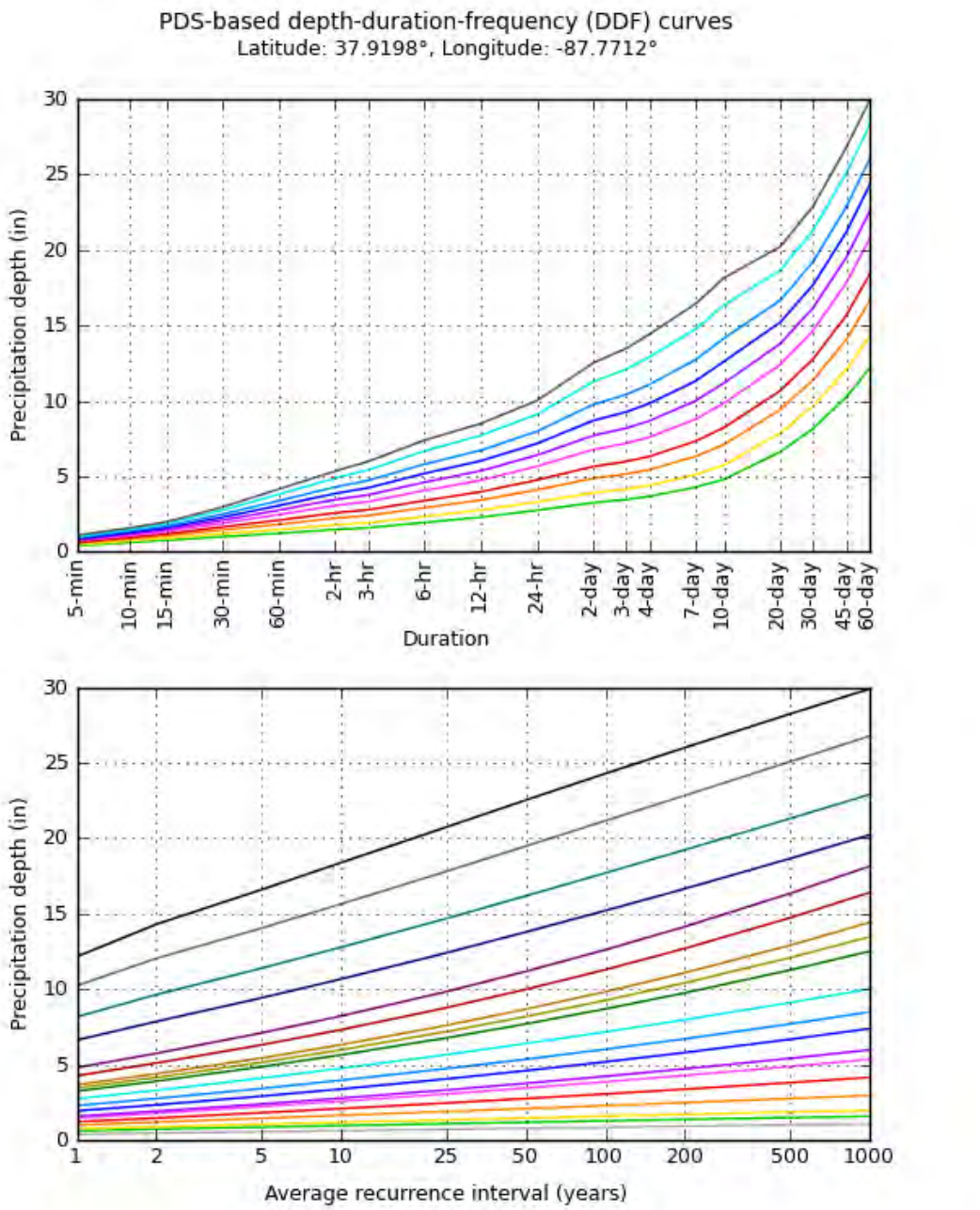
PF graphical



NOAA Atlas 14, Volume 2, Version 3

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Maps & aerials

Small scale terrain

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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

Appendix B

Curve Number Table

Table 1. Standard Curve Numbers

Class	Value	Classification Description [NLCD 2006]	Curve Number				
			Soil Type*				
			A	B	C	D	W
Water	11	Open Water - areas of open water, generally with less than 25% cover of vegetation or soil.	98	98	98	98	100
	12	Perennial Ice/Snow - areas characterized by a perennial cover of ice and/or snow, generally greater than 25% of total cover.	98	98	98	98	100
Developed	21	Developed, Open Space - areas with a mixture of some constructed materials, but mostly vegetation in the form of lawn grasses. Impervious surfaces account for less than 20% of total cover. These areas most commonly include large-lot single-family housing units, parks, golf courses, and vegetation planted in developed settings for recreation, erosion control, or aesthetic purposes.	46	65	77	82	100
	22	Developed, Low Intensity - areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 20% to 49% percent of total cover. These areas most commonly include single-family housing units.	61	75	83	87	100
	23	Developed, Medium Intensity – areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 50% to 79% of the total cover. These areas most commonly include single-family housing units.	77	85	90	95	100
	24	Developed High Intensity -highly developed areas where people reside or work in high numbers. Examples include apartment complexes, row houses and commercial/industrial. Impervious surfaces account for 80% to 100% of the total cover.	89	92	94	95	100
Barren	31	Barren Land (Rock/Sand/Clay) - areas of bedrock, desert pavement, scarps, talus, slides, volcanic material, glacial debris, sand dunes, strip mines, gravel pits and other accumulations of earthen material. Generally, vegetation accounts for less than 15% of total cover.	77	86	91	94	100
Forest	41	Deciduous Forest - areas dominated by trees generally greater than 5 meters tall, and greater than 20% of total vegetation cover. More than 75% of the tree species shed foliage simultaneously in response to seasonal change.	43	55	70	77	100
	42	Evergreen Forest - areas dominated by trees generally greater than 5 meters tall, and greater than 20% of total vegetation cover. More than 75% of the tree species maintain their leaves all year. Canopy is never without green foliage.	43	55	70	77	100
	43	Mixed Forest - areas dominated by trees generally greater than 5 meters tall, and greater than 20% of total vegetation cover. Neither deciduous nor evergreen species are greater than 75% of total tree cover.	43	55	70	77	100
Shrubland	51	Dwarf Scrub - Alaska only areas dominated by shrubs less than 20 centimeters tall with shrub canopy typically greater than 20% of total vegetation. This type is often co-associated with grasses, sedges, herbs, and non-vascular vegetation.	43	48	65	73	100
	52	Shrub/Scrub - areas dominated by shrubs; less than 5 meters tall with shrub canopy typically greater than 20% of total vegetation. This class includes true shrubs, young trees in an early successional stage or trees stunted from environmental conditions.	43	48	65	73	100
Herbaceous	71	Grassland/Herbaceous - areas dominated by gramanoid or herbaceous vegetation, generally greater than 80% of total vegetation. These areas are not subject to intensive management such as tilling, but can be utilized for grazing.	43	58	71	78	100
	72	Sedge/Herbaceous - Alaska only areas dominated by sedges and forbs, generally greater than 80% of total vegetation. This type can occur with significant other grasses or other grass like plants, and includes sedge tundra, and sedge tussock tundra.	43	58	71	78	100
	73	Lichens - Alaska only areas dominated by fruticose or foliose lichens generally greater than 80% of total vegetation.	43	48	65	73	100
	74	Moss - Alaska only areas dominated by mosses, generally greater than 80% of total vegetation.	43	48	65	73	100
Planted/Cultivated	81	Pasture/Hay – areas of grasses, legumes, or grass-legume mixtures planted for livestock grazing or the production of seed or hay crops, typically on a perennial cycle. Pasture/hay vegetation accounts for greater than 20% of total vegetation.	43	58	71	78	100
	82	Cultivated Crops – areas used for the production of annual crops, such as corn, soybeans, vegetables, tobacco, and cotton, and also perennial woody crops such as orchards and vineyards. Crop vegetation accounts for greater than 20% of total vegetation. This class also includes all land being actively tilled.	67	78	85	89	100
	83	Small Grains	63	75	83	87	100
Wetlands	91	Woody Wetlands - areas where forest or shrubland vegetation accounts for greater than 20% of vegetative cover and the soil or substrate is periodically saturated with or covered with water.	45	66	77	83	100
	92	Emergent Herbaceous Wetlands - Areas where perennial herbaceous vegetation accounts for greater than 80% of vegetative cover and the soil or substrate is periodically saturated with or covered with water.	45	66	77	83	100

*A/D, B/D and C/D soils lumped as D soils, W denotes water

**Curve Numbers for NLCD Codes 41-81 have been increased from 30 to 43 as many of these areas are partially grazed Woods-grass combination.

Appendix C

FEMA FIRM Panels

Project Boundary

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) Report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS Report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

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The **projection** used in the preparation of this map was Indiana State Plane West Zone (FIPS zone 1302). The **horizontal datum** was NAD 83, GRS 1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

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NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

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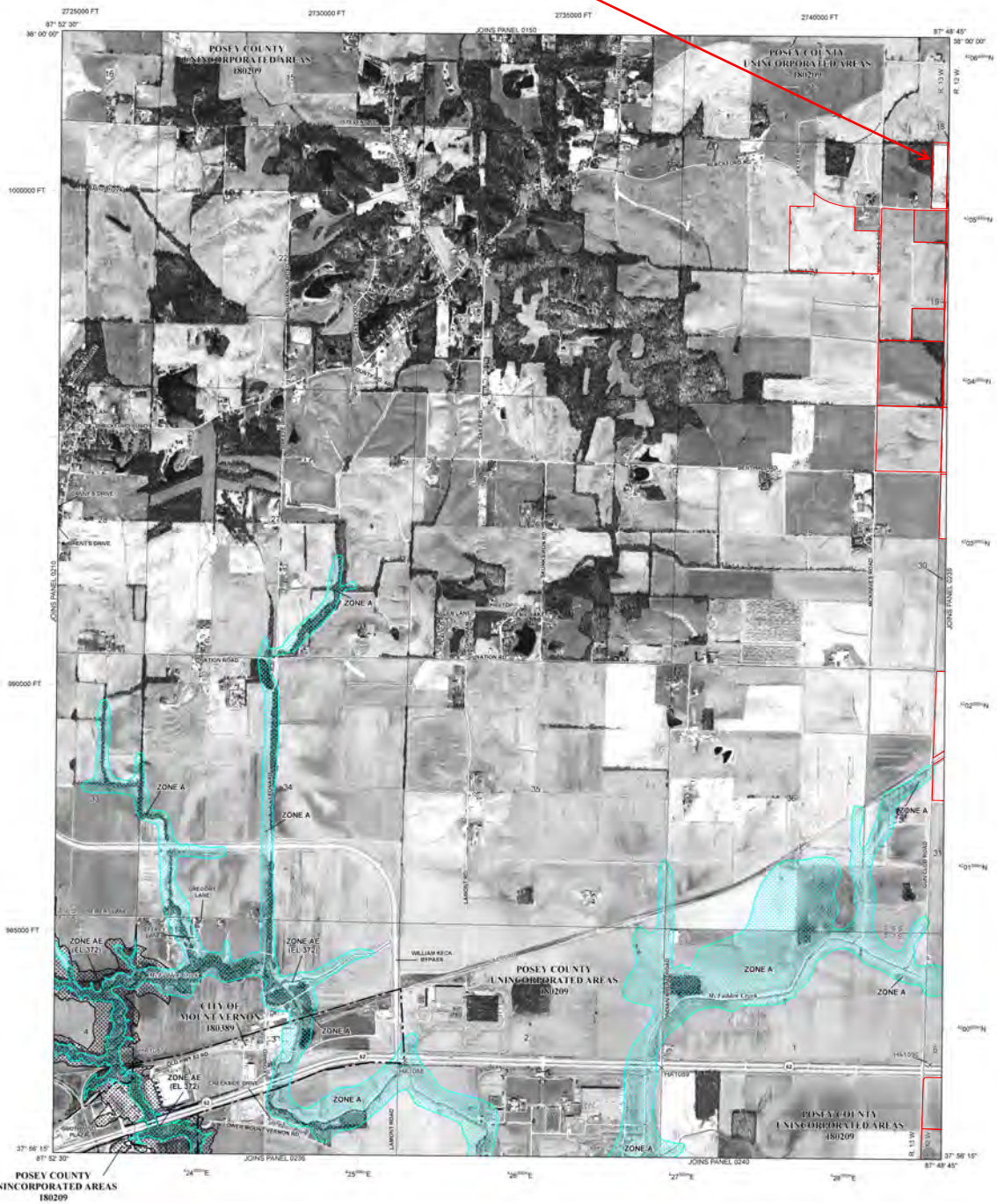

LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A — No Base Flood Elevations determined.

ZONE AE — Base Flood Elevations determined.

ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR — Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE A99 — Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V — Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE — Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% Annual Chance Floodplain Boundary
- 0.2% Annual Chance Floodplain Boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities.
- 513 — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

- A — A — Cross section line
- 23 — 23 — Transect line
- Culvert
- Bridge
- 87° 02' 06", 39° 02' 12" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere
- 5000-foot ticks: Indiana State Plane West Zone (FIPS Zone 1302), Transverse Mercator projection
- 1000-meter Universal Transverse Mercator grid values, zone 16
- DM5810 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
- Spot Hgt

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
November 5, 2014

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 1000'
500 0 1000 2000 FEET
300 0 300 600 METERS

NFIP — NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0230C

FIRM

FLOOD INSURANCE RATE MAP

POSEY COUNTY, INDIANA AND INCORPORATED AREAS

PANEL 230 OF 325
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MOUNT VERNON, CITY OF	180389	0230	C
POSEY COUNTY	180209	0230	C

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
18129C0230C
EFFECTIVE DATE
NOVEMBER 5, 2014

Federal Emergency Management Agency

0.0 mi 0.5 mi 1.0 mi 1.5 mi 2.0 mi 2.5 mi

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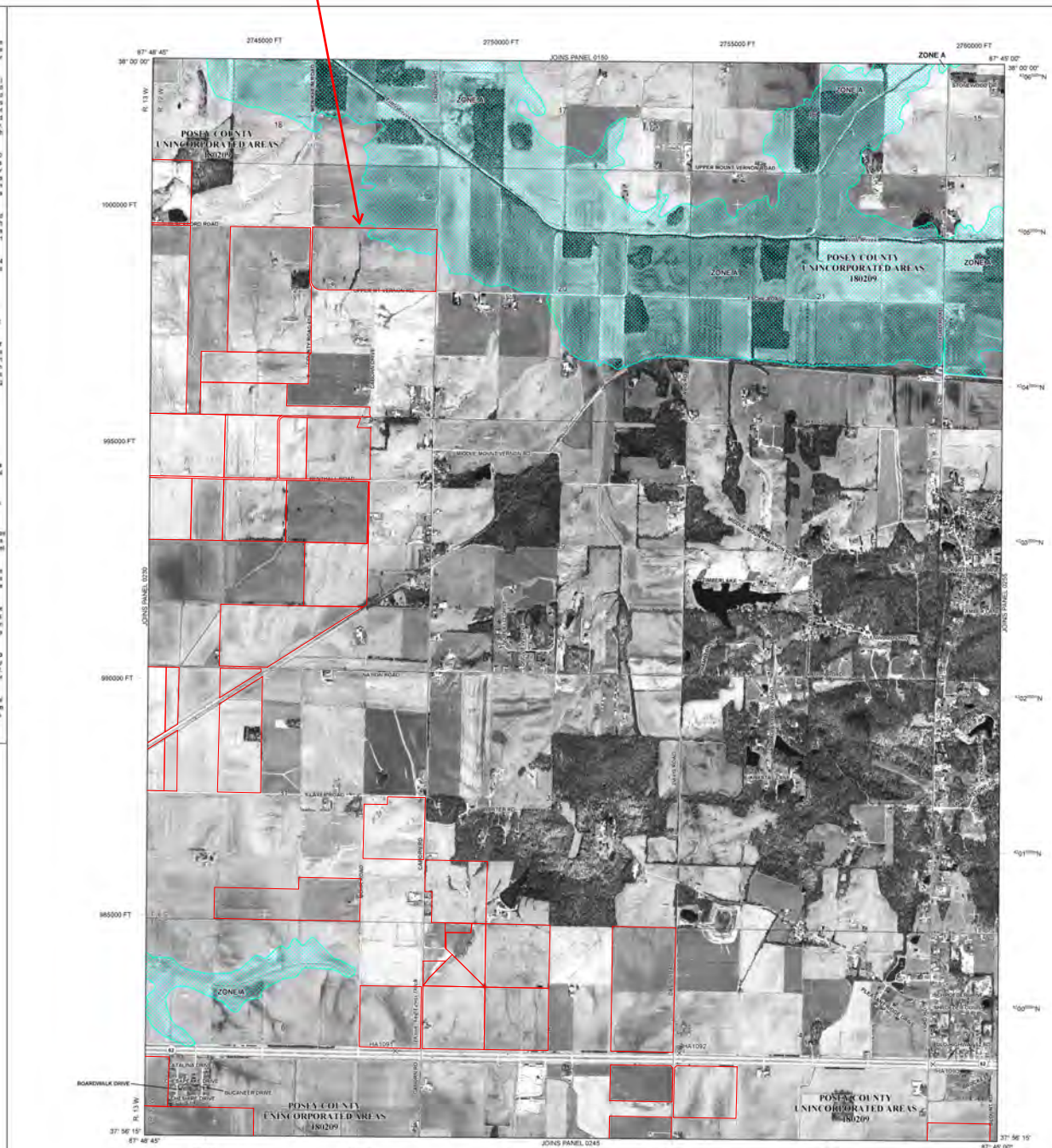

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COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% Annual Chance Floodplain Boundary
0.2% Annual Chance Floodplain Boundary
Floodway boundary
Zone D boundary
CBRS and OPA boundary
Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities.
513 — Base Flood Elevation line and value; elevation in feet*
(EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

A — A — Cross section line
23 — 23 — Transect line
Culvert
Bridge
45° 02' 08", 93° 02' 13" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere
3100000 FT — 5000-foot ticks: Indiana State Plane West Zone (FIPS Zone 1302), Transverse Mercator projection
DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
November 5, 2014

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 5000'
500 0 1000 2000 FEET
300 0 300 600 METERS

NFIP
PANEL 0235C

FIRM
FLOOD INSURANCE RATE MAP
POSEY COUNTY, INDIANA AND INCORPORATED AREAS

PANEL 235 OF 325
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
POSEY COUNTY	180209	0235	C

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
18129C0235C
EFFECTIVE DATE
NOVEMBER 5, 2014

Federal Emergency Management Agency

0.0 mi 0.5 mi 1.0 mi 1.5 mi 2.0 mi 2.5 mi

Project Boundary

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) Report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS Report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study Report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study Report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study Report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Indiana State Plane West Zone (FIPS zone 1302). The **horizontal datum** was NAD 83, GRS 1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713- 3242**, or visit its website at http://www.ngs.noaa.gov.

Base map information shown on this FIRM was derived from the 2005 Indiana Orthophotography (IndianaMap Framework Data www.indianamap.org). This information was photogrammetrically compiled at a scale of 1:2400 from aerial photography dated spring 2005.

The **profile baselines** depicted on this map represent the hydraulic modeling baselines that match the flood profiles in the FIS report. As a result of improved topographic data, the **profile baseline**, in some cases, may deviate significantly from the channel centerline or appear outside the SFHA.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels, community map repository addresses, and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

For information on available products associated with this FIRM visit the **Map Service Center (MSC)** website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the MSC website.

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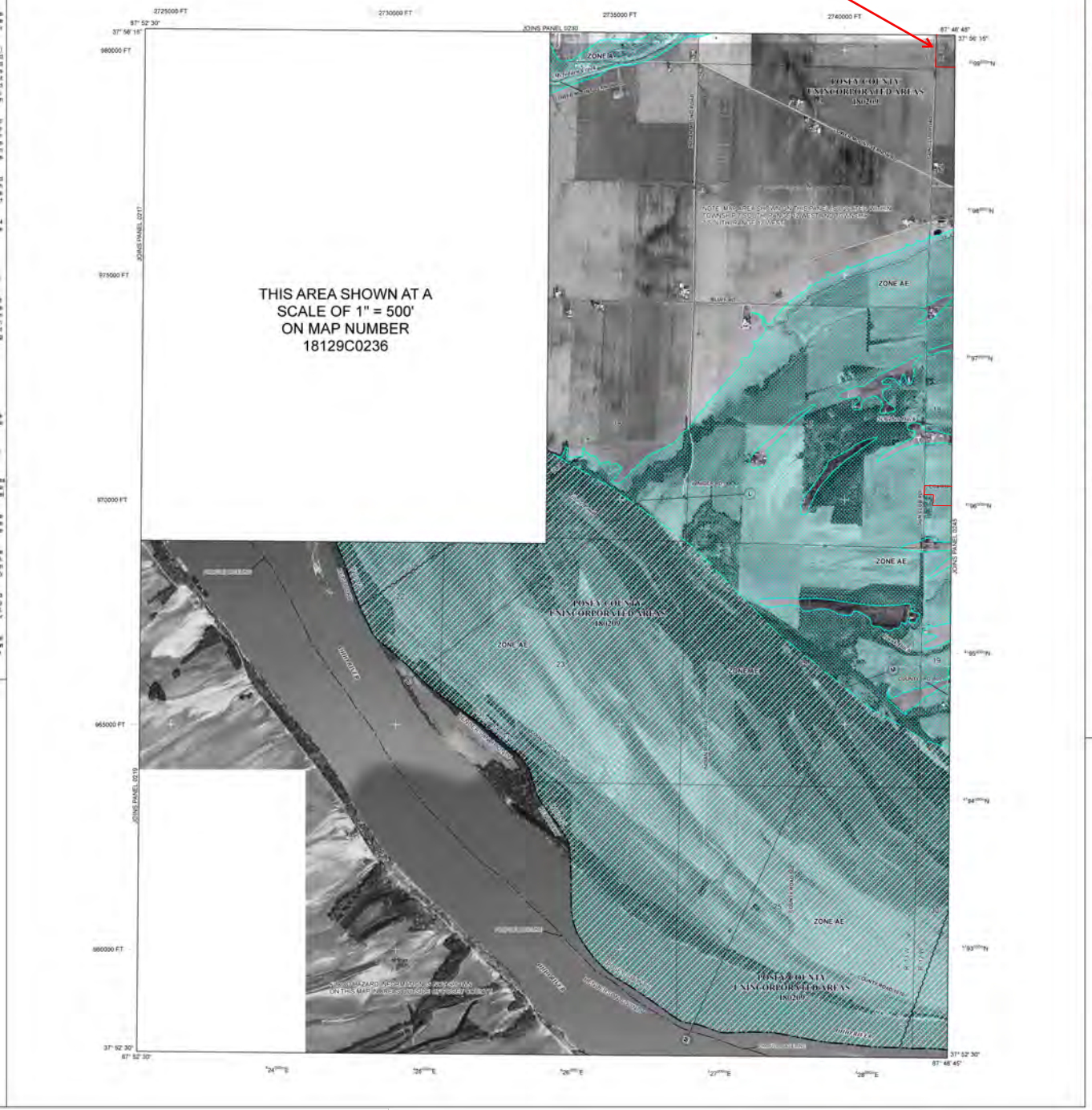

LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A — No Base Flood Elevations determined.

ZONE AE — Base Flood Elevations determined.

ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR — Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE A99 — Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V — Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE — Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% Annual Chance Floodplain Boundary

0.2% Annual Chance Floodplain Boundary

Floodway boundary

Zone D boundary

CBRS and OPA boundary

Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities.

513 — Base Flood Elevation line and value; elevation in feet*

(EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

A — A — Cross section line

23 — 23 — Transect line

Culvert

Bridge

45° 02' 08", 93° 02' 12" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere

1000000 FT — 5000-foot ticks: Indiana State Plane West Zone (FIPS Zone 1302), Transverse Mercator projection

DX510 — 1000-meter Universal Transverse Mercator grid values, zone 16

Bench mark (see explanation in Notes to Users section of this FIRM panel)

River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
November 5, 2014

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 1000'
500 0 1000 2000 FEET
150 0 300 600 METERS

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0240C

FIRM

FLOOD INSURANCE RATE MAP

POSEY COUNTY, INDIANA AND INCORPORATED AREAS

PANEL 240 OF 325

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
POSEY COUNTY	180200	0240	C

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
18129C0240C

EFFECTIVE DATE
NOVEMBER 5, 2014

Federal Emergency Management Agency

0.0 mi 0.5 mi 1.0 mi 1.5 mi 2.0 mi 2.5 mi

Project Boundary

NOTES TO USERS

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Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study Report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study Report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study Report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Indiana State Plane West Zone (FIPS zone 1302). The **horizontal datum** was NAD 83, GRS 1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

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The **profile baselines** depicted on this map represent the hydraulic modeling baselines that match the flood profiles in the FIS report. As a result of improved topographic data, the **profile baseline**, in some cases, may deviate significantly from the channel centerline or appear outside the SFHA.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

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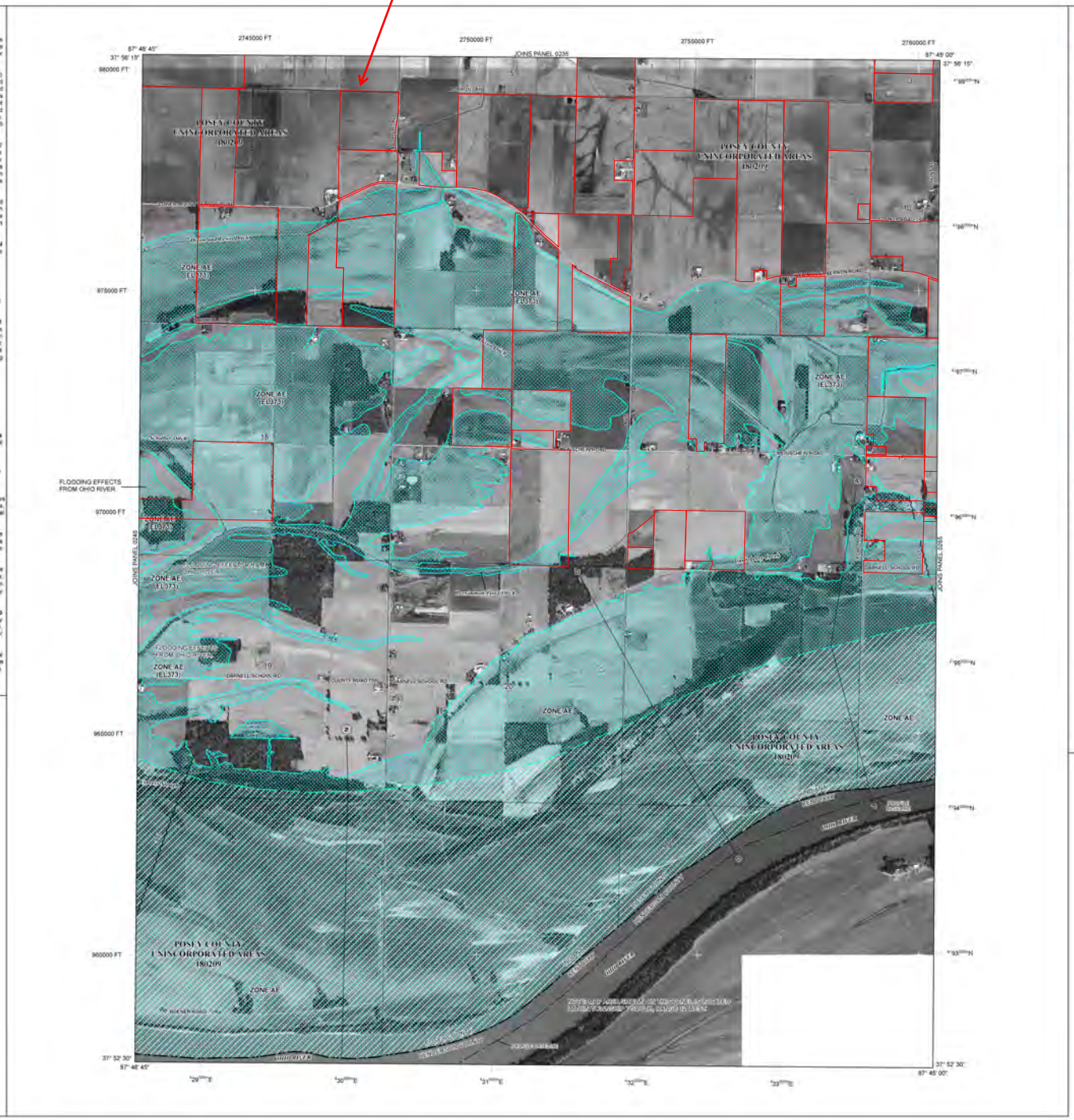

LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A — No Base Flood Elevations determined.

ZONE AE — Base Flood Elevations determined.

ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR — Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE A99 — Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V — Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE — Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% Annual Chance Floodplain Boundary

0.2% Annual Chance Floodplain Boundary

Floodway Boundary

Zone D Boundary

CBRS and OPA Boundary

Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities.

513 — Base Flood Elevation line and value; elevation in feet*

(EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

A — A — Cross section line

23 — 23 — Transect line

Culvert

Bridge

43° 02' 08", 93° 02' 12" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere

1000 meter Universal Transverse Mercator grid values, zone 16

Bench mark (see explanation in Notes to Users section of this FIRM panel)

River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
November 5, 2014

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

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MAP SCALE 1" = 1000'
500 0 1000 2000 FEET
150 0 300 600 METERS

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0245C

FIRM
FLOOD INSURANCE RATE MAP
POSEY COUNTY, INDIANA AND INCORPORATED AREAS

PANEL 245 OF 325
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
POSEY COUNTY	180209	0245	C

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
18129C0245C
EFFECTIVE DATE
NOVEMBER 5, 2014

Federal Emergency Management Agency

0.0 mi 0.5 mi 1.0 mi 1.5 mi 2.0 mi 2.5 mi

Project Boundary

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LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A — No Base Flood Elevations determined.
ZONE AE — Base Flood Elevations determined.
ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR — Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99 — Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V — Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE — Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% Annual Chance Floodplain Boundary
0.2% Annual Chance Floodplain Boundary
Floodway boundary
Zone D boundary
CBRS and OPA boundary
Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities.
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(EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

A — A — Cross section line
23 — 23 — Transect line
Culvert
Bridge
45° 22' 08", 93° 02' 12" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere
1000-meter Universal Transverse Mercator grid values, zone 16
5000-foot ticks: Indiana State Plane West Zone (FIPS Zone 1302), Transverse Mercator projection
DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
November 5, 2014

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

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MAP SCALE 1" = 1000'
500 0 1000 2000 FEET
300 0 300 600 METERS

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0265C

FIRM
FLOOD INSURANCE RATE MAP
POSEY COUNTY, INDIANA AND INCORPORATED AREAS

PANEL 265 OF 325
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

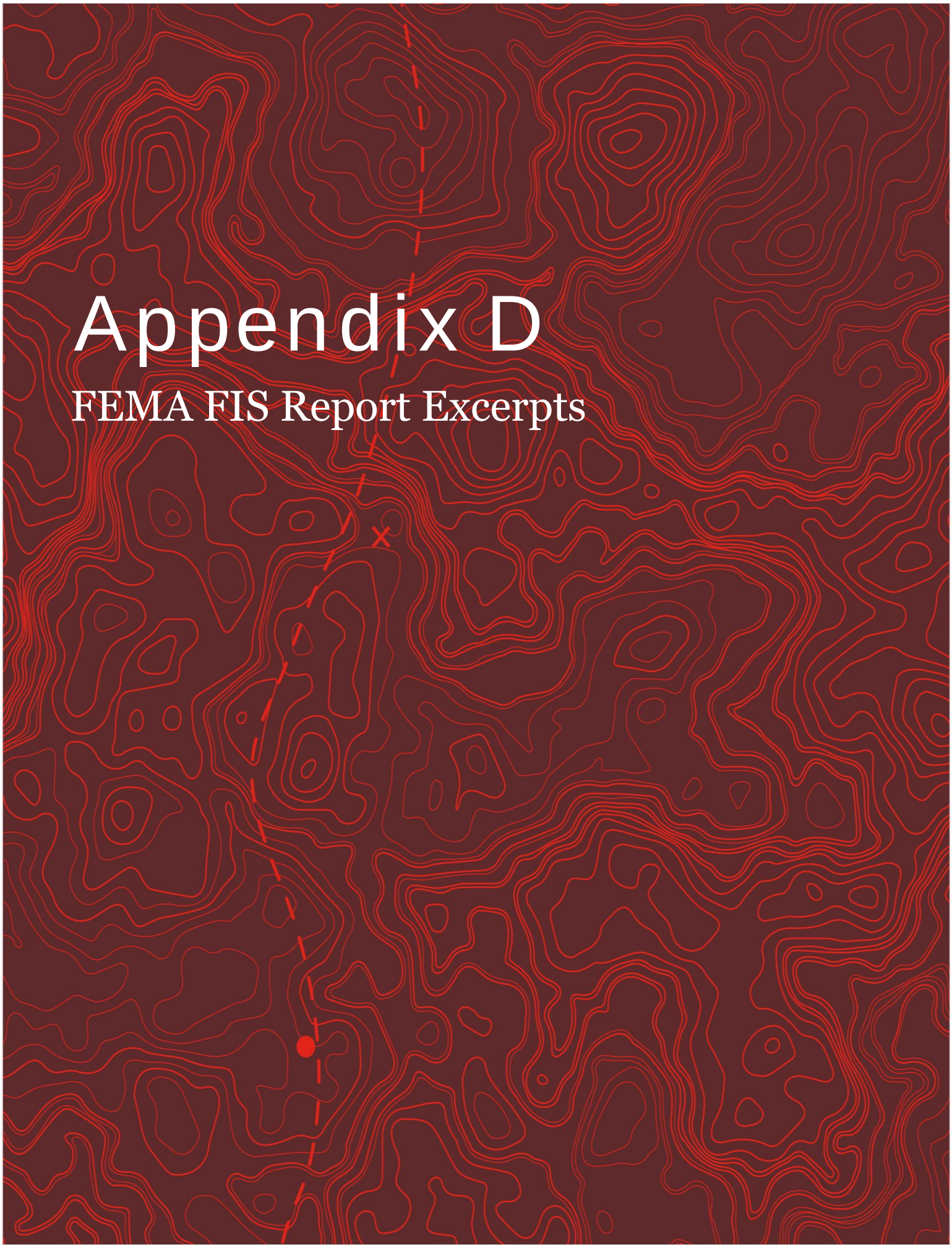
CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
POSEY COUNTY	180209	0265	C

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
18129C0265C
EFFECTIVE DATE
NOVEMBER 5, 2014
Federal Emergency Management Agency

0.0 mi 0.5 mi 1.0 mi 1.5 mi 2.0 mi 2.5 mi



Appendix D

FEMA FIS Report Excerpts

This Revision

Hydrologic analyses were carried out to establish peak discharge-frequency relationships for the flooding source studied by detailed methods affecting Posey County. Table 6 contains a summary of peak discharges for the 10-, 2-, 1-, and 0.2-percent annual chance floods, where applicable, for each flooding source studied in detail in Posey County. Peak discharges in the table were provided by the U.S. Army Corps of Engineers, Louisville District.

Table 6. Summary of Discharges

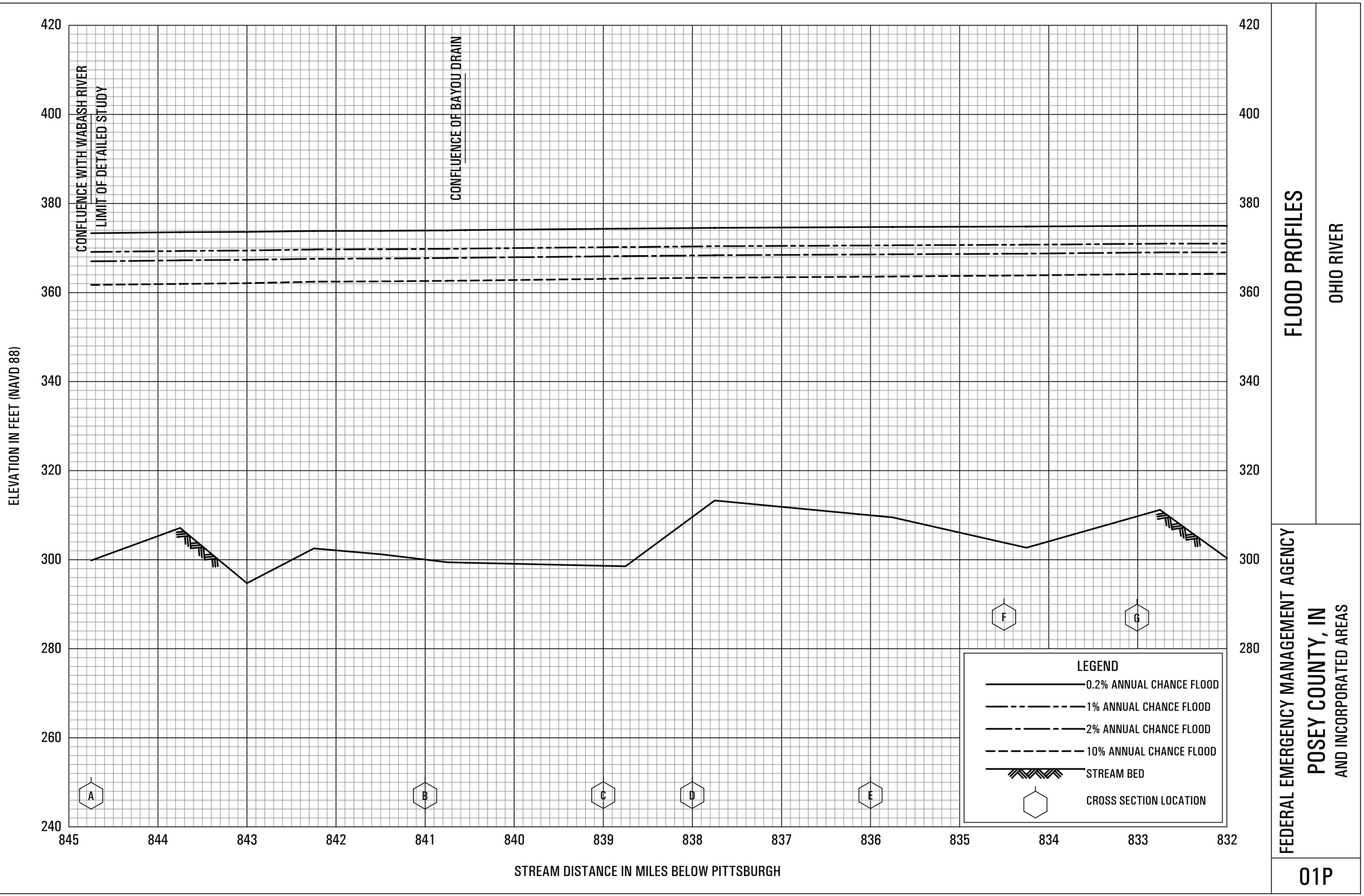
		Peak Discharge (CFS)			
Flooding Source And Location	Drainage Area (Square Miles)	10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
OHIO RIVER					
At Evansville Gage, IN	107,000	708,000	853,000	920,000	1,080,000

The hydrologic analyses for the Ohio River were performed by the U.S. Army Corps of Engineers. Frequency discharge data for the entire length of the Ohio River are available based on an analysis conducted by the Ohio River Division of the Corps of Engineers in Cincinnati, Ohio. Natural discharge-frequency curves for the Ohio River were developed in accordance with methods presented in papers by Leo R. Beard, Statistical Methods in Hydrology. Modified discharge-frequency curves, for the Ohio River, resulted from routing twelve representative floods for the Ohio River modified by an upstream Corps of Engineers reservoir system. That system included reservoirs completed or near completion in 1976 and is considered current in 2002. Data were plotted opposite original flood data on a grid containing a referenced flow reduction of natural flow and a new best-fit curve drawn. Total reductions were read from the new curve at selected natural flow frequencies, and subtracted from natural flows at those frequencies to obtain new modified-flow values.

Standard and accepted hydrologic methods were used to develop discharge data on the study streams in Posey County. These data were coordinated with the Indiana Department of Natural Resources, the Natural Resources Conservation Service (formally the Soil Conservation Service), the U. S. Geological Survey and the Louisville District of the U. S. Army Corps of Engineers, through a Memorandum Of Understanding dated May 6, 1976. Discharge curves for the 10%, 2%, 1%, and 0.2% annual chance floods were developed for each study stream using several different procedures and compared for consistency.

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the sources studied were carried out to provide estimates of the elevations of floods of the selected recurrence intervals. Users should be aware that flood elevations shown on the Flood Insurance



FLOOD PROFILES

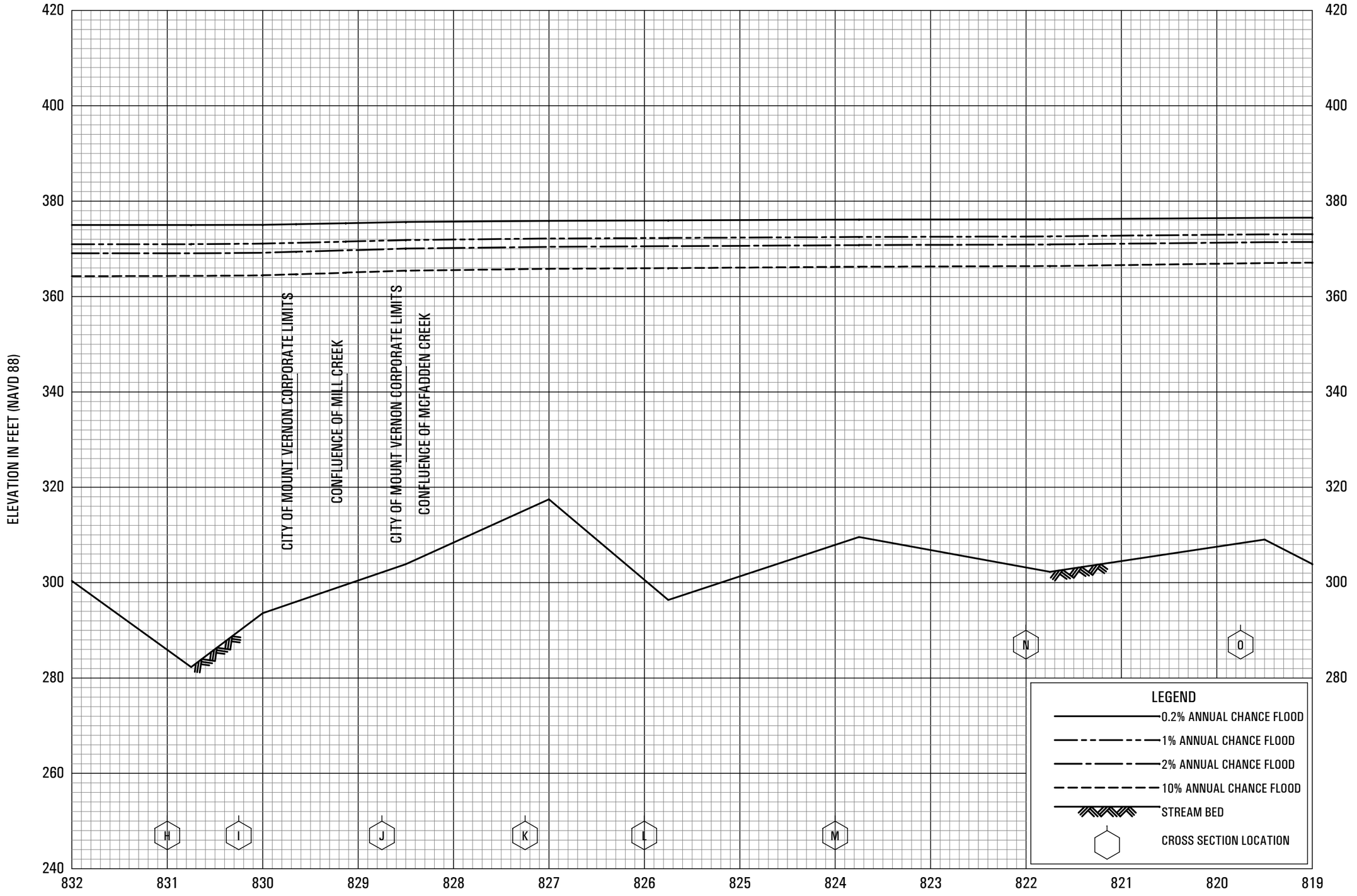
OHIO RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

POSEY COUNTY, IN

AND INCORPORATED AREAS

01P



FLOOD PROFILES

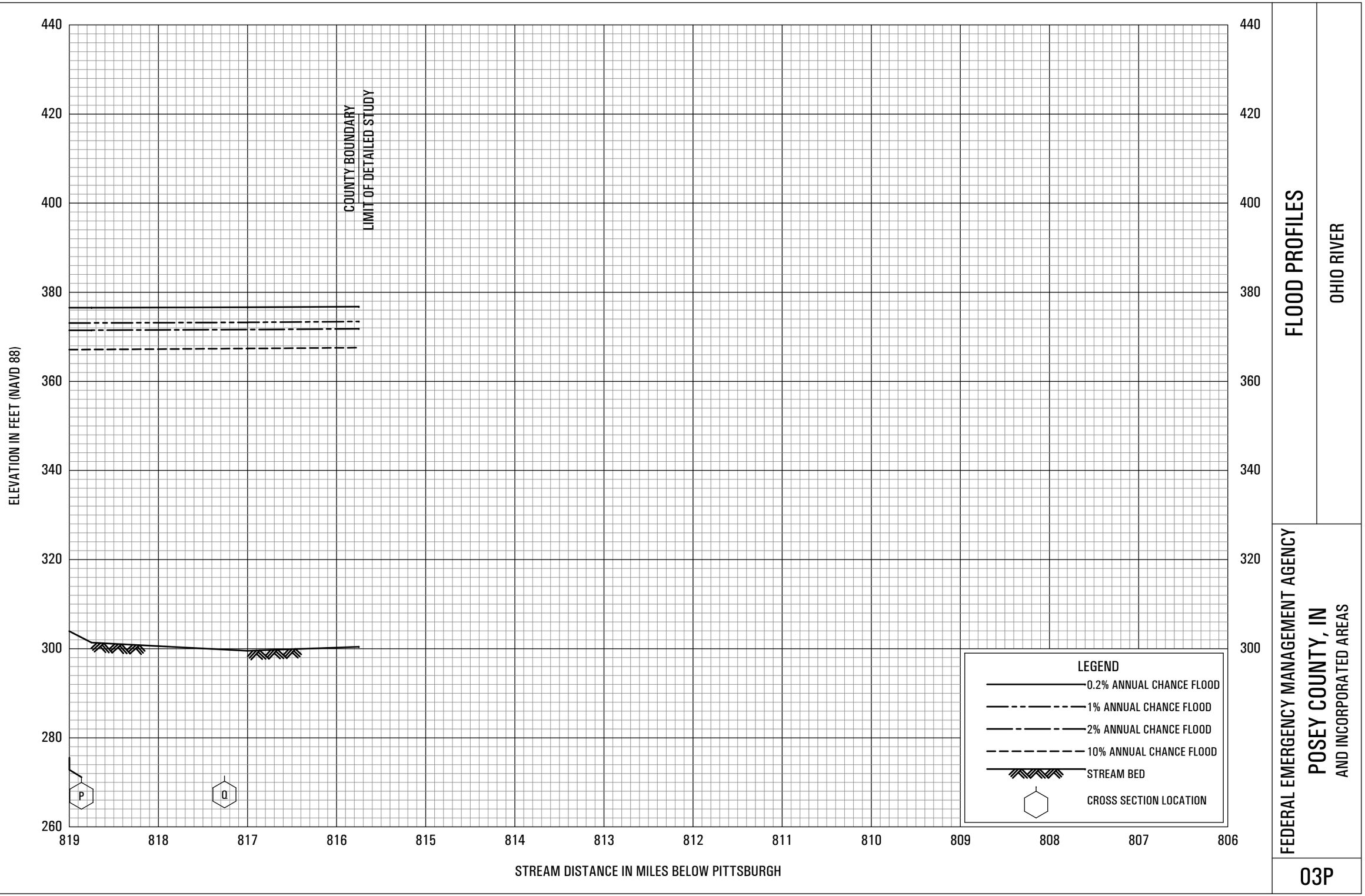
OHIO RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

POSEY COUNTY, IN

AND INCORPORATED AREAS

02P



FLOOD PROFILES

OHIO RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

POSEY COUNTY, IN

AND INCORPORATED AREAS

03P

Appendix E

USGS StreamStats Station Report

StreamStats Data-Collection Station Report

USGS Station Number	**03378550**
Station Name	**BIG CREEK NEAR WADESVILLE, IN**

Click here to link to available data on NWIS-Web for this site.

Descriptive Information

Station Type	Streamgage, continuous record
Location	Lat 38°04'59.2", long 87°46'10.7" referenced to North American Datum of 1983, in SW 1/4 SW 1/4 sec.16, T.5 S., R.12 W., Posey County, IN, Hydrologic Unit 05120113, on left bank at downstream side of bridge on State Highway 66, 0.6 mi northwest of Blairsville, 0.8 mi upstream from County Road 250 North, and 1.6 mi southeast of Wadesville.
Gage	Water-stage recorder. Datum of gage is 369.70 feet above the North American Vertical Datum of 1988.
Regulation and Diversions	None known.
Regulated?	Unknown
Period of Record	
Remarks	
Latitude (degrees NAD83)	38.08282118
Longitude (degrees NAD83)	-87.7694692
Hydrologic unit code	05120113
County	129-Posey
HCDN2009	No

Physical Characteristics

Characteristic Name	Value	Units	Citation Number
Descriptive Information			
Datum_of_Latitude_Longitude	NAD83	dimensionless	30
District_Code	18	dimensionless	30
Precipitation Statistics			
24_Hour_2_Year_Precipitation	3.3000	inches	31
Mean_Annual_Precipitation	42.000	inches	31
Temperature Statistics			
Mean_Min_January_Temperature	21.000	degrees F	31
Topographical Characteristics			
Elevation_of_10_and_85_points	445.000	feet	31
Mean_Basin_Elevation	445.000	feet	31
Land Cover Characteristics			
Percent_Forest	11.400	percent	31
Percent_Storage	0.6100	percent	31
Stream Channel Properties			
Main_Channel_Length	18.600	miles	31
Stream_Slope_10_and_85_Method	3.8000	feet per mi	31
Basin Dimensional Characteristics			
Contributing_Drainage_Area	104.000	square miles	31
Drainage_Area	104	square miles	290

Streamflow Statistics

	Citation	Years of	Standard Error,	Variance	Lower 95% Confidence	Upper 95% Confidence	Start	End

Statistic Name	Value	Units	Number Preferred? Record	percent	log-10	Interval	Interval	Date
Peak-Flow Statistics								
10_percent_AEP_flood	7470	cubic feet per second	62 Y					
4_percent_AEP_flood	8780	cubic feet per second	62 Y					
2_percent_AEP_flood	9740	cubic feet per second	62 Y					
1_percent_AEP_flood	10700	cubic feet per second	62 Y					
0_5_percent_AEP_flood	11600	cubic feet per second	62 Y					
0_2_percent_AEP_flood	12800	cubic feet per second	62 Y					
Systematic_peak_years	38	years	62 Y					
Flood-Volume Statistics								
1_Day_2_Year_Maximum	3070.00	cubic feet per second	31 Y					
1_Day_20_Year_Maximum	5570.00	cubic feet per second	31 Y					
1_Day_5_Year_Maximum	4170.00	cubic feet per second	31 Y					
1_Day_10_Year_Maximum	4850.00	cubic feet per second	31 Y					
1_Day_25_Year_Maximum	5700.00	cubic feet per second	31 Y					
1_Day_50_Year_Maximum	6500.00	cubic feet per second	31 Y					
3_Day_2_Year_Maximum	1960.00	cubic feet per second	31 Y					
3_Day_5_Year_Maximum	2840.00	cubic feet per second	31 Y					
3_Day_10_Year_Maximum	3400.00	cubic feet per second	31 Y					
3_Day_20_Year_Maximum	4050.00	cubic feet per second	31 Y					
3_Day_25_Year_Maximum	4200.00	cubic feet per second	31 Y					
3_Day_50_Year_Maximum	4900.00	cubic feet per second	31 Y					
3_Day_100_Year_Maximum	5580.00	cubic feet per second	31 Y					
7_Day_2_Year_Maximum	1180.00	cubic feet per second	31 Y					
7_Day_5_Year_Maximum	1630.00	cubic feet per second	31 Y					
7_Day_10_Year_Maximum	1930.00	cubic feet per second	31 Y					
7_Day_20_Year_Maximum	2240.00	cubic feet per second	31 Y					
7_Day_25_Year_Maximum	2300.00	cubic feet per second	31 Y					
7_Day_50_Year_Maximum	2630.00	cubic feet per second	31 Y					
7_Day_100_Year_Maximum	2950.00	cubic feet per second	31 Y					
15_Day_2_Year_Maximum	667.000	cubic feet per second	31 Y					
15_Day_10_Year_Maximum	1160.00	cubic feet per second	31 Y					
15_Day_20_Year_Maximum	1380.00	cubic feet per second	31 Y					

15_Day_25_Year_Maximum	1420.00	cubic feet per second	31	Y			
15_Day_50_Year_Maximum	1630.00	cubic feet per second	31	Y			
15_Day_100_Year_Maximum	1840.00	cubic feet per second	31	Y			
30_Day_2_Year_Maximum	450.000	cubic feet per second	31	Y			
30_Day_10_Year_Maximum	646.000	cubic feet per second	31	Y			
30_Day_25_Year_Maximum	745.000	cubic feet per second	31	Y			
30_Day_50_Year_Maximum	830.000	cubic feet per second	31	Y			
Low-Flow Statistics							
1_Day_10_Year_Low_Flow	0	cubic feet per second	290	Y	46	4/1/1966	3/3
7_Day_10_Year_Low_Flow	0	cubic feet per second	290	Y	46	4/1/1966	3/3
30_Day_10_Year_Low_Flow	0	cubic feet per second	290	Y	46	4/1/1966	3/3
Flow-Duration Statistics							
1_Percent_Duration	2210	cubic feet per second	290	N	46	10/1/1965	9/3(
1_Percent_Duration	2080	cubic feet per second	325	Y	50	10/1/1965	9/3(
2_Percent_Duration	1270	cubic feet per second	325	Y	50	10/1/1965	9/3(
2_Percent_Duration	1280	cubic feet per second	290	N	46	10/1/1965	9/3(
3_Percent_Duration	892	cubic feet per second	325	Y	50	10/1/1965	9/3(
5_Percent_Duration	523	cubic feet per second	290	N	46	10/1/1965	9/3(
5_Percent_Duration	536	cubic feet per second	325	Y	50	10/1/1965	9/3(
10_Percent_Duration	217	cubic feet per second	290	N	46	10/1/1965	9/3(
10_Percent_Duration	217	cubic feet per second	325	Y	50	10/1/1965	9/3(
15_Percent_Duration	128	cubic feet per second	325	Y	50	10/1/1965	9/3(
20_Percent_Duration	90	cubic feet per second	290	N	46	10/1/1965	9/3(
20_Percent_Duration	89	cubic feet per second	325	Y	50	10/1/1965	9/3(
25_Percent_Duration	66	cubic feet per second	325	Y	50	10/1/1965	9/3(
30_Percent_Duration	52	cubic feet per second	290	N	46	10/1/1965	9/3(
30_Percent_Duration	51	cubic feet per second	325	Y	50	10/1/1965	9/3(
35_Percent_Duration	40	cubic feet per second	325	Y	50	10/1/1965	9/3(
40_Percent_Duration	32	cubic feet per second	290	N	46	10/1/1965	9/3(
40_Percent_Duration	31	cubic feet per second	325	Y	50	10/1/1965	9/3(
45_Percent_Duration	24	cubic feet per second	325	Y	50	10/1/1965	9/3(
50_Percent_Duration	18	cubic feet per second	290	N	46	10/1/1965	9/3(
50_Percent_Duration	18	cubic feet per second	325	Y	50	10/1/1965	9/3(

55_Percent_Duration	13	cubic feet per second	325	Y	50	10/1/1965 9/3(
60_Percent_Duration	9	cubic feet per second	290	N	46	10/1/1965 9/3(
60_Percent_Duration	9.2	cubic feet per second	325	Y	50	10/1/1965 9/3(
65_Percent_Duration	6	cubic feet per second	325	Y	50	10/1/1965 9/3(
70_Percent_Duration	3.9	cubic feet per second	290	N	46	10/1/1965 9/3(
70_Percent_Duration	3.9	cubic feet per second	325	Y	50	10/1/1965 9/3(
75_Percent_Duration	2.5	cubic feet per second	325	Y	50	10/1/1965 9/3(
80_Percent_Duration	1.5	cubic feet per second	290	N	46	10/1/1965 9/3(
80_Percent_Duration	1.5	cubic feet per second	325	Y	50	10/1/1965 9/3(
85_Percent_Duration	0.84	cubic feet per second	325	Y	50	10/1/1965 9/3(
90_Percent_Duration	0.3	cubic feet per second	290	N	46	10/1/1965 9/3(
90_Percent_Duration	0.36	cubic feet per second	325	Y	50	10/1/1965 9/3(
95_Percent_Duration	0.1	cubic feet per second	290	N	46	10/1/1965 9/3(
95_Percent_Duration	0.1	cubic feet per second	325	Y	50	10/1/1965 9/3(
97_Percent_Duration	0.02	cubic feet per second	325	Y	50	10/1/1965 9/3(
98_Percent_Duration	0	cubic feet per second	290	N	46	10/1/1965 9/3(
98_Percent_Duration	0	cubic feet per second	325	Y	50	10/1/1965 9/3(
99_Percent_Duration	0	cubic feet per second	290	N	46	10/1/1965 9/3(
99_Percent_Duration	0	cubic feet per second	325	Y	50	10/1/1965 9/3(
Annual Flow Statistics						
Mean_Annual_Flow	124	cubic feet per second	325	Y	50	10/1/1965 9/3(
Mean_Annual_Flow	114.000	cubic feet per second	31	N		
Daily_flow_years	14.000	years	31	Y		
Stand_Dev_of_Mean_Annual_Flow	49	cubic feet per second	325	Y	50	10/1/1965 9/3(
Maximum_Annual_Mean_Flow	255	cubic feet per second	325	Y	50	10/1/1965 9/3(
Minimum_Annual_Mean_Flow	39	cubic feet per second	325	Y	50	10/1/1965 9/3(
Monthly Flow Statistics						
January_Mean_Flow	145.000	cubic feet per second	31	Y		
February_Mean_Flow	163.000	cubic feet per second	31	Y		
March_Mean_Flow	254.000	cubic feet per second	31	Y		
April_Mean_Flow	220.000	cubic feet per second	31	Y		
May_Mean_Flow	110.000	cubic feet per second	31	Y		
June_Mean_Flow	102.000	cubic feet per second	31	Y		
July_Mean_Flow	78.400	cubic feet per	31	Y		

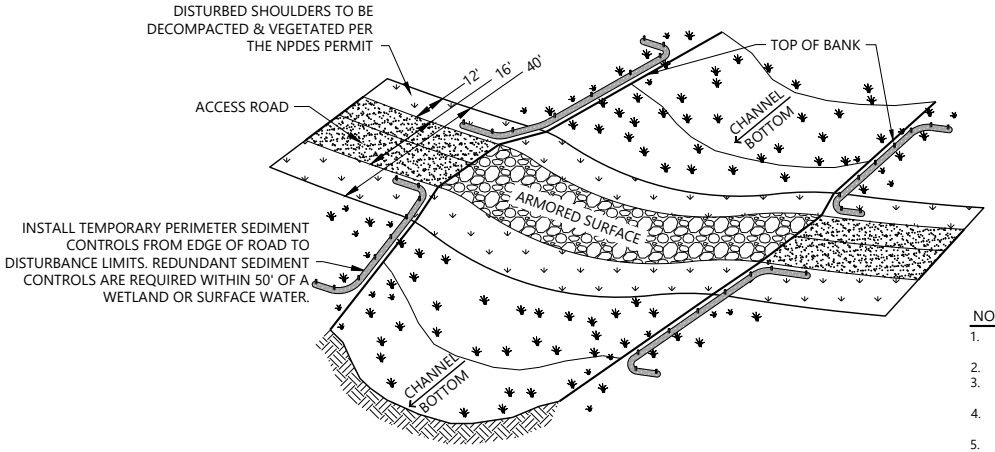
		second					
August_Mean_Flow	50.800	cubic feet per second	31	Y			
September_Mean_Flow	31.100	cubic feet per second	31	Y			
October_Mean_Flow	23.200	cubic feet per second	31	Y			
November_Mean_Flow	57.700	cubic feet per second	31	Y			
December_Mean_Flow	133.000	cubic feet per second	31	Y			
General Flow Statistics							
Minimum_daily_flow	0	cubic feet per second	325	Y	50		10/1/1965 9/3(
Maximum_daily_flow	10200	cubic feet per second	325	Y	50		10/1/1965 9/3(
Std_Dev_of_daily_flows	457	cubic feet per second	325	Y	50		10/1/1965 9/3(
Harmonic_Mean_Streamflow	0.66	cubic feet per second	325	Y	50		10/1/1965 9/3(
Mean_of_Logs_of_Daily_Values	1.149139	Log base 10	325	Y	50		10/1/1965 9/3(
Std_Dev_of_Logs_of_Daily_Values	1.028524	Log base 10	325	Y	50		10/1/1965 9/3(
Skew_of_Logs_of_Daily_Values	-0.366392	Log base 10	325	Y	50		10/1/1965 9/3(
Non_Zero_Adjusted_Harmonic_Mean_Flow	0.68	cubic feet per second	325	Y	50		10/1/1965 9/3(
Base Flow Statistics							
Number_of_years_to_compute_BFI	38	years	42	Y	38		
Average_BFI_value	0.119	dimensionless	42	Y	38		
Std_dev_of_annual_BFI_values	0.04	dimensionless	42	Y	38		
Probabillity Statistics							
Probability_flow_durations_are_zero	0.024751	dimensionless	325	Y	50		10/1/1965 9/3(

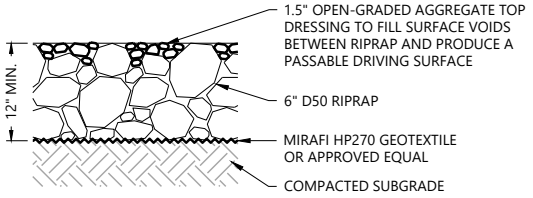
Citations

Citation Number	*Citation Name and URL*
31	Imported from Basin Characteristics file
42	Wolock, D.M., 2003, Base-flow index grid for the conterminous United States: U.S. Geological Survey Open-File Report 03-263, digital data set
62	Rao, A.R., 2005, Flood-Frequency Relationships for Indiana: Joint Transportation Research Program, Purdue University, FHWA/IN/JTRP-2005/18, 14 p.
290	Fowler, K.K., and Wilson, J.T., 2015, Low-flow characteristics for selected streams in Indiana: U.S. Geological Survey Scientific Investigations Report 2014–5242, 353 p.
325	Granato G.E., Ries, K.G., III, and Steeves, P.A., 2017, Compilation of streamflow statistics calculated from daily mean streamflow data collected during water years 1901–2015 for selected U.S. Geological Survey streamgages: U.S. Geological Survey Open-File Report 2017-1108, 17 p.

Appendix H

Standard Duty Low Water Crossing Detail





STANDARD DUTY ARMORED SURFACE

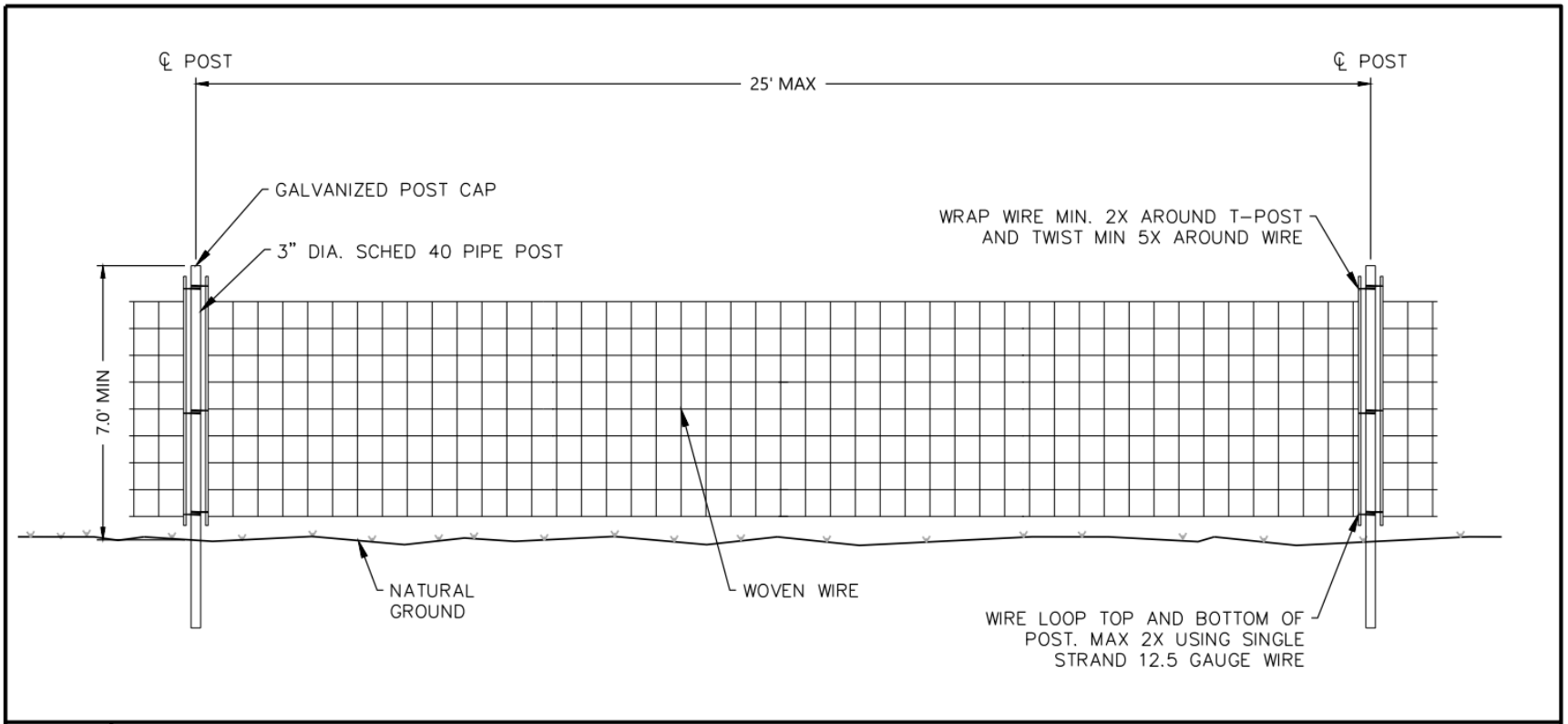
NOTES:

1. CHANNEL SIDE SLOPES MAY REQUIRE MODIFICATION TO CONSTRUCT THE ACCESS ROAD THROUGH THE CHANNEL TO MEET DELIVERY REQUIREMENTS.
2. THE ACCESS ROAD SHALL CROSS THE CHANNEL AS CLOSE TO 90-DEGREES AS POSSIBLE.
3. THE FINISHED ACCESS ROAD SURFACE SHALL BE AT AN ELEVATION THAT ALLOWS WATER TO FLOW THROUGH THE CHANNEL UNIMPEDED AND WITHOUT PONDING UPSTREAM OF ROAD OR ON THE ROAD SURFACE.
4. ARMORED SURFACE SHALL EXTEND THROUGH THE CHANNEL BOTTOM AND UP THE CHANNEL SIDE SLOPES TO THE OBSERVED TOP OF BANK OF THE CHANNEL, UNLESS OTHERWISE NOTED.
5. PERIMETER SEDIMENT CONTROL MAY CONSIST OF SILT FENCE, FIBERLOGS (BIOROLLS), WOOD MULCH BERMS, OR TOPSOIL BERMS. REFER TO APPROPRIATE DETAIL FOR INSTALLATION REQUIREMENTS. REDUNDANT PERIMETER SEDIMENT CONTROLS ARE REQUIRED WITHIN 50' OF A WETLAND OR SURFACE WATER.
6. STABILIZE DISTURBED GROUND IN ACCORDANCE WITH THE SWPPP.
7. CROSSING MAY BE INSTALLED DURING THE PROJECT RESTORATION PHASE. IF INSTALLED DURING CONSTRUCTION, MONITOR THE CROSSING FOR DAMAGE FROM CONSTRUCTION TRAFFIC. ADDITIONAL MAINTENANCE OR REPAIRS MAY BE REQUIRED.

Westwood	STANDARD DUTY LOW WATER CROSSING	NOT TO SCALE	ST01

Appendix I

Breakaway Fence Detail



Westwood

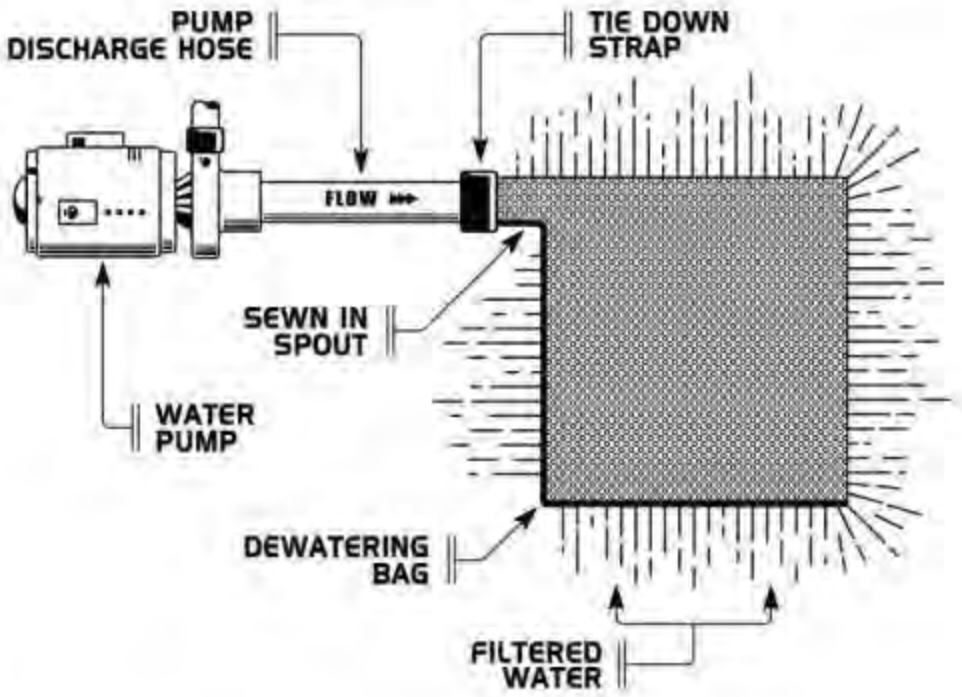
FLOOD FENCE – BREAKAWAY (WOVEN WIRE) OPTION DETAIL

Appendix J

Dewatering Bag Detail & Specifications

DANDY DEWATERING BAG™

TOP VIEW



SIDE VIEW

DANDY DEWATERING BAG ™
PUMPED WATER SEDIMENT CONTROL SYSTEM GUIDE SPECIFICATIONS

PRODUCT:

DANDY DEWATERING BAG™

MANUFACTURER:

Dandy Products Inc.
P.O. Box 1980
Westerville, Ohio 43086
Phone: 800-591-2284
Fax: 740-881-2791
E Mail dlc@dandyproducts.com
Web www.dandyproducts.com

1.0 **Description:**

1.1 Work covered under this consists of furnishing, installing, maintaining, and removal of the Dandy Dewatering Bag ™ The purpose is to control sediment discharge in any dewatering or pumped water application.

2.0 **Material:**

2.1 The Dandy Dewatering Bag™ shall be a bag sewn of nonwoven fabric **in the U.S.A.** using a double needle machine and a high strength thread.

2.2 The Dandy Dewatering Bag™ shall have a spout opening large enough to accommodate at least a four (4) inch pump discharge hose with an attached strap to tie unit closed.

2.3 The Dandy Dewatering Bag™ Seams shall be a double stitched "J" type seam with an average wide width strength per ASTM D-4884 of 60lb/in for a 8 oz. fabric manufactured in the U.S.A. with the following characteristics:

PROPERTY	TEST METHOD	UNITS	MARV
Grab Tensile Strength	ASTM D 4632	kN (lbs)	0.9 (205)
Grab Tensile Elongation	ASTM D 4632	%	50
Puncture Strength	ASTM D 4833	kN (lbs)	0.58 (130)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	2618 (380)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.36 (80)
% Open Area	COE - 22125-86	%	N/A
Apparent Opening Size	ASTM D 4751	mm (US Std Sieve)	.0180 (80)

Permittivity	ASTM D 4491	sec^{1}	1.2
Permeability	ASTM 4491	cm/sec	0.21
Water Flow Rate	ASTM 4491	$l/min/m^2$ ($gal/min/ft^2$)	3866 (95)
Ultraviolet Resistance	ASTM D 4355	%	70
Color			Black

3.0 **Installation:**

3.1 Lifting straps (not included) should be placed under the unit to facilitate removal after use.

3.2 Unfold Dandy Dewatering Bag™ on a stabilized area over dense vegetation, straw, or gravel (if an increased drainage surface is needed) or as detailed in plans.

3.3 Insert discharge hose from pump into Dandy Dewatering Bag™ a minimum of six (6) inches and tightly secure with attached strap to prevent water from flowing out of the unit without being filtered.

4.0 **Maintenance:**

4.1 Replace the unit when ½ full of sediment or when sediment has reduced the flow rate of the pump discharge to an impractical rate.

4.2 Remove and dispose of the sediment in a manner satisfactory to the engineer/inspector or in one of the following ways:

A) Remove the unit and sediment from environmentally sensitive areas and waterways. At the approved disposal site, slit the unit; remove the sediment and grade smoothly into the existing topography. Dispose of unit no longer in use at an appropriate recycling or solid waste facility.

B) Bury unit on site; remove any visible fabric and seed.

5.0 **Method of Measurement:**

5.1 The quantity to be paid is for the actual number of Dandy Dewatering Bags ™.

6.0 **Basis of Payment:**

6.1 The unit price shall include labor, equipment, and materials necessary to install, maintain, and remove the Dandy Dewatering Bag™.
6.2 Payment for the completed work will be made at the contract prices for:

ITEM	UNIT	DESCRIPTION
Dandy Dewatering Bag™	EA	Pumped Water Sediment Control Unit (#_____UNITS)