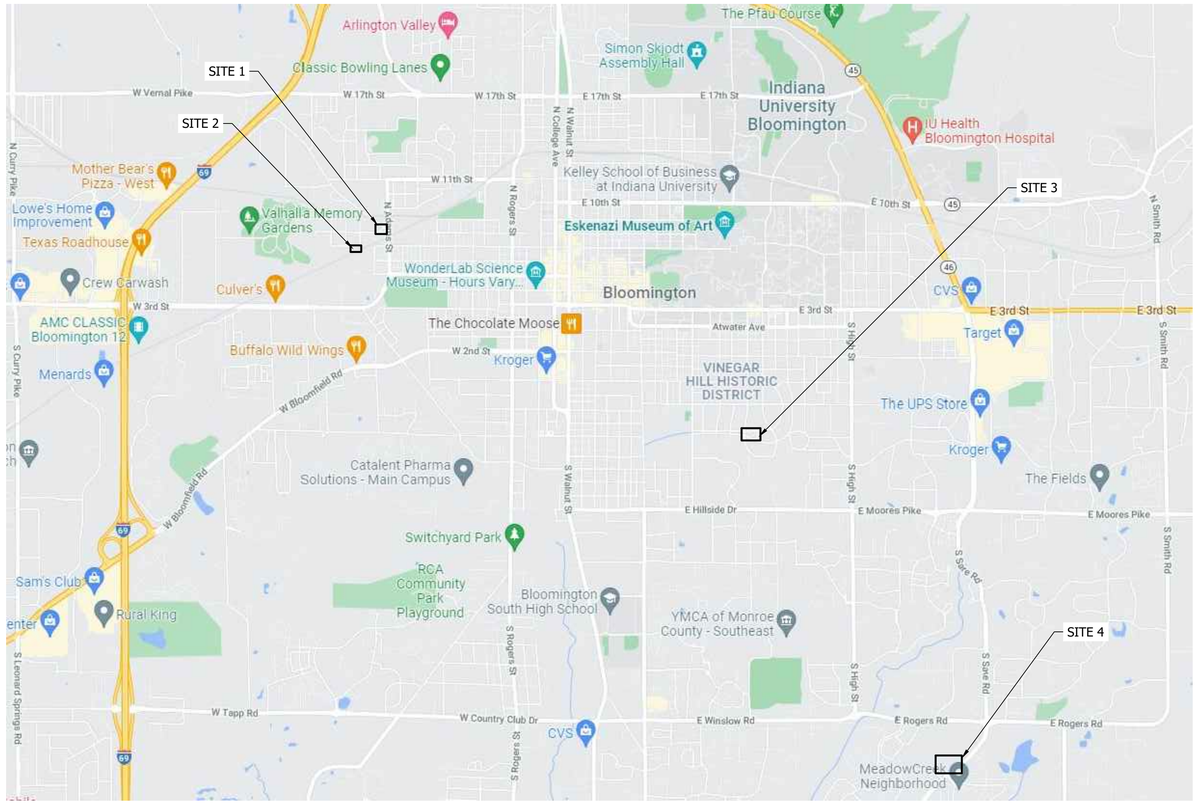
CITY OF BLOOMINGTON
MONROE COUNTY, INDIANA

DETENTION DESIGN PROJECTS - (SITES 1&2)
JANUARY 2023



Sheet List Table	
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3	SITE 1 PROPOSED DRAINAGE PLAN
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Indiana 811
Know what's below. Call before you dig.

UTILITY NOTES

NOTE 1: All utilities depicted are at "Quality Level B" and "Quality Level C".

NOTE 2: "Quality Level B" utility locates are based on markings provided by others. There is no guarantee as to theaccuracy or completeness of these markings. Existing utility depths shown on profiles and cross sections are shown for reference purposes only and are based on what may be considered standard bury depths. The exact depth of existing utilities is uncertain and should be field verified by the contractor as needed.

NOTE 3: "Quality Level C" utility locates are based on visible surface features which have been surveyed such as hydrants, valve boxes, meter boxes or other items related to a utility.

NOTE 4: Utility quality level designations are based on ASCE 38-02 (Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data).

PLANS PREPARED BY:

FPBH, Inc.

Engineers • Surveyors • Planners • Inspectors

Offices in North Vernon, Seymour, & New Castle

72 Henry Street, PO Box 47
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Scale: NTS

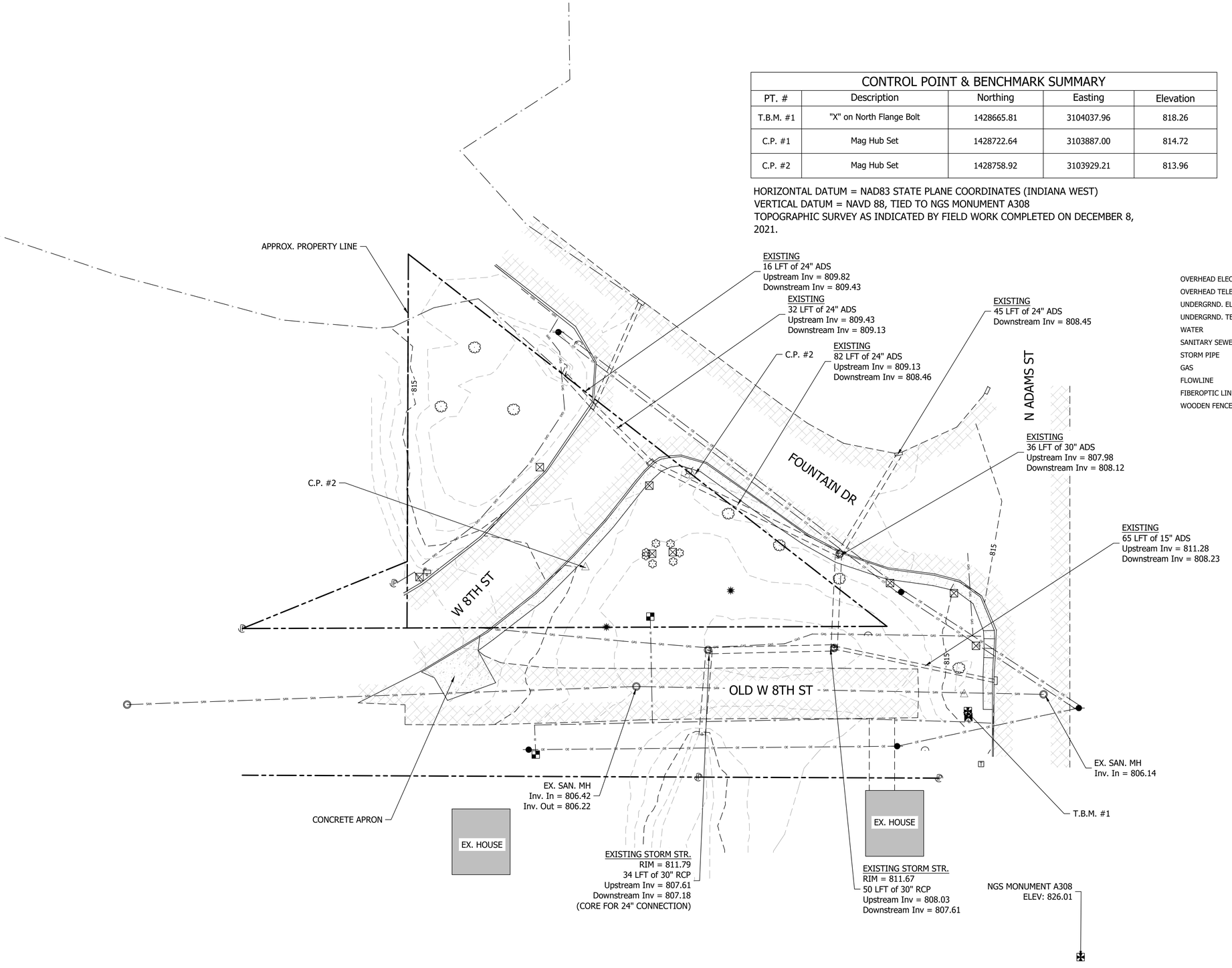
COLBY L. KING
REGISTERED
No. 10808974
STATE OF INDIANA
PROFESSIONAL ENGINEER
01/19/2023

PREPARED FOR: CITY OF BLOOMINGTON
PROJECT DESCRIPTION: DETENTION DESIGN PROJECT
FILE NUMBER: 21-12324
DATE: JANUARY 19, 2023
DESIGN PHASE: FINAL PLANS
PAPER SIZE: PLOT SHEETS TO SCALE ON ANSI D 22" X 34"

N:\Projects\PublicWorks\Bloomington\2112324_BloomingtonDetentionSystem\Drawings\TITLESHEET_Site1_2.dwg, 1/19/2023 10:24:58 AM, _AutoCAD PDF (General Documentation).pc3

CONTROL POINT & BENCHMARK SUMMARY				
PT. #	Description	Northing	Easting	Elevation
T.B.M. #1	"X" on North Flange Bolt	1428665.81	3104037.96	818.26
C.P. #1	Mag Hub Set	1428722.64	3103887.00	814.72
C.P. #2	Mag Hub Set	1428758.92	3103929.21	813.96

HORIZONTAL DATUM = NAD83 STATE PLANE COORDINATES (INDIANA WEST)
VERTICAL DATUM = NAVD 88, TIED TO NGS MONUMENT A308
TOPOGRAPHIC SURVEY AS INDICATED BY FIELD WORK COMPLETED ON DECEMBER 8, 2021.



Scale: 1" = 20'

EX. FEATURES LEGEND

OVERHEAD ELEC.	OE	SANITARY MH	
OVERHEAD TELE.	OT	STORM MH	
UNDERGRND. ELEC.	UE	STORM INLET	
UNDERGRND. TELE.	UT	FIRE HYDRANT	
WATER	W	WATER METER	
SANITARY SEWER	SAN	WATER VALVE	
STORM PIPE		POWER POLE	
GAS	GAS	GUY WIRE	
FLOWLINE		ELECTRIC BOX	
FIBEROPTIC LINE	FO	TELEPHONE POLE	
WOODEN FENCE		TELEPHONE BOX	
		SIGN POLE	
		STREET LIGHT	
		MAILBOX	
		DECIDUOUS TREE	
		EVERGREE TREE	
		STUMP	
		IRON PIN FND.	
		CORNER POST	
		BENCHMARK	
		CONTROL POINT	

GENERAL NOTE:
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NOTES:
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SCALE:	1" = 20'
DRAWN BY:	ARC
CHECKED BY:	CLK
DATE:	JANUARY 19, 2023

Revision	Drawn By	Date

FILE NO: 21-12324

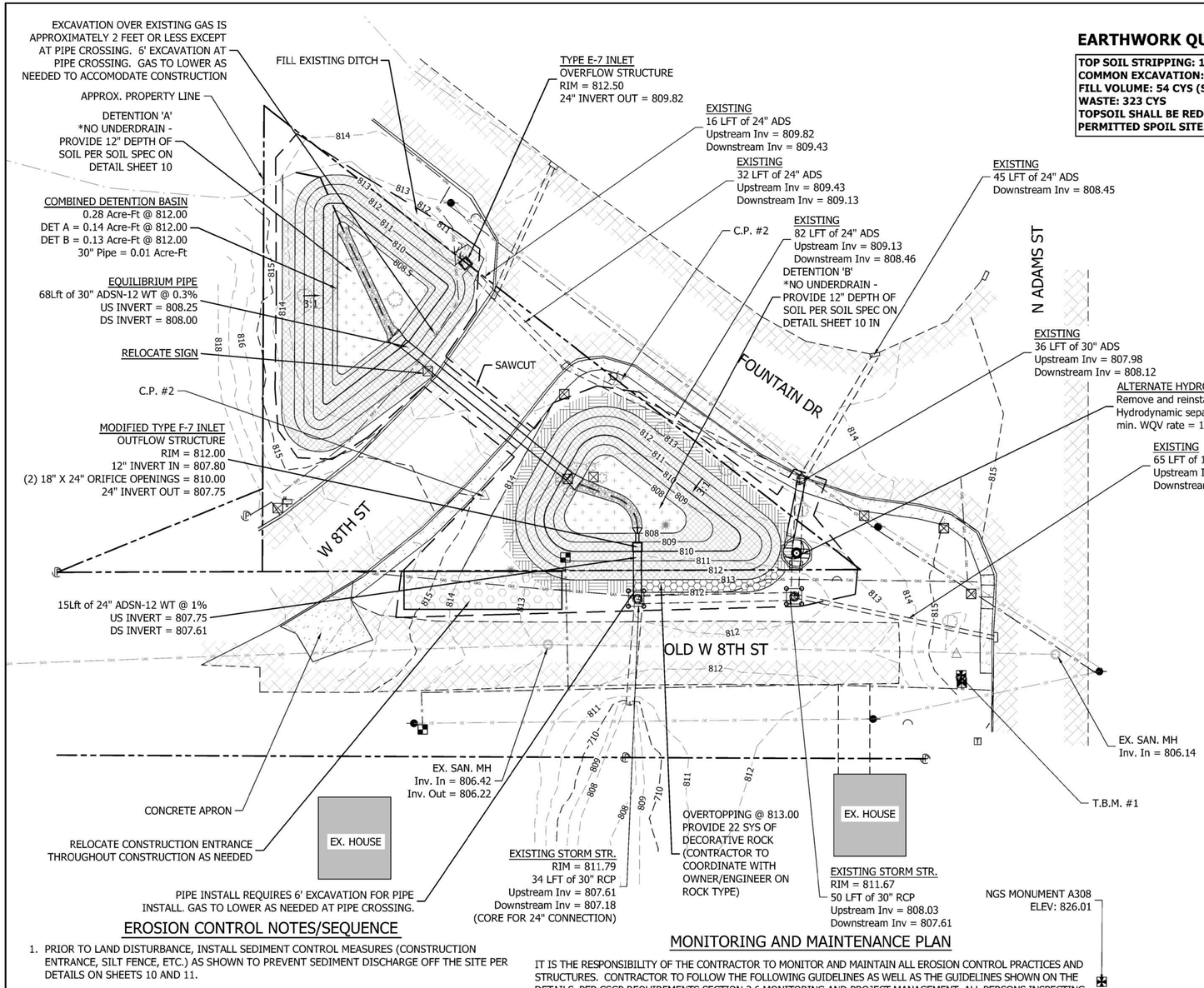
CLIENT NAME:
CITY OF BLOOMINGTON

PROJECT DESCRIPTION:
BLOOMINGTON DETENTION
DESIGN PROJECT - SITES 1 & 2

SHEET TITLE:
SITE 1 EXISTING CONDITIONS

DESIGN PHASE:
FINAL PLANS

SHEET NUMBER:
2



EARTHWORK QUANTITIES (TO FINISH GRADE)

TOP SOIL STRIPPING: 141 SYS (Based on 6" Depth)
COMMON EXCAVATION: 332 CYS
FILL VOLUME: 54 CYS (SEE DETAIL SHEET FOR SOIL FILL REQUIREMENTS)
WASTE: 323 CYS
TOPSOIL SHALL BE REDISTRIBUTED ON SITE, ANY EXCESS MATERIAL SHALL BE HAULED TO PERMITTED SPOIL SITE. BALANCE SHOWN USES A SHRINK/SWELL FACTOR OF 1 TO 1.

Scale: 1" = 20'

EX. FEATURES LEGEND

OVERHEAD ELEC.	OE	SANITARY MH	
OVERHEAD TELE.	OT	STORM MH	
UNDERGRND. ELEC.	UE	STORM INLET	
UNDERGRND. TELE.	UT	FIRE HYDRANT	
WATER	W	WATER METER	
SANITARY SEWER	SAS	WATER VALVE	
STORM PIPE		POWER POLE	
GAS	GAS	GUY WIRE	
FLOWLINE	FL	ELECTRIC BOX	
FIBEROPTIC LINE	FO	TELEPHONE POLE	
WOODEN FENCE	X	TELEPHONE BOX	
		SIGN POLE	
		STREET LIGHT	
		MAILBOX	
		DECIDUOUS TREE	
		EVERGREE TREE	
		STUMP	
		IRON PIN FND.	
		CORNER POST	
		BENCHMARK	
		CONTROL POINT	

PLAN LEGEND

- PROPOSED CONSTRUCTION LIMITS (0.26 ACRES +/-)
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED STORM PIPE
- 4FT LANDSCAPE MULCH STRIP
- EROSION CONTROL BLANKET/UPLAND GRASS MIX (BY OTHERS)
- LOW FLOW CHANNEL PROPOSED 'V' SWALE (6:1 MAX SIDE SLOPES)
- BASIN PERENNIAL PLANT MIX (BY OTHERS).
- INLET PROTECTION (SEE DETAIL SHEET 11)

CONTROL POINT & BENCHMARK SUMMARY

PT. #	Description	Northing	Easting	Elevation
T.B.M. #1	"X" on North Flange Bolt	1428665.81	3104037.96	818.26
C.P. #1	Mag Hub Set	1428722.64	3103887.00	814.72
C.P. #2	Mag Hub Set	1428758.92	3103929.21	813.96

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VERTICAL DATUM = NAVD 88, TIED TO NGS MONUMENT A308
TOPOGRAPHIC SURVEY AS INDICATED BY FIELD WORK COMPLETED ON DECEMBER 8, 2021.

GENERAL NOTES

1. PROTECT ALL SITE AMENITIES THAT ARE NOT LABELED TO BE REMOVED. COORDINATE WITH ENGINEER/OWNER BEFORE REMOVING ANY SITE AMENITIES.
2. REFER TO SITE 1 DETAIL SHEET 12 FOR ADDITIONAL INFORMATION.
3. EROSION CONTROL MEASURES SHALL BE IMPLEMENTED THROUGHOUT CONSTRUCTION TO PREVENT SEDIMENT DISCHARGE. REFER TO EROSION CONTROL NOTES FOR REQUIREMENTS.
4. CONTRACTOR SHALL FIELD VERIFY ALL UTILITIES AS NEEDED FOR CONSTRUCTION. UTILITIES SHOWN ARE BASED UPON INFORMATION (MAPS AND/OR FIELD PAINT MARKINGS) SUPPLIED BY OTHERS AND THERE IS NO GUARANTEE OF THE ACCURACY OR COMPLETENESS OF SAID LOCATIONS.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION, SIZE AND MATERIAL OF THE EXISTING UTILITIES PRIOR TO CONSTRUCTION.
6. ALL STORM SEWER PIPE SHALL BE INSTALLED, BEDDED AND BACKFILLED IN ACCORDANCE WITH DETAIL ON SHEET 11 .
7. TOPSOIL SHALL BE STRIPPED AND REDISTRIBUTED AFTER GRADING IS COMPLETED. FIELD VERIFY EXISTING TOPSOIL THICKNESS.
8. CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE THROUGHOUT PROJECT LIMITS.
9. ALL EXCESS STOCKPILE MATERIAL TO BE HAULED TO PERMITTED SPOIL SITE.
10. UTILITY COORDINATION REQUIRED FOR GAS AND WATER LINE ROUTING.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ONE-WAY TRAFFIC ALONG W 8TH STREET DURING CONSTRUCTION PROCESS BY MEANS OF FLAGGING OPERATIONS. TWO-WAY TRAFFIC SHALL REMAIN OPEN DURING AFTER HOURS.
12. ALL NECESSARY TREE REMOVAL SHALL BE DONE OUTSIDE OF THE BREEDING SEASON (APRIL 1st - SEPTEMBER 30th).

POST CONSTRUCTION EROSION CONTROL SEQUENCE

1. AFTER PERMANENT EROSION CONTROL MEASURES (i.e. PERMANENT SEEDING) ARE WELL ESTABLISHED THE TEMPORARY EROSION CONTROL MEASURES (i.e. SILT FENCE, ETC.), SHALL BE REMOVED. REMOVE ANY EXCESS SILT IN DRY DETENTION FACILITY AND RESTORE POND BACK TO DESIGN GRADES. CONTRACTOR SHALL THEN SUBMIT (NOT) NOTICE OF TERMINATION FOR THE CSGP.

EROSION CONTROL NOTES/SEQUENCE

1. PRIOR TO LAND DISTURBANCE, INSTALL SEDIMENT CONTROL MEASURES (CONSTRUCTION ENTRANCE, SILT FENCE, ETC.) AS SHOWN TO PREVENT SEDIMENT DISCHARGE OFF THE SITE PER DETAILS ON SHEETS 10 AND 11.
2. INSTALL DRY DETENTION FACILITY AS SHOWN, SEE SITE 1 DETAIL SHEET 12 FOR DETENTION REQUIREMENTS.
3. CONTRACTOR SHALL STRIP TOPSOIL FROM CONSTRUCTION AREAS PRIOR TO PLACING ANY FILL MATERIALS. STRIPPED TOPSOIL SHALL BE REDISTRIBUTED OVER CONSTRUCTION AREA AFTER GRADING IS COMPLETE AND PRIOR TO SEEDING/PLANTING. CONTRACTOR SHALL FIELD VERIFY TOPSOIL THICKNESS AND PROVIDE 4" - 6" MINIMUM.
4. STOCKPILE CUT MATERIAL ONSITE AND SURROUNDED WITH SILT FENCE IF LEFT UNDISTURBED FOR MORE THAN 7 DAYS. TEMPORARILY SEED/MULCH IN ACCORDANCE WITH INDOT TYPE 'U' SPECS.
5. INSTALL DRAINAGE SWALES AND STORM SEWER AS SHOWN. PROVIDE TEMPORARY CHECK DAMS ALONG FLOW LINE IF ROCK IS NOT IMMEDIATELY PLACED AFTER INSTALLING SWALES. SEE DETAILS ON SHEET 10 AND 11.
6. COMPLETE GRADING AND FILLING. PLACE FILL AND SPOILS IN 6" MAX LIFTS AND COMPACT.
7. PERFORM FINAL GRADING AND REFER TO PLANTING/SEEDING SCHEDULE ON SHEET 10 FOR PERMANENT SEED STABILIZATION MIX AND BASIN PLANTINGS. ALL BASIN SIDE SLOPES SHALL RECEIVE EROSION CONTROL BLANKET, REFER TO DETAIL ON SHEET 10.

MONITORING AND MAINTENANCE PLAN

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MONITOR AND MAINTAIN ALL EROSION CONTROL PRACTICES AND STRUCTURES. CONTRACTOR TO FOLLOW THE FOLLOWING GUIDELINES AS WELL AS THE GUIDELINES SHOWN ON THE DETAILS. PER CSGP REQUIREMENTS SECTION 3.6 MONITORING AND PROJECT MANAGEMENT, ALL PERSONS INSPECTING EROSION CONTROL SHALL MAINTAIN WRITTEN EVALUATIONS OF THE ENTIRE SITE AND BE PERFORMED BY A TRAINED INDIVIDUAL.

1. SILT FENCE SHALL BE MONITORED ON A WEEKLY BASIS AND AFTER EVERY ½ INCH RAINFALL EVENT. DAMAGED SILT FENCE IS TO BE REPLACED. SILT FENCE WHICH HAS BEEN KNOCKED OVER SHALL BE ERECTED AND MAINTAINED PROPERLY. REMOVE TRAPPED SEDIMENT WHEN IT REACHES HALF THE HEIGHT OF THE FENCE.
2. IF DIVERSION DITCHES/SWALES FILL WITH SOIL, CONTRACTOR IS RESPONSIBLE FOR RECUTTING DITCHES/SWALES AND/OR REMOVING FILL AS NEEDED TO ENSURE PROPER FLOW DEPTH IS MAINTAINED THROUGHOUT CONSTRUCTION.
3. CONTRACTOR TO FOLLOW ANY ADDITIONAL MAINTENANCE AND GUIDELINES ESTABLISHED PER INDOT STANDARDS AND SPECIFICATIONS.
4. SEDIMENT SHALL BE REMOVED FROM SEDIMENT TRAPPING DEVICES SUCH AS SILT FENCE, TEMPORARY CHECK DAMS, AND OTHER EROSION CONTROL MEASURES WHICH TRAP SEDIMENT. SEDIMENT FROM ALL EROSION CONTROL MEASURES SHALL BE REMOVED WHEN IT BECOMES HALF FULL OF SEDIMENT OR AS NEEDED TO ENSURE THAT THE EROSION CONTROL MEASURE FUNCTIONS PROPERLY. EROSION CONTROL MEASURES WHICH TRAP SEDIMENT SHOULD BE AT A MINIMUM MONITORED ON A WEEKLY BASIS AND AFTER EVERY ½ INCH RAINFALL EVENT.
5. MONITOR CONSTRUCTION ENTRANCE TO ENSURE THAT STONE IS NOT WASHED OR TRACKED OFF. REPLACE STONE THAT IS WASHED OFF OR TOO DIRTY TO BE FUNCTIONAL.

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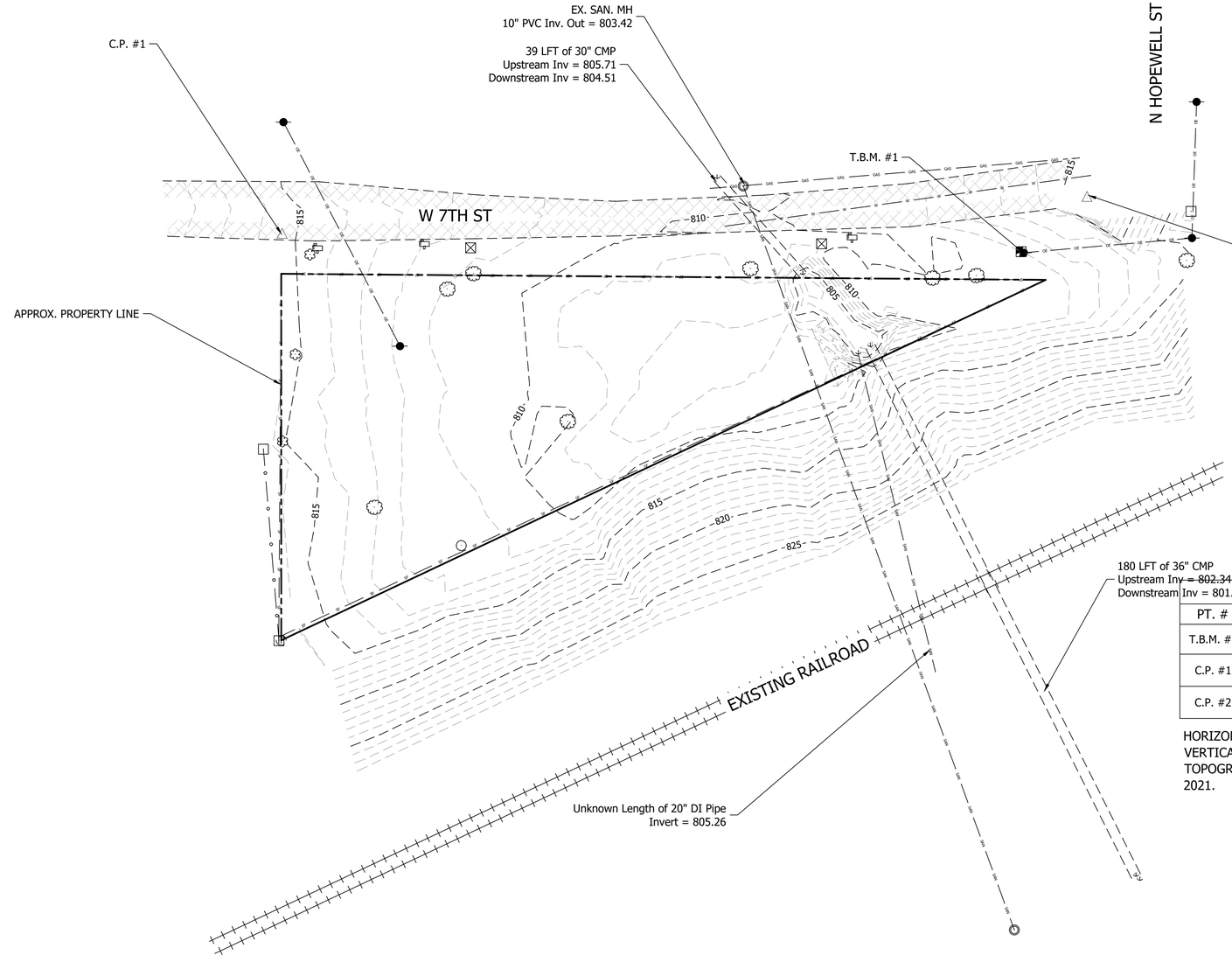
COLBY L. KING REGISTERED No. 10808974 STATE OF INDIANA PROFESSIONAL ENGINEER
01/19/2023

SCALE:	1" = 20'
DRAWN BY:	ARC
CHECKED BY:	CLK
DATE:	JANUARY 19, 2023

Revision	Drawn By	Date

FILE NO: 21-12324
CLIENT NAME: CITY OF BLOOMINGTON
PROJECT DESCRIPTION: BLOOMINGTON DETENTION DESIGN PROJECT - SITES 1 & 2
SHEET TITLE: SITE 1 PROPOSED DRAINAGE PLAN
DESIGN PHASE: FINAL PLANS
SHEET NUMBER: 3



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EX. FEATURES LEGEND

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OVERHEAD TELE.	OT	STORM MH	
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GAS	GAS	GUY WIRE	
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WOODEN FENCE	X	TELEPHONE BOX	
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		MAILBOX	
		DECIDUOUS TREE	
		EVERGREE TREE	
		STUMP	
		IRON PIN FND.	
		CORNER POST	
		BENCHMARK	
		CONTROL POINT	

CONTROL POINT & BENCHMARK SUMMARY

PT. #	Description	Northing	Easting	Elevation
T.B.M. #1	Mag Nail in PWP	1428305.06	3103291.69	812.22
C.P. #1	Mag Hub Set	1428310.19	3103068.58	815.35
C.P. #2	Mag Hub Set	1428321.33	3103311.58	815.52

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Revision	Drawn By	Date

FILE NO: 21-12324

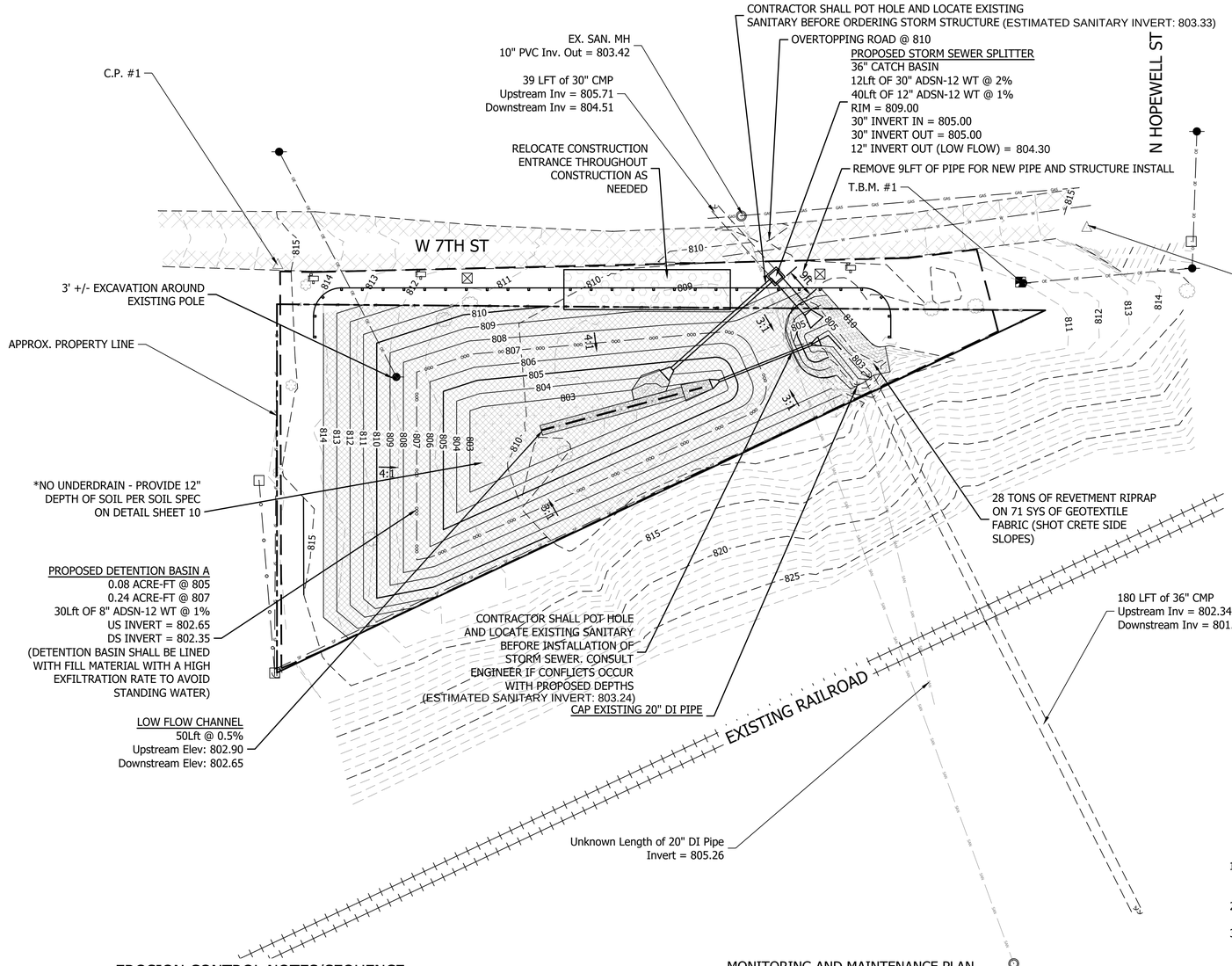
CLIENT NAME:
CITY OF BLOOMINGTON

PROJECT DESCRIPTION:
BLOOMINGTON DETENTION
DESIGN PROJECT - SITES 1 & 2

SHEET TITLE:
SITE 2 EXISTING CONDITIONS

DESIGN PHASE:
FINAL PLANS

SHEET NUMBER:
4



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FIBEROPTIC LINE	FO	TELEPHONE POLE	
WOODEN FENCE	X	TELEPHONE BOX	
		SIGN POLE	
		STREET LIGHT	
		MAILBOX	
		DECIDUOUS TREE	
		EVERGREE TREE	
		STUMP	
		IRON PIN FND.	
		CORNER POST	
		BENCHMARK	
		CONTROL POINT	

PLAN LEGEND

- PROPOSED CONSTRUCTION LIMITS (0.35 ACRES +/-)
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED STORM PIPE
- PROPOSED GUARDRAIL
- EROSION CONTROL BLANKET(BY CONTRACTOR)/UPLAND GRASS MIX (BY OTHERS)
- LOW FLOW CHANNEL
  PROPOSED 'V' SWALE (6:1 MAX SIDE SLOPES)
- BASIN PERENNIAL PLANT MIX (BY OTHERS)

CONTROL POINT & BENCHMARK SUMMARY

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EARTHWORK QUANTITIES (TO FINISH GRADE)

TOPSOIL STRIPPING: 202 CYS (Based on 6" Depth)
COMMON EXCAVATION: 1,148 CYS
FILL VOLUME: 11 CYS
FILL VOLUME (BASIN BOTTOM): 38 CYS (SEE DETAIL SHEET FOR SOIL REQUIREMENTS)
WASTE: 1,148 - 11 = 1,137 CYS
TOPSOIL SHALL BE REDISTRIBUTED ACROSS SITE, ANY EXCESS MATERIAL SHALL BE HAULED TO PERMITTED SPOIL SITE. BALANCE SHOWN USES A SHRINK/SWELL FACTOR OF 1 TO 1.

GENERAL NOTES

1. PROTECT ALL SITE AMENITIES THAT ARE NOT LABELED TO BE REMOVED. COORDINATE WITH ENGINEER/OWNER BEFORE REMOVING ANY SITE AMENITIES.
2. REFER TO SITE 2 DETAIL SHEET 13 FOR ADDITIONAL INFORMATION.
3. EROSION CONTROL MEASURES SHALL BE IMPLEMENTED THROUGHOUT CONSTRUCTION TO PREVENT SEDIMENT DISCHARGE. REFER TO EROSION CONTROL NOTES FOR REQUIREMENTS.
4. CONTRACTOR SHALL FIELD VERIFY ALL UTILITIES AS NEEDED FOR CONSTRUCTION. UTILITIES SHOWN ARE BASED UPON INFORMATION (MAPS AND/OR FIELD PAINT MARKINGS) SUPPLIED BY OTHERS AND THERE IS NO GUARANTEE OF THE ACCURACY OR COMPLETENESS OF SAID LOCATIONS.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION, SIZE AND MATERIAL OF THE EXISTING UTILITIES PRIOR TO CONSTRUCTION.
6. ALL STORM SEWER PIPE SHALL BE INSTALLED, BEDDED AND BACKFILLED IN ACCORDANCE WITH DETAIL ON SHEET 11 .
7. TOPSOIL SHALL BE STRIPPED AND REDISTRIBUTED AFTER GRADING IS COMPLETED. FIELD VERIFY EXISTING TOPSOIL THICKNESS.
8. CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE THROUGHOUT PROJECT LIMITS.
9. ALL EXCESS STOCKPILE MATERIAL TO BE HAULED TO PERMITTED SPOIL SITE.
10. UTILITY COORDINATION REQUIRED FOR REMOVING ABANDONED EXISTING OVERHEAD ELECTRIC AND POLE.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRAFFIC THROUGHOUT CONSTRUCTION ALONG W 7TH STREET BY MEANS OF FLAGGING OPERATIONS AS REQ'D.
12. ALL NECESSARY TREE REMOVAL SHALL BE DONE OUTSIDE OF THE BREEDING SEASON (APRIL 1st - SEPTEMBER 30th).

POST CONSTRUCTION EROSION CONTROL SEQUENCE

1. AFTER PERMANENT EROSION CONTROL MEASURES (i.e. PERMANENT SEEDING) ARE WELL ESTABLISHED THE TEMPORARY EROSION CONTROL MEASURES (i.e. SILT FENCE, ETC.), SHALL BE REMOVED. REMOVE ANY EXCESS SILT IN DRY DETENTION FACILITY AND RESTORE POND BACK TO DESIGN GRADES. CONTRACTOR SHALL THEN SUBMIT (NOT) NOTICE OF TERMINATION FOR THE CSGP.

EROSION CONTROL NOTES/SEQUENCE

1. PRIOR TO LAND DISTURBANCE, INSTALL SEDIMENT CONTROL MEASURES (CONSTRUCTION ENTRANCE, SILT FENCE, ETC.) AS SHOWN TO PREVENT SEDIMENT DISCHARGE OFF THE SITE PER DETAILS ON SHEETS 10 AND 11.
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4. STOCKPILE CUT MATERIAL ONSITE AND SURROUNDED WITH SILT FENCE IF LEFT UNDISTURBED FOR MORE THAN 7 DAYS. TEMPORARILY SEED/MULCH IN ACCORDANCE WITH INDOT TYPE 'U' SPECS.
5. INSTALL DRAINAGE SWALES AND STORM SEWER AS SHOWN. PROVIDE TEMPORARY CHECK DAMS ALONG FLOW LINE IF ROCK IS NOT IMMEDIATELY PLACED AFTER SWALE INSTALLATION. SEE DETAILS ON SHEET 10 AND 11.
6. COMPLETE GRADING AND FILLING. PLACE FILL AND SPOILS IN 6" MAX LIFTS AND COMPACT.
7. PERFORM FINAL GRADING AND REFER TO PLANTING/SEEDING SCHEDULE ON SHEET 10 FOR PERMANENT SEED STABILIZATION MIX AND BASIN PLANTINGS. ALL BASIN SIDE SLOPES SHALL RECEIVE EROSION CONTROL BLANKET, REFER TO DETAIL ON SHEET 10.

MONITORING AND MAINTENANCE PLAN

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MONITOR AND MAINTAIN ALL EROSION CONTROL PRACTICES AND STRUCTURES. CONTRACTOR TO FOLLOW THE FOLLOWING GUIDELINES AS WELL AS THE GUIDELINES SHOWN ON THE DETAILS. PER CSGP REQUIREMENTS SECTION 3.6 MONITORING AND PROJECT MANAGEMENT, ALL PERSONS INSPECTING EROSION CONTROL SHALL MAINTAIN WRITTEN EVALUATIONS OF THE ENTIRE SITE AND BE PERFORMED BY A TRAINED INDIVIDUAL.

1. SILT FENCE SHALL BE MONITORED ON A WEEKLY BASIS AND AFTER EVERY ½ INCH RAINFALL EVENT. DAMAGED SILT FENCE IS TO BE REPLACED. SILT FENCE WHICH HAS BEEN KNOCKED OVER SHALL BE ERECTED AND MAINTAINED PROPERLY. REMOVE TRAPPED SEDIMENT WHEN IT REACHES HALF THE HEIGHT OF THE FENCE.

2. IF DIVERSION DITCHES/SWALES FILL WITH SOIL, CONTRACTOR IS RESPONSIBLE FOR RECUTTING DITCHES/SWALES AND/OR REMOVING FILL AS NEEDED TO ENSURE PROPER FLOW DEPTH IS MAINTAINED THROUGHOUT CONSTRUCTION.

3. CONTRACTOR TO FOLLOW ANY ADDITIONAL MAINTENANCE AND GUIDELINES ESTABLISHED PER INDOT STANDARDS AND SPECIFICATIONS.

4. SEDIMENT SHALL BE REMOVED FROM SEDIMENT TRAPPING DEVICES SUCH AS SILT FENCE, TEMPORARY CHECK DAMS, AND OTHER EROSION CONTROL MEASURES WHICH TRAP SEDIMENT. SEDIMENT FROM ALL EROSION CONTROL MEASURES SHALL BE REMOVED WHEN IT BECOMES HALF FULL OF SEDIMENT OR AS NEEDED TO ENSURE THAT THE EROSION CONTROL MEASURE FUNCTIONS PROPERLY. EROSION CONTROL MEASURES WHICH TRAP SEDIMENT SHOULD BE AT A MINIMUM MONITORED ON A WEEKLY BASIS AND AFTER EVERY ½ INCH RAINFALL EVENT.

5. MONITOR CONSTRUCTION ENTRANCE TO ENSURE THAT STONE IS NOT WASHED OR TRACKED OFF. REPLACE STONE THAT IS WASHED OFF OR TOO DIRTY TO BE FUNCTIONAL.

GENERAL NOTE:
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NOTES:
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COLBY L. KING
REGISTERED
No. 10808974
STATE OF INDIANA
PROFESSIONAL ENGINEER
01/19/2023

SCALE:	1" = 20'
DRAWN BY:	ARC
CHECKED BY:	CLK
DATE:	JANUARY 19, 2023

Revision	Drawn By	Date

FILE NO: 21-12324
CLIENT NAME: CITY OF BLOOMINGTON
PROJECT DESCRIPTION: BLOOMINGTON DETENTION DESIGN PROJECT - SITES 1 & 2
SHEET TITLE: SITE 2 PROPOSED DRAINAGE PLAN
DESIGN PHASE: FINAL PLANS
SHEET NUMBER: 5

N:\Projects\PublicWorks\Bloomington\2112324_BloomingtonDetentionSystem\Drawings\2112324_Design_SITE_1_2_Revision.dwg, 1/19/2023 10:25:24 AM, _AutoCAD PDF (General Documentation).pc3

MATERIAL HANDLING AND SPILL PREVENTION PLAN

REGARDLESS OF THE REPORTING REQUIREMENTS, ALL SPILLS OF SUCH FLUIDS AND HAZARDOUS MATERIALS SHALL BE PROPERLY CLEANED UP AND ACTIONS SHALL INCLUDE THE FOLLOWING:

1. CONTAIN THE SPILLED MATERIAL OR BLOCK/RESTRICT ITS FLOW USING ABSORBENTS, DIRT, SAND, OR OTHER AVAILABLE MEANS TO PREVENT THE SUBSTANCE FROM DRAINING FURTHER.
2. CORDON OFF THE AREA OF THE SPILL AS REQUIRED.
3. CORRECTLY IDENTIFY THE MATERIAL FROM A SAFE DISTANCE.
4. DENY ENTRY TO THE CORDONED OFF AREA TO ALL BUT RESPONSE PERSONNEL.
5. CONTACT IDEM AS NOTED ABOVE IF APPLICABLE.
6. RESPOND TO THE SPILL IN ACCORDANCE WITH PROPER PROCEDURES REQUIRED FOR THE SUBSTANCE.

IN ADDITION TO THE LISTED SPILL RESPONSE, REFUELING OPERATIONS AND THE ADDITION OF VEHICULAR FLUIDS SHALL NOT OCCUR WITHIN 50 FEET OF ROADSIDE DITCHES AND INSTALLED STORM SYSTEMS. MEASURES SHALL BE TAKEN TO ENSURE THAT OIL PANS OR OTHER ACCEPTABLE SECONDARY CONTAINMENT CONTAINERS ARE PLACED SO AS TO CATCH ANY SPILLED FLUIDS AND PREVENT THEIR DISPERSAL ONTO THE SURROUNDING SOIL DURING SUCH OPERATIONS.

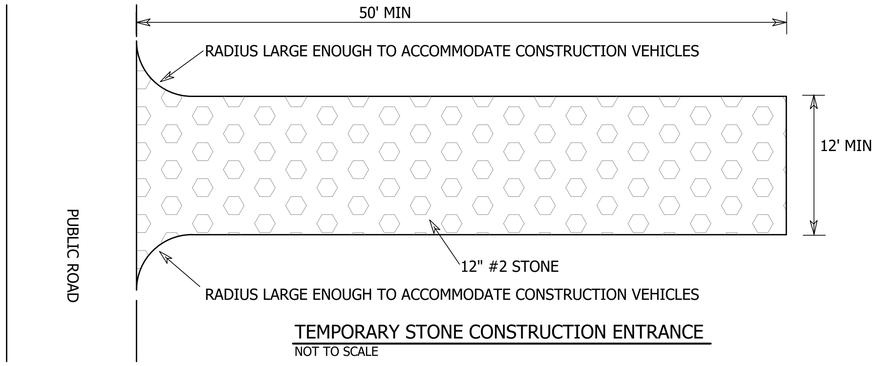
SPILLS OF THESE FLUIDS AND MATERIALS SHALL NOT BE WASHED OFF INTO SIDE DITCHES OR WATERWAYS, BUT MUST BE CONTAINED AT THE SITE OF THE SPILL AND REMOVED BY ABSORBENTS OR OTHER APPROVED METHODS FOR THEIR CLEANUP. SOILS WHICH HAVE ABSORBED THESE FLUIDS DUE TO SPILLS SHALL BE TREATED AS CONTAMINATED IN ACCORDANCE WITH THE FLUID FOR WHICH IT HAS BEEN CONTAMINATED AND SHALL BE PROPERLY REMOVED AND DISPOSED OF FROM THE SITE.

THE STORAGE OF SUCH FLUIDS AND MATERIALS SHALL BE IN MANUFACTURER PROVIDED CONTAINERS OR IN OTHER LEGAL CONTAINERS FOR THE RESPECTIVE SUBSTANCE. THE CONTAINERS SHALL BE PROPERLY MARKED IN ACCORDANCE WITH ANY STATE, LOCAL, OR FEDERAL REGULATORY REQUIREMENTS SO AS TO IDENTIFY THE SUBSTANCE. SUCH SUBSTANCES MAY ONLY BE LEFT ON SITE OVERNIGHT IF STORED IN VEHICLE LOCKERS WHICH ARE INTEGRAL PARTS OF THE VEHICLE OR THAT HAVE BEEN SECURELY FASTENED TO THE VEHICLE SO AS TO PREVENT REMOVAL OF THE LOCKER. SUCH LOCKERS SHALL REMAIN LOCKED WHEN CONSTRUCTION PERSONNEL ARE NOT ON SITE AND SHALL BE MARKED ACCORDING TO REGULATIONS AS TO THEIR CONTENTS.

ANTICIPATED POLLUTANTS WHICH MAY BE PRESENT ON THE SITE INCLUDE SEDIMENT, CONCRETE, GASOLINE, DIESEL FUEL, VEHICULAR OILS AND LUBRICANTS, VARIOUS HYDROCARBONS, HYDRAULIC FLUIDS AND PAINTS. THIS LIST IS NOT INTENDED TO BE ALL ENCOMPASSING. IF THE CONTRACTOR HAS ADDITIONAL TYPES OF POLLUTANTS DUE TO PROJECT REQUIREMENTS THEY SHALL ENSURE THAT THE SPILL OF THESE ADDITIONAL FLUIDS SHALL BE TREATED IN ACCORDANCE WITH ALL MSDS AND LOCAL STATE AND FEDERAL REGULATIONS. ALL LOCAL, STATE, AND FEDERAL REGULATIONS REGARDING THE SPILLS OF THESE FLUIDS AND CLEANUP PROCEDURES SHALL BE COMPLIED WITH BY THE CONTRACTOR. MSDS SHEETS FOR THESE MATERIALS SHALL BE ON SITE AND ACCESSIBLE BY WORK PERSONNEL DEALING WITH THESE MATERIALS. THE CONTRACTOR SHALL ENSURE THAT A USABLE SPILL CONTROL PLAN IS IN EXISTENCE TO ENSURE THAT PROPER RESPONSES ARE AVAILABLE FOR EACH OF THE SUBSTANCES WHICH WILL BE ON SITE DURING CONSTRUCTION.

SEVERAL DIFFERENT UNEXPECTED FACTORS COULD CAUSE THE ANTICIPATED POLLUTANTS LISTED ABOVE TO ENTER STORM WATER RUNOFF VIA ROADSIDE DITCHES AND/OR STORM INFRASTRUCTURE. ACCIDENTS SUCH AS FUEL SPILLS, OIL LEAKS, PAINT SPILLS, ETC. ARE UNEXPECTED BUT MAY BE UNPREVENTABLE AND THEREFORE IT IS VERY IMPORTANT TO HAVE A PROPER SPILL PREVENTION PLAN IN PLACE.

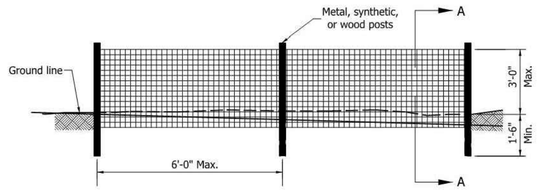
THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE REPORTABLE QUANTITIES REQUIRED FOR THE FLUIDS WHICH HE WILL HAVE ON SITE AND AS DESIGNATED IN FEDERAL REGULATIONS, 40 CFR PART 110, PART 117, AND PART 302. ANY SPILLS IN THESE QUANTITIES SHALL BE HANDLED AS REQUIRED BY LOCAL STATE AND FEDERAL REGULATIONS. ADDITIONAL REFERENCE TO CORRECT SPILL RESPONSE MAY BE FOUND IN 327 IAC 2-6 FOR APPLICABLE QUANTITIES OF SPILLS WHICH MUST BE REPORTED. RELEASES OF HAZARDOUS SUBSTANCES IN THE REPORTABLE QUANTITIES SHALL BE REPORTED TO THE IDEM EMERGENCY RESPONSE SECTION AT (888)-233-7745 BY PROVIDING THE INFORMATION AS NOTED IN 327 IAC 2-6.1-4(17).



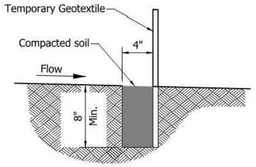
TEMPORARY STONE CONSTRUCTION ENTRANCE
NOT TO SCALE

SILT FENCE MAINTENANCE & MONITORING REQUIREMENTS

1. Inspect within 24 hours of a rain event and at least once every seven calendar When installed in a series at intervals on a slope, inspection should be done daily.
2. Remove accumulated sediment when it reaches one-quarter the height of the silt fence. Inspect to ensure that the fence is maintaining its integrity and producing adequate flow.
3. Repair eroded and damaged areas. If ponding becomes excessive, fence should be removed and either reconstructed or new product installed. Reseed, if applicable.



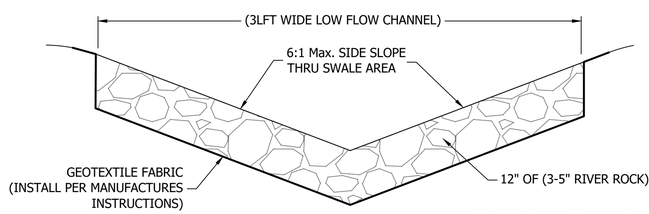
SILT FENCE ELEVATION



SECTION A-A

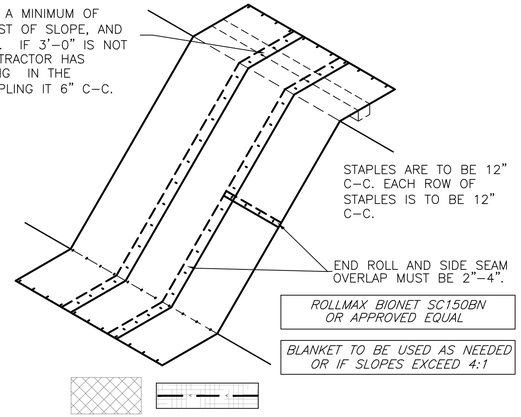
JOINT DETAIL
PLAN VIEW

**TEMPORARY SILT FENCE (PER INDOT STD. DWG E205-TECD-11)
NOT TO SCALE



NOTE: SEE DRAINAGE PLAN FOR GRADING AND LOCATIONS, CONTRACTOR SHALL COORDINATE WITH OWNER ON RIVER ROCK TYPE

LOW FLOW CHANNEL
NOT TO SCALE



EROSION CONTROL BLANKET
NOT TO SCALE

SEEDING AND PLANT SCHEDULE

(BY OTHERS)

BASIN PERENNIALS -

PLUGS SPACED @ 24 - 36" APART. PLANTED IN SWATHS OF 9-11 PLANTS.

APPROVED PLANT SPECIES
Asclepias incarnata (Marsh Milkweed)
Carex vulpinoidea (Fox Sedge)
Schizachyrium scoparium (Little Bluestem)
Iris Virginica Shrevei (Blue Flag Iris)
Eupatorium perfoliatum (Boneset)
Hibiscus moscheutos (Swamp Rose Mallow)
Oligoneuron riddellii (Riddell's Goldenrod)
Penstemon digitalis (Foxglove Beardtongue)
Pycnanthemum virginianum (Mountain Mint)
Rudbeckia hirta (Black Eyed Susan)
Symphyotrichum novae-angliae (New England Aster)
Zizia aurea (Golden Alexanders)

MICROPOOL PERENNIALS -

PLUGS SPACED @ 24 - 36" APART. PLANTED ALONG EDGES OF MICROPOOL.

APPROVED PLANT SPECIES
Pontederia cordata (Pickerel Weed)
Juncus effusus (Soft Rush)
Sagittaria latifolia (Common Arrowhead)
Carex lacustris (Lake sedge)

✱✱✱✱✱

BASIN SLOPE UPLAND GRASS MIX -

PLANTED ON ALL SLOPES OF ALL BASINS FROM THE TOP OF THE SLOPE TO THE TOE AND WILL BE ANCHORED WITH EROSION CONTROL BLANKET (DETAIL THIS SHEET).

APPROVED MIX PLS 1,168 (OZ/ACRE)
(32) Andropogon gerardii (Big Bluestem)
(16) Bouteloua curtipendula (Side-Oats Grama)
(2) Carex brevior (Plains Oval Sedge)
(48) Elymus canadensis (Canada Wild Rye)
(32) Elymus virginicus (Virginia Wild Rye)
(14) Panicum virgatum (Switchgrass)
(32) Schizachyrium scoparium (Little Bluestem)
(32) Sorghastrum nutans (Indian Grass)
(800) Avena sativa (Seed Oats)
(160) Lolium multiflorum (Annual Ryegrass)

NOTE: SUB SPECIES FOR BASIN PERENNIALS AND MICRO-POOLS SHALL BE AN ASSORTMENT OF EQUAL QUANTITIES OF EACH. FINAL LIST WITH QUANTITIES OF PLANTS FOR EACH SITE SHALL BE SUBMITTED BY CONTRACTOR FOR OWNER APPROVAL

DETENTION BASIN SOIL SPECIFICATION

A well blended, homogenous mixture of

- 60 to 70 percent construction sand;
- 15 to 25 percent top soil; and
- 15 to 25 percent compost.

Sand: Provide clean construction sand, free of deleterious materials. AASHTO M-6 or ASTM C-33 washed sand.

Top Soil: Sandy loam, loamy sand, or loam texture per USDA textural triangle with less than 5 percent clay content

Compost: Compost derived from composted leaves and/ yard waste. Animal or poultry manure, at any stage of decomposition, shall not be acceptable.

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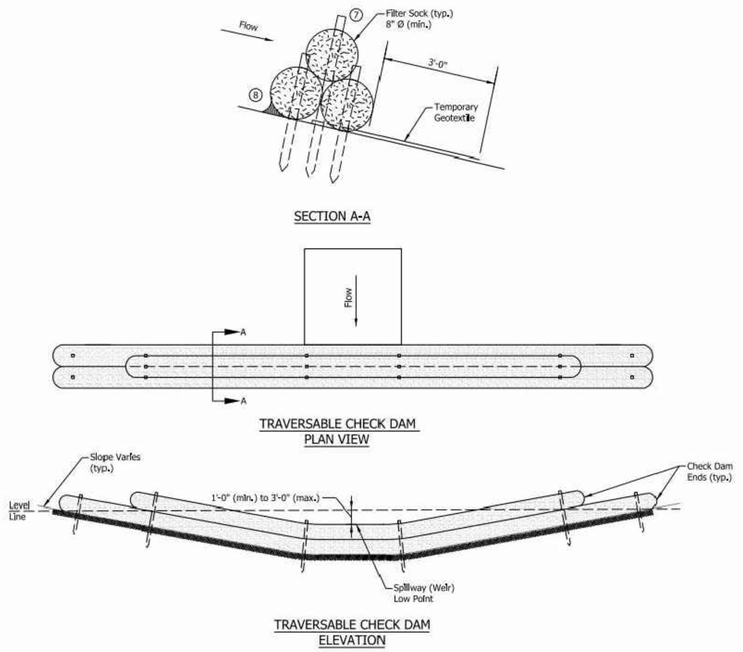
No. 10808974
STATE OF INDIANA
PROFESSIONAL ENGINEER
01/19/2023

SCALE:	AS SHOWN
DRAWN BY:	ARC
CHECKED BY:	CLK
DATE:	JANUARY 19, 2023

Revision	Drawn By	Date

FILE NO: 21-12324
CLIENT NAME: CITY OF BLOOMINGTON
PROJECT DESCRIPTION: BLOOMINGTON DETENTION DESIGN PROJECT - SITES 1 & 2
SHEET TITLE: DETAILS (1 OF 4)
DESIGN PHASE: FINAL PLANS
SHEET NUMBER: 6



NOTES:

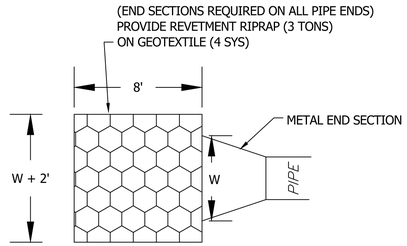
1. Fiber roll may be substituted for filter sock.
2. Check dams shall be placed perpendicular to the flow of water.
3. Check dam ends shall be positioned as shown such that storm water flows over the weir low point and does not flow around the ends.
4. Check dams shall remain in place until all upstream areas become stable.
5. Check dams shall be spaced such that the top of the downstream check dam is at the same elevation as the toe of the adjacent upstream check dam.
6. Filter sock shall be shall be secured as shown or in accordance with the manufacturer's instructions.
7. Stake length shall be sufficient to wedge filter sock to the ground to prevent movement and undercutting.
8. When undercutting is identified, compacted #5 or #8 stone shall be placed as shown.

INDIANA DEPARTMENT OF TRANSPORTATION
TEMPORARY CHECK DAM, TRAVERSABLE
SEPTEMBER 2019
STANDARD DRAWING NO. E 205-TECD-08

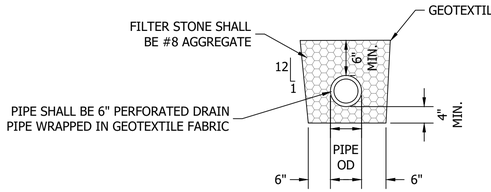
TEMPORARY CHECK DAM (PER INDOT STD. DWG E205-TECD-08)
NOT TO SCALE

****FILTER SOCK MAINTENANCE & MONITORING REQUIREMENTS**

1. Inspect within 24 hours of a rain event and at least once every seven calendar When installed in a series at intervals on a slope, inspection should be done daily.
2. Remove accumulated sediment when it reaches one-quarter the height of the filter sock. Inspect to ensure that the sock is maintaining its integrity and producing adequate flow.
3. Repair eroded and damaged areas. If ponding becomes excessive, socks should be removed and either reconstructed or new product installed. Reseed, if applicable.
4. If the filter sock is not designed as a permanent filter or part of the natural landscape and the contributing drainage area has been stabilized, use a blade or knife to cut open sock and use a bulldozer, loader, rake, or other device to incorporate the organic material into the soil, or spread it over the top of the soil surface for final seeding. Remove and dispose of sock if necessary.



TYPICAL PIPE OUTFALL
NOT TO SCALE



TYPICAL 6" UNDERDRAIN DETAIL
NOT TO SCALE

GENERAL NOTE:

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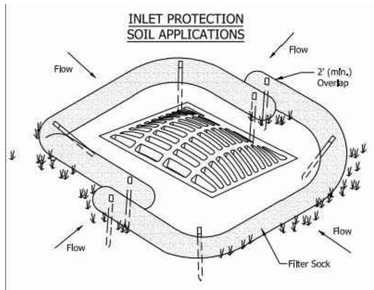
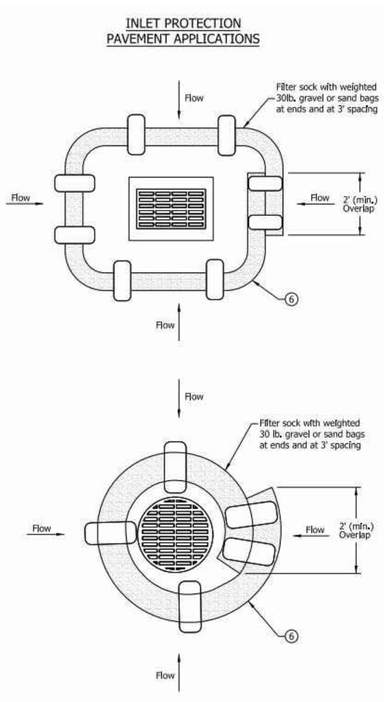




NOTES:

1. Fiber roll may be substituted for filter sock.
2. Filter sock shall be secured to prevent movement and undercutting as shown or in accordance with the manufacturer's instructions. See Standard Drawing E 205-TECD-10 for securing methods.
3. Inlet protection shall be inspected, at a minimum once every seven days and after each storm event. Sediment shall be removed when 1/3 of the filter sock depth has been filled or as directed.
4. Sediment and gravel deposited on roadways shall be removed once identified after each storm event.
5. Inlet protection shall be removed after the surrounding area becomes stable.
6. Inlet protection shall be used within a lane or shoulder only when closed to traffic. Inlet protection shall not cause water to encroach upon a lane open to traffic.

INDIANA DEPARTMENT OF TRANSPORTATION
TEMPORARY INLET PROTECTION, FILTER SOCK
SEPTEMBER 2019

TEMPORARY INLET PROTECTION (E205-TECD-02)
NOT TO SCALE

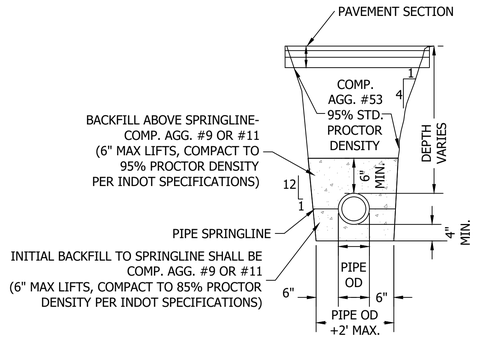
STANDARD TRENCH DETAIL
(NON-PAVED AREAS)
NOT TO SCALE

NOTES
1) EARTH BACKFILL IN 6" COMPACTED LIFTS THROUGHOUT YARD AREAS.

2) GRANULAR BACKFILL PLACED AND COMPACTED PER INDOT 2018 SPECIFICATIONS AND SUPPLEMENTS.

3) MEET OR EXCEED ALL OSHA STANDARDS REGARDING TRENCH PROTECTION.

4. THIS DETAIL VALID FOR ROOF DRAINS, STORM SEWERS, SANITARY SEWER & WATER SERVICE LINES . PROVIDE DETECTION WIRE ON WATER LINES.



STANDARD TRENCH DETAIL
(PAVED AREAS - WITHIN 5' OF PAVEMENT)
NOT TO SCALE

NOTES
1) FULL DEPTH COMPACTED AGGREGATE #53S SHALL GO TO BOTTOM OF PAVEMENT SECTION.

2) GRANULAR BACKFILL PLACED AND COMPACTED PER INDOT 2022 SPECIFICATIONS AND SUPPLEMENTS.

3) MEET OR EXCEED ALL OSHA STANDARDS REGARDING TRENCH PROTECTION.

4. THIS DETAIL VALID FOR ROOF DRAINS, STORM SEWERS, SANITARY SEWER & WATER SERVICE LINES . PROVIDE DETECTION WIRE ON WATER LINES.

5. TRENCH DEPTHS SHALL BE PER PLANS AND SHALL MEET MANUFACTURER'S REQUIREMENTS AS WELL AS LOCAL/STATE/FEDERAL REQUIREMENTS.

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SCALE: AS SHOWN		
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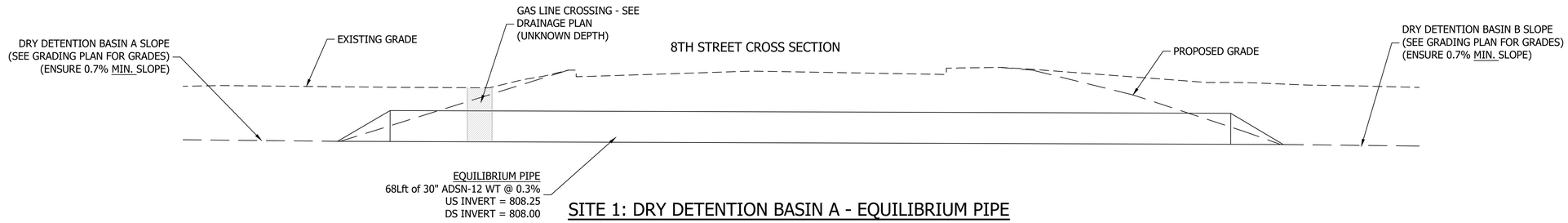
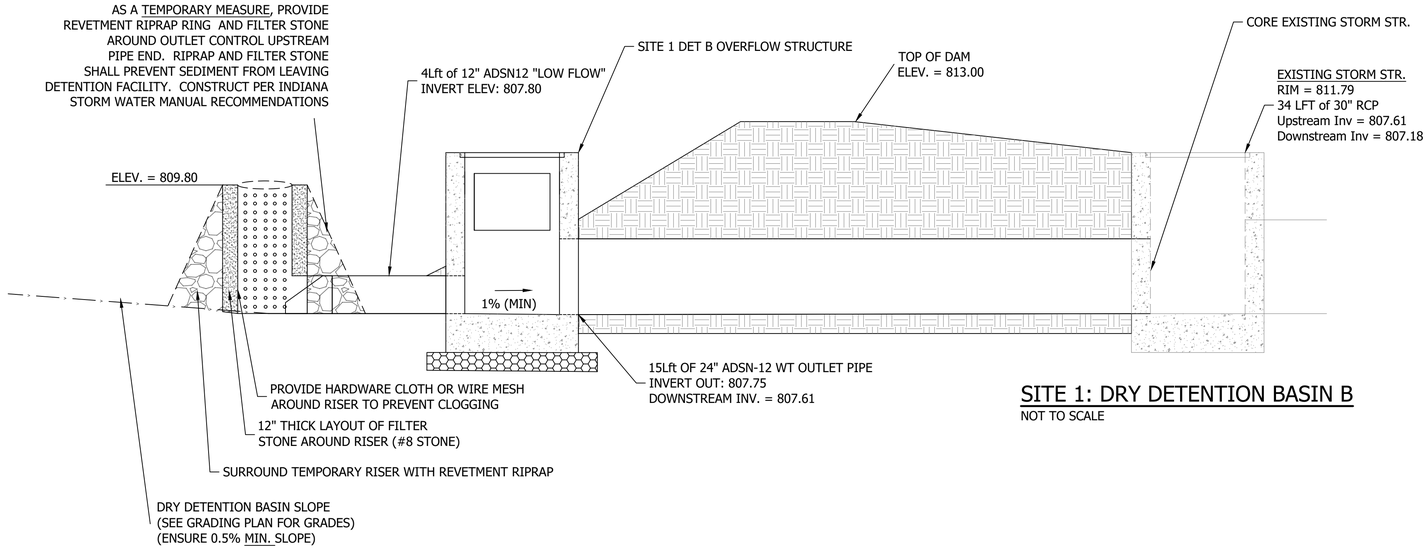
DATE: JANUARY 19, 2023		
Revision	Drawn By	Date
FILE NO: 21-12324		
CLIENT NAME: CITY OF BLOOMINGTON		
PROJECT DESCRIPTION: BLOOMINGTON DETENTION DESIGN PROJECT - SITES 1 & 2		
SHEET TITLE: DETAILS (2 OF 4)		
DESIGN PHASE: FINAL PLANS		

SHEET NUMBER: 7



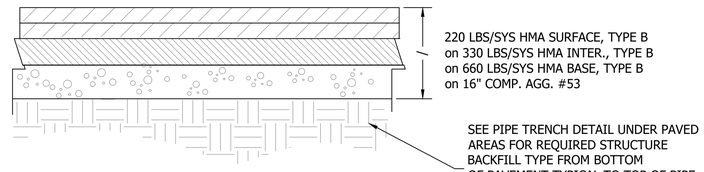
SITE 1: DRY DETENTION BASIN A - EQUILIBRIUM PIPE

1" = 5'



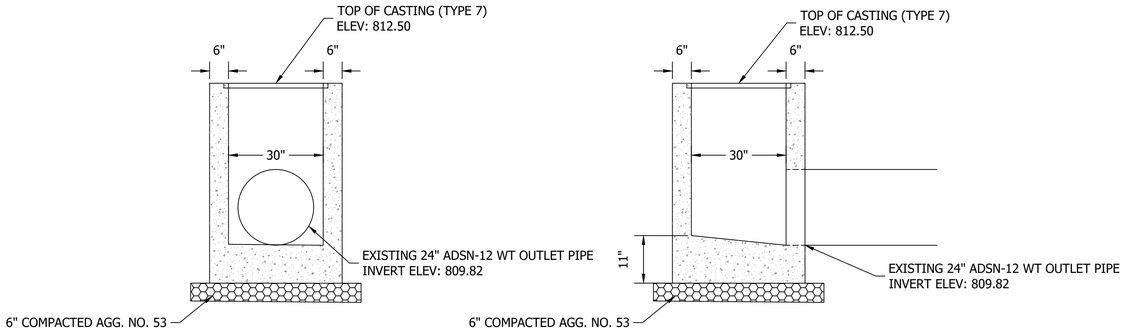
SITE 1: DRY DETENTION BASIN B

NOT TO SCALE



PAVEMENT PATCHING DETAIL

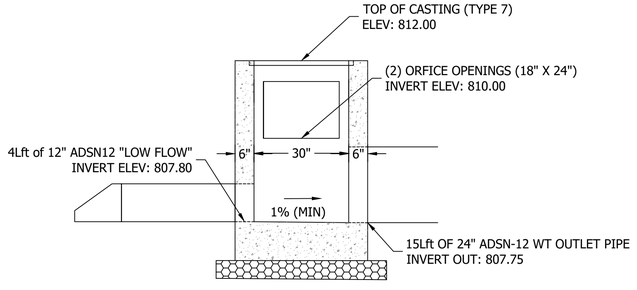
NOT TO SCALE



SITE 1 OVERFLOW STRUCTURE DETENTION BASIN A (TYPE E-INLET)

NOT TO SCALE

GENERAL NOTES:
1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO ENGINEER FOR APPROVAL PRIOR TO START OF CONSTRUCTION.



SITE 1 OVERFLOW STRUCTURE DETENTION BASIN B (MODIFIED TYPE F-INLET)

NOT TO SCALE

GENERAL NOTES:
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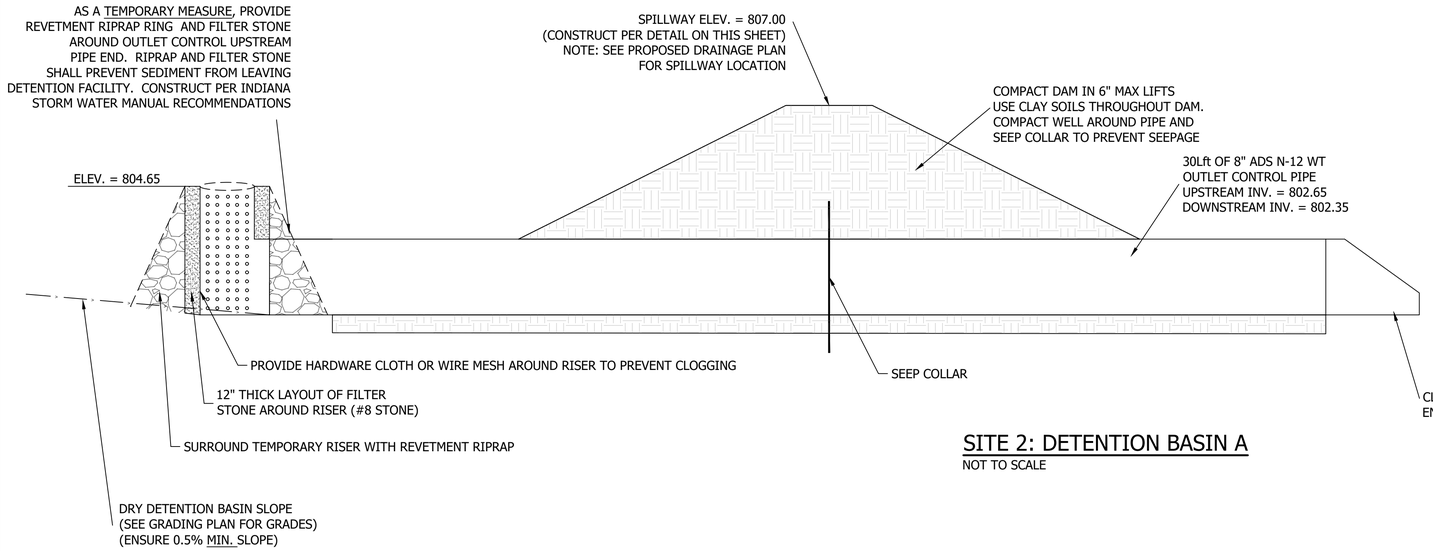
PROJECT DESCRIPTION:
BLOOMINGTON DETENTION
DESIGN PROJECT - SITES 1 & 2

SHEET TITLE:
DETAILS (3 OF 4)

DESIGN PHASE:
FINAL PLANS

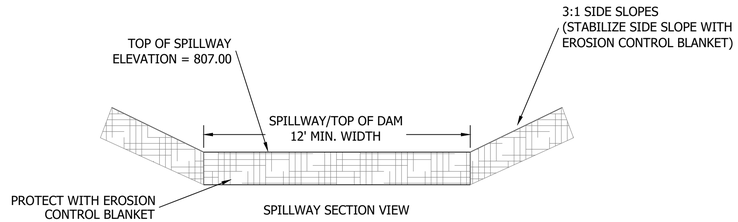
SHEET NUMBER:
8



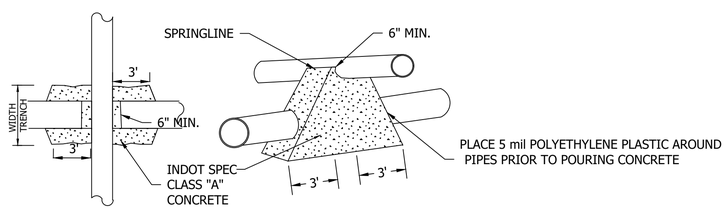
SITE 2: DETENTION BASIN A

NOT TO SCALE

NOTE: SEE DRAINAGE SITE PLANS FOR LOCATION. EROSION CONTROL BLANKET SHALL BE HEAVY DUTY (CURLEX 2 OR BETTER) AND MUST BE STAPLED, HELD IN PLACE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

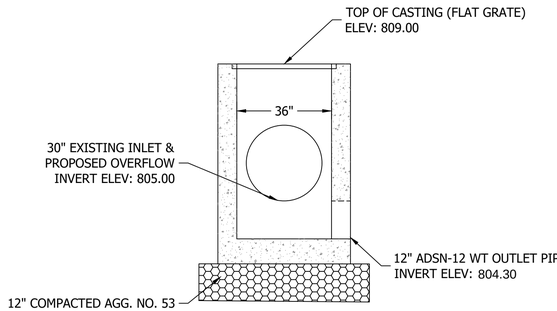


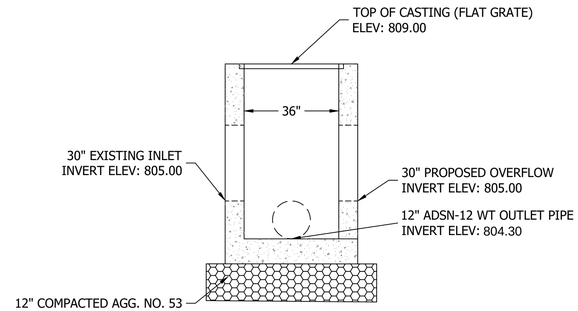
NOTE: *
1. WHERE 18" VERTICAL SEPARATION CANNOT BE MAINTAINED THE FOLLOWING CONCRETE ENCASEMENT SHALL BE PLACED AT THE IMMEDIATE CROSSING LOCATION FOR STRUCTURAL SUPPORT.
2. THE CROSSING MUST BE AT 45° OR GREATER. CROSSINGS AT ANGLES LESS THAN 45° SHALL BE BROUGHT TO THE ENGINEERS ATTENTION FOR FURTHER DESIGN CONSIDERATION.
3. THE STORM OR SANITARY PRESSURE PIPE SHALL HAVE 5.0 MIL MIN. DETECTABLE WARNING TAPE MARKING THE PIPE AS "STORM SEWER" OR "SANITARY SEWER" AS APPLICABLE.



SEWER MAIN CROSSING DETAIL

NTS





SITE 2: STORM SPLITTER STRUCTURE (36" CATCH BASIN)

NOT TO SCALE

GENERAL NOTES:
1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO ENGINEER FOR APPROVAL PRIOR TO START OF CONSTRUCTION. CONTRACTOR SHALL POT HOLE EXISTING SANITARY LINE AND VERIFY LOCATION AND DEPTH BEFORE ORDERING

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NOTES:
1. This sheet is to be: ANSI D 22" X 34"

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REGISTERED
No. 10808974
STATE OF INDIANA
PROFESSIONAL ENGINEER
01/19/2023

SCALE:	AS SHOWN
DRAWN BY:	ARC
CHECKED BY:	CLK
DATE:	JANUARY 19, 2023

Revision	Drawn By	Date

FILE NO: 21-12324

CLIENT NAME:
CITY OF BLOOMINGTON

PROJECT DESCRIPTION:
BLOOMINGTON DETENTION
DESIGN PROJECT - SITES 1 & 2

SHEET TITLE:
DETAILS (4 OF 4)

DESIGN PHASE:
FINAL PLANS

SHEET NUMBER:
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Construction Plan – General Plan Components (Section A)

A1 - Index of the location of required plan elements in the construction plan:
This sheet is to act as the plan index. General Plan Components, Construction Components and Post Construction Components are all addressed on this sheet.

A2 - A vicinity map depicting the project site location in relationship to recognizable local landmarks, towns, and major roads:
A vicinity map showing the (4) project locations is provided on the Title Sheet. Project involves (4) drainage and detention projects within the City of Bloomington.

A3 - Narrative of the nature and purpose of the project:
The purpose of this project is to provide stormwater detention on (2) parcels owned by City of Bloomington.
Stormwater Water quality measures are also being implemented where feasible/practical.

A4 - Latitude and longitude to the nearest fifteen (15) seconds:
SITE 1 = Lat N 39 degrees, 10 minutes , 11 seconds. Long W -86 degress, 33 minutes 0 seconds.
SITE 2 = Lat N 39 degrees, 10 minutes , 7 seconds. Long W -86 degress, 33 minutes 10 seconds.

A5 - Legal description of the project site:
SITE 1 = Southwest Quarter of Section 32, Township 9N, Range 1W, Bloomington Township, Monroe County
SITE 2 = Southwest Quarter of Section 32, Township 9N, Range 1W, Bloomington Township, Monroe County

A6 - 11 X 17-inch plat showing building lot numbers/boundaries and road layout/names:
Site improvements, lot and road layouts can be seen on the Proposed Drainage Plan for each site.

A7 - Boundaries of the one hundred (100) year floodplains, floodway fringes, and floodways
Not applicable for all sites. All sites are outside 100-year floodplains and floodways.

A8 - Land use of all adjacent properties: This information provides information for the overall project including downstream impacts.
All sites are parcels owned by City of Bloomington within the city limits, primarily bordered by roads and residential properties.
This project is a detention/water quality improvement project which should improve drainage and downstream impacts.

A9 - Identification of a U.S. EPA approved or established TMDL:
SITE 1 & 2 HUC14: 05120208090010 (Lower Salt Creek), Established TMDL for Salt Creek (E-Coli)
Sites 1 & 2 are not within an UNT but ultimately discharge to Salt Creek

A10 - Name(s) of the receiving water(s): The plan should identify all named streams, or other water bodies that will potentially receive run-off from the project site. If the discharge is to a municipal storm sewer, the plan should identify the owner or operator of the storm drainage system as well as the ultimate receiving water for the storm drain system.
Sites 1 & 2 will drain thru Stormwater infrastructure owned by City of Bloomington.
Both sites are within the Lower Salt Creek drainage basin.

A11 - Identification of discharges to a water on the current 303(d) list of impaired waters and the pollutant(s) for which it is impaired:
All sites drain to a Clear Creek UNT which ultimately drains to Site drains to Lower Salt Creek TMDL (Impairment E-Coli).

A12 - Soils map of the predominate soil types:
Soils map for each site is provided on Erosion Control References sheet.

A13 - Identification and location of all known wetlands, lakes, and water courses on or adjacent to the project site :
US Fish and Wildlife Mapper provided on Erosion Control References sheet, shows there are not any known wetlands or US Waters on site.

A14 - Identification of any other state or federal water quality permits or authorizations that are required for construction activities:
No state or federal water quality permits are required for this project. No work is being done within a US Waterway.

A15 - Identification and delineation of existing cover, including natural buffers:
Existing sites are primarily covered with grass vegetation.

A16 - Existing site topography at an interval appropriate to indicate drainage patterns:
Existing site topography is shown as contour lines on the Existing Conditions Plan.
Drainage patterns are being maintained as each detention basin (post-development) will continue to discharge in the same general direction.

A17- Location(s) where run-off enters the project site: Identify areas where stormwater flows onto the project site. This includes both concentrated flow and areas where sheet flow enters the project site. These areas, including drainage acreage must be considered to properly design the stormwater management system for the project site.
Existing contours and flow arrows are provided on the existing conditions plans for each site. Drainage patterns are being maintained and the incoming offsite drainage into each basin has been accounted for in the detention calculations for each site.

A18 - Location(s) where run-off discharges from the project site prior to land disturbance:
Dry Detention Basins are being constructed with Outlet locations shown on each site on the proposed drainage plans.
Both sites are within the Lower Salt Creek drainage basin.

A19 - Location of all existing structures on the project site:
There are no existing buildings or structures on the site. Storm sewer infrastructure is shown on the Proposed Drainage plans.

A20 - Existing permanent retention or detention facilities, including manmade wetlands, designed for stormwater management:
There are not any existing detention basins on the sites however Dry Detention Basins are being constructed.
Refer to the proposed drainage plans for locations and details on the Dry Detention Basins to be constructed at each site.

A21 - Locations where stormwater may be directly discharged into ground water, such as abandoned wells, sinkholes, or karst features:
N/A - There are no known Karst or sinkholes on the site.

A22 - Size of the project area expressed in acres:
Site 1 involves 0.26 acre land disturbance on a 0.32 acre parcel.
Site 2 involves 0.35 acre land disturbance on a 0.29 acre parcel plus 0.10 acre Right of Way area.

A23 - Total expected land disturbance expressed in acres:
In order to maximize detention provided approximately the entire parcel for each site is being disturbed.
Site 1 involves 0.26 acre land disturbance on a 0.32 acre parcel.
Site 2 involves 0.35 acre land disturbance on a 0.29 acre parcel plus 0.10 acre Right of Way area.

A24 - Proposed final topography:
Proposed final topography, including contours is on the Proposed Drainage plan sheets.

A25 - Locations and approximate boundaries of all disturbed areas:
Construction Limits and contours are shown on the Proposed Drainage plan sheets.

Construction Plan – General Plan Components (Section A continued)

A26 - Locations, size, and dimensions of all stormwater drainage system:
All proposed drainage infrastructure for each dry detention basin is shown on the Proposed Drainage plan sheets.

A27 - Locations of specific points where stormwater and non-stormwater discharges will leave the project site: Topographic or drainage system information can be used to identify the location of the discharges. If the location is not easily discernable then note for clarity.
Contours and drainage arrows shown on the Proposed Drainage plan sheets show where stormwater discharges from each site.

A28 - Location of all proposed site improvements, roads, utilities, lot delineation, proposed structures, and common areas:
The Proposed Drainage plan sheets show where the dry detention basins and water quality measures are being constructed.

A29 - Location of all on-site and off-site soil stockpiles and borrow areas:
Excavated soils will be placed directly in dump trucks and taken offsite to a permitted location.

A30 - Construction support activities that are expected to be part of the project:
Excavated soils will be taken offsite to a permitted location. Location to be determined but shall require separate permit.

A31 - Location of any in-stream activities that are planned for the project including, but not limited to, stream crossings and pump arounds:
N/A - No work within US waterways.

Stormwater Pollution Prevention - Construction Component (Section B)

B1 - Description of the potential pollutant generating sources and pollutants, including all potential non-stormwater discharges:
Expected on-site pollutants include Gasoline, Diesel Fuel, vehicular oils and lubricants, greases, coolants, hydrocarbons and hydraulic fuels from construction equipment. Eroded soils may also be present on-site. Refer to "Material Handling" Specifications on the Erosion Control Details sheet.

B2 - Stable construction entrance locations and specifications:
Construction Entrance is mandatory for construction traffic entering and leaving all sites. Details for the construction entrance are shown on Details sheet 6. Construction Entrance location is shown on the Proposed Drainage plan sheets.

B3 – Specifications for temporary and permanent stabilization:
Temporary seeding is to be used on all areas disturbed which will remain undisturbed for 7 days or more. See detail sheet 6 for Basin Slope Upland Grass Mix to be used for temporary and permanent stabilization. Warrenty bond required for seeding done between October 16 and January 31.

B4 - Sediment control measures for concentrated flow areas: This item is intended to address areas of the site where run-off will occur in a concentrated flow condition. The plan preparer should evaluate these areas and design the stormwater control measures to ensure that the proposed measures are adequate for the site characteristics and drainage area. Each proposed measure must include the location accompanied by construction details and specifications.
Concentrated flow areas (channels) are being lined with rock on geotextile. Outlet control structures are sized with orifices to control discharge rates off the site. Riprap on geotextile shall also be installed at pipe outlet ends.

B5 - Sediment control measures for sheet flow areas: This item is intended to identify the areas of the site where run-off will primarily be discharged under a sheet flow condition. The plan preparer should evaluate these areas and select adequate sediment control measures that are properly sized for site characteristics and the expected drainage area. It may also be necessary to evaluate if concentrated flow measures might be more applicable rather than just relying on sheet flow measures. Each proposed measure must include the location and accompanied by construction details and specifications.
All sites are setup as contained detention basins, so areas sheet flow at a 3:1 or flatter slope down to a rock lined channel.
Sheet flow areas are lined with erosion control blanket with grass seed mix. Outlet structures have temporary perforated riser pipe surrounded with filter stone to prevent sediment discharge.

B6 – Run-off control measures: This item refers to measures that are utilized to manage and direct run-off. Run-off control measures include but are not limited to diversions, rock check dams, and slope drains.
All sites are setup as contained detention basins, so areas sheet flow at a 3:1 or flatter slope down to a rock lined channel draining to outlet.
Outlet structures have temporary perforated riser pipe surrounded with filter stone to prevent sediment discharge.

B7 - Stormwater outlet protection location and specifications: All stormwater discharge locations need to be adequately protected to prevent scour erosion. The plan should specify protection measures appropriate for site characteristics. Each proposed measure must include the location and be accompanied by construction details and specifications.
Scour protection is provided by installing Riprap on geotextile at all pipe outlet ends.

B8 - Grade stabilization structure locations and specifications: This item includes but is not limited to measures such as rock chutes, toe wall, and drop structures. These types of measures may not be necessary on every project but should be considered during the plan development stage. Proposed measures must include the location and be accompanied by construction details and specifications.
Grades shall be stabilized by placing topsoil on final grade established and then lining with erosion control blanket with grass seed mix.

B9 - Dewatering applications and management methods: If dewatering activities are anticipated appropriate measures should be identified and included on the plans. This plan element is primarily associated with activities that include pumping of accumulated water associated with excavated areas.
Dewatering is not needed for this project. No work within waterway or excavation within water table required.

B10 - Measures utilized for work within waterbodies: The plan should identify the type of measure(s) that are proposed for any in-stream activities.
No work within Waters of US is proposed.

B11 - Maintenance guidelines for each proposed stormwater quality measure: Each proposed temporary measure must be accompanied by criteria/standards and instructions for evaluating the measure for maintenance once installed. While permanent measures are considered long-term it will also be necessary to have criteria/standards in the plan while the permanent measures are being constructed or until final stabilization of the measure is achieved.
Self monitoring shall be provided in accordance with CGSP requirements, after 1/2" or larger rain events and weekly.
See details sheets for maintenance requirements for construction entrance, silt fence and filter sock.

B12 - Planned construction sequence that describes the implementation of stormwater quality measures in relation to land disturbance: A complete construction sequence is required and should reflect what measures will be implemented on the project site and when these measures will be installed in relation to land disturbance and construction activities.
Erosion Control Sequence is provided on the Proposed Drainage Plan sheets for each site.

B13 - Provisions for erosion and sediment control on individual residential building lots regulated under the proposed project:
N/A

B14 - Material handling and spill prevention and spill response plan meeting the requirements in 327 IAC 2-6.1:
Refer to Material Handling and Spill Prevention special provision specs provided on the Details sheet.

B15 - Material handling and storage procedures associated with construction activity:
Refer to Material Handling and Spill Prevention special provision specs provided on the Details sheet.

Stormwater Pollution Prevention - Post-construction Component (Section C)

C1 - Description of pollutants and their sources associated with the proposed land use: The plan should include a narrative description of the final land use and the expected pollutants that will typically be generated by this type of land use. The description should also discuss the sources of these pollutants within the completed project site. Common pollutants include, oil, grease, antifreeze, brake fluid, brake dust, rubber fragments, gasoline, diesel fuel and other hydrocarbons, metals from vehicular and other sources, grit (sediment) from wearing of the road surface and falling or washing off of vehicles, trash (including bacteria and other biological agents contained in the trash) from littering and other types of improper disposal or storage, and elevated receiving water temperatures from stormwater run-off contact with impervious surfaces.

Possible post construction pollution could include things such as minor soil erosion due to disturbed soils or grass/stabilization that fails. Sites are surrounded by roads and roadway storm sewer discharges into each site and therefore vehicular related pollutants such as oil, grease, antifreeze, brake fluid, brake dust and rubber fragments shall be expected.

C2 - Description of proposed post-construction stormwater measures:
The plan should include a description of how the project was designed to minimize the generation of post-construction pollutants, and how the proposed post-construction stormwater measures will manage the quality and quantity of stormwater discharges from the completed project. It may be feasible for a project to comply with the postconstruction requirements without installing elaborate and expensive treatment systems.
Reducing impervious surfaces and increasing vegetative surfaces to trap pollutants may be sufficient. Post-construction measures may include but are not limited to stormwater retention and detention, bio-retention, vegetated swales, and infiltration systems. Low impact development and green infrastructure strategies are encouraged to enhance water quality and to reduce stormwater run-off. Generally, these strategies are designed to mimic natural processes, minimize land disturbance, reduce surface imperviousness, and maximize green space.

All of the sites are designed with dry detention basins to help alleviate downstream flooding.
Water Quality treatment measures are also implemented where possible.
Low flow outlet control structures also are being used.
Detention basin details are provided on details sheets 8 & 9.

C3 – Plan details for each stormwater measures:
All proposed post-construction stormwater measures should be clearly located on the plan, and include dimensions, specifications, and construction details.

All of the sites are designed with dry detention basins to help alleviate downstream flooding.
Water Quality treatment measures are also implemented where possible.
Low flow outlet control structures also are being used.
Detention basin details are provided on details sheets 8 & 9.

C4 - Sequence describing stormwater measure implementation.
The plan should provide a sequence of when the proposed post-construction stormwater quality measures will be installed. Consider post-construction measures, like basins or ponds that can be utilized during construction for sediment control. If a measure serves a dual purpose this should be identified in the sequencing for construction and how and when it will be modified for use as a post-construction measure.
If a post-construction measure that does not tolerate sediment impacts is installed early in the construction phase, sediment control measures and management practices should be implemented to ensure that it is not inundated with construction phase sedimentation.
An erosion control sequence is provided on the proposed drainage plan sheet for each site.

C5 - Maintenance guidelines for proposed post-construction stormwater measures:
Provide an operation manual and where applicable a narrative description of the maintenance guidelines for all post-construction stormwater measures to facilitate their proper long-term function. This documentation must be made available to future parties who will assume responsibility for the operation and maintenance of the postconstruction stormwater measures. All proposed measures must be accompanied by guidelines for monitoring and maintenance. If manufactured products are utilized, the manufacturers operation and maintenance manual/guidance may be referenced and is acceptable.

Owner shall maintain site by ensuring grass is maintained, kept alive and mowed.
Owner shall restabilize any side slopes that erode with topsoil and stabilize with mulch seeding.
Riprap/Rock channels shall be maintained as needed to ensure they maintain their proper shape.
Roadway superintendent shall be aware of infrastructure installed and maintain storm infrastructure by removing any sediments blocking discharge pipes or inlet grates.
Replace any riprap scour protection that is washed away or needs replaced.

C6 - Entity that will be responsible for operation and maintenance of the postconstruction stormwater measures:
The property owner (City of Bloomington) will be responsible for operation and maintenance of post construction measures.

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REGISTERED
No. 10808974
STATE OF INDIANA
PROFESSIONAL ENGINEER
01/19/2023

SCALE: N/A
DRAWN BY: ARC
CHECKED BY: CLK
DATE: JANUARY 19, 2023

Revision	Drawn By	Date

FILE NO: 21-12324
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EROSION CONTROL INDEX

DESIGN PHASE:
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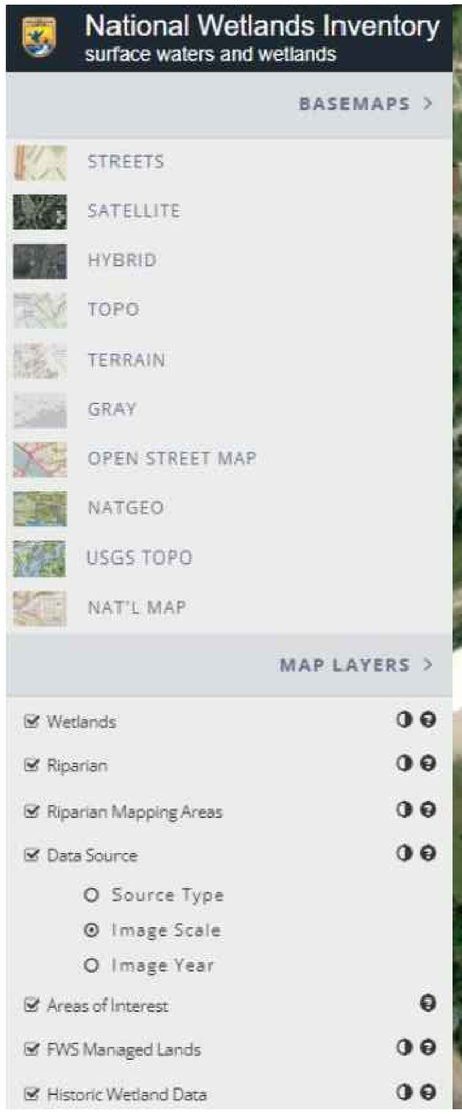

US FISH WILDLIFE MAPPER RESULTS FOR SITES 1 & 2 SHOW THAT THERE ARE NO KNOWN WETLANDS OR RIPARIAN AREAS WITHIN PROJECT LIMITS. (SITES ARE NOT TO SCALE)

US FISH WILDLIFE MAPPER (SITE 1 & 2)
NOT TO SCALE

Map Unit Symbol	Map Unit Name
CtB	Crider-Urban land complex, 2 to 6 percent slopes
CtC	Crider-Urban land complex, 6 to 12 percent slopes

SOIL PROPERTIES (SITE 1 & 2)
NOT TO SCALE

SOIL MAP (SITE 1 & 2)
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EROSION CONTROL REFERENCES

DESIGN PHASE:
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11

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