8 7 6 5 4 3 2 1

F E D C B A

FACADE MATERIAL LEGEND

CW GLAZING - CLEAR VISION [GL-1V]	CW GLAZING - CLEAR VISION W/ FRIT [GL-1VF]	CW GLAZING - LOW IRON VISION [GL-2V]	CW GLAZING - LOW IRON W/ SHADOW BOX [GL-2V2]	LIGHT METAL PANEL AMF-01	DARK METAL PANEL AMF-02
CW GLAZING - CLEAR W/ SPANDREL [GL-1S]	CW GLAZING - CLEAR W/ SPANDREL W/ FRIT [GL-1SF]	CW GLAZING - LOW IRON W/ SPANDREL [GL-2S]	STONE VENEER ST-01	BRICK VENEER MV-01	

GENERAL BUILDING ZONING REQUIREMENT

PER COOPER PLAZA REDEVELOPMENT PLAN (CITY OF CAMDEN DIVISION OF PLANNING, MARCH 2005, REV. 5/13/05), SECTION III REGULATORY CONTROLS, PROPOSED SITE DESIGN CONTROLS, A. AREA AND BULK REGULATIONS, ITEM 7:

1. FRONT YARD: A FRONT YARD SETBACK SHALL BE PROVIDED TO BE NOT LESS THAN FIVE (5) FEET. WHERE THERE IS AN EXISTING BUILDING ON EACH OF TWO LOTS ADJACENT TO A LOT ON WHICH A PROPOSED BUILDING IS TO BE ERECTED AND BOTH BUILDINGS HAVE AN ALIGNMENT NEARER TO THE STREET THAN THE REQUIRED FRONT YARD AND WHERE BOTH BUILDINGS ARE WITHIN ONE HUNDRED (100) FEET OF THE PROPOSED BUILDING, THE AVERAGE OF THE EXISTING FRONT YARD DEPTHS OF EACH ADJACENT LOT SHALL BE THE MINIMUM REQUIRED FRONT YARD DEPT OF THE LOT ON WHICH THE PROPOSED BUILDING IS TO BE ERECTED.

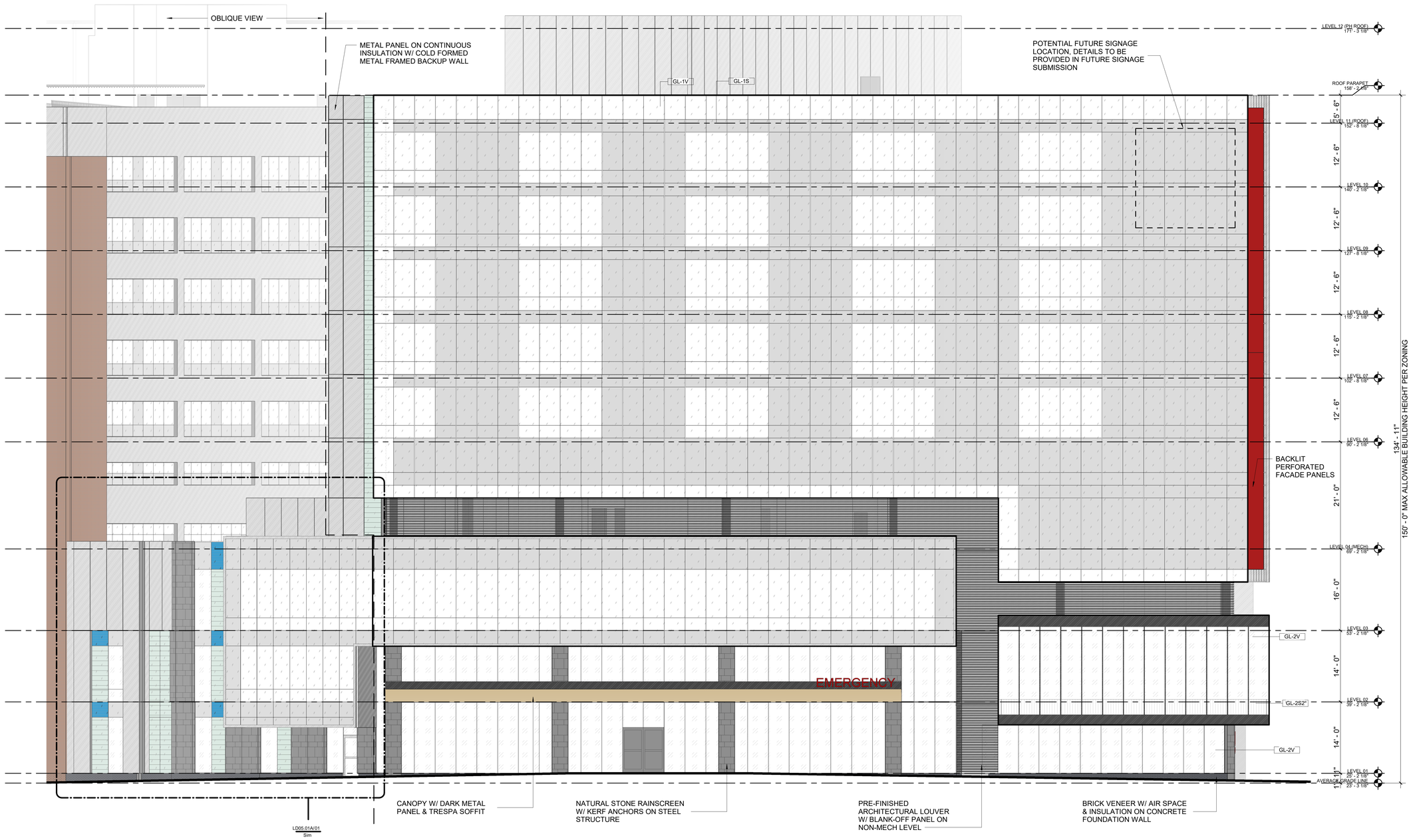
PER COOPER PLAZA REDEVELOPMENT PLAN (CITY OF CAMDEN DIVISION OF PLANNING, MARCH 2005, REV. 5/13/05), SECTION III REGULATORY CONTROLS, PROPOSED SITE DESIGN CONTROLS, A. AREA AND BULK REGULATIONS, ITEM 13:

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NOTE: BUILDING PLANS AND ELEVATIONS ARE SHOWN FOR CONCEPTUAL DESIGN ONLY TO DEMONSTRATE BUILDING SATISFIES CURRENT ZONING REQUIREMENTS AND OVERALL BUILDING DIMENSIONS AND HEIGHT. OWNER IS CONTINUING TO DEVELOP THE FINAL DESIGN OF THE EXTERIOR INCLUDING LOCATION AND TYPE OF FENESTRATION, COLORS, AND MATERIALS.

EXISTING BUILDINGS

EARTH



01 OVERALL BUILDING ELEVATION SE
1/8" = 1'-0"

PROJECT:

COOPER NORCROSS HEALTH

BENSON PAVILION

COOPER NORCROSS UNIVERSITY HOSPITAL
1 COOPER PLAZA
CAMDEN, NJ 08103

SEAL:

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BR+A CONSULTING ENGINEERS
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NEW YORK, NY 10017
212-840-0060

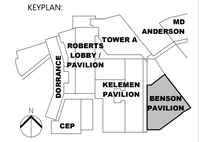
INTROBA
LOW VOLTAGE AV/IT
32 OLD SLIP, 10TH FLOOR
NEW YORK, NY 10006
212-997-5100

VISIONBUILDERS DESIGN
FOOD SERVICES CONSULTANT
1515 SHOPTON ROAD, SUITE 104
CHARLOTTE, NC 28217
704-405-3101

HEALTH, EDUCATION AND RESEARCH ASSOCIATES, INC.
LABORATORY PLANNER
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314-289-9202

ST ONGE
STERILE PROCESSING & VERTICAL TRANSPORTATION CONSULTANT
1400 WILLIAMS ROAD
YORK, PA 17402
717-840-8181

KEYPLAN:



ISSUES:

NO.	DESCRIPTION	DATE

PROJECT NO. 7088
CON/REF NO.
DATE 10/08/26

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OVERALL BUILDING ELEVATION - SE

LD05.01

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F

E

D

C

B

A

FACADE MATERIAL LEGEND

CW GLAZING - CLEAR VISION [GL-1V]	CW GLAZING - CLEAR VISION W/ FRIT [GL-1VF]	CW GLAZING - LOW IRON VISION [GL-2V]	CW GLAZING - LOW IRON W/ SHADOW BOX [GL-2V2]	LIGHT METAL PANEL AMF-01	DARK METAL PANEL AMF-02
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GENERAL BUILDING ZONING REQUIREMENT

PER COOPER PLAZA REDEVELOPMENT PLAN (CITY OF CAMDEN DIVISION OF PLANNING, MARCH 2005, REV. 5/13/05), SECTION III REGULATORY CONTROLS, PROPOSED SITE DESIGN CONTROLS, A. AREA AND BULK REGULATIONS, ITEM 7:

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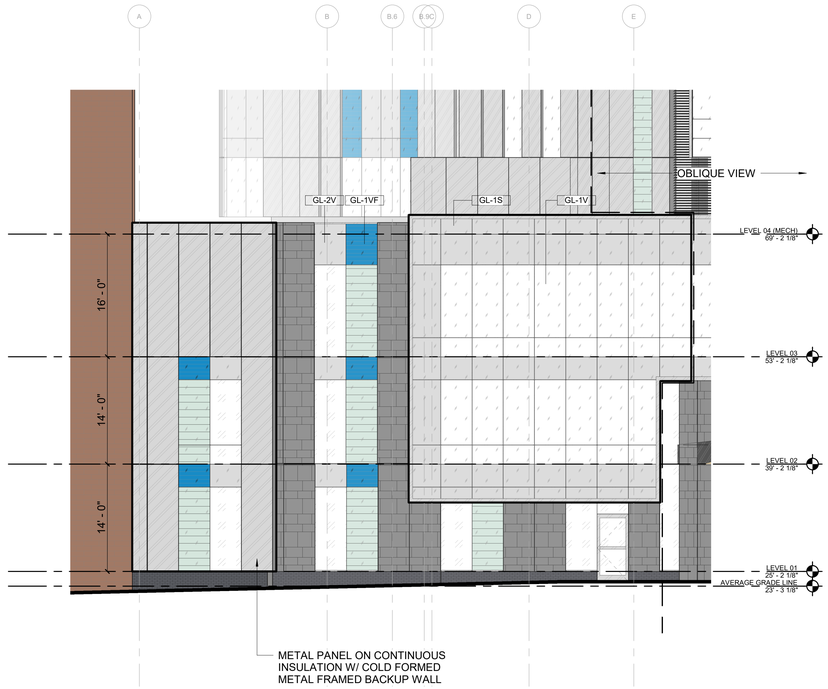
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EXISTING BUILDINGS

EARTH



01 PARTIAL BUILDING ELEVATION S
1/8" = 1'-0"

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PROJECT:

COOPER NORCROSS HEALTH

BENSON PAVILION

COOPER NORCROSS UNIVERSITY HOSPITAL
1 COOPER PLAZA
CAMDEN, NJ 08103

SEAL:

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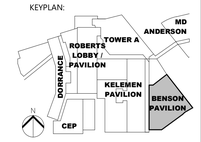
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ST ONGE
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1400 WILLIAMS ROAD
YORK, PA 17402
717-840-8181

KEYPLAN:



ISSUES:

NO.	DESCRIPTION	DATE

PROJECT NO. 7088
CON/REF NO.
DATE 10/08/26

DCA# NJPRP-XXXXX

PARTIAL BUILDING ELEVATION - S

LD05.01A

[redacted]

8 7 6 5 4 3 2 1

F E D C B A

FACADE MATERIAL LEGEND

CW GLAZING - CLEAR VISION [GL-1V]	CW GLAZING - CLEAR VISION W/ FRIT [GL-1VF]	CW GLAZING - LOW IRON VISION [GL-2V]	CW GLAZING - LOW IRON W/ SHADOW BOX [GL-2V2]	LIGHT METAL PANEL AMF-01	DARK METAL PANEL AMF-02
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GENERAL BUILDING ZONING REQUIREMENT

PER COOPER PLAZA REDEVELOPMENT PLAN (CITY OF CAMDEN DIVISION OF PLANNING, MARCH 2005, REV. 5/13/05), SECTION III REGULATORY CONTROLS, PROPOSED SITE DESIGN CONTROLS, A. AREA AND BULK REGULATIONS, ITEM 7:

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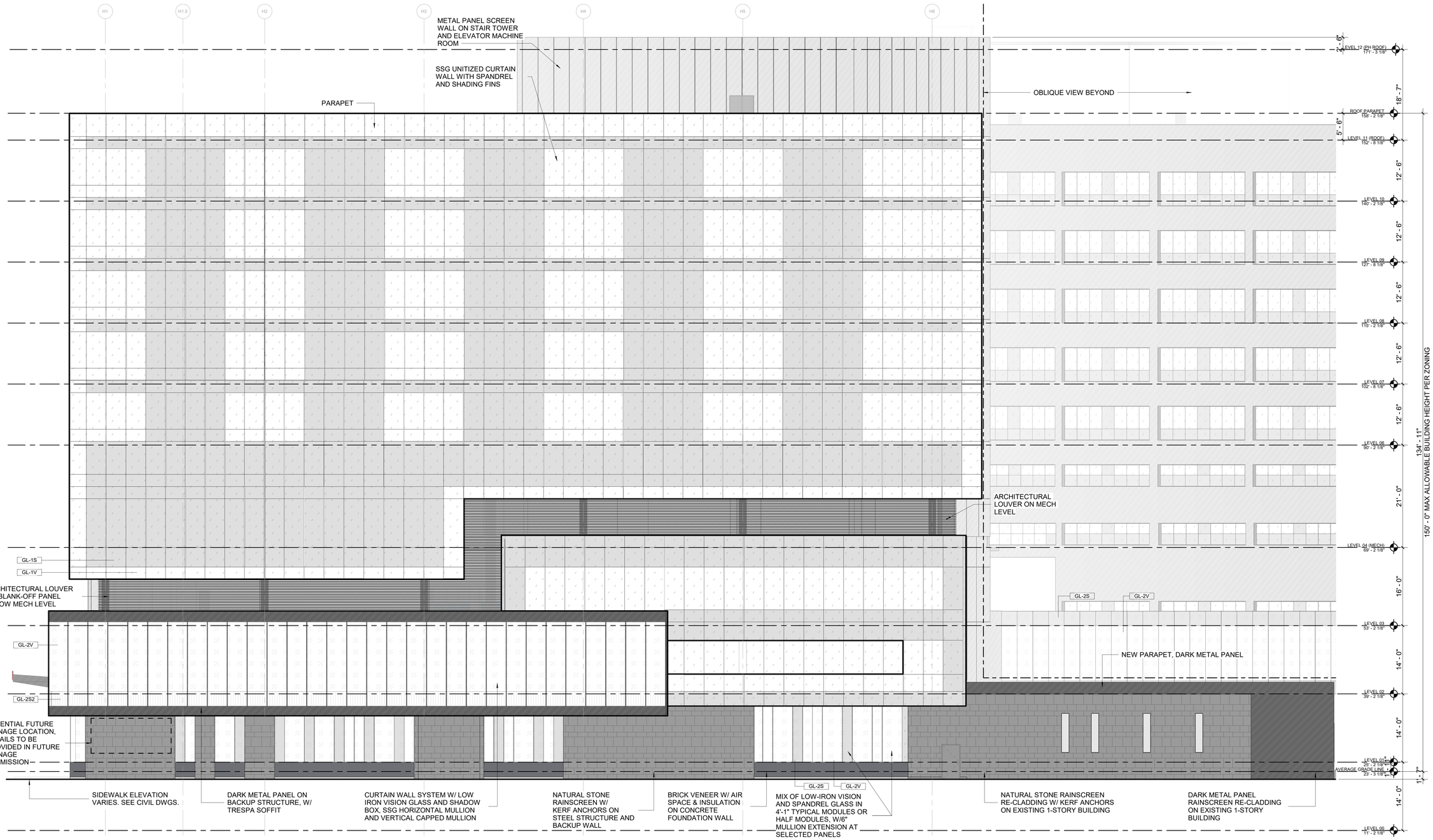
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EXISTING BUILDINGS

EARTH



01 OVERALL BUILDING ELEVATION NE
1/8" = 1'-0"

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PROJECT:

COOPER NORCROSS HEALTH

BENSON PAVILION

COOPER NORCROSS UNIVERSITY HOSPITAL
1 COOPER PLAZA
CAMDEN, NJ 08103

SEAL:

CERT OF AUTHORIZATION #AC 331

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1001 E HECTOR STREET, SUITE 230
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IN COLLABORATION WITH:

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HKS ARCHITECTS, P.C.
CORE & SHELL ARCHITECT
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O'DONNELL & NACCARATO
STRUCTURAL ENGINEER
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HIGHLAND ASSOCIATES
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BR+A CONSULTING ENGINEERS
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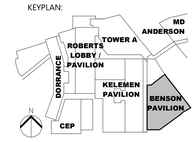
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YORK, PA 17402
717-840-8181

KEYPLAN:



ISSUES:

NO.	DESCRIPTION	DATE

PROJECT NO. 7088
CON/REF NO.
DATE 10/08/26

DCA# NJPRP-XXXXX

OVERALL BUILDING ELEVATION - NE

LD05.02

[redacted]

FACADE MATERIAL LEGEND

CW GLAZING - CLEAR VISION [GL-1V]	CW GLAZING - CLEAR VISION W/ FRIT [GL-1VF]	CW GLAZING - LOW IRON VISION [GL-2V]	CW GLAZING - LOW IRON W/ SHADOW BOX [GL-2V2]	LIGHT METAL PANEL AMF-01	DARK METAL PANEL AMF-02
CW GLAZING - CLEAR W/ SPANDREL [GL-1S]	CW GLAZING - CLEAR W/ SPANDREL W/ FRIT [GL-1SF]	CW GLAZING - LOW IRON W/ SPANDREL [GL-2S]	STONE VENEER ST-01	BRICK VENEER MV-01	

GENERAL BUILDING ZONING REQUIREMENT

PER COOPER PLAZA REDEVELOPMENT PLAN (CITY OF CAMDEN DIVISION OF PLANNING, MARCH 2005, REV. 5/13/05), SECTION III REGULATORY CONTROLS, PROPOSED SITE DESIGN CONTROLS, A. AREA AND BULK REGULATIONS, ITEM 7:

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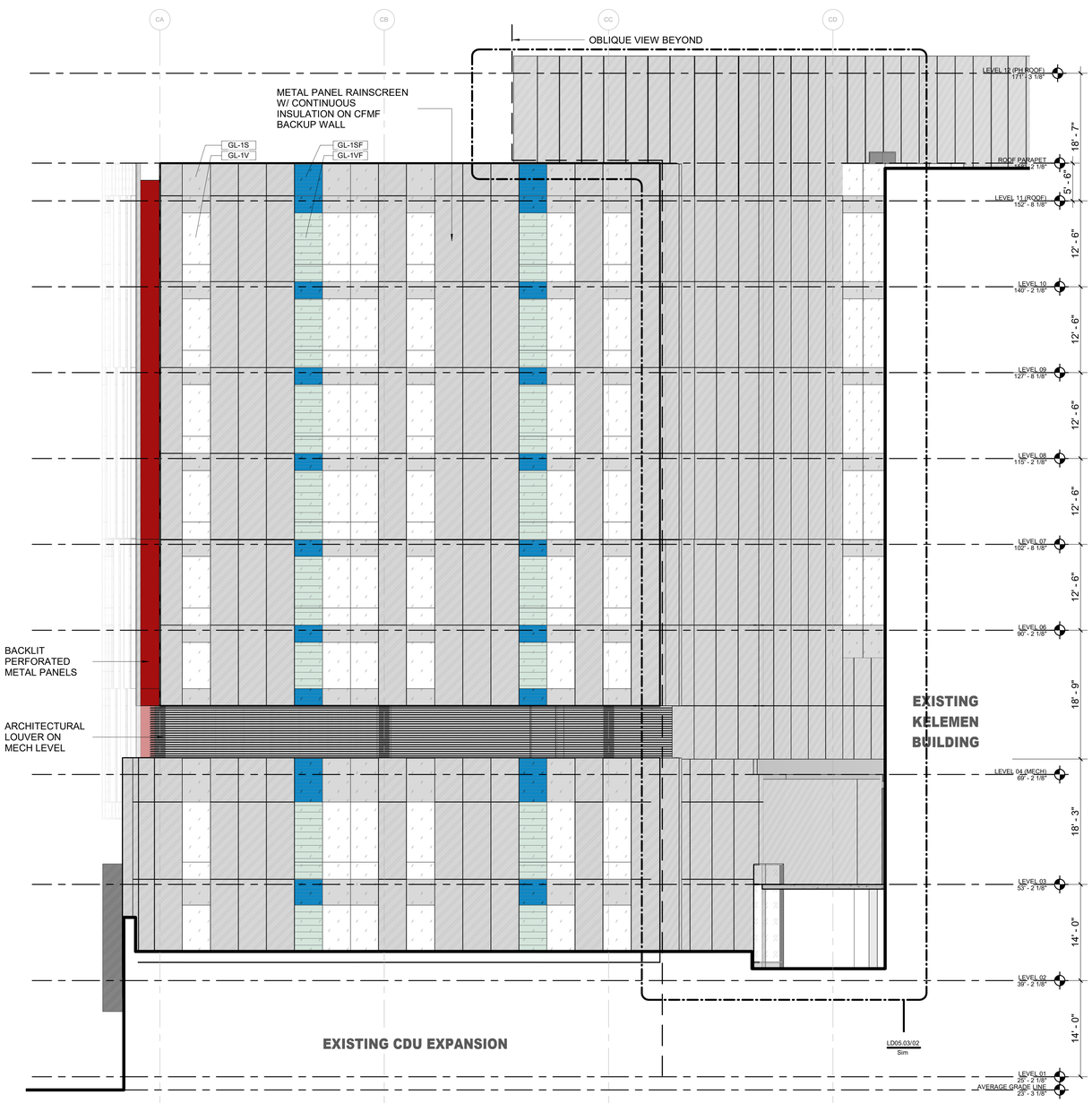
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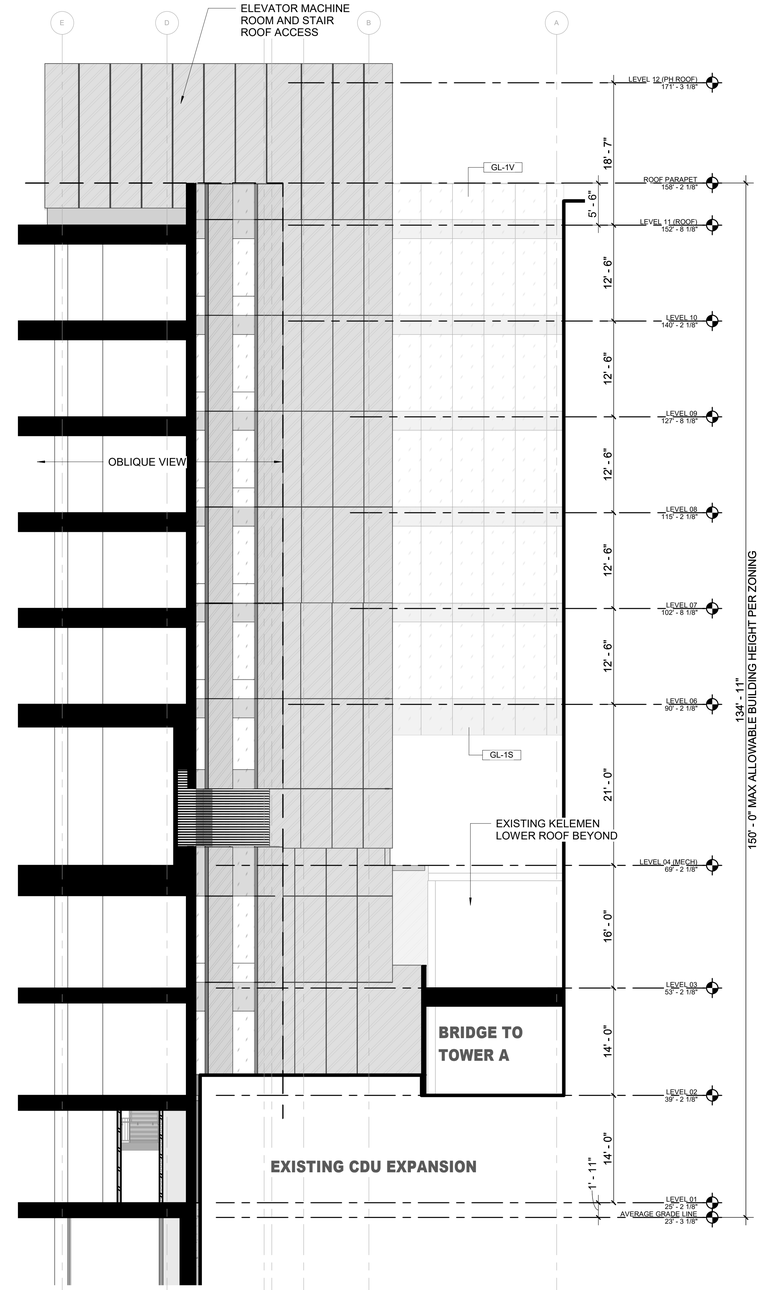
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EXISTING BUILDINGS

EARTH



01 OVERALL BUILDING ELEVATION NW
1/8" = 1'-0"



02 OVERALL BUILDING ELEVATION N
1/8" = 1'-0"

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PROJECT:

COOPER NORCROSS HEALTH

BENSON PAVILION

COOPER NORCROSS UNIVERSITY HOSPITAL
1 COOPER PLAZA
CAMDEN, NJ 08103

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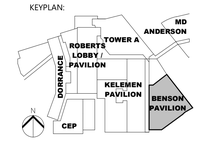
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KEYPLAN:



ISSUES:

NO.	DESCRIPTION	DATE

PROJECT NO. 7088
CON/REF NO.
DATE 10/08/26

DCA# NJPRP-XXXXX

OVERALL BUILDING ELEVATION - NW

LD05.03

FACADE MATERIAL LEGEND

CW GLAZING - CLEAR VISION [GL-1V]	CW GLAZING - CLEAR VISION W/ FRIT [GL-1VF]	CW GLAZING - LOW IRON VISION [GL-2V]	CW GLAZING - LOW IRON W/ SHADOW BOX [GL-2V2]	LIGHT METAL PANEL AMF-01	DARK METAL PANEL AMF-02
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GENERAL BUILDING ZONING REQUIREMENT

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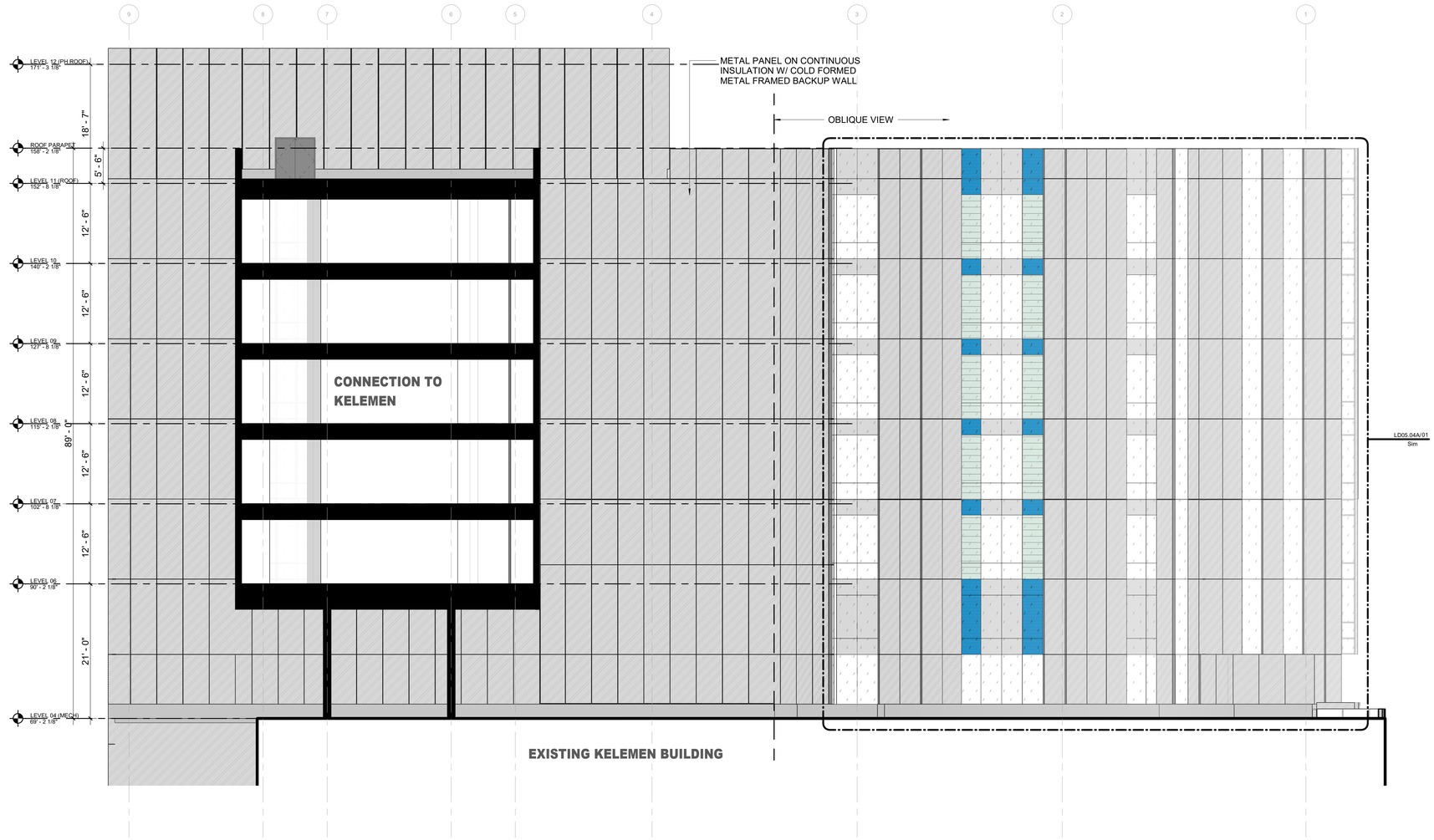
PER COOPER PLAZA REDEVELOPMENT PLAN (CITY OF CAMDEN DIVISION OF PLANNING, MARCH 2005, REV. 5/13/05), SECTION III REGULATORY CONTROLS, PROPOSED SITE DESIGN CONTROLS, A. AREA AND BULK REGULATIONS, ITEM 13:

1. BUILDING HEIGHTS, MAXIMUM: A NON-RESIDENTIAL STRUCTURE SHALL NOT HAVE A GREATER HEIGHT THAN TEN (10) STORIES OR ONE HUNDRED FIFTY (150) FEET MEASURED FROM THE AVERAGE GRADE LINE PERIMETERING THE BUILDING TO THE TOP OF THE MAIN ROOF CORNICE LINE, EXCLUDING NECESSARY AND CUSTOMARY ROOF-TOP STRUCTURES SUCH AS HVAC COMPRESSORS, AIR HANDLING UNITS, COOLING TOWERS, ELEVATOR MECHANICAL ROOMS, ANTENNAE AND SATELLITE DISHES, AND OTHER UTILITY-TYPE ROOF STRUCTURES.

NOTE: BUILDING PLANS AND ELEVATIONS ARE SHOWN FOR CONCEPTUAL DESIGN ONLY TO DEMONSTRATE BUILDING SATISFIES CURRENT ZONING REQUIREMENTS AND OVERALL BUILDING DIMENSIONS AND HEIGHT. OWNER IS CONTINUING TO DEVELOP THE FINAL DESIGN OF THE EXTERIOR INCLUDING LOCATION AND TYPE OF FENESTRATION, COLORS, AND MATERIALS.

EXISTING BUILDINGS

EARTH



01 OVERALL BUILDING ELEVATION W

1/8" = 1'-0"

PROJECT:

COOPER NORCROSS HEALTH

BENSON PAVILION

COOPER NORCROSS UNIVERSITY HOSPITAL
1 COOPER PLAZA
CAMDEN, NJ 08103

SEAL:

CERT OF AUTHORIZATION #AC 331

ARRAY architects
1001 E HECTOR STREET, SUITE 230
CONSHOHOCKEN, PA 19428
610-270-0599
ARRAY-ARCHITECTS.COM

IN COLLABORATION WITH:

LANGAN ENGINEERING & ENVIRONMENTAL SERVICES, LLC
CIVIL ENGINEERING
1 UNIVERSITY SQUARE DRIVE, SUITE 100
PRINCETON, NJ 08540
609-282-8000

HKS ARCHITECTS, P.C.
CORE & SHELL ARCHITECT
975 F ST NW, SUITE 200
WASHINGTON, DC 20004
202-682-6289

O'DONNELL & NACCARATO
STRUCTURAL ENGINEER
701 MARKET STREET, #6000
PHILADELPHIA, PA 19106
215-925-3788

HIGHLAND ASSOCIATES
MEP-FP ENGINEERS
102 HIGHLAND AVE
CLARKS SUMMIT, PA 18411
570-586-4334

BR+A CONSULTING ENGINEERS
MEP-FP ENGINEERS
100 PARK AVENUE, SUITE 200
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212-840-0060

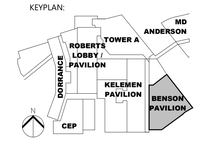
INTROBA
LOW VOLTAGE AV/IT
32 OLD SLIP, 10TH FLOOR
NEW YORK, NY 10006
212-997-5100

VISIONBUILDERS DESIGN
FOOD SERVICES CONSULTANT
1515 SHOPTON ROAD, SUITE 104
CHARLOTTE, NC 28217
704-405-3101

HEALTH, EDUCATION AND RESEARCH ASSOCIATES, INC.
LABORATORY PLANNER
609 E. LOCKWOOD AVENUE, SUITE 204
ST. LOUIS, MO 63119
314-289-9202

ST ONGE
STERILE PROCESSING & VERTICAL TRANSPORTATION CONSULTANT
1400 WILLIAMS ROAD
YORK, PA 17402
717-840-8181

KEYPLAN:



ISSUES:

NO.	DESCRIPTION	DATE

PROJECT NO. 7088
CON/REF NO.
DATE 10/08/26

DCA# NJPRP-XXXXX

OVERALL BUILDING ELEVATION - W

LD05.04

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FACADE MATERIAL LEGEND

CW GLAZING - CLEAR VISION [GL-1V]	CW GLAZING - CLEAR VISION W/ FRIT [GL-1VF]	CW GLAZING - LOW IRON VISION [GL-2V]	CW GLAZING - LOW IRON W/ SHADOW BOX [GL-2V2]	LIGHT METAL PANEL AMF-01	DARK METAL PANEL AMF-02
CW GLAZING - CLEAR W/ SPANDREL [GL-1S]	CW GLAZING - CLEAR W/ SPANDREL W/ FRIT [GL-1SF]	CW GLAZING - LOW IRON W/ SPANDREL [GL-2S]	STONE VENEER ST-01	BRICK VENEER MV-01	

GENERAL BUILDING ZONING REQUIREMENT

PER COOPER PLAZA REDEVELOPMENT PLAN (CITY OF CAMDEN DIVISION OF PLANNING, MARCH 2005, REV. 5/13/05), SECTION III REGULATORY CONTROLS, PROPOSED SITE DESIGN CONTROLS, A. AREA AND BULK REGULATIONS, ITEM 7:

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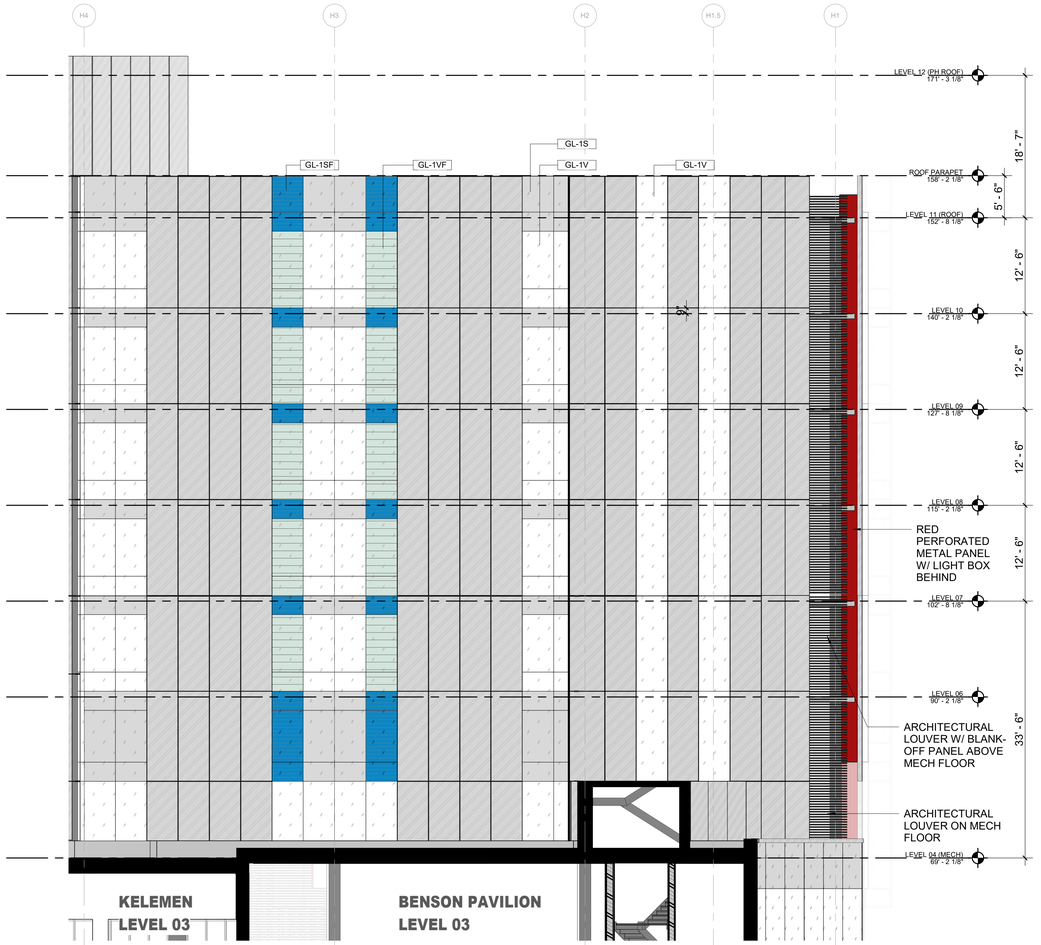
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EXISTING BUILDINGS

EARTH



01 PARTIAL BUILDING ELEVATION SW
1/8" = 1'-0"

PROJECT:

COOPER NORCROSS HEALTH

BENSON PAVILION

COOPER NORCROSS UNIVERSITY HOSPITAL
1 COOPER PLAZA
CAMDEN, NJ 08103

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CERT OF AUTHORIZATION #AC 331

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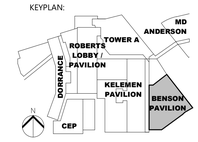
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KEYPLAN:



ISSUES:

NO.	DESCRIPTION	DATE

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DCA# NJPRP-XXXXX

PARTIAL BUILDING ELEVATION - SW

LD05.04A

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COOPER NORCROSS HEALTH
COOPER NORCROSS HEALTH BENSON PAVILION
PRELIMINARY AND FINAL SITE PLAN APPLICATION
1 COOPER PLAZA, CAMDEN, CAMDEN COUNTY, NEW JERSEY
BLOCK 1402 LOT 1

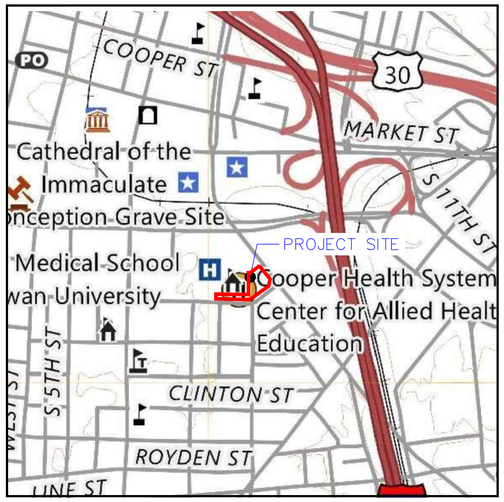
GENERAL NOTES

1. THESE PLANS REPRESENT THE OVERALL SITEWORK IMPROVEMENTS REQUIRED FOR PROJECT CONSTRUCTION. THE CONTRACTOR SHALL FURNISH, INSTALL, TEST AND COMPLETE ALL WORK TO THE SATISFACTION OF THE ENGINEER AND OWNER IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR MEANS AND METHODS OF CONSTRUCTION; AS SUCH, THESE PLANS DO NOT COMPLETELY REPRESENT, NOR ARE THEY INTENDED TO REPRESENT, ALL SPECIFIC INSTRUCTIONS REQUIRED FOR SITEWORK CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONSTRUCT ALL IMPROVEMENTS DEPICTED ON THESE PLANS IN ACCORDANCE WITH ALL APPLICABLE RULES, REGULATIONS AND LAWS IN EFFECT AT THE TIME OF CONSTRUCTION.
2. THE CONTRACTOR SHALL ACCEPT THE SITE AS IS. THE CONTRACTOR SHALL ASSESS CONDITIONS, AND THE KIND, QUALITY AND QUANTITY OF WORK REQUIRED. THE OWNER MAKES NO GUARANTEE IN REGARD TO THE ACCURACY OF ANY AVAILABLE INFORMATION WHICH WAS OBTAINED DURING INVESTIGATIONS. THE CONTRACTOR SHALL MAKE A THOROUGH SITE INSPECTION IN ORDER TO FIELD CHECK EXISTING SITE CONDITIONS, CORRELATE CONDITIONS WITH THE DRAWINGS AND RESOLVE ANY POSSIBLE CONSTRUCTION CONFLICTS WITH THE OWNER AND ENGINEER PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR SHALL MAKE ADDITIONAL TOPOGRAPHIC SURVEYS HE DEEMS NECESSARY, PROVIDED THEY ARE COORDINATED WITH THE OWNER. ANY CONDITIONS DETERMINED BY THE CONTRACTOR THAT DIFFER FROM THE INFORMATION SHOWN ON THE DRAWINGS THAT ARE NOT BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER PRIOR TO THE START OF WORK SHALL NOT BE CONSIDERED GROUNDS FOR ADDITIONAL PAYMENT OR CHANGES TO THE CONTRACT DURATION, OR ANY OTHER CLAIMS AGAINST THE OWNER OR OWNER'S ENGINEER.
3. THE CONTRACTOR SHALL, WHEN THEY DEEM NECESSARY, PROVIDE WRITTEN REQUESTS FOR INFORMATION (RFI) TO THE OWNER AND ENGINEER PRIOR TO THE CONSTRUCTION OF ANY SPECIFIC SITEWORK ITEM. THE (RFI) SHALL BE IN A FORM ACCEPTABLE TO OWNER AND ENGINEER AND SHALL ALLOW FOR A MINIMUM OF TWO WORK DAYS OR ADDITIONAL REASONABLE TIME FOR A WRITTEN REPLY. RFI'S SHALL BE NUMBERED CONSECUTIVELY BY DATE SUBMITTED. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SITEWORK ITEMS CONSTRUCTED DIFFERENTLY THAN INTENDED OR AS DEPICTED ON THE PLANS.
4. INFORMATION RELATED TO ELEVATIONS AND PROPOSED UTILITIES (SUCH AS ROADWAY GRADES, INVERT ELEVATIONS, RIM ELEVATIONS, GRATE ELEVATIONS, BUILDING FINISHED FLOOR ELEVATIONS, ETC.) MAY BE FOUND IN MORE THAN ONE LOCATION IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL SUFFICIENTLY REVIEW ALL PLANS, PROFILES AND ANY OTHER INFORMATION IN THE CONTRACT DOCUMENTS FOR CONSISTENCY PRIOR TO CONSTRUCTION. ANY INCONSISTENCIES OR DISCREPANCIES THAT ARE FOUND BY THE CONTRACTOR OR HIS ASSIGNS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER IN WRITING, IN THE FORMAT OF AN RFI PRIOR TO CONSTRUCTION.
5. CONSTRUCTION INFORMATION AND REQUIREMENTS ARE LOCATED IN NUMEROUS PROJECT DOCUMENTS SUCH AS DRAWINGS, SPECIFICATIONS, DETAILS, NOTES, ORDINANCES, CODES, PERMITS, STANDARDS, GUIDELINES AND MANUFACTURER DOCUMENTS. MOST STRINGENT CRITERIA SHALL APPLY.
6. CONTRACTOR IS RESPONSIBLE FOR OBTAINING COPIES, UNDERSTANDING AND IMPLEMENTING THE REFERENCED PROJECT STANDARDS (I.E. ASTM, AWWA, ASSHTO, ETC.). PROJECT PERMIT REQUIREMENTS, REGULATORY CODES AND REGULATIONS, AND MANUFACTURER GUIDELINES AND REQUIREMENTS.



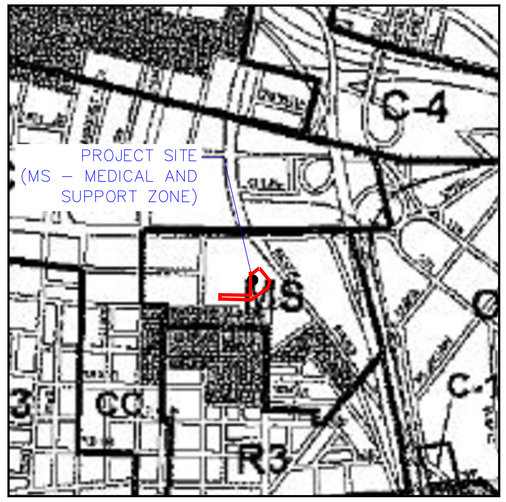
MAP REFERENCE : bing

PROJECT LOCATION
SCALE: 1" = 250'



MAP REFERENCE : USGS

USGS MAP
SCALE: 1" = 500'



SHEET INDEX

FIRST ISSUED	LAST DATED	SHEET NO.	DWG. NO.	TITLE
08 OCTOBER 2026		1	GI001	CIVIL COVER SHEET
08 OCTOBER 2026		2	CD101	SITE DEMOLITION PLAN
08 OCTOBER 2026		3	CS101	SITE PLAN
08 OCTOBER 2026		4	CS301	SITE TURNING MOVEMENTS
08 OCTOBER 2026		5	CS501	SITE DETAILS
08 OCTOBER 2026		6	CG101	OVERALL GRADING AND DRAINAGE/UTILITY PLAN
08 OCTOBER 2026		7	CG102	DETAILED GRADING AND DRAINAGE PLAN
08 OCTOBER 2026		8	CG201	STORM AND SANITARY PROFILES
08 OCTOBER 2026		9	CG501	GRADING AND DRAINAGE DETAILS
08 OCTOBER 2026		10	CU501	UTILITY DETAILS
08 OCTOBER 2026		11	CE101	SOIL EROSION AND SEDIMENT CONTROL PLAN
08 OCTOBER 2026		12	CE501	SOIL EROSION AND SEDIMENT CONTROL DETAILS AND NOTES 1
08 OCTOBER 2026		13	CE502	SOIL EROSION AND SEDIMENT CONTROL DETAILS AND NOTES 2
08 OCTOBER 2026		14	LS101	LANDSCAPE MATERIALS PLAN
08 OCTOBER 2026		15	LP101	LANDSCAPE PLANTING PLAN
08 OCTOBER 2026		16	LP501	LANDSCAPE NOTES AND DETAILS
08 OCTOBER 2026		17	LP502	LANDSCAPE NOTES AND DETAILS

ADDITONAL DRAWINGS ENTITLED:

BOUNDARY AND TOPOGRAPHIC SURVEY, DRAWING EX102 DATED AUGUST 31, 2026, PREPARED BY LANGAN ENGINEERING AND ENVIRONMENTAL SERVICES, LLC.

PORTION OF BENSON STREET TO BE VACATED, DRAWING EX-1 DATED SEPTEMBER 17, 2026, PREPARED BY LANGAN ENGINEERING AND ENVIRONMENTAL SERVICES, LLC.

ZONING TABLE FOR COOPER NORCROSS HEALTH - BENSON PAVILION
CITY OF CAMDEN, CAMDEN COUNTY, NEW JERSEY
MS - MEDICAL AND SUPPORT ZONE

PERMITTED USES:	**COMPLY / WILL COMPLY**
• Hospitals, medical clinics , and health care facilities.	Comply
• Outpatient care facilities, including surgical centers.	Comply
ACCESSORY USES	-
• Off-street parking.	Comply
• Multilevel parking structures.	Comply
• Fences and walls.	Comply
• Signs.	Comply

AREA REGULATIONS FOR MS - MEDICAL AND SUPPORT ZONE - NON-RESIDENTIAL

APPLICABLE REGULATION	REQUIRED / ALLOWABLE	EXISTING BLOCK NO. 1402 LOT 1 with previously approved Tower A, Bridge & CUP	Benson Pavilion	COMPLY / WILL COMPLY	VARIANCE REQUIRED
Minimum Lot Area	2,500 SF	339,870 SF	343,496 SF ****	Comply	
Maximum Lot Area	N/A	339,870 SF	343,496 SF ****	Comply	
Minimum Lot Width	10 FT per City Ordinance / 25 FT per Cooper Plaza Redevelopment Plan	480.3 FT	480.3 FT	Comply	
Minimum Lot Depth	N/A	N/A	N/A	N/A	
Maximum Building Coverage	80%	**65.2% (221,506 SF)****	73.9% (253,308 SF)**	Comply	
Maximum Lot Impervious Coverage	90%	**92.8% (315,536 SF)**	94.3% (324,075 SF)		VARIANCE REQUIRED
Minimum Setbacks		-		-	-
-Front Yard	N/A per City Ordinance / 5 FT per Cooper Plaza Redevelopment Plan	0 FT	Existing to remain: 0 FT Proposed: 5 FT	Comply	
-Rear Yard	10 FT	N/A (Corner Lot)	N/A (Corner Lot)	N/A	
-Side Yard	N/A	N/A (Corner Lot)	N/A (Corner Lot)	N/A	
Minimum Building Height	2 Stories OR 30 FT	Existing to remain: 1 Story **Tower A: 10 Stories** **Bridge: 2nd Story Only** **CUP: 2nd Story Only**	Existing to remain: 1 Story Proposed Building: 10 Stories	Comply	
Maximum Building Height***	10 Stories OR 145 FT per City Ordinance / 10 Stories or 150 FT per Cooper Plaza Redevelopment Plan	1-10 Stories, Existing max building height to remain (158'-8")	10 Stories	Comply	
Maximum Floor Area Ratio	10.0	**3.70 (1,257,275 SF)**	4.57 (1,572,616 SF)	Comply	

PARKING AND LOADING REGULATIONS

APPLICABLE REGULATION	REQUIRED / ALLOWABLE	EXISTING BLOCK NO. 1402 LOT 1	Benson Pavilion	COMPLY / WILL COMPLY	VARIANCE REQUIRED
Hospitals/health care facilities:	1 parking space for each 2 beds, plus 1 parking space for each 2 employees or staff members, including nurses, on shift of largest employment, plus 1 parking space per doctor.	Campus-wide parking approach - No change	Existing to remain. **No additional proposed**		
ADA Parking (per ADA Standards):	76-100 spaces provided: 3 ADA, 1 ADA van	Campus-wide parking approach - No change	Existing to remain. **No additional proposed**		
Electric Charging Facilities (per Municipal Land Use Law and DCA Model Ordinance):	76-100 off-street spaces: 3 make-ready In lieu of installing Make-Ready parking spaces, a parking lot or garage may install EVSE to satisfy the requirements of this subsection.	Campus-wide parking approach - No change Campus-wide parking approach - No change	No new spaces constructed, so no new chargers proposed No new spaces constructed, so no new chargers proposed		
Bike Parking:	Shall be provided at a rate of 10% of the first one hundred required automobile parking spaces as specified above, plus 2% of any amount thereafter.	Campus-wide parking approach - No change	No new spaces constructed, so no new bicycle parking proposed		
Loading space:	Buildings not with dominant use of handling and selling retail goods and buildings not with manufacturing, repair, wholesale, or warehouse use--including but not limited to offices, hotels, hospitals and mortuaries: 1 loading space at least 12'Wx50'Lx14'H	Existing to remain: min. 12'Wx50'Lx14'H	Existing to remain. **No additional proposed**	Existing Loading Complies	
Parking per the redevelopment	Institutions: 1 parking space for every 1,000 square feet of institutional use; or 1 parking space for each 10 seats of public assembly, including auditoriums, convention halls, churches or similar uses, whichever yields the maximum number of parking spaces.	Campus-wide parking approach - No change******	Existing to remain. **No additional proposed *******		

NOTES:

*Existing building area includes aboveground structures (Existing Roberts, Kellemen, and Dorrance Buildings, Building 85 Expansion (Combined Heat and Power Addition Project), Kelemen ED Expansion, CDU Kelemen Expansion, Tower A, bridge over private property, and CUP and Canopies).

**Proposed building area includes aboveground structures (existing building areas; proposed Benson Pavilion).

***Height excludes necessary and customary roof-top structures such as HVAC compressors, air handling units, cooling towers, elevator mechanical rooms, antennae and satellite dishes, and other utility-type roof

****This project is assuming that the lot line relocation will be approved

*****The proposed Benson Pavilion expansion will house 110 additional beds and 428 additional employees during the shift of largest employment, as well as 40 new doctors. If CNC changes the design that results in an increase of beds and employees, the parking demand would increase, which CNH plans to address by leasing spaces in the garage sites near the hospital.

****** refer to parking memo included with this submission.

PROJECT CONTACTS

APPLICANT:
COOPER NORCROSS HEALTH
1 COOPER PLAZA, CAMDEN, NJ

OWNER:
COOPER NORCROSS HEALTH
1 COOPER PLAZA, CAMDEN, NJ

CIVIL ENGINEER:
LANGAN
1 UNIVERSITY SQUARE DRIVE, SUITE 110
PRINCETON, NJ 08540
TEL: (609) 282-8000
NJ Certificate of Authorization No: 24GA27996400

APPROVED BY CITY OF CAMDEN PLANNING BOARD
PRELIMINARY & FINAL SITE PLAN

CHAIRMAN OF THE PLANNING BOARD

SECRETARY OF THE PLANNING BOARD

ZONING OFFICER/ADMINISTRATIVE OFFICER

PLANNING BOARD ENGINEER

THE OWNER, OR THEIR REPRESENTATIVE, IS TO DESIGNATE AN INDIVIDUAL RESPONSIBLE FOR CONSTRUCTION SITE SAFETY DURING THE COURSE OF SITE IMPROVEMENTS PURSUANT TO N.J.A.C. 5:23-2.21 (E) OF THE N.J. UNIFORM CONSTRUCTION CODE AND CFR 1926.32 (F) (OSHA COMPETENT PERSON).

THE APPLICANT WILL COMPLY WITH THE CITY'S "ORDINANCE ESTABLISHING STANDARDS FOR THE SUBMISSION OF MAPS AND OTHER DOCUMENTS IN A DIGITAL FORMAT."

PROJECT:

BENSON PAVILION

COOPER NORCROSS UNIVERSITY HOSPITAL
1 COOPER PLAZA
CAMDEN, NJ 08103

SEAL:

CERT OF AUTHORIZATION #AC 331

ARRAY architects
1001 E HECTOR STREET, SUITE 230
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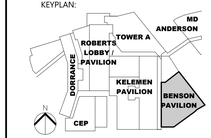
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KEYPLAN:



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SHEET NAME

CIVIL COVER SHEET

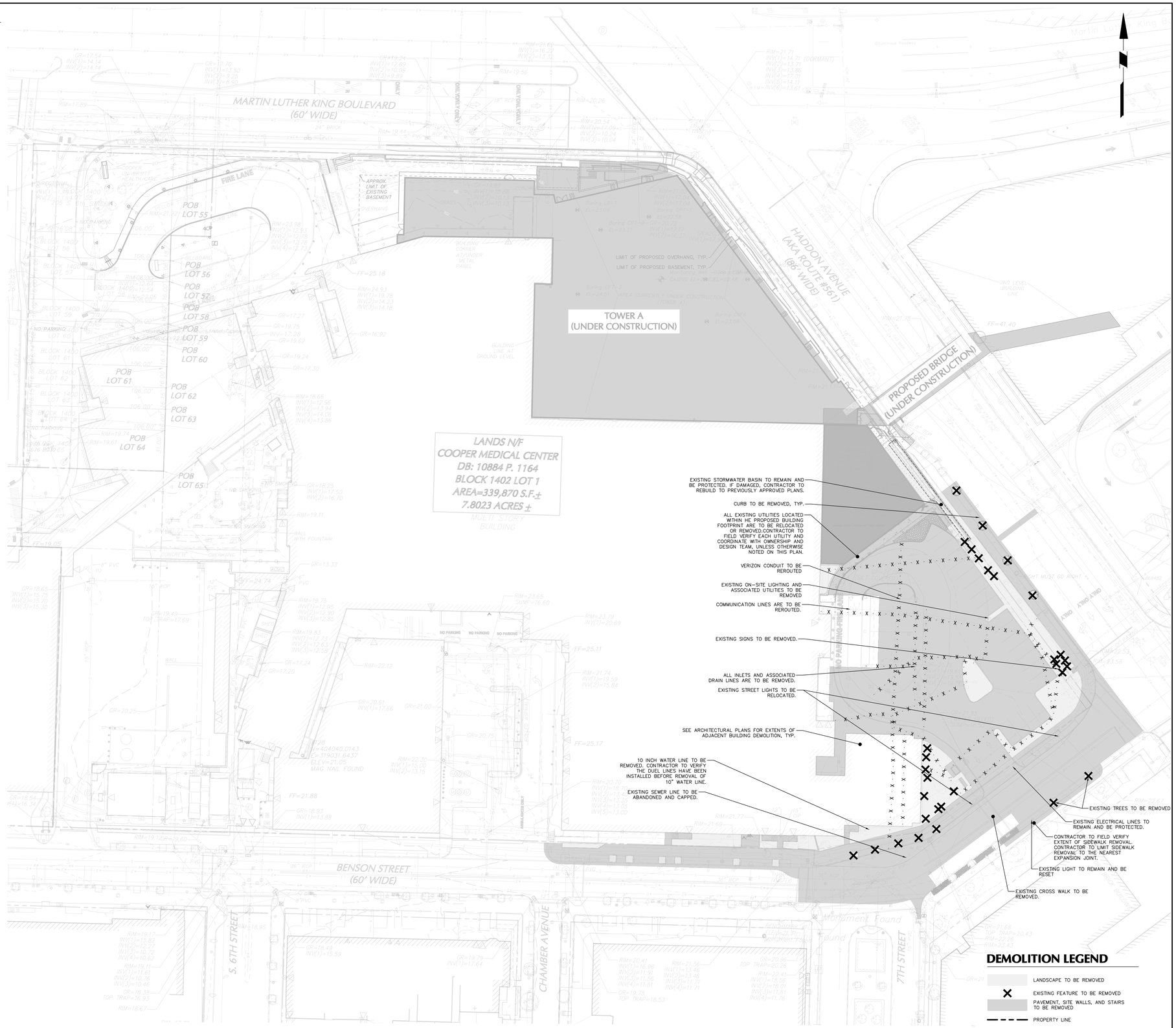
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SITE DEMOLITION NOTES

1. BOUNDARY INFORMATION AND EXISTING FEATURES SHOWN HEREON ARE BASED ON "BOUNDARY AND TOPOGRAPHIC SURVEY" DATED 08/31/2026 PREPARED BY LANGAN ENGINEERING AND ENVIRONMENTAL SERVICES, INC.
2. THE MERIDIAN OF THE PLAN IS REFERENCED TO THE NEW JERSEY STATE PLANE COORDINATE SYSTEM (NAD 83) 2011 DERIVED USING SURVEY-GRADE GNSS EQUIPMENT.
3. ELEVATIONS SHOWN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) DERIVED USING SURVEY-GRADE GNSS EQUIPMENT.
4. CONVERSION FROM NAVD 1988 TO NGVD IS AS FOLLOWS: EL. 17.00 (NAVD 88) + 1.09 = EL. 18.09 (NGVD 29)
5. TOPOGRAPHIC INFORMATION SHOWN HEREON HAS BEEN OBTAINED FROM GROUND SURVEYS BY LANGAN ENGINEERING AND ENVIRONMENTAL SERVICES, INC. DURING JULY 2023 AND AUGUST 2026.
6. STREET NAMES, RIGHT OF WAY WIDTHS, BLOCK AND LOT NUMBERS ARE SHOWN IN ACCORDANCE WITH TOWNSHIP TAX MAPS.
7. OFFSETS (IF SHOWN) ARE FOR SURVEY REFERENCES ONLY AND SHOULD NOT BE USED IN CONSTRUCTION OF ANY TYPE. LANGAN ENGINEERING AND ENVIRONMENTAL SERVICES, INC. RECOMMENDS THE PLACEMENT OF SURVEY MARKERS.
8. THE CONTRACTOR SHALL VERIFY ALL INFORMATION TO THEIR SATISFACTION PRIOR TO THE EXECUTION OF CONTRACTS OR COMMENCING WORK. ANY DISCREPANCIES SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER OF RECORD.
9. THE CONTRACTOR SHALL DEMOLISH WHERE INDICATED WITHIN THE LIMIT OF DISTURBANCE. EDGES OF PAVEMENT DEMOLITION SHALL BE SAW CUT. DEMOLISHED CONCRETE AND ASPHALT SHALL BE CRUSHED TO THE DIMENSIONS INDICATED IN THE PROJECT GEOTECHNICAL REPORT AND STOCKPILED FOR REUSE AS SITE FILL. ALL DEMOLITION AND MATERIAL REUSE SHALL BE IN ACCORDANCE WITH ENVIRONMENTAL REQUIREMENTS FOR THE SITE.
10. THE CONTRACTOR MUST ACCEPT THE SITE AS IS AND SHALL BE DEEMED TO HAVE INSPECTED THE SITE AND REVIEWED ALL CONTRACT DOCUMENTS PRIOR TO SUBMITTING A BID. THE CONTRACTOR SHALL INSPECT THE SITE THOROUGHLY AND FIELD VERIFY THE LOCATION AND DEPTH OF ALL APPLICABLE EXISTING UTILITIES. SOME UNDERGROUND UTILITIES MAY BE LOCATED DIFFERENT THAN SHOWN ON THIS PLAN. ALL CONTRACTORS USING THESE PLANS FOR DEMOLITION OR CONSTRUCTION SHALL CONFIRM ALL UTILITIES IN THE FIELD TO ESTABLISH LOCATIONS, SIZES, MATERIALS, AND ELEVATIONS. ANY DISCREPANCIES SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND THE CONSTRUCTION MANAGER. CONTRACTOR SHALL PROTECT AND MAINTAIN UTILITIES AS NOTED.
11. THE CONTRACTOR SHALL CARRY OUT THE WORK OF THIS CONTRACT PLACING THE SAFETY AND PROTECTION OF THE SURROUNDING COMMUNITY AND PROPERTY AT THE HIGHEST PRIORITY. THE CONTRACTOR SHALL ENSURE FREE AND SAFE PASSAGE OF PERSONS AROUND THE AREA OF THE DEMOLITION AS DIRECTED BY THE GOVERNING AGENCIES AND THE OWNER. ALL OPERATIONS SHALL BE CONDUCTED SO AS TO PREVENT DAMAGE TO ADJACENT BUILDINGS, STRUCTURES, AND OTHER FACILITIES AND INJURY TO PERSONS, BOTH PEDESTRIAN AND WORKERS ALIKE. THE CONSULTANT DOES NOT HAVE THE RIGHT TO STOP DEMOLITION ACTIVITIES. SUCH DIRECTION MUST COME FROM THE OWNER.
12. THE CONTRACTOR SHALL INSTALL AND MAINTAIN CONSTRUCTION SIGNAGE AND ASSOCIATED TRAFFIC MEASURES. THE CONTRACTOR SHALL FOLLOW THE WORK ZONE SAFETY GUIDELINES FOR CONSTRUCTION, MAINTENANCE AND UTILITY OPERATIONS REQUIRED BY LOCAL JURISDICTION.
13. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR MAINTAINING THE SECURITY OF THE PROJECT SITE AT ALL TIMES.
14. THE CONTRACTOR SHALL DETERMINE THE LOCATION OF ALL UTILITIES, WHETHER SHOWN OR NOT ON THE CONTRACT DRAWING, AND SHALL ABANDON, REMOVE, OR PROTECT THE UTILITIES AS INDICATED HEREON OR AS DIRECTED BY THE OWNER, SUBCONSULTANT, OR INTERESTED UTILITY COMPANY.
15. THE CONTRACTOR SHALL VERIFY THAT A SOIL EROSION AND SEDIMENT CONTROL PERMIT HAS BEEN OBTAINED FOR DEMOLITION ACTIVITIES. CONTRACTOR SHALL COMPLY WITH THE CONDITIONS THEREON BY INSTALLING AND MAINTAINING ALL SESC MEASURES AND MAKING THE REQUIRED NOTIFICATIONS.
16. PRIOR TO DEMOLITION, THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL CONTENTS OF THE BUILDINGS TO BE DEMOLISHED INCLUDING, BUT NOT NECESSARILY LIMITED TO, FURNISHINGS, MECHANICAL EQUIPMENT, RESERVOIR TANKS, PLUMBING FIXTURES, FURNITURE, CABINETS, ETC. IN ACCORDANCE WITH ENVIRONMENTAL REQUIREMENTS FOR THE SITE.
17. PRIOR TO DEMOLITION, THE CONTRACTOR SHALL VERIFY THAT THE UTILITY SERVICES TO BE DEMOLISHED WILL NOT AFFECT OTHER SERVICES OUTSIDE THE CONTRACT LIMIT.
18. PRIOR TO DEMOLITION, THE CONTRACTOR SHALL DISCONNECT AND CAP/TERMINATE AT THE UTILITY MAIN ALL BUILDING SERVICES, E.G. WATER, SEWER, GAS, ELECTRIC, TELEPHONE, ETC. (UNLESS OTHERWISE NOTED) IN ACCORDANCE WITH ALL LOCAL REGULATION AND UTILITY COMPANY REQUIREMENTS. THIS WORK SHALL INCLUDE COORDINATION WITH UTILITY COMPANIES AND OBTAINING AND PAYING FEES FOR ALL STREET AND SIDEWALK OPENING PERMITS.
19. ALL EXISTING SITE ELEMENTS SLATED FOR DEMOLITION SHALL BE REMOVED IN THEIR ENTIRETY INCLUDING, BUT NOT LIMITED TO, ASPHALT, BUSHES, TREES, PLANTERS, ETC. WITHIN THE CONTRACT LIMITS UNLESS OTHERWISE NOTED.
20. CONTRACTOR TO VERIFY THAT ALL ENVIRONMENTAL CONCERNS (ASBESTOS, LEAD BASED PAINT, HAZMAT MATERIALS, UNDERGROUND STORAGE TANKS, TRANSFORMERS, ETC.) HAVE BEEN REMOVED PRIOR TO COMMENCEMENT OF DEMOLITION ACTIVITIES. THESE POTENTIAL CONCERNS ARE NOT SHOWN ON THIS PLAN. THE CONTRACTOR SHALL REFER TO THE ENVIRONMENTAL REPORTS AND DOCUMENTS FOR ENVIRONMENTAL CONCERN LOCATIONS AND DISPOSAL PROCEDURES.
21. CONTRACTOR IS RESPONSIBLE FOR KEEPING ALL ADJACENT RIGHT-OF-WAYS AND ADJACENT PROPERTIES CLEAN DURING DEMOLITION.
22. CONTRACTOR SHALL STOCKPILE REMOVED ASPHALT AND CONCRETE IN SEPARATE PILES. REMOVED MATERIAL MAY BE REUSED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT AND ENVIRONMENTAL REQUIREMENTS.
23. CONTRACTOR TO PROVIDE DUST CONTROL MEASURES DURING DEMOLITION AND CONSTRUCTION ACTIVITIES.
24. CONTRACTOR TO WASH TRUCK TIRES BEFORE EXITING THE CONSTRUCTION SITE.
25. EXISTING IRRIGATION WELLS ONSITE SHALL BE DECOMMISSIONED BY NJ LICENSED WELL DRILLER.
26. PER CITY ORDINANCE ALL UTILITY SERVICES TO BE ABANDONED ARE TO BE DISCONNECTED AT THE MAIN AND REMOVED FROM THE GROUND.



DEMOLITION LEGEND

- LANDSCAPE TO BE REMOVED
- EXISTING FEATURE TO BE REMOVED
- PAVEMENT, SITE WALLS, AND STAIRS TO BE REMOVED
- PROPERTY LINE
- UTILITY/DRAINAGE TO BE REMOVED
- EXISTING STORMWATER BASIN TO REMAIN AND BE PROTECTED

EXISTING INFORMATION SHOWN IN BACKGROUND IN MD ANDERSON CANCER CENTER AND KELEMEN CDU ADDITION AREAS IS BASED ON A COMBINATION OF PREDEVELOPMENT FIELD SURVEY AND PROPOSED DESIGN DRAWINGS. CONTRACTOR SHALL USE DESIGN INFORMATION AS A GUIDE TO MEET INTENT, BUT MUST ULTIMATELY TIE INTO AS-BUILT CONDITIONS IN FIELD.

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SCALE: 1 INCH = 30 FEET

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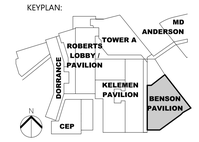
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KEYPLAN:



ISSUES:

NO.	DESCRIPTION	DATE

PROJECT NO. 7088
CON/REF NO.
DATE 10/08/2026

DCA# NJPRP-XXXXX

SITE DEMOLITION PLAN

CD101

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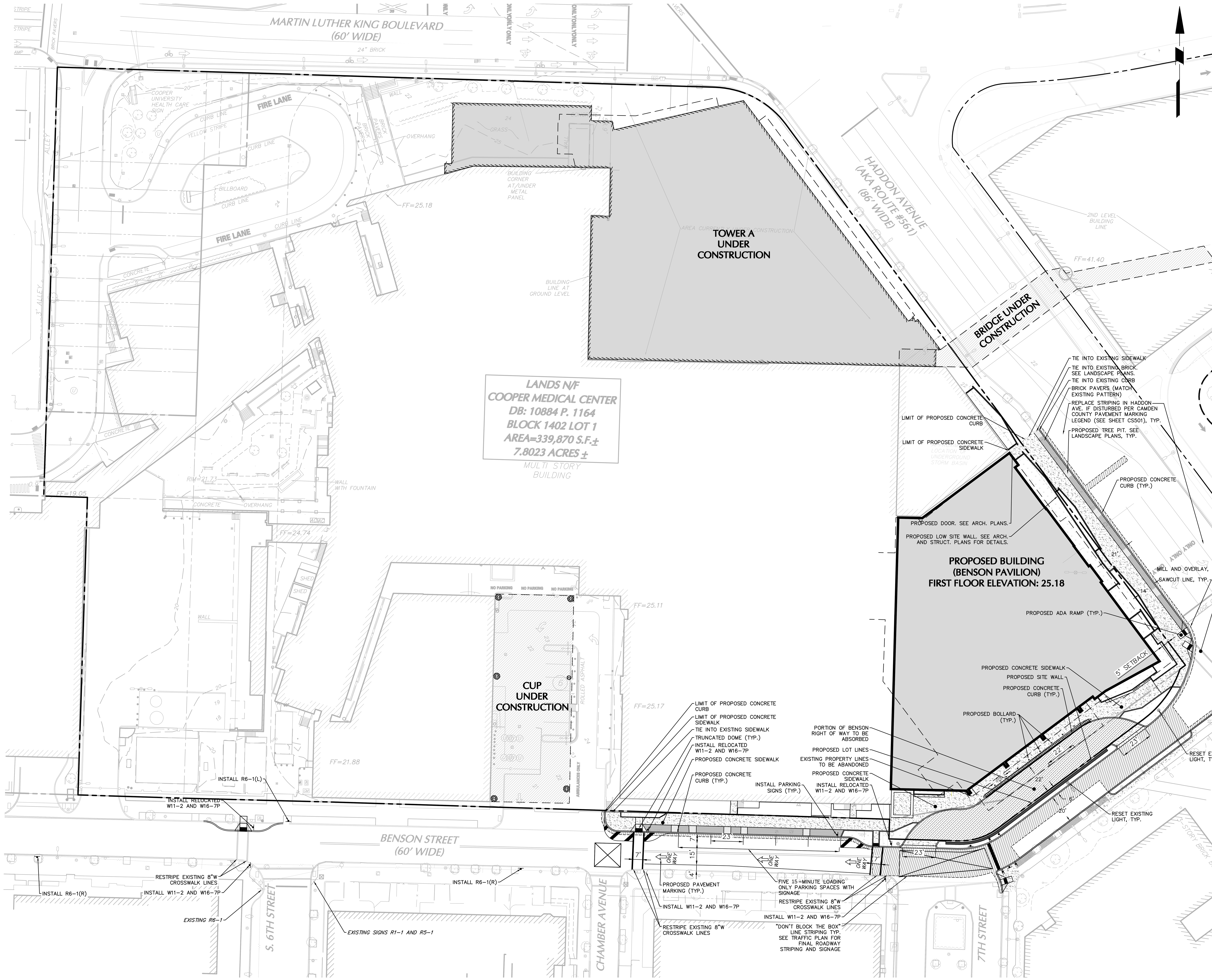
SITE NOTES

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4. CONVERSION FROM NAVD 1988 TO NGVD IS AS FOLLOWS: EL. 17.00 (NAVD 88) + 1.09 = EL. 18.09 (NGVD 29)
5. AS PER THE NATIONAL FLOOD INSURANCE PROGRAM FIRM MAPS TITLED, CAMDEN COUNTY, NEW JERSEY, COMMUNITY PANEL 28 OF 305, MAP NUMBER 34007C0028F. LAST REVISED 08/17/2016. THE PROPERTY PRIMARILY LIES IN "OTHER AREAS", NOT WITHIN FLOOD AREA.
6. FINAL EGRESS DOOR LOCATIONS TO BE COORDINATED WITH ARCHITECT.
7. REFER TO ARCHITECTURAL DOCUMENTS FOR DETAILED BUILDING DIMENSIONS, MECHANICAL SYSTEMS, ROOF LEADERS, AND UTILITY CONNECTIONS AT BUILDING. MECHANICALS WILL BE PROVIDED AT THE TIME OF BUILDING PERMIT.
8. ALL REGULATORY SIGNS AND TRAFFIC MARKINGS SHALL COMPLY WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

CITY OF CAMDEN REGULATORY REQUIREMENT NOTES

1. ALL TELEPHONE, ELECTRIC, TELEVISION, AND OTHER COMMUNICATION SERVICE FACILITIES, BOTH MAIN AND SERVICE LINES, ARE TO BE INSTALLED UNDERGROUND.
2. THE OWNER, OR THEIR REPRESENTATIVE, IS TO DESIGNATE AN INDIVIDUAL RESPONSIBLE FOR CONSTRUCTION SITE SAFETY DURING THE COURSE OF SITE IMPROVEMENTS PURSUANT TO N.J.A.C. 5:23–2.21 (e) OF THE N.J. UNIFORM CONSTRUCTION CODE AND CFR 1926.32 (f) (OSHA COMPETENT PERSON).
3. ALL SITE WORK CONSTRUCTION AND DETAILS MUST CONFORM TO THE STANDARDS OF THE CITY OF CAMDEN.
4. THE CONTRACTOR (NOT CITY) SHALL BE RESPONSIBLE FOR ANY AND ALL COST (LABOR, MATERIAL AND EQUIPMENT) RELATED TO ANY WATER MAIN ISOLATION AND BY–PASSING OF THE SEWER TO MAKE A PROPOSED CONNECTION.
5. THE CITY ENGINEER AND AMERICAN WATER ENTERPRISES MUST BE GIVEN 48 HOURS ADVANCE NOTICE OF SANITARY SEWER/WATERMAIN WORK, AND THE REPRESENTATIVES MUST WITNESS THE WORK AND CONNECTION.
6. THE APPLICANT AND CONTRACTOR (NOT CITY) ARE RESPONSIBLE FOR THE PROPER ABANDONMENT OF ALL WATER/SEWER LATERAL DISCOVERED IN THE FIELD/SITE. ALL EXISTING WATER SERVICE LINES TO BE ABANDONED SHALL BE CUT AND CAPPED AT THE MAIN, IN ACCORDANCE WITH CAPITAL IMPROVEMENTS AND PROJECT MANAGEMENT (CIP) STANDARDS, AND INSPECTED WITHIN 24 HOURS AFTER INSTALLATION OF NEW TAP. THE MAXIMUM OF ONE (1) TAP SHALL BE MADE FOR BOTH DOMESTIC AND FIRE SERVICE PER FACILITY. THE TAP SHALL BE THE MAXIMUM OF ONE (1) SIZE SMALLER THAN THE CITY'S WATER MAIN.
7. THE INSTALLATION OF ALL WATER AND SEWER MAINS SHALL COMPLY WITH CITY ORDINANCES.
8. ALL WATER/SEWER MAIN INSTALLATIONS AND TESTING SHALL BE WITNESSED/OBSERVED BY AN INSPECTOR OF THE CITY ENGINEER OR AMERICAN WATER, OR PLANNING BOARD ENGINEER.
9. ALL WATER/SEWER SERVICES SHALL BE INSTALLED ON APPLICANT'S PROPERTY (AND NOT WITHIN CITY RIGHT–OF–WAY); EXCEPT WHEN MAKING CONNECTIONS TO THE EXISTING WATER AND/OR SEWER MAIN FROM THE VALVE BOX AND SEWER CLEANOUT RESPECTIVELY.
10. THE OWNER/APPLICANT SHALL OWN, OPERATE AND MAINTAIN ALL WATER, SANITARY AND STORM SEWER MAINS AND APPURTENANCES OUTSIDE OF THE CITY RIGHT–OF–WAY.
11. ALL WATER PIPES, FITTINGS AND VALVES SHALL BE TESTED AND DISINFECTED IN ACCORDANCE WITH AWWA REQUIREMENTS.
12. THRUST BLOCKS AND RESTRAINTS SHALL BE INSTALLED AT ALL BENDS AND FITTINGS. THRUST BLOCKS SHALL HAVE A 28–DAY STRENGTH OF 4,500 PSI.
13. AIR RELEASE VALVES SHALL BE INSTALLED AT HIGH POINTS IN THE WATER MAIN.
14. A SOLID DUCTILE IRON TAPPING SLEEVE SUCH AS MUELLER H–615 SLEEVE OR APPROVED EQUAL SHALL BE UTILIZED FOR TAPS 2" AND LARGER. THE TAPPING SLEEVE SHALL PASS PRESSURE TESTING BASED ON AWWA STANDARDS BEFORE TAP IS MADE.
15. FOR ALL SERVICES INCLUDED HEREIN, TWO (2) GATE VALVES ARE REQUIRED THAT ARE TO BE INSTALLED BY THE APPLICANT; A TAPPING VALVE LOCATED AT THE TAP, AND A CURB VALVE LOCATED IN THE SIDEWALK BEFORE THE METER. TAPPING GATES SHALL BE FURNISHED OPENED RIGHT. ALL TAPPING AND CURB VALVES SHALL BE DOUBLE DISC GATE VALVES AND MEET AWWA STANDARDS.
16. FOR TAPS OFF MAINS 2–INCHES AND LARGER, THE APPLICANT SHALL FURNISH AND INSTALL AN ADDITIONAL GATE VALVE ADJACENT TO THE TAPPING VALVE. NO TAPS SHALL BE PERMITTED ON MAINS, LARGER THAN 20–INCHES UNLESS THERE IS NO ALTERNATIVE WATER SOURCE, AND A SPECIAL WRITTEN APPROVAL IS ISSUED BY THE CIP.
17. VALVE BOX PARTS FOR ALL VALVES SHALL BE PROVIDED BY THE CONTRACTOR (NOT CITY). ALL TAPPING GATE VALVES LARGER THAN 2–INCHES AND ALL CURB VALVES/STOPS REGARDLESS OF SIZE REQUIRE A VALVE BOX WITH THE WORD 'WATER' CAST IN THE COVER. BURIED CORPORATION VALVES/STOPS SHALL BE USED AT THE TAP FOR CLASS K COPPER SERVICES 2–INCHES AND SMALLER.
18. ALL METERS SIZES 2 INCHES THROUGH 6 INCHES SHALL BE SINGLE COMPOUND METERS AND ALL METERS 8 INCHES AND LARGER SHALL BE DUPLEX COMPOUND MANIFOLD METERS.
19. ALL METERS SHALL BE ADEQUATELY RESTRAINED WITH METAL BRACKETS FASTENED TO THE FLOOR OR WALL OF OTHER APPROVED MEANS SUCH AS UNIFLANGES WHERE INTERNAL PIPE PRESSURE AND FLOW WARRANT SUCH RESTRAINTS. METERS, DETECTOR CHECKS, AND VALVES MAY BE SEATED ON CONCRETE BLOCK AND TAPERED SHIMS TO PROVIDE ADEQUATE SUPPORT. METERS SHALL BE INSTALLED APPROXIMATELY 36" ABOVE FLOOR GRADE.
20. ALL METER INSTALLATIONS IN METER PIT OR VAULT SHALL BE PRE–APPROVED BY CIP AND HAVE PROPER ACCESS OPENINGS FOR METER READING AND REPLACEMENT.
21. UPON COMPLETION OF ALL WATER/SEWER INSTALLATION, THREE (3) SETS OF "AS–BUILT" PLANS SHALL BE SUBMITTED TO THE CIP AND AMERICAN WATER ENTERPRISES. THE CIP WILL AUTHORIZE SUPPLY WATER UPON ACCEPTANCE OF THE AS–BUILT DRAWINGS. SUBMISSION OF RECORD DRAWINGS IS REQUIRED IN ACCORDANCE WITH ORDINANCE FOR WATER SERVICES LINES AND SEWER LATERALS. THE AS–BUILT PLANS SHALL BE PROVIDED BY THE CONTRACTOR AND SHALL BE PERFORMED BY A NEW JERSEY LICENSED PROFESSIONAL LAND SURVEYOR. AN ELECTRONIC FORMAT OF THE SAME IN COMPLIANCE WITH THE CITY ORDINANCE SHALL BE ALSO BE SUBMITTED.
22. ALL SEWER INSTALLATION SHALL CONFORM TO THE REQUIREMENT OF THE PROCEDURE MANUAL OF THE CITY OF CAMDEN.
23. ALL NECESSARY REPAIRS TO EXISTING MANHOLE AT SEWER CONNECTION AND RELINING OF THE MANHOLE WITH A LINER BY TERRES HILL COMPOSITE OR APPROVED EQUAL SHALL BE COMPLETED BY THE CONTRACTOR.
24. IT SHALL BE THE RESPONSIBILITY OF THE APPLICANT/CONTRACTOR TO RELOCATE ALL IMPACTED UTILITIES AT NO COST TO THE CITY.
25. TELEVISION INSPECTION OF THE NEW OFF–SITE AND ONSITE STORM SYSTEM IS REQUIRED PRIOR TO FINAL ACCEPTANCE BY THE CITY.
26. A CCTV OF THE SANITARY/STORM SEWER ON DR MARTIN LUTHER KING BLVD AND HADDON AVE SHALL BE PERFORMED AND SUBMITTED TO THE CITY ENGINEER FOR REVIEW PRIOR TO ISSUING APPROVALS TO CONNECT TO THE CAMDEN CITY WATER AND SEWER SYSTEM.
27. VIDEO SEWER INSPECTIONS, INFILTRATION/EXFILTRATION TESTING AND PIPE ALIGNMENT TESTING SHALL BE PERFORMED IN ACCORDANCE WITH THE CITY SEWER MANUAL ON ALL NEW PUBLIC SEWERS (PVC AND RCP) AT THE COMPLETION OF THE PROJECT, BUT PRIOR TO ACCEPTANCE AND/OR DEDICATION OF THE SAME TO THE CITY. THE MAXIMUM RATE OF INFILTRATION/EXFILTRATION SHALL NOT EXCEED THE ORDINANCE REQUIREMENT.
28. SELECT FILL FOR WATER/SEWER TRENCH INSTALLATION WITHIN THE CITY RIGHT OF WAY SHALL BE DENSE GRADED AGGREGATE I–5, IN ACCORDANCE WITH THE SPECIFICATION SUBSECTION 901.08 OF THE NJDOT STANDARD SPECIFICATION AND CONFORM TO THE TABLE IN SECTION 577–229.H OF THE ORDINANCE.
29. ALL PROPOSED PVC FOR SANITARY SEWER SHALL HAVE AN SDR CLASSIFICATION OF 35.
30. ALL PIPES SHALL BE MANUFACTURED AND SUPPLIED WITHOUT LIFTING HOLES.
31. ALL RCP FROM 24 INCHES UP TO AND INCLUDING 72 INCHES DIAMETER SHALL CONFORM TO ASTM C76, MINIMUM PIPE CLASS IV, WALL B (SECTION 577–229).
32. ALL RCP SHALL BE LINED ON THE INTERIOR WITH A COAT TAR EPOXY SEAL COAT WITH A MINIMUM OF FOUR (4) MILS IN THICKNESS (DFT).
33. ALL PUBLIC CONCRETE STORM DRAIN PIPE IS TO EITHER HAVE RUBBER GASKETED OR BUTYL TAPED JOINTS. ALL LIFT HOLES AND BUTYL TAPED JOINTS SHALL BE WRAPPED AND MORTARED ON THE OUTSIDE.
34. EACH MANHOLE BASE AND INLET SHALL BE PROVIDED WITH CIRCULAR OPENINGS AT THE REQUIRED LOCATIONS AND ELEVATIONS FOR PROPER CONNECTION OF THE PIPES. THE FLEXIBLE CONNECTION SHALL BE A–LOK FLEXIBLE CONNECTOR, OR APPROVED EQUAL, AND SHALL BE CAST INTEGRALLY IN THE MANHOLE/INLET WALL FOR ALL PIPE CONNECTIONS. NO PIPE PENETRATIONS SHALL BE LOCATED WITHIN 12" OF A JOINT.
35. ALL NEW MANHOLES AND CATCH BASINS SHALL HAVE AN EXTERIOR COATING OF CARBOLINE COAL TAR EPOXY 300M, OR APPROVED EQUAL, TWO COATS. ALL REINFORCED CONCRETE PIPES SHALL BE LINED ON THE INTERIOR WITH A COAT OF TAR EPOXY SEAL WITH A MINIMUM OF 4 MIL IN THICKNESS (DFT) (SECTION 577–229).
36. ALL STORM INLETS WHICH ARE CONNECTED TO THE CITY COMBINED SEWER SHALL BE FURNISHED WITH A SUMP AND TRAP PER CITY STANDARDS.
37. PROPOSED MANHOLES CONSTRUCTED IN THE PUBLIC RIGHT–OF–WAY ON EXISTING OR PROPOSED CITY SEWERS SHALL BE FURNISHED WITH CONCENTRIC MANHOLES APPROVED BY THE CITY.
38. MANHOLE FRAMES AND COVERS ARE TO PROVIDE FOR A MINIMUM OF THIRTY INCH CLEAR OPENING AT THE COVER IN ORDER TO ALLOW EASY ACCESS UNDER CONFINED SPACE ENTRY REQUIREMENTS. CAMPBELL FOUNDRY PATTERN NUMBER 1012B OR NJDOT APPROVED EQUAL. THE MINIMUM DIAMETER MANHOLE SHALL BE 48–INCHES. A MINIMUM ACCESS DIAMETER OF 30–INCHES SHALL BE PROVIDED.
39. MANHOLE COVERS SHALL BE A SOLID TYPE MARKED WITH SEWER.
40. A DROP MANHOLE CONNECTION SHALL BE USED WHERE THERE IS A DIFFERENCE IN ELEVATION OF TWO FEET OR GREATER BETWEEN THE PIPE INVERT IN AND THE MANHOLE INVERT ELEVATION. REFER TO CITY DETAILS.
41. ALL CONCRETE SHALL BE 4,500 PSI MINIMUM DESIGN MIX.

EXISTING INFORMATION SHOWN IN BACKGROUND IN MD ANDERSON CANCER CENTER AND KELEMEN CDU ADDITION AREAS IS BASED ON A COMBINATION OF PREDEVELOPMENT FIELD SURVEY AND PROPOSED DESIGN DRAWINGS. CONTRACTOR SHALL USE DESIGN INFORMATION AS A GUIDE TO MEET INTENT, BUT MUST ULTIMATELY TIE INTO AS-BUILT CONDITIONS IN FIELD.



LEGEND

- MAIN DOOR
- STAIRS
- SIGN
- PROPOSED CONCRETE CURB
- PROPOSED FLUSH CURB
- PROPERTY LINE
- CONCRETE SIDEWALK
- TRUNCATED DOME
- CRASH RATED STEEL BOLLARD
- FULL DEPTH ASPHALT PAVING

THE SECTION OF HADDON AVENUE IMPACTED BY THE CURB INSTALLATION AND NEW UTILITY CONNECTIONS SHALL BE MILLED AND OVERLAID ONCE THIS WORK IS COMPLETE. THE PAVEMENT MARKINGS SHALL BE REPLACED IN KIND.

30 0 15 30
SCALE: 1 INCH = 30 FEET

PROJECT:

BENSON PAVILION

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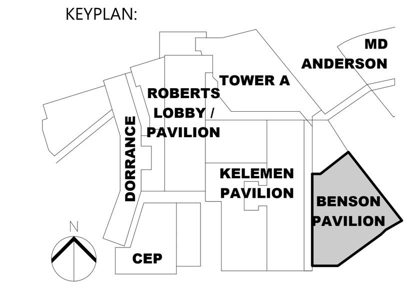
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KEYPLAN:



ISSUES:

NO.	DESCRIPTION	DATE

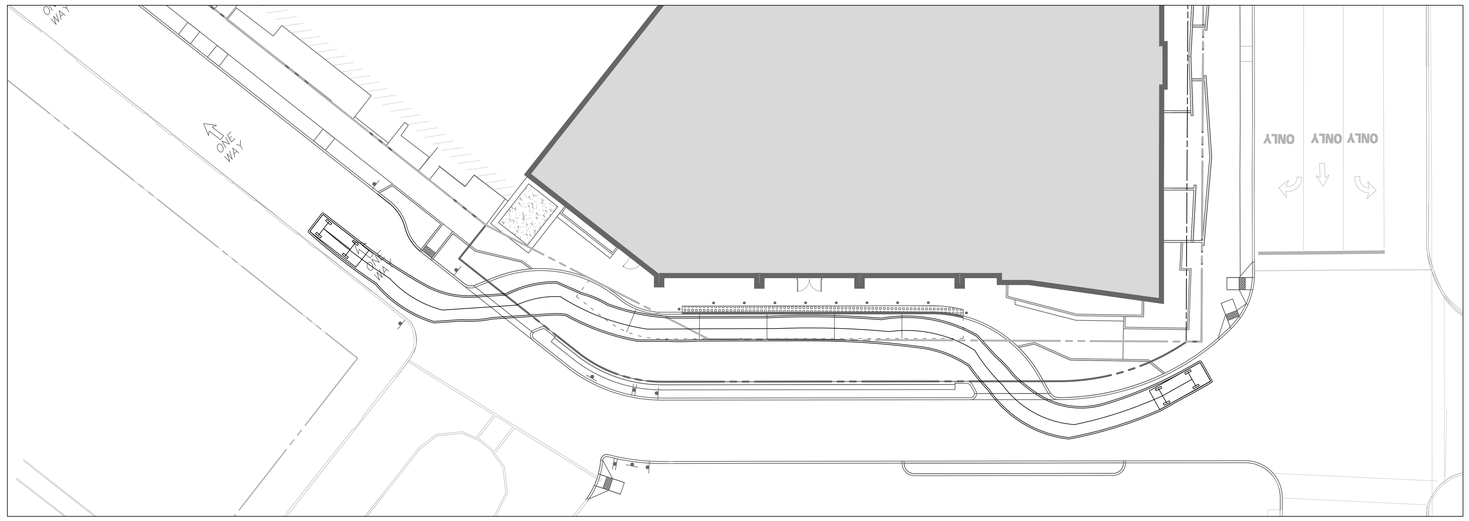
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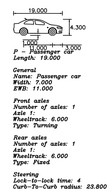
SITE PLAN

CS101

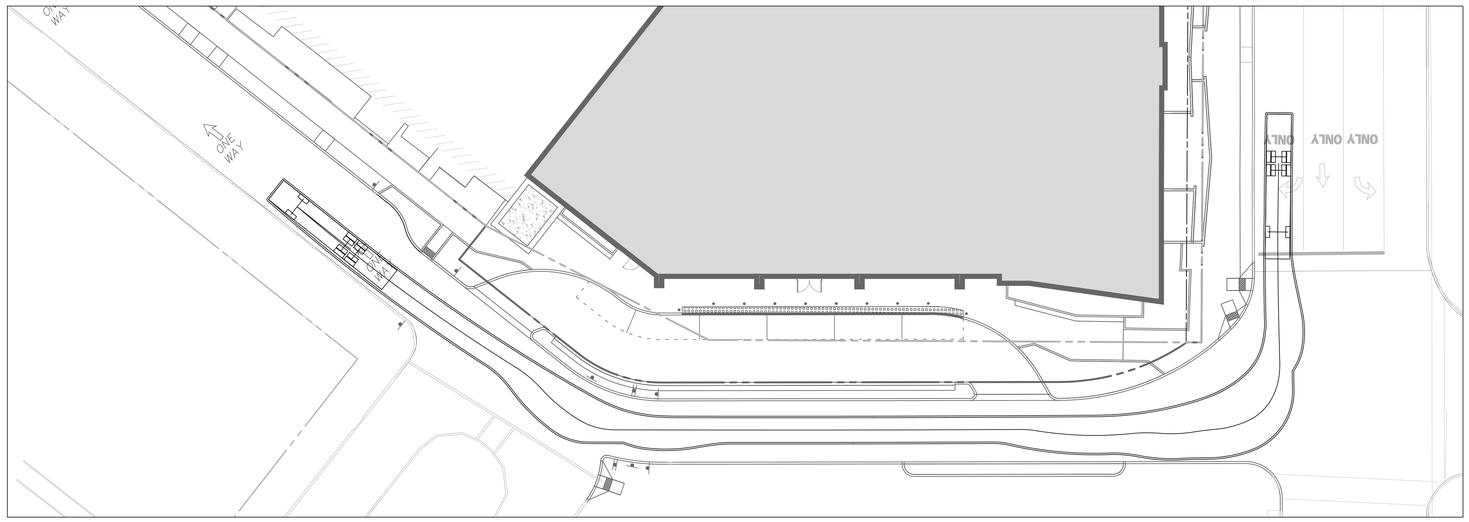
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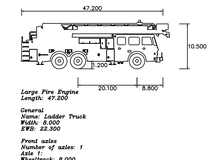
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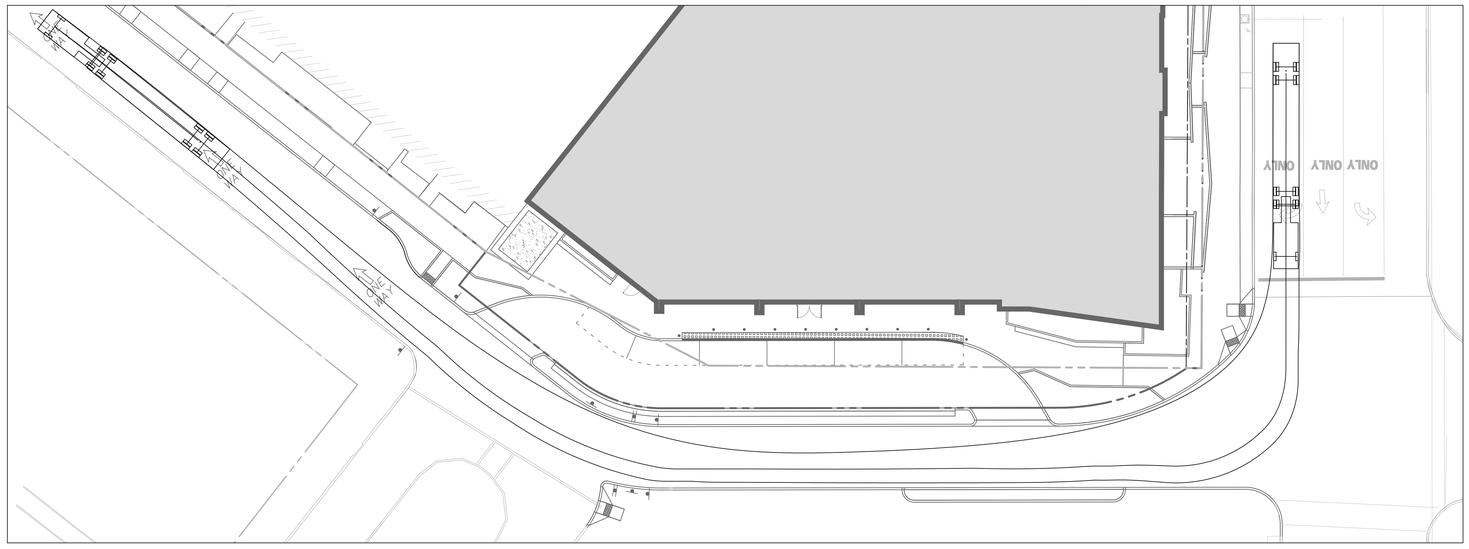


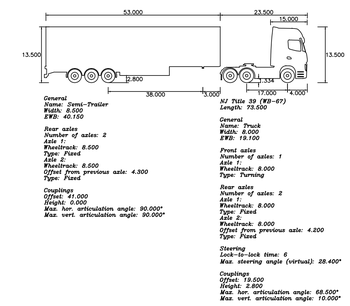
PASSENGER CAR DROP-OFF LOOP MOVEMENT





FIRE TRUCK BENSON STREET MOVEMENT





WB-67 BENSON STREET MOVEMENT

20 0 5 10 20
SCALE: 1 INCH = 20 FEET

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PROJECT:

BENSON PAVILION

COOPER NORCROSS UNIVERSITY HOSPITAL
1 COOPER PLAZA
CAMDEN, NJ 08103

SEAL:

CERT OF AUTHORIZATION #AC 331

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CONSHOHOCKEN, PA 19428
610-270-0599
ARRAY-ARCHITECTS.COM

IN COLLABORATION WITH:

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CIVIL ENGINEERING
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609-282-8000

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CORE & SHELL ARCHITECT
975 F ST NW, SUITE 200
WASHINGTON, DC 20004
202-682-6289

O'DONNELL & NACCARATO
STRUCTURAL ENGINEER
701 MARKET STREET, #6000
PHILADELPHIA, PA 19106
215-925-3788

HIGHLAND ASSOCIATES
MEP-FP ENGINEERS
102 HIGHLAND AVE
CLARKS SUMMIT, PA 18411
570-586-4334

BR+A CONSULTING ENGINEERS
MEP-FP ENGINEERS
100 PARK AVENUE, SUITE 200
NEW YORK, NY 10017
212-840-0060

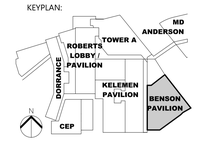
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LOW VOLTAGE AV/IT
32 OLD SLIP, 10TH FLOOR
NEW YORK, NY 10006
212-997-5100

VISIONBUILDERS DESIGN
FOOD SERVICES CONSULTANT
1515 SHOPTON ROAD, SUITE 104
CHARLOTTE, NC 28217
704-405-3101

HEALTH, EDUCATION AND RESEARCH ASSOCIATES, INC.
LABORATORY PLANNER
609 E. LOCKWOOD AVENUE, SUITE 204
ST. LOUIS, MO 63119
314-289-9202

ST ONGE
STERILE PROCESSING & VERTICAL TRANSPORTATION CONSULTANT
1400 WILLIAMS ROAD
YORK, PA 17402
717-840-8181

KEYPLAN:



ISSUES:

NO.	DESCRIPTION	DATE

PROJECT NO. 7088
CON/REF NO.
DATE 10/08/2026

DCA# NJPRP-XXXXX

SITE TURNING MOVEMENTS

CS301

Date: 10/7/2026 Time: 16:01 User: jlees Style Table: Langan.stb Layout: CS301 Document Code: 220245001-0502-CS101-0103

CAMDEN CITY ORDINANCE SPECIFICATIONS PER CITY SIDEWALK APPLICATION NOTES:

A. CONCRETE MUST BE PORTLAND CEMENT CONCRETE, AIR-ENTRAINED, CONFORM TO THE NJDOT STANDARD SPECIFICATIONS FOR CLASS B CONCRETE, AND MUST HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,500 PSI AFTER 28 DAYS.

B. INSTALL EXPANSION JOINT PAPER AGAINST EXISTING CONCRETE AND EVERY 20 FT.

C. GRADES AND CROSS SLOPES:
THE MAXIMUM SIDEWALK CROSS SLOPE IS 2% THE MAXIMUM GRADE IS 12:1 (8.33%), HOWEVER, THE LONGITUDINAL GRADE OF THE SIDEWALK SHOULD BE CONSISTENT WITH THE GRADE OF THE ADJACENT ROADWAY. IF THE 12:1 GRADE IS NOT FEASIBLE DUE TO TOPOGRAPHY AND OTHER PHYSICAL CONSTRAINTS, THEN THE GRADE SHOULD BE DEVELOPED TO THE EXTENT FEASIBLE, WHEN SIDEWALK GRADES ARE STEEPER THAN 12:1 FOR A MAXIMUM DISTANCE OF 30 FEET ARE UNAVOIDABLE, A LEVEL 4 FOOT LONG LANDING SHOULD BE INCLUDED IF FEASIBLE (OR AT A DISTANCE THAT IS PRACTICABLE).
SIDEWALK DEPTH: 5 IN. NOTE NOT EXCEED 2%, APRON DEPTH: 6 IN. NOT TO EXCEED 8%, HANDICAP RAMP DEPTH 6 IN., HANDICAP RAMPS SHALL BE INSTALLED UNDER ADA GUIDELINES. PLEASE REFER TO A LICENSED SURVEYOR AS NEEDED.

D. TWO INSPECTIONS WILL BE PERFORMED PRIOR OF APPROVING WORK: 1) FORM INSPECTION, 2) POUR INSPECTION.

E. CONTRACTOR OR UTILITY CO. RESPONSIBLE TO SUPPLY A CONCRETE SLIP.

F. CURB INSTALLATION: MATCH EXISTING (PROVIDING AREAS ARE SMALL). PLEASE CONTACT INSPECTOR CARDI TO VERIFY APPROVED ADJUSTMENTS.

G. CURB INSTALLATION: CURB DIMENSION 18 IN. VERTICAL, 7" WIDE (TOP), 8" WIDE (BOTTOM) (LARGE AREAS).

H. CONTRACTOR OR UTILITY CO. MUST USE WATER WHEN SAW CUTTING CONCRETE OR ASPHALT TO PREVENT DUST IN THE AIR. CONTRACTOR/UTILITY CO. RESPONSIBLE TO CALL IN FOR MARKOUTS "811".

I. STREET RESTORATION: EXISTING CONCRETE BASE AND ASPHALT TOP: INSTALL 6 IN. CONCRETE BASE AND NJDOT ASPHALT TOP 2 IN. NOTE: EXISTING ASPHALT MUST BE SAW CUTTED SQUARE AT LEAST FOUR IN. BACK FROM EXISTING OPENING AROUND PERIMETER.

J. STREET RESTORATION: ASPHALT STREET: NJDOT ASPHALT BASE, 6 IN., 2 IN. ASPHALT TOP, HOT TACK SEAMS INNER AND OUTER SEAM. COLD TACK IS NOT ACCEPTED.

K. STREET RESTORATION: CONCRETE STREET: 8 IN. DEPTH (CITY)

L. WAITING TIME FOR CONCRETE SETTING UP IN THE STREET, WAITING PERIOD SHOULD BE A MINIMUM OF THREE DAYS PRIOR OF INSTALLING ASPHALT. STEEL PLATES SHOULD BE IN PLACE FOR THE SAFETY OF THE RESIDENTS OF THE CITY OF CAMDEN.

M. ROAD RESTORATION: CONCRETE ROAD: 9 TO 10 IN. DEPTH AND INSTALL DOWEL RODS IN EXISTING SLAB. UTILITY CO. OR CONTRACTOR MUST REMOVE WHOLE SLAB (JOINT TO JOINT).

N. PLEASE PROVIDE 95% TO 98% COMPACTION. COMPACT IN 12 IN. LIFTS. CONTRACTOR OR UTILITY CO. MUST USE NJDOT CERTIFIED CLEAN FILL (DGA).

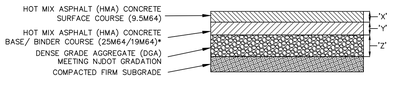
O. INSPECTION SCHEDULING: PLEASE CALL MRS. WALKER AT (856) 757-7680

P. CONTRACTOR OR UTILITY CO. RESPONSIBLE TO CLEAN AREA AND SECURE ALL EQUIPMENT PRIOR OF DEPARTING WORK AREA. CITY OF CAMDEN ACCEPTS NO LIABILITY.

Q. CONTRACTOR/UTILITY CO. RESPONSIBLE TO PROVIDE TEMPORARY TRAFFIC CONTROL PLAN IN COMPLIANCE WITH MUTCD REQUIREMENTS IF NEEDED. REFER TO CAMDEN COUNTY POLICE DEPT. TRAFFIC CONTROL OFFICER LT. MOFFA AT (856) 757-7280. NOTE: MUST BE PRE-APPROVED PRIOR OF WORKING IN THE STREET OR SIDEWALK (IF RESTRICTING TRAFFIC). NOTE: SIDEWALK CLOSED: PLEASE INSTALL PEDESTRIAN SIDEWALK CLOSED SIGNS WITH ARROW DIRECTING ACROSS THE STREET OR PROVIDE OTHER OPTIONS IN COMPLIANCE WITH MUTCD REQUIREMENTS.

ASPHALT SECTION	SURFACE COURSE - 'X'	BASE COURSE - 'Y'	SUBBASE - 'Z'
STANDARD DUTY	1.5 INCHES	2.5 INCHES	4 INCHES
HEAVY DUTY	1.5 INCHES	4 INCHES	6 INCHES
PUBLIC RIGHT-OF-WAY	2 INCHES	4 INCHES	6 INCHES

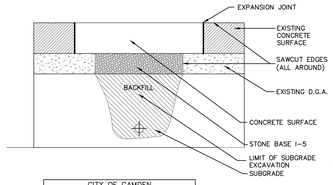
NOTE: THICKNESSES TO BE CONFIRMED BY GEOTECHNICAL ENGINEER OF RECORD.



* BITUMINOUS CONCRETE BASE COURSE (25M64) TO BE USED FOR HEAVY DUTY. ALL OTHER PAVEMENT AREAS TO USE BITUMINOUS CONCRETE BINDER COURSE (19M64).

NOTES:
1. PRIOR TO ANY ASPHALT PAVING ACTIVITIES, THE CONTRACTOR SHALL PROVIDE ASPHALT DESIGN MIX SUBMITTAL TO THE OWNER'S ENGINEER FOR REVIEW AND APPROVAL.
2. PRIOR TO ANY ASPHALT PAVING ACTIVITIES, THE PAVEMENT SUBGRADE AND SUBBASE SHALL BE PROPERLY PREPARED AND ADEQUATELY COMPACTED AS REQUIRED BY GEOTECHNICAL ENGINEER OF RECORD RECOMMENDATION.
3. ALL AREAS TO BE PAVED SHALL BE PROOFROLLED WITH A SMOOTH ROLLER HAVING A MINIMUM STATIC DRUM WEIGHT OF 5-TONS AND A FULLY LOADED TRI-AXLE DUMP TRUCK. ANY SOFT AREAS SHALL BE REMOVED AND REPLACED WITH APPROVED, COMPACTED FILL. FILL SHALL BE PLACED IN LOOSE LIFTS NOT TO EXCEED 12-INCHES AND SHALL BE COMPACTED TO AT LEAST 95% OF ITS MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557.
4. THE ASPHALT MIXTURE, AFTER BEING SPREAD, SHALL BE THOROUGHLY COMPACTED BY ROLLING AS SOON AS IT WILL BEAR THE WEIGHT OF THE ROLLERS WITHOUT UNDUE DISPLACEMENT. THE NUMBER, WEIGHT, AND TYPES OF ROLLERS AND SEQUENCES OF ROLLING OPERATIONS SHALL BE SUCH THAT THE REQUIRED DENSITY AND SURFACE ARE CONSISTENTLY ATTAINED WHILE THE MIXTURE IS IN A WORKABLE CONDITION.
5. ASPHALT SHALL BE COMPACTED TO A MINIMUM OF 93% OF THE MAXIMUM THEORETICAL DENSITY ACCORDING TO ASTM D2041 FOR THE 9.5M64 AND 19M64 COURSES. FOR THE 25M64 COURSE, THE ASPHALT SHALL BE COMPACTED TO A MINIMUM OF 92% OF THE MAXIMUM THEORETICAL DENSITY, OR IN ACCORDANCE WITH GEOTECHNICAL ENGINEER OF RECORD RECOMMENDATION.
6. A TESTING AGENCY SHALL PERFORM IN PLACE DENSITY TESTS AS PART OF THE CONSTRUCTION TESTING REQUIREMENTS USING THE NUCLEAR METHOD IN ACCORDANCE WITH ASTM D-2922 METHOD B DIRECT TRANSMISSION.
7. APPLY TACK COAT TO ASPHALTIC CONCRETE BASE COURSE PRIOR TO PLACING SURFACE COURSE. APPLY EMULSIFIED ASPHALT TACK COAT BETWEEN EACH LIFT OR LAYER OF FULL DEPTH ASPHALTIC CONCRETE BASES, WHERE APPLICABLE.
8. ASPHALT PAVING OPERATIONS SHALL ONLY OCCUR WHEN ATMOSPHERIC TEMPERATURE IS ABOVE 40°F. DO NOT PLACE ASPHALT ON FROZEN GROUND OR IN STANDING WATER. DO NOT PAVE IN THE RAIN.

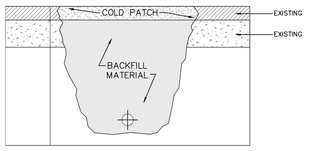
4 ON-SITE ASPHALT PAVEMENT
NOT TO SCALE



CITY OF CAMDEN
DIVISION OF CAPITAL IMPROVEMENTS
AND CONSTRUCTION MANAGEMENT
CAMDEN COUNTY, NEW JERSEY

NOTES:
1. PROTECT SUBGRADES AND FOUNDATION SOILS FROM SOFTENING AND DAMAGE BY WATER, FREEZING TEMPERATURES OR FROST.
2. EXCAVATE TO SUBGRADE ELEVATIONS REGARDLESS OF CHARACTER OF MATERIALS AND OBSTRUCTIONS ENCOUNTERED. TAMP SUBGRADE PRIOR TO PLACEMENT OF RESTORATION MATERIALS.
3. BOX OUT EXISTING OPENINGS AS INDICATED ON DETAIL. SAW CUT EXISTING UTILITY STREET OPENING USING LONGITUDINAL AND TRAVERSE CUTS TO PROVIDE A NEAT EDGE AND SEAL JOINTS AS INDICATED.
4. PLACE EACH MATERIAL AT DEPTH AND THICKNESS INDICATED. COMPACT EACH LAYER BY MEANS OF TAMPING.
5. GRADE AREAS TO A SMOOTH SURFACE TO BLEND INTO EXISTING GRADES.
6. UNDER PAVEMENTS AND WALKWAYS, PLACE SUB-BASE COURSE MATERIAL ON PREPARED SUBGRADES AS INDICATED OR DIRECTED BY ENGINEER AND COMPACT BY TAMPING TO REQUIRED THICKNESSES.
7. REMOVE SURPLUS SATISFACTORY SOIL AND WASTE MATERIAL INCLUDING UNSATISFACTORY SOIL, TRASH, AND DEBRIS AND LEGALLY DISPOSE OF IT.

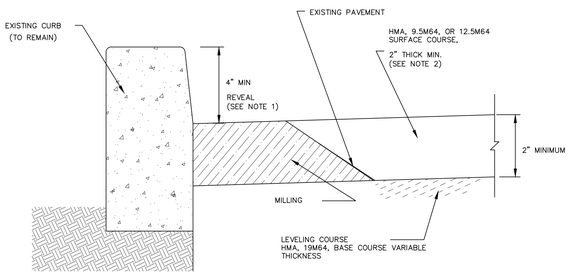
5 CITY OF CAMDEN 7" x 8" x 18" VERTICAL CONCRETE CURB
NOT TO SCALE



CITY OF CAMDEN
DIVISION OF CAPITAL IMPROVEMENTS
AND CONSTRUCTION MANAGEMENT
CAMDEN COUNTY, NEW JERSEY

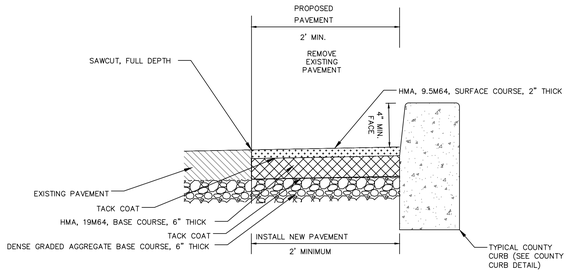
NOTES:
1. UTILITY TRENCHES: EXCAVATE TRENCHES TO INDICATED SLOPES, LINE DEPTHS AND INVERT ELEVATIONS. MAINTAIN 12 INCHES (300 mm) OF WORKING CLEARENCE ON EACH SIDE OF PIPE OR CONDUIT.
2. PLACE, COMPACT AND SHAPE BEDDING COURSE TO PROVIDE CONTINUOUS SUPPORT FOR PIPES AND CONDUITS OVER ROCK AND OTHER UNYIELDING BEARING SURFACES AND TO FILL UNAUTHORIZED EXCAVATIONS.
3. PLACE AND COMPACT INITIAL BACKFILL OF SATISFACTORY SOIL MATERIAL OR SUBBASE MATERIAL, FREE OF PARTICLES LARGER THAN 1 INCH (25 mm) TO A HEIGHT OF 12 INCHES (300 mm) OVER THE UTILITY PIPE OR CONDUIT. PLACE AND COMPACT FINAL BACKFILL OF SATISFACTORY SOIL MATERIAL TO FINAL SUBGRADE.
4. PROVIDE TEMPORARY BITUMINOUS PATCH
5. CHECK PATCHED AREA ROUTINELY FOR ANY SIGNS OF SETTLEMENT, REPAIR AS NEEDED.

8 CITY OF CAMDEN STREET RESTORATION DETAIL #3
NOT TO SCALE



NOTES:
1. PROVIDE 1/2" MINIMUM REVEAL AT DEPRESSED CURBS DURING MILL & RESURFACING.
2. SURFACE COURSE MAY BE 9.5M64 FOR COUNTY ROADS WITH LESS THAN 5,000 AADT, SURFACE COURSE MUST BE 12.5M64 FOR COUNTY ROADS WITH EQUAL OR GREATER THAN 5000 AADT.

9 CITY OF CAMDEN STREET RESTORATION DETAIL #4
NOT TO SCALE

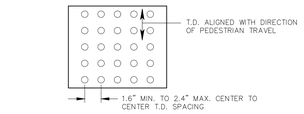


NOTES:
1. SEE CONSTRUCTION PLANS FOR LOCATIONS WHERE PAVEMENT RESTORATION ADJACENT TO CURB IS GREATER THAN 2' MINIMUM

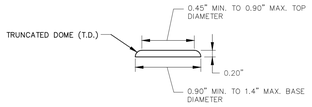
11 CAMDEN COUNTY MILLING AND RESURFACING
NOT TO SCALE

12 CAMDEN COUNTY TYPICAL ROADWAY RESTORATION FOR CURB INSTALLATION
NOT TO SCALE

WIDTH OF CURB CUT



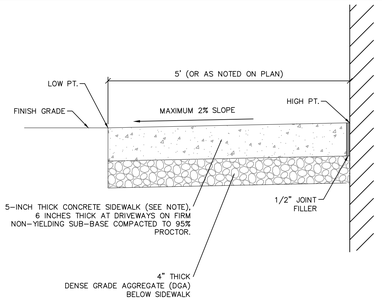
PLAN



ELEVATION

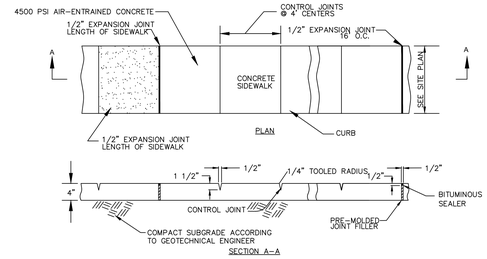
NOTES:
1. DETECTABLE WARNING SURFACE (DWS) SHALL EXTEND FULL WIDTH OF CURB RAMP (EXCLUSIVE OF FLARES) OR FULL WIDTH OF LANDING/TURNING SPACE.
2. DWS SHALL EXTEND 2 FEET MINIMUM IN THE DIRECTION OF PEDESTRIAN TRAVEL.
3. TYPICALLY, DWS SHALL BE PLACED ADJACENT TO BACK OF CURB.

1 DETECTABLE WARNING SURFACE
NOT TO SCALE



NOTES:
1. CONCRETE MUST BE PORTLAND CEMENT CONCRETE, AIR-ENTRAINED, CONFORM TO THE NJDOT STANDARD SPECIFICATIONS FOR CLASS B CONCRETE, AND MUST HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,500 PSI AFTER 28 DAYS.
2. ALL SIDEWALKS TO RECEIVE LIGHT BROOM FINISH.

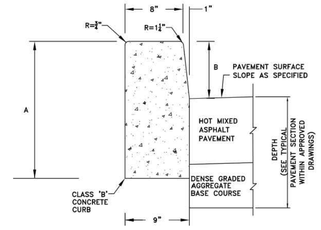
2 CITY OF CAMDEN CONCRETE SIDEWALK
NOT TO SCALE



SECTION A-A

NOTES:
1. ALL SIDEWALKS SHALL BE FLOATED, TOOLED, AND SOFT BROOM BRUSHED.
2. SIDEWALKS SHALL BE INSTALLED ON AN APPROVED, COMPACTED SUBGRADE.
3. MAXIMUM CROSS SLOPE OF 1/4" PER FOOT.

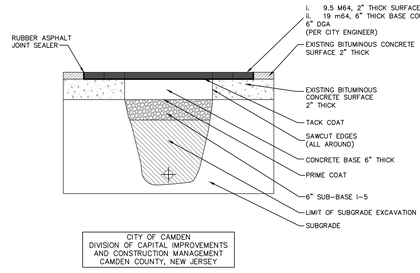
3 ON-SITE CONCRETE SIDEWALK
NOT TO SCALE



CURB SIZE	DIM "A"	DIM "B"
9"x 18"	18"	4"
9"x 18"	18"	6"

NOTES:
1. EXPANSION JOINTS 3/4" WIDE IN THE CURB SHALL BE PROVIDED AT APPROXIMATELY EQUAL DISTANCES OF NOT MORE THAN 20' BETWEEN THE JOINTS.
2. THE COST OF EXPANSION JOINTS IN THE CURB AND DENSE GRADED AGGREGATE BEDDING SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE CURB.
3. CONCRETE SHALL BE CLASS B WITH 28 DAY COMPRESSIVE STRENGTH OF 4500 PSI, AND 6% ±1.5 AIR ENTRAINMENT.

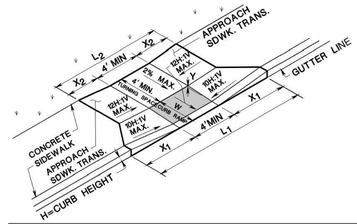
6 CAMDEN COUNTY 8"x9"x18" VERTICAL CONCRETE CURB
NOT TO SCALE



CITY OF CAMDEN
DIVISION OF CAPITAL IMPROVEMENTS
AND CONSTRUCTION MANAGEMENT
CAMDEN COUNTY, NEW JERSEY

NOTES:
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2. EXCAVATE TO SUBGRADE ELEVATIONS REGARDLESS OF CHARACTER OF MATERIALS AND OBSTRUCTIONS ENCOUNTERED. TAMP SUBGRADE PRIOR TO PLACEMENT OF RESTORATION MATERIALS.
3. BOX OUT EXISTING OPENINGS AS INDICATED ON DETAIL. SAW CUT EXISTING UTILITY STREET OPENING USING LONGITUDINAL AND TRAVERSE CUTS TO PROVIDE A NEAT EDGE AND SEAL JOINTS AS INDICATED.
4. PLACE EACH MATERIAL AT DEPTH AND THICKNESS INDICATED. COMPACT EACH LAYER BY MEANS OF TAMPING.
5. GRADE AREAS TO A SMOOTH SURFACE TO BLEND INTO EXISTING GRADES.
6. UNDER PAVEMENTS AND WALKWAYS, PLACE SUB-BASE COURSE MATERIAL ON PREPARED SUBGRADES AS INDICATED OR DIRECTED BY ENGINEER AND COMPACT BY TAMPING TO REQUIRED THICKNESSES.
7. REMOVE SURPLUS SATISFACTORY SOIL AND WASTE MATERIAL INCLUDING UNSATISFACTORY SOIL, TRASH, AND DEBRIS AND LEGALLY DISPOSE OF IT.

7 CITY OF CAMDEN STREET RESTORATION DETAIL #2
NOT TO SCALE



CURB RAMP TABLE							
RAMP TYPE	W (FEET)	H (INCHES)	X1 (FEET)	L1 (FEET)	Y (INCHES)	X2 (FEET)	L2 (FEET)
3	4.0	6	5.0	14.0	4.0	2	8

NOTE: CURB RAMP DETAIL PROVIDED FOR GENERAL REFERENCE. SEE SITE SPECIFIC GRADING PLAN ON DRAWING CG102.

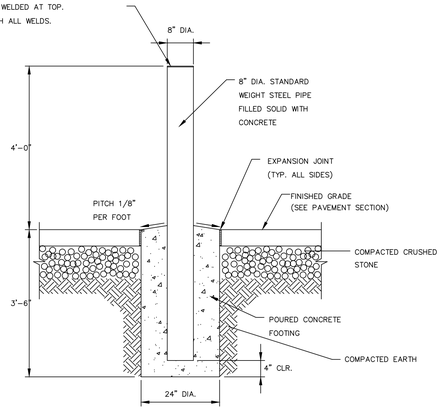
10 NJDOT CURB RAMP TYPE 3
NOT TO SCALE

UNLESS OTHERWISE SHOWN, PAVEMENT MARKINGS SHALL CONFORM TO THE FOLLOWING:

STOP LINE (24" SWL)	-24" WIDE WHITE LINE
CENTER LINE (4" CL)	-2-4" WIDE YELLOW LINES
TWO WAY LEFT TURN LANE LINES (4" SYL) (4" DYL)	-4" WIDE YELLOW LINE -4" WIDE YELLOW LINE, 10' LONG AT 30' INTERVALS
DASHED LANE LINE (4" DWL)	-4" WIDE WHITE LINE, 10' LONG AT 30' INTERVALS
LANE EXTENSION GUIDE LINES	-4" WIDE WHITE LINE, 2' LONG AT 4' INTERVALS
SOLID LANE LINE-EXCLUSIVE MOVEMENT (8" SWL)	-8" WIDE WHITE LINE
SOLID LANE LINE- ALL OTHERS (4" SWL)	-4" WIDE WHITE LINE
CROSSWALK LINES (6" SWL)	-6" WIDE WHITE LINES
MEDIAN CROSS HATCH LINES (24" CHL)	-24" WIDE YELLOW LINES AT 45° SPACED 12' O.C.
GORE CROSS HATCH LINES (24" CHL)	-24" WIDE WHITE LINES AT 45° SPACED 12' O.C.
ISLAND CHANNELIZATION LINE	-8" WIDE WHITE LINE
RIGHT SHOULDER LINE	-4" WIDE WHITE LINE
LEFT SHOULDER LINE	-8" WIDE YELLOW LINE

1) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE 2009 EDITION MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
2) NEAREST CROSSWALK LINE IS TO BE LOCATED A MINIMUM OF 4' FROM THE STOP LINE.
3) W = WHITE STRIPE
Y = YELLOW STRIPE
4) ALL DIMENSIONS SHOWN ARE FROM THE CENTER OF ALL PAVEMENT MARKING LINES.

13 CAMDEN COUNTY PAVEMENT MARKING LEGEND
NOT TO SCALE



NOTE:
BOLLARD TO BE PAINTED, COLOR TO BE COORDINATED WITH OWNER/ENGINEER.

14 STEEL BOLLARD
NOT TO SCALE

PROJECT:

BENSON PAVILION

COOPER NORCROSS UNIVERSITY HOSPITAL
1 COOPER PLAZA
CAMDEN, NJ 08103

SEAL:

CERT OF AUTHORIZATION #AC 331

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1001 E HECTOR STREET, SUITE 230
CONSHOHOCKEN, PA 19428
610-270-0599
ARRAY-ARCHITECTS.COM

IN COLLABORATION WITH:

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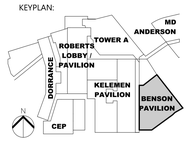
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KEYPLAN:



ISSUES:

NO.	DESCRIPTION	DATE

PROJECT NO. 7088
CON/REF NO.
DATE 10/08/2026
DCA# NJPRP-XXXXX

SITE DETAILS

CS501

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CITY OF CAMDEN REGULATORY REQUIREMENT NOTES

1. ALL TELEPHONE, ELECTRIC, TELEVISION, AND OTHER COMMUNICATION SERVICE FACILITIES, BOTH MAIN AND SERVICE LINES, ARE TO BE INSTALLED UNDERGROUND.
2. THE OWNER, OR THEIR REPRESENTATIVE, IS TO DESIGNATE AN INDIVIDUAL RESPONSIBLE FOR CONSTRUCTION SITE SAFETY DURING THE COURSE OF SITE IMPROVEMENTS PURSUANT TO N.J.A.C. 5:23-2.21 (e) OF THE N.J. UNIFORM CONSTRUCTION CODE AND CFR 1926.32 (r) (OSHA COMPETENT PERSON).
3. ALL SITE WORK CONSTRUCTION AND DETAILS MUST CONFORM TO THE STANDARDS OF THE CITY OF CAMDEN.
4. THE CONTRACTOR (NOT CITY) SHALL BE RESPONSIBLE FOR ANY AND ALL COST (LABOR, MATERIAL AND EQUIPMENT) RELATED TO ANY WATER MAIN ISOLATION AND BY-PASSING OF THE SEWER TO MAKE A PROPOSED CONNECTION.
5. THE CITY ENGINEER AND AMERICAN WATER ENTERPRISES MUST BE GIVEN 48 HOURS ADVANCE NOTICE OF SANITARY SEWER/WATERMAIN WORK, AND THE REPRESENTATIVES MUST WITNESS THE WORK AND CONNECTION.
6. THE APPLICANT AND CONTRACTOR (NOT CITY) ARE RESPONSIBLE FOR THE PROPER ABANDONMENT OF ALL WATER/SEWER LATERAL DISCOVERED IN THE FIELD/SITE. ALL EXISTING WATER SERVICE LINES TO BE ABANDONED SHALL BE CUT AND CAPPED AT THE MAIN, IN ACCORDANCE WITH CAPITAL IMPROVEMENTS AND PROJECT MANAGEMENT (CIP) STANDARDS, AND INSPECTED WITHIN 24 HOURS AFTER INSTALLATION OF NEW TAP. THE MAXIMUM OF ONE (1) TAP SHALL BE MADE FOR BOTH DOMESTIC AND FIRE SERVICE PER FACILITY. THE TAP SHALL BE THE MAXIMUM OF ONE (1) SIZE SMALLER THAN THE CITY'S WATER MAIN.
7. THE INSTALLATION OF ALL WATER AND SEWER MAINS SHALL COMPLY WITH CITY ORDINANCES.
8. ALL WATER/SEWER MAIN INSTALLATIONS AND TESTING SHALL BE WITNESSED/OBSERVED BY AN INSPECTOR OF THE CITY ENGINEER OR AMERICAN WATER, OR PLANNING BOARD ENGINEER.
9. ALL WATER/SEWER SERVICES SHALL BE INSTALLED ON APPLICANT'S PROPERTY (AND NOT WITHIN CITY RIGHT-OF-WAY); EXCEPT WHEN MAKING CONNECTIONS TO THE EXISTING WATER AND/OR SEWER MAIN FROM THE VALVE BOX AND SEWER CLEANOUT RESPECTIVELY.
10. THE OWNER/APPLICANT SHALL OWN, OPERATE AND MAINTAIN ALL WATER, SANITARY AND STORM SEWER MAINS AND APPURTENANCES OUTSIDE OF THE CITY RIGHT-OF-WAY.
11. ALL WATER PIPES, FITTINGS AND VALVES SHALL BE TESTED AND DISINFECTED IN ACCORDANCE WITH AWWA REQUIREMENTS.
12. THRUST BLOCKS AND RESTRAINTS SHALL BE INSTALLED AT ALL BENDS AND FITTINGS. THRUST BLOCKS SHALL HAVE A 28-DAY STRENGTH OF 4,500 PSI.
13. AIR RELEASE VALVES SHALL BE INSTALLED AT HIGH POINTS IN THE WATER MAIN.
14. A SOLID DUCTILE IRON TAPPING SLEEVE SUCH AS MUELLER H-615 SLEEVE OR APPROVED EQUAL SHALL BE UTILIZED FOR TAPS 2" AND LARGER. THE TAPPING SLEEVE SHALL PASS PRESSURE TESTING BASED ON AWWA STANDARDS BEFORE TAP IS MADE.
15. FOR ALL SERVICES INCLUDED HEREIN, TWO (2) GATE VALVES ARE REQUIRED THAT ARE TO BE INSTALLED BY THE APPLICANT; A TAPPING VALVE LOCATED AT THE TAP, AND A CURB VALVE LOCATED IN THE SIDEWALK BEFORE THE METER. TAPPING GATES SHALL BE FURNISHED OPENED RIGHT. ALL TAPPING AND CURB VALVES SHALL BE DOUBLE DISC GATE VALVES AND MEET AWWA STANDARDS.
16. FOR TAPS OFF MAINS 2-INCHES AND LARGER, THE APPLICANT SHALL FURNISH AND INSTALL AN ADDITIONAL GATE VALVE ADJACENT TO THE TAPPING VALVE. NO TAPS SHALL BE PERMITTED ON MAINS, LARGER THAN 20-INCHES UNLESS THERE IS NO ALTERNATIVE WATER SOURCE, AND A SPECIAL WRITTEN APPROVAL IS ISSUED BY THE CIP.
17. VALVE BOX PARTS FOR ALL VALVES SHALL BE PROVIDED BY THE CONTRACTOR (NOT CITY). ALL TAPPING GATE VALVES LARGER THAN 2-INCHES AND ALL CURB VALVES/STOPS REGARDLESS OF SIZE REQUIRE A VALVE BOX WITH THE WORD 'WATER' CAST IN THE COVER. BURIED CORPORATION VALVES/STOPS SHALL BE USED AT THE TAP FOR CLASS K COPPER SERVICES 2-INCHES AND SMALLER.
18. ALL METERS SIZES 2 INCHES THROUGH 6 INCHES SHALL BE SINGLE COMPOUND METERS AND ALL METERS 8 INCHES AND LARGER SHALL BE DUPLEX COMPOUND MANIFOLD METERS.
19. ALL METERS SHALL BE ADEQUATELY RESTRAINED WITH METAL BRACKETS FASTENED TO THE FLOOR OR WALL OF OTHER APPROVED MEANS SUCH AS UNIFLANGES WHERE INTERNAL PIPE PRESSURE AND FLOW WARRANT SUCH RESTRAINTS. METERS, DETECTOR CHECKS, AND VALVES MAY BE SEATED ON CONCRETE BLOCK AND TAPERED SHIMS TO PROVIDE ADEQUATE SUPPORT. METERS SHALL BE INSTALLED APPROXIMATELY 36" ABOVE FLOOR GRADE.
20. ALL METER INSTALLATIONS IN METER PIT OR VAULT SHALL BE PRE-APPROVED BY CIP AND HAVE PROPER ACCESS OPENINGS FOR METER READING AND REPLACEMENT.
21. UPON COMPLETION OF ALL WATER/SEWER INSTALLATION, THREE (3) SETS OF "AS-BUILT" PLANS SHALL BE SUBMITTED TO THE CIP AND AMERICAN WATER ENTERPRISES. THE CIP WILL AUTHORIZE SUPPLY WATER UPON ACCEPTANCE OF THE AS-BUILT DRAWINGS. SUBMISSION OF RECORD DRAWINGS IS REQUIRED IN ACCORDANCE WITH ORDINANCE FOR WATER SERVICES LINES AND SEWER LATERALS. THE AS-BUILT PLANS SHALL BE PROVIDED BY THE CONTRACTOR AND SHALL BE PERFORMED BY A NEW JERSEY LICENSED PROFESSIONAL LAND SURVEYOR. AN ELECTRONIC FORMAT OF THE SAME IN COMPLIANCE WITH THE CITY ORDINANCE SHALL BE ALSO BE SUBMITTED.
22. ALL SEWER INSTALLATION SHALL CONFORM TO THE REQUIREMENT OF THE PROCEDURE MANUAL OF THE CITY OF CAMDEN.
23. ALL NECESSARY REPAIRS TO EXISTING MANHOLE AT SEWER CONNECTION AND RELINING OF THE MANHOLE WITH A LINER BY TERRES HILL COMPOSITE OR APPROVED EQUAL SHALL BE COMPLETED BY THE CONTRACTOR.
24. IT SHALL BE THE RESPONSIBILITY OF THE APPLICANT/CONTRACTOR TO RELOCATE ALL IMPACTED UTILITIES AT NO COST TO THE CITY.
25. TELEVISION INSPECTION OF THE NEW OFF-SITE AND ONSITE STORM SYSTEM IS REQUIRED PRIOR TO FINAL ACCEPTANCE BY THE CITY.
26. A CCTV OF THE SANITARY/STORM SEWER ON DR MARTIN LUTHER KING BLVD AND HADDON AVE SHALL BE PERFORMED AND SUBMITTED TO THE CITY ENGINEER FOR REVIEW PRIOR TO ISSUING APPROVALS TO CONNECT TO THE CAMDEN CITY WATER AND SEWER SYSTEM.
27. VIDEO SEWER INSPECTIONS, INFILTRATION/EXFILTRATION TESTING AND PIPE ALIGNMENT TESTING SHALL BE PERFORMED IN ACCORDANCE WITH THE CITY SEWER MANUAL ON ALL NEW PUBLIC SEWERS (PVC AND RCP) AT THE COMPLETION OF THE PROJECT, BUT PRIOR TO ACCEPTANCE AND/OR DEDICATION OF THE SAME TO THE CITY. THE MAXIMUM RATE OF INFILTRATION/EXFILTRATION SHALL NOT EXCEED THE ORDINANCE REQUIREMENT.
28. SELECT FILL FOR WATER/SEWER TRENCH INSTALLATION WITHIN THE CITY RIGHT OF WAY SHALL BE DENSE GRADED AGGREGATE I-5, IN ACCORDANCE WITH THE SPECIFICATION SUBSECTION 901.08 OF THE NJDOT STANDARD SPECIFICATION AND CONFORM TO THE TABLE IN SECTION 577-229.H OF THE ORDINANCE.
29. ALL PROPOSED PVC FOR SANITARY SEWER SHALL HAVE AN SDR CLASSIFICATION OF 35.
30. ALL PIPES SHALL BE MANUFACTURED AND SUPPLIED WITHOUT LIFTING HOLES.
31. ALL RCP FROM 24 INCHES UP TO AND INCLUDING 72 INCHES DIAMETER SHALL CONFORM TO ASTM C76, MINIMUM PIPE CLASS IV, WALL B (SECTION 577-229).
32. ALL RCP SHALL BE LINED ON THE INTERIOR WITH A COAT TAR EPOXY SEAL COAT WITH A MINIMUM OF FOUR (4) MILS IN THICKNESS (DFT).
33. ALL PUBLIC CONCRETE STORM DRAIN PIPE IS TO EITHER HAVE RUBBER GASKETED OR BUTYL TAPED JOINTS. ALL LIFT HOLES AND BUTYL TAPED JOINTS SHALL BE WRAPPED AND MORTARED ON THE OUTSIDE.
34. EACH MANHOLE BASE AND INLET SHALL BE PROVIDED WITH CIRCULAR OPENINGS AT THE REQUIRED LOCATIONS AND ELEVATIONS FOR PROPER CONNECTION OF THE PIPES. THE FLEXIBLE CONNECTION SHALL BE A-LOK FLEXIBLE CONNECTOR, OR APPROVED EQUAL, AND SHALL BE CAST INTEGRALLY IN THE MANHOLE/INLET WALL FOR ALL PIPE CONNECTIONS. NO PIPE PENETRATIONS SHALL BE LOCATED WITHIN 12" OF A JOINT.
35. ALL NEW MANHOLES AND CATCH BASINS SHALL HAVE AN EXTERIOR COATING OF CARBOLINE COAL TAR EPOXY 300M, OR APPROVED EQUAL, TWO COATS. ALL REINFORCED CONCRETE PIPES SHALL BE LINED ON THE INTERIOR WITH A COAT OF TAR EPOXY SEAL WITH A MINIMUM OF 4 MIL IN THICKNESS (DFT) (SECTION 577-229).
36. ALL STORM INLETS WHICH ARE CONNECTED TO THE CITY COMBINED SEWER SHALL BE FURNISHED WITH A SUMP AND TRAP PER CITY STANDARDS.
37. PROPOSED MANHOLES CONSTRUCTED IN THE PUBLIC RIGHT-OF-WAY ON EXISTING OR PROPOSED CITY SEWERS SHALL BE FURNISHED WITH CONCENTRIC MANHOLES APPROVED BY THE CITY.
38. MANHOLE FRAMES AND COVERS ARE TO PROVIDE FOR A MINIMUM OF THIRTY INCH CLEAR OPENING AT THE COVER IN ORDER TO ALLOW EASY ACCESS UNDER CONFINED SPACE ENTRY REQUIREMENTS. CAMPBELL FOUNDRY PATTERN NUMBER 1012B OR NJDOT APPROVED EQUAL. THE MINIMUM DIAMETER MANHOLE SHALL BE 48-INCHES. A MINIMUM ACCESS DIAMETER OF 30-INCHES SHALL BE PROVIDED.
39. MANHOLE COVERS SHALL BE A SOLID TYPE MARKED WITH SEWER.
40. A DROP MANHOLE CONNECTION SHALL BE USED WHERE THERE IS A DIFFERENCE IN ELEVATION OF TWO FEET OR GREATER BETWEEN THE PIPE INVERT IN AND THE MANHOLE INVERT ELEVATION. REFER TO CITY DETAILS.
41. ALL CONCRETE SHALL BE 4,500 PSI MINIMUM DESIGN MIX.

GRADING AND DRAINAGE NOTES

1. THE CONTRACTOR SHALL VERIFY ALL INFORMATION TO THEIR SATISFACTION PRIOR TO THE EXECUTION OF CONTRACTS OR COMMENCING WORK. ANY DISCREPANCIES SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER OF RECORD.
2. BOUNDARY INFORMATION AND EXISTING FEATURES SHOWN HEREON ARE BASED ON "BOUNDARY AND TOPOGRAPHIC SURVEY" DATED 08/31/2026 PREPARED BY LANGAN ENGINEERING AND ENVIRONMENTAL SERVICES, INC.
3. THE MERIDIAN OF THE PLAN IS REFERENCED TO THE NEW JERSEY STATE PLANE COORDINATE SYSTEM (NAD 83) 2011 DERIVED USING SURVEY-GRADE GNSS EQUIPMENT.
4. TOPOGRAPHIC INFORMATION SHOWN HEREON HAS BEEN OBTAINED FROM GROUND SURVEYS BY LANGAN ENGINEERING AND ENVIRONMENTAL SERVICES, INC. DURING JULY 2023 AND AUGUST 2026.
5. ELEVATIONS SHOWN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) DERIVED USING SURVEY-GRADE GNSS EQUIPMENT.
6. CONVERSION FROM NAVD 1988 TO NGVD IS AS FOLLOWS: EL. 17.00 (NAVD 88) + 1.09 = EL. 18.09 (NGVD 29)
7. AS AS PER THE NATIONAL FLOOD INSURANCE PROGRAM FIRM MAPS TITLED, CAMDEN COUNTY, NEW JERSEY, COMMUNITY PANEL 28 OF 305, MAP NUMBER 34007C0028F. LAST REVISED 08/17/2016. THE PROPERTY PRIMARILY LIES IN "OTHER AREAS", NOT WITHIN FLOOD AREA.
8. EXISTING FRAMES, COVERS, AND GRATES IN AREAS WHERE GRADES WILL BE REVISED BY FILLING OR CUTTING, OR PAVEMENT OVERLAY, MUST BE RESET TO MATCH FINAL GRADE (THIS INCLUDES MANHOLES, HANDHOLES, VALVE BOXES, INLETS, ETC). IN AREAS OF CUT, CONTRACTOR SHALL PROVIDE REQUIRED COVERAGE OF UTILITY AND STORMWATER LINES AS SPECIFIED BY THE UTILITY PURVEYOR.
9. PROPOSED STORMWATER PIPING TRENCHES MAY REQUIRE OVER EXCAVATION IN AREAS NOT CAPABLE OF SUPPORTING THE PROPOSED SYSTEMS. STABILIZATION WITH APPROVED BEDDING MATERIALS WILL BE REQUIRED. OWNER'S GEOTECHNICAL ENGINEER MUST APPROVE BEDDING MATERIALS USED FOR STABILIZATION AND THE DEPTH OF THE OVER EXCAVATION.
10. CONTRACTOR IS RESPONSIBLE FOR LOCATING UTILITY CROSSINGS AND PROVIDING UTILITY DROPS AS REQUIRED. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY IF CROSSING CONFLICT OCCURS.
11. GRADING FOR ADA ACCESSIBLE ROUTES, RAMPS, PARKING AND LOADING SHALL BE IN ACCORDANCE WITH THE NEW JERSEY AMERICAN WITH DISABILITIES ACT ARCHITECTURAL BARRIER REMOVAL AND COMPLIANCE MANUAL. MAXIMUM SLOPES INCLUDE (1) RAMPS – 1:12, (2) ROUTES – 1:20, (3) ROUTES CROSS-SLOPE – 1:50 AND (4) PARKING AND LOADING AREAS – 1:50.
12. TEST PITS WILL BE REQUIRED TO CONFIRM ADEQUATE CLEAR DISTANCES BETWEEN PROPOSED AND EXISTING UTILITIES. TEST PITS SHALL BE PERFORMED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
13. STRUCTURES SHOWN ON THESE DRAWINGS INCLUDE, BUT ARE NOT LIMITED TO: DRAINAGE STRUCTURES (INLETS, CATCH BASINS AND MANHOLES), SANITARY MANHOLES, METER PITS AND UNDERGROUND VAULTS ARE NOT STRUCTURALLY DESIGNED. THE DETAILS PROVIDE TYPICAL DIMENSIONS, LOCATIONS OF PIPE PENETRATIONS, PIPE INVERTS AND GROUND ELEVATIONS AT THE STRUCTURE RIM OR GRATE ONLY. THE STRUCTURAL DESIGN INCLUDING WALL AND SLAB THICKNESS AS WELL AS REINFORCING SHALL BE THE RESPONSIBILITY OF THE PRECAST MANUFACTURER TO MEET STATE DEPARTMENT OF TRANSPORTATION STANDARDS AND HS-20 OR HS-25 LOADING REQUIREMENTS WHEN POSITIONED IN TRAVEL WAYS.
14. ALL GRADING, DRAINAGE, AND UTILITY INSTALLATION AND/OR CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS OR LOCAL REQUIREMENTS. SHOULD A DIFFERENCE IN REQUIREMENTS OCCUR, THE STRICTER OF THE TWO REGULATIONS WILL APPLY.
15. GRADE ALL AREAS OTHER THAN PAVED GRADED AREAS AND BUILDINGS, INCLUDING EXCAVATED AREAS, FILLED AND TRANSITION AREAS, AND LANDSCAPED AREAS TO FINISH GRADE ELEVATIONS OR CONTOURS AS INDICATED ON DRAWINGS. FINISHED SUBGRADE SURFACE SHALL BE UNIFORM AND SMOOTH, FREE FROM ROCK, DEBRIS, OR IRREGULAR SURFACE CHANGES. SITE SHALL BE GRADED TO ALLOW FOR PROPER DRAINAGE WITHOUT PONDING AND IN A MANNER THAT WILL MINIMIZE EROSION POTENTIAL.
16. ALL DRAINAGE STRUCTURES AND STORM SEWER PIPES SHALL MEET HEAVY DUTY TRAFFIC LOADING AND BE INSTALLED ACCORDINGLY.
17. ALL DRAINAGE STRUCTURES AND STORM SEWER PIPES SHALL WATER TIGHT AND BE INSTALLED ACCORDINGLY.
18. SITE GRADING SHALL NOT PROCEED UNTIL ALL EROSION CONTROL MEASURES HAVE BEEN INSTALLED.
19. LENGTHS OF STORM PIPES SHOWN ARE CENTER-TO-CENTER LENGTHS BETWEEN DRAINAGE STRUCTURES.
20. CONTRACTOR SHALL REVIEW ALL DRAINAGE CONNECTIONS TO MANHOLES AND CATCH BASINS AND INCREASE THE INLET BOX SIZES AS NECESSARY TO ACCOMMODATE THE PROPOSED INLET AND OUTLET PIPES.
21. ALL GRADING IS TO PROMOTE POSITIVE DRAINAGE AWAY FROM THE BUILDING.
22. EACH INLET BOX SHALL BE PROVIDED WITH CIRCULAR OPENINGS AT THE REQUIRED LOCATIONS AND ELEVATIONS FOR THE PROPER CONNECTION OF ALL PIPES. THE CIRCULAR CONNECTIONS SHALL BE SEALED WITH A FLEXIBLE SEAL ASSEMBLY SUCH AS A3-FLEXIBLE CONNECTOR BY A-LOK PRODUCTS, INC. OR APPROVED EQUAL.
23. REPORTED GROUNDWATER ELEVATIONS ARE BASED ON HIGHEST REPORTED VALUE FROM VARIOUS PRIOR SUBSURFACE EXPLORATIONS (BY OTHERS). GEOTECHNICAL REPORT TO BE PROVIDED UNDER SEPARATE COVER.
24. PROPOSED LANDSCAPE GRADING MUST NOT EXCEED 3:1.

STORMWATER MAINTENANCE NOTES

1. TO THE EXTENT PERMITTED BY LAW, THE CITY WILL AT 3. ALL REASONABLE TIMES HAVE A RIGHT OF INGRESS AND EGRESS OVER THE EASEMENT AREA AND THE RIGHT TO ENTER THE EASEMENT AREA VIA ANY ROAD OR PARKING LOT LOCATED WITHIN ANY COMMON AREA OWNED BY THE GRANTOR TO INSPECT THE SYSTEM LOCATED IN THE EASEMENT AREA;
2. EXCEPT IN THE CASE OF AN EMERGENCY, THE CITY WILL PROVIDE NOT LESS THAN SEVEN (7) DAYS PRIOR NOTICE TO THE PERFORMING ANY INSPECTION OR MONITOR OF THE SYSTEM IN ACCORDANCE WITH APPROVED PLAN. THE APPLICANT AGREES THAT THE FAILURE TO TIMELY OBJECT AFTER RECEIVING NOTICE FROM THE CITY CONSTITUTES CONSENT TO INSPECTION OF THE PROPERTY WITHIN THE TIMEFRAME SPECIFIED IN THE NOTICE.

IF, AFTER REASONABLE NOTICE BY THE CITY, THE APPLICANT FAILS TO MAINTAIN THE SYSTEM IN ACCORDANCE WITH THE APPROVED MANUAL AND THE MAINTENANCE PLAN, THE CITY MAY PERFORM ANY MAINTENANCE NEEDED TO CORRECT A CONDITION THAT IMPACTS THE EFFECTIVENESS OF ROUTINE MAINTENANCE AND OPERATIONS OF THE SYSTEM AND COLLECT ANY COSTS INCURRED AS A RESULT FROM EACH OWNER OF THE SYSTEM AND IN THE SAME MANNER AS REAL PROPERTY TAXES ARE COLLECTED. IN ADDITION, THE CITY MAY SEEK REIMBURSEMENT UNDER ANY OTHER METHOD LEGALLY AVAILABLE TO COLLECT DEBTS OWED.

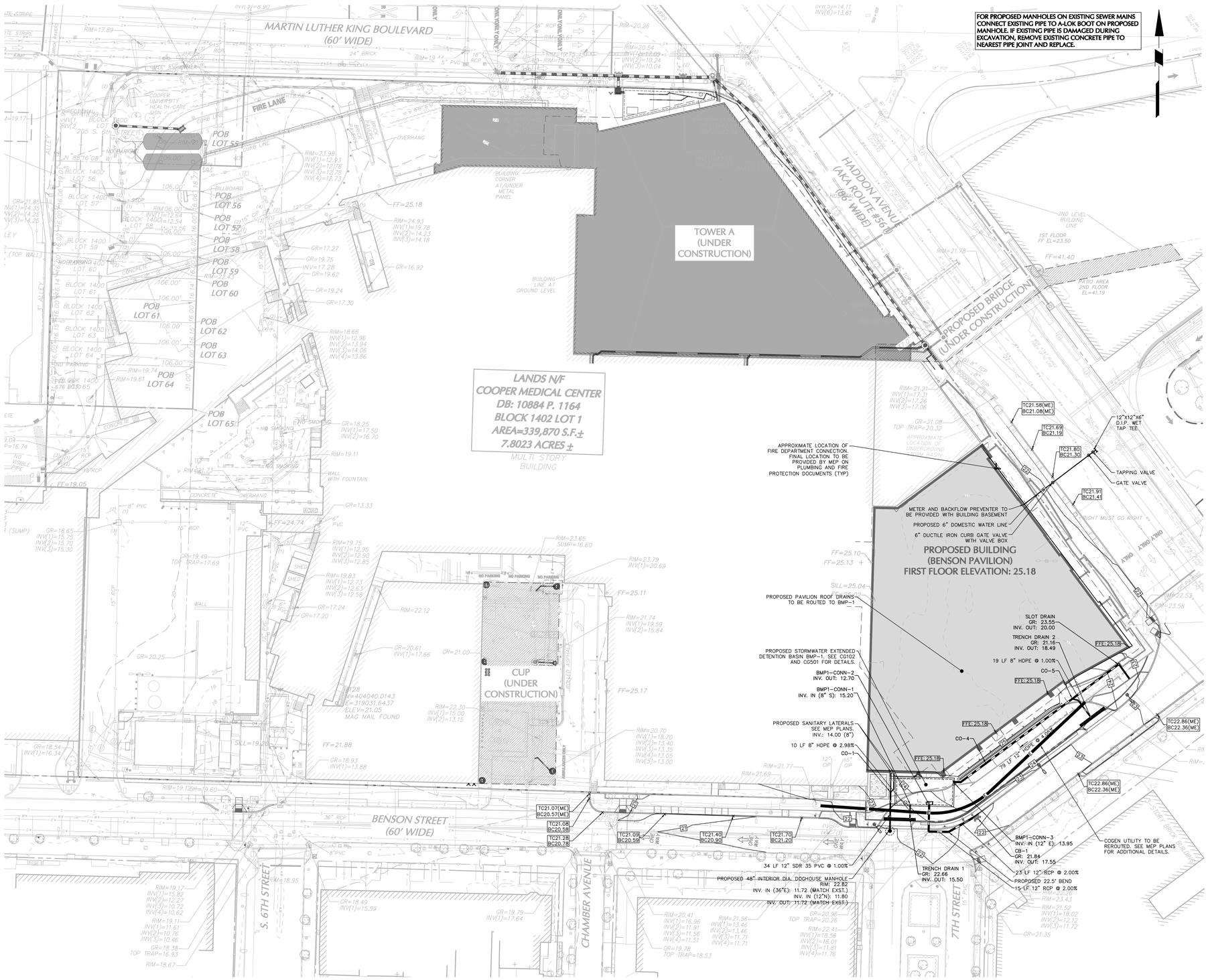
4. THE APPLICANT AGREES TO INDEMNIFY AND SAVE THE CITY HARMLESS FROM ANY AND ALL CLAIMS FOR DIRECT DAMAGES TO PERSONS OR PROPERTY ARISING FROM INSPECTIONS PERFORMED BY THE CITY.

CONTRACTOR TO COORDINATE WITH OWNER'S ENVIRONMENTAL AND GEOTECHNICAL ENGINEERS REGARDING SOIL REQUIREMENTS FOR ONSITE RE-USE, DISPOSAL, AND ENVIRONMENTAL REGULATORY REQUIREMENTS AND COMPLIANCE.

CALL BEFORE YOU DIG IN ALL TOLL FREE 1 – 800 – 272 – 1000 FOR FREE MARKOUTS TO LOCATE UNDERGROUND UTILITIES

"IT'S THE LAW"
GARDEN STATE UNDERGROUND PLANT LOCATION SERVICE, INC.

CALL BEFORE YOU DIG



LEGEND

- PROPERTY LINE
- LIMIT OF DISTURBANCE/NPDES BOUNDARY
- 25.50 PROPOSED SPOT ELEVATION
- X.X% PROPOSED SLOPE
- 25 PROPOSED 1 FOOT CONTOUR LINE

EXISTING INFORMATION SHOWN IN BACKGROUND IN MD ANDERSON CANCER CENTER AND KELEMEN CDU ADDITION AREAS IS BASED ON A COMBINATION OF PREDEVELOPMENT FIELD SURVEY AND PROPOSED DESIGN DRAWINGS. CONTRACTOR SHALL USE DESIGN INFORMATION AS A GUIDE TO MEET INTENT, BUT MUST ULTIMATELY TIE INTO AS-BUILT CONDITIONS IN FIELD.

EXISTING PIPE ANGLES DETERMINED DURING TEST PIT EXPLORATION ARE BASED ON SURVEYED INFORMATION FROM WILKINSON IN FEB/MARCH 2025. SOME MINOR FIELD ADJUSTMENTS MAY BE REQUIRED ONCE MANHOLE PIT IS OPENED FOR CONSTRUCTION.

IN THE AREAS OF PROPOSED WORK ONLY, CONTRACTOR TO REMOVE ALL PREVIOUSLY ABANDONED SEWER/STORM PIPING IDENTIFIED IN THE VARIOUS SEWER VIDEOS AND SITE INVESTIGATIONS, FROM THE MAIN TO THE R.O.W. LINE.

ALL WORK TO BE COORDINATED WITH THE POTENTIAL CITY SEWER MAIN WORK IN THE INTERSECTION OF HADDON AVE AND MLK BLVD, AND ALONG HADDON AVE.

FINAL LIMITS OF CURB RAMP REPLACEMENTS INCLUDING THOSE SHOWN ON THE GRADING INSETS ON SHEET CG102 WILL BE DETERMINED ONCE ALL SITE WORK IS COMPLETE.

NOTE: SEE CG102 FOR DETAILED GRADING AND DRAINAGE DESIGN.

30 0 15 30
SCALE: 1 INCH = 30 FEET

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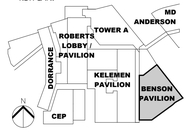
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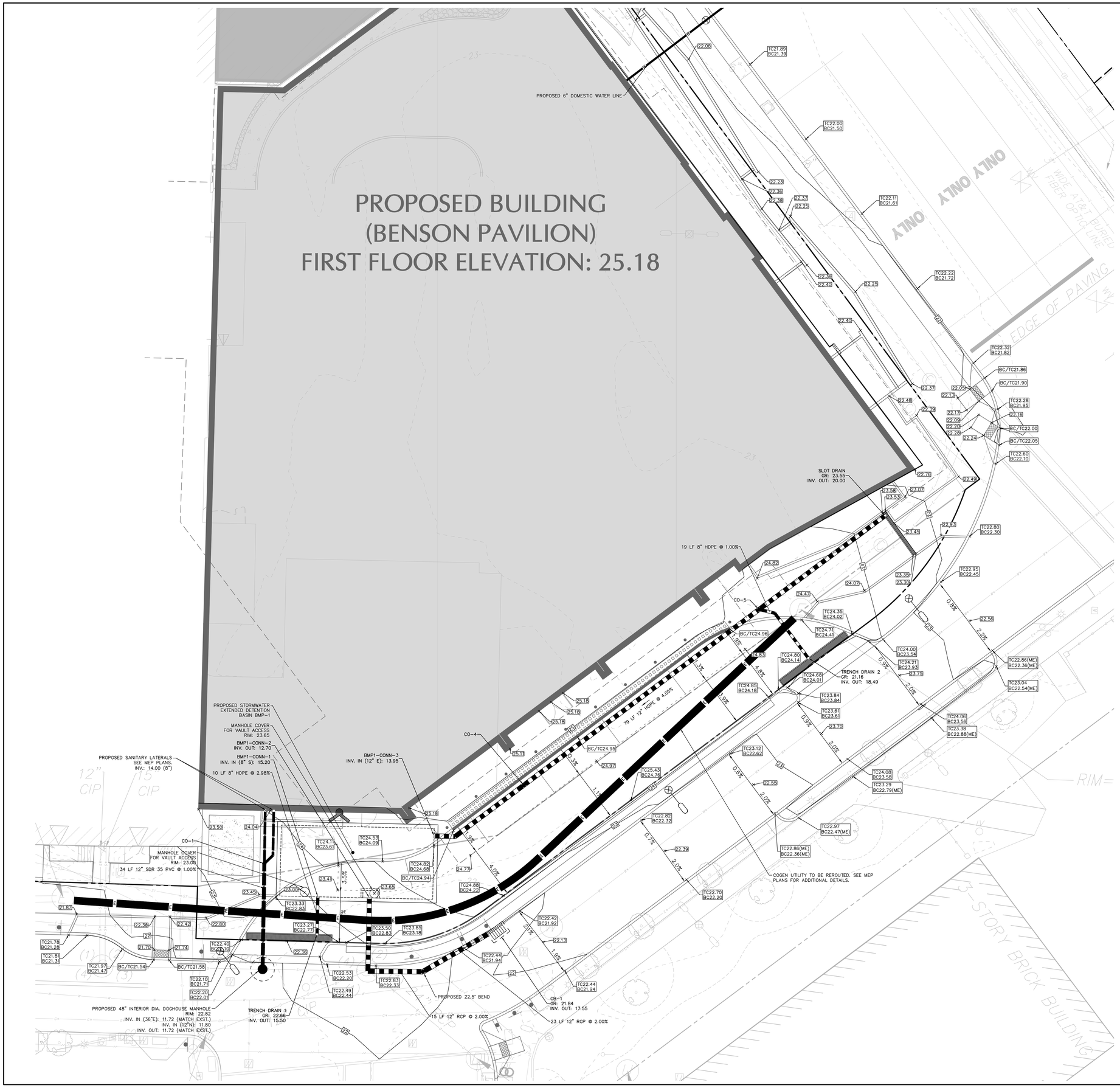
NO.	DESCRIPTION	DATE

PROJECT NO. 7088
CON/REF NO.
DATE 10/08/2026
DCA# NJPRP-XXXXX

OVERALL GRADING AND DRAINAGE/UTILITY PLAN

CG101

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6. CONVERSION FROM NAVD 1988 TO NGVD IS AS FOLLOWS: EL. 17.00 (NAVD 88) + 1.09 = EL. 18.09 (NGVD 29)
7. AS AS PER THE NATIONAL FLOOD INSURANCE PROGRAM FIRM MAPS TITLED, CAMDEN COUNTY, NEW JERSEY, COMMUNITY PANEL 28 OF 305, MAP NUMBER 34007C0028F, LAST REVISED 08/17/2016. THE PROPERTY PRIMARILY LIES IN "OTHER AREAS", NOT WITHIN FLOOD AREA.
8. EXISTING FRAMES, COVERS, AND GRATES IN AREAS WHERE GRADES WILL BE REVISED BY FILLING OR CUTTING, OR PAVEMENT OVERLAY, MUST BE RESET TO MATCH FINAL GRADE (THIS INCLUDES MANHOLES, HANDHOLES, VALVE BOXES, INLETS, ETC). IN AREAS OF CUT, CONTRACTOR SHALL PROVIDE REQUIRED COVERAGE OF UTILITY AND STORMWATER LINES AS SPECIFIED BY THE UTILITY PURVEYOR.

NOTE: SEE OVERALL GRADING AND DRAINAGE PLAN (CG101) FOR COMPLETE NOTES.

LEGEND

- PROPERTY LINE
- LIMIT OF DISTURBANCE/NPDES BOUNDARY
- 25.50 — PROPOSED SPOT ELEVATION
- X.X% — PROPOSED SLOPE
- 25 — PROPOSED 1 FOOT CONTOUR LINE

FOR PROPOSED MANHOLES ON EXISTING SEWER MAINS CONNECT EXISTING PIPE TO A-LOK BOOT ON PROPOSED MANHOLE. IF EXISTING PIPE IS DAMAGED DURING EXCAVATION, REMOVE EXISTING CONCRETE PIPE TO NEAREST PIPE JOINT AND REPLACE.

EXISTING INFORMATION SHOWN IN BACKGROUND IN MD ANDERSON CANCER CENTER AND KELEMEN CDU ADDITION AREAS IS BASED ON A COMBINATION OF PREDEVELOPMENT FIELD SURVEY AND PROPOSED DESIGN DRAWINGS. CONTRACTOR SHALL USE DESIGN INFORMATION AS A GUIDE TO MEET INTENT, BUT MUST ULTIMATELY TIE INTO AS-BUILT CONDITIONS IN FIELD.

EXISTING PIPE ANGLES DETERMINED DURING TEST PIT EXPLORATION ARE BASED ON SURVEYED INFORMATION FROM WILKINSON IN FEB/MARCH 2025. SOME MINOR FIELD ADJUSTMENTS MAY BE REQUIRED ONCE MANHOLE PIT IS OPENED FOR CONSTRUCTION.

IN THE AREAS OF PROPOSED WORK ONLY, CONTRACTOR TO REMOVE ALL PREVIOUSLY ABANDONED SEWER/STORM PIPING IDENTIFIED IN THE VARIOUS SEWER VIDEOS AND SITE INVESTIGATIONS, FROM THE MAIN TO THE R.O.W. LINE.

FINAL LIMITS OF CURB RAMP REPLACEMENTS WILL BE DETERMINED ONCE ALL SITE WORK IS COMPLETE.

10 0 2 4 10
SCALE: 1 INCH = 10 FEET

PROJECT:

BENSON PAVILION

COOPER NORCROSS UNIVERSITY HOSPITAL
1 COOPER PLAZA
CAMDEN, NJ 08103

SEAL:

CERT OF AUTHORIZATION #AC 331

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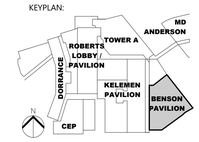
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1400 WILLIAMS ROAD
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717-840-8181

KEYPLAN:



ISSUES:

NO.	DESCRIPTION	DATE

PROJECT NO. 7088
CON/REF NO.
DATE 10/08/2026

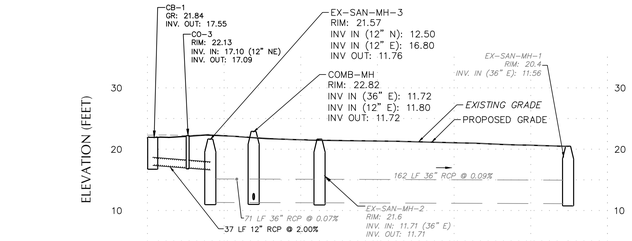
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DETAILED GRADING AND DRAINAGE PLAN

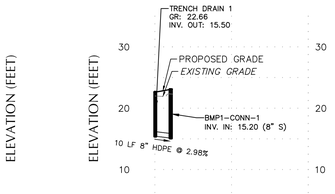
CG102

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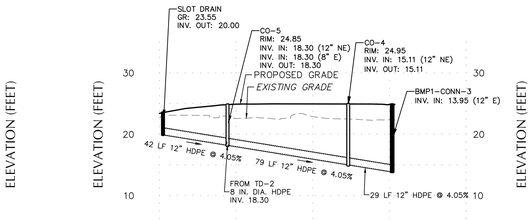
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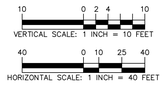
DRAINAGE PROFILE
(CB-1 TO EX-SAN-MH-1)

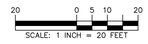


DRAINAGE PROFILE
(TRENCH DRAIN 1 TO BMP-1)



DRAINAGE PROFILE
(SLOT DRAIN TO BMP-1)





PLAN VIEW - BENSON PAVILION

EXISTING UTILITY CROSSINGS MAY EXIST. CONTRACTOR TO PERFORM TEST PITS TO CONFIRM. CONTRACTOR TO CONFIRM EXISTING SEWER INLETS PRIOR TO PROCUREMENT OF MATERIALS.

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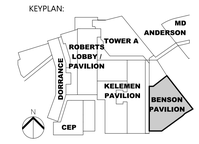
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KEYPLAN:



ISSUES:

NO.	DESCRIPTION	DATE

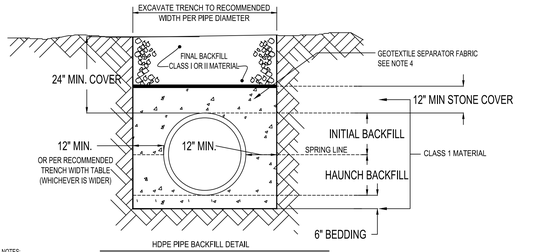
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CON/REF NO.
DATE 10/08/2026

DCA# NJPRP-XXXXX

STORMWATER PROFILES

CG201

Date: 10/7/2026 Time: 16:07 User: jlees Style Table: Langan,stb Layout: CG201 Document Code: 220245001-0502-CG201-0101



HDPE PIPE BACKFILL DETAIL

NOTES:

1. BEDDING, HAUNCH, INITIAL BACKFILL AND COVER SHALL BE CLASS 1 MATERIAL. CLASS 1 MATERIAL MUST BE EVENLY SPREAD INTO THE HAUNCH AND BETWEEN CORRUGATIONS. IF CLASS 1A MATERIAL IS USED, THE CLASS 1A MATERIAL SHOULD BE SPREAD IN 6-INCH-THICK LIFTS AND NOMINALLY COMPACTED USING A HAND-OPERATED COMPACTION EQUIPMENT. IF CLASS 1B MATERIAL IS USED, THE CLASS 1B MATERIAL SHOULD BE SPREAD IN 6-INCH-THICK LIFTS AND COMPACTED TO AT LEAST 95% OF THE MATERIALS MAX DRY DENSITY.
2. FINAL BACKFILL MATERIAL SHALL BE EITHER CLASS I (A OR B) OR CLASS II MATERIAL. THESE MATERIALS CAN EITHER BE IMPORTED OR PROCESSED FROM ONSITE MATERIAL GENERATED DURING ROCK EXCAVATION.
3. FINAL BACKFILL SHALL BE COMPACTED TO AT LEAST 95% OF THE MATERIAL'S MAXIMUM DRY DENSITY AS DETERMINED BY A MODIFIED PROCTOR COMPACTION TEST (ASTM D1557).
4. THE SEPARATOR FABRIC IS REQUIRED UNLESS OTHERWISE DIRECTED BY THE GEOTECHNICAL ENGINEER. THE NEED FOR A SEPARATOR FABRIC TO PREVENT SOIL PARTICLE MIGRATION SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER ONCE GRADATION DATA IS PROVIDED FOR ALL PROPOSED BACKFILL MATERIALS.

CLASSES OF EMBEDMENT AND BACKFILL MATERIALS

CLASS (PER ASTM D2321)	TYPE	SOIL GROUP SYMBOL ASTM D 2487	DESCRIPTION	PERCENTAGE PASSING SIEVE SIZES 1 1/2 IN. (40 MM)	NO. 4 (4.75 MM)	NO. 200 (0.075 MM)
IA	MANUFACTURED AGGREGATES OPEN-GRADED, CLEAN.	NONE	ANGULAR, CRUSHED STONE OR ROCK, CRUSHED GRAVEL, BROKEN CORAL, CRUSHED SLAG, CINDERS OR SHELLS: LARGE VOID CONTENT, CONTAIN LITTLE OR NO FINES.	100 %	≤ 10 %	< 5 %
IB	MANUFACTURED, PROCESSED AGGREGATES; DENSE-GRADED, CLEAN	NONE	ANGULAR, CRUSHED STONE (OR OTHER CLASS IA MATERIALS) AND STONE/SAND MIXTURES WITH GRADATIONS SELECTED TO MINIMIZE MIGRATION OF ADJACENT SOILS; CONTAIN LITTLE OR NO FINES (SEE X1.6.).	100 %	≤ 50 %	< 5 %
II	COARSE-GRAINED SOILS, CLEAN	GW	WELL-GRADED GRAVELS AND GRAVEL-SAND MIXTURES; LITTLE OR NO FINES.	100 %	< 50 % "COARSE FRACTION"	< 5 %
		GP	POORLY-GRADED GRAVELS AND GRAVEL-SAND MIXTURES; LITTLE OR NO FINES.			
		SW	WELL-GRADED SANDS AND GRAVELLY SANDS; LITTLE OR NO FINES.		> 50 % OF "COARSE FRACTION"	
		SP	POORLY-GRADED SANDS AND GRAVEL SANDS; LITTLE OR NO FINES.			
	COARSE-GRAINED SOILS, BORDERLINE CLEAN TO W/ FINES	E.G. GW-GC, SP-SM.	SANDS AND GRAVELS WHICH ARE BORDERLINE BETWEEN CLEAN AND WITH FINES.	100 %	VARIES	5 % TO 12 %
III	COARSE-GRAINED SOILS, WITH FINES	GM	SILTY GRAVELS, GRAVEL-SAND SILT MIXTURES.	100 %	< 50 % OF "COARSE FRACTION"	12 % TO 50 %
		GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES.			
		SM	SILTY SANDS, SAND-SILT MIXTURES.		> 50 % OF "COARSE FRACTION"	
		SC	CLAYEY SANDS, SAND-CLAY MIXTURES.			

NOTE: CONTRACTOR TO COORDINATE AND CONFIRM WITH SPECIFIC PIPE MANUFACTURER.

GENERAL NOTES:

1. MATERIALS: UNLESS OTHERWISE SPECIFIED ON THE PLANS OR HEREIN, CORRUGATED POLYETHYLENE PIPE SHALL CONFORM TO AASHTO M-294, LATEST EDITION, STANDARD SPECIFICATION FOR CORRUGATED POLYETHYLENE PIPE.
2. RESINS: CORRUGATED POLYETHYLENE PIPE SHALL BE MANUFACTURED FROM HIGH DENSITY POLYETHYLENE VIRGIN COMPOUNDS, AND SHALL CONFORM TO THE REQUIREMENTS OF ASTM D-3350 FOR THE CELL CLASSIFICATION 335400C.
3. COUPLING BANDS: EXCEPT AS OTHERWISE REQUIRED HEREIN, COUPLING BANDS AND OTHER HARDWARE FOR CORRUGATED POLYETHYLENE PIPE SHALL DEMONSTRATE THAT THEY MEET THE SOIL TIGHTNESS REQUIREMENTS OF AASHTO SECTION 26 "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES."

   COUPLING BANDS SHALL LAP EQUALLY ON EACH OF THE PIPES BEING CONNECTED TO FORM A TIGHTLY CLOSED JOINT AFTER INSTALLATION.

   THE CORRUGATIONS IN THE BAND SHALL INDEX THE CORRUGATIONS IN THE PIPE ENDS TO ENGAGE AT LEAST TWO FULL CORRUGATIONS FROM THE END OF EACH PIPE.

   WHEN INFILTRATION OR EXFILTRATION IS A CONCERN, THE COUPLING BANDS MAY BE REQUIRED TO HAVE GASKETS. THE GASKET MATERIAL SHALL BE CLOSED-CELL EXPANDED RUBBER OR NEOPRENE.

   OTHER COUPLINGS MAY BE BELL & SPIGOT AND CONFORM TO THE REQUIREMENTS OF AASHTO M294.
4. DESIGNATION OF TYPE: THE PIPE MAY BE ONE OR BOTH OF THE FOLLOWING TYPE:

   TYPE S: THIS PIPE WILL HAVE A FULL CIRCULAR CROSS- SECTION, WITH AN OUTER CORRUGATED PIPE WALL AND A SMOOTH INNER LINER.

   TYPE D: THIS PIPE SHALL CONSIST OF AN ESSENTIALLY SMOOTH WATERWAY BRACED CIRCUMFERENTIALLY WITH CIRCULAR RIBS WHICH ARE FORMED SIMULTANEOUSLY WITH A SMOOTH OUTER WALL.
5. INSTALLATION: CORRUGATED POLYETHYLENE PIPE SHALL BE INSTALLED IN ACCORDANCE WITH TABLE 1 AND ASTM D-2321, LATEST EDITION, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS."

HIGH DENSITY CORRUGATED POLYETHYLENE PIPE HEIGHT OF COVER H-20 AND E-80 LIVE LOADS

NOMINAL DIAMETER IN. (MM)	MINIMUM COVER IN. & (MM) H-20	E-80
12 (300)	12 (300)	24 (600)
15 (375)	12 (300)	24 (600)
18 (450)	12 (300)	24 (600)
24 (600)	12 (300)	24 (600)
30 (750)	12 (300)	24 (600)
36 (900)	12 (300)	24 (600)
42 (1050)	12 (300)	24 (600)
48 (1200)	12 (300)	24 (600)
60 (1500)	24 (600)	24 (600)

RECOMMENDED TRENCH WIDTH

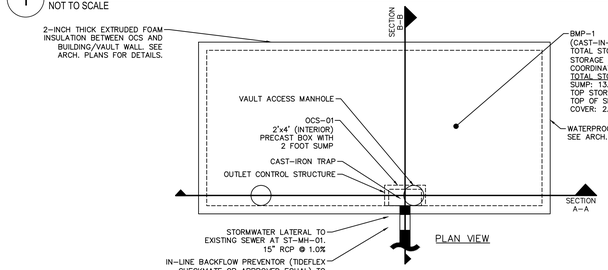
DIAMETER	O.D.	TRENCH WIDTH
12"	14.45"	31"
15"	17.65"	34"
18"	21.10"	39"
24"	28.30"	48"
30"	36.10"	66"
36"	42.25"	78"
42"	47.00"	83"
48"	53.00"	89"
60"	66.30"	102"

The trench width must be wide enough to accomodate compaction equipment.

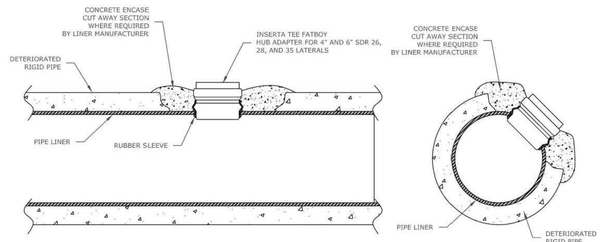
APPROXIMATE MAXIMUM COVER FOR HDPE PIPES (PER ASTM F2648, FT/MIN). REFERENCE FROM ADS LITERATURE. CONTRACTOR MUST CONFIRM MAXIMUM ALLOWABLE COVER WITH SELECTED MANUFACTURER.

DIAMETER OF PIPE IN. (MM)	CLASS 1 COMPACTED 95% FT. (M)	CLASS 2 95% FT. (M)	CLASS 2 90% FT. (M)	CLASS 3 90% FT. (M)
12 (300)	27 (8.2)	21 (6.4)	14 (4.3)	12 (3.6)
15 (375)	27 (8.2)	21 (6.4)	14 (4.3)	13 (3.9)
18 (450)	25 (7.6)	18 (5.5)	13 (3.9)	11 (3.3)
24 (600)	22 (6.7)	16 (4.8)	11 (3.3)	12 (3.6)
30 (750)	16 (4.8)	12 (3.6)	8 (2.4)	6 (1.8)
36 (900)	21 (6.4)	15 (4.5)	10 (3.0)	10 (3.0)
42 (1050)	17 (5.2)	13 (3.9)	9 (2.7)	7 (2.1)
48 (1200)	18 (5.5)	13 (3.9)	9 (2.7)	10 (3.0)
60 (1500)	20 (6.0)	15 (4.5)	10 (3.0)	10 (3.0)

1 HDPE PIPE INSTALLATION DETAIL
NOT TO SCALE



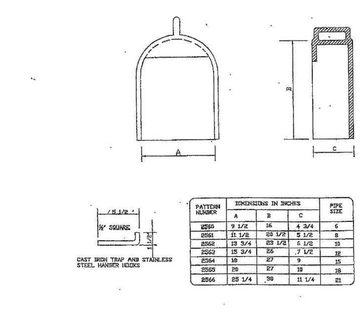
2 INSERTA- TEE SEWER CONNECTION
NOT TO SCALE



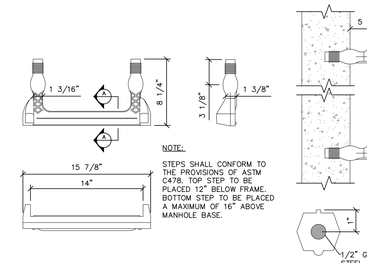
INSTALLATION INSTRUCTIONS:

1. MARK AREA TO BE TAPPED ON SURFACE OF RIGID PIPE. WORKING AREA SHOULD BE 2+INCHES WIDER THAN DIAMETER OF INSERTA TEE.
2. BREAK AWAY RIGID PIPE SECTION TO BE TAPPED AND EXPOSE NEW LINER SECTION.
3. BRUSH AND CLEAN PIPE LINER SURFACE AND REMOVE DAMAGED SECTIONS OF RIGID PIPE.
4. CORE HOLE INTO LINER WITH APPROPRIATE INSERTA TEE HOLE SAW.
5. INSTALL INSERTA TEE FATBOY® TAP CONNECTION PER PROVIDED INSTALLATION INSTRUCTIONS.
6. ENCASE CUT OUT SECTION OF RIGID PIPE WITH CONCRETE WHERE REQUIRED BY LINING MANUFACTURER.

3 CITY OF CAMDEN STANDARD CAST IRON TRAP
NOT TO SCALE



PATTERN NUMBER	DIMENSIONS IN INCHES A	B	C	PIPE SIZE
2560	9 1/2	16	4 3/4	6
2561	11 1/2	20 1/2	5 1/2	8
2562	13 3/4	23 1/2	6 1/2	10
2563	15 3/4	26	7 1/2	12
2564	18	27	9	15
2565	19	27	10	18
2566	22 1/4	30	11 1/4	21

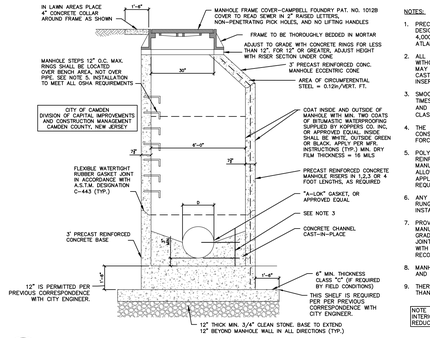


NOTE:

STEPS SHALL CONFORM TO THE PROVISIONS OF ASTM C478. TOP STEP TO BE PLACED 12" BELOW FRAME. BOTTOM STEP TO BE PLACED A MAXIMUM OF 16" ABOVE MANHOLE BASE.

SECTION A-A
NOT TO SCALE

4 CITY OF CAMDEN STANDARD PRECAST MANHOLE
NOT TO SCALE

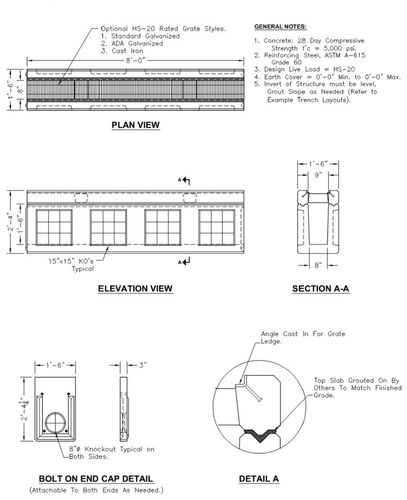


NOTES:

1. PRECAST MANHOLE IN ACCORDANCE WITH A.S.T.M. DESIGNATION C-478, MINIMUM COMPRESSIVE STRENGTH 4,000 P.S.I. (TYP.). MANHOLE TO BE MANUFACTURED BY ATLANTIC CONCRETE OR APPROVED EQUAL.
2. ALL MANHOLES SHALL BE CONSTRUCTED WATERTIGHT WITHOUT THE USE OF A RUBBER GASKET. WATER TIGHTNESS MAY BE ACHIEVED BY DISH SHAPED INSERTS, WATERTIGHT CASTING, OR APPROVED EQUAL DISH SHAPED WATERTIGHT INSERT SHALL BE SUPPLIED, TWO PER MANHOLE.
3. SMOOTH CONCRETE CHANNEL WITH DEPTH EQUAL TO 0.80 TIMES THE DIA. OF THE MAIN SEWER FOR SIZES 8" TO 15" AND 0.50 TIMES THE DIA. FOR SIZES 16" AND ABOVE. (USE CLASS C CONCRETE)
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTING ADEQUATE BALLAST TO OFFSET FLOTATION FORCES ACTING ON MANHOLES INSTALLED IN WET AREAS.
5. POLYPROPYLENE RUNGS, WITH GRADE 60 STEEL REINFORCEMENT AND TEETH SIDE CLEATS, AS MANUFACTURED BY MA INDUSTRIES. STEEL RUNGS NOT ALLOWED. FOR MANHOLES GREATER THAN 15'-0" DEEP, APPLICANT SHALL CONTACT LTMUA FOR SPECIFIC MANHOLE REQUIREMENTS. ALL OSHA REQUIREMENTS MUST BE MET.
6. ANY MANHOLE REQUIRING LINING SHALL HAVE MANHOLE RUNGS REMOVED AND HAVE A COMPOSITE LADDER INSTALLED.
7. PROVIDE WRAPIDSEAL MANHOLE ENCAPSULATION SYSTEM, AS MANUFACTURED BY CANUSA-CPS, AROUND FRAME AND GRADE RINGS FOR ALL MANHOLES AND AROUND ALL RISER JOINTS. INSTALLATION SHALL BE PROVIDED IN ACCORDANCE WITH ALL CPS MANUFACTURER'S REQUIREMENTS AND RECOMMENDATIONS.
8. MANHOLE FRAME SHALL BE LAID IN 1-INCH OF MORTAR AND HAVE 1-INCH MORTAR AROUND THE RIM.
9. THERE SHALL BE NO CHANGE IN FLOW DIRECTION GREATER THAN 90 DEGREES.

NOTE THAT IF REDUCING SLABS ARE USED, MINIMUM INTERIOR HEIGHT OF 7 FEET BETWEEN MANHOLE BASE AND REDUCING SLAB MUST BE PROVIDED PER CITY ENGINEER.

5 CITY OF CAMDEN COPOLYMER POLYPROPYLENE PLASTIC STEEL REINFORCED MANHOLE STEP
NOT TO SCALE

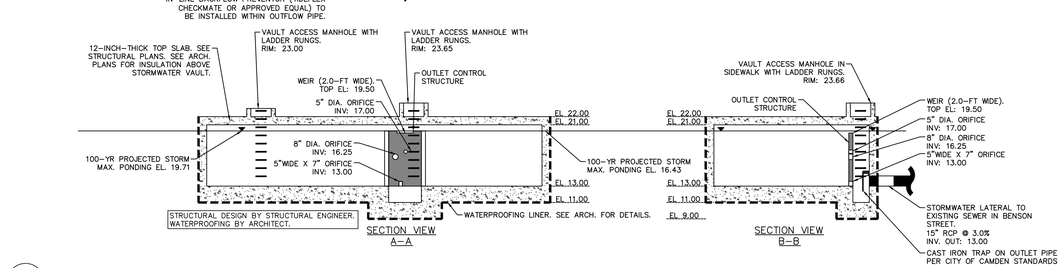


GENERAL NOTES:

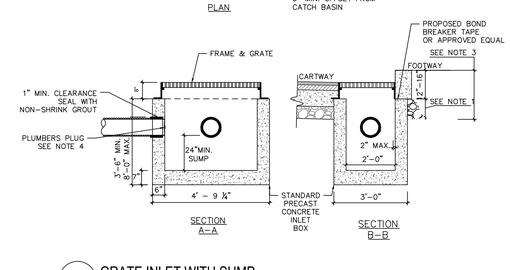
1. Concrete: 28 Day Compressive Strength f'c = 5,000 psi.
2. Reinforcing Steel, ASTM A-615 Grade 60
3. Design Live Load = HS-20
4. Earth Cover = 0'-0" Min. to 0'-0" Max.
5. Invert of Structure must be level, Grout Slope as Needed (Refer to Example Trench Layouts).

DETAIL PROVIDED FOR REFERENCE. FINAL TRENCH DRAIN DETAIL WILL BE PROVIDED TO PLANNING BOARD ENGINEER ONCE SELECTED.

6 SCHEMATIC DETAIL OF PROPOSED UNDERGROUND EXTENDED DETENTION BASIN (BMP-1) AND OUTLET CONTROL STRCUTURE (OCS-01)
1:4



7 GRATE INLET WITH SUMP
NOT TO SCALE



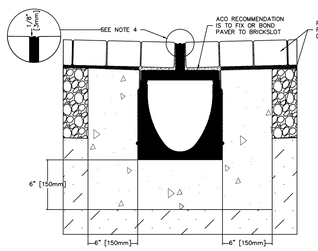
NOTES:

1. LOCATE PIPE OPENINGS TO PROVIDE MINIMUM 4" OF CONCRETE BETWEEN TOP OF INLET BOX AND TOP OF PIPE OPENING. CURB ABOVE INLET SHALL BE SUPPORTED WITH DGA STONE BETWEEN TOP OF PIPE AND BOTTOM OF CURB. CURB OUTSIDE OF INLET SHALL BE STANDARD DEPTH.
2. FOOTWAY AND CARTWAY RESTORATION HAS BEEN DRAWN FOR REFERENCE PURPOSES ONLY. PAVEMENT RESTORATION QUANTITIES AND DESIGN MUST CONFORM TO CURRENT CITY OF CAMDEN STANDARDS FOR CITY STREETS.
3. PLUMBERS PLUG TO MAINTAIN WATERTIGHT SEAL UNTIL CONSTRUCTION IS COMPLETE. PLUMBERS PLUG IS NOT TO EXTEND MORE THAN 2" OUT FROM INLET WALL.
4. ALL JOINTS, ADJUSTMENTS, AND PIPE CONNECTIONS MUST BE WATERTIGHT.

8 TRENCH DRAIN (OR APPROVED EQUAL)
NOT TO SCALE

9 SLOT DRAIN (OR APPROVED EQUAL)
NOT TO SCALE

BS2K2-A-HPP



NOTES:

1. IT IS NECESSARY TO ENSURE MINIMUM DIMENSIONS SHOWN ARE SUITABLE FOR EXISTING GROUND CONDITIONS. *ENGINEERING ADVICE MAY BE REQUIRED.*
2. MINIMUM CONCRETE STRENGTH OF 4,000 PSI IS RECOMMENDED. CONCRETE SHOULD BE VIBRATED TO ELIMINATE AIR POCKETS.
3. EXPANSION AND CONTRACTION CONTROL JOINTS AND REINFORCEMENT ARE RECOMMENDED TO PROTECT CHANNEL AND CONCRETE SURROUND. *ENGINEERING ADVICE MAY BE REQUIRED.*
4. THE FINISHED LEVEL OF THE CONCRETE SURROUND MUST BE APPROX. 1/8" [3mm] ABOVE THE TOP OF THE CHANNEL EDGE.
5. CONCRETE BASE THICKNESS SHOULD MATCH SLAB THICKNESS. ENGINEERING ADVICE MAY BE REQUIRED TO DETERMINE PROPER LOAD CLASS.
6. REFER TO ACO'S LATEST INSTALLATION INSTRUCTIONS FOR FURTHER DETAILS.

SPECIFICATION CLAUSE

K200 KLASSIKDRAIN W/HEEL RESISTANT BRICKSLOT 200 - LOAD CLASS A

GENERAL
THE SURFACE DRAINAGE SYSTEM SHALL BE POLYMER CONCRETE K200 CHANNEL SYSTEM WITH GALVANIZED STEEL EDGE RAILS AND HEEL RESISTANT BRICKSLOT 200 AS MANUFACTURED BY ACO POLYMER PRODUCTS, INC.

MATERIALS
CHANNELS SHALL BE MANUFACTURED FROM POLYESTER RESIN POLYMER CONCRETE WITH AN INTEGRALLY CAST-IN GALVANIZED STEEL EDGE RAIL. MINIMUM PROPERTIES OF POLYMER CONCRETE STILL BE AS FOLLOWS:

COMPRESSIVE STRENGTH	14,000 PSI
FLEXURAL STRENGTH 4,000 PSI	TENSILE STRENGTH 1,500 PSI
WATER ABSORPTION 0.07%	FROST PROOF YES
DILUTE ACID AND ALKALI RESISTANT YES	
B117 SALT SPRAY TEST COMPLIANT YES	

THE SYSTEM SHALL BE 8" (100mm) NOMINAL INTERNAL WIDTH WITH A 10.2" (260mm) OVERALL WIDTH. ALL CHANNELS SHALL BE INTERLOCKING WITH A MALE/FEMALE JOINT.

THE COMPLETE DRAINAGE SYSTEM SHALL BE BY ACO POLYMER PRODUCTS, INC. ANY DEVIATION OR PARTIAL SYSTEM DESIGN AND/OR IMPROPER INSTALLATION WILL VOID ANY AND ALL WARRANTIES PROVIDED BY ACO POLYMER PRODUCTS, INC.

CHANNEL SHALL WITHSTAND LOADING TO PROPER LOAD CLASS AS OUTLINED BY EN 1433. HEEL RESISTANT BRICKSLOT 200 SHALL BE APPROPRIATE TO MEET THE SYSTEM LOAD CLASS SPECIFIED AND SHALL BE MANUFACTURED, INSTALLED AND TESTED TO BE CERTIFIED TO MEET THE SPECIFIED EN 1433 LOAD CLASS. THE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.

THE HEEL RESISTANT BRICKSLOT 200 GRATING SYSTEM SHALL HAVE AN OVERALL INTERNAL WIDTH OF 0.89" (22.35mm) WITH TWO 0.31" (8mm) SLOT OPENINGS AND WITH A 0.25" (6.35mm) TAPERED BAR BETWEEN THE TWO OPENINGS TO PREVENT DEBRIS FROM BEING TRAPPED. THE BRICKSLOT GRATING SYSTEM ADDS 3.27" (83mm) TO THE OVERALL HEIGHT OF THE K200 SYSTEM

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CERT OF AUTHORIZATION #AC 331

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ARRAY-ARCHITECTS.COM

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BR+A CONSULTING ENGINEERS
MEP-FP ENGINEERS
100 PARK AVENUE, SUITE 200
NEW YORK, NY 10017
212-840-0060

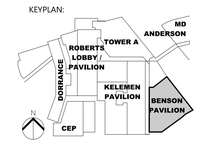
INTROBA
LOW VOLTAGE AV/IT
32 OLD SLIP, 10TH FLOOR
NEW YORK, NY 10006
212-997-5100

VISIONBUILDERS DESIGN
FOOD SERVICES CONSULTANT
1515 SHOPTON ROAD, SUITE 104
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STERILE PROCESSING & VERTICAL TRANSPORTATION CONSULTANT
1400 WILLIAMS ROAD
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KEYPLAN:



ISSUES:

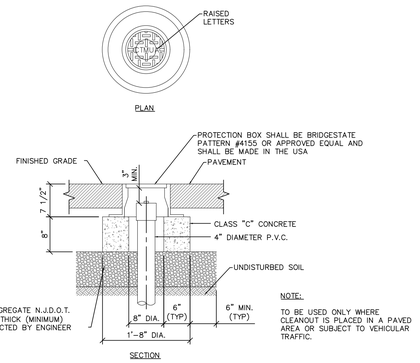
NO.	DESCRIPTION	DATE

PROJECT NO. 7088
CON/REF NO.
DATE 10/08/2026
DCA# NJPRP-XXXXX

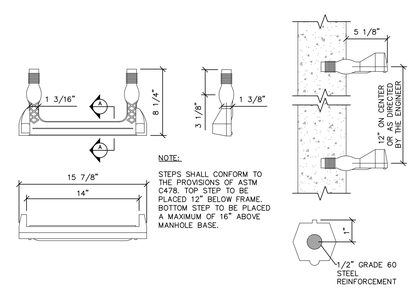
GRADING AND DRAINAGE DETAILS

CG501

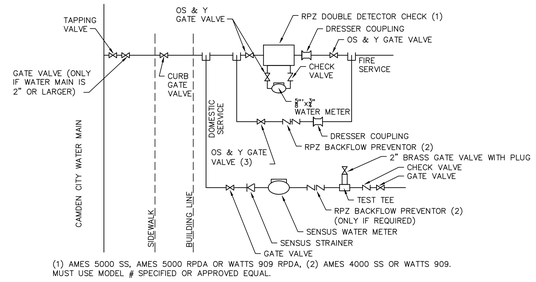
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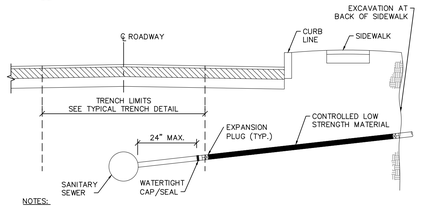
1 CITY OF CAMDEN CLEANOUT PROTECTION BOX
NOT TO SCALE



2 CITY OF CAMDEN COPOLYMER POLYPROPYLENE PLASTIC STEEL REINFORCED MANHOLE STEP
NOT TO SCALE



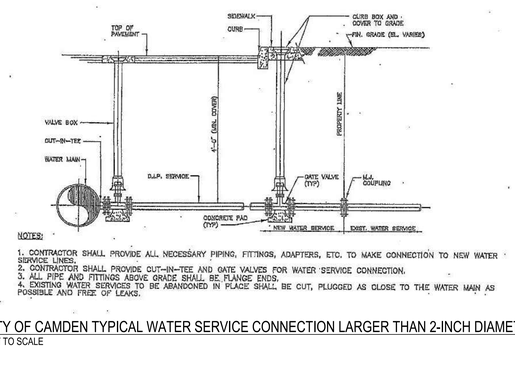
3 CITY OF CAMDEN REQUIREMENTS FOR FIRE AND DOMESTIC WATER LINE AND METER INSTALLATIONS
NOT TO SCALE



NOTES:

1. EXCAVATE AS NECESSARY AT BACK OF SIDEWALK AND AT SEWER MAIN.
2. INSTALL PROPERLY SIZED EXPANSION JOINT PLUGS INTO ABANDONED SEWER LATERAL AS INDICATED 24 INCHES FROM SANITARY SEWER.
3. FILL SEWER LATERAL WITH CONTROLLED LOW STRENGTH MATERIAL AS INDICATED.
4. SEAL SEWER HUB WITH MALE ADAPTER AND CAP OR WITH SECOND EXPANSION JOINT OR AS APPROVED BY THE CITY IN THE FIELD.
5. BACKFILL AS REQUIRED.

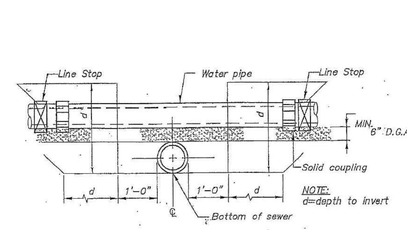
4 CITY OF CAMDEN PLUGGING SEWER LATERALS EXCAVATION METHOD
NOT TO SCALE



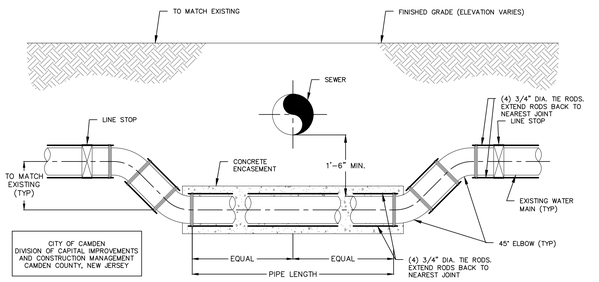
NOTES:

1. CONTRACTOR SHALL PROVIDE ALL NECESSARY PIPING, FITTINGS, ADAPTERS, ETC. TO MAKE CONNECTION TO NEW WATER SERVICE LINES.
2. CONTRACTOR SHALL PROVIDE CUT-IN-TEE AND GATE VALVES FOR WATER SERVICE CONNECTION.
3. ALL PIPE AND FITTINGS ABOVE GRADE SHALL BE FLANGE ENDS.
4. EXISTING WATER SERVICES TO BE ABANDONED IN PLACE SHALL BE CUT, PLUGGED AS CLOSE TO THE WATER MAIN AS POSSIBLE AND FREE OF LEAKS.

5 CITY OF CAMDEN TYPICAL WATER SERVICE CONNECTION LARGER THAN 2-INCH DIAMETER
NOT TO SCALE



6 CITY OF CAMDEN WATER PIPE CROSSING DETAIL W-1
NOT TO SCALE

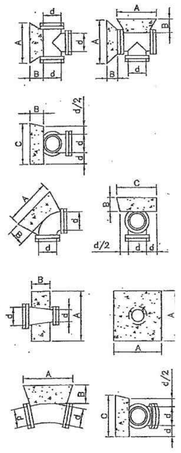


7 CITY OF CAMDEN WATER PIPE CROSSING DETAIL W-2
NOT TO SCALE

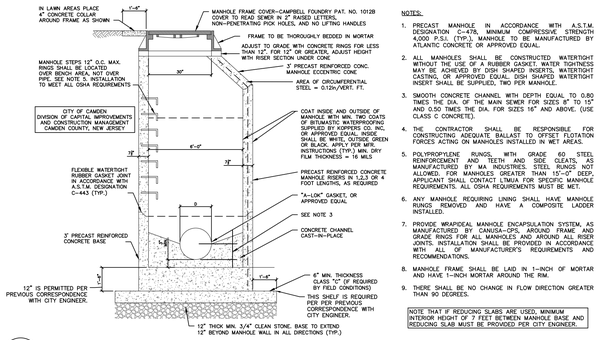
MINIMUM SIZE OF CONCRETE THRUST BLOCKS				
d	6"	8"	10"	12"
TEES & CROSSES				
A	2'-0"	2'-8"	3'-0"	3'-6"
B	8"	8"	10"	10"
C	1'-3"	1'-6"	2'-0"	2'-6"
90° BENDS				
A	2'-6"	3'-0"	3'-6"	3'-9"
B	8"	8"	10"	10"
C	1'-3"	1'-6"	2'-0"	2'-9"
45° BENDS				
A	1'-6"	1'-6"	2'-3"	2'-3"
B	8"	8"	10"	10"
C	1'-3"	1'-9"	2'-0"	2'-6"
22.5° & 11.25° BENDS				
A	1'-6"	1'-6"	1'-6"	1'-6"
B	8"	8"	10"	10"
C	1'-3"	1'-9"	2'-0"	2'-6"
REDUCERS				
dxd	6"x4"	8"x4"	10"x6"	10"x8"
A	1'-6"	2'-0"	2'-4"	2'-6"
B	1'-0"	1'-0"	1'-3"	1'-6"

NOTES:

1. ALL CONCRETE TO HAVE MINIMUM COMPRESSIVE STRENGTH OF 4,500 PSI



8 CITY OF CAMDEN THRUST BLOCK DETAILS
NOT TO SCALE

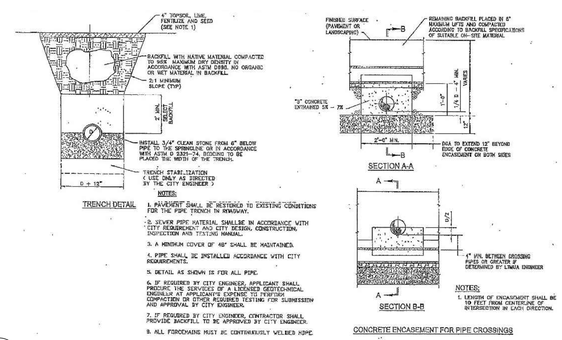


NOTES:

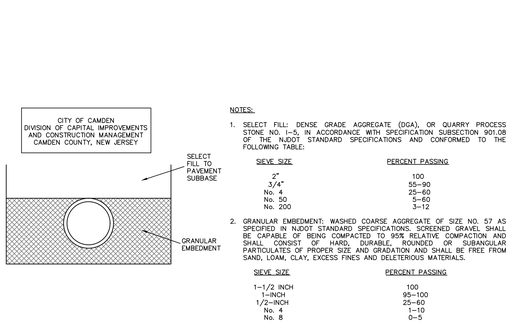
1. PRECAST MANHOLE IN ACCORDANCE WITH A.S.T.M. DESIGNATION C-478, MINIMUM COMPRESSIVE STRENGTH 4,000 P.S.I. (TYP.). MANHOLE TO BE MANUFACTURED BY ATLANTIC CONCRETE OR APPROVED EQUAL.
2. ALL MANHOLES SHALL BE CONSTRUCTED WATERTIGHT WITHOUT THE USE OF A RUBBER GASKET. WATER TIGHTNESS MAY BE ACHIEVED BY DISH SHAPED INSERTS, WATERTIGHT CASTING, OR APPROVED EQUAL. DISH SHAPED WATERTIGHT INSERT SHALL BE SUPPLIED, TWO PER MANHOLE.
3. SMOOTH CONCRETE CHANNEL WITH DEPTH EQUAL TO 0.80 TIMES THE DIA. OF THE MAIN SEWER FOR SIZES 8" TO 15" AND 0.50 TIMES THE DIA. FOR SIZES 16" AND ABOVE. (USE CLASS C CONCRETE).
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTING ADEQUATE BALLAST TO OFFSET FLOTATION FORCES ACTING ON MANHOLES INSTALLED IN WET AREAS.
5. POLYPROPYLENE RUNGS, WITH GRADE 60 STEEL REINFORCEMENT AND TEETH AND SIDE CLEATS, AS MANUFACTURED BY MA INDUSTRIES. STEEL RUNGS NOT ALLOWED. FOR MANHOLES GREATER THAN 15'-0" DEEP, APPLICANT SHALL CONTACT LTMUA FOR SPECIFIC MANHOLE REQUIREMENTS. ALL OSHA REQUIREMENTS MUST BE MET.
6. ANY MANHOLE REQUIRING LINING SHALL HAVE MANHOLE RUNGS REMOVED AND HAVE A COMPOSITE LADDER INSTALLED.
7. PROVIDE WRAPIDSEAL MANHOLE ENCAPSULATION SYSTEM, AS MANUFACTURED BY CANUSA-CPS, AROUND FRAME AND GRADE RINGS FOR ALL MANHOLES AND AROUND ALL RISER JOINTS. INSTALLATION SHALL BE PROVIDED IN ACCORDANCE WITH ALL OF MANUFACTURER'S REQUIREMENTS AND RECOMMENDATIONS.
8. MANHOLE FRAME SHALL BE LAID IN 1-INCH OF MORTAR AND HAVE 1-INCH MORTAR AROUND THE RIM.
9. THERE SHALL BE NO CHANGE IN FLOW DIRECTION GREATER THAN 90 DEGREES.

NOTE THAT IF REDUCING SLABS ARE USED, MINIMUM INTERIOR HEIGHT OF 7 FEET BETWEEN MANHOLE BASE AND REDUCING SLAB MUST BE PROVIDED PER CITY ENGINEER.

9 CITY OF CAMDEN STANDARD PRECAST MANHOLE
NOT TO SCALE



10 CITY OF CAMDEN TRENCH AND CONCRETE ENCASEMENT FOR PIPE CROSSING DETAIL
NOT TO SCALE



NOTES:

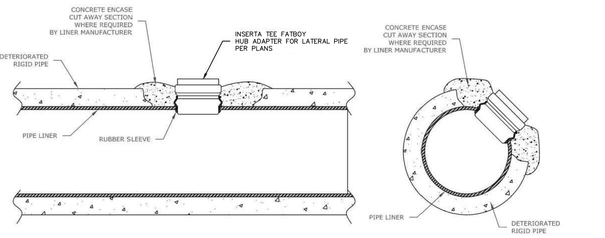
1. SELECT FILL: DENSE GRADE AGGREGATE (DGA), OR QUARRY PROCESS STONE NO. 1-5, IN ACCORDANCE WITH SPECIFICATION SUBSECTION 901.08 OF THE NJDOT STANDARD SPECIFICATIONS AND CONFORMED TO THE FOLLOWING TABLE:

SIEVE SIZE	PERCENT PASSING
2"	100
3/4"	55–90
No. 4	25–60
No. 50	5–60
No. 200	3–12

2. GRANULAR EMBEDMENT: WASHED COARSE AGGREGATE OF SIZE NO. 57 AS SPECIFIED IN NJDOT STANDARD SPECIFICATIONS. SCREENED GRAVEL SHALL BE CAPABLE OF BEING COMPACTED TO 95% RELATIVE COMPACTION AND SHALL CONSIST OF HARD, DURABLE, ROUNDED OR SUBANGULAR PARTICULATES OF PROPER SIZE AND GRADATION AND SHALL BE FREE FROM SAND, LOAM, CLAY, EXCESS FINES AND DELETERIOUS MATERIALS.

SIEVE SIZE	PERCENT PASSING
1-1/2 INCH	100
1-INCH	95–100
1/2-INCH	25–60
No. 4	1–10
No. 8	0–5

11 CITY OF CAMDEN WATERMAIN TRENCH INSTALLATION DETAIL
NOT TO SCALE

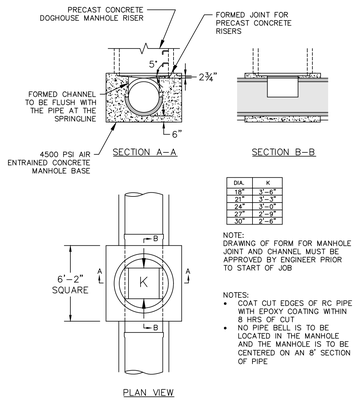


INSTALLATION INSTRUCTIONS:

1. MARK AREA TO BE TAPPED ON SURFACE OF RIGID PIPE. WORKING AREA SHOULD BE 2-INCHES WIDER THAN DIAMETER OF INSERTA TEE.
2. BREAK AWAY RIGID PIPE SECTION TO BE TAPPED AND EXPOSE NEW LINER SECTION.
3. BRUSH AND CLEAN PIPE LINER SURFACE AND REMOVE DAMAGED SECTIONS OF RIGID PIPE.
4. CORE HOLE INTO LINER WITH APPROPRIATE INSERTA TEE HOLE SAW.
5. INSTALL INSERTA TEE FATBOY® TAP CONNECTION PER PROVIDED INSTALLATION INSTRUCTIONS.
6. ENCASE CUT OUT SECTION OF RIGID PIPE WITH CONCRETE WHERE REQUIRED BY LINING MANUFACTURER.

NEW LATERAL CONNECTIONS TO BE INSTALLED USING AN APPROPRIATELY SIZED CORING MACHINE.

12 INSERTA- TEE SEWER CONNECTION
NOT TO SCALE



DIA.	K
18"	3'-6"
21"	3'-3"
24"	3'-0"
27"	2'-9"
30"	2'-6"

NOTE:
DRAWING OF FORM FOR MANHOLE JOINT AND CHANNEL MUST BE APPROVED BY ENGINEER PRIOR TO START OF JOB

NOTES:

- COAT CUT EDGES OF RC PIPE WITH EPOXY COATING WITHIN 8 HRS OF CUT
- NO PIPE BELL IS TO BE LOCATED IN THE MANHOLE AND THE MANHOLE IS TO BE CENTERED ON AN 8' SECTION OF PIPE

13 DOGHOUSE MANHOLE (REFERENCED FROM PHILADELPHIA WATER DEPARTMENT)
NOT TO SCALE

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PROJECT:

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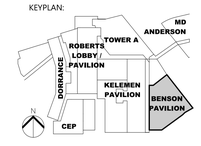
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KEYPLAN:



ISSUES:

NO.	DESCRIPTION	DATE

PROJECT NO. 7088
CON/REF NO.
DATE 10/08/2026
DCA# NJPRP-XXXXX

UTILITY DETAILS

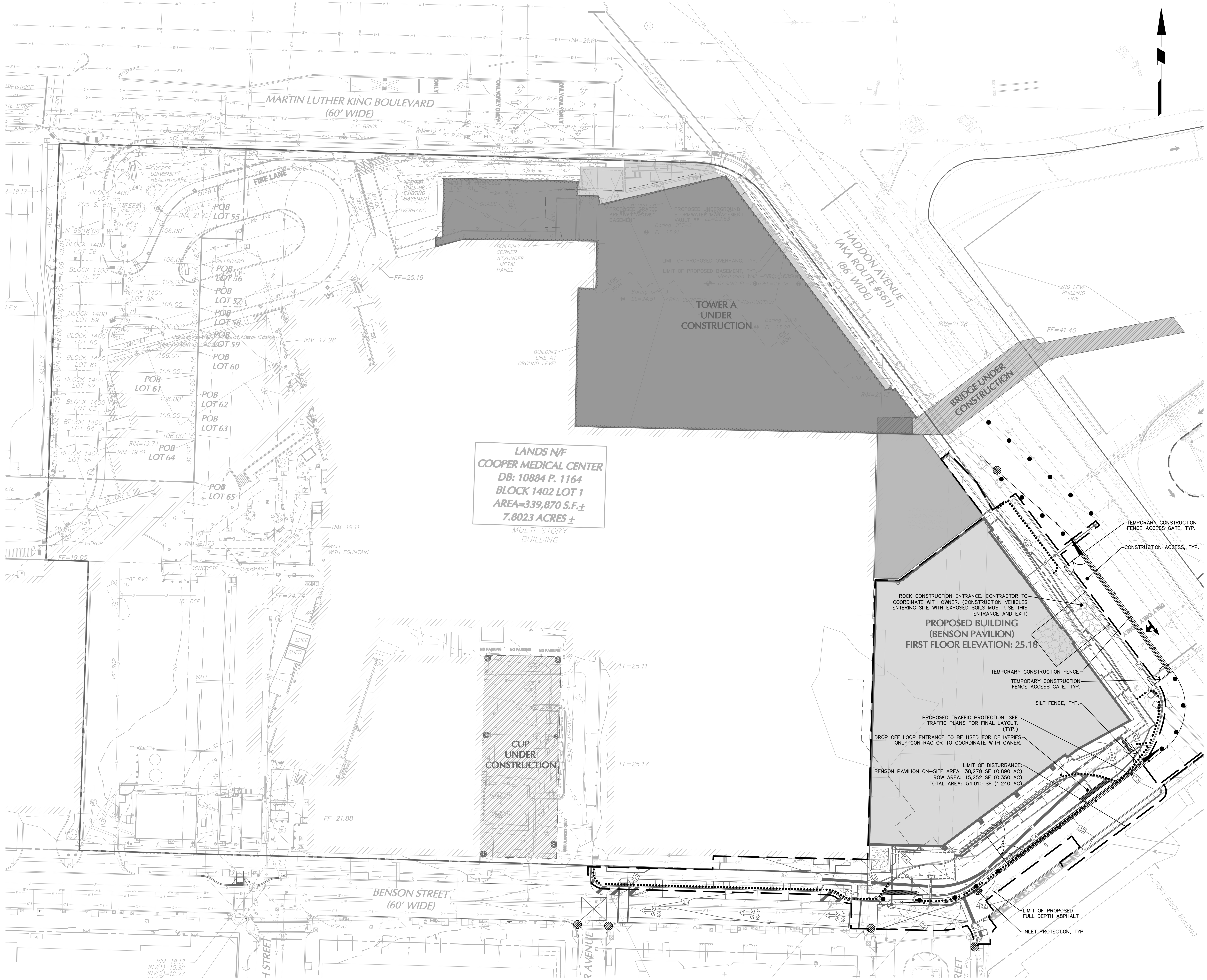
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EROSION AND SEDIMENT CONTROL NOTES

1. THE CONTRACTOR SHALL VERIFY ALL INFORMATION TO THEIR SATISFACTION PRIOR TO THE EXECUTION OF CONTRACTS OR COMMENCING WORK. ANY DISCREPANCIES SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER OF RECORD.
2. BOUNDARY INFORMATION AND EXISTING FEATURES SHOWN HEREON ARE BASED ON "BOUNDARY AND TOPOGRAPHIC SURVEY" DATED 09/23/2026 PREPARED BY LANGAN ENGINEERING AND ENVIRONMENTAL SERVICES, INC.
3. THE MERIDIAN OF THE PLAN IS REFERENCED TO THE NEW JERSEY STATE PLANE COORDINATE SYSTEM (NAD 83) 2011 DERIVED USING SURVEY-GRADE GNSS EQUIPMENT.
4. TOPOGRAPHIC INFORMATION SHOWN HEREON HAS BEEN OBTAINED FROM GROUND SURVEYS BY LANGAN ENGINEERING AND ENVIRONMENTAL SERVICES, INC. DURING JULY 2023 AND AUGUST 2026.
5. ELEVATIONS SHOWN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) DERIVED USING SURVEY-GRADE GNSS EQUIPMENT.
6. CONVERSION FROM NAVD 1988 TO NGVD IS AS FOLLOWS: EL. 17.00 (NAVD 88) + 1.09 = EL. 18.09 (NGVD 29)
7. AS AS PER THE NATIONAL FLOOD INSURANCE PROGRAM FIRM MAPS TITLED, CAMDEN COUNTY, NEW JERSEY, COMMUNITY PANEL 28 OF 305, MAP NUMBER 34007C0028F. LAST REVISED 08/17/2016. THE PROPERTY PRIMARILY LIES IN "OTHER AREAS", NOT WITHIN FLOOD AREA.

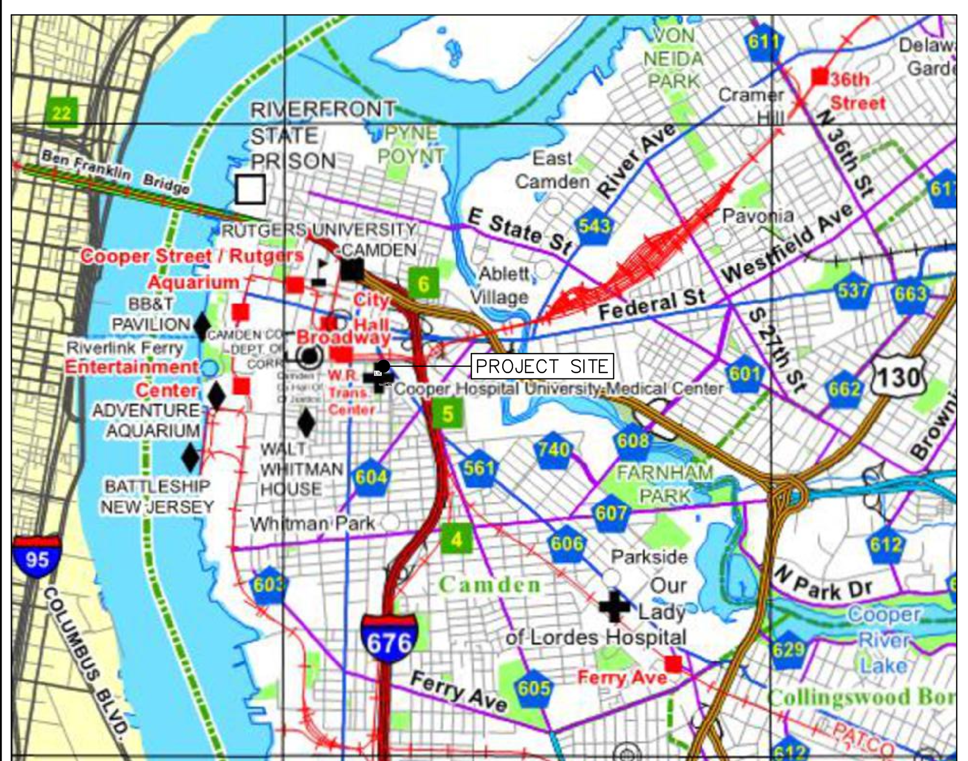
EXISTING INFORMATION SHOWN IN BACKGROUND IN MD ANDERSON CANCER CENTER AND KELEMEN CDU ADDITION AREAS IS BASED ON A COMBINATION OF PREDEVELOPMENT FIELD SURVEY AND PROPOSED DESIGN DRAWINGS. CONTRACTOR SHALL USE DESIGN INFORMATION AS A GUIDE TO MEET INTENT, BUT MUST ULTIMATELY TIE INTO AS-BUILT CONDITIONS IN FIELD.



LEGEND

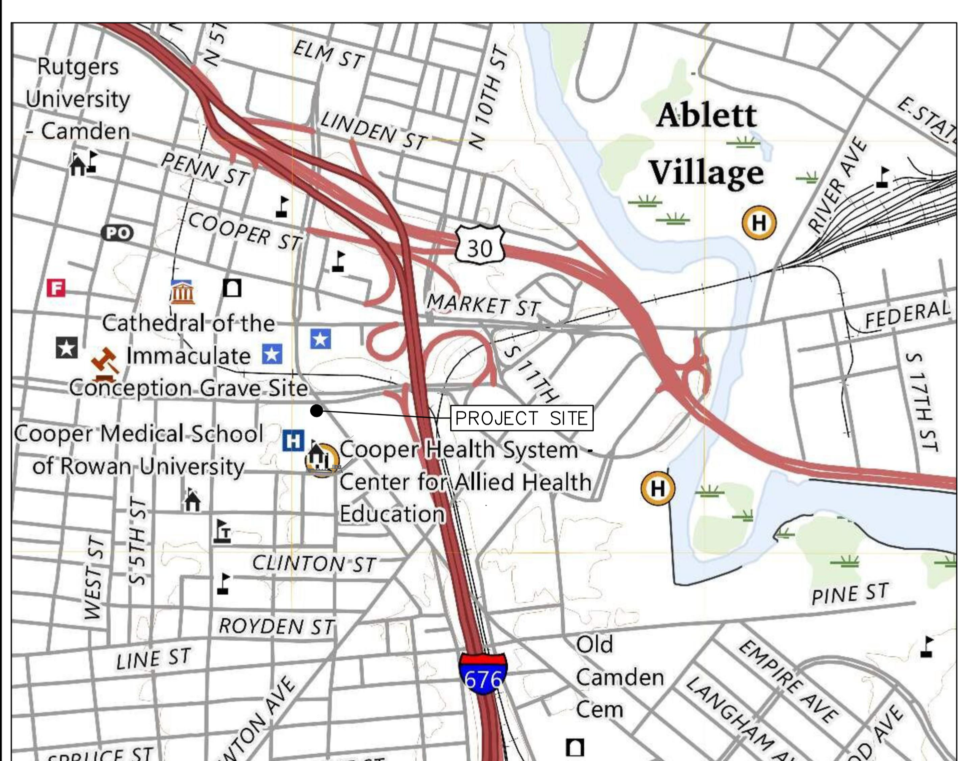
- PROPERTY LINE
- LIMIT OF DISTURBANCE
- SILT FENCE
- INLET PROTECTION
- PROPOSED 1 FOOT CONTOUR LINE

30 0 15 30
SCALE: 1 INCH = 30 FEET



LOCATION MAP

SOURCE: NJ DEPT. OF TRANSPORTATION SCALE: 1" = 3,000'



USGS MAP

SOURCE: USGS SCALE: 1" = 1,000'

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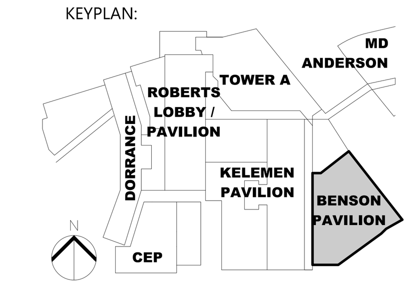
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1400 WILLIAMS ROAD
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KEYPLAN:



ISSUES:

NO.	DESCRIPTION	DATE

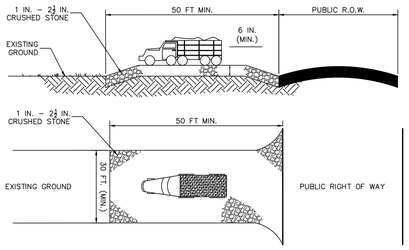
PROJECT NO. 7088
CON/REF NO.
DATE 10/08/2026

DCA# NJPRP-XXXXX

SOIL EROSION AND SEDIMENT CONTROL PLAN

CE101

Date: 10/7/2026 Time: 16:10 User: jlees Style Table: Langan.stb Layout: CE101 Document Code: 220245001-0502-CE101-0101



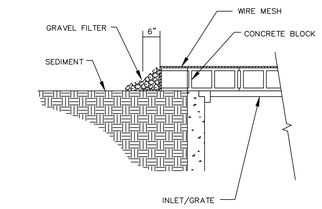
NOTES:

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO ROADWAYS. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR ADDITIONAL LENGTH AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO ROADWAYS (PUBLIC OR PRIVATE) OR OTHER IMPERVIOUS SURFACES MUST BE REMOVED IMMEDIATELY.

2. WHERE ACCUMULATION OF DUST/SEDIMENT IS INADEQUATELY CLEANED OR REMOVED BY CONVENTIONAL METHODS, A POWER BROOM OR STREET SWEEPER WILL BE REQUIRED TO CLEAN PAVED OR IMPERVIOUS SURFACES. ALL OTHER ACCESS POINTS WHICH ARE NOT STABILIZED SHALL BE BLOCKED OFF.

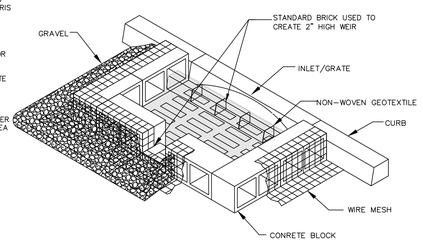
CONSTRUCTION SPECIFICATIONS

1. LAY CONCRETE BLOCKS ON SIDES ALONG OUTER EDGE OF GRATE. FOR CURB INLET LAY BLOCKS ALONG 3 SIDES AND BUTT BLOCKS UP AGAINST CURB PIECE.
2. PLACE 1/2" WIRE MESH ALONG BLOCK OPENINGS, WRAPPED OVER TOP OF BLOCKS AND EXTEND A MINIMUM OF SIX INCHES FROM FACE OF BLOCKS, AS SHOWN, TO SUPPORT STONE. 3
3. USE CLEAN CRUSHED GRAVEL – 1 INCH IN DIAMETER PLACED 4 ALONG WIRE MESH/BLOCK OPENINGS AT A WIDTH OF AT LEAST 12 INCHES.
4. USING STANDARD BRICK CREATE WEIR ALONG FRONT FACE, AS SHOWN, TO ALLOW FLOW FROM SIGNIFICANT STORM EVENTS TO PASS FREELY.
5. CLEAN SEDIMENT DEPOSITS AFTER EVERY STORM.
6. AFTER SITE HAS BEEN STABILIZED, INLET STRUCTURES TO BE CLEANED OF ALL ROCK, SEDIMENT, AND DEBRIS FOLLOWING REMOVAL OF FILTER FABRIC.



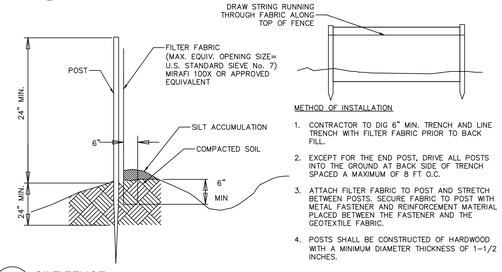
NOTES:

1. DETAIL PREPARED SPECIFICALLY FOR DELATLANTIC SOIL CONSERVATION DISTRICT BY LANGAN.
2. FLAT GRATES TO RECEIVE CONCRETE BLOCKS ON ALL FOUR SIDES.
3. INSPECTIONS SHALL BE FREQUENT. MAINTENANCE, REPAIR, AND REPLACEMENT SHALL BE MADE PROMPTLY, AS NEEDED. THE BARRIER SHALL BE REMOVED WHEN THE AREA DRAINING TOWARD THE INLET HAS BEEN STABILIZED.



1 INLET PROTECTION
NOT TO SCALE

2 STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE



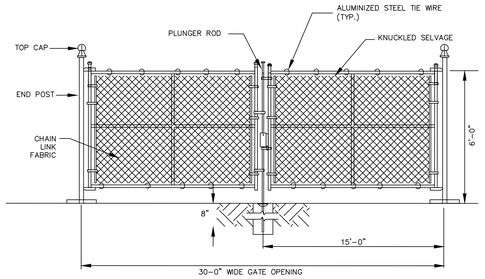
METHOD OF INSTALLATION

1. CONTRACTOR TO DIG 6" MIN. TRENCH AND LINE TRENCH WITH FILTER FABRIC PRIOR TO BACK FILL.
2. EXCEPT FOR THE END POST, DRIVE ALL POSTS INTO THE GROUND AT BACK SIDE OF TRENCH SPACED A MAXIMUM OF 8 FT O.C.
3. ATTACH FILTER FABRIC TO POST AND STRETCH BETWEEN POSTS. SECURE FABRIC TO POST WITH METAL FASTENER AND REINFORCEMENT MATERIAL PLACED BETWEEN THE FASTENER AND THE GEOTEXTILE FABRIC.
4. POSTS SHALL BE CONSTRUCTED OF HARDWOOD WITH A MINIMUM DIAMETER THICKNESS OF 1-1/2 INCHES.

NOTES

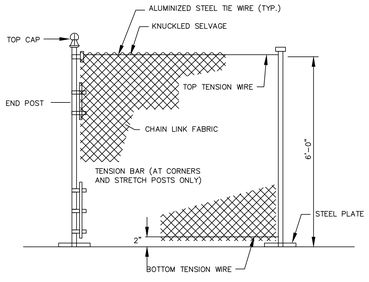
1. SEDIMENT SHALL BE REMOVED FROM THE UPSTREAM FACE OF THE BARRIER WHEN IT HAS REACHED A DEPTH OF ½ THE BARRIER HEIGHT.
2. REPAIR OR REPLACE BARRIER (FABRIC, POSTS, BALES, ETC.) WHEN DAMAGED.
3. BARRIERS SHALL BE INSPECTED DAILY FOR SIGNS OF DETERIORATION AND SEDIMENT REMOVAL.

3 SILT FENCE
NOT TO SCALE



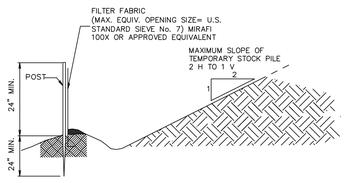
NOTE: GATE AND FENCE DETAILS PROVIDED PER REFERENCE. CONTRACTOR SHALL COORDINATE SITE SPECIFIC SECURITY REQUIREMENTS WITH FENCE PROVIDER AND ENSURE THAT FENCES ARE ADEQUATELY SUPPORTED FOR WIND LOADS.

4 TEMPORARY CONSTRUCTION FENCE ACCESS GATE
NOT TO SCALE



NOTE: GATE AND FENCE DETAILS PROVIDED PER REFERENCE. CONTRACTOR SHALL COORDINATE SITE SPECIFIC SECURITY REQUIREMENTS WITH FENCE PROVIDER AND ENSURE THAT FENCES ARE ADEQUATELY SUPPORTED FOR WIND LOADS.

5 TEMPORARY CONSTRUCTION FENCE
NOT TO SCALE



6 TEMPORARY STOCKPILE
NOT TO SCALE

DELATLANTIC SOIL EROSION AND SEDIMENT CONTROL NOTES

1. ALL APPLICABLE EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE IN PLACE PRIOR TO ANY GRADING OPERATION AND/OR INSTALLATION OF PROPOSED STRUCTURES OR UTILITIES.
2. SOIL EROSION AND SEDIMENT CONTROL PRACTICES ON THIS PLAN SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY.
3. APPLICABLE EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE LEFT IN PLACE UNTIL CONSTRUCTION IS COMPLETED AND/OR THE AREA IS STABILIZED.
4. THE CONTRACTOR SHALL PERFORM ALL WORK, FURNISH ALL MATERIALS AND INSTALL ALL MEASURES REQUIRED TO REASONABLY CONTROL SOIL EROSION RESULTING FROM CONSTRUCTION OPERATIONS AND PREVENT EXCESSIVE FLOW OF SEDIMENT FROM THE CONSTRUCTION SITE.
5. ANY DISTURBED AREA THAT IS TO BE LEFT EXPOSED FOR MORE THAN THIRTY (30) DAYS AND NOT SUBJECT TO CONSTRUCTION TRAFFIC SHALL IMMEDIATELY RECEIVE A TEMPORARY SEEDING AND FERTILIZATION IN ACCORDANCE WITH THE NEW JERSEY STANDARDS AND THEIR RATES SHOULD BE INCLUDED IN THE NARRATIVE. IF THE SEASON PROHIBITS TEMPORARY SEEDING, THE DISTURBED AREAS WILL BE MULCHED WITH SALT HAY OR EQUIVALENT AND ANCHORED IN ACCORDANCE WITH THE NEW JERSEY STANDARDS (I.E. PEG AND TWINE, MULCH NETTING OR LIQUID MULCH BINDER).
6. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE CONFIRMATION OF LIME, FERTILIZER AND SEED APPLICATION AND RATES OF APPLICATION AT THE REQUEST OF THE CAMDEN COUNTY SOIL CONSERVATION DISTRICT.
7. ALL CRITICAL AREAS SUBJECT TO EROSION WILL RECEIVE A TEMPORARY SEEDING IN COMBINATION WITH STRAW MULCH AT A RATE OF 2 TONS PER ACRE, ACCORDING TO THE NEW JERSEY STANDARDS IMMEDIATELY FOLLOWING ROUGH GRADING.
8. THE SITE SHALL AT ALL TIMES BE GRADED AND MAINTAINED SUCH THAT ALL STORMWATER RUNOFF IS DIVERTED TO SOIL EROSION AND SEDIMENT CONTROL FACILITIES.
9. ALL SEDIMENTATION STRUCTURES WILL BE INSPECTED AND MAINTAINED ON A REGULAR BASIS AND AFTER EVERY STORM EVENT.
10. A CRUSHED STONE, TIRE CLEANING PAD WILL BE INSTALLED WHEREVER A CONSTRUCTION ACCESS EXISTS. THE STABILIZED PAD WILL BE INSTALLED ACCORDING TO THE STANDARD FOR STABILIZED CONSTRUCTION ACCESS
11. ALL DRIVEWAYS MUST BE STABILIZED WITH 2 ½" CRUSHED STONE OR SUBBASE PRIOR TO INDIVIDUAL LOT CONSTRUCTION.
12. PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES.
13. ALL CATCH BASIN INLETS WILL BE PROTECTED ACCORDING TO THE CERTIFIED PLAN.
14. ALL STORM DRAINAGE OUTLETS WILL BE STABILIZED, AS REQUIRED, BEFORE THE DISCHARGE POINTS BECOME OPERATIONAL.
15. NJSA 4:24–39, ET SEQ. REQUIRES THAT NO CERTIFICATE OF OCCUPANCY BE ISSUED BEFORE ALL PROVISIONS OF THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLAN HAVE BEEN COMPLIED WITH FOR PERMANENT MEASURES. ALL SITE WORK FOR THE PROJECT MUST BE COMPLETED PRIOR TO THE DISTRICT ISSUING A REPORT OF COMPLIANCE AS A PREREQUISITE TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY BY THE MUNICIPALITY.
16. MULCHING IS REQUIRED ON ALL SEEDED AREAS TO INSURE AGAINST EROSION BEFORE GRASS IS ESTABLISHED TO PROMOTE EARLIER VEGETATION COVER.
17. OFFSITE SEDIMENT DISTURBANCE MAY REQUIRE ADDITIONAL CONTROL MEASURES TO BE DETERMINED BY THE EROSION CONTROL INSPECTOR.
18. A COPY OF THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLAN MUST BE MAINTAINED ON THE PROJECT SITE DURING CONSTRUCTION.
19. THE DELATLANTIC SOIL CONSERVATION DISTRICT MUST BE NOTIFIED 48 HOURS PRIOR TO ANY LAND DISTURBANCE.
20. ANY CONVEYANCE OF THIS PROJECT PRIOR TO ITS COMPLETION WILL TRANSFER FULL RESPONSIBILITY FOR COMPLIANCE WITH THE CERTIFIED PLAN TO ANY SUBSEQUENT OWNERS.
21. IMMEDIATELY AFTER THE COMPLETION OF STRIPPING AND STOCKPILING OF TOPSOIL, THE STOCKPILE MUST BE STABILIZED ACCORDING TO THE STANDARD FOR TEMPORARY VEGETATIVE COVER. STABILIZE TOPSOIL PILE WITH STRAW MULCH FOR PROTECTION IF THE SEASON DOES NOT PERMIT THE APPLICATION AND ESTABLISHMENT OF TEMPORARY SEEDING. ALL SOIL STOCKPILES ARE NOT TO BE LOCATED WITHIN FIFTY (50) FEET OF A FLOODPLAIN, SLOPE, ROADWAY OR DRAINAGE FACILITY AND THE BASE MUST BE PROTECTED WITH A SEDIMENT BARRIER.
22. ANY CHANGES TO THE SITE PLAN WILL REQUIRE THE SUBMISSION OF A REVISED SOIL EROSION AND SEDIMENT CONTROL PLAN TO THE DELATLANTIC SOIL CONSERVATION DISTRICT. THE REVISED PLAN MUST BE IN ACCORDANCE WITH THE CURRENT NEW JERSEY STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL.
23. METHODS FOR THE MANAGEMENT OF HIGH ACID PRODUCING SOILS SHALL BE IN ACCORDANCE WITH THE STANDARDS. HIGH ACID PRODUCING SOILS ARE THOSE FOUND TO CONTAIN IRON SULFIDES OR HAVE A pH OF 4 OR LESS.
24. TEMPORARY AND PERMANENT SEEDING MEASURES MUST BE APPLIED ACCORDING TO THE NEW JERSEY STANDARDS, AND MULCHED WITH SALT HAY OR EQUIVALENT AND ANCHORED IN ACCORDANCE WITH THE NEW JERSEY STANDARDS (I.E. PEG AND TWINE, MULCH NETTING OR LIQUID MULCH BINDER).
25. MAXIMUM SIDE SLOPES OF ALL EXPOSED SURFACES SHALL NOT BE CONSTRUCTED STEEPER THAN 3:1 UNLESS OTHERWISE APPROVED BY THE DISTRICT.
26. DUST IS TO BE CONTROLLED BY AN APPROVED METHOD ACCORDING TO THE NEW JERSEY STANDARDS AND MAY INCLUDE WATERING WITH A SOLUTION OF CALCIUM CHLORIDE AND WATER.
27. ADJOINING PROPERTY SHALL BE PROTECTED FROM EXCAVATION AND FILLING OPERATIONS ON THE PROPOSED SITE.
28. USE STAGED CONSTRUCTION METHODS TO MINIMIZE EXPOSED SURFACES, WHERE APPLICABLE.
29. ALL VEGETATIVE MATERIAL SHALL BE SELECTED IN ACCORDANCE WITH AMERICAN STANDARDS FOR NURSERY STOCK OF THE AMERICAN ASSOCIATION OF THE NURSERYMEN AND IN ACCORDANCE WITH THE NEW JERSEY STANDARDS.
30. NATURAL VEGETATION AND SPECIES SHALL BE RETAINED WHERE SPECIFIED ON THE LANDSCAPE PLAN.
31. THE SOIL EROSION INSPECTOR MAY REQUIRE ADDITIONAL SOIL EROSION MEASURES TO BE INSTALLED, AS DIRECTED BY THE DISTRICT INSPECTOR.

SCHEDULE OF CONSTRUCTION OPERATIONS

	ACTIVITY DURATION
1. NOTIFY THE DELATLANTIC SOIL CONSERVATION DISTRICT IN WRITING AT LEAST 72 HOURS PRIOR TO ANY PROJECT PRE CONSTRUCTION MEETING OR SITE DISTURBANCES.	---
2. INSTALL A CRUSHED STONE, VEHICLE WHEEL–CLEANING BLANKET OF 1 IN. TO 21/2 IN. WASHED STONE 6 IN. DEEP AT THE CONSTRUCTION ENTRANCE(S) IMMEDIATELY AFTER INITIAL DISTURBANCES AS PER STANDARDS ON DRAWINGS. SITE TRAFFIC SHOULD USE ONLY THESE AREAS FOR INGRESS AND EGRESS. INSTALL SILT FENCE AND BARRIERS, EQUIP ALL EXISTING CATCH BASINS WITH FILTER FABRIC INLET PROTECTION IMMEDIATELY UPON START OF CONSTRUCTION. CLEAR AND GRUB AREAS CONTAINING VEGETATION AS REQUIRED TO COMMENCE CONSTRUCTION.	1 WEEK
3. INSTALL REMAINDER OF TEMPORARY SOIL EROSION & SEDIMENT CONTROL MEASURES, IMMEDIATELY AFTER INITIAL DISTURBANCES. TRAFFIC SHOULD USE ONLY THIS AREA FOR INGRESS AND EGRESS. PLACE AND MAINTAIN SEDIMENT BARRIERS AS SHOWN ON THE PLAN.	2 WEEKS
4. CONSTRUCT STOCKPILE AND STABILIZE.	---
5. ANY DISTURBED AREAS THAT WILL BE LEFT EXPOSED MORE THAN THIRTY (30) DAYS, AND NOT SUBJECT TO CONSTRUCTION TRAFFIC, WILL IMMEDIATELY RECEIVE A TEMPORARY SEEDING. IF THE SEASON PREVENTS THE ESTABLISHMENT OF TEMPORARY COVER, THE DISTURBED AREAS WILL BE MULCHED WITH STRAW, OR EQUIVALENT MATERIAL, AT A RATE OF 2 TO 2 ½ TONS PER ACRE, ACCORDING TO STATE STANDARD FOR STABILIZATION WITH MULCH ONLY.	---
6. PROPOSED SITE IMPROVEMENTS SHALL ONLY BE STARTED AFTER RECEIVING SITE PLAN APPROVAL FROM THE REGULATORY AGENCIES HAVING JURISDICTION AND CERTIFICATION OF THE SITE CONSTRUCTION SOIL EROSION AND SEDIMENT CONTROL PLAN FROM THE DELATLANTIC SOIL CONSERVATION DISTRICT.	---
7. ALL SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED UNTIL ALL IMPROVEMENTS TO THE SITE ARE COMPLETE, THE ROADS AND PARKING AREAS ARE PAVED, AND THE VEGETATIVE COVER IS 70% OR GREATER IN NON–PAVED AREAS.	---
8. COMPLETE DEMOLITION OF SITE FEATURES AND EXCAVATION.	3 MONTHS
9. PROVIDE TEMPORARY PIPING FOR EXISTING UTILITIES FROM KELEMEN.	1 MONTH
10. COMPLETE BUILDING FOUNDATIONS.	6 MONTHS
11. COMPLETE BUILDING BASEMENT, BELOW GRADE UTILITIES, AND STORMWATER BASIN AND OUTLET CONTROL STRUCTURES.	2 MONTHS
12. COMPLETE CONSTRUCTION OF ROUGH GRADING, STORMWATER VAULT, AND STORM IMPROVEMENTS INCLUDING OUTLET CONTROL STRUCTURES.	6 MONTHS
13. AFTER STORM DRAINAGE SYSTEM AND CATCH BASINS ARE CONSTRUCTED PLACE FILTER FABRIC INLET PROTECTION ON EACH CATCH BASIN WHICH SHALL REMAIN UNTIL THE SITE IS PAVED. REPLACE AS NECESSARY.	---
14. COMPLETE BELOW–GRADE UTILITIES AND FOUNDATION	3 MONTHS
15. BUILDING CONSTRUCTION.	8 MONTHS
16. COMPLETE FINAL SITE GRADING, CURB, ASPHALT PAVING AND SIDEWALK INSTALLATION.	2 MONTHS
17. ALL SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED UNTIL ALL PERMANENT IMPROVEMENTS TO THE SITE ARE COMPLETE AND THE ROADS ARE PAVED.	---
18. LANDSCAPE ALL APPROPRIATE AREAS AS INDICATED ON THE LANDSCAPE PLAN AND REMOVE ALL TEMPORARY SEDIMENT CONTROL STRUCTURES AND MEASURES. PERMANENTLY STABILIZE ALL AREAS.	1 MONTH
19. A UNIFORM APPLICATION TO AN AVERAGE DEPTH OF 5", MINIMUM OF 4" FIRMED IN PLACE IS REQUIRED. SHOULD ENVIRONMENTAL REQUIREMENTS FOR THE SITE SPECIFY MORE THAN A MINIMUM OF 4", ENVIRONMENTAL REQUIREMENTS SHALL DICTATE.	1 WEEK
20. CLEAN ALL SITE DRAINAGE STRUCTURES AND PIPES OF SILT AND DEBRIS. DOWNSTREAM/OFF–SITE DRAINAGE FACILITIES SHALL BE INSPECTED AND CLEANED OF SILT AND DEBRIS RESULTING FROM SITE CONSTRUCTION PRIOR TO FINAL TURNOVER.	2 WEEKS
21. NOTIFY THE DELATLANTIC SOIL CONSERVATION DISTRICT AT THE COMPLETION OF CONSTRUCTION.	---

DUST CONTROL NOTES

MATERIAL	WATER DILUTION	TYPE OF NOZZLE	APPLY GALLONS/ACRE
ANIONIC ASPHALT EMULSION	7:1	COARSE SPRAY	1200
LATEX EMULSION	12.5:1	FINE SPRAY	235
RESIN IN WATER	4:1	FINE SPRAY	300
POLYACRYLAMIDE (PAM) – SPRAY ON	APPLY ACCORDING TO MANUFACTURER'S INSTRUCTIONS.		
POLYACRYLAMIDE (PAM) – DRY SPREAD	MAY ALSO BE USED AS AN ADDITIVE TO SEDIMENT BASINS TO FLOCCULATE AND PRECIPITATE SUSPENDED COLLOIDS.		
ACIDULATED SOY BEAN SOAP STICK	NONE	COARSE SPRAY	1200

TILLAGE – TO ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE. THIS IS A TEMPORARY EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS. BEGIN PLOWING ON WINDWARD SIDE OF SITE. CHISEL–TYPE PLOWS SPACED ABOUT 12 INCHES APART AND SPRING–TOOTHED HARROWS ARE EXAMPLES OF EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT.

SPRINKLING – SITE IS SPRINKLED UNTIL THE SURFACE IS WET.

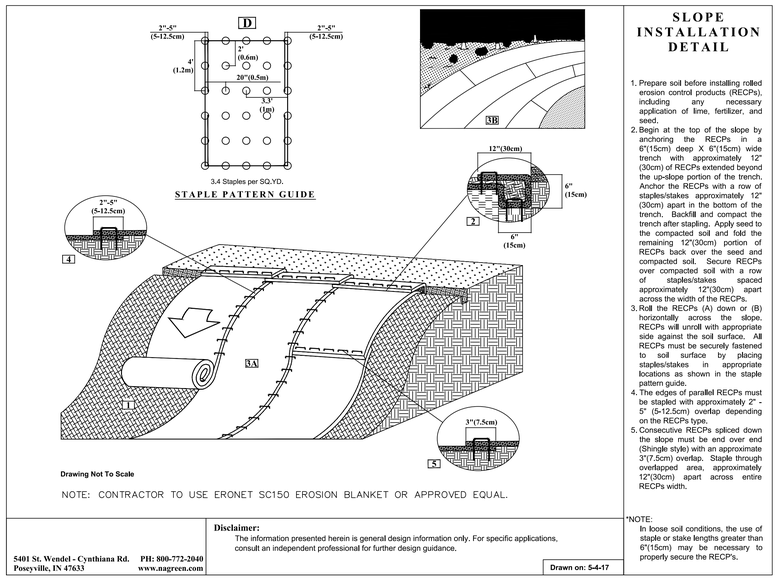
BARRIERS – SOLID BOARD FENCES, SNOW FENCES, BURLAP FENCES, CRATE WALLS, BALES OF HAY AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING.

CALCIUM CHLORIDE – SHALL BE IN THE FORM OF LOOSE, DRY GRANULES OR FLAKES FINE ENOUGH TO FEED THROUGH COMMONLY USED SPREADERS AT A RATE THAT WILL KEEP SURFACE MOIST BUT NOT CAUSE POLLUTION OR PLANT DAMAGE. IF USED ON STEEPER SLOPES, THEN USE OTHER PRACTICES TO PREVENT WASHING INTO STREAMS OR ACCUMULATION AROUND PLANTS.

STONE – COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL

DISTRICT CONTACT INFORMATION

DELATLANTIC
SOIL CONSERVATION DISTRICT
408 COMMERCE LANE
WEST BERLIN, NJ 08091
PHONE: (856) 767-6299



NOTE: CONTRACTOR TO USE ERONET SC150 EROSION BLANKET OR APPROVED EQUAL.

SLOPE INSTALLATION DETAIL

1. Prepare soil before installing rolled erosion control products (RECPs), including any necessary application of lime, fertilizer, and seed.
2. Begin at the top of the slope by anchoring the RECPs in a 6"(15cm) deep X 6"(15cm) wide trench with approximately 12" (30cm) of RECPs extended beyond the up-slope portion of the trench. Anchor the RECPs with a row of staples/stakes approximately 12" (30cm) apart in the bottom of the trench. Backfill and compact the trench after stapling. Apply seed to the compacted soil and fold the remaining 12"(30cm) portion of RECPs back over the seed and compacted soil. Secure RECPs over compacted soil with a row of staples/stakes spaced approximately 12"(30cm) apart across the width of the RECPs.
3. Roll the RECPs (A) down or (B) horizontally across the slope. RECPs will unroll with appropriate side against the soil surface. All RECPs must be securely fastened to soil surface by placing staples/stakes in appropriate locations as shown in the staple pattern guide.
4. The edges of parallel RECPs must be stapled with approximately 2" - 5" (5-12.5cm) overlap depending on the RECPs type.
5. Consecutive RECPs spliced down the slope must be end over end (Shingle style) with an approximate 3"(7.5cm) overlap. Staple through overlapped area, approximately 12"(30cm) apart across entire RECPs width.

*NOTE:
In loose soil conditions, the use of staple or stake lengths greater than 6"(15cm) may be necessary to properly secure the RECP's.

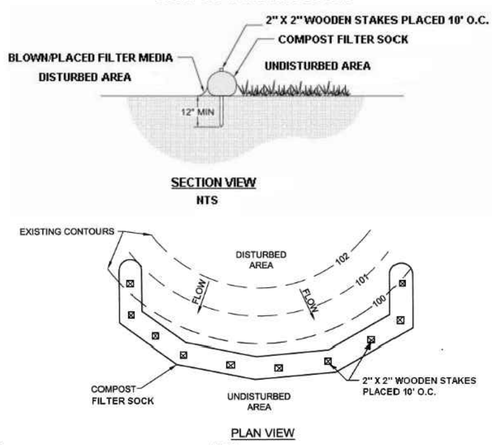
5401 St. Wendel - Cynthiana Rd. PH: 800-772-2040
Poseyville, IN 47633 www.nagreen.com

Disclaimer:
The information presented herein is general design information only. For specific applications, consult an independent professional for further design guidance.

Drawn on: 5-4-17

7 EROSION CONTROL MATTING
NOT TO SCALE

COMPOST FILTER SOCK



Filtrexx

8 COMPOST FILTER SOCK
NOT TO SCALE

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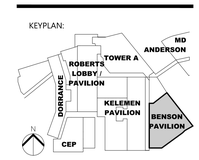
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SOIL EROSION AND SEDIMENT CONTROL DETAILS AND NOTES 1

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SOIL STABILIZATION NOTES

TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION
TEMPORARY VEGETATIVE COVER SHALL BE IN ACCORDANCE WITH "STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY"

METHODS AND MATERIALS:

1. SITE PREPARATION
   A. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING. ALL GRADING SHOULD BE DONE IN ACCORDANCE WITH STANDARDS FOR LAND GRADING, PG. 19–1.
   B. INSTALL NEEDED EROSION CONTROL PRACTICES OR FACILITIES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS. SEE STANDARDS 11 THROUGH 42.
   C. IMMEDIATELY PRIOR TO SEEDING, THE SURFACE SHOULD BE SCARIFIED 6" TO 12" WHERE THERE HAS BEEN SOIL COMPACTION. THIS PRACTICE IS PERMISSIBLE ONLY WHERE THERE IS NO DANGER TO UNDERGROUND UTILITIES (CABLES, IRRIGATION SYSTEMS, ETC.).

2. SEEDBED PREPARATION
   A. APPLY GROUND LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS SUCH AS OFFERED BY RUTGERS CO–OPERATIVE EXTENSION. SOIL SAMPLE MAILERS ARE AVAILABLE FROM THE LOCAL RUTGERS COOPERATIVE EXTENSION OFFICES. FERTILIZER SHALL BE APPLIED AT THE RATE OF 500 POUNDS PER ACRE OR 11 POUNDS PER 1,000 SQUARE FEET OF 10–20–10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN UNLESS A SOIL TEST INDICATES OTHERWISE. APPLY LIMESTONE AT THE RATE OF 2 TONS/ACRE UNLESS SOIL TESTING INDICATES OTHERWISE. CALCIUM CARBONATE IS THE EQUIVALENT AND STANDARD FOR MEASURING THE ABILITY OF LIMING MATERIALS TO NEUTRALIZE SOIL ACIDITY AND SUPPLY CALCIUM AND MAGNESIUM TO GRASSES AND LEGUMES.
   B. WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC, SPRINGTOOTH HARROW, OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OR DISKING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLE UNIFORM SEEDBED IS PREPARED.
   C. INSPECT SEEDBED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED, THE AREA MUST BE RETILLED IN ACCORDANCE WITH THE ABOVE.
   D. SOILS HIGH IN SULFIDES OR HAVING A PH OF 4 OR LESS REFER TO STANDARD FOR MANAGEMENT OF HIGH ACID PRODUCING SOILS, PG. 1–1.

3. SEEDING
   A. SELECT SEED FROM RECOMMENDATIONS IN TABLE 7.2
   B. CONVENTIONAL SEEDING. APPLY SEED UNIFORMLY BY HAND, CYCLONE (CENTRIFUGAL) SEEDER, DROP SEEDER, DRILL OR CULTIPACKER SEEDER. EXCEPT FOR DRILLED, HYDROSEEDED OR CULTIPACKED SEEDINGS, SEED SHALL BE INCORPORATED INTO THE SOIL, TO A DEPTH OF 1/4 TO 1/2 INCH, BY RAKING OR DRAGGING. DEPTH OF SEED PLACEMENT MAY BE 1/4 INCH DEEPER ON COARSE TEXTURED SOIL.
   C. HYDROSEEDING IS A BROADCAST SEEDING METHOD USUALLY INVOLVING A TRUCK OR TRAILER MOUNTED TANK, WITH AN AGITATION SYSTEM AND HYDRAULIC PUMP FOR MIXING SEED, WATER AND FERTILIZER AND SPRAYING THE MIX ONTO THE PREPARED SEEDBED. MULCH SHALL NOT BE INCLUDED IN THE TANK WITH SEED. SHORT FIBERED MULCH MAY BE APPLIED WITH A HYDROSEEDER FOLLOWING SEEDING. (ALSO SEE SECTION IV MULCHING) HYDROSEEDING IS NOT A PREFERRED SEEDING METHOD BECAUSE SEED AND FERTILIZER ARE APPLIED TO THE SURFACE AND NOT INCORPORATED INTO THE SOIL. POOR SEED TO SOIL CONTACT OCCURS REDUCING SEED GERMINATION AND GROWTH. HYDROSEEDING MAY BE USED FOR AREAS TOO STEEP FOR CONVENTIONAL EQUIPMENT TO TRAVERSE OR TOO OBSTRUCTED WITH ROCKS, STUMPS, ETC.
   D. AFTER SEEDING, FIRMING THE SOIL WITH A CORRUGATED ROLLER WILL ASSURE GOOD SEED–TO–SOIL CONTACT, RESTORE CAPILLARITY, AND IMPROVE SEEDLING EMERGENCE. THIS IS THE PREFERRED METHOD. WHEN PERFORMED ON THE CONTOUR, SHEET EROSION WILL BE MINIMIZED AND WATER CONSERVATION ON SITE WILL BE MAXIMIZED.

4. MULCHING
   MULCHING IS REQUIRED ON ALL SEEDING. MULCH WILL INSURE AGAINST EROSION BEFORE GRASS IS ESTABLISHED AND WILL PROMOTE FASTER AND EARLIER ESTABLISHMENT. THE EXISTENCE OF VEGETATION SUFFICIENT TO CONTROL SOIL EROSION SHALL BE DEEMED COMPLIANCE WITH THIS MULCHING REQUIREMENT.
   A. STRAW OR HAY. UNROTTED SMALL GRAIN STRAW, HAY FREE OF SEEDS, APPLIED AT THE RATE OF 1–1/2 TO 2 TONS PER ACRE (70 TO 90 POUNDS PER 1,000 SQUARE FEET), EXCEPT THAT WHERE A CRIMPER IS USED INSTEAD OF A LIQUID MULCH–BINDER (TACKIFYING OR ADHESIVE AGENT), THE RATE OF APPLICATION IS 3 TONS PER ACRE. MULCH CHOPPER–BLOWERS MUST NOT GRIND THE MULCH. HAY MULCH IS NOT RECOMMENDED FOR ESTABLISHING FINE TURF OR LAWNS DUE TO THE PRESENCE OF WEED SEED.
   APPLICATION. SPREAD MULCH UNIFORMLY BY HAND OR MECHANICALLY SO THAT APPROXIMATELY 95% OF THE SOIL SURFACE WILL BE COVERED. FOR UNIFORM DISTRIBUTION OF HAND–SPREAD MULCH, DIVIDE AREA INTO APPROXIMATELY 1,000 SQUARE FEET SECTIONS AND DISTRIBUTE 70 TO 90 POUNDS WITHIN EACH SECTION.
   ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA, STEEPNESS OF SLOPES, AND COSTS.
   1. PEG AND TWINE. DRIVE 8 TO 10 INCH WOODEN PEGS TO WITHIN 2 TO 3 INCHES OF THE SOIL SURFACE EVERY 4 FEET IN ALL DIRECTIONS. STAKES MAY BE DRIVEN BEFORE OR AFTER APPLYING MULCH. SECURE MULCH TO SOIL SURFACE BY STRETCHING TWINE BETWEEN PEGS IN A CRIS–CROSS AND A SQUARE PATTERN. SECURE TWINE AROUND EACH PEG WITH TWO OR MORE ROUND TURNS.
   2. MULCH NETTINGS. STAPLE PAPER, JUTE, COTTON, OR PLASTIC NETTINGS TO THE SOIL SURFACE. USE A DEGRADABLE NETTING IN AREAS TO BE MOWED.
   3. CRIMPER (MULCH ANCHORING TOOL). A TRACTOR–DRAWN IMPLEMENT, SOMEWHAT LIKE A DISC HARROW, ESPECIALLY DESIGNED TO PUSH OR CUT SOME OF THE BROADCAST LONG FIBER MULCH 3 TO 4 INCHES INTO THE SOIL SO AS TO ANCHOR IT AND LEAVE PART STANDING UPRIGHT. THIS TECHNIQUE IS LIMITED TO AREAS TRAVERSABLE BY A TRACTOR, WHICH MUST OPERATE ON THE CONTOUR OF SLOPES. STRAW MULCH RATE MUST BE 3 TONS PER ACRE. NO TACKIFYING OR ADHESIVE AGENT IS REQUIRED.
   4. LIQUID MULCH–BINDERS. – MAY BE USED TO ANCHOR HAY OR STRAW MULCH.
      A.APPLICATIONS SHOULD BE HEAVIER AT EDGES WHERE WIND MAY CATCH THE MULCH, IN VALLEYS, AND AT CRESTS OF BANKS. THE REMAINDER OF THE AREA SHOULD BE UNIFORM IN APPEARANCE.
      B. USE ONE OF THE FOLLOWING:
      1. ORGANIC AND VEGETABLE BASED BINDERS – NATURALLY OCCURRING, POWDER BASED, HYDROPHILIC MATERIALS WHEN MIXED WITH WATER FORMULATES A GEL AND WHEN APPLIED TO MULCH UNDER SATISFACTORY CURING CONDITIONS WILL FORM MEMBRANED NETWORKS OF INSOLUBLE POLYMERS. THE VEGETABLE GEL SHALL BE PHYSIOLOGICALLY HARMLESS AND NOT RESULT IN A PHYTOTOXIC EFFECT OR IMPEDE GROWTH OF TURFGRASS. USE AT RATES AND WEATHER CONDITIONS AS RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH MATERIALS. MANY NEW PRODUCTS ARE AVAILABLE, SOME OF WHICH MAY NEED FURTHER EVALUATION FOR USE IN THIS STATE.
      2. SYNTHETIC BINDERS – HIGH POLYMER SYNTHETIC EMULSION, MISCIBLE WITH WATER WHEN DILUTED AND FOLLOWING APPLICATION TO MULCH, DRYING AND CURING SHALL NO LONGER BE SOLUBLE OR DISPERSIBLE IN WATER. IT SHALL BE APPLIED AT RATES RECOMMENDED BY THE MANUFACTURER AND REMAIN TACKY UNTIL GERMINATION OF GRASS.
      NOTE: ALL NAMES GIVEN ABOVE ARE REGISTERED TRADE NAMES. THIS DOES NOT CONSTITUTE A COMMENDATION OF THESE PRODUCTS TO THE EXCLUSION OF OTHER PRODUCTS.
   B. WOOD–FIBER OR PAPER–FIBER MULCH. SHALL BE MADE FROM WOOD, PLANT FIBERS OR PAPER CONTAINING NO GROWTH OR GERMINATION INHIBITING MATERIALS, USED AT THE RATE OF 1,500 PONDS PER ACRE (OR AS RECOMMENDED BY THE PROJECT MANUFACTURER) AND MAY BE APPLIED BY A HYDROSEEDER. THIS MULCH SHALL NOT BE MIXED IN THE TANK WITH SEED. USE IS LIMITED TO FLATTER SLOPES AND DURING OPTIMUM SEEDING PERIODS IN SPRING AND FALL.
   C. PELLETIZED MULCH. COMPRESSED AND EXTRUDED PAPER AND/OR WOOD FIBER PRODUCT, WHICH MAY CONTAIN CO–POLYMERS, TACKIFIERS, FERTILIZERS AND COLORING AGENTS. THE DRY PELLETS, WHEN APPLIED TO A SEEDED AREA AND WATERED, FORMA MULCH MAT. PELLETIZED MULCH SHALL BE APPLIES IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. MULCH MAY BE APPLIED BY HAND OR MECHANICAL SPREADER AT THE RATE OF 60–75 LBS./1,000 SQUARE FEET AND ACTIVATED WITH 0.2 TO 0.4 INCHES OF WATER. THIS MATERIAL HAS BEE FOUND TO BE BENEFICIAL FOR USE ON SMALL LAWN OR RENOVATION AREAS, SEEDED AREAS WHERE WEED–SEED FREE MULCH IS DESIRED OR ON SITES WHERE STRAW MULCH AND TACKIFIER AGENT ARE NOT PRACTICAL OR DESIRABLE.

   APPLYING THE FULL 0.2 TO 0.4 INCHES OF WATER AFTER SPREADING PELLETIZED MULCH ON THE SEED BED IS EXTREMELY IMPORTANT FOR SUFFICIENT ACTIVATION AND EXPANSION OF THE MULCH TO PROVIDE SOIL COVERAGE.

PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION
PERMANENT VEGETATIVE COVER SHALL BE IN ACCORDANCE WITH "STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY"

METHODS AND MATERIALS:

1. SITE PREPARATION
   A. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING. ALL GRADING SHOULD BE DONE IN ACCORDANCE WITH STANDARD FOR LAND GRADING.
   B. IMMEDIATELY PRIOR TO SEEDING AND TOPSOIL APPLICATION, THE SUBSOIL SHALL BE EVALUATED FOR COMPACTION IN ACCORDANCE WITH THE STANDARD FOR LAND GRADING .
   C. TOPSOIL SHOULD BE HANDLED ONLY WHEN IT IS DRY ENOUGH TO WORK WITHOUT DAMAGING THE SOIL STRUCTURE. A UNIFORM APPLICATION TO A DEPTH OF 5 INCHES (UNSETTLED) IS REQUIRED ON ALL SITES. TOPSOIL SHALL BE AMENDED WITH ORGANIC MATTER, AS NEEDED, IN ACCORDANCE WITH THE STANDARD FOR TOPSOILING.
   D. INSTALL NEEDED EROSION CONTROL PRACTICES OR FACILITIES SUCH AS DIVERSIONS, GRADE–STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS.

2. SEEDBED PREPARATION
   A. UNIFORMLY APPLY GROUND LIMESTONE AND FERTILIZER TO TOPSOIL WHICH HAS BEEN SPREAD AND FIRMED, ACCORDING TO SOIL TEST RECOMMENDATIONS SUCH AS OFFERED BY RUTGERS CO–OPERATIVE EXTENSION SOIL SAMPLE MAILERS ARE AVAILABLE FROM THE LOCAL RUTGERS COOPERATIVE EXTENSION OFFICES (HTTP://NJAES.RUTGERS.EDU/COUNTY/). FERTILIZER SHALL BE APPLIED AT THE RATE OF 500 POUNDS PER ACRE OR 11 POUNDS PER 1,000 SQUARE FEET OF 10–10–10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN UNLESS A SOIL TEST INDICATES OTHERWISE AND INCORPORATED INTO THE SURFACE 4 INCHES. IF FERTILIZER IS NOT INCORPORATED, APPLY ONE–HALF THE RATE DESCRIBED ABOVE DURING SEEDBED PREPARATION AND REPEAT ANOTHER ONE–HALF RATE APPLICATION OF THE SAME FERTILIZER WITHIN 3 TO 5 WEEKS AFTER SEEDING.
   B. WORK LIME AND FERTILIZER INTO THE TOPSOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC, SPRING–TOOTH HARROW, OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OR DISKING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLE UNIFORM SEEDBED IS PREPARED.
   C. HIGH ACID PRODUCING SOIL. SOILS HAVING A PH OF 4 OR LESS OR CONTAINING IRON SULFIDE SHALL BE COVERED WITH A MINIMUM OF 12 INCHES OF SOIL HAVING A PH OF 5 OR MORE BEFORE INITIATING SEEDBED REPARATION. SEE STANDARD FOR MANAGEMENT OF HIGH ACID–PRODUCING SOILS FOR SPECIFIC REQUIREMENTS.

3. SEEDING
   A. SELECT A MIXTURE FROM TABLE 4–3 OR USE A MIXTURE RECOMMENDED BY RUTGERS COOPERATIVE EXTENSION OR NATURAL RESOURCES CONSERVATION SERVICE WHICH IS APPROVED BY THE SOIL CONSERVATION DISTRICT. SEED GERMINATION SHALL HAVE BEEN TESTED WITHIN 12 MONTHS OF THE PLANTING DATE. NO SEED SHALL BE ACCEPTED WITH A GERMINATION TEST DATE MORE THAN 12 MONTHS OLD UNLESS RETESTED.
   1. SEEDING RATES SPECIFIED ARE REQUIRED WHEN A REPORT OF COMPLIANCE IS REQUESTED PRIOR TO ACTUAL ESTABLISHMENT OF PERMANENT VEGETATION. UP TO 50% REDUCTION IN RATES MAY BE USED WHEN PERMANENT VEGETATION IS ESTABLISHED PRIOR TO A REPORT OF COMPLIANCE INSPECTION. THESE RATES APPLY TO ALL METHODS OF SEEDING. ESTABLISHING PERMANENT VEGETATION MEANS 80% VEGETATIVE COVERAGE WITH THE SPECIFIED SEED MIXTURE FOR THE SEEDED AREA AND MOWED ONCE.
   2. WARM–SEASON MIXTURES ARE GRASSES AND LEGUMES WHICH MAXIMIZE GROWTH AT HIGH TEMPERATURES, GENERALLY 85° F AND ABOVE. SEE TABLE 4–3 MIXTURES 1 TO 7. PLANTING RATES FOR WARM–SEASON GRASSES SHALL BE THE AMOUNT OF PURE LIVE SEED (PLS) AS DETERMINED BY GERMINATION TESTING RESULTS.
   3. COOL–SEASON MIXTURES ARE GRASSES AND LEGUMES WHICH MAXIMIZE GROWTH AT TEMPERATURES BELOW 85°F. MANY GRASSES BECOME ACTIVE AT 65°F. SEE TABLE 4–3, MIXTURES 8–20. ADJUSTMENT OF PLANTING RATES TO COMPENSATE FOR THE AMOUNT OF PLS IS NOT REQUIRED FOR COOL SEASON GRASSES.
   B. CONVENTIONAL SEEDING IS PERFORMED BY APPLYING SEED UNIFORMLY BY HAND, CYCLONE (CENTRIFUGAL) SEEDER, DROP SEEDER, DRILL OR CULTIPACKER SEEDER. EXCEPT FOR DRILLED, HYDROSEEDED OR CULTIPACKED SEEDINGS, SEED SHALL BE INCORPORATED INTO THE SOIL WITHIN 24 HOURS OF SEEDBED PREPARATION TO A DEPTH OF 1/4 TO 1/2 INCH, BY RAKING OR DRAGGING. DEPTH OF SEED PLACEMENT MAY BE 1/4 INCH DEEPER ON COARSE–TEXTURED SOIL.
   C. AFTER SEEDING, FIRMING THE SOIL WITH A CORRUGATED ROLLER WILL ASSURE GOOD SEED–TO–SOIL CONTACT, RESTORE CAPILLARITY, AND IMPROVE SEEDLING EMERGENCE. THIS IS THE PREFERRED METHOD. WHEN PERFORMED ON THE CONTOUR, SHEET EROSION WILL BE MINIMIZED AND WATER CONSERVATION ON SITE WILL BE MAXIMIZED.
   D. HYDROSEEDING IS A BROADCAST SEEDING METHOD USUALLY INVOLVING A TRUCK, OR TRAILER–MOUNTED TANK, WITH AN AGITATION SYSTEM AND HYDRAULIC PUMP FOR MIXING SEED, WATER AND FERTILIZER AND SPRAYING THE MIX ONTO THE PREPARED SEEDBED. MULCH SHALL NOT BE INCLUDED IN THE TANK WITH SEED. SHORT– FIBERED MULCH MAY BE APPLIED WITH A HYDROSEEDER FOLLOWING SEEDING. (ALSO SEE SECTION 4–MULCHING BELOW). HYDROSEEDING IS NOT A PREFERRED SEEDING METHOD BECAUSE SEED AND FERTILIZER ARE APPLIED TO THE SURFACE AND NOT INCORPORATED INTO THE SOIL. WHEN POOR SEED TO SOIL CONTACT OCCURS, THERE IS A REDUCED SEED GERMINATION AND GROWTH.

4. MULCHING
   MULCHING IS REQUIRED ON ALL SEEDING. MULCH WILL PROTECT AGAINST EROSION BEFORE GRASS IS ESTABLISHED AND WILL PROMOTE FASTER AND EARLIER ESTABLISHMENT. THE EXISTENCE OF VEGETATION SUFFICIENT TO CONTROL SOIL EROSION SHALL BE DEEMED COMPLIANCE WITH THIS MULCHING REQUIREMENT.
   A. STRAW OR HAY. UNROTTED SMALL GRAIN STRAW, HAY FREE OF SEEDS, TO BE APPLIED AT THE RATE OF 1–1/2 TO 2 TONS PER ACRE (70 TO 90 POUNDS PER 1,000 SQUARE FEET), EXCEPT THAT WHERE A CRIMPER IS USED INSTEAD OF A LIQUID MULCH–BINDER (TACKIFYING OR ADHESIVE AGENT), THE RATE OF APPLICATION IS 3 TONS PER ACRE. MULCH CHOPPER–BLOWERS MUST NOT GRIND THE MULCH. HAY MULCH IS NOT RECOMMENDED FOR ESTABLISHING FINE TURF OR LAWNS DUE TO THE PRESENCE OF WEED SEED.

   APPLICATION – SPREAD MULCH UNIFORMLY BY HAND OR MECHANICALLY SO THAT AT LEAST 85% OF THE SOIL SURFACE IS COVERED. FOR UNIFORM DISTRIBUTION OF HAND–SPREAD MULCH, DIVIDE AREA INTO APPROXIMATELY 1,000 SQUARE FEET SECTIONS AND DISTRIBUTE 70 TO 90 POUNDS WITHIN EACH SECTION.
   ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA, STEEPNESS OF SLOPES, AND COSTS.
   1. PEG AND TWINE. DRIVE 8 TO 10 INCH WOODEN PEGS TO WITHIN 2 TO 3 INCHES OF THE SOIL SURFACE EVERY 4 FEET IN ALL DIRECTIONS. STAKES MAY BE DRIVEN BEFORE OR AFTER APPLYING MULCH. SECURE MULCH TO SOIL SURFACE BY STRETCHING TWINE BETWEEN PEGS IN A CRISS–CROSS AND A SQUARE PATTERN. SECURE TWINE AROUND EACH PEG WITH TWO OR MORE ROUND TURNS.
   2. MULCH NETTINGS – STAPLE PAPER, JUTE, COTTON, OR PLASTIC NETTINGS TO THE SOIL SURFACE. USE A DEGRADABLE NETTING IN AREAS TO BE MOWED.
   3. CRIMPER (MULCH ANCHORING COULTER TOOL) – A TRACTOR–DRAWN IMPLEMENT, SOMEWHAT LIKE A DISC HARROW, ESPECIALLY DESIGNED TO PUSH OR CUT SOME OF THE BROADCAST LONG FIBER MULCH 3 TO 4 INCHES INTO THE SOIL SO AS TO ANCHOR IT AND LEAVE PART STANDING UPRIGHT. THIS TECHNIQUE IS LIMITED TO AREAS TRAVERSABLE BY A TRACTOR, WHICH MUST OPERATE ON THE CONTOUR OF SLOPES. STRAW MULCH RATE MUST BE 3 TONS PER ACRE. NO TACKIFYING OR ADHESIVE AGENT IS REQUIRED.
   4. LIQUID MULCH–BINDERS – MAY BE USED TO ANCHOR SALT HAY, HAY OR STRAW MULCH.
      A. APPLICATIONS SHOULD BE HEAVIER AT EDGES WHERE WIND MAY CATCH THE MULCH, IN VALLEYS, AND AT CRESTS OF BANKS. THE REMAINDER OF THE AREA SHOULD BE UNIFORM IN APPEARANCE.
      B. USE ONE OF THE FOLLOWING:
      1. ORGANIC AND VEGETABLE BASED BINDERS – NATURALLY OCCURRING, POWDER–BASED, HYDROPHILIC MATERIALS WHEN MIXED WITH WATER FORMULATES A GEL AND WHEN APPLIED TO MULCH UNDER SATISFACTORY CURING CONDITIONS WILL FORM MEMBRANED NETWORKS OF INSOLUBLE POLYMERS. THE VEGETABLE GEL SHALL BE PHYSIOLOGICALLY HARMLESS AND NOT RESULT IN A PHYTOTOXIC EFFECT OR IMPEDE GROWTH OF TURF GRASS. USE AT RATES AND WEATHER CONDITIONS AS RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH MATERIALS. MANY NEW PRODUCTS ARE AVAILABLE, SOME OF WHICH MAY NEED FURTHER EVALUATION FOR USE IN THIS STATE.
      2. SYNTHETIC BINDERS – HIGH POLYMER SYNTHETIC EMULSION, MISCIBLE WITH WATER WHEN DILUTED AND, FOLLOWING APPLICATION OF MULCH, DRYING AND CURING, SHALL NO LONGER BE SOLUBLE OR DISPERSIBLE IN WATER. BINDER SHALL BE APPLIED AT RATES RECOMMENDED BY THE MANUFACTURER AND REMAIN TACKY UNTIL GERMINATION OF GRASS.
      NOTE: ALL NAMES GIVEN ABOVE ARE REGISTERED TRADE NAMES. THIS DOES NOT CONSTITUTE A RECOMMENDATION OF THESE PRODUCTS TO THE EXCLUSION OF OTHER PRODUCTS.
   B. WOOD–FIBER OR PAPER–FIBER MULCH – SHALL BE MADE FROM WOOD, PLANT FIBERS OR PAPER CONTAINING NOGROWTH OR GERMINATION INHIBITING MATERIALS, USED AT THE RATE OF 1,500 POUNDS PER ACRE (OR AS RECOMMENDED BY THE PRODUCT MANUFACTURER) AND MAY BE APPLIED BY A HYDROSEEDER. MULCH SHALL NOT BE MIXED IN THE TANK WITH SEED. USE IS LIMITED TO FLATTER SLOPES AND DURING OPTIMUM SEEDING PERIODS IN SPRING AND FALL.
   C. PELLETIZED MULCH – COMPRESSED AND EXTRUDED PAPER AND/OR WOOD FIBER PRODUCT, WHICH MAY CONTAIN CO–POLYMERS, TACKIFIERS, FERTILIZERS, AND COLORING AGENTS. THE DRY PELLETS, WHEN APPLIED TO A SEEDED AREA AND WATERED, FORM A MULCH MAT. PELLETIZED MULCH SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MULCH MAY BE APPLIED BY HAND OR MECHANICAL SPREADER AT THE RATE OF 60–75 LBS/1,000 SQUARE FEET AND ACTIVATED WITH 0.2 TO 0.4 INCHES OF WATER. THIS MATERIAL HAS BEEN FOUND TO BE BENEFICIAL FOR USE ON SMALL LAWN OR RENOVATION AREAS, SEEDED AREAS WHERE WEED– SEED FREE MULCH IS DESIRED, OR ON SITES WHERE STRAW MULCH AND TACKIFIER AGENT ARE NOT PRACTICAL OR DESIRABLE. APPLYING THE FULL 0.2 TO 0.4 INCHES OF WATER AFTER SPREADING PELLETIZED MULCH ON THE SEED BED IS EXTREMELY IMPORTANT FOR SUFFICIENT ACTIVATION AND EXPANSION OF THE MULCH TO PROVIDE SOIL COVERAGE.

5. IRRIGATION (WHERE FEASIBLE)
IF SOIL MOISTURE IS DEFICIENT SUPPLY NEW SEEDING WITH ADEQUATE WATER (A MINIMUM OF 1/4 INCH APPLIED UP TO TWICE A DAY UNTIL VEGETATION IS WELL ESTABLISHED). THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE IN ABNORMALLY DRY OR HOT WEATHER OR ON DROUGHTY SITES.

6. TOPDRESSING
SINCE SOIL ORGANIC MATTER CONTENT AND SLOW RELEASE NITROGEN FERTILIZER (WATER INSOLUBLE) ARE PRESCRIBED IN SECTION 2A – SEEDBED PREPARATION IN THIS STANDARD, NO FOLLOW–UP OF TOPDRESSING IS MANDATORY. AN EXCEPTION MAY BE MADE WHERE GROSS NITROGEN DEFICIENCY EXISTS IN THE SOIL TO THE EXTENT THAT TURF FAILURE MAY DEVELOP. IN THAT INSTANCE, TOPDRESS WITH 10–10–10 OR EQUIVALENT AT 300 POUNDS PER ACRE OR 7 POUNDS PER 1,000 SQUARE FEET EVERY 3 TO 5 WEEKS UNTIL THE GROSS NITROGEN DEFICIENCY IN THE TURF IS AMELIORATED.

7. ESTABLISHING PERMANENT VEGETATIVE STABILIZATION
THE QUALITY OF PERMANENT VEGETATION RESTS WITH THE CONTRACTOR. THE TIMING OF SEEDING, PREPARING THE SEEDBED, APPLYING NUTRIENTS, MULCH AND OTHER MANAGEMENT ARE ESSENTIAL. THE SEED APPLICATION RATES IN TABLE 4–3 ARE REQUIRED WHEN A REPORT OF COMPLIANCE IS REQUESTED PRIOR TO ACTUAL ESTABLISHMENT OF PERMANENT VEGETATION. UP TO 50% REDUCTION IN APPLICATION RATES MAY BE USED WHEN PERMANENT VEGETATION IS ESTABLISHED PRIOR TO REQUESTING A REPORT OF COMPLIANCE FROM THE DISTRICT. THESE RATES APPLY TO ALL METHODS OF SEEDING. ESTABLISHING PERMANENT VEGETATION MEANS 80% VEGETATIVE COVER (OF THE SEEDED SPECIES) AND MOWED ONCE. NOTE THIS DESIGNATION OF MOWED ONCE DOES NOT GUARANTEE THE PERMANENCY OF THE TURF SHOULD OTHER MAINTENANCE FACTORS BE NEGLECTED OR OTHERWISE MISMANAGED.

STABILIZATION WITH MULCH ONLY
MULCH SHALL BE IN ACCORDANCE WITH "STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY"

METHODS AND MATERIALS:

1. SITE PREPARATION
   A. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING. ALL GRADING SHOULD BE DONE IN ACCORDANCE WITH STANDARDS FOR LAND GRADING, PG. 19–1.
   B. INSTALL NEEDED EROSION CONTROL PRACTICES OR FACILITIES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS. SEE STANDARDS 11 THROUGH 42.

2. PROTECTIVE MATERIALS
   A. UNROTTED SMALL–GRAIN STRAW, AT 2.0 TO 2.5 TONS PER ACRE, IS SPREAD UNIFORMLY AT 90 TO 115 POUNDS PER 1,000 SQUARE FEET AND ANCHORED WITH A MULCH ANCHORING TOOL, LIQUID MULCH BINDERS, OR NETTING TIE DOWN. OTHER SUITABLE MATERIALS MAY BE USED IF APPROVED BY THE SOIL CONSERVATION DISTRICT. THE APPROVED RATES ABOVE HAVE BEEN MET WHEN THE MULCH COVERS THE GROUND COMPLETELY UPON VISUAL INSPECTION, I.E. THE SOIL CANNOT BE SEEN BELOW THE MULCH.
   B. SYNTHETIC OR ORGANIC SOIL STABILIZERS MAY BE USED UNDER SUITABLE CONDITIONS AND IN QUANTITIES AS RECOMMENDED BY THE MANUFACTURER.
   C. WOOD–FIBER OR PAPER–FIBER MULCH AT THE RATE OF 1,500 POUNDS PER ACRE (OR ACCORDING TO THE MANUFACTURER'S REQUIREMENTS) MAY BE APPLIED BY A HYDROSEEDER.
   D. MULCH NETTING, SUCH AS PAPER JUTE, EXCELSIOR, COTTON, OR PLASTIC, MAY BE USED.
   E. WOODCHIPS APPLIED UNIFORMLY TO A MINIMUM DEPTH OF 2 INCHES MAY BE USED. WOODCHIPS WILL NOT BE USED ON AREAS WHERE FLOWING WATER COULD WASH THEM INTO AN INLET AND PLUG IT.
   F. GRAVEL, CRUSHED STONE, OR SLAG AT THE RATE OF 9 CUBIC YARDS PER 1,000 SQ. FT. APPLIED UNIFORMLY TO A MINIMUM DEPTH OF 3 INCHES MAY BE USED. SIZE 2 OR 3 (ASTM C–33) IS RECOMMENDED.

3. MULCH ANCHORING SHOULD BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT OF HAY OR STRAW MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA AND STEEPNESS OF SLOPES.
   A. PEG AND TWINE – DRIVE 8 TO 10 INCH WOODEN PEGS TO WITHIN 2 TO 3 INCHES OF THE SOIL SURFACE EVERY 4 FEET IN ALL DIRECTIONS. STAKES MAY BE DRIVEN BEFORE OR AFTER APPLYING MULCH. SECURE MULCH TO SOIL SURFACE BY STRETCHING TWINE BETWEEN PEGS IN A CRISS–CROSS AND A SQUARE PATTERN. SECURE TWINE AROUND EACH PEG WITH TWO OR MORE ROUND TURNS.
   B. MULCH NETTINGS – STAPLE PAPER, COTTON, OR PLASTIC NETTINGS OVER MULCH. USE DEGRADABLE NETTING IN AREAS TO BE MOWED. NETTING IS USUALLY AVAILABLE IN ROLLS 4 FEET WIDE AND UP TO 300 FEET LONG.
   C. CRIMPER MULCH ANCHORING COULTER TOOL – A TRACTOR–DRAWN IMPLEMENT ESPECIALLY DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE. THIS PRACTICE AFFORDS MAXIMUM EROSION CONTROL, BUT ITS USE IS LIMITED TO THOSE SLOPES UPON WHICH THE TRACTOR CAN OPERATE SAFELY. SOIL PENETRATION SHOULD BE ABOUT 3 TO 4 INCHES. ON SLOPING LAND, THE OPERATION SHOULD BE ON THE CONTOUR.
   D. LIQUID MULCH–BINDERS
      1. APPLICATIONS SHOULD BE HEAVIER AT EDGES WHERE WIND CATCHES THE MULCH, IN VALLEYS, AND AT CRESTS OF BANKS. REMAINDER OF AREA SHOULD BE UNIFORM IN APPEARANCE.
      2. USE ONE OF THE FOLLOWING:
      A. ORGANIC AND VEGETABLE BASED BINDERS – NATURALLY OCCURRING, POWDER BASED, HYDROPHILIC MATERIALS THAT MIXED WITH WATER FORMULATES A GEL AND WHEN APPLIED TO MULCH UNDER SATISFACTORY CURING CONDITIONS WILL FORM MEMBRANE NETWORKS OF INSOLUBLE POLYMERS. THE VEGETABLE GEL SHALL BE PHYSIOLOGICALLY HARMLESS AND NOT RESULT IN A PHYTO–TOXIC EFFECT OR IMPEDE GROWTH OF TURFGRASS. VEGETABLE BASED GELS SHALL BE APPLIED AT RATES AND WEATHER CONDITIONS RECOMMENDED BY THE MANUFACTURER.
      B. SYNTHETIC BINDERS – HIGH POLYMER SYNTHETIC EMULSION, MISCIBLE WITH WATER WHEN DILUTED AND FOLLOWING APPLICATION TO MULCH, DRYING AND CURING SHALL NO LONGER BE SOLUBLE OR DISPERSIBLE IN WATER. IT SHALL BE APPLIED AT RATES AND WEATHER CONDITIONS RECOMMENDED BY THE MANUFACTURER AND REMAIN TACKY UNTIL GERMINATION OF GRASS.

TOPSOILING
TOPSOILING SHALL BE IN ACCORDANCE WITH "STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY"

METHODS AND MATERIALS:

1. MATERIALS
   A. TOPSOIL SHOULD BE FRIABLE, LOAMY, FREE OF DEBRIS, OBJECTIONABLE WEEDS AND STONES, AND CONTAIN NO TOXIC SUBSTANCE OR ADVERSE CHEMICAL OR PHYSICAL CONDITION THAT MAY BE HARMFUL TO PLANT GROWTH. SOLUBLE SALTS SHOULD NOT BE EXCESSIVE (CONDUCTIVITY LESS THAN 0.5 MILLIMHOS PER CENTIMETER. MORE THAN 0.5 MILLIMHOS MAY DESICCATE SEEDLINGS AND ADVERSELY IMPACT GROWTH). IMPORTED TOPSOIL SHALL HAVE A MINIMUM ORGANIC MATTER CONTENT OF 2.75 PERCENT. ORGANIC MATTER CONTENT MAY BE RAISED BY ADDITIVES.
   B. TOPSOIL SUBSTITUTE IS A SOIL MATERIAL WHICH MAY HAVE BEEN AMENDED WITH SAND, SILT, CLAY, ORGANIC MATTER, FERTILIZER OR LIME AND HAS THE APPEARANCE OF TOPSOIL. TOPSOIL SUBSTITUTES MAY BE UTILIZED ON SITES WITH INSUFFICIENT TOPSOIL FOR ESTABLISHING PERMANENT VEGETATION. ALL TOPSOIL SUBSTITUTE MATERIALS SHALL MEET THE REQUIREMENTS OF TOPSOIL NOTED ABOVE. SOIL TESTS SHALL BE PERFORMED TO DETERMINE THE COMPONENTS OF SAND, SILT, CLAY, ORGANIC MATTER, SOLUBLE SALTS AND PH LEVEL.

2. STRIPPING AND STOCKPILING
   A. FIELD EXPLORATION SHOULD BE MADE TO DETERMINE WHETHER QUANTITY AND OR QUALITY OF SURFACE SOIL JUSTIFIES STRIPPING.
   B. STRIPPING SHALL BE CONFINED TO THE IMMEDIATE CONSTRUCTION AREA.
   C. WHERE FEASIBLE, LIME MAY BE APPLIED BEFORE STRIPPING AT A RATE DETERMINED BY SOIL TESTS TO BRING THE SOIL PH TO APPROXIMATELY 6.5.
   D. A 4–6 INCH STRIPPING DEPTH IS COMMON, BUT MAY VARY DEPENDING ON THE PARTICULAR SOIL.
   E. STOCKPILES OF TOPSOIL SHOULD BE SITUATED SO AS NOT TO OBSTRUCT NATURAL DRAINAGE OR CAUSE OFF–SITE ENVIRONMENTAL DAMAGE.
   F. STOCKPILES SHOULD BE VEGETATED IN ACCORDANCE WITH STANDARDS PREVIOUSLY DESCRIBED HEREIN; SEE STANDARDS FOR PERMANENT (PG. 4–1) OR TEMPORARY (PG.7–1) VEGETATIVE COVER FOR SOIL STABILIZATION. WEEDS SHOULD NOT BE ALLOWED TO GROW ON STOCKPILES.

3. SITE PREPARATION
   A. GRADE AT THE ONSET OF THE OPTIMAL SEEDING PERIOD SO AS TO MINIMIZE THE DURATION AND AREA OF EXPOSURE OF DISTURBED SOIL TO EROSION. IMMEDIATELY PROCEED TO ESTABLISH VEGETATIVE COVER IN ACCORDANCE WITH THE SPECIFIED SEED MIXTURE. TIME IS OF THE ESSENCE
   B. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION AND ANCHORING, AND MAINTENANCE. SEE THE STANDARD FOR LAND GRADING, PG. 19–1.
   C. AS GUIDANCE FOR IDEAL CONDITIONS, SUBSOIL SHOULD BE TESTED FOR LIME REQUIREMENT. LIMESTONE, IF NEEDED, SHOULD BE APPLIED TO BRING SOIL TO A PH OF APPROXIMATELY 6.5 AND INCORPORATED INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES.
   D. PRIOR TO TOPSOILING, THE SUBSOIL SHALL BE IN COMPLIANCE WITH THE STANDARD FOR LAND GRADING, PG. 19–1.
   E. EMPLOY NEEDED EROSION CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENTATION BASINS, AND WATERWAYS. SEE STANDARDS 11 THROUGH 42.

4. APPLYING TOPSOIL
   A. TOPSOIL SHOULD BE HANDLED ONLY WHEN IT IS DRY ENOUGH TO WORK WITHOUT DAMAGING SOIL STRUCTURE; I.E., LESS THAN FIELD CAPACITY (SEE GLOSSARY)
   B. A UNIFORM APPLICATION TO AN AVERAGE DEPTH OF 5.0 INCHES, MINIMUM OF 4 INCHES, FIRMED IN PLACE IS REQUIRED. ALTERNATIVE DEPTHS MAY BE CONSIDERED WHERE SPECIAL REGULATORY AND/OR INDUSTRY DESIGN STANDARDS ARE APPROPRIATE SUCH AS ON GOLF COURSES, SPORTS FIELDS, LANDFILL CAPPING, ETC.. SOILS WITH A PH OF 4.0 OR LESS OR CONTAINING IRON SULFIDE SHALL BE COVERED WITH A MINIMUM DEPTH OF 12 INCHES OF SOIL HAVING A PH OF 5.0 OR MORE, IN ACCORDANCE WITH THE STANDARD FOR MANAGEMENT OF HIGH ACID PRODUCING SOIL (PG. 1–1).
   C. PURSUANT TO THE REQUIREMENTS IN SECTION 7 OF THE STANDARD FOR PERMANENT VEGETATIVE STABILIZATION, THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT PERMANENT VEGETATIVE COVER BECOMES ESTABLISHED ON AT LEAST 80% OF THE SOILS TO BE STABILIZED WITH VEGETATION. FAILURE TO ACHIEVE THE MINIMUM COVERAGE MAY REQUIRE ADDITIONAL WORK TO BE PERFORMED BY THE CONTRACTOR TO INCLUDE SOME OR ALL OF THE FOLLOWING: SUPPLEMENTAL SEEDING, RE–APPLICATION OF LIME AND FERTILIZERS, AND/OR THE ADDITION OF ORGANIC MATTER (I.E. COMPOST) AS A TOP DRESSING. SUCH ADDITIONAL MEASURES SHALL BE BASED ON SOIL TESTS SUCH AS THOSE OFFERED BY RUTGERS COOPERATIVE EXTENSION SERVICE OR OTHER APPROVED LABORATORY FACILITIES QUALIFIED TO TEST SOIL SAMPLES FOR AGRONOMIC PROPERTIES.

TABLE 7.2
TEMPORARY VEGETATIVE STABILIZATION GRASSES, SEEDING RATES, DATES AND DEPTH

SEED SELECTION	SEEDING RATE 1 (pounds)		OPTIMUM SEEDING DATE 3 Based on Plant Hardiness Zone			OPTIMUM SEED DEPTH 4 (inches)
	Per Acre	Per 1000 Sq. Ft.	ZONE 5b, 6a	ZONE 6b	ZONE 7a, b	
COOL SEASON GRASSES						
1. Perennial ryegrass	100	1	3/15-6/1 8/1-9/15	3/1-5/15 8/15-10/1	2/15-5/1 8/15-10/15	0.5
2. Spring oats	86	2	3/15-6/1 8/1-9/15	3/1-5/15 8/15-10/1	2/15-5/1 8/15-10/15	1
3. Winter Barley	96	2.2	8/1-9/15	8/15-10/1	8/15-10/1	1
4. Annual ryegrass	100	1	3/15- 6/1 8/1- 9/15	3/15- 6/1 8/1- 9/15	2/15 - 5/1 8/15-10/15	0.5
5. Winter Cereal Rye	112	2.8	8/1 - 11/1	8/1 - 11/15	8/1 - 12/15	1
WARM SEASON GRASSES						
6. Pearl millet	20	0.5	6/1-8/1	5/15-8/15	5/1-9/1	1
7. Millet (German or Hungarian)	30	0.7	6/1-8/1	5/15-8/15	5/1-9/1	1

Notes:
1. Seeding rate for warm season grass, selections 5 - 7 shall be adjusted to reflect the amount of Pure Line Seed (PLS) as determined by a germination test result. No adjustment is required for cool season grasses.
2. May be planted throughout summer if soil moisture is adequate or seeded area can be irrigated.
3. Plant Hardiness Zone (see figure 7-1, pg. 7-4.)
4. Twice the depth for sandy soils

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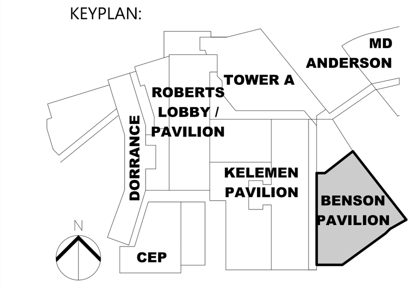
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DATE 10/08/2026

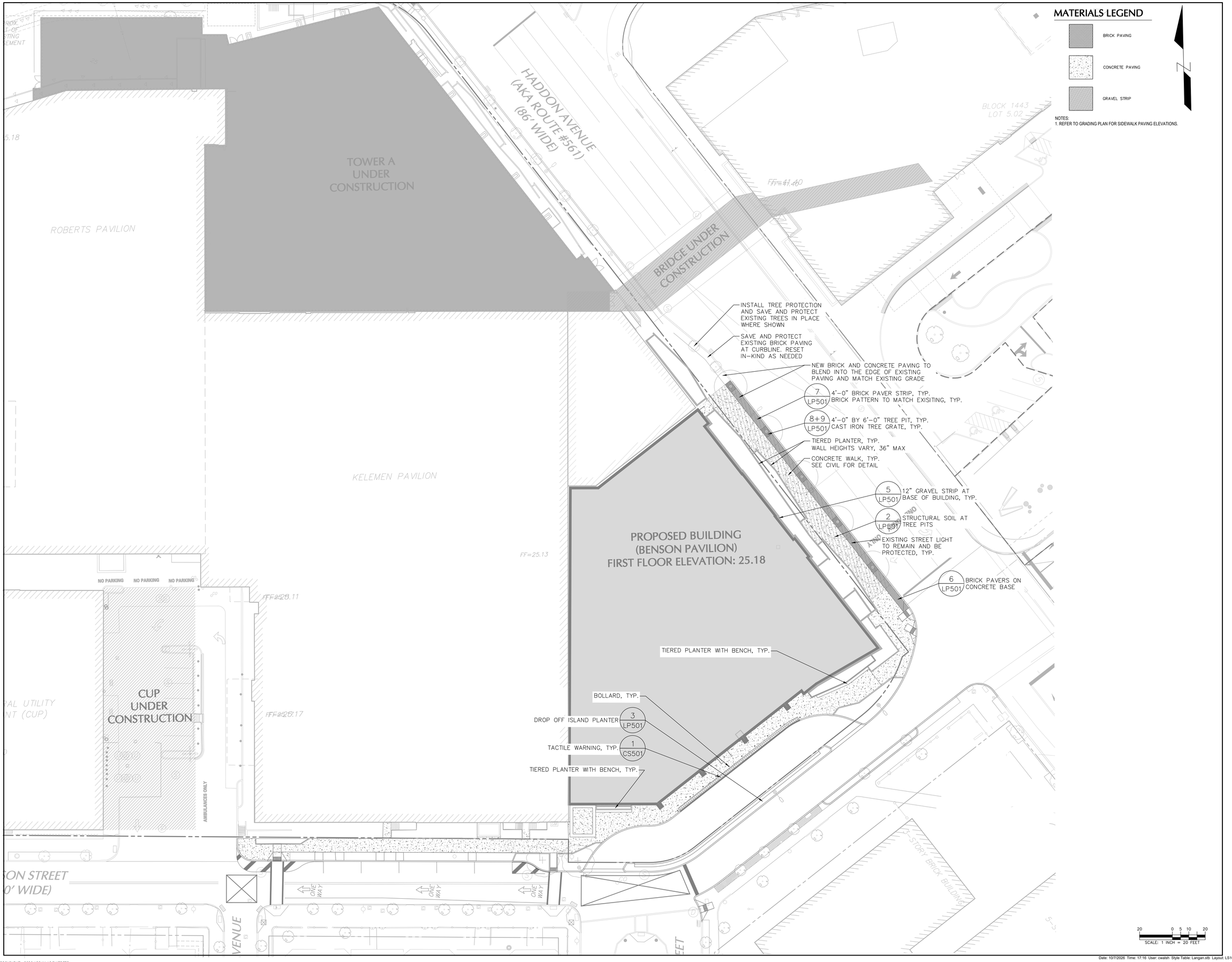
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SOIL EROSION AND SEDIMENT CONTROL NOTES 2

CE502

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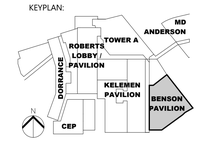
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LAND DEVELOPMENT

LANDSCAPE MATERIALS PLAN

LS101

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City of Camden, NJ Compliance Chart			
Section	**Requirement**	**Calculation**	**Compliance**
§ 870-244 D. (2)	(a) Street trees shall be placed in a formal allee in order to be visually unifying. The distance between trees shall be based on 1/3 overlap of mature canopy cover and is therefore dependent on the size of the individual trees. Street trees shall be spaced no greater than 40 feet on center and be placed in the public right-of-way between the cartway and right-of-way line, or at least 10 feet behind the right-of-way line.		Complies
	(b) Street trees shall be placed in naturalized groupings located within and outside the public right-of-way; the total number of street trees shall average one for every 35 feet measured at the edge of the cartway. Planting design should accentuate the views and integrate contrasting landscape elements.	Required: 5 trees along Haddon Ave (174 ft / 35 = 5), 9 trees along Benson St (305.62 ft / 35 = 9) Proposed: 5 trees along Haddon Ave, 2 trees along Benson St	See Note 1 below.
§ 870-244 D. (8)	(e) At maturity, trees must be prunable to a height of 14 feet.	All trees are prunable to 14 ft at maturity	Complies
	(m) If existing trees are preserved within five feet of the curb or cartway, the requirements for street tree planting may be reduced.		See Note 1 below.

1 Per Section 870-244 D. (2), the project requires (5) new trees along Benson Street. The project proposes two (2) trees along Benson Street. Trees have not been proposed along the dropoff frontage due to visibility concerns.

PLANT SCHEDULE

SYMBOL	KEY	QTY	BOTANICAL / COMMON NAME	SIZE	ROOT	SPACING
SHADE TREES						
	AROG	5	ACER RUBRUM 'OCTOBER GLORY' / OCTOBER GLORY RED MAPLE	4" CAL.	B&B	
	PLO	2	PLATANUS OCCIDENTALIS / AMERICAN SYCAMORE	4" CAL.	B&B	
SHRUBS						
	ES2	18	EUONYMUS JAPONICUS 'SILVER KING' / SILVER KING EUONYMUS	24"	CONTAINER	
	ISB	48	ILEX GLABRA STRONGBOX / STRONGBOX INKBERRY HOLLY	24"	CONTAINER	
DECIDUOUS SHRUBS						
	CSK	23	CORNUS SERICEA 'KELSEYI' / KELSEY'S DWARF RED TWIG DOGWOOD	24-36" HT.	CONTAINER	
	HG	31	HYDRANGEA ARBORESCENS 'HAAS' HALO' / HAAS' HALO SMOOTH HYDRANGEA	24-36" HT.	CONTAINER	
EVERGREEN SHRUBS						
	JB	50	JUNIPERUS CONFERTA 'BLUE PACIFIC' / BLUE PACIFIC SHORE JUNIPER	24"	CONTAINER	
	SHO	4	SARCOCOCCA HOOKERIANA / SWEETBOX	24"	CONTAINER	
PERENNIALS						
	HF	39	HOSTA X 'FRANCEE' / FRANCEE HOSTA	3 GAL.	CONTAINER	
ORNAMENTAL GRASSES						
	CK2	18	CALAMAGROSTIS X ACUTIFLORA 'KARL FOERSTER' / KARL FOERSTER FEATHER REED GRASS	1 GAL	CONTAINER	24" o.c.
	MC	6	MUHLENBERGIA CAPILLARIS / PINK MUHLY GRASS	1 GAL	CONTAINER	24" o.c.
	PS2	8	PANICUM VIRGATUM 'SHENANDOAH' / SHENANDOAH SWITCH GRASS	1 GAL	CONTAINER	24" o.c.
PERENNIALS						
	CSC	31	ECHINACEA PURPUREA 'CHEYENNE SPIRIT' / CHEYENNE SPIRIT CONEFLOWER	1 GAL	CONTAINER	12" o.c.
	RS	18	RUDBECKIA FULGIDA 'LITTLE GOLDSTAR' / LITTLE GOLDSTAR CONEFLOWER	1 GAL	CONTAINER	12" o.c.

BLOCK 1402
LOT 1
MULTI STORY BUILDING

HADDON AVENUE (AKA ROUTE #561) (86' WIDE)

TOWER A UNDER CONSTRUCTION

BRIDGE UNDER CONSTRUCTION

FF=41.460

APPROXIMATE LOCATION OF UNDERGROUND STORM BASIN

PROPOSED BUILDING (BENSON PAVILION)
FIRST FLOOR ELEVATION: 25.18

NO PARKING NO PARKING NO PARKING

FF=25.11

FF=25.17

CUP UNDER CONSTRUCTION

AMBULANCES ONLY

ONE WAY

ONE WAY

ONE WAY

ONLY

3 STORY BRICK BUILDING

2 JB
10 HG
SEASONAL PLANTING, TYP.
4 / LP501 SHRUB PLANTING
2 JB
5 AROG
27 HF
2 ES
7 HG
SEASONAL PLANTING, TYP.
9 JB
SEASONAL PLANTING, TYP.
4 / LP501 STRUCTURAL SOILS AT TREE PITS
4 HG
6 ES
SEASONAL PLANTING, TYP.
7 HF
2 ES
2 HG
SEASONAL PLANTING, TYP.
2 ES
5 HF
4 SHO
2 ES
4 HG
2 JB
SEASONAL PLANTING, TYP.
2 ES
2 JB
4 HG
2 JB
SEASONAL PLANTING, TYP.
12 HF
13 JB
6 MC
2 ES
8 PS2
10 CK2
31 CSC
3 JB
4 CSK
12 ISB
4 CSK
12 ISB
4 CSK
12 ISB
4 CSK
3 JB
2 PO
8 CSK
7 JB
SEASONAL PLANTING, TYP.
8 CK2
5 CSK
4 ISB
4 ISB
5 JB

LEGEND

SEASONAL PLANTINGS - REPLACED SEASONALLY BY LANDSCAPE CONTRACTOR

STRUCTURAL SOIL EXTENTS

N

20 0 5 10 20
SCALE: 1 INCH = 20 FEET

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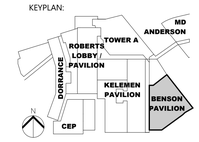
INTROBA
LOW VOLTAGE AV/IT
32 OLD SLIP, 10TH FLOOR
NEW YORK, NY 10006
212-997-5100

VISIONBUILDERS DESIGN
FOOD SERVICES CONSULTANT
1515 SHOPTON ROAD, SUITE 104
CHARLOTTE, NC 28217
704-405-3101

HEALTH, EDUCATION AND RESEARCH ASSOCIATES, INC.
LABORATORY PLANNER
609 E. LOCKWOOD AVENUE, SUITE 204
ST. LOUIS, MO 63119
314-289-9202

ST ONGE
STERILE PROCESSING & VERTICAL TRANSPORTATION CONSULTANT
1400 WILLIAMS ROAD
YORK, PA 17402
717-840-8181

KEYPLAN:



ISSUES:

NO.	DESCRIPTION	DATE

PROJECT NO. 7088
CON/REF NO.
DATE 10/08/26
DCA# NJPRP-XXXXX

LAND DEVELOPMENT

LANDSCAPE PLANTING PLAN

LP101

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Date: 10/7/2026 Time: 17:18 User: cwalsh Style Table: Langan.stb Layout: LP101 Document Code: 220245001-0502-LP101-0101

GENERAL LANDSCAPE PLANTING NOTES:

PLANTING MATERIALS

1. NAMES OF PLANTS AS DESCRIBED ON THIS PLAN CONFORM TO THOSE GIVEN IN "STANDARDIZED PLANT NAMES", 1942 EDITION PREPARED BY THE AMERICAN JOINT COMMITTEE ON HORTICULTURAL NOMENCLATURE. NAMES OF PLANT VARIETIES NOT INCLUDED THEREIN CONFORM TO NAMES GENERALLY ACCEPTED IN NURSERY TRADE.
2. STANDARDS FOR TYPE, SPREAD, HEIGHT, ROOT BALL AND QUALITY OF NEW PLANT MATERIAL SHALL BE IN ACCORDANCE WITH GUIDELINES AS SET FORTH IN THE "AMERICAN STANDARD FOR NURSERY STOCK", PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN. PLANT MATERIAL SHALL HAVE NORMAL HABIT OF GROWTH AND BE HEALTHY, VIGOROUS, AND FREE FROM DISEASES AND INSECT INFESTATION.
3. NEW PLANT MATERIAL SHALL BE NURSERY GROWN UNLESS SPECIFIED OTHERWISE. ALL PLANTS SHALL BE SET PLUMB AND SHALL BEAR THE SAME RELATIONSHIP TO FINISHED GRADE AS THE PLANT'S ORIGINAL GRADE BEFORE DIGGING. PLANT MATERIAL OF THE SAME SPECIES AND SPECIFIED AS THE SAME SIZE SHOULD BE SIMILAR IN SHAPE, COLOR AND HABIT. THE LANDSCAPE ARCHITECT HAS THE RIGHT TO REJECT PLANT MATERIAL THAT DOES NOT CONFORM TO THE TYPICAL OR SPECIFIED HABIT OF THAT SPECIES.
4. THE CONTRACTOR SHALL NOT MAKE SUBSTITUTIONS. IF THE SPECIFIED LANDSCAPE MATERIAL IS NOT OBTAINABLE, THE CONTRACTOR SHALL SUBMIT PROOF OF NON-AVAILABILITY TO THE LANDSCAPE ARCHITECT AND OWNER TOGETHER WITH A WRITTEN PROPOSAL FOR USE OF AN EQUIVALENT MATERIAL.
5. THE LANDSCAPE ARCHITECT MAY REVIEW PLANT MATERIALS AT THE SITE, BEFORE PLANTING, FOR COMPLIANCE WITH REQUIREMENTS FOR GENUS, SPECIES, VARIETY, SIZE, AND QUALITY. THE LANDSCAPE ARCHITECT RETAINS THE RIGHT TO FURTHER REVIEW PLANT MATERIALS FOR SIZE AND CONDITION OF BALLS AND ROOT SYSTEM, INSECTS, INJURIES, AND LATENT DEFECTS, AND TO REJECT UNSATISFACTORY OR DEFECTIVE MATERIAL AT ANY TIME DURING PROGRESS OF WORK. THE CONTRACTOR SHALL REMOVE REJECTED PLANT MATERIALS IMMEDIATELY FROM PROJECT SITE AS DIRECTED BY THE LANDSCAPE ARCHITECT OR OWNER.

PLANTING SOILS

1. REUSE SURFACE SOILS STOCKPILED ON SITE, VERIFYING COMPLIANCE WITH PLANTING SOIL AND TOPSOIL CRITERIA IN THIS SPECIFICATION THROUGH TESTING. CLEAN SURFACE SOIL OF ALL ROOTS, PLANTS, SOD, AND GRAVEL OVER 1" IN DIAMETER AND DELETERIOUS MATERIALS. IF ON-SITE SOILS ARE TO BE USED FOR PROPOSED PLANTING, THE CONTRACTOR SHALL DEMONSTRATE, THROUGH SOIL TESTING, THAT ON-SITE SOILS MEET THE SAME CRITERIA AS INDICATED IN NOTES PLANS AND SPECIFICATIONS
2. SUPPLEMENT WITH IMPORTED OR MANUFACTURED TOPSOIL FROM OFF SITE SOURCES WHEN TOPSOIL AND PLANTING SOIL QUANTITIES ARE INSUFFICIENT. OBTAIN SOIL DISPLACED FROM NATURALLY WELL-DRAINED SITES WHERE TOPSOIL OCCURS AT LEAST 4" DEEP. DO NOT OBTAIN FROM AGRICULTURAL LAND, BOGS, MARSHES OR CONTAMINATED SITES.
3. IF DEPTH OF PLANTING SOILS AND TOPSOIL IS NOT INDICATED IN PLANS OR DETAILS, A MINIMUM 18" DEPTH SHALL BE PROVIDED FOR ALL TREES AND LARGE SHRUBS; MINIMUM 12" DEPTH SHALL BE PROVIDED FOR GROUNDCOVERS, HERBACEOUS AND MEADOW OR ORNAMENTAL GRASS AREAS AND A MINIMUM 6" LAYER SHALL BE INSTALLED IN ALL LAWN AREAS. TOPSOIL AND PLANTING SOIL DEPTH INDICATED ON PLANS AND PLANTING DETAILS AND NARRATIVE SPECIFICATIONS SHALL GOVERN DEPTH WHEN PROVIDED.
4. WHERE PLANTING AREAS ARE PROPOSED FOR FORMER PAVED OR GRAVEL AREAS, BEDS SHALL BE EXCAVATED TO A MINIMUM 30" DEPTH AND, AT A MINIMUM, BE BACKFILLED WITH BOTTOM LAYER OF SANDY LOAM (ORGANIC CONTENT LESS THAN 2%) OVER WHICH TOPSOIL AND PLANTING SOILS WILL BE PLACED AT DEPTHS INDICATED IN PLANS, DETAILS AND NOTES.
5. IF THE QUANTITY OF SOILS FROM THE SITE IS NOT ADEQUATE TO FILL PLANTING AREAS TO A DEPTH INDICATED IN PLANS AND DETAILS, TOPSOIL AND PLANTING SOILS TO DETERMINE IF THE MATERIALS ARE CONDUCIVE TO SUSTAINING PROPOSED PLANTINGS SHOULD BE FURNISHED BY THE CONTRACTOR. TOPSOIL AND PLANTING SOILS SHALL BE FREE OF BROKEN GLASS, PAINT CHIPS, PLASTIC, DELETERIOUS MATERIALS, ROOTS, WEEDS, BOULDERS, COBBLES AND GRAVEL OVER 1" IN DIAMETER AND COMPLY WITH THE FOLLOWING CRITERIA:
   -SOILS SHALL MEET ALL APPLICABLE SOIL REMEDIATION STANDARDS
   -ORGANIC CONTENT: 2-5% IN NATIVE SOILS; UP TO 10% IN AMENDED SOILS
   -SOLUBLE SALTS: LESS THAN 0.5 MM HOS/CM
   -SOIL PH: 4.5-7% TO BE AMENDED PER SOIL TEST RESULTS
   -PHYSICAL (SIEVE) ANALYSIS/ SOIL TEXTURE
   SAND: 40-60% SILT: 25-60% CLAY: 5-20%
   -NOT MORE THAN 1% OF MATERIAL SHALL BE RETAINED BY A #4 SIEVE.
6. ALL PLANTING SOILS SHALL BE SUBMITTED FOR TESTING TO THE STATE COOPERATIVE EXTENSION SERVICE, OR APPROVED EQUAL, PRIOR TO DELIVERY TO THE SITE. CONTRACTOR SHALL FURNISH SOIL SAMPLES AND SOIL TEST RESULTS TO LANDSCAPE ARCHITECT OR OWNER AT A RATE OF ONE SAMPLE PER 500 CUBIC YARDS TO ENSURE CONSISTENCY ACROSS THE TOTAL VOLUME OF PLANTING SOIL REQUIRED. TEST RESULTS SHALL EVALUATE FOR ALL CRITERIA LISTED IN THIS SPECIFICATION. IF TESTING AGENCY DETERMINES THAT THE SOILS ARE DEFICIENT IN ANY MANNER AND MAY BE CORRECTED BY ADDING AMENDMENTS, THE CONTRACTOR SHALL FOLLOW STATED RECOMMENDATIONS FOR SOIL IMPROVEMENT AND FURNISH SUBMITTALS FOR ALL AMENDMENTS PRIOR TO DELIVERY OF SOIL TO THE PROJECT SITE.
7. IF SOIL ORGANIC CONTENT IS INADEQUATE, SOIL SHALL BE AMENDED WITH COMPOST OR ACCEPTABLE, WEED FREE, ORGANIC MATTER. ORGANIC AMENDMENT SHALL BE WELL COMPOSTED, PH RANGE OF 6-8; MOISTURE CONTENT 35-55% BY WEIGHT 100% PASSING THROUGH 1" SIEVE; SOLUBLE SALT CONTENT LESS THAN 0.5 MM HOS/CM; MEETING ALL APPLICABLE ENVIRONMENTAL CRITERIA FOR CLEAN FILL; FREE OF BROKEN GLASS, PAINT CHIPS, PLASTIC, DELETERIOUS MATERIALS, ROOTS, WEEDS, BOULDERS, COBBLES AND GRAVEL OVER 1" IN DIAMETER
8. SCARIFY AND/OR TILL ALL COMPACTED SUBSOILS PRIOR TO ADDING PLANTING SOIL OR TOPSOIL. PLANTING SOILS AND TOPSOIL SHALL BE PLACED IN 12-18" LIFTS AND WATER THOROUGHLY BEFORE INSTALLING NEXT LIFT. NO SOILS SHALL BE PLACED IN A FROZEN OR MUDDY CONDITION.

DELIVERY, STORAGE, AND HANDLING

1. PACKAGED MATERIALS: PACKAGED MATERIALS SHALL BE DELIVERED IN CONTAINERS SHOWING WEIGHT, ANALYSIS, AND NAME OF MANUFACTURER. MATERIALS SHALL BE PROTECTED FROM DETERIORATION DURING DELIVERY, AND WHILE STORED AT SITE.
2. TREES AND SHRUBS: THE CONTRACTOR SHALL PROVIDE TREES AND SHRUBS DUG FOR THE GROWING SEASON FOR WHICH THEY WILL BE PLANTED. DO NOT PRUNE PRIOR TO DELIVERY UNLESS OTHERWISE DIRECTED BY THE LANDSCAPE ARCHITECT. DO NOT BEND OR BIND-TIE TREES OR SHRUBS IN SUCH A MANNER AS TO DAMAGE BARK, BREAK BRANCHES, OR DESTROY NATURAL SHAPE. PROVIDE PROTECTIVE COVERING DURING TRANSIT. DO NOT DROP OR BREAK BALLED STOCK DURING DELIVERY OR HANDLING.
3. ALL PLANTS SHALL BE BALLED AND BURLAPPED OR CONTAINER GROWN AS SPECIFIED. NO CONTAINER GROWN STOCK WILL BE ACCEPTED IF IT IS ROOT BOUND. ALL ROOT BALL WRAPPING AND BINDING MATERIAL MADE OF SYNTHETICS OR PLASTICS SHALL BE REMOVED FROM THE TOP OF THE BALL AT THE TIME OF PLANTING, IF THE PLANT IS SHIPPED WITH A WIRE BASKET AROUND THE ROOT BALL, THE WIRE BASKET SHALL BE CUT AND FOLDED DOWN 8" INTO THE PLANTING HOLE. WITH CONTAINER-GROWN STOCK, THE CONTAINER SHALL BE REMOVED AND THE ROOT BALL SHALL BE CUT THROUGH THE SURFACE IN TWO LOCATIONS.
4. THE CONTRACTOR SHALL HAVE TREES AND SHRUBS DELIVERED TO SITE AFTER PREPARATIONS FOR PLANTING HAVE BEEN COMPLETED AND PLANT IMMEDIATELY. IF PLANTING IS DELAYED MORE THAN 6 HOURS AFTER DELIVERY, THE CONTRACTOR SHALL SET TREES AND SHRUBS IN SHADE, PROTECT FROM WEATHER AND MECHANICAL DAMAGE AND KEEP ROOTS MOIST BY COVERING WITH MULCH, BURLAP OR OTHER ACCEPTABLE MEANS OF RETAINING MOISTURE.

INSTALLATION

1. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UNDERGROUND UTILITY AND SEWER LINES PRIOR TO THE START OF EXCAVATION ACTIVITIES. NOTIFY THE PROJECT ENGINEER AND OWNER IMMEDIATELY OF ANY CONFLICTS WITH PROPOSED PLANTING LOCATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE.
2. THE CONTRACTOR TO STAKE OUT PLANTING LOCATIONS, FOR REVIEW AND APPROVAL BY THE LANDSCAPE ARCHITECT AND/OR OWNER BEFORE PLANTING WORK BEGINS. THE LANDSCAPE ARCHITECT AND/OR OWNER SHALL DIRECT THE CONTRACTOR IN THE FINAL PLACEMENT OF ALL PLANT MATERIAL AND LOCATION OF PLANTING BEDS TO ENSURE COMPLIANCE WITH DESIGN INTENT UNLESS OTHERWISE INSTRUCTED.
3. NO PLANT SHALL BE PUT INTO THE GROUND BEFORE ROUGH GRADING HAS BEEN COMPLETED AND APPROVED BY THE PROJECT LANDSCAPE ARCHITECT OR PROJECT ENGINEER.
4. ALL LANDSCAPED AREAS TO BE CLEARED OF ROCKS, STUMPS, TRASH AND OTHER UNSIGHTLY DEBRIS. ALL FINE GRADED AREAS SHOULD BE HAND RAKED SMOOTH ELIMINATING ANY CLUMPS AND UNEVEN SURFACES PRIOR TO PLANTING OR MULCHING.
5. ALL PLANT MATERIAL SHALL BE INSTALLED AS PER DETAILS, NOTES AND CONTRACT SPECIFICATIONS. THE LANDSCAPE ARCHITECT MAY REVIEW INSTALLATION AND MAINTENANCE PROCEDURES.
6. THE CONTRACTOR SHALL KEEP AREA CLEAN DURING DELIVERY AND INSTALLATION OF PLANT MATERIALS. REMOVE AND DISPOSE OF OFF-SITE ANY ACCUMULATED DEBRIS OR UNUSED MATERIALS. REPAIR DAMAGE TO ADJACENT AREAS CAUSED BY LANDSCAPE INSTALLATION OPERATIONS.
7. AFTER PLANT IS PLACED IN TREE PIT LOCATION, ALL TWINE HOLDING ROOT BALL TOGETHER SHOULD BE COMPLETELY REMOVED AND THE BURLAP SHOULD BE PULLED DOWN SO 1/3 OF THE ROOT BALL IS EXPOSED. SYNTHETIC BURLAP SHOULD BE COMPLETELY REMOVED AFTER INSTALLATION.
8. MULCH SHOULD NOT BE PILED UP AROUND THE TRUNK OF ANY PLANT MATERIAL. NO MULCH OR TOPSOIL SHOULD BE TOUCHING THE BASE OF THE TRUNK ABOVE THE ROOT COLLAR.
9. ALL PLANTS SHALL BE WATERED THOROUGHLY TWICE DURING THE FIRST 24-HOUR PERIOD AFTER PLANTING. ALL PLANTS SHALL THEN BE WATERED WEEKLY OR AS REQUIRED BY SITE AND WEATHER CONDITIONS TO MAINTAIN VIGOROUS AND HEALTHY PLANT GROWTH.
10. AFTER COMPLETION OF A PROJECT, ALL EXPOSED GROUND SURFACES THAT ARE NOT PAVED WITHIN THE CONTRACT LIMIT LINE, AND THAT ARE NOT COVERED BY LANDSCAPE PLANTING OR SEEDING AS SPECIFIED, SHALL BE COVERED BY A SHREDDED HARDWOOD BARK OR APPROVED EQUAL MULCH THAT WILL PREVENT SOIL EROSION AND THE EMANATION OF DUST.
11. TREES MAY BE STAKED AT LANDSCAPE CONTRACTOR'S DISCRETION. CURRENT HORTICULTURAL PRACTICE DOES NOT RECOMMEND STAKING TREES EXCEPT IN CONDITIONS WHERE TREES ARE SUBJECT TO BLOW DOWNS DUE TO SOIL CONDITIONS, HEAVY PREVAILING WINDS OR A HIGH RATIO OF TOP GROWTH TO ROOT BALL. IF STAKING IS DEEMED NECESSARY BY CONTRACTOR, STAKE AND GUYS SHOULD BE LOCATED AND FLAGGED IN A MANNER TO PREVENT TRIPPING HAZARDS. WIRES OR GUYS SHALL BE LOCATED AND COVERED SO AS NOT TO PULL OR DAMAGE BRANCHES AND SHALL BE REMOVED AT THE END OF THE GUARANTEE PERIOD.

GUARANTEE

1. NEW PLANT MATERIAL SHALL BE GUARANTEED TO BE ALIVE AND IN VIGOROUS GROWING CONDITION FOR A PERIOD OF TWO YEARS FOLLOWING ACCEPTANCE BY THE OWNER. PLANT MATERIAL FOUND TO BE UNHEALTHY, DYING OR DEAD DURING THIS PERIOD, SHALL BE REMOVED AND REPLACED IN KIND BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER.

SOD SPECIFICATIONS:

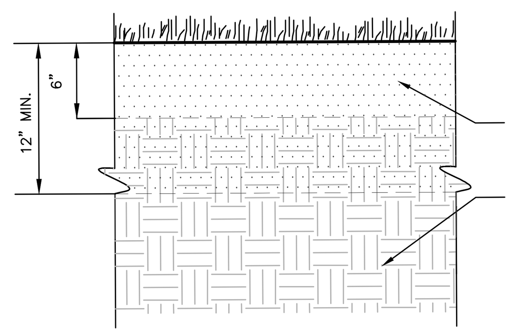
1. SOD IS TO BE A FESCUE/BLUEGRASS BLEND APPROXIMATELY 70/30%. SOD IS TO BE INDIGENOUS TO THE AREA AND BE FURNISHED BY A REPUTABLE GROWER WITH A MINIMUM 5 YEARS EXPERIENCE.
2. PRIOR TO SODDING ALL AREAS ARE TO BE TOPSOILED, FINE GRADED, RAKED, WATERED LIGHTLY, AND FERTILIZED WITH A STARTER FERTILIZER.
3. ALL STONES GREATER THAN 2" DIAMETER SHALL BE REMOVED.
4. SOD TO BE INSTALLED PERPENDICULAR TO ALL SLOPED AREAS. SOD STRIPS TO BE LAID OUT SO JOINTS ARE NOT CLOSER THAN ONE FOOT (1'-0") FROM EACH OTHER.
5. SOD IS TO BE WATERED AT A RATE OF AT LEAST ONE AND A HALF INCHES ($1\frac{1}{2}$") PER WEEK UNTIL ROOT MASS MENDS WITH SOIL. AFTER THIS HAS OCCURRED NORMAL WATERING OF AT LEAST ONE INCH (1") PER WEEK IS TO COMMENCE.
6. ALL SOD AREAS ARE TO BE ROLLED IF ANY HEAVING OR DEPRESSIONS OCCUR.

LANDSCAPE MAINTENANCE NOTES

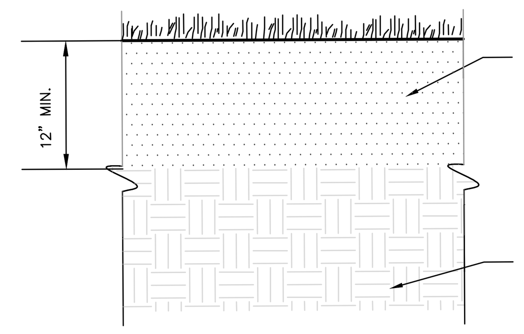
1. MAINTENANCE OPERATIONS BEFORE APPROVAL:
   A. PLANT CARE SHALL BEGIN IMMEDIATELY AFTER EACH PLANT IS SATISFACTORILY INSTALLED AND SHALL CONTINUE THROUGHOUT THE LIFE OF THE CONTRACT UNTIL FINAL ACCEPTANCE OF THE PROJECT.
   B. CARE SHALL INCLUDE, BUT NOT BE LIMITED TO, REPLACING MULCH THAT HAS BEEN DISPLACED BY EROSION OR OTHER MEANS, REPAIRING AND RESHAPING WATER RINGS OR SAUCERS, MAINTAINING STAKES AND GUYS AS ORIGINALLY INSTALLED, WATERING WHEN NEEDED OR DIRECTED, AND PERFORMING ANY OTHER WORK REQUIRED TO KEEP THE PLANTS IN A HEALTHY CONDITION.
   C. CONTRACTOR SHALL REMOVE AND REPLACE ALL DEAD, DEFECTIVE AND/OR REJECTED PLANTS AS REQUIRED BEFORE FINAL ACCEPTANCE.
2. MAINTENANCE DURING CONSTRUCTION:
   A. MAINTENANCE SHALL BEGIN IMMEDIATELY AFTER PLANTING. PLANTS SHALL BE WATERED, MULCHED, WEEDED, PRUNED, SPRAYED, FERTILIZED, CULTIVATED, AND OTHERWISE MAINTAINED AND PROTECTED UNTIL PROVISIONAL ACCEPTANCE. SETTLED PLANTS SHALL BE RESET TO PROPER GRADE AND POSITION, PLANTING SAUCER RESTORED AND DEAD MATERIAL REMOVED. STAKES AND WIRES SHALL BE TIGHTENED AND REPAIRED. DEFECTIVE WORK SHALL BE CORRECTED AS SOON AS POSSIBLE AFTER IT BECOMES APPARENT AND WEATHER AND SEASON PERMIT.
   B. IF A SUBSTANTIAL NUMBER OF PLANTS ARE SICKLY OR DEAD AT THE TIME OF INSPECTION, ACCEPTANCE SHALL NOT BE GRANTED AND THE CONTRACTOR'S RESPONSIBILITY FOR MAINTENANCE OF ALL PLANTS SHALL BE EXTENDED FROM THE TIME REPLACEMENTS ARE MADE OR EXISTING PLANTS ARE DEEMED ACCEPTABLE BY THE LANDSCAPE ARCHITECT.
   C. ALL REPLACEMENTS SHALL BE PLANTS OF THE SAME KIND AND SIZE SPECIFIED ON THE PLANT LIST OR THAT WHICH WAS TO REMAIN OR BE RELOCATED. THEY SHALL BE FURNISHED AND PLANTED AS SPECIFIED. THE COST SHALL BE BORNE BY THE CONTRACTOR. REPLACEMENTS RESULTING FROM REMOVAL, LOSS, OR DAMAGE DUE TO OCCUPANCY OF THE PROJECT IN ANY PART, VANDALISM, PHYSICAL DAMAGE BY ANIMALS, VEHICLES, ETC., AND LOSSES DUE TO CURTAILMENT OF WATER BY LOCAL AUTHORITIES SHALL BE APPROVED AND PAID FOR BY THE OWNER.
   D. PLANTS SHALL BE GUARANTEED FOR A PERIOD OF TWO YEARS AFTER INSPECTION AND PROVISIONAL ACCEPTANCE.
   E. AT THE END OF THE ESTABLISHMENT PERIOD, INSPECTION SHALL BE MADE AGAIN. ANY PLANT REQUIRED UNDER THIS CONTRACT THAT IS DEAD OR UNSATISFACTORY TO THE LANDSCAPE ARCHITECT OR OWNER SHALL BE REMOVED FROM THE SITE AND REPLACED DURING THE NORMAL PLANTING SEASON.
3. LAWN MAINTENANCE:
   A. BEGIN MAINTENANCE IMMEDIATELY AFTER EACH PORTION OF LAWN IS PLANTED AND CONTINUE FOR 8 WEEKS AFTER ALL LAWN PLANTING IS COMPLETED.
   B. WATER TO KEEP SURFACE SOIL MOIST, REPAIR WASHED OUT AREAS BY FILLING WITH TOPSOIL, LIMING, FERTILIZING AND RE-SEEDING.
   C. IN NOW-MOW LAWN AREAS, MOW TO A FOUR INCH HEIGHT DURING THE FIRST SEASON. IN THE SECOND SEASON, MOWING MAY BE REQUIRED TWICE OR THREE TIMES A YEAR IN MIDSUMMER, WHEN GRASS SEEDHEADS APPEAR. ONCE THE LAWN IS ESTABLISHED, MOWING MAY BE REQUIRED ONLY IN THE FALL TO REMOVE THE SEASON'S DENSE LEAF GROWTH AND FALLEN LEAVES, ENCOURAGING THICK REGROWTH IN THE SPRING.

GENERAL NOTE:

DUE TO GENERAL CONSTRUCTION ACTIVITIES AND ADJACENT SITE COMPACTION REQUIREMENTS, SUBGRADE SOILS WITHIN PROPOSED PLANTING AREAS TEND TO BECOME HIGHLY COMPACTED. IN ORDER TO CREATE A HEALTHY GROWTH MEDIUM TO ALLOW PROPOSED PLANTINGS TO ESTABLISH A VIGOROUS ROOT MASS, THIS SUBGRADE SOIL MUST UNDERGO A RESTORATION PROCESS. IN ADDITION, IMPORTED OR AMENDED EXISTING SOILS SHALL BE MIXED WITH SUBGRADE SOILS WHERE THEY MEET IN ORDER TO CREATE A TRANSITIONAL GRADIENT TO ALLOW FOR PROPER DRAINAGE.



PLANTING SOIL WITHIN AREAS OF CUT OR RAISED GRADE



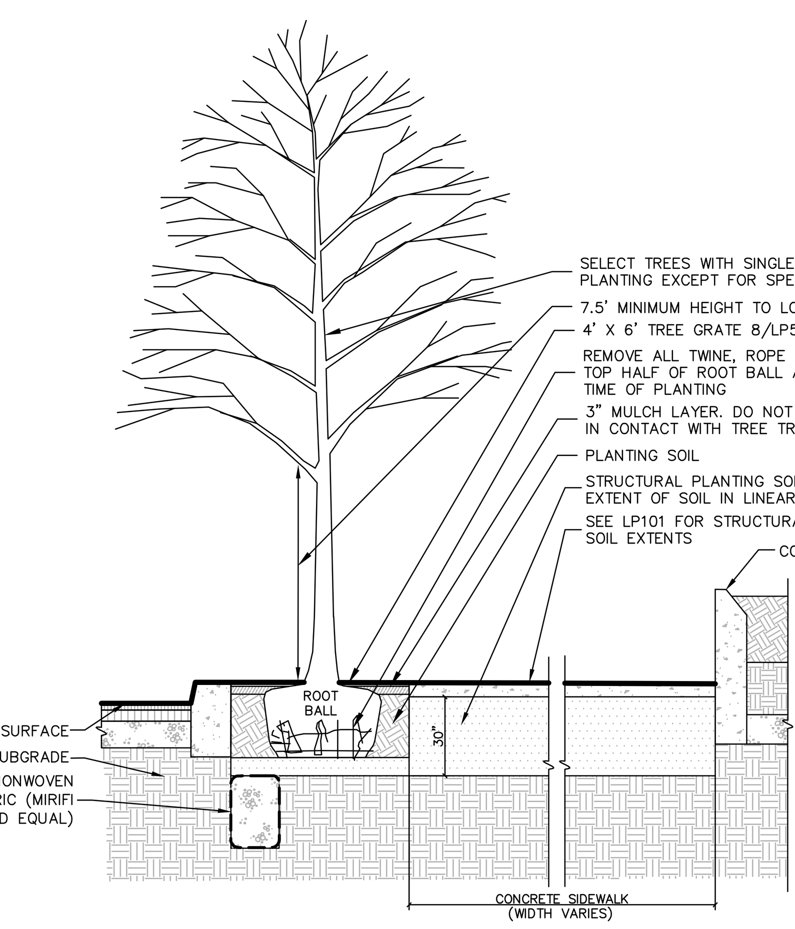
PLANTING SOIL WITHIN AREAS OF UNCHANGED GRADE

NOTES:

1. CONTRACTOR IS RESPONSIBLE TO SEND SAMPLES OF EXISTING SOILS INTENDED FOR USE IN PLANTING AREAS (1 PER 500 CY.) TO TESTING LABORATORY OR UNIVERSITY COOPERATIVE EXTENSION FOR TESTING. ALL TESTING COSTS ARE AT THE CONTRACTOR'S EXPENSE.
2. RECYCLED CRUSHED CONCRETE AND ASPHALT MILLINGS SHALL NOT BE PLACED WITHIN 2'-6" OF FINISH GRADE IN PROPOSED LANDSCAPE AREAS.
3. IMPORTED FILL SHALL CONTAIN NO CONTAMINATION IN EXCEEDENCE OF THE APPLICABLE STATE ENVIRONMENTAL STANDARDS AND MEET THE ENVIRONMENTAL REQUIREMENTS FOR THE PROJECT. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION OF COMPLIANCE PRIOR TO DELIVERY OF ANY FILL TO THE SITE.
4. CONTRACTOR TO LIGHTLY COMPACT ALL PLACED PLANTING SOILS AND RAISE GRADES ACCORDINGLY TO ALLOW FOR FUTURE SETTLEMENT OF PLANTING SOILS (TYP.)
5. NO STONES, WOOD CHIPS, OR DEBRIS LARGER THAN 1/2" SHALL BE ACCEPTABLE WITHIN PLANTING AREAS.

1 PLANTING SOIL

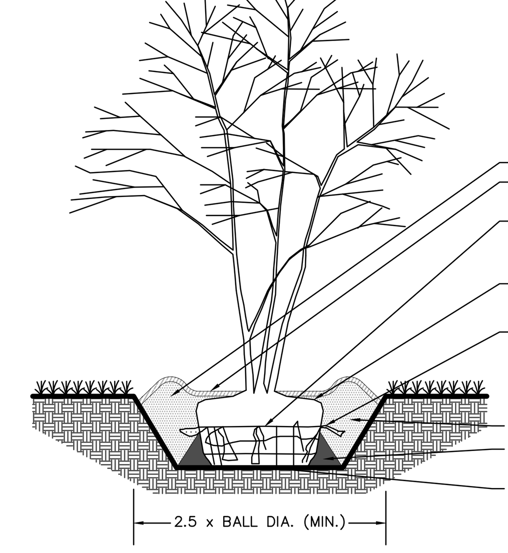
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NOTES:
1. DO NOT STAKE OR WRAP TRUNK. MARK THE NORTH SIDE OF THE TREE IN THE NURSERY AND LOCATE TO THE NORTH IN THE FIELD.
2. AVOID PURCHASING TREES WITH TWO LEADERS OR REMOVE ONE AT PLANTING; OTHERWISE DO NOT PRUNE TREE AT PLANTING EXCEPT FOR SPECIFIC CORRECTIONS.

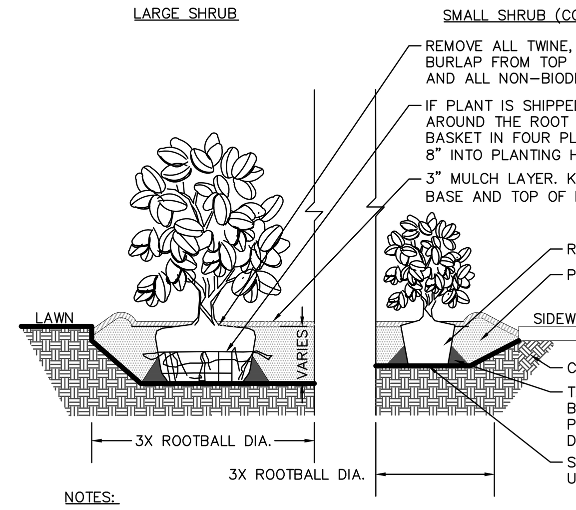
2 STRUCTURAL SOIL AT TREE PITS

1/4"=1'-0"



3 ORNAMENTAL TREE PLANTING

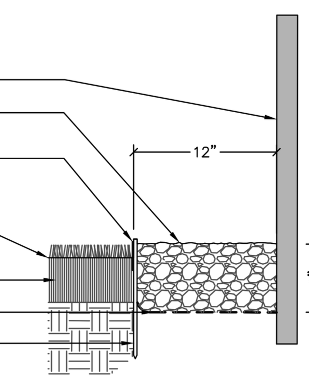
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NOTES:
1. ALL SHRUBS TO BE SET PLUMB.
2. REFER TO LANDSCAPE PLAN FOR SPACING OF INDIVIDUAL PLANTS.
3. REMOVE ALL WIRE, PLASTIC, TAGS OR SYNTHETIC MATERIAL FROM PLANTS PRIOR TO PLANTING.

4 SHRUB PLANTING

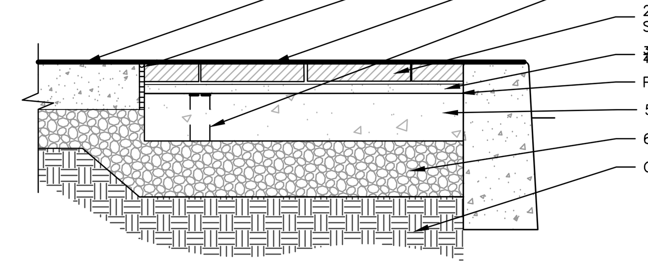
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NOTES: RIVER GRAVEL TO BE INSTALLED WHERE PLANTINGS OR LAWN MEET BUILDING WALLS AND UNDER BUILDING OVERHANGS WHERE SHOWN ON THE LANDSCAPE PLANS.

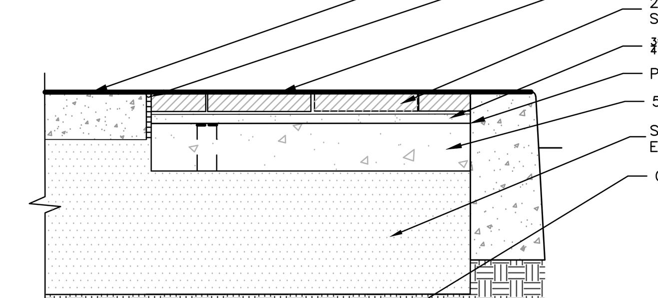
5 GRAVEL STRIP

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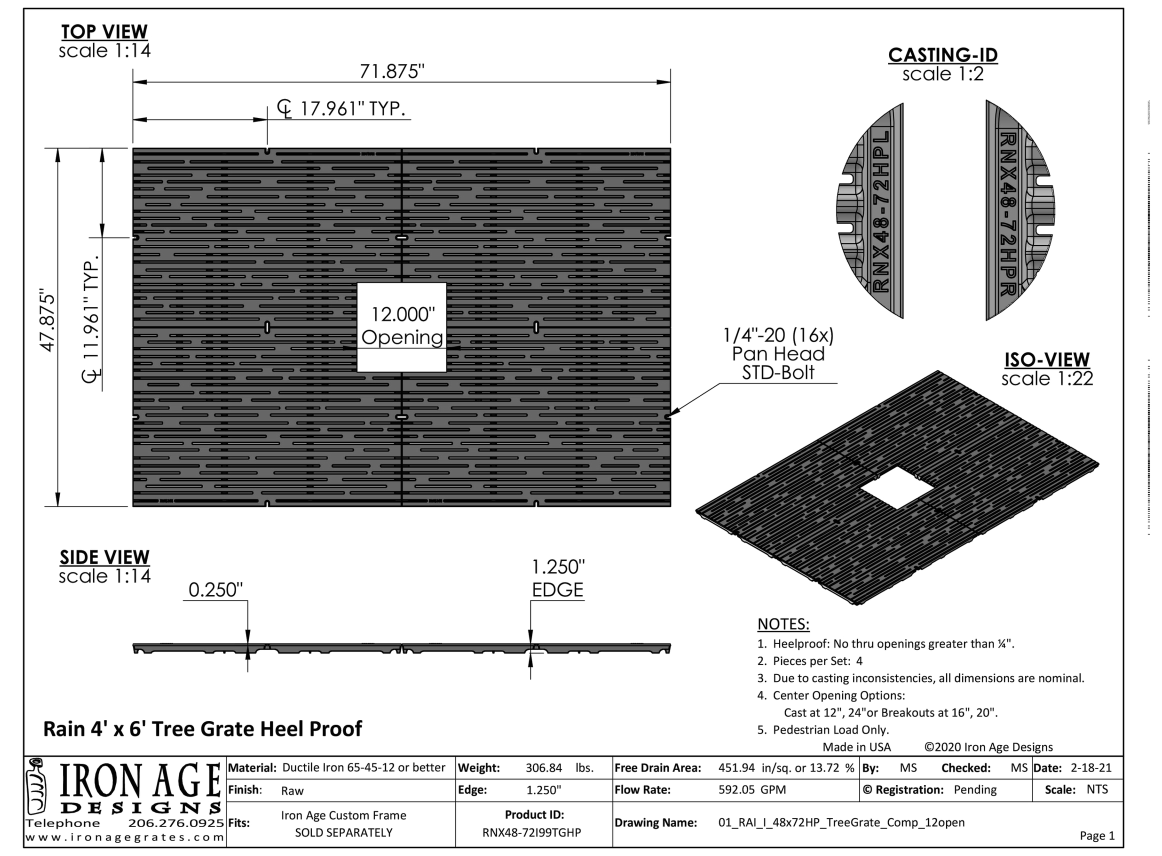
6 BRICK PAVERS ON CONCRETE BASE

NTS



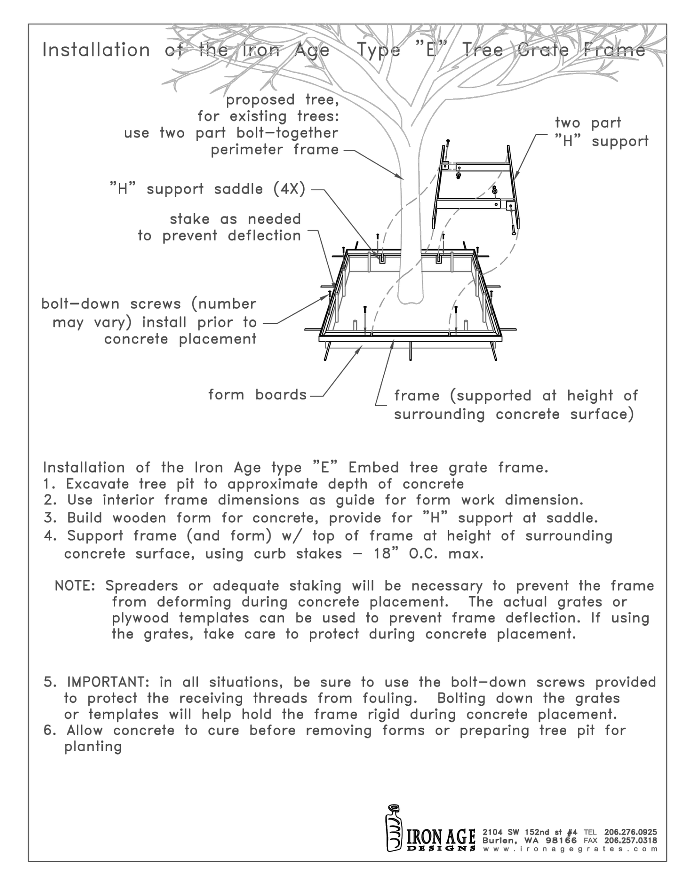
7 BRICK PAVERS ON STRUCTURAL SOIL

NTS



8 CAST IRON TREE GRATE

NTS


Installation of the Iron Age Type "E" Tree Grate Frame

Installation of the Iron Age type "E" Embed tree grate frame.
1. Excavate tree pit to approximate depth of concrete
2. Use interior frame dimensions as guide for form work dimension.
3. Build wooden form for concrete, provide for "H" support at saddle.
4. Support frame (and form) w/ top of frame at height of surrounding concrete surface, using curb stakes – 18" O.C. max.

NOTE: Spreaders or adequate staking will be necessary to prevent the frame from deforming during concrete placement. The actual grates or plywood templates can be used to prevent frame deflection. If using the grates, take care to protect during concrete placement.

5. IMPORTANT: in all situations, be sure to use the bolt-down screws provided to protect the receiving threads from fouling. Bolting down the grates or templates will help hold the frame rigid during concrete placement.
6. Allow concrete to cure before removing forms or preparing tree pit for planting

IRON AGE DESIGNS 2104 SW 152nd st #4 Burien, WA 98166 TEL 206.276.0925 FAX 206.257.0318 www.ironagegrates.com

9 TREE GRATE FRAME

NTS

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SEAL:



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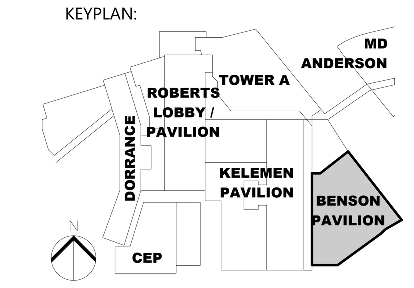
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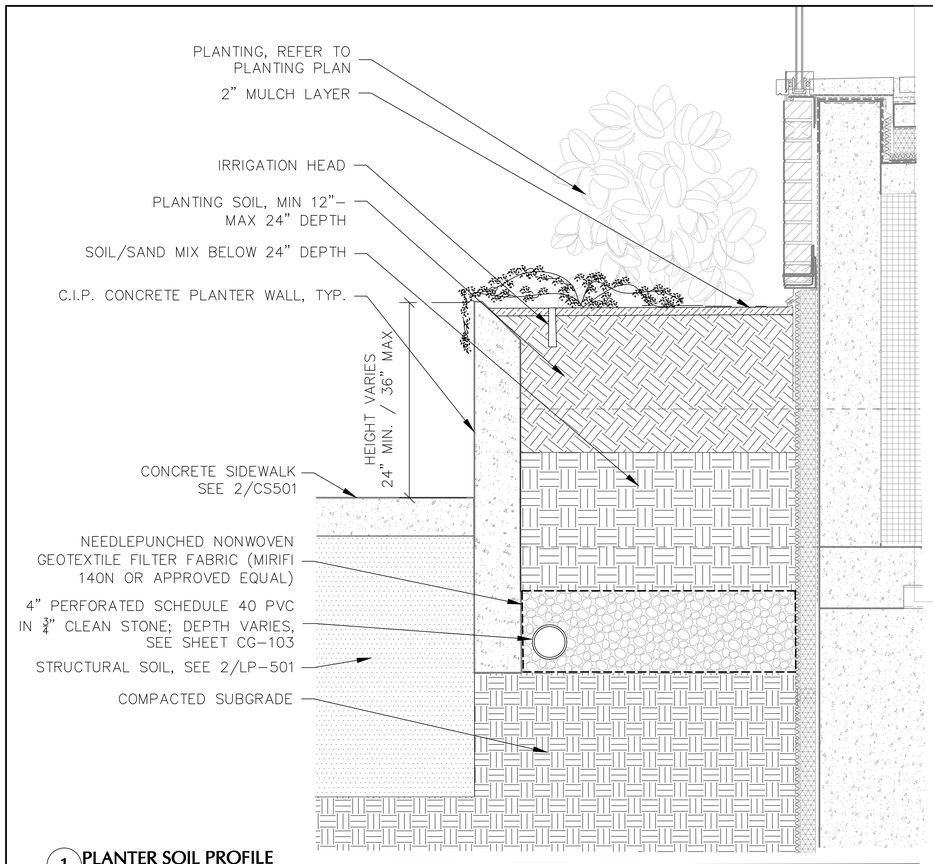
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CON/REF NO.
DATE 10/08/2026
DCA# NJPRP-XXXXX

LAND DEVELOPMENT

LANDSCAPE NOTES AND DETAILS

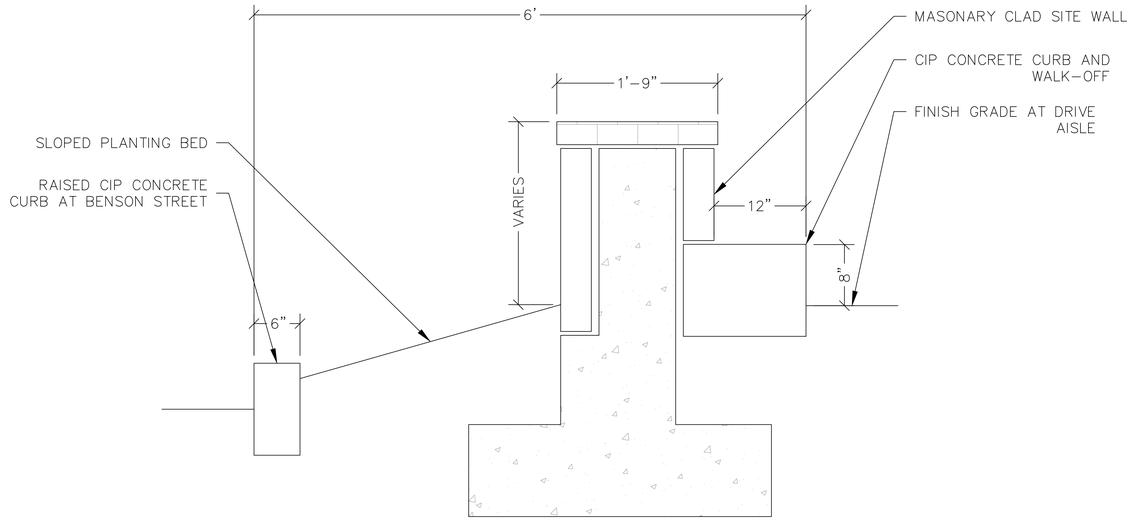
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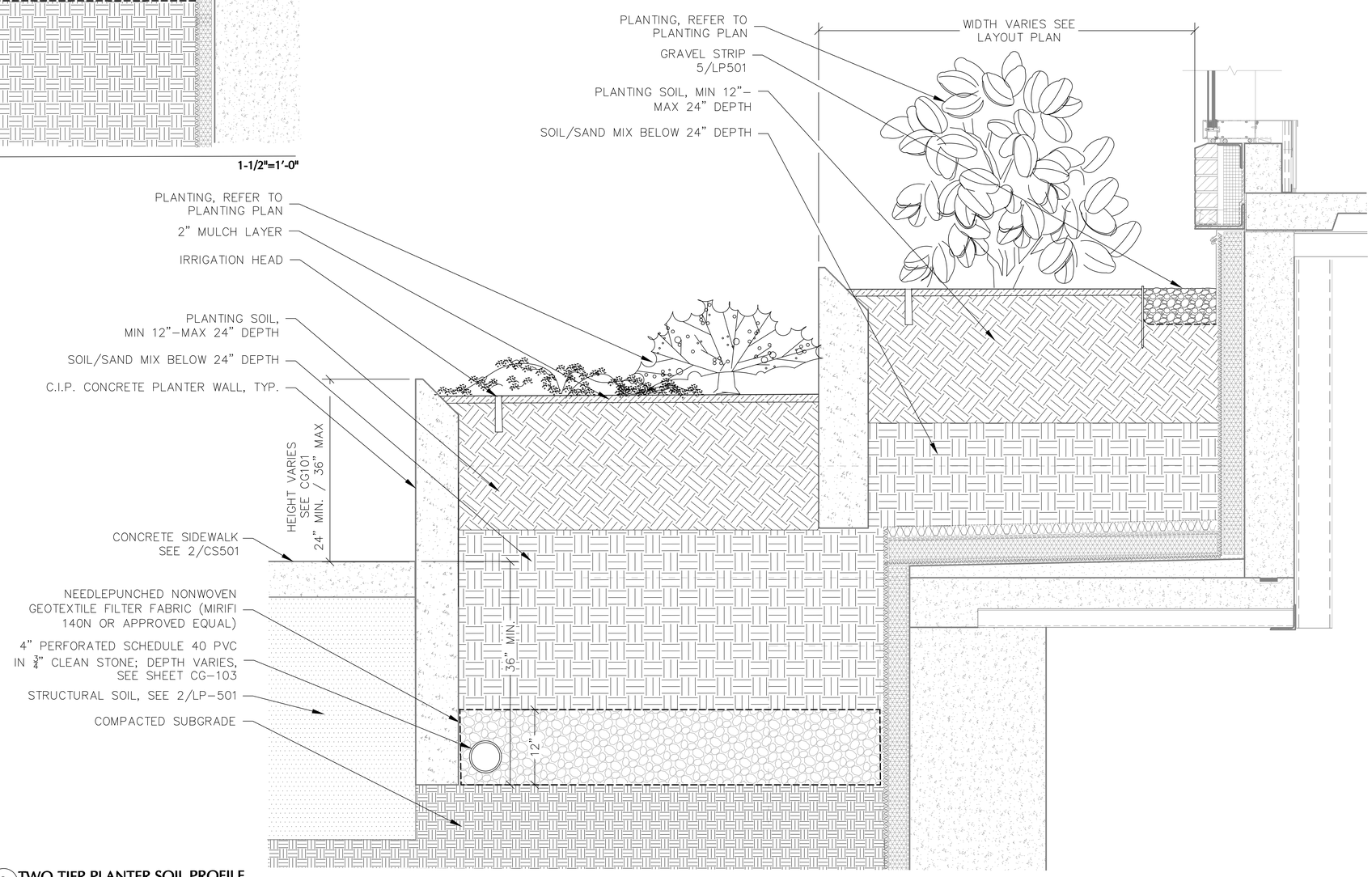
1 PLANTER SOIL PROFILE

1-1/2"=1'-0"



3 ER DROP OFF ISLAND PLANTER PROFILE

1-1/2"=1'-0"



2 TWO-TIER PLANTER SOIL PROFILE

1-1/2"=1'-0"

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PROJECT:

BENSON PAVILION

COOPER NORCROSS UNIVERSITY HOSPITAL
1 COOPER PLAZA
CAMDEN, NJ 08103

SEAL:



Carolyn Campbell

CERT OF AUTHORIZATION #AC 331

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KEYPLAN:

ISSUES:

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PROJECT NO. 7088
CON/REF NO.
DATE 10/08/2026

DCA# NJPRP-XXXXX

LAND DEVELOPMENT

LANDSCAPE NOTES AND DETAILS

LP502

Date: 10/7/2026 Time: 17:18 User: cwalsh Style Table: Langan.stb Layout: LP502 Document Code: 220245001-0502-LP501-0101

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Memorandum

1 University Square Drive, Suite 110 Princeton, NJ 08540 T: 609.282.8000 F: 609.282.8001

TO: Department of Planning and Development, City of Camden, New Jersey

FROM: Kyle MacGeorge, P.E., LEED AP, Matthew Michelson

INFO: Jennifer O'Shea, Faith Orsini – Cooper Norcross Health
Dave Lamontagne, Jim McPhilemy, Drew Sivertsen, PurePM

DATE: October 8, 2026

RE: **Parking Statement**
Cooper Norcross Health Benson Pavilion
1 Cooper Plaza, Camden, NJ 08103
Langan Project No.: 220245001

Cooper Norcross Health (CNC) is proposing to improve the Cooper Norcross University Hospital located in Camden, New Jersey. The proposed Benson Pavilion will be a 10-story hospital-building with a footprint of approximately 28,360-square-feet. Cooper intends that the Benson Pavilion expansion will better serve patients and the community by upgrading CNC's aging facilities with a new, state-of-the-art healthcare space.

The proposed Benson Pavilion expansion will be developed in two phases. The initial phase includes the construction and occupancy of the first six floors of the building, while the upper four floors will be constructed as shell space for future fit-out and occupancy. Upon full build-out of the ten-story facility, Benson Pavilion is anticipated to accommodate a maximum increase of 110 patient beds, 428 employees during the shift of largest employment, and 40 physicians.

For Phase I (six-story occupancy), the facility is anticipated to contain 22 patient beds and approximately 60 percent of the projected staffing associated with the full build-out, resulting in 257 employees and 24 physicians.

The City of Camden parking requirements may be evaluated under both the City Zoning Ordinance and the applicable Redevelopment Plan standards. To be conservative, parking demand calculations have therefore been prepared under both methodologies for the Phase I and full build-out conditions, as summarized below.

Zoning Ordinance Parking Requirements

Pursuant to the City of Camden Zoning Ordinance, parking for hospitals and healthcare facilities is calculated based on the following requirements:

- One (1) parking space for every two (2) patient beds;
- One (1) parking space for every two (2) employees or staff members, including nurses, during the shift of largest employment; and
- One (1) parking space per physician.

Based on these standards, the proposed Benson Pavilion would require the following:

PARKING COUNT FOR PROPOSED BENSON PAVILION (6-story fit out)					
APPLICABLE REGULATION	**REQUIRED / ALLOWABLE**	**VALUE**	**UNIT**	**# SPACES REQUIRED**	**TOTAL PARKING SPACES REQUIRED**
Hospitals/health care facilities:	1 parking space for each 2 beds	22	beds	11	**164**
	1 parking space for each 2 employees or staff members, including nurses, on shift of largest employment	257	employees or staff	129	
	1 parking space per doctor	24	doctors	24	

PARKING COUNT FOR PROPOSED BENSON PAVILION (10-story fit out)					
APPLICABLE REGULATION	**REQUIRED / ALLOWABLE**	**VALUE**	**UNIT**	**# SPACES REQUIRED**	**TOTAL PARKING SPACES REQUIRED**
Hospitals/health care facilities:	1 parking space for each 2 beds	110	beds	55	**309**
	1 parking space for each 2 employees or staff members, including nurses, on shift of largest employment	428	employees or staff	214	
	1 parking space per doctor	40	doctors	40	

Redevelopment Plan Parking Requirements

The applicable Redevelopment Plan calculates parking requirements for institutional uses based on the greater of the following:

- One (1) parking space for every 1,000 square feet of institutional floor area; or
- One (1) parking space for every ten (10) seats of public assembly, including auditoriums, convention halls, churches, or similar uses.

As the proposed development does not include a public assembly use that would generate a greater parking demand, the floor area method governs. Based on this standard, the proposed Benson Pavilion would require:

PARKING COUNT FOR PROPOSED BENSON PAVILION (6-stories)					
Redevelopment Plan	1 parking space per every 1,000 sq ft of institutional use	200,400	SF	200.4	**201**

PARKING COUNT FOR PROPOSED BENSON PAVILION (10-stories)					
Redevelopment Plan	1 parking space per every 1,000 sq ft of institutional use	315,344	SF	315.3	**316**

Based on the analyses above, the Redevelopment Ordinance generates the greater parking requirement. Under the maximum projected occupancy scenario associated with the full build-out of Benson Pavilion, the project would require **316 parking spaces**.

CNH intends to satisfy this parking demand through the combination of leasing parking spaces at existing parking facilities located in proximity to the hospital campus and leasing spaces at an offsite location near Camden Waterfront, where employees will be shuttled to the campus. CNH has previously met their parking demand using a similar arrangement.

The Benson Pavilion project represents a key component of CNH's long-term investment in the Camden community and serves as the initial phase of a broader campus modernization effort that will facilitate the future demolition, replacement, and upgrading of existing hospital facilities.

Parking and circulation for the Cooper Norcross University Hospital campus is established and consists of several parking facilities. The attached Overall Traffic Circulation and Parking Plan identifies existing parking facilities that support the campus in proximity to the hospital. These include the Rowan Medical School Parking Garage, the CCIA Garage, the Cooper Haddon Parking Garage, and several surface parking lots. In general, over 4,300 parking spaces support the Cooper University Hospital Campus. Additionally, Cooper leases spaces in the Hinson garage near the waterfront and provides shuttle service for employees from that lot. CNH prioritizes patient parking spaces in the CCIA garage that is attached to the main hospital. This approach will be maintained with the additional patient demand being met within this garage so that patients have a direct accessible connection to the hospital. Employee spaces will be relocated as necessary to the surrounding campus locations, including the waterfront garage and CNH will lease additional spaces in that garage as required to meet the parking regulations and its parking demand. Each of these locations are connected by pedestrian routes via sidewalks, crosswalks, and ADA accessible curb cuts at crosswalk locations.

The proposed Benson Pavilion development will result in the removal of ten (10) existing short-term patient parking spaces, consisting of one (1) accessible parking space and nine (9) standard parking spaces. These spaces are intended for short-duration patient and visitor use and are not included in Cooper University Health Care's (CNH) inventory of employee and visitor parking spaces used to satisfy institutional parking requirements.

To maintain and enhance short-term parking accommodations, the proposed project will provide space for a total of eleven (11) replacement short-term parking spaces. Six spaces will be located as part of the Emergency Department drop-off entrance, and five additional spaces will be provided along Benson Street to accommodate overflow demand and other short-term (15 minute) parking. All spaces will be managed through CNH's valet operations to ensure efficient utilization and access for patients and visitors.

STORMWATER MANAGEMENT REPORT

for

COOPER NORCROSS HEALTH
BENSON PAVILION
CAMDEN, NEW JERSEY

Prepared For:

Cooper Norcross Health

Prepared By:

Langan Engineering and Environmental Services, Inc.
1 University Square Drive
Suite 110
Princeton, NJ 08540
NJ Certificate of Authorization No: 24GA27996400

Kyle J. MacGeorge, P.E., LEED AP®
NJ PE License No.: NJ 24GE05751600
Associate Principal

Original: 08 October 2026
220245001

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TABLE OF CONTENTS

Section **Page No.**

SITE INFORMATION AND HISTORY **1**

DESIGN REQUIREMENTS **1**

STORMWATER MANAGEMENT APPROACH **2**

Low-Impact Development **2**

Drainage Areas **3**

NRCS Methodology **3**

Stormwater Runoff Quantity **4**

STORMWATER CONVEYANCE SYSTEM **6**

CONCLUSION **6**

LIST OF FIGURES

Figure 1	USGS Location Map
Figure 2	Soils Map
Figure 3	Predevelopment Drainage Area Map
Figure 4	Post-Development Drainage Area Map

LIST OF DRAWINGS

CG101	Overall Grading and Drainage Plan
CG102	Detailed Grading and Drainage Plan
CG201	Stormwater Profiles
CG501	Grading and Drainage Details

LIST OF APPENDICES

Appendix A	Low-Impact Development Checklist
Appendix B	Pre-Development Drainage Area and Land Cover Summary / Runoff Hydrographs
Appendix C	Post-Development Drainage Area and Land Cover Summary / Runoff Hydrographs
Appendix D	Time of Concentration Calculations
Appendix E	Stormwater Conveyance Calculations
Appendix F	City of Camden Stormwater Fee Calculation

This report summarizes the stormwater drainage analysis for the proposed Cooper Norcross Health Benson Pavilion project in Camden, New Jersey.

SITE INFORMATION AND HISTORY

For the purpose of this report, "site" refers to the portion of Cooper Norcross Health main hospital campus area associated with proposed Benson Pavilion, which is proposed near the intersection of Benson Street and Haddon Avenue. All improvements are within Block 1402 Lot 1, with exception of improvements required in the public right-of-way.

Cooper Norcross Health (CNC) is proposing to improve the Cooper Norcross Health hospital located in Camden, New Jersey. The proposed Benson Pavilion will be a 10-story hospital-building expansion with a footprint of approximate 28,775-square-feet. Cooper intends that the Benson Pavilion expansion will better serve patients and the community by upgrading CNC's aging facilities with a new, state-of-the-art healthcare space. The project includes the proposed Benson Pavilion building, which will be constructed as a 10-story building with 6-stories of fit out and 4-stories constructed as shell space and reserved for future fit-out, new emergency department patient drop-off, and modifications within the Benson Street and Haddon Avenue ROW to accommodate the drop-off.

DESIGN REQUIREMENTS

This project is considered a "major development" as defined in N.JA.C. 7:8-1.2 (September 2026). The project will disturb approximately 38,770 sf within the project property and 15,252 sf within the right-of-way for a total of 54,022 sf or 1.24 acres; and thus, the project is considered a major development. The project will create 9,574 sf of new "regulated impervious surface," which is less than one-quarter acre. Due to the disturbance greater than one acre and being a major development the project is subject to the New Jersey Stormwater requirements outlined in N.J.A.C. 7:8 and the City of Camden Stormwater Ordinance. Stormwater management is proposed for the project to meet the requirements of N.J.A.C. 7:8 (September 2026).

In accordance with groundwater recharge standards set forth in N.J.A.C. 7:8-5.4(b)2 and city requirements, the groundwater recharge requirements do not apply to the project because the project is in an Urban Redevelopment Area.

In accordance with the stormwater runoff quality standards set forth in N.J.A.C 7:8-5.5(a) and city requirements, the water quality standards are not applicable because the major development does not result in an increase of one-quarter acre or more of regulated motor vehicle surface or the reconstruction of one-quarter acre or more of motor vehicle surface because there is a total of 8,460 sf 0.19 acres of motor vehicle surface.

In accordance with the stormwater runoff quantity standards set forth in N.J.A.C. 7:8-5.6(b)2 and city requirements, the water quantity standards are applicable. The project proposed no increase, as compared to the pre-construction condition, in the peak runoff rates of stormwater leaving the site for the current and projected two-, 10-, and 100-year storm events. Any increased volume, change in

timing, or increased rate of stormwater runoff will not result in additional flood damage below the point of discharge of the project.

Additionally, the City of Camden requires that the 25-year storm post development peak rate be reduced to less than or equal to the pre-development peak rate. This criterion has been satisfied.

In accordance with the green infrastructure standards set forth in N.J.A.C. 7:8-5.3(d) and city requirements, a variance from strict compliance in accordance with N.J.A.C. 7:8-4.6 is requested to utilize a BMP from Table 5-3 (extended detention basin) to meet the stormwater runoff quantity standards of N.J.A.C. 7:8-5.6. As noted previously, the groundwater recharge and stormwater runoff quality requirements are not applicable. Due to safety concerns of green stormwater infrastructure in an urban setting and the size constraints of the site, it is technically impractical to satisfy the stormwater runoff quantity requirements with a Green Infrastructure BMP. The stormwater runoff quantity requirements are met with the underground extended detention basin. The design implements low impact design to the extent possible, which is demonstrated on the Low Impact Design Checklist provided in Appendix A.

The proposed detention basin is integrated into the design of the Benson Pavilion basement. A outlet control structure will control the flow before gravity-draining to the existing 36-inch RCP city sewer in Benson Street. Due to the proximity of the detention basin and basement walls, both the basin and basement will be waterproofed to prevent infiltration of groundwater into the system and exfiltration of collected stormwater runoff.

The city of Camden has previously required that stormwater conveyance systems be designed for the 25-year storm event. The proposed outlet pipe from the new detention system was sized based on the outflow from the basin, which is designed for up to and including the 100-year (current and projected) managed rate, so the system is more than adequate to convey the 25-year storm. No point-discharges to the ground surface are proposed, and the existing discharge points will be maintained.

STORMWATER MANAGEMENT APPROACH

Low-Impact Development

The proposed stormwater management approach for the project includes low-impact development strategies listed below, in accordance with N.J.A.C. 7:8-5.3. A Low-Impact Development Checklist for the project is provided as Appendix A.

1. Protect areas that provide water quality benefits or areas particularly susceptible to erosion and sediment loss.
2. Minimize land disturbance including clearing and grading, by redeveloping the existing hospital campus rather than a new "greenfield" elsewhere.
3. Minimize soil compaction, by redeveloping the existing hospital campus rather than a new "greenfield" elsewhere.
4. Provide low maintenance landscaping that encourages retention and planting of native vegetation and minimizes the use of lawns, fertilizers, and pesticides.

5. Provide preventative source controls.

Drainage Areas

The pre-development condition of the site is composed of two drainage areas as described below (see Figure 3 for Pre-Development Drainage Area Map):

- EXDA-1 drains to point of interest POI-1, which is understood to be in the existing 36-inch RCP city sewer in Benson Street. The point of interest is approximately 15 feet west of the existing manhole in Benson Street at the intersection with 7th Street.

- EXDA-2 drains to point of interest POI-2, which is understood to be the existing inlet located in Haddon Avenue along the curbline approximately 75-feet north of the Benson Pavilion project site. This inlet, drains to an existing 12-inch storm sewer main in Haddon Avenue, which drains to the north to system in Martin Luther King Boulevard.

The post-development condition of the site is composed of two drainage areas as described below (see Figure 4 for Post-Development Drainage Area Map):

- PRDA-1 drains to POI-1, which is understood to be in the existing 36-inch RCP city sewer in Benson Street. The point of interest is approximately 15 feet west of the existing manhole in Benson Street at the intersection with 7th Street.

- PRDA-2 drains to point of interest POI-2, which is understood to be the existing inlet located in Haddon Avenue along the curbline approximately 75-feet north of the Benson Pavilion project site. This inlet, drains to an existing 12-inch storm sewer main in Haddon Avenue, which drains to the north to system in Martin Luther King Boulevard.

The stormwater management design for the project accounts for the uncontrolled ground-level areas by over-detaining stormwater in the BMP to make up for the bypass volumes and rates.

NRCS Methodology

In accordance with N.J.A.C. 7:8-5.7, stormwater runoff is calculated using the USDA Natural Resources Conservation Service (NRCS) methodology, which is described in Technical Release 55—Urban Hydrology for Small Watersheds (TR-55), dated June 1986. Pre-development and post-development hydrographs are developed for each of the drainage areas described in the previous section using an area, hydrologic soil group (HSG), land cover, rainfall depth, and time of concentration. A table summarizing the area, HSG, and land cover with curve numbers for the pre-development condition is provided in Appendix B, and for the post-development condition in Appendix C.

Time of concentration is calculated using the velocity method for each drainage area described in the previous section. See Appendix D for calculations and Figure 3 for pre-development flow path and Figure 4 for post-development flow path used in the calculations.

In accordance with N.J.A.C. 7:8-5.6, stormwater analysis must be performed for current and projected storm events, as defined and determined pursuant of N.J.A.C. 7:8-5.7(c) and (d). We are using the county-specific, New Jersey 24-hour rainfall frequency data for Camden County as provided in Table 5-1 of the New Jersey Stormwater Best Management Practices Manual (January 2026) because it has larger depths than site-specific rainfall data from NOAA Atlas 14 and, therefore, results is a more conservative design. The rainfall depths are provided in the table below with design current and future rainfall depths in bold.

Design Rainfall Depths

Design Storm Event	Site-Specific Rainfall Depth [NOAA Atlas 14, Vol2, Ver3] (in.)	Table 5-1: County Specific Rainfall (in.), Camden	Current Adj. Factor, Camden	Current Rainfall (in.)	Future Adj. Factor, Camden	Future Rainfall (in.)
2-yr	3.28	3.31	1.03	**3.41**	1.18	**3.91**
10-yr	4.89	5.06	1.04	**5.26**	1.22	**6.17**
25-yr	5.98	6.28	1.00	**6.28**	1.00	**6.28**
100-yr	7.92	8.52	1.05	**8.95**	1.39	**11.84**

The hydrograph summaries calculated with the NRCS methodology are provided in Appendix B for the pre-development condition and Appendix C for the post-development condition.

Stormwater Runoff Quantity

The table below shows a comparison of peak flow for pre-construction and post-construction at POI-1. The post-construction peak rates for the current and projected two-, 10-, and 100-year storm events do not exceed that of the pre-construction peak rates. Therefore, the project complies with N.J.A.C. 7:8-5.6(b)4 and city requirements.

CURRENT RAINFALL

POI-1			
STORM EVENT	**PRE-DEVELOPED DISTURBED**	**REGULATION**	**PROVIDED RATE**
2-YR	**2.77**	2.77	**1.57**
10-YR	**4.50**	4.50	**2.22**
25-YR	**5.46**	5.46	**3.38**
100-YR	**8.01**	8.01	**5.60**

POI-2			
STORM EVENT	**PRE-DEVELOPED DISTURBED**	**REGULATION**	**PROVIDED RATE**
2-YR	**0.16**	0.16	**0.14**
10-YR	**0.30**	0.30	**0.25**
25-YR	**0.38**	0.38	**0.32**
100-YR	**0.61**	0.61	**0.49**

PROJECTED RAINFALL

POI-1			
STORM EVENT	**PRE-DEVELOPED DISTURBED**	**REGULATION**	**PROVIDED RATE**
2-YR	**3.23**	3.23	**1.73**
10-YR	**5.37**	5.37	**3.28**
25-YR	**5.47**	5.47	**3.38**
100-YR	**10.79**	10.79	**7.51**

POI-2			
STORM EVENT	**PRE-DEVELOPED DISTURBED**	**REGULATION**	**PROVIDED RATE**
2-YR	**0.20**	0.20	**0.17**
10-YR	**0.38**	0.38	**0.31**
25-YR	**0.39**	0.39	**0.32**
100-YR	**0.86**	0.86	**0.67**

STORMWATER CONVEYANCE SYSTEM

The proposed stormwater conveyance system is designed for the 25-year (current) storm event using the rational method. All storm pipes tie-in to proposed drainage structures. No point-discharges to the ground surface are proposed, as shown on the Proposed Drainage Area Map (Figure 2). A value for area, time of concentration, and a runoff coefficient were calculated for each runoff area to individual catch-basin inlets. Runoff coefficient and pipe conveyance calculations are provided in Appendix E.

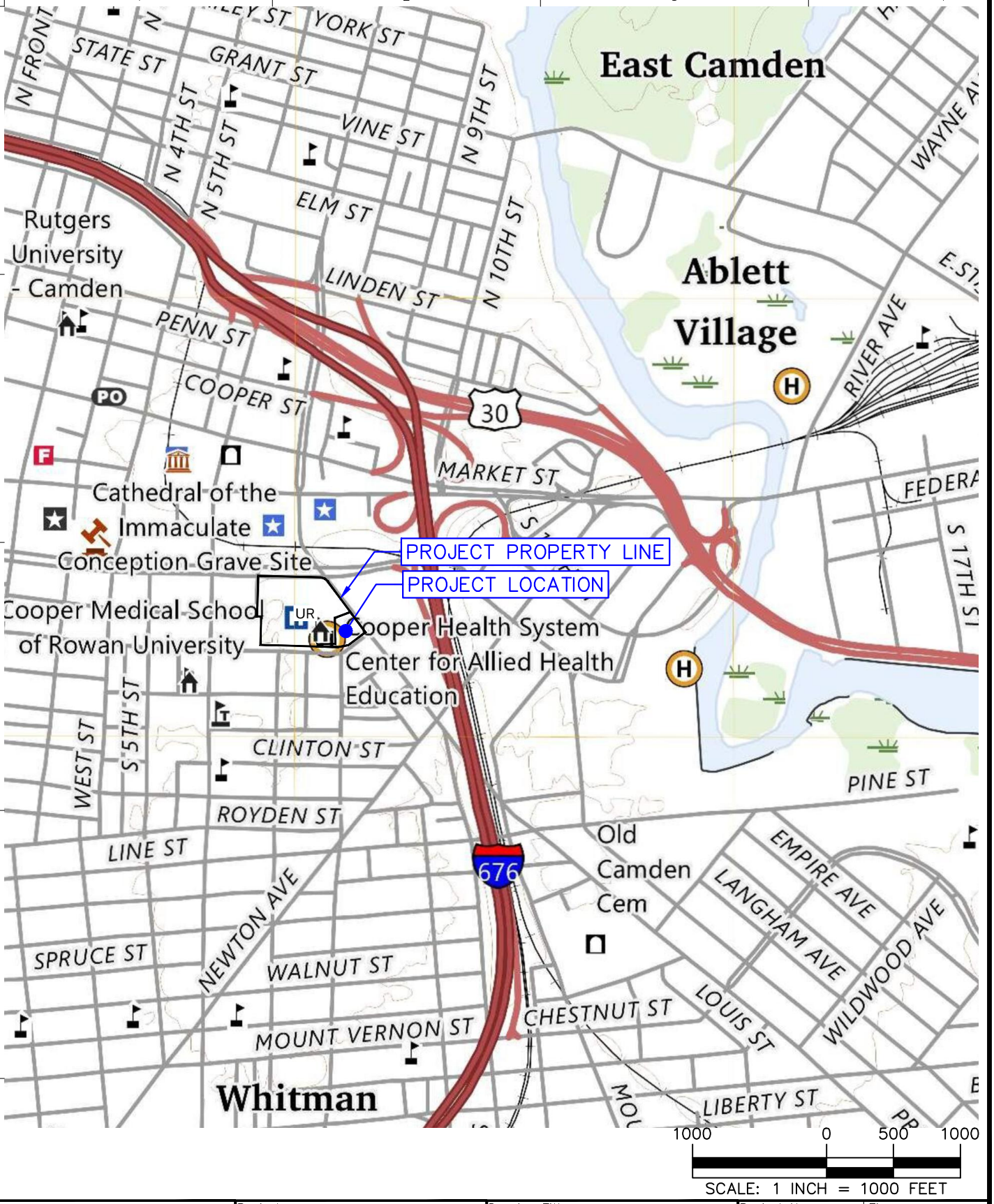
CONCLUSION

The proposed stormwater management approach meets the requirements of N.J.A.C. 7:8 that are applicable at the time of this application, and the City of Camden requirements by managing the post-development peak discharge rates to not exceed the pre-development peak discharge rates leaving the site for all drainage areas and the entire site as documented in this report. Because the project discharges to an existing sewer that discharges to a tidal water body, any increased volume or change in timing will not increase downstream flooding or flood damages below the point of discharge.

The proposed storm conveyance system has been designed to convey the 25-year storm in accordance with City of Camden requirements.

As a result, the proposed site redevelopment meets the intent of the state and city requirements and will have no adverse impact on the existing stormwater conveyance system that services the site and adjacent properties.

FIGURES



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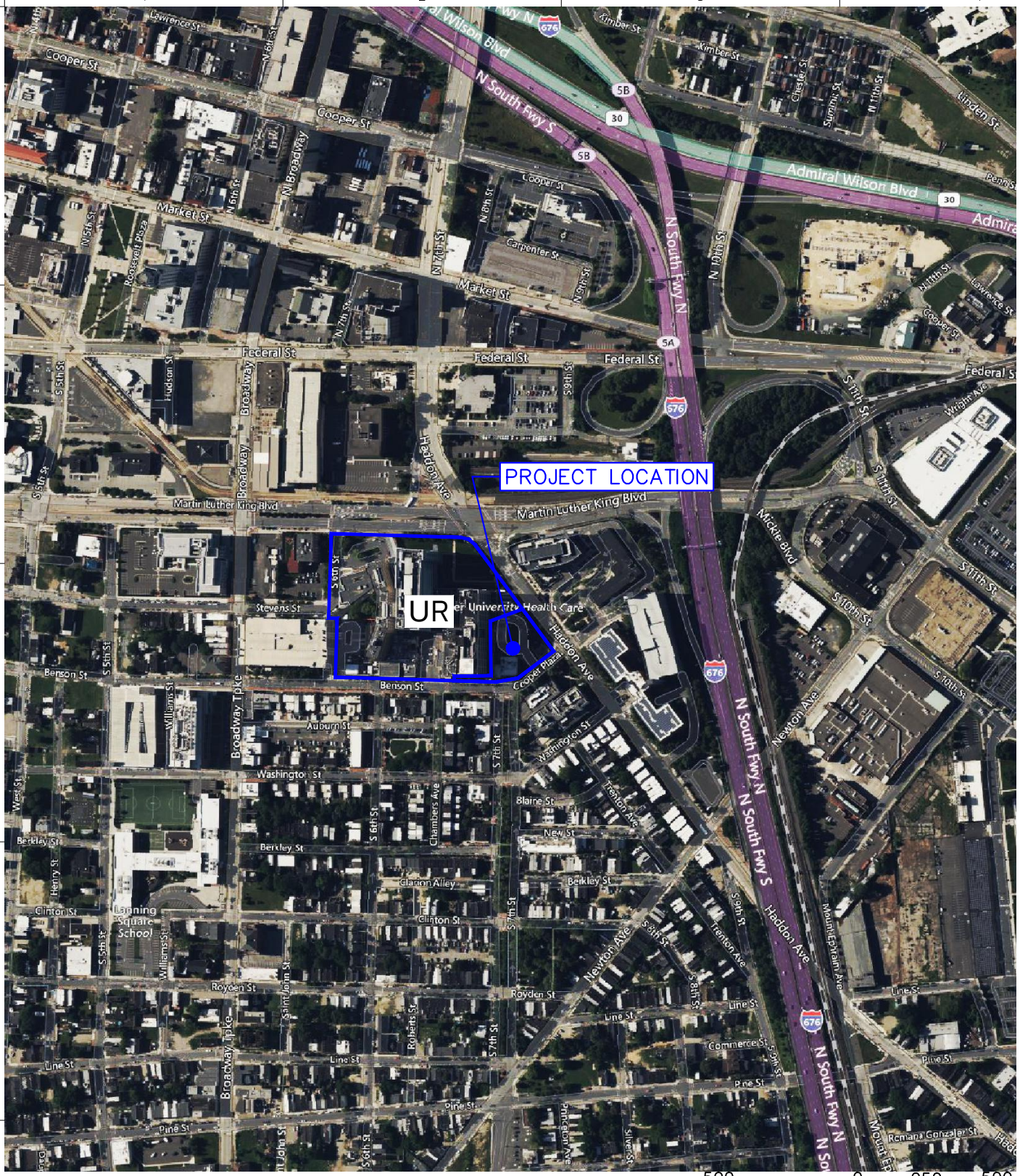
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Project	COOPER NORCROSS HEALTH BENSON PAVILION Block 1443 - Lot 5.02 Camden Camden New Jersey
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Project No.	220245001
Date	2026-10-08
Drawn By	MCM
Checked By	MXK
Figure	SI101
Sheet	1 of 1

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Date: 10/5/2026 Time: 12:42 User: mmichelson Style Table: Langan.stb Layout: Fig.1 Document Code: FG01-220245001-0201-SI101-0101



UR - Urban land

500 0 250 500

SCALE: 1 INCH = 500 FEET

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Project
COOPER NORCROSS HEALTH
BENSON PAVILION

Block 1443 - Lot 5.02
Camden
Camden New Jersey

Drawing Title
SOIL MAP

Project No. 220245001
Date 2026-10-08
Drawn By MCM
Checked By

Figure
GI101

Sheet 1 of 1

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LEGEND

- PROPERTY LINE
- EXISTING DRAINAGE AREA EX-1
- EXISTING DRAINAGE AREA EX-2
- EXISTING IMPERVIOUS DRIVEWAY
- EXISTING IMPERVIOUS WALKWAY
- EXISTING IMPERVIOUS BUILDING
- EXISTING PERVIOUS LAWN
- TIME OF CONCENTRATION FLOW PATH
- POA-2 IMPER. C PERV. D — TIME OF CONCENTRATION FLOW TYPE CHANGE

ROBERTS PAVILION

BLOCK 1402
LOT 1

MULTI STORY BUILDING

KELEMEN PAVILION

SILL=22.26
PATIO AREA
2ND FLOOR
EL=41.19

22.77

HADDON AVENUE (C.R. 561)

POA-2
IMPER. C
PERV. D

PROPERTY LINE

EXISTING DRAINAGE AREA POA 1 (EXDA-1)
IMPERVIOUS BUILDING: 8,664 SF (0.199 AC)
IMPERVIOUS DRIVEWAY: 13,557 SF (0.302 AC)
IMPERVIOUS WALKWAY: 5,270 SF (0.120 AC)
PERVIOUS LAWN: 8,065 (0.186)
TOTAL AREA: 35,556 SF (0.807 AC)

POA-1 IMPER. B

POA-1 IMPER. A

EXISTING DRAINAGE AREA POA 2 (EXDA-2)
IMPERVIOUS DRIVEWAY: 122 SF (0.001 AC)
IMPERVIOUS WALKWAY: 759 SF (0.017 AC)
PERVIOUS LAWN: 2,333 (0.054)
TOTAL AREA: 3,214 SF (0.072 AC)

POA-1 PERV. A
POA-1 PERV. B

DRAINAGE AREA BOUNDARY EXDA-1

POA-1 BLDG. A
POA-1 BLDG. B

POA-1
PERV. C
BLDG. C

POA-2
IMPER. B
PERV. C

POA-1
IMPER. C
PERV. D
BLDG. D

DRAINAGE AREA
BOUNDARY POA-2

POA-2 PERV. B
POA-2 PERV. A
POA-2 IMPER. A

EXISTING DISTURBED R.O.W TO CITY SEWER
IMPERVIOUS DRIVEWAY: 7,209 SF (0.207 AC)
IMPERVIOUS WALKWAY: 5,978 SF (0.137 AC)
PERVIOUS LAWN: 2,065 (0.047 AC)
TOTAL AREA: 15,252 SF (0.392 AC)

POA-1
IMPER. E
PERV. F
BLDG. F

POA-1
IMPER. D
PERV. E
BLDG. E

NO PARKING NO PARKING NO PARKING

AMBULANCES ONLY

BENSON STREET

CURB LINE

SCALE: 1 INCH = 20 FEET

PROJECT:

BENSON PAVILION

COOPER NORCROSS UNIVERSITY HOSPITAL
1 COOPER PLAZA
CAMDEN, NJ 08103

SEAL:

CERT OF AUTHORIZATION #AC 331

1001 E HECTOR STREET, SUITE 230
CONSHOHOCKEN, PA 19428
610-270-0599
ARRAY-ARCHITECTS.COM

IN COLLABORATION WITH:

LANGAN ENGINEERING & ENVIRONMENTAL SERVICES, LLC
CIVIL ENGINEERING
1 UNIVERSITY SQUARE DRIVE, SUITE 100
PRINCETON, NJ 08540
609-282-8000

HKS ARCHITECTS, P.C.
CORE & SHELL ARCHITECT
975 F ST NW, SUITE 200
WASHINGTON, DC 20004
202-682-6289

O'DONNELL & NACCARATO
STRUCTURAL ENGINEER
701 MARKET STREET, #6000
PHILADELPHIA, PA 19106
215-925-3788

HIGHLAND ASSOCIATES
MEP-FP ENGINEERS
102 HIGHLAND AVE
CLARKS SUMMIT, PA 18411
570-586-4334

BR+A CONSULTING ENGINEERS
MEP-FP ENGINEERS
100 PARK AVENUE, SUITE 200
NEW YORK, NY 10017
212-840-0060

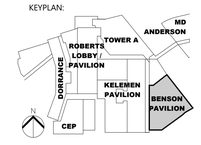
INTROBA
LOW VOLTAGE AV/IT
32 OLD SLIP, 10TH FLOOR
NEW YORK, NY 10006
212-997-5100

VISIONBUILDERS DESIGN
FOOD SERVICES CONSULTANT
1515 SHOPTON ROAD, SUITE 104
CHARLOTTE, NC 28217
704-405-3101

HEALTH, EDUCATION AND RESEARCH ASSOCIATES, INC.
LABORATORY PLANNER
609 E. LOCKWOOD AVENUE, SUITE 204
ST. LOUIS, MO 63119
314-289-9202

ST ONGE
STERILE PROCESSING & VERTICAL TRANSPORTATION CONSULTANT
1400 WILLIAMS ROAD
YORK, PA 17402
717-840-8181

KEYPLAN:



ISSUES:

NO.	DESCRIPTION	DATE

PROJECT NO. 7088
CON/REF NO.
DATE 10/08/2026

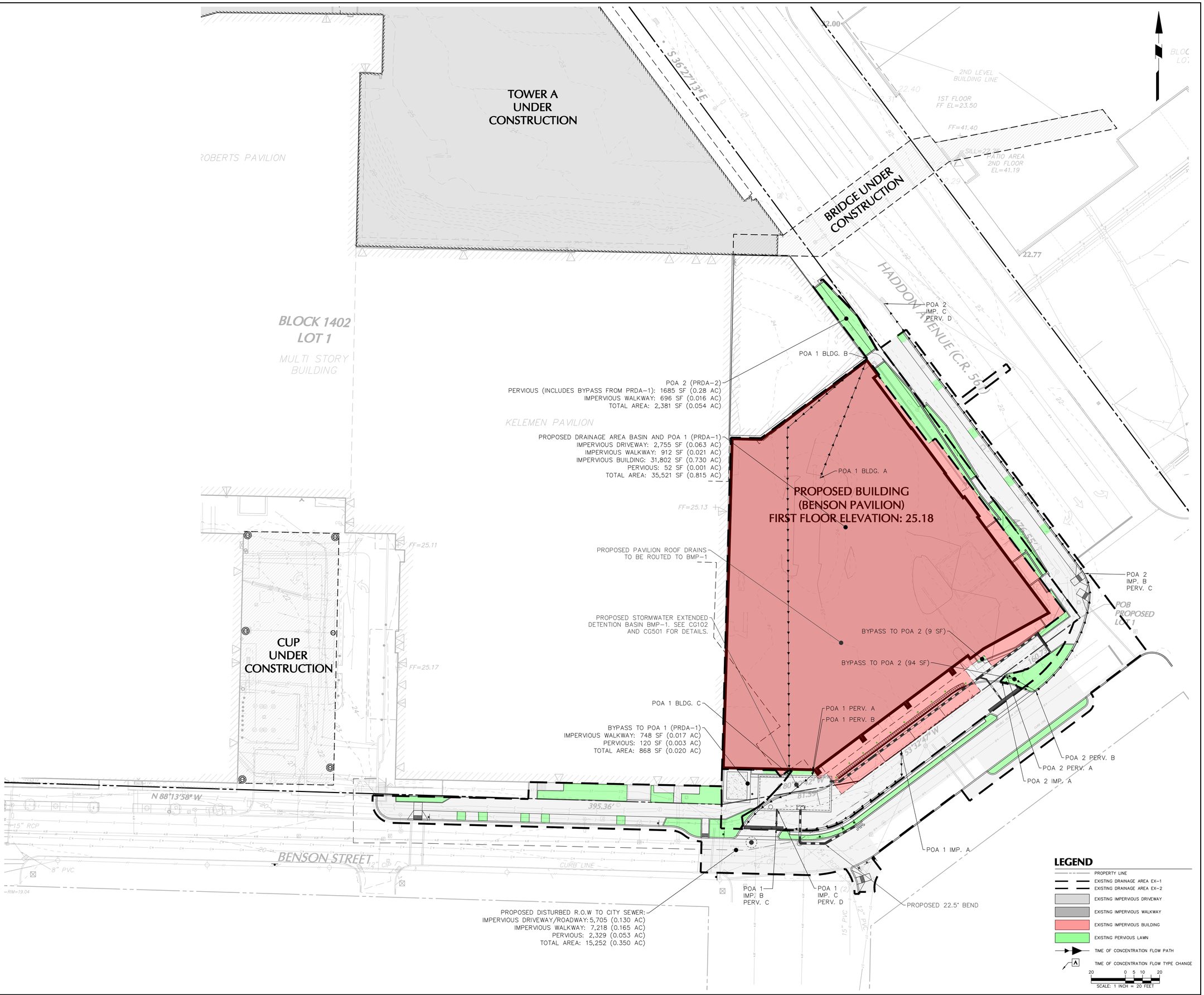
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PRE DEVELOPMENT DRAINAGE AREA MAP

FIGURE 3

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PROJECT:

BENSON PAVILION

COOPER NORCROSS UNIVERSITY HOSPITAL
1 COOPER PLAZA
CAMDEN, NJ 08103

SEAL:

CERT OF AUTHORIZATION #AC 331

1001 E HECTOR STREET, SUITE 230
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LANGAN ENGINEERING & ENVIRONMENTAL SERVICES, LLC
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570-586-4334

BR+A CONSULTING ENGINEERS
MEP-FP ENGINEERS
100 PARK AVENUE, SUITE 200
NEW YORK, NY 10017
212-840-0060

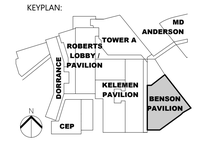
INTROBA
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32 OLD SLIP, 10TH FLOOR
NEW YORK, NY 10006
212-997-5100

VISIONBUILDERS DESIGN
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1515 SHOPTON ROAD, SUITE 104
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1400 WILLIAMS ROAD
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717-840-8181

KEYPLAN:



ISSUES:

NO.	DESCRIPTION	DATE

PROJECT NO. 7088
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DATE 10/08/2026

DCA# NJPRP-XXXXX

POST DEVELOPMENT DRAINAGE AREA MAP

FIGURE 4

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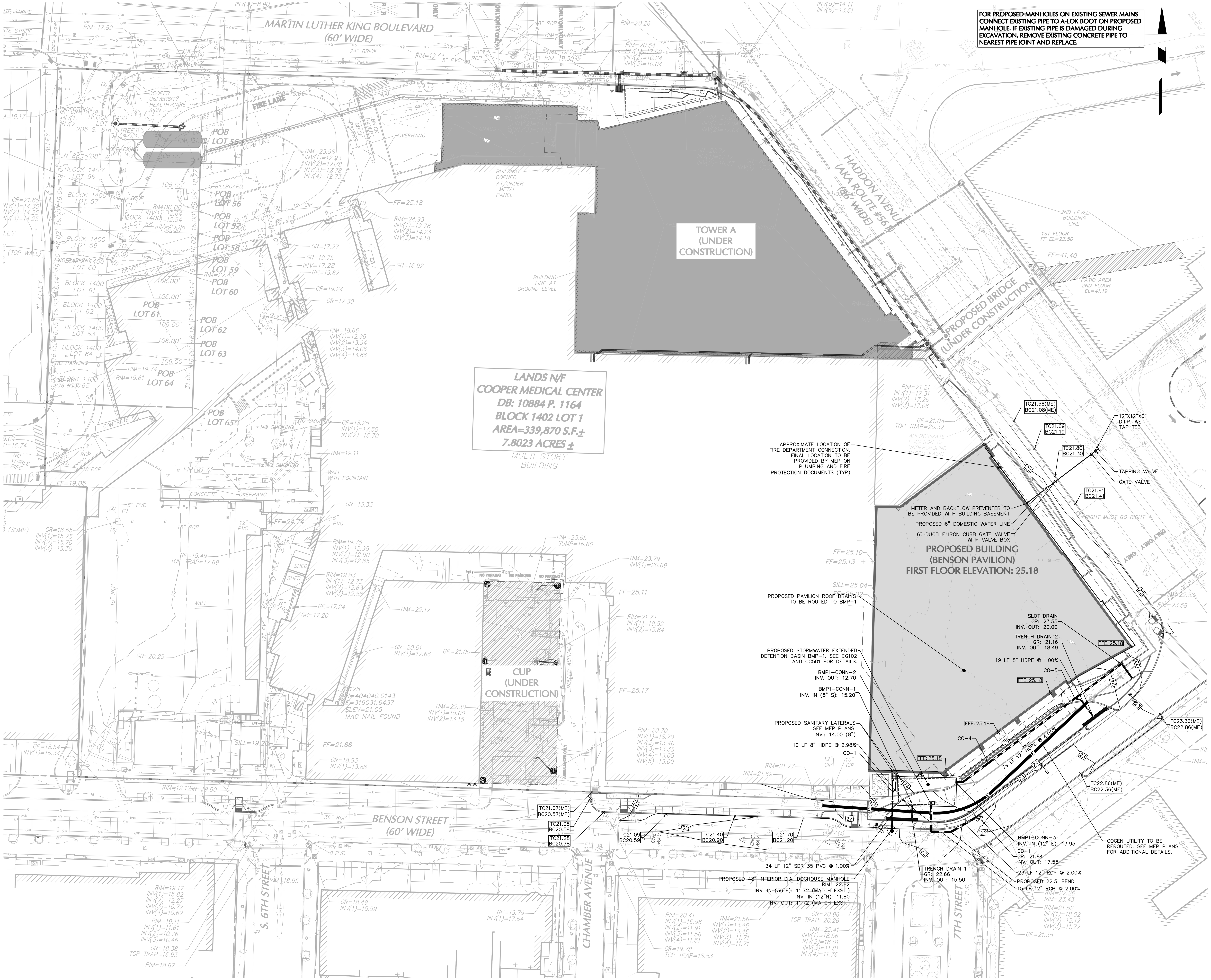
DRAWINGS

CITY OF CAMDEN REGULATORY REQUIREMENT NOTES

1. ALL TELEPHONE, ELECTRIC, TELEVISION, AND OTHER COMMUNICATION SERVICE FACILITIES, BOTH MAIN AND SERVICE LINES, ARE TO BE INSTALLED UNDERGROUND.
2. THE OWNER, OR THEIR REPRESENTATIVE, IS TO DESIGNATE AN INDIVIDUAL RESPONSIBLE FOR CONSTRUCTION SITE SAFETY DURING THE COURSE OF SITE IMPROVEMENTS PURSUANT TO N.J.A.C. 5:23-2.21 (e) OF THE N.J. UNIFORM CONSTRUCTION CODE AND CFR 1926.32 (f) (OSHA COMPETENT PERSON).
3. ALL SITE WORK CONSTRUCTION AND DETAILS MUST CONFORM TO THE STANDARDS OF THE CITY OF CAMDEN.
4. THE CONTRACTOR (NOT CITY) SHALL BE RESPONSIBLE FOR ANY AND ALL COST (LABOR, MATERIAL AND EQUIPMENT) RELATED TO ANY WATER MAIN ISOLATION AND BY-PASSING OF THE SEWER TO MAKE A PROPOSED CONNECTION.
5. THE CITY ENGINEER AND AMERICAN WATER ENTERPRISES MUST BE GIVEN 48 HOURS ADVANCE NOTICE OF SANITARY SEWER/WATERMAIN WORK, AND THE REPRESENTATIVES MUST WITNESS THE WORK AND CONNECTION.
6. THE APPLICANT AND CONTRACTOR (NOT CITY) ARE RESPONSIBLE FOR THE PROPER ABANDONMENT OF ALL WATER/SEWER LATERAL DISCOVERED IN THE FIELD/SITE. ALL EXISTING WATER SERVICE LINES TO BE ABANDONED SHALL BE CUT AND CAPPED AT THE MAIN, IN ACCORDANCE WITH CAPITAL IMPROVEMENTS AND PROJECT MANAGEMENT (CIP) STANDARDS, AND INSPECTED WITHIN 24 HOURS AFTER INSTALLATION OF NEW TAP. THE MAXIMUM OF ONE (1) TAP SHALL BE MADE FOR BOTH DOMESTIC AND FIRE SERVICE PER FACILITY. THE TAP SHALL BE THE MAXIMUM OF ONE (1) SIZE SMALLER THAN THE CITY'S WATER MAIN.
7. THE INSTALLATION OF ALL WATER AND SEWER MAINS SHALL COMPLY WITH CITY ORDINANCES.
8. ALL WATER/SEWER MAIN INSTALLATIONS AND TESTING SHALL BE WITNESSED/OBSERVED BY AN INSPECTOR OF THE CITY ENGINEER OR AMERICAN WATER, OR PLANNING BOARD ENGINEER.
9. ALL WATER/SEWER SERVICES SHALL BE INSTALLED ON APPLICANT'S PROPERTY (AND NOT WITHIN CITY RIGHT-OF-WAY); EXCEPT WHEN MAKING CONNECTIONS TO THE EXISTING WATER AND/OR SEWER MAIN FROM THE VALVE BOX AND SEWER CLEANOUT RESPECTIVELY.
10. THE OWNER/APPLICANT SHALL OWN, OPERATE AND MAINTAIN ALL WATER, SANITARY AND STORM SEWER MAINS AND APPURTENANCES OUTSIDE OF THE CITY RIGHT-OF-WAY.
11. ALL WATER PIPES, FITTINGS AND VALVES SHALL BE TESTED AND DISINFECTED IN ACCORDANCE WITH AWWA REQUIREMENTS.
12. THRUST BLOCKS AND RESTRAINTS SHALL BE INSTALLED AT ALL BENDS AND FITTINGS. THRUST BLOCKS SHALL HAVE A 28-DAY STRENGTH OF 4,500 PSI.
13. AIR RELEASE VALVES SHALL BE INSTALLED AT HIGH POINTS IN THE WATER MAIN.
14. A SOLID DUCTILE IRON TAPPING SLEEVE SUCH AS MUELLER H-615 SLEEVE OR APPROVED EQUAL SHALL BE UTILIZED FOR TAPS 2" AND LARGER. THE TAPPING SLEEVE SHALL PASS PRESSURE TESTING BASED ON AWWA STANDARDS BEFORE TAP IS MADE.
15. FOR ALL SERVICES INCLUDED HEREIN, TWO (2) GATE VALVES ARE REQUIRED THAT ARE TO BE INSTALLED BY THE APPLICANT; A TAPPING VALVE LOCATED AT THE TAP, AND A CURB VALVE LOCATED IN THE SIDEWALK BEFORE THE METER. TAPPING GATES SHALL BE FURNISHED OPENED RIGHT. ALL TAPPING AND CURB VALVES SHALL BE DOUBLE DISC GATE VALVES AND MEET AWWA STANDARDS.
16. FOR TAPS OFF MAINS 2-INCHES AND LARGER, THE APPLICANT SHALL FURNISH AND INSTALL AN ADDITIONAL GATE VALVE ADJACENT TO THE TAPPING VALVE. NO TAPS SHALL BE PERMITTED ON MAINS, LARGER THAN 20-INCHES UNLESS THERE IS NO ALTERNATIVE WATER SOURCE, AND A SPECIAL WRITTEN APPROVAL IS ISSUED BY THE CIP.
17. VALVE BOX PARTS FOR ALL VALVES SHALL BE PROVIDED BY THE CONTRACTOR (NOT CITY). ALL TAPPING GATE VALVES LARGER THAN 2-INCHES AND ALL CURB VALVES/STOPS REGARDLESS OF SIZE REQUIRE A VALVE BOX WITH THE WORD 'WATER' CAST IN THE COVER. BURIED CORPORATION VALVES/STOPS SHALL BE USED AT THE TAP FOR CLASS K COPPER SERVICES 2-INCHES AND SMALLER.
18. ALL METERS SIZES 2 INCHES THROUGH 6 INCHES SHALL BE SINGLE COMPOUND METERS AND ALL METERS 8 INCHES AND LARGER SHALL BE DUPLEX COMPOUND MANIFOLD METERS.
19. ALL METERS SHALL BE ADEQUATELY RESTRAINED WITH METAL BRACKETS FASTENED TO THE FLOOR OR WALL OF OTHER APPROVED MEANS SUCH AS UNIFLANGES WHERE INTERNAL PIPE PRESSURE AND FLOW WARRANT SUCH RESTRAINTS. METERS, DETECTOR CHECKS, AND VALVES MAY BE SEATED ON CONCRETE BLOCK AND TAPERED SHIMS TO PROVIDE ADEQUATE SUPPORT. METERS SHALL BE INSTALLED APPROXIMATELY 36" ABOVE FLOOR GRADE.
20. ALL METER INSTALLATIONS IN METER PIT OR VAULT SHALL BE PRE-APPROVED BY CIP AND HAVE PROPER ACCESS OPENINGS FOR METER READING AND REPLACEMENT.
21. UPON COMPLETION OF ALL WATER/SEWER INSTALLATION, THREE (3) SETS OF "AS-BUILT" PLANS SHALL BE SUBMITTED TO THE CIP AND AMERICAN WATER ENTERPRISES. THE CIP WILL AUTHORIZE SUPPLY WATER UPON ACCEPTANCE OF THE AS-BUILT DRAWINGS. SUBMISSION OF RECORD DRAWINGS IS REQUIRED IN ACCORDANCE WITH ORDINANCE FOR WATER SERVICES LINES AND SEWER LATERALS. THE AS-BUILT PLANS SHALL BE PROVIDED BY THE CONTRACTOR AND SHALL BE PERFORMED BY A NEW JERSEY LICENSED PROFESSIONAL LAND SURVEYOR. AN ELECTRONIC FORMAT OF THE SAME IN COMPLIANCE WITH THE CITY ORDINANCE SHALL BE ALSO BE SUBMITTED.
22. ALL SEWER INSTALLATION SHALL CONFORM TO THE REQUIREMENT OF THE PROCEDURE MANUAL OF THE CITY OF CAMDEN.
23. ALL NECESSARY REPAIRS TO EXISTING MANHOLE AT SEWER CONNECTION AND RELINING OF THE MANHOLE WITH A LINER BY TERRES HILL COMPOSITE OR APPROVED EQUAL SHALL BE COMPLETED BY THE CONTRACTOR.
24. IT SHALL BE THE RESPONSIBILITY OF THE APPLICANT/CONTRACTOR TO RELOCATE ALL IMPACTED UTILITIES AT NO COST TO THE CITY.
25. TELEVISION INSPECTION OF THE NEW OFF-SITE AND ONSITE STORM SYSTEM IS REQUIRED PRIOR TO FINAL ACCEPTANCE BY THE CITY.
26. A CCTV OF THE SANITARY/STORM SEWER ON DR MARTIN LUTHER KING BLVD AND HADDON AVE SHALL BE PERFORMED AND SUBMITTED TO THE CITY ENGINEER FOR REVIEW PRIOR TO ISSUING APPROVALS TO CONNECT TO THE CAMDEN CITY WATER AND SEWER SYSTEM.
27. VIDEO SEWER INSPECTIONS, INFILTRATION/EXFILTRATION TESTING AND PIPE ALIGNMENT TESTING SHALL BE PERFORMED IN ACCORDANCE WITH THE CITY SEWER MANUAL ON ALL NEW PUBLIC SEWERS (PVC AND RCP) AT THE COMPLETION OF THE PROJECT, BUT PRIOR TO ACCEPTANCE AND/OR DEDICATION OF THE SAME TO THE CITY. THE MAXIMUM RATE OF INFILTRATION/EXFILTRATION SHALL NOT EXCEED THE ORDINANCE REQUIREMENT.
28. SELECT FILL FOR WATER/SEWER TRENCH INSTALLATION WITHIN THE CITY RIGHT OF WAY SHALL BE DENSE GRADED AGGREGATE I-5, IN ACCORDANCE WITH THE SPECIFICATION SUBSECTION 901.08 OF THE NJDOT STANDARD SPECIFICATION AND CONFORM TO THE TABLE IN SECTION 577-229.H OF THE ORDINANCE.
29. ALL PROPOSED PVC FOR SANITARY SEWER SHALL HAVE AN SDR CLASSIFICATION OF 35.
30. ALL PIPES SHALL BE MANUFACTURED AND SUPPLIED WITHOUT LIFTING HOLES.
31. ALL RCP FROM 24 INCHES UP TO AND INCLUDING 72 INCHES DIAMETER SHALL CONFORM TO ASTM C76, MINIMUM PIPE CLASS IV, WALL B (SECTION 577-229).
32. ALL RCP SHALL BE LINED ON THE INTERIOR WITH A COAT TAR EPOXY SEAL COAT WITH A MINIMUM OF FOUR (4) MILS IN THICKNESS (DFT).
33. ALL PUBLIC CONCRETE STORM DRAIN PIPE IS TO EITHER HAVE RUBBER GASKETED OR BUTYL TAPED JOINTS. ALL LIFT HOLES AND BUTYL TAPED JOINTS SHALL BE WRAPPED AND MORTARED ON THE OUTSIDE.
34. EACH MANHOLE BASE AND INLET SHALL BE PROVIDED WITH CIRCULAR OPENINGS AT THE REQUIRED LOCATIONS AND ELEVATIONS FOR PROPER CONNECTION OF THE PIPES. THE FLEXIBLE CONNECTION SHALL BE A-LOK FLEXIBLE CONNECTOR, OR APPROVED EQUAL, AND SHALL BE CAST INTEGRALLY IN THE MANHOLE/INLET WALL FOR ALL PIPE CONNECTIONS. NO PIPE PENETRATIONS SHALL BE LOCATED WITHIN 12" OF A JOINT.
35. ALL NEW MANHOLES AND CATCH BASINS SHALL HAVE AN EXTERIOR COATING OF CARBOLINE COAL TAR EPOXY 300M, OR APPROVED EQUAL, TWO COATS. ALL REINFORCED CONCRETE PIPES SHALL BE LINED ON THE INTERIOR WITH A COAT OF TAR EPOXY SEAL WITH A MINIMUM OF 4 MIL IN THICKNESS (DFT) (SECTION 577-229).
36. ALL STORM INLETS WHICH ARE CONNECTED TO THE CITY COMBINED SEWER SHALL BE FURNISHED WITH A SUMP AND TRAP PER CITY STANDARDS.
37. PROPOSED MANHOLES CONSTRUCTED IN THE PUBLIC RIGHT-OF-WAY ON EXISTING OR PROPOSED CITY SEWERS SHALL BE FURNISHED WITH CONCENTRIC MANHOLES APPROVED BY THE CITY.
38. MANHOLE FRAMES AND COVERS ARE TO PROVIDE FOR A MINIMUM OF THIRTY INCH CLEAR OPENING AT THE COVER IN ORDER TO ALLOW EASY ACCESS UNDER CONFINED SPACE ENTRY REQUIREMENTS. CAMPBELL FOUNDRY PATTERN NUMBER 1012B OR NJDOT APPROVED EQUAL. THE MINIMUM DIAMETER MANHOLE SHALL BE 48-INCHES. A MINIMUM ACCESS DIAMETER OF 30-INCHES SHALL BE PROVIDED.
39. MANHOLE COVERS SHALL BE A SOLID TYPE MARKED WITH SEWER.
40. A DROP MANHOLE CONNECTION SHALL BE USED WHERE THERE IS A DIFFERENCE IN ELEVATION OF TWO FEET OR GREATER BETWEEN THE PIPE INVERT IN AND THE MANHOLE INVERT ELEVATION. REFER TO CITY DETAILS.
41. ALL CONCRETE SHALL BE 4,500 PSI MINIMUM DESIGN MIX.

GRADING AND DRAINAGE NOTES

1. THE CONTRACTOR SHALL VERIFY ALL INFORMATION TO THEIR SATISFACTION PRIOR TO THE EXECUTION OF CONTRACTS OR COMMENCING WORK. ANY DISCREPANCIES SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER OF RECORD.
2. BOUNDARY INFORMATION AND EXISTING FEATURES SHOWN HEREON ARE BASED ON "BOUNDARY AND TOPOGRAPHIC SURVEY" DATED 08/31/2026 PREPARED BY LANGAN ENGINEERING AND ENVIRONMENTAL SERVICES, INC.
3. THE MERIDIAN OF THE PLAN IS REFERENCED TO THE NEW JERSEY STATE PLANE COORDINATE SYSTEM (NAD 83) 2011 DERIVED USING SURVEY-GRADE GNSS EQUIPMENT.
4. TOPOGRAPHIC INFORMATION SHOWN HEREON HAS BEEN OBTAINED FROM GROUND SURVEYS BY LANGAN ENGINEERING AND ENVIRONMENTAL SERVICES, INC. DURING JULY 2023 AND AUGUST 2026.
5. ELEVATIONS SHOWN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) DERIVED USING SURVEY-GRADE GNSS EQUIPMENT.
6. CONVERSION FROM NAVD 1988 TO NGVD IS AS FOLLOWS: EL. 17.00 (NAVD 88) + 1.09 = EL. 18.09 (NGVD 29)
7. AS AS PER THE NATIONAL FLOOD INSURANCE PROGRAM FIRM MAPS TITLED, CAMDEN COUNTY, NEW JERSEY, COMMUNITY PANEL 28 OF 305, MAP NUMBER 34007C0028F. LAST REVISED 08/17/2016. THE PROPERTY PRIMARILY LIES IN "OTHER AREAS", NOT WITHIN FLOOD AREA.
8. EXISTING FRAMES, COVERS, AND GRATES IN AREAS WHERE GRADES WILL BE REVISED BY FILLING OR CUTTING, OR PAVEMENT OVERLAY, MUST BE RESET TO MATCH FINAL GRADE (THIS INCLUDES MANHOLES, HANDHOLES, VALVE BOXES, INLETS, ETC). IN AREAS OF CUT, CONTRACTOR SHALL PROVIDE REQUIRED COVERAGE OF UTILITY AND STORMWATER LINES AS SPECIFIED BY THE UTILITY PURVEYOR.
9. PROPOSED STORMWATER PIPING TRENCHES MAY REQUIRE OVER EXCAVATION IN AREAS NOT CAPABLE OF SUPPORTING THE PROPOSED SYSTEMS. STABILIZATION WITH APPROVED BEDDING MATERIALS WILL BE REQUIRED. OWNER'S GEOTECHNICAL ENGINEER MUST APPROVE BEDDING MATERIALS USED FOR STABILIZATION AND THE DEPTH OF THE OVER EXCAVATION.
10. CONTRACTOR IS RESPONSIBLE FOR LOCATING UTILITY CROSSINGS AND PROVIDING UTILITY DROPS AS REQUIRED. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY IF CROSSING CONFLICT OCCURS.
11. GRADING FOR ADA ACCESSIBLE ROUTES, RAMPS, PARKING AND LOADING SHALL BE IN ACCORDANCE WITH THE NEW JERSEY AMERICAN WITH DISABILITIES ACT ARCHITECTURAL BARRIER REMOVAL AND COMPLIANCE MANUAL. MAXIMUM SLOPES INCLUDE (1) RAMPS – 1:12, (2) ROUTES – 1:20, (3) ROUTES CROSS-SLOPE – 1:50 AND (4) PARKING AND LOADING AREAS – 1:50.
12. TEST PITS WILL BE REQUIRED TO CONFIRM ADEQUATE CLEAR DISTANCES BETWEEN PROPOSED AND EXISTING UTILITIES. TEST PITS SHALL BE PERFORMED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
13. STRUCTURES SHOWN ON THESE DRAWINGS INCLUDE, BUT ARE NOT LIMITED TO: DRAINAGE STRUCTURES (INLETS, CATCH BASINS AND MANHOLES), SANITARY MANHOLES, METER PITS AND UNDERGROUND VAULTS ARE NOT STRUCTURALLY DESIGNED. THE DETAILS PROVIDE TYPICAL DIMENSIONS, LOCATIONS OF PIPE PENETRATIONS, PIPE INVERTS AND GROUND ELEVATIONS AT THE STRUCTURE RIM OR GRATE ONLY. THE STRUCTURAL DESIGN INCLUDING WALL AND SLAB THICKNESS AS WELL AS REINFORCING SHALL BE THE RESPONSIBILITY OF THE PRECAST MANUFACTURER TO MEET STATE DEPARTMENT OF TRANSPORTATION STANDARDS AND HS-20 OR HS-25 LOADING REQUIREMENTS WHEN POSITIONED IN TRAVEL WAYS.
14. ALL GRADING, DRAINAGE, AND UTILITY INSTALLATION AND/OR CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS OR LOCAL REQUIREMENTS. SHOULD A DIFFERENCE IN REQUIREMENTS OCCUR, THE STRICTER OF THE TWO REGULATIONS WILL APPLY.
15. GRADE ALL AREAS OTHER THAN PAVED GRADED AREAS AND BUILDINGS, INCLUDING EXCAVATED AREAS, FILLED AND TRANSITION AREAS, AND LANDSCAPED AREAS TO FINISH GRADE ELEVATIONS OR CONTOURS AS INDICATED ON DRAWINGS. FINISHED SUBGRADE SURFACE SHALL BE UNIFORM AND SMOOTH, FREE FROM ROCK, DEBRIS, OR IRREGULAR SURFACE CHANGES. SITE SHALL BE GRADED TO ALLOW FOR PROPER DRAINAGE WITHOUT PONDING AND IN A MANNER THAT WILL MINIMIZE EROSION POTENTIAL.
16. ALL DRAINAGE STRUCTURES AND STORM SEWER PIPES SHALL MEET HEAVY DUTY TRAFFIC LOADING AND BE INSTALLED ACCORDINGLY.
17. ALL DRAINAGE STRUCTURES AND STORM SEWER PIPES SHALL WATER TIGHT AND BE INSTALLED ACCORDINGLY.
18. SITE GRADING SHALL NOT PROCEED UNTIL ALL EROSION CONTROL MEASURES HAVE BEEN INSTALLED.
19. LENGTHS OF STORM PIPES SHOWN ARE CENTER-TO-CENTER LENGTHS BETWEEN DRAINAGE STRUCTURES.
20. CONTRACTOR SHALL REVIEW ALL DRAINAGE CONNECTIONS TO MANHOLES AND CATCH BASINS AND INCREASE THE INLET BOX SIZES AS NECESSARY TO ACCOMMODATE THE PROPOSED INLET AND OUTLET PIPES.
21. ALL GRADING IS TO PROMOTE POSITIVE DRAINAGE AWAY FROM THE BUILDING.
22. EACH INLET BOX SHALL BE PROVIDED WITH CIRCULAR OPENINGS AT THE REQUIRED LOCATIONS AND ELEVATIONS FOR THE PROPER CONNECTION OF ALL PIPES. THE CIRCULAR CONNECTIONS SHALL BE SEALED WITH A FLEXIBLE SEAL ASSEMBLY SUCH AS G3-FLEXIBLE CONNECTOR BY A-LOK PRODUCTS, INC. OR APPROVED EQUAL.
23. REPORTED GROUNDWATER ELEVATIONS ARE BASED ON HIGHEST REPORTED VALUE FROM VARIOUS PRIOR SUBSURFACE EXPLORATIONS (BY OTHERS). GEOTECHNICAL REPORT TO BE PROVIDED UNDER SEPARATE COVER.
24. PROPOSED LANDSCAPE GRADING MUST NOT EXCEED 3:1.



FOR PROPOSED MANHOLES ON EXISTING SEWER MAINS CONNECT EXISTING PIPE TO A-LOK BOOT ON PROPOSED MANHOLE. IF EXISTING PIPE IS DAMAGED DURING EXCAVATION, REMOVE EXISTING CONCRETE PIPE TO NEAREST PIPE JOINT AND REPLACE.

STORMWATER MAINTENANCE NOTES

1. TO THE EXTENT PERMITTED BY LAW, THE CITY WILL AT ALL REASONABLE TIMES HAVE A RIGHT OF INGRESS AND EGRESS OVER THE EASEMENT AREA AND THE RIGHT TO ENTER THE EASEMENT AREA VIA ANY ROAD OR PARKING LOT LOCATED WITHIN ANY COMMON AREA OWNED BY THE GRANTOR TO INSPECT THE SYSTEM LOCATED IN THE EASEMENT AREA;
2. EXCEPT IN THE CASE OF AN EMERGENCY, THE CITY WILL PROVIDE NOT LESS THAN SEVEN (7) DAYS PRIOR NOTICE TO THE PERFORMING ANY INSPECTION OR MONITOR OF THE SYSTEM IN ACCORDANCE WITH APPROVED PLAN. THE APPLICANT AGREES THAT THE FAILURE TO TIMELY OBJECT AFTER RECEIVING NOTICE FROM THE CITY CONSTITUTES CONSENT TO INSPECTION OF THE PROPERTY WITHIN THE TIMEFRAME SPECIFIED IN THE NOTICE.
3. IF, AFTER REASONABLE NOTICE BY THE CITY, THE APPLICANT FAILS TO MAINTAIN THE SYSTEM IN ACCORDANCE WITH THE APPROVED MANUAL AND THE MAINTENANCE PLAN, THE CITY MAY PERFORM ANY MAINTENANCE NEEDED TO CORRECT A CONDITION THAT IMPACTS THE EFFECTIVENESS OF ROUTINE MAINTENANCE AND OPERATIONS OF THE SYSTEM AND COLLECT ANY COSTS INCURRED AS A RESULT FROM EACH OWNER OF THE SYSTEM AND IN THE SAME MANNER AS REAL PROPERTY TAXES ARE COLLECTED. IN ADDITION, THE CITY MAY SEEK REIMBURSEMENT UNDER ANY OTHER METHOD LEGALLY AVAILABLE TO COLLECT DEBTS OWED.
4. THE APPLICANT AGREES TO INDEMNIFY AND SAVE THE CITY HARMLESS FROM ANY AND ALL CLAIMS FOR DIRECT DAMAGES TO PERSONS OR PROPERTY ARISING FROM INSPECTIONS PERFORMED BY THE CITY.

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FOR FREE MARKOUTS TO LOCATE UNDERGROUND UTILITIES
" IT'S THE LAW "
GARDEN STATE UNDERGROUND PLANT LOCATION SERVICE, INC.
CALL BEFORE YOU DIG

CONTRACTOR TO COORDINATE WITH OWNER'S ENVIRONMENTAL AND GEOTECHNICAL ENGINEERS REGARDING SOIL REQUIREMENTS FOR ONSITE RE-USE, DISPOSAL, AND ENVIRONMENTAL REGULATORY REQUIREMENTS AND COMPLIANCE.

EXISTING INFORMATION SHOWN IN BACKGROUND IN MD ANDERSON CANCER CENTER AND KELEMEN CDU ADDITION AREAS IS BASED ON A COMBINATION OF PREDEVELOPMENT FIELD SURVEY AND PROPOSED DESIGN DRAWINGS. CONTRACTOR SHALL USE DESIGN INFORMATION AS A GUIDE TO MEET INTENT, BUT MUST ULTIMATELY TIE INTO AS-BUILT CONDITIONS IN FIELD.

EXISTING PIPE ANGLES DETERMINED DURING TEST PIT EXPLORATION ARE BASED ON SURVEYED INFORMATION FROM WILKINSON IN FEB/MARCH 2025. SOME MINOR FIELD ADJUSTMENTS MAY BE REQUIRED ONCE MANHOLE PIT IS OPENED FOR CONSTRUCTION.

IN THE AREAS OF PROPOSED WORK ONLY, CONTRACTOR TO REMOVE ALL PREVIOUSLY ABANDONED SEWER/STORM PIPING IDENTIFIED IN THE VARIOUS SEWER VIDEOS AND SITE INVESTIGATIONS, FROM THE MAIN TO THE R.O.W. LINE.

ALL WORK TO BE COORDINATED WITH THE POTENTIAL CITY SEWER MAIN WORK IN THE INTERSECTION OF HADDON AVE AND MLK BLVD, AND ALONG HADDON AVE.

FINAL LIMITS OF CURB RAMP REPLACEMENTS INCLUDING THOSE SHOWN ON THE GRADING INSETS ON SHEET CG102 WILL BE DETERMINED ONCE ALL SITE WORK IS COMPLETE.

LEGEND

— — —	PROPERTY LINE
— — —	LIMIT OF DISTURBANCE/NPDES BOUNDARY
25.50	PROPOSED SPOT ELEVATION
X.X%	PROPOSED SLOPE
25	PROPOSED 1 FOOT CONTOUR LINE

NOTE: SEE CG102 FOR DETAILED GRADING AND DRAINAGE DESIGN.

30 0 15 30
SCALE: 1 INCH = 30 FEET

PROJECT:

BENSON PAVILION

COOPER NORCROSS UNIVERSITY HOSPITAL
1 COOPER PLAZA
CAMDEN, NJ 08103

SEAL:

CERT OF AUTHORIZATION #AC 331

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IN COLLABORATION WITH:

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CIVIL ENGINEERING
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CORE & SHELL ARCHITECT
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O'DONNELL & NACCARATO
STRUCTURAL ENGINEER
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HIGHLAND ASSOCIATES
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570-586-4334

BR+A CONSULTING ENGINEERS
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NEW YORK, NY 10017
212-840-0060

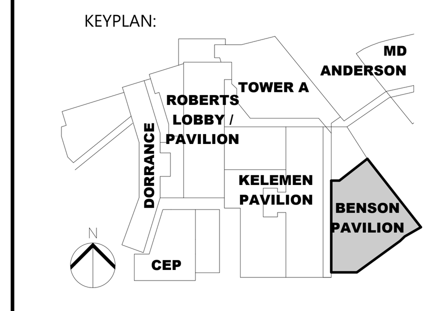
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LOW VOLTAGE AV/IT
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NEW YORK, NY 10006
212-997-5100

VISIONBUILDERS DESIGN
FOOD SERVICES CONSULTANT
1515 SHOPTON ROAD, SUITE 104
CHARLOTTE, NC 28217
704-405-3101

HEALTH, EDUCATION AND RESEARCH ASSOCIATES, INC.
LABORATORY PLANNER
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314-289-9202

ST ONGE
STERILE PROCESSING & VERTICAL TRANSPORTATION CONSULTANT
1400 WILLIAMS ROAD
YORK, PA 17402
717-840-8181

KEYPLAN:



ISSUES:

NO.	DESCRIPTION	DATE

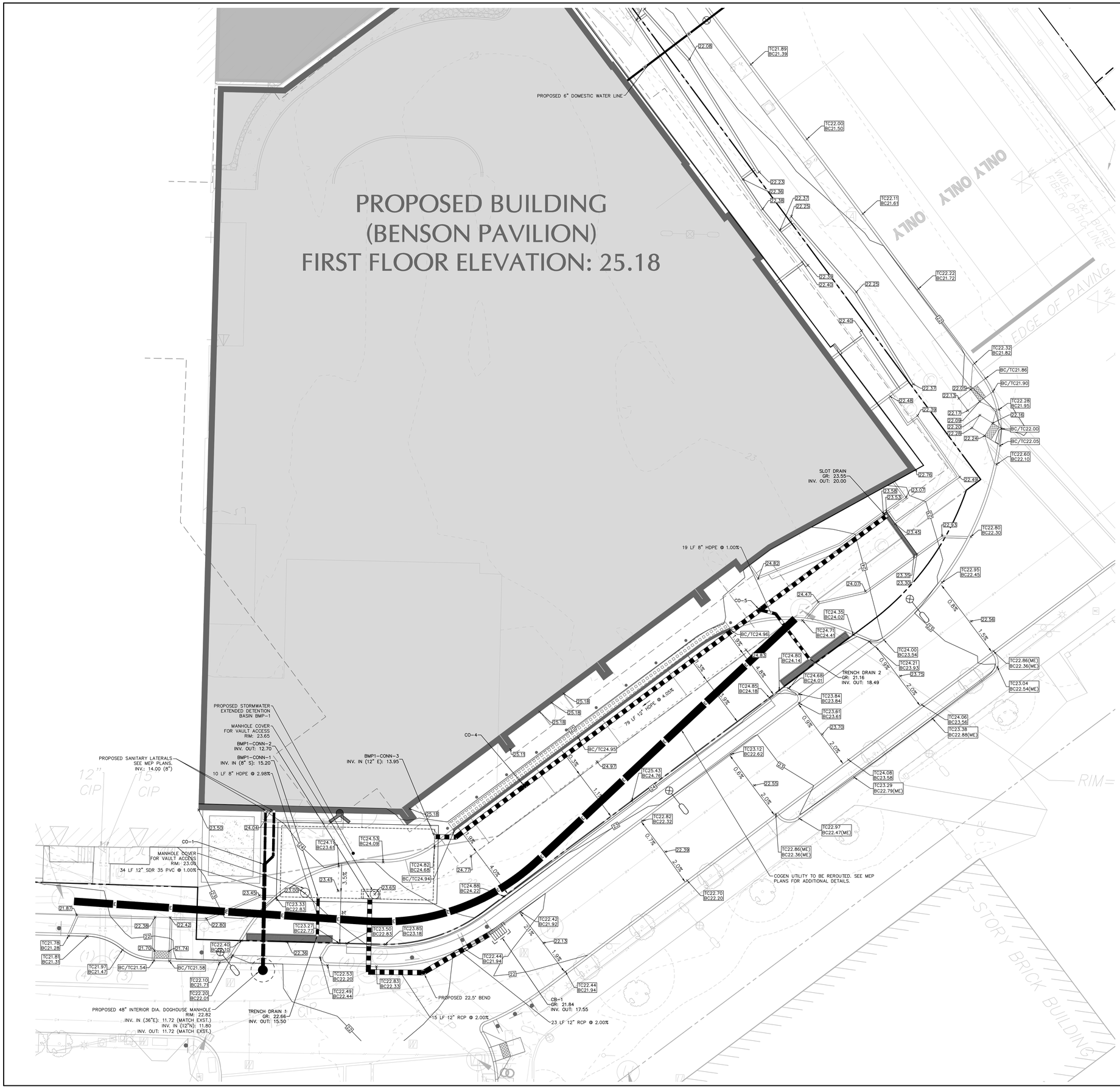
PROJECT NO. 7088
CON/REF NO.
DATE 10/08/2026
DCA# NJPRP-XXXXX

OVERALL GRADING AND DRAINAGE/UTILITY PLAN

CG101

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GRADING AND DRAINAGE NOTES

1. THE CONTRACTOR SHALL VERIFY ALL INFORMATION TO THEIR SATISFACTION PRIOR TO THE EXECUTION OF CONTRACTS OR COMMENCING WORK. ANY DISCREPANCIES SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER OF RECORD.
2. BOUNDARY INFORMATION AND EXISTING FEATURES SHOWN HEREON ARE BASED ON "TOPOGRAPHIC SURVEY (SHOWING UTILITIES)" DATED 09/23/2026 PREPARED BY LANGAN ENGINEERING AND ENVIRONMENTAL SERVICES, INC..
3. THE MERIDIAN OF THE PLAN IS REFERENCED TO THE NEW JERSEY STATE PLANE COORDINATE SYSTEM (NAD 83) 2011 DERIVED USING SURVEY-GRADE GNSS EQUIPMENT.
4. TOPOGRAPHIC INFORMATION SHOWN HEREON HAS BEEN OBTAINED FROM GROUND SURVEYS BY LANGAN ENGINEERING AND ENVIRONMENTAL SERVICES, INC. DURING JULY 2023.
5. ELEVATIONS SHOWN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) DERIVED USING SURVEY-GRADE GNSS EQUIPMENT.
6. CONVERSION FROM NAVD 1988 TO NGVD IS AS FOLLOWS: EL. 17.00 (NAVD 88) + 1.09 = EL. 18.09 (NGVD 29)
7. AS AS PER THE NATIONAL FLOOD INSURANCE PROGRAM FIRM MAPS TITLED, CAMDEN COUNTY, NEW JERSEY, COMMUNITY PANEL 28 OF 305, MAP NUMBER 34007C0028F, LAST REVISED 08/17/2016, THE PROPERTY PRIMARILY LIES IN "OTHER AREAS", NOT WITHIN FLOOD AREA.
8. EXISTING FRAMES, COVERS, AND GRATES IN AREAS WHERE GRADES WILL BE REVISED BY FILLING OR CUTTING, OR PAVEMENT OVERLAY, MUST BE RESET TO MATCH FINAL GRADE (THIS INCLUDES MANHOLES, HANDHOLES, VALVE BOXES, INLETS, ETC). IN AREAS OF CUT, CONTRACTOR SHALL PROVIDE REQUIRED COVERAGE OF UTILITY AND STORMWATER LINES AS SPECIFIED BY THE UTILITY PURVEYOR.

NOTE: SEE OVERALL GRADING AND DRAINAGE PLAN (CG101) FOR COMPLETE NOTES.

LEGEND

- PROPERTY LINE
- LIMIT OF DISTURBANCE/NPDES BOUNDARY
- 25.50 — PROPOSED SPOT ELEVATION
- X.X% — PROPOSED SLOPE
- 25 — PROPOSED 1 FOOT CONTOUR LINE

FOR PROPOSED MANHOLES ON EXISTING SEWER MAINS CONNECT EXISTING PIPE TO A-LOK BOOT ON PROPOSED MANHOLE. IF EXISTING PIPE IS DAMAGED DURING EXCAVATION, REMOVE EXISTING CONCRETE PIPE TO NEAREST PIPE JOINT AND REPLACE.

EXISTING INFORMATION SHOWN IN BACKGROUND IN MD ANDERSON CANCER CENTER AND KELEMEN CDU ADDITION AREAS IS BASED ON A COMBINATION OF PREDEVELOPMENT FIELD SURVEY AND PROPOSED DESIGN DRAWINGS. CONTRACTOR SHALL USE DESIGN INFORMATION AS A GUIDE TO MEET INTENT, BUT MUST ULTIMATELY TIE INTO AS-BUILT CONDITIONS IN FIELD.

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FINAL LIMITS OF CURB RAMP REPLACEMENTS WILL BE DETERMINED ONCE ALL SITE WORK IS COMPLETE.

SCALE: 1 INCH = 10 FEET

PROJECT:

BENSON PAVILION

COOPER NORCROSS UNIVERSITY HOSPITAL
1 COOPER PLAZA
CAMDEN, NJ 08103

SEAL:

CERT OF AUTHORIZATION #AC 331

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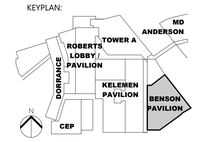
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1400 WILLIAMS ROAD
YORK, PA 17402
717-840-8181

KEYPLAN:



ISSUES:

NO.	DESCRIPTION	DATE

PROJECT NO. 7088
CON/REF NO.
DATE 10/08/2026

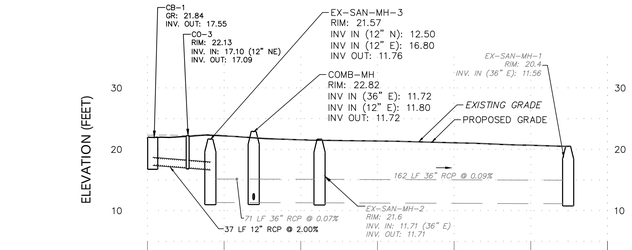
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DETAILED GRADING AND DRAINAGE PLAN

CG102

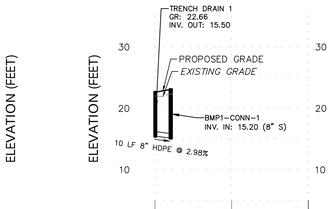
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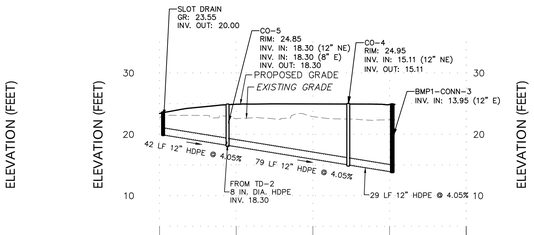
DISTANCE (FEET)	0	100	200	300
EXISTING ELEV. (FEET)	22.3	22.3	21.5	21.4	21.1	20.7
PROPOSED ELEV. (FEET)	22.30	22.28	21.54	21.38	21.11	20.67

DRAINAGE PROFILE
(CB-1 TO EX-SAN-MH-1)



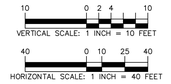
DISTANCE (FEET)	0	100
EXISTING ELEV. (FEET)	22.0
PROPOSED ELEV. (FEET)	22.02

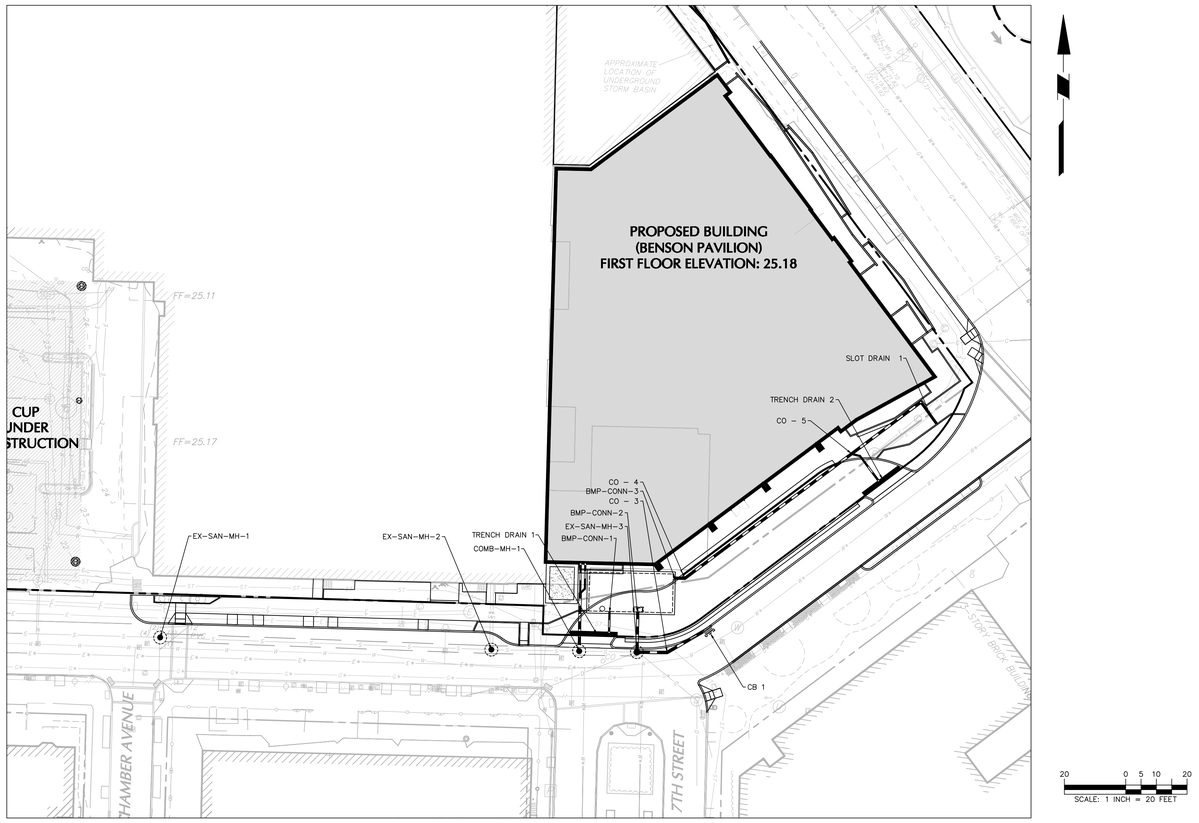
DRAINAGE PROFILE
(TRENCH DRAIN 1 TO BMP-1)



DISTANCE (FEET)	0	100	200
EXISTING ELEV. (FEET)	22.8	22.6	22.9	22.4
PROPOSED ELEV. (FEET)	22.81	22.59	22.89	22.38

DRAINAGE PROFILE
(SLOT DRAIN TO BMP-1)





PLAN VIEW - BENSON PAVILION

EXISTING UTILITY CROSSINGS MAY EXIST. CONTRACTOR TO PERFORM TEST PITS TO CONFIRM. CONTRACTOR TO CONFIRM EXISTING SEWER INLETS PRIOR TO PROCUREMENT OF MATERIALS.

PROJECT:

BENSON PAVILION

COOPER NORCROSS UNIVERSITY HOSPITAL
1 COOPER PLAZA
CAMDEN, NJ 08103

SEAL:

CERT OF AUTHORIZATION #AC 331

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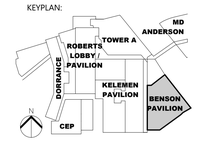
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YORK, PA 17402
717-840-8181

KEYPLAN:



ISSUES:

NO.	DESCRIPTION	DATE

PROJECT NO. 7088
CON/REF NO.
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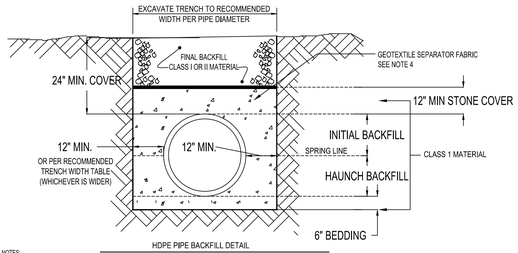
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STORMWATER PROFILES

CG201

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HDPE PIPE BACKFILL DETAIL

NOTES:

1. BEDDING, HAUNCH, INITIAL BACKFILL AND COVER SHALL BE CLASS 1 MATERIAL. CLASS 1 MATERIAL MUST BE EVENLY SPREAD INTO THE HAUNCH AND BETWEEN CORRUGATIONS. IF CLASS 1A MATERIAL IS USED, THE CLASS 1A MATERIAL SHOULD BE SPREAD IN 6-INCH-THICK LIFTS AND NOMINALLY COMPACTED USING A HAND-OPERATED COMPACTION EQUIPMENT. IF CLASS 1B MATERIAL IS USED, THE CLASS 1B MATERIAL SHOULD BE SPREAD IN 6-INCH-THICK LIFTS AND COMPACTED TO AT LEAST 95% OF THE MATERIALS MAX DRY DENSITY.
2. FINAL BACKFILL MATERIAL SHALL BE EITHER CLASS I (A OR B) OR CLASS II MATERIAL. THESE MATERIALS CAN EITHER BE IMPORTED OR PROCESSED FROM ONSITE MATERIAL GENERATED DURING ROCK EXCAVATION.
3. FINAL BACKFILL SHALL BE COMPACTED TO AT LEAST 95% OF THE MATERIAL'S MAXIMUM DRY DENSITY AS DETERMINED BY A MODIFIED PROCTOR COMPACTION TEST (ASTM D1557).
4. THE SEPARATOR FABRIC IS REQUIRED UNLESS OTHERWISE DIRECTED BY THE GEOTECHNICAL ENGINEER. THE NEED FOR A SEPARATOR FABRIC TO PREVENT SOIL PARTICLE MIGRATION SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER ONCE GRADATION DATA IS PROVIDED FOR ALL PROPOSED BACKFILL MATERIALS.

CLASSES OF EMBEDMENT AND BACKFILL MATERIALS

CLASS (PER ASTM D2321)	TYPE	SOIL GROUP SYMBOL ASTM D 2487	DESCRIPTION	PERCENTAGE PASSING SIEVE SIZES 1 1/2 IN (40 MM)	NO. 4 (4.75 MM)	NO. 200 (0.075 MM)
IA	MANUFACTURED AGGREGATES OPEN-GRADED, CLEAN.	NONE	ANGULAR, CRUSHED STONE OR ROCK, CRUSHED GRAVEL, BROKEN CORAL, CRUSHED SLAG, CINDERS OR SHELLS: LARGE VOID CONTENT, CONTAIN LITTLE OR NO FINES.	100 %	≤ 10 %	< 5 %
IB	MANUFACTURED, PROCESSED AGGREGATES; DENSE-GRADED, CLEAN	NONE	ANGULAR, CRUSHED STONE (OR OTHER CLASS IA MATERIALS) AND STONE/SAND MIXTURES WITH GRADATIONS SELECTED TO MINIMIZE MIGRATION OF ADJACENT SOILS; CONTAIN LITTLE OR NO FINES (SEE X1.6.).	100 %	≤ 50 %	< 5 %
II	COARSE-GRAINED SOILS, CLEAN	GW	WELL-GRADED GRAVELS AND GRAVEL-SAND MIXTURES; LITTLE OR NO FINES.	100 %	< 50 % "COARSE FRACTION"	< 5 %
		GP	POORLY-GRADED GRAVELS AND GRAVEL-SAND MIXTURES; LITTLE OR NO FINES.			
		SW	WELL-GRADED SANDS AND GRAVELLY SANDS; LITTLE OR NO FINES.		> 50 % OF "COARSE FRACTION"	
		SP	POORLY-GRADED SANDS AND GRAVEL SANDS; LITTLE OR NO FINES.			
	COARSE-GRAINED SOILS, BORDERLINE CLEAN TO W/ FINES	E.G. GW-GC, SP-SM.	SANDS AND GRAVELS WHICH ARE BORDERLINE BETWEEN CLEAN AND WITH FINES.	100 %	VARIES	5 % TO 12 %
III	COARSE-GRAINED SOILS, WITH FINES	GM	SILTY GRAVELS, GRAVEL-SAND SILT MIXTURES.	100 %	< 50 % OF "COARSE FRACTION"	12 % TO 50 %
		GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES.			
		SM	SILTY SANDS, SAND-SILT MIXTURES.		> 50 % OF "COARSE FRACTION"	
		SC	CLAYEY SANDS, SAND-CLAY MIXTURES.			

NOTE: CONTRACTOR TO COORDINATE AND CONFIRM WITH SPECIFIC PIPE MANUFACTURER.

GENERAL NOTES:

1. MATERIALS: UNLESS OTHERWISE SPECIFIED ON THE PLANS OR HEREIN, CORRUGATED POLYETHYLENE PIPE SHALL CONFORM TO AASHTO M-294, LATEST EDITION. STANDARD SPECIFICATION FOR CORRUGATED POLYETHYLENE PIPE.
2. RESINS: CORRUGATED POLYETHYLENE PIPE SHALL BE MANUFACTURED FROM HIGH DENSITY POLYETHYLENE VIRGIN COMPOUNDS, AND SHALL CONFORM TO THE REQUIREMENTS OF ASTM D-3350 FOR THE CELL CLASSIFICATION 335400C.
3. COUPLING BANDS: EXCEPT AS OTHERWISE REQUIRED HEREIN, COUPLING BANDS AND OTHER HARDWARE FOR CORRUGATED POLYETHYLENE PIPE SHALL DEMONSTRATE THAT THEY MEET THE SOIL TIGHTNESS REQUIREMENTS OF AASHTO SECTION 26 "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES."

   COUPLING BANDS SHALL LAP EQUALLY ON EACH OF THE PIPES BEING CONNECTED TO FORM A TIGHTLY CLOSED JOINT AFTER INSTALLATION.

   THE CORRUGATIONS IN THE BAND SHALL INDEX THE CORRUGATIONS IN THE PIPE ENDS TO ENGAGE AT LEAST TWO FULL CORRUGATIONS FROM THE END OF EACH PIPE.

   WHEN INFILTRATION OR EXFILTRATION IS A CONCERN, THE COUPLING BANDS MAY BE REQUIRED TO HAVE GASKETS. THE GASKET MATERIAL SHALL BE CLOSED-CELL EXPANDED RUBBER OR NEOPRENE.

   OTHER COUPLINGS MAY BE BELL & SPIGOT AND CONFORM TO THE REQUIREMENTS OF AASHTO M294.
4. DESIGNATION OF TYPE: THE PIPE MAY BE ONE OR BOTH OF THE FOLLOWING TYPE:

   TYPE S: THIS PIPE WILL HAVE A FULL CIRCULAR CROSS- SECTION, WITH AN OUTER CORRUGATED PIPE WALL AND A SMOOTH INNER LINER.

   TYPE D: THIS PIPE SHALL CONSIST OF AN ESSENTIALLY SMOOTH WATERWAY BRACED CIRCUMFERENTIALLY WITH CIRCULAR RIBS WHICH ARE FORMED SIMULTANEOUSLY WITH A SMOOTH OUTER WALL.
5. INSTALLATION: CORRUGATED POLYETHYLENE PIPE SHALL BE INSTALLED IN ACCORDANCE WITH TABLE 1 AND ASTM D-2321, LATEST EDITION, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS."

HIGH DENSITY CORRUGATED POLYETHYLENE PIPE HEIGHT OF COVER H-20 AND E-80 LIVE LOADS

NOMINAL DIAMETER IN. (MM)	MINIMUM COVER IN & (MM) H-20	E-80
12 (300)	12 (300)	24 (600)
15 (375)	12 (300)	24 (600)
18 (450)	12 (300)	24 (600)
24 (600)	12 (300)	24 (600)
30 (750)	12 (300)	24 (600)
36 (900)	12 (300)	24 (600)
42 (1050)	12 (300)	24 (600)
48 (1200)	12 (300)	24 (600)
60 (1500)	24 (600)	24 (600)

RECOMMENDED TRENCH WIDTH

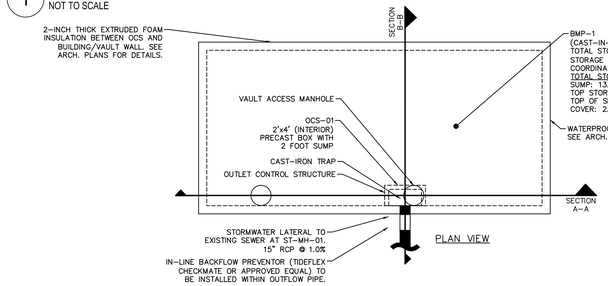
DIAMETER	O.D.	TRENCH WIDTH
12"	14.48"	31"
15"	17.65"	34"
18"	21.10"	39"
24"	28.30"	48"
30"	36.10"	66"
36"	42.25"	78"
42"	47.00"	83"
48"	53.00"	89"
60"	66.30"	102"

The trench width must be wide enough to accomodate compaction equipment.

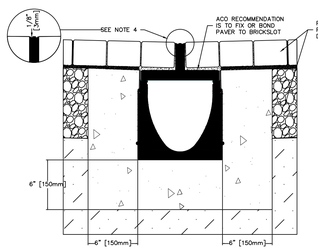
APPROXIMATE MAXIMUM COVER FOR HDPE PIPES (PER ASTM F2648), FT(MM). REFERENCE FROM ADS LITERATURE. CONTRACTOR MUST CONFIRM MAXIMUM ALLOWABLE COVER WITH SELECTED MANUFACTURER.

DIAMETER OF PIPE IN. (MM)	CLASS 1 COMPACTED 95% FT. (M)	CLASS 2 95% FT. (M)	CLASS 2 90% FT. (M)	CLASS 3 95% FT. (M)
12 (300)	27 (8.2)	21 (6.4)	14 (4.3)	12 (3.6)
15 (375)	27 (8.2)	21 (6.4)	14 (4.3)	13 (3.9)
18 (450)	25 (7.6)	18 (5.5)	13 (3.9)	11 (3.3)
24 (600)	22 (6.7)	16 (4.8)	11 (3.3)	12 (3.6)
30 (750)	17 (5.2)	13 (3.9)	9 (2.7)	7 (2.1)
36 (900)	21 (6.4)	15 (4.5)	10 (3.0)	10 (3.0)
42 (1050)	17 (5.2)	13 (3.9)	9 (2.7)	7 (2.1)
48 (1200)	18 (5.5)	13 (3.9)	9 (2.7)	10 (3.0)
60 (1500)	20 (6.0)	15 (4.5)	10 (3.0)	10 (3.0)

1 HDPE PIPE INSTALLATION DETAIL
NOT TO SCALE



6 SCHEMATIC DETAIL OF PROPOSED UNDERGROUND EXTENDED DETENTION BASIN (BMP-1) AND OUTLET CONTROL STRCUTURE (OCS-01)
1:4



NOTES:
1. IT IS NECESSARY TO ENSURE MINIMUM DIMENSIONS SHOWN ARE SUITABLE FOR EXISTING GROUND CONDITIONS. *ENGINEERING ADVICE MAY BE REQUIRED.*
2. MINIMUM CONCRETE STRENGTH OF 4,000 PSI IS RECOMMENDED. CONCRETE SHOULD BE VIBRATED TO ELIMINATE AIR POCKETS.
3. EXPANSION AND CONTRACTION CONTROL JOINTS AND REINFORCEMENT ARE RECOMMENDED TO PROTECT CHANNEL AND CONCRETE SURROUND. *ENGINEERING ADVICE MAY BE REQUIRED.*
4. THE FINISHED LEVEL OF THE CONCRETE SURROUND MUST BE APPROX. 1/8" [3mm] ABOVE THE TOP OF THE CHANNEL EDGE.
5. CONCRETE BASE THICKNESS SHOULD MATCH SLAB THICKNESS. ENGINEERING ADVICE MAY BE REQUIRED TO DETERMINE PROPER LOAD CLASS.
6. REFER TO ACO'S LATEST INSTALLATION INSTRUCTIONS FOR FURTHER DETAILS.

SPECIFICATION CLAUSE

K200 KLASSIKDRAIN W/HEEL RESISTANT BRICKSLOT 200 - LOAD CLASS A

GENERAL
THE SURFACE DRAINAGE SYSTEM SHALL BE POLYMER CONCRETE K200 CHANNEL SYSTEM WITH GALVANIZED STEEL EDGE RAILS AND HEEL RESISTANT BRICKSLOT 200 AS MANUFACTURED BY ACO POLYMER PRODUCTS, INC.

MATERIALS
CHANNELS SHALL BE MANUFACTURED FROM POLYESTER RESIN POLYMER CONCRETE WITH AN INTEGRALLY CAST-IN GALVANIZED STEEL EDGE RAILS. MINIMUM PROPERTIES OF POLYMER CONCRETE STILL BE AS FOLLOWS:
COMPRESSIVE STRENGTH 14,000 PSI
FLEXURAL STRENGTH 4,000 PSI
TENSILE STRENGTH 1,500 PSI
WATER ABSORPTION 0.07%
FROST PROOF YES
DILUTE ACID AND ALKALI RESISTANT YES
B117 SALT SPRAY TEST COMPLIANT YES

THE SYSTEM SHALL BE 8" (200mm) NOMINAL INTERNAL WIDTH WITH A 10.2" (260mm) OVERALL WIDTH. ALL CHANNELS SHALL BE INTERLOCKING WITH A MALE/FEMALE JOINT.

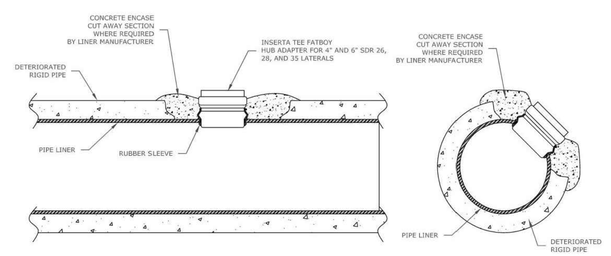
THE COMPLETE DRAINAGE SYSTEM SHALL BE BY ACO POLYMER PRODUCTS, INC. ANY DEVIATION OR PARTIAL SYSTEM DESIGN AND/OR IMPROPER INSTALLATION WILL VOID ANY AND ALL WARRANTIES PROVIDED BY ACO POLYMER PRODUCTS, INC.

CHANNEL SHALL WITHSTAND LOADING TO PROPER LOAD CLASS AS OUTLINED BY EN 1433. HEEL RESISTANT BRICKSLOT 200 SHALL BE APPROPRIATE TO MEET THE SYSTEM LOAD CLASS SPECIFIED AND SHALL BE MANUFACTURED IN ACCORDANCE WITH AND BE CERTIFIED TO MEET THE SPECIFIED EN 1433 LOAD CLASS. THE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.

THE HEEL RESISTANT BRICKSLOT 200 GRATING SYSTEM SHALL HAVE AN OVERALL INTERNAL WIDTH OF 0.89" (22.25mm) WITH TWO 0.31" (8mm) SLOT OPENINGS AND WITH A 0.25" (6.35mm) TAPERED BAR BETWEEN THE TWO OPENINGS TO PREVENT DEBRIS FROM BEING TRAPPED. THE BRICKSLOT GRATING SYSTEM ADDS 3.27" (83mm) TO THE OVERALL HEIGHT OF THE K200 SYSTEM

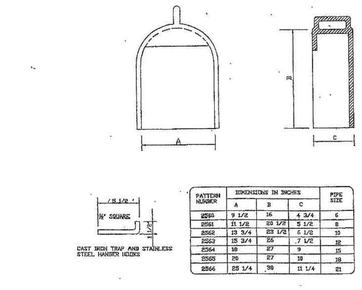
9 SLOT DRAIN (OR APPROVED EQUAL)
NOT TO SCALE

2 INSERTA- TEE SEWER CONNECTION
NOT TO SCALE



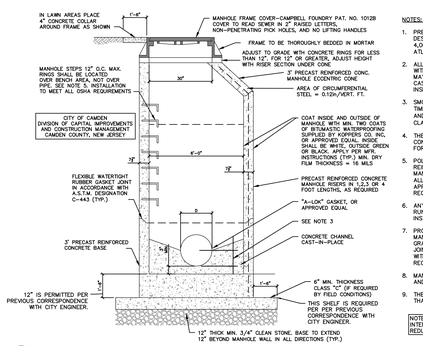
INSTALLATION INSTRUCTIONS:
1. MARK AREA TO BE TAPPED ON SURFACE OF RIGID PIPE. WORKING AREA SHOULD BE 2-INCHES WIDER THAN DIAMETER OF INSERTA TEE.
2. BREAK AWAY RIGID PIPE SECTION TO BE TAPPED AND EXPOSE NEW LINER SECTION.
3. BRUSH AND CLEAN PIPE LINER SURFACE AND REMOVE DAMAGED SECTIONS OF RIGID PIPE.
4. CORE HOLE INTO LINER WITH APPROPRIATE INSERTA TEE HOLE SAW.
5. INSTALL INSERTA TEE FATBOY® TAP CONNECTION PER PROVIDED INSTALLATION INSTRUCTIONS.
6. ENCASE CUT OUT SECTION OF RIGID PIPE WITH CONCRETE WHERE REQUIRED BY LINING MANUFACTURER.

3 CITY OF CAMDEN STANDARD CAST IRON TRAP
NOT TO SCALE



PATTERN NUMBER	DIMENSIONS IN INCHES A	B	C	PIPE SIZE
2561	9 1/2	16	4 3/4	6
2562	11 1/2	20 1/2	5 1/2	8
2563	13 3/4	23 1/2	6 1/2	10
2564	15 3/4	26	7 1/2	12
2565	18	27	9	15
2566	19	27	10	16
2566	23 1/4	30	11 1/4	21

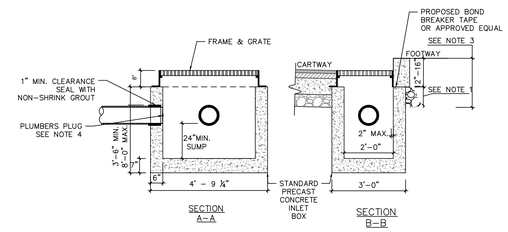
4 CITY OF CAMDEN STANDARD PRECAST MANHOLE
NOT TO SCALE



NOTES:
1. PRECAST MANHOLE IN ACCORDANCE WITH A.S.T.M. DESIGNATION C-478, MINIMUM COMPRESSIVE STRENGTH 4,000 P.S.I. (TYP.). MANHOLE TO BE MANUFACTURED BY ATLANTIC CONCRETE OR APPROVED EQUAL.
2. ALL MANHOLES SHALL BE CONSTRUCTED WATERTIGHT WITHOUT THE USE OF A RUBBER GASKET. WATER TIGHTNESS MAY BE ACHIEVED BY DISH SHAPED INSERTS, WATERTIGHT CASTING, OR APPROVED EQUAL DISH SHAPED WATERTIGHT INSERT SHALL BE SUPPLIED, TWO PER MANHOLE.
3. SMOOTH CONCRETE CHANNEL WITH DEPTH EQUAL TO 0.80 TIMES THE DIA. OF THE MAIN SEWER FOR SIZES 8" TO 15" AND 0.50 TIMES THE DIA. FOR SIZES 16" AND ABOVE. (USE CLASS C CONCRETE)
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTING ADEQUATE BALLAST TO OFFSET FLOTATION FORCES ACTING ON MANHOLES INSTALLED IN WET AREAS.
5. POLYPROPYLENE RUNGS, WITH GRADE 60 STEEL REINFORCEMENT AND TEETH SIDE CLEATS, AS MANUFACTURED BY MA INDUSTRIES. STEEL RUNGS NOT ALLOWED. FOR MANHOLES GREATER THAN 15'-0" DEEP, APPLICANT SHALL CONTACT LTMUA FOR SPECIFIC MANHOLE REQUIREMENTS. ALL OSHA REQUIREMENTS MUST BE MET.
6. ANY MANHOLE REQUIRING LINING SHALL HAVE MANHOLE RUNGS REMOVED AND HAVE A COMPOSITE LADDER INSTALLED.
7. PROVIDE WRAPIDSEAL MANHOLE ENCAPSULATION SYSTEM, AS MANUFACTURED BY CANUSA-CPS, AROUND FRAME AND GRADE RINGS FOR ALL MANHOLES AND AROUND ALL RISER JOINTS. INSTALLATION SHALL BE PROVIDED IN ACCORDANCE WITH ALL CPS MANUFACTURER'S REQUIREMENTS AND RECOMMENDATIONS.
8. MANHOLE FRAME SHALL BE LAID IN 1-INCH OF MORTAR AND HAVE 1-INCH MORTAR AROUND THE RIM.
9. THERE SHALL BE NO CHANGE IN FLOW DIRECTION GREATER THAN 90 DEGREES.

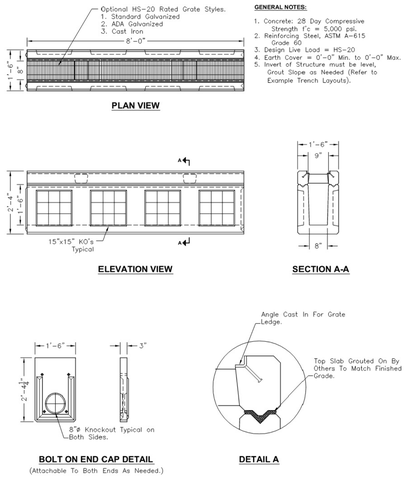
NOTE THAT IF REDUCING SLABS ARE USED, MINIMUM INTERIOR HEIGHT OF 7 FEET BETWEEN MANHOLE BASE AND REDUCING SLAB MUST BE PROVIDED PER CITY ENGINEER.

7 GRATE INLET WITH SUMP
NOT TO SCALE



NOTES:
1. LOCATE PIPE OPENINGS TO PROVIDE MINIMUM 4" OF CONCRETE BETWEEN TOP OF INLET BOX AND TOP OF PIPE OPENING. CURB ABOVE INLET SHALL BE SUPPORTED WITH DGA STONE BETWEEN TOP OF PIPE AND BOTTOM OF CURB. CURB OUTSIDE OF INLET SHALL BE STANDARD DEPTH.
2. FOOTWAY AND CARTWAY RESTORATION HAS BEEN DRAWN FOR REFERENCE PURPOSES ONLY. PAVEMENT RESTORATION QUANTITIES AND DESIGN MUST CONFORM TO CURRENT CITY OF CAMDEN STANDARDS FOR CITY STREETS.
3. PLUMBERS PLUG TO MAINTAIN WATERTIGHT SEAL UNTIL CONSTRUCTION IS COMPLETE. PLUMBERS PLUG IS NOT TO EXTEND MORE THAN 2" OUT FROM INLET WALL.
4. ALL JOINTS, ADJUSTMENTS, AND PIPE CONNECTIONS MUST BE WATERTIGHT.

5 CITY OF CAMDEN COPOLYMER POLYPROPYLENE PLASTIC STEEL REINFORCED MANHOLE STEP
NOT TO SCALE



GENERAL NOTES:
1. Concrete: 28 Day Compressive Strength f'c = 5,000 psi.
2. Reinforcing Steel, ASTM A-615 Grade 60
3. Design Live Load = HS-20
4. Earth Cover = 0'-0" Min. to 0'-0" Max.
5. Invert of Structure must be level, Grout Slope as Needed (Refer to Example Trench Layouts).

DETAIL PROVIDED FOR REFERENCE. FINAL TRENCH DRAIN DETAIL WILL BE PROVIDED TO PLANNING BOARD ENGINEER ONCE SELECTED.

8 TRENCH DRAIN (OR APPROVED EQUAL)
NOT TO SCALE

PROJECT:

BENSON PAVILION

COOPER NORCROSS UNIVERSITY HOSPITAL
1 COOPER PLAZA
CAMDEN, NJ 08103

SEAL:

CERT OF AUTHORIZATION #AC 331

1001 E HECTOR STREET, SUITE 230
CONSHOHOCKEN, PA 19428
610-270-0595
ARRAY-ARCHITECTS.COM

IN COLLABORATION WITH:

LANGAN ENGINEERING & ENVIRONMENTAL SERVICES, LLC
CIVIL ENGINEERING
1 UNIVERSITY SQUARE DRIVE, SUITE 100
PRINCETON, NJ 08540
609-282-8000

HKS ARCHITECTS, P.C.
CORE & SHELL ARCHITECT
975 F ST NW, SUITE 200
WASHINGTON, DC 20004
202-682-6289

O'DONNELL & NACCARATO
STRUCTURAL ENGINEER
701 MARKET STREET, #6000
PHILADELPHIA, PA 19106
215-925-3788

HIGHLAND ASSOCIATES
MEP-FP ENGINEERS
102 HIGHLAND AVE
CLARKS SUMMIT, PA 18411
570-586-4334

BR+A CONSULTING ENGINEERS
MEP-FP ENGINEERS
100 PARK AVENUE, SUITE 200
NEW YORK, NY 10017
212-840-0060

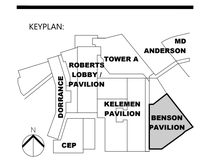
INTROBA
LOW VOLTAGE AV/IT
32 OLD SLIP, 10TH FLOOR
NEW YORK, NY 10006
212-997-5100

VISIONBUILDERS DESIGN
FOOD SERVICES CONSULTANT
1515 SHOPTON ROAD, SUITE 104
CHARLOTTE, NC 28217
704-405-3101

HEALTH, EDUCATION AND RESEARCH ASSOCIATES, INC.
LABORATORY PLANNER
609 E. LOCKWOOD AVENUE, SUITE 204
ST. LOUIS, MO 63119
314-289-9202

ST ONGE
STERILE PROCESSING & VERTICAL TRANSPORTATION CONSULTANT
1400 WILLIAMS ROAD
YORK, PA 17402
717-840-8181

KEYPLAN:



ISSUES:

NO.	DESCRIPTION	DATE

PROJECT NO. 7088
CON/REF NO.
DATE 10/08/2026
DCA# NJPRP-XXXXX

GRADING AND DRAINAGE DETAILS

CG501

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Date: 10/7/2026 Time: 16:06 User: jcluckey Style Table: Langan.stb Layout: CG501 Document Code: 220245001-0502-CG501-0101

Appendix A
Low-Impact Development Checklist

New Jersey Stormwater Best Management Practices Manual

February 2004

http://www.state.nj.us/dep/watershedmgt/bmpmanualfeb2004.htm

A P P E N D I X A

Low Impact Development Checklist

A checklist for identifying nonstructural stormwater management strategies incorporated into proposed land development

According to the NJDEP Stormwater Management Rules at N.J.A.C. 7:8, the groundwater recharge, stormwater quality, and stormwater quantity standards established by the Rules for major land development projects must be met by incorporating nine specific nonstructural stormwater management strategies into the project's design to the maximum extent practicable.

To accomplish this, the Rules require an applicant seeking land development approval from a regulatory board or agency to identify those nonstructural strategies that have been incorporated into the project's design. In addition, if an applicant contends that it is not feasible to incorporate any of the specific strategies into the project's design, particularly for engineering, environmental, or safety reasons, the Rules further require that the applicant provide a basis for that contention.

This checklist has been prepared to assist applicants, site designers, and regulatory boards and agencies in ensuring that the nonstructural stormwater management requirements of the Rules are met. It provides an applicant with a means to identify both the nonstructural strategies incorporated into the development's design and the specific low impact development BMPs (LID-BMPs) that have been used to do so. It can also help an applicant explain the engineering, environmental, and/or safety reasons that a specific nonstructural strategy could not be incorporated into the development's design.

The checklist can also assist municipalities and other land development review agencies in the development of specific requirements for both nonstructural strategies and LID-BMPs in zoning and/or land use ordinances and regulations. As such, where requirements consistent with the Rules have been adopted, they may supersede this checklist.

Finally, the checklist can be used during a pre-design meeting between an applicant and pertinent review personnel to discuss local nonstructural strategies and LID-BMPs requirements in order to optimize the development's nonstructural stormwater management design.

Since this checklist is intended to promote the use of nonstructural stormwater management strategies and provide guidance in their incorporation in land development projects, municipalities are permitted to revise it as necessary to meet the goals and objectives of their specific stormwater management program and plan within the limits of N.J.A.C. 7:8.

Low Impact Development Checklist

A checklist for identifying nonstructural stormwater management strategies incorporated into proposed land development

Municipality: *City of Camden*

County: *Camden* Date: *10/01/2026*

Review board or agency: *City of Camden Planning Board*

Proposed land development name: *Cooper University Hospital – Benson Pavilion*

Lot(s): *1* Block(s): *1402* Lot(s): Block(s):

Project or application number: *TBD*

Applicant's name: _____

Applicant's address: _____

Telephone: _____ Fax: _____

Email address: _____

Designer's name: *Kyle MacGeorge*

Designer's address: *1 University Square Drive, Suite 110, Princeton, NJ 08540*

Telephone: *609-282-8000* Fax: *609-282-8001*

Email address: *kmacgeorge@langan.com*

Part 1: Description of Nonstructural Approach to Site Design

In narrative form, provide an overall description of the nonstructural stormwater management approach and strategies incorporated into the proposed site's design. Attach additional pages as necessary. Details of each nonstructural strategy are provided in Part 3 below.

The proposed stormwater management approach for the project includes low-impact development strategies listed below, in accordance with N.J.A.C. 7:8-5.3.

1. Protect areas that provide water quality benefits or areas particularly susceptible to erosion and sediment loss.
2. Minimize land disturbance including clearing and grading, by redeveloping the existing hospital campus rather than a new "greenfield" elsewhere.
3. Minimize soil compaction, by redeveloping the existing hospital campus rather than a new "greenfield" elsewhere.
4. Provide low maintenance landscaping that encourages retention and planting of native vegetation and minimizes the use of lawns, fertilizers, and pesticides.
5. Provide preventative source controls.

Part 2: Review of Local Stormwater Management Regulations

Title and date of stormwater management regulations used in development design:

City of Camden Zoning and Land Use and Stormwater Control and Management Code; N.J.A.C. 7:8 (July 2023)

Do regulations include nonstructural requirements?
Yes: *X* No: _____

If yes, briefly describe: *Nonstructural requirements in the city ordinance are consistent with the N.J.A.C. code requirements, which include evaluating nonstructural strategies as part of the stormwater management plan to reduce the need for structural requirements.*

List LID-BMPs prohibited by local regulations: *N/A*

Pre-design meeting held? Yes: *X* Date: *8/2026* No: _____

Meeting held with: *Langan, Array, HKS, PurePM, CUHC*

Pre-design site walk held? Yes: *X* Date: *68/7/2026* No: _____

Site walk held with: *Langan*

Other agencies with stormwater review jurisdiction:

Name: *Camden County Soil Conservation District*

Required approval: *NJPDES Approval*

Name: _____

Required approval: _____

Name: _____

Required approval: _____

Part 3: Nonstructural Strategies and LID-BMPs in Design

3.1 Vegetation and Landscaping

Effective management of both existing and proposed site vegetation can reduce a development's adverse impacts on groundwater recharges and runoff quality and quantity. This section of the checklist helps identify the vegetation and landscaping strategies and nonstructural LID-BMPs that have been incorporated into the proposed development's design to help maintain existing recharge rates and/or minimize or prevent increases in runoff quantity and pollutant loading.

A. Has an inventory of existing site vegetation been performed? Yes: _____ No: *X*

If yes, was this inventory a factor in the site's layout and design? Yes: _____ No: *X*

B. Does the site design utilize any of the following nonstructural LID-BMPs?

Preservation of natural areas? Yes: _____ No: *X (N/A)*
If yes, specify % of site: _____

Native ground cover? Yes: _____ No: *X (N/A)*
If yes, specify % of site: _____

Vegetated buffers? Yes: _____ No: *X*
If yes, specify % of site: _____

C. Do the land development regulations require these nonstructural LID-BMPs?

Preservation of natural areas? Yes: _____ No: *X*
If yes, specify % of site: _____

Native ground cover? Yes: _____ No: *X*
If yes, specify % of site: _____

Vegetated buffers? Yes: _____ No: *X*
If yes, specify % of site: _____

D. If vegetated filter strips or buffers are utilized, specify their functions: N/A

Reduce runoff volume increases through lower runoff coefficient:
Yes: _____ No: _____

Reduce runoff pollutant loads through runoff treatment:
Yes: _____ No: _____

Maintain groundwater recharge by preserving natural areas:
Yes: _____ No: _____

3.2 Minimize Land Disturbance

Minimizing land disturbance is a nonstructural LID-BMP that can be applied during both the development's construction and post-construction phases. This section of the checklist helps identify those land disturbance strategies and nonstructural LID-BMPs that have been incorporated into the proposed development's design to minimize land disturbance and the resultant change in the site's hydrologic character.

A. Have inventories of existing site soils and slopes been performed?
Yes: X No: _____

If yes, were these inventories factors in the site's layout and design? Yes: X No: _____

B. Does the development's design utilize any of the following nonstructural LID-BMPs?

Restrict permanent site disturbance by land owners?
Yes: _____ No: X

If yes, how: _____

Restrict temporary site disturbance during construction?
Yes: _____ No: X

If yes, how: _____

Consider soils and slopes in selecting disturbance limits?
Yes: X No: _____

If yes, how: *No steep slopes exist on-site pre-construction. All soils on-site are urban fill.*

C. Specify percentage of site to be cleared: *100%* Regraded: *100%*

D. Specify percentage of cleared areas done so for buildings: *100%*

For driveways and parking: *0%* For roadways: *0%*

E. What design criteria and/or site changes would be required to reduce the percentages in C and D above? *Nothing can be changed to reduce the percentages in C and D above because the majority of the site is building area, which requires regrading around it.*

F. Specify site's hydrologic soil group (HSG) percentages:

HSG A: _____ HSG B: _____ HSG C: *100%* HSG D:

G. Specify percentage of each HSG that will be permanently disturbed:

HSG A: _____ HSG B: _____ HSG C: *100%* HSG D:

H. Locating site disturbance within areas with less permeable soils (HSG C and D) and minimizing disturbance within areas with greater permeable soils (HSG A and B) can help maintain groundwater recharge rates and reduce runoff volume increases. In light of the HSG percentages in F and G above, what other practical measures if any can be taken to achieve this?

None, entire site is urban fill with HSG D.

I. Does the site include Karst topography? Yes: _____ No: *X*

If yes, discuss measures taken to limit Karst impacts:

_____

3.3 Impervious Area Management

New impervious surfaces at a development site can have the greatest adverse effect on groundwater recharge and stormwater quality and quantity. This section of the checklist helps identify those nonstructural strategies and LID-BMPs that have been incorporated into a proposed development's design to comprehensively manage the extent and impacts of new impervious surfaces.

A. Specify impervious cover at site: Existing: *73%* Proposed: *95.%*

B. Specify maximum site impervious coverage allowed by regulations: *90%*

C. Compare proposed street cartway widths with those required by regulations: N/A

Type of Street	Proposed Cartway Width (feet)	Required Cartway Width (feet)
Residential access – low intensity		
Residential access – medium intensity		
Residential access – high intensity with parking		
Residential access – high intensity without parking		
Neighborhood		
Minor collector – low intensity without parking		
Minor collector – with one parking lane		
Minor collector – with two parking lanes		
Minor collector – without parking		
Major collector		

D. Compare proposed parking space dimensions with those required by regulations: N/A

Proposed: _____ Regulations: _____

E. Compare proposed number of parking spaces with those required by regulations: N/A

Proposed: _____ Regulations: _____

F. Specify percentage of total site impervious cover created by buildings: 83%

By driveways and parking: *6%* By roadways: *0%*

G. What design criteria and/or site changes would be required to reduce the percentages in F above?

None, the building footprint cannot be reduced because of project requirements.

H. Specify percentage of total impervious area that will be unconnected:

Total site: *3%* Buildings: 0_____ Driveways and parking: 9_____ Roads:0 _____

I. Specify percentage of total impervious area that will be porous:

Total site: *0%* Buildings: _____ Driveways and parking: _____Roads: _____

J. Specify percentage of total building roof area that will be vegetated: *0%*

K. Specify percentage of total parking area located beneath buildings: *0%*

L. Specify percentage of total parking located within multi-level parking deck: *0%*

3.4 Time of Concentration Modifications

Decreasing a site's time of concentration (Tc) can lead directly to increased site runoff rates which, in turn, can create new and/or aggravate existing erosion and flooding problems downstream. This section of the checklist helps identify those nonstructural strategies and LID-BMPs that have been incorporated into the proposed development's design to effectively minimize such Tc decreases.

When reviewing Tc modification strategies, it is important to remember that a drainage area's Tc should reflect the general conditions throughout the area. As a result, Tc modifications must generally be applied throughout a drainage area, not just along a specific Tc route.

A. Specify percentage of site's total stormwater conveyance system length that will be:

Storm sewer: 90% Vegetated swale: *N/A – urban site* Natural channel: *N/A – urban site*

Stormwater management facility: *10%* Other: _____

Note: the total length of the stormwater conveyance system should be measured from the site's downstream property line to the downstream limit of sheet flow at the system's headwaters.

B. What design criteria and/or site changes would be required to reduce the storm sewer percentages and increase the vegetated swale and natural channel percentages in A above?

This is not possible in an urban setting like this one.

C. In conveyance system subareas that have overland or sheet flow over impervious surfaces or turf grass, what practical and effective site changes can be made to:

Decrease overland flow slope: *This is not possible in an urban setting like this one.*

Increase overland flow roughness: *This is not possible in an urban setting like this one.*

3.5 Preventative Source Controls

The most effective way to address water quality concerns is by pollution prevention. This section of the checklist helps identify those nonstructural strategies and LID-BMPs that have been incorporated into the proposed development's design to reduce the exposure of pollutants to prevent their release into the stormwater runoff.

A. Trash Receptacles

Specify the number of trash receptacles provided: *0*

Specify the spacing between the trash receptacles: *N/A*

Compare trash receptacles proposed with those required by regulations:

Proposed: *0* Regulations: *N/A*

B. Pet Waste Stations

Specify the number of pet waste stations provided: *0*

Specify the spacing between the pet waste stations: *N/A*

Compare pet waste stations proposed with those required by regulations:

Proposed: *0* Regulations: *N/A*

C. Inlets, Trash Racks, and Other Devices that Prevent Discharge of Large Trash and Debris

Specify percentage of total inlets that comply with the NJPDES storm drain inlet criteria: *100% of downstream inlets*

D. Maintenance

Specify the frequency of the following maintenance activities:

Street sweeping: Proposed: *0* Regulations: *N/A*

Litter collection: Proposed: *0* Regulations: *N/A*

Identify other stormwater management measures on the site that prevent discharge of large trash and debris:

Sumps and traps are provided in all downstream inlets before discharging to BMPs.

E. Prevention and Containment of Spills

Identify locations where pollutants are located on the site, and the features that prevent these pollutants from being exposed to stormwater runoff:

Pollutant: *N/A* Location: _____

Feature utilized to prevent pollutant exposure, harmful accumulation, or contain spills:

Pollutant: *N/A* Location: _____

Feature utilized to prevent pollutant exposure, harmful accumulation, or contain spills:

Pollutant: *N/A* Location: _____

Feature utilized to prevent pollutant exposure, harmful accumulation, or contain spills:

Pollutant: *N/A* Location: _____

Feature utilized to prevent pollutant exposure, harmful accumulation, or contain spills:

Pollutant: *N/A* Location: _____

Part 4: Compliance with Nonstructural Requirements of NJDEP Stormwater Management Rules

1. Based upon the checklist responses above, indicate which nonstructural strategies have been incorporated into the proposed development's design in accordance with N.J.A.C. 7:8-5.3(b):

No.	Nonstructural Strategy	Yes	No
1.	Protect areas that provide water quality benefits or areas particularly susceptible to erosion and sediment loss.	*X*	
2.	Minimize impervious surfaces and break up or disconnect the flow of runoff over impervious surfaces.		*X*
3.	Maximize the protection of natural drainage features and vegetation.	*X*	
4.	Minimize the decrease in the pre-construction time of concentration.		*X*
5.	Minimize land disturbance including clearing and grading.	*X*	
6.	Minimize soil compaction.	*X*	
7.	Provide low maintenance landscaping that encourages retention and planting of native vegetation and minimizes the use of lawns, fertilizers, and pesticides.	*X*	
8.	Provide vegetated open-channel conveyance systems discharge into and through stable vegetated areas.		*X*
9.	Provide preventative source controls.	*X*	

2. For those strategies that have not been incorporated into the proposed development's design, provide engineering, environmental, and/or safety reasons. Attached additional pages as necessary.

The time of concentration will decrease due to decreased ground-level open space and added stormwater conveyance systems. However, runoff will be managed by BMPs and the peak runoff rates leaving the site are lower than the pre-construction conditions.

There is limited space to fit vegetated open-channel conveyance. Therefore, storm piping is proposed to convey runoff. As noted above, this runoff is directed to BMPs for management of quantity and rate per NJDEP and City of Camden requirements.

Appendix B
Pre-Development Drainage Area and Land Cover Summary / Runoff Hydrographs

STORMWATER ANALYSIS

PROJECT: Cooper University Hospital - Benson Pavilion
LOCATION: Camden, New Jersey
JOB #: 220245001
DATE: 08 October 2026

LAND COVER SUMMARY - PRE-DEVELOPED CONDITIONS

DRAINAGE AREA	LAND COVER	HYDROLOGIC SOIL GROUP	AREA		CN	Tc	
			SF	ACRES		Current	Projected
EXDA-1 (POI-1)	Impervious Building (Roof)	C	8,664	0.199	98	2.3	2.3
	Impervious driveway/road	C	13,557	0.311	98	1.1	1.1
	Impervious Site (Ground)	C	5,270	0.121	98	1.1	1.1
	Lawn	C	8,065	0.185	74	2.2	2.1
	TOTAL		**35,556**	**0.816**			

DRAINAGE AREA	LAND COVER	HYDROLOGIC SOIL GROUP	AREA		CN	Tc	
			SF	ACRES		Current	Projected
EXDA-2 (POI-2)	Impervious driveway/road	C	122	0.003	98	4.4	4.3
	Impervious Site (Ground)	C	759	0.017	98	4.4	4.3
	Lawn	C	2,333	0.054	74	4.4	4.2
	TOTAL		**3,214**	**0.074**			

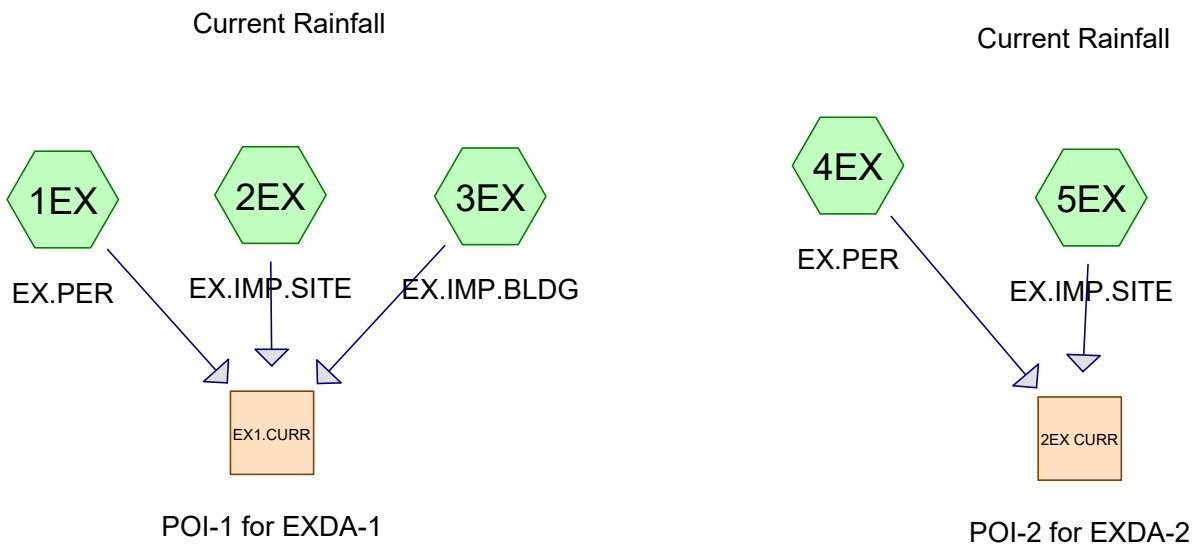
total on-site 38,770

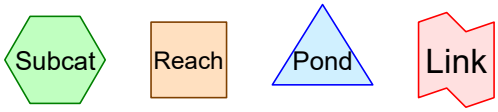
DRAINAGE AREA	LAND COVER	HYDROLOGIC SOIL GROUP	AREA		CN	Tc	
			SF	ACRES		Current	Projected
EX DISTURBED R.O.W. TO CITY SEWER	Impervious driveway/road	C	7,209	0.165	98		
	Impervious Site (Ground)	C	5,978	0.137	98		
	Lawn	C	2,065	0.047	74		
	TOTAL		**15,252**	**0.350**			

total disturbed 54,022

(CURRENT RAINFALL)

EXISTING





Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr, Current	NOAA 24-hr	C	Default	24.00	1	3.41	2
2	10-yr, Current	NOAA 24-hr	C	Default	24.00	1	5.26	2
3	100-yr, Current	NOAA 24-hr	C	Default	24.00	1	8.95	2
4	25-yr	NOAA 24-hr	C	Default	24.00	1	6.28	2

Area Listing (selected nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
10,398	74	>75% Grass cover, Good, HSG C (1EX, 4EX)
5,270	98	Impervious walkway (2EX)
14,438	98	Paved parking, HSG D (2EX, 5EX)
8,664	98	Roofs, HSG D (3EX)

Summary for Subcatchment 1EX: EX.PER

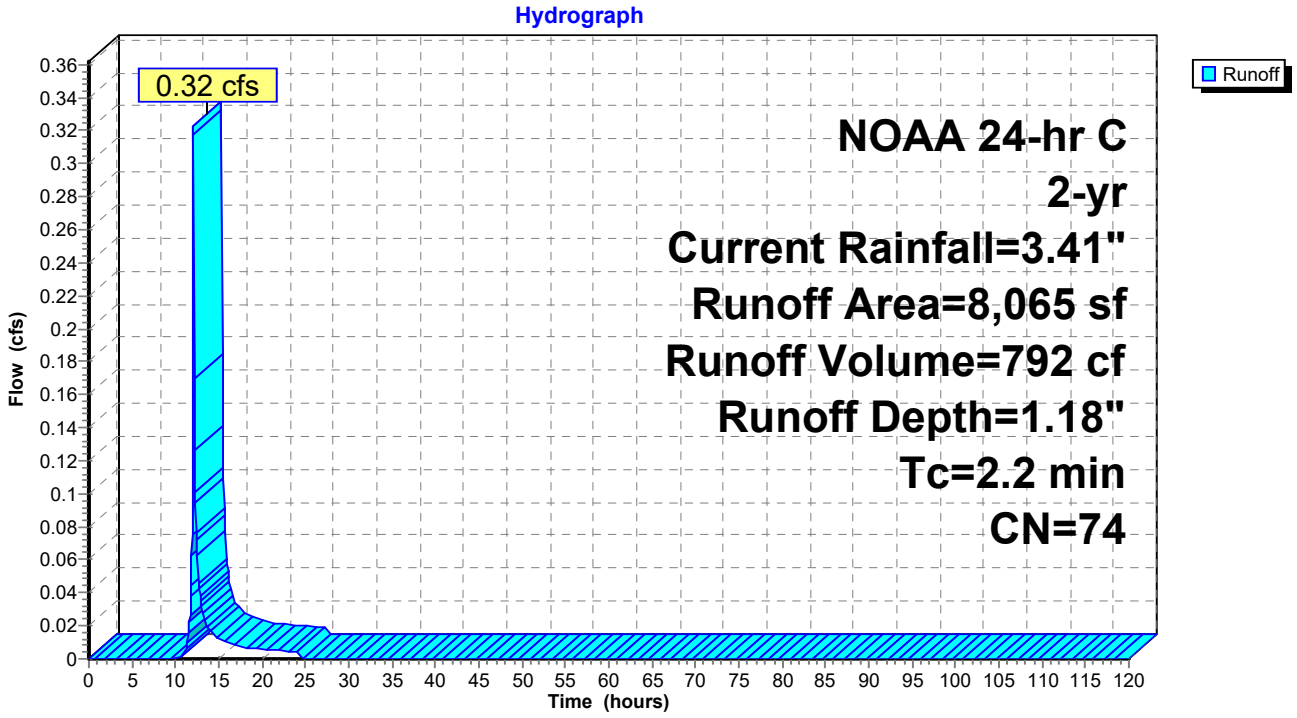
Runoff = 0.32 cfs @ 12.09 hrs, Volume= 792 cf, Depth= 1.18"
Routed to Reach EX1.CURR : POI-1 for EXDA-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 2-yr, Current Rainfall=3.41"

Area (sf)	CN	Description
8,065	74	>75% Grass cover, Good, HSG C
8,065		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2					**Direct Entry,**

Subcatchment 1EX: EX.PER



Hydrograph for Subcatchment 1EX: EX.PER

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.10	0.00	0.00
5.00	0.22	0.00	0.00
7.50	0.37	0.00	0.00
10.00	0.62	0.00	**0.00**
12.50	2.40	0.55	**0.07**
15.00	2.91	0.85	0.01
17.50	3.11	0.98	0.01
20.00	3.24	1.07	0.01
22.50	**3.35**	**1.14**	0.01
25.00	**3.41**	**1.18**	0.00
27.50	3.41	1.18	0.00
30.00	3.41	1.18	0.00
32.50	3.41	1.18	0.00
35.00	3.41	1.18	0.00
37.50	3.41	1.18	0.00
40.00	3.41	1.18	0.00
42.50	3.41	1.18	0.00
45.00	3.41	1.18	0.00
47.50	3.41	1.18	0.00
50.00	3.41	1.18	0.00
52.50	3.41	1.18	0.00
55.00	3.41	1.18	0.00
57.50	3.41	1.18	0.00
60.00	3.41	1.18	0.00
62.50	3.41	1.18	0.00
65.00	3.41	1.18	0.00
67.50	3.41	1.18	0.00
70.00	3.41	1.18	0.00
72.50	3.41	1.18	0.00
75.00	3.41	1.18	0.00
77.50	3.41	1.18	0.00
80.00	3.41	1.18	0.00
82.50	3.41	1.18	0.00
85.00	3.41	1.18	0.00
87.50	3.41	1.18	0.00
90.00	3.41	1.18	0.00
92.50	3.41	1.18	0.00
95.00	3.41	1.18	0.00
97.50	3.41	1.18	0.00
100.00	3.41	1.18	0.00
102.50	3.41	1.18	0.00
105.00	3.41	1.18	0.00
107.50	3.41	1.18	0.00
110.00	3.41	1.18	0.00
112.50	3.41	1.18	0.00
115.00	3.41	1.18	0.00
117.50	3.41	1.18	0.00
120.00	3.41	1.18	0.00

Summary for Subcatchment 2EX: EX.IMP.SITE

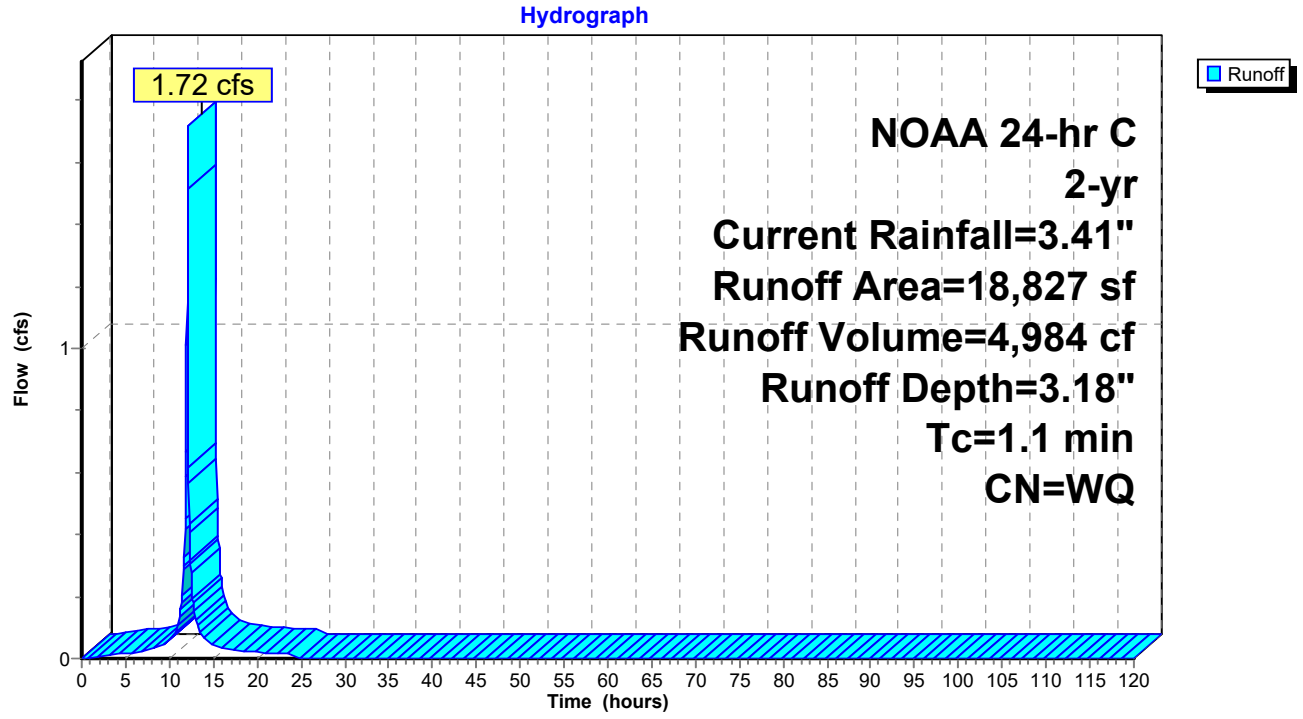
Runoff = 1.72 cfs @ 12.06 hrs, Volume= 4,984 cf, Depth= 3.18"
Routed to Reach EX1.CURR : POI-1 for EXDA-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 2-yr, Current Rainfall=3.41"

	Area (sf)	CN	Description
	13,557	98	Paved parking, HSG D
*	5,270	98	Impervious walkway
	18,827		Weighted Average
	18,827		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1					**Direct Entry,**

Subcatchment 2EX: EX.IMP.SITE



Hydrograph for Subcatchment 2EX: EX.IMP.SITE

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.10	0.01	0.01
5.00	0.22	0.08	0.02
7.50	0.37	0.20	0.03
10.00	0.62	0.43	**0.06**
12.50	2.40	2.17	**0.28**
15.00	2.91	2.68	0.04
17.50	3.11	2.88	0.03
20.00	3.24	3.01	0.02
22.50	**3.35**	**3.12**	0.02
25.00	**3.41**	**3.18**	0.00
27.50	3.41	3.18	0.00
30.00	3.41	3.18	0.00
32.50	3.41	3.18	0.00
35.00	3.41	3.18	0.00
37.50	3.41	3.18	0.00
40.00	3.41	3.18	0.00
42.50	3.41	3.18	0.00
45.00	3.41	3.18	0.00
47.50	3.41	3.18	0.00
50.00	3.41	3.18	0.00
52.50	3.41	3.18	0.00
55.00	3.41	3.18	0.00
57.50	3.41	3.18	0.00
60.00	3.41	3.18	0.00
62.50	3.41	3.18	0.00
65.00	3.41	3.18	0.00
67.50	3.41	3.18	0.00
70.00	3.41	3.18	0.00
72.50	3.41	3.18	0.00
75.00	3.41	3.18	0.00
77.50	3.41	3.18	0.00
80.00	3.41	3.18	0.00
82.50	3.41	3.18	0.00
85.00	3.41	3.18	0.00
87.50	3.41	3.18	0.00
90.00	3.41	3.18	0.00
92.50	3.41	3.18	0.00
95.00	3.41	3.18	0.00
97.50	3.41	3.18	0.00
100.00	3.41	3.18	0.00
102.50	3.41	3.18	0.00
105.00	3.41	3.18	0.00
107.50	3.41	3.18	0.00
110.00	3.41	3.18	0.00
112.50	3.41	3.18	0.00
115.00	3.41	3.18	0.00
117.50	3.41	3.18	0.00
120.00	3.41	3.18	0.00

Summary for Subcatchment 3EX: EX.IMP.BLDG

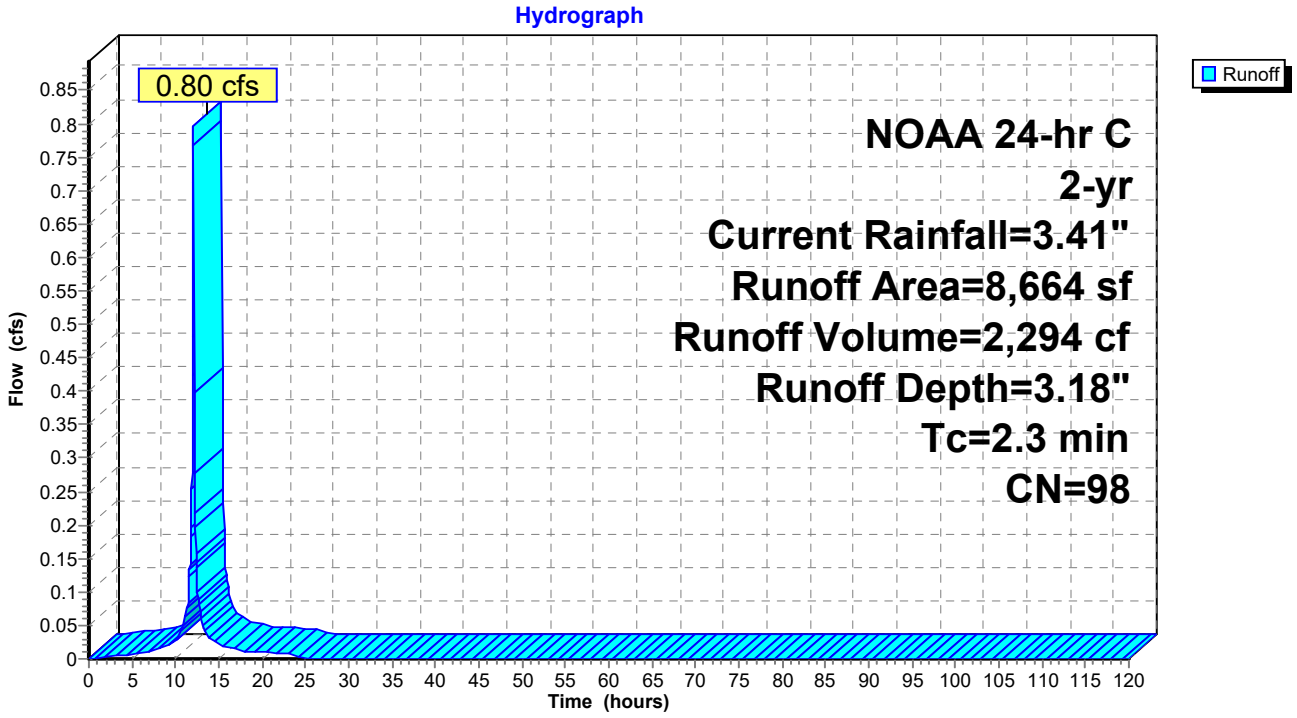
Runoff = 0.80 cfs @ 12.08 hrs, Volume= 2,294 cf, Depth= 3.18"
Routed to Reach EX1.CURR : POI-1 for EXDA-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 2-yr, Current Rainfall=3.41"

Area (sf)	CN	Description
8,664	98	Roofs, HSG D
8,664		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3					**Direct Entry,**

Subcatchment 3EX: EX.IMP.BLDG



Hydrograph for Subcatchment 3EX: EX.IMP.BLDG

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.10	0.01	0.00
5.00	0.22	0.08	0.01
7.50	0.37	0.20	0.01
10.00	0.62	0.43	**0.03**
12.50	2.40	2.17	**0.14**
15.00	2.91	2.68	0.02
17.50	3.11	2.88	0.01
20.00	3.24	3.01	0.01
22.50	**3.35**	**3.12**	0.01
25.00	**3.41**	**3.18**	0.00
27.50	3.41	3.18	0.00
30.00	3.41	3.18	0.00
32.50	3.41	3.18	0.00
35.00	3.41	3.18	0.00
37.50	3.41	3.18	0.00
40.00	3.41	3.18	0.00
42.50	3.41	3.18	0.00
45.00	3.41	3.18	0.00
47.50	3.41	3.18	0.00
50.00	3.41	3.18	0.00
52.50	3.41	3.18	0.00
55.00	3.41	3.18	0.00
57.50	3.41	3.18	0.00
60.00	3.41	3.18	0.00
62.50	3.41	3.18	0.00
65.00	3.41	3.18	0.00
67.50	3.41	3.18	0.00
70.00	3.41	3.18	0.00
72.50	3.41	3.18	0.00
75.00	3.41	3.18	0.00
77.50	3.41	3.18	0.00
80.00	3.41	3.18	0.00
82.50	3.41	3.18	0.00
85.00	3.41	3.18	0.00
87.50	3.41	3.18	0.00
90.00	3.41	3.18	0.00
92.50	3.41	3.18	0.00
95.00	3.41	3.18	0.00
97.50	3.41	3.18	0.00
100.00	3.41	3.18	0.00
102.50	3.41	3.18	0.00
105.00	3.41	3.18	0.00
107.50	3.41	3.18	0.00
110.00	3.41	3.18	0.00
112.50	3.41	3.18	0.00
115.00	3.41	3.18	0.00
117.50	3.41	3.18	0.00
120.00	3.41	3.18	0.00

Summary for Subcatchment 4EX: EX.PER

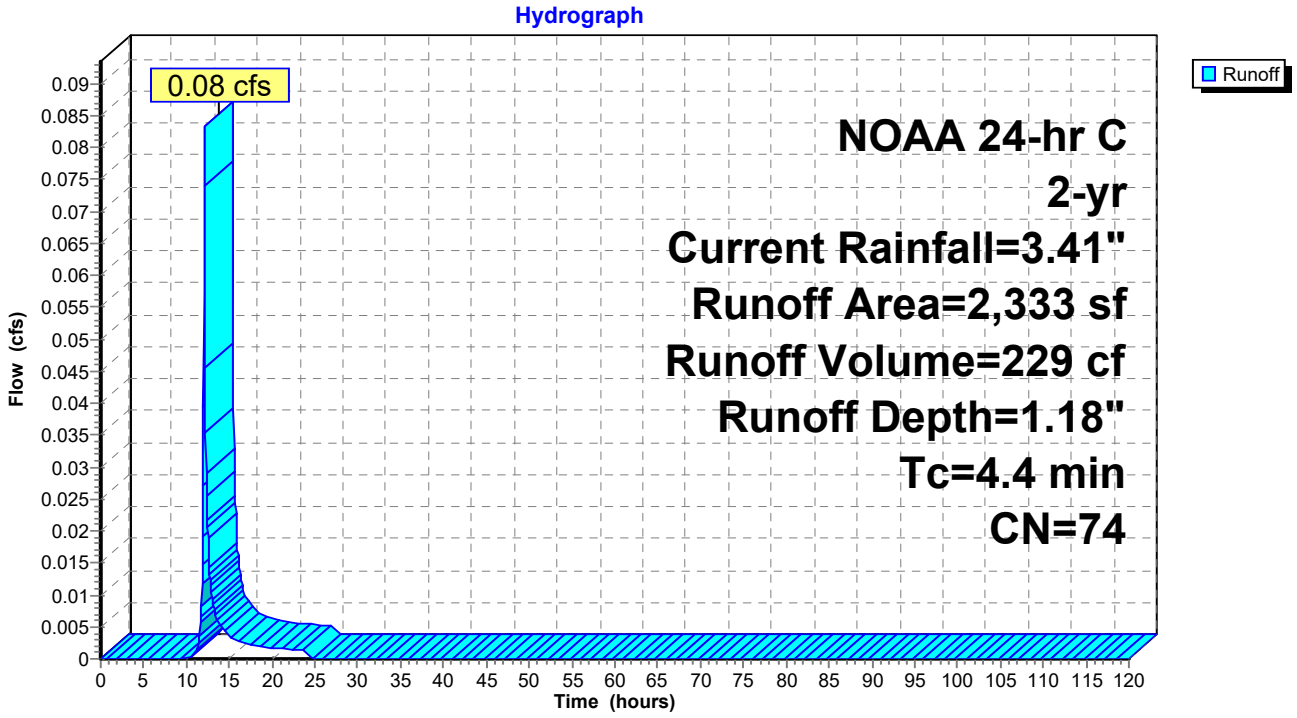
Runoff = 0.08 cfs @ 12.11 hrs, Volume= 229 cf, Depth= 1.18"
Routed to Reach 2EX CURR : POI-2 for EXDA-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 2-yr, Current Rainfall=3.41"

	Area (sf)	CN	Description
*	2,333	74	>75% Grass cover, Good, HSG C
	2,333		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.4					**Direct Entry,**

Subcatchment 4EX: EX.PER



Hydrograph for Subcatchment 4EX: EX.PER

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.10	0.00	0.00
5.00	0.22	0.00	0.00
7.50	0.37	0.00	0.00
10.00	0.62	0.00	**0.00**
12.50	2.40	0.55	**0.02**
15.00	2.91	0.85	0.00
17.50	3.11	0.98	0.00
20.00	3.24	1.07	0.00
22.50	**3.35**	**1.14**	0.00
25.00	**3.41**	**1.18**	0.00
27.50	3.41	1.18	0.00
30.00	3.41	1.18	0.00
32.50	3.41	1.18	0.00
35.00	3.41	1.18	0.00
37.50	3.41	1.18	0.00
40.00	3.41	1.18	0.00
42.50	3.41	1.18	0.00
45.00	3.41	1.18	0.00
47.50	3.41	1.18	0.00
50.00	3.41	1.18	0.00
52.50	3.41	1.18	0.00
55.00	3.41	1.18	0.00
57.50	3.41	1.18	0.00
60.00	3.41	1.18	0.00
62.50	3.41	1.18	0.00
65.00	3.41	1.18	0.00
67.50	3.41	1.18	0.00
70.00	3.41	1.18	0.00
72.50	3.41	1.18	0.00
75.00	3.41	1.18	0.00
77.50	3.41	1.18	0.00
80.00	3.41	1.18	0.00
82.50	3.41	1.18	0.00
85.00	3.41	1.18	0.00
87.50	3.41	1.18	0.00
90.00	3.41	1.18	0.00
92.50	3.41	1.18	0.00
95.00	3.41	1.18	0.00
97.50	3.41	1.18	0.00
100.00	3.41	1.18	0.00
102.50	3.41	1.18	0.00
105.00	3.41	1.18	0.00
107.50	3.41	1.18	0.00
110.00	3.41	1.18	0.00
112.50	3.41	1.18	0.00
115.00	3.41	1.18	0.00
117.50	3.41	1.18	0.00
120.00	3.41	1.18	0.00

Summary for Subcatchment 5EX: EX.IMP.SITE

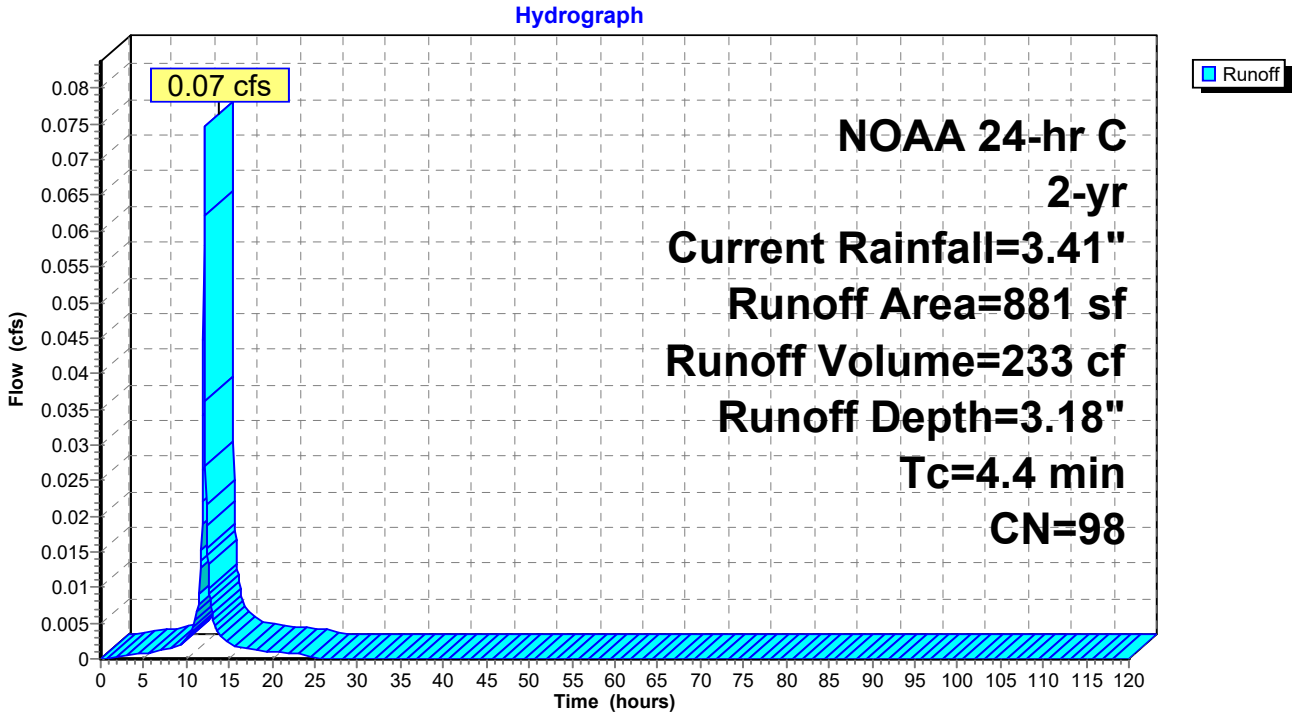
Runoff = 0.07 cfs @ 12.10 hrs, Volume= 233 cf, Depth= 3.18"
Routed to Reach 2EX CURR : POI-2 for EXDA-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 2-yr, Current Rainfall=3.41"

	Area (sf)	CN	Description
*	881	98	Paved parking, HSG D
	881		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.4					**Direct Entry,**

Subcatchment 5EX: EX.IMP.SITE



Hydrograph for Subcatchment 5EX: EX.IMP.SITE

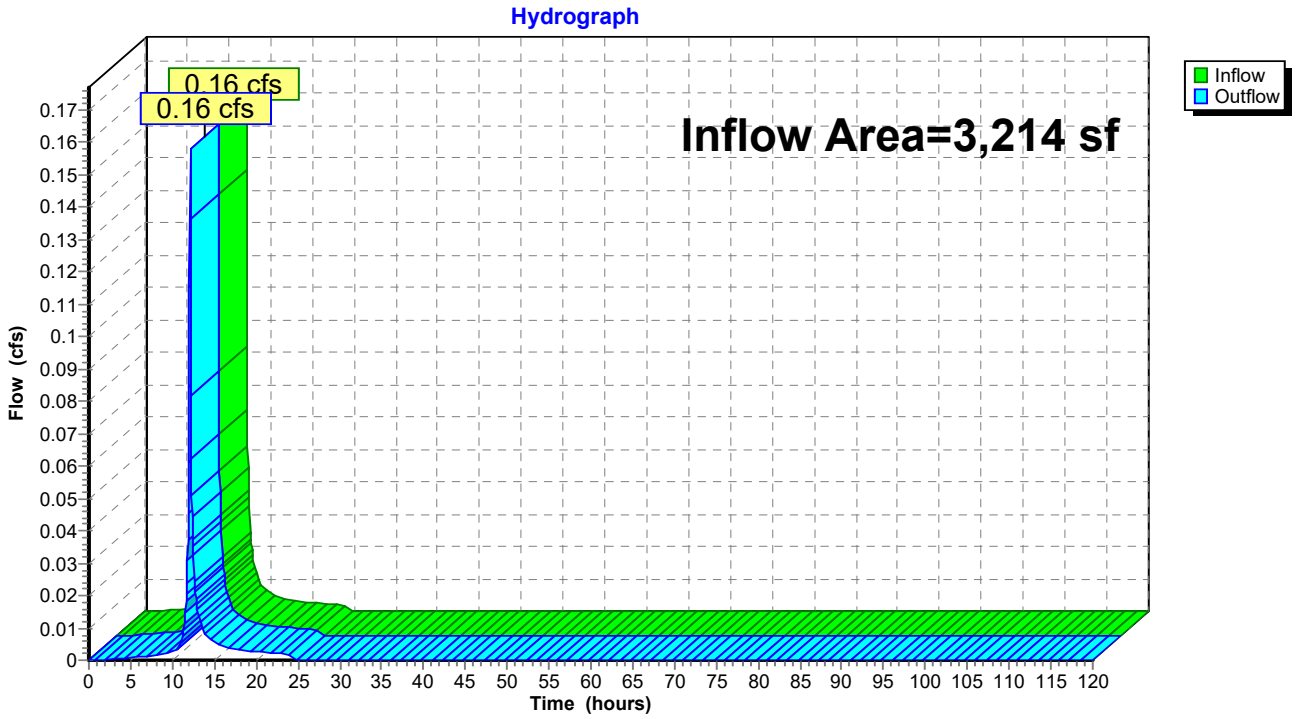
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.10	0.01	0.00
5.00	0.22	0.08	0.00
7.50	0.37	0.20	0.00
10.00	0.62	0.43	**0.00**
12.50	2.40	2.17	**0.01**
15.00	2.91	2.68	0.00
17.50	3.11	2.88	0.00
20.00	3.24	3.01	0.00
22.50	**3.35**	**3.12**	0.00
25.00	**3.41**	**3.18**	0.00
27.50	3.41	3.18	0.00
30.00	3.41	3.18	0.00
32.50	3.41	3.18	0.00
35.00	3.41	3.18	0.00
37.50	3.41	3.18	0.00
40.00	3.41	3.18	0.00
42.50	3.41	3.18	0.00
45.00	3.41	3.18	0.00
47.50	3.41	3.18	0.00
50.00	3.41	3.18	0.00
52.50	3.41	3.18	0.00
55.00	3.41	3.18	0.00
57.50	3.41	3.18	0.00
60.00	3.41	3.18	0.00
62.50	3.41	3.18	0.00
65.00	3.41	3.18	0.00
67.50	3.41	3.18	0.00
70.00	3.41	3.18	0.00
72.50	3.41	3.18	0.00
75.00	3.41	3.18	0.00
77.50	3.41	3.18	0.00
80.00	3.41	3.18	0.00
82.50	3.41	3.18	0.00
85.00	3.41	3.18	0.00
87.50	3.41	3.18	0.00
90.00	3.41	3.18	0.00
92.50	3.41	3.18	0.00
95.00	3.41	3.18	0.00
97.50	3.41	3.18	0.00
100.00	3.41	3.18	0.00
102.50	3.41	3.18	0.00
105.00	3.41	3.18	0.00
107.50	3.41	3.18	0.00
110.00	3.41	3.18	0.00
112.50	3.41	3.18	0.00
115.00	3.41	3.18	0.00
117.50	3.41	3.18	0.00
120.00	3.41	3.18	0.00

Summary for Reach 2EX CURR: POI-2 for EXDA-2

Inflow Area = 3,214 sf, 27.41% Impervious, Inflow Depth = 1.73" for 2-yr, Current event
Inflow = 0.16 cfs @ 12.11 hrs, Volume= 462 cf
Outflow = 0.16 cfs @ 12.11 hrs, Volume= 462 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach 2EX CURR: POI-2 for EXDA-2



Hydrograph for Reach 2EX CURR: POI-2 for EXDA-2

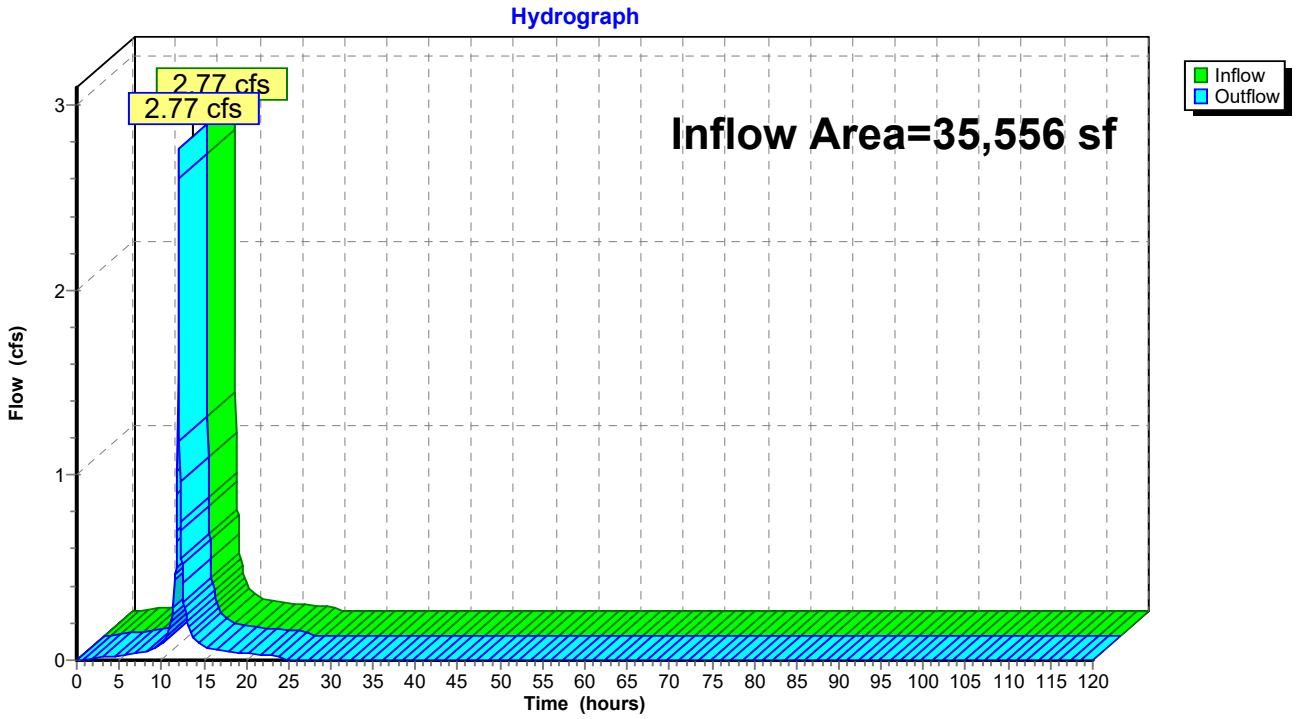
Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00
2.50	0.00		0.00
5.00	0.00		0.00
7.50	0.00		0.00
10.00	**0.00**		**0.00**
12.50	**0.03**		**0.03**
15.00	0.01		0.01
17.50	0.00		0.00
20.00	0.00		0.00
22.50	0.00		0.00
25.00	0.00		0.00
27.50	0.00		0.00
30.00	0.00		0.00
32.50	0.00		0.00
35.00	0.00		0.00
37.50	0.00		0.00
40.00	0.00		0.00
42.50	0.00		0.00
45.00	0.00		0.00
47.50	0.00		0.00
50.00	0.00		0.00
52.50	0.00		0.00
55.00	0.00		0.00
57.50	0.00		0.00
60.00	0.00		0.00
62.50	0.00		0.00
65.00	0.00		0.00
67.50	0.00		0.00
70.00	0.00		0.00
72.50	0.00		0.00
75.00	0.00		0.00
77.50	0.00		0.00
80.00	0.00		0.00
82.50	0.00		0.00
85.00	0.00		0.00
87.50	0.00		0.00
90.00	0.00		0.00
92.50	0.00		0.00
95.00	0.00		0.00
97.50	0.00		0.00
100.00	0.00		0.00
102.50	0.00		0.00
105.00	0.00		0.00
107.50	0.00		0.00
110.00	0.00		0.00
112.50	0.00		0.00
115.00	0.00		0.00
117.50	0.00		0.00
120.00	0.00		0.00

Summary for Reach EX1.CURR: POI-1 for EXDA-1

Inflow Area = 35,556 sf, 77.32% Impervious, Inflow Depth = 2.72" for 2-yr, Current event
Inflow = 2.77 cfs @ 12.07 hrs, Volume= 8,070 cf
Outflow = 2.77 cfs @ 12.07 hrs, Volume= 8,070 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach EX1.CURR: POI-1 for EXDA-1



Hydrograph for Reach EX1.CURR: POI-1 for EXDA-1

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00
2.50	0.01		0.01
5.00	0.02		0.02
7.50	0.04		0.04
10.00	**0.09**		**0.09**
12.50	**0.48**		**0.48**
15.00	0.08		0.08
17.50	0.05		0.05
20.00	0.04		0.04
22.50	0.03		0.03
25.00	0.00		0.00
27.50	0.00		0.00
30.00	0.00		0.00
32.50	0.00		0.00
35.00	0.00		0.00
37.50	0.00		0.00
40.00	0.00		0.00
42.50	0.00		0.00
45.00	0.00		0.00
47.50	0.00		0.00
50.00	0.00		0.00
52.50	0.00		0.00
55.00	0.00		0.00
57.50	0.00		0.00
60.00	0.00		0.00
62.50	0.00		0.00
65.00	0.00		0.00
67.50	0.00		0.00
70.00	0.00		0.00
72.50	0.00		0.00
75.00	0.00		0.00
77.50	0.00		0.00
80.00	0.00		0.00
82.50	0.00		0.00
85.00	0.00		0.00
87.50	0.00		0.00
90.00	0.00		0.00
92.50	0.00		0.00
95.00	0.00		0.00
97.50	0.00		0.00
100.00	0.00		0.00
102.50	0.00		0.00
105.00	0.00		0.00
107.50	0.00		0.00
110.00	0.00		0.00
112.50	0.00		0.00
115.00	0.00		0.00
117.50	0.00		0.00
120.00	0.00		0.00

Summary for Subcatchment 1EX: EX.PER

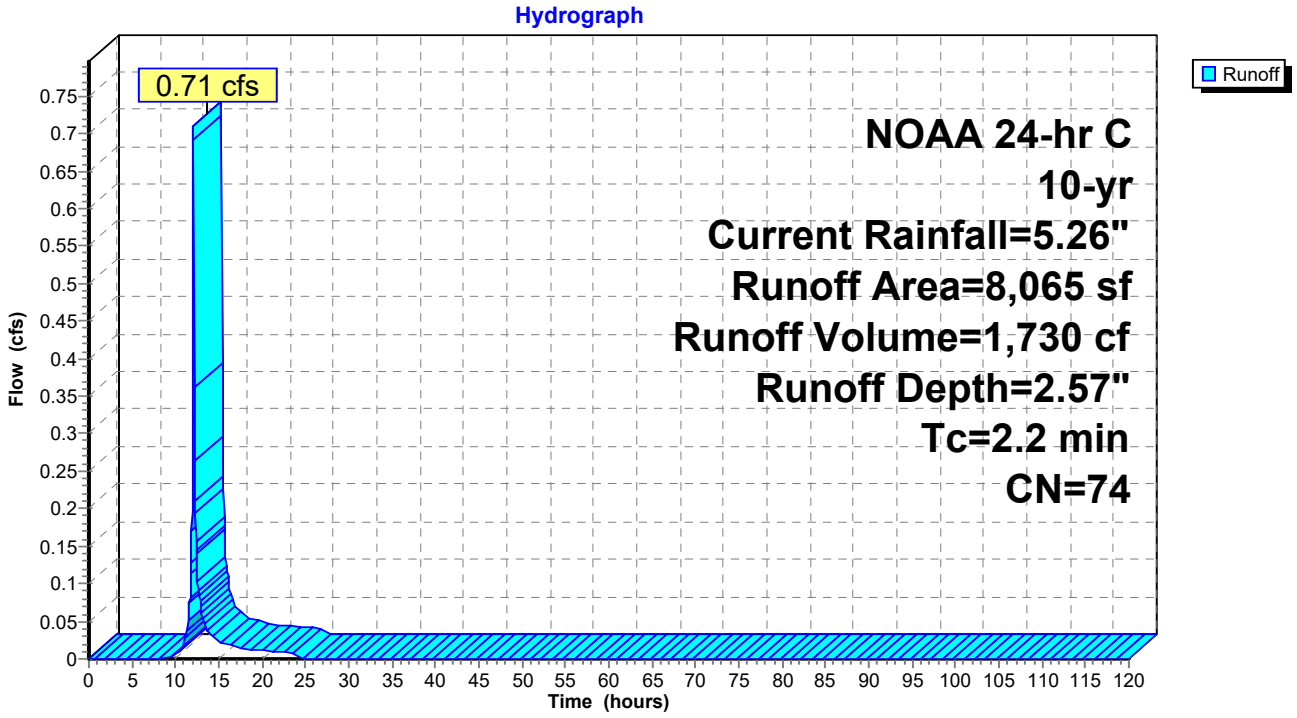
Runoff = 0.71 cfs @ 12.08 hrs, Volume= 1,730 cf, Depth= 2.57"
Routed to Reach EX1.CURR : POI-1 for EXDA-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 10-yr, Current Rainfall=5.26"

Area (sf)	CN	Description
8,065	74	>75% Grass cover, Good, HSG C
8,065		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2					**Direct Entry,**

Subcatchment 1EX: EX.PER



Hydrograph for Subcatchment 1EX: EX.PER

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.15	0.00	0.00
5.00	0.33	0.00	0.00
7.50	0.57	0.00	0.00
10.00	0.96	0.02	**0.01**
12.50	3.71	1.38	**0.14**
15.00	4.49	1.97	0.02
17.50	4.80	2.20	0.01
20.00	5.00	2.37	0.01
22.50	**5.17**	**2.50**	0.01
25.00	**5.26**	**2.57**	0.00
27.50	5.26	2.57	0.00
30.00	5.26	2.57	0.00
32.50	5.26	2.57	0.00
35.00	5.26	2.57	0.00
37.50	5.26	2.57	0.00
40.00	5.26	2.57	0.00
42.50	5.26	2.57	0.00
45.00	5.26	2.57	0.00
47.50	5.26	2.57	0.00
50.00	5.26	2.57	0.00
52.50	5.26	2.57	0.00
55.00	5.26	2.57	0.00
57.50	5.26	2.57	0.00
60.00	5.26	2.57	0.00
62.50	5.26	2.57	0.00
65.00	5.26	2.57	0.00
67.50	5.26	2.57	0.00
70.00	5.26	2.57	0.00
72.50	5.26	2.57	0.00
75.00	5.26	2.57	0.00
77.50	5.26	2.57	0.00
80.00	5.26	2.57	0.00
82.50	5.26	2.57	0.00
85.00	5.26	2.57	0.00
87.50	5.26	2.57	0.00
90.00	5.26	2.57	0.00
92.50	5.26	2.57	0.00
95.00	5.26	2.57	0.00
97.50	5.26	2.57	0.00
100.00	5.26	2.57	0.00
102.50	5.26	2.57	0.00
105.00	5.26	2.57	0.00
107.50	5.26	2.57	0.00
110.00	5.26	2.57	0.00
112.50	5.26	2.57	0.00
115.00	5.26	2.57	0.00
117.50	5.26	2.57	0.00
120.00	5.26	2.57	0.00

Summary for Subcatchment 2EX: EX.IMP.SITE

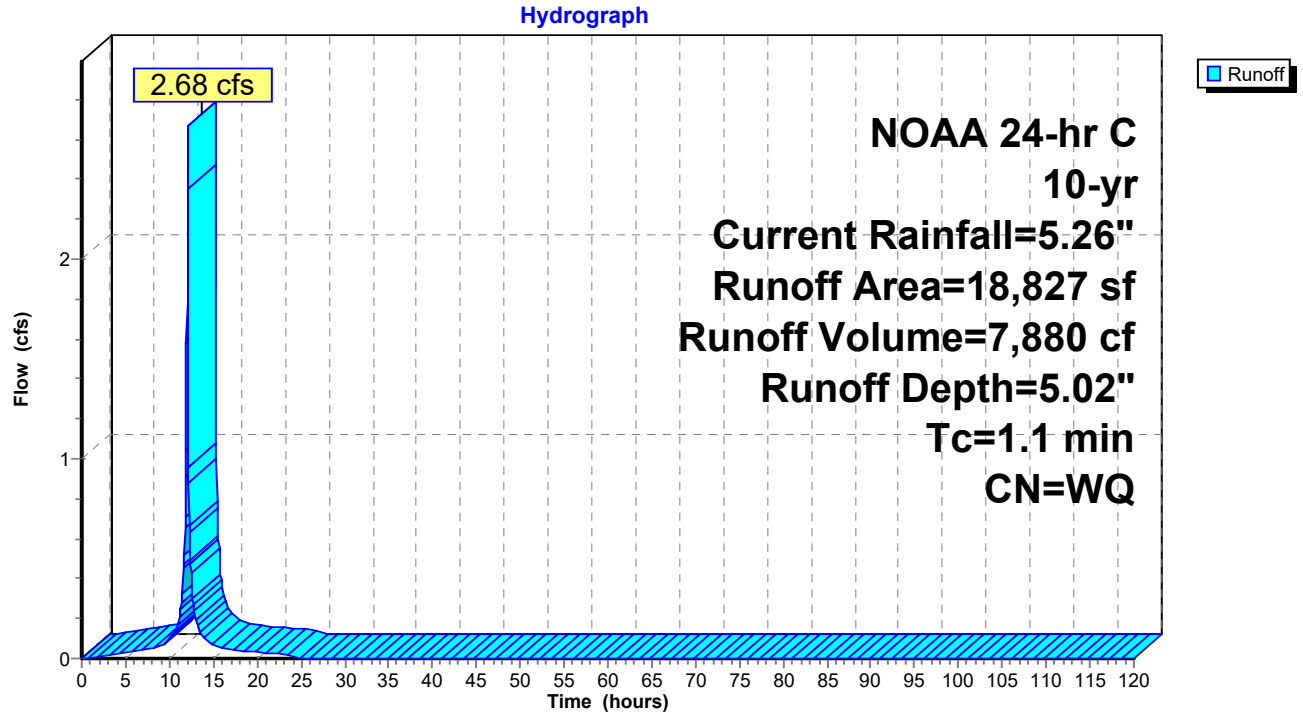
Runoff = 2.68 cfs @ 12.06 hrs, Volume= 7,880 cf, Depth= 5.02"
Routed to Reach EX1.CURR : POI-1 for EXDA-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 10-yr, Current Rainfall=5.26"

	Area (sf)	CN	Description
	13,557	98	Paved parking, HSG D
*	5,270	98	Impervious walkway
	18,827		Weighted Average
	18,827		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1					**Direct Entry,**

Subcatchment 2EX: EX.IMP.SITE



Hydrograph for Subcatchment 2EX: EX.IMP.SITE

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.15	0.04	0.02
5.00	0.33	0.17	0.03
7.50	0.57	0.38	0.05
10.00	0.96	0.75	**0.10**
12.50	3.71	3.47	**0.43**
15.00	4.49	4.26	0.07
17.50	4.80	4.56	0.04
20.00	5.00	4.77	0.03
22.50	**5.17**	**4.94**	0.03
25.00	**5.26**	**5.02**	0.00
27.50	5.26	5.02	0.00
30.00	5.26	5.02	0.00
32.50	5.26	5.02	0.00
35.00	5.26	5.02	0.00
37.50	5.26	5.02	0.00
40.00	5.26	5.02	0.00
42.50	5.26	5.02	0.00
45.00	5.26	5.02	0.00
47.50	5.26	5.02	0.00
50.00	5.26	5.02	0.00
52.50	5.26	5.02	0.00
55.00	5.26	5.02	0.00
57.50	5.26	5.02	0.00
60.00	5.26	5.02	0.00
62.50	5.26	5.02	0.00
65.00	5.26	5.02	0.00
67.50	5.26	5.02	0.00
70.00	5.26	5.02	0.00
72.50	5.26	5.02	0.00
75.00	5.26	5.02	0.00
77.50	5.26	5.02	0.00
80.00	5.26	5.02	0.00
82.50	5.26	5.02	0.00
85.00	5.26	5.02	0.00
87.50	5.26	5.02	0.00
90.00	5.26	5.02	0.00
92.50	5.26	5.02	0.00
95.00	5.26	5.02	0.00
97.50	5.26	5.02	0.00
100.00	5.26	5.02	0.00
102.50	5.26	5.02	0.00
105.00	5.26	5.02	0.00
107.50	5.26	5.02	0.00
110.00	5.26	5.02	0.00
112.50	5.26	5.02	0.00
115.00	5.26	5.02	0.00
117.50	5.26	5.02	0.00
120.00	5.26	5.02	0.00

Summary for Subcatchment 3EX: EX.IMP.BLDG

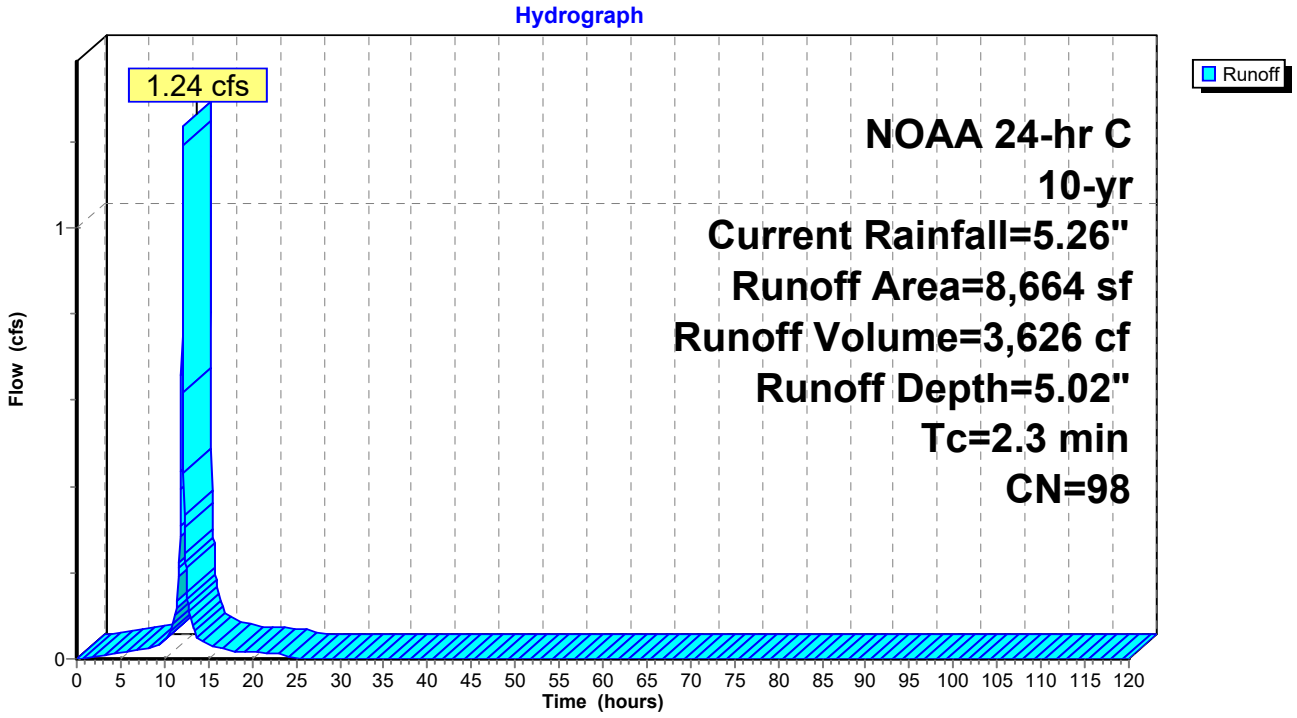
Runoff = 1.24 cfs @ 12.08 hrs, Volume= 3,626 cf, Depth= 5.02"
Routed to Reach EX1.CURR : POI-1 for EXDA-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 10-yr, Current Rainfall=5.26"

Area (sf)	CN	Description
8,664	98	Roofs, HSG D
8,664		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3					**Direct Entry,**

Subcatchment 3EX: EX.IMP.BLDG



Hydrograph for Subcatchment 3EX: EX.IMP.BLDG

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.15	0.04	0.01
5.00	0.33	0.17	0.01
7.50	0.57	0.38	0.02
10.00	0.96	0.75	**0.04**
12.50	3.71	3.47	**0.21**
15.00	4.49	4.26	0.03
17.50	4.80	4.56	0.02
20.00	5.00	4.77	0.01
22.50	**5.17**	**4.94**	0.01
25.00	**5.26**	**5.02**	0.00
27.50	5.26	5.02	0.00
30.00	5.26	5.02	0.00
32.50	5.26	5.02	0.00
35.00	5.26	5.02	0.00
37.50	5.26	5.02	0.00
40.00	5.26	5.02	0.00
42.50	5.26	5.02	0.00
45.00	5.26	5.02	0.00
47.50	5.26	5.02	0.00
50.00	5.26	5.02	0.00
52.50	5.26	5.02	0.00
55.00	5.26	5.02	0.00
57.50	5.26	5.02	0.00
60.00	5.26	5.02	0.00
62.50	5.26	5.02	0.00
65.00	5.26	5.02	0.00
67.50	5.26	5.02	0.00
70.00	5.26	5.02	0.00
72.50	5.26	5.02	0.00
75.00	5.26	5.02	0.00
77.50	5.26	5.02	0.00
80.00	5.26	5.02	0.00
82.50	5.26	5.02	0.00
85.00	5.26	5.02	0.00
87.50	5.26	5.02	0.00
90.00	5.26	5.02	0.00
92.50	5.26	5.02	0.00
95.00	5.26	5.02	0.00
97.50	5.26	5.02	0.00
100.00	5.26	5.02	0.00
102.50	5.26	5.02	0.00
105.00	5.26	5.02	0.00
107.50	5.26	5.02	0.00
110.00	5.26	5.02	0.00
112.50	5.26	5.02	0.00
115.00	5.26	5.02	0.00
117.50	5.26	5.02	0.00
120.00	5.26	5.02	0.00

Summary for Subcatchment 4EX: EX.PER

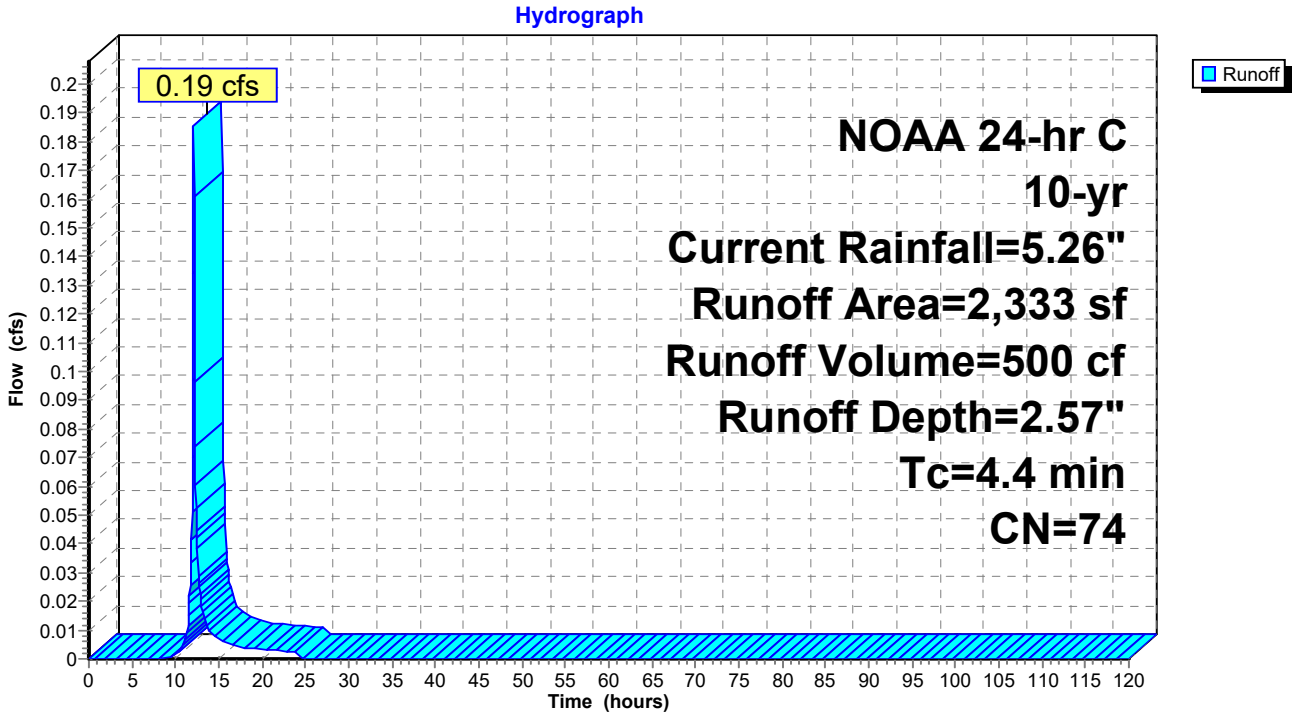
Runoff = 0.19 cfs @ 12.11 hrs, Volume= 500 cf, Depth= 2.57"
Routed to Reach 2EX CURR : POI-2 for EXDA-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 10-yr, Current Rainfall=5.26"

	Area (sf)	CN	Description
*	2,333	74	>75% Grass cover, Good, HSG C
	2,333		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.4					**Direct Entry,**

Subcatchment 4EX: EX.PER



Hydrograph for Subcatchment 4EX: EX.PER

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.15	0.00	0.00
5.00	0.33	0.00	0.00
7.50	0.57	0.00	0.00
10.00	0.96	0.02	**0.00**
12.50	3.71	1.38	**0.04**
15.00	4.49	1.97	0.01
17.50	4.80	2.20	0.00
20.00	5.00	2.37	0.00
22.50	**5.17**	**2.50**	0.00
25.00	**5.26**	**2.57**	0.00
27.50	5.26	2.57	0.00
30.00	5.26	2.57	0.00
32.50	5.26	2.57	0.00
35.00	5.26	2.57	0.00
37.50	5.26	2.57	0.00
40.00	5.26	2.57	0.00
42.50	5.26	2.57	0.00
45.00	5.26	2.57	0.00
47.50	5.26	2.57	0.00
50.00	5.26	2.57	0.00
52.50	5.26	2.57	0.00
55.00	5.26	2.57	0.00
57.50	5.26	2.57	0.00
60.00	5.26	2.57	0.00
62.50	5.26	2.57	0.00
65.00	5.26	2.57	0.00
67.50	5.26	2.57	0.00
70.00	5.26	2.57	0.00
72.50	5.26	2.57	0.00
75.00	5.26	2.57	0.00
77.50	5.26	2.57	0.00
80.00	5.26	2.57	0.00
82.50	5.26	2.57	0.00
85.00	5.26	2.57	0.00
87.50	5.26	2.57	0.00
90.00	5.26	2.57	0.00
92.50	5.26	2.57	0.00
95.00	5.26	2.57	0.00
97.50	5.26	2.57	0.00
100.00	5.26	2.57	0.00
102.50	5.26	2.57	0.00
105.00	5.26	2.57	0.00
107.50	5.26	2.57	0.00
110.00	5.26	2.57	0.00
112.50	5.26	2.57	0.00
115.00	5.26	2.57	0.00
117.50	5.26	2.57	0.00
120.00	5.26	2.57	0.00

Summary for Subcatchment 5EX: EX.IMP.SITE

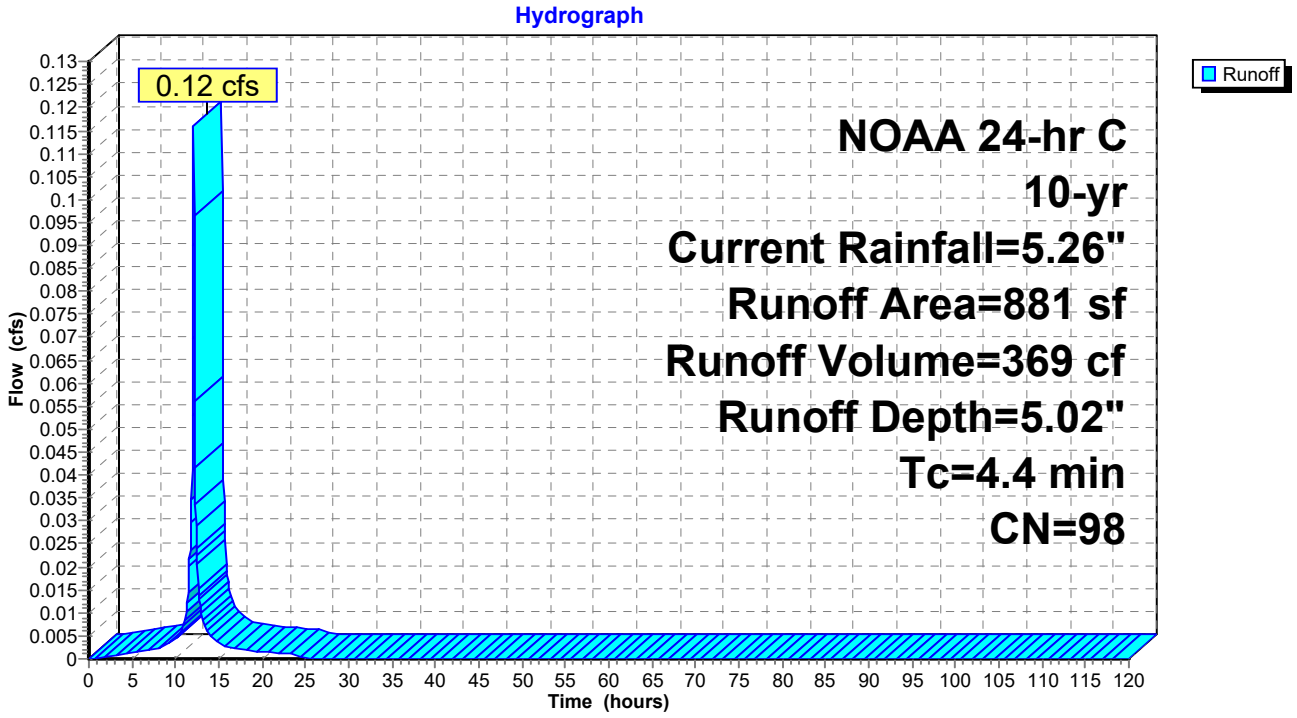
Runoff = 0.12 cfs @ 12.10 hrs, Volume= 369 cf, Depth= 5.02"
Routed to Reach 2EX CURR : POI-2 for EXDA-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 10-yr, Current Rainfall=5.26"

	Area (sf)	CN	Description
*	881	98	Paved parking, HSG D
	881		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.4					**Direct Entry,**

Subcatchment 5EX: EX.IMP.SITE



Hydrograph for Subcatchment 5EX: EX.IMP.SITE

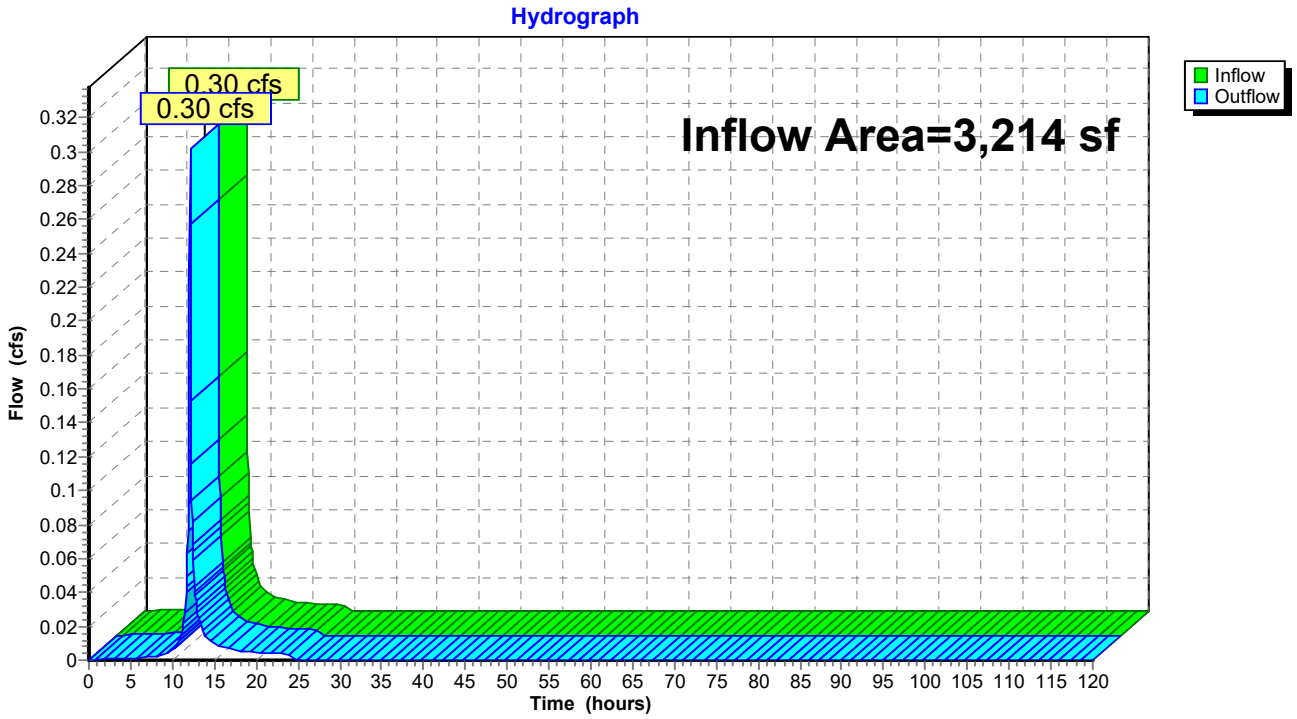
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.15	0.04	0.00
5.00	0.33	0.17	0.00
7.50	0.57	0.38	0.00
10.00	0.96	0.75	**0.00**
12.50	3.71	3.47	**0.02**
15.00	4.49	4.26	0.00
17.50	4.80	4.56	0.00
20.00	5.00	4.77	0.00
22.50	**5.17**	**4.94**	0.00
25.00	**5.26**	**5.02**	0.00
27.50	5.26	5.02	0.00
30.00	5.26	5.02	0.00
32.50	5.26	5.02	0.00
35.00	5.26	5.02	0.00
37.50	5.26	5.02	0.00
40.00	5.26	5.02	0.00
42.50	5.26	5.02	0.00
45.00	5.26	5.02	0.00
47.50	5.26	5.02	0.00
50.00	5.26	5.02	0.00
52.50	5.26	5.02	0.00
55.00	5.26	5.02	0.00
57.50	5.26	5.02	0.00
60.00	5.26	5.02	0.00
62.50	5.26	5.02	0.00
65.00	5.26	5.02	0.00
67.50	5.26	5.02	0.00
70.00	5.26	5.02	0.00
72.50	5.26	5.02	0.00
75.00	5.26	5.02	0.00
77.50	5.26	5.02	0.00
80.00	5.26	5.02	0.00
82.50	5.26	5.02	0.00
85.00	5.26	5.02	0.00
87.50	5.26	5.02	0.00
90.00	5.26	5.02	0.00
92.50	5.26	5.02	0.00
95.00	5.26	5.02	0.00
97.50	5.26	5.02	0.00
100.00	5.26	5.02	0.00
102.50	5.26	5.02	0.00
105.00	5.26	5.02	0.00
107.50	5.26	5.02	0.00
110.00	5.26	5.02	0.00
112.50	5.26	5.02	0.00
115.00	5.26	5.02	0.00
117.50	5.26	5.02	0.00
120.00	5.26	5.02	0.00

Summary for Reach 2EX CURR: POI-2 for EXDA-2

Inflow Area = 3,214 sf, 27.41% Impervious, Inflow Depth = 3.24" for 10-yr, Current event
Inflow = 0.30 cfs @ 12.11 hrs, Volume= 869 cf
Outflow = 0.30 cfs @ 12.11 hrs, Volume= 869 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach 2EX CURR: POI-2 for EXDA-2



Hydrograph for Reach 2EX CURR: POI-2 for EXDA-2

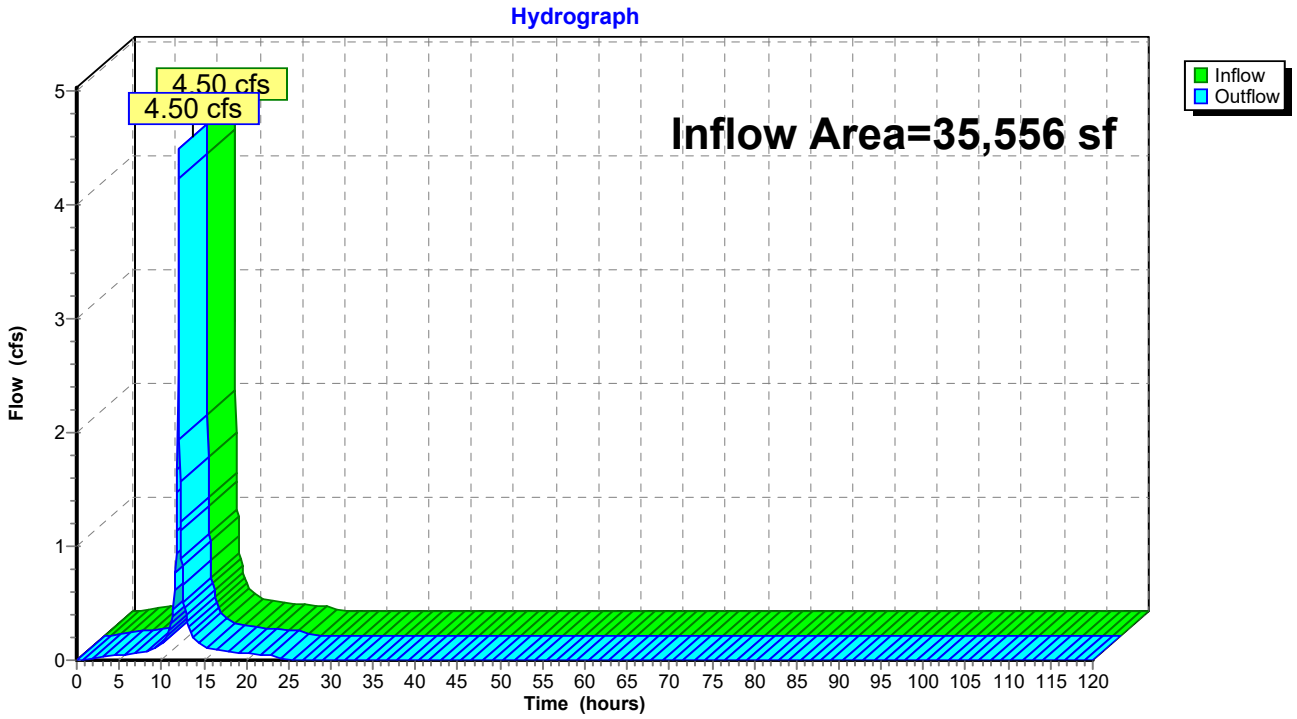
Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00
2.50	0.00		0.00
5.00	0.00		0.00
7.50	0.00		0.00
10.00	**0.01**		**0.01**
12.50	**0.06**		**0.06**
15.00	0.01		0.01
17.50	0.01		0.01
20.00	0.00		0.00
22.50	0.00		0.00
25.00	0.00		0.00
27.50	0.00		0.00
30.00	0.00		0.00
32.50	0.00		0.00
35.00	0.00		0.00
37.50	0.00		0.00
40.00	0.00		0.00
42.50	0.00		0.00
45.00	0.00		0.00
47.50	0.00		0.00
50.00	0.00		0.00
52.50	0.00		0.00
55.00	0.00		0.00
57.50	0.00		0.00
60.00	0.00		0.00
62.50	0.00		0.00
65.00	0.00		0.00
67.50	0.00		0.00
70.00	0.00		0.00
72.50	0.00		0.00
75.00	0.00		0.00
77.50	0.00		0.00
80.00	0.00		0.00
82.50	0.00		0.00
85.00	0.00		0.00
87.50	0.00		0.00
90.00	0.00		0.00
92.50	0.00		0.00
95.00	0.00		0.00
97.50	0.00		0.00
100.00	0.00		0.00
102.50	0.00		0.00
105.00	0.00		0.00
107.50	0.00		0.00
110.00	0.00		0.00
112.50	0.00		0.00
115.00	0.00		0.00
117.50	0.00		0.00
120.00	0.00		0.00

Summary for Reach EX1.CURR: POI-1 for EXDA-1

Inflow Area = 35,556 sf, 77.32% Impervious, Inflow Depth = 4.47" for 10-yr, Current event
Inflow = 4.50 cfs @ 12.07 hrs, Volume= 13,236 cf
Outflow = 4.50 cfs @ 12.07 hrs, Volume= 13,236 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach EX1.CURR: POI-1 for EXDA-1



Hydrograph for Reach EX1.CURR: POI-1 for EXDA-1

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00
2.50	0.02		0.02
5.00	0.04		0.04
7.50	0.07		0.07
10.00	**0.15**		**0.15**
12.50	**0.78**		**0.78**
15.00	0.12		0.12
17.50	0.08		0.08
20.00	0.06		0.06
22.50	0.05		0.05
25.00	0.00		0.00
27.50	0.00		0.00
30.00	0.00		0.00
32.50	0.00		0.00
35.00	0.00		0.00
37.50	0.00		0.00
40.00	0.00		0.00
42.50	0.00		0.00
45.00	0.00		0.00
47.50	0.00		0.00
50.00	0.00		0.00
52.50	0.00		0.00
55.00	0.00		0.00
57.50	0.00		0.00
60.00	0.00		0.00
62.50	0.00		0.00
65.00	0.00		0.00
67.50	0.00		0.00
70.00	0.00		0.00
72.50	0.00		0.00
75.00	0.00		0.00
77.50	0.00		0.00
80.00	0.00		0.00
82.50	0.00		0.00
85.00	0.00		0.00
87.50	0.00		0.00
90.00	0.00		0.00
92.50	0.00		0.00
95.00	0.00		0.00
97.50	0.00		0.00
100.00	0.00		0.00
102.50	0.00		0.00
105.00	0.00		0.00
107.50	0.00		0.00
110.00	0.00		0.00
112.50	0.00		0.00
115.00	0.00		0.00
117.50	0.00		0.00
120.00	0.00		0.00

Summary for Subcatchment 1EX: EX.PER

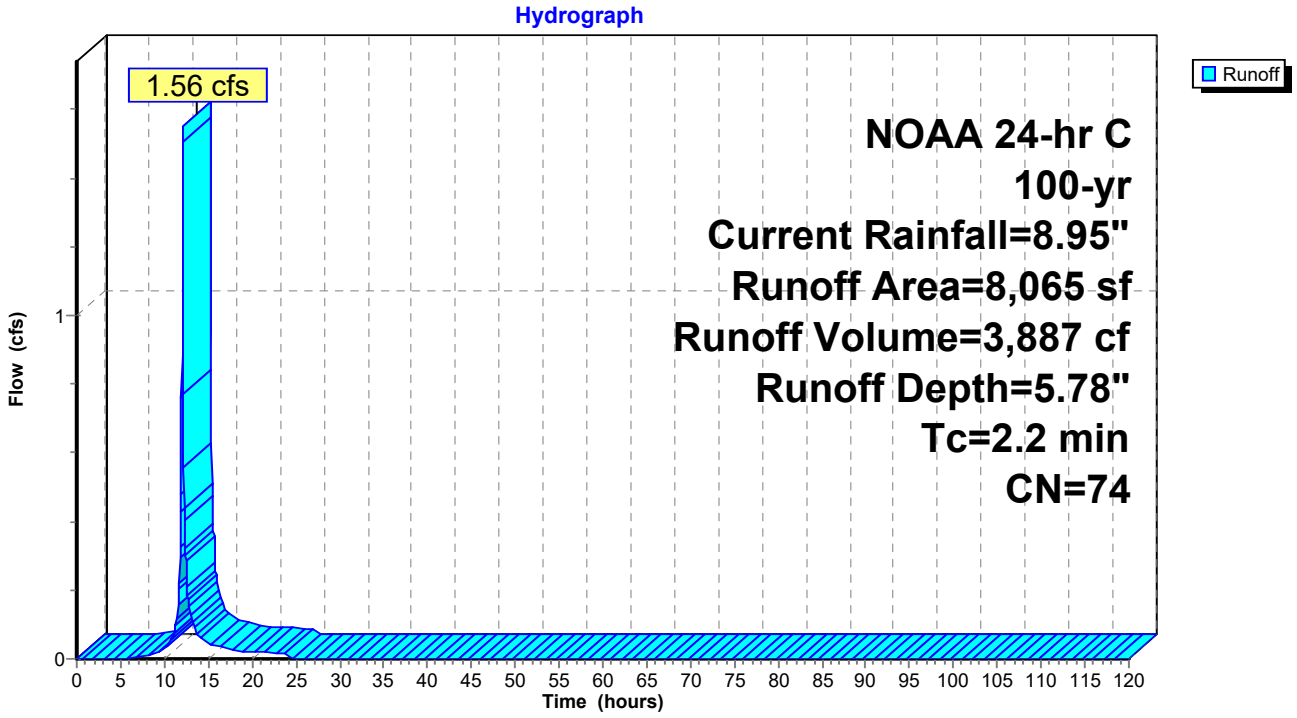
Runoff = 1.56 cfs @ 12.08 hrs, Volume= 3,887 cf, Depth= 5.78"
Routed to Reach EX1.CURR : POI-1 for EXDA-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 100-yr, Current Rainfall=8.95"

Area (sf)	CN	Description
8,065	74	>75% Grass cover, Good, HSG C
8,065		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2					**Direct Entry,**

Subcatchment 1EX: EX.PER



Hydrograph for Subcatchment 1EX: EX.PER

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.26	0.00	0.00
5.00	0.57	0.00	0.00
7.50	0.97	0.02	0.00
10.00	1.63	0.19	**0.03**
12.50	6.31	3.44	**0.28**
15.00	7.64	4.61	0.04
17.50	8.16	5.07	0.03
20.00	8.51	5.39	0.02
22.50	**8.80**	**5.65**	0.02
25.00	**8.95**	**5.78**	0.00
27.50	8.95	5.78	0.00
30.00	8.95	5.78	0.00
32.50	8.95	5.78	0.00
35.00	8.95	5.78	0.00
37.50	8.95	5.78	0.00
40.00	8.95	5.78	0.00
42.50	8.95	5.78	0.00
45.00	8.95	5.78	0.00
47.50	8.95	5.78	0.00
50.00	8.95	5.78	0.00
52.50	8.95	5.78	0.00
55.00	8.95	5.78	0.00
57.50	8.95	5.78	0.00
60.00	8.95	5.78	0.00
62.50	8.95	5.78	0.00
65.00	8.95	5.78	0.00
67.50	8.95	5.78	0.00
70.00	8.95	5.78	0.00
72.50	8.95	5.78	0.00
75.00	8.95	5.78	0.00
77.50	8.95	5.78	0.00
80.00	8.95	5.78	0.00
82.50	8.95	5.78	0.00
85.00	8.95	5.78	0.00
87.50	8.95	5.78	0.00
90.00	8.95	5.78	0.00
92.50	8.95	5.78	0.00
95.00	8.95	5.78	0.00
97.50	8.95	5.78	0.00
100.00	8.95	5.78	0.00
102.50	8.95	5.78	0.00
105.00	8.95	5.78	0.00
107.50	8.95	5.78	0.00
110.00	8.95	5.78	0.00
112.50	8.95	5.78	0.00
115.00	8.95	5.78	0.00
117.50	8.95	5.78	0.00
120.00	8.95	5.78	0.00

Summary for Subcatchment 2EX: EX.IMP.SITE

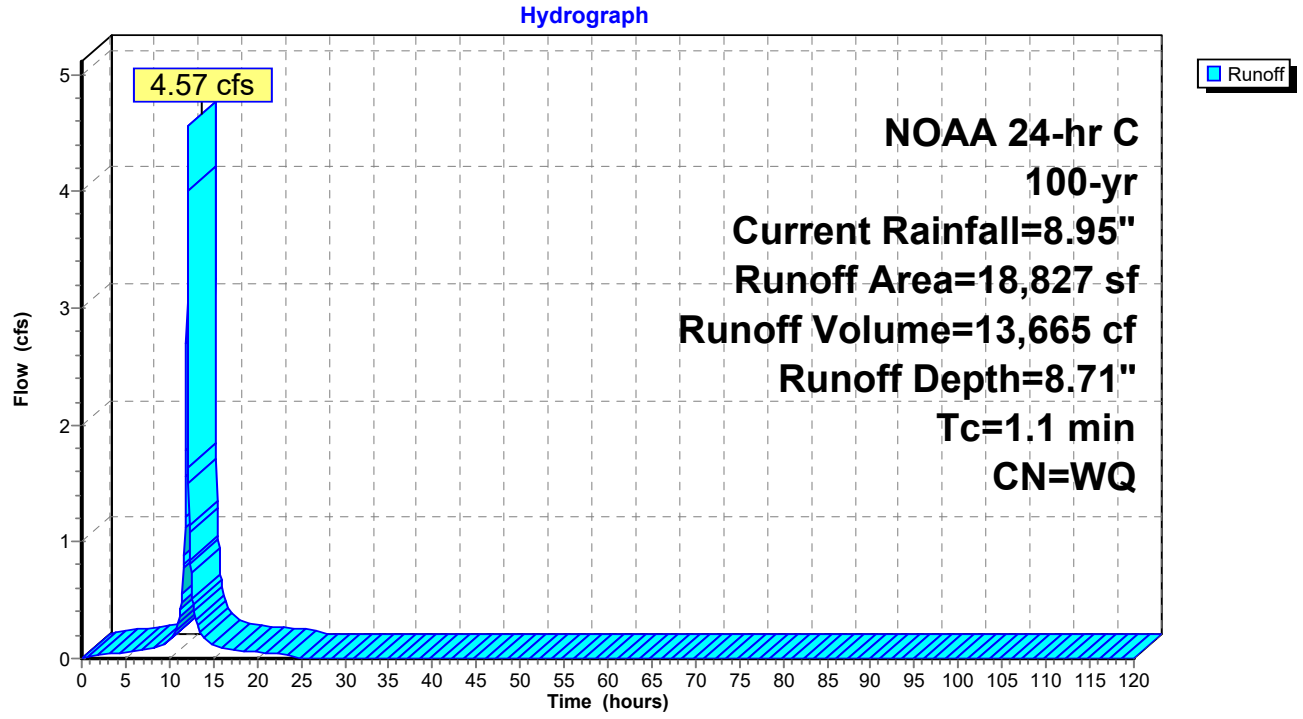
Runoff = 4.57 cfs @ 12.06 hrs, Volume= 13,665 cf, Depth= 8.71"
Routed to Reach EX1.CURR : POI-1 for EXDA-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 100-yr, Current Rainfall=8.95"

	Area (sf)	CN	Description
	13,557	98	Paved parking, HSG D
*	5,270	98	Impervious walkway
	18,827		Weighted Average
	18,827		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1					**Direct Entry,**

Subcatchment 2EX: EX.IMP.SITE



Hydrograph for Subcatchment 2EX: EX.IMP.SITE

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.26	0.11	0.04
5.00	0.57	0.38	0.05
7.50	0.97	0.76	0.08
10.00	1.63	1.41	**0.17**
12.50	6.31	6.07	**0.74**
15.00	7.64	7.40	0.11
17.50	8.16	7.92	0.07
20.00	8.51	8.27	0.06
22.50	**8.80**	**8.56**	0.05
25.00	**8.95**	**8.71**	0.00
27.50	8.95	8.71	0.00
30.00	8.95	8.71	0.00
32.50	8.95	8.71	0.00
35.00	8.95	8.71	0.00
37.50	8.95	8.71	0.00
40.00	8.95	8.71	0.00
42.50	8.95	8.71	0.00
45.00	8.95	8.71	0.00
47.50	8.95	8.71	0.00
50.00	8.95	8.71	0.00
52.50	8.95	8.71	0.00
55.00	8.95	8.71	0.00
57.50	8.95	8.71	0.00
60.00	8.95	8.71	0.00
62.50	8.95	8.71	0.00
65.00	8.95	8.71	0.00
67.50	8.95	8.71	0.00
70.00	8.95	8.71	0.00
72.50	8.95	8.71	0.00
75.00	8.95	8.71	0.00
77.50	8.95	8.71	0.00
80.00	8.95	8.71	0.00
82.50	8.95	8.71	0.00
85.00	8.95	8.71	0.00
87.50	8.95	8.71	0.00
90.00	8.95	8.71	0.00
92.50	8.95	8.71	0.00
95.00	8.95	8.71	0.00
97.50	8.95	8.71	0.00
100.00	8.95	8.71	0.00
102.50	8.95	8.71	0.00
105.00	8.95	8.71	0.00
107.50	8.95	8.71	0.00
110.00	8.95	8.71	0.00
112.50	8.95	8.71	0.00
115.00	8.95	8.71	0.00
117.50	8.95	8.71	0.00
120.00	8.95	8.71	0.00

Summary for Subcatchment 3EX: EX.IMP.BLDG

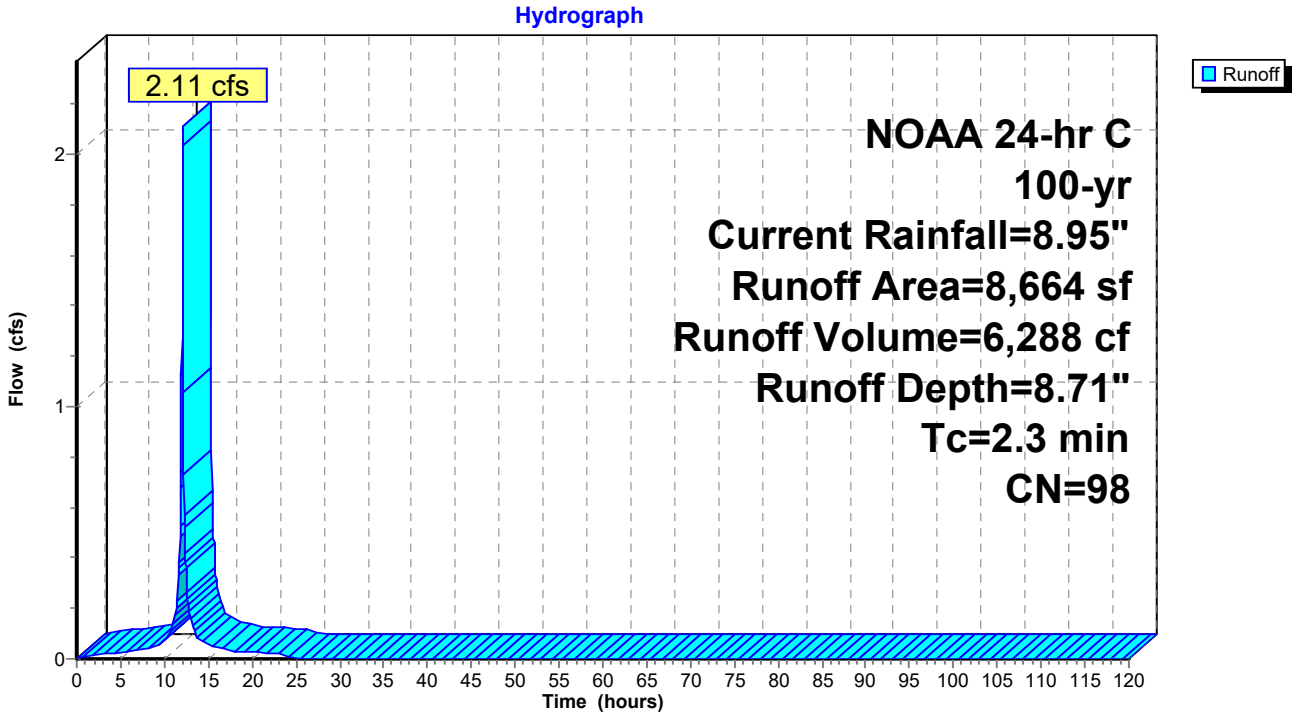
Runoff = 2.11 cfs @ 12.08 hrs, Volume= 6,288 cf, Depth= 8.71"
Routed to Reach EX1.CURR : POI-1 for EXDA-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 100-yr, Current Rainfall=8.95"

Area (sf)	CN	Description
8,664	98	Roofs, HSG D
8,664		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3					**Direct Entry,**

Subcatchment 3EX: EX.IMP.BLDG



Hydrograph for Subcatchment 3EX: EX.IMP.BLDG

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.26	0.11	0.02
5.00	0.57	0.38	0.02
7.50	0.97	0.76	0.04
10.00	1.63	1.41	**0.08**
12.50	6.31	6.07	**0.36**
15.00	7.64	7.40	0.05
17.50	8.16	7.92	0.03
20.00	8.51	8.27	0.03
22.50	**8.80**	**8.56**	0.02
25.00	**8.95**	**8.71**	0.00
27.50	8.95	8.71	0.00
30.00	8.95	8.71	0.00
32.50	8.95	8.71	0.00
35.00	8.95	8.71	0.00
37.50	8.95	8.71	0.00
40.00	8.95	8.71	0.00
42.50	8.95	8.71	0.00
45.00	8.95	8.71	0.00
47.50	8.95	8.71	0.00
50.00	8.95	8.71	0.00
52.50	8.95	8.71	0.00
55.00	8.95	8.71	0.00
57.50	8.95	8.71	0.00
60.00	8.95	8.71	0.00
62.50	8.95	8.71	0.00
65.00	8.95	8.71	0.00
67.50	8.95	8.71	0.00
70.00	8.95	8.71	0.00
72.50	8.95	8.71	0.00
75.00	8.95	8.71	0.00
77.50	8.95	8.71	0.00
80.00	8.95	8.71	0.00
82.50	8.95	8.71	0.00
85.00	8.95	8.71	0.00
87.50	8.95	8.71	0.00
90.00	8.95	8.71	0.00
92.50	8.95	8.71	0.00
95.00	8.95	8.71	0.00
97.50	8.95	8.71	0.00
100.00	8.95	8.71	0.00
102.50	8.95	8.71	0.00
105.00	8.95	8.71	0.00
107.50	8.95	8.71	0.00
110.00	8.95	8.71	0.00
112.50	8.95	8.71	0.00
115.00	8.95	8.71	0.00
117.50	8.95	8.71	0.00
120.00	8.95	8.71	0.00

Summary for Subcatchment 4EX: EX.PER

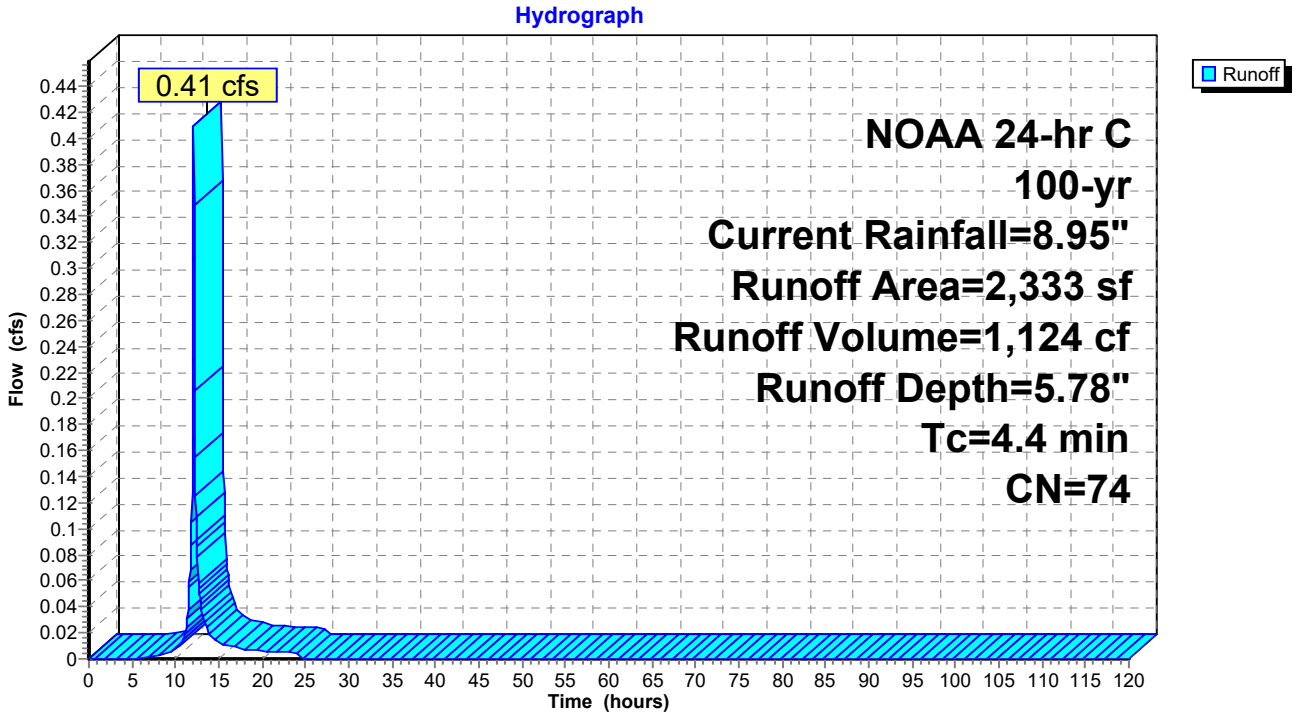
Runoff = 0.41 cfs @ 12.11 hrs, Volume= 1,124 cf, Depth= 5.78"
Routed to Reach 2EX CURR : POI-2 for EXDA-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 100-yr, Current Rainfall=8.95"

	Area (sf)	CN	Description
*	2,333	74	>75% Grass cover, Good, HSG C
	2,333		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.4					**Direct Entry,**

Subcatchment 4EX: EX.PER



Hydrograph for Subcatchment 4EX: EX.PER

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.26	0.00	0.00
5.00	0.57	0.00	0.00
7.50	0.97	0.02	0.00
10.00	1.63	0.19	**0.01**
12.50	6.31	3.44	**0.08**
15.00	7.64	4.61	0.01
17.50	8.16	5.07	0.01
20.00	8.51	5.39	0.01
22.50	**8.80**	**5.65**	0.01
25.00	**8.95**	**5.78**	0.00
27.50	8.95	5.78	0.00
30.00	8.95	5.78	0.00
32.50	8.95	5.78	0.00
35.00	8.95	5.78	0.00
37.50	8.95	5.78	0.00
40.00	8.95	5.78	0.00
42.50	8.95	5.78	0.00
45.00	8.95	5.78	0.00
47.50	8.95	5.78	0.00
50.00	8.95	5.78	0.00
52.50	8.95	5.78	0.00
55.00	8.95	5.78	0.00
57.50	8.95	5.78	0.00
60.00	8.95	5.78	0.00
62.50	8.95	5.78	0.00
65.00	8.95	5.78	0.00
67.50	8.95	5.78	0.00
70.00	8.95	5.78	0.00
72.50	8.95	5.78	0.00
75.00	8.95	5.78	0.00
77.50	8.95	5.78	0.00
80.00	8.95	5.78	0.00
82.50	8.95	5.78	0.00
85.00	8.95	5.78	0.00
87.50	8.95	5.78	0.00
90.00	8.95	5.78	0.00
92.50	8.95	5.78	0.00
95.00	8.95	5.78	0.00
97.50	8.95	5.78	0.00
100.00	8.95	5.78	0.00
102.50	8.95	5.78	0.00
105.00	8.95	5.78	0.00
107.50	8.95	5.78	0.00
110.00	8.95	5.78	0.00
112.50	8.95	5.78	0.00
115.00	8.95	5.78	0.00
117.50	8.95	5.78	0.00
120.00	8.95	5.78	0.00

Summary for Subcatchment 5EX: EX.IMP.SITE

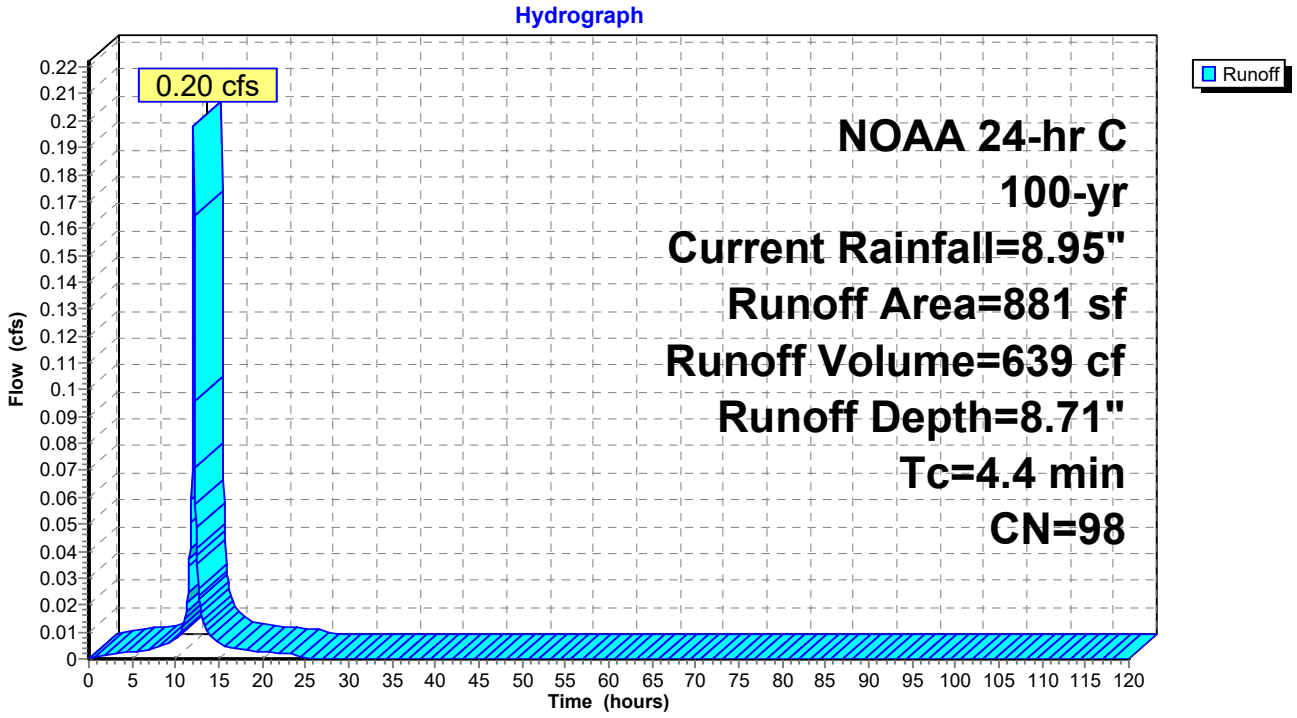
Runoff = 0.20 cfs @ 12.10 hrs, Volume= 639 cf, Depth= 8.71"
Routed to Reach 2EX CURR : POI-2 for EXDA-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 100-yr, Current Rainfall=8.95"

	Area (sf)	CN	Description
*	881	98	Paved parking, HSG D
	881		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.4					**Direct Entry,**

Subcatchment 5EX: EX.IMP.SITE



Hydrograph for Subcatchment 5EX: EX.IMP.SITE

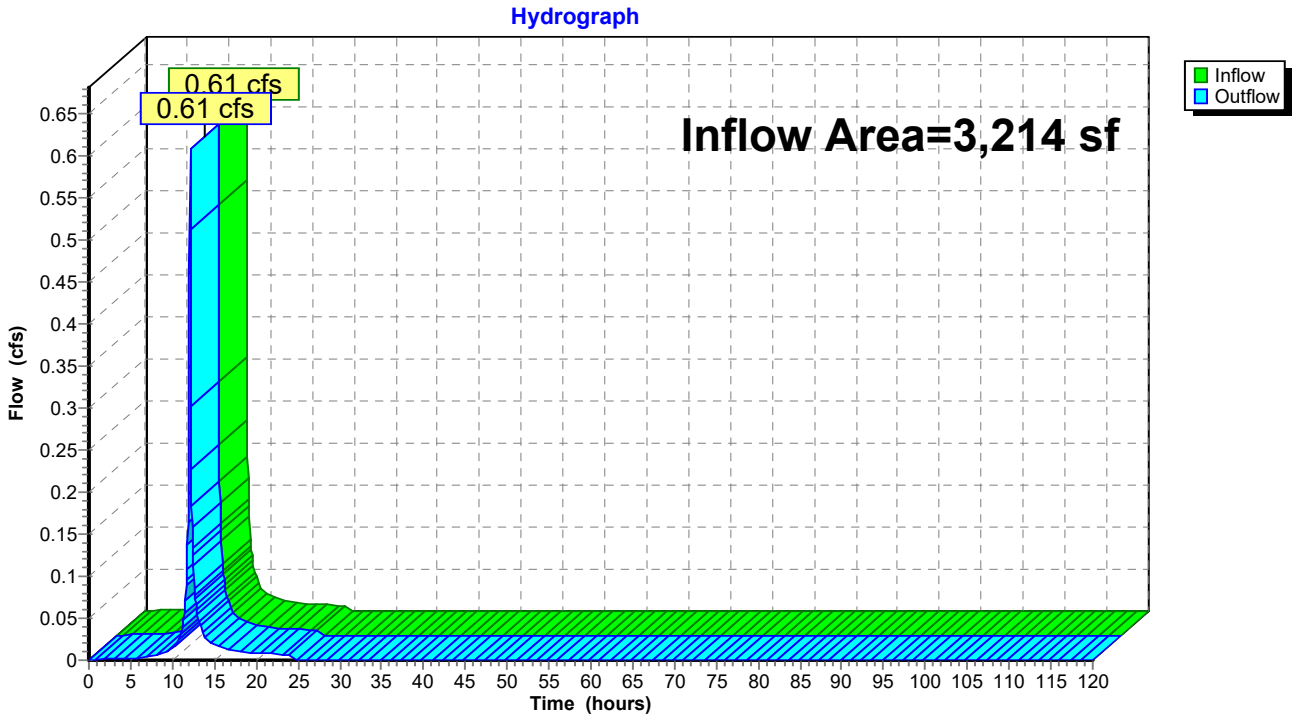
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.26	0.11	0.00
5.00	0.57	0.38	0.00
7.50	0.97	0.76	0.00
10.00	1.63	1.41	**0.01**
12.50	6.31	6.07	**0.04**
15.00	7.64	7.40	0.01
17.50	8.16	7.92	0.00
20.00	8.51	8.27	0.00
22.50	**8.80**	**8.56**	0.00
25.00	**8.95**	**8.71**	0.00
27.50	8.95	8.71	0.00
30.00	8.95	8.71	0.00
32.50	8.95	8.71	0.00
35.00	8.95	8.71	0.00
37.50	8.95	8.71	0.00
40.00	8.95	8.71	0.00
42.50	8.95	8.71	0.00
45.00	8.95	8.71	0.00
47.50	8.95	8.71	0.00
50.00	8.95	8.71	0.00
52.50	8.95	8.71	0.00
55.00	8.95	8.71	0.00
57.50	8.95	8.71	0.00
60.00	8.95	8.71	0.00
62.50	8.95	8.71	0.00
65.00	8.95	8.71	0.00
67.50	8.95	8.71	0.00
70.00	8.95	8.71	0.00
72.50	8.95	8.71	0.00
75.00	8.95	8.71	0.00
77.50	8.95	8.71	0.00
80.00	8.95	8.71	0.00
82.50	8.95	8.71	0.00
85.00	8.95	8.71	0.00
87.50	8.95	8.71	0.00
90.00	8.95	8.71	0.00
92.50	8.95	8.71	0.00
95.00	8.95	8.71	0.00
97.50	8.95	8.71	0.00
100.00	8.95	8.71	0.00
102.50	8.95	8.71	0.00
105.00	8.95	8.71	0.00
107.50	8.95	8.71	0.00
110.00	8.95	8.71	0.00
112.50	8.95	8.71	0.00
115.00	8.95	8.71	0.00
117.50	8.95	8.71	0.00
120.00	8.95	8.71	0.00

Summary for Reach 2EX CURR: POI-2 for EXDA-2

Inflow Area = 3,214 sf, 27.41% Impervious, Inflow Depth = 6.59" for 100-yr, Current event
Inflow = 0.61 cfs @ 12.11 hrs, Volume= 1,764 cf
Outflow = 0.61 cfs @ 12.11 hrs, Volume= 1,764 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach 2EX CURR: POI-2 for EXDA-2



Hydrograph for Reach 2EX CURR: POI-2 for EXDA-2

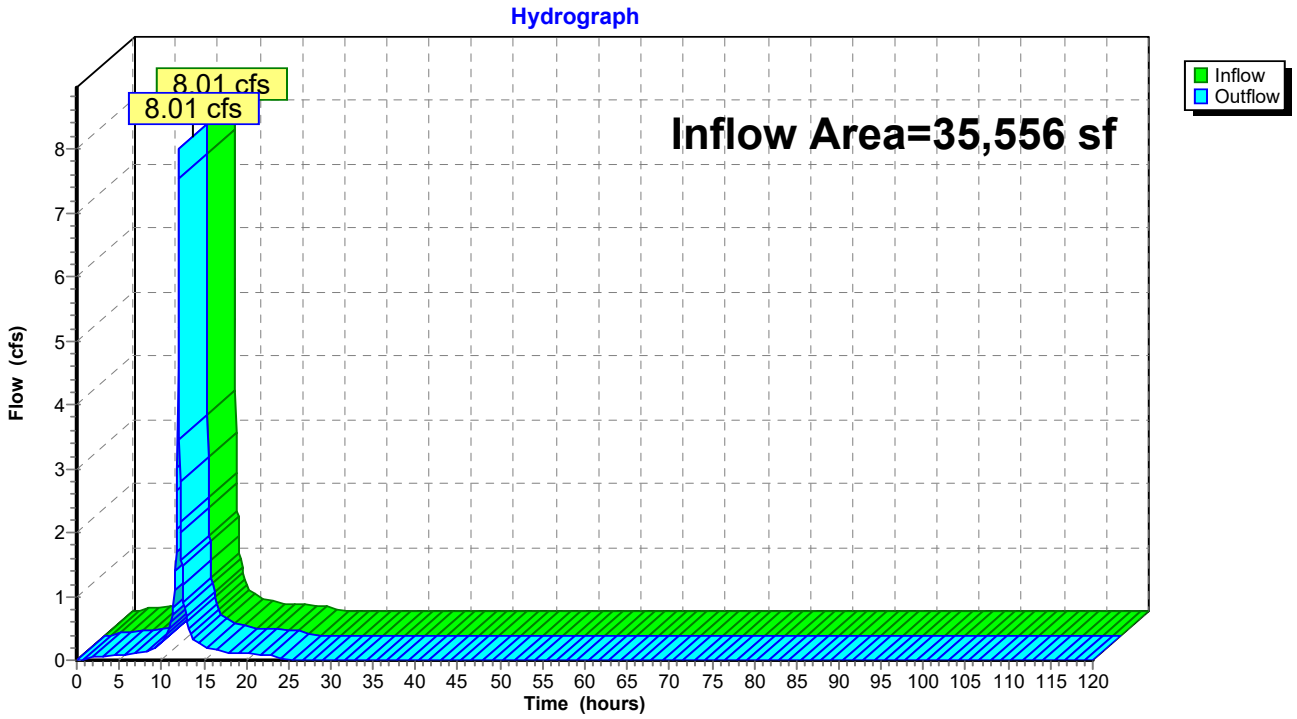
Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00
2.50	0.00		0.00
5.00	0.00		0.00
7.50	0.01		0.01
10.00	**0.02**		**0.02**
12.50	**0.12**		**0.12**
15.00	0.02		0.02
17.50	0.01		0.01
20.00	0.01		0.01
22.50	0.01		0.01
25.00	0.00		0.00
27.50	0.00		0.00
30.00	0.00		0.00
32.50	0.00		0.00
35.00	0.00		0.00
37.50	0.00		0.00
40.00	0.00		0.00
42.50	0.00		0.00
45.00	0.00		0.00
47.50	0.00		0.00
50.00	0.00		0.00
52.50	0.00		0.00
55.00	0.00		0.00
57.50	0.00		0.00
60.00	0.00		0.00
62.50	0.00		0.00
65.00	0.00		0.00
67.50	0.00		0.00
70.00	0.00		0.00
72.50	0.00		0.00
75.00	0.00		0.00
77.50	0.00		0.00
80.00	0.00		0.00
82.50	0.00		0.00
85.00	0.00		0.00
87.50	0.00		0.00
90.00	0.00		0.00
92.50	0.00		0.00
95.00	0.00		0.00
97.50	0.00		0.00
100.00	0.00		0.00
102.50	0.00		0.00
105.00	0.00		0.00
107.50	0.00		0.00
110.00	0.00		0.00
112.50	0.00		0.00
115.00	0.00		0.00
117.50	0.00		0.00
120.00	0.00		0.00

Summary for Reach EX1.CURR: POI-1 for EXDA-1

Inflow Area = 35,556 sf, 77.32% Impervious, Inflow Depth = 8.05" for 100-yr, Current event
Inflow = 8.01 cfs @ 12.07 hrs, Volume= 23,840 cf
Outflow = 8.01 cfs @ 12.07 hrs, Volume= 23,840 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach EX1.CURR: POI-1 for EXDA-1



Hydrograph for Reach EX1.CURR: POI-1 for EXDA-1

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00
2.50	0.05		0.05
5.00	0.08		0.08
7.50	0.13		0.13
10.00	**0.27**		**0.27**
12.50	**1.38**		**1.38**
15.00	0.21		0.21
17.50	0.13		0.13
20.00	0.10		0.10
22.50	0.08		0.08
25.00	0.00		0.00
27.50	0.00		0.00
30.00	0.00		0.00
32.50	0.00		0.00
35.00	0.00		0.00
37.50	0.00		0.00
40.00	0.00		0.00
42.50	0.00		0.00
45.00	0.00		0.00
47.50	0.00		0.00
50.00	0.00		0.00
52.50	0.00		0.00
55.00	0.00		0.00
57.50	0.00		0.00
60.00	0.00		0.00
62.50	0.00		0.00
65.00	0.00		0.00
67.50	0.00		0.00
70.00	0.00		0.00
72.50	0.00		0.00
75.00	0.00		0.00
77.50	0.00		0.00
80.00	0.00		0.00
82.50	0.00		0.00
85.00	0.00		0.00
87.50	0.00		0.00
90.00	0.00		0.00
92.50	0.00		0.00
95.00	0.00		0.00
97.50	0.00		0.00
100.00	0.00		0.00
102.50	0.00		0.00
105.00	0.00		0.00
107.50	0.00		0.00
110.00	0.00		0.00
112.50	0.00		0.00
115.00	0.00		0.00
117.50	0.00		0.00
120.00	0.00		0.00

Summary for Subcatchment 1EX: EX.PER

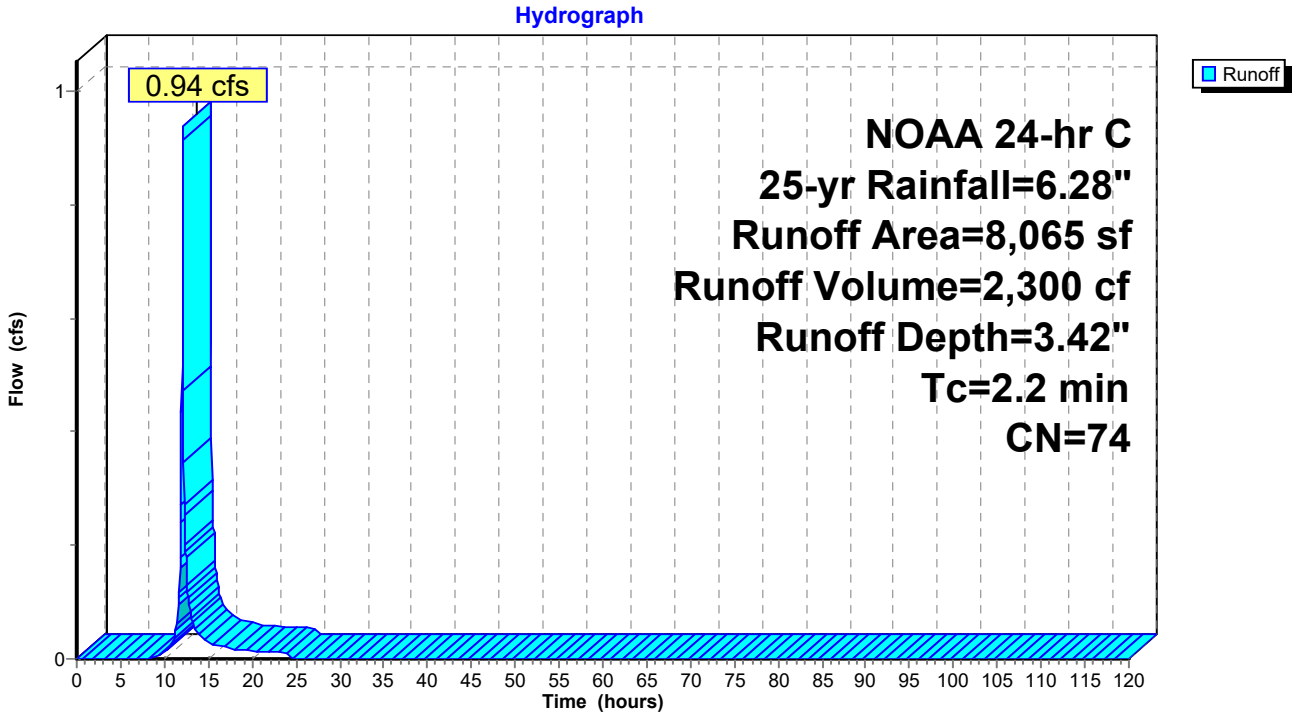
Runoff = 0.94 cfs @ 12.08 hrs, Volume= 2,300 cf, Depth= 3.42"
Routed to Reach EX1.CURR : POI-1 for EXDA-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 25-yr Rainfall=6.28"

Area (sf)	CN	Description
8,065	74	>75% Grass cover, Good, HSG C
8,065		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2					**Direct Entry,**

Subcatchment 1EX: EX.PER



Hydrograph for Subcatchment 1EX: EX.PER

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.18	0.00	0.00
5.00	0.40	0.00	0.00
7.50	0.68	0.00	0.00
10.00	1.15	0.05	**0.01**
12.50	4.42	1.91	**0.18**
15.00	5.36	2.66	0.03
17.50	5.73	2.96	0.02
20.00	5.97	3.16	0.01
22.50	**6.18**	**3.33**	0.01
25.00	**6.28**	**3.42**	0.00
27.50	6.28	3.42	0.00
30.00	6.28	3.42	0.00
32.50	6.28	3.42	0.00
35.00	6.28	3.42	0.00
37.50	6.28	3.42	0.00
40.00	6.28	3.42	0.00
42.50	6.28	3.42	0.00
45.00	6.28	3.42	0.00
47.50	6.28	3.42	0.00
50.00	6.28	3.42	0.00
52.50	6.28	3.42	0.00
55.00	6.28	3.42	0.00
57.50	6.28	3.42	0.00
60.00	6.28	3.42	0.00
62.50	6.28	3.42	0.00
65.00	6.28	3.42	0.00
67.50	6.28	3.42	0.00
70.00	6.28	3.42	0.00
72.50	6.28	3.42	0.00
75.00	6.28	3.42	0.00
77.50	6.28	3.42	0.00
80.00	6.28	3.42	0.00
82.50	6.28	3.42	0.00
85.00	6.28	3.42	0.00
87.50	6.28	3.42	0.00
90.00	6.28	3.42	0.00
92.50	6.28	3.42	0.00
95.00	6.28	3.42	0.00
97.50	6.28	3.42	0.00
100.00	6.28	3.42	0.00
102.50	6.28	3.42	0.00
105.00	6.28	3.42	0.00
107.50	6.28	3.42	0.00
110.00	6.28	3.42	0.00
112.50	6.28	3.42	0.00
115.00	6.28	3.42	0.00
117.50	6.28	3.42	0.00
120.00	6.28	3.42	0.00

Summary for Subcatchment 2EX: EX.IMP.SITE

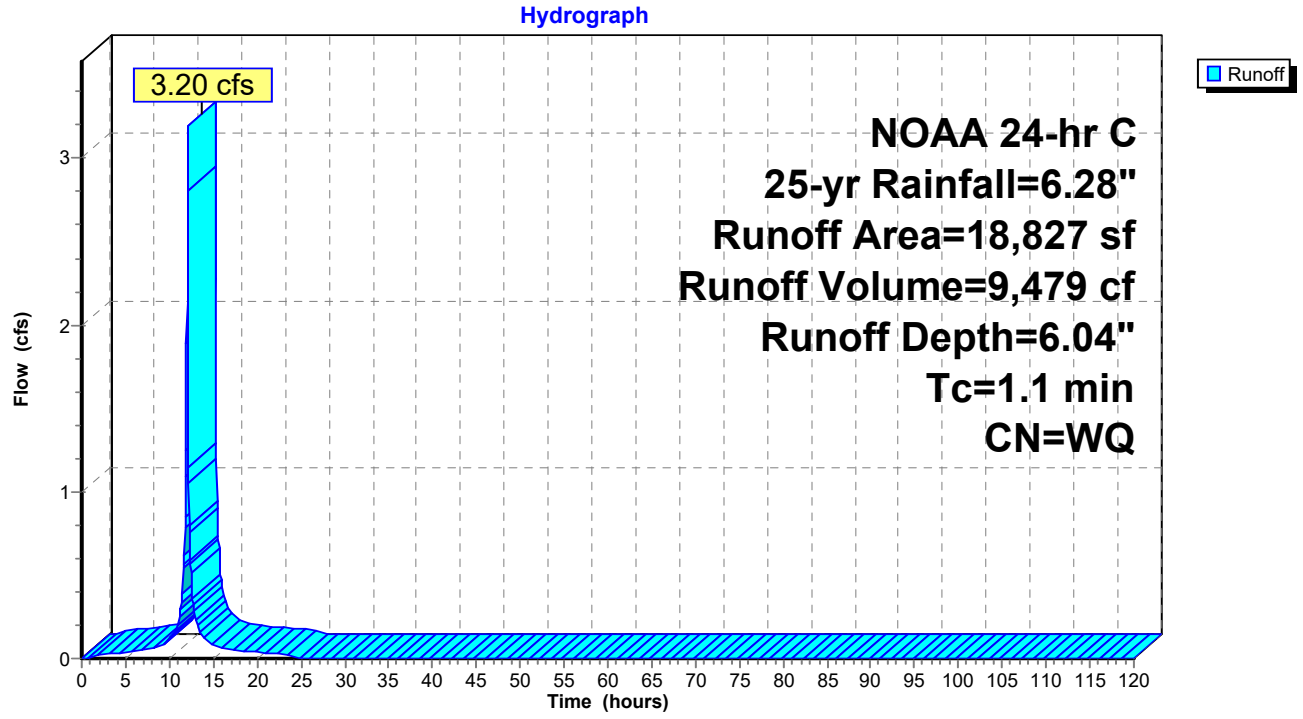
Runoff = 3.20 cfs @ 12.06 hrs, Volume= 9,479 cf, Depth= 6.04"
Routed to Reach EX1.CURR : POI-1 for EXDA-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 25-yr Rainfall=6.28"

	Area (sf)	CN	Description
	13,557	98	Paved parking, HSG D
*	5,270	98	Impervious walkway
	18,827		Weighted Average
	18,827		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1					**Direct Entry,**

Subcatchment 2EX: EX.IMP.SITE



Hydrograph for Subcatchment 2EX: EX.IMP.SITE

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.18	0.06	0.02
5.00	0.40	0.23	0.04
7.50	0.68	0.48	0.06
10.00	1.15	0.93	**0.12**
12.50	4.42	4.19	**0.52**
15.00	5.36	5.13	0.08
17.50	5.73	5.49	0.05
20.00	5.97	5.73	0.04
22.50	**6.18**	**5.94**	0.03
25.00	**6.28**	**6.04**	0.00
27.50	6.28	6.04	0.00
30.00	6.28	6.04	0.00
32.50	6.28	6.04	0.00
35.00	6.28	6.04	0.00
37.50	6.28	6.04	0.00
40.00	6.28	6.04	0.00
42.50	6.28	6.04	0.00
45.00	6.28	6.04	0.00
47.50	6.28	6.04	0.00
50.00	6.28	6.04	0.00
52.50	6.28	6.04	0.00
55.00	6.28	6.04	0.00
57.50	6.28	6.04	0.00
60.00	6.28	6.04	0.00
62.50	6.28	6.04	0.00
65.00	6.28	6.04	0.00
67.50	6.28	6.04	0.00
70.00	6.28	6.04	0.00
72.50	6.28	6.04	0.00
75.00	6.28	6.04	0.00
77.50	6.28	6.04	0.00
80.00	6.28	6.04	0.00
82.50	6.28	6.04	0.00
85.00	6.28	6.04	0.00
87.50	6.28	6.04	0.00
90.00	6.28	6.04	0.00
92.50	6.28	6.04	0.00
95.00	6.28	6.04	0.00
97.50	6.28	6.04	0.00
100.00	6.28	6.04	0.00
102.50	6.28	6.04	0.00
105.00	6.28	6.04	0.00
107.50	6.28	6.04	0.00
110.00	6.28	6.04	0.00
112.50	6.28	6.04	0.00
115.00	6.28	6.04	0.00
117.50	6.28	6.04	0.00
120.00	6.28	6.04	0.00

Summary for Subcatchment 3EX: EX.IMP.BLDG

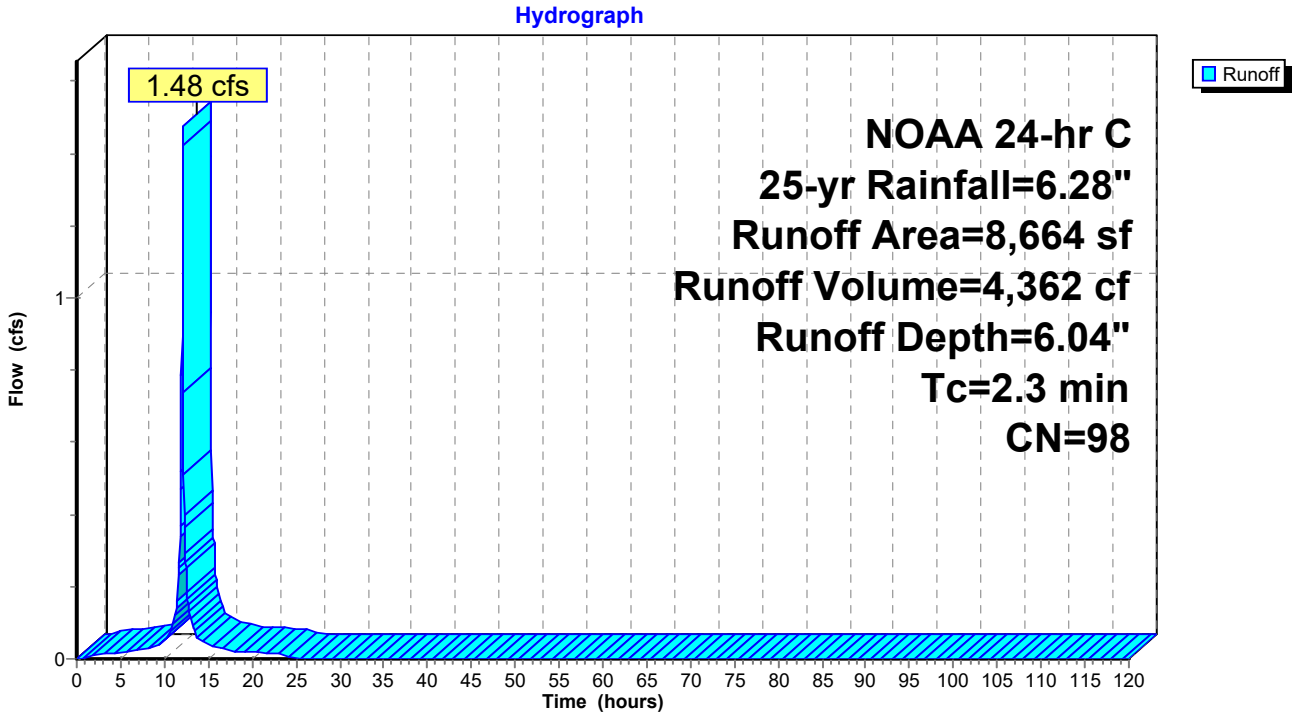
Runoff = 1.48 cfs @ 12.08 hrs, Volume= 4,362 cf, Depth= 6.04"
Routed to Reach EX1.CURR : POI-1 for EXDA-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 25-yr Rainfall=6.28"

Area (sf)	CN	Description
8,664	98	Roofs, HSG D
8,664		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3					**Direct Entry,**

Subcatchment 3EX: EX.IMP.BLDG



Hydrograph for Subcatchment 3EX: EX.IMP.BLDG

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.18	0.06	0.01
5.00	0.40	0.23	0.02
7.50	0.68	0.48	0.03
10.00	1.15	0.93	**0.05**
12.50	4.42	4.19	**0.25**
15.00	5.36	5.13	0.04
17.50	5.73	5.49	0.02
20.00	5.97	5.73	0.02
22.50	**6.18**	**5.94**	0.01
25.00	**6.28**	**6.04**	0.00
27.50	6.28	6.04	0.00
30.00	6.28	6.04	0.00
32.50	6.28	6.04	0.00
35.00	6.28	6.04	0.00
37.50	6.28	6.04	0.00
40.00	6.28	6.04	0.00
42.50	6.28	6.04	0.00
45.00	6.28	6.04	0.00
47.50	6.28	6.04	0.00
50.00	6.28	6.04	0.00
52.50	6.28	6.04	0.00
55.00	6.28	6.04	0.00
57.50	6.28	6.04	0.00
60.00	6.28	6.04	0.00
62.50	6.28	6.04	0.00
65.00	6.28	6.04	0.00
67.50	6.28	6.04	0.00
70.00	6.28	6.04	0.00
72.50	6.28	6.04	0.00
75.00	6.28	6.04	0.00
77.50	6.28	6.04	0.00
80.00	6.28	6.04	0.00
82.50	6.28	6.04	0.00
85.00	6.28	6.04	0.00
87.50	6.28	6.04	0.00
90.00	6.28	6.04	0.00
92.50	6.28	6.04	0.00
95.00	6.28	6.04	0.00
97.50	6.28	6.04	0.00
100.00	6.28	6.04	0.00
102.50	6.28	6.04	0.00
105.00	6.28	6.04	0.00
107.50	6.28	6.04	0.00
110.00	6.28	6.04	0.00
112.50	6.28	6.04	0.00
115.00	6.28	6.04	0.00
117.50	6.28	6.04	0.00
120.00	6.28	6.04	0.00

Summary for Subcatchment 4EX: EX.PER

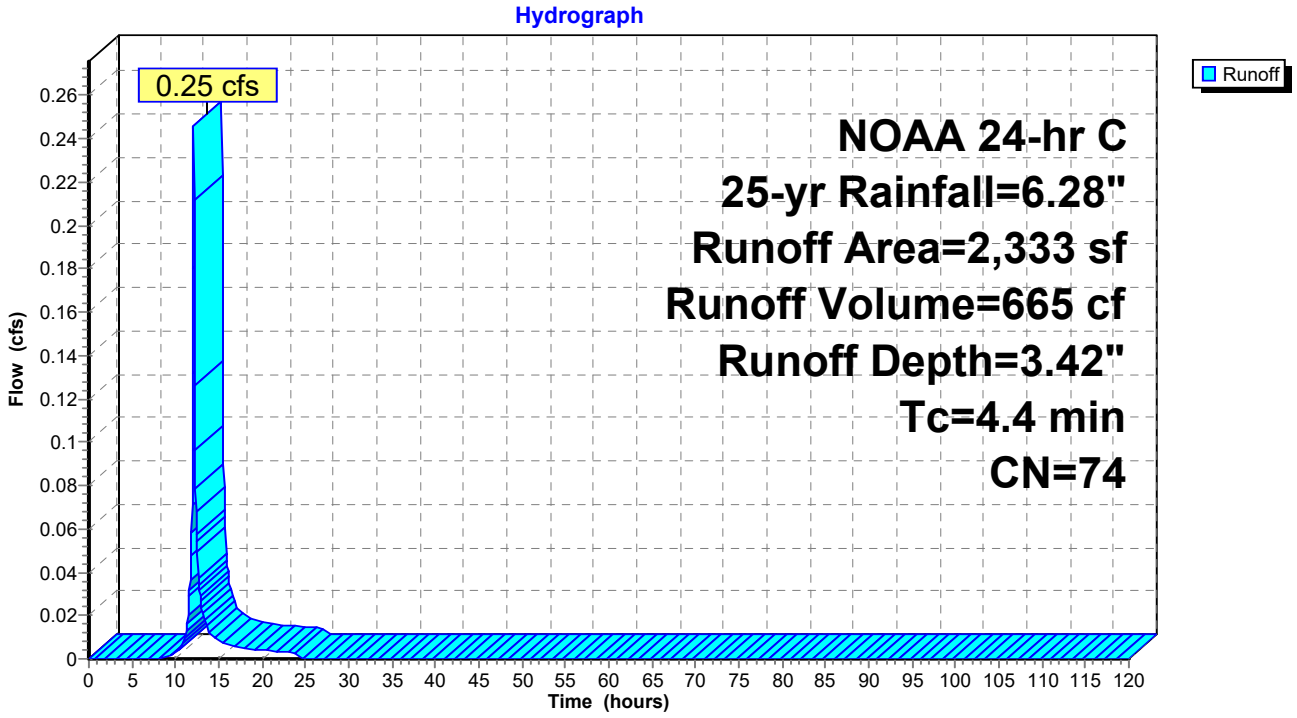
Runoff = 0.25 cfs @ 12.11 hrs, Volume= 665 cf, Depth= 3.42"
Routed to Reach 2EX CURR : POI-2 for EXDA-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 25-yr Rainfall=6.28"

	Area (sf)	CN	Description
*	2,333	74	>75% Grass cover, Good, HSG C
	2,333		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.4					**Direct Entry,**

Subcatchment 4EX: EX.PER



Hydrograph for Subcatchment 4EX: EX.PER

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.18	0.00	0.00
5.00	0.40	0.00	0.00
7.50	0.68	0.00	0.00
10.00	1.15	0.05	**0.00**
12.50	4.42	1.91	**0.05**
15.00	5.36	2.66	0.01
17.50	5.73	2.96	0.01
20.00	5.97	3.16	0.00
22.50	**6.18**	**3.33**	0.00
25.00	**6.28**	**3.42**	0.00
27.50	6.28	3.42	0.00
30.00	6.28	3.42	0.00
32.50	6.28	3.42	0.00
35.00	6.28	3.42	0.00
37.50	6.28	3.42	0.00
40.00	6.28	3.42	0.00
42.50	6.28	3.42	0.00
45.00	6.28	3.42	0.00
47.50	6.28	3.42	0.00
50.00	6.28	3.42	0.00
52.50	6.28	3.42	0.00
55.00	6.28	3.42	0.00
57.50	6.28	3.42	0.00
60.00	6.28	3.42	0.00
62.50	6.28	3.42	0.00
65.00	6.28	3.42	0.00
67.50	6.28	3.42	0.00
70.00	6.28	3.42	0.00
72.50	6.28	3.42	0.00
75.00	6.28	3.42	0.00
77.50	6.28	3.42	0.00
80.00	6.28	3.42	0.00
82.50	6.28	3.42	0.00
85.00	6.28	3.42	0.00
87.50	6.28	3.42	0.00
90.00	6.28	3.42	0.00
92.50	6.28	3.42	0.00
95.00	6.28	3.42	0.00
97.50	6.28	3.42	0.00
100.00	6.28	3.42	0.00
102.50	6.28	3.42	0.00
105.00	6.28	3.42	0.00
107.50	6.28	3.42	0.00
110.00	6.28	3.42	0.00
112.50	6.28	3.42	0.00
115.00	6.28	3.42	0.00
117.50	6.28	3.42	0.00
120.00	6.28	3.42	0.00

Summary for Subcatchment 5EX: EX.IMP.SITE

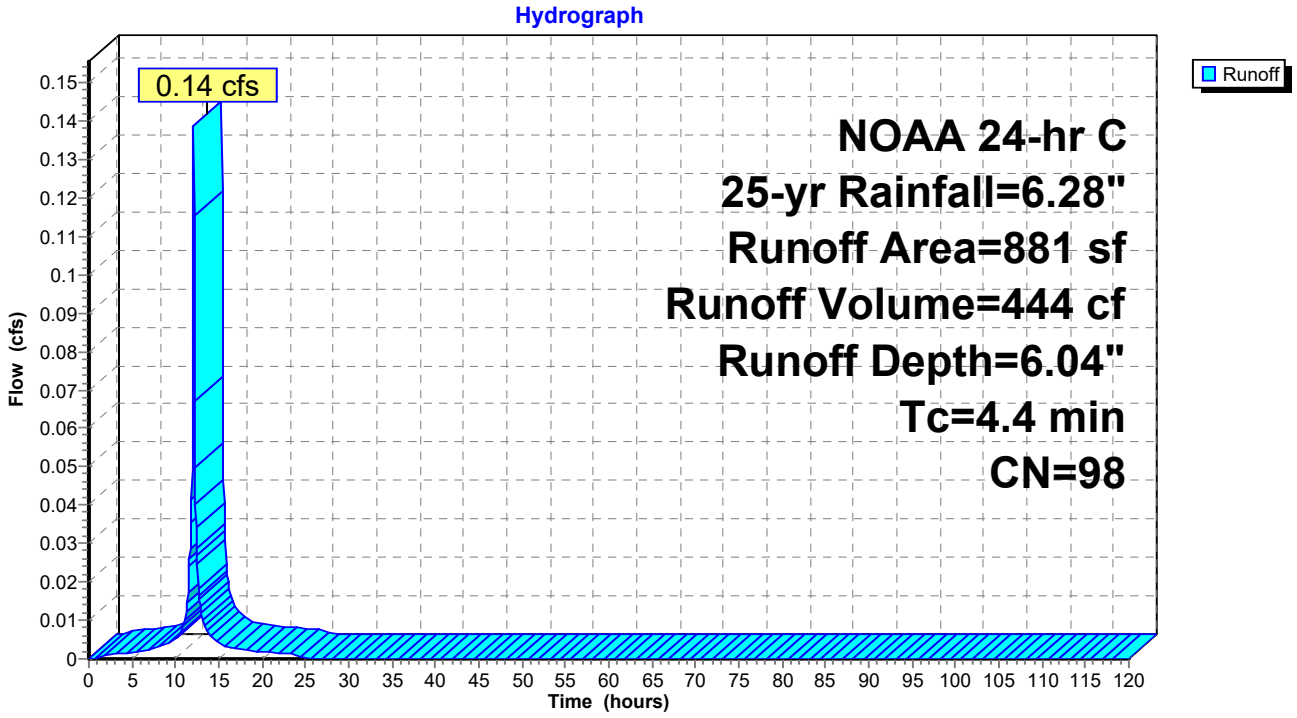
Runoff = 0.14 cfs @ 12.10 hrs, Volume= 444 cf, Depth= 6.04"
Routed to Reach 2EX CURR : POI-2 for EXDA-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 25-yr Rainfall=6.28"

	Area (sf)	CN	Description
*	881	98	Paved parking, HSG D
	881		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.4					**Direct Entry,**

Subcatchment 5EX: EX.IMP.SITE



Hydrograph for Subcatchment 5EX: EX.IMP.SITE

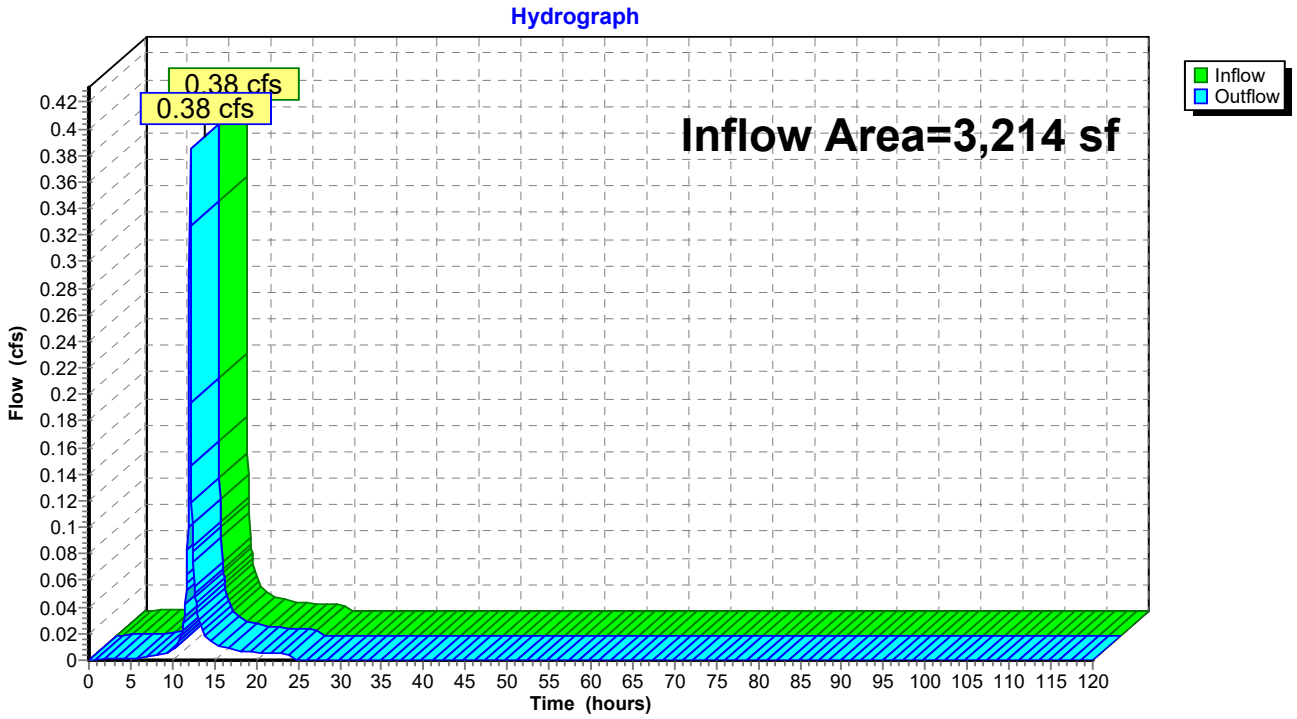
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.18	0.06	0.00
5.00	0.40	0.23	0.00
7.50	0.68	0.48	0.00
10.00	1.15	0.93	**0.01**
12.50	4.42	4.19	**0.03**
15.00	5.36	5.13	0.00
17.50	5.73	5.49	0.00
20.00	5.97	5.73	0.00
22.50	**6.18**	**5.94**	0.00
25.00	**6.28**	**6.04**	0.00
27.50	6.28	6.04	0.00
30.00	6.28	6.04	0.00
32.50	6.28	6.04	0.00
35.00	6.28	6.04	0.00
37.50	6.28	6.04	0.00
40.00	6.28	6.04	0.00
42.50	6.28	6.04	0.00
45.00	6.28	6.04	0.00
47.50	6.28	6.04	0.00
50.00	6.28	6.04	0.00
52.50	6.28	6.04	0.00
55.00	6.28	6.04	0.00
57.50	6.28	6.04	0.00
60.00	6.28	6.04	0.00
62.50	6.28	6.04	0.00
65.00	6.28	6.04	0.00
67.50	6.28	6.04	0.00
70.00	6.28	6.04	0.00
72.50	6.28	6.04	0.00
75.00	6.28	6.04	0.00
77.50	6.28	6.04	0.00
80.00	6.28	6.04	0.00
82.50	6.28	6.04	0.00
85.00	6.28	6.04	0.00
87.50	6.28	6.04	0.00
90.00	6.28	6.04	0.00
92.50	6.28	6.04	0.00
95.00	6.28	6.04	0.00
97.50	6.28	6.04	0.00
100.00	6.28	6.04	0.00
102.50	6.28	6.04	0.00
105.00	6.28	6.04	0.00
107.50	6.28	6.04	0.00
110.00	6.28	6.04	0.00
112.50	6.28	6.04	0.00
115.00	6.28	6.04	0.00
117.50	6.28	6.04	0.00
120.00	6.28	6.04	0.00

Summary for Reach 2EX CURR: POI-2 for EXDA-2

Inflow Area = 3,214 sf, 27.41% Impervious, Inflow Depth = 4.14" for 25-yr event
Inflow = 0.38 cfs @ 12.11 hrs, Volume= 1,109 cf
Outflow = 0.38 cfs @ 12.11 hrs, Volume= 1,109 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach 2EX CURR: POI-2 for EXDA-2



Hydrograph for Reach 2EX CURR: POI-2 for EXDA-2

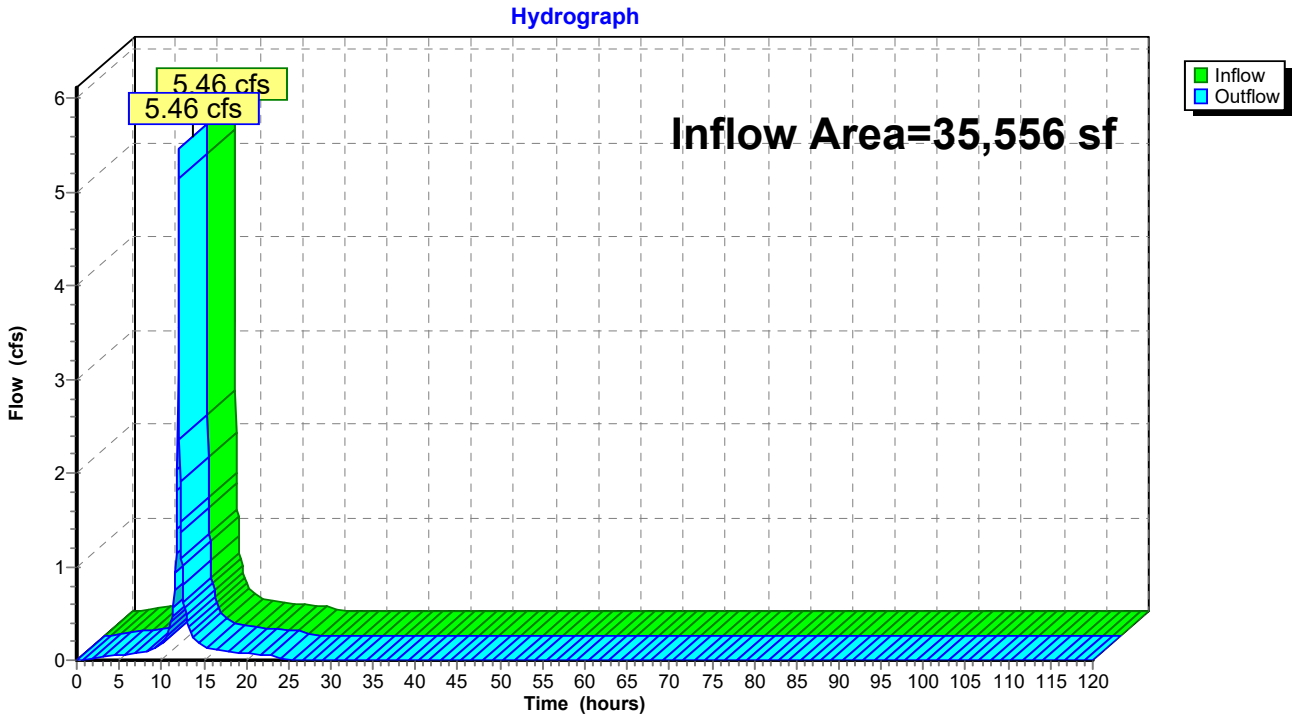
Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00
2.50	0.00		0.00
5.00	0.00		0.00
7.50	0.00		0.00
10.00	**0.01**		**0.01**
12.50	**0.08**		**0.08**
15.00	0.01		0.01
17.50	0.01		0.01
20.00	0.01		0.01
22.50	0.00		0.00
25.00	0.00		0.00
27.50	0.00		0.00
30.00	0.00		0.00
32.50	0.00		0.00
35.00	0.00		0.00
37.50	0.00		0.00
40.00	0.00		0.00
42.50	0.00		0.00
45.00	0.00		0.00
47.50	0.00		0.00
50.00	0.00		0.00
52.50	0.00		0.00
55.00	0.00		0.00
57.50	0.00		0.00
60.00	0.00		0.00
62.50	0.00		0.00
65.00	0.00		0.00
67.50	0.00		0.00
70.00	0.00		0.00
72.50	0.00		0.00
75.00	0.00		0.00
77.50	0.00		0.00
80.00	0.00		0.00
82.50	0.00		0.00
85.00	0.00		0.00
87.50	0.00		0.00
90.00	0.00		0.00
92.50	0.00		0.00
95.00	0.00		0.00
97.50	0.00		0.00
100.00	0.00		0.00
102.50	0.00		0.00
105.00	0.00		0.00
107.50	0.00		0.00
110.00	0.00		0.00
112.50	0.00		0.00
115.00	0.00		0.00
117.50	0.00		0.00
120.00	0.00		0.00

Summary for Reach EX1.CURR: POI-1 for EXDA-1

Inflow Area = 35,556 sf, 77.32% Impervious, Inflow Depth = 5.45" for 25-yr event
Inflow = 5.46 cfs @ 12.07 hrs, Volume= 16,140 cf
Outflow = 5.46 cfs @ 12.07 hrs, Volume= 16,140 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

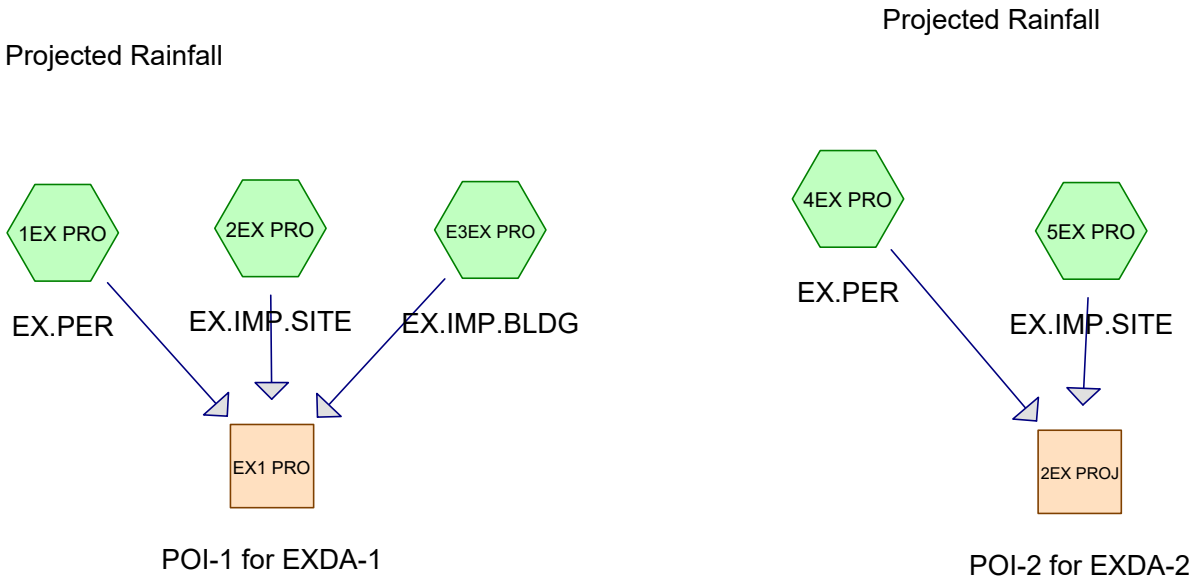
Reach EX1.CURR: POI-1 for EXDA-1

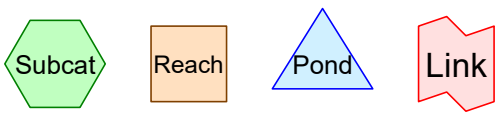


Hydrograph for Reach EX1.CURR: POI-1 for EXDA-1

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00
2.50	0.03		0.03
5.00	0.05		0.05
7.50	0.08		0.08
10.00	**0.18**		**0.18**
12.50	**0.95**		**0.95**
15.00	0.15		0.15
17.50	0.09		0.09
20.00	0.07		0.07
22.50	0.06		0.06
25.00	0.00		0.00
27.50	0.00		0.00
30.00	0.00		0.00
32.50	0.00		0.00
35.00	0.00		0.00
37.50	0.00		0.00
40.00	0.00		0.00
42.50	0.00		0.00
45.00	0.00		0.00
47.50	0.00		0.00
50.00	0.00		0.00
52.50	0.00		0.00
55.00	0.00		0.00
57.50	0.00		0.00
60.00	0.00		0.00
62.50	0.00		0.00
65.00	0.00		0.00
67.50	0.00		0.00
70.00	0.00		0.00
72.50	0.00		0.00
75.00	0.00		0.00
77.50	0.00		0.00
80.00	0.00		0.00
82.50	0.00		0.00
85.00	0.00		0.00
87.50	0.00		0.00
90.00	0.00		0.00
92.50	0.00		0.00
95.00	0.00		0.00
97.50	0.00		0.00
100.00	0.00		0.00
102.50	0.00		0.00
105.00	0.00		0.00
107.50	0.00		0.00
110.00	0.00		0.00
112.50	0.00		0.00
115.00	0.00		0.00
117.50	0.00		0.00
120.00	0.00		0.00

(PROJ RAINFALL)





Routing Diagram for 2026-10-05 Benson Pavilion - MCM-Final
Prepared by Langan Engineering, Printed 10/6/2026
HydroCAD® 10.20-8a s/n 08223 © 2025 HydroCAD Software Solutions LLC

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr, Projected	NOAA 24-hr	C	Default	24.00	1	3.91	2
2	10-yr, Projected	NOAA 24-hr	C	Default	24.00	1	6.17	2
3	25-yr	NOAA 24-hr	C	Default	24.00	1	6.28	2
4	100-yr, Projected	NOAA 24-hr	C	Default	24.00	1	11.84	2

Area Listing (selected nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
10,398	74	>75% Grass cover, Good, HSG C (1EX PRO, 4EX PRO)
5,270	98	Impervious walkway (2EX PRO)
14,438	98	Paved parking, HSG D (2EX PRO, 5EX PRO)
8,664	98	Roofs, HSG D (E3EX PRO)

Summary for Subcatchment 1EX PRO: EX.PER

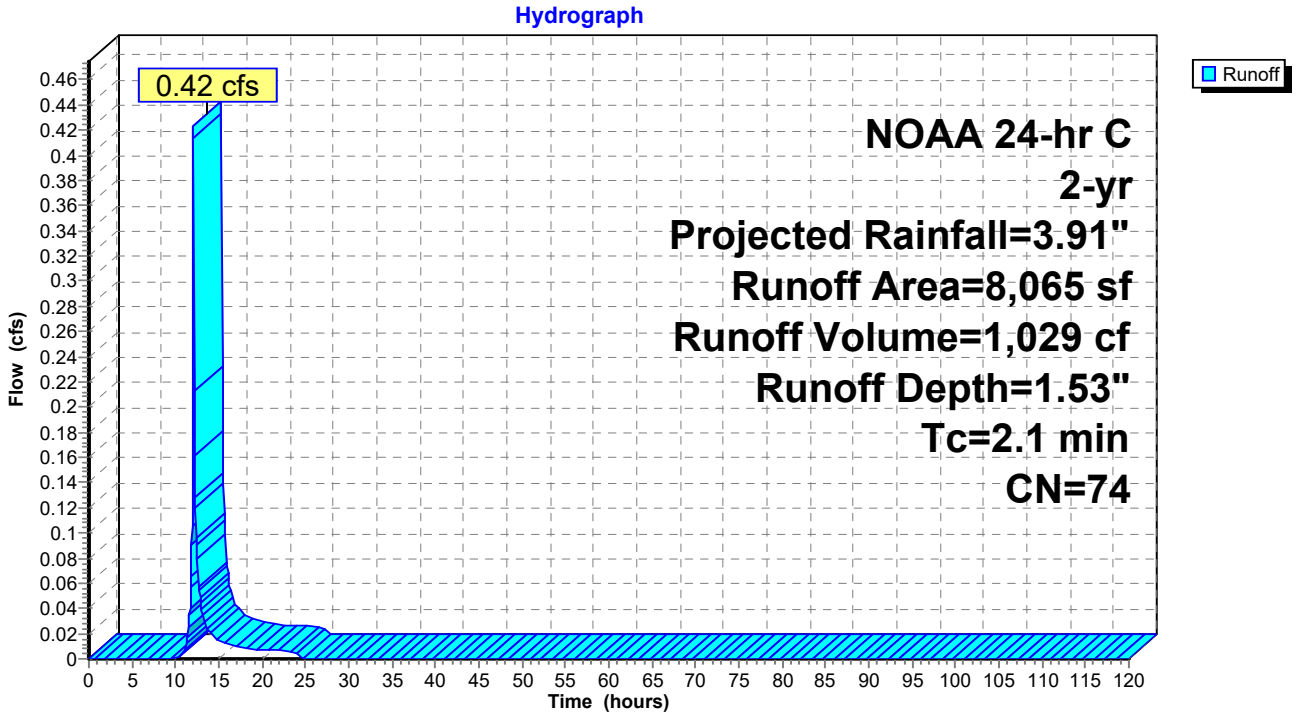
Runoff = 0.42 cfs @ 12.09 hrs, Volume= 1,029 cf, Depth= 1.53"
Routed to Reach EX1 PRO : POI-1 for EXDA-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 2-yr, Projected Rainfall=3.91"

Area (sf)	CN	Description
8,065	74	>75% Grass cover, Good, HSG C
8,065		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1					**Direct Entry,**

Subcatchment 1EX PRO: EX.PER



Hydrograph for Subcatchment 1EX PRO: EX.PER

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.11	0.00	0.00
5.00	0.25	0.00	0.00
7.50	0.42	0.00	0.00
10.00	0.71	0.00	**0.00**
12.50	2.75	0.76	**0.09**
15.00	3.34	1.13	0.01
17.50	3.57	1.29	0.01
20.00	3.72	1.39	0.01
22.50	**3.84**	**1.48**	0.01
25.00	**3.91**	**1.53**	0.00
27.50	3.91	1.53	0.00
30.00	3.91	1.53	0.00
32.50	3.91	1.53	0.00
35.00	3.91	1.53	0.00
37.50	3.91	1.53	0.00
40.00	3.91	1.53	0.00
42.50	3.91	1.53	0.00
45.00	3.91	1.53	0.00
47.50	3.91	1.53	0.00
50.00	3.91	1.53	0.00
52.50	3.91	1.53	0.00
55.00	3.91	1.53	0.00
57.50	3.91	1.53	0.00
60.00	3.91	1.53	0.00
62.50	3.91	1.53	0.00
65.00	3.91	1.53	0.00
67.50	3.91	1.53	0.00
70.00	3.91	1.53	0.00
72.50	3.91	1.53	0.00
75.00	3.91	1.53	0.00
77.50	3.91	1.53	0.00
80.00	3.91	1.53	0.00
82.50	3.91	1.53	0.00
85.00	3.91	1.53	0.00
87.50	3.91	1.53	0.00
90.00	3.91	1.53	0.00
92.50	3.91	1.53	0.00
95.00	3.91	1.53	0.00
97.50	3.91	1.53	0.00
100.00	3.91	1.53	0.00
102.50	3.91	1.53	0.00
105.00	3.91	1.53	0.00
107.50	3.91	1.53	0.00
110.00	3.91	1.53	0.00
112.50	3.91	1.53	0.00
115.00	3.91	1.53	0.00
117.50	3.91	1.53	0.00
120.00	3.91	1.53	0.00

Summary for Subcatchment 2EX PRO: EX.IMP.SITE

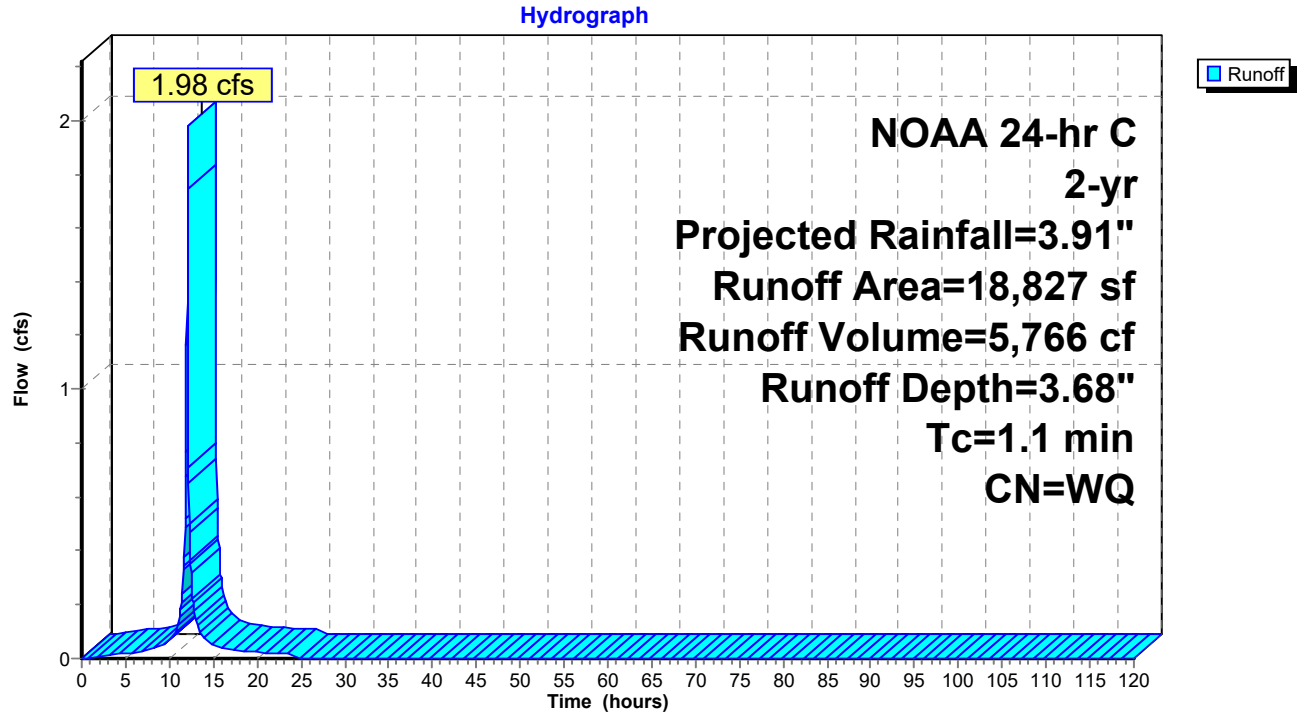
Runoff = 1.98 cfs @ 12.06 hrs, Volume= 5,766 cf, Depth= 3.68"
Routed to Reach EX1 PRO : POI-1 for EXDA-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 2-yr, Projected Rainfall=3.91"

	Area (sf)	CN	Description
	13,557	98	Paved parking, HSG D
*	5,270	98	Impervious walkway
	18,827		Weighted Average
	18,827		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1					**Direct Entry,**

Subcatchment 2EX PRO: EX.IMP.SITE



Hydrograph for Subcatchment 2EX PRO: EX.IMP.SITE

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.11	0.02	0.01
5.00	0.25	0.10	0.02
7.50	0.42	0.25	0.03
10.00	0.71	0.52	**0.07**
12.50	2.75	2.52	**0.32**
15.00	3.34	3.11	0.05
17.50	3.57	3.33	0.03
20.00	3.72	3.48	0.02
22.50	**3.84**	**3.61**	0.02
25.00	**3.91**	**3.68**	0.00
27.50	3.91	3.68	0.00
30.00	3.91	3.68	0.00
32.50	3.91	3.68	0.00
35.00	3.91	3.68	0.00
37.50	3.91	3.68	0.00
40.00	3.91	3.68	0.00
42.50	3.91	3.68	0.00
45.00	3.91	3.68	0.00
47.50	3.91	3.68	0.00
50.00	3.91	3.68	0.00
52.50	3.91	3.68	0.00
55.00	3.91	3.68	0.00
57.50	3.91	3.68	0.00
60.00	3.91	3.68	0.00
62.50	3.91	3.68	0.00
65.00	3.91	3.68	0.00
67.50	3.91	3.68	0.00
70.00	3.91	3.68	0.00
72.50	3.91	3.68	0.00
75.00	3.91	3.68	0.00
77.50	3.91	3.68	0.00
80.00	3.91	3.68	0.00
82.50	3.91	3.68	0.00
85.00	3.91	3.68	0.00
87.50	3.91	3.68	0.00
90.00	3.91	3.68	0.00
92.50	3.91	3.68	0.00
95.00	3.91	3.68	0.00
97.50	3.91	3.68	0.00
100.00	3.91	3.68	0.00
102.50	3.91	3.68	0.00
105.00	3.91	3.68	0.00
107.50	3.91	3.68	0.00
110.00	3.91	3.68	0.00
112.50	3.91	3.68	0.00
115.00	3.91	3.68	0.00
117.50	3.91	3.68	0.00
120.00	3.91	3.68	0.00

Summary for Subcatchment 4EX PRO: EX.PER

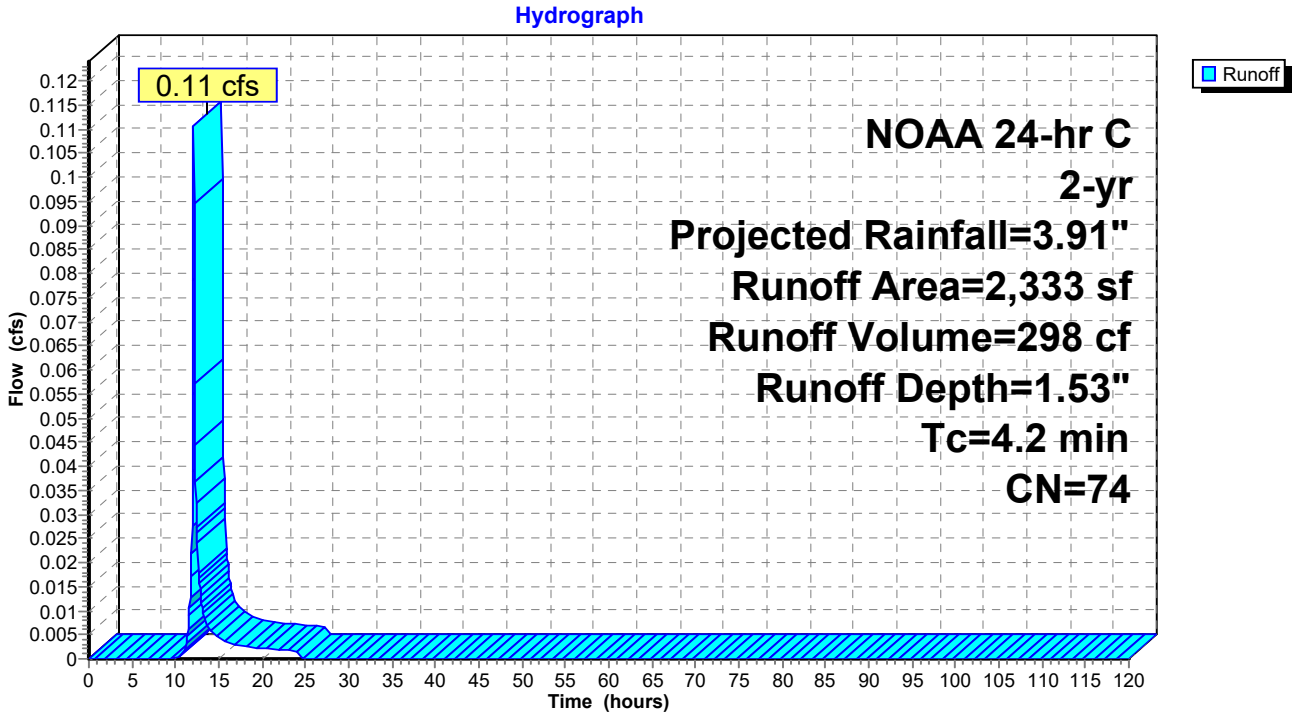
Runoff = 0.11 cfs @ 12.11 hrs, Volume= 298 cf, Depth= 1.53"
Routed to Reach 2EX PROJ : POI-2 for EXDA-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 2-yr, Projected Rainfall=3.91"

	Area (sf)	CN	Description
*	2,333	74	>75% Grass cover, Good, HSG C
	2,333		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2					**Direct Entry,**

Subcatchment 4EX PRO: EX.PER



Hydrograph for Subcatchment 4EX PRO: EX.PER

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.11	0.00	0.00
5.00	0.25	0.00	0.00
7.50	0.42	0.00	0.00
10.00	0.71	0.00	**0.00**
12.50	2.75	0.76	**0.03**
15.00	3.34	1.13	0.00
17.50	3.57	1.29	0.00
20.00	3.72	1.39	0.00
22.50	**3.84**	**1.48**	0.00
25.00	**3.91**	**1.53**	0.00
27.50	3.91	1.53	0.00
30.00	3.91	1.53	0.00
32.50	3.91	1.53	0.00
35.00	3.91	1.53	0.00
37.50	3.91	1.53	0.00
40.00	3.91	1.53	0.00
42.50	3.91	1.53	0.00
45.00	3.91	1.53	0.00
47.50	3.91	1.53	0.00
50.00	3.91	1.53	0.00
52.50	3.91	1.53	0.00
55.00	3.91	1.53	0.00
57.50	3.91	1.53	0.00
60.00	3.91	1.53	0.00
62.50	3.91	1.53	0.00
65.00	3.91	1.53	0.00
67.50	3.91	1.53	0.00
70.00	3.91	1.53	0.00
72.50	3.91	1.53	0.00
75.00	3.91	1.53	0.00
77.50	3.91	1.53	0.00
80.00	3.91	1.53	0.00
82.50	3.91	1.53	0.00
85.00	3.91	1.53	0.00
87.50	3.91	1.53	0.00
90.00	3.91	1.53	0.00
92.50	3.91	1.53	0.00
95.00	3.91	1.53	0.00
97.50	3.91	1.53	0.00
100.00	3.91	1.53	0.00
102.50	3.91	1.53	0.00
105.00	3.91	1.53	0.00
107.50	3.91	1.53	0.00
110.00	3.91	1.53	0.00
112.50	3.91	1.53	0.00
115.00	3.91	1.53	0.00
117.50	3.91	1.53	0.00
120.00	3.91	1.53	0.00

Summary for Subcatchment 5EX PRO: EX.IMP.SITE

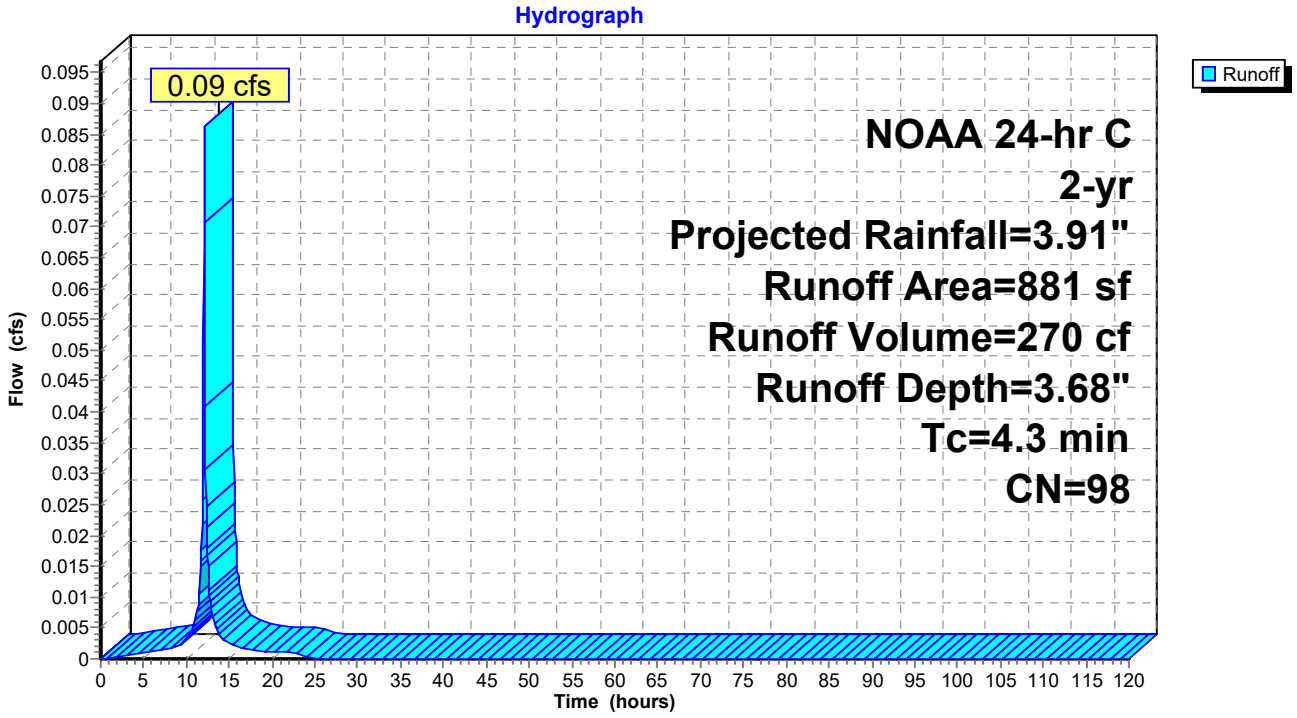
Runoff = 0.09 cfs @ 12.10 hrs, Volume= 270 cf, Depth= 3.68"
Routed to Reach 2EX PROJ : POI-2 for EXDA-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 2-yr, Projected Rainfall=3.91"

	Area (sf)	CN	Description
*	881	98	Paved parking, HSG D
	881		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3					**Direct Entry,**

Subcatchment 5EX PRO: EX.IMP.SITE



Hydrograph for Subcatchment 5EX PRO: EX.IMP.SITE

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.11	0.02	0.00
5.00	0.25	0.10	0.00
7.50	0.42	0.25	0.00
10.00	0.71	0.52	**0.00**
12.50	2.75	2.52	**0.02**
15.00	3.34	3.11	0.00
17.50	3.57	3.33	0.00
20.00	3.72	3.48	0.00
22.50	**3.84**	**3.61**	0.00
25.00	**3.91**	**3.68**	0.00
27.50	3.91	3.68	0.00
30.00	3.91	3.68	0.00
32.50	3.91	3.68	0.00
35.00	3.91	3.68	0.00
37.50	3.91	3.68	0.00
40.00	3.91	3.68	0.00
42.50	3.91	3.68	0.00
45.00	3.91	3.68	0.00
47.50	3.91	3.68	0.00
50.00	3.91	3.68	0.00
52.50	3.91	3.68	0.00
55.00	3.91	3.68	0.00
57.50	3.91	3.68	0.00
60.00	3.91	3.68	0.00
62.50	3.91	3.68	0.00
65.00	3.91	3.68	0.00
67.50	3.91	3.68	0.00
70.00	3.91	3.68	0.00
72.50	3.91	3.68	0.00
75.00	3.91	3.68	0.00
77.50	3.91	3.68	0.00
80.00	3.91	3.68	0.00
82.50	3.91	3.68	0.00
85.00	3.91	3.68	0.00
87.50	3.91	3.68	0.00
90.00	3.91	3.68	0.00
92.50	3.91	3.68	0.00
95.00	3.91	3.68	0.00
97.50	3.91	3.68	0.00
100.00	3.91	3.68	0.00
102.50	3.91	3.68	0.00
105.00	3.91	3.68	0.00
107.50	3.91	3.68	0.00
110.00	3.91	3.68	0.00
112.50	3.91	3.68	0.00
115.00	3.91	3.68	0.00
117.50	3.91	3.68	0.00
120.00	3.91	3.68	0.00

Summary for Subcatchment E3EX PRO: EX.IMP.BLDG

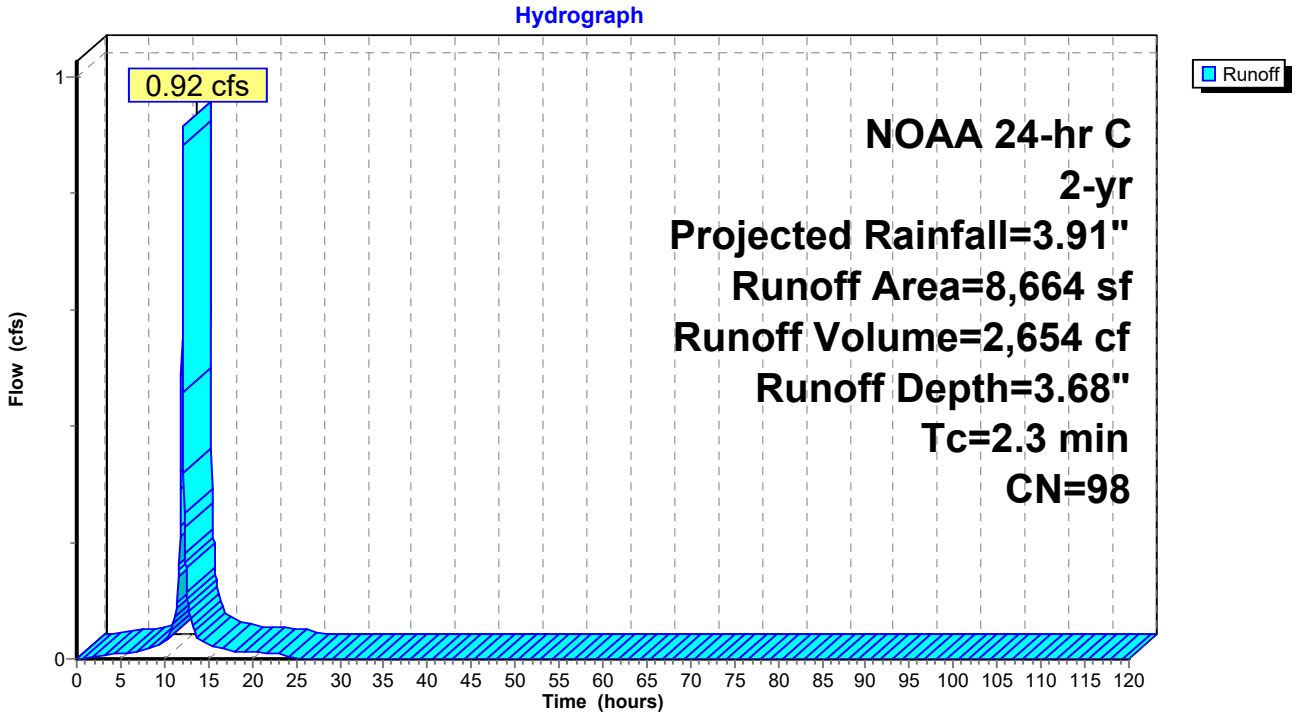
Runoff = 0.92 cfs @ 12.08 hrs, Volume= 2,654 cf, Depth= 3.68"
Routed to Reach EX1 PRO : POI-1 for EXDA-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 2-yr, Projected Rainfall=3.91"

Area (sf)	CN	Description
8,664	98	Roofs, HSG D
8,664		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3					**Direct Entry,**

Subcatchment E3EX PRO: EX.IMP.BLDG



Hydrograph for Subcatchment E3EX PRO: EX.IMP.BLDG

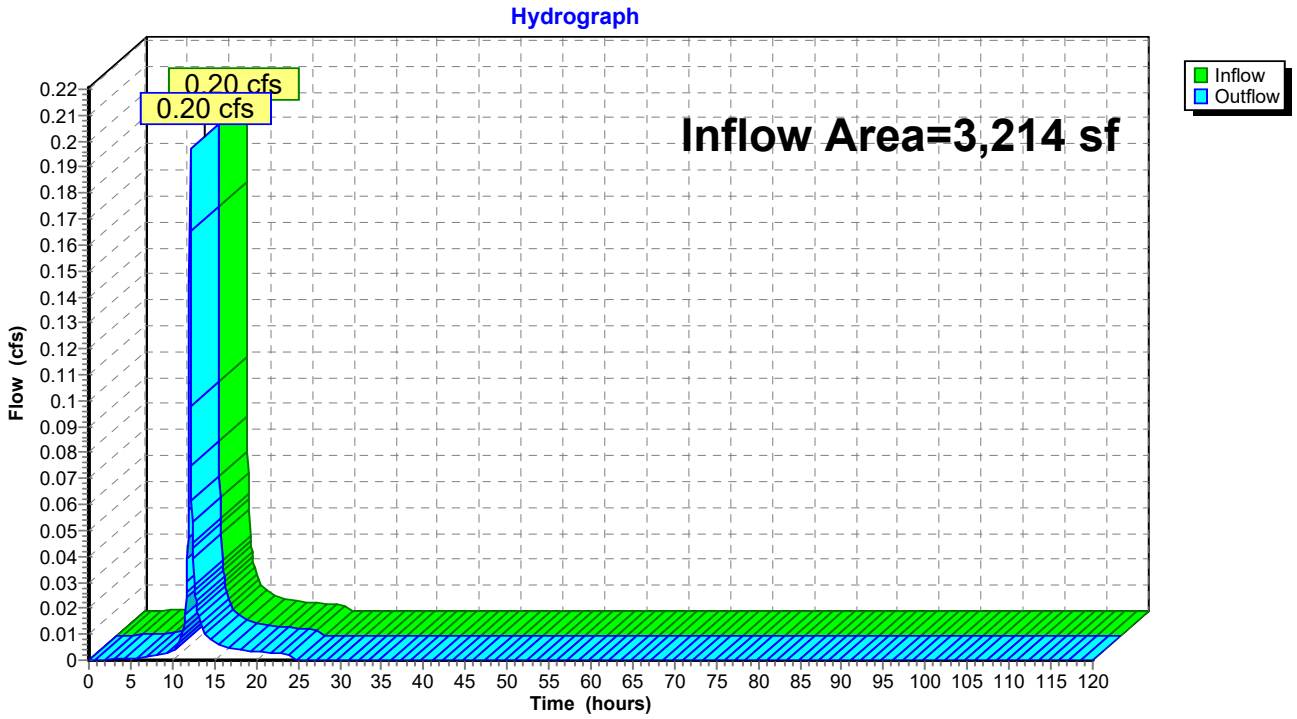
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.11	0.02	0.00
5.00	0.25	0.10	0.01
7.50	0.42	0.25	0.02
10.00	0.71	0.52	**0.03**
12.50	2.75	2.52	**0.16**
15.00	3.34	3.11	0.02
17.50	3.57	3.33	0.01
20.00	3.72	3.48	0.01
22.50	**3.84**	**3.61**	0.01
25.00	**3.91**	**3.68**	0.00
27.50	3.91	3.68	0.00
30.00	3.91	3.68	0.00
32.50	3.91	3.68	0.00
35.00	3.91	3.68	0.00
37.50	3.91	3.68	0.00
40.00	3.91	3.68	0.00
42.50	3.91	3.68	0.00
45.00	3.91	3.68	0.00
47.50	3.91	3.68	0.00
50.00	3.91	3.68	0.00
52.50	3.91	3.68	0.00
55.00	3.91	3.68	0.00
57.50	3.91	3.68	0.00
60.00	3.91	3.68	0.00
62.50	3.91	3.68	0.00
65.00	3.91	3.68	0.00
67.50	3.91	3.68	0.00
70.00	3.91	3.68	0.00
72.50	3.91	3.68	0.00
75.00	3.91	3.68	0.00
77.50	3.91	3.68	0.00
80.00	3.91	3.68	0.00
82.50	3.91	3.68	0.00
85.00	3.91	3.68	0.00
87.50	3.91	3.68	0.00
90.00	3.91	3.68	0.00
92.50	3.91	3.68	0.00
95.00	3.91	3.68	0.00
97.50	3.91	3.68	0.00
100.00	3.91	3.68	0.00
102.50	3.91	3.68	0.00
105.00	3.91	3.68	0.00
107.50	3.91	3.68	0.00
110.00	3.91	3.68	0.00
112.50	3.91	3.68	0.00
115.00	3.91	3.68	0.00
117.50	3.91	3.68	0.00
120.00	3.91	3.68	0.00

Summary for Reach 2EX PROJ: POI-2 for EXDA-2

Inflow Area = 3,214 sf, 27.41% Impervious, Inflow Depth = 2.12" for 2-yr, Projected event
Inflow = 0.20 cfs @ 12.11 hrs, Volume= 567 cf
Outflow = 0.20 cfs @ 12.11 hrs, Volume= 567 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach 2EX PROJ: POI-2 for EXDA-2



Hydrograph for Reach 2EX PROJ: POI-2 for EXDA-2

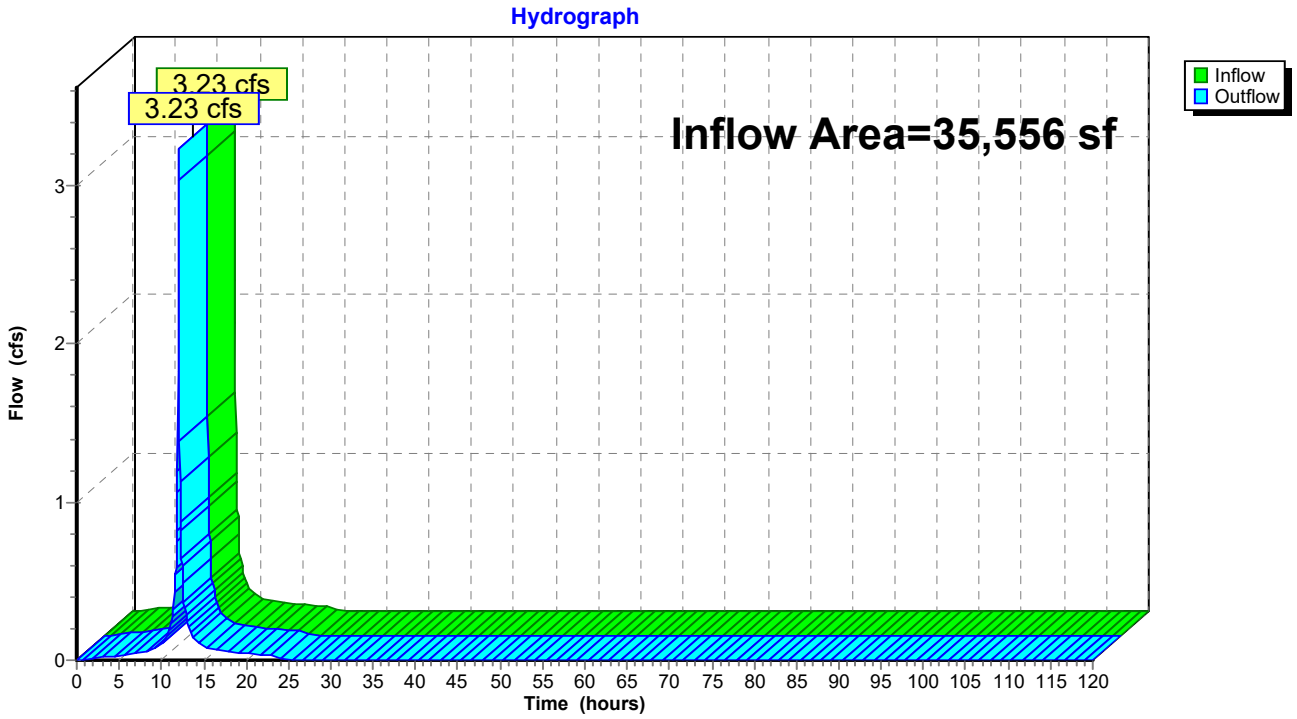
Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00
2.50	0.00		0.00
5.00	0.00		0.00
7.50	0.00		0.00
10.00	**0.00**		**0.00**
12.50	**0.04**		**0.04**
15.00	0.01		0.01
17.50	0.00		0.00
20.00	0.00		0.00
22.50	0.00		0.00
25.00	0.00		0.00
27.50	0.00		0.00
30.00	0.00		0.00
32.50	0.00		0.00
35.00	0.00		0.00
37.50	0.00		0.00
40.00	0.00		0.00
42.50	0.00		0.00
45.00	0.00		0.00
47.50	0.00		0.00
50.00	0.00		0.00
52.50	0.00		0.00
55.00	0.00		0.00
57.50	0.00		0.00
60.00	0.00		0.00
62.50	0.00		0.00
65.00	0.00		0.00
67.50	0.00		0.00
70.00	0.00		0.00
72.50	0.00		0.00
75.00	0.00		0.00
77.50	0.00		0.00
80.00	0.00		0.00
82.50	0.00		0.00
85.00	0.00		0.00
87.50	0.00		0.00
90.00	0.00		0.00
92.50	0.00		0.00
95.00	0.00		0.00
97.50	0.00		0.00
100.00	0.00		0.00
102.50	0.00		0.00
105.00	0.00		0.00
107.50	0.00		0.00
110.00	0.00		0.00
112.50	0.00		0.00
115.00	0.00		0.00
117.50	0.00		0.00
120.00	0.00		0.00

Summary for Reach EX1 PRO: POI-1 for EXDA-1

Inflow Area = 35,556 sf, 77.32% Impervious, Inflow Depth = 3.19" for 2-yr, Projected event
Inflow = 3.23 cfs @ 12.07 hrs, Volume= 9,449 cf
Outflow = 3.23 cfs @ 12.07 hrs, Volume= 9,449 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach EX1 PRO: POI-1 for EXDA-1



Hydrograph for Reach EX1 PRO: POI-1 for EXDA-1

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00
2.50	0.01		0.01
5.00	0.03		0.03
7.50	0.05		0.05
10.00	**0.10**		**0.10**
12.50	**0.56**		**0.56**
15.00	0.09		0.09
17.50	0.06		0.06
20.00	0.04		0.04
22.50	0.04		0.04
25.00	0.00		0.00
27.50	0.00		0.00
30.00	0.00		0.00
32.50	0.00		0.00
35.00	0.00		0.00
37.50	0.00		0.00
40.00	0.00		0.00
42.50	0.00		0.00
45.00	0.00		0.00
47.50	0.00		0.00
50.00	0.00		0.00
52.50	0.00		0.00
55.00	0.00		0.00
57.50	0.00		0.00
60.00	0.00		0.00
62.50	0.00		0.00
65.00	0.00		0.00
67.50	0.00		0.00
70.00	0.00		0.00
72.50	0.00		0.00
75.00	0.00		0.00
77.50	0.00		0.00
80.00	0.00		0.00
82.50	0.00		0.00
85.00	0.00		0.00
87.50	0.00		0.00
90.00	0.00		0.00
92.50	0.00		0.00
95.00	0.00		0.00
97.50	0.00		0.00
100.00	0.00		0.00
102.50	0.00		0.00
105.00	0.00		0.00
107.50	0.00		0.00
110.00	0.00		0.00
112.50	0.00		0.00
115.00	0.00		0.00
117.50	0.00		0.00
120.00	0.00		0.00

Summary for Subcatchment 1EX PRO: EX.PER

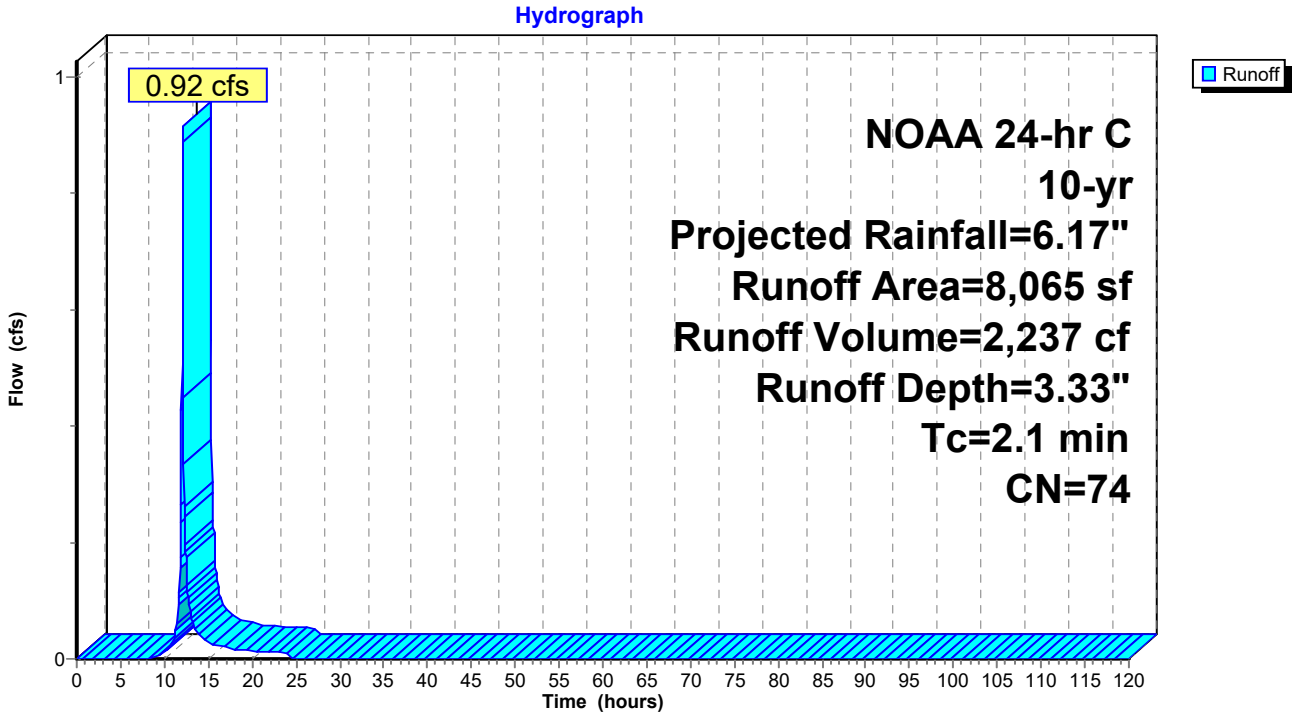
Runoff = 0.92 cfs @ 12.08 hrs, Volume= 2,237 cf, Depth= 3.33"
Routed to Reach EX1 PRO : POI-1 for EXDA-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 10-yr, Projected Rainfall=6.17"

Area (sf)	CN	Description
8,065	74	>75% Grass cover, Good, HSG C
8,065		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1					**Direct Entry,**

Subcatchment 1EX PRO: EX.PER



Hydrograph for Subcatchment 1EX PRO: EX.PER

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.18	0.00	0.00
5.00	0.39	0.00	0.00
7.50	0.67	0.00	0.00
10.00	1.12	0.05	**0.01**
12.50	4.35	1.86	**0.17**
15.00	5.27	2.58	0.03
17.50	5.63	2.87	0.02
20.00	5.87	3.07	0.01
22.50	**6.07**	**3.24**	0.01
25.00	**6.17**	**3.33**	0.00
27.50	6.17	3.33	0.00
30.00	6.17	3.33	0.00
32.50	6.17	3.33	0.00
35.00	6.17	3.33	0.00
37.50	6.17	3.33	0.00
40.00	6.17	3.33	0.00
42.50	6.17	3.33	0.00
45.00	6.17	3.33	0.00
47.50	6.17	3.33	0.00
50.00	6.17	3.33	0.00
52.50	6.17	3.33	0.00
55.00	6.17	3.33	0.00
57.50	6.17	3.33	0.00
60.00	6.17	3.33	0.00
62.50	6.17	3.33	0.00
65.00	6.17	3.33	0.00
67.50	6.17	3.33	0.00
70.00	6.17	3.33	0.00
72.50	6.17	3.33	0.00
75.00	6.17	3.33	0.00
77.50	6.17	3.33	0.00
80.00	6.17	3.33	0.00
82.50	6.17	3.33	0.00
85.00	6.17	3.33	0.00
87.50	6.17	3.33	0.00
90.00	6.17	3.33	0.00
92.50	6.17	3.33	0.00
95.00	6.17	3.33	0.00
97.50	6.17	3.33	0.00
100.00	6.17	3.33	0.00
102.50	6.17	3.33	0.00
105.00	6.17	3.33	0.00
107.50	6.17	3.33	0.00
110.00	6.17	3.33	0.00
112.50	6.17	3.33	0.00
115.00	6.17	3.33	0.00
117.50	6.17	3.33	0.00
120.00	6.17	3.33	0.00

Summary for Subcatchment 2EX PRO: EX.IMP.SITE

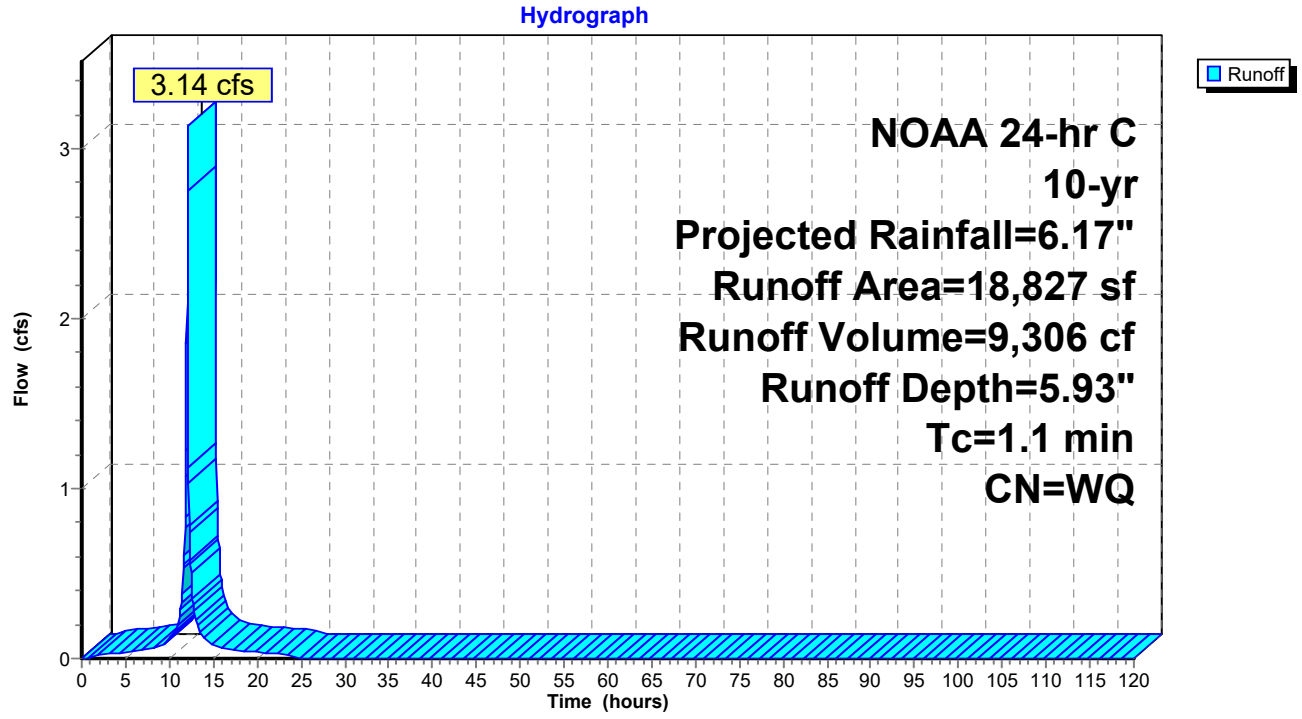
Runoff = 3.14 cfs @ 12.06 hrs, Volume= 9,306 cf, Depth= 5.93"
Routed to Reach EX1 PRO : POI-1 for EXDA-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 10-yr, Projected Rainfall=6.17"

	Area (sf)	CN	Description
	13,557	98	Paved parking, HSG D
*	5,270	98	Impervious walkway
	18,827		Weighted Average
	18,827		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1					**Direct Entry,**

Subcatchment 2EX PRO: EX.IMP.SITE



Hydrograph for Subcatchment 2EX PRO: EX.IMP.SITE

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.18	0.06	0.02
5.00	0.39	0.22	0.04
7.50	0.67	0.47	0.06
10.00	1.12	0.91	**0.11**
12.50	4.35	4.11	**0.51**
15.00	5.27	5.03	0.08
17.50	5.63	5.39	0.05
20.00	5.87	5.63	0.04
22.50	**6.07**	**5.83**	0.03
25.00	**6.17**	**5.93**	0.00
27.50	6.17	5.93	0.00
30.00	6.17	5.93	0.00
32.50	6.17	5.93	0.00
35.00	6.17	5.93	0.00
37.50	6.17	5.93	0.00
40.00	6.17	5.93	0.00
42.50	6.17	5.93	0.00
45.00	6.17	5.93	0.00
47.50	6.17	5.93	0.00
50.00	6.17	5.93	0.00
52.50	6.17	5.93	0.00
55.00	6.17	5.93	0.00
57.50	6.17	5.93	0.00
60.00	6.17	5.93	0.00
62.50	6.17	5.93	0.00
65.00	6.17	5.93	0.00
67.50	6.17	5.93	0.00
70.00	6.17	5.93	0.00
72.50	6.17	5.93	0.00
75.00	6.17	5.93	0.00
77.50	6.17	5.93	0.00
80.00	6.17	5.93	0.00
82.50	6.17	5.93	0.00
85.00	6.17	5.93	0.00
87.50	6.17	5.93	0.00
90.00	6.17	5.93	0.00
92.50	6.17	5.93	0.00
95.00	6.17	5.93	0.00
97.50	6.17	5.93	0.00
100.00	6.17	5.93	0.00
102.50	6.17	5.93	0.00
105.00	6.17	5.93	0.00
107.50	6.17	5.93	0.00
110.00	6.17	5.93	0.00
112.50	6.17	5.93	0.00
115.00	6.17	5.93	0.00
117.50	6.17	5.93	0.00
120.00	6.17	5.93	0.00

Summary for Subcatchment 4EX PRO: EX.PER

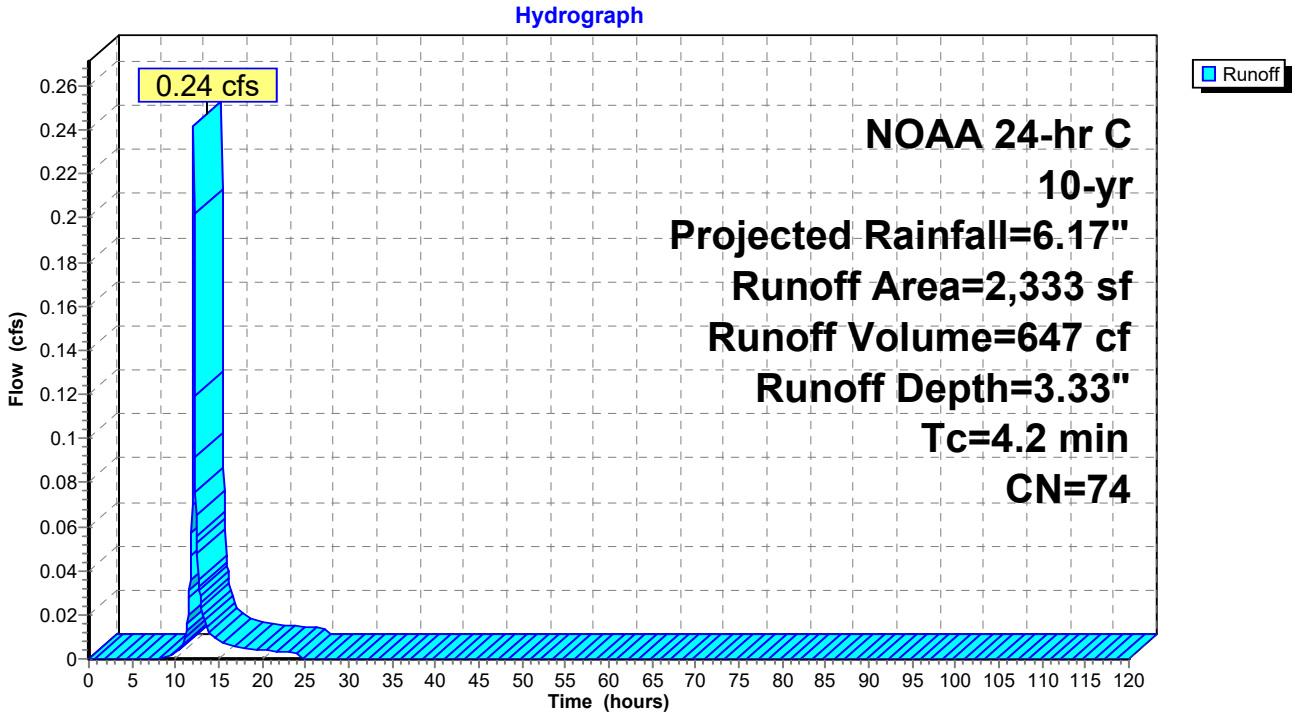
Runoff = 0.24 cfs @ 12.11 hrs, Volume= 647 cf, Depth= 3.33"
Routed to Reach 2EX PROJ : POI-2 for EXDA-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 10-yr, Projected Rainfall=6.17"

	Area (sf)	CN	Description
*	2,333	74	>75% Grass cover, Good, HSG C
	2,333		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2					**Direct Entry,**

Subcatchment 4EX PRO: EX.PER



Hydrograph for Subcatchment 4EX PRO: EX.PER

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.18	0.00	0.00
5.00	0.39	0.00	0.00
7.50	0.67	0.00	0.00
10.00	1.12	0.05	**0.00**
12.50	4.35	1.86	**0.05**
15.00	5.27	2.58	0.01
17.50	5.63	2.87	0.01
20.00	5.87	3.07	0.00
22.50	**6.07**	**3.24**	0.00
25.00	**6.17**	**3.33**	0.00
27.50	6.17	3.33	0.00
30.00	6.17	3.33	0.00
32.50	6.17	3.33	0.00
35.00	6.17	3.33	0.00
37.50	6.17	3.33	0.00
40.00	6.17	3.33	0.00
42.50	6.17	3.33	0.00
45.00	6.17	3.33	0.00
47.50	6.17	3.33	0.00
50.00	6.17	3.33	0.00
52.50	6.17	3.33	0.00
55.00	6.17	3.33	0.00
57.50	6.17	3.33	0.00
60.00	6.17	3.33	0.00
62.50	6.17	3.33	0.00
65.00	6.17	3.33	0.00
67.50	6.17	3.33	0.00
70.00	6.17	3.33	0.00
72.50	6.17	3.33	0.00
75.00	6.17	3.33	0.00
77.50	6.17	3.33	0.00
80.00	6.17	3.33	0.00
82.50	6.17	3.33	0.00
85.00	6.17	3.33	0.00
87.50	6.17	3.33	0.00
90.00	6.17	3.33	0.00
92.50	6.17	3.33	0.00
95.00	6.17	3.33	0.00
97.50	6.17	3.33	0.00
100.00	6.17	3.33	0.00
102.50	6.17	3.33	0.00
105.00	6.17	3.33	0.00
107.50	6.17	3.33	0.00
110.00	6.17	3.33	0.00
112.50	6.17	3.33	0.00
115.00	6.17	3.33	0.00
117.50	6.17	3.33	0.00
120.00	6.17	3.33	0.00

Summary for Subcatchment 5EX PRO: EX.IMP.SITE

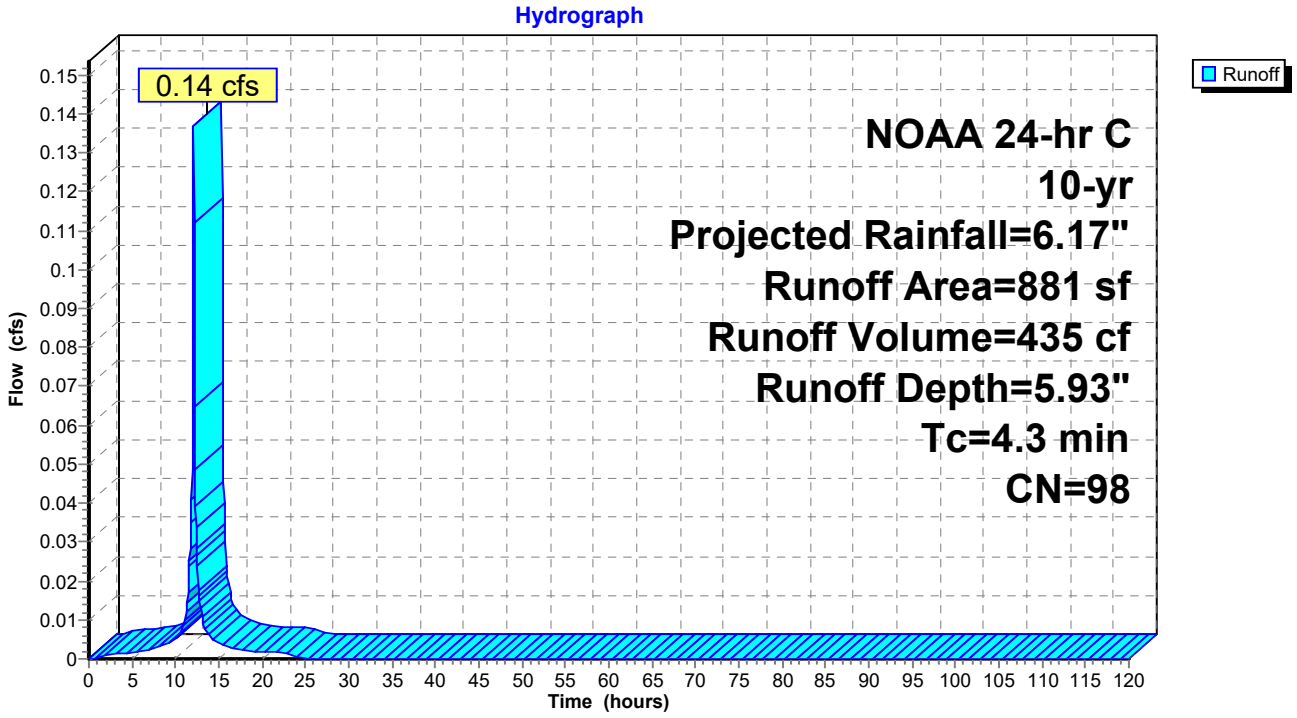
Runoff = 0.14 cfs @ 12.10 hrs, Volume= 435 cf, Depth= 5.93"
Routed to Reach 2EX PROJ : POI-2 for EXDA-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 10-yr, Projected Rainfall=6.17"

	Area (sf)	CN	Description
*	881	98	Paved parking, HSG D
	881		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3					**Direct Entry,**

Subcatchment 5EX PRO: EX.IMP.SITE



Hydrograph for Subcatchment 5EX PRO: EX.IMP.SITE

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.18	0.06	0.00
5.00	0.39	0.22	0.00
7.50	0.67	0.47	0.00
10.00	1.12	0.91	**0.01**
12.50	4.35	4.11	**0.03**
15.00	5.27	5.03	0.00
17.50	5.63	5.39	0.00
20.00	5.87	5.63	0.00
22.50	**6.07**	**5.83**	0.00
25.00	**6.17**	**5.93**	0.00
27.50	6.17	5.93	0.00
30.00	6.17	5.93	0.00
32.50	6.17	5.93	0.00
35.00	6.17	5.93	0.00
37.50	6.17	5.93	0.00
40.00	6.17	5.93	0.00
42.50	6.17	5.93	0.00
45.00	6.17	5.93	0.00
47.50	6.17	5.93	0.00
50.00	6.17	5.93	0.00
52.50	6.17	5.93	0.00
55.00	6.17	5.93	0.00
57.50	6.17	5.93	0.00
60.00	6.17	5.93	0.00
62.50	6.17	5.93	0.00
65.00	6.17	5.93	0.00
67.50	6.17	5.93	0.00
70.00	6.17	5.93	0.00
72.50	6.17	5.93	0.00
75.00	6.17	5.93	0.00
77.50	6.17	5.93	0.00
80.00	6.17	5.93	0.00
82.50	6.17	5.93	0.00
85.00	6.17	5.93	0.00
87.50	6.17	5.93	0.00
90.00	6.17	5.93	0.00
92.50	6.17	5.93	0.00
95.00	6.17	5.93	0.00
97.50	6.17	5.93	0.00
100.00	6.17	5.93	0.00
102.50	6.17	5.93	0.00
105.00	6.17	5.93	0.00
107.50	6.17	5.93	0.00
110.00	6.17	5.93	0.00
112.50	6.17	5.93	0.00
115.00	6.17	5.93	0.00
117.50	6.17	5.93	0.00
120.00	6.17	5.93	0.00

Summary for Subcatchment E3EX PRO: EX.IMP.BLDG

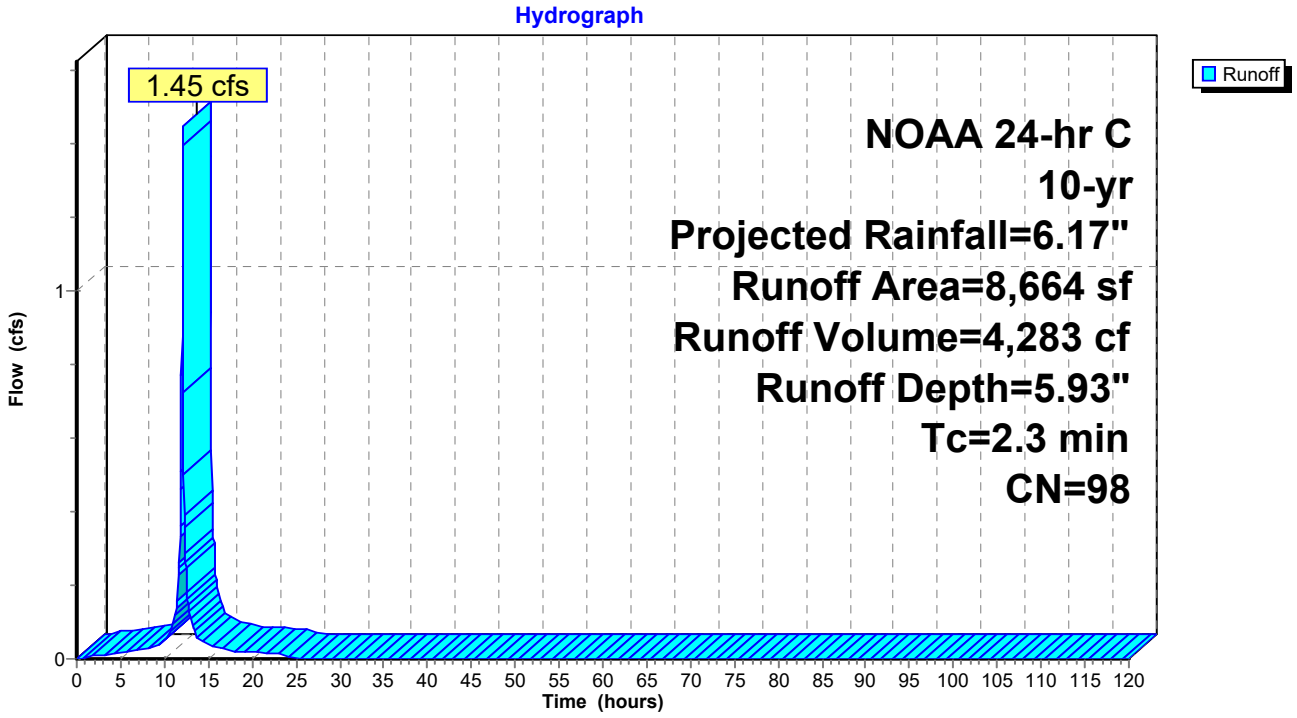
Runoff = 1.45 cfs @ 12.08 hrs, Volume= 4,283 cf, Depth= 5.93"
Routed to Reach EX1 PRO : POI-1 for EXDA-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 10-yr, Projected Rainfall=6.17"

Area (sf)	CN	Description
8,664	98	Roofs, HSG D
8,664		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3					**Direct Entry,**

Subcatchment E3EX PRO: EX.IMP.BLDG



Hydrograph for Subcatchment E3EX PRO: EX.IMP.BLDG

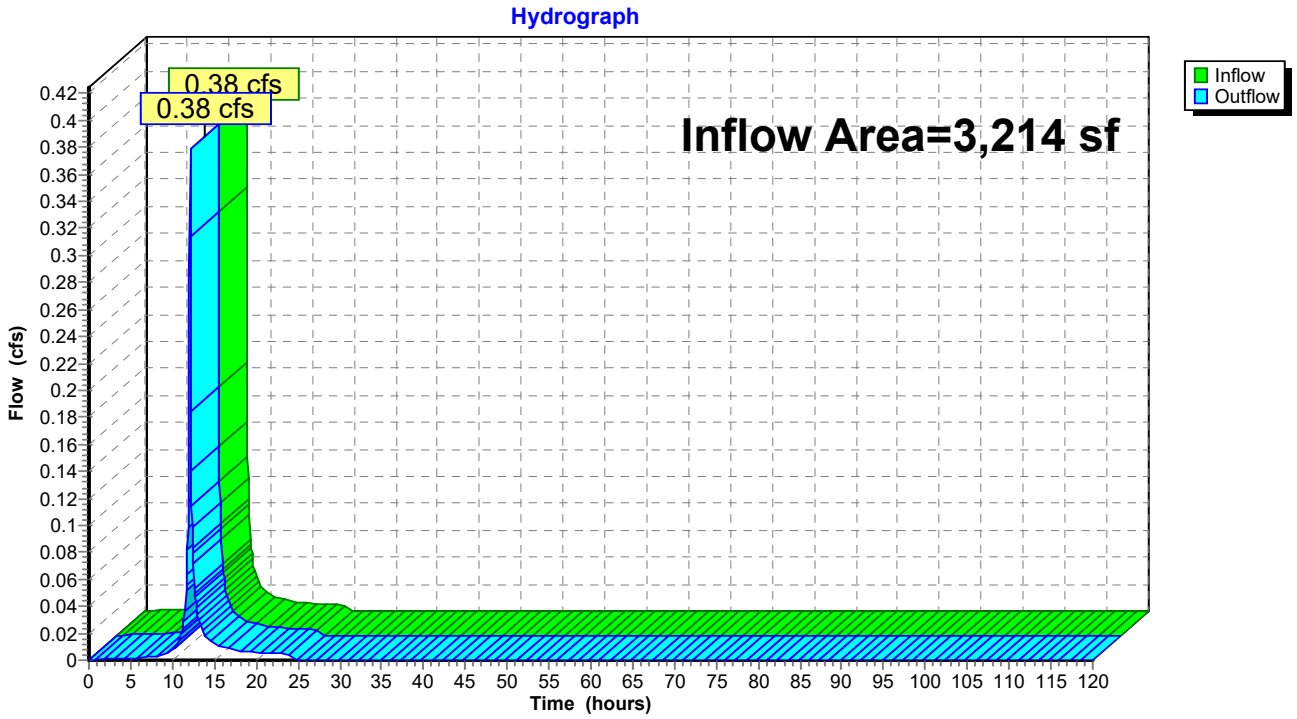
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.18	0.06	0.01
5.00	0.39	0.22	0.02
7.50	0.67	0.47	0.03
10.00	1.12	0.91	**0.05**
12.50	4.35	4.11	**0.25**
15.00	5.27	5.03	0.04
17.50	5.63	5.39	0.02
20.00	5.87	5.63	0.02
22.50	**6.07**	**5.83**	0.01
25.00	**6.17**	**5.93**	0.00
27.50	6.17	5.93	0.00
30.00	6.17	5.93	0.00
32.50	6.17	5.93	0.00
35.00	6.17	5.93	0.00
37.50	6.17	5.93	0.00
40.00	6.17	5.93	0.00
42.50	6.17	5.93	0.00
45.00	6.17	5.93	0.00
47.50	6.17	5.93	0.00
50.00	6.17	5.93	0.00
52.50	6.17	5.93	0.00
55.00	6.17	5.93	0.00
57.50	6.17	5.93	0.00
60.00	6.17	5.93	0.00
62.50	6.17	5.93	0.00
65.00	6.17	5.93	0.00
67.50	6.17	5.93	0.00
70.00	6.17	5.93	0.00
72.50	6.17	5.93	0.00
75.00	6.17	5.93	0.00
77.50	6.17	5.93	0.00
80.00	6.17	5.93	0.00
82.50	6.17	5.93	0.00
85.00	6.17	5.93	0.00
87.50	6.17	5.93	0.00
90.00	6.17	5.93	0.00
92.50	6.17	5.93	0.00
95.00	6.17	5.93	0.00
97.50	6.17	5.93	0.00
100.00	6.17	5.93	0.00
102.50	6.17	5.93	0.00
105.00	6.17	5.93	0.00
107.50	6.17	5.93	0.00
110.00	6.17	5.93	0.00
112.50	6.17	5.93	0.00
115.00	6.17	5.93	0.00
117.50	6.17	5.93	0.00
120.00	6.17	5.93	0.00

Summary for Reach 2EX PROJ: POI-2 for EXDA-2

Inflow Area = 3,214 sf, 27.41% Impervious, Inflow Depth = 4.04" for 10-yr, Projected event
Inflow = 0.38 cfs @ 12.10 hrs, Volume= 1,083 cf
Outflow = 0.38 cfs @ 12.10 hrs, Volume= 1,083 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach 2EX PROJ: POI-2 for EXDA-2



Hydrograph for Reach 2EX PROJ: POI-2 for EXDA-2

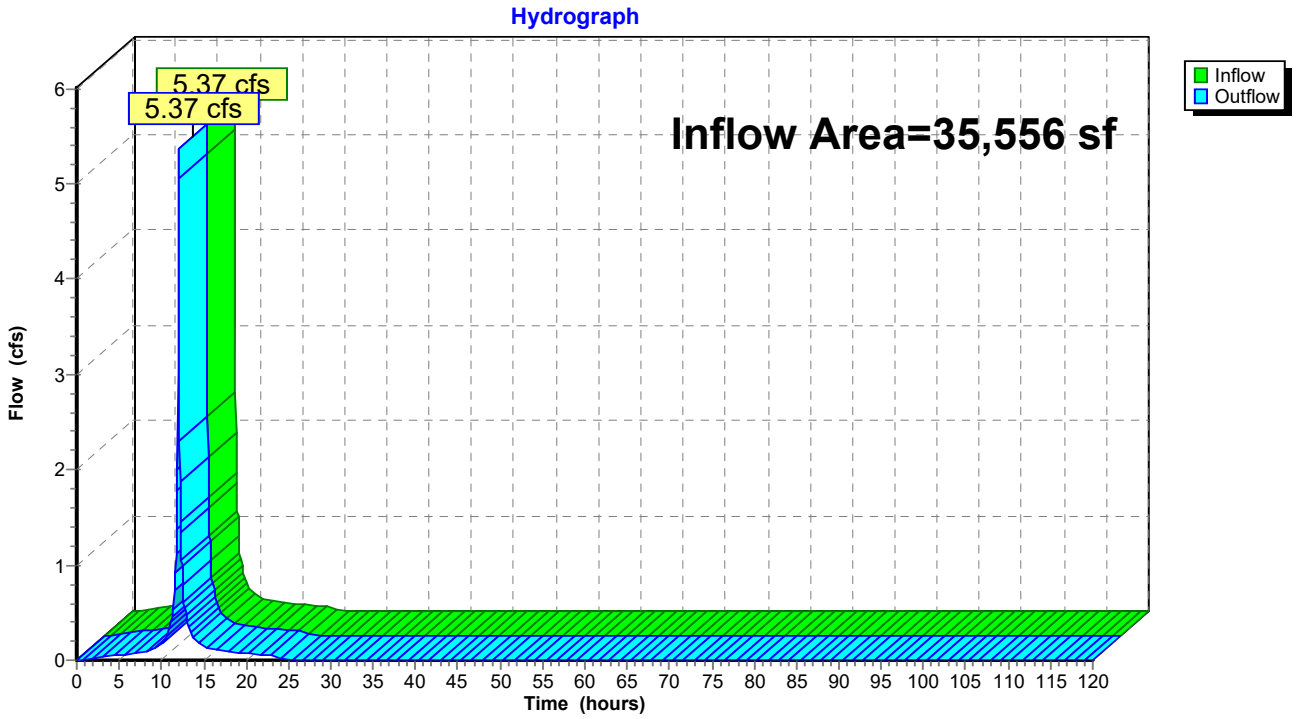
Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00
2.50	0.00		0.00
5.00	0.00		0.00
7.50	0.00		0.00
10.00	**0.01**		**0.01**
12.50	**0.08**		**0.08**
15.00	0.01		0.01
17.50	0.01		0.01
20.00	0.01		0.01
22.50	0.00		0.00
25.00	0.00		0.00
27.50	0.00		0.00
30.00	0.00		0.00
32.50	0.00		0.00
35.00	0.00		0.00
37.50	0.00		0.00
40.00	0.00		0.00
42.50	0.00		0.00
45.00	0.00		0.00
47.50	0.00		0.00
50.00	0.00		0.00
52.50	0.00		0.00
55.00	0.00		0.00
57.50	0.00		0.00
60.00	0.00		0.00
62.50	0.00		0.00
65.00	0.00		0.00
67.50	0.00		0.00
70.00	0.00		0.00
72.50	0.00		0.00
75.00	0.00		0.00
77.50	0.00		0.00
80.00	0.00		0.00
82.50	0.00		0.00
85.00	0.00		0.00
87.50	0.00		0.00
90.00	0.00		0.00
92.50	0.00		0.00
95.00	0.00		0.00
97.50	0.00		0.00
100.00	0.00		0.00
102.50	0.00		0.00
105.00	0.00		0.00
107.50	0.00		0.00
110.00	0.00		0.00
112.50	0.00		0.00
115.00	0.00		0.00
117.50	0.00		0.00
120.00	0.00		0.00

Summary for Reach EX1 PRO: POI-1 for EXDA-1

Inflow Area = 35,556 sf, 77.32% Impervious, Inflow Depth = 5.34" for 10-yr, Projected event
Inflow = 5.37 cfs @ 12.07 hrs, Volume= 15,826 cf
Outflow = 5.37 cfs @ 12.07 hrs, Volume= 15,826 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach EX1 PRO: POI-1 for EXDA-1



Hydrograph for Reach EX1 PRO: POI-1 for EXDA-1

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00
2.50	0.03		0.03
5.00	0.05		0.05
7.50	0.08		0.08
10.00	**0.18**		**0.18**
12.50	**0.93**		**0.93**
15.00	0.14		0.14
17.50	0.09		0.09
20.00	0.07		0.07
22.50	0.06		0.06
25.00	0.00		0.00
27.50	0.00		0.00
30.00	0.00		0.00
32.50	0.00		0.00
35.00	0.00		0.00
37.50	0.00		0.00
40.00	0.00		0.00
42.50	0.00		0.00
45.00	0.00		0.00
47.50	0.00		0.00
50.00	0.00		0.00
52.50	0.00		0.00
55.00	0.00		0.00
57.50	0.00		0.00
60.00	0.00		0.00
62.50	0.00		0.00
65.00	0.00		0.00
67.50	0.00		0.00
70.00	0.00		0.00
72.50	0.00		0.00
75.00	0.00		0.00
77.50	0.00		0.00
80.00	0.00		0.00
82.50	0.00		0.00
85.00	0.00		0.00
87.50	0.00		0.00
90.00	0.00		0.00
92.50	0.00		0.00
95.00	0.00		0.00
97.50	0.00		0.00
100.00	0.00		0.00
102.50	0.00		0.00
105.00	0.00		0.00
107.50	0.00		0.00
110.00	0.00		0.00
112.50	0.00		0.00
115.00	0.00		0.00
117.50	0.00		0.00
120.00	0.00		0.00

Summary for Subcatchment 1EX PRO: EX.PER

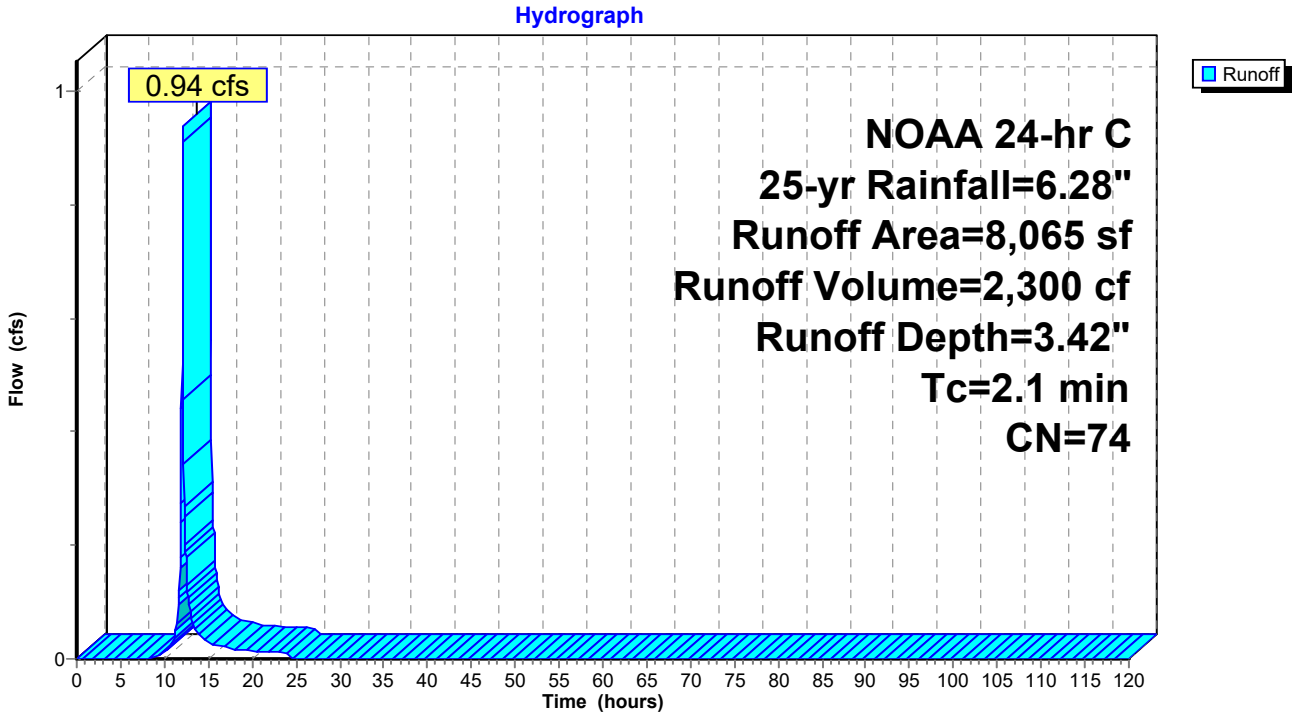
Runoff = 0.94 cfs @ 12.08 hrs, Volume= 2,300 cf, Depth= 3.42"
Routed to Reach EX1 PRO : POI-1 for EXDA-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 25-yr Rainfall=6.28"

Area (sf)	CN	Description
8,065	74	>75% Grass cover, Good, HSG C
8,065		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1					**Direct Entry,**

Subcatchment 1EX PRO: EX.PER



Hydrograph for Subcatchment 1EX PRO: EX.PER

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.18	0.00	0.00
5.00	0.40	0.00	0.00
7.50	0.68	0.00	0.00
10.00	1.15	0.05	**0.01**
12.50	4.42	1.91	**0.18**
15.00	5.36	2.66	0.03
17.50	5.73	2.96	0.02
20.00	5.97	3.16	0.01
22.50	**6.18**	**3.33**	0.01
25.00	**6.28**	**3.42**	0.00
27.50	6.28	3.42	0.00
30.00	6.28	3.42	0.00
32.50	6.28	3.42	0.00
35.00	6.28	3.42	0.00
37.50	6.28	3.42	0.00
40.00	6.28	3.42	0.00
42.50	6.28	3.42	0.00
45.00	6.28	3.42	0.00
47.50	6.28	3.42	0.00
50.00	6.28	3.42	0.00
52.50	6.28	3.42	0.00
55.00	6.28	3.42	0.00
57.50	6.28	3.42	0.00
60.00	6.28	3.42	0.00
62.50	6.28	3.42	0.00
65.00	6.28	3.42	0.00
67.50	6.28	3.42	0.00
70.00	6.28	3.42	0.00
72.50	6.28	3.42	0.00
75.00	6.28	3.42	0.00
77.50	6.28	3.42	0.00
80.00	6.28	3.42	0.00
82.50	6.28	3.42	0.00
85.00	6.28	3.42	0.00
87.50	6.28	3.42	0.00
90.00	6.28	3.42	0.00
92.50	6.28	3.42	0.00
95.00	6.28	3.42	0.00
97.50	6.28	3.42	0.00
100.00	6.28	3.42	0.00
102.50	6.28	3.42	0.00
105.00	6.28	3.42	0.00
107.50	6.28	3.42	0.00
110.00	6.28	3.42	0.00
112.50	6.28	3.42	0.00
115.00	6.28	3.42	0.00
117.50	6.28	3.42	0.00
120.00	6.28	3.42	0.00

Summary for Subcatchment 2EX PRO: EX.IMP.SITE

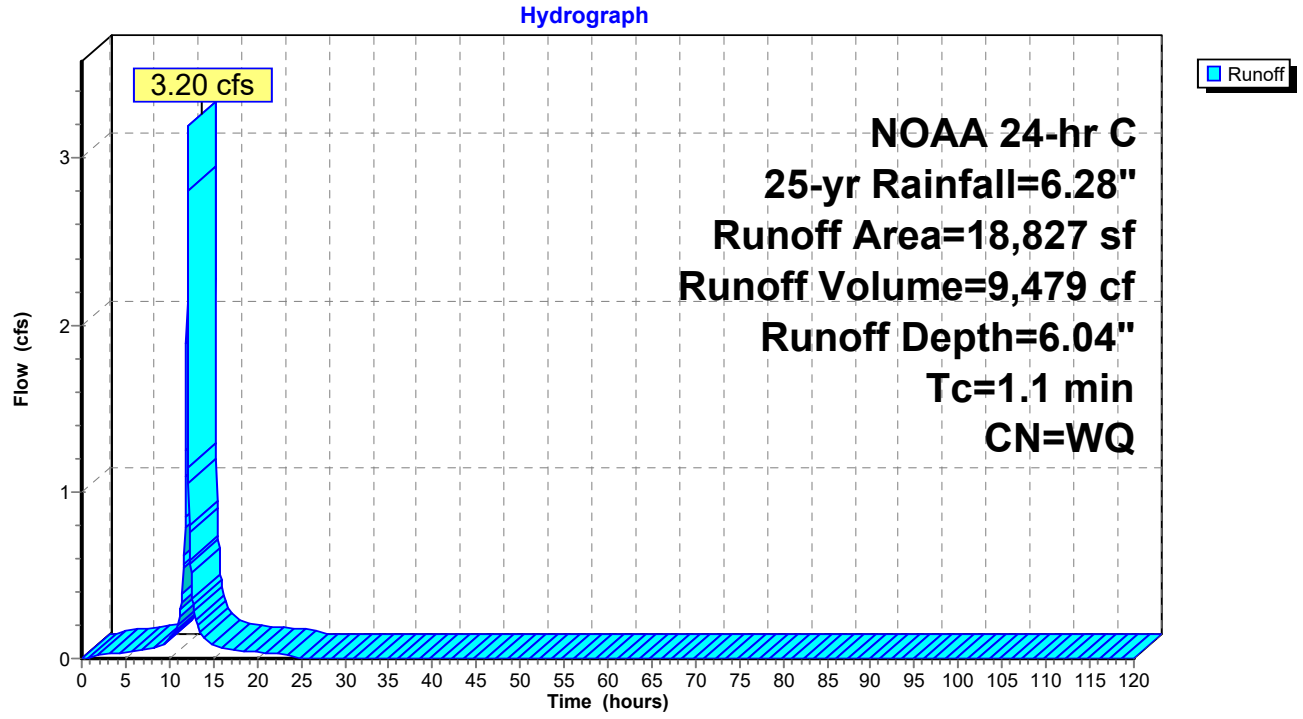
Runoff = 3.20 cfs @ 12.06 hrs, Volume= 9,479 cf, Depth= 6.04"
Routed to Reach EX1 PRO : POI-1 for EXDA-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 25-yr Rainfall=6.28"

	Area (sf)	CN	Description
	13,557	98	Paved parking, HSG D
*	5,270	98	Impervious walkway
	18,827		Weighted Average
	18,827		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1					**Direct Entry,**

Subcatchment 2EX PRO: EX.IMP.SITE



Hydrograph for Subcatchment 2EX PRO: EX.IMP.SITE

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.18	0.06	0.02
5.00	0.40	0.23	0.04
7.50	0.68	0.48	0.06
10.00	1.15	0.93	**0.12**
12.50	4.42	4.19	**0.52**
15.00	5.36	5.13	0.08
17.50	5.73	5.49	0.05
20.00	5.97	5.73	0.04
22.50	**6.18**	**5.94**	0.03
25.00	**6.28**	**6.04**	0.00
27.50	6.28	6.04	0.00
30.00	6.28	6.04	0.00
32.50	6.28	6.04	0.00
35.00	6.28	6.04	0.00
37.50	6.28	6.04	0.00
40.00	6.28	6.04	0.00
42.50	6.28	6.04	0.00
45.00	6.28	6.04	0.00
47.50	6.28	6.04	0.00
50.00	6.28	6.04	0.00
52.50	6.28	6.04	0.00
55.00	6.28	6.04	0.00
57.50	6.28	6.04	0.00
60.00	6.28	6.04	0.00
62.50	6.28	6.04	0.00
65.00	6.28	6.04	0.00
67.50	6.28	6.04	0.00
70.00	6.28	6.04	0.00
72.50	6.28	6.04	0.00
75.00	6.28	6.04	0.00
77.50	6.28	6.04	0.00
80.00	6.28	6.04	0.00
82.50	6.28	6.04	0.00
85.00	6.28	6.04	0.00
87.50	6.28	6.04	0.00
90.00	6.28	6.04	0.00
92.50	6.28	6.04	0.00
95.00	6.28	6.04	0.00
97.50	6.28	6.04	0.00
100.00	6.28	6.04	0.00
102.50	6.28	6.04	0.00
105.00	6.28	6.04	0.00
107.50	6.28	6.04	0.00
110.00	6.28	6.04	0.00
112.50	6.28	6.04	0.00
115.00	6.28	6.04	0.00
117.50	6.28	6.04	0.00
120.00	6.28	6.04	0.00

Summary for Subcatchment 4EX PRO: EX.PER

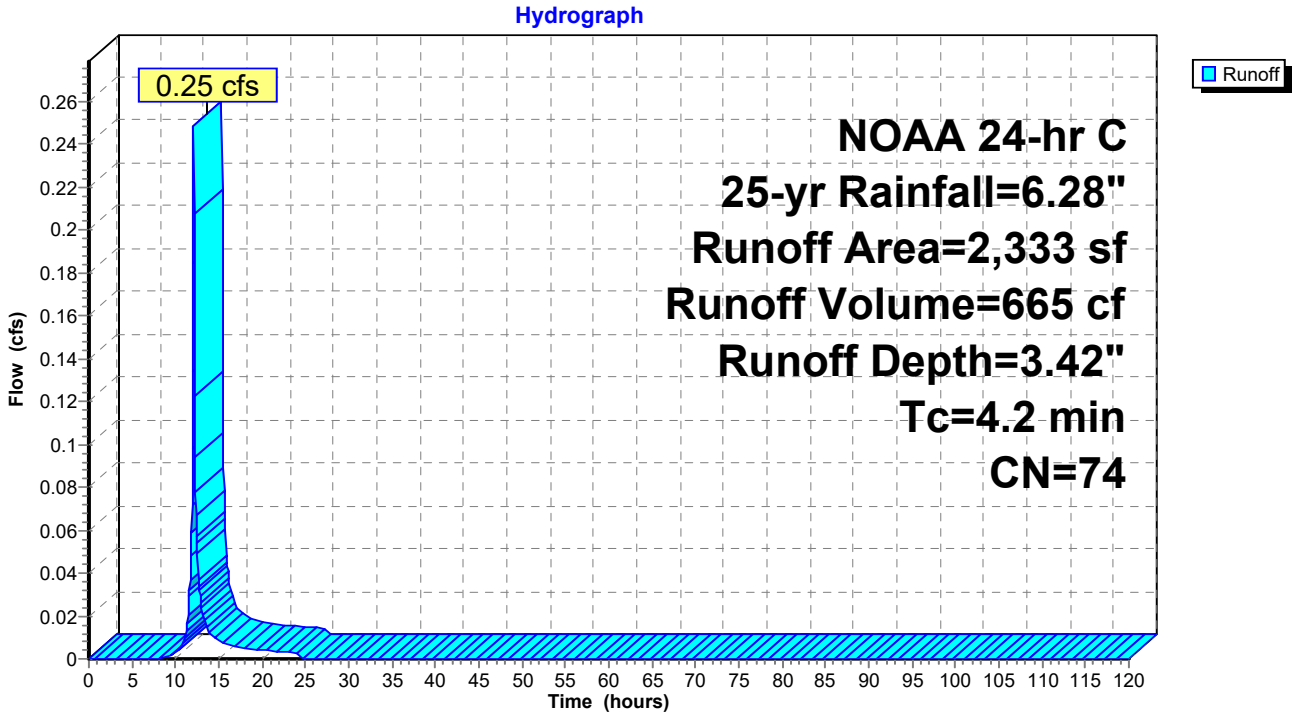
Runoff = 0.25 cfs @ 12.11 hrs, Volume= 665 cf, Depth= 3.42"
Routed to Reach 2EX PROJ : POI-2 for EXDA-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 25-yr Rainfall=6.28"

	Area (sf)	CN	Description
*	2,333	74	>75% Grass cover, Good, HSG C
	2,333		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2					**Direct Entry,**

Subcatchment 4EX PRO: EX.PER



Hydrograph for Subcatchment 4EX PRO: EX.PER

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.18	0.00	0.00
5.00	0.40	0.00	0.00
7.50	0.68	0.00	0.00
10.00	1.15	0.05	**0.00**
12.50	4.42	1.91	**0.05**
15.00	5.36	2.66	0.01
17.50	5.73	2.96	0.01
20.00	5.97	3.16	0.00
22.50	**6.18**	**3.33**	0.00
25.00	**6.28**	**3.42**	0.00
27.50	6.28	3.42	0.00
30.00	6.28	3.42	0.00
32.50	6.28	3.42	0.00
35.00	6.28	3.42	0.00
37.50	6.28	3.42	0.00
40.00	6.28	3.42	0.00
42.50	6.28	3.42	0.00
45.00	6.28	3.42	0.00
47.50	6.28	3.42	0.00
50.00	6.28	3.42	0.00
52.50	6.28	3.42	0.00
55.00	6.28	3.42	0.00
57.50	6.28	3.42	0.00
60.00	6.28	3.42	0.00
62.50	6.28	3.42	0.00
65.00	6.28	3.42	0.00
67.50	6.28	3.42	0.00
70.00	6.28	3.42	0.00
72.50	6.28	3.42	0.00
75.00	6.28	3.42	0.00
77.50	6.28	3.42	0.00
80.00	6.28	3.42	0.00
82.50	6.28	3.42	0.00
85.00	6.28	3.42	0.00
87.50	6.28	3.42	0.00
90.00	6.28	3.42	0.00
92.50	6.28	3.42	0.00
95.00	6.28	3.42	0.00
97.50	6.28	3.42	0.00
100.00	6.28	3.42	0.00
102.50	6.28	3.42	0.00
105.00	6.28	3.42	0.00
107.50	6.28	3.42	0.00
110.00	6.28	3.42	0.00
112.50	6.28	3.42	0.00
115.00	6.28	3.42	0.00
117.50	6.28	3.42	0.00
120.00	6.28	3.42	0.00

Summary for Subcatchment 5EX PRO: EX.IMP.SITE

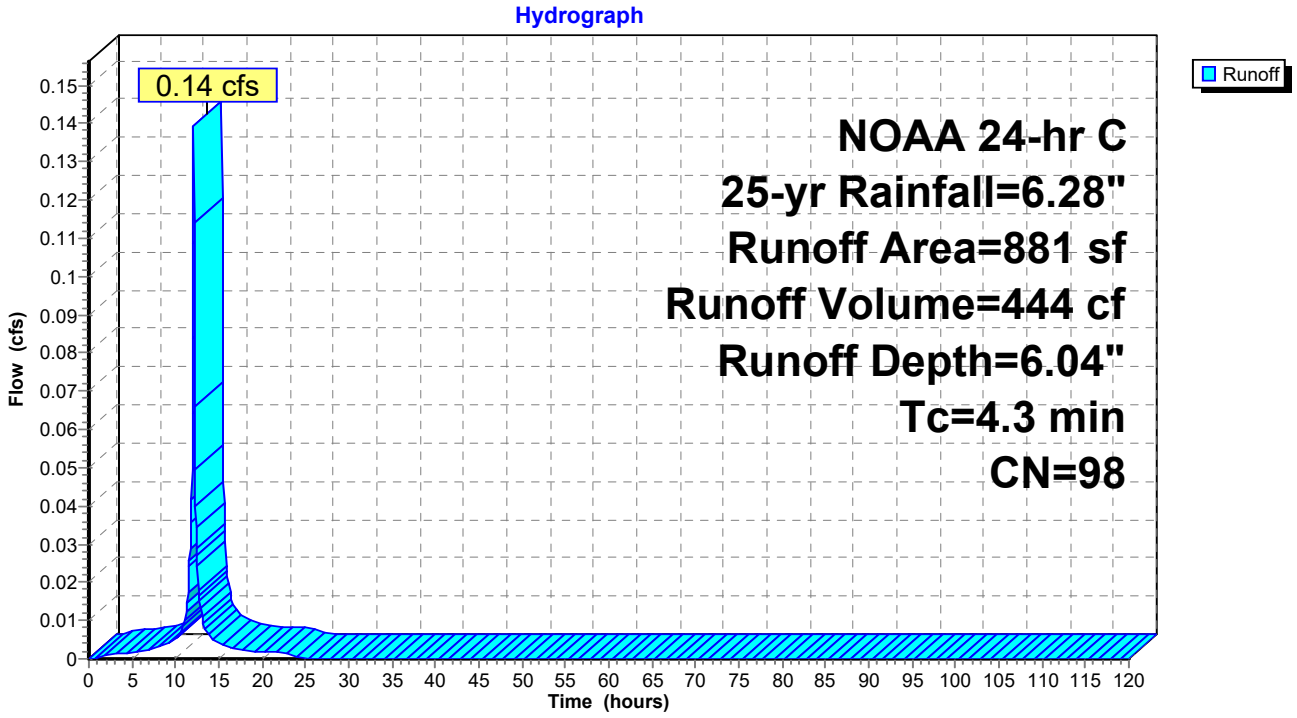
Runoff = 0.14 cfs @ 12.10 hrs, Volume= 444 cf, Depth= 6.04"
Routed to Reach 2EX PROJ : POI-2 for EXDA-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 25-yr Rainfall=6.28"

	Area (sf)	CN	Description
*	881	98	Paved parking, HSG D
	881		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3					**Direct Entry,**

Subcatchment 5EX PRO: EX.IMP.SITE



Hydrograph for Subcatchment 5EX PRO: EX.IMP.SITE

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.18	0.06	0.00
5.00	0.40	0.23	0.00
7.50	0.68	0.48	0.00
10.00	1.15	0.93	**0.01**
12.50	4.42	4.19	**0.03**
15.00	5.36	5.13	0.00
17.50	5.73	5.49	0.00
20.00	5.97	5.73	0.00
22.50	**6.18**	**5.94**	0.00
25.00	**6.28**	**6.04**	0.00
27.50	6.28	6.04	0.00
30.00	6.28	6.04	0.00
32.50	6.28	6.04	0.00
35.00	6.28	6.04	0.00
37.50	6.28	6.04	0.00
40.00	6.28	6.04	0.00
42.50	6.28	6.04	0.00
45.00	6.28	6.04	0.00
47.50	6.28	6.04	0.00
50.00	6.28	6.04	0.00
52.50	6.28	6.04	0.00
55.00	6.28	6.04	0.00
57.50	6.28	6.04	0.00
60.00	6.28	6.04	0.00
62.50	6.28	6.04	0.00
65.00	6.28	6.04	0.00
67.50	6.28	6.04	0.00
70.00	6.28	6.04	0.00
72.50	6.28	6.04	0.00
75.00	6.28	6.04	0.00
77.50	6.28	6.04	0.00
80.00	6.28	6.04	0.00
82.50	6.28	6.04	0.00
85.00	6.28	6.04	0.00
87.50	6.28	6.04	0.00
90.00	6.28	6.04	0.00
92.50	6.28	6.04	0.00
95.00	6.28	6.04	0.00
97.50	6.28	6.04	0.00
100.00	6.28	6.04	0.00
102.50	6.28	6.04	0.00
105.00	6.28	6.04	0.00
107.50	6.28	6.04	0.00
110.00	6.28	6.04	0.00
112.50	6.28	6.04	0.00
115.00	6.28	6.04	0.00
117.50	6.28	6.04	0.00
120.00	6.28	6.04	0.00

Summary for Subcatchment E3EX PRO: EX.IMP.BLDG

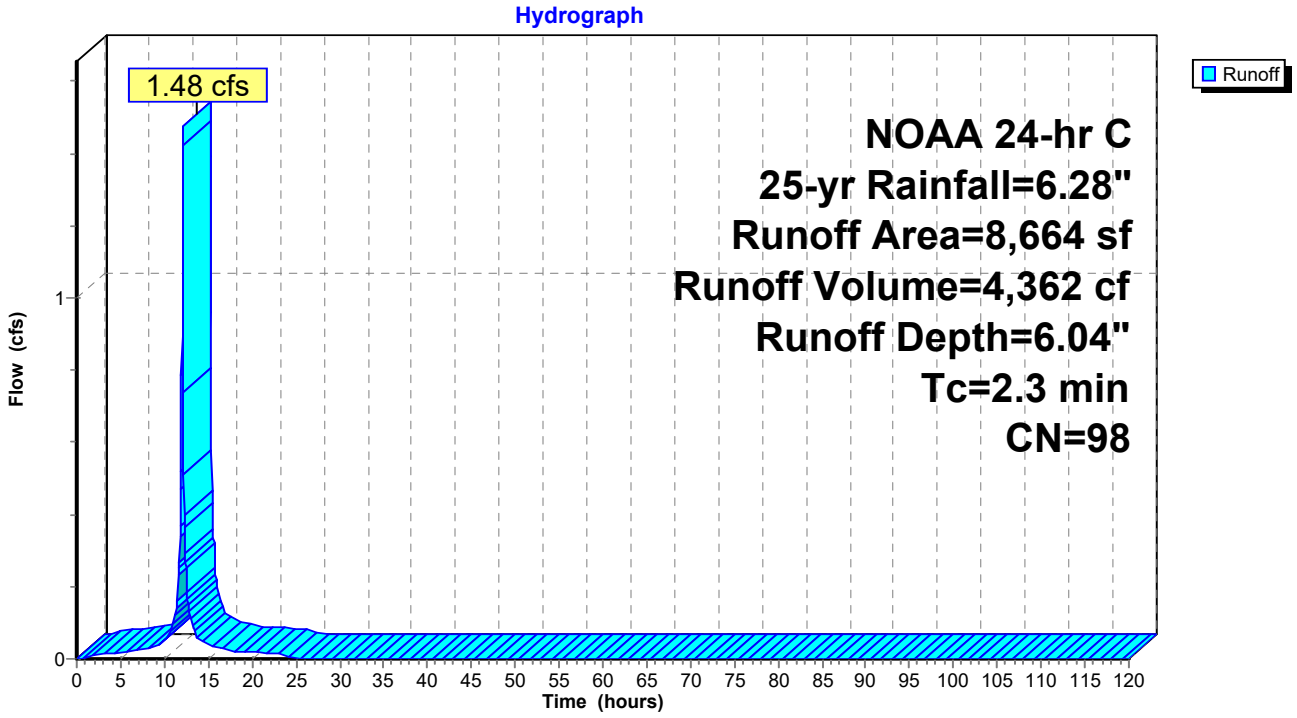
Runoff = 1.48 cfs @ 12.08 hrs, Volume= 4,362 cf, Depth= 6.04"
Routed to Reach EX1 PRO : POI-1 for EXDA-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 25-yr Rainfall=6.28"

Area (sf)	CN	Description
8,664	98	Roofs, HSG D
8,664		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3					**Direct Entry,**

Subcatchment E3EX PRO: EX.IMP.BLDG



Hydrograph for Subcatchment E3EX PRO: EX.IMP.BLDG

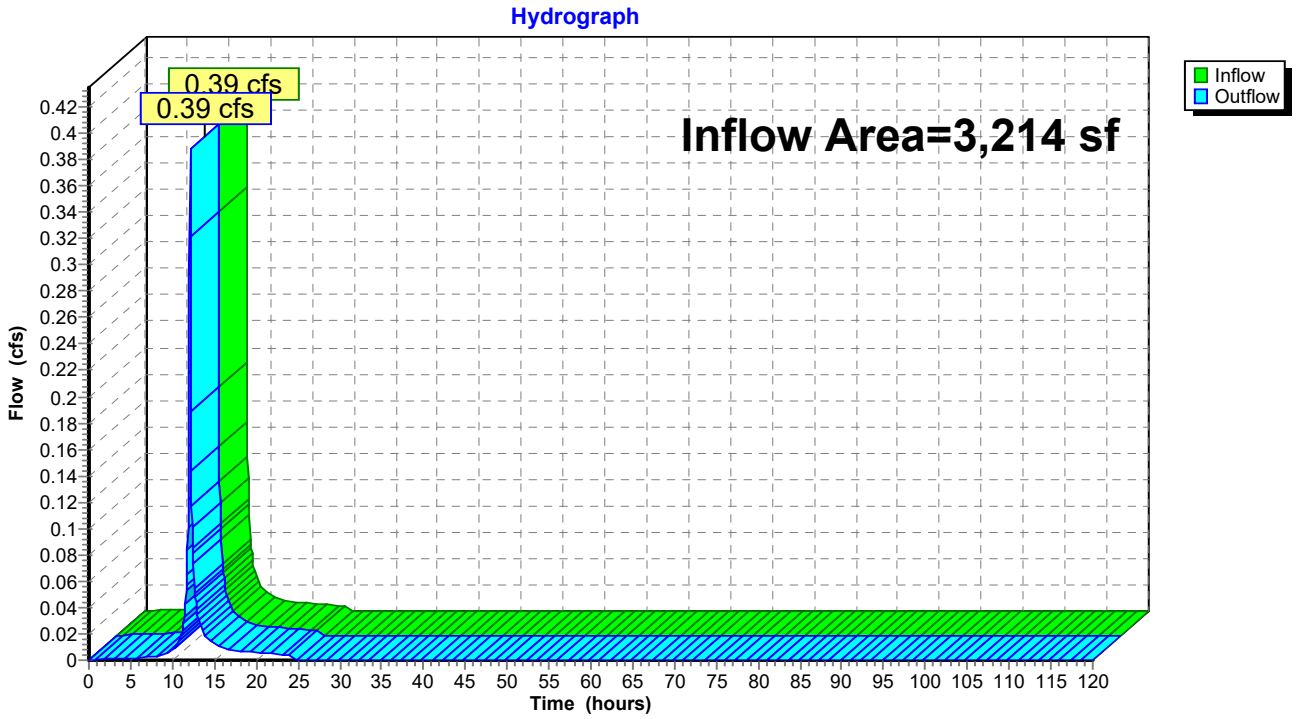
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.18	0.06	0.01
5.00	0.40	0.23	0.02
7.50	0.68	0.48	0.03
10.00	1.15	0.93	**0.05**
12.50	4.42	4.19	**0.25**
15.00	5.36	5.13	0.04
17.50	5.73	5.49	0.02
20.00	5.97	5.73	0.02
22.50	**6.18**	**5.94**	0.01
25.00	**6.28**	**6.04**	0.00
27.50	6.28	6.04	0.00
30.00	6.28	6.04	0.00
32.50	6.28	6.04	0.00
35.00	6.28	6.04	0.00
37.50	6.28	6.04	0.00
40.00	6.28	6.04	0.00
42.50	6.28	6.04	0.00
45.00	6.28	6.04	0.00
47.50	6.28	6.04	0.00
50.00	6.28	6.04	0.00
52.50	6.28	6.04	0.00
55.00	6.28	6.04	0.00
57.50	6.28	6.04	0.00
60.00	6.28	6.04	0.00
62.50	6.28	6.04	0.00
65.00	6.28	6.04	0.00
67.50	6.28	6.04	0.00
70.00	6.28	6.04	0.00
72.50	6.28	6.04	0.00
75.00	6.28	6.04	0.00
77.50	6.28	6.04	0.00
80.00	6.28	6.04	0.00
82.50	6.28	6.04	0.00
85.00	6.28	6.04	0.00
87.50	6.28	6.04	0.00
90.00	6.28	6.04	0.00
92.50	6.28	6.04	0.00
95.00	6.28	6.04	0.00
97.50	6.28	6.04	0.00
100.00	6.28	6.04	0.00
102.50	6.28	6.04	0.00
105.00	6.28	6.04	0.00
107.50	6.28	6.04	0.00
110.00	6.28	6.04	0.00
112.50	6.28	6.04	0.00
115.00	6.28	6.04	0.00
117.50	6.28	6.04	0.00
120.00	6.28	6.04	0.00

Summary for Reach 2EX PROJ: POI-2 for EXDA-2

Inflow Area = 3,214 sf, 27.41% Impervious, Inflow Depth = 4.14" for 25-yr event
Inflow = 0.39 cfs @ 12.10 hrs, Volume= 1,109 cf
Outflow = 0.39 cfs @ 12.10 hrs, Volume= 1,109 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach 2EX PROJ: POI-2 for EXDA-2



Hydrograph for Reach 2EX PROJ: POI-2 for EXDA-2

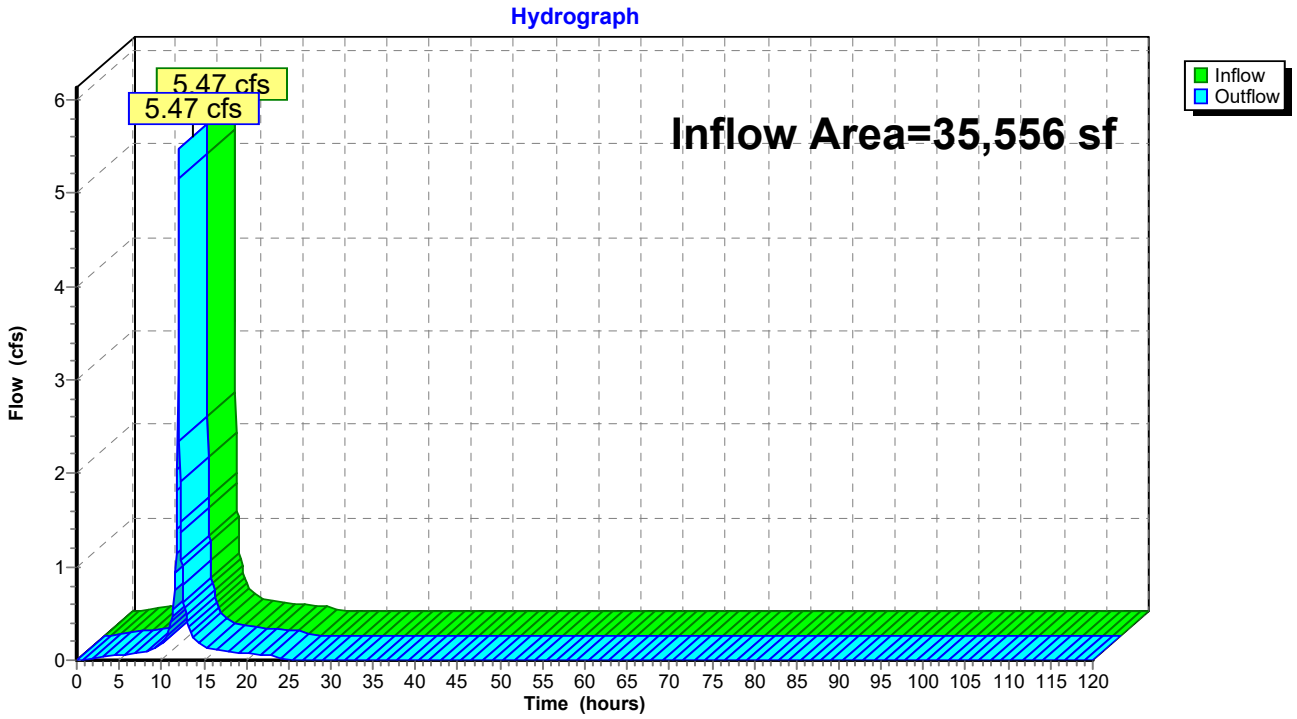
Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00
2.50	0.00		0.00
5.00	0.00		0.00
7.50	0.00		0.00
10.00	**0.01**		**0.01**
12.50	**0.08**		**0.08**
15.00	0.01		0.01
17.50	0.01		0.01
20.00	0.01		0.01
22.50	0.00		0.00
25.00	0.00		0.00
27.50	0.00		0.00
30.00	0.00		0.00
32.50	0.00		0.00
35.00	0.00		0.00
37.50	0.00		0.00
40.00	0.00		0.00
42.50	0.00		0.00
45.00	0.00		0.00
47.50	0.00		0.00
50.00	0.00		0.00
52.50	0.00		0.00
55.00	0.00		0.00
57.50	0.00		0.00
60.00	0.00		0.00
62.50	0.00		0.00
65.00	0.00		0.00
67.50	0.00		0.00
70.00	0.00		0.00
72.50	0.00		0.00
75.00	0.00		0.00
77.50	0.00		0.00
80.00	0.00		0.00
82.50	0.00		0.00
85.00	0.00		0.00
87.50	0.00		0.00
90.00	0.00		0.00
92.50	0.00		0.00
95.00	0.00		0.00
97.50	0.00		0.00
100.00	0.00		0.00
102.50	0.00		0.00
105.00	0.00		0.00
107.50	0.00		0.00
110.00	0.00		0.00
112.50	0.00		0.00
115.00	0.00		0.00
117.50	0.00		0.00
120.00	0.00		0.00

Summary for Reach EX1 PRO: POI-1 for EXDA-1

Inflow Area = 35,556 sf, 77.32% Impervious, Inflow Depth = 5.45" for 25-yr event
Inflow = 5.47 cfs @ 12.07 hrs, Volume= 16,140 cf
Outflow = 5.47 cfs @ 12.07 hrs, Volume= 16,140 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach EX1 PRO: POI-1 for EXDA-1



Hydrograph for Reach EX1 PRO: POI-1 for EXDA-1

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00
2.50	0.03		0.03
5.00	0.05		0.05
7.50	0.08		0.08
10.00	**0.18**		**0.18**
12.50	**0.95**		**0.95**
15.00	0.15		0.15
17.50	0.09		0.09
20.00	0.07		0.07
22.50	0.06		0.06
25.00	0.00		0.00
27.50	0.00		0.00
30.00	0.00		0.00
32.50	0.00		0.00
35.00	0.00		0.00
37.50	0.00		0.00
40.00	0.00		0.00
42.50	0.00		0.00
45.00	0.00		0.00
47.50	0.00		0.00
50.00	0.00		0.00
52.50	0.00		0.00
55.00	0.00		0.00
57.50	0.00		0.00
60.00	0.00		0.00
62.50	0.00		0.00
65.00	0.00		0.00
67.50	0.00		0.00
70.00	0.00		0.00
72.50	0.00		0.00
75.00	0.00		0.00
77.50	0.00		0.00
80.00	0.00		0.00
82.50	0.00		0.00
85.00	0.00		0.00
87.50	0.00		0.00
90.00	0.00		0.00
92.50	0.00		0.00
95.00	0.00		0.00
97.50	0.00		0.00
100.00	0.00		0.00
102.50	0.00		0.00
105.00	0.00		0.00
107.50	0.00		0.00
110.00	0.00		0.00
112.50	0.00		0.00
115.00	0.00		0.00
117.50	0.00		0.00
120.00	0.00		0.00

Summary for Subcatchment 1EX PRO: EX.PER

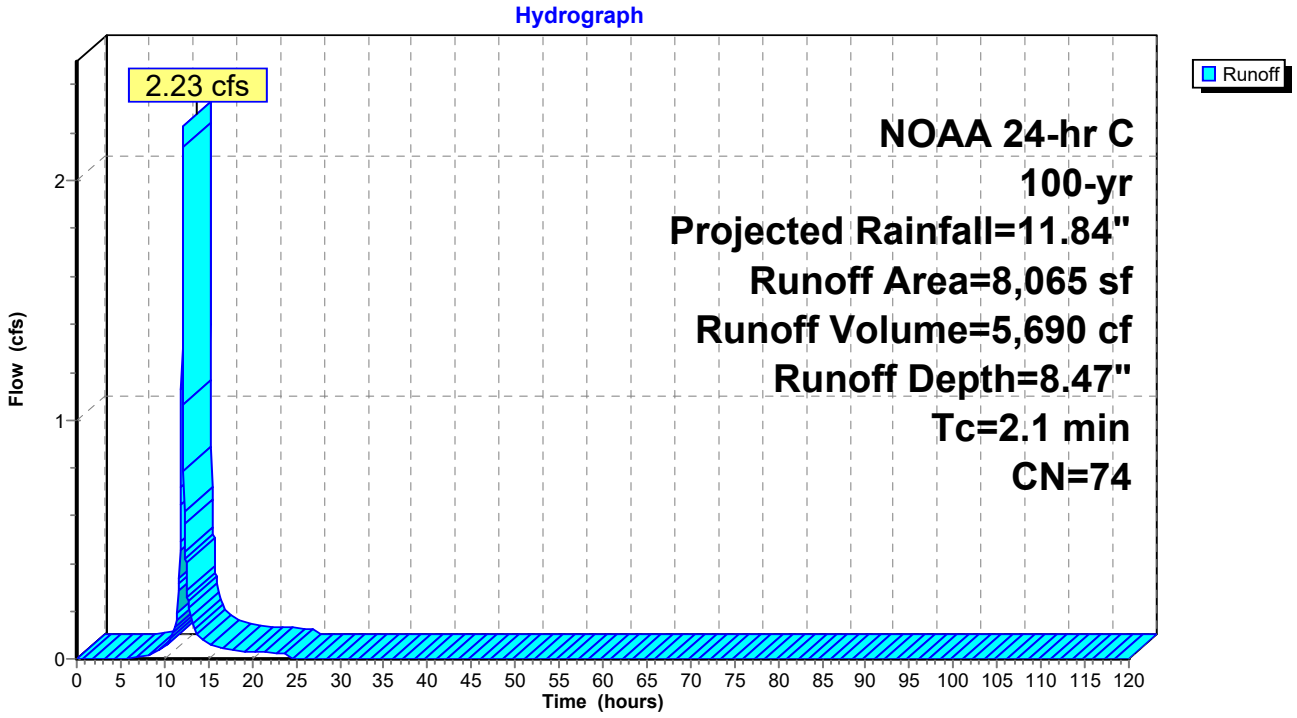
Runoff = 2.23 cfs @ 12.08 hrs, Volume= 5,690 cf, Depth= 8.47"
Routed to Reach EX1 PRO : POI-1 for EXDA-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 100-yr, Projected Rainfall=11.84"

Area (sf)	CN	Description
8,065	74	>75% Grass cover, Good, HSG C
8,065		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1					**Direct Entry,**

Subcatchment 1EX PRO: EX.PER



Hydrograph for Subcatchment 1EX PRO: EX.PER

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.34	0.00	0.00
5.00	0.75	0.00	0.00
7.50	1.28	0.08	0.01
10.00	2.16	0.43	**0.05**
12.50	8.34	5.23	**0.40**
15.00	10.11	6.85	0.06
17.50	10.80	7.49	0.04
20.00	11.26	7.92	0.03
22.50	**11.64**	**8.28**	0.02
25.00	**11.84**	**8.47**	0.00
27.50	11.84	8.47	0.00
30.00	11.84	8.47	0.00
32.50	11.84	8.47	0.00
35.00	11.84	8.47	0.00
37.50	11.84	8.47	0.00
40.00	11.84	8.47	0.00
42.50	11.84	8.47	0.00
45.00	11.84	8.47	0.00
47.50	11.84	8.47	0.00
50.00	11.84	8.47	0.00
52.50	11.84	8.47	0.00
55.00	11.84	8.47	0.00
57.50	11.84	8.47	0.00
60.00	11.84	8.47	0.00
62.50	11.84	8.47	0.00
65.00	11.84	8.47	0.00
67.50	11.84	8.47	0.00
70.00	11.84	8.47	0.00
72.50	11.84	8.47	0.00
75.00	11.84	8.47	0.00
77.50	11.84	8.47	0.00
80.00	11.84	8.47	0.00
82.50	11.84	8.47	0.00
85.00	11.84	8.47	0.00
87.50	11.84	8.47	0.00
90.00	11.84	8.47	0.00
92.50	11.84	8.47	0.00
95.00	11.84	8.47	0.00
97.50	11.84	8.47	0.00
100.00	11.84	8.47	0.00
102.50	11.84	8.47	0.00
105.00	11.84	8.47	0.00
107.50	11.84	8.47	0.00
110.00	11.84	8.47	0.00
112.50	11.84	8.47	0.00
115.00	11.84	8.47	0.00
117.50	11.84	8.47	0.00
120.00	11.84	8.47	0.00

Summary for Subcatchment 2EX PRO: EX.IMP.SITE

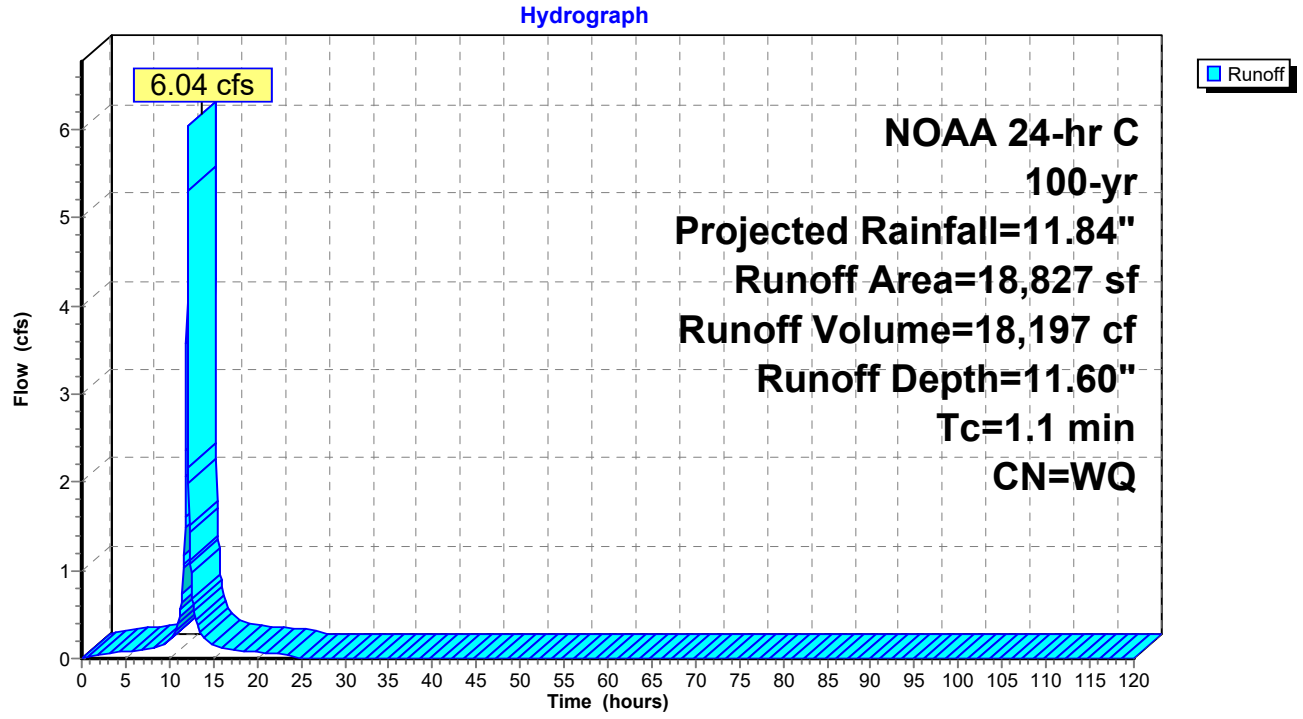
Runoff = 6.04 cfs @ 12.06 hrs, Volume= 18,197 cf, Depth=11.60"
Routed to Reach EX1 PRO : POI-1 for EXDA-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 100-yr, Projected Rainfall=11.84"

	Area (sf)	CN	Description
	13,557	98	Paved parking, HSG D
*	5,270	98	Impervious walkway
	18,827		Weighted Average
	18,827		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1					**Direct Entry,**

Subcatchment 2EX PRO: EX.IMP.SITE



Hydrograph for Subcatchment 2EX PRO: EX.IMP.SITE

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.34	0.18	0.05
5.00	0.75	0.55	0.07
7.50	1.28	1.06	0.11
10.00	2.16	1.93	**0.22**
12.50	8.34	8.10	**0.98**
15.00	10.11	9.87	0.15
17.50	10.80	10.56	0.10
20.00	11.26	11.02	0.07
22.50	**11.64**	**11.40**	0.06
25.00	**11.84**	**11.60**	0.00
27.50	11.84	11.60	0.00
30.00	11.84	11.60	0.00
32.50	11.84	11.60	0.00
35.00	11.84	11.60	0.00
37.50	11.84	11.60	0.00
40.00	11.84	11.60	0.00
42.50	11.84	11.60	0.00
45.00	11.84	11.60	0.00
47.50	11.84	11.60	0.00
50.00	11.84	11.60	0.00
52.50	11.84	11.60	0.00
55.00	11.84	11.60	0.00
57.50	11.84	11.60	0.00
60.00	11.84	11.60	0.00
62.50	11.84	11.60	0.00
65.00	11.84	11.60	0.00
67.50	11.84	11.60	0.00
70.00	11.84	11.60	0.00
72.50	11.84	11.60	0.00
75.00	11.84	11.60	0.00
77.50	11.84	11.60	0.00
80.00	11.84	11.60	0.00
82.50	11.84	11.60	0.00
85.00	11.84	11.60	0.00
87.50	11.84	11.60	0.00
90.00	11.84	11.60	0.00
92.50	11.84	11.60	0.00
95.00	11.84	11.60	0.00
97.50	11.84	11.60	0.00
100.00	11.84	11.60	0.00
102.50	11.84	11.60	0.00
105.00	11.84	11.60	0.00
107.50	11.84	11.60	0.00
110.00	11.84	11.60	0.00
112.50	11.84	11.60	0.00
115.00	11.84	11.60	0.00
117.50	11.84	11.60	0.00
120.00	11.84	11.60	0.00

Summary for Subcatchment 4EX PRO: EX.PER

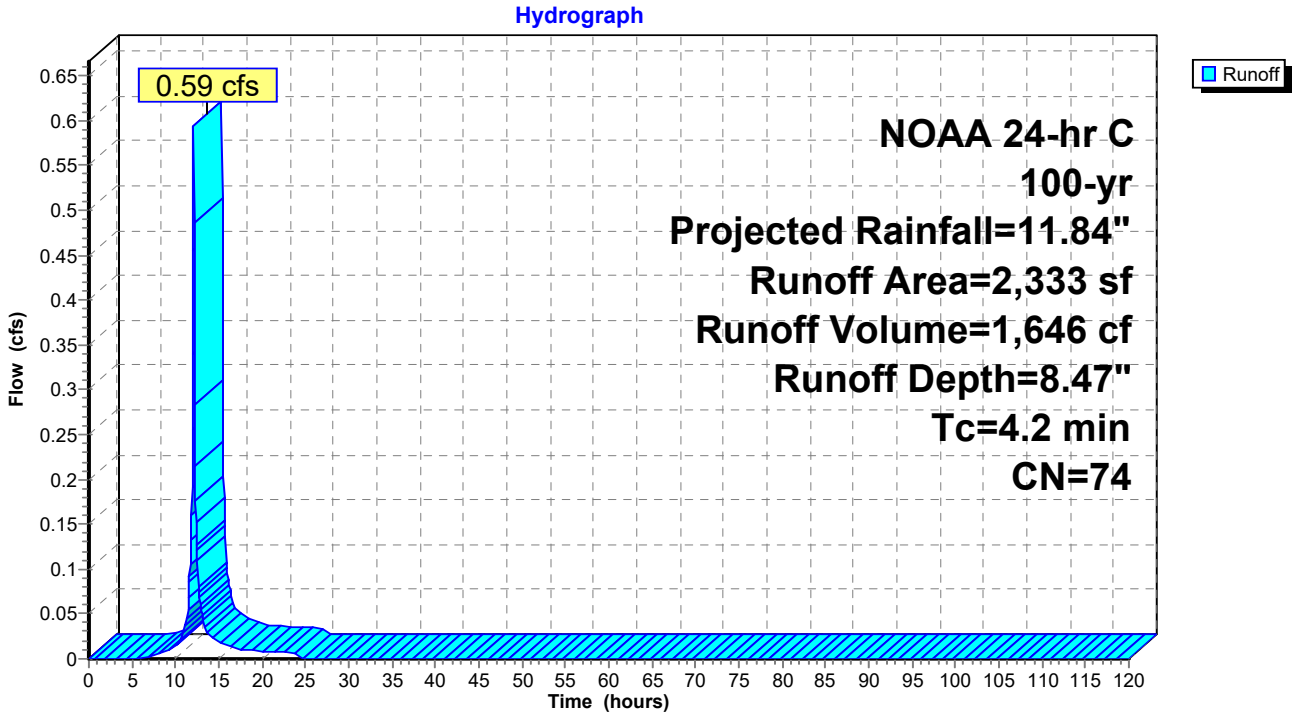
Runoff = 0.59 cfs @ 12.10 hrs, Volume= 1,646 cf, Depth= 8.47"
Routed to Reach 2EX PROJ : POI-2 for EXDA-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 100-yr, Projected Rainfall=11.84"

	Area (sf)	CN	Description
*	2,333	74	>75% Grass cover, Good, HSG C
	2,333		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2					**Direct Entry,**

Subcatchment 4EX PRO: EX.PER



Hydrograph for Subcatchment 4EX PRO: EX.PER

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.34	0.00	0.00
5.00	0.75	0.00	0.00
7.50	1.28	0.08	0.00
10.00	2.16	0.43	**0.01**
12.50	8.34	5.23	**0.12**
15.00	10.11	6.85	0.02
17.50	10.80	7.49	0.01
20.00	11.26	7.92	0.01
22.50	**11.64**	**8.28**	0.01
25.00	**11.84**	**8.47**	0.00
27.50	11.84	8.47	0.00
30.00	11.84	8.47	0.00
32.50	11.84	8.47	0.00
35.00	11.84	8.47	0.00
37.50	11.84	8.47	0.00
40.00	11.84	8.47	0.00
42.50	11.84	8.47	0.00
45.00	11.84	8.47	0.00
47.50	11.84	8.47	0.00
50.00	11.84	8.47	0.00
52.50	11.84	8.47	0.00
55.00	11.84	8.47	0.00
57.50	11.84	8.47	0.00
60.00	11.84	8.47	0.00
62.50	11.84	8.47	0.00
65.00	11.84	8.47	0.00
67.50	11.84	8.47	0.00
70.00	11.84	8.47	0.00
72.50	11.84	8.47	0.00
75.00	11.84	8.47	0.00
77.50	11.84	8.47	0.00
80.00	11.84	8.47	0.00
82.50	11.84	8.47	0.00
85.00	11.84	8.47	0.00
87.50	11.84	8.47	0.00
90.00	11.84	8.47	0.00
92.50	11.84	8.47	0.00
95.00	11.84	8.47	0.00
97.50	11.84	8.47	0.00
100.00	11.84	8.47	0.00
102.50	11.84	8.47	0.00
105.00	11.84	8.47	0.00
107.50	11.84	8.47	0.00
110.00	11.84	8.47	0.00
112.50	11.84	8.47	0.00
115.00	11.84	8.47	0.00
117.50	11.84	8.47	0.00
120.00	11.84	8.47	0.00

Summary for Subcatchment 5EX PRO: EX.IMP.SITE

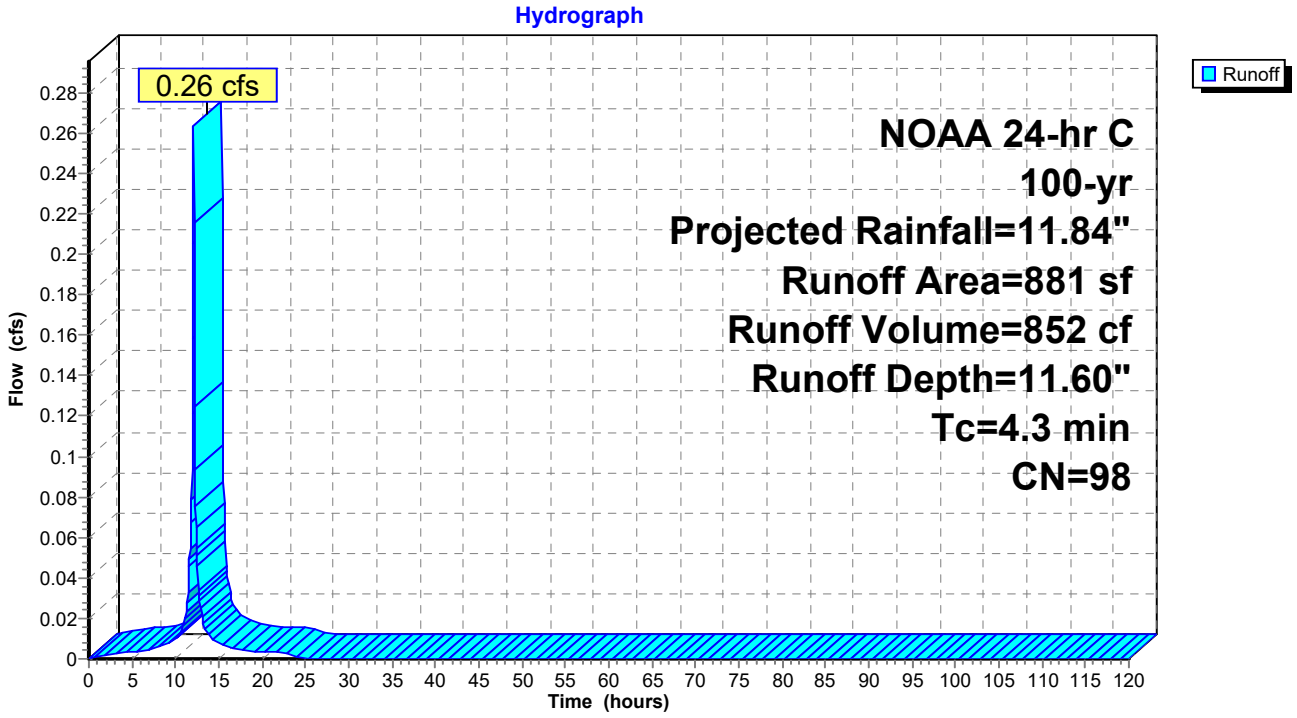
Runoff = 0.26 cfs @ 12.10 hrs, Volume= 852 cf, Depth=11.60"
Routed to Reach 2EX PROJ : POI-2 for EXDA-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 100-yr, Projected Rainfall=11.84"

	Area (sf)	CN	Description
*	881	98	Paved parking, HSG D
	881		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3					**Direct Entry,**

Subcatchment 5EX PRO: EX.IMP.SITE



Hydrograph for Subcatchment 5EX PRO: EX.IMP.SITE

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.34	0.18	0.00
5.00	0.75	0.55	0.00
7.50	1.28	1.06	0.01
10.00	2.16	1.93	**0.01**
12.50	8.34	8.10	**0.05**
15.00	10.11	9.87	0.01
17.50	10.80	10.56	0.00
20.00	11.26	11.02	0.00
22.50	**11.64**	**11.40**	0.00
25.00	**11.84**	**11.60**	0.00
27.50	11.84	11.60	0.00
30.00	11.84	11.60	0.00
32.50	11.84	11.60	0.00
35.00	11.84	11.60	0.00
37.50	11.84	11.60	0.00
40.00	11.84	11.60	0.00
42.50	11.84	11.60	0.00
45.00	11.84	11.60	0.00
47.50	11.84	11.60	0.00
50.00	11.84	11.60	0.00
52.50	11.84	11.60	0.00
55.00	11.84	11.60	0.00
57.50	11.84	11.60	0.00
60.00	11.84	11.60	0.00
62.50	11.84	11.60	0.00
65.00	11.84	11.60	0.00
67.50	11.84	11.60	0.00
70.00	11.84	11.60	0.00
72.50	11.84	11.60	0.00
75.00	11.84	11.60	0.00
77.50	11.84	11.60	0.00
80.00	11.84	11.60	0.00
82.50	11.84	11.60	0.00
85.00	11.84	11.60	0.00
87.50	11.84	11.60	0.00
90.00	11.84	11.60	0.00
92.50	11.84	11.60	0.00
95.00	11.84	11.60	0.00
97.50	11.84	11.60	0.00
100.00	11.84	11.60	0.00
102.50	11.84	11.60	0.00
105.00	11.84	11.60	0.00
107.50	11.84	11.60	0.00
110.00	11.84	11.60	0.00
112.50	11.84	11.60	0.00
115.00	11.84	11.60	0.00
117.50	11.84	11.60	0.00
120.00	11.84	11.60	0.00

Summary for Subcatchment E3EX PRO: EX.IMP.BLDG

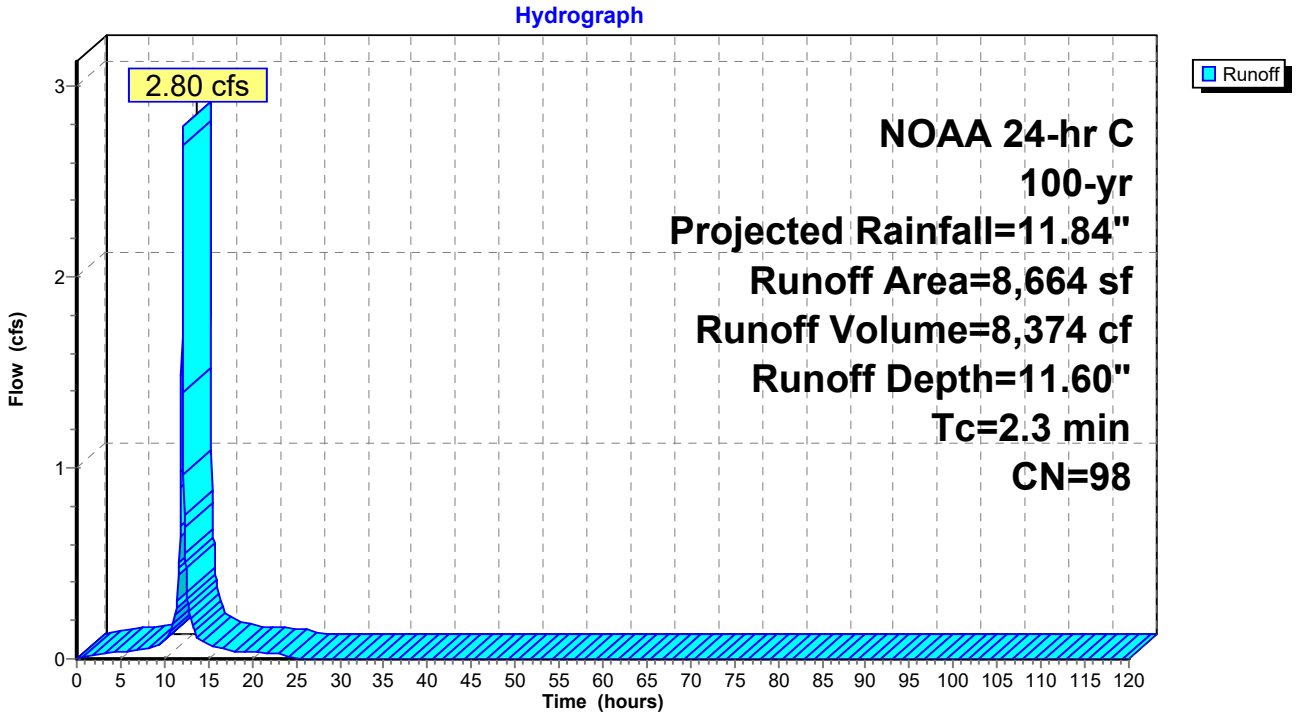
Runoff = 2.80 cfs @ 12.08 hrs, Volume= 8,374 cf, Depth=11.60"
Routed to Reach EX1 PRO : POI-1 for EXDA-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 100-yr, Projected Rainfall=11.84"

Area (sf)	CN	Description
8,664	98	Roofs, HSG D
8,664		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3					**Direct Entry,**

Subcatchment E3EX PRO: EX.IMP.BLDG



Hydrograph for Subcatchment E3EX PRO: EX.IMP.BLDG

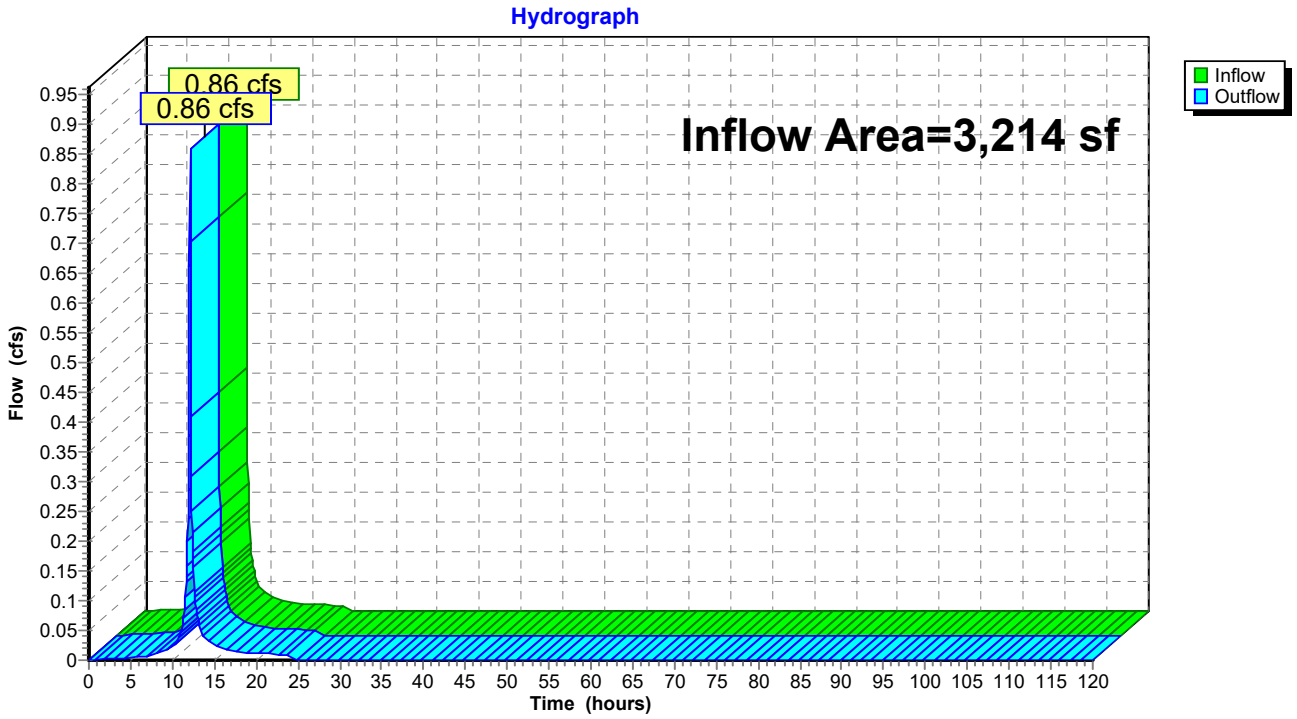
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.34	0.18	0.02
5.00	0.75	0.55	0.03
7.50	1.28	1.06	0.05
10.00	2.16	1.93	**0.10**
12.50	8.34	8.10	**0.47**
15.00	10.11	9.87	0.07
17.50	10.80	10.56	0.04
20.00	11.26	11.02	0.03
22.50	**11.64**	**11.40**	0.03
25.00	**11.84**	**11.60**	0.00
27.50	11.84	11.60	0.00
30.00	11.84	11.60	0.00
32.50	11.84	11.60	0.00
35.00	11.84	11.60	0.00
37.50	11.84	11.60	0.00
40.00	11.84	11.60	0.00
42.50	11.84	11.60	0.00
45.00	11.84	11.60	0.00
47.50	11.84	11.60	0.00
50.00	11.84	11.60	0.00
52.50	11.84	11.60	0.00
55.00	11.84	11.60	0.00
57.50	11.84	11.60	0.00
60.00	11.84	11.60	0.00
62.50	11.84	11.60	0.00
65.00	11.84	11.60	0.00
67.50	11.84	11.60	0.00
70.00	11.84	11.60	0.00
72.50	11.84	11.60	0.00
75.00	11.84	11.60	0.00
77.50	11.84	11.60	0.00
80.00	11.84	11.60	0.00
82.50	11.84	11.60	0.00
85.00	11.84	11.60	0.00
87.50	11.84	11.60	0.00
90.00	11.84	11.60	0.00
92.50	11.84	11.60	0.00
95.00	11.84	11.60	0.00
97.50	11.84	11.60	0.00
100.00	11.84	11.60	0.00
102.50	11.84	11.60	0.00
105.00	11.84	11.60	0.00
107.50	11.84	11.60	0.00
110.00	11.84	11.60	0.00
112.50	11.84	11.60	0.00
115.00	11.84	11.60	0.00
117.50	11.84	11.60	0.00
120.00	11.84	11.60	0.00

Summary for Reach 2EX PROJ: POI-2 for EXDA-2

Inflow Area = 3,214 sf, 27.41% Impervious, Inflow Depth = 9.32" for 100-yr, Projected event
Inflow = 0.86 cfs @ 12.10 hrs, Volume= 2,498 cf
Outflow = 0.86 cfs @ 12.10 hrs, Volume= 2,498 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach 2EX PROJ: POI-2 for EXDA-2



Hydrograph for Reach 2EX PROJ: POI-2 for EXDA-2

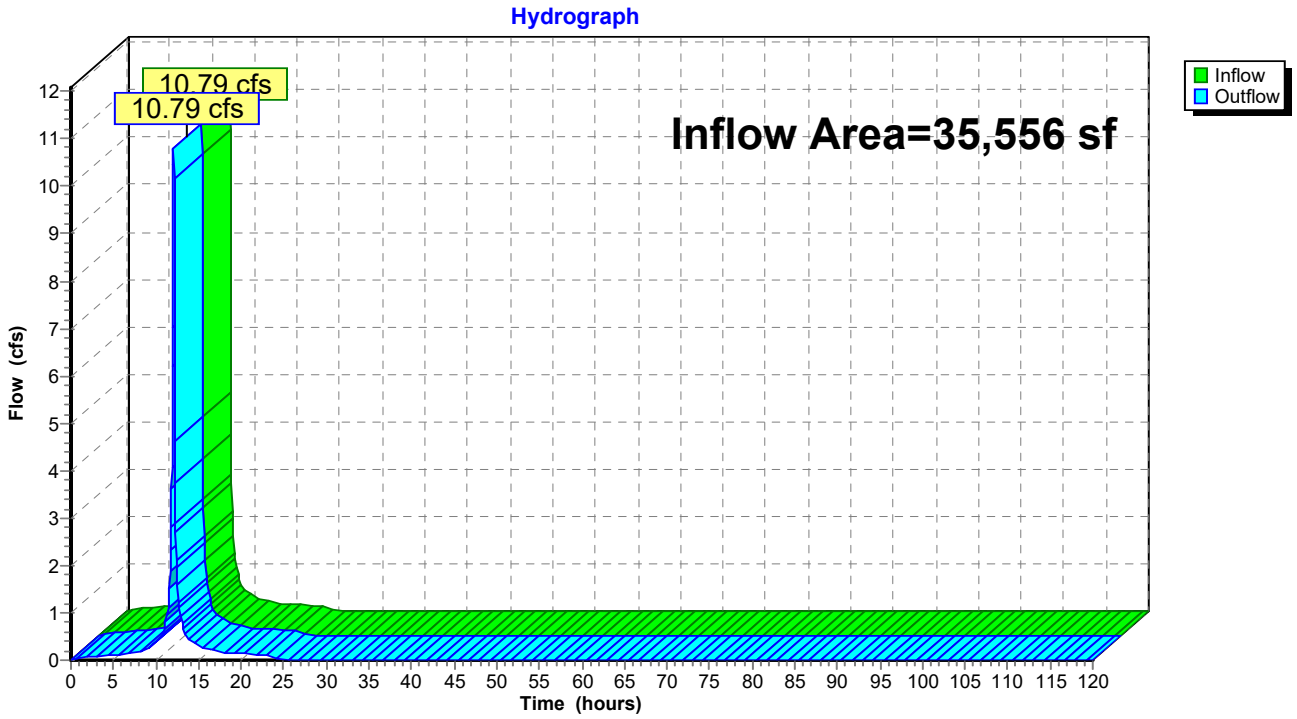
Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00
2.50	0.00		0.00
5.00	0.00		0.00
7.50	0.01		0.01
10.00	**0.02**		**0.02**
12.50	**0.17**		**0.17**
15.00	0.02		0.02
17.50	0.02		0.02
20.00	0.01		0.01
22.50	0.01		0.01
25.00	0.00		0.00
27.50	0.00		0.00
30.00	0.00		0.00
32.50	0.00		0.00
35.00	0.00		0.00
37.50	0.00		0.00
40.00	0.00		0.00
42.50	0.00		0.00
45.00	0.00		0.00
47.50	0.00		0.00
50.00	0.00		0.00
52.50	0.00		0.00
55.00	0.00		0.00
57.50	0.00		0.00
60.00	0.00		0.00
62.50	0.00		0.00
65.00	0.00		0.00
67.50	0.00		0.00
70.00	0.00		0.00
72.50	0.00		0.00
75.00	0.00		0.00
77.50	0.00		0.00
80.00	0.00		0.00
82.50	0.00		0.00
85.00	0.00		0.00
87.50	0.00		0.00
90.00	0.00		0.00
92.50	0.00		0.00
95.00	0.00		0.00
97.50	0.00		0.00
100.00	0.00		0.00
102.50	0.00		0.00
105.00	0.00		0.00
107.50	0.00		0.00
110.00	0.00		0.00
112.50	0.00		0.00
115.00	0.00		0.00
117.50	0.00		0.00
120.00	0.00		0.00

Summary for Reach EX1 PRO: POI-1 for EXDA-1

Inflow Area = 35,556 sf, 77.32% Impervious, Inflow Depth = 10.89" for 100-yr, Projected event
Inflow = 10.79 cfs @ 12.07 hrs, Volume= 32,261 cf
Outflow = 10.79 cfs @ 12.07 hrs, Volume= 32,261 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach EX1 PRO: POI-1 for EXDA-1



Hydrograph for Reach EX1 PRO: POI-1 for EXDA-1

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00
2.50	0.08		0.08
5.00	0.11		0.11
7.50	0.18		0.18
10.00	**0.37**		**0.37**
12.50	**1.85**		**1.85**
15.00	0.28		0.28
17.50	0.18		0.18
20.00	0.14		0.14
22.50	0.11		0.11
25.00	0.00		0.00
27.50	0.00		0.00
30.00	0.00		0.00
32.50	0.00		0.00
35.00	0.00		0.00
37.50	0.00		0.00
40.00	0.00		0.00
42.50	0.00		0.00
45.00	0.00		0.00
47.50	0.00		0.00
50.00	0.00		0.00
52.50	0.00		0.00
55.00	0.00		0.00
57.50	0.00		0.00
60.00	0.00		0.00
62.50	0.00		0.00
65.00	0.00		0.00
67.50	0.00		0.00
70.00	0.00		0.00
72.50	0.00		0.00
75.00	0.00		0.00
77.50	0.00		0.00
80.00	0.00		0.00
82.50	0.00		0.00
85.00	0.00		0.00
87.50	0.00		0.00
90.00	0.00		0.00
92.50	0.00		0.00
95.00	0.00		0.00
97.50	0.00		0.00
100.00	0.00		0.00
102.50	0.00		0.00
105.00	0.00		0.00
107.50	0.00		0.00
110.00	0.00		0.00
112.50	0.00		0.00
115.00	0.00		0.00
117.50	0.00		0.00
120.00	0.00		0.00

Appendix C
Post-Development Drainage Area and Land Cover Summary / Runoff Hydrographs

STORMWATER ANALYSIS

PROJECT: Cooper University Hospital - Benson Pavilion
LOCATION: Camden, New Jersey
JOB #: 220245001
DATE: 08 October 2026

LAND COVER SUMMARY - POST-DEVELOPMENT CONDITIONS

DRAINAGE AREA	LAND COVER	HYDROLOGIC SOIL GROUP	AREA		CN	Tc	
			SF	ACRES		Current	Projected
PRDA-1 (POI-1)	Impervious Building (Roof - to BMP-1)	C	31,802	0.730	98	1.7	1.6
	Impervious driveway/road	C	2,755	0.063	98	1.3	1.2
	Impervious Site (Ground)	C	912	0.021	98	1.3	1.2
	Impervious Site (Ground) bypass	C	748	0.017	98	1.3	1.2
	Lawn (fair conditions)	C	52	0.001	79	0.8	0.8
	Lawn (fair conditions) bypass	C	120	0.003	79	0.8	0.8
	TOTAL		**36,389**	**0.835**			

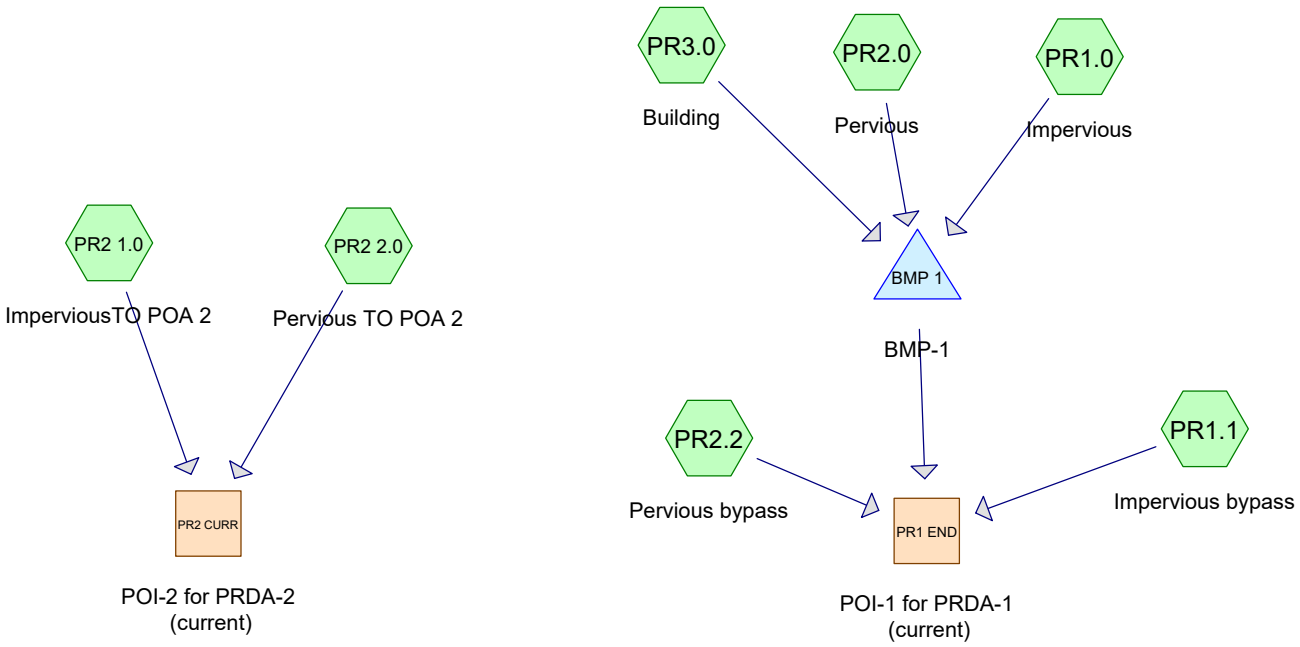
DRAINAGE AREA	LAND COVER	HYDROLOGIC SOIL GROUP	AREA		CN	Tc	
			SF	ACRES		Current	Projected
	Impervious Site (Ground) bypass	C	696	0.016	98	3.7	3.7
	Lawn (fair conditions) bypass	C	1,685	0.039	79	4.0	3.9
	TOTAL		**2,381**	**0.055**			

total on-site 38,770

DRAINAGE AREA	LAND COVER	HYDROLOGIC SOIL GROUP	AREA		CN	Tc	
			SF	ACRES		Current	Projected
EX DISTURBED R.O.W. TO CITY SEWER	Impervious driveway/road	C	5,705	0.131	98		
	Impervious Site (Ground)	C	7,218	0.166	98		
	Lawn	C	2,329	0.053	74		
	TOTAL		**15,252**	**0.350**			

total disturbed 54,022

CURRENT



Subcat Reach Pond Link

Routing Diagram for 2026-10-05 Benson Pavilion - MCM-Final
Prepared by Langan Engineering, Printed 10/7/2026
HydroCAD® 10.20-8a s/n 08223 © 2025 HydroCAD Software Solutions LLC

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr, Current	NOAA 24-hr	C	Default	24.00	1	3.41	2
2	10-yr, Current	NOAA 24-hr	C	Default	24.00	1	5.26	2
3	100-yr, Current	NOAA 24-hr	C	Default	24.00	1	8.95	2
4	25-yr	NOAA 24-hr	C	Default	24.00	1	6.28	2

Area Listing (selected nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
52	79	50-75% Grass cover, Fair, HSG C (PR2.0)
2,755	98	Paved parking, HSG C (PR1.0)
31,802	98	Roofs, HSG C (PR3.0)
696	98	impervious (PR2 1.0)
1,660	98	impervious walkway (PR1.0, PR1.1)
1,805	79	planters (PR2 2.0, PR2.2)

Summary for Subcatchment PR1.0: Impervious

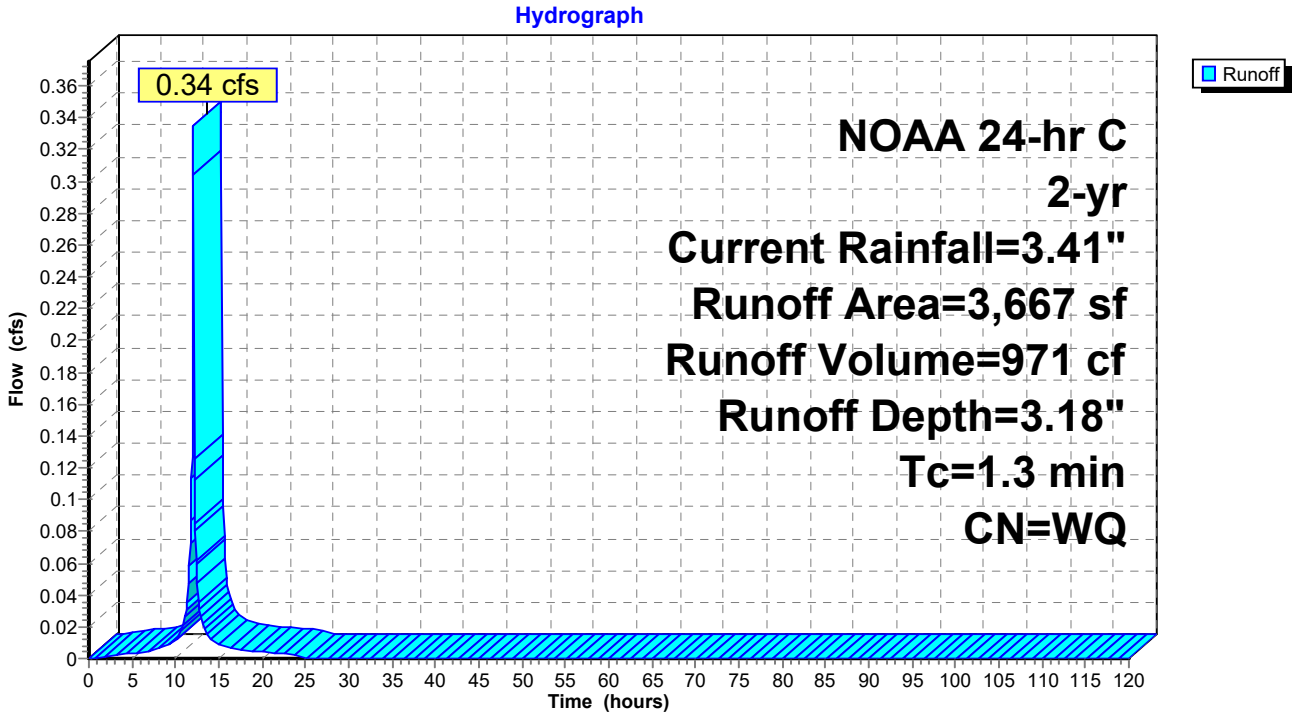
Runoff = 0.34 cfs @ 12.07 hrs, Volume= 971 cf, Depth= 3.18"
Routed to Pond BMP 1 : BMP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 2-yr, Current Rainfall=3.41"

	Area (sf)	CN	Description
*	2,755	98	Paved parking, HSG C
*	912	98	impervious walkway
	3,667		Weighted Average
	3,667		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3					**Direct Entry,**

Subcatchment PR1.0: Impervious



Hydrograph for Subcatchment PR1.0: Impervious

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.10	0.01	0.00
5.00	0.22	0.08	0.00
7.50	0.37	0.20	0.01
10.00	0.62	0.43	**0.01**
12.50	2.40	2.17	**0.06**
15.00	2.91	2.68	0.01
17.50	3.11	2.88	0.01
20.00	3.24	3.01	0.00
22.50	**3.35**	**3.12**	0.00
25.00	**3.41**	**3.18**	0.00
27.50	3.41	3.18	0.00
30.00	3.41	3.18	0.00
32.50	3.41	3.18	0.00
35.00	3.41	3.18	0.00
37.50	3.41	3.18	0.00
40.00	3.41	3.18	0.00
42.50	3.41	3.18	0.00
45.00	3.41	3.18	0.00
47.50	3.41	3.18	0.00
50.00	3.41	3.18	0.00
52.50	3.41	3.18	0.00
55.00	3.41	3.18	0.00
57.50	3.41	3.18	0.00
60.00	3.41	3.18	0.00
62.50	3.41	3.18	0.00
65.00	3.41	3.18	0.00
67.50	3.41	3.18	0.00
70.00	3.41	3.18	0.00
72.50	3.41	3.18	0.00
75.00	3.41	3.18	0.00
77.50	3.41	3.18	0.00
80.00	3.41	3.18	0.00
82.50	3.41	3.18	0.00
85.00	3.41	3.18	0.00
87.50	3.41	3.18	0.00
90.00	3.41	3.18	0.00
92.50	3.41	3.18	0.00
95.00	3.41	3.18	0.00
97.50	3.41	3.18	0.00
100.00	3.41	3.18	0.00
102.50	3.41	3.18	0.00
105.00	3.41	3.18	0.00
107.50	3.41	3.18	0.00
110.00	3.41	3.18	0.00
112.50	3.41	3.18	0.00
115.00	3.41	3.18	0.00
117.50	3.41	3.18	0.00
120.00	3.41	3.18	0.00

Summary for Subcatchment PR1.1: Impervious bypass

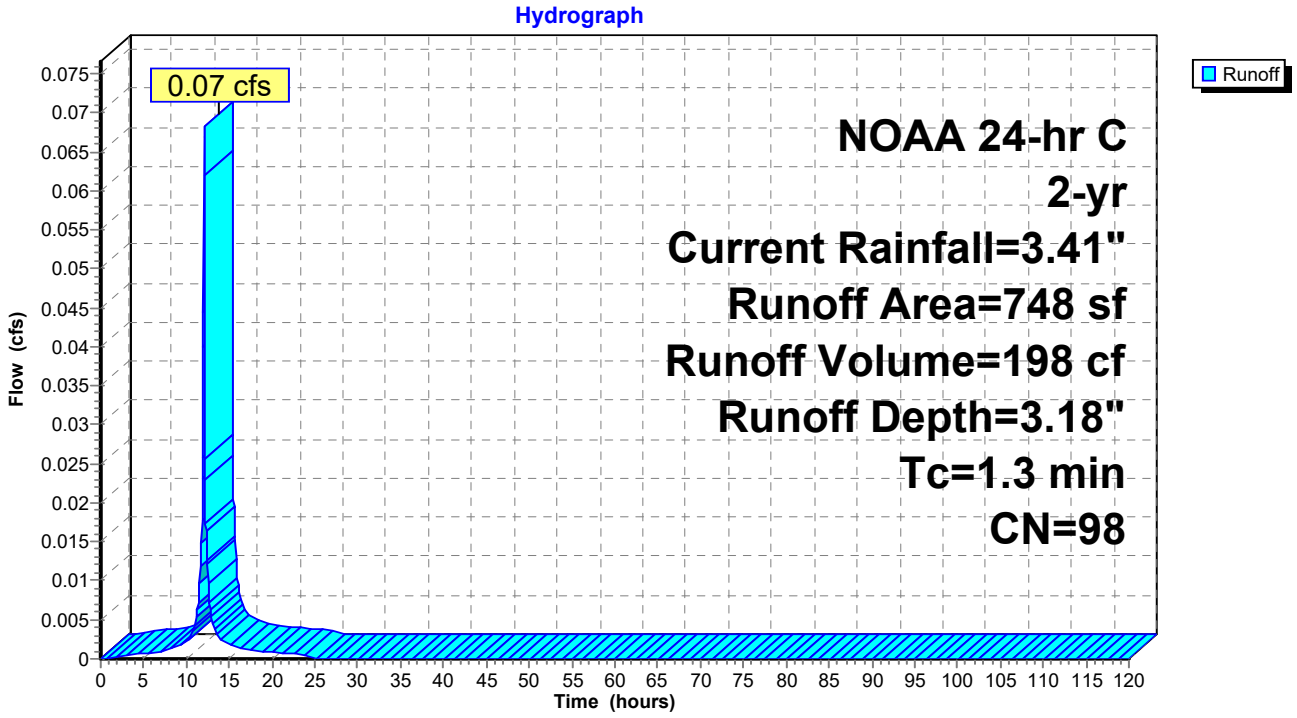
Runoff = 0.07 cfs @ 12.07 hrs, Volume= 198 cf, Depth= 3.18"
Routed to Reach PR1 END : POI-1 for PRDA-1 (current)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 2-yr, Current Rainfall=3.41"

	Area (sf)	CN	Description
*	748	98	impervious walkway
	748		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3					**Direct Entry,**

Subcatchment PR1.1: Impervious bypass



Hydrograph for Subcatchment PR1.1: Impervious bypass

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.10	0.01	0.00
5.00	0.22	0.08	0.00
7.50	0.37	0.20	0.00
10.00	0.62	0.43	**0.00**
12.50	2.40	2.17	**0.01**
15.00	2.91	2.68	0.00
17.50	3.11	2.88	0.00
20.00	3.24	3.01	0.00
22.50	**3.35**	**3.12**	0.00
25.00	**3.41**	**3.18**	0.00
27.50	3.41	3.18	0.00
30.00	3.41	3.18	0.00
32.50	3.41	3.18	0.00
35.00	3.41	3.18	0.00
37.50	3.41	3.18	0.00
40.00	3.41	3.18	0.00
42.50	3.41	3.18	0.00
45.00	3.41	3.18	0.00
47.50	3.41	3.18	0.00
50.00	3.41	3.18	0.00
52.50	3.41	3.18	0.00
55.00	3.41	3.18	0.00
57.50	3.41	3.18	0.00
60.00	3.41	3.18	0.00
62.50	3.41	3.18	0.00
65.00	3.41	3.18	0.00
67.50	3.41	3.18	0.00
70.00	3.41	3.18	0.00
72.50	3.41	3.18	0.00
75.00	3.41	3.18	0.00
77.50	3.41	3.18	0.00
80.00	3.41	3.18	0.00
82.50	3.41	3.18	0.00
85.00	3.41	3.18	0.00
87.50	3.41	3.18	0.00
90.00	3.41	3.18	0.00
92.50	3.41	3.18	0.00
95.00	3.41	3.18	0.00
97.50	3.41	3.18	0.00
100.00	3.41	3.18	0.00
102.50	3.41	3.18	0.00
105.00	3.41	3.18	0.00
107.50	3.41	3.18	0.00
110.00	3.41	3.18	0.00
112.50	3.41	3.18	0.00
115.00	3.41	3.18	0.00
117.50	3.41	3.18	0.00
120.00	3.41	3.18	0.00

Summary for Subcatchment PR2 1.0: ImperviousTO POA 2

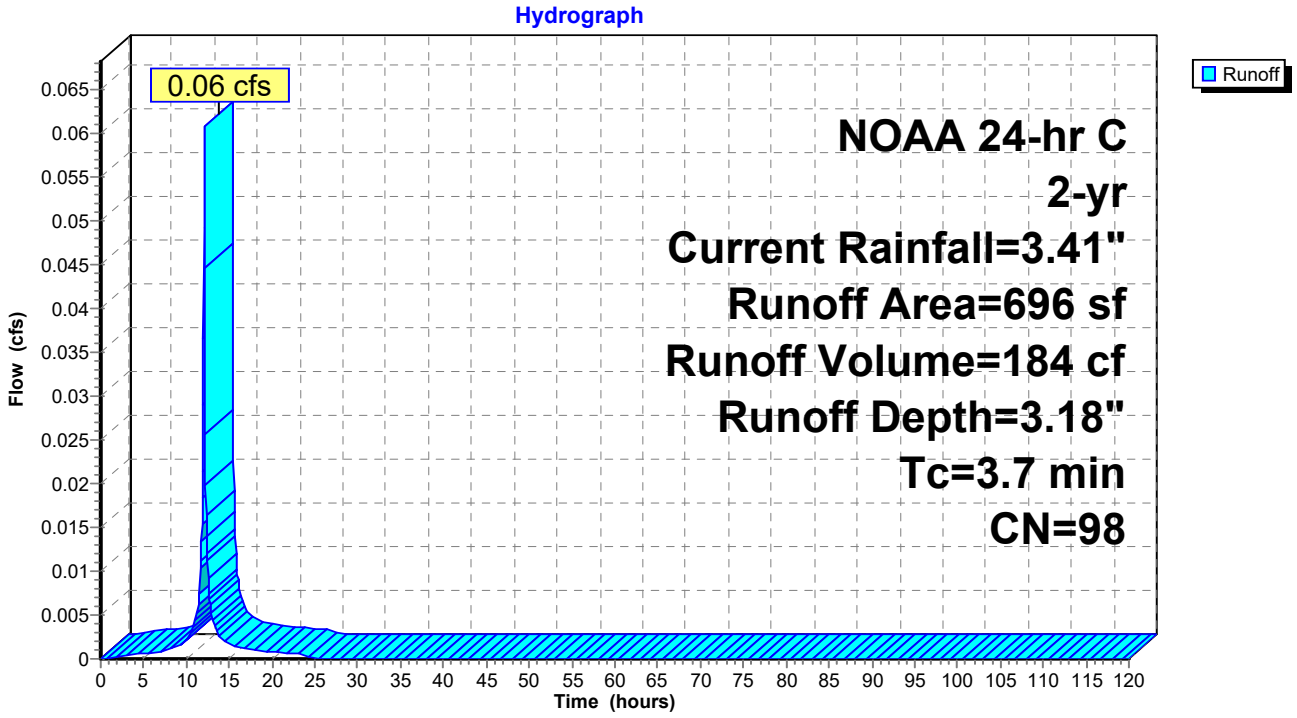
Runoff = 0.06 cfs @ 12.10 hrs, Volume= 184 cf, Depth= 3.18"
Routed to Reach PR2 CURR : POI-2 for PRDA-2 (current)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 2-yr, Current Rainfall=3.41"

	Area (sf)	CN	Description
*	696	98	impervious
	696		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7					**Direct Entry,**

Subcatchment PR2 1.0: ImperviousTO POA 2



Hydrograph for Subcatchment PR2 1.0: ImperviousTO POA 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.10	0.01	0.00
5.00	0.22	0.08	0.00
7.50	0.37	0.20	0.00
10.00	0.62	0.43	**0.00**
12.50	2.40	2.17	**0.01**
15.00	2.91	2.68	0.00
17.50	3.11	2.88	0.00
20.00	3.24	3.01	0.00
22.50	**3.35**	**3.12**	0.00
25.00	**3.41**	**3.18**	0.00
27.50	3.41	3.18	0.00
30.00	3.41	3.18	0.00
32.50	3.41	3.18	0.00
35.00	3.41	3.18	0.00
37.50	3.41	3.18	0.00
40.00	3.41	3.18	0.00
42.50	3.41	3.18	0.00
45.00	3.41	3.18	0.00
47.50	3.41	3.18	0.00
50.00	3.41	3.18	0.00
52.50	3.41	3.18	0.00
55.00	3.41	3.18	0.00
57.50	3.41	3.18	0.00
60.00	3.41	3.18	0.00
62.50	3.41	3.18	0.00
65.00	3.41	3.18	0.00
67.50	3.41	3.18	0.00
70.00	3.41	3.18	0.00
72.50	3.41	3.18	0.00
75.00	3.41	3.18	0.00
77.50	3.41	3.18	0.00
80.00	3.41	3.18	0.00
82.50	3.41	3.18	0.00
85.00	3.41	3.18	0.00
87.50	3.41	3.18	0.00
90.00	3.41	3.18	0.00
92.50	3.41	3.18	0.00
95.00	3.41	3.18	0.00
97.50	3.41	3.18	0.00
100.00	3.41	3.18	0.00
102.50	3.41	3.18	0.00
105.00	3.41	3.18	0.00
107.50	3.41	3.18	0.00
110.00	3.41	3.18	0.00
112.50	3.41	3.18	0.00
115.00	3.41	3.18	0.00
117.50	3.41	3.18	0.00
120.00	3.41	3.18	0.00

Summary for Subcatchment PR2 2.0: Pervious TO POA 2

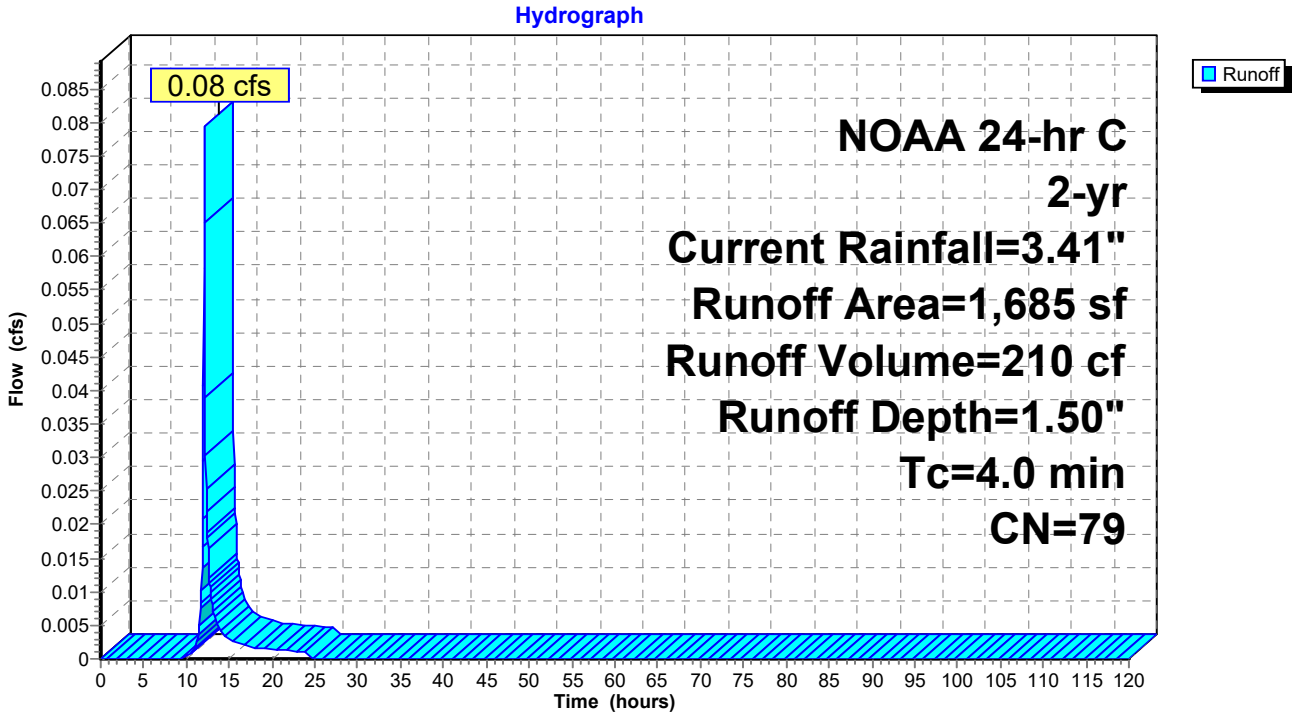
Runoff = 0.08 cfs @ 12.10 hrs, Volume= 210 cf, Depth= 1.50"
Routed to Reach PR2 CURR : POI-2 for PRDA-2 (current)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 2-yr, Current Rainfall=3.41"

	Area (sf)	CN	Description
*	1,685	79	planters
	1,685		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0					**Direct Entry,**

Subcatchment PR2 2.0: Pervious TO POA 2



Hydrograph for Subcatchment PR2 2.0: Pervious TO POA 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.10	0.00	0.00
5.00	0.22	0.00	0.00
7.50	0.37	0.00	0.00
10.00	0.62	0.00	**0.00**
12.50	2.40	0.77	**0.02**
15.00	2.91	1.12	0.00
17.50	3.11	1.27	0.00
20.00	3.24	1.37	0.00
22.50	**3.35**	**1.45**	0.00
25.00	**3.41**	**1.50**	0.00
27.50	3.41	1.50	0.00
30.00	3.41	1.50	0.00
32.50	3.41	1.50	0.00
35.00	3.41	1.50	0.00
37.50	3.41	1.50	0.00
40.00	3.41	1.50	0.00
42.50	3.41	1.50	0.00
45.00	3.41	1.50	0.00
47.50	3.41	1.50	0.00
50.00	3.41	1.50	0.00
52.50	3.41	1.50	0.00
55.00	3.41	1.50	0.00
57.50	3.41	1.50	0.00
60.00	3.41	1.50	0.00
62.50	3.41	1.50	0.00
65.00	3.41	1.50	0.00
67.50	3.41	1.50	0.00
70.00	3.41	1.50	0.00
72.50	3.41	1.50	0.00
75.00	3.41	1.50	0.00
77.50	3.41	1.50	0.00
80.00	3.41	1.50	0.00
82.50	3.41	1.50	0.00
85.00	3.41	1.50	0.00
87.50	3.41	1.50	0.00
90.00	3.41	1.50	0.00
92.50	3.41	1.50	0.00
95.00	3.41	1.50	0.00
97.50	3.41	1.50	0.00
100.00	3.41	1.50	0.00
102.50	3.41	1.50	0.00
105.00	3.41	1.50	0.00
107.50	3.41	1.50	0.00
110.00	3.41	1.50	0.00
112.50	3.41	1.50	0.00
115.00	3.41	1.50	0.00
117.50	3.41	1.50	0.00
120.00	3.41	1.50	0.00

Summary for Subcatchment PR2.0: Pervious

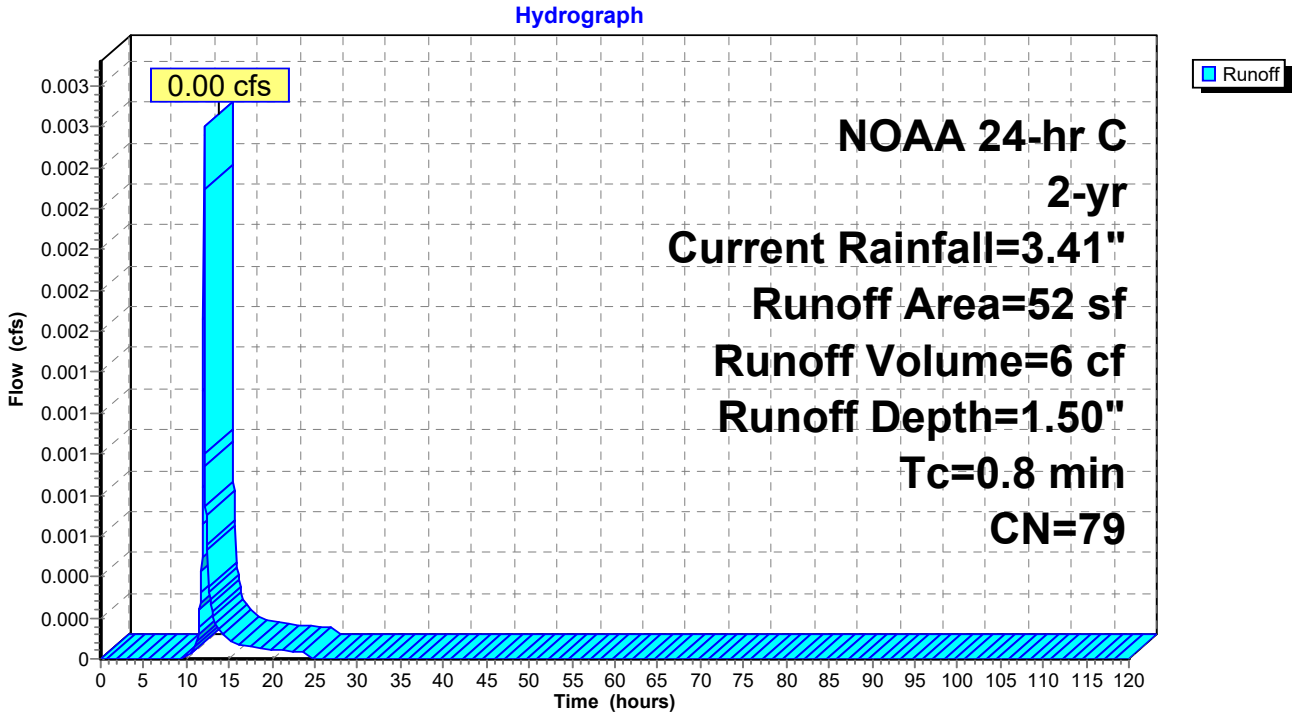
Runoff = 0.00 cfs @ 12.06 hrs, Volume= 6 cf, Depth= 1.50"
Routed to Pond BMP 1 : BMP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 2-yr, Current Rainfall=3.41"

	Area (sf)	CN	Description
*	52	79	50-75% Grass cover, Fair, HSG C
	52		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8					**Direct Entry,**

Subcatchment PR2.0: Pervious



Hydrograph for Subcatchment PR2.0: Pervious

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.10	0.00	0.00
5.00	0.22	0.00	0.00
7.50	0.37	0.00	0.00
10.00	0.62	0.00	**0.00**
12.50	2.40	0.77	**0.00**
15.00	2.91	1.12	0.00
17.50	3.11	1.27	0.00
20.00	3.24	1.37	0.00
22.50	**3.35**	**1.45**	0.00
25.00	**3.41**	**1.50**	0.00
27.50	3.41	1.50	0.00
30.00	3.41	1.50	0.00
32.50	3.41	1.50	0.00
35.00	3.41	1.50	0.00
37.50	3.41	1.50	0.00
40.00	3.41	1.50	0.00
42.50	3.41	1.50	0.00
45.00	3.41	1.50	0.00
47.50	3.41	1.50	0.00
50.00	3.41	1.50	0.00
52.50	3.41	1.50	0.00
55.00	3.41	1.50	0.00
57.50	3.41	1.50	0.00
60.00	3.41	1.50	0.00
62.50	3.41	1.50	0.00
65.00	3.41	1.50	0.00
67.50	3.41	1.50	0.00
70.00	3.41	1.50	0.00
72.50	3.41	1.50	0.00
75.00	3.41	1.50	0.00
77.50	3.41	1.50	0.00
80.00	3.41	1.50	0.00
82.50	3.41	1.50	0.00
85.00	3.41	1.50	0.00
87.50	3.41	1.50	0.00
90.00	3.41	1.50	0.00
92.50	3.41	1.50	0.00
95.00	3.41	1.50	0.00
97.50	3.41	1.50	0.00
100.00	3.41	1.50	0.00
102.50	3.41	1.50	0.00
105.00	3.41	1.50	0.00
107.50	3.41	1.50	0.00
110.00	3.41	1.50	0.00
112.50	3.41	1.50	0.00
115.00	3.41	1.50	0.00
117.50	3.41	1.50	0.00
120.00	3.41	1.50	0.00

Summary for Subcatchment PR2.2: Pervious bypass

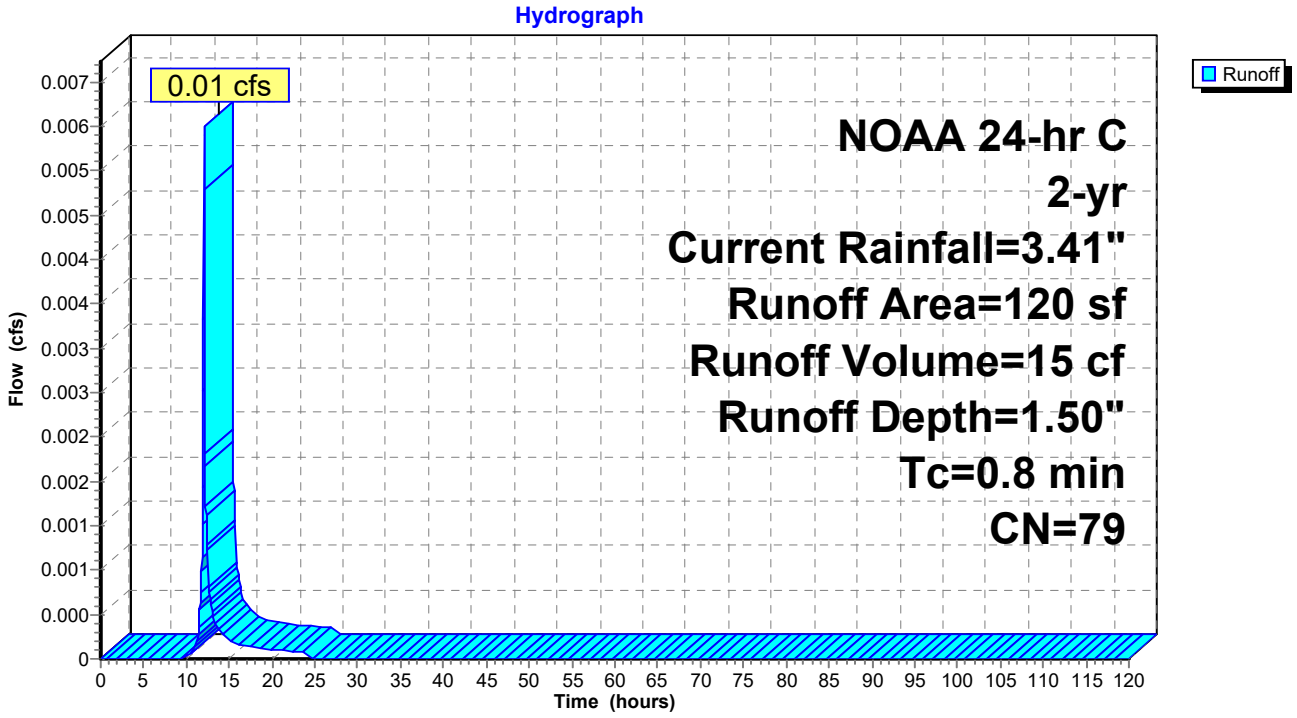
Runoff = 0.01 cfs @ 12.06 hrs, Volume= 15 cf, Depth= 1.50"
Routed to Reach PR1 END : POI-1 for PRDA-1 (current)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 2-yr, Current Rainfall=3.41"

	Area (sf)	CN	Description
*	120	79	planters
	120		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8					**Direct Entry,**

Subcatchment PR2.2: Pervious bypass



Hydrograph for Subcatchment PR2.2: Pervious bypass

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.10	0.00	0.00
5.00	0.22	0.00	0.00
7.50	0.37	0.00	0.00
10.00	0.62	0.00	**0.00**
12.50	2.40	0.77	**0.00**
15.00	2.91	1.12	0.00
17.50	3.11	1.27	0.00
20.00	3.24	1.37	0.00
22.50	**3.35**	**1.45**	0.00
25.00	**3.41**	**1.50**	0.00
27.50	3.41	1.50	0.00
30.00	3.41	1.50	0.00
32.50	3.41	1.50	0.00
35.00	3.41	1.50	0.00
37.50	3.41	1.50	0.00
40.00	3.41	1.50	0.00
42.50	3.41	1.50	0.00
45.00	3.41	1.50	0.00
47.50	3.41	1.50	0.00
50.00	3.41	1.50	0.00
52.50	3.41	1.50	0.00
55.00	3.41	1.50	0.00
57.50	3.41	1.50	0.00
60.00	3.41	1.50	0.00
62.50	3.41	1.50	0.00
65.00	3.41	1.50	0.00
67.50	3.41	1.50	0.00
70.00	3.41	1.50	0.00
72.50	3.41	1.50	0.00
75.00	3.41	1.50	0.00
77.50	3.41	1.50	0.00
80.00	3.41	1.50	0.00
82.50	3.41	1.50	0.00
85.00	3.41	1.50	0.00
87.50	3.41	1.50	0.00
90.00	3.41	1.50	0.00
92.50	3.41	1.50	0.00
95.00	3.41	1.50	0.00
97.50	3.41	1.50	0.00
100.00	3.41	1.50	0.00
102.50	3.41	1.50	0.00
105.00	3.41	1.50	0.00
107.50	3.41	1.50	0.00
110.00	3.41	1.50	0.00
112.50	3.41	1.50	0.00
115.00	3.41	1.50	0.00
117.50	3.41	1.50	0.00
120.00	3.41	1.50	0.00

Summary for Subcatchment PR3.0: Building

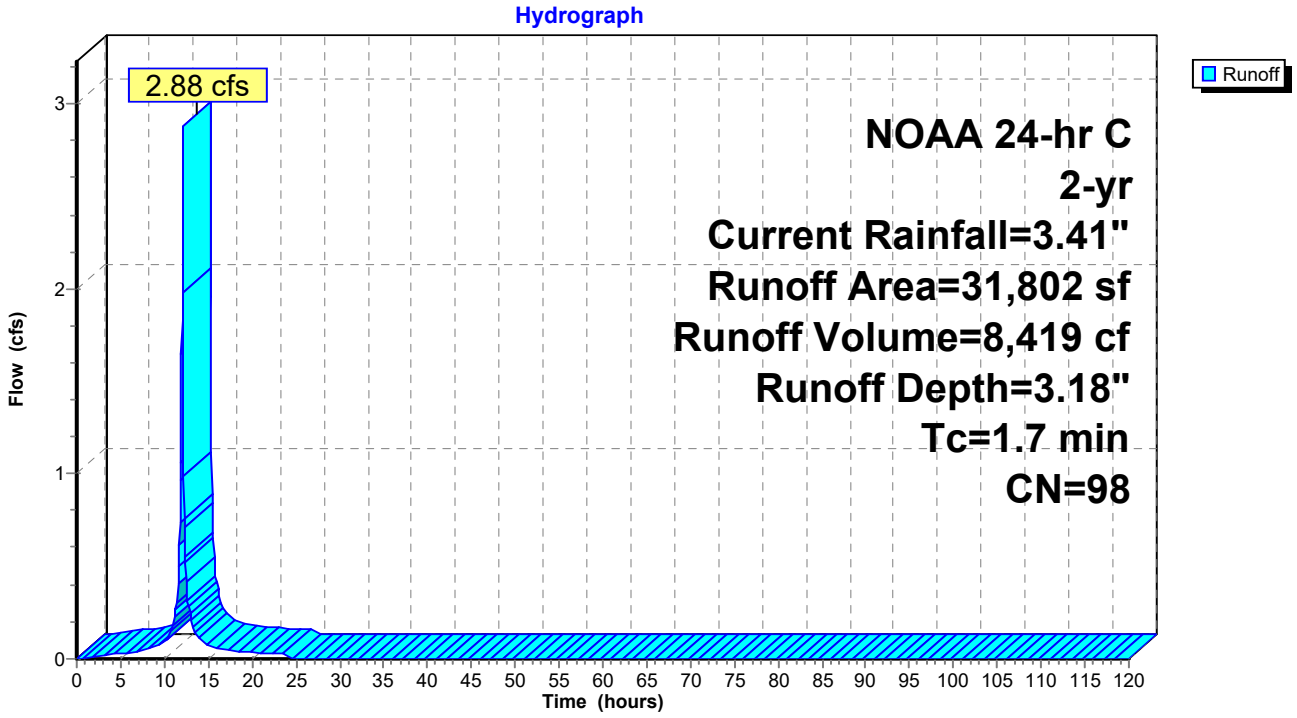
Runoff = 2.88 cfs @ 12.07 hrs, Volume= 8,419 cf, Depth= 3.18"
Routed to Pond BMP 1 : BMP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 2-yr, Current Rainfall=3.41"

Area (sf)	CN	Description
31,802	98	Roofs, HSG C
31,802		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7					**Direct Entry,**

Subcatchment PR3.0: Building



Hydrograph for Subcatchment PR3.0: Building

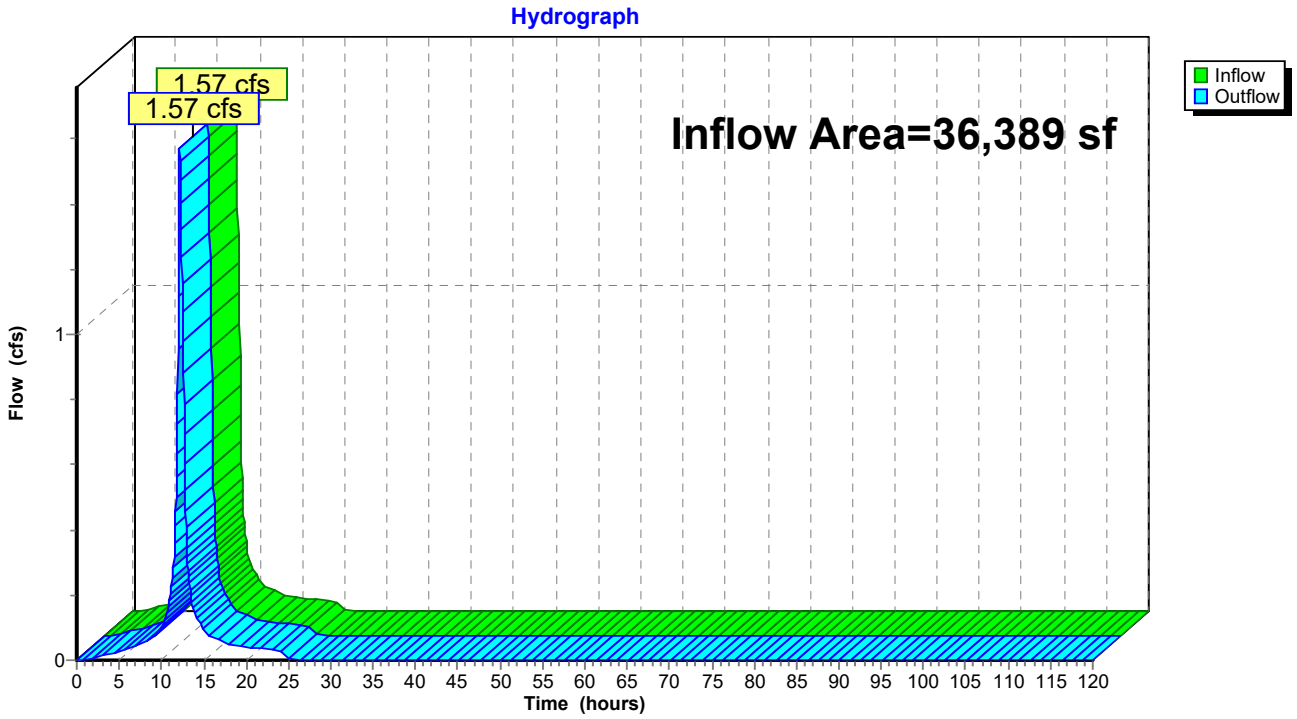
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.10	0.01	0.01
5.00	0.22	0.08	0.03
7.50	0.37	0.20	0.05
10.00	0.62	0.43	**0.10**
12.50	2.40	2.17	**0.49**
15.00	2.91	2.68	0.07
17.50	3.11	2.88	0.05
20.00	3.24	3.01	0.04
22.50	**3.35**	**3.12**	0.03
25.00	**3.41**	**3.18**	0.00
27.50	3.41	3.18	0.00
30.00	3.41	3.18	0.00
32.50	3.41	3.18	0.00
35.00	3.41	3.18	0.00
37.50	3.41	3.18	0.00
40.00	3.41	3.18	0.00
42.50	3.41	3.18	0.00
45.00	3.41	3.18	0.00
47.50	3.41	3.18	0.00
50.00	3.41	3.18	0.00
52.50	3.41	3.18	0.00
55.00	3.41	3.18	0.00
57.50	3.41	3.18	0.00
60.00	3.41	3.18	0.00
62.50	3.41	3.18	0.00
65.00	3.41	3.18	0.00
67.50	3.41	3.18	0.00
70.00	3.41	3.18	0.00
72.50	3.41	3.18	0.00
75.00	3.41	3.18	0.00
77.50	3.41	3.18	0.00
80.00	3.41	3.18	0.00
82.50	3.41	3.18	0.00
85.00	3.41	3.18	0.00
87.50	3.41	3.18	0.00
90.00	3.41	3.18	0.00
92.50	3.41	3.18	0.00
95.00	3.41	3.18	0.00
97.50	3.41	3.18	0.00
100.00	3.41	3.18	0.00
102.50	3.41	3.18	0.00
105.00	3.41	3.18	0.00
107.50	3.41	3.18	0.00
110.00	3.41	3.18	0.00
112.50	3.41	3.18	0.00
115.00	3.41	3.18	0.00
117.50	3.41	3.18	0.00
120.00	3.41	3.18	0.00

Summary for Reach PR1 END: POI-1 for PRDA-1 (current)

Inflow Area = 36,389 sf, 99.53% Impervious, Inflow Depth = 3.17" for 2-yr, Current event
Inflow = 1.57 cfs @ 12.15 hrs, Volume= 9,609 cf
Outflow = 1.57 cfs @ 12.15 hrs, Volume= 9,609 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach PR1 END: POI-1 for PRDA-1 (current)



Hydrograph for Reach PR1 END: POI-1 for PRDA-1 (current)

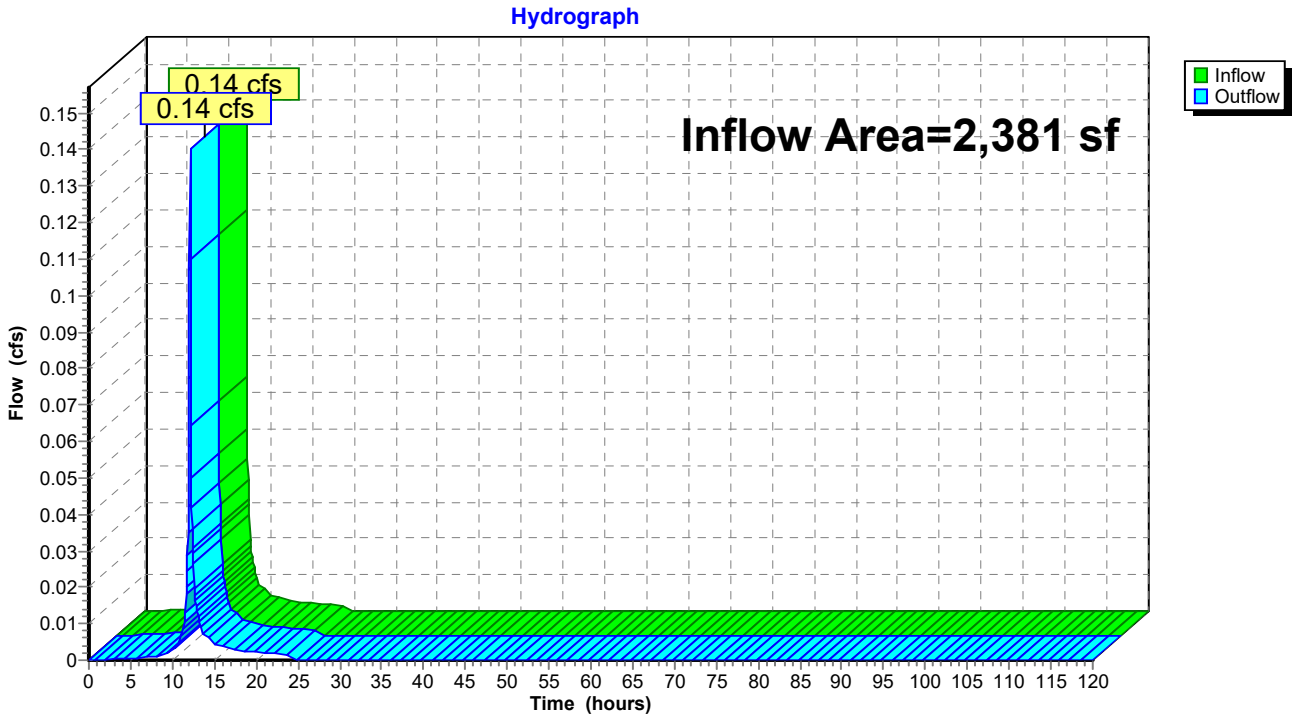
Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00
2.50	0.01		0.01
5.00	0.03		0.03
7.50	0.05		0.05
10.00	**0.11**		**0.11**
12.50	**1.07**		**1.07**
15.00	0.09		0.09
17.50	0.06		0.06
20.00	0.04		0.04
22.50	0.03		0.03
25.00	0.01		0.01
27.50	0.00		0.00
30.00	0.00		0.00
32.50	0.00		0.00
35.00	0.00		0.00
37.50	0.00		0.00
40.00	0.00		0.00
42.50	0.00		0.00
45.00	0.00		0.00
47.50	0.00		0.00
50.00	0.00		0.00
52.50	0.00		0.00
55.00	0.00		0.00
57.50	0.00		0.00
60.00	0.00		0.00
62.50	0.00		0.00
65.00	0.00		0.00
67.50	0.00		0.00
70.00	0.00		0.00
72.50	0.00		0.00
75.00	0.00		0.00
77.50	0.00		0.00
80.00	0.00		0.00
82.50	0.00		0.00
85.00	0.00		0.00
87.50	0.00		0.00
90.00	0.00		0.00
92.50	0.00		0.00
95.00	0.00		0.00
97.50	0.00		0.00
100.00	0.00		0.00
102.50	0.00		0.00
105.00	0.00		0.00
107.50	0.00		0.00
110.00	0.00		0.00
112.50	0.00		0.00
115.00	0.00		0.00
117.50	0.00		0.00
120.00	0.00		0.00

Summary for Reach PR2 CURR: POI-2 for PRDA-2 (current)

Inflow Area = 2,381 sf, 29.23% Impervious, Inflow Depth = 1.99" for 2-yr, Current event
Inflow = 0.14 cfs @ 12.10 hrs, Volume= 394 cf
Outflow = 0.14 cfs @ 12.10 hrs, Volume= 394 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach PR2 CURR: POI-2 for PRDA-2 (current)



Hydrograph for Reach PR2 CURR: POI-2 for PRDA-2 (current)

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00
2.50	0.00		0.00
5.00	0.00		0.00
7.50	0.00		0.00
10.00	**0.00**		**0.00**
12.50	**0.03**		**0.03**
15.00	0.00		0.00
17.50	0.00		0.00
20.00	0.00		0.00
22.50	0.00		0.00
25.00	0.00		0.00
27.50	0.00		0.00
30.00	0.00		0.00
32.50	0.00		0.00
35.00	0.00		0.00
37.50	0.00		0.00
40.00	0.00		0.00
42.50	0.00		0.00
45.00	0.00		0.00
47.50	0.00		0.00
50.00	0.00		0.00
52.50	0.00		0.00
55.00	0.00		0.00
57.50	0.00		0.00
60.00	0.00		0.00
62.50	0.00		0.00
65.00	0.00		0.00
67.50	0.00		0.00
70.00	0.00		0.00
72.50	0.00		0.00
75.00	0.00		0.00
77.50	0.00		0.00
80.00	0.00		0.00
82.50	0.00		0.00
85.00	0.00		0.00
87.50	0.00		0.00
90.00	0.00		0.00
92.50	0.00		0.00
95.00	0.00		0.00
97.50	0.00		0.00
100.00	0.00		0.00
102.50	0.00		0.00
105.00	0.00		0.00
107.50	0.00		0.00
110.00	0.00		0.00
112.50	0.00		0.00
115.00	0.00		0.00
117.50	0.00		0.00
120.00	0.00		0.00

Summary for Pond BMP 1: BMP-1

Inflow Area = 35,521 sf, 99.85% Impervious, Inflow Depth = 3.17" for 2-yr, Current event
Inflow = 3.22 cfs @ 12.07 hrs, Volume= 9,396 cf
Outflow = 1.55 cfs @ 12.16 hrs, Volume= 9,396 cf, Atten= 52%, Lag= 5.2 min
Primary = 1.55 cfs @ 12.16 hrs, Volume= 9,396 cf
Routed to Reach PR1 END : POI-1 for PRDA-1 (current)

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 15.04' @ 12.16 hrs Surf.Area= 766 sf Storage= 1,562 cf

Plug-Flow detention time= 19.8 min calculated for 9,392 cf (100% of inflow)
Center-of-Mass det. time= 19.9 min (772.1 - 752.2)

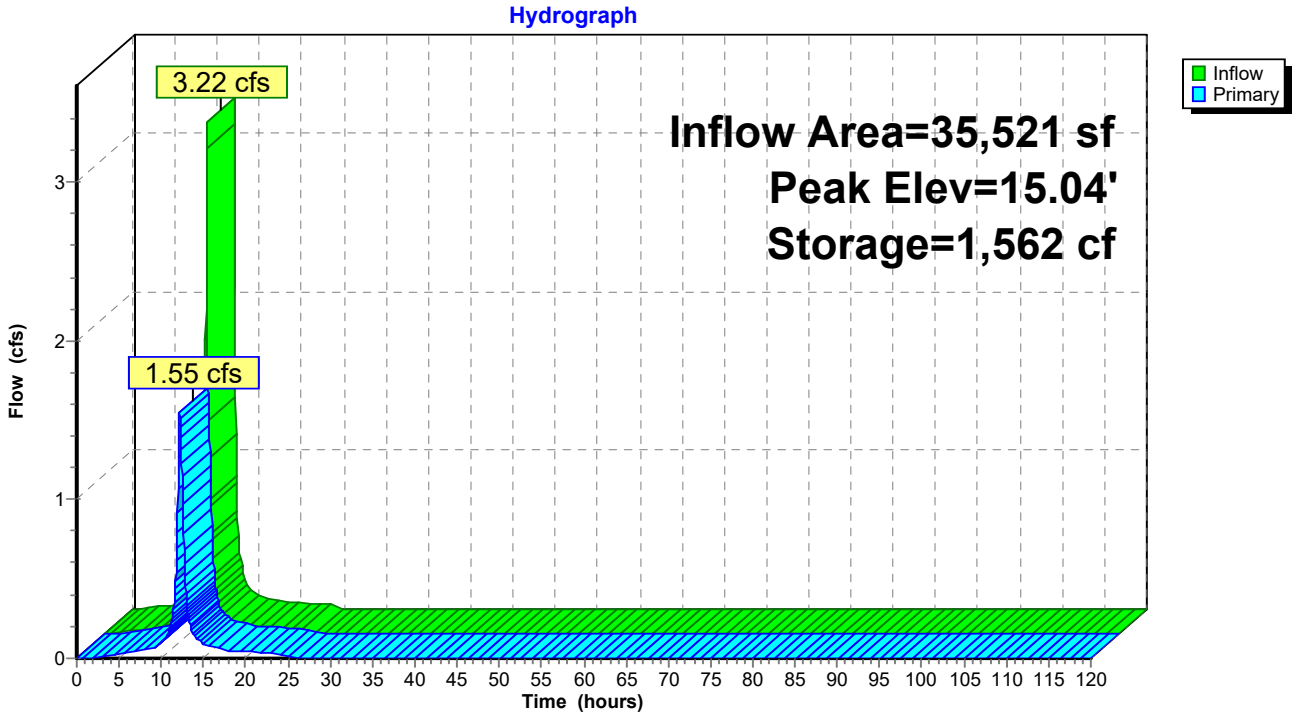
Volume	Invert	Avail.Storage	Storage Description
#1	13.00'	6,128 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.00	766	0	0
14.00	766	766	766
15.00	766	766	1,532
16.00	766	766	2,298
17.00	766	766	3,064
18.00	766	766	3,830
19.00	766	766	4,596
20.00	766	766	5,362
21.00	766	766	6,128

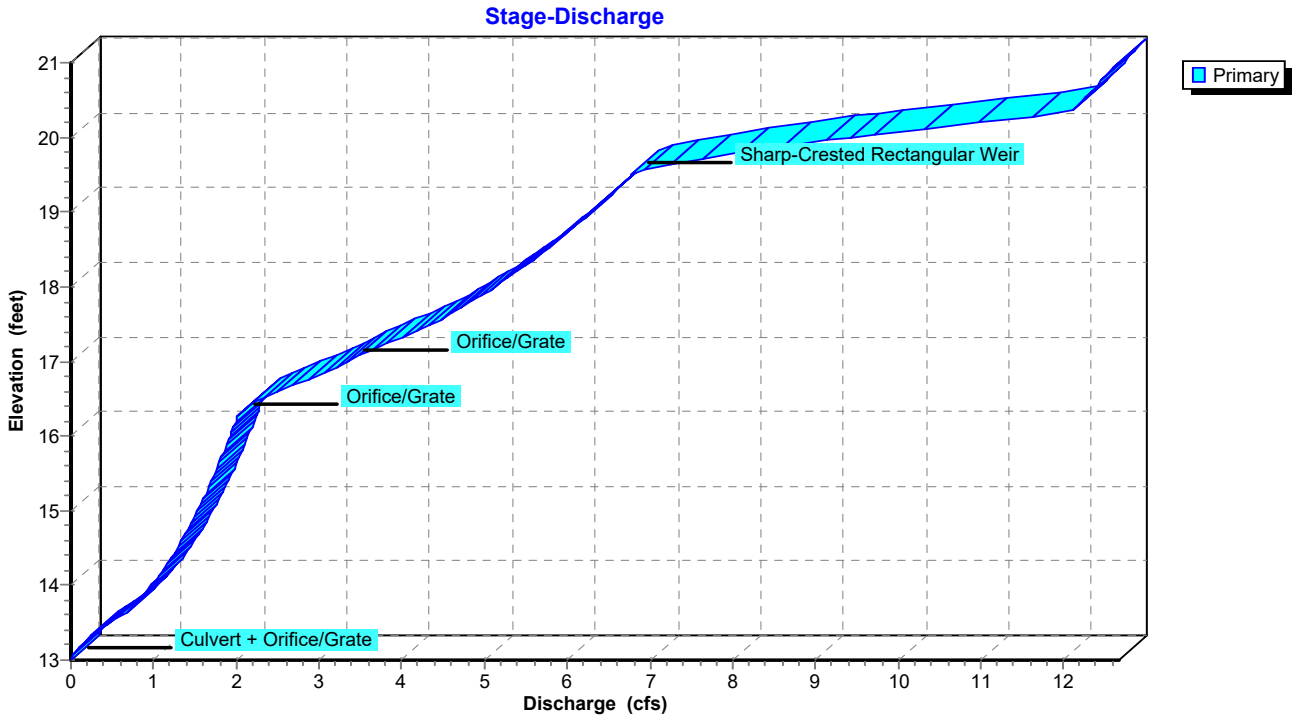
Device	Routing	Invert	Outlet Devices
#1	Primary	13.00'	**15.0" Round Culvert** L= 40.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.00' / 11.80' S= 0.0300 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.23 sf
#2	Device 1	13.00'	**5.0" W x 7.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	16.25'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	17.00'	**5.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Device 1	19.50'	**2.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=1.54 cfs @ 12.16 hrs HW=15.02' (Free Discharge)
└**1=Culvert** (Passes 1.54 cfs of 5.51 cfs potential flow)
├**2=Orifice/Grate** (Orifice Controls 1.54 cfs @ 6.32 fps)
├**3=Orifice/Grate** (Controls 0.00 cfs)
├**4=Orifice/Grate** (Controls 0.00 cfs)
└**5=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond BMP 1: BMP-1



Pond BMP 1: BMP-1



Hydrograph for Pond BMP 1: BMP-1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	13.00	0.00
2.50	0.01	20	13.03	0.01
5.00	0.03	63	13.08	0.03
7.50	0.05	86	13.11	0.05
10.00	**0.11**	**138**	**13.18**	**0.10**
12.50	**0.55**	**860**	**14.12**	**1.06**
15.00	0.08	127	13.17	0.09
17.50	0.05	91	13.12	0.05
20.00	0.04	77	13.10	0.04
22.50	0.03	70	13.09	0.03
25.00	0.00	16	13.02	0.01
27.50	0.00	0	13.00	0.00
30.00	0.00	0	13.00	0.00
32.50	0.00	0	13.00	0.00
35.00	0.00	0	13.00	0.00
37.50	0.00	0	13.00	0.00
40.00	0.00	0	13.00	0.00
42.50	0.00	0	13.00	0.00
45.00	0.00	0	13.00	0.00
47.50	0.00	0	13.00	0.00
50.00	0.00	0	13.00	0.00
52.50	0.00	0	13.00	0.00
55.00	0.00	0	13.00	0.00
57.50	0.00	0	13.00	0.00
60.00	0.00	0	13.00	0.00
62.50	0.00	0	13.00	0.00
65.00	0.00	0	13.00	0.00
67.50	0.00	0	13.00	0.00
70.00	0.00	0	13.00	0.00
72.50	0.00	0	13.00	0.00
75.00	0.00	0	13.00	0.00
77.50	0.00	0	13.00	0.00
80.00	0.00	0	13.00	0.00
82.50	0.00	0	13.00	0.00
85.00	0.00	0	13.00	0.00
87.50	0.00	0	13.00	0.00
90.00	0.00	0	13.00	0.00
92.50	0.00	0	13.00	0.00
95.00	0.00	0	13.00	0.00
97.50	0.00	0	13.00	0.00
100.00	0.00	0	13.00	0.00
102.50	0.00	0	13.00	0.00
105.00	0.00	0	13.00	0.00
107.50	0.00	0	13.00	0.00
110.00	0.00	0	13.00	0.00
112.50	0.00	0	13.00	0.00
115.00	0.00	0	13.00	0.00
117.50	0.00	0	13.00	0.00
120.00	0.00	0	13.00	0.00

Stage-Area-Storage for Pond BMP 1: BMP-1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
13.00	**766**	0
13.10	766	77
13.20	766	153
13.30	766	230
13.40	766	306
13.50	766	383
13.60	766	460
13.70	766	536
13.80	766	613
13.90	766	689
14.00	766	766
14.10	766	843
14.20	766	919
14.30	766	996
14.40	766	1,072
14.50	766	1,149
14.60	766	1,226
14.70	766	1,302
14.80	766	1,379
14.90	766	1,455
15.00	766	1,532
15.10	766	1,609
15.20	766	1,685
15.30	766	1,762
15.40	766	1,838
15.50	766	1,915
15.60	766	1,992
15.70	766	2,068
15.80	766	2,145
15.90	766	2,221
16.00	766	2,298
16.10	766	2,375
16.20	766	2,451
16.30	766	2,528
16.40	766	2,604
16.50	766	2,681
16.60	766	2,758
16.70	766	2,834
16.80	766	2,911
16.90	766	2,987
17.00	766	3,064
17.10	766	3,141
17.20	766	3,217
17.30	766	3,294
17.40	766	3,370
17.50	766	3,447
17.60	766	3,524
17.70	766	3,600
17.80	766	3,677
17.90	766	3,753
18.00	766	3,830
18.10	766	3,907
18.20	766	3,983
18.30	766	4,060
18.40	766	4,136
18.50	766	4,213
18.60	766	4,290
18.70	766	4,366
18.80	766	4,443
18.90	766	4,519
19.00	766	4,596
19.10	766	4,673
19.20	766	4,749
19.30	766	4,826
19.40	766	4,902
19.50	766	4,979
19.60	766	5,056
19.70	766	5,132
19.80	766	5,209
19.90	766	5,285
20.00	766	5,362
20.10	766	5,439
20.20	766	5,515
20.30	766	5,592
20.40	766	5,668
20.50	766	5,745
20.60	766	5,822
20.70	766	5,898
20.80	766	5,975
20.90	766	6,051
21.00	766	**6,128**

Summary for Subcatchment PR1.0: Impervious

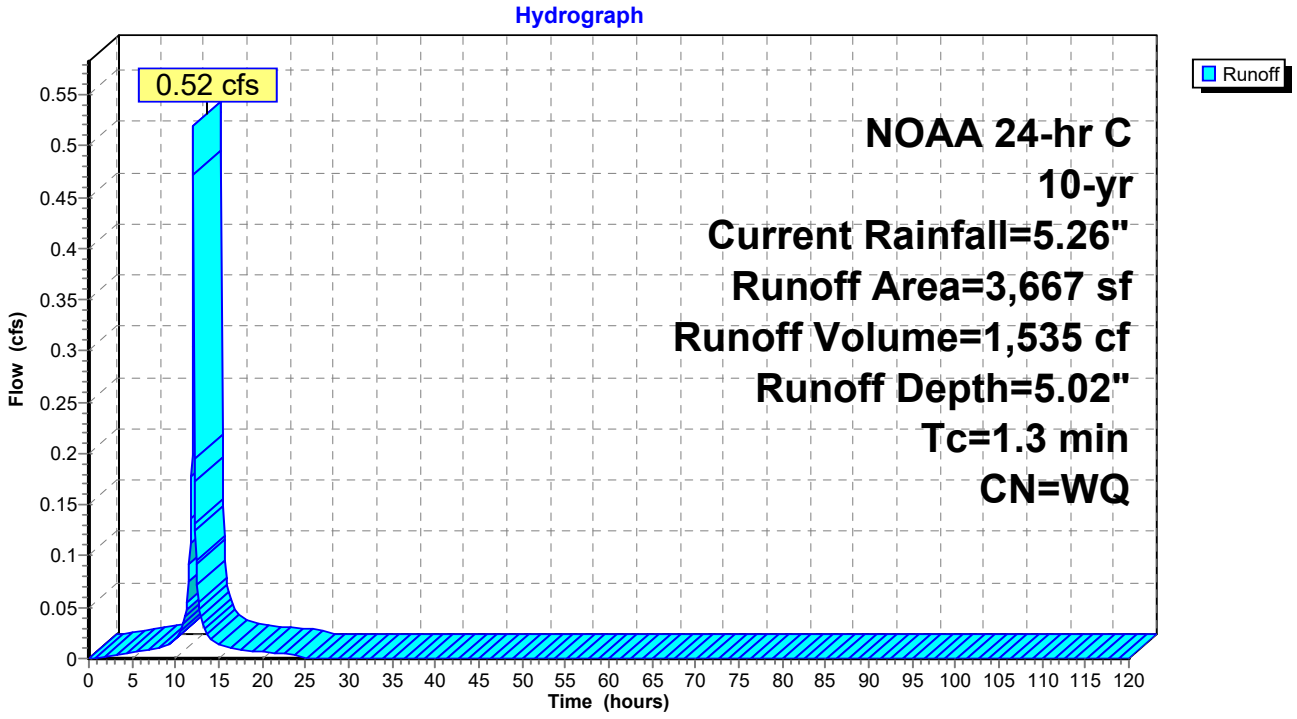
Runoff = 0.52 cfs @ 12.07 hrs, Volume= 1,535 cf, Depth= 5.02"
Routed to Pond BMP 1 : BMP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 10-yr, Current Rainfall=5.26"

	Area (sf)	CN	Description
*	2,755	98	Paved parking, HSG C
*	912	98	impervious walkway
	3,667		Weighted Average
	3,667		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3					**Direct Entry,**

Subcatchment PR1.0: Impervious



Hydrograph for Subcatchment PR1.0: Impervious

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.15	0.04	0.00
5.00	0.33	0.17	0.01
7.50	0.57	0.38	0.01
10.00	0.96	0.75	**0.02**
12.50	3.71	3.47	**0.09**
15.00	4.49	4.26	0.01
17.50	4.80	4.56	0.01
20.00	5.00	4.77	0.01
22.50	**5.17**	**4.94**	0.01
25.00	**5.26**	**5.02**	0.00
27.50	5.26	5.02	0.00
30.00	5.26	5.02	0.00
32.50	5.26	5.02	0.00
35.00	5.26	5.02	0.00
37.50	5.26	5.02	0.00
40.00	5.26	5.02	0.00
42.50	5.26	5.02	0.00
45.00	5.26	5.02	0.00
47.50	5.26	5.02	0.00
50.00	5.26	5.02	0.00
52.50	5.26	5.02	0.00
55.00	5.26	5.02	0.00
57.50	5.26	5.02	0.00
60.00	5.26	5.02	0.00
62.50	5.26	5.02	0.00
65.00	5.26	5.02	0.00
67.50	5.26	5.02	0.00
70.00	5.26	5.02	0.00
72.50	5.26	5.02	0.00
75.00	5.26	5.02	0.00
77.50	5.26	5.02	0.00
80.00	5.26	5.02	0.00
82.50	5.26	5.02	0.00
85.00	5.26	5.02	0.00
87.50	5.26	5.02	0.00
90.00	5.26	5.02	0.00
92.50	5.26	5.02	0.00
95.00	5.26	5.02	0.00
97.50	5.26	5.02	0.00
100.00	5.26	5.02	0.00
102.50	5.26	5.02	0.00
105.00	5.26	5.02	0.00
107.50	5.26	5.02	0.00
110.00	5.26	5.02	0.00
112.50	5.26	5.02	0.00
115.00	5.26	5.02	0.00
117.50	5.26	5.02	0.00
120.00	5.26	5.02	0.00

Summary for Subcatchment PR1.1: Impervious bypass

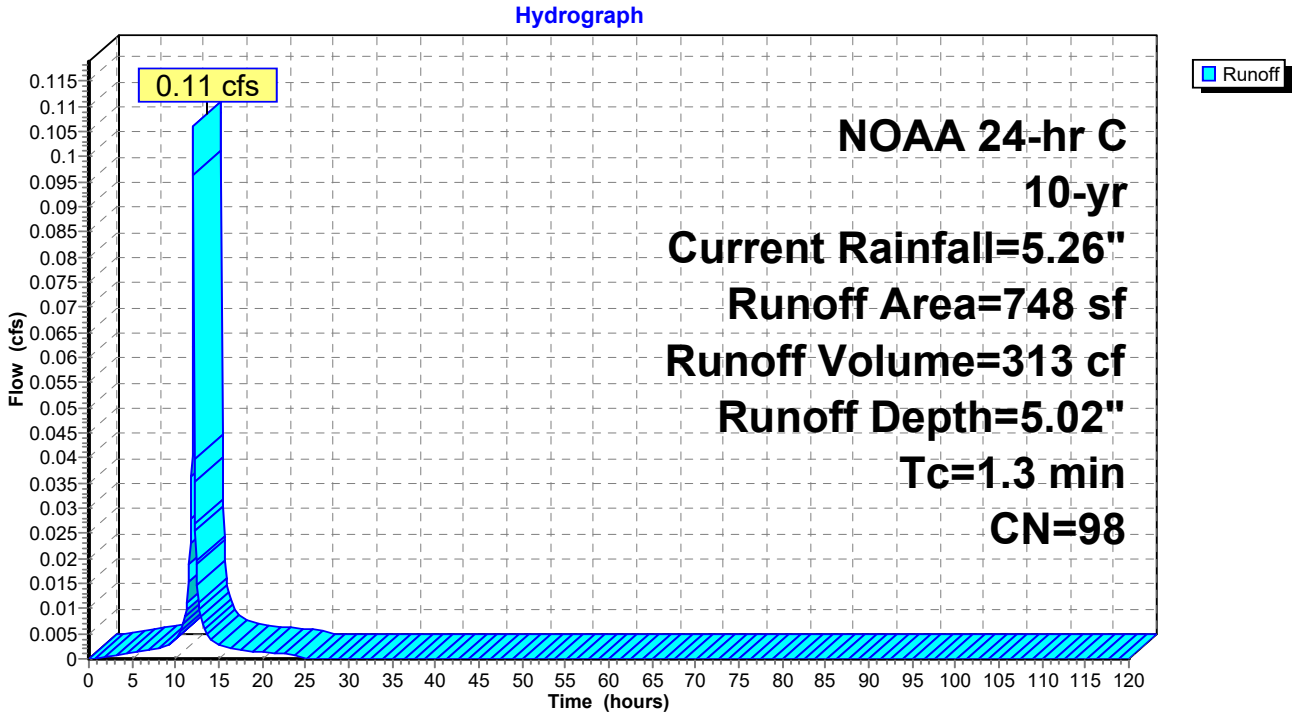
Runoff = 0.11 cfs @ 12.07 hrs, Volume= 313 cf, Depth= 5.02"
Routed to Reach PR1 END : POI-1 for PRDA-1 (current)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 10-yr, Current Rainfall=5.26"

	Area (sf)	CN	Description
*	748	98	impervious walkway
	748		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3					**Direct Entry,**

Subcatchment PR1.1: Impervious bypass



Hydrograph for Subcatchment PR1.1: Impervious bypass

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.15	0.04	0.00
5.00	0.33	0.17	0.00
7.50	0.57	0.38	0.00
10.00	0.96	0.75	**0.00**
12.50	3.71	3.47	**0.02**
15.00	4.49	4.26	0.00
17.50	4.80	4.56	0.00
20.00	5.00	4.77	0.00
22.50	**5.17**	**4.94**	0.00
25.00	**5.26**	**5.02**	0.00
27.50	5.26	5.02	0.00
30.00	5.26	5.02	0.00
32.50	5.26	5.02	0.00
35.00	5.26	5.02	0.00
37.50	5.26	5.02	0.00
40.00	5.26	5.02	0.00
42.50	5.26	5.02	0.00
45.00	5.26	5.02	0.00
47.50	5.26	5.02	0.00
50.00	5.26	5.02	0.00
52.50	5.26	5.02	0.00
55.00	5.26	5.02	0.00
57.50	5.26	5.02	0.00
60.00	5.26	5.02	0.00
62.50	5.26	5.02	0.00
65.00	5.26	5.02	0.00
67.50	5.26	5.02	0.00
70.00	5.26	5.02	0.00
72.50	5.26	5.02	0.00
75.00	5.26	5.02	0.00
77.50	5.26	5.02	0.00
80.00	5.26	5.02	0.00
82.50	5.26	5.02	0.00
85.00	5.26	5.02	0.00
87.50	5.26	5.02	0.00
90.00	5.26	5.02	0.00
92.50	5.26	5.02	0.00
95.00	5.26	5.02	0.00
97.50	5.26	5.02	0.00
100.00	5.26	5.02	0.00
102.50	5.26	5.02	0.00
105.00	5.26	5.02	0.00
107.50	5.26	5.02	0.00
110.00	5.26	5.02	0.00
112.50	5.26	5.02	0.00
115.00	5.26	5.02	0.00
117.50	5.26	5.02	0.00
120.00	5.26	5.02	0.00

Summary for Subcatchment PR2 1.0: ImperviousTO POA 2

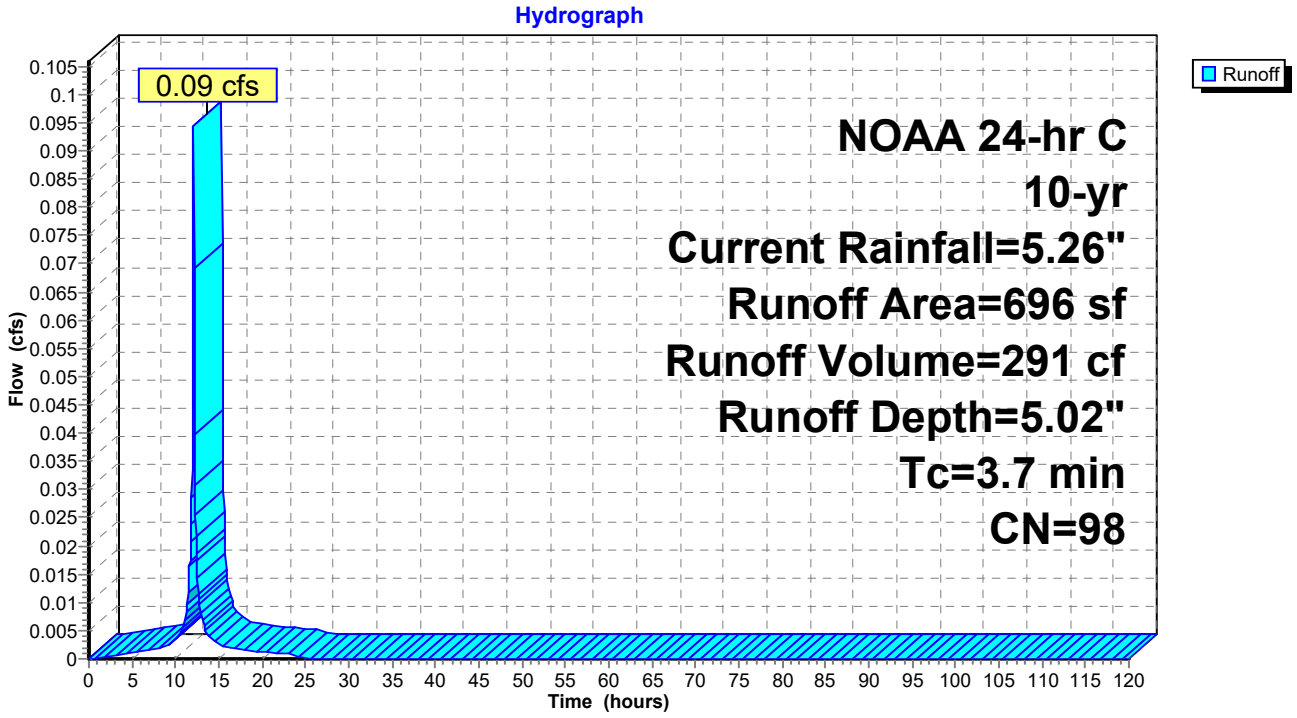
Runoff = 0.09 cfs @ 12.10 hrs, Volume= 291 cf, Depth= 5.02"
Routed to Reach PR2 CURR : POI-2 for PRDA-2 (current)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 10-yr, Current Rainfall=5.26"

	Area (sf)	CN	Description
*	696	98	impervious
	696		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7					**Direct Entry,**

Subcatchment PR2 1.0: ImperviousTO POA 2



Hydrograph for Subcatchment PR2 1.0: ImperviousTO POA 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.15	0.04	0.00
5.00	0.33	0.17	0.00
7.50	0.57	0.38	0.00
10.00	0.96	0.75	**0.00**
12.50	3.71	3.47	**0.02**
15.00	4.49	4.26	0.00
17.50	4.80	4.56	0.00
20.00	5.00	4.77	0.00
22.50	**5.17**	**4.94**	0.00
25.00	**5.26**	**5.02**	0.00
27.50	5.26	5.02	0.00
30.00	5.26	5.02	0.00
32.50	5.26	5.02	0.00
35.00	5.26	5.02	0.00
37.50	5.26	5.02	0.00
40.00	5.26	5.02	0.00
42.50	5.26	5.02	0.00
45.00	5.26	5.02	0.00
47.50	5.26	5.02	0.00
50.00	5.26	5.02	0.00
52.50	5.26	5.02	0.00
55.00	5.26	5.02	0.00
57.50	5.26	5.02	0.00
60.00	5.26	5.02	0.00
62.50	5.26	5.02	0.00
65.00	5.26	5.02	0.00
67.50	5.26	5.02	0.00
70.00	5.26	5.02	0.00
72.50	5.26	5.02	0.00
75.00	5.26	5.02	0.00
77.50	5.26	5.02	0.00
80.00	5.26	5.02	0.00
82.50	5.26	5.02	0.00
85.00	5.26	5.02	0.00
87.50	5.26	5.02	0.00
90.00	5.26	5.02	0.00
92.50	5.26	5.02	0.00
95.00	5.26	5.02	0.00
97.50	5.26	5.02	0.00
100.00	5.26	5.02	0.00
102.50	5.26	5.02	0.00
105.00	5.26	5.02	0.00
107.50	5.26	5.02	0.00
110.00	5.26	5.02	0.00
112.50	5.26	5.02	0.00
115.00	5.26	5.02	0.00
117.50	5.26	5.02	0.00
120.00	5.26	5.02	0.00

Summary for Subcatchment PR2 2.0: Pervious TO POA 2

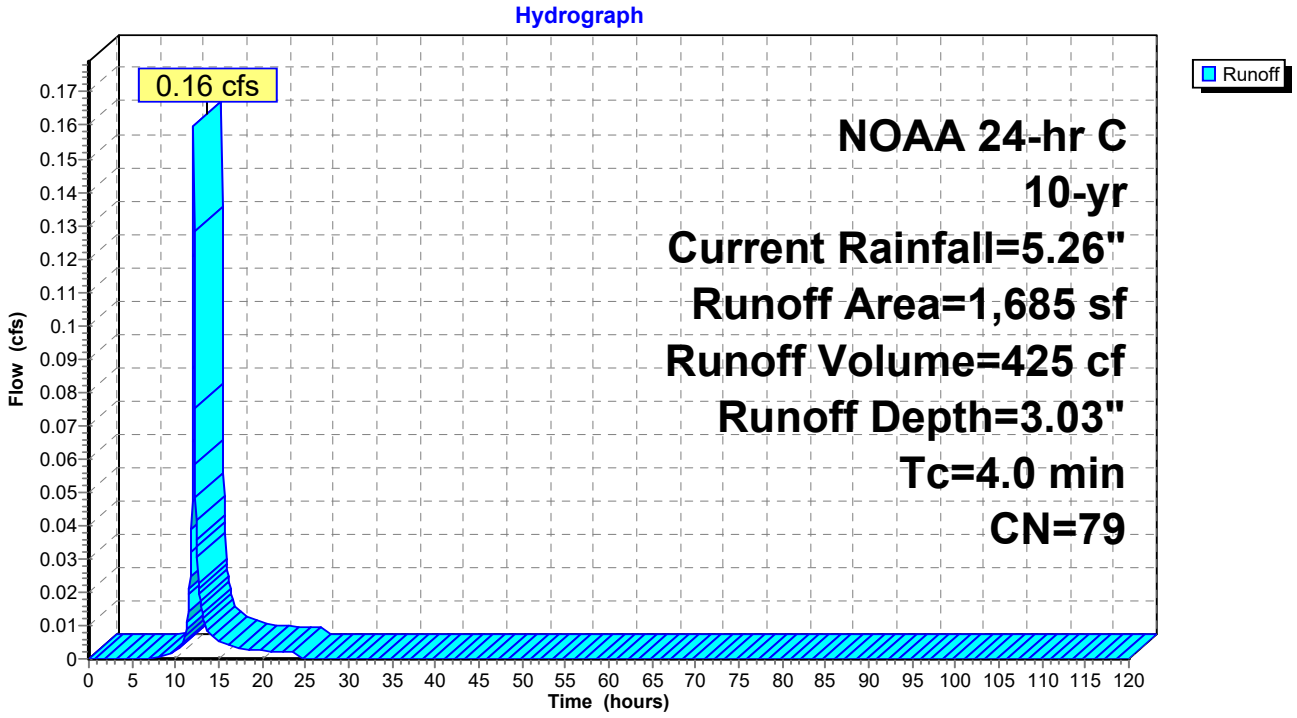
Runoff = 0.16 cfs @ 12.10 hrs, Volume= 425 cf, Depth= 3.03"
Routed to Reach PR2 CURR : POI-2 for PRDA-2 (current)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 10-yr, Current Rainfall=5.26"

	Area (sf)	CN	Description
*	1,685	79	planters
	1,685		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0					**Direct Entry,**

Subcatchment PR2 2.0: Pervious TO POA 2



Hydrograph for Subcatchment PR2 2.0: Pervious TO POA 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.15	0.00	0.00
5.00	0.33	0.00	0.00
7.50	0.57	0.00	0.00
10.00	0.96	0.06	**0.00**
12.50	3.71	1.73	**0.03**
15.00	4.49	2.37	0.01
17.50	4.80	2.63	0.00
20.00	5.00	2.80	0.00
22.50	**5.17**	**2.95**	0.00
25.00	**5.26**	**3.03**	0.00
27.50	5.26	3.03	0.00
30.00	5.26	3.03	0.00
32.50	5.26	3.03	0.00
35.00	5.26	3.03	0.00
37.50	5.26	3.03	0.00
40.00	5.26	3.03	0.00
42.50	5.26	3.03	0.00
45.00	5.26	3.03	0.00
47.50	5.26	3.03	0.00
50.00	5.26	3.03	0.00
52.50	5.26	3.03	0.00
55.00	5.26	3.03	0.00
57.50	5.26	3.03	0.00
60.00	5.26	3.03	0.00
62.50	5.26	3.03	0.00
65.00	5.26	3.03	0.00
67.50	5.26	3.03	0.00
70.00	5.26	3.03	0.00
72.50	5.26	3.03	0.00
75.00	5.26	3.03	0.00
77.50	5.26	3.03	0.00
80.00	5.26	3.03	0.00
82.50	5.26	3.03	0.00
85.00	5.26	3.03	0.00
87.50	5.26	3.03	0.00
90.00	5.26	3.03	0.00
92.50	5.26	3.03	0.00
95.00	5.26	3.03	0.00
97.50	5.26	3.03	0.00
100.00	5.26	3.03	0.00
102.50	5.26	3.03	0.00
105.00	5.26	3.03	0.00
107.50	5.26	3.03	0.00
110.00	5.26	3.03	0.00
112.50	5.26	3.03	0.00
115.00	5.26	3.03	0.00
117.50	5.26	3.03	0.00
120.00	5.26	3.03	0.00

Summary for Subcatchment PR2.0: Pervious

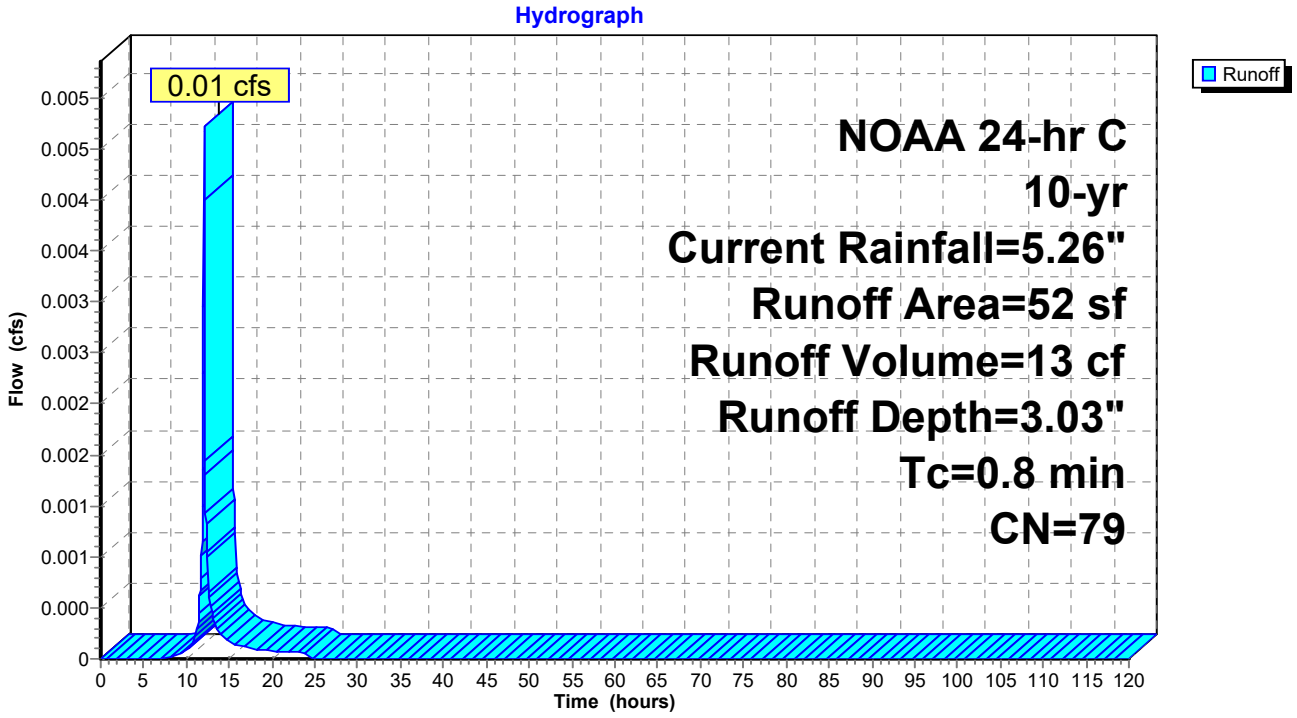
Runoff = 0.01 cfs @ 12.06 hrs, Volume= 13 cf, Depth= 3.03"
Routed to Pond BMP 1 : BMP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 10-yr, Current Rainfall=5.26"

	Area (sf)	CN	Description
*	52	79	50-75% Grass cover, Fair, HSG C
	52		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8					**Direct Entry,**

Subcatchment PR2.0: Pervious



Hydrograph for Subcatchment PR2.0: Pervious

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.15	0.00	0.00
5.00	0.33	0.00	0.00
7.50	0.57	0.00	0.00
10.00	0.96	0.06	**0.00**
12.50	3.71	1.73	**0.00**
15.00	4.49	2.37	0.00
17.50	4.80	2.63	0.00
20.00	5.00	2.80	0.00
22.50	**5.17**	**2.95**	0.00
25.00	**5.26**	**3.03**	0.00
27.50	5.26	3.03	0.00
30.00	5.26	3.03	0.00
32.50	5.26	3.03	0.00
35.00	5.26	3.03	0.00
37.50	5.26	3.03	0.00
40.00	5.26	3.03	0.00
42.50	5.26	3.03	0.00
45.00	5.26	3.03	0.00
47.50	5.26	3.03	0.00
50.00	5.26	3.03	0.00
52.50	5.26	3.03	0.00
55.00	5.26	3.03	0.00
57.50	5.26	3.03	0.00
60.00	5.26	3.03	0.00
62.50	5.26	3.03	0.00
65.00	5.26	3.03	0.00
67.50	5.26	3.03	0.00
70.00	5.26	3.03	0.00
72.50	5.26	3.03	0.00
75.00	5.26	3.03	0.00
77.50	5.26	3.03	0.00
80.00	5.26	3.03	0.00
82.50	5.26	3.03	0.00
85.00	5.26	3.03	0.00
87.50	5.26	3.03	0.00
90.00	5.26	3.03	0.00
92.50	5.26	3.03	0.00
95.00	5.26	3.03	0.00
97.50	5.26	3.03	0.00
100.00	5.26	3.03	0.00
102.50	5.26	3.03	0.00
105.00	5.26	3.03	0.00
107.50	5.26	3.03	0.00
110.00	5.26	3.03	0.00
112.50	5.26	3.03	0.00
115.00	5.26	3.03	0.00
117.50	5.26	3.03	0.00
120.00	5.26	3.03	0.00

Summary for Subcatchment PR2.2: Pervious bypass

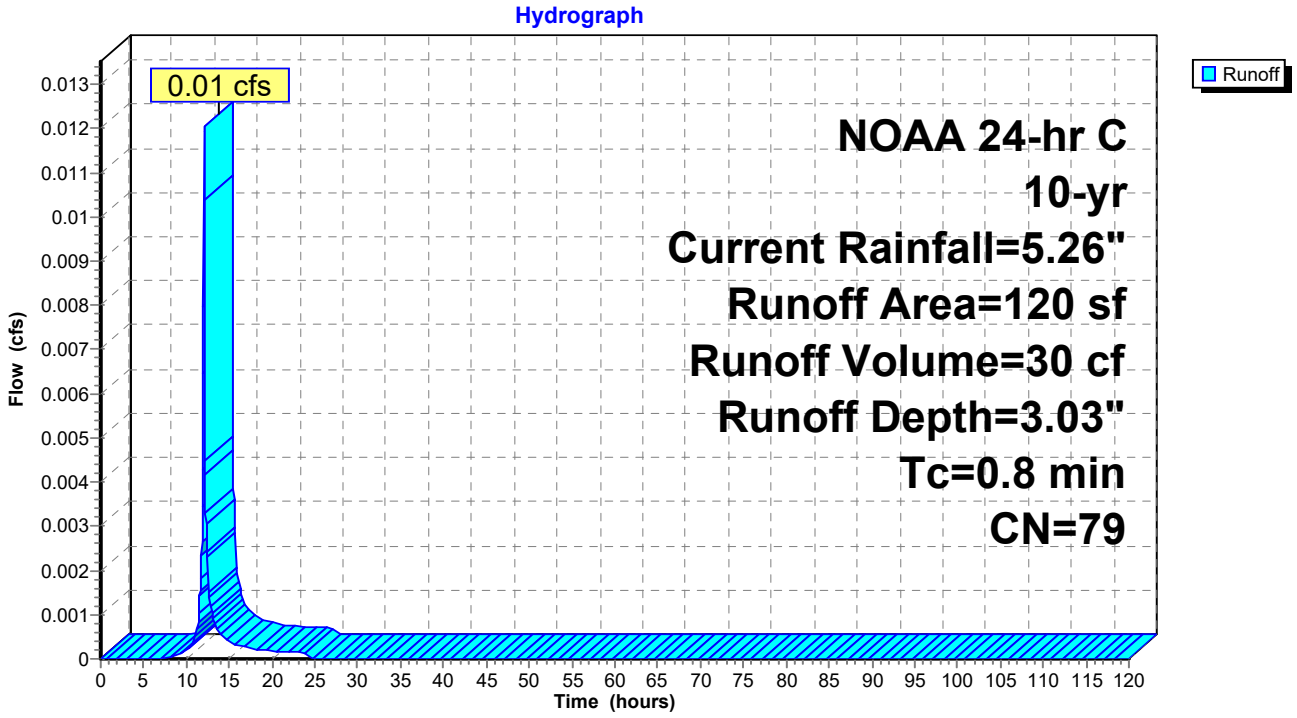
Runoff = 0.01 cfs @ 12.06 hrs, Volume= 30 cf, Depth= 3.03"
Routed to Reach PR1 END : POI-1 for PRDA-1 (current)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 10-yr, Current Rainfall=5.26"

	Area (sf)	CN	Description
*	120	79	planters
	120		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8					**Direct Entry,**

Subcatchment PR2.2: Pervious bypass



Hydrograph for Subcatchment PR2.2: Pervious bypass

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.15	0.00	0.00
5.00	0.33	0.00	0.00
7.50	0.57	0.00	0.00
10.00	0.96	0.06	**0.00**
12.50	3.71	1.73	**0.00**
15.00	4.49	2.37	0.00
17.50	4.80	2.63	0.00
20.00	5.00	2.80	0.00
22.50	**5.17**	**2.95**	0.00
25.00	**5.26**	**3.03**	0.00
27.50	5.26	3.03	0.00
30.00	5.26	3.03	0.00
32.50	5.26	3.03	0.00
35.00	5.26	3.03	0.00
37.50	5.26	3.03	0.00
40.00	5.26	3.03	0.00
42.50	5.26	3.03	0.00
45.00	5.26	3.03	0.00
47.50	5.26	3.03	0.00
50.00	5.26	3.03	0.00
52.50	5.26	3.03	0.00
55.00	5.26	3.03	0.00
57.50	5.26	3.03	0.00
60.00	5.26	3.03	0.00
62.50	5.26	3.03	0.00
65.00	5.26	3.03	0.00
67.50	5.26	3.03	0.00
70.00	5.26	3.03	0.00
72.50	5.26	3.03	0.00
75.00	5.26	3.03	0.00
77.50	5.26	3.03	0.00
80.00	5.26	3.03	0.00
82.50	5.26	3.03	0.00
85.00	5.26	3.03	0.00
87.50	5.26	3.03	0.00
90.00	5.26	3.03	0.00
92.50	5.26	3.03	0.00
95.00	5.26	3.03	0.00
97.50	5.26	3.03	0.00
100.00	5.26	3.03	0.00
102.50	5.26	3.03	0.00
105.00	5.26	3.03	0.00
107.50	5.26	3.03	0.00
110.00	5.26	3.03	0.00
112.50	5.26	3.03	0.00
115.00	5.26	3.03	0.00
117.50	5.26	3.03	0.00
120.00	5.26	3.03	0.00

Summary for Subcatchment PR3.0: Building

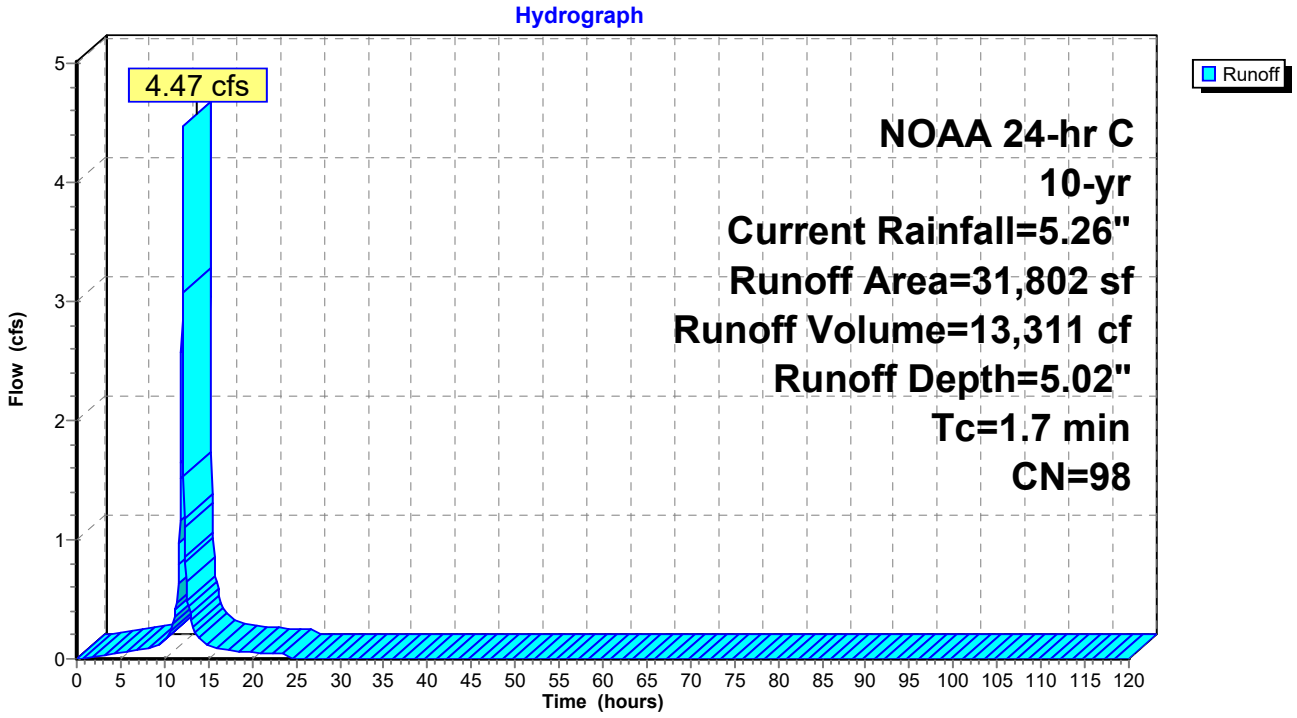
Runoff = 4.47 cfs @ 12.07 hrs, Volume= 13,311 cf, Depth= 5.02"
Routed to Pond BMP 1 : BMP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 10-yr, Current Rainfall=5.26"

Area (sf)	CN	Description
31,802	98	Roofs, HSG C
31,802		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7					**Direct Entry,**

Subcatchment PR3.0: Building



Hydrograph for Subcatchment PR3.0: Building

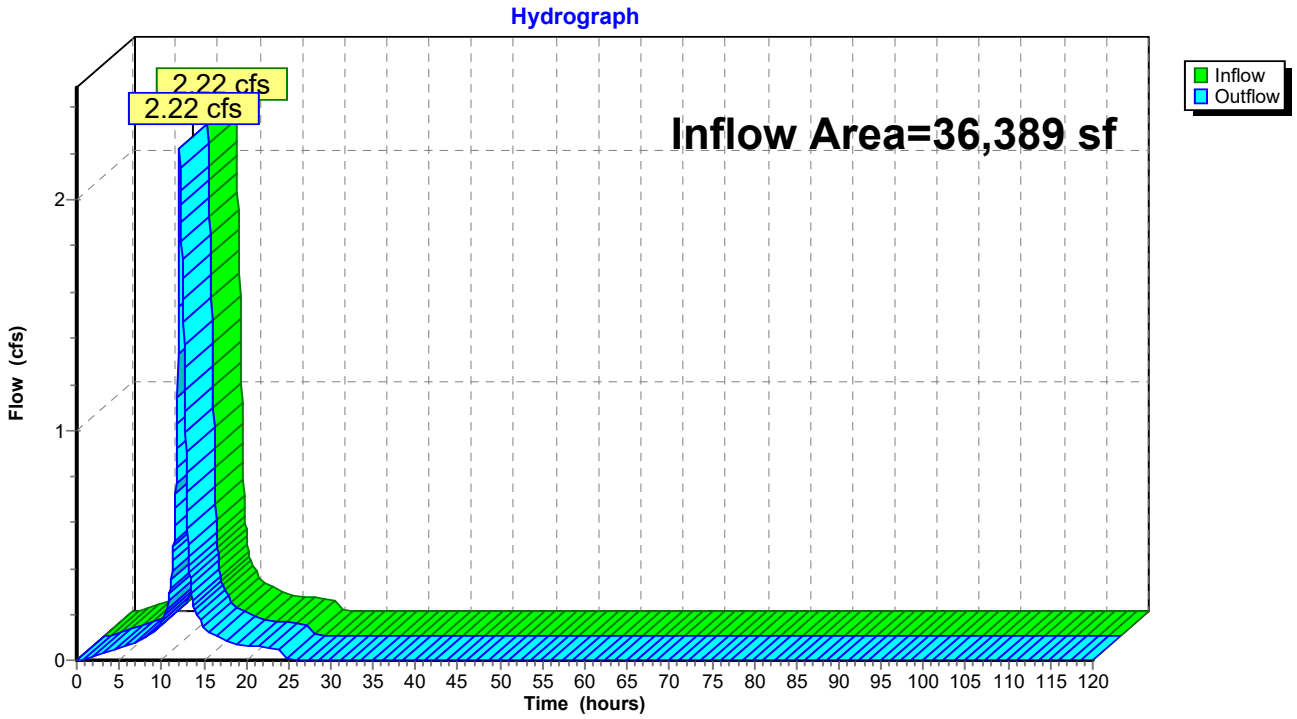
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.15	0.04	0.03
5.00	0.33	0.17	0.05
7.50	0.57	0.38	0.08
10.00	0.96	0.75	**0.16**
12.50	3.71	3.47	**0.76**
15.00	4.49	4.26	0.11
17.50	4.80	4.56	0.07
20.00	5.00	4.77	0.05
22.50	**5.17**	**4.94**	0.05
25.00	**5.26**	**5.02**	0.00
27.50	5.26	5.02	0.00
30.00	5.26	5.02	0.00
32.50	5.26	5.02	0.00
35.00	5.26	5.02	0.00
37.50	5.26	5.02	0.00
40.00	5.26	5.02	0.00
42.50	5.26	5.02	0.00
45.00	5.26	5.02	0.00
47.50	5.26	5.02	0.00
50.00	5.26	5.02	0.00
52.50	5.26	5.02	0.00
55.00	5.26	5.02	0.00
57.50	5.26	5.02	0.00
60.00	5.26	5.02	0.00
62.50	5.26	5.02	0.00
65.00	5.26	5.02	0.00
67.50	5.26	5.02	0.00
70.00	5.26	5.02	0.00
72.50	5.26	5.02	0.00
75.00	5.26	5.02	0.00
77.50	5.26	5.02	0.00
80.00	5.26	5.02	0.00
82.50	5.26	5.02	0.00
85.00	5.26	5.02	0.00
87.50	5.26	5.02	0.00
90.00	5.26	5.02	0.00
92.50	5.26	5.02	0.00
95.00	5.26	5.02	0.00
97.50	5.26	5.02	0.00
100.00	5.26	5.02	0.00
102.50	5.26	5.02	0.00
105.00	5.26	5.02	0.00
107.50	5.26	5.02	0.00
110.00	5.26	5.02	0.00
112.50	5.26	5.02	0.00
115.00	5.26	5.02	0.00
117.50	5.26	5.02	0.00
120.00	5.26	5.02	0.00

Summary for Reach PR1 END: POI-1 for PRDA-1 (current)

Inflow Area = 36,389 sf, 99.53% Impervious, Inflow Depth = 5.01" for 10-yr, Current event
Inflow = 2.22 cfs @ 12.16 hrs, Volume= 15,203 cf
Outflow = 2.22 cfs @ 12.16 hrs, Volume= 15,203 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach PR1 END: POI-1 for PRDA-1 (current)



Hydrograph for Reach PR1 END: POI-1 for PRDA-1 (current)

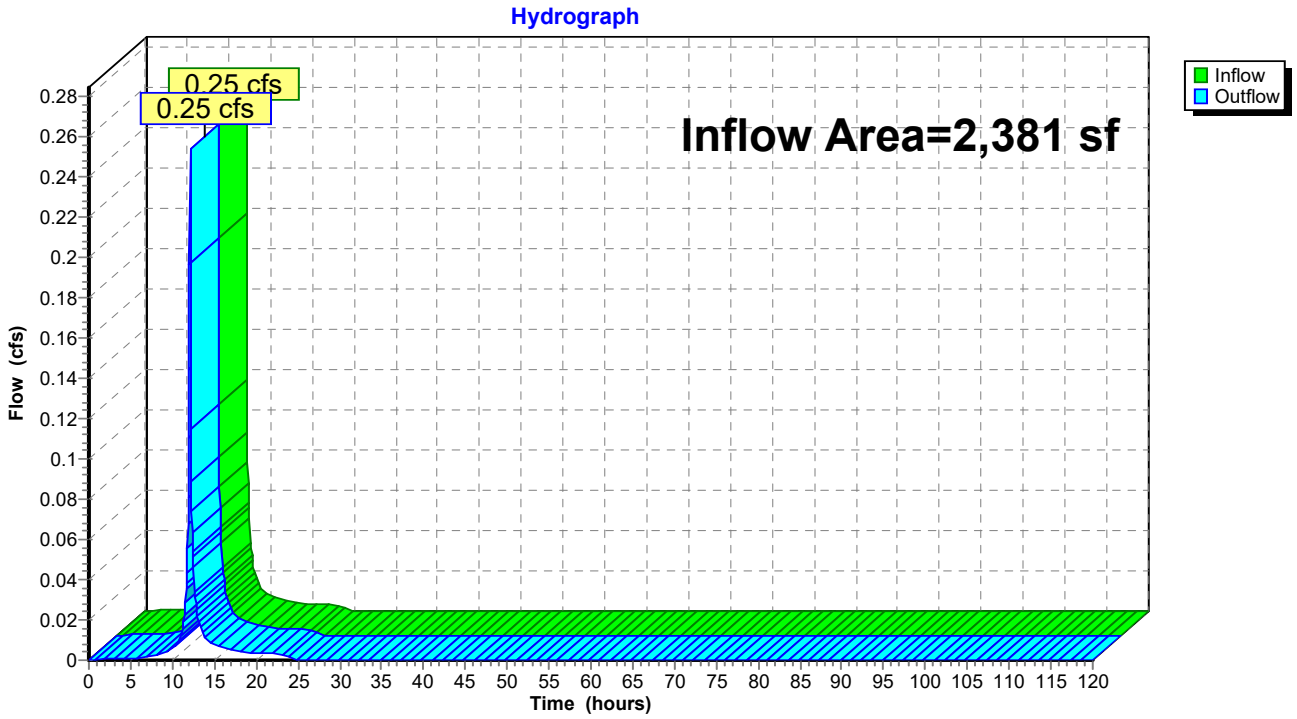
Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00
2.50	0.02		0.02
5.00	0.05		0.05
7.50	0.09		0.09
10.00	**0.17**		**0.17**
12.50	**1.66**		**1.66**
15.00	0.14		0.14
17.50	0.09		0.09
20.00	0.06		0.06
22.50	0.05		0.05
25.00	0.01		0.01
27.50	0.00		0.00
30.00	0.00		0.00
32.50	0.00		0.00
35.00	0.00		0.00
37.50	0.00		0.00
40.00	0.00		0.00
42.50	0.00		0.00
45.00	0.00		0.00
47.50	0.00		0.00
50.00	0.00		0.00
52.50	0.00		0.00
55.00	0.00		0.00
57.50	0.00		0.00
60.00	0.00		0.00
62.50	0.00		0.00
65.00	0.00		0.00
67.50	0.00		0.00
70.00	0.00		0.00
72.50	0.00		0.00
75.00	0.00		0.00
77.50	0.00		0.00
80.00	0.00		0.00
82.50	0.00		0.00
85.00	0.00		0.00
87.50	0.00		0.00
90.00	0.00		0.00
92.50	0.00		0.00
95.00	0.00		0.00
97.50	0.00		0.00
100.00	0.00		0.00
102.50	0.00		0.00
105.00	0.00		0.00
107.50	0.00		0.00
110.00	0.00		0.00
112.50	0.00		0.00
115.00	0.00		0.00
117.50	0.00		0.00
120.00	0.00		0.00

Summary for Reach PR2 CURR: POI-2 for PRDA-2 (current)

Inflow Area = 2,381 sf, 29.23% Impervious, Inflow Depth = 3.61" for 10-yr, Current event
Inflow = 0.25 cfs @ 12.10 hrs, Volume= 716 cf
Outflow = 0.25 cfs @ 12.10 hrs, Volume= 716 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach PR2 CURR: POI-2 for PRDA-2 (current)



Hydrograph for Reach PR2 CURR: POI-2 for PRDA-2 (current)

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00
2.50	0.00		0.00
5.00	0.00		0.00
7.50	0.00		0.00
10.00	**0.01**		**0.01**
12.50	**0.05**		**0.05**
15.00	0.01		0.01
17.50	0.00		0.00
20.00	0.00		0.00
22.50	0.00		0.00
25.00	0.00		0.00
27.50	0.00		0.00
30.00	0.00		0.00
32.50	0.00		0.00
35.00	0.00		0.00
37.50	0.00		0.00
40.00	0.00		0.00
42.50	0.00		0.00
45.00	0.00		0.00
47.50	0.00		0.00
50.00	0.00		0.00
52.50	0.00		0.00
55.00	0.00		0.00
57.50	0.00		0.00
60.00	0.00		0.00
62.50	0.00		0.00
65.00	0.00		0.00
67.50	0.00		0.00
70.00	0.00		0.00
72.50	0.00		0.00
75.00	0.00		0.00
77.50	0.00		0.00
80.00	0.00		0.00
82.50	0.00		0.00
85.00	0.00		0.00
87.50	0.00		0.00
90.00	0.00		0.00
92.50	0.00		0.00
95.00	0.00		0.00
97.50	0.00		0.00
100.00	0.00		0.00
102.50	0.00		0.00
105.00	0.00		0.00
107.50	0.00		0.00
110.00	0.00		0.00
112.50	0.00		0.00
115.00	0.00		0.00
117.50	0.00		0.00
120.00	0.00		0.00

Summary for Pond BMP 1: BMP-1

Inflow Area = 35,521 sf, 99.85% Impervious, Inflow Depth = 5.02" for 10-yr, Current event
Inflow = 5.00 cfs @ 12.07 hrs, Volume= 14,859 cf
Outflow = 2.18 cfs @ 12.16 hrs, Volume= 14,859 cf, Atten= 56%, Lag= 5.3 min
Primary = 2.18 cfs @ 12.16 hrs, Volume= 14,859 cf
Routed to Reach PR1 END : POI-1 for PRDA-1 (current)

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 16.45' @ 12.17 hrs Surf.Area= 766 sf Storage= 2,639 cf

Plug-Flow detention time= 19.1 min calculated for 14,853 cf (100% of inflow)
Center-of-Mass det. time= 19.1 min (763.2 - 744.0)

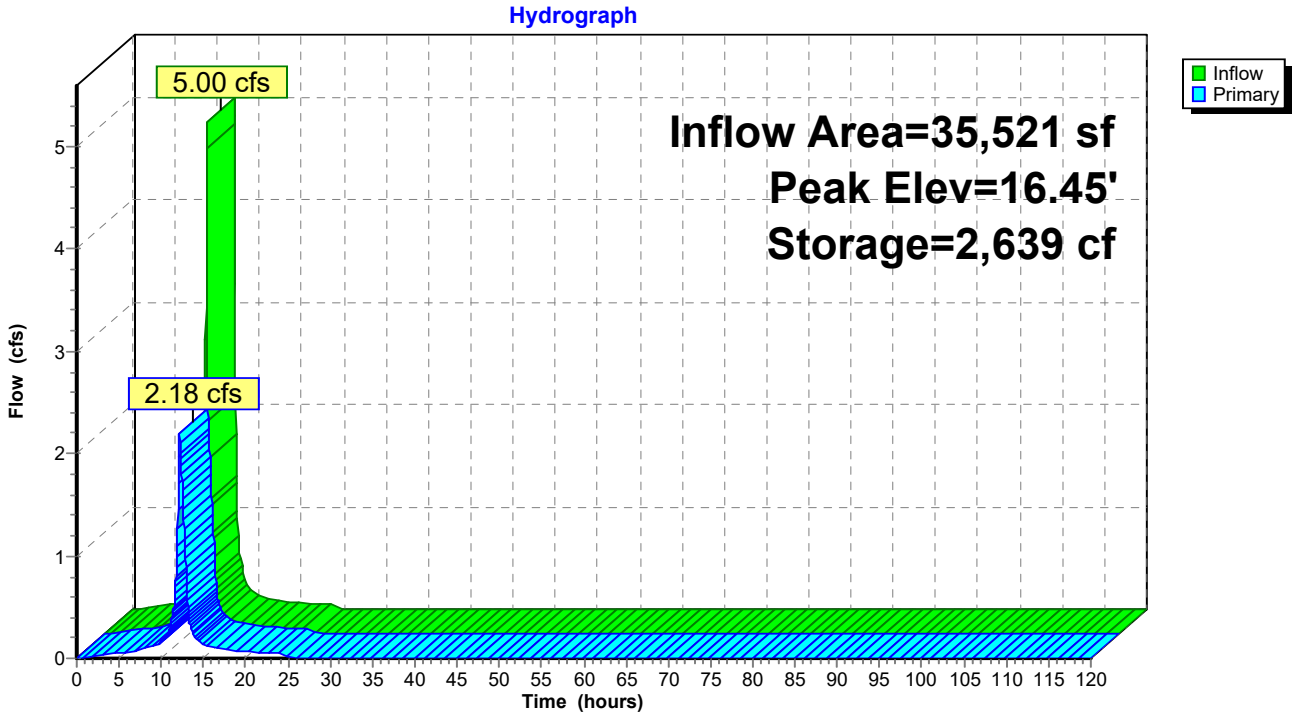
Volume	Invert	Avail.Storage	Storage Description
#1	13.00'	6,128 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.00	766	0	0
14.00	766	766	766
15.00	766	766	1,532
16.00	766	766	2,298
17.00	766	766	3,064
18.00	766	766	3,830
19.00	766	766	4,596
20.00	766	766	5,362
21.00	766	766	6,128

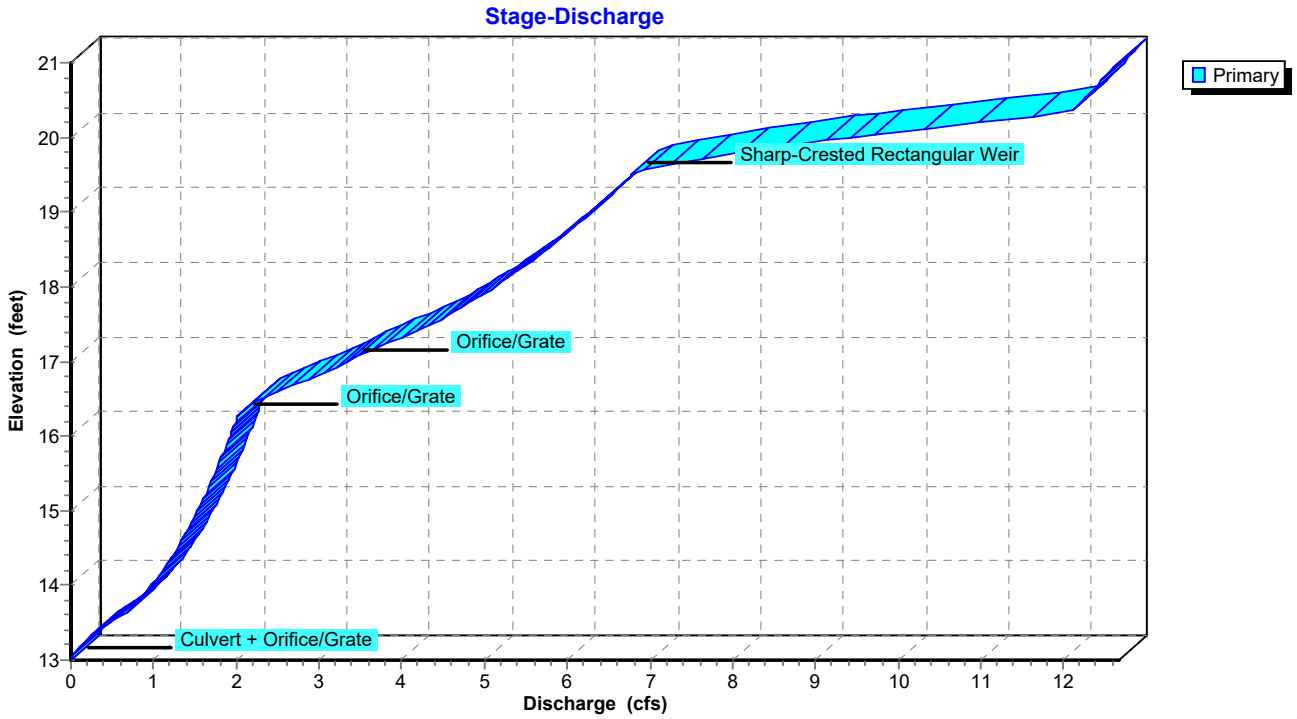
Device	Routing	Invert	Outlet Devices
#1	Primary	13.00'	**15.0" Round Culvert** L= 40.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.00' / 11.80' S= 0.0300 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.23 sf
#2	Device 1	13.00'	**5.0" W x 7.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	16.25'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	17.00'	**5.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Device 1	19.50'	**2.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=2.15 cfs @ 12.16 hrs HW=16.41' (Free Discharge)
└**1=Culvert** (Passes 2.15 cfs of 7.79 cfs potential flow)
├**2=Orifice/Grate** (Orifice Controls 2.07 cfs @ 8.50 fps)
├**3=Orifice/Grate** (Orifice Controls 0.09 cfs @ 1.36 fps)
├**4=Orifice/Grate** (Controls 0.00 cfs)
└**5=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond BMP 1: BMP-1



Pond BMP 1: BMP-1



Hydrograph for Pond BMP 1: BMP-1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	13.00	0.00
2.50	0.03	53	13.07	0.02
5.00	0.05	89	13.12	0.05
7.50	0.09	120	13.16	0.08
10.00	**0.18**	**191**	**13.25**	**0.17**
12.50	**0.84**	**1,735**	**15.27**	**1.64**
15.00	0.13	170	13.22	0.14
17.50	0.08	121	13.16	0.08
20.00	0.06	99	13.13	0.06
22.50	0.05	88	13.12	0.05
25.00	0.00	19	13.02	0.01
27.50	0.00	0	13.00	0.00
30.00	0.00	0	13.00	0.00
32.50	0.00	0	13.00	0.00
35.00	0.00	0	13.00	0.00
37.50	0.00	0	13.00	0.00
40.00	0.00	0	13.00	0.00
42.50	0.00	0	13.00	0.00
45.00	0.00	0	13.00	0.00
47.50	0.00	0	13.00	0.00
50.00	0.00	0	13.00	0.00
52.50	0.00	0	13.00	0.00
55.00	0.00	0	13.00	0.00
57.50	0.00	0	13.00	0.00
60.00	0.00	0	13.00	0.00
62.50	0.00	0	13.00	0.00
65.00	0.00	0	13.00	0.00
67.50	0.00	0	13.00	0.00
70.00	0.00	0	13.00	0.00
72.50	0.00	0	13.00	0.00
75.00	0.00	0	13.00	0.00
77.50	0.00	0	13.00	0.00
80.00	0.00	0	13.00	0.00
82.50	0.00	0	13.00	0.00
85.00	0.00	0	13.00	0.00
87.50	0.00	0	13.00	0.00
90.00	0.00	0	13.00	0.00
92.50	0.00	0	13.00	0.00
95.00	0.00	0	13.00	0.00
97.50	0.00	0	13.00	0.00
100.00	0.00	0	13.00	0.00
102.50	0.00	0	13.00	0.00
105.00	0.00	0	13.00	0.00
107.50	0.00	0	13.00	0.00
110.00	0.00	0	13.00	0.00
112.50	0.00	0	13.00	0.00
115.00	0.00	0	13.00	0.00
117.50	0.00	0	13.00	0.00
120.00	0.00	0	13.00	0.00

Stage-Area-Storage for Pond BMP 1: BMP-1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
13.00	**766**	0
13.10	766	77
13.20	766	153
13.30	766	230
13.40	766	306
13.50	766	383
13.60	766	460
13.70	766	536
13.80	766	613
13.90	766	689
14.00	766	766
14.10	766	843
14.20	766	919
14.30	766	996
14.40	766	1,072
14.50	766	1,149
14.60	766	1,226
14.70	766	1,302
14.80	766	1,379
14.90	766	1,455
15.00	766	1,532
15.10	766	1,609
15.20	766	1,685
15.30	766	1,762
15.40	766	1,838
15.50	766	1,915
15.60	766	1,992
15.70	766	2,068
15.80	766	2,145
15.90	766	2,221
16.00	766	2,298
16.10	766	2,375
16.20	766	2,451
16.30	766	2,528
16.40	766	2,604
16.50	766	2,681
16.60	766	2,758
16.70	766	2,834
16.80	766	2,911
16.90	766	2,987
17.00	766	3,064
17.10	766	3,141
17.20	766	3,217
17.30	766	3,294
17.40	766	3,370
17.50	766	3,447
17.60	766	3,524
17.70	766	3,600
17.80	766	3,677
17.90	766	3,753
18.00	766	3,830
18.10	766	3,907
18.20	766	3,983
18.30	766	4,060
18.40	766	4,136
18.50	766	4,213
18.60	766	4,290
18.70	766	4,366
18.80	766	4,443
18.90	766	4,519
19.00	766	4,596
19.10	766	4,673
19.20	766	4,749
19.30	766	4,826
19.40	766	4,902
19.50	766	4,979
19.60	766	5,056
19.70	766	5,132
19.80	766	5,209
19.90	766	5,285
20.00	766	5,362
20.10	766	5,439
20.20	766	5,515
20.30	766	5,592
20.40	766	5,668
20.50	766	5,745
20.60	766	5,822
20.70	766	5,898
20.80	766	5,975
20.90	766	6,051
21.00	766	**6,128**

Summary for Subcatchment PR1.0: Impervious

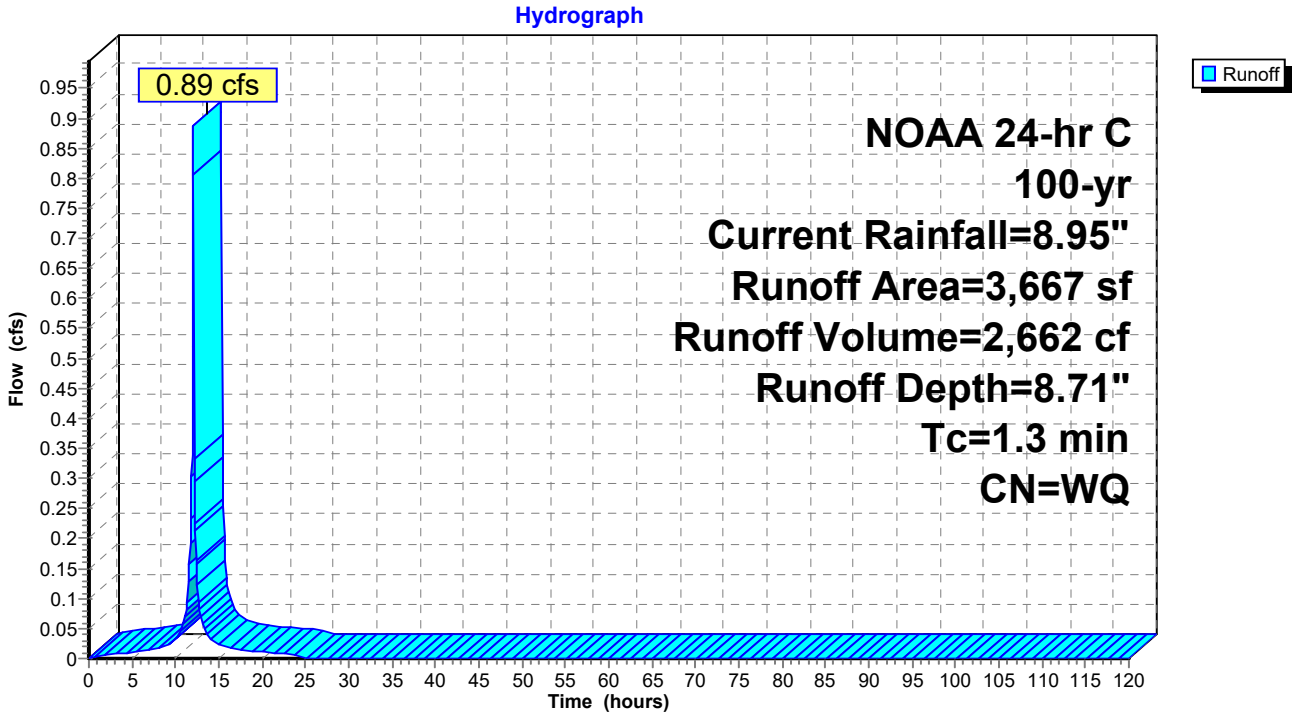
Runoff = 0.89 cfs @ 12.07 hrs, Volume= 2,662 cf, Depth= 8.71"
Routed to Pond BMP 1 : BMP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 100-yr, Current Rainfall=8.95"

	Area (sf)	CN	Description
*	2,755	98	Paved parking, HSG C
*	912	98	impervious walkway
	3,667		Weighted Average
	3,667		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3					**Direct Entry,**

Subcatchment PR1.0: Impervious



Hydrograph for Subcatchment PR1.0: Impervious

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.26	0.11	0.01
5.00	0.57	0.38	0.01
7.50	0.97	0.76	0.02
10.00	1.63	1.41	**0.03**
12.50	6.31	6.07	**0.15**
15.00	7.64	7.40	0.02
17.50	8.16	7.92	0.01
20.00	8.51	8.27	0.01
22.50	**8.80**	**8.56**	0.01
25.00	**8.95**	**8.71**	0.00
27.50	8.95	8.71	0.00
30.00	8.95	8.71	0.00
32.50	8.95	8.71	0.00
35.00	8.95	8.71	0.00
37.50	8.95	8.71	0.00
40.00	8.95	8.71	0.00
42.50	8.95	8.71	0.00
45.00	8.95	8.71	0.00
47.50	8.95	8.71	0.00
50.00	8.95	8.71	0.00
52.50	8.95	8.71	0.00
55.00	8.95	8.71	0.00
57.50	8.95	8.71	0.00
60.00	8.95	8.71	0.00
62.50	8.95	8.71	0.00
65.00	8.95	8.71	0.00
67.50	8.95	8.71	0.00
70.00	8.95	8.71	0.00
72.50	8.95	8.71	0.00
75.00	8.95	8.71	0.00
77.50	8.95	8.71	0.00
80.00	8.95	8.71	0.00
82.50	8.95	8.71	0.00
85.00	8.95	8.71	0.00
87.50	8.95	8.71	0.00
90.00	8.95	8.71	0.00
92.50	8.95	8.71	0.00
95.00	8.95	8.71	0.00
97.50	8.95	8.71	0.00
100.00	8.95	8.71	0.00
102.50	8.95	8.71	0.00
105.00	8.95	8.71	0.00
107.50	8.95	8.71	0.00
110.00	8.95	8.71	0.00
112.50	8.95	8.71	0.00
115.00	8.95	8.71	0.00
117.50	8.95	8.71	0.00
120.00	8.95	8.71	0.00

Summary for Subcatchment PR1.1: Impervious bypass

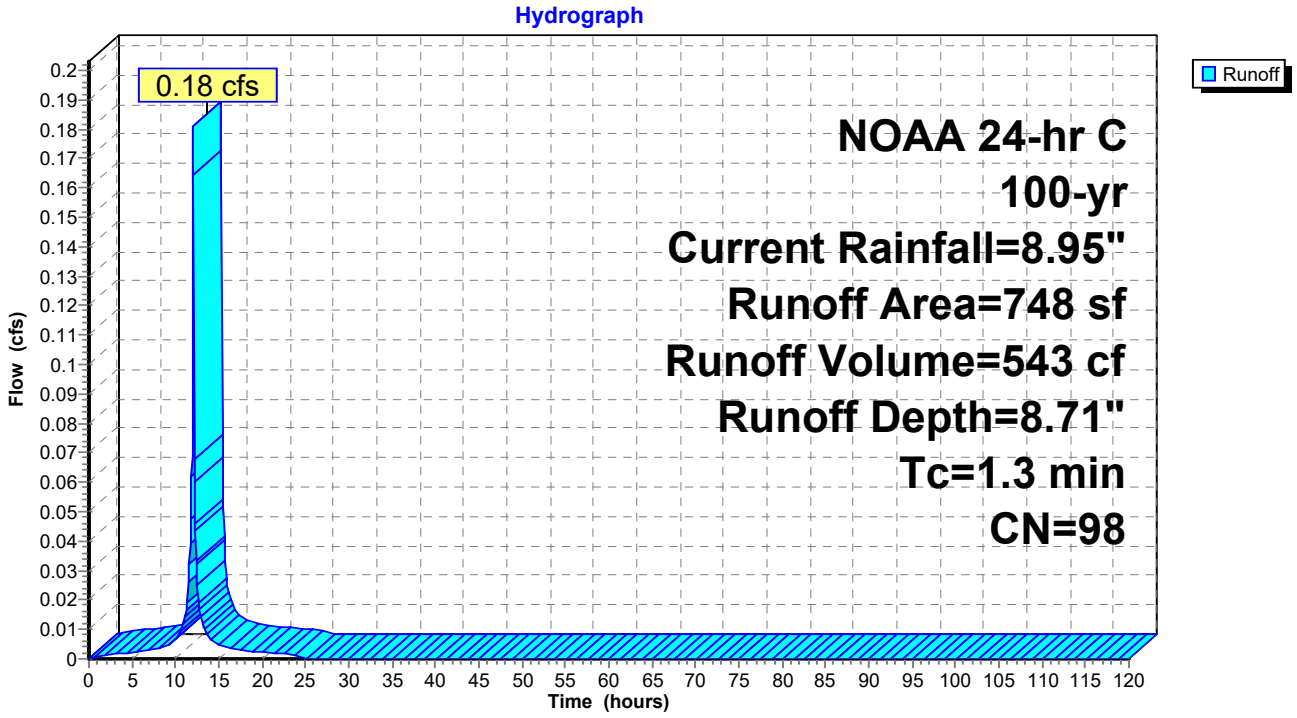
Runoff = 0.18 cfs @ 12.07 hrs, Volume= 543 cf, Depth= 8.71"
Routed to Reach PR1 END : POI-1 for PRDA-1 (current)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 100-yr, Current Rainfall=8.95"

	Area (sf)	CN	Description
*	748	98	impervious walkway
	748		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3					**Direct Entry,**

Subcatchment PR1.1: Impervious bypass



Hydrograph for Subcatchment PR1.1: Impervious bypass

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.26	0.11	0.00
5.00	0.57	0.38	0.00
7.50	0.97	0.76	0.00
10.00	1.63	1.41	**0.01**
12.50	6.31	6.07	**0.03**
15.00	7.64	7.40	0.00
17.50	8.16	7.92	0.00
20.00	8.51	8.27	0.00
22.50	**8.80**	**8.56**	0.00
25.00	**8.95**	**8.71**	0.00
27.50	8.95	8.71	0.00
30.00	8.95	8.71	0.00
32.50	8.95	8.71	0.00
35.00	8.95	8.71	0.00
37.50	8.95	8.71	0.00
40.00	8.95	8.71	0.00
42.50	8.95	8.71	0.00
45.00	8.95	8.71	0.00
47.50	8.95	8.71	0.00
50.00	8.95	8.71	0.00
52.50	8.95	8.71	0.00
55.00	8.95	8.71	0.00
57.50	8.95	8.71	0.00
60.00	8.95	8.71	0.00
62.50	8.95	8.71	0.00
65.00	8.95	8.71	0.00
67.50	8.95	8.71	0.00
70.00	8.95	8.71	0.00
72.50	8.95	8.71	0.00
75.00	8.95	8.71	0.00
77.50	8.95	8.71	0.00
80.00	8.95	8.71	0.00
82.50	8.95	8.71	0.00
85.00	8.95	8.71	0.00
87.50	8.95	8.71	0.00
90.00	8.95	8.71	0.00
92.50	8.95	8.71	0.00
95.00	8.95	8.71	0.00
97.50	8.95	8.71	0.00
100.00	8.95	8.71	0.00
102.50	8.95	8.71	0.00
105.00	8.95	8.71	0.00
107.50	8.95	8.71	0.00
110.00	8.95	8.71	0.00
112.50	8.95	8.71	0.00
115.00	8.95	8.71	0.00
117.50	8.95	8.71	0.00
120.00	8.95	8.71	0.00

Summary for Subcatchment PR2 1.0: ImperviousTO POA 2

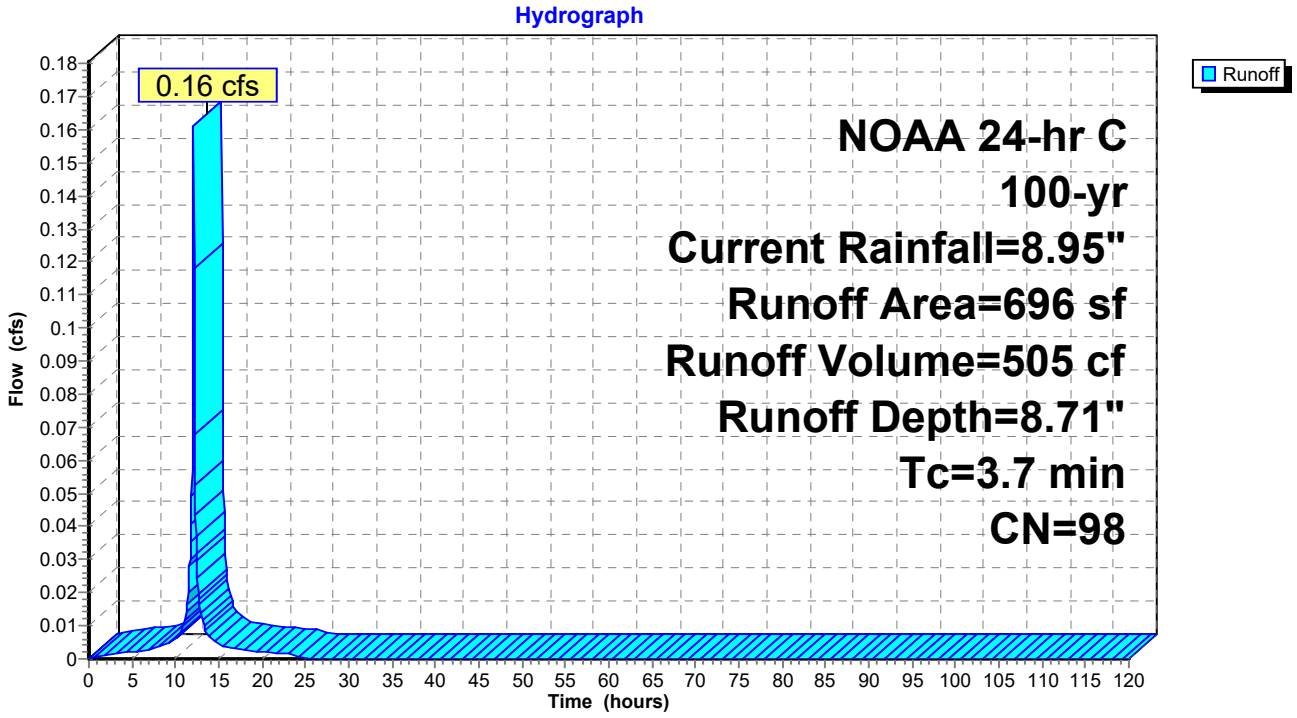
Runoff = 0.16 cfs @ 12.10 hrs, Volume= 505 cf, Depth= 8.71"
Routed to Reach PR2 CURR : POI-2 for PRDA-2 (current)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 100-yr, Current Rainfall=8.95"

	Area (sf)	CN	Description
*	696	98	impervious
	696		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7					**Direct Entry,**

Subcatchment PR2 1.0: ImperviousTO POA 2



Hydrograph for Subcatchment PR2 1.0: ImperviousTO POA 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.26	0.11	0.00
5.00	0.57	0.38	0.00
7.50	0.97	0.76	0.00
10.00	1.63	1.41	**0.01**
12.50	6.31	6.07	**0.03**
15.00	7.64	7.40	0.00
17.50	8.16	7.92	0.00
20.00	8.51	8.27	0.00
22.50	**8.80**	**8.56**	0.00
25.00	**8.95**	**8.71**	0.00
27.50	8.95	8.71	0.00
30.00	8.95	8.71	0.00
32.50	8.95	8.71	0.00
35.00	8.95	8.71	0.00
37.50	8.95	8.71	0.00
40.00	8.95	8.71	0.00
42.50	8.95	8.71	0.00
45.00	8.95	8.71	0.00
47.50	8.95	8.71	0.00
50.00	8.95	8.71	0.00
52.50	8.95	8.71	0.00
55.00	8.95	8.71	0.00
57.50	8.95	8.71	0.00
60.00	8.95	8.71	0.00
62.50	8.95	8.71	0.00
65.00	8.95	8.71	0.00
67.50	8.95	8.71	0.00
70.00	8.95	8.71	0.00
72.50	8.95	8.71	0.00
75.00	8.95	8.71	0.00
77.50	8.95	8.71	0.00
80.00	8.95	8.71	0.00
82.50	8.95	8.71	0.00
85.00	8.95	8.71	0.00
87.50	8.95	8.71	0.00
90.00	8.95	8.71	0.00
92.50	8.95	8.71	0.00
95.00	8.95	8.71	0.00
97.50	8.95	8.71	0.00
100.00	8.95	8.71	0.00
102.50	8.95	8.71	0.00
105.00	8.95	8.71	0.00
107.50	8.95	8.71	0.00
110.00	8.95	8.71	0.00
112.50	8.95	8.71	0.00
115.00	8.95	8.71	0.00
117.50	8.95	8.71	0.00
120.00	8.95	8.71	0.00

Summary for Subcatchment PR2 2.0: Pervious TO POA 2

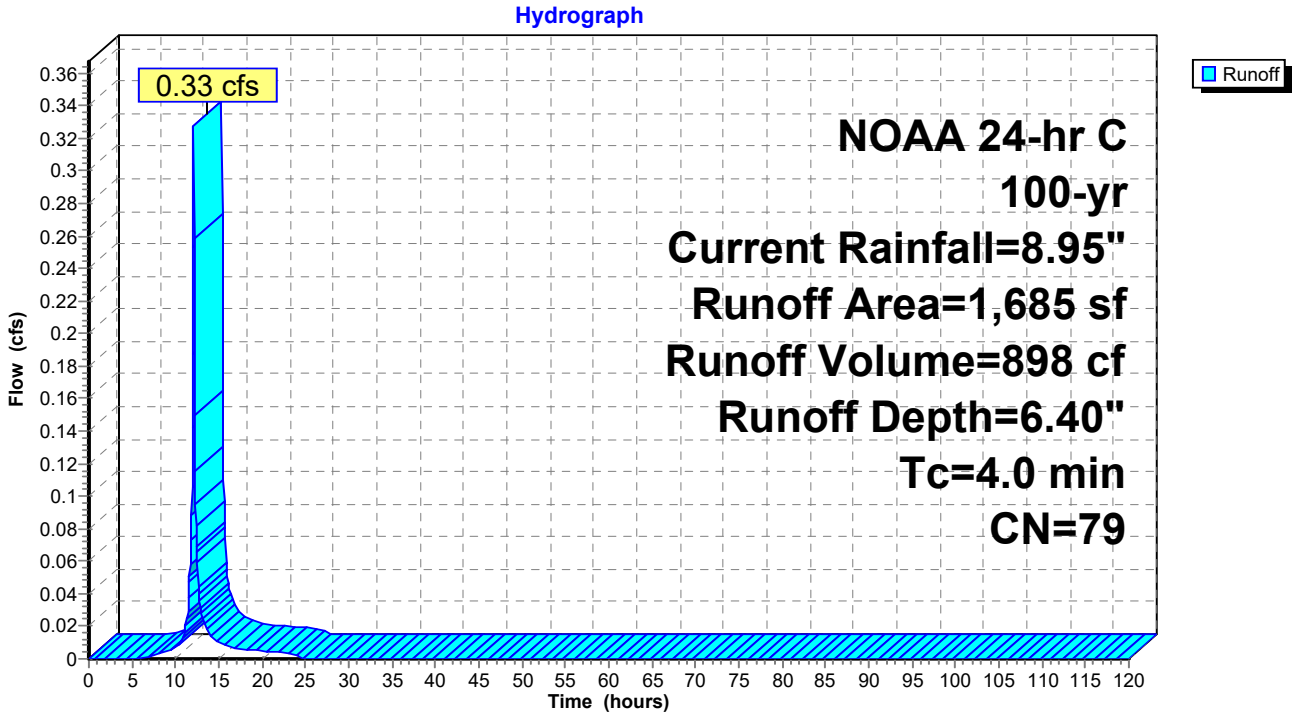
Runoff = 0.33 cfs @ 12.10 hrs, Volume= 898 cf, Depth= 6.40"
Routed to Reach PR2 CURR : POI-2 for PRDA-2 (current)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 100-yr, Current Rainfall=8.95"

	Area (sf)	CN	Description
*	1,685	79	planters
	1,685		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0					**Direct Entry,**

Subcatchment PR2 2.0: Pervious TO POA 2



Hydrograph for Subcatchment PR2 2.0: Pervious TO POA 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.26	0.00	0.00
5.00	0.57	0.00	0.00
7.50	0.97	0.06	0.00
10.00	1.63	0.32	**0.01**
12.50	6.31	3.95	**0.06**
15.00	7.64	5.18	0.01
17.50	8.16	5.66	0.01
20.00	8.51	5.99	0.00
22.50	**8.80**	**6.26**	0.00
25.00	**8.95**	**6.40**	0.00
27.50	8.95	6.40	0.00
30.00	8.95	6.40	0.00
32.50	8.95	6.40	0.00
35.00	8.95	6.40	0.00
37.50	8.95	6.40	0.00
40.00	8.95	6.40	0.00
42.50	8.95	6.40	0.00
45.00	8.95	6.40	0.00
47.50	8.95	6.40	0.00
50.00	8.95	6.40	0.00
52.50	8.95	6.40	0.00
55.00	8.95	6.40	0.00
57.50	8.95	6.40	0.00
60.00	8.95	6.40	0.00
62.50	8.95	6.40	0.00
65.00	8.95	6.40	0.00
67.50	8.95	6.40	0.00
70.00	8.95	6.40	0.00
72.50	8.95	6.40	0.00
75.00	8.95	6.40	0.00
77.50	8.95	6.40	0.00
80.00	8.95	6.40	0.00
82.50	8.95	6.40	0.00
85.00	8.95	6.40	0.00
87.50	8.95	6.40	0.00
90.00	8.95	6.40	0.00
92.50	8.95	6.40	0.00
95.00	8.95	6.40	0.00
97.50	8.95	6.40	0.00
100.00	8.95	6.40	0.00
102.50	8.95	6.40	0.00
105.00	8.95	6.40	0.00
107.50	8.95	6.40	0.00
110.00	8.95	6.40	0.00
112.50	8.95	6.40	0.00
115.00	8.95	6.40	0.00
117.50	8.95	6.40	0.00
120.00	8.95	6.40	0.00

Summary for Subcatchment PR2.0: Pervious

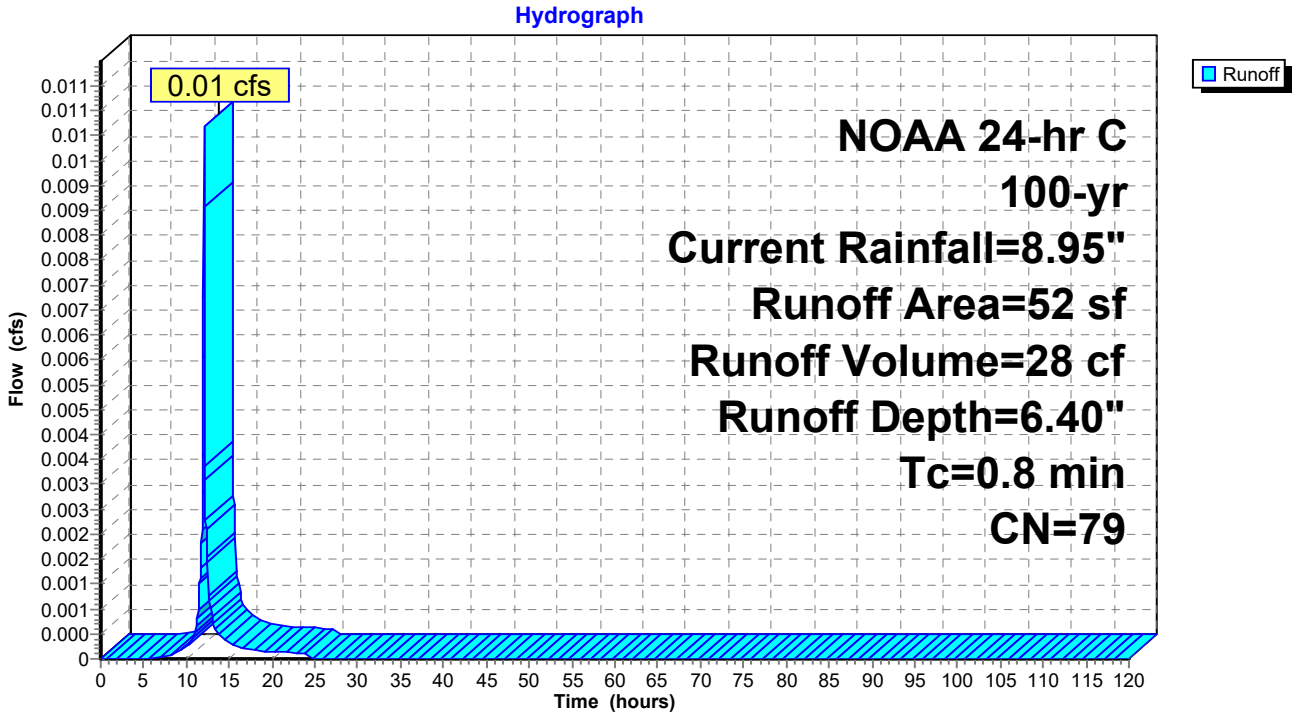
Runoff = 0.01 cfs @ 12.06 hrs, Volume= 28 cf, Depth= 6.40"
Routed to Pond BMP 1 : BMP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 100-yr, Current Rainfall=8.95"

	Area (sf)	CN	Description
*	52	79	50-75% Grass cover, Fair, HSG C
	52		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8					**Direct Entry,**

Subcatchment PR2.0: Pervious



Hydrograph for Subcatchment PR2.0: Pervious

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.26	0.00	0.00
5.00	0.57	0.00	0.00
7.50	0.97	0.06	0.00
10.00	1.63	0.32	**0.00**
12.50	6.31	3.95	**0.00**
15.00	7.64	5.18	0.00
17.50	8.16	5.66	0.00
20.00	8.51	5.99	0.00
22.50	**8.80**	**6.26**	0.00
25.00	**8.95**	**6.40**	0.00
27.50	8.95	6.40	0.00
30.00	8.95	6.40	0.00
32.50	8.95	6.40	0.00
35.00	8.95	6.40	0.00
37.50	8.95	6.40	0.00
40.00	8.95	6.40	0.00
42.50	8.95	6.40	0.00
45.00	8.95	6.40	0.00
47.50	8.95	6.40	0.00
50.00	8.95	6.40	0.00
52.50	8.95	6.40	0.00
55.00	8.95	6.40	0.00
57.50	8.95	6.40	0.00
60.00	8.95	6.40	0.00
62.50	8.95	6.40	0.00
65.00	8.95	6.40	0.00
67.50	8.95	6.40	0.00
70.00	8.95	6.40	0.00
72.50	8.95	6.40	0.00
75.00	8.95	6.40	0.00
77.50	8.95	6.40	0.00
80.00	8.95	6.40	0.00
82.50	8.95	6.40	0.00
85.00	8.95	6.40	0.00
87.50	8.95	6.40	0.00
90.00	8.95	6.40	0.00
92.50	8.95	6.40	0.00
95.00	8.95	6.40	0.00
97.50	8.95	6.40	0.00
100.00	8.95	6.40	0.00
102.50	8.95	6.40	0.00
105.00	8.95	6.40	0.00
107.50	8.95	6.40	0.00
110.00	8.95	6.40	0.00
112.50	8.95	6.40	0.00
115.00	8.95	6.40	0.00
117.50	8.95	6.40	0.00
120.00	8.95	6.40	0.00

Summary for Subcatchment PR2.2: Pervious bypass

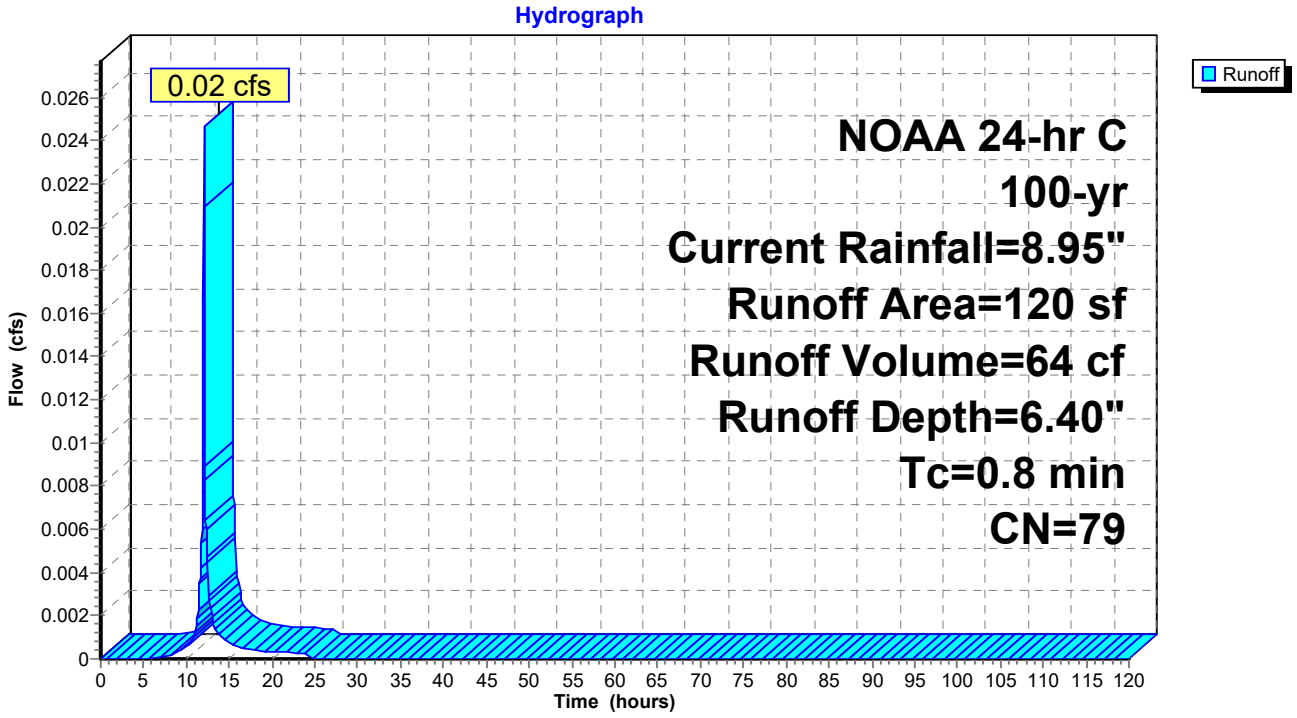
Runoff = 0.02 cfs @ 12.06 hrs, Volume= 64 cf, Depth= 6.40"
Routed to Reach PR1 END : POI-1 for PRDA-1 (current)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 100-yr, Current Rainfall=8.95"

	Area (sf)	CN	Description
*	120	79	planters
	120		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8					**Direct Entry,**

Subcatchment PR2.2: Pervious bypass



Hydrograph for Subcatchment PR2.2: Pervious bypass

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.26	0.00	0.00
5.00	0.57	0.00	0.00
7.50	0.97	0.06	0.00
10.00	1.63	0.32	**0.00**
12.50	6.31	3.95	**0.00**
15.00	7.64	5.18	0.00
17.50	8.16	5.66	0.00
20.00	8.51	5.99	0.00
22.50	**8.80**	**6.26**	0.00
25.00	**8.95**	**6.40**	0.00
27.50	8.95	6.40	0.00
30.00	8.95	6.40	0.00
32.50	8.95	6.40	0.00
35.00	8.95	6.40	0.00
37.50	8.95	6.40	0.00
40.00	8.95	6.40	0.00
42.50	8.95	6.40	0.00
45.00	8.95	6.40	0.00
47.50	8.95	6.40	0.00
50.00	8.95	6.40	0.00
52.50	8.95	6.40	0.00
55.00	8.95	6.40	0.00
57.50	8.95	6.40	0.00
60.00	8.95	6.40	0.00
62.50	8.95	6.40	0.00
65.00	8.95	6.40	0.00
67.50	8.95	6.40	0.00
70.00	8.95	6.40	0.00
72.50	8.95	6.40	0.00
75.00	8.95	6.40	0.00
77.50	8.95	6.40	0.00
80.00	8.95	6.40	0.00
82.50	8.95	6.40	0.00
85.00	8.95	6.40	0.00
87.50	8.95	6.40	0.00
90.00	8.95	6.40	0.00
92.50	8.95	6.40	0.00
95.00	8.95	6.40	0.00
97.50	8.95	6.40	0.00
100.00	8.95	6.40	0.00
102.50	8.95	6.40	0.00
105.00	8.95	6.40	0.00
107.50	8.95	6.40	0.00
110.00	8.95	6.40	0.00
112.50	8.95	6.40	0.00
115.00	8.95	6.40	0.00
117.50	8.95	6.40	0.00
120.00	8.95	6.40	0.00

Summary for Subcatchment PR3.0: Building

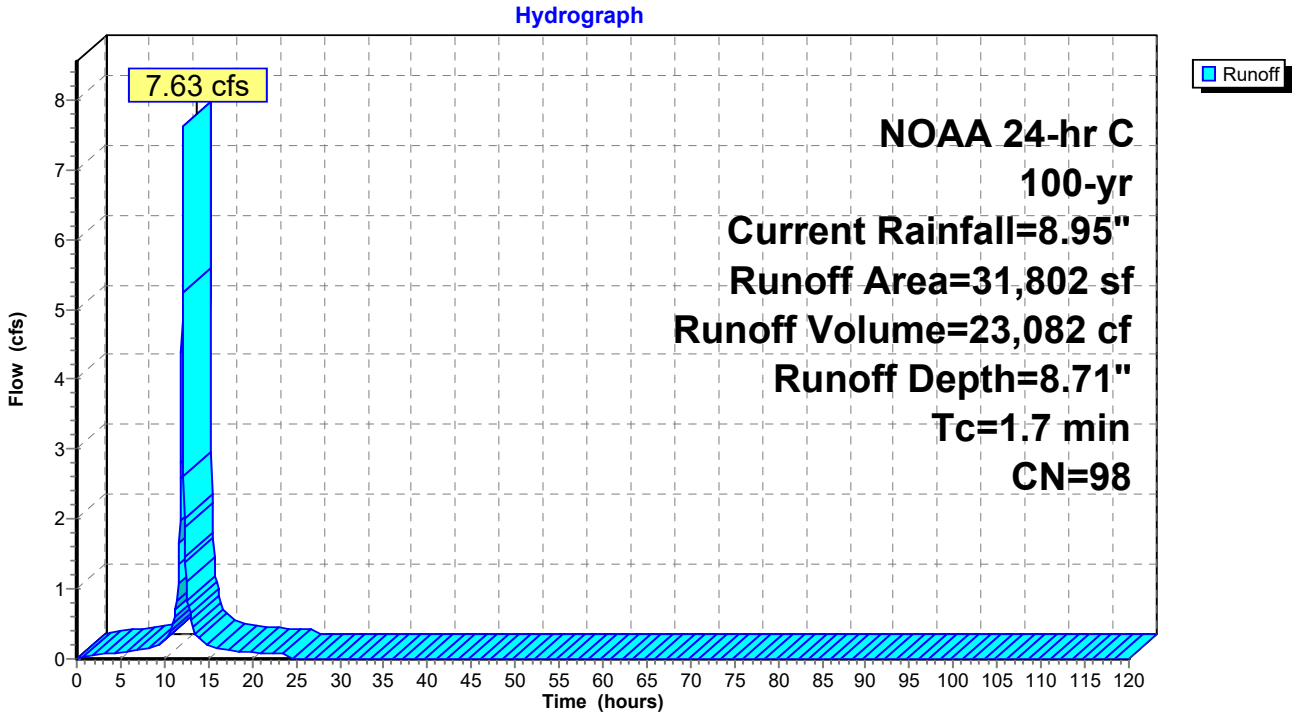
Runoff = 7.63 cfs @ 12.07 hrs, Volume= 23,082 cf, Depth= 8.71"
Routed to Pond BMP 1 : BMP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 100-yr, Current Rainfall=8.95"

Area (sf)	CN	Description
31,802	98	Roofs, HSG C
31,802		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7					**Direct Entry,**

Subcatchment PR3.0: Building



Hydrograph for Subcatchment PR3.0: Building

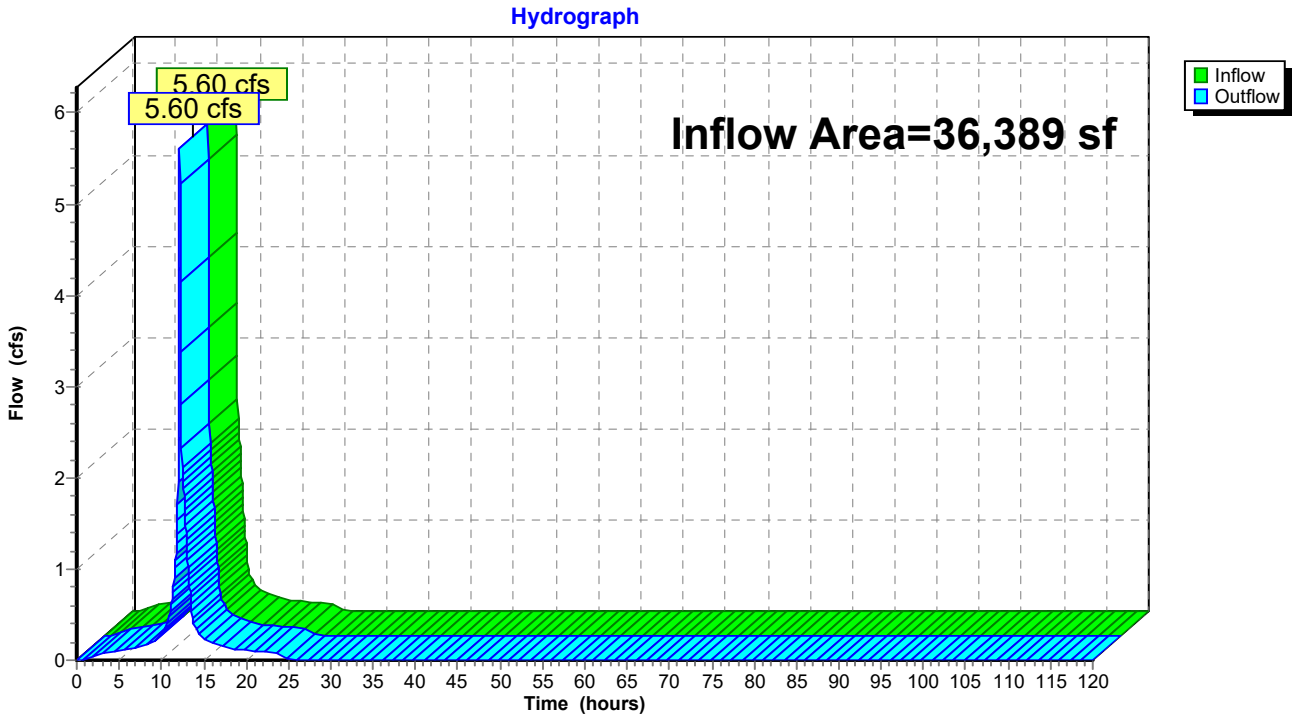
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.26	0.11	0.06
5.00	0.57	0.38	0.09
7.50	0.97	0.76	0.14
10.00	1.63	1.41	**0.28**
12.50	6.31	6.07	**1.29**
15.00	7.64	7.40	0.19
17.50	8.16	7.92	0.12
20.00	8.51	8.27	0.09
22.50	**8.80**	**8.56**	0.08
25.00	**8.95**	**8.71**	0.00
27.50	8.95	8.71	0.00
30.00	8.95	8.71	0.00
32.50	8.95	8.71	0.00
35.00	8.95	8.71	0.00
37.50	8.95	8.71	0.00
40.00	8.95	8.71	0.00
42.50	8.95	8.71	0.00
45.00	8.95	8.71	0.00
47.50	8.95	8.71	0.00
50.00	8.95	8.71	0.00
52.50	8.95	8.71	0.00
55.00	8.95	8.71	0.00
57.50	8.95	8.71	0.00
60.00	8.95	8.71	0.00
62.50	8.95	8.71	0.00
65.00	8.95	8.71	0.00
67.50	8.95	8.71	0.00
70.00	8.95	8.71	0.00
72.50	8.95	8.71	0.00
75.00	8.95	8.71	0.00
77.50	8.95	8.71	0.00
80.00	8.95	8.71	0.00
82.50	8.95	8.71	0.00
85.00	8.95	8.71	0.00
87.50	8.95	8.71	0.00
90.00	8.95	8.71	0.00
92.50	8.95	8.71	0.00
95.00	8.95	8.71	0.00
97.50	8.95	8.71	0.00
100.00	8.95	8.71	0.00
102.50	8.95	8.71	0.00
105.00	8.95	8.71	0.00
107.50	8.95	8.71	0.00
110.00	8.95	8.71	0.00
112.50	8.95	8.71	0.00
115.00	8.95	8.71	0.00
117.50	8.95	8.71	0.00
120.00	8.95	8.71	0.00

Summary for Reach PR1 END: POI-1 for PRDA-1 (current)

Inflow Area = 36,389 sf, 99.53% Impervious, Inflow Depth = 8.70" for 100-yr, Current event
Inflow = 5.60 cfs @ 12.13 hrs, Volume= 26,378 cf
Outflow = 5.60 cfs @ 12.13 hrs, Volume= 26,378 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach PR1 END: POI-1 for PRDA-1 (current)



Hydrograph for Reach PR1 END: POI-1 for PRDA-1 (current)

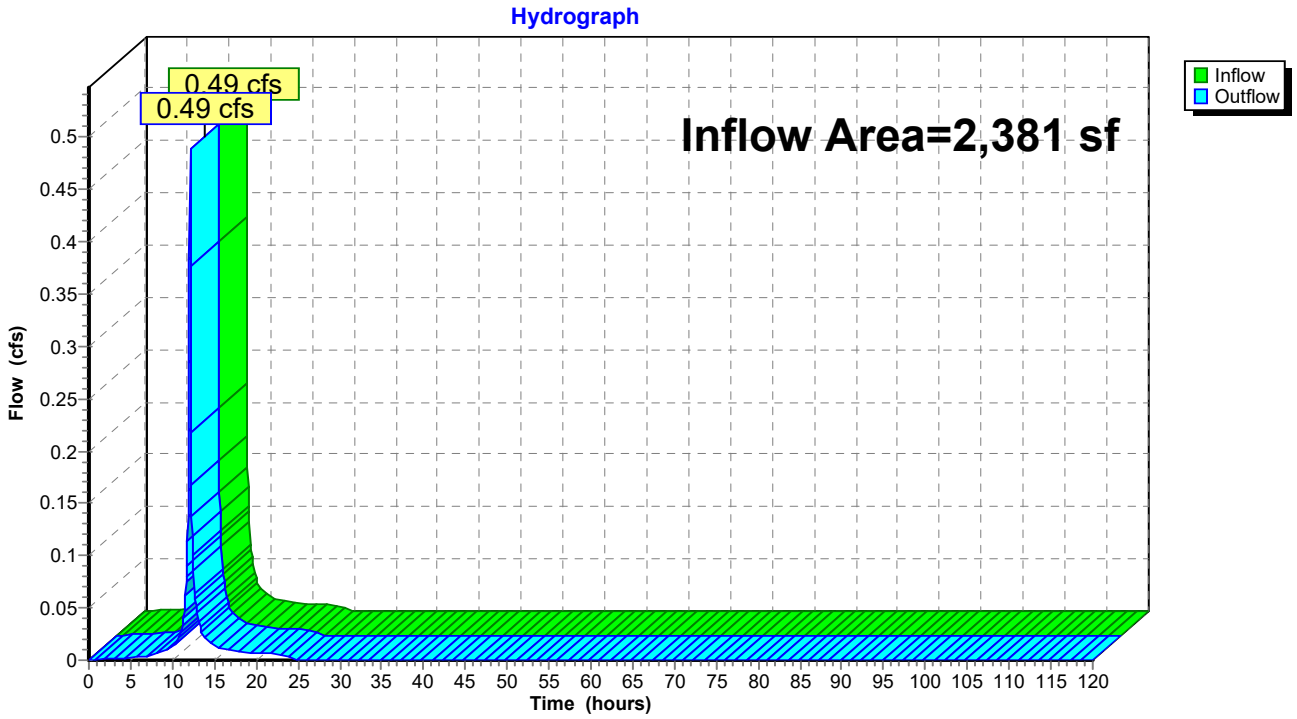
Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00
2.50	0.07		0.07
5.00	0.10		0.10
7.50	0.15		0.15
10.00	**0.30**		**0.30**
12.50	**2.03**		**2.03**
15.00	0.24		0.24
17.50	0.15		0.15
20.00	0.11		0.11
22.50	0.09		0.09
25.00	0.01		0.01
27.50	0.00		0.00
30.00	0.00		0.00
32.50	0.00		0.00
35.00	0.00		0.00
37.50	0.00		0.00
40.00	0.00		0.00
42.50	0.00		0.00
45.00	0.00		0.00
47.50	0.00		0.00
50.00	0.00		0.00
52.50	0.00		0.00
55.00	0.00		0.00
57.50	0.00		0.00
60.00	0.00		0.00
62.50	0.00		0.00
65.00	0.00		0.00
67.50	0.00		0.00
70.00	0.00		0.00
72.50	0.00		0.00
75.00	0.00		0.00
77.50	0.00		0.00
80.00	0.00		0.00
82.50	0.00		0.00
85.00	0.00		0.00
87.50	0.00		0.00
90.00	0.00		0.00
92.50	0.00		0.00
95.00	0.00		0.00
97.50	0.00		0.00
100.00	0.00		0.00
102.50	0.00		0.00
105.00	0.00		0.00
107.50	0.00		0.00
110.00	0.00		0.00
112.50	0.00		0.00
115.00	0.00		0.00
117.50	0.00		0.00
120.00	0.00		0.00

Summary for Reach PR2 CURR: POI-2 for PRDA-2 (current)

Inflow Area = 2,381 sf, 29.23% Impervious, Inflow Depth = 7.07" for 100-yr, Current event
Inflow = 0.49 cfs @ 12.10 hrs, Volume= 1,404 cf
Outflow = 0.49 cfs @ 12.10 hrs, Volume= 1,404 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach PR2 CURR: POI-2 for PRDA-2 (current)



Hydrograph for Reach PR2 CURR: POI-2 for PRDA-2 (current)

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00
2.50	0.00		0.00
5.00	0.00		0.00
7.50	0.01		0.01
10.00	**0.01**		**0.01**
12.50	**0.09**		**0.09**
15.00	0.01		0.01
17.50	0.01		0.01
20.00	0.01		0.01
22.50	0.01		0.01
25.00	0.00		0.00
27.50	0.00		0.00
30.00	0.00		0.00
32.50	0.00		0.00
35.00	0.00		0.00
37.50	0.00		0.00
40.00	0.00		0.00
42.50	0.00		0.00
45.00	0.00		0.00
47.50	0.00		0.00
50.00	0.00		0.00
52.50	0.00		0.00
55.00	0.00		0.00
57.50	0.00		0.00
60.00	0.00		0.00
62.50	0.00		0.00
65.00	0.00		0.00
67.50	0.00		0.00
70.00	0.00		0.00
72.50	0.00		0.00
75.00	0.00		0.00
77.50	0.00		0.00
80.00	0.00		0.00
82.50	0.00		0.00
85.00	0.00		0.00
87.50	0.00		0.00
90.00	0.00		0.00
92.50	0.00		0.00
95.00	0.00		0.00
97.50	0.00		0.00
100.00	0.00		0.00
102.50	0.00		0.00
105.00	0.00		0.00
107.50	0.00		0.00
110.00	0.00		0.00
112.50	0.00		0.00
115.00	0.00		0.00
117.50	0.00		0.00
120.00	0.00		0.00

Summary for Pond BMP 1: BMP-1

Inflow Area = 35,521 sf, 99.85% Impervious, Inflow Depth = 8.71" for 100-yr, Current event
Inflow = 8.53 cfs @ 12.07 hrs, Volume= 25,771 cf
Outflow = 5.50 cfs @ 12.13 hrs, Volume= 25,771 cf, Atten= 36%, Lag= 3.6 min
Primary = 5.50 cfs @ 12.13 hrs, Volume= 25,771 cf
Routed to Reach PR1 END : POI-1 for PRDA-1 (current)

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 18.29' @ 12.13 hrs Surf.Area= 766 sf Storage= 4,050 cf

Plug-Flow detention time= 16.8 min calculated for 25,761 cf (100% of inflow)
Center-of-Mass det. time= 16.9 min (753.3 - 736.5)

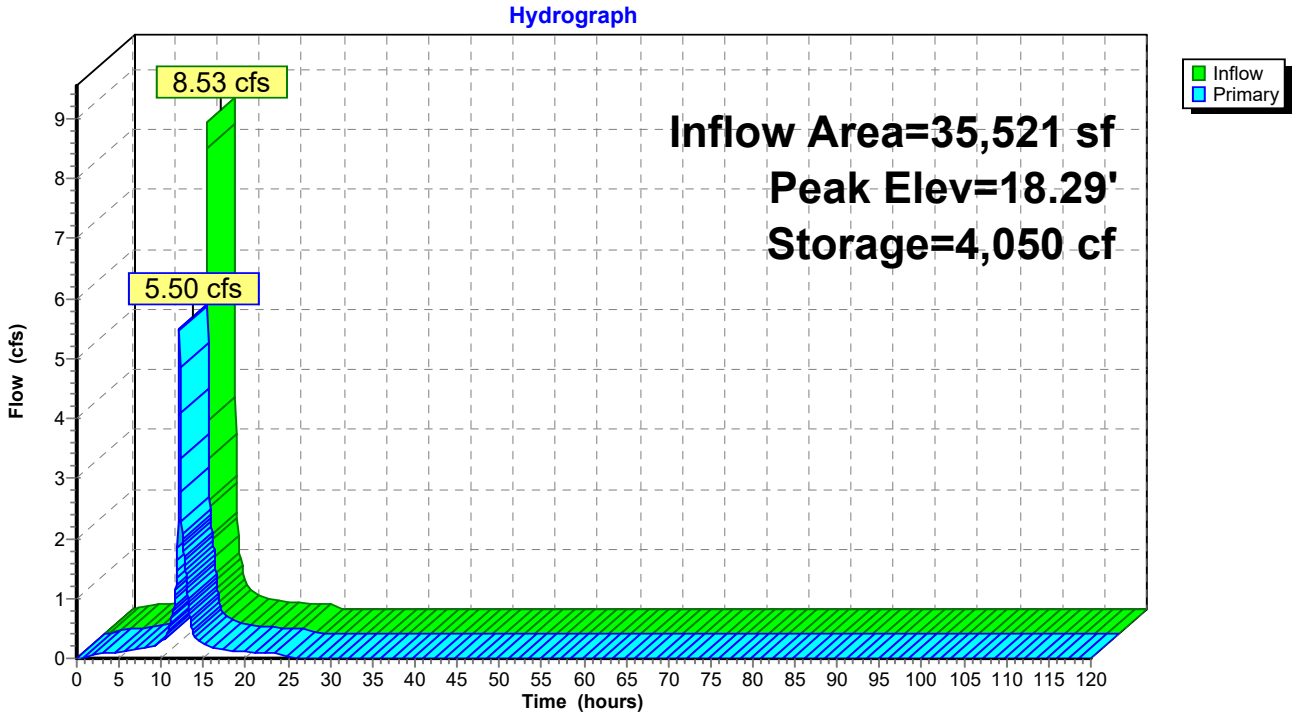
Volume	Invert	Avail.Storage	Storage Description
#1	13.00'	6,128 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.00	766	0	0
14.00	766	766	766
15.00	766	766	1,532
16.00	766	766	2,298
17.00	766	766	3,064
18.00	766	766	3,830
19.00	766	766	4,596
20.00	766	766	5,362
21.00	766	766	6,128

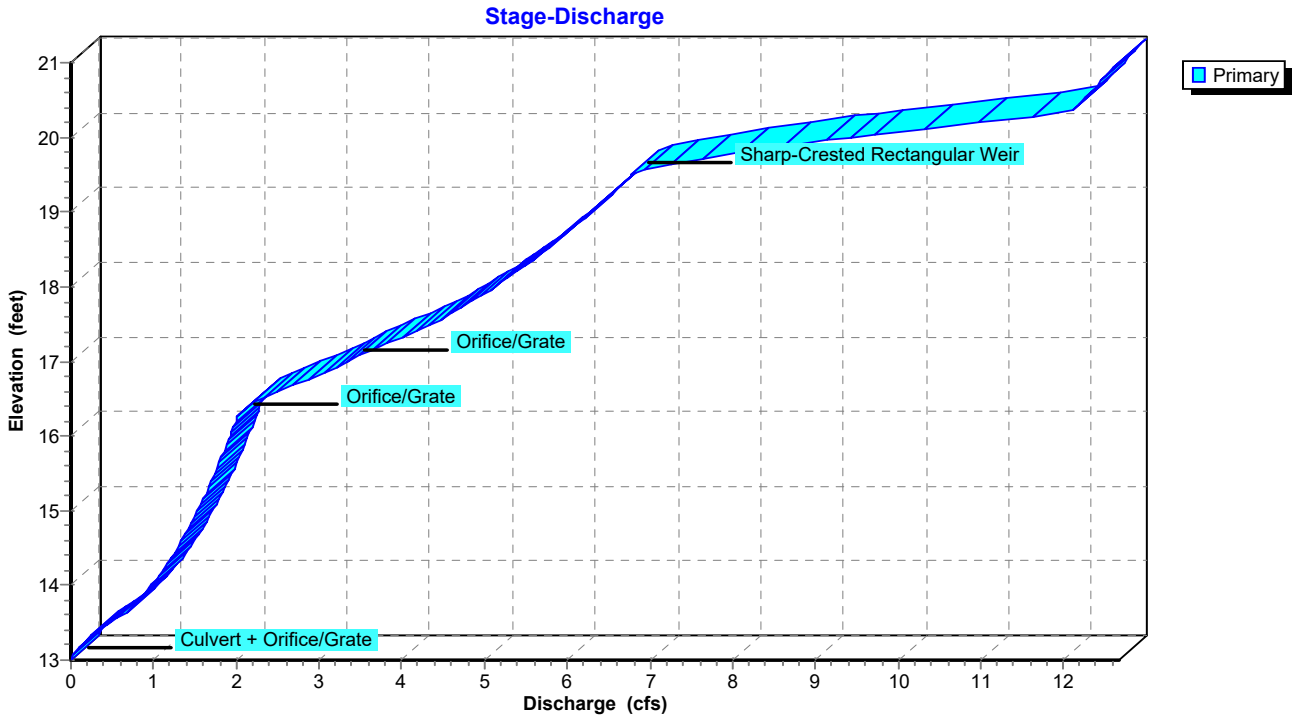
Device	Routing	Invert	Outlet Devices
#1	Primary	13.00'	**15.0" Round Culvert** L= 40.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.00' / 11.80' S= 0.0300 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.23 sf
#2	Device 1	13.00'	**5.0" W x 7.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	16.25'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	17.00'	**5.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Device 1	19.50'	**2.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=5.42 cfs @ 12.13 hrs HW=18.23' (Free Discharge)
└**1=Culvert** (Passes 5.42 cfs of 10.01 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 2.60 cfs @ 10.69 fps)
  ├**3=Orifice/Grate** (Orifice Controls 2.15 cfs @ 6.17 fps)
  ├**4=Orifice/Grate** (Orifice Controls 0.66 cfs @ 4.86 fps)
  └**5=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond BMP 1: BMP-1



Pond BMP 1: BMP-1



Hydrograph for Pond BMP 1: BMP-1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	13.00	0.00
2.50	0.07	102	13.13	0.06
5.00	0.10	135	13.18	0.10
7.50	0.16	178	13.23	0.15
10.00	**0.31**	**279**	**13.36**	**0.30**
12.50	**1.44**	**2,456**	**16.21**	**2.00**
15.00	0.22	240	13.31	0.23
17.50	0.14	171	13.22	0.14
20.00	0.10	140	13.18	0.11
22.50	0.09	124	13.16	0.09
25.00	0.00	24	13.03	0.01
27.50	0.00	1	13.00	0.00
30.00	0.00	0	13.00	0.00
32.50	0.00	0	13.00	0.00
35.00	0.00	0	13.00	0.00
37.50	0.00	0	13.00	0.00
40.00	0.00	0	13.00	0.00
42.50	0.00	0	13.00	0.00
45.00	0.00	0	13.00	0.00
47.50	0.00	0	13.00	0.00
50.00	0.00	0	13.00	0.00
52.50	0.00	0	13.00	0.00
55.00	0.00	0	13.00	0.00
57.50	0.00	0	13.00	0.00
60.00	0.00	0	13.00	0.00
62.50	0.00	0	13.00	0.00
65.00	0.00	0	13.00	0.00
67.50	0.00	0	13.00	0.00
70.00	0.00	0	13.00	0.00
72.50	0.00	0	13.00	0.00
75.00	0.00	0	13.00	0.00
77.50	0.00	0	13.00	0.00
80.00	0.00	0	13.00	0.00
82.50	0.00	0	13.00	0.00
85.00	0.00	0	13.00	0.00
87.50	0.00	0	13.00	0.00
90.00	0.00	0	13.00	0.00
92.50	0.00	0	13.00	0.00
95.00	0.00	0	13.00	0.00
97.50	0.00	0	13.00	0.00
100.00	0.00	0	13.00	0.00
102.50	0.00	0	13.00	0.00
105.00	0.00	0	13.00	0.00
107.50	0.00	0	13.00	0.00
110.00	0.00	0	13.00	0.00
112.50	0.00	0	13.00	0.00
115.00	0.00	0	13.00	0.00
117.50	0.00	0	13.00	0.00
120.00	0.00	0	13.00	0.00

Stage-Area-Storage for Pond BMP 1: BMP-1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
13.00	**766**	0
13.10	766	77
13.20	766	153
13.30	766	230
13.40	766	306
13.50	766	383
13.60	766	460
13.70	766	536
13.80	766	613
13.90	766	689
14.00	766	766
14.10	766	843
14.20	766	919
14.30	766	996
14.40	766	1,072
14.50	766	1,149
14.60	766	1,226
14.70	766	1,302
14.80	766	1,379
14.90	766	1,455
15.00	766	1,532
15.10	766	1,609
15.20	766	1,685
15.30	766	1,762
15.40	766	1,838
15.50	766	1,915
15.60	766	1,992
15.70	766	2,068
15.80	766	2,145
15.90	766	2,221
16.00	766	2,298
16.10	766	2,375
16.20	766	2,451
16.30	766	2,528
16.40	766	2,604
16.50	766	2,681
16.60	766	2,758
16.70	766	2,834
16.80	766	2,911
16.90	766	2,987
17.00	766	3,064
17.10	766	3,141
17.20	766	3,217
17.30	766	3,294
17.40	766	3,370
17.50	766	3,447
17.60	766	3,524
17.70	766	3,600
17.80	766	3,677
17.90	766	3,753
18.00	766	3,830
18.10	766	3,907
18.20	766	3,983
18.30	766	4,060
18.40	766	4,136
18.50	766	4,213
18.60	766	4,290
18.70	766	4,366
18.80	766	4,443
18.90	766	4,519
19.00	766	4,596
19.10	766	4,673
19.20	766	4,749
19.30	766	4,826
19.40	766	4,902
19.50	766	4,979
19.60	766	5,056
19.70	766	5,132
19.80	766	5,209
19.90	766	5,285
20.00	766	5,362
20.10	766	5,439
20.20	766	5,515
20.30	766	5,592
20.40	766	5,668
20.50	766	5,745
20.60	766	5,822
20.70	766	5,898
20.80	766	5,975
20.90	766	6,051
21.00	766	**6,128**

Summary for Subcatchment PR1.0: Impervious

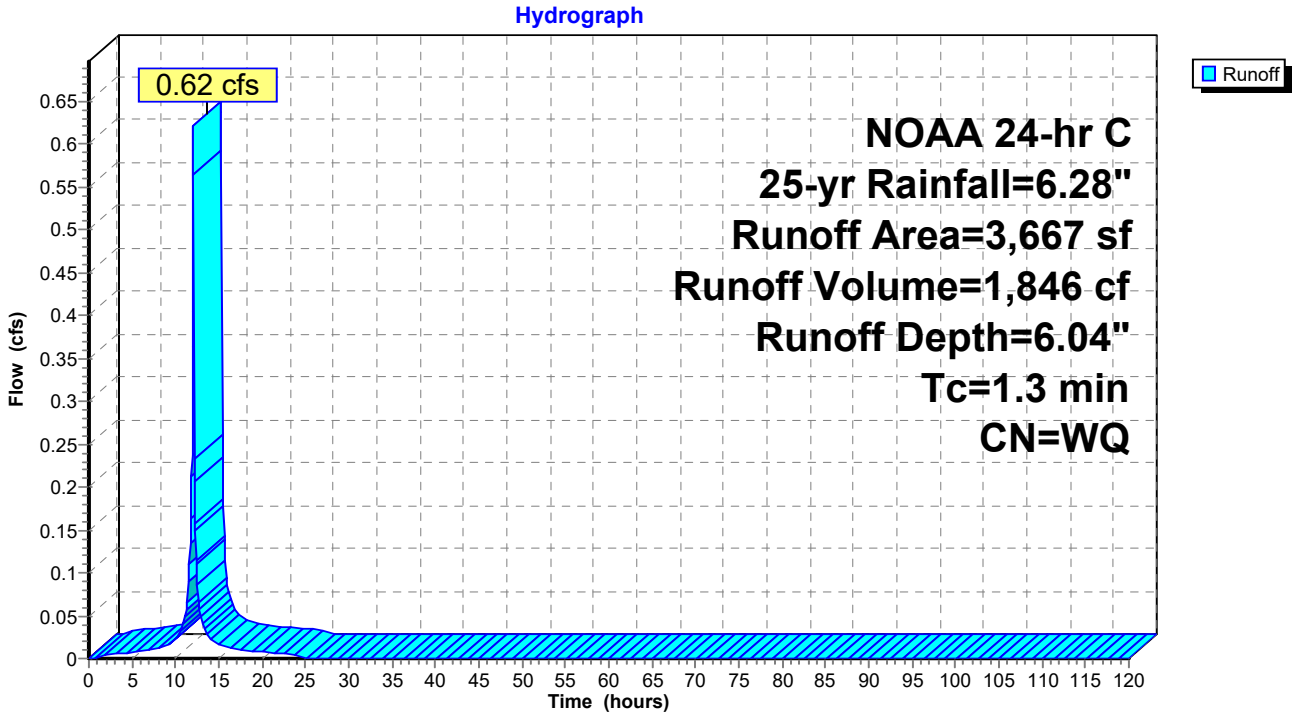
Runoff = 0.62 cfs @ 12.07 hrs, Volume= 1,846 cf, Depth= 6.04"
Routed to Pond BMP 1 : BMP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 25-yr Rainfall=6.28"

	Area (sf)	CN	Description
*	2,755	98	Paved parking, HSG C
*	912	98	impervious walkway
	3,667		Weighted Average
	3,667		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3					**Direct Entry,**

Subcatchment PR1.0: Impervious



Hydrograph for Subcatchment PR1.0: Impervious

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.18	0.06	0.00
5.00	0.40	0.23	0.01
7.50	0.68	0.48	0.01
10.00	1.15	0.93	**0.02**
12.50	4.42	4.19	**0.10**
15.00	5.36	5.13	0.02
17.50	5.73	5.49	0.01
20.00	5.97	5.73	0.01
22.50	**6.18**	**5.94**	0.01
25.00	**6.28**	**6.04**	0.00
27.50	6.28	6.04	0.00
30.00	6.28	6.04	0.00
32.50	6.28	6.04	0.00
35.00	6.28	6.04	0.00
37.50	6.28	6.04	0.00
40.00	6.28	6.04	0.00
42.50	6.28	6.04	0.00
45.00	6.28	6.04	0.00
47.50	6.28	6.04	0.00
50.00	6.28	6.04	0.00
52.50	6.28	6.04	0.00
55.00	6.28	6.04	0.00
57.50	6.28	6.04	0.00
60.00	6.28	6.04	0.00
62.50	6.28	6.04	0.00
65.00	6.28	6.04	0.00
67.50	6.28	6.04	0.00
70.00	6.28	6.04	0.00
72.50	6.28	6.04	0.00
75.00	6.28	6.04	0.00
77.50	6.28	6.04	0.00
80.00	6.28	6.04	0.00
82.50	6.28	6.04	0.00
85.00	6.28	6.04	0.00
87.50	6.28	6.04	0.00
90.00	6.28	6.04	0.00
92.50	6.28	6.04	0.00
95.00	6.28	6.04	0.00
97.50	6.28	6.04	0.00
100.00	6.28	6.04	0.00
102.50	6.28	6.04	0.00
105.00	6.28	6.04	0.00
107.50	6.28	6.04	0.00
110.00	6.28	6.04	0.00
112.50	6.28	6.04	0.00
115.00	6.28	6.04	0.00
117.50	6.28	6.04	0.00
120.00	6.28	6.04	0.00

Summary for Subcatchment PR1.1: Impervious bypass

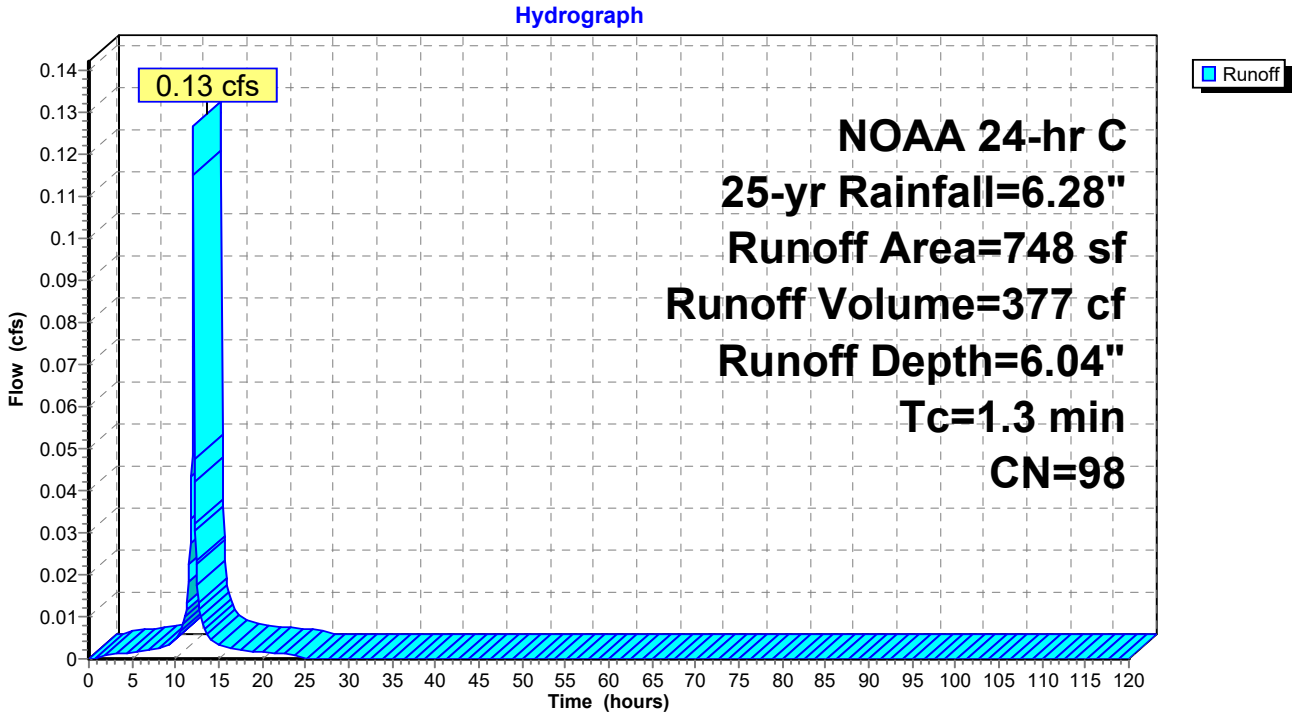
Runoff = 0.13 cfs @ 12.07 hrs, Volume= 377 cf, Depth= 6.04"
Routed to Reach PR1 END : POI-1 for PRDA-1 (current)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 25-yr Rainfall=6.28"

	Area (sf)	CN	Description
*	748	98	impervious walkway
	748		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3					**Direct Entry,**

Subcatchment PR1.1: Impervious bypass



Hydrograph for Subcatchment PR1.1: Impervious bypass

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.18	0.06	0.00
5.00	0.40	0.23	0.00
7.50	0.68	0.48	0.00
10.00	1.15	0.93	**0.00**
12.50	4.42	4.19	**0.02**
15.00	5.36	5.13	0.00
17.50	5.73	5.49	0.00
20.00	5.97	5.73	0.00
22.50	**6.18**	**5.94**	0.00
25.00	**6.28**	**6.04**	0.00
27.50	6.28	6.04	0.00
30.00	6.28	6.04	0.00
32.50	6.28	6.04	0.00
35.00	6.28	6.04	0.00
37.50	6.28	6.04	0.00
40.00	6.28	6.04	0.00
42.50	6.28	6.04	0.00
45.00	6.28	6.04	0.00
47.50	6.28	6.04	0.00
50.00	6.28	6.04	0.00
52.50	6.28	6.04	0.00
55.00	6.28	6.04	0.00
57.50	6.28	6.04	0.00
60.00	6.28	6.04	0.00
62.50	6.28	6.04	0.00
65.00	6.28	6.04	0.00
67.50	6.28	6.04	0.00
70.00	6.28	6.04	0.00
72.50	6.28	6.04	0.00
75.00	6.28	6.04	0.00
77.50	6.28	6.04	0.00
80.00	6.28	6.04	0.00
82.50	6.28	6.04	0.00
85.00	6.28	6.04	0.00
87.50	6.28	6.04	0.00
90.00	6.28	6.04	0.00
92.50	6.28	6.04	0.00
95.00	6.28	6.04	0.00
97.50	6.28	6.04	0.00
100.00	6.28	6.04	0.00
102.50	6.28	6.04	0.00
105.00	6.28	6.04	0.00
107.50	6.28	6.04	0.00
110.00	6.28	6.04	0.00
112.50	6.28	6.04	0.00
115.00	6.28	6.04	0.00
117.50	6.28	6.04	0.00
120.00	6.28	6.04	0.00

Summary for Subcatchment PR2 1.0: ImperviousTO POA 2

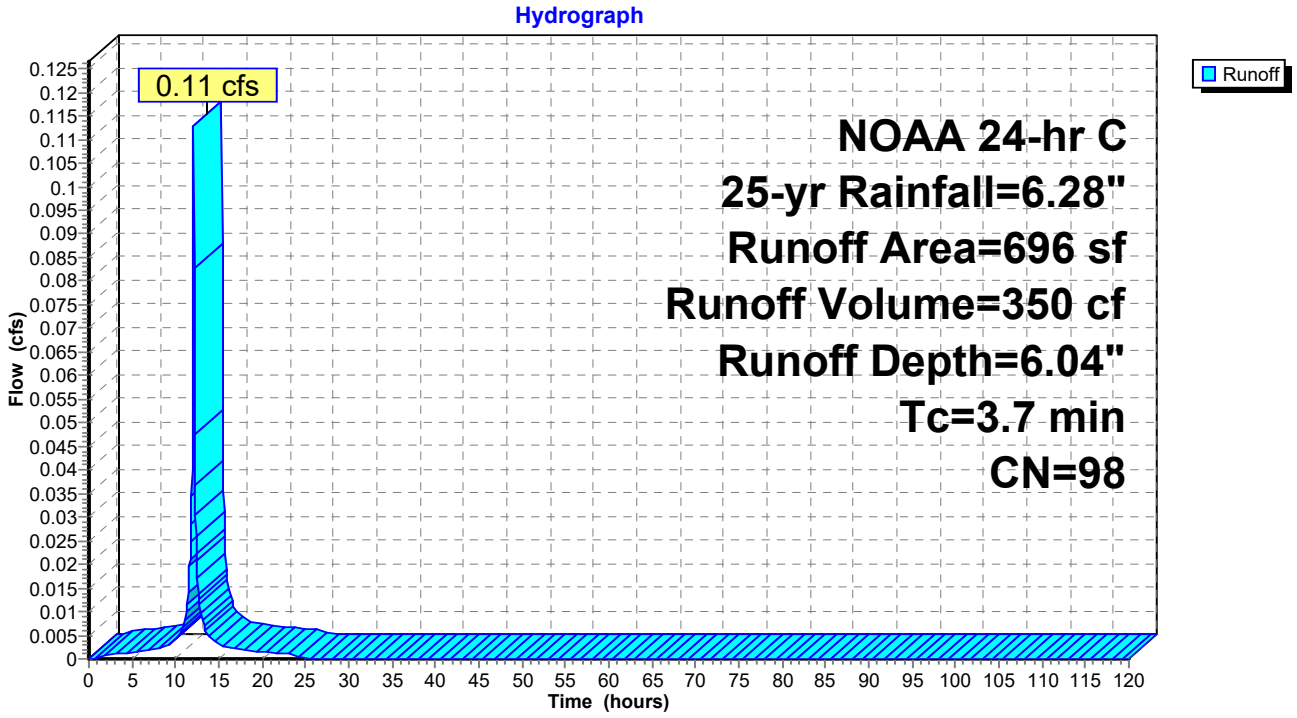
Runoff = 0.11 cfs @ 12.10 hrs, Volume= 350 cf, Depth= 6.04"
Routed to Reach PR2 CURR : POI-2 for PRDA-2 (current)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 25-yr Rainfall=6.28"

	Area (sf)	CN	Description
*	696	98	impervious
	696		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7					**Direct Entry,**

Subcatchment PR2 1.0: ImperviousTO POA 2



Hydrograph for Subcatchment PR2 1.0: ImperviousTO POA 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.18	0.06	0.00
5.00	0.40	0.23	0.00
7.50	0.68	0.48	0.00
10.00	1.15	0.93	**0.00**
12.50	4.42	4.19	**0.02**
15.00	5.36	5.13	0.00
17.50	5.73	5.49	0.00
20.00	5.97	5.73	0.00
22.50	**6.18**	**5.94**	0.00
25.00	**6.28**	**6.04**	0.00
27.50	6.28	6.04	0.00
30.00	6.28	6.04	0.00
32.50	6.28	6.04	0.00
35.00	6.28	6.04	0.00
37.50	6.28	6.04	0.00
40.00	6.28	6.04	0.00
42.50	6.28	6.04	0.00
45.00	6.28	6.04	0.00
47.50	6.28	6.04	0.00
50.00	6.28	6.04	0.00
52.50	6.28	6.04	0.00
55.00	6.28	6.04	0.00
57.50	6.28	6.04	0.00
60.00	6.28	6.04	0.00
62.50	6.28	6.04	0.00
65.00	6.28	6.04	0.00
67.50	6.28	6.04	0.00
70.00	6.28	6.04	0.00
72.50	6.28	6.04	0.00
75.00	6.28	6.04	0.00
77.50	6.28	6.04	0.00
80.00	6.28	6.04	0.00
82.50	6.28	6.04	0.00
85.00	6.28	6.04	0.00
87.50	6.28	6.04	0.00
90.00	6.28	6.04	0.00
92.50	6.28	6.04	0.00
95.00	6.28	6.04	0.00
97.50	6.28	6.04	0.00
100.00	6.28	6.04	0.00
102.50	6.28	6.04	0.00
105.00	6.28	6.04	0.00
107.50	6.28	6.04	0.00
110.00	6.28	6.04	0.00
112.50	6.28	6.04	0.00
115.00	6.28	6.04	0.00
117.50	6.28	6.04	0.00
120.00	6.28	6.04	0.00

Summary for Subcatchment PR2 2.0: Pervious TO POA 2

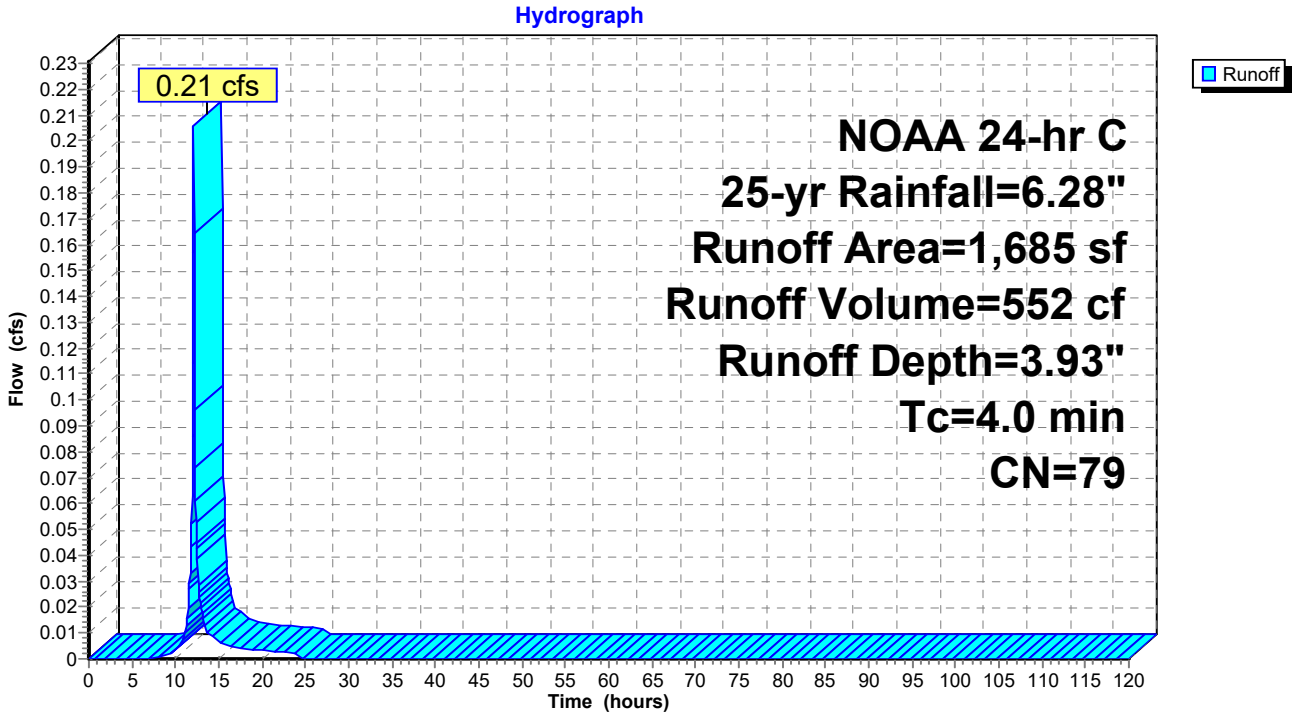
Runoff = 0.21 cfs @ 12.10 hrs, Volume= 552 cf, Depth= 3.93"
Routed to Reach PR2 CURR : POI-2 for PRDA-2 (current)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 25-yr Rainfall=6.28"

	Area (sf)	CN	Description
*	1,685	79	planters
	1,685		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0					**Direct Entry,**

Subcatchment PR2 2.0: Pervious TO POA 2



Hydrograph for Subcatchment PR2 2.0: Pervious TO POA 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.18	0.00	0.00
5.00	0.40	0.00	0.00
7.50	0.68	0.01	0.00
10.00	1.15	0.12	**0.00**
12.50	4.42	2.31	**0.04**
15.00	5.36	3.12	0.01
17.50	5.73	3.44	0.00
20.00	5.97	3.66	0.00
22.50	**6.18**	**3.84**	0.00
25.00	**6.28**	**3.93**	0.00
27.50	6.28	3.93	0.00
30.00	6.28	3.93	0.00
32.50	6.28	3.93	0.00
35.00	6.28	3.93	0.00
37.50	6.28	3.93	0.00
40.00	6.28	3.93	0.00
42.50	6.28	3.93	0.00
45.00	6.28	3.93	0.00
47.50	6.28	3.93	0.00
50.00	6.28	3.93	0.00
52.50	6.28	3.93	0.00
55.00	6.28	3.93	0.00
57.50	6.28	3.93	0.00
60.00	6.28	3.93	0.00
62.50	6.28	3.93	0.00
65.00	6.28	3.93	0.00
67.50	6.28	3.93	0.00
70.00	6.28	3.93	0.00
72.50	6.28	3.93	0.00
75.00	6.28	3.93	0.00
77.50	6.28	3.93	0.00
80.00	6.28	3.93	0.00
82.50	6.28	3.93	0.00
85.00	6.28	3.93	0.00
87.50	6.28	3.93	0.00
90.00	6.28	3.93	0.00
92.50	6.28	3.93	0.00
95.00	6.28	3.93	0.00
97.50	6.28	3.93	0.00
100.00	6.28	3.93	0.00
102.50	6.28	3.93	0.00
105.00	6.28	3.93	0.00
107.50	6.28	3.93	0.00
110.00	6.28	3.93	0.00
112.50	6.28	3.93	0.00
115.00	6.28	3.93	0.00
117.50	6.28	3.93	0.00
120.00	6.28	3.93	0.00

Summary for Subcatchment PR2.0: Pervious

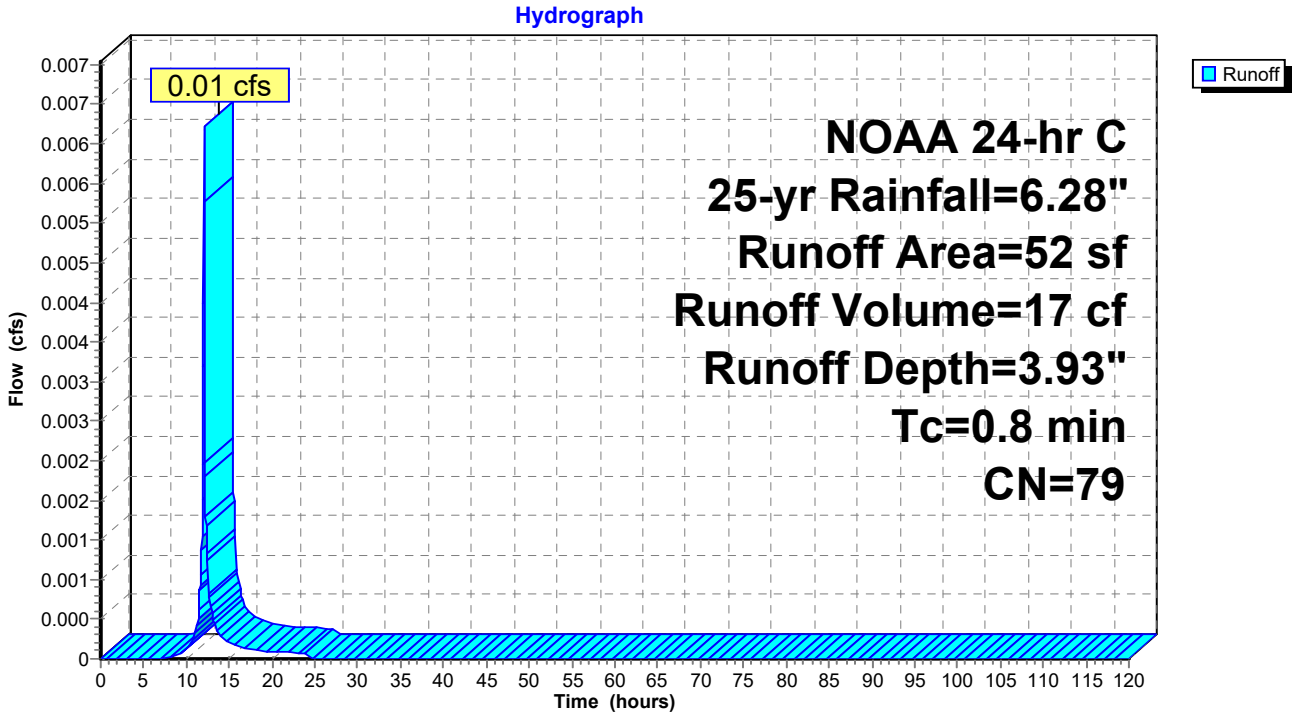
Runoff = 0.01 cfs @ 12.06 hrs, Volume= 17 cf, Depth= 3.93"
Routed to Pond BMP 1 : BMP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 25-yr Rainfall=6.28"

	Area (sf)	CN	Description
*	52	79	50-75% Grass cover, Fair, HSG C
	52		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8					**Direct Entry,**

Subcatchment PR2.0: Pervious



Hydrograph for Subcatchment PR2.0: Pervious

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.18	0.00	0.00
5.00	0.40	0.00	0.00
7.50	0.68	0.01	0.00
10.00	1.15	0.12	**0.00**
12.50	4.42	2.31	**0.00**
15.00	5.36	3.12	0.00
17.50	5.73	3.44	0.00
20.00	5.97	3.66	0.00
22.50	**6.18**	**3.84**	0.00
25.00	**6.28**	**3.93**	0.00
27.50	6.28	3.93	0.00
30.00	6.28	3.93	0.00
32.50	6.28	3.93	0.00
35.00	6.28	3.93	0.00
37.50	6.28	3.93	0.00
40.00	6.28	3.93	0.00
42.50	6.28	3.93	0.00
45.00	6.28	3.93	0.00
47.50	6.28	3.93	0.00
50.00	6.28	3.93	0.00
52.50	6.28	3.93	0.00
55.00	6.28	3.93	0.00
57.50	6.28	3.93	0.00
60.00	6.28	3.93	0.00
62.50	6.28	3.93	0.00
65.00	6.28	3.93	0.00
67.50	6.28	3.93	0.00
70.00	6.28	3.93	0.00
72.50	6.28	3.93	0.00
75.00	6.28	3.93	0.00
77.50	6.28	3.93	0.00
80.00	6.28	3.93	0.00
82.50	6.28	3.93	0.00
85.00	6.28	3.93	0.00
87.50	6.28	3.93	0.00
90.00	6.28	3.93	0.00
92.50	6.28	3.93	0.00
95.00	6.28	3.93	0.00
97.50	6.28	3.93	0.00
100.00	6.28	3.93	0.00
102.50	6.28	3.93	0.00
105.00	6.28	3.93	0.00
107.50	6.28	3.93	0.00
110.00	6.28	3.93	0.00
112.50	6.28	3.93	0.00
115.00	6.28	3.93	0.00
117.50	6.28	3.93	0.00
120.00	6.28	3.93	0.00

Summary for Subcatchment PR2.2: Pervious bypass

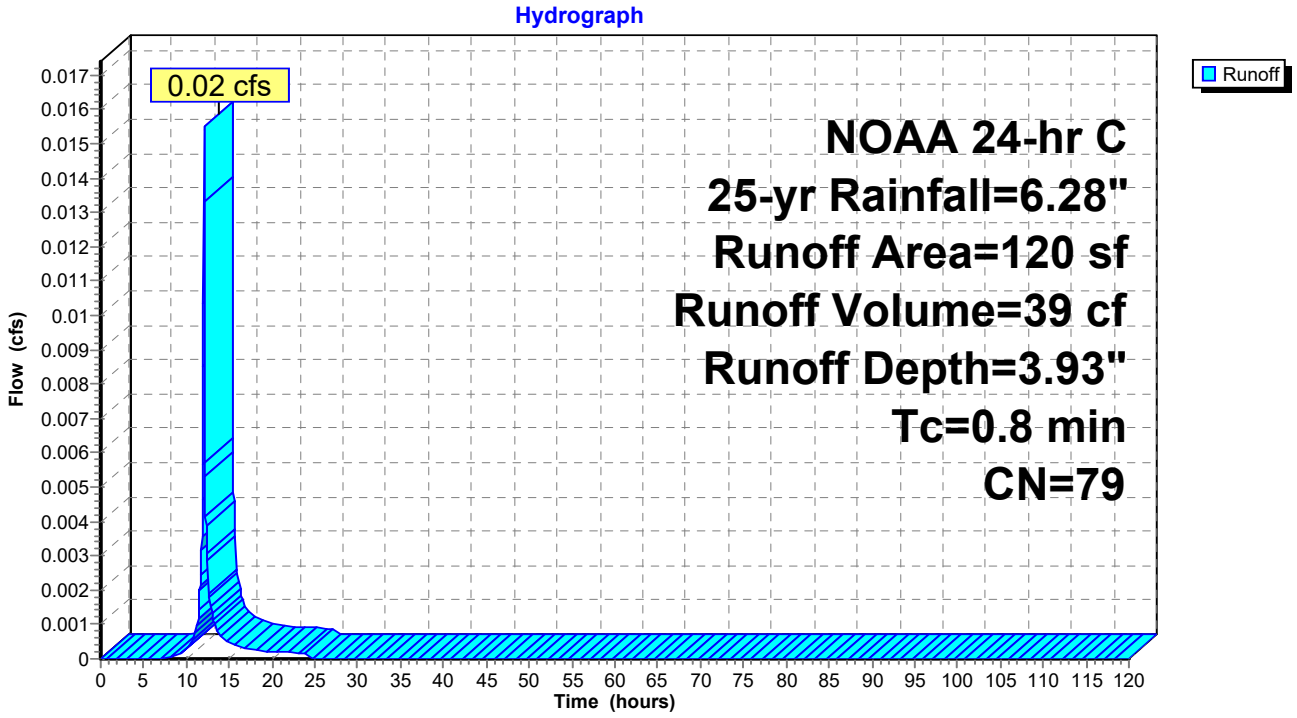
Runoff = 0.02 cfs @ 12.06 hrs, Volume= 39 cf, Depth= 3.93"
Routed to Reach PR1 END : POI-1 for PRDA-1 (current)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 25-yr Rainfall=6.28"

	Area (sf)	CN	Description
*	120	79	planters
	120		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8					**Direct Entry,**

Subcatchment PR2.2: Pervious bypass



Hydrograph for Subcatchment PR2.2: Pervious bypass

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.18	0.00	0.00
5.00	0.40	0.00	0.00
7.50	0.68	0.01	0.00
10.00	1.15	0.12	**0.00**
12.50	4.42	2.31	**0.00**
15.00	5.36	3.12	0.00
17.50	5.73	3.44	0.00
20.00	5.97	3.66	0.00
22.50	**6.18**	**3.84**	0.00
25.00	**6.28**	**3.93**	0.00
27.50	6.28	3.93	0.00
30.00	6.28	3.93	0.00
32.50	6.28	3.93	0.00
35.00	6.28	3.93	0.00
37.50	6.28	3.93	0.00
40.00	6.28	3.93	0.00
42.50	6.28	3.93	0.00
45.00	6.28	3.93	0.00
47.50	6.28	3.93	0.00
50.00	6.28	3.93	0.00
52.50	6.28	3.93	0.00
55.00	6.28	3.93	0.00
57.50	6.28	3.93	0.00
60.00	6.28	3.93	0.00
62.50	6.28	3.93	0.00
65.00	6.28	3.93	0.00
67.50	6.28	3.93	0.00
70.00	6.28	3.93	0.00
72.50	6.28	3.93	0.00
75.00	6.28	3.93	0.00
77.50	6.28	3.93	0.00
80.00	6.28	3.93	0.00
82.50	6.28	3.93	0.00
85.00	6.28	3.93	0.00
87.50	6.28	3.93	0.00
90.00	6.28	3.93	0.00
92.50	6.28	3.93	0.00
95.00	6.28	3.93	0.00
97.50	6.28	3.93	0.00
100.00	6.28	3.93	0.00
102.50	6.28	3.93	0.00
105.00	6.28	3.93	0.00
107.50	6.28	3.93	0.00
110.00	6.28	3.93	0.00
112.50	6.28	3.93	0.00
115.00	6.28	3.93	0.00
117.50	6.28	3.93	0.00
120.00	6.28	3.93	0.00

Summary for Subcatchment PR3.0: Building

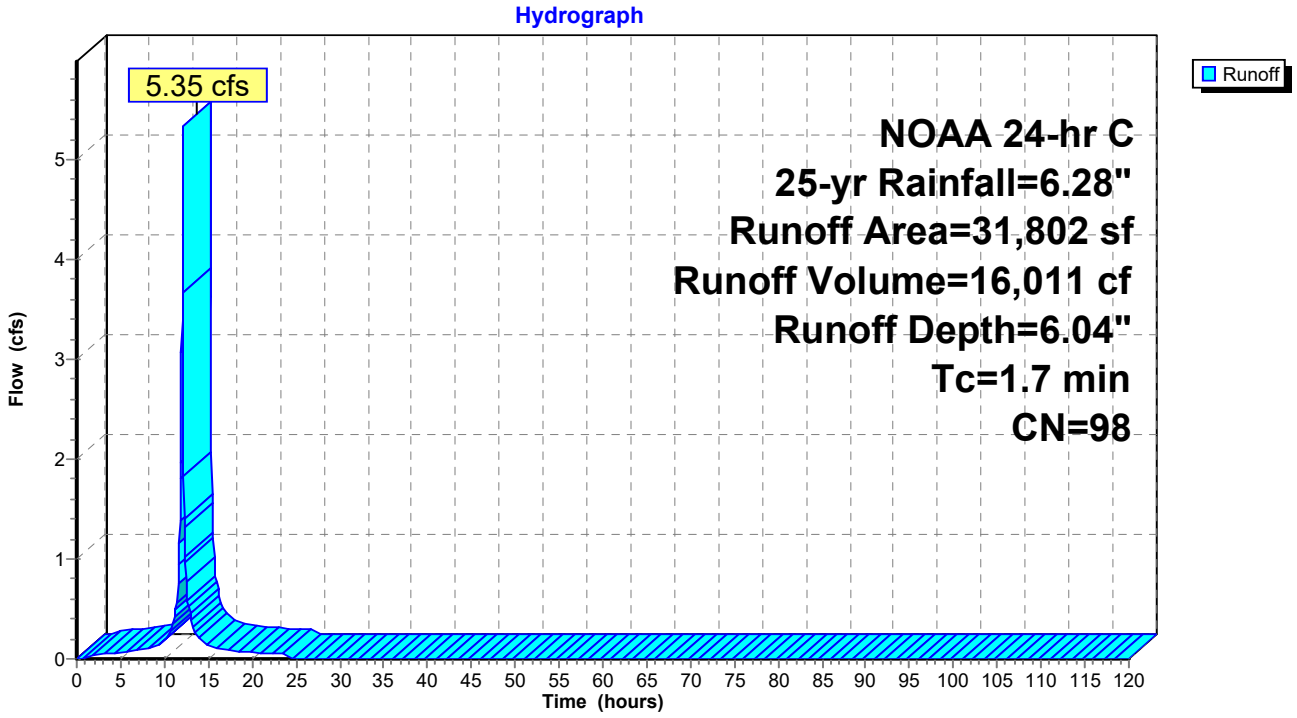
Runoff = 5.35 cfs @ 12.07 hrs, Volume= 16,011 cf, Depth= 6.04"
Routed to Pond BMP 1 : BMP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 25-yr Rainfall=6.28"

Area (sf)	CN	Description
31,802	98	Roofs, HSG C
31,802		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7					**Direct Entry,**

Subcatchment PR3.0: Building



Hydrograph for Subcatchment PR3.0: Building

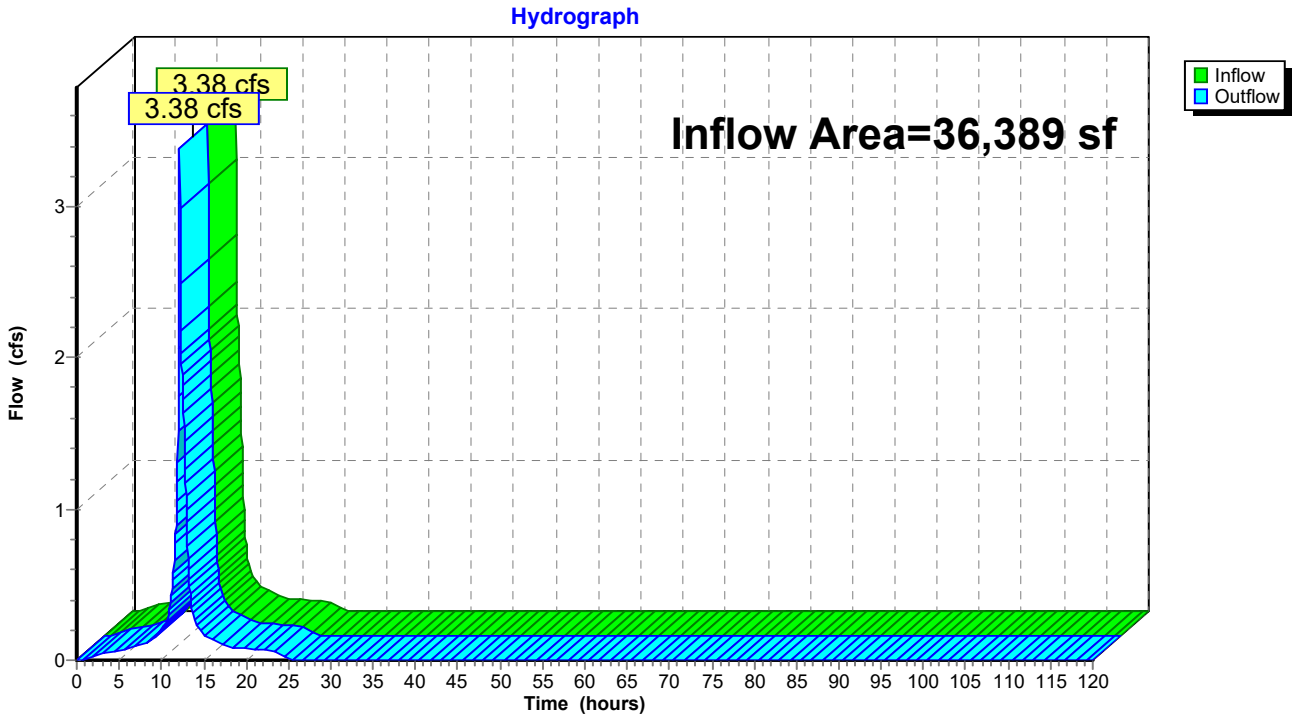
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.18	0.06	0.04
5.00	0.40	0.23	0.06
7.50	0.68	0.48	0.10
10.00	1.15	0.93	**0.19**
12.50	4.42	4.19	**0.91**
15.00	5.36	5.13	0.14
17.50	5.73	5.49	0.09
20.00	5.97	5.73	0.07
22.50	**6.18**	**5.94**	0.05
25.00	**6.28**	**6.04**	0.00
27.50	6.28	6.04	0.00
30.00	6.28	6.04	0.00
32.50	6.28	6.04	0.00
35.00	6.28	6.04	0.00
37.50	6.28	6.04	0.00
40.00	6.28	6.04	0.00
42.50	6.28	6.04	0.00
45.00	6.28	6.04	0.00
47.50	6.28	6.04	0.00
50.00	6.28	6.04	0.00
52.50	6.28	6.04	0.00
55.00	6.28	6.04	0.00
57.50	6.28	6.04	0.00
60.00	6.28	6.04	0.00
62.50	6.28	6.04	0.00
65.00	6.28	6.04	0.00
67.50	6.28	6.04	0.00
70.00	6.28	6.04	0.00
72.50	6.28	6.04	0.00
75.00	6.28	6.04	0.00
77.50	6.28	6.04	0.00
80.00	6.28	6.04	0.00
82.50	6.28	6.04	0.00
85.00	6.28	6.04	0.00
87.50	6.28	6.04	0.00
90.00	6.28	6.04	0.00
92.50	6.28	6.04	0.00
95.00	6.28	6.04	0.00
97.50	6.28	6.04	0.00
100.00	6.28	6.04	0.00
102.50	6.28	6.04	0.00
105.00	6.28	6.04	0.00
107.50	6.28	6.04	0.00
110.00	6.28	6.04	0.00
112.50	6.28	6.04	0.00
115.00	6.28	6.04	0.00
117.50	6.28	6.04	0.00
120.00	6.28	6.04	0.00

Summary for Reach PR1 END: POI-1 for PRDA-1 (current)

Inflow Area = 36,389 sf, 99.53% Impervious, Inflow Depth = 6.03" for 25-yr event
Inflow = 3.38 cfs @ 12.15 hrs, Volume= 18,290 cf
Outflow = 3.38 cfs @ 12.15 hrs, Volume= 18,290 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach PR1 END: POI-1 for PRDA-1 (current)



Hydrograph for Reach PR1 END: POI-1 for PRDA-1 (current)

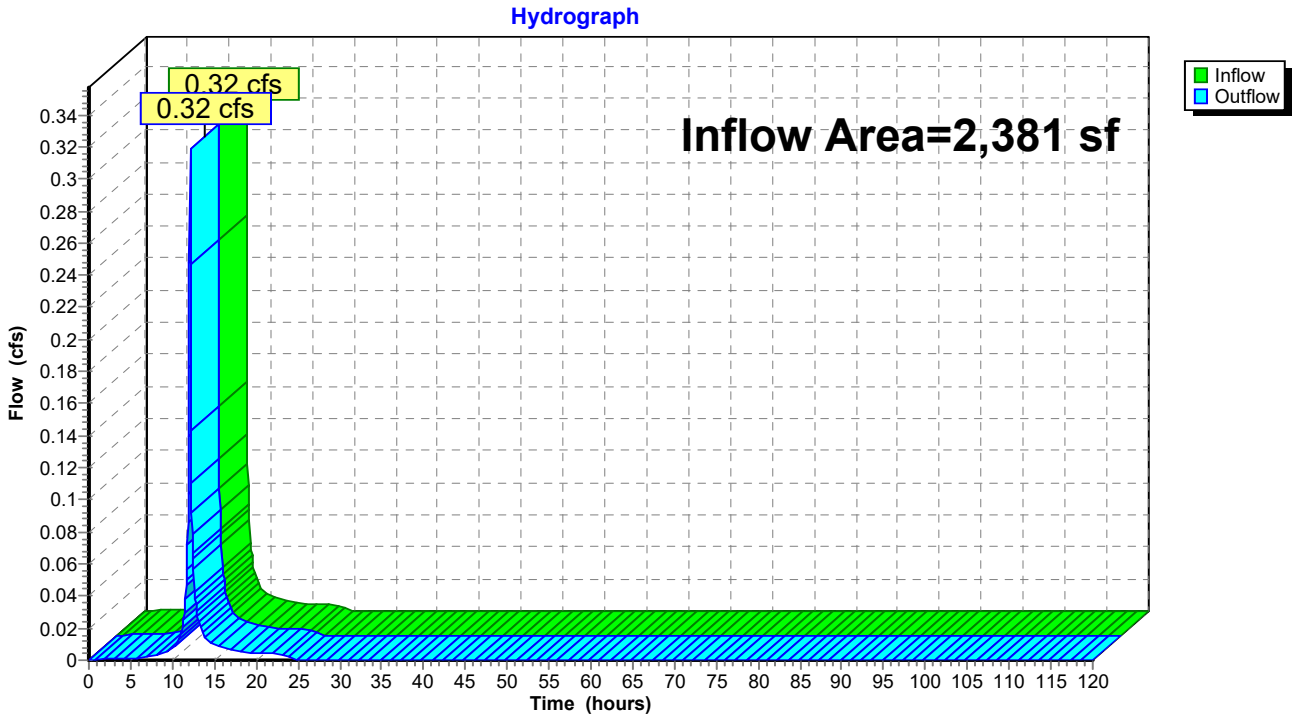
Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00
2.50	0.04		0.04
5.00	0.07		0.07
7.50	0.10		0.10
10.00	**0.21**		**0.21**
12.50	**1.81**		**1.81**
15.00	0.17		0.17
17.50	0.10		0.10
20.00	0.08		0.08
22.50	0.06		0.06
25.00	0.01		0.01
27.50	0.00		0.00
30.00	0.00		0.00
32.50	0.00		0.00
35.00	0.00		0.00
37.50	0.00		0.00
40.00	0.00		0.00
42.50	0.00		0.00
45.00	0.00		0.00
47.50	0.00		0.00
50.00	0.00		0.00
52.50	0.00		0.00
55.00	0.00		0.00
57.50	0.00		0.00
60.00	0.00		0.00
62.50	0.00		0.00
65.00	0.00		0.00
67.50	0.00		0.00
70.00	0.00		0.00
72.50	0.00		0.00
75.00	0.00		0.00
77.50	0.00		0.00
80.00	0.00		0.00
82.50	0.00		0.00
85.00	0.00		0.00
87.50	0.00		0.00
90.00	0.00		0.00
92.50	0.00		0.00
95.00	0.00		0.00
97.50	0.00		0.00
100.00	0.00		0.00
102.50	0.00		0.00
105.00	0.00		0.00
107.50	0.00		0.00
110.00	0.00		0.00
112.50	0.00		0.00
115.00	0.00		0.00
117.50	0.00		0.00
120.00	0.00		0.00

Summary for Reach PR2 CURR: POI-2 for PRDA-2 (current)

Inflow Area = 2,381 sf, 29.23% Impervious, Inflow Depth = 4.55" for 25-yr event
Inflow = 0.32 cfs @ 12.10 hrs, Volume= 902 cf
Outflow = 0.32 cfs @ 12.10 hrs, Volume= 902 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach PR2 CURR: POI-2 for PRDA-2 (current)



Hydrograph for Reach PR2 CURR: POI-2 for PRDA-2 (current)

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00
2.50	0.00		0.00
5.00	0.00		0.00
7.50	0.00		0.00
10.00	**0.01**		**0.01**
12.50	**0.06**		**0.06**
15.00	0.01		0.01
17.50	0.01		0.01
20.00	0.00		0.00
22.50	0.00		0.00
25.00	0.00		0.00
27.50	0.00		0.00
30.00	0.00		0.00
32.50	0.00		0.00
35.00	0.00		0.00
37.50	0.00		0.00
40.00	0.00		0.00
42.50	0.00		0.00
45.00	0.00		0.00
47.50	0.00		0.00
50.00	0.00		0.00
52.50	0.00		0.00
55.00	0.00		0.00
57.50	0.00		0.00
60.00	0.00		0.00
62.50	0.00		0.00
65.00	0.00		0.00
67.50	0.00		0.00
70.00	0.00		0.00
72.50	0.00		0.00
75.00	0.00		0.00
77.50	0.00		0.00
80.00	0.00		0.00
82.50	0.00		0.00
85.00	0.00		0.00
87.50	0.00		0.00
90.00	0.00		0.00
92.50	0.00		0.00
95.00	0.00		0.00
97.50	0.00		0.00
100.00	0.00		0.00
102.50	0.00		0.00
105.00	0.00		0.00
107.50	0.00		0.00
110.00	0.00		0.00
112.50	0.00		0.00
115.00	0.00		0.00
117.50	0.00		0.00
120.00	0.00		0.00

Summary for Pond BMP 1: BMP-1

Inflow Area = 35,521 sf, 99.85% Impervious, Inflow Depth = 6.04" for 25-yr event
Inflow = 5.97 cfs @ 12.07 hrs, Volume= 17,874 cf
Outflow = 3.32 cfs @ 12.15 hrs, Volume= 17,874 cf, Atten= 44%, Lag= 4.7 min
Primary = 3.32 cfs @ 12.15 hrs, Volume= 17,874 cf
Routed to Reach PR1 END : POI-1 for PRDA-1 (current)

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 16.99' @ 12.15 hrs Surf.Area= 766 sf Storage= 3,057 cf

Plug-Flow detention time= 18.4 min calculated for 17,867 cf (100% of inflow)
Center-of-Mass det. time= 18.4 min (759.6 - 741.2)

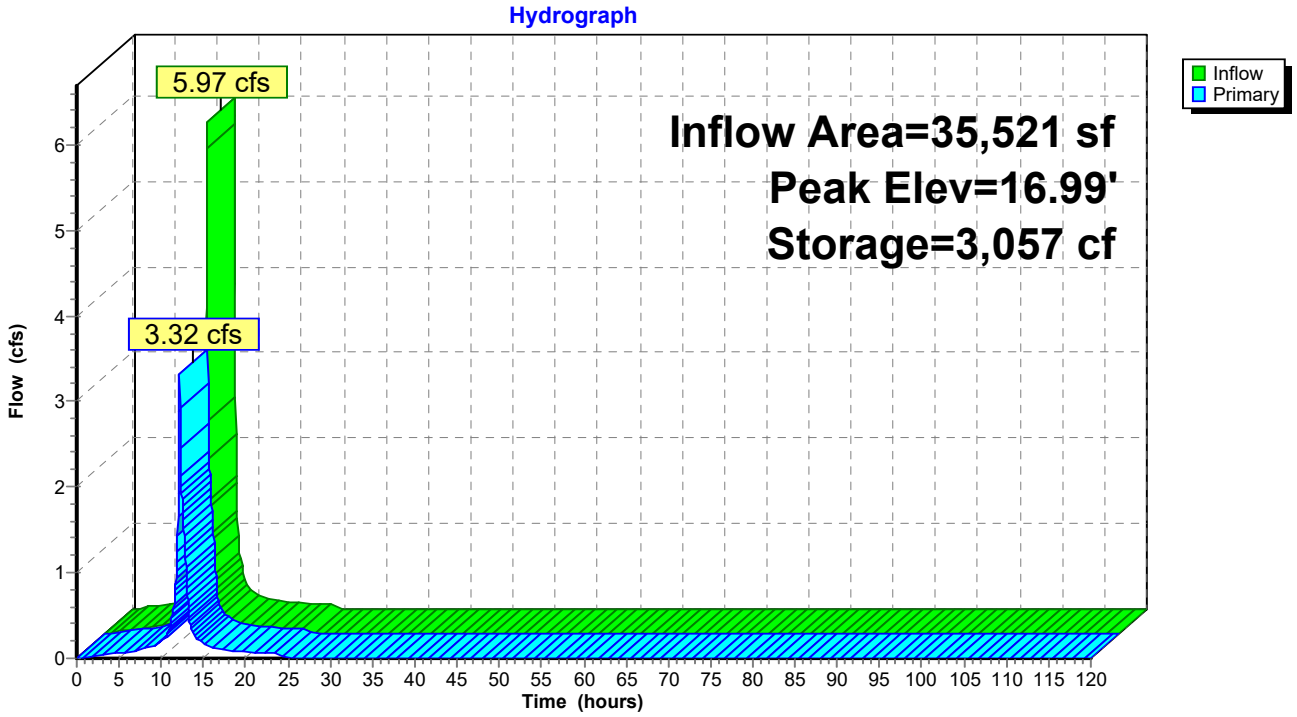
Volume	Invert	Avail.Storage	Storage Description
#1	13.00'	6,128 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.00	766	0	0
14.00	766	766	766
15.00	766	766	1,532
16.00	766	766	2,298
17.00	766	766	3,064
18.00	766	766	3,830
19.00	766	766	4,596
20.00	766	766	5,362
21.00	766	766	6,128

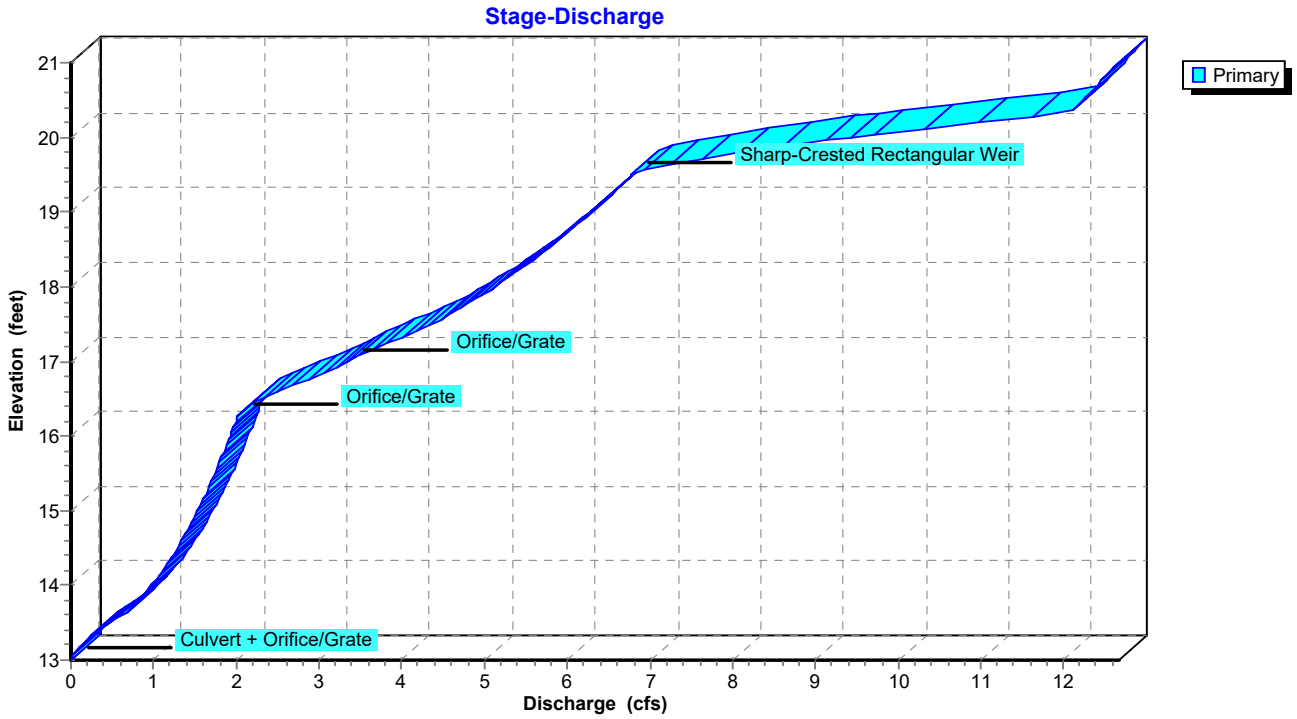
Device	Routing	Invert	Outlet Devices
#1	Primary	13.00'	**15.0" Round Culvert** L= 40.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.00' / 11.80' S= 0.0300 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.23 sf
#2	Device 1	13.00'	**5.0" W x 7.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	16.25'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	17.00'	**5.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Device 1	19.50'	**2.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=3.31 cfs @ 12.15 hrs HW=16.99' (Free Discharge)
└**1=Culvert** (Passes 3.31 cfs of 8.55 cfs potential flow)
├**2=Orifice/Grate** (Orifice Controls 2.25 cfs @ 9.25 fps)
├**3=Orifice/Grate** (Orifice Controls 1.07 cfs @ 3.05 fps)
├**4=Orifice/Grate** (Controls 0.00 cfs)
└**5=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond BMP 1: BMP-1



Pond BMP 1: BMP-1



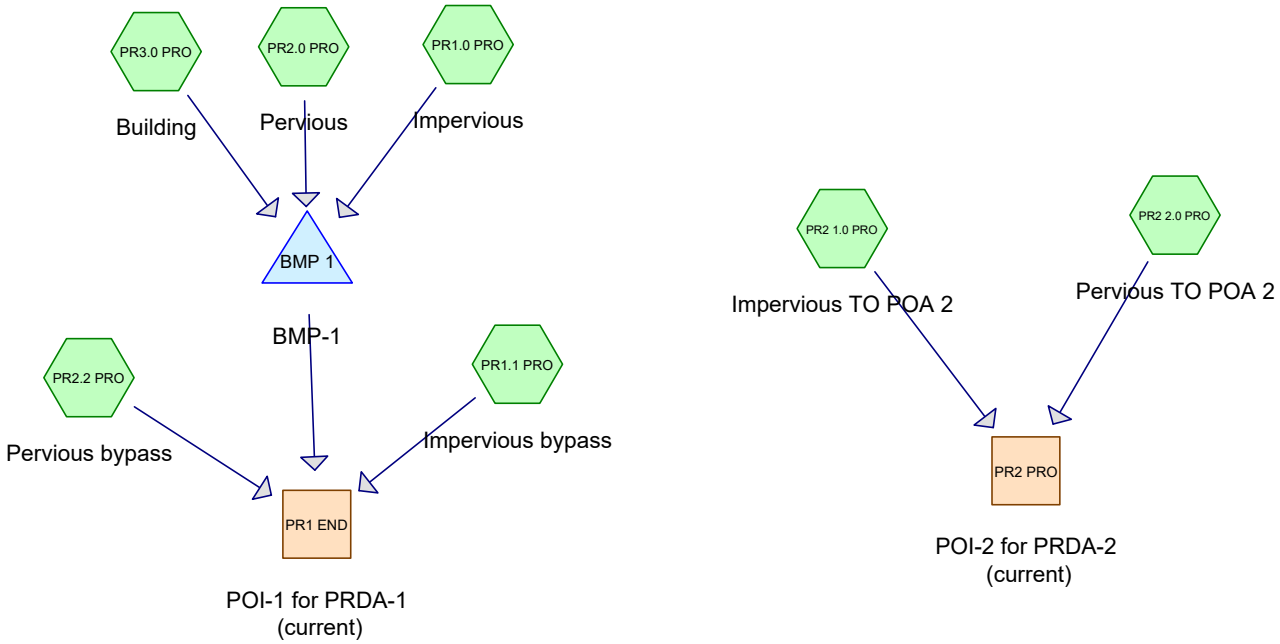
Hydrograph for Pond BMP 1: BMP-1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	13.00	0.00
2.50	0.04	71	13.09	0.03
5.00	0.07	102	13.13	0.07
7.50	0.11	137	13.18	0.10
10.00	**0.22**	**217**	**13.28**	**0.20**
12.50	**1.01**	**2,016**	**15.63**	**1.79**
15.00	0.15	190	13.25	0.17
17.50	0.10	135	13.18	0.10
20.00	0.07	111	13.15	0.07
22.50	0.06	98	13.13	0.06
25.00	0.00	21	13.03	0.01
27.50	0.00	1	13.00	0.00
30.00	0.00	0	13.00	0.00
32.50	0.00	0	13.00	0.00
35.00	0.00	0	13.00	0.00
37.50	0.00	0	13.00	0.00
40.00	0.00	0	13.00	0.00
42.50	0.00	0	13.00	0.00
45.00	0.00	0	13.00	0.00
47.50	0.00	0	13.00	0.00
50.00	0.00	0	13.00	0.00
52.50	0.00	0	13.00	0.00
55.00	0.00	0	13.00	0.00
57.50	0.00	0	13.00	0.00
60.00	0.00	0	13.00	0.00
62.50	0.00	0	13.00	0.00
65.00	0.00	0	13.00	0.00
67.50	0.00	0	13.00	0.00
70.00	0.00	0	13.00	0.00
72.50	0.00	0	13.00	0.00
75.00	0.00	0	13.00	0.00
77.50	0.00	0	13.00	0.00
80.00	0.00	0	13.00	0.00
82.50	0.00	0	13.00	0.00
85.00	0.00	0	13.00	0.00
87.50	0.00	0	13.00	0.00
90.00	0.00	0	13.00	0.00
92.50	0.00	0	13.00	0.00
95.00	0.00	0	13.00	0.00
97.50	0.00	0	13.00	0.00
100.00	0.00	0	13.00	0.00
102.50	0.00	0	13.00	0.00
105.00	0.00	0	13.00	0.00
107.50	0.00	0	13.00	0.00
110.00	0.00	0	13.00	0.00
112.50	0.00	0	13.00	0.00
115.00	0.00	0	13.00	0.00
117.50	0.00	0	13.00	0.00
120.00	0.00	0	13.00	0.00

Stage-Area-Storage for Pond BMP 1: BMP-1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
13.00	**766**	0
13.10	766	77
13.20	766	153
13.30	766	230
13.40	766	306
13.50	766	383
13.60	766	460
13.70	766	536
13.80	766	613
13.90	766	689
14.00	766	766
14.10	766	843
14.20	766	919
14.30	766	996
14.40	766	1,072
14.50	766	1,149
14.60	766	1,226
14.70	766	1,302
14.80	766	1,379
14.90	766	1,455
15.00	766	1,532
15.10	766	1,609
15.20	766	1,685
15.30	766	1,762
15.40	766	1,838
15.50	766	1,915
15.60	766	1,992
15.70	766	2,068
15.80	766	2,145
15.90	766	2,221
16.00	766	2,298
16.10	766	2,375
16.20	766	2,451
16.30	766	2,528
16.40	766	2,604
16.50	766	2,681
16.60	766	2,758
16.70	766	2,834
16.80	766	2,911
16.90	766	2,987
17.00	766	3,064
17.10	766	3,141
17.20	766	3,217
17.30	766	3,294
17.40	766	3,370
17.50	766	3,447
17.60	766	3,524
17.70	766	3,600
17.80	766	3,677
17.90	766	3,753
18.00	766	3,830
18.10	766	3,907
18.20	766	3,983
18.30	766	4,060
18.40	766	4,136
18.50	766	4,213
18.60	766	4,290
18.70	766	4,366
18.80	766	4,443
18.90	766	4,519
19.00	766	4,596
19.10	766	4,673
19.20	766	4,749
19.30	766	4,826
19.40	766	4,902
19.50	766	4,979
19.60	766	5,056
19.70	766	5,132
19.80	766	5,209
19.90	766	5,285
20.00	766	5,362
20.10	766	5,439
20.20	766	5,515
20.30	766	5,592
20.40	766	5,668
20.50	766	5,745
20.60	766	5,822
20.70	766	5,898
20.80	766	5,975
20.90	766	6,051
21.00	766	**6,128**

FUTURE



Subcat Reach Pond Link

Routing Diagram for 2026-10-05 Benson Pavilion - MCM-Final
Prepared by Langan Engineering, Printed 10/7/2026
HydroCAD® 10.20-8a s/n 08223 © 2025 HydroCAD Software Solutions LLC

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr, Projected	NOAA 24-hr	C	Default	24.00	1	3.91	2
2	10-yr, Projected	NOAA 24-hr	C	Default	24.00	1	6.17	2
3	25-yr	NOAA 24-hr	C	Default	24.00	1	6.28	2
4	100-yr, Projected	NOAA 24-hr	C	Default	24.00	1	11.84	2

Area Listing (selected nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
52	79	50-75% Grass cover, Fair, HSG C (PR2.0 PRO)
2,755	98	Paved parking, HSG C (PR1.0 PRO)
31,802	98	Roofs, HSG C (PR3.0 PRO)
696	98	impervious (PR2 1.0 PRO)
1,660	98	impervious walkway (PR1.0 PRO, PR1.1 PRO)
1,805	79	planters (PR2 2.0 PRO, PR2.2 PRO)

Summary for Subcatchment PR1.0 PRO: Impervious

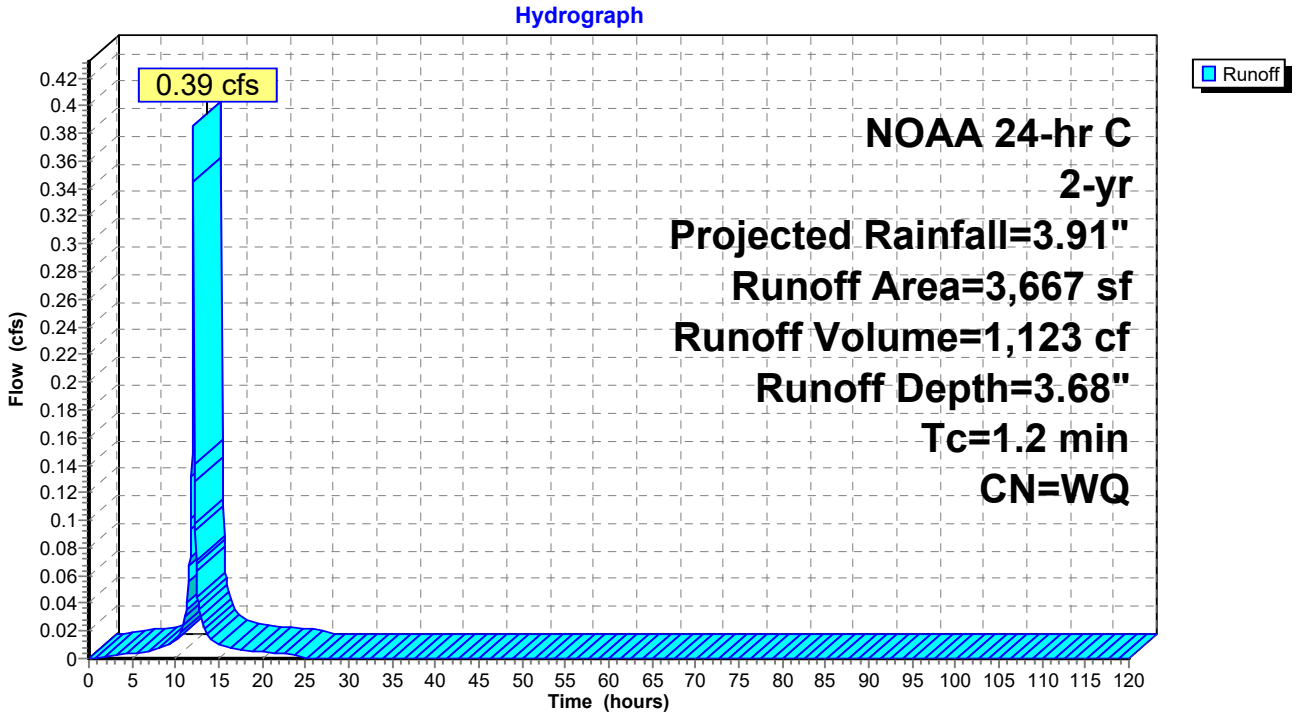
Runoff = 0.39 cfs @ 12.06 hrs, Volume= 1,123 cf, Depth= 3.68"
Routed to Pond BMP 1 : BMP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 2-yr, Projected Rainfall=3.91"

	Area (sf)	CN	Description
*	2,755	98	Paved parking, HSG C
*	912	98	impervious walkway
	3,667		Weighted Average
	3,667		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2					**Direct Entry,**

Subcatchment PR1.0 PRO: Impervious



Hydrograph for Subcatchment PR1.0 PRO: Impervious

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.11	0.02	0.00
5.00	0.25	0.10	0.00
7.50	0.42	0.25	0.01
10.00	0.71	0.52	**0.01**
12.50	2.75	2.52	**0.06**
15.00	3.34	3.11	0.01
17.50	3.57	3.33	0.01
20.00	3.72	3.48	0.00
22.50	**3.84**	**3.61**	0.00
25.00	**3.91**	**3.68**	0.00
27.50	3.91	3.68	0.00
30.00	3.91	3.68	0.00
32.50	3.91	3.68	0.00
35.00	3.91	3.68	0.00
37.50	3.91	3.68	0.00
40.00	3.91	3.68	0.00
42.50	3.91	3.68	0.00
45.00	3.91	3.68	0.00
47.50	3.91	3.68	0.00
50.00	3.91	3.68	0.00
52.50	3.91	3.68	0.00
55.00	3.91	3.68	0.00
57.50	3.91	3.68	0.00
60.00	3.91	3.68	0.00
62.50	3.91	3.68	0.00
65.00	3.91	3.68	0.00
67.50	3.91	3.68	0.00
70.00	3.91	3.68	0.00
72.50	3.91	3.68	0.00
75.00	3.91	3.68	0.00
77.50	3.91	3.68	0.00
80.00	3.91	3.68	0.00
82.50	3.91	3.68	0.00
85.00	3.91	3.68	0.00
87.50	3.91	3.68	0.00
90.00	3.91	3.68	0.00
92.50	3.91	3.68	0.00
95.00	3.91	3.68	0.00
97.50	3.91	3.68	0.00
100.00	3.91	3.68	0.00
102.50	3.91	3.68	0.00
105.00	3.91	3.68	0.00
107.50	3.91	3.68	0.00
110.00	3.91	3.68	0.00
112.50	3.91	3.68	0.00
115.00	3.91	3.68	0.00
117.50	3.91	3.68	0.00
120.00	3.91	3.68	0.00

Summary for Subcatchment PR1.1 PRO: Impervious bypass

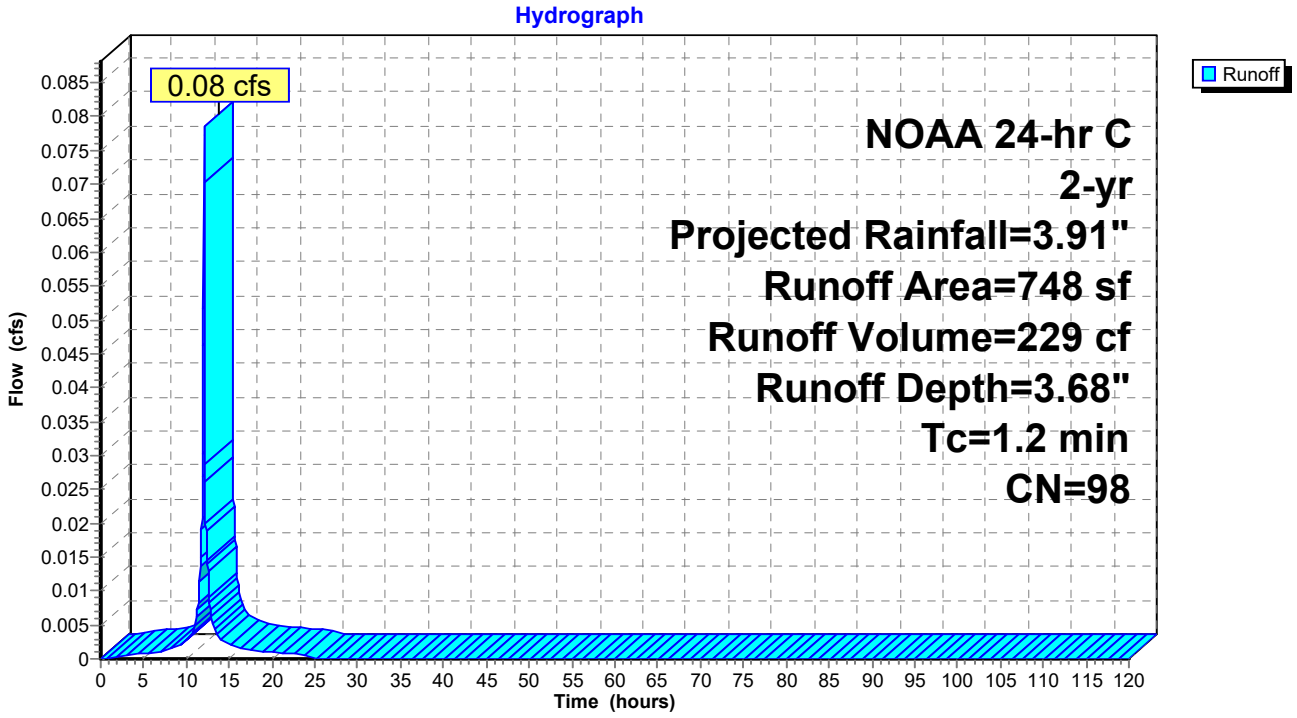
Runoff = 0.08 cfs @ 12.06 hrs, Volume= 229 cf, Depth= 3.68"
Routed to Reach PR1 END : POI-1 for PRDA-1 (current)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 2-yr, Projected Rainfall=3.91"

	Area (sf)	CN	Description
*	748	98	impervious walkway
	748		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2					**Direct Entry,**

Subcatchment PR1.1 PRO: Impervious bypass



Hydrograph for Subcatchment PR1.1 PRO: Impervious bypass

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.11	0.02	0.00
5.00	0.25	0.10	0.00
7.50	0.42	0.25	0.00
10.00	0.71	0.52	**0.00**
12.50	2.75	2.52	**0.01**
15.00	3.34	3.11	0.00
17.50	3.57	3.33	0.00
20.00	3.72	3.48	0.00
22.50	**3.84**	**3.61**	0.00
25.00	**3.91**	**3.68**	0.00
27.50	3.91	3.68	0.00
30.00	3.91	3.68	0.00
32.50	3.91	3.68	0.00
35.00	3.91	3.68	0.00
37.50	3.91	3.68	0.00
40.00	3.91	3.68	0.00
42.50	3.91	3.68	0.00
45.00	3.91	3.68	0.00
47.50	3.91	3.68	0.00
50.00	3.91	3.68	0.00
52.50	3.91	3.68	0.00
55.00	3.91	3.68	0.00
57.50	3.91	3.68	0.00
60.00	3.91	3.68	0.00
62.50	3.91	3.68	0.00
65.00	3.91	3.68	0.00
67.50	3.91	3.68	0.00
70.00	3.91	3.68	0.00
72.50	3.91	3.68	0.00
75.00	3.91	3.68	0.00
77.50	3.91	3.68	0.00
80.00	3.91	3.68	0.00
82.50	3.91	3.68	0.00
85.00	3.91	3.68	0.00
87.50	3.91	3.68	0.00
90.00	3.91	3.68	0.00
92.50	3.91	3.68	0.00
95.00	3.91	3.68	0.00
97.50	3.91	3.68	0.00
100.00	3.91	3.68	0.00
102.50	3.91	3.68	0.00
105.00	3.91	3.68	0.00
107.50	3.91	3.68	0.00
110.00	3.91	3.68	0.00
112.50	3.91	3.68	0.00
115.00	3.91	3.68	0.00
117.50	3.91	3.68	0.00
120.00	3.91	3.68	0.00

Summary for Subcatchment PR2 1.0 PRO: Impervious TO POA 2

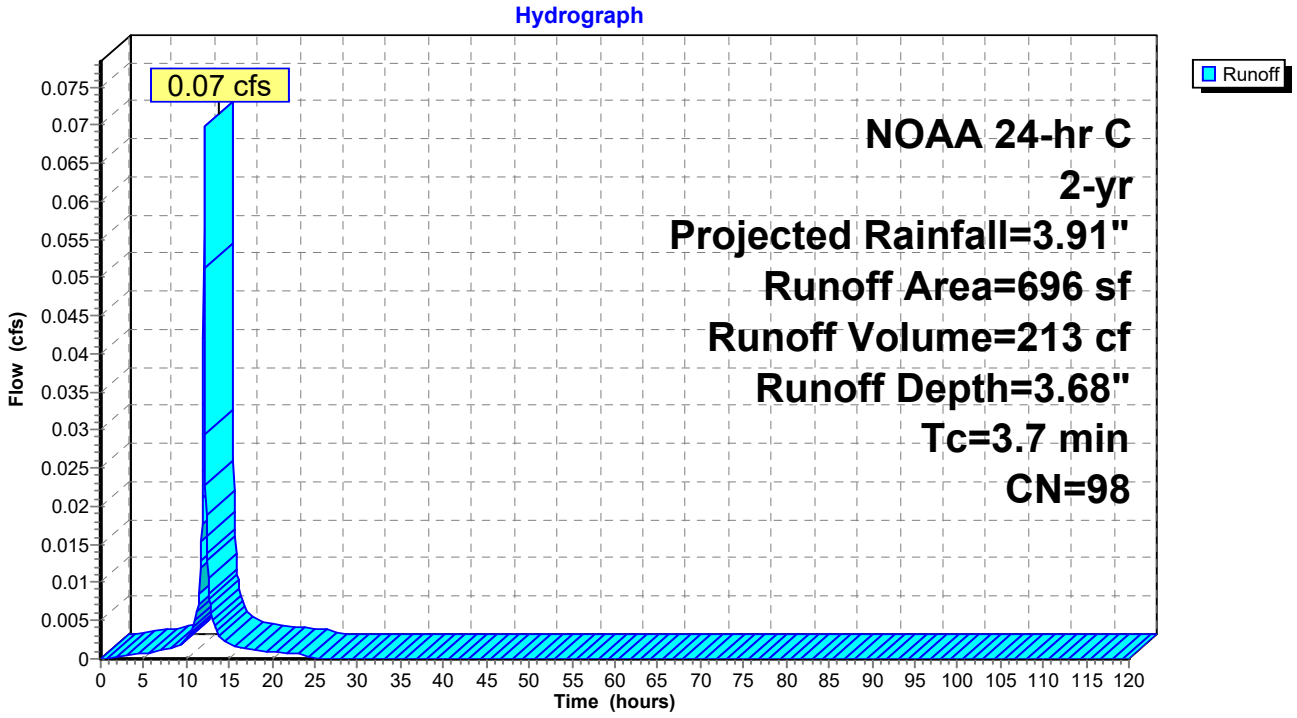
Runoff = 0.07 cfs @ 12.10 hrs, Volume= 213 cf, Depth= 3.68"
Routed to Reach PR2 PRO : POI-2 for PRDA-2 (current)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 2-yr, Projected Rainfall=3.91"

	Area (sf)	CN	Description
*	696	98	impervious
	696		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7					**Direct Entry,**

Subcatchment PR2 1.0 PRO: Impervious TO POA 2



Hydrograph for Subcatchment PR2 1.0 PRO: Impervious TO POA 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.11	0.02	0.00
5.00	0.25	0.10	0.00
7.50	0.42	0.25	0.00
10.00	0.71	0.52	**0.00**
12.50	2.75	2.52	**0.01**
15.00	3.34	3.11	0.00
17.50	3.57	3.33	0.00
20.00	3.72	3.48	0.00
22.50	**3.84**	**3.61**	0.00
25.00	**3.91**	**3.68**	0.00
27.50	3.91	3.68	0.00
30.00	3.91	3.68	0.00
32.50	3.91	3.68	0.00
35.00	3.91	3.68	0.00
37.50	3.91	3.68	0.00
40.00	3.91	3.68	0.00
42.50	3.91	3.68	0.00
45.00	3.91	3.68	0.00
47.50	3.91	3.68	0.00
50.00	3.91	3.68	0.00
52.50	3.91	3.68	0.00
55.00	3.91	3.68	0.00
57.50	3.91	3.68	0.00
60.00	3.91	3.68	0.00
62.50	3.91	3.68	0.00
65.00	3.91	3.68	0.00
67.50	3.91	3.68	0.00
70.00	3.91	3.68	0.00
72.50	3.91	3.68	0.00
75.00	3.91	3.68	0.00
77.50	3.91	3.68	0.00
80.00	3.91	3.68	0.00
82.50	3.91	3.68	0.00
85.00	3.91	3.68	0.00
87.50	3.91	3.68	0.00
90.00	3.91	3.68	0.00
92.50	3.91	3.68	0.00
95.00	3.91	3.68	0.00
97.50	3.91	3.68	0.00
100.00	3.91	3.68	0.00
102.50	3.91	3.68	0.00
105.00	3.91	3.68	0.00
107.50	3.91	3.68	0.00
110.00	3.91	3.68	0.00
112.50	3.91	3.68	0.00
115.00	3.91	3.68	0.00
117.50	3.91	3.68	0.00
120.00	3.91	3.68	0.00

Summary for Subcatchment PR2 2.0 PRO: Pervious TO POA 2

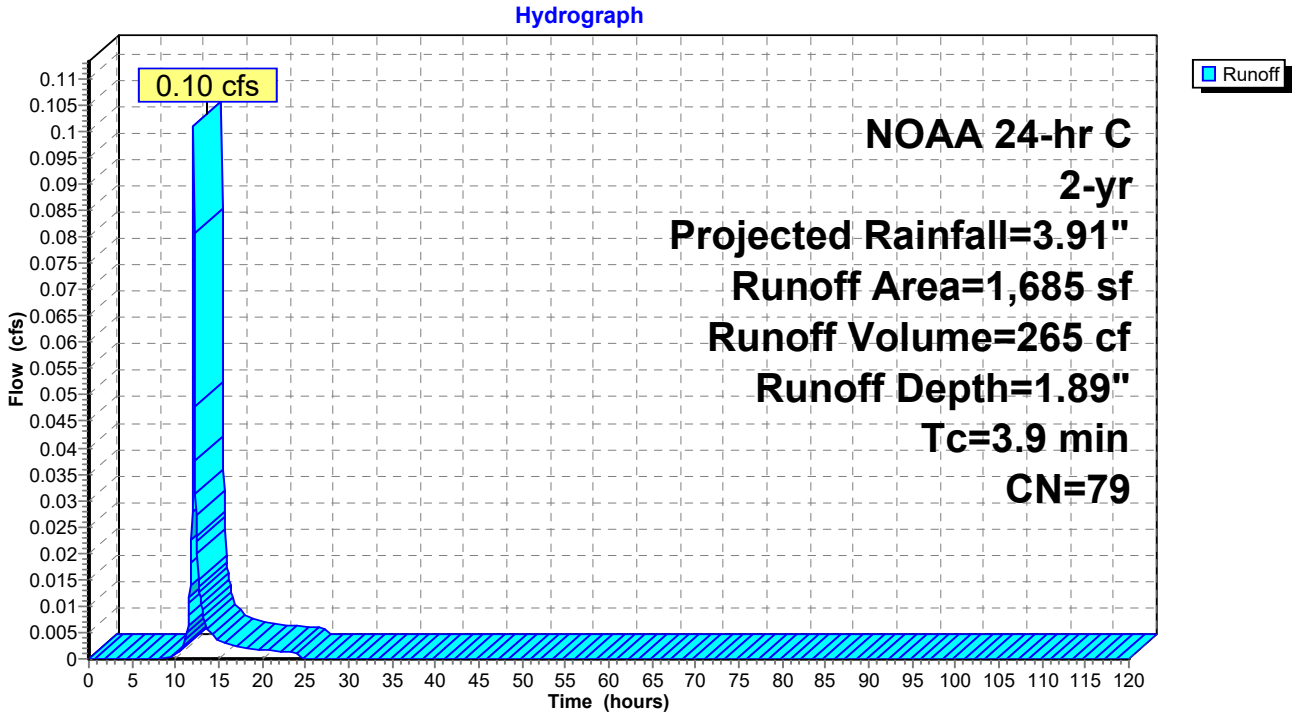
Runoff = 0.10 cfs @ 12.10 hrs, Volume= 265 cf, Depth= 1.89"
Routed to Reach PR2 PRO : POI-2 for PRDA-2 (current)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 2-yr, Projected Rainfall=3.91"

	Area (sf)	CN	Description
*	1,685	79	planters
	1,685		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9					**Direct Entry,**

Subcatchment PR2 2.0 PRO: Pervious TO POA 2



Hydrograph for Subcatchment PR2 2.0 PRO: Pervious TO POA 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.11	0.00	0.00
5.00	0.25	0.00	0.00
7.50	0.42	0.00	0.00
10.00	0.71	0.01	**0.00**
12.50	2.75	1.01	**0.02**
15.00	3.34	1.44	0.00
17.50	3.57	1.62	0.00
20.00	3.72	1.74	0.00
22.50	**3.84**	**1.84**	0.00
25.00	**3.91**	**1.89**	0.00
27.50	3.91	1.89	0.00
30.00	3.91	1.89	0.00
32.50	3.91	1.89	0.00
35.00	3.91	1.89	0.00
37.50	3.91	1.89	0.00
40.00	3.91	1.89	0.00
42.50	3.91	1.89	0.00
45.00	3.91	1.89	0.00
47.50	3.91	1.89	0.00
50.00	3.91	1.89	0.00
52.50	3.91	1.89	0.00
55.00	3.91	1.89	0.00
57.50	3.91	1.89	0.00
60.00	3.91	1.89	0.00
62.50	3.91	1.89	0.00
65.00	3.91	1.89	0.00
67.50	3.91	1.89	0.00
70.00	3.91	1.89	0.00
72.50	3.91	1.89	0.00
75.00	3.91	1.89	0.00
77.50	3.91	1.89	0.00
80.00	3.91	1.89	0.00
82.50	3.91	1.89	0.00
85.00	3.91	1.89	0.00
87.50	3.91	1.89	0.00
90.00	3.91	1.89	0.00
92.50	3.91	1.89	0.00
95.00	3.91	1.89	0.00
97.50	3.91	1.89	0.00
100.00	3.91	1.89	0.00
102.50	3.91	1.89	0.00
105.00	3.91	1.89	0.00
107.50	3.91	1.89	0.00
110.00	3.91	1.89	0.00
112.50	3.91	1.89	0.00
115.00	3.91	1.89	0.00
117.50	3.91	1.89	0.00
120.00	3.91	1.89	0.00

Summary for Subcatchment PR2.0 PRO: Pervious

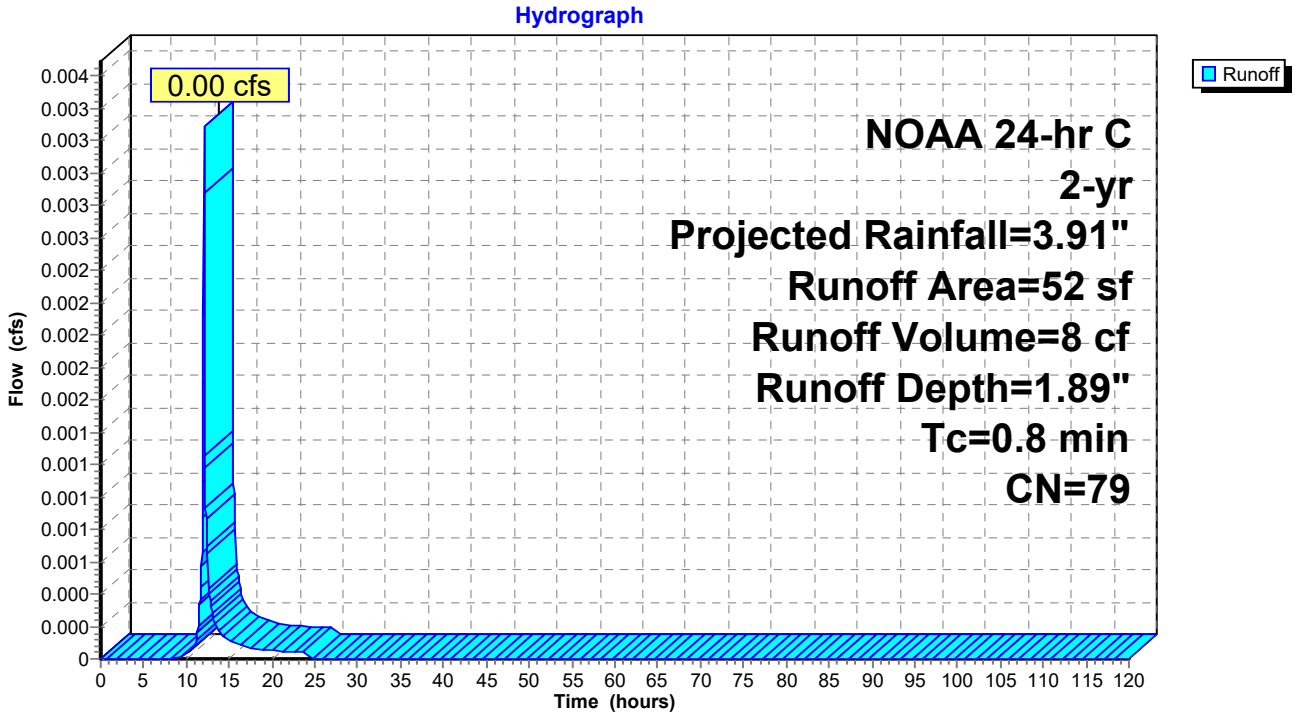
Runoff = 0.00 cfs @ 12.06 hrs, Volume= 8 cf, Depth= 1.89"
Routed to Pond BMP 1 : BMP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 2-yr, Projected Rainfall=3.91"

	Area (sf)	CN	Description
*	52	79	50-75% Grass cover, Fair, HSG C
	52		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8					**Direct Entry,**

Subcatchment PR2.0 PRO: Pervious



Hydrograph for Subcatchment PR2.0 PRO: Pervious

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.11	0.00	0.00
5.00	0.25	0.00	0.00
7.50	0.42	0.00	0.00
10.00	0.71	0.01	**0.00**
12.50	2.75	1.01	**0.00**
15.00	3.34	1.44	0.00
17.50	3.57	1.62	0.00
20.00	3.72	1.74	0.00
22.50	**3.84**	**1.84**	0.00
25.00	**3.91**	**1.89**	0.00
27.50	3.91	1.89	0.00
30.00	3.91	1.89	0.00
32.50	3.91	1.89	0.00
35.00	3.91	1.89	0.00
37.50	3.91	1.89	0.00
40.00	3.91	1.89	0.00
42.50	3.91	1.89	0.00
45.00	3.91	1.89	0.00
47.50	3.91	1.89	0.00
50.00	3.91	1.89	0.00
52.50	3.91	1.89	0.00
55.00	3.91	1.89	0.00
57.50	3.91	1.89	0.00
60.00	3.91	1.89	0.00
62.50	3.91	1.89	0.00
65.00	3.91	1.89	0.00
67.50	3.91	1.89	0.00
70.00	3.91	1.89	0.00
72.50	3.91	1.89	0.00
75.00	3.91	1.89	0.00
77.50	3.91	1.89	0.00
80.00	3.91	1.89	0.00
82.50	3.91	1.89	0.00
85.00	3.91	1.89	0.00
87.50	3.91	1.89	0.00
90.00	3.91	1.89	0.00
92.50	3.91	1.89	0.00
95.00	3.91	1.89	0.00
97.50	3.91	1.89	0.00
100.00	3.91	1.89	0.00
102.50	3.91	1.89	0.00
105.00	3.91	1.89	0.00
107.50	3.91	1.89	0.00
110.00	3.91	1.89	0.00
112.50	3.91	1.89	0.00
115.00	3.91	1.89	0.00
117.50	3.91	1.89	0.00
120.00	3.91	1.89	0.00

Summary for Subcatchment PR2.2 PRO: Pervious bypass

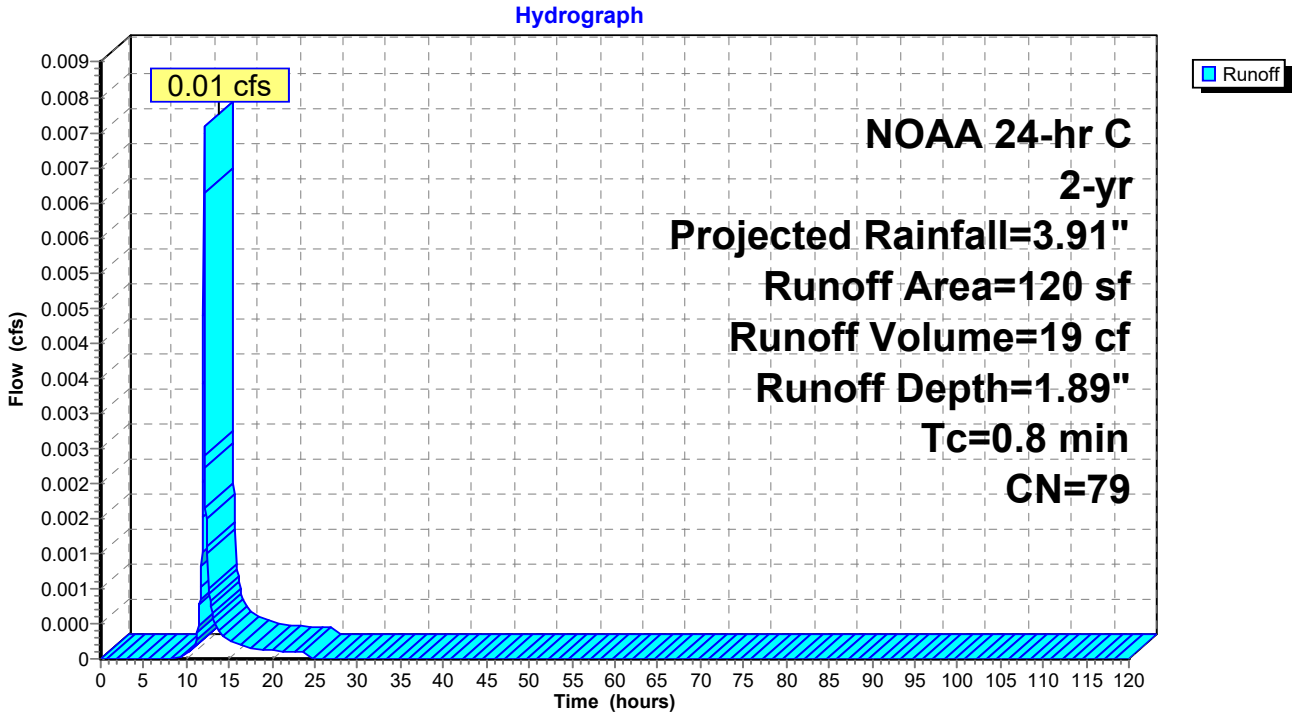
Runoff = 0.01 cfs @ 12.06 hrs, Volume= 19 cf, Depth= 1.89"
Routed to Reach PR1 END : POI-1 for PRDA-1 (current)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 2-yr, Projected Rainfall=3.91"

	Area (sf)	CN	Description
*	120	79	planters
	120		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8					**Direct Entry,**

Subcatchment PR2.2 PRO: Pervious bypass



Hydrograph for Subcatchment PR2.2 PRO: Pervious bypass

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.11	0.00	0.00
5.00	0.25	0.00	0.00
7.50	0.42	0.00	0.00
10.00	0.71	0.01	**0.00**
12.50	2.75	1.01	**0.00**
15.00	3.34	1.44	0.00
17.50	3.57	1.62	0.00
20.00	3.72	1.74	0.00
22.50	**3.84**	**1.84**	0.00
25.00	**3.91**	**1.89**	0.00
27.50	3.91	1.89	0.00
30.00	3.91	1.89	0.00
32.50	3.91	1.89	0.00
35.00	3.91	1.89	0.00
37.50	3.91	1.89	0.00
40.00	3.91	1.89	0.00
42.50	3.91	1.89	0.00
45.00	3.91	1.89	0.00
47.50	3.91	1.89	0.00
50.00	3.91	1.89	0.00
52.50	3.91	1.89	0.00
55.00	3.91	1.89	0.00
57.50	3.91	1.89	0.00
60.00	3.91	1.89	0.00
62.50	3.91	1.89	0.00
65.00	3.91	1.89	0.00
67.50	3.91	1.89	0.00
70.00	3.91	1.89	0.00
72.50	3.91	1.89	0.00
75.00	3.91	1.89	0.00
77.50	3.91	1.89	0.00
80.00	3.91	1.89	0.00
82.50	3.91	1.89	0.00
85.00	3.91	1.89	0.00
87.50	3.91	1.89	0.00
90.00	3.91	1.89	0.00
92.50	3.91	1.89	0.00
95.00	3.91	1.89	0.00
97.50	3.91	1.89	0.00
100.00	3.91	1.89	0.00
102.50	3.91	1.89	0.00
105.00	3.91	1.89	0.00
107.50	3.91	1.89	0.00
110.00	3.91	1.89	0.00
112.50	3.91	1.89	0.00
115.00	3.91	1.89	0.00
117.50	3.91	1.89	0.00
120.00	3.91	1.89	0.00

Summary for Subcatchment PR3.0 PRO: Building

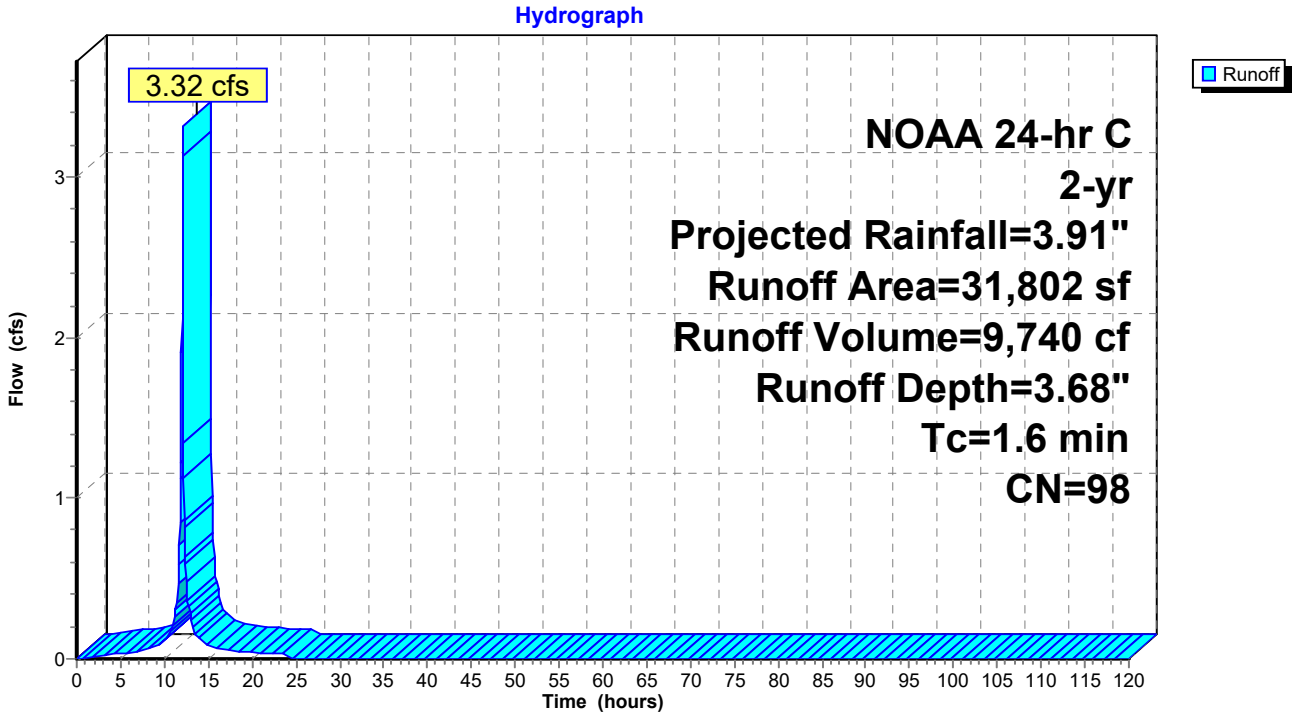
Runoff = 3.32 cfs @ 12.07 hrs, Volume= 9,740 cf, Depth= 3.68"
Routed to Pond BMP 1 : BMP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 2-yr, Projected Rainfall=3.91"

Area (sf)	CN	Description
31,802	98	Roofs, HSG C
31,802		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6					**Direct Entry,**

Subcatchment PR3.0 PRO: Building



Hydrograph for Subcatchment PR3.0 PRO: Building

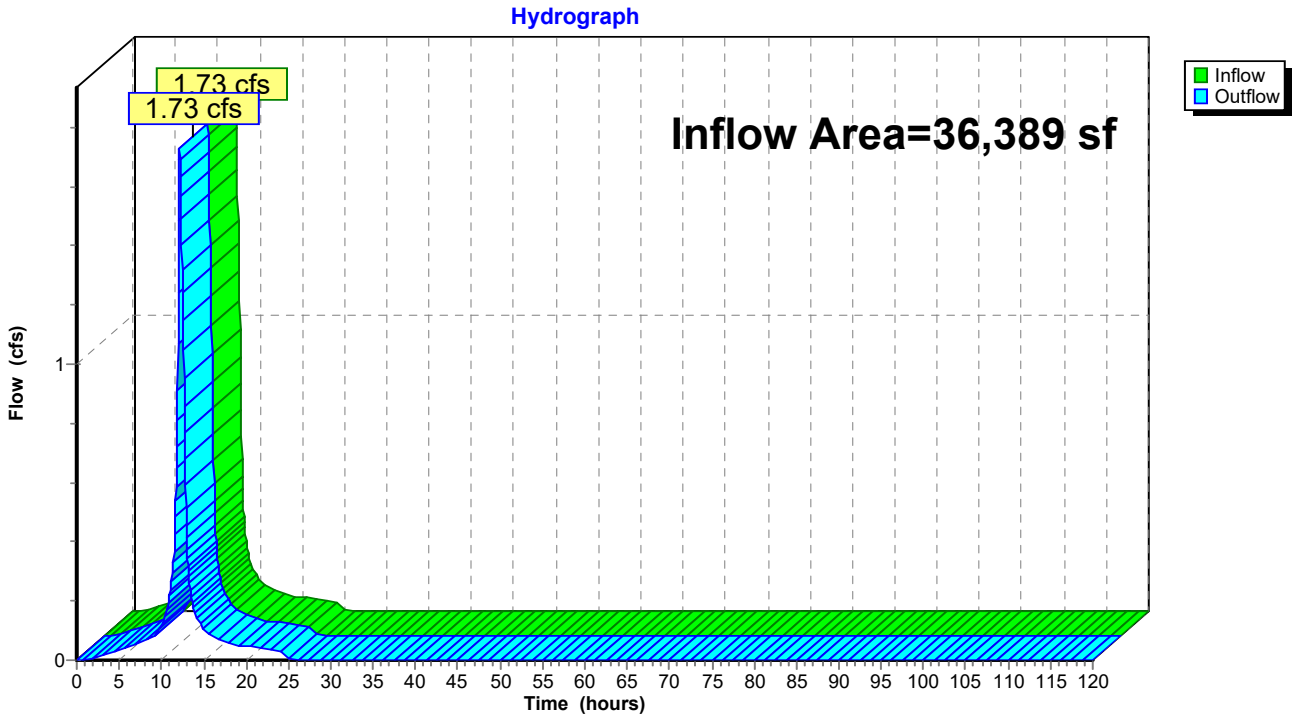
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.11	0.02	0.02
5.00	0.25	0.10	0.03
7.50	0.42	0.25	0.06
10.00	0.71	0.52	**0.12**
12.50	2.75	2.52	**0.56**
15.00	3.34	3.11	0.08
17.50	3.57	3.33	0.05
20.00	3.72	3.48	0.04
22.50	**3.84**	**3.61**	0.03
25.00	**3.91**	**3.68**	0.00
27.50	3.91	3.68	0.00
30.00	3.91	3.68	0.00
32.50	3.91	3.68	0.00
35.00	3.91	3.68	0.00
37.50	3.91	3.68	0.00
40.00	3.91	3.68	0.00
42.50	3.91	3.68	0.00
45.00	3.91	3.68	0.00
47.50	3.91	3.68	0.00
50.00	3.91	3.68	0.00
52.50	3.91	3.68	0.00
55.00	3.91	3.68	0.00
57.50	3.91	3.68	0.00
60.00	3.91	3.68	0.00
62.50	3.91	3.68	0.00
65.00	3.91	3.68	0.00
67.50	3.91	3.68	0.00
70.00	3.91	3.68	0.00
72.50	3.91	3.68	0.00
75.00	3.91	3.68	0.00
77.50	3.91	3.68	0.00
80.00	3.91	3.68	0.00
82.50	3.91	3.68	0.00
85.00	3.91	3.68	0.00
87.50	3.91	3.68	0.00
90.00	3.91	3.68	0.00
92.50	3.91	3.68	0.00
95.00	3.91	3.68	0.00
97.50	3.91	3.68	0.00
100.00	3.91	3.68	0.00
102.50	3.91	3.68	0.00
105.00	3.91	3.68	0.00
107.50	3.91	3.68	0.00
110.00	3.91	3.68	0.00
112.50	3.91	3.68	0.00
115.00	3.91	3.68	0.00
117.50	3.91	3.68	0.00
120.00	3.91	3.68	0.00

Summary for Reach PR1 END: POI-1 for PRDA-1 (current)

Inflow Area = 36,389 sf, 99.53% Impervious, Inflow Depth = 3.67" for 2-yr, Projected event
Inflow = 1.73 cfs @ 12.15 hrs, Volume= 11,120 cf
Outflow = 1.73 cfs @ 12.15 hrs, Volume= 11,120 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach PR1 END: POI-1 for PRDA-1 (current)



Hydrograph for Reach PR1 END: POI-1 for PRDA-1 (current)

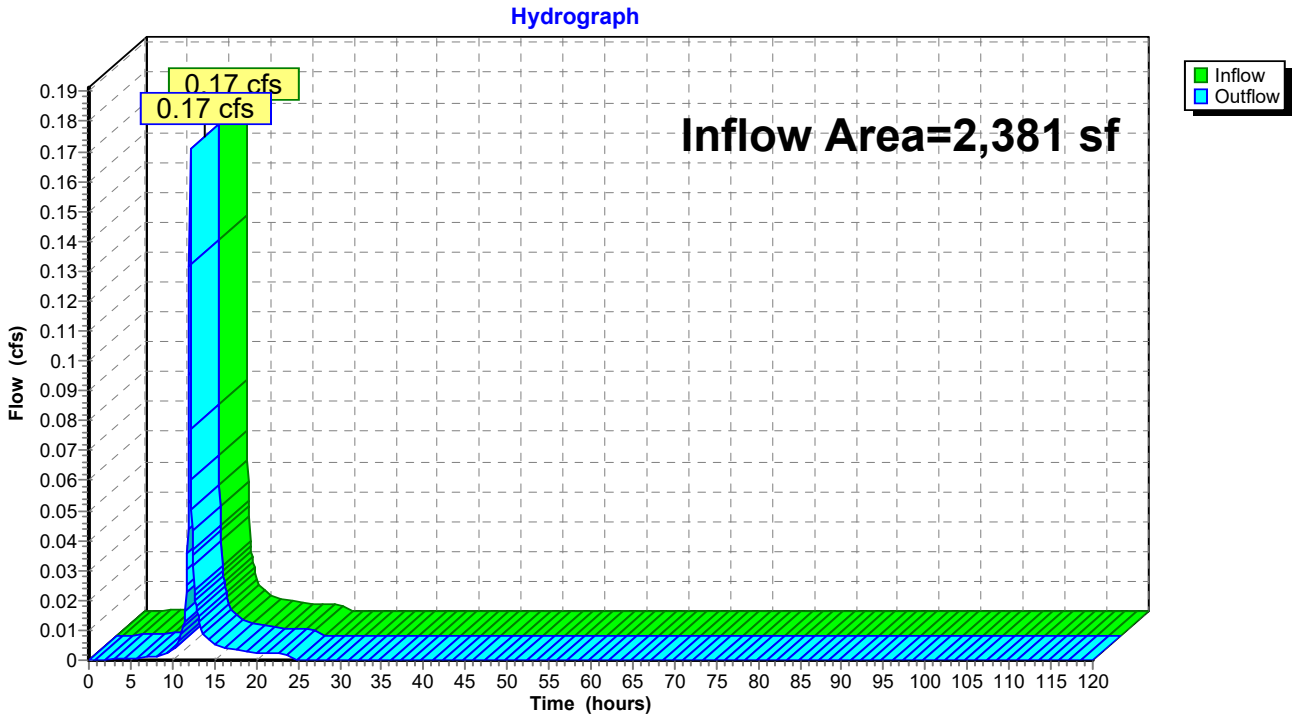
Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00
2.50	0.01		0.01
5.00	0.04		0.04
7.50	0.06		0.06
10.00	**0.12**		**0.12**
12.50	**1.24**		**1.24**
15.00	0.11		0.11
17.50	0.06		0.06
20.00	0.05		0.05
22.50	0.04		0.04
25.00	0.01		0.01
27.50	0.00		0.00
30.00	0.00		0.00
32.50	0.00		0.00
35.00	0.00		0.00
37.50	0.00		0.00
40.00	0.00		0.00
42.50	0.00		0.00
45.00	0.00		0.00
47.50	0.00		0.00
50.00	0.00		0.00
52.50	0.00		0.00
55.00	0.00		0.00
57.50	0.00		0.00
60.00	0.00		0.00
62.50	0.00		0.00
65.00	0.00		0.00
67.50	0.00		0.00
70.00	0.00		0.00
72.50	0.00		0.00
75.00	0.00		0.00
77.50	0.00		0.00
80.00	0.00		0.00
82.50	0.00		0.00
85.00	0.00		0.00
87.50	0.00		0.00
90.00	0.00		0.00
92.50	0.00		0.00
95.00	0.00		0.00
97.50	0.00		0.00
100.00	0.00		0.00
102.50	0.00		0.00
105.00	0.00		0.00
107.50	0.00		0.00
110.00	0.00		0.00
112.50	0.00		0.00
115.00	0.00		0.00
117.50	0.00		0.00
120.00	0.00		0.00

Summary for Reach PR2 PRO: POI-2 for PRDA-2 (current)

Inflow Area = 2,381 sf, 29.23% Impervious, Inflow Depth = 2.41" for 2-yr, Projected event
Inflow = 0.17 cfs @ 12.10 hrs, Volume= 479 cf
Outflow = 0.17 cfs @ 12.10 hrs, Volume= 479 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach PR2 PRO: POI-2 for PRDA-2 (current)



Hydrograph for Reach PR2 PRO: POI-2 for PRDA-2 (current)

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00
2.50	0.00		0.00
5.00	0.00		0.00
7.50	0.00		0.00
10.00	**0.00**		**0.00**
12.50	**0.03**		**0.03**
15.00	0.01		0.01
17.50	0.00		0.00
20.00	0.00		0.00
22.50	0.00		0.00
25.00	0.00		0.00
27.50	0.00		0.00
30.00	0.00		0.00
32.50	0.00		0.00
35.00	0.00		0.00
37.50	0.00		0.00
40.00	0.00		0.00
42.50	0.00		0.00
45.00	0.00		0.00
47.50	0.00		0.00
50.00	0.00		0.00
52.50	0.00		0.00
55.00	0.00		0.00
57.50	0.00		0.00
60.00	0.00		0.00
62.50	0.00		0.00
65.00	0.00		0.00
67.50	0.00		0.00
70.00	0.00		0.00
72.50	0.00		0.00
75.00	0.00		0.00
77.50	0.00		0.00
80.00	0.00		0.00
82.50	0.00		0.00
85.00	0.00		0.00
87.50	0.00		0.00
90.00	0.00		0.00
92.50	0.00		0.00
95.00	0.00		0.00
97.50	0.00		0.00
100.00	0.00		0.00
102.50	0.00		0.00
105.00	0.00		0.00
107.50	0.00		0.00
110.00	0.00		0.00
112.50	0.00		0.00
115.00	0.00		0.00
117.50	0.00		0.00
120.00	0.00		0.00

Summary for Pond BMP 1: BMP-1

Inflow Area = 35,521 sf, 99.85% Impervious, Inflow Depth = 3.67" for 2-yr, Projected event
Inflow = 3.71 cfs @ 12.07 hrs, Volume= 10,872 cf
Outflow = 1.70 cfs @ 12.16 hrs, Volume= 10,872 cf, Atten= 54%, Lag= 5.5 min
Primary = 1.70 cfs @ 12.16 hrs, Volume= 10,872 cf
Routed to Reach PR1 END : POI-1 for PRDA-1 (current)

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 15.41' @ 12.16 hrs Surf.Area= 766 sf Storage= 1,844 cf

Plug-Flow detention time= 19.5 min calculated for 10,867 cf (100% of inflow)
Center-of-Mass det. time= 19.5 min (768.9 - 749.3)

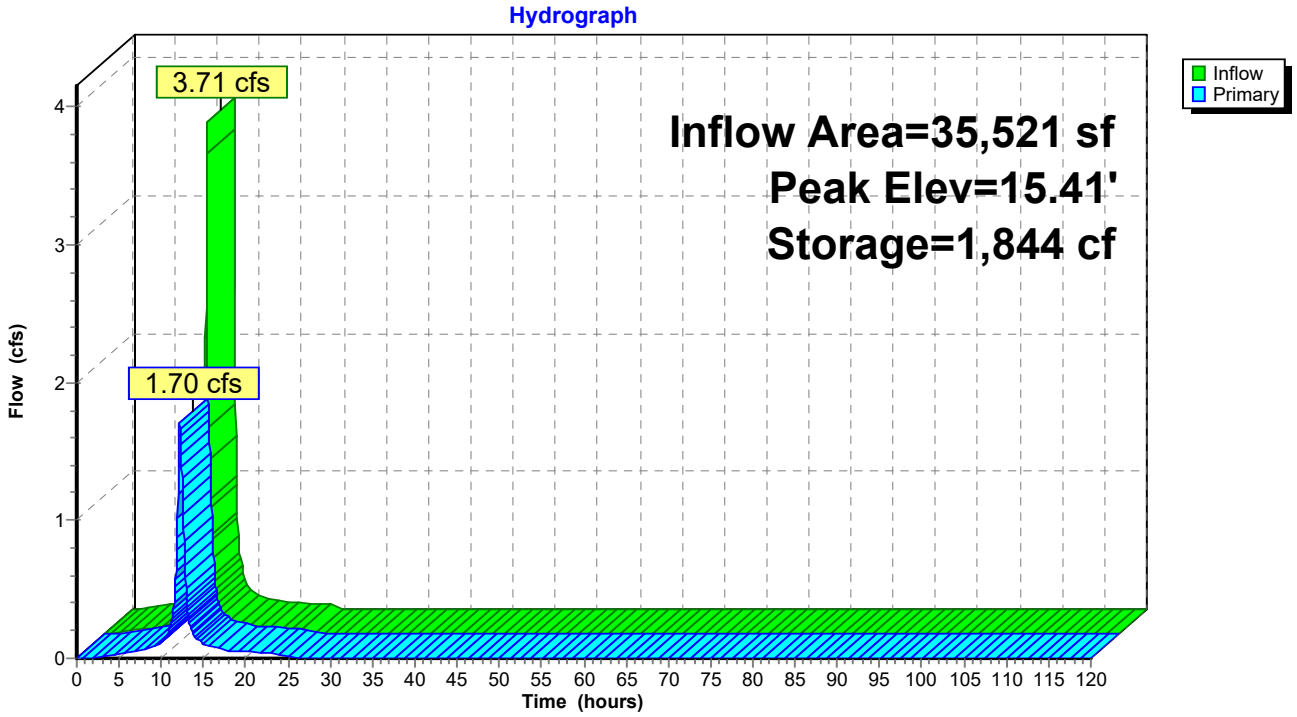
Volume	Invert	Avail.Storage	Storage Description
#1	13.00'	6,128 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.00	766	0	0
14.00	766	766	766
15.00	766	766	1,532
16.00	766	766	2,298
17.00	766	766	3,064
18.00	766	766	3,830
19.00	766	766	4,596
20.00	766	766	5,362
21.00	766	766	6,128

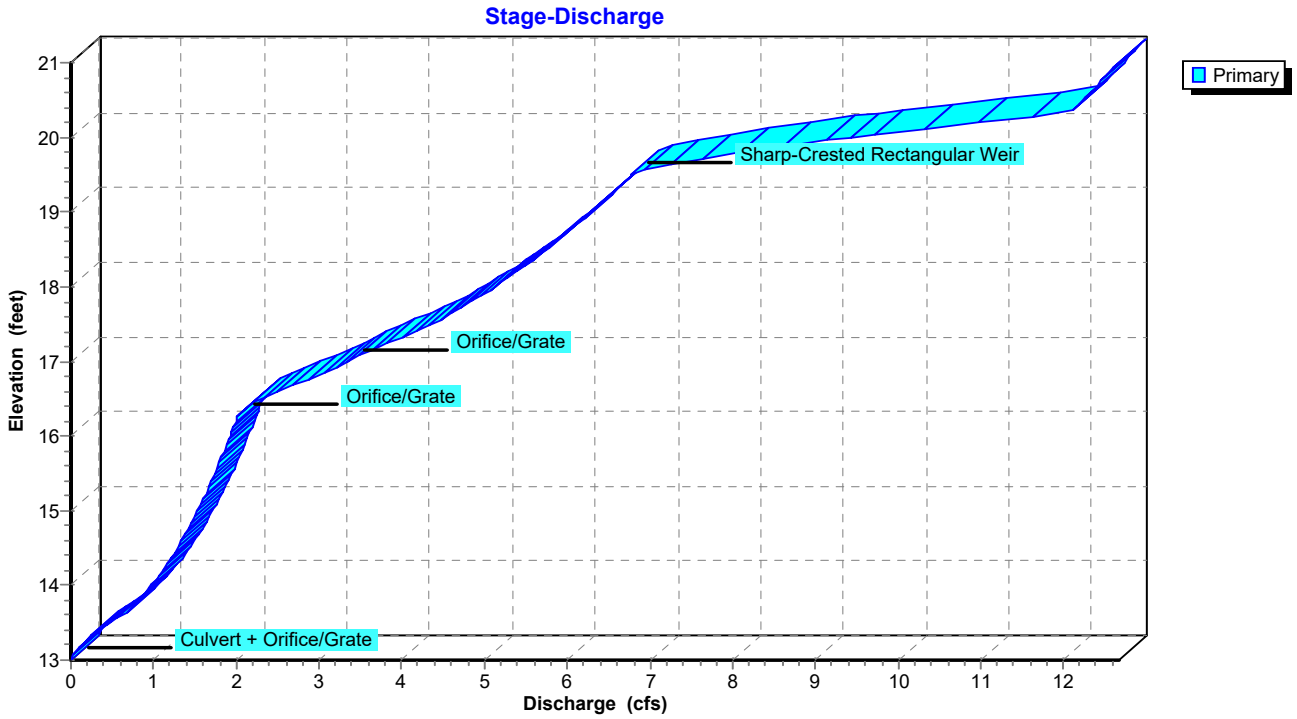
Device	Routing	Invert	Outlet Devices
#1	Primary	13.00'	**15.0" Round Culvert** L= 40.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.00' / 11.80' S= 0.0300 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.23 sf
#2	Device 1	13.00'	**5.0" W x 7.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	16.25'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	17.00'	**5.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Device 1	19.50'	**2.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=1.69 cfs @ 12.16 hrs HW=15.38' (Free Discharge)
└**1=Culvert** (Passes 1.69 cfs of 6.19 cfs potential flow)
├**2=Orifice/Grate** (Orifice Controls 1.69 cfs @ 6.96 fps)
├**3=Orifice/Grate** (Controls 0.00 cfs)
├**4=Orifice/Grate** (Controls 0.00 cfs)
└**5=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond BMP 1: BMP-1



Pond BMP 1: BMP-1



Hydrograph for Pond BMP 1: BMP-1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	13.00	0.00
2.50	0.02	28	13.04	0.01
5.00	0.04	71	13.09	0.03
7.50	0.06	95	13.12	0.06
10.00	**0.13**	**152**	**13.20**	**0.12**
12.50	**0.62**	**1,072**	**14.40**	**1.23**
15.00	0.09	139	13.18	0.10
17.50	0.06	99	13.13	0.06
20.00	0.05	83	13.11	0.05
22.50	0.04	75	13.10	0.04
25.00	0.00	17	13.02	0.01
27.50	0.00	0	13.00	0.00
30.00	0.00	0	13.00	0.00
32.50	0.00	0	13.00	0.00
35.00	0.00	0	13.00	0.00
37.50	0.00	0	13.00	0.00
40.00	0.00	0	13.00	0.00
42.50	0.00	0	13.00	0.00
45.00	0.00	0	13.00	0.00
47.50	0.00	0	13.00	0.00
50.00	0.00	0	13.00	0.00
52.50	0.00	0	13.00	0.00
55.00	0.00	0	13.00	0.00
57.50	0.00	0	13.00	0.00
60.00	0.00	0	13.00	0.00
62.50	0.00	0	13.00	0.00
65.00	0.00	0	13.00	0.00
67.50	0.00	0	13.00	0.00
70.00	0.00	0	13.00	0.00
72.50	0.00	0	13.00	0.00
75.00	0.00	0	13.00	0.00
77.50	0.00	0	13.00	0.00
80.00	0.00	0	13.00	0.00
82.50	0.00	0	13.00	0.00
85.00	0.00	0	13.00	0.00
87.50	0.00	0	13.00	0.00
90.00	0.00	0	13.00	0.00
92.50	0.00	0	13.00	0.00
95.00	0.00	0	13.00	0.00
97.50	0.00	0	13.00	0.00
100.00	0.00	0	13.00	0.00
102.50	0.00	0	13.00	0.00
105.00	0.00	0	13.00	0.00
107.50	0.00	0	13.00	0.00
110.00	0.00	0	13.00	0.00
112.50	0.00	0	13.00	0.00
115.00	0.00	0	13.00	0.00
117.50	0.00	0	13.00	0.00
120.00	0.00	0	13.00	0.00

Stage-Area-Storage for Pond BMP 1: BMP-1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
13.00	**766**	0
13.10	766	77
13.20	766	153
13.30	766	230
13.40	766	306
13.50	766	383
13.60	766	460
13.70	766	536
13.80	766	613
13.90	766	689
14.00	766	766
14.10	766	843
14.20	766	919
14.30	766	996
14.40	766	1,072
14.50	766	1,149
14.60	766	1,226
14.70	766	1,302
14.80	766	1,379
14.90	766	1,455
15.00	766	1,532
15.10	766	1,609
15.20	766	1,685
15.30	766	1,762
15.40	766	1,838
15.50	766	1,915
15.60	766	1,992
15.70	766	2,068
15.80	766	2,145
15.90	766	2,221
16.00	766	2,298
16.10	766	2,375
16.20	766	2,451
16.30	766	2,528
16.40	766	2,604
16.50	766	2,681
16.60	766	2,758
16.70	766	2,834
16.80	766	2,911
16.90	766	2,987
17.00	766	3,064
17.10	766	3,141
17.20	766	3,217
17.30	766	3,294
17.40	766	3,370
17.50	766	3,447
17.60	766	3,524
17.70	766	3,600
17.80	766	3,677
17.90	766	3,753
18.00	766	3,830
18.10	766	3,907
18.20	766	3,983
18.30	766	4,060
18.40	766	4,136
18.50	766	4,213
18.60	766	4,290
18.70	766	4,366
18.80	766	4,443
18.90	766	4,519
19.00	766	4,596
19.10	766	4,673
19.20	766	4,749
19.30	766	4,826
19.40	766	4,902
19.50	766	4,979
19.60	766	5,056
19.70	766	5,132
19.80	766	5,209
19.90	766	5,285
20.00	766	5,362
20.10	766	5,439
20.20	766	5,515
20.30	766	5,592
20.40	766	5,668
20.50	766	5,745
20.60	766	5,822
20.70	766	5,898
20.80	766	5,975
20.90	766	6,051
21.00	766	**6,128**

Summary for Subcatchment PR1.0 PRO: Impervious

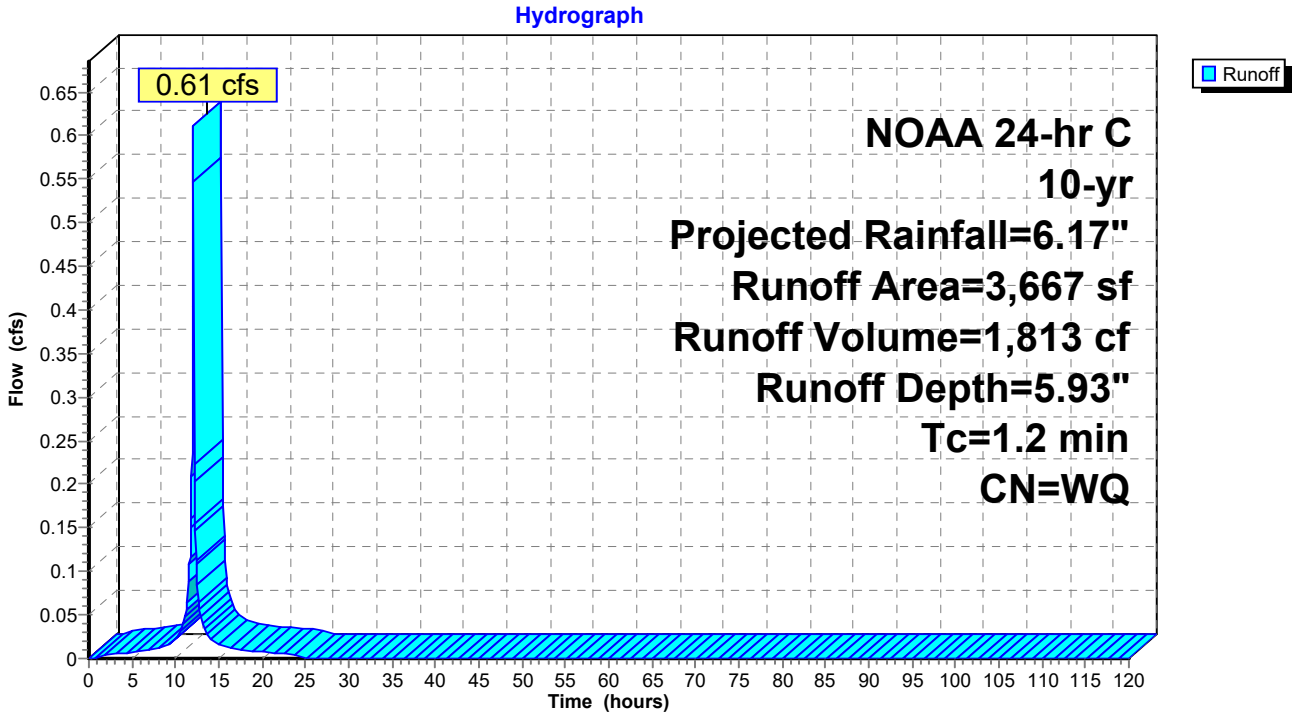
Runoff = 0.61 cfs @ 12.06 hrs, Volume= 1,813 cf, Depth= 5.93"
Routed to Pond BMP 1 : BMP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 10-yr, Projected Rainfall=6.17"

	Area (sf)	CN	Description
*	2,755	98	Paved parking, HSG C
*	912	98	impervious walkway
	3,667		Weighted Average
	3,667		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2					**Direct Entry,**

Subcatchment PR1.0 PRO: Impervious



Hydrograph for Subcatchment PR1.0 PRO: Impervious

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.18	0.06	0.00
5.00	0.39	0.22	0.01
7.50	0.67	0.47	0.01
10.00	1.12	0.91	**0.02**
12.50	4.35	4.11	**0.10**
15.00	5.27	5.03	0.02
17.50	5.63	5.39	0.01
20.00	5.87	5.63	0.01
22.50	**6.07**	**5.83**	0.01
25.00	**6.17**	**5.93**	0.00
27.50	6.17	5.93	0.00
30.00	6.17	5.93	0.00
32.50	6.17	5.93	0.00
35.00	6.17	5.93	0.00
37.50	6.17	5.93	0.00
40.00	6.17	5.93	0.00
42.50	6.17	5.93	0.00
45.00	6.17	5.93	0.00
47.50	6.17	5.93	0.00
50.00	6.17	5.93	0.00
52.50	6.17	5.93	0.00
55.00	6.17	5.93	0.00
57.50	6.17	5.93	0.00
60.00	6.17	5.93	0.00
62.50	6.17	5.93	0.00
65.00	6.17	5.93	0.00
67.50	6.17	5.93	0.00
70.00	6.17	5.93	0.00
72.50	6.17	5.93	0.00
75.00	6.17	5.93	0.00
77.50	6.17	5.93	0.00
80.00	6.17	5.93	0.00
82.50	6.17	5.93	0.00
85.00	6.17	5.93	0.00
87.50	6.17	5.93	0.00
90.00	6.17	5.93	0.00
92.50	6.17	5.93	0.00
95.00	6.17	5.93	0.00
97.50	6.17	5.93	0.00
100.00	6.17	5.93	0.00
102.50	6.17	5.93	0.00
105.00	6.17	5.93	0.00
107.50	6.17	5.93	0.00
110.00	6.17	5.93	0.00
112.50	6.17	5.93	0.00
115.00	6.17	5.93	0.00
117.50	6.17	5.93	0.00
120.00	6.17	5.93	0.00

Summary for Subcatchment PR1.1 PRO: Impervious bypass

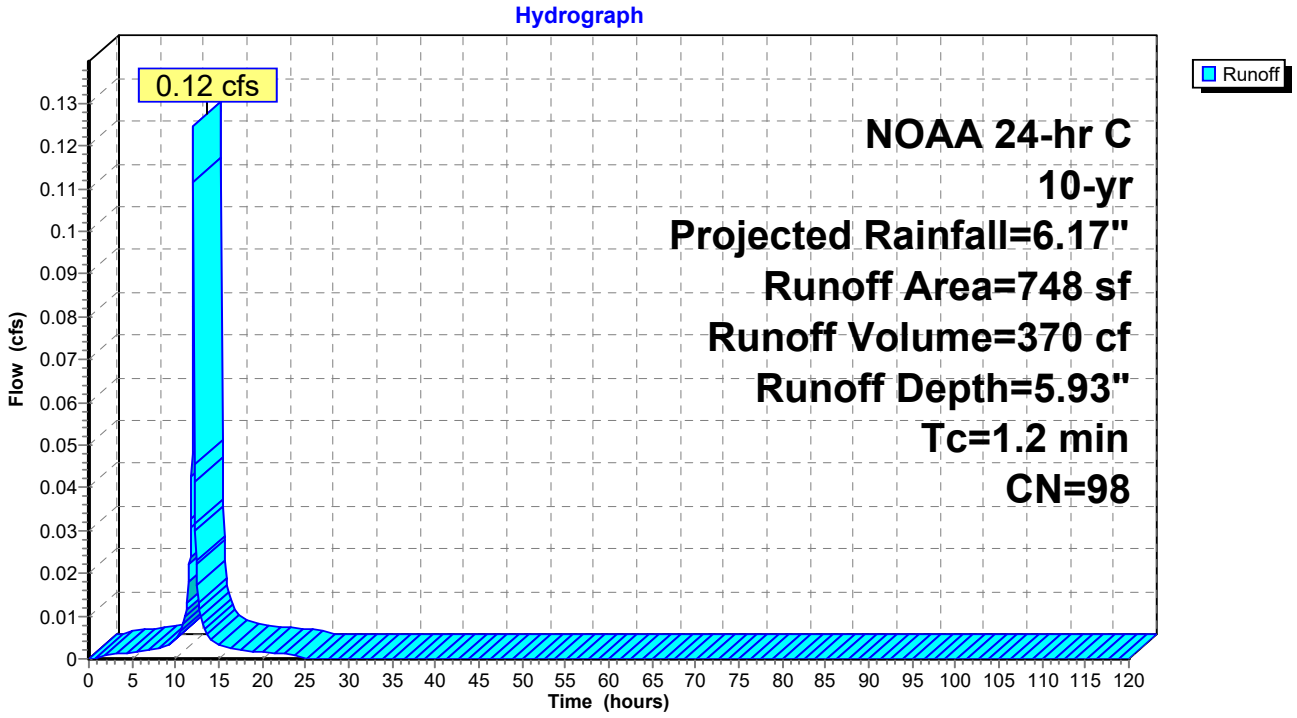
Runoff = 0.12 cfs @ 12.06 hrs, Volume= 370 cf, Depth= 5.93"
Routed to Reach PR1 END : POI-1 for PRDA-1 (current)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 10-yr, Projected Rainfall=6.17"

	Area (sf)	CN	Description
*	748	98	impervious walkway
	748		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2					**Direct Entry,**

Subcatchment PR1.1 PRO: Impervious bypass



Hydrograph for Subcatchment PR1.1 PRO: Impervious bypass

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.18	0.06	0.00
5.00	0.39	0.22	0.00
7.50	0.67	0.47	0.00
10.00	1.12	0.91	**0.00**
12.50	4.35	4.11	**0.02**
15.00	5.27	5.03	0.00
17.50	5.63	5.39	0.00
20.00	5.87	5.63	0.00
22.50	**6.07**	**5.83**	0.00
25.00	**6.17**	**5.93**	0.00
27.50	6.17	5.93	0.00
30.00	6.17	5.93	0.00
32.50	6.17	5.93	0.00
35.00	6.17	5.93	0.00
37.50	6.17	5.93	0.00
40.00	6.17	5.93	0.00
42.50	6.17	5.93	0.00
45.00	6.17	5.93	0.00
47.50	6.17	5.93	0.00
50.00	6.17	5.93	0.00
52.50	6.17	5.93	0.00
55.00	6.17	5.93	0.00
57.50	6.17	5.93	0.00
60.00	6.17	5.93	0.00
62.50	6.17	5.93	0.00
65.00	6.17	5.93	0.00
67.50	6.17	5.93	0.00
70.00	6.17	5.93	0.00
72.50	6.17	5.93	0.00
75.00	6.17	5.93	0.00
77.50	6.17	5.93	0.00
80.00	6.17	5.93	0.00
82.50	6.17	5.93	0.00
85.00	6.17	5.93	0.00
87.50	6.17	5.93	0.00
90.00	6.17	5.93	0.00
92.50	6.17	5.93	0.00
95.00	6.17	5.93	0.00
97.50	6.17	5.93	0.00
100.00	6.17	5.93	0.00
102.50	6.17	5.93	0.00
105.00	6.17	5.93	0.00
107.50	6.17	5.93	0.00
110.00	6.17	5.93	0.00
112.50	6.17	5.93	0.00
115.00	6.17	5.93	0.00
117.50	6.17	5.93	0.00
120.00	6.17	5.93	0.00

Summary for Subcatchment PR2 1.0 PRO: Impervious TO POA 2

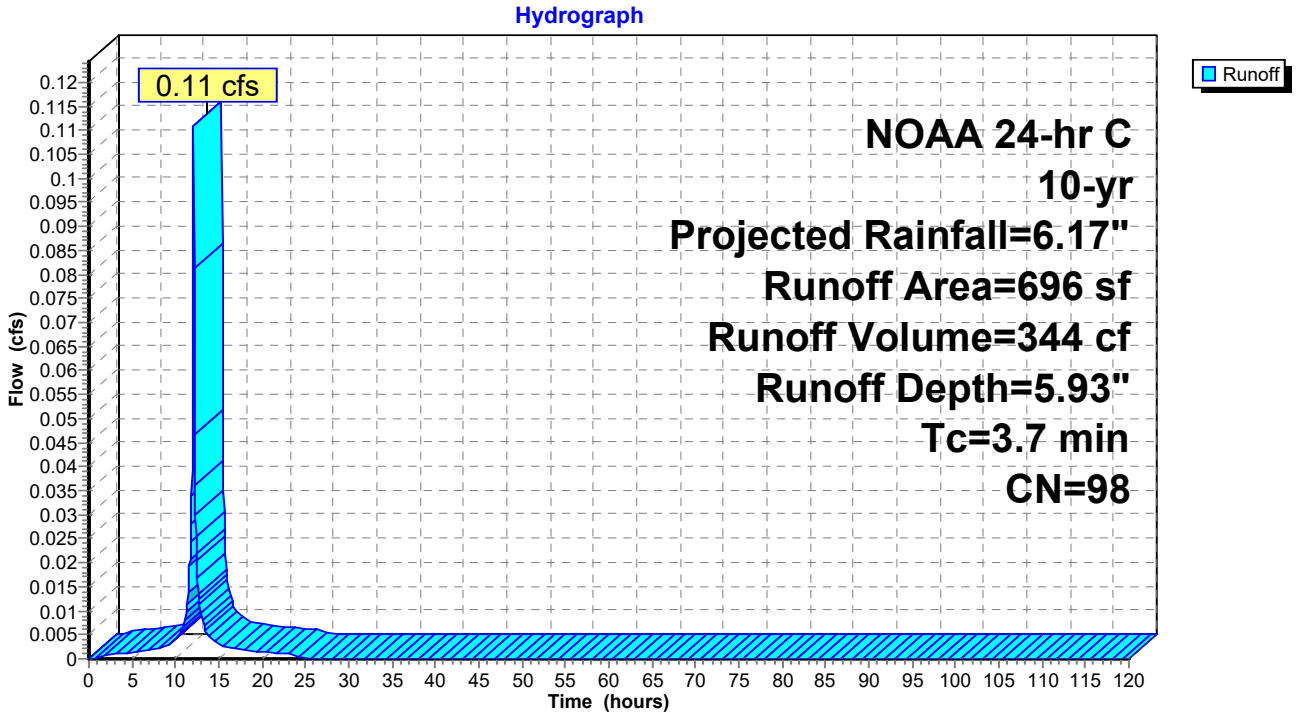
Runoff = 0.11 cfs @ 12.10 hrs, Volume= 344 cf, Depth= 5.93"
Routed to Reach PR2 PRO : POI-2 for PRDA-2 (current)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 10-yr, Projected Rainfall=6.17"

	Area (sf)	CN	Description
*	696	98	impervious
	696		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7					**Direct Entry,**

Subcatchment PR2 1.0 PRO: Impervious TO POA 2



Hydrograph for Subcatchment PR2 1.0 PRO: Impervious TO POA 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.18	0.06	0.00
5.00	0.39	0.22	0.00
7.50	0.67	0.47	0.00
10.00	1.12	0.91	**0.00**
12.50	4.35	4.11	**0.02**
15.00	5.27	5.03	0.00
17.50	5.63	5.39	0.00
20.00	5.87	5.63	0.00
22.50	**6.07**	**5.83**	0.00
25.00	**6.17**	**5.93**	0.00
27.50	6.17	5.93	0.00
30.00	6.17	5.93	0.00
32.50	6.17	5.93	0.00
35.00	6.17	5.93	0.00
37.50	6.17	5.93	0.00
40.00	6.17	5.93	0.00
42.50	6.17	5.93	0.00
45.00	6.17	5.93	0.00
47.50	6.17	5.93	0.00
50.00	6.17	5.93	0.00
52.50	6.17	5.93	0.00
55.00	6.17	5.93	0.00
57.50	6.17	5.93	0.00
60.00	6.17	5.93	0.00
62.50	6.17	5.93	0.00
65.00	6.17	5.93	0.00
67.50	6.17	5.93	0.00
70.00	6.17	5.93	0.00
72.50	6.17	5.93	0.00
75.00	6.17	5.93	0.00
77.50	6.17	5.93	0.00
80.00	6.17	5.93	0.00
82.50	6.17	5.93	0.00
85.00	6.17	5.93	0.00
87.50	6.17	5.93	0.00
90.00	6.17	5.93	0.00
92.50	6.17	5.93	0.00
95.00	6.17	5.93	0.00
97.50	6.17	5.93	0.00
100.00	6.17	5.93	0.00
102.50	6.17	5.93	0.00
105.00	6.17	5.93	0.00
107.50	6.17	5.93	0.00
110.00	6.17	5.93	0.00
112.50	6.17	5.93	0.00
115.00	6.17	5.93	0.00
117.50	6.17	5.93	0.00
120.00	6.17	5.93	0.00

Summary for Subcatchment PR2 2.0 PRO: Pervious TO POA 2

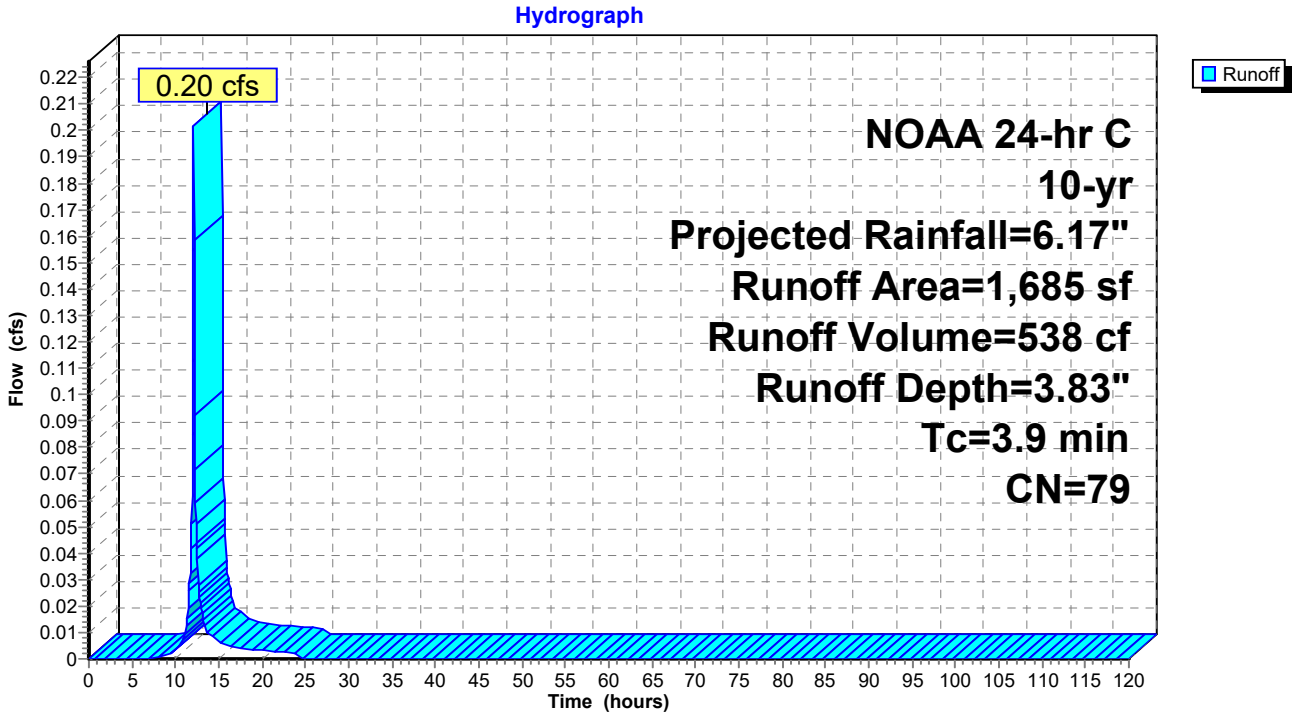
Runoff = 0.20 cfs @ 12.10 hrs, Volume= 538 cf, Depth= 3.83"
Routed to Reach PR2 PRO : POI-2 for PRDA-2 (current)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 10-yr, Projected Rainfall=6.17"

	Area (sf)	CN	Description
*	1,685	79	planters
	1,685		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9					**Direct Entry,**

Subcatchment PR2 2.0 PRO: Pervious TO POA 2



Hydrograph for Subcatchment PR2 2.0 PRO: Pervious TO POA 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.18	0.00	0.00
5.00	0.39	0.00	0.00
7.50	0.67	0.01	0.00
10.00	1.12	0.11	**0.00**
12.50	4.35	2.25	**0.04**
15.00	5.27	3.03	0.01
17.50	5.63	3.35	0.00
20.00	5.87	3.56	0.00
22.50	**6.07**	**3.74**	0.00
25.00	**6.17**	**3.83**	0.00
27.50	6.17	3.83	0.00
30.00	6.17	3.83	0.00
32.50	6.17	3.83	0.00
35.00	6.17	3.83	0.00
37.50	6.17	3.83	0.00
40.00	6.17	3.83	0.00
42.50	6.17	3.83	0.00
45.00	6.17	3.83	0.00
47.50	6.17	3.83	0.00
50.00	6.17	3.83	0.00
52.50	6.17	3.83	0.00
55.00	6.17	3.83	0.00
57.50	6.17	3.83	0.00
60.00	6.17	3.83	0.00
62.50	6.17	3.83	0.00
65.00	6.17	3.83	0.00
67.50	6.17	3.83	0.00
70.00	6.17	3.83	0.00
72.50	6.17	3.83	0.00
75.00	6.17	3.83	0.00
77.50	6.17	3.83	0.00
80.00	6.17	3.83	0.00
82.50	6.17	3.83	0.00
85.00	6.17	3.83	0.00
87.50	6.17	3.83	0.00
90.00	6.17	3.83	0.00
92.50	6.17	3.83	0.00
95.00	6.17	3.83	0.00
97.50	6.17	3.83	0.00
100.00	6.17	3.83	0.00
102.50	6.17	3.83	0.00
105.00	6.17	3.83	0.00
107.50	6.17	3.83	0.00
110.00	6.17	3.83	0.00
112.50	6.17	3.83	0.00
115.00	6.17	3.83	0.00
117.50	6.17	3.83	0.00
120.00	6.17	3.83	0.00

Summary for Subcatchment PR2.0 PRO: Pervious

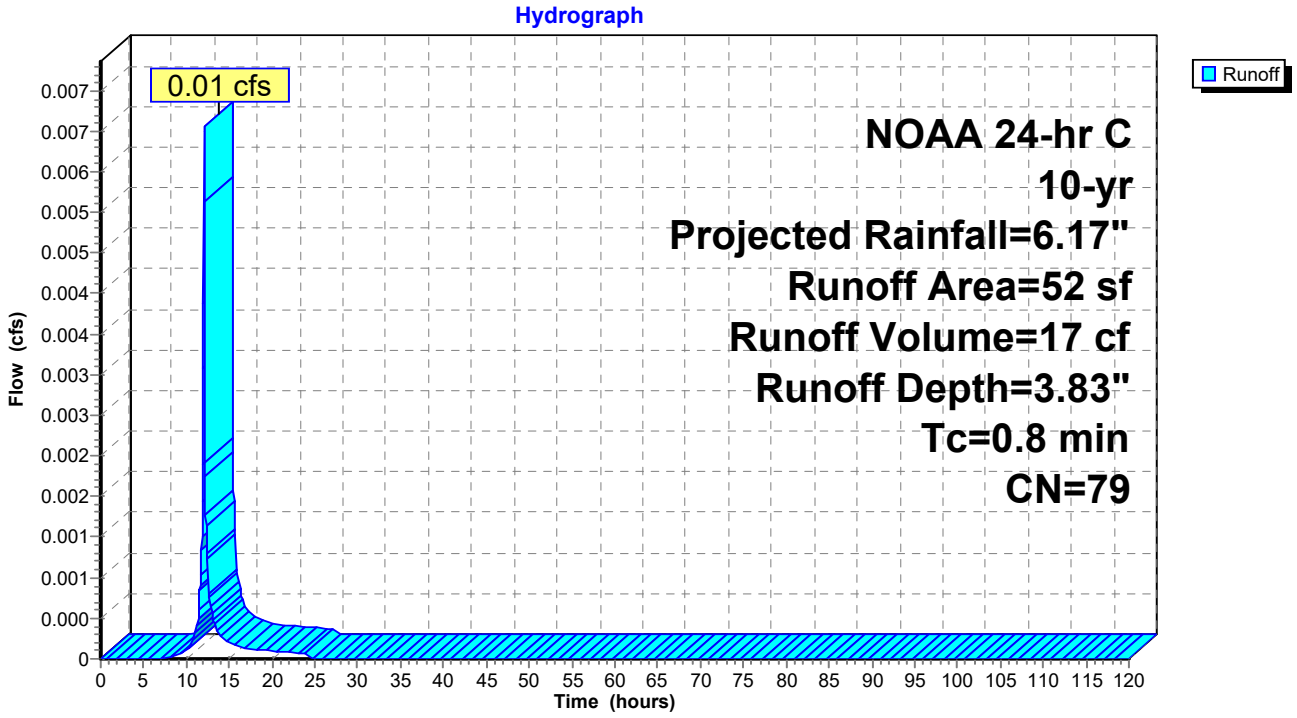
Runoff = 0.01 cfs @ 12.06 hrs, Volume= 17 cf, Depth= 3.83"
Routed to Pond BMP 1 : BMP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 10-yr, Projected Rainfall=6.17"

	Area (sf)	CN	Description
*	52	79	50-75% Grass cover, Fair, HSG C
	52		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8					**Direct Entry,**

Subcatchment PR2.0 PRO: Pervious



Hydrograph for Subcatchment PR2.0 PRO: Pervious

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.18	0.00	0.00
5.00	0.39	0.00	0.00
7.50	0.67	0.01	0.00
10.00	1.12	0.11	**0.00**
12.50	4.35	2.25	**0.00**
15.00	5.27	3.03	0.00
17.50	5.63	3.35	0.00
20.00	5.87	3.56	0.00
22.50	**6.07**	**3.74**	0.00
25.00	**6.17**	**3.83**	0.00
27.50	6.17	3.83	0.00
30.00	6.17	3.83	0.00
32.50	6.17	3.83	0.00
35.00	6.17	3.83	0.00
37.50	6.17	3.83	0.00
40.00	6.17	3.83	0.00
42.50	6.17	3.83	0.00
45.00	6.17	3.83	0.00
47.50	6.17	3.83	0.00
50.00	6.17	3.83	0.00
52.50	6.17	3.83	0.00
55.00	6.17	3.83	0.00
57.50	6.17	3.83	0.00
60.00	6.17	3.83	0.00
62.50	6.17	3.83	0.00
65.00	6.17	3.83	0.00
67.50	6.17	3.83	0.00
70.00	6.17	3.83	0.00
72.50	6.17	3.83	0.00
75.00	6.17	3.83	0.00
77.50	6.17	3.83	0.00
80.00	6.17	3.83	0.00
82.50	6.17	3.83	0.00
85.00	6.17	3.83	0.00
87.50	6.17	3.83	0.00
90.00	6.17	3.83	0.00
92.50	6.17	3.83	0.00
95.00	6.17	3.83	0.00
97.50	6.17	3.83	0.00
100.00	6.17	3.83	0.00
102.50	6.17	3.83	0.00
105.00	6.17	3.83	0.00
107.50	6.17	3.83	0.00
110.00	6.17	3.83	0.00
112.50	6.17	3.83	0.00
115.00	6.17	3.83	0.00
117.50	6.17	3.83	0.00
120.00	6.17	3.83	0.00

Summary for Subcatchment PR2.2 PRO: Pervious bypass

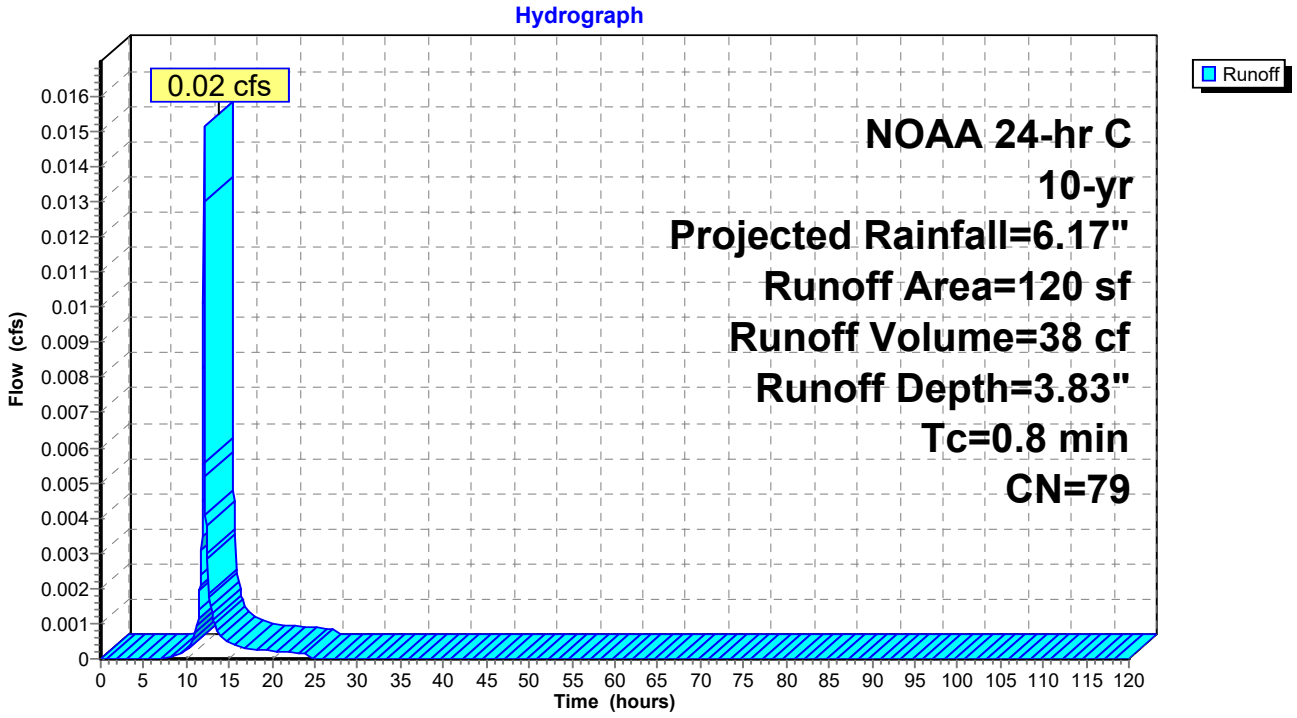
Runoff = 0.02 cfs @ 12.06 hrs, Volume= 38 cf, Depth= 3.83"
Routed to Reach PR1 END : POI-1 for PRDA-1 (current)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 10-yr, Projected Rainfall=6.17"

	Area (sf)	CN	Description
*	120	79	planters
	120		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8					**Direct Entry,**

Subcatchment PR2.2 PRO: Pervious bypass



Hydrograph for Subcatchment PR2.2 PRO: Pervious bypass

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.18	0.00	0.00
5.00	0.39	0.00	0.00
7.50	0.67	0.01	0.00
10.00	1.12	0.11	**0.00**
12.50	4.35	2.25	**0.00**
15.00	5.27	3.03	0.00
17.50	5.63	3.35	0.00
20.00	5.87	3.56	0.00
22.50	**6.07**	**3.74**	0.00
25.00	**6.17**	**3.83**	0.00
27.50	6.17	3.83	0.00
30.00	6.17	3.83	0.00
32.50	6.17	3.83	0.00
35.00	6.17	3.83	0.00
37.50	6.17	3.83	0.00
40.00	6.17	3.83	0.00
42.50	6.17	3.83	0.00
45.00	6.17	3.83	0.00
47.50	6.17	3.83	0.00
50.00	6.17	3.83	0.00
52.50	6.17	3.83	0.00
55.00	6.17	3.83	0.00
57.50	6.17	3.83	0.00
60.00	6.17	3.83	0.00
62.50	6.17	3.83	0.00
65.00	6.17	3.83	0.00
67.50	6.17	3.83	0.00
70.00	6.17	3.83	0.00
72.50	6.17	3.83	0.00
75.00	6.17	3.83	0.00
77.50	6.17	3.83	0.00
80.00	6.17	3.83	0.00
82.50	6.17	3.83	0.00
85.00	6.17	3.83	0.00
87.50	6.17	3.83	0.00
90.00	6.17	3.83	0.00
92.50	6.17	3.83	0.00
95.00	6.17	3.83	0.00
97.50	6.17	3.83	0.00
100.00	6.17	3.83	0.00
102.50	6.17	3.83	0.00
105.00	6.17	3.83	0.00
107.50	6.17	3.83	0.00
110.00	6.17	3.83	0.00
112.50	6.17	3.83	0.00
115.00	6.17	3.83	0.00
117.50	6.17	3.83	0.00
120.00	6.17	3.83	0.00

Summary for Subcatchment PR3.0 PRO: Building

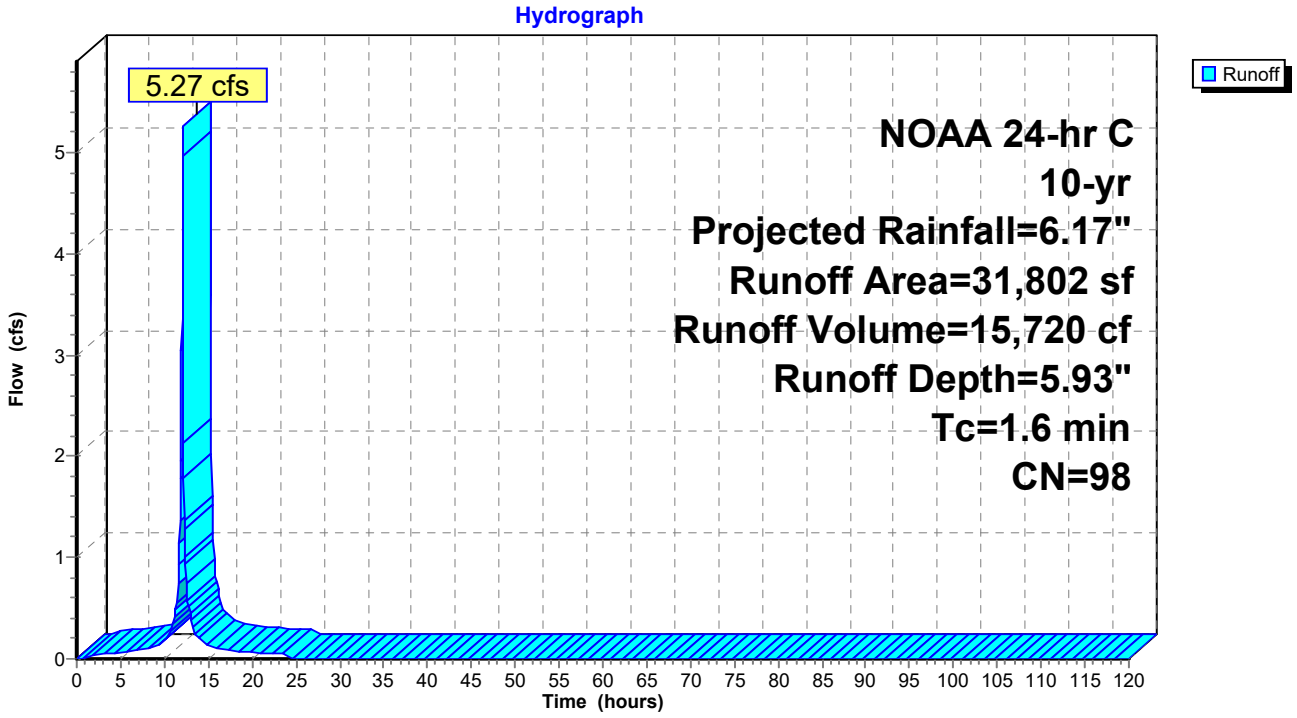
Runoff = 5.27 cfs @ 12.07 hrs, Volume= 15,720 cf, Depth= 5.93"
Routed to Pond BMP 1 : BMP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 10-yr, Projected Rainfall=6.17"

Area (sf)	CN	Description
31,802	98	Roofs, HSG C
31,802		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6					**Direct Entry,**

Subcatchment PR3.0 PRO: Building



Hydrograph for Subcatchment PR3.0 PRO: Building

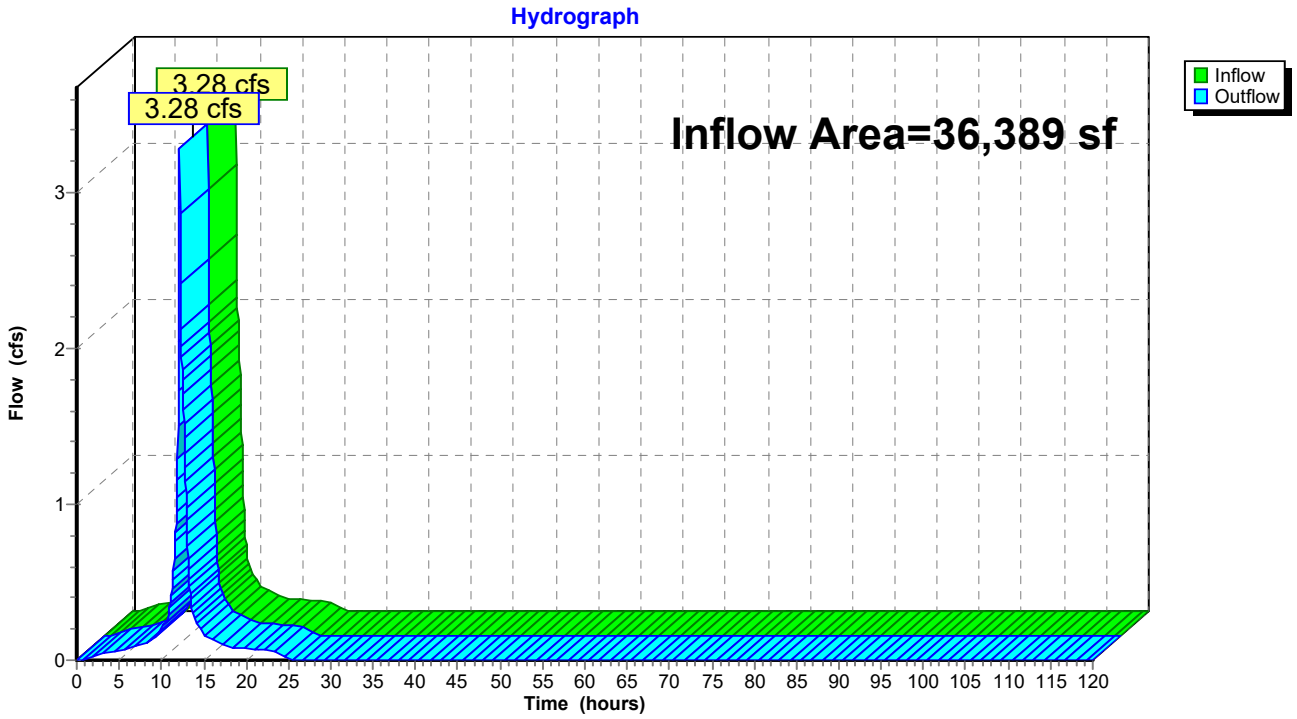
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.18	0.06	0.04
5.00	0.39	0.22	0.06
7.50	0.67	0.47	0.09
10.00	1.12	0.91	**0.19**
12.50	4.35	4.11	**0.89**
15.00	5.27	5.03	0.13
17.50	5.63	5.39	0.08
20.00	5.87	5.63	0.06
22.50	**6.07**	**5.83**	0.05
25.00	**6.17**	**5.93**	0.00
27.50	6.17	5.93	0.00
30.00	6.17	5.93	0.00
32.50	6.17	5.93	0.00
35.00	6.17	5.93	0.00
37.50	6.17	5.93	0.00
40.00	6.17	5.93	0.00
42.50	6.17	5.93	0.00
45.00	6.17	5.93	0.00
47.50	6.17	5.93	0.00
50.00	6.17	5.93	0.00
52.50	6.17	5.93	0.00
55.00	6.17	5.93	0.00
57.50	6.17	5.93	0.00
60.00	6.17	5.93	0.00
62.50	6.17	5.93	0.00
65.00	6.17	5.93	0.00
67.50	6.17	5.93	0.00
70.00	6.17	5.93	0.00
72.50	6.17	5.93	0.00
75.00	6.17	5.93	0.00
77.50	6.17	5.93	0.00
80.00	6.17	5.93	0.00
82.50	6.17	5.93	0.00
85.00	6.17	5.93	0.00
87.50	6.17	5.93	0.00
90.00	6.17	5.93	0.00
92.50	6.17	5.93	0.00
95.00	6.17	5.93	0.00
97.50	6.17	5.93	0.00
100.00	6.17	5.93	0.00
102.50	6.17	5.93	0.00
105.00	6.17	5.93	0.00
107.50	6.17	5.93	0.00
110.00	6.17	5.93	0.00
112.50	6.17	5.93	0.00
115.00	6.17	5.93	0.00
117.50	6.17	5.93	0.00
120.00	6.17	5.93	0.00

Summary for Reach PR1 END: POI-1 for PRDA-1 (current)

Inflow Area = 36,389 sf, 99.53% Impervious, Inflow Depth = 5.92" for 10-yr, Projected event
Inflow = 3.28 cfs @ 12.15 hrs, Volume= 17,957 cf
Outflow = 3.28 cfs @ 12.15 hrs, Volume= 17,957 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach PR1 END: POI-1 for PRDA-1 (current)



Hydrograph for Reach PR1 END: POI-1 for PRDA-1 (current)

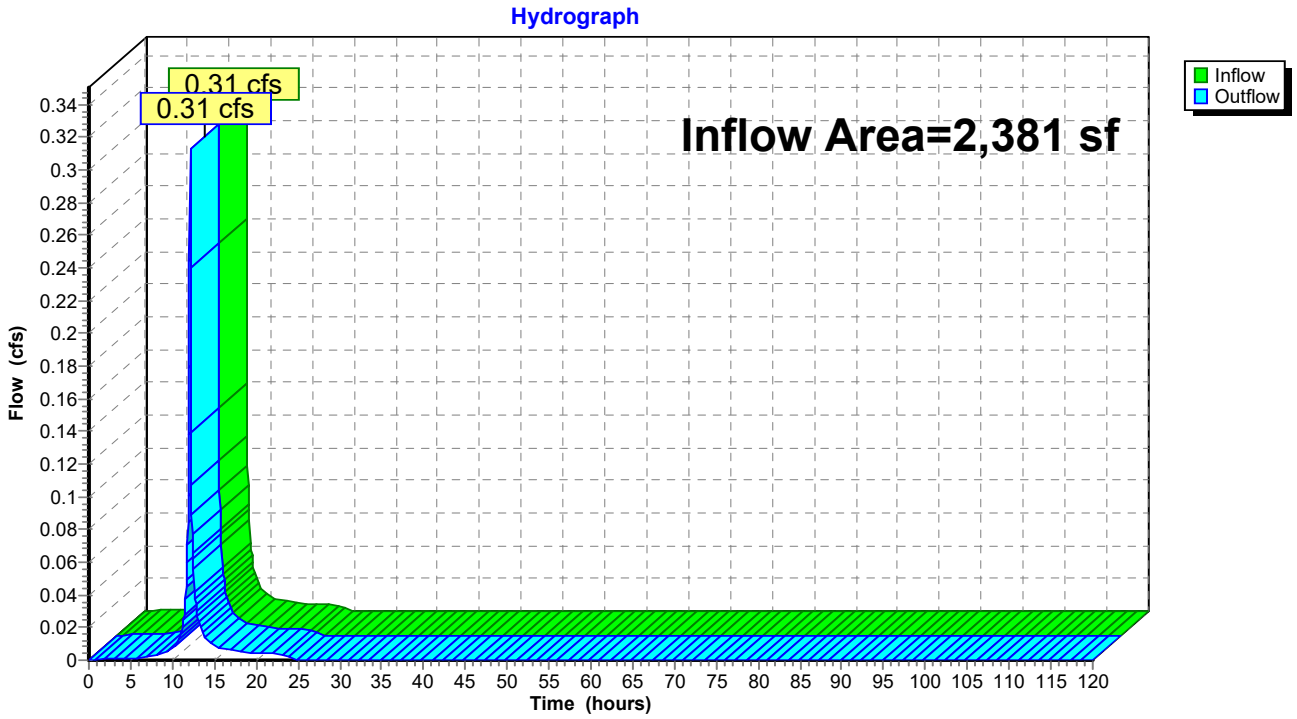
Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00
2.50	0.03		0.03
5.00	0.07		0.07
7.50	0.10		0.10
10.00	**0.20**		**0.20**
12.50	**1.80**		**1.80**
15.00	0.17		0.17
17.50	0.10		0.10
20.00	0.08		0.08
22.50	0.06		0.06
25.00	0.01		0.01
27.50	0.00		0.00
30.00	0.00		0.00
32.50	0.00		0.00
35.00	0.00		0.00
37.50	0.00		0.00
40.00	0.00		0.00
42.50	0.00		0.00
45.00	0.00		0.00
47.50	0.00		0.00
50.00	0.00		0.00
52.50	0.00		0.00
55.00	0.00		0.00
57.50	0.00		0.00
60.00	0.00		0.00
62.50	0.00		0.00
65.00	0.00		0.00
67.50	0.00		0.00
70.00	0.00		0.00
72.50	0.00		0.00
75.00	0.00		0.00
77.50	0.00		0.00
80.00	0.00		0.00
82.50	0.00		0.00
85.00	0.00		0.00
87.50	0.00		0.00
90.00	0.00		0.00
92.50	0.00		0.00
95.00	0.00		0.00
97.50	0.00		0.00
100.00	0.00		0.00
102.50	0.00		0.00
105.00	0.00		0.00
107.50	0.00		0.00
110.00	0.00		0.00
112.50	0.00		0.00
115.00	0.00		0.00
117.50	0.00		0.00
120.00	0.00		0.00

Summary for Reach PR2 PRO: POI-2 for PRDA-2 (current)

Inflow Area = 2,381 sf, 29.23% Impervious, Inflow Depth = 4.45" for 10-yr, Projected event
Inflow = 0.31 cfs @ 12.10 hrs, Volume= 882 cf
Outflow = 0.31 cfs @ 12.10 hrs, Volume= 882 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach PR2 PRO: POI-2 for PRDA-2 (current)



Hydrograph for Reach PR2 PRO: POI-2 for PRDA-2 (current)

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00
2.50	0.00		0.00
5.00	0.00		0.00
7.50	0.00		0.00
10.00	**0.01**		**0.01**
12.50	**0.06**		**0.06**
15.00	0.01		0.01
17.50	0.01		0.01
20.00	0.00		0.00
22.50	0.00		0.00
25.00	0.00		0.00
27.50	0.00		0.00
30.00	0.00		0.00
32.50	0.00		0.00
35.00	0.00		0.00
37.50	0.00		0.00
40.00	0.00		0.00
42.50	0.00		0.00
45.00	0.00		0.00
47.50	0.00		0.00
50.00	0.00		0.00
52.50	0.00		0.00
55.00	0.00		0.00
57.50	0.00		0.00
60.00	0.00		0.00
62.50	0.00		0.00
65.00	0.00		0.00
67.50	0.00		0.00
70.00	0.00		0.00
72.50	0.00		0.00
75.00	0.00		0.00
77.50	0.00		0.00
80.00	0.00		0.00
82.50	0.00		0.00
85.00	0.00		0.00
87.50	0.00		0.00
90.00	0.00		0.00
92.50	0.00		0.00
95.00	0.00		0.00
97.50	0.00		0.00
100.00	0.00		0.00
102.50	0.00		0.00
105.00	0.00		0.00
107.50	0.00		0.00
110.00	0.00		0.00
112.50	0.00		0.00
115.00	0.00		0.00
117.50	0.00		0.00
120.00	0.00		0.00

Summary for Pond BMP 1: BMP-1

Inflow Area = 35,521 sf, 99.85% Impervious, Inflow Depth = 5.93" for 10-yr, Projected event
Inflow = 5.89 cfs @ 12.07 hrs, Volume= 17,549 cf
Outflow = 3.23 cfs @ 12.15 hrs, Volume= 17,549 cf, Atten= 45%, Lag= 4.8 min
Primary = 3.23 cfs @ 12.15 hrs, Volume= 17,549 cf
Routed to Reach PR1 END : POI-1 for PRDA-1 (current)

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 16.94' @ 12.15 hrs Surf.Area= 766 sf Storage= 3,016 cf

Plug-Flow detention time= 18.7 min calculated for 17,549 cf (100% of inflow)
Center-of-Mass det. time= 18.5 min (759.9 - 741.4)

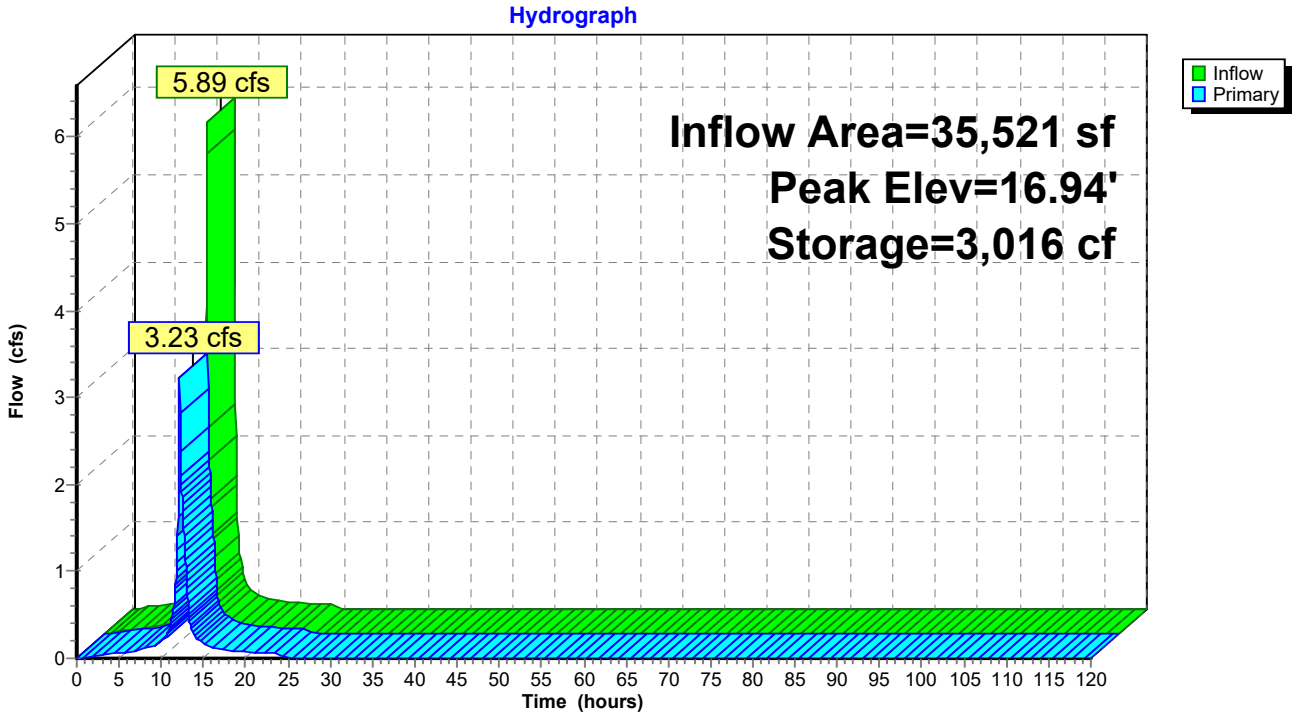
Volume	Invert	Avail.Storage	Storage Description
#1	13.00'	6,128 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.00	766	0	0
14.00	766	766	766
15.00	766	766	1,532
16.00	766	766	2,298
17.00	766	766	3,064
18.00	766	766	3,830
19.00	766	766	4,596
20.00	766	766	5,362
21.00	766	766	6,128

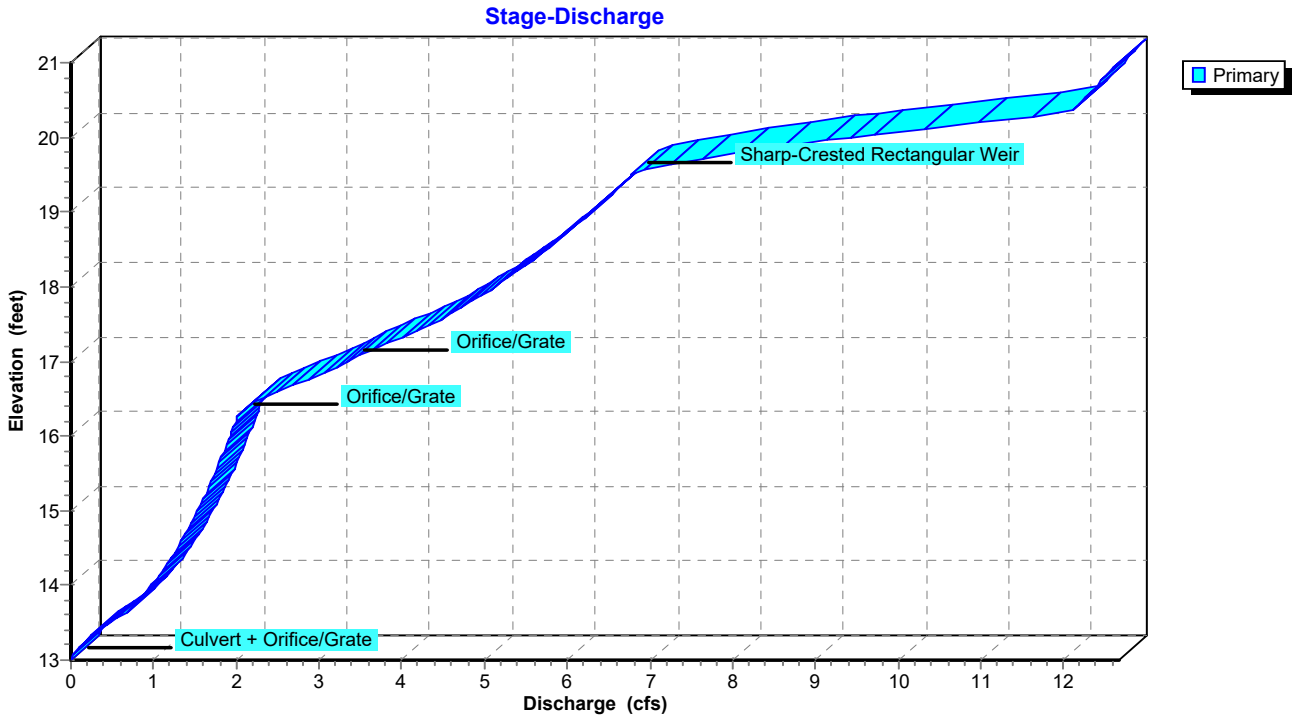
Device	Routing	Invert	Outlet Devices
#1	Primary	13.00'	**15.0" Round Culvert** L= 40.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.00' / 11.80' S= 0.0300 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.23 sf
#2	Device 1	13.00'	**5.0" W x 7.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	16.25'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	17.00'	**5.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Device 1	19.50'	**2.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=3.22 cfs @ 12.15 hrs HW=16.93' (Free Discharge)
└**1=Culvert** (Passes 3.22 cfs of 8.48 cfs potential flow)
├**2=Orifice/Grate** (Orifice Controls 2.23 cfs @ 9.18 fps)
├**3=Orifice/Grate** (Orifice Controls 0.99 cfs @ 2.84 fps)
├**4=Orifice/Grate** (Controls 0.00 cfs)
└**5=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond BMP 1: BMP-1



Pond BMP 1: BMP-1



Hydrograph for Pond BMP 1: BMP-1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	13.00	0.00
2.50	0.04	70	13.09	0.03
5.00	0.07	101	13.13	0.06
7.50	0.11	135	13.18	0.10
10.00	**0.21**	**214**	**13.28**	**0.20**
12.50	**0.99**	**1,987**	**15.59**	**1.77**
15.00	0.15	188	13.25	0.16
17.50	0.09	133	13.17	0.10
20.00	0.07	110	13.14	0.07
22.50	0.06	97	13.13	0.06
25.00	0.00	20	13.03	0.01
27.50	0.00	1	13.00	0.00
30.00	0.00	0	13.00	0.00
32.50	0.00	0	13.00	0.00
35.00	0.00	0	13.00	0.00
37.50	0.00	0	13.00	0.00
40.00	0.00	0	13.00	0.00
42.50	0.00	0	13.00	0.00
45.00	0.00	0	13.00	0.00
47.50	0.00	0	13.00	0.00
50.00	0.00	0	13.00	0.00
52.50	0.00	0	13.00	0.00
55.00	0.00	0	13.00	0.00
57.50	0.00	0	13.00	0.00
60.00	0.00	0	13.00	0.00
62.50	0.00	0	13.00	0.00
65.00	0.00	0	13.00	0.00
67.50	0.00	0	13.00	0.00
70.00	0.00	0	13.00	0.00
72.50	0.00	0	13.00	0.00
75.00	0.00	0	13.00	0.00
77.50	0.00	0	13.00	0.00
80.00	0.00	0	13.00	0.00
82.50	0.00	0	13.00	0.00
85.00	0.00	0	13.00	0.00
87.50	0.00	0	13.00	0.00
90.00	0.00	0	13.00	0.00
92.50	0.00	0	13.00	0.00
95.00	0.00	0	13.00	0.00
97.50	0.00	0	13.00	0.00
100.00	0.00	0	13.00	0.00
102.50	0.00	0	13.00	0.00
105.00	0.00	0	13.00	0.00
107.50	0.00	0	13.00	0.00
110.00	0.00	0	13.00	0.00
112.50	0.00	0	13.00	0.00
115.00	0.00	0	13.00	0.00
117.50	0.00	0	13.00	0.00
120.00	0.00	0	13.00	0.00

Stage-Area-Storage for Pond BMP 1: BMP-1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
13.00	**766**	0
13.10	766	77
13.20	766	153
13.30	766	230
13.40	766	306
13.50	766	383
13.60	766	460
13.70	766	536
13.80	766	613
13.90	766	689
14.00	766	766
14.10	766	843
14.20	766	919
14.30	766	996
14.40	766	1,072
14.50	766	1,149
14.60	766	1,226
14.70	766	1,302
14.80	766	1,379
14.90	766	1,455
15.00	766	1,532
15.10	766	1,609
15.20	766	1,685
15.30	766	1,762
15.40	766	1,838
15.50	766	1,915
15.60	766	1,992
15.70	766	2,068
15.80	766	2,145
15.90	766	2,221
16.00	766	2,298
16.10	766	2,375
16.20	766	2,451
16.30	766	2,528
16.40	766	2,604
16.50	766	2,681
16.60	766	2,758
16.70	766	2,834
16.80	766	2,911
16.90	766	2,987
17.00	766	3,064
17.10	766	3,141
17.20	766	3,217
17.30	766	3,294
17.40	766	3,370
17.50	766	3,447
17.60	766	3,524
17.70	766	3,600
17.80	766	3,677
17.90	766	3,753
18.00	766	3,830
18.10	766	3,907
18.20	766	3,983
18.30	766	4,060
18.40	766	4,136
18.50	766	4,213
18.60	766	4,290
18.70	766	4,366
18.80	766	4,443
18.90	766	4,519
19.00	766	4,596
19.10	766	4,673
19.20	766	4,749
19.30	766	4,826
19.40	766	4,902
19.50	766	4,979
19.60	766	5,056
19.70	766	5,132
19.80	766	5,209
19.90	766	5,285
20.00	766	5,362
20.10	766	5,439
20.20	766	5,515
20.30	766	5,592
20.40	766	5,668
20.50	766	5,745
20.60	766	5,822
20.70	766	5,898
20.80	766	5,975
20.90	766	6,051
21.00	766	**6,128**

Summary for Subcatchment PR1.0 PRO: Impervious

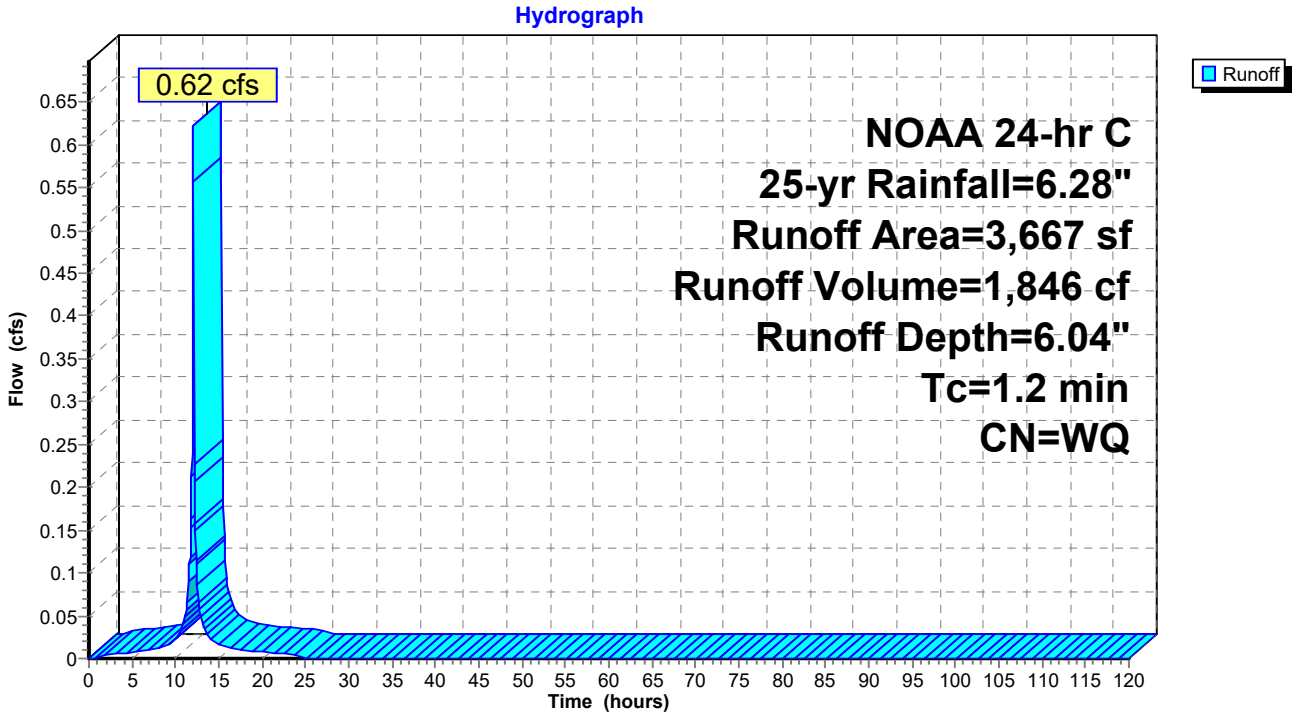
Runoff = 0.62 cfs @ 12.06 hrs, Volume= 1,846 cf, Depth= 6.04"
Routed to Pond BMP 1 : BMP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 25-yr Rainfall=6.28"

	Area (sf)	CN	Description
*	2,755	98	Paved parking, HSG C
*	912	98	impervious walkway
	3,667		Weighted Average
	3,667		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2					**Direct Entry,**

Subcatchment PR1.0 PRO: Impervious



Hydrograph for Subcatchment PR1.0 PRO: Impervious

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.18	0.06	0.00
5.00	0.40	0.23	0.01
7.50	0.68	0.48	0.01
10.00	1.15	0.93	**0.02**
12.50	4.42	4.19	**0.10**
15.00	5.36	5.13	0.02
17.50	5.73	5.49	0.01
20.00	5.97	5.73	0.01
22.50	**6.18**	**5.94**	0.01
25.00	**6.28**	**6.04**	0.00
27.50	6.28	6.04	0.00
30.00	6.28	6.04	0.00
32.50	6.28	6.04	0.00
35.00	6.28	6.04	0.00
37.50	6.28	6.04	0.00
40.00	6.28	6.04	0.00
42.50	6.28	6.04	0.00
45.00	6.28	6.04	0.00
47.50	6.28	6.04	0.00
50.00	6.28	6.04	0.00
52.50	6.28	6.04	0.00
55.00	6.28	6.04	0.00
57.50	6.28	6.04	0.00
60.00	6.28	6.04	0.00
62.50	6.28	6.04	0.00
65.00	6.28	6.04	0.00
67.50	6.28	6.04	0.00
70.00	6.28	6.04	0.00
72.50	6.28	6.04	0.00
75.00	6.28	6.04	0.00
77.50	6.28	6.04	0.00
80.00	6.28	6.04	0.00
82.50	6.28	6.04	0.00
85.00	6.28	6.04	0.00
87.50	6.28	6.04	0.00
90.00	6.28	6.04	0.00
92.50	6.28	6.04	0.00
95.00	6.28	6.04	0.00
97.50	6.28	6.04	0.00
100.00	6.28	6.04	0.00
102.50	6.28	6.04	0.00
105.00	6.28	6.04	0.00
107.50	6.28	6.04	0.00
110.00	6.28	6.04	0.00
112.50	6.28	6.04	0.00
115.00	6.28	6.04	0.00
117.50	6.28	6.04	0.00
120.00	6.28	6.04	0.00

Summary for Subcatchment PR1.1 PRO: Impervious bypass

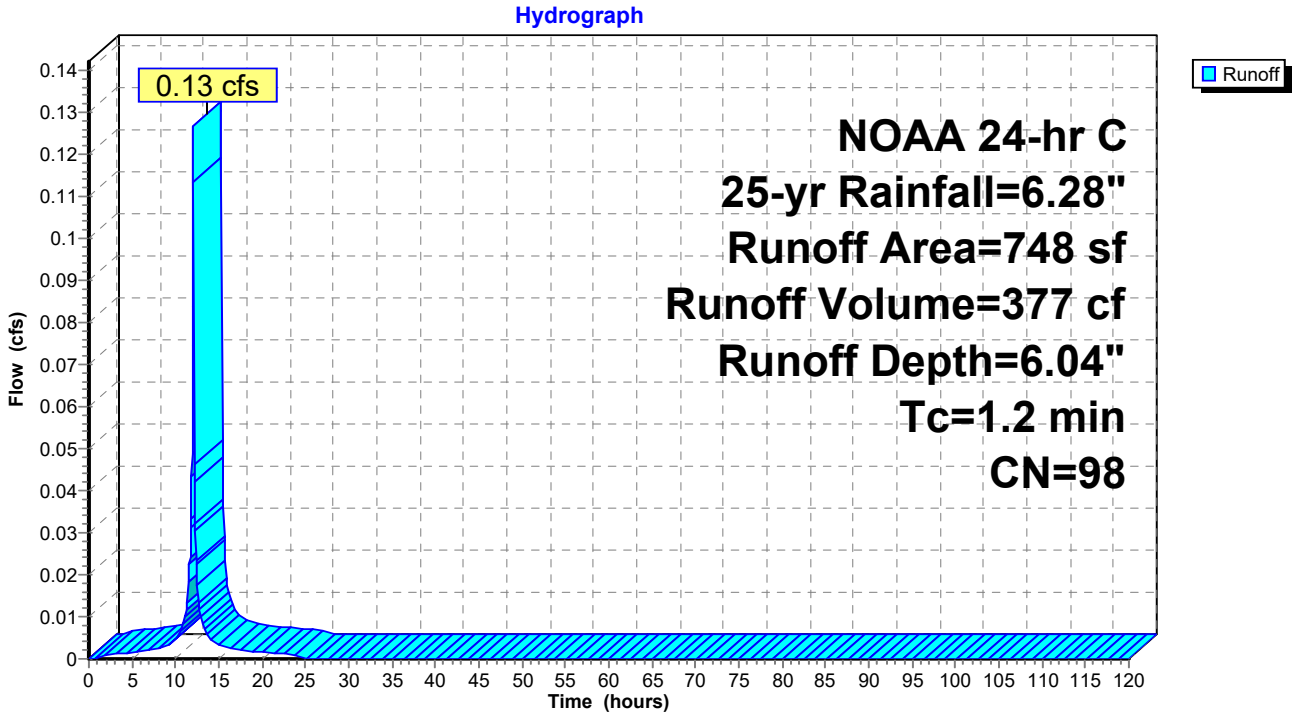
Runoff = 0.13 cfs @ 12.06 hrs, Volume= 377 cf, Depth= 6.04"
Routed to Reach PR1 END : POI-1 for PRDA-1 (current)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 25-yr Rainfall=6.28"

	Area (sf)	CN	Description
*	748	98	impervious walkway
	748		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2					**Direct Entry,**

Subcatchment PR1.1 PRO: Impervious bypass



Hydrograph for Subcatchment PR1.1 PRO: Impervious bypass

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.18	0.06	0.00
5.00	0.40	0.23	0.00
7.50	0.68	0.48	0.00
10.00	1.15	0.93	**0.00**
12.50	4.42	4.19	**0.02**
15.00	5.36	5.13	0.00
17.50	5.73	5.49	0.00
20.00	5.97	5.73	0.00
22.50	**6.18**	**5.94**	0.00
25.00	**6.28**	**6.04**	0.00
27.50	6.28	6.04	0.00
30.00	6.28	6.04	0.00
32.50	6.28	6.04	0.00
35.00	6.28	6.04	0.00
37.50	6.28	6.04	0.00
40.00	6.28	6.04	0.00
42.50	6.28	6.04	0.00
45.00	6.28	6.04	0.00
47.50	6.28	6.04	0.00
50.00	6.28	6.04	0.00
52.50	6.28	6.04	0.00
55.00	6.28	6.04	0.00
57.50	6.28	6.04	0.00
60.00	6.28	6.04	0.00
62.50	6.28	6.04	0.00
65.00	6.28	6.04	0.00
67.50	6.28	6.04	0.00
70.00	6.28	6.04	0.00
72.50	6.28	6.04	0.00
75.00	6.28	6.04	0.00
77.50	6.28	6.04	0.00
80.00	6.28	6.04	0.00
82.50	6.28	6.04	0.00
85.00	6.28	6.04	0.00
87.50	6.28	6.04	0.00
90.00	6.28	6.04	0.00
92.50	6.28	6.04	0.00
95.00	6.28	6.04	0.00
97.50	6.28	6.04	0.00
100.00	6.28	6.04	0.00
102.50	6.28	6.04	0.00
105.00	6.28	6.04	0.00
107.50	6.28	6.04	0.00
110.00	6.28	6.04	0.00
112.50	6.28	6.04	0.00
115.00	6.28	6.04	0.00
117.50	6.28	6.04	0.00
120.00	6.28	6.04	0.00

Summary for Subcatchment PR2 1.0 PRO: Impervious TO POA 2

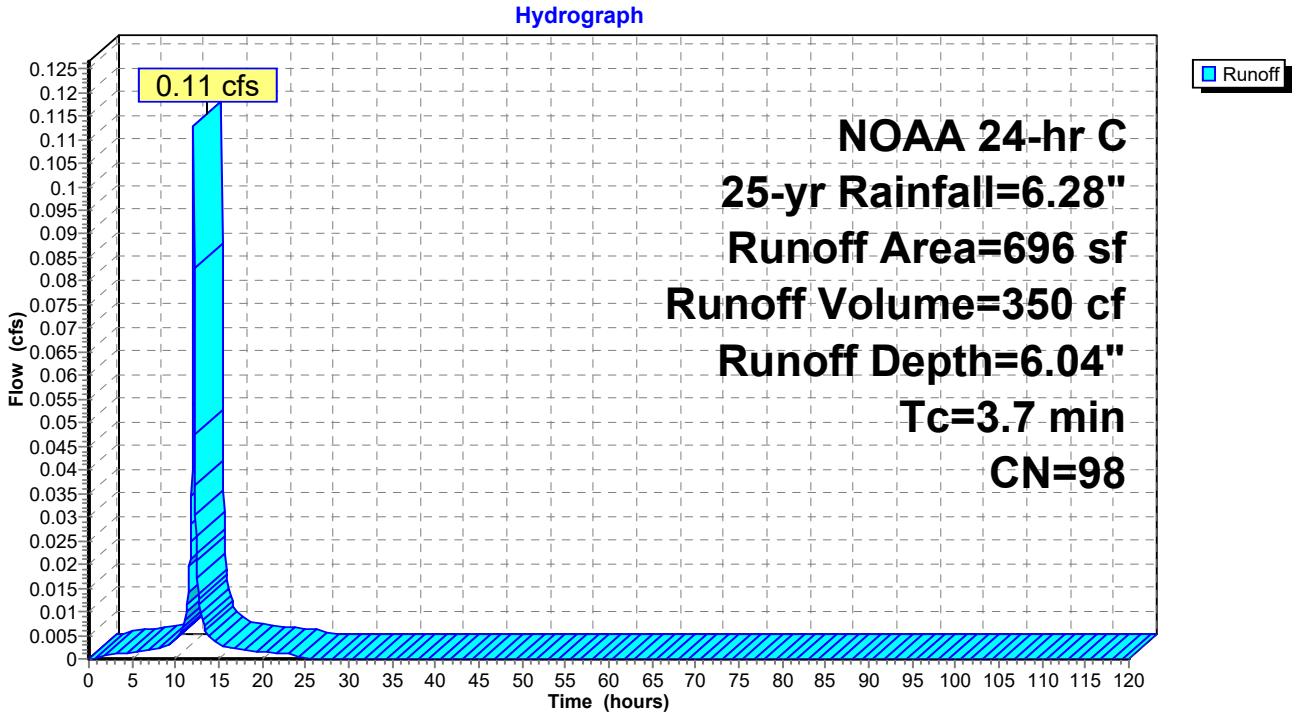
Runoff = 0.11 cfs @ 12.10 hrs, Volume= 350 cf, Depth= 6.04"
Routed to Reach PR2 PRO : POI-2 for PRDA-2 (current)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 25-yr Rainfall=6.28"

	Area (sf)	CN	Description
*	696	98	impervious
	696		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7					**Direct Entry,**

Subcatchment PR2 1.0 PRO: Impervious TO POA 2



Hydrograph for Subcatchment PR2 1.0 PRO: Impervious TO POA 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.18	0.06	0.00
5.00	0.40	0.23	0.00
7.50	0.68	0.48	0.00
10.00	1.15	0.93	**0.00**
12.50	4.42	4.19	**0.02**
15.00	5.36	5.13	0.00
17.50	5.73	5.49	0.00
20.00	5.97	5.73	0.00
22.50	**6.18**	**5.94**	0.00
25.00	**6.28**	**6.04**	0.00
27.50	6.28	6.04	0.00
30.00	6.28	6.04	0.00
32.50	6.28	6.04	0.00
35.00	6.28	6.04	0.00
37.50	6.28	6.04	0.00
40.00	6.28	6.04	0.00
42.50	6.28	6.04	0.00
45.00	6.28	6.04	0.00
47.50	6.28	6.04	0.00
50.00	6.28	6.04	0.00
52.50	6.28	6.04	0.00
55.00	6.28	6.04	0.00
57.50	6.28	6.04	0.00
60.00	6.28	6.04	0.00
62.50	6.28	6.04	0.00
65.00	6.28	6.04	0.00
67.50	6.28	6.04	0.00
70.00	6.28	6.04	0.00
72.50	6.28	6.04	0.00
75.00	6.28	6.04	0.00
77.50	6.28	6.04	0.00
80.00	6.28	6.04	0.00
82.50	6.28	6.04	0.00
85.00	6.28	6.04	0.00
87.50	6.28	6.04	0.00
90.00	6.28	6.04	0.00
92.50	6.28	6.04	0.00
95.00	6.28	6.04	0.00
97.50	6.28	6.04	0.00
100.00	6.28	6.04	0.00
102.50	6.28	6.04	0.00
105.00	6.28	6.04	0.00
107.50	6.28	6.04	0.00
110.00	6.28	6.04	0.00
112.50	6.28	6.04	0.00
115.00	6.28	6.04	0.00
117.50	6.28	6.04	0.00
120.00	6.28	6.04	0.00

Summary for Subcatchment PR2 2.0 PRO: Pervious TO POA 2

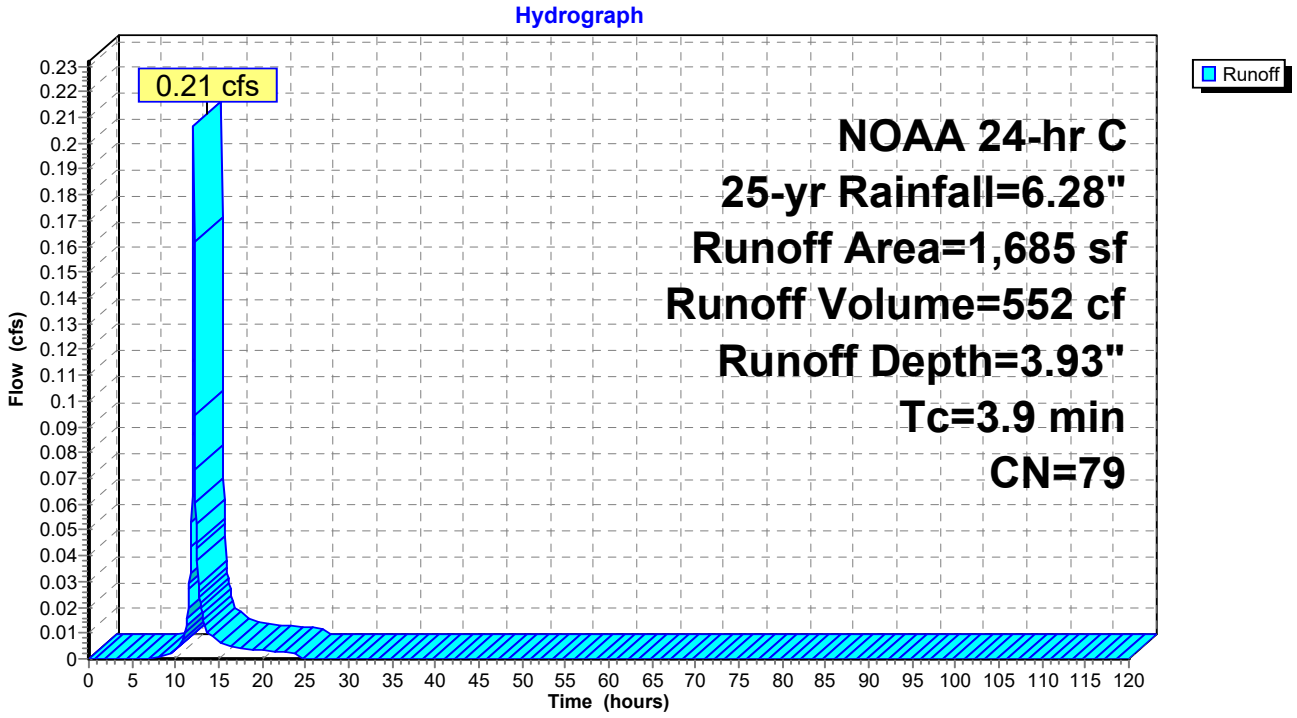
Runoff = 0.21 cfs @ 12.10 hrs, Volume= 552 cf, Depth= 3.93"
Routed to Reach PR2 PRO : POI-2 for PRDA-2 (current)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 25-yr Rainfall=6.28"

	Area (sf)	CN	Description
*	1,685	79	planters
	1,685		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9					**Direct Entry,**

Subcatchment PR2 2.0 PRO: Pervious TO POA 2



Hydrograph for Subcatchment PR2 2.0 PRO: Pervious TO POA 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.18	0.00	0.00
5.00	0.40	0.00	0.00
7.50	0.68	0.01	0.00
10.00	1.15	0.12	**0.00**
12.50	4.42	2.31	**0.04**
15.00	5.36	3.12	0.01
17.50	5.73	3.44	0.00
20.00	5.97	3.66	0.00
22.50	**6.18**	**3.84**	0.00
25.00	**6.28**	**3.93**	0.00
27.50	6.28	3.93	0.00
30.00	6.28	3.93	0.00
32.50	6.28	3.93	0.00
35.00	6.28	3.93	0.00
37.50	6.28	3.93	0.00
40.00	6.28	3.93	0.00
42.50	6.28	3.93	0.00
45.00	6.28	3.93	0.00
47.50	6.28	3.93	0.00
50.00	6.28	3.93	0.00
52.50	6.28	3.93	0.00
55.00	6.28	3.93	0.00
57.50	6.28	3.93	0.00
60.00	6.28	3.93	0.00
62.50	6.28	3.93	0.00
65.00	6.28	3.93	0.00
67.50	6.28	3.93	0.00
70.00	6.28	3.93	0.00
72.50	6.28	3.93	0.00
75.00	6.28	3.93	0.00
77.50	6.28	3.93	0.00
80.00	6.28	3.93	0.00
82.50	6.28	3.93	0.00
85.00	6.28	3.93	0.00
87.50	6.28	3.93	0.00
90.00	6.28	3.93	0.00
92.50	6.28	3.93	0.00
95.00	6.28	3.93	0.00
97.50	6.28	3.93	0.00
100.00	6.28	3.93	0.00
102.50	6.28	3.93	0.00
105.00	6.28	3.93	0.00
107.50	6.28	3.93	0.00
110.00	6.28	3.93	0.00
112.50	6.28	3.93	0.00
115.00	6.28	3.93	0.00
117.50	6.28	3.93	0.00
120.00	6.28	3.93	0.00

Summary for Subcatchment PR2.0 PRO: Pervious

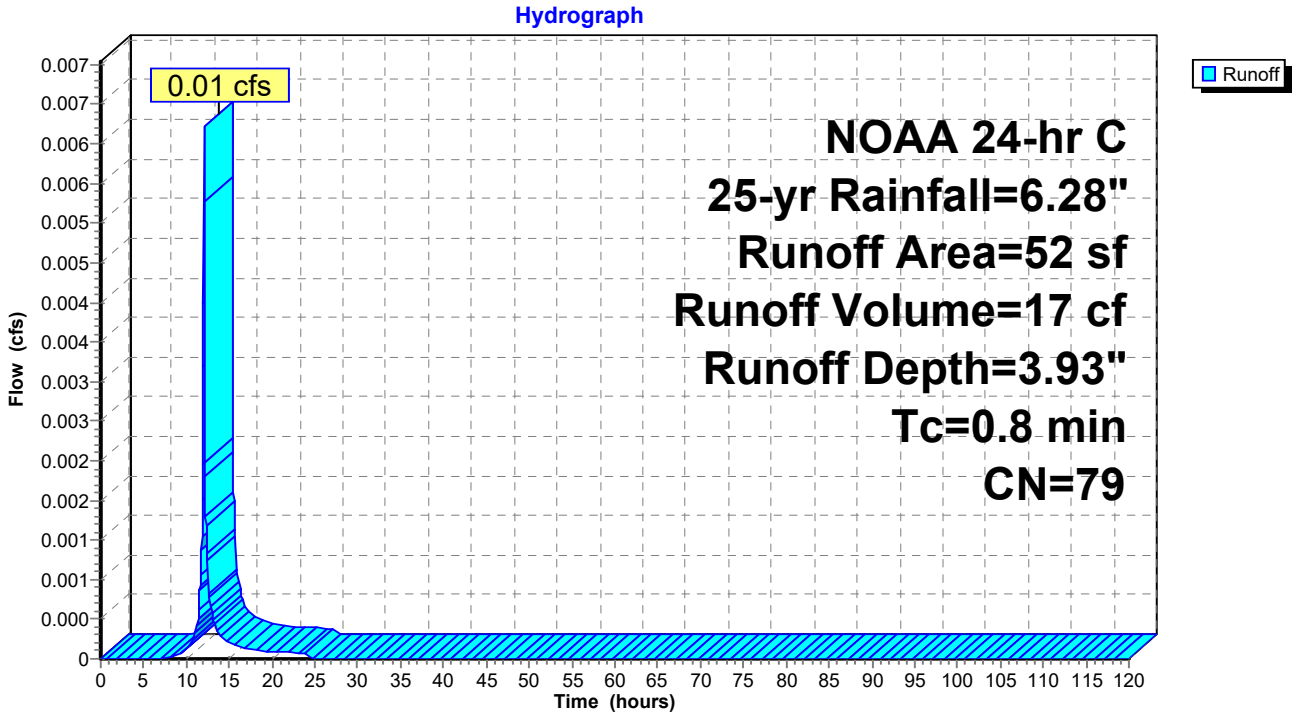
Runoff = 0.01 cfs @ 12.06 hrs, Volume= 17 cf, Depth= 3.93"
Routed to Pond BMP 1 : BMP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 25-yr Rainfall=6.28"

	Area (sf)	CN	Description
*	52	79	50-75% Grass cover, Fair, HSG C
	52		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8					**Direct Entry,**

Subcatchment PR2.0 PRO: Pervious



Hydrograph for Subcatchment PR2.0 PRO: Pervious

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.18	0.00	0.00
5.00	0.40	0.00	0.00
7.50	0.68	0.01	0.00
10.00	1.15	0.12	**0.00**
12.50	4.42	2.31	**0.00**
15.00	5.36	3.12	0.00
17.50	5.73	3.44	0.00
20.00	5.97	3.66	0.00
22.50	**6.18**	**3.84**	0.00
25.00	**6.28**	**3.93**	0.00
27.50	6.28	3.93	0.00
30.00	6.28	3.93	0.00
32.50	6.28	3.93	0.00
35.00	6.28	3.93	0.00
37.50	6.28	3.93	0.00
40.00	6.28	3.93	0.00
42.50	6.28	3.93	0.00
45.00	6.28	3.93	0.00
47.50	6.28	3.93	0.00
50.00	6.28	3.93	0.00
52.50	6.28	3.93	0.00
55.00	6.28	3.93	0.00
57.50	6.28	3.93	0.00
60.00	6.28	3.93	0.00
62.50	6.28	3.93	0.00
65.00	6.28	3.93	0.00
67.50	6.28	3.93	0.00
70.00	6.28	3.93	0.00
72.50	6.28	3.93	0.00
75.00	6.28	3.93	0.00
77.50	6.28	3.93	0.00
80.00	6.28	3.93	0.00
82.50	6.28	3.93	0.00
85.00	6.28	3.93	0.00
87.50	6.28	3.93	0.00
90.00	6.28	3.93	0.00
92.50	6.28	3.93	0.00
95.00	6.28	3.93	0.00
97.50	6.28	3.93	0.00
100.00	6.28	3.93	0.00
102.50	6.28	3.93	0.00
105.00	6.28	3.93	0.00
107.50	6.28	3.93	0.00
110.00	6.28	3.93	0.00
112.50	6.28	3.93	0.00
115.00	6.28	3.93	0.00
117.50	6.28	3.93	0.00
120.00	6.28	3.93	0.00

Summary for Subcatchment PR2.2 PRO: Pervious bypass

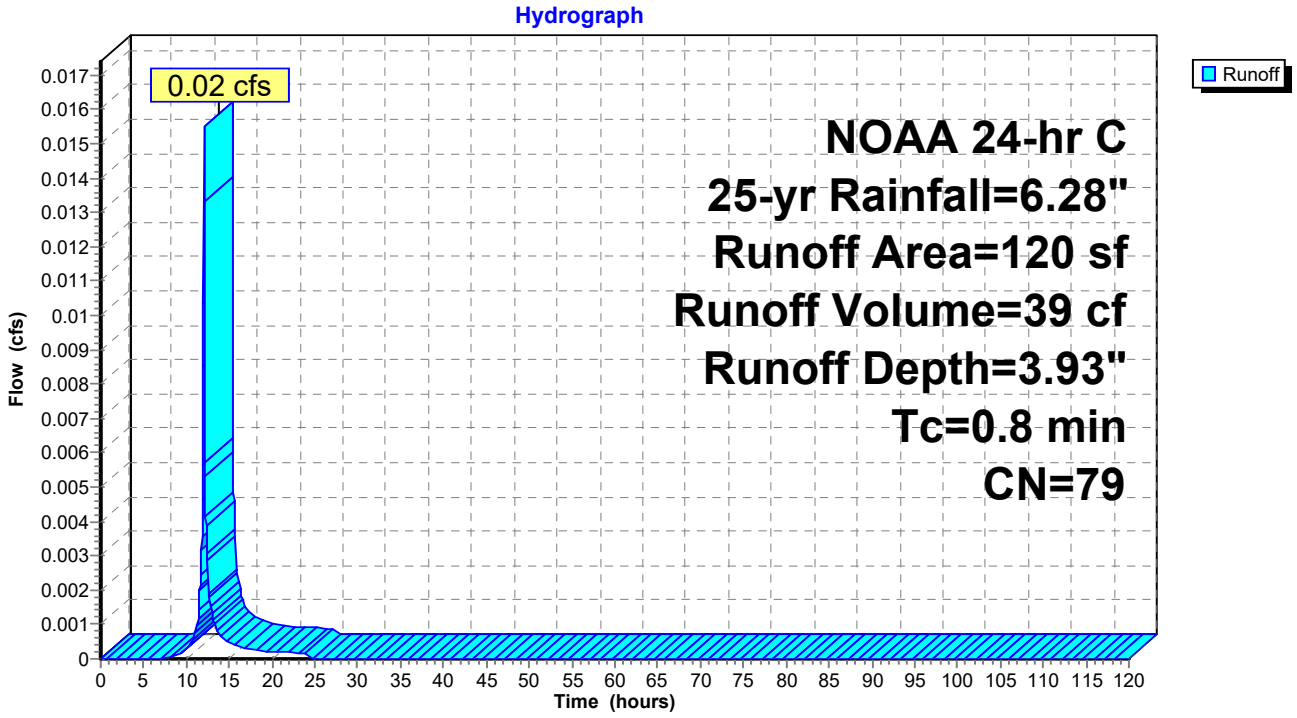
Runoff = 0.02 cfs @ 12.06 hrs, Volume= 39 cf, Depth= 3.93"
Routed to Reach PR1 END : POI-1 for PRDA-1 (current)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 25-yr Rainfall=6.28"

	Area (sf)	CN	Description
*	120	79	planters
	120		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8					**Direct Entry,**

Subcatchment PR2.2 PRO: Pervious bypass



Hydrograph for Subcatchment PR2.2 PRO: Pervious bypass

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.18	0.00	0.00
5.00	0.40	0.00	0.00
7.50	0.68	0.01	0.00
10.00	1.15	0.12	**0.00**
12.50	4.42	2.31	**0.00**
15.00	5.36	3.12	0.00
17.50	5.73	3.44	0.00
20.00	5.97	3.66	0.00
22.50	**6.18**	**3.84**	0.00
25.00	**6.28**	**3.93**	0.00
27.50	6.28	3.93	0.00
30.00	6.28	3.93	0.00
32.50	6.28	3.93	0.00
35.00	6.28	3.93	0.00
37.50	6.28	3.93	0.00
40.00	6.28	3.93	0.00
42.50	6.28	3.93	0.00
45.00	6.28	3.93	0.00
47.50	6.28	3.93	0.00
50.00	6.28	3.93	0.00
52.50	6.28	3.93	0.00
55.00	6.28	3.93	0.00
57.50	6.28	3.93	0.00
60.00	6.28	3.93	0.00
62.50	6.28	3.93	0.00
65.00	6.28	3.93	0.00
67.50	6.28	3.93	0.00
70.00	6.28	3.93	0.00
72.50	6.28	3.93	0.00
75.00	6.28	3.93	0.00
77.50	6.28	3.93	0.00
80.00	6.28	3.93	0.00
82.50	6.28	3.93	0.00
85.00	6.28	3.93	0.00
87.50	6.28	3.93	0.00
90.00	6.28	3.93	0.00
92.50	6.28	3.93	0.00
95.00	6.28	3.93	0.00
97.50	6.28	3.93	0.00
100.00	6.28	3.93	0.00
102.50	6.28	3.93	0.00
105.00	6.28	3.93	0.00
107.50	6.28	3.93	0.00
110.00	6.28	3.93	0.00
112.50	6.28	3.93	0.00
115.00	6.28	3.93	0.00
117.50	6.28	3.93	0.00
120.00	6.28	3.93	0.00

Summary for Subcatchment PR3.0 PRO: Building

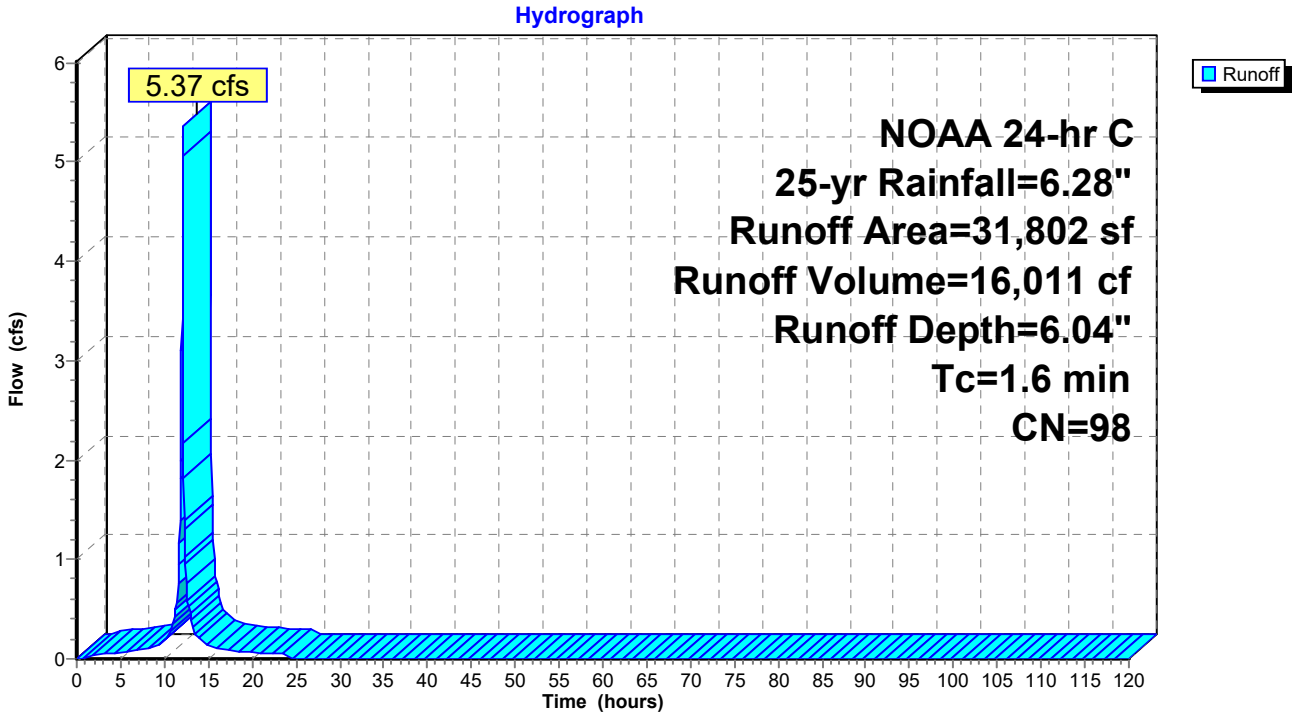
Runoff = 5.37 cfs @ 12.07 hrs, Volume= 16,011 cf, Depth= 6.04"
Routed to Pond BMP 1 : BMP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 25-yr Rainfall=6.28"

Area (sf)	CN	Description
31,802	98	Roofs, HSG C
31,802		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6					**Direct Entry,**

Subcatchment PR3.0 PRO: Building



Hydrograph for Subcatchment PR3.0 PRO: Building

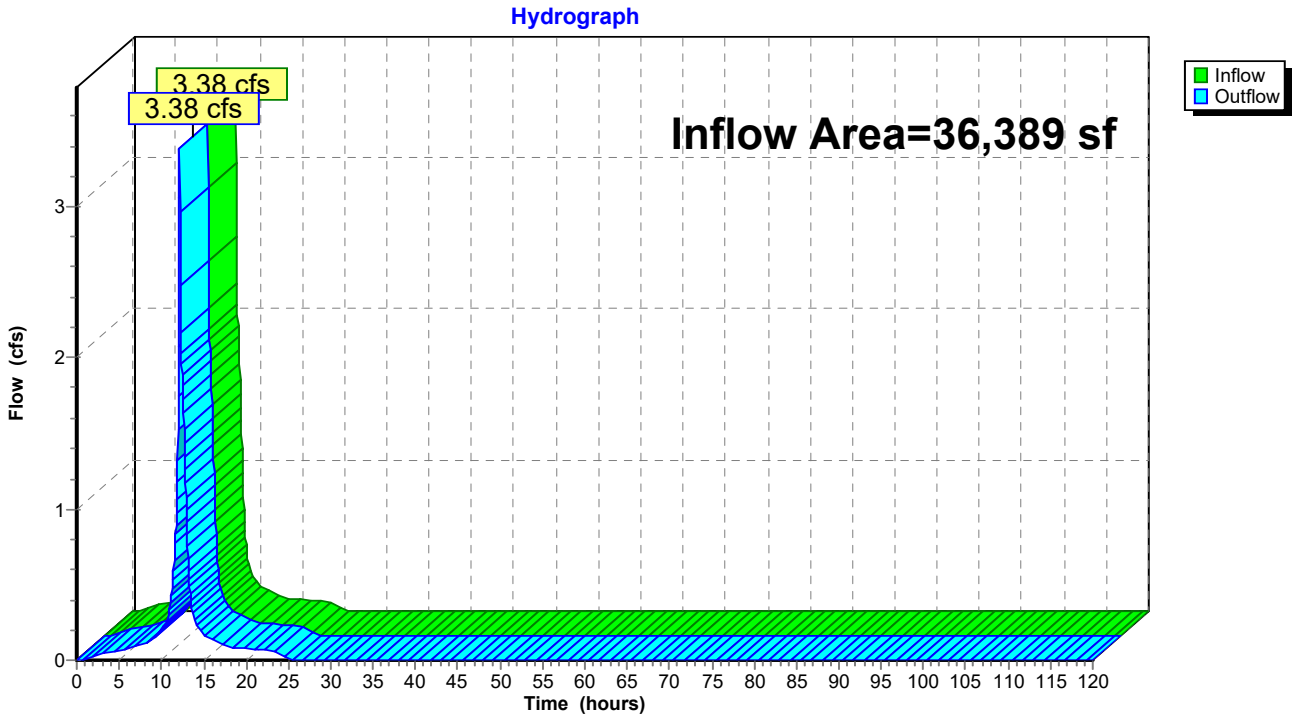
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.18	0.06	0.04
5.00	0.40	0.23	0.06
7.50	0.68	0.48	0.10
10.00	1.15	0.93	**0.19**
12.50	4.42	4.19	**0.90**
15.00	5.36	5.13	0.14
17.50	5.73	5.49	0.09
20.00	5.97	5.73	0.07
22.50	**6.18**	**5.94**	0.05
25.00	**6.28**	**6.04**	0.00
27.50	6.28	6.04	0.00
30.00	6.28	6.04	0.00
32.50	6.28	6.04	0.00
35.00	6.28	6.04	0.00
37.50	6.28	6.04	0.00
40.00	6.28	6.04	0.00
42.50	6.28	6.04	0.00
45.00	6.28	6.04	0.00
47.50	6.28	6.04	0.00
50.00	6.28	6.04	0.00
52.50	6.28	6.04	0.00
55.00	6.28	6.04	0.00
57.50	6.28	6.04	0.00
60.00	6.28	6.04	0.00
62.50	6.28	6.04	0.00
65.00	6.28	6.04	0.00
67.50	6.28	6.04	0.00
70.00	6.28	6.04	0.00
72.50	6.28	6.04	0.00
75.00	6.28	6.04	0.00
77.50	6.28	6.04	0.00
80.00	6.28	6.04	0.00
82.50	6.28	6.04	0.00
85.00	6.28	6.04	0.00
87.50	6.28	6.04	0.00
90.00	6.28	6.04	0.00
92.50	6.28	6.04	0.00
95.00	6.28	6.04	0.00
97.50	6.28	6.04	0.00
100.00	6.28	6.04	0.00
102.50	6.28	6.04	0.00
105.00	6.28	6.04	0.00
107.50	6.28	6.04	0.00
110.00	6.28	6.04	0.00
112.50	6.28	6.04	0.00
115.00	6.28	6.04	0.00
117.50	6.28	6.04	0.00
120.00	6.28	6.04	0.00

Summary for Reach PR1 END: POI-1 for PRDA-1 (current)

Inflow Area = 36,389 sf, 99.53% Impervious, Inflow Depth = 6.03" for 25-yr event
Inflow = 3.38 cfs @ 12.15 hrs, Volume= 18,290 cf
Outflow = 3.38 cfs @ 12.15 hrs, Volume= 18,290 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach PR1 END: POI-1 for PRDA-1 (current)



Hydrograph for Reach PR1 END: POI-1 for PRDA-1 (current)

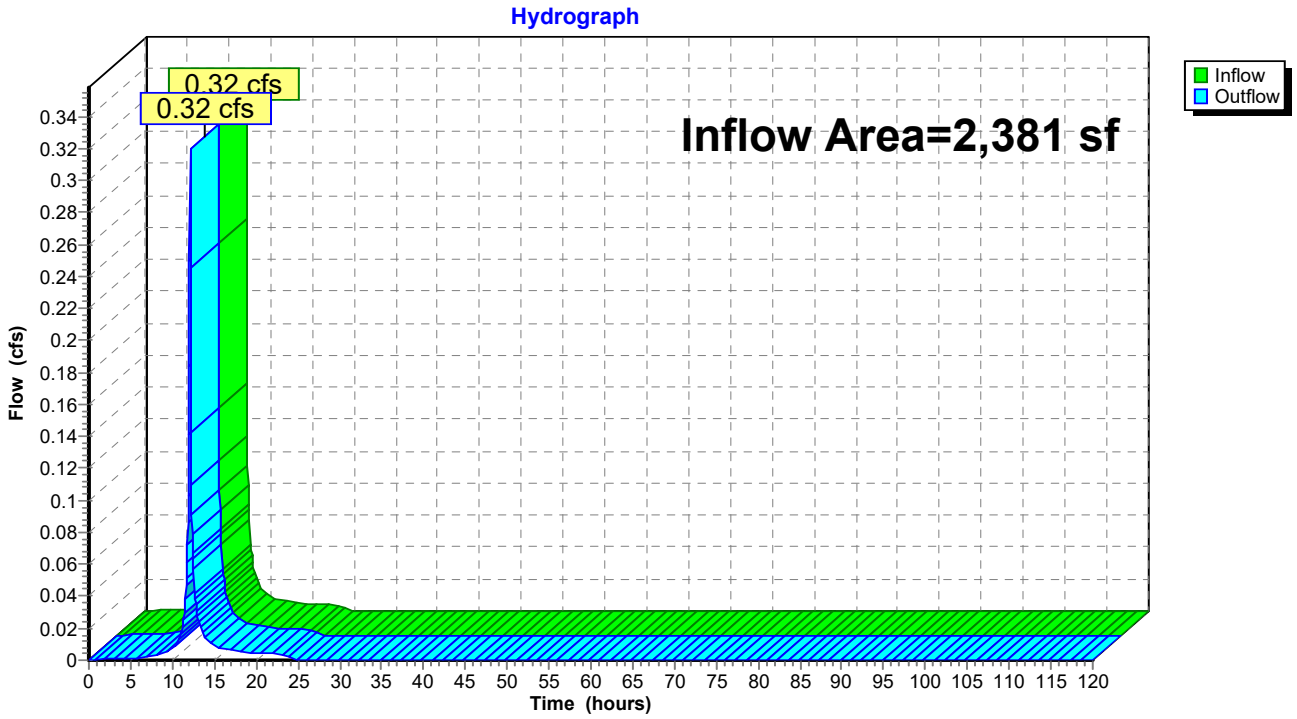
Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00
2.50	0.04		0.04
5.00	0.07		0.07
7.50	0.10		0.10
10.00	**0.21**		**0.21**
12.50	**1.81**		**1.81**
15.00	0.17		0.17
17.50	0.10		0.10
20.00	0.08		0.08
22.50	0.06		0.06
25.00	0.01		0.01
27.50	0.00		0.00
30.00	0.00		0.00
32.50	0.00		0.00
35.00	0.00		0.00
37.50	0.00		0.00
40.00	0.00		0.00
42.50	0.00		0.00
45.00	0.00		0.00
47.50	0.00		0.00
50.00	0.00		0.00
52.50	0.00		0.00
55.00	0.00		0.00
57.50	0.00		0.00
60.00	0.00		0.00
62.50	0.00		0.00
65.00	0.00		0.00
67.50	0.00		0.00
70.00	0.00		0.00
72.50	0.00		0.00
75.00	0.00		0.00
77.50	0.00		0.00
80.00	0.00		0.00
82.50	0.00		0.00
85.00	0.00		0.00
87.50	0.00		0.00
90.00	0.00		0.00
92.50	0.00		0.00
95.00	0.00		0.00
97.50	0.00		0.00
100.00	0.00		0.00
102.50	0.00		0.00
105.00	0.00		0.00
107.50	0.00		0.00
110.00	0.00		0.00
112.50	0.00		0.00
115.00	0.00		0.00
117.50	0.00		0.00
120.00	0.00		0.00

Summary for Reach PR2 PRO: POI-2 for PRDA-2 (current)

Inflow Area = 2,381 sf, 29.23% Impervious, Inflow Depth = 4.55" for 25-yr event
Inflow = 0.32 cfs @ 12.10 hrs, Volume= 902 cf
Outflow = 0.32 cfs @ 12.10 hrs, Volume= 902 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach PR2 PRO: POI-2 for PRDA-2 (current)



Hydrograph for Reach PR2 PRO: POI-2 for PRDA-2 (current)

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00
2.50	0.00		0.00
5.00	0.00		0.00
7.50	0.00		0.00
10.00	**0.01**		**0.01**
12.50	**0.06**		**0.06**
15.00	0.01		0.01
17.50	0.01		0.01
20.00	0.00		0.00
22.50	0.00		0.00
25.00	0.00		0.00
27.50	0.00		0.00
30.00	0.00		0.00
32.50	0.00		0.00
35.00	0.00		0.00
37.50	0.00		0.00
40.00	0.00		0.00
42.50	0.00		0.00
45.00	0.00		0.00
47.50	0.00		0.00
50.00	0.00		0.00
52.50	0.00		0.00
55.00	0.00		0.00
57.50	0.00		0.00
60.00	0.00		0.00
62.50	0.00		0.00
65.00	0.00		0.00
67.50	0.00		0.00
70.00	0.00		0.00
72.50	0.00		0.00
75.00	0.00		0.00
77.50	0.00		0.00
80.00	0.00		0.00
82.50	0.00		0.00
85.00	0.00		0.00
87.50	0.00		0.00
90.00	0.00		0.00
92.50	0.00		0.00
95.00	0.00		0.00
97.50	0.00		0.00
100.00	0.00		0.00
102.50	0.00		0.00
105.00	0.00		0.00
107.50	0.00		0.00
110.00	0.00		0.00
112.50	0.00		0.00
115.00	0.00		0.00
117.50	0.00		0.00
120.00	0.00		0.00

Summary for Pond BMP 1: BMP-1

Inflow Area = 35,521 sf, 99.85% Impervious, Inflow Depth = 6.04" for 25-yr event
Inflow = 5.99 cfs @ 12.07 hrs, Volume= 17,874 cf
Outflow = 3.32 cfs @ 12.15 hrs, Volume= 17,874 cf, Atten= 45%, Lag= 4.7 min
Primary = 3.32 cfs @ 12.15 hrs, Volume= 17,874 cf
Routed to Reach PR1 END : POI-1 for PRDA-1 (current)

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 16.99' @ 12.15 hrs Surf.Area= 766 sf Storage= 3,057 cf

Plug-Flow detention time= 18.4 min calculated for 17,867 cf (100% of inflow)
Center-of-Mass det. time= 18.4 min (759.5 - 741.1)

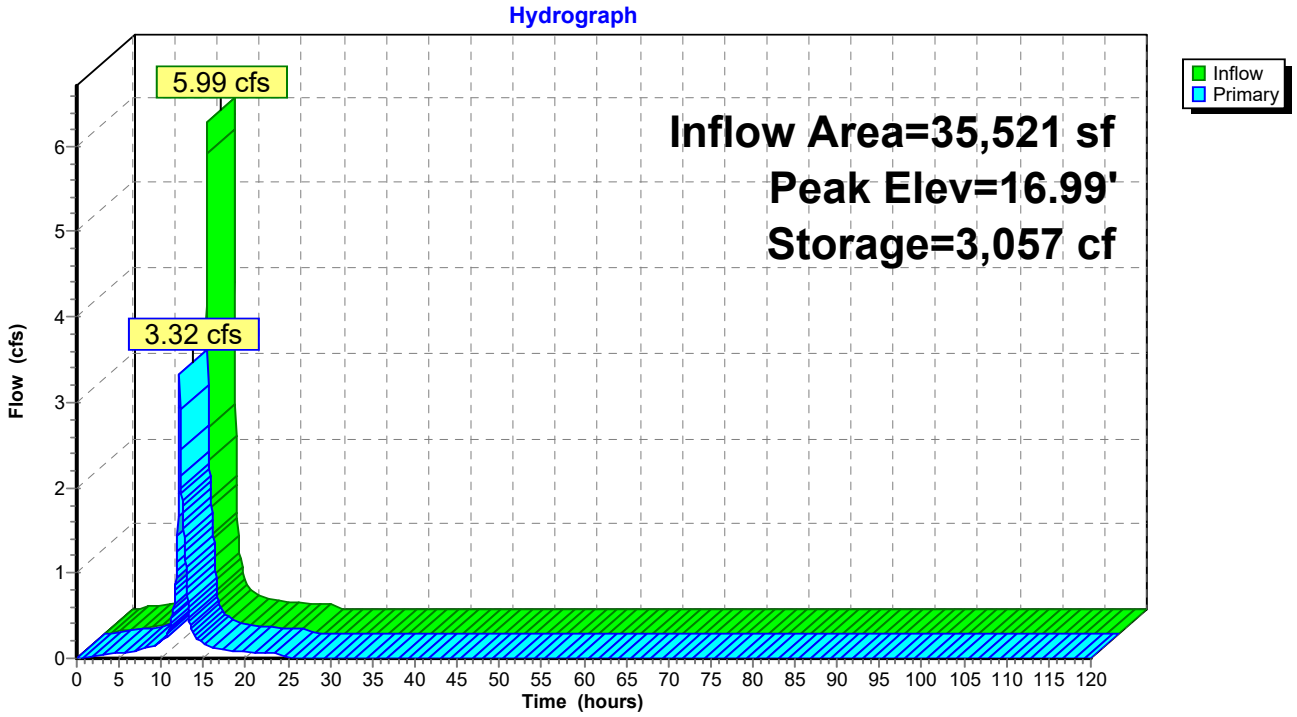
Volume	Invert	Avail.Storage	Storage Description
#1	13.00'	6,128 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.00	766	0	0
14.00	766	766	766
15.00	766	766	1,532
16.00	766	766	2,298
17.00	766	766	3,064
18.00	766	766	3,830
19.00	766	766	4,596
20.00	766	766	5,362
21.00	766	766	6,128

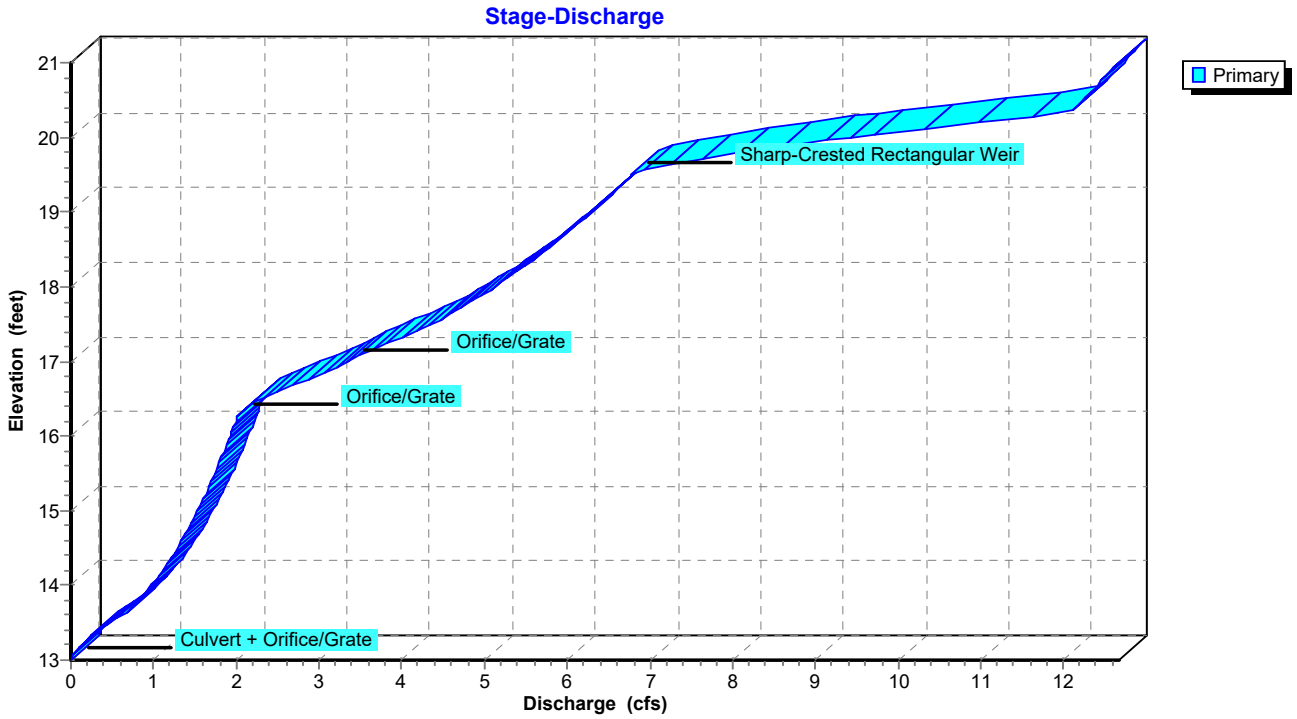
Device	Routing	Invert	Outlet Devices
#1	Primary	13.00'	**15.0" Round Culvert** L= 40.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.00' / 11.80' S= 0.0300 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.23 sf
#2	Device 1	13.00'	**5.0" W x 7.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	16.25'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	17.00'	**5.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Device 1	19.50'	**2.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=3.32 cfs @ 12.15 hrs HW=16.99' (Free Discharge)
└**1=Culvert** (Passes 3.32 cfs of 8.56 cfs potential flow)
├**2=Orifice/Grate** (Orifice Controls 2.25 cfs @ 9.26 fps)
├**3=Orifice/Grate** (Orifice Controls 1.07 cfs @ 3.07 fps)
├**4=Orifice/Grate** (Controls 0.00 cfs)
└**5=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond BMP 1: BMP-1



Pond BMP 1: BMP-1



Hydrograph for Pond BMP 1: BMP-1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	13.00	0.00
2.50	0.04	71	13.09	0.04
5.00	0.07	102	13.13	0.07
7.50	0.11	137	13.18	0.10
10.00	**0.22**	**217**	**13.28**	**0.20**
12.50	**1.00**	**2,011**	**15.63**	**1.79**
15.00	0.15	190	13.25	0.17
17.50	0.10	135	13.18	0.10
20.00	0.07	111	13.15	0.07
22.50	0.06	98	13.13	0.06
25.00	0.00	21	13.03	0.01
27.50	0.00	1	13.00	0.00
30.00	0.00	0	13.00	0.00
32.50	0.00	0	13.00	0.00
35.00	0.00	0	13.00	0.00
37.50	0.00	0	13.00	0.00
40.00	0.00	0	13.00	0.00
42.50	0.00	0	13.00	0.00
45.00	0.00	0	13.00	0.00
47.50	0.00	0	13.00	0.00
50.00	0.00	0	13.00	0.00
52.50	0.00	0	13.00	0.00
55.00	0.00	0	13.00	0.00
57.50	0.00	0	13.00	0.00
60.00	0.00	0	13.00	0.00
62.50	0.00	0	13.00	0.00
65.00	0.00	0	13.00	0.00
67.50	0.00	0	13.00	0.00
70.00	0.00	0	13.00	0.00
72.50	0.00	0	13.00	0.00
75.00	0.00	0	13.00	0.00
77.50	0.00	0	13.00	0.00
80.00	0.00	0	13.00	0.00
82.50	0.00	0	13.00	0.00
85.00	0.00	0	13.00	0.00
87.50	0.00	0	13.00	0.00
90.00	0.00	0	13.00	0.00
92.50	0.00	0	13.00	0.00
95.00	0.00	0	13.00	0.00
97.50	0.00	0	13.00	0.00
100.00	0.00	0	13.00	0.00
102.50	0.00	0	13.00	0.00
105.00	0.00	0	13.00	0.00
107.50	0.00	0	13.00	0.00
110.00	0.00	0	13.00	0.00
112.50	0.00	0	13.00	0.00
115.00	0.00	0	13.00	0.00
117.50	0.00	0	13.00	0.00
120.00	0.00	0	13.00	0.00

Stage-Area-Storage for Pond BMP 1: BMP-1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
13.00	**766**	0
13.10	766	77
13.20	766	153
13.30	766	230
13.40	766	306
13.50	766	383
13.60	766	460
13.70	766	536
13.80	766	613
13.90	766	689
14.00	766	766
14.10	766	843
14.20	766	919
14.30	766	996
14.40	766	1,072
14.50	766	1,149
14.60	766	1,226
14.70	766	1,302
14.80	766	1,379
14.90	766	1,455
15.00	766	1,532
15.10	766	1,609
15.20	766	1,685
15.30	766	1,762
15.40	766	1,838
15.50	766	1,915
15.60	766	1,992
15.70	766	2,068
15.80	766	2,145
15.90	766	2,221
16.00	766	2,298
16.10	766	2,375
16.20	766	2,451
16.30	766	2,528
16.40	766	2,604
16.50	766	2,681
16.60	766	2,758
16.70	766	2,834
16.80	766	2,911
16.90	766	2,987
17.00	766	3,064
17.10	766	3,141
17.20	766	3,217
17.30	766	3,294
17.40	766	3,370
17.50	766	3,447
17.60	766	3,524
17.70	766	3,600
17.80	766	3,677
17.90	766	3,753
18.00	766	3,830
18.10	766	3,907
18.20	766	3,983
18.30	766	4,060
18.40	766	4,136
18.50	766	4,213
18.60	766	4,290
18.70	766	4,366
18.80	766	4,443
18.90	766	4,519
19.00	766	4,596
19.10	766	4,673
19.20	766	4,749
19.30	766	4,826
19.40	766	4,902
19.50	766	4,979
19.60	766	5,056
19.70	766	5,132
19.80	766	5,209
19.90	766	5,285
20.00	766	5,362
20.10	766	5,439
20.20	766	5,515
20.30	766	5,592
20.40	766	5,668
20.50	766	5,745
20.60	766	5,822
20.70	766	5,898
20.80	766	5,975
20.90	766	6,051
21.00	766	**6,128**

Summary for Subcatchment PR1.0 PRO: Impervious

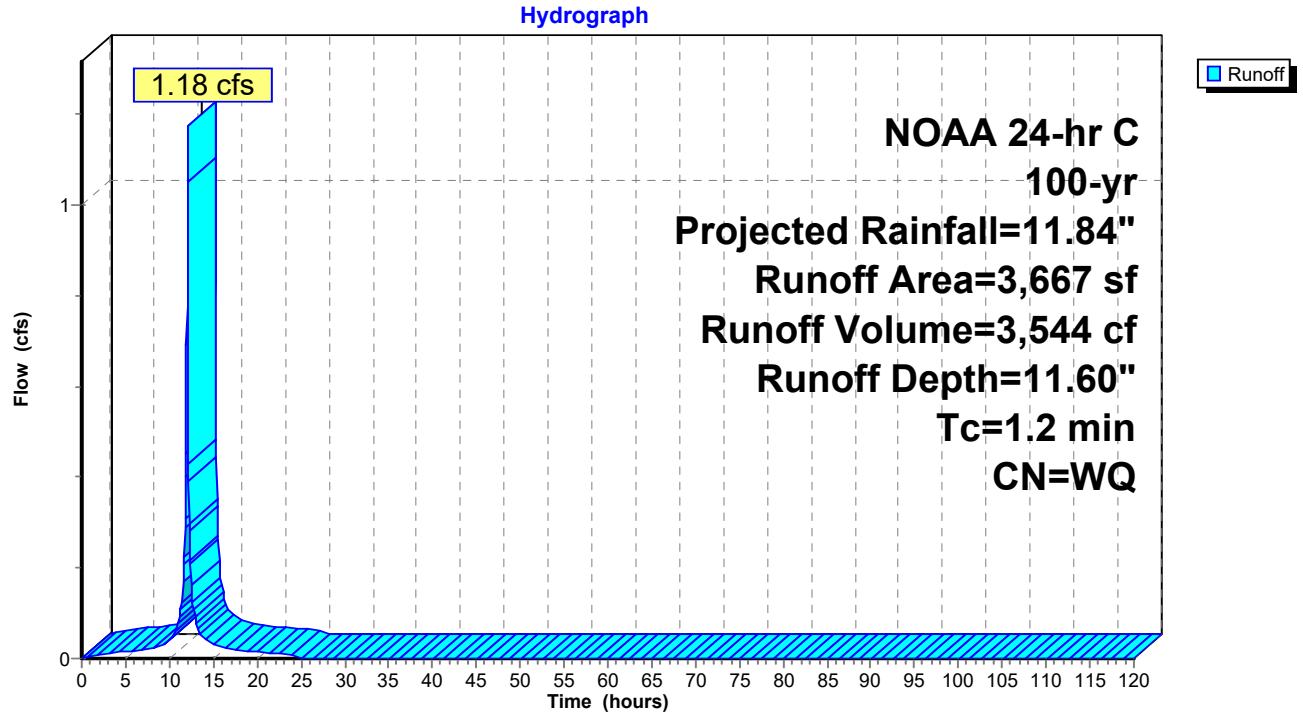
Runoff = 1.18 cfs @ 12.06 hrs, Volume= 3,544 cf, Depth=11.60"
Routed to Pond BMP 1 : BMP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 100-yr, Projected Rainfall=11.84"

	Area (sf)	CN	Description
*	2,755	98	Paved parking, HSG C
*	912	98	impervious walkway
	3,667		Weighted Average
	3,667		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2					**Direct Entry,**

Subcatchment PR1.0 PRO: Impervious



Hydrograph for Subcatchment PR1.0 PRO: Impervious

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.34	0.18	0.01
5.00	0.75	0.55	0.01
7.50	1.28	1.06	0.02
10.00	2.16	1.93	**0.04**
12.50	8.34	8.10	**0.19**
15.00	10.11	9.87	0.03
17.50	10.80	10.56	0.02
20.00	11.26	11.02	0.01
22.50	**11.64**	**11.40**	0.01
25.00	**11.84**	**11.60**	0.00
27.50	11.84	11.60	0.00
30.00	11.84	11.60	0.00
32.50	11.84	11.60	0.00
35.00	11.84	11.60	0.00
37.50	11.84	11.60	0.00
40.00	11.84	11.60	0.00
42.50	11.84	11.60	0.00
45.00	11.84	11.60	0.00
47.50	11.84	11.60	0.00
50.00	11.84	11.60	0.00
52.50	11.84	11.60	0.00
55.00	11.84	11.60	0.00
57.50	11.84	11.60	0.00
60.00	11.84	11.60	0.00
62.50	11.84	11.60	0.00
65.00	11.84	11.60	0.00
67.50	11.84	11.60	0.00
70.00	11.84	11.60	0.00
72.50	11.84	11.60	0.00
75.00	11.84	11.60	0.00
77.50	11.84	11.60	0.00
80.00	11.84	11.60	0.00
82.50	11.84	11.60	0.00
85.00	11.84	11.60	0.00
87.50	11.84	11.60	0.00
90.00	11.84	11.60	0.00
92.50	11.84	11.60	0.00
95.00	11.84	11.60	0.00
97.50	11.84	11.60	0.00
100.00	11.84	11.60	0.00
102.50	11.84	11.60	0.00
105.00	11.84	11.60	0.00
107.50	11.84	11.60	0.00
110.00	11.84	11.60	0.00
112.50	11.84	11.60	0.00
115.00	11.84	11.60	0.00
117.50	11.84	11.60	0.00
120.00	11.84	11.60	0.00

Summary for Subcatchment PR1.1 PRO: Impervious bypass

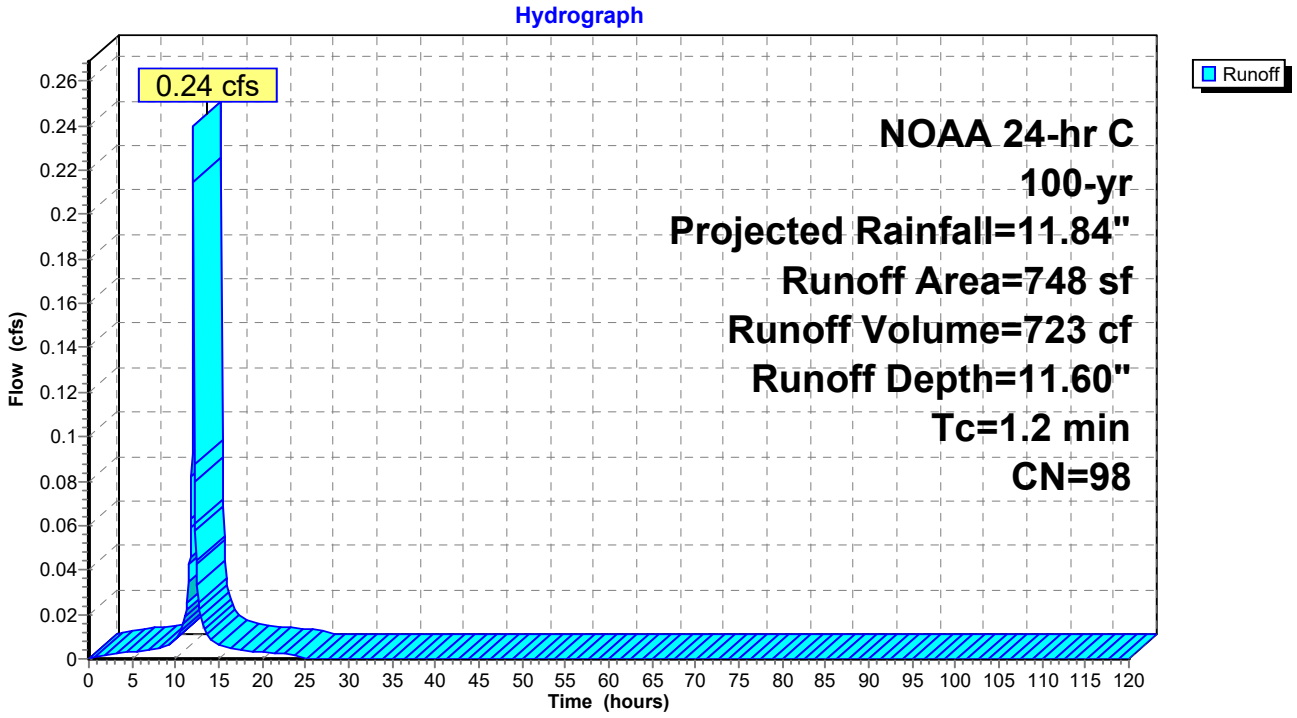
Runoff = 0.24 cfs @ 12.06 hrs, Volume= 723 cf, Depth=11.60"
Routed to Reach PR1 END : POI-1 for PRDA-1 (current)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 100-yr, Projected Rainfall=11.84"

	Area (sf)	CN	Description
*	748	98	impervious walkway
	748		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2					**Direct Entry,**

Subcatchment PR1.1 PRO: Impervious bypass



Hydrograph for Subcatchment PR1.1 PRO: Impervious bypass

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.34	0.18	0.00
5.00	0.75	0.55	0.00
7.50	1.28	1.06	0.00
10.00	2.16	1.93	**0.01**
12.50	8.34	8.10	**0.04**
15.00	10.11	9.87	0.01
17.50	10.80	10.56	0.00
20.00	11.26	11.02	0.00
22.50	**11.64**	**11.40**	0.00
25.00	**11.84**	**11.60**	0.00
27.50	11.84	11.60	0.00
30.00	11.84	11.60	0.00
32.50	11.84	11.60	0.00
35.00	11.84	11.60	0.00
37.50	11.84	11.60	0.00
40.00	11.84	11.60	0.00
42.50	11.84	11.60	0.00
45.00	11.84	11.60	0.00
47.50	11.84	11.60	0.00
50.00	11.84	11.60	0.00
52.50	11.84	11.60	0.00
55.00	11.84	11.60	0.00
57.50	11.84	11.60	0.00
60.00	11.84	11.60	0.00
62.50	11.84	11.60	0.00
65.00	11.84	11.60	0.00
67.50	11.84	11.60	0.00
70.00	11.84	11.60	0.00
72.50	11.84	11.60	0.00
75.00	11.84	11.60	0.00
77.50	11.84	11.60	0.00
80.00	11.84	11.60	0.00
82.50	11.84	11.60	0.00
85.00	11.84	11.60	0.00
87.50	11.84	11.60	0.00
90.00	11.84	11.60	0.00
92.50	11.84	11.60	0.00
95.00	11.84	11.60	0.00
97.50	11.84	11.60	0.00
100.00	11.84	11.60	0.00
102.50	11.84	11.60	0.00
105.00	11.84	11.60	0.00
107.50	11.84	11.60	0.00
110.00	11.84	11.60	0.00
112.50	11.84	11.60	0.00
115.00	11.84	11.60	0.00
117.50	11.84	11.60	0.00
120.00	11.84	11.60	0.00

Summary for Subcatchment PR2 1.0 PRO: Impervious TO POA 2

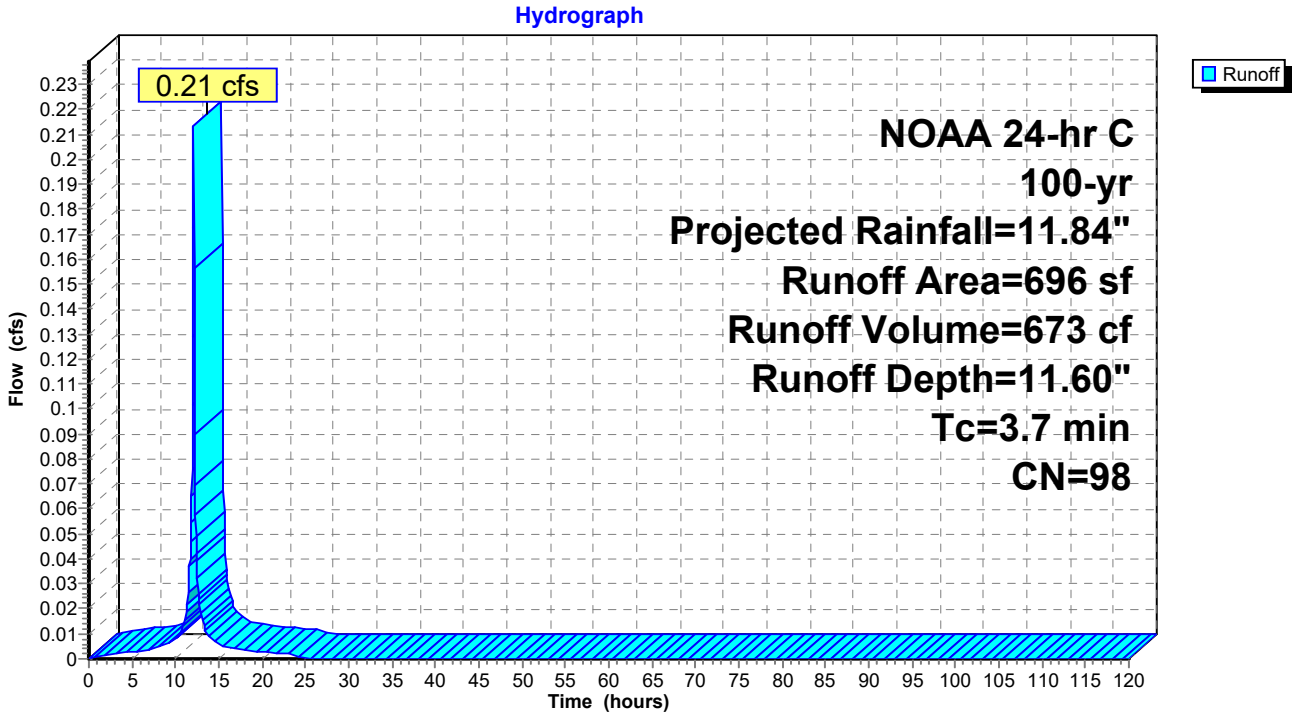
Runoff = 0.21 cfs @ 12.10 hrs, Volume= 673 cf, Depth=11.60"
Routed to Reach PR2 PRO : POI-2 for PRDA-2 (current)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 100-yr, Projected Rainfall=11.84"

	Area (sf)	CN	Description
*	696	98	impervious
	696		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7					**Direct Entry,**

Subcatchment PR2 1.0 PRO: Impervious TO POA 2



Hydrograph for Subcatchment PR2 1.0 PRO: Impervious TO POA 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.34	0.18	0.00
5.00	0.75	0.55	0.00
7.50	1.28	1.06	0.00
10.00	2.16	1.93	**0.01**
12.50	8.34	8.10	**0.04**
15.00	10.11	9.87	0.01
17.50	10.80	10.56	0.00
20.00	11.26	11.02	0.00
22.50	**11.64**	**11.40**	0.00
25.00	**11.84**	**11.60**	0.00
27.50	11.84	11.60	0.00
30.00	11.84	11.60	0.00
32.50	11.84	11.60	0.00
35.00	11.84	11.60	0.00
37.50	11.84	11.60	0.00
40.00	11.84	11.60	0.00
42.50	11.84	11.60	0.00
45.00	11.84	11.60	0.00
47.50	11.84	11.60	0.00
50.00	11.84	11.60	0.00
52.50	11.84	11.60	0.00
55.00	11.84	11.60	0.00
57.50	11.84	11.60	0.00
60.00	11.84	11.60	0.00
62.50	11.84	11.60	0.00
65.00	11.84	11.60	0.00
67.50	11.84	11.60	0.00
70.00	11.84	11.60	0.00
72.50	11.84	11.60	0.00
75.00	11.84	11.60	0.00
77.50	11.84	11.60	0.00
80.00	11.84	11.60	0.00
82.50	11.84	11.60	0.00
85.00	11.84	11.60	0.00
87.50	11.84	11.60	0.00
90.00	11.84	11.60	0.00
92.50	11.84	11.60	0.00
95.00	11.84	11.60	0.00
97.50	11.84	11.60	0.00
100.00	11.84	11.60	0.00
102.50	11.84	11.60	0.00
105.00	11.84	11.60	0.00
107.50	11.84	11.60	0.00
110.00	11.84	11.60	0.00
112.50	11.84	11.60	0.00
115.00	11.84	11.60	0.00
117.50	11.84	11.60	0.00
120.00	11.84	11.60	0.00

Summary for Subcatchment PR2 2.0 PRO: Pervious TO POA 2

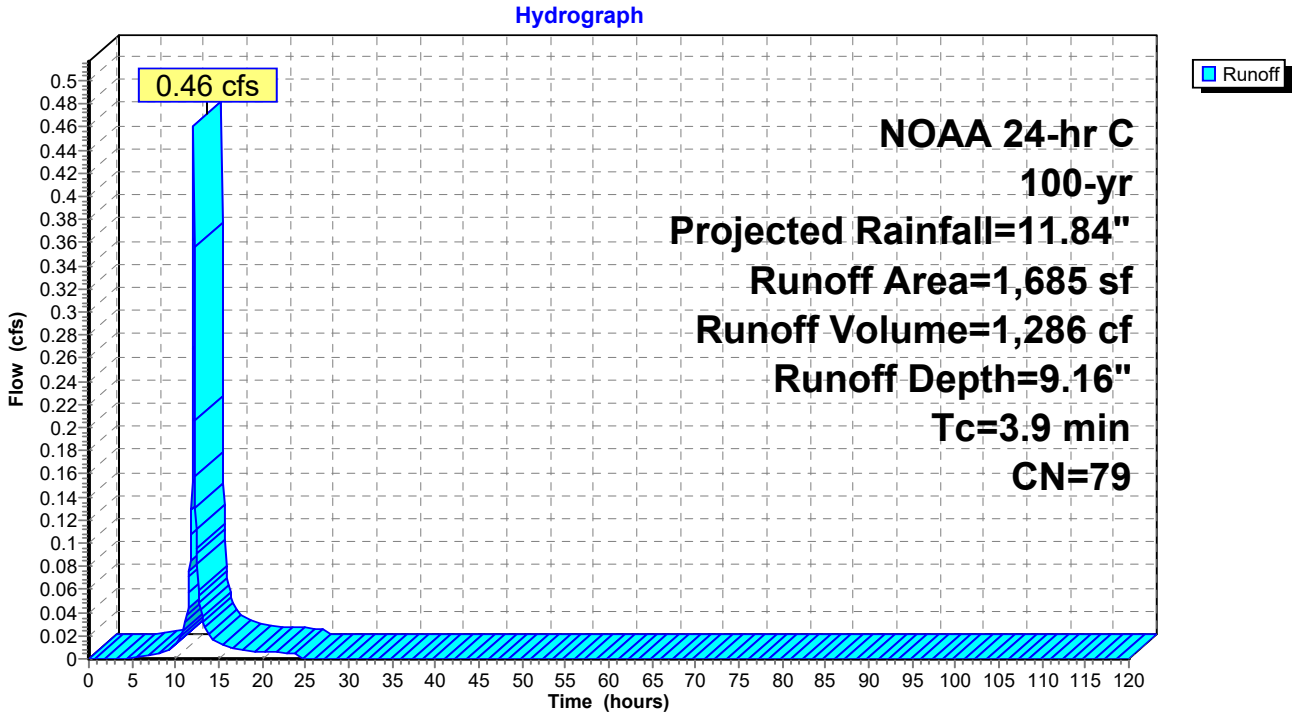
Runoff = 0.46 cfs @ 12.10 hrs, Volume= 1,286 cf, Depth= 9.16"
Routed to Reach PR2 PRO : POI-2 for PRDA-2 (current)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 100-yr, Projected Rainfall=11.84"

	Area (sf)	CN	Description
*	1,685	79	planters
	1,685		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9					**Direct Entry,**

Subcatchment PR2 2.0 PRO: Pervious TO POA 2



Hydrograph for Subcatchment PR2 2.0 PRO: Pervious TO POA 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.34	0.00	0.00
5.00	0.75	0.02	0.00
7.50	1.28	0.16	0.00
10.00	2.16	0.62	**0.01**
12.50	8.34	5.83	**0.09**
15.00	10.11	7.50	0.01
17.50	10.80	8.16	0.01
20.00	11.26	8.60	0.01
22.50	**11.64**	**8.97**	0.01
25.00	**11.84**	**9.16**	0.00
27.50	11.84	9.16	0.00
30.00	11.84	9.16	0.00
32.50	11.84	9.16	0.00
35.00	11.84	9.16	0.00
37.50	11.84	9.16	0.00
40.00	11.84	9.16	0.00
42.50	11.84	9.16	0.00
45.00	11.84	9.16	0.00
47.50	11.84	9.16	0.00
50.00	11.84	9.16	0.00
52.50	11.84	9.16	0.00
55.00	11.84	9.16	0.00
57.50	11.84	9.16	0.00
60.00	11.84	9.16	0.00
62.50	11.84	9.16	0.00
65.00	11.84	9.16	0.00
67.50	11.84	9.16	0.00
70.00	11.84	9.16	0.00
72.50	11.84	9.16	0.00
75.00	11.84	9.16	0.00
77.50	11.84	9.16	0.00
80.00	11.84	9.16	0.00
82.50	11.84	9.16	0.00
85.00	11.84	9.16	0.00
87.50	11.84	9.16	0.00
90.00	11.84	9.16	0.00
92.50	11.84	9.16	0.00
95.00	11.84	9.16	0.00
97.50	11.84	9.16	0.00
100.00	11.84	9.16	0.00
102.50	11.84	9.16	0.00
105.00	11.84	9.16	0.00
107.50	11.84	9.16	0.00
110.00	11.84	9.16	0.00
112.50	11.84	9.16	0.00
115.00	11.84	9.16	0.00
117.50	11.84	9.16	0.00
120.00	11.84	9.16	0.00

Summary for Subcatchment PR2.0 PRO: Pervious

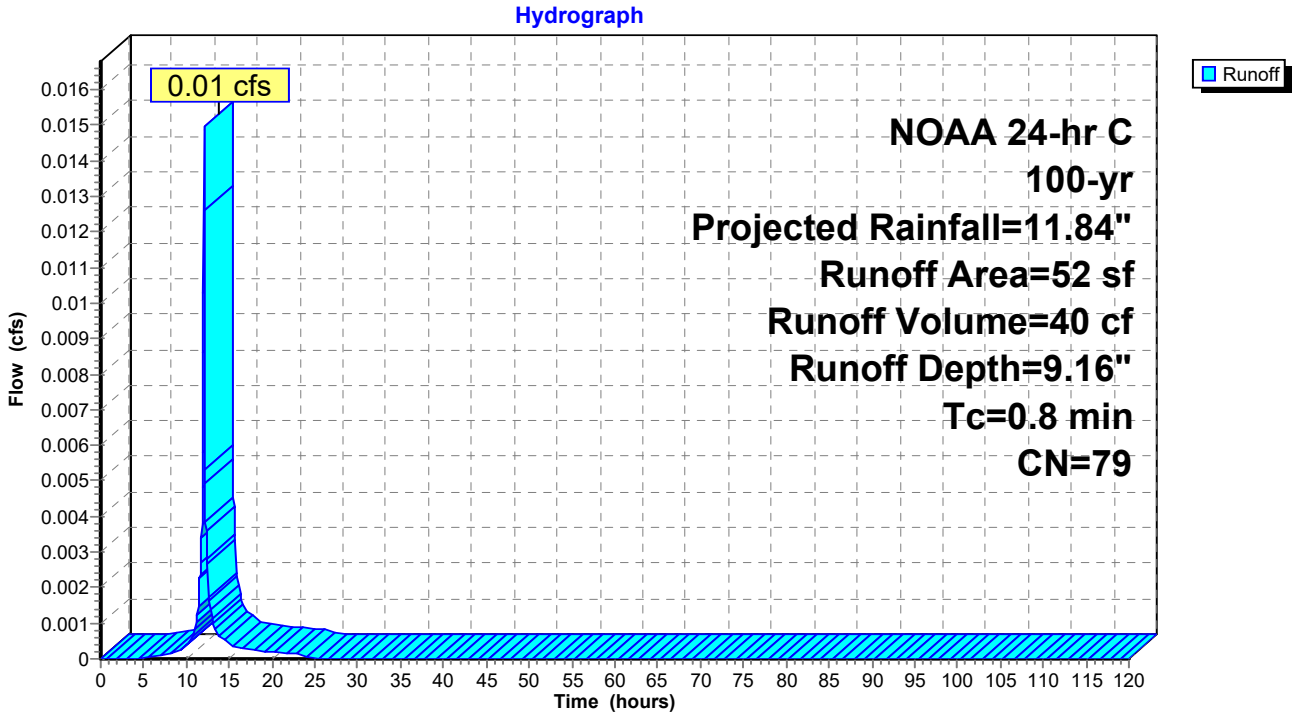
Runoff = 0.01 cfs @ 12.06 hrs, Volume= 40 cf, Depth= 9.16"
Routed to Pond BMP 1 : BMP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 100-yr, Projected Rainfall=11.84"

	Area (sf)	CN	Description
*	52	79	50-75% Grass cover, Fair, HSG C
	52		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8					**Direct Entry,**

Subcatchment PR2.0 PRO: Pervious



Hydrograph for Subcatchment PR2.0 PRO: Pervious

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.34	0.00	0.00
5.00	0.75	0.02	0.00
7.50	1.28	0.16	0.00
10.00	2.16	0.62	**0.00**
12.50	8.34	5.83	**0.00**
15.00	10.11	7.50	0.00
17.50	10.80	8.16	0.00
20.00	11.26	8.60	0.00
22.50	**11.64**	**8.97**	0.00
25.00	**11.84**	**9.16**	0.00
27.50	11.84	9.16	0.00
30.00	11.84	9.16	0.00
32.50	11.84	9.16	0.00
35.00	11.84	9.16	0.00
37.50	11.84	9.16	0.00
40.00	11.84	9.16	0.00
42.50	11.84	9.16	0.00
45.00	11.84	9.16	0.00
47.50	11.84	9.16	0.00
50.00	11.84	9.16	0.00
52.50	11.84	9.16	0.00
55.00	11.84	9.16	0.00
57.50	11.84	9.16	0.00
60.00	11.84	9.16	0.00
62.50	11.84	9.16	0.00
65.00	11.84	9.16	0.00
67.50	11.84	9.16	0.00
70.00	11.84	9.16	0.00
72.50	11.84	9.16	0.00
75.00	11.84	9.16	0.00
77.50	11.84	9.16	0.00
80.00	11.84	9.16	0.00
82.50	11.84	9.16	0.00
85.00	11.84	9.16	0.00
87.50	11.84	9.16	0.00
90.00	11.84	9.16	0.00
92.50	11.84	9.16	0.00
95.00	11.84	9.16	0.00
97.50	11.84	9.16	0.00
100.00	11.84	9.16	0.00
102.50	11.84	9.16	0.00
105.00	11.84	9.16	0.00
107.50	11.84	9.16	0.00
110.00	11.84	9.16	0.00
112.50	11.84	9.16	0.00
115.00	11.84	9.16	0.00
117.50	11.84	9.16	0.00
120.00	11.84	9.16	0.00

Summary for Subcatchment PR2.2 PRO: Pervious bypass

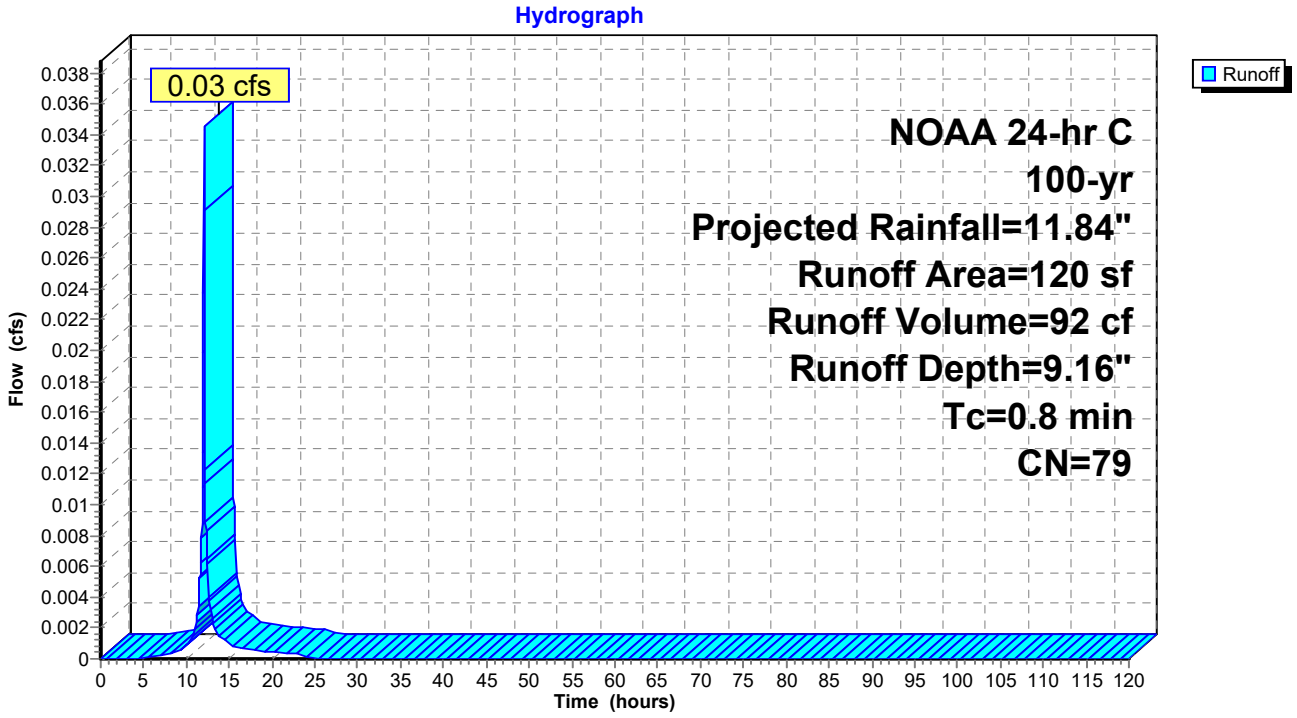
Runoff = 0.03 cfs @ 12.06 hrs, Volume= 92 cf, Depth= 9.16"
Routed to Reach PR1 END : POI-1 for PRDA-1 (current)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 100-yr, Projected Rainfall=11.84"

	Area (sf)	CN	Description
*	120	79	planters
	120		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8					**Direct Entry,**

Subcatchment PR2.2 PRO: Pervious bypass



Hydrograph for Subcatchment PR2.2 PRO: Pervious bypass

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.34	0.00	0.00
5.00	0.75	0.02	0.00
7.50	1.28	0.16	0.00
10.00	2.16	0.62	**0.00**
12.50	8.34	5.83	**0.01**
15.00	10.11	7.50	0.00
17.50	10.80	8.16	0.00
20.00	11.26	8.60	0.00
22.50	**11.64**	**8.97**	0.00
25.00	**11.84**	**9.16**	0.00
27.50	11.84	9.16	0.00
30.00	11.84	9.16	0.00
32.50	11.84	9.16	0.00
35.00	11.84	9.16	0.00
37.50	11.84	9.16	0.00
40.00	11.84	9.16	0.00
42.50	11.84	9.16	0.00
45.00	11.84	9.16	0.00
47.50	11.84	9.16	0.00
50.00	11.84	9.16	0.00
52.50	11.84	9.16	0.00
55.00	11.84	9.16	0.00
57.50	11.84	9.16	0.00
60.00	11.84	9.16	0.00
62.50	11.84	9.16	0.00
65.00	11.84	9.16	0.00
67.50	11.84	9.16	0.00
70.00	11.84	9.16	0.00
72.50	11.84	9.16	0.00
75.00	11.84	9.16	0.00
77.50	11.84	9.16	0.00
80.00	11.84	9.16	0.00
82.50	11.84	9.16	0.00
85.00	11.84	9.16	0.00
87.50	11.84	9.16	0.00
90.00	11.84	9.16	0.00
92.50	11.84	9.16	0.00
95.00	11.84	9.16	0.00
97.50	11.84	9.16	0.00
100.00	11.84	9.16	0.00
102.50	11.84	9.16	0.00
105.00	11.84	9.16	0.00
107.50	11.84	9.16	0.00
110.00	11.84	9.16	0.00
112.50	11.84	9.16	0.00
115.00	11.84	9.16	0.00
117.50	11.84	9.16	0.00
120.00	11.84	9.16	0.00

Summary for Subcatchment PR3.0 PRO: Building

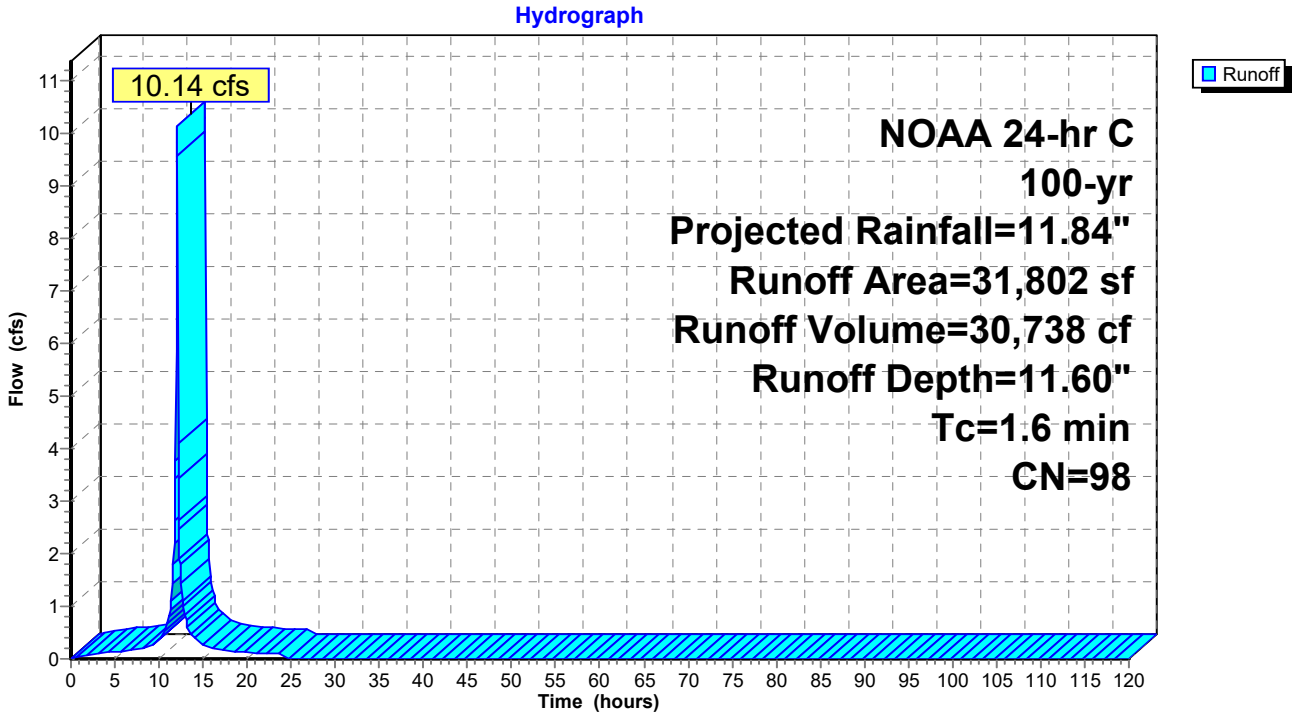
Runoff = 10.14 cfs @ 12.07 hrs, Volume= 30,738 cf, Depth=11.60"
Routed to Pond BMP 1 : BMP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 100-yr, Projected Rainfall=11.84"

Area (sf)	CN	Description
31,802	98	Roofs, HSG C
31,802		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6					**Direct Entry,**

Subcatchment PR3.0 PRO: Building



Hydrograph for Subcatchment PR3.0 PRO: Building

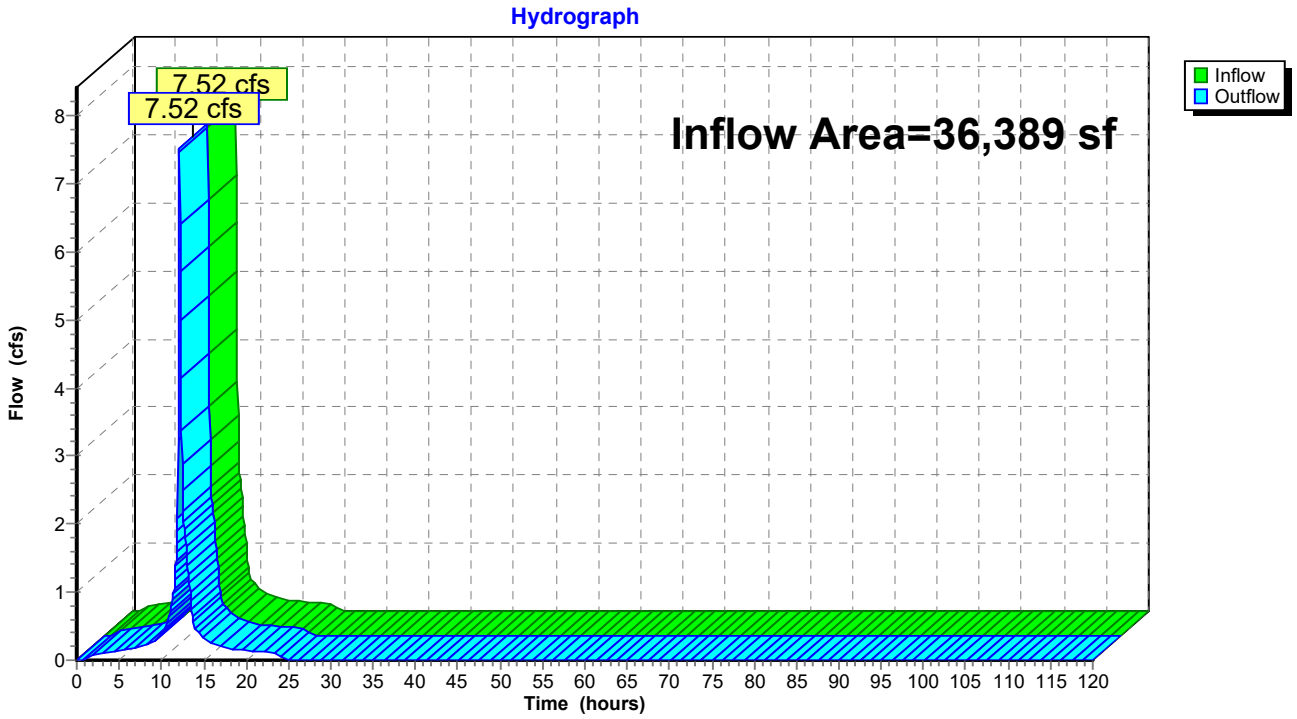
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.34	0.18	0.09
5.00	0.75	0.55	0.13
7.50	1.28	1.06	0.19
10.00	2.16	1.93	**0.37**
12.50	8.34	8.10	**1.70**
15.00	10.11	9.87	0.26
17.50	10.80	10.56	0.16
20.00	11.26	11.02	0.12
22.50	**11.64**	**11.40**	0.10
25.00	**11.84**	**11.60**	0.00
27.50	11.84	11.60	0.00
30.00	11.84	11.60	0.00
32.50	11.84	11.60	0.00
35.00	11.84	11.60	0.00
37.50	11.84	11.60	0.00
40.00	11.84	11.60	0.00
42.50	11.84	11.60	0.00
45.00	11.84	11.60	0.00
47.50	11.84	11.60	0.00
50.00	11.84	11.60	0.00
52.50	11.84	11.60	0.00
55.00	11.84	11.60	0.00
57.50	11.84	11.60	0.00
60.00	11.84	11.60	0.00
62.50	11.84	11.60	0.00
65.00	11.84	11.60	0.00
67.50	11.84	11.60	0.00
70.00	11.84	11.60	0.00
72.50	11.84	11.60	0.00
75.00	11.84	11.60	0.00
77.50	11.84	11.60	0.00
80.00	11.84	11.60	0.00
82.50	11.84	11.60	0.00
85.00	11.84	11.60	0.00
87.50	11.84	11.60	0.00
90.00	11.84	11.60	0.00
92.50	11.84	11.60	0.00
95.00	11.84	11.60	0.00
97.50	11.84	11.60	0.00
100.00	11.84	11.60	0.00
102.50	11.84	11.60	0.00
105.00	11.84	11.60	0.00
107.50	11.84	11.60	0.00
110.00	11.84	11.60	0.00
112.50	11.84	11.60	0.00
115.00	11.84	11.60	0.00
117.50	11.84	11.60	0.00
120.00	11.84	11.60	0.00

Summary for Reach PR1 END: POI-1 for PRDA-1 (current)

Inflow Area = 36,389 sf, 99.53% Impervious, Inflow Depth = 11.59" for 100-yr, Projected event
Inflow = 7.52 cfs @ 12.14 hrs, Volume= 35,137 cf
Outflow = 7.52 cfs @ 12.14 hrs, Volume= 35,137 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach PR1 END: POI-1 for PRDA-1 (current)



Hydrograph for Reach PR1 END: POI-1 for PRDA-1 (current)

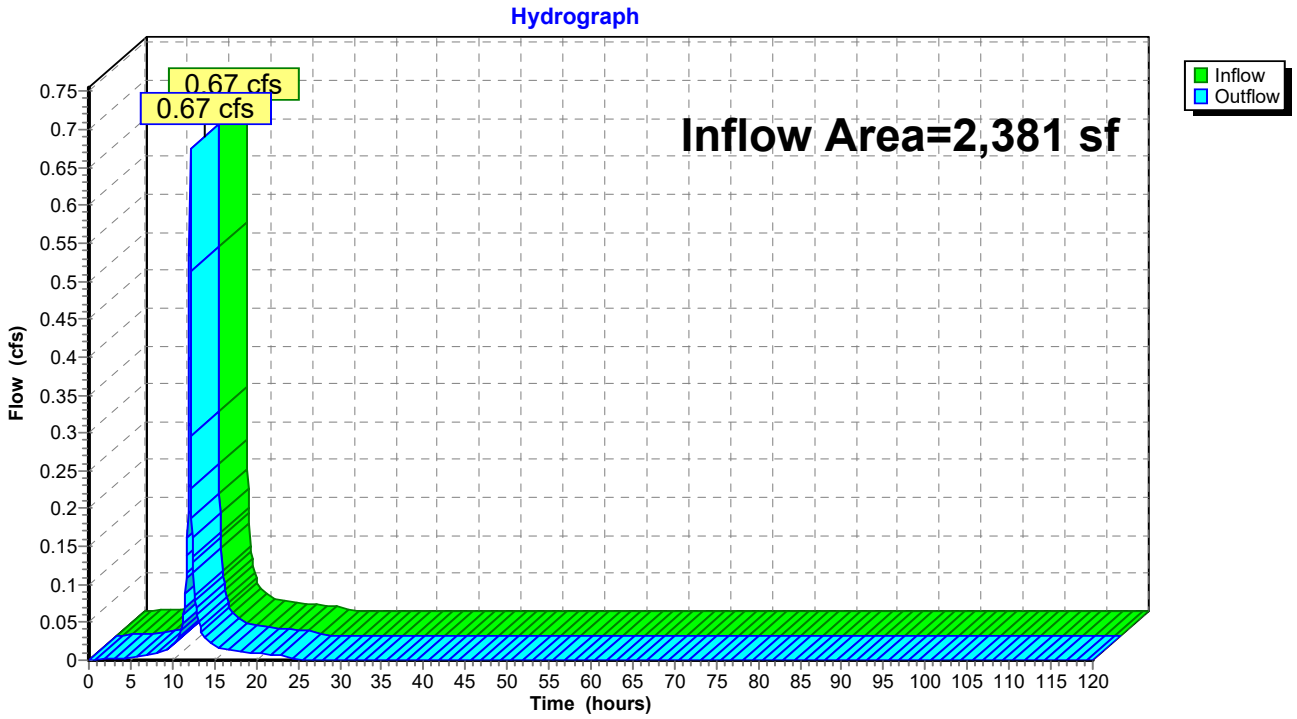
Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00
2.50	0.10		0.10
5.00	0.14		0.14
7.50	0.21		0.21
10.00	**0.41**		**0.41**
12.50	**2.49**		**2.49**
15.00	0.32		0.32
17.50	0.19		0.19
20.00	0.14		0.14
22.50	0.12		0.12
25.00	0.01		0.01
27.50	0.00		0.00
30.00	0.00		0.00
32.50	0.00		0.00
35.00	0.00		0.00
37.50	0.00		0.00
40.00	0.00		0.00
42.50	0.00		0.00
45.00	0.00		0.00
47.50	0.00		0.00
50.00	0.00		0.00
52.50	0.00		0.00
55.00	0.00		0.00
57.50	0.00		0.00
60.00	0.00		0.00
62.50	0.00		0.00
65.00	0.00		0.00
67.50	0.00		0.00
70.00	0.00		0.00
72.50	0.00		0.00
75.00	0.00		0.00
77.50	0.00		0.00
80.00	0.00		0.00
82.50	0.00		0.00
85.00	0.00		0.00
87.50	0.00		0.00
90.00	0.00		0.00
92.50	0.00		0.00
95.00	0.00		0.00
97.50	0.00		0.00
100.00	0.00		0.00
102.50	0.00		0.00
105.00	0.00		0.00
107.50	0.00		0.00
110.00	0.00		0.00
112.50	0.00		0.00
115.00	0.00		0.00
117.50	0.00		0.00
120.00	0.00		0.00

Summary for Reach PR2 PRO: POI-2 for PRDA-2 (current)

Inflow Area = 2,381 sf, 29.23% Impervious, Inflow Depth = 9.87" for 100-yr, Projected event
Inflow = 0.67 cfs @ 12.10 hrs, Volume= 1,958 cf
Outflow = 0.67 cfs @ 12.10 hrs, Volume= 1,958 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach PR2 PRO: POI-2 for PRDA-2 (current)



Hydrograph for Reach PR2 PRO: POI-2 for PRDA-2 (current)

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00
2.50	0.00		0.00
5.00	0.00		0.00
7.50	0.01		0.01
10.00	**0.02**		**0.02**
12.50	**0.13**		**0.13**
15.00	0.02		0.02
17.50	0.01		0.01
20.00	0.01		0.01
22.50	0.01		0.01
25.00	0.00		0.00
27.50	0.00		0.00
30.00	0.00		0.00
32.50	0.00		0.00
35.00	0.00		0.00
37.50	0.00		0.00
40.00	0.00		0.00
42.50	0.00		0.00
45.00	0.00		0.00
47.50	0.00		0.00
50.00	0.00		0.00
52.50	0.00		0.00
55.00	0.00		0.00
57.50	0.00		0.00
60.00	0.00		0.00
62.50	0.00		0.00
65.00	0.00		0.00
67.50	0.00		0.00
70.00	0.00		0.00
72.50	0.00		0.00
75.00	0.00		0.00
77.50	0.00		0.00
80.00	0.00		0.00
82.50	0.00		0.00
85.00	0.00		0.00
87.50	0.00		0.00
90.00	0.00		0.00
92.50	0.00		0.00
95.00	0.00		0.00
97.50	0.00		0.00
100.00	0.00		0.00
102.50	0.00		0.00
105.00	0.00		0.00
107.50	0.00		0.00
110.00	0.00		0.00
112.50	0.00		0.00
115.00	0.00		0.00
117.50	0.00		0.00
120.00	0.00		0.00

Summary for Pond BMP 1: BMP-1

Inflow Area = 35,521 sf, 99.85% Impervious, Inflow Depth = 11.59" for 100-yr, Projected event
Inflow = 11.33 cfs @ 12.07 hrs, Volume= 34,322 cf
Outflow = 7.39 cfs @ 12.14 hrs, Volume= 34,322 cf, Atten= 35%, Lag= 4.1 min
Primary = 7.39 cfs @ 12.14 hrs, Volume= 34,322 cf
Routed to Reach PR1 END : POI-1 for PRDA-1 (current)

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 19.71' @ 12.13 hrs Surf.Area= 766 sf Storage= 5,140 cf

Plug-Flow detention time= 15.8 min calculated for 34,308 cf (100% of inflow)
Center-of-Mass det. time= 15.9 min (749.2 - 733.3)

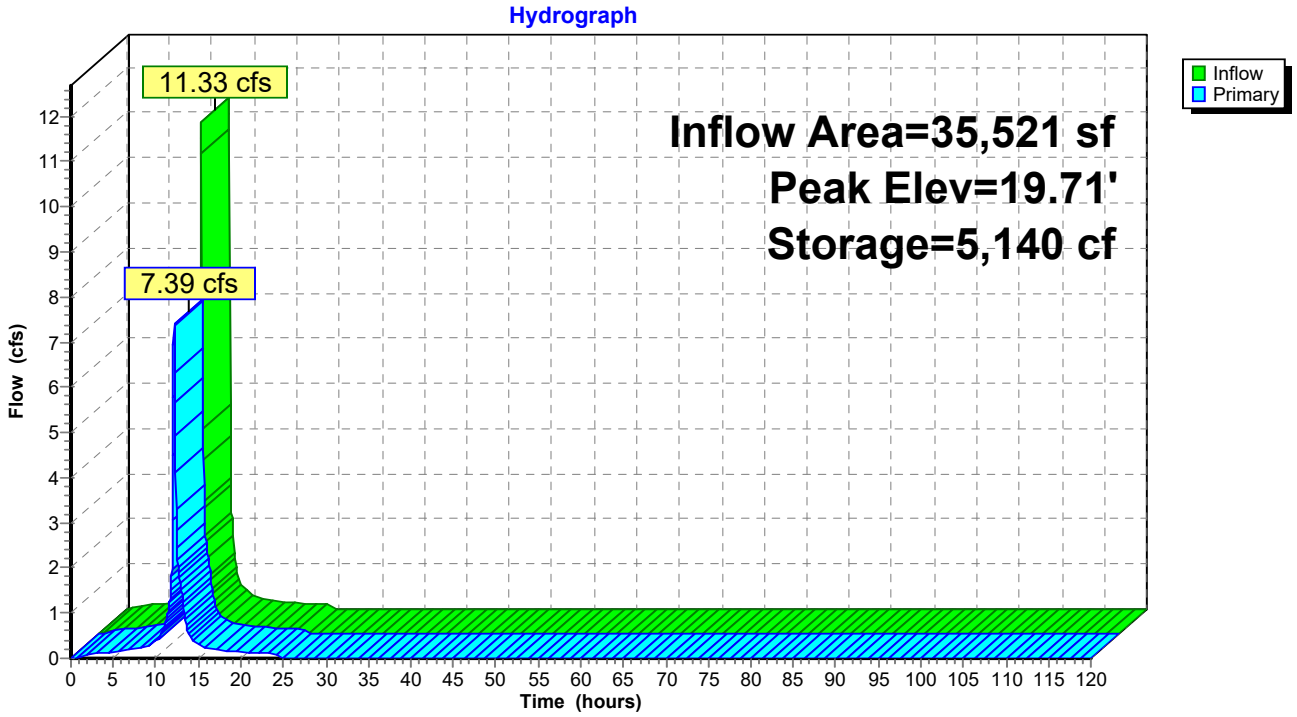
Volume	Invert	Avail.Storage	Storage Description
#1	13.00'	6,128 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.00	766	0	0
14.00	766	766	766
15.00	766	766	1,532
16.00	766	766	2,298
17.00	766	766	3,064
18.00	766	766	3,830
19.00	766	766	4,596
20.00	766	766	5,362
21.00	766	766	6,128

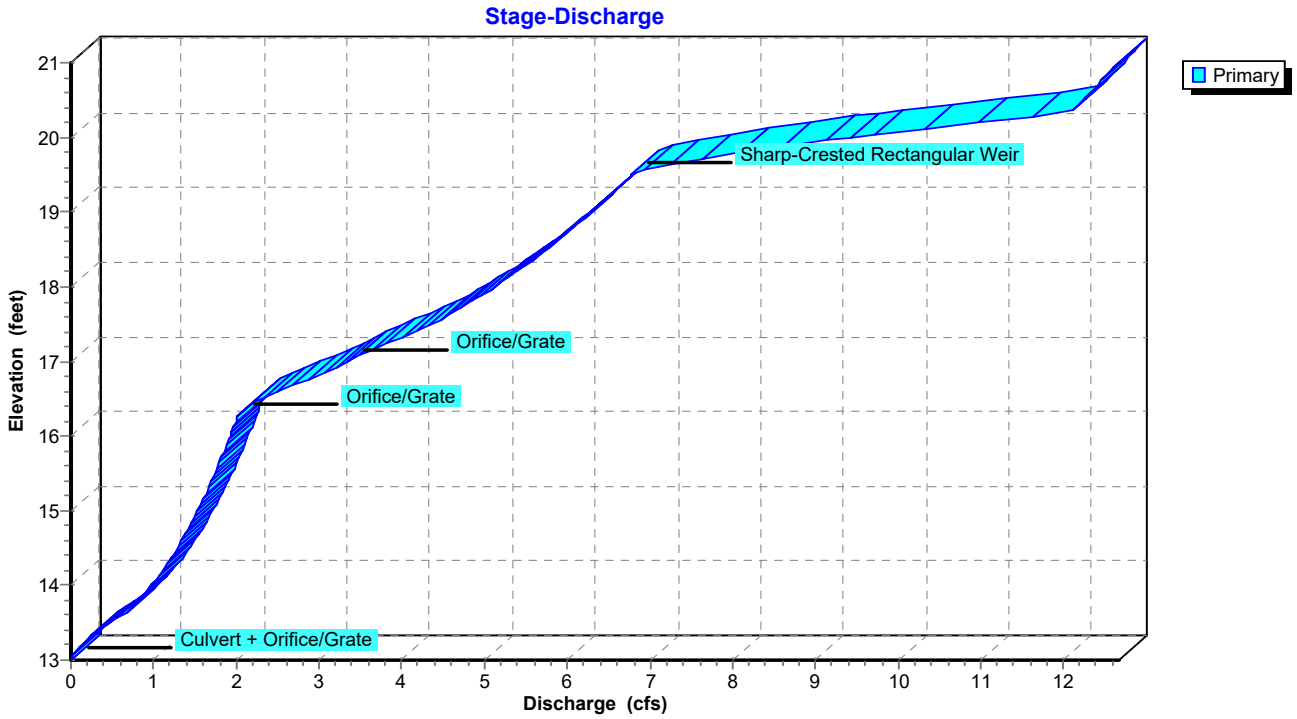
Device	Routing	Invert	Outlet Devices
#1	Primary	13.00'	**15.0" Round Culvert** L= 40.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.00' / 11.80' S= 0.0300 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.23 sf
#2	Device 1	13.00'	**5.0" W x 7.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	16.25'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	17.00'	**5.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Device 1	19.50'	**2.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=7.25 cfs @ 12.14 hrs HW=19.64' (Free Discharge)
└**1=Culvert** (Passes 7.25 cfs of 11.44 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 2.95 cfs @ 12.13 fps)
  ├**3=Orifice/Grate** (Orifice Controls 2.94 cfs @ 8.42 fps)
  ├**4=Orifice/Grate** (Orifice Controls 1.02 cfs @ 7.51 fps)
  └**5=Sharp-Crested Rectangular Weir** (Weir Controls 0.34 cfs @ 1.23 fps)

Pond BMP 1: BMP-1



Pond BMP 1: BMP-1



Hydrograph for Pond BMP 1: BMP-1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	13.00	0.00
2.50	0.10	132	13.17	0.10
5.00	0.14	166	13.22	0.14
7.50	0.21	217	13.28	0.20
10.00	**0.42**	**339**	**13.44**	**0.40**
12.50	**1.90**	**2,738**	**16.57**	**2.45**
15.00	0.29	287	13.38	0.31
17.50	0.18	205	13.27	0.19
20.00	0.14	169	13.22	0.14
22.50	0.11	149	13.19	0.12
25.00	0.00	26	13.03	0.01
27.50	0.00	1	13.00	0.00
30.00	0.00	0	13.00	0.00
32.50	0.00	0	13.00	0.00
35.00	0.00	0	13.00	0.00
37.50	0.00	0	13.00	0.00
40.00	0.00	0	13.00	0.00
42.50	0.00	0	13.00	0.00
45.00	0.00	0	13.00	0.00
47.50	0.00	0	13.00	0.00
50.00	0.00	0	13.00	0.00
52.50	0.00	0	13.00	0.00
55.00	0.00	0	13.00	0.00
57.50	0.00	0	13.00	0.00
60.00	0.00	0	13.00	0.00
62.50	0.00	0	13.00	0.00
65.00	0.00	0	13.00	0.00
67.50	0.00	0	13.00	0.00
70.00	0.00	0	13.00	0.00
72.50	0.00	0	13.00	0.00
75.00	0.00	0	13.00	0.00
77.50	0.00	0	13.00	0.00
80.00	0.00	0	13.00	0.00
82.50	0.00	0	13.00	0.00
85.00	0.00	0	13.00	0.00
87.50	0.00	0	13.00	0.00
90.00	0.00	0	13.00	0.00
92.50	0.00	0	13.00	0.00
95.00	0.00	0	13.00	0.00
97.50	0.00	0	13.00	0.00
100.00	0.00	0	13.00	0.00
102.50	0.00	0	13.00	0.00
105.00	0.00	0	13.00	0.00
107.50	0.00	0	13.00	0.00
110.00	0.00	0	13.00	0.00
112.50	0.00	0	13.00	0.00
115.00	0.00	0	13.00	0.00
117.50	0.00	0	13.00	0.00
120.00	0.00	0	13.00	0.00

Stage-Area-Storage for Pond BMP 1: BMP-1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
13.00	**766**	0
13.10	766	77
13.20	766	153
13.30	766	230
13.40	766	306
13.50	766	383
13.60	766	460
13.70	766	536
13.80	766	613
13.90	766	689
14.00	766	766
14.10	766	843
14.20	766	919
14.30	766	996
14.40	766	1,072
14.50	766	1,149
14.60	766	1,226
14.70	766	1,302
14.80	766	1,379
14.90	766	1,455
15.00	766	1,532
15.10	766	1,609
15.20	766	1,685
15.30	766	1,762
15.40	766	1,838
15.50	766	1,915
15.60	766	1,992
15.70	766	2,068
15.80	766	2,145
15.90	766	2,221
16.00	766	2,298
16.10	766	2,375
16.20	766	2,451
16.30	766	2,528
16.40	766	2,604
16.50	766	2,681
16.60	766	2,758
16.70	766	2,834
16.80	766	2,911
16.90	766	2,987
17.00	766	3,064
17.10	766	3,141
17.20	766	3,217
17.30	766	3,294
17.40	766	3,370
17.50	766	3,447
17.60	766	3,524
17.70	766	3,600
17.80	766	3,677
17.90	766	3,753
18.00	766	3,830
18.10	766	3,907
18.20	766	3,983
18.30	766	4,060
18.40	766	4,136
18.50	766	4,213
18.60	766	4,290
18.70	766	4,366
18.80	766	4,443
18.90	766	4,519
19.00	766	4,596
19.10	766	4,673
19.20	766	4,749
19.30	766	4,826
19.40	766	4,902
19.50	766	4,979
19.60	766	5,056
19.70	766	5,132
19.80	766	5,209
19.90	766	5,285
20.00	766	5,362
20.10	766	5,439
20.20	766	5,515
20.30	766	5,592
20.40	766	5,668
20.50	766	5,745
20.60	766	5,822
20.70	766	5,898
20.80	766	5,975
20.90	766	6,051
21.00	766	**6,128**

Appendix D
Time of Concentration Calculations

Time of Concentration (T_c) or Travel Time (T_t)
EXISTING DRAINAGE AREA

Project: Cooper Master Benson Pavilion | By: MCM | Date: 3/20/2024
Location: Camden, NJ | Checked: | Date:
Circle One: (Present) During Developed — **Pre-Developed Benson Pavilion**
Circle One: (T_c) T_t through subarea

NOTES: Space for as many as three segments per flow type can be used for each worksheet.
Include a map, schematic, or description of flow segments.

POA 1 (impervious)

Sheet Flow (Applicable to T_c only)	Segment ID	CURRENT RAINFALL				FUTURE RAINFALL			
1. Surface Description (Table 3-1 of TR-55)		AB				AB			
		PAVED				PAVED			
2. Manning's Roughness Coeff., n (Table 3-1 of TR-55)		0.011				0.011			
3. Flow Length, L (total L≤ 150 ft)	ft	72				72			
4. Two-yr 24-hr Rainfall, P_2	in	3.41				3.91			
5. Land Slope, s	ft/ft	0.042				0.042			
6. $Tt = (0.007\ (nL)^{0.8}) / (P_2^{0.5}\ s^{0.4})$ Compute T_t	hr	0.011			= 0.011	0.010			= 0.010

Channel or Pipe Flow	Segment ID	CURRENT RAINFALL					FUTURE RAINFALL				
		PIPE					PIPE				
		BC	CD	DE			BC	CD	DE		
12. Cross Sectional Flow Area, A	ft^2	0.79	1.23	7.07			0.79	1.23	7.07		
13. Wetted Perimeter, P_w	ft	3.14	3.93	9.42			3.14	3.93	9.42		
14. Hydraulic Radius, R = A / P_w Compute R	ft	0.250	0.313	0.750			0.250	0.313	0.750		
15. Channel Slope, s	ft/ft	0.033	0.052	0.013			0.033	0.052	0.013		
16. Manning's Roughness Coeff., n		0.011	0.012	0.012			0.011	0.012	0.012		
17. $V = (1.486\ R^{0.67}\ s^{0.5}) / n$ Compute V	ft/sec	9.721	12.988	11.644			9.721	12.988	11.644		
18. Flow Length, L	ft	132	114	42			132	114	42		
19. $T_t = L / 3600V$ Compute T_t	hr	0.004	0.002	0.001	=	0.007	0.004	0.002	0.001	=	0.007
20. Watershed or Subarea T_c or T_t (add T_t in steps 6, 11, and 19)	hr					0.018					0.018
	min					**1.1**					**1.1**

POA 1 (pervious)

Sheet Flow (Applicable to T_c only)	Segment ID	CURRENT RAINFALL				FUTURE RAINFALL			
1. Surface Description (Table 3-1 of TR-55)		AB	BC			AB	BC		
		UNPAVED	PAVED			UNPAVED	PAVED		
2. Manning's Roughness Coeff., n (Table 3-1 of TR-55)		0.015	0.011			0.015	0.011		
3. Flow Length, L (total L≤ 150 ft)	ft	40	56			40	56		
4. Two-yr 24-hr Rainfall, P_2	in	3.41	3.41			3.91	3.91		
5. Land Slope, s	ft/ft	0.010	0.015			0.010	0.015		
6. $Tt = (0.007\ (nL)^{0.8}) / (P_2^{0.5}\ s^{0.4})$ Compute T_t	hr	0.016	0.014		= 0.030	0.015	0.013		= 0.028

Channel or Pipe Flow	Segment ID	CURRENT RAINFALL					FUTURE RAINFALL				
		PIPE					PIPE				
		CD	DE	EF			CD	DE	EF		
12. Cross Sectional Flow Area, A	ft^2	0.79	1.23	7.07			0.79	1.23	7.07		
13. Wetted Perimeter, P_w	ft	3.14	3.93	9.42			3.14	3.93	9.42		
14. Hydraulic Radius, R = A / P_w Compute R	ft	0.250	0.313	0.750			0.250	0.313	0.750		
15. Channel Slope, s	ft/ft	0.010	0.052	0.013			0.010	0.052	0.013		
16. Manning's Roughness Coeff., n		0.011	0.012	0.012			0.011	0.012	0.012		
17. $V = (1.486\ R^{0.67}\ s^{0.5}) / n$ Compute V	ft/sec	5.336	12.988	11.644			5.336	12.988	11.644		
18. Flow Length, L	ft	82	114	42			82	114	42		
19. $T_t = L / 3600V$ Compute T_t	hr	0.004	0.002	0.001	=	0.008	0.004	0.002	0.001	=	0.008
20. Watershed or Subarea T_c or T_t (add T_t in steps 6, 11, and 19)	hr					0.037					0.035
	min					**2.2**					**2.1**

POA 1 (building)

Sheet Flow (Applicable to T_c only)	Segment ID	CURRENT RAINFALL				FUTURE RAINFALL			
1. Surface Description (Table 3-1 of TR-55)		AB				AB			
		roof				roof			
2. Manning's Roughness Coeff., n (Table 3-1 of TR-55)		0.011				0.011			
3. Flow Length, L (total L≤ 150 ft)	ft	67				67			
4. Two-yr 24-hr Rainfall, P_2	in	3.41				3.91			
5. Land Slope, s	ft/ft	0.010				0.01			
6. $Tt = (0.007\ (nL)^{0.8}) / (P_2^{0.5}\ s^{0.4})$ Compute T_t	hr	0.019			= 0.019	0.019			= 0.019

Channel or Pipe Flow	Segment ID	CURRENT RAINFALL						FUTURE RAINFALL					
		PIPE						PIPE					
		BC	CD	EF	FG			BC	CD	EF	FG		
12. Cross Sectional Flow Area, A	ft^2	1.23	0.20	0.79	176.71			1.23	0.20	0.79	176.71		
13. Wetted Perimeter, P_w	ft	1.57	3.14	3.93	18.00			1.57	3.14	3.93	18.00		
14. Hydraulic Radius, R = A / P_w Compute R	ft	0.781	0.063	0.200	9.817			0.781	0.063	0.200	9.817		
15. Channel Slope, s	ft/ft	0.010	0.010	0.013	0.013			0.010	0.010	0.013	0.013		
16. Manning's Roughness Coeff., n		0.012	0.012	0.012	0.012			0.012	0.012	0.012	0.012		
17. $V = (1.486\ R^{0.67}\ s^{0.5}) / n$ Compute V	ft/sec	10.496	1.932	4.803	65.230			10.496	1.932	4.803	65.230		
18. Flow Length, L	ft	28	82	114	42			28	82	114	42		
19. $T_t = L / 3600V$ Compute T_t	hr	0.001	0.012	0.007	0.000	=	0.019	0.001	0.012	0.007	0.000	=	0.019
20. Watershed or Subarea T_c or T_t (add T_t in steps 6, 11, and 19)	hr						0.038						0.038
	min						**2.3**						**2.3**

Time of Concentration (T_c) or Travel Time (T_t)
EXISTING DRAINAGE AREA

Project: Cooper Master Benson Pavilion | By: MCM | Date: 3/20/2024
Location: Camden, NJ | Checked: | Date:
Circle One: (Present) During Developed — **Pre-Developed Benson Pavilion**
Circle One: (T_c) T_t through subarea

NOTES: Space for as many as three segments per flow type can be used for each worksheet.
Include a map, schematic, or description of flow segments.

POA 2 (Impervious)

		CURRENT RAINFALL				FUTURE RAINFALL			
Sheet Flow (Applicable to T_c only)	Segment ID	AB				AB			
1. Surface Description (Table 3-1 of TR-55)		PAVED				PAVED			
2. Manning's Roughness Coeff., n (Table 3-1 of TR-55)		0.011				0.011			
3. Flow Length, L (total L≤ 150 ft)	ft	100				100			
4. Two-yr 24-hr Rainfall, P_2	in	3.41				3.91			
5. Land Slope, s	ft/ft	0.004				0.004			
6. $Tt = (0.007\ (nL)^{0.8}) / (P_2^{0.5}\ s^{0.4})$ Compute T_t	hr	0.037			= 0.037	0.035			= 0.035
Shallow Concentrated Flow	Segment ID	BC				BC			
7. Surface Description (Paved or Unpaved)		PAVED				PAVED			
8. Flow Length, L	ft	170				170			
9. Watercourse Slope, s	ft/ft	0.004				0.004			
10. Average Velocity, V (Figure 3-1 of TR-55)	ft/sec	1.29				1.29			
11. $T_t = L / 3600V$ Compute T_t	hr	0.037			= 0.037	0.037			= 0.037
20. Watershed or Subarea T_c or T_t (add T_t in steps 6, 11, and 19)	hr				0.074				0.072
	min				**4.4**				**4.3**

POA 2 (pervious)

		CURRENT RAINFALL				FUTURE RAINFALL			
Sheet Flow (Applicable to T_c only)	Segment ID	AB	BC			AB	BC		
1. Surface Description (Table 3-1 of TR-55)		UNPAVED	PAVED			PUNPAVED	PAVED		
2. Manning's Roughness Coeff., n (Table 3-1 of TR-55)		0.015	0.011			0.015	0.011		
3. Flow Length, L (total L≤ 150 ft)	ft	2	98			2	98		
4. Two-yr 24-hr Rainfall, P_2	in	3.41	3.41			3.91	3.91		
5. Land Slope, s	ft/ft	0.004	0.004			0.004	0.004		
6. $Tt = (0.007\ (nL)^{0.8}) / (P_2^{0.5}\ s^{0.4})$ Compute T_t	hr	0.002	0.037		= 0.039	0.002	0.034		= 0.036
Shallow Concentrated Flow	Segment ID	CD				CD			
7. Surface Description (Paved or Unpaved)		PAVED				PAVED			
8. Flow Length, L	ft	158				158			
9. Watercourse Slope, s	ft/ft	0.004				0.004			
10. Average Velocity, V (Figure 3-1 of TR-55)	ft/sec	1.29				1.29			
11. $T_t = L / 3600V$ Compute T_t	hr	0.034			= 0.034	0.034			= 0.034
20. Watershed or Subarea T_c or T_t (add T_t in steps 6, 11, and 19)	hr				0.073				0.070
	min				**4.4**				**4.2**

Time of Concentration (T_c) or Travel Time (T_t)
PROPOSED DRAINAGE AREA

Project: Cooper Master Plan - Phase I | By: MXK | Date: 7/2/2024
Location: Camden, NJ | Checked: KJM | Date:
Circle One: Present During (Developed)
Circle One: (T_c) T_t through subarea
Post-Developed Benson Pavilion

NOTES: Space for as many as three segments per flow type can be used for each worksheet.
Include a map, schematic, or description of flow segments.

POA1 (impervious)

Sheet Flow (Applicable to T_c only)	Segment ID	CURRENT RAINFALL					FUTURE RAINFALL				
1. Surface Description (Table 3-1 of TR-55)		AB					AB				
2. Manning's Roughness Coeff., n (Table 3-1 of TR-55)		PAVED					PAVED				
3. Flow Length, L (total L ≤ 150 ft)	ft	0.011					0.011				
4. Two-yr 24-hr Rainfall, P_2	in	94					94				
5. Land Slope, s	ft/ft	3.41					3.91				
6. $Tt = (0.007\ (nL)^{0.8}) / (P_2^{0.5}\ s^{0.4})$ Compute T_t	hr	0.019				= 0.019	0.019				= 0.018
		PIPE					PIPE				
Channel or Pipe Flow	Segment ID	BC					BC				
12. Cross Sectional Flow Area, A	ft^2	0.35					0.35				
13. Wetted Perimeter, P_w	ft	2.09					2.09				
14. Hydraulic Radius, R = A / P_w Compute R	ft	0.167					0.167				
15. Channel Slope, s	ft/ft	0.006					0.006				
16. Manning's Roughness Coeff., n		0.012					0.012				
17. $V = (1.486\ R^{0.67}\ s^{0.5}) / n$ Compute V	ft/sec	2.888					2.888				
18. Flow Length, L	ft	21					21				
19. $T_t = L / 3600V$ Compute T_t	hr	0.002				= 0.002	0.002				= 0.002
20. Watershed or Subarea T_c or T_t (add T_t in steps 6, 11, and 19)	hr					0.021					0.020
	min					**1.3**					**1.2**

POA1 (pervious)

Sheet Flow (Applicable to T_c only)	Segment ID	CURRENT RAINFALL					FUTURE RAINFALL				
1. Surface Description (Table 3-1 of TR-55)		AB	BC				AB	BC			
2. Manning's Roughness Coeff., n (Table 3-1 of TR-55)		UNPAVED	PAVED				UNPAVED	PAVED			
3. Flow Length, L (total L ≤ 150 ft)	ft	0.015	0.011				0.015	0.011			
4. Two-yr 24-hr Rainfall, P_2	in	2	52				2	52			
5. Land Slope, s	ft/ft	3.41	3.41				3.91	3.91			
6. $Tt = (0.007\ (nL)^{0.8}) / (P_2^{0.5}\ s^{0.4})$ Compute T_t	hr	0.030	0.030				0.030	0.030			
		0.001	0.010			= 0.011	0.001	0.009			= 0.010
		PIPE					PIPE				
Channel or Pipe Flow	Segment ID	CD					CD				
12. Cross Sectional Flow Area, A	ft^2	0.09					0.09				
13. Wetted Perimeter, P_w	ft	1.05					1.05				
14. Hydraulic Radius, R = A / P_w Compute R	ft	0.083					0.083				
15. Channel Slope, s	ft/ft	0.010					0.010				
16. Manning's Roughness Coeff., n		0.012					0.012				
17. $V = (1.486\ R^{0.67}\ s^{0.5}) / n$ Compute V	ft/sec	2.343					2.343				
18. Flow Length, L	ft	21					21				
19. $T_t = L / 3600V$ Compute T_t	hr	0.002				= 0.002	0.002				= 0.002
20. Watershed or Subarea T_c or T_t (add T_t in steps 6, 11, and 19)	hr					0.013					0.013
	min					**0.8**					**0.8**

POA1 (building)

Sheet Flow (Applicable to T_c only)	Segment ID	CURRENT RAINFALL					FUTURE RAINFALL				
1. Surface Description (Table 3-1 of TR-55)		AB					AB				
2. Manning's Roughness Coeff., n (Table 3-1 of TR-55)		ROO					ROO				
3. Flow Length, L (total L ≤ 150 ft)	ft	0.011					0.011				
4. Two-yr 24-hr Rainfall, P_2	in	75					75				
5. Land Slope, s	ft/ft	3.41					3.91				
6. $Tt = (0.007\ (nL)^{0.8}) / (P_2^{0.5}\ s^{0.4})$ Compute T_t	hr	0.050					0.050				
		0.011				= 0.011	0.010				= 0.010
		PIPE					PIPE				
Channel or Pipe Flow	Segment ID	BC					BC				
12. Cross Sectional Flow Area, A	ft^2	0.55					0.55				
13. Wetted Perimeter, P_w	ft	2.62					2.62				
14. Hydraulic Radius, R = A / P_w Compute R	ft	0.208					0.208				
15. Channel Slope, s	ft/ft	0.010					0.010				
16. Manning's Roughness Coeff., n		0.012					0.012				
17. $V = (1.486\ R^{0.67}\ s^{0.5}) / n$ Compute V	ft/sec	4.329					4.329				
18. Flow Length, L	ft	264					264				
19. $T_t = L / 3600V$ Compute T_t	hr	0.017				= 0.017	0.017				= 0.017
20. Watershed or Subarea T_c or T_t (add T_t in steps 6, 11, and 19)	hr					0.028					0.027
	min					**1.7**					**1.6**

Time of Concentration (T_c) or Travel Time (T_t)
PROPOSED DRAINAGE AREA

Project: Cooper Master Plan - Phase I | By: MXK | Date: 7/2/2024
Location: Camden, NJ | Checked: KJM | Date:
Circle One: Present During (Developed)
Circle One: (T_c) T_t through subarea
Post-Developed Benson Pavilion

NOTES: Space for as many as three segments per flow type can be used for each worksheet.
Include a map, schematic, or description of flow segments.

POA2 (impervious)

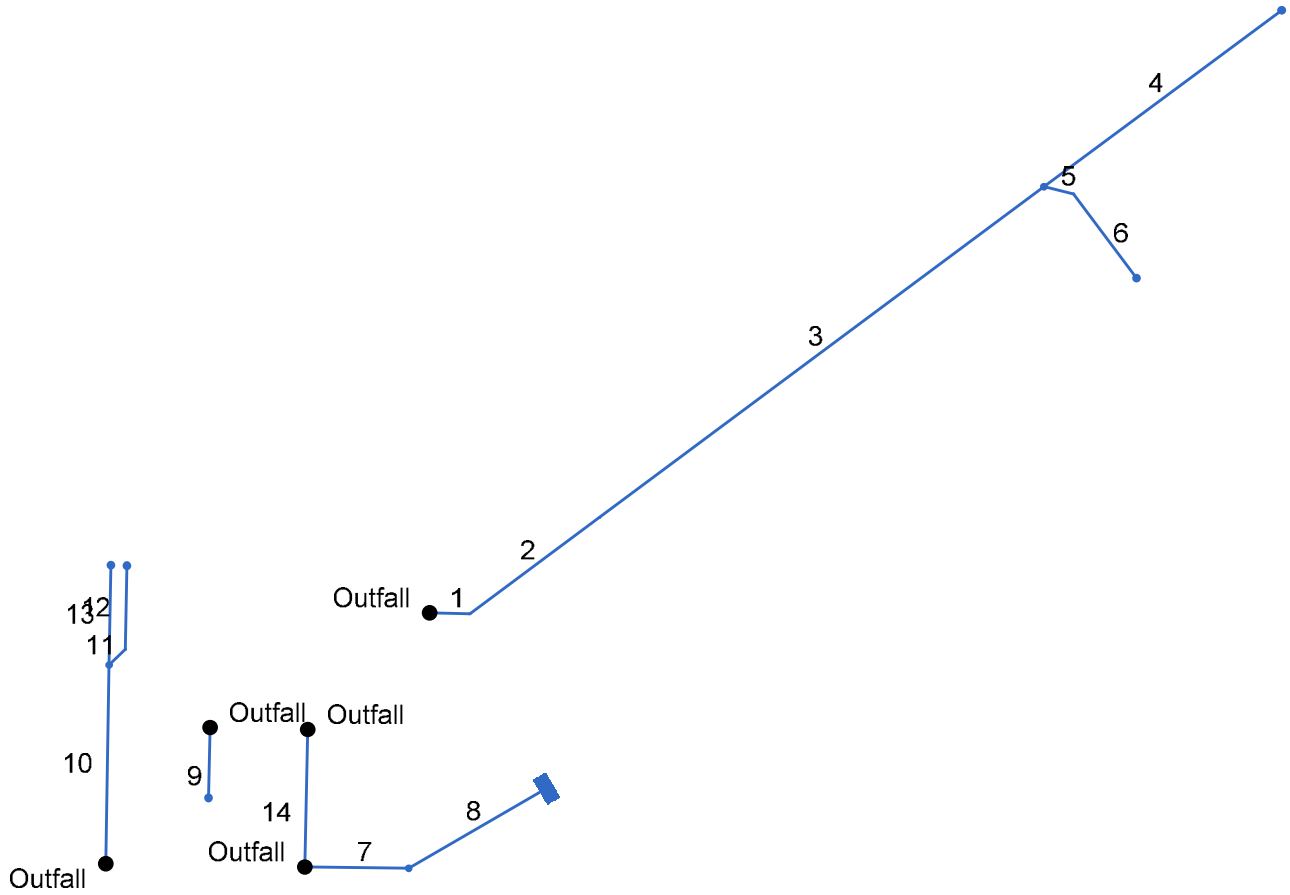
		CURRENT RAINFALL					FUTURE RAINFALL				
Sheet Flow (Applicable to T_c only)	Segment ID	AB					AB				
1. Surface Description (Table 3-1 of TR-55)		PAVED					PAVED				
2. Manning's Roughness Coeff., n (Table 3-1 of TR-55)		0.011					0.011				
3. Flow Length, L (total L ≤ 150 ft)	ft	100					100				
4. Two-yr 24-hr Rainfall, P_2	in	3.41					3.91				
5. Land Slope, s	ft/ft	0.019					0.019				
6. $Tt = (0.007\ (nL)^{0.8}) / (P_2^{0.5}\ s^{0.4})$ Compute T_t	hr	0.020				= 0.020	0.019				= 0.019
Shallow Concentrated Flow	Segment ID	BC					BC				
7. Surface Description (Paved or Unpaved)		PAVED					PAVED				
8. Flow Length, L	ft	196					196				
9. Watercourse Slope, s	ft/ft	0.012					0.012				
10. Average Velocity, V (Figure 3-1 of TR-55)	ft/sec	1.29					1.29				
11. $T_t = L / 3600V$ Compute T_t	hr	0.042				= 0.042	0.042				= 0.042
20. Watershed or Subarea T_c or T_t (add T_t in steps 6, 11, and 19)	hr					0.062					0.061
	min					3.7					3.7

POA2 (pervious)

		CURRENT RAINFALL					FUTURE RAINFALL				
Sheet Flow (Applicable to T_c only)	Segment ID	AB	BC				AB	BC			
1. Surface Description (Table 3-1 of TR-55)		UNPAVED	PAVED				UNPAVED	PAVED			
2. Manning's Roughness Coeff., n (Table 3-1 of TR-55)		0.015	0.011				0.015	0.011			
3. Flow Length, L (total L ≤ 150 ft)	ft	20	80				20	80			
4. Two-yr 24-hr Rainfall, P_2	in	3.41	3.41				3.91	3.91			
5. Land Slope, s	ft/ft	0.019	0.019				0.019	0.019			
6. $Tt = (0.007\ (nL)^{0.8}) / (P_2^{0.5}\ s^{0.4})$ Compute T_t	hr	0.007	0.017			= 0.024	0.007	0.016			= 0.022
Shallow Concentrated Flow	Segment ID	CD					CD				
7. Surface Description (Paved or Unpaved)		PAVED					PAVED				
8. Flow Length, L	ft	196					196				
9. Watercourse Slope, s	ft/ft	0.004					0.004				
10. Average Velocity, V (Figure 3-1 of TR-55)	ft/sec	1.29					1.29				
11. $T_t = L / 3600V$ Compute T_t	hr	0.042				= 0.042	0.042				= 0.042
20. Watershed or Subarea T_c or T_t (add T_t in steps 6, 11, and 19)	hr					0.066					0.065
	min					4.0					3.9

Appendix E
On-Site Stormwater Collection System Calculations

Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



Project File: 2026-10-6 - Benson Strm.stm	Number of lines: 14	Date: 10/6/2026

Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data								Line ID
	Dnstr Line No.	Line Length (ft)	Defl angle (deg)	Junc Type	Known Q (cfs)	Drng Area (ac)	Runoff Coeff (C)	Inlet Time (min)	Invert El Dn (ft)	Line Slope (%)	Invert El Up (ft)	Line Size (in)	Line Shape	N Value (n)	J-Loss Coeff (K)	Inlet/ Rim El (ft)	
1	End	5.693	1.246	None	0.00	0.00	0.00	0.0	13.95	4.04	14.18	12	Cir	0.011	0.67	15.34	PIPE-24
2	1	22.953	-37.999	None	0.00	0.00	0.00	0.0	14.18	4.05	15.11	12	Cir	0.011	0.15	16.27	PIPE-23
3	2	78.745	0.005	MH	0.00	0.00	0.00	1.2	15.11	4.05	18.30	12	Cir	0.011	0.81	24.85	PIPE-8 (1) (1)
4	3	42.077	0.060	MH	0.10	0.00	0.00	1.2	18.30	4.04	20.00	12	Cir	0.011	1.00	23.55	SLOT DRAIN OUT
5	3	4.318	50.598	None	0.00	0.00	0.00	0.0	18.30	0.93	18.34	8	Cir	0.011	0.68	19.09	PIPE-26
6	5	14.974	39.386	MH	0.17	0.00	0.00	0.0	18.34	1.00	18.49	8	Cir	0.011	1.00	21.16	TD-2 OUT
7	End	14.743	0.718	MH	0.00	0.00	0.00	0.0	16.80	1.97	17.09	12	Cir	0.013	0.57	22.13	PIPE-10 (1)
8	7	22.669	-30.915	Comb	0.01	0.00	0.00	0.0	17.10	1.99	17.55	12	Cir	0.013	1.00	21.84	CB-1 OUT
9	End	10.051	91.246	MH	0.34	0.00	0.00	1.2	15.20	2.98	15.50	8	Cir	0.011	1.00	22.66	TD-1 OUT
10	End	28.306	-89.028	MH	0.00	0.00	0.00	0.0	13.23	2.12	13.83	12	Cir	0.011	0.75	23.68	PIPE-19
11	10	3.199	45.000	None	0.00	0.00	0.00	0.0	13.83	2.19	13.90	8	Cir	0.011	0.75	12.80	PIPE-18
12	11	11.955	-45.000	MH	0.01	0.00	0.00	0.0	13.90	1.67	14.10	8	Cir	0.011	1.00	13.38	PIPE-17
13	10	14.228	0.000	MH	0.01	0.00	0.00	0.0	13.83	4.71	14.50	8	Cir	0.011	1.00	13.62	PIPE-6
14	End	19.608	91.225	None	0.01	0.00	0.00	0.0	12.70	1.53	13.00	12	Cir	0.011	1.00	0.00	PIPE-27

Project File: 2026-10-6 - Benson Strm.stm | Number of lines: 14 | Date: 10/6/2026

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	5.693	0.00	0.00	0.00	0.00	0.00	0.0	11.6	0.0	0.27	8.46	3.55	12	4.04	13.95	14.18	14.07	14.39	15.55	15.34	PIPE-24
2	1	22.953	0.00	0.00	0.00	0.00	0.00	0.0	10.5	0.0	0.27	8.47	2.20	12	4.05	14.18	15.11	14.39	15.32	15.34	16.27	PIPE-23
3	2	78.745	0.00	0.00	0.00	0.00	0.00	1.2	6.7	0.0	0.27	8.47	2.20	12	4.05	15.11	18.30	15.32	18.51	16.27	24.85	PIPE-8 (1) (1)
4	3	42.077	0.00	0.00	0.00	0.00	0.00	1.2	1.2	0.0	0.10	8.46	1.25	12	4.04	18.30	20.00	18.51	20.13	24.85	23.55	SLOT DRAIN OU
5	3	4.318	0.00	0.00	0.00	0.00	0.00	0.0	0.5	0.0	0.17	1.37	1.93	8	0.93	18.30	18.34	18.51	18.53	24.85	19.09	PIPE-26
6	5	14.974	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.17	1.43	2.09	8	1.00	18.34	18.49	18.53	18.68	19.09	21.16	TD-2 OUT
7	End	14.743	0.00	0.00	0.00	0.00	0.00	0.0	29.7	0.0	0.01	4.99	1.09	12	1.97	16.80	17.09	16.83	17.13	0.00	22.13	PIPE-10 (1)
8	7	22.669	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.01	5.02	1.09	12	1.99	17.10	17.55	17.13	17.59	22.13	21.84	CB-1 OUT
9	End	10.051	0.00	0.00	0.00	0.00	0.00	1.2	1.2	0.0	0.34	2.47	3.76	8	2.98	15.20	15.50	15.37	15.77	22.64	22.66	TD-1 OUT
10	End	28.306	0.00	0.00	0.00	0.00	0.00	0.0	8.8	0.0	0.02	6.13	1.45	12	2.12	13.23	13.83	13.27	13.89	21.90	23.68	PIPE-19
11	10	3.199	0.00	0.00	0.00	0.00	0.00	0.0	7.0	0.0	0.01	2.11	0.84	8	2.19	13.83	13.90	13.89	13.94	23.68	12.80	PIPE-18
12	11	11.955	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.01	1.85	0.99	8	1.67	13.90	14.10	13.94	14.14	12.80	13.38	PIPE-17
13	10	14.228	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.01	3.10	0.84	8	4.71	13.83	14.50	13.89	14.54	23.68	13.62	PIPE-6
14	End	19.608	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.01	5.21	1.11	12	1.53	12.70	13.00	12.73	13.04	0.00	0.00	PIPE-27

Project File: 2026-10-6 - Benson Strm.stm

Number of lines: 14

Run Date: 10/6/2026

NOTES:Known Qs only ; c = cir e = ellip b = box

Appendix F
City of Camden Stormwater Fee Calculation

APPENDIX XVIII

STORMWATER FEES

Stormwater Rate

The stormwater rate is imposed on each and every new, renovated, change in use, rehabilitated and/or rebuilt Single-Family Residential Developed Property, Other Residential Developed Property, Non-Residential Developed Property, and Vacant Property, other than Exempt Property, and the owner and non-owner users, and is hereby set as follows:

(a) The Equivalent Stormwater Unit (ESU) rate is **ten dollars and seventy-seven cents ($10.77).** The ESU measurement is 1,530 square feet of impervious area.

(b) The stormwater rate imposed on Single-Family Residential Developed Properties shall be categorized into three tiers based on the estimated amount of impervious area as follows:

High - Single-Family Residential Developed Property - greater than one thousand five hundred and seventy-eight (1,578) square feet of estimated impervious area. The ESU shall be 1.25 and the stormwater rate set at **thirteen dollars and forty-six cents ($13.46).**

Medium - Single-Family Residential Developed Property - equal to or greater than one thousand four hundred and eighty-five (1,485) square feet and less than or equal to one thousand five hundred and seventy-eight (1,578) square feet of estimated impervious area. The ESU shall be 1.00 and the stormwater rate set at **ten dollars and seventy-seven cents (10.77).**

Low - Single-Family Residential Developed Property - less than one thousand four hundred and eighty-five (1,485) square feet of estimated impervious area. The ESU shall be .75 and the stormwater rate set at **eight dollars and eight cents ($8.08).**

(c) Stormwater charges for all other properties will be based on the following calculation:

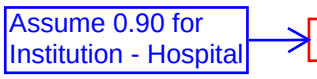
(Gross Lot Size in sq. ft. X Runoff Coefficient) / 1,530 sq. ft. = # of ESU

# of ESU X **$ 10.77** = Monthly Fee

((343,496 SF)x(0.90) / 1530 SF = 202.05 ESU
(202.05 ESU) x ($10.77) = $2,176.14

The runoff coefficient assumed for each land use category is shown below:

Land Use	Coefficient Applied
Bar-Restaurant - Entertainment	.75
Car Sales Lot	.95
Cemetery w/Monuments	.20
Central Business District	1.00
Common Area	.20
Garage or Misc. Res.	.55
Group Residence	.75
Ind. Warehouse-Factory	.90
Industrial Railway	.85
Institution-Sch.-Church	.90
Misc. Commercial	.90
Mixed Comm.-Res.-Apt.	.75
Multi-Family Apartment	.75
Multi-Family Residential	.40
Office	.91
Parks & Playgrounds	.20
Public Accommodations	.91
Retail	.91
Single Family Attached	.75
Single Family Detached	ESU
Sport or Rec. Facility	.60
Utility	.90
Vacant Land Use	.20
Vehicle Related Use	.90



STORMWATER MANAGEMENT REPORT

for

COOPER NORCROSS HEALTH
BENSON PAVILION
CAMDEN, NEW JERSEY

Prepared For:

Cooper Norcross Health

Prepared By:

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Original: 08 October 2026
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TABLE OF CONTENTS

Section **Page No.**

SITE INFORMATION AND HISTORY **1**

DESIGN REQUIREMENTS **1**

STORMWATER MANAGEMENT APPROACH **2**

Low-Impact Development **2**

Drainage Areas **3**

NRCS Methodology **3**

Stormwater Runoff Quantity **4**

STORMWATER CONVEYANCE SYSTEM **6**

CONCLUSION **6**

LIST OF FIGURES

Figure 1	USGS Location Map
Figure 2	Soils Map
Figure 3	Predevelopment Drainage Area Map
Figure 4	Post-Development Drainage Area Map

LIST OF DRAWINGS

CG101	Overall Grading and Drainage Plan
CG102	Detailed Grading and Drainage Plan
CG201	Stormwater Profiles
CG501	Grading and Drainage Details

LIST OF APPENDICES

Appendix A	Low-Impact Development Checklist
Appendix B	Pre-Development Drainage Area and Land Cover Summary / Runoff Hydrographs (HydroCad Report excluded: Full report has been provided to the City of Camden and Planning Board engineers)
Appendix C	Post-Development Drainage Area and Land Cover Summary / Runoff Hydrographs (HydroCad Report excluded: Full report has been provided to the City of Camden and Planning Board engineers)
Appendix D	Time of Concentration Calculations
Appendix E	Stormwater Conveyance Calculations
Appendix F	City of Camden Stormwater Fee Calculation

This report summarizes the stormwater drainage analysis for the proposed Cooper Norcross Health Benson Pavilion project in Camden, New Jersey.

SITE INFORMATION AND HISTORY

For the purpose of this report, "site" refers to the portion of Cooper Norcross Health main hospital campus area associated with proposed Benson Pavilion, which is proposed near the intersection of Benson Street and Haddon Avenue. All improvements are within Block 1402 Lot 1, with exception of improvements required in the public right-of-way.

Cooper Norcross Health (CNC) is proposing to improve the Cooper Norcross Health hospital located in Camden, New Jersey. The proposed Benson Pavilion will be a 10-story hospital-building expansion with a footprint of approximate 28,775-square-feet. Cooper intends that the Benson Pavilion expansion will better serve patients and the community by upgrading CNC's aging facilities with a new, state-of-the-art healthcare space. The project includes the proposed Benson Pavilion building, which will be constructed as a 10-story building with 6-stories of fit out and 4-stories constructed as shell space and reserved for future fit-out, new emergency department patient drop-off, and modifications within the Benson Street and Haddon Avenue ROW to accommodate the drop-off.

DESIGN REQUIREMENTS

This project is considered a "major development" as defined in N.JA.C. 7:8-1.2 (September 2026). The project will disturb approximately 38,770 sf within the project property and 15,252 sf within the right-of-way for a total of 54,022 sf or 1.24 acres; and thus, the project is considered a major development. The project will create 9,574 sf of new "regulated impervious surface," which is less than one-quarter acre. Due to the disturbance greater than one acre and being a major development the project is subject to the New Jersey Stormwater requirements outlined in N.J.A.C. 7:8 and the City of Camden Stormwater Ordinance. Stormwater management is proposed for the project to meet the requirements of N.J.A.C. 7:8 (September 2026).

In accordance with groundwater recharge standards set forth in N.J.A.C. 7:8-5.4(b)2 and city requirements, the groundwater recharge requirements do not apply to the project because the project is in an Urban Redevelopment Area.

In accordance with the stormwater runoff quality standards set forth in N.J.A.C 7:8-5.5(a) and city requirements, the water quality standards are not applicable because the major development does not result in an increase of one-quarter acre or more of regulated motor vehicle surface or the reconstruction of one-quarter acre or more of motor vehicle surface because there is a total of 8,460 sf 0.19 acres of motor vehicle surface.

In accordance with the stormwater runoff quantity standards set forth in N.J.A.C. 7:8-5.6(b)2 and city requirements, the water quantity standards are applicable. The project proposed no increase, as compared to the pre-construction condition, in the peak runoff rates of stormwater leaving the site for the current and projected two-, 10-, and 100-year storm events. Any increased volume, change in

timing, or increased rate of stormwater runoff will not result in additional flood damage below the point of discharge of the project.

Additionally, the City of Camden requires that the 25-year storm post development peak rate be reduced to less than or equal to the pre-development peak rate. This criterion has been satisfied.

In accordance with the green infrastructure standards set forth in N.J.A.C. 7:8-5.3(d) and city requirements, a variance from strict compliance in accordance with N.J.A.C. 7:8-4.6 is requested to utilize a BMP from Table 5-3 (extended detention basin) to meet the stormwater runoff quantity standards of N.J.A.C. 7:8-5.6. As noted previously, the groundwater recharge and stormwater runoff quality requirements are not applicable. Due to safety concerns of green stormwater infrastructure in an urban setting and the size constraints of the site, it is technically impractical to satisfy the stormwater runoff quantity requirements with a Green Infrastructure BMP. The stormwater runoff quantity requirements are met with the underground extended detention basin. The design implements low impact design to the extent possible, which is demonstrated on the Low Impact Design Checklist provided in Appendix A.

The proposed detention basin is integrated into the design of the Benson Pavilion basement. A outlet control structure will control the flow before gravity-draining to the existing 36-inch RCP city sewer in Benson Street. Due to the proximity of the detention basin and basement walls, both the basin and basement will be waterproofed to prevent infiltration of groundwater into the system and exfiltration of collected stormwater runoff.

The city of Camden has previously required that stormwater conveyance systems be designed for the 25-year storm event. The proposed outlet pipe from the new detention system was sized based on the outflow from the basin, which is designed for up to and including the 100-year (current and projected) managed rate, so the system is more than adequate to convey the 25-year storm. No point-discharges to the ground surface are proposed, and the existing discharge points will be maintained.

STORMWATER MANAGEMENT APPROACH

Low-Impact Development

The proposed stormwater management approach for the project includes low-impact development strategies listed below, in accordance with N.J.A.C. 7:8-5.3. A Low-Impact Development Checklist for the project is provided as Appendix A.

1. Protect areas that provide water quality benefits or areas particularly susceptible to erosion and sediment loss.
2. Minimize land disturbance including clearing and grading, by redeveloping the existing hospital campus rather than a new "greenfield" elsewhere.
3. Minimize soil compaction, by redeveloping the existing hospital campus rather than a new "greenfield" elsewhere.
4. Provide low maintenance landscaping that encourages retention and planting of native vegetation and minimizes the use of lawns, fertilizers, and pesticides.

5. Provide preventative source controls.

Drainage Areas

The pre-development condition of the site is composed of two drainage areas as described below (see Figure 3 for Pre-Development Drainage Area Map):

- EXDA-1 drains to point of interest POI-1, which is understood to be in the existing 36-inch RCP city sewer in Benson Street. The point of interest is approximately 15 feet west of the existing manhole in Benson Street at the intersection with 7th Street.

- EXDA-2 drains to point of interest POI-2, which is understood to be the existing inlet located in Haddon Avenue along the curbline approximately 75-feet north of the Benson Pavilion project site. This inlet, drains to an existing 12-inch storm sewer main in Haddon Avenue, which drains to the north to system in Martin Luther King Boulevard.

The post-development condition of the site is composed of two drainage areas as described below (see Figure 4 for Post-Development Drainage Area Map):

- PRDA-1 drains to POI-1, which is understood to be in the existing 36-inch RCP city sewer in Benson Street. The point of interest is approximately 15 feet west of the existing manhole in Benson Street at the intersection with 7th Street.

- PRDA-2 drains to point of interest POI-2, which is understood to be the existing inlet located in Haddon Avenue along the curbline approximately 75-feet north of the Benson Pavilion project site. This inlet, drains to an existing 12-inch storm sewer main in Haddon Avenue, which drains to the north to system in Martin Luther King Boulevard.

The stormwater management design for the project accounts for the uncontrolled ground-level areas by over-detaining stormwater in the BMP to make up for the bypass volumes and rates.

NRCS Methodology

In accordance with N.J.A.C. 7:8-5.7, stormwater runoff is calculated using the USDA Natural Resources Conservation Service (NRCS) methodology, which is described in Technical Release 55—Urban Hydrology for Small Watersheds (TR-55), dated June 1986. Pre-development and post-development hydrographs are developed for each of the drainage areas described in the previous section using an area, hydrologic soil group (HSG), land cover, rainfall depth, and time of concentration. A table summarizing the area, HSG, and land cover with curve numbers for the pre-development condition is provided in Appendix B, and for the post-development condition in Appendix C.

Time of concentration is calculated using the velocity method for each drainage area described in the previous section. See Appendix D for calculations and Figure 3 for pre-development flow path and Figure 4 for post-development flow path used in the calculations.

In accordance with N.J.A.C. 7:8-5.6, stormwater analysis must be performed for current and projected storm events, as defined and determined pursuant of N.J.A.C. 7:8-5.7(c) and (d). We are using the county-specific, New Jersey 24-hour rainfall frequency data for Camden County as provided in Table 5-1 of the New Jersey Stormwater Best Management Practices Manual (January 2026) because it has larger depths than site-specific rainfall data from NOAA Atlas 14 and, therefore, results is a more conservative design. The rainfall depths are provided in the table below with design current and future rainfall depths in bold.

Design Rainfall Depths

Design Storm Event	Site-Specific Rainfall Depth [NOAA Atlas 14, Vol2, Ver3] (in.)	Table 5-1: County Specific Rainfall (in.), Camden	Current Adj. Factor, Camden	Current Rainfall (in.)	Future Adj. Factor, Camden	Future Rainfall (in.)
2-yr	3.28	3.31	1.03	**3.41**	1.18	**3.91**
10-yr	4.89	5.06	1.04	**5.26**	1.22	**6.17**
25-yr	5.98	6.28	1.00	**6.28**	1.00	**6.28**
100-yr	7.92	8.52	1.05	**8.95**	1.39	**11.84**

The hydrograph summaries calculated with the NRCS methodology are provided in Appendix B for the pre-development condition and Appendix C for the post-development condition.

Stormwater Runoff Quantity

The table below shows a comparison of peak flow for pre-construction and post-construction at POI-1. The post-construction peak rates for the current and projected two-, 10-, and 100-year storm events do not exceed that of the pre-construction peak rates. Therefore, the project complies with N.J.A.C. 7:8-5.6(b)4 and city requirements.

CURRENT RAINFALL

POI-1			
STORM EVENT	**PRE-DEVELOPED DISTURBED**	**REGULATION**	**PROVIDED RATE**
2-YR	**2.77**	2.77	**1.57**
10-YR	**4.50**	4.50	**2.22**
25-YR	**5.46**	5.46	**3.38**
100-YR	**8.01**	8.01	**5.60**

POI-2			
STORM EVENT	**PRE-DEVELOPED DISTURBED**	**REGULATION**	**PROVIDED RATE**
2-YR	**0.16**	0.16	**0.14**
10-YR	**0.30**	0.30	**0.25**
25-YR	**0.38**	0.38	**0.32**
100-YR	**0.61**	0.61	**0.49**

PROJECTED RAINFALL

POI-1			
STORM EVENT	**PRE-DEVELOPED DISTURBED**	**REGULATION**	**PROVIDED RATE**
2-YR	**3.23**	3.23	**1.73**
10-YR	**5.37**	5.37	**3.28**
25-YR	**5.47**	5.47	**3.38**
100-YR	**10.79**	10.79	**7.51**

POI-2			
STORM EVENT	**PRE-DEVELOPED DISTURBED**	**REGULATION**	**PROVIDED RATE**
2-YR	**0.20**	0.20	**0.17**
10-YR	**0.38**	0.38	**0.31**
25-YR	**0.39**	0.39	**0.32**
100-YR	**0.86**	0.86	**0.67**

STORMWATER CONVEYANCE SYSTEM

The proposed stormwater conveyance system is designed for the 25-year (current) storm event using the rational method. All storm pipes tie-in to proposed drainage structures. No point-discharges to the ground surface are proposed, as shown on the Proposed Drainage Area Map (Figure 2). A value for area, time of concentration, and a runoff coefficient were calculated for each runoff area to individual catch-basin inlets. Runoff coefficient and pipe conveyance calculations are provided in Appendix E.

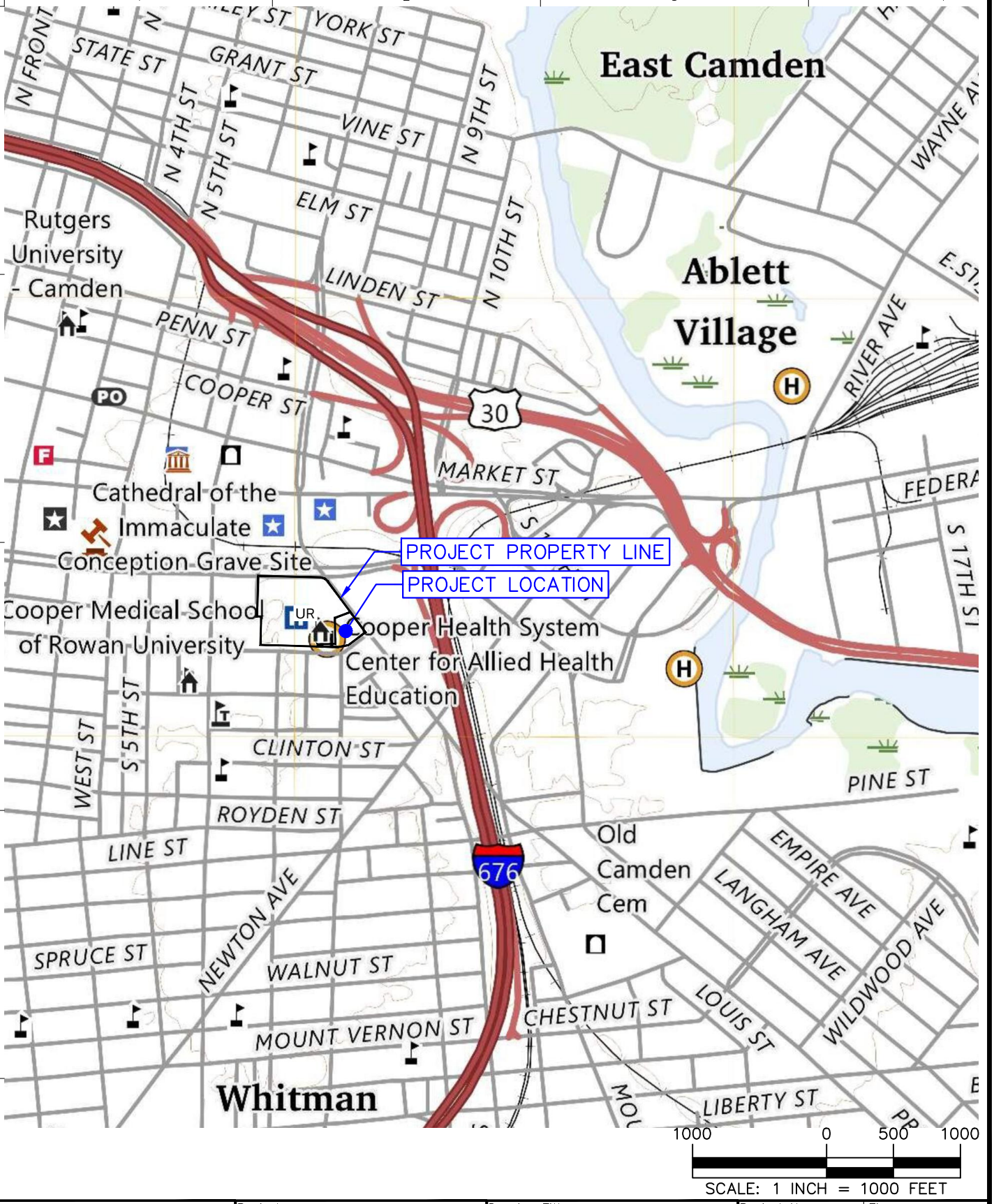
CONCLUSION

The proposed stormwater management approach meets the requirements of N.J.A.C. 7:8 that are applicable at the time of this application, and the City of Camden requirements by managing the post-development peak discharge rates to not exceed the pre-development peak discharge rates leaving the site for all drainage areas and the entire site as documented in this report. Because the project discharges to an existing sewer that discharges to a tidal water body, any increased volume or change in timing will not increase downstream flooding or flood damages below the point of discharge.

The proposed storm conveyance system has been designed to convey the 25-year storm in accordance with City of Camden requirements.

As a result, the proposed site redevelopment meets the intent of the state and city requirements and will have no adverse impact on the existing stormwater conveyance system that services the site and adjacent properties.

FIGURES



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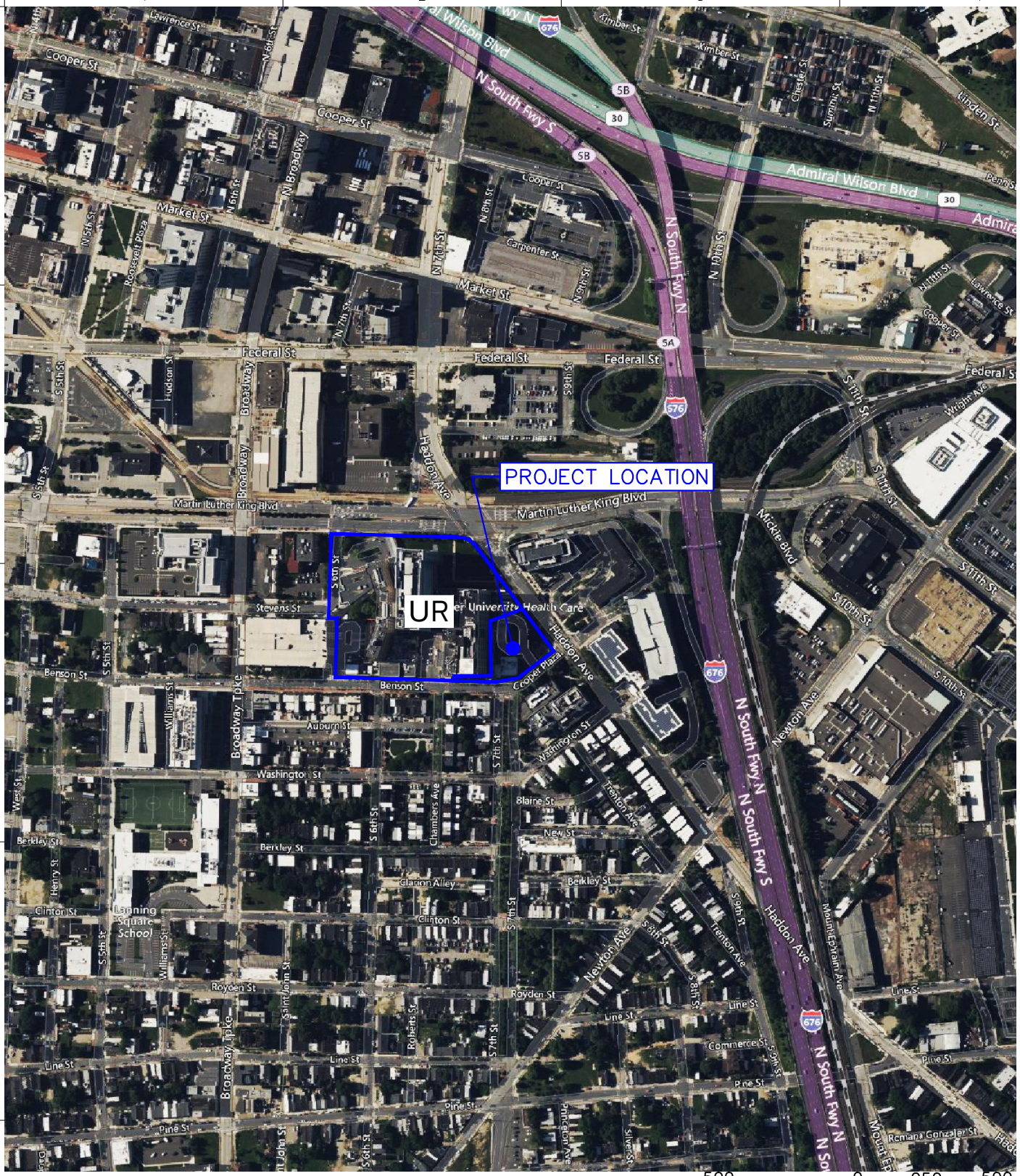
Project No. 001234501

LANGAN
Langan Engineering and Environmental Services, Inc.
300 Kimball Drive
Parsippany, NJ 07054
973.560.4900 973.560.4901 www.langan.com
NJ Certificate of Authorization No. 24GA27996400

Project	COOPER NORCROSS HEALTH BENSON PAVILION Block 1443 - Lot 5.02 Camden Camden New Jersey
Drawing Title	USGS LOCATION PLAN
Project No.	220245001
Date	2026-10-08
Drawn By	MCM
Checked By	MXK
Figure	SI101
Sheet	1 of 1

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UR - Urban land

500 0 250 500

SCALE: 1 INCH = 500 FEET

LANGAN

Langan Engineering
and Environmental Services, Inc.

300 Kimball Drive
Parsippany, NJ 07054

973.560.4900 973.560.4901 www.langan.com
NJ Certificate of Authorization No. 24GA27996400

Project
COOPER NORCROSS HEALTH
BENSON PAVILION

Block 1443 - Lot 5.02
Camden
Camden New Jersey

Drawing Title
SOIL MAP

Project No. 220245001
Date 2026-10-08
Drawn By MCM
Checked By

Figure
GI101

Sheet 1 of 1

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LEGEND

- PROPERTY LINE
- EXISTING DRAINAGE AREA EX-1
- EXISTING DRAINAGE AREA EX-2
- EXISTING IMPERVIOUS DRIVEWAY
- EXISTING IMPERVIOUS WALKWAY
- EXISTING IMPERVIOUS BUILDING
- EXISTING PERVIOUS LAWN
- TIME OF CONCENTRATION FLOW PATH
- POA-2 IMPER. C PERV. D — TIME OF CONCENTRATION FLOW TYPE CHANGE

ROBERTS PAVILION

BLOCK 1402
LOT 1

MULTI STORY BUILDING

KELEMEN PAVILION

SILL=22.26
PATIO AREA
2ND FLOOR
EL=41.19

22.77

HADDON AVENUE (C.R. 561)

POA-2
IMPER. C
PERV. D

PROPERTY LINE

EXISTING DRAINAGE AREA POA 1 (EXDA-1)
IMPERVIOUS BUILDING: 8,664 SF (0.199 AC)
IMPERVIOUS DRIVEWAY: 13,557 SF (0.302 AC)
IMPERVIOUS WALKWAY: 5,270 SF (0.120 AC)
PERVIOUS LAWN: 8,065 (0.186)
TOTAL AREA: 35,556 SF (0.807 AC)

POA-1 IMPER. B

POA-1 IMPER. A

EXISTING DRAINAGE AREA POA 2 (EXDA-2)
IMPERVIOUS DRIVEWAY: 122 SF (0.001 AC)
IMPERVIOUS WALKWAY: 759 SF (0.017 AC)
PERVIOUS LAWN: 2,333 (0.054)
TOTAL AREA: 3,214 SF (0.072 AC)

POA-1 PERV. A
POA-1 PERV. B

DRAINAGE AREA BOUNDARY EXDA-1

POA-1 BLDG. A
POA-1 BLDG. B

POA-1
PERV. C
BLDG. C

POA-2
IMPER. B
PERV. C

POA-1
IMPER. C
PERV. D
BLDG. D

DRAINAGE AREA
BOUNDARY POA-2

POA-2 PERV. B
POA-2 PERV. A
POA-2 IMPER. A

EXISTING DISTURBED R.O.W TO CITY SEWER
IMPERVIOUS DRIVEWAY: 7,209 SF (0.207 AC)
IMPERVIOUS WALKWAY: 5,978 SF (0.137 AC)
PERVIOUS LAWN: 2,065 (0.047 AC)
TOTAL AREA: 15,252 SF (0.392 AC)

POA-1
IMPER. E
PERV. F
BLDG. F

POA-1
IMPER. D
PERV. E
BLDG. E

NO PARKING NO PARKING NO PARKING

AMBULANCES ONLY

BENSON STREET

CURB LINE

SCALE: 1 INCH = 20 FEET

PROJECT:

BENSON PAVILION

COOPER NORCROSS UNIVERSITY HOSPITAL
1 COOPER PLAZA
CAMDEN, NJ 08103

SEAL:

CERT OF AUTHORIZATION #AC 331

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CONSHOHOCKEN, PA 19428
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BR+A CONSULTING ENGINEERS
MEP-FP ENGINEERS
100 PARK AVENUE, SUITE 200
NEW YORK, NY 10017
212-840-0060

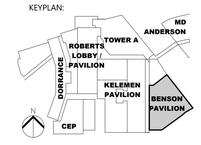
INTROBA
LOW VOLTAGE AV/IT
32 OLD SLIP, 10TH FLOOR
NEW YORK, NY 10006
212-997-5100

VISIONBUILDERS DESIGN
FOOD SERVICES CONSULTANT
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704-405-3101

HEALTH, EDUCATION AND RESEARCH ASSOCIATES, INC.
LABORATORY PLANNER
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ST. LOUIS, MO 63119
314-289-9202

ST ONGE
STERILE PROCESSING & VERTICAL TRANSPORTATION CONSULTANT
1400 WILLIAMS ROAD
YORK, PA 17402
717-840-8181

KEYPLAN:



ISSUES:

NO.	DESCRIPTION	DATE

PROJECT NO. 7088
CON/REF NO.
DATE 10/08/2026

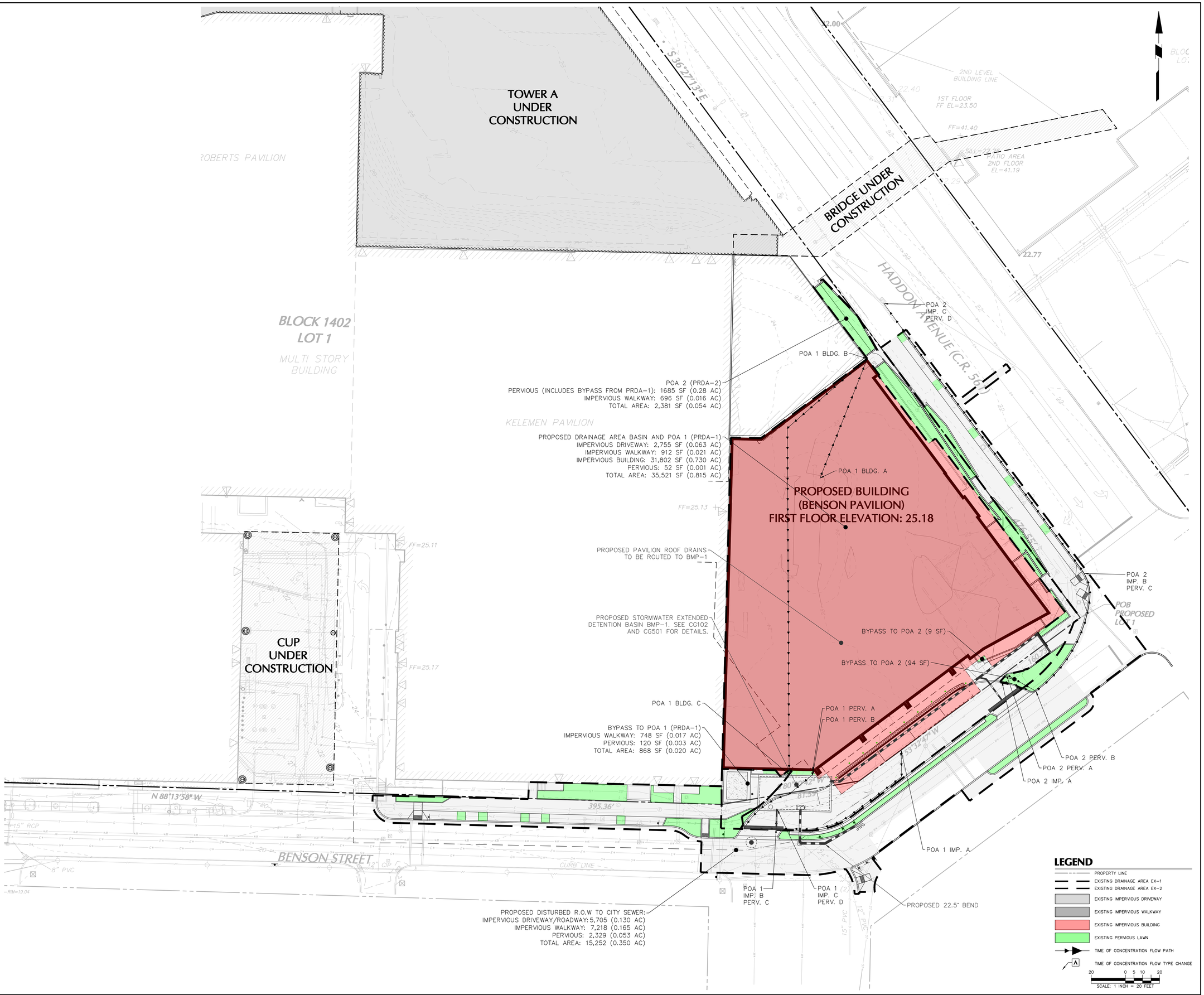
DCA# NJPRP-XXXXX

PRE DEVELOPMENT DRAINAGE AREA MAP

FIGURE 3

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Date: 10/7/2026 Time: 15:55 User: jcluckey Style Table: Langan.stb Layout: FIGURE 3 Document Code: 220245001-0201-CG101-0102



PROJECT:

BENSON PAVILION

COOPER NORCROSS UNIVERSITY HOSPITAL
1 COOPER PLAZA
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O'DONNELL & NACCARATO
STRUCTURAL ENGINEER
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PHILADELPHIA, PA 19106
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570-586-4334

BR+A CONSULTING ENGINEERS
MEP-FP ENGINEERS
100 PARK AVENUE, SUITE 200
NEW YORK, NY 10017
212-840-0060

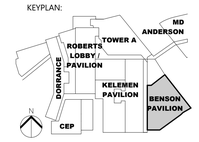
INTROBA
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VISIONBUILDERS DESIGN
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1515 SHOPTON ROAD, SUITE 104
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314-289-9202

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STERILE PROCESSING & VERTICAL TRANSPORTATION CONSULTANT
1400 WILLIAMS ROAD
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717-840-8181

KEYPLAN:



ISSUES:

NO.	DESCRIPTION	DATE

PROJECT NO. 7088
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DATE 10/08/2026

DCA# NJPRP-XXXXX

POST DEVELOPMENT DRAINAGE AREA MAP

FIGURE 4

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DRAWINGS

CITY OF CAMDEN REGULATORY REQUIREMENT NOTES

1. ALL TELEPHONE, ELECTRIC, TELEVISION, AND OTHER COMMUNICATION SERVICE FACILITIES, BOTH MAIN AND SERVICE LINES, ARE TO BE INSTALLED UNDERGROUND.
2. THE OWNER, OR THEIR REPRESENTATIVE, IS TO DESIGNATE AN INDIVIDUAL RESPONSIBLE FOR CONSTRUCTION SITE SAFETY DURING THE COURSE OF SITE IMPROVEMENTS PURSUANT TO N.J.A.C. 5:23–2.21 (e) OF THE N.J. UNIFORM CONSTRUCTION CODE AND CFR 1926.32 (f) (OSHA COMPETENT PERSON).
3. ALL SITE WORK CONSTRUCTION AND DETAILS MUST CONFORM TO THE STANDARDS OF THE CITY OF CAMDEN.
4. THE CONTRACTOR (NOT CITY) SHALL BE RESPONSIBLE FOR ANY AND ALL COST (LABOR, MATERIAL AND EQUIPMENT) RELATED TO ANY WATER MAIN ISOLATION AND BY–PASSING OF THE SEWER TO MAKE A PROPOSED CONNECTION.
5. THE CITY ENGINEER AND AMERICAN WATER ENTERPRISES MUST BE GIVEN 48 HOURS ADVANCE NOTICE OF SANITARY SEWER/WATERMAIN WORK, AND THE REPRESENTATIVES MUST WITNESS THE WORK AND CONNECTION.
6. THE APPLICANT AND CONTRACTOR (NOT CITY) ARE RESPONSIBLE FOR THE PROPER ABANDONMENT OF ALL WATER/SEWER LATERAL DISCOVERED IN THE FIELD/SITE. ALL EXISTING WATER SERVICE LINES TO BE ABANDONED SHALL BE CUT AND CAPPED AT THE MAIN, IN ACCORDANCE WITH CAPITAL IMPROVEMENTS AND PROJECT MANAGEMENT (CIP) STANDARDS, AND INSPECTED WITHIN 24 HOURS AFTER INSTALLATION OF NEW TAP. THE MAXIMUM OF ONE (1) TAP SHALL BE MADE FOR BOTH DOMESTIC AND FIRE SERVICE PER FACILITY. THE TAP SHALL BE THE MAXIMUM OF ONE (1) SIZE SMALLER THAN THE CITY'S WATER MAIN.
7. THE INSTALLATION OF ALL WATER AND SEWER MAINS SHALL COMPLY WITH CITY ORDINANCES.
8. ALL WATER/SEWER MAIN INSTALLATIONS AND TESTING SHALL BE WITNESSED/OBSERVED BY AN INSPECTOR OF THE CITY ENGINEER OR AMERICAN WATER, OR PLANNING BOARD ENGINEER.
9. ALL WATER/SEWER SERVICES SHALL BE INSTALLED ON APPLICANT'S PROPERTY (AND NOT WITHIN CITY RIGHT–OF–WAY); EXCEPT WHEN MAKING CONNECTIONS TO THE EXISTING WATER AND/OR SEWER MAIN FROM THE VALVE BOX AND SEWER CLEANOUT RESPECTIVELY.
10. THE OWNER/APPLICANT SHALL OWN, OPERATE AND MAINTAIN ALL WATER, SANITARY AND STORM SEWER MAINS AND APPURTENANCES OUTSIDE OF THE CITY RIGHT–OF–WAY.
11. ALL WATER PIPES, FITTINGS AND VALVES SHALL BE TESTED AND DISINFECTED IN ACCORDANCE WITH AWWA REQUIREMENTS.
12. THRUST BLOCKS AND RESTRAINTS SHALL BE INSTALLED AT ALL BENDS AND FITTINGS. THRUST BLOCKS SHALL HAVE A 28–DAY STRENGTH OF 4,500 PSI.
13. AIR RELEASE VALVES SHALL BE INSTALLED AT HIGH POINTS IN THE WATER MAIN.
14. A SOLID DUCTILE IRON TAPPING SLEEVE SUCH AS MUELLER H–615 SLEEVE OR APPROVED EQUAL SHALL BE UTILIZED FOR TAPS 2" AND LARGER. THE TAPPING SLEEVE SHALL PASS PRESSURE TESTING BASED ON AWWA STANDARDS BEFORE TAP IS MADE.
15. FOR ALL SERVICES INCLUDED HEREIN, TWO (2) GATE VALVES ARE REQUIRED THAT ARE TO BE INSTALLED BY THE APPLICANT; A TAPPING VALVE LOCATED AT THE TAP, AND A CURB VALVE LOCATED IN THE SIDEWALK BEFORE THE METER. TAPPING GATES SHALL BE FURNISHED OPENED RIGHT. ALL TAPPING AND CURB VALVES SHALL BE DOUBLE DISC GATE VALVES AND MEET AWWA STANDARDS.
16. FOR TAPS OFF MAINS 2–INCHES AND LARGER, THE APPLICANT SHALL FURNISH AND INSTALL AN ADDITIONAL GATE VALVE ADJACENT TO THE TAPPING VALVE. NO TAPS SHALL BE PERMITTED ON MAINS, LARGER THAN 20–INCHES UNLESS THERE IS NO ALTERNATIVE WATER SOURCE, AND A SPECIAL WRITTEN APPROVAL IS ISSUED BY THE CIP.
17. VALVE BOX PARTS FOR ALL VALVES SHALL BE PROVIDED BY THE CONTRACTOR (NOT CITY). ALL TAPPING GATE VALVES LARGER THAN 2–INCHES AND ALL CURB VALVES/STOPS REGARDLESS OF SIZE REQUIRE A VALVE BOX WITH THE WORD 'WATER' CAST IN THE COVER. BURIED CORPORATION VALVES/STOPS SHALL BE USED AT THE TAP FOR CLASS K COPPER SERVICES 2–INCHES AND SMALLER.
18. ALL METERS SIZES 2 INCHES THROUGH 6 INCHES SHALL BE SINGLE COMPOUND METERS AND ALL METERS 8 INCHES AND LARGER SHALL BE DUPLEX COMPOUND MANIFOLD METERS.
19. ALL METERS SHALL BE ADEQUATELY RESTRAINED WITH METAL BRACKETS FASTENED TO THE FLOOR OR WALL OF OTHER APPROVED MEANS SUCH AS UNIFLANGES WHERE INTERNAL PIPE PRESSURE AND FLOW WARRANT SUCH RESTRAINTS. METERS, DETECTOR CHECKS, AND VALVES MAY BE SEATED ON CONCRETE BLOCK AND TAPERED SHIMS TO PROVIDE ADEQUATE SUPPORT. METERS SHALL BE INSTALLED APPROXIMATELY 36" ABOVE FLOOR GRADE.
20. ALL METER INSTALLATIONS IN METER PIT OR VAULT SHALL BE PRE–APPROVED BY CIP AND HAVE PROPER ACCESS OPENINGS FOR METER READING AND REPLACEMENT.
21. UPON COMPLETION OF ALL WATER/SEWER INSTALLATION, THREE (3) SETS OF "AS–BUILT" PLANS SHALL BE SUBMITTED TO THE CIP AND AMERICAN WATER ENTERPRISES. THE CIP WILL AUTHORIZE SUPPLY WATER UPON ACCEPTANCE OF THE AS–BUILT DRAWINGS. SUBMISSION OF RECORD DRAWINGS IS REQUIRED IN ACCORDANCE WITH ORDINANCE FOR WATER SERVICES LINES AND SEWER LATERALS. THE AS–BUILT PLANS SHALL BE PROVIDED BY THE CONTRACTOR AND SHALL BE PERFORMED BY A NEW JERSEY LICENSED PROFESSIONAL LAND SURVEYOR. AN ELECTRONIC FORMAT OF THE SAME IN COMPLIANCE WITH THE CITY ORDINANCE SHALL BE ALSO BE SUBMITTED.
22. ALL SEWER INSTALLATION SHALL CONFORM TO THE REQUIREMENT OF THE PROCEDURE MANUAL OF THE CITY OF CAMDEN.
23. ALL NECESSARY REPAIRS TO EXISTING MANHOLE AT SEWER CONNECTION AND RELINING OF THE MANHOLE WITH A LINER BY TERRES HILL COMPOSITE OR APPROVED EQUAL SHALL BE COMPLETED BY THE CONTRACTOR.
24. IT SHALL BE THE RESPONSIBILITY OF THE APPLICANT/CONTRACTOR TO RELOCATE ALL IMPACTED UTILITIES AT NO COST TO THE CITY.
25. TELEVISION INSPECTION OF THE NEW OFF–SITE AND ONSITE STORM SYSTEM IS REQUIRED PRIOR TO FINAL ACCEPTANCE BY THE CITY.
26. A CCTV OF THE SANITARY/STORM SEWER ON DR MARTIN LUTHER KING BLVD AND HADDON AVE SHALL BE PERFORMED AND SUBMITTED TO THE CITY ENGINEER FOR REVIEW PRIOR TO ISSUING APPROVALS TO CONNECT TO THE CAMDEN CITY WATER AND SEWER SYSTEM.
27. VIDEO SEWER INSPECTIONS, INFILTRATION/EXFILTRATION TESTING AND PIPE ALIGNMENT TESTING SHALL BE PERFORMED IN ACCORDANCE WITH THE CITY SEWER MANUAL ON ALL NEW PUBLIC SEWERS (PVC AND RCP) AT THE COMPLETION OF THE PROJECT, BUT PRIOR TO ACCEPTANCE AND/OR DEDICATION OF THE SAME TO THE CITY. THE MAXIMUM RATE OF INFILTRATION/EXFILTRATION SHALL NOT EXCEED THE ORDINANCE REQUIREMENT.
28. SELECT FILL FOR WATER/SEWER TRENCH INSTALLATION WITHIN THE CITY RIGHT OF WAY SHALL BE DENSE GRADED AGGREGATE I–5, IN ACCORDANCE WITH THE SPECIFICATION SUBSECTION 901.08 OF THE NJDOT STANDARD SPECIFICATION AND CONFORM TO THE TABLE IN SECTION 577–229.H OF THE ORDINANCE.
29. ALL PROPOSED PVC FOR SANITARY SEWER SHALL HAVE AN SDR CLASSIFICATION OF 35.
30. ALL PIPES SHALL BE MANUFACTURED AND SUPPLIED WITHOUT LIFTING HOLES.
31. ALL RCP FROM 24 INCHES UP TO AND INCLUDING 72 INCHES DIAMETER SHALL CONFORM TO ASTM C76, MINIMUM PIPE CLASS IV, WALL B (SECTION 577–229).
32. ALL RCP SHALL BE LINED ON THE INTERIOR WITH A COAT TAR EPOXY SEAL COAT WITH A MINIMUM OF FOUR (4) MILS IN THICKNESS (DFT).
33. ALL PUBLIC CONCRETE STORM DRAIN PIPE IS TO EITHER HAVE RUBBER GASKETED OR BUTYL TAPED JOINTS. ALL LIFT HOLES AND BUTYL TAPED JOINTS SHALL BE WRAPPED AND MORTARED ON THE OUTSIDE.
34. EACH MANHOLE BASE AND INLET SHALL BE PROVIDED WITH CIRCULAR OPENINGS AT THE REQUIRED LOCATIONS AND ELEVATIONS FOR PROPER CONNECTION OF THE PIPES. THE FLEXIBLE CONNECTION SHALL BE A–LOK FLEXIBLE CONNECTOR, OR APPROVED EQUAL, AND SHALL BE CAST INTEGRALLY IN THE MANHOLE/INLET WALL FOR ALL PIPE CONNECTIONS. NO PIPE PENETRATIONS SHALL BE LOCATED WITHIN 12" OF A JOINT.
35. ALL NEW MANHOLES AND CATCH BASINS SHALL HAVE AN EXTERIOR COATING OF CARBOLINE COAL TAR EPOXY 300M, OR APPROVED EQUAL, TWO COATS. ALL REINFORCED CONCRETE PIPES SHALL BE LINED ON THE INTERIOR WITH A COAT OF TAR EPOXY SEAL WITH A MINIMUM OF 4 MIL IN THICKNESS (DFT) (SECTION 577–229).
36. ALL STORM INLETS WHICH ARE CONNECTED TO THE CITY COMBINED SEWER SHALL BE FURNISHED WITH A SUMP AND TRAP PER CITY STANDARDS.
37. PROPOSED MANHOLES CONSTRUCTED IN THE PUBLIC RIGHT–OF–WAY ON EXISTING OR PROPOSED CITY SEWERS SHALL BE FURNISHED WITH CONCENTRIC MANHOLES APPROVED BY THE CITY.
38. MANHOLE FRAMES AND COVERS ARE TO PROVIDE FOR A MINIMUM OF THIRTY INCH CLEAR OPENING AT THE COVER IN ORDER TO ALLOW EASY ACCESS UNDER CONFINED SPACE ENTRY REQUIREMENTS. CAMPBELL FOUNDRY PATTERN NUMBER 1012B OR NJDOT APPROVED EQUAL. THE MINIMUM DIAMETER MANHOLE SHALL BE 48–INCHES. A MINIMUM ACCESS DIAMETER OF 30–INCHES SHALL BE PROVIDED.
39. MANHOLE COVERS SHALL BE A SOLID TYPE MARKED WITH SEWER.
40. A DROP MANHOLE CONNECTION SHALL BE USED WHERE THERE IS A DIFFERENCE IN ELEVATION OF TWO FEET OR GREATER BETWEEN THE PIPE INVERT IN AND THE MANHOLE INVERT ELEVATION. REFER TO CITY DETAILS.
41. ALL CONCRETE SHALL BE 4,500 PSI MINIMUM DESIGN MIX.

GRADING AND DRAINAGE NOTES

1. THE CONTRACTOR SHALL VERIFY ALL INFORMATION TO THEIR SATISFACTION PRIOR TO THE EXECUTION OF CONTRACTS OR COMMENCING WORK. ANY DISCREPANCIES SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER OF RECORD.
2. BOUNDARY INFORMATION AND EXISTING FEATURES SHOWN HEREON ARE BASED ON "BOUNDARY AND TOPOGRAPHIC SURVEY" DATED 08/31/2026 PREPARED BY LANGAN ENGINEERING AND ENVIRONMENTAL SERVICES, INC.
3. THE MERIDIAN OF THE PLAN IS REFERENCED TO THE NEW JERSEY STATE PLANE COORDINATE SYSTEM (NAD 83) 2011 DERIVED USING SURVEY–GRADE GNSS EQUIPMENT.
4. TOPOGRAPHIC INFORMATION SHOWN HEREON HAS BEEN OBTAINED FROM GROUND SURVEYS BY LANGAN ENGINEERING AND ENVIRONMENTAL SERVICES, INC. DURING JULY 2023 AND AUGUST 2026.
5. ELEVATIONS SHOWN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) DERIVED USING SURVEY–GRADE GNSS EQUIPMENT.
6. CONVERSION FROM NAVD 1988 TO NGVD IS AS FOLLOWS: EL. 17.00 (NAVD 88) + 1.09 = EL. 18.09 (NGVD 29)
7. AS AS PER THE NATIONAL FLOOD INSURANCE PROGRAM FIRM MAPS TITLED, CAMDEN COUNTY, NEW JERSEY, COMMUNITY PANEL 28 OF 305, MAP NUMBER 34007C0028F. LAST REVISED 08/17/2016. THE PROPERTY PRIMARILY LIES IN "OTHER AREAS", NOT WITHIN FLOOD AREA.
8. EXISTING FRAMES, COVERS, AND GRATES IN AREAS WHERE GRADES WILL BE REVISED BY FILLING OR CUTTING, OR PAVEMENT OVERLAY, MUST BE RESET TO MATCH FINAL GRADE (THIS INCLUDES MANHOLES, HANDHOLES, VALVE BOXES, INLETS, ETC). IN AREAS OF CUT, CONTRACTOR SHALL PROVIDE REQUIRED COVERAGE OF UTILITY AND STORMWATER LINES AS SPECIFIED BY THE UTILITY PURVEYOR.
9. PROPOSED STORMWATER PIPING TRENCHES MAY REQUIRE OVER EXCAVATION IN AREAS NOT CAPABLE OF SUPPORTING THE PROPOSED SYSTEMS. STABILIZATION WITH APPROVED BEDDING MATERIALS WILL BE REQUIRED. OWNER'S GEOTECHNICAL ENGINEER MUST APPROVE BEDDING MATERIALS USED FOR STABILIZATION AND THE DEPTH OF THE OVER EXCAVATION.
10. CONTRACTOR IS RESPONSIBLE FOR LOCATING UTILITY CROSSINGS AND PROVIDING UTILITY DROPS AS REQUIRED. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY IF CROSSING CONFLICT OCCURS.
11. GRADING FOR ADA ACCESSIBLE ROUTES, RAMPS, PARKING AND LOADING SHALL BE IN ACCORDANCE WITH THE NEW JERSEY AMERICAN WITH DISABILITIES ACT ARCHITECTURAL BARRIER REMOVAL AND COMPLIANCE MANUAL. MAXIMUM SLOPES INCLUDE (1) RAMPS – 1:12, (2) ROUTES – 1:20, (3) ROUTES CROSS–SLOPE – 1:50 AND (4) PARKING AND LOADING AREAS – 1:50.
12. TEST PITS WILL BE REQUIRED TO CONFIRM ADEQUATE CLEAR DISTANCES BETWEEN PROPOSED AND EXISTING UTILITIES. TEST PITS SHALL BE PERFORMED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
13. STRUCTURES SHOWN ON THESE DRAWINGS INCLUDE, BUT ARE NOT LIMITED TO: DRAINAGE STRUCTURES (INLETS, CATCH BASINS AND MANHOLES), SANITARY MANHOLES, METER PITS AND UNDERGROUND VAULTS ARE NOT STRUCTURALLY DESIGNED. THE DETAILS PROVIDE TYPICAL DIMENSIONS, LOCATIONS OF PIPE PENETRATIONS, PIPE INVERTS AND GROUND ELEVATIONS AT THE STRUCTURE RIM OR GRATE ONLY. THE STRUCTURAL DESIGN INCLUDING WALL AND SLAB THICKNESS AS WELL AS REINFORCING SHALL BE THE RESPONSIBILITY OF THE PRECAST MANUFACTURER TO MEET STATE DEPARTMENT OF TRANSPORTATION STANDARDS AND HS–20 OR HS–25 LOADING REQUIREMENTS WHEN POSITIONED IN TRAVEL WAYS.
14. ALL GRADING, DRAINAGE, AND UTILITY INSTALLATION AND/OR CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS OR LOCAL REQUIREMENTS. SHOULD A DIFFERENCE IN REQUIREMENTS OCCUR, THE STRICTER OF THE TWO REGULATIONS WILL APPLY.
15. GRADE ALL AREAS OTHER THAN PAVED GRADED AREAS AND BUILDINGS, INCLUDING EXCAVATED AREAS, FILLED AND TRANSITION AREAS, AND LANDSCAPED AREAS TO FINISH GRADE ELEVATIONS OR CONTOURS AS INDICATED ON DRAWINGS. FINISHED SUBGRADE SURFACE SHALL BE UNIFORM AND SMOOTH, FREE FROM ROCK, DEBRIS, OR IRREGULAR SURFACE CHANGES. SITE SHALL BE GRADED TO ALLOW FOR PROPER DRAINAGE WITHOUT PONDING AND IN A MANNER THAT WILL MINIMIZE EROSION POTENTIAL.
16. ALL DRAINAGE STRUCTURES AND STORM SEWER PIPES SHALL MEET HEAVY DUTY TRAFFIC LOADING AND BE INSTALLED ACCORDINGLY.
17. ALL DRAINAGE STRUCTURES AND STORM SEWER PIPES SHALL WATER TIGHT AND BE INSTALLED ACCORDINGLY.
18. SITE GRADING SHALL NOT PROCEED UNTIL ALL EROSION CONTROL MEASURES HAVE BEEN INSTALLED.
19. LENGTHS OF STORM PIPES SHOWN ARE CENTER–TO–CENTER LENGTHS BETWEEN DRAINAGE STRUCTURES.
20. CONTRACTOR SHALL REVIEW ALL DRAINAGE CONNECTIONS TO MANHOLES AND CATCH BASINS AND INCREASE THE INLET BOX SIZES AS NECESSARY TO ACCOMMODATE THE PROPOSED INLET AND OUTLET PIPES.
21. ALL GRADING IS TO PROMOTE POSITIVE DRAINAGE AWAY FROM THE BUILDING.
22. EACH INLET BOX SHALL BE PROVIDED WITH CIRCULAR OPENINGS AT THE REQUIRED LOCATIONS AND ELEVATIONS FOR THE PROPER CONNECTION OF ALL PIPES. THE CIRCULAR CONNECTIONS SHALL BE SEALED WITH A FLEXIBLE SEAL ASSEMBLY SUCH AS G3–FLEXIBLE CONNECTOR BY A–LOK PRODUCTS, INC. OR APPROVED EQUAL.
23. REPORTED GROUNDWATER ELEVATIONS ARE BASED ON HIGHEST REPORTED VALUE FROM VARIOUS PRIOR SUBSURFACE EXPLORATIONS (BY OTHERS). GEOTECHNICAL REPORT TO BE PROVIDED UNDER SEPARATE COVER.
24. PROPOSED LANDSCAPE GRADING MUST NOT EXCEED 3:1.



STORMWATER MAINTENANCE NOTES

1. TO THE EXTENT PERMITTED BY LAW, THE CITY WILL AT ALL REASONABLE TIMES HAVE A RIGHT OF INGRESS AND EGRESS OVER THE EASEMENT AREA AND THE RIGHT TO ENTER THE EASEMENT AREA VIA ANY ROAD OR PARKING LOT LOCATED WITHIN ANY COMMON AREA OWNED BY THE GRANTOR TO INSPECT THE SYSTEM LOCATED IN THE EASEMENT AREA;
2. EXCEPT IN THE CASE OF AN EMERGENCY, THE CITY WILL PROVIDE NOT LESS THAN SEVEN (7) DAYS PRIOR NOTICE TO THE PERFORMING ANY INSPECTION OR MONITOR OF THE SYSTEM IN ACCORDANCE WITH APPROVED PLAN. THE APPLICANT AGREES THAT THE FAILURE TO TIMELY OBJECT AFTER RECEIVING NOTICE FROM THE CITY CONSTITUTES CONSENT TO INSPECTION OF THE PROPERTY WITHIN THE TIMEFRAME SPECIFIED IN THE NOTICE.
3. IF, AFTER REASONABLE NOTICE BY THE CITY, THE APPLICANT FAILS TO MAINTAIN THE SYSTEM IN ACCORDANCE WITH THE APPROVED MANUAL AND THE MAINTENANCE PLAN, THE CITY MAY PERFORM ANY MAINTENANCE NEEDED TO CORRECT A CONDITION THAT IMPACTS THE EFFECTIVENESS OF ROUTINE MAINTENANCE AND OPERATIONS OF THE SYSTEM AND COLLECT ANY COSTS INCURRED AS A RESULT FROM EACH OWNER OF THE SYSTEM AND IN THE SAME MANNER AS REAL PROPERTY TAXES ARE COLLECTED. IN ADDITION, THE CITY MAY SEEK REIMBURSEMENT UNDER ANY OTHER METHOD LEGALLY AVAILABLE TO COLLECT DEBTS OWED.
4. THE APPLICANT AGREES TO INDEMNIFY AND SAVE THE CITY HARMLESS FROM ANY AND ALL CLAIMS FOR DIRECT DAMAGES TO PERSONS OR PROPERTY ARISING FROM INSPECTIONS PERFORMED BY THE CITY.

CALL BEFORE YOU DIG
IN NJ, TOLL FREE
1 – 800 – 272 – 1000
FOR FREE MARKOUTS TO LOCATE UNDERGROUND UTILITIES
" IT'S THE LAW "
GARDEN STATE UNDERGROUND PLANT LOCATION SERVICE, INC.
CALL BEFORE YOU DIG

CONTRACTOR TO COORDINATE WITH OWNER'S ENVIRONMENTAL AND GEOTECHNICAL ENGINEERS REGARDING SOIL REQUIREMENTS FOR ONSITE RE-USE, DISPOSAL, AND ENVIRONMENTAL REGULATORY REQUIREMENTS AND COMPLIANCE.

EXISTING INFORMATION SHOWN IN BACKGROUND IN MD ANDERSON CANCER CENTER AND KELEMEN CDU ADDITION AREAS IS BASED ON A COMBINATION OF PREDEVELOPMENT FIELD SURVEY AND PROPOSED DESIGN DRAWINGS. CONTRACTOR SHALL USE DESIGN INFORMATION AS A GUIDE TO MEET INTENT, BUT MUST ULTIMATELY TIE INTO AS-BUILT CONDITIONS IN FIELD.

EXISTING PIPE ANGLES DETERMINED DURING TEST PIT EXPLORATION ARE BASED ON SURVEYED INFORMATION FROM WILKINSON IN FEB/MARCH 2025. SOME MINOR FIELD ADJUSTMENTS MAY BE REQUIRED ONCE MANHOLE PIT IS OPENED FOR CONSTRUCTION.

IN THE AREAS OF PROPOSED WORK ONLY, CONTRACTOR TO REMOVE ALL PREVIOUSLY ABANDONED SEWER/STORM PIPING IDENTIFIED IN THE VARIOUS SEWER VIDEOS AND SITE INVESTIGATIONS, FROM THE MAIN TO THE R.O.W. LINE.

ALL WORK TO BE COORDINATED WITH THE POTENTIAL CITY SEWER MAIN WORK IN THE INTERSECTION OF HADDON AVE AND MLK BLVD, AND ALONG HADDON AVE.

FINAL LIMITS OF CURB RAMP REPLACEMENTS INCLUDING THOSE SHOWN ON THE GRADING INSETS ON SHEET CG102 WILL BE DETERMINED ONCE ALL SITE WORK IS COMPLETE.

LEGEND

— — —	PROPERTY LINE
— — —	LIMIT OF DISTURBANCE/NPDES BOUNDARY
25.50	PROPOSED SPOT ELEVATION
X.X%	PROPOSED SLOPE
25	PROPOSED 1 FOOT CONTOUR LINE

NOTE: SEE CG102 FOR DETAILED GRADING AND DRAINAGE DESIGN.

30 0 15 30
SCALE: 1 INCH = 30 FEET

PROJECT:

BENSON PAVILION

COOPER NORCROSS UNIVERSITY HOSPITAL
1 COOPER PLAZA
CAMDEN, NJ 08103

SEAL:

CERT OF AUTHORIZATION #AC 331

1001 E HECTOR STREET, SUITE 230
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610-270-0599
ARRAY-ARCHITECTS.COM

IN COLLABORATION WITH:

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CIVIL ENGINEERING
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PRINCETON, NJ 08540
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215-925-3788

HIGHLAND ASSOCIATES
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CLARKS SUMMIT, PA 18411
570-586-4334

BR+A CONSULTING ENGINEERS
MEP-FP ENGINEERS
100 PARK AVENUE, SUITE 200
NEW YORK, NY 10017
212-840-0060

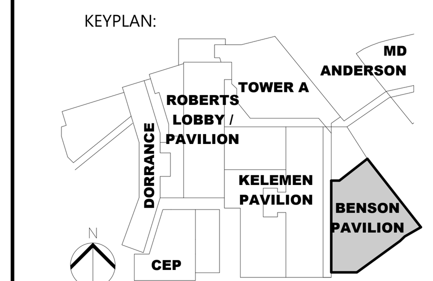
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FOOD SERVICES CONSULTANT
1515 SHOPTON ROAD, SUITE 104
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704-405-3101

HEALTH, EDUCATION AND RESEARCH ASSOCIATES, INC.
LABORATORY PLANNER
609 E. LOCKWOOD AVENUE, SUITE 204
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314-289-9202

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STERILE PROCESSING & VERTICAL TRANSPORTATION CONSULTANT
1400 WILLIAMS ROAD
YORK, PA 17402
717-840-8181

KEYPLAN:



ISSUES:

NO.	DESCRIPTION	DATE

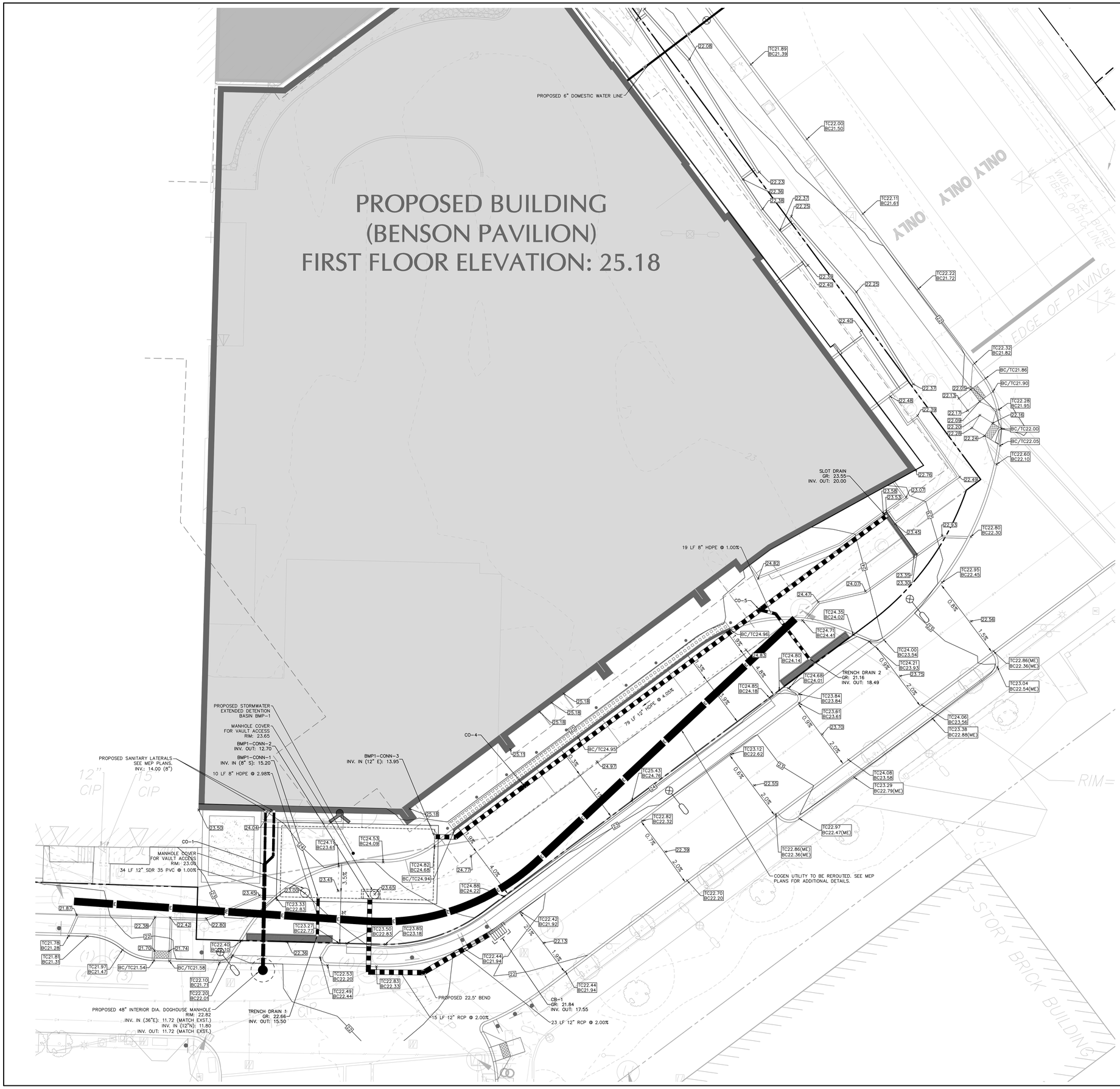
PROJECT NO. 7088
CON/REF NO.
DATE 10/08/2026
DCA# NJPRP-XXXXX

OVERALL GRADING AND DRAINAGE/UTILITY PLAN

CG101

Date: 10/7/2026 Time: 16:03 User: jcluckey Style Table: Langan.stb Layout: CG101 Document Code: 220245001-0502-CG101-0101

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GRADING AND DRAINAGE NOTES

1. THE CONTRACTOR SHALL VERIFY ALL INFORMATION TO THEIR SATISFACTION PRIOR TO THE EXECUTION OF CONTRACTS OR COMMENCING WORK. ANY DISCREPANCIES SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER OF RECORD.
2. BOUNDARY INFORMATION AND EXISTING FEATURES SHOWN HEREON ARE BASED ON "TOPOGRAPHIC SURVEY (SHOWING UTILITIES)" DATED 09/23/2026 PREPARED BY LANGAN ENGINEERING AND ENVIRONMENTAL SERVICES, INC..
3. THE MERIDIAN OF THE PLAN IS REFERENCED TO THE NEW JERSEY STATE PLANE COORDINATE SYSTEM (NAD 83) 2011 DERIVED USING SURVEY-GRADE GNSS EQUIPMENT.
4. TOPOGRAPHIC INFORMATION SHOWN HEREON HAS BEEN OBTAINED FROM GROUND SURVEYS BY LANGAN ENGINEERING AND ENVIRONMENTAL SERVICES, INC. DURING JULY 2023.
5. ELEVATIONS SHOWN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) DERIVED USING SURVEY-GRADE GNSS EQUIPMENT.
6. CONVERSION FROM NAVD 1988 TO NGVD IS AS FOLLOWS: EL. 17.00 (NAVD 88) + 1.09 = EL. 18.09 (NGVD 29)
7. AS AS PER THE NATIONAL FLOOD INSURANCE PROGRAM FIRM MAPS TITLED, CAMDEN COUNTY, NEW JERSEY, COMMUNITY PANEL 28 OF 305, MAP NUMBER 34007C0028F, LAST REVISED 08/17/2016, THE PROPERTY PRIMARILY LIES IN "OTHER AREAS", NOT WITHIN FLOOD AREA.
8. EXISTING FRAMES, COVERS, AND GRATES IN AREAS WHERE GRADES WILL BE REVISED BY FILLING OR CUTTING, OR PAVEMENT OVERLAY, MUST BE RESET TO MATCH FINAL GRADE (THIS INCLUDES MANHOLES, HANDHOLES, VALVE BOXES, INLETS, ETC). IN AREAS OF CUT, CONTRACTOR SHALL PROVIDE REQUIRED COVERAGE OF UTILITY AND STORMWATER LINES AS SPECIFIED BY THE UTILITY PURVEYOR.

NOTE: SEE OVERALL GRADING AND DRAINAGE PLAN (CG101) FOR COMPLETE NOTES.

LEGEND

- PROPERTY LINE
- LIMIT OF DISTURBANCE/NPDES BOUNDARY
- 25.50 — PROPOSED SPOT ELEVATION
- X.X% — PROPOSED SLOPE
- 25 — PROPOSED 1 FOOT CONTOUR LINE

FOR PROPOSED MANHOLES ON EXISTING SEWER MAINS CONNECT EXISTING PIPE TO A-LOK BOOT ON PROPOSED MANHOLE. IF EXISTING PIPE IS DAMAGED DURING EXCAVATION, REMOVE EXISTING CONCRETE PIPE TO NEAREST PIPE JOINT AND REPLACE.

EXISTING INFORMATION SHOWN IN BACKGROUND IN MD ANDERSON CANCER CENTER AND KELEMEN CDU ADDITION AREAS IS BASED ON A COMBINATION OF PREDEVELOPMENT FIELD SURVEY AND PROPOSED DESIGN DRAWINGS. CONTRACTOR SHALL USE DESIGN INFORMATION AS A GUIDE TO MEET INTENT, BUT MUST ULTIMATELY TIE INTO AS-BUILT CONDITIONS IN FIELD.

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FINAL LIMITS OF CURB RAMP REPLACEMENTS WILL BE DETERMINED ONCE ALL SITE WORK IS COMPLETE.

SCALE: 1 INCH = 10 FEET

PROJECT:

BENSON PAVILION

COOPER NORCROSS UNIVERSITY HOSPITAL
1 COOPER PLAZA
CAMDEN, NJ 08103

SEAL:

CERT OF AUTHORIZATION #AC 331

1001 E HECTOR STREET, SUITE 230
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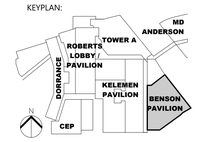
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314-289-9202

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STERILE PROCESSING & VERTICAL TRANSPORTATION CONSULTANT
1400 WILLIAMS ROAD
YORK, PA 17402
717-840-8181

KEYPLAN:



ISSUES:

NO.	DESCRIPTION	DATE

PROJECT NO. 7088
CON/REF NO.
DATE 10/08/2026

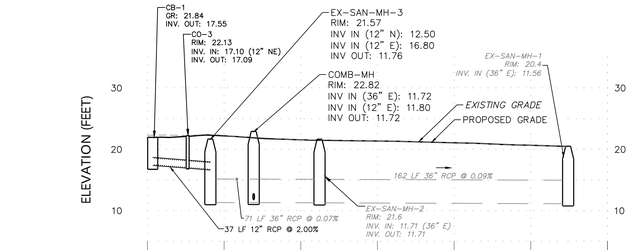
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DETAILED GRADING AND DRAINAGE PLAN

CG102

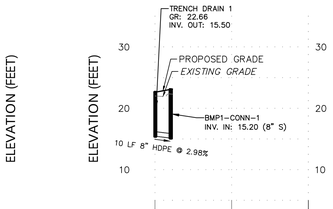
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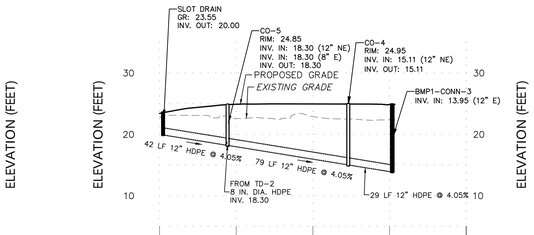
DISTANCE (FEET)	0	100	200	300
EXISTING ELEV. (FEET)	22.3	22.3	21.5	21.4	21.1	20.7
PROPOSED ELEV. (FEET)	22.30	22.28	21.54	21.38	21.11	20.67

DRAINAGE PROFILE
(CB-1 TO EX-SAN-MH-1)



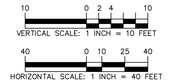
DISTANCE (FEET)	0	100
EXISTING ELEV. (FEET)	22.0
PROPOSED ELEV. (FEET)	22.02

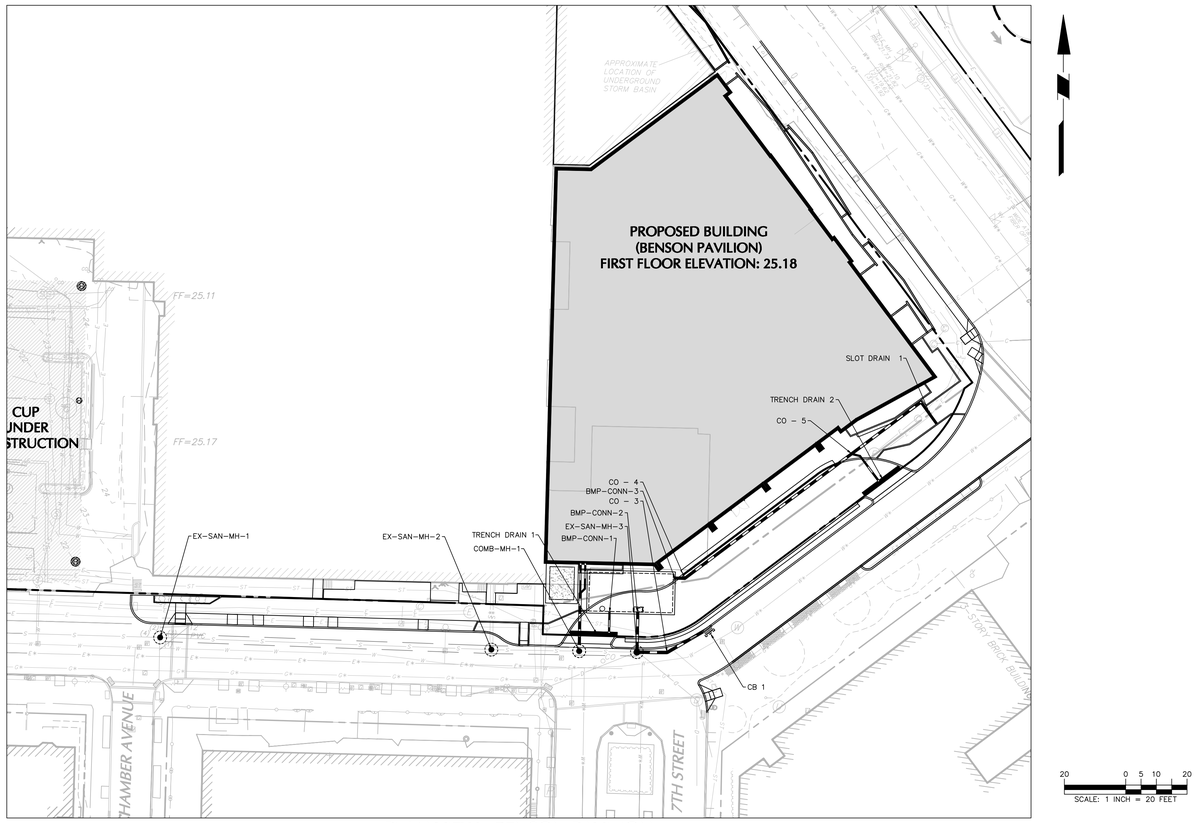
DRAINAGE PROFILE
(TRENCH DRAIN 1 TO BMP-1)



DISTANCE (FEET)	0	100	200
EXISTING ELEV. (FEET)	22.8	22.6	22.9	22.4
PROPOSED ELEV. (FEET)	22.81	22.59	22.89	22.38

DRAINAGE PROFILE
(SLOT DRAIN TO BMP-1)





PLAN VIEW - BENSON PAVILION

EXISTING UTILITY CROSSINGS MAY EXIST. CONTRACTOR TO PERFORM TEST PITS TO CONFIRM. CONTRACTOR TO CONFIRM EXISTING SEWER INLETS PRIOR TO PROCUREMENT OF MATERIALS.

PROJECT:

BENSON PAVILION

COOPER NORCROSS UNIVERSITY HOSPITAL
1 COOPER PLAZA
CAMDEN, NJ 08103

SEAL:

CERT OF AUTHORIZATION #AC 331

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IN COLLABORATION WITH:

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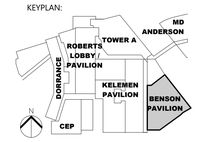
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KEYPLAN:



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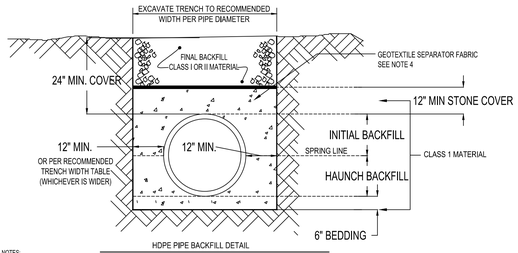
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STORMWATER PROFILES

CG201

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HDPE PIPE BACKFILL DETAIL

NOTES:

1. BEDDING, HAUNCH, INITIAL BACKFILL AND COVER SHALL BE CLASS 1 MATERIAL. CLASS 1 MATERIAL MUST BE EVENLY SPREAD INTO THE HAUNCH AND BETWEEN CORRUGATIONS. IF CLASS 1A MATERIAL IS USED, THE CLASS 1A MATERIAL SHOULD BE SPREAD IN 6-INCH-THICK LIFTS AND NOMINALLY COMPACTED USING A HAND-OPERATED COMPACTION EQUIPMENT. IF CLASS 1B MATERIAL IS USED, THE CLASS 1B MATERIAL SHOULD BE SPREAD IN 6-INCH-THICK LIFTS AND COMPACTED TO AT LEAST 95% OF THE MATERIALS MAX DRY DENSITY.
2. FINAL BACKFILL MATERIAL SHALL BE EITHER CLASS I (A OR B) OR CLASS II MATERIAL. THESE MATERIALS CAN EITHER BE IMPORTED OR PROCESSED FROM ONSITE MATERIAL GENERATED DURING ROCK EXCAVATION.
3. FINAL BACKFILL SHALL BE COMPACTED TO AT LEAST 95% OF THE MATERIAL'S MAXIMUM DRY DENSITY AS DETERMINED BY A MODIFIED PROCTOR COMPACTION TEST (ASTM D1557).
4. THE SEPARATOR FABRIC IS REQUIRED UNLESS OTHERWISE DIRECTED BY THE GEOTECHNICAL ENGINEER. THE NEED FOR A SEPARATOR FABRIC TO PREVENT SOIL PARTICLE MIGRATION SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER ONCE GRADATION DATA IS PROVIDED FOR ALL PROPOSED BACKFILL MATERIALS.

CLASSES OF EMBEDMENT AND BACKFILL MATERIALS

CLASS (PER ASTM D2321)	TYPE	SOIL GROUP SYMBOL ASTM D 2487	DESCRIPTION	PERCENTAGE PASSING SIEVE SIZES 1 1/2 IN (40 MM)	NO. 4 (4.75 MM)	NO. 200 (0.075 MM)
IA	MANUFACTURED AGGREGATES OPEN-GRADED, CLEAN.	NONE	ANGULAR, CRUSHED STONE OR ROCK, CRUSHED GRAVEL, BROKEN CORAL, CRUSHED SLAG, CINDERS OR SHELLS: LARGE VOID CONTENT, CONTAIN LITTLE OR NO FINES.	100 %	≤ 10 %	< 5 %
IB	MANUFACTURED, PROCESSED AGGREGATES; DENSE-GRADED, CLEAN	NONE	ANGULAR, CRUSHED STONE (OR OTHER CLASS IA MATERIALS) AND STONE/SAND MIXTURES WITH GRADATIONS SELECTED TO MINIMIZE MIGRATION OF ADJACENT SOILS; CONTAIN LITTLE OR NO FINES (SEE X1.6.).	100 %	≤ 50 %	< 5 %
II	COARSE-GRAINED SOILS, CLEAN	GW	WELL-GRADED GRAVELS AND GRAVEL-SAND MIXTURES; LITTLE OR NO FINES.	100 %	< 50 % "COARSE FRACTION"	< 5 %
		GP	POORLY-GRADED GRAVELS AND GRAVEL-SAND MIXTURES; LITTLE OR NO FINES.			
		SW	WELL-GRADED SANDS AND GRAVELLY SANDS; LITTLE OR NO FINES.		> 50 % OF "COARSE FRACTION"	
		SP	POORLY-GRADED SANDS AND GRAVEL SANDS; LITTLE OR NO FINES.			
	COARSE-GRAINED SOILS, BORDERLINE CLEAN TO W/ FINES	E.G. GW-GC, SP-SM.	SANDS AND GRAVELS WHICH ARE BORDERLINE BETWEEN CLEAN AND WITH FINES.	100 %	VARIES	5 % TO 12 %
III	COARSE-GRAINED SOILS, WITH FINES	GM	SILTY GRAVELS, GRAVEL-SAND SILT MIXTURES.	100 %	< 50 % OF "COARSE FRACTION"	12 % TO 50 %
		GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES.			
		SM	SILTY SANDS, SAND-SILT MIXTURES.		> 50 % OF "COARSE FRACTION"	
		SC	CLAYEY SANDS, SAND-CLAY MIXTURES.			

NOTE: CONTRACTOR TO COORDINATE AND CONFIRM WITH SPECIFIC PIPE MANUFACTURER.

GENERAL NOTES:

1. MATERIALS: UNLESS OTHERWISE SPECIFIED ON THE PLANS OR HEREIN, CORRUGATED POLYETHYLENE PIPE SHALL CONFORM TO AASHTO M-294, LATEST EDITION. STANDARD SPECIFICATION FOR CORRUGATED POLYETHYLENE PIPE.
2. RESINS: CORRUGATED POLYETHYLENE PIPE SHALL BE MANUFACTURED FROM HIGH DENSITY POLYETHYLENE VIRGIN COMPOUNDS, AND SHALL CONFORM TO THE REQUIREMENTS OF ASTM D-3350 FOR THE CELL CLASSIFICATION 335400C.
3. COUPLING BANDS: EXCEPT AS OTHERWISE REQUIRED HEREIN, COUPLING BANDS AND OTHER HARDWARE FOR CORRUGATED POLYETHYLENE PIPE SHALL DEMONSTRATE THAT THEY MEET THE SOIL TIGHTNESS REQUIREMENTS OF AASHTO SECTION 26 "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES."

   COUPLING BANDS SHALL LAP EQUALLY ON EACH OF THE PIPES BEING CONNECTED TO FORM A TIGHTLY CLOSED JOINT AFTER INSTALLATION.

   THE CORRUGATIONS IN THE BAND SHALL INDEX THE CORRUGATIONS IN THE PIPE ENDS TO ENGAGE AT LEAST TWO FULL CORRUGATIONS FROM THE END OF EACH PIPE.

   WHEN INFILTRATION OR EXFILTRATION IS A CONCERN, THE COUPLING BANDS MAY BE REQUIRED TO HAVE GASKETS. THE GASKET MATERIAL SHALL BE CLOSED-CELL EXPANDED RUBBER OR NEOPRENE.

   OTHER COUPLINGS MAY BE BELL & SPIGOT AND CONFORM TO THE REQUIREMENTS OF AASHTO M294.
4. DESIGNATION OF TYPE: THE PIPE MAY BE ONE OR BOTH OF THE FOLLOWING TYPE:

   TYPE S: THIS PIPE WILL HAVE A FULL CIRCULAR CROSS- SECTION, WITH AN OUTER CORRUGATED PIPE WALL AND A SMOOTH INNER LINER.

   TYPE D: THIS PIPE SHALL CONSIST OF AN ESSENTIALLY SMOOTH WATERWAY BRACED CIRCUMFERENTIALLY WITH CIRCULAR RIBS WHICH ARE FORMED SIMULTANEOUSLY WITH A SMOOTH OUTER WALL.
5. INSTALLATION: CORRUGATED POLYETHYLENE PIPE SHALL BE INSTALLED IN ACCORDANCE WITH TABLE 1 AND ASTM D-2321, LATEST EDITION, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS."

HIGH DENSITY CORRUGATED POLYETHYLENE PIPE HEIGHT OF COVER H-20 AND E-80 LIVE LOADS

NOMINAL DIAMETER IN. (MM)	MINIMUM COVER IN & (MM) H-20	E-80
12 (300)	12 (300)	24 (600)
15 (375)	12 (300)	24 (600)
18 (450)	12 (300)	24 (600)
24 (600)	12 (300)	24 (600)
30 (750)	12 (300)	24 (600)
36 (900)	12 (300)	24 (600)
42 (1050)	12 (300)	24 (600)
48 (1200)	12 (300)	24 (600)
60 (1500)	24 (600)	24 (600)

RECOMMENDED TRENCH WIDTH

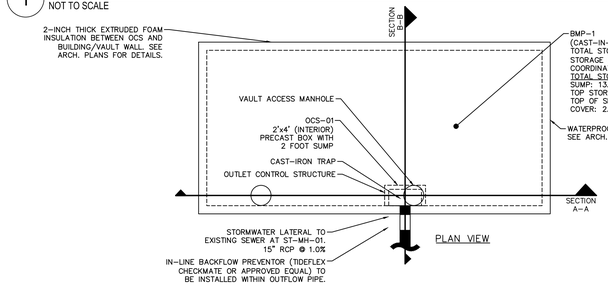
DIAMETER	O.D.	TRENCH WIDTH
12"	14.48"	31"
15"	17.65"	34"
18"	21.10"	39"
24"	28.30"	48"
30"	36.10"	66"
36"	42.25"	78"
42"	47.00"	83"
48"	53.00"	89"
60"	66.30"	102"

The trench width must be wide enough to accomodate compaction equipment.

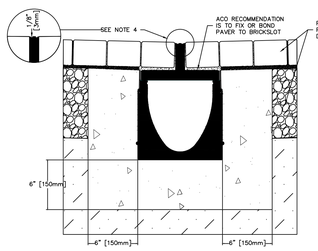
APPROXIMATE MAXIMUM COVER FOR HDPE PIPES (PER ASTM F2648), FT(MM). REFERENCE FROM ADS LITERATURE. CONTRACTOR MUST CONFIRM MAXIMUM ALLOWABLE COVER WITH SELECTED MANUFACTURER.

DIAMETER OF PIPE IN. (MM)	CLASS 1 COMPACTED 95% FT. (M)	CLASS 2 95% FT. (M)	CLASS 2 90% FT. (M)	CLASS 3 95% FT. (M)
12 (300)	27 (8.2)	21 (6.4)	14 (4.3)	12 (3.6)
15 (375)	27 (8.2)	21 (6.4)	14 (4.3)	13 (3.9)
18 (450)	25 (7.6)	18 (5.5)	13 (3.9)	11 (3.3)
24 (600)	22 (6.7)	16 (4.8)	11 (3.3)	12 (3.6)
30 (750)	17 (5.2)	13 (3.9)	9 (2.7)	7 (2.1)
36 (900)	21 (6.4)	15 (4.5)	10 (3.0)	10 (3.0)
42 (1050)	17 (5.2)	13 (3.9)	9 (2.7)	7 (2.1)
48 (1200)	18 (5.5)	13 (3.9)	9 (2.7)	10 (3.0)
60 (1500)	20 (6.0)	15 (4.5)	10 (3.0)	10 (3.0)

1 HDPE PIPE INSTALLATION DETAIL
NOT TO SCALE



6 SCHEMATIC DETAIL OF PROPOSED UNDERGROUND EXTENDED DETENTION BASIN (BMP-1) AND OUTLET CONTROL STRCUTURE (OCS-01)
1:4



NOTES:
1. IT IS NECESSARY TO ENSURE MINIMUM DIMENSIONS SHOWN ARE SUITABLE FOR EXISTING GROUND CONDITIONS. *ENGINEERING ADVICE MAY BE REQUIRED.*
2. MINIMUM CONCRETE STRENGTH OF 4,000 PSI IS RECOMMENDED. CONCRETE SHOULD BE VIBRATED TO ELIMINATE AIR POCKETS.
3. EXPANSION AND CONTRACTION CONTROL JOINTS AND REINFORCEMENT ARE RECOMMENDED TO PROTECT CHANNEL AND CONCRETE SURROUND. *ENGINEERING ADVICE MAY BE REQUIRED.*
4. THE FINISHED LEVEL OF THE CONCRETE SURROUND MUST BE APPROX. 1/8" [3mm] ABOVE THE TOP OF THE CHANNEL EDGE.
5. CONCRETE BASE THICKNESS SHOULD MATCH SLAB THICKNESS. ENGINEERING ADVICE MAY BE REQUIRED TO DETERMINE PROPER LOAD CLASS.
6. REFER TO ACO'S LATEST INSTALLATION INSTRUCTIONS FOR FURTHER DETAILS.

SPECIFICATION CLAUSE

K200 KLASSIKDRAIN W/HEEL RESISTANT BRICKSLOT 200 - LOAD CLASS A

GENERAL
THE SURFACE DRAINAGE SYSTEM SHALL BE POLYMER CONCRETE K200 CHANNEL SYSTEM WITH GALVANIZED STEEL EDGE RAILS AND HEEL RESISTANT BRICKSLOT 200 AS MANUFACTURED BY ACO POLYMER PRODUCTS, INC.

MATERIALS
CHANNELS SHALL BE MANUFACTURED FROM POLYESTER RESIN POLYMER CONCRETE WITH AN INTEGRALLY CAST-IN GALVANIZED STEEL EDGE RAILS. MINIMUM PROPERTIES OF POLYMER CONCRETE STILL BE AS FOLLOWS:
COMPRESSIVE STRENGTH 14,000 PSI
FLEXURAL STRENGTH 4,000 PSI
TENSILE STRENGTH 1,500 PSI
WATER ABSORPTION 0.07%
FROST PROOF YES
DILUTE ACID AND ALKALI RESISTANT YES
B117 SALT SPRAY TEST COMPLIANT YES

THE SYSTEM SHALL BE 8" (200mm) NOMINAL INTERNAL WIDTH WITH A 10.2" (260mm) OVERALL WIDTH. ALL CHANNELS SHALL BE INTERLOCKING WITH A MALE/FEMALE JOINT.

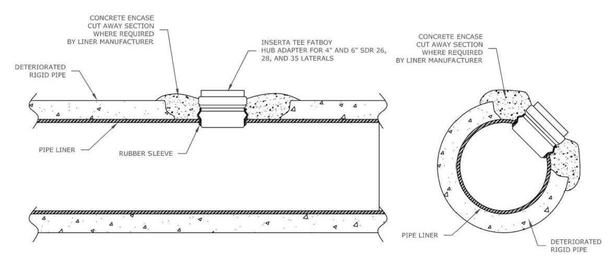
THE COMPLETE DRAINAGE SYSTEM SHALL BE BY ACO POLYMER PRODUCTS, INC. ANY DEVIATION OR PARTIAL SYSTEM DESIGN AND/OR IMPROPER INSTALLATION WILL VOID ANY AND ALL WARRANTIES PROVIDED BY ACO POLYMER PRODUCTS, INC.

CHANNEL SHALL WITHSTAND LOADING TO PROPER LOAD CLASS AS OUTLINED BY EN 1433. HEEL RESISTANT BRICKSLOT 200 SHALL BE APPROPRIATE TO MEET THE SYSTEM LOAD CLASS SPECIFIED AND SHALL BE MANUFACTURED IN ACCORDANCE WITH AND BE CERTIFIED TO MEET THE SPECIFIED EN 1433 LOAD CLASS. THE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.

THE HEEL RESISTANT BRICKSLOT 200 GRATING SYSTEM SHALL HAVE AN OVERALL INTERNAL WIDTH OF 0.89" (22.25mm) WITH TWO 0.31" (8mm) SLOT OPENINGS AND WITH A 0.25" (6.35mm) TAPERED BAR BETWEEN THE TWO OPENINGS TO PREVENT DEBRIS FROM BEING TRAPPED. THE BRICKSLOT GRATING SYSTEM ADDS 3.27" (83mm) TO THE OVERALL HEIGHT OF THE K200 SYSTEM

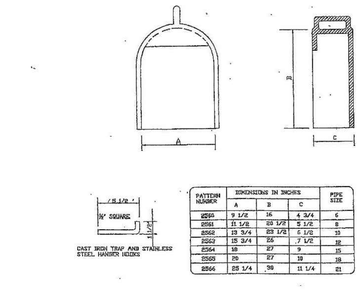
9 SLOT DRAIN (OR APPROVED EQUAL)
NOT TO SCALE

2 INSERTA- TEE SEWER CONNECTION
NOT TO SCALE



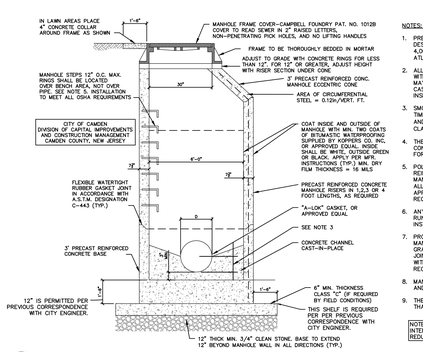
INSTALLATION INSTRUCTIONS:
1. MARK AREA TO BE TAPPED ON SURFACE OF RIGID PIPE. WORKING AREA SHOULD BE 2-INCHES WIDER THAN DIAMETER OF INSERTA TEE.
2. BREAK AWAY RIGID PIPE SECTION TO BE TAPPED AND EXPOSE NEW LINER SECTION.
3. BRUSH AND CLEAN PIPE LINER SURFACE AND REMOVE DAMAGED SECTIONS OF RIGID PIPE.
4. CORE HOLE INTO LINER WITH APPROPRIATE INSERTA TEE HOLE SAW.
5. INSTALL INSERTA TEE FATBOY® TAP CONNECTION PER PROVIDED INSTALLATION INSTRUCTIONS.
6. ENCASE CUT OUT SECTION OF RIGID PIPE WITH CONCRETE WHERE REQUIRED BY LINING MANUFACTURER.

3 CITY OF CAMDEN STANDARD CAST IRON TRAP
NOT TO SCALE



PATTERN NUMBER	DIMENSIONS IN INCHES A	B	C	PIPE SIZE
2561	9 1/2	16	4 3/4	6
2562	11 1/2	20 1/2	5 1/2	8
2563	13 3/4	23 1/2	6 1/2	10
2564	15 3/4	26	7 1/2	12
2565	18	27	9	15
2566	25	27	10	18
2566	28 1/4	30	11 1/4	21

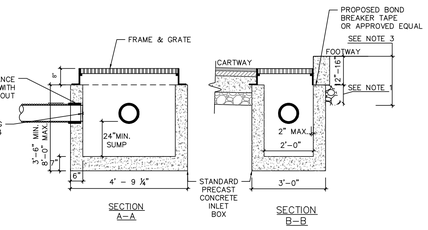
4 CITY OF CAMDEN STANDARD PRECAST MANHOLE
NOT TO SCALE



NOTES:
1. PRECAST MANHOLE IN ACCORDANCE WITH A.S.T.M. DESIGNATION C-478, MINIMUM COMPRESSIVE STRENGTH 4,000 P.S.I. (TYP.). MANHOLE TO BE MANUFACTURED BY ATLANTIC CONCRETE OR APPROVED EQUAL.
2. ALL MANHOLES SHALL BE CONSTRUCTED WATERTIGHT WITHOUT THE USE OF A RUBBER GASKET. WATER TIGHTNESS MAY BE ACHIEVED BY DISH SHAPED INSERTS, WATERTIGHT CASTING, OR APPROVED EQUAL DISH SHAPED WATERTIGHT INSERT SHALL BE SUPPLIED, TWO PER MANHOLE.
3. SMOOTH CONCRETE CHANNEL WITH DEPTH EQUAL TO 0.80 TIMES THE DIA. OF THE MAIN SEWER FOR SIZES 8" TO 15" AND 0.50 TIMES THE DIA. FOR SIZES 16" AND ABOVE. (USE CLASS C CONCRETE)
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTING ADEQUATE BALLAST TO OFFSET FLOTATION FORCES ACTING ON MANHOLES INSTALLED IN WET AREAS.
5. POLYPROPYLENE RUNGS, WITH GRADE 60 STEEL REINFORCEMENT AND TEETH SIDE CLEATS, AS MANUFACTURED BY M.A. INDUSTRIES. STEEL RUNGS NOT ALLOWED. FOR MANHOLES GREATER THAN 15'-0" DEEP, APPLICANT SHALL CONTACT LTMUA FOR SPECIFIC MANHOLE REQUIREMENTS. ALL OSHA REQUIREMENTS MUST BE MET.
6. ANY MANHOLE REQUIRING LINING SHALL HAVE MANHOLE RUNGS REMOVED AND HAVE A COMPOSITE LADDER INSTALLED.
7. PROVIDE WRAPIDSEAL MANHOLE ENCAPSULATION SYSTEM, AS MANUFACTURED BY CANUSA-CPS, AROUND FRAME AND GRADE RINGS FOR ALL MANHOLES AND AROUND ALL RISER JOINTS. INSTALLATION SHALL BE PROVIDED IN ACCORDANCE WITH ALL CPS MANUFACTURER'S REQUIREMENTS AND RECOMMENDATIONS.
8. MANHOLE FRAME SHALL BE LAID IN 1-INCH OF MORTAR AND HAVE 1-INCH MORTAR AROUND THE RIM.
9. THERE SHALL BE NO CHANGE IN FLOW DIRECTION GREATER THAN 90 DEGREES.

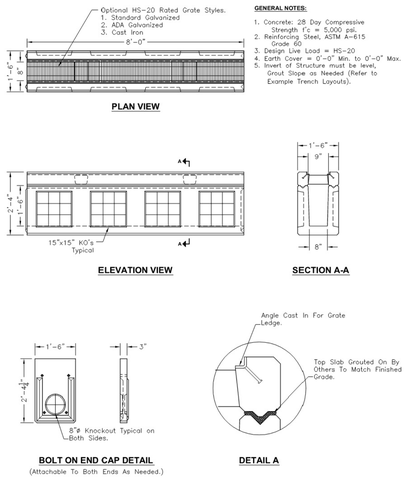
NOTE THAT IF REDUCING SLABS ARE USED, MINIMUM INTERIOR HEIGHT OF 7 FEET BETWEEN MANHOLE BASE AND REDUCING SLAB MUST BE PROVIDED PER CITY ENGINEER.

7 GRATE INLET WITH SUMP
NOT TO SCALE



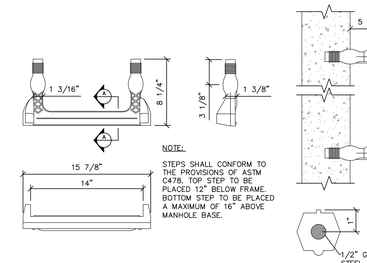
NOTES:
1. LOCATE PIPE OPENINGS TO PROVIDE MINIMUM 4" OF CONCRETE BETWEEN TOP OF INLET BOX AND TOP OF PIPE OPENING. CURB ABOVE INLET SHALL BE SUPPORTED WITH DGA STONE BETWEEN TOP OF PIPE AND BOTTOM OF CURB. CURB OUTSIDE OF INLET SHALL BE STANDARD DEPTH.
2. FOOTWAY AND CARTWAY RESTORATION HAS BEEN DRAWN FOR REFERENCE PURPOSES ONLY. PAVEMENT RESTORATION QUANTITIES AND DESIGN MUST CONFORM TO CURRENT CITY OF CAMDEN STANDARDS FOR CITY STREETS.
3. PLUMBERS PLUG TO MAINTAIN WATERTIGHT SEAL UNTIL CONSTRUCTION IS COMPLETE. PLUMBERS PLUG IS NOT TO EXTEND MORE THAN 2" OUT FROM INLET WALL.
4. ALL JOINTS, ADJUSTMENTS, AND PIPE CONNECTIONS MUST BE WATERTIGHT.

8 TRENCH DRAIN (OR APPROVED EQUAL)
NOT TO SCALE



DETAIL PROVIDED FOR REFERENCE. FINAL TRENCH DRAIN DETAIL WILL BE PROVIDED TO PLANNING BOARD ENGINEER ONCE SELECTED.

5 CITY OF CAMDEN COPOLYMER POLYPROPYLENE PLASTIC STEEL REINFORCED MANHOLE STEP
NOT TO SCALE



NOTE:
STEPS SHALL CONFORM TO THE PROVISIONS OF ASTM C478. TOP STEP TO BE PLACED 12" BELOW FRAME. BOTTOM STEP TO BE PLACED A MAXIMUM OF 16" ABOVE MANHOLE BASE.

SECTION A-A
NOT TO SCALE

PROJECT:

BENSON PAVILION

COOPER NORCROSS UNIVERSITY HOSPITAL
1 COOPER PLAZA
CAMDEN, NJ 08103

SEAL:

CERT OF AUTHORIZATION #AC 331

1001 E HECTOR STREET, SUITE 230
CONSHOHOCKEN, PA 19428
610-270-0595
ARRAY-ARCHITECTS.COM

IN COLLABORATION WITH:

LANGAN ENGINEERING & ENVIRONMENTAL SERVICES, LLC
CIVIL ENGINEERING
1 UNIVERSITY SQUARE DRIVE, SUITE 100
PRINCETON, NJ 08540
609-282-8000

HKS ARCHITECTS, P.C.
CORE & SHELL ARCHITECT
975 F ST NW, SUITE 200
WASHINGTON, DC 20004
202-682-6289

O'DONNELL & NACCARATO
STRUCTURAL ENGINEER
701 MARKET STREET, #6000
PHILADELPHIA, PA 19106
215-925-3788

HIGHLAND ASSOCIATES
MEP-FP ENGINEERS
102 HIGHLAND AVE
CLARKS SUMMIT, PA 18411
570-586-4334

BR+A CONSULTING ENGINEERS
MEP-FP ENGINEERS
100 PARK AVENUE, SUITE 200
NEW YORK, NY 10017
212-840-0060

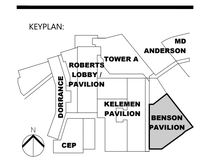
INTROBA
LOW VOLTAGE AV/IT
32 OLD SLIP, 10TH FLOOR
NEW YORK, NY 10006
212-997-5100

VISIONBUILDERS DESIGN
FOOD SERVICES CONSULTANT
1515 SHOPTON ROAD, SUITE 104
CHARLOTTE, NC 28217
704-405-3101

HEALTH, EDUCATION AND RESEARCH ASSOCIATES, INC.
LABORATORY PLANNER
609 E. LOCKWOOD AVENUE, SUITE 204
ST. LOUIS, MO 63119
314-289-9202

ST ONGE
STERILE PROCESSING & VERTICAL TRANSPORTATION CONSULTANT
1400 WILLIAMS ROAD
YORK, PA 17402
717-840-8181

KEYPLAN:



ISSUES:

NO.	DESCRIPTION	DATE

PROJECT NO. 7088
CON/REF NO.
DATE 10/08/2026
DCA# NJPRP-XXXXX

GRADING AND DRAINAGE DETAILS

CG501

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Date: 10/7/2026 Time: 16:06 User: jcluckey Style Table: Langan.stb Layout: CG501 Document Code: 220245001-0502-CG501-0101

Appendix A
Low-Impact Development Checklist

New Jersey Stormwater Best Management Practices Manual

February 2004

http://www.state.nj.us/dep/watershedmgt/bmpmanualfeb2004.htm

A P P E N D I X A

Low Impact Development Checklist

A checklist for identifying nonstructural stormwater management strategies incorporated into proposed land development

According to the NJDEP Stormwater Management Rules at N.J.A.C. 7:8, the groundwater recharge, stormwater quality, and stormwater quantity standards established by the Rules for major land development projects must be met by incorporating nine specific nonstructural stormwater management strategies into the project's design to the maximum extent practicable.

To accomplish this, the Rules require an applicant seeking land development approval from a regulatory board or agency to identify those nonstructural strategies that have been incorporated into the project's design. In addition, if an applicant contends that it is not feasible to incorporate any of the specific strategies into the project's design, particularly for engineering, environmental, or safety reasons, the Rules further require that the applicant provide a basis for that contention.

This checklist has been prepared to assist applicants, site designers, and regulatory boards and agencies in ensuring that the nonstructural stormwater management requirements of the Rules are met. It provides an applicant with a means to identify both the nonstructural strategies incorporated into the development's design and the specific low impact development BMPs (LID-BMPs) that have been used to do so. It can also help an applicant explain the engineering, environmental, and/or safety reasons that a specific nonstructural strategy could not be incorporated into the development's design.

The checklist can also assist municipalities and other land development review agencies in the development of specific requirements for both nonstructural strategies and LID-BMPs in zoning and/or land use ordinances and regulations. As such, where requirements consistent with the Rules have been adopted, they may supersede this checklist.

Finally, the checklist can be used during a pre-design meeting between an applicant and pertinent review personnel to discuss local nonstructural strategies and LID-BMPs requirements in order to optimize the development's nonstructural stormwater management design.

Since this checklist is intended to promote the use of nonstructural stormwater management strategies and provide guidance in their incorporation in land development projects, municipalities are permitted to revise it as necessary to meet the goals and objectives of their specific stormwater management program and plan within the limits of N.J.A.C. 7:8.

Low Impact Development Checklist

A checklist for identifying nonstructural stormwater management strategies incorporated into proposed land development

Municipality: *City of Camden*

County: *Camden* Date: *10/01/2026*

Review board or agency: *City of Camden Planning Board*

Proposed land development name: *Cooper University Hospital – Benson Pavilion*

Lot(s): *1* Block(s): *1402* Lot(s): Block(s):

Project or application number: *TBD*

Applicant's name: _____

Applicant's address: _____

Telephone: _____ Fax: _____

Email address: _____

Designer's name: *Kyle MacGeorge*

Designer's address: *1 University Square Drive, Suite 110, Princeton, NJ 08540*

Telephone: *609-282-8000* Fax: *609-282-8001*

Email address: *kmacgeorge@langan.com*

Part 1: Description of Nonstructural Approach to Site Design

In narrative form, provide an overall description of the nonstructural stormwater management approach and strategies incorporated into the proposed site's design. Attach additional pages as necessary. Details of each nonstructural strategy are provided in Part 3 below.

The proposed stormwater management approach for the project includes low-impact development strategies listed below, in accordance with N.J.A.C. 7:8-5.3.

1. Protect areas that provide water quality benefits or areas particularly susceptible to erosion and sediment loss.
2. Minimize land disturbance including clearing and grading, by redeveloping the existing hospital campus rather than a new "greenfield" elsewhere.
3. Minimize soil compaction, by redeveloping the existing hospital campus rather than a new "greenfield" elsewhere.
4. Provide low maintenance landscaping that encourages retention and planting of native vegetation and minimizes the use of lawns, fertilizers, and pesticides.
5. Provide preventative source controls.

Part 2: Review of Local Stormwater Management Regulations

Title and date of stormwater management regulations used in development design:

City of Camden Zoning and Land Use and Stormwater Control and Management Code; N.J.A.C. 7:8 (July 2023)

Do regulations include nonstructural requirements?
Yes: *X* No: _____

If yes, briefly describe: *Nonstructural requirements in the city ordinance are consistent with the N.J.A.C. code requirements, which include evaluating nonstructural strategies as part of the stormwater management plan to reduce the need for structural requirements.*

List LID-BMPs prohibited by local regulations: *N/A*

Pre-design meeting held? Yes: *X* Date: *8/2026* No: _____

Meeting held with: *Langan, Array, HKS, PurePM, CUHC*

Pre-design site walk held? Yes: *X* Date: *68/7/2026* No: _____

Site walk held with: *Langan*

Other agencies with stormwater review jurisdiction:

Name: *Camden County Soil Conservation District*

Required approval: *NJPDES Approval*

Name: _____

Required approval: _____

Name: _____

Required approval: _____

Part 3: Nonstructural Strategies and LID-BMPs in Design

3.1 Vegetation and Landscaping

Effective management of both existing and proposed site vegetation can reduce a development's adverse impacts on groundwater recharges and runoff quality and quantity. This section of the checklist helps identify the vegetation and landscaping strategies and nonstructural LID-BMPs that have been incorporated into the proposed development's design to help maintain existing recharge rates and/or minimize or prevent increases in runoff quantity and pollutant loading.

A. Has an inventory of existing site vegetation been performed? Yes: _____ No: *X*

If yes, was this inventory a factor in the site's layout and design? Yes: _____ No: *X*

B. Does the site design utilize any of the following nonstructural LID-BMPs?

Preservation of natural areas? Yes: _____ No: *X (N/A)*
If yes, specify % of site: _____

Native ground cover? Yes: _____ No: *X (N/A)*
If yes, specify % of site: _____

Vegetated buffers? Yes: _____ No: *X*
If yes, specify % of site: _____

C. Do the land development regulations require these nonstructural LID-BMPs?

Preservation of natural areas? Yes: _____ No: *X*
If yes, specify % of site: _____

Native ground cover? Yes: _____ No: *X*
If yes, specify % of site: _____

Vegetated buffers? Yes: _____ No: *X*
If yes, specify % of site: _____

D. If vegetated filter strips or buffers are utilized, specify their functions: N/A

Reduce runoff volume increases through lower runoff coefficient:
Yes: _____ No: _____

Reduce runoff pollutant loads through runoff treatment:
Yes: _____ No: _____

Maintain groundwater recharge by preserving natural areas:
Yes: _____ No: _____

3.2 Minimize Land Disturbance

Minimizing land disturbance is a nonstructural LID-BMP that can be applied during both the development's construction and post-construction phases. This section of the checklist helps identify those land disturbance strategies and nonstructural LID-BMPs that have been incorporated into the proposed development's design to minimize land disturbance and the resultant change in the site's hydrologic character.

A. Have inventories of existing site soils and slopes been performed?
Yes: X No: _____

If yes, were these inventories factors in the site's layout and design? Yes: X No: _____

B. Does the development's design utilize any of the following nonstructural LID-BMPs?

Restrict permanent site disturbance by land owners?
Yes: _____ No: X

If yes, how: _____

Restrict temporary site disturbance during construction?
Yes: _____ No: X

If yes, how: _____

Consider soils and slopes in selecting disturbance limits?
Yes: X No: _____

If yes, how: *No steep slopes exist on-site pre-construction. All soils on-site are urban fill.*

C. Specify percentage of site to be cleared: *100%* Regraded: *100%*

D. Specify percentage of cleared areas done so for buildings: *100%*

For driveways and parking: *0%* For roadways: *0%*

E. What design criteria and/or site changes would be required to reduce the percentages in C and D above? *Nothing can be changed to reduce the percentages in C and D above because the majority of the site is building area, which requires regrading around it.*

F. Specify site's hydrologic soil group (HSG) percentages:

HSG A: _____ HSG B: _____ HSG C: *100%* HSG D:

G. Specify percentage of each HSG that will be permanently disturbed:

HSG A: _____ HSG B: _____ HSG C: *100%* HSG D:

H. Locating site disturbance within areas with less permeable soils (HSG C and D) and minimizing disturbance within areas with greater permeable soils (HSG A and B) can help maintain groundwater recharge rates and reduce runoff volume increases. In light of the HSG percentages in F and G above, what other practical measures if any can be taken to achieve this?

None, entire site is urban fill with HSG D.

I. Does the site include Karst topography? Yes: _____ No: *X*

If yes, discuss measures taken to limit Karst impacts:

_____

3.3 Impervious Area Management

New impervious surfaces at a development site can have the greatest adverse effect on groundwater recharge and stormwater quality and quantity. This section of the checklist helps identify those nonstructural strategies and LID-BMPs that have been incorporated into a proposed development's design to comprehensively manage the extent and impacts of new impervious surfaces.

A. Specify impervious cover at site: Existing: *73%* Proposed: *95.%*

B. Specify maximum site impervious coverage allowed by regulations: *90%*

C. Compare proposed street cartway widths with those required by regulations: N/A

Type of Street	Proposed Cartway Width (feet)	Required Cartway Width (feet)
Residential access – low intensity		
Residential access – medium intensity		
Residential access – high intensity with parking		
Residential access – high intensity without parking		
Neighborhood		
Minor collector – low intensity without parking		
Minor collector – with one parking lane		
Minor collector – with two parking lanes		
Minor collector – without parking		
Major collector		

D. Compare proposed parking space dimensions with those required by regulations: N/A

Proposed: _____ Regulations: _____

E. Compare proposed number of parking spaces with those required by regulations: N/A

Proposed: _____ Regulations: _____

F. Specify percentage of total site impervious cover created by buildings: 83%

By driveways and parking: *6%* By roadways: *0%*

G. What design criteria and/or site changes would be required to reduce the percentages in F above?

None, the building footprint cannot be reduced because of project requirements.

H. Specify percentage of total impervious area that will be unconnected:

Total site: *3%* Buildings: 0_____ Driveways and parking: 9_____ Roads:0 _____

I. Specify percentage of total impervious area that will be porous:

Total site: *0%* Buildings: _____ Driveways and parking: _____Roads: _____

J. Specify percentage of total building roof area that will be vegetated: *0%*

K. Specify percentage of total parking area located beneath buildings: *0%*

L. Specify percentage of total parking located within multi-level parking deck: *0%*

3.4 Time of Concentration Modifications

Decreasing a site's time of concentration (Tc) can lead directly to increased site runoff rates which, in turn, can create new and/or aggravate existing erosion and flooding problems downstream. This section of the checklist helps identify those nonstructural strategies and LID-BMPs that have been incorporated into the proposed development's design to effectively minimize such Tc decreases.

When reviewing Tc modification strategies, it is important to remember that a drainage area's Tc should reflect the general conditions throughout the area. As a result, Tc modifications must generally be applied throughout a drainage area, not just along a specific Tc route.

A. Specify percentage of site's total stormwater conveyance system length that will be:

Storm sewer: 90% Vegetated swale: *N/A – urban site* Natural channel: *N/A – urban site*

Stormwater management facility: *10%* Other: _____

Note: the total length of the stormwater conveyance system should be measured from the site's downstream property line to the downstream limit of sheet flow at the system's headwaters.

B. What design criteria and/or site changes would be required to reduce the storm sewer percentages and increase the vegetated swale and natural channel percentages in A above?

This is not possible in an urban setting like this one.

C. In conveyance system subareas that have overland or sheet flow over impervious surfaces or turf grass, what practical and effective site changes can be made to:

Decrease overland flow slope: *This is not possible in an urban setting like this one.*

Increase overland flow roughness: *This is not possible in an urban setting like this one.*

3.5 Preventative Source Controls

The most effective way to address water quality concerns is by pollution prevention. This section of the checklist helps identify those nonstructural strategies and LID-BMPs that have been incorporated into the proposed development's design to reduce the exposure of pollutants to prevent their release into the stormwater runoff.

A. Trash Receptacles

Specify the number of trash receptacles provided: *0*

Specify the spacing between the trash receptacles: *N/A*

Compare trash receptacles proposed with those required by regulations:

Proposed: *0* Regulations: *N/A*

B. Pet Waste Stations

Specify the number of pet waste stations provided: *0*

Specify the spacing between the pet waste stations: *N/A*

Compare pet waste stations proposed with those required by regulations:

Proposed: *0* Regulations: *N/A*

C. Inlets, Trash Racks, and Other Devices that Prevent Discharge of Large Trash and Debris

Specify percentage of total inlets that comply with the NJPDES storm drain inlet criteria: *100% of downstream inlets*

D. Maintenance

Specify the frequency of the following maintenance activities:

Street sweeping: Proposed: *0* Regulations: *N/A*

Litter collection: Proposed: *0* Regulations: *N/A*

Identify other stormwater management measures on the site that prevent discharge of large trash and debris:

Sumps and traps are provided in all downstream inlets before discharging to BMPs.

E. Prevention and Containment of Spills

Identify locations where pollutants are located on the site, and the features that prevent these pollutants from being exposed to stormwater runoff:

Pollutant: *N/A* Location: _____

Feature utilized to prevent pollutant exposure, harmful accumulation, or contain spills:

Pollutant: *N/A* Location: _____

Feature utilized to prevent pollutant exposure, harmful accumulation, or contain spills:

Pollutant: *N/A* Location: _____

Feature utilized to prevent pollutant exposure, harmful accumulation, or contain spills:

Pollutant: *N/A* Location: _____

Feature utilized to prevent pollutant exposure, harmful accumulation, or contain spills:

Pollutant: *N/A* Location: _____

Part 4: Compliance with Nonstructural Requirements of NJDEP Stormwater Management Rules

1. Based upon the checklist responses above, indicate which nonstructural strategies have been incorporated into the proposed development's design in accordance with N.J.A.C. 7:8-5.3(b):

No.	Nonstructural Strategy	Yes	No
1.	Protect areas that provide water quality benefits or areas particularly susceptible to erosion and sediment loss.	*X*	
2.	Minimize impervious surfaces and break up or disconnect the flow of runoff over impervious surfaces.		*X*
3.	Maximize the protection of natural drainage features and vegetation.	*X*	
4.	Minimize the decrease in the pre-construction time of concentration.		*X*
5.	Minimize land disturbance including clearing and grading.	*X*	
6.	Minimize soil compaction.	*X*	
7.	Provide low maintenance landscaping that encourages retention and planting of native vegetation and minimizes the use of lawns, fertilizers, and pesticides.	*X*	
8.	Provide vegetated open-channel conveyance systems discharge into and through stable vegetated areas.		*X*
9.	Provide preventative source controls.	*X*	

2. For those strategies that have not been incorporated into the proposed development's design, provide engineering, environmental, and/or safety reasons. Attached additional pages as necessary.

The time of concentration will decrease due to decreased ground-level open space and added stormwater conveyance systems. However, runoff will be managed by BMPs and the peak runoff rates leaving the site are lower than the pre-construction conditions.

There is limited space to fit vegetated open-channel conveyance. Therefore, storm piping is proposed to convey runoff. As noted above, this runoff is directed to BMPs for management of quantity and rate per NJDEP and City of Camden requirements.

Appendix B
Pre-Development Drainage Area and Land Cover Summary / Runoff Hydrographs
(HydroCad Report excluded: Full report has been provided to the City of Camden and Planning Board engineers)

LIST OF FIGURES

Figure 1	USGS Location Map
Figure 2	Soils Map
Figure 3	Predevelopment Drainage Area Map
Figure 4	Post-Development Drainage Area Map

LIST OF DRAWINGS

CG101	Overall Grading and Drainage Plan
CG102	Detailed Grading and Drainage Plan
CG201	Stormwater Profiles
CG501	Grading and Drainage Details

LIST OF APPENDICES

Appendix A	Low-Impact Development Checklist
Appendix B	Pre-Development Drainage Area and Land Cover Summary /Runoff Hydrographs (HydroCad Report excluded: Full report has been provided to the City of Camden and Planning Board engineers)
Appendix C	Post-Development Drainage Area and Land Cover Summary / Runoff Hydrographs (HydroCad Report excluded: Full report has been provided to the City of Camden and Planning Board engineers)
Appendix D	Time of Concentration Calculations
Appendix E	Stormwater Conveyance Calculations
Appendix F	City of Camden Stormwater Fee Calculation

STORMWATER ANALYSIS

PROJECT: Cooper University Hospital - Benson Pavilion
LOCATION: Camden, New Jersey
JOB #: 220245001
DATE: 08 October 2026

LAND COVER SUMMARY - PRE-DEVELOPED CONDITIONS

DRAINAGE AREA	LAND COVER	HYDROLOGIC SOIL GROUP	AREA		CN	Tc	
			SF	ACRES		Current	Projected
EXDA-1 (POI-1)	Impervious Building (Roof)	C	8,664	0.199	98	2.3	2.3
	Impervious driveway/road	C	13,557	0.311	98	1.1	1.1
	Impervious Site (Ground)	C	5,270	0.121	98	1.1	1.1
	Lawn	C	8,065	0.185	74	2.2	2.1
	TOTAL		**35,556**	**0.816**			

DRAINAGE AREA	LAND COVER	HYDROLOGIC SOIL GROUP	AREA		CN	Tc	
			SF	ACRES		Current	Projected
EXDA-2 (POI-2)	Impervious driveway/road	C	122	0.003	98	4.4	4.3
	Impervious Site (Ground)	C	759	0.017	98	4.4	4.3
	Lawn	C	2,333	0.054	74	4.4	4.2
	TOTAL		**3,214**	**0.074**			

total on-site 38,770

DRAINAGE AREA	LAND COVER	HYDROLOGIC SOIL GROUP	AREA		CN	Tc	
			SF	ACRES		Current	Projected
EX DISTURBED R.O.W. TO CITY SEWER	Impervious driveway/road	C	7,209	0.165	98		
	Impervious Site (Ground)	C	5,978	0.137	98		
	Lawn	C	2,065	0.047	74		
	TOTAL		**15,252**	**0.350**			

total disturbed 54,022

Appendix C
Post-Development Drainage Area and Land Cover Summary / Runoff Hydrographs
(HydroCad Report excluded: Full report has been provided to the City of Camden and Planning Board engineers)

STORMWATER ANALYSIS

PROJECT: Cooper University Hospital - Benson Pavilion
LOCATION: Camden, New Jersey
JOB #: 220245001
DATE: 08 October 2026

LAND COVER SUMMARY - POST-DEVELOPMENT CONDITIONS

DRAINAGE AREA	LAND COVER	HYDROLOGIC SOIL GROUP	AREA		CN	Tc	
			SF	ACRES		Current	Projected
PRDA-1 (POI-1)	Impervious Building (Roof - to BMP-1)	C	31,802	0.730	98	1.7	1.6
	Impervious driveway/road	C	2,755	0.063	98	1.3	1.2
	Impervious Site (Ground)	C	912	0.021	98	1.3	1.2
	Impervious Site (Ground) bypass	C	748	0.017	98	1.3	1.2
	Lawn (fair conditions)	C	52	0.001	79	0.8	0.8
	Lawn (fair conditions) bypass	C	120	0.003	79	0.8	0.8
	TOTAL		**36,389**	**0.835**			

DRAINAGE AREA	LAND COVER	HYDROLOGIC SOIL GROUP	AREA		CN	Tc	
			SF	ACRES		Current	Projected
	Impervious Site (Ground) bypass	C	696	0.016	98	3.7	3.7
	Lawn (fair conditions) bypass	C	1,685	0.039	79	4.0	3.9
	TOTAL		**2,381**	**0.055**			

total on-site 38,770

DRAINAGE AREA	LAND COVER	HYDROLOGIC SOIL GROUP	AREA		CN	Tc	
			SF	ACRES		Current	Projected
EX DISTURBED R.O.W. TO CITY SEWER	Impervious driveway/road	C	5,705	0.131	98		
	Impervious Site (Ground)	C	7,218	0.166	98		
	Lawn	C	2,329	0.053	74		
	TOTAL		**15,252**	**0.350**			

total disturbed 54,022

Appendix D
Time of Concentration Calculations

Time of Concentration (T_c) or Travel Time (T_t)
EXISTING DRAINAGE AREA

Project: Cooper Master Benson Pavilion | By: MCM | Date: 3/20/2024
Location: Camden, NJ | Checked: | Date:
Circle One: (Present) During Developed — **Pre-Developed Benson Pavilion**
Circle One: (T_c) T_t through subarea

NOTES: Space for as many as three segments per flow type can be used for each worksheet.
Include a map, schematic, or description of flow segments.

POA 1 (impervious)

Sheet Flow (Applicable to T_c only)	Segment ID	CURRENT RAINFALL				FUTURE RAINFALL			
1. Surface Description (Table 3-1 of TR-55)		AB				AB			
		PAVED				PAVED			
2. Manning's Roughness Coeff., n (Table 3-1 of TR-55)		0.011				0.011			
3. Flow Length, L (total L≤ 150 ft)	ft	72				72			
4. Two-yr 24-hr Rainfall, P_2	in	3.41				3.91			
5. Land Slope, s	ft/ft	0.042				0.042			
6. $Tt = (0.007\ (nL)^{0.8}) / (P_2^{0.5}\ s^{0.4})$ Compute T_t	hr	0.011			= 0.011	0.010			= 0.010

Channel or Pipe Flow	Segment ID	CURRENT RAINFALL					FUTURE RAINFALL				
		PIPE					PIPE				
		BC	CD	DE			BC	CD	DE		
12. Cross Sectional Flow Area, A	ft^2	0.79	1.23	7.07			0.79	1.23	7.07		
13. Wetted Perimeter, P_w	ft	3.14	3.93	9.42			3.14	3.93	9.42		
14. Hydraulic Radius, R = A / P_w Compute R	ft	0.250	0.313	0.750			0.250	0.313	0.750		
15. Channel Slope, s	ft/ft	0.033	0.052	0.013			0.033	0.052	0.013		
16. Manning's Roughness Coeff., n		0.011	0.012	0.012			0.011	0.012	0.012		
17. $V = (1.486\ R^{0.67}\ s^{0.5}) / n$ Compute V	ft/sec	9.721	12.988	11.644			9.721	12.988	11.644		
18. Flow Length, L	ft	132	114	42			132	114	42		
19. $T_t = L / 3600V$ Compute T_t	hr	0.004	0.002	0.001	=	0.007	0.004	0.002	0.001	=	0.007
20. Watershed or Subarea T_c or T_t (add T_t in steps 6, 11, and 19)	hr					0.018					0.018
	min					**1.1**					**1.1**

POA 1 (pervious)

Sheet Flow (Applicable to T_c only)	Segment ID	CURRENT RAINFALL				FUTURE RAINFALL			
1. Surface Description (Table 3-1 of TR-55)		AB	BC			AB	BC		
		UNPAVED	PAVED			UNPAVED	PAVED		
2. Manning's Roughness Coeff., n (Table 3-1 of TR-55)		0.015	0.011			0.015	0.011		
3. Flow Length, L (total L≤ 150 ft)	ft	40	56			40	56		
4. Two-yr 24-hr Rainfall, P_2	in	3.41	3.41			3.91	3.91		
5. Land Slope, s	ft/ft	0.010	0.015			0.010	0.015		
6. $Tt = (0.007\ (nL)^{0.8}) / (P_2^{0.5}\ s^{0.4})$ Compute T_t	hr	0.016	0.014		= 0.030	0.015	0.013		= 0.028

Channel or Pipe Flow	Segment ID	CURRENT RAINFALL					FUTURE RAINFALL				
		PIPE					PIPE				
		CD	DE	EF			CD	DE	EF		
12. Cross Sectional Flow Area, A	ft^2	0.79	1.23	7.07			0.79	1.23	7.07		
13. Wetted Perimeter, P_w	ft	3.14	3.93	9.42			3.14	3.93	9.42		
14. Hydraulic Radius, R = A / P_w Compute R	ft	0.250	0.313	0.750			0.250	0.313	0.750		
15. Channel Slope, s	ft/ft	0.010	0.052	0.013			0.010	0.052	0.013		
16. Manning's Roughness Coeff., n		0.011	0.012	0.012			0.011	0.012	0.012		
17. $V = (1.486\ R^{0.67}\ s^{0.5}) / n$ Compute V	ft/sec	5.336	12.988	11.644			5.336	12.988	11.644		
18. Flow Length, L	ft	82	114	42			82	114	42		
19. $T_t = L / 3600V$ Compute T_t	hr	0.004	0.002	0.001	=	0.008	0.004	0.002	0.001	=	0.008
20. Watershed or Subarea T_c or T_t (add T_t in steps 6, 11, and 19)	hr					0.037					0.035
	min					**2.2**					**2.1**

POA 1 (building)

Sheet Flow (Applicable to T_c only)	Segment ID	CURRENT RAINFALL				FUTURE RAINFALL			
1. Surface Description (Table 3-1 of TR-55)		AB				AB			
		roof				roof			
2. Manning's Roughness Coeff., n (Table 3-1 of TR-55)		0.011				0.011			
3. Flow Length, L (total L≤ 150 ft)	ft	67				67			
4. Two-yr 24-hr Rainfall, P_2	in	3.41				3.91			
5. Land Slope, s	ft/ft	0.010				0.01			
6. $Tt = (0.007\ (nL)^{0.8}) / (P_2^{0.5}\ s^{0.4})$ Compute T_t	hr	0.019			= 0.019	0.019			= 0.019

Channel or Pipe Flow	Segment ID	CURRENT RAINFALL						FUTURE RAINFALL					
		PIPE						PIPE					
		BC	CD	EF	FG			BC	CD	EF	FG		
12. Cross Sectional Flow Area, A	ft^2	1.23	0.20	0.79	176.71			1.23	0.20	0.79	176.71		
13. Wetted Perimeter, P_w	ft	1.57	3.14	3.93	18.00			1.57	3.14	3.93	18.00		
14. Hydraulic Radius, R = A / P_w Compute R	ft	0.781	0.063	0.200	9.817			0.781	0.063	0.200	9.817		
15. Channel Slope, s	ft/ft	0.010	0.010	0.013	0.013			0.010	0.010	0.013	0.013		
16. Manning's Roughness Coeff., n		0.012	0.012	0.012	0.012			0.012	0.012	0.012	0.012		
17. $V = (1.486\ R^{0.67}\ s^{0.5}) / n$ Compute V	ft/sec	10.496	1.932	4.803	65.230			10.496	1.932	4.803	65.230		
18. Flow Length, L	ft	28	82	114	42			28	82	114	42		
19. $T_t = L / 3600V$ Compute T_t	hr	0.001	0.012	0.007	0.000	=	0.019	0.001	0.012	0.007	0.000	=	0.019
20. Watershed or Subarea T_c or T_t (add T_t in steps 6, 11, and 19)	hr						0.038						0.038
	min						**2.3**						**2.3**

Time of Concentration (T_c) or Travel Time (T_t)
EXISTING DRAINAGE AREA

Project: Cooper Master Benson Pavilion | By: MCM | Date: 3/20/2024
Location: Camden, NJ | Checked: | Date:
Circle One: (Present) During Developed — **Pre-Developed Benson Pavilion**
Circle One: (T_c) T_t through subarea

NOTES: Space for as many as three segments per flow type can be used for each worksheet.
Include a map, schematic, or description of flow segments.

POA 2 (Impervious)

		CURRENT RAINFALL				FUTURE RAINFALL			
Sheet Flow (Applicable to T_c only)	Segment ID	AB				AB			
1. Surface Description (Table 3-1 of TR-55)		PAVED				PAVED			
2. Manning's Roughness Coeff., n (Table 3-1 of TR-55)		0.011				0.011			
3. Flow Length, L (total L≤ 150 ft)	ft	100				100			
4. Two-yr 24-hr Rainfall, P_2	in	3.41				3.91			
5. Land Slope, s	ft/ft	0.004				0.004			
6. $Tt = (0.007\ (nL)^{0.8}) / (P_2^{0.5}\ s^{0.4})$ Compute T_t	hr	0.037			= 0.037	0.035			= 0.035
Shallow Concentrated Flow	Segment ID	BC				BC			
7. Surface Description (Paved or Unpaved)		PAVED				PAVED			
8. Flow Length, L	ft	170				170			
9. Watercourse Slope, s	ft/ft	0.004				0.004			
10. Average Velocity, V (Figure 3-1 of TR-55)	ft/sec	1.29				1.29			
11. $T_t = L / 3600V$ Compute T_t	hr	0.037			= 0.037	0.037			= 0.037
20. Watershed or Subarea T_c or T_t (add T_t in steps 6, 11, and 19)	hr				0.074				0.072
	min				**4.4**				**4.3**

POA 2 (pervious)

		CURRENT RAINFALL				FUTURE RAINFALL			
Sheet Flow (Applicable to T_c only)	Segment ID	AB	BC			AB	BC		
1. Surface Description (Table 3-1 of TR-55)		UNPAVED	PAVED			PUNPAVED	PAVED		
2. Manning's Roughness Coeff., n (Table 3-1 of TR-55)		0.015	0.011			0.015	0.011		
3. Flow Length, L (total L≤ 150 ft)	ft	2	98			2	98		
4. Two-yr 24-hr Rainfall, P_2	in	3.41	3.41			3.91	3.91		
5. Land Slope, s	ft/ft	0.004	0.004			0.004	0.004		
6. $Tt = (0.007\ (nL)^{0.8}) / (P_2^{0.5}\ s^{0.4})$ Compute T_t	hr	0.002	0.037		= 0.039	0.002	0.034		= 0.036
Shallow Concentrated Flow	Segment ID	CD				CD			
7. Surface Description (Paved or Unpaved)		PAVED				PAVED			
8. Flow Length, L	ft	158				158			
9. Watercourse Slope, s	ft/ft	0.004				0.004			
10. Average Velocity, V (Figure 3-1 of TR-55)	ft/sec	1.29				1.29			
11. $T_t = L / 3600V$ Compute T_t	hr	0.034			= 0.034	0.034			= 0.034
20. Watershed or Subarea T_c or T_t (add T_t in steps 6, 11, and 19)	hr				0.073				0.070
	min				**4.4**				**4.2**

Time of Concentration (T_c) or Travel Time (T_t)
PROPOSED DRAINAGE AREA

Project: Cooper Master Plan - Phase I | By: MXK | Date: 7/2/2024
Location: Camden, NJ | Checked: KJM | Date:
Circle One: Present During (Developed)
Circle One: (T_c) T_t through subarea
Post-Developed Benson Pavilion

NOTES: Space for as many as three segments per flow type can be used for each worksheet.
Include a map, schematic, or description of flow segments.

POA1 (impervious)

Sheet Flow (Applicable to T_c only)	Segment ID	CURRENT RAINFALL					FUTURE RAINFALL				
1. Surface Description (Table 3-1 of TR-55)		AB					AB				
2. Manning's Roughness Coeff., n (Table 3-1 of TR-55)		PAVED					PAVED				
3. Flow Length, L (total L ≤ 150 ft)	ft	0.011					0.011				
4. Two-yr 24-hr Rainfall, P_2	in	94					94				
5. Land Slope, s	ft/ft	3.41					3.91				
6. $Tt = (0.007\ (nL)^{0.8}) / (P_2^{0.5}\ s^{0.4})$ Compute T_t	hr	0.019				= 0.019	0.019				= 0.018
		PIPE					PIPE				
Channel or Pipe Flow	Segment ID	BC					BC				
12. Cross Sectional Flow Area, A	ft^2	0.35					0.35				
13. Wetted Perimeter, P_w	ft	2.09					2.09				
14. Hydraulic Radius, R = A / P_w Compute R	ft	0.167					0.167				
15. Channel Slope, s	ft/ft	0.006					0.006				
16. Manning's Roughness Coeff., n		0.012					0.012				
17. $V = (1.486\ R^{0.67}\ s^{0.5}) / n$ Compute V	ft/sec	2.888					2.888				
18. Flow Length, L	ft	21					21				
19. $T_t = L / 3600V$ Compute T_t	hr	0.002				= 0.002	0.002				= 0.002
20. Watershed or Subarea T_c or T_t (add T_t in steps 6, 11, and 19)	hr					0.021					0.020
	min					**1.3**					**1.2**

POA1 (pervious)

Sheet Flow (Applicable to T_c only)	Segment ID	CURRENT RAINFALL					FUTURE RAINFALL				
1. Surface Description (Table 3-1 of TR-55)		AB	BC				AB	BC			
2. Manning's Roughness Coeff., n (Table 3-1 of TR-55)		UNPAVED	PAVED				UNPAVED	PAVED			
3. Flow Length, L (total L ≤ 150 ft)	ft	0.015	0.011				0.015	0.011			
4. Two-yr 24-hr Rainfall, P_2	in	2	52				2	52			
5. Land Slope, s	ft/ft	3.41	3.41				3.91	3.91			
6. $Tt = (0.007\ (nL)^{0.8}) / (P_2^{0.5}\ s^{0.4})$ Compute T_t	hr	0.030	0.030				0.030	0.030			
		0.001	0.010			= 0.011	0.001	0.009			= 0.010
		PIPE					PIPE				
Channel or Pipe Flow	Segment ID	CD					CD				
12. Cross Sectional Flow Area, A	ft^2	0.09					0.09				
13. Wetted Perimeter, P_w	ft	1.05					1.05				
14. Hydraulic Radius, R = A / P_w Compute R	ft	0.083					0.083				
15. Channel Slope, s	ft/ft	0.010					0.010				
16. Manning's Roughness Coeff., n		0.012					0.012				
17. $V = (1.486\ R^{0.67}\ s^{0.5}) / n$ Compute V	ft/sec	2.343					2.343				
18. Flow Length, L	ft	21					21				
19. $T_t = L / 3600V$ Compute T_t	hr	0.002				= 0.002	0.002				= 0.002
20. Watershed or Subarea T_c or T_t (add T_t in steps 6, 11, and 19)	hr					0.013					0.013
	min					**0.8**					**0.8**

POA1 (building)

Sheet Flow (Applicable to T_c only)	Segment ID	CURRENT RAINFALL					FUTURE RAINFALL				
1. Surface Description (Table 3-1 of TR-55)		AB					AB				
2. Manning's Roughness Coeff., n (Table 3-1 of TR-55)		ROO					ROO				
3. Flow Length, L (total L ≤ 150 ft)	ft	0.011					0.011				
4. Two-yr 24-hr Rainfall, P_2	in	75					75				
5. Land Slope, s	ft/ft	3.41					3.91				
6. $Tt = (0.007\ (nL)^{0.8}) / (P_2^{0.5}\ s^{0.4})$ Compute T_t	hr	0.050					0.050				
		0.011				= 0.011	0.010				= 0.010
		PIPE					PIPE				
Channel or Pipe Flow	Segment ID	BC					BC				
12. Cross Sectional Flow Area, A	ft^2	0.55					0.55				
13. Wetted Perimeter, P_w	ft	2.62					2.62				
14. Hydraulic Radius, R = A / P_w Compute R	ft	0.208					0.208				
15. Channel Slope, s	ft/ft	0.010					0.010				
16. Manning's Roughness Coeff., n		0.012					0.012				
17. $V = (1.486\ R^{0.67}\ s^{0.5}) / n$ Compute V	ft/sec	4.329					4.329				
18. Flow Length, L	ft	264					264				
19. $T_t = L / 3600V$ Compute T_t	hr	0.017				= 0.017	0.017				= 0.017
20. Watershed or Subarea T_c or T_t (add T_t in steps 6, 11, and 19)	hr					0.028					0.027
	min					**1.7**					**1.6**

Time of Concentration (T_c) or Travel Time (T_t)
PROPOSED DRAINAGE AREA

Project: Cooper Master Plan - Phase I | By: MXK | Date: 7/2/2024
Location: Camden, NJ | Checked: KJM | Date:
Circle One: Present During (Developed)
Circle One: (T_c) T_t through subarea
Post-Developed Benson Pavilion

NOTES: Space for as many as three segments per flow type can be used for each worksheet.
Include a map, schematic, or description of flow segments.

POA2 (impervious)

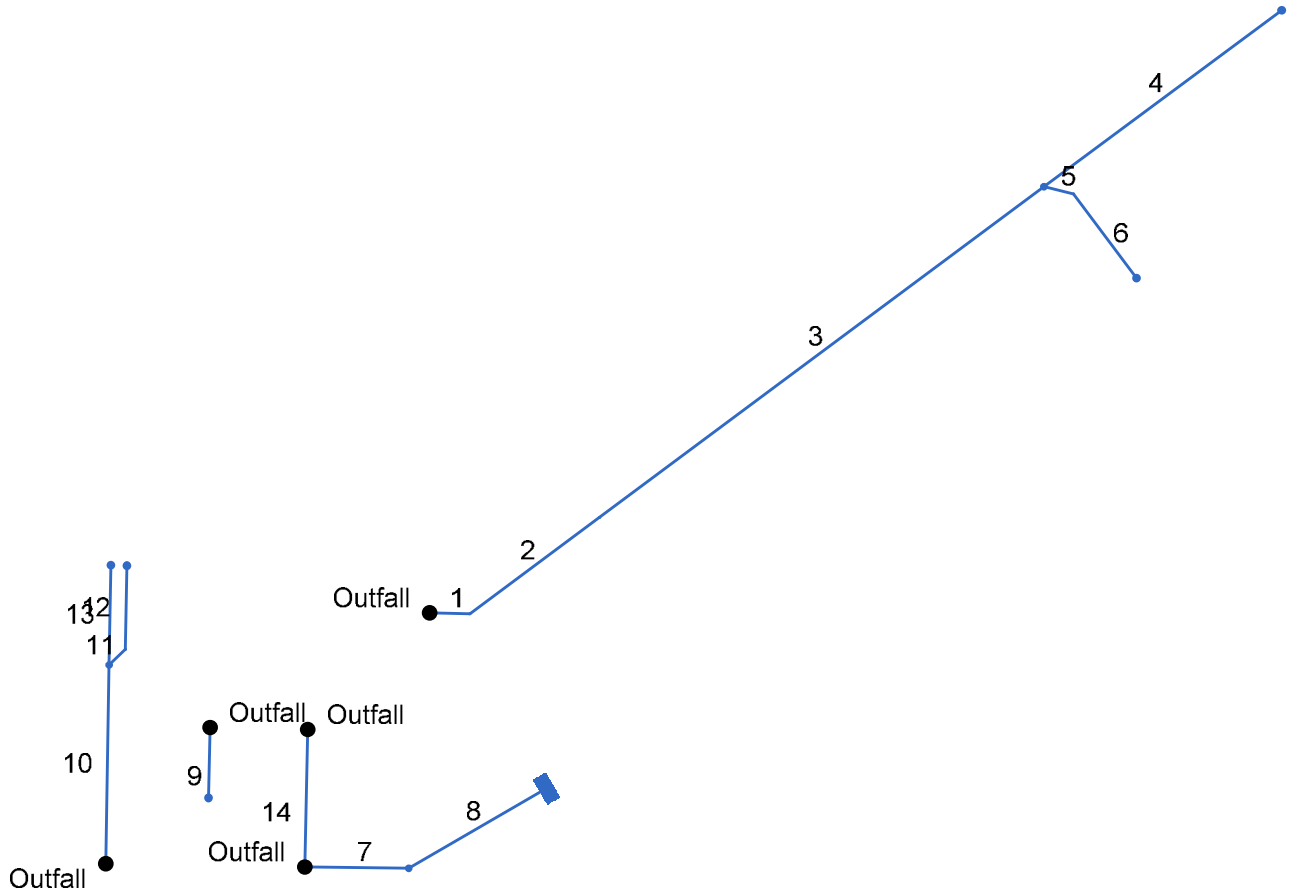
		CURRENT RAINFALL					FUTURE RAINFALL				
Sheet Flow (Applicable to T_c only)	Segment ID	AB					AB				
1. Surface Description (Table 3-1 of TR-55)		PAVED					PAVED				
2. Manning's Roughness Coeff., n (Table 3-1 of TR-55)		0.011					0.011				
3. Flow Length, L (total L ≤ 150 ft)	ft	100					100				
4. Two-yr 24-hr Rainfall, P_2	in	3.41					3.91				
5. Land Slope, s	ft/ft	0.019					0.019				
6. $Tt = (0.007\ (nL)^{0.8}) / (P_2^{0.5}\ s^{0.4})$ Compute T_t	hr	0.020				= 0.020	0.019				= 0.019
Shallow Concentrated Flow	Segment ID	BC					BC				
7. Surface Description (Paved or Unpaved)		PAVED					PAVED				
8. Flow Length, L	ft	196					196				
9. Watercourse Slope, s	ft/ft	0.012					0.012				
10. Average Velocity, V (Figure 3-1 of TR-55)	ft/sec	1.29					1.29				
11. $T_t = L / 3600V$ Compute T_t	hr	0.042				= 0.042	0.042				= 0.042
20. Watershed or Subarea T_c or T_t (add T_t in steps 6, 11, and 19)	hr					0.062					0.061
	min					3.7					3.7

POA2 (pervious)

		CURRENT RAINFALL					FUTURE RAINFALL				
Sheet Flow (Applicable to T_c only)	Segment ID	AB	BC				AB	BC			
1. Surface Description (Table 3-1 of TR-55)		UNPAVED	PAVED				UNPAVED	PAVED			
2. Manning's Roughness Coeff., n (Table 3-1 of TR-55)		0.015	0.011				0.015	0.011			
3. Flow Length, L (total L ≤ 150 ft)	ft	20	80				20	80			
4. Two-yr 24-hr Rainfall, P_2	in	3.41	3.41				3.91	3.91			
5. Land Slope, s	ft/ft	0.019	0.019				0.019	0.019			
6. $Tt = (0.007\ (nL)^{0.8}) / (P_2^{0.5}\ s^{0.4})$ Compute T_t	hr	0.007	0.017			= 0.024	0.007	0.016			= 0.022
Shallow Concentrated Flow	Segment ID	CD					CD				
7. Surface Description (Paved or Unpaved)		PAVED					PAVED				
8. Flow Length, L	ft	196					196				
9. Watercourse Slope, s	ft/ft	0.004					0.004				
10. Average Velocity, V (Figure 3-1 of TR-55)	ft/sec	1.29					1.29				
11. $T_t = L / 3600V$ Compute T_t	hr	0.042				= 0.042	0.042				= 0.042
20. Watershed or Subarea T_c or T_t (add T_t in steps 6, 11, and 19)	hr					0.066					0.065
	min					4.0					3.9

Appendix E
On-Site Stormwater Collection System Calculations

Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



Project File: 2026-10-6 - Benson Strm.stm	Number of lines: 14	Date: 10/6/2026

Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data								Line ID
	Dnstr Line No.	Line Length (ft)	Defl angle (deg)	Junc Type	Known Q (cfs)	Drng Area (ac)	Runoff Coeff (C)	Inlet Time (min)	Invert El Dn (ft)	Line Slope (%)	Invert El Up (ft)	Line Size (in)	Line Shape	N Value (n)	J-Loss Coeff (K)	Inlet/ Rim El (ft)	
1	End	5.693	1.246	None	0.00	0.00	0.00	0.0	13.95	4.04	14.18	12	Cir	0.011	0.67	15.34	PIPE-24
2	1	22.953	-37.999	None	0.00	0.00	0.00	0.0	14.18	4.05	15.11	12	Cir	0.011	0.15	16.27	PIPE-23
3	2	78.745	0.005	MH	0.00	0.00	0.00	1.2	15.11	4.05	18.30	12	Cir	0.011	0.81	24.85	PIPE-8 (1) (1)
4	3	42.077	0.060	MH	0.10	0.00	0.00	1.2	18.30	4.04	20.00	12	Cir	0.011	1.00	23.55	SLOT DRAIN OUT
5	3	4.318	50.598	None	0.00	0.00	0.00	0.0	18.30	0.93	18.34	8	Cir	0.011	0.68	19.09	PIPE-26
6	5	14.974	39.386	MH	0.17	0.00	0.00	0.0	18.34	1.00	18.49	8	Cir	0.011	1.00	21.16	TD-2 OUT
7	End	14.743	0.718	MH	0.00	0.00	0.00	0.0	16.80	1.97	17.09	12	Cir	0.013	0.57	22.13	PIPE-10 (1)
8	7	22.669	-30.915	Comb	0.01	0.00	0.00	0.0	17.10	1.99	17.55	12	Cir	0.013	1.00	21.84	CB-1 OUT
9	End	10.051	91.246	MH	0.34	0.00	0.00	1.2	15.20	2.98	15.50	8	Cir	0.011	1.00	22.66	TD-1 OUT
10	End	28.306	-89.028	MH	0.00	0.00	0.00	0.0	13.23	2.12	13.83	12	Cir	0.011	0.75	23.68	PIPE-19
11	10	3.199	45.000	None	0.00	0.00	0.00	0.0	13.83	2.19	13.90	8	Cir	0.011	0.75	12.80	PIPE-18
12	11	11.955	-45.000	MH	0.01	0.00	0.00	0.0	13.90	1.67	14.10	8	Cir	0.011	1.00	13.38	PIPE-17
13	10	14.228	0.000	MH	0.01	0.00	0.00	0.0	13.83	4.71	14.50	8	Cir	0.011	1.00	13.62	PIPE-6
14	End	19.608	91.225	None	0.01	0.00	0.00	0.0	12.70	1.53	13.00	12	Cir	0.011	1.00	0.00	PIPE-27

Project File: 2026-10-6 - Benson Strm.stm | Number of lines: 14 | Date: 10/6/2026

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	5.693	0.00	0.00	0.00	0.00	0.00	0.0	11.6	0.0	0.27	8.46	3.55	12	4.04	13.95	14.18	14.07	14.39	15.55	15.34	PIPE-24
2	1	22.953	0.00	0.00	0.00	0.00	0.00	0.0	10.5	0.0	0.27	8.47	2.20	12	4.05	14.18	15.11	14.39	15.32	15.34	16.27	PIPE-23
3	2	78.745	0.00	0.00	0.00	0.00	0.00	1.2	6.7	0.0	0.27	8.47	2.20	12	4.05	15.11	18.30	15.32	18.51	16.27	24.85	PIPE-8 (1) (1)
4	3	42.077	0.00	0.00	0.00	0.00	0.00	1.2	1.2	0.0	0.10	8.46	1.25	12	4.04	18.30	20.00	18.51	20.13	24.85	23.55	SLOT DRAIN OU
5	3	4.318	0.00	0.00	0.00	0.00	0.00	0.0	0.5	0.0	0.17	1.37	1.93	8	0.93	18.30	18.34	18.51	18.53	24.85	19.09	PIPE-26
6	5	14.974	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.17	1.43	2.09	8	1.00	18.34	18.49	18.53	18.68	19.09	21.16	TD-2 OUT
7	End	14.743	0.00	0.00	0.00	0.00	0.00	0.0	29.7	0.0	0.01	4.99	1.09	12	1.97	16.80	17.09	16.83	17.13	0.00	22.13	PIPE-10 (1)
8	7	22.669	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.01	5.02	1.09	12	1.99	17.10	17.55	17.13	17.59	22.13	21.84	CB-1 OUT
9	End	10.051	0.00	0.00	0.00	0.00	0.00	1.2	1.2	0.0	0.34	2.47	3.76	8	2.98	15.20	15.50	15.37	15.77	22.64	22.66	TD-1 OUT
10	End	28.306	0.00	0.00	0.00	0.00	0.00	0.0	8.8	0.0	0.02	6.13	1.45	12	2.12	13.23	13.83	13.27	13.89	21.90	23.68	PIPE-19
11	10	3.199	0.00	0.00	0.00	0.00	0.00	0.0	7.0	0.0	0.01	2.11	0.84	8	2.19	13.83	13.90	13.89	13.94	23.68	12.80	PIPE-18
12	11	11.955	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.01	1.85	0.99	8	1.67	13.90	14.10	13.94	14.14	12.80	13.38	PIPE-17
13	10	14.228	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.01	3.10	0.84	8	4.71	13.83	14.50	13.89	14.54	23.68	13.62	PIPE-6
14	End	19.608	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.01	5.21	1.11	12	1.53	12.70	13.00	12.73	13.04	0.00	0.00	PIPE-27

Project File: 2026-10-6 - Benson Strm.stm

Number of lines: 14

Run Date: 10/6/2026

NOTES:Known Qs only ; c = cir e = ellip b = box

Appendix F
City of Camden Stormwater Fee Calculation

APPENDIX XVIII

STORMWATER FEES

Stormwater Rate

The stormwater rate is imposed on each and every new, renovated, change in use, rehabilitated and/or rebuilt Single-Family Residential Developed Property, Other Residential Developed Property, Non-Residential Developed Property, and Vacant Property, other than Exempt Property, and the owner and non-owner users, and is hereby set as follows:

(a) The Equivalent Stormwater Unit (ESU) rate is **ten dollars and seventy-seven cents ($10.77).** The ESU measurement is 1,530 square feet of impervious area.

(b) The stormwater rate imposed on Single-Family Residential Developed Properties shall be categorized into three tiers based on the estimated amount of impervious area as follows:

High - Single-Family Residential Developed Property - greater than one thousand five hundred and seventy-eight (1,578) square feet of estimated impervious area. The ESU shall be 1.25 and the stormwater rate set at **thirteen dollars and forty-six cents ($13.46).**

Medium - Single-Family Residential Developed Property - equal to or greater than one thousand four hundred and eighty-five (1,485) square feet and less than or equal to one thousand five hundred and seventy-eight (1,578) square feet of estimated impervious area. The ESU shall be 1.00 and the stormwater rate set at **ten dollars and seventy-seven cents (10.77).**

Low - Single-Family Residential Developed Property - less than one thousand four hundred and eighty-five (1,485) square feet of estimated impervious area. The ESU shall be .75 and the stormwater rate set at **eight dollars and eight cents ($8.08).**

(c) Stormwater charges for all other properties will be based on the following calculation:

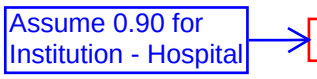
(Gross Lot Size in sq. ft. X Runoff Coefficient) / 1,530 sq. ft. = # of ESU

# of ESU X **$ 10.77** = Monthly Fee

((343,496 SF)x(0.90) / 1530 SF = 202.05 ESU
(202.05 ESU) x ($10.77) = $2,176.14

The runoff coefficient assumed for each land use category is shown below:

Land Use	Coefficient Applied
Bar-Restaurant - Entertainment	.75
Car Sales Lot	.95
Cemetery w/Monuments	.20
Central Business District	1.00
Common Area	.20
Garage or Misc. Res.	.55
Group Residence	.75
Ind. Warehouse-Factory	.90
Industrial Railway	.85
Institution-Sch.-Church	.90
Misc. Commercial	.90
Mixed Comm.-Res.-Apt.	.75
Multi-Family Apartment	.75
Multi-Family Residential	.40
Office	.91
Parks & Playgrounds	.20
Public Accommodations	.91
Retail	.91
Single Family Attached	.75
Single Family Detached	ESU
Sport or Rec. Facility	.60
Utility	.90
Vacant Land Use	.20
Vehicle Related Use	.90



STORMWATER MAINTENANCE PLAN

for

COOPER NORCROSS HEALTH
Benson Pavilion
1 Cooper Plaza,
Camden, New Jersey

Prepared For:

Cooper Norcross Health

Prepared By:

Langan Engineering and Environmental Services, Inc.
1 University Square Drive
Suite 110
Princeton, NJ 08540
NJ Certificate of Authorization No: 24GA27996400

Kyle J. MacGeorge, P.E., LEED AP®
Associate Principal

Benson Pavilion: 08 October 2026
220245001

STORMWATER MAINTENANCE PLAN

TABLE OF CONTENTS

INTRODUCTION **1**
PROPERTY AND PROJECT DESCRIPTION **1**
STORMWATER MAINTENANCE OBJECTIVE **2**
MAINTENANCE OF SYSTEMS **3**

LIST OF ATTACHMENTS

ATTACHMENT	DESCRIPTION
A	Stormwater Maintenance Schedule
B	Stormwater Conveyance System Maintenance Log & Inspection Form
C	Subsurface Detention Maintenance Log & Inspection Form
D	Low-Impact Development Maintenance Log & Inspection Form

INTRODUCTION

This manual addresses the operation and maintenance components of the stormwater management facilities for the Cooper Norcross Health Benson Pavilion project for the effective, efficient, and enduring performance. This plan contains preventative and corrective maintenance tasks and procedures.

The party responsible for the preventative and corrective maintenance of the stormwater measures described herein is:

Faith Orsini, Vice President, Planning, Design, and Construction
Cooper Norcross Health
628 Benson Street
Camden, NJ 08103
(856) 968-8402

The responsible party shall maintain a detailed log of all preventative and corrective maintenance for the structural stormwater management measures incorporated into this development, including a record of all inspections and copies of all maintenance-related work orders. In addition, the responsible person shall evaluate the effectiveness of the maintenance plan at least once per year and adjust the plan and the deed as needed. The responsible party shall also retain and make available, upon request, the maintenance plan and the required documentation.

PROPERTY AND PROJECT DESCRIPTION

The Cooper Norcross Health Pavilion project is located within the following parcels of the City of Camden, New Jersey:

- Block 1402 Lot 1
- Block 1400 Lots 55-65
- Block 1443 Lot 5

Cooper Norcross Health is proposing to improve their hospital located in Camden, New Jersey. This project entails the construction of "Benson Pavilion", which is proposed near the intersection of Benson Street and Haddon Avenue. The proposed Benson Pavilion will be a 10-story hospital-building expansion with a footprint of approximately 31,802-square-feet.

The stormwater management improvements for the project include:

- Subsurface Detention (BMP-1)
- Stormwater Conveyance Infrastructure
- Low-Impact Development (LID) Strategies

STORMWATER MAINTENANCE OBJECTIVE

This maintenance plan has been prepared to provide measures to keep the stormwater management facilities related to the project operating efficiently and reliably. The responsible party shall make sure the long-term/perpetual operation, maintenance, repair, and safety of the stormwater management facilities is maintained.

Maintenance procedures are required to maintain safe operation of the stormwater management facilities by reducing the occurrence of problems and malfunctions. To be effective, maintenance shall be performed on a regular basis and include such routine procedures as training of staff, periodic inspections, silt and debris removal, and review of maintenance and inspection work to identify where the maintenance program could be more effective.

Repair procedures are required to correct a problem or malfunction of stormwater management facilities and to restore the intended means of operation and safe condition of the facility. Based upon the severity of the problem, repairs shall be performed on an as-needed or emergency basis and include such procedures as structural repairs, mosquito control, removal of debris, sediment and trash, which threaten discharge capacity, erosion repair, snow and ice removal, and restoration of vegetation.

In the event that the stormwater management facility becomes a danger to public safety or public health, or if it is in need of maintenance, the municipality may notify the responsible party in writing. Upon receipt of that notice, the responsible person shall have fourteen (14) days to initiate maintenance and repair of the facility in a manner that is approved by the municipality or their designee. The municipality, in its discretion, may extend the time allowed for effecting maintenance and repair for good cause. If the responsible person fails or refuses to perform such maintenance and repair, the municipality or county may immediately proceed to do so and shall invoice the responsible person for reimbursement.
To the extent permitted by law, the City will at all reasonable times have a right of ingress and egress over the Easement Area and the right to enter the Easement Area via any road or parking lot located within any common area owned by the Grantor to inspect the System located in the

Easement Area.

Except in the case of an emergency, the City will provide not less than seven (7) days prior notice to the performing any inspection or monitor of the System in accordance with approved plan. The applicant agrees that the failure to timely object after receiving notice from the City constitutes consent to inspection of the property within the timeframe specified in the notice.

If, after reasonable notice by the City, the applicant fails to maintain the System in accordance with the approved Manual and the Maintenance Plan, the City may perform any maintenance needed to correct a condition that impacts the effectiveness of routine maintenance and operations of the system and collect any costs incurred as a result from each owner of the System and in the same manner as real property taxes are collected. In addition, the City may seek reimbursement under any other method legally available to collect debts owed.

The applicant agrees to indemnify and save the City harmless from any and all claims for direct damages to persons or property arising from inspections performed by the City.

MAINTENANCE OF SYSTEMS

Stormwater systems, including inlets, pipes, and extended detention systems are expected to receive and accumulate debris and sediment. These systems must be inspected for clogging and excessive debris and sediment accumulation at least twice annually (per the NJ BMP Manual), as well as after every storm exceeding 1-inch of rainfall. Sediment removal should take place when all runoff has drained from the conveyance network and the systems are reasonably dry. Disposal of debris, trash, sediment, and other waste material shall be done at suitable disposal/recycling sites and in compliance with all applicable local, county, state and federal waste regulations. Stormwater BMPs may not be used for stockpiling of plowed snow, ice, or any other material.

All structural components must be inspected for cracking, subsidence, breaching, wearing, and deterioration at least annually. The condition of surrounding above ground areas shall be inspected for evidence of potential failures or deterioration of subsurface stormwater facilities. This includes checking the basin bottom for soil subsidence that could be a sign of liner failure within in the basin. If depressions are observed in the basin, the soil in the area of the subsidence shall be excavated out and the liner inspected for punctures.

The routine equipment expected to be used for the maintenance tasks include a jet vacuum vehicle, shovels, lighting equipment, and a wheel barrow or truck for the hauling of debris. Water and concrete repair materials may also be required depending on the condition of the structures.

The estimated annual maintenance cost for the stormwater infrastructure is $1,500. This value was approximated using the Maryland Department of the Environment's Unit Stormwater BMP Cost spreadsheet; actual costs may vary.

ATTACHMENT A

STORMWATER MAINTENANCE SCHEDULE

COOPER NORCROSS HEALTH
BENSON PAVILION
MAINTENANCE SCHEDULE

FACILITY	WHAT TO INSPECT FOR	FREQUENCY OF INSPECTIONS
Stormwater Conveyance Infrastructure	• Clogging, excessive debris, and sediment accumulation • Cracking, subsidence, breaching, wearing, and deterioration of structural components	1x each year and after each storm event exceeding 1 inch of rainfall
Subsurface Detention (BMP-1)	• Clogging, excessive debris, and sediment accumulation • Cracking, subsidence, breaching, wearing, and deterioration of structural components	Structural Components: 1x each year Traps & Areas of Sediment Accumulation: 4x each year and after each storm event exceeding 1 inch of rainfall.
Low-Impact Development (LID) Strategies	• Trash receptacles • Accumulation of litter, trash, and debris on site • Accumulation of oil, grease, fuel, and sediment on site • Functionality of trash compactor	Continuous as a function of the site and per Manufacturer's recommendations

NOTES:

1. **MAINTENANCE AND INSPECTIONS SHALL BE CONDUCTED IN ACCORDANCE WITH THE NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION (NJDEP) STORMWATER BEST MANAGEMENT PRACTICES MANUAL AND NEW JERSEY ADMINISTRATICE CODE (NJAC).**

2. **SEDIMENT REMOVAL SHALL TAKE PLACE DURING DRY-WEATHER PERIODS AND WHEN THE SYSTEM IS THOROUGHLY DRY.**

3. **DISPOSAL OF DEBRIS, TRASH, SEDIMENT, AND OTHER WASTE MATERIAL SHALL BE AT A SUITABLE DISPOSAL/RECYCLING SITE AND IN COMPLIANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL WASTE REGULATIONS.**

ATTACHMENT B

STORMWATER CONVEYANCE SYSTEM MAINTENANCE LOG & INSPECTION FORM

MAINTENANCE INSPECTION
FOR STORMWATER CONVEYANCE SYSTEMS

COOPER NORCROSS HEALTH
Benson Pavilion
CAMDEN, NEW JERSEY

NOTE: INSPECTIONS TO BE PERFORMED DURING A PERIOD OF DRY WEATHER.

Yes	No	Maintenance Evaluation	Action(s) Required if Answer "Yes"
❑	❑	Is there a buildup of sediment (in excess of 3 inches), trash, debris or any other stormwater pollution?	Remove sediment and evaluate on-site upstream systems. Dispose debris in accordance with owner, local, county, state and federal requirements.
❑	❑	Is there standing water?	Evaluate downstream systems for clogging or trash sediment buildup.
❑	❑	Is there any structural failure?	Consult engineer to determine safety and/or stability of the system.
❑	❑	Are there visible signs of cracking, subsidence, erosion, or deterioration of any of the storm conveyance systems?	Consult engineer to determine safety and/or stability of the system.
❑	❑	Are there any root intrusions or any other vegetation within catch basins?	Remove roots and dispose vegetation in accordance with local, county, state and federal requirements.
❑	❑	Are ladder rungs or grate frame in catch basins or manholes damaged, missing, or misaligned?	Repair or replace.
❑	❑	Are grates or covers missing, damaged or only partially in place at any catch basin or manhole?	Repair or replace.
❑	❑	Does the existing maintenance program need to be amended to provide a more effective maintenance program?	Address suggested changes to the responsible party for the stormwater maintenance facility.

MAINTENANCE LOG FOR STORMWATER CONVEYANCE SYSTEMS

COOPER NORCROSS HEALTH
Benson Pavilion
CAMDEN, NEW JERSEY

INSTRUCTIONS:
THIS LOG SHALL BE UPDATED TO INCLUDE ALL MAINTENANCE PERFORMED AT A SPECIFIC STORMWATER MEASURE.

DATE	PERSON CONDUCTING MAINTENANCE	AREA OF MAINTENANCE	PROBLEM(S) FOUND	ACTION(S) TAKEN

ATTACHMENT C

SUBSURFACE DETENTION
MAINTENANCE LOG & INSPECTION FORM

MAINTENANCE INSPECTION FOR SUBSURFACE DETENTION

COOPER NORCROSS HEALTH
Benson Pavilion
CAMDEN, NEW JERSEY

NOTE: INSPECTIONS TO BE PERFORMED DURING A PERIOD OF DRY WEATHER.

Yes	No	Maintenance Evaluation	Action(s) Required if Answer "Yes"
❑	❑	Is there any structural failure to the inside or outside of the unit?	Consult engineer to determine safety and/or stability of the system.
❑	❑	Is there a build-up of sediment, floatables, or other debris in the unit impeding the flow through the cartridges?	Remove large debris using a pole with a grapple or net on the end. Schedule for major maintenance including replacement of cartridges.
❑	❑	Do cartridges need to be replaced based on maintenance schedule and inspection conditions?	Remove and replace cartridges in accordance with the Maintenance Plan directions.
❑	❑	Are the manifold or connections damaged?	Repair manifold or connections.
❑	❑	Are there any upstream conditions contributing to excessive sediment loading?	Address the conditions causing excessive sediment loading.
❑	❑	Does the existing maintenance program need to be amended to provide a more effective maintenance program?	Address suggested changes to the responsible party for the stormwater maintenance facility.

MAINTENANCE LOG FOR SUBSURFACE DETENTION

COOPER NORCROSS HEALTH
Benson Pavilion
CAMDEN, NEW JERSEY

INSTRUCTIONS:
THIS LOG SHALL BE UPDATED TO INCLUDE ALL MAINTENANCE PERFORMED AT A SPECIFIC STORMWATER MEASURE.

DATE	PERSON CONDUCTING MAINTENANCE	AREA OF MAINTENANCE	PROBLEM(S) FOUND	ACTION(S) TAKEN

ATTACHMENT D

LOW-IMPACT DEVELOPMENT MAINTENANCE LOG & INSPECTION FORM

MAINTENANCE INSPECTION FOR LOW-IMPACT DEVELOPMENT

COOPER NORCROSS HEALTH
Benson Pavilion
CAMDEN, NEW JERSEY

Yes	No	Maintenance Evaluation	Action(s) Required if Answer "Yes"
❑	❑	Trash receptacles full?	Schedule immediate trash collection
❑	❑	Accumulation of litter, trash, or debris on site? Especially near stormwater infrastructure (inlets, manholes, basins, etc.)	Schedule immediate clean-up and collection
❑	❑	Accumulation of oil, grease, fuel, or sediment on site?	Schedule immediate clean-up and collection
❑	❑	Trash compactor is functional and Manufacturer's recommendations for maintenance and inspection procedures are complete?	Follow Manufacturer's recommendations

MAINTENANCE LOG FOR LOW-IMPACT DEVELOPMENT

COOPER NORCROSS HEALTH
Benson Pavilion
CAMDEN, NEW JERSEY

INSTRUCTIONS:
THIS LOG SHALL BE UPDATED TO INCLUDE ALL MAINTENANCE PERFORMED AT A SPECIFIC STORMWATER MEASURE.

DATE	PERSON CONDUCTING MAINTENANCE	AREA OF MAINTENANCE	PROBLEM(S) FOUND	ACTION(S) TAKEN

LANGAN

Memorandum

1 University Square, Suite 110 Princeton, NJ 08540 T: 609.282.8000 F: 609.282.8001

TO: Camden Planning and Zoning Department

FROM: Kyle MacGeorge, P.E, LEEP AP
Sean Moronski, P.P., AICP
Rachel Fifield, P.P., AICP

DATE: 8 October 2026

RE: Environmental Impact Assessment
Cooper Norcross Health Benson Pavilion
Block 1402, Lot 1
Camden City, Camden County, New Jersey
Langan Project No.: 220245001

On behalf of Cooper Norcross Health ("applicant"), Langan has prepared this environmental impact assessment (EIA) consistent with §870-272 of the Camden zoning and land use ordinance. The EIA describes site environmental conditions, impacts during and after construction, measures to minimize or eliminate negative impacts, permits and approvals required, reference list, and, if necessary, suitable mitigation. The EIA is required since the applicant is requesting preliminary and final major site plan approval.

Project Site Location and Existing Conditions. The project site is the Cooper Norcross Health Medical Center (CNH), located at 1 Cooper Plaza in Camden, New Jersey (Figure 1 – USGS Map). Surrounding streets include Dr. Martin Luther King Boulevard to the north, Haddon Avenue to the west, Benson Street to the south, and South 6th Street to the west (Figure 2 - Vicinity Map).

City tax records identify the project site as Block 1402, Lot 1, which has a lot area of 339,870 square feet (approximately 7.8 acres) (Figure 3 – Tax Map). The existing Block 1402, Lot 1, includes the previously approved Tower A, Bridge, and Central Utility Plant (CUP). The project site is in the Cooper Plaza Redevelopment Area, which is subject to the requirements of the Cooper Plaza Redevelopment Plan.

The area of the proposed improvements currently serves as a temporary drop-off loop for the CNH Emergency Department. The temporary drop-off loop has two-way access onto Benson Street/Cooper Plaza. Sidewalks are present on Haddon Avenue, Benson Street/Cooper Plaza, and internal to the site along the western edge of the drop-off loop, providing pedestrian access to the Emergency Department from the street (Figure 4 – Aerial Photograph).

Benson Street is a two-way local street with sidewalks and street trees on both sides. In addition, Benson Street features painted crosswalks at cross-streets and becomes a one-way street at the intersection with South 6th Street.

Project Description. The applicant proposes to develop the area near the intersection of Benson Street and Haddon Avenue with the Benson Pavilion, a 10-story hospital-building expansion with an approximate footprint of 28,775 square feet. The Benson Pavilion construction will include six stories of fit out and four stories constructed as shell space and reserved for future fit out. The new space will include 110 beds, a new emergency patient drop-off area, and modifications of Benson Street and Haddon Avenue rights-of-way (ROW) to accommodate the drop-off area.

Cooper Norcross Health plans the Benson Pavilion to better serve the community by upgrading aging facilities with a new, state-of-the-art healthcare space. Once constructed, CNH will be fitting out the first six floors, with additional floors fit out in phases. The planning and design of the specific building spaces is still evolving. CNH continues to evaluate future development phases, which will be part of a separate application.

Potential Impacts. This section includes a review of potential positive and negative impacts during and after construction, including unavoidable negative impacts.

- Soil Erosion and Sedimentation. Langan prepared a geotechnical report, dated August 7, 2026, which indicates the project site sits on a mix of fill, above the Cape May Formation (Geotechnical Engineering Report, bound separately). The project will implement a plan to minimize erosion and sediment transport during and after construction (Soil Erosion and Sediment Control [SESC] Plan, Drawing No. CE101, bound separately). The SESC Plan is subject to the Camden County Soil Conservation District review and approval prior to earth disturbance. Based on the foregoing, the project would not have an adverse impact regarding soil erosion and sedimentation.

- Flooding and Flood Plain Disruption. The project site is not in any floodplain or floodway areas (Figure 5 – FEMA Effective FIRM). Based on the foregoing, the project would not have an adverse impact regarding flooding or flood plain disruption.

- Degradation of Surface Water Quality. The project site does not include any surface waters. The nearest surface water is the Cooper River, a freshwater nontrout (FW2-NT) river, located approximately 2,700 feet northeast of the project site (Figure 6 – NJDEP Surface Waters). The project site does not have any wetlands. The nearest wetlands are located approximately 2,600 feet northeast of the project site (Figure 7 – NJDEP Wetlands Map). The project site is in the Cooper River (Below Route 130) HUC-14 watershed (Figure 8 – NJDEP HUC-14 Watershed Map).

Per the stormwater standards set forth in N.J.A.C. 7:8-5.5(a) and city requirements, the water quality standards are not applicable because the project does not result in an increase of one-quarter acre or more of regulated motor vehicle surface, or the reconstruction of one-quarter acre or more of motor vehicle surface because the total motor vehicle surface is 0.19 acres (8,460 square feet). Based on the foregoing, the project would not have an adverse impact on surface water quality.

- Ground Water Pollution. Per N.J.A.C. 7:8-5.4(a) 2.ii and city requirements, the project is exempt from the groundwater recharge requirements because the project site is in an urban redevelopment area and meets the definition for redevelopment. In lieu of infiltration systems, the project proposes stormwater systems that detain the peak rate of runoff.

- Sewage Disposal. The project site is in a sewer service area (Figure 9 – NJDEP Sewer Service Area). The applicant will coordinate sewer service with the city during the site plan application review. The applicant will address issues regarding sewage disposal during site plan review.

- Solid Waste Disposal. A private waste hauler will address solid waste and recycling for the project. The operator will comply with applicable state and local recycling requirements.

- Vegetation. The project will result in removing all existing structures, pavement, and other features, including landscaping, unless specifically noted on the site plans (Demolition Plan, Drawing No. CD101, bound separately). The landscape plan involves shading street trees, substantial shrubs, and seasonal plantings. The proposed plants are native or climate resistant for sustainability and an attractive look (Landscape Plan, Sheet No. LP101, bound separately). Based on the foregoing, the project would not have an adverse impact regarding vegetation.

- Scenic and Historic Features On and Off Site. The project site is an identified Individual historic property, which refers to previous developments on the site that have been cleared for over a decade. The NJDEP does not categorize the project site as National Historic Landmark (NHL) eligible (Figure 10 – NJDEP Historic Resources Map). The project site is also part of Panel AW195 of the NJDEP Archaeological Site Grid. Since the project does remove, relocate, or alter any historic resources, the project is not anticipated to have an adverse impact on scenic and historic features on or off-site.

- Previous Uses at Project Area The NJDEP Known Contaminated Sites List does not identify any contaminated sites at the project site (Figure 11 – NJDEP Known Contaminated Sites Map).

- Air Quality. Mobile source traffic can result in potential emissions of carbon monoxide, particulate matter, and nitrogen oxides. The Clean Air Act requires the U.S. Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS) for six "criteria air pollutants." The closest monitoring station to the project site is the Camden County Municipal Utilities Authority (CCMUA), 1645 Ferry Avenue in Camden.

  The data collected in 2025 is likely representative of the ambient air quality at and around the project site. Air quality monitoring data indicates that existing area air quality complies with the current NAAQS. Table 1 provides ambient air quality monitoring data.

Table 1: 2025 Ambient Air Quality Monitoring Data.

Pollutant	Averaging Period	Primary NAAQS ($\mu g/m^3$)	NJ Ambient Air Monitoring Concentration	Location
Nitrogen Dioxide NO_2	1-hour	68 ppb	40 ppb	CCMUA, 1645 Ferry Avenue. 3-yr avg, 98th pct of 1-hr concentrations.
	Annual	10.74 ppb	9.18 ppb	CCMUA, 1645 Ferry Avenue. annual mean
Carbon Monoxide CO	1-hour	1.5 ppm	1.6 ppm	CCMUA, 1645 Ferry Avenue. not exceeded more than once per yr.
	8-hour	0 ppm	1.1 ppm	CCMUA, 1645 Ferry Avenue. not exceeded more than once per yr.
Particulate Matter PM_{10}	24-hour	50 $\mu g/m^3$	46 $\mu g/m^3$	CCMUA, 1645 Ferry Avenue. 2nd highest
Particulate Matter $PM_{2.5}$	24-hour	19 $\mu g/m^3$	22 $\mu g/m^3$	CCMUA, 1645 Ferry Avenue. 3-yr average, 98th percentile
	Annual	8.4$\mu g/m^3$	8.4 $\mu g/m^3$	CCMUA, 1645 Ferry Avenue. 3-yr average, annual mean

Source: EPA Air Quality Monitor Values Report, 2025

No measurements exceed the limits. New traffic from the project will consist of employee vehicles, vans, and a small number of tractor trailers. After the project construction, relatively minimal impacts are projected. When added to background concentrations, which comply with NAAQS, the project would not have an adverse impact regarding air quality.

- Noise. Noise regulations are subject to the New Jersey Noise Control Act (N.J.A.C. 7:29). All municipal noise ordinances must be identical to the State Model Noise Control Ordinance and the NJDEP, which oversees noise control rules. Noise level will increase temporarily during construction activities, which will be temporary and restricted to hours mandated by the municipal ordinance.

  When operating, the hospital building will contribute background noise from rooftop equipment and operations. The project will comply with the applicable state and local noise level standards. Based on anticipated compliance with state and local regulations, the project would not have an adverse effect regarding noise at the project site and surrounding area.

Measures to Minimize or Eliminate Negative Impacts.

- Drainage plans. The pre-development condition of the project site consists of two drainage areas (Stormwater Management Report, bound separately). The drainage areas discharge to the existing city sewer, located at the intersection of 7th and Benson streets, and an inlet at Haddon Avenue, respectively. The post-development condition of the project still comprises of two drainage areas, still discharged at those same locations. The project stormwater management approach meets the requirements of N.J.A.C. 7:8 and the city requirements.

- Water supply and water conservation. The city will review the adequacy of water supply as part of the overall site plan application. The project will not create a substantial burden on water supply as the proposed pavilion is an expansion of existing planned hospital use.

- Energy conservation measures. Where possible, the project will take measures to conserve energy for the operation of mechanical and electrical systems, including but not limited to the following operations:

  - Motion sensors in appropriate locations to avoid lighting areas that are not in use.
  - Mechanical equipment efficiency for energy conservation to the extent possible.
  - Temperature set points would be reviewed based on specific needs, including but not limited to storage types, needs of patients and staff etc.

- Noise reduction techniques. Noise associated with the project construction will be temporary and will dissipate as distance from the source increases. The project will not adversely impact on the current noise levels in the area. When the project is operational, noise levels at the site will comply with applicable state and local noise performance standards.

- Landscaping. Shade trees and seasonal plantings will enhance the aesthetics of the site from Haddon Avenue, while smaller-scale plantings face the Benson Street access for clear sightlines and an attractive appearance.

- Permits and Approvals Required. Table 2 outlines the following permits and approvals required for the project:

Table 2: Permits and Approvals Required for Project

Camden Redevelopment Agency (CRA)	Presentation to CRA prior to land development application, if required by city
City of Camden Planning Board	Preliminary/final site plan approval.
City of Camden Water and Sewer	Water and sanitary sewer capacity approval
Camden County Municipal Utility Authority	Sewer Connection Approval
Camden County Soil Conservation District	Soil erosion and sediment control certification.
NJ Department of Environmental Protection (NJDEP)	NJPDES authorization to discharge stormwater
New Jersey Department of Community Affairs (NJDCA)	Building Review

The permit summary does not include specific construction or building permits that the architect, general contractor, and various trades may need to obtain from the city building department or any other agency.

References. The following documents contribute to supporting the EIA findings:

- Site Plan, prepared by Langan, last dated October 1, 2026.

- City of Camden Zoning and Land Use Ordinance, Chapter 870, adopted by the City Council of the City of Camden December 14, 2010, by Ord. No. MC-4585.

- Cooper Plaza Redevelopment Plan, City of Camden, Camden County, NJ, adopted March 2005 and most recently amended May 13, 2005.

- Environmental Data Resources, Inc. (EDR, Inc.), Aerial Photo Decade Package, September 2026.

- U.S. Environmental Protection Agency, Outdoor Air Quality Data, Monitor Values Report, 2025, https://www.epa.gov/outdoor-air-quality-data/monitor-values-report
- Stormwater Management Report for Cooper Norcross Health Benson Pavilion prepared by Langan, dated October 1, 2026
- Geotechnical Engineering Report for Emergency Department Expansion, Benson Pavilion, prepared by Langan, dated August 7, 2026.

The project would not have an adverse environmental impact on the site or surrounding community. Based on the findings of the EIA, the applicant does not plan any mitigation as it does not consider mitigation measures necessary.

The project will expand the footprint of the hospital campus to provide more modern and efficient services, in line with multiple objectives of the Cooper Plaza Redevelopment Plan, which aims to upgrade functioning institutional land uses, such as the Cooper Norcross Health Medical Center, as well as create momentum for redevelopment through phasing of development. This project is an upgrade of an institutional land use that involves phasing to create momentum for redevelopment in the area and furthers the goals of the city's redevelopment plan adopted for the project site and area, including "*promote Cooper University Hospital's* [Now Cooper Norcross Health] *expansion*" and "*improve area infrastructure*."

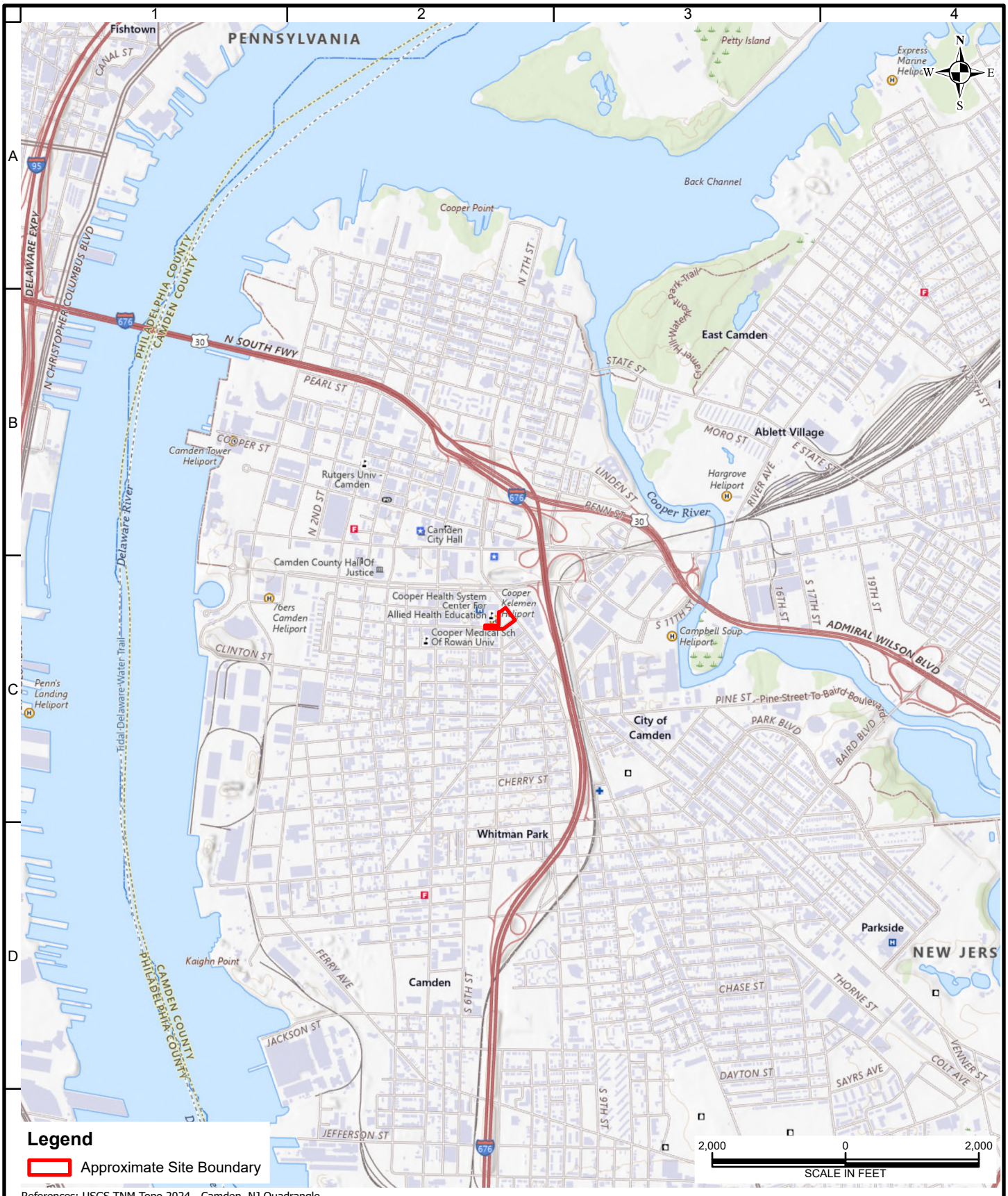
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Kyle MacGeorge, P.E., LEED AP®
Associate
New Jersey Professional Engineer License No. 24GE05751600

Sean Moronski, P.P., AICP
Senior Project Manager
New Jersey Professional Planner License No. 33LI00560100

Attachments: Figures
NJ Certificate of Authorization No. 24GA27996400

FIGURES



Legend

Approximate Site Boundary

References: USGS TNM Topo 2024 - Camden, NJ Quadrangle

LANGAN

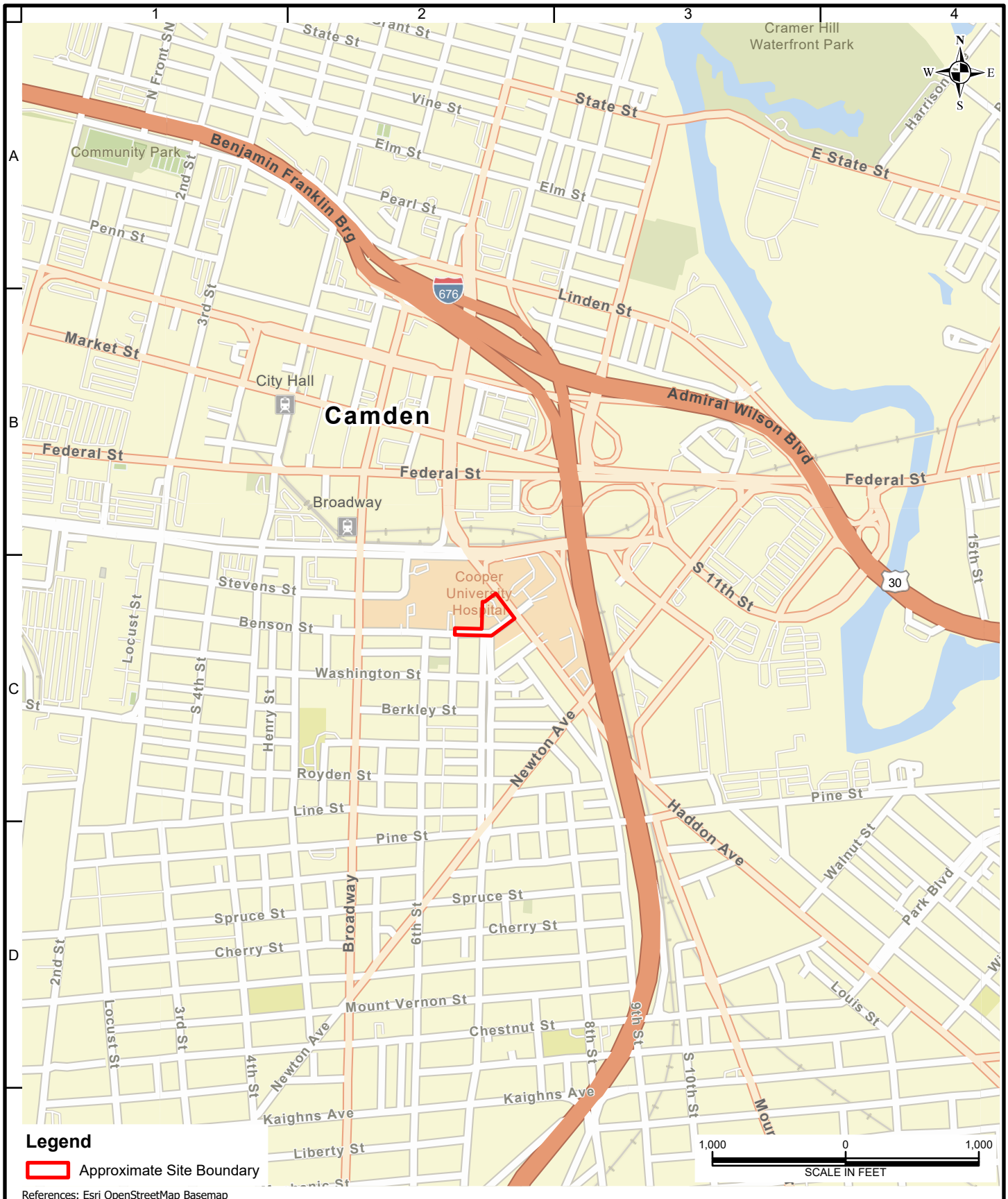
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Project	BENSON PAVILION BLOCK No. 1402, LOT No. 1 CAMDEN CITY CAMDEN COUNTY NEW JERSEY
Figure Title	USGS SITE LOCATION MAP
Project No.	220245001
Date	9/17/2026
Scale	1" = 2,000'
Drawn By	KAM
Figure No.	1

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Legend

Approximate Site Boundary

References: Esri OpenStreetMap Basemap

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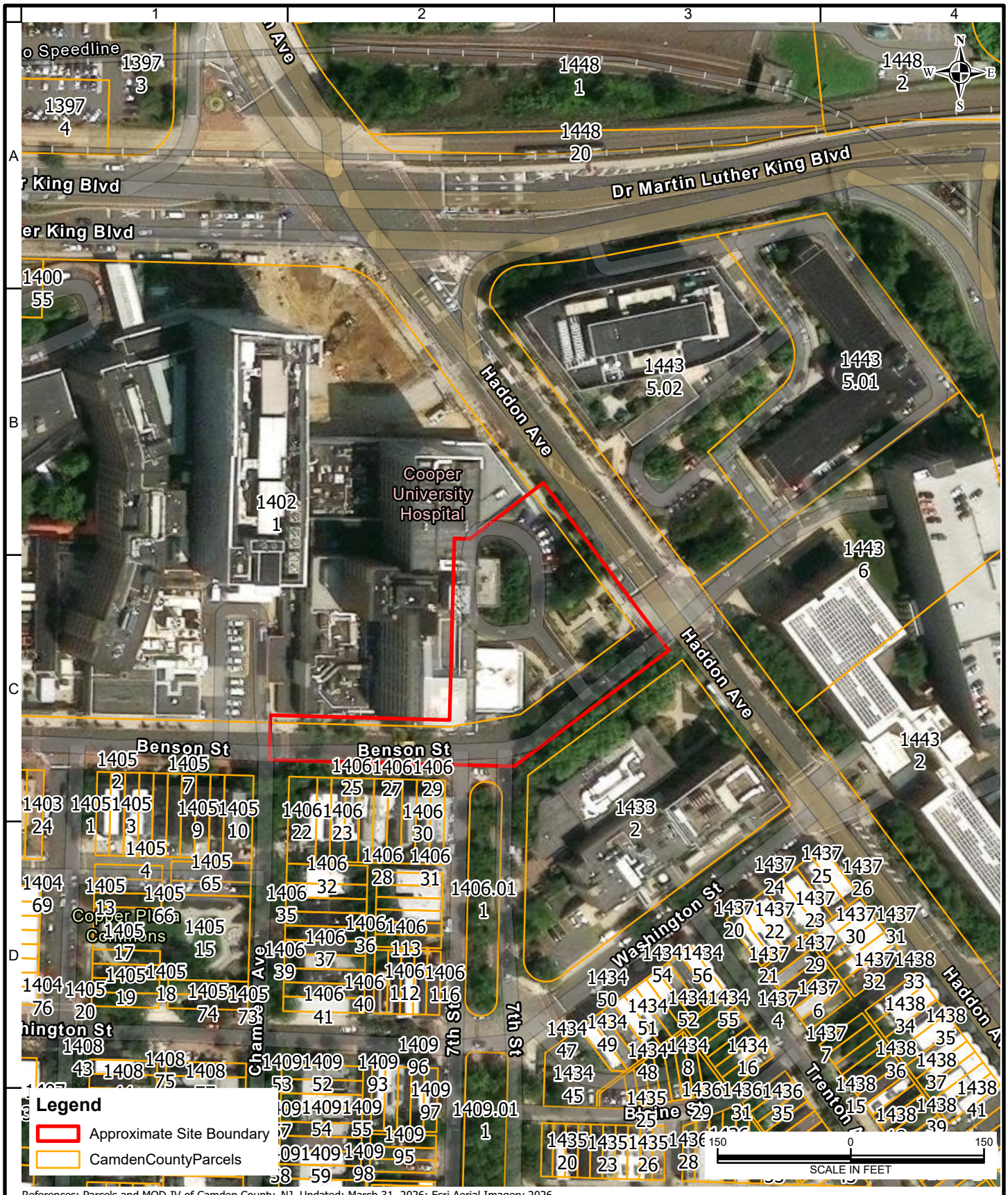
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Project	BENSON PAVILION
	BLOCK No. 1402, LOT No. 1
	CAMDEN CITY
	CAMDEN COUNTY NEW JERSEY
Figure Title	VICINITY MAP
Project No.	220245001
Date	9/17/2026
Scale	1" = 1,000'
Drawn By	KAM
Figure No.	2

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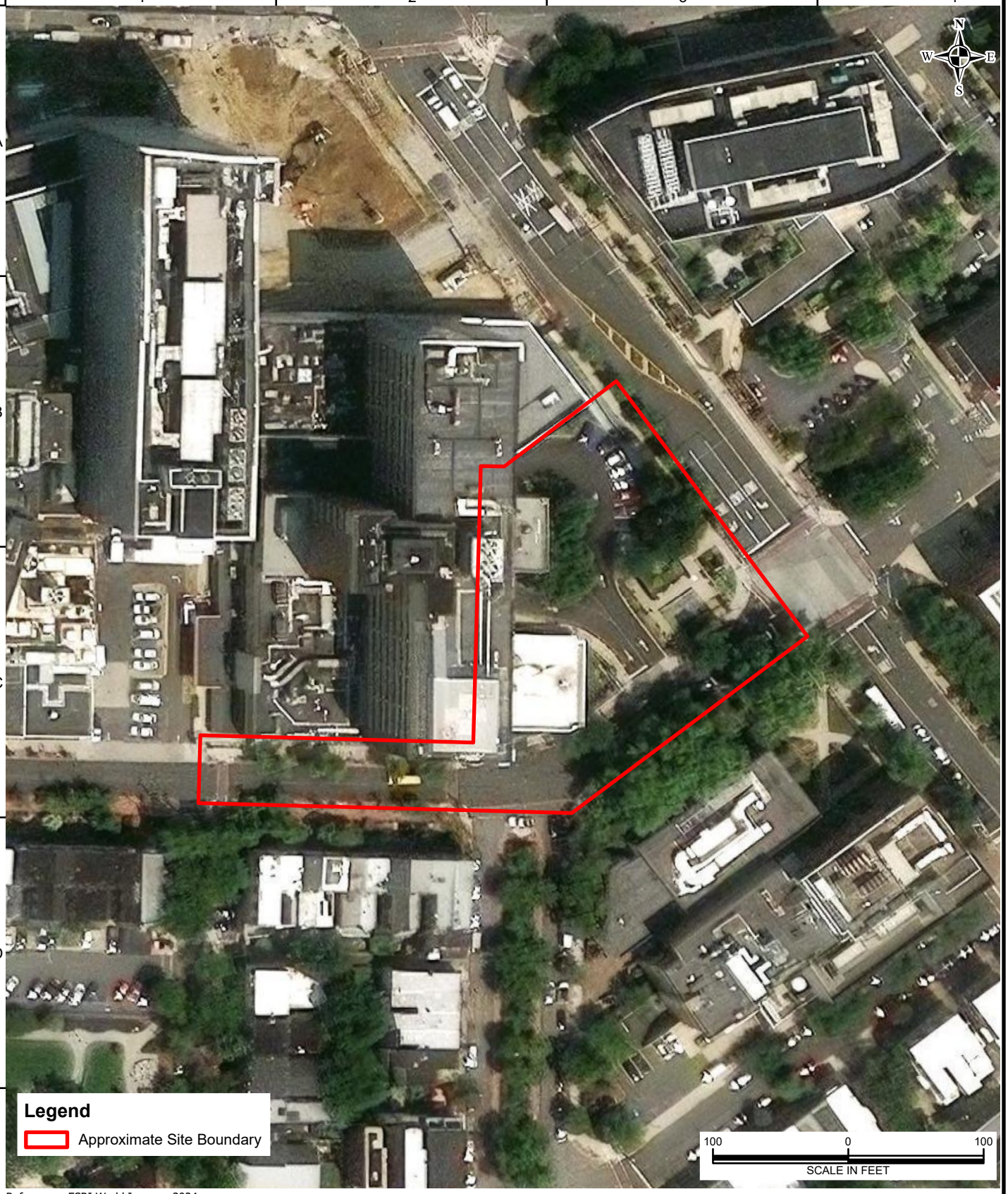
References: Parcels and MOD-IV of Camden County, NJ, Updated: March 31, 2026; Esri Aerial Imagery 2026

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Project	BENSON PAVILION BLOCK No. 1402, LOT No. 1 CAMDEN CITY CAMDEN COUNTY NEW JERSEY
Figure Title	TAX MAP
Project No.	220245001
Date	9/17/2026
Scale	1" = 150'
Drawn By	KAM
Figure No.	3

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References: ESRI World Imagery 2024

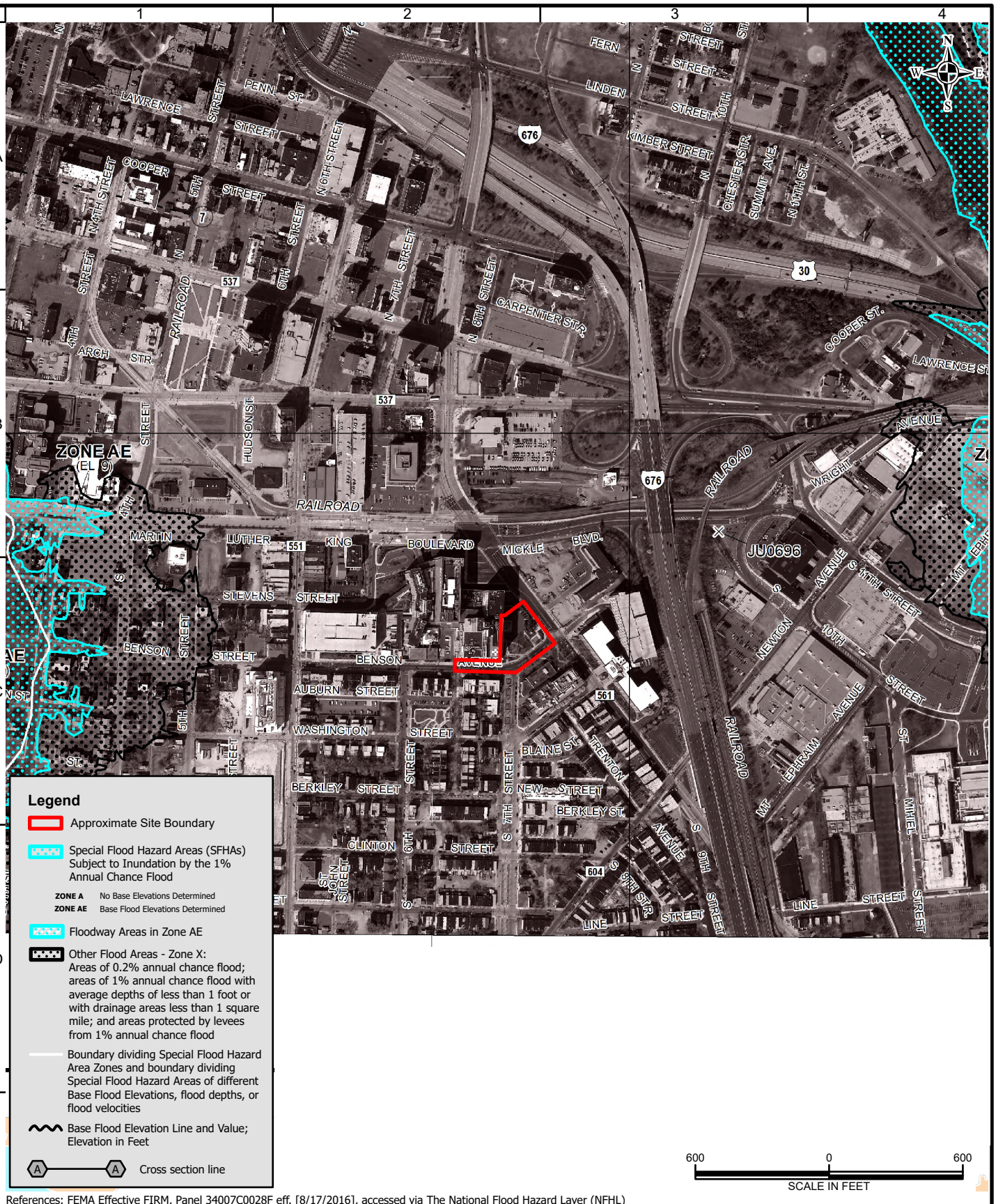
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Project	PROJECT TITLE BLOCK No. 1402, LOT No. 1 CAMDEN CITY CAMDEN COUNTY NEW JERSEY
Figure Title	SITE AERIAL PHOTOGRAPH
Project No.	220245001
Date	9/17/2026
Scale	1" = 100'
Drawn By	KAM
Figure No.	4

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Legend

- Approximate Site Boundary
- Special Flood Hazard Areas (SFHAs) Subject to Inundation by the 1% Annual Chance Flood
  - ZONE A — No Base Elevations Determined
  - ZONE AE — Base Flood Elevations Determined
- Floodway Areas in Zone AE
- 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
- Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities
- Base Flood Elevation Line and Value; Elevation in Feet
- A — A: Cross section line

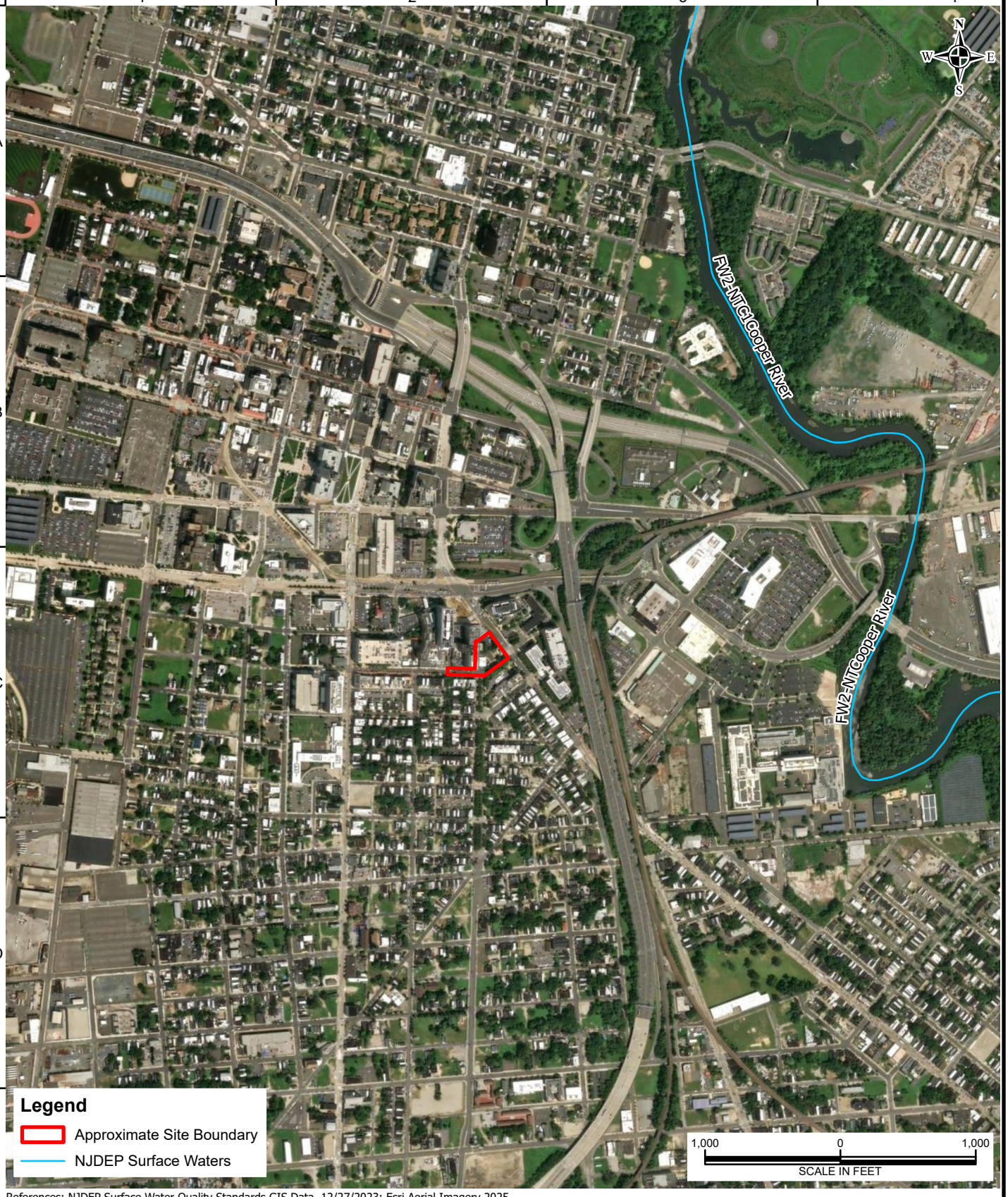
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SCALE IN FEET

References: FEMA Effective FIRM, Panel 34007C0028F eff. [8/17/2016], accessed via The National Flood Hazard Layer (NFHL)

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Project	BENSON PAVILION BLOCK No. 1402, LOT No. 1 CAMDEN CITY CAMDEN COUNTY NEW JERSEY
Figure Title	FEMA EFFECTIVE FIRM MAP
Project No.	220245001
Date	9/17/2026
Scale	1" = 600'
Drawn By	KAM
Figure No.	5

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References: NJDEP Surface Water Quality Standards GIS Data, 12/27/2023; Esri Aerial Imagery 2025

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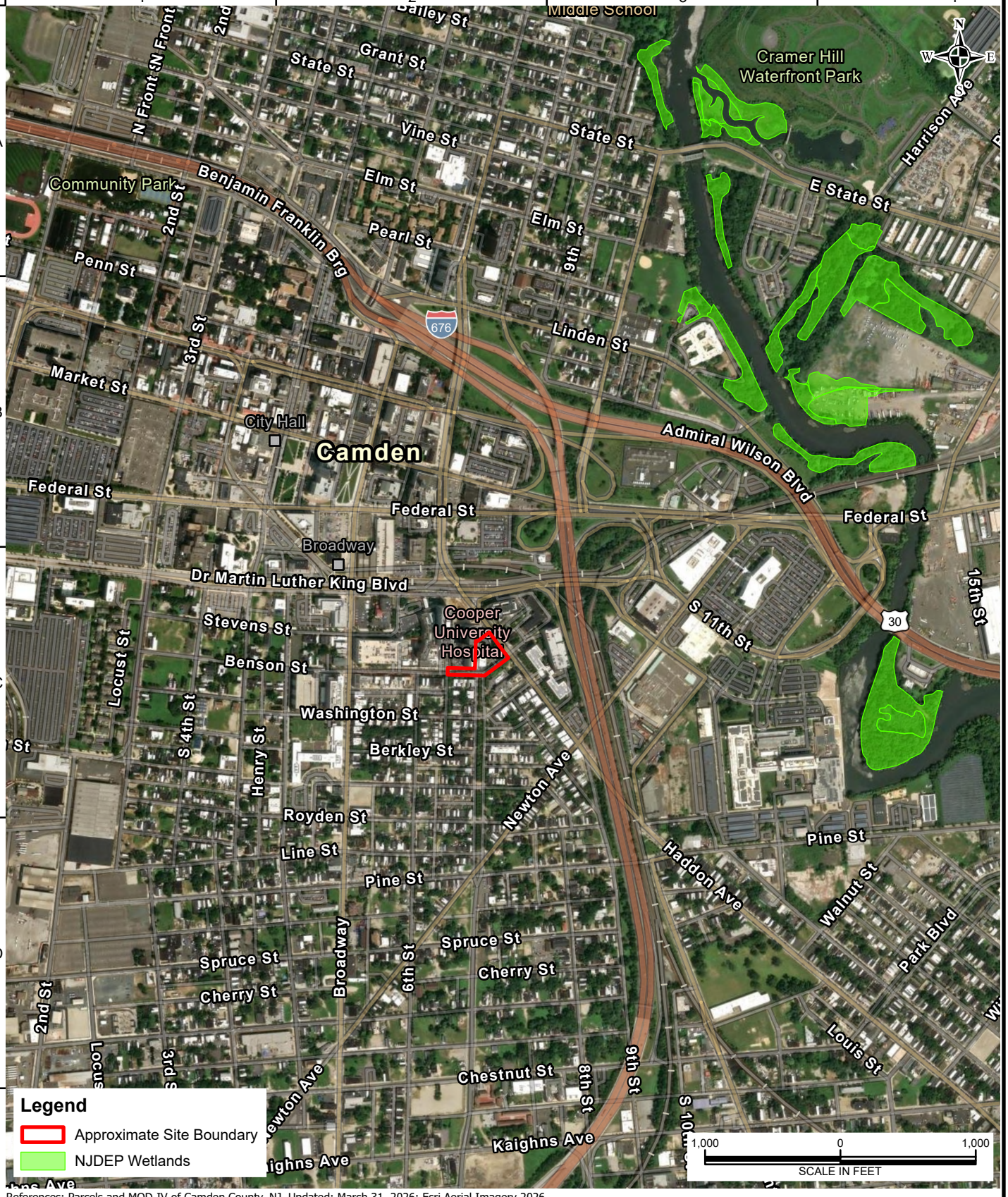
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Project	BENSON PAVILION BLOCK No. 1402, LOT No. 1 CAMDEN CITY CAMDEN COUNTY NEW JERSEY
Figure Title	NJDEP SURFACE WATERS MAP
Project No.	220245001
Date	9/17/2026
Scale	1" = 1,000'
Drawn By	KAM
Figure No.	6

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References: Parcels and MOD-IV of Camden County, NJ, Updated: March 31, 2026; Esri Aerial Imagery 2026

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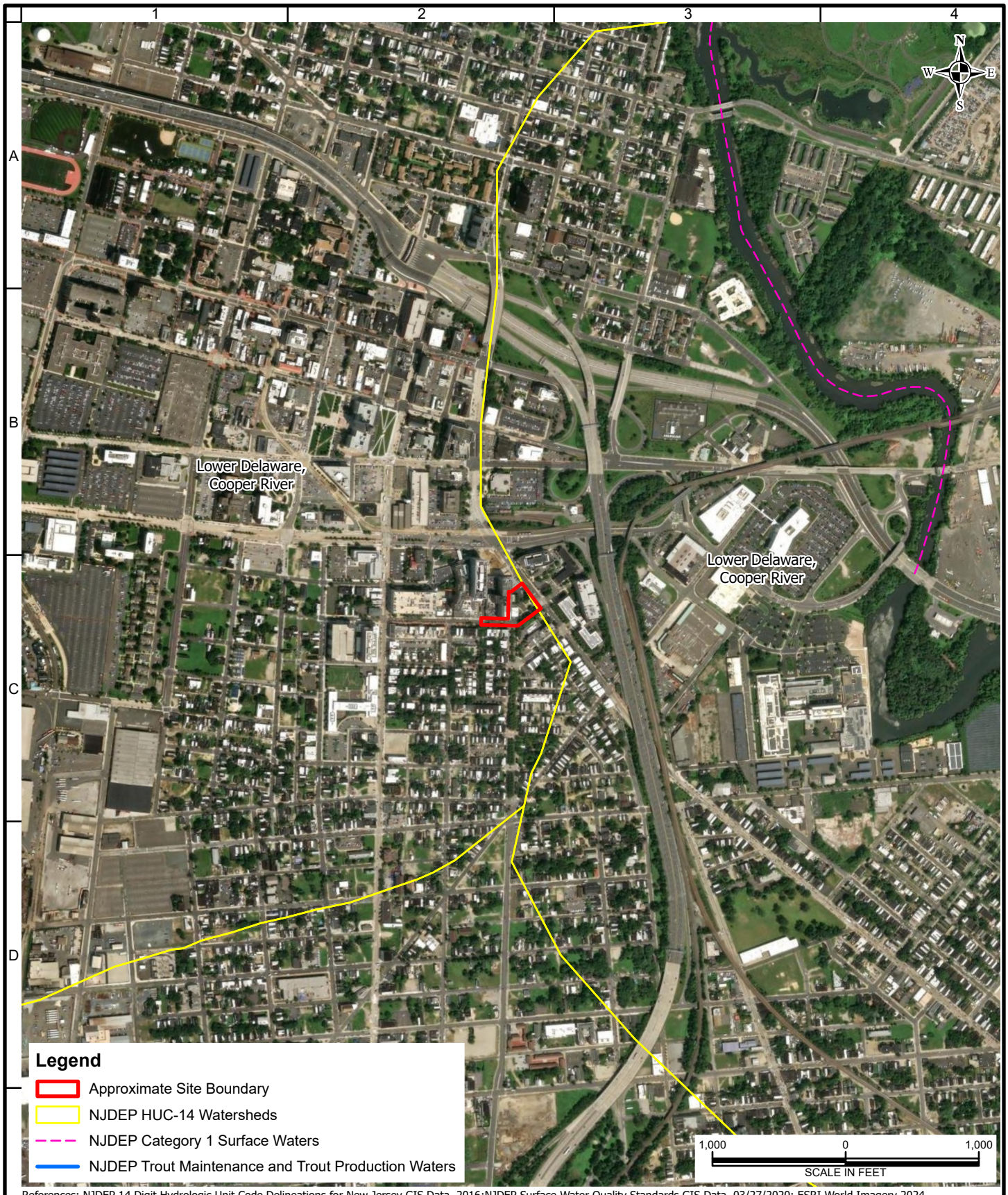
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Project	BENSON PAVILION BLOCK No. 1402, LOT No. 1 CAMDEN CITY CAMDEN COUNTY NEW JERSEY
Figure Title	NJDEP WETLANDS MAP
Project No.	220245001
Date	9/17/2026
Scale	1" = 1,000'
Drawn By	KAM
Figure No.	7

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References: NJDEP 14 Digit Hydrologic Unit Code Delineations for New Jersey GIS Data, 2016;NJDEP Surface Water Quality Standards GIS Data, 03/27/2020; ESRI World Imagery 2024

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Project
BENSON PAVILION
BLOCK No. 1402, LOT No. 1
CAMDEN CITY
CAMDEN COUNTY NEW JERSEY

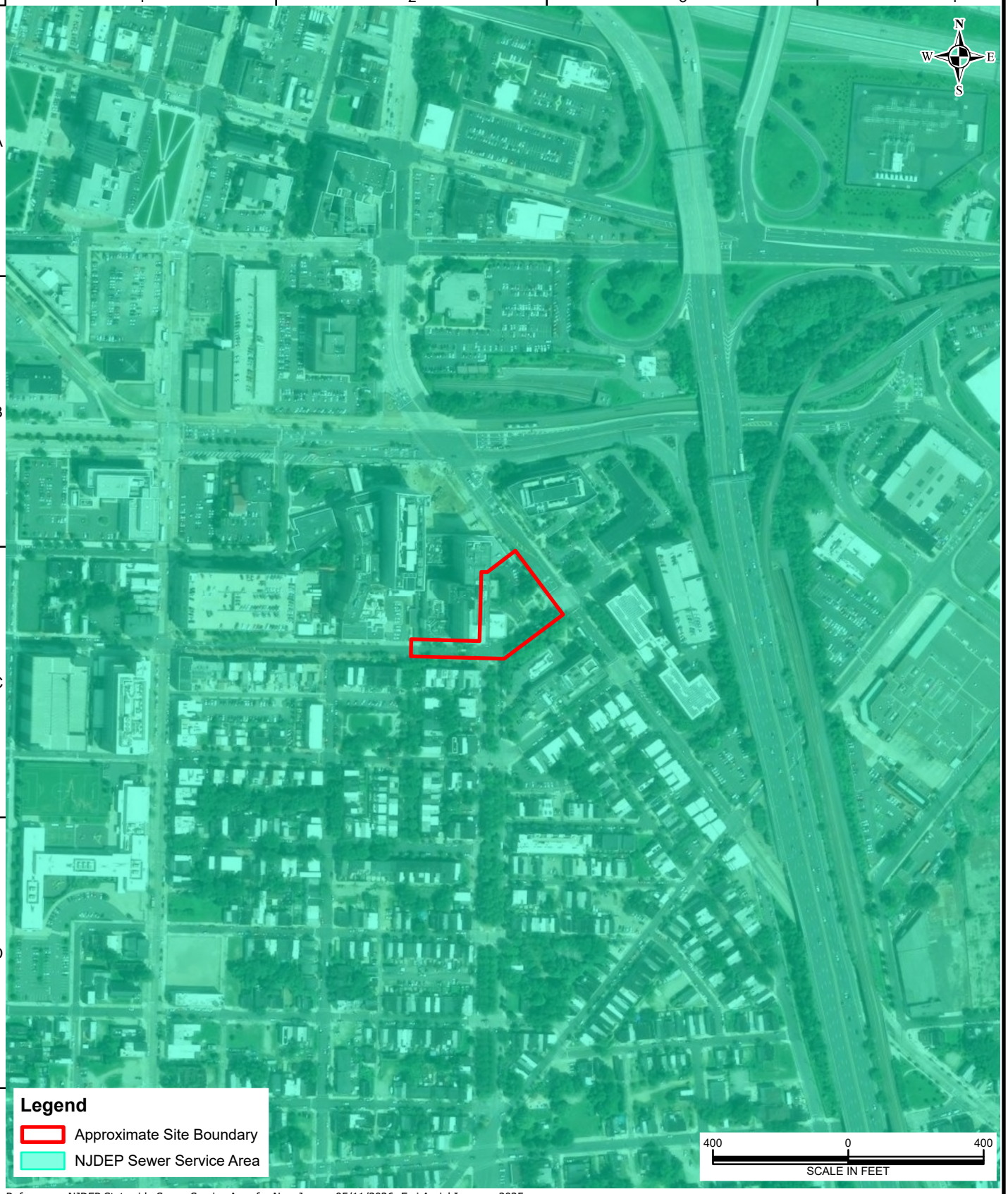
Figure Title
NJDEP HUC-14
WATERSHED MAP

Project No.	220245001
Date	9/17/2026
Scale	1" = 1,000'
Drawn By	KAM

Figure No.
8

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Path: \\langan.com\data\PHL\data0\220245001\Project Data\ArcGIS\APRX\Natural Resources\NR Figures\NR Figures.aprx Date: 9/17/2026 User: kmeckeler Time: 10:11 AM



References: NJDEP Statewide Sewer Service Area for New Jersey, 05/11/2026; Esri Aerial Imagery 2025

LANGAN
Langan Engineering and
Environmental Services, LLC
300 Kimball Drive
Parsippany, NJ 07054

T: 973.560.4900 F: 973.560.4901 www.langan.com
NJ Certification of Authorization No. 24GA27996400

Project
BENSON PAVILION
BLOCK No. 1402, LOT No. 1
CAMDEN CITY
CAMDEN COUNTY NEW JERSEY

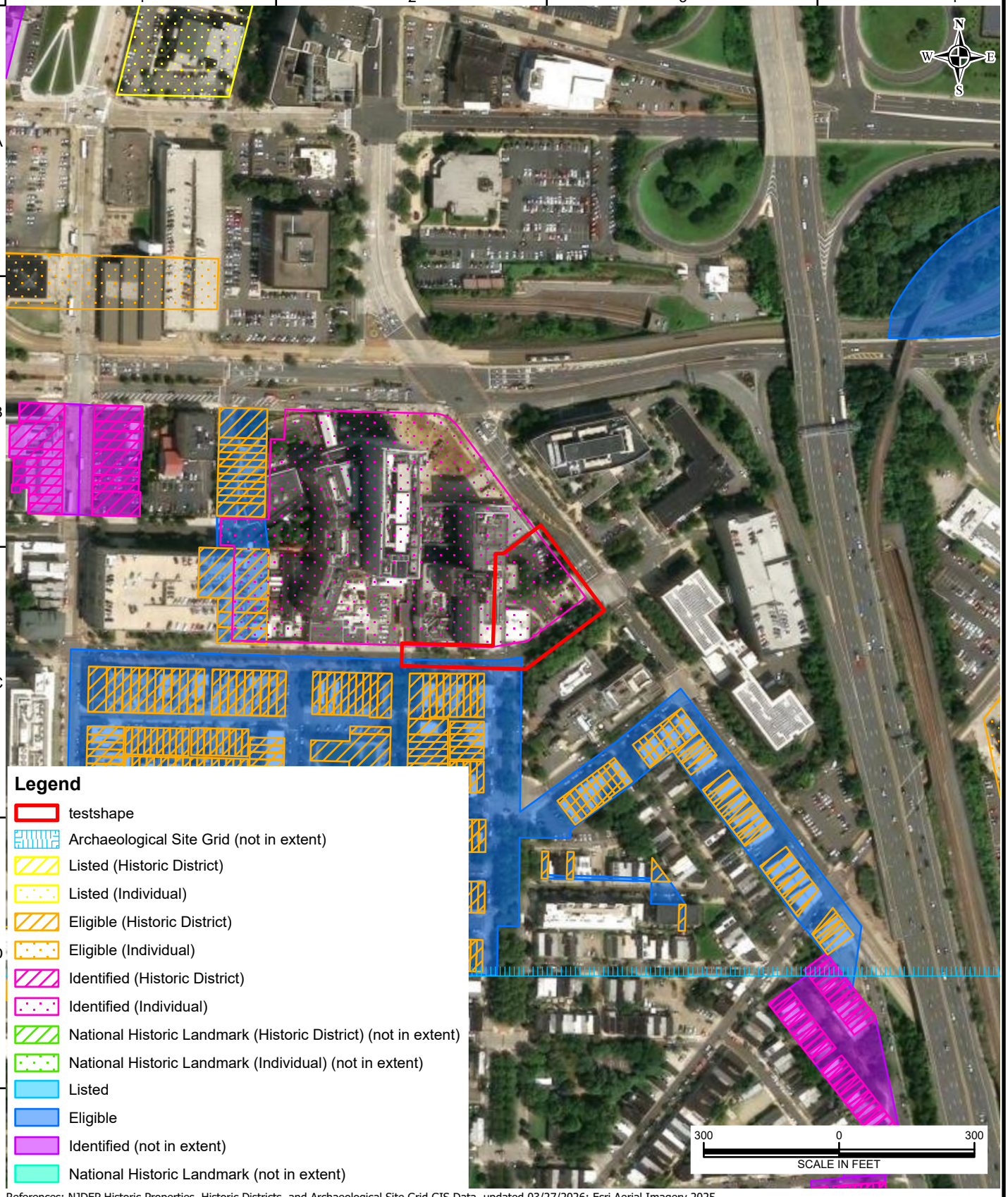
Figure Title
SEWER
SERVICE MAP

Project No. 220245001
Date 9/17/2026
Scale 1" = 400'
Drawn By KAM

Figure No. 9

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References: NJDEP Historic Properties, Historic Districts, and Archaeological Site Grid GIS Data, updated 03/27/2026; Esri Aerial Imagery 2025

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Project

PROJECT TITLE

BLOCK No. 1402, LOT No. 1

CAMDEN COUNTY

CAMDEN COUNTY NEW JERSEY

Figure Title

NJDEP HISTORIC RESOURCES MAP

Project No.	220245001
Date	9/17/2026
Scale	1" = 300'
Drawn By	KAM

Figure No. 10

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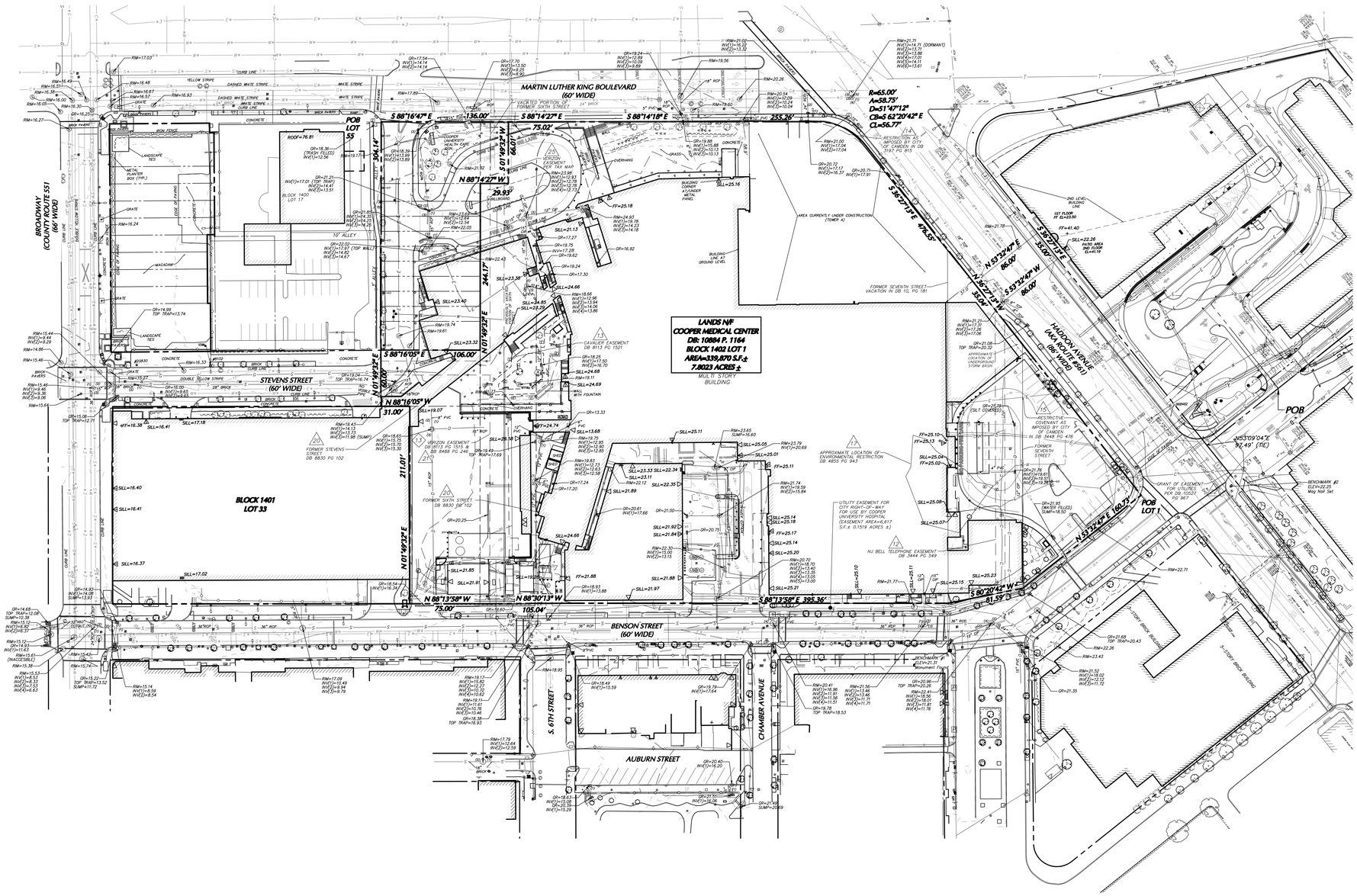
References: Known Contaminated Sites List, updated: Sep. 23, 2025; Esri World Imagery 2026

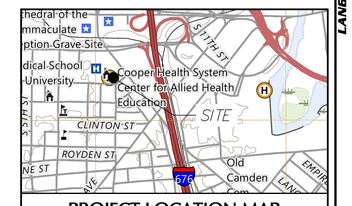
LANGAN
Langan Engineering and Environmental Services, LLC
300 Kimball Drive
Parsippany, NJ 07054
T: 973.560.4900 F: 973.560.4901 www.langan.com
NJ Certification of Authorization No. 24GA27996400

Project	BENSON PAVILION BLOCK No. 1402, LOT No. 1 CAMDEN CITY CAMDEN COUNTY NEW JERSEY
Figure Title	NJDEP KNOWN CONTAMINATED SITES MAP
Project No.	220245001
Date	9/17/2026
Scale	1" = 200'
Drawn By	KAM
Figure No.	11

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Path: \\langan.com\data\PHL\data0\220245001\Project Data\ArcGIS\APRX\Natural Resources\NR Figures\NR Figures.aprx Date: 9/17/2026 User: kmeckeler Time: 10:36 AM





PROJECT LOCATION MAP

SCALE: 1" = 2000'

SOURCE: ESRI

GENERAL NOTES

1. THE SURVEYED PROPERTY IS SUBJECT BUT NOT LIMITED TO THE FOLLOWING FACTS AS REVEALED BY THE HEREON REFERENCED INFORMATION. THE INFORMATION SHOWN HEREON DOES NOT CONSTITUTE A TITLE SEARCH BY THE SURVEYOR. ALL INFORMATION THAT MAY AFFECT THE QUALITY OF TITLE TO BOTH THE SUBJECT AND ADJOINING PARCELS SHOULD BE VERIFIED BY AN ACCURATE AND CURRENT TITLE REPORT.
2. THE MERIDIAN OF THIS SURVEY IS REFERENCED TO THE NEW JERSEY STATE PLANE COORDINATE SYSTEM NAD 83 (2011) DERIVED USING SURVEY-GRADE GNSS EQUIPMENT.
3. ELEVATIONS SHOWN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) DERIVED USING SURVEY-GRADE GNSS EQUIPMENT.

   SITE BENCHMARKS: BENCHMARK #1 ELEVATION = 21.31', BENCHMARK #2 ELEVATION = 22.25'
4. STREET NAMES, RIGHT OF WAY WIDTHS, BLOCK AND LOT NUMBERS ARE SHOWN IN ACCORDANCE WITH TOWNSHIP TAX MAPS.
5. TOPOGRAPHIC INFORMATION SHOWN HEREON HAS BEEN OBTAINED FROM GROUND SURVEYS BY LANGAN ENGINEERING AND ENVIRONMENTAL SERVICES, LLC. DURING JULY, 2023 AND AUGUST, 2026.
6. OFFSETS (IF SHOWN) ARE FOR SURVEY REFERENCES ONLY AND SHOULD NOT BE USED IN CONSTRUCTION OF ANY TYPE. LANGAN ENGINEERING AND ENVIRONMENTAL SERVICES, LLC. RECOMMENDS THE PLACEMENT OF SURVEY MARKERS.
7. WETLANDS, ENVIRONMENTAL AND/OR HAZARDOUS MATERIALS LOCATION, IF ANY, NOT COVERED UNDER THIS CONTRACT.
8. UNLESS SPECIFICALLY NOTED HEREON, STORM AND SANITARY SEWER INFORMATION (INCLUDING PIPE INVERT, PIPE MATERIAL, AND PIPE SIZE) WAS OBSERVED AND MEASURED AT FIELD LOCATED STRUCTURES (MANHOLES/CATCH BASINS, ETC.). CONDITIONS CAN VARY FROM THOSE ENCOUNTERED AT THE TIMES WHEN AND THE LOCATIONS WHERE DATA WAS OBTAINED. DESPITE MEETING THE REQUIRED STANDARD OF CARE, THE SURVEYOR CANNOT AND DOES NOT WARRANT THAT PIPE MATERIAL AND/OR PIPE SIZE THROUGHOUT THE PIPE RUN ARE THE SAME AS THOSE OBSERVED AT EACH STRUCTURE, OR THAT THE PIPE RUN IS STRAIGHT BETWEEN THE LOCATED STRUCTURES.
9. THIS PLAN NOT VALID UNLESS EMBOSSED WITH THE IMPRESSION SEAL OR ENCRYPTED WITH THE DIGITAL SIGNATURE AND SEAL OF THE PROFESSIONAL.
10. NO EVIDENCE OF DRILLING, WELLS OR, ANY OTHER EQUIPMENT RELATED TO OIL OR MINERAL EXTRACTION WAS OBSERVED IN THE COURSE OF CONDUCTING THIS SURVEY. SURVEYOR IS NOT QUALIFIED TO IDENTIFY MINERAL OR OIL EXTRACTION OR PRODUCTION EQUIPMENT AND THEREFORE THIS STATEMENT SHOULD NOT BE CONSTRUED TO INDICATE A DEFINITIVE LACK OF SUCH EQUIPMENT OR ACTIVITY ON SITE.
11. A WRITTEN WAIVER AND DIRECTION NOT TO SET CORNER MARKERS HAS BEEN OBTAINED FROM THE ULTIMATE USER PURSUANT TO P.L. 2003, c.14 (N.J.S.A. 45:8-36.3) AND N.J.A.C. 13:40-5.1(d)

TITLE EXCEPTIONS
BLOCK 1402 LOT 1

PER TITLE COMMITMENT ISSUED BY FIRST AMERICAN TITLE INSURANCE COMPANY
COMMITMENT NUMBER: TA-4539-6-1
COMMITMENT DATE: OCTOBER 20, 2023

ITEMS 1-11 ARE NOT SURVEY RELATED

12. RIGHT OF WAY GRANTED TO NEW JERSEY BELL TELEPHONE AS CONTAINED IN DEED BOOK 3444, PAGE 549.(PLOTTED, AS SHOWN)
13. DEED OF EASEMENT TO CAVALIER TELEPHONE MID-ATLANTIC, LLC AS CONTAINED IN DEED BOOK 8113, LOT 1521.(PLOTTED, AS SHOWN)
14. RESTRICTION AS IMPOSED BY THE CITY OF CAMDEN AS CONTAINED IN DEED BOOK 3197, PAGE 815.

    - AT NO TIME SHALL PREMISES DESCRIBED HEREIN BE USED FOR A USED CAR LOT, JUNK YARD, OR ANY OTHER DANGEROUS, NOXIOUS OR OFFENSIVE PURPOSE OR ESTABLISHMENT WHATSOEVER. (RESTRICTION AREA PLOTTED, SHOWN)
15. RESTRICTIVE COVENANT AS IMPOSED BY THE CITY OF CAMDEN AS CONTAINED IN DEED BOOK 3448, PAGE 476.(AREA OF RESTRICTIONS SHOWN)

    (A) THE LAND PREMISES DESCRIBED HEREIN ABOVE SHALL NOT BE USED AS USED CAR LOT, JUNK YARD OR FOR ANY OTHER PURPOSE WHICH IS DANGEROUS OR EMITS NOXIOUS OR OFFENSIVE ODORS OR NOISES.
    (B) THE PURCHASER (COOPER MEDICAL CENTER) SHALL MAINTAIN THE PREMISES AS A PARK AVAILABLE TO THE GENERAL PUBLIC
    (C) THE CITY OF CAMDEN SHALL RETAIN THE RIGHT TO REACQUIRE TITLE TO ANY PART OF THE PREMISES FOR PURPOSES OF STREET WIDENING WITHOUT PAYING ANY COMPENSATION FOR REACQUISITION
    (D) UPON DEFAULT OF THE CONDITION OF SALE HEREIN OR THE BREACH OF THE COVENANT, THE SAID PREMISES SHALL REVERT TO THE CITY OF CAMDEN, FREE AND CLEAR OF ANY LIENS, CLAIMS OR ENCUMBRANCES, THE CONSIDERATION AND/OR PURCHASE PRICE BID BY THE GRANTEE (COOPER MEDICAL CENTER) SHALL BE RETAINED BY THE CITY OF CAMDEN, AS LIQUIDATED DAMAGES AND NOT AS A PENALTY)

    (E) DESIGNATED AREA OF RESTRICTIVE COVENANT HAVING AN APPROXIMATE LOCATION AT THE SOUTHWEST CORNER OF HADDON AVENUE AND THE NORTHWEST CORNER OF BENSON STREET (200 X 250, IRREGULAR)
16. RESTRICTIVE COVENANT AND RELEASE OF REVERTER (REVERTER SET FORTH IN DEED BOOK 3448 PAGE 476) AS CONTAINED IN DEED BOOK 10884 PAGE 1164.(AREA SHOWN).
17. DECLARATION OF ENVIRONMENTAL RESTRICTIONS AS IN DEED BOOK 4855, PAGE 943.(APPROXIMATE LOCATION PLOTTED, SHOWN)
18. VACATION ORDINANCE AS CONTAINED IN VAC 0012-901. (ORDINANCE AUTHORIZES THE VACATION OF A PORTION OF AN ALLEY BEHIND SIXTH STREET BETWEEN MICKLE BOULEVARD AND MICKLE ALLEY.)

    (A) THE CITY OF CAMDEN EXPRESSLY RESERVES AN EASEMENT, IN, ON OR UNDER THE ENTIRE PORTION OF THE VACATED ALLEY
    (B) AN AGREEMENT OR CONTRACT WITH THE CITY OF CAMDEN OR APPLICABLE PUBLIC UTILITY OR CABLE TELEVISION COMPANY TO CLOSE, REMOVE, RELOCATE, ERECT ANY STRUCTURE UPON OR BLOCK ACCESS EXISTING IN, ON OR UNDER THE VACATED ALLEY
    (C) VACATED PORTION OF THE ALLEY MUST MAINTAIN FIRE ACCESS AT ALL TIMES.
19. ANY EASEMENT OR LESSER RIGHT WHICH THE OWNER(S) OF THE FOLLOWING MATTERS MAY HAVE OR CLAIM IN THE SAID LAND BY REASON OF THE EXISTENCE OF THE SAME AS DISCLOSED ON A SURVEY PREPARED BY LAWRENCE M. DIVITRO, JR., NJ LAND SURVEY LICENSE NO. 24198 OF LAND DIMENSIONS ENGINEERING, DATED JUNE 21, 2004, LAST REVISED AUGUST 5, 2004:

    OVERHEAD WIRES
    VARIOUS SIGNS, CHAINS, POLES AND PLAQUES
    EXISTING 2 INCH HIGH PRESSURE GAS LINE
    EXISTING 8 INCH WATER MAIN
    EXISTING BUSES ALONG HADDON AVENUE
    VARIOUS STORM WATER PIPES EXTENDING INTO THE RIGHT OF WAY OF BENSON STREET, MICKEL BOULEVARD AND HADDON AVENUE
    UNDERGROUND TELEPHONE LINES ALONG SIXTH STREET
    DRIVEWAY EXTENDS IN THE RIGHT OF WAY OF SIXTH STREET
    BUS ENCLOSURE LOCATED ON HADDON AVENUE
    SANITARY SEWER LATERALS EXTENDING INTO THE MANHOLES ALONG SIXTH STREET
    EXISTING PSE&G MANHOLE LOCATED ON SIXTH STREET
    10 INCH CURB WITH FENCING ON TOP, LOCATED ALONG THE LINE OF HADDON AVENUE
20. TERMS AND CONDITIONS AS CONTAINED IN THE VACATION OF SOUTH 6TH STREET AS CONTAINED IN BOOK 8830 PAGE 102.(PLOTTED, AS SHOWN)
21. RIGHT-OF-WAY GRANT-UTILITY EASEMENT BY AND BETWEEN THE COOPER HEALTH SYSTEM, AND VERIZON-NJ, INC.(AFFECTS BLOCK 1401, LOT 22 AND BLOCK 1402, LOT 1, CITY OF CAMDEN) RECORDED IN DEED BOOK 8113, PAGE 1515. RE-RECORDED (MISSING NOTARY FOR VERIZON ACKNOWLEDGEMENT) IN DEED BOOK 8488, PAGE 246.
22. GRANT OF EASEMENT FOR UTILITIES AS CONTAINED IN DEED BOOK 10527 PAGE 967.
23. MEMORANDUM OF AGREEMENT BETWEEN PSE&G AND COOPER UNIVERSITY HEALTH CARE AS CONTAINED IN DEED BOOK 10531 PAGE 1968.(AGREEMENT NOT PLOTTABLE)
24. SUBJECT TO ALL MATTERS AS SHOWN ON FILED MAP IN BOOK 9906 PAGE 12.(MATTERS PLOTTED,SHOWN)
25. SUBJECT TO ALL MATTERS AS SHOWN ON THE CURRENT TAX MAP OF THE CITY OF CAMDEN. (MATTERS PLOTTED, SHOWN)

FLOOD ZONE

TABLE A ITEM 3

PER THE MAP ENTITLED " FIRM, NATIONAL FLOOD INSURANCE PROGRAM,PANEL 0028F, MAP NUMBER 34007C0028F, REVISED DATE: AUGUST 17, 2016." THE ENTIRE PORTION THE SUBJECT PROPERTIES LIES WITHIN ZONE "X", AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

MAP REFERENCE

THIS SURVEY IS BASED UPON EXISTING PHYSICAL CONDITIONS FOUND AT THE SUBJECT SITE, AND THE FOLLOWING REFERENCE:

1. "MINOR SUBDIVISION, LOT LINE ADJUSTMENT BETWEEN BLOCK 1401 LOT 33 & BLOCK 1402 LOT 1" COOPER HOSPITAL BLOCKS 1401 & 1402. LAST REVISED OCTOBER 21, 2005, FILED MAP NO 906-12.

TITLE EXCEPTIONS
BLOCK 1400 LOT 55

PER TITLE COMMITMENT ISSUED BY FIRST AMERICAN TITLE INSURANCE COMPANY
COMMITMENT NUMBER: TA-5520-1
COMMITMENT DATE: SEPTEMBER 12, 2023

ITEMS 1-11 ARE NOT SURVEY RELATED

12. RESTRICTIONS AS CONTAINED IN DEED BOOK 210 PAGE 38.(RESTRICTIONS NOT PLOTTABLE)
13. EASEMENT TO VERIZON-NJ, INC. AS CONTAINED IN DEED BOOK 8113 PAGE 1515, RE-RECORDED IN DEED BOOK 8488 PAGE 246.
14. REDEVELOPMENT AGREEMENT BETWEEN THE CITY OF CAMDEN REDEVELOPMENT AGENCY AND THE COOPER HEALTH SYSTEM AS CONTAINED IN DEED BOOK 8341 PAGE 1464. (LOT 57)
15. RIGHTS, PUBLIC AND PRIVATE, IN AND TO ALLEYS AND PASSAGEWAYS WHICH MAY EXIST.(ALLEYS PLOTTED, SHOWN)

TITLE EXCEPTIONS
BLOCK 1400 LOTS 56-65

PER TITLE COMMITMENT ISSUED BY FIRST AMERICAN TITLE INSURANCE COMPANY
COMMITMENT NUMBER: TA-5520-1
COMMITMENT DATE: SEPTEMBER 12, 2023

ITEMS 1-11 ARE NOT SURVEY RELATED

12. RESTRICTIONS AS CONTAINED IN DEED BOOK 210 PAGE 38.(AFFECTS ALL LOTS),(RESTRICTIONS NOT PLOTTABLE)
13. REDEVELOPMENT AGREEMENT BETWEEN THE CITY OF CAMDEN REDEVELOPMENT AGENCY AND THE COOPER HEALTH SYSTEM AS CONTAINED IN DEED BOOK 8341 PAGE 1464. (AGREEMENT NOT PLOTTABLE)
14. RIGHTS, PUBLIC AND PRIVATE, IN AND TO ALLEYS AND PASSAGEWAYS WHICH MAY EXIST.(ALLEYS SHOWN)

SUBJECT PROPERTIES INFORMATION

BLOCK 1402-LOT 1, N/F THE COOPER HEALTH SYSTEM, CONTAINING 312,015 S.F. OR 7.163 ACRES

BLOCK 1400-LOT 55, N/F THE COOPER HEALTH SYSTEM, CONTAINING 8,969 S.F. OR 0.206 ACRES

BLOCK 1400-LOT 56, N/F THE COOPER HEALTH SYSTEM, CONTAINING 2,015 S.F. OR 0.046 ACRES

BLOCK 1400-LOT 57, N/F THE COOPER HOSPITAL/UNIVERSITY MEDICAL CENTER, CONTAINING 1,702 S.F. OR 0.039 ACRES

BLOCK 1400-LOT 58, N/F THE COOPER HOSPITAL/UNIVERSITY MEDICAL CENTER, CONTAINING 1,696 S.F. OR 0.039 ACRES

BLOCK 1400-LOT 59, N/F THE COOPER HOSPITAL/UNIVERSITY MEDICAL CENTER, CONTAINING 1,698 S.F. OR 0.039 ACRES

BLOCK 1400-LOT 60, N/F THE COOPER HOSPITAL/UNIVERSITY MEDICAL CENTER, CONTAINING 1,696 S.F. OR 0.039 ACRES

BLOCK 1400-LOT 61, N/F THE COOPER HOSPITAL/UNIVERSITY MEDICAL CENTER, CONTAINING 1,711 S.F. OR 0.039 ACRES

BLOCK 1400-LOT 62, N/F THE COOPER HOSPITAL/UNIVERSITY MEDICAL CENTER, CONTAINING 1,696 S.F. OR 0.039 ACRES

BLOCK 1400-LOT 63, N/F THE COOPER HOSPITAL/UNIVERSITY MEDICAL CENTER, CONTAINING 1,712 S.F. OR 0.039 ACRES

BLOCK 1400-LOT 64, N/F THE COOPER HOSPITAL/UNIVERSITY MEDICAL CENTER, CONTAINING 1,696 S.F. OR 0.039 ACRES

BLOCK 1400-LOT 65, N/F THE COOPER HOSPITAL/UNIVERSITY MEDICAL CENTER, CONTAINING 3,264 S.F. OR 0.075 ACRES

LEGEND OF SYMBOLS & ABBREVIATIONS

- HYDRANT
- STREET LIGHT
- AREA LIGHT
- SIGNAL POLE
- POLE
- GUY WIRE
- ANCHOR POLE
- MANHOLE
- MANHOLE (DRAINAGE)
- MANHOLE (SANITARY SEWER)
- MANHOLE (ELECTRIC)
- MANHOLE (WATER)
- MANHOLE (NATURAL GAS)
- MANHOLE (TELEPHONE)
- MANHOLE (FORCE MAIN)
- MANHOLE (STEAM)
- MANHOLE (UNKNOWN UTILITY)
- WATER VALVE
- GAS VALVE
- SHRUB
- CATCH BASIN
- CLEAN OUT
- TREE
- SIGN
- BOLLARD
- PEDESTRIAN WALK SIGNAL
- DOOR
- DOUBLE DOOR
- OVERHEAD DOOR
- PARKING METER
- METAL COVER
- ELECTRIC BOX
- SOIL BORING
- MONITORING WELL
- TEST PIT
- BENCHMARK
- ROOF DRAIN
- SPOT ELEVATION
- CONCRETE CURB
- CONCRETE
- DETECTABLE PAD
- DROP CURB
- BROKEN WHITE STRIPE
- SINGLE YELLOW STRIPE
- DOUBLE YELLOW STRIPE
- SINGLE WHITE STRIPE
- REINFORCED CONCRETE PIPE
- DUCTILE IRON PIPE
- CORRUGATED METAL PIPE
- NO VISIBLE PIPE
- EDGE OF PAVEMENT
- LANDSCAPED AREA
- SURVEY BEARING & DISTANCE
- DEED BEARING & DISTANCE
- STORM DRAIN
- SANITARY LINE
- COMBINED UTILITY LINE
- UNKNOWN UTILITY LINE
- GAS LINE
- WATER LINE
- ELECTRIC LINE
- TELEPHONE LINE
- CABLE TV LINE
- STEAM LINE
- FORCE MAIN
- FIBER OPTIC
- REFERENCED UTILITY LINE (TYPE AS NOTED) BASED ON RECORD MAPPING
- OVERHEAD WIRE
- GUIDE RAIL(TYPE AS NOTED)
- CHAIN LINK FENCE
- WOOD/STOCKADE FENCE
- WIRE FENCE
- IRON FENCE
- TREE LINE
- EASEMENT LINE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- CONTOUR LINE

SCALE IN FEET: 50 0 25 50

Date	Description	No.
REVISIONS		

"I, HEREBY STATE THAT THIS PLAN IS BASED ON A FIELD SURVEY MADE BY ME OR UNDER MY IMMEDIATE SUPERVISION IN ACCORDANCE WITH N.J.A.C. 13:40-5.1 "PREPARATION OF LAND SURVEYS", AND TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, INFORMATION AND BELIEF, AND IN MY PROFESSIONAL OPINION, CORRECTLY REPRESENTS THE CONDITIONS FOUND ON THE DATE OF THE FIELD SURVEY AT THE SUBJECT PROPERTY."

MATTHEW SIPPLE — DATE SIGNED
PROFESSIONAL LAND SURVEYOR
NJ Lic. No. 24GS04332100

LANGAN
Langan Engineering and Environmental Services, LLC
1818 Market Street, Suite 3300
Philadelphia, PA 19103
T: 215.845.8900 F: 215.845.8901 www.langan.com
NJ CERTIFICATE OF AUTHORIZATION # 24GA27996400

Project
COOPER-BENSON PAVILION
CAMDEN
CAMDEN COUNTY — NEW JERSEY

Drawing Title
BOUNDARY AND TOPOGRAPHIC SURVEY

Project No.	Drawing No.
220245001	EX102
Date: 08-31-2026	
Drawn By: AJL / MCM	
Checked By: SFH / MGS	Sheet 1 of 1

PROJECT NO. 220245001

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Kevin D. Sheehan, Esquire
Shareholder
P: 856-985-4020
F: 856-552-1427
ksheehan@parkermccay.com

October 9, 2026

File No. 13978-75

VIA HAND DELIVERY
Mr. Ashton Jones, P.P.
Acting Planning Director/Zoning Officer
Dept. of Development and Planning
520 Market Street, City Hall, Room 224
Camden, NJ 08101

Re: Cooper Norcross Health
Preliminary & Final Major Site Plan Application (Tower A)
Block 1402, Lot 1; Block 1400, Lots 55 through 65; and Block 1443, Lot 5.02
1 Cooper Plaza

Dear Mr. Jones:

This office represents Cooper Norcross Health ("Applicant" or "CNH") with the development of the above-referenced property located in the MS Zoning District. The Property is commonly known as 1 Cooper Plaza ("Property").

The Applicant is proposing to improve the Cooper Hospital located in Camden, New Jersey. This project entails the construction of "Benson Pavilion." CNH continues to evaluate future phases of development and the CNH will submit them as part of any separate application. The proposed Benson Pavilion will be a 10-story hospital-building expansion with a footprint of approximately 30,000-square-feet. The Applicant intends that the Benson Pavilion expansion will better serve patients and the community by upgrading CNH's aging facilities with a new, state-of-the-art healthcare space. Once constructed, CNH will begin transitioning existing healthcare uses from older areas of the hospital into the newly constructed Benson Pavilion.

The programming of the specific spaces includes expansion of numerous departments throughout the hospital including (22) new beds and (3) operating rooms. The proposed expansion will house, at most, a maximum of 22 additional beds and 428 additional employees during the shift of largest employment, as well as 40 new doctors. The parking demand would increase by no more than 309 spaces, which CNH plans to address by leasing spaces at the Waterfront Car Park

near the hospital. Benson Pavilion is part of Cooper's long-term investment in the community, and it will serve as the initial project for future improvements and renovations to other areas of the hospital campus.

The Applicant is seeking Preliminary and Final Major Site Plan approval for the development of the Project. The Applicant will seek the following variances, deviations, or waivers from the Zoning Ordinance and/or Redevelopment Plan pursuant to N.J.S.A. 40:55D-70.c as may be required: (i) from the Cooper Plaza Redevelopment Plan to permit impervious coverage of 94.3% where 90% is permitted; and (ii) to permit parking for the hospital to be located off-site where on-site parking is required.

The Applicant will request any and all other variances, deviations or waivers that the Board may deem necessary upon its review of the application.

In that regard, I enclose the following:

1. Original plus twelve (O+12) copies of the Zoning Permit application;
2. Original plus twelve (O+12) copies of the Site Plan Application with completed checklist;
3. Thirteen (13) sets of the Preliminary and Final Major Site Plan prepared by Langan;
4. Thirteen (13) copies of a Stormwater Management Report prepared by Langan;
5. Thirteen (13) copies of the Boundary and Topographic Survey prepared by Langan;
6. Thirteen (13) copies of the Architectural Plans / Elevations prepared by Array Architects;
7. Thirteen (13) copies of the Parking Statement prepared by Langan;
8. Thirteen (13) copies of the Environmental Impact Statement prepared by Langan;
9. Thirteen (13) copies of the Completed Assessment Certifications for each of the lots;
10. Original plus twelve (O+12) copies of the Escrow Agreement and executed W-9 form;
11. Thirteen (13) copies of the Disclosure of Owners of the Applicant pursuant to N.J.S.A. 40:55D-48.1;
12. Thirteen (13) copies of the Proof of Ownership (City Tax Assessment portal showing Cooper Health System as the Property owner); and

13. Our checks in the amount of:

    a. $87.30 representing the zoning permit fee;
    b. $500.00 representing the pre-application fee;
    c. $1,137.58 representing the preliminary and final major site plan application fee;
    d. $3,613.23 representing the preliminary and final major site plan escrow fee.

Two (2) hard copies of all submission materials, as well as a PDF, are being delivered directly to Robert Hunter at Remington & Vernick. We are also delivering two (2) copies of the Stormwater Maintenance Plan to Mr. Hunter. Please review this application and confirm that it can be scheduled for consideration at the November 12, 2026 Planning Board meeting.

Please note that the Board Solicitor has a conflict and cannot participate in the Cooper applications. Please schedule the Conflict Solicitor to attend the November 12 Board meeting.

Thank you for your cooperation. If you have any questions, please contact me.

Very truly yours,

KEVIN D. SHEEHAN

KDS/rr
Enclosures

cc: Robert Hunter, P.E., Remington & Vernick (2 hard copy sets)

VIA EMAIL ONLY (w/out Plans)
Faith Orsini, Cooper Health System
Dave Lamontagne, Pure Project Management
Kyle MacGeorge, Langan
James Burns, Esq.
Eric Bernstine, Esq.

DIVISION OF PLANNING

Sign Permit

Edward C. Williams
Planning Director/Zoning Officer
Department of Development and Planning
Division of Planning
520 Market street
City Hall, Room 224
P.O. Box 95120
Camden, NJ 08101-5120
Phone: 856-757-7214
Fax: 856-968-4705

Prior to erecting and/or altering any sign, a sign permit application must be completed. If the sign proposed is larger than permitted the zoning officer will deny the application and the applicant may choose to appeal before the Camden City Planning Board.

Requirements

- A proposed use and/or an accurate drawing of a proposed sign including dimensions and illustration signed by sign supplier.

CITY OF CAMDEN
DIVISION OF PLANNING
CITY HALL – ROOM 224
PO BOX 95120
CAMDEN, NEW JERSEY 08101-5120
(856) 757-7214

INSTRUCTIONS FOR ZONING/SIGN PERMIT APPLICATION

ALL APPLICANTS WHO NEED A ZONING/SIGN PERMIT MUST SUBMIT THE FOLLOWING:

1. Completed Zoning AND/OR Sign Application

2. Proof of ownership (deed, tax bill, or lease)

3. A detail floor plan of proposed use, conversion of single family dwelling shall have measurement of all habitable space. Accurate drawing of a proposed sign including dimensions and illustration signed by sign supplier. **Any addition or accessory uses or fences must have a Plot Plan and/or Survey. Additions/Fences must be presented on a Plot Plan/Survey with rear and side set back. You can obtain a Plot Plan from the Engineering Dept. located at 101 Newton Ave., 3rd Floor.**
*(copy of all/any plans must accompany application.

4. Completed attached Tax Certification (**City of Camden Tax Office Room 117 1st floor plus Water/Sewer PNC Bank located Broadway & Market St.)**

5. Application fee:
(non-refundable)

Single Family Dwelling	$ 69.56
Two-Family Dwelling	$ 139.13
Three-Family Dwelling Or More	$ 215.51
Rooming House	$ 259.16
Boarding House	$ 259.16
Commercial Use	$ 87.30
Industrial Warehousing & Manufacturing Use	$ 139.87
Institutional Use	$ 69.56
Advertising Billboards	$ 395.56
Sign Application	$ 79.11
Rezoning Application	$ 345.09

Money Order or Check payable to the City of Camden

PLEASE RETURN COMPLETED APPLICATIONS TO THE ABOVE ADDRESS. **INCOMPLETE APPLICATIONS SHALL NOT BE PROCESS.** ANY APPLICATION WHICH REMAINS INCOMPLETE FOR MORE THAN 10 BUSINESS DAYS WILL BE DISCARDED. FALSIFICATION IN ANY FORM SHALL SUBJECT APPLICANT TO A FINE OR MUNICIPAL COURT.

No construction, erection, alteration, repair, remodeling, conversion, renovation or demolition of any building or structure shall begin prior to Zoning approval. Other municipal agency approvals maybe required.

DO NOT REMOVE OR DISCARD ANY PART OF THIS APPLICATION

I. GENERAL

Today's Date: October 9, 2026

Applicant: Cooper Norcross Health **Telephone:** 215-313-0966 (Jim McPhileny)

Applicant's Address: 1 Cooper Plaza, Camden, NJ 08103

Applicant Interest : (please check one) **(X) owner** **( ) tenant** **(x) agent/owner**

SUBMITTING FOR: **(X) Zoning Permit** **( ) Sign Permit**

---

1. Name and Address of property OWNER if different from that of applicant:

   Same

2. **Address and Block and Lot number** for which zoning/sign permit is desired:

   1 Cooper Plaza **Block:** 1443 ~~1402~~ ~~1400~~ **Lot:** 5.02 1 ~~55-65~~

3. **Zone District:** **R1 R2 R3 C1 C2 C3 C4 LII LI2 GI1 GI2**
   (please circle) **US PR1 OL1 TOD MW1 MW2 (MS) CV2 CC**

4. Historic District: No

5. What is the property/land PRESENTLY being used *entirely as:*

   Hospital

6. Is the structure presently vacant? No If so how long? N/A

7. How many stories/floors does the building have? 10 proposed Is there a basement/cellar? _____

DO NOT REMOVE OR DISCARD ANY PART OF THIS APPLICATION

II. ZONING

1. What is being proposed?

   New Construction_____ Addition X Fence_____ (ht____) Installation_____

   New Business_____ Conversion_____ Other (explain: _____)

2. Describe in detail the use & activities PROPOSED (attached separate sheet if necessary):

   See attached cover letter.

3. Are there other activities existing within the same property? Yes (please describe)

   Hospital Buildings

4. Dimensions of Principal Building and/or structure Irregular - addition is 183 4½" x 165' 0½" x 53' 1" x 189' 7"

5. Dimensions of All Accessory Building and/or structure N/A

6. Are any of the activities conducted in the principal building existing as a nonconforming use?

   No X Yes_____ (please explain) _____

7. To the applicant's knowledge, has there been any prior applications made to the Zoning Board of Adjustment or the Planning Board?

   No_____ Yes X (please explain) _____

THIS APPLICANT CERTIFIES THAT THE ABOVE INFORMATION HAS BEEN COMPLETED TO THE BEST OF HIS/HER KNOWLEDGE.

10/9/2026
(Date)

(Signature of Applicant)

Kevin D. Sheehan, Attorney for Applicant

(Name of Corporation or Association)

DO NOT REMOVE OR DISCARD ANY PART OF THIS APPLICATION

III. SIGN **NO SIGNS**

1. Type Sign: Awning / Billboard / Freestanding / Hanging / Mounted / Off Site / Window *(please circle)*
   Other (describe): _____ Alteration of an existing sign _____
   (attach photo & describe) _____

2. Are there any existing signs? _____ (if yes, please attach photos)

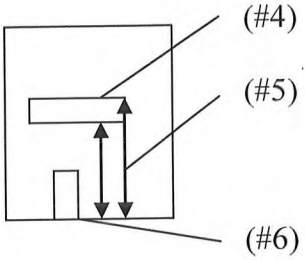
3. How many signs are proposed? _____

4. Will signs(s) be illuminated? Yes_____ No_____

5. Dimension: _____X_____=_____sq ft.

6. Distance between ground and the lowest part of sign _____ft.

7. Distance between ground and highest part of the sign _____ft.



8. Material of Sign:_____

9. Color(s) on sign(s):_____

10. Illustration/Wording:_____

_____

==========

THIS APPLICANT CERTIFIES THAT THE ABOVE INFORMATION HAS BEEN COMPLETED TO THE BEST OF HIS/HER KNOWLEDGE AND FURTHER UNDERSTANDS THAT <u>IF THE SIGN EXCEEDS THE MAXIMUM REQUIREMENT</u> A VARIANCE THROUGH THE PLANNING BOARD OF THE CITY OF CAMDEN MUST BE REQUESTED.

10/9/2026
_____
(Date)

_____
(Signature of Applicant)

Kevin D. Sheehan, Attorney for Applicant
_____
(Name of Corporation or Association)

DO NOT REMOVE OR DISCARD ANY PART OF THIS APPLICATION

CITY OF CAMDEN
DEPARTMENT OF PLANNING & DEVELOPMENT

DIVISION OF PLANNING
&
ZONING

SITE PLAN APPLICATION AND
SUBMISSION ITEMS PACKAGE

Any question please contact:
Angela Miller, Planning Board Secretary
(856) 757-7214

SITE PLAN APPLICATION AND SUBMISSION ITEMS PACKAGE

TABLE OF CONTENTS

SITE PLAN CHECKLIST.....Page 2

PLOT PLAN CHECKLIST.....Page 3

PLANNING & ZONING FEES.....Page 5

SITE PLAN APPLICATION.....Page 6

ESCROW AGREEMENT.....Page 10

COUNTY PLANNING BOARD APPLICATION.....Page 11

REVISED 8/27/2020

SITE PLAN APPLICATION
CHECKLIST

CHECK IF COMPLETED		FOR OFFICE USE ONLY
X	1. Zoning Application	____
X	2. Site Plan Applications & Site Plans (15 copies of both)	____
X	3. Proof of ownership (i.e. Deed, Tax Bill and/or Lease)	____
X	4. Signed Escrow Fee Agreement	____

PRIOR TO SUBMISSION OF ANY SITE PLAN APPLICATIONS EVERY APPLICANT MUST CALL FOR A PRE-APPLICATION CONFERENCE.

IT IS STRONGLY ADVISED THAT THE APPROPRIATE PROFESSIONALS BE PRESENT AT SAID MEETING.

PRE-APPLICATION CONFERENCE FEE: $500.00

(ACCORDING TO SECTION 577-270 OF THE CITY'S ZONING CODE)

***NOTE:**

A. **Incomplete applications will not be processed.**

B. **Submission hours are 8:30am to 4:30pm, Monday through Friday. All applications must be stamped "received" by the Division of Planning. No outside drop-offs will be processed.**

C. **All plans must be folded with *Title Block* facing upward.**

D. **Whenever public notice is required, the Division of Planning shall prepare procedures for said notification and advise applicant of its readiness.**

Revised 8/27/2020

The following checklist pertains to PLOT PLANS:

Check if Completed		For Office Use Only
X	1. Name and Address of owner and applicant	____
X	2. Name, signature, licenses #, seal and address of engineer, land surveyor, architect, professional planner, and/or landscape architect (as applicable).	____
X	3. Title block denoting type of application, tax map sheet, county municipality, block and lot, and street address.	____
X	4. Key map not less the 1" – 1000" showing location of tract to surrounding street, municipal boundaries, etc. within 500'.	____
X	5. Schedule for required and proposed zone requirements for Lot area, frontage, setbacks, imperious coverage, parking, etc.	____
X	6. North arrow to top of sheet, scale and graphic scale.	____
X	7. Signature block for board chair, secretary, zoning officer/ administrative officer and engineer.	____
X	8. Date of property survey	____
X	9. Acreage of tract to nearest tenth	____
X	10. Date or original and all revisions	____
X	11. Size and location of existing or proposed structures and their dimension of setbacks	____
X	12. Location and dimensions of any existing or proposed streets	____
X	13. All proposed lot lines and area of lots in square feet	____
X	14. Copy of and plan delineation of any existing or proposed deed restriction	____
X	15. Any existing or proposed easement or land reserved or dedicated for public use	____
X	16. Existing streets, other right-of-way or easements; water courses, wetlands, soils floodplains, or other environmentally Sensitive area within 200' of tract	____
X	17. Topographical features of subject property from USGS 7.5 minute maps	____

CHECK IF COMPLETED		FOR OFFICE USE ONLY
X	18. Boundary, limits, nature and extent of wooded areas, Specimen trees and other significant physical features	____
X	19. Drainage calculations	____
X	20. Proposed utilities: sanitary sewer, water, storm water management, telephone, cable TV and electric	____
X	21. Soil erosion and sediment control plan if more than 5000 sq. ft.	____
X	22. Spot and finished elevations at all property corners, corners of Structures, existing or proposed first floor elevations	____
X	23. Construction details road and paving cross-sections and profiles if no profiles needed	____
N/A	24. Lighting plan and details Existing street lights to remain.	____
X	25. Landscape plan and details	____
X	26. Site identification signs, traffic control signs, and directional signs	____
N/A	27. Sight triangles	____
X	28. Vehicular and pedestrian circulation patterns	____
N/A	29. Parking plan indicating spaces, size and type aisle width internal Collectors, curb cuts, drives and driveways and all ingress and Egress areas with dimensions	____
X	30. Preliminary architectural plan and elevations	____
X	31. Environmental impact report, parcels 2 acres or larger	____
W	32. Plan paper size should be 24 by 36 Waiver requested.	____

PURSUANT TO THE CODE OF THE CITY OF CAMDEN
(ARTICLE I, SECTION 233-4)

SITE PLAN APPLICATION

(Please Answer ALL Questions)

APPLICANT Cooper Norcross Health

ADDRESS 1 Cooper Plaza, Camden, NJ 08103

TELEPHONE# 856-382-6574 **FAX#** _____

OWNER OF PROPERTY Same
(if other than applicant)

ADDRESS _____

TELEPHONE _____

IF APPLICANT IS INCORPORATE OR A PARTNERSHIP, LEGAL REPRESENTATION IS REQUIRED. PLEASE PROVIDE THE FOLLOWING:

ATTORNEY'S NAME Kevin D. Sheehan, Parker McCay

ADDRESS 2 Cooper Street, Suite 1901, Camden, NJ 08102

TELEPHONE# 856-985-4020 **FAX#** _____

EMAIL ADDRESS ksheehan@parkermccay.com

PLEASE PROVIDE THE FOLLOWING INFORMATION BELOW:

ENGINEER AND/OR ARCHITECT NAME Kyle MacGeorge, P.E. (Langan)

ADDRESS 1 University Square Drive, Suite 110, Princeton, NJ 08540

TELEPHONE# 609-282-8000 **FAX#** 609-282-8001

ADDRESS OF DEVELOPMENT 1 Cooper Plaza, Camden, NJ 08103

BLOCK NO.(S) 1402 and 1400 LOT NO.(S) 1, 55-65 ZONE MS

PRESENT USE(S) Hospital

_____

DESCRIBE PROPOSED USES (S):
(attach separate sheet if needed) Hospital - Preliminary and Final Site Plan for Benson Pavillion.

_____

_____

SQUARE FOOTAGE OF PROPOSED USE 315,344 sf

LOT AREA (Measured in Square Footage) 343,496 sf

BUILDING AREA OF GROUND FLOOR 28,360 sf

BUILDING AREA (Total Sq. Ft. – all floors) 315,344 sf

NO. OF PROPOSED PARKING SPACES No new parking spaces. Hospital parking is provided campus-wide.

NO. OF EXISTING PARKING SPACES No changes proposed to parking space count.

AREA IN ACRES OF ANY ADDITION ADJOINING LAND OWNED BY APPLICANT N/A

Lots extend to City and County Right-of-Way and to lands owned by others.

DOES THIS APPLICANT CONSTITUTE:
(Please check appropriate box)

X New Application

____ Preliminary X Preliminary and Final

____ Revision or Resubmission of a prior application

*IS THIS APPLICATION FOR A VARIANCE TO CONSTRUCT A MULTI-DWELLING OF 25 OR MORE FAMILY DWELLING UNITS? (Please check) YES _____ NO X

*IS THIS APPLICATION INTENDED FOR COMMERCIAL PURPOSE(S)?
(Please check) YES _____ NO X

IF THE ANSWER TO (A) OR (B) IS "YES", AND/OR IF APPLICANT IS A CORPORATION OR PARTNERSHIP, PLEASE PROVIDE THE FOLLOWING:

1. Name and address of all stockholders or individual partners owning at least 10% of its stock, of any class, or at least 10% of the interest in the partnership, as the case may be. (Additional sheet may be attached if needed).

NAME ADDRESS

See attached.

DOES THIS APPLICATION INCLUDE:

1. AN ADDITION OF 1,000 SQ. FT. OR MORE TO AN EXISTING STRUCTURE?
   (Please circle) YES NO

2. AN ADDITION OF 1,000 SQ. FT. OR MORE OF PAVING AREA FOR OFF-STREET PARKING?
   (Please circle) YES NO

THIS APPLICANT CERTIFIES THAT THE ABOVE INFORMATION HAS BEEN COMPLETED TO THE BEST OF HIS/HER KNOWLEDGE.

10/9/26
DATE

The Cooper Health System
APPLICANT'S NAME (PLEASE PRINT)

APPLICANT'S SIGNATURE
Kevin D. Sheehan, Attorney for Applicant

IV. ASSESSMENT CERTIFICATION

Section A: Applicant shall complete

SECTION A **OWNER**

Name of OWNER of Property Cooper Medical Center; %Bill Smith

Address: 1 Federal Street, #NW-400A

SEARCH Address: 1 Cooper Plaza

Block: 1402 **Lot:** 1 **Account:** _____

Section B: Applicant shall take this form to the City of Camden Tax Office, Room 117 (1st floor) for completion to indicate whether taxes are paid up to date. Applicant must also go to the PNC Bank (Broadway & Market St) for water and sewer to make sure water /sewer is paid up to date.
Upon completion, this form shall be submitted with original application. **NO APPLICATIONS WILL BE ACCEPTED – if any money is owed for Taxes or Water/Sewer, no permit can be issued until accounts are paid in full-proof of payment must be brought back before turning application in.**

Section C: **TAX OFFICE & PNC BANK**
An application for Zoning/Sign permit has been submitted to the Division of Planning. Please check your records to be certain that the account is current

I HEREBY CERTIFY THAT THE PROPERTY ASSESSMENT ARE:
****MORTGAGE LETTERS ON LETTERHEAD WILL BE ACCEPTED FOR SALE/RESALE PROPERTIES ONLY****

Account Type	Qtr.	Due date	Amount Owed	Other
(Taxes/W&S/Other	3rd	8/1/26	Zero	LB 9/15/2026
(Taxes/W&S/Other	City Of Camden Water Camden Office Date 9.15.26 Rep KC		Ø	KC 9.15.26
(Taxes/W&S/Other				
(Taxes/W&S/Other				

COMMENTS: _____

_____

_____

DATED: _____ **PREPARED BY:** _____

IV. ASSESSMENT CERTIFICATION

Section A: Applicant shall complete

SECTION A **OWNER**

Name of OWNER of Property Cooper Medical Center; %Bill Smith

Address: 1 Federal Street, #NW-400A, Camden

SEARCH Address: 205 So 6th Street

Block: 1400 **Lot:** 55 **Account:** _____

Section B: Applicant shall take this form to the City of Camden Tax Office, Room 117 (1st floor) for completion to indicate whether taxes are paid up to date. Applicant must also go to the PNC Bank (Broadway & Market St) for water and sewer to make sure water /sewer is paid up to date.
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Account Type	Qtr.	Due date	Amount Owed	Other
(Taxes/W&S/Other	3rd	8/1/26	Zero	LB 9/15/2026
(Taxes/W&S/Other		NOT BILLING		RC 9/15/26
(Taxes/W&S/Other				
(Taxes/W&S/Other				

COMMENTS: _____

_____

_____

DATED: _____ **PREPARED BY:** _____

IV. ASSESSMENT CERTIFICATION

Section A: Applicant shall complete

SECTION A **OWNER**

Name of OWNER of Property Cooper Medical Center; %Bill Smith

Address: 1 Federal Street, #NW-400A, Camden

SEARCH Address: 209 So 6th Street

Block: 1400 **Lot:** 56 **Account:** _____

Section B: Applicant shall take this form to the City of Camden Tax Office, Room 117 (1st floor) for completion to indicate whether taxes are paid up to date. Applicant must also go to the PNC Bank (Broadway & Market St) for water and sewer to make sure water /sewer is paid up to date.
Upon completion, this form shall be submitted with original application. **NO APPLICATIONS WILL BE ACCEPTED – if any money is owed for Taxes or Water/Sewer, no permit can be issued until accounts are paid in full-proof of payment must be brought back before turning application in.**

Section C: **TAX OFFICE & PNC BANK**
An application for Zoning/Sign permit has been submitted to the Division of Planning. Please check your records to be certain that the account is current

I HEREBY CERTIFY THAT THE PROPERTY ASSESSMENT ARE:
****MORTGAGE LETTERS ON LETTERHEAD WILL BE ACCEPTED FOR SALE/RESALE PROPERTIES ONLY****

Account Type	Qtr.	Due date	Amount Owed	Other
(Taxes)/W&S/Other	____	NO BILLING		LB 9/15/2026
(Taxes/W&S)/Other	____	NOT BILLING		RC 9/15/26
(Taxes/W&S/Other	____			
(Taxes/W&S/Other	____			

COMMENTS: _____

_____

_____

DATED: _____ **PREPARED BY:** _____

IV. ASSESSMENT CERTIFICATION

Section A: Applicant shall complete

SECTION A	**OWNER**
Name of OWNER of Property	Cooper Medical Center; %Bill Smith
Address:	1 Federal Street, #NW-400A
SEARCH Address:	400 Haddon Avenue
Block: 1443	**Lot:** 5.02 **Account:**

Section B: Applicant shall take this form to the City of Camden Tax Office, Room 117 (1st floor) for completion to indicate whether taxes are paid up to date. Applicant must also go to the PNC Bank (Broadway & Market St) for water and sewer to make sure water /sewer is paid up to date.
Upon completion, this form shall be submitted with original application. **NO APPLICATIONS WILL BE ACCEPTED – if any money is owed for Taxes or Water/Sewer, no permit can be issued until accounts are paid in full-proof of payment must be brought back before turning application in.**

Section C: TAX OFFICE & PNC BANK
An application for Zoning/Sign permit has been submitted to the Division of Planning. Please check your records to be certain that the account is current

I HEREBY CERTIFY THAT THE PROPERTY ASSESSMENT ARE:
****MORTGAGE LETTERS ON LETTERHEAD WILL BE ACCEPTED FOR SALE/RESALE PROPERTIES ONLY****

Account Type	Qtr.	Due date	Amount Owed	Other
(Taxes/W&S/Other	3rd	8/1/26	$159.70	LB 9/15/2026
(Taxes/W&S/Other	City Of Camden Water Camden Office Date 9.15.26 Rep RC			RC 9-15-26
(Taxes/W&S/Other				
(Taxes/W&S/Other				

COMMENTS: _____

_____

_____

DATED: _____ **PREPARED BY:** _____

ESCROW DEPOSIT AGREEMENT BETWEEN THE CITY OF CAMDEN AND

DEPOSITOR Cooper Norcross Health

Address 1 Cooper Plaza

Camden, NJ 08103

Telephone No. 215-313-0966 Check No. _____

Depositor herewith deposits the sum of Three thousand six hundred thirteen dollars and twenty-three cents dollars ($3,613.23) with the City of Camden in accordance with an subject to the provisions of the City of Camden Ordinance No. MC-2304, being incorporated by reference and made a part hereof, and agrees to the following:

1. Depositor's payment of said deposit is made in connection with an application for:
   Preliminary and Final Site Plan

   At (provide address with block and lot number): 1 Cooper Plaza, Block 1402, Lot 1, Block 1400, Lots 55-65, Block 1443, Lot 5.02

2. The Treasure of the City of Camden shall be authorized to disburse to the City Engineer from the funds deposited, those fees required to be paid for the technical and professional review by the Zoning Board of Adjustment and/or Planning Board pursuant to the terms of Ordinance MC-2304.

3. All fees shall be disbursed upon reconciliation of the Engineer & Insurance Escrow Accounts by Ordinance MC-2304.

4. If there are insufficient funds in the depositor's escrow account to pay all pending bill attribute to the aforementioned project, depositor shall be notified by the appropriate agency and requested to make an additional deposit into the escrow account.

5. Depositor understands that if he/she fails to make any additional deposit required, depositor's application shall be denied.

6. Any additional deposits shall be made to the Treasure, City of Camden, by way of the Division of Planning, in accordance with the terms set forth herein unless otherwise agreed to by the depositor and the approving agency.

7. The City of Camden shall not be required to pay interest on any sums held pursuant to this agreement.

IN WITNESS WHEREOF the undersigned hereby accepts the terms and conditions of this agreement.

10/9/2026
DATE:

Applicant or Authorized Signature
Kevin D. Sheehan, Attorney for Applicant

Form **W-9**
(Rev. October 2018)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

▶ Go to *www.irs.gov/FormW9* for instructions and the latest information.

Give Form to the requester. Do not send to the IRS.

Print or type. See Specific Instructions on page 3.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.

The Cooper Health System

2 Business name/disregarded entity name, if different from above

3 Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only one of the following seven boxes.

☐ Individual/sole proprietor or single-member LLC ☐ C Corporation ☐ S Corporation ☐ Partnership ☐ Trust/estate

☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ▶ _____

Note: Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is not disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner.

☑ Other (see instructions) ▶ Non-Profit 501 (c) (3)

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):

Exempt payee code (if any) _____

Exemption from FATCA reporting code (if any) _____

(Applies to accounts maintained outside the U.S.)

5 Address (number, street, and apt. or suite no.) See instructions.

One Cooper Plaza

Requester's name and address (optional)

6 City, state, and ZIP code

Camden, NJ 08103

7 List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

Note: If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number

			–			–				

or

Employer identification number

2	1	–	0	6	3	4	4	6	2

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign Here Signature of U.S. person ▶ Kenneth M. Knight Date ▶

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to *www.irs.gov/FormW9*.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding, *later.*

DISCLOSURE STATEMENT PURSUANT TO N.J.S.A. 40:55d-48.1

The Cooper Health System is a non-profit corporation. There are no owners of the corporation and there are no legal interests (pecuniary or otherwise) of any members of the non-profit entity.

4915-6979-1191, v. 1

Block/Lot/Qual	1402. 1.	**Tax Account Id**	31215
Property Location	1 COOPER PLAZA	**Property Class**	15D - Church/Charitable
Owner Name/Address	COOPER MEDICAL CENTER; %BILL SMITH	**Land Value**	3,276,600
	1 FEDERAL ST, #NW-400A	**Improvement Value**	200,847,000
	CAMDEN, NJ 081031161	**Exempt Value**	0
		Total Assessed Value	204,123,600
		Additional Lots	HOSPITAL
Special Taxing Districts	S01	**Deductions**	0

Block/Lot/Qual	1400. 55.	**Tax Account Id**	31190
Property Location	205 SO 6TH ST	**Property Class**	15D - Church/Charitable
Owner Name/Address	COOPER HEALTH SYSTEM; %BILL SMITH	**Land Value**	245,200
	1 FEDERAL ST, #NW-400A	**Improvement Value**	58,200
	CAMDEN, NJ 081031161	**Exempt Value**	0
		Total Assessed Value	303,400
		Additional Lots	
Special Taxing Districts		**Deductions**	0

Block/Lot/Qual	1400. 56.	**Tax Account Id**	31191
Property Location	209 SO 6TH ST	**Property Class**	15D - Church/Charitable
Owner Name/Address	COOPER HOSP/UNIV MED CTR;% B SMITH	**Land Value**	254,900
	1 FEDERAL ST, #NW-400A	**Improvement Value**	59,500
	CAMDEN, NJ 081031161	**Exempt Value**	0
		Total Assessed Value	314,400
		Additional Lots	57,58,59,60,61,62,6364,65
Special Taxing Districts		**Deductions**	0

Block/Lot/Qual	1443. 5.02	**Tax Account Id**	33581
Property Location	400 HADDON AVE	**Property Class**	15D - Church/Charitable
Owner Name/Address	COOPER HEALTH SYSTEM; %BILL SMITH	**Land Value**	839,500
	1 FEDERAL ST, #NW-400A	**Improvement Value**	50,000,000
	CAMDEN, NJ 081031161	**Exempt Value**	0
		Total Assessed Value	50,839,500
		Additional Lots	MD-ANDERSON CENTER
Special Taxing Districts	S01	**Deductions**	0

SECURITY FEATURES INCLUDE TRUE WATERMARK PAPER, HEAT SENSITIVE ICON AND FOIL HOLOGRAM.

PARKER MCCAY P.A.
DISBURESMENT ACCOUNT
9000 MIDLANTIC DR STE. 300
PO BOX 5054
MOUNT LAUREL, NJ 08054-5054

19 3151
55-136/312
631

DATE 10/9/26

PAY TO THE ORDER OF City of Camden $ 81.30

Eighty-seven dollars 30/100 DOLLARS

TD Bank
America's Most Convenient Bank®

FOR 13978-75-Zoning Permit Fee

Gappt

⑈003151⑈ ⑆031201360⑆ 7859739257⑈

CHECK ARMOR FRAUD PROTECTION
Details on Back.
Security Features Included
HEAT SENSITIVE

PARKER MCCAY P.A.
DISBURESMENT ACCOUNT
9000 MIDLANTIC DR STE. 300
PO BOX 5054
MOUNT LAUREL, NJ 08054-5054

19 3152
55-136/312
631

DATE 10/9/26

PAY TO THE ORDER OF City of Camden $ 500.00

Five hundred dollars 00/100 DOLLARS

TD Bank
America's Most Convenient Bank®

FOR 13978-75/Rec App Fee

Gappt

⑈003152⑈ ⑆031201360⑆ 7859739257⑈

CHECK ARMOR FRAUD PROTECTION
Details on Back.
Security Features Included
HEAT SENSITIVE

SECURITY FEATURES INCLUDE TRUE WATERMARK PAPER, HEAT SENSITIVE ICON AND FOIL HOLOGRAM.

PARKER MCCAY P.A.
DISBURESMENT ACCOUNT
9000 MIDLANTIC DR STE. 300
PO BOX 5054
MOUNT LAUREL, NJ 08054-5054

19 3153
55-136/312
631

DATE 10/9/26

PAY TO THE ORDER OF City of Camden $ 1,137.58

One Thousand One hundred Thirty Seven 58/100 DOLLARS

TD Bank
America's Most Convenient Bank®

FOR 13978-75/ APP FEE

Gappt

⑈003153⑈ ⑆031201360⑆ 7859739257⑈

CHECK ARMOR FRAUD PROTECTION
Details on Back.
Security Features Included
HEAT SENSITIVE

9000 MIDLANTIC DR STE. 300
PO BOX 5054
MOUNT LAUREL, NJ 08054-5054

55-136/312
631

DATE 10/8/26

PAY TO THE ORDER OF City of Camden $ 3,613.23

Three Thousand Six hundred thirteen 23/100 DOLLARS

TD Bank
America's Most Convenient Bank®

FOR 13978-75/ESCROW

Gappt

⑈003154⑈ ⑆031201360⑆ 7859739257⑈

CHECK ARMOR FRAUD PROTECTION
Details on Back.
Security Features Included
HEAT SENSITIVE