PETITION NO. 1192 -- SOLARCITY CORPORATION
DEVELOPMENT AND MANAGEMENT PLAN

NOVEMBER 3, 2015

a) A final plan of site development to include specifications for the solar panels, supporting infrastructure, electrical equipment, equipment compound, access, including fencing and entrance gates, and maintenance roads, utility connections, and landscaping -- **See attached Exhibit A, Site Development Plan.***

b) As discussed on the Field Review on October 21, 2015, a smaller aperture fence will be used along Rogers Road for MP-1 and MP-4 -- **See attached Exhibit A, Site Development Plan, and details on Sheet 3 of Sheet 10.**

c) Construction details for site clearing, site phasing, grading, water drainage, and erosion and sedimentation controls consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended **-- See attached Exhibit A, Site Development Plan.**

d) A final Drainage Report and associated site plans stamped by a Professional Engineer -- **See attached Exhibit B, Stormwater Management Report**.

e) Incorporation of a Wetland Protection Program as provided in Petition Exhibit 2, Appendix G -- **See attached Exhibit A, Site Development Plan, and notes on Sheet 9**.

f) Construction work hours and days of work -- **The following work schedule is planned: 7 a.m. to 7 p.m., seven days per week. Please note that the on-site work is expected to take approximately 18 weeks**.

g) Incorporation of Wildlife Impact Mitigation Measures -- **See attached Exhibit A, site Development Plan, and notes on Sheet 9.**

h) All Points Technology has been assigned as the environmental monitor for the project.

i) Decommissioning Plan -- **See attached Exhibit C, Decommissioning Plan**.

j) Above-ground conduits will be used within the limits of waste of the landfills. Once outside the limits of waste or within access roadways, buried conduit may be utilized.

* If necessary, SolarCity will file a revised Site Development Plan for MP-2 and MP-3 after receipt of the DEEP disruption permit.

EXHIBIT A – Site Development Plan

ROGERS ROAD LANDFILL SOLAR PROJECT
SITE DEVELOPMENT AND MANAGEMENT PLAN

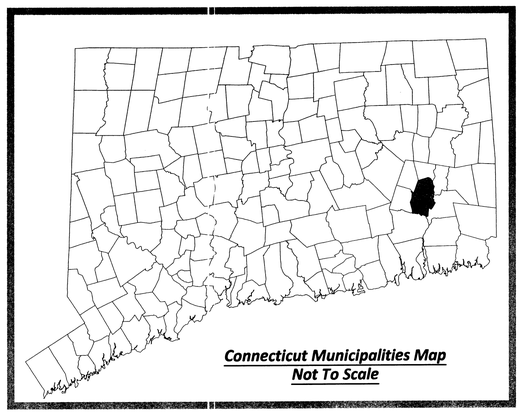
Prepared For

SolarCity Corporation

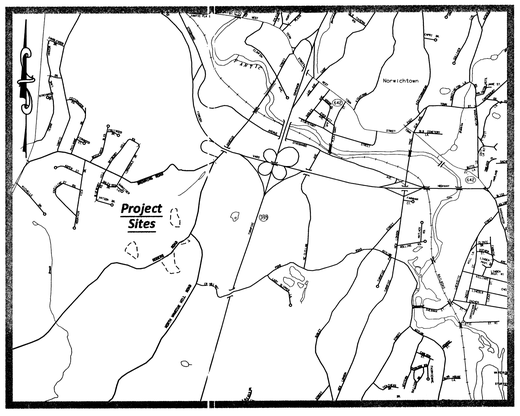
82 Rogers Road - Norwich, Connecticut

September 2015

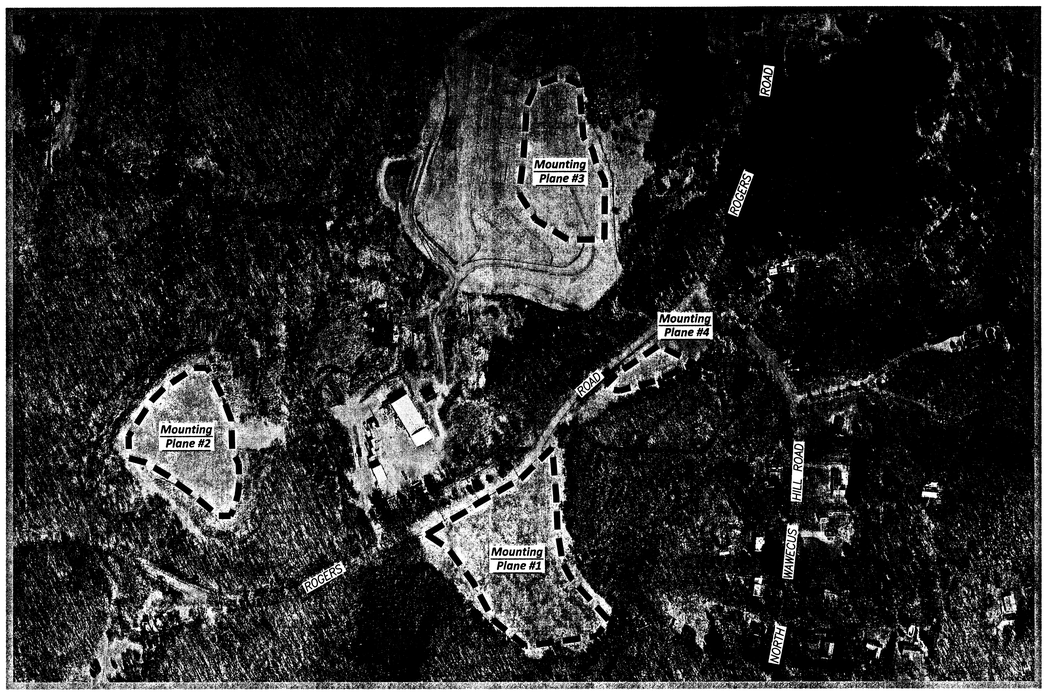
Revision A - Equipment Pad Details - 9/29/15
Revision B - Development and Management Plan - 11/02/15



Connecticut Municipalities Map
Not To Scale



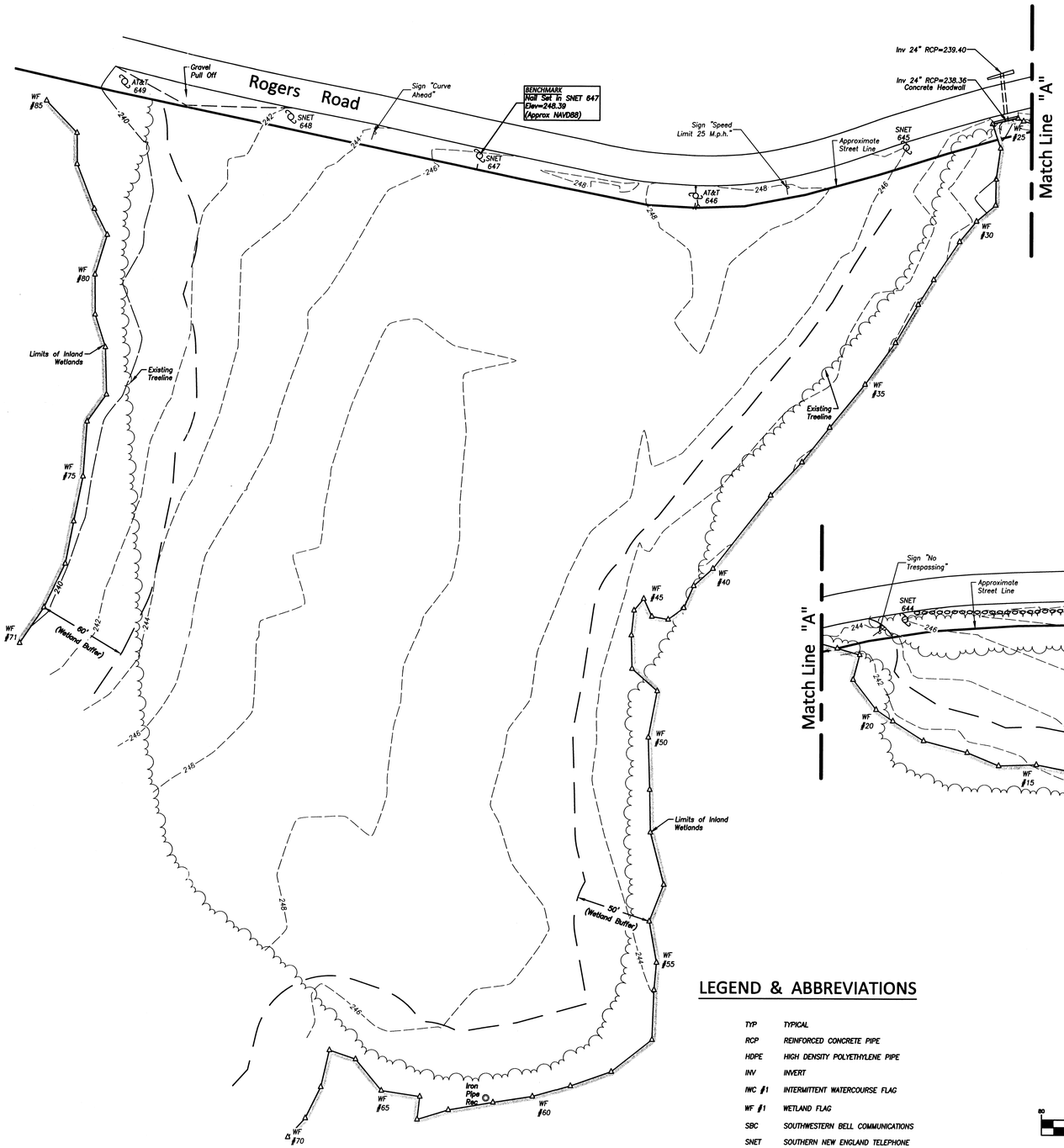
Site Location Map
Scale: 1"=2000'

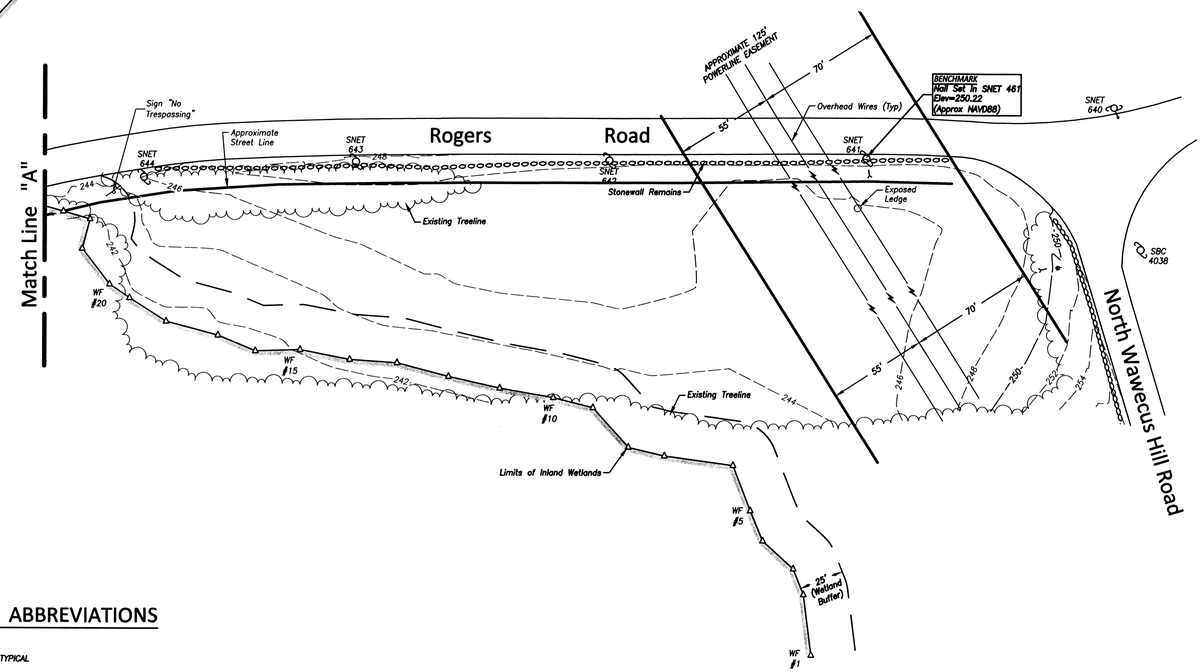


Site Location Aerial View
Not To Scale

Project Information	
Developed By:	***Electrical Engineer:***
Brightfields Development, LLC *41 Walnut Street, Suite 301* *Wellesley, MA 02481*	*SolarCity Corporation* *714 Brook Street* *Rocky Hill, CT 06067*
SolarCity Corporation *714 Brook Street* *Rocky Hill, CT 06067*	***Host:*** *City of Norwich* *100 Broadway* *Norwich, CT 06360*
Civil Engineer:	***Utility:***
Boundaries LLC *179 Pachaug River Drive* *Griswold, CT 06351*	*Connecticut Municipal Electric Energy Cooperative* *30 Stott Avenue* *Norwich, CT 06360*

Index To Drawings	
Sheet	*Sheet Title*
1	*Cover Sheet*
	Mounting Plane #1 and Mounting Plane #4
2	*Topographic Survey-Existing Conditions*
3	*Site Development Plan*
	Mounting Plane #2
4	*Topographic Survey-Existing Conditions*
5	*Site Development Plan*
	Mounting Plane #3
6	*Topographic Survey-Existing Conditions*
7	*Site Development Plan*
8	*Overall Site Utility Plan*
9	*Erosion & Sediment Control Narrative and Details*
10	*Site Details*
11	*Site Details*
12	*Structural Details for On-Cap Equipment Pads*





SURVEY NOTES

1. THIS SURVEY HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300B-1 THROUGH 20-300B-20 AND THE "STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED FOR USE BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPTEMBER 26, 1996. IT IS A TOPOGRAPHIC SURVEY AND CONFORMS TOPOGRAPHIC CLASS T-2 ACCURACY STANDARDS. IT IS INTENDED TO BE USED FOR SITE PLANNING.
2. NORTH ORIENTATION DEPICTED HEREON IS APPROXIMATE NORTH AMERICAN DATUM 1983 (NAD83) BASED UPON GLOBAL POSITIONING SYSTEM OBSERVATIONS, OBSERVED ON OCTOBER 03, 2014 THRU OCTOBER 07, 2014.
3. VERTICAL DATUM DEPICTED HERE ON IS APPROXIMATE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD83) BASED GLOBAL POSITIONING SYSTEM OBSERVATIONS USING GEOIDE12A ON OCTOBER 03, 2014 THRU OCTOBER 07, 2014.
3. ALL SUBTERRANEAN FEATURES AND IMPROVEMENTS MAY NOT BE DEPICTED OR NOTED HEREON.
4. THE FIELD SURVEY WAS COMPLETED ON OCTOBER 07, 2014
5. LIMITS OF INLAND WETLANDS DEPICTED HEREON WERE DELINEATED BY DEMIAN A. SORRENTINO, C.S.S., BOUNDARIES LLC. BUFFER AREAS DEPICTED HEREON ARE PREDICATED ON RECOMMENDED SETBACKS PROVIDED BY ALL POINTS TECHNOLOGY CORPORATION BASED EVALUATION OF SAID INLAND WETLANDS. THE CITY OF NORWICH INLAND WETLAND REGULATIONS REQUIRES AN UPLAND REGULATED AREA OF 100'.
6. THE LOCATIONS OF UNDERGROUND UTILITIES AS SHOWN HEREON ARE BASED ON THE LOCATION OF ABOVEGROUND STRUCTURES AND RECORD DRAWINGS PROVIDED TO THE SURVEYOR. LOCATIONS OF UNDERGROUND UTILITIES MAY VARY FROM LOCATIONS SHOWN HEREON. ADDITIONAL BURIED UTILITIES/STRUCTURES MAY BE ENCOUNTERED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL UTILITY LOCATIONS AND ELEVATIONS AND CONTACT "CALL BEFORE YOU DIG" AT LEAST 48 HOURS PRIOR TO ANY EARTHWORK OPERATIONS.

REFERENCE MAPS

1. AS-BUILT CONDITIONS, PREPARED FOR NUTMEG SAND AND GRAVEL COMPANY, NORWICH BULKY WASTE SITE, ROGERS ROAD, NORWICH, CONNECTICUT, SCALE: 1"=40', DATED: 10/26/99 SHEET No. 1 OF 1, PREPARED BY: ANCHOR ENGINEERING SERVICES, INC.
2. CONSTRUCTION PLANS FOR NORWICH LANDFILL CLOSURE, TOWN OF NORWICH, ROGERS ROAD, NORWICH, CONNECTICUT DATED: APRIL 1996, SHEETS 1 - 7, PREPARED BY: FUSS & O'NEILL

LEGEND & ABBREVIATIONS

TYP	TYPICAL
RCP	REINFORCED CONCRETE PIPE
HDPE	HIGH DENSITY POLYETHYLENE PIPE
INV	INVERT
IWC #1	INTERMITTENT WATERCOURSE FLAG
WF #1	WETLAND FLAG
SBC	SOUTHWESTERN BELL COMMUNICATIONS
SNET	SOUTHERN NEW ENGLAND TELEPHONE
CL&P	CONNECTICUT LIGHT AND POWER
AT&T	AMERICAN TELEPHONE AND TELEGRAPH
— 248 —	EXISTING CONTOUR
	IRON PIN
	UTILITY POLE
	GUY WIRE
	SIGN
	WETLAND FLAG

GRAPHIC SCALE

80 40 20 0 40

(IN FEET)
1 inch = 40 ft.

I HAVE CONDUCTED AN ON-SITE SOIL INVESTIGATION OF THE PARCEL OF LAND DEPICTED HEREON. THE INTERMITTENT WATERCOURSES AND INLAND WETLAND BOUNDARIES AS PORTRAYED ARE AN ACCURATE REPRESENTATION OF THE DELINEATION PERFORMED IN THE FIELD.

DEMIAN A. SORRENTINO, C.S.S. — DATE 11/2/15

"TO MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON."

JOHN U. FAULISE JR. L.S. — LICENSE NO. 70016 — DATE 11-2-15

CIVIL ENGINEERING LAND SURVEYING LAND USE PLANNING GIS/LOCATION
BOUNDARIES
Boundaries LLC
179 Padanaram Road Danbury, CT 06811
T 860.274.2006 | www.boundariesllc.net

BRIGHTFIELDS DEVELOPMENT LLC
40 Walnut Street Suite 301
Wellesley, MA 02481
www.solarbrownfields.com

SolarCity
714 Brook Street
Rocky Hill, CT 06067
www.solarcity.com

SolarCity Corporation
Rogers Road Landfill Solar Project
82 Rogers Road - Norwich, Connecticut
Mounting Plane 1 and Mounting Plane 4
Topographic Survey - Existing Conditions

SCALE:	1" = 40'
DATE:	September 2015
JOB I.D. NO.	14-2302

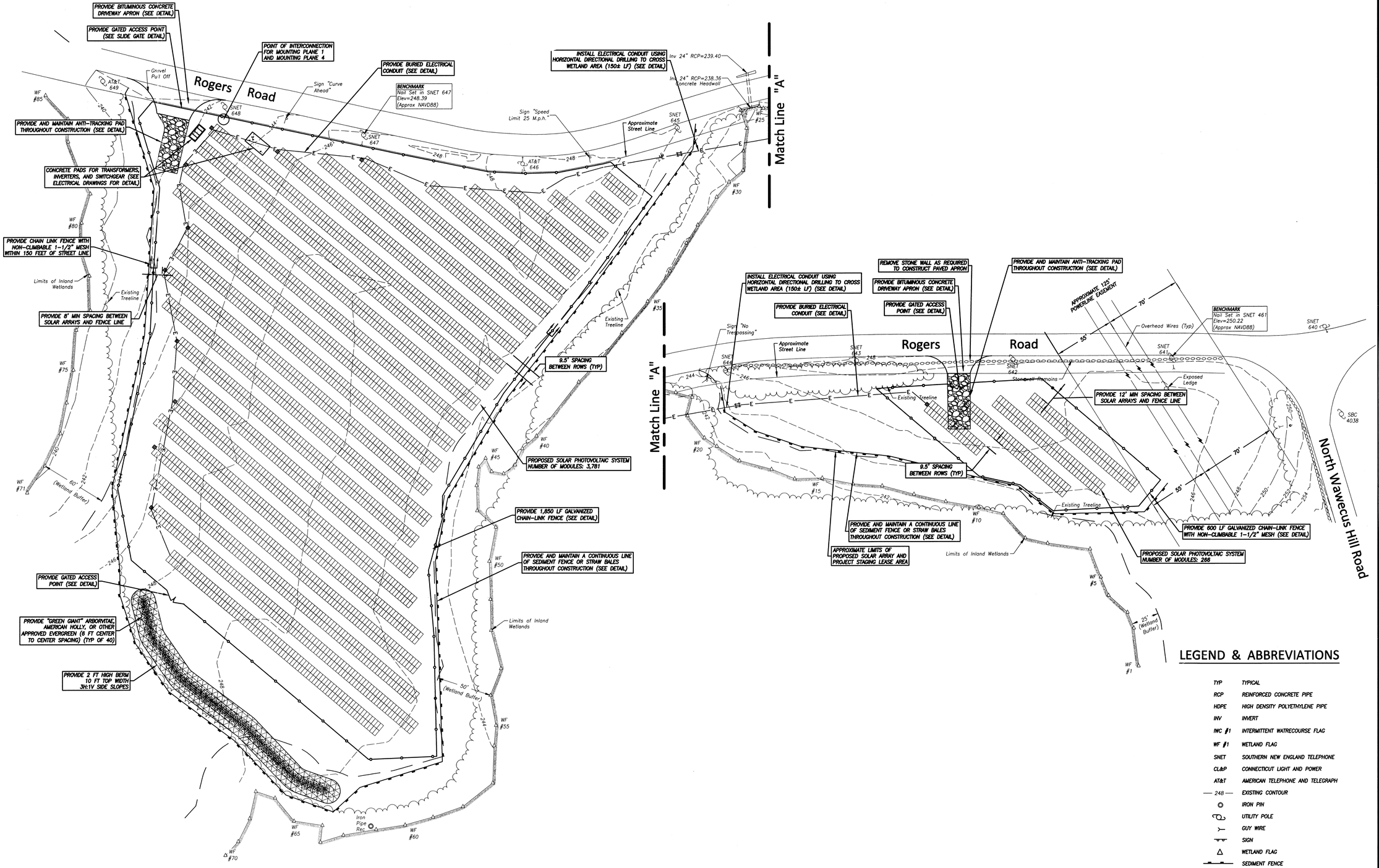
Revisions

Rev. A - Equipment Pad Details - 9/29/15

Rev. B - Development and Management Plan - 11/02/15

SHEET NO.

2 / 12



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	UTILITY POLE
	GUY WIRE
	SIGN
	WETLAND FLAG
	SEDIMENT FENCE
	STRAW WATTLE
	CHAIN LINK FENCE
—E—	ELECTRICAL CONDUIT

GRAPHIC SCALE

80 40 20 0 40

(IN FEET)
1 inch = 40 ft.

DAVID C. McKAY, P.E., 29102 LICENSE NO. 12-15 DATE

CIVIL ENGINEERING LAND SURVEYING LAND USE PLANNING SOIL SCIENCE
BOUNDARIES
Boundaries LLC
179 Pachaug River Drive, Griswold, CT 06351
T 860.376.3006 | www.boundariesllc.net

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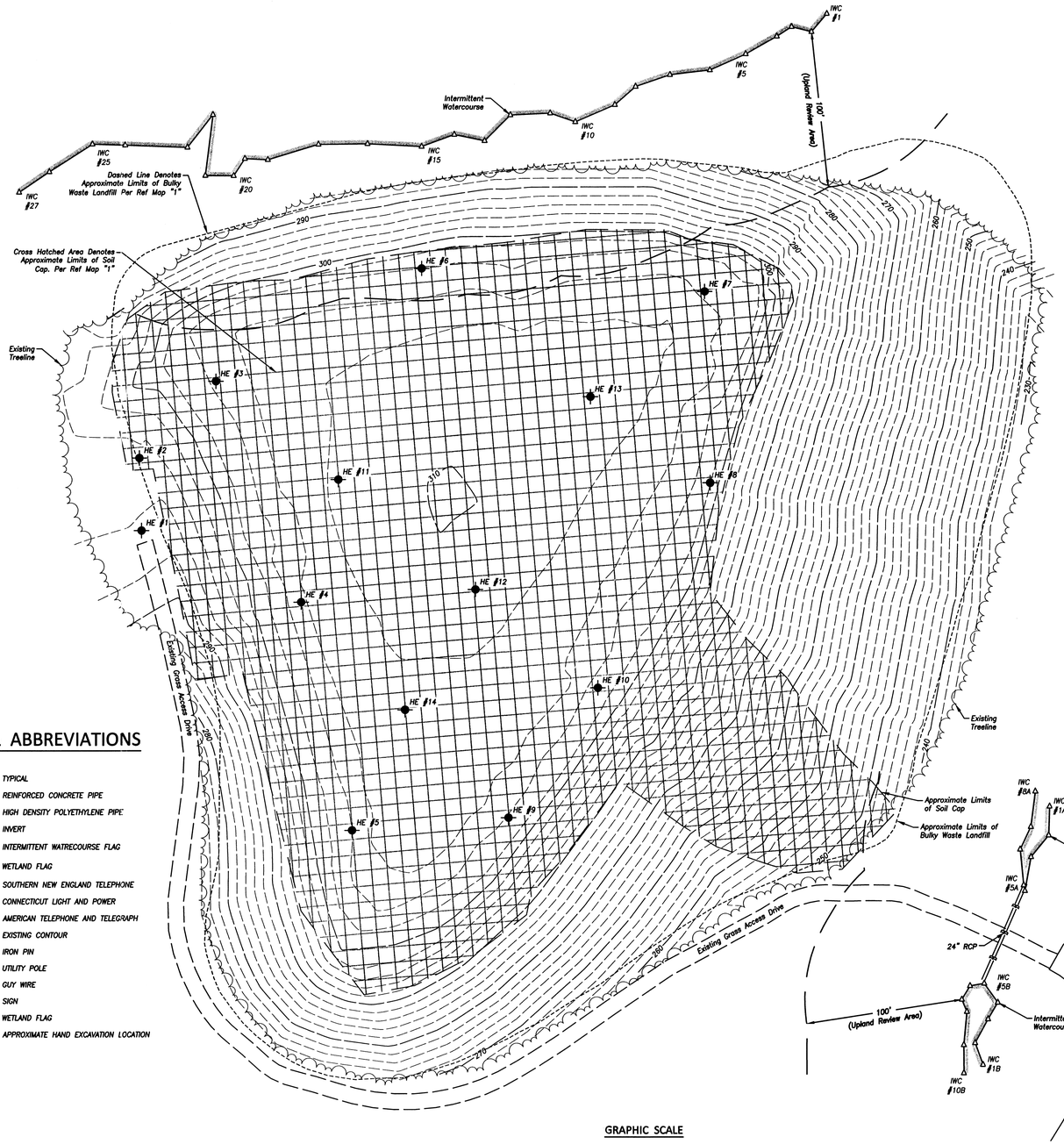
SHEET NO.

3 / 12



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248	EXISTING CONTOUR
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	UTILITY POLE
	GUY WIRE
	SIGN
	WETLAND FLAG
HE #1	APPROXIMATE HAND EXCAVATION LOCATION

GRAPHIC SCALE

80 40 20 0 40

(IN FEET)
1 inch = 40 ft.

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HAND EXCAVATION RESULTS

HAND EXCAVATION LOCATIONS ARE APPROXIMATE ONLY. HAND EXCAVATIONS WERE PERFORMED BY WESTON & SAMPSON ENGINEERS, INC. ON JULY 9, 2015.

HAND EXCAVATION #1

SURFACE	COMPACTED SAND/GRAVEL AT BEGINNING OF PROPOSED GRAVEL ACCESS DRIVE
0" - 11"	BROWN, FINE TO MEDIUM, SILTY SAND FILL, SOME SMALL TO LARGE GRAVEL; MOIST. APPEARED TO BE DENSE TO VERY DENSE BASED ON HAND EXCAVATION EFFORT. COULD NOT EXCAVATE BEYOND 11" BELOW GROUND SURFACE.

END OF EXCAVATION AT 11" BELOW GROUND SURFACE.

HAND EXCAVATION #2

SURFACE	TALL FIELD GRASS ALONG PROPOSED GRAVEL ACCESS DRIVE AT BASE OF LANDFILL SLOPE
0" - 4"	DARK BROWN SILTY TOPSOIL WITH THICK GRASS ROOT SYSTEMS; MOIST.
4" - 12"	BROWN, FINE TO MEDIUM, SILTY SAND FILL, SOME MEDIUM TO LARGE GRAVELS. APPEARED TO BE MEDIUM DENSE TO DENSE BASED ON HAND EXCAVATION EFFORT.
12" - 19"	GRAY, GRAVEL FILL (UP TO 4 IN. DIAMETER) WITH FINE TO MEDIUM SILTY SAND; MOIST. APPEARED TO BE VERY DENSE BASED ON HAND EXCAVATION EFFORT. COULD NOT EXCAVATE BEYOND 19" BELOW GROUND SURFACE.

END OF EXCAVATION AT 19" BELOW GROUND SURFACE.

HAND EXCAVATION #3

SURFACE	TALL FIELD GRASS ALONG PROPOSED GRAVEL ACCESS DRIVE AT TOP OF LANDFILL
0" - 2"	DARK BROWN SILTY TOPSOIL WITH THICK GRASS ROOT SYSTEMS.
2" - 18"	BROWN, FINE TO MEDIUM, SILTY SAND FILL, TRACE TO LITTLE GRAVEL, TRACE TO LITTLE ORGANICS (ROOTS, WOOD CHIPS, SMALL TWIGS); MOIST. APPEARED TO BE LOOSE BASED ON HAND EXCAVATION EFFORT.

SILTY SAND COVER LAYER OBSERVED AT 18" BELOW GROUND SURFACE, END OF EXCAVATION AT 18" BELOW GROUND SURFACE.

HAND EXCAVATION #4

SURFACE	TALL FIELD GRASS ON TOP OF LANDFILL
0" - 3"	DARK BROWN SILTY TOPSOIL WITH THICK GRASS ROOT SYSTEMS; MOIST.
3" - 23"	BROWN, FINE TO MEDIUM, SILTY SAND FILL, TRACE TO LITTLE GRAVEL, TRACE TO LITTLE ORGANICS (ROOTS, WOOD CHIPS, SMALL TWIGS), TRACE BRICK DEBRIS; MOIST. APPEARED TO BE LOOSE BASED ON HAND EXCAVATION EFFORT.

SILTY SAND COVER LAYER OBSERVED AT 23" BELOW GROUND SURFACE, END OF EXCAVATION AT 23" BELOW GROUND SURFACE.

HAND EXCAVATION #5

SURFACE	TALL FIELD GRASS ON TOP OF LANDFILL
0" - 4"	DARK BROWN SILTY TOPSOIL WITH THICK GRASS ROOT SYSTEMS; MOIST.
4" - 15"	BROWN, FINE TO MEDIUM, SILTY SAND FILL, TRACE TO LITTLE GRAVEL, TRACE TO LITTLE ORGANICS (ROOTS, WOOD CHIPS, SMALL TWIGS), TRACE BRICK DEBRIS; MOIST. APPEARED TO BE LOOSE BASED ON HAND EXCAVATION EFFORT.

SILTY SAND COVER LAYER OBSERVED AT 15" BELOW GROUND SURFACE, END OF EXCAVATION AT 15" BELOW GROUND SURFACE.

HAND EXCAVATION #6

SURFACE	TALL FIELD GRASS ON TOP OF LANDFILL
0" - 3"	DARK BROWN SILTY TOPSOIL WITH THICK GRASS ROOT SYSTEMS; MOIST.
3" - 17"	BROWN, FINE TO MEDIUM, SILTY SAND FILL, TRACE TO LITTLE GRAVEL, TRACE TO LITTLE ORGANICS (ROOTS, WOOD CHIPS, SMALL TWIGS); MOIST. APPEARED TO BE LOOSE BASED ON HAND EXCAVATION EFFORT.

SILTY SAND COVER LAYER OBSERVED AT 17" BELOW GROUND SURFACE, END OF EXCAVATION AT 17" BELOW GROUND SURFACE.

HAND EXCAVATION #7

SURFACE	TALL FIELD GRASS ON TOP OF LANDFILL
0" - 4"	DARK BROWN SILTY TOPSOIL WITH THICK GRASS ROOT SYSTEMS; MOIST.
4" - 9"	BROWN, FINE TO MEDIUM, SILTY SAND FILL, TRACE TO LITTLE GRAVEL, TRACE TO LITTLE ORGANICS (ROOTS, WOOD CHIPS, SMALL TWIGS); MOIST. APPEARED TO BE LOOSE BASED ON HAND EXCAVATION EFFORT.

SILTY SAND COVER LAYER OBSERVED AT 9" BELOW GROUND SURFACE, END OF EXCAVATION AT 9" BELOW GROUND SURFACE.

HAND EXCAVATION #8

SURFACE	TALL FIELD GRASS ON TOP OF LANDFILL
0" - 4"	DARK BROWN SILTY TOPSOIL WITH THICK GRASS ROOT SYSTEMS; MOIST.
4" - 15"	BROWN, FINE TO MEDIUM, SILTY SAND FILL, TRACE TO LITTLE GRAVEL, TRACE TO LITTLE ORGANICS (ROOTS, WOOD CHIPS, SMALL TWIGS), TRACE PLASTIC DEBRIS; MOIST. APPEARED TO BE LOOSE BASED ON HAND EXCAVATION EFFORT.

SILTY SAND COVER LAYER OBSERVED AT 15" BELOW GROUND SURFACE, END OF EXCAVATION AT 15" BELOW GROUND SURFACE.

HAND EXCAVATION #9

SURFACE	TALL FIELD GRASS ON TOP OF LANDFILL
0" - 6"	DARK BROWN SILTY TOPSOIL WITH THICK GRASS ROOT SYSTEMS; MOIST.
6" - 15"	BROWN, FINE TO MEDIUM, SILTY SAND FILL, TRACE TO LITTLE GRAVEL, TRACE TO LITTLE ORGANICS (ROOTS, WOOD CHIPS, SMALL TWIGS), TRACE PLASTIC DEBRIS; MOIST. APPEARED TO BE LOOSE BASED ON HAND EXCAVATION EFFORT.

SILTY SAND COVER LAYER OBSERVED AT 15" BELOW GROUND SURFACE, END OF EXCAVATION AT 15" BELOW GROUND SURFACE.

HAND EXCAVATION #10

SURFACE	TALL FIELD GRASS ON TOP OF LANDFILL
0" - 5"	DARK BROWN SILTY TOPSOIL WITH THICK GRASS ROOT SYSTEMS; MOIST.
5" - 14"	BROWN, FINE TO MEDIUM, SILTY SAND FILL, TRACE TO LITTLE GRAVEL, TRACE TO LITTLE ORGANICS (ROOTS, WOOD CHIPS, SMALL TWIGS); MOIST. APPEARED TO BE LOOSE BASED ON HAND EXCAVATION EFFORT.

SILTY SAND COVER LAYER OBSERVED AT 14" BELOW GROUND SURFACE, END OF EXCAVATION AT 14" BELOW GROUND SURFACE.

HAND EXCAVATION #11

SURFACE	TALL FIELD GRASS ON TOP OF LANDFILL
0" - 2"	DARK BROWN SILTY TOPSOIL WITH THICK GRASS ROOT SYSTEMS; MOIST.
2" - 27"	BROWN, FINE TO MEDIUM, SILTY SAND FILL, TRACE TO LITTLE GRAVEL, TRACE TO LITTLE ORGANICS (ROOTS, WOOD CHIPS, SMALL TWIGS); MOIST. SMALL COBBLES AT APPROXIMATELY 15" BELOW GROUND SURFACE. APPEARED TO BE LOOSE BASED ON HAND EXCAVATION EFFORT.

SILTY SAND COVER LAYER OBSERVED AT 27" BELOW GROUND SURFACE, END OF EXCAVATION AT 27" BELOW GROUND SURFACE.

HAND EXCAVATION #12

SURFACE	TALL FIELD GRASS ON TOP OF LANDFILL
0" - 4"	DARK BROWN SILTY TOPSOIL WITH THICK GRASS ROOT SYSTEMS; MOIST.
4" - 17"	BROWN, FINE TO MEDIUM, SILTY SAND FILL, TRACE TO LITTLE GRAVEL, TRACE TO LITTLE ORGANICS (ROOTS, WOOD CHIPS, SMALL TWIGS); MOIST. APPEARED TO BE LOOSE BASED ON HAND EXCAVATION EFFORT.

SILTY SAND COVER LAYER OBSERVED AT 17" BELOW GROUND SURFACE, END OF EXCAVATION AT 17" BELOW GROUND SURFACE.

HAND EXCAVATION #13

SURFACE	TALL FIELD GRASS ON TOP OF LANDFILL
0" - 6"	DARK BROWN SILTY TOPSOIL WITH THICK GRASS ROOT SYSTEMS; MOIST.
6" - 21"	BROWN, FINE TO MEDIUM, SILTY SAND FILL, TRACE TO LITTLE GRAVEL, TRACE TO LITTLE ORGANICS (ROOTS, WOOD CHIPS, SMALL TWIGS); MOIST. APPEARED TO BE LOOSE BASED ON HAND EXCAVATION EFFORT.

SILTY SAND COVER LAYER OBSERVED AT 21" BELOW GROUND SURFACE, END OF EXCAVATION AT 21" BELOW GROUND SURFACE.

HAND EXCAVATION #14

SURFACE	TALL FIELD GRASS ON TOP OF LANDFILL
0" - 3"	DARK BROWN SILTY TOPSOIL WITH THICK GRASS ROOT SYSTEMS; MOIST.
3" - 25"	BROWN, FINE TO MEDIUM, SILTY SAND FILL, TRACE TO LITTLE GRAVEL, TRACE TO LITTLE ORGANICS (ROOTS, WOOD CHIPS, SMALL TWIGS), TRACE PLASTIC DEBRIS; MOIST. APPEARED TO BE LOOSE BASED ON HAND EXCAVATION EFFORT.

SILTY SAND COVER LAYER OBSERVED AT 25" BELOW GROUND SURFACE, END OF EXCAVATION AT 25" BELOW GROUND SURFACE.

I HAVE CONDUCTED AN ON-SITE SOIL INVESTIGATION OF THE PARCEL OF LAND DEPICTED HEREON. THE INTERMITTENT WATERCOURSES AND INLAND WETLAND BOUNDARIES AS PORTRAYED ARE AN ACCURATE REPRESENTATION OF THE DELINEATION PERFORMED IN THE FIELD.

DEMIAN A. SORRENTINO, C.S.S. — DATE 11/2/15

"TO MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON."

JOHN U. FABUSS JR. L.S. — LICENSE NO. 70016 — DATE 11-2-15

CIVIL ENGINEERING LAND SURVEYING LAND USE PLANNING SOIL SCIENCE
BOUNDARIES
Boundaries LLC
179 Pachaug River Drive, Griswold, CT 06351
T 860.376.2006 | www.boundariesllc.net

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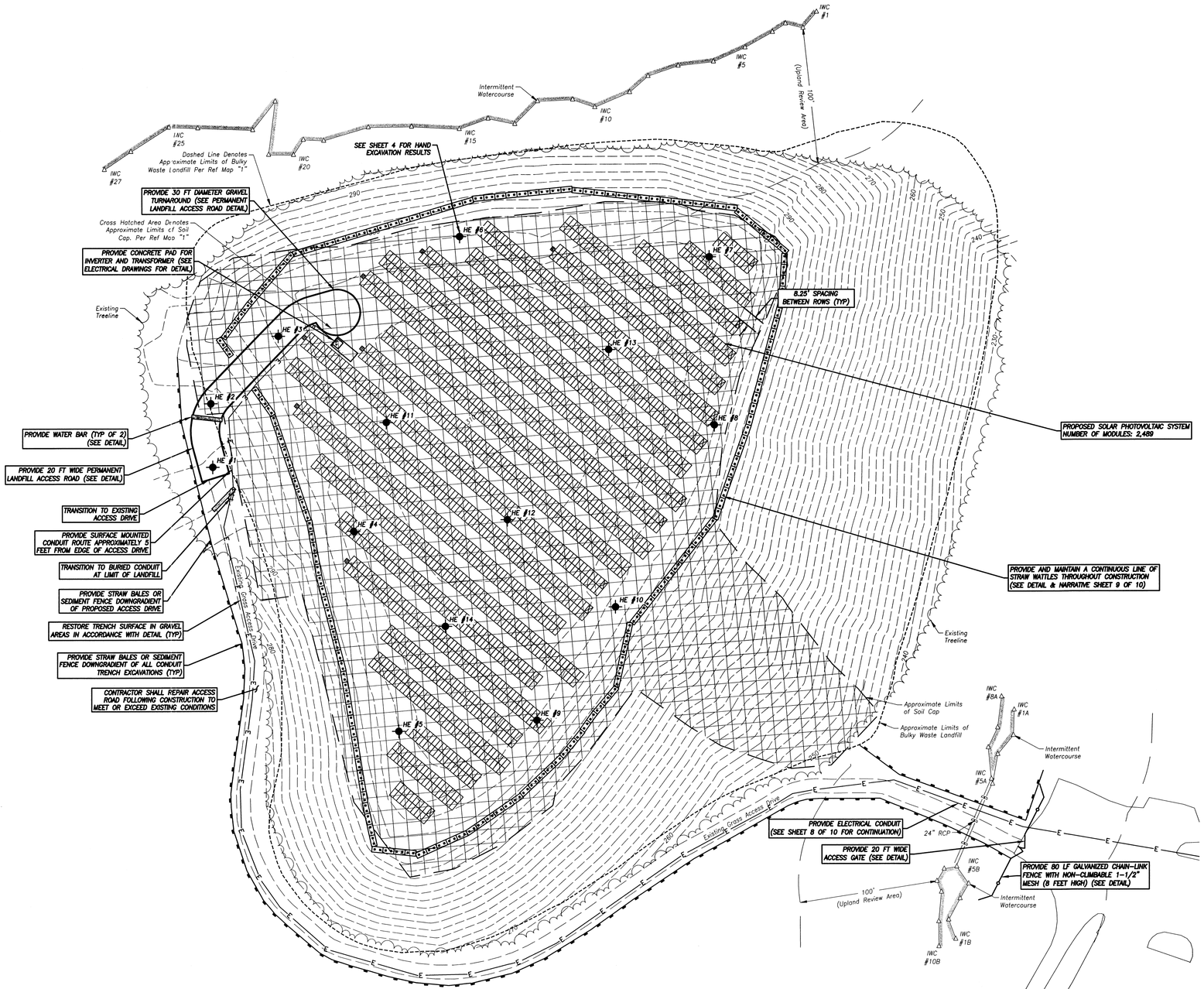

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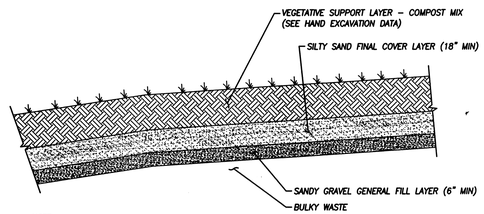
248	EXISTING CONTOUR
	IRON PIN
	UTILITY POLE
	GUY WIRE
	SIGN
	WETLAND FLAG
	SEDIMENT FENCE
	STRAW WATTLE
	CHAIN LINK FENCE
E	ELECTRICAL CONDUIT
HE #1	APPROXIMATE HAND EXCAVATION LOCATION

GRAPHIC SCALE

80 40 20 0 40

(IN FEET)

1 inch = 40 ft.



NOTE:
1. NO EXCAVATION WITHIN THE 18" SILTY SAND COVER LAYER.
2. CROSS SECTION DEVELOPED FROM LANDFILL CLOSURE REPORT PREPARED BY OTHERS AND MAY NOT REFLECT ACTUAL CONDITIONS.

BULKY WASTE LANDFILL SOIL CAP CROSS SECTION

NOT TO SCALE

DAVID C. McKAY P.E., 29102 LICENSE NO. 11-2-15 DATE

CIVIL ENGINEERING LAND SURVEYING LAND USE PLANNING SOIL SCIENCE
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SolarCity Corporation
Rogers Road Landfill Solar Project
82 Rogers Road - Norwich, Connecticut
Mounting Plane 2 - Bulky Waste Area
Site Development Plan

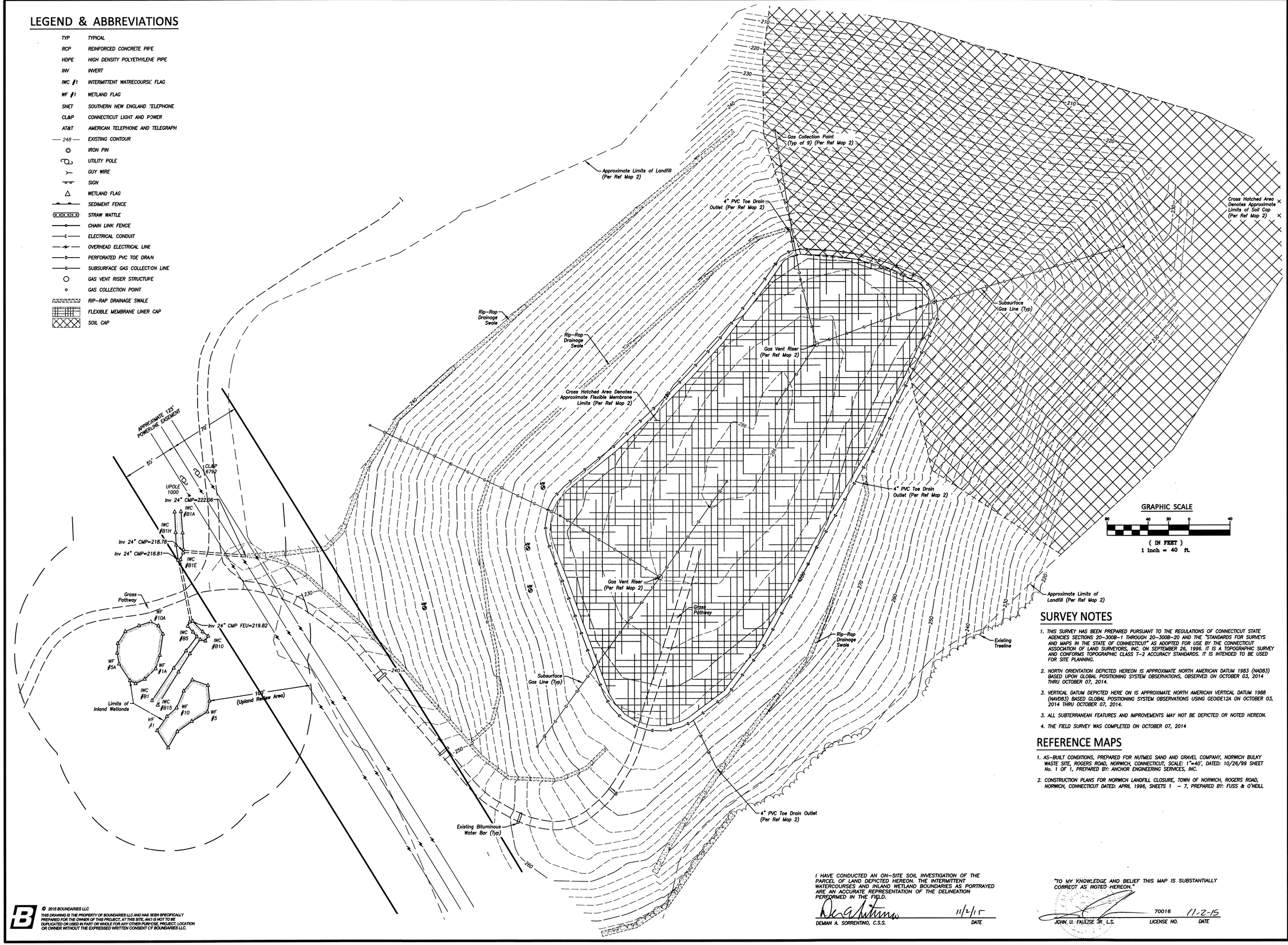
SCALE: 1" = 40'
DATE: September 2015
JOB I.D. NO. 14-2302

Revisions
Rev. A - Equipment Pad Details - 9/29/15
Rev. B - Development and Management Plan - 11/02/15

SHEET NO.
5
12

LEGEND & ABBREVIATIONS

TYP	TYPICAL
RCP	REINFORCED CONCRETE PIPE
HDPE	HIGH DENSITY POLYETHYLENE PIPE
INV	INVERT
IWC #1	INTERMITTENT WATRECOURSE FLAG
WF #1	WETLAND FLAG
SNET	SOUTHERN NEW ENGLAND TELEPHONE
CL&P	CONNECTICUT LIGHT AND POWER
AT&T	AMERICAN TELEPHONE AND TELEGRAPH
248	EXISTING CONTOUR
	IRON PIN
	UTILITY POLE
	GUY WIRE
	SIGN
	WETLAND FLAG
	SEDIMENT FENCE
	STRAW WATTLE
	CHAIN LINK FENCE
E	ELECTRICAL CONDUIT
	OVERHEAD ELECTRICAL LINE
D	PERFORATED PVC TOE DRAIN
G	SUBSURFACE GAS COLLECTION LINE
	GAS VENT RISER STRUCTURE
	GAS COLLECTION POINT
	RIP-RAP DRAINAGE SWALE
	FLEXIBLE MEMBRANE LINER CAP
	SOIL CAP



GRAPHIC SCALE

80 40 20 0 40

(IN FEET)

1 inch = 40 ft.

SURVEY NOTES

1. THIS SURVEY HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300B-1 THROUGH 20-300B-20 AND THE "STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED FOR USE BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPTEMBER 26, 1996. IT IS A TOPOGRAPHIC SURVEY AND CONFORMS TOPOGRAPHIC CLASS T-2 ACCURACY STANDARDS. IT IS INTENDED TO BE USED FOR SITE PLANNING.
2. NORTH ORIENTATION DEPICTED HEREON IS APPROXIMATE NORTH AMERICAN DATUM 1983 (NAD83) BASED UPON GLOBAL POSITIONING SYSTEM OBSERVATIONS, OBSERVED ON OCTOBER 03, 2014 THRU OCTOBER 07, 2014.
3. VERTICAL DATUM DEPICTED HERE ON IS APPROXIMATE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD83) BASED GLOBAL POSITIONING SYSTEM OBSERVATIONS USING GEOID12A ON OCTOBER 03, 2014 THRU OCTOBER 07, 2014.
3. ALL SUBTERRANEAN FEATURES AND IMPROVEMENTS MAY NOT BE DEPICTED OR NOTED HEREON.
4. THE FIELD SURVEY WAS COMPLETED ON OCTOBER 07, 2014

REFERENCE MAPS

1. AS-BUILT CONDITIONS, PREPARED FOR NUTMEG SAND AND GRAVEL COMPANY, NORWICH BULKY WASTE SITE, ROGERS ROAD, NORWICH, CONNECTICUT, SCALE: 1"=40', DATED: 10/26/99 SHEET No. 1 OF 1, PREPARED BY: ANCHOR ENGINEERING SERVICES, INC.
2. CONSTRUCTION PLANS FOR NORWICH LANDFILL CLOSURE, TOWN OF NORWICH, ROGERS ROAD, NORWICH, CONNECTICUT DATED: APRIL 1996, SHEETS 1 - 7, PREPARED BY: FUSS & O'NEILL

I HAVE CONDUCTED AN ON-SITE SOIL INVESTIGATION OF THE PARCEL OF LAND DEPICTED HEREON. THE INTERMITTENT WATERCOURSES AND INLAND WETLAND BOUNDARIES AS PORTRAYED ARE AN ACCURATE REPRESENTATION OF THE DELINEATION PERFORMED IN THE FIELD.

DEMIAN A. SORRENTINO, C.S.S. — DATE 11/2/15

"TO MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON."

JOHN U. FAULISE JR. L.S. — LICENSE NO. 70016 — DATE 11-2-15

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www.solarcity.com

SolarCity Corporation
Rogers Road Landfill Solar Project
82 Rogers Road - Norwich, Connecticut
Mounting Plane 3 - Landfill
Topographic Survey - Existing Conditions

SCALE: 1" = 40'

DATE: September 2015

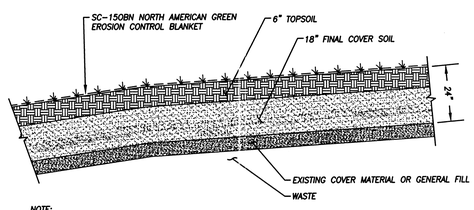
JOB I.D. NO. 14-2302

Revisions

Rev. A - Equipment Pad Details - 9/29/15

Rev. B - Development and Management Plan - 11/02/15

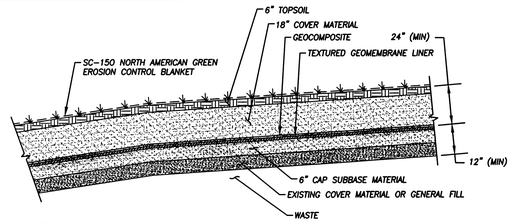
SHEET NO. 6 / 12



NOTE:
1. NO EXCAVATION WITHIN THE ORIGINAL COVER MATERIAL/GENERAL FILL LAYER.
2. CROSS SECTION DEVELOPED FROM LANDFILL CLOSURE PLANS PREPARED BY OTHERS AND MAY NOT REFLECT ACTUAL CONDITIONS.

NORWICH LANDFILL SOIL CAP CROSS SECTION

NOT TO SCALE



NOTE:
1. NO EXCAVATION WITHIN THE COVER MATERIAL LAYER.
2. CROSS SECTION DEVELOPED FROM LANDFILL CLOSURE PLANS PREPARED BY OTHERS AND MAY NOT REFLECT ACTUAL CONDITIONS.

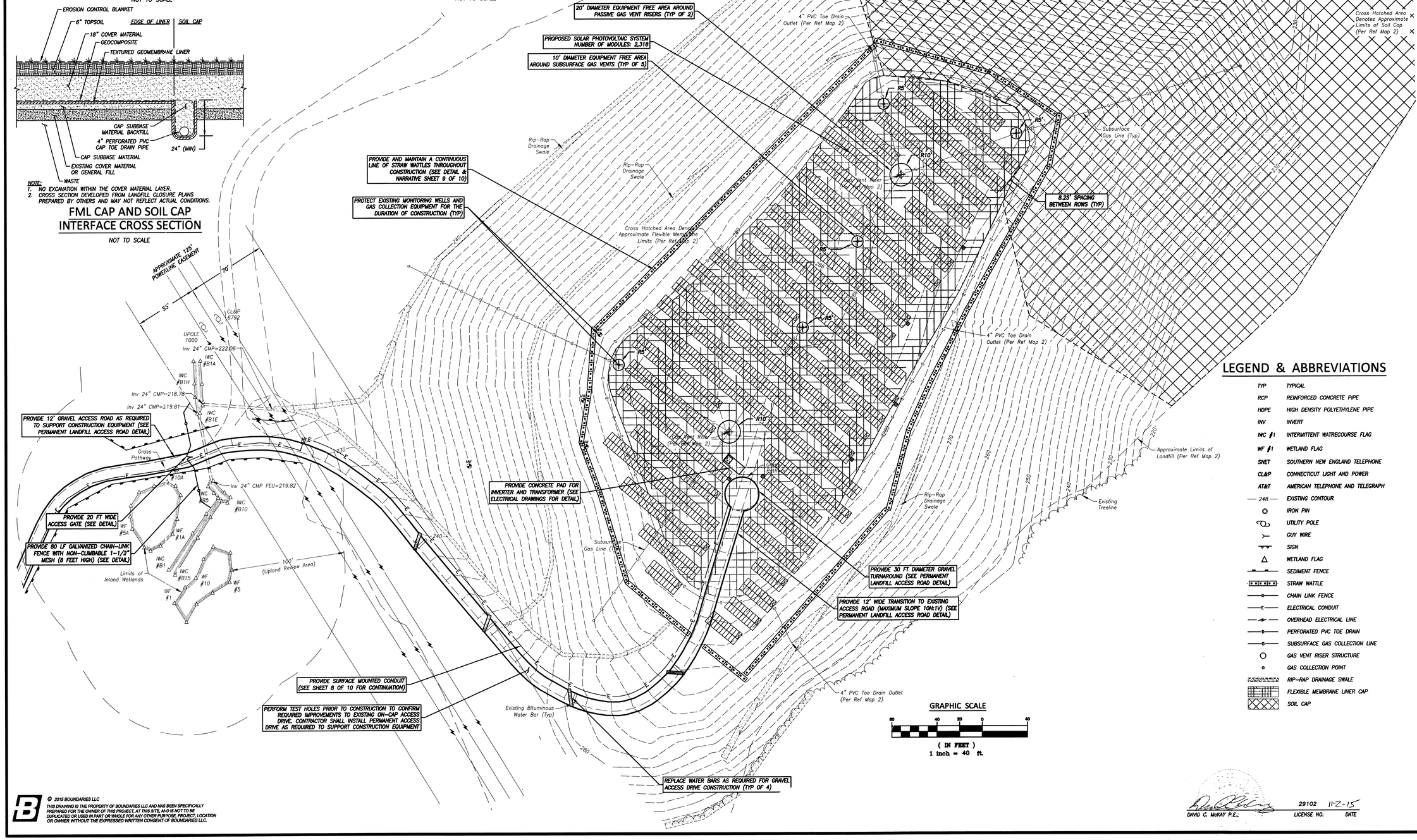
NORWICH LANDFILL FLEXIBLE MEMBRANE LINER CAP CROSS SECTION

NOT TO SCALE

NOTE:
1. NO EXCAVATION WITHIN THE COVER MATERIAL LAYER.
2. CROSS SECTION DEVELOPED FROM LANDFILL CLOSURE PLANS PREPARED BY OTHERS AND MAY NOT REFLECT ACTUAL CONDITIONS.

FML CAP AND SOIL CAP INTERFACE CROSS SECTION

NOT TO SCALE



LEGEND & ABBREVIATIONS

TYP	TYPICAL
RCP	REINFORCED CONCRETE PIPE
HDPE	HIGH DENSITY POLYETHYLENE PIPE
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	GAS VENT RISER STRUCTURE
	GAS COLLECTION POINT
	RIP-RAP DRAINAGE SWALE
	FLEXIBLE MEMBRANE LINER CAP
	SOIL CAP

GRAPHIC SCALE

80 40 20 0 40

(IN FEET)
1 inch = 40 ft.

DAVID C. McKAY P.E. — 29102 — 11-2-15 (LICENSE NO. — DATE)

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SolarCity Corporation
Rogers Road Landfill Solar Project
82 Rogers Road - Norwich, Connecticut
Mounting Plane 3 - Landfill
Site Development Plan

SCALE: 1" = 40'
DATE: September 2015
JOB I.D. NO. 14-2302

Revisions
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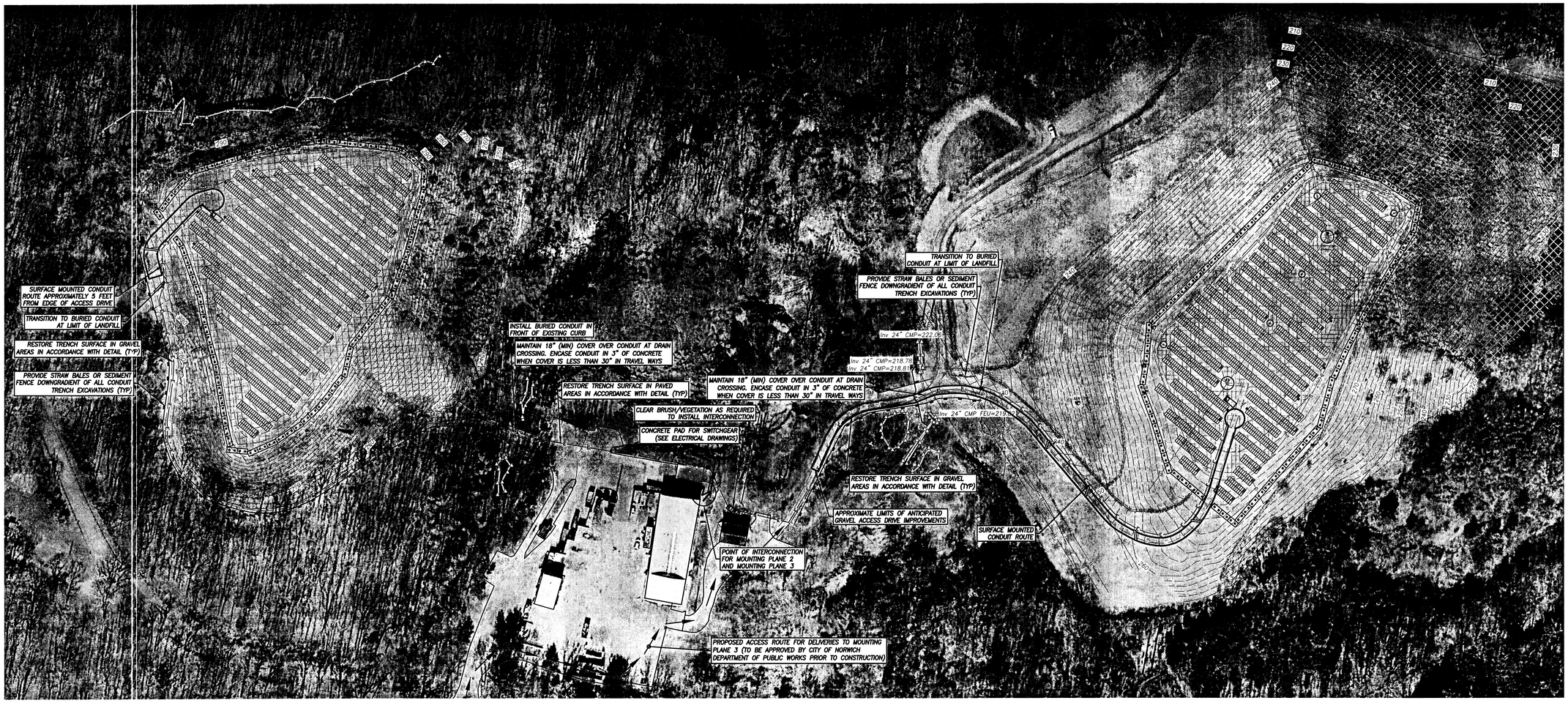
Rev. B - Development and Management Plan - 11/02/15

SHEET NO.
7
12



GRAPHIC SCALE

160 80 40 0 80

(IN FEET)
1 inch = 80 ft.

LEGEND & ABBREVIATIONS

TYP	TYPICAL
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HDPE	HIGH DENSITY POLYETHYLENE PIPE
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	STRAW WATTLE
	CHAIN LINK FENCE
E	ELECTRICAL CONDUIT
U	OVERHEAD ELECTRICAL LINE

DAVID C. McKAY P.E. 29102 LICENSE NO. 11-2-15 DATE

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www.solarcity.com

SolarCity Corporation
Rogers Road Landfill Solar Project
82 Rogers Road - Norwich, Connecticut
Mounting Planes 2 & 3
Overall Site Utility Plan

SCALE: 1" = 80'
DATE: September 2015
JOB I.D. NO. 14-2302

Revisions
Rev. A - Equipment Pad Details - 9/29/15
Rev. B - Development and Management Plan - 11/02/15

SHEET NO.
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CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL CALL BEFORE YOU DIG AT 811 OR 1-800-922-4455 AT LEAST 72 HOURS, SATURDAY, SUNDAYS, AND HOLIDAYS EXCLUDED, PRIOR TO EXCAVATION AT ANY LOCATION. A COPY OF THE CALL BEFORE YOU DIG PROJECT REFERENCE NUMBER(S) SHALL BE GIVEN TO THE OWNER PRIOR TO EXCAVATION.
2. LOCATIONS OF EXISTING PIPES, CONDUITS, UTILITIES, FOUNDATIONS AND OTHER UNDERGROUND OBJECTS ARE NOT WARRANTED TO BE CORRECT AND THE CONTRACTOR SHALL HAVE NO CLAIM ON THAT ACCOUNT SHOULD THEY BE OTHER THAN THAT SHOWN.
3. STONE WALLS, FENCES, CURBS, ETC. SHALL BE REMOVED AND REPLACED AS NECESSARY TO PERFORM THE WORK. UNLESS OTHERWISE INDICATED, ALL SUCH WORK SHALL BE INCIDENTAL TO CONSTRUCTION OF THE PROJECT.
4. ALL OTHER DISTURBED BY THE CONTRACTOR BEYOND PAYMENT LIMITS SHALL BE RESTORED AT NO ADDITIONAL COST TO THE OWNER.
5. IF SURVEY CONTROL STAKING AND EROSION CONTROL MEASURES ARE REQUIRED, HAND DUG TEST HOLES WILL BE PERFORMED TO CONFIRM THE DEPTH TO THE LINER OR SOIL CAP, PRIOR TO INSTALLATION. ALL TEST HOLES SHALL BE VERIFIED BY THE ON-SITE ENGINEER.
6. ALL WORK SHALL BE DONE IN ACCORDANCE WITH OSHA REQUIREMENTS AND THE CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH THESE REQUIREMENTS. IN ADDITION, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ANY EXCAVATION SAFEGUARDS, NECESSARY BARRICADES, FLAGMEN, ETC. FOR TRAFFIC CONTROL AND SITE SAFETY.
7. ALL EROSION & SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF CONSTRUCTION.
8. ALL FUEL, OIL, PAINT OR OTHER HAZARDOUS MATERIALS USED DURING CONSTRUCTION SHOULD BE STORED IN A SECONDARY CONTAINER AND REMOVED TO A LOCKED INDOOR AREA WITH AN IMPERVIOUS FLOOR DURING NON-WORK HOURS.
9. NO WASTE MATERIALS (SUCH AS STUMPS) ARE ALLOWED TO BE BURIED ON SITE. ALL WASTE MATERIALS SHALL BE DISPOSED OF OFF-SITE AT AN APPROPRIATE LOCATION IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.

SPECIFICATIONS FOR WORK ON LANDFILL:

GENERAL:

1. THE CONTRACTOR SHALL BE AWARE THAT WORK IS LOCATED ON A LANDFILL AND IS SUBJECT TO THE CONNECTICUT SOLID WASTE REGULATIONS AND ANY REQUIREMENTS OUTLINED IN THE CT DEEP LANDFILL DISRUPTION AUTHORIZATION.
2. THE CONTRACTOR SHALL BE AWARE THAT THE WORK IS TO TAKE PLACE ABOVE A LANDFILL COVER SYSTEM, GENERALLY COMPRISED OF A VEGETATIVE SUPPORT LAYER, A SAND DRAINAGE LAYER, AND A LOW PERMEABILITY FLEXIBLE MEMBRANE LINER OR SOIL CAP. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO NOT DISRUPT THE LANDFILL CAP PROFILE OR TO DAMAGE THE LOW PERMEABILITY FLEXIBLE MEMBRANE LINER OR SOIL CAP.
3. WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION'S PERMIT APPROVAL.
4. THE CONTRACTOR SHALL HAVE A HEALTH AND SAFETY PLAN WHILE WORKING ON THE LANDFILL.

EQUIPMENT:

1. THE CONTRACTOR SHALL PROVIDE A LIST OF ALL EQUIPMENT PROPOSED TO BE WORKING ON THE LANDFILL. THE LIST SHALL INCLUDE THE EQUIPMENT WEIGHT, GROUND PRESSURE, AND ANY RESTRICTIONS THAT WILL BE IMPOSED ON THE VEHICLE (I.E. LIMITED TO EXISTING ACCESS ROADS, LIMITED TO CARRYING ½ LOADS, ETC.)
2. ALL EQUIPMENT IS SUBJECT TO REVIEW AND APPROVAL BY THE ENGINEER. AS A GENERAL RULE, EQUIPMENT SHALL ADHERE TO THE FOLLOWING REQUIREMENTS:

Equipment Ground Pressure		Minimum Lift Thickness	
KPa	psi	meter	inches
<70	<10	0.30	12
70-140	10-20	0.60	24
>140	>20	0.90	36

SOURCE: GEOMEMBRANE PROTECTION DESIGN MANUAL, GSE; DHANI MAREJO, PH.D. AND GREG CORCORAN, P.E., FIRST EDITION.

EXCAVATIONS:

1. THE CONTRACTOR SHALL PROVIDE AN EXCAVATION PLAN DETAILING HOW THE CONTRACTOR WILL COMPLY WITH ALL PERTINENT PROVISIONS OF THE CONTRACT DOCUMENTS INCLUDING SITE RESTRICTIONS, WORK PROTOCOLS, TEMPORARY ROADS, ON-SITE PARKING AND STORAGE AREAS.
2. EXCAVATIONS ON THE LANDFILL AREA SHALL BE PERFORMED WITH THE GUIDANCE OF A LABORER OR "SPOTTER" AT ALL TIMES. THE LABORER SHALL IDENTIFY THE DEPTH OF THE LINER AND ENSURE THAT THE OPERATOR MAINTAINS A SAFE SEPARATING DISTANCE.
3. IT IS REQUIRED TO USE A SMOOTH BUCKET EXCAVATOR IN LIEU OF BUCKET WITH TEETH FOR EXCAVATIONS IN THE VICINITY OF THE LANDFILLS.

TEMPORARY EROSION CONTROL MEASURES:

1. EROSION CONTROL MEASURES SHALL BE IMPLEMENTED AS DETERMINED BY THE ON-SITE ENGINEER.
2. THE SMALLEST PRACTICAL AREA OF LAND SHALL BE EXPOSED AT ANY ONE TIME.
3. SEDIMENT/EROSION CONTROL MEASURES SHALL BE INSTALLED AS SHOWN ON PLANS. EROSION CONTROL BARRIERS ARE TO BE MAINTAINED AND CLEANED UNTIL ALL SLOPES HAVE BEEN ADEQUATELY STABILIZED.
4. FILL MATERIAL SHALL BE FREE FROM STUMPS, WOOD, ROOTS, ETC.
5. THE TEMPORARY AND PERMANENT STORMWATER CONTROLS SHALL BE PERIODICALLY CLEANED OF SEDIMENT, AS REQUIRED BY THE ENGINEER. THE SEDIMENT WILL BE REMOVED TO A SECURE LOCATION SO AS TO PREVENT SILTATION OF NATURAL WATER WAYS.
6. STRAW WATTLES MUST BE A MINIMUM TUBE DIAMETER OF 12 INCHES (300MM) FOR SLOPES UP TO 50 FEET (15.24M) IN LENGTH WITH A SLOPE RATIO OF 3H:1V OR STEEPER. LONGER SLOPS OF 3H:1V MAY REQUIRE LARGER TUBE DIAMETER OR ADDITIONAL COURSING OF FILTER TUBES TO CREATE A FILTER BERM. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR SITUATIONS WITH LONGER OR STEEPER SLOPES.
7. INSTALL TUBES ALONG CONTOURS AND PERPENDICULAR TO SHEET OR CONCENTRATED FLOW.
8. CONFIGURE TUBES AROUND EXISTING SITE FEATURES TO MINIMIZE SITE DISTURBANCE AND MAXIMIZE CAPTURE AREA OF STORMWATER RUN-OFF.
9. EROSION CONTROL MEASURES SHALL BE REMOVED WHEN DISTURBED AREA IS STABILIZED. DISTURBED AREA RESULTING FROM THE SILT FENCE REMOVAL OPERATION SHALL BE SEEDED IN ACCORDANCE WITH THE SPECIFICATIONS.
10. EROSION CONTROLS OTHER THAT AS SHOWN (I.E. HAY BALES) MUST BE APPROVED BY THE ENGINEER.

EROSION CONTROL NOTES:

1. THE RESPONSIBLE PARTY FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION CONTROL MEASURES IS ROBERT MILLER AT SOLARCITY AT 914-584-6894.
2. THE "2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL" BY THE CONNECTICUT COUNCIL ON SOIL AND WATER CONSERVATION IN COOPERATION WITH THE CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION, DEP BULLETIN 34, SHALL BE USED FOR INSTALLING AND MAINTAINING ALL EROSION CONTROL MEASURES. THE CONTRACTOR SHALL INSTALL ADDITIONAL MEASURES AS NECESSARY IF DIRECTED BY THE ENGINEER.
3. SEEDING FOR PERMANENT STABILIZATION SHALL BE DONE BETWEEN APRIL 15 THROUGH JUNE 15 OR BETWEEN AUGUST 15 THROUGH SEPTEMBER 15. IF SEEDING CANNOT BE DONE WITHIN THESE TIMES, APPLY TEMPORARY MULCH UNTIL NEXT SEEDING TIME. SEED MIXTURE SHALL BE AS FOLLOWS:

ALL 2:1 SLOPE AREAS			
CROWN VETCH	15 LBS/ACRE	OR	0.35 LBS/1,000 SF
PERENNIAL RYEGRASS	10 LBS/ACRE	OR	0.25 LBS/1,000 SF
ALL OTHER GRASSED AREAS			
CREEPING RED FESCUE	20 LBS/ACRE	OR	0.45 LBS/1,000 SF
REDTOP	2 LBS/ACRE	OR	0.05 LBS/1,000 SF
CROWN VETCH	15 LBS/ACRE	OR	0.35 LBS/1,000 SF

4. MULCH SHALL BE A GOOD QUALITY HAY OR STRAW AND SHALL BE APPLIED AT A RATE OF 2 BALES/1,000 SF.
5. ALL EROSION CONTROL MEASURES SHALL BE INSPECTED WITHIN 24 HOURS AFTER RAIN EVENTS AND REPAIRED OR REPLACED AS NECESSARY TO INSURE COMPLIANCE WITH THE APPROVED SOIL EROSION AND SEDIMENT CONTROL PLAN.
6. DUST CONTROL MEASURES WILL BE IMPLEMENTED DURING DRY CONDITIONS AND INCLUDE WATERING WITH A TANK TRUCK ON AN AS-NEEDED BASIS IN ORDER TO INSURE THAT NO AMBIENT DUST CONDITIONS ARE GENERATED FROM THE PROJECT.
7. THE ANTI-TRACKING PAD SHALL BE INSPECTED ON A WEEKLY BASIS AND MAINTAINED THROUGHOUT THE DURATION OF THE CONSTRUCTION FOR THIS PROJECT. WHEN THE ANTI-TRACKING PAD IS NO LONGER FUNCTIONING EFFICIENTLY OR ACCUMULATED SEDIMENT IS TO A DEPTH OF 2" BELOW THE STONE SURFACE, THE ANTI-TRACKING PAD SHALL BE REMOVED AND REPLACED AS PER THE DETAIL INDICATED ON THESE PLANS.

ENVIRONMENTAL NOTES:

(PREPARED BY ALL-POINTS TECHNOLOGY CORPORATION)

WILDLIFE HABITAT ENHANCEMENT MEASURES

AREAS LOCATED BETWEEN THE SOLAR ARRAYS AND EXISTING FOREST EDGE SHALL BE MANAGED AS FOLLOWS TO ENHANCE WILDLIFE HABITAT. RELATIVELY NARROW STRIPS OF LAND (GENERALLY 25 FEET IN MOST AREAS WITH AN EXPANSION TO 50 FEET FOR AREAS BORDERING VEGETATED COMMUNITY TYPES) WILL BE ESTABLISHED AND MAINTAINED BETWEEN THE SOLAR ARRAYS AND THE EXISTING FOREST EDGE BY MOWING ON A ROTATIONAL BASIS EVERY 4 TO 7 YEARS. MOWING SHALL NOT OCCUR BETWEEN MARCH 1 AND NOVEMBER 1 TO MINIMIZE POTENTIAL IMPACTS TO WILDLIFE. THIS MOWING REGIME WILL ALLOW THESE AREAS TO REVERT TO LATE, OLD-FIELD HABITAT COVER AND CREATE A "SOFT" ECOTONE THAT WILL PROVIDE COVER AND HABITAT FOR A NUMBER OF WILDLIFE SPECIES THAT UTILIZE THIS "EDGE" HABITAT, PARTICULARLY NESTING BIRD SPECIES.

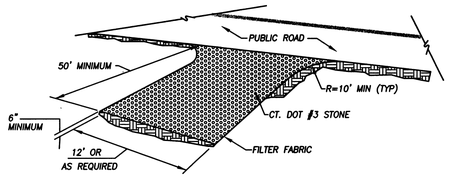
WETLAND PROTECTION PROGRAM

PORTIONS OF THE PROPOSED PROJECT ARE LOCATED IN CLOSE PROXIMITY TO WETLANDS. AS A RESULT, THE FOLLOWING PROTECTIVE MEASURES SHALL BE FOLLOWED TO HELP AVOID DEGRADATION OF THE NEARBY WETLAND SYSTEM.

IT IS OF THE UTMOST IMPORTANCE THAT THE CONTRACTOR COMPLIES WITH THE REQUIREMENT FOR THE INSTALLATION OF PROTECTIVE MEASURES AND THE EDUCATION OF ITS EMPLOYEES AND SUBCONTRACTORS PERFORMING WORK ON THE PROJECT SITE. THESE MEASURES WILL ALSO PROVIDE PROTECTION TO A NEARBY WETLAND SYSTEM. THIS PROTECTION PROGRAM SHALL BE IMPLEMENTED REGARDLESS OF TIME OF YEAR THE CONSTRUCTION ACTIVITIES OCCUR. ALL-POINTS TECHNOLOGY CORPORATION, P.C. ("APT") WILL SERVE AS THE ENVIRONMENTAL MONITOR FOR THIS PROJECT TO ENSURE THAT WETLAND PROTECTION MEASURES ARE IMPLEMENTED PROPERLY. THE CONTRACTOR SHALL CONTACT DEAN GUSTAFSON, SENIOR ENVIRONMENTAL SCIENTIST AT APT, AT LEAST 5 BUSINESS DAYS PRIOR TO THE PRE-CONSTRUCTION MEETING. MR. GUSTAFSON CAN BE REACHED BY TELEPHONE AT (860) 663-1697 EXT. 201 OR VIA EMAIL AT DGUSTAFSON@ALLPOINTSTECH.COM.

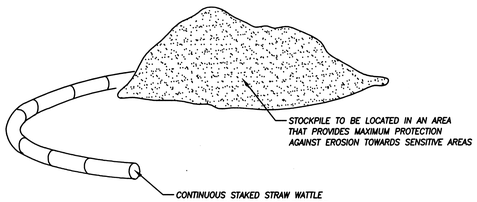
THE WETLAND PROTECTION PROGRAM CONSISTS OF SEVERAL COMPONENTS: USE OF APPROPRIATE EROSION CONTROL MEASURES TO CONTROL AND CONTAIN EROSION WHILE AVOIDING/MINIMIZING WILDLIFE ENTANGLEMENT; PERIODIC INSPECTION AND MAINTENANCE OF ISOLATION STRUCTURES AND EROSION CONTROL MEASURES; EDUCATION OF ALL CONTRACTORS AND SUB-CONTRACTORS PRIOR TO INITIATION OF WORK ON THE SITE; PROTECTIVE MEASURES; AND, REPORTING.

1. EROSION AND SEDIMENTATION CONTROLS
   a. PLASTIC NETTING USED IN A VARIETY OF EROSION CONTROL PRODUCTS (I.E., EROSION CONTROL BLANKETS, FIBER ROLLS [WATTLES], REINFORCED SILT FENCE) HAS BEEN FOUND TO ENTANGLE WILDLIFE, INCLUDING REPTILES, AMPHIBIANS, BIRDS AND SMALL MAMMALS. NO PERMANENT EROSION CONTROL PRODUCTS OR REINFORCED SILT FENCE WILL BE USED ON THE PROJECT. TEMPORARY EROSION CONTROL PRODUCTS WILL USE EITHER EROSION CONTROL BLANKETS AND FIBER ROLLS COMPOSED OF PROCESSED FIBERS MECHANICALLY BOUND TOGETHER TO FORM A CONTINUOUS MATRIX (NET LESS) OR NETTING COMPOSED OF PLANAR WOVEN NATURAL BIODEGRADABLE FIBER TO AVOID/MINIMIZE WILDLIFE ENTANGLEMENT.
   b. INSTALLATION OF EROSION CONTROL MEASURES SHALL BE PERFORMED BY THE CONTRACTOR PRIOR TO ANY EARTHWORK. THE ENVIRONMENTAL MONITOR WILL INSPECT THE WORK ZONE AREA PRIOR TO AND FOLLOWING BARRIER INSTALLATION TO ENSURE EROSION CONTROLS ARE PROPERLY INSTALLED.
   c. IN ADDITION TO REQUIRED DAILY INSPECTION BY THE CONTRACTOR, THE FENCING WILL BE INSPECTED FOR TEARS OR BREECHES IN THE FABRIC FOLLOWING INSTALLATION PERIODICALLY BY THE ENVIRONMENTAL MONITOR THROUGHOUT THE COURSE OF THE CONSTRUCTION PROJECT.
   d. THE EXTENT OF THE EROSION CONTROLS WILL BE AS SHOWN ON THE SITE PLANS. THE CONTRACTOR SHALL HAVE ADDITIONAL EROSION CONTROL MATERIALS SHOULD FIELD CONDITIONS WARRANT EXTENDING THE FENCING AS DIRECTED BY THE ENVIRONMENTAL MONITOR.
   e. ALL SILT FENCING AND OTHER EROSION CONTROL DEVICES SHALL BE REMOVED WITHIN 30 DAYS OF COMPLETION OF WORK AND PERMANENT STABILIZATION OF SITE SOILS. IF FIBER ROLLS/WATTLES, STRAW BALES, OR OTHER NATURAL MATERIAL EROSION CONTROL PRODUCTS ARE USED, SUCH DEVICES WILL NOT BE LEFT IN PLACE TO BIODEGRADE AND SHALL BE PROMPTLY REMOVED AFTER SOILS ARE STABLE SO AS NOT TO CREATE A BARRIER TO MIGRATING WILDLIFE. SEED FROM SEEDING OF SOILS SHOULD NOT SPREAD OVER FIBER ROLLS/WATTLES AS IT MAKES THEM HARDER TO REMOVE ONCE SOILS ARE STABILIZED BY VEGETATION.
2. CONTRACTOR EDUCATION
   a. PRIOR TO WORK ON SITE, THE CONTRACTOR SHALL ATTEND AN EDUCATIONAL SESSION AT THE PRE-CONSTRUCTION MEETING WITH THE ENVIRONMENTAL MONITOR. THIS ORIENTATION AND EDUCATIONAL SESSION WILL CONSIST OF AN INTRODUCTORY MEETING WITH THE ENVIRONMENTAL MONITOR TO UNDERSTAND THE ENVIRONMENTALLY SENSITIVE NATURE OF THE DEVELOPMENT SITE AND THE NEED TO FOLLOW THESE PROTECTIVE MEASURES.
3. PETROLEUM MATERIALS STORAGE AND SPILL PREVENTION
   a. CERTAIN PRECAUTIONS ARE NECESSARY TO STORE PETROLEUM MATERIALS, REFUEL AND CONTAIN AND PROPERLY CLEAN UP ANY INADVERTENT FUEL OR PETROLEUM (I.E., OIL, HYDRAULIC FLUID, ETC.) SPILL DUE TO THE PROJECT'S LOCATION IN PROXIMITY TO SENSITIVE WETLANDS.
   b. A SPILL CONTAINMENT KIT CONSISTING OF A SUFFICIENT SUPPLY OF ABSORBENT PADS AND ABSORBENT MATERIAL WILL BE MAINTAINED BY THE CONTRACTOR AT THE CONSTRUCTION SITE THROUGHOUT THE DURATION OF THE PROJECT. IN ADDITION, A WASTE DRUM WILL BE KEPT ON SITE TO CONTAIN ANY USED ABSORBENT PADS/MATERIAL FOR PROPER AND TIMELY DISPOSAL OFF SITE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL LAWS.
   c. THE FOLLOWING PETROLEUM AND HAZARDOUS MATERIALS STORAGE AND REFUELING RESTRICTIONS AND SPILL RESPONSE PROCEDURES WILL BE ADHERED TO BY THE CONTRACTOR.
4. PETROLEUM AND HAZARDOUS MATERIALS STORAGE AND REFUELING
   a. REFUELING OF VEHICLES OR MACHINERY SHALL OCCUR A MINIMUM OF 100 FEET FROM WETLANDS OR WATERCOURSES AND SHALL TAKE PLACE ON AN IMPERVIOUS PAD WITH SECONDARY CONTAINMENT DESIGNED TO CONTAIN FUELS.
   b. ANY FUEL OR HAZARDOUS MATERIALS THAT MUST BE KEPT ON SITE SHALL BE STORED ON AN IMPERVIOUS SURFACE UTILIZING SECONDARY CONTAINMENT A MINIMUM OF 100 FEET FROM WETLANDS OR WATERCOURSES.
5. INITIAL SPILL RESPONSE PROCEDURES
   a. STOP OPERATIONS AND SHUT OFF EQUIPMENT.
   b. REMOVE ANY SOURCES OF SPARK OR FLAME.
   c. CONTAIN THE SOURCE OF THE SPILL.
   d. DETERMINE THE APPROXIMATE VOLUME OF THE SPILL.
   e. IDENTIFY THE LOCATION OF NATURAL FLOW PATHS TO PREVENT THE RELEASE OF THE SPILL TO SENSITIVE NEARBY WATERWAYS OR WETLANDS.
   f. ENSURE THAT FELLOW WORKERS ARE NOTIFIED OF THE SPILL.
6. SPILL CLEAN UP & CONTAINMENT
   a. OBTAIN SPILL RESPONSE MATERIALS FROM THE ON-SITE SPILL RESPONSE KIT. PLACE ABSORBENT MATERIALS DIRECTLY ON THE RELEASE AREA.
   b. LIMIT THE SPREAD OF THE SPILL BY PLACING ABSORBENT MATERIALS AROUND THE PERIMETER OF THE SPILL.
   c. ISOLATE AND ELIMINATE THE SPILL SOURCE.
   d. CONTACT APPROPRIATE LOCAL, STATE AND/OR FEDERAL AGENCIES, AS NECESSARY.
   e. CONTACT A DISPOSAL COMPANY TO PROPERLY DISPOSE OF CONTAMINATED MATERIALS.
7. REPORTING
   a. COMPLETE AN INCIDENT REPORT.
   b. SUBMIT A COMPLETED INCIDENT REPORT TO APPROPRIATE LOCAL, STATE AND/OR FEDERAL AGENCIES, AS NECESSARY.
8. HERBICIDE AND PESTICIDE RESTRICTIONS
   a. IN THE EVENT HERBICIDES AND/OR PESTICIDES ARE REQUIRED AT THE PROPOSED FACILITY, THEIR USE WILL BE USED IN ACCORDANCE WITH INTEGRATED PEST MANAGEMENT ("IPM") PRINCIPLES WITH PARTICULAR ATTENTION TO MINIMIZE APPLICATIONS WITHIN 100 FEET OF WETLAND OR WATERCOURSE RESOURCES. NO APPLICATIONS OF HERBICIDES OR PESTICIDES ARE ALLOWED WITHIN ACTUAL WETLAND OR WATERCOURSE RESOURCES.
9. REPORTING
   a. ANY INCIDENTS OF SEDIMENT RELEASE INTO THE NEARBY WETLAND WILL BE REPORTED TO THE CONNECTICUT SITING COUNCIL.



ANTI-TRACKING PAD

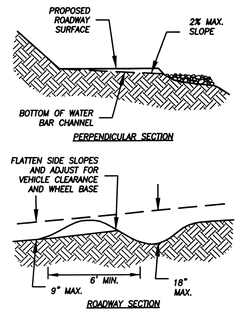
NOT TO SCALE



NOTE: LONG AXIS OF STOCKPILE TO BE PERPENDICULAR TO CONTOUR.

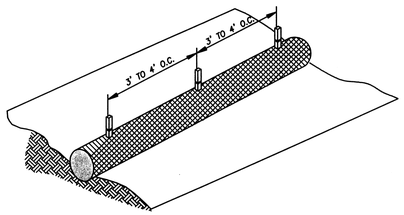
TEMPORARY STOCKPILE BARRIER DETAIL

NOT TO SCALE



WATER BAR DETAIL

NOT TO SCALE

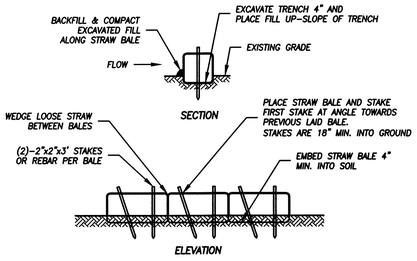


STRAW WATTLE INSTALLATION DETAIL (ON CAP)

NOT TO SCALE

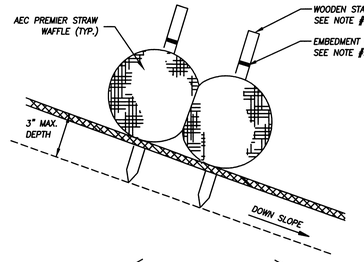
NOTES:

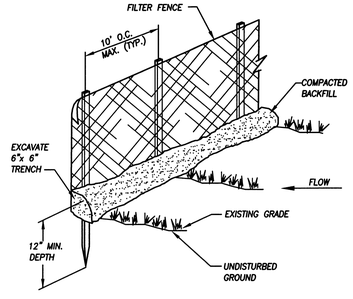
1. PRIOR TO INSTALLATION OF WATTLES OR OTHER APPROVED EROSION CONTROL MEASURES, THE CONTRACTOR MUST PERFORM HAND DUG TEST HOLES UNDER THE SUPERVISION OF THE ON-SITE ENGINEER. IF SUFFICIENT CLEARANCE IS NOT FOUND, CONCRETE BLOCKS WILL BE USED AS A SUBSTITUTE FOR STAKES.
2. WATTLES CAN BE STAKED ON THE LANDFILL PROVIDED THE STAKES DO NOT EXCEED 3 INCHES INTO THE VEGETATIVE SUPPORT LAYER. STAKES SHALL BE CLEARLY MARKED 16 INCHES FROM THE TIP OF THE STAKE (3" MAX. EMBEDMENT DEPTH + 12" WATTLE) AND SHALL BE CLEARLY VISIBLE.



STRAW BALE BARRIER DETAIL (OFF CAP)

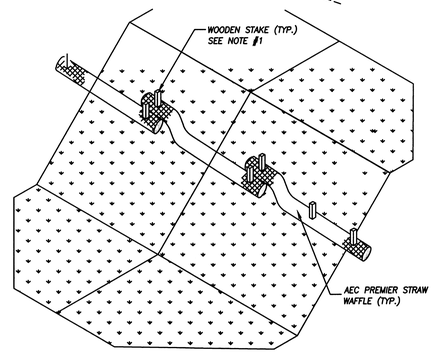
NOT TO SCALE





SEDIMENT FENCE DETAIL (OFF CAP)

NOT TO SCALE



STRAW WATTLE SLOPE INSTALLATION DETAIL (ON CAP)

NOT TO SCALE

DAVID C. McKAY, P.E. — LICENSE NO. 29102 — DATE 11-2-15

P:\CIVIL 3D PROJECTS\2014\14-2302 - BRIGHTFIELDS-NORWICH\DWG\DESIGN\(9) EROSION & SEDIMENT CTRL NARRATIVE & DETAILS.DWG

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82 Rogers Road - Norwich, Connecticut
Mounting Planes 1-3
Erosion & Sediment Control Narrative and Details

SCALE:

DATE: September 2015

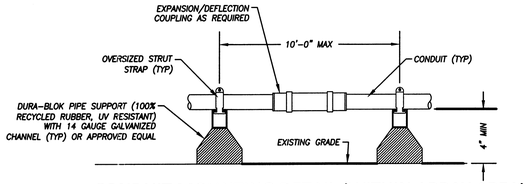
JOB I.D. NO. 14-2302

Revisions

Rev. A - Equipment Pad Details - 9/29/15

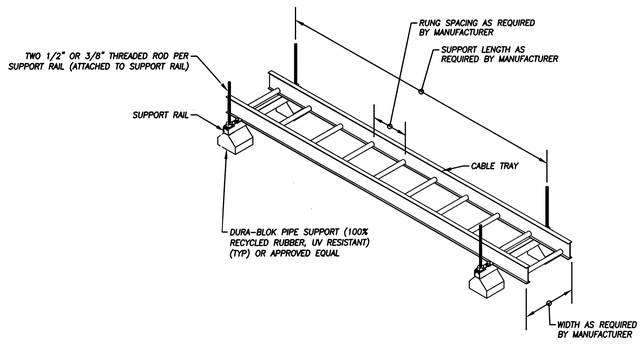
Rev. B - Development and Management Plan - 11/02/15

SHEET NO. 9 / 12



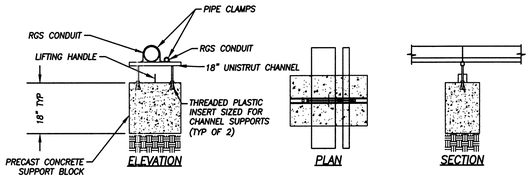
CONDUIT MOUNTING DETAIL (WITHIN ARRAY AREA)

NOT TO SCALE



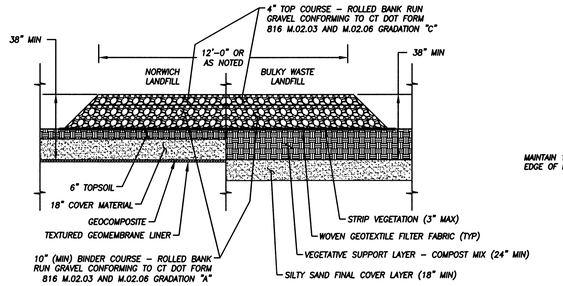
CABLE TRAY DETAIL (WITHIN ARRAY AREA)

NOT TO SCALE



CONCRETE BLOCK RACEWAY DETAIL (ON LANDFILL CAP)

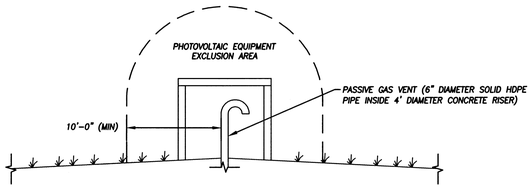
NOT TO SCALE



NOTE:
1. TEST PITS TO DETERMINE EXISTING ACCESS ROAD THICKNESS SHALL BE COMPLETED PRIOR TO UTILIZATION FOR CONSTRUCTION EQUIPMENT. IMPROVE AS REQUIRED FOR CONSTRUCTION EQUIPMENT USE.
2. ACCESS ROAD TO COMPLY WITH H-20 WHEEL LOADING.
3. TEST PITS TO DETERMINE CAPPING SYSTEM AND CONFIRM LAYER THICKNESS SHALL BE PERFORMED PRIOR TO INSTALLATION OF THE ACCESS ROAD.
4. ROADWAY DESIGN TO COMPLY WITH LOCAL EMERGENCY SERVICE REQUIREMENTS.
5. COMPACT PERMANENT ACCESS ROAD TO 95% MAXIMUM DENSITY IN LIFTS NOT TO EXCEED 12".

PERMANENT/TEMPORARY LANDFILL ACCESS ROAD

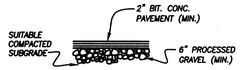
NOT TO SCALE



NOTE:
1. NO EQUIPMENT ASSOCIATED WITH THE PHOTOVOLTAIC SYSTEM SHALL BE LOCATED WITHIN A 10' EXCLUSION AREA OF PASSIVE GAS VENTS.
2. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING THE EXISTING GAS VENTS FROM DAMAGE FROM CONSTRUCTION EQUIPMENT/VEHICLES. ANY DAMAGE TO EXISTING GAS VENTS SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER AND REPAIRED AT NO COST TO THE OWNER/DEVELOPER.

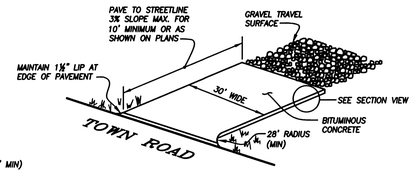
PASSIVE GAS VENT (EQUIPMENT FREE AREA) DETAIL

NOT TO SCALE



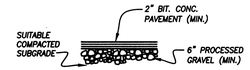
SECTION VIEW

NOT TO SCALE



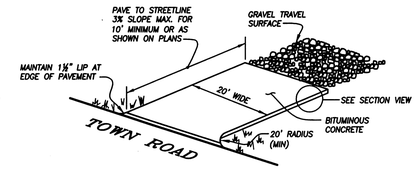
TYPICAL DRIVEWAY APRON MOUNTING PLANE #1

NOT TO SCALE



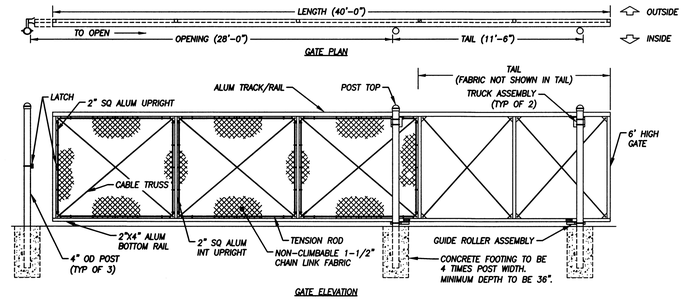
SECTION VIEW

NOT TO SCALE



TYPICAL DRIVEWAY APRON MOUNTING PLANE #4

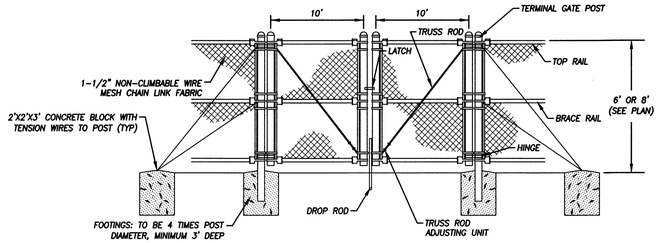
NOT TO SCALE



NOTES:
1. SLIDE GATE BY MASTER HALCO OR APPROVED EQUAL.
2. SLIDE GATE TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.

ALUMINUM SINGLE-TRACK CANTILEVERED SLIDE GATE DETAIL

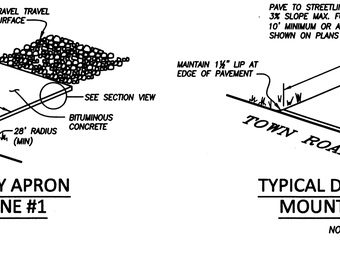
NOT TO SCALE



NOTE:
SWING GATES TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.

OFF CAP GALVANIZED SWING GATE DETAIL MOUNTING PLANE #1

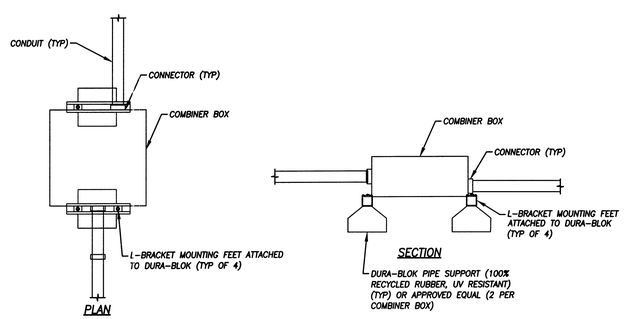
NOT TO SCALE



NOTE:
1. SIGNS MOUNTED ON GATES AT ALL ENTRANCES.
2. SIGNS TO BE RATED FOR OUTDOOR ENVIRONMENTS.

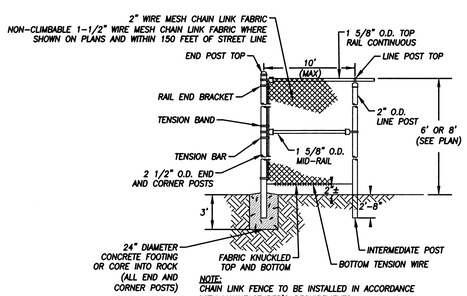
IDENTIFICATION SIGNAGE

NOT TO SCALE



COMBINER BOX MOUNTING DETAIL

NOT TO SCALE



NOTE:
CHAIN LINK FENCE TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.

OFF CAP GALVANIZED CHAIN LINK FENCE DETAIL

NOT TO SCALE

P:\CIVIL 3D PROJECTS\2014\14-2302 - BRIGHTFIELDS-NORWICH\DWG\DESIGN\(10-11) SITE DETAILS.DWG

David C. McKay, P.E. — 29102 — 11-2-15 (License No. — Date)

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SolarCity Corporation
Rogers Road Landfill Solar Project
82 Rogers Road - Norwich, Connecticut
Mounting Planes 1-3
Site Details

SCALE:

DATE: September 2015

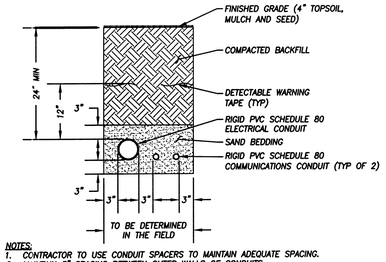
JOB I.D. NO. 14-2302

Revisions

Rev. A - Equipment Pad Details - 9/29/15

Rev. B - Development and Management Plan - 11/02/15

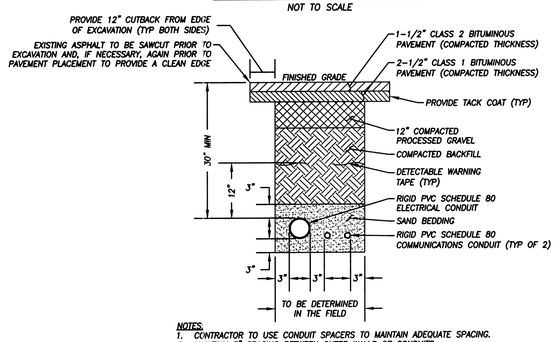
SHEET NO. 10 / 12



NOTES:
1. CONTRACTOR TO USE CONDUIT SPACERS TO MAINTAIN ADEQUATE SPACING.
2. MAINTAIN 3" SPACING BETWEEN OUTER WALLS OF CONDUITS.

OFF CAP TYPICAL MEDIUM VOLTAGE CONDUIT TRENCH DETAIL

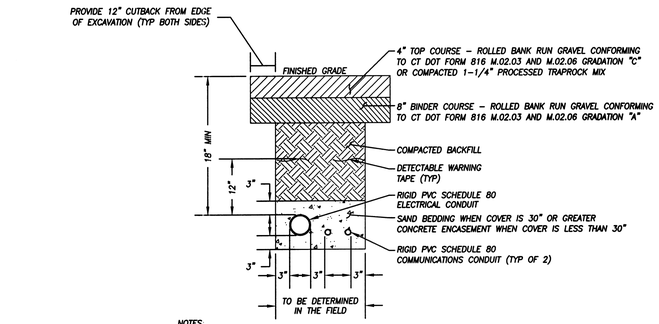
NOT TO SCALE



NOTES:
1. CONTRACTOR TO USE CONDUIT SPACERS TO MAINTAIN ADEQUATE SPACING.
2. MAINTAIN 3" SPACING BETWEEN OUTER WALLS OF CONDUITS.

TYPICAL MEDIUM VOLTAGE CONDUIT TRENCH (IN PAVED AREAS) DETAIL

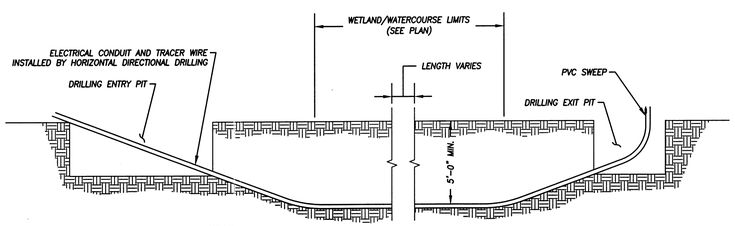
NOT TO SCALE



NOTES:
1. CONTRACTOR TO USE CONDUIT SPACERS TO MAINTAIN ADEQUATE SPACING.
2. MAINTAIN 3" SPACING BETWEEN OUTER WALLS OF CONDUITS.

TYPICAL MEDIUM VOLTAGE CONDUIT TRENCH (IN GRAVEL AREAS) DETAIL

NOT TO SCALE

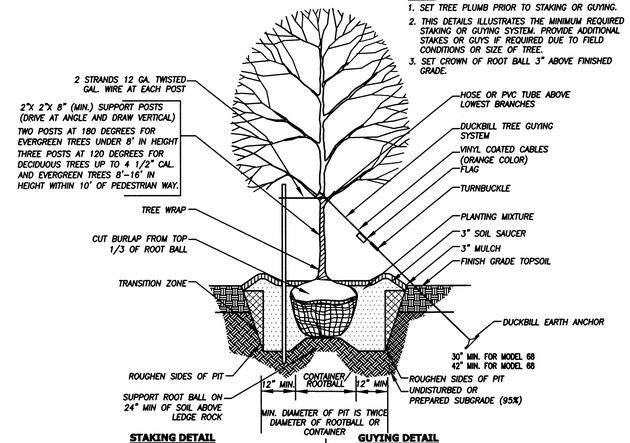


NOTES:
1. 5' DRILL DEPTH TO BE MAINTAINED EXCEPT WHERE ELEVATION CHANGES ARE REQUIRED TO AVOID OBSTACLES.
2. REFER TO ELECTRICAL PLANS AND WIRE SCHEDULE FOR ACTUAL NUMBER AND LOCATION OF CONDUITS.

TYPICAL HORIZONTAL DIRECTIONAL DRILLING DETAIL

NOT TO SCALE

NOTES:
1. SET TREE PLUMB PRIOR TO STAKING OR GUYING.
2. THIS DETAILS ILLUSTRATES THE MINIMUM REQUIRED STAKING OR GUYING SYSTEM. PROVIDE ADDITIONAL STAKES OR GUYS IF REQUIRED DUE TO FIELD CONDITIONS OR SIZE OF TREE.
3. SET CROWN OF ROOT BALL 3" ABOVE FINISHED GRADE.



STAKING DETAIL

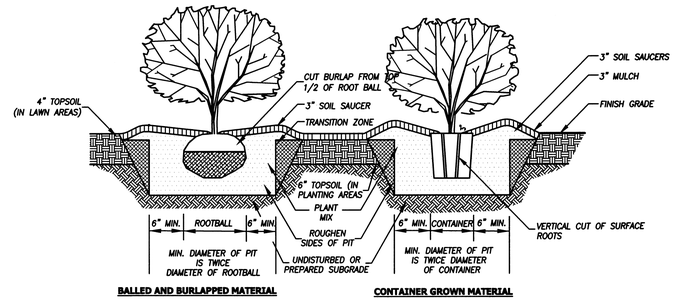
FOR USE WITH:
A. DECIDUOUS TREES UNDER 3" CALIPER.
B. DECIDUOUS TREES 3"–4 1/2" CALIPER WHEN PLANTED WITHIN 10' OF PEDESTRIAN WAYS.
C. EVERGREEN TREES UNDER 8' IN HEIGHT.
D. EVERGREEN TREES 8'–16' IN HEIGHT WHEN PLANTED WITHIN 10' OF PEDESTRIAN WAYS.

GUYING DETAIL

FOR USE WITH:
A. DECIDUOUS TREES 3"–4 1/2" CALIPER WHEN PLANTED GREATER THAN 10' OUTSIDE OF PEDESTRIAN WAYS.
B. DECIDUOUS TREE OVER 4 1/2" CALIPER.
C. EVERGREEN TREES 8'–16' IN HEIGHT WHEN PLANTED GREATER THAN 10' OUTSIDE OF PEDESTRIAN WAYS.
D. EVERGREEN TREES OVER 16' IN HEIGHT.

TREE PLANTING DETAIL

NOT TO SCALE



BALLED AND BURLAPPED MATERIAL | **CONTAINER GROWN MATERIAL**

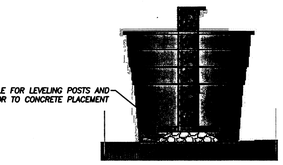
NOTES:
1. SET CROWN OF ROOTBALL 2" ABOVE FINISH GRADE.
2. FOR CONTAINER GROWN STOCK USE FINGERS OR A SHARP KNIFE TO LOOSEN ROOTS OUT OF THE OUTER LAYER OF POTTING SOIL. THEN CUT OR PULL APART ANY ROOTS CIRCLING THE PERIMETER OF THE CONTAINER.
3. AT PLANTING THOROUGHLY SOAK THE ROOT MASS AND ADJACENT SOIL. REPEAT SEVERAL TIMES DURING THE FIRST MONTH AND THROUGHOUT THE FOLLOWING TWO SUMMERS.

SHRUB PLANTING DETAIL

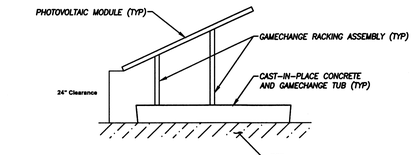
NOT TO SCALE

PLANTING SPECIFICATIONS:

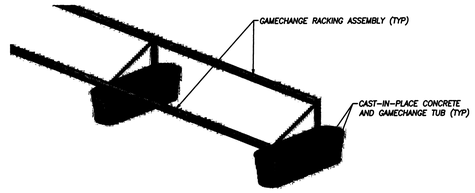
1. All materials and construction methods shall conform to the requirements of the Connecticut Association of Landscape Contractors Specification. All plants shall be nursery grown and conform to the latest edition of ANSI 260.1, AMERICAN STANDARD FOR NURSERY STOCK and also the minimum guidelines established for nursery stock published by the American Association of Nurserymen, Inc.
2. No substitution of plant materials will be allowed without the prior written consent of the Project Owner. Where a plant size range is provided at least 50% of the plants shall be of the larger size.
3. All lawn and planting area soil preparation shall be fertilized and amended according to recommendations of a soil analysis provided by an approved soil testing laboratory.
4. All exterior ground areas disturbed by construction and not covered by buildings, structures, paving, continuous planting beds or other site improvements shall be graded, topsoiled to a minimum depth of 4" and grass seeded. Provide lawn development in all areas of selective clearing as directed.
5. All plant pits must be free draining. Break up the bottom of the hole by fork if necessary to ensure plant has proper drainage.
6. Set all plants in center of plant pits, plumb and straight and as detailed on the drawing. All plant material shall bear the same relationship to finished grade as to original planting grade prior to digging. Trees shall be planted with the junction of roots and stem level with finished grade.
7. Handle balled and burlapped plants from the ball only. Once positioned in the hole, remove the top 1/3 of the burlap from the root ball without disturbing the roots.
8. Face each plant to give the best appearance. Final location of plant material should be approved by the Project Owner in the field.
9. Fill plant pits 2/3 their depth with prepared planting mixture, water thoroughly and allow to settle. Complete back-filling, water thoroughly to eliminate any voids and air pockets. Provide additional back-fill as necessary to conform to required elevation and as detailed.
10. Form saucer and install mulch over entire plant pit and saucer area as detailed.
11. All tree staking or guying shall be completed immediately after planting, but in no instance more than 24 hours after planting. See staking/guying detail. At the completion of the maintenance period remove all stakes, flags, guys, tree wrap, and anchors.
12. Mulch all new shrub beds and plant pits to achieve a 3" depth after settlement. Mulch all ground cover beds to achieve a 2" depth after settlement. Mulch for saucers and planting areas to be a double shredded bark mulch.
13. All plants shall be guaranteed for a period of one full year after inspection and acceptance by the Owner's representative, and shall have at least 80% healthy growth at the end of the guarantee period.
14. Landscape planting materials as proposed by this plan are Connecticut native and/or non-invasive species. This landscape plan has been designed to incorporate species which are prolific in USDA plant hardiness zone 6b and which require minimal energy input for upkeep and maintenance. References utilized for Connecticut native and non-invasive species selection include the Connecticut Botanical Society, the Connecticut agricultural experiment station, the U.S. Department of Transportation Federal Highway Administration, 2004 Connecticut Stormwater Quality Manual, New England Wetland Plants, Inc., and other sources.



GAMECHANGE TUB CROSS SECTION



CROSS SECTION



ISOMETRIC

NOTES:
1. GAMECHANGE RACKING SYSTEM TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.
2. SEE MANUFACTURER'S DETAIL SHEETS FOR ADDITIONAL INFORMATION AND INSTALLATION SEQUENCE.

ON-CAP SOLAR ARRAY AND RACKING SYSTEM

NOT TO SCALE

NOTES:
SEE MANUFACTURER'S DETAIL SHEETS FOR ADDITIONAL INFORMATION REGARDING RACKING SYSTEM REQUIREMENTS AND INSTALLATION PROCEDURES. RACKING SYSTEM TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.

TYPICAL POST MOUNTED RACKING SYSTEM DETAIL (OFF-CAP)

NOT TO SCALE

DAVID C. McKAY, P.E. — LICENSE NO. 29102 — DATE 11-2-15

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Rocky Hill, CT 06067
www.solarcity.com

SolarCity Corporation
Rogers Road Landfill Solar Project
82 Rogers Road - Norwich, Connecticut
Mounting Planes 1-3
Site Details

SCALE:

DATE: September 2015

JOB I.D. NO. 14-2302

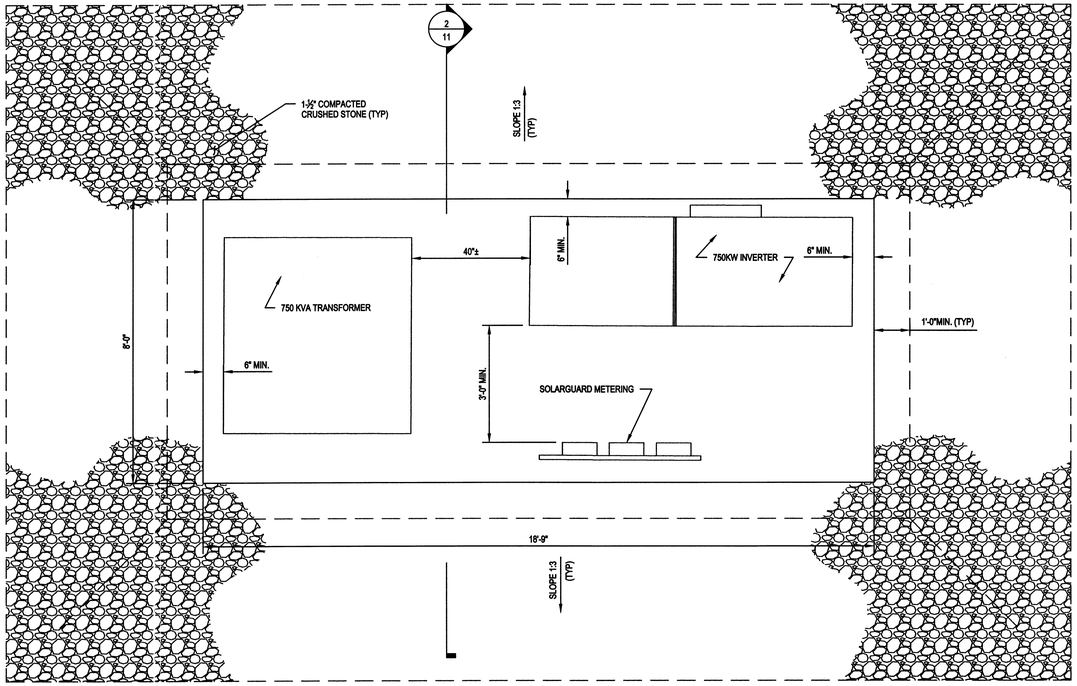
Revisions

Rev. A - Equipment Pad Details - 9/29/15

Rev. B - Development and Management Plan - 11/02/15

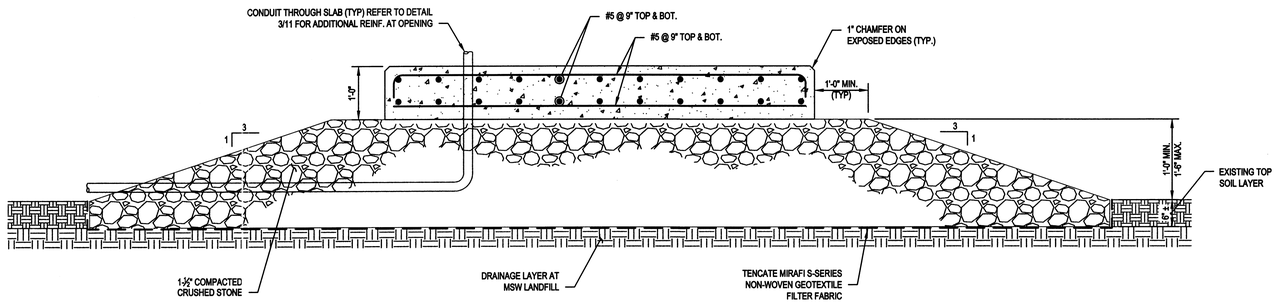
SHEET NO. 11 / 12

P:\CIVIL 3D PROJECTS\2014\14-2302 - BRIGHTFIELDS-NORWICH\DWG\DESIGN\(10-11) SITE DETAILS.DWG



1 PLAN VIEW
SCALE: 1/2"=1'-0"

NOTES:
1. COORDINATE DIMENSIONS WITH EQUIPMENT REQUIREMENTS AND ELECTRICAL DRAWINGS.
2. ANCHOR EQUIPMENT TO SLAB PER MANUFACTURER'S REQUIREMENTS
3. TWO (2) PADS ARE REQUIRED: ONE (1) AT MSW LANDFILL AND ONE (1) AT BULKY WASTE LANDFILL.



2 PAD SECTION
SCALE: 3/4"=1'-0"

NOTE:
1. DO NOT DISTURB DRAINAGE LAYER AT MSW LANDFILL.
2. COORDINATE CONDUIT LOCATIONS WITH ELECTRICAL DRAWINGS.

PERMIT SET
9/29/2015

1.0 GENERAL NOTES:
1. ALL WORK SHALL CONFORM WITH THE CONNECTICUT STATE BUILDING CODE 2005 SUPPLEMENT AND AMENDMENTS, INTERNATIONAL BUILDING CODE (2003), ASCE 7-02, AND THE BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318-02).
2. THE CONTRACTOR IS RESPONSIBLE FOR CHECKING, COORDINATING AND VERIFYING ALL DIMENSIONS IN THE FIELD PRIOR TO COMMENCING WORK.
3. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF UNANTICIPATED CONDITIONS THAT MAY BE UNCOVERED DURING CONSTRUCTION.
4. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING IN THE FIELD THE EXISTENCE OF ALL EMBEDDED UTILITIES AND DETERMINING THE EXISTENCE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING SYSTEMS AFFECTED BY THE WORK OF THIS CONTRACT.

2.0 FOUNDATIONS:
1. THE CONTRACTOR SHALL DESIGN AND PROVIDE ALL TEMPORARY EARTH SUPPORT, SHORING AND BRACING NECESSARY TO PERFORM THE WORK IN ACCORDANCE WITH OSHA, STATE AND LOCAL REQUIREMENTS.
2. FOUNDATIONS SHALL BE INSTALLED IN THE GEOMETRY SHOWN IN THE PLANS.
3. REFER TO THE GEOTECHNICAL MEMOS BY WESTON & SAMPSON DATED 09/02/2015 AND 09/04/2015 FOR ADDITIONAL DATA AND REQUIREMENTS.
4. EXCAVATION FOR SUBGRADE SHALL BE PERFORMED USING A SMOOTH EDGED BUCKET.
5. THOROUGHLY COMPACT SUBGRADE BY MECHANICAL MEANS. THE CONTRACTOR SHALL USE CAUTION TO NOT OVERSTRESS THE FLEXIBLE MEMBRANE LINER WHEN SELECTING EQUIPMENT AND PERFORMING COMPACTION AT THE MSW LANDFILL. REFER TO THE GEOTECHNICAL MEMO BY WESTON & SAMPSON DATED 09/02/2015 FOR ADDITIONAL DATA AND RECOMMENDATIONS.

3.0 CAST IN PLACE CONCRETE
1. CONCRETE WORK SHALL CONFORM TO "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318-02).
2. CONCRETE SHALL BE CONTROLLED CONCRETE, PROPORTIONED, MIXED AND PLACED IN THE PRESENCE OF A REPRESENTATIVE TESTING AGENCY.
3. CONCRETE SHALL BE NORMAL WEIGHT AND HAVE THE FOLLOWING PROPERTIES:
   A. MINIMUM 28 DAY COMPRESSIVE STRENGTH _____ 4000 PSI.
   B. MAXIMUM SLUMP _____ 4"
4. SUBMIT CONCRETE MIX DESIGNS FOR APPROVAL.

4.0 CAST IN PLACE REINFORCEMENT
1. REINFORCEMENT DETAILING, FABRICATION, AND ERECTION SHALL CONFORM TO "ACI DETAILING MANUAL" - SP-66, "CRSI MANUAL OF STANDARD PRACTICE".
2. STEEL REINFORCEMENT, UNLESS NOTED OTHERWISE, SHALL CONFORM TO THE FOLLOWING:
   A. BARS, TIES, AND STIRRUPS _____ ASTM A615 GRADE 60
3. REINFORCING STEEL SHALL BE UNCOATED AND DEFORMED.
4. MINIMUM CONCRETE PROTECTIVE COVERING FOR REINFORCEMENT, UNLESS REQUIRED FOR FIRE PROTECTION OR NOTED OTHERWISE, SHALL BE AS FOLLOWS:
   A. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH: _____ 3"
   B. CONCRETE EXPOSED TO EARTH OR WEATHER:
      (1) NO. 6 THRU NO. 18 BARS _____ 2"
      (2) NO. 5 BAR, W31 OR D31 WIRE AND SMALLER _____ 1½"
5. FOR REINFORCING STEEL SPLICE LAP LENGTHS REFER TO THE TABLE PROVIDED UNLESS NOTED OTHERWISE.
6. REINFORCEMENT SHALL NOT BE TACK WELDED.
7. DOWELS SHALL MATCH BAR SIZE, NUMBER AND SPACING, UNLESS NOTED OTHERWISE.
8. SUBMIT REINFORCING SHOP DRAWINGS FOR APPROVAL.

5.0 DESIGN LOADS

LOADS, LOADING CONDITIONS AND COMBINATIONS SHALL BE IN ACCORDANCE WITH THE CONNECTICUT STATE BUILDING CODE 2005 SUPPLEMENT AND AMENDMENTS, IBC 2003, AND ASCE 7-02 AS APPLICABLE. LOADS DESIGNATED BY "PSF" ARE UNIFORM LOADS, THOSE DESIGNATED BY "LB" ARE CONCENTRATED LOADINGS AND SHALL BE APPLIED AS REQUIRED BY THE CONNECTICUT STATE BUILDING CODE.

BUILDING OCCUPANCY CATEGORY _____ II

1. DEAD LOADS
   1.1. SELFWEIGHT OF ALL ATTACHED ELEMENTS, CONSULT APPLICABLE DRAWINGS AND TRADES FOR FURTHER INFORMATION
      1.1.1. TRANSFORMER _____ 5,920 LBS.
      1.1.2. INVERTER _____ 3,570 LBS.

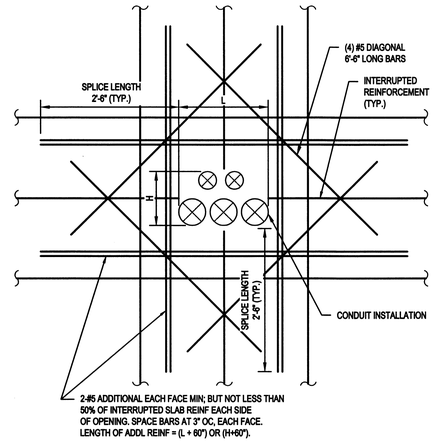
2. SNOW LOAD:
   2.1. GROUND SNOW LOAD, PG _____ 30 PSF
   2.2. HEATED SPACE
      2.2.1. FLAT ROOF SNOW LOAD, PF _____ 30 PSF MIN.
      2.2.2. SNOW EXPOSURE FACTOR, CE _____ 1.0
      2.2.3. SNOW LOAD IMPORTANCE FACTOR, I _____ 1.0 II
      2.2.4. THERMAL FACTOR, CT _____ 1.2

3. WIND DESIGN DATA
   3.1. BASIC WIND SPEED, V _____ 110 MPH
   3.2. WIND IMPORTANCE FACTOR, I _____ 1.0, II
   3.3. WIND EXPOSURE _____ C

4. EARTHQUAKE DESIGN DATA
   4.1. SEISMIC IMPORTANCE FACTOR, I _____ 1.0, II
   4.2. MAPPED SPECTRAL RESPONSE ACCELERATIONS, SS, S1 _____ 0.270G, 0.068G
   4.3. SITE CLASS _____ **

5. GEOTECHNICAL INFORMATION
   5.1. ALLOWABLE NET BEARING PRESSURE _____ **

** REFER TO GEOTECHNICAL MEMOS BY WESTON & SAMPSON DATED 09/02/2015 AND 09/04/2015 FOR DATA AND REQUIREMENTS.



2-#5 ADDITIONAL EACH FACE MIN; BUT NOT LESS THAN 50% OF INTERRUPTED SLAB REINF EACH SIDE OF OPENING. SPACE BARS AT 3" OC, EACH FACE. LENGTH OF ADDL REINF = (L + 60") OR (H+60").

NOTES:
1. SLAB OPENINGS SHALL BE COORDINATED AND DETAILED ON THE REINFORCEMENT SHOP DRAWINGS.

3 ADDITIONAL SLAB REINFORCING AT CONDUIT PENETRATIONS

WESTON & SAMPSON ENGINEERS, INC. LICENSE NO. DATE

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SolarCity Corporation
Proposed Solar Photovoltaic System
82 Rogers Road - Norwich, Connecticut
Structural Details for On-Cap Equipment Pads

SCALE:

DATE: September 2015

JOB I.D. NO. 14-2302

Revisions

SHEET NO.
12
12

EXHIBIT B – Stormwater Management Report

John U. Faulise Jr. L.S.
James McNally, Jr., L.S.

David C. McKay, P.E.
Demian A. Sorrentino AICP, C.S.S.

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STORMWATER MANAGEMENT REPORT

PREPARED FOR:

SOLARCITY CORPORATION
DEVELOPMENT AND MANAGEMENT PLAN
ROGERS ROAD SOLAR PROJECT
82 ROGERS ROAD
NORWICH, CONNECTICUT

AUGUST 2015

PREPARED BY:

BOUNDARIES LLC

PROJECT I.D. NO. 14-2302

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Introduction

On behalf of SolarCity Corporation, Boundaries LLC has prepared the following stormwater management report for the proposed solar photovoltaic development to be located at 82 Rogers Road and the Norwich Landfill in Norwich, CT. The proposed development consists of an approximately 2.8 MW DC solar photovoltaic development on two distinct lots (four locations/mounting planes). This stormwater management report has been prepared to determine the potential for the proposed development to impact stormwater runoff patterns and flow rates. The proposed development makes use of low impact development techniques in order to limit the impacts to stormwater flow patterns and utilize the existing stormwater management systems.

The new construction includes solar panels mounted on posts or concrete ballasts, electrical equipment installed on concrete pads, and improvements to the existing gravel access drives for maintenance access to the landfill sites. The proposed developments will be protected by a chain link fences and access gates as shown on the attached plans. The mounting posts for the solar arrays located at 82 Rogers Road will be pole driven approximately 8-feet into the ground, while the landfill solar panels will be anchored on plastic tubs filled with concrete set on top of the landfill cover. The proposed project areas are shown on the Location Map included as Figure 1.

The primary purpose of this stormwater management report is to demonstrate how the proposed solar arrays may affect the existing runoff flow patterns. The proposed solar panel system is raised above grade by approximately 2-feet at its leading edge (lowest end). There will be minimal regrading required on all sites and with the exception of the installation of the pole driven supports, the proposed project areas remain essentially unchanged. These low impact techniques will have minimal impact on runoff flow patterns and will ensure that the landfill caps continue to operate as designed.

According to the Natural Resources Conservation Service (NRCS) Web Soil Survey the soils on the landfill sites are classified as “Dumps”, and have no Hydrologic Soil Group classification. Hydrologic Soil Group C was assigned for the purposes of this analysis as a typical value for landfills in this region due to the impervious liner below the vegetative support layer. The non-landfill sites located south of Rogers Road consist primarily of Agawam fine sandy loam, 3 to 8% slopes, with some areas designated as Charlon-Chatfield complex, 3 to 15% slopes, very rocky; Hollis-Chatfield-Rock outcrop complex, 3 to 15% slopes; Walpole sandy loam, 0 to 3% slopes; and Catden and Freetown soils. Agawam and Charlton-Chatfield soils are classified as Hydrologic Soil Group B. Hollis-Chatfield-Rock outcrop, Walpole, and Catden and Freetown soils are classified as Hydrologic Soil Group A/D or D, and have been modeled as Hydrologic Soils Group D. The Soils Report is provided in Appendix A.

Existing and post-development conditions hydrographs were estimated using the hydrologic modeling program HydroCAD. The methodology selected was NRCS TR-20. Times of concentration were estimated using multiple segment flow paths as described in the NRCS TR-55 manual. The Type III 24-hour storm was analyzed under antecedent moisture condition two. HydroCAD modeling results are presented in Appendix B.

There are several regulated inland wetlands resource areas in the vicinity of the project, as determined by Demian Sorrentino of Boundaries LLC, a certified soil scientist, and were confirmed by All-Points Technology. The wetland areas south of Rogers Road are located in the woods at the limits of the existing cleared areas. There are also wetlands and watercourses located at the base of both of the landfills. For additional information regarding the locations of the regulated wetland resources within the project areas, please see Sheets 2, 4, and 6 of the Proposed Site Development Plans included in Appendix C.

Existing Conditions

The proposed project area consists of approximately 5.1 acres of the 75.0-acre parcel that contains the Norwich landfills and approximately 4.2 acres of the 23.3 acre 82 Rogers Road parcel. The proposed array area includes 2.5 acres on the bulky waste landfill (MP-2), 2.6 acres on the Norwich landfill (MP-3), 3.8 acres on the western portion of 82 Rogers Road (MP-1), and 0.4 acres on the eastern portion of 82 Rogers Road (MP-4). The landfill property is zoned ROS and 82 Rogers Road is zoned R-80. The Norwich Landfill property contains the City of Norwich's former bulky waste and municipal waste landfills. The property currently contains the City of Norwich's Transfer Station. 82 Rogers Road is a City-owned property and consists of wooded areas with wetlands and open fields that were previously used for agricultural purposes. The landfill property is adjacent to properties owned by the Norwich Fish and Game Club, municipally owned properties, undeveloped properties, and a large residential lot. 82 Rogers Road is adjacent to several single family residential lots and two undeveloped properties. Existing conditions of the property are shown below.

Aerial Photograph of Project Area

During storm events, runoff flows overland from the 82 Rogers Road site (MP-1/MP-4) to the wetlands systems that surround the existing clearings. Runoff from the bulky waste landfill (MP-2) flows overland to the wooded areas and the adjacent wetlands and watercourses that surround the landfill. The majority of the runoff from the Norwich landfill (MP-3) is collected in riprap lined swales and discharged to a detention basin. The remainder of the runoff from MP-3 flows overland to the wooded areas and watercourse located at the northern base of the landfill. Existing conditions sub-watersheds are shown on Figure 2. Existing conditions sub-watersheds were delineated using topographic survey data supplemented with aerial topographic survey from the City of Norwich's GIS mapping for areas outside of the detailed survey limits. Land uses were estimated based on Site inspections, aerial photography and survey data.

Runoff Curve Numbers (CN) used for the existing conditions analysis are as follows: 61 (>75% grass cover) for the grassed areas in Hydrologic Soil Group B, 74 (>75% grass cover) for the grassed landfill cap and the grassed areas in Hydrologic Soil Group C, 80 (>75% grass cover) for the grassed areas in Hydrologic Soil Group D, 55 (woods) for wooded areas in Hydrologic Soil Group B, 77 (woods) for wooded areas in Hydrologic Soil Group D, and 89 (gravel roads) for existing unpaved access drives.

The existing conditions sub-watersheds are described further below:

Drainage Area #1S (DA #1S)

This 1.0± acre drainage area encompasses the southern portion of the top of the bulky waste landfill (MP-2). The drainage area is comprised of dense grass that makes up the vegetative cover of the landfill. The weighted CN of the drainage area is 74. This area drains generally southerly via overland flow along the existing gravel access drive and eventually flows to a depression area south of the landfill before entering the wooded area and intermittent water course east of the bulky waste landfill.

Drainage Area #2S (DA #2S)

This 0.7± acre drainage area encompasses the western portion of the top of the bulky waste landfill (MP-2). The drainage area is comprised of dense grass that makes up the vegetative cover of the landfill. The weighted CN of the drainage area is 74. This area drains generally westerly via overland flow over the landfill cover before entering the wooded wetland area west of the bulky waste landfill.

Drainage Area #3S (DA #3S)

This 1.1± acre drainage area encompasses the eastern portion of the top of the bulky waste landfill (MP-2). The drainage area is comprised of dense grass that makes up the vegetative cover of the landfill. The weighted CN of the drainage area is 74. This area drains generally easterly via overland flow over the landfill cover before entering the wooded area and intermittent water course east of the bulky waste landfill.

Drainage Area #4S (DA #4S)

This 0.6± acre drainage area encompasses the northern portion of the top of the Norwich landfill (MP-3). The drainage area is comprised of dense grass that makes up the vegetative cover of the landfill. The weighted CN of the drainage area is 74. This area drains generally northerly via overland flow over the landfill cover before entering the brushy area of the old landfill cover and the wooded area north of the landfill.

Drainage Area #5S (DA #5S)

This 2.0± acre drainage area encompasses the western portion of the top of the Norwich landfill (MP-3). The drainage area is comprised of dense grass that makes up the vegetative cover of the landfill. The weighted CN of the drainage area is 74. This area drains generally westerly via overland flow over the landfill cover before entering a riprap drainage swale that collects runoff from the landfill and eventually discharges to a detention basin at the base of the landfill.

Drainage Area #6S (DA #6S)

This 1.2± acre drainage area encompasses the eastern portion of the top of the Norwich landfill (MP-3). The drainage area is comprised of dense grass that makes up the vegetative cover of the landfill and a portion of the existing gravel access drive. The weighted CN of the drainage area is 75. This area drains generally easterly via overland flow over the landfill cover and gravel access drive before entering a riprap drainage swale that collects runoff from the landfill and eventually discharges to a detention basin at the base of the landfill.

Drainage Area #7S (DA #7S)

This 2.1± acre drainage area encompasses the western portion of the larger 82 Rogers Road clearing (MP-1). The drainage area is comprised of dense grass pasture. The weighted CN of the drainage area is 62. This area drains generally westerly via overland flow to the wooded wetland area adjacent to the clearing.

Drainage Area #8S (DA #8S)

This 2.9± acre drainage area encompasses the eastern portion of the larger 82 Rogers Road clearing (MP-1). The drainage area is comprised of dense grass pasture. The weighted CN of the drainage area is 62. This area drains generally easterly via overland flow to the wooded wetland area adjacent to the clearing.

Drainage Area #9S (DA #9S)

This 1.7± acre drainage area encompasses the smaller 82 Rogers Road clearing (MP-4). The drainage area is comprised of dense grass pasture and a small wooded area. The weighted CN of the drainage area is 63. This area drains generally southerly and westerly via overland flow to the wooded wetland area adjacent to the clearing.

Existing conditions peak runoff rates were analyzed at the limits of the proposed development areas. The existing conditions peak runoff rates will be compared to the post-development peak runoff rates to determine the effect of the proposed development on existing stormwater runoff patterns. Existing conditions peak flow rates are summarized below in Tables 1 through 3. Detailed modeling results are included in Appendix B.

Table 1
Peak Runoff Rates – Bulky Waste Landfill (MP-2) Existing Conditions

Storm Event	DA #1S (CFS)	DA #2S (CFS)	DA #3S (CFS)
2-Year	1.0	0.7	1.1
5-Year	1.6	1.1	1.7
10-Year	2.0	1.5	2.3
25-Year	2.5	1.9	2.9
50-Year	3.0	2.2	3.3
100-Year	3.6	2.6	4.0

Table 2
Peak Runoff Rates – Norwich Landfill (MP-3) Existing Conditions

Storm Event	DA #4S (CFS)	DA #5S (CFS)	DA #6S (CFS)
2-Year	0.6	1.9	1.5
5-Year	1.0	3.1	2.3
10-Year	1.3	4.0	3.0
25-Year	1.6	5.0	3.8
50-Year	1.9	5.9	4.4
100-Year	2.3	7.1	5.2

Table 3
Peak Runoff Rates – 82 Rogers Road (MP-1/4) Existing Conditions

Storm Event	DA #7S (CFS)	DA #8S (CFS)	DA #9S (CFS)
2-Year	0.7	0.9	0.6
5-Year	1.4	2.0	1.3
10-Year	2.0	3.0	1.9
25-Year	2.8	4.0	2.6
50-Year	3.4	5.0	3.2
100-Year	4.3	6.3	4.0

Proposed Conditions

The proposed improvements to the site include the installation of solar panels mounted on steel posts driven into the ground, or in the case of the landfills, at grade plastic tubs filled with concrete. Additional proposed conditions include minor improvements to the existing gravel landfill access drives as needed to support construction equipment, various concrete pads for electrical equipment, and installation of chain link security fence to limits access to each solar array.

Installation of the solar arrays will consist of mowing the dense grass in the proposed development areas, installing proposed metal racking posts or plastic tubs as applicable, installing and anchoring the solar array panels to the racking system, installing the proposed chain link fence, and installing the necessary electrical equipment for harvesting power.

The stormwater analysis was conducted to determine if the proposed development would result in significant changes to existing flow patterns, water quality, or peak runoff rates. The design

incorporates measures for limiting disturbed areas and minimizing increases in impervious area. Proposed impervious areas are limited to the steel posts for the proposed racking system, the proposed electrical equipment pads, the cast-in-place concrete racking ballasts for the solar arrays on the landfill sites, paved aprons for access to the 82 Rogers Road arrays, and gravel drive improvements to the to the landfill access roadways.

The W8X10 steel post each cover 2.96 square inches (0.02 square feet) and they are spaced approximately 16 feet along each row of solar arrays. The plastic tubs for the cast-in-place racking system cover approximately 22 square feet each, are spaced at 13 feet along each row of solar arrays for the edge of the layout and at approximately 20 feet along each row of solar arrays in the interior of the layout. The proposed concrete equipment pads are approximately 18 feet by 8 feet and cover approximately 144 square feet. The changes in impervious areas and CN values for each drainage area as a result of the proposed development are presented below in Table 4 – Impervious Area Summary.

Table 4
Impervious Area Summary

Drainage Area	Access Drive Improvements (SF)	Proposed Racking System (SF)	Proposed Concrete Pads (SF)	Total Proposed Impervious Area (SF)	Total Watershed Area (SF)	CN (Pre)	CN (Post)
DA #1S	3,485	1,742	144	5,371	41,469	74	76
DA #2S	610	1,394	0	2,004	30,710	74	75
DA #3S	0	2,526	0	2,526	47,567	74	75
MP-2 Total	**4,095**	**5,662**	**144**	**9,901**	**119,746**	**74**	**75**
DA #4S	0	1,220	0	1,220	26,921	74	75
DA #5S	0	2,778	0	2,778	85,378	74	75
DA #6S	440	2,004	144	2,588	53,318	75	76
MP-3 Total	**440**	**6,002**	**144**	**6,586**	**165,617**	**74**	**75**
DA #7S	340	4	230	574	93,438	62	62
DA #8S	0	5	0	5	125,941	62	62
DA #9S	218	<1	0	219	74,793	63	63
MP-1/4 Total	**558**	**10**	**230**	**798**	**294,172**	**62**	**62**

Proposed conditions sub-watersheds are shown on Figure 3. Proposed conditions sub-watersheds were delineated using topographic survey data supplemented with aerial topographic survey from the City of Norwich's GIS mapping for areas outside of the detailed survey limits. Land uses were estimated based on Site inspections and by using the proposed site development plan.

Runoff Curve Numbers (CN) used for the proposed conditions analysis are as follows: 61 (>75% grass cover) for the grassed areas in Hydrologic Soil Group B, 74 (>75% grass cover) for the grassed landfill cap and the grassed areas in Hydrologic Soil Group C, 80 (>75% grass cover) for the grassed areas in Hydrologic Soil Group D, 55 (woods) for wooded areas in Hydrologic Soil Group B, 77 (woods) for wooded areas in Hydrologic Soil Group D, and 89 (gravel roads) for proposed gravel access improvements, and 98 (impervious) for solar array ballasts and posts, concrete equipment pads and fence post ballasts, and paved aprons.

The proposed improvements to the existing conditions sub-watersheds are described further below:

Drainage Area #1S (DA #1S)

The area will be mowed prior to construction. The proposed improvements to this drainage area include the construction of 3,485 square feet of gravel access drive and the installation of 1,742 square feet of concrete ballasts for the proposed racking system, and the installation of 144 square feet of concrete equipment pads. The weighted CN of the drainage area is 76. This area drains generally southerly via overland flow along the existing gravel access drive and eventually flows to a depression area south of the landfill before entering the wooded area and intermittent water course east of the bulky waste landfill. The existing runoff flow paths will not be affected by the proposed development.

Drainage Area #2S (DA #2S)

The area will be mowed prior to construction. The proposed improvements to this drainage area include the construction of 610 square feet of gravel access drive and the installation of 1,394 square feet of concrete ballasts for the proposed racking system. The weighted CN of the drainage area is 75. This area drains generally westerly via overland flow over the landfill cover before entering the wooded wetland area west of the bulky waste landfill. The existing runoff flow paths will not be affected by the proposed development.

Drainage Area #3S (DA #3S)

The area will be mowed prior to construction. The proposed improvements to this drainage area include the installation of 2,526 square feet of concrete ballasts for the proposed racking system. The weighted CN of the drainage area is 75. This area drains generally easterly via overland flow over the landfill cover before entering the wooded area and intermittent water course east of the bulky waste landfill. The existing runoff flow paths will not be affected by the proposed development.

Drainage Area #4S (DA #4S)

The area will be mowed prior to construction. The proposed improvements to this drainage area include the installation of 1,220 square feet of concrete ballasts for the proposed racking system. The weighted CN of the drainage area is 75. This area drains generally northerly via overland flow over the landfill cover before entering the brushy area of the old landfill cover and the wooded area north of the landfill. The existing runoff flow paths will not be affected by the proposed development.

Drainage Area #5S (DA #5S)

The area will be mowed prior to construction. The proposed improvements to this drainage area include the installation of 2,778 square feet of concrete ballasts for the proposed racking system. The weighted CN of the drainage area is 75. This area drains generally westerly via overland flow over the landfill cover before entering a riprap drainage swale that collects runoff from the landfill and eventually discharges to a detention basin at the base of the landfill. The existing runoff flow paths will not be affected by the proposed development.

Drainage Area #6S (DA #6S)

The area will be mowed prior to construction. The proposed improvements to this drainage area include the construction of 440 square feet of gravel access drive and the installation of 2,004 square feet of concrete ballasts for the proposed racking system, and the installation 144 square feet of concrete equipment pads. The weighted CN of the drainage area is 76. This area drains generally easterly via overland flow over the landfill cover and gravel access drive before entering a riprap drainage swale that collects runoff from the landfill and eventually discharges to a detention basin at the base of the landfill. The existing runoff flow paths will not be affected by the proposed development.

Drainage Area #7S (DA #7S)

The area will be mowed prior to construction. The proposed improvements to this drainage area include the construction of 340 square feet of paved apron, the installation of 4 square feet of posts for the proposed racking system, and the installation of an estimated 230 square feet of concrete pads for the proposed electrical equipment. The weighted CN of the drainage area is 62. This area drains generally westerly via overland flow to the wooded wetland area adjacent to the clearing. The existing runoff flow paths will not be affected by the proposed development.

Drainage Area #8S (DA #8S)

The area will be mowed prior to construction. The proposed improvements to this drainage area include the installation of 5 square feet of posts for the proposed racking system. The weighted CN of the drainage area is 62. This area drains generally easterly via overland flow to the wooded wetland area adjacent to the clearing. The existing runoff flow paths will not be affected by the proposed development.

Drainage Area #9S (DA #9S)

The area will be mowed prior to construction. The proposed improvements to this drainage area include the construction of 218 square feet of paved apron, and the installation of 1 square foot of posts for the proposed racking system. The weighted CN of the drainage area is 63. This area drains generally southerly and westerly via overland flow to the wooded wetland area adjacent to the clearing. The existing runoff flow paths will not be affected by the proposed development.

Proposed conditions peak flow rates were analyzed at the down-gradient limit of the proposed development areas for 82 Rogers Road (MP-1/MP-4) and the bulky waste landfill (MP-2) as there are no stormwater management systems in place on these sites and runoff flows overland. Peak runoff rates for the Norwich landfill (MP-3) were analyzed at the existing riprap swales. The change in peak runoff rates as a result of the proposed improvements are summarized below in Tables 5, 6, and 7. Detailed modeling results are included in Appendix B.

Table 5
Peak Runoff Rates – Bulky Waste Landfill (MP-2) Post-Development vs. Pre-Development

Storm Event	DA #1S			DA #2S			DA #3S		
	Post (CFS)	Pre (CFS)	Change (CFS)	Post (CFS)	Pre (CFS)	Change (CFS)	Post (CFS)	Pre (CFS)	Change (CFS)
2-Year	1.1	1.0	+0.1	0.8	0.7	+0.1	1.2	1.1	+0.1
5-Year	1.7	1.6	+0.1	1.2	1.1	+0.1	1.8	1.7	+0.1
10-Year	2.2	2.0	+0.2	1.6	1.5	+0.1	2.4	2.3	+0.1
25-Year	2.7	2.5	+0.2	1.9	1.9	+0.0	2.9	2.9	+0.0
50-Year	3.2	3.0	+0.2	2.3	2.2	+0.1	3.4	3.3	+0.1
100-Year	3.8	3.6	+0.2	2.7	2.6	+0.1	4.1	4.0	+0.1

Table 6
Peak Runoff Rates – Norwich Landfill (MP-3) Post-Development vs. Pre-Development

Storm Event	DA #4S			DA #5S			DA #6S		
	Post (CFS)	Pre (CFS)	Change (CFS)	Post (CFS)	Pre (CFS)	Change (CFS)	Post (CFS)	Pre (CFS)	Change (CFS)
2-Year	0.7	0.6	+0.1	2.0	1.9	+0.1	1.6	1.5	+0.1
5-Year	1.0	1.0	+0.0	3.2	3.1	+0.1	2.4	2.3	+0.1
10-Year	1.4	1.3	+0.1	4.2	4.0	+0.2	3.1	3.0	+0.1
25-Year	1.7	1.6	+0.1	5.2	5.0	+0.2	3.9	3.8	+0.1
50-Year	2.0	1.9	+0.1	6.1	5.9	+0.2	4.5	4.4	+0.1
100-Year	2.4	2.3	+0.1	7.3	7.1	+0.2	5.4	5.2	+0.2

Table 7
Peak Runoff Rates – 82 Rogers Road (MP-1/4) Post-Development vs. Pre-Development

Storm Event	DA #7S			DA #8S			DA #9S		
	Post (CFS)	Pre (CFS)	Change (CFS)	Post (CFS)	Pre (CFS)	Change (CFS)	Post (CFS)	Pre (CFS)	Change (CFS)
2-Year	0.7	0.7	+0.0	0.9	0.9	+0.0	0.6	0.6	+0.0
5-Year	1.4	1.4	+0.0	2.0	2.0	+0.0	1.3	1.3	+0.0
10-Year	2.0	2.0	+0.0	3.0	3.0	+0.0	1.9	1.9	+0.0
25-Year	2.8	2.8	+0.0	4.0	4.0	+0.0	2.6	2.6	+0.0
50-Year	3.4	3.4	+0.0	5.0	5.0	+0.0	3.2	3.2	+0.0
100-Year	4.3	4.3	+0.0	6.3	6.3	+0.0	4.0	4.0	+0.0

As presented above, the proposed low impact development has limited effects on peak runoff rates. Due to the minimal impervious area increase associated with the post mounted solar arrays to be used at 82 Rogers Road (MP-1/MP-4) there is no modeled increase in peak runoff rates after development. The larger impervious areas of the concrete ballasts for the ballasted solar arrays results in minor increases in the peak runoff rates, but no change in the runoff flow paths.

As a result of the proposed development, runoff from the bulky waste landfill (MP-2) solar array increases slightly due to the proposed concrete ballasts, as presented above in Table 5. Runoff from the bulky waste landfill currently flows overland from the top of the cap (the location of the proposed development) to the wooded areas and wetlands/watercourses that surround the base of the landfill. Due to the heavily vegetated nature of the landfill cap, the distance of overland flow to the wetland

resources, and the lack of an existing stormwater management system point discharge, and current conditions being maintained and essentially unchanged, it is believed that the minimal increases in peak flow rates should not negatively impact down gradient areas.

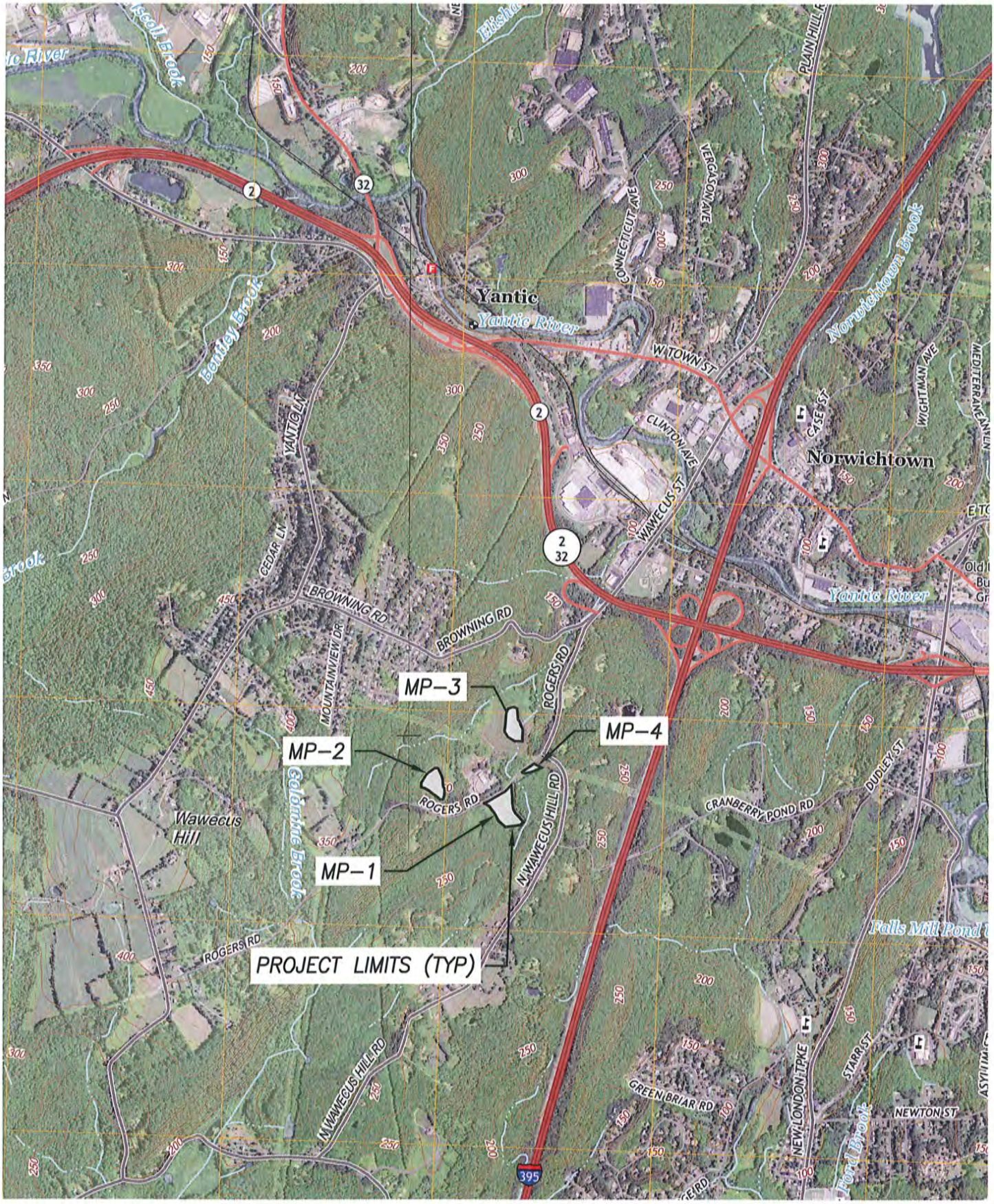
Runoff from the Norwich landfill (MP-3) solar array also increases slightly due to the proposed concrete ballasts, as presented above in Table 6. Runoff from two out of the three sub-watersheds on the Norwich landfill is collected by riprap swales and is discharged to an existing detention basin. The capacities of the swales were analyzed to determine if they had sufficient capacity to transport the post-development runoff to the existing detention basin. The existing riprap swales, based on the existing conditions and survey data, have capacity for greater than 8.6 CFS, depending on the running slope of the swale. The detailed modeling results of the swale capacities are included in Appendix B. The post-development peak runoff rate ranges from 5.4 CFS to 7.3 CFS during the 100-year storm event, therefore the existing stormwater management system should have sufficient excess capacity to manage the slight increase in peak runoff rates. Runoff from the top of the cap (the location of the proposed development) currently flows to the wooded areas and wetlands/watercourses that surround the base of the landfill on the northern and eastern sides. Due to the heavily vegetated nature of the landfill cap in this area, the distance of overland flow to the wetland resources, and the lack of an existing stormwater management system point discharge, and current conditions being maintained and essentially unchanged, it is believed that the minimal increases in peak flow rates should not negatively impact down gradient areas.

Summary

As discussed above the proposed development has been designed to limit the impacts to existing stormwater runoff flow rates and patterns. The existing runoff flow paths have been maintained and while there are minor increases in peak runoff rates from the existing landfill sites they should not have a negative impact on down gradient areas.

The proposed improvements are shown on plans titled “Rogers Road Solar Project, Prepared for SolarCity Corporation, 82 Rogers Road, Norwich, Connecticut, July 2015, Job I.D. No. 14-2302, Cover Sheet through Sheet 11 of 11” prepared by Boundaries LLC.

Figures

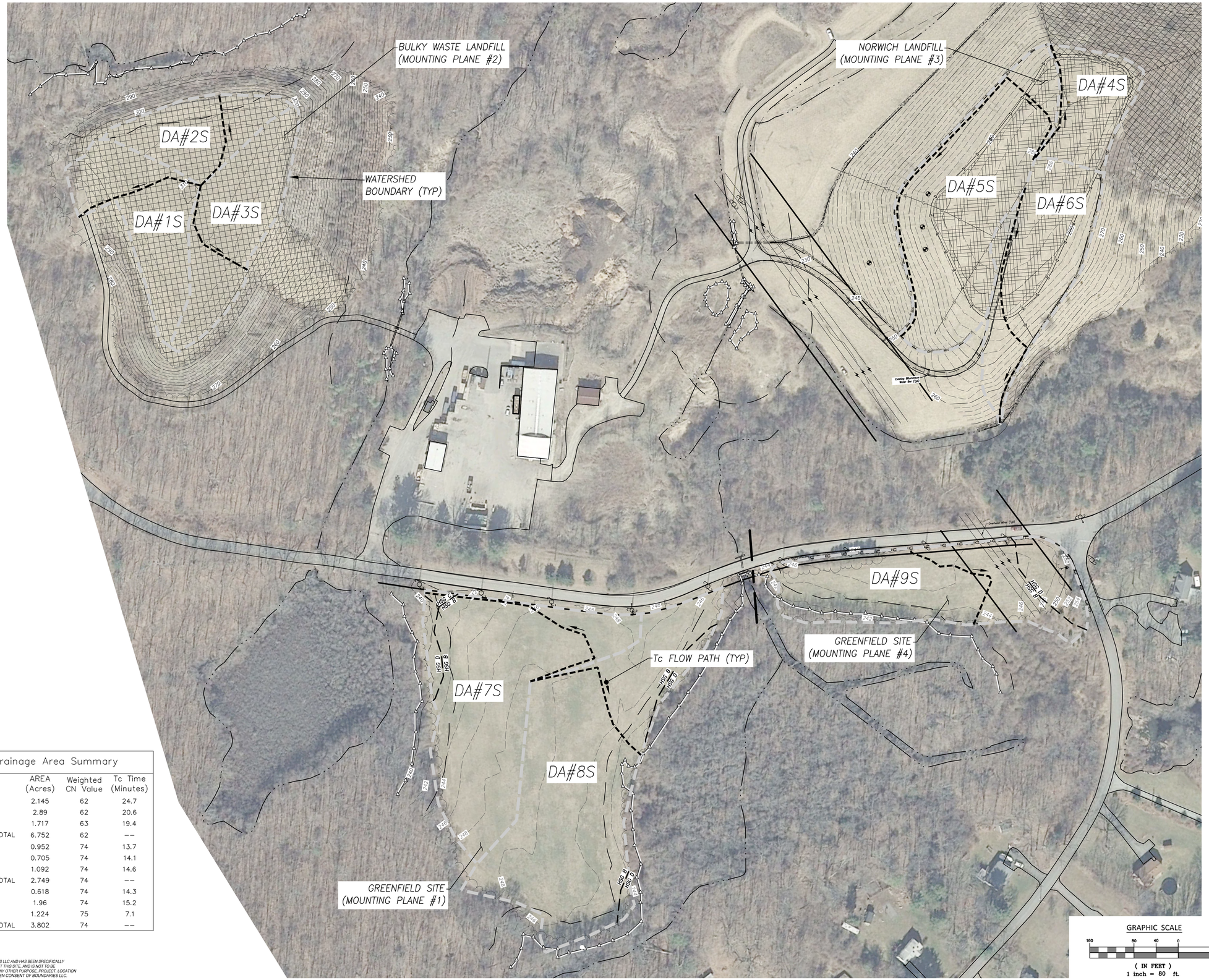


BOUNDARIES
CIVIL ENGINEERING LAND SURVEYING LAND USE PLANNING SOIL SCIENCE

Boundaries LLC
179 Pachaug River Drive, Griswold, CT 06351
T 860.376.2006 | www.boundariesllc.net

Location Map
(Norwich/Fitchville Quads)
Brightfields Development, LLC
82 Rogers Road, Norwich, CT

SCALE:	1"=2,000'
DATE:	August 2015
JOB NO.	14–2302
FIGURE	1



Drainage Area Summary			
NAME	AREA (Acres)	Weighted CN Value	Tc Time (Minutes)
DA #7S	2.145	62	24.7
DA #8S	2.89	62	20.6
DA #9S	1.717	63	19.4
MP-1/4 TOTAL	6.752	62	--
DA #1S	0.952	74	13.7
DA #2S	0.705	74	14.1
DA #3S	1.092	74	14.6
MP-2 TOTAL	2.749	74	--
DA #4S	0.618	74	14.3
DA #5S	1.96	74	15.2
DA #6S	1.224	75	7.1
MP-3 TOTAL	3.802	74	--

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Figure 2
"Pre-Development Conditions Watershed Map"
Prepared for
SolarCity Corporation
Rogers Road, Norwich, Connecticut

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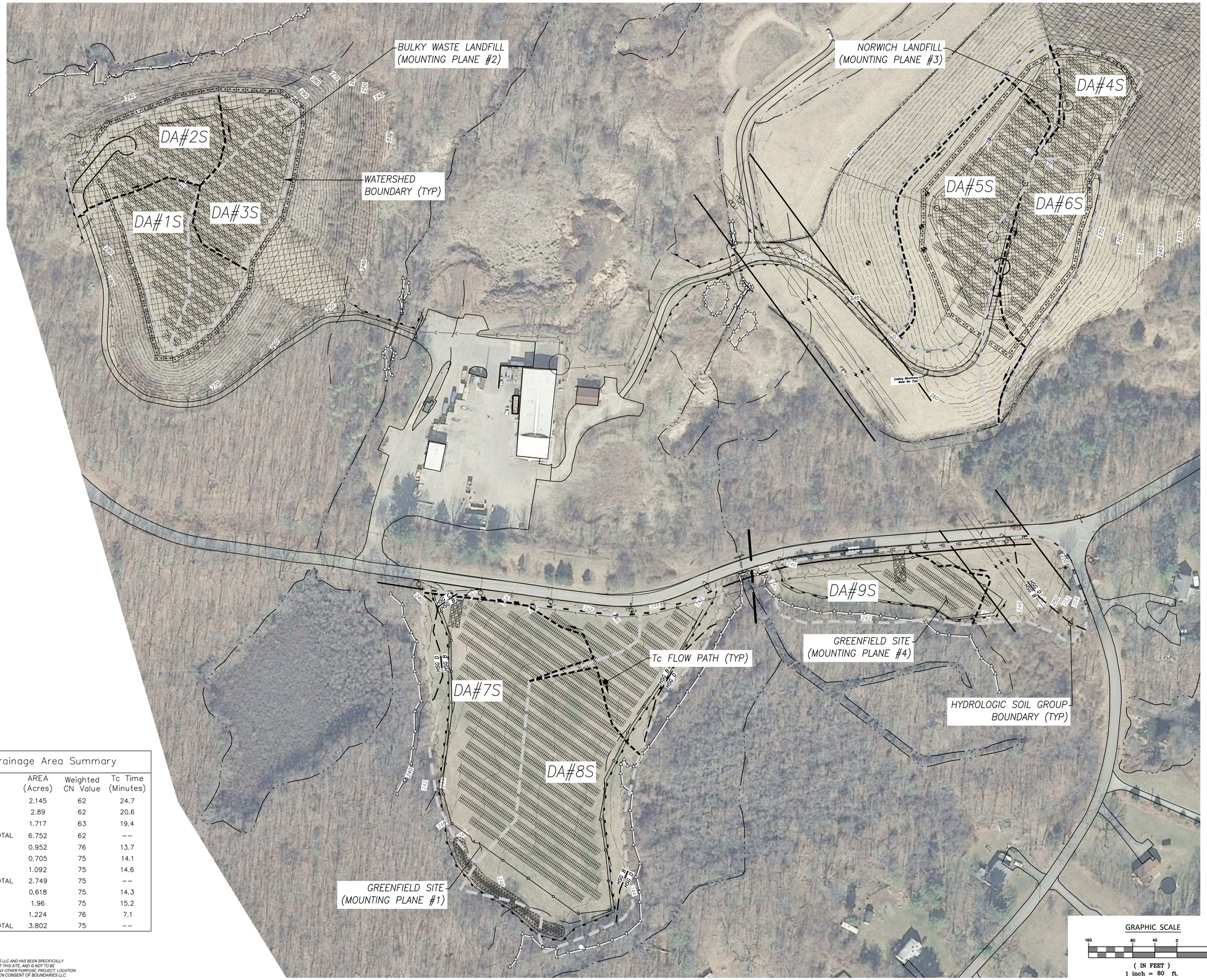
SCALE: 1" = 80'
DATE: August 2015
JOB I.D. NO. 14-2302

Revisions

SHEET NO.
1
2



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DA #5S	1.96	75	15.2
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MP-3 TOTAL	3.802	75	--

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Boundaries LLC
179 Pachaug River Drive Griswold, CT 06351
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Figure 3
"Post-Development Conditions Watershed Map"
Prepared for
SolarCity Corporation
Rogers Road, Norwich, Connecticut

SCALE: 1" = 80'
DATE: August 2015
JOB I.D. NO. 14-2302
Revisions

SHEET NO.
2
2

Appendix A
NRCS Web Soil Survey Soils Report

United States Department of Agriculture

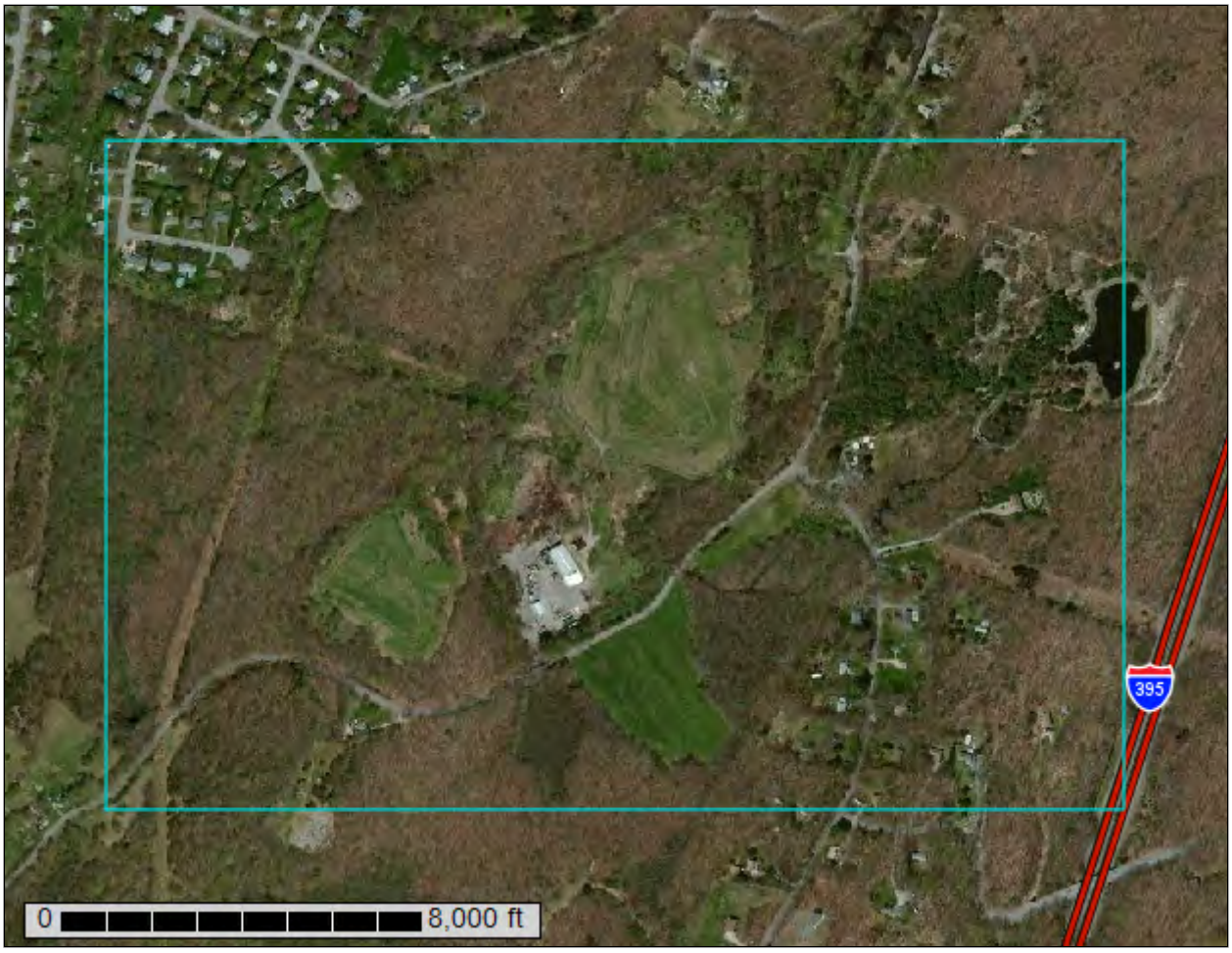
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for State of Connecticut

Rogers Road Solar Sites



June 5, 2015

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

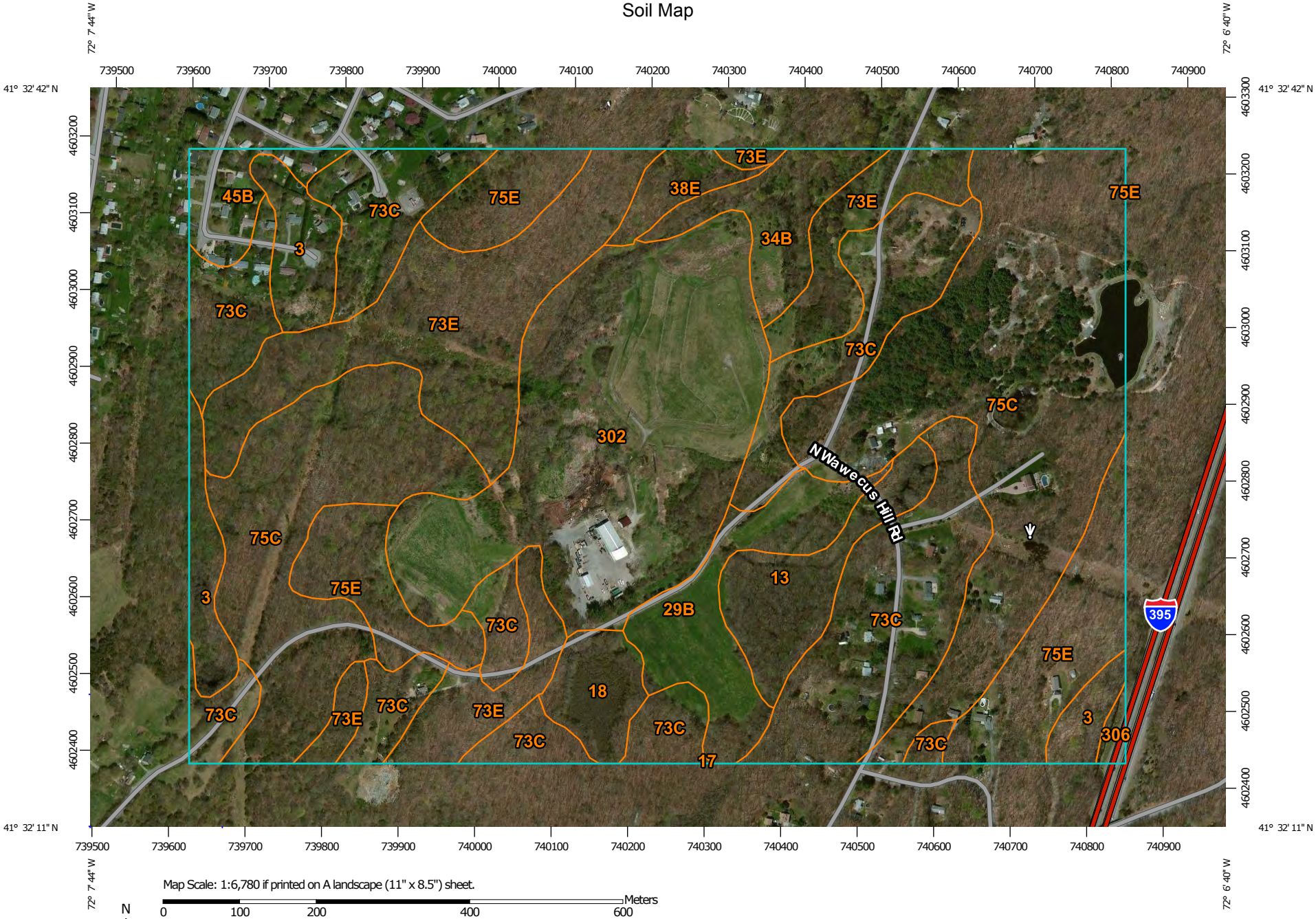
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:6,780 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 100 200 400 600

Feet: 0 300 600 1200 1800

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut
Survey Area Data: Version 13, Oct 28, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 28, 2011—May 12, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

State of Connecticut (CT600)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
3	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	9.4	3.9%
13	Walpole sandy loam, 0 to 3 percent slopes	7.3	3.0%
17	Timakwa and Natchaug soils	0.0	0.0%
18	Catden and Freetown soils	4.1	1.7%
29B	Agawam fine sandy loam, 3 to 8 percent slopes	9.7	4.0%
34B	Merrimac sandy loam, 3 to 8 percent slopes	6.1	2.5%
38E	Hinckley gravelly sandy loam, 15 to 45 percent slopes	2.5	1.0%
45B	Woodbridge fine sandy loam, 3 to 8 percent slopes	3.7	1.5%
73C	Charlton-Chatfield complex, 3 to 15 percent slopes, very rocky	47.4	19.5%
73E	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky	33.0	13.6%
75C	Hollis-Chatfield-Rock outcrop complex, 3 to 15 percent slopes	60.5	24.9%
75E	Hollis-Chatfield-Rock outcrop complex, 15 to 45 percent slopes	19.7	8.1%
302	Dumps	39.0	16.1%
306	Udorthents-Urban land complex	0.6	0.3%
Totals for Area of Interest		**243.1**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic

class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

State of Connecticut

3—Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony

Map Unit Setting

National map unit symbol: 2t2qt
Elevation: 0 to 1,480 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Ridgebury, extremely stony, and similar soils: 40 percent
Leicester, extremely stony, and similar soils: 35 percent
Whitman, extremely stony, and similar soils: 20 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ridgebury, Extremely Stony

Setting

Landform: Drainageways, depressions, hills, ground moraines
Landform position (two-dimensional): Backslope, footslope, toeslope
Landform position (three-dimensional): Head slope, base slope, dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

A - 0 to 5 inches: fine sandy loam
Bw - 5 to 9 inches: sandy loam
Bg - 9 to 18 inches: gravelly sandy loam
Cd - 18 to 65 inches: gravelly sandy loam

Properties and qualities

Slope: 0 to 8 percent
Percent of area covered with surface fragments: 9.0 percent
Depth to restrictive feature: 14 to 32 inches to densic material
Natural drainage class: Poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 2.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D

Description of Leicester, Extremely Stony

Setting

Landform: Depressions, drainageways
Landform position (two-dimensional): Toeslope, footslope, backslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Coarse-loamy melt-out till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 7 inches: fine sandy loam
Bg1 - 7 to 10 inches: fine sandy loam
Bg2 - 10 to 18 inches: fine sandy loam
BC - 18 to 24 inches: fine sandy loam
C1 - 24 to 43 inches: gravelly fine sandy loam
C2 - 43 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 0 to 8 percent
Percent of area covered with surface fragments: 9.0 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: About 0 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 6.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B/D

Description of Whitman, Extremely Stony

Setting

Landform: Depressions, drainageways
Landform position (two-dimensional): Toeslope, footslope, backslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 9 inches: fine sandy loam
Bg - 9 to 16 inches: fine sandy loam
Cdg1 - 16 to 22 inches: fine sandy loam
Cdg2 - 22 to 60 inches: fine sandy loam

Properties and qualities

Slope: 0 to 8 percent
Percent of area covered with surface fragments: 9.0 percent
Depth to restrictive feature: 12 to 20 inches to densic material
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: Occasional
Available water storage in profile: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D

Minor Components

Woodbridge, extremely stony

Percent of map unit: 3 percent
Landform: Hills, drumlins, ground moraines
Landform position (two-dimensional): Backslope, footslope, summit
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear

Swansea

Percent of map unit: 2 percent
Landform: Swamps, bogs
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave

13—Walpole sandy loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2svkl
Elevation: 0 to 1,020 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 250 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Walpole and similar soils: 80 percent

Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Walpole

Setting

Landform: Deltas, depressions, outwash terraces, outwash plains, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, talf, dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Sandy glaciofluvial deposits derived from igneous, metamorphic and sedimentary rock

Typical profile

Oe - 0 to 1 inches: mucky peat
A - 1 to 7 inches: sandy loam
Bg - 7 to 21 inches: sandy loam
BC - 21 to 25 inches: gravelly sandy loam
C - 25 to 65 inches: very gravelly sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to very high (0.14 to 14.17 in/hr)
Depth to water table: About 0 to 4 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 6.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D

Minor Components

Sudbury

Percent of map unit: 10 percent
Landform: Terraces, deltas, outwash plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Linear

Scarboro

Percent of map unit: 10 percent
Landform: Outwash plains, outwash terraces, deltas
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave

17—Timakwa and Natchaug soils

Map Unit Setting

National map unit symbol: 9lk2
Elevation: 0 to 1,200 feet
Mean annual precipitation: 43 to 56 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 140 to 185 days
Farmland classification: Not prime farmland

Map Unit Composition

Timakwa and similar soils: 45 percent
Natchaug and similar soils: 40 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Timakwa

Setting

Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Woody organic material over sandy and gravelly glaciofluvial deposits

Typical profile

Oa1 - 0 to 10 inches: muck
Oa2 - 10 to 21 inches: muck
Oa3 - 21 to 24 inches: muck
Oa4 - 24 to 37 inches: muck
2Cg1 - 37 to 47 inches: very gravelly loamy coarse sand
2Cg2 - 47 to 60 inches: gravelly loamy very fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (0.57 to 99.62 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: Rare
Frequency of ponding: Frequent
Available water storage in profile: Very high (about 16.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: A/D

Description of Natchaug

Setting

Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Woody organic material over loamy alluvium and/or loamy glaciofluvial deposits and/or loamy till

Typical profile

Oi1 - 0 to 2 inches: peat
Oi2 - 2 to 4 inches: peat
Oa1 - 4 to 6 inches: muck
Oa2 - 6 to 11 inches: muck
Oa3 - 11 to 18 inches: muck
Oa4 - 18 to 24 inches: muck
2Cg1 - 24 to 33 inches: fine sandy loam
2Cg2 - 33 to 36 inches: fine sandy loam
2Cg3 - 36 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: Rare
Frequency of ponding: Frequent
Available water storage in profile: Very high (about 13.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D

Minor Components

Maybid

Percent of map unit: 3 percent
Landform: Depressions, drainageways, terraces
Down-slope shape: Concave
Across-slope shape: Concave

Catden

Percent of map unit: 3 percent
Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Concave

Saco

Percent of map unit: 3 percent
Landform: Flood plains
Down-slope shape: Concave
Across-slope shape: Concave

Whitman

Percent of map unit: 2 percent
Landform: Depressions, drainageways
Down-slope shape: Concave
Across-slope shape: Concave

Menlo

Percent of map unit: 2 percent
Landform: Depressions, drainageways
Down-slope shape: Concave
Across-slope shape: Concave

Scarboro

Percent of map unit: 2 percent
Landform: Depressions, drainageways, terraces
Down-slope shape: Concave
Across-slope shape: Concave

18—Catden and Freetown soils

Map Unit Setting

National map unit symbol: 9lk3
Elevation: 0 to 1,200 feet
Mean annual precipitation: 43 to 56 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 140 to 185 days
Farmland classification: Not prime farmland

Map Unit Composition

Freetown and similar soils: 40 percent
Catden and similar soils: 40 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Catden

Setting

Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Woody organic material

Typical profile

Oa1 - 0 to 2 inches: muck
Oa2 - 2 to 18 inches: muck
Oa3 - 18 to 47 inches: muck
Oa4 - 47 to 49 inches: muck
Oa5 - 49 to 61 inches: muck

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: Rare
Frequency of ponding: Frequent
Available water storage in profile: Very high (about 23.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: A/D

Description of Freetown

Setting

Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Woody organic material

Typical profile

Oi1 - 0 to 4 inches: peat
Oi2 - 4 to 10 inches: peat
Oa1 - 10 to 22 inches: muck
Oa2 - 22 to 35 inches: muck
Oa3 - 35 to 41 inches: muck
Oa4 - 41 to 55 inches: muck
Oa5 - 55 to 71 inches: muck
Oa6 - 71 to 91 inches: muck

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: Rare
Frequency of ponding: Frequent
Available water storage in profile: Very high (about 23.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: A/D

Minor Components

Timakwa

Percent of map unit: 5 percent
Landform: Depressions

Down-slope shape: Concave
Across-slope shape: Concave

Natchaug
Percent of map unit: 5 percent
Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Concave

Whitman
Percent of map unit: 3 percent
Landform: Depressions, drainageways
Down-slope shape: Concave
Across-slope shape: Concave

Scarboro
Percent of map unit: 2 percent
Landform: Depressions, drainageways, terraces
Down-slope shape: Concave
Across-slope shape: Concave

Saco
Percent of map unit: 2 percent
Landform: Flood plains
Down-slope shape: Concave
Across-slope shape: Concave

Maybid
Percent of map unit: 2 percent
Landform: Depressions, drainageways, terraces
Down-slope shape: Concave
Across-slope shape: Concave

Menlo
Percent of map unit: 1 percent
Landform: Depressions, drainageways
Down-slope shape: Concave
Across-slope shape: Concave

29B—Agawam fine sandy loam, 3 to 8 percent slopes

Map Unit Setting
National map unit symbol: 9lm6
Elevation: 0 to 1,200 feet
Mean annual precipitation: 43 to 54 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 140 to 185 days
Farmland classification: All areas are prime farmland

Map Unit Composition
Agawam and similar soils: 80 percent

Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Agawam

Setting

Landform: Outwash plains, terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Coarse-loamy eolian deposits over sandy and gravelly glaciofluvial deposits derived from granite and/or schist and/or gneiss

Typical profile

Ap - 0 to 8 inches: fine sandy loam
Bw1 - 8 to 14 inches: fine sandy loam
Bw2 - 14 to 24 inches: fine sandy loam
2C - 24 to 60 inches: stratified very gravelly coarse sand to fine sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B

Minor Components

Hinckley

Percent of map unit: 5 percent
Landform: Eskers, kames, outwash plains, terraces
Down-slope shape: Convex
Across-slope shape: Convex

Merrimac

Percent of map unit: 5 percent
Landform: Kames, outwash plains, terraces
Down-slope shape: Linear
Across-slope shape: Linear

Walpole

Percent of map unit: 3 percent
Landform: Depressions on terraces, drainageways on terraces
Down-slope shape: Concave
Across-slope shape: Concave

Ninigret

Percent of map unit: 3 percent
Landform: Outwash plains, terraces

Down-slope shape: Linear
Across-slope shape: Concave

Unnamed, red parent material
Percent of map unit: 2 percent

Scarboro
Percent of map unit: 2 percent
Landform: Depressions, drainageways, terraces
Down-slope shape: Concave
Across-slope shape: Concave

34B—Merrimac sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9lmy
Elevation: 0 to 1,200 feet
Mean annual precipitation: 43 to 54 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 140 to 185 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Merrimac and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Merrimac

Setting

Landform: Kames, outwash plains, terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy and gravelly glaciofluvial deposits derived from granite and/or schist and/or gneiss

Typical profile

Ap - 0 to 9 inches: sandy loam
Bw1 - 9 to 16 inches: sandy loam
Bw2 - 16 to 24 inches: gravelly sandy loam
2C - 24 to 60 inches: stratified very gravelly coarse sand to gravelly sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Available water storage in profile: Low (about 4.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: A

Minor Components

Windsor

Percent of map unit: 5 percent
Landform: Kames, outwash plains, terraces
Down-slope shape: Convex
Across-slope shape: Convex

Agawam

Percent of map unit: 3 percent
Landform: Outwash plains, terraces
Down-slope shape: Linear
Across-slope shape: Linear

Hinckley

Percent of map unit: 3 percent
Landform: Eskers, kames, outwash plains, terraces
Down-slope shape: Convex
Across-slope shape: Convex

Walpole

Percent of map unit: 2 percent
Landform: Depressions on terraces, drainageways on terraces
Down-slope shape: Concave
Across-slope shape: Concave

Scarboro

Percent of map unit: 2 percent
Landform: Depressions, drainageways, terraces
Down-slope shape: Concave
Across-slope shape: Concave

Ninigret

Percent of map unit: 2 percent
Landform: Outwash plains, terraces
Down-slope shape: Linear
Across-slope shape: Concave

Sudbury

Percent of map unit: 2 percent
Landform: Outwash plains, terraces
Down-slope shape: Concave
Across-slope shape: Linear

Unnamed, red parent material

Percent of map unit: 1 percent

38E—Hinckley gravelly sandy loam, 15 to 45 percent slopes

Map Unit Setting

National map unit symbol: 9lnb
Elevation: 0 to 1,200 feet
Mean annual precipitation: 43 to 56 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 140 to 185 days
Farmland classification: Not prime farmland

Map Unit Composition

Hinckley and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hinckley

Setting

Landform: Eskers, kames, outwash plains, terraces
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy and gravelly glaciofluvial deposits derived from granite and/or schist and/or gneiss

Typical profile

Ap - 0 to 8 inches: gravelly sandy loam
Bw1 - 8 to 20 inches: very gravelly loamy sand
Bw2 - 20 to 27 inches: very gravelly sand
C1 - 27 to 42 inches: stratified cobbly coarse sand to extremely gravelly sand
C2 - 42 to 60 inches: stratified cobbly coarse sand to extremely gravelly sand

Properties and qualities

Slope: 15 to 45 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A

Minor Components

Windsor
Percent of map unit: 5 percent
Landform: Kames, outwash plains, terraces
Down-slope shape: Convex
Across-slope shape: Convex

Merrimac
Percent of map unit: 5 percent
Landform: Kames, outwash plains, terraces
Down-slope shape: Linear
Across-slope shape: Linear

Agawam
Percent of map unit: 3 percent
Landform: Outwash plains, terraces
Down-slope shape: Linear
Across-slope shape: Linear

Sudbury
Percent of map unit: 2 percent
Landform: Outwash plains, terraces
Down-slope shape: Concave
Across-slope shape: Linear

Rock outcrop
Percent of map unit: 1 percent

Unnamed, red parent material
Percent of map unit: 1 percent

Walpole
Percent of map unit: 1 percent
Landform: Depressions on terraces, drainageways on terraces
Down-slope shape: Concave
Across-slope shape: Concave

Scarboro
Percent of map unit: 1 percent
Landform: Depressions, drainageways, terraces
Down-slope shape: Concave
Across-slope shape: Concave

Unnamed, gravelly silt loam solum
Percent of map unit: 1 percent

45B—Woodbridge fine sandy loam, 3 to 8 percent slopes

Map Unit Setting
National map unit symbol: 2t2ql
Elevation: 0 to 1,470 feet

Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Woodbridge, fine sandy loam, and similar soils: 82 percent
Minor components: 18 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Woodbridge, Fine Sandy Loam

Setting

Landform: Hills, drumlins, ground moraines
Landform position (two-dimensional): Backslope, footslope, summit
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Ap - 0 to 7 inches: fine sandy loam
Bw1 - 7 to 18 inches: fine sandy loam
Bw2 - 18 to 30 inches: fine sandy loam
Cd - 30 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 20 to 39 inches to densic material
Natural drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D

Minor Components

Paxton

Percent of map unit: 10 percent
Landform: Hills, ground moraines, drumlins
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Nose slope, crest, side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex

Ridgebury

Percent of map unit: 8 percent

Landform: Drainageways, hills, ground moraines, depressions
Landform position (two-dimensional): Backslope, footslope, toeslope
Landform position (three-dimensional): Head slope, base slope, dip
Down-slope shape: Concave
Across-slope shape: Concave

73C—Charlton-Chatfield complex, 3 to 15 percent slopes, very rocky

Map Unit Setting

National map unit symbol: 9lqk
Elevation: 0 to 1,200 feet
Mean annual precipitation: 43 to 56 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 140 to 185 days
Farmland classification: Not prime farmland

Map Unit Composition

Charlton and similar soils: 45 percent
Chatfield and similar soils: 30 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Charlton

Setting

Landform: Hills
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Coarse-loamy melt-out till derived from granite and/or schist and/or gneiss

Typical profile

Ap - 0 to 4 inches: fine sandy loam
Bw1 - 4 to 7 inches: fine sandy loam
Bw2 - 7 to 19 inches: fine sandy loam
Bw3 - 19 to 27 inches: gravelly fine sandy loam
C - 27 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 3 to 15 percent
Percent of area covered with surface fragments: 1.6 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B

Description of Chatfield

Setting

Landform: Hills, ridges
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Coarse-loamy melt-out till derived from granite and/or schist and/or gneiss

Typical profile

Oa - 0 to 1 inches: highly decomposed plant material
A - 1 to 6 inches: gravelly fine sandy loam
Bw1 - 6 to 15 inches: gravelly fine sandy loam
Bw2 - 15 to 29 inches: gravelly fine sandy loam
2R - 29 to 80 inches: unweathered bedrock

Properties and qualities

Slope: 3 to 15 percent
Percent of area covered with surface fragments: 1.6 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Low to high (0.01 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B

Minor Components

Rock outcrop

Percent of map unit: 6 percent

Sutton

Percent of map unit: 5 percent
Landform: Depressions, drainageways
Down-slope shape: Concave
Across-slope shape: Linear

Leicester

Percent of map unit: 5 percent
Landform: Depressions, drainageways
Down-slope shape: Linear
Across-slope shape: Concave

Hollis

Percent of map unit: 5 percent

Landform: Hills, ridges
Down-slope shape: Convex
Across-slope shape: Convex

Unnamed, sandy subsoil
Percent of map unit: 2 percent

Unnamed, red parent material
Percent of map unit: 2 percent

73E—Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky

Map Unit Setting
National map unit symbol: 9lql
Elevation: 0 to 1,200 feet
Mean annual precipitation: 43 to 56 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 140 to 185 days
Farmland classification: Not prime farmland

Map Unit Composition
Charlton and similar soils: 45 percent
Chatfield and similar soils: 30 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Charlton

Setting
Landform: Hills
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Coarse-loamy melt-out till derived from granite and/or schist and/or gneiss

Typical profile
Ap - 0 to 4 inches: fine sandy loam
Bw1 - 4 to 7 inches: fine sandy loam
Bw2 - 7 to 19 inches: fine sandy loam
Bw3 - 19 to 27 inches: gravelly fine sandy loam
C - 27 to 65 inches: gravelly fine sandy loam

Properties and qualities
Slope: 15 to 45 percent
Percent of area covered with surface fragments: 1.6 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)

Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B

Description of Chatfield

Setting

Landform: Hills, ridges
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Coarse-loamy melt-out till derived from granite and/or schist and/or gneiss

Typical profile

Oa - 0 to 1 inches: highly decomposed plant material
A - 1 to 6 inches: gravelly fine sandy loam
Bw1 - 6 to 15 inches: gravelly fine sandy loam
Bw2 - 15 to 29 inches: gravelly fine sandy loam
2R - 29 to 80 inches: unweathered bedrock

Properties and qualities

Slope: 15 to 45 percent
Percent of area covered with surface fragments: 1.6 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to high (0.01 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B

Minor Components

Rock outcrop

Percent of map unit: 10 percent

Leicester

Percent of map unit: 5 percent
Landform: Depressions, drainageways
Down-slope shape: Linear
Across-slope shape: Concave

Sutton

Percent of map unit: 5 percent
Landform: Depressions, drainageways

Down-slope shape: Concave
Across-slope shape: Linear

Hollis
Percent of map unit: 3 percent
Landform: Hills, ridges
Down-slope shape: Convex
Across-slope shape: Convex

Unnamed, sandy subsoil
Percent of map unit: 1 percent

Unnamed, red parent material
Percent of map unit: 1 percent

75C—Hollis-Chatfield-Rock outcrop complex, 3 to 15 percent slopes

Map Unit Setting
National map unit symbol: 9lqn
Elevation: 0 to 1,200 feet
Mean annual precipitation: 43 to 56 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 140 to 185 days
Farmland classification: Not prime farmland

Map Unit Composition
Hollis and similar soils: 35 percent
Chatfield and similar soils: 30 percent
Rock outcrop: 15 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hollis

Setting
Landform: Hills, ridges
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy melt-out till derived from granite and/or schist and/or gneiss

Typical profile
Oa - 0 to 1 inches: highly decomposed plant material
A - 1 to 6 inches: gravelly fine sandy loam
Bw1 - 6 to 9 inches: channery fine sandy loam
Bw2 - 9 to 15 inches: gravelly fine sandy loam
2R - 15 to 80 inches: bedrock

Properties and qualities
Slope: 3 to 15 percent
Percent of area covered with surface fragments: 9.0 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock

Natural drainage class: Somewhat excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Low to high (0.01 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 1.8 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D

Description of Chatfield

Setting
Landform: Hills, ridges
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Coarse-loamy melt-out till derived from granite and/or schist and/or gneiss

Typical profile
Oa - 0 to 1 inches: highly decomposed plant material
A - 1 to 6 inches: gravelly fine sandy loam
Bw1 - 6 to 15 inches: gravelly fine sandy loam
Bw2 - 15 to 29 inches: gravelly fine sandy loam
2R - 29 to 80 inches: unweathered bedrock

Properties and qualities
Slope: 3 to 15 percent
Percent of area covered with surface fragments: 1.6 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Low to high (0.01 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.3 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B

Description of Rock Outcrop

Properties and qualities
Slope: 3 to 15 percent
Depth to restrictive feature: 0 inches to lithic bedrock
Runoff class: Very high

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8

Hydrologic Soil Group: D

Minor Components

Charlton
Percent of map unit: 7 percent
Landform: Hills
Down-slope shape: Linear
Across-slope shape: Linear

Sutton
Percent of map unit: 5 percent
Landform: Depressions, drainageways
Down-slope shape: Concave
Across-slope shape: Linear

Leicester
Percent of map unit: 5 percent
Landform: Depressions, drainageways
Down-slope shape: Linear
Across-slope shape: Concave

Brimfield
Percent of map unit: 1 percent
Landform: Hills, ridges
Down-slope shape: Convex
Across-slope shape: Convex

Unnamed, sandy subsoil
Percent of map unit: 1 percent

Unnamed, red parent material
Percent of map unit: 1 percent

75E—Hollis-Chatfield-Rock outcrop complex, 15 to 45 percent slopes

Map Unit Setting
National map unit symbol: 9lqp
Elevation: 0 to 1,200 feet
Mean annual precipitation: 43 to 56 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 140 to 185 days
Farmland classification: Not prime farmland

Map Unit Composition
Hollis and similar soils: 35 percent
Chatfield and similar soils: 30 percent
Rock outcrop: 15 percent
Minor components: 20 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hollis

Setting

Landform: Hills, ridges
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy melt-out till derived from granite and/or schist and/or gneiss

Typical profile

Oa - 0 to 1 inches: highly decomposed plant material
A - 1 to 6 inches: gravelly fine sandy loam
Bw1 - 6 to 9 inches: channery fine sandy loam
Bw2 - 9 to 15 inches: gravelly fine sandy loam
2R - 15 to 80 inches: bedrock

Properties and qualities

Slope: 15 to 45 percent
Percent of area covered with surface fragments: 9.0 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Somewhat excessively drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to high (0.01 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D

Description of Chatfield

Setting

Landform: Hills, ridges
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Coarse-loamy melt-out till derived from granite and/or schist and/or gneiss

Typical profile

Oa - 0 to 1 inches: highly decomposed plant material
A - 1 to 6 inches: gravelly fine sandy loam
Bw1 - 6 to 15 inches: gravelly fine sandy loam
Bw2 - 15 to 29 inches: gravelly fine sandy loam
2R - 29 to 80 inches: unweathered bedrock

Properties and qualities

Slope: 15 to 45 percent
Percent of area covered with surface fragments: 1.6 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Low to high (0.01 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B

Description of Rock Outcrop

Properties and qualities

Slope: 15 to 45 percent
Depth to restrictive feature: 0 inches to lithic bedrock
Runoff class: Very high

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D

Minor Components

Charlton

Percent of map unit: 7 percent
Landform: Hills
Down-slope shape: Linear
Across-slope shape: Linear

Sutton

Percent of map unit: 5 percent
Landform: Depressions, drainageways
Down-slope shape: Concave
Across-slope shape: Linear

Leicester

Percent of map unit: 5 percent
Landform: Depressions, drainageways
Down-slope shape: Linear
Across-slope shape: Concave

Unnamed, sandy subsoil

Percent of map unit: 1 percent

Unnamed, red parent material

Percent of map unit: 1 percent

Brimfield

Percent of map unit: 1 percent
Landform: Hills, ridges
Down-slope shape: Convex
Across-slope shape: Convex

302—Dumps

Map Unit Setting

National map unit symbol: 9lmb
Elevation: 0 to 1,200 feet
Mean annual precipitation: 37 to 56 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 140 to 185 days
Farmland classification: Not prime farmland

Map Unit Composition

Dumps: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dumps

Typical profile

C - 0 to 65 inches: variable

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8

Minor Components

Udorthents

Percent of map unit: 2 percent

Westbrook

Percent of map unit: 1 percent
Landform: Salt marshes, tidal marshes
Down-slope shape: Concave
Across-slope shape: Concave

Rock outcrop

Percent of map unit: 1 percent

Unnamed, frequently flooded

Percent of map unit: 1 percent
Landform: Drainageways

306—Udorthents-Urban land complex

Map Unit Setting

National map unit symbol: 9lmg
Elevation: 0 to 2,000 feet
Mean annual precipitation: 43 to 56 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 120 to 185 days
Farmland classification: Not prime farmland

Map Unit Composition

Udorthents and similar soils: 50 percent
Urban land: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents

Setting

Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Drift

Typical profile

A - 0 to 5 inches: loam
C1 - 5 to 21 inches: gravelly loam
C2 - 21 to 80 inches: very gravelly sandy loam

Properties and qualities

Slope: 0 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 1.98 in/hr)
Depth to water table: About 54 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B

Description of Urban Land

Typical profile

H - 0 to 6 inches: material

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D

Minor Components

Unnamed, undisturbed soils

Percent of map unit: 8 percent

Udorthents, wet substratum

Percent of map unit: 5 percent
Down-slope shape: Convex
Across-slope shape: Linear

Rock outcrop

Percent of map unit: 2 percent

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Physical Properties

Soil Physical Properties are measured or inferred from direct observations in the field or laboratory. Examples of soil physical properties include percent clay, organic matter, saturated hydraulic conductivity, available water capacity, and bulk density.

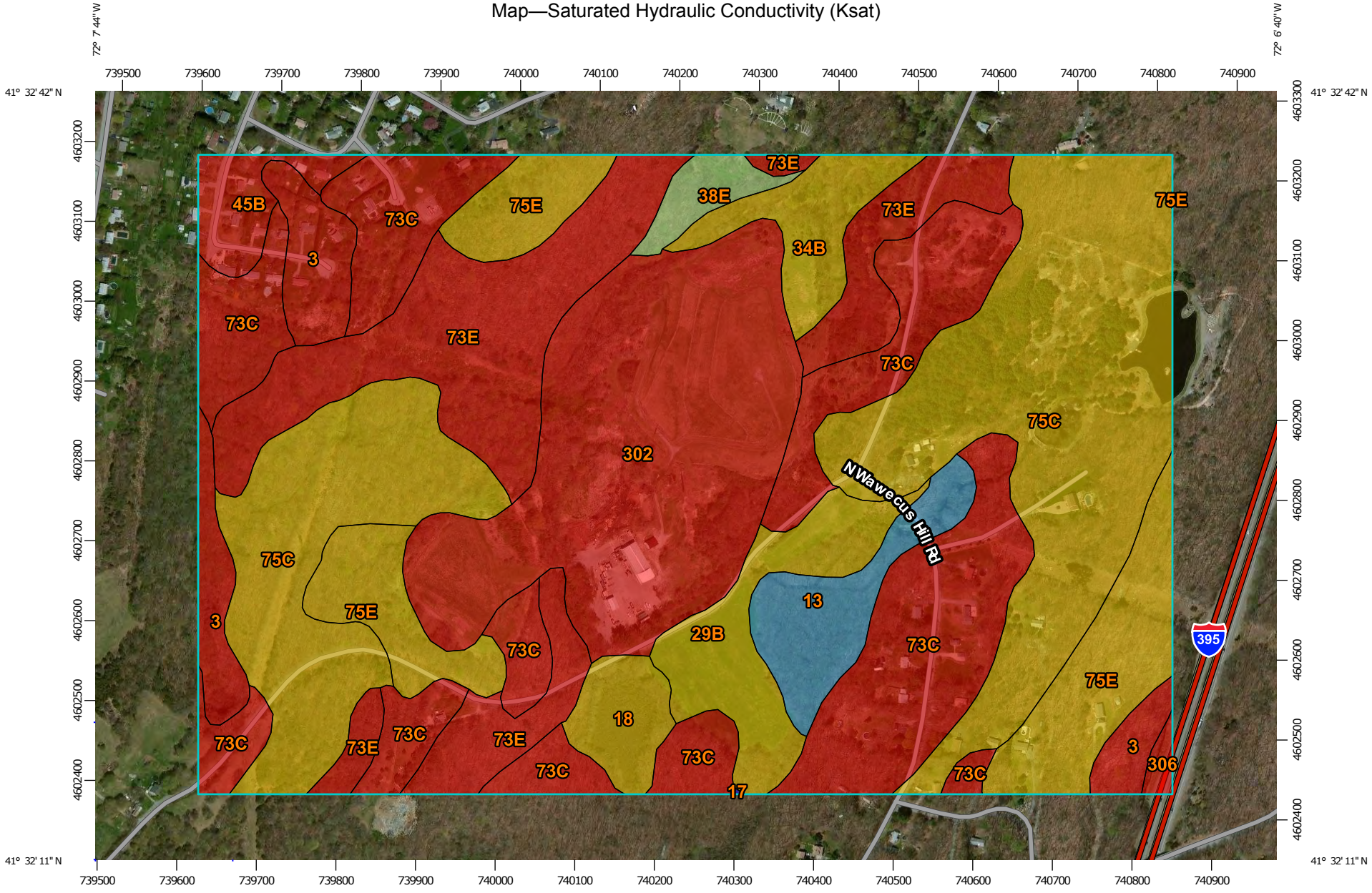
Saturated Hydraulic Conductivity (Ksat)

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity is considered in the design of soil drainage systems and septic tank absorption fields.

For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

The numeric Ksat values have been grouped according to standard Ksat class limits.

Custom Soil Resource Report
Map—Saturated Hydraulic Conductivity (Ksat)



Map Scale: 1:6,780 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 100 200 400 600

Feet: 0 300 600 1200 1800

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- <= 10.0000
- > 10.0000 and <= 28.0000
- > 28.0000 and <= 92.0000
- > 92.0000 and <= 100.0000
- > 100.0000 and <= 354.0000
- Not rated or not available

Soil Rating Lines

- <= 10.0000
- > 10.0000 and <= 28.0000
- > 28.0000 and <= 92.0000
- > 92.0000 and <= 100.0000
- > 100.0000 and <= 354.0000
- Not rated or not available

Soil Rating Points

- <= 10.0000
- > 10.0000 and <= 28.0000
- > 28.0000 and <= 92.0000
- > 92.0000 and <= 100.0000
- > 100.0000 and <= 354.0000
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut
Survey Area Data: Version 13, Oct 28, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 28, 2011—May 12, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Saturated Hydraulic Conductivity (Ksat)

Saturated Hydraulic Conductivity (Ksat)— Summary by Map Unit — State of Connecticut (CT600)				
Map unit symbol	**Map unit name**	**Rating (micrometers per second)**	**Acres in AOI**	**Percent of AOI**
3	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	5.5000	9.4	3.9%
13	Walpole sandy loam, 0 to 3 percent slopes	100.0000	7.3	3.0%
17	Timakwa and Natchaug soils	354.0000	0.0	0.0%
18	Catden and Freetown soils	23.0000	4.1	1.7%
29B	Agawam fine sandy loam, 3 to 8 percent slopes	28.0000	9.7	4.0%
34B	Merrimac sandy loam, 3 to 8 percent slopes	28.0000	6.1	2.5%
38E	Hinckley gravelly sandy loam, 15 to 45 percent slopes	92.0000	2.5	1.0%
45B	Woodbridge fine sandy loam, 3 to 8 percent slopes	5.5000	3.7	1.5%
73C	Charlton-Chatfield complex, 3 to 15 percent slopes, very rocky	10.0000	47.4	19.5%
73E	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky	10.0000	33.0	13.6%
75C	Hollis-Chatfield-Rock outcrop complex, 3 to 15 percent slopes	28.0000	60.5	24.9%
75E	Hollis-Chatfield-Rock outcrop complex, 15 to 45 percent slopes	28.0000	19.7	8.1%
302	Dumps	10.0000	39.0	16.1%
306	Udorthents-Urban land complex	10.0000	0.6	0.3%
Totals for Area of Interest			**243.1**	**100.0%**

Rating Options—Saturated Hydraulic Conductivity (Ksat)

Units of Measure: micrometers per second

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Fastest

Interpret Nulls as Zero: No

Layer Options (Horizon Aggregation Method): Surface Layer (Not applicable)

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

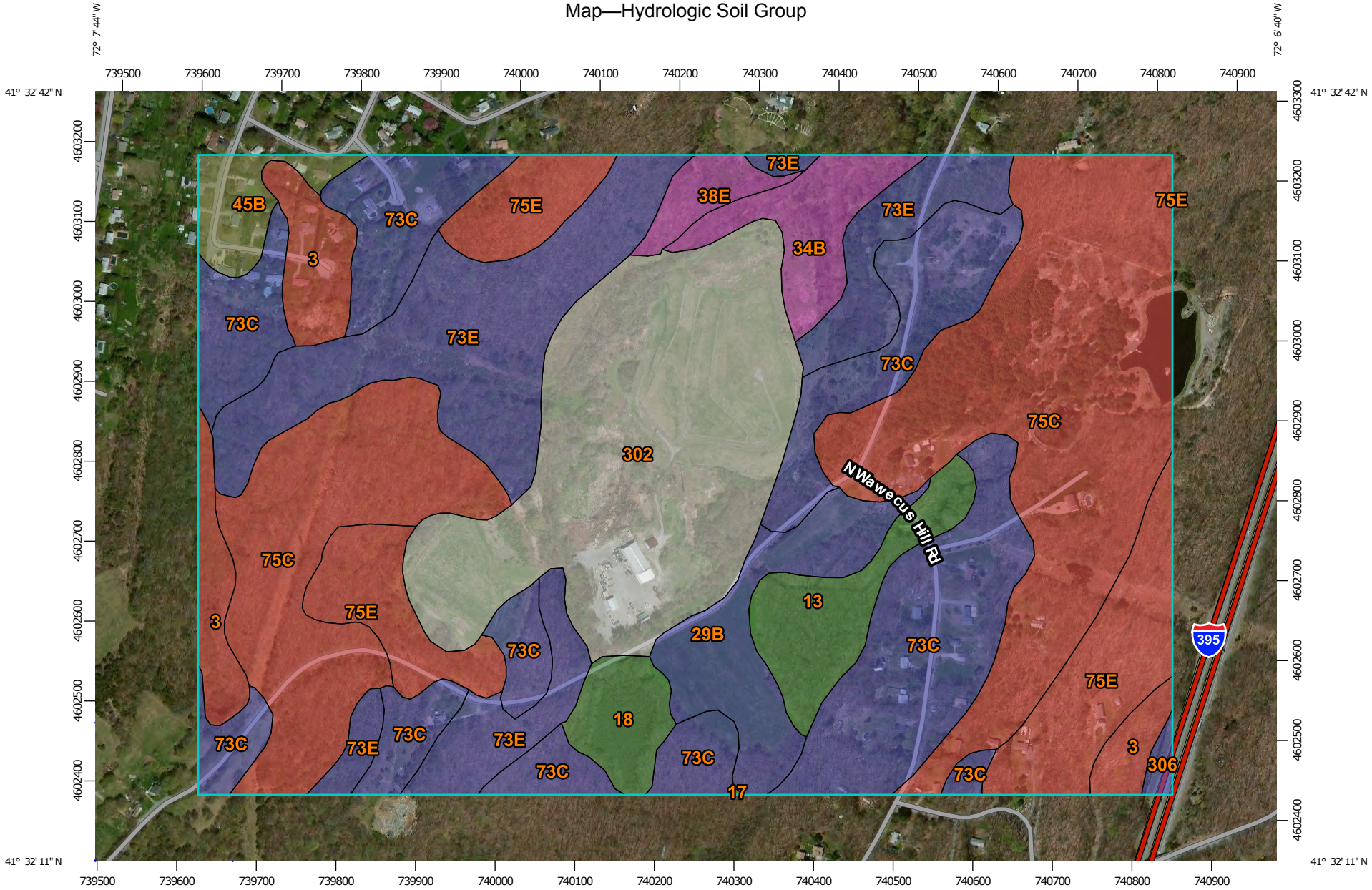
Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Custom Soil Resource Report
Map—Hydrologic Soil Group



Map Scale: 1:6,780 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 100 200 400 600

Feet: 0 300 600 1200 1800

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut
Survey Area Data: Version 13, Oct 28, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 28, 2011—May 12, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — State of Connecticut (CT600)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
3	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	D	9.4	3.9%
13	Walpole sandy loam, 0 to 3 percent slopes	A/D	7.3	3.0%
17	Timakwa and Natchaug soils	A/D	0.0	0.0%
18	Catden and Freetown soils	A/D	4.1	1.7%
29B	Agawam fine sandy loam, 3 to 8 percent slopes	B	9.7	4.0%
34B	Merrimac sandy loam, 3 to 8 percent slopes	A	6.1	2.5%
38E	Hinckley gravelly sandy loam, 15 to 45 percent slopes	A	2.5	1.0%
45B	Woodbridge fine sandy loam, 3 to 8 percent slopes	C/D	3.7	1.5%
73C	Charlton-Chatfield complex, 3 to 15 percent slopes, very rocky	B	47.4	19.5%
73E	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky	B	33.0	13.6%
75C	Hollis-Chatfield-Rock outcrop complex, 3 to 15 percent slopes	D	60.5	24.9%
75E	Hollis-Chatfield-Rock outcrop complex, 15 to 45 percent slopes	D	19.7	8.1%
302	Dumps		39.0	16.1%
306	Udorthents-Urban land complex	B	0.6	0.3%
Totals for Area of Interest			**243.1**	**100.0%**

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

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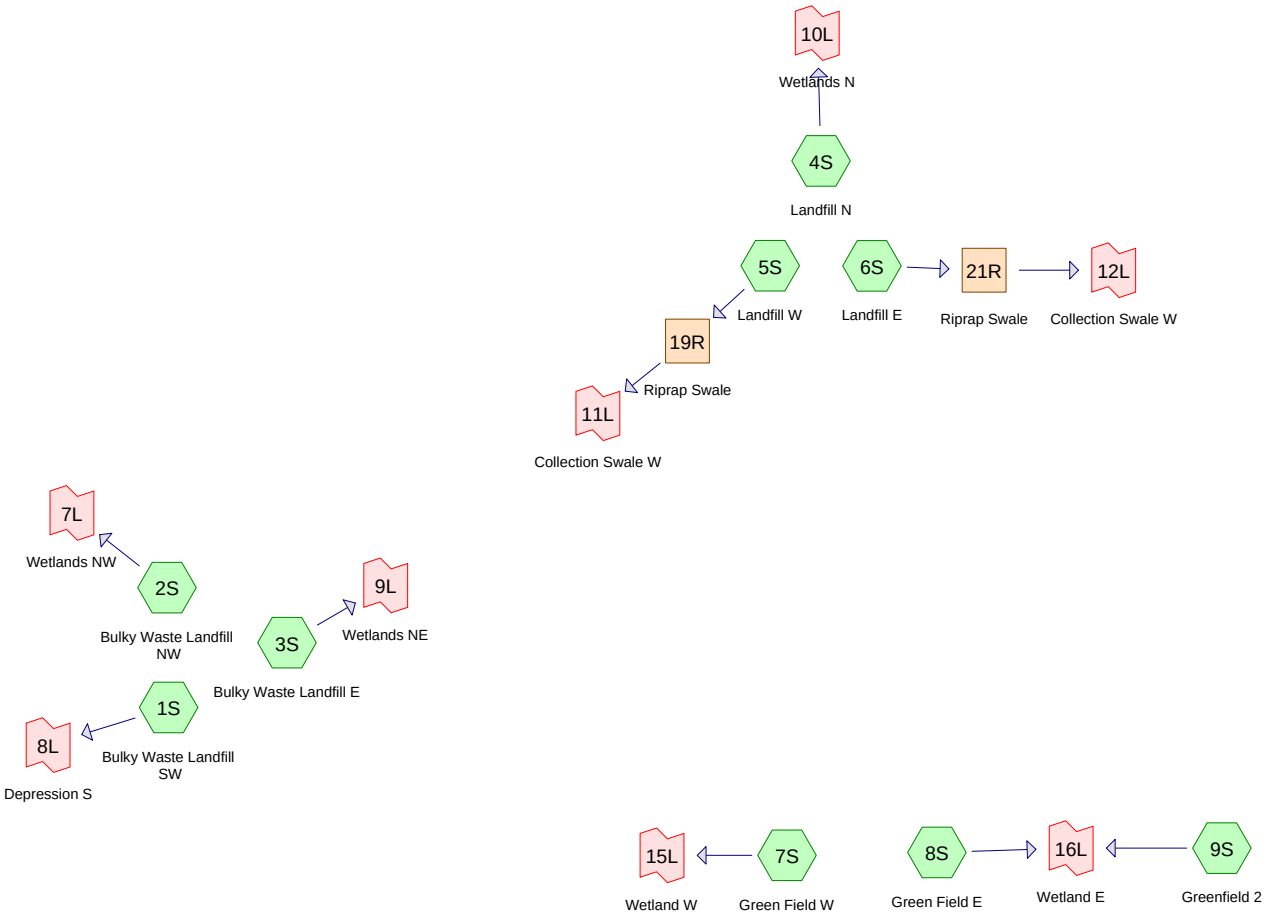
Appendix B
HydroCAD Modeling Results

Existing Conditions Results



Subcat Reach Pond Link

Routing Diagram for Rogers Road Existing Conditions
Prepared by Boundaries LLC - DCM, Printed 8/12/2015

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
266,021	61	>75% Grass cover, Good, HSG B (7S, 8S, 9S)
282,399	74	>75% Grass cover, Good, HSG C (1S, 2S, 3S, 4S, 5S, 6S, 7S)
16,596	80	>75% Grass cover, Good, HSG D (7S, 8S, 9S)
3,920	89	Gravel roads, HSG C (6S)
6,578	55	Woods, Good, HSG B (9S)
3,964	77	Woods, Good, HSG D (9S)
579,479	**68**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
272,598	HSG B	7S, 8S, 9S
286,320	HSG C	1S, 2S, 3S, 4S, 5S, 6S, 7S
20,560	HSG D	7S, 8S, 9S
0	Other	
579,479		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Sub Num
0	266,021	282,399	16,596	0	565,017	>75% Grass cover, Good	
0	0	3,920	0	0	3,920	Gravel roads	
0	6,578	0	3,964	0	10,542	Woods, Good	
0	**272,598**	**286,320**	**20,560**	**0**	**579,479**	**TOTAL AREA**	

Time span=0.00-24.00 hrs, dt=0.050 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Bulky Waste Landfill SW Runoff Area=0.952 ac 0.00% Impervious Runoff Depth>1.17"
Flow Length=239' Tc=13.7 min CN=74 Runoff=1.0 cfs 4,035 cf

Subcatchment 2S: Bulky Waste Landfill NW Runoff Area=0.705 ac 0.00% Impervious Runoff Depth>1.17"
Flow Length=179' Tc=14.1 min CN=74 Runoff=0.7 cfs 2,988 cf

Subcatchment 3S: Bulky Waste Landfill E Runoff Area=1.092 ac 0.00% Impervious Runoff Depth>1.17"
Flow Length=204' Tc=14.6 min CN=74 Runoff=1.1 cfs 4,628 cf

Subcatchment 4S: Landfill N Runoff Area=0.618 ac 0.00% Impervious Runoff Depth>1.17"
Flow Length=222' Tc=14.3 min CN=74 Runoff=0.6 cfs 2,619 cf

Subcatchment 5S: Landfill W Runoff Area=1.960 ac 0.00% Impervious Runoff Depth>1.17"
Flow Length=752' Tc=15.2 min CN=74 Runoff=1.9 cfs 8,304 cf

Subcatchment 6S: Landfill E Runoff Area=1.224 ac 0.00% Impervious Runoff Depth>1.23"
Flow Length=459' Tc=10.0 min CN=75 Runoff=1.5 cfs 5,460 cf

Subcatchment 7S: Green Field W Runoff Area=2.145 ac 0.00% Impervious Runoff Depth>0.56"
Flow Length=472' Tc=24.7 min CN=62 Runoff=0.7 cfs 4,395 cf

Subcatchment 8S: Green Field E Runoff Area=2.890 ac 0.00% Impervious Runoff Depth>0.57"
Flow Length=305' Tc=20.6 min CN=62 Runoff=0.9 cfs 5,931 cf

Subcatchment 9S: Greenfield 2 Runoff Area=1.717 ac 0.00% Impervious Runoff Depth>0.61"
Flow Length=247' Tc=19.4 min CN=63 Runoff=0.6 cfs 3,787 cf

Reach 19R: Riprap Swale Avg. Flow Depth=0.18' Max Vel=2.61 fps Inflow=1.9 cfs 8,304 cf
n=0.030 L=657.0' S=0.0383 '/' Capacity=8.6 cfs Outflow=1.8 cfs 8,265 cf

Reach 21R: Riprap Swale Avg. Flow Depth=0.16' Max Vel=2.54 fps Inflow=1.5 cfs 5,460 cf
n=0.030 L=527.0' S=0.0372 '/' Capacity=34.5 cfs Outflow=1.4 cfs 5,437 cf

Link 7L: Wetlands NW Inflow=0.7 cfs 2,988 cf
Primary=0.7 cfs 2,988 cf

Link 8L: Depression S Inflow=1.0 cfs 4,035 cf
Primary=1.0 cfs 4,035 cf

Link 9L: Wetlands NE Inflow=1.1 cfs 4,628 cf
Primary=1.1 cfs 4,628 cf

Link 10L: Wetlands N Inflow=0.6 cfs 2,619 cf
Primary=0.6 cfs 2,619 cf

Link 11L: Collection Swale W Inflow=1.8 cfs 8,265 cf
Primary=1.8 cfs 8,265 cf

Link 12L: Collection Swale W Inflow=1.4 cfs 5,437 cf
Primary=1.4 cfs 5,437 cf

Link 15L: Wetland W Inflow=0.7 cfs 4,395 cf
Primary=0.7 cfs 4,395 cf

Link 16L: Wetland E Inflow=1.6 cfs 9,719 cf
Primary=1.6 cfs 9,719 cf

Total Runoff Area = 579,479 sf Runoff Volume = 42,148 cf Average Runoff Depth = 0.87"
100.00% Pervious = 579,479 sf 0.00% Impervious = 0 sf

Summary for Subcatchment 1S: Bulky Waste Landfill SW

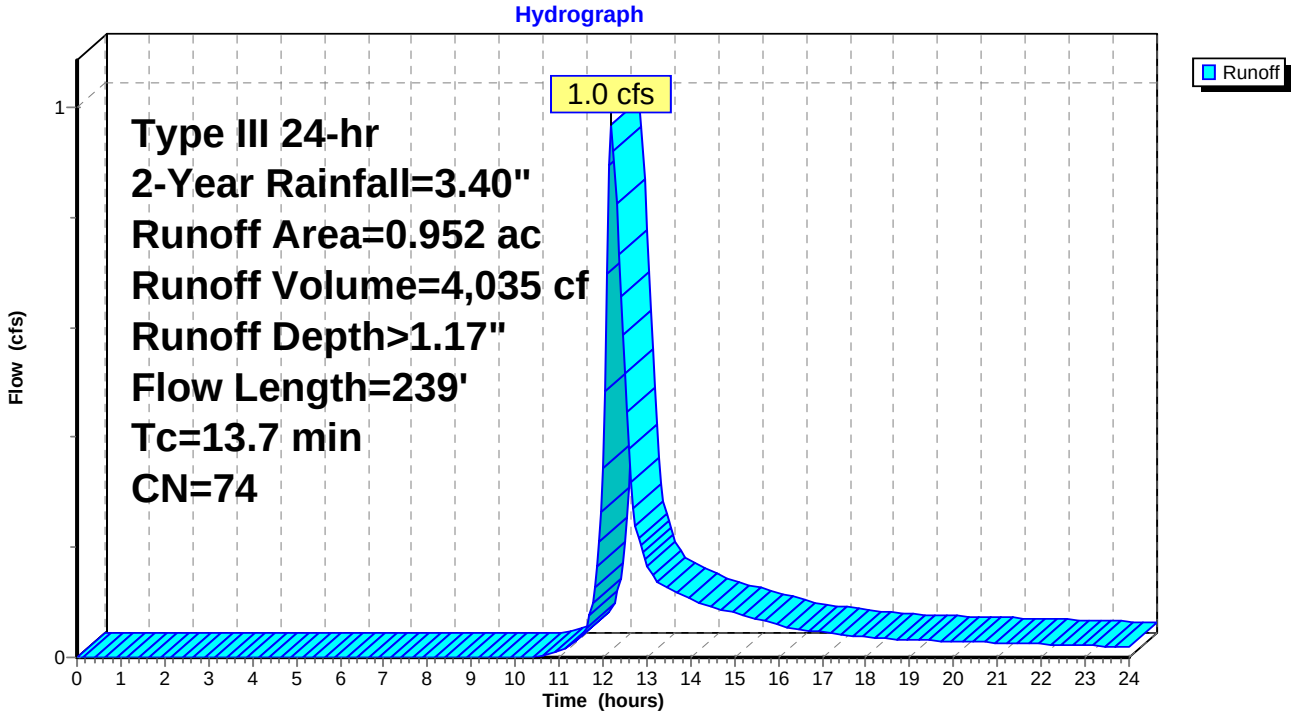
Runoff = 1.0 cfs @ 12.21 hrs, Volume= 4,035 cf, Depth> 1.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 2-Year Rainfall=3.40"

Area (ac)	CN	Description
0.952	74	>75% Grass cover, Good, HSG C
0.952		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.6	100	0.0251	0.13		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
0.5	66	0.1137	2.36		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	46	0.1957	3.10		**Shallow Concentrated Flow, Lanfill Cap** Short Grass Pasture Kv= 7.0 fps
0.4	27	0.0050	1.14		**Shallow Concentrated Flow, Access Drive** Unpaved Kv= 16.1 fps
13.7	239	Total			

Subcatchment 1S: Bulky Waste Landfill SW



Summary for Subcatchment 2S: Bulky Waste Landfill NW

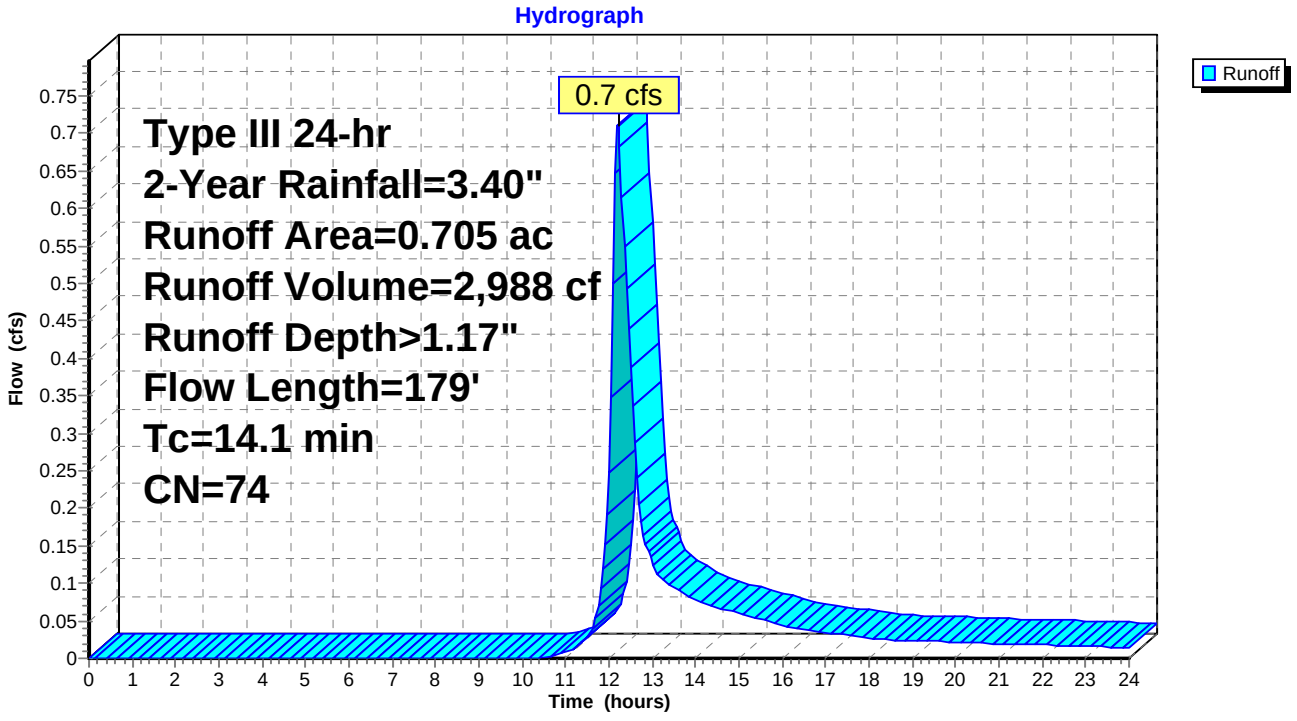
Runoff = 0.7 cfs @ 12.21 hrs, Volume= 2,988 cf, Depth> 1.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 2-Year Rainfall=3.40"

Area (ac)	CN	Description
0.705	74	>75% Grass cover, Good, HSG C
0.705		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0212	0.12		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
0.6	79	0.0886	2.08		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
14.1	179	Total			

Subcatchment 2S: Bulky Waste Landfill NW



Summary for Subcatchment 3S: Bulky Waste Landfill E

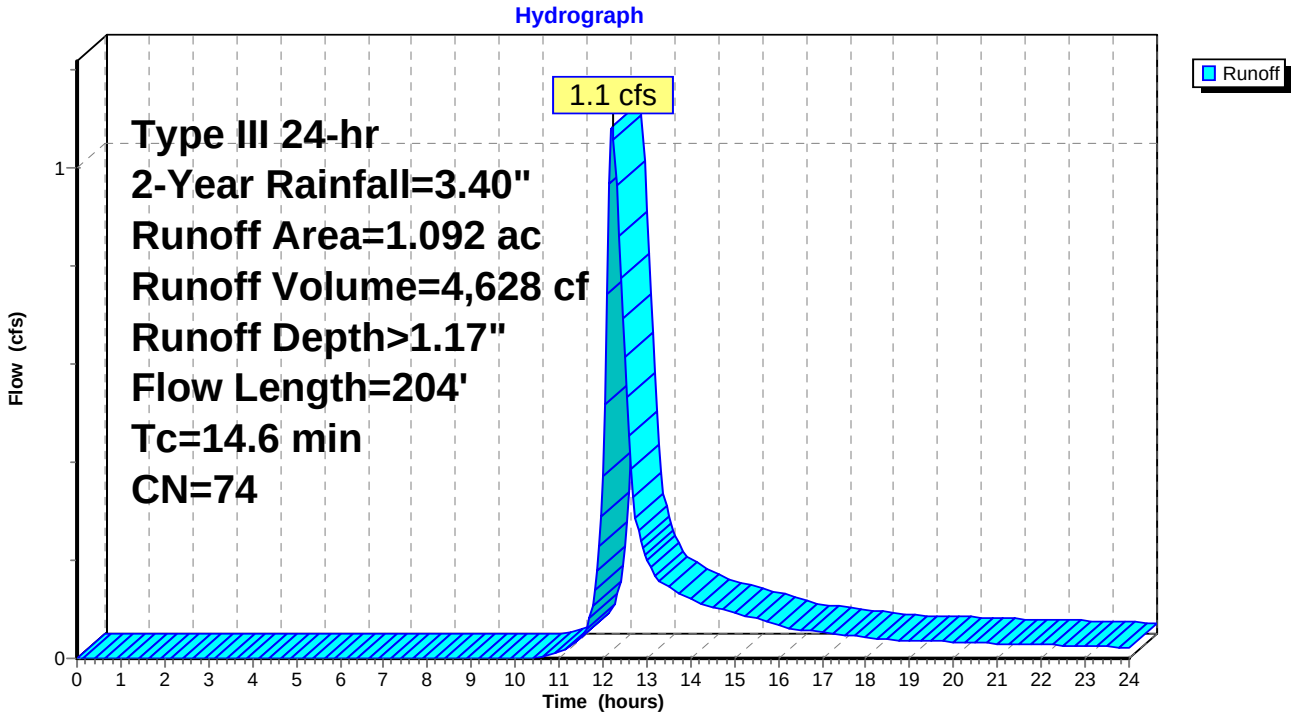
Runoff = 1.1 cfs @ 12.22 hrs, Volume= 4,628 cf, Depth> 1.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 2-Year Rainfall=3.40"

Area (ac)	CN	Description
1.092	74	>75% Grass cover, Good, HSG C
1.092		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0212	0.12		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
1.0	80	0.0375	1.36		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.1	24	0.1667	2.86		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
14.6	204	Total			

Subcatchment 3S: Bulky Waste Landfill E



Summary for Subcatchment 4S: Landfill N

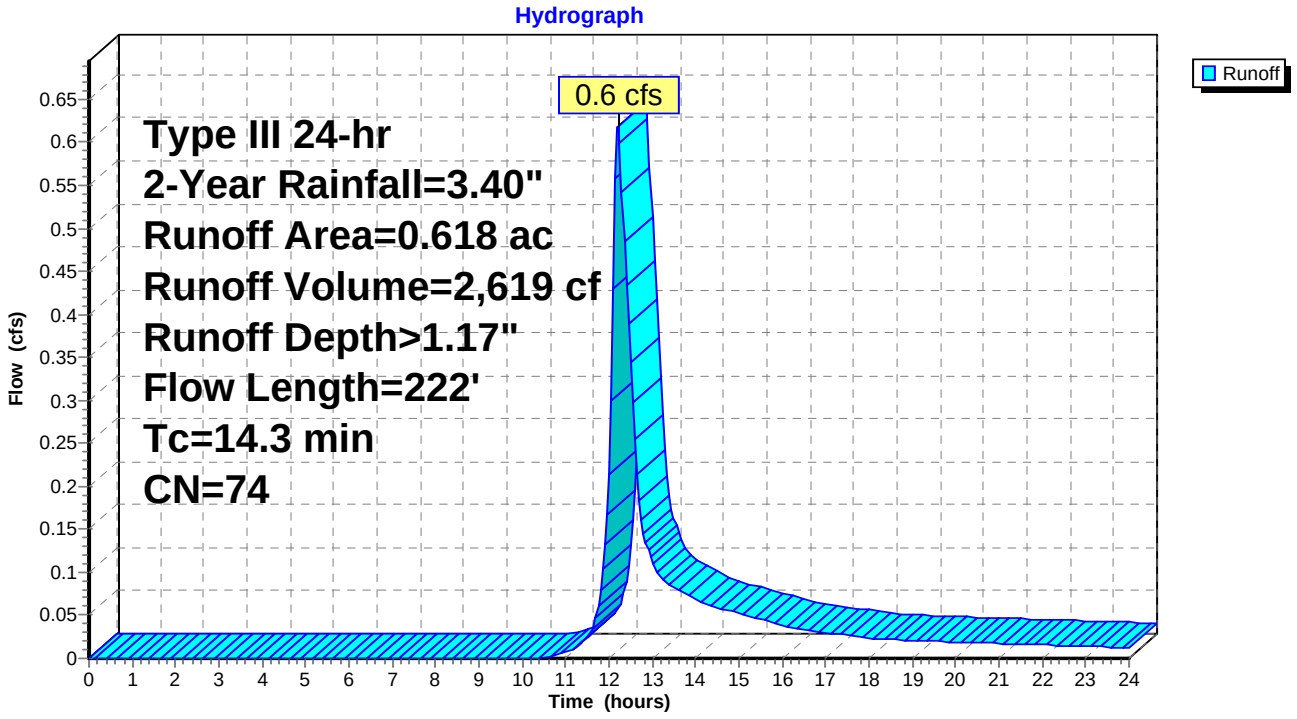
Runoff = 0.6 cfs @ 12.21 hrs, Volume= 2,619 cf, Depth> 1.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 2-Year Rainfall=3.40"

Area (ac)	CN	Description
0.618	74	>75% Grass cover, Good, HSG C
0.618		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	100	0.0230	0.13		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
1.0	81	0.0371	1.35		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	41	0.1707	2.89		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
14.3	222	Total			

Subcatchment 4S: Landfill N



Summary for Subcatchment 5S: Landfill W

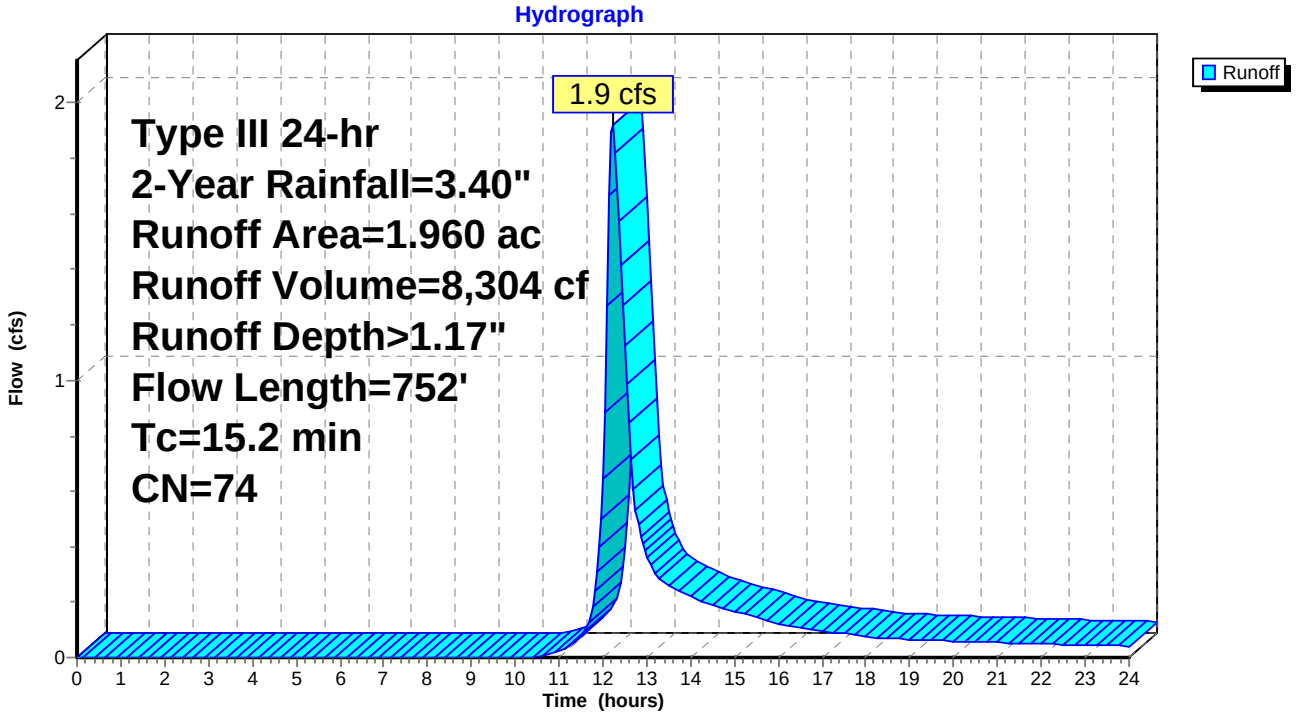
Runoff = 1.9 cfs @ 12.22 hrs, Volume= 8,304 cf, Depth> 1.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 2-Year Rainfall=3.40"

Area (ac)	CN	Description
1.960	74	>75% Grass cover, Good, HSG C
1.960		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.3	100	0.0220	0.13		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
0.3	37	0.0811	1.99		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.3	58	0.1897	3.05		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
1.3	520	0.0200	6.71	50.33	**Channel Flow, Riprap Swale** Area= 7.5 sf Perim= 8.0' r= 0.94' n= 0.030 Rubble masonry, cemented
0.0	37	0.2160	22.05	165.39	**Channel Flow, Riprap Swale** Area= 7.5 sf Perim= 8.0' r= 0.94' n= 0.030 Rubble masonry, cemented
15.2	752	Total			

Subcatchment 5S: Landfill W



Summary for Subcatchment 6S: Landfill E

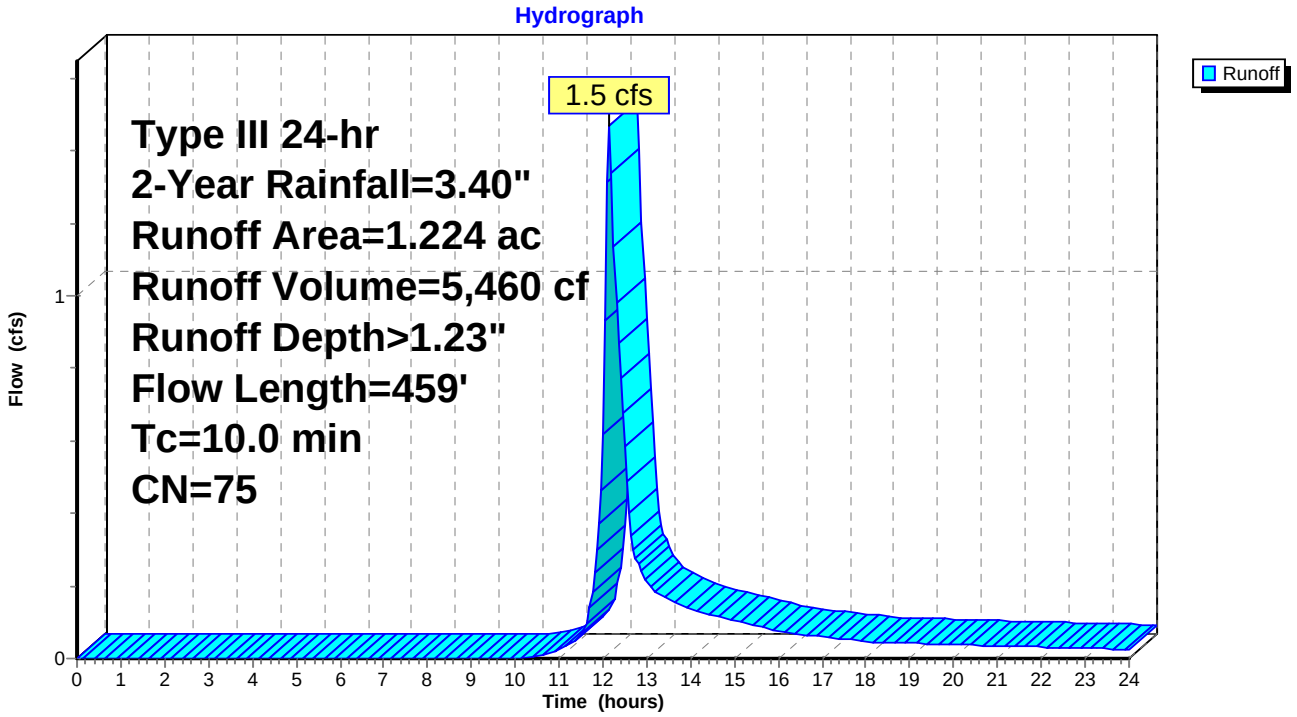
Runoff = 1.5 cfs @ 12.15 hrs, Volume= 5,460 cf, Depth> 1.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 2-Year Rainfall=3.40"

Area (ac)	CN	Description
1.134	74	>75% Grass cover, Good, HSG C
0.090	89	Gravel roads, HSG C
1.224	75	Weighted Average
1.224		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.5	40	0.0543	0.15		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
1.0	60	0.0117	1.03		**Sheet Flow, Gravel** Smooth surfaces n= 0.011 P2= 3.40"
0.5	86	0.0384	3.15		**Shallow Concentrated Flow, Gravel** Unpaved Kv= 16.1 fps
0.7	76	0.0658	1.80		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	49	0.2245	3.32		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	148	0.1081	15.60	117.00	**Channel Flow, Riprap Swale** Area= 7.5 sf Perim= 8.0' r= 0.94' n= 0.030 Rubble masonry, cemented
7.1	459	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 6S: Landfill E



Summary for Subcatchment 7S: Green Field W

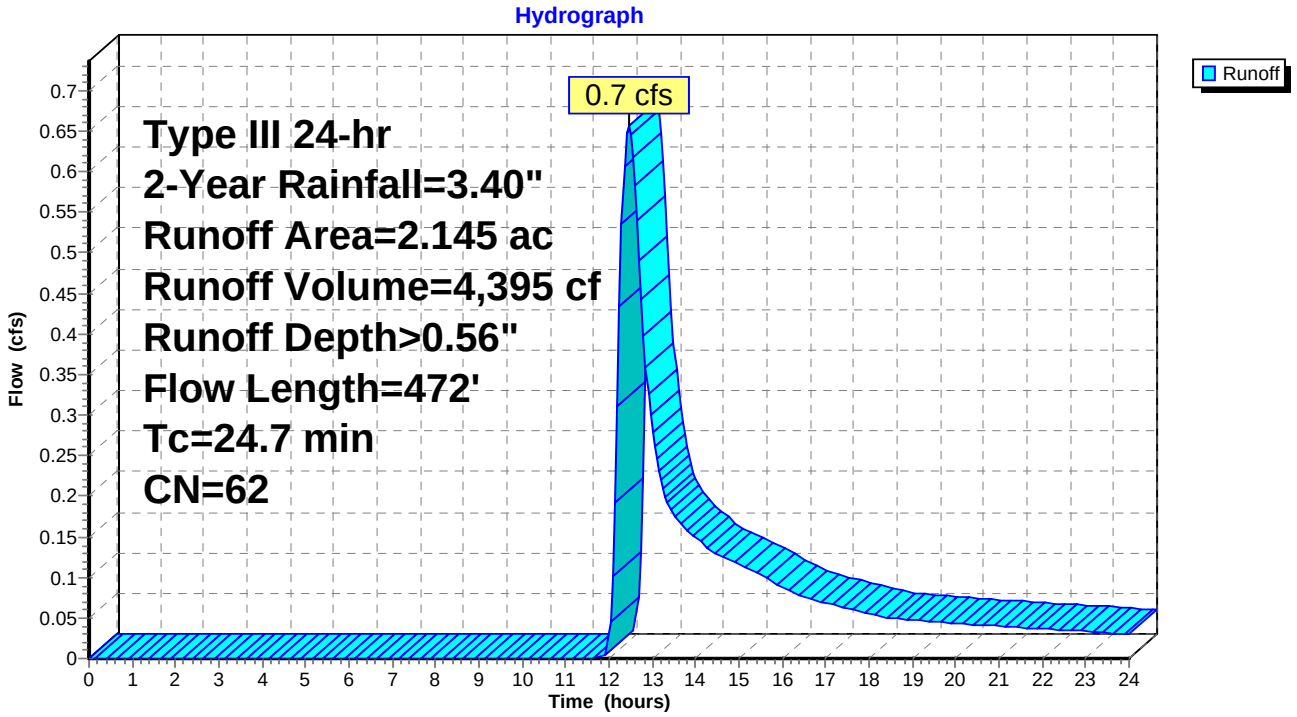
Runoff = 0.7 cfs @ 12.45 hrs, Volume= 4,395 cf, Depth> 0.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 2-Year Rainfall=3.40"

Area (ac)	CN	Description
0.022	74	>75% Grass cover, Good, HSG C
0.089	80	>75% Grass cover, Good, HSG D
0.282	61	>75% Grass cover, Good, HSG B
1.752	61	>75% Grass cover, Good, HSG B
2.145	62	Weighted Average
2.145		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0123	0.10		**Sheet Flow, Field** Grass: Dense n= 0.240 P2= 3.40"
0.4	23	0.0217	1.03		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
4.8	160	0.0063	0.56		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
0.6	51	0.0392	1.39		**Shallow Concentrated Flow, field** Short Grass Pasture Kv= 7.0 fps
1.4	88	0.0227	1.05		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
0.7	50	0.0300	1.21		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
24.7	472	Total			

Subcatchment 7S: Green Field W



Summary for Subcatchment 8S: Green Field E

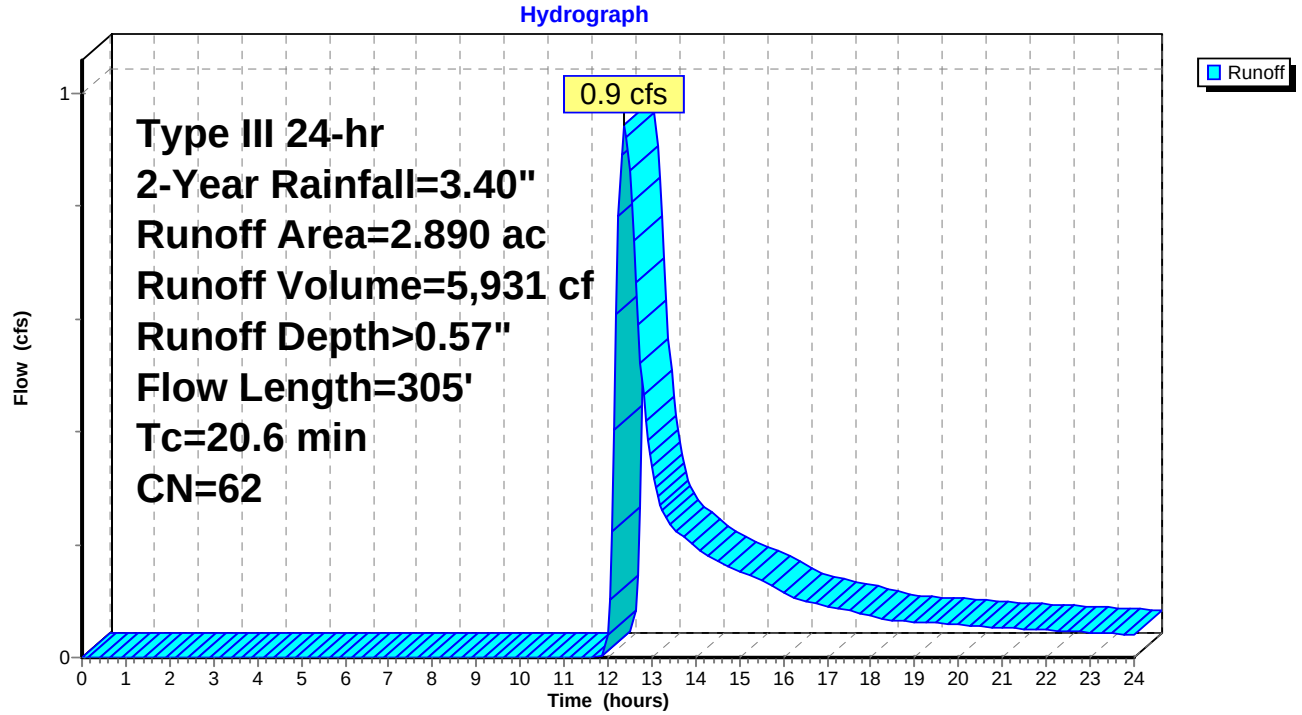
Runoff = 0.9 cfs @ 12.37 hrs, Volume= 5,931 cf, Depth> 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 2-Year Rainfall=3.40"

Area (ac)	CN	Description
2.685	61	>75% Grass cover, Good, HSG B
0.072	80	>75% Grass cover, Good, HSG D
0.033	80	>75% Grass cover, Good, HSG D
0.100	61	>75% Grass cover, Good, HSG B
2.890	62	Weighted Average
2.890		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0123	0.10		**Sheet Flow, Field** Grass: Dense n= 0.240 P2= 3.40"
0.4	24	0.0208	1.01		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
2.6	106	0.0094	0.68		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
0.8	75	0.0467	1.51		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
20.6	305	Total			

Subcatchment 8S: Green Field E



Summary for Subcatchment 9S: Greenfield 2

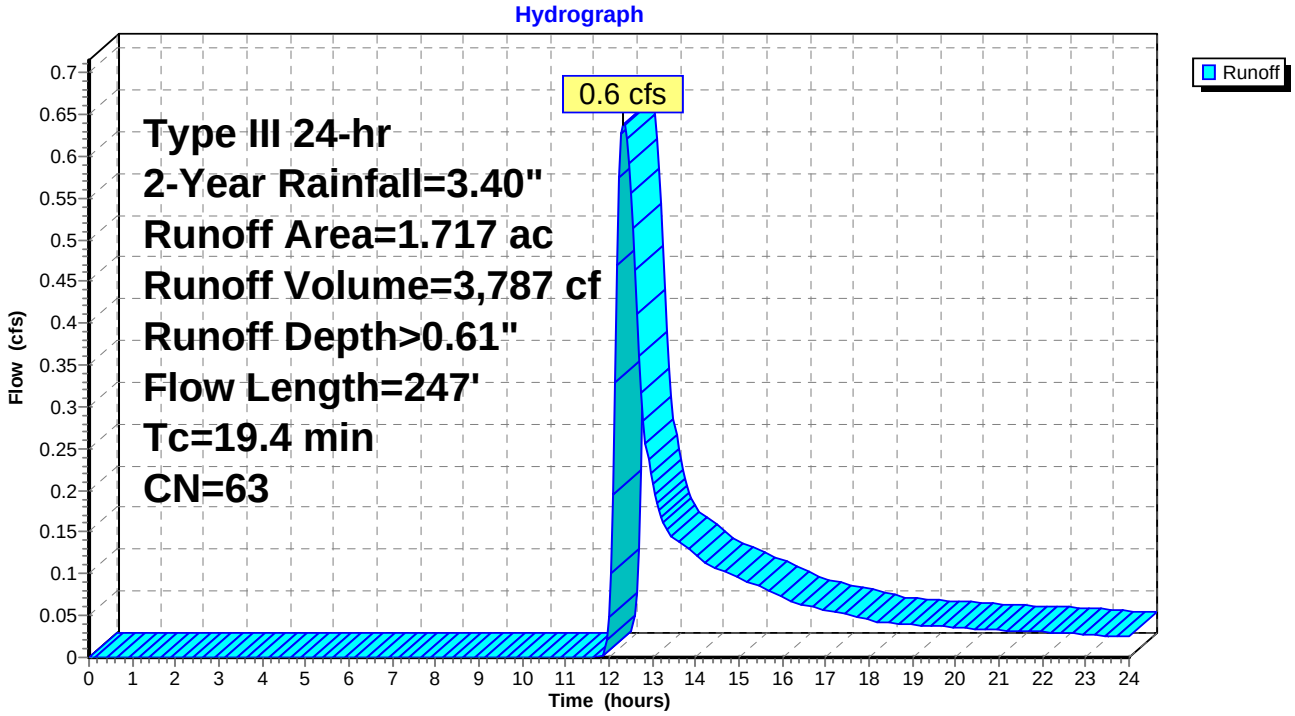
Runoff = 0.6 cfs @ 12.34 hrs, Volume= 3,787 cf, Depth> 0.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 2-Year Rainfall=3.40"

Area (ac)	CN	Description
0.091	77	Woods, Good, HSG D
0.151	55	Woods, Good, HSG B
1.288	61	>75% Grass cover, Good, HSG B
0.187	80	>75% Grass cover, Good, HSG D
1.717	63	Weighted Average
1.717		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.5	100	0.0128	0.10		**Sheet Flow, Grass** Grass: Dense n= 0.240 P2= 3.40"
2.9	147	0.0148	0.85		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
19.4	247	Total			

Subcatchment 9S: Greenfield 2



Summary for Reach 19R: Riprap Swale

Inflow Area = 85,378 sf, 0.00% Impervious, Inflow Depth > 1.17" for 2-Year event
Inflow = 1.9 cfs @ 12.22 hrs, Volume= 8,304 cf
Outflow = 1.8 cfs @ 12.28 hrs, Volume= 8,265 cf, Atten= 5%, Lag= 3.4 min

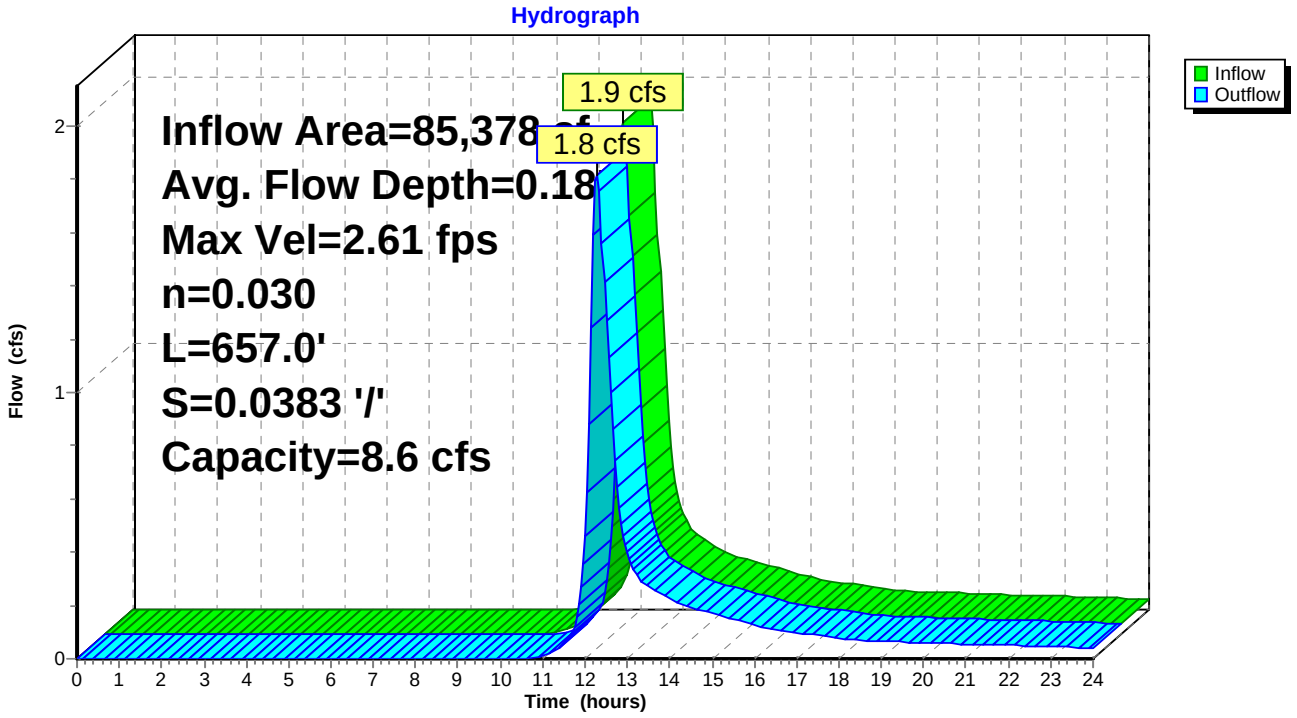
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Max. Velocity= 2.61 fps, Min. Travel Time= 4.2 min
Avg. Velocity = 0.99 fps, Avg. Travel Time= 11.1 min

Peak Storage= 457 cf @ 12.28 hrs
Average Depth at Peak Storage= 0.18'
Bank-Full Depth= 0.40' Flow Area= 2.1 sf, Capacity= 8.6 cfs

3.00' x 0.40' deep channel, n= 0.030 Rubble masonry, cemented
Side Slope Z-value= 5.5 '/' Top Width= 7.40'
Length= 657.0' Slope= 0.0383 '/'
Inlet Invert= 274.52', Outlet Invert= 249.36'

‡

Reach 19R: Riprap Swale



Summary for Reach 21R: Riprap Swale

Inflow Area = 53,317 sf, 0.00% Impervious, Inflow Depth > 1.23" for 2-Year event
Inflow = 1.5 cfs @ 12.15 hrs, Volume= 5,460 cf
Outflow = 1.4 cfs @ 12.20 hrs, Volume= 5,437 cf, Atten= 6%, Lag= 2.6 min

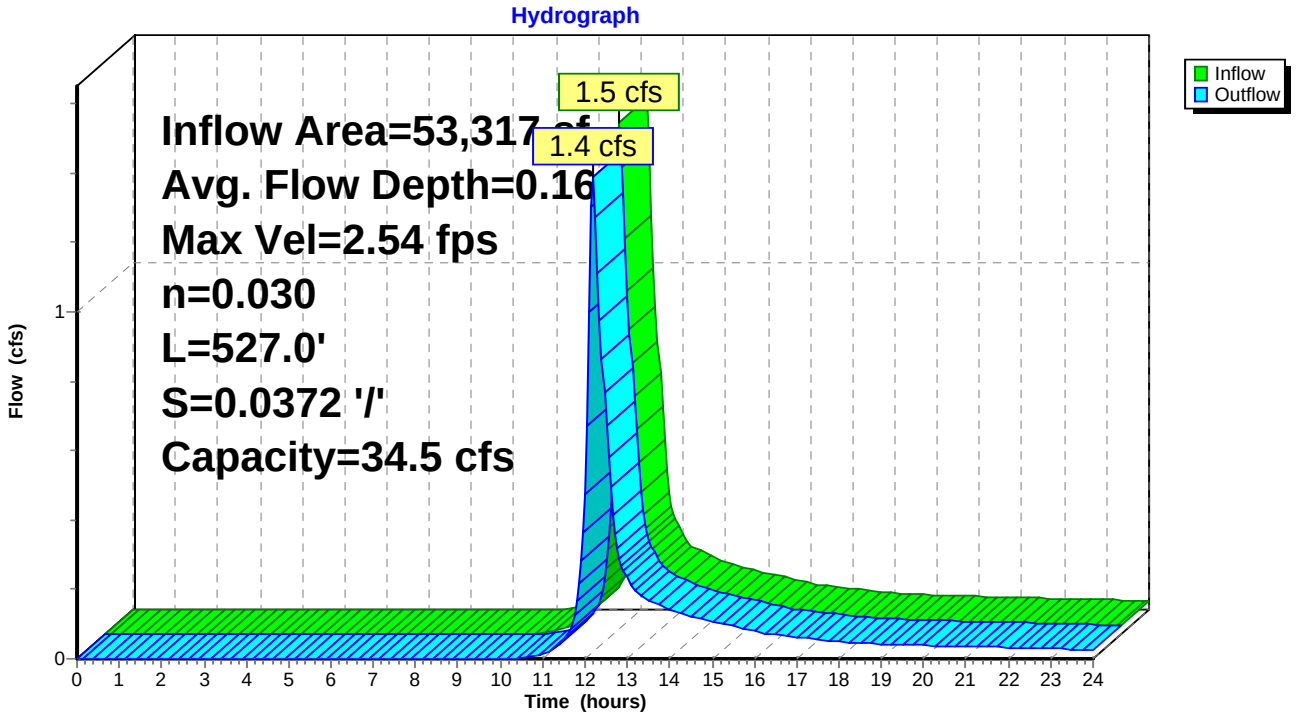
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Max. Velocity= 2.54 fps, Min. Travel Time= 3.5 min
Avg. Velocity = 0.86 fps, Avg. Travel Time= 10.2 min

Peak Storage= 288 cf @ 12.20 hrs
Average Depth at Peak Storage= 0.16'
Bank-Full Depth= 0.90' Flow Area= 5.1 sf, Capacity= 34.5 cfs

3.00' x 0.90' deep channel, n= 0.030 Rubble masonry, cemented
Side Slope Z-value= 3.0 '/' Top Width= 8.40'
Length= 527.0' Slope= 0.0372 '/'
Inlet Invert= 276.70', Outlet Invert= 257.10'

‡

Reach 21R: Riprap Swale

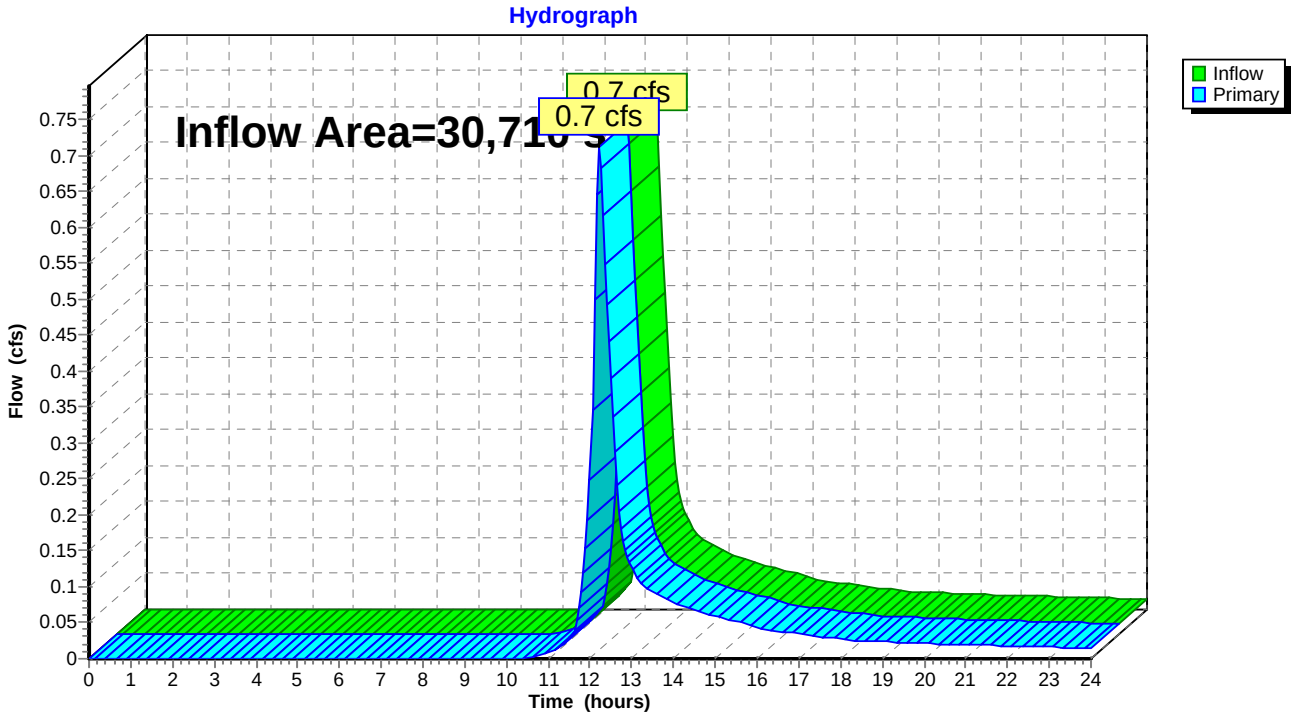


Summary for Link 7L: Wetlands NW

Inflow Area = 30,710 sf, 0.00% Impervious, Inflow Depth > 1.17" for 2-Year event
Inflow = 0.7 cfs @ 12.21 hrs, Volume= 2,988 cf
Primary = 0.7 cfs @ 12.21 hrs, Volume= 2,988 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 7L: Wetlands NW

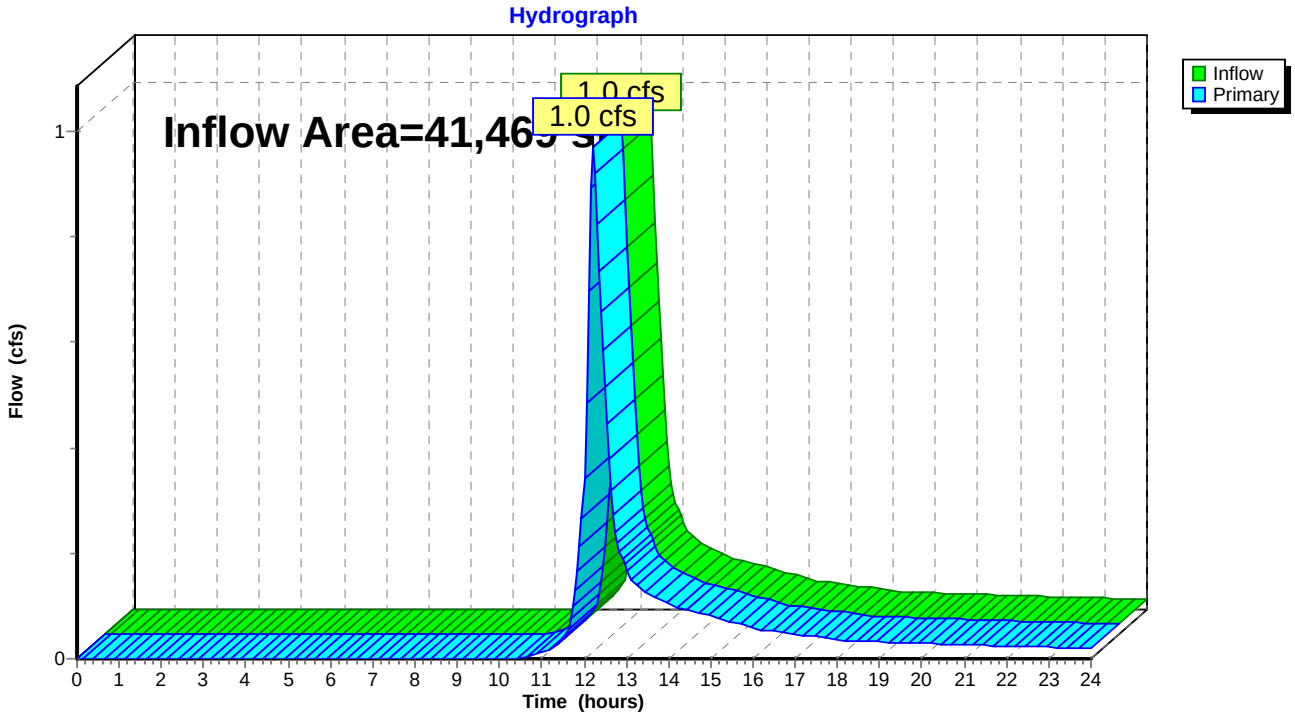


Summary for Link 8L: Depression S

Inflow Area = 41,469 sf, 0.00% Impervious, Inflow Depth > 1.17" for 2-Year event
Inflow = 1.0 cfs @ 12.21 hrs, Volume= 4,035 cf
Primary = 1.0 cfs @ 12.21 hrs, Volume= 4,035 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 8L: Depression S

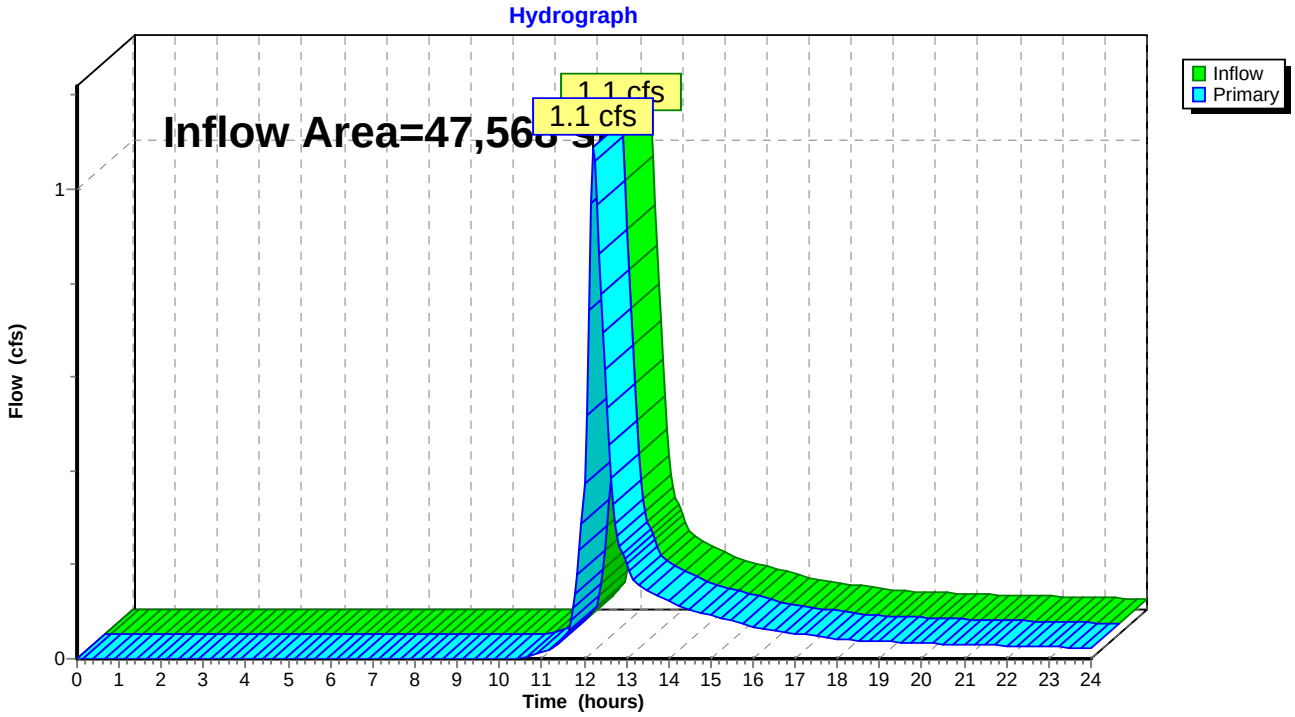


Summary for Link 9L: Wetlands NE

Inflow Area = 47,568 sf, 0.00% Impervious, Inflow Depth > 1.17" for 2-Year event
Inflow = 1.1 cfs @ 12.22 hrs, Volume= 4,628 cf
Primary = 1.1 cfs @ 12.22 hrs, Volume= 4,628 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 9L: Wetlands NE

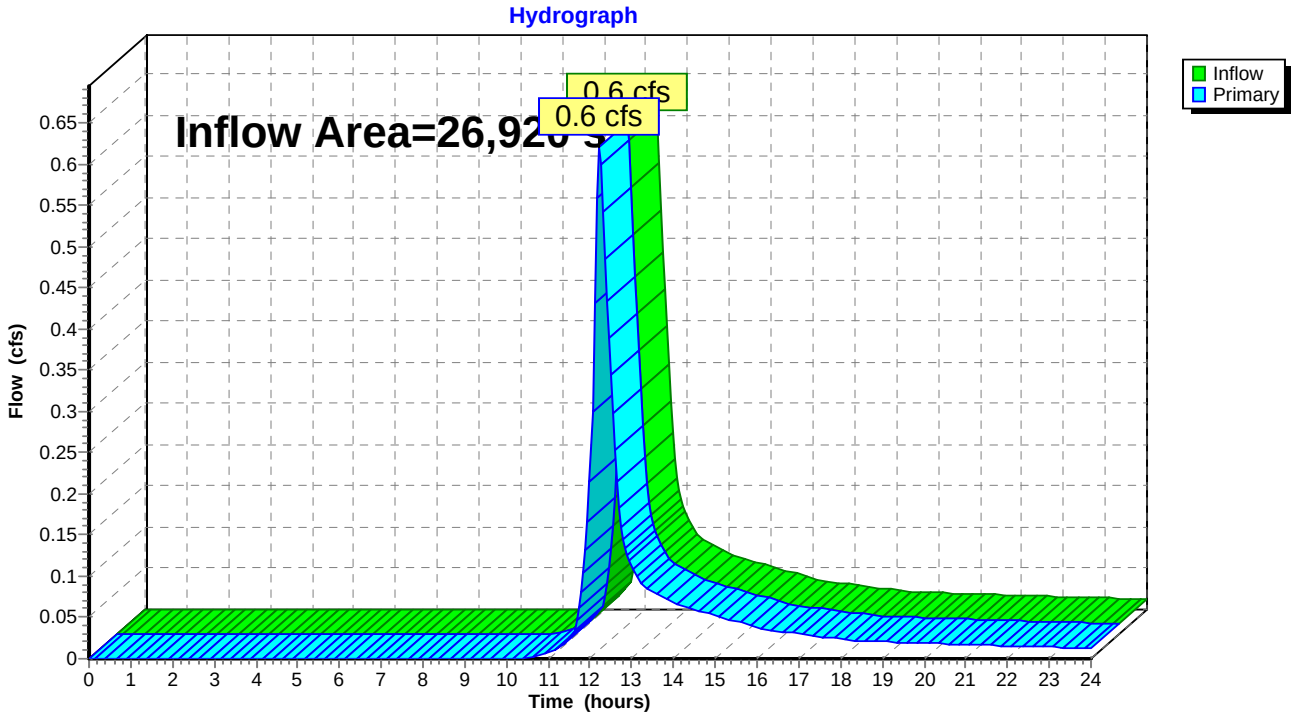


Summary for Link 10L: Wetlands N

Inflow Area = 26,920 sf, 0.00% Impervious, Inflow Depth > 1.17" for 2-Year event
Inflow = 0.6 cfs @ 12.21 hrs, Volume= 2,619 cf
Primary = 0.6 cfs @ 12.21 hrs, Volume= 2,619 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 10L: Wetlands N

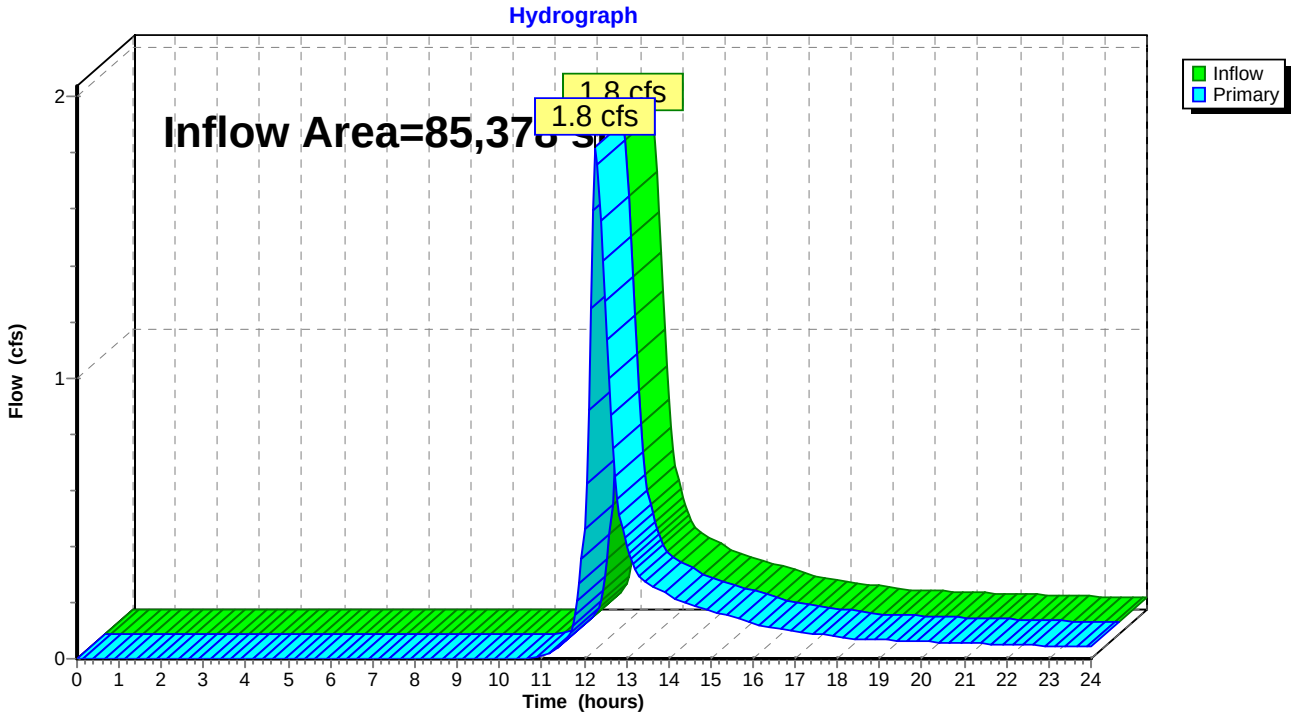


Summary for Link 11L: Collection Swale W

Inflow Area = 85,378 sf, 0.00% Impervious, Inflow Depth > 1.16" for 2-Year event
Inflow = 1.8 cfs @ 12.28 hrs, Volume= 8,265 cf
Primary = 1.8 cfs @ 12.28 hrs, Volume= 8,265 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 11L: Collection Swale W

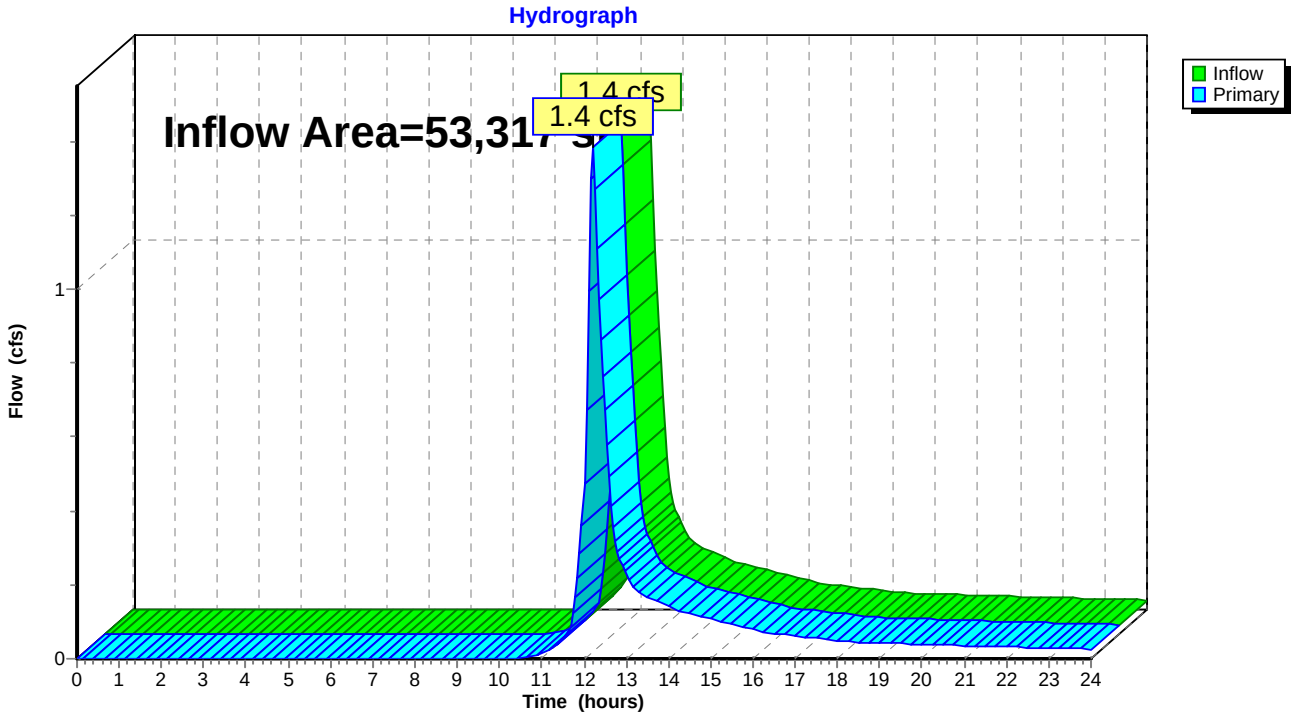


Summary for Link 12L: Collection Swale W

Inflow Area = 53,317 sf, 0.00% Impervious, Inflow Depth > 1.22" for 2-Year event
Inflow = 1.4 cfs @ 12.20 hrs, Volume= 5,437 cf
Primary = 1.4 cfs @ 12.20 hrs, Volume= 5,437 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 12L: Collection Swale W

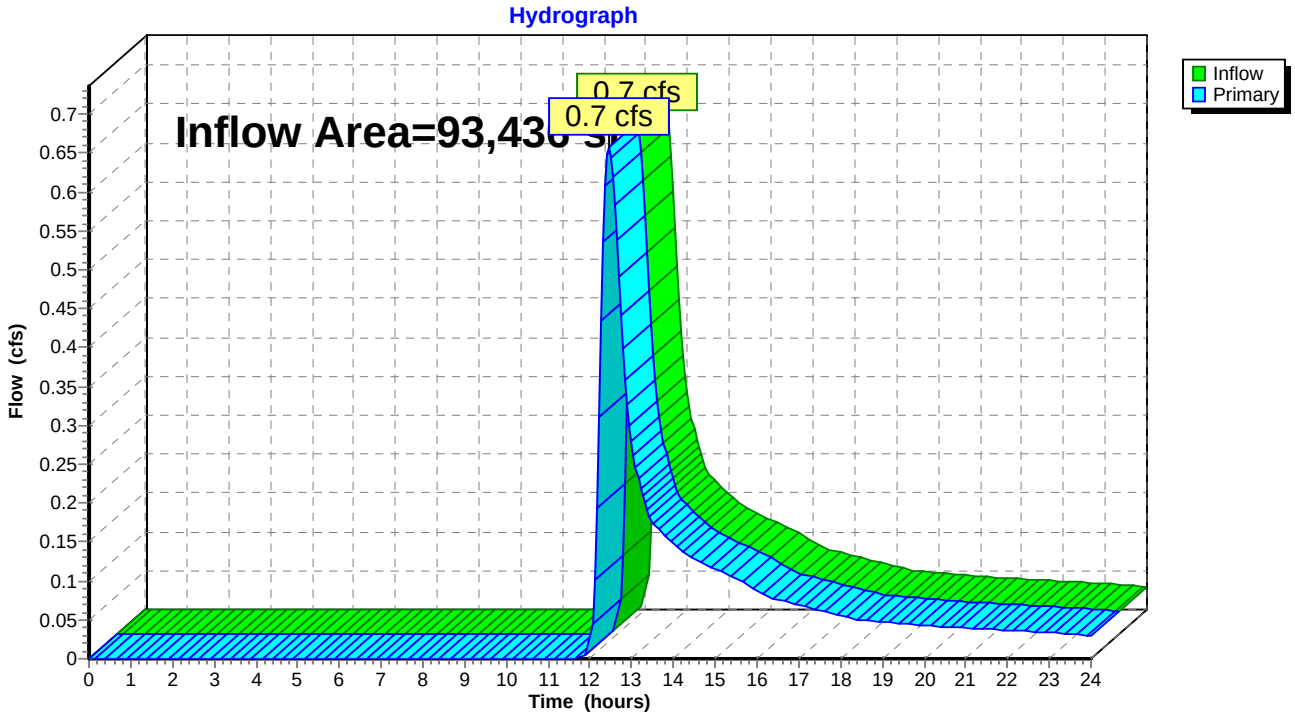


Summary for Link 15L: Wetland W

Inflow Area = 93,436 sf, 0.00% Impervious, Inflow Depth > 0.56" for 2-Year event
Inflow = 0.7 cfs @ 12.45 hrs, Volume= 4,395 cf
Primary = 0.7 cfs @ 12.45 hrs, Volume= 4,395 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 15L: Wetland W

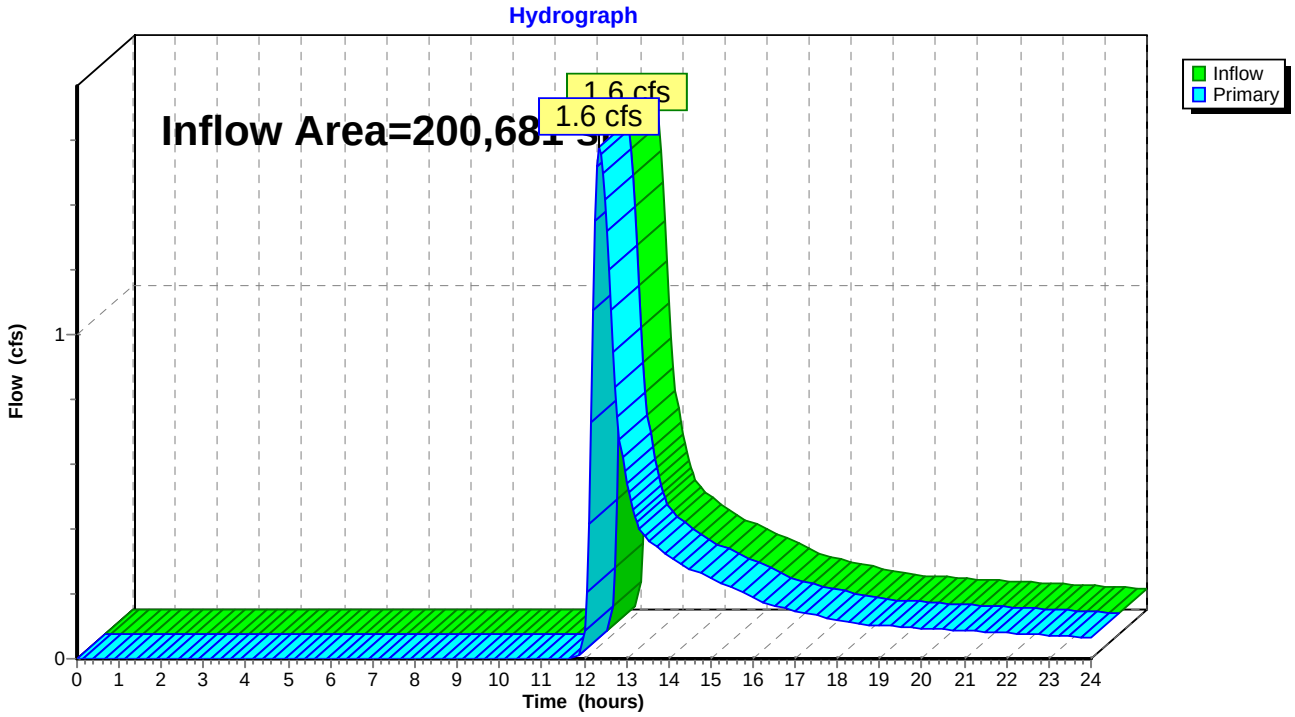


Summary for Link 16L: Wetland E

Inflow Area = 200,681 sf, 0.00% Impervious, Inflow Depth > 0.58" for 2-Year event
Inflow = 1.6 cfs @ 12.36 hrs, Volume= 9,719 cf
Primary = 1.6 cfs @ 12.36 hrs, Volume= 9,719 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 16L: Wetland E



Time span=0.00-24.00 hrs, dt=0.050 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Bulky Waste Landfill SW Runoff Area=0.952 ac 0.00% Impervious Runoff Depth>1.81"
Flow Length=239' Tc=13.7 min CN=74 Runoff=1.6 cfs 6,271 cf

Subcatchment 2S: Bulky Waste Landfill NW Runoff Area=0.705 ac 0.00% Impervious Runoff Depth>1.81"
Flow Length=179' Tc=14.1 min CN=74 Runoff=1.1 cfs 4,643 cf

Subcatchment 3S: Bulky Waste Landfill E Runoff Area=1.092 ac 0.00% Impervious Runoff Depth>1.81"
Flow Length=204' Tc=14.6 min CN=74 Runoff=1.7 cfs 7,191 cf

Subcatchment 4S: Landfill N Runoff Area=0.618 ac 0.00% Impervious Runoff Depth>1.81"
Flow Length=222' Tc=14.3 min CN=74 Runoff=1.0 cfs 4,070 cf

Subcatchment 5S: Landfill W Runoff Area=1.960 ac 0.00% Impervious Runoff Depth>1.81"
Flow Length=752' Tc=15.2 min CN=74 Runoff=3.1 cfs 12,906 cf

Subcatchment 6S: Landfill E Runoff Area=1.224 ac 0.00% Impervious Runoff Depth>1.89"
Flow Length=459' Tc=10.0 min CN=75 Runoff=2.3 cfs 8,403 cf

Subcatchment 7S: Green Field W Runoff Area=2.145 ac 0.00% Impervious Runoff Depth>1.02"
Flow Length=472' Tc=24.7 min CN=62 Runoff=1.4 cfs 7,938 cf

Subcatchment 8S: Green Field E Runoff Area=2.890 ac 0.00% Impervious Runoff Depth>1.02"
Flow Length=305' Tc=20.6 min CN=62 Runoff=2.0 cfs 10,709 cf

Subcatchment 9S: Greenfield 2 Runoff Area=1.717 ac 0.00% Impervious Runoff Depth>1.08"
Flow Length=247' Tc=19.4 min CN=63 Runoff=1.3 cfs 6,729 cf

Reach 19R: Riprap Swale Avg. Flow Depth=0.23' Max Vel=3.03 fps Inflow=3.1 cfs 12,906 cf
n=0.030 L=657.0' S=0.0383 '/' Capacity=8.6 cfs Outflow=3.0 cfs 12,857 cf

Reach 21R: Riprap Swale Avg. Flow Depth=0.21' Max Vel=2.96 fps Inflow=2.3 cfs 8,403 cf
n=0.030 L=527.0' S=0.0372 '/' Capacity=34.5 cfs Outflow=2.2 cfs 8,374 cf

Link 7L: Wetlands NW Inflow=1.1 cfs 4,643 cf
Primary=1.1 cfs 4,643 cf

Link 8L: Depression S Inflow=1.6 cfs 6,271 cf
Primary=1.6 cfs 6,271 cf

Link 9L: Wetlands NE Inflow=1.7 cfs 7,191 cf
Primary=1.7 cfs 7,191 cf

Link 10L: Wetlands N Inflow=1.0 cfs 4,070 cf
Primary=1.0 cfs 4,070 cf

Link 11L: Collection Swale W Inflow=3.0 cfs 12,857 cf
Primary=3.0 cfs 12,857 cf

Link 12L: Collection Swale W Inflow=2.2 cfs 8,374 cf
Primary=2.2 cfs 8,374 cf

Link 15L: Wetland W Inflow=1.4 cfs 7,938 cf
Primary=1.4 cfs 7,938 cf

Link 16L: Wetland E Inflow=3.3 cfs 17,438 cf
Primary=3.3 cfs 17,438 cf

Total Runoff Area = 579,479 sf Runoff Volume = 68,860 cf Average Runoff Depth = 1.43"
100.00% Pervious = 579,479 sf 0.00% Impervious = 0 sf

Summary for Subcatchment 1S: Bulky Waste Landfill SW

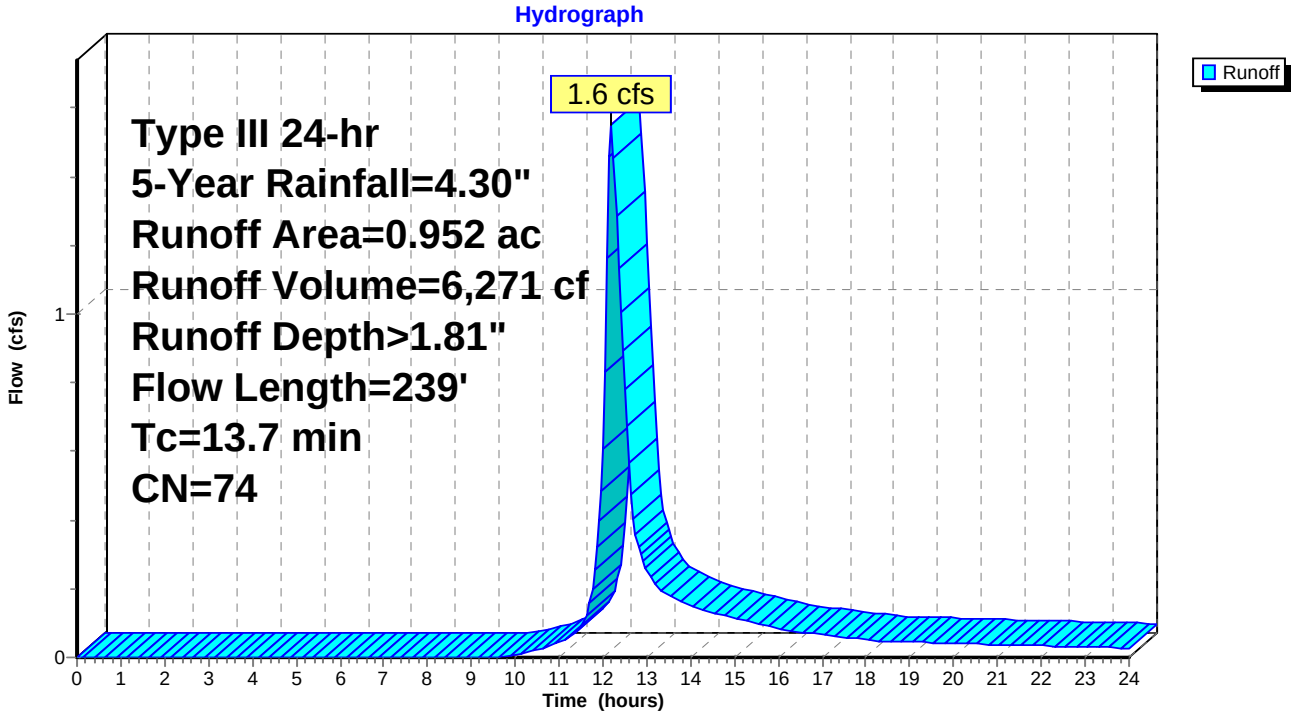
Runoff = 1.6 cfs @ 12.20 hrs, Volume= 6,271 cf, Depth> 1.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 5-Year Rainfall=4.30"

Area (ac)	CN	Description
0.952	74	>75% Grass cover, Good, HSG C
0.952		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.6	100	0.0251	0.13		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
0.5	66	0.1137	2.36		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	46	0.1957	3.10		**Shallow Concentrated Flow, Lanfill Cap** Short Grass Pasture Kv= 7.0 fps
0.4	27	0.0050	1.14		**Shallow Concentrated Flow, Access Drive** Unpaved Kv= 16.1 fps
13.7	239	Total			

Subcatchment 1S: Bulky Waste Landfill SW



Summary for Subcatchment 2S: Bulky Waste Landfill NW

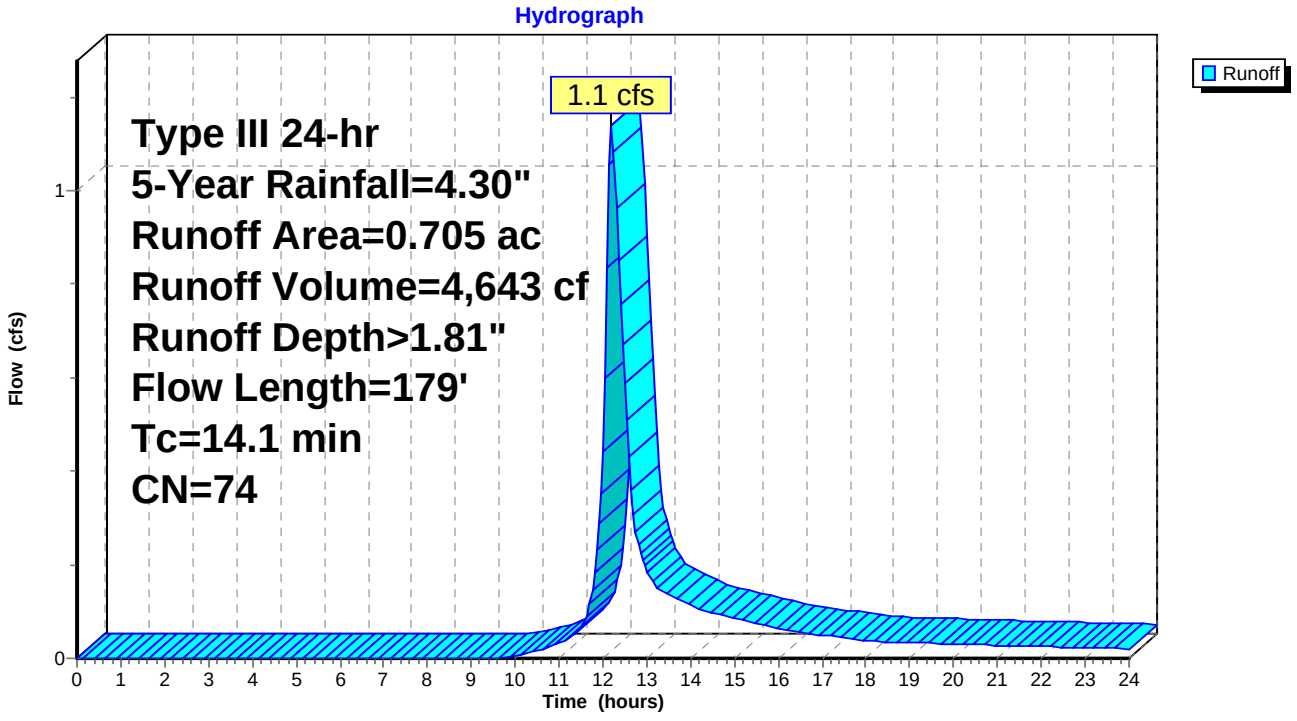
Runoff = 1.1 cfs @ 12.20 hrs, Volume= 4,643 cf, Depth> 1.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 5-Year Rainfall=4.30"

Area (ac)	CN	Description
0.705	74	>75% Grass cover, Good, HSG C
0.705		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0212	0.12		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
0.6	79	0.0886	2.08		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
14.1	179	Total			

Subcatchment 2S: Bulky Waste Landfill NW



Summary for Subcatchment 3S: Bulky Waste Landfill E

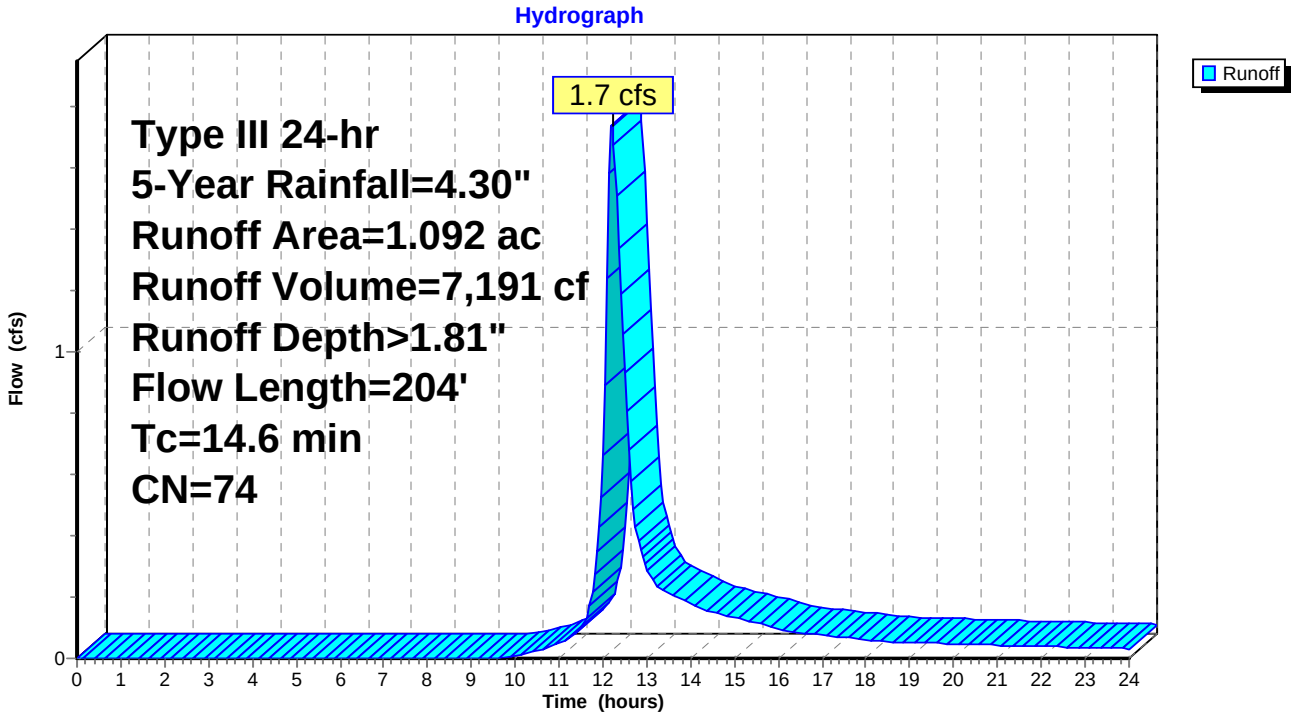
Runoff = 1.7 cfs @ 12.21 hrs, Volume= 7,191 cf, Depth> 1.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 5-Year Rainfall=4.30"

Area (ac)	CN	Description
1.092	74	>75% Grass cover, Good, HSG C
1.092		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0212	0.12		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
1.0	80	0.0375	1.36		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.1	24	0.1667	2.86		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
14.6	204	Total			

Subcatchment 3S: Bulky Waste Landfill E



Summary for Subcatchment 4S: Landfill N

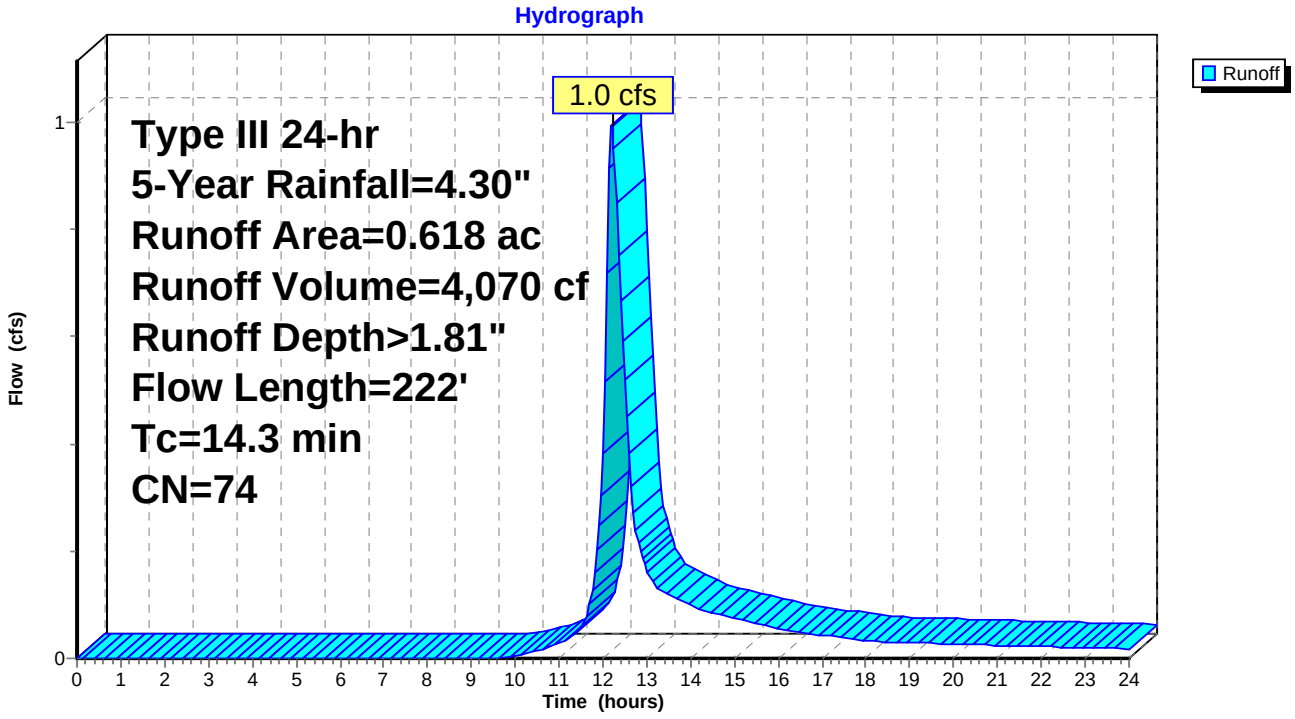
Runoff = 1.0 cfs @ 12.21 hrs, Volume= 4,070 cf, Depth> 1.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 5-Year Rainfall=4.30"

Area (ac)	CN	Description
0.618	74	>75% Grass cover, Good, HSG C
0.618		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	100	0.0230	0.13		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
1.0	81	0.0371	1.35		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	41	0.1707	2.89		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
14.3	222	Total			

Subcatchment 4S: Landfill N



Summary for Subcatchment 5S: Landfill W

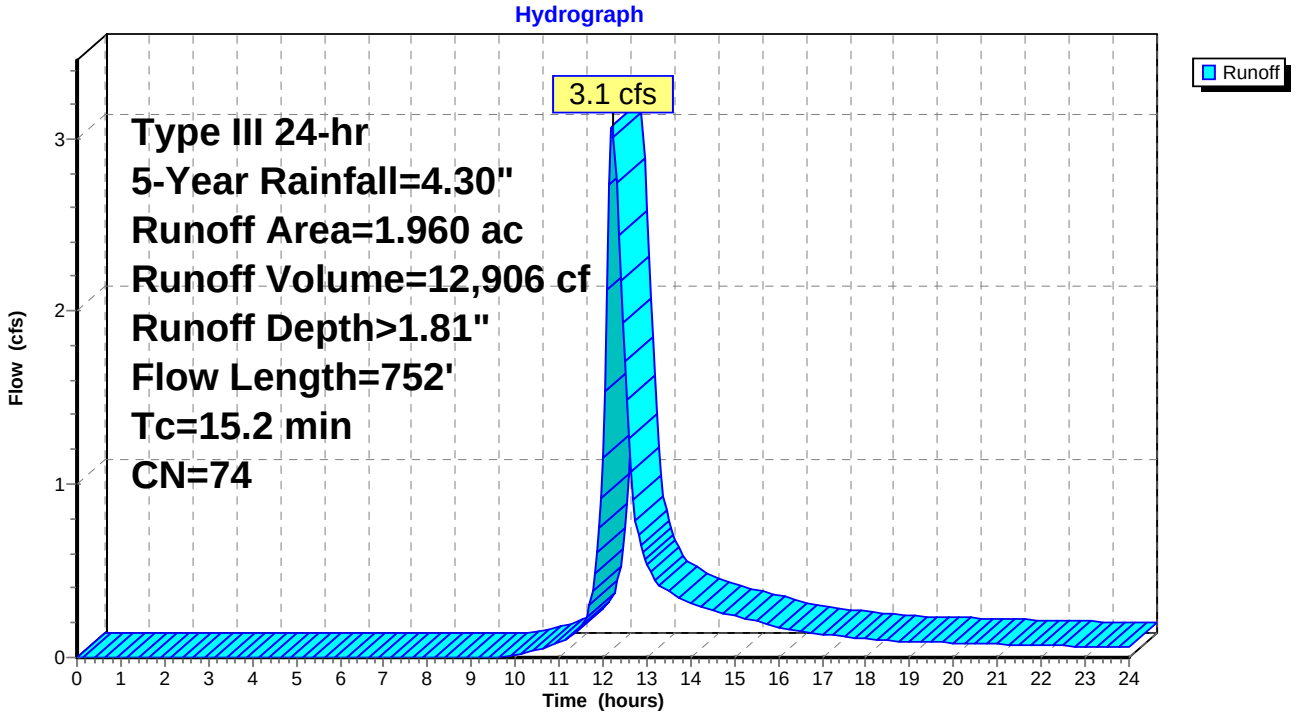
Runoff = 3.1 cfs @ 12.22 hrs, Volume= 12,906 cf, Depth> 1.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 5-Year Rainfall=4.30"

Area (ac)	CN	Description
1.960	74	>75% Grass cover, Good, HSG C
1.960		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.3	100	0.0220	0.13		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
0.3	37	0.0811	1.99		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.3	58	0.1897	3.05		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
1.3	520	0.0200	6.71	50.33	**Channel Flow, Riprap Swale** Area= 7.5 sf Perim= 8.0' r= 0.94' n= 0.030 Rubble masonry, cemented
0.0	37	0.2160	22.05	165.39	**Channel Flow, Riprap Swale** Area= 7.5 sf Perim= 8.0' r= 0.94' n= 0.030 Rubble masonry, cemented
15.2	752	Total			

Subcatchment 5S: Landfill W



Summary for Subcatchment 6S: Landfill E

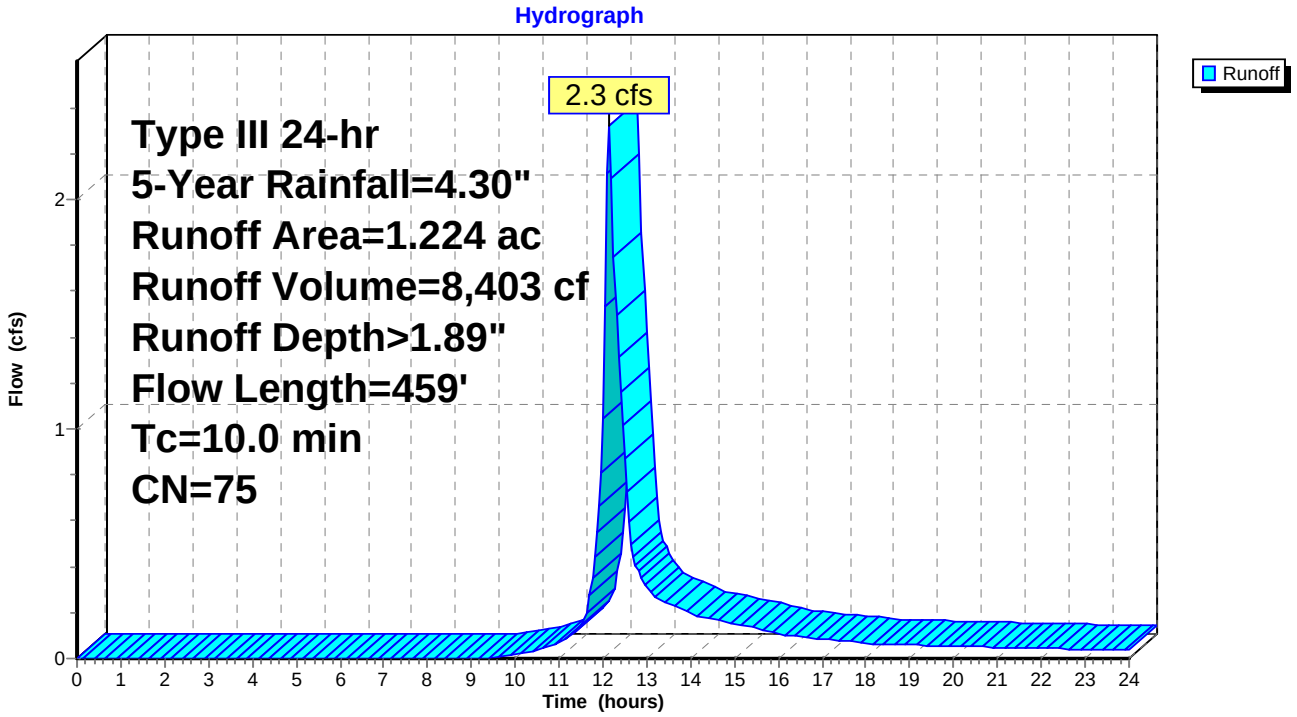
Runoff = 2.3 cfs @ 12.15 hrs, Volume= 8,403 cf, Depth> 1.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 5-Year Rainfall=4.30"

Area (ac)	CN	Description
1.134	74	>75% Grass cover, Good, HSG C
0.090	89	Gravel roads, HSG C
1.224	75	Weighted Average
1.224		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.5	40	0.0543	0.15		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
1.0	60	0.0117	1.03		**Sheet Flow, Gravel** Smooth surfaces n= 0.011 P2= 3.40"
0.5	86	0.0384	3.15		**Shallow Concentrated Flow, Gravel** Unpaved Kv= 16.1 fps
0.7	76	0.0658	1.80		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	49	0.2245	3.32		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	148	0.1081	15.60	117.00	**Channel Flow, Riprap Swale** Area= 7.5 sf Perim= 8.0' r= 0.94' n= 0.030 Rubble masonry, cemented
7.1	459	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 6S: Landfill E



Summary for Subcatchment 7S: Green Field W

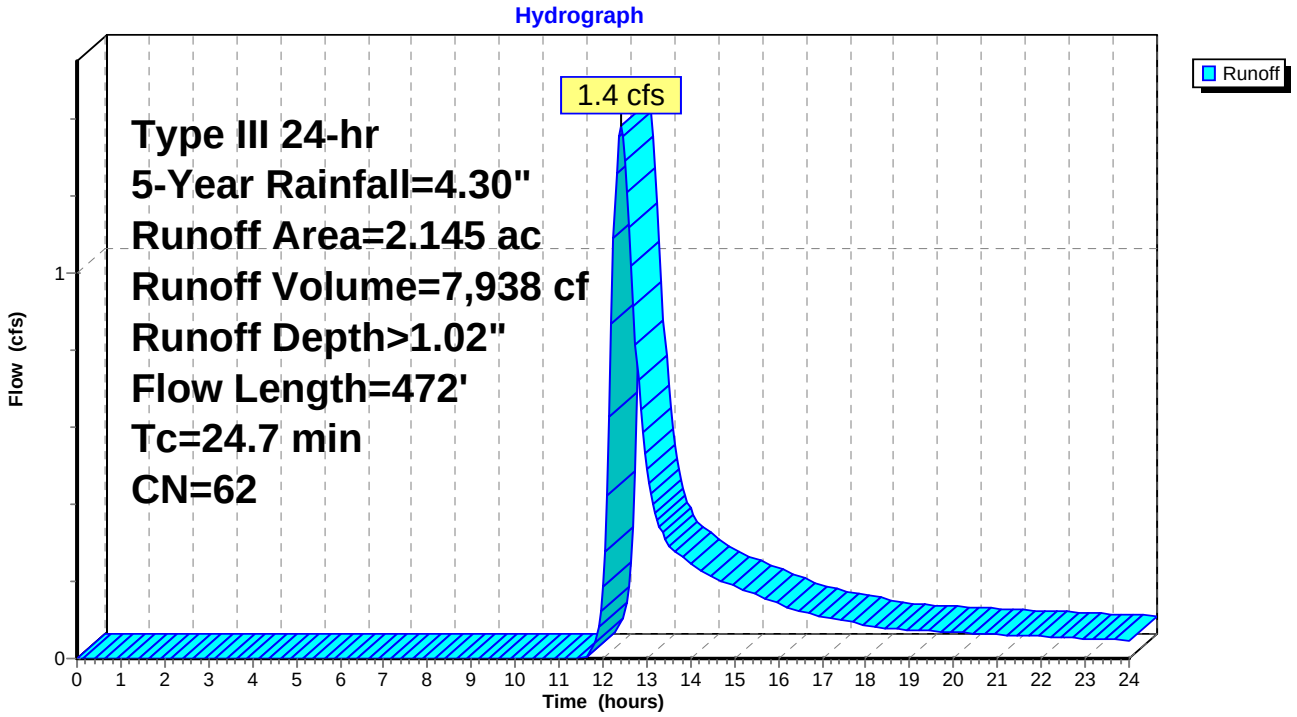
Runoff = 1.4 cfs @ 12.40 hrs, Volume= 7,938 cf, Depth> 1.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 5-Year Rainfall=4.30"

Area (ac)	CN	Description
0.022	74	>75% Grass cover, Good, HSG C
0.089	80	>75% Grass cover, Good, HSG D
0.282	61	>75% Grass cover, Good, HSG B
1.752	61	>75% Grass cover, Good, HSG B
2.145	62	Weighted Average
2.145		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0123	0.10		**Sheet Flow, Field** Grass: Dense n= 0.240 P2= 3.40"
0.4	23	0.0217	1.03		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
4.8	160	0.0063	0.56		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
0.6	51	0.0392	1.39		**Shallow Concentrated Flow, field** Short Grass Pasture Kv= 7.0 fps
1.4	88	0.0227	1.05		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
0.7	50	0.0300	1.21		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
24.7	472	Total			

Subcatchment 7S: Green Field W



Summary for Subcatchment 8S: Green Field E

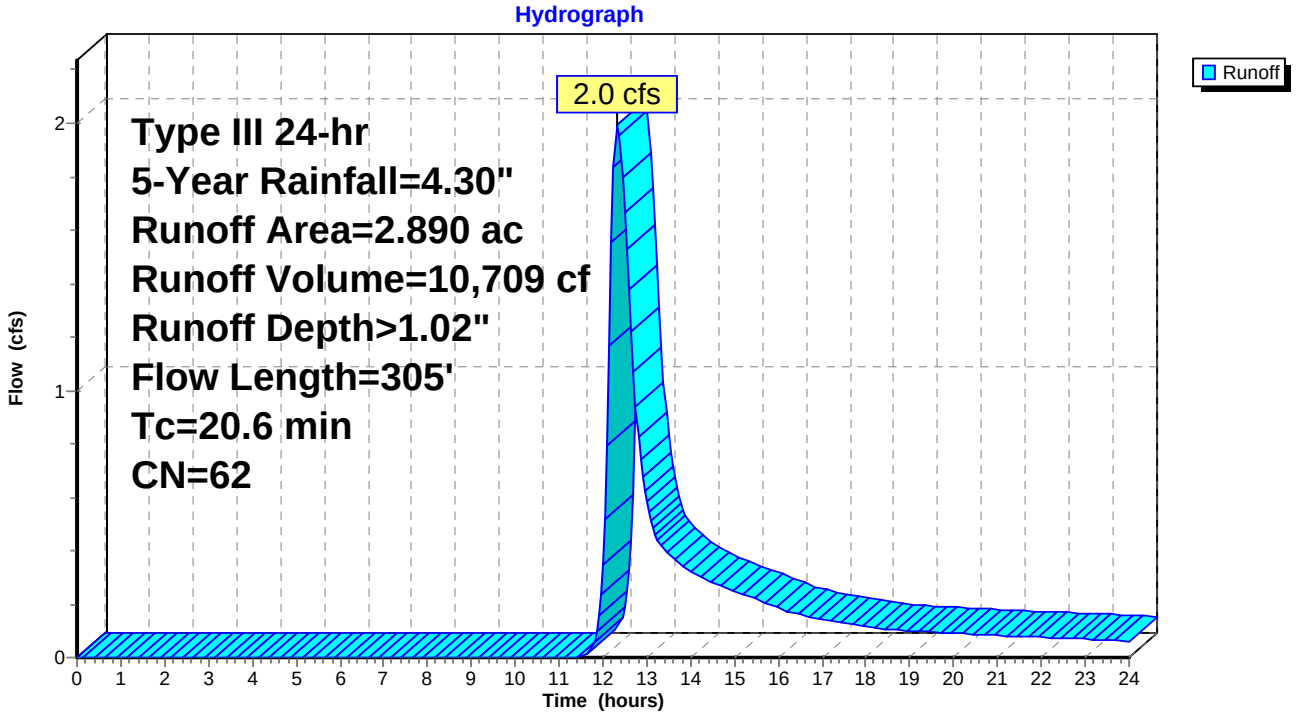
Runoff = 2.0 cfs @ 12.33 hrs, Volume= 10,709 cf, Depth> 1.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 5-Year Rainfall=4.30"

Area (ac)	CN	Description
2.685	61	>75% Grass cover, Good, HSG B
0.072	80	>75% Grass cover, Good, HSG D
0.033	80	>75% Grass cover, Good, HSG D
0.100	61	>75% Grass cover, Good, HSG B
2.890	62	Weighted Average
2.890		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0123	0.10		**Sheet Flow, Field** Grass: Dense n= 0.240 P2= 3.40"
0.4	24	0.0208	1.01		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
2.6	106	0.0094	0.68		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
0.8	75	0.0467	1.51		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
20.6	305	Total			

Subcatchment 8S: Green Field E



Summary for Subcatchment 9S: Greenfield 2

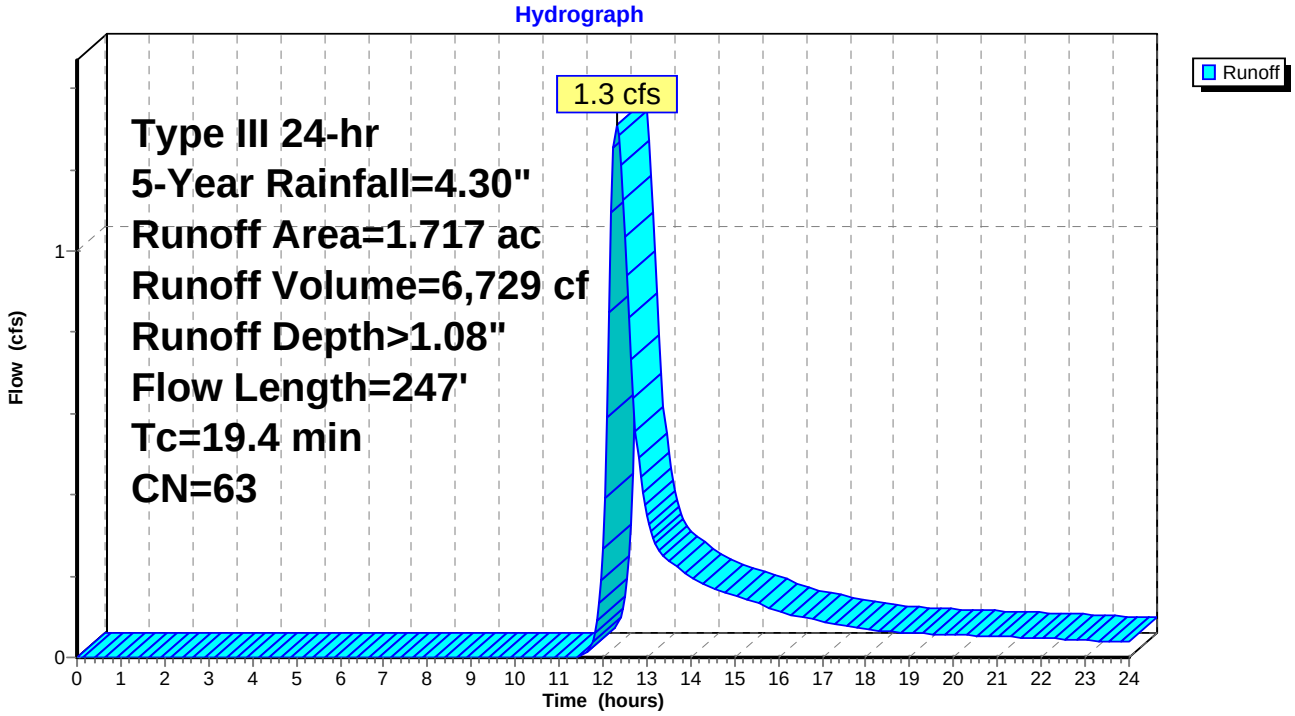
Runoff = 1.3 cfs @ 12.31 hrs, Volume= 6,729 cf, Depth> 1.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 5-Year Rainfall=4.30"

Area (ac)	CN	Description
0.091	77	Woods, Good, HSG D
0.151	55	Woods, Good, HSG B
1.288	61	>75% Grass cover, Good, HSG B
0.187	80	>75% Grass cover, Good, HSG D
1.717	63	Weighted Average
1.717		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.5	100	0.0128	0.10		**Sheet Flow, Grass** Grass: Dense n= 0.240 P2= 3.40"
2.9	147	0.0148	0.85		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
19.4	247	Total			

Subcatchment 9S: Greenfield 2



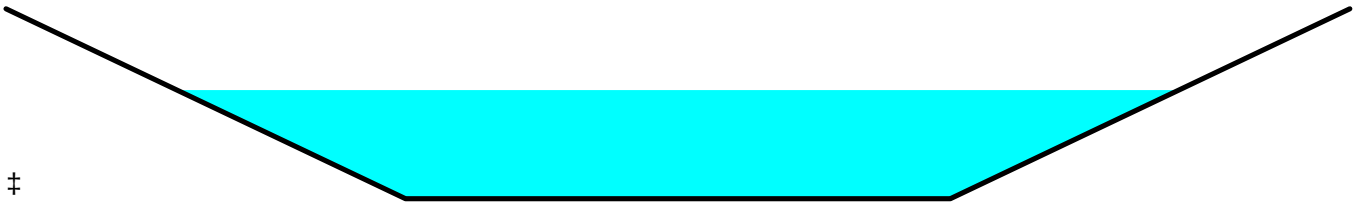
Summary for Reach 19R: Riprap Swale

Inflow Area = 85,378 sf, 0.00% Impervious, Inflow Depth > 1.81" for 5-Year event
Inflow = 3.1 cfs @ 12.22 hrs, Volume= 12,906 cf
Outflow = 3.0 cfs @ 12.27 hrs, Volume= 12,857 cf, Atten= 4%, Lag= 2.9 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Max. Velocity= 3.03 fps, Min. Travel Time= 3.6 min
Avg. Velocity = 1.11 fps, Avg. Travel Time= 9.8 min

Peak Storage= 641 cf @ 12.27 hrs
Average Depth at Peak Storage= 0.23'
Bank-Full Depth= 0.40' Flow Area= 2.1 sf, Capacity= 8.6 cfs

3.00' x 0.40' deep channel, n= 0.030 Rubble masonry, cemented
Side Slope Z-value= 5.5 '/' Top Width= 7.40'
Length= 657.0' Slope= 0.0383 '/'
Inlet Invert= 274.52', Outlet Invert= 249.36'



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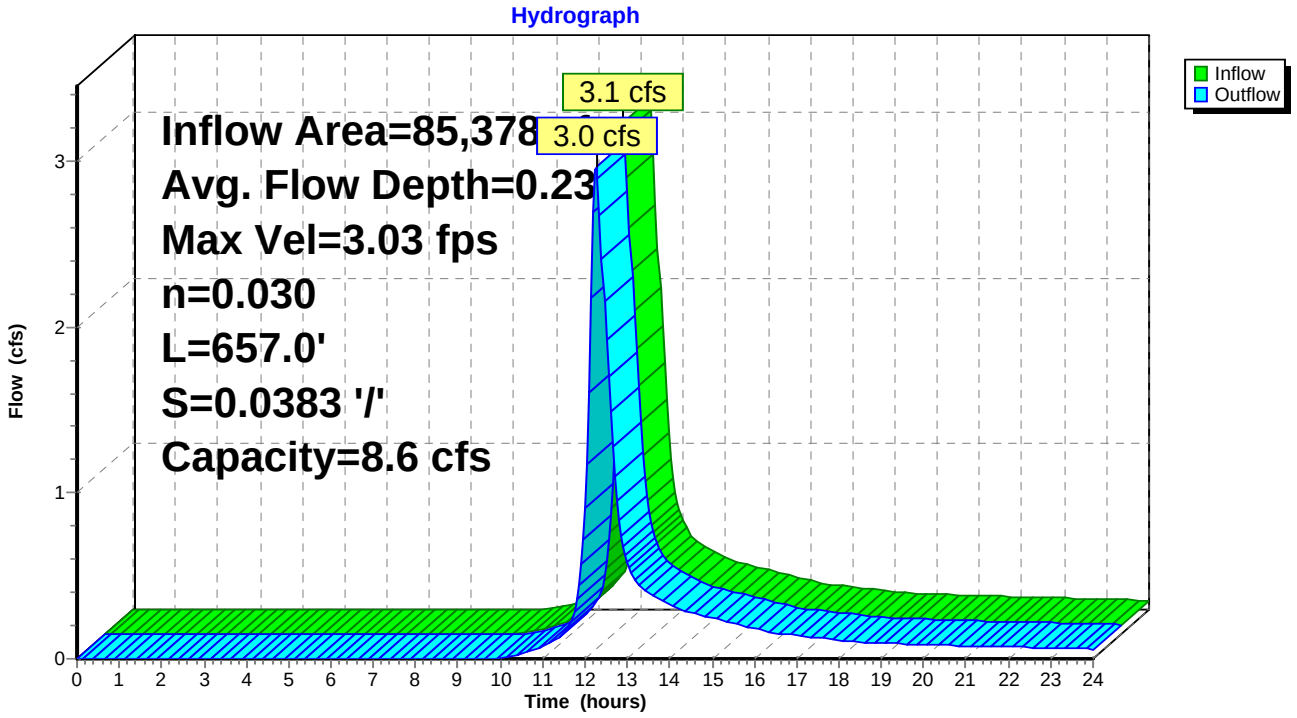
Reach 19R: Riprap Swale



Summary for Reach 21R: Riprap Swale

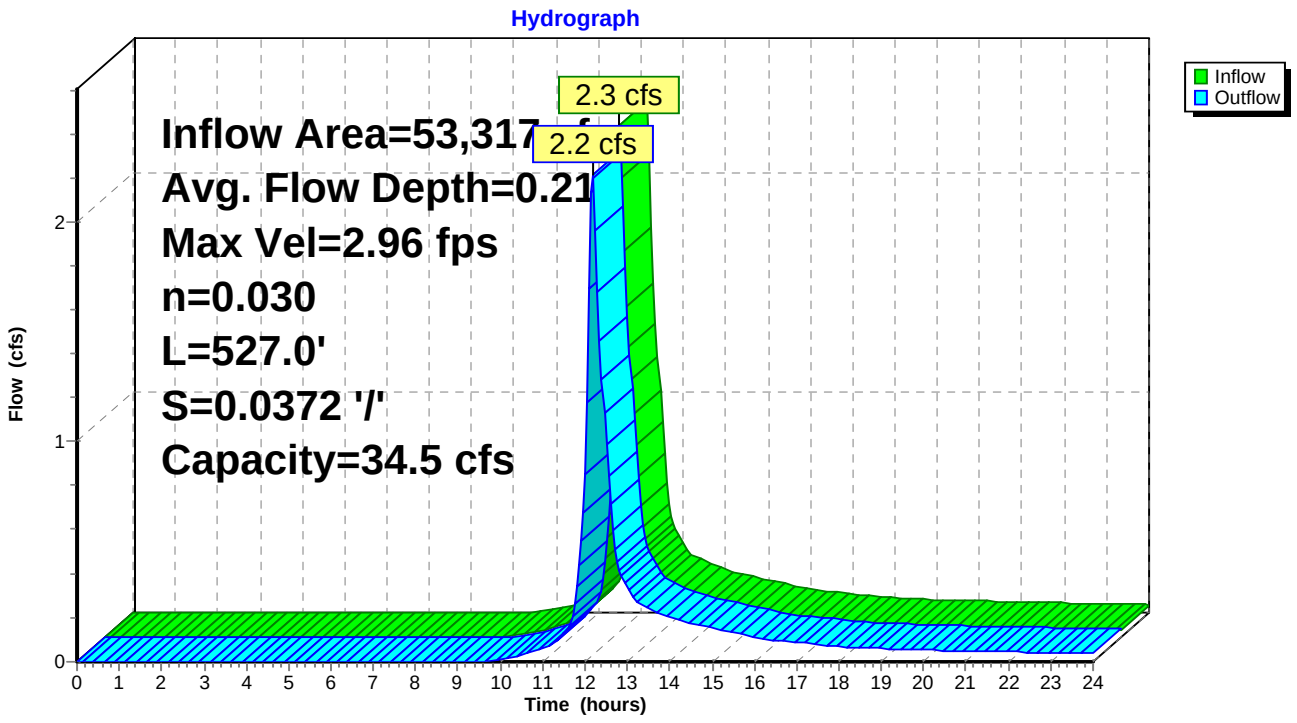
Inflow Area = 53,317 sf, 0.00% Impervious, Inflow Depth > 1.89" for 5-Year event
Inflow = 2.3 cfs @ 12.15 hrs, Volume= 8,403 cf
Outflow = 2.2 cfs @ 12.19 hrs, Volume= 8,374 cf, Atten= 5%, Lag= 2.2 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Max. Velocity= 2.96 fps, Min. Travel Time= 3.0 min
Avg. Velocity = 0.97 fps, Avg. Travel Time= 9.0 min

Peak Storage= 392 cf @ 12.19 hrs
Average Depth at Peak Storage= 0.21'
Bank-Full Depth= 0.90' Flow Area= 5.1 sf, Capacity= 34.5 cfs

3.00' x 0.90' deep channel, n= 0.030 Rubble masonry, cemented
Side Slope Z-value= 3.0 '/' Top Width= 8.40'
Length= 527.0' Slope= 0.0372 '/'
Inlet Invert= 276.70', Outlet Invert= 257.10'

‡

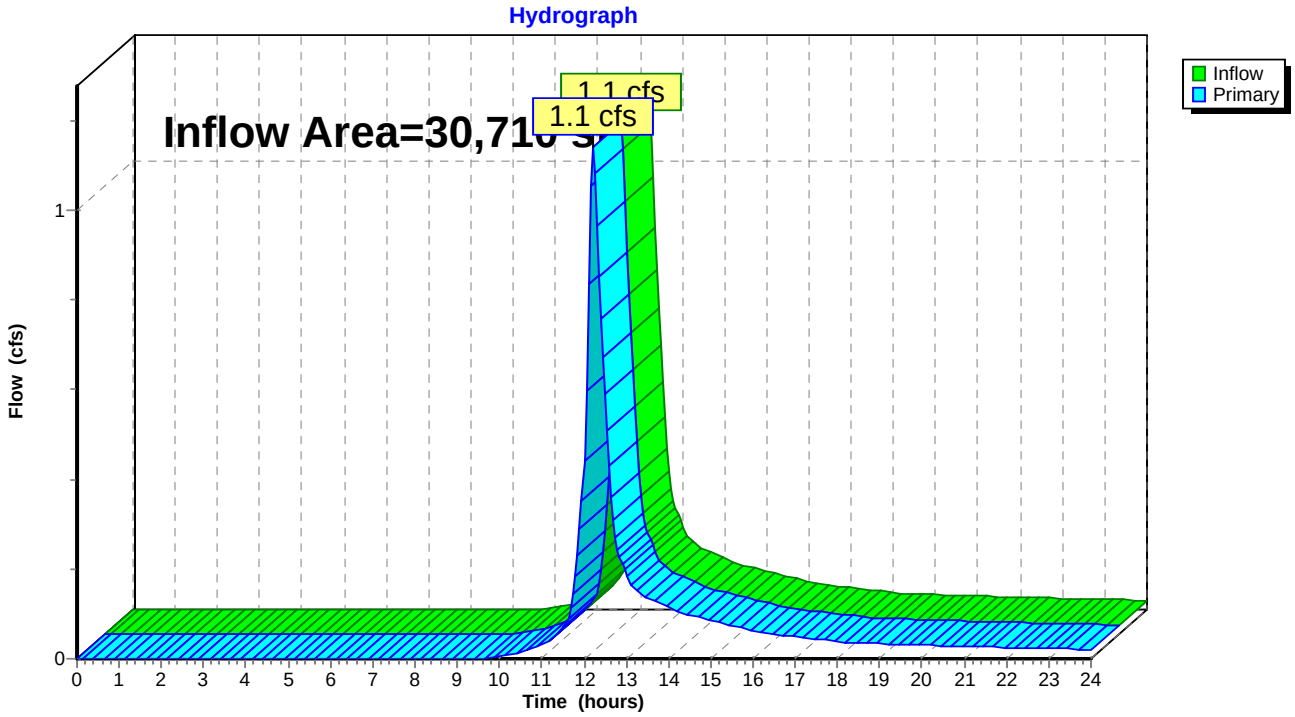


Summary for Link 7L: Wetlands NW

Inflow Area = 30,710 sf, 0.00% Impervious, Inflow Depth > 1.81" for 5-Year event
Inflow = 1.1 cfs @ 12.20 hrs, Volume= 4,643 cf
Primary = 1.1 cfs @ 12.20 hrs, Volume= 4,643 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 7L: Wetlands NW

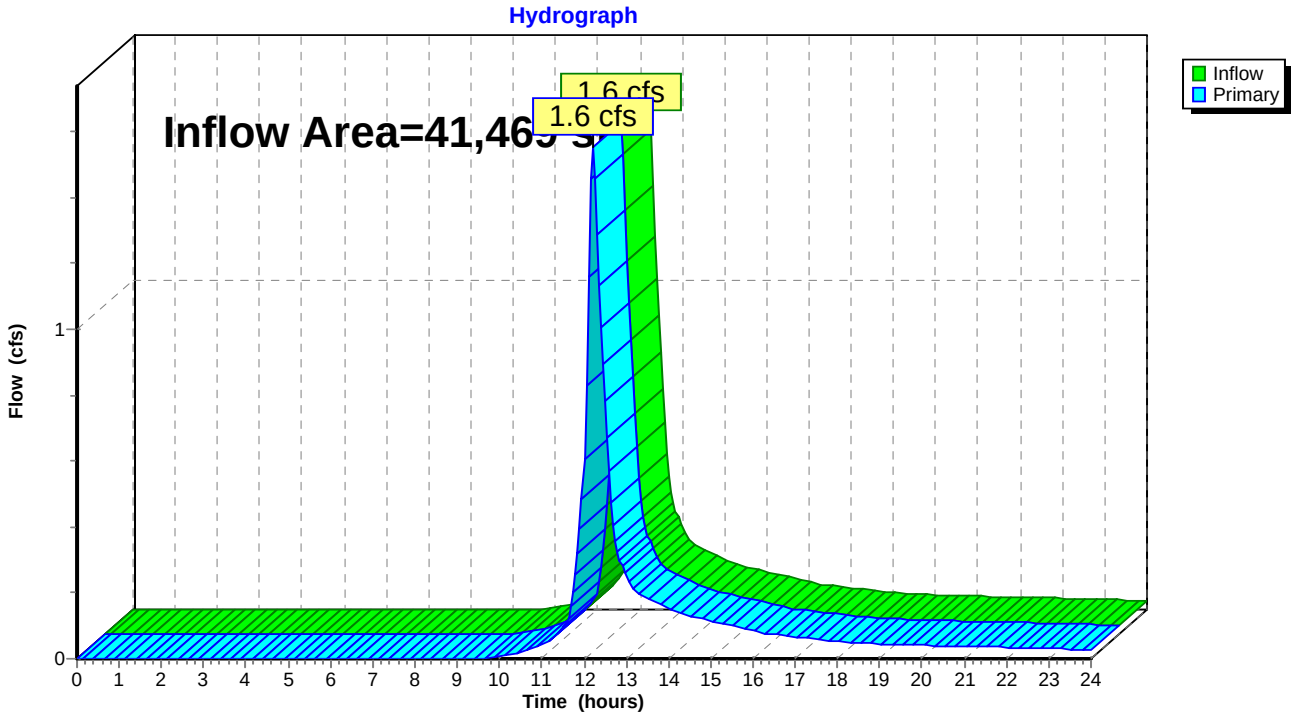


Summary for Link 8L: Depression S

Inflow Area = 41,469 sf, 0.00% Impervious, Inflow Depth > 1.81" for 5-Year event
Inflow = 1.6 cfs @ 12.20 hrs, Volume= 6,271 cf
Primary = 1.6 cfs @ 12.20 hrs, Volume= 6,271 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 8L: Depression S

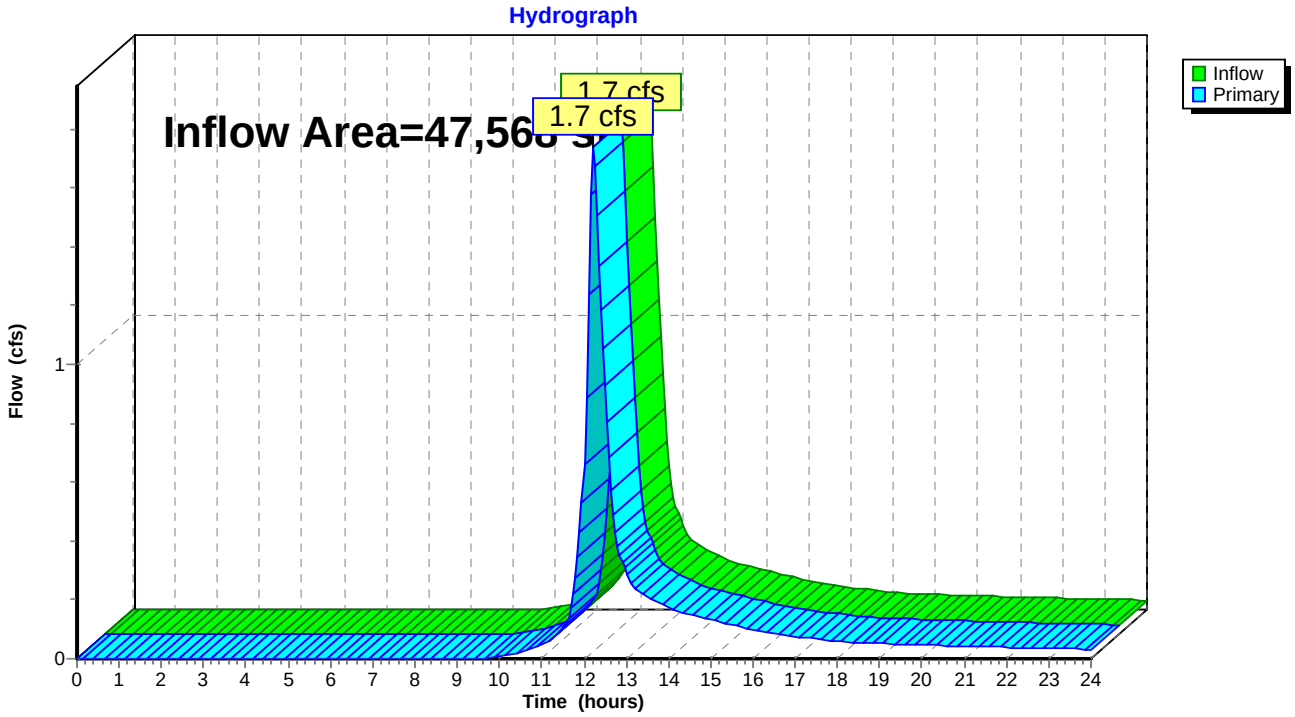


Summary for Link 9L: Wetlands NE

Inflow Area = 47,568 sf, 0.00% Impervious, Inflow Depth > 1.81" for 5-Year event
Inflow = 1.7 cfs @ 12.21 hrs, Volume= 7,191 cf
Primary = 1.7 cfs @ 12.21 hrs, Volume= 7,191 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 9L: Wetlands NE

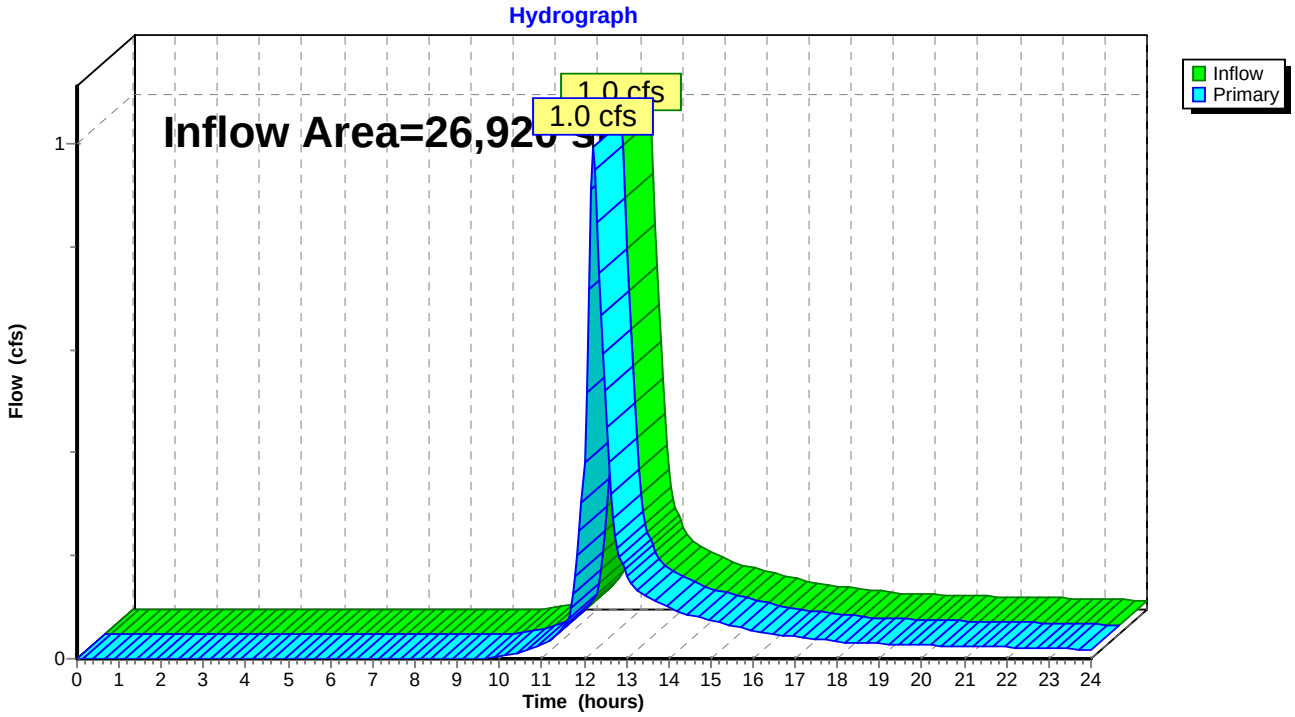


Summary for Link 10L: Wetlands N

Inflow Area = 26,920 sf, 0.00% Impervious, Inflow Depth > 1.81" for 5-Year event
Inflow = 1.0 cfs @ 12.21 hrs, Volume= 4,070 cf
Primary = 1.0 cfs @ 12.21 hrs, Volume= 4,070 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 10L: Wetlands N

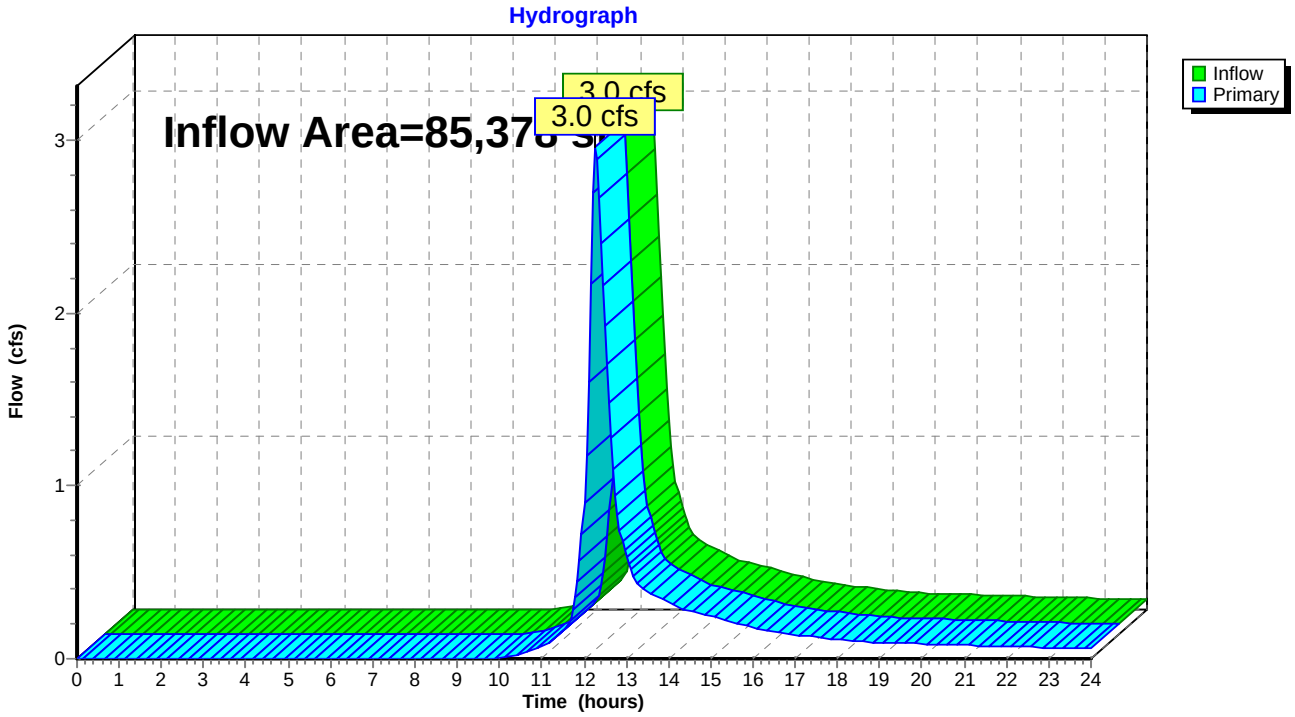


Summary for Link 11L: Collection Swale W

Inflow Area = 85,378 sf, 0.00% Impervious, Inflow Depth > 1.81" for 5-Year event
Inflow = 3.0 cfs @ 12.27 hrs, Volume= 12,857 cf
Primary = 3.0 cfs @ 12.27 hrs, Volume= 12,857 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 11L: Collection Swale W

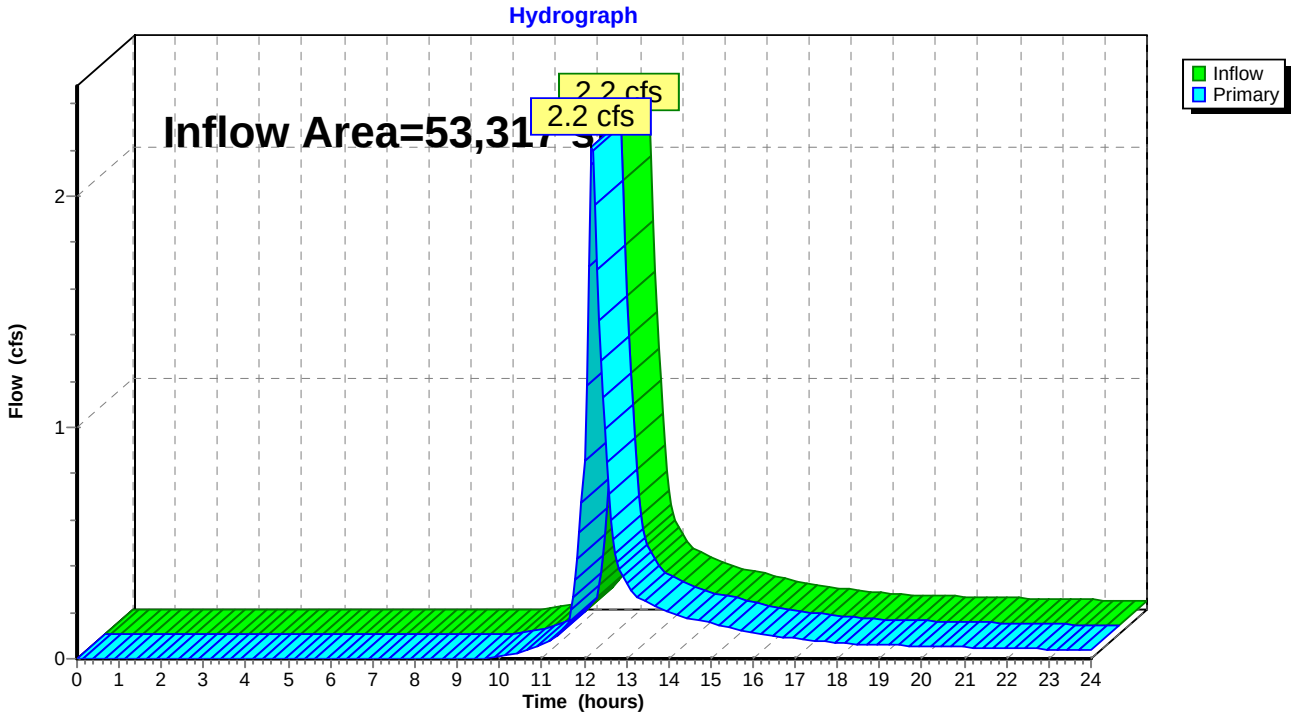


Summary for Link 12L: Collection Swale W

Inflow Area = 53,317 sf, 0.00% Impervious, Inflow Depth > 1.88" for 5-Year event
Inflow = 2.2 cfs @ 12.19 hrs, Volume= 8,374 cf
Primary = 2.2 cfs @ 12.19 hrs, Volume= 8,374 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 12L: Collection Swale W

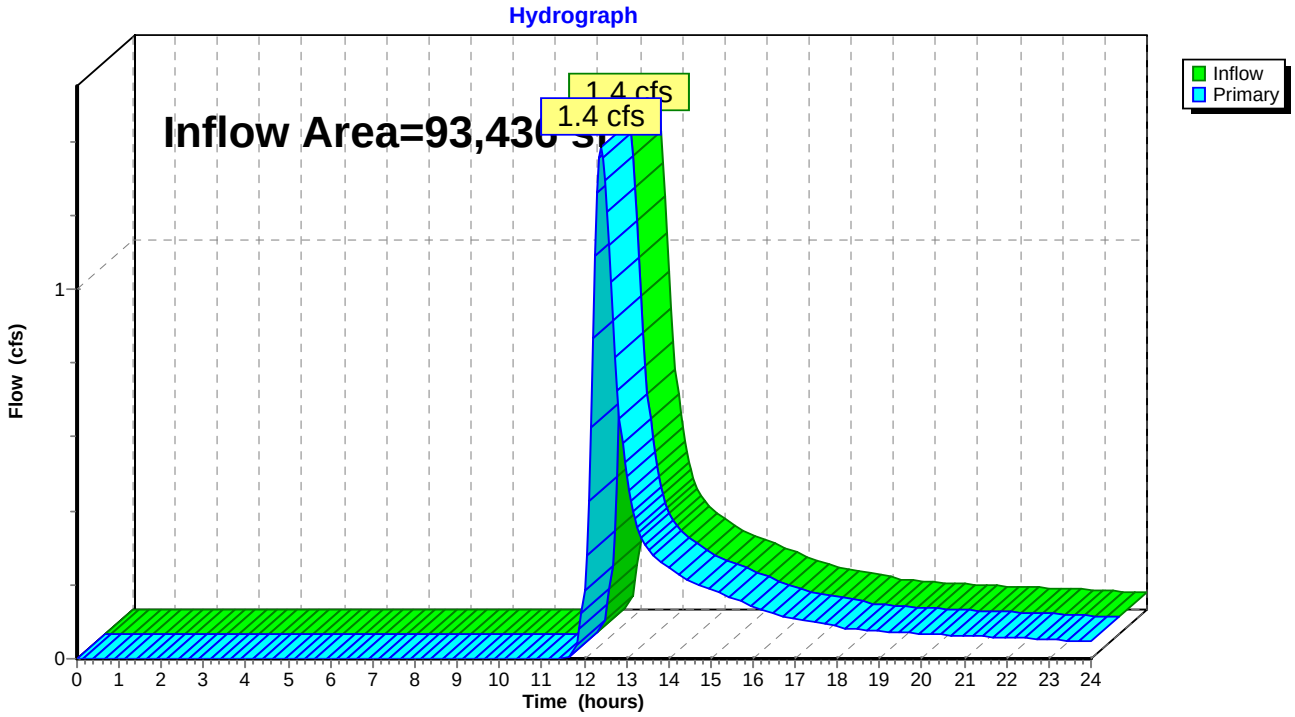


Summary for Link 15L: Wetland W

Inflow Area = 93,436 sf, 0.00% Impervious, Inflow Depth > 1.02" for 5-Year event
Inflow = 1.4 cfs @ 12.40 hrs, Volume= 7,938 cf
Primary = 1.4 cfs @ 12.40 hrs, Volume= 7,938 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 15L: Wetland W

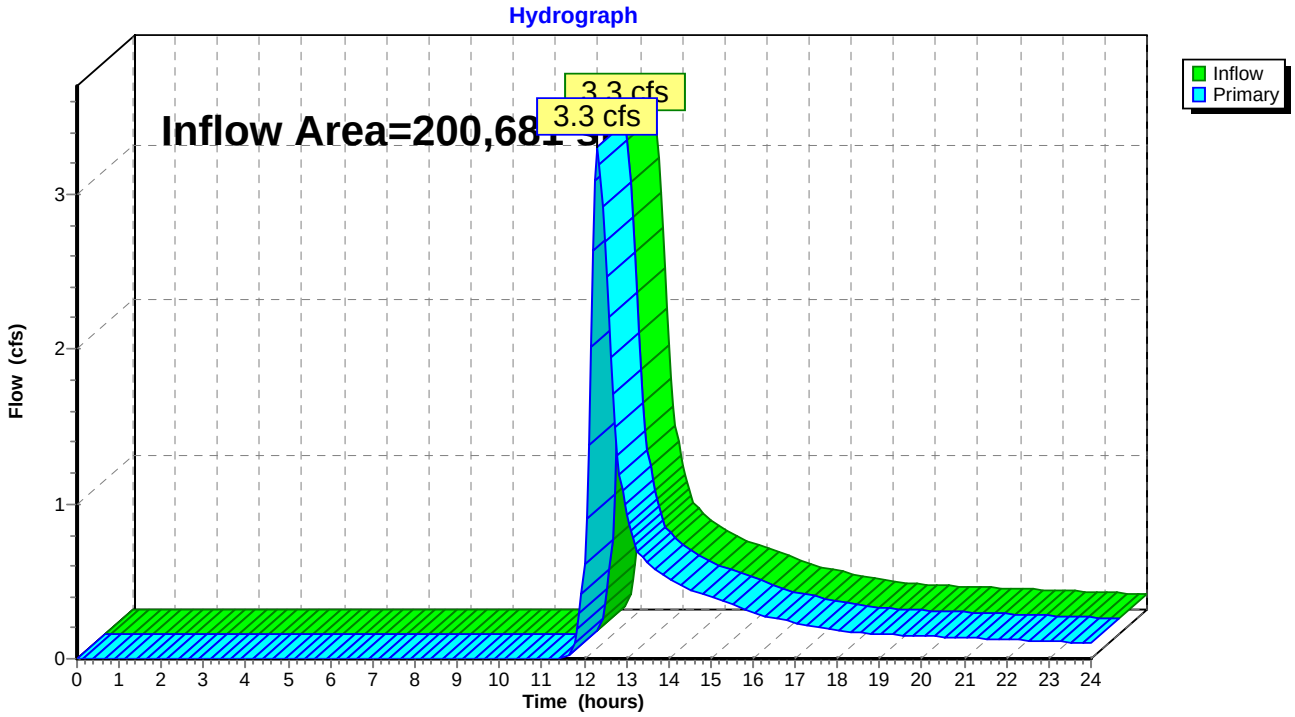


Summary for Link 16L: Wetland E

Inflow Area = 200,681 sf, 0.00% Impervious, Inflow Depth > 1.04" for 5-Year event
Inflow = 3.3 cfs @ 12.32 hrs, Volume= 17,438 cf
Primary = 3.3 cfs @ 12.32 hrs, Volume= 17,438 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 16L: Wetland E



Time span=0.00-24.00 hrs, dt=0.050 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Bulky Waste Landfill SW Runoff Area=0.952 ac 0.00% Impervious Runoff Depth>2.36"
Flow Length=239' Tc=13.7 min CN=74 Runoff=2.0 cfs 8,148 cf

Subcatchment 2S: Bulky Waste Landfill NW Runoff Area=0.705 ac 0.00% Impervious Runoff Depth>2.36"
Flow Length=179' Tc=14.1 min CN=74 Runoff=1.5 cfs 6,033 cf

Subcatchment 3S: Bulky Waste Landfill E Runoff Area=1.092 ac 0.00% Impervious Runoff Depth>2.36"
Flow Length=204' Tc=14.6 min CN=74 Runoff=2.3 cfs 9,344 cf

Subcatchment 4S: Landfill N Runoff Area=0.618 ac 0.00% Impervious Runoff Depth>2.36"
Flow Length=222' Tc=14.3 min CN=74 Runoff=1.3 cfs 5,289 cf

Subcatchment 5S: Landfill W Runoff Area=1.960 ac 0.00% Impervious Runoff Depth>2.36"
Flow Length=752' Tc=15.2 min CN=74 Runoff=4.0 cfs 16,770 cf

Subcatchment 6S: Landfill E Runoff Area=1.224 ac 0.00% Impervious Runoff Depth>2.44"
Flow Length=459' Tc=10.0 min CN=75 Runoff=3.0 cfs 10,862 cf

Subcatchment 7S: Green Field W Runoff Area=2.145 ac 0.00% Impervious Runoff Depth>1.43"
Flow Length=472' Tc=24.7 min CN=62 Runoff=2.0 cfs 11,125 cf

Subcatchment 8S: Green Field E Runoff Area=2.890 ac 0.00% Impervious Runoff Depth>1.43"
Flow Length=305' Tc=20.6 min CN=62 Runoff=3.0 cfs 15,007 cf

Subcatchment 9S: Greenfield 2 Runoff Area=1.717 ac 0.00% Impervious Runoff Depth>1.50"
Flow Length=247' Tc=19.4 min CN=63 Runoff=1.9 cfs 9,357 cf

Reach 19R: Riprap Swale Avg. Flow Depth=0.27' Max Vel=3.30 fps Inflow=4.0 cfs 16,770 cf
n=0.030 L=657.0' S=0.0383 '/' Capacity=8.6 cfs Outflow=3.9 cfs 16,715 cf

Reach 21R: Riprap Swale Avg. Flow Depth=0.24' Max Vel=3.23 fps Inflow=3.0 cfs 10,862 cf
n=0.030 L=527.0' S=0.0372 '/' Capacity=34.5 cfs Outflow=2.9 cfs 10,830 cf

Link 7L: Wetlands NW Inflow=1.5 cfs 6,033 cf
Primary=1.5 cfs 6,033 cf

Link 8L: Depression S Inflow=2.0 cfs 8,148 cf
Primary=2.0 cfs 8,148 cf

Link 9L: Wetlands NE Inflow=2.3 cfs 9,344 cf
Primary=2.3 cfs 9,344 cf

Link 10L: Wetlands N Inflow=1.3 cfs 5,289 cf
Primary=1.3 cfs 5,289 cf

Link 11L: Collection Swale W Inflow=3.9 cfs 16,715 cf
Primary=3.9 cfs 16,715 cf

Link 12L: Collection Swale W Inflow=2.9 cfs 10,830 cf
Primary=2.9 cfs 10,830 cf

Link 15L: Wetland W Inflow=2.0 cfs 11,125 cf
Primary=2.0 cfs 11,125 cf

Link 16L: Wetland E Inflow=4.9 cfs 24,364 cf
Primary=4.9 cfs 24,364 cf

Total Runoff Area = 579,479 sf Runoff Volume = 91,936 cf Average Runoff Depth = 1.90"
100.00% Pervious = 579,479 sf 0.00% Impervious = 0 sf

Summary for Subcatchment 1S: Bulky Waste Landfill SW

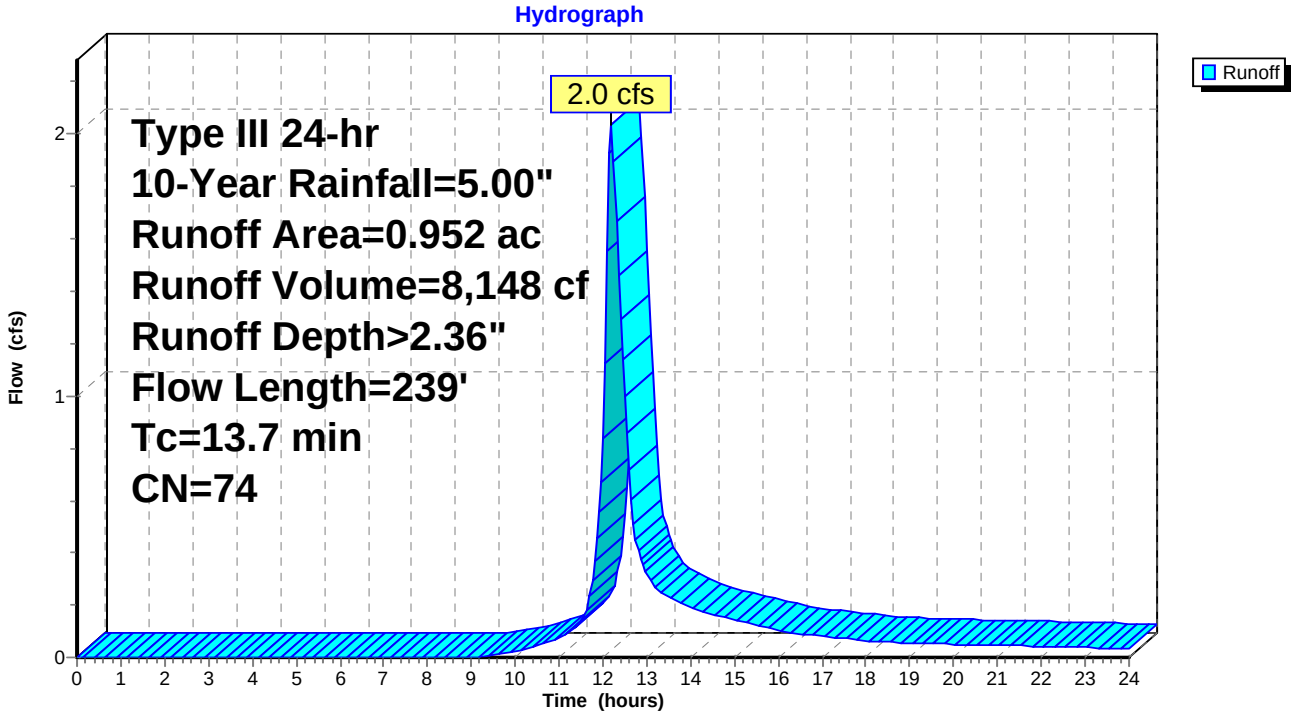
Runoff = 2.0 cfs @ 12.20 hrs, Volume= 8,148 cf, Depth> 2.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 10-Year Rainfall=5.00"

Area (ac)	CN	Description
0.952	74	>75% Grass cover, Good, HSG C
0.952		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.6	100	0.0251	0.13		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
0.5	66	0.1137	2.36		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	46	0.1957	3.10		**Shallow Concentrated Flow, Lanfill Cap** Short Grass Pasture Kv= 7.0 fps
0.4	27	0.0050	1.14		**Shallow Concentrated Flow, Access Drive** Unpaved Kv= 16.1 fps
13.7	239	Total			

Subcatchment 1S: Bulky Waste Landfill SW



Summary for Subcatchment 2S: Bulky Waste Landfill NW

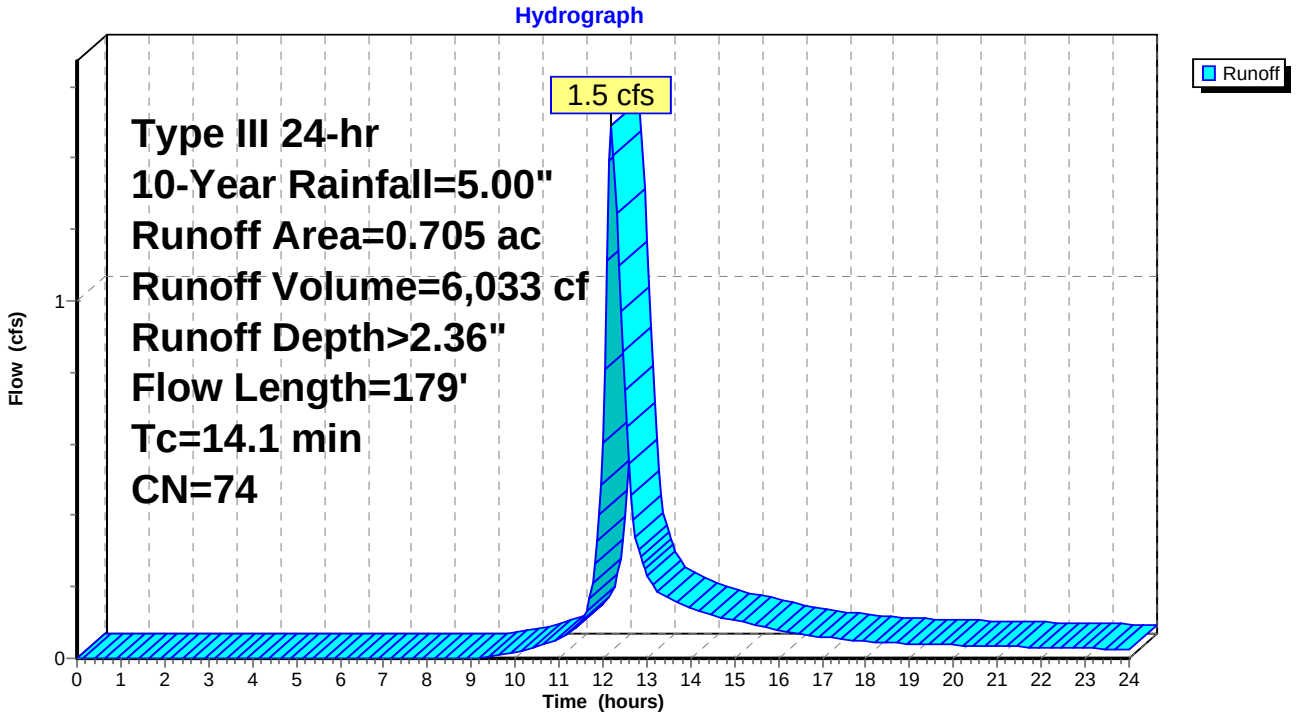
Runoff = 1.5 cfs @ 12.20 hrs, Volume= 6,033 cf, Depth> 2.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 10-Year Rainfall=5.00"

Area (ac)	CN	Description
0.705	74	>75% Grass cover, Good, HSG C
0.705		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0212	0.12		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
0.6	79	0.0886	2.08		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
14.1	179	Total			

Subcatchment 2S: Bulky Waste Landfill NW



Summary for Subcatchment 3S: Bulky Waste Landfill E

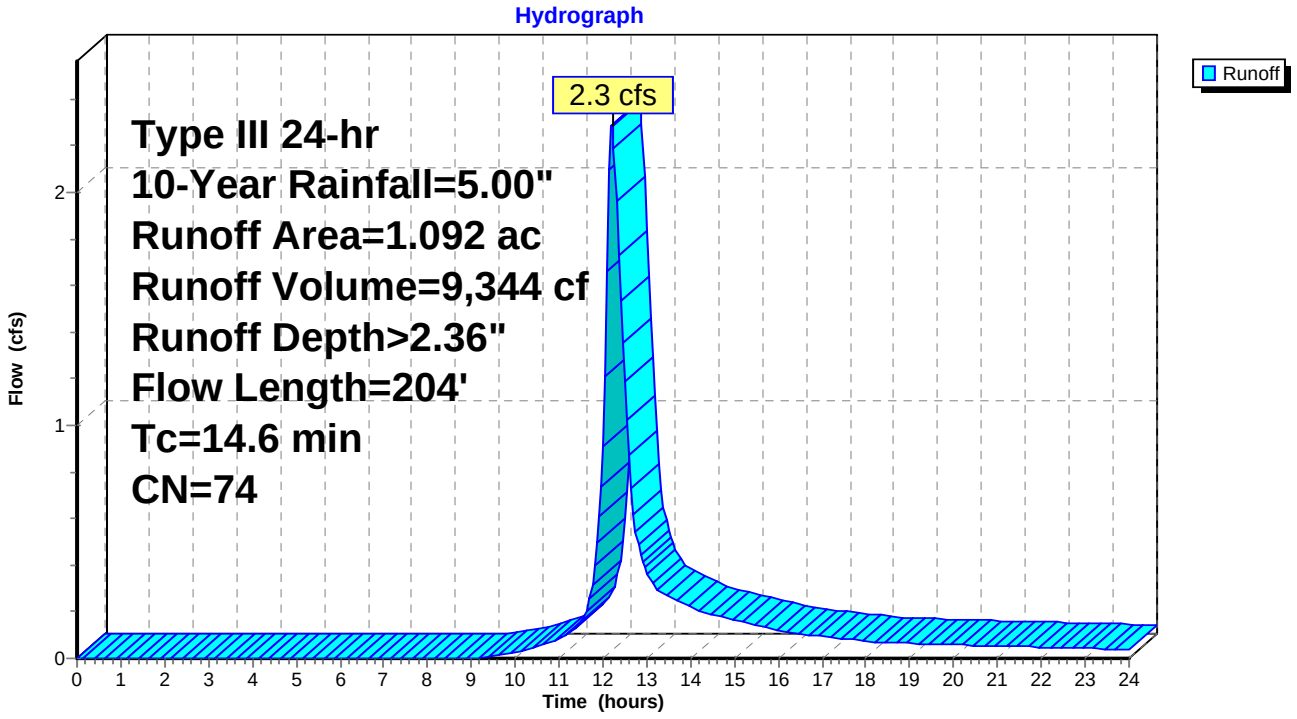
Runoff = 2.3 cfs @ 12.21 hrs, Volume= 9,344 cf, Depth> 2.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 10-Year Rainfall=5.00"

Area (ac)	CN	Description
1.092	74	>75% Grass cover, Good, HSG C
1.092		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0212	0.12		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
1.0	80	0.0375	1.36		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.1	24	0.1667	2.86		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
14.6	204	Total			

Subcatchment 3S: Bulky Waste Landfill E



Summary for Subcatchment 4S: Landfill N

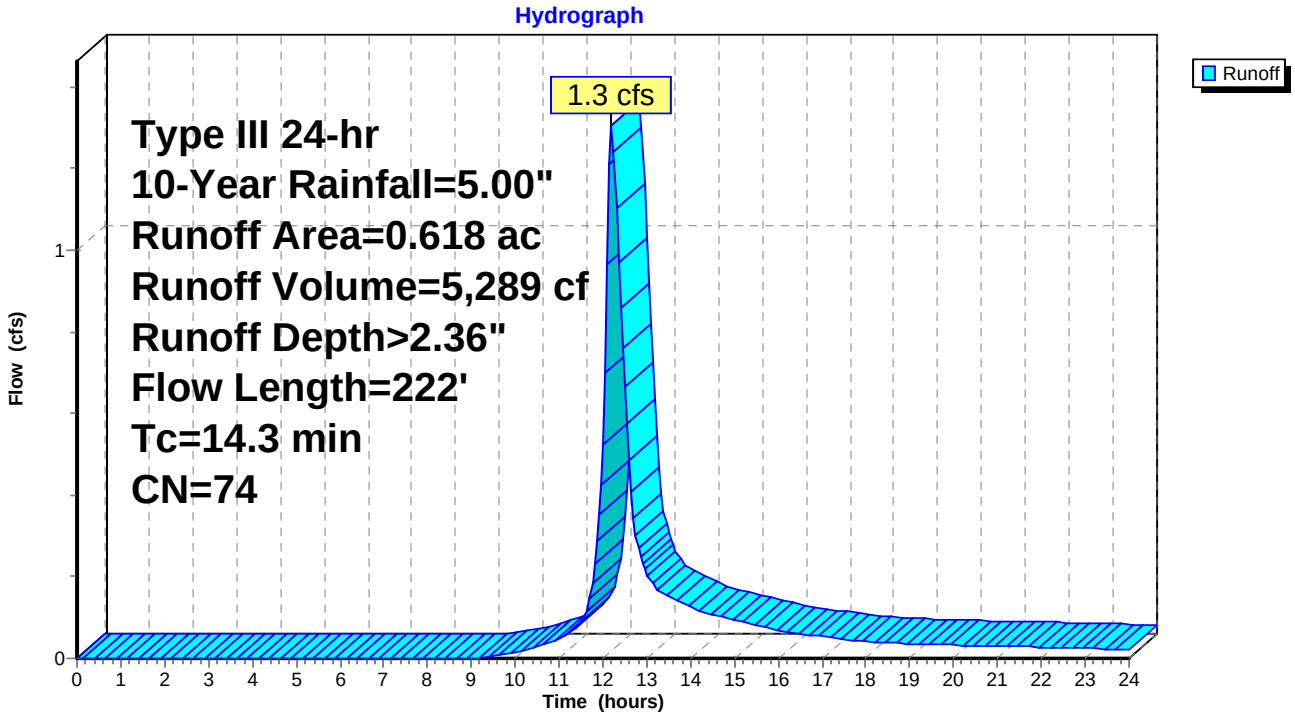
Runoff = 1.3 cfs @ 12.20 hrs, Volume= 5,289 cf, Depth> 2.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 10-Year Rainfall=5.00"

Area (ac)	CN	Description
0.618	74	>75% Grass cover, Good, HSG C
0.618		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	100	0.0230	0.13		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
1.0	81	0.0371	1.35		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	41	0.1707	2.89		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
14.3	222	Total			

Subcatchment 4S: Landfill N



Summary for Subcatchment 5S: Landfill W

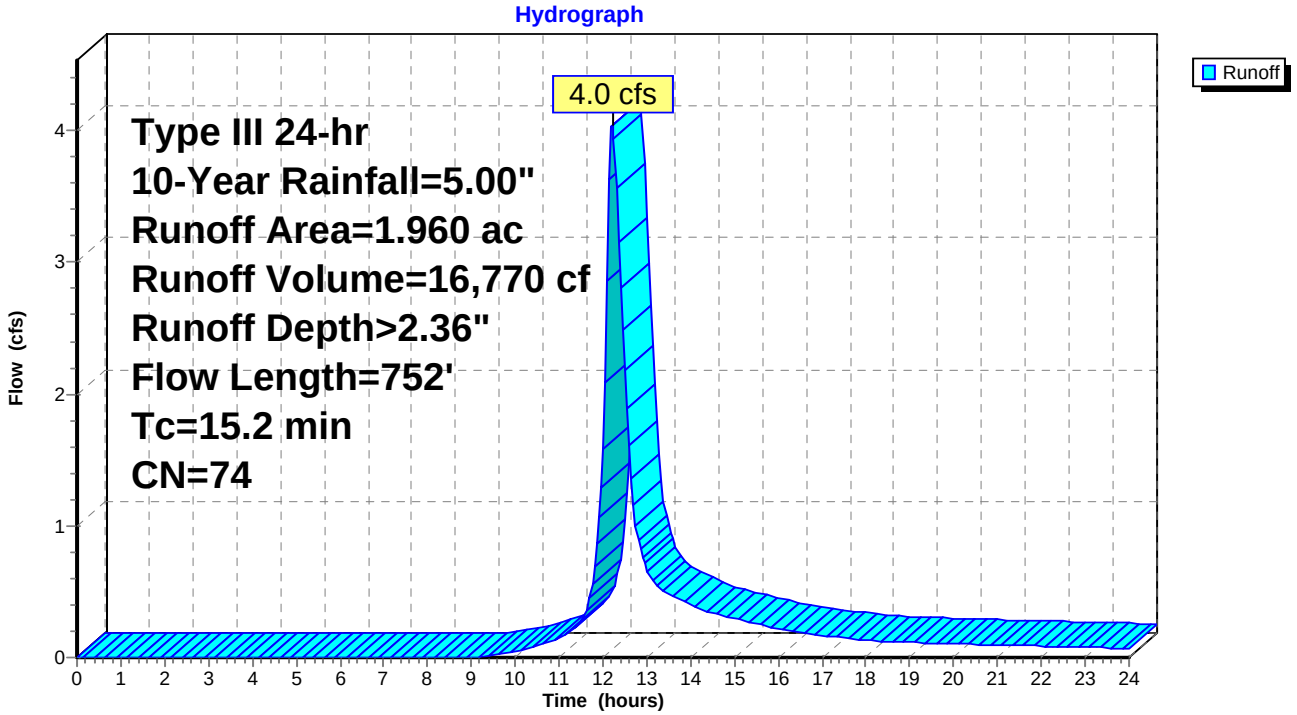
Runoff = 4.0 cfs @ 12.22 hrs, Volume= 16,770 cf, Depth> 2.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 10-Year Rainfall=5.00"

Area (ac)	CN	Description
1.960	74	>75% Grass cover, Good, HSG C
1.960		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.3	100	0.0220	0.13		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
0.3	37	0.0811	1.99		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.3	58	0.1897	3.05		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
1.3	520	0.0200	6.71	50.33	**Channel Flow, Riprap Swale** Area= 7.5 sf Perim= 8.0' r= 0.94' n= 0.030 Rubble masonry, cemented
0.0	37	0.2160	22.05	165.39	**Channel Flow, Riprap Swale** Area= 7.5 sf Perim= 8.0' r= 0.94' n= 0.030 Rubble masonry, cemented
15.2	752	Total			

Subcatchment 5S: Landfill W



Summary for Subcatchment 6S: Landfill E

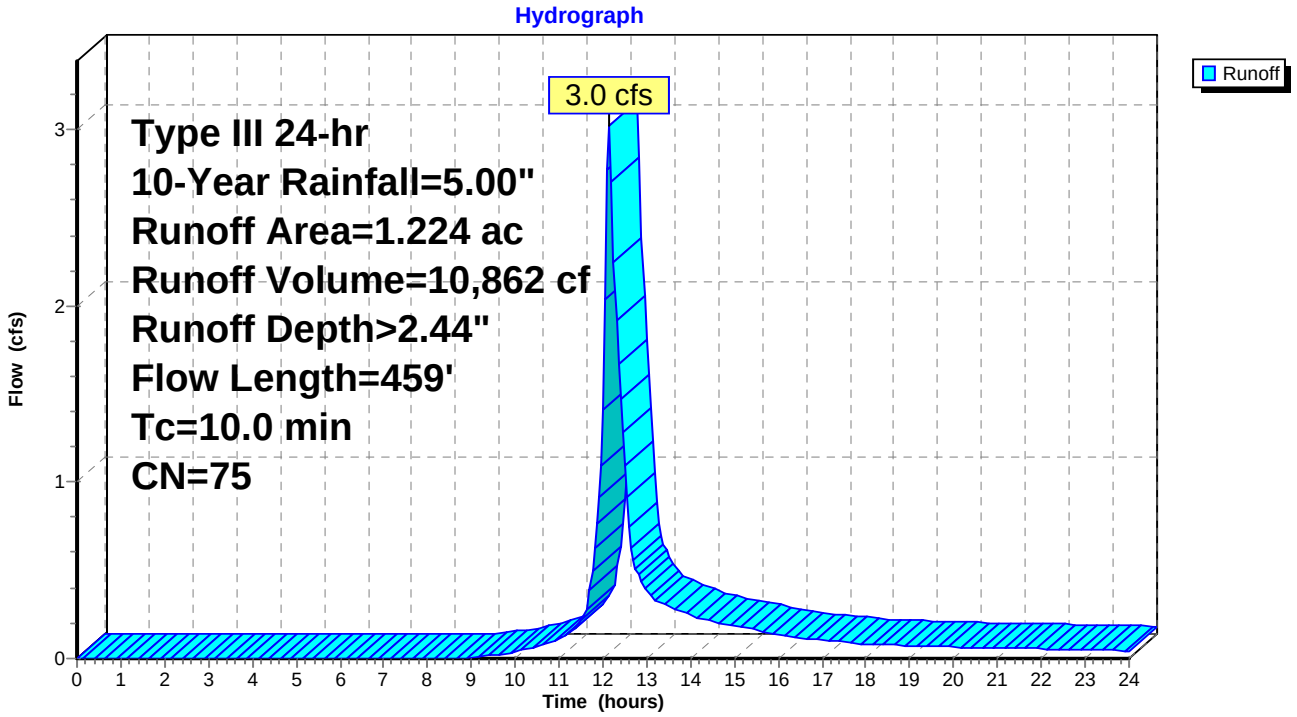
Runoff = 3.0 cfs @ 12.15 hrs, Volume= 10,862 cf, Depth> 2.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 10-Year Rainfall=5.00"

Area (ac)	CN	Description
1.134	74	>75% Grass cover, Good, HSG C
0.090	89	Gravel roads, HSG C
1.224	75	Weighted Average
1.224		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.5	40	0.0543	0.15		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
1.0	60	0.0117	1.03		**Sheet Flow, Gravel** Smooth surfaces n= 0.011 P2= 3.40"
0.5	86	0.0384	3.15		**Shallow Concentrated Flow, Gravel** Unpaved Kv= 16.1 fps
0.7	76	0.0658	1.80		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	49	0.2245	3.32		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	148	0.1081	15.60	117.00	**Channel Flow, Riprap Swale** Area= 7.5 sf Perim= 8.0' r= 0.94' n= 0.030 Rubble masonry, cemented
7.1	459	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 6S: Landfill E



Summary for Subcatchment 7S: Green Field W

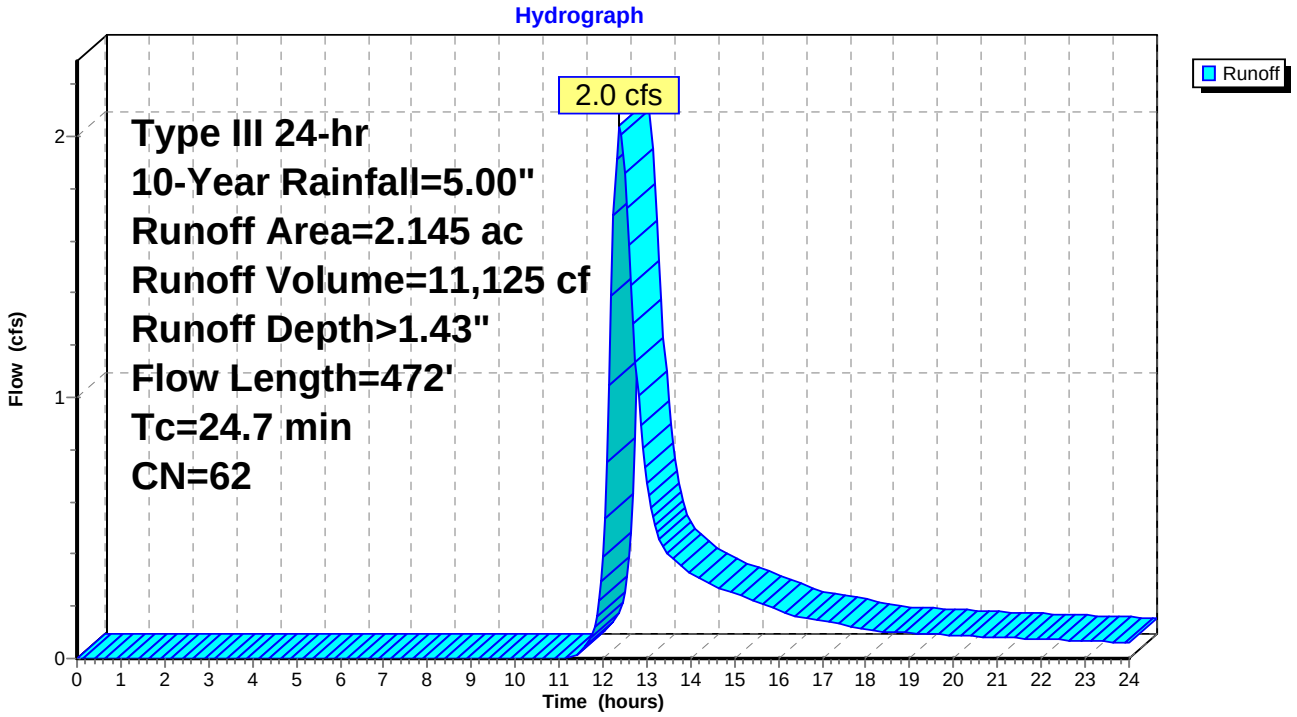
Runoff = 2.0 cfs @ 12.38 hrs, Volume= 11,125 cf, Depth> 1.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 10-Year Rainfall=5.00"

Area (ac)	CN	Description
0.022	74	>75% Grass cover, Good, HSG C
0.089	80	>75% Grass cover, Good, HSG D
0.282	61	>75% Grass cover, Good, HSG B
1.752	61	>75% Grass cover, Good, HSG B
2.145	62	Weighted Average
2.145		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0123	0.10		**Sheet Flow, Field** Grass: Dense n= 0.240 P2= 3.40"
0.4	23	0.0217	1.03		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
4.8	160	0.0063	0.56		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
0.6	51	0.0392	1.39		**Shallow Concentrated Flow, field** Short Grass Pasture Kv= 7.0 fps
1.4	88	0.0227	1.05		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
0.7	50	0.0300	1.21		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
24.7	472	Total			

Subcatchment 7S: Green Field W



Summary for Subcatchment 8S: Green Field E

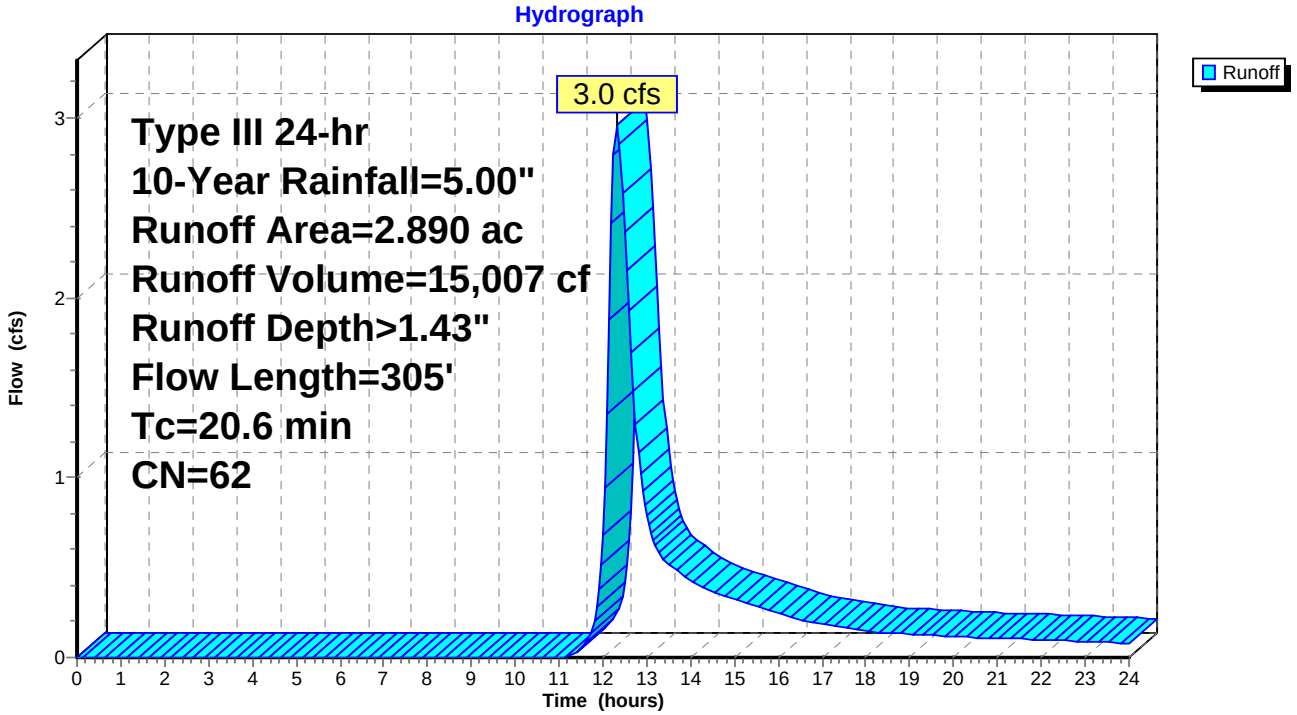
Runoff = 3.0 cfs @ 12.32 hrs, Volume= 15,007 cf, Depth> 1.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 10-Year Rainfall=5.00"

Area (ac)	CN	Description
2.685	61	>75% Grass cover, Good, HSG B
0.072	80	>75% Grass cover, Good, HSG D
0.033	80	>75% Grass cover, Good, HSG D
0.100	61	>75% Grass cover, Good, HSG B
2.890	62	Weighted Average
2.890		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0123	0.10		**Sheet Flow, Field** Grass: Dense n= 0.240 P2= 3.40"
0.4	24	0.0208	1.01		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
2.6	106	0.0094	0.68		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
0.8	75	0.0467	1.51		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
20.6	305	Total			

Subcatchment 8S: Green Field E



Summary for Subcatchment 9S: Greenfield 2

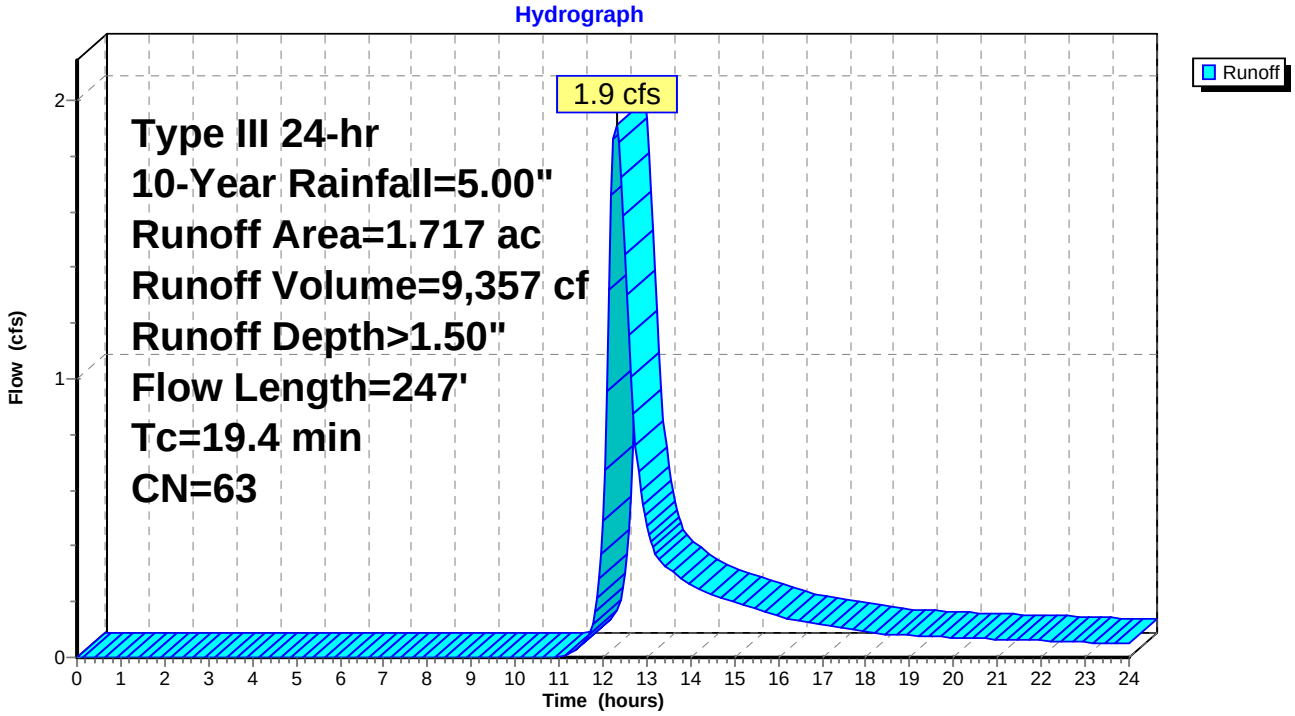
Runoff = 1.9 cfs @ 12.30 hrs, Volume= 9,357 cf, Depth> 1.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 10-Year Rainfall=5.00"

Area (ac)	CN	Description
0.091	77	Woods, Good, HSG D
0.151	55	Woods, Good, HSG B
1.288	61	>75% Grass cover, Good, HSG B
0.187	80	>75% Grass cover, Good, HSG D
1.717	63	Weighted Average
1.717		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.5	100	0.0128	0.10		**Sheet Flow, Grass** Grass: Dense n= 0.240 P2= 3.40"
2.9	147	0.0148	0.85		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
19.4	247	Total			

Subcatchment 9S: Greenfield 2



Summary for Reach 19R: Riprap Swale

Inflow Area = 85,378 sf, 0.00% Impervious, Inflow Depth > 2.36" for 10-Year event
Inflow = 4.0 cfs @ 12.22 hrs, Volume= 16,770 cf
Outflow = 3.9 cfs @ 12.26 hrs, Volume= 16,715 cf, Atten= 3%, Lag= 2.7 min

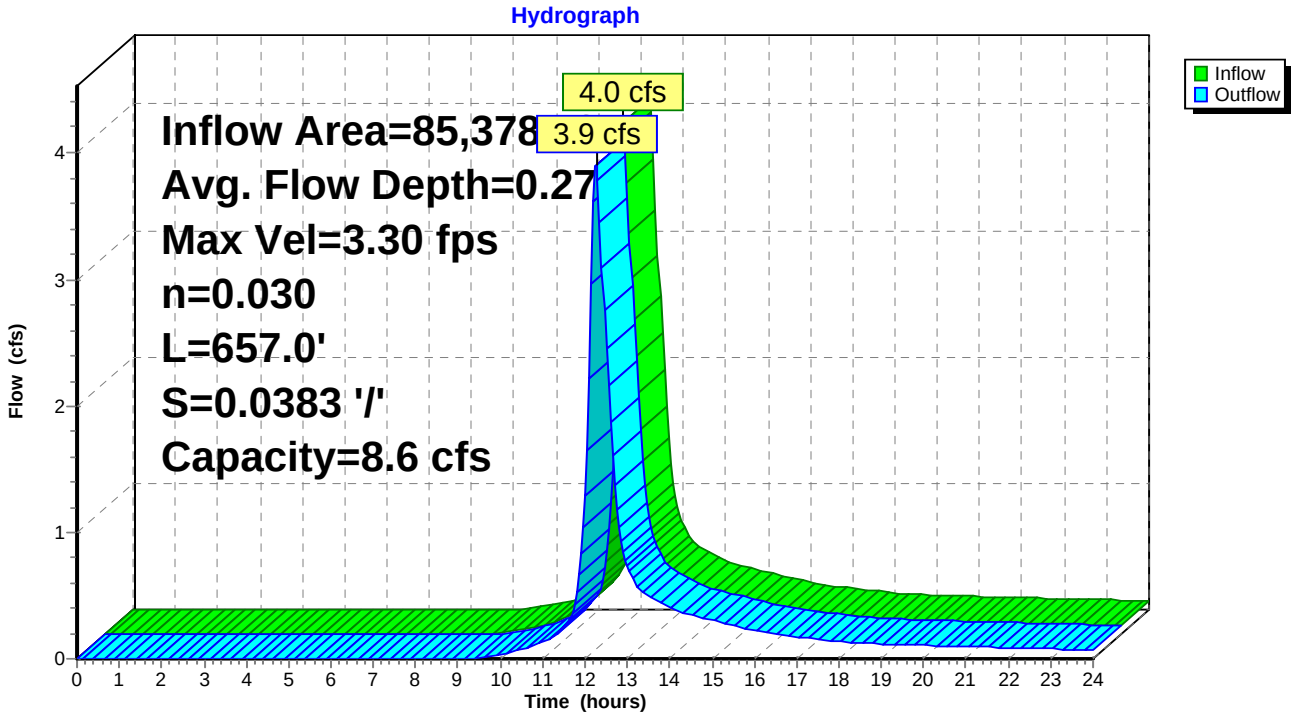
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Max. Velocity= 3.30 fps, Min. Travel Time= 3.3 min
Avg. Velocity = 1.20 fps, Avg. Travel Time= 9.2 min

Peak Storage= 778 cf @ 12.26 hrs
Average Depth at Peak Storage= 0.27'
Bank-Full Depth= 0.40' Flow Area= 2.1 sf, Capacity= 8.6 cfs

3.00' x 0.40' deep channel, n= 0.030 Rubble masonry, cemented
Side Slope Z-value= 5.5 '/' Top Width= 7.40'
Length= 657.0' Slope= 0.0383 '/'
Inlet Invert= 274.52', Outlet Invert= 249.36'

‡

Reach 19R: Riprap Swale



Summary for Reach 21R: Riprap Swale

Inflow Area = 53,317 sf, 0.00% Impervious, Inflow Depth > 2.44" for 10-Year event
Inflow = 3.0 cfs @ 12.15 hrs, Volume= 10,862 cf
Outflow = 2.9 cfs @ 12.18 hrs, Volume= 10,830 cf, Atten= 4%, Lag= 1.9 min

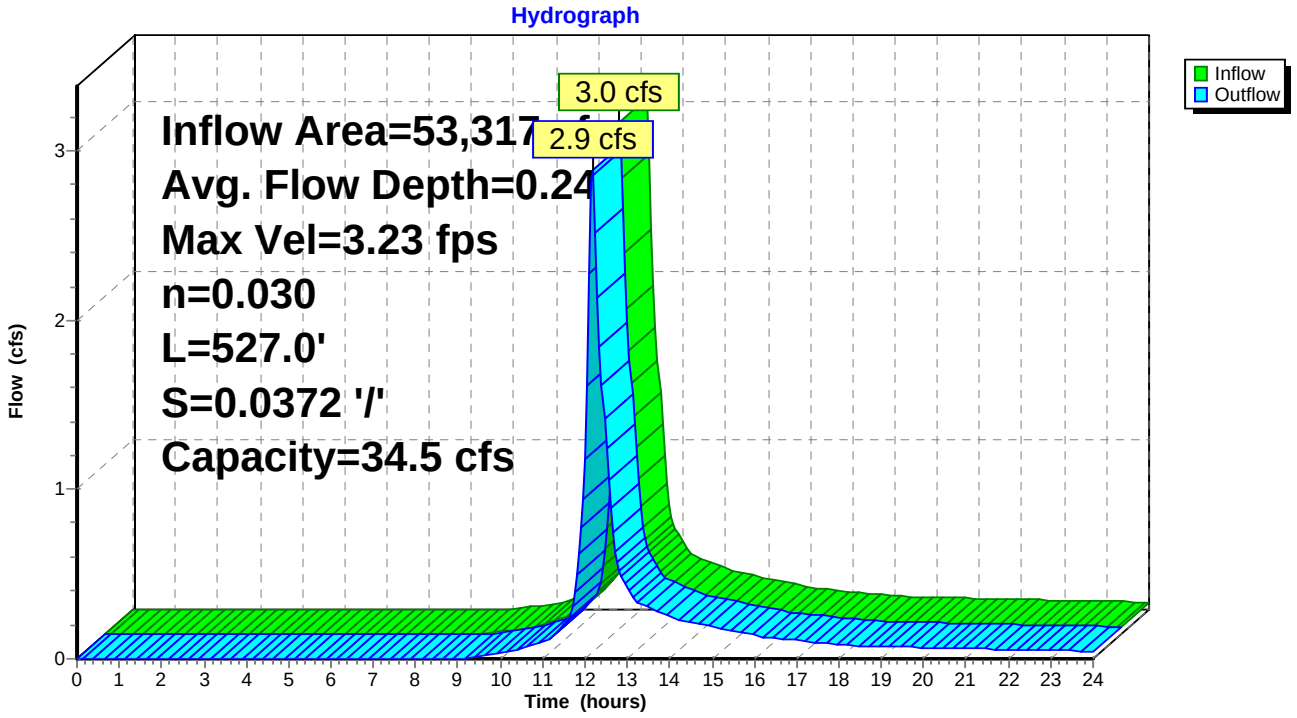
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Max. Velocity= 3.23 fps, Min. Travel Time= 2.7 min
Avg. Velocity = 1.04 fps, Avg. Travel Time= 8.4 min

Peak Storage= 470 cf @ 12.18 hrs
Average Depth at Peak Storage= 0.24'
Bank-Full Depth= 0.90' Flow Area= 5.1 sf, Capacity= 34.5 cfs

3.00' x 0.90' deep channel, n= 0.030 Rubble masonry, cemented
Side Slope Z-value= 3.0 '/' Top Width= 8.40'
Length= 527.0' Slope= 0.0372 '/'
Inlet Invert= 276.70', Outlet Invert= 257.10'

‡

Reach 21R: Riprap Swale

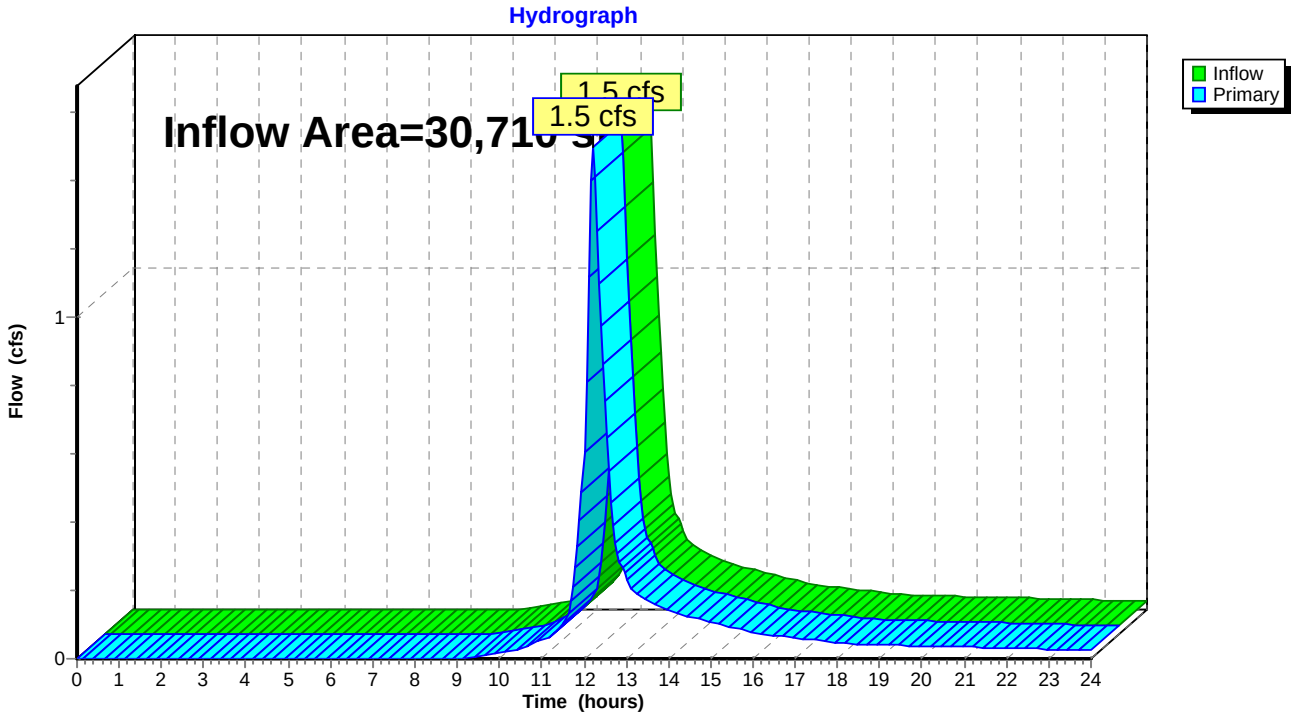


Summary for Link 7L: Wetlands NW

Inflow Area = 30,710 sf, 0.00% Impervious, Inflow Depth > 2.36" for 10-Year event
Inflow = 1.5 cfs @ 12.20 hrs, Volume= 6,033 cf
Primary = 1.5 cfs @ 12.20 hrs, Volume= 6,033 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 7L: Wetlands NW

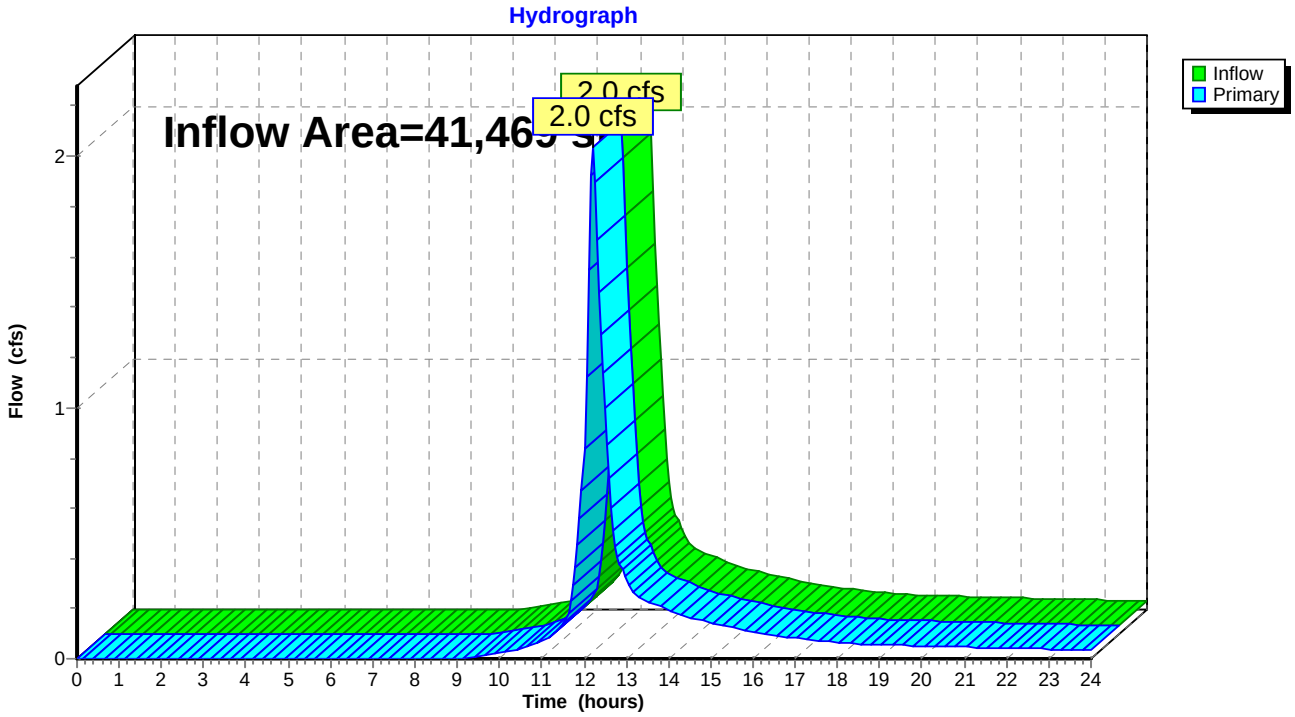


Summary for Link 8L: Depression S

Inflow Area = 41,469 sf, 0.00% Impervious, Inflow Depth > 2.36" for 10-Year event
Inflow = 2.0 cfs @ 12.20 hrs, Volume= 8,148 cf
Primary = 2.0 cfs @ 12.20 hrs, Volume= 8,148 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 8L: Depression S

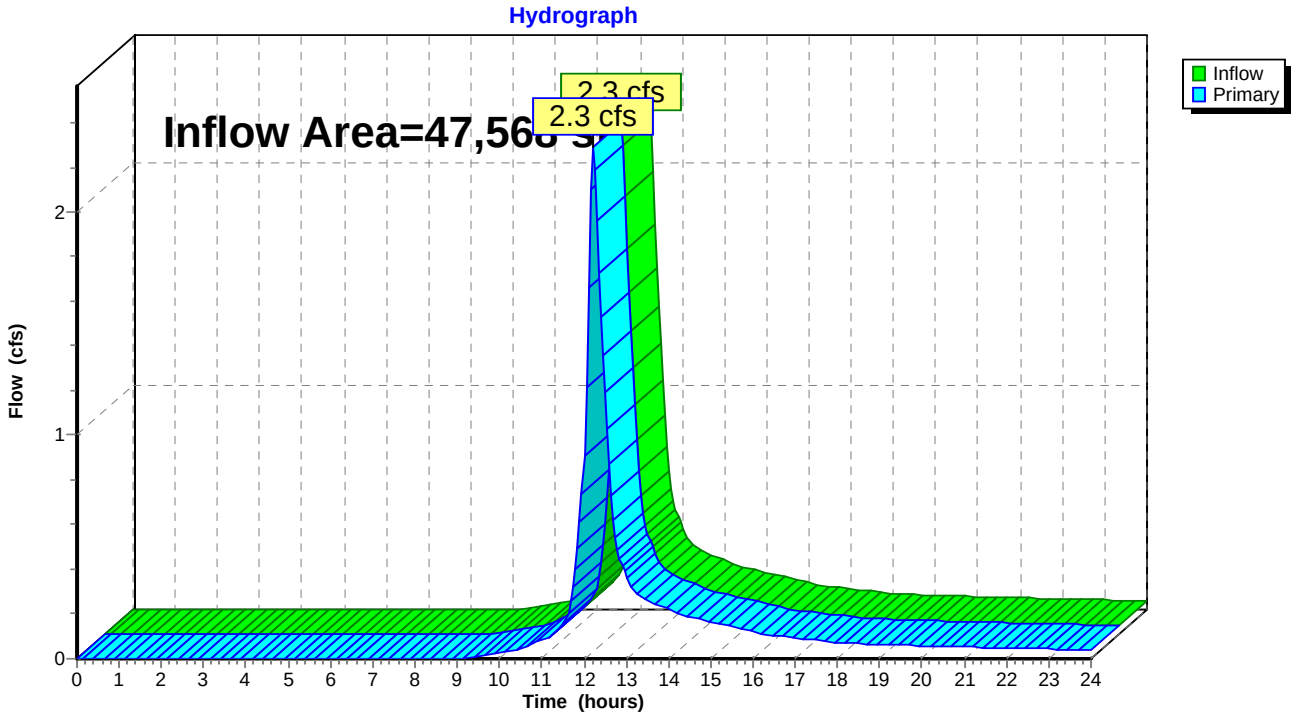


Summary for Link 9L: Wetlands NE

Inflow Area = 47,568 sf, 0.00% Impervious, Inflow Depth > 2.36" for 10-Year event
Inflow = 2.3 cfs @ 12.21 hrs, Volume= 9,344 cf
Primary = 2.3 cfs @ 12.21 hrs, Volume= 9,344 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 9L: Wetlands NE

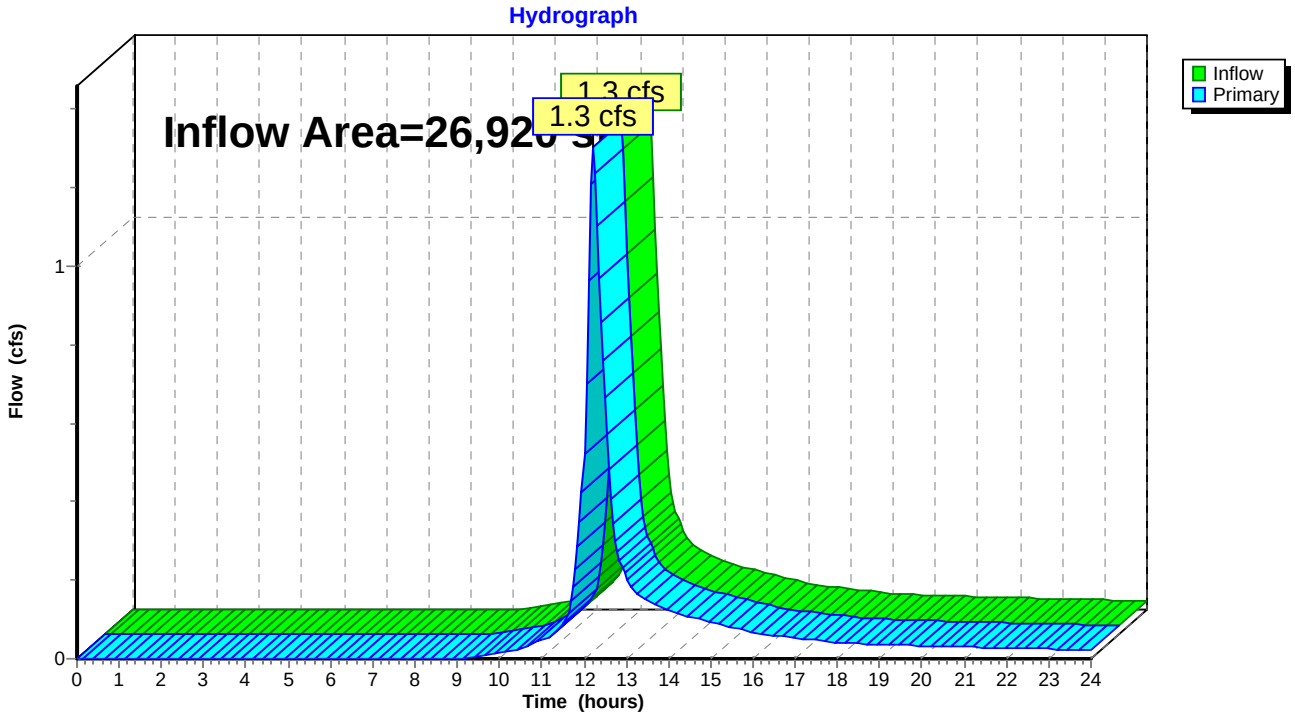


Summary for Link 10L: Wetlands N

Inflow Area = 26,920 sf, 0.00% Impervious, Inflow Depth > 2.36" for 10-Year event
Inflow = 1.3 cfs @ 12.20 hrs, Volume= 5,289 cf
Primary = 1.3 cfs @ 12.20 hrs, Volume= 5,289 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 10L: Wetlands N

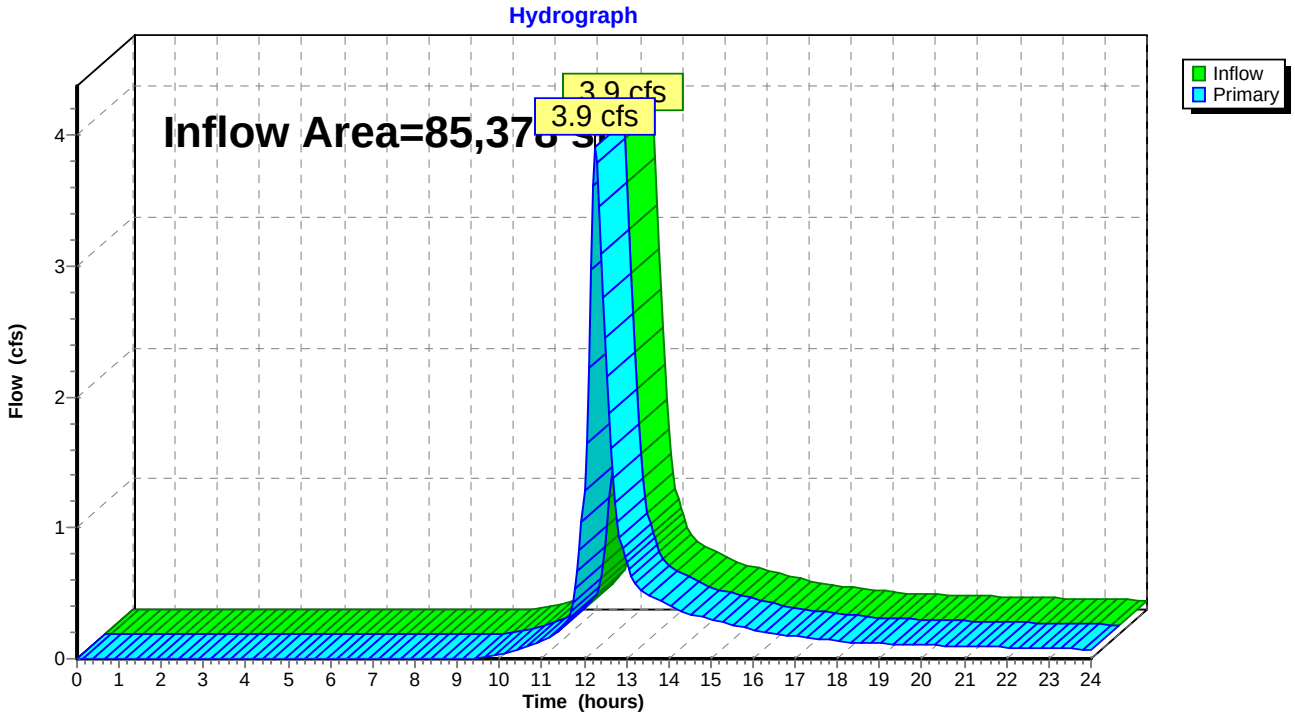


Summary for Link 11L: Collection Swale W

Inflow Area = 85,378 sf, 0.00% Impervious, Inflow Depth > 2.35" for 10-Year event
Inflow = 3.9 cfs @ 12.26 hrs, Volume= 16,715 cf
Primary = 3.9 cfs @ 12.26 hrs, Volume= 16,715 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 11L: Collection Swale W

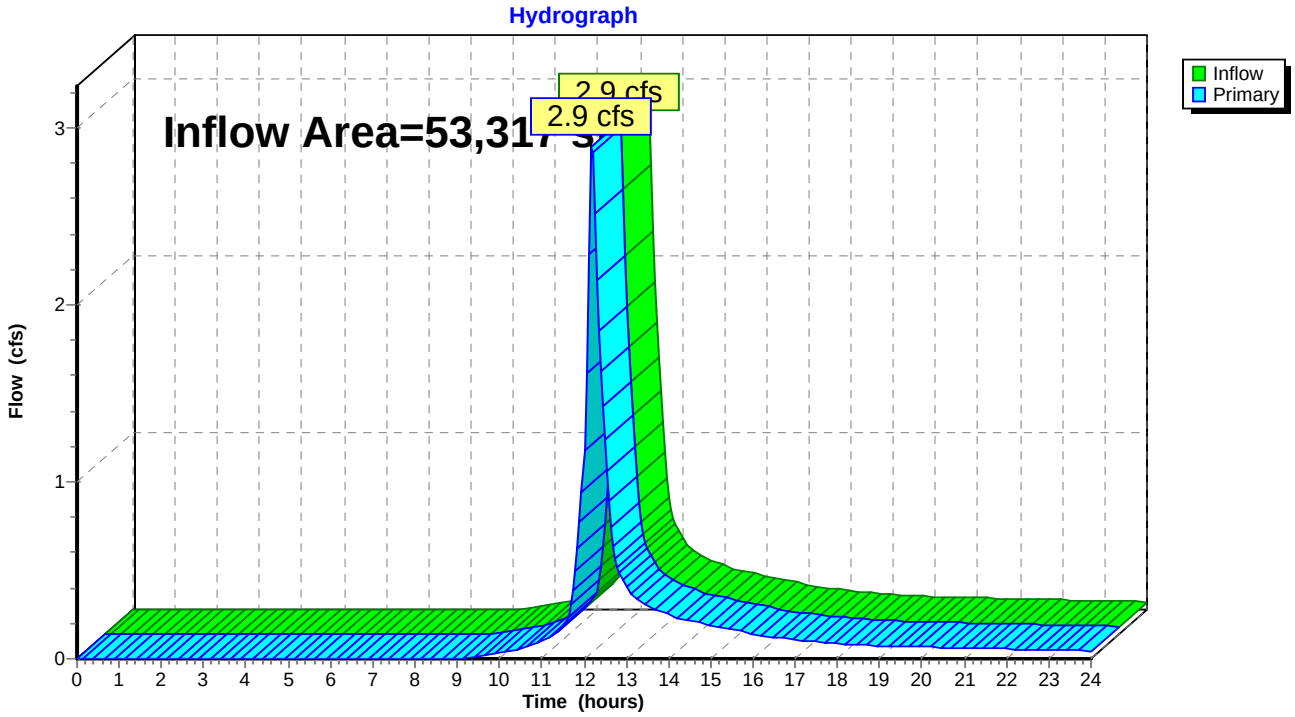


Summary for Link 12L: Collection Swale W

Inflow Area = 53,317 sf, 0.00% Impervious, Inflow Depth > 2.44" for 10-Year event
Inflow = 2.9 cfs @ 12.18 hrs, Volume= 10,830 cf
Primary = 2.9 cfs @ 12.18 hrs, Volume= 10,830 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 12L: Collection Swale W

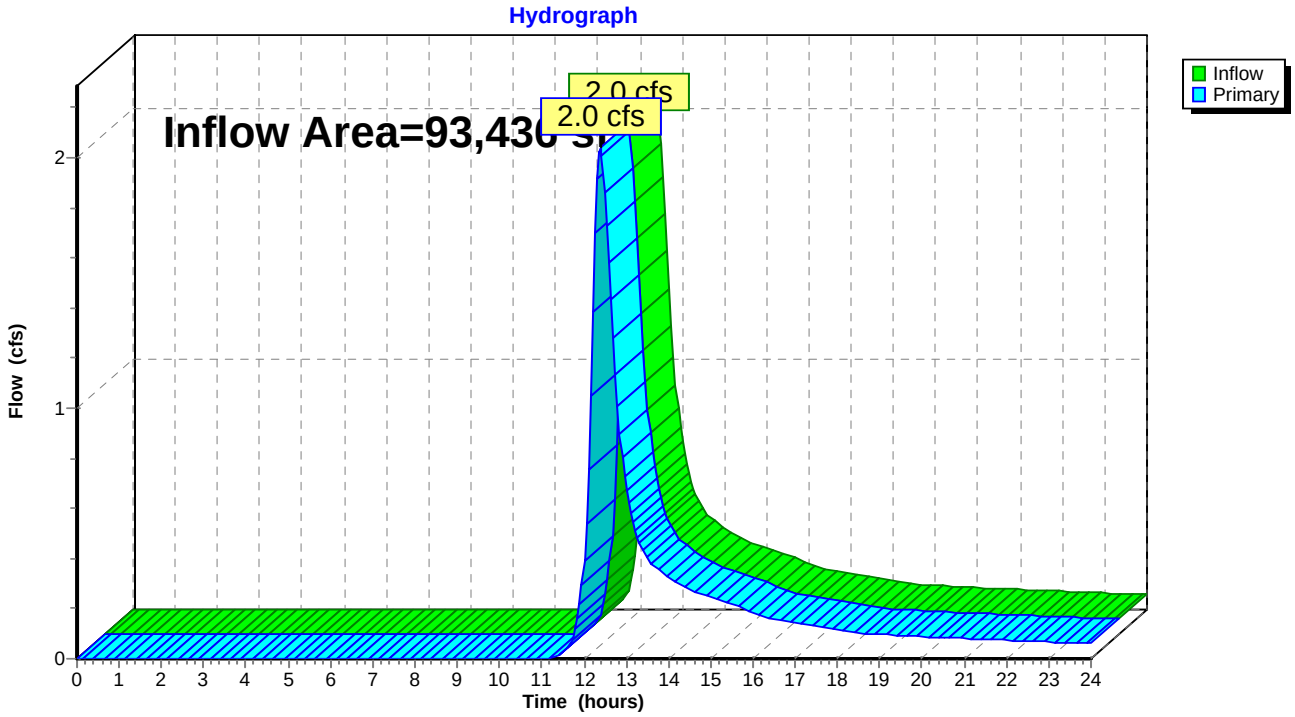


Summary for Link 15L: Wetland W

Inflow Area = 93,436 sf, 0.00% Impervious, Inflow Depth > 1.43" for 10-Year event
Inflow = 2.0 cfs @ 12.38 hrs, Volume= 11,125 cf
Primary = 2.0 cfs @ 12.38 hrs, Volume= 11,125 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 15L: Wetland W

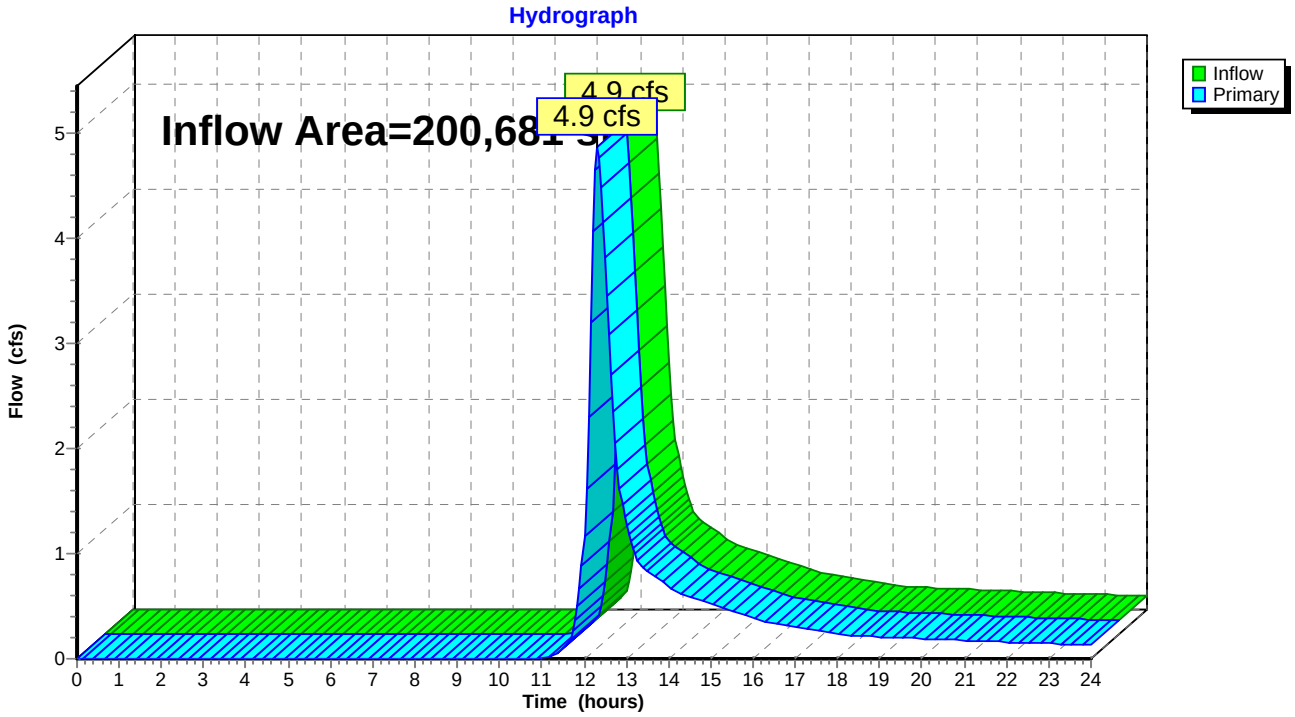


Summary for Link 16L: Wetland E

Inflow Area = 200,681 sf, 0.00% Impervious, Inflow Depth > 1.46" for 10-Year event
Inflow = 4.9 cfs @ 12.31 hrs, Volume= 24,364 cf
Primary = 4.9 cfs @ 12.31 hrs, Volume= 24,364 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 16L: Wetland E



Time span=0.00-24.00 hrs, dt=0.050 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Bulky Waste Landfill SW Runoff Area=0.952 ac 0.00% Impervious Runoff Depth>2.93"
Flow Length=239' Tc=13.7 min CN=74 Runoff=2.5 cfs 10,114 cf

Subcatchment 2S: Bulky Waste Landfill NW Runoff Area=0.705 ac 0.00% Impervious Runoff Depth>2.93"
Flow Length=179' Tc=14.1 min CN=74 Runoff=1.9 cfs 7,489 cf

Subcatchment 3S: Bulky Waste Landfill E Runoff Area=1.092 ac 0.00% Impervious Runoff Depth>2.93"
Flow Length=204' Tc=14.6 min CN=74 Runoff=2.9 cfs 11,599 cf

Subcatchment 4S: Landfill N Runoff Area=0.618 ac 0.00% Impervious Runoff Depth>2.93"
Flow Length=222' Tc=14.3 min CN=74 Runoff=1.6 cfs 6,565 cf

Subcatchment 5S: Landfill W Runoff Area=1.960 ac 0.00% Impervious Runoff Depth>2.93"
Flow Length=752' Tc=15.2 min CN=74 Runoff=5.0 cfs 20,816 cf

Subcatchment 6S: Landfill E Runoff Area=1.224 ac 0.00% Impervious Runoff Depth>3.02"
Flow Length=459' Tc=10.0 min CN=75 Runoff=3.8 cfs 13,430 cf

Subcatchment 7S: Green Field W Runoff Area=2.145 ac 0.00% Impervious Runoff Depth>1.88"
Flow Length=472' Tc=24.7 min CN=62 Runoff=2.8 cfs 14,608 cf

Subcatchment 8S: Green Field E Runoff Area=2.890 ac 0.00% Impervious Runoff Depth>1.88"
Flow Length=305' Tc=20.6 min CN=62 Runoff=4.0 cfs 19,704 cf

Subcatchment 9S: Greenfield 2 Runoff Area=1.717 ac 0.00% Impervious Runoff Depth>1.96"
Flow Length=247' Tc=19.4 min CN=63 Runoff=2.6 cfs 12,217 cf

Reach 19R: Riprap Swale Avg. Flow Depth=0.30' Max Vel=3.52 fps Inflow=5.0 cfs 20,816 cf
n=0.030 L=657.0' S=0.0383 '/' Capacity=8.6 cfs Outflow=4.9 cfs 20,755 cf

Reach 21R: Riprap Swale Avg. Flow Depth=0.27' Max Vel=3.46 fps Inflow=3.8 cfs 13,430 cf
n=0.030 L=527.0' S=0.0372 '/' Capacity=34.5 cfs Outflow=3.6 cfs 13,394 cf

Link 7L: Wetlands NW Inflow=1.9 cfs 7,489 cf
Primary=1.9 cfs 7,489 cf

Link 8L: Depression S Inflow=2.5 cfs 10,114 cf
Primary=2.5 cfs 10,114 cf

Link 9L: Wetlands NE Inflow=2.9 cfs 11,599 cf
Primary=2.9 cfs 11,599 cf

Link 10L: Wetlands N Inflow=1.6 cfs 6,565 cf
Primary=1.6 cfs 6,565 cf

Link 11L: Collection Swale W Inflow=4.9 cfs 20,755 cf
Primary=4.9 cfs 20,755 cf

Link 12L: Collection Swale W Inflow=3.6 cfs 13,394 cf
Primary=3.6 cfs 13,394 cf

Link 15L: Wetland W Inflow=2.8 cfs 14,608 cf
Primary=2.8 cfs 14,608 cf

Link 16L: Wetland E Inflow=6.6 cfs 31,922 cf
Primary=6.6 cfs 31,922 cf

Total Runoff Area = 579,479 sf Runoff Volume = 116,542 cf Average Runoff Depth = 2.41"
100.00% Pervious = 579,479 sf 0.00% Impervious = 0 sf

Summary for Subcatchment 1S: Bulky Waste Landfill SW

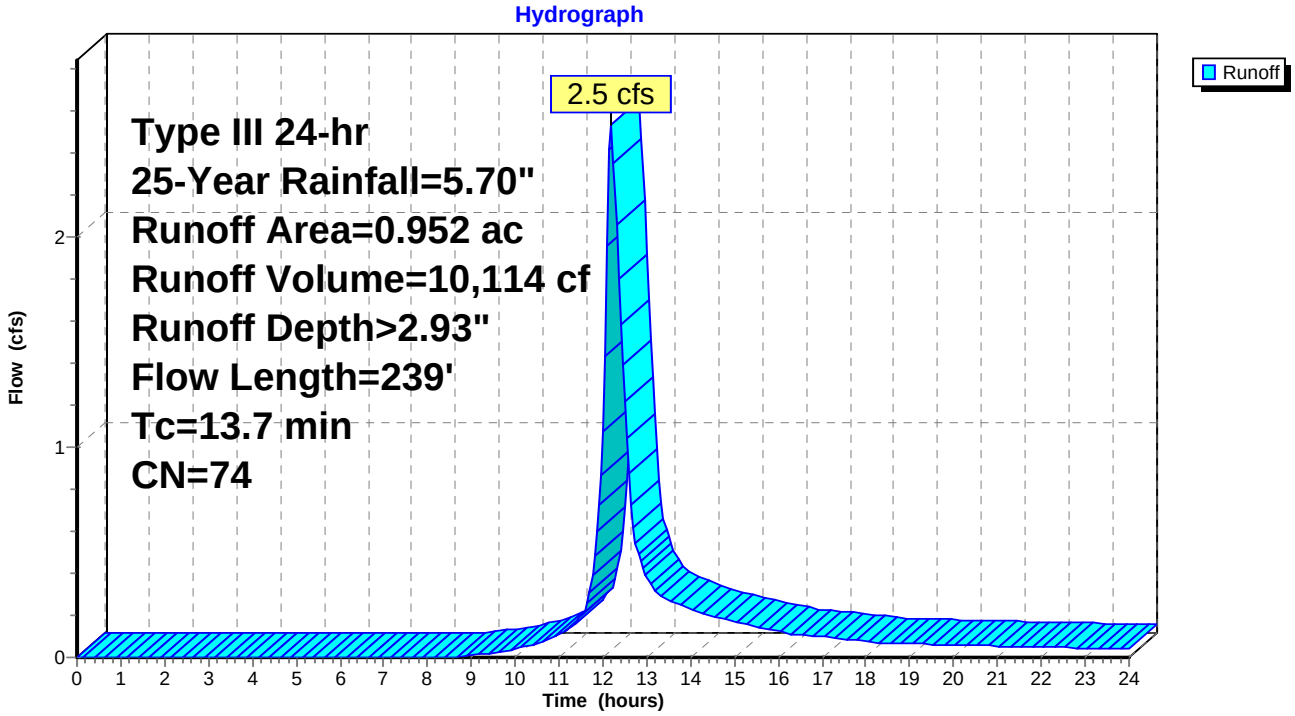
Runoff = 2.5 cfs @ 12.19 hrs, Volume= 10,114 cf, Depth> 2.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 25-Year Rainfall=5.70"

Area (ac)	CN	Description
0.952	74	>75% Grass cover, Good, HSG C
0.952		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.6	100	0.0251	0.13		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
0.5	66	0.1137	2.36		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	46	0.1957	3.10		**Shallow Concentrated Flow, Lanfill Cap** Short Grass Pasture Kv= 7.0 fps
0.4	27	0.0050	1.14		**Shallow Concentrated Flow, Access Drive** Unpaved Kv= 16.1 fps
13.7	239	Total			

Subcatchment 1S: Bulky Waste Landfill SW



Summary for Subcatchment 2S: Bulky Waste Landfill NW

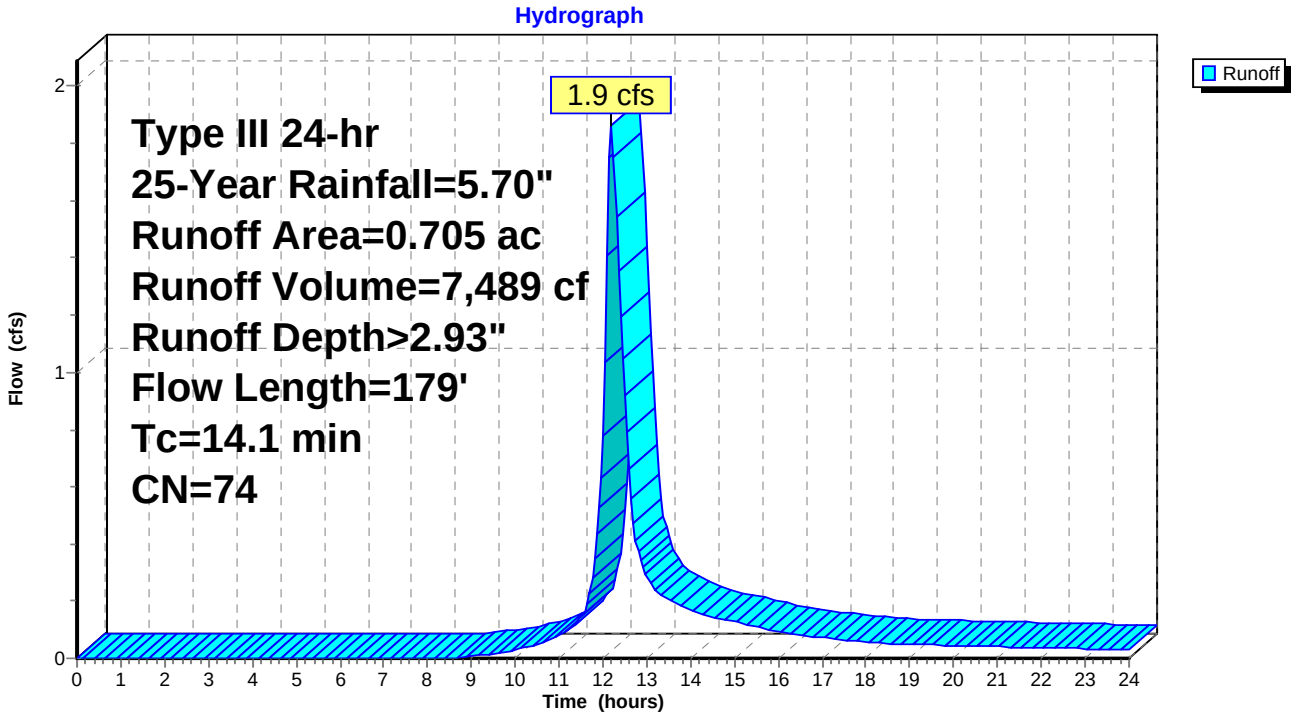
Runoff = 1.9 cfs @ 12.20 hrs, Volume= 7,489 cf, Depth> 2.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 25-Year Rainfall=5.70"

Area (ac)	CN	Description
0.705	74	>75% Grass cover, Good, HSG C
0.705		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0212	0.12		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
0.6	79	0.0886	2.08		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
14.1	179	Total			

Subcatchment 2S: Bulky Waste Landfill NW



Summary for Subcatchment 3S: Bulky Waste Landfill E

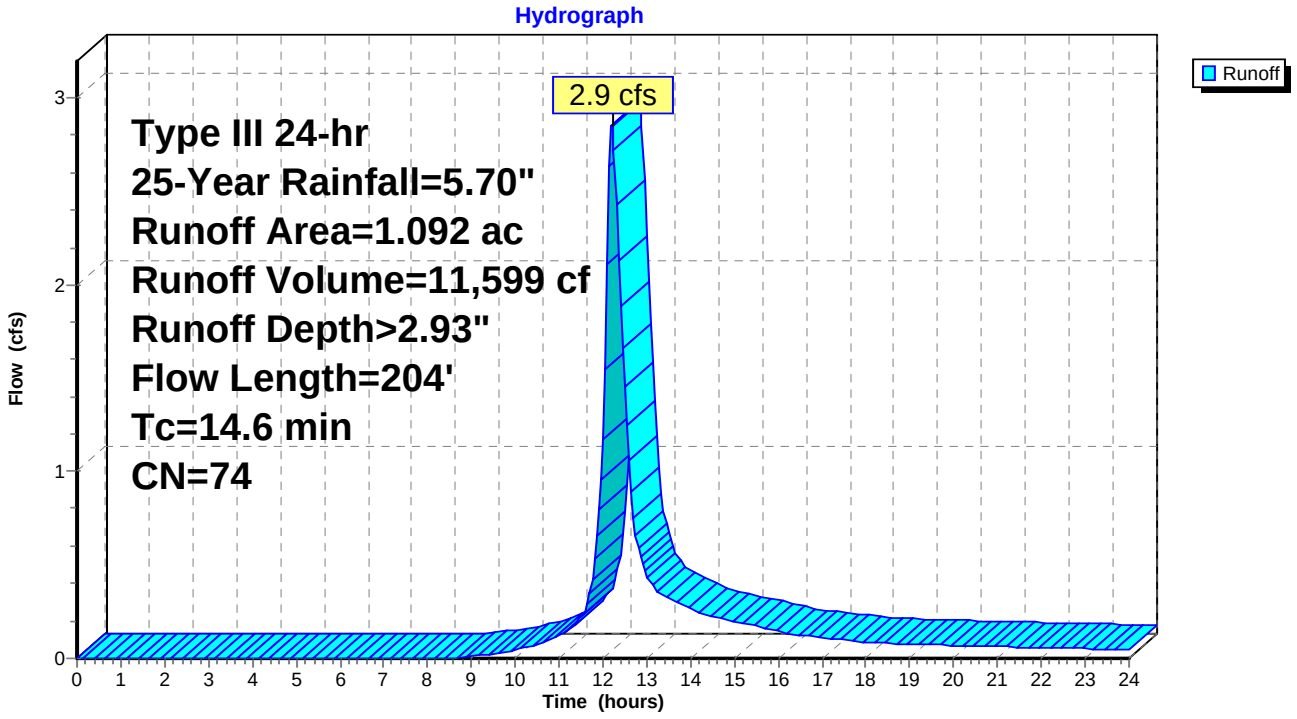
Runoff = 2.9 cfs @ 12.21 hrs, Volume= 11,599 cf, Depth> 2.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 25-Year Rainfall=5.70"

Area (ac)	CN	Description
1.092	74	>75% Grass cover, Good, HSG C
1.092		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0212	0.12		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
1.0	80	0.0375	1.36		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.1	24	0.1667	2.86		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
14.6	204	Total			

Subcatchment 3S: Bulky Waste Landfill E



Summary for Subcatchment 4S: Landfill N

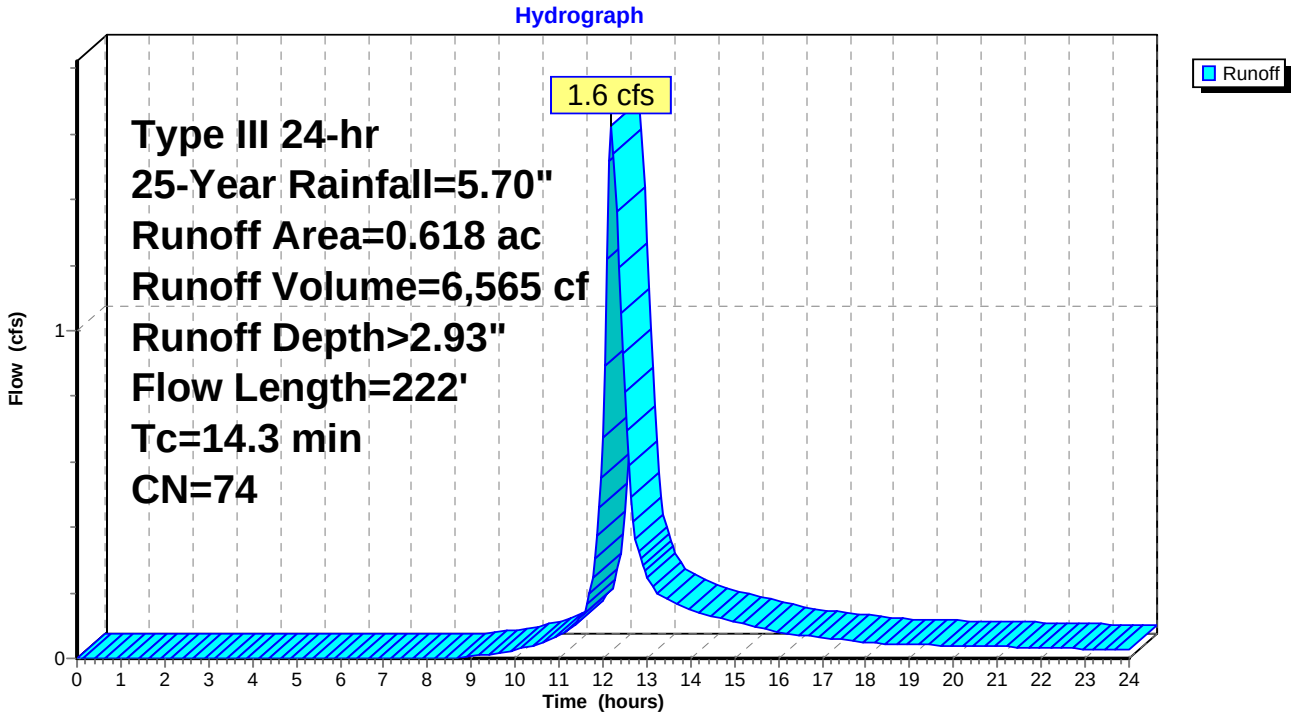
Runoff = 1.6 cfs @ 12.20 hrs, Volume= 6,565 cf, Depth> 2.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 25-Year Rainfall=5.70"

Area (ac)	CN	Description
0.618	74	>75% Grass cover, Good, HSG C
0.618		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	100	0.0230	0.13		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
1.0	81	0.0371	1.35		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	41	0.1707	2.89		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
14.3	222	Total			

Subcatchment 4S: Landfill N



Summary for Subcatchment 5S: Landfill W

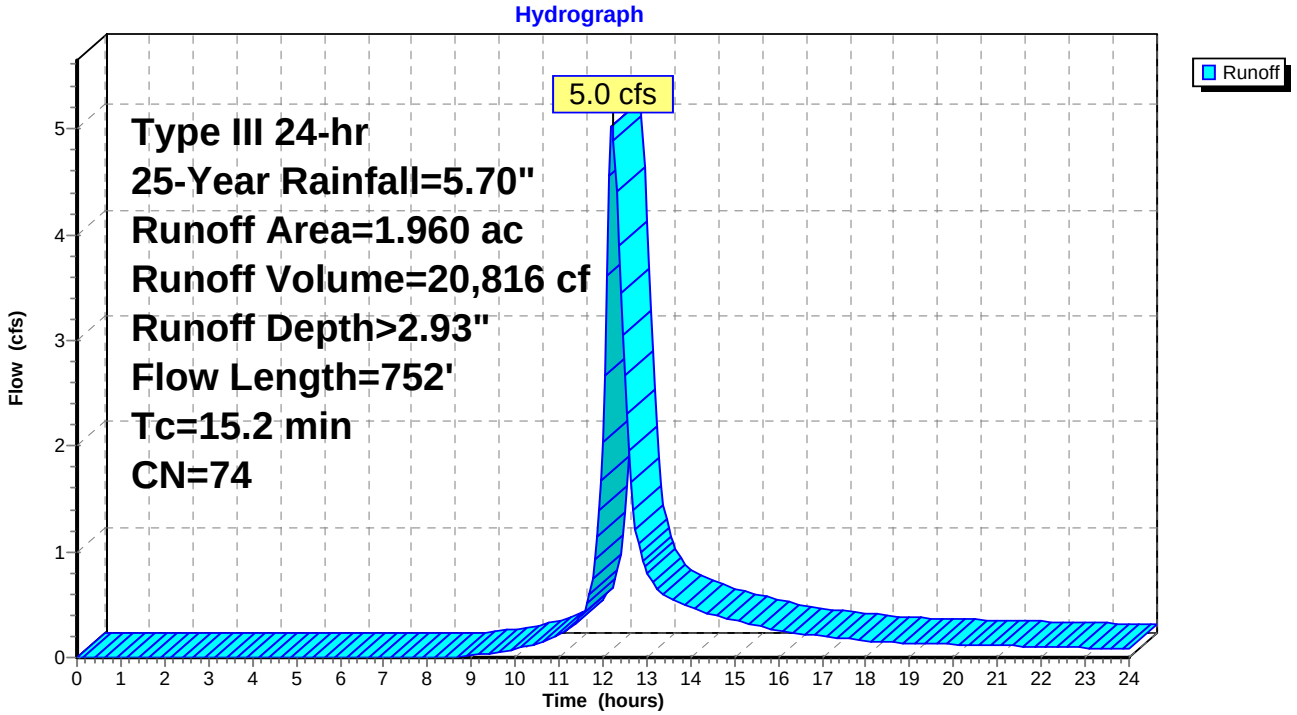
Runoff = 5.0 cfs @ 12.21 hrs, Volume= 20,816 cf, Depth> 2.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 25-Year Rainfall=5.70"

Area (ac)	CN	Description
1.960	74	>75% Grass cover, Good, HSG C
1.960		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.3	100	0.0220	0.13		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
0.3	37	0.0811	1.99		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.3	58	0.1897	3.05		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
1.3	520	0.0200	6.71	50.33	**Channel Flow, Riprap Swale** Area= 7.5 sf Perim= 8.0' r= 0.94' n= 0.030 Rubble masonry, cemented
0.0	37	0.2160	22.05	165.39	**Channel Flow, Riprap Swale** Area= 7.5 sf Perim= 8.0' r= 0.94' n= 0.030 Rubble masonry, cemented
15.2	752	Total			

Subcatchment 5S: Landfill W



Summary for Subcatchment 6S: Landfill E

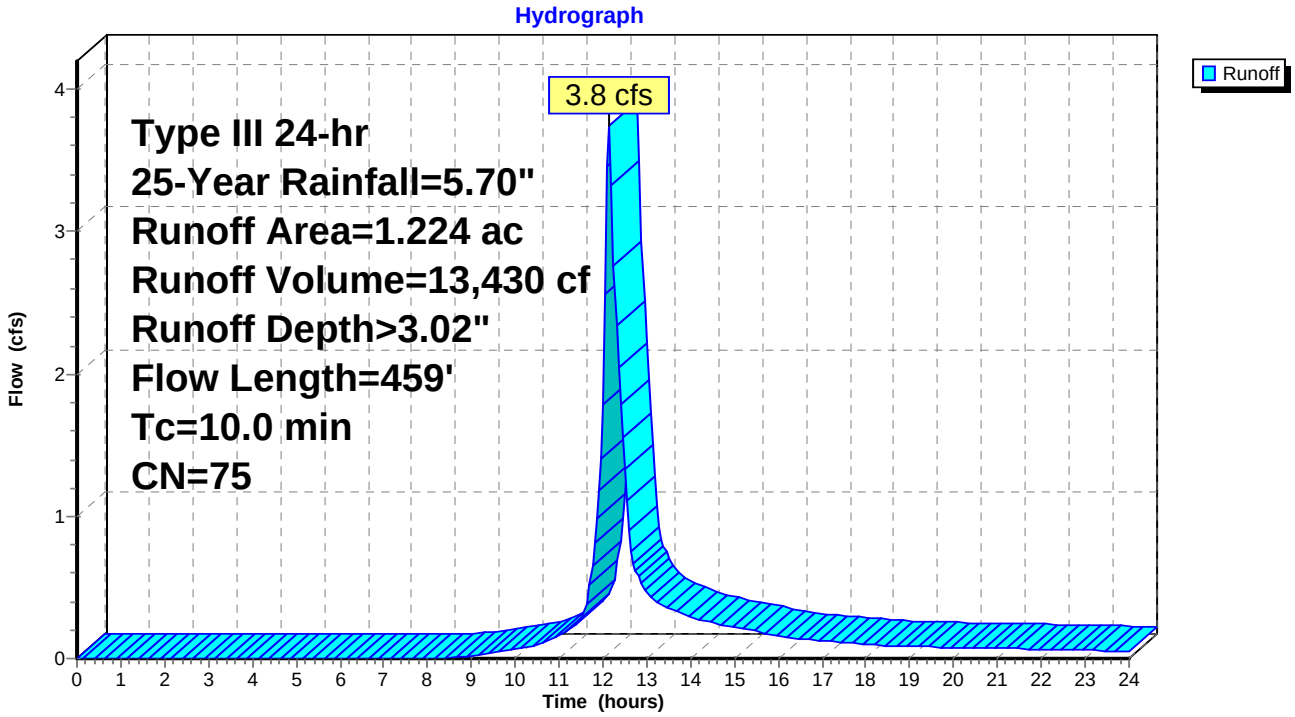
Runoff = 3.8 cfs @ 12.15 hrs, Volume= 13,430 cf, Depth> 3.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 25-Year Rainfall=5.70"

Area (ac)	CN	Description
1.134	74	>75% Grass cover, Good, HSG C
0.090	89	Gravel roads, HSG C
1.224	75	Weighted Average
1.224		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.5	40	0.0543	0.15		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
1.0	60	0.0117	1.03		**Sheet Flow, Gravel** Smooth surfaces n= 0.011 P2= 3.40"
0.5	86	0.0384	3.15		**Shallow Concentrated Flow, Gravel** Unpaved Kv= 16.1 fps
0.7	76	0.0658	1.80		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	49	0.2245	3.32		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	148	0.1081	15.60	117.00	**Channel Flow, Riprap Swale** Area= 7.5 sf Perim= 8.0' r= 0.94' n= 0.030 Rubble masonry, cemented
7.1	459	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 6S: Landfill E



Summary for Subcatchment 7S: Green Field W

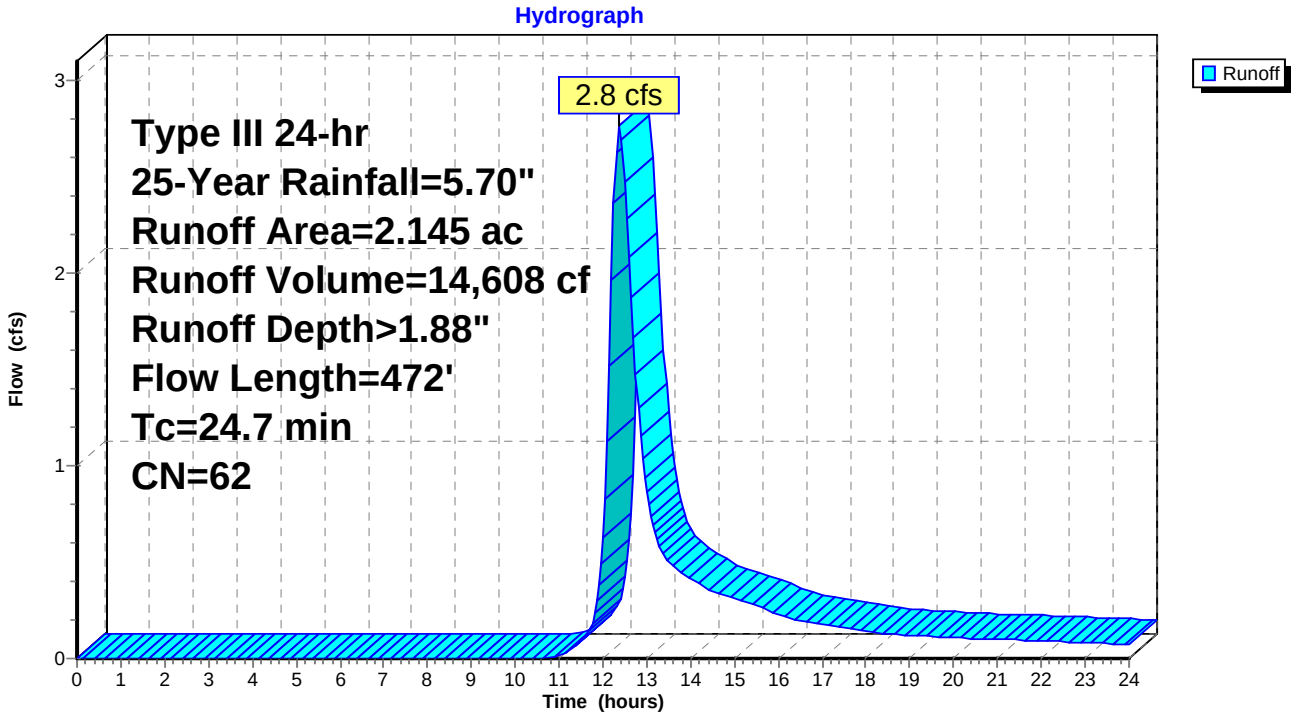
Runoff = 2.8 cfs @ 12.37 hrs, Volume= 14,608 cf, Depth> 1.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 25-Year Rainfall=5.70"

Area (ac)	CN	Description
0.022	74	>75% Grass cover, Good, HSG C
0.089	80	>75% Grass cover, Good, HSG D
0.282	61	>75% Grass cover, Good, HSG B
1.752	61	>75% Grass cover, Good, HSG B
2.145	62	Weighted Average
2.145		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0123	0.10		**Sheet Flow, Field**
					Grass: Dense n= 0.240 P2= 3.40"
0.4	23	0.0217	1.03		**Shallow Concentrated Flow, Field**
					Short Grass Pasture Kv= 7.0 fps
4.8	160	0.0063	0.56		**Shallow Concentrated Flow, Field**
					Short Grass Pasture Kv= 7.0 fps
0.6	51	0.0392	1.39		**Shallow Concentrated Flow, field**
					Short Grass Pasture Kv= 7.0 fps
1.4	88	0.0227	1.05		**Shallow Concentrated Flow, Field**
					Short Grass Pasture Kv= 7.0 fps
0.7	50	0.0300	1.21		**Shallow Concentrated Flow, Field**
					Short Grass Pasture Kv= 7.0 fps
24.7	472	Total			

Subcatchment 7S: Green Field W



Summary for Subcatchment 8S: Green Field E

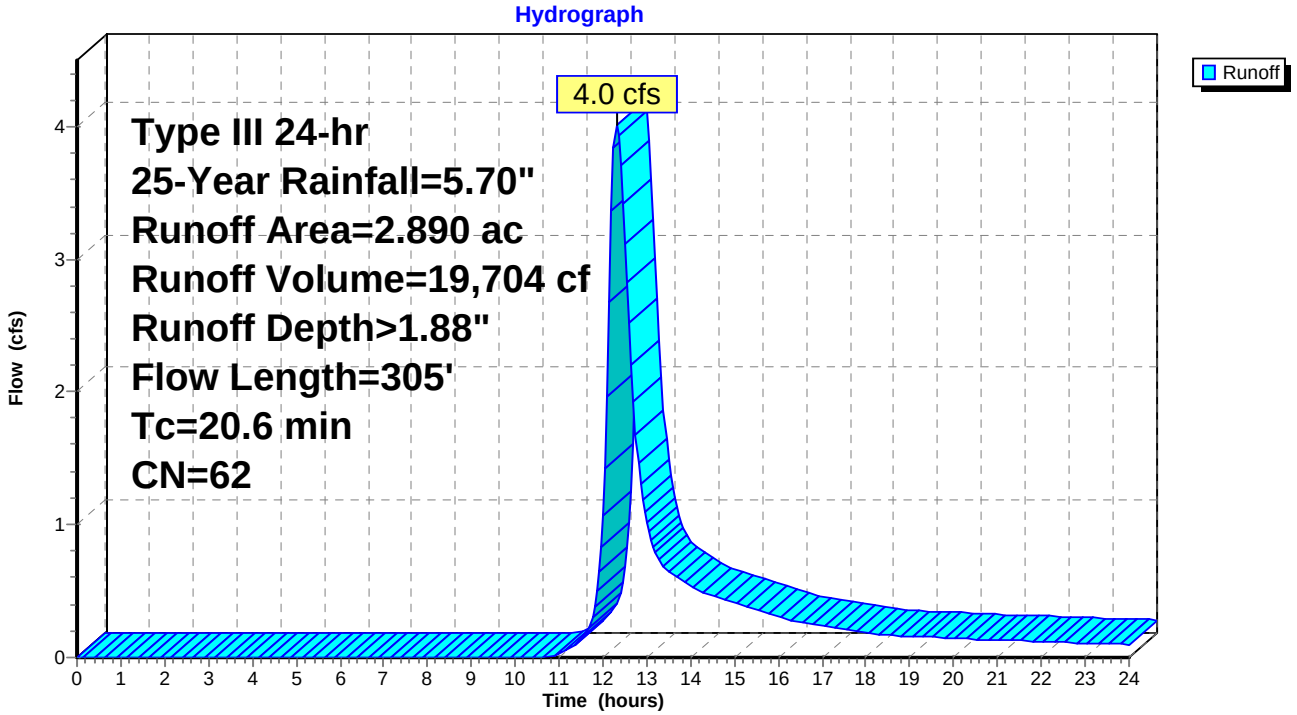
Runoff = 4.0 cfs @ 12.31 hrs, Volume= 19,704 cf, Depth> 1.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 25-Year Rainfall=5.70"

Area (ac)	CN	Description
2.685	61	>75% Grass cover, Good, HSG B
0.072	80	>75% Grass cover, Good, HSG D
0.033	80	>75% Grass cover, Good, HSG D
0.100	61	>75% Grass cover, Good, HSG B
2.890	62	Weighted Average
2.890		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0123	0.10		**Sheet Flow, Field** Grass: Dense n= 0.240 P2= 3.40"
0.4	24	0.0208	1.01		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
2.6	106	0.0094	0.68		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
0.8	75	0.0467	1.51		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
20.6	305	Total			

Subcatchment 8S: Green Field E



Summary for Subcatchment 9S: Greenfield 2

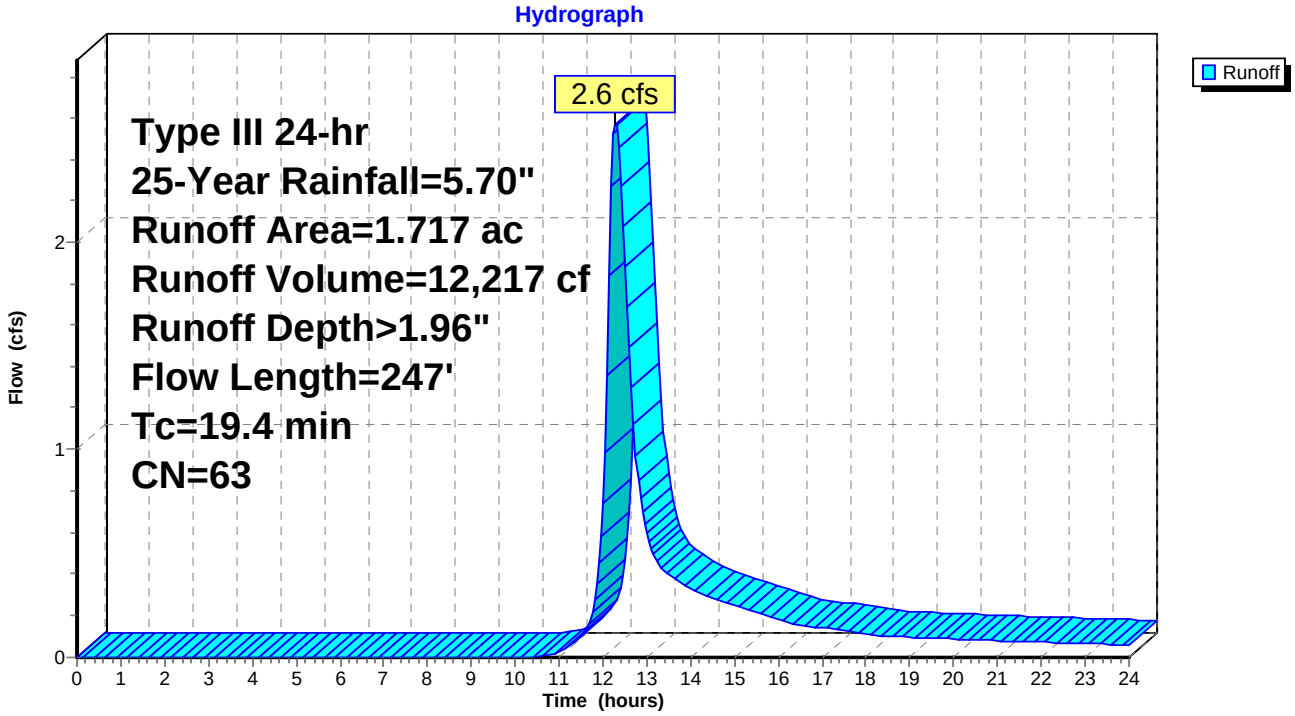
Runoff = 2.6 cfs @ 12.29 hrs, Volume= 12,217 cf, Depth> 1.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 25-Year Rainfall=5.70"

Area (ac)	CN	Description
0.091	77	Woods, Good, HSG D
0.151	55	Woods, Good, HSG B
1.288	61	>75% Grass cover, Good, HSG B
0.187	80	>75% Grass cover, Good, HSG D
1.717	63	Weighted Average
1.717		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.5	100	0.0128	0.10		**Sheet Flow, Grass** Grass: Dense n= 0.240 P2= 3.40"
2.9	147	0.0148	0.85		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
19.4	247	Total			

Subcatchment 9S: Greenfield 2



Summary for Reach 19R: Riprap Swale

Inflow Area = 85,378 sf, 0.00% Impervious, Inflow Depth > 2.93" for 25-Year event
Inflow = 5.0 cfs @ 12.21 hrs, Volume= 20,816 cf
Outflow = 4.9 cfs @ 12.26 hrs, Volume= 20,755 cf, Atten= 3%, Lag= 2.5 min

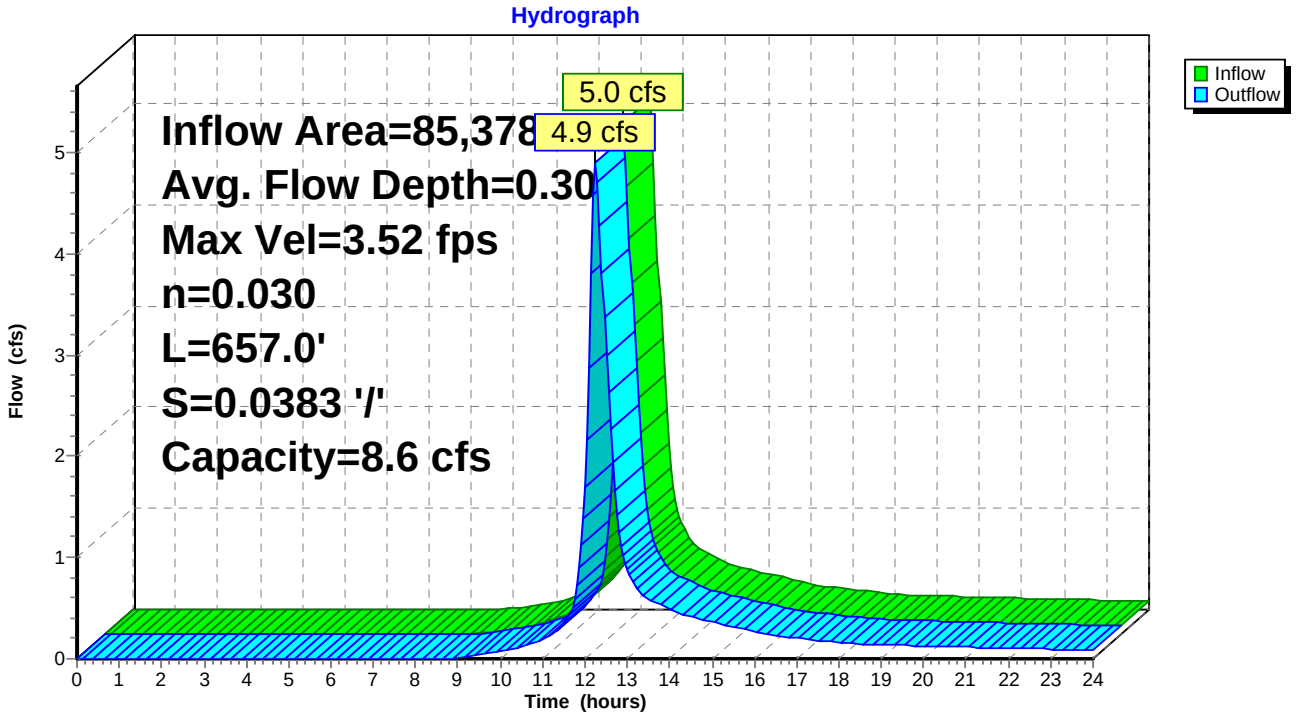
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Max. Velocity= 3.52 fps, Min. Travel Time= 3.1 min
Avg. Velocity = 1.27 fps, Avg. Travel Time= 8.6 min

Peak Storage= 912 cf @ 12.26 hrs
Average Depth at Peak Storage= 0.30'
Bank-Full Depth= 0.40' Flow Area= 2.1 sf, Capacity= 8.6 cfs

3.00' x 0.40' deep channel, n= 0.030 Rubble masonry, cemented
Side Slope Z-value= 5.5 '/' Top Width= 7.40'
Length= 657.0' Slope= 0.0383 '/'
Inlet Invert= 274.52', Outlet Invert= 249.36'

‡

Reach 19R: Riprap Swale



Summary for Reach 21R: Riprap Swale

Inflow Area = 53,317 sf, 0.00% Impervious, Inflow Depth > 3.02" for 25-Year event
Inflow = 3.8 cfs @ 12.15 hrs, Volume= 13,430 cf
Outflow = 3.6 cfs @ 12.17 hrs, Volume= 13,394 cf, Atten= 3%, Lag= 1.8 min

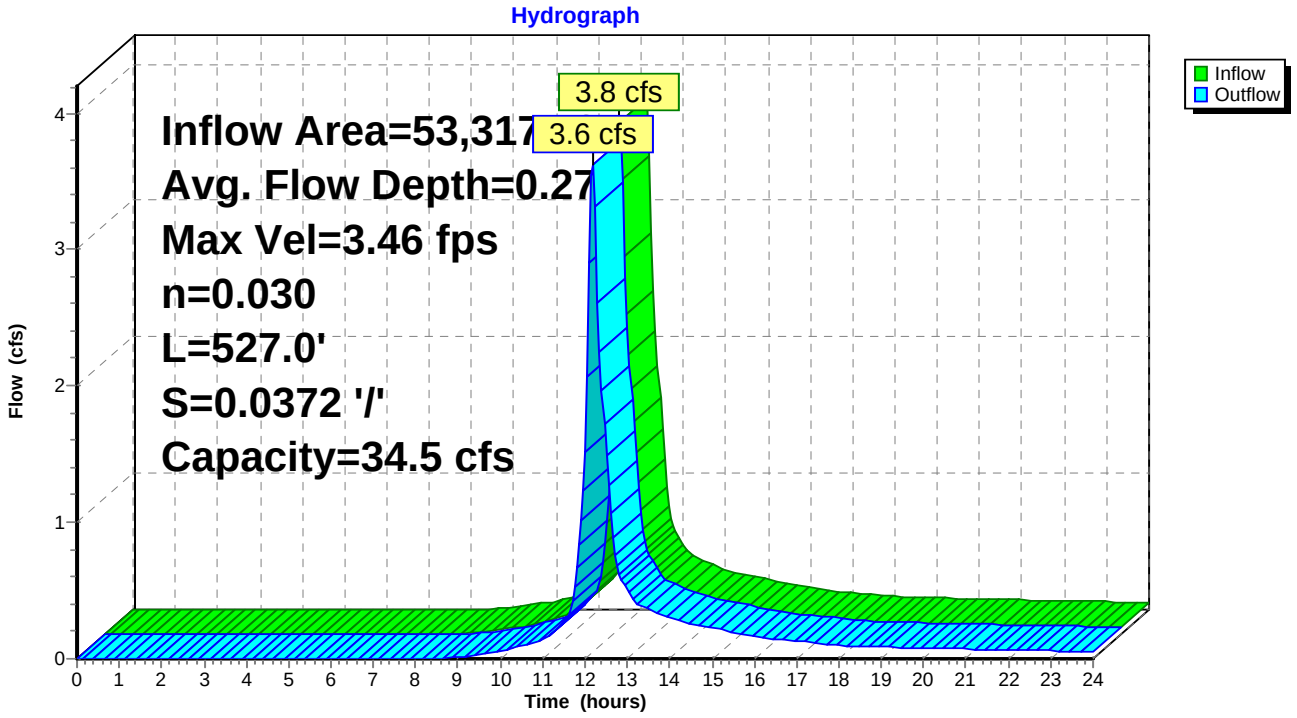
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Max. Velocity= 3.46 fps, Min. Travel Time= 2.5 min
Avg. Velocity = 1.11 fps, Avg. Travel Time= 7.9 min

Peak Storage= 548 cf @ 12.17 hrs
Average Depth at Peak Storage= 0.27'
Bank-Full Depth= 0.90' Flow Area= 5.1 sf, Capacity= 34.5 cfs

3.00' x 0.90' deep channel, n= 0.030 Rubble masonry, cemented
Side Slope Z-value= 3.0 '/' Top Width= 8.40'
Length= 527.0' Slope= 0.0372 '/'
Inlet Invert= 276.70', Outlet Invert= 257.10'

‡

Reach 21R: Riprap Swale

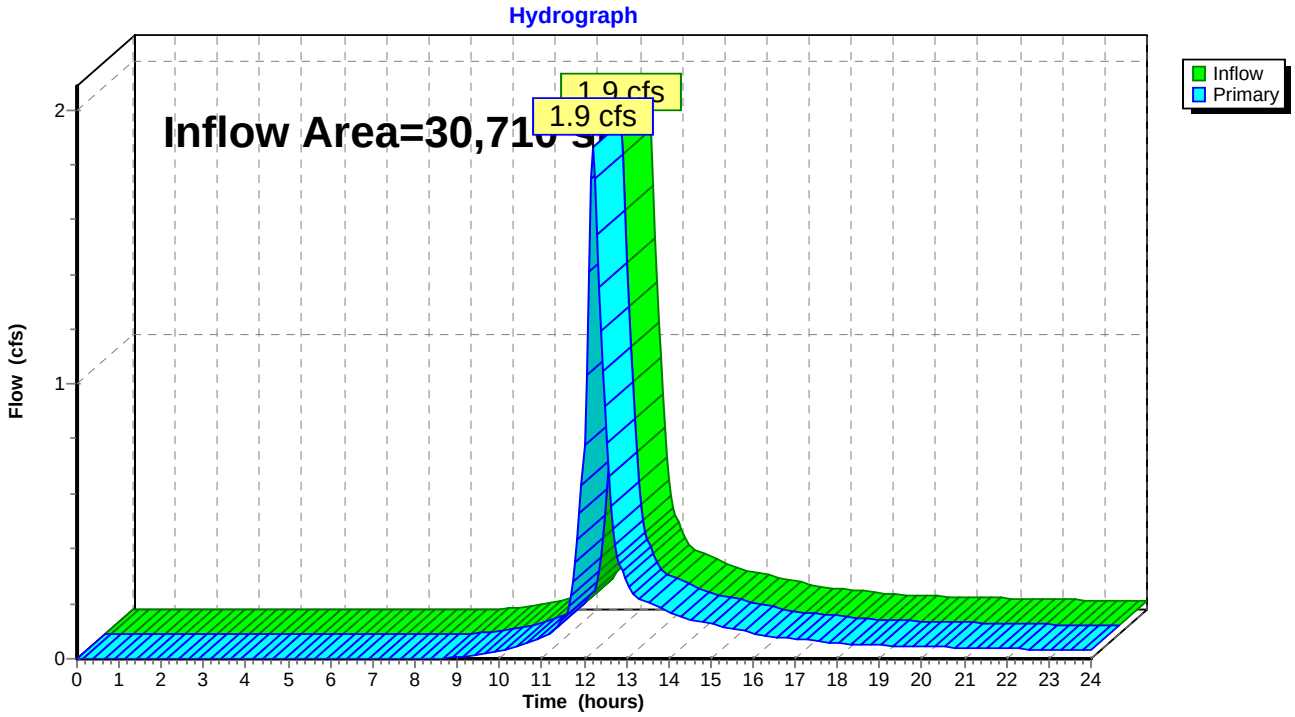


Summary for Link 7L: Wetlands NW

Inflow Area = 30,710 sf, 0.00% Impervious, Inflow Depth > 2.93" for 25-Year event
Inflow = 1.9 cfs @ 12.20 hrs, Volume= 7,489 cf
Primary = 1.9 cfs @ 12.20 hrs, Volume= 7,489 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 7L: Wetlands NW

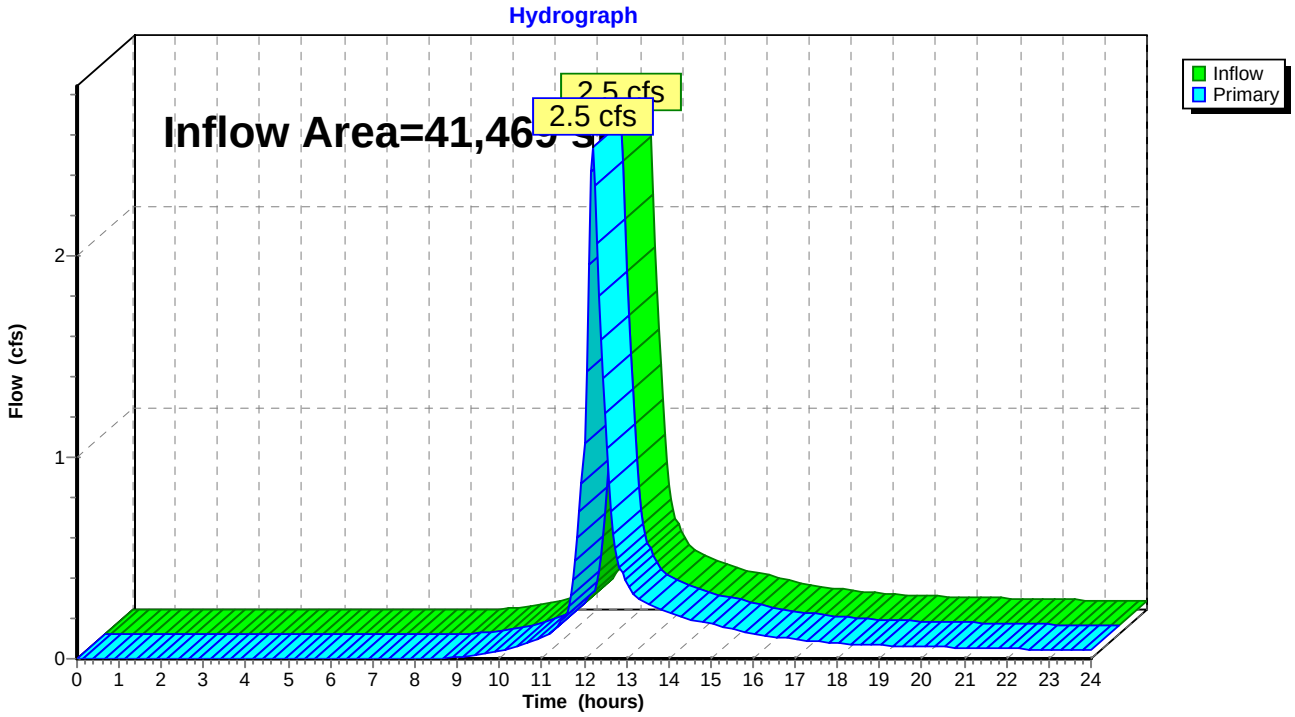


Summary for Link 8L: Depression S

Inflow Area = 41,469 sf, 0.00% Impervious, Inflow Depth > 2.93" for 25-Year event
Inflow = 2.5 cfs @ 12.19 hrs, Volume= 10,114 cf
Primary = 2.5 cfs @ 12.19 hrs, Volume= 10,114 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 8L: Depression S

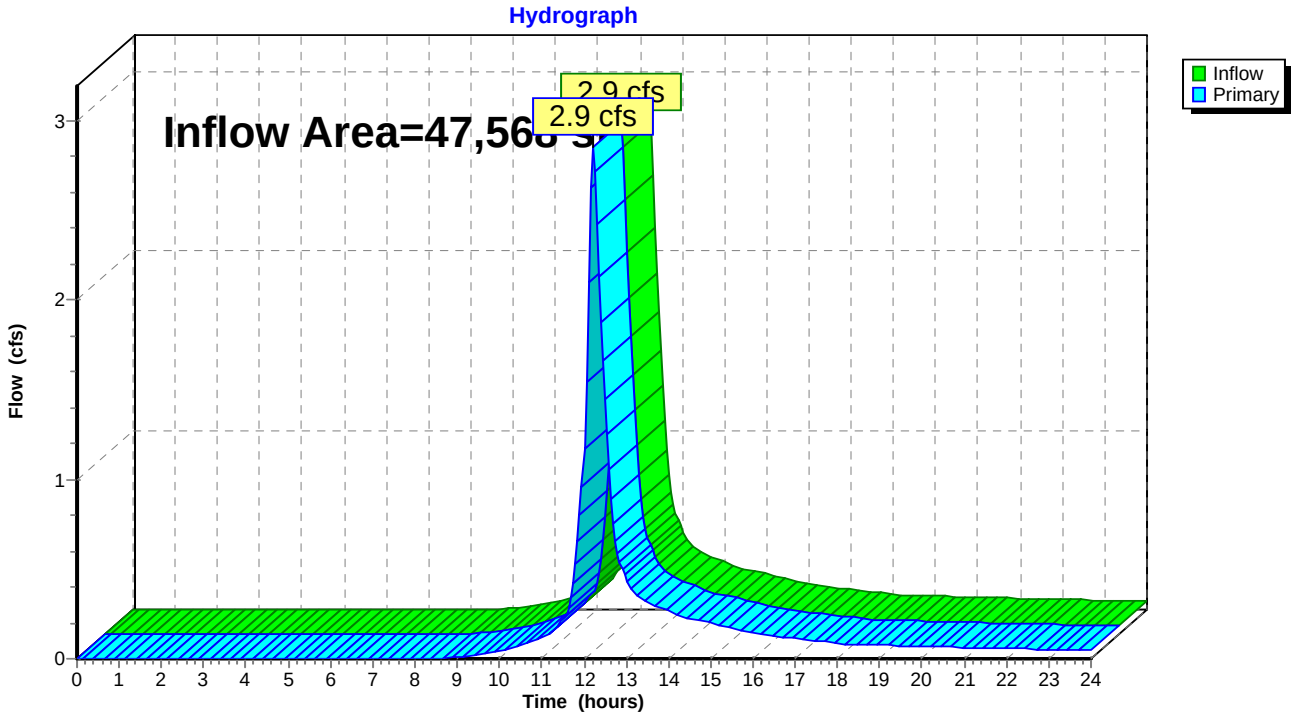


Summary for Link 9L: Wetlands NE

Inflow Area = 47,568 sf, 0.00% Impervious, Inflow Depth > 2.93" for 25-Year event
Inflow = 2.9 cfs @ 12.21 hrs, Volume= 11,599 cf
Primary = 2.9 cfs @ 12.21 hrs, Volume= 11,599 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 9L: Wetlands NE

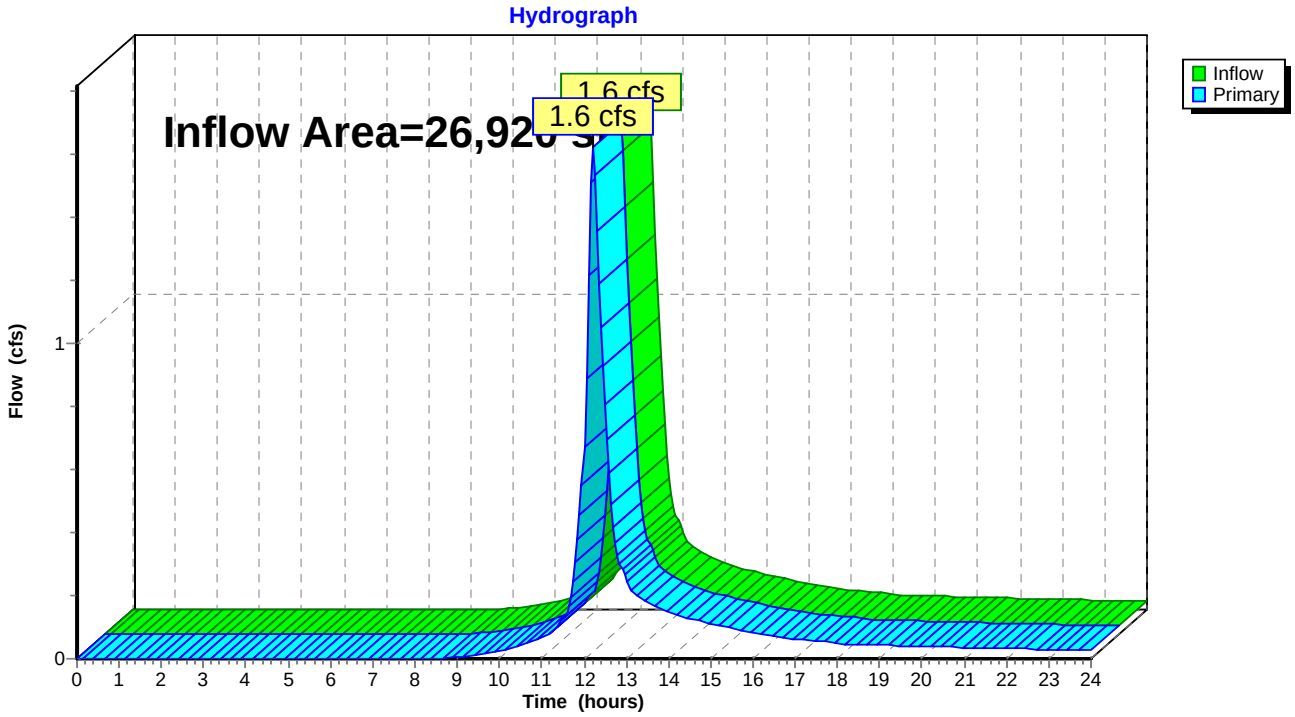


Summary for Link 10L: Wetlands N

Inflow Area = 26,920 sf, 0.00% Impervious, Inflow Depth > 2.93" for 25-Year event
Inflow = 1.6 cfs @ 12.20 hrs, Volume= 6,565 cf
Primary = 1.6 cfs @ 12.20 hrs, Volume= 6,565 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 10L: Wetlands N

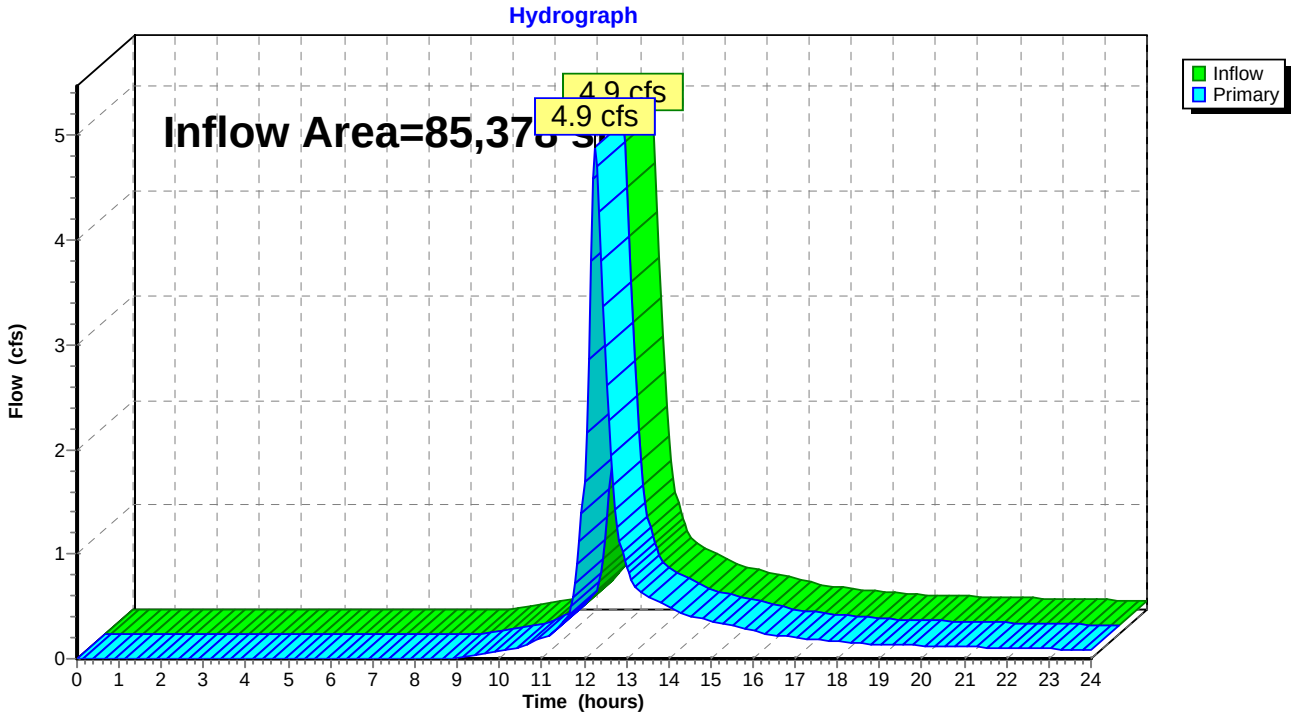


Summary for Link 11L: Collection Swale W

Inflow Area = 85,378 sf, 0.00% Impervious, Inflow Depth > 2.92" for 25-Year event
Inflow = 4.9 cfs @ 12.26 hrs, Volume= 20,755 cf
Primary = 4.9 cfs @ 12.26 hrs, Volume= 20,755 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 11L: Collection Swale W

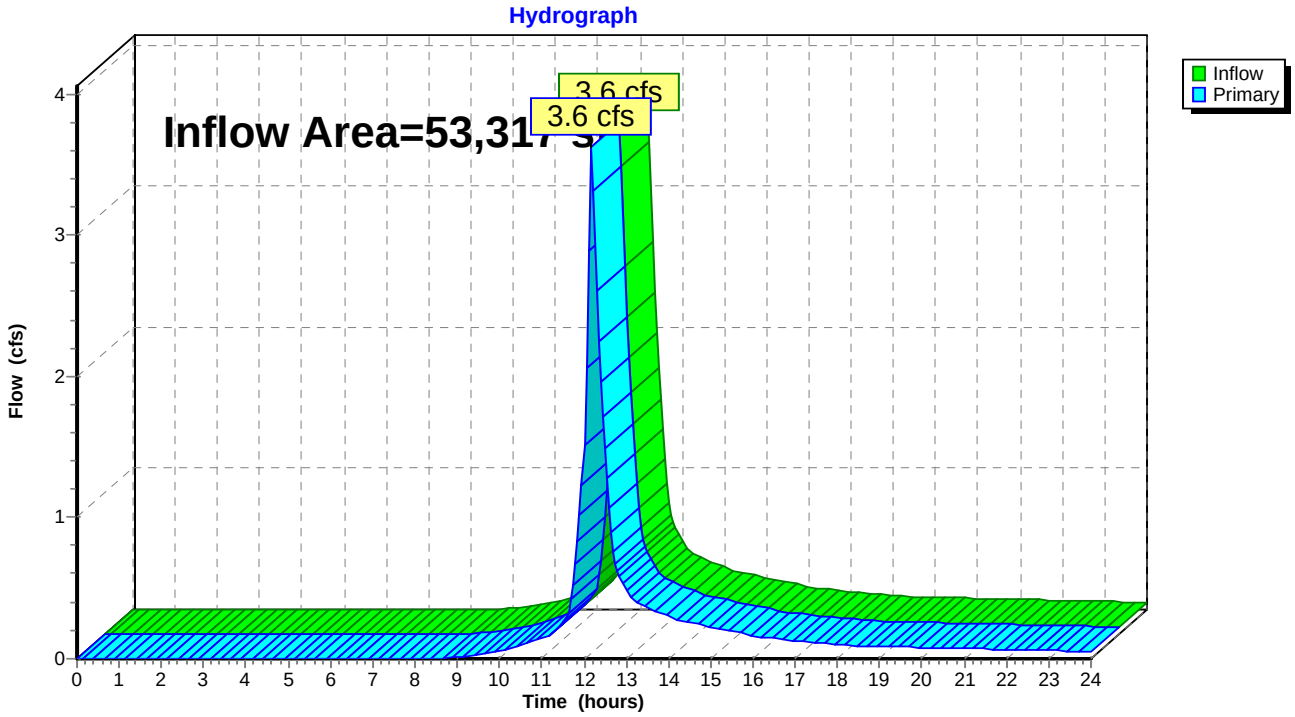


Summary for Link 12L: Collection Swale W

Inflow Area = 53,317 sf, 0.00% Impervious, Inflow Depth > 3.01" for 25-Year event
Inflow = 3.6 cfs @ 12.17 hrs, Volume= 13,394 cf
Primary = 3.6 cfs @ 12.17 hrs, Volume= 13,394 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 12L: Collection Swale W

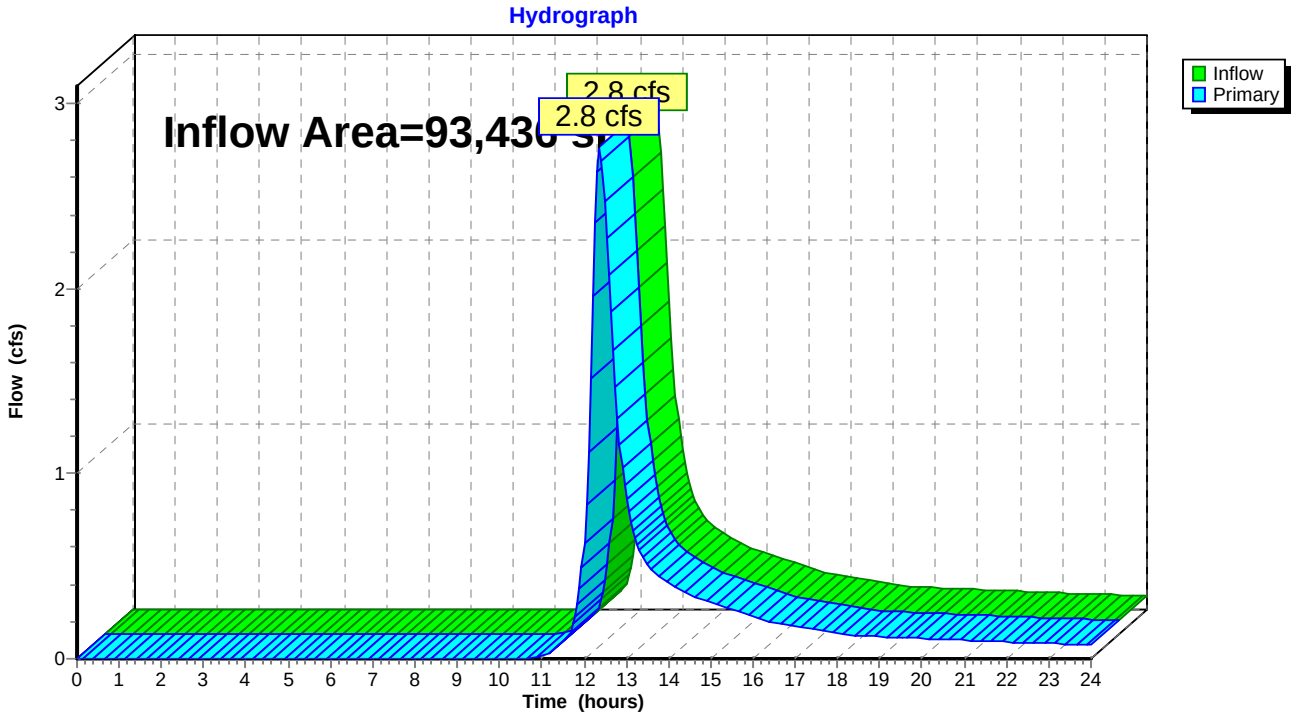


Summary for Link 15L: Wetland W

Inflow Area = 93,436 sf, 0.00% Impervious, Inflow Depth > 1.88" for 25-Year event
Inflow = 2.8 cfs @ 12.37 hrs, Volume= 14,608 cf
Primary = 2.8 cfs @ 12.37 hrs, Volume= 14,608 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 15L: Wetland W

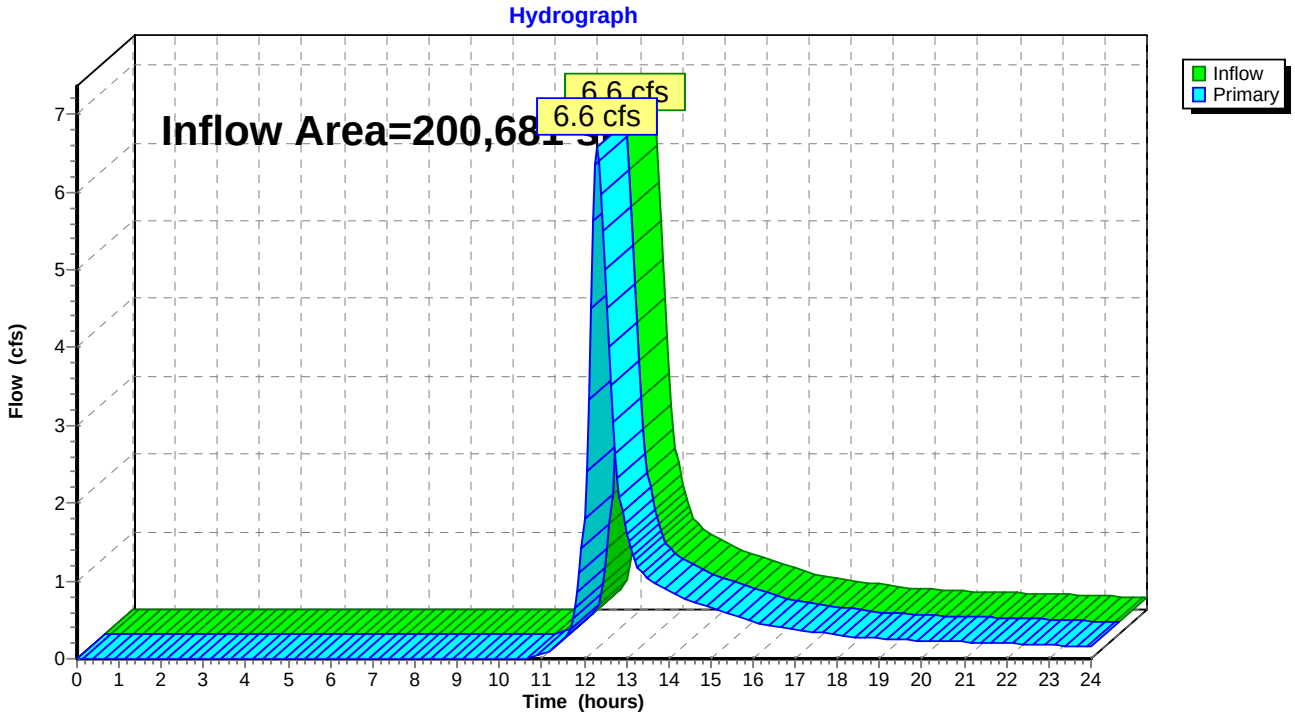


Summary for Link 16L: Wetland E

Inflow Area = 200,681 sf, 0.00% Impervious, Inflow Depth > 1.91" for 25-Year event
Inflow = 6.6 cfs @ 12.30 hrs, Volume= 31,922 cf
Primary = 6.6 cfs @ 12.30 hrs, Volume= 31,922 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 16L: Wetland E



Time span=0.00-24.00 hrs, dt=0.050 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Bulky Waste Landfill SW Runoff Area=0.952 ac 0.00% Impervious Runoff Depth>3.43"
Flow Length=239' Tc=13.7 min CN=74 Runoff=3.0 cfs 11,854 cf

Subcatchment 2S: Bulky Waste Landfill NW Runoff Area=0.705 ac 0.00% Impervious Runoff Depth>3.43"
Flow Length=179' Tc=14.1 min CN=74 Runoff=2.2 cfs 8,777 cf

Subcatchment 3S: Bulky Waste Landfill E Runoff Area=1.092 ac 0.00% Impervious Runoff Depth>3.43"
Flow Length=204' Tc=14.6 min CN=74 Runoff=3.3 cfs 13,594 cf

Subcatchment 4S: Landfill N Runoff Area=0.618 ac 0.00% Impervious Runoff Depth>3.43"
Flow Length=222' Tc=14.3 min CN=74 Runoff=1.9 cfs 7,694 cf

Subcatchment 5S: Landfill W Runoff Area=1.960 ac 0.00% Impervious Runoff Depth>3.43"
Flow Length=752' Tc=15.2 min CN=74 Runoff=5.9 cfs 24,397 cf

Subcatchment 6S: Landfill E Runoff Area=1.224 ac 0.00% Impervious Runoff Depth>3.53"
Flow Length=459' Tc=10.0 min CN=75 Runoff=4.4 cfs 15,698 cf

Subcatchment 7S: Green Field W Runoff Area=2.145 ac 0.00% Impervious Runoff Depth>2.28"
Flow Length=472' Tc=24.7 min CN=62 Runoff=3.4 cfs 17,787 cf

Subcatchment 8S: Green Field E Runoff Area=2.890 ac 0.00% Impervious Runoff Depth>2.29"
Flow Length=305' Tc=20.6 min CN=62 Runoff=5.0 cfs 23,992 cf

Subcatchment 9S: Greenfield 2 Runoff Area=1.717 ac 0.00% Impervious Runoff Depth>2.38"
Flow Length=247' Tc=19.4 min CN=63 Runoff=3.2 cfs 14,820 cf

Reach 19R: Riprap Swale Avg. Flow Depth=0.33' Max Vel=3.69 fps Inflow=5.9 cfs 24,397 cf
n=0.030 L=657.0' S=0.0383 '/' Capacity=8.6 cfs Outflow=5.8 cfs 24,331 cf

Reach 21R: Riprap Swale Avg. Flow Depth=0.30' Max Vel=3.64 fps Inflow=4.4 cfs 15,698 cf
n=0.030 L=527.0' S=0.0372 '/' Capacity=34.5 cfs Outflow=4.3 cfs 15,659 cf

Link 7L: Wetlands NW Inflow=2.2 cfs 8,777 cf
Primary=2.2 cfs 8,777 cf

Link 8L: Depression S Inflow=3.0 cfs 11,854 cf
Primary=3.0 cfs 11,854 cf

Link 9L: Wetlands NE Inflow=3.3 cfs 13,594 cf
Primary=3.3 cfs 13,594 cf

Link 10L: Wetlands N Inflow=1.9 cfs 7,694 cf
Primary=1.9 cfs 7,694 cf

Link 11L: Collection Swale W Inflow=5.8 cfs 24,331 cf
Primary=5.8 cfs 24,331 cf

Link 12L: Collection Swale W Inflow=4.3 cfs 15,659 cf
Primary=4.3 cfs 15,659 cf

Link 15L: Wetland W Inflow=3.4 cfs 17,787 cf
Primary=3.4 cfs 17,787 cf

Link 16L: Wetland E Inflow=8.1 cfs 38,811 cf
Primary=8.1 cfs 38,811 cf

Total Runoff Area = 579,479 sf Runoff Volume = 138,613 cf Average Runoff Depth = 2.87"
100.00% Pervious = 579,479 sf 0.00% Impervious = 0 sf

Summary for Subcatchment 1S: Bulky Waste Landfill SW

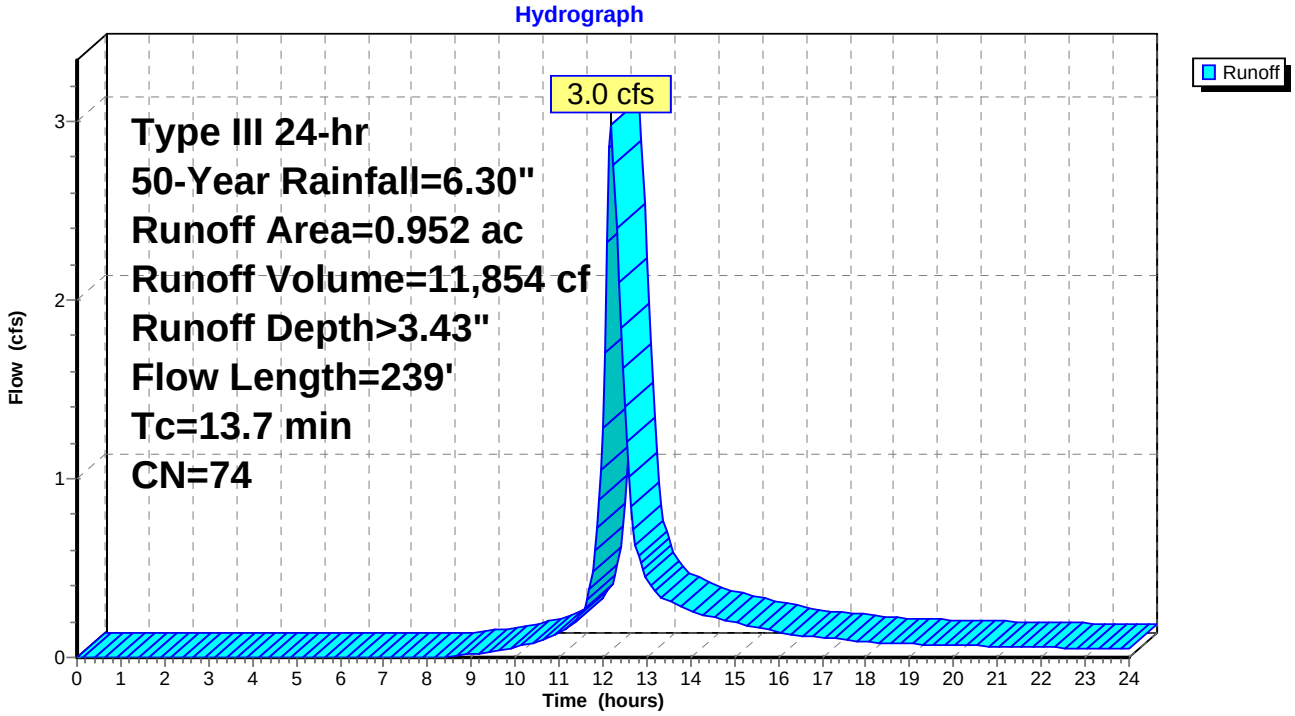
Runoff = 3.0 cfs @ 12.19 hrs, Volume= 11,854 cf, Depth> 3.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 50-Year Rainfall=6.30"

Area (ac)	CN	Description
0.952	74	>75% Grass cover, Good, HSG C
0.952		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.6	100	0.0251	0.13		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
0.5	66	0.1137	2.36		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	46	0.1957	3.10		**Shallow Concentrated Flow, Lanfill Cap** Short Grass Pasture Kv= 7.0 fps
0.4	27	0.0050	1.14		**Shallow Concentrated Flow, Access Drive** Unpaved Kv= 16.1 fps
13.7	239	Total			

Subcatchment 1S: Bulky Waste Landfill SW



Summary for Subcatchment 2S: Bulky Waste Landfill NW

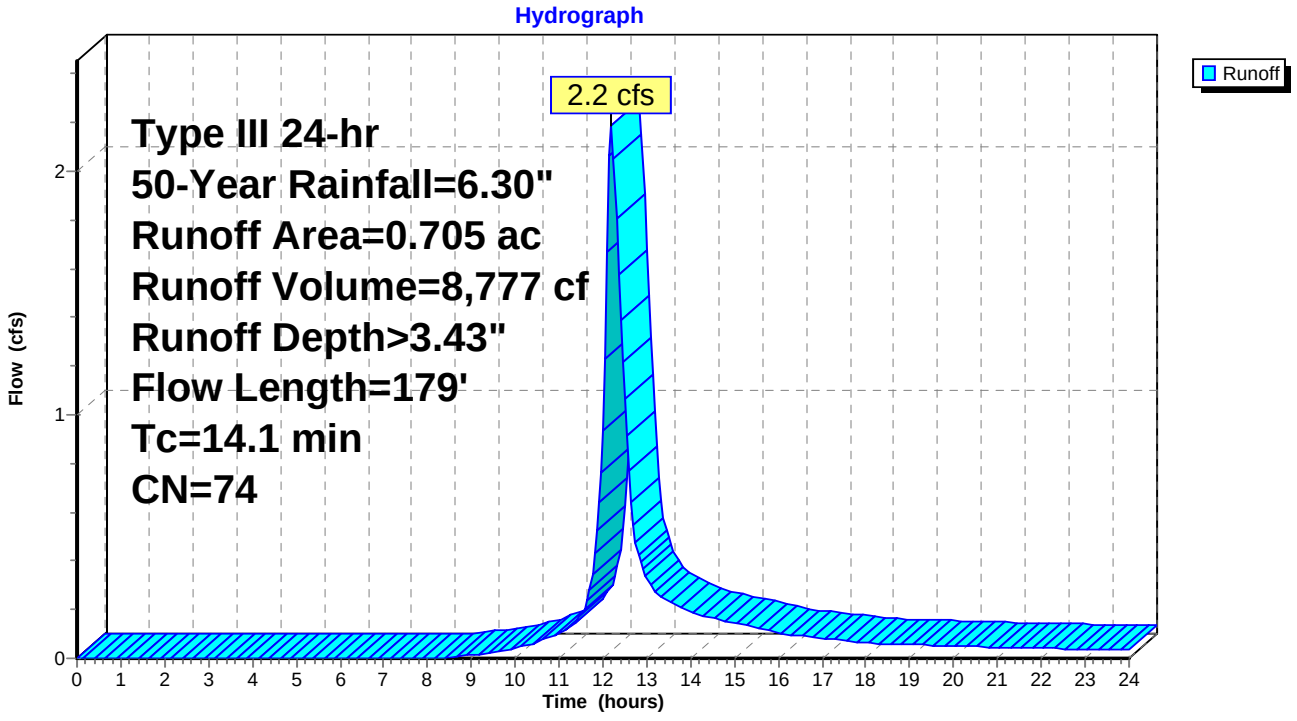
Runoff = 2.2 cfs @ 12.20 hrs, Volume= 8,777 cf, Depth> 3.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 50-Year Rainfall=6.30"

Area (ac)	CN	Description
0.705	74	>75% Grass cover, Good, HSG C
0.705		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0212	0.12		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
0.6	79	0.0886	2.08		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
14.1	179	Total			

Subcatchment 2S: Bulky Waste Landfill NW



Summary for Subcatchment 3S: Bulky Waste Landfill E

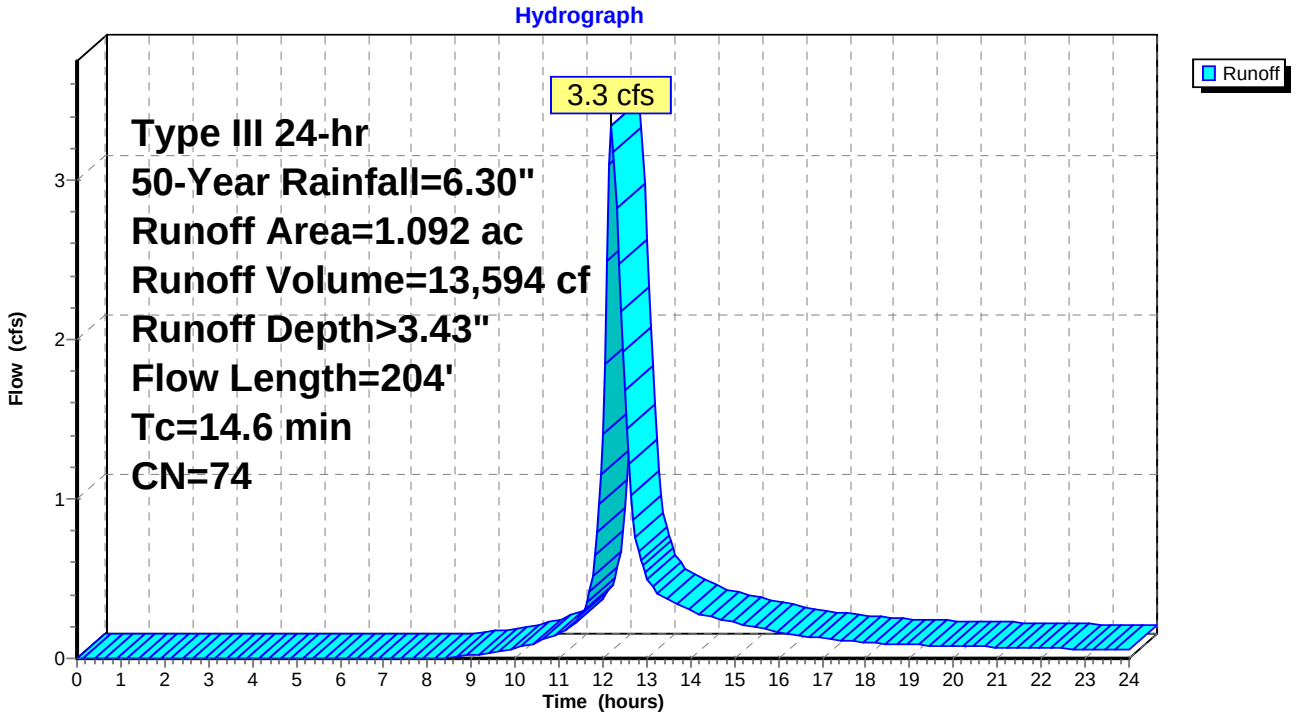
Runoff = 3.3 cfs @ 12.20 hrs, Volume= 13,594 cf, Depth> 3.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 50-Year Rainfall=6.30"

Area (ac)	CN	Description
1.092	74	>75% Grass cover, Good, HSG C
1.092		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0212	0.12		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
1.0	80	0.0375	1.36		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.1	24	0.1667	2.86		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
14.6	204	Total			

Subcatchment 3S: Bulky Waste Landfill E



Summary for Subcatchment 4S: Landfill N

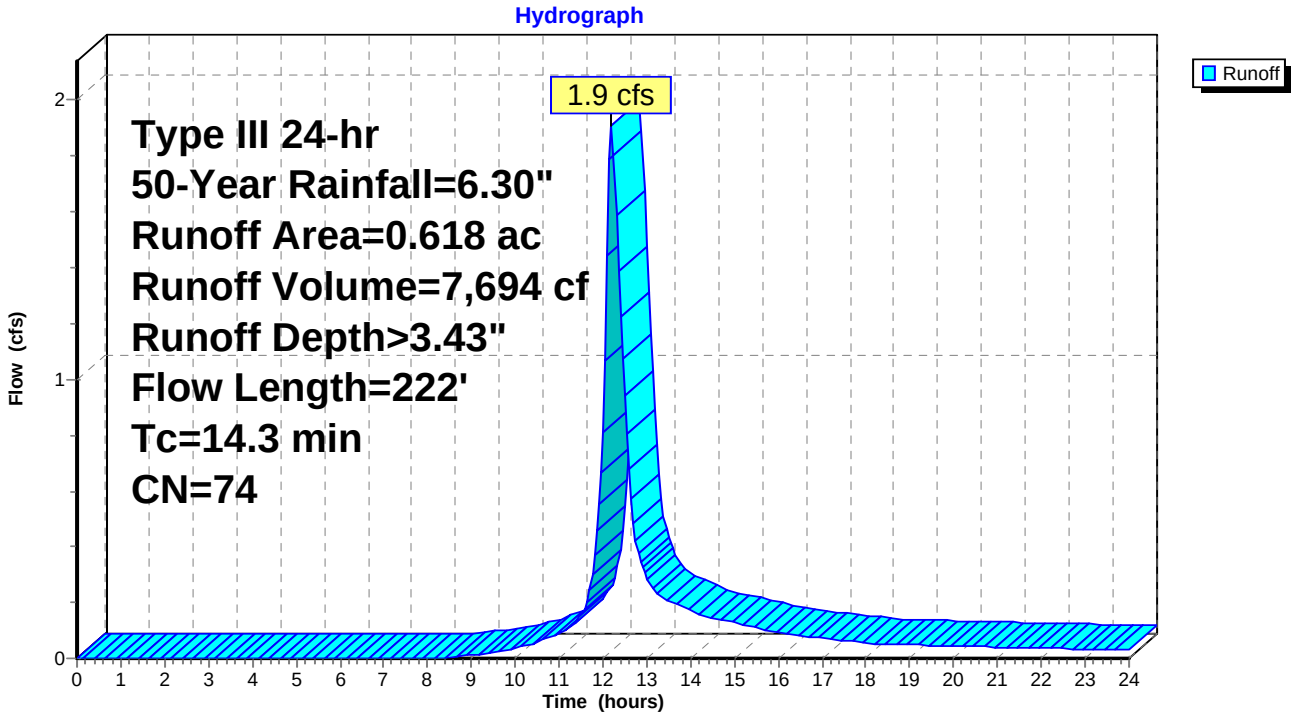
Runoff = 1.9 cfs @ 12.20 hrs, Volume= 7,694 cf, Depth> 3.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 50-Year Rainfall=6.30"

Area (ac)	CN	Description
0.618	74	>75% Grass cover, Good, HSG C
0.618		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	100	0.0230	0.13		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
1.0	81	0.0371	1.35		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	41	0.1707	2.89		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
14.3	222	Total			

Subcatchment 4S: Landfill N



Summary for Subcatchment 5S: Landfill W

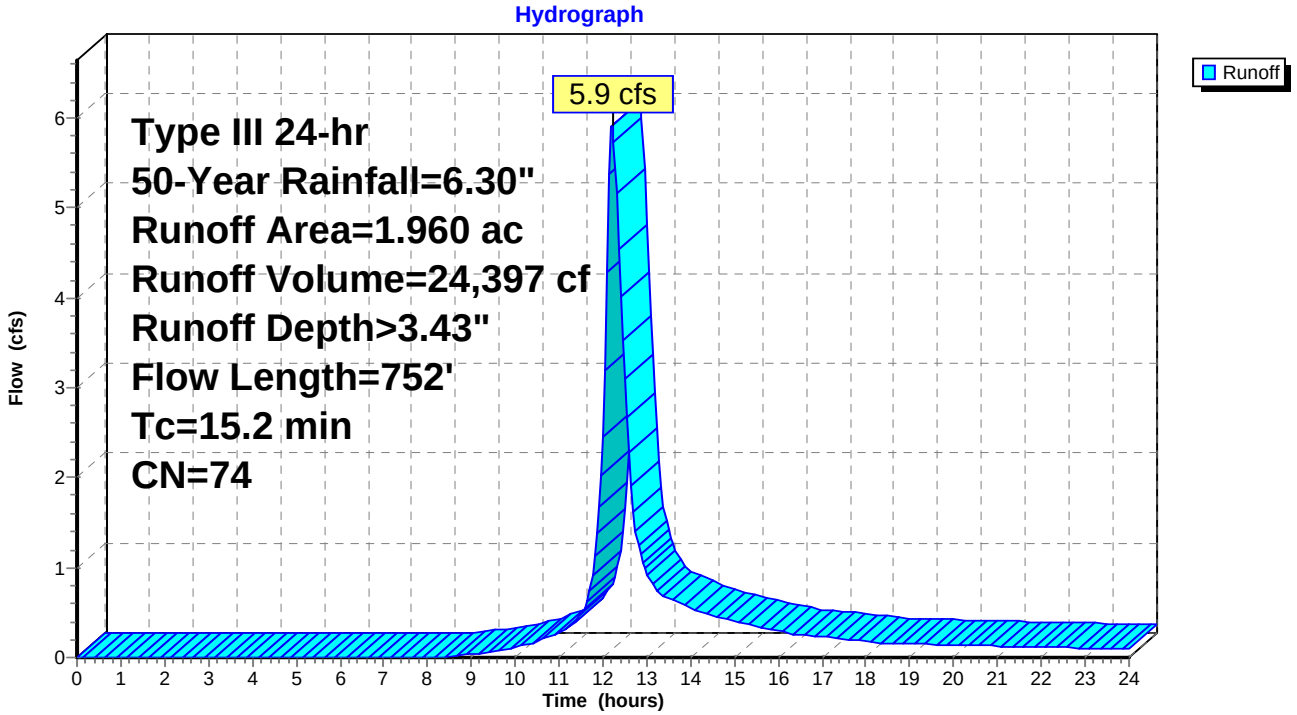
Runoff = 5.9 cfs @ 12.21 hrs, Volume= 24,397 cf, Depth> 3.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 50-Year Rainfall=6.30"

Area (ac)	CN	Description
1.960	74	>75% Grass cover, Good, HSG C
1.960		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.3	100	0.0220	0.13		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
0.3	37	0.0811	1.99		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.3	58	0.1897	3.05		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
1.3	520	0.0200	6.71	50.33	**Channel Flow, Riprap Swale** Area= 7.5 sf Perim= 8.0' r= 0.94' n= 0.030 Rubble masonry, cemented
0.0	37	0.2160	22.05	165.39	**Channel Flow, Riprap Swale** Area= 7.5 sf Perim= 8.0' r= 0.94' n= 0.030 Rubble masonry, cemented
15.2	752	Total			

Subcatchment 5S: Landfill W



Summary for Subcatchment 6S: Landfill E

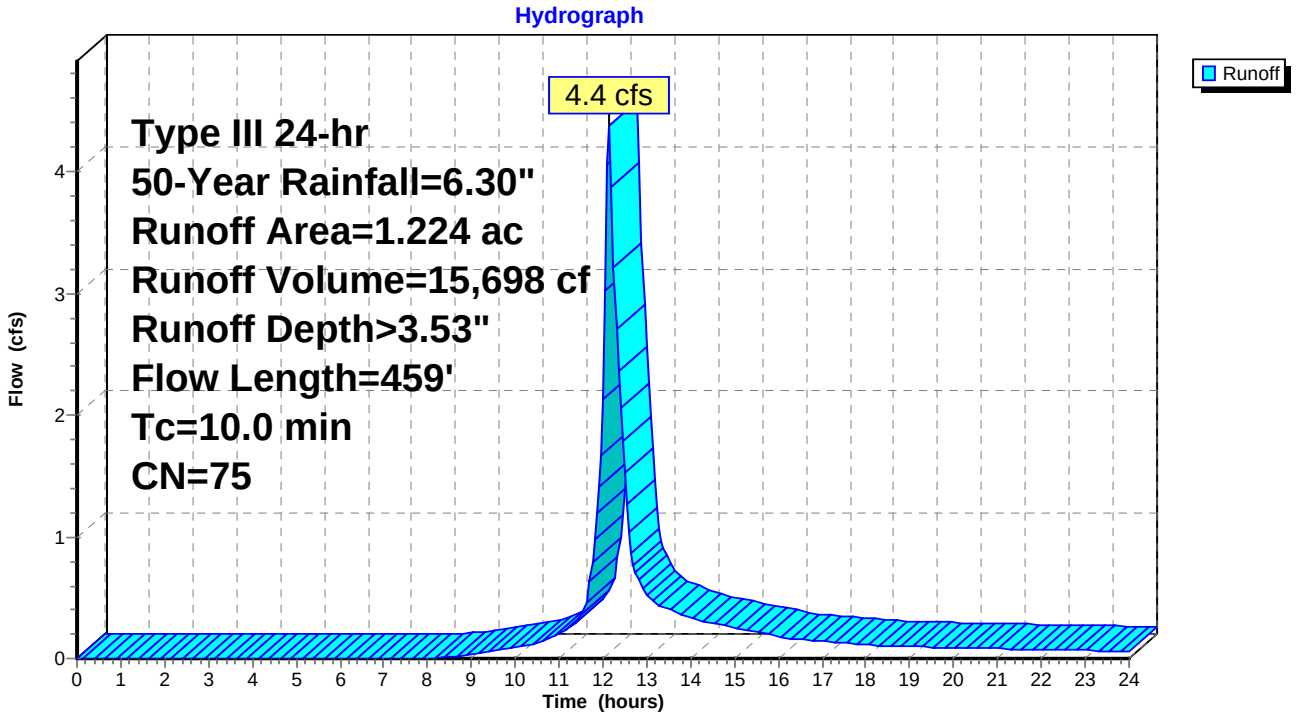
Runoff = 4.4 cfs @ 12.14 hrs, Volume= 15,698 cf, Depth> 3.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 50-Year Rainfall=6.30"

Area (ac)	CN	Description
1.134	74	>75% Grass cover, Good, HSG C
0.090	89	Gravel roads, HSG C
1.224	75	Weighted Average
1.224		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.5	40	0.0543	0.15		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
1.0	60	0.0117	1.03		**Sheet Flow, Gravel** Smooth surfaces n= 0.011 P2= 3.40"
0.5	86	0.0384	3.15		**Shallow Concentrated Flow, Gravel** Unpaved Kv= 16.1 fps
0.7	76	0.0658	1.80		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	49	0.2245	3.32		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	148	0.1081	15.60	117.00	**Channel Flow, Riprap Swale** Area= 7.5 sf Perim= 8.0' r= 0.94' n= 0.030 Rubble masonry, cemented
7.1	459	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 6S: Landfill E



Summary for Subcatchment 7S: Green Field W

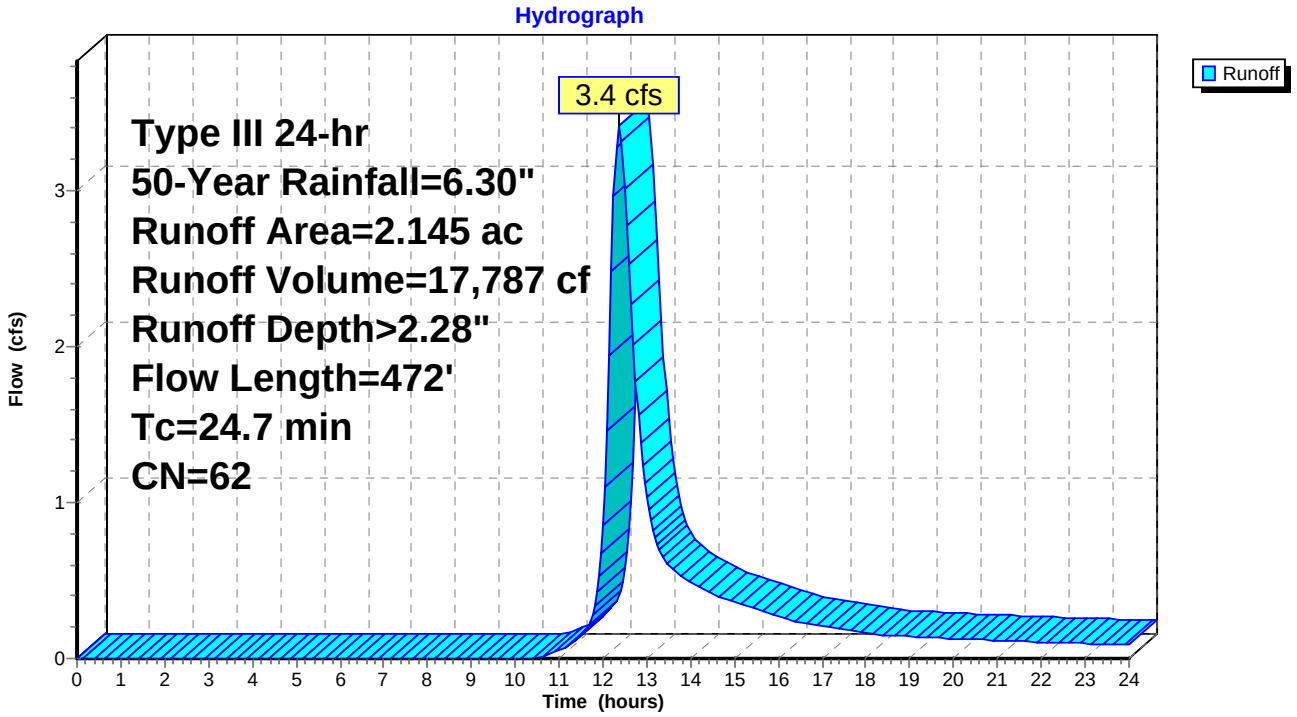
Runoff = 3.4 cfs @ 12.37 hrs, Volume= 17,787 cf, Depth> 2.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 50-Year Rainfall=6.30"

Area (ac)	CN	Description
0.022	74	>75% Grass cover, Good, HSG C
0.089	80	>75% Grass cover, Good, HSG D
0.282	61	>75% Grass cover, Good, HSG B
1.752	61	>75% Grass cover, Good, HSG B
2.145	62	Weighted Average
2.145		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0123	0.10		**Sheet Flow, Field** Grass: Dense n= 0.240 P2= 3.40"
0.4	23	0.0217	1.03		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
4.8	160	0.0063	0.56		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
0.6	51	0.0392	1.39		**Shallow Concentrated Flow, field** Short Grass Pasture Kv= 7.0 fps
1.4	88	0.0227	1.05		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
0.7	50	0.0300	1.21		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
24.7	472	Total			

Subcatchment 7S: Green Field W



Summary for Subcatchment 8S: Green Field E

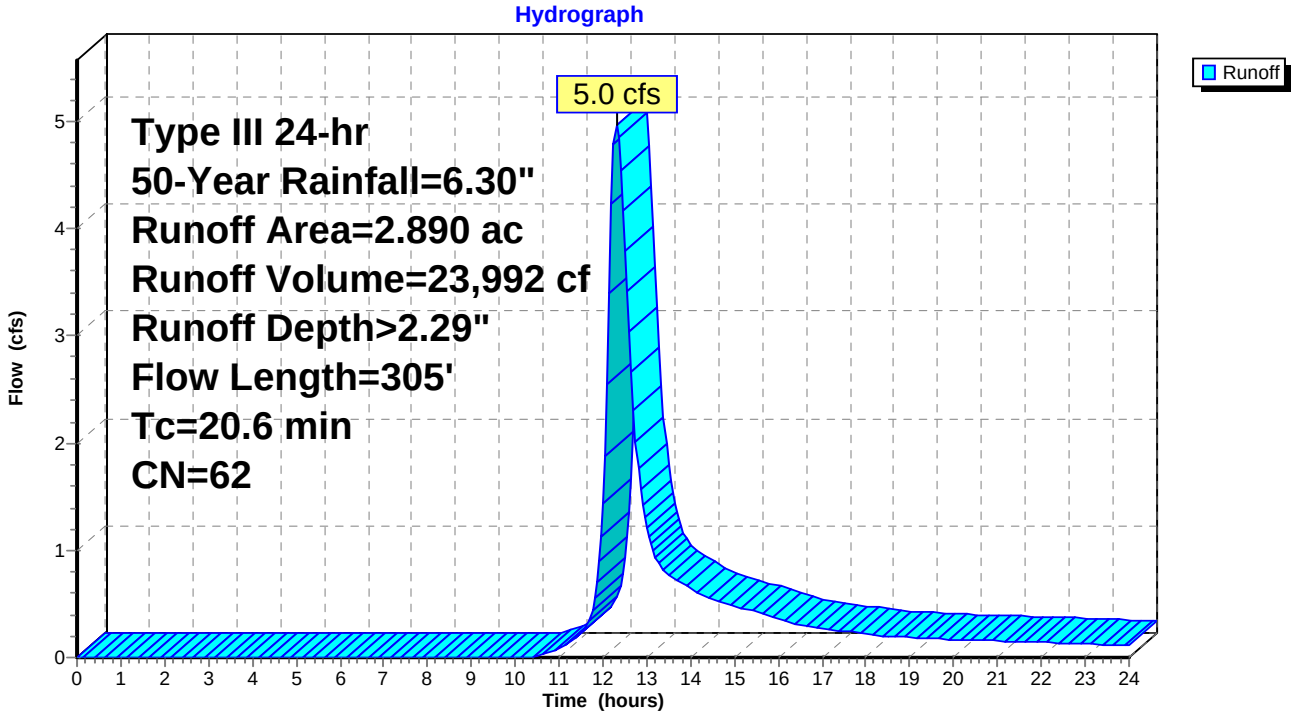
Runoff = 5.0 cfs @ 12.31 hrs, Volume= 23,992 cf, Depth> 2.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 50-Year Rainfall=6.30"

Area (ac)	CN	Description
2.685	61	>75% Grass cover, Good, HSG B
0.072	80	>75% Grass cover, Good, HSG D
0.033	80	>75% Grass cover, Good, HSG D
0.100	61	>75% Grass cover, Good, HSG B
2.890	62	Weighted Average
2.890		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0123	0.10		**Sheet Flow, Field** Grass: Dense n= 0.240 P2= 3.40"
0.4	24	0.0208	1.01		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
2.6	106	0.0094	0.68		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
0.8	75	0.0467	1.51		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
20.6	305	Total			

Subcatchment 8S: Green Field E



Summary for Subcatchment 9S: Greenfield 2

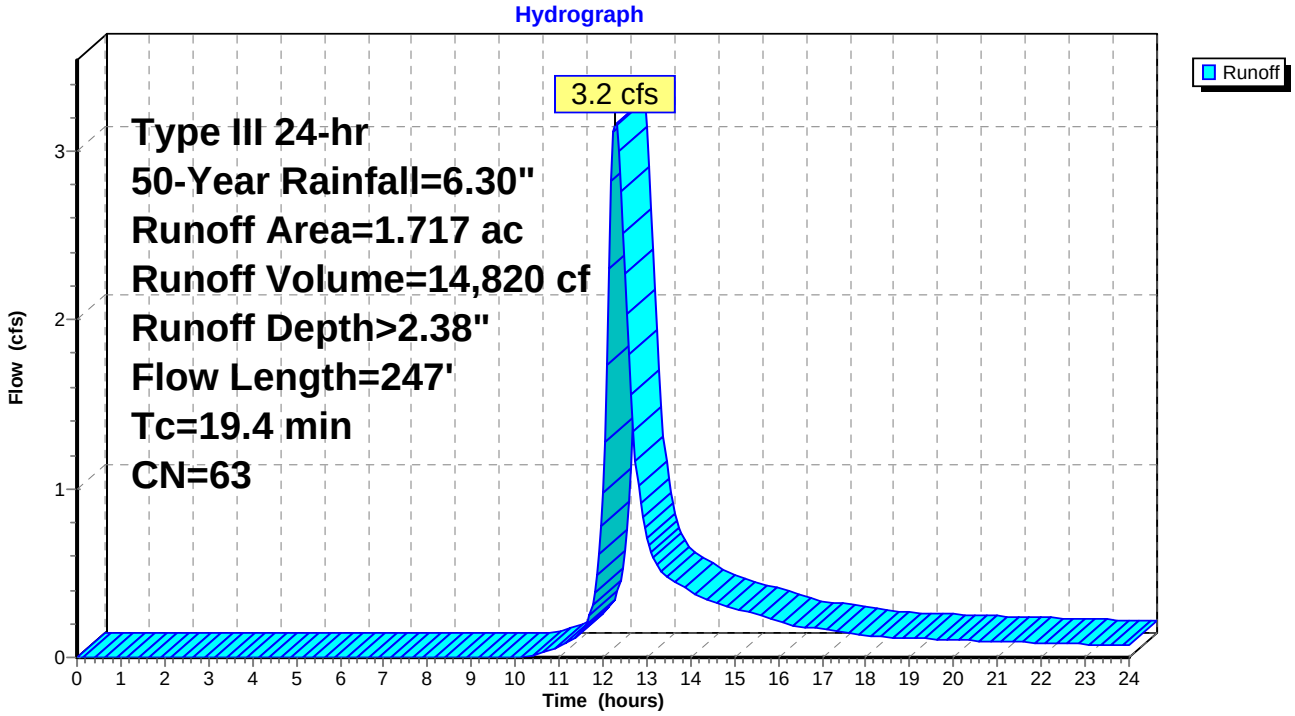
Runoff = 3.2 cfs @ 12.28 hrs, Volume= 14,820 cf, Depth> 2.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 50-Year Rainfall=6.30"

Area (ac)	CN	Description
0.091	77	Woods, Good, HSG D
0.151	55	Woods, Good, HSG B
1.288	61	>75% Grass cover, Good, HSG B
0.187	80	>75% Grass cover, Good, HSG D
1.717	63	Weighted Average
1.717		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.5	100	0.0128	0.10		**Sheet Flow, Grass** Grass: Dense n= 0.240 P2= 3.40"
2.9	147	0.0148	0.85		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
19.4	247	Total			

Subcatchment 9S: Greenfield 2



Summary for Reach 19R: Riprap Swale

Inflow Area = 85,378 sf, 0.00% Impervious, Inflow Depth > 3.43" for 50-Year event
Inflow = 5.9 cfs @ 12.21 hrs, Volume= 24,397 cf
Outflow = 5.8 cfs @ 12.25 hrs, Volume= 24,331 cf, Atten= 3%, Lag= 2.4 min

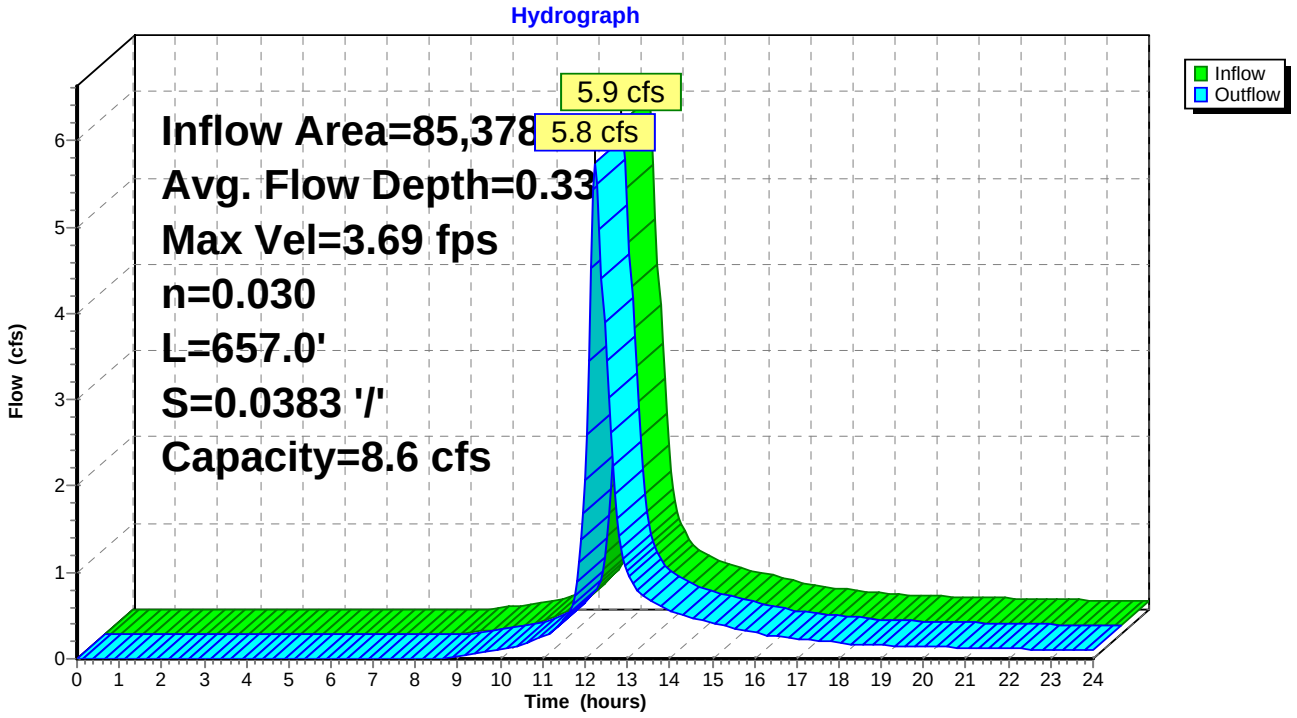
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Max. Velocity= 3.69 fps, Min. Travel Time= 3.0 min
Avg. Velocity = 1.32 fps, Avg. Travel Time= 8.3 min

Peak Storage= 1,024 cf @ 12.25 hrs
Average Depth at Peak Storage= 0.33'
Bank-Full Depth= 0.40' Flow Area= 2.1 sf, Capacity= 8.6 cfs

3.00' x 0.40' deep channel, n= 0.030 Rubble masonry, cemented
Side Slope Z-value= 5.5 '/' Top Width= 7.40'
Length= 657.0' Slope= 0.0383 '/'
Inlet Invert= 274.52', Outlet Invert= 249.36'

‡

Reach 19R: Riprap Swale



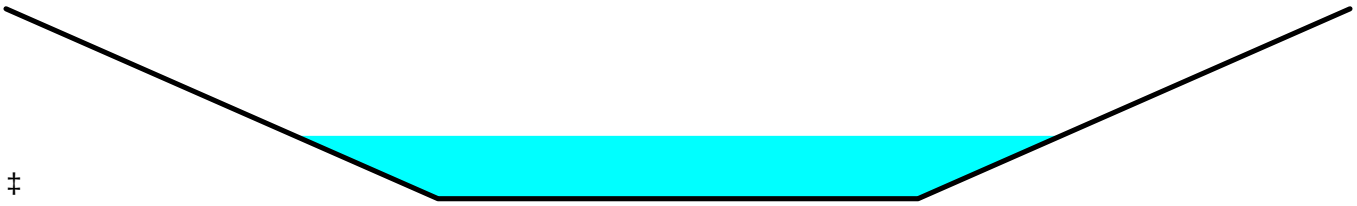
Summary for Reach 21R: Riprap Swale

Inflow Area = 53,317 sf, 0.00% Impervious, Inflow Depth > 3.53" for 50-Year event
Inflow = 4.4 cfs @ 12.14 hrs, Volume= 15,698 cf
Outflow = 4.3 cfs @ 12.17 hrs, Volume= 15,659 cf, Atten= 3%, Lag= 1.7 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Max. Velocity= 3.64 fps, Min. Travel Time= 2.4 min
Avg. Velocity = 1.16 fps, Avg. Travel Time= 7.6 min

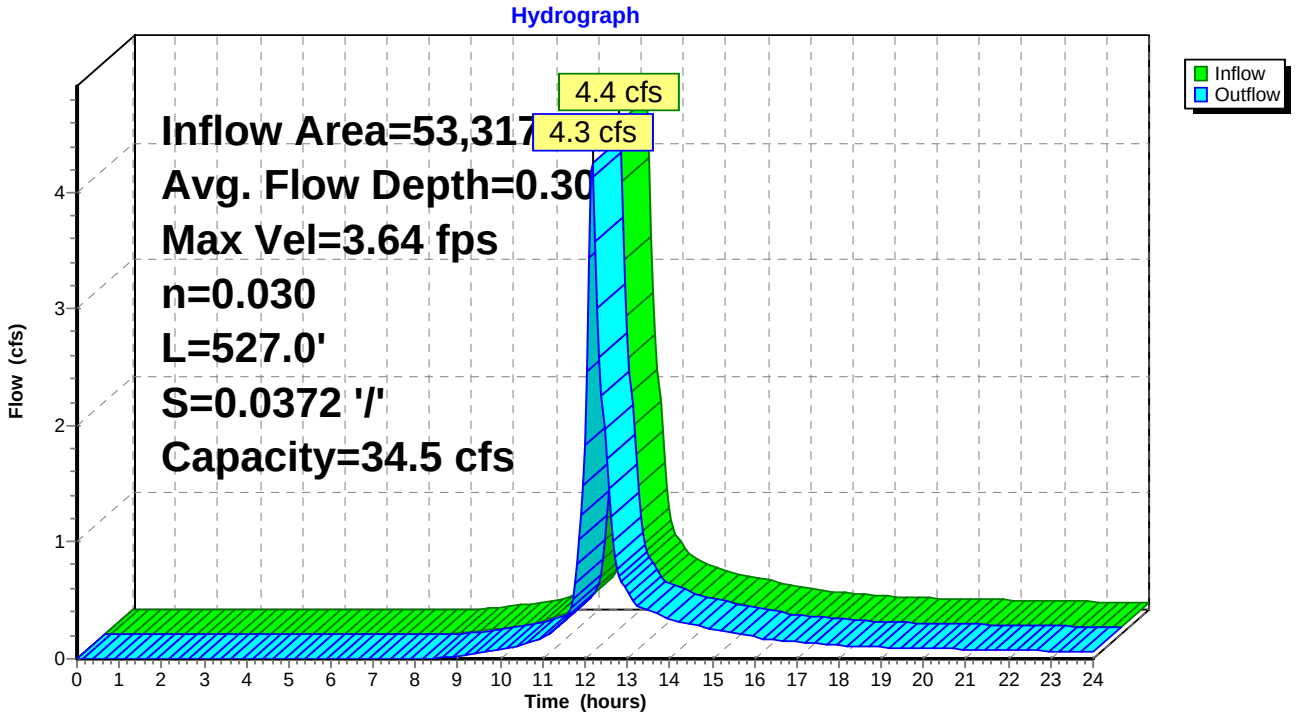
Peak Storage= 612 cf @ 12.17 hrs
Average Depth at Peak Storage= 0.30'
Bank-Full Depth= 0.90' Flow Area= 5.1 sf, Capacity= 34.5 cfs

3.00' x 0.90' deep channel, n= 0.030 Rubble masonry, cemented
Side Slope Z-value= 3.0 '/' Top Width= 8.40'
Length= 527.0' Slope= 0.0372 '/'
Inlet Invert= 276.70', Outlet Invert= 257.10'



‡

Reach 21R: Riprap Swale

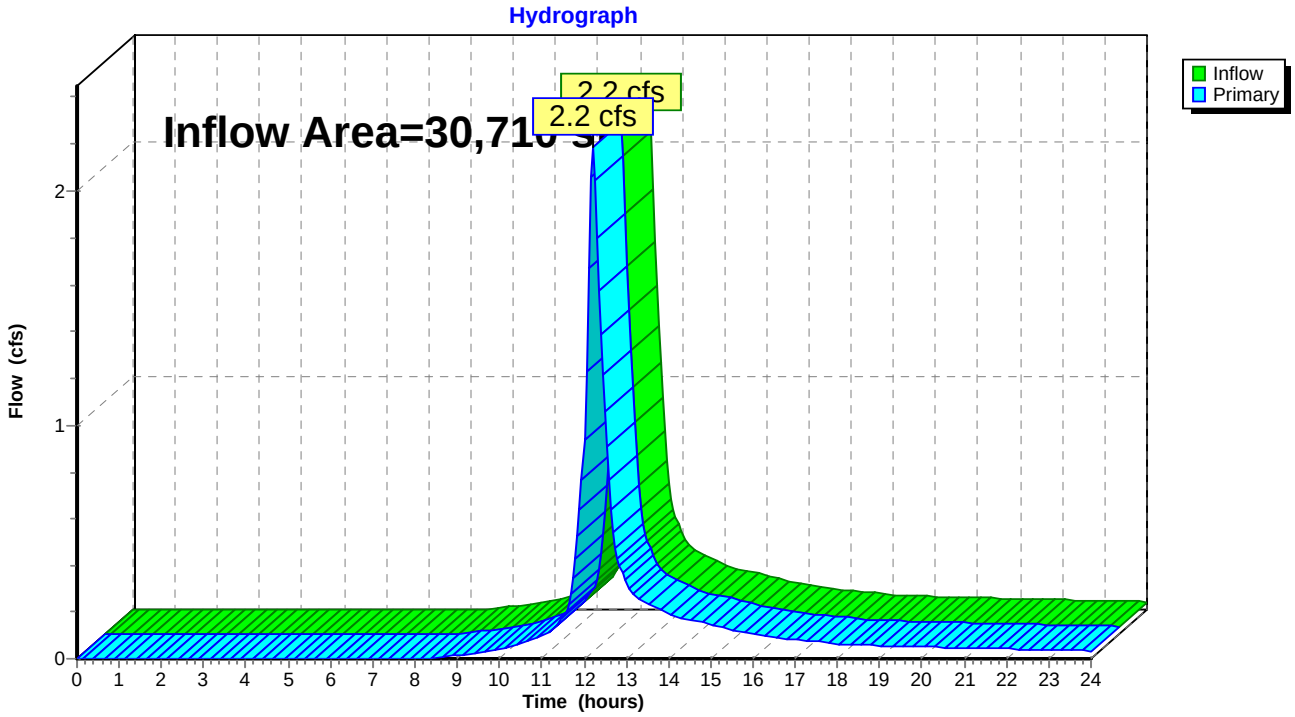


Summary for Link 7L: Wetlands NW

Inflow Area = 30,710 sf, 0.00% Impervious, Inflow Depth > 3.43" for 50-Year event
Inflow = 2.2 cfs @ 12.20 hrs, Volume= 8,777 cf
Primary = 2.2 cfs @ 12.20 hrs, Volume= 8,777 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 7L: Wetlands NW

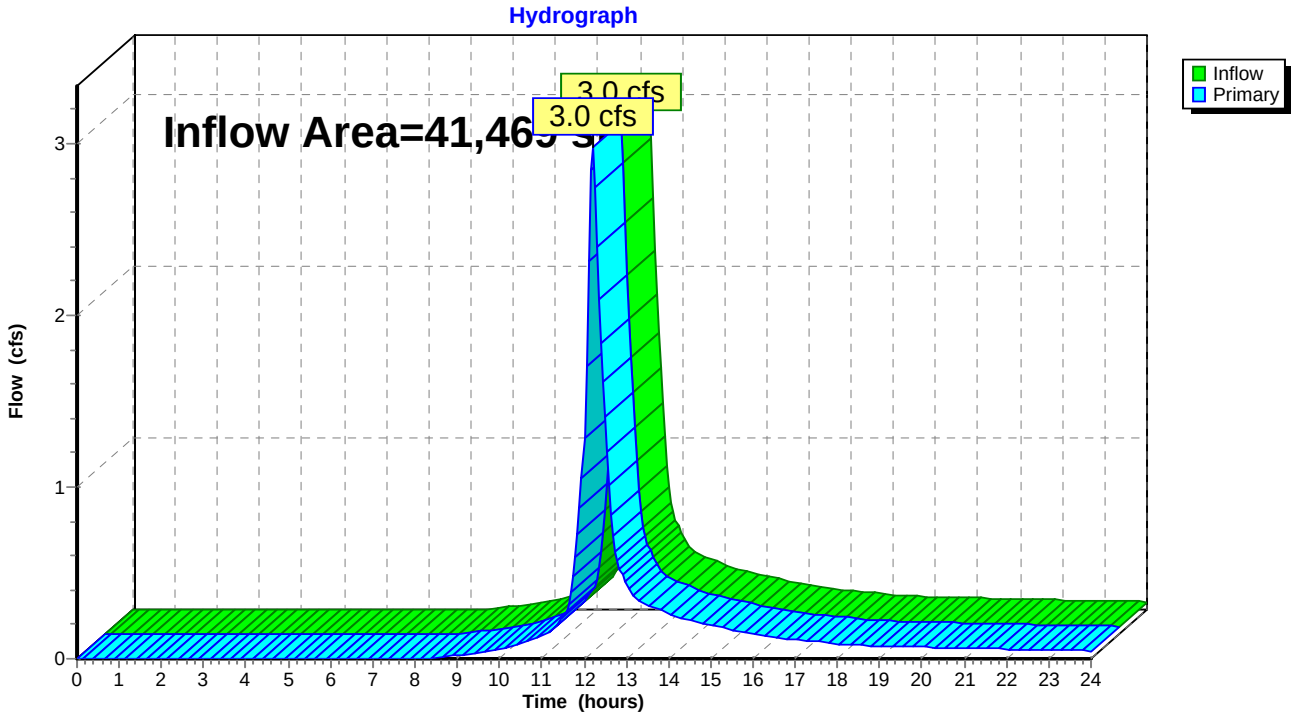


Summary for Link 8L: Depression S

Inflow Area = 41,469 sf, 0.00% Impervious, Inflow Depth > 3.43" for 50-Year event
Inflow = 3.0 cfs @ 12.19 hrs, Volume= 11,854 cf
Primary = 3.0 cfs @ 12.19 hrs, Volume= 11,854 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 8L: Depression S

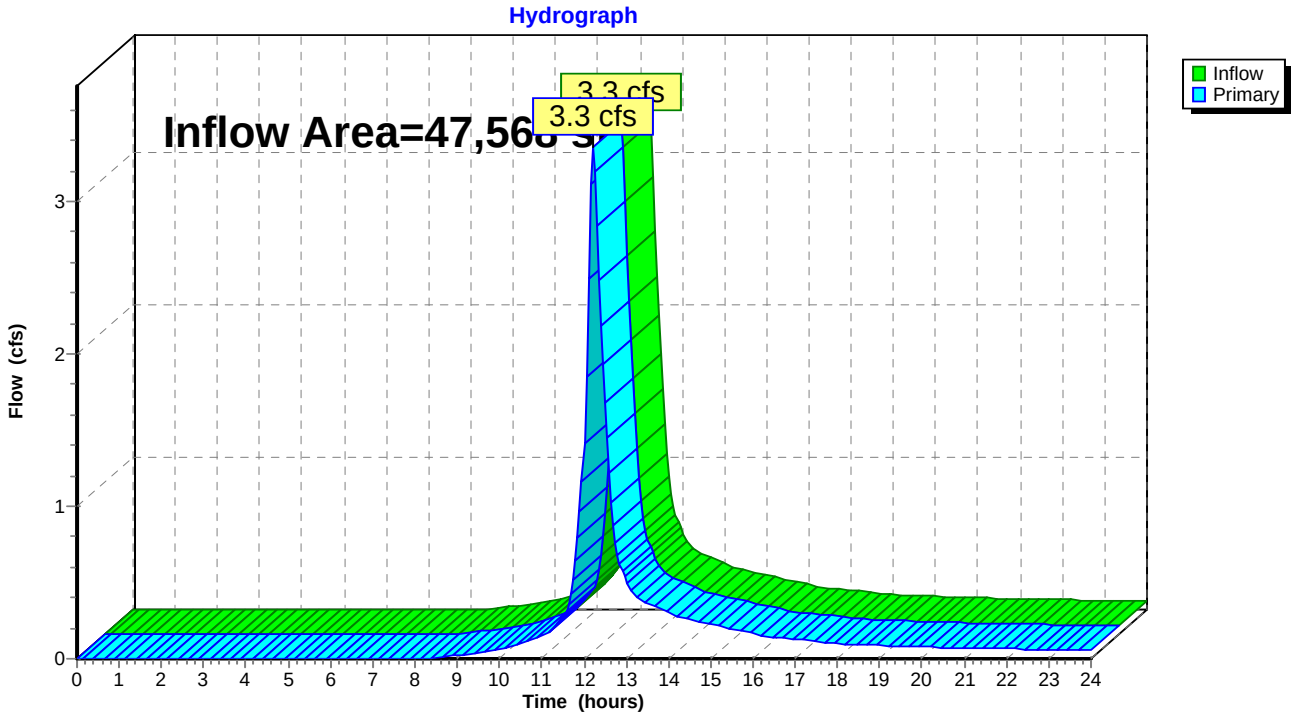


Summary for Link 9L: Wetlands NE

Inflow Area = 47,568 sf, 0.00% Impervious, Inflow Depth > 3.43" for 50-Year event
Inflow = 3.3 cfs @ 12.20 hrs, Volume= 13,594 cf
Primary = 3.3 cfs @ 12.20 hrs, Volume= 13,594 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 9L: Wetlands NE

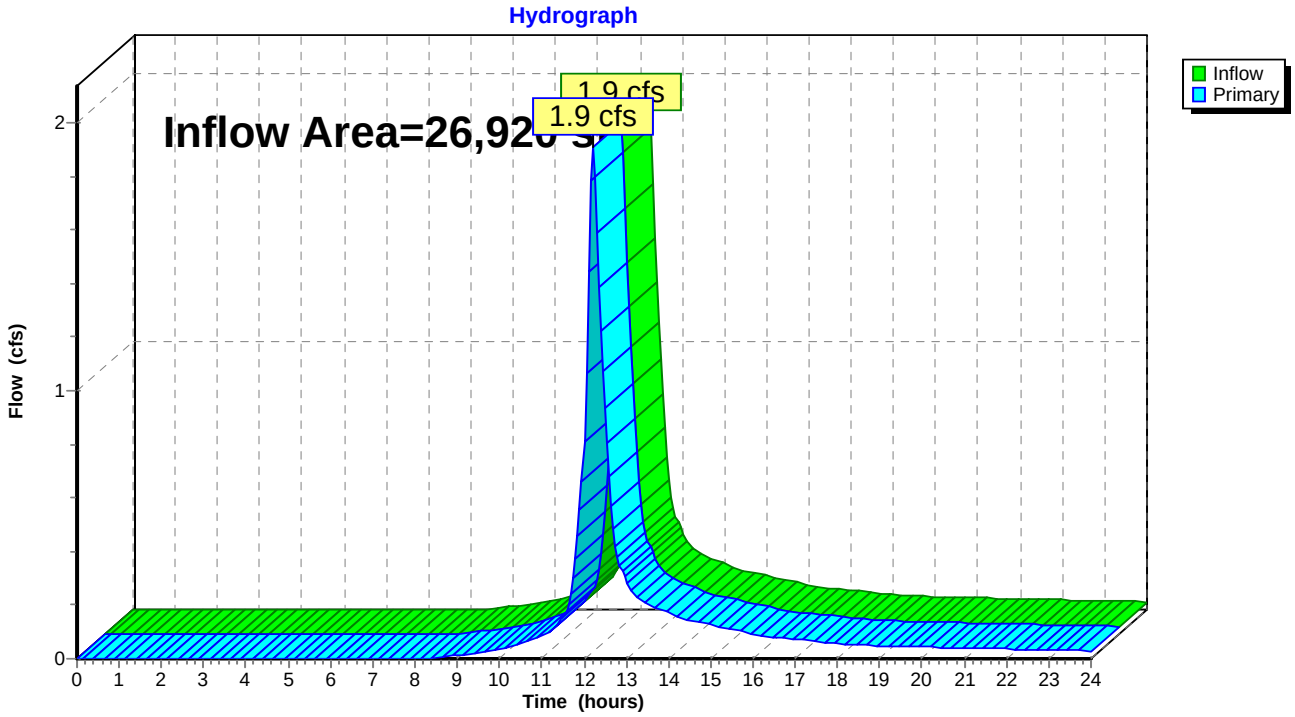


Summary for Link 10L: Wetlands N

Inflow Area = 26,920 sf, 0.00% Impervious, Inflow Depth > 3.43" for 50-Year event
Inflow = 1.9 cfs @ 12.20 hrs, Volume= 7,694 cf
Primary = 1.9 cfs @ 12.20 hrs, Volume= 7,694 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 10L: Wetlands N

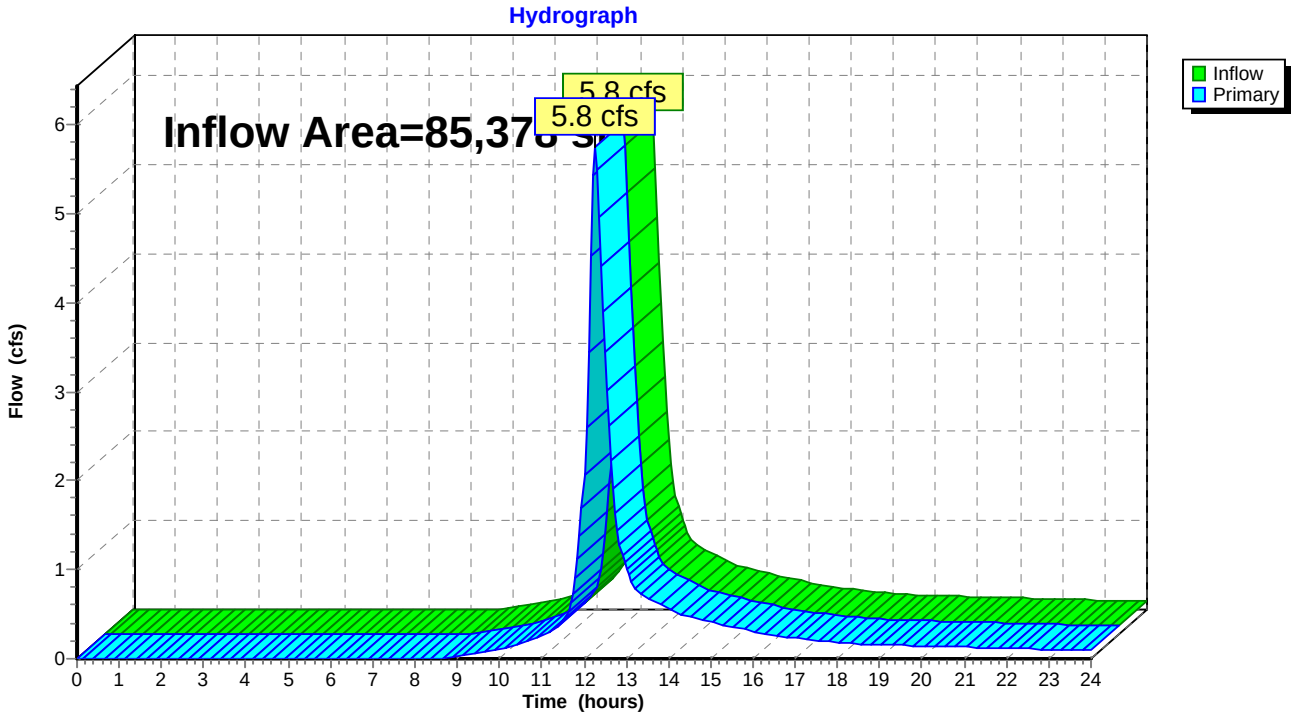


Summary for Link 11L: Collection Swale W

Inflow Area = 85,378 sf, 0.00% Impervious, Inflow Depth > 3.42" for 50-Year event
Inflow = 5.8 cfs @ 12.25 hrs, Volume= 24,331 cf
Primary = 5.8 cfs @ 12.25 hrs, Volume= 24,331 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 11L: Collection Swale W

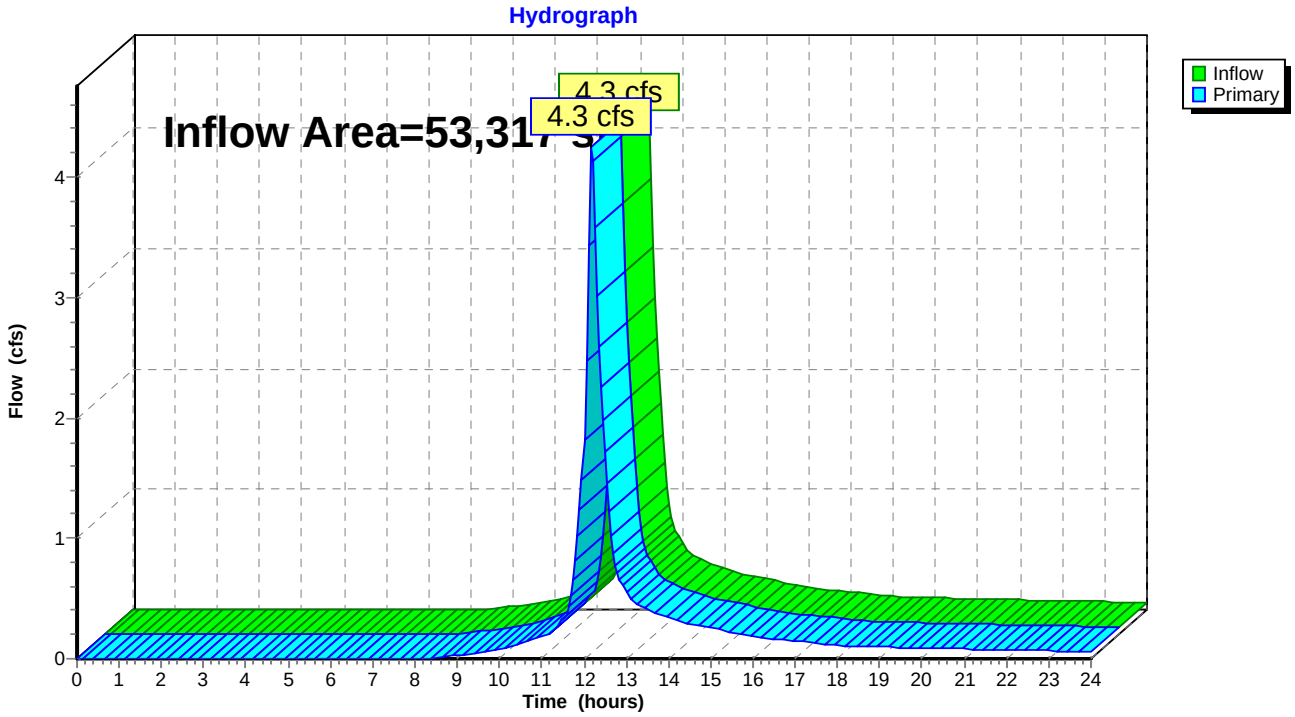


Summary for Link 12L: Collection Swale W

Inflow Area = 53,317 sf, 0.00% Impervious, Inflow Depth > 3.52" for 50-Year event
Inflow = 4.3 cfs @ 12.17 hrs, Volume= 15,659 cf
Primary = 4.3 cfs @ 12.17 hrs, Volume= 15,659 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 12L: Collection Swale W

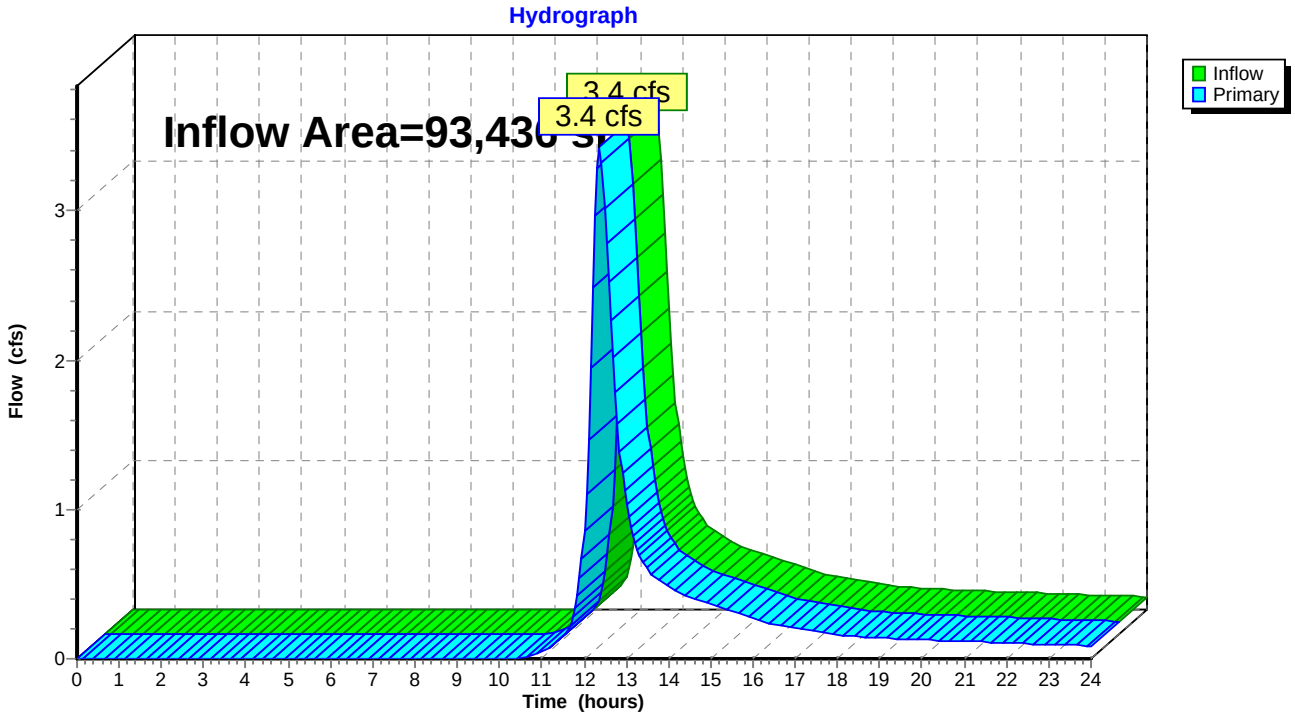


Summary for Link 15L: Wetland W

Inflow Area = 93,436 sf, 0.00% Impervious, Inflow Depth > 2.28" for 50-Year event
Inflow = 3.4 cfs @ 12.37 hrs, Volume= 17,787 cf
Primary = 3.4 cfs @ 12.37 hrs, Volume= 17,787 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 15L: Wetland W

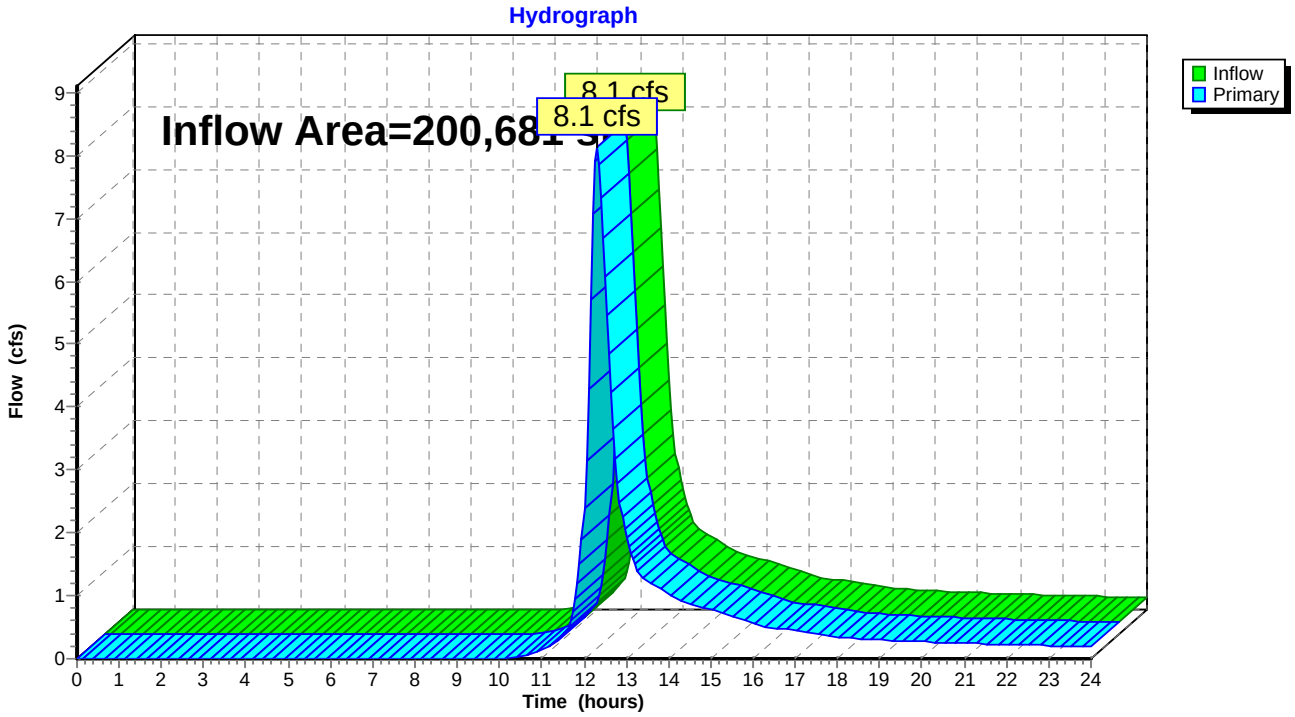


Summary for Link 16L: Wetland E

Inflow Area = 200,681 sf, 0.00% Impervious, Inflow Depth > 2.32" for 50-Year event
Inflow = 8.1 cfs @ 12.30 hrs, Volume= 38,811 cf
Primary = 8.1 cfs @ 12.30 hrs, Volume= 38,811 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 16L: Wetland E



Time span=0.00-24.00 hrs, dt=0.050 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Bulky Waste Landfill SW Runoff Area=0.952 ac 0.00% Impervious Runoff Depth>4.12"
Flow Length=239' Tc=13.7 min CN=74 Runoff=3.6 cfs 14,236 cf

Subcatchment 2S: Bulky Waste Landfill NW Runoff Area=0.705 ac 0.00% Impervious Runoff Depth>4.12"
Flow Length=179' Tc=14.1 min CN=74 Runoff=2.6 cfs 10,541 cf

Subcatchment 3S: Bulky Waste Landfill E Runoff Area=1.092 ac 0.00% Impervious Runoff Depth>4.12"
Flow Length=204' Tc=14.6 min CN=74 Runoff=4.0 cfs 16,326 cf

Subcatchment 4S: Landfill N Runoff Area=0.618 ac 0.00% Impervious Runoff Depth>4.12"
Flow Length=222' Tc=14.3 min CN=74 Runoff=2.3 cfs 9,240 cf

Subcatchment 5S: Landfill W Runoff Area=1.960 ac 0.00% Impervious Runoff Depth>4.12"
Flow Length=752' Tc=15.2 min CN=74 Runoff=7.1 cfs 29,299 cf

Subcatchment 6S: Landfill E Runoff Area=1.224 ac 0.00% Impervious Runoff Depth>4.23"
Flow Length=459' Tc=10.0 min CN=75 Runoff=5.2 cfs 18,797 cf

Subcatchment 7S: Green Field W Runoff Area=2.145 ac 0.00% Impervious Runoff Depth>2.86"
Flow Length=472' Tc=24.7 min CN=62 Runoff=4.3 cfs 22,256 cf

Subcatchment 8S: Green Field E Runoff Area=2.890 ac 0.00% Impervious Runoff Depth>2.86"
Flow Length=305' Tc=20.6 min CN=62 Runoff=6.3 cfs 30,017 cf

Subcatchment 9S: Greenfield 2 Runoff Area=1.717 ac 0.00% Impervious Runoff Depth>2.96"
Flow Length=247' Tc=19.4 min CN=63 Runoff=4.0 cfs 18,468 cf

Reach 19R: Riprap Swale Avg. Flow Depth=0.36' Max Vel=3.89 fps Inflow=7.1 cfs 29,299 cf
n=0.030 L=657.0' S=0.0383 '/' Capacity=8.6 cfs Outflow=6.9 cfs 29,227 cf

Reach 21R: Riprap Swale Avg. Flow Depth=0.33' Max Vel=3.86 fps Inflow=5.2 cfs 18,797 cf
n=0.030 L=527.0' S=0.0372 '/' Capacity=34.5 cfs Outflow=5.1 cfs 18,754 cf

Link 7L: Wetlands NW Inflow=2.6 cfs 10,541 cf
Primary=2.6 cfs 10,541 cf

Link 8L: Depression S Inflow=3.6 cfs 14,236 cf
Primary=3.6 cfs 14,236 cf

Link 9L: Wetlands NE Inflow=4.0 cfs 16,326 cf
Primary=4.0 cfs 16,326 cf

Link 10L: Wetlands N Inflow=2.3 cfs 9,240 cf
Primary=2.3 cfs 9,240 cf

Link 11L: Collection Swale W Inflow=6.9 cfs 29,227 cf
Primary=6.9 cfs 29,227 cf

Link 12L: Collection Swale W Inflow=5.1 cfs 18,754 cf
Primary=5.1 cfs 18,754 cf

Link 15L: Wetland W Inflow=4.3 cfs 22,256 cf
Primary=4.3 cfs 22,256 cf

Link 16L: Wetland E Inflow=10.3 cfs 48,486 cf
Primary=10.3 cfs 48,486 cf

Total Runoff Area = 579,479 sf Runoff Volume = 169,181 cf Average Runoff Depth = 3.50"
100.00% Pervious = 579,479 sf 0.00% Impervious = 0 sf

Summary for Subcatchment 1S: Bulky Waste Landfill SW

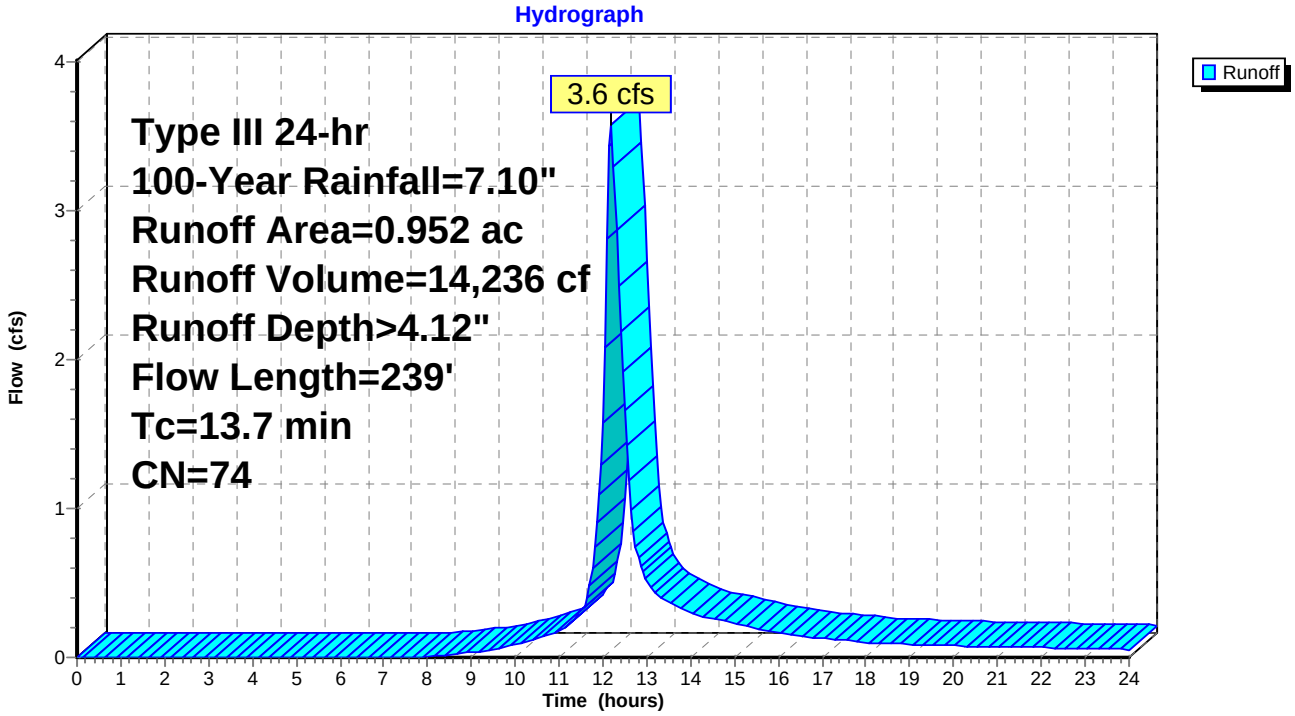
Runoff = 3.6 cfs @ 12.19 hrs, Volume= 14,236 cf, Depth> 4.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 100-Year Rainfall=7.10"

Area (ac)	CN	Description
0.952	74	>75% Grass cover, Good, HSG C
0.952		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.6	100	0.0251	0.13		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
0.5	66	0.1137	2.36		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	46	0.1957	3.10		**Shallow Concentrated Flow, Lanfill Cap** Short Grass Pasture Kv= 7.0 fps
0.4	27	0.0050	1.14		**Shallow Concentrated Flow, Access Drive** Unpaved Kv= 16.1 fps
13.7	239	Total			

Subcatchment 1S: Bulky Waste Landfill SW



Summary for Subcatchment 2S: Bulky Waste Landfill NW

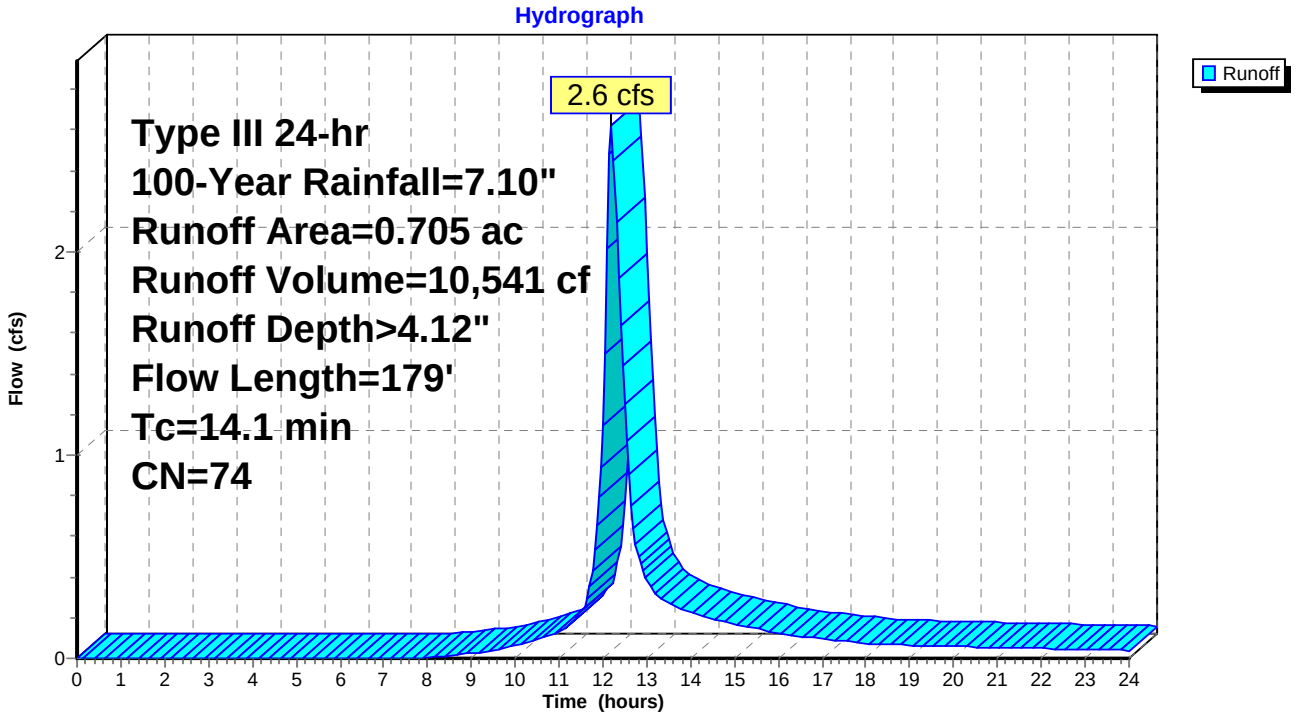
Runoff = 2.6 cfs @ 12.20 hrs, Volume= 10,541 cf, Depth> 4.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 100-Year Rainfall=7.10"

Area (ac)	CN	Description
0.705	74	>75% Grass cover, Good, HSG C
0.705		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0212	0.12		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
0.6	79	0.0886	2.08		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
14.1	179	Total			

Subcatchment 2S: Bulky Waste Landfill NW



Summary for Subcatchment 3S: Bulky Waste Landfill E

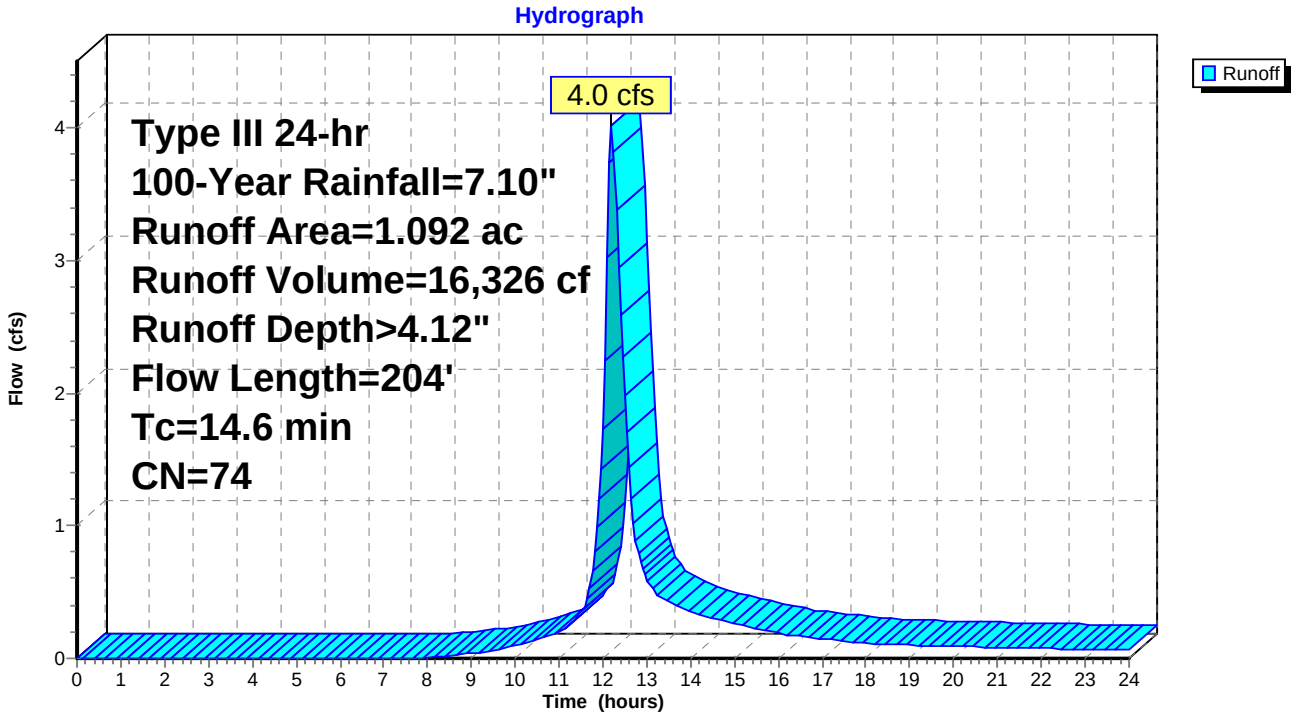
Runoff = 4.0 cfs @ 12.20 hrs, Volume= 16,326 cf, Depth> 4.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 100-Year Rainfall=7.10"

Area (ac)	CN	Description
1.092	74	>75% Grass cover, Good, HSG C
1.092		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0212	0.12		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
1.0	80	0.0375	1.36		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.1	24	0.1667	2.86		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
14.6	204	Total			

Subcatchment 3S: Bulky Waste Landfill E



Summary for Subcatchment 4S: Landfill N

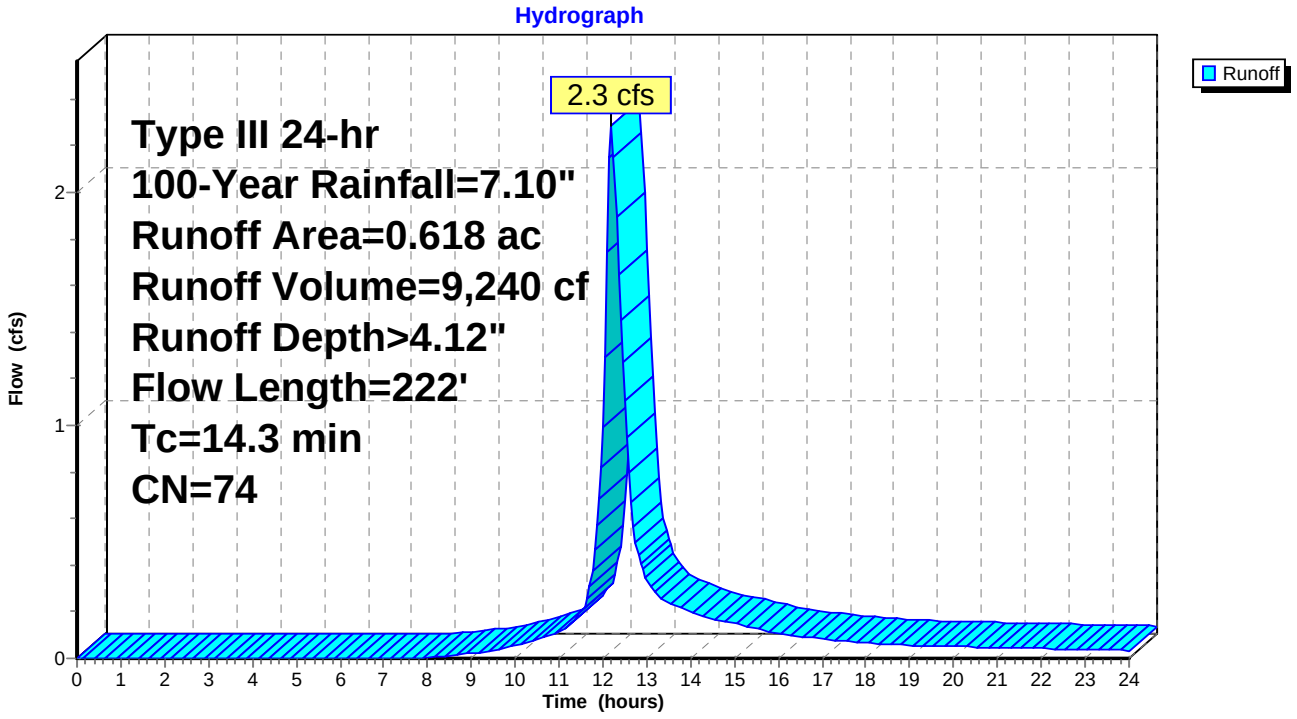
Runoff = 2.3 cfs @ 12.20 hrs, Volume= 9,240 cf, Depth> 4.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 100-Year Rainfall=7.10"

Area (ac)	CN	Description
0.618	74	>75% Grass cover, Good, HSG C
0.618		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	100	0.0230	0.13		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
1.0	81	0.0371	1.35		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	41	0.1707	2.89		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
14.3	222	Total			

Subcatchment 4S: Landfill N



Summary for Subcatchment 5S: Landfill W

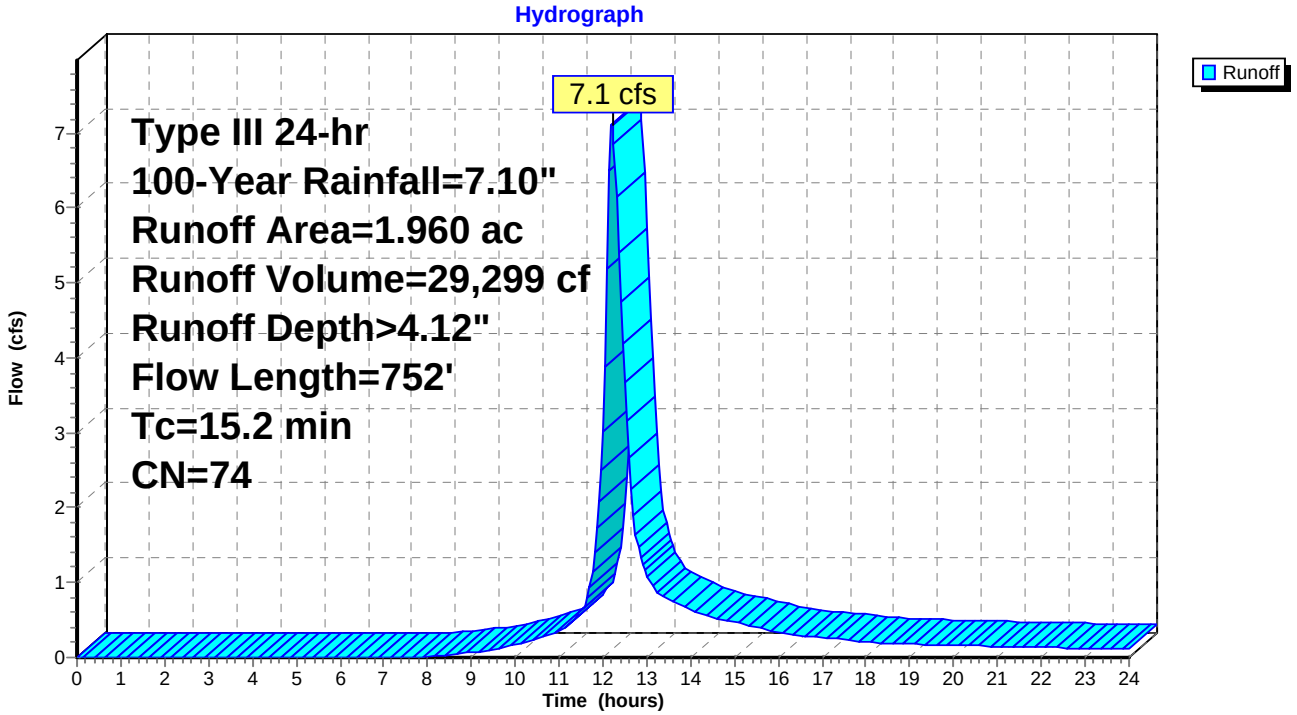
Runoff = 7.1 cfs @ 12.21 hrs, Volume= 29,299 cf, Depth> 4.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 100-Year Rainfall=7.10"

Area (ac)	CN	Description
1.960	74	>75% Grass cover, Good, HSG C
1.960		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.3	100	0.0220	0.13		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
0.3	37	0.0811	1.99		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.3	58	0.1897	3.05		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
1.3	520	0.0200	6.71	50.33	**Channel Flow, Riprap Swale** Area= 7.5 sf Perim= 8.0' r= 0.94' n= 0.030 Rubble masonry, cemented
0.0	37	0.2160	22.05	165.39	**Channel Flow, Riprap Swale** Area= 7.5 sf Perim= 8.0' r= 0.94' n= 0.030 Rubble masonry, cemented
15.2	752	Total			

Subcatchment 5S: Landfill W



Summary for Subcatchment 6S: Landfill E

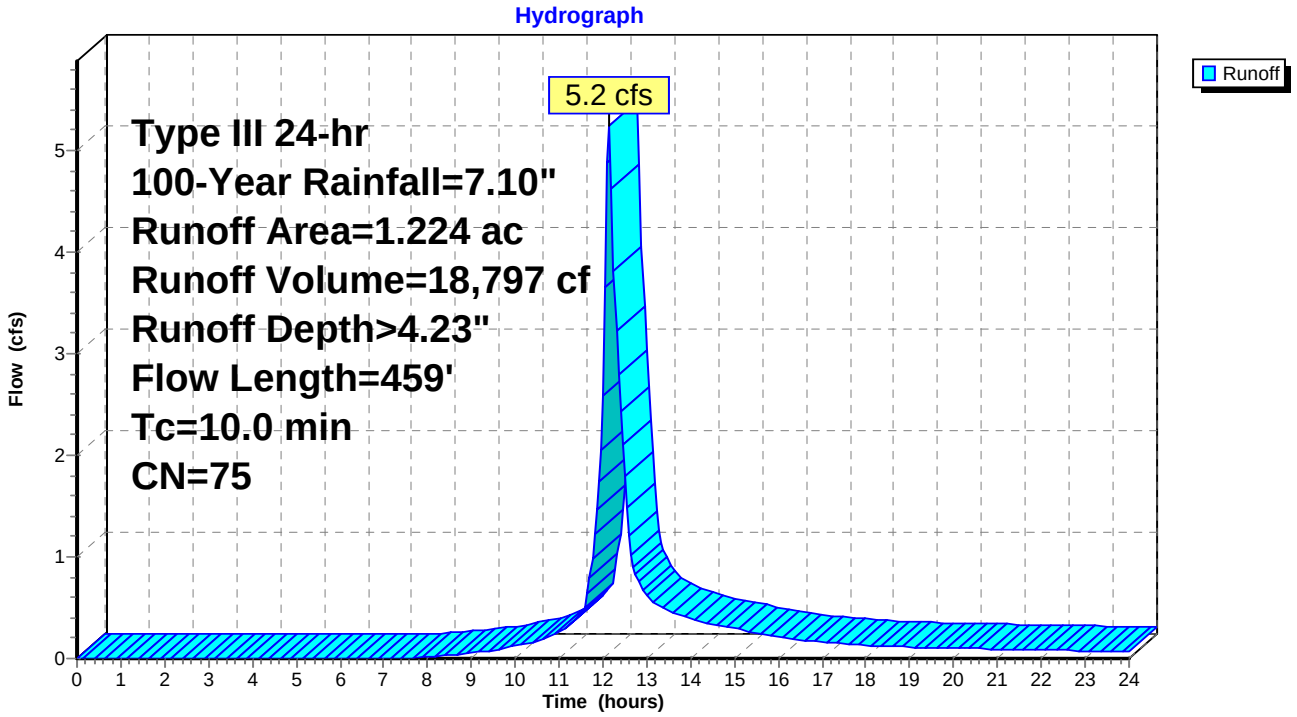
Runoff = 5.2 cfs @ 12.14 hrs, Volume= 18,797 cf, Depth> 4.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 100-Year Rainfall=7.10"

Area (ac)	CN	Description
1.134	74	>75% Grass cover, Good, HSG C
0.090	89	Gravel roads, HSG C
1.224	75	Weighted Average
1.224		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.5	40	0.0543	0.15		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
1.0	60	0.0117	1.03		**Sheet Flow, Gravel** Smooth surfaces n= 0.011 P2= 3.40"
0.5	86	0.0384	3.15		**Shallow Concentrated Flow, Gravel** Unpaved Kv= 16.1 fps
0.7	76	0.0658	1.80		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	49	0.2245	3.32		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	148	0.1081	15.60	117.00	**Channel Flow, Riprap Swale** Area= 7.5 sf Perim= 8.0' r= 0.94' n= 0.030 Rubble masonry, cemented
7.1	459	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 6S: Landfill E



Summary for Subcatchment 7S: Green Field W

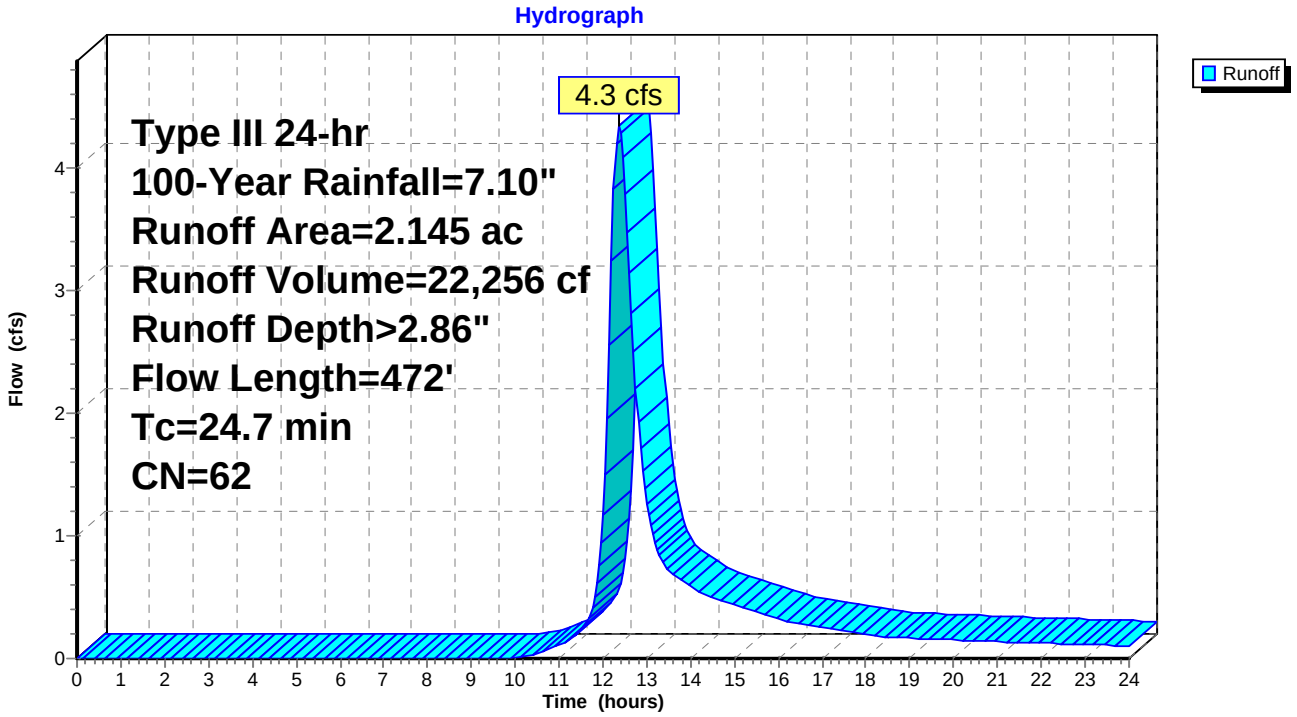
Runoff = 4.3 cfs @ 12.36 hrs, Volume= 22,256 cf, Depth> 2.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 100-Year Rainfall=7.10"

Area (ac)	CN	Description
0.022	74	>75% Grass cover, Good, HSG C
0.089	80	>75% Grass cover, Good, HSG D
0.282	61	>75% Grass cover, Good, HSG B
1.752	61	>75% Grass cover, Good, HSG B
2.145	62	Weighted Average
2.145		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0123	0.10		**Sheet Flow, Field** Grass: Dense n= 0.240 P2= 3.40"
0.4	23	0.0217	1.03		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
4.8	160	0.0063	0.56		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
0.6	51	0.0392	1.39		**Shallow Concentrated Flow, field** Short Grass Pasture Kv= 7.0 fps
1.4	88	0.0227	1.05		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
0.7	50	0.0300	1.21		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
24.7	472	Total			

Subcatchment 7S: Green Field W



Summary for Subcatchment 8S: Green Field E

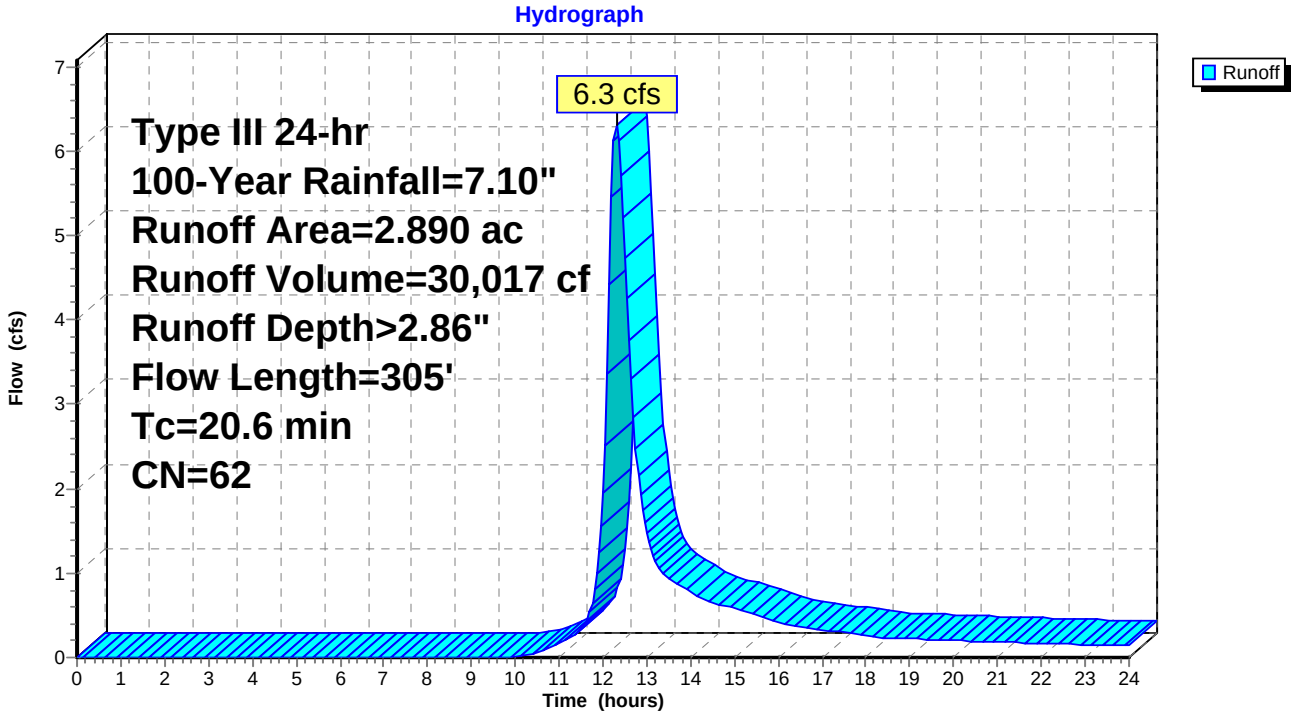
Runoff = 6.3 cfs @ 12.30 hrs, Volume= 30,017 cf, Depth> 2.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 100-Year Rainfall=7.10"

Area (ac)	CN	Description
2.685	61	>75% Grass cover, Good, HSG B
0.072	80	>75% Grass cover, Good, HSG D
0.033	80	>75% Grass cover, Good, HSG D
0.100	61	>75% Grass cover, Good, HSG B
2.890	62	Weighted Average
2.890		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0123	0.10		**Sheet Flow, Field** Grass: Dense n= 0.240 P2= 3.40"
0.4	24	0.0208	1.01		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
2.6	106	0.0094	0.68		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
0.8	75	0.0467	1.51		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
20.6	305	Total			

Subcatchment 8S: Green Field E



Summary for Subcatchment 9S: Greenfield 2

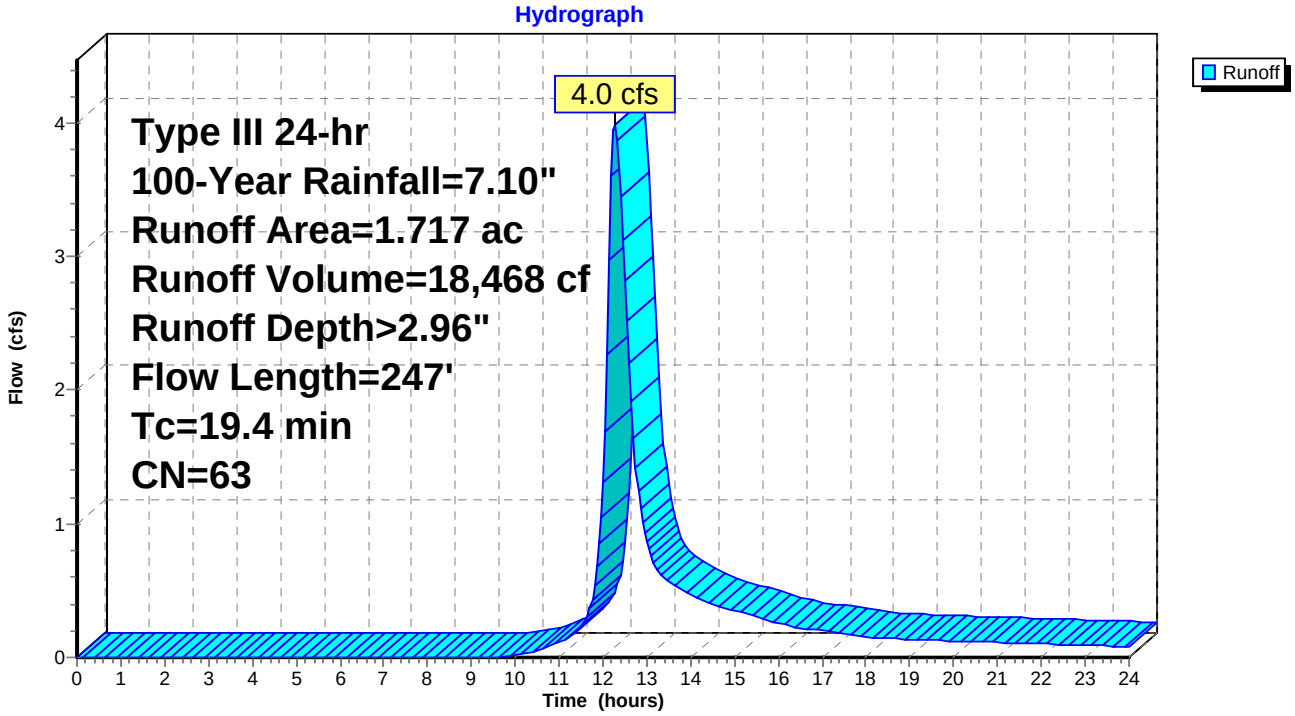
Runoff = 4.0 cfs @ 12.28 hrs, Volume= 18,468 cf, Depth> 2.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 100-Year Rainfall=7.10"

Area (ac)	CN	Description
0.091	77	Woods, Good, HSG D
0.151	55	Woods, Good, HSG B
1.288	61	>75% Grass cover, Good, HSG B
0.187	80	>75% Grass cover, Good, HSG D
1.717	63	Weighted Average
1.717		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.5	100	0.0128	0.10		**Sheet Flow, Grass** Grass: Dense n= 0.240 P2= 3.40"
2.9	147	0.0148	0.85		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
19.4	247	Total			

Subcatchment 9S: Greenfield 2



Summary for Reach 19R: Riprap Swale

Inflow Area = 85,378 sf, 0.00% Impervious, Inflow Depth > 4.12" for 100-Year event
Inflow = 7.1 cfs @ 12.21 hrs, Volume= 29,299 cf
Outflow = 6.9 cfs @ 12.25 hrs, Volume= 29,227 cf, Atten= 3%, Lag= 2.3 min

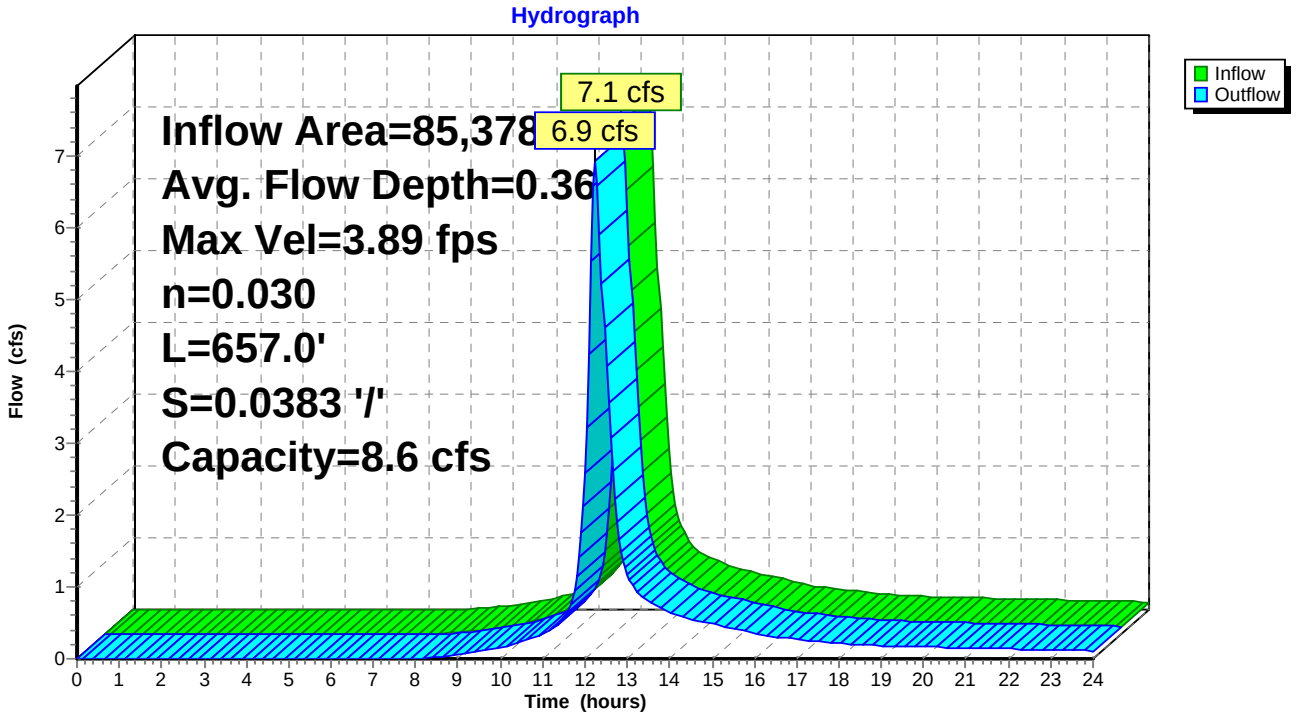
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Max. Velocity= 3.89 fps, Min. Travel Time= 2.8 min
Avg. Velocity = 1.39 fps, Avg. Travel Time= 7.9 min

Peak Storage= 1,169 cf @ 12.25 hrs
Average Depth at Peak Storage= 0.36'
Bank-Full Depth= 0.40' Flow Area= 2.1 sf, Capacity= 8.6 cfs

3.00' x 0.40' deep channel, n= 0.030 Rubble masonry, cemented
Side Slope Z-value= 5.5 '/' Top Width= 7.40'
Length= 657.0' Slope= 0.0383 '/'
Inlet Invert= 274.52', Outlet Invert= 249.36'

‡

Reach 19R: Riprap Swale



Summary for Reach 21R: Riprap Swale

Inflow Area = 53,317 sf, 0.00% Impervious, Inflow Depth > 4.23" for 100-Year event
Inflow = 5.2 cfs @ 12.14 hrs, Volume= 18,797 cf
Outflow = 5.1 cfs @ 12.17 hrs, Volume= 18,754 cf, Atten= 3%, Lag= 1.6 min

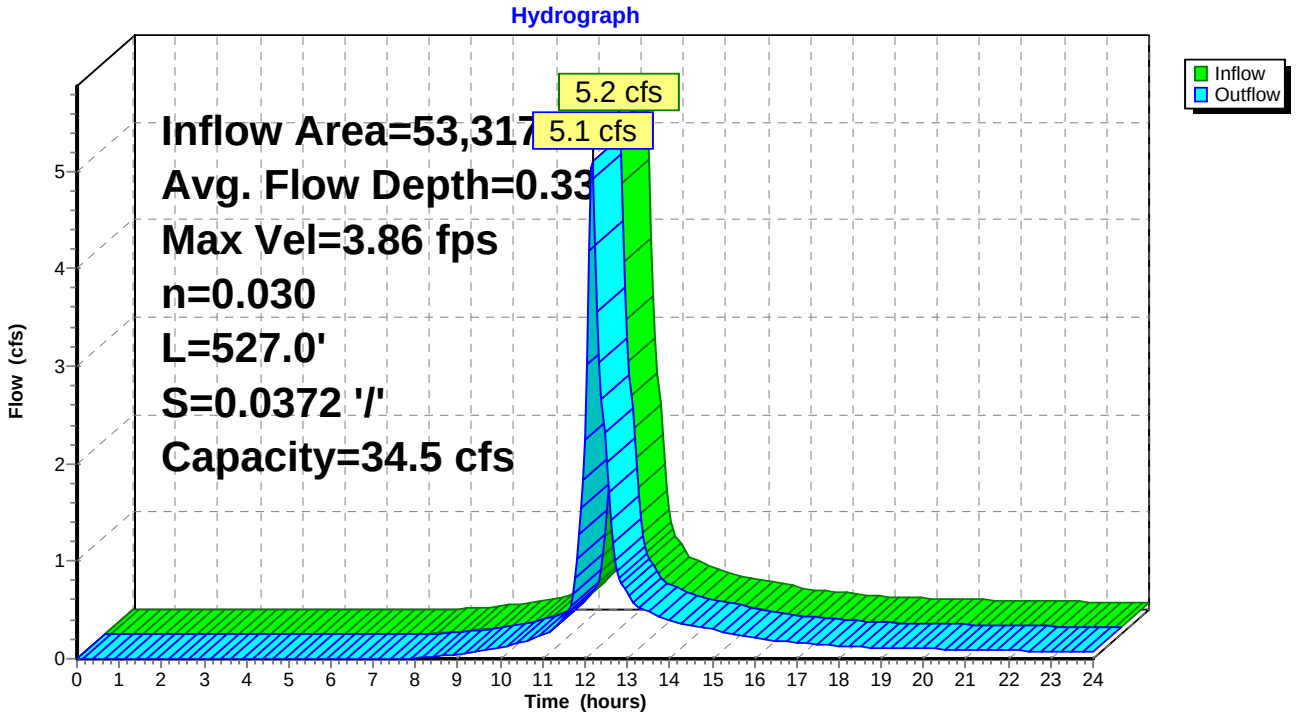
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Max. Velocity= 3.86 fps, Min. Travel Time= 2.3 min
Avg. Velocity = 1.22 fps, Avg. Travel Time= 7.2 min

Peak Storage= 693 cf @ 12.17 hrs
Average Depth at Peak Storage= 0.33'
Bank-Full Depth= 0.90' Flow Area= 5.1 sf, Capacity= 34.5 cfs

3.00' x 0.90' deep channel, n= 0.030 Rubble masonry, cemented
Side Slope Z-value= 3.0 '/' Top Width= 8.40'
Length= 527.0' Slope= 0.0372 '/'
Inlet Invert= 276.70', Outlet Invert= 257.10'

‡

Reach 21R: Riprap Swale

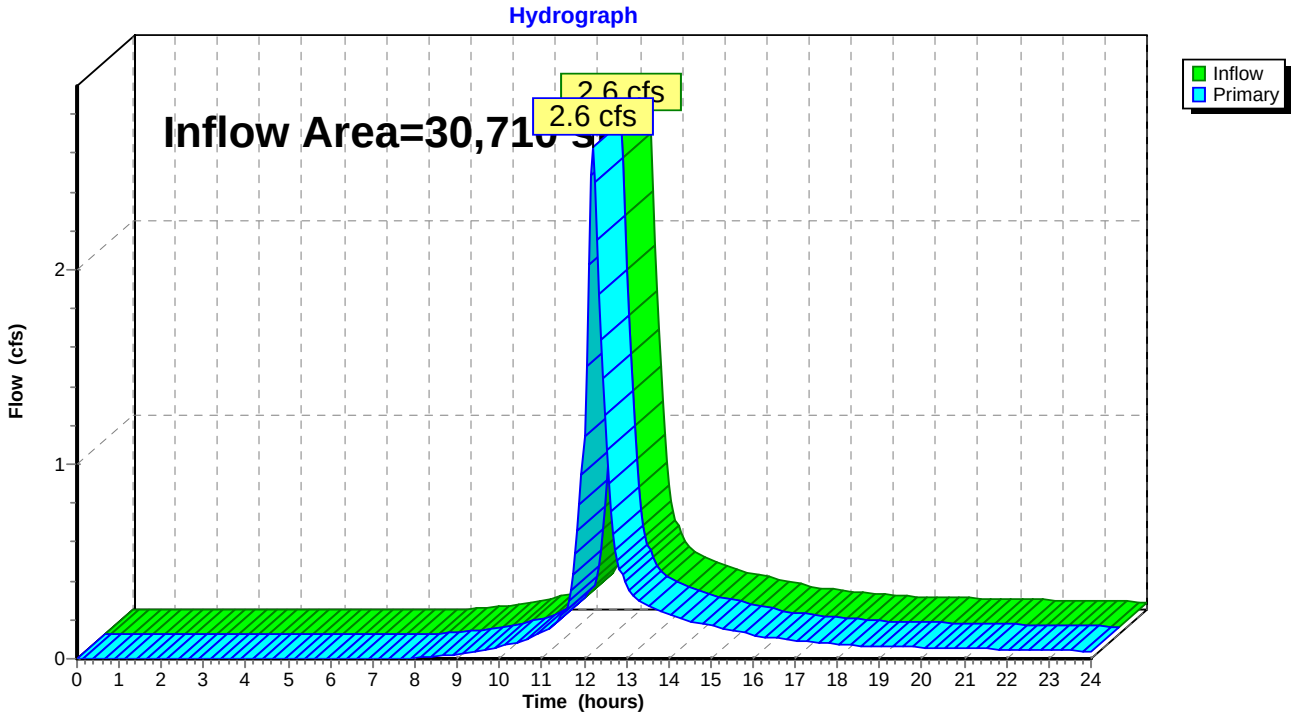


Summary for Link 7L: Wetlands NW

Inflow Area = 30,710 sf, 0.00% Impervious, Inflow Depth > 4.12" for 100-Year event
Inflow = 2.6 cfs @ 12.20 hrs, Volume= 10,541 cf
Primary = 2.6 cfs @ 12.20 hrs, Volume= 10,541 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 7L: Wetlands NW

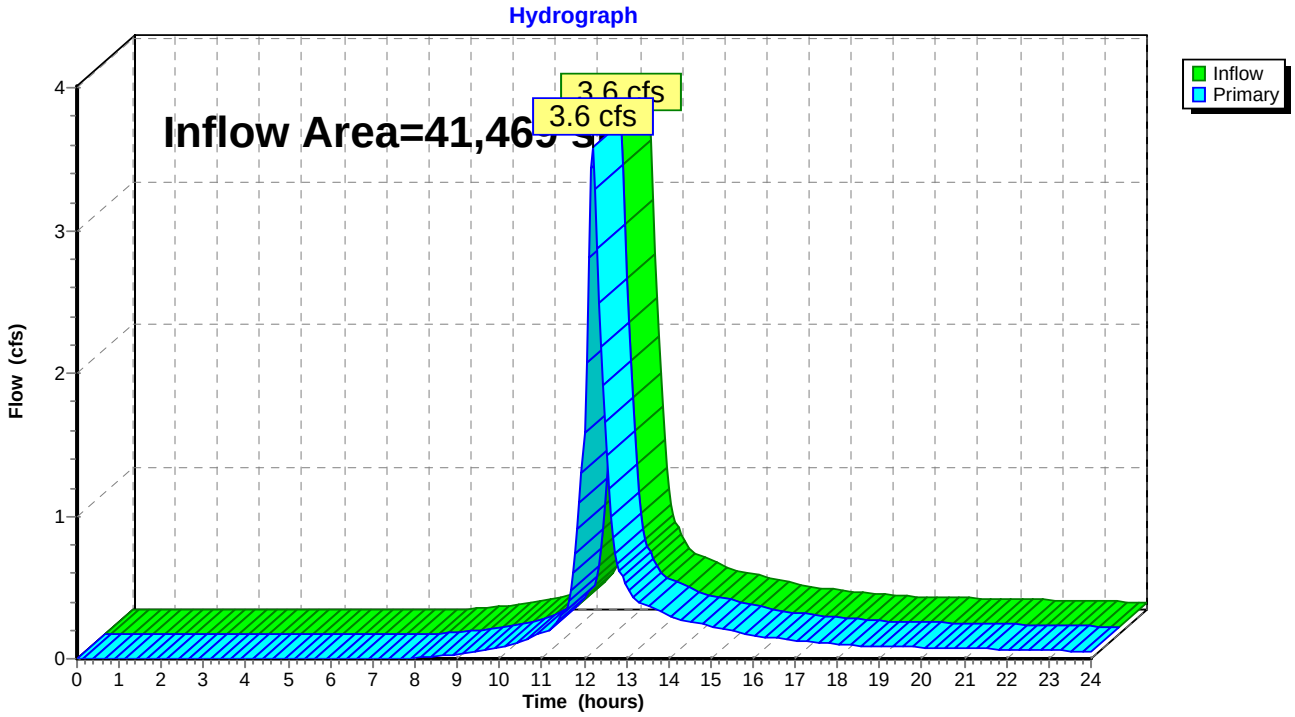


Summary for Link 8L: Depression S

Inflow Area = 41,469 sf, 0.00% Impervious, Inflow Depth > 4.12" for 100-Year event
Inflow = 3.6 cfs @ 12.19 hrs, Volume= 14,236 cf
Primary = 3.6 cfs @ 12.19 hrs, Volume= 14,236 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 8L: Depression S

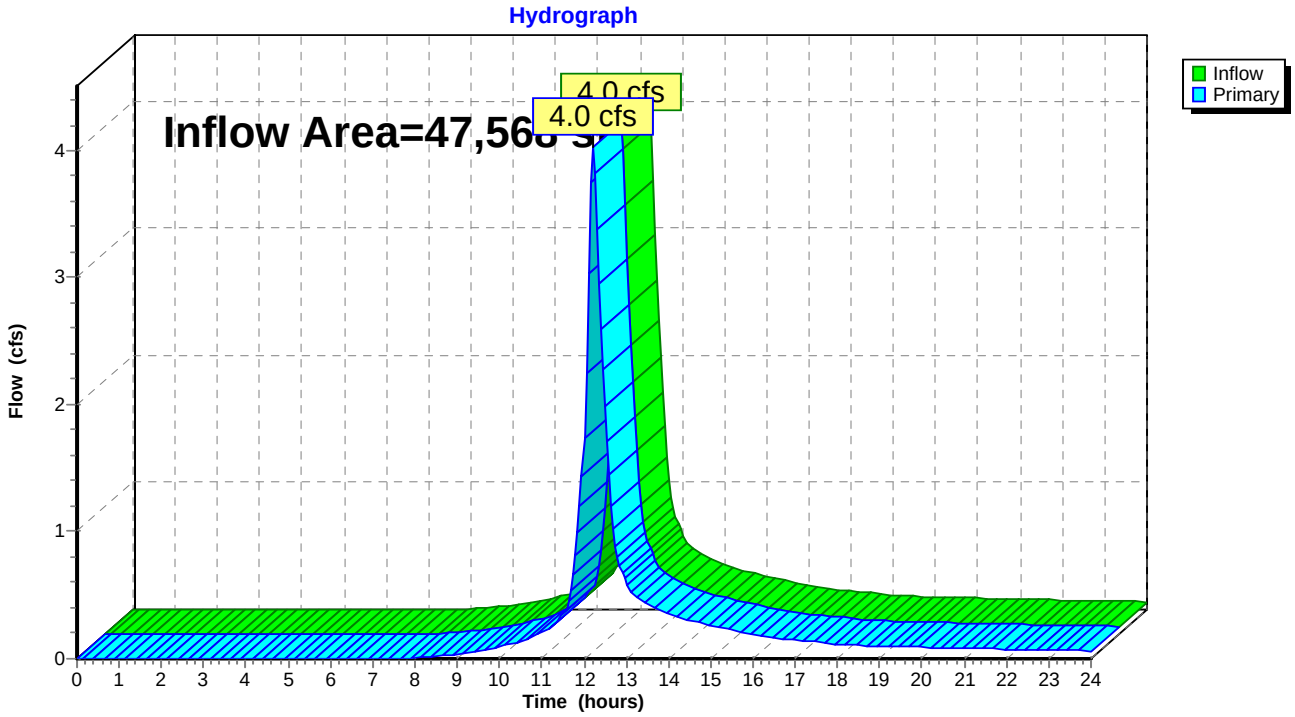


Summary for Link 9L: Wetlands NE

Inflow Area = 47,568 sf, 0.00% Impervious, Inflow Depth > 4.12" for 100-Year event
Inflow = 4.0 cfs @ 12.20 hrs, Volume= 16,326 cf
Primary = 4.0 cfs @ 12.20 hrs, Volume= 16,326 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 9L: Wetlands NE

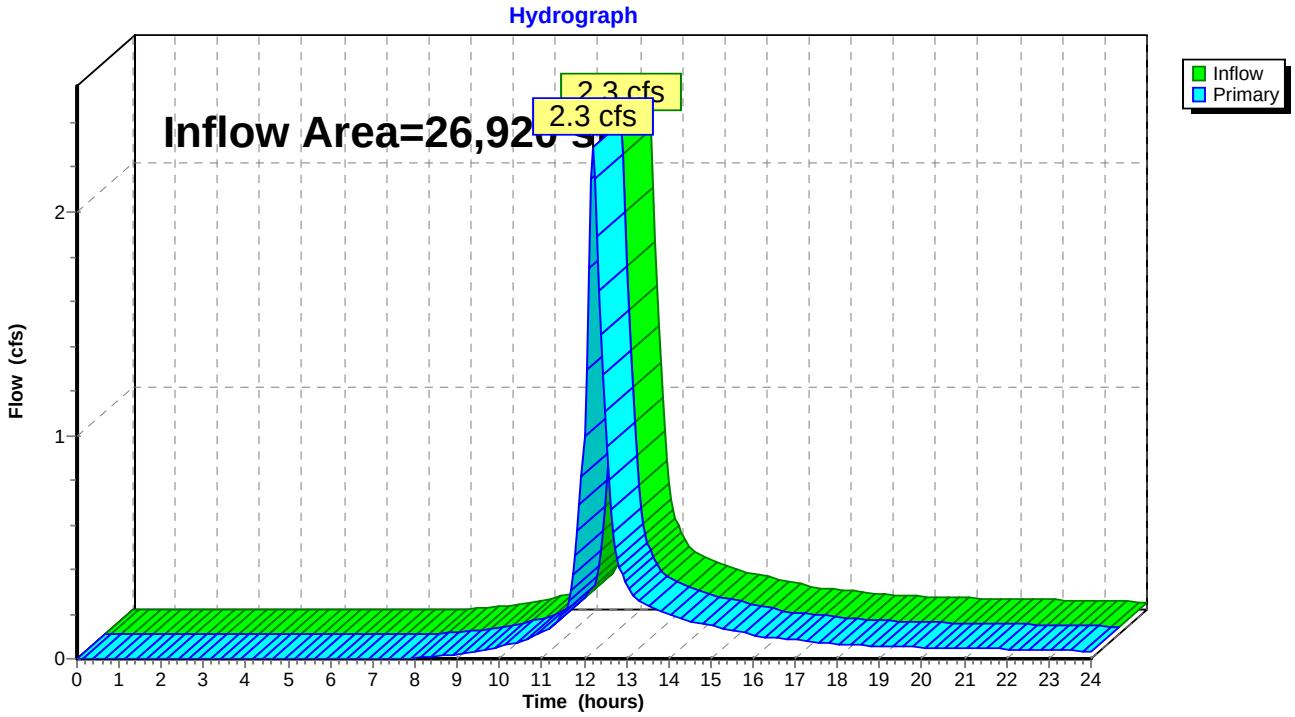


Summary for Link 10L: Wetlands N

Inflow Area = 26,920 sf, 0.00% Impervious, Inflow Depth > 4.12" for 100-Year event
Inflow = 2.3 cfs @ 12.20 hrs, Volume= 9,240 cf
Primary = 2.3 cfs @ 12.20 hrs, Volume= 9,240 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 10L: Wetlands N

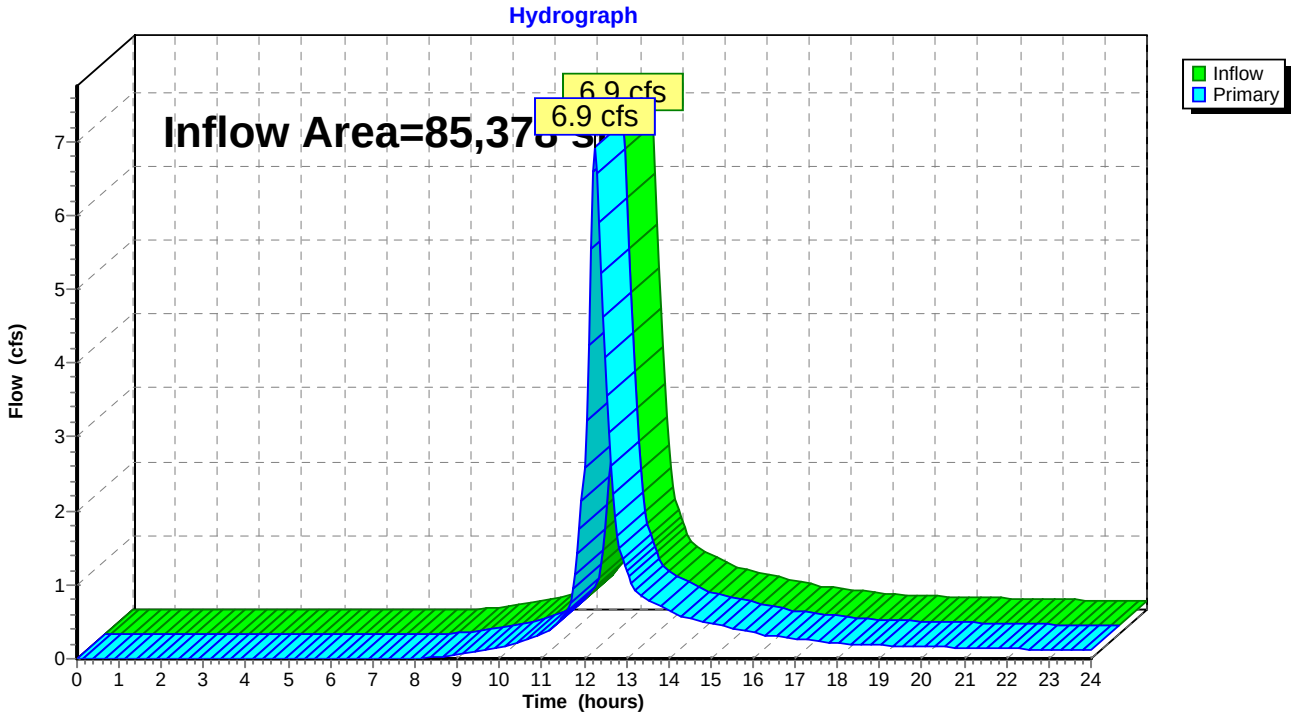


Summary for Link 11L: Collection Swale W

Inflow Area = 85,378 sf, 0.00% Impervious, Inflow Depth > 4.11" for 100-Year event
Inflow = 6.9 cfs @ 12.25 hrs, Volume= 29,227 cf
Primary = 6.9 cfs @ 12.25 hrs, Volume= 29,227 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 11L: Collection Swale W

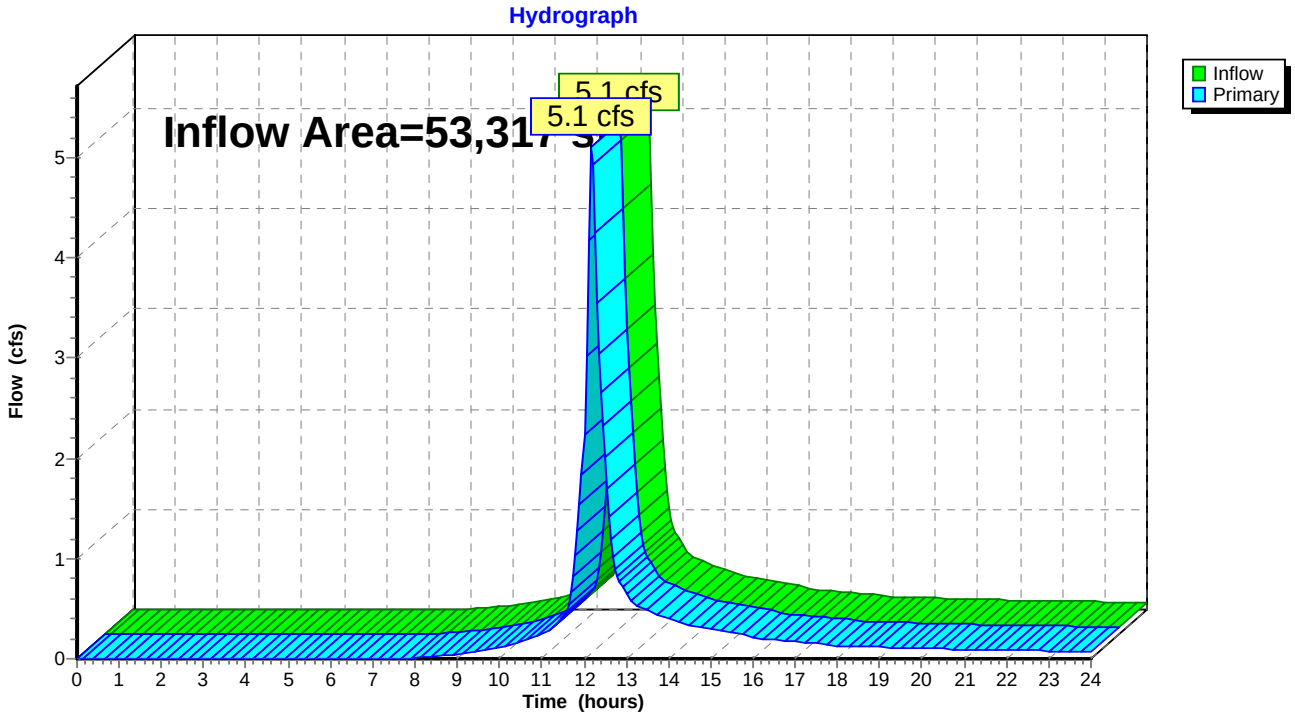


Summary for Link 12L: Collection Swale W

Inflow Area = 53,317 sf, 0.00% Impervious, Inflow Depth > 4.22" for 100-Year event
Inflow = 5.1 cfs @ 12.17 hrs, Volume= 18,754 cf
Primary = 5.1 cfs @ 12.17 hrs, Volume= 18,754 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 12L: Collection Swale W

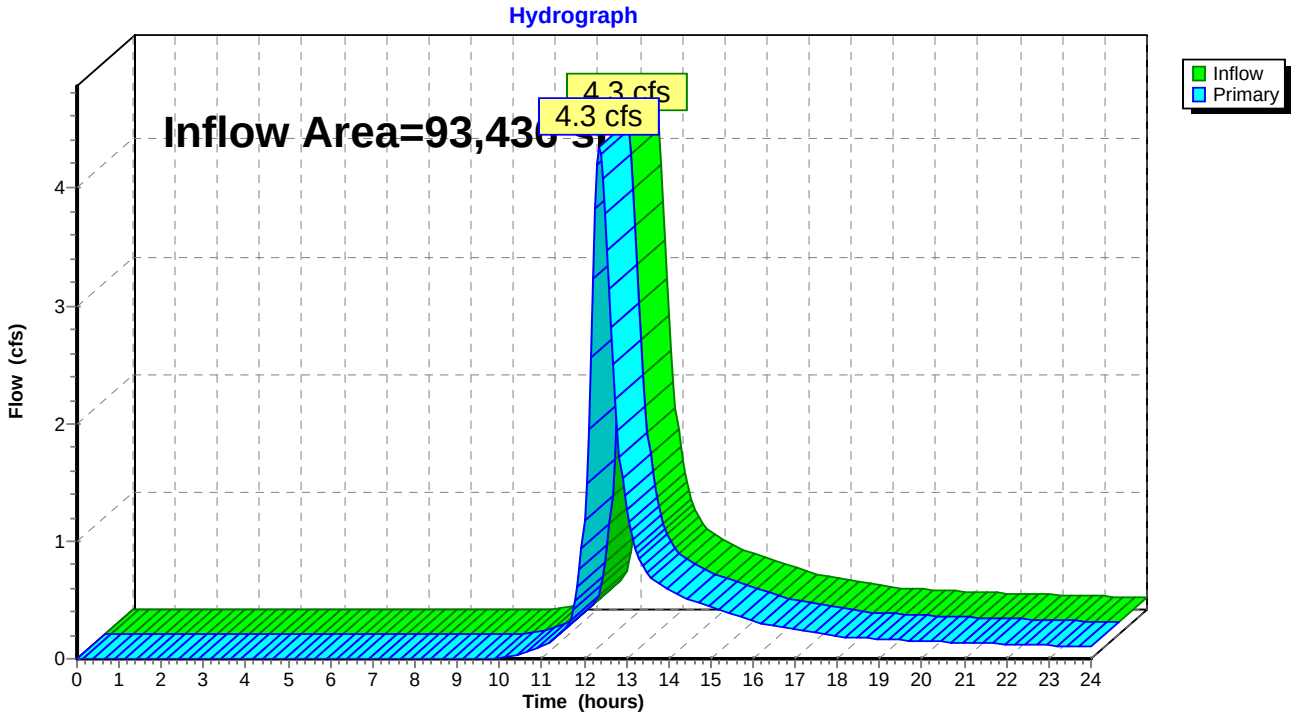


Summary for Link 15L: Wetland W

Inflow Area = 93,436 sf, 0.00% Impervious, Inflow Depth > 2.86" for 100-Year event
Inflow = 4.3 cfs @ 12.36 hrs, Volume= 22,256 cf
Primary = 4.3 cfs @ 12.36 hrs, Volume= 22,256 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 15L: Wetland W

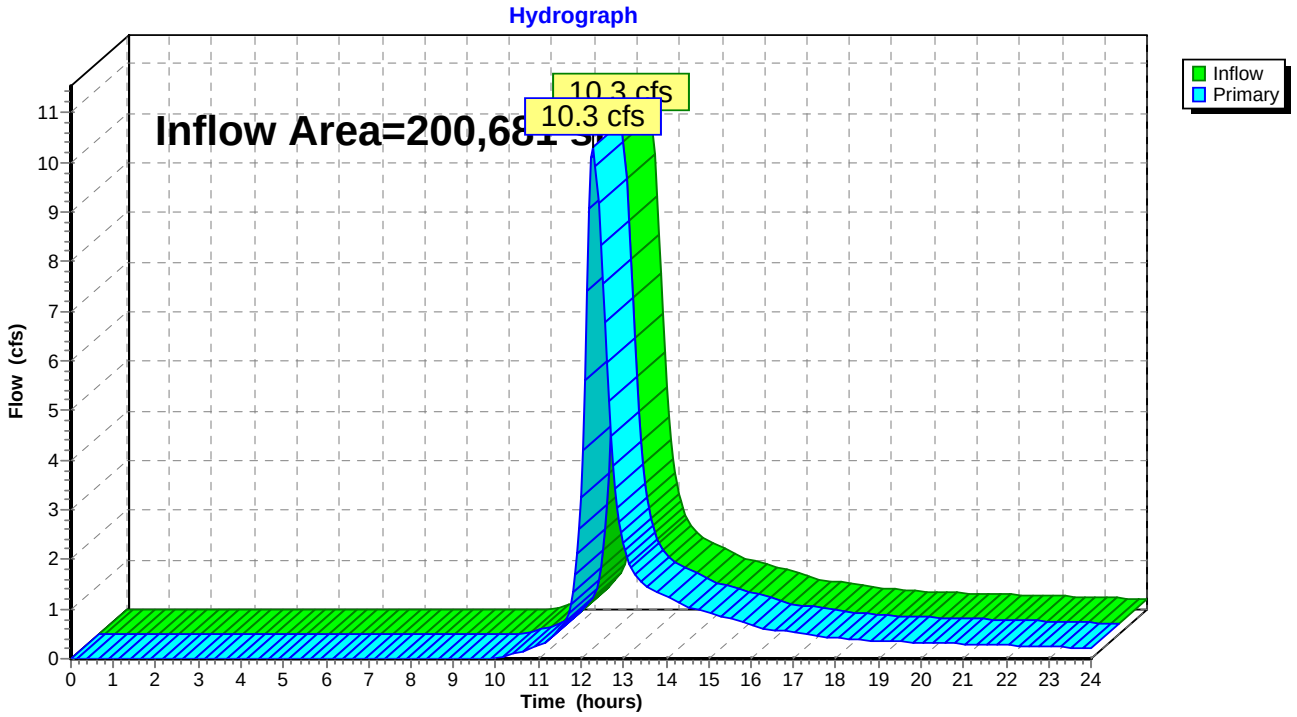


Summary for Link 16L: Wetland E

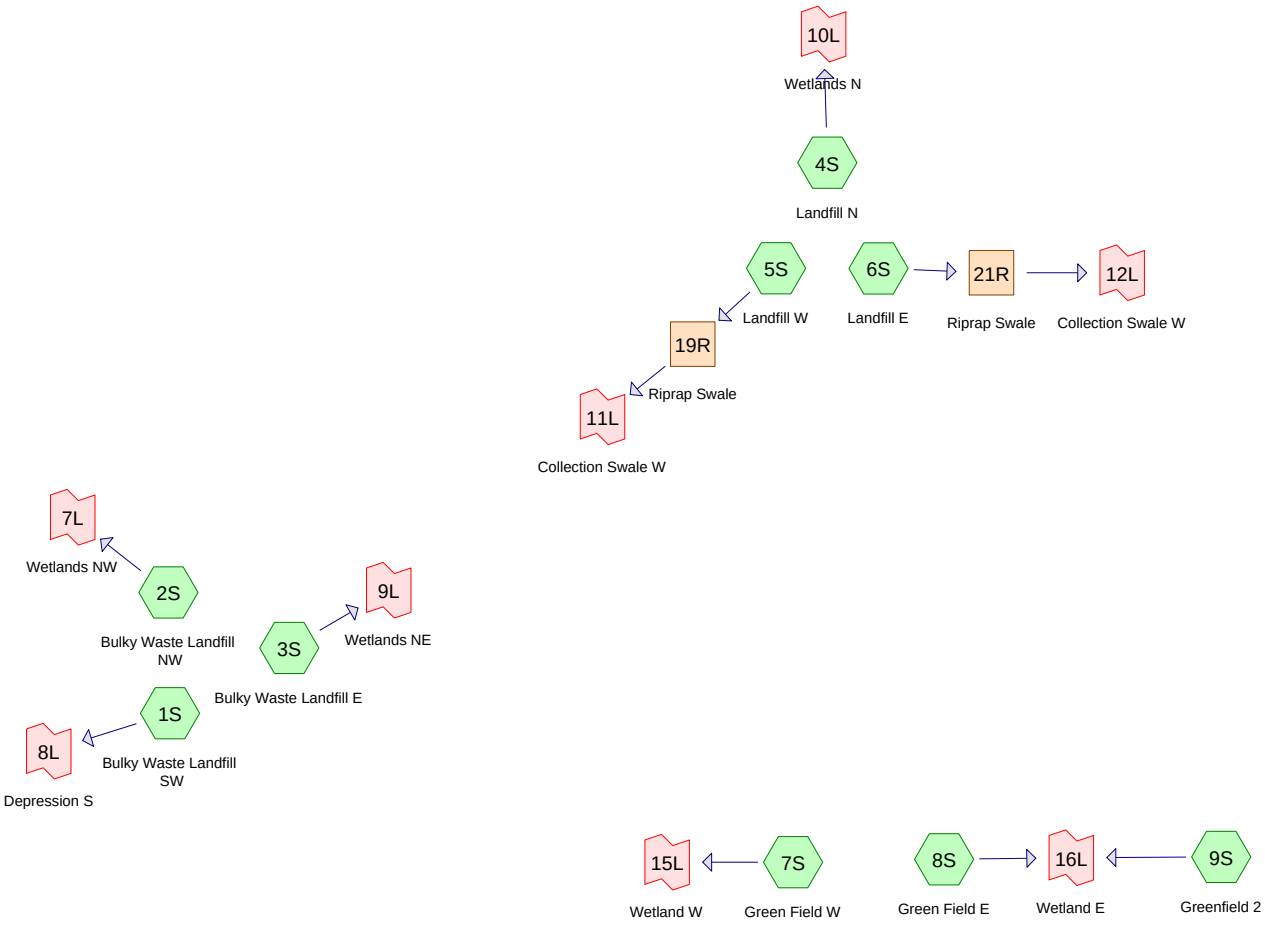
Inflow Area = 200,681 sf, 0.00% Impervious, Inflow Depth > 2.90" for 100-Year event
Inflow = 10.3 cfs @ 12.29 hrs, Volume= 48,486 cf
Primary = 10.3 cfs @ 12.29 hrs, Volume= 48,486 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 16L: Wetland E



Proposed Conditions Results



Subcat Reach Pond Link

Routing Diagram for Rogers Road Proposed Conditions
Prepared by Boundaries LLC - DCM, Printed 8/27/2015

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
265,413	61	>75% Grass cover, Good, HSG B (7S, 8S, 9S)
266,243	74	>75% Grass cover, Good, HSG C (1S, 2S, 3S, 4S, 5S, 6S, 7S)
16,588	80	>75% Grass cover, Good, HSG D (7S, 8S, 9S)
131	98	Concrete Equipment Pad, HSG C (6S)
230	98	Equipment Pad, HSG B (7S)
131	98	Equipment Pad, HSG C (1S)
8,015	89	Gravel roads, HSG C (1S, 2S, 6S)
218	98	Paved parking, HSG B (9S)
340	98	Paved parking, HSG C (7S)
9	98	Solar Array Posts, HSG B (7S, 8S)
1,742	98	Solar array Ballasts, HSG C (1S)
9,932	98	Solar array ballasts, HSG C (2S, 3S, 4S, 5S, 6S)
6,578	55	Woods, Good, HSG B (9S)
3,964	77	Woods, Good, HSG D (9S)
579,533	**69**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
272,448	HSG B	7S, 8S, 9S
286,534	HSG C	1S, 2S, 3S, 4S, 5S, 6S, 7S
20,552	HSG D	7S, 8S, 9S
0	Other	
579,533		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Sub Num
0	265,413	266,243	16,588	0	548,244	>75% Grass cover, Good	
0	0	131	0	0	131	Concrete Equipment Pad	
0	230	131	0	0	361	Equipment Pad	
0	0	8,015	0	0	8,015	Gravel roads	
0	218	340	0	0	558	Paved parking	
0	9	0	0	0	9	Solar Array Posts	
0	0	1,742	0	0	1,742	Solar array Ballasts	
0	0	9,932	0	0	9,932	Solar array ballasts	
0	6,578	0	3,964	0	10,542	Woods, Good	
0	**272,448**	**286,534**	**20,552**	**0**	**579,533**	**TOTAL AREA**	

Time span=0.00-24.00 hrs, dt=0.050 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Bulky Waste Landfill SW Runoff Area=0.952 ac 4.52% Impervious Runoff Depth>1.29"
Flow Length=239' Tc=13.7 min CN=76 Runoff=1.1 cfs 4,456 cf

Subcatchment 2S: Bulky Waste Landfill NW Runoff Area=0.705 ac 4.54% Impervious Runoff Depth>1.23"
Flow Length=179' Tc=14.1 min CN=75 Runoff=0.8 cfs 3,141 cf

Subcatchment 3S: Bulky Waste Landfill E Runoff Area=1.092 ac 5.31% Impervious Runoff Depth>1.23"
Flow Length=204' Tc=14.6 min CN=75 Runoff=1.2 cfs 4,865 cf

Subcatchment 4S: Landfill N Runoff Area=0.618 ac 4.53% Impervious Runoff Depth>1.23"
Flow Length=222' Tc=14.3 min CN=75 Runoff=0.7 cfs 2,754 cf

Subcatchment 5S: Landfill W Runoff Area=1.960 ac 3.27% Impervious Runoff Depth>1.23"
Flow Length=752' Tc=15.2 min CN=75 Runoff=2.0 cfs 8,731 cf

Subcatchment 6S: Landfill E Runoff Area=1.224 ac 4.00% Impervious Runoff Depth>1.29"
Flow Length=459' Tc=10.0 min CN=76 Runoff=1.6 cfs 5,734 cf

Subcatchment 7S: Green Field W Runoff Area=93,438 sf 0.61% Impervious Runoff Depth>0.56"
Flow Length=472' Tc=24.7 min CN=62 Runoff=0.7 cfs 4,395 cf

Subcatchment 8S: Green Field E Runoff Area=125,941 sf 0.00% Impervious Runoff Depth>0.57"
Flow Length=305' Tc=20.6 min CN=62 Runoff=0.9 cfs 5,934 cf

Subcatchment 9S: Greenfield 2 Runoff Area=1.717 ac 0.29% Impervious Runoff Depth>0.61"
Flow Length=247' Tc=19.4 min CN=63 Runoff=0.6 cfs 3,787 cf

Reach 19R: Riprap Swale Avg. Flow Depth=0.18' Max Vel=2.66 fps Inflow=2.0 cfs 8,731 cf
n=0.030 L=657.0' S=0.0383 '/' Capacity=8.6 cfs Outflow=1.9 cfs 8,691 cf

Reach 21R: Riprap Swale Avg. Flow Depth=0.16' Max Vel=2.59 fps Inflow=1.6 cfs 5,734 cf
n=0.030 L=527.0' S=0.0372 '/' Capacity=34.5 cfs Outflow=1.5 cfs 5,710 cf

Link 7L: Wetlands NW Inflow=0.8 cfs 3,141 cf
Primary=0.8 cfs 3,141 cf

Link 8L: Depression S Inflow=1.1 cfs 4,456 cf
Primary=1.1 cfs 4,456 cf

Link 9L: Wetlands NE Inflow=1.2 cfs 4,865 cf
Primary=1.2 cfs 4,865 cf

Link 10L: Wetlands N Inflow=0.7 cfs 2,754 cf
Primary=0.7 cfs 2,754 cf

Link 11L: Collection Swale W Inflow=1.9 cfs 8,691 cf
Primary=1.9 cfs 8,691 cf

Link 12L: Collection Swale W Inflow=1.5 cfs 5,710 cf
Primary=1.5 cfs 5,710 cf

Link 15L: Wetland W Inflow=0.7 cfs 4,395 cf
Primary=0.7 cfs 4,395 cf

Link 16L: Wetland E Inflow=1.6 cfs 9,721 cf
Primary=1.6 cfs 9,721 cf

Total Runoff Area = 579,533 sf Runoff Volume = 43,798 cf Average Runoff Depth = 0.91"
97.80% Pervious = 566,801 sf 2.20% Impervious = 12,732 sf

Summary for Subcatchment 1S: Bulky Waste Landfill SW

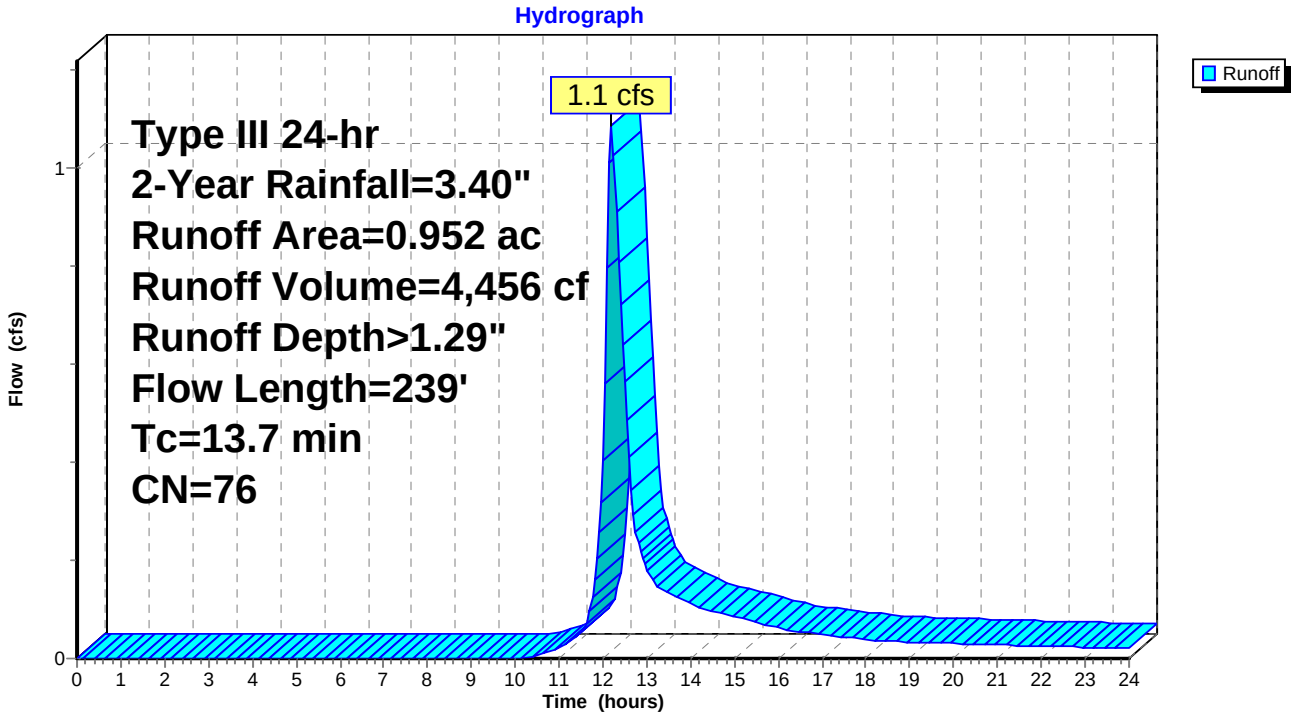
Runoff = 1.1 cfs @ 12.20 hrs, Volume= 4,456 cf, Depth> 1.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 2-Year Rainfall=3.40"

	Area (ac)	CN	Description
	0.829	74	>75% Grass cover, Good, HSG C
	0.080	89	Gravel roads, HSG C
*	0.003	98	Equipment Pad, HSG C
*	0.040	98	Solar array Ballasts, HSG C
	0.952	76	Weighted Average
	0.909		95.48% Pervious Area
	0.043		4.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.6	100	0.0251	0.13		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
0.5	66	0.1137	2.36		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	46	0.1957	3.10		**Shallow Concentrated Flow, Lanfill Cap** Short Grass Pasture Kv= 7.0 fps
0.4	27	0.0050	1.14		**Shallow Concentrated Flow, Access Drive** Unpaved Kv= 16.1 fps
13.7	239	Total			

Subcatchment 1S: Bulky Waste Landfill SW



Summary for Subcatchment 2S: Bulky Waste Landfill NW

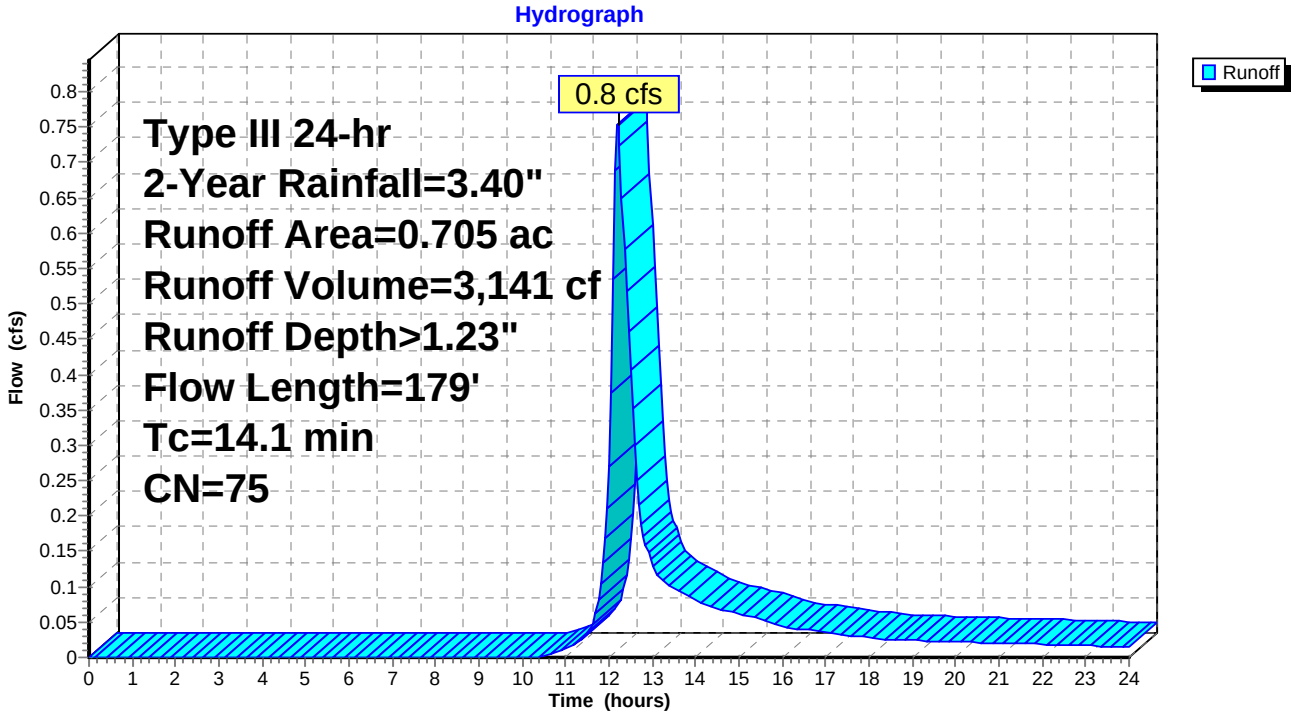
Runoff = 0.8 cfs @ 12.21 hrs, Volume= 3,141 cf, Depth> 1.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 2-Year Rainfall=3.40"

	Area (ac)	CN	Description
	0.659	74	>75% Grass cover, Good, HSG C
*	0.032	98	Solar array ballasts, HSG C
	0.014	89	Gravel roads, HSG C
	0.705	75	Weighted Average
	0.673		95.46% Pervious Area
	0.032		4.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0212	0.12		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
0.6	79	0.0886	2.08		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
14.1	179	Total			

Subcatchment 2S: Bulky Waste Landfill NW



Summary for Subcatchment 3S: Bulky Waste Landfill E

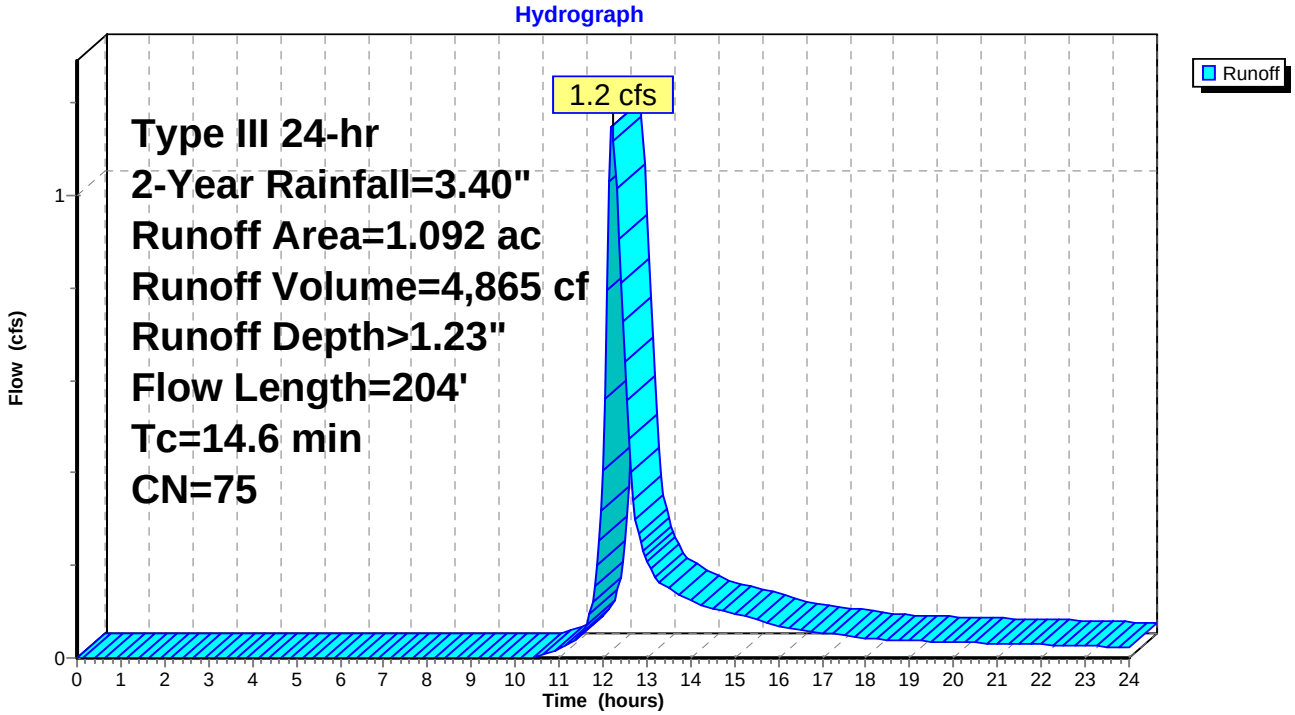
Runoff = 1.2 cfs @ 12.22 hrs, Volume= 4,865 cf, Depth> 1.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 2-Year Rainfall=3.40"

	Area (ac)	CN	Description
	1.034	74	>75% Grass cover, Good, HSG C
*	0.058	98	Solar array ballasts, HSG C
	1.092	75	Weighted Average
	1.034		94.69% Pervious Area
	0.058		5.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0212	0.12		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
1.0	80	0.0375	1.36		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.1	24	0.1667	2.86		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
14.6	204	Total			

Subcatchment 3S: Bulky Waste Landfill E



Summary for Subcatchment 4S: Landfill N

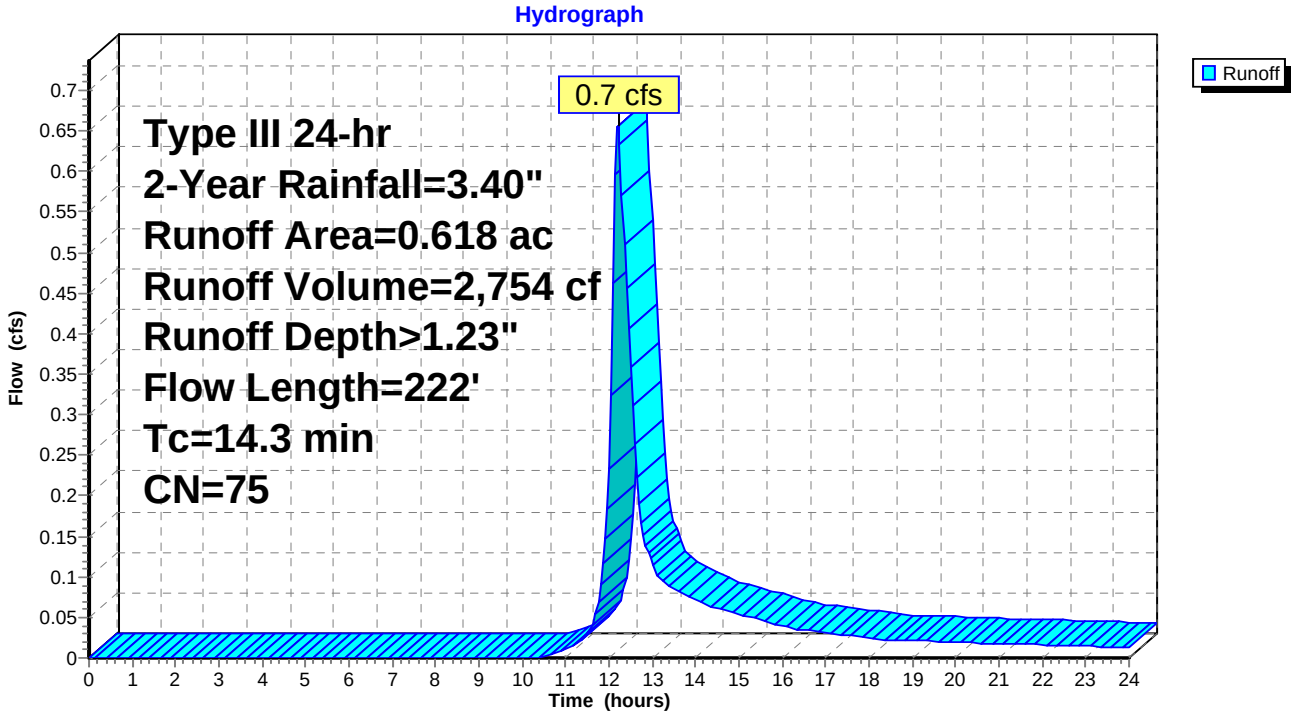
Runoff = 0.7 cfs @ 12.21 hrs, Volume= 2,754 cf, Depth> 1.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 2-Year Rainfall=3.40"

	Area (ac)	CN	Description
	0.590	74	>75% Grass cover, Good, HSG C
*	0.028	98	Solar array ballasts, HSG C
	0.618	75	Weighted Average
	0.590		95.47% Pervious Area
	0.028		4.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	100	0.0230	0.13		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
1.0	81	0.0371	1.35		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	41	0.1707	2.89		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
14.3	222	Total			

Subcatchment 4S: Landfill N



Summary for Subcatchment 5S: Landfill W

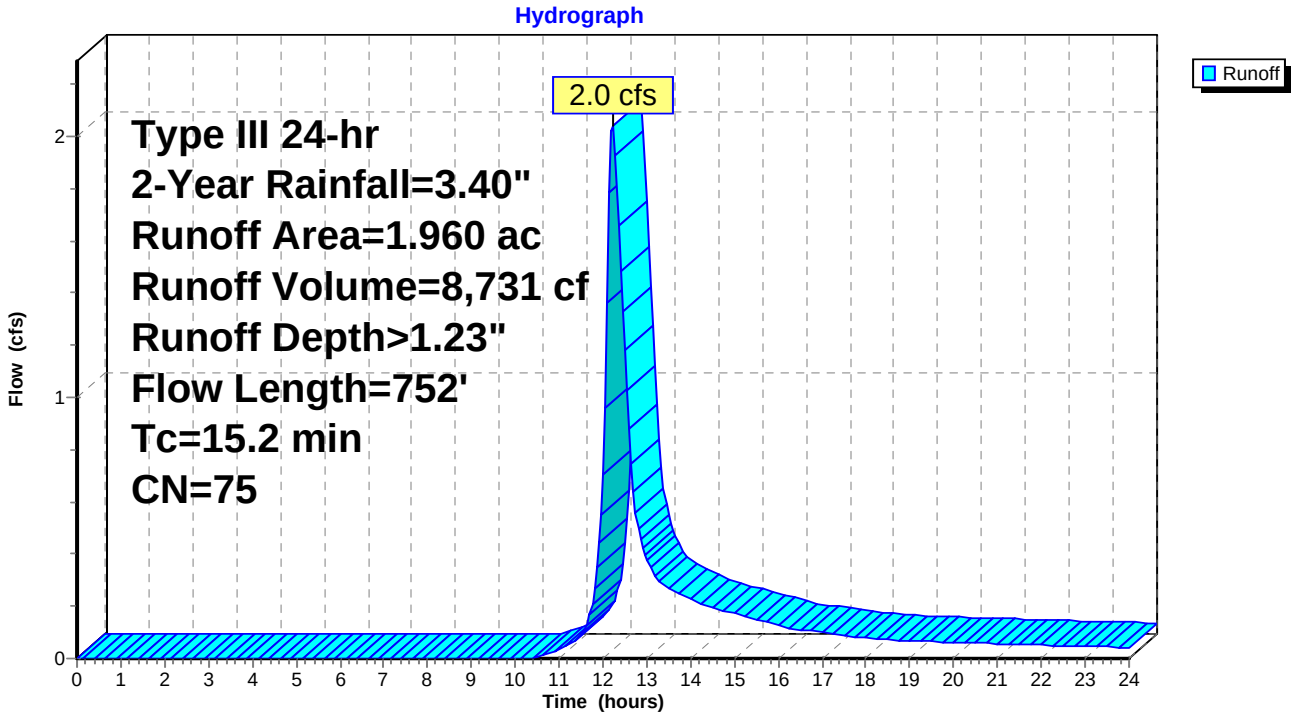
Runoff = 2.0 cfs @ 12.22 hrs, Volume= 8,731 cf, Depth> 1.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 2-Year Rainfall=3.40"

	Area (ac)	CN	Description
	1.896	74	>75% Grass cover, Good, HSG C
*	0.064	98	Solar array ballasts, HSG C
	1.960	75	Weighted Average
	1.896		96.73% Pervious Area
	0.064		3.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.3	100	0.0220	0.13		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
0.3	37	0.0811	1.99		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.3	58	0.1897	3.05		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
1.3	520	0.0200	6.71	50.33	**Channel Flow, Riprap Swale** Area= 7.5 sf Perim= 8.0' r= 0.94' n= 0.030 Rubble masonry, cemented
0.0	37	0.2160	22.05	165.39	**Channel Flow, Riprap Swale** Area= 7.5 sf Perim= 8.0' r= 0.94' n= 0.030 Rubble masonry, cemented
15.2	752	Total			

Subcatchment 5S: Landfill W



Summary for Subcatchment 6S: Landfill E

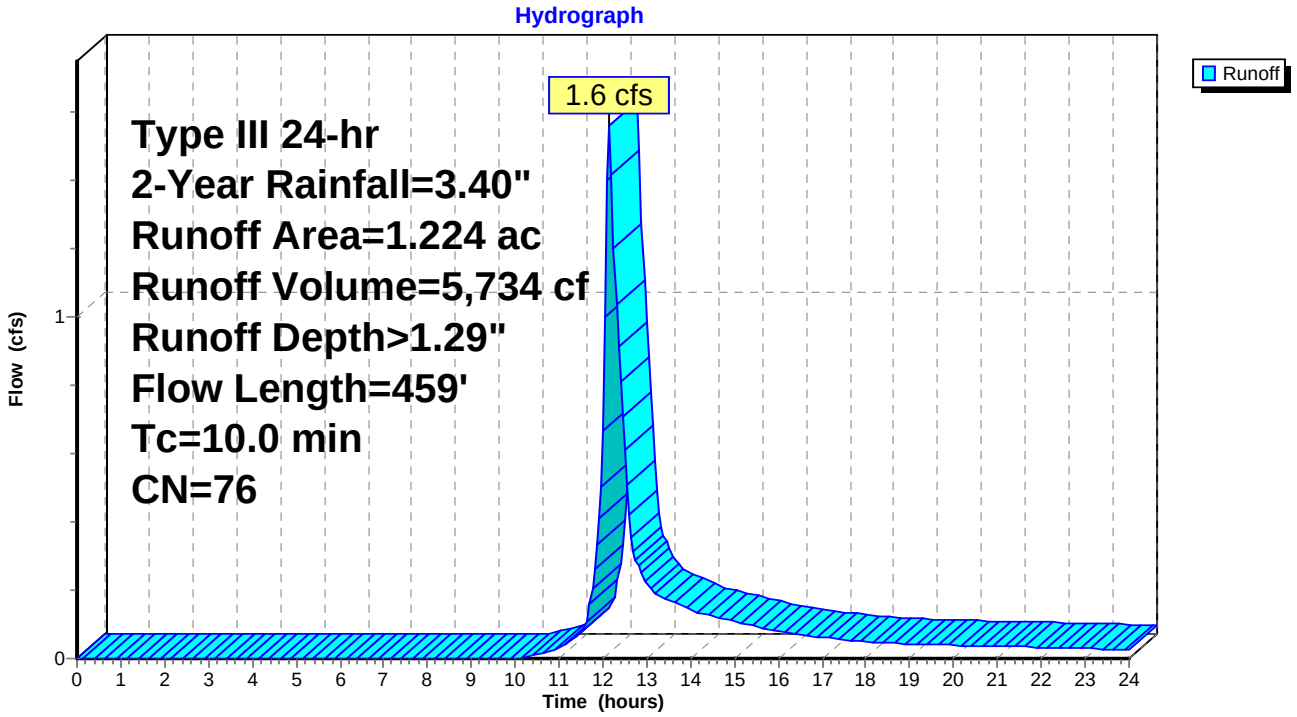
Runoff = 1.6 cfs @ 12.15 hrs, Volume= 5,734 cf, Depth> 1.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 2-Year Rainfall=3.40"

	Area (ac)	CN	Description
	1.085	74	>75% Grass cover, Good, HSG C
	0.090	89	Gravel roads, HSG C
*	0.046	98	Solar array ballasts, HSG C
*	0.003	98	Concrete Equipment Pad, HSG C
	1.224	76	Weighted Average
	1.175		96.00% Pervious Area
	0.049		4.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.5	40	0.0543	0.15		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
1.0	60	0.0117	1.03		**Sheet Flow, Gravel** Smooth surfaces n= 0.011 P2= 3.40"
0.5	86	0.0384	3.15		**Shallow Concentrated Flow, Gravel** Unpaved Kv= 16.1 fps
0.7	76	0.0658	1.80		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	49	0.2245	3.32		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	148	0.1081	15.60	117.00	**Channel Flow, Riprap Swale** Area= 7.5 sf Perim= 8.0' r= 0.94' n= 0.030 Rubble masonry, cemented
7.1	459	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 6S: Landfill E



Summary for Subcatchment 7S: Green Field W

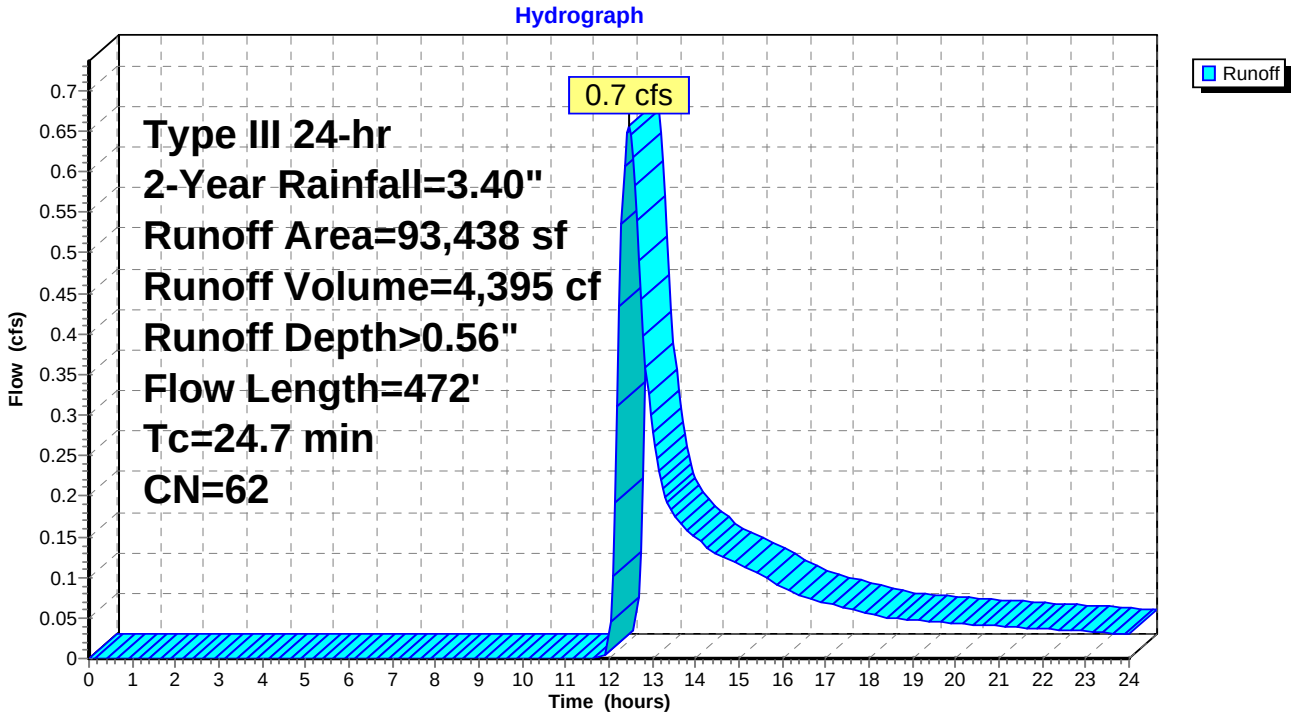
Runoff = 0.7 cfs @ 12.45 hrs, Volume= 4,395 cf, Depth> 0.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 2-Year Rainfall=3.40"

	Area (sf)	CN	Description
	832	74	>75% Grass cover, Good, HSG C
	3,861	80	>75% Grass cover, Good, HSG D
	21,955	61	>75% Grass cover, Good, HSG B
	66,216	61	>75% Grass cover, Good, HSG B
	340	98	Paved parking, HSG C
*	4	98	Solar Array Posts, HSG B
*	230	98	Equipment Pad, HSG B
	93,438	62	Weighted Average
	92,864		99.39% Pervious Area
	574		0.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0123	0.10		**Sheet Flow, Field** Grass: Dense n= 0.240 P2= 3.40"
0.4	23	0.0217	1.03		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
4.8	160	0.0063	0.56		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
0.6	51	0.0392	1.39		**Shallow Concentrated Flow, field** Short Grass Pasture Kv= 7.0 fps
1.4	88	0.0227	1.05		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
0.7	50	0.0300	1.21		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
24.7	472	Total			

Subcatchment 7S: Green Field W



Summary for Subcatchment 8S: Green Field E

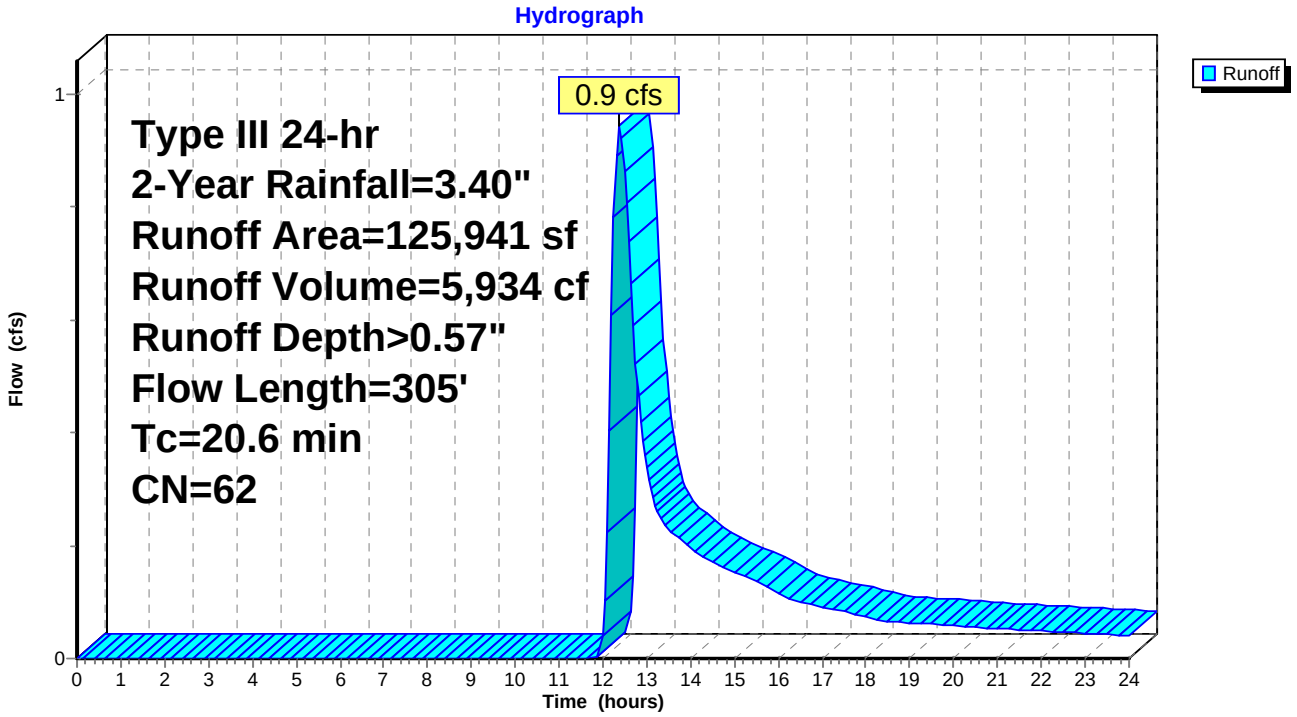
Runoff = 0.9 cfs @ 12.37 hrs, Volume= 5,934 cf, Depth> 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 2-Year Rainfall=3.40"

	Area (sf)	CN	Description
	116,936	61	>75% Grass cover, Good, HSG B
	3,129	80	>75% Grass cover, Good, HSG D
	1,452	80	>75% Grass cover, Good, HSG D
	4,419	61	>75% Grass cover, Good, HSG B
*	5	98	Solar Array Posts, HSG B
	125,941	62	Weighted Average
	125,936		100.00% Pervious Area
	5		0.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0123	0.10		**Sheet Flow, Field** Grass: Dense n= 0.240 P2= 3.40"
0.4	24	0.0208	1.01		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
2.6	106	0.0094	0.68		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
0.8	75	0.0467	1.51		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
20.6	305	Total			

Subcatchment 8S: Green Field E



Summary for Subcatchment 9S: Greenfield 2

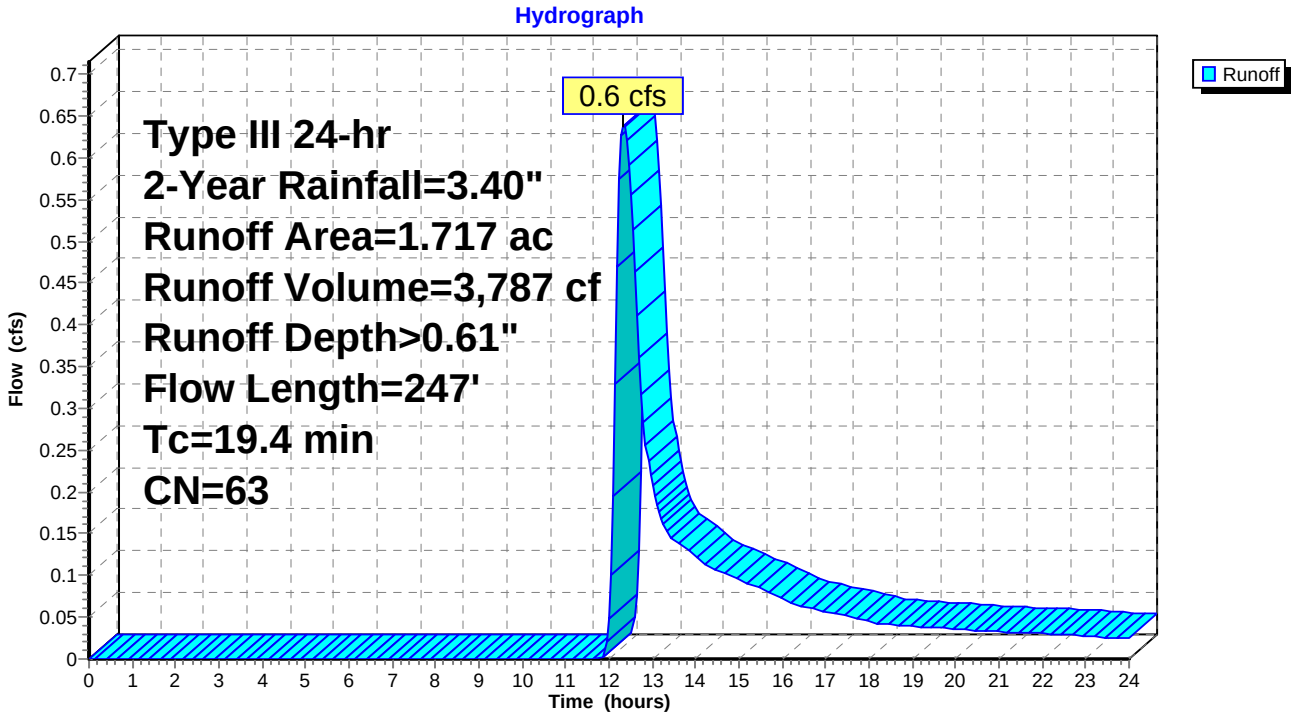
Runoff = 0.6 cfs @ 12.34 hrs, Volume= 3,787 cf, Depth> 0.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 2-Year Rainfall=3.40"

	Area (ac)	CN	Description
	0.091	77	Woods, Good, HSG D
	0.151	55	Woods, Good, HSG B
	1.283	61	>75% Grass cover, Good, HSG B
	0.187	80	>75% Grass cover, Good, HSG D
*	0.000	98	Solar Array Posts, HSG B
	0.005	98	Paved parking, HSG B
	1.717	63	Weighted Average
	1.712		99.71% Pervious Area
	0.005		0.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.5	100	0.0128	0.10		**Sheet Flow, Grass** Grass: Dense n= 0.240 P2= 3.40"
2.9	147	0.0148	0.85		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
19.4	247	Total			

Subcatchment 9S: Greenfield 2



Summary for Reach 19R: Riprap Swale

Inflow Area = 85,378 sf, 3.27% Impervious, Inflow Depth > 1.23" for 2-Year event
Inflow = 2.0 cfs @ 12.22 hrs, Volume= 8,731 cf
Outflow = 1.9 cfs @ 12.28 hrs, Volume= 8,691 cf, Atten= 5%, Lag= 3.3 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Max. Velocity= 2.66 fps, Min. Travel Time= 4.1 min
Avg. Velocity = 1.00 fps, Avg. Travel Time= 11.0 min

Peak Storage= 477 cf @ 12.28 hrs
Average Depth at Peak Storage= 0.18'
Bank-Full Depth= 0.40' Flow Area= 2.1 sf, Capacity= 8.6 cfs

3.00' x 0.40' deep channel, n= 0.030 Rubble masonry, cemented
Side Slope Z-value= 5.5 '/' Top Width= 7.40'
Length= 657.0' Slope= 0.0383 '/'
Inlet Invert= 274.52', Outlet Invert= 249.36'

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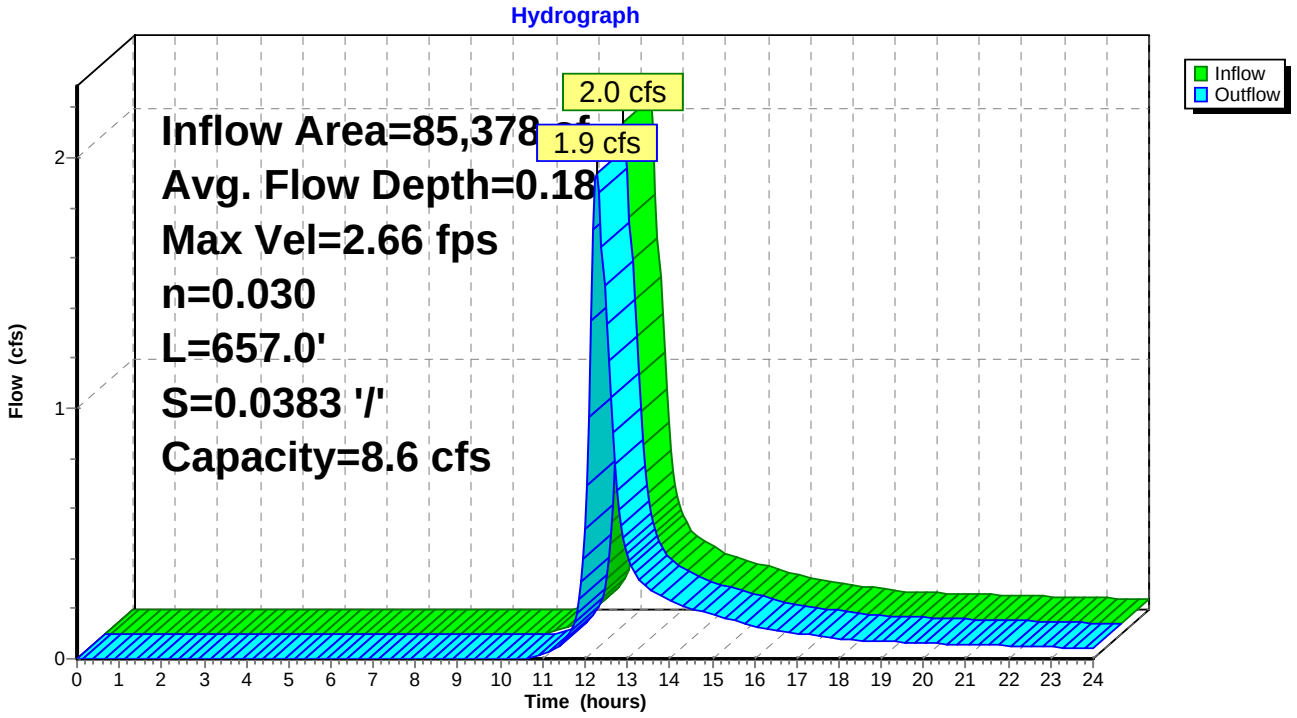
Reach 19R: Riprap Swale



Summary for Reach 21R: Riprap Swale

Inflow Area = 53,317 sf, 4.00% Impervious, Inflow Depth > 1.29" for 2-Year event
Inflow = 1.6 cfs @ 12.15 hrs, Volume= 5,734 cf
Outflow = 1.5 cfs @ 12.19 hrs, Volume= 5,710 cf, Atten= 6%, Lag= 2.6 min

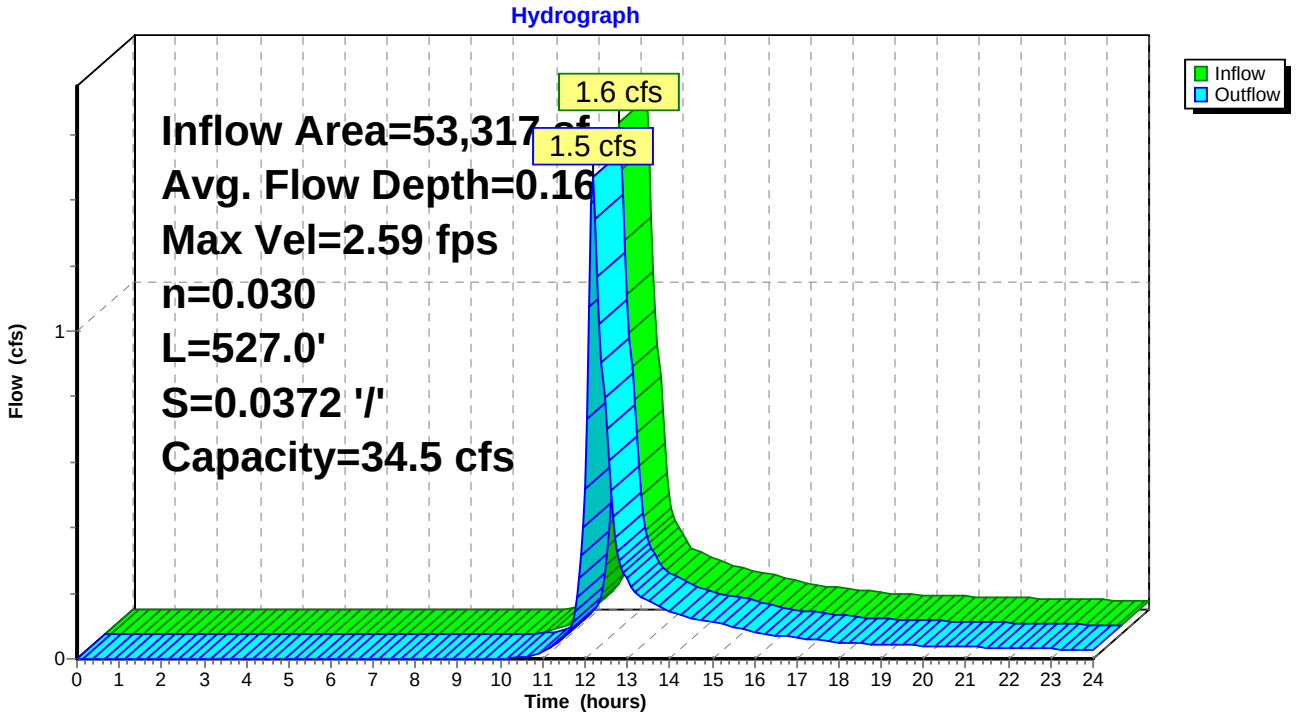
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Max. Velocity= 2.59 fps, Min. Travel Time= 3.4 min
Avg. Velocity = 0.87 fps, Avg. Travel Time= 10.1 min

Peak Storage= 299 cf @ 12.19 hrs
Average Depth at Peak Storage= 0.16'
Bank-Full Depth= 0.90' Flow Area= 5.1 sf, Capacity= 34.5 cfs

3.00' x 0.90' deep channel, n= 0.030 Rubble masonry, cemented
Side Slope Z-value= 3.0 '/' Top Width= 8.40'
Length= 527.0' Slope= 0.0372 '/'
Inlet Invert= 276.70', Outlet Invert= 257.10'

‡

Reach 21R: Riprap Swale

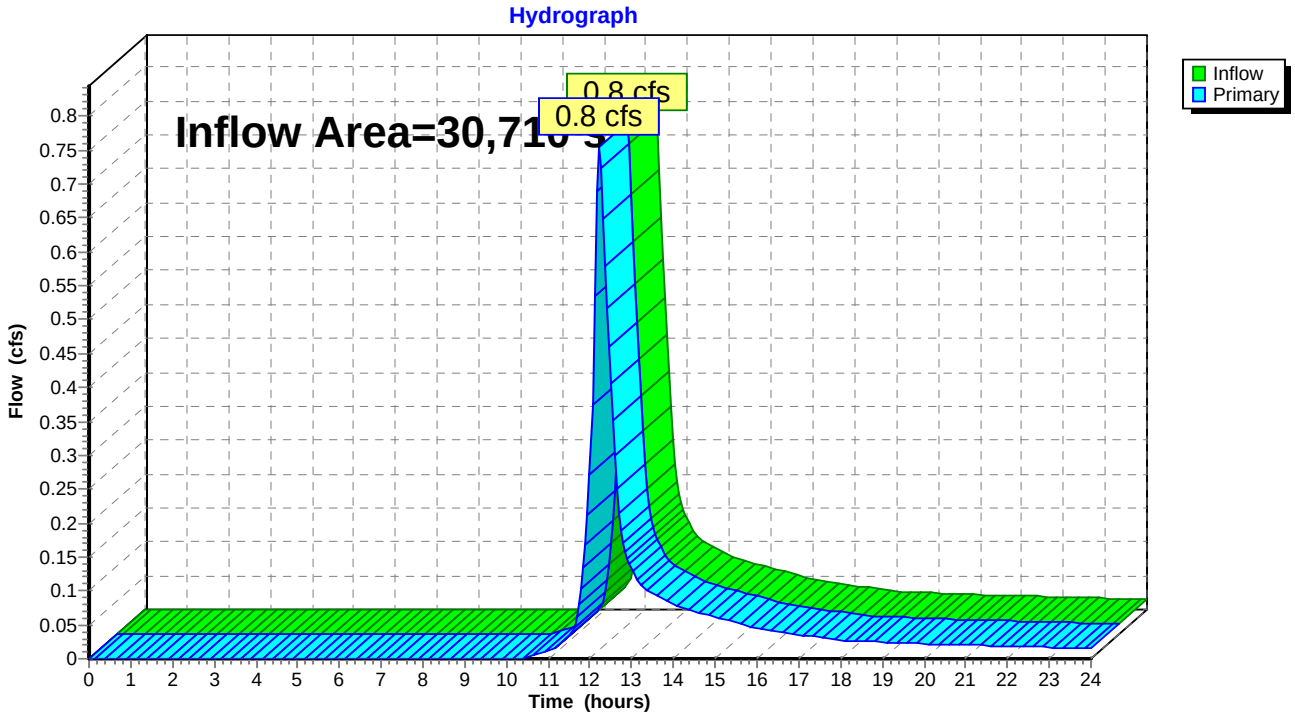


Summary for Link 7L: Wetlands NW

Inflow Area = 30,710 sf, 4.54% Impervious, Inflow Depth > 1.23" for 2-Year event
Inflow = 0.8 cfs @ 12.21 hrs, Volume= 3,141 cf
Primary = 0.8 cfs @ 12.21 hrs, Volume= 3,141 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 7L: Wetlands NW

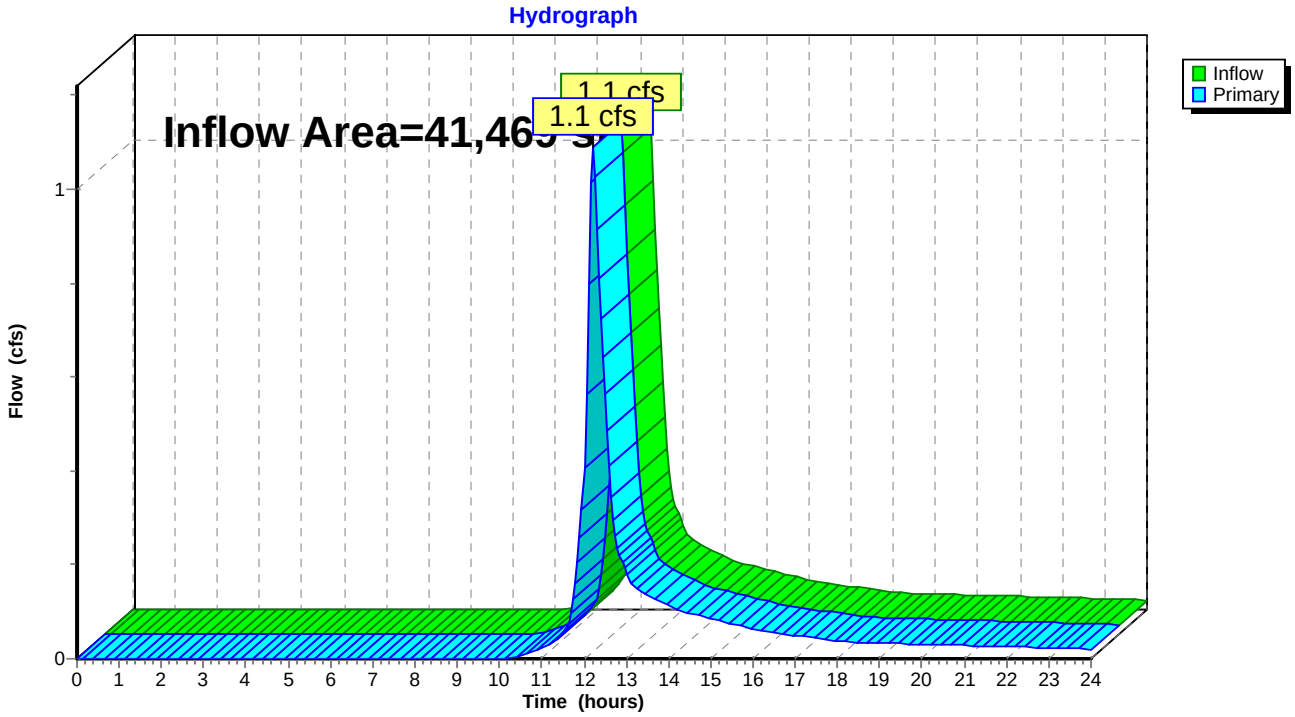


Summary for Link 8L: Depression S

Inflow Area = 41,469 sf, 4.52% Impervious, Inflow Depth > 1.29" for 2-Year event
Inflow = 1.1 cfs @ 12.20 hrs, Volume= 4,456 cf
Primary = 1.1 cfs @ 12.20 hrs, Volume= 4,456 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 8L: Depression S

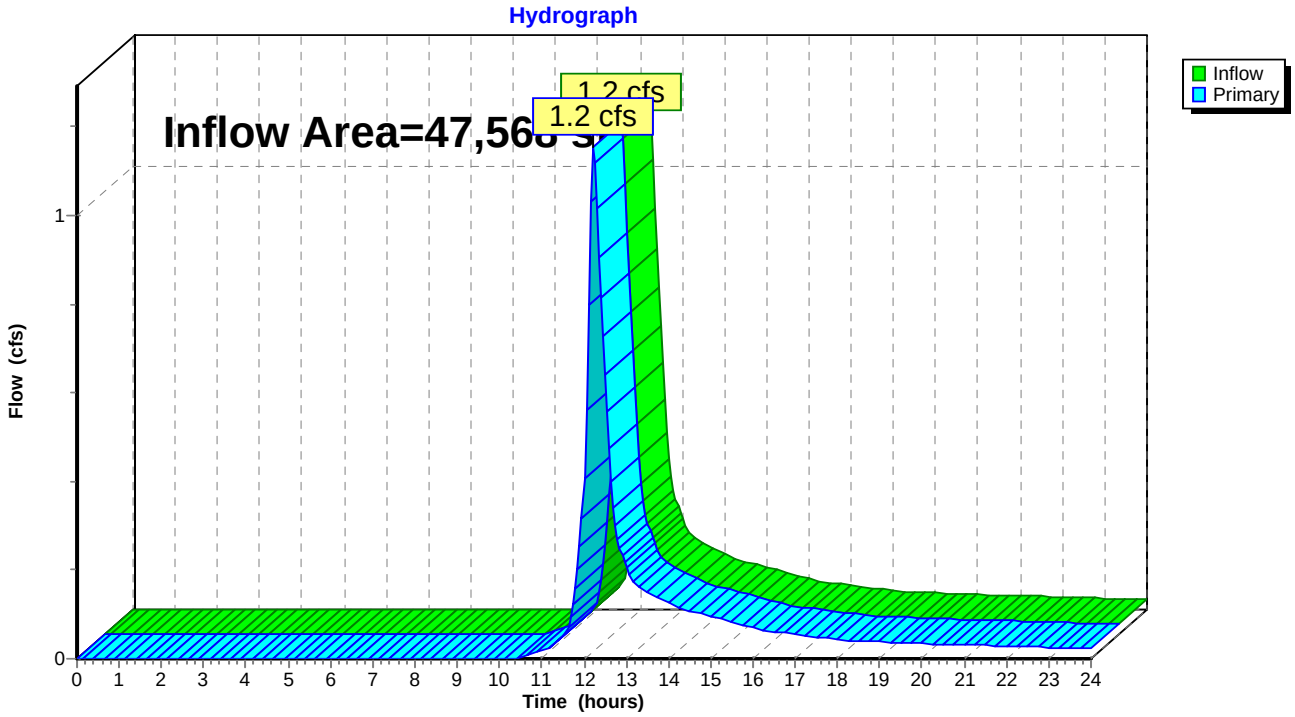


Summary for Link 9L: Wetlands NE

Inflow Area = 47,568 sf, 5.31% Impervious, Inflow Depth > 1.23" for 2-Year event
Inflow = 1.2 cfs @ 12.22 hrs, Volume= 4,865 cf
Primary = 1.2 cfs @ 12.22 hrs, Volume= 4,865 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 9L: Wetlands NE

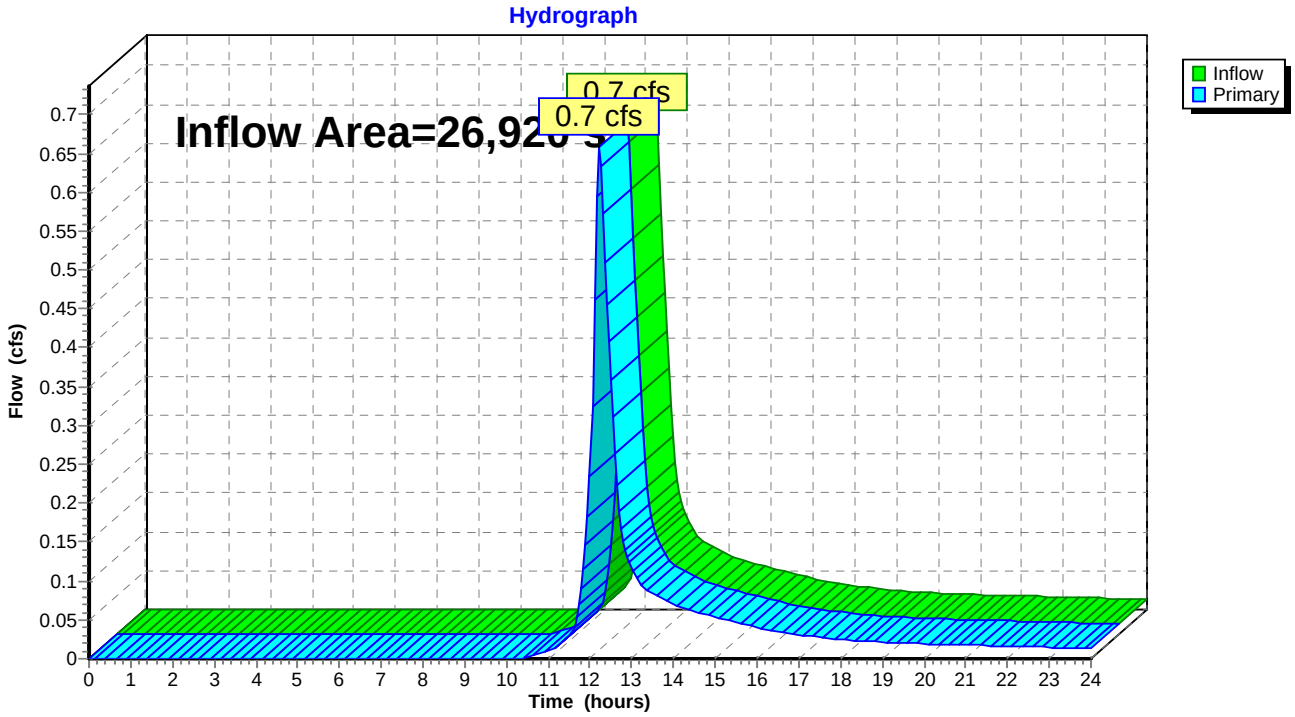


Summary for Link 10L: Wetlands N

Inflow Area = 26,920 sf, 4.53% Impervious, Inflow Depth > 1.23" for 2-Year event
Inflow = 0.7 cfs @ 12.21 hrs, Volume= 2,754 cf
Primary = 0.7 cfs @ 12.21 hrs, Volume= 2,754 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 10L: Wetlands N

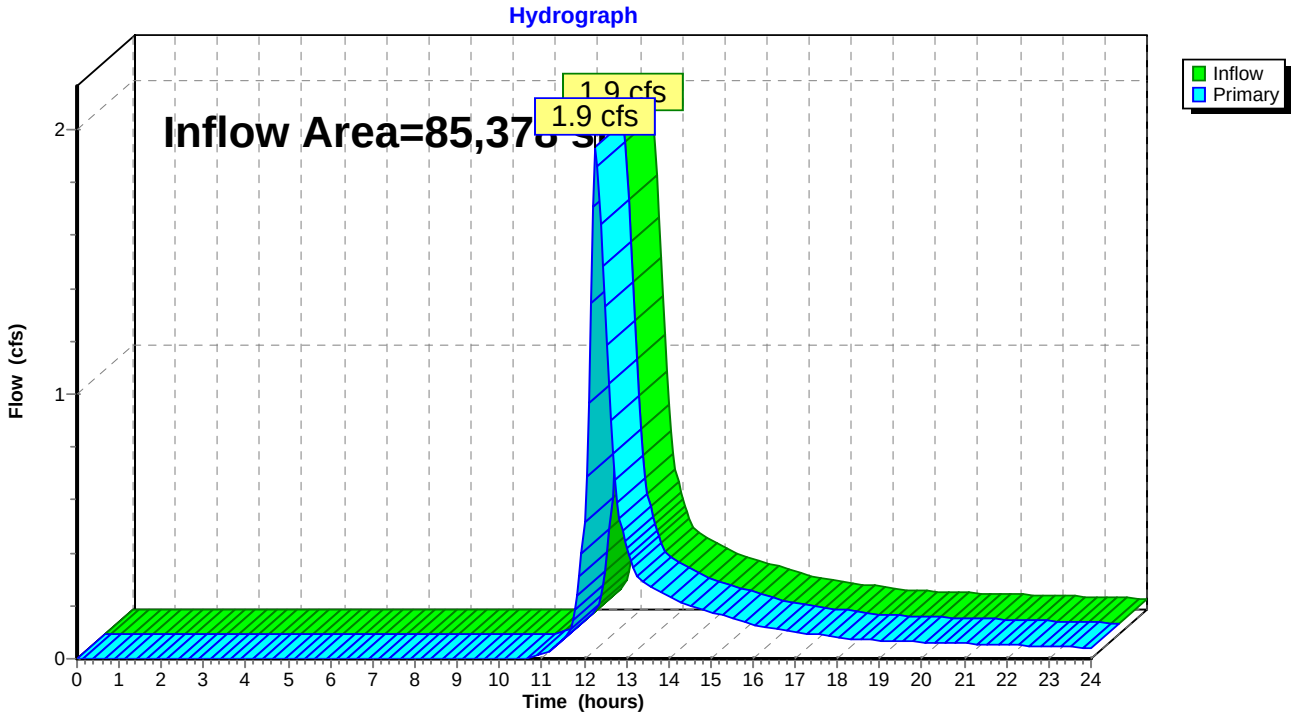


Summary for Link 11L: Collection Swale W

Inflow Area = 85,378 sf, 3.27% Impervious, Inflow Depth > 1.22" for 2-Year event
Inflow = 1.9 cfs @ 12.28 hrs, Volume= 8,691 cf
Primary = 1.9 cfs @ 12.28 hrs, Volume= 8,691 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 11L: Collection Swale W

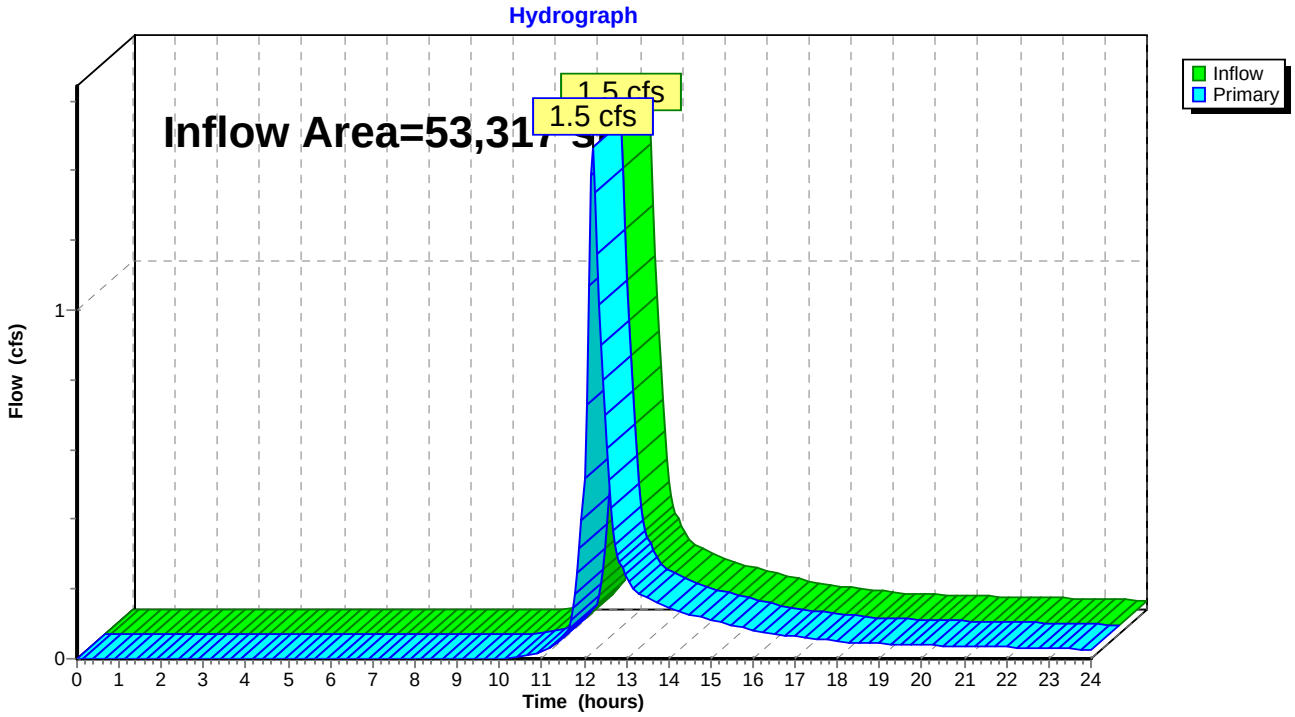


Summary for Link 12L: Collection Swale W

Inflow Area = 53,317 sf, 4.00% Impervious, Inflow Depth > 1.29" for 2-Year event
Inflow = 1.5 cfs @ 12.19 hrs, Volume= 5,710 cf
Primary = 1.5 cfs @ 12.19 hrs, Volume= 5,710 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 12L: Collection Swale W

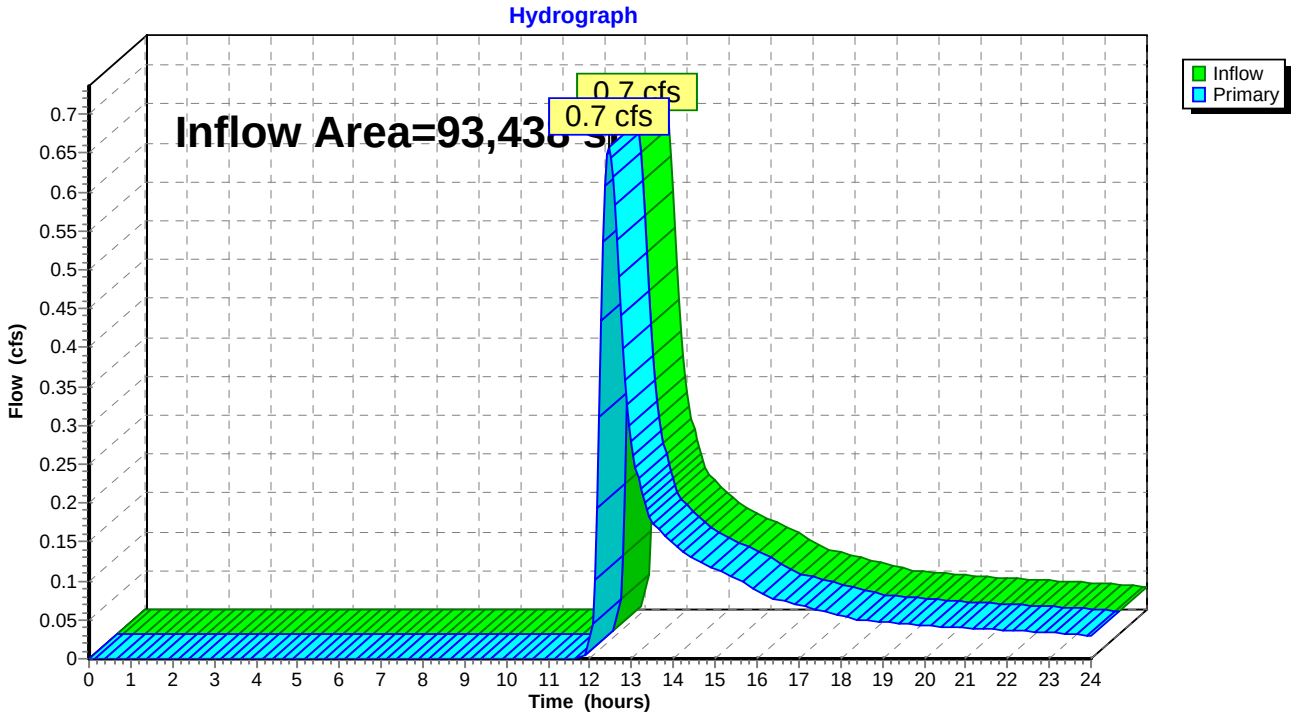


Summary for Link 15L: Wetland W

Inflow Area = 93,438 sf, 0.61% Impervious, Inflow Depth > 0.56" for 2-Year event
Inflow = 0.7 cfs @ 12.45 hrs, Volume= 4,395 cf
Primary = 0.7 cfs @ 12.45 hrs, Volume= 4,395 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 15L: Wetland W

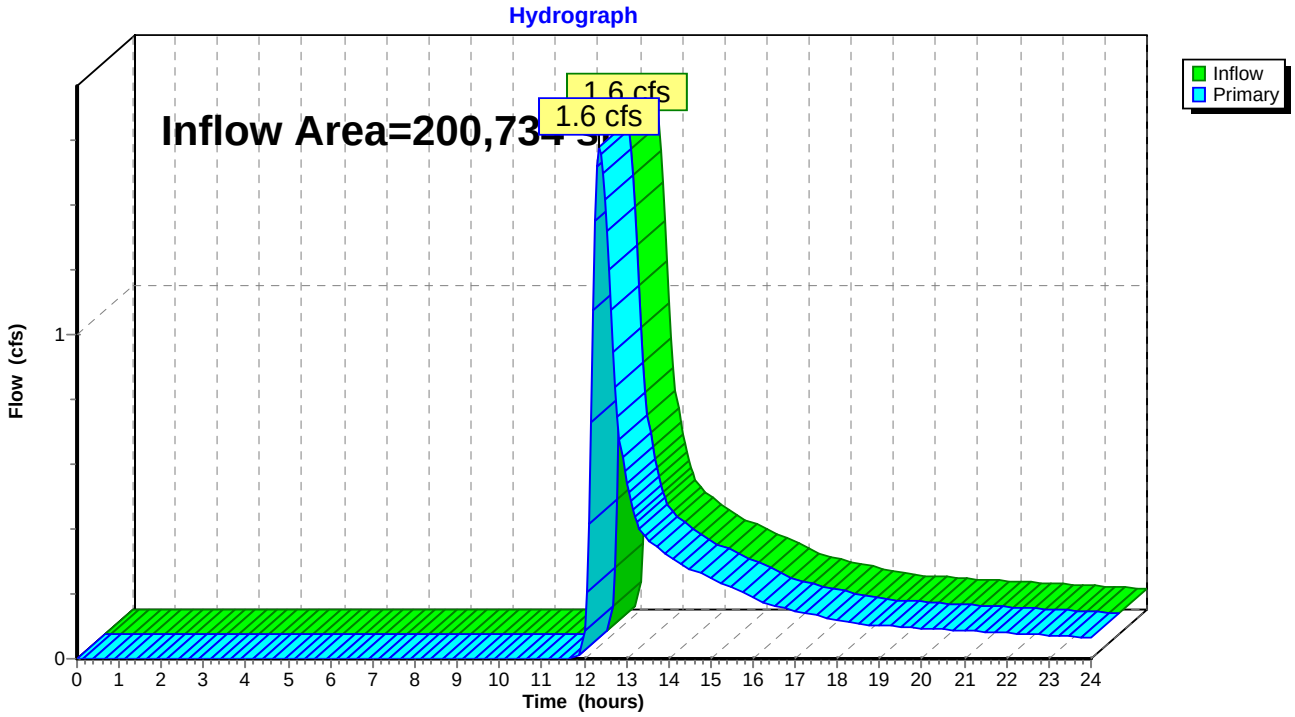


Summary for Link 16L: Wetland E

Inflow Area = 200,734 sf, 0.11% Impervious, Inflow Depth > 0.58" for 2-Year event
Inflow = 1.6 cfs @ 12.36 hrs, Volume= 9,721 cf
Primary = 1.6 cfs @ 12.36 hrs, Volume= 9,721 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 16L: Wetland E



Time span=0.00-24.00 hrs, dt=0.050 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Bulky Waste Landfill SW Runoff Area=0.952 ac 4.52% Impervious Runoff Depth>1.97"
Flow Length=239' Tc=13.7 min CN=76 Runoff=1.7 cfs 6,794 cf

Subcatchment 2S: Bulky Waste Landfill NW Runoff Area=0.705 ac 4.54% Impervious Runoff Depth>1.89"
Flow Length=179' Tc=14.1 min CN=75 Runoff=1.2 cfs 4,835 cf

Subcatchment 3S: Bulky Waste Landfill E Runoff Area=1.092 ac 5.31% Impervious Runoff Depth>1.89"
Flow Length=204' Tc=14.6 min CN=75 Runoff=1.8 cfs 7,489 cf

Subcatchment 4S: Landfill N Runoff Area=0.618 ac 4.53% Impervious Runoff Depth>1.89"
Flow Length=222' Tc=14.3 min CN=75 Runoff=1.0 cfs 4,238 cf

Subcatchment 5S: Landfill W Runoff Area=1.960 ac 3.27% Impervious Runoff Depth>1.89"
Flow Length=752' Tc=15.2 min CN=75 Runoff=3.2 cfs 13,439 cf

Subcatchment 6S: Landfill E Runoff Area=1.224 ac 4.00% Impervious Runoff Depth>1.97"
Flow Length=459' Tc=10.0 min CN=76 Runoff=2.4 cfs 8,742 cf

Subcatchment 7S: Green Field W Runoff Area=93,438 sf 0.61% Impervious Runoff Depth>1.02"
Flow Length=472' Tc=24.7 min CN=62 Runoff=1.4 cfs 7,938 cf

Subcatchment 8S: Green Field E Runoff Area=125,941 sf 0.00% Impervious Runoff Depth>1.02"
Flow Length=305' Tc=20.6 min CN=62 Runoff=2.0 cfs 10,713 cf

Subcatchment 9S: Greenfield 2 Runoff Area=1.717 ac 0.29% Impervious Runoff Depth>1.08"
Flow Length=247' Tc=19.4 min CN=63 Runoff=1.3 cfs 6,729 cf

Reach 19R: Riprap Swale Avg. Flow Depth=0.23' Max Vel=3.07 fps Inflow=3.2 cfs 13,439 cf
n=0.030 L=657.0' S=0.0383 '/' Capacity=8.6 cfs Outflow=3.1 cfs 13,390 cf

Reach 21R: Riprap Swale Avg. Flow Depth=0.21' Max Vel=3.00 fps Inflow=2.4 cfs 8,742 cf
n=0.030 L=527.0' S=0.0372 '/' Capacity=34.5 cfs Outflow=2.3 cfs 8,713 cf

Link 7L: Wetlands NW Inflow=1.2 cfs 4,835 cf
Primary=1.2 cfs 4,835 cf

Link 8L: Depression S Inflow=1.7 cfs 6,794 cf
Primary=1.7 cfs 6,794 cf

Link 9L: Wetlands NE Inflow=1.8 cfs 7,489 cf
Primary=1.8 cfs 7,489 cf

Link 10L: Wetlands N Inflow=1.0 cfs 4,238 cf
Primary=1.0 cfs 4,238 cf

Link 11L: Collection Swale W Inflow=3.1 cfs 13,390 cf
Primary=3.1 cfs 13,390 cf

Link 12L: Collection Swale W Inflow=2.3 cfs 8,713 cf
Primary=2.3 cfs 8,713 cf

Link 15L: Wetland W Inflow=1.4 cfs 7,938 cf
Primary=1.4 cfs 7,938 cf

Link 16L: Wetland E Inflow=3.3 cfs 17,442 cf
Primary=3.3 cfs 17,442 cf

Total Runoff Area = 579,533 sf Runoff Volume = 70,917 cf Average Runoff Depth = 1.47"
97.80% Pervious = 566,801 sf 2.20% Impervious = 12,732 sf

Summary for Subcatchment 1S: Bulky Waste Landfill SW

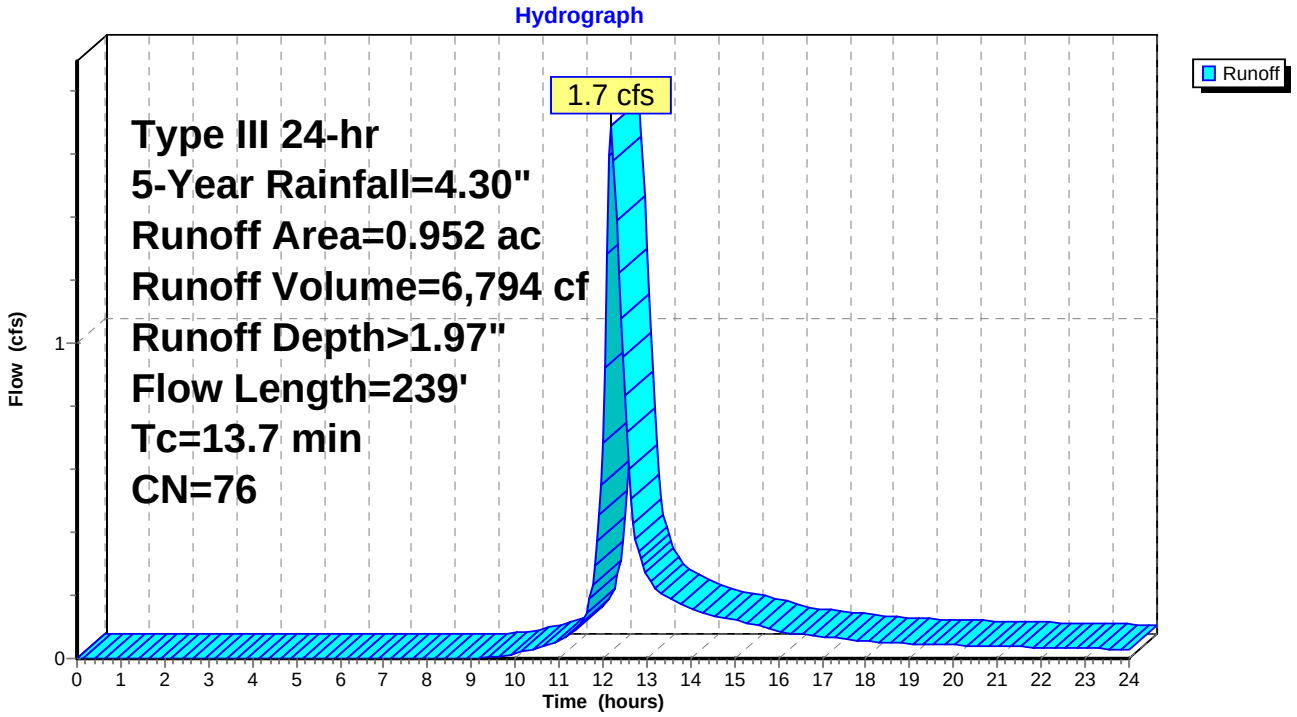
Runoff = 1.7 cfs @ 12.20 hrs, Volume= 6,794 cf, Depth> 1.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 5-Year Rainfall=4.30"

	Area (ac)	CN	Description
	0.829	74	>75% Grass cover, Good, HSG C
	0.080	89	Gravel roads, HSG C
*	0.003	98	Equipment Pad, HSG C
*	0.040	98	Solar array Ballasts, HSG C
	0.952	76	Weighted Average
	0.909		95.48% Pervious Area
	0.043		4.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.6	100	0.0251	0.13		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
0.5	66	0.1137	2.36		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	46	0.1957	3.10		**Shallow Concentrated Flow, Lanfill Cap** Short Grass Pasture Kv= 7.0 fps
0.4	27	0.0050	1.14		**Shallow Concentrated Flow, Access Drive** Unpaved Kv= 16.1 fps
13.7	239	Total			

Subcatchment 1S: Bulky Waste Landfill SW



Summary for Subcatchment 2S: Bulky Waste Landfill NW

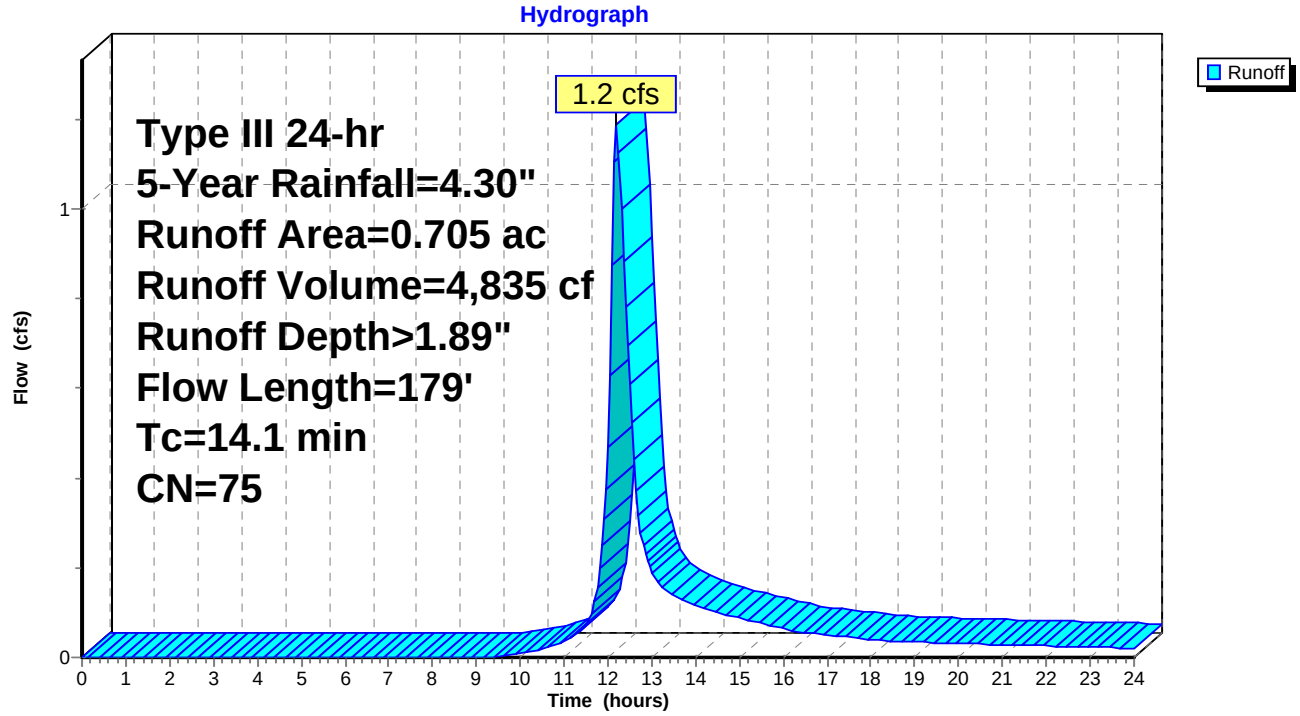
Runoff = 1.2 cfs @ 12.20 hrs, Volume= 4,835 cf, Depth> 1.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 5-Year Rainfall=4.30"

	Area (ac)	CN	Description
	0.659	74	>75% Grass cover, Good, HSG C
*	0.032	98	Solar array ballasts, HSG C
	0.014	89	Gravel roads, HSG C
	0.705	75	Weighted Average
	0.673		95.46% Pervious Area
	0.032		4.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0212	0.12		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
0.6	79	0.0886	2.08		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
14.1	179	Total			

Subcatchment 2S: Bulky Waste Landfill NW



Summary for Subcatchment 3S: Bulky Waste Landfill E

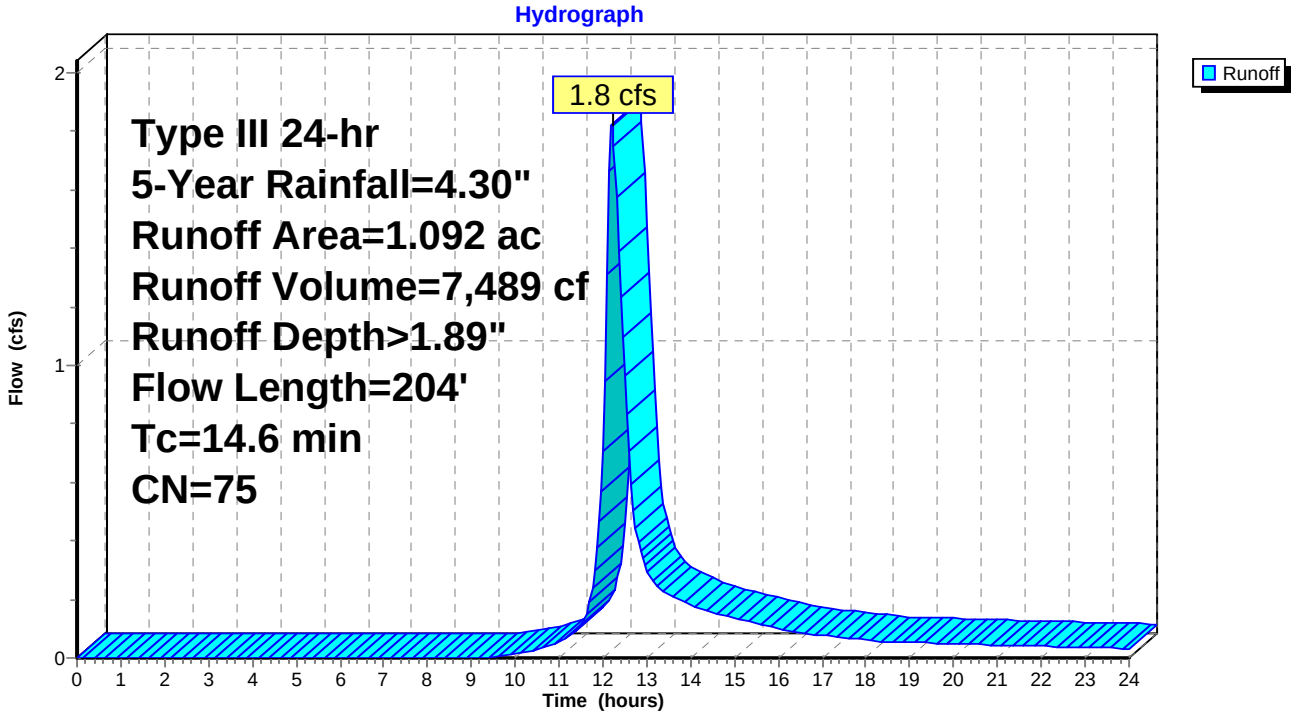
Runoff = 1.8 cfs @ 12.21 hrs, Volume= 7,489 cf, Depth> 1.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 5-Year Rainfall=4.30"

	Area (ac)	CN	Description
	1.034	74	>75% Grass cover, Good, HSG C
*	0.058	98	Solar array ballasts, HSG C
	1.092	75	Weighted Average
	1.034		94.69% Pervious Area
	0.058		5.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0212	0.12		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
1.0	80	0.0375	1.36		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.1	24	0.1667	2.86		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
14.6	204	Total			

Subcatchment 3S: Bulky Waste Landfill E



Summary for Subcatchment 4S: Landfill N

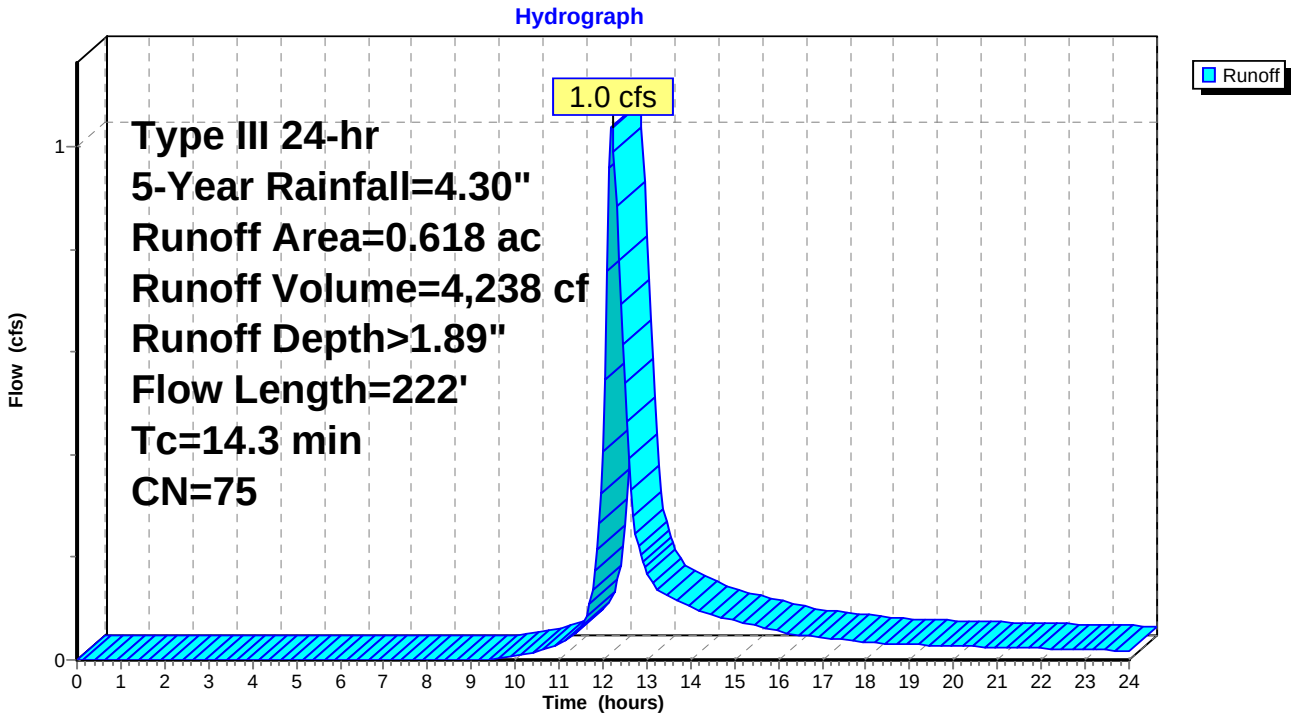
Runoff = 1.0 cfs @ 12.21 hrs, Volume= 4,238 cf, Depth> 1.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 5-Year Rainfall=4.30"

	Area (ac)	CN	Description
	0.590	74	>75% Grass cover, Good, HSG C
*	0.028	98	Solar array ballasts, HSG C
	0.618	75	Weighted Average
	0.590		95.47% Pervious Area
	0.028		4.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	100	0.0230	0.13		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
1.0	81	0.0371	1.35		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	41	0.1707	2.89		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
14.3	222	Total			

Subcatchment 4S: Landfill N



Summary for Subcatchment 5S: Landfill W

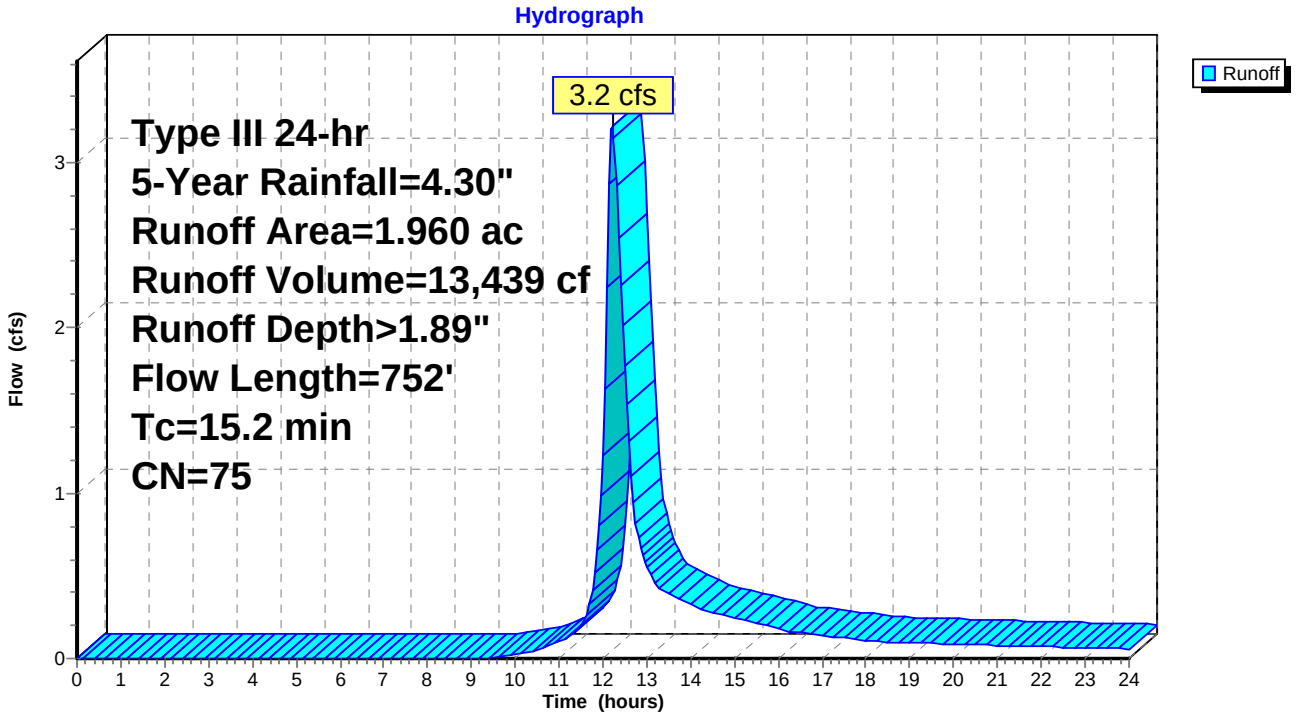
Runoff = 3.2 cfs @ 12.22 hrs, Volume= 13,439 cf, Depth> 1.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 5-Year Rainfall=4.30"

	Area (ac)	CN	Description
	1.896	74	>75% Grass cover, Good, HSG C
*	0.064	98	Solar array ballasts, HSG C
	1.960	75	Weighted Average
	1.896		96.73% Pervious Area
	0.064		3.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.3	100	0.0220	0.13		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
0.3	37	0.0811	1.99		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.3	58	0.1897	3.05		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
1.3	520	0.0200	6.71	50.33	**Channel Flow, Riprap Swale** Area= 7.5 sf Perim= 8.0' r= 0.94' n= 0.030 Rubble masonry, cemented
0.0	37	0.2160	22.05	165.39	**Channel Flow, Riprap Swale** Area= 7.5 sf Perim= 8.0' r= 0.94' n= 0.030 Rubble masonry, cemented
15.2	752	Total			

Subcatchment 5S: Landfill W



Summary for Subcatchment 6S: Landfill E

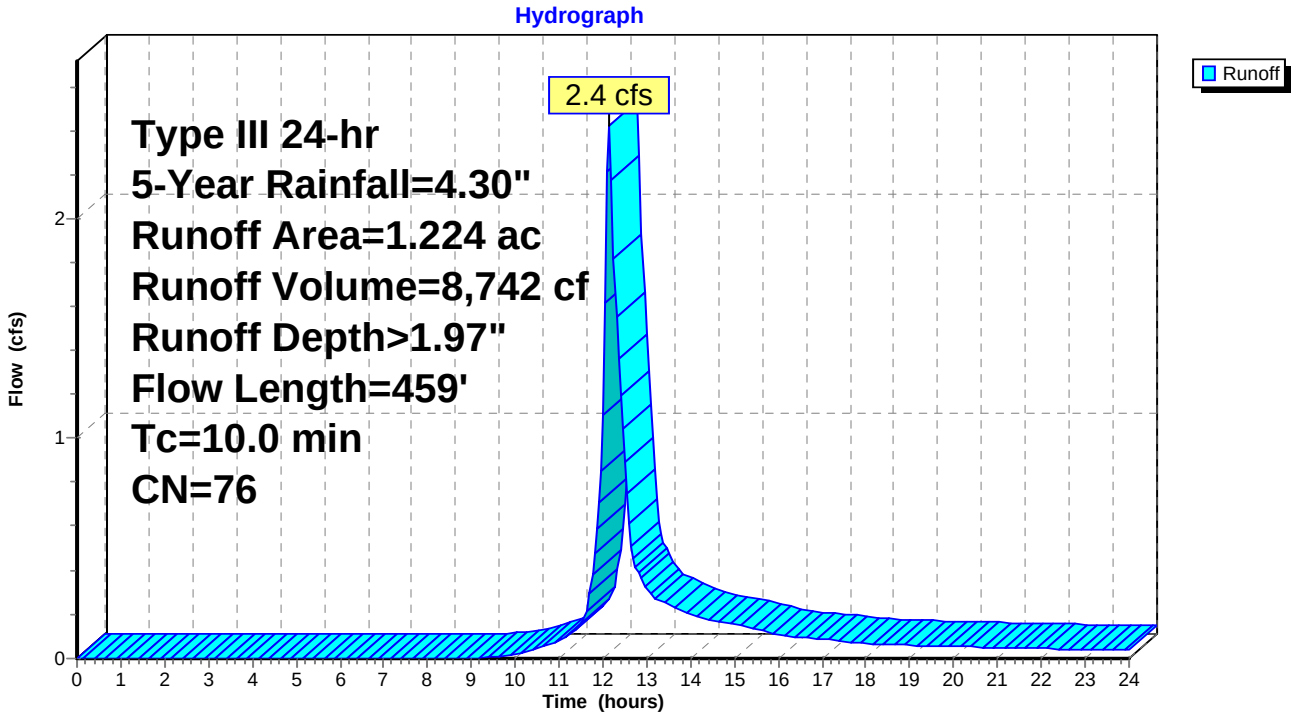
Runoff = 2.4 cfs @ 12.15 hrs, Volume= 8,742 cf, Depth> 1.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 5-Year Rainfall=4.30"

	Area (ac)	CN	Description
	1.085	74	>75% Grass cover, Good, HSG C
	0.090	89	Gravel roads, HSG C
*	0.046	98	Solar array ballasts, HSG C
*	0.003	98	Concrete Equipment Pad, HSG C
	1.224	76	Weighted Average
	1.175		96.00% Pervious Area
	0.049		4.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.5	40	0.0543	0.15		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
1.0	60	0.0117	1.03		**Sheet Flow, Gravel** Smooth surfaces n= 0.011 P2= 3.40"
0.5	86	0.0384	3.15		**Shallow Concentrated Flow, Gravel** Unpaved Kv= 16.1 fps
0.7	76	0.0658	1.80		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	49	0.2245	3.32		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	148	0.1081	15.60	117.00	**Channel Flow, Riprap Swale** Area= 7.5 sf Perim= 8.0' r= 0.94' n= 0.030 Rubble masonry, cemented
7.1	459	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 6S: Landfill E



Summary for Subcatchment 7S: Green Field W

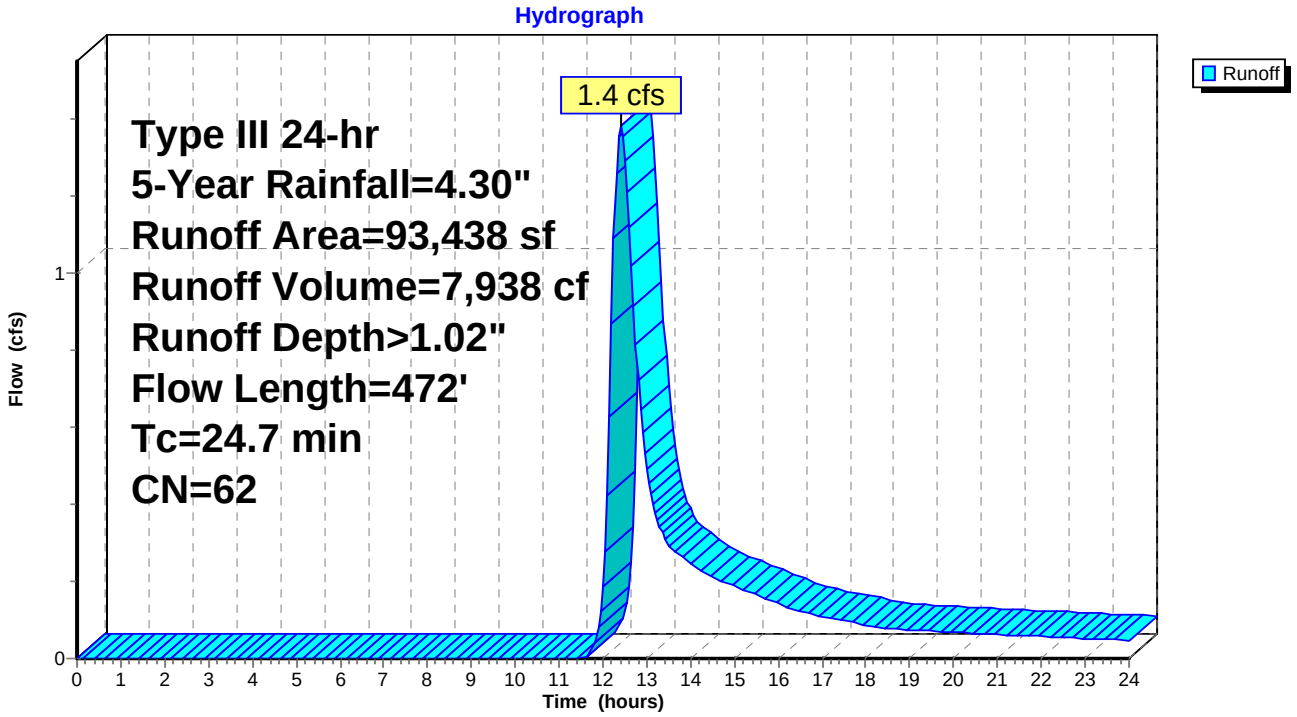
Runoff = 1.4 cfs @ 12.40 hrs, Volume= 7,938 cf, Depth> 1.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 5-Year Rainfall=4.30"

	Area (sf)	CN	Description
	832	74	>75% Grass cover, Good, HSG C
	3,861	80	>75% Grass cover, Good, HSG D
	21,955	61	>75% Grass cover, Good, HSG B
	66,216	61	>75% Grass cover, Good, HSG B
	340	98	Paved parking, HSG C
*	4	98	Solar Array Posts, HSG B
*	230	98	Equipment Pad, HSG B
	93,438	62	Weighted Average
	92,864		99.39% Pervious Area
	574		0.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0123	0.10		**Sheet Flow, Field** Grass: Dense n= 0.240 P2= 3.40"
0.4	23	0.0217	1.03		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
4.8	160	0.0063	0.56		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
0.6	51	0.0392	1.39		**Shallow Concentrated Flow, field** Short Grass Pasture Kv= 7.0 fps
1.4	88	0.0227	1.05		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
0.7	50	0.0300	1.21		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
24.7	472	Total			

Subcatchment 7S: Green Field W



Summary for Subcatchment 8S: Green Field E

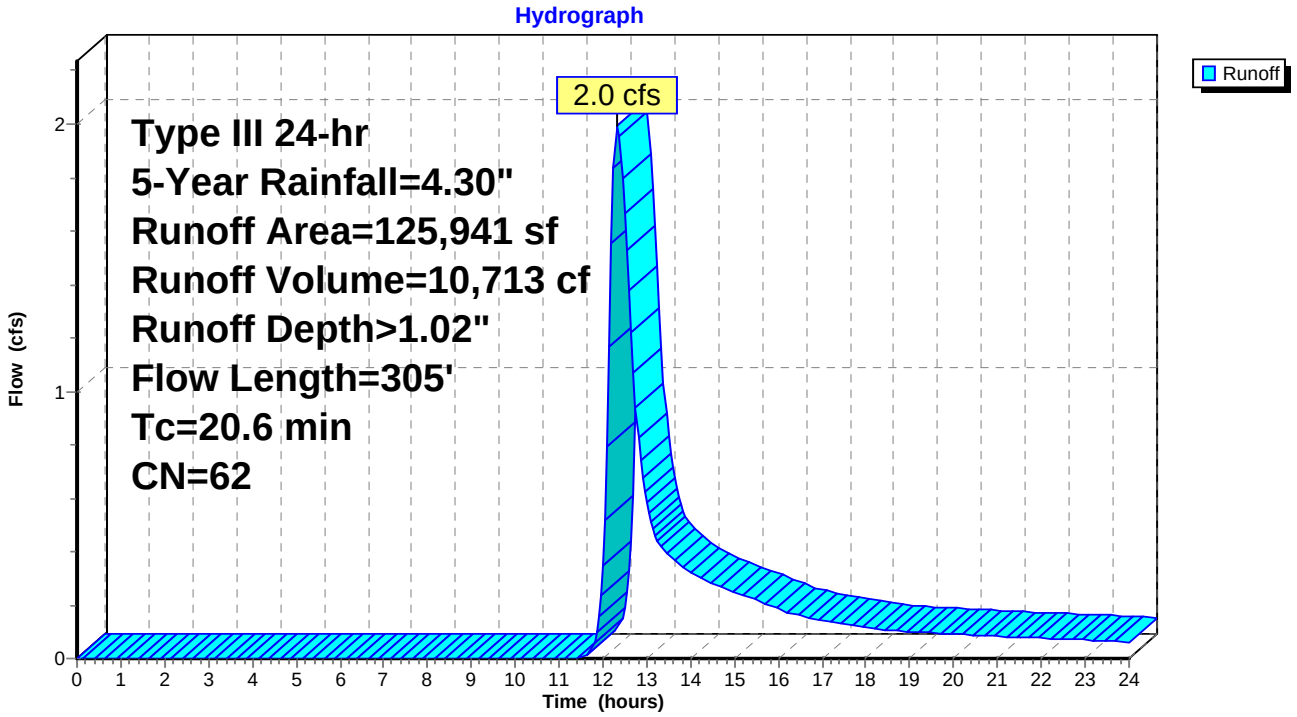
Runoff = 2.0 cfs @ 12.33 hrs, Volume= 10,713 cf, Depth> 1.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 5-Year Rainfall=4.30"

	Area (sf)	CN	Description
	116,936	61	>75% Grass cover, Good, HSG B
	3,129	80	>75% Grass cover, Good, HSG D
	1,452	80	>75% Grass cover, Good, HSG D
	4,419	61	>75% Grass cover, Good, HSG B
*	5	98	Solar Array Posts, HSG B
	125,941	62	Weighted Average
	125,936		100.00% Pervious Area
	5		0.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0123	0.10		**Sheet Flow, Field** Grass: Dense n= 0.240 P2= 3.40"
0.4	24	0.0208	1.01		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
2.6	106	0.0094	0.68		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
0.8	75	0.0467	1.51		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
20.6	305	Total			

Subcatchment 8S: Green Field E



Summary for Subcatchment 9S: Greenfield 2

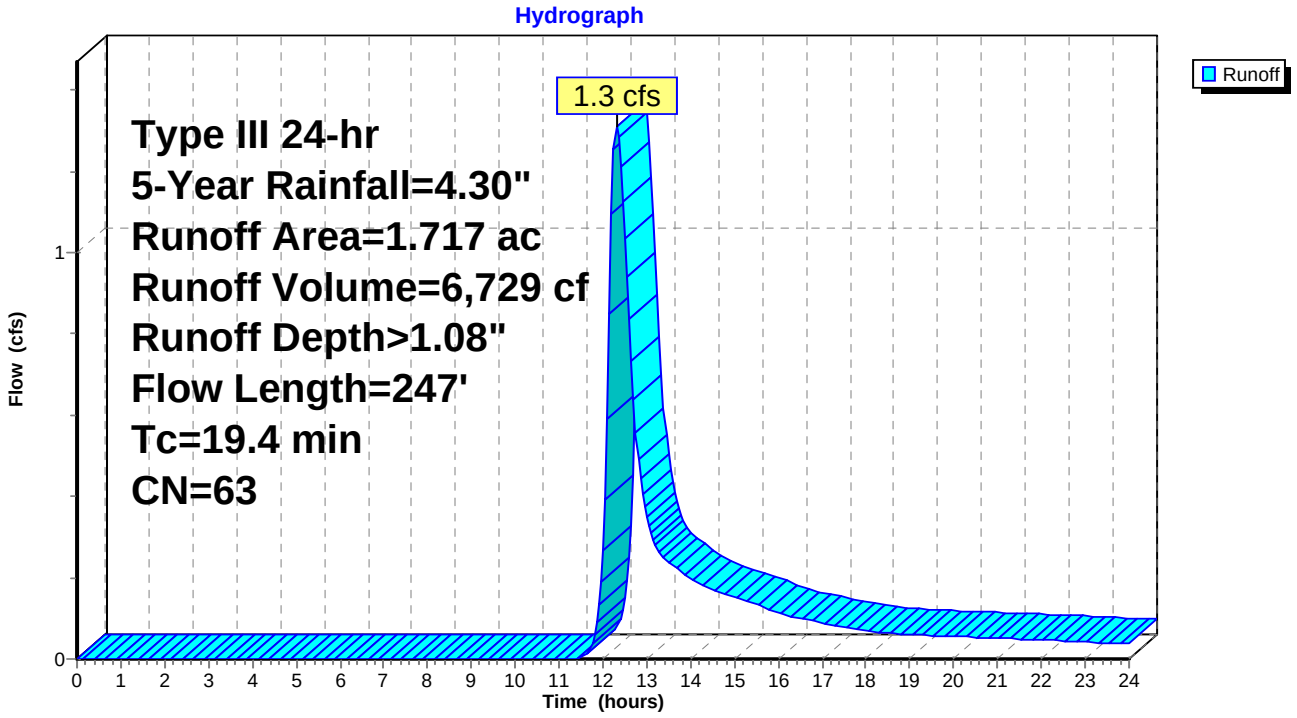
Runoff = 1.3 cfs @ 12.31 hrs, Volume= 6,729 cf, Depth> 1.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 5-Year Rainfall=4.30"

	Area (ac)	CN	Description
	0.091	77	Woods, Good, HSG D
	0.151	55	Woods, Good, HSG B
	1.283	61	>75% Grass cover, Good, HSG B
	0.187	80	>75% Grass cover, Good, HSG D
*	0.000	98	Solar Array Posts, HSG B
	0.005	98	Paved parking, HSG B
	1.717	63	Weighted Average
	1.712		99.71% Pervious Area
	0.005		0.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.5	100	0.0128	0.10		**Sheet Flow, Grass** Grass: Dense n= 0.240 P2= 3.40"
2.9	147	0.0148	0.85		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
19.4	247	Total			

Subcatchment 9S: Greenfield 2



Summary for Reach 19R: Riprap Swale

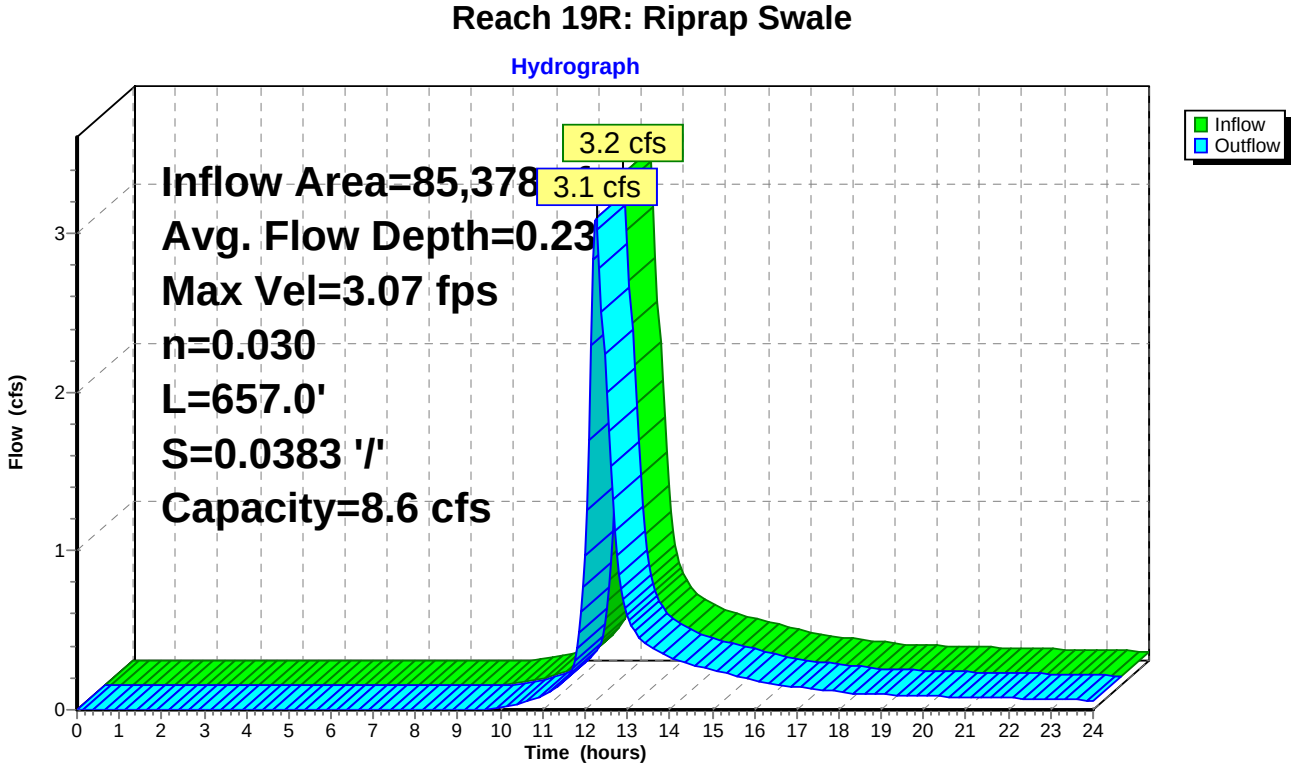
Inflow Area = 85,378 sf, 3.27% Impervious, Inflow Depth > 1.89" for 5-Year event
Inflow = 3.2 cfs @ 12.22 hrs, Volume= 13,439 cf
Outflow = 3.1 cfs @ 12.26 hrs, Volume= 13,390 cf, Atten= 4%, Lag= 2.8 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Max. Velocity= 3.07 fps, Min. Travel Time= 3.6 min
Avg. Velocity = 1.12 fps, Avg. Travel Time= 9.8 min

Peak Storage= 661 cf @ 12.26 hrs
Average Depth at Peak Storage= 0.23'
Bank-Full Depth= 0.40' Flow Area= 2.1 sf, Capacity= 8.6 cfs

3.00' x 0.40' deep channel, n= 0.030 Rubble masonry, cemented
Side Slope Z-value= 5.5 '/' Top Width= 7.40'
Length= 657.0' Slope= 0.0383 '/'
Inlet Invert= 274.52', Outlet Invert= 249.36'

‡



Summary for Reach 21R: Riprap Swale

Inflow Area = 53,317 sf, 4.00% Impervious, Inflow Depth > 1.97" for 5-Year event
Inflow = 2.4 cfs @ 12.15 hrs, Volume= 8,742 cf
Outflow = 2.3 cfs @ 12.18 hrs, Volume= 8,713 cf, Atten= 5%, Lag= 2.1 min

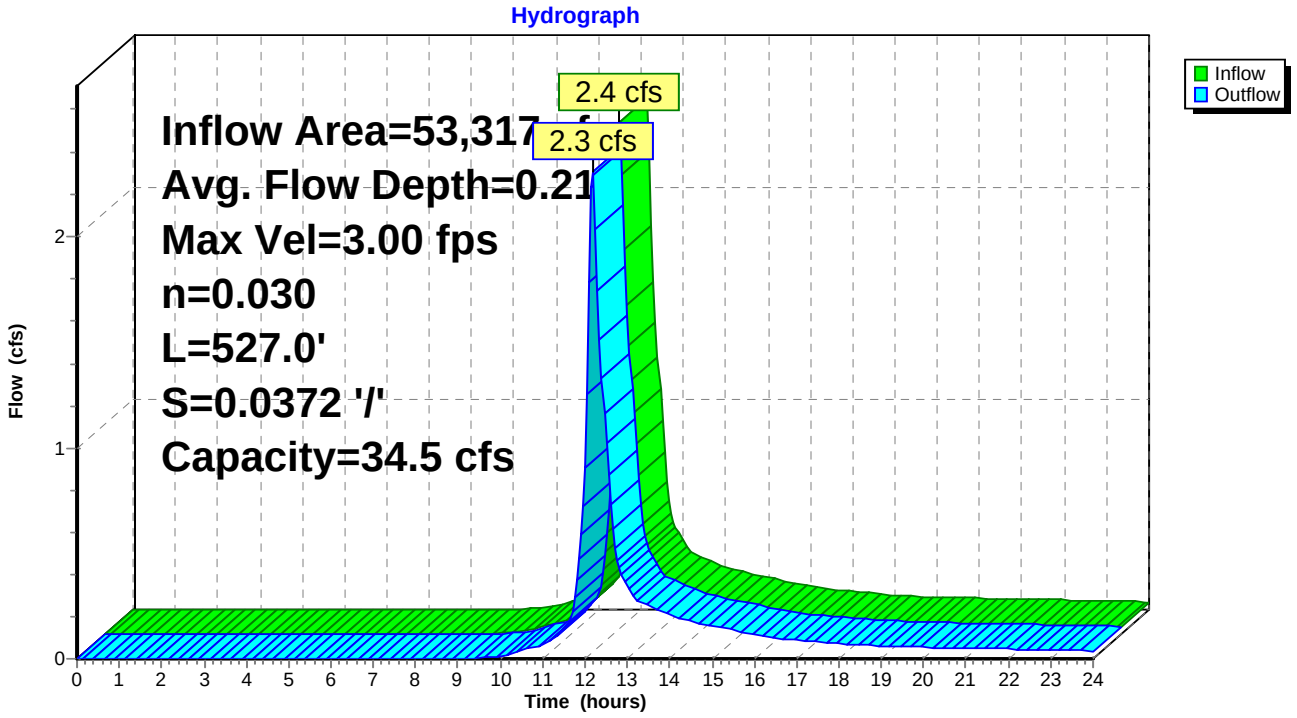
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Max. Velocity= 3.00 fps, Min. Travel Time= 2.9 min
Avg. Velocity = 0.98 fps, Avg. Travel Time= 9.0 min

Peak Storage= 404 cf @ 12.18 hrs
Average Depth at Peak Storage= 0.21'
Bank-Full Depth= 0.90' Flow Area= 5.1 sf, Capacity= 34.5 cfs

3.00' x 0.90' deep channel, n= 0.030 Rubble masonry, cemented
Side Slope Z-value= 3.0 '/' Top Width= 8.40'
Length= 527.0' Slope= 0.0372 '/'
Inlet Invert= 276.70', Outlet Invert= 257.10'

‡

Reach 21R: Riprap Swale

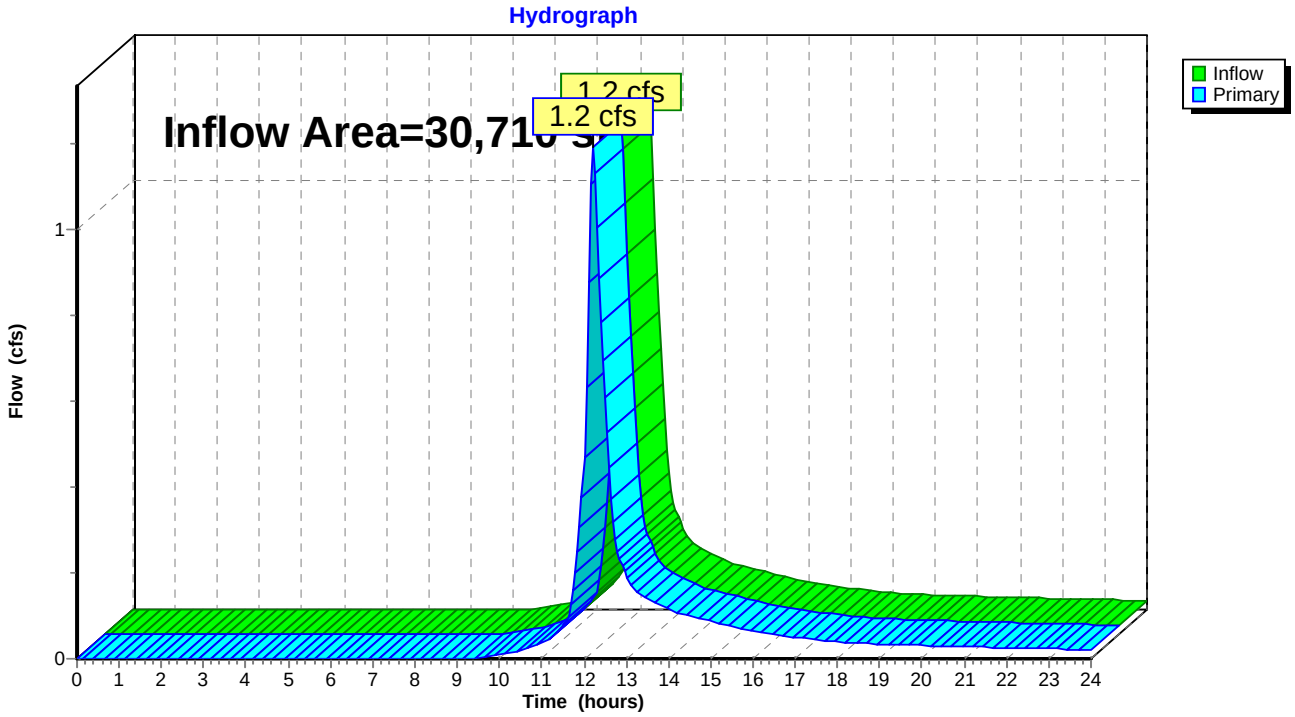


Summary for Link 7L: Wetlands NW

Inflow Area = 30,710 sf, 4.54% Impervious, Inflow Depth > 1.89" for 5-Year event
Inflow = 1.2 cfs @ 12.20 hrs, Volume= 4,835 cf
Primary = 1.2 cfs @ 12.20 hrs, Volume= 4,835 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 7L: Wetlands NW

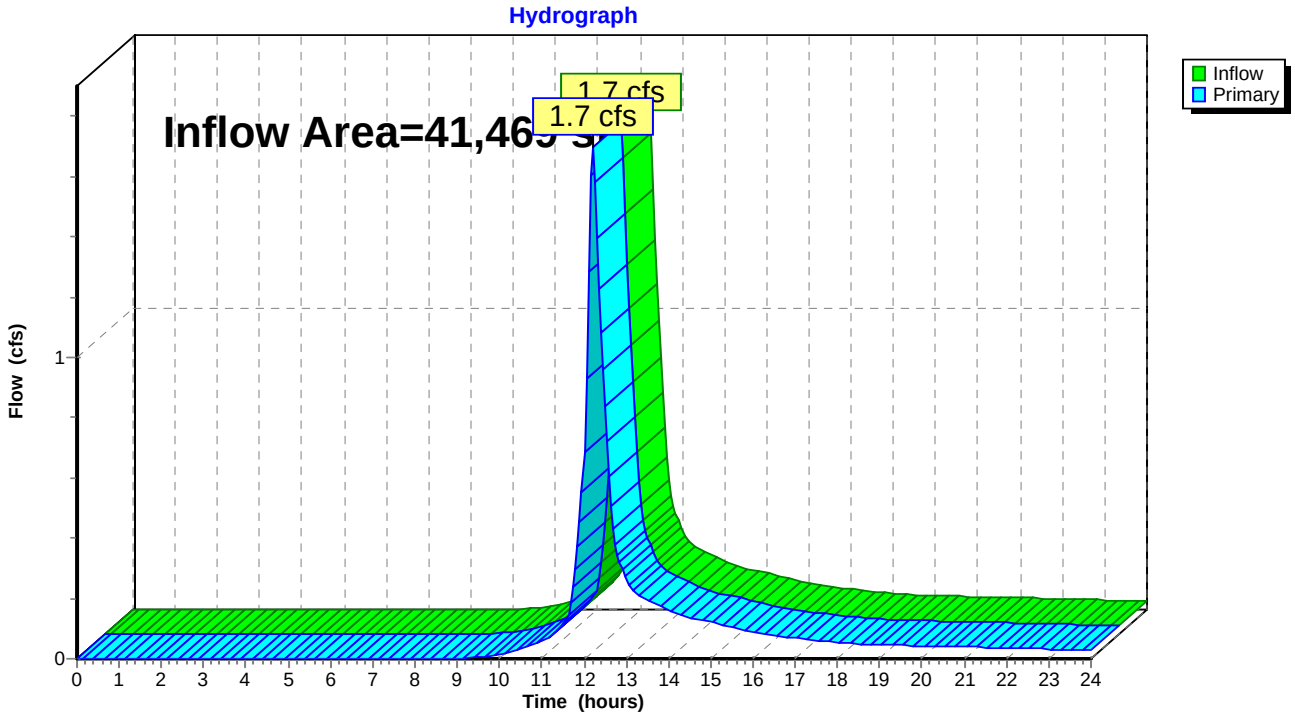


Summary for Link 8L: Depression S

Inflow Area = 41,469 sf, 4.52% Impervious, Inflow Depth > 1.97" for 5-Year event
Inflow = 1.7 cfs @ 12.20 hrs, Volume= 6,794 cf
Primary = 1.7 cfs @ 12.20 hrs, Volume= 6,794 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 8L: Depression S

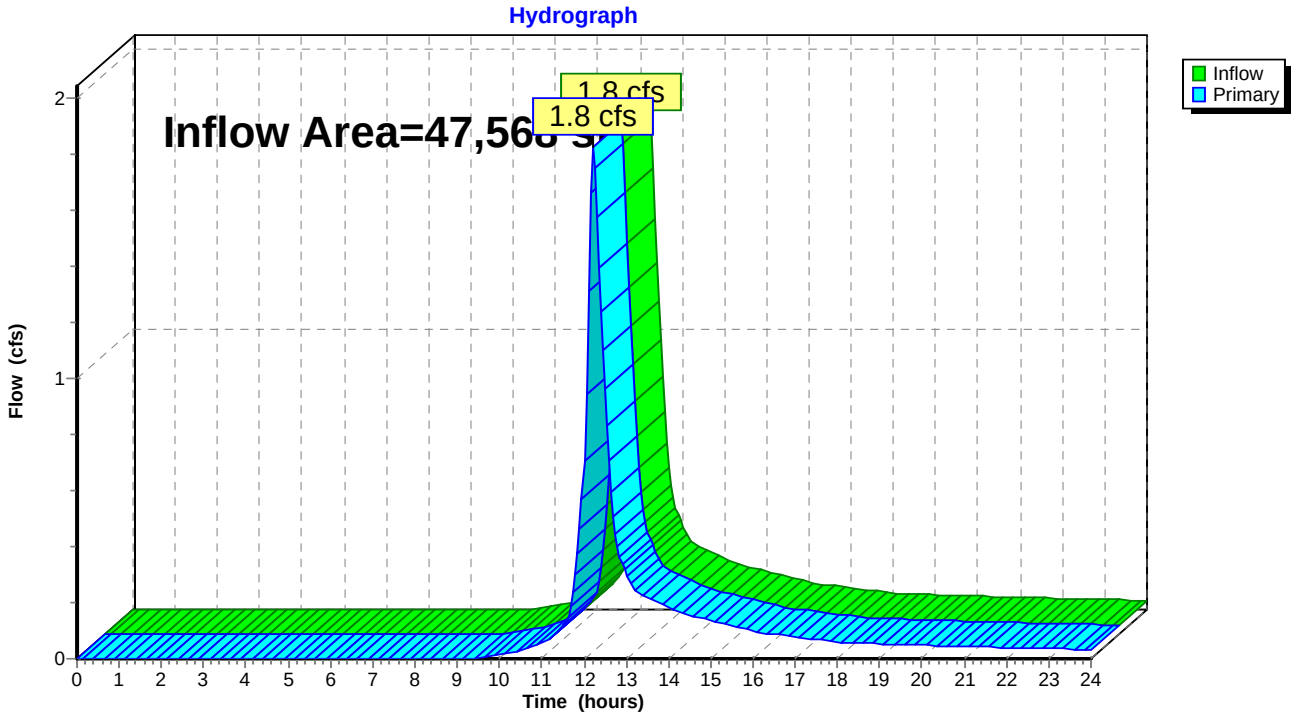


Summary for Link 9L: Wetlands NE

Inflow Area = 47,568 sf, 5.31% Impervious, Inflow Depth > 1.89" for 5-Year event
Inflow = 1.8 cfs @ 12.21 hrs, Volume= 7,489 cf
Primary = 1.8 cfs @ 12.21 hrs, Volume= 7,489 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 9L: Wetlands NE

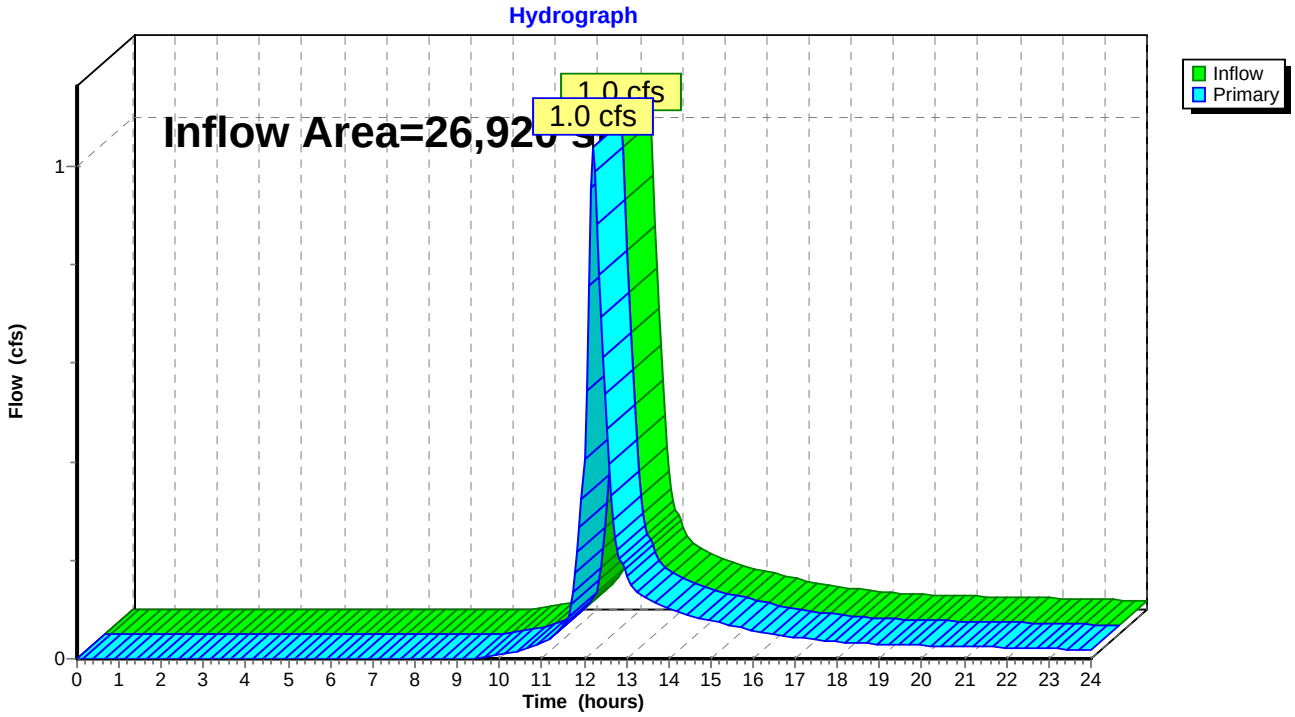


Summary for Link 10L: Wetlands N

Inflow Area = 26,920 sf, 4.53% Impervious, Inflow Depth > 1.89" for 5-Year event
Inflow = 1.0 cfs @ 12.21 hrs, Volume= 4,238 cf
Primary = 1.0 cfs @ 12.21 hrs, Volume= 4,238 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 10L: Wetlands N

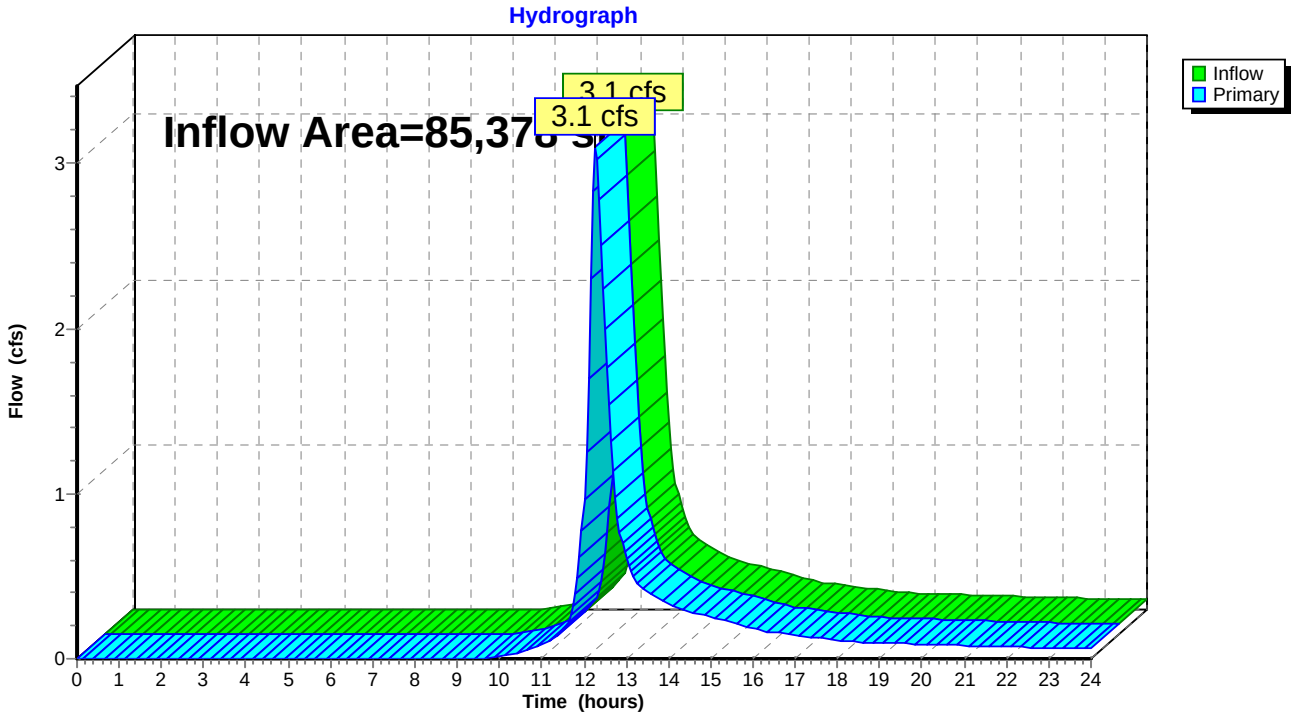


Summary for Link 11L: Collection Swale W

Inflow Area = 85,378 sf, 3.27% Impervious, Inflow Depth > 1.88" for 5-Year event
Inflow = 3.1 cfs @ 12.26 hrs, Volume= 13,390 cf
Primary = 3.1 cfs @ 12.26 hrs, Volume= 13,390 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 11L: Collection Swale W

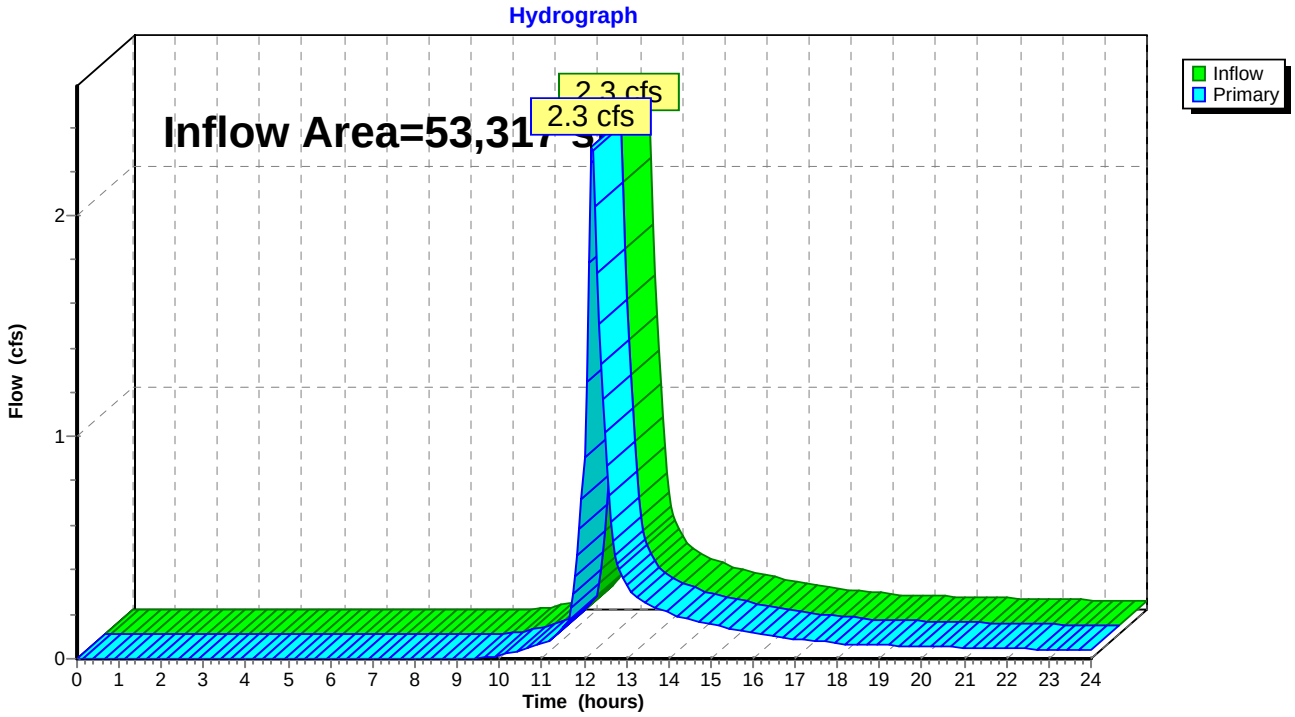


Summary for Link 12L: Collection Swale W

Inflow Area = 53,317 sf, 4.00% Impervious, Inflow Depth > 1.96" for 5-Year event
Inflow = 2.3 cfs @ 12.18 hrs, Volume= 8,713 cf
Primary = 2.3 cfs @ 12.18 hrs, Volume= 8,713 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 12L: Collection Swale W

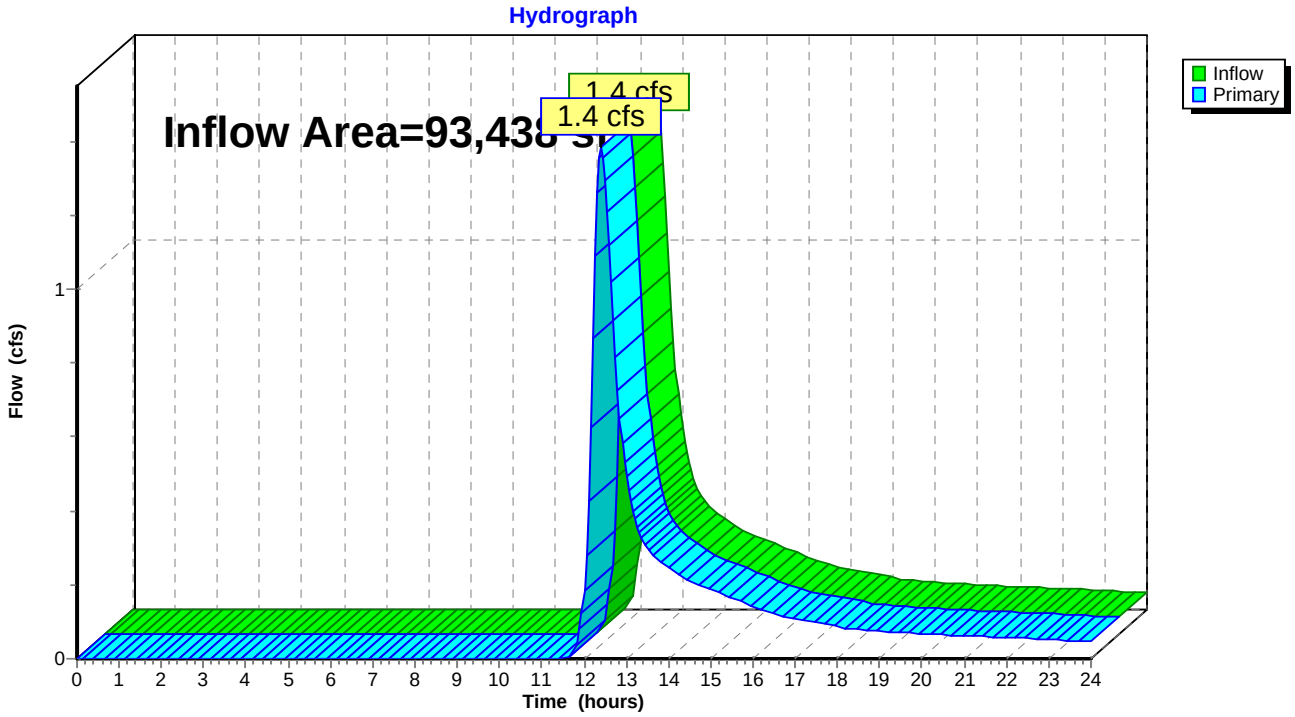


Summary for Link 15L: Wetland W

Inflow Area = 93,438 sf, 0.61% Impervious, Inflow Depth > 1.02" for 5-Year event
Inflow = 1.4 cfs @ 12.40 hrs, Volume= 7,938 cf
Primary = 1.4 cfs @ 12.40 hrs, Volume= 7,938 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 15L: Wetland W

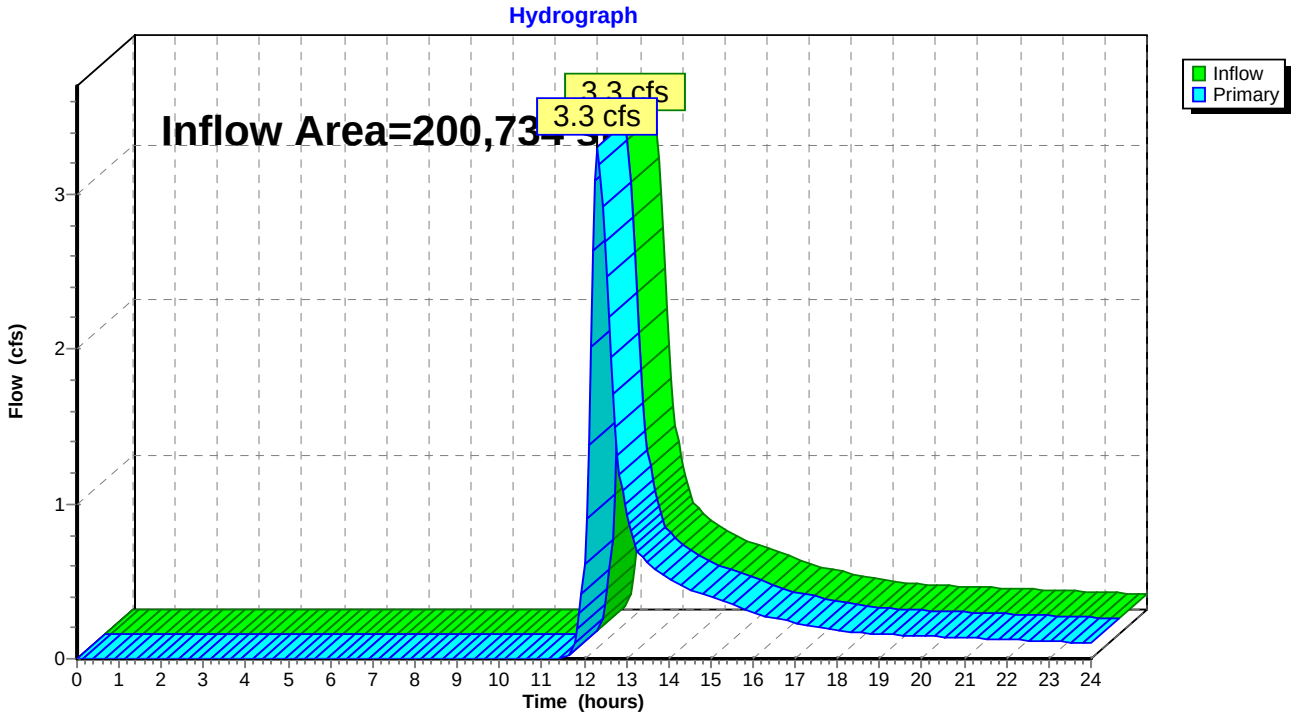


Summary for Link 16L: Wetland E

Inflow Area = 200,734 sf, 0.11% Impervious, Inflow Depth > 1.04" for 5-Year event
Inflow = 3.3 cfs @ 12.32 hrs, Volume= 17,442 cf
Primary = 3.3 cfs @ 12.32 hrs, Volume= 17,442 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 16L: Wetland E



Time span=0.00-24.00 hrs, dt=0.050 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Bulky Waste Landfill SW Runoff Area=0.952 ac 4.52% Impervious Runoff Depth>2.53"
Flow Length=239' Tc=13.7 min CN=76 Runoff=2.2 cfs 8,739 cf

Subcatchment 2S: Bulky Waste Landfill NW Runoff Area=0.705 ac 4.54% Impervious Runoff Depth>2.44"
Flow Length=179' Tc=14.1 min CN=75 Runoff=1.6 cfs 6,251 cf

Subcatchment 3S: Bulky Waste Landfill E Runoff Area=1.092 ac 5.31% Impervious Runoff Depth>2.44"
Flow Length=204' Tc=14.6 min CN=75 Runoff=2.4 cfs 9,681 cf

Subcatchment 4S: Landfill N Runoff Area=0.618 ac 4.53% Impervious Runoff Depth>2.44"
Flow Length=222' Tc=14.3 min CN=75 Runoff=1.4 cfs 5,479 cf

Subcatchment 5S: Landfill W Runoff Area=1.960 ac 3.27% Impervious Runoff Depth>2.44"
Flow Length=752' Tc=15.2 min CN=75 Runoff=4.2 cfs 17,374 cf

Subcatchment 6S: Landfill E Runoff Area=1.224 ac 4.00% Impervious Runoff Depth>2.53"
Flow Length=459' Tc=10.0 min CN=76 Runoff=3.1 cfs 11,245 cf

Subcatchment 7S: Green Field W Runoff Area=93,438 sf 0.61% Impervious Runoff Depth>1.43"
Flow Length=472' Tc=24.7 min CN=62 Runoff=2.0 cfs 11,125 cf

Subcatchment 8S: Green Field E Runoff Area=125,941 sf 0.00% Impervious Runoff Depth>1.43"
Flow Length=305' Tc=20.6 min CN=62 Runoff=3.0 cfs 15,013 cf

Subcatchment 9S: Greenfield 2 Runoff Area=1.717 ac 0.29% Impervious Runoff Depth>1.50"
Flow Length=247' Tc=19.4 min CN=63 Runoff=1.9 cfs 9,357 cf

Reach 19R: Riprap Swale Avg. Flow Depth=0.27' Max Vel=3.33 fps Inflow=4.2 cfs 17,374 cf
n=0.030 L=657.0' S=0.0383 '/' Capacity=8.6 cfs Outflow=4.1 cfs 17,318 cf

Reach 21R: Riprap Swale Avg. Flow Depth=0.24' Max Vel=3.27 fps Inflow=3.1 cfs 11,245 cf
n=0.030 L=527.0' S=0.0372 '/' Capacity=34.5 cfs Outflow=3.0 cfs 11,212 cf

Link 7L: Wetlands NW Inflow=1.6 cfs 6,251 cf
Primary=1.6 cfs 6,251 cf

Link 8L: Depression S Inflow=2.2 cfs 8,739 cf
Primary=2.2 cfs 8,739 cf

Link 9L: Wetlands NE Inflow=2.4 cfs 9,681 cf
Primary=2.4 cfs 9,681 cf

Link 10L: Wetlands N Inflow=1.4 cfs 5,479 cf
Primary=1.4 cfs 5,479 cf

Link 11L: Collection Swale W Inflow=4.1 cfs 17,318 cf
Primary=4.1 cfs 17,318 cf

Link 12L: Collection Swale W Inflow=3.0 cfs 11,212 cf
Primary=3.0 cfs 11,212 cf

Link 15L: Wetland W Inflow=2.0 cfs 11,125 cf
Primary=2.0 cfs 11,125 cf

Link 16L: Wetland E Inflow=4.9 cfs 24,370 cf
Primary=4.9 cfs 24,370 cf

Total Runoff Area = 579,533 sf Runoff Volume = 94,264 cf Average Runoff Depth = 1.95"
97.80% Pervious = 566,801 sf 2.20% Impervious = 12,732 sf

Summary for Subcatchment 1S: Bulky Waste Landfill SW

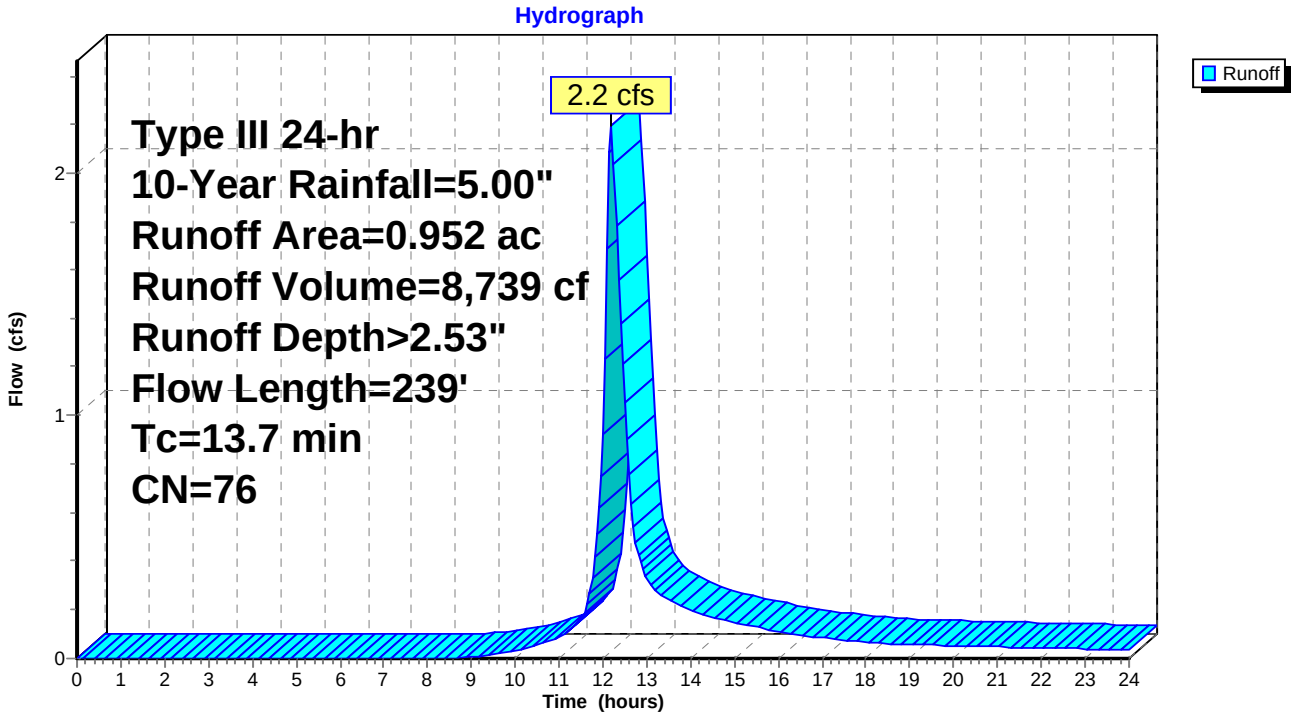
Runoff = 2.2 cfs @ 12.20 hrs, Volume= 8,739 cf, Depth> 2.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 10-Year Rainfall=5.00"

	Area (ac)	CN	Description
	0.829	74	>75% Grass cover, Good, HSG C
	0.080	89	Gravel roads, HSG C
*	0.003	98	Equipment Pad, HSG C
*	0.040	98	Solar array Ballasts, HSG C
	0.952	76	Weighted Average
	0.909		95.48% Pervious Area
	0.043		4.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.6	100	0.0251	0.13		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
0.5	66	0.1137	2.36		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	46	0.1957	3.10		**Shallow Concentrated Flow, Lanfill Cap** Short Grass Pasture Kv= 7.0 fps
0.4	27	0.0050	1.14		**Shallow Concentrated Flow, Access Drive** Unpaved Kv= 16.1 fps
13.7	239	Total			

Subcatchment 1S: Bulky Waste Landfill SW



Summary for Subcatchment 2S: Bulky Waste Landfill NW

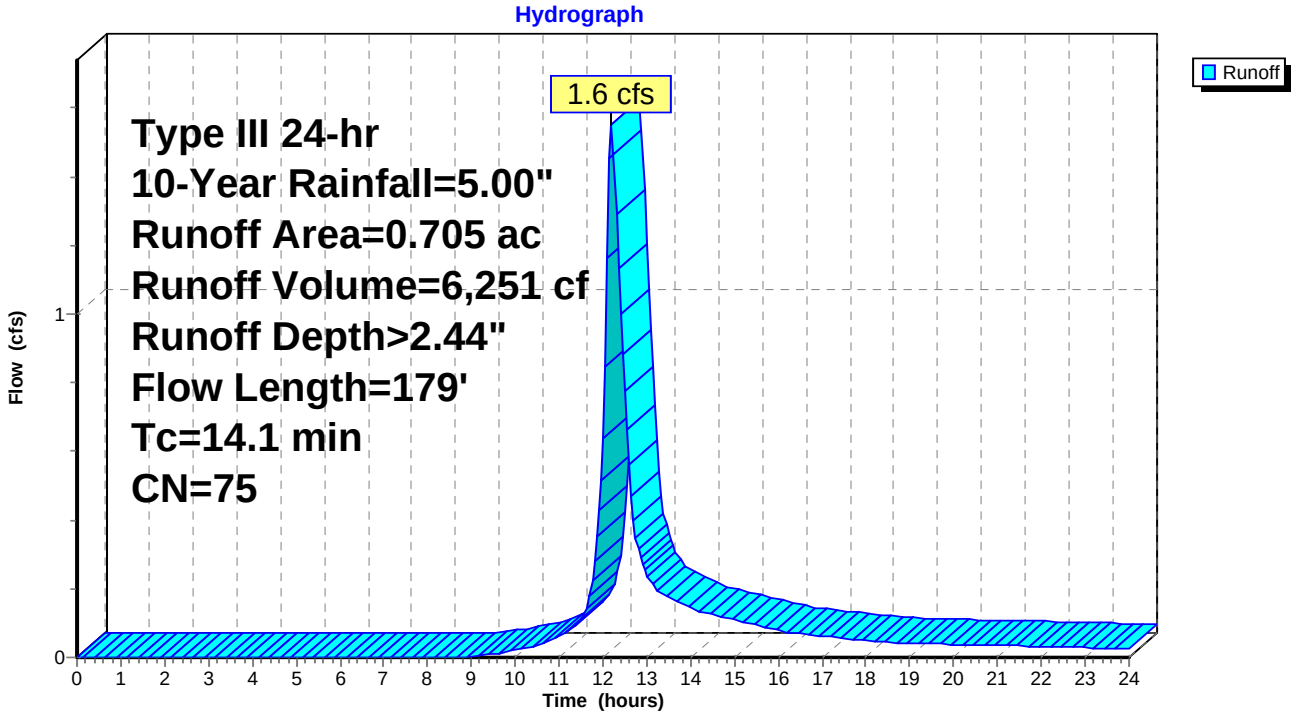
Runoff = 1.6 cfs @ 12.20 hrs, Volume= 6,251 cf, Depth> 2.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 10-Year Rainfall=5.00"

	Area (ac)	CN	Description
	0.659	74	>75% Grass cover, Good, HSG C
*	0.032	98	Solar array ballasts, HSG C
	0.014	89	Gravel roads, HSG C
	0.705	75	Weighted Average
	0.673		95.46% Pervious Area
	0.032		4.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0212	0.12		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
0.6	79	0.0886	2.08		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
14.1	179	Total			

Subcatchment 2S: Bulky Waste Landfill NW



Summary for Subcatchment 3S: Bulky Waste Landfill E

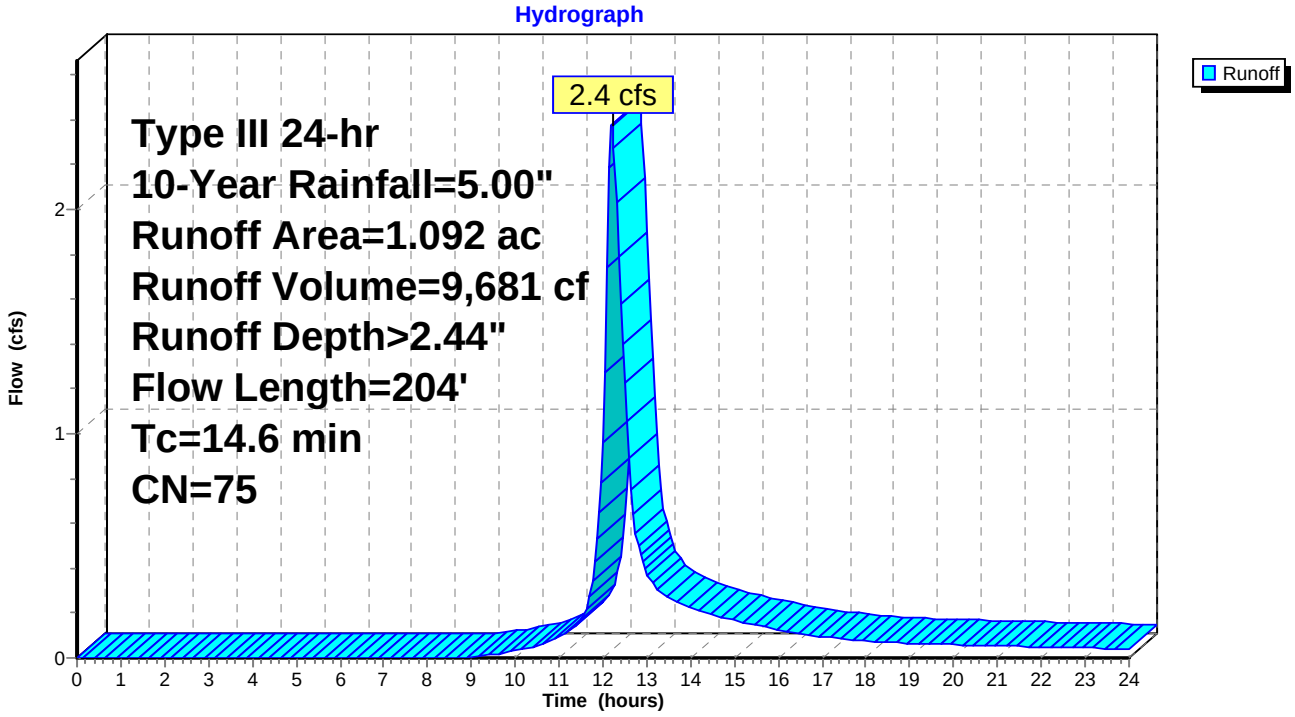
Runoff = 2.4 cfs @ 12.21 hrs, Volume= 9,681 cf, Depth> 2.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 10-Year Rainfall=5.00"

	Area (ac)	CN	Description
	1.034	74	>75% Grass cover, Good, HSG C
*	0.058	98	Solar array ballasts, HSG C
	1.092	75	Weighted Average
	1.034		94.69% Pervious Area
	0.058		5.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0212	0.12		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
1.0	80	0.0375	1.36		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.1	24	0.1667	2.86		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
14.6	204	Total			

Subcatchment 3S: Bulky Waste Landfill E



Summary for Subcatchment 4S: Landfill N

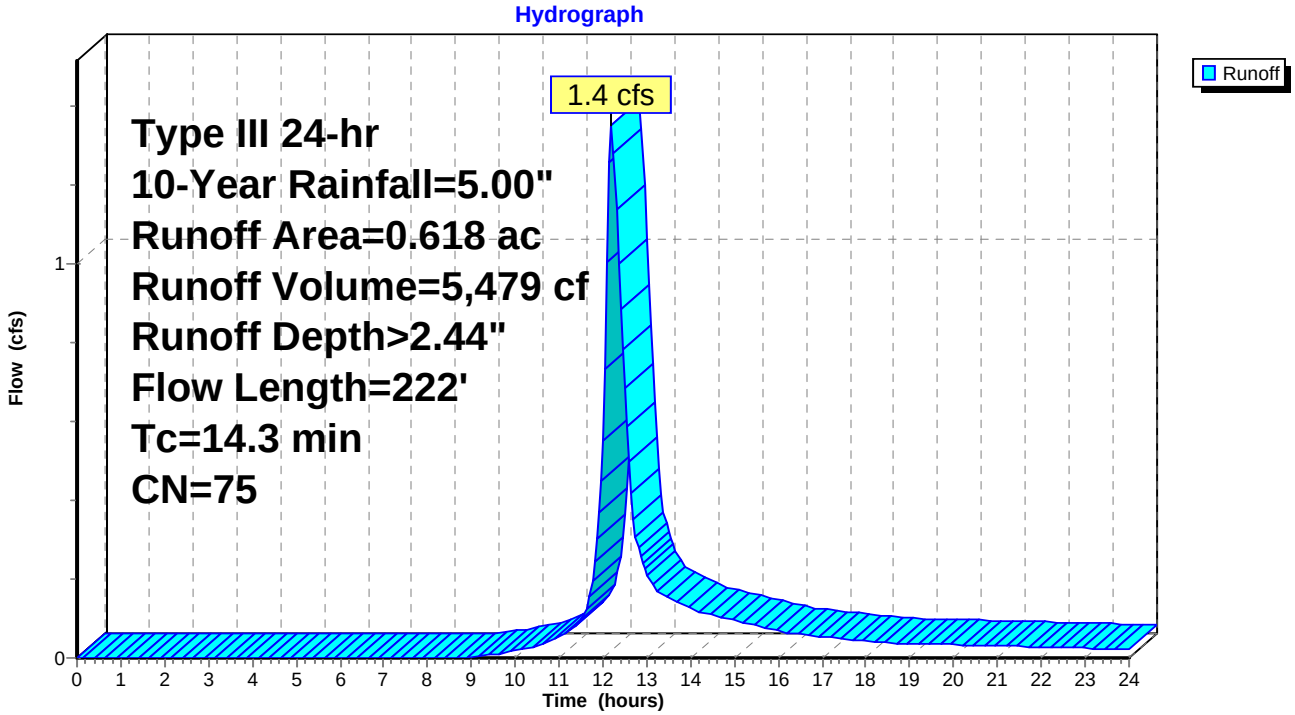
Runoff = 1.4 cfs @ 12.20 hrs, Volume= 5,479 cf, Depth> 2.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 10-Year Rainfall=5.00"

	Area (ac)	CN	Description
	0.590	74	>75% Grass cover, Good, HSG C
*	0.028	98	Solar array ballasts, HSG C
	0.618	75	Weighted Average
	0.590		95.47% Pervious Area
	0.028		4.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	100	0.0230	0.13		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
1.0	81	0.0371	1.35		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	41	0.1707	2.89		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
14.3	222	Total			

Subcatchment 4S: Landfill N



Summary for Subcatchment 5S: Landfill W

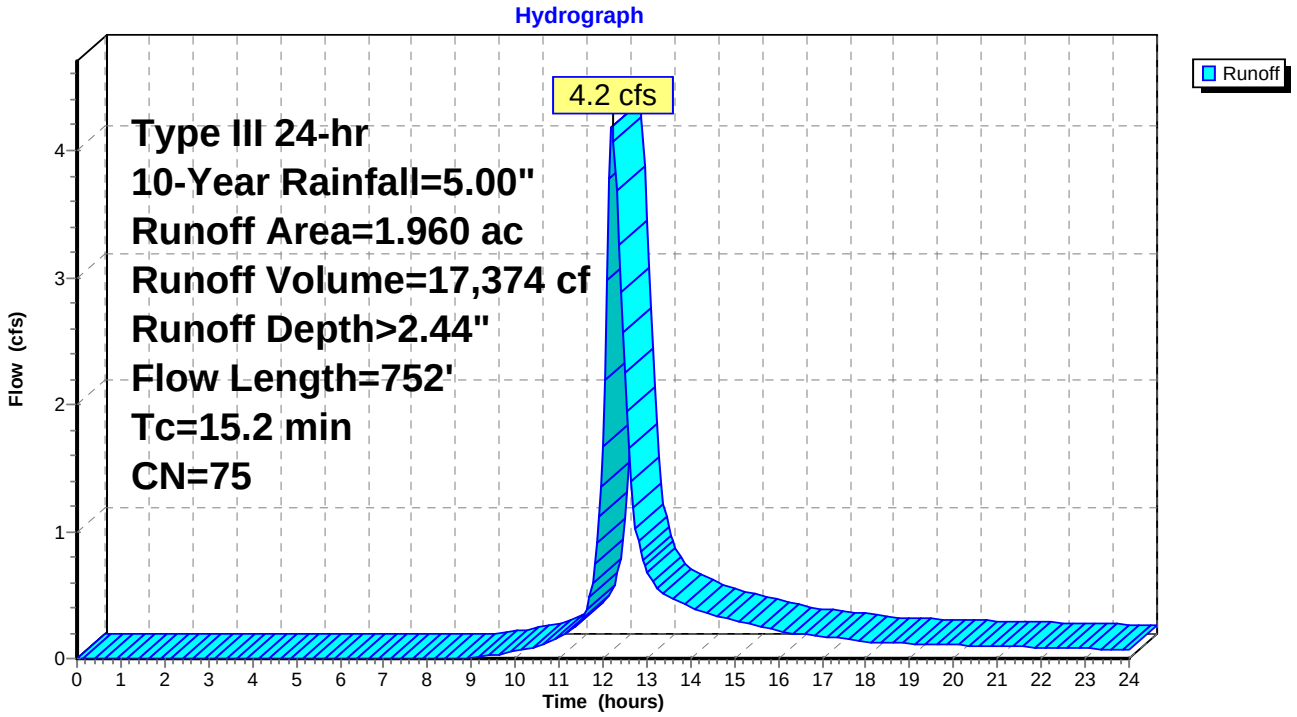
Runoff = 4.2 cfs @ 12.21 hrs, Volume= 17,374 cf, Depth> 2.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 10-Year Rainfall=5.00"

	Area (ac)	CN	Description
	1.896	74	>75% Grass cover, Good, HSG C
*	0.064	98	Solar array ballasts, HSG C
	1.960	75	Weighted Average
	1.896		96.73% Pervious Area
	0.064		3.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.3	100	0.0220	0.13		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
0.3	37	0.0811	1.99		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.3	58	0.1897	3.05		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
1.3	520	0.0200	6.71	50.33	**Channel Flow, Riprap Swale** Area= 7.5 sf Perim= 8.0' r= 0.94' n= 0.030 Rubble masonry, cemented
0.0	37	0.2160	22.05	165.39	**Channel Flow, Riprap Swale** Area= 7.5 sf Perim= 8.0' r= 0.94' n= 0.030 Rubble masonry, cemented
15.2	752	Total			

Subcatchment 5S: Landfill W



Summary for Subcatchment 6S: Landfill E

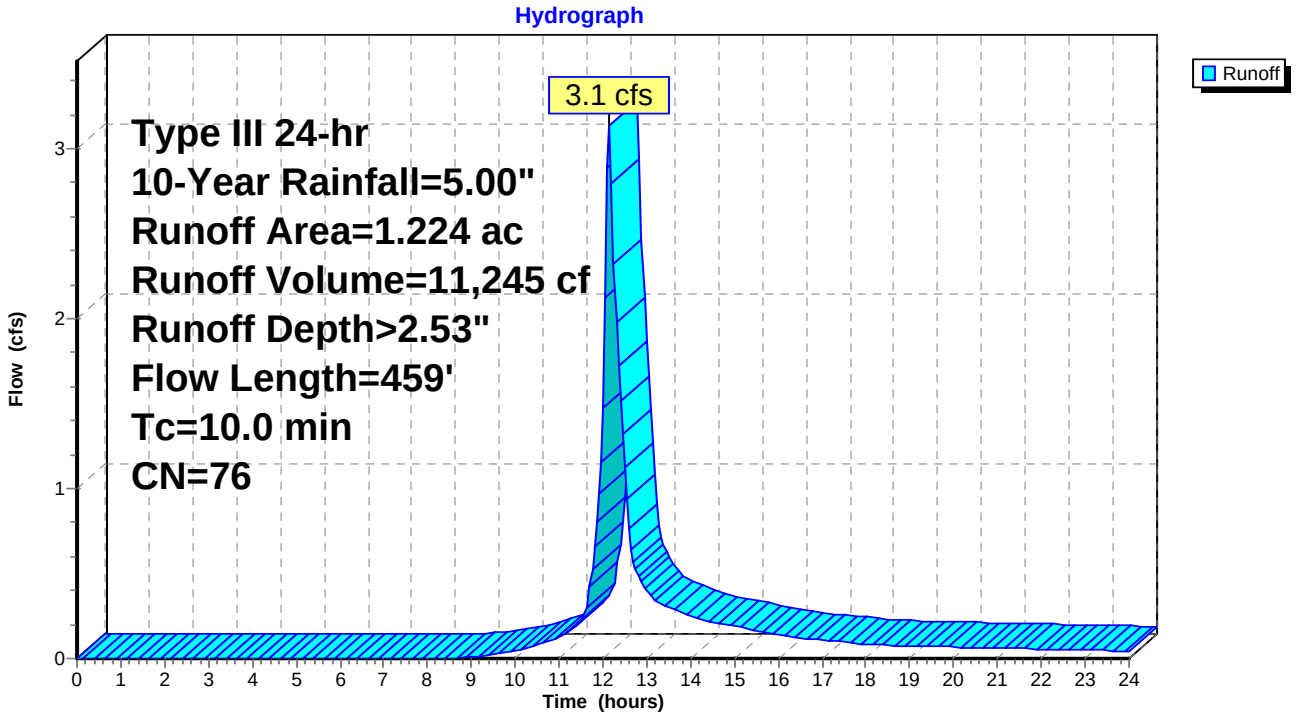
Runoff = 3.1 cfs @ 12.15 hrs, Volume= 11,245 cf, Depth> 2.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 10-Year Rainfall=5.00"

	Area (ac)	CN	Description
	1.085	74	>75% Grass cover, Good, HSG C
	0.090	89	Gravel roads, HSG C
*	0.046	98	Solar array ballasts, HSG C
*	0.003	98	Concrete Equipment Pad, HSG C
	1.224	76	Weighted Average
	1.175		96.00% Pervious Area
	0.049		4.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.5	40	0.0543	0.15		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
1.0	60	0.0117	1.03		**Sheet Flow, Gravel** Smooth surfaces n= 0.011 P2= 3.40"
0.5	86	0.0384	3.15		**Shallow Concentrated Flow, Gravel** Unpaved Kv= 16.1 fps
0.7	76	0.0658	1.80		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	49	0.2245	3.32		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	148	0.1081	15.60	117.00	**Channel Flow, Riprap Swale** Area= 7.5 sf Perim= 8.0' r= 0.94' n= 0.030 Rubble masonry, cemented
7.1	459	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 6S: Landfill E



Summary for Subcatchment 7S: Green Field W

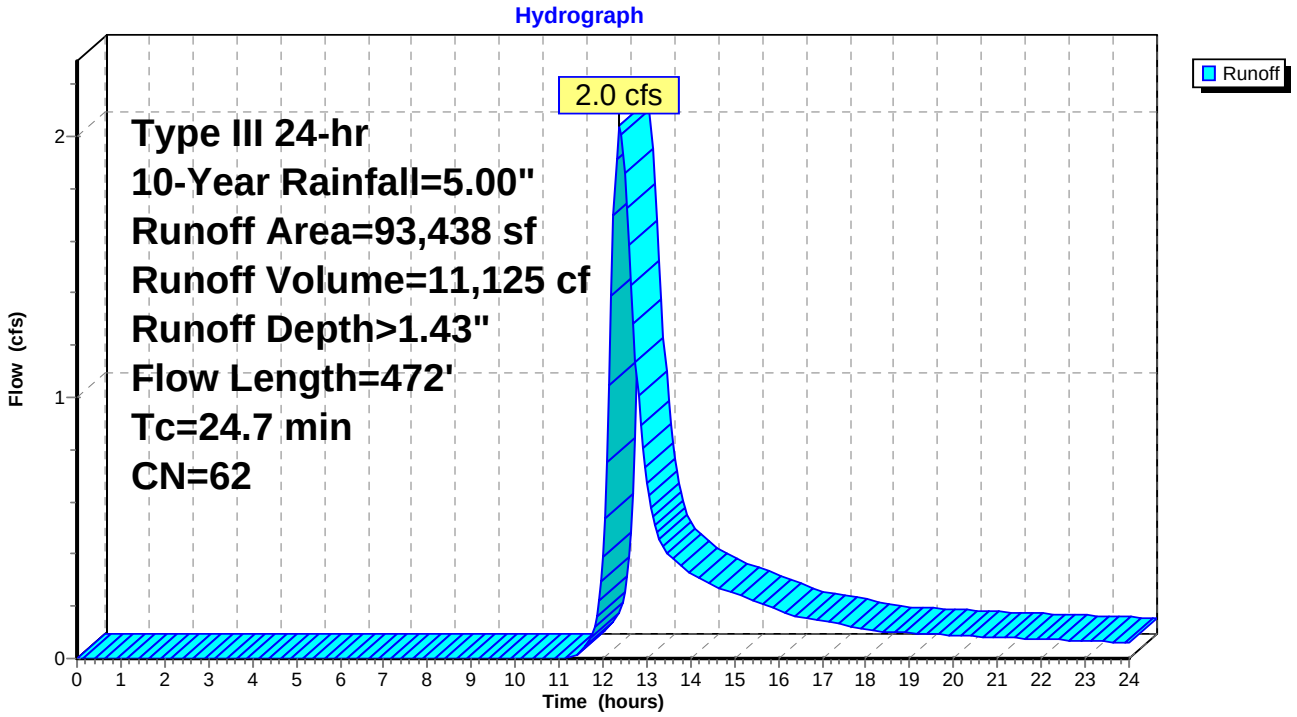
Runoff = 2.0 cfs @ 12.38 hrs, Volume= 11,125 cf, Depth> 1.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 10-Year Rainfall=5.00"

	Area (sf)	CN	Description
	832	74	>75% Grass cover, Good, HSG C
	3,861	80	>75% Grass cover, Good, HSG D
	21,955	61	>75% Grass cover, Good, HSG B
	66,216	61	>75% Grass cover, Good, HSG B
	340	98	Paved parking, HSG C
*	4	98	Solar Array Posts, HSG B
*	230	98	Equipment Pad, HSG B
	93,438	62	Weighted Average
	92,864		99.39% Pervious Area
	574		0.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0123	0.10		**Sheet Flow, Field** Grass: Dense n= 0.240 P2= 3.40"
0.4	23	0.0217	1.03		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
4.8	160	0.0063	0.56		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
0.6	51	0.0392	1.39		**Shallow Concentrated Flow, field** Short Grass Pasture Kv= 7.0 fps
1.4	88	0.0227	1.05		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
0.7	50	0.0300	1.21		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
24.7	472	Total			

Subcatchment 7S: Green Field W



Summary for Subcatchment 8S: Green Field E

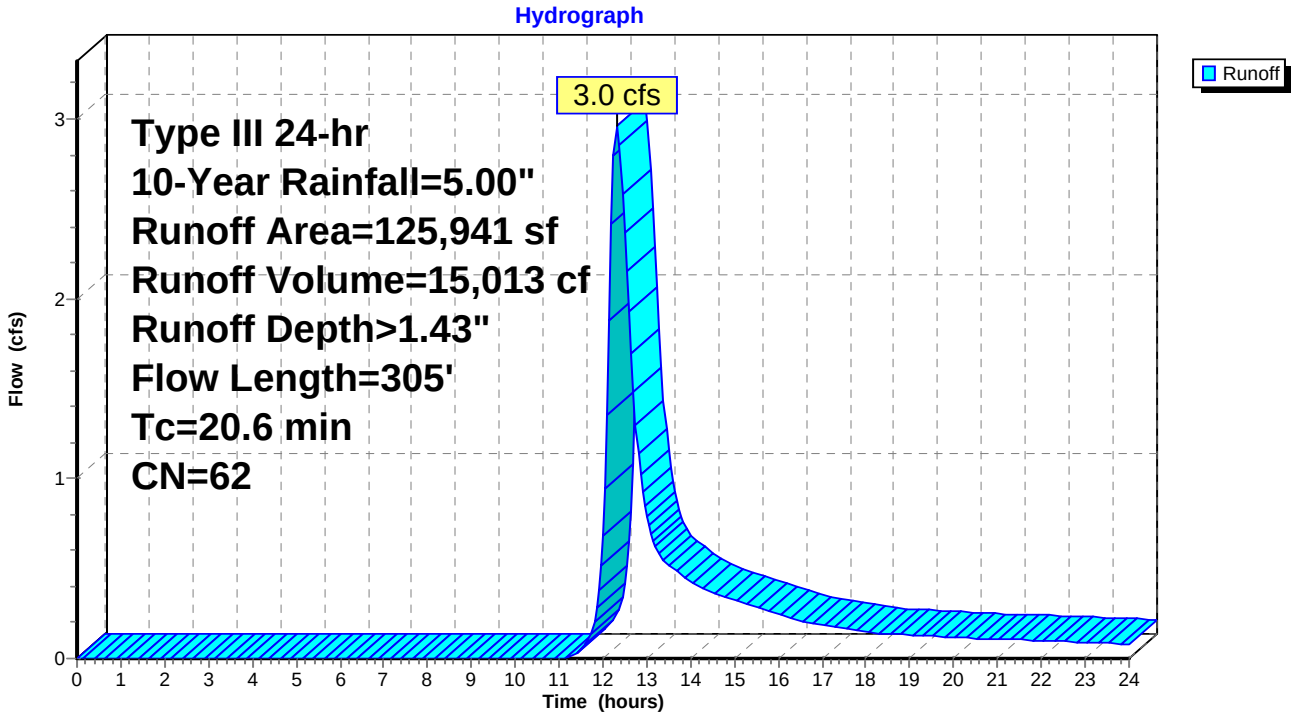
Runoff = 3.0 cfs @ 12.32 hrs, Volume= 15,013 cf, Depth> 1.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 10-Year Rainfall=5.00"

	Area (sf)	CN	Description
	116,936	61	>75% Grass cover, Good, HSG B
	3,129	80	>75% Grass cover, Good, HSG D
	1,452	80	>75% Grass cover, Good, HSG D
	4,419	61	>75% Grass cover, Good, HSG B
*	5	98	Solar Array Posts, HSG B
	125,941	62	Weighted Average
	125,936		100.00% Pervious Area
	5		0.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0123	0.10		**Sheet Flow, Field** Grass: Dense n= 0.240 P2= 3.40"
0.4	24	0.0208	1.01		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
2.6	106	0.0094	0.68		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
0.8	75	0.0467	1.51		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
20.6	305	Total			

Subcatchment 8S: Green Field E



Summary for Subcatchment 9S: Greenfield 2

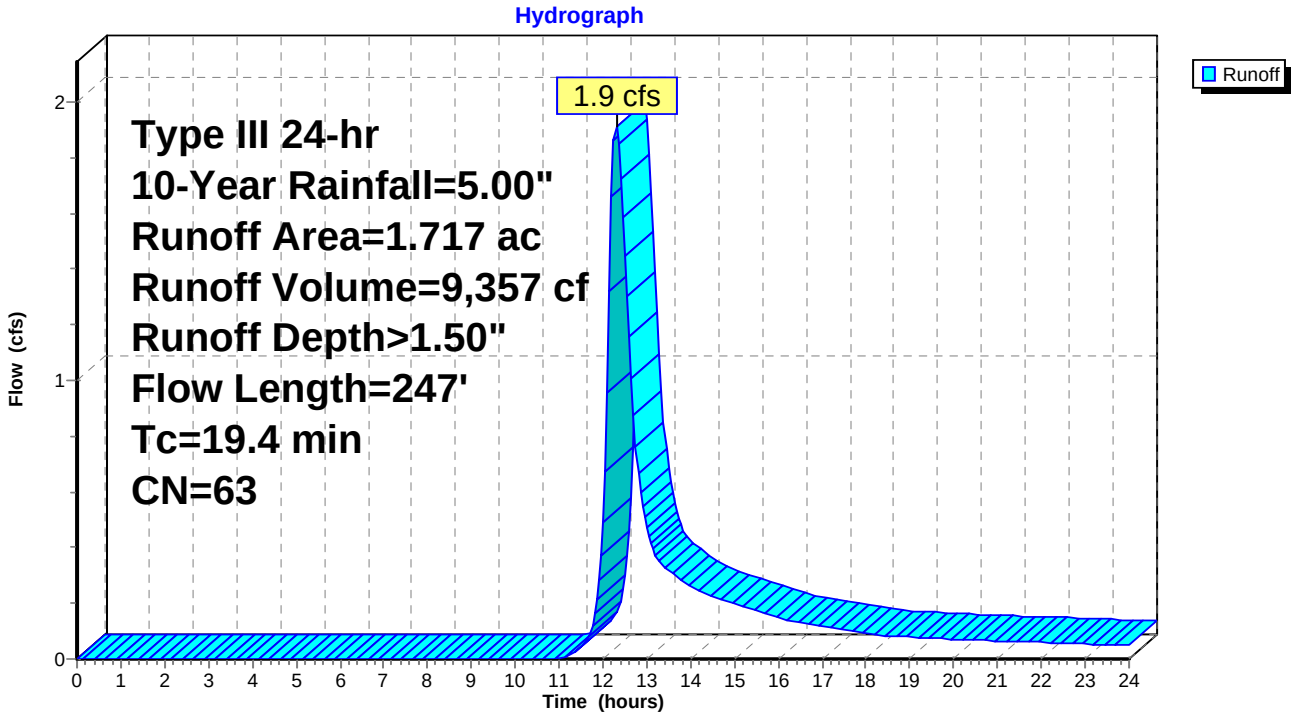
Runoff = 1.9 cfs @ 12.30 hrs, Volume= 9,357 cf, Depth> 1.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 10-Year Rainfall=5.00"

	Area (ac)	CN	Description
	0.091	77	Woods, Good, HSG D
	0.151	55	Woods, Good, HSG B
	1.283	61	>75% Grass cover, Good, HSG B
	0.187	80	>75% Grass cover, Good, HSG D
*	0.000	98	Solar Array Posts, HSG B
	0.005	98	Paved parking, HSG B
	1.717	63	Weighted Average
	1.712		99.71% Pervious Area
	0.005		0.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.5	100	0.0128	0.10		**Sheet Flow, Grass** Grass: Dense n= 0.240 P2= 3.40"
2.9	147	0.0148	0.85		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
19.4	247	Total			

Subcatchment 9S: Greenfield 2



Summary for Reach 19R: Riprap Swale

Inflow Area = 85,378 sf, 3.27% Impervious, Inflow Depth > 2.44" for 10-Year event
Inflow = 4.2 cfs @ 12.21 hrs, Volume= 17,374 cf
Outflow = 4.1 cfs @ 12.26 hrs, Volume= 17,318 cf, Atten= 3%, Lag= 2.7 min

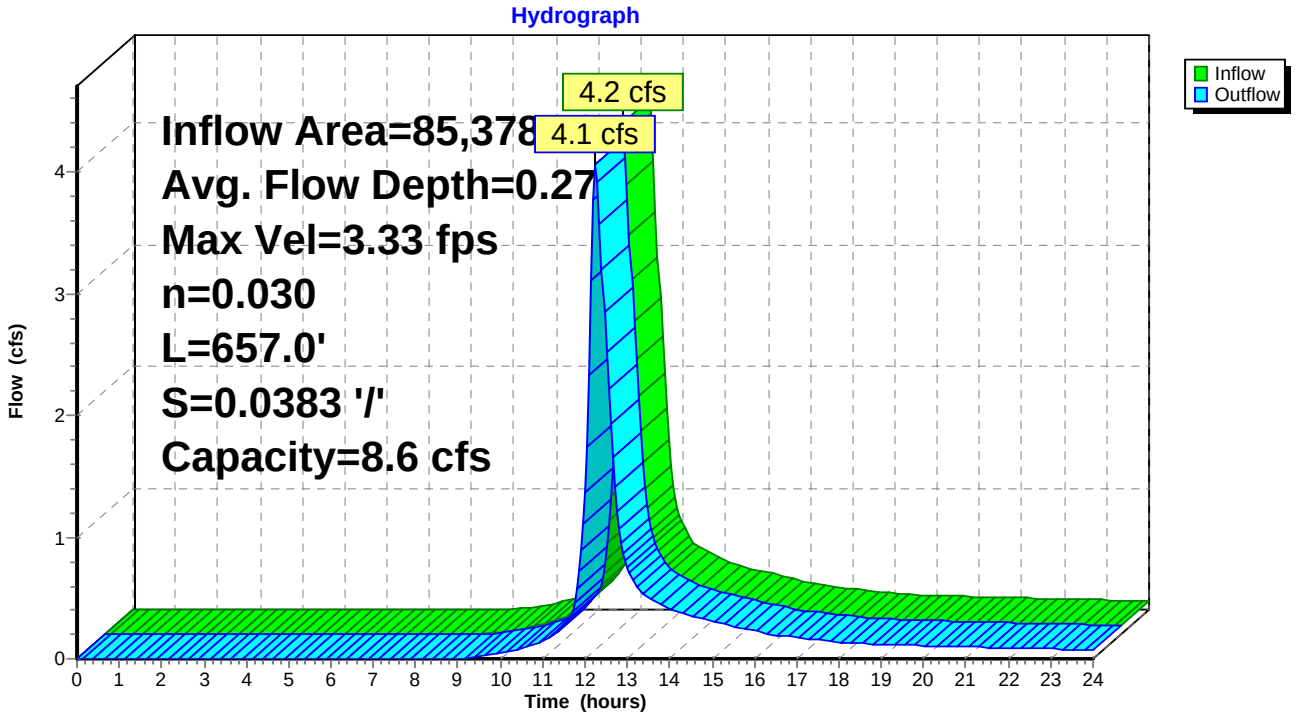
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Max. Velocity= 3.33 fps, Min. Travel Time= 3.3 min
Avg. Velocity = 1.20 fps, Avg. Travel Time= 9.1 min

Peak Storage= 800 cf @ 12.26 hrs
Average Depth at Peak Storage= 0.27'
Bank-Full Depth= 0.40' Flow Area= 2.1 sf, Capacity= 8.6 cfs

3.00' x 0.40' deep channel, n= 0.030 Rubble masonry, cemented
Side Slope Z-value= 5.5 '/' Top Width= 7.40'
Length= 657.0' Slope= 0.0383 '/'
Inlet Invert= 274.52', Outlet Invert= 249.36'

‡

Reach 19R: Riprap Swale



Summary for Reach 21R: Riprap Swale

Inflow Area = 53,317 sf, 4.00% Impervious, Inflow Depth > 2.53" for 10-Year event
Inflow = 3.1 cfs @ 12.15 hrs, Volume= 11,245 cf
Outflow = 3.0 cfs @ 12.18 hrs, Volume= 11,212 cf, Atten= 4%, Lag= 1.9 min

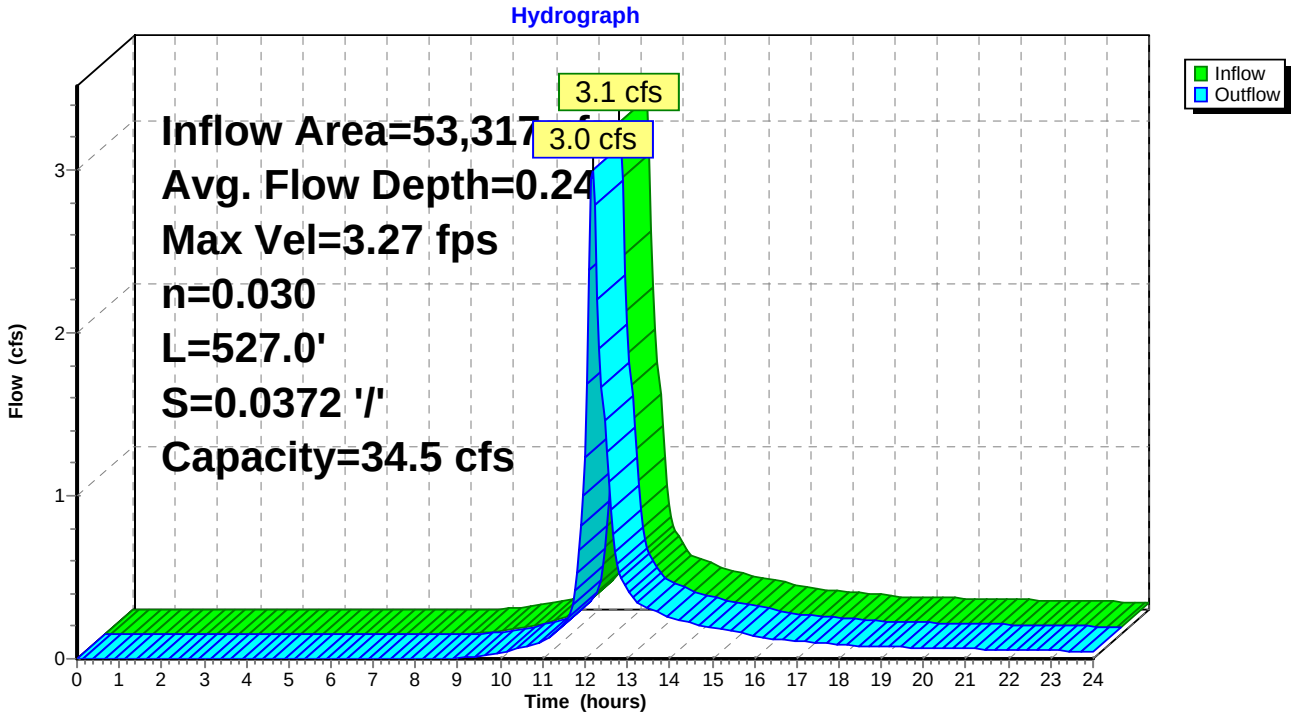
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Max. Velocity= 3.27 fps, Min. Travel Time= 2.7 min
Avg. Velocity = 1.05 fps, Avg. Travel Time= 8.4 min

Peak Storage= 482 cf @ 12.18 hrs
Average Depth at Peak Storage= 0.24'
Bank-Full Depth= 0.90' Flow Area= 5.1 sf, Capacity= 34.5 cfs

3.00' x 0.90' deep channel, n= 0.030 Rubble masonry, cemented
Side Slope Z-value= 3.0 '/' Top Width= 8.40'
Length= 527.0' Slope= 0.0372 '/'
Inlet Invert= 276.70', Outlet Invert= 257.10'

‡

Reach 21R: Riprap Swale

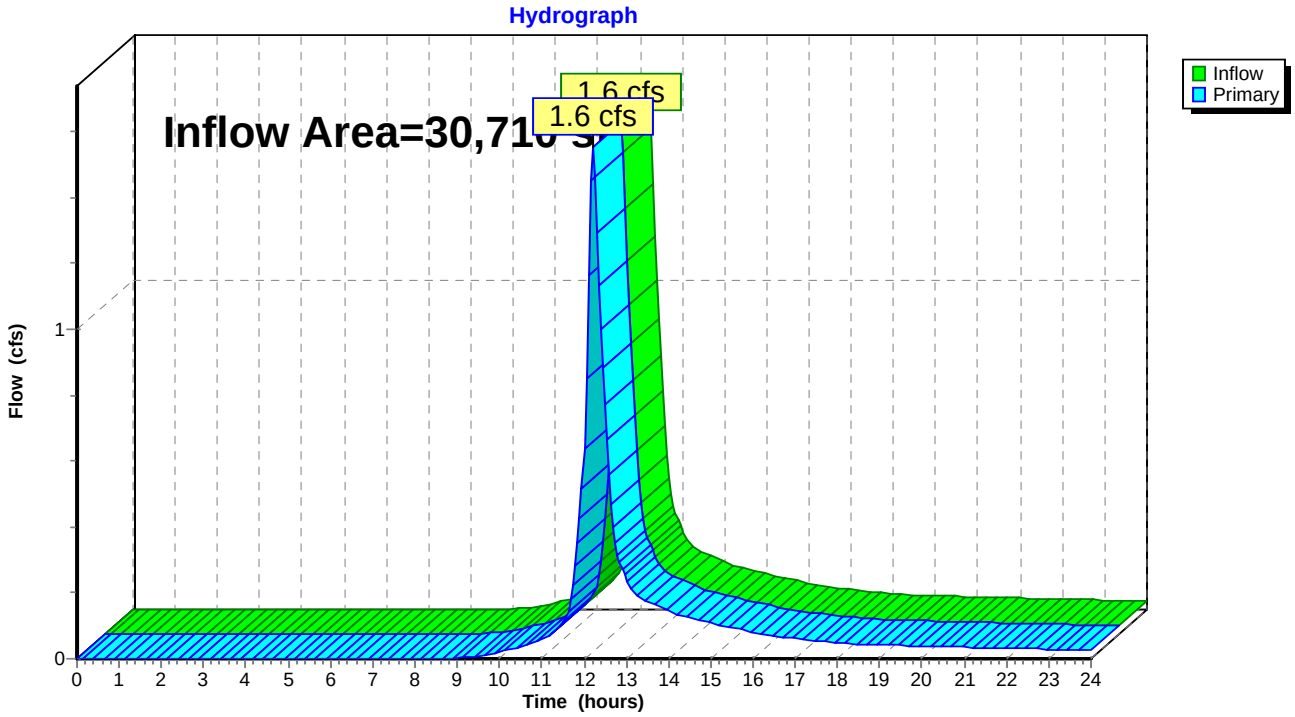


Summary for Link 7L: Wetlands NW

Inflow Area = 30,710 sf, 4.54% Impervious, Inflow Depth > 2.44" for 10-Year event
Inflow = 1.6 cfs @ 12.20 hrs, Volume= 6,251 cf
Primary = 1.6 cfs @ 12.20 hrs, Volume= 6,251 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 7L: Wetlands NW

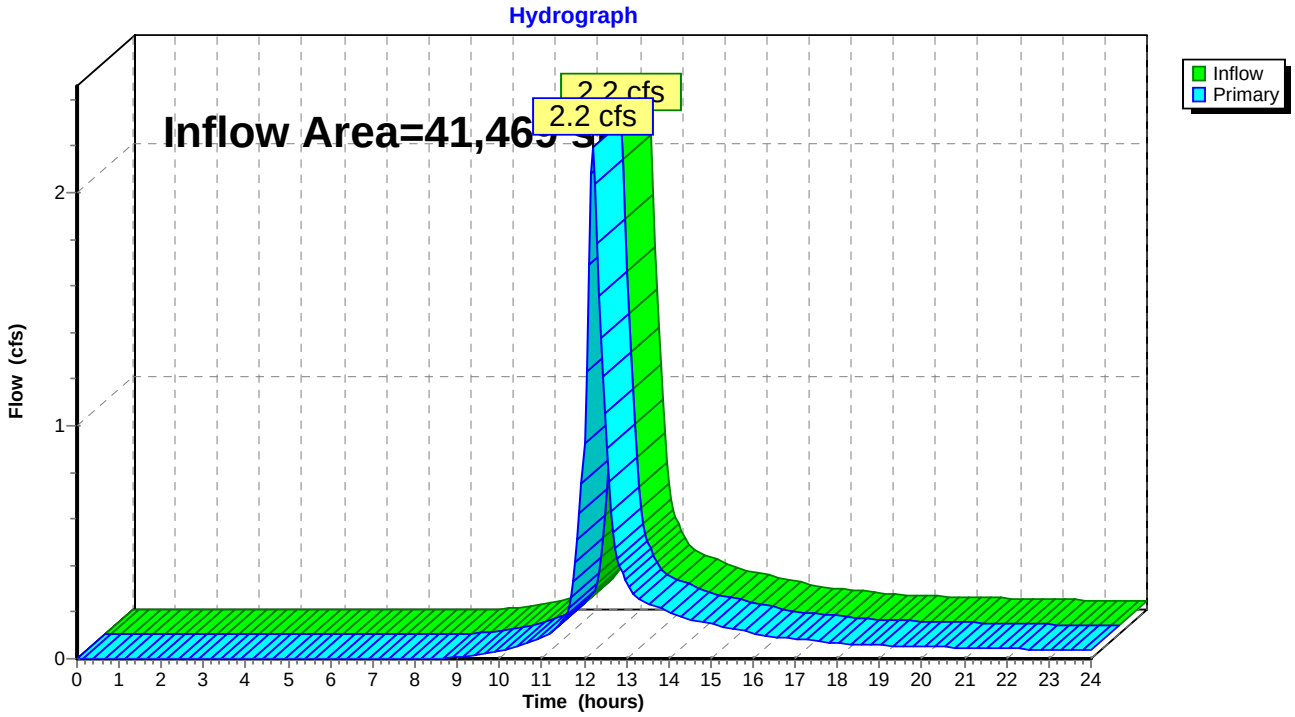


Summary for Link 8L: Depression S

Inflow Area = 41,469 sf, 4.52% Impervious, Inflow Depth > 2.53" for 10-Year event
Inflow = 2.2 cfs @ 12.20 hrs, Volume= 8,739 cf
Primary = 2.2 cfs @ 12.20 hrs, Volume= 8,739 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 8L: Depression S

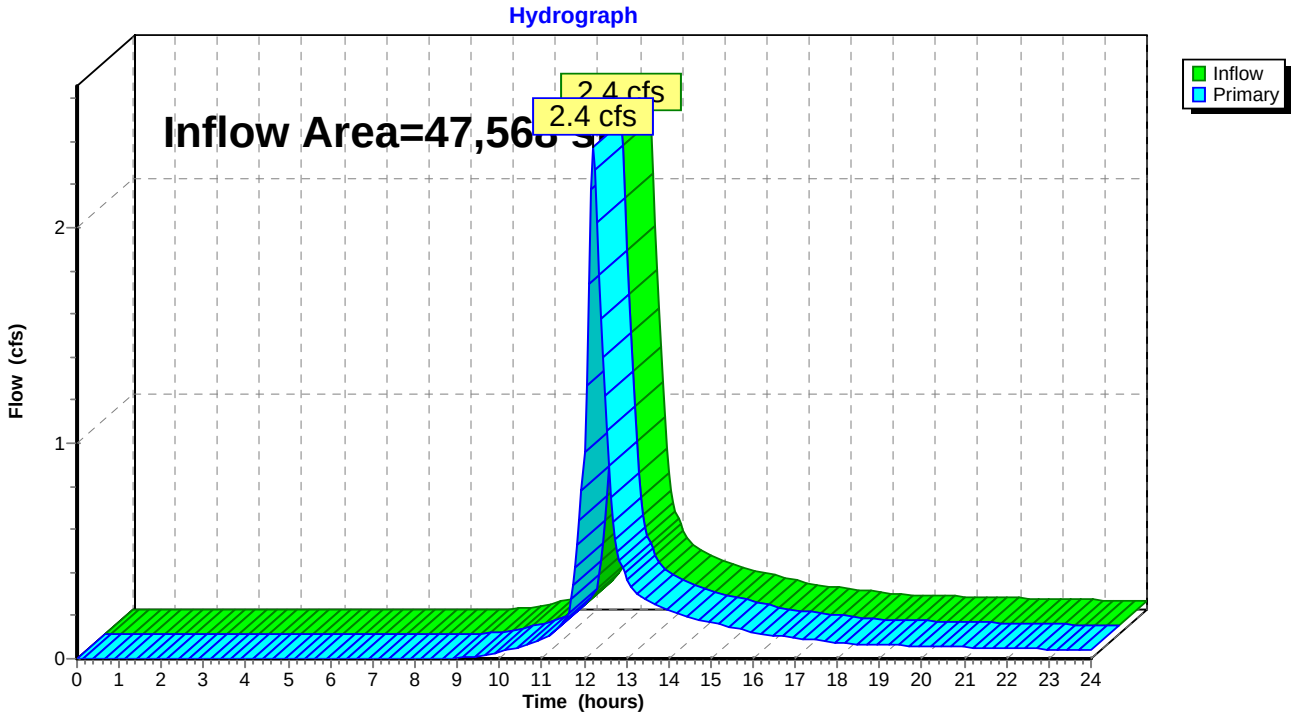


Summary for Link 9L: Wetlands NE

Inflow Area = 47,568 sf, 5.31% Impervious, Inflow Depth > 2.44" for 10-Year event
Inflow = 2.4 cfs @ 12.21 hrs, Volume= 9,681 cf
Primary = 2.4 cfs @ 12.21 hrs, Volume= 9,681 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 9L: Wetlands NE

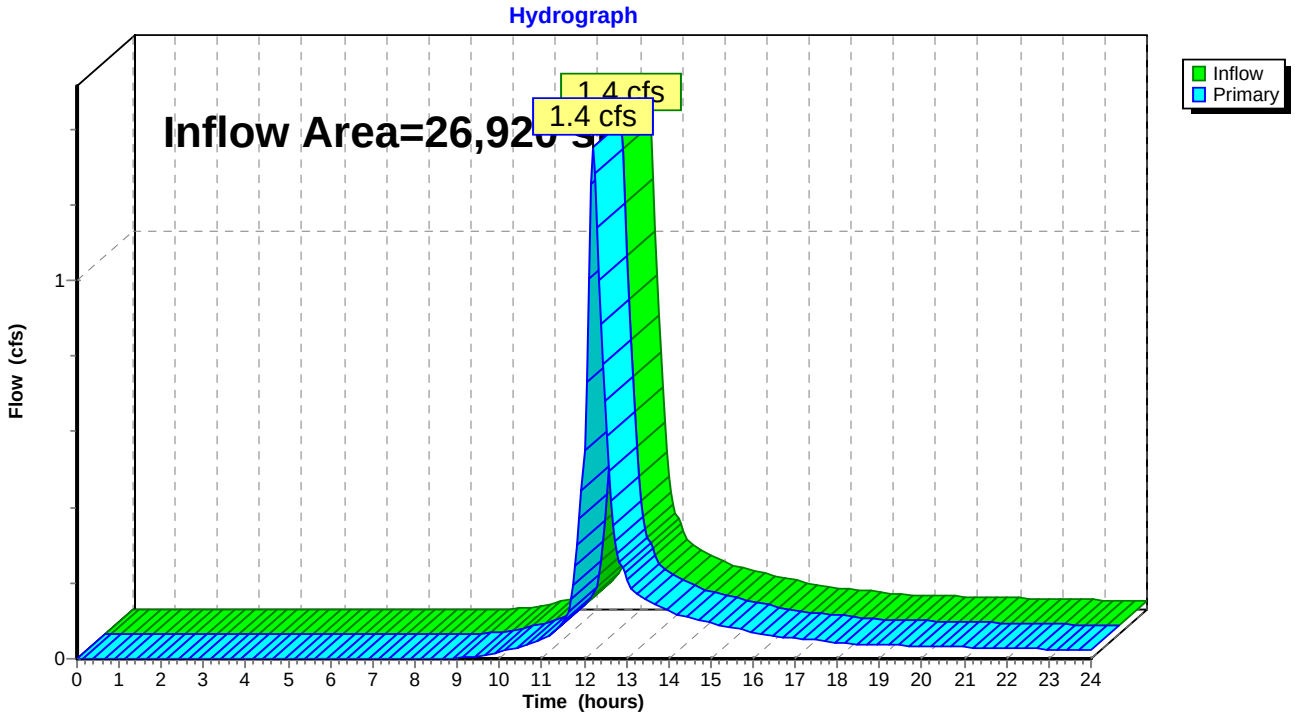


Summary for Link 10L: Wetlands N

Inflow Area = 26,920 sf, 4.53% Impervious, Inflow Depth > 2.44" for 10-Year event
Inflow = 1.4 cfs @ 12.20 hrs, Volume= 5,479 cf
Primary = 1.4 cfs @ 12.20 hrs, Volume= 5,479 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 10L: Wetlands N

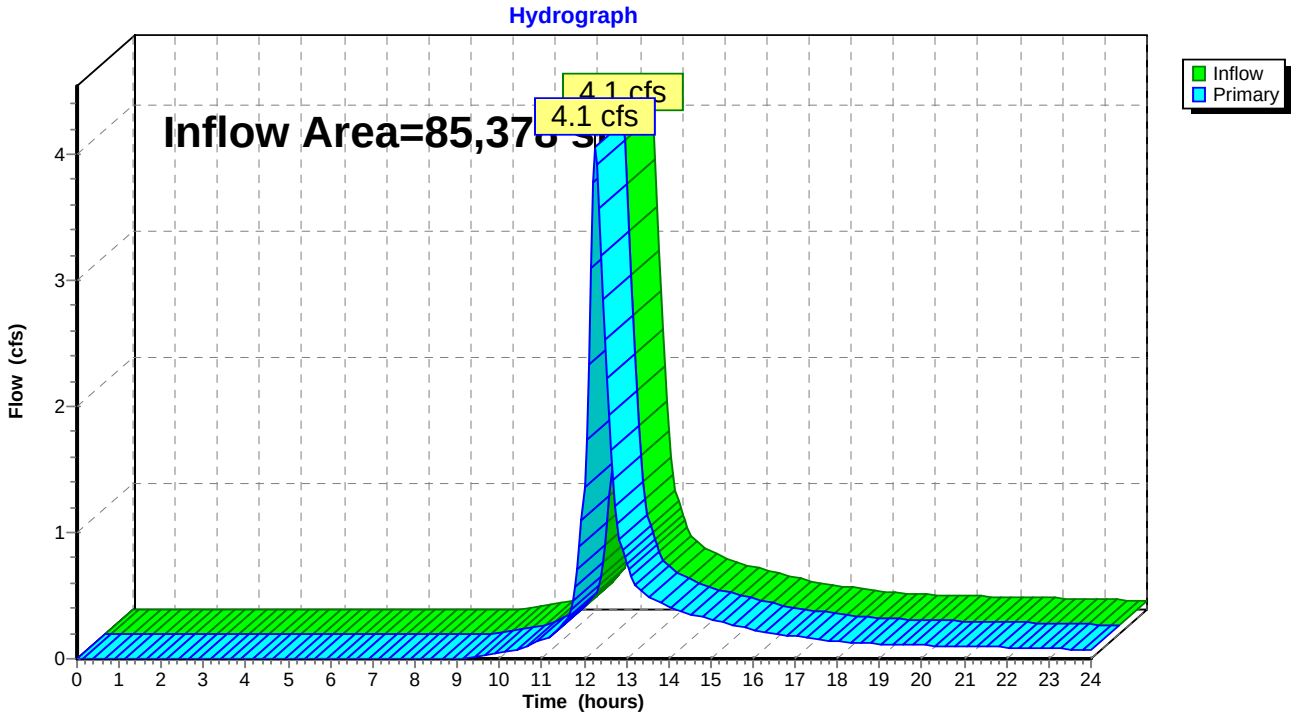


Summary for Link 11L: Collection Swale W

Inflow Area = 85,378 sf, 3.27% Impervious, Inflow Depth > 2.43" for 10-Year event
Inflow = 4.1 cfs @ 12.26 hrs, Volume= 17,318 cf
Primary = 4.1 cfs @ 12.26 hrs, Volume= 17,318 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 11L: Collection Swale W

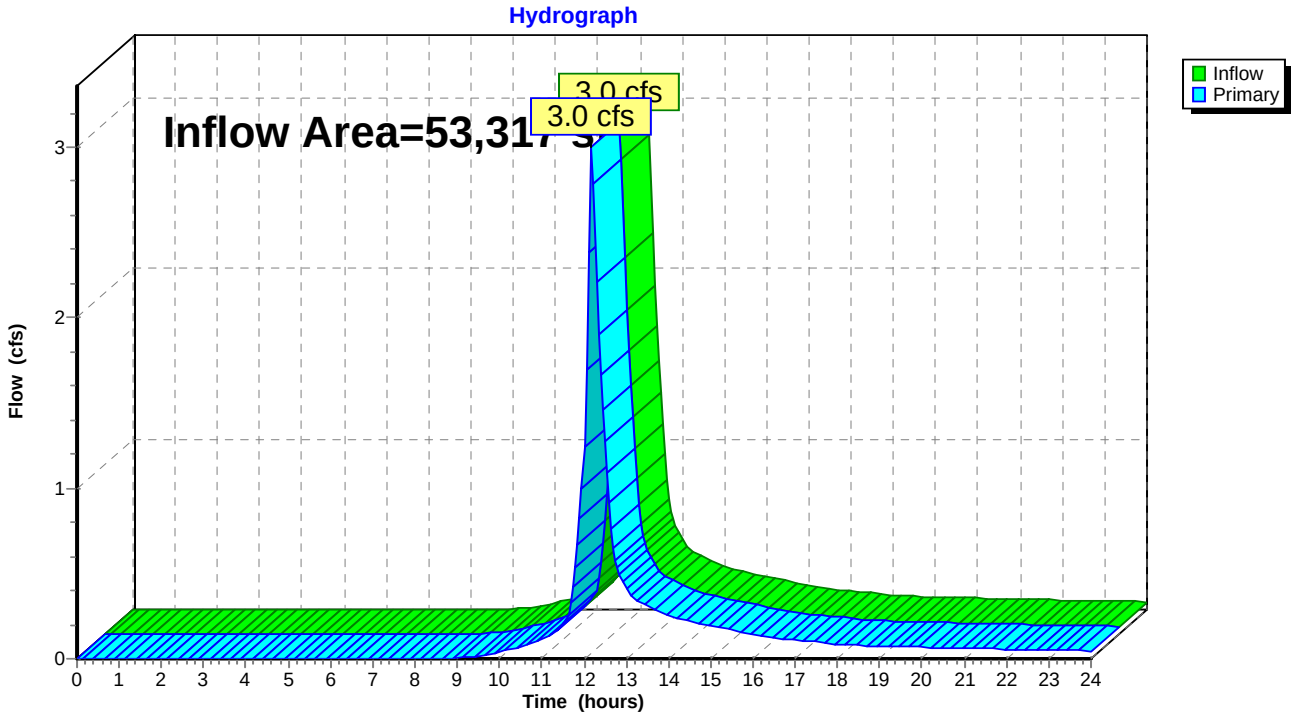


Summary for Link 12L: Collection Swale W

Inflow Area = 53,317 sf, 4.00% Impervious, Inflow Depth > 2.52" for 10-Year event
Inflow = 3.0 cfs @ 12.18 hrs, Volume= 11,212 cf
Primary = 3.0 cfs @ 12.18 hrs, Volume= 11,212 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 12L: Collection Swale W

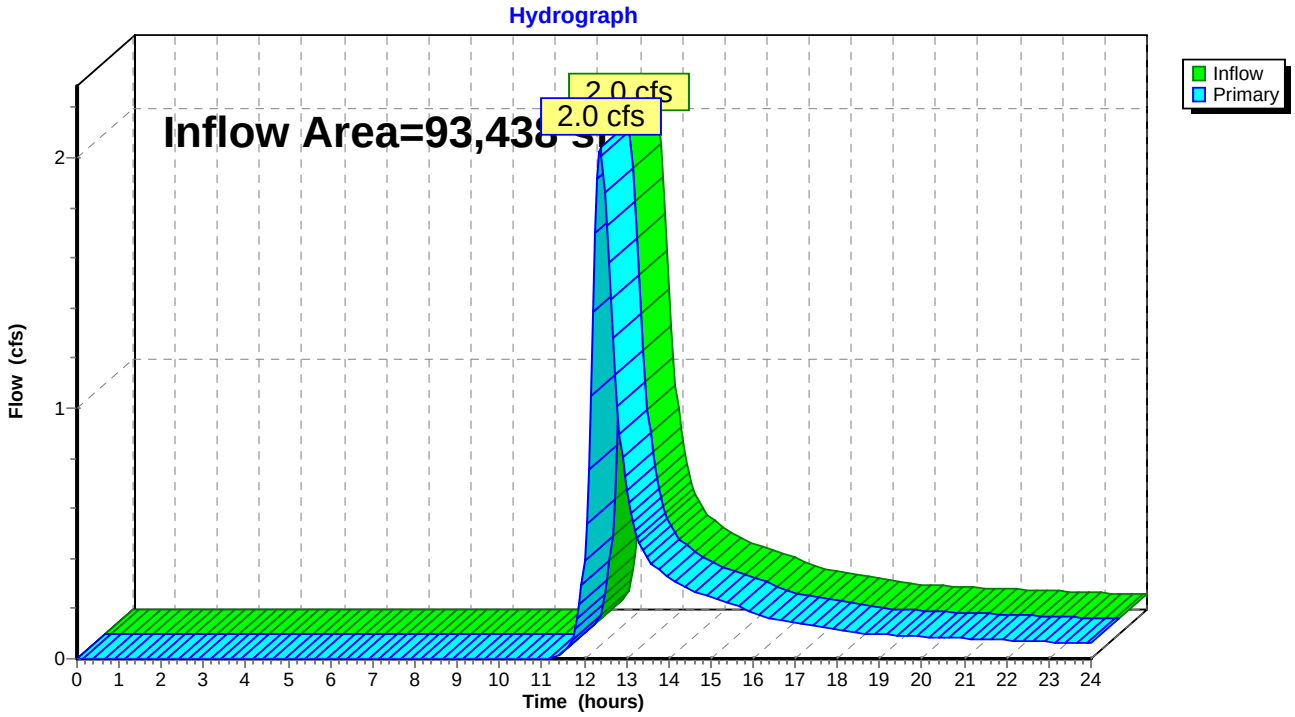


Summary for Link 15L: Wetland W

Inflow Area = 93,438 sf, 0.61% Impervious, Inflow Depth > 1.43" for 10-Year event
Inflow = 2.0 cfs @ 12.38 hrs, Volume= 11,125 cf
Primary = 2.0 cfs @ 12.38 hrs, Volume= 11,125 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 15L: Wetland W

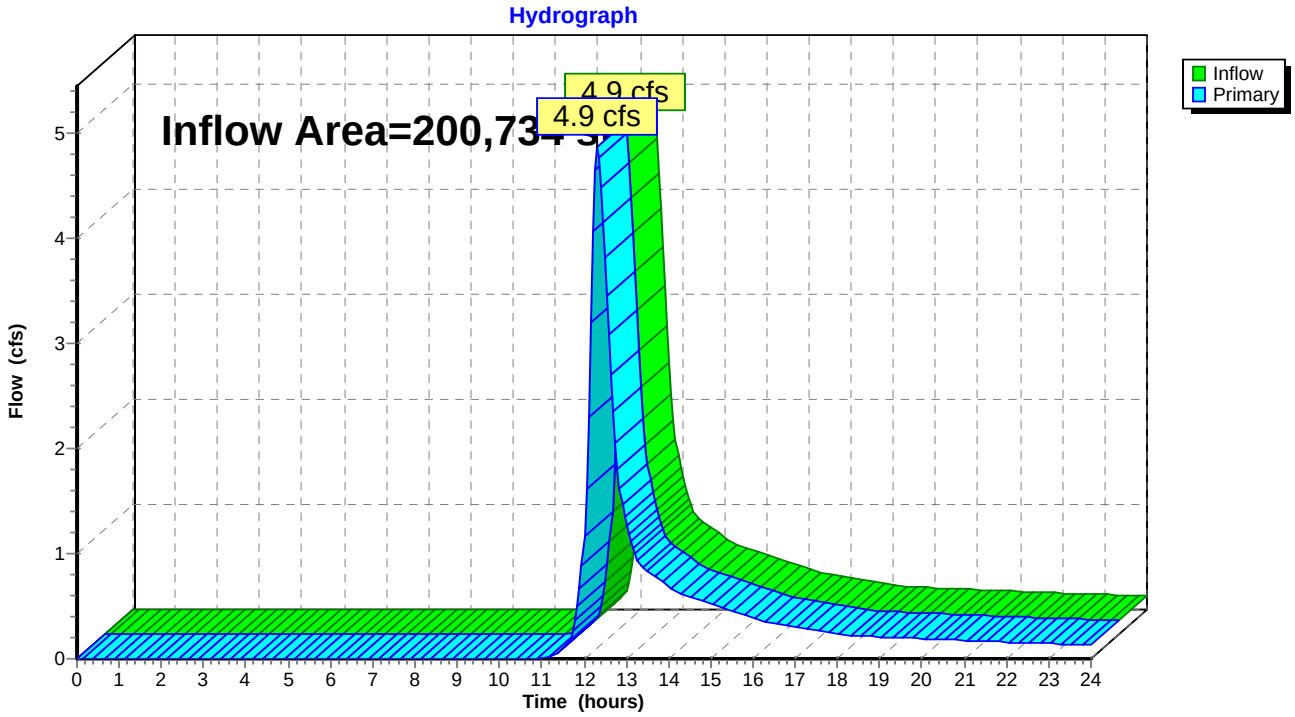


Summary for Link 16L: Wetland E

Inflow Area = 200,734 sf, 0.11% Impervious, Inflow Depth > 1.46" for 10-Year event
Inflow = 4.9 cfs @ 12.31 hrs, Volume= 24,370 cf
Primary = 4.9 cfs @ 12.31 hrs, Volume= 24,370 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 16L: Wetland E



Time span=0.00-24.00 hrs, dt=0.050 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Bulky Waste Landfill SW Runoff Area=0.952 ac 4.52% Impervious Runoff Depth>3.11"
Flow Length=239' Tc=13.7 min CN=76 Runoff=2.7 cfs 10,764 cf

Subcatchment 2S: Bulky Waste Landfill NW Runoff Area=0.705 ac 4.54% Impervious Runoff Depth>3.02"
Flow Length=179' Tc=14.1 min CN=75 Runoff=1.9 cfs 7,729 cf

Subcatchment 3S: Bulky Waste Landfill E Runoff Area=1.092 ac 5.31% Impervious Runoff Depth>3.02"
Flow Length=204' Tc=14.6 min CN=75 Runoff=2.9 cfs 11,970 cf

Subcatchment 4S: Landfill N Runoff Area=0.618 ac 4.53% Impervious Runoff Depth>3.02"
Flow Length=222' Tc=14.3 min CN=75 Runoff=1.7 cfs 6,775 cf

Subcatchment 5S: Landfill W Runoff Area=1.960 ac 3.27% Impervious Runoff Depth>3.02"
Flow Length=752' Tc=15.2 min CN=75 Runoff=5.2 cfs 21,482 cf

Subcatchment 6S: Landfill E Runoff Area=1.224 ac 4.00% Impervious Runoff Depth>3.12"
Flow Length=459' Tc=10.0 min CN=76 Runoff=3.9 cfs 13,851 cf

Subcatchment 7S: Green Field W Runoff Area=93,438 sf 0.61% Impervious Runoff Depth>1.88"
Flow Length=472' Tc=24.7 min CN=62 Runoff=2.8 cfs 14,608 cf

Subcatchment 8S: Green Field E Runoff Area=125,941 sf 0.00% Impervious Runoff Depth>1.88"
Flow Length=305' Tc=20.6 min CN=62 Runoff=4.0 cfs 19,713 cf

Subcatchment 9S: Greenfield 2 Runoff Area=1.717 ac 0.29% Impervious Runoff Depth>1.96"
Flow Length=247' Tc=19.4 min CN=63 Runoff=2.6 cfs 12,217 cf

Reach 19R: Riprap Swale Avg. Flow Depth=0.30' Max Vel=3.55 fps Inflow=5.2 cfs 21,482 cf
n=0.030 L=657.0' S=0.0383 '/' Capacity=8.6 cfs Outflow=5.1 cfs 21,420 cf

Reach 21R: Riprap Swale Avg. Flow Depth=0.28' Max Vel=3.50 fps Inflow=3.9 cfs 13,851 cf
n=0.030 L=527.0' S=0.0372 '/' Capacity=34.5 cfs Outflow=3.7 cfs 13,814 cf

Link 7L: Wetlands NW Inflow=1.9 cfs 7,729 cf
Primary=1.9 cfs 7,729 cf

Link 8L: Depression S Inflow=2.7 cfs 10,764 cf
Primary=2.7 cfs 10,764 cf

Link 9L: Wetlands NE Inflow=2.9 cfs 11,970 cf
Primary=2.9 cfs 11,970 cf

Link 10L: Wetlands N Inflow=1.7 cfs 6,775 cf
Primary=1.7 cfs 6,775 cf

Link 11L: Collection Swale W Inflow=5.1 cfs 21,420 cf
Primary=5.1 cfs 21,420 cf

Link 12L: Collection Swale W Inflow=3.7 cfs 13,814 cf
Primary=3.7 cfs 13,814 cf

Link 15L: Wetland W Inflow=2.8 cfs 14,608 cf
Primary=2.8 cfs 14,608 cf

Link 16L: Wetland E Inflow=6.6 cfs 31,930 cf
Primary=6.6 cfs 31,930 cf

Total Runoff Area = 579,533 sf Runoff Volume = 119,109 cf Average Runoff Depth = 2.47"
97.80% Pervious = 566,801 sf 2.20% Impervious = 12,732 sf

Summary for Subcatchment 1S: Bulky Waste Landfill SW

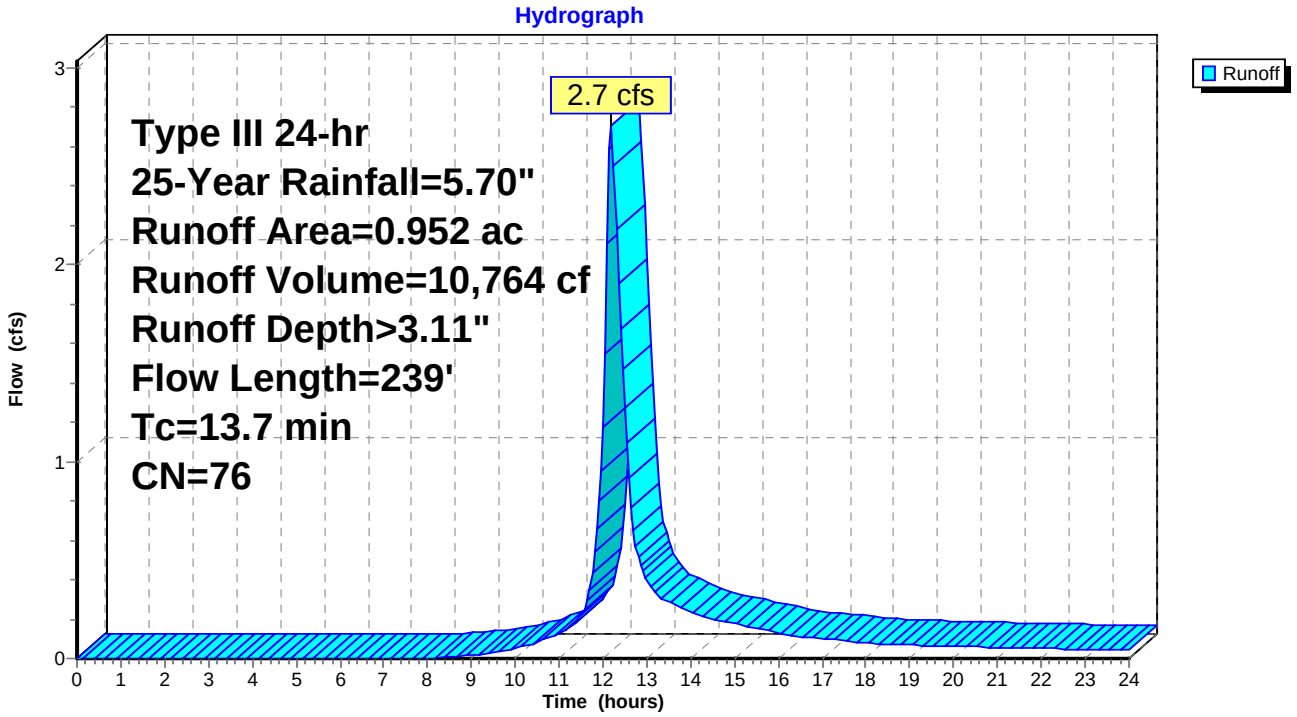
Runoff = 2.7 cfs @ 12.19 hrs, Volume= 10,764 cf, Depth> 3.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (ac)	CN	Description
	0.829	74	>75% Grass cover, Good, HSG C
	0.080	89	Gravel roads, HSG C
*	0.003	98	Equipment Pad, HSG C
*	0.040	98	Solar array Ballasts, HSG C
	0.952	76	Weighted Average
	0.909		95.48% Pervious Area
	0.043		4.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.6	100	0.0251	0.13		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
0.5	66	0.1137	2.36		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	46	0.1957	3.10		**Shallow Concentrated Flow, Lanfill Cap** Short Grass Pasture Kv= 7.0 fps
0.4	27	0.0050	1.14		**Shallow Concentrated Flow, Access Drive** Unpaved Kv= 16.1 fps
13.7	239	Total			

Subcatchment 1S: Bulky Waste Landfill SW



Summary for Subcatchment 2S: Bulky Waste Landfill NW

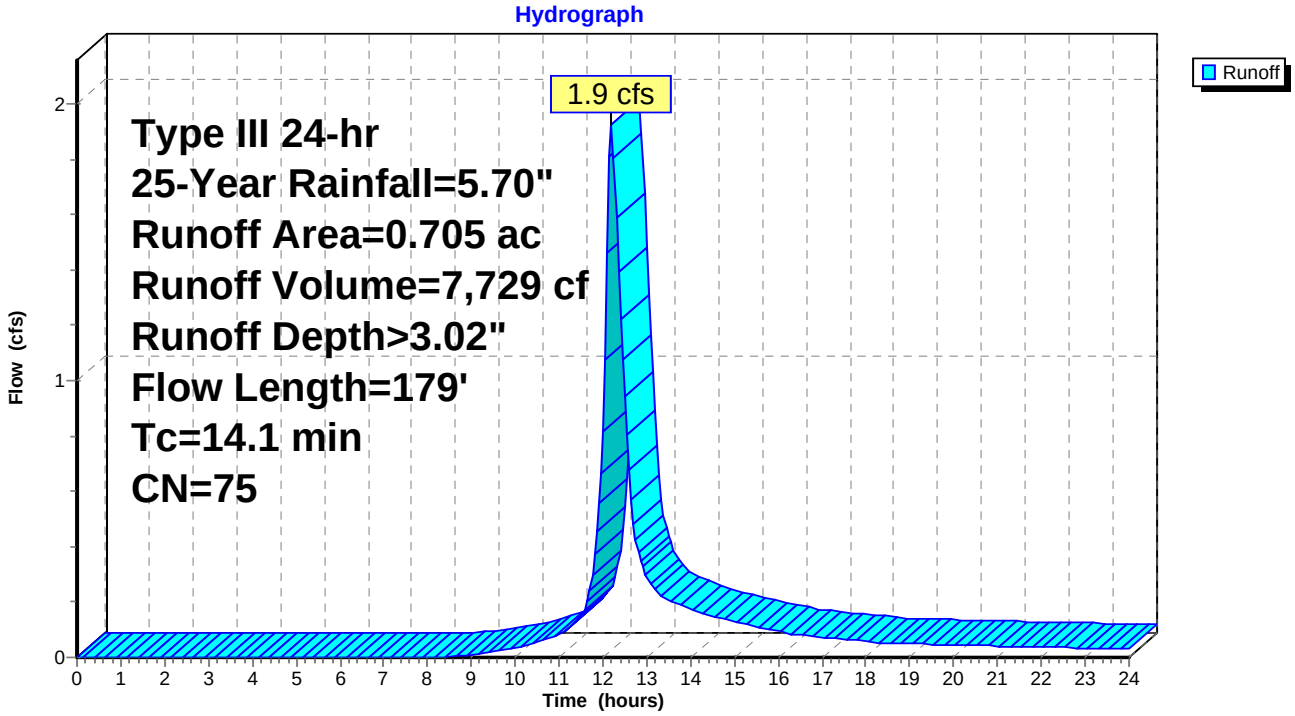
Runoff = 1.9 cfs @ 12.20 hrs, Volume= 7,729 cf, Depth> 3.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (ac)	CN	Description
	0.659	74	>75% Grass cover, Good, HSG C
*	0.032	98	Solar array ballasts, HSG C
	0.014	89	Gravel roads, HSG C
	0.705	75	Weighted Average
	0.673		95.46% Pervious Area
	0.032		4.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0212	0.12		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
0.6	79	0.0886	2.08		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
14.1	179	Total			

Subcatchment 2S: Bulky Waste Landfill NW



Summary for Subcatchment 3S: Bulky Waste Landfill E

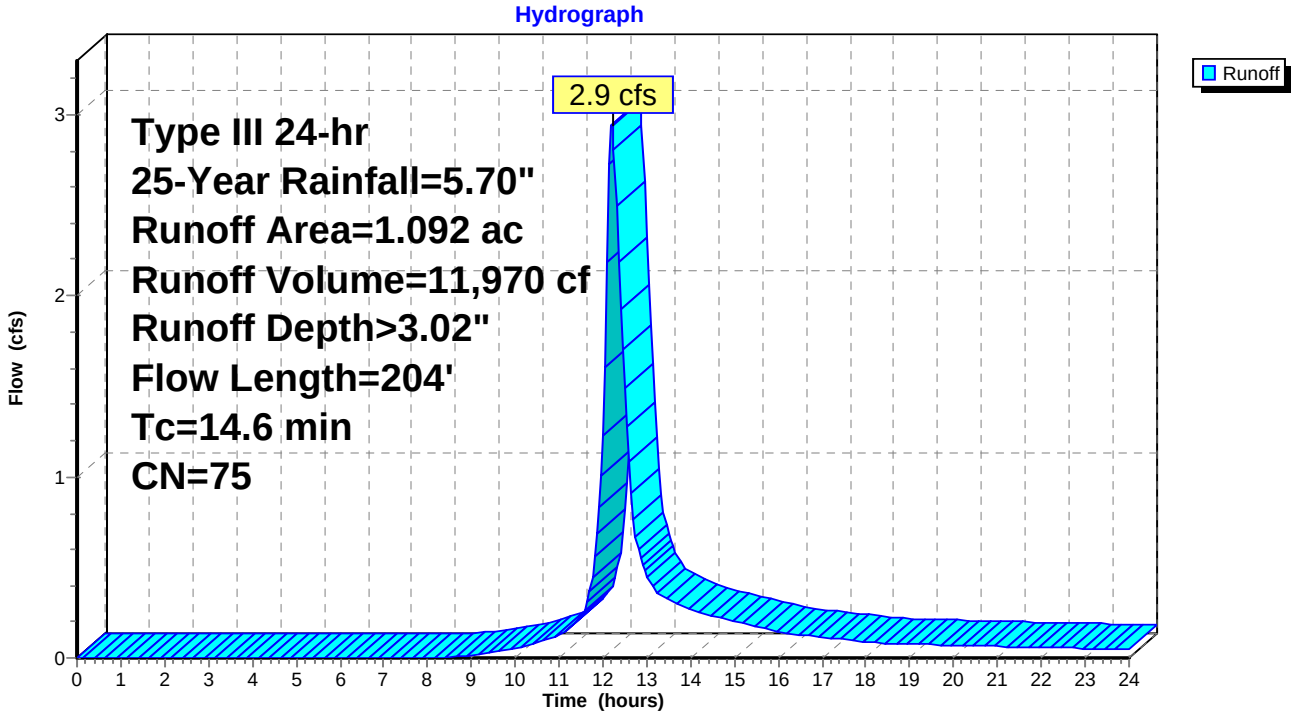
Runoff = 2.9 cfs @ 12.21 hrs, Volume= 11,970 cf, Depth> 3.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (ac)	CN	Description
	1.034	74	>75% Grass cover, Good, HSG C
*	0.058	98	Solar array ballasts, HSG C
	1.092	75	Weighted Average
	1.034		94.69% Pervious Area
	0.058		5.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0212	0.12		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
1.0	80	0.0375	1.36		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.1	24	0.1667	2.86		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
14.6	204	Total			

Subcatchment 3S: Bulky Waste Landfill E



Summary for Subcatchment 4S: Landfill N

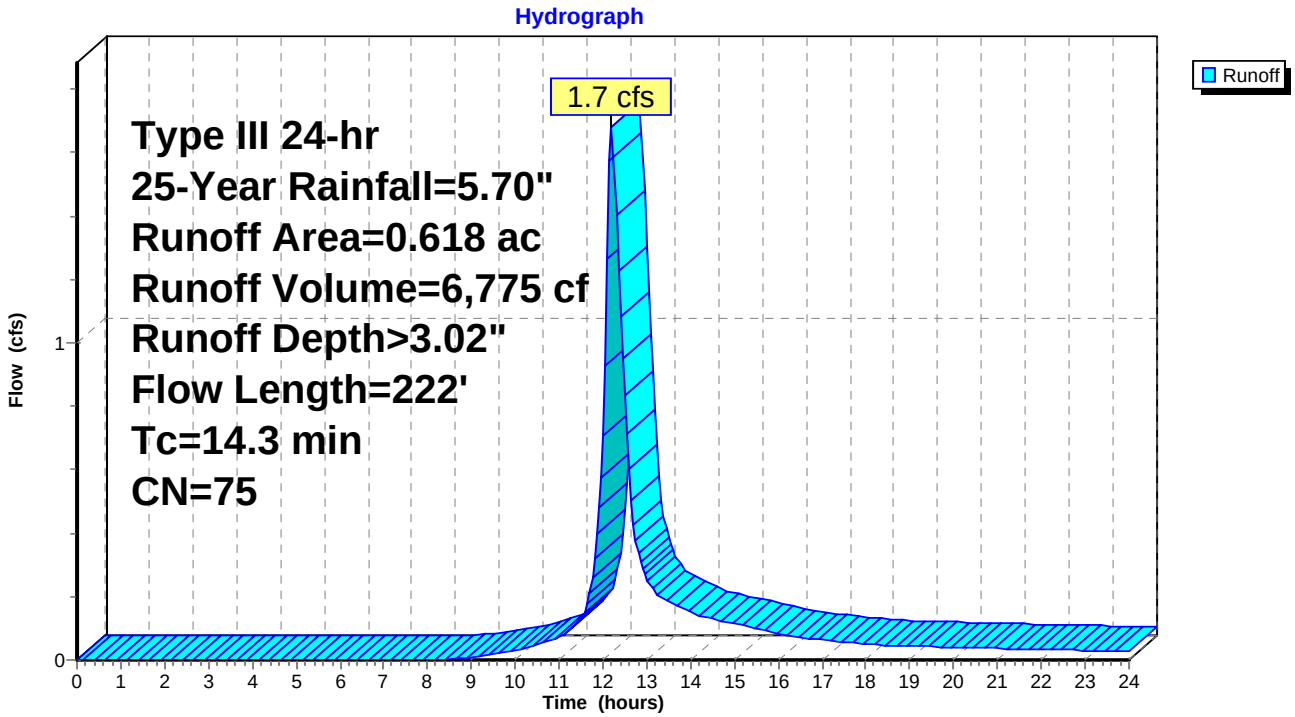
Runoff = 1.7 cfs @ 12.20 hrs, Volume= 6,775 cf, Depth> 3.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (ac)	CN	Description
	0.590	74	>75% Grass cover, Good, HSG C
*	0.028	98	Solar array ballasts, HSG C
	0.618	75	Weighted Average
	0.590		95.47% Pervious Area
	0.028		4.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	100	0.0230	0.13		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
1.0	81	0.0371	1.35		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	41	0.1707	2.89		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
14.3	222	Total			

Subcatchment 4S: Landfill N



Summary for Subcatchment 5S: Landfill W

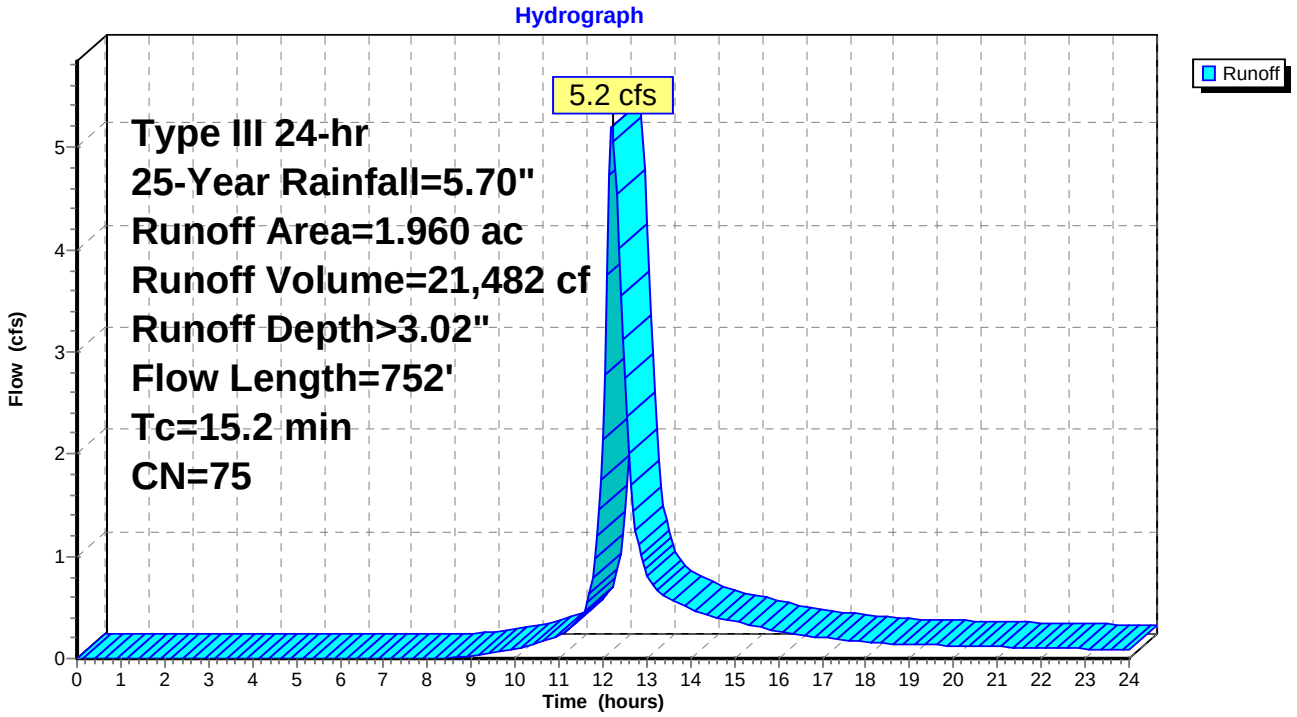
Runoff = 5.2 cfs @ 12.21 hrs, Volume= 21,482 cf, Depth> 3.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (ac)	CN	Description
	1.896	74	>75% Grass cover, Good, HSG C
*	0.064	98	Solar array ballasts, HSG C
	1.960	75	Weighted Average
	1.896		96.73% Pervious Area
	0.064		3.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.3	100	0.0220	0.13		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
0.3	37	0.0811	1.99		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.3	58	0.1897	3.05		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
1.3	520	0.0200	6.71	50.33	**Channel Flow, Riprap Swale** Area= 7.5 sf Perim= 8.0' r= 0.94' n= 0.030 Rubble masonry, cemented
0.0	37	0.2160	22.05	165.39	**Channel Flow, Riprap Swale** Area= 7.5 sf Perim= 8.0' r= 0.94' n= 0.030 Rubble masonry, cemented
15.2	752	Total			

Subcatchment 5S: Landfill W



Summary for Subcatchment 6S: Landfill E

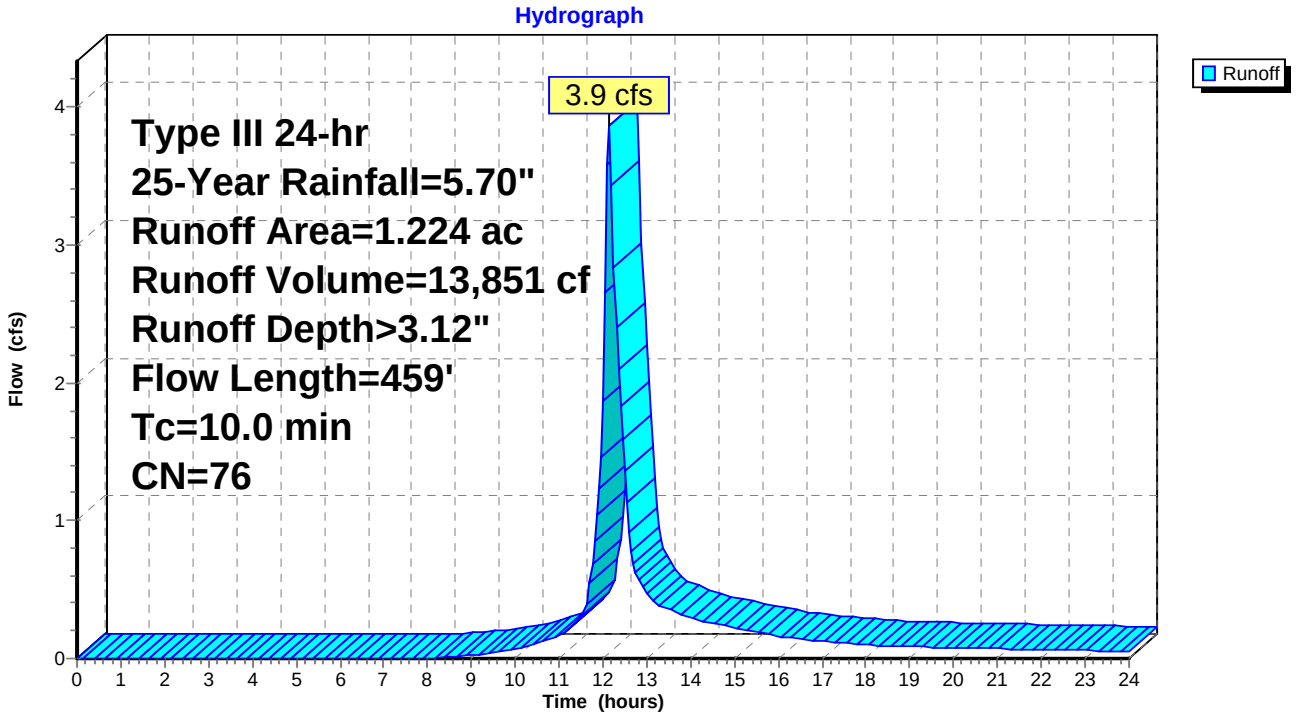
Runoff = 3.9 cfs @ 12.14 hrs, Volume= 13,851 cf, Depth> 3.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (ac)	CN	Description
	1.085	74	>75% Grass cover, Good, HSG C
	0.090	89	Gravel roads, HSG C
*	0.046	98	Solar array ballasts, HSG C
*	0.003	98	Concrete Equipment Pad, HSG C
	1.224	76	Weighted Average
	1.175		96.00% Pervious Area
	0.049		4.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.5	40	0.0543	0.15		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
1.0	60	0.0117	1.03		**Sheet Flow, Gravel** Smooth surfaces n= 0.011 P2= 3.40"
0.5	86	0.0384	3.15		**Shallow Concentrated Flow, Gravel** Unpaved Kv= 16.1 fps
0.7	76	0.0658	1.80		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	49	0.2245	3.32		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	148	0.1081	15.60	117.00	**Channel Flow, Riprap Swale** Area= 7.5 sf Perim= 8.0' r= 0.94' n= 0.030 Rubble masonry, cemented
7.1	459	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 6S: Landfill E



Summary for Subcatchment 7S: Green Field W

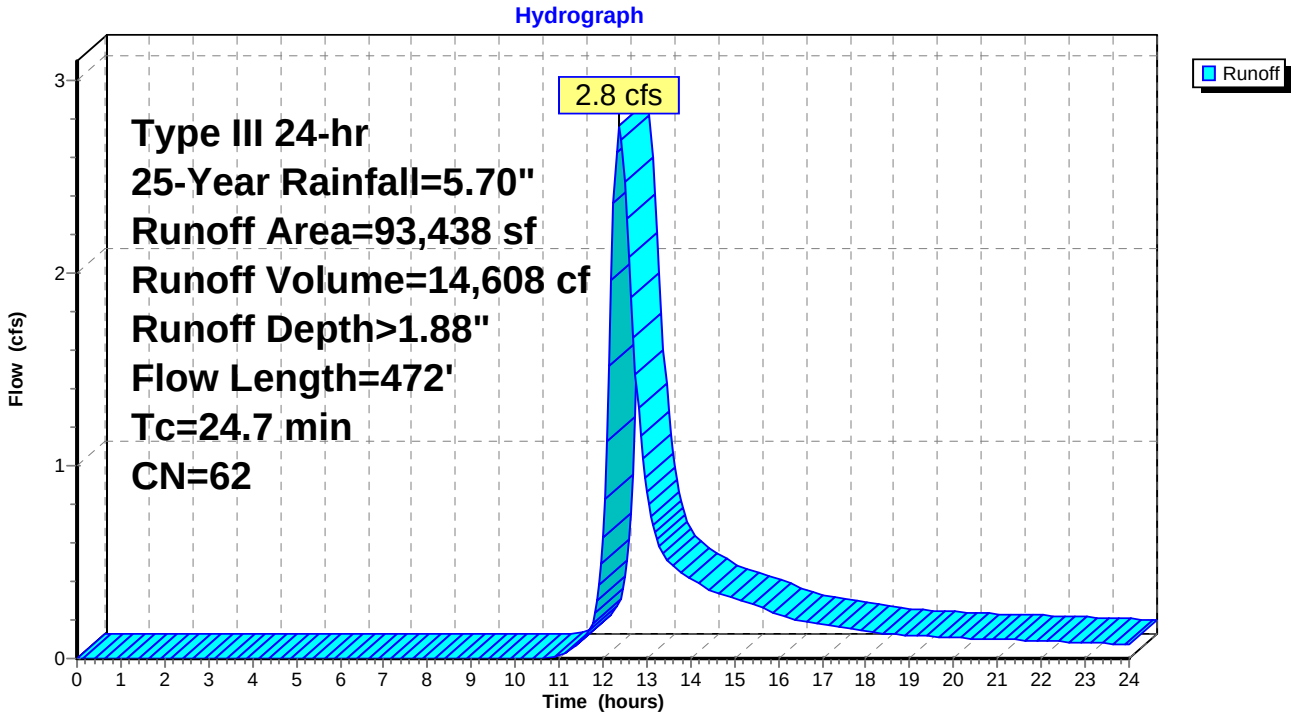
Runoff = 2.8 cfs @ 12.37 hrs, Volume= 14,608 cf, Depth> 1.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (sf)	CN	Description
	832	74	>75% Grass cover, Good, HSG C
	3,861	80	>75% Grass cover, Good, HSG D
	21,955	61	>75% Grass cover, Good, HSG B
	66,216	61	>75% Grass cover, Good, HSG B
	340	98	Paved parking, HSG C
*	4	98	Solar Array Posts, HSG B
*	230	98	Equipment Pad, HSG B
	93,438	62	Weighted Average
	92,864		99.39% Pervious Area
	574		0.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0123	0.10		**Sheet Flow, Field** Grass: Dense n= 0.240 P2= 3.40"
0.4	23	0.0217	1.03		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
4.8	160	0.0063	0.56		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
0.6	51	0.0392	1.39		**Shallow Concentrated Flow, field** Short Grass Pasture Kv= 7.0 fps
1.4	88	0.0227	1.05		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
0.7	50	0.0300	1.21		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
24.7	472	Total			

Subcatchment 7S: Green Field W



Summary for Subcatchment 8S: Green Field E

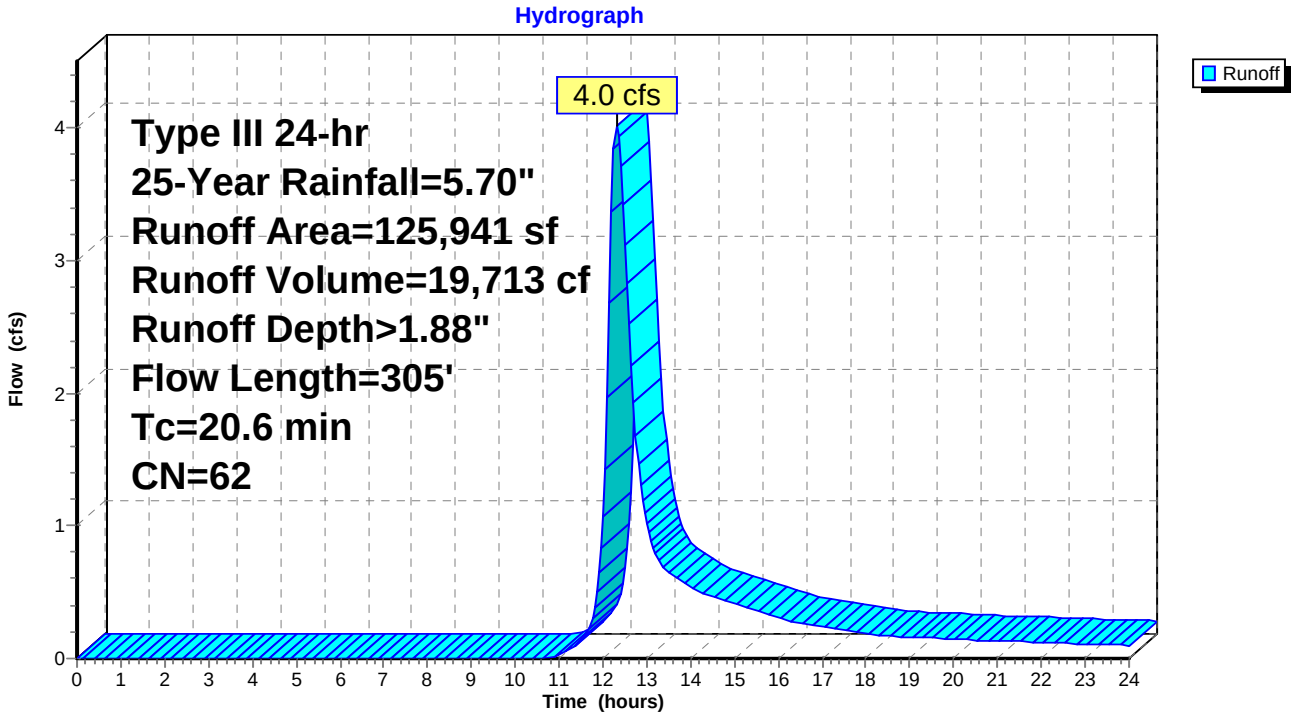
Runoff = 4.0 cfs @ 12.31 hrs, Volume= 19,713 cf, Depth> 1.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (sf)	CN	Description
	116,936	61	>75% Grass cover, Good, HSG B
	3,129	80	>75% Grass cover, Good, HSG D
	1,452	80	>75% Grass cover, Good, HSG D
	4,419	61	>75% Grass cover, Good, HSG B
*	5	98	Solar Array Posts, HSG B
	125,941	62	Weighted Average
	125,936		100.00% Pervious Area
	5		0.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0123	0.10		**Sheet Flow, Field** Grass: Dense n= 0.240 P2= 3.40"
0.4	24	0.0208	1.01		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
2.6	106	0.0094	0.68		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
0.8	75	0.0467	1.51		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
20.6	305	Total			

Subcatchment 8S: Green Field E



Summary for Subcatchment 9S: Greenfield 2

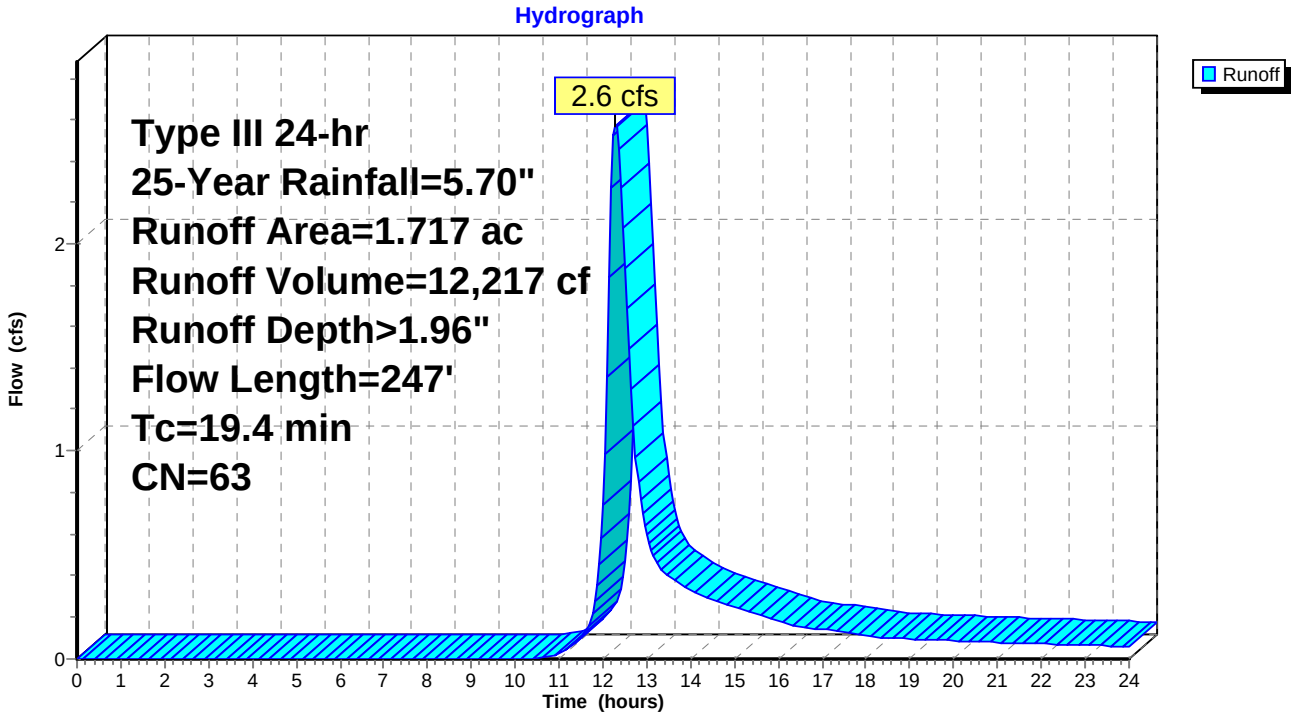
Runoff = 2.6 cfs @ 12.29 hrs, Volume= 12,217 cf, Depth> 1.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (ac)	CN	Description
	0.091	77	Woods, Good, HSG D
	0.151	55	Woods, Good, HSG B
	1.283	61	>75% Grass cover, Good, HSG B
	0.187	80	>75% Grass cover, Good, HSG D
*	0.000	98	Solar Array Posts, HSG B
	0.005	98	Paved parking, HSG B
	1.717	63	Weighted Average
	1.712		99.71% Pervious Area
	0.005		0.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.5	100	0.0128	0.10		**Sheet Flow, Grass** Grass: Dense n= 0.240 P2= 3.40"
2.9	147	0.0148	0.85		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
19.4	247	Total			

Subcatchment 9S: Greenfield 2



Summary for Reach 19R: Riprap Swale

Inflow Area = 85,378 sf, 3.27% Impervious, Inflow Depth > 3.02" for 25-Year event
Inflow = 5.2 cfs @ 12.21 hrs, Volume= 21,482 cf
Outflow = 5.1 cfs @ 12.25 hrs, Volume= 21,420 cf, Atten= 3%, Lag= 2.5 min

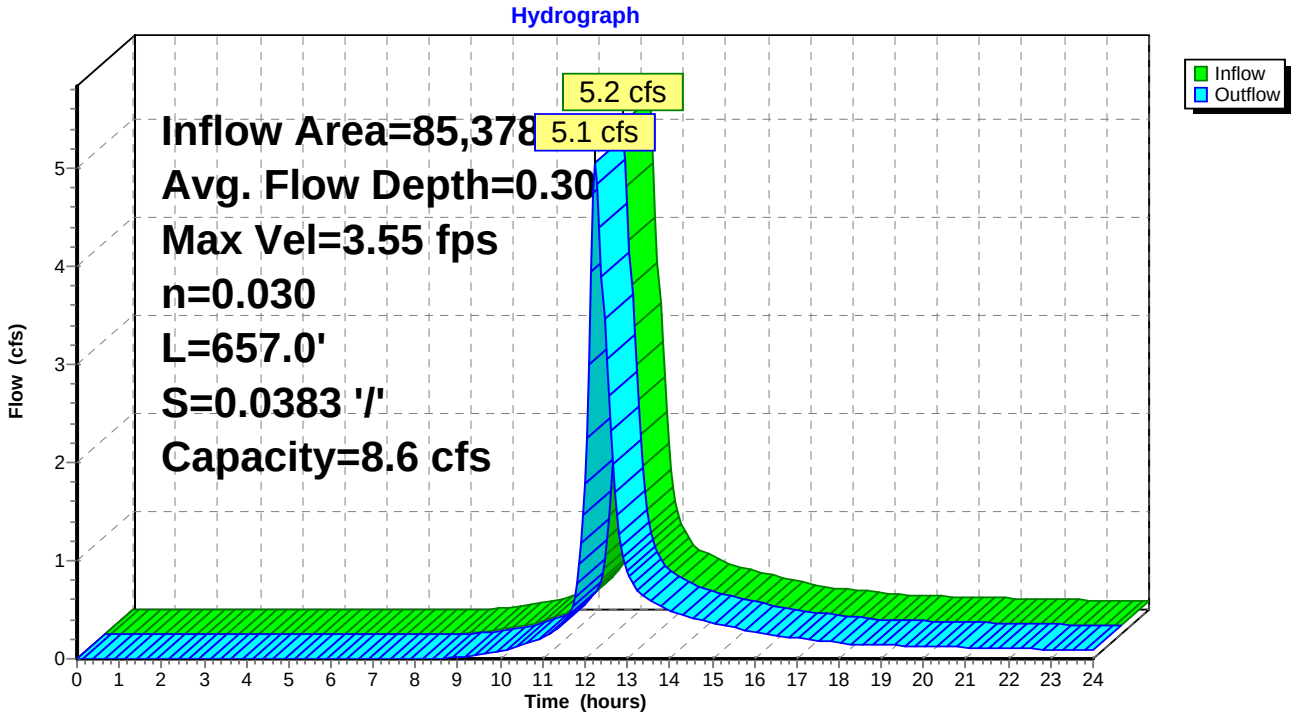
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Max. Velocity= 3.55 fps, Min. Travel Time= 3.1 min
Avg. Velocity = 1.27 fps, Avg. Travel Time= 8.6 min

Peak Storage= 934 cf @ 12.25 hrs
Average Depth at Peak Storage= 0.30'
Bank-Full Depth= 0.40' Flow Area= 2.1 sf, Capacity= 8.6 cfs

3.00' x 0.40' deep channel, n= 0.030 Rubble masonry, cemented
Side Slope Z-value= 5.5 '/' Top Width= 7.40'
Length= 657.0' Slope= 0.0383 '/'
Inlet Invert= 274.52', Outlet Invert= 249.36'

‡

Reach 19R: Riprap Swale



Summary for Reach 21R: Riprap Swale

Inflow Area = 53,317 sf, 4.00% Impervious, Inflow Depth > 3.12" for 25-Year event
Inflow = 3.9 cfs @ 12.14 hrs, Volume= 13,851 cf
Outflow = 3.7 cfs @ 12.17 hrs, Volume= 13,814 cf, Atten= 3%, Lag= 1.7 min

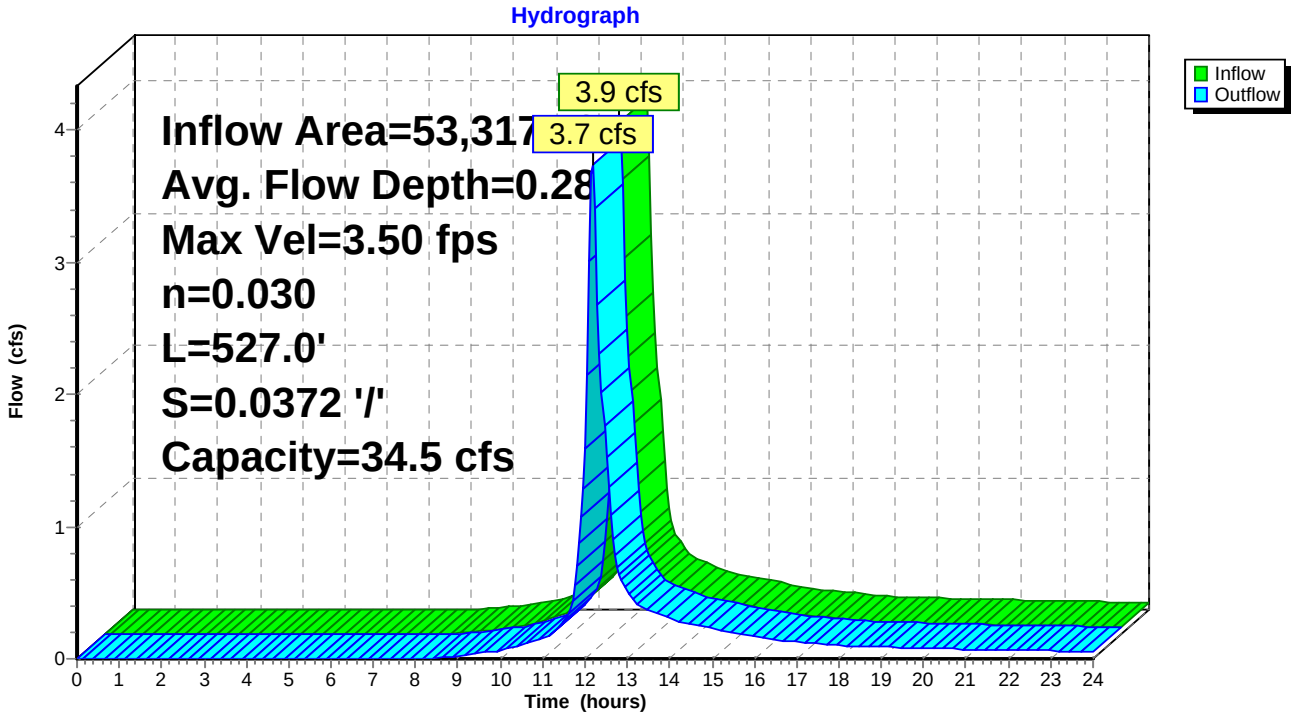
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Max. Velocity= 3.50 fps, Min. Travel Time= 2.5 min
Avg. Velocity = 1.11 fps, Avg. Travel Time= 7.9 min

Peak Storage= 560 cf @ 12.17 hrs
Average Depth at Peak Storage= 0.28'
Bank-Full Depth= 0.90' Flow Area= 5.1 sf, Capacity= 34.5 cfs

3.00' x 0.90' deep channel, n= 0.030 Rubble masonry, cemented
Side Slope Z-value= 3.0 '/' Top Width= 8.40'
Length= 527.0' Slope= 0.0372 '/'
Inlet Invert= 276.70', Outlet Invert= 257.10'

‡

Reach 21R: Riprap Swale

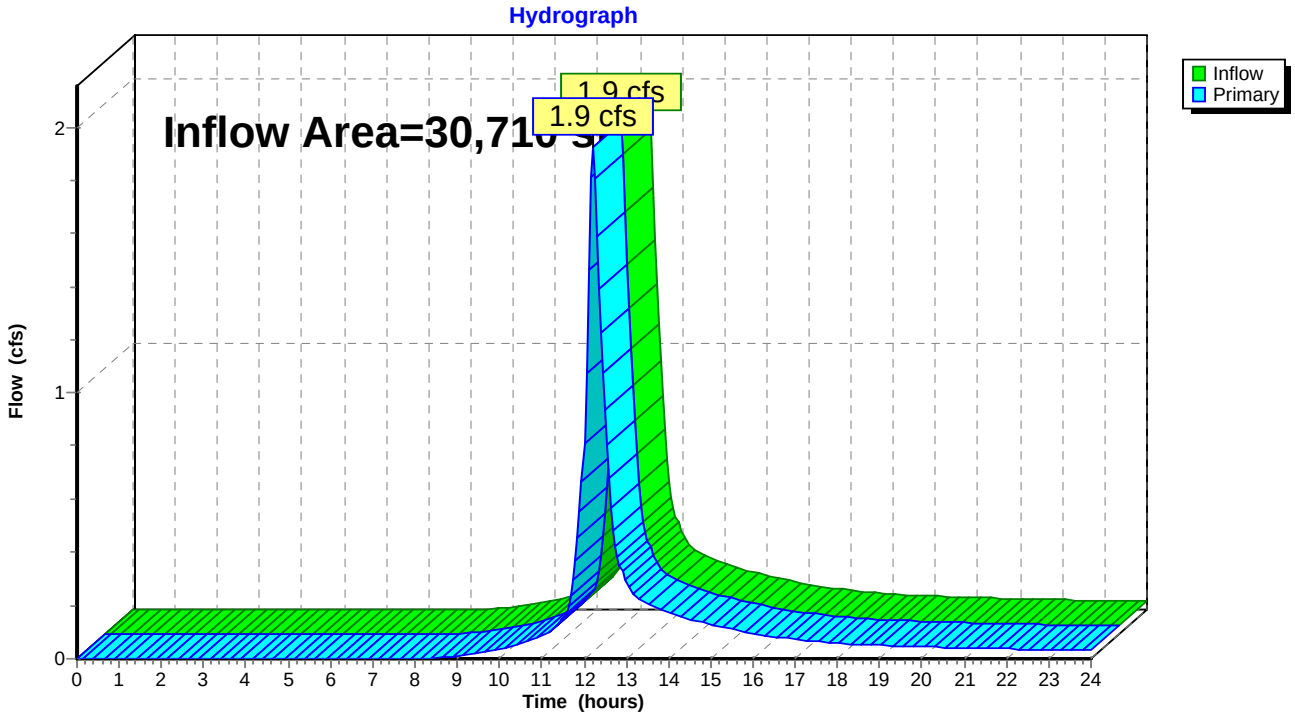


Summary for Link 7L: Wetlands NW

Inflow Area = 30,710 sf, 4.54% Impervious, Inflow Depth > 3.02" for 25-Year event
Inflow = 1.9 cfs @ 12.20 hrs, Volume= 7,729 cf
Primary = 1.9 cfs @ 12.20 hrs, Volume= 7,729 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 7L: Wetlands NW

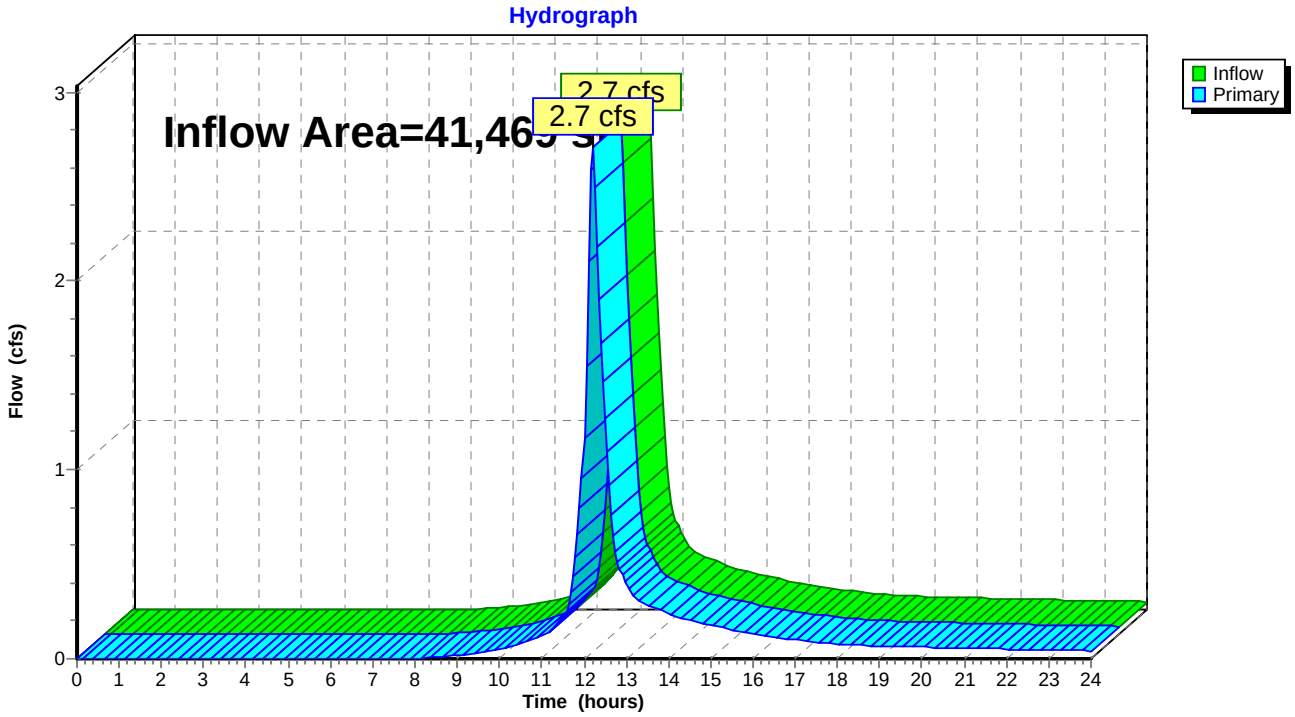


Summary for Link 8L: Depression S

Inflow Area = 41,469 sf, 4.52% Impervious, Inflow Depth > 3.11" for 25-Year event
Inflow = 2.7 cfs @ 12.19 hrs, Volume= 10,764 cf
Primary = 2.7 cfs @ 12.19 hrs, Volume= 10,764 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 8L: Depression S

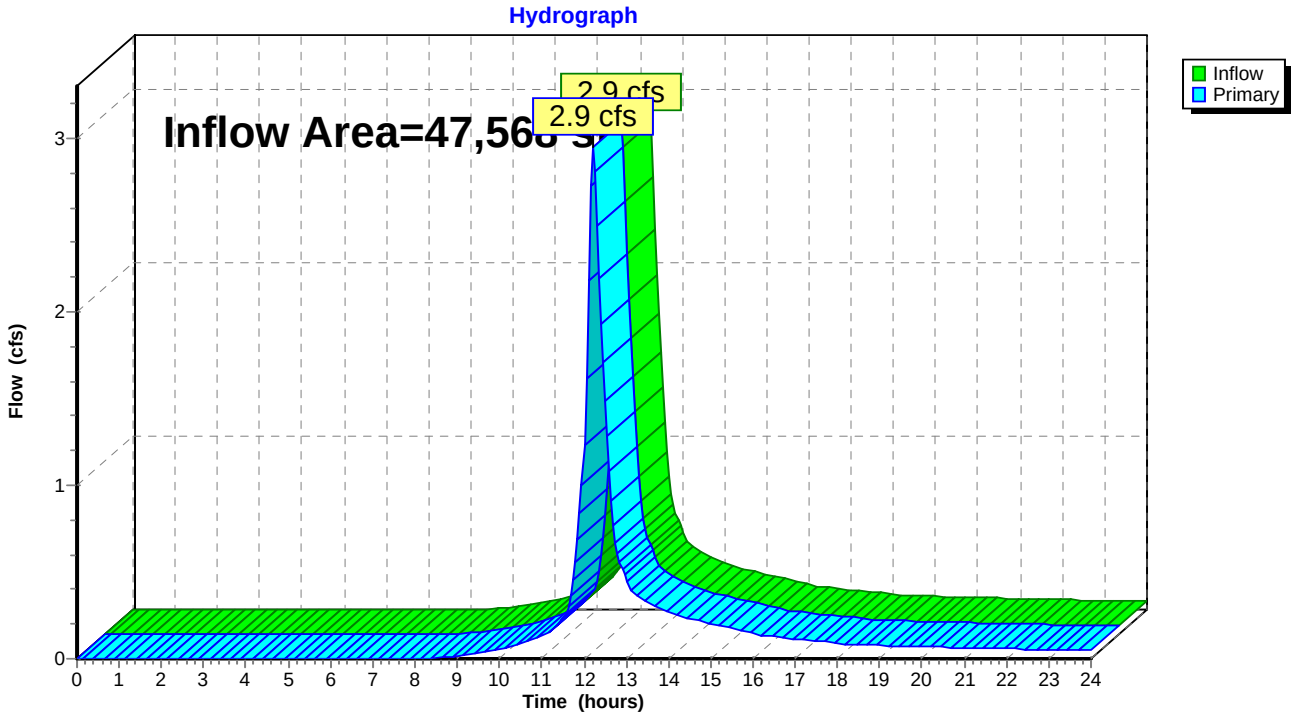


Summary for Link 9L: Wetlands NE

Inflow Area = 47,568 sf, 5.31% Impervious, Inflow Depth > 3.02" for 25-Year event
Inflow = 2.9 cfs @ 12.21 hrs, Volume= 11,970 cf
Primary = 2.9 cfs @ 12.21 hrs, Volume= 11,970 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 9L: Wetlands NE

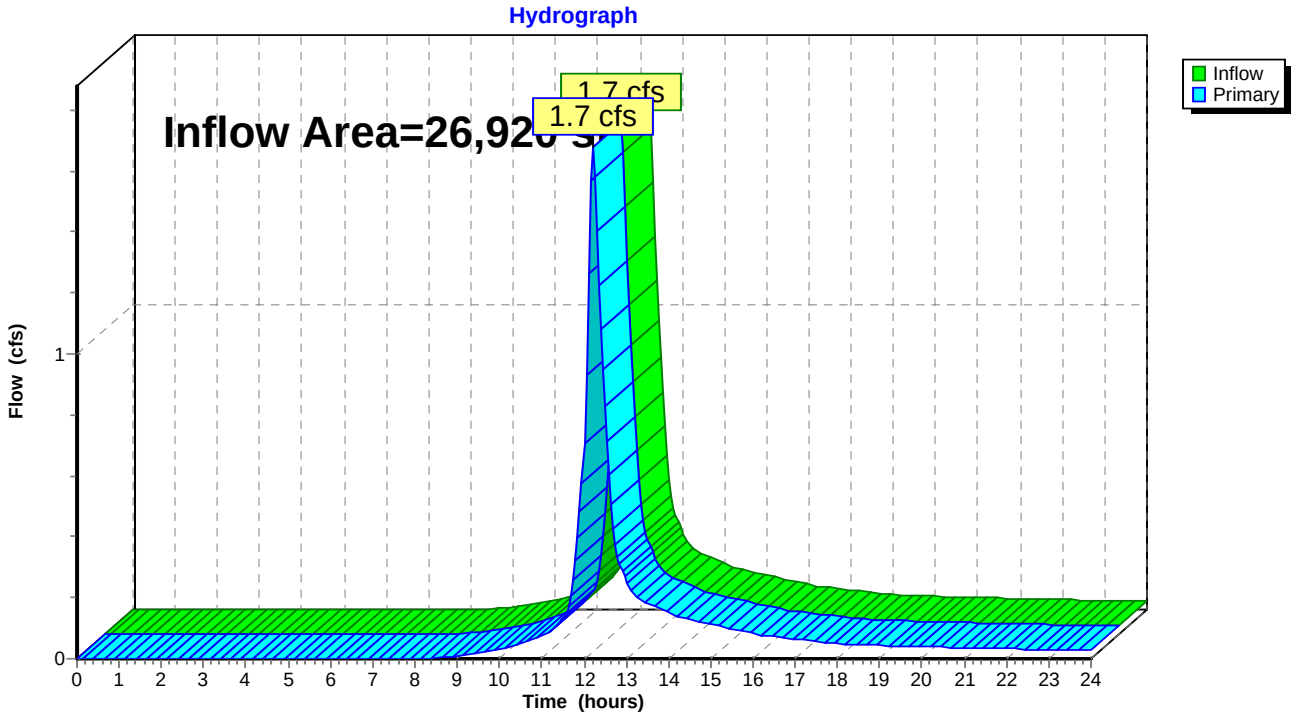


Summary for Link 10L: Wetlands N

Inflow Area = 26,920 sf, 4.53% Impervious, Inflow Depth > 3.02" for 25-Year event
Inflow = 1.7 cfs @ 12.20 hrs, Volume= 6,775 cf
Primary = 1.7 cfs @ 12.20 hrs, Volume= 6,775 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 10L: Wetlands N

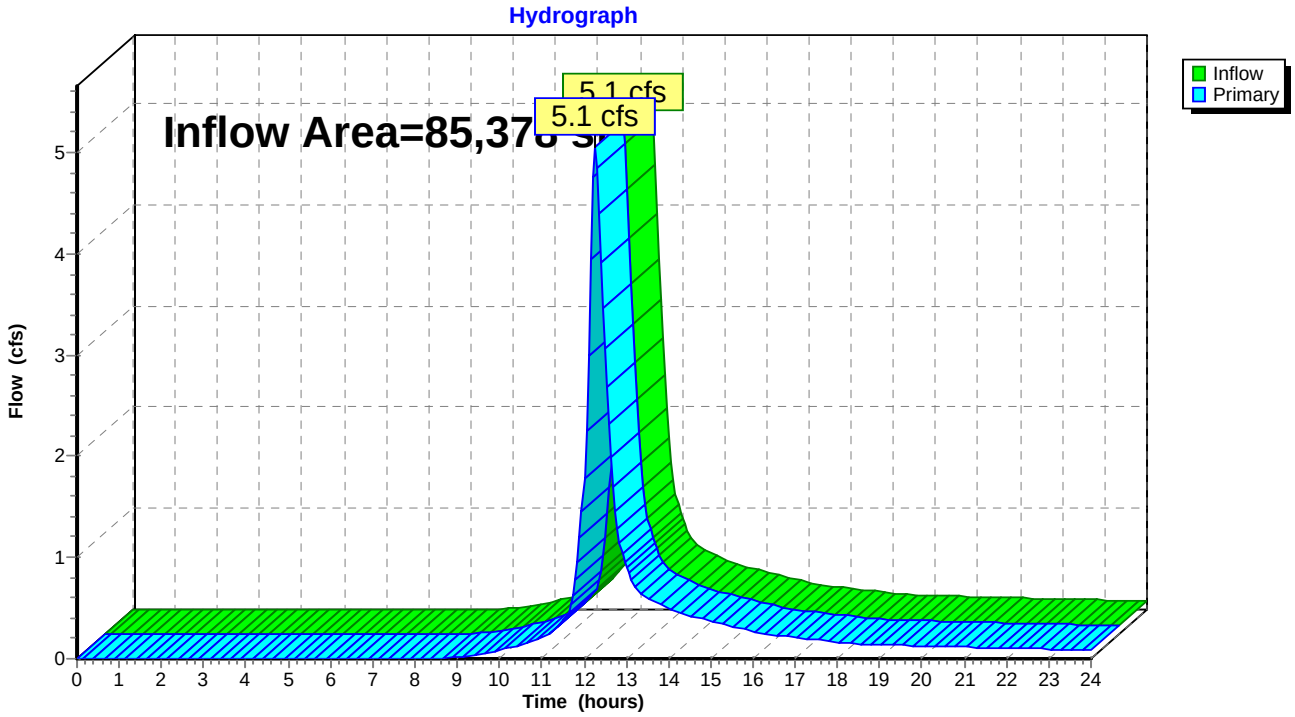


Summary for Link 11L: Collection Swale W

Inflow Area = 85,378 sf, 3.27% Impervious, Inflow Depth > 3.01" for 25-Year event
Inflow = 5.1 cfs @ 12.25 hrs, Volume= 21,420 cf
Primary = 5.1 cfs @ 12.25 hrs, Volume= 21,420 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 11L: Collection Swale W

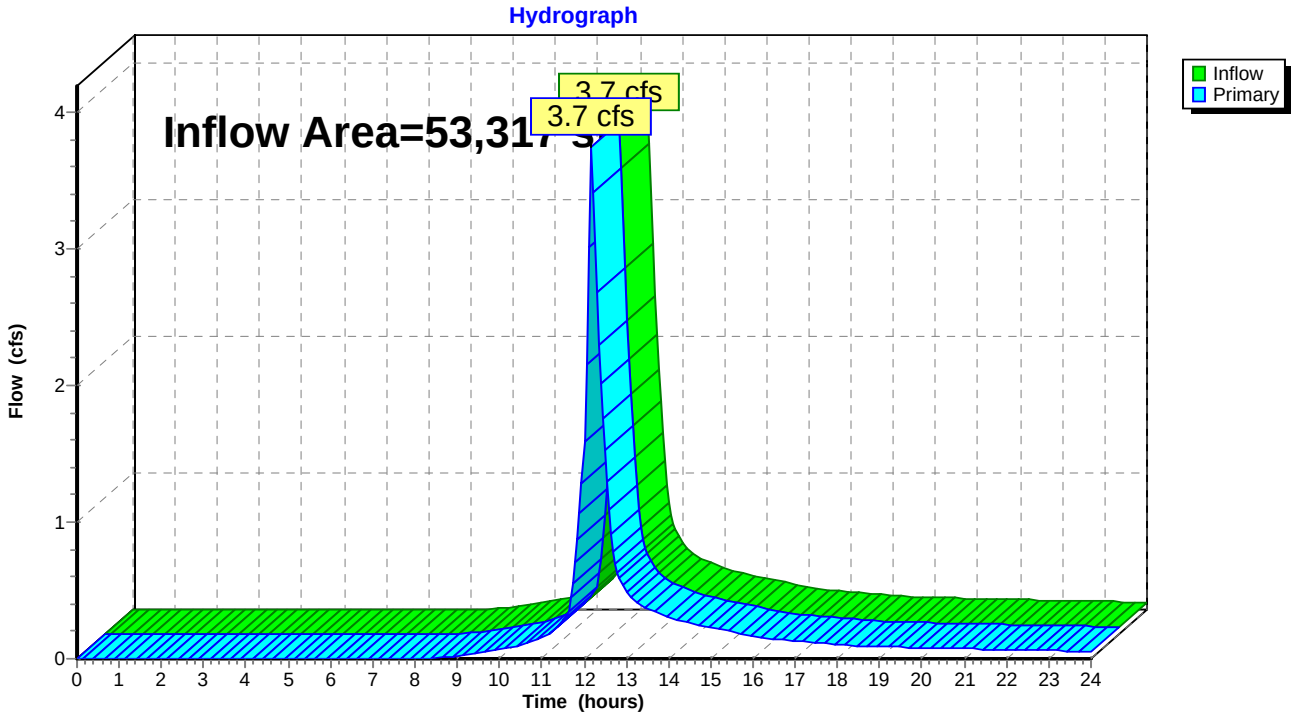


Summary for Link 12L: Collection Swale W

Inflow Area = 53,317 sf, 4.00% Impervious, Inflow Depth > 3.11" for 25-Year event
Inflow = 3.7 cfs @ 12.17 hrs, Volume= 13,814 cf
Primary = 3.7 cfs @ 12.17 hrs, Volume= 13,814 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 12L: Collection Swale W

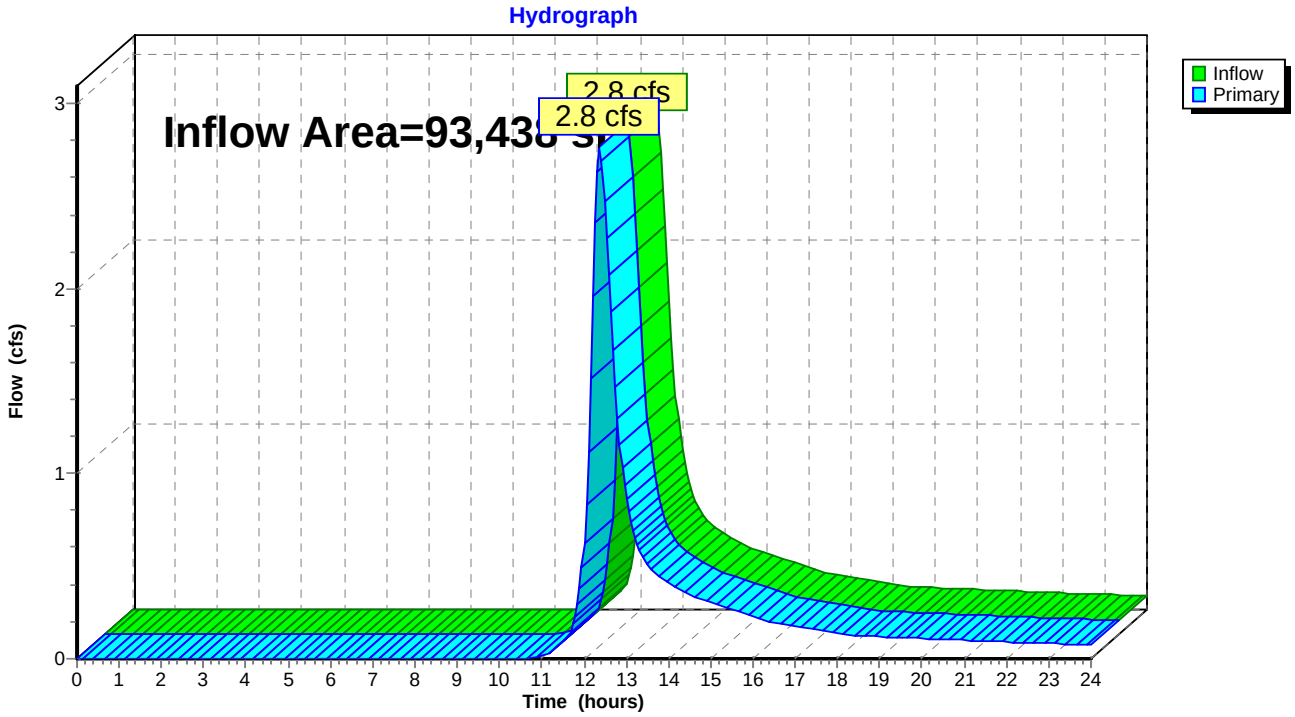


Summary for Link 15L: Wetland W

Inflow Area = 93,438 sf, 0.61% Impervious, Inflow Depth > 1.88" for 25-Year event
Inflow = 2.8 cfs @ 12.37 hrs, Volume= 14,608 cf
Primary = 2.8 cfs @ 12.37 hrs, Volume= 14,608 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 15L: Wetland W

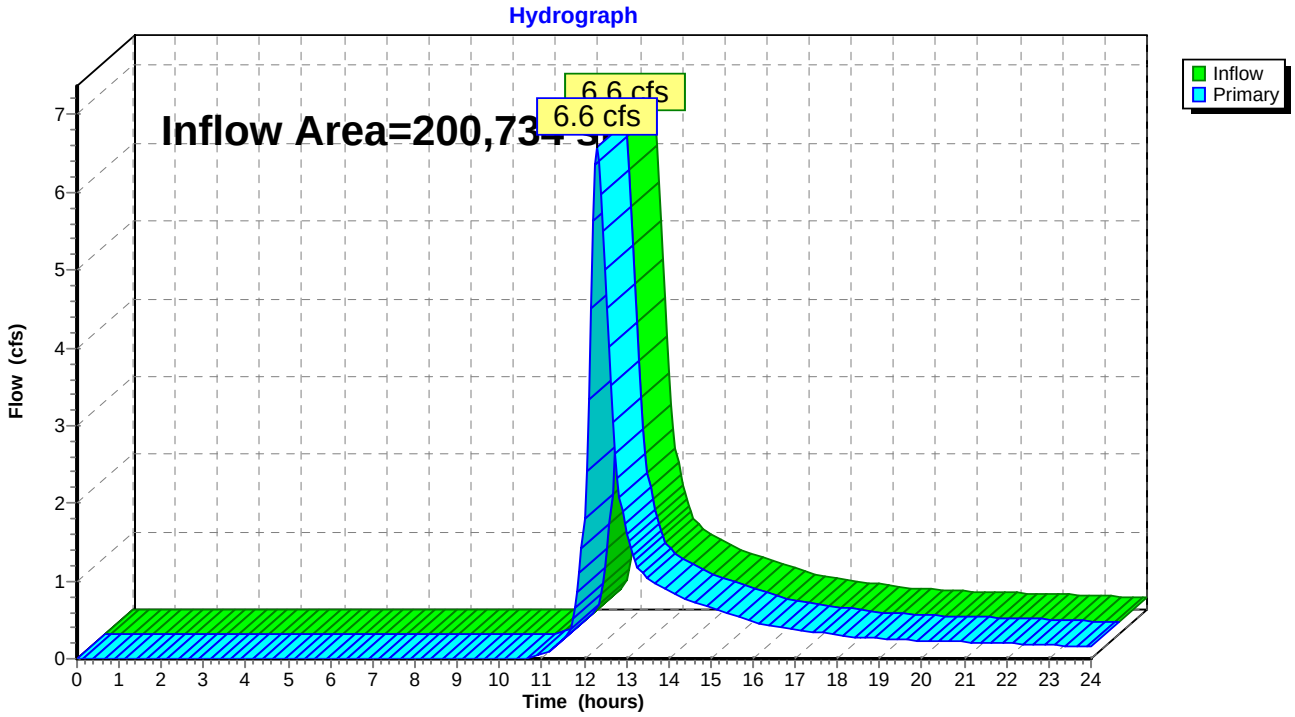


Summary for Link 16L: Wetland E

Inflow Area = 200,734 sf, 0.11% Impervious, Inflow Depth > 1.91" for 25-Year event
Inflow = 6.6 cfs @ 12.30 hrs, Volume= 31,930 cf
Primary = 6.6 cfs @ 12.30 hrs, Volume= 31,930 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 16L: Wetland E



Time span=0.00-24.00 hrs, dt=0.050 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Bulky Waste Landfill SW Runoff Area=0.952 ac 4.52% Impervious Runoff Depth>3.63"
Flow Length=239' Tc=13.7 min CN=76 Runoff=3.2 cfs 12,550 cf

Subcatchment 2S: Bulky Waste Landfill NW Runoff Area=0.705 ac 4.54% Impervious Runoff Depth>3.53"
Flow Length=179' Tc=14.1 min CN=75 Runoff=2.3 cfs 9,034 cf

Subcatchment 3S: Bulky Waste Landfill E Runoff Area=1.092 ac 5.31% Impervious Runoff Depth>3.53"
Flow Length=204' Tc=14.6 min CN=75 Runoff=3.4 cfs 13,992 cf

Subcatchment 4S: Landfill N Runoff Area=0.618 ac 4.53% Impervious Runoff Depth>3.53"
Flow Length=222' Tc=14.3 min CN=75 Runoff=2.0 cfs 7,919 cf

Subcatchment 5S: Landfill W Runoff Area=1.960 ac 3.27% Impervious Runoff Depth>3.53"
Flow Length=752' Tc=15.2 min CN=75 Runoff=6.1 cfs 25,110 cf

Subcatchment 6S: Landfill E Runoff Area=1.224 ac 4.00% Impervious Runoff Depth>3.63"
Flow Length=459' Tc=10.0 min CN=76 Runoff=4.5 cfs 16,147 cf

Subcatchment 7S: Green Field W Runoff Area=93,438 sf 0.61% Impervious Runoff Depth>2.28"
Flow Length=472' Tc=24.7 min CN=62 Runoff=3.4 cfs 17,788 cf

Subcatchment 8S: Green Field E Runoff Area=125,941 sf 0.00% Impervious Runoff Depth>2.29"
Flow Length=305' Tc=20.6 min CN=62 Runoff=5.0 cfs 24,002 cf

Subcatchment 9S: Greenfield 2 Runoff Area=1.717 ac 0.29% Impervious Runoff Depth>2.38"
Flow Length=247' Tc=19.4 min CN=63 Runoff=3.2 cfs 14,820 cf

Reach 19R: Riprap Swale Avg. Flow Depth=0.33' Max Vel=3.72 fps Inflow=6.1 cfs 25,110 cf
n=0.030 L=657.0' S=0.0383 '/' Capacity=8.6 cfs Outflow=5.9 cfs 25,044 cf

Reach 21R: Riprap Swale Avg. Flow Depth=0.30' Max Vel=3.68 fps Inflow=4.5 cfs 16,147 cf
n=0.030 L=527.0' S=0.0372 '/' Capacity=34.5 cfs Outflow=4.4 cfs 16,108 cf

Link 7L: Wetlands NW Inflow=2.3 cfs 9,034 cf
Primary=2.3 cfs 9,034 cf

Link 8L: Depression S Inflow=3.2 cfs 12,550 cf
Primary=3.2 cfs 12,550 cf

Link 9L: Wetlands NE Inflow=3.4 cfs 13,992 cf
Primary=3.4 cfs 13,992 cf

Link 10L: Wetlands N Inflow=2.0 cfs 7,919 cf
Primary=2.0 cfs 7,919 cf

Link 11L: Collection Swale W Inflow=5.9 cfs 25,044 cf
Primary=5.9 cfs 25,044 cf

Link 12L: Collection Swale W Inflow=4.4 cfs 16,108 cf
Primary=4.4 cfs 16,108 cf

Link 15L: Wetland W Inflow=3.4 cfs 17,788 cf
Primary=3.4 cfs 17,788 cf

Link 16L: Wetland E Inflow=8.1 cfs 38,821 cf
Primary=8.1 cfs 38,821 cf

Total Runoff Area = 579,533 sf Runoff Volume = 141,361 cf Average Runoff Depth = 2.93"
97.80% Pervious = 566,801 sf 2.20% Impervious = 12,732 sf

Summary for Subcatchment 1S: Bulky Waste Landfill SW

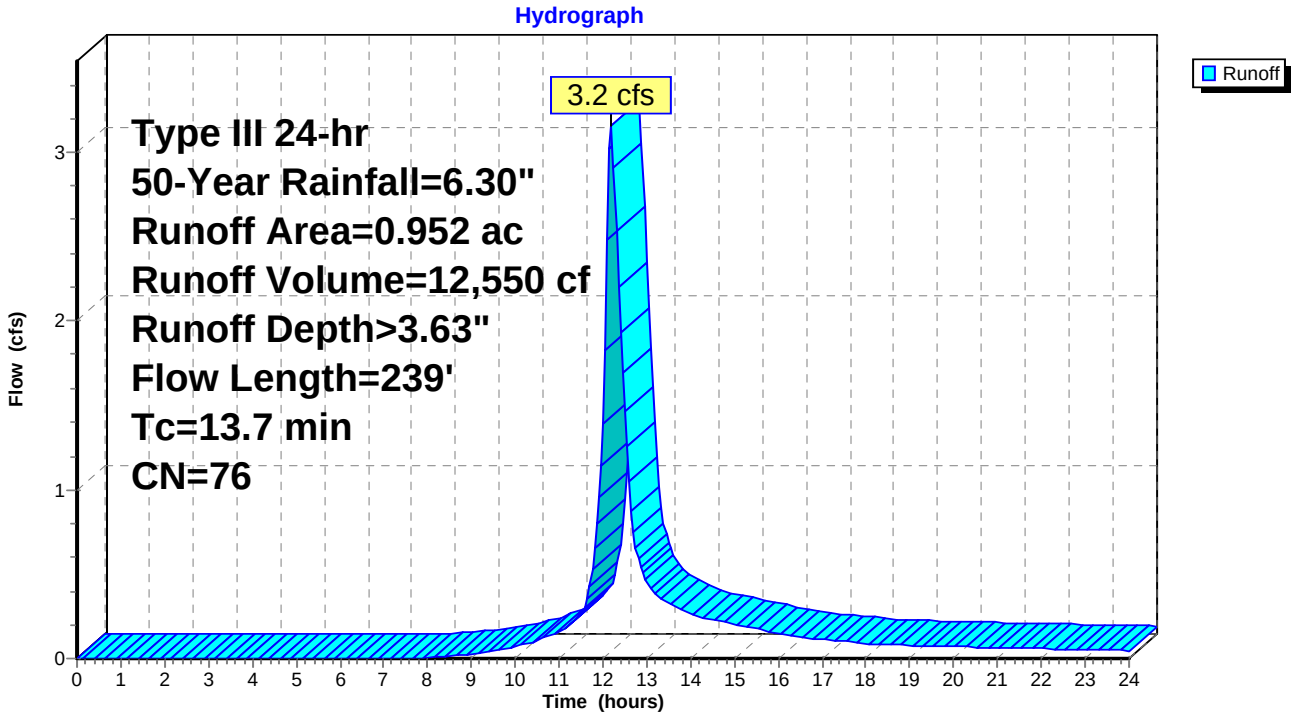
Runoff = 3.2 cfs @ 12.19 hrs, Volume= 12,550 cf, Depth> 3.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 50-Year Rainfall=6.30"

	Area (ac)	CN	Description
	0.829	74	>75% Grass cover, Good, HSG C
	0.080	89	Gravel roads, HSG C
*	0.003	98	Equipment Pad, HSG C
*	0.040	98	Solar array Ballasts, HSG C
	0.952	76	Weighted Average
	0.909		95.48% Pervious Area
	0.043		4.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.6	100	0.0251	0.13		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
0.5	66	0.1137	2.36		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	46	0.1957	3.10		**Shallow Concentrated Flow, Lanfill Cap** Short Grass Pasture Kv= 7.0 fps
0.4	27	0.0050	1.14		**Shallow Concentrated Flow, Access Drive** Unpaved Kv= 16.1 fps
13.7	239	Total			

Subcatchment 1S: Bulky Waste Landfill SW



Summary for Subcatchment 2S: Bulky Waste Landfill NW

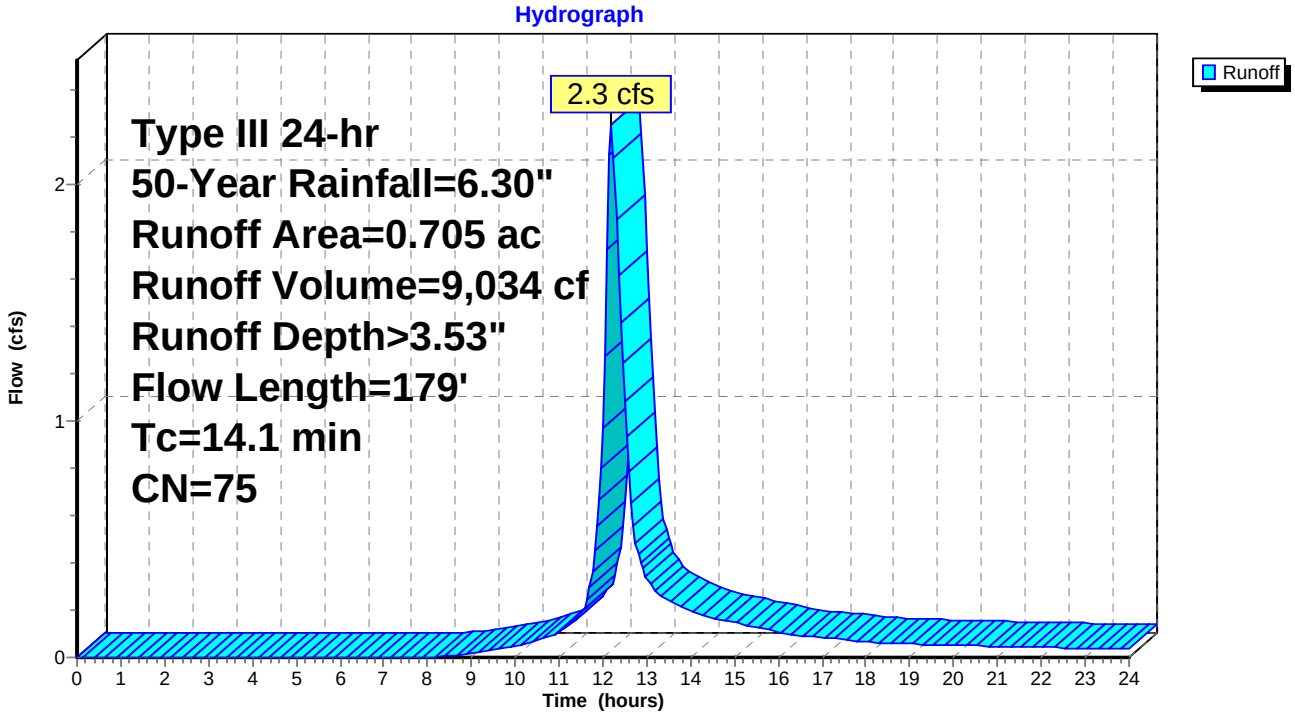
Runoff = 2.3 cfs @ 12.20 hrs, Volume= 9,034 cf, Depth> 3.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 50-Year Rainfall=6.30"

	Area (ac)	CN	Description
	0.659	74	>75% Grass cover, Good, HSG C
*	0.032	98	Solar array ballasts, HSG C
	0.014	89	Gravel roads, HSG C
	0.705	75	Weighted Average
	0.673		95.46% Pervious Area
	0.032		4.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0212	0.12		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
0.6	79	0.0886	2.08		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
14.1	179	Total			

Subcatchment 2S: Bulky Waste Landfill NW



Summary for Subcatchment 3S: Bulky Waste Landfill E

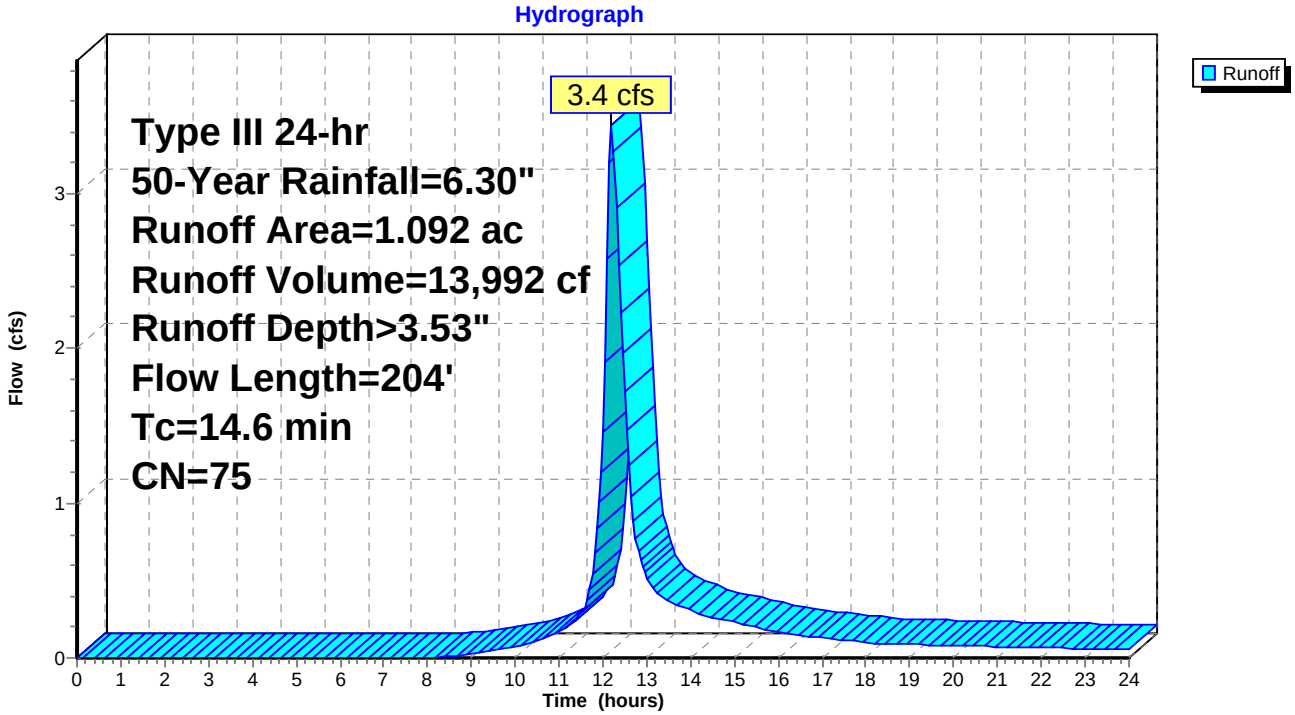
Runoff = 3.4 cfs @ 12.20 hrs, Volume= 13,992 cf, Depth> 3.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 50-Year Rainfall=6.30"

	Area (ac)	CN	Description
	1.034	74	>75% Grass cover, Good, HSG C
*	0.058	98	Solar array ballasts, HSG C
	1.092	75	Weighted Average
	1.034		94.69% Pervious Area
	0.058		5.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0212	0.12		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
1.0	80	0.0375	1.36		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.1	24	0.1667	2.86		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
14.6	204	Total			

Subcatchment 3S: Bulky Waste Landfill E



Summary for Subcatchment 4S: Landfill N

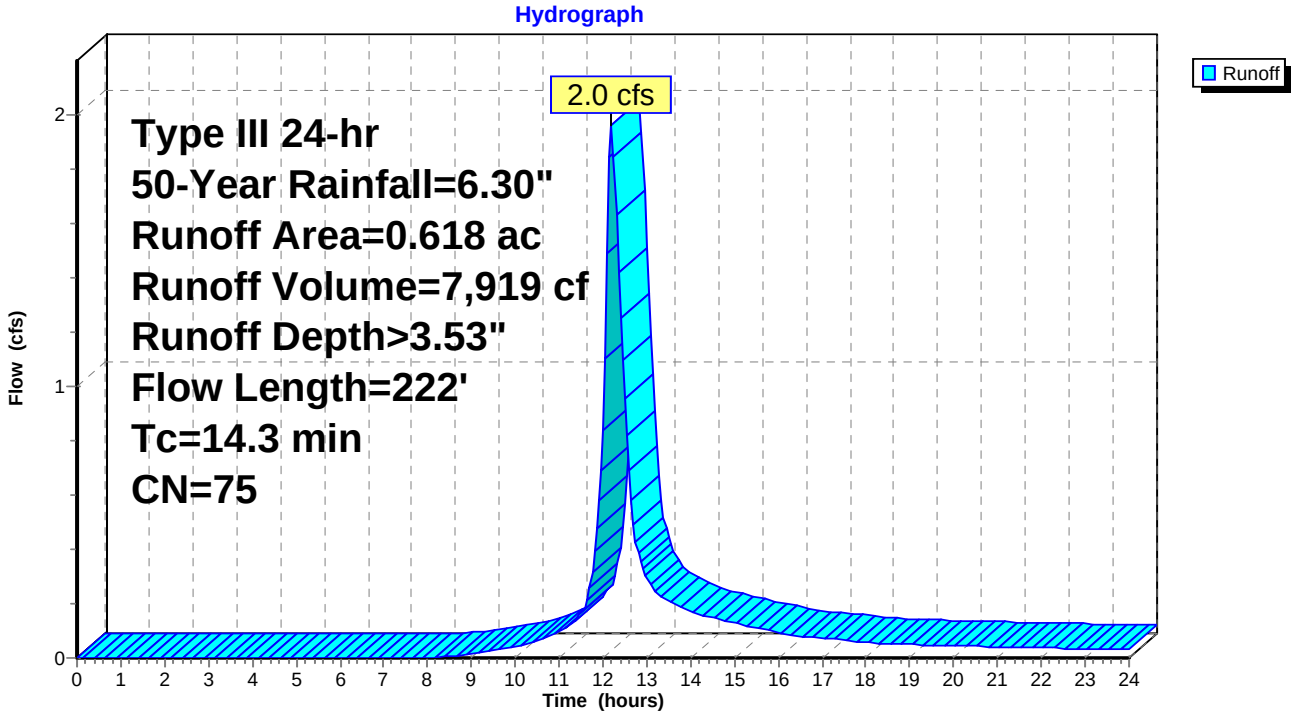
Runoff = 2.0 cfs @ 12.20 hrs, Volume= 7,919 cf, Depth> 3.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 50-Year Rainfall=6.30"

	Area (ac)	CN	Description
	0.590	74	>75% Grass cover, Good, HSG C
*	0.028	98	Solar array ballasts, HSG C
	0.618	75	Weighted Average
	0.590		95.47% Pervious Area
	0.028		4.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	100	0.0230	0.13		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
1.0	81	0.0371	1.35		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	41	0.1707	2.89		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
14.3	222	Total			

Subcatchment 4S: Landfill N



Summary for Subcatchment 5S: Landfill W

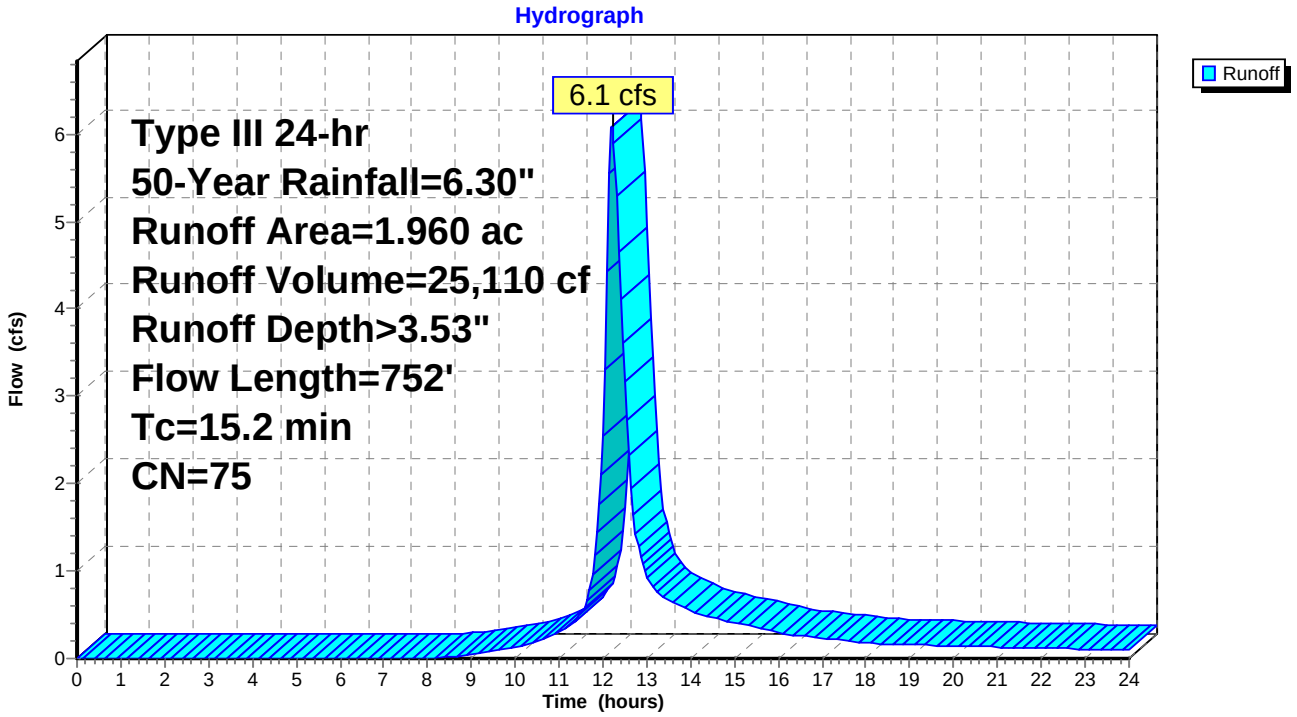
Runoff = 6.1 cfs @ 12.21 hrs, Volume= 25,110 cf, Depth> 3.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 50-Year Rainfall=6.30"

	Area (ac)	CN	Description
	1.896	74	>75% Grass cover, Good, HSG C
*	0.064	98	Solar array ballasts, HSG C
	1.960	75	Weighted Average
	1.896		96.73% Pervious Area
	0.064		3.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.3	100	0.0220	0.13		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
0.3	37	0.0811	1.99		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.3	58	0.1897	3.05		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
1.3	520	0.0200	6.71	50.33	**Channel Flow, Riprap Swale** Area= 7.5 sf Perim= 8.0' r= 0.94' n= 0.030 Rubble masonry, cemented
0.0	37	0.2160	22.05	165.39	**Channel Flow, Riprap Swale** Area= 7.5 sf Perim= 8.0' r= 0.94' n= 0.030 Rubble masonry, cemented
15.2	752	Total			

Subcatchment 5S: Landfill W



Summary for Subcatchment 6S: Landfill E

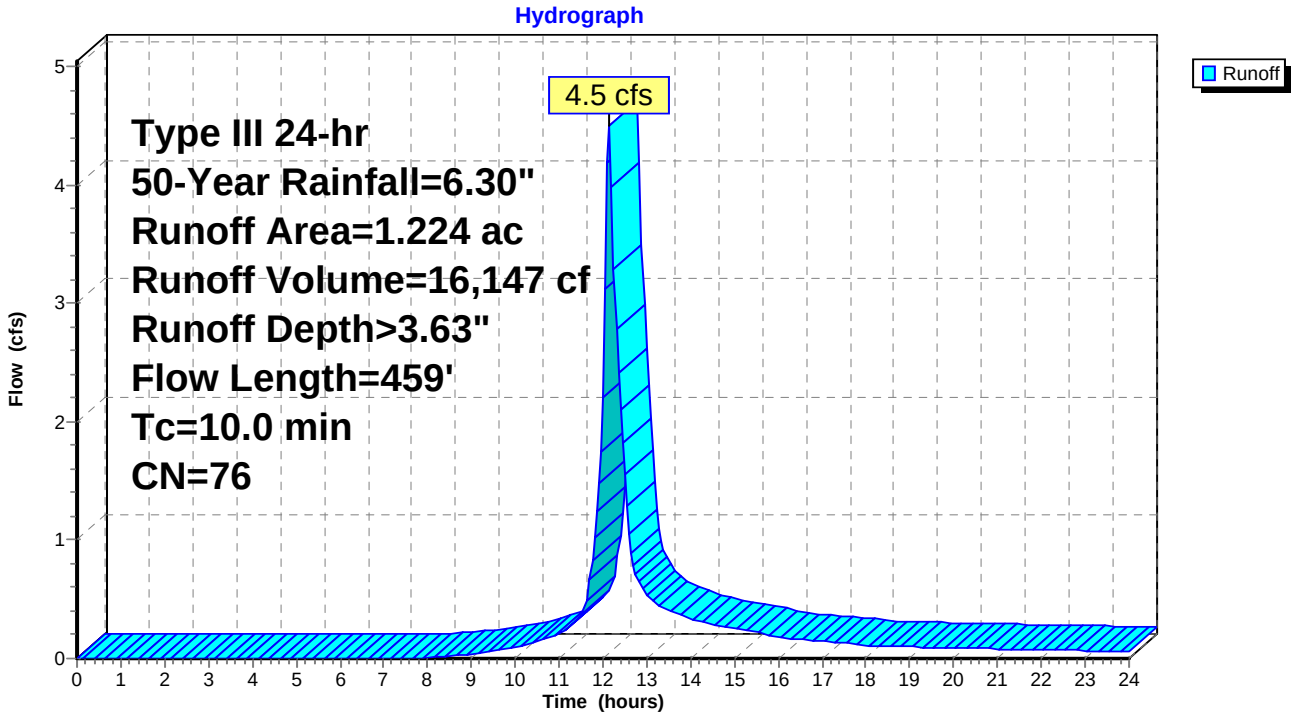
Runoff = 4.5 cfs @ 12.14 hrs, Volume= 16,147 cf, Depth> 3.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 50-Year Rainfall=6.30"

	Area (ac)	CN	Description
	1.085	74	>75% Grass cover, Good, HSG C
	0.090	89	Gravel roads, HSG C
*	0.046	98	Solar array ballasts, HSG C
*	0.003	98	Concrete Equipment Pad, HSG C
	1.224	76	Weighted Average
	1.175		96.00% Pervious Area
	0.049		4.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.5	40	0.0543	0.15		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
1.0	60	0.0117	1.03		**Sheet Flow, Gravel** Smooth surfaces n= 0.011 P2= 3.40"
0.5	86	0.0384	3.15		**Shallow Concentrated Flow, Gravel** Unpaved Kv= 16.1 fps
0.7	76	0.0658	1.80		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	49	0.2245	3.32		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	148	0.1081	15.60	117.00	**Channel Flow, Riprap Swale** Area= 7.5 sf Perim= 8.0' r= 0.94' n= 0.030 Rubble masonry, cemented
7.1	459	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 6S: Landfill E



Summary for Subcatchment 7S: Green Field W

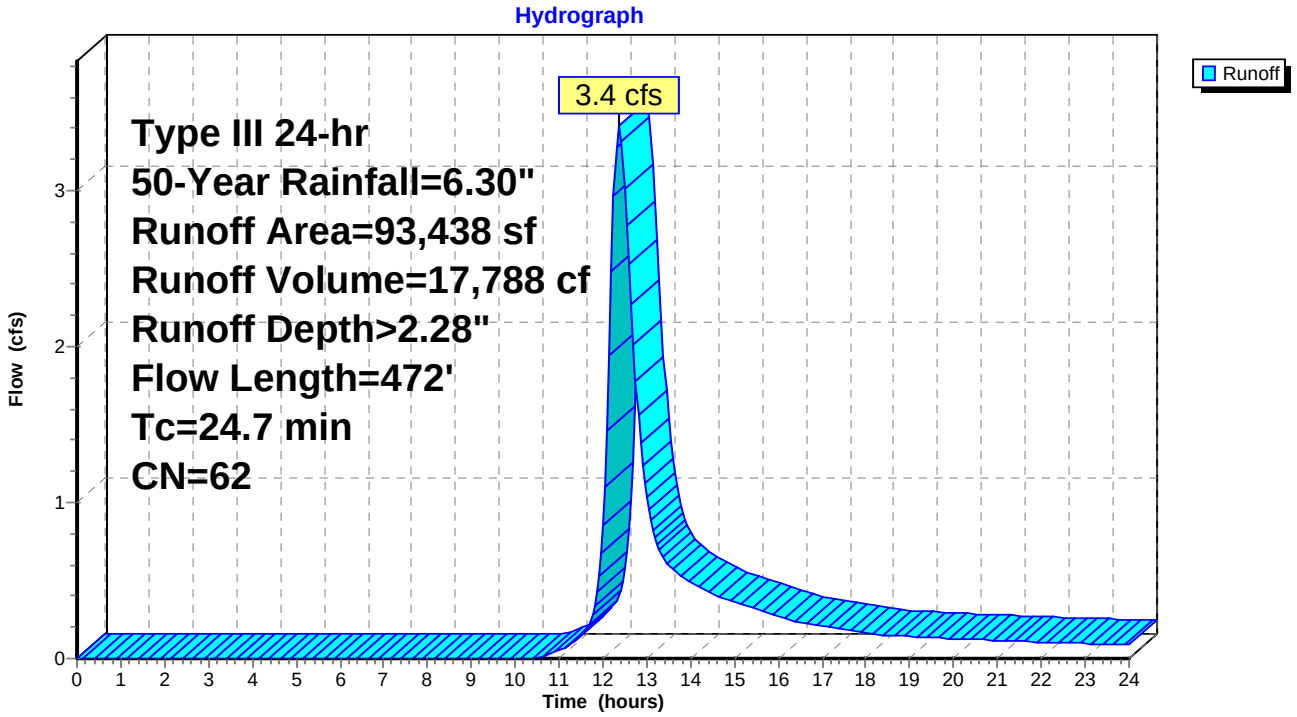
Runoff = 3.4 cfs @ 12.37 hrs, Volume= 17,788 cf, Depth> 2.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 50-Year Rainfall=6.30"

	Area (sf)	CN	Description
	832	74	>75% Grass cover, Good, HSG C
	3,861	80	>75% Grass cover, Good, HSG D
	21,955	61	>75% Grass cover, Good, HSG B
	66,216	61	>75% Grass cover, Good, HSG B
	340	98	Paved parking, HSG C
*	4	98	Solar Array Posts, HSG B
*	230	98	Equipment Pad, HSG B
	93,438	62	Weighted Average
	92,864		99.39% Pervious Area
	574		0.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0123	0.10		**Sheet Flow, Field** Grass: Dense n= 0.240 P2= 3.40"
0.4	23	0.0217	1.03		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
4.8	160	0.0063	0.56		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
0.6	51	0.0392	1.39		**Shallow Concentrated Flow, field** Short Grass Pasture Kv= 7.0 fps
1.4	88	0.0227	1.05		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
0.7	50	0.0300	1.21		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
24.7	472	Total			

Subcatchment 7S: Green Field W



Summary for Subcatchment 8S: Green Field E

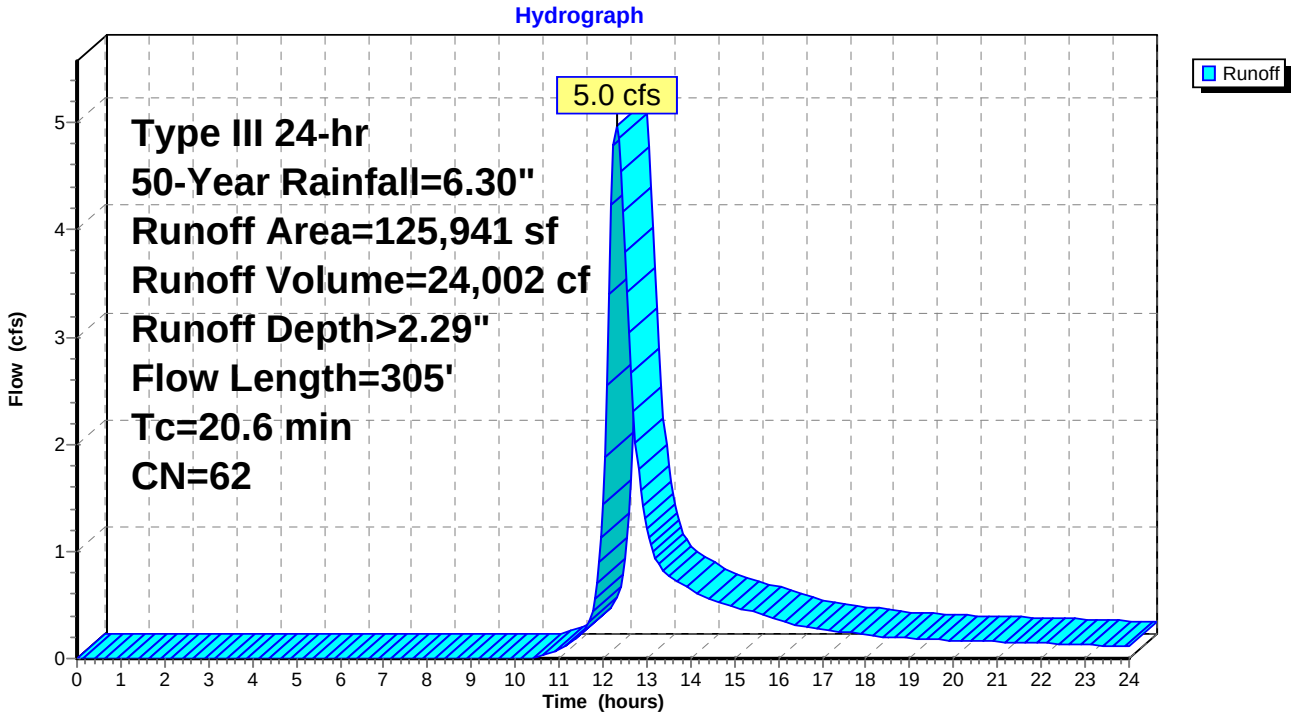
Runoff = 5.0 cfs @ 12.31 hrs, Volume= 24,002 cf, Depth> 2.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 50-Year Rainfall=6.30"

	Area (sf)	CN	Description
	116,936	61	>75% Grass cover, Good, HSG B
	3,129	80	>75% Grass cover, Good, HSG D
	1,452	80	>75% Grass cover, Good, HSG D
	4,419	61	>75% Grass cover, Good, HSG B
*	5	98	Solar Array Posts, HSG B
	125,941	62	Weighted Average
	125,936		100.00% Pervious Area
	5		0.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0123	0.10		**Sheet Flow, Field** Grass: Dense n= 0.240 P2= 3.40"
0.4	24	0.0208	1.01		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
2.6	106	0.0094	0.68		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
0.8	75	0.0467	1.51		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
20.6	305	Total			

Subcatchment 8S: Green Field E



Summary for Subcatchment 9S: Greenfield 2

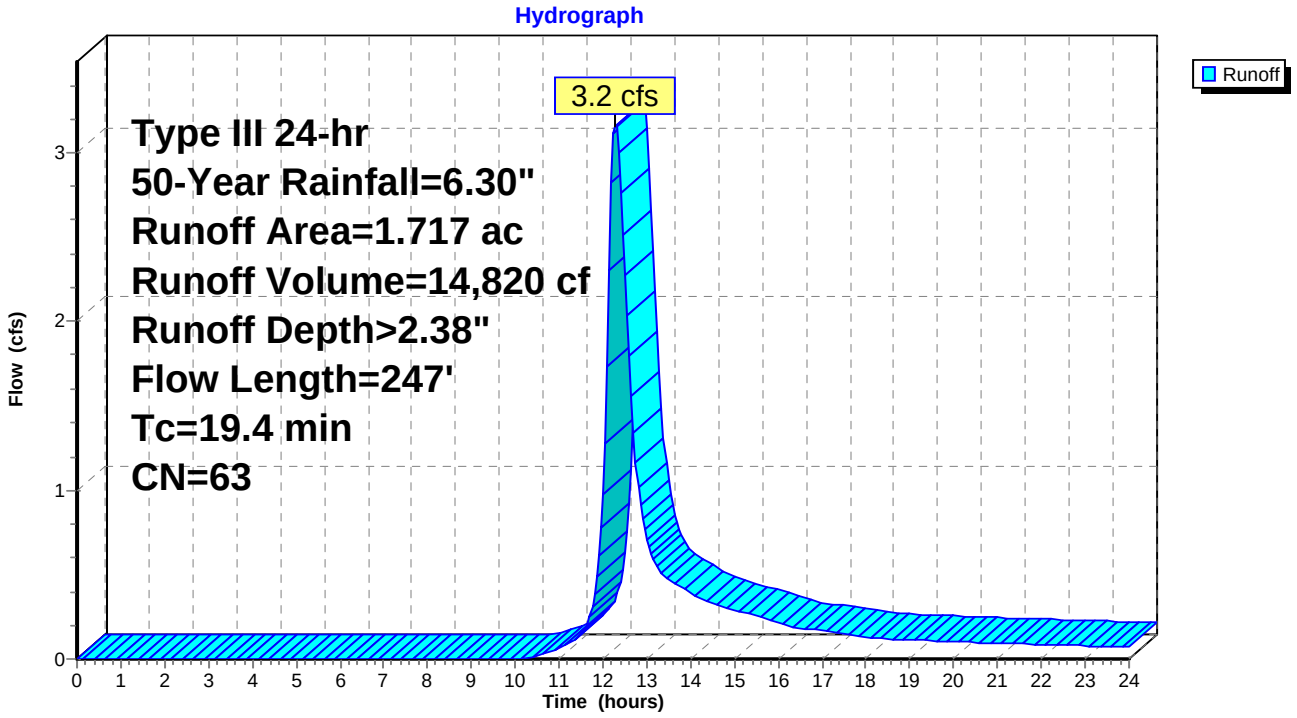
Runoff = 3.2 cfs @ 12.28 hrs, Volume= 14,820 cf, Depth> 2.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 50-Year Rainfall=6.30"

	Area (ac)	CN	Description
	0.091	77	Woods, Good, HSG D
	0.151	55	Woods, Good, HSG B
	1.283	61	>75% Grass cover, Good, HSG B
	0.187	80	>75% Grass cover, Good, HSG D
*	0.000	98	Solar Array Posts, HSG B
	0.005	98	Paved parking, HSG B
	1.717	63	Weighted Average
	1.712		99.71% Pervious Area
	0.005		0.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.5	100	0.0128	0.10		**Sheet Flow, Grass** Grass: Dense n= 0.240 P2= 3.40"
2.9	147	0.0148	0.85		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
19.4	247	Total			

Subcatchment 9S: Greenfield 2



Summary for Reach 19R: Riprap Swale

Inflow Area = 85,378 sf, 3.27% Impervious, Inflow Depth > 3.53" for 50-Year event
Inflow = 6.1 cfs @ 12.21 hrs, Volume= 25,110 cf
Outflow = 5.9 cfs @ 12.25 hrs, Volume= 25,044 cf, Atten= 3%, Lag= 2.4 min

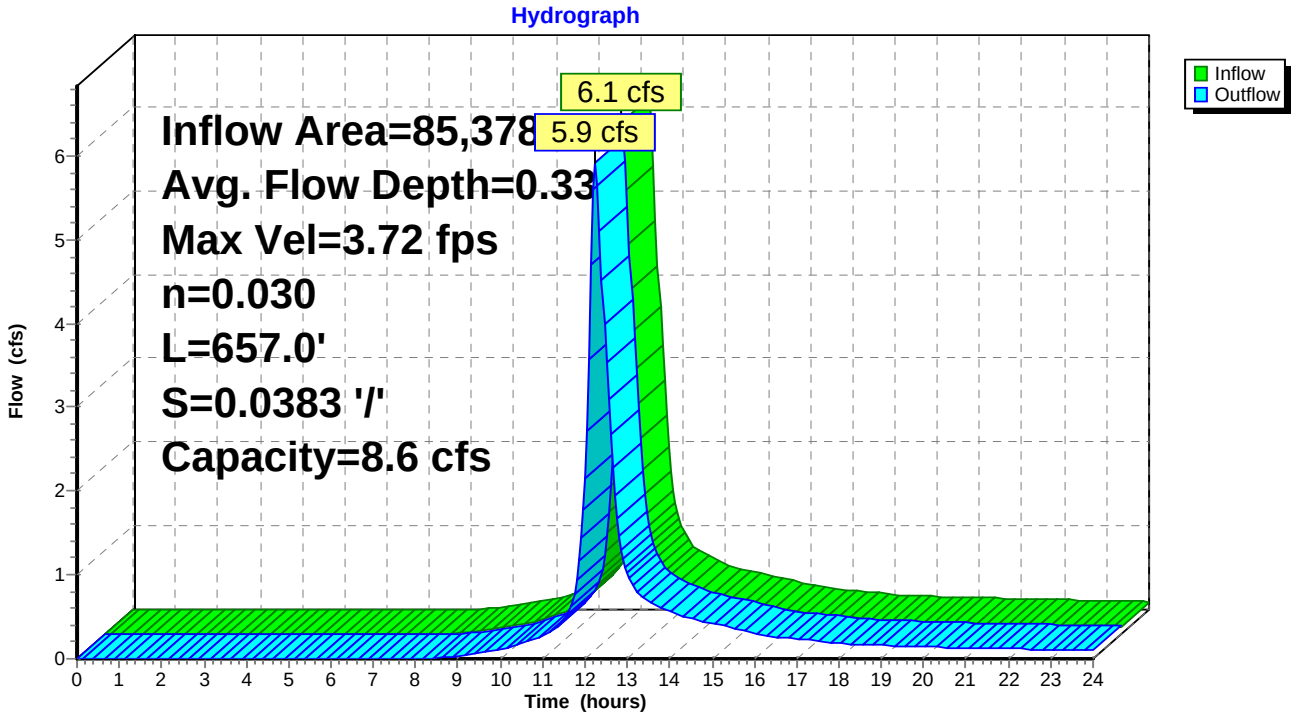
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Max. Velocity= 3.72 fps, Min. Travel Time= 2.9 min
Avg. Velocity = 1.33 fps, Avg. Travel Time= 8.3 min

Peak Storage= 1,046 cf @ 12.25 hrs
Average Depth at Peak Storage= 0.33'
Bank-Full Depth= 0.40' Flow Area= 2.1 sf, Capacity= 8.6 cfs

3.00' x 0.40' deep channel, n= 0.030 Rubble masonry, cemented
Side Slope Z-value= 5.5 '/' Top Width= 7.40'
Length= 657.0' Slope= 0.0383 '/'
Inlet Invert= 274.52', Outlet Invert= 249.36'

‡

Reach 19R: Riprap Swale



Summary for Reach 21R: Riprap Swale

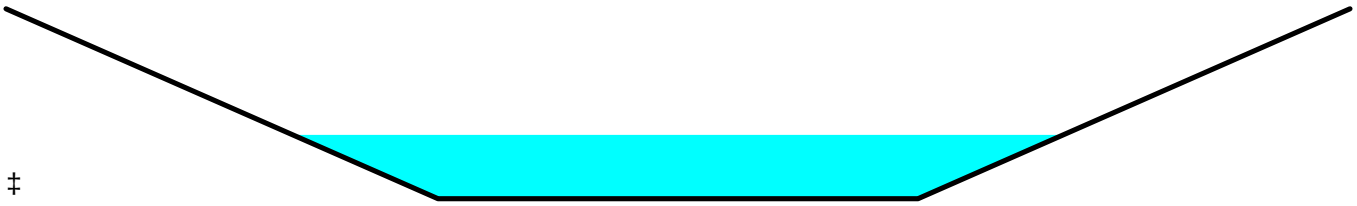
Inflow Area = 53,317 sf, 4.00% Impervious, Inflow Depth > 3.63" for 50-Year event
Inflow = 4.5 cfs @ 12.14 hrs, Volume= 16,147 cf
Outflow = 4.4 cfs @ 12.17 hrs, Volume= 16,108 cf, Atten= 3%, Lag= 1.7 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Max. Velocity= 3.68 fps, Min. Travel Time= 2.4 min
Avg. Velocity = 1.16 fps, Avg. Travel Time= 7.6 min

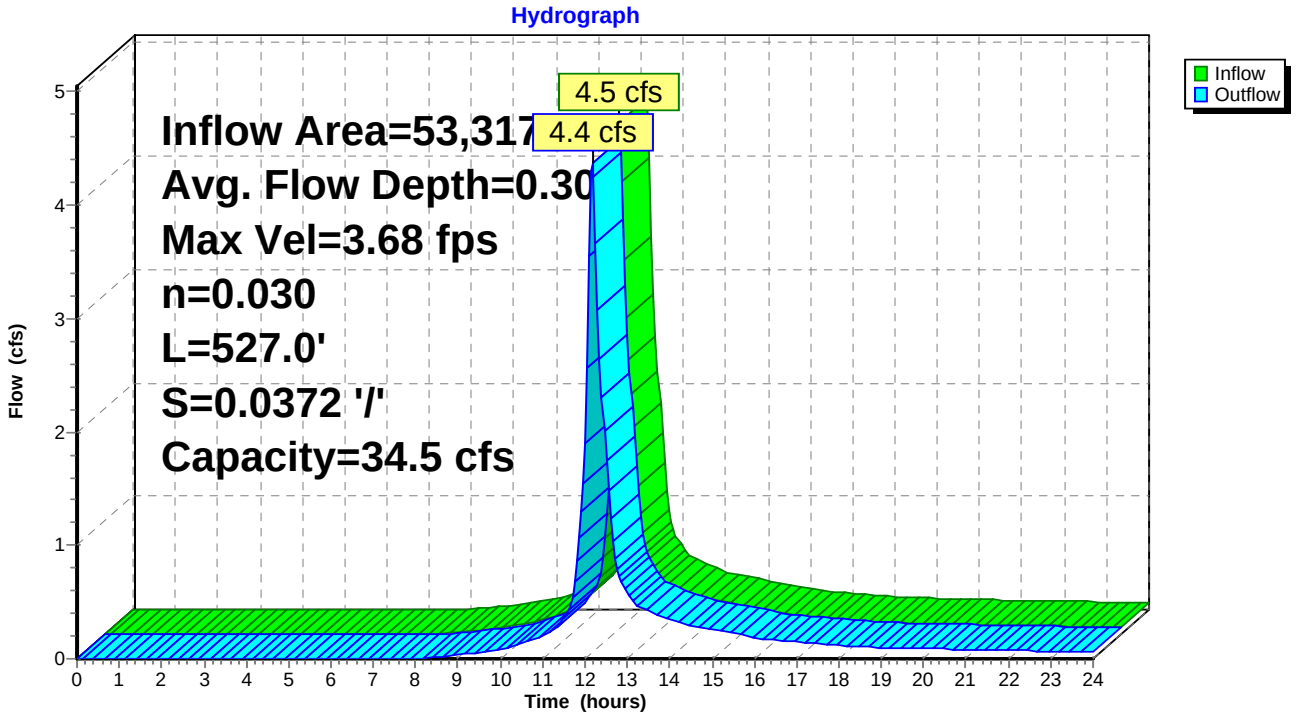
Peak Storage= 624 cf @ 12.17 hrs
Average Depth at Peak Storage= 0.30'
Bank-Full Depth= 0.90' Flow Area= 5.1 sf, Capacity= 34.5 cfs

3.00' x 0.90' deep channel, n= 0.030 Rubble masonry, cemented
Side Slope Z-value= 3.0 '/' Top Width= 8.40'
Length= 527.0' Slope= 0.0372 '/'
Inlet Invert= 276.70', Outlet Invert= 257.10'

‡



Reach 21R: Riprap Swale

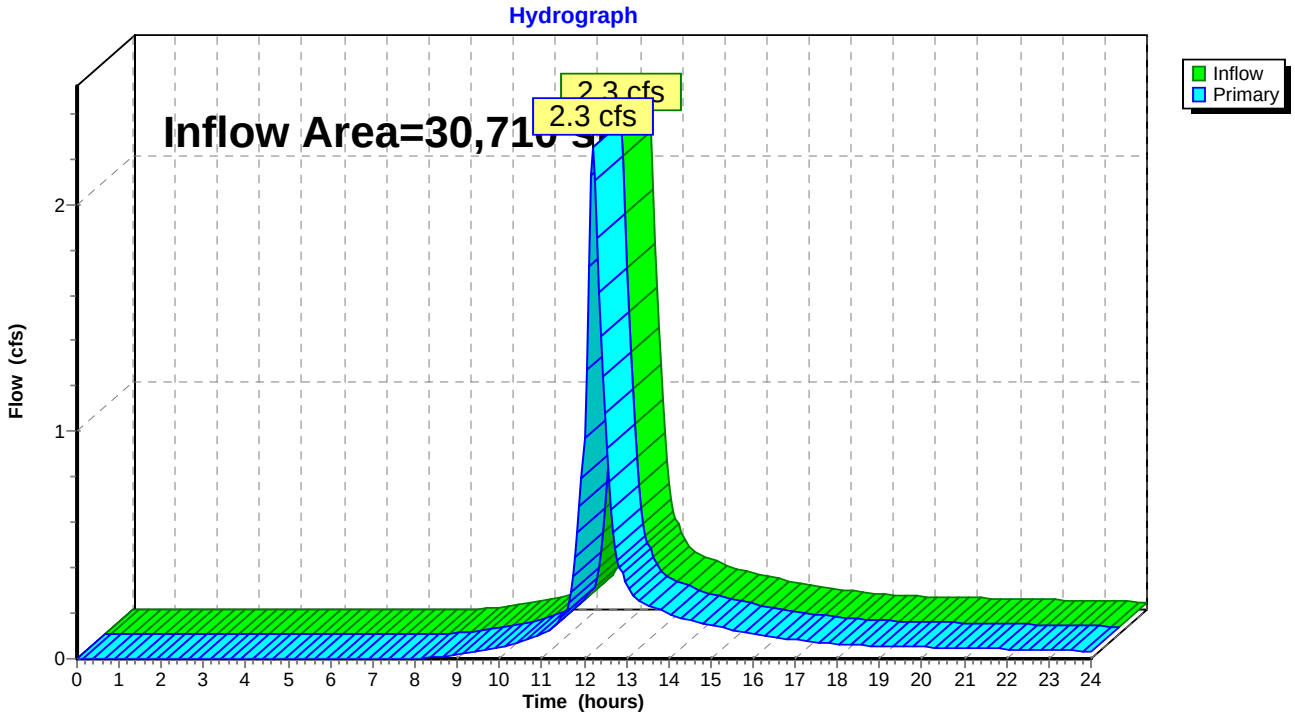


Summary for Link 7L: Wetlands NW

Inflow Area = 30,710 sf, 4.54% Impervious, Inflow Depth > 3.53" for 50-Year event
Inflow = 2.3 cfs @ 12.20 hrs, Volume= 9,034 cf
Primary = 2.3 cfs @ 12.20 hrs, Volume= 9,034 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 7L: Wetlands NW

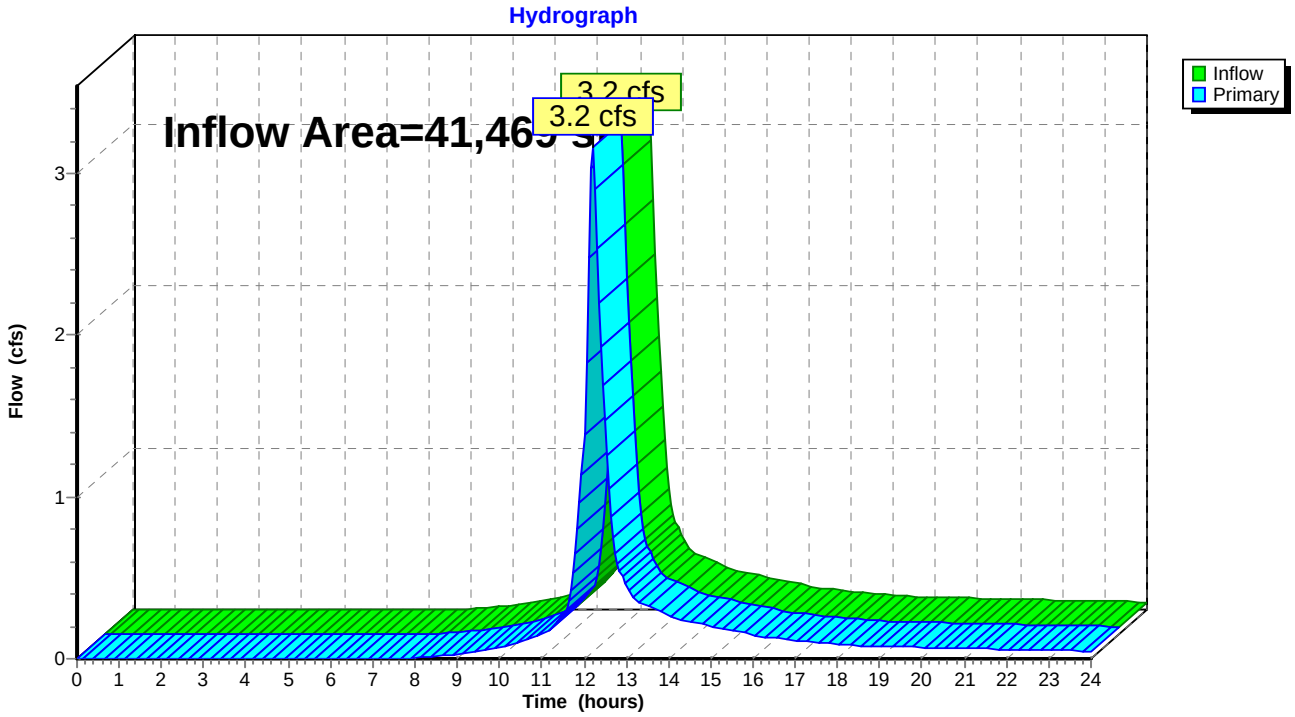


Summary for Link 8L: Depression S

Inflow Area = 41,469 sf, 4.52% Impervious, Inflow Depth > 3.63" for 50-Year event
Inflow = 3.2 cfs @ 12.19 hrs, Volume= 12,550 cf
Primary = 3.2 cfs @ 12.19 hrs, Volume= 12,550 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 8L: Depression S

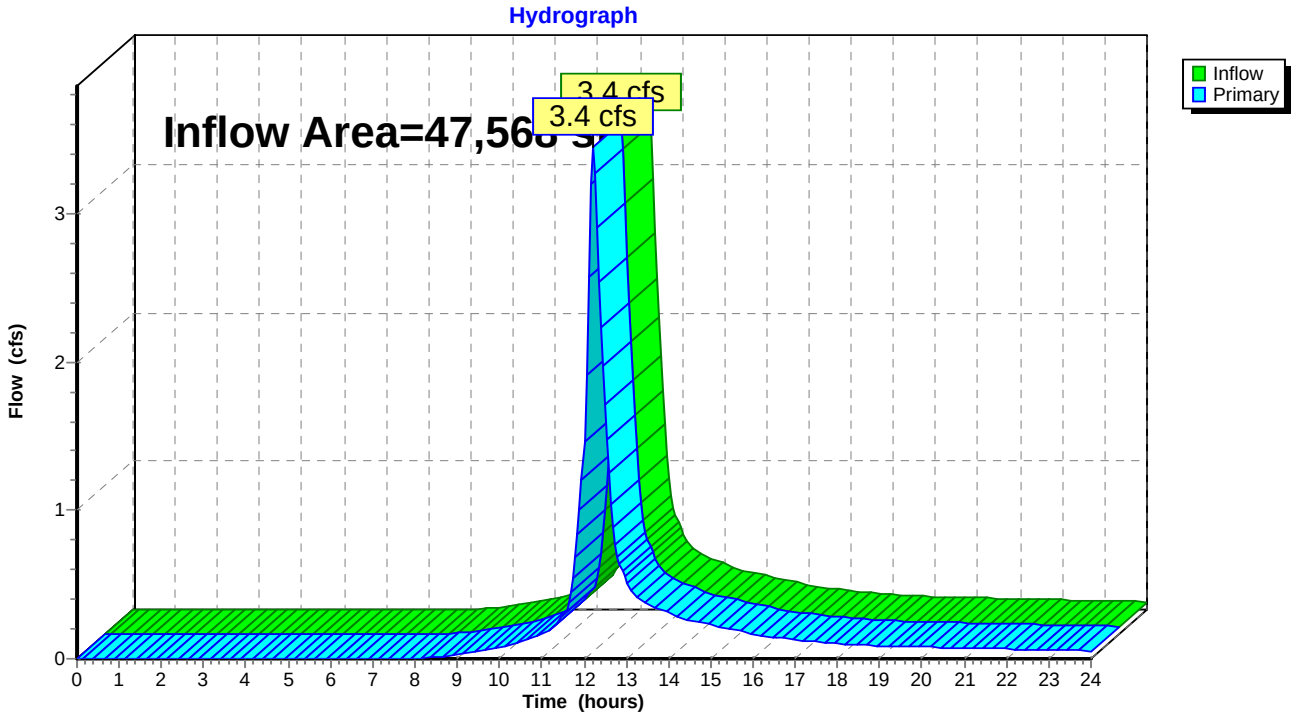


Summary for Link 9L: Wetlands NE

Inflow Area = 47,568 sf, 5.31% Impervious, Inflow Depth > 3.53" for 50-Year event
Inflow = 3.4 cfs @ 12.20 hrs, Volume= 13,992 cf
Primary = 3.4 cfs @ 12.20 hrs, Volume= 13,992 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 9L: Wetlands NE

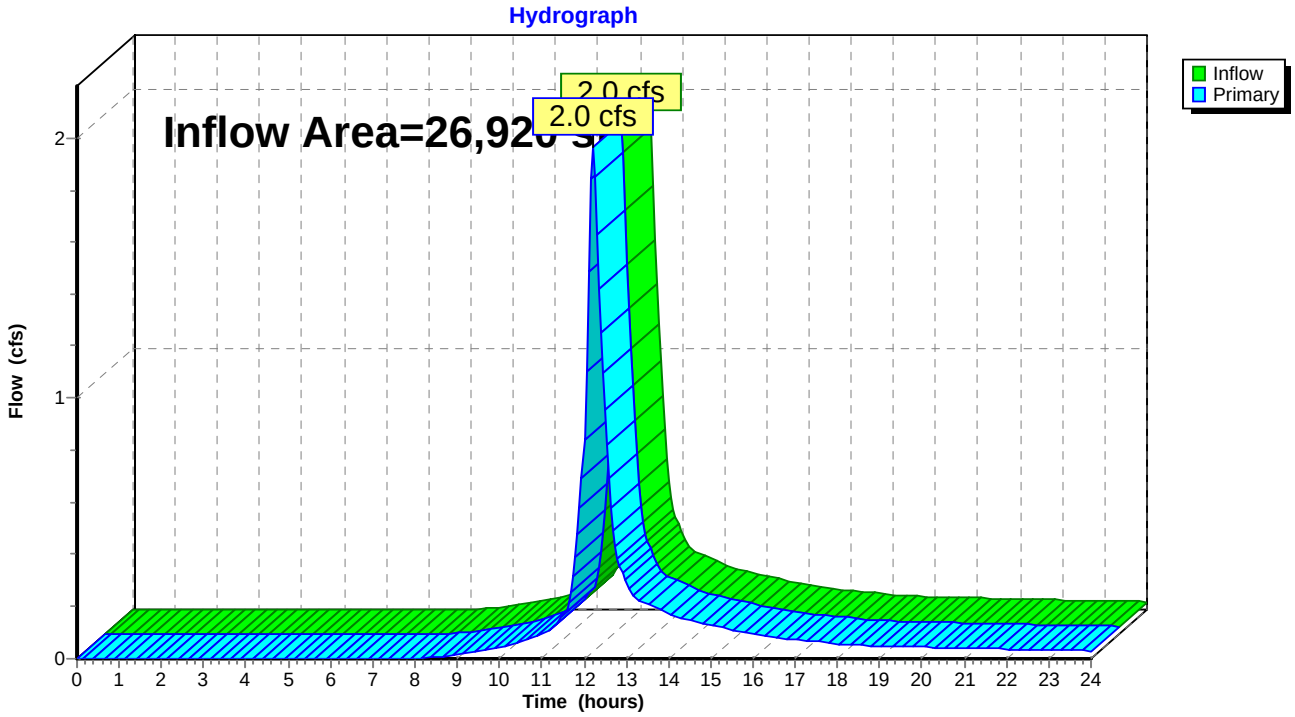


Summary for Link 10L: Wetlands N

Inflow Area = 26,920 sf, 4.53% Impervious, Inflow Depth > 3.53" for 50-Year event
Inflow = 2.0 cfs @ 12.20 hrs, Volume= 7,919 cf
Primary = 2.0 cfs @ 12.20 hrs, Volume= 7,919 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 10L: Wetlands N

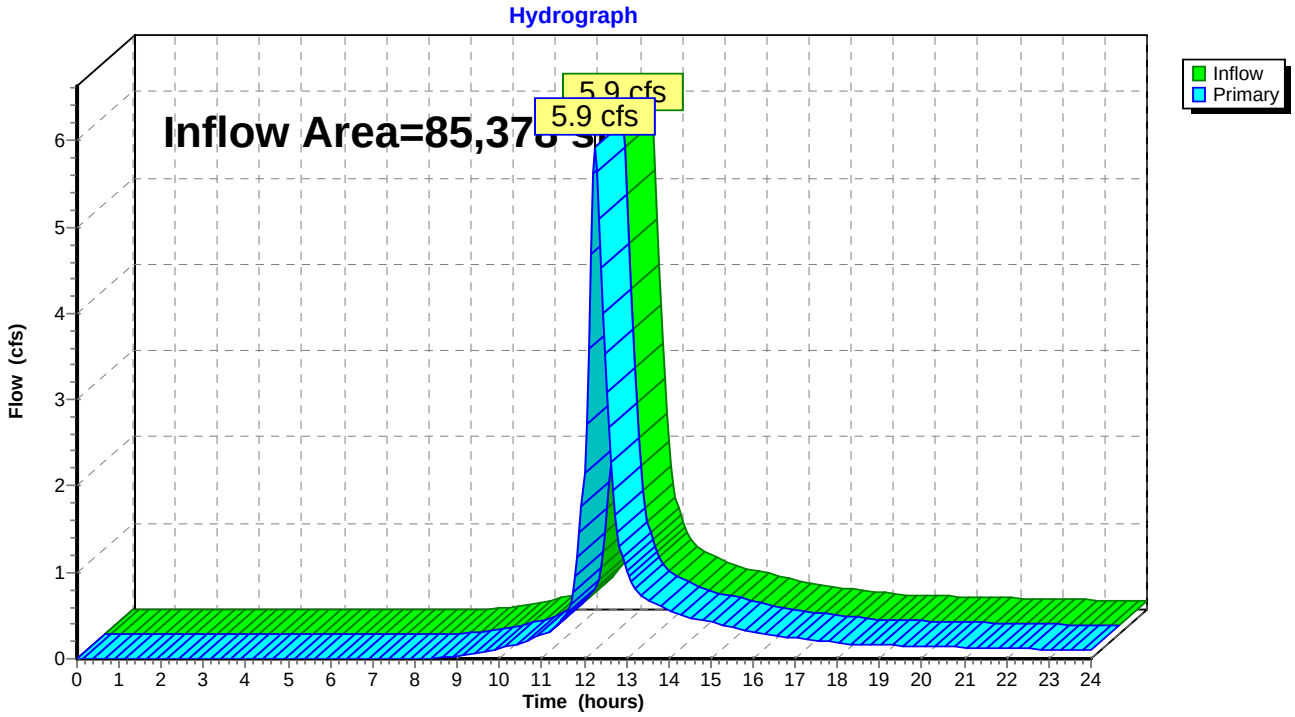


Summary for Link 11L: Collection Swale W

Inflow Area = 85,378 sf, 3.27% Impervious, Inflow Depth > 3.52" for 50-Year event
Inflow = 5.9 cfs @ 12.25 hrs, Volume= 25,044 cf
Primary = 5.9 cfs @ 12.25 hrs, Volume= 25,044 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 11L: Collection Swale W

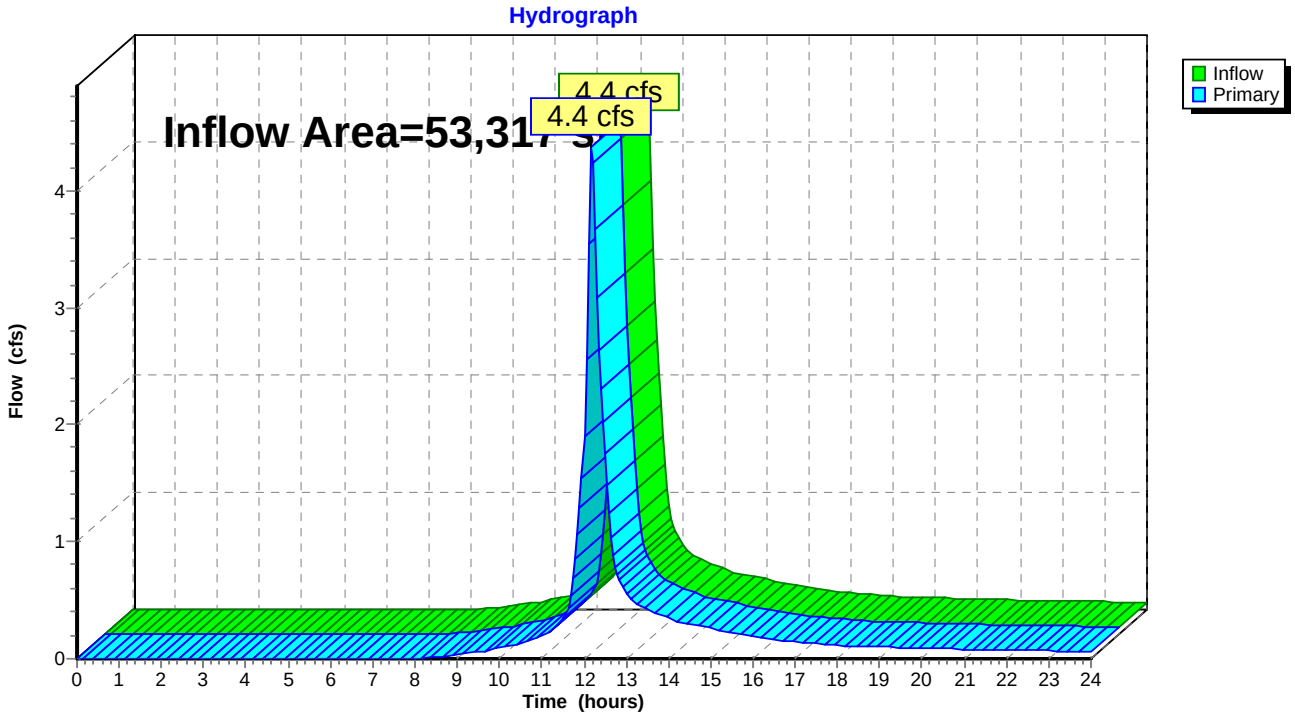


Summary for Link 12L: Collection Swale W

Inflow Area = 53,317 sf, 4.00% Impervious, Inflow Depth > 3.63" for 50-Year event
Inflow = 4.4 cfs @ 12.17 hrs, Volume= 16,108 cf
Primary = 4.4 cfs @ 12.17 hrs, Volume= 16,108 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 12L: Collection Swale W

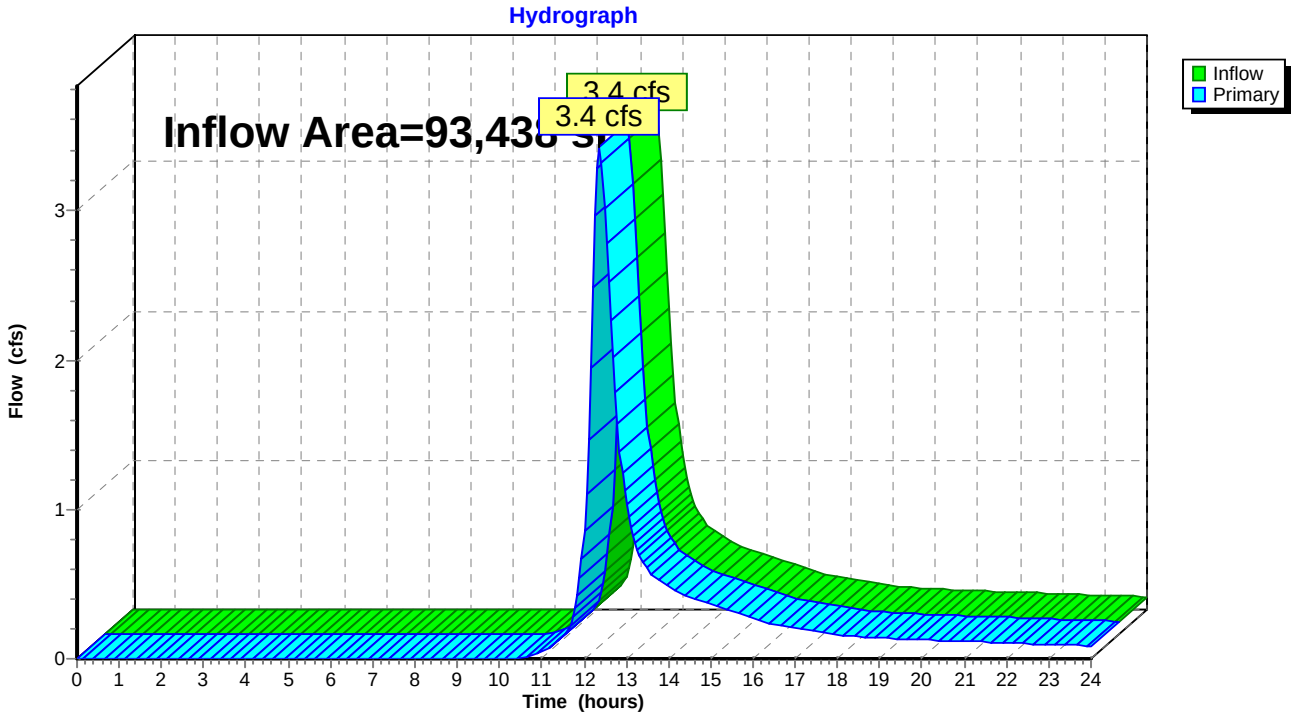


Summary for Link 15L: Wetland W

Inflow Area = 93,438 sf, 0.61% Impervious, Inflow Depth > 2.28" for 50-Year event
Inflow = 3.4 cfs @ 12.37 hrs, Volume= 17,788 cf
Primary = 3.4 cfs @ 12.37 hrs, Volume= 17,788 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 15L: Wetland W

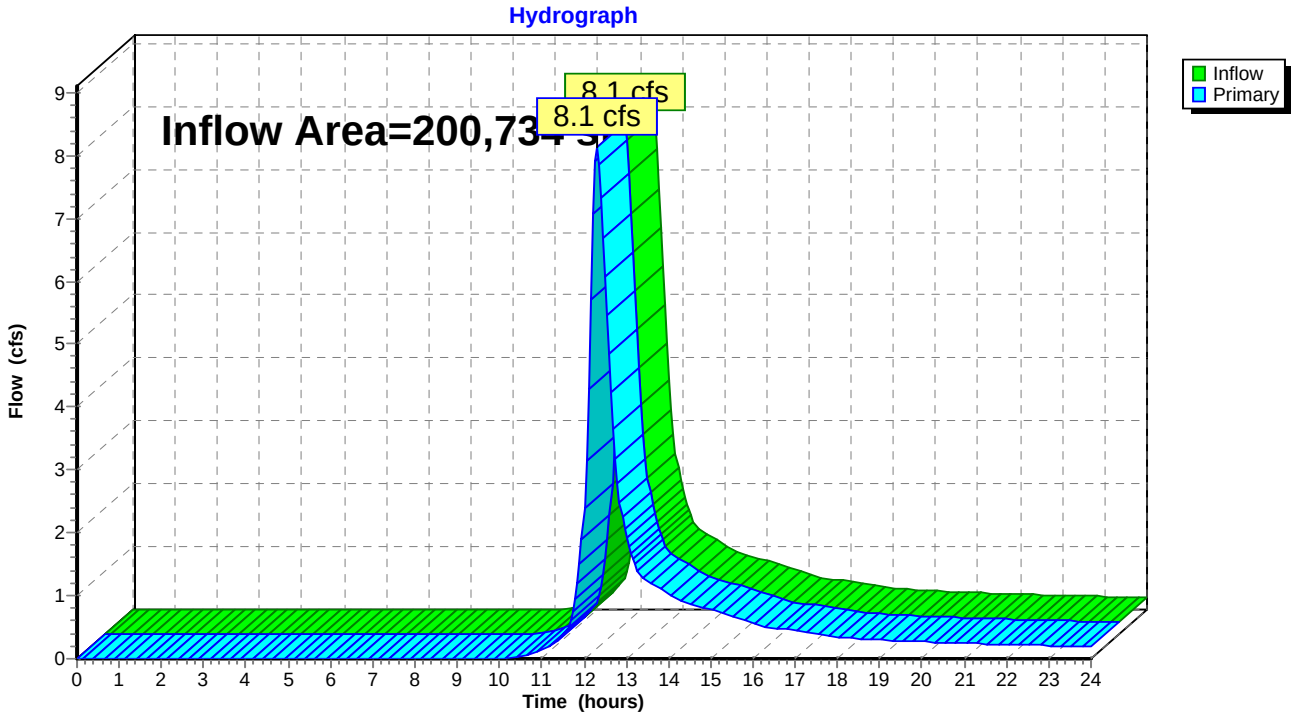


Summary for Link 16L: Wetland E

Inflow Area = 200,734 sf, 0.11% Impervious, Inflow Depth > 2.32" for 50-Year event
Inflow = 8.1 cfs @ 12.30 hrs, Volume= 38,821 cf
Primary = 8.1 cfs @ 12.30 hrs, Volume= 38,821 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 16L: Wetland E



Time span=0.00-24.00 hrs, dt=0.050 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Bulky Waste Landfill SW Runoff Area=0.952 ac 4.52% Impervious Runoff Depth>4.34"
Flow Length=239' Tc=13.7 min CN=76 Runoff=3.8 cfs 14,985 cf

Subcatchment 2S: Bulky Waste Landfill NW Runoff Area=0.705 ac 4.54% Impervious Runoff Depth>4.23"
Flow Length=179' Tc=14.1 min CN=75 Runoff=2.7 cfs 10,818 cf

Subcatchment 3S: Bulky Waste Landfill E Runoff Area=1.092 ac 5.31% Impervious Runoff Depth>4.23"
Flow Length=204' Tc=14.6 min CN=75 Runoff=4.1 cfs 16,755 cf

Subcatchment 4S: Landfill N Runoff Area=0.618 ac 4.53% Impervious Runoff Depth>4.23"
Flow Length=222' Tc=14.3 min CN=75 Runoff=2.4 cfs 9,483 cf

Subcatchment 5S: Landfill W Runoff Area=1.960 ac 3.27% Impervious Runoff Depth>4.23"
Flow Length=752' Tc=15.2 min CN=75 Runoff=7.3 cfs 30,069 cf

Subcatchment 6S: Landfill E Runoff Area=1.224 ac 4.00% Impervious Runoff Depth>4.34"
Flow Length=459' Tc=10.0 min CN=76 Runoff=5.4 cfs 19,281 cf

Subcatchment 7S: Green Field W Runoff Area=93,438 sf 0.61% Impervious Runoff Depth>2.86"
Flow Length=472' Tc=24.7 min CN=62 Runoff=4.3 cfs 22,257 cf

Subcatchment 8S: Green Field E Runoff Area=125,941 sf 0.00% Impervious Runoff Depth>2.86"
Flow Length=305' Tc=20.6 min CN=62 Runoff=6.3 cfs 30,030 cf

Subcatchment 9S: Greenfield 2 Runoff Area=1.717 ac 0.29% Impervious Runoff Depth>2.96"
Flow Length=247' Tc=19.4 min CN=63 Runoff=4.0 cfs 18,468 cf

Reach 19R: Riprap Swale Avg. Flow Depth=0.36' Max Vel=3.92 fps Inflow=7.3 cfs 30,069 cf
n=0.030 L=657.0' S=0.0383 '/' Capacity=8.6 cfs Outflow=7.1 cfs 29,996 cf

Reach 21R: Riprap Swale Avg. Flow Depth=0.33' Max Vel=3.89 fps Inflow=5.4 cfs 19,281 cf
n=0.030 L=527.0' S=0.0372 '/' Capacity=34.5 cfs Outflow=5.2 cfs 19,237 cf

Link 7L: Wetlands NW Inflow=2.7 cfs 10,818 cf
Primary=2.7 cfs 10,818 cf

Link 8L: Depression S Inflow=3.8 cfs 14,985 cf
Primary=3.8 cfs 14,985 cf

Link 9L: Wetlands NE Inflow=4.1 cfs 16,755 cf
Primary=4.1 cfs 16,755 cf

Link 10L: Wetlands N Inflow=2.4 cfs 9,483 cf
Primary=2.4 cfs 9,483 cf

Link 11L: Collection Swale W Inflow=7.1 cfs 29,996 cf
Primary=7.1 cfs 29,996 cf

Link 12L: Collection Swale W Inflow=5.2 cfs 19,237 cf
Primary=5.2 cfs 19,237 cf

Link 15L: Wetland W Inflow=4.3 cfs 22,257 cf
Primary=4.3 cfs 22,257 cf

Link 16L: Wetland E Inflow=10.3 cfs 48,498 cf
Primary=10.3 cfs 48,498 cf

Total Runoff Area = 579,533 sf Runoff Volume = 172,145 cf Average Runoff Depth = 3.56"
97.80% Pervious = 566,801 sf 2.20% Impervious = 12,732 sf

Summary for Subcatchment 1S: Bulky Waste Landfill SW

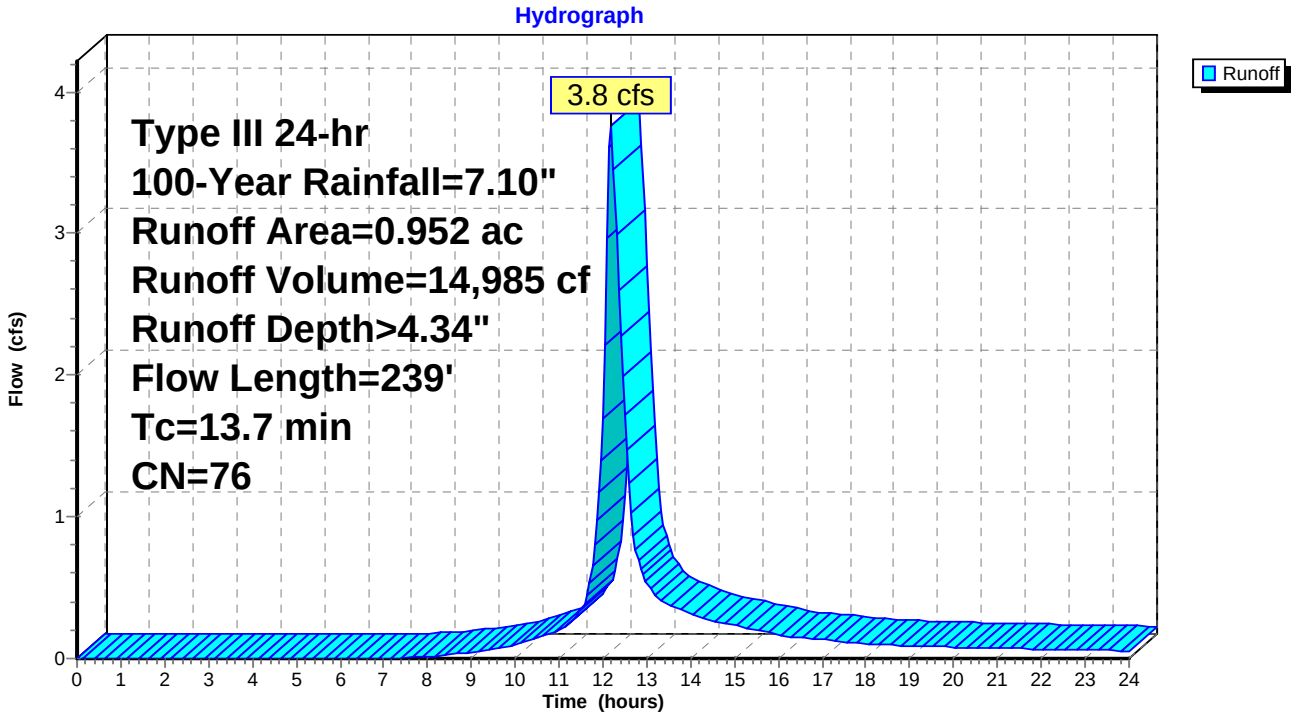
Runoff = 3.8 cfs @ 12.19 hrs, Volume= 14,985 cf, Depth> 4.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (ac)	CN	Description
	0.829	74	>75% Grass cover, Good, HSG C
	0.080	89	Gravel roads, HSG C
*	0.003	98	Equipment Pad, HSG C
*	0.040	98	Solar array Ballasts, HSG C
	0.952	76	Weighted Average
	0.909		95.48% Pervious Area
	0.043		4.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.6	100	0.0251	0.13		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
0.5	66	0.1137	2.36		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	46	0.1957	3.10		**Shallow Concentrated Flow, Lanfill Cap** Short Grass Pasture Kv= 7.0 fps
0.4	27	0.0050	1.14		**Shallow Concentrated Flow, Access Drive** Unpaved Kv= 16.1 fps
13.7	239	Total			

Subcatchment 1S: Bulky Waste Landfill SW



Summary for Subcatchment 2S: Bulky Waste Landfill NW

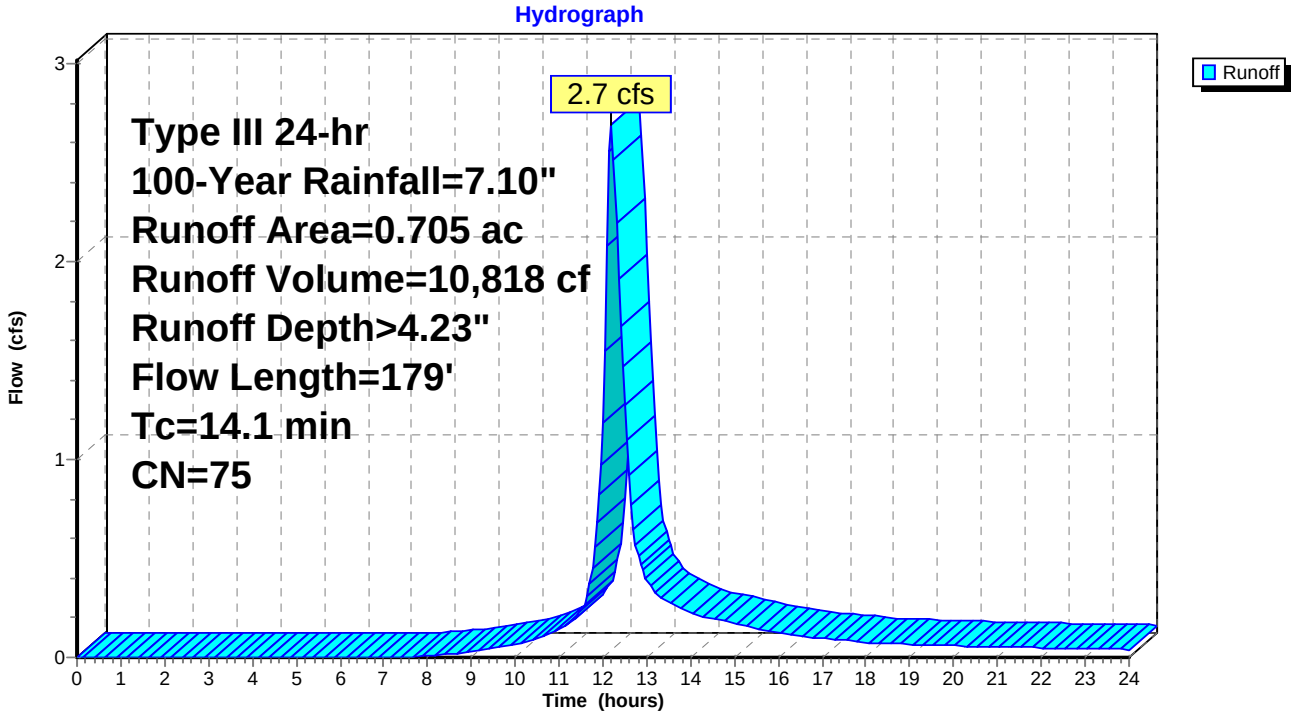
Runoff = 2.7 cfs @ 12.20 hrs, Volume= 10,818 cf, Depth> 4.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (ac)	CN	Description
	0.659	74	>75% Grass cover, Good, HSG C
*	0.032	98	Solar array ballasts, HSG C
	0.014	89	Gravel roads, HSG C
	0.705	75	Weighted Average
	0.673		95.46% Pervious Area
	0.032		4.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0212	0.12		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
0.6	79	0.0886	2.08		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
14.1	179	Total			

Subcatchment 2S: Bulky Waste Landfill NW



Summary for Subcatchment 3S: Bulky Waste Landfill E

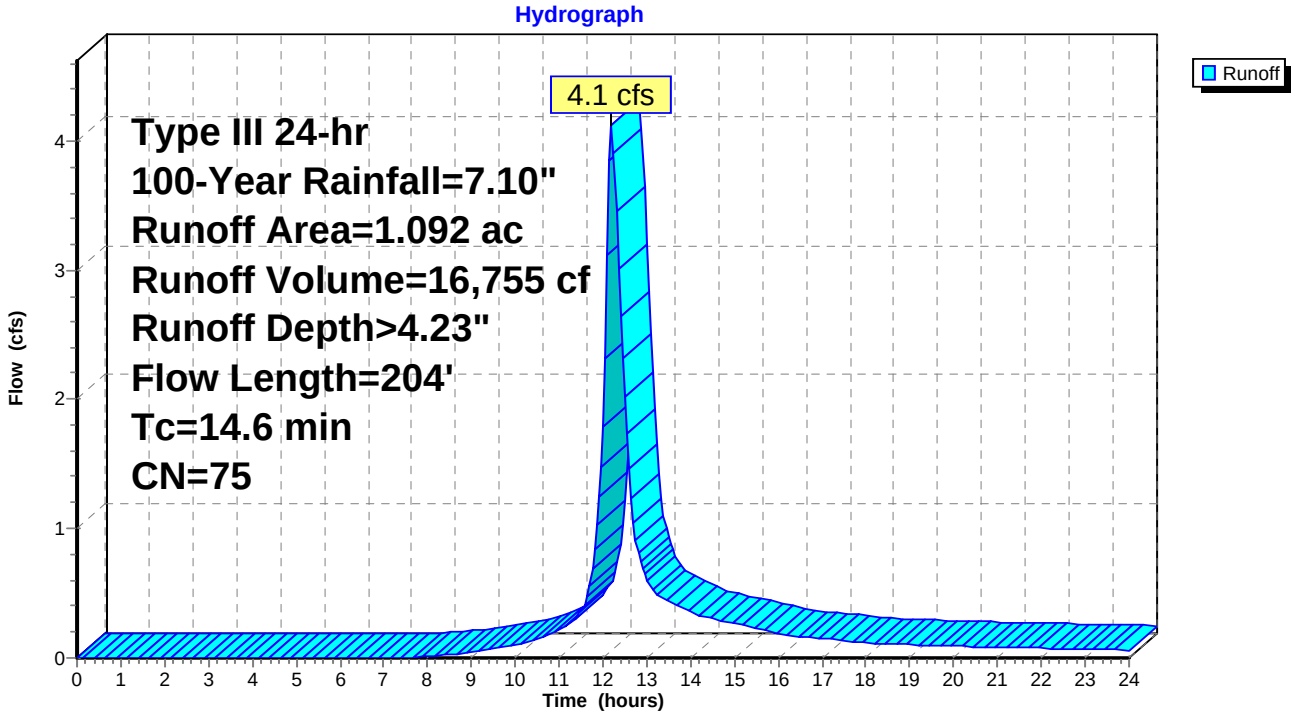
Runoff = 4.1 cfs @ 12.20 hrs, Volume= 16,755 cf, Depth> 4.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (ac)	CN	Description
	1.034	74	>75% Grass cover, Good, HSG C
*	0.058	98	Solar array ballasts, HSG C
	1.092	75	Weighted Average
	1.034		94.69% Pervious Area
	0.058		5.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0212	0.12		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
1.0	80	0.0375	1.36		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.1	24	0.1667	2.86		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
14.6	204	Total			

Subcatchment 3S: Bulky Waste Landfill E



Summary for Subcatchment 4S: Landfill N

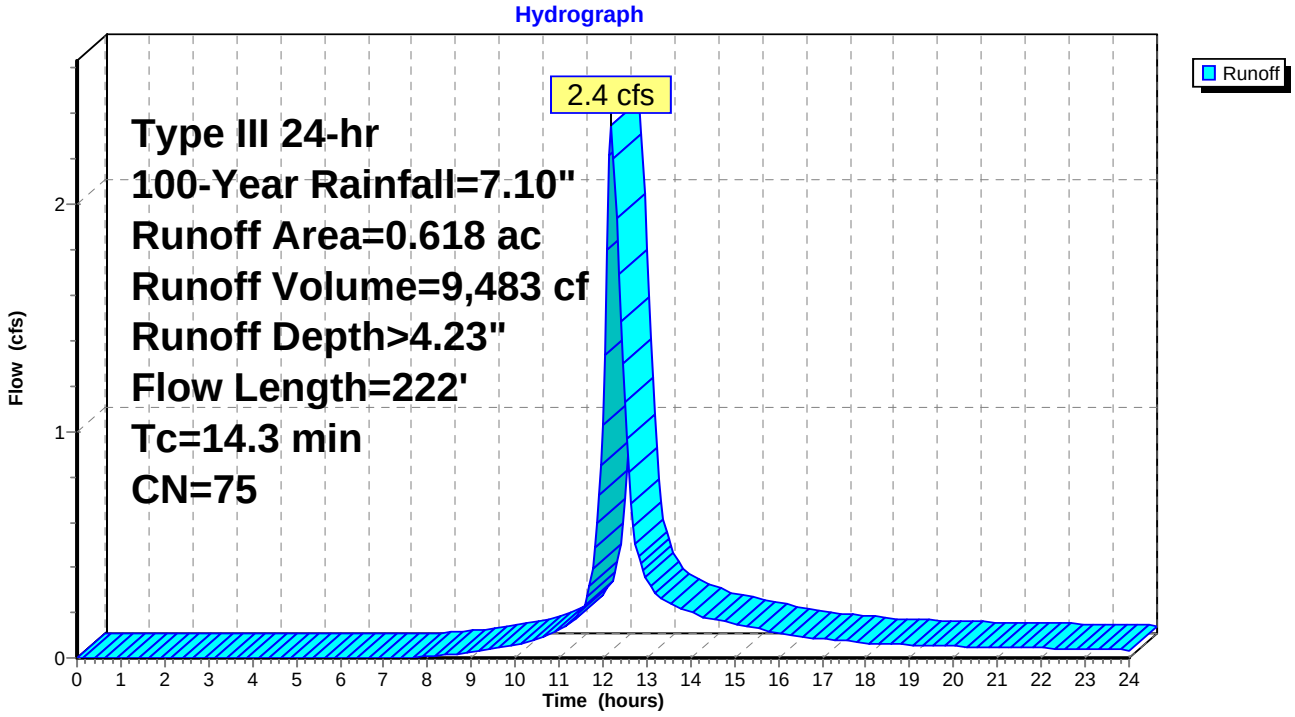
Runoff = 2.4 cfs @ 12.20 hrs, Volume= 9,483 cf, Depth> 4.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (ac)	CN	Description
	0.590	74	>75% Grass cover, Good, HSG C
*	0.028	98	Solar array ballasts, HSG C
	0.618	75	Weighted Average
	0.590		95.47% Pervious Area
	0.028		4.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	100	0.0230	0.13		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
1.0	81	0.0371	1.35		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	41	0.1707	2.89		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
14.3	222	Total			

Subcatchment 4S: Landfill N



Summary for Subcatchment 5S: Landfill W

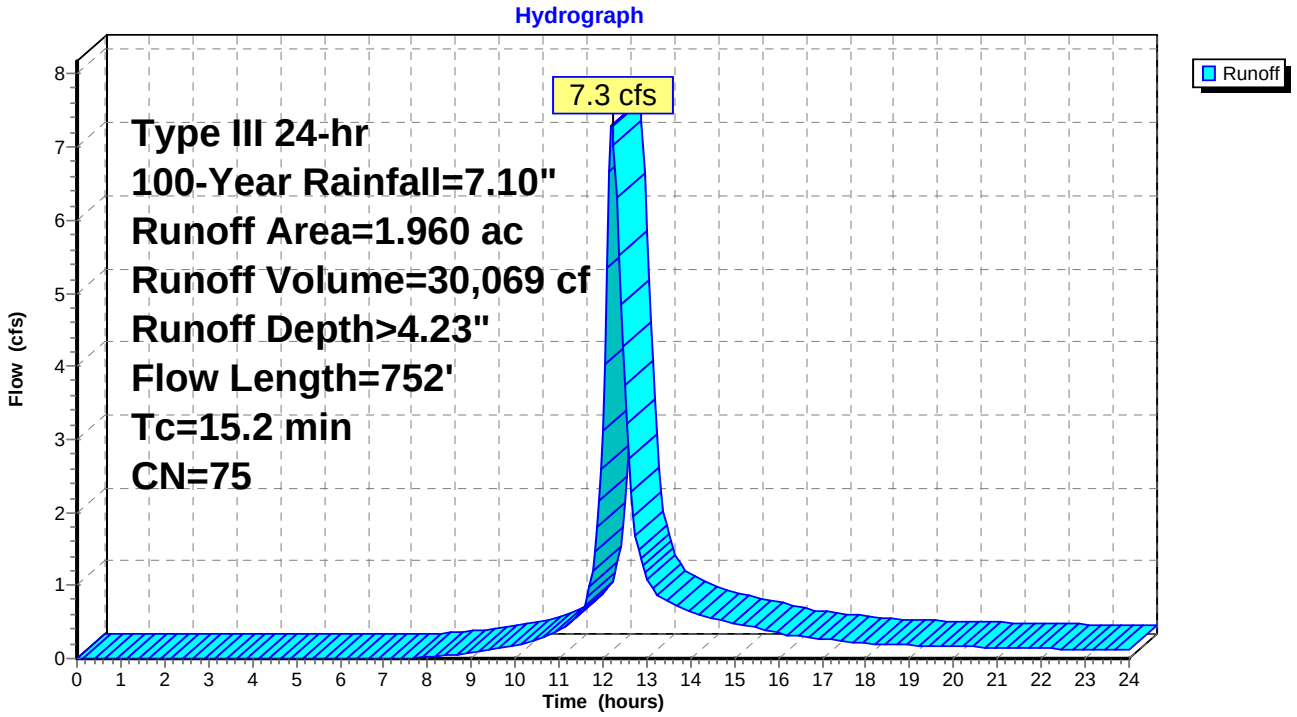
Runoff = 7.3 cfs @ 12.21 hrs, Volume= 30,069 cf, Depth> 4.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (ac)	CN	Description
	1.896	74	>75% Grass cover, Good, HSG C
*	0.064	98	Solar array ballasts, HSG C
	1.960	75	Weighted Average
	1.896		96.73% Pervious Area
	0.064		3.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.3	100	0.0220	0.13		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
0.3	37	0.0811	1.99		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.3	58	0.1897	3.05		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
1.3	520	0.0200	6.71	50.33	**Channel Flow, Riprap Swale** Area= 7.5 sf Perim= 8.0' r= 0.94' n= 0.030 Rubble masonry, cemented
0.0	37	0.2160	22.05	165.39	**Channel Flow, Riprap Swale** Area= 7.5 sf Perim= 8.0' r= 0.94' n= 0.030 Rubble masonry, cemented
15.2	752	Total			

Subcatchment 5S: Landfill W



Summary for Subcatchment 6S: Landfill E

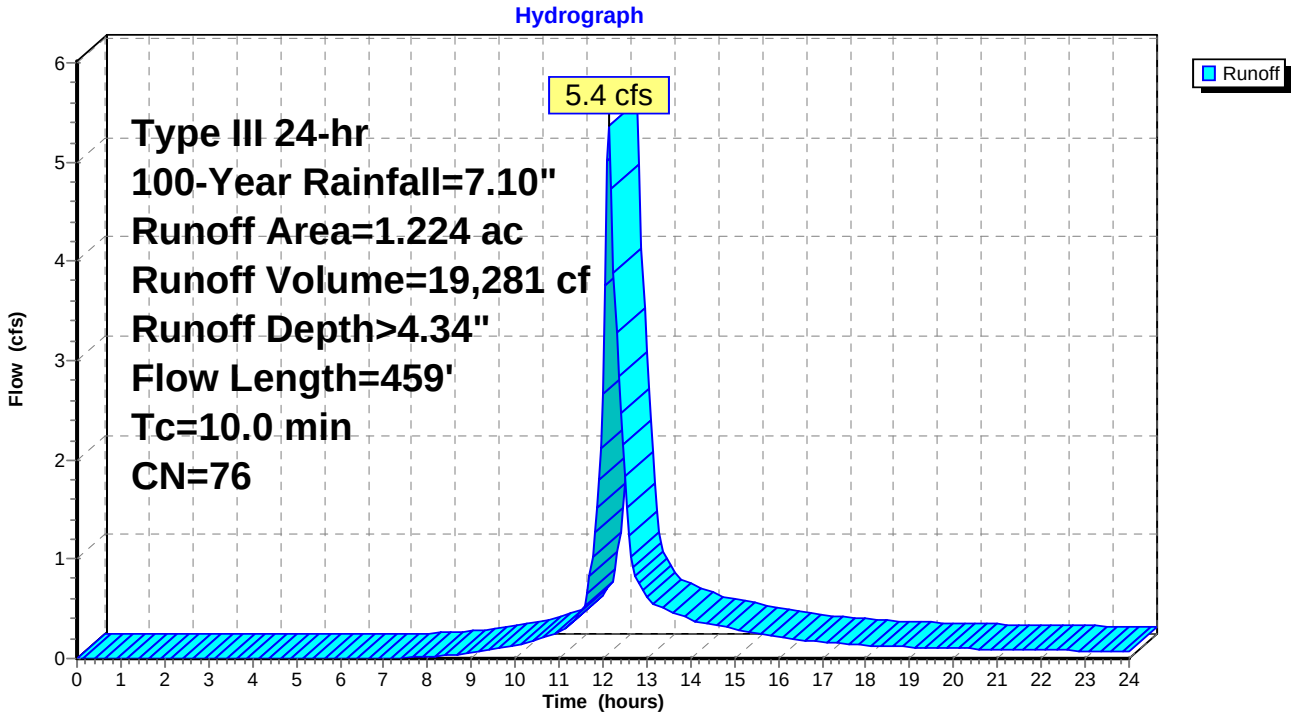
Runoff = 5.4 cfs @ 12.14 hrs, Volume= 19,281 cf, Depth> 4.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (ac)	CN	Description
	1.085	74	>75% Grass cover, Good, HSG C
	0.090	89	Gravel roads, HSG C
*	0.046	98	Solar array ballasts, HSG C
*	0.003	98	Concrete Equipment Pad, HSG C
	1.224	76	Weighted Average
	1.175		96.00% Pervious Area
	0.049		4.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.5	40	0.0543	0.15		**Sheet Flow, Landfill Cap** Grass: Dense n= 0.240 P2= 3.40"
1.0	60	0.0117	1.03		**Sheet Flow, Gravel** Smooth surfaces n= 0.011 P2= 3.40"
0.5	86	0.0384	3.15		**Shallow Concentrated Flow, Gravel** Unpaved Kv= 16.1 fps
0.7	76	0.0658	1.80		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	49	0.2245	3.32		**Shallow Concentrated Flow, Landfill Cap** Short Grass Pasture Kv= 7.0 fps
0.2	148	0.1081	15.60	117.00	**Channel Flow, Riprap Swale** Area= 7.5 sf Perim= 8.0' r= 0.94' n= 0.030 Rubble masonry, cemented
7.1	459	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 6S: Landfill E



Summary for Subcatchment 7S: Green Field W

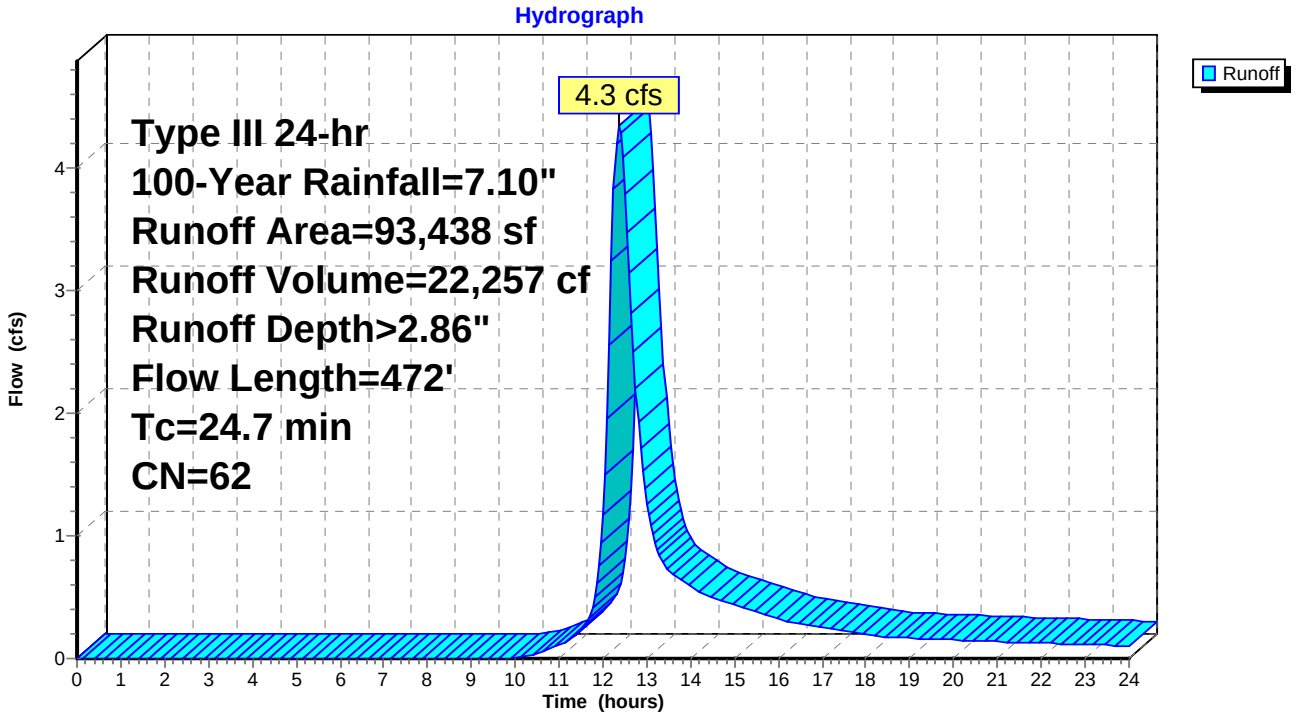
Runoff = 4.3 cfs @ 12.36 hrs, Volume= 22,257 cf, Depth> 2.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (sf)	CN	Description
	832	74	>75% Grass cover, Good, HSG C
	3,861	80	>75% Grass cover, Good, HSG D
	21,955	61	>75% Grass cover, Good, HSG B
	66,216	61	>75% Grass cover, Good, HSG B
	340	98	Paved parking, HSG C
*	4	98	Solar Array Posts, HSG B
*	230	98	Equipment Pad, HSG B
	93,438	62	Weighted Average
	92,864		99.39% Pervious Area
	574		0.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0123	0.10		**Sheet Flow, Field**
					Grass: Dense n= 0.240 P2= 3.40"
0.4	23	0.0217	1.03		**Shallow Concentrated Flow, Field**
					Short Grass Pasture Kv= 7.0 fps
4.8	160	0.0063	0.56		**Shallow Concentrated Flow, Field**
					Short Grass Pasture Kv= 7.0 fps
0.6	51	0.0392	1.39		**Shallow Concentrated Flow, field**
					Short Grass Pasture Kv= 7.0 fps
1.4	88	0.0227	1.05		**Shallow Concentrated Flow, Field**
					Short Grass Pasture Kv= 7.0 fps
0.7	50	0.0300	1.21		**Shallow Concentrated Flow, Field**
					Short Grass Pasture Kv= 7.0 fps
24.7	472	Total			

Subcatchment 7S: Green Field W



Summary for Subcatchment 8S: Green Field E

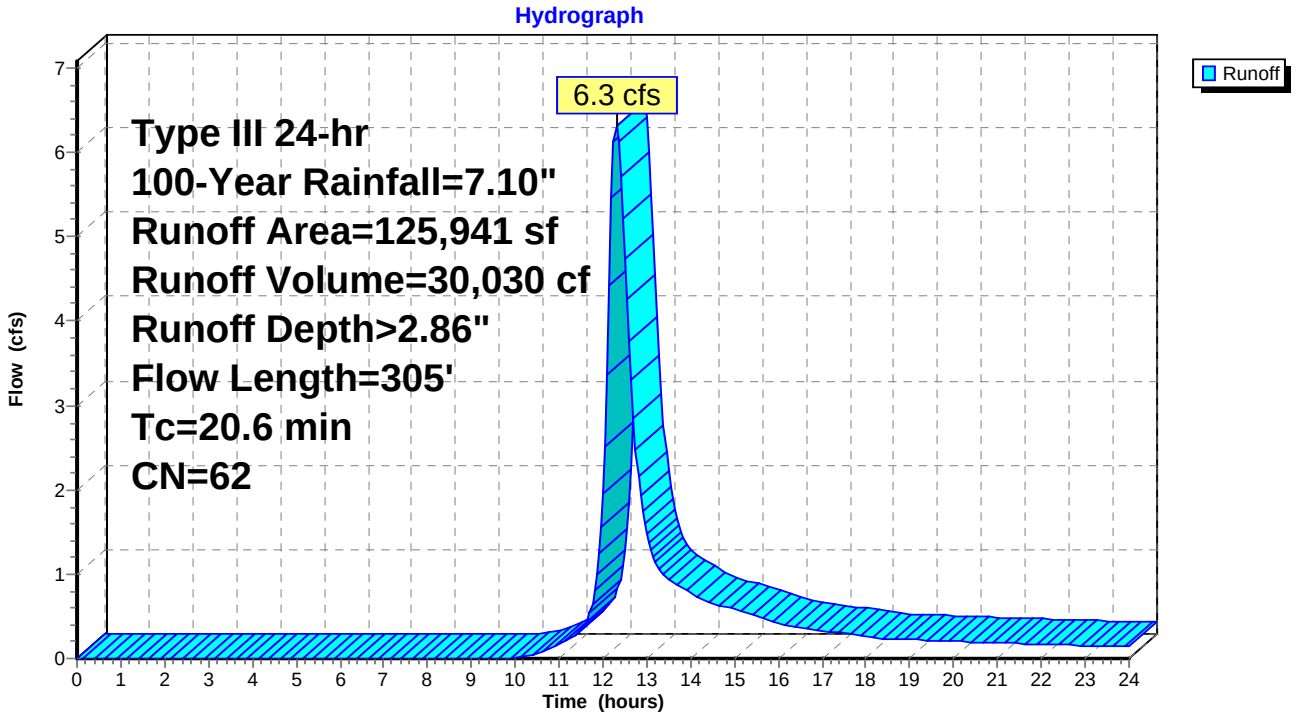
Runoff = 6.3 cfs @ 12.30 hrs, Volume= 30,030 cf, Depth> 2.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (sf)	CN	Description
	116,936	61	>75% Grass cover, Good, HSG B
	3,129	80	>75% Grass cover, Good, HSG D
	1,452	80	>75% Grass cover, Good, HSG D
	4,419	61	>75% Grass cover, Good, HSG B
*	5	98	Solar Array Posts, HSG B
	125,941	62	Weighted Average
	125,936		100.00% Pervious Area
	5		0.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0123	0.10		**Sheet Flow, Field** Grass: Dense n= 0.240 P2= 3.40"
0.4	24	0.0208	1.01		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
2.6	106	0.0094	0.68		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
0.8	75	0.0467	1.51		**Shallow Concentrated Flow, Field** Short Grass Pasture Kv= 7.0 fps
20.6	305	Total			

Subcatchment 8S: Green Field E



Summary for Subcatchment 9S: Greenfield 2

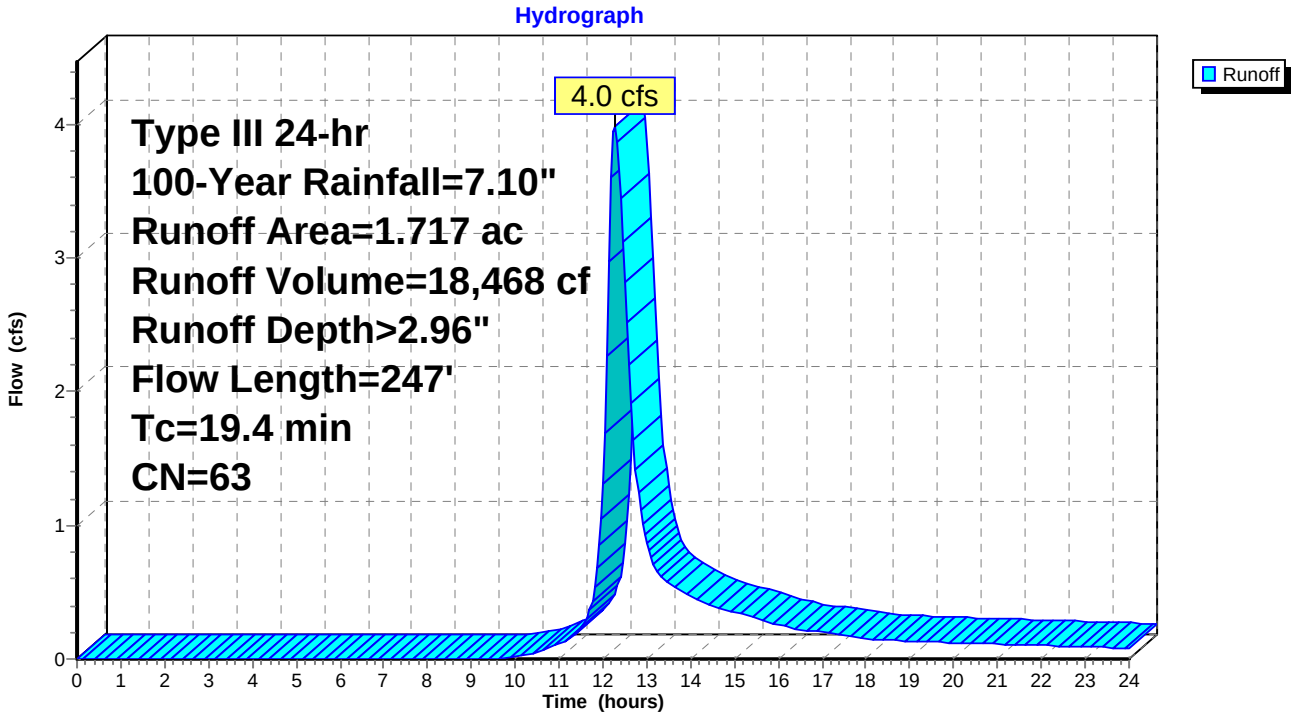
Runoff = 4.0 cfs @ 12.28 hrs, Volume= 18,468 cf, Depth> 2.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (ac)	CN	Description
	0.091	77	Woods, Good, HSG D
	0.151	55	Woods, Good, HSG B
	1.283	61	>75% Grass cover, Good, HSG B
	0.187	80	>75% Grass cover, Good, HSG D
*	0.000	98	Solar Array Posts, HSG B
	0.005	98	Paved parking, HSG B
	1.717	63	Weighted Average
	1.712		99.71% Pervious Area
	0.005		0.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.5	100	0.0128	0.10		**Sheet Flow, Grass** Grass: Dense n= 0.240 P2= 3.40"
2.9	147	0.0148	0.85		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
19.4	247	Total			

Subcatchment 9S: Greenfield 2



Summary for Reach 19R: Riprap Swale

Inflow Area = 85,378 sf, 3.27% Impervious, Inflow Depth > 4.23" for 100-Year event
Inflow = 7.3 cfs @ 12.21 hrs, Volume= 30,069 cf
Outflow = 7.1 cfs @ 12.25 hrs, Volume= 29,996 cf, Atten= 3%, Lag= 2.3 min

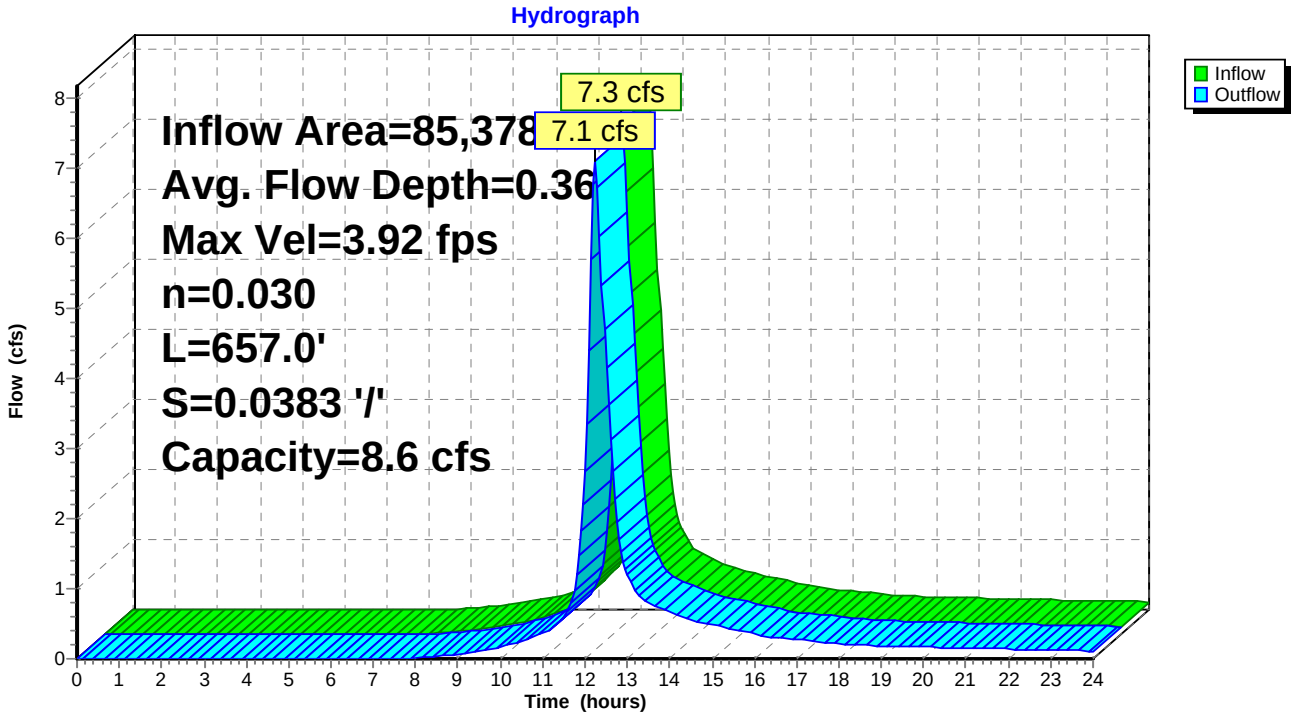
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Max. Velocity= 3.92 fps, Min. Travel Time= 2.8 min
Avg. Velocity = 1.39 fps, Avg. Travel Time= 7.9 min

Peak Storage= 1,191 cf @ 12.25 hrs
Average Depth at Peak Storage= 0.36'
Bank-Full Depth= 0.40' Flow Area= 2.1 sf, Capacity= 8.6 cfs

3.00' x 0.40' deep channel, n= 0.030 Rubble masonry, cemented
Side Slope Z-value= 5.5 '/' Top Width= 7.40'
Length= 657.0' Slope= 0.0383 '/'
Inlet Invert= 274.52', Outlet Invert= 249.36'

‡

Reach 19R: Riprap Swale



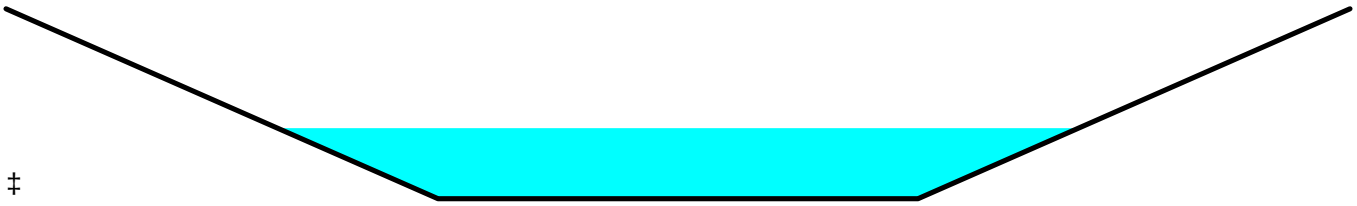
Summary for Reach 21R: Riprap Swale

Inflow Area = 53,317 sf, 4.00% Impervious, Inflow Depth > 4.34" for 100-Year event
Inflow = 5.4 cfs @ 12.14 hrs, Volume= 19,281 cf
Outflow = 5.2 cfs @ 12.17 hrs, Volume= 19,237 cf, Atten= 3%, Lag= 1.6 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs
Max. Velocity= 3.89 fps, Min. Travel Time= 2.3 min
Avg. Velocity = 1.22 fps, Avg. Travel Time= 7.2 min

Peak Storage= 705 cf @ 12.17 hrs
Average Depth at Peak Storage= 0.33'
Bank-Full Depth= 0.90' Flow Area= 5.1 sf, Capacity= 34.5 cfs

3.00' x 0.90' deep channel, n= 0.030 Rubble masonry, cemented
Side Slope Z-value= 3.0 '/' Top Width= 8.40'
Length= 527.0' Slope= 0.0372 '/'
Inlet Invert= 276.70', Outlet Invert= 257.10'



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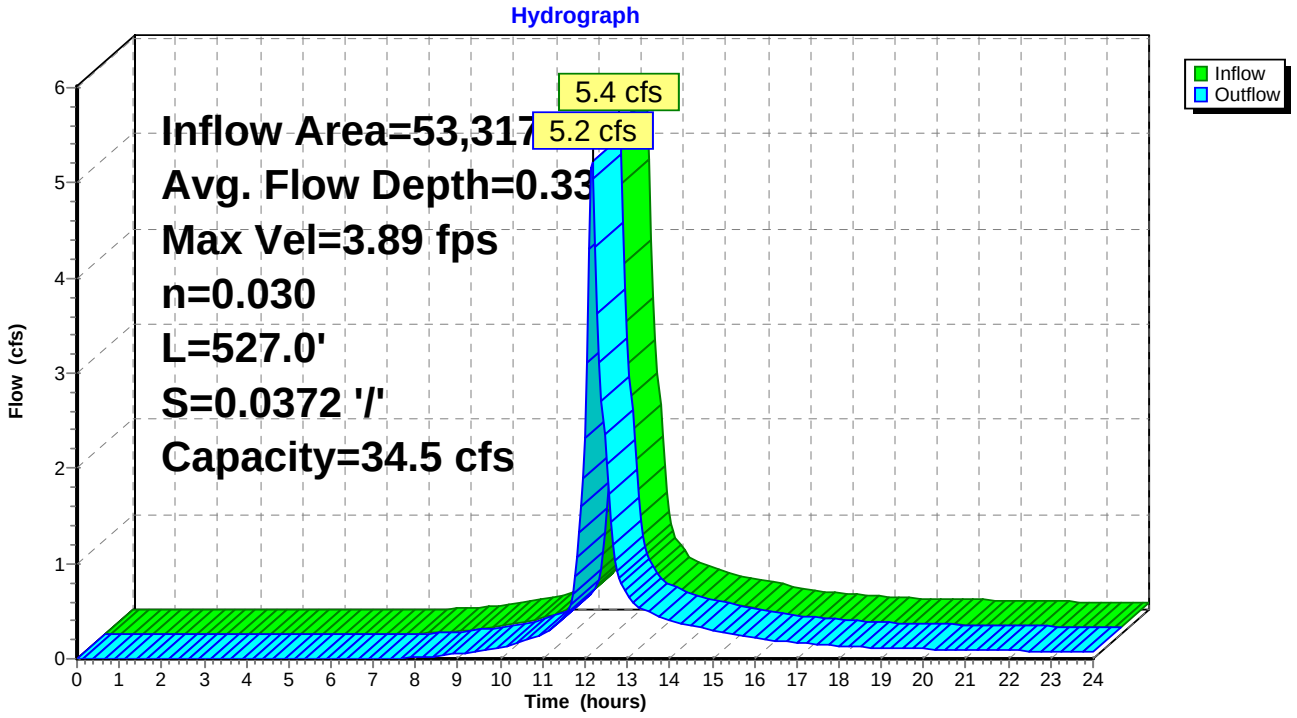
Reach 21R: Riprap Swale

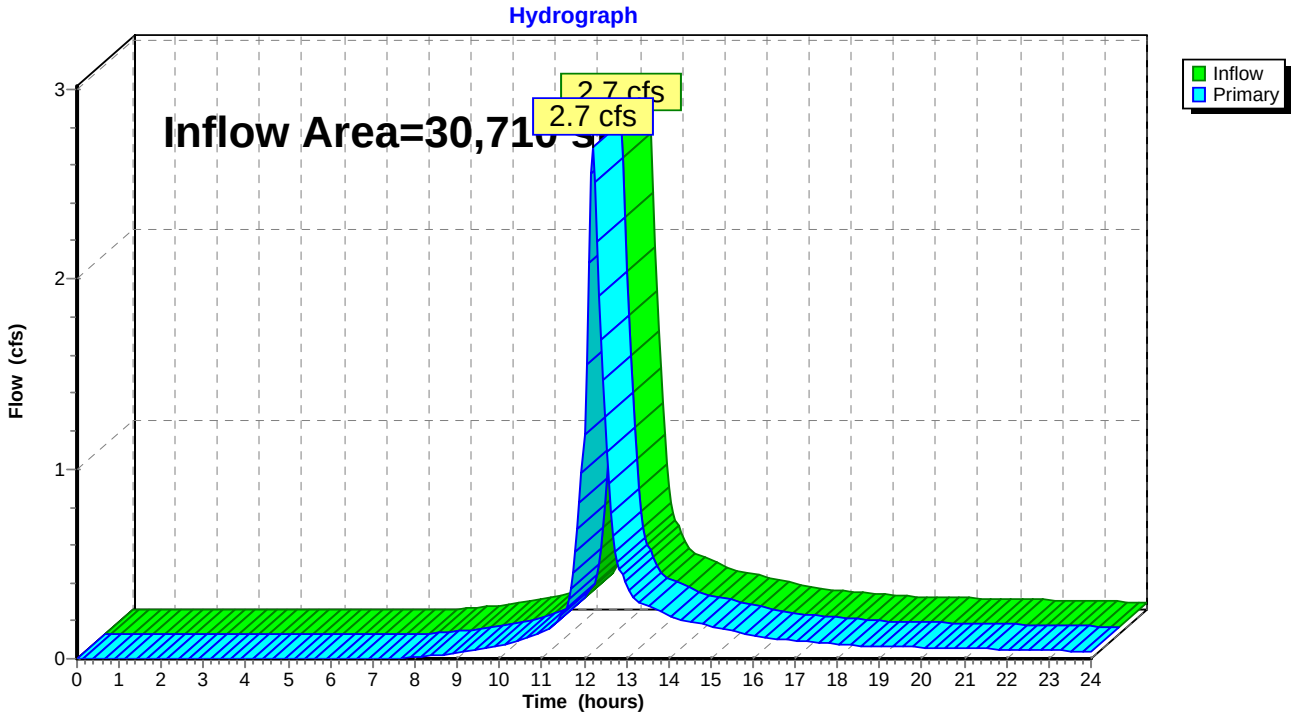


Summary for Link 7L: Wetlands NW

Inflow Area = 30,710 sf, 4.54% Impervious, Inflow Depth > 4.23" for 100-Year event
Inflow = 2.7 cfs @ 12.20 hrs, Volume= 10,818 cf
Primary = 2.7 cfs @ 12.20 hrs, Volume= 10,818 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 7L: Wetlands NW

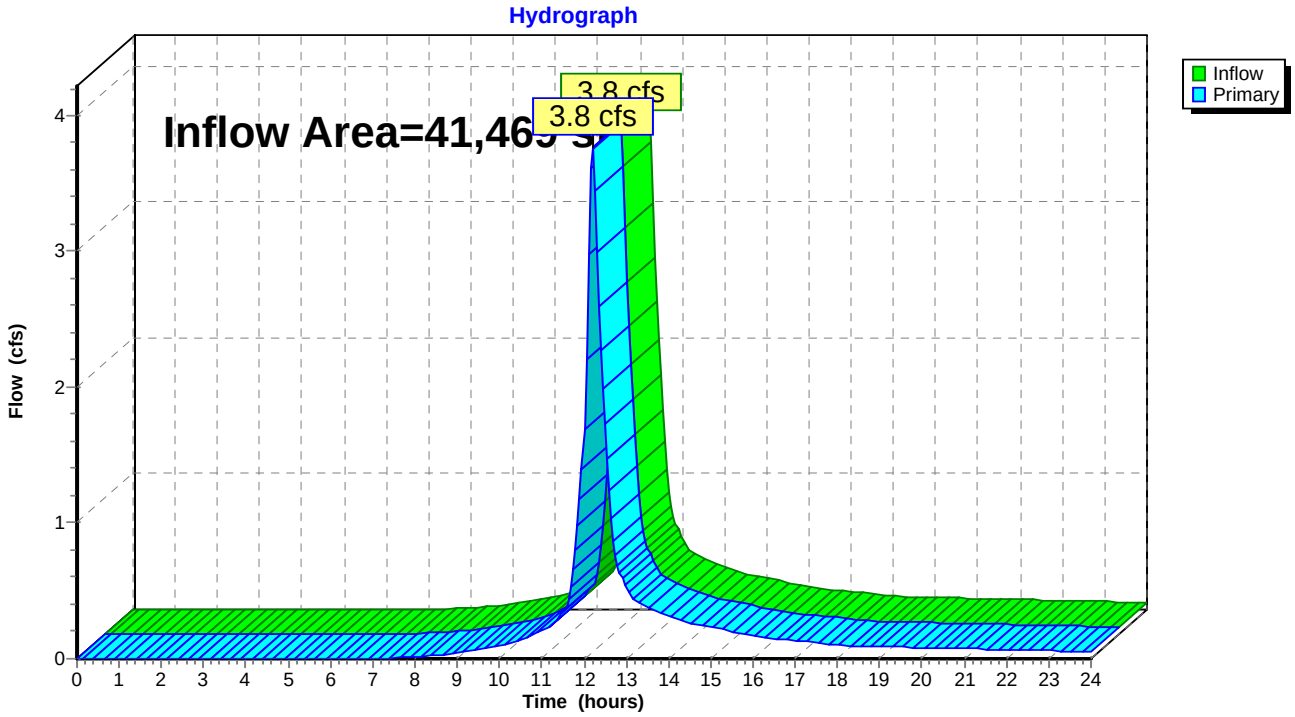


Summary for Link 8L: Depression S

Inflow Area = 41,469 sf, 4.52% Impervious, Inflow Depth > 4.34" for 100-Year event
Inflow = 3.8 cfs @ 12.19 hrs, Volume= 14,985 cf
Primary = 3.8 cfs @ 12.19 hrs, Volume= 14,985 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 8L: Depression S

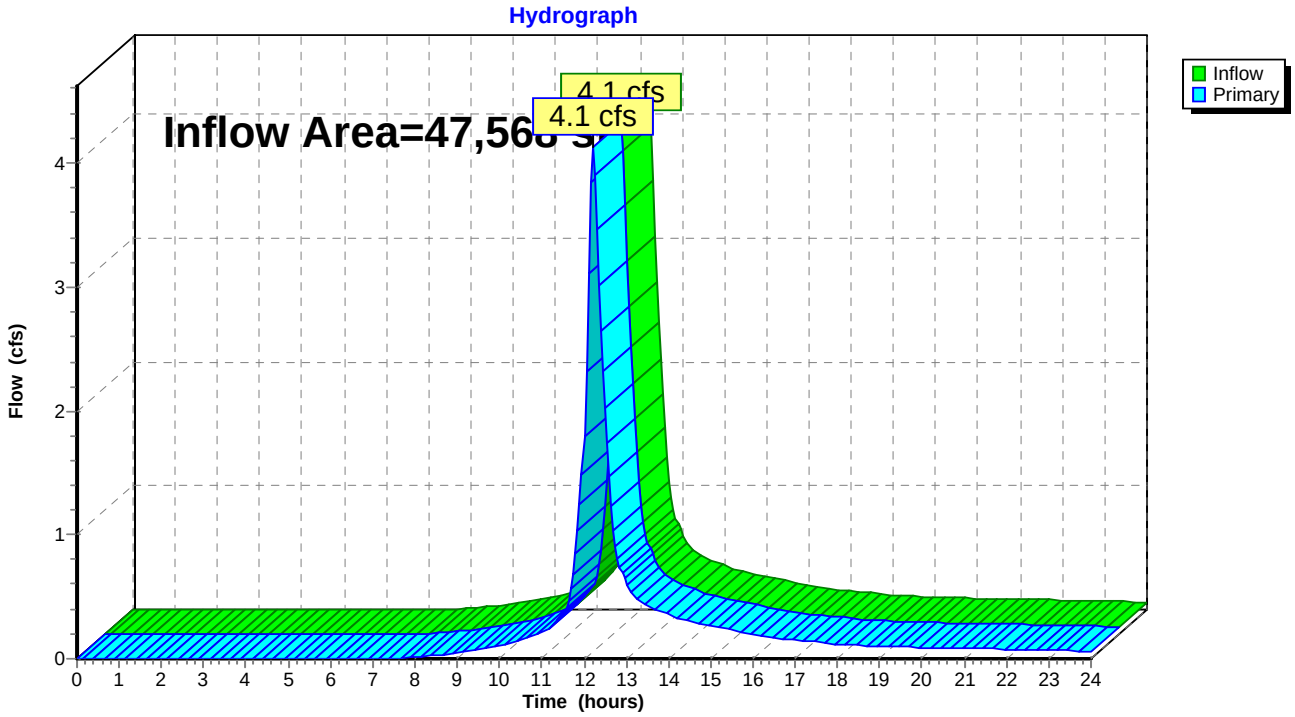


Summary for Link 9L: Wetlands NE

Inflow Area = 47,568 sf, 5.31% Impervious, Inflow Depth > 4.23" for 100-Year event
Inflow = 4.1 cfs @ 12.20 hrs, Volume= 16,755 cf
Primary = 4.1 cfs @ 12.20 hrs, Volume= 16,755 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 9L: Wetlands NE

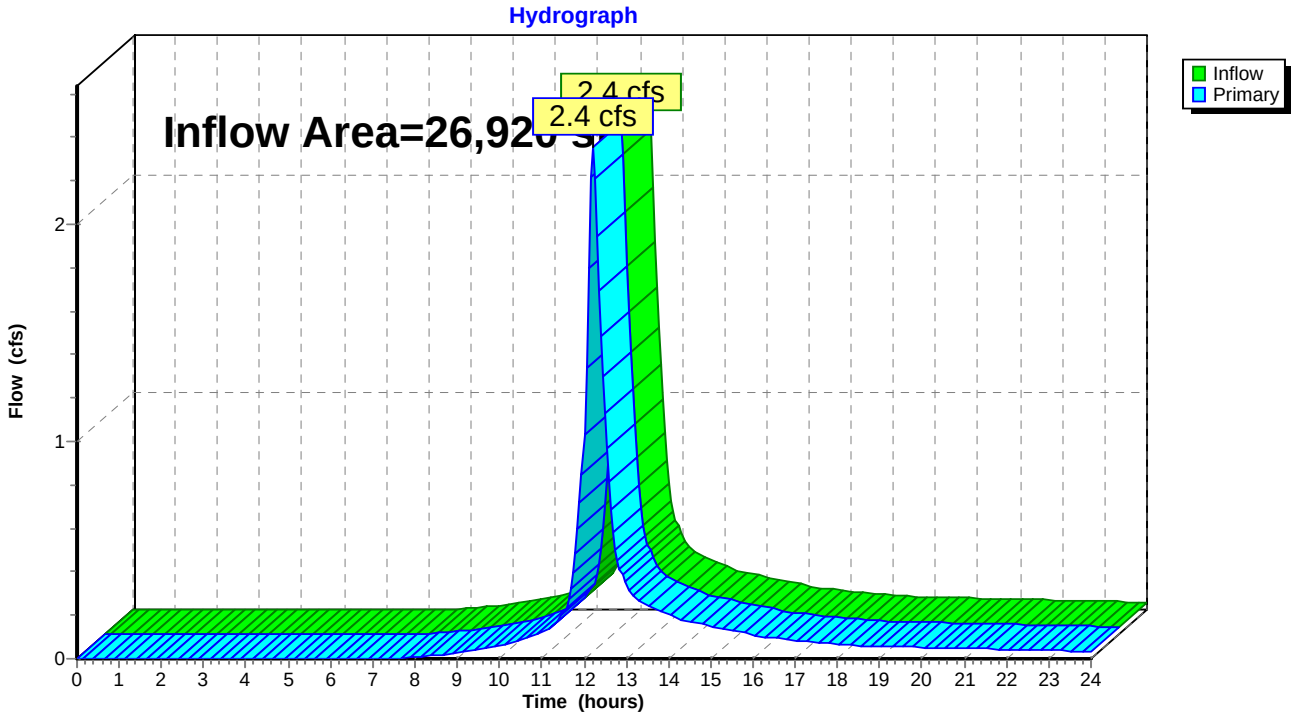


Summary for Link 10L: Wetlands N

Inflow Area = 26,920 sf, 4.53% Impervious, Inflow Depth > 4.23" for 100-Year event
Inflow = 2.4 cfs @ 12.20 hrs, Volume= 9,483 cf
Primary = 2.4 cfs @ 12.20 hrs, Volume= 9,483 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 10L: Wetlands N

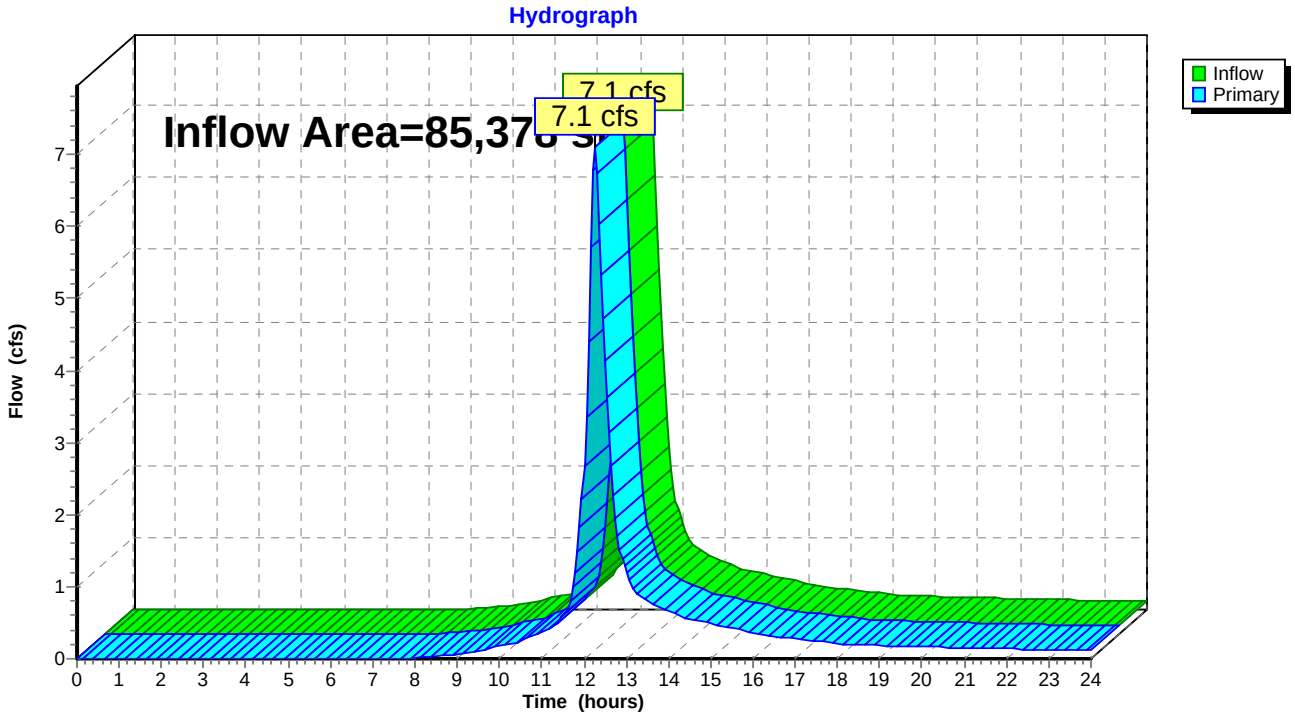


Summary for Link 11L: Collection Swale W

Inflow Area = 85,378 sf, 3.27% Impervious, Inflow Depth > 4.22" for 100-Year event
Inflow = 7.1 cfs @ 12.25 hrs, Volume= 29,996 cf
Primary = 7.1 cfs @ 12.25 hrs, Volume= 29,996 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 11L: Collection Swale W

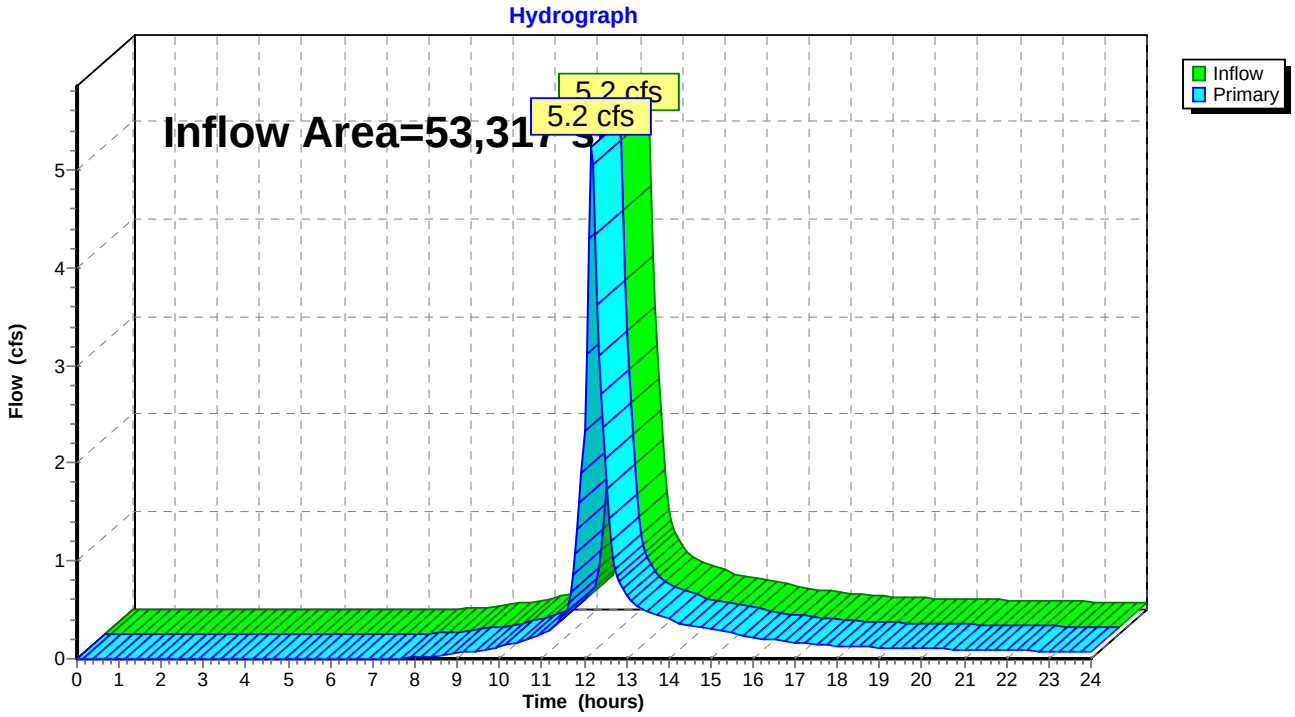


Summary for Link 12L: Collection Swale W

Inflow Area = 53,317 sf, 4.00% Impervious, Inflow Depth > 4.33" for 100-Year event
Inflow = 5.2 cfs @ 12.17 hrs, Volume= 19,237 cf
Primary = 5.2 cfs @ 12.17 hrs, Volume= 19,237 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 12L: Collection Swale W

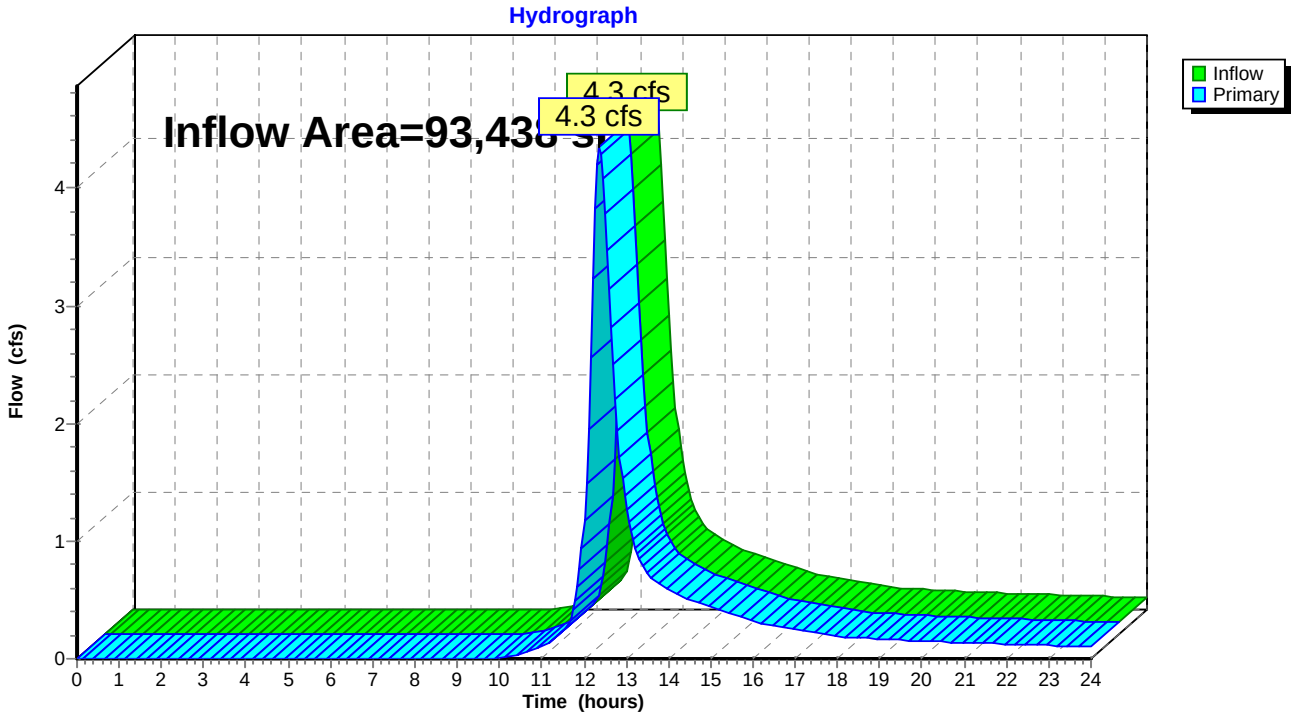


Summary for Link 15L: Wetland W

Inflow Area = 93,438 sf, 0.61% Impervious, Inflow Depth > 2.86" for 100-Year event
Inflow = 4.3 cfs @ 12.36 hrs, Volume= 22,257 cf
Primary = 4.3 cfs @ 12.36 hrs, Volume= 22,257 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 15L: Wetland W

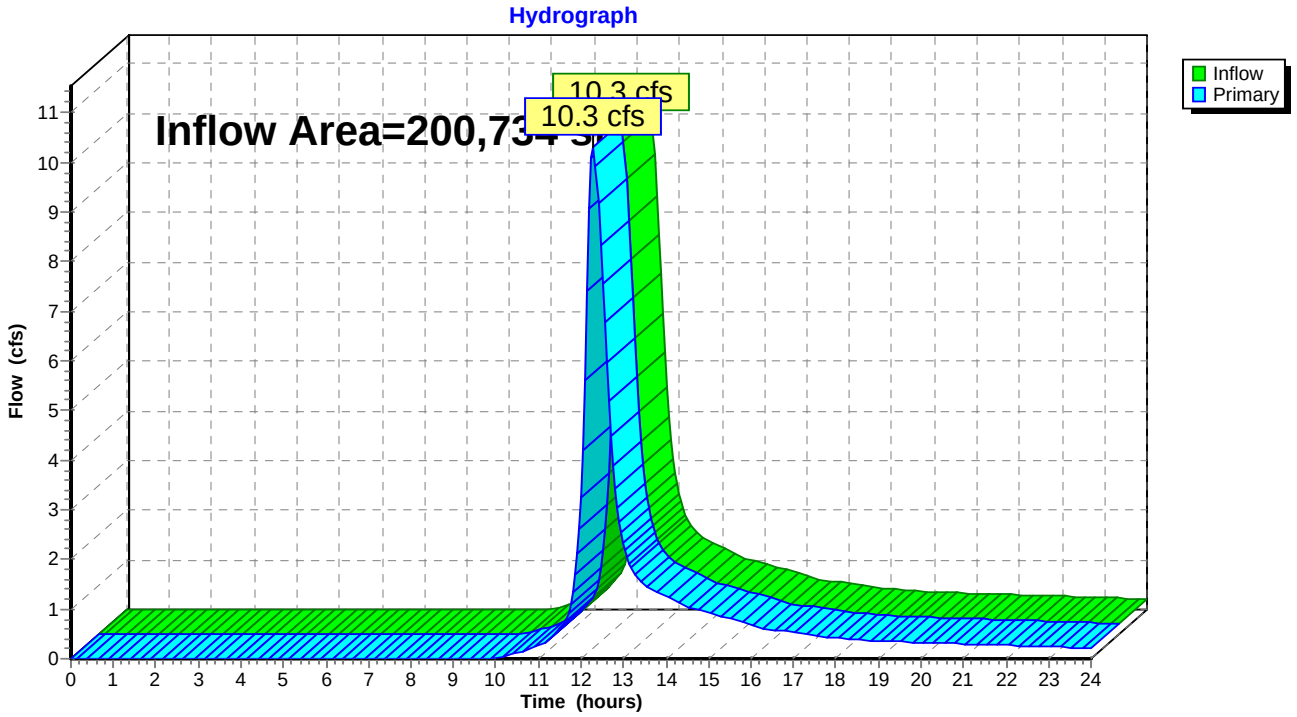


Summary for Link 16L: Wetland E

Inflow Area = 200,734 sf, 0.11% Impervious, Inflow Depth > 2.90" for 100-Year event
Inflow = 10.3 cfs @ 12.29 hrs, Volume= 48,498 cf
Primary = 10.3 cfs @ 12.29 hrs, Volume= 48,498 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.050 hrs

Link 16L: Wetland E



Appendix C
Site Development Plans

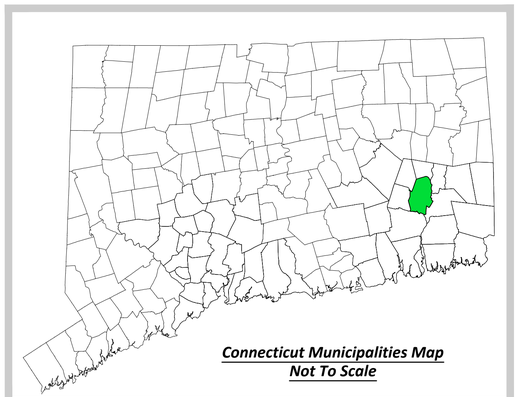
ROGERS ROAD LANDFILL SOLAR PROJECT
SOLAR PHOTOVOLTAIC (PV) SYSTEM

Prepared For

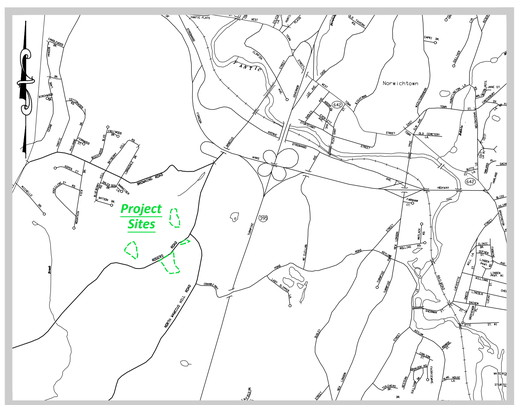
SolarCity Corporation

82 Rogers Road - Norwich, Connecticut

September 2015



Connecticut Municipalities Map
Not To Scale



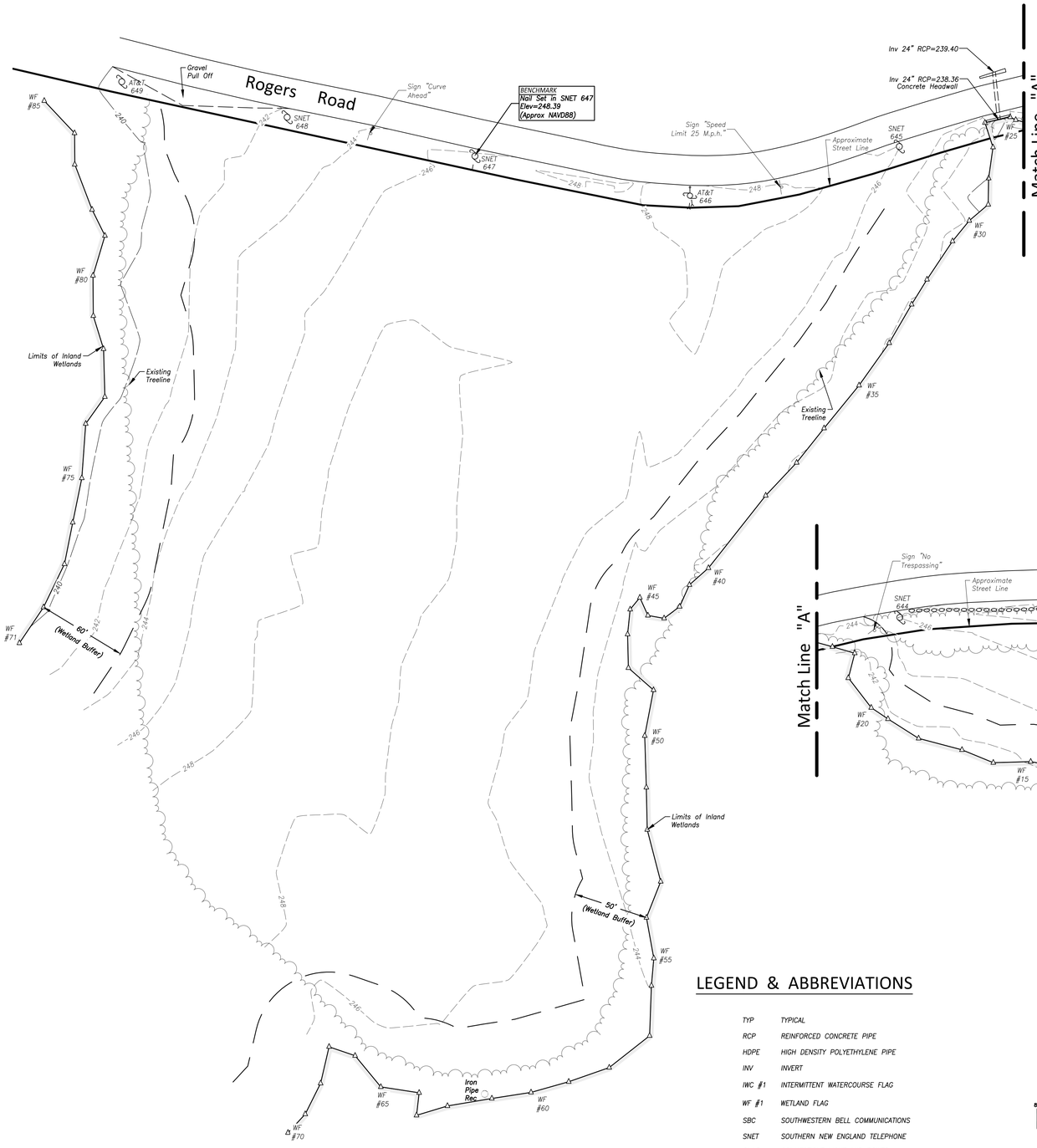
Site Location Map
Scale: 1"=2000'

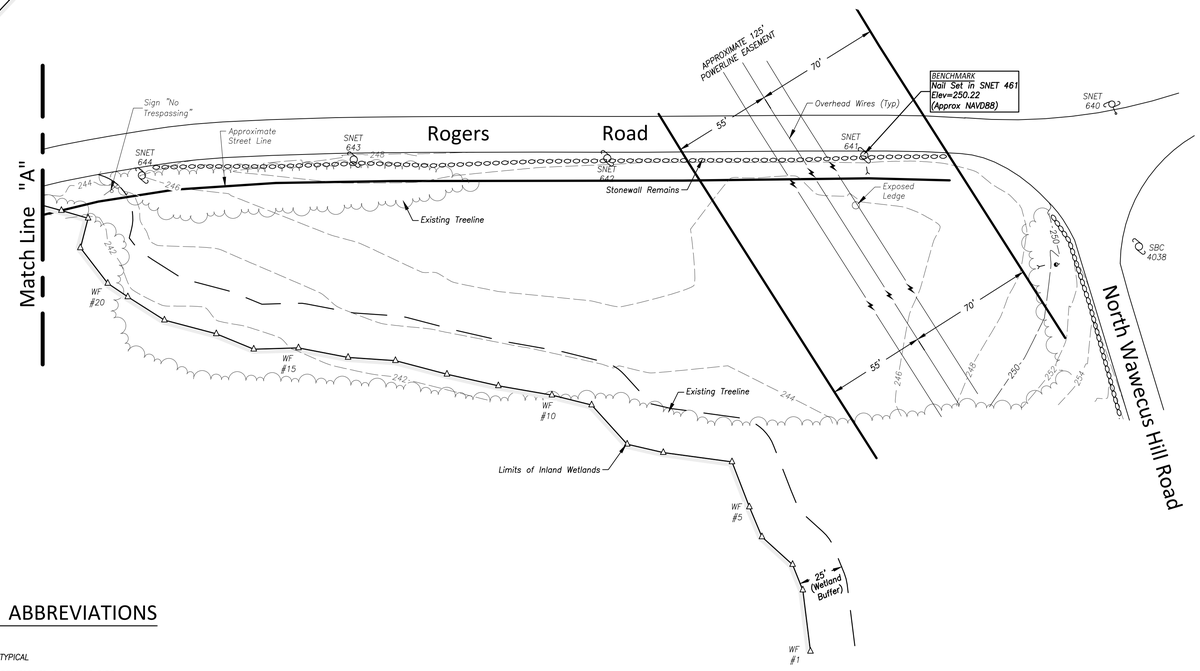
Site Location Aerial View
Not To Scale

Project Information	
Developed By: *Brightfields Development, LLC* *41 Walnut Street, Suite 301* *Wellesley, MA 02481* *SolarCity Corporation* *714 Brook Street* *Rocky Hill, CT 06067* *Civil Engineer:* *Boundaries LLC* *179 Pachaug River Drive* *Griswold, CT 06351*	*Electrical Engineer:* *SolarCity Corporation* *714 Brook Street* *Rocky Hill, CT 06067* *Host:* *City of Norwich* *100 Broadway* *Norwich, CT 06360* *Utility:* *Connecticut Municipal Electric Energy Cooperative* *30 Stott Avenue* *Norwich, CT 06360*

Index To Drawings

PROGRESS PRINT
SEPTEMBER 9, 2015





SURVEY NOTES

1. THIS SURVEY HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300B-1 THROUGH 20-300B-20 AND THE "STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED FOR USE BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPTEMBER 26, 1996. IT IS A TOPOGRAPHIC SURVEY AND CONFORMS TOPOGRAPHIC CLASS T-2 ACCURACY STANDARDS. IT IS INTENDED TO BE USED FOR SITE PLANNING.
2. NORTH ORIENTATION DEPICTED HEREON IS APPROXIMATE NORTH AMERICAN DATUM 1983 (NAD83) BASED UPON GLOBAL POSITIONING SYSTEM OBSERVATIONS, OBSERVED ON OCTOBER 03, 2014 THRU OCTOBER 07, 2014.
3. VERTICAL DATUM DEPICTED HERE ON IS APPROXIMATE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD83) BASED GLOBAL POSITIONING SYSTEM OBSERVATIONS USING GEOIDE12A ON OCTOBER 03, 2014 THRU OCTOBER 07, 2014.
3. ALL SUBTERRANEAN FEATURES AND IMPROVEMENTS MAY NOT BE DEPICTED OR NOTED HEREON.
4. THE FIELD SURVEY WAS COMPLETED ON OCTOBER 07, 2014
5. LIMITS OF INLAND WETLANDS DEPICTED HEREON WERE DELINEATED BY DEMIAN A. SORRENTINO, C.S.S., BOUNDARIES LLC. BUFFER AREAS DEPICTED HEREON ARE PREDICATED ON RECOMMENDED SETBACKS PROVIDED BY ALL POINTS TECHNOLOGY CORPORATION BASED EVALUATION OF SAID INLAND WETLANDS. THE CITY OF NORWICH INLAND WETLAND REGULATIONS REQUIRES AN UPLAND REGULATED AREA OF 100'.
6. THE LOCATIONS OF UNDERGROUND UTILITIES AS SHOWN HEREON ARE BASED ON THE LOCATION OF ABOVEGROUND STRUCTURES AND RECORD DRAWINGS PROVIDED TO THE SURVEYOR. LOCATIONS OF UNDERGROUND UTILITIES MAY VARY FROM LOCATIONS SHOWN HEREON. ADDITIONAL BURIED UTILITIES/STRUCTURES MAY BE ENCOUNTERED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL UTILITY LOCATIONS AND ELEVATIONS AND CONTACT "CALL BEFORE YOU DIG" AT LEAST 48 HOURS PRIOR TO ANY EARTHWORK OPERATIONS.

REFERENCE MAPS

1. AS-BUILT CONDITIONS, PREPARED FOR NUTMEG SAND AND GRAVEL COMPANY, NORWICH BULKY WASTE SITE, ROGERS ROAD, NORWICH, CONNECTICUT, SCALE: 1"=40', DATED: 10/26/99 SHEET No. 1 OF 1, PREPARED BY: ANCHOR ENGINEERING SERVICES, INC.
2. CONSTRUCTION PLANS FOR NORWICH LANDFILL CLOSURE, TOWN OF NORWICH, ROGERS ROAD, NORWICH, CONNECTICUT DATED: APRIL 1996, SHEETS 1 - 7, PREPARED BY: FUSS & O'NEILL

LEGEND & ABBREVIATIONS

TYP	TYPICAL
RCP	REINFORCED CONCRETE PIPE
HDPE	HIGH DENSITY POLYETHYLENE PIPE
INV	INVERT
IWC #1	INTERMITTENT WATERCOURSE FLAG
WF #1	WETLAND FLAG
SBC	SOUTHWESTERN BELL COMMUNICATIONS
SNET	SOUTHERN NEW ENGLAND TELEPHONE
CL&P	CONNECTICUT LIGHT AND POWER
AT&T	AMERICAN TELEPHONE AND TELEGRAPH
248	EXISTING CONTOUR
	IRON PIN
	UTILITY POLE
	GUY WIRE
	SIGN
	WETLAND FLAG

GRAPHIC SCALE

80 40 20 0 40

(IN FEET)
1 inch = 40 ft.

PROGRESS PRINT
SEPTEMBER 9, 2015

I HAVE CONDUCTED AN ON-SITE SOIL INVESTIGATION OF THE PARCEL OF LAND DEPICTED HEREON. THE INTERMITTENT WATERCOURSES AND INLAND WETLAND BOUNDARIES AS PORTRAYED ARE AN ACCURATE REPRESENTATION OF THE DELINEATION PERFORMED IN THE FIELD.

DEMIAN A. SORRENTINO, C.S.S. DATE

"TO MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON."

70016
JOHN U. FAULISE JR. L.S. LICENSE NO. DATE

CIVIL ENGINEERING LAND SURVEYING LAND DEVELOPMENT SITE DESIGN
BOUNDARIES
Boundaries LLC
179 Pachaug River Drive Griswold, CT 06351
T 860.376.2006 | www.boundariesllc.net

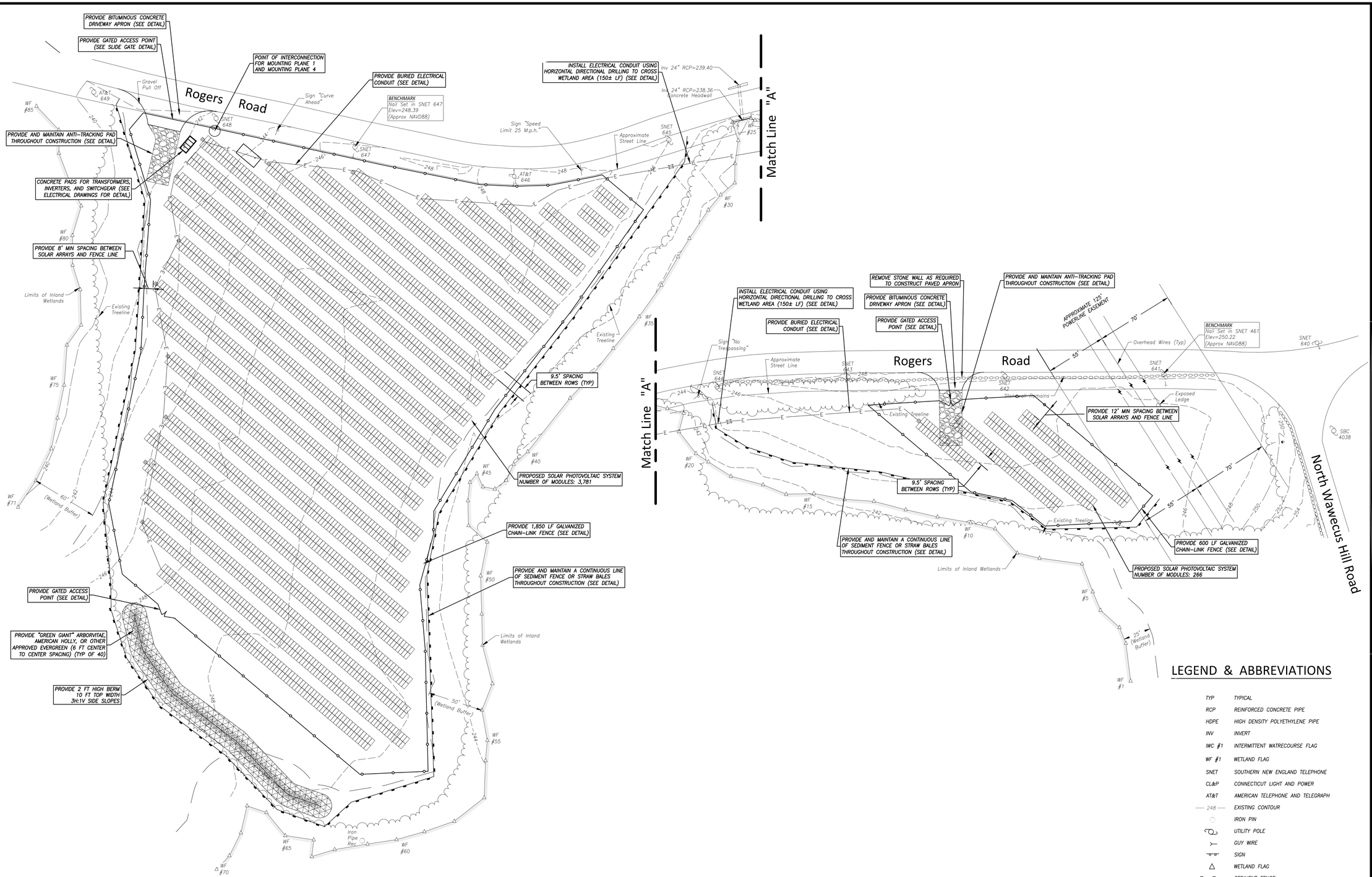
BRIGHTFIELDS DEVELOPMENT LLC
40 Walnut Street Suite 301
Wellesley, MA 02481
www.solarbrownfields.com

SolarCity
714 Brook Street
Rocky Hill, CT 06067
www.solarcity.com

SolarCity Corporation
Proposed Solar Photovoltaic System
82 Rogers Road - Norwich, Connecticut
Mounting Plane 1 and Mounting Plane 4
Topographic Survey - Existing Conditions

SCALE:
DATE: September 2015
JOB I.D. NO. 14-2302
Revisions

SHEET NO.
2
11



GRAPHIC SCALE

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(IN FEET)
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LEGEND & ABBREVIATIONS

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CL&P	CONNECTICUT LIGHT AND POWER
AT&T	AMERICAN TELEPHONE AND TELEGRAPH
248	EXISTING CONTOUR
	IRON PIN
	UTILITY POLE
	GUY WIRE
	SIGN
	WETLAND FLAG
	SEDIMENT FENCE
	STRAW WATTLE
	CHAIN LINK FENCE
E	ELECTRICAL CONDUIT

PROGRESS PRINT
SEPTEMBER 9, 2015

29102
DAVID C. McKAY P.E., LICENSE NO. DATE

CIVIL ENGINEERING LAND SURVEYING LAND DEVELOPMENT LAND CAD DESIGN
BOUNDARIES
Boundaries LLC
179 Pachaug River Drive Griswold, CT 06351
T 860.376.2006 | www.boundariesllc.net

BRIGHTFIELDS DEVELOPMENT LLC
40 Walnut Street Suite 301
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SolarCity Corporation
Proposed Solar Photovoltaic System
82 Rogers Road - Norwich, Connecticut
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Site Development Plan

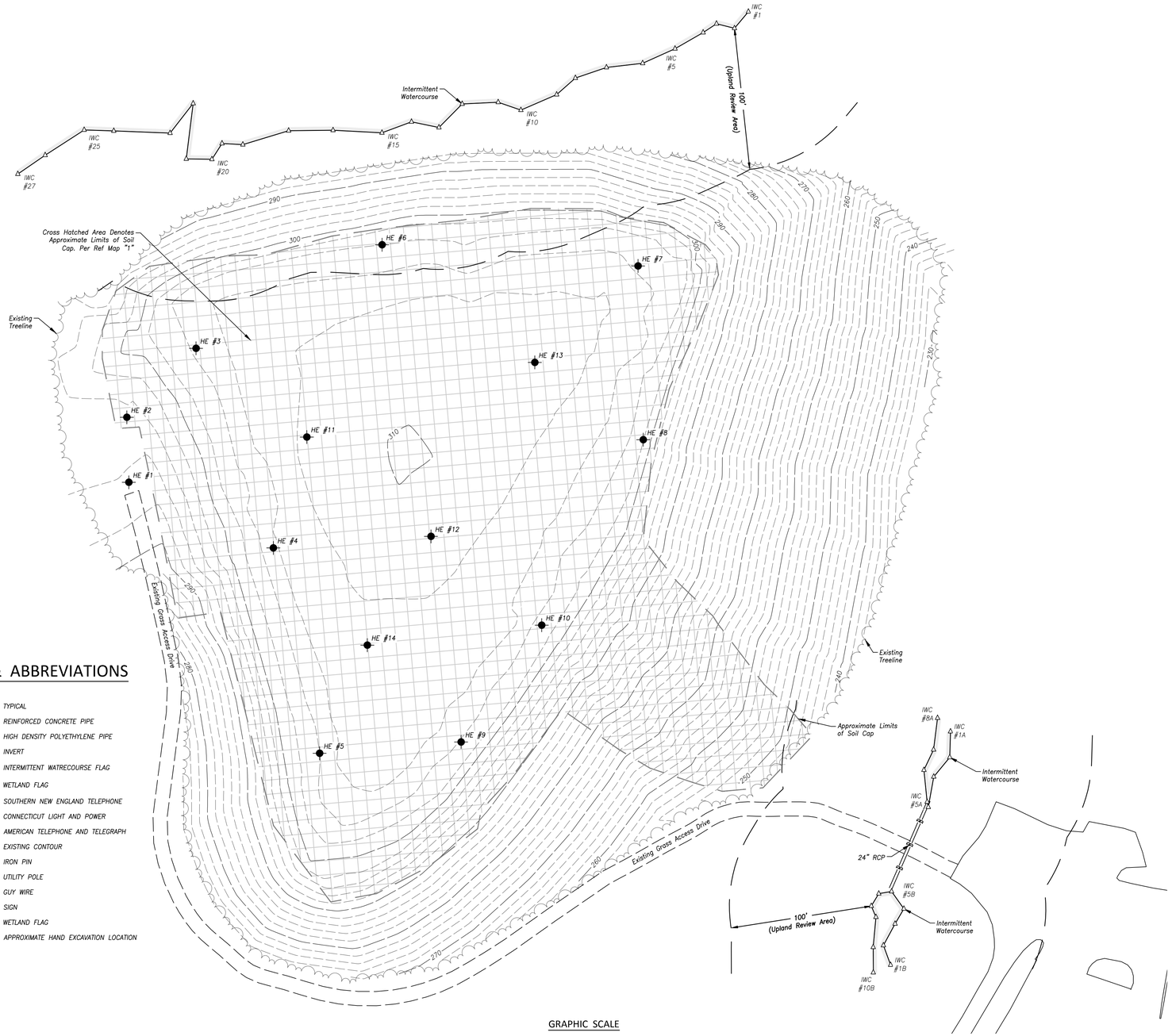
SCALE:

DATE: September 2015

JOB I.D. NO. 14-2302

Revisions

SHEET NO.
3
11



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	IRON PIN
	UTILITY POLE
	GUY WIRE
	SIGN
	WETLAND FLAG
HE #1	APPROXIMATE HAND EXCAVATION LOCATION

GRAPHIC SCALE

80 40 20 0 40

(IN FEET)

1 inch = 40 ft.

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HAND EXCAVATION RESULTS

HAND EXCAVATION LOCATIONS ARE APPROXIMATE ONLY. HAND EXCAVATIONS WERE PERFORMED BY WESTON & SAMPSON ENGINEERS, INC. ON JULY 9, 2015.

HAND EXCAVATION #1

SURFACE	COMPACTED SAND/GRAVEL AT BEGINNING OF PROPOSED GRAVEL ACCESS DRIVE
0" – 11"	BROWN, FINE TO MEDIUM, SILTY SAND FILL, SOME SMALL TO LARGE GRAVEL; MOIST. APPEARED TO BE DENSE TO VERY DENSE BASED ON HAND EXCAVATION EFFORT. COULD NOT EXCAVATE BEYOND 11" BELOW GROUND SURFACE.

END OF EXCAVATION AT 11" BELOW GROUND SURFACE.

HAND EXCAVATION #2

SURFACE	TALL FIELD GRASS ALONG PROPOSED GRAVEL ACCESS DRIVE AT BASE OF LANDFILL SLOPE
0" – 4"	DARK BROWN SILTY TOPSOIL WITH THICK GRASS ROOT SYSTEMS; MOIST.
4" – 12"	BROWN, FINE TO MEDIUM, SILTY SAND FILL, SOME MEDIUM TO LARGE GRAVELS. APPEARED TO BE MEDIUM DENSE TO DENSE BASED ON HAND EXCAVATION EFFORT.
12" – 19"	GRAY, GRAVEL FILL (UP TO 4 IN. DIAMETER) WITH FINE TO MEDIUM SILTY SAND; MOIST. APPEARED TO BE VERY DENSE BASED ON HAND EXCAVATION EFFORT. COULD NOT EXCAVATE BEYOND 19" BELOW GROUND SURFACE.

END OF EXCAVATION AT 19" BELOW GROUND SURFACE.

HAND EXCAVATION #3

SURFACE	TALL FIELD GRASS ALONG PROPOSED GRAVEL ACCESS DRIVE AT TOP OF LANDFILL
0" – 2"	DARK BROWN SILTY TOPSOIL WITH THICK GRASS ROOT SYSTEMS.
2" – 18"	BROWN, FINE TO MEDIUM, SILTY SAND FILL, TRACE TO LITTLE GRAVEL, TRACE TO LITTLE ORGANICS (ROOTS, WOOD CHIPS, SMALL TWIGS); MOIST. APPEARED TO BE LOOSE BASED ON HAND EXCAVATION EFFORT.

SILTY SAND COVER LAYER OBSERVED AT 18" BELOW GROUND SURFACE, END OF EXCAVATION AT 18" BELOW GROUND SURFACE.

HAND EXCAVATION #4

SURFACE	TALL FIELD GRASS ON TOP OF LANDFILL
0" – 3"	DARK BROWN SILTY TOPSOIL WITH THICK GRASS ROOT SYSTEMS; MOIST.
3" – 23"	BROWN, FINE TO MEDIUM, SILTY SAND FILL, TRACE TO LITTLE GRAVEL, TRACE TO LITTLE ORGANICS (ROOTS, WOOD CHIPS, SMALL TWIGS), TRACE BRICK DEBRIS; MOIST. APPEARED TO BE LOOSE BASED ON HAND EXCAVATION EFFORT.

SILTY SAND COVER LAYER OBSERVED AT 23" BELOW GROUND SURFACE, END OF EXCAVATION AT 23" BELOW GROUND SURFACE.

HAND EXCAVATION #5

SURFACE	TALL FIELD GRASS ON TOP OF LANDFILL
0" – 4"	DARK BROWN SILTY TOPSOIL WITH THICK GRASS ROOT SYSTEMS; MOIST.
4" – 15"	BROWN, FINE TO MEDIUM, SILTY SAND FILL, TRACE TO LITTLE GRAVEL, TRACE TO LITTLE ORGANICS (ROOTS, WOOD CHIPS, SMALL TWIGS), TRACE BRICK DEBRIS; MOIST. APPEARED TO BE LOOSE BASED ON HAND EXCAVATION EFFORT.

SILTY SAND COVER LAYER OBSERVED AT 15" BELOW GROUND SURFACE, END OF EXCAVATION AT 15" BELOW GROUND SURFACE.

HAND EXCAVATION #6

SURFACE	TALL FIELD GRASS ON TOP OF LANDFILL
0" – 3"	DARK BROWN SILTY TOPSOIL WITH THICK GRASS ROOT SYSTEMS; MOIST.
3" – 17"	BROWN, FINE TO MEDIUM, SILTY SAND FILL, TRACE TO LITTLE GRAVEL, TRACE TO LITTLE ORGANICS (ROOTS, WOOD CHIPS, SMALL TWIGS); MOIST. APPEARED TO BE LOOSE BASED ON HAND EXCAVATION EFFORT.

SILTY SAND COVER LAYER OBSERVED AT 17" BELOW GROUND SURFACE, END OF EXCAVATION AT 17" BELOW GROUND SURFACE.

HAND EXCAVATION #7

SURFACE	TALL FIELD GRASS ON TOP OF LANDFILL
0" – 4"	DARK BROWN SILTY TOPSOIL WITH THICK GRASS ROOT SYSTEMS; MOIST.
4" – 9"	BROWN, FINE TO MEDIUM, SILTY SAND FILL, TRACE TO LITTLE GRAVEL, TRACE TO LITTLE ORGANICS (ROOTS, WOOD CHIPS, SMALL TWIGS); MOIST. APPEARED TO BE LOOSE BASED ON HAND EXCAVATION EFFORT.

SILTY SAND COVER LAYER OBSERVED AT 9" BELOW GROUND SURFACE, END OF EXCAVATION AT 9" BELOW GROUND SURFACE.

HAND EXCAVATION #8

SURFACE	TALL FIELD GRASS ON TOP OF LANDFILL
0" – 4"	DARK BROWN SILTY TOPSOIL WITH THICK GRASS ROOT SYSTEMS; MOIST.
4" – 15"	BROWN, FINE TO MEDIUM, SILTY SAND FILL, TRACE TO LITTLE GRAVEL, TRACE TO LITTLE ORGANICS (ROOTS, WOOD CHIPS, SMALL TWIGS), TRACE PLASTIC DEBRIS; MOIST. APPEARED TO BE LOOSE BASED ON HAND EXCAVATION EFFORT.

SILTY SAND COVER LAYER OBSERVED AT 15" BELOW GROUND SURFACE, END OF EXCAVATION AT 15" BELOW GROUND SURFACE.

HAND EXCAVATION #9

SURFACE	TALL FIELD GRASS ON TOP OF LANDFILL
0" – 6"	DARK BROWN SILTY TOPSOIL WITH THICK GRASS ROOT SYSTEMS; MOIST.
6" – 15"	BROWN, FINE TO MEDIUM, SILTY SAND FILL, TRACE TO LITTLE GRAVEL, TRACE TO LITTLE ORGANICS (ROOTS, WOOD CHIPS, SMALL TWIGS), TRACE PLASTIC DEBRIS; MOIST. APPEARED TO BE LOOSE BASED ON HAND EXCAVATION EFFORT.

SILTY SAND COVER LAYER OBSERVED AT 15" BELOW GROUND SURFACE, END OF EXCAVATION AT 15" BELOW GROUND SURFACE.

HAND EXCAVATION #10

SURFACE	TALL FIELD GRASS ON TOP OF LANDFILL
0" – 5"	DARK BROWN SILTY TOPSOIL WITH THICK GRASS ROOT SYSTEMS; MOIST.
5" – 14"	BROWN, FINE TO MEDIUM, SILTY SAND FILL, TRACE TO LITTLE GRAVEL, TRACE TO LITTLE ORGANICS (ROOTS, WOOD CHIPS, SMALL TWIGS); MOIST. APPEARED TO BE LOOSE BASED ON HAND EXCAVATION EFFORT.

SILTY SAND COVER LAYER OBSERVED AT 14" BELOW GROUND SURFACE, END OF EXCAVATION AT 14" BELOW GROUND SURFACE.

HAND EXCAVATION #11

SURFACE	TALL FIELD GRASS ON TOP OF LANDFILL
0" – 2"	DARK BROWN SILTY TOPSOIL WITH THICK GRASS ROOT SYSTEMS; MOIST.
2" – 27"	BROWN, FINE TO MEDIUM, SILTY SAND FILL, TRACE TO LITTLE GRAVEL, TRACE TO LITTLE ORGANICS (ROOTS, WOOD CHIPS, SMALL TWIGS); MOIST. SMALL COBBLES AT APPROXIMATELY 15" BELOW GROUND SURFACE. APPEARED TO BE LOOSE BASED ON HAND EXCAVATION EFFORT.

SILTY SAND COVER LAYER OBSERVED AT 27" BELOW GROUND SURFACE, END OF EXCAVATION AT 27" BELOW GROUND SURFACE.

HAND EXCAVATION #12

SURFACE	TALL FIELD GRASS ON TOP OF LANDFILL
0" – 4"	DARK BROWN SILTY TOPSOIL WITH THICK GRASS ROOT SYSTEMS; MOIST.
4" – 17"	BROWN, FINE TO MEDIUM, SILTY SAND FILL, TRACE TO LITTLE GRAVEL, TRACE TO LITTLE ORGANICS (ROOTS, WOOD CHIPS, SMALL TWIGS); MOIST. APPEARED TO BE LOOSE BASED ON HAND EXCAVATION EFFORT.

SILTY SAND COVER LAYER OBSERVED AT 17" BELOW GROUND SURFACE, END OF EXCAVATION AT 17" BELOW GROUND SURFACE.

HAND EXCAVATION #13

SURFACE	TALL FIELD GRASS ON TOP OF LANDFILL
0" – 6"	DARK BROWN SILTY TOPSOIL WITH THICK GRASS ROOT SYSTEMS; MOIST.
6" – 21"	BROWN, FINE TO MEDIUM, SILTY SAND FILL, TRACE TO LITTLE GRAVEL, TRACE TO LITTLE ORGANICS (ROOTS, WOOD CHIPS, SMALL TWIGS); MOIST. APPEARED TO BE LOOSE BASED ON HAND EXCAVATION EFFORT.

SILTY SAND COVER LAYER OBSERVED AT 21" BELOW GROUND SURFACE, END OF EXCAVATION AT 21" BELOW GROUND SURFACE.

HAND EXCAVATION #14

SURFACE	TALL FIELD GRASS ON TOP OF LANDFILL
0" – 3"	DARK BROWN SILTY TOPSOIL WITH THICK GRASS ROOT SYSTEMS; MOIST.
3" – 25"	BROWN, FINE TO MEDIUM, SILTY SAND FILL, TRACE TO LITTLE GRAVEL, TRACE TO LITTLE ORGANICS (ROOTS, WOOD CHIPS, SMALL TWIGS), TRACE PLASTIC DEBRIS; MOIST. APPEARED TO BE LOOSE BASED ON HAND EXCAVATION EFFORT.

SILTY SAND COVER LAYER OBSERVED AT 25" BELOW GROUND SURFACE, END OF EXCAVATION AT 25" BELOW GROUND SURFACE.

PROGRESS PRINT
SEPTEMBER 9, 2015

I HAVE CONDUCTED AN ON-SITE SOIL INVESTIGATION OF THE PARCEL OF LAND DEPICTED HEREON. THE INTERMITTENT WATERCOURSES AND INLAND WETLAND BOUNDARIES AS PORTRAYED ARE AN ACCURATE REPRESENTATION OF THE DELINEATION PERFORMED IN THE FIELD.

DEMIAN A. SORRENTINO, C.S.S. DATE

"TO MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON."

70016

JOHN U. FAULISE JR. L.S. LICENSE NO. DATE

CIVIL ENGINEERING LAND SURVEYING LAND DEVELOPMENT LAND CONSULTANTS
BOUNDARIES
Boundaries LLC
179 Pachaug River Drive Griswold, CT 06351
T 860.376.2006 | www.boundariesllc.net

BRIGHTFIELDS DEVELOPMENT LLC
40 Walnut Street Suite 301
Wellesley, MA 02481
www.solarbrownfields.com

SolarCity
714 Brook Street
Rocky Hill, CT 06067
www.solarcity.com

SolarCity Corporation
Proposed Solar Photovoltaic System
82 Rogers Road - Norwich, Connecticut
Mounting Plane 2 - Bulky Waste Area
Topographic Survey - Existing Conditions

SCALE:

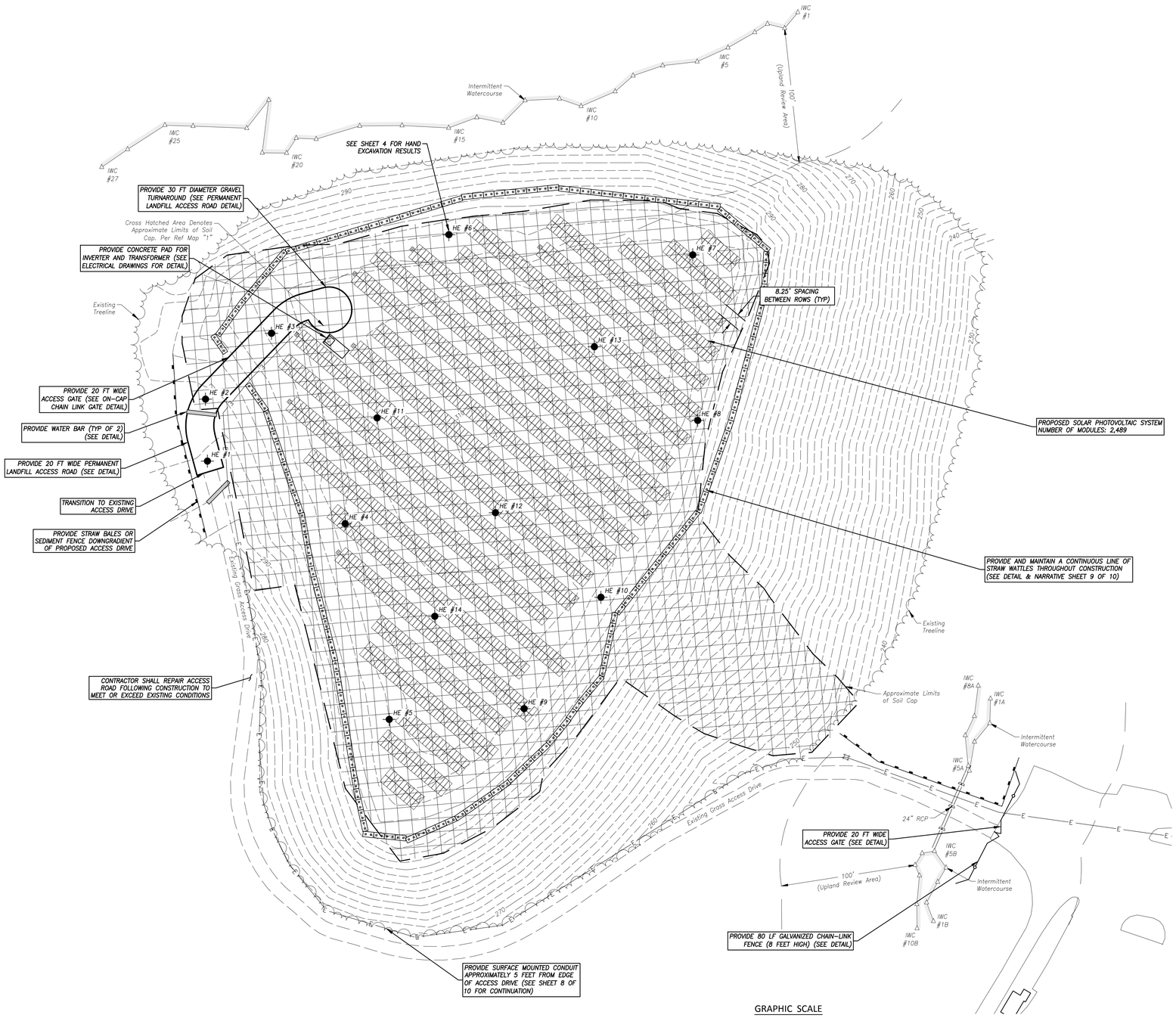
DATE: September 2015

JOB I.D. NO. 14-2302

Revisions

SHEET NO.

4 / 11



GRAPHIC SCALE

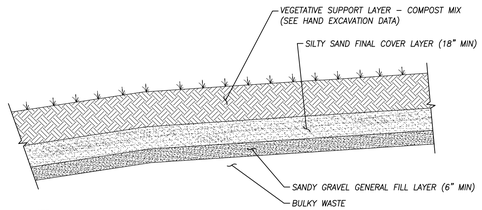
80 40 20 0 40

(IN FEET)

1 inch = 40 ft.

LEGEND & ABBREVIATIONS

TYP	TYPICAL
RCP	REINFORCED CONCRETE PIPE
HDPE	HIGH DENSITY POLYETHYLENE PIPE
INV	INVERT
IWC #1	INTERMITTENT WATRECOURSE FLAG
WF #1	WETLAND FLAG
SNET	SOUTHERN NEW ENGLAND TELEPHONE
CL&P	CONNECTICUT LIGHT AND POWER
AT&T	AMERICAN TELEPHONE AND TELEGRAPH
248	EXISTING CONTOUR
	IRON PIN
	UTILITY POLE
	GUY WIRE
	SIGN
	WETLAND FLAG
	SEDIMENT FENCE
	STRAW WATTLE
	CHAIN LINK FENCE
E	ELECTRICAL CONDUIT
HE #1	APPROXIMATE HAND EXCAVATION LOCATION



NOTE:
1. NO EXCAVATION WITHIN THE 18" SILTY SAND COVER LAYER.
2. CROSS SECTION DEVELOPED FROM LANDFILL CLOSURE REPORT PREPARED BY OTHERS AND MAY NOT REFLECT ACTUAL CONDITIONS.

BULKY WASTE LANDFILL SOIL CAP
CROSS SECTION

NOT TO SCALE

PROGRESS PRINT
SEPTEMBER 9, 2015

29102

DAVID C. McKAY P.E., LICENSE NO. DATE

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Revisions

SHEET NO. 5 / 11

LEGEND & ABBREVIATIONS

TYP	TYPICAL
RCP	REINFORCED CONCRETE PIPE
HDPE	HIGH DENSITY POLYETHYLENE PIPE
INV	INVERT
IWC #1	INTERMITTENT WATRECOURSE FLAG
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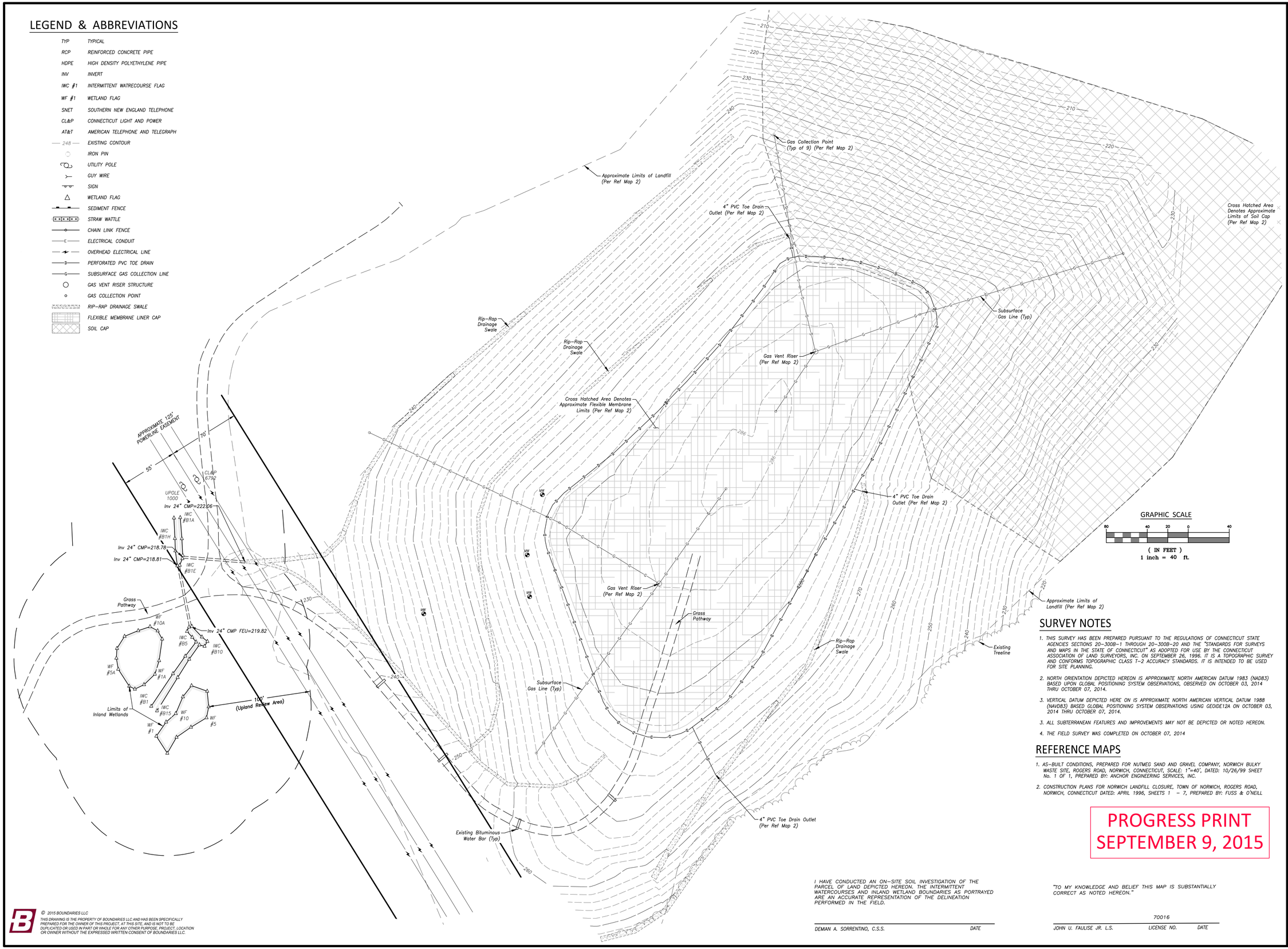
	GAS COLLECTION POINT
	RIP-RAP DRAINAGE SWALE
	FLEXIBLE MEMBRANE LINER CAP
	SOIL CAP



GRAPHIC SCALE

80 40 20 0 40

(IN FEET)
1 inch = 40 ft.

SURVEY NOTES

1. THIS SURVEY HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300B-1 THROUGH 20-300B-20 AND THE "STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED FOR USE BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPTEMBER 26, 1996. IT IS A TOPOGRAPHIC SURVEY AND CONFORMS TOPOGRAPHIC CLASS T-2 ACCURACY STANDARDS. IT IS INTENDED TO BE USED FOR SITE PLANNING.
2. NORTH ORIENTATION DEPICTED HEREON IS APPROXIMATE NORTH AMERICAN DATUM 1983 (NADB3) BASED UPON GLOBAL POSITIONING SYSTEM OBSERVATIONS, OBSERVED ON OCTOBER 03, 2014 THRU OCTOBER 07, 2014.
3. VERTICAL DATUM DEPICTED HERE ON IS APPROXIMATE NORTH AMERICAN VERTICAL DATUM 1988 (NAVDB3) BASED GLOBAL POSITIONING SYSTEM OBSERVATIONS USING GEOIDE12A ON OCTOBER 03, 2014 THRU OCTOBER 07, 2014.
3. ALL SUBTERRANEAN FEATURES AND IMPROVEMENTS MAY NOT BE DEPICTED OR NOTED HEREON.
4. THE FIELD SURVEY WAS COMPLETED ON OCTOBER 07, 2014

REFERENCE MAPS

1. AS-BUILT CONDITIONS, PREPARED FOR NUTMEG SAND AND GRAVEL COMPANY, NORWICH BULKY WASTE SITE, ROGERS ROAD, NORWICH, CONNECTICUT, SCALE: 1"=40', DATED: 10/26/99 SHEET No. 1 OF 1, PREPARED BY: ANCHOR ENGINEERING SERVICES, INC.
2. CONSTRUCTION PLANS FOR NORWICH LANDFILL CLOSURE, TOWN OF NORWICH, ROGERS ROAD, NORWICH, CONNECTICUT DATED: APRIL 1996, SHEETS 1 - 7, PREPARED BY: FUSS & O'NEILL

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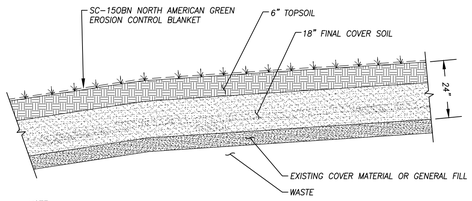
DATE: September 2015
JOB I.D. NO. 14-2302
Revisions

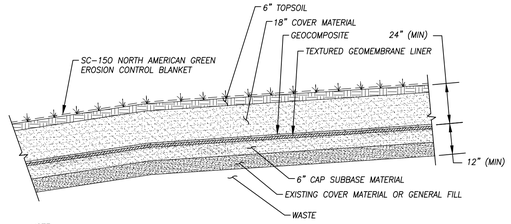
SHEET NO.
6
11



NOTE:
1. NO EXCAVATION WITHIN THE ORIGINAL COVER MATERIAL/GENERAL FILL LAYER.
2. CROSS SECTION DEVELOPED FROM LANDFILL CLOSURE PLANS PREPARED BY OTHERS AND MAY NOT REFLECT ACTUAL CONDITIONS.

NORWICH LANDFILL SOIL CAP CROSS SECTION

NOT TO SCALE



NOTE:
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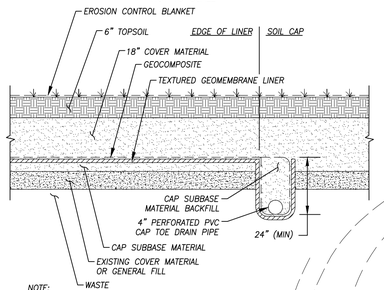
NORWICH LANDFILL FLEXIBLE MEMBRANE LINER CAP CROSS SECTION

NOT TO SCALE



NOTE:
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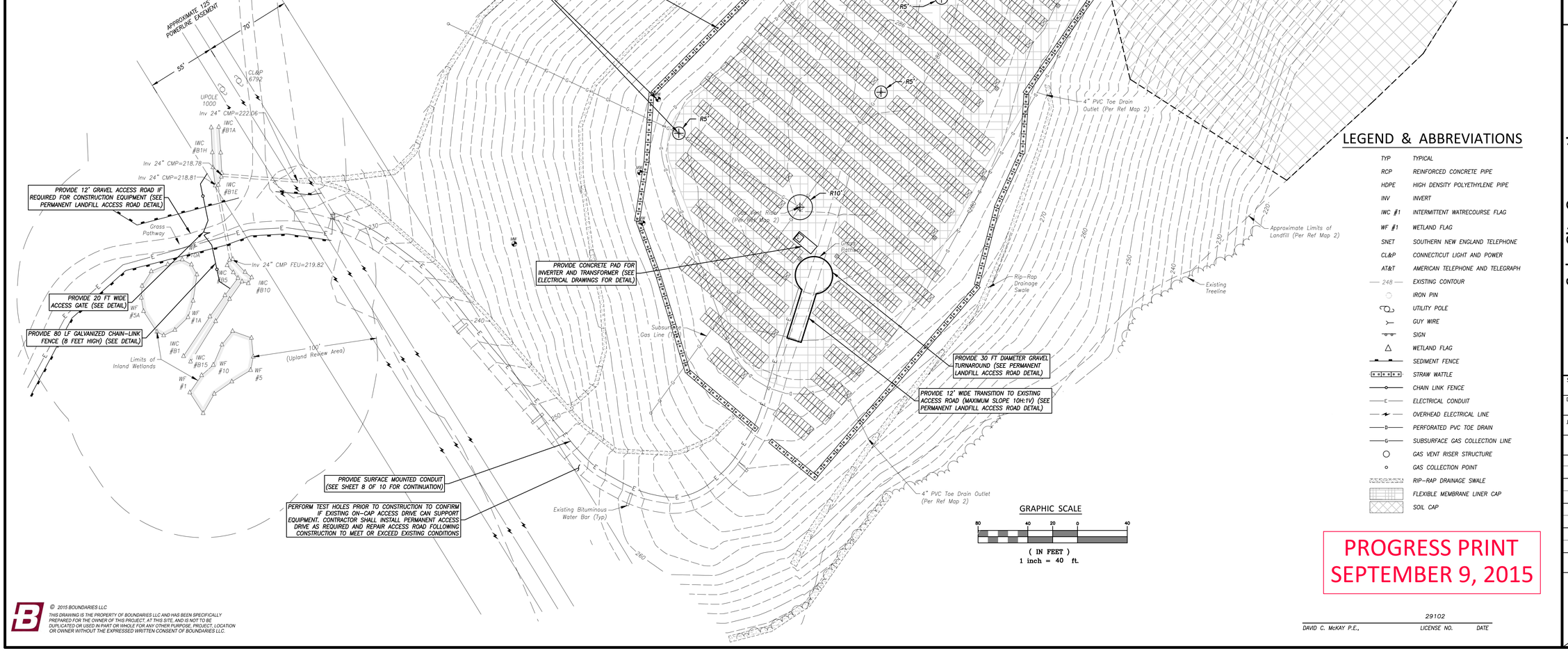
2. CROSS SECTION DEVELOPED FROM LANDFILL CLOSURE PLANS PREPARED BY OTHERS AND MAY NOT REFLECT ACTUAL CONDITIONS.

FML CAP AND SOIL CAP INTERFACE CROSS SECTION

NOT TO SCALE



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	GAS COLLECTION POINT
	RIP-RAP DRAINAGE SWALE
	FLEXIBLE MEMBRANE LINER CAP
	SOIL CAP

GRAPHIC SCALE

80 40 20 0 40

(IN FEET)
1 inch = 40 ft.

PROGRESS PRINT
SEPTEMBER 9, 2015

29102
DAVID C. McKAY P.E., LICENSE NO. DATE

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Mounting Plane 3 - Landfill
Site Development Plan

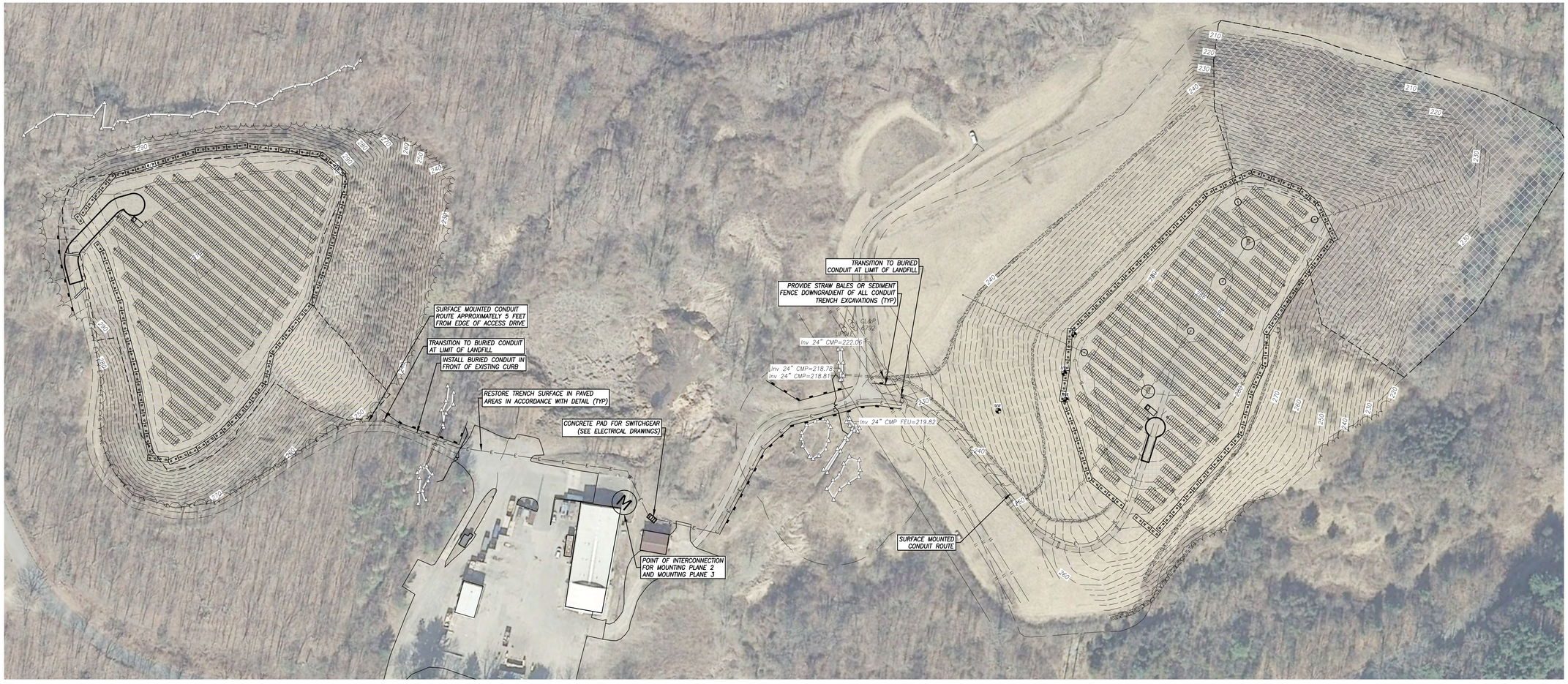
SCALE:

DATE: September 2015

JOB I.D. NO. 14-2302

Revisions

SHEET NO. 7 / 11



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	SEDIMENT FENCE
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	CHAIN LINK FENCE
E	ELECTRICAL CONDUIT
H	OVERHEAD ELECTRICAL LINE

GRAPHIC SCALE

160 80 40 0 80

(IN FEET)
1 inch = 80 ft.

PROGRESS PRINT
SEPTEMBER 9, 2015

29102
DAVID C. McKAY P.E., LICENSE NO. DATE

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Mounting Planes 2 & 3
Overall Site Utility Plan

SCALE: 1" = 80'
DATE: September 2015
JOB I.D. NO. 14-2302
Revisions

SHEET NO.
8
11

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL CALL BEFORE YOU DIG AT 811 OR 1-800-922-4455 AT LEAST 72 HOURS, SATURDAY, SUNDAYS, AND HOLIDAYS EXCLUDED, PRIOR TO EXCAVATION AT ANY LOCATION. A COPY OF THE CALL BEFORE YOU DIG PROJECT REFERENCE NUMBER(S) SHALL BE GIVEN TO THE OWNER PRIOR TO EXCAVATION.
2. LOCATIONS OF EXISTING PIPES, CONDUITS, UTILITIES, FOUNDATIONS AND OTHER UNDERGROUND OBJECTS ARE NOT WARRANTED TO BE CORRECT AND THE CONTRACTOR SHALL HAVE NO CLAIM ON THAT ACCOUNT SHOULD THEY BE OTHER THAN THAT SHOWN.
3. STONE WALLS, FENCES, CURBS, ETC. SHALL BE REMOVED AND REPLACED AS NECESSARY TO PERFORM THE WORK. UNLESS OTHERWISE INDICATED, ALL SUCH WORK SHALL BE INCIDENTAL TO CONSTRUCTION OF THE PROJECT.
4. ALL OTHER DISTURBED BY THE CONTRACTOR BEYOND PAYMENT LIMITS SHALL BE RESTORED AT NO ADDITIONAL COST TO THE OWNER.
5. IF SURVEY CONTROL STAKING AND EROSION CONTROL MEASURES ARE REQUIRED, HAND DUG TEST HOLES WILL BE PERFORMED TO CONFIRM THE DEPTH TO THE LINER OR SOIL CAP, PRIOR TO INSTALLATION. ALL TEST HOLES SHALL BE VERIFIED BY THE ON-SITE ENGINEER.
6. ALL WORK SHALL BE DONE IN ACCORDANCE WITH OSHA REQUIREMENTS AND THE CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH THESE REQUIREMENTS. IN ADDITION, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ANY EXCAVATION SAFEGUARDS, NECESSARY BARRICADES, FLAGMEN, ETC. FOR TRAFFIC CONTROL AND SITE SAFETY.
7. ALL EROSION & SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF CONSTRUCTION.
8. ALL FUEL, OIL, PAINT OR OTHER HAZARDOUS MATERIALS USED DURING CONSTRUCTION SHOULD BE STORED IN A SECONDARY CONTAINER AND REMOVED TO A LOCKED INDOOR AREA WITH AN IMPERVIOUS FLOOR DURING NON-WORK HOURS.
9. NO WASTE MATERIALS (SUCH AS STUMPS) ARE ALLOWED TO BE BURIED ON SITE. ALL WASTE MATERIALS SHALL BE DISPOSED OF OFF-SITE AT AN APPROPRIATE LOCATION IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.

SPECIFICATIONS FOR WORK ON LANDFILL:

GENERAL:

1. THE CONTRACTOR SHALL BE AWARE THAT WORK IS LOCATED ON A LANDFILL AND IS SUBJECT TO THE CONNECTICUT SOLID WASTE REGULATIONS AND ANY REQUIREMENTS OUTLINED IN THE CT DEEP LANDFILL DISRUPTION AUTHORIZATION.
2. THE CONTRACTOR SHALL BE AWARE THAT THE WORK IS TO TAKE PLACE ABOVE A LANDFILL COVER SYSTEM, GENERALLY COMPRISED OF A VEGETATIVE SUPPORT LAYER, A SAND DRAINAGE LAYER, AND A LOW PERMEABILITY FLEXIBLE MEMBRANE LINER OR SOIL CAP. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO NOT DISRUPT THE LANDFILL CAP PROFILE OR TO DAMAGE THE LOW PERMEABILITY FLEXIBLE MEMBRANE LINER OR SOIL CAP.
3. WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION'S PERMIT APPROVAL.
4. THE CONTRACTOR SHALL HAVE A HEALTH AND SAFETY PLAN WHILE WORKING ON THE LANDFILL.

EQUIPMENT:

1. THE CONTRACTOR SHALL PROVIDE A LIST OF ALL EQUIPMENT PROPOSED TO BE WORKING ON THE LANDFILL. THE LIST SHALL INCLUDE THE EQUIPMENT WEIGHT, GROUND PRESSURE, AND ANY RESTRICTIONS THAT WILL BE IMPOSED ON THE VEHICLE (I.E. LIMITED TO EXISTING ACCESS ROADS, LIMITED TO CARRYING ½ LOADS, ETC.)
2. ALL EQUIPMENT IS SUBJECT TO REVIEW AND APPROVAL BY THE ENGINEER. AS A GENERAL RULE, EQUIPMENT SHALL ADHERE TO THE FOLLOWING REQUIREMENTS:

Equipment Ground Pressure		Minimum Lift Thickness	
KPa	psi	meter	inches
<70	<10	0.30	12
70-140	10-20	0.60	24
>140	>20	0.90	36

SOURCE: GEOMEMBRANE PROTECTION DESIGN MANUAL, GSE; DHANI MAREJO, PH.D. AND GREG CORCORAN, P.E., FIRST EDITION.

EXCAVATIONS:

1. THE CONTRACTOR SHALL PROVIDE AN EXCAVATION PLAN DETAILING HOW THE CONTRACTOR WILL COMPLY WITH ALL PERTINENT PROVISIONS OF THE CONTRACT DOCUMENTS INCLUDING SITE RESTRICTIONS, WORK PROTOCOLS, TEMPORARY ROADS, ON-SITE PARKING AND STORAGE AREAS.
2. EXCAVATIONS ON THE LANDFILL AREA SHALL BE PERFORMED WITH THE GUIDANCE OF A LABORER OR "SPOTTER" AT ALL TIMES. THE LABORER SHALL IDENTIFY THE DEPTH OF THE LINER AND ENSURE THAT THE OPERATOR MAINTAINS A SAFE SEPARATING DISTANCE.
3. IT IS REQUIRED TO USE A SMOOTH BUCKET EXCAVATOR IN LIEU OF BUCKET WITH TEETH FOR EXCAVATIONS IN THE VICINITY OF THE LANDFILLS.

TEMPORARY EROSION CONTROL MEASURES:

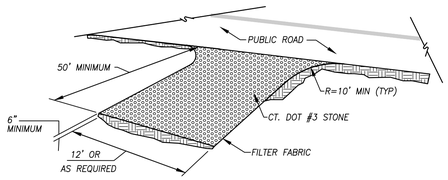
1. EROSION CONTROL MEASURES SHALL BE IMPLEMENTED AS DETERMINED BY THE ON-SITE ENGINEER.
2. THE SMALLEST PRACTICAL AREA OF LAND SHALL BE EXPOSED AT ANY ONE TIME.
3. SEDIMENT/EROSION CONTROL MEASURES SHALL BE INSTALLED AS SHOWN ON PLANS. EROSION CONTROL BARRIERS ARE TO BE MAINTAINED AND CLEANED UNTIL ALL SLOPES HAVE BEEN ADEQUATELY STABILIZED.
4. FILL MATERIAL SHALL BE FREE FROM STUMPS, WOOD, ROOTS, ETC.
5. THE TEMPORARY AND PERMANENT STORMWATER CONTROLS SHALL BE PERIODICALLY CLEANED OF SEDIMENT, AS REQUIRED BY THE ENGINEER. THE SEDIMENT WILL BE REMOVED TO A SECURE LOCATION SO AS TO PREVENT SILTATION OF NATURAL WATER WAYS.
6. STRAW WATTLES MUST BE A MINIMUM TUBE DIAMETER OF 12 INCHES (300MM) FOR SLOPES UP TO 50 FEET (15.24M) IN LENGTH WITH A SLOPE RATIO OF 3H:1V OR STEEPER. LONGER SLOPS OF 3H:1V MAY REQUIRE LARGER TUBE DIAMETER OR ADDITIONAL COURSING OF FILTER TUBES TO CREATE A FILTER BERM. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR SITUATIONS WITH LONGER OR STEEPER SLOPES.
7. INSTALL TUBES ALONG CONTOURS AND PERPENDICULAR TO SHEET OR CONCENTRATED FLOW.
8. CONFIGURE TUBES AROUND EXISTING SITE FEATURES TO MINIMIZE SITE DISTURBANCE AND MAXIMIZE CAPTURE AREA OF STORMWATER RUN-OFF.
9. EROSION CONTROL MEASURES SHALL BE REMOVED WHEN DISTURBED AREA IS STABILIZED. DISTURBED AREA RESULTING FROM THE SILT FENCE REMOVAL OPERATION SHALL BE SEEDED IN ACCORDANCE WITH THE SPECIFICATIONS.
10. EROSION CONTROLS OTHER THAT AS SHOWN (I.E. HAY BALES) MUST BE APPROVED BY THE ENGINEER.

EROSION CONTROL NOTES:

1. THE RESPONSIBLE PARTY FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION CONTROL MEASURES IS ROBERT MILLER AT SOLARCITY AT 914-584-6894.
2. THE "2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL" BY THE CONNECTICUT COUNCIL ON SOIL AND WATER CONSERVATION IN COOPERATION WITH THE CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION, DEP BULLETIN 34, SHALL BE USED FOR INSTALLING AND MAINTAINING ALL EROSION CONTROL MEASURES. THE CONTRACTOR SHALL INSTALL ADDITIONAL MEASURES AS NECESSARY IF DIRECTED BY THE ENGINEER.
3. SEEDING FOR PERMANENT STABILIZATION SHALL BE DONE BETWEEN APRIL 15 THROUGH JUNE 15 OR BETWEEN AUGUST 15 THROUGH SEPTEMBER 15. IF SEEDING CANNOT BE DONE WITHIN THESE TIMES, APPLY TEMPORARY MULCH UNTIL NEXT SEEDING TIME. SEED MIXTURE SHALL BE AS FOLLOWS:

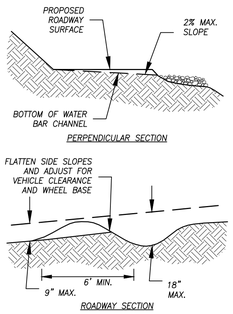
ALL 2:1 SLOPE AREAS			
CROWN VETCH	15 LBS/ACRE	OR	0.35 LBS/1,000 SF
PERENNIAL RYEGRASS	10 LBS/ACRE	OR	0.25 LBS/1,000 SF
ALL OTHER GRASSED AREAS			
CREEPING RED FESCUE	20 LBS/ACRE	OR	0.45 LBS/1,000 SF
REDTOP	2 LBS/ACRE	OR	0.05 LBS/1,000 SF
CROWN VETCH	15 LBS/ACRE	OR	0.35 LBS/1,000 SF

4. MULCH SHALL BE A GOOD QUALITY HAY OR STRAW AND SHALL BE APPLIED AT A RATE OF 2 BALES/1,000 SF.
5. ALL EROSION CONTROL MEASURES SHALL BE INSPECTED WITHIN 24 HOURS AFTER RAIN EVENTS AND REPAIRED OR REPLACED AS NECESSARY TO INSURE COMPLIANCE WITH THE APPROVED SOIL EROSION AND SEDIMENT CONTROL PLAN.
6. DUST CONTROL MEASURES WILL BE IMPLEMENTED DURING DRY CONDITIONS AND INCLUDE WATERING WITH A TANK TRUCK ON AN AS-NEEDED BASIS IN ORDER TO INSURE THAT NO AMBIENT DUST CONDITIONS ARE GENERATED FROM THE PROJECT.
7. THE ANTI-TRACKING PAD SHALL BE INSPECTED ON A WEEKLY BASIS AND MAINTAINED THROUGHOUT THE DURATION OF THE CONSTRUCTION FOR THIS PROJECT. WHEN THE ANTI-TRACKING PAD IS NO LONGER FUNCTIONING EFFICIENTLY OR ACCUMULATED SEDIMENT IS TO A DEPTH OF 2" BELOW THE STONE SURFACE, THE ANTI-TRACKING PAD SHALL BE REMOVED AND REPLACED AS PER THE DETAIL INDICATED ON THESE PLANS.



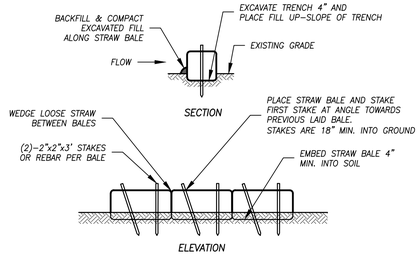
ANTI-TRACKING PAD

NOT TO SCALE



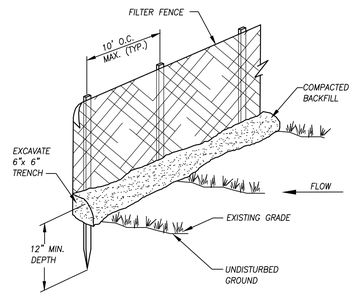
WATER BAR DETAIL

NOT TO SCALE



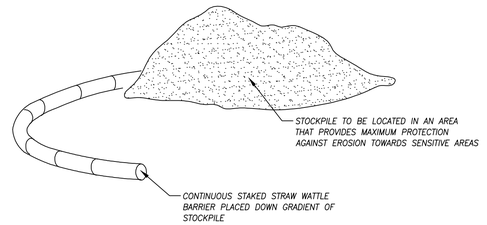
STRAW BALE BARRIER DETAIL (OFF CAP)

NOT TO SCALE



SEDIMENT FENCE DETAIL (OFF CAP)

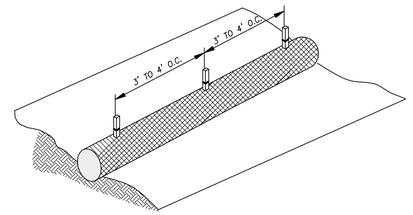
NOT TO SCALE



NOTE: LONG AXIS OF STOCKPILE TO BE PERPENDICULAR TO CONTOUR.

TEMPORARY STOCKPILE BARRIER DETAIL

NOT TO SCALE

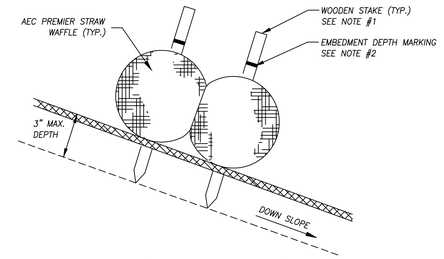


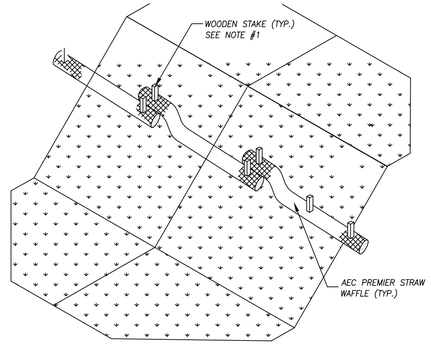
STRAW WATTLE INSTALLATION DETAIL (ON CAP)

NOT TO SCALE

NOTES:

1. PRIOR TO INSTALLATION OF WATTLES OR OTHER APPROVED EROSION CONTROL MEASURES, THE CONTRACTOR MUST PERFORM HAND DUG TEST HOLES UNDER THE SUPERVISION OF THE ON-SITE ENGINEER. IF SUFFICIENT CLEARANCE IS NOT FOUND, CONCRETE BLOCKS WILL BE USED AS A SUBSTITUTE FOR STAKES.
2. WATTLES CAN BE STAKED ON THE LANDFILL PROVIDED THE STAKES DO NOT EXCEED 3 INCHES INTO THE VEGETATIVE SUPPORT LAYER. STAKES SHALL BE CLEARLY MARKED 16 INCHES FROM THE TIP OF THE STAKE (3" MAX. EMBEDMENT DEPTH + 12" WATTLE) AND SHALL BE CLEARLY VISIBLE.





STRAW WATTLE SLOPE INSTALLATION DETAIL (ON CAP)

NOT TO SCALE

29102

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Mounting Planes 1-3
Erosion & Sediment Control Narrative and Details

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Revisions

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9
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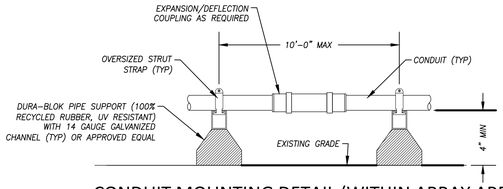
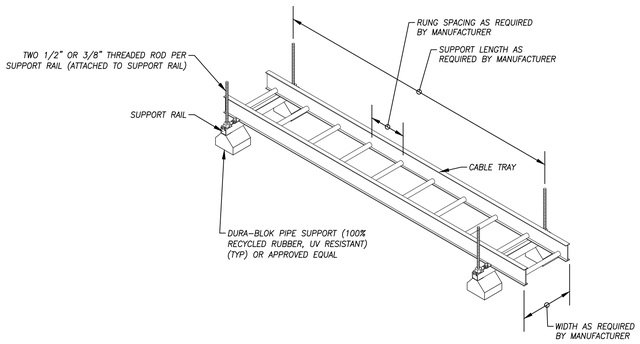


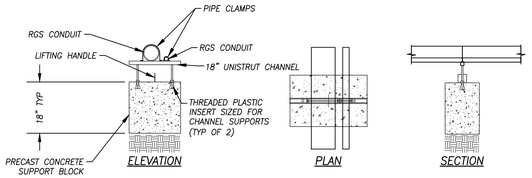
CONDUIT MOUNTING DETAIL (WITHIN ARRAY AREA)

NOT TO SCALE



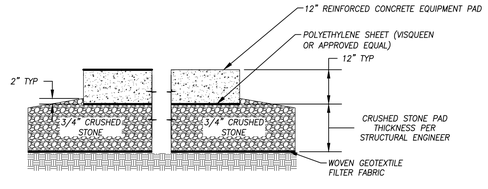
CABLE TRAY DETAIL (WITHIN ARRAY AREA)

NOT TO SCALE



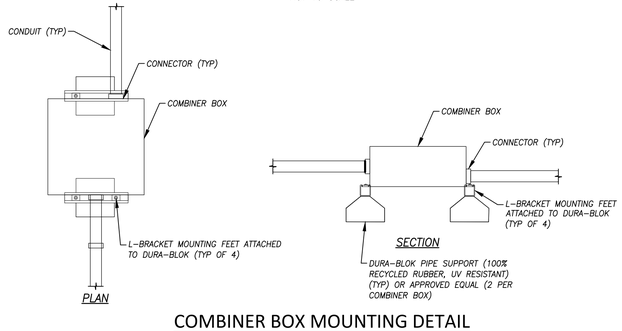
CONCRETE BLOCK RACEWAY DETAIL (ON LANDFILL CAP)

NOT TO SCALE



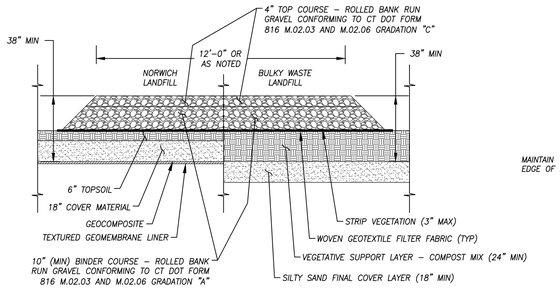
ELECTRICAL EQUIPMENT PAD DETAIL (ON LANDFILL CAP)

NOT TO SCALE



COMBINER BOX MOUNTING DETAIL

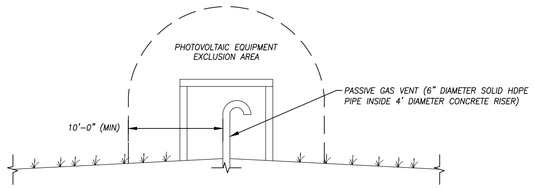
NOT TO SCALE



NOTE:
1. TEST PITS TO DETERMINE EXISTING ACCESS ROAD THICKNESS SHALL BE COMPLETED PRIOR TO UTILIZATION FOR CONSTRUCTION EQUIPMENT. IMPROVE AS REQUIRED FOR CONSTRUCTION EQUIPMENT USE.
2. ACCESS ROAD TO COMPLY WITH H-20 WHEEL LOADING.
3. TEST PITS TO DETERMINE CAPPING SYSTEM AND CONFIRM LAYER THICKNESS SHALL BE PERFORMED PRIOR TO INSTALLATION OF THE ACCESS ROAD.
4. ROADWAY DESIGN TO COMPLY WITH LOCAL EMERGENCY SERVICE REQUIREMENTS.
5. COMPACT PERMANENT ACCESS ROAD TO 95% MAXIMUM DENSITY IN LIFTS NOT TO EXCEED 12".

PERMANENT/TEMPORARY LANDFILL ACCESS ROAD

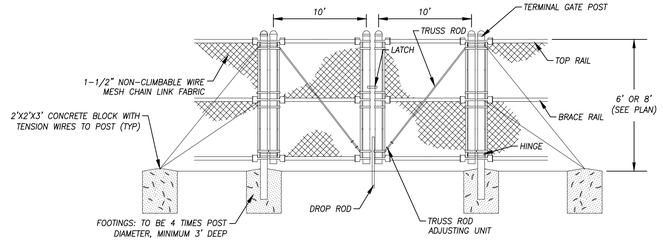
NOT TO SCALE



NOTE:
1. NO EQUIPMENT ASSOCIATED WITH THE PHOTOVOLTAIC SYSTEM SHALL BE LOCATED WITHIN A 10' EXCLUSION AREA OF PASSIVE GAS VENTS.
2. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING THE EXISTING GAS VENTS FROM DAMAGE FROM CONSTRUCTION EQUIPMENT/VEHICLES. ANY DAMAGE TO EXISTING GAS VENTS SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER AND REPAIRED AT NO COST TO THE OWNER/DEVELOPER.

PASSIVE GAS VENT (EQUIPMENT FREE AREA) DETAIL

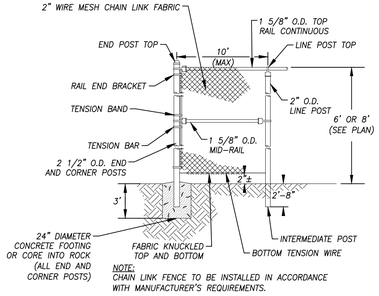
NOT TO SCALE



NOTE:
SWING GATES TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.

OFF CAP GALVANIZED SWING GATE DETAIL MOUNTING PLANE #1

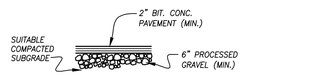
NOT TO SCALE



NOTE:
CHAIN LINK FENCE TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.

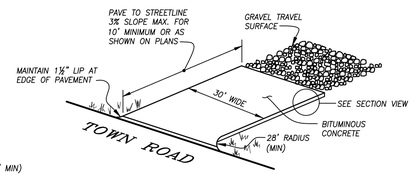
OFF CAP GALVANIZED CHAIN LINK FENCE DETAIL

NOT TO SCALE



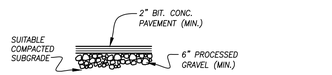
SECTION VIEW

NOT TO SCALE



TYPICAL DRIVEWAY APRON MOUNTING PLANE #1

NOT TO SCALE



SECTION VIEW

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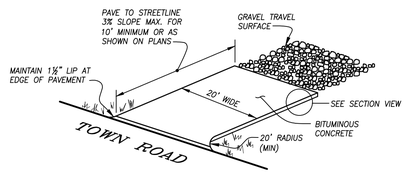
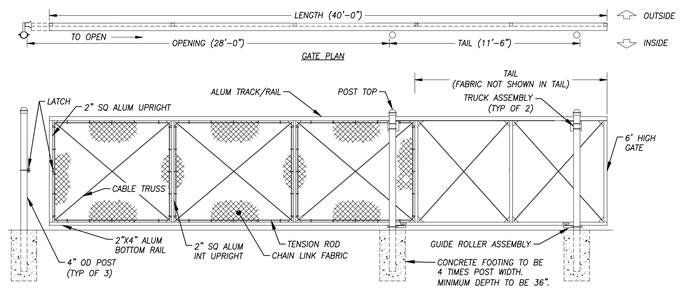


TYPICAL DRIVEWAY APRON MOUNTING PLANE #4

NOT TO SCALE



NOTES:
1. SLIDE GATE BY MASTER HALCO OR APPROVED EQUAL.
2. SLIDE GATE TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.

ALUMINUM SINGLE-TRACK CANTILEVERED SLIDE GATE DETAIL

NOT TO SCALE

NOTE:
1. SIGNS MOUNTED ON GATES AT ALL ENTRANCES.
2. SIGNS TO BE RATED FOR OUTDOOR ENVIRONMENTS.

IDENTIFICATION SIGNAGE

NOT TO SCALE

29102
DAVID C. McKAY, P.E. LICENSE NO. DATE

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Revisions

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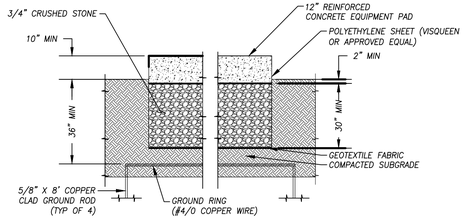
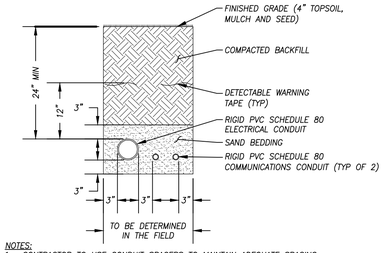


OFF CAP ELECTRICAL EQUIPMENT PAD DETAIL

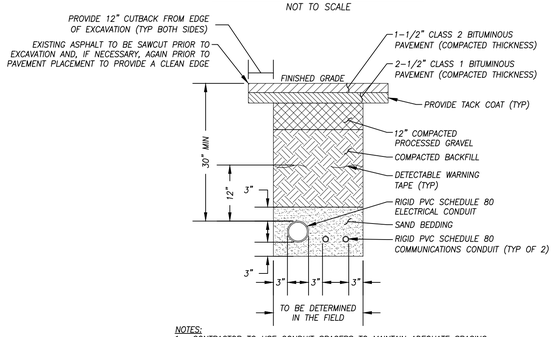
NOT TO SCALE



NOTES:
1. CONTRACTOR TO USE CONDUIT SPACERS TO MAINTAIN ADEQUATE SPACING.
2. MAINTAIN 3" SPACING BETWEEN OUTER WALLS OF CONDUITS.

OFF CAP TYPICAL MEDIUM VOLTAGE CONDUIT TRENCH DETAIL

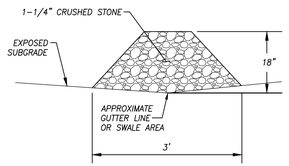
NOT TO SCALE



NOTES:
1. CONTRACTOR TO USE CONDUIT SPACERS TO MAINTAIN ADEQUATE SPACING.
2. MAINTAIN 3" SPACING BETWEEN OUTER WALLS OF CONDUITS.

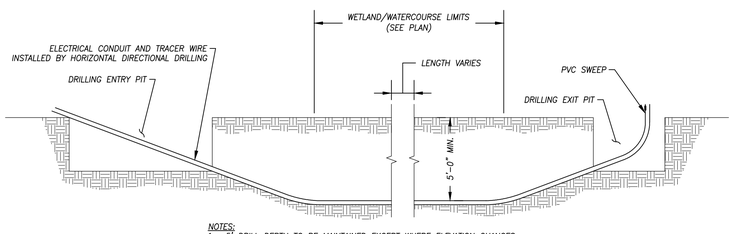
TYPICAL MEDIUM VOLTAGE CONDUIT TRENCH (IN PAVED AREAS) DETAIL

NOT TO SCALE



STONE CHECK DAM

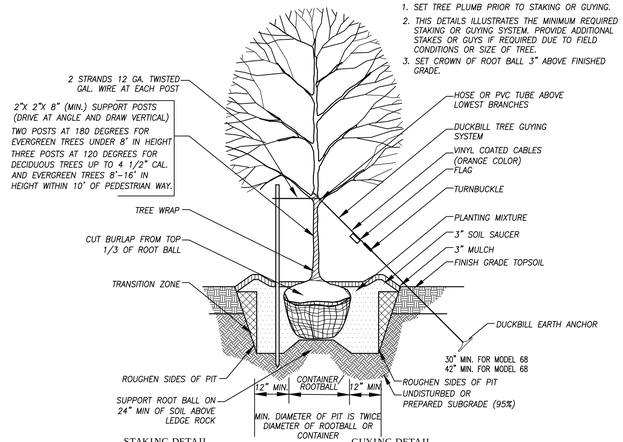
NOT TO SCALE



NOTES:
1. 5' DRILL DEPTH TO BE MAINTAINED EXCEPT WHERE ELEVATION CHANGES ARE REQUIRED TO AVOID OBSTACLES.
2. REFER TO ELECTRICAL PLANS AND WIRE SCHEDULE FOR ACTUAL NUMBER AND LOCATION OF CONDUITS.

TYPICAL HORIZONTAL DIRECTIONAL DRILLING DETAIL

NOT TO SCALE



NOTES:
1. SET TREE PLUMB PRIOR TO STAKING OR GUYING.
2. THIS DETAILS ILLUSTRATES THE MINIMUM REQUIRED STAKING OR GUYING SYSTEM. PROVIDE ADDITIONAL STAKES OR GUYS IF REQUIRED DUE TO FIELD CONDITIONS OR SIZE OF TREE.
3. SET CROWN OF ROOT BALL 3" ABOVE FINISHED GRADE.

STAKING DETAIL

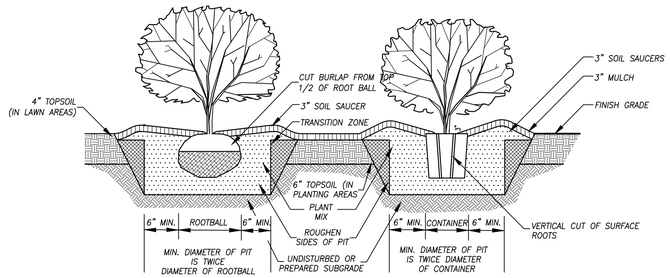
FOR USE WITH:
A. DECIDUOUS TREES UNDER 3" CALIPER.
B. DECIDUOUS TREES 3"-4 1/2" CALIPER WHEN PLANTED WITHIN 10' OF PEDESTRIAN WAYS.
C. EVERGREEN TREES UNDER 8' IN HEIGHT.
D. EVERGREEN TREES 8'-16' IN HEIGHT WHEN PLANTED WITHIN 10' OF PEDESTRIAN WAYS.

GUYING DETAIL

FOR USE WITH:
A. DECIDUOUS TREES 3"-4 1/2" CALIPER WHEN PLANTED GREATER THAN 10' OUTSIDE OF PEDESTRIAN WAYS.
B. DECIDUOUS TREE OVER 4 1/2" CALIPER.
C. EVERGREEN TREES 8'-16' IN HEIGHT WHEN PLANTED GREATER THAN 10' OUTSIDE OF PEDESTRIAN WAYS.
D. EVERGREEN TREES OVER 16' IN HEIGHT.

TREE PLANTING DETAIL

NOT TO SCALE



BALLED AND BURLAPPED MATERIAL

CONTAINER GROWN MATERIAL

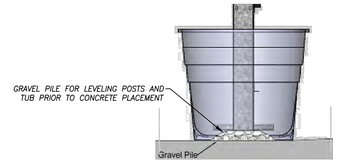
NOTES:
1. SET CROWN OF ROOTBALL 2" ABOVE FINISH GRADE.
2. FOR CONTAINER GROWN STOCK USE FINGERS OR A SHARP KNIFE TO LOOSEN ROOTS OUT OF THE OUTER LAYER OF POTTING SOIL; THEN CUT OR PULL APART ANY ROOTS CIRCLING THE PERIMETER OF THE CONTAINER.
3. AT PLANTING THOROUGHLY SOAK THE ROOT MASS AND ADJACENT SOIL. REPEAT SEVERAL TIMES DURING THE FIRST MONTH AND THROUGHOUT THE FOLLOWING TWO SUMMERS.

SHRUB PLANTING DETAIL

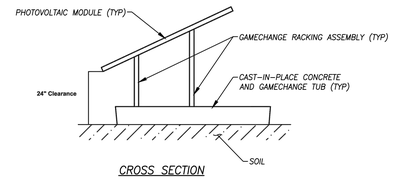
NOT TO SCALE

PLANTING SPECIFICATIONS:

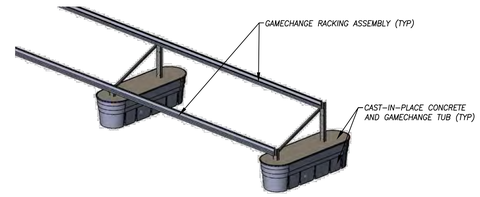
1. *All materials and construction methods shall conform to the requirements of the Connecticut Association of Landscape Contractors Specification. All plants shall be nursery grown and conform to the latest edition of ANSI 260.1, AMERICAN STANDARD FOR NURSERY STOCK and also the minimum guidelines established for nursery stock published by the American Association of Nurserymen, Inc.*
2. *No substitution of plant materials will be allowed without the prior written consent of the Project Owner. Where a plant size range is provided at least 50% of the plants shall be of the larger size.*
3. *All lawn and planting area soil preparation shall be fertilized and amended according to recommendations of a soil analysis provided by an approved soil testing laboratory.*
4. *All exterior ground areas disturbed by construction and not covered by buildings, structures, paving, continuous planting beds or other site improvements shall be graded, topsoiled to a minimum depth of 4" and grass seeded. Provide lawn development in all areas of selective clearing as directed.*
5. *All plant pits must be free draining. Break up the bottom of the hole by fork if necessary to ensure plant has proper drainage.*
6. *Set all plants in center of plant pits, plumb and straight and as detailed on the drawing. All plant material shall bear the same relationship to finished grade as to original planting grade prior to digging. Trees shall be planted with the junction of roots and stem level with finished grade.*
7. *Handle balled and burlapped plants from the ball only. Once positioned in the hole, remove the top 1/3 of the burlap from the root ball without disturbing the roots.*
8. *Face each plant to give the best appearance. Final location of plant material should be approved by the Project Owner in the field.*
9. *Fill plant pits 2/3 their depth with prepared planting mixture, water thoroughly and allow to settle. Complete back-filling, water thoroughly to eliminate any voids and air pockets. Provide additional back-fill as necessary to conform to required elevation and as detailed.*
10. *Form saucer and install mulch over entire plant pit and saucer area as detailed.*
11. *All tree staking or guying shall be completed immediately after planting, but in no instance more than 24 hours after planting. See staking/guying detail. At the completion of the maintenance period remove all stakes, flags, guys, tree wrap, and anchors.*
12. *Mulch all new shrub beds and plant pits to achieve a 3" depth after settlement. Mulch all ground cover beds to achieve a 2" depth after settlement. Mulch for saucers and planting areas to be a double shredded bark mulch.*
13. *All plants shall be guaranteed for a period of one full year after inspection and acceptance by the Owner's representative, and shall have at least 80% healthy growth at the end of the guarantee period.*
14. *Landscape planting materials as proposed by this plan are Connecticut native and/or non-invasive species. This landscape plan has been designed to incorporate species which are prolific in USDA plant hardiness zone 6b and which require minimal energy input for upkeep and maintenance. References utilized for Connecticut native and non-invasive species selection include the Connecticut Botanical Society, the Connecticut agricultural experiment station, the U.S. Department of Transportation Federal Highway Administration, 2004 Connecticut Stormwater Quality Manual, New England Wetland Plants, Inc., and other sources.*



GAMECHANGE TUB CROSS SECTION



CROSS SECTION

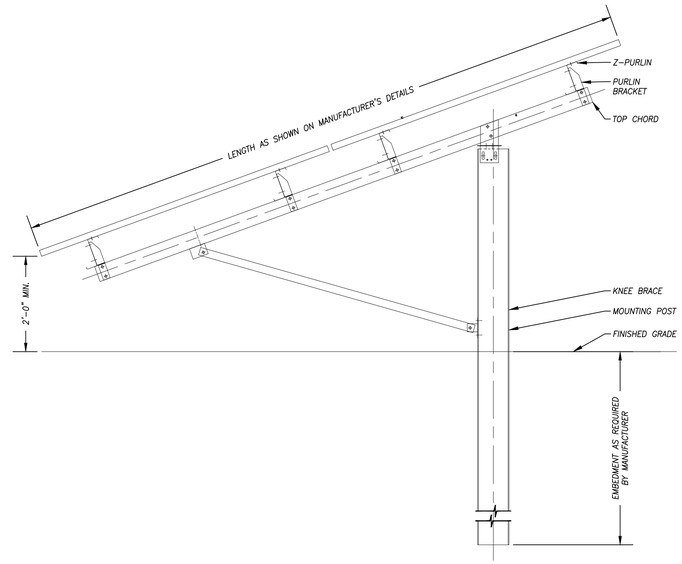


ISOMETRIC

NOTES:
1. GAMECHANGE RACKING SYSTEM TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.
2. SEE MANUFACTURER'S DETAIL SHEETS FOR ADDITIONAL INFORMATION AND INSTALLATION SEQUENCE.

ON-CAP SOLAR ARRAY AND RACKING SYSTEM

NOT TO SCALE



NOTES:
SEE MANUFACTURER'S DETAIL SHEETS FOR ADDITIONAL INFORMATION REGARDING RACKING SYSTEM REQUIREMENTS AND INSTALLATION PROCEDURES. RACKING SYSTEM TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.

TYPICAL POST MOUNTED RACKING SYSTEM DETAIL (OFF-CAP)

NOT TO SCALE

29102

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DATE: September 2015

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Revisions

SHEET NO. 11 / 11

EXHIBIT C – Decommissioning Plan

Decommissioning Plan

82 Rogers Road Solar Project
Norwich, CT

This Decommissioning Plan establishes the approach to conduct decommissioning activities for the permanent closure of the solar panels and appurtenant equipment (Project or Facility) at the end of the Facility's useful life or the permanent cessation of the Facility's' operation, whichever comes first. This Plan also describes the approach for removal and/or abandonment of equipment associated with the Facility and describes anticipated land-restoration activities.

As background, the Site License Agreement (SLA) for the Site requires that no later than 90 days after its expiration all tangible personal property comprising the Facility must be removed from the site. The SLA also requires that the site be returned to its original condition, excepting ordinary wear and tear, including the removal of mounting pads or other support structures for the solar modules.

DECOMMISSIONING ACTIVITIES

In accordance with the SLA, decommissioning will involve removal and disposal or recycling of all Project components. All recyclable materials will be transported to the appropriate nearby recycling facilities. Any non-recyclable materials will be properly disposed of at a nearby landfill. 95% or greater of the Facility's components will be recyclable.

Decommissioning Preparation

The first step in the decommissioning process will be to prepare the site for decommissioning. Site decommissioning and equipment removal can take up to eight months to complete for a project of this size. Therefore, access roads, temporary fencing, and electrical power will temporarily remain in place for use by the decommissioning and site restoration workers until no longer needed. Demolition debris will be placed in temporary on-site storage areas pending final transportation and disposal/recycling according to the procedures listed below.

PV Equipment Removal and Recycling

During decommissioning, all Facility components that will not be used by the site owner will be removed from the site. Equipment removal will include all pad-mounted cabinets, wiring, solar modules, solar module racking, inverters, and panel boards. Steel posts and concrete pads that supported the module racking will be removed and any resulting holes will be backfilled with locally imported soil to match existing site soil conditions. The concrete transformer and interconnection equipment pads will be broken up and removed.

The demolition debris and removed equipment may be cut or dismantled into pieces that can be safely lifted or carried with the on-site equipment being used. The majority of glass, steel and aluminum will be processed for transportation and delivery to a licensed off-site recycling center. The solar modules will be transported to and recycled at the nearest facility that will accept them. Minimal non-recyclable materials are anticipated; these will be properly disposed of at the nearest qualified disposal facility.

Internal Power Collection System

The DC and AC power collection system will be dismantled and removed. All conduit and cabling that is removed will be recycled.

Access Roads

The onsite access driveway will remain in place to accomplish decommissioning at the end of the Facility's life. At the time of decommissioning, if the landowner determines that this road will be beneficial for the future use of the site, the access road may remain after decommissioning.. Roads that will not be used will be restored to pre-construction conditions by removal of the aggregate base material, fill of the compacted base section with locally imported soil to match existing onsite soils, and hydroseeding with a seed mix to match existing onsite groundcover.

Interconnection Line

The overhead interconnection cabling that connects the Project to the Norwich Public Utilities distribution network will remain in place during decommissioning activities to provide electric service onsite during decommissioning. At the time of decommissioning, if the landowner determines that this electric service line will be beneficial for the future use of the site, the line may remain after decommissioning. If the line is not used, it will be removed per Norwich Public Utilities guidelines and transported offsite to the nearest recycling facility.

SITE RECLAMATION

After the Project is completely decommissioned, and all Project equipment has been removed from the Site, additional activities will be performed to return the property back to its pre-construction conditions, excepting ordinary wear and tear.

Any site restoration or monitoring activities completed on the two closed landfill parcels will comply with applicable CTDEEP requirements.

Restoration Process

The decommissioning process will remove Project-related structures and infrastructure as described in the previous sections. Following decommissioning, site reclamation activities will occur. Reclamation will restore landform features, vegetative cover, and hydrologic function after the closure of the facility. The process will involve (where needed) the replacement of topsoil and vegetation, as well as modification of site topography where necessary to bring the Site back to substantially pre-construction conditions compatible with the adjacent surroundings.

Any excavated areas remain after removal of equipment pads or access road base material, will be backfilled and compacted with locally imported soil to match existing onsite soils, and hydroseeded with a seed mix to match existing onsite groundcover. Any other areas of lower than average ground surface level will receive similar treatment.

If any soils are compacted at levels that would affect successful re-vegetation, they will be de-compacted. The method of de-compaction will depend on how compacted the soil has become

over the life of the Project. Following de-compaction, re-contouring of the site will be conducted, if necessary, to return the Site to approximately match the pre-construction surface conditions and the surrounding area conditions. Original site drainage characteristics will be restored if they have not been maintained. It is unlikely that a significant amount of earthwork will be required, because the Project construction plan calls for minimal disturbance of the Site during Project construction. Grading activities will be limited to areas as shown on the design plans that require re-contouring. Efforts will be made to disturb as little of the natural drainages and existing natural vegetation that remain post-decommissioning as possible.

Any remaining bare earth areas will be hydroseeded with a seed mix to match existing onsite groundcover. Site restoration activities are anticipated to be limited, because the pre-construction conditions of the site are not planned to be significantly altered during Project construction. Also, any other activities that become necessary, will be performed to return the Site to a pre-construction condition.

Monitoring Activities

The Site will be monitored by SolarCity after site restoration activities are complete to confirm that any earthwork and re-vegetation were performed correctly. The Site will be periodically inspected (at least quarterly) to check for any eroded earthwork or failed vegetation. Any deficiencies will be promptly corrected. This monitoring will continue for a period of one year, or until the Site is re-developed for another future purpose, whichever comes first.

Financial Assurance

In accordance with the SLA, SolarCity shall provide, on or before the Commercial Operation Date of the System, financial assurance in the form of an annually renewing irrevocable Letter of Credit from a financial institution acceptable to the City of Norwich, in the form of financial assurance agreeable to the City to be in place prior to the start issuance of building permit naming the City as the beneficiary and to be drawn upon by City in the event that SolarCity fails to timely perform all of its obligations concerning removal of the System as required by the SLA. Such Letter of Credit shall remain effective and in force until such time as the System is fully removed and the Premises restored in accordance with the SLA or until such time that Licensor exercises its purchase option. The City shall provide up to fifty thousand (50,000) sq. ft. of space for the temporary storage and staging of tools, materials and equipment and for the parking of up to twenty (20) construction crew vehicles and one (1) temporary construction trailer and facilities reasonably necessary during System removal.

Applicable DEEP requirements