R18.000647

THE CITY OF Fitchburg City of Fitchburg Planning/Zoning Department 5520 Lacy Road Fitchburg, WI 53711 (608-270-4200)	**LAND DIVISION APPLICATION**

The undersigned owner, or owner's authorized agent, of property herein described hereby submits ten (10) copies of the attached maps, one (1) copy no larger than 11" x 17", and one (1) pdf document of the complete submittal (planning@fitchburgwi.gov) for approval under the rules and requirements of the Fitchburg Land Division Ordinance.

1. Type of Action Requested:

- ☐ Certified Survey Map Approval
- ☒ Preliminary Plat Approval
- ☐ Final Plat Approval
- ☐ Replat
- ☐ Comprehensive Development Plan Approval

2. Proposed Land Use (Check all that Apply):

- ☒ Single Family Residential
- ☒ Two-Family Residential
- ☒ Multi-Family Residential
- ☒ Commercial/Industrial

3. No. of Parcels Proposed: 10

4. No. Of Buildable Lots Proposed: 6

5. Zoning District: PD

6. Current Owner of Property: Nine Springs Hill Inc - Jim Fosied

Address: 2721 Stevens Street, Madison, WI 53705 **Phone No:** 608-215-8296

7. Contact Person: Royal Capital - Terrell Walter

Email: t.walter@royalcapital.net

Address: 710 N. Plankinton Ave Suite 300 Milwaukee, WI 53203 **Phone No:** 773-619-0416

8. Submission of legal description in electronic format (MS Word or plain text) by email to: planning@fitchburgwi.gov

Pursuant to Section 24-2 (4) of the Fitchburg Land Division Ordinance, all Land Divisions shall be consistent with the currentlyadopted City of Fitchburg Comprehensive Plan.

Respectfully Submitted By: _____ Terrell Walter

Owner's or Authorized Agent's Signature — Print Owner's or Authorized Agent's Name

PLEASE NOTE - Applicants shall be responsible for legal or outside consultant costs incurred by the City. Submissions shall be made at least four (4) weeks prior to desired plan commission meeting.

For City Use Only: **Date Received:** 12-14-2022

Ordinance Section No. _____ **Fee Paid:** $1,375.00

Permit Request No. PP – 2490 -23

Receipt No: 18.000647 Dec 15, 2022

FOSIED, JIM

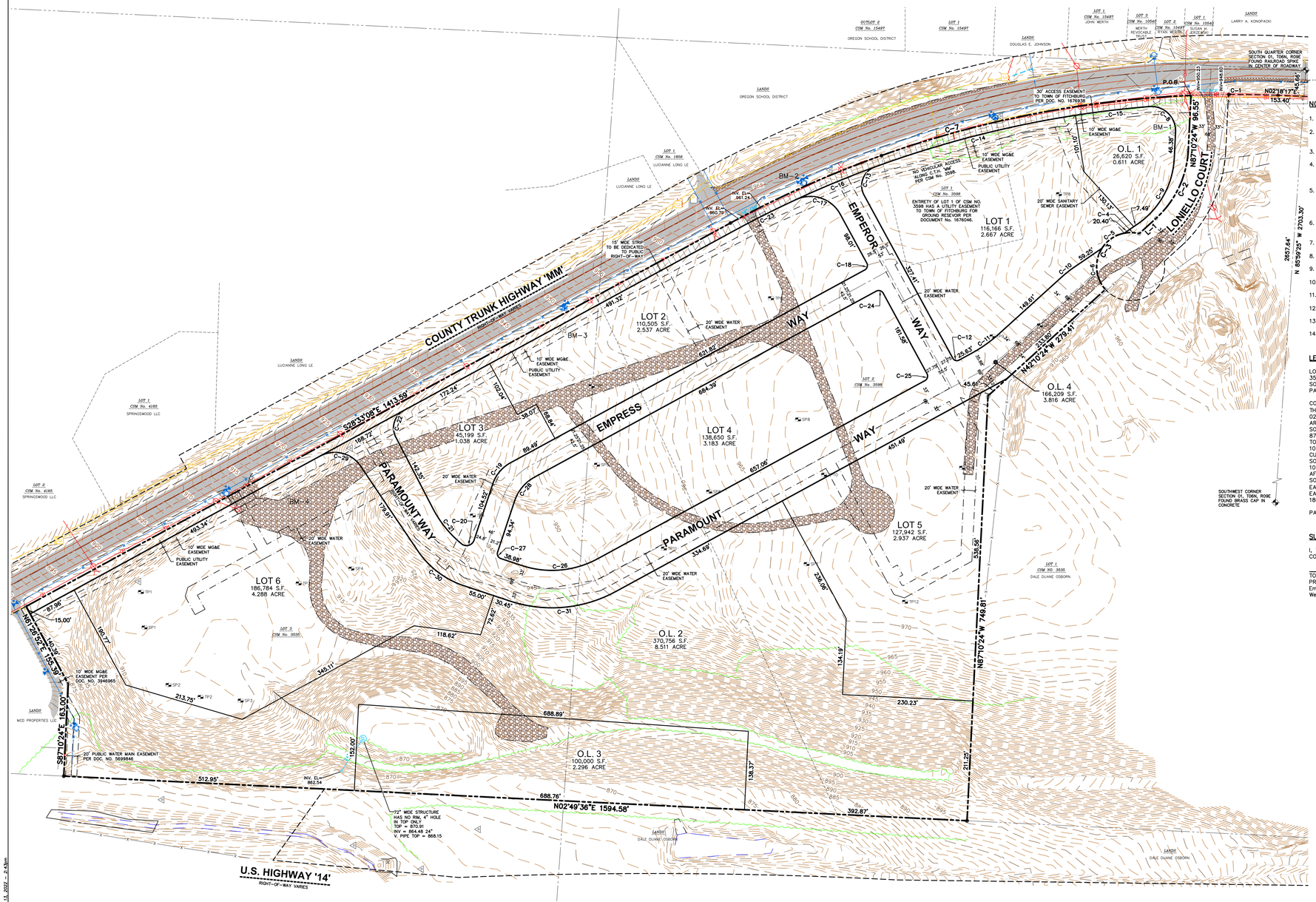
LICENSES & PERMITS	
PP-2490-23	2,375.00
Total:	2,375.00
CHECK	
Check No: 2385	2,375.00
Payor:	
ROYAL CAPITAL GROUP LLC	
Total Applied:	2,375.00
Change Tendered:	.00

12/15/2022 09:39AM

CITY OF FITCHBURG
5520 LACY RD
FITCHBURG WI 53711 608-270-4200

PRELIMINARY PLAT OF NINE SPRINGS

LOTS 1 AND 2, CERTIFIED SURVEY MAP NO. 3598, RECORDED IN VOLUME 14, PAGES 234–235, AS DOCUMENT NO. 1691387, AND LOT 3, CERTIFIED SURVEY MAP NO. 3535, RECORDED IN VOLUME 14, PAGES 124–125, AS DOCUMENT NO. 1676937, LOCATED IN THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER AND THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER, SECTION 01, TOWNSHIP 06 NORTH, RANGE 09 EAST, CITY OF FITCHBURG, DANE COUNTY, WISCONSIN.



LEGEND

- GOVERNMENT CORNER
- ¾" REBAR FOUND
- CONTROL POINT
- SETTLING PLATE
- BOLLARD
- SIGN
- ENDWALL/END OF PIPE
- STORM MANHOLE
- POWER POLE W/GUY
- TELEPHONE PEDESTAL
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- EDGE OF GRAVEL
- ST STORM SEWER
- OH OVERHEAD LINE
- UNDERGROUND TELEPHONE
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- 875 INDEX CONTOUR
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- DITCH LINE
- 874.29 SPOT ELEVATION
- BITUMINOUS PAVEMENT
- GRAVEL
- EDGE OF BITUMINOUS
- NO VEHICULAR ACCESS
- ( ) DENOTES RECORD DATA DEPICTING THE SAME LINE ON THE GROUND AS RETRACED BY THIS SURVEY

NOTES

1. FIELD WORK COMPLETED BY JSD PROFESSIONAL SERVICES, INC. ON JUNE 9, 2021.
2. ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). BENCHMARK IS A RAIL ROAD SPIKE MARKING THE SOUTH 1/4 CORNER OF SECTION 01, T06N, R09E, ELEVATION = 946.82'
3. CONTOUR INTERVAL IS ONE FOOT.
4. SUBSURFACE UTILITIES AND FEATURES SHOWN ON THIS MAP HAVE BEEN APPROXIMATED BY LOCATING SURFICIAL FEATURES AND APPURTENANCES, LOCATING DIGGERS HOTLINE FIELD MARKINGS AND BY REFERENCE TO UTILITY RECORDS AND MAPS. DIGGER'S HOTLINE TICKET NO. 20171003764, 20171003835, 20171003839, AND 20171003690, WITH A CLEAR DATE OF MARCH 13, 2017.
5. UTILITY COMPANIES CONTACTED THRU DIGGERS HOTLINE:
   CITY OF FITCHBURG — CHARTER COMMUNICATIONS
   MG&E (ELECTRIC AND GAS) — AT&T
   WISCONSIN INDEPENDANT NETWORK
6. BEFORE EXCAVATION, APPROPRIATE UTILITY COMPANIES SHOULD BE CONTACTED. FOR EXACT LOCATION OF UNDERGROUND UTILITIES, CONTACT DIGGERS HOTLINE, AT 1.800.242.8511.
7. LOT 2, CERTIFIED SURVEY MAP No. 3598–"ANY FUTURE DEVELOPMENT OF LOT 2 SHALL CONFORM TO THE CITY OF MADISON SUBDIVISION REGULATIONS."
8. LOT 1, CERTIFIED SURVEY MAP No. 3598–"LOT 1 SHALL ONLY BE USED FOR A WELL AND UNDERGROUND RESERVOIR SITE."
9. COUNTY TRUNK HIGHWAY MM IS A CONTROLLED ACCESS HIGHWAY PURSUANT TO CHAPTER 79 OF THE DANE COUNTY CODE OF ORDINANCES.
10. U.S.H. "14" IS A CONTROLLED ACCESS HIGHWAY PER STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION 233
11. CURRENT ZONING: RURAL DEVELOPMENT
12. EXISTING ASPHALTIC PAVEMENT ON C.T.H. MM IS (42') WIDE
13. EMPEROR WAY ACCESS IS LIMITED TO A RIGHT IN AND RIGHT OUT USE ONLY.
14. STORMWATER PONDS LOCATED ON OUTLOT 1 AND OUTLOT 3 SHALL BE PRIVATELY OWNED AND MAINTAINED.

LEGAL DESCRIPTION

LOTS 1 AND 2, CERTIFIED SURVEY MAP NO. 3598, RECORDED IN VOLUME 14, PAGES 234–235, AS DOCUMENT NO. 1691387, AND LOT 3, CERTIFIED SURVEY MAP NO. 3535, RECORDED IN VOLUME 14, PAGES 124–125, AS DOCUMENT NO. 1676937, LOCATED IN THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER AND THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER, SECTION 01, TOWNSHIP 06 NORTH, RANGE 09 EAST, CITY OF FITCHBURG, DANE COUNTY, WISCONSIN, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTH QUARTER CORNER OF SECTION 01, AFORESAID; THENCE NORTH 85 DEGREES 59 MINUTES 25 SECONDS WEST ALONG THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 01, AFORESAID, 45.66 FEET TO THE WESTERLY RIGHT–OF–WAY LINE OF COUNTY TRUNK HIGHWAY 'MM'; THENCE NORTH 02 DEGREES 18 MINUTES 17 SECONDS EAST ALONG SAID RIGHT–OF–WAY LINE, 153.40 FEET TO A POINT OF CURVE; THENCE NORTHWESTERLY 153.47 FEET ALONG AN ARC OF A CURVE TO THE LEFT, HAVING A RADIUS OF 1863.34 FEET, THE CHORD BEARS NORTH 00 DEGREES 03 MINUTES 21 SECONDS WEST, 153.43 FEET TO THE SOUTHEAST CORNER OF LOT 2, AFORESAID, A POINT ON THE NORTHERLY RIGHT–OF–WAY LINE OF LONIELLO COURT, AND THE POINT OF BEGINNING; THENCE NORTH 87 DEGREES 10 MINUTES 24 SECONDS WEST ALONG SAID LINE, 96.55 FEET TO A POINT OF CURVE; THENCE NORTHWESTERLY 136.65 FEET ALONG AN ARC OF CURVE TO THE RIGHT, HAVING A RADIUS OF 174.00 FEET, THE CHORD BEARS NORTH 64 DEGREES 40 MINUTES 24 SECONDS WEST, 133.17 FEET; THENCE NORTH 42 DEGREES 10 MINUTES 24 SECONDS WEST ALONG SAID LINE, 40.00 FEET TO A POINT OF A NON–TANGENT CURVE; THENCE NORTHWESTERLY 153.55 FEET ALONG AN ARC OF CURVE TO THE LEFT, HAVING A RADIUS OF 60.00 FEET, THE CHORD BEARS NORTH 58 DEGREES 51 MINUTES 24 SECONDS WEST, 114.95 FEET TO A POINT ON THE SOUTHERLY LINE OF LOT 2, AFORESAID; THENCE NORTH 42 DEGREES 10 MINUTES 24 SECONDS WEST ALONG SAID LINE, 279.41 FEET; THENCE NORTH 87 DEGREES 10 MINUTES 24 SECONDS WEST ALONG SAID LINE, 749.81 FEET TO A POINT ON THE WEST LINE OF THE EAST HALF OF THE SOUTHWEST QUARTER OF SECTION 01, AFORESAID; THENCE NORTH 02 DEGREES 49 MINUTES 36 SECONDS EAST ALONG SAID LINE, 1594.58 FEET TO THE NORTHWEST CORNER OF LOT 3, AFORESAID; THENCE SOUTH 87 DEGREES 10 MINUTES 24 SECONDS EAST ALONG THE NORTHERLY LINE OF SAID LOT 3, 163.00 FEET; THENCE NORTH 61 DEGREES 26 MINUTES 52 SECONDS EAST ALONG SAID LINE, 155.39 FEET TO THE WESTERLY RIGHT–OF–WAY LINE OF COUNTY TRUNK HIGHWAY 'MM'; THENCE SOUTH 28 DEGREES 33 MINUTES 08 SECONDS EAST ALONG SAID LINE, 1413.59 FEET TO A POINT OF CURVE; THENCE SOUTHEASTERLY 850.01 FEET ALONG AN ARC OF CURVE TO THE RIGHT, HAVING A RADIUS OF 1863.34 FEET, THE CHORD BEARS SOUTH 15 DEGREES 29 MINUTES 01 SECONDS EAST, 842.66 FEET TO THE POINT OF BEGINNING.

PARCEL CONTAINS 1,428,270 S.F. OR 32.789 ACRES.

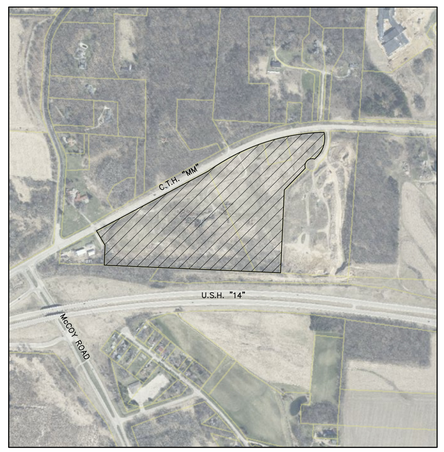
SURVEYOR'S CERTIFICATE

I, TODD J. BUHR, WISCONSIN PROFESSIONAL LAND SURVEYOR NO. S–2614, HEREBY CERTIFY THAT THIS PRELIMINARY PLAT MAP IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF IN ACCORDANCE WITH THE INFORMATION PROVIDED.

TODD J. BUHR, S–2614
PROFESSIONAL LAND SURVEYOR
Email: todd.buhr@jsdinc.com
Website: www.jsdinc.com

DATE

WISCONSIN — TODD J. BUHR S–2614 DEFOREST, WI — LAND SURVEYOR



VICINITY MAP
NOT TO SCALE

north

BEARINGS ARE BASED ON THE WISCONSIN COUNTY COORDINATE SYSTEM, DANE COUNTY. THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 01–06–09 BEARS N85°59'25"W.

0 40' 80' 160'

SCALE: 1" = 80'

SURVEYED FOR:

ROYAL CAPITAL
701 N PLANKINTON AVE, SUITE 300
MILWAUKEE, WI 53203

SURVEYED BY:

JSD PROFESSIONAL SERVICES, INC.
161 HORIZON DRIVE, SUITE 101
VERONA, WISCONSIN 53593
(608) 848–5060

CURVE TABLE

CURVE	LENGTH	RADIUS	TANGENT	DELTA	CHORD	CHORD BEARING
C–1	153.47'	1863.34'	76.78	4°43'08"	153.43'	N0°03'21"W
C–2	136.65'	174.00'	72.07	44°59'54"	133.17'	N64°40'24"W
C–3	153.55'	60.00'	200.20	146°37'58"	114.95'	N58°51'24"W
C–4	26.62'	60.00'	13.53	25°25'10"	26.40'	S1°45'00"W
C–5	48.72'	60.00'	25.79	46°31'23"	47.39'	S34°13'17"E
C–6	78.22'	60.00'	45.78	74°41'25"	72.79'	N85°10'19"E
C–7	850.01'	1863.34'	432.53	26°08'13"	842.66'	S15°29'01"E
C–8	73.21'	43.00'	49.07	97°32'58"	64.68'	S44°03'07"W
C–9	138.17'	149.50'	74.46	52°57'07"	133.30'	N60°41'50"W
C–10	27.90'	201.00'	13.97	7°57'07"	27.87'	S38°11'50"E
C–11	58.72'	247.00'	29.50	13°37'16"	58.58'	S35°21'46"E
C–12	12.57'	8.00'	8.00	90°00'00"	11.31'	S16°26'52"W
C–13	60.12'	35.00'	40.56	98°25'12"	53.00'	N69°20'32"W
C–14	366.13'	1848.34'	183.69	11°21'04"	365.53'	S14°27'27"E
C–15	130.97'	1848.34'	65.51	4°03'36"	130.95'	S6°45'10"E
C–16	150.07'	1848.34'	75.07	4°39'06"	150.02'	S22°27'30"E
C–17	90.30'	60.00'	56.18	86°13'56"	82.02'	N18°19'55"E

CURVE TABLE

CURVE	LENGTH	RADIUS	TANGENT	DELTA	CHORD	CHORD BEARING
C–18	14.14'	9.00'	9.00	90°00'00"	12.73'	S73°33'08"E
C–19	49.62'	66.00'	26.05	43°04'43"	48.46'	S50°05'29"E
C–20	27.11'	14.00'	20.36	110°57'53"	23.07'	S16°08'55"E
C–21	80.32'	198.27'	40.72	23°12'41"	79.78'	S50°56'22"W
C–22	54.31'	35.00'	34.34	88°54'09"	49.02'	N73°00'13"W
C–23	121.56'	1848.34'	63.41	3°55'46"	121.54'	S26°40'05"E
C–24	14.14'	9.00'	9.00	90°00'00"	12.73'	N16°26'52"E
C–25	14.14'	9.00'	9.00	90°00'00"	12.73'	S73°33'08"E
C–26	137.99'	168.50'	73.13	46°55'17"	134.17'	S5°05'29"E
C–27	14.14'	9.00'	9.00	90°00'00"	12.73'	S63°22'09"W
C–28	58.36'	74.19'	30.79	45°04'34"	56.87'	N49°43'28"W
C–29	81.12'	55.00'	49.97	84°30'28"	73.97'	N13°42'06"E
C–30	104.30'	159.00'	54.11	37°35'11"	102.44'	N37°09'45"E
C–31	192.04'	234.50'	101.77	46°55'17"	186.72'	N5°05'29"W

LINE TABLE

LINE	BEARING	DISTANCE
L–1	N42°10'24"W	40.00'

LOT SUMMARY TABLE

LOTS	TYPE	ACREAGE
LOT 1	FOR SALE	2.667
LOT 2	SENIOR LIVING	2.537
LOT 3	COMMERCIAL	1.038
LOT 4	APARTMENTS	3.183
LOT 5	APARTMENTS	2.937
LOT 6	FOR SALE	4.288
OUTLOT 1	STORMWATER MANAGEMENT	1.611
OUTLOT 2	OPEN SPACE	8.511
OUTLOT 3	STORMWATER MANAGEMENT	2.296
OUTLOT 4	PRIVATE ROADS	3.816

BENCHMARKS

BENCH MARK	ELEVATION	DESCRIPTION
BM–1	956.78	No. 6 REBAR
BM–2	964.66	No. 6 REBAR
BM–3	951.35	No. 6 REBAR
BM–4	915.54	No. 6 REBAR

PROJECT LOCATION:
SECTION 01
TOWNSHIP 06 NORTH
RANGE 09 EAST
CITY OF FITCHBURG
DANE COUNTY, WI

JSD — CREATE THE VISION TELL THE STORY — jsdinc.com

PRELIMINARY PLAT OF NINE SPRINGS

PROJECT NO: 21–10566	DRAWN BY: CJO	INITIAL SUBMITTAL DATE:	14 DECEMBER 2022
FIELDBOOK/PG: –	CHECKED BY: JK	REVISION RESUBMITTAL DATE:	–
SURVEYED BY: JR/CJO	APPROVED BY: TJB	REVISION RESUBMITTAL DATE:	–
		REVISION RESUBMITTAL DATE:	–

SHEET 1 OF 1

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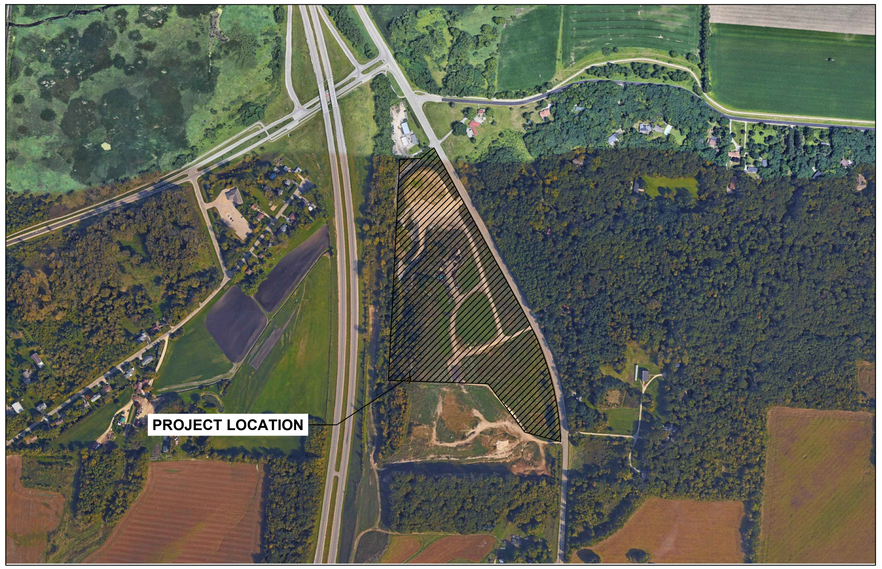
NINE SPRINGS

CITY OF FITCHBURG, WISCONSIN

NE1/4, SW 1/4, SECTION 01, TOWNSHIP 06 NORTH, RANGE 09 EAST

DRAWING INDEX

C0.0	TITLE SHEET
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C1.1	NOTES AND LEGEND
C2.0	DEMOLITION PLAN
C3.0	SITE PLAN
C4.0	GRADING PLAN
C5.0	UTILITY PLAN
C6.0	TYPICAL ROAD SECTIONS
C6.1	TYPICAL ROAD SECTIONS
PLAN & PROFILES	
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C7.2	PARAMOUNT WAY
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C7.5	EMPRESS WAY
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LANDSCAPE	
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L1.2	DETAILED LANDSCAPE PLAN
L1.3	DETAILED LANDSCAPE PLAN
L1.4	DETAILED LANDSCAPE PLAN
L1.5	DETAILED LANDSCAPE PLAN
L1.6	DETAILED LANDSCAPE PLAN
L2.0	LANDSCAPE DETAILS & NOTES



PROJECT AREA
NOT TO SCALE

north

PROJECT INFORMATION

OWNER
ROYAL CAPITAL
CONTACT: TERRELL WALTER
710 N PLANKINTON AVE, SUITE 300
MILWUKEE, WI 53203
P: 414-800-5289
C: 773-619-0416
T.Walter@RoyalCapital.net

CONSTRUCTION MANAGER
ROYAL CAPITAL
CONTACT: ANDY PALEC
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C: 773-619-0416
a.palec@royalcapital.net

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P: 608-848-5060
andrew.geffert@jsdinc.com

LANDSCAPE ARCHITECT
JSD PROFESSIONAL SERVICES
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VERONA, WI 53593
P: 608-848-5060
kevin.yeska@jsdinc.com

MUNICIPAL CONTACTS

CITY OF FITCHBURG
DIRECTOR OF PUBLIC WORKS
CONTACT: BILL BALKE, P.E.
5520 LACY ROAD
FITCHBURG, WI 53711
P: 608-270-4260
bill.balke@fitchburgwi.gov

DANE COUNTY
HIGHWAY & TRANSPORTATION
CONTACT: KEVIN ESLICK
2302 FISH HATCHERY ROAD
MADISON, WI 53713
P: 608-266-4037
eslick.kevin@countyofdane.com

CITY OF FITCHBURG
PROJECT ENGINEER
CONTACT: ANDREW McFADDEN
5520 LACY ROAD, FITCHBURG, WI 53711
P: 6008-270-4261
andrew.mcfadden@fitchburgwi.gov

UTILITY CONTACTS

WATER AND SEWER
CITY OF FITCHBURG
CONTACT: PHIL MANION
5520 LACY ROAD, FITCHBURG, WI 53711
P: 608-270-4260
C: 608-729-1730
philip.manion@fitchburgwi.gov

TELEPHONE
AT&T
CONTACT: LISA GUNDLACH
316 WEST WASHINGTON AVENUE
MADISON WI 53703
P: 608-252-2432
C: 608-609-1961
lg6852@att.com

GAS
MADISON GAS & ELECTRIC
CONTACT: SHAUN ENDRES
623 RAILROAD STREET, MADISON, WI 53703
P: 608-252-7224
P: 608-516-7913
C: 608-242-6708
SEendres@mge.com

CABLE TV
CHARTER COMMUNICATIONS
CONTACT: GLEN JAKUSZ
555 IRISH LANE, FITCHBURG
WI 53711
P: 608-273-3883
C: 608-209-3202
glen.jackusz@charter.com

ELECTRIC
MADISON GAS & ELECTRIC
CONTACT: JIM HERFEL
623 RAILROAD STREET, MADISON, WI 53703
P: 608-252-723
JHerfel@mge.com

DIGGERS HOTLINE
Toll Free (800) 242-8511

JSD
CREATE THE VISION | TELL THE STORY
jsdinc.com
MADISON REGIONAL OFFICE
161 HORIZON DRIVE, SUITE 101
VERONA, WISCONSIN 53593
P. 608.848.5060

CLIENT:
ROYAL CAPITAL

CLIENT ADDRESS:
710 N PLANKINTON AVE. SUITE 300
MILWAUKEE, WI 53203

PRELIMINARY
NOT FOR CONSTRUCTION

PROJECT:
NINE SPRINGS

PROJECT LOCATION:
FITCHBURG, WI 53711
DANE COUNTY

PLAN MODIFICATIONS:

#	Date:	Description:
1	03.25.22	P-PLAT SUBMITTAL
2	04.12.22	RESPONSE TO P-PLAT COMMENTS
3	06.21.22	ADR SUBMITTAL
4	12.14.22	P-PLAT SUBMITTAL
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

Designed By: MSS
Reviewed By: ACG
Approved By:

SHEET TITLE:
TITLE SHEET

SHEET NUMBER:
C0.0

JSD PROJECT NO: 21-10566

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EXISTING CONDITIONS SURVEY

LOT 3, CERTIFIED SURVEY MAP No. 3535, RECORDED IN VOLUME 14, PAGES 124–125, AS DOCUMENT 1676937 AND LOTS 1 AND 2, CERTIFIED SURVEY MAP No. 3895, RECORDED IN VOLUME 14, PAGES 234–235, AS DOCUMENT 1691387, LOCATED IN THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER AND THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 01, TOWNSHIP 06 NORTH, RANGE 09 EAST, CITY OF FITCHBURG, DANE COUNTY, WISCONSIN.

LEGEND

- GOVERNMENT CORNER
- 3/4" REBAR FOUND
- CONTROL POINT
- SETTLING PLATE
- BOLLARD
- SIGN
- STORM MANHOLE
- ENDWALL/END OF PIPE
- POWER POLE W/GUY
- TELEPHONE PEDESTAL
- DECIDUOUS TREE
- PARCEL BOUNDARY
- SECTION LINE
- RIGHT-OF-WAY LINE
- CENTERLINE
- CHORD LINE
- PLATTED LOT LINE
- EASEMENT LINE
- FENCE LINE
- EDGE OF GRAVEL
- WATER LINE
- STORM SEWER
- OHP — OVERHEAD LINE
- UNDERGROUND TELEPHONE
- EDGE OF WOODS OR BRUSH
- 955 — INDEX CONTOUR
- 954 — INTERMEDIATE CONTOUR
- +954.29 — SPOT ELEVATION
- DITCH LINE
- BITUMINOUS PAVEMENT
- GRAVEL
- EDGE OF BITUMINOUS
- ( ) DENOTES RECORD DATA DEPICTING THE SAME LINE ON THE GROUND AS RETRACED BY THIS SURVEY

NOTES

1. FIELD WORK COMPLETED BY JSD PROFESSIONAL SERVICES, INC. ON MAY & SEPTEMBER 2017.
2. BEARINGS FOR THIS SURVEY AND MAP ARE BASED ON THE WISCONSIN COUNTY COORDINATE SYSTEM, (WCCS), DANE COUNTY ZONE. THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 01–06–09, BEARS N 85°59'25" W.
3. ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). BENCHMARK IS A RAIL ROAD SPIKE MARKING THE SOUTH 1/4 CORNER OF SECTION 01, T06N, R09E, ELEVATION = 946.82'
4. CONTOUR INTERVAL IS ONE FOOT.
5. SUBSURFACE UTILITIES AND FEATURES SHOWN ON THIS MAP HAVE BEEN APPROXIMATED BY LOCATING SURFICIAL FEATURES AND APPURTENANCES, LOCATING DIGGERS HOTLINE FIELD MARKINGS AND BY REFERENCE TO UTILITY RECORDS AND MAPS. DIGGER'S HOTLINE TICKET NO. 20212307420, 20212307439, 20212307456, AND 20212307473, WITH A CLEAR DATE OF JUNE 4, 2021.
6. UTILITY COMPANIES CONTACTED THRU DIGGERS HOTLINE:
   - CITY OF FITCHBURG
   - CHARTER COMMUNICATIONS
   - MG&E (ELECTRIC AND GAS)
   - MADISON METROPOLITAN SEWERAGE DISTRICT
   - CITY OF MADISON ENGINEERING DEPT.
   - WIN LLC (WISCONSIN INDEPENDANT NETWORK)
   - AT&T
   - OREGON SCHOOL DISTRICT
7. BEFORE EXCAVATION, APPROPRIATE UTILITY COMPANIES SHOULD BE CONTACTED. FOR EXACT LOCATION OF UNDERGROUND UTILITIES, CONTACT DIGGERS HOTLINE, AT 1.800.242.8511.
8. JSD PROFESSIONAL SERVICES, INC. DOES NOT GUARANTEE THAT THE CONTROL POINT ELEVATIONS LISTED ON THIS MAP HAVE NOT BEEN DISTURBED SINCE THE DATE OF THIS SURVEY AND SHOULD BE VERIFIED PRIOR TO CONSTRUCTION ACTIVITIES.
9. THIS PARCEL IS SUBJECT TO ALL EASEMENTS AND AGREEMENTS, BOTH RECORDED AND UNRECORDED.
10. LOT 2, CERTIFIED SURVEY MAP No. 3598–"ANY FUTURE DEVELOPMENT OF LOT 2 SHALL CONFORM TO THE CITY OF MADISON SUBDIVISION REGULATIONS."
11. LOT 1, CERTIFIED SURVEY MAP No. 3598–"LOT 1 SHALL ONLY BE USED FOR A WELL AND UNDERGROUND RESERVOIR SITE."
12. COUNTY TRUNK HIGHWAY MM IS A CONTROLLED ACCESS HIGHWAY PURSUANT TO CHAPTER 79 OF THE DANE COUNTY CODE OF ORDINANCES.
13. U.S.H. "14" IS A CONTROLLED ACCESS HIGHWAY PER STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION 233.
14. WETLAND BOUNDARY DETERMINED BY HEARTLAND ECOLOGICAL GROUP, INC AND IS NOT MARKED IN THE FIELD.

BENCHMARKS

CONTROL POINT	ELEVATION	DESCRIPTION
BM–200	956.98	3/4" REBAR
BM–201	964.66	3/4" REBAR
BM–202	951.35	3/4" REBAR
BM–203	915.54	3/4" REBAR

LINE TABLE

LINE	BEARING	DISTANCE
L–1	N87°10'45"W (N87°33'12"W)	96.57' (96.55')
L–2	N42°09'51"W (N42°33'12"W)	40.02' (40.00')

CURVE TABLE

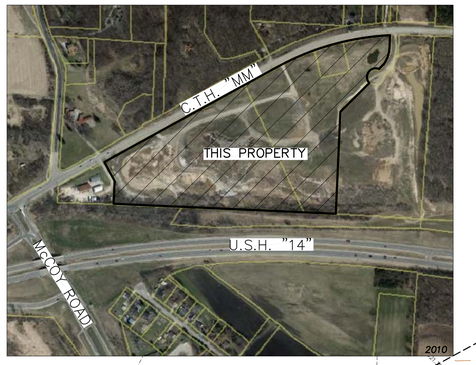
CURVE	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD
C–1	136.66' (NR)	174.00' (174.00')	44°59'55" (45°00'00")	N64°40'24"W (N65°03'12"E)	133.17' (133.17')
C–2	153.53' (NR)	59.97' (60.00')	146°40'38" (146°37'58")	N58°52'26"W (N59°14'12"W)	114.91' (114.95')
C–3	850.01' (NR)	1863.60' (1863.34')	26°07'59" (26°08'14")	S15°29'06"E (S15°51'49"E)	842.66' (842.67')

NR=NO RECORD

LEGAL DESCRIPTION

LOT 3, CERTIFIED SURVEY MAP NO. 3535, RECORDED IN VOLUME 14 OF DANE COUNTY CERTIFIED SURVEY MAPS ON PAGES 124–125 AS DOCUMENT NUMBER 1676937 AND LOTS 1 AND 2, CERTIFIED SURVEY MAP NO. 3598, RECORDED IN VOLUME 14 OF DANE COUNTY CERTIFIED SURVEY MAPS ON PAGES 234–235 AS DOCUMENT NUMBER 1691387, TOWN OF FITCHBURG (NOW CITY OF FITCHBURG), LOCATED IN THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER AND THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 01, TOWNSHIP 06 NORTH, RANGE 09 EAST, CITY OF FITCHBURG, DANE COUNTY, WISCONSIN.

TAX KEY NO: 225/0609–013–8170–4, 225/0609–013–9940–0, 225/0609–013–9540–4



VICINITY MAP
NOT TO SCALE

north

SCALE IN FEET
60 0 60

PLAN MODIFICATIONS:

#	Date:	Description:
1	12/01/21	ADDED HYDRANTS AND VALVES
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

Design/Drawn: JK 06/08/21
Approved: TJB 06/10/21

SHEET TITLE:
EXISTING CONDITION SURVEY

SHEET NUMBER:
1 OF 1

JSD PROJECT NO: 21-10566

JSD Professional Services, Inc.
Engineers • Surveyors • Planners

CREATE THE VISION ❯❯ TELL THE STORY

MADISON | MILWAUKEE
KENOSHA | APPLETON | WAUSAU

MADISON REGIONAL OFFICE
161 HORIZON DRIVE, SUITE 101
VERONA, WISCONSIN 53593
P. 608.848.5060

CLIENT:
ROYAL CAPITAL GROUP LLC

CLIENT ADDRESS:
710 N. PLANKINTON AVE., STE. 300
MILWAUKEE, WI 53203

PROJECT:
NINE SPRINGS

PROJECT LOCATION:
CITY OF FITCHBURG
DANE COUNTY, WISCONSIN

THESE PLANS AND DESIGNS ARE COPYRIGHT PROTECTED AND MAY NOT BE USED IN WHOLE OR IN PART WITHOUT THE WRITTEN CONSENT OF JSD PROFESSIONAL SERVICES, INC.

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GENERAL NOTES:

1. REFER TO THE EXISTING CONDITIONS SURVEY FOR EXISTING CONDITIONS NOTES AND LEGENDS.
2. ALL WORK IN THE ROW AND/OR PUBLIC EASEMENTS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE CITY OF FITCHBURG STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (CITY SPECIFICATIONS).
3. EXISTING GRADE SPOT ELEVATIONS SHOWN FOR INFORMATIONAL PURPOSES. DURING CONSTRUCTION MATCH EXISTING GRADES AT CONSTRUCTION LIMITS.
4. NO SITE GRADING OUTSIDE OR DOWNSLOPE OF PROPOSED SILT FENCE LOCATION. NO LAND DISTURBANCE BEYOND PROPERTY LINES.
5. JSD SHALL BE HELD HARMLESS AND DOES NOT WARRANT ANY DEVIATIONS BY THE OWNER/CONTRACTOR FROM THE APPROVED CONSTRUCTION PLANS THAT MAY RESULT IN DISCIPLINARY ACTIONS BY ANY OR ALL REGULATORY AGENCIES.
6. SEE COUNTY HIGHWAY MM IMPROVEMENTS PLANS FOR WORK WITHIN CTH MM RIGHT OF WAY.

DEMOLITION NOTES

1. THIS PLAN INDICATES ITEMS ON THE PROPERTY INTENDED FOR DEMOLITION BASED ON THE CURRENT SITE DESIGN THAT HAVE BEEN IDENTIFIED BY A REASONABLE OBSERVATION OF THE EXISTING CONDITIONS THROUGH FIELD SURVEY RECONNAISSANCE, "DIGGER'S HOTLINE" LOCATION, AND GENERAL "STANDARD OF CARE". THERE MAY BE ADDITIONAL ITEMS THAT CAN NOT BE IDENTIFIED BY A REASONABLE ABOVE GROUND OBSERVATION, OF WHICH THE ENGINEER WOULD HAVE NO KNOWLEDGE OR MAY BE A PART OF ANOTHER DESIGN DISCIPLINE. IT IS THE CONTRACTOR'S/BIDDER'S RESPONSIBILITY TO REVIEW THE PLANS, INSPECT THE SITE AND PROVIDE HIS OWN DUE DILIGENCE TO INCLUDE IN HIS BID WHAT ADDITIONAL ITEMS, IN HIS OPINION, MAY BE NECESSARY FOR DEMOLITION. ANY ADDITIONAL ITEMS IDENTIFIED BY THE CONTRACTOR/BIDDER SHALL BE IDENTIFIED IN THE BID AND REPORTED TO THE ENGINEER OF RECORD. JSD TAKES NO RESPONSIBILITY FOR ITEMS ON THE PROPERTY THAT COULD NOT BE LOCATED BY A REASONABLE OBSERVATION OF THE PROPERTY OR OF WHICH THEY WOULD HAVE NO KNOWLEDGE.
2. CONTRACTOR SHALL KEEP ALL STREETS AND PRIVATE DRIVES FREE AND CLEAR OF ALL CONSTRUCTION RELATED DIRT, DUST AND DEBRIS.
3. ALL TREES WITHIN THE CONSTRUCTION LIMITS SHALL BE REMOVED UNLESS SPECIFICALLY CALLED OUT FOR PROTECTION. ALL TREES TO BE REMOVED SHALL BE REMOVED IN THEIR ENTIRETY AND STUMPS SHALL BE GROUND TO PROPOSED SUBGRADE.
4. ABANDONED/REMOVED ITEMS SHALL BE DISPOSED OF OFF SITE UNLESS OTHERWISE NOTED.
5. CONTRACTOR TO REPLACE ALL SIDEWALK AND CURB AND GUTTER ABUTTING THE PROPERTIES, WHICH IS DAMAGED BY THE CONSTRUCTION, OR ANY SIDEWALK AND CURB AND GUTTER THAT THE CITY ENGINEER DETERMINES NEEDS TO BE REPLACED BECAUSE IT IS NOT AT A DESIRABLE GRADE REGARDLESS OF WHETHER THE CONDITION EXISTED PRIOR TO BEGINNING CONSTRUCTION.
6. PRIOR TO CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR:
   - 6.1. EXAMINE ALL SITE CONDITIONS RELATIVE TO THE CONDITIONS INDICATED ON THE ENGINEERING DRAWINGS. ANY DISCREPANCIES ARE TO BE REPORTED IMMEDIATELY TO THE ENGINEER AND RESOLVED PRIOR TO THE START OF CONSTRUCTION.
   - 6.2. VERIFYING UTILITY ELEVATIONS AND NOTIFYING ENGINEER OF ANY DISCREPANCIES. NO WORK SHALL BE PERFORMED UNTIL THE DISCREPANCIES ARE RESOLVED.
   - 6.3. NOTIFYING ALL UTILITIES PRIOR TO THE REMOVAL OF ANY UNDERGROUND UTILITIES.
   - 6.4. NOTIFYING THE DESIGN ENGINEER AND LOCAL CONTROLLING MUNICIPALITY 48 HOURS PRIOR TO THE START OF CONSTRUCTION TO ARRANGE FOR APPROPRIATE CONSTRUCTION INSPECTION.
7. ANY SANITARY SEWER, SANITARY SEWER SERVICES, WATER MAIN, WATER SERVICES, STORM SEWER, OR OTHER UTILITIES, WHICH ARE DAMAGED BY THE CONTRACTORS, SHALL BE REPAIRED TO THE OWNER'S SATISFACTION AT THE CONTRACTOR'S EXPENSE.
8. CONTRACTOR IS RESPONSIBLE FOR SITE SAFETY DURING THE CONSTRUCTION OF THESE IMPROVEMENTS.
9. CONTRACTOR TO COORDINATE PRIVATE UTILITY REMOVAL / ABANDONMENT AND NECESSARY RELOCATION WITH RESPECTIVE UTILITY COMPANY. COORDINATION REQUIRED PRIOR TO CONSTRUCTION.
10. ALL DEMOLITION SHALL BE IN ACCORDANCE WITH THE APPROVED MUNICIPALITY RECYCLING PLAN.
11. ANY CONTAMINATED SOILS SHALL BE REMOVED IN ACCORDANCE WITH FEDERAL AND STATE REGULATIONS TO AN APPROVED LANDFILL.
12. ALL EXISTING UTILITIES TO BE FIELD LOCATED AND FLAGGED BY CONTRACTOR.
13. EXISTING FIBER OPTIC LINE TO BE CLEARLY MARKED PRIOR TO ANY EXCAVATION. CONTRACTOR TO NOTIFY ENGINEER IMMEDIATELY IF ANY DISCREPANCIES OCCUR IN THE LOCATION SHOWN OR PROPOSED IMPROVEMENTS IMPACTING EXISTING FIBER OPTIC LINE LOCATION.
14. ALL PERIMETER EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO THE START OF DEMOLITION ACTIVITIES. CONTRACTOR SHALL KEEP ALL STREETS AND PAVEMENT FREE AND CLEAR OF ALL CONSTRUCTION RELATED DIRT, DUST AND DEBRIS.
15. SAWCUT LOCATIONS SHOWN ON THE PLAN ARE SUBJECT TO ADJUSTMENT BY THE ENGINEER IN THE FIELD. THE LINE OF SUCH SAWCUTS WILL BE NEATLY DELINEATED THRU THE ASPHALT.

GRADING AND SEEDING NOTES

1. **ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED IMMEDIATELY FOLLOWING GRADING ACTIVITIES. SEED MIX TO BE IN ACCORDANCE WITH LANDSCAPE PLAN.**
2. ALL PROPOSED GRADES SHOWN ARE FINISHED GRADES. CONTRACTOR SHALL VERIFY ALL GRADES, MAKE SURE ALL AREAS DRAIN PROPERLY AND SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO CONSTRUCTION.
3. CONTRACTOR SHALL PROTECT ADJACENT PROPERTIES WITH SILT FENCING FOR EROSION CONTROL UNTIL CONSTRUCTION IS COMPLETED AND NOTICE OF TERMINATION FILED.
4. CONTRACTOR SHALL CHISEL-PLOW OR DEEP TILL WITH DOUBLE TINES ALL STORMWATER MANAGEMENT FACILITIES JUST PRIOR TO SODDING AND/OR SEEDING AND MULCHING TO PROMOTE INFILTRATION.
5. CONTRACTOR SHALL WATER ALL NEWLY SEEDED AREAS DURING THE SUMMER MONTHS WHENEVER THERE IS A 7 DAY LAPSE WITH NO SIGNIFICANT RAINFALL.
6. CONTRACTOR TO DEEP TILL ALL COMPACTED PERVIOUS SURFACES PRIOR TO SEEDING AND MULCHING.
7. THE CONTRACTOR SHALL NOTIFY THE CITY OF FITCHBURG TWO (2) WORKING DAYS IN ADVANCE OF ANY SOIL DISTURBING ACTIVITY.
8. IF GRADING ACTIVITIES CEASE ON ANY PORTION OF THE SITE FOR 14 OR MORE CALENDAR DAYS, THE AREA IN QUESTION MUST BE TEMPORARILY STABILIZED IN ACCORDANCE WITH CSECR NOTE 16.
9. ALL SLOPES 20% OR GREATER SHALL BE TEMPORARY SEEDED, MULCHED, OR OTHER MEANS OF COVER PLACED ON THEM WITHIN 2 WEEKS OF DISTURBANCE IN ACCORDANCE WITH CSECR NOTE 16.

SITE PLAN NOTES

1. ALL DIMENSIONS TO FACE OF CURB AND/OR EDGING OF CONCRETE UNLESS OTHERWISE NOTED.
2. ALL RADII TO FACE OF CURB AND/OR EDGING OF CONCRETE UNLESS OTHERWISE NOTED.
3. ANY REQUIRED REPLACEMENT OF PUBLIC CURB AND GUTTER SHALL MATCH EXISTING AND MEET THE REQUIREMENTS OF THE CITY OF FITCHBURG.
4. ALL PAVING SHALL CONFORM TO "STATE OF WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY & STRUCTURE CONSTRUCTION, LATEST EDITION, APPLICABLE CITY OF FITCHBURG ORDINANCES AND THE GEOTECHNICAL REPORT PREPARED BY AECOM DATED 4/13/2018.
5. SURFACE PREPARATION – NOTIFY ENGINEER/OWNER OF UNSATISFACTORY CONDITIONS. DO NOT BEGIN PAVING WORK UNTIL DEFICIENT SUBBASE AREAS HAVE BEEN CORRECTED AND ARE READY TO RECEIVE PAVING.
6. ASPHALTIC CONCRETE PAVING SPECIFICATIONS
   - 6.1. CODES AND STANDARDS – THE PLACING, CONSTRUCTION AND COMPOSITION OF THE ASPHALTIC BASE COURSE AND ASPHALTIC CONCRETE SURFACE COURSE SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTIONS 450, 455, 460 AND 465 OF THE STATE OF WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, CURRENT EDITION. HEREAFTER, THIS PUBLICATION WILL BE REFERRED TO AS STATE HIGHWAY SPECIFICATIONS.
   - 6.2. WEATHER LIMITATIONS – APPLY TACK COATS WHEN AMBIENT TEMPERATURE IS ABOVE 50° F (10° C) AND WHEN TEMPERATURE HAS NOT BEEN BELOW 35° F (1° C) FOR 12 HOURS IMMEDIATELY PRIOR TO APPLICATION. DO NOT APPLY WHEN BASE IS WET OR CONTAINS EXCESS OF MOISTURE. CONSTRUCT ASPHALTIC CONCRETE SURFACE COURSE WHEN ATMOSPHERIC TEMPERATURE IS ABOVE 40° F (4° C) AND WHEN BASE IS DRY AND WHEN WEATHER IS NOT RAINY. BASE COURSE MAY BE PLACED WHEN AIR TEMPERATURE IS ABOVE 30° F (–1° C).
   - 6.3. GRADE CONTROL – ESTABLISH AND MAINTAIN REQUIRED LINES AND ELEVATIONS FOR EACH COURSE DURING CONSTRUCTION.
   - 6.4. CRUSHED AGGREGATE BASE COURSE – THE TOP LAYER OF BASE COURSE SHALL CONFORM TO SECTIONS 301 AND 305, STATE HIGHWAY SPECIFICATIONS.
   - 6.5. BINDER COURSE AGGREGATE – THE AGGREGATE FOR THE BINDER COURSE SHALL CONFORM TO SECTIONS 460 AND 315, STATE HIGHWAY SPECIFICATIONS.
   - 6.6. SURFACE COURSE AGGREGATE – THE AGGREGATE FOR THE SURFACE COURSE SHALL CONFORM TO SECTIONS 460 AND 465, STATE HIGHWAY SPECIFICATIONS.
   - 6.7. ASPHALTIC MATERIALS – THE ASPHALTIC MATERIALS SHALL CONFORM TO SECTION 455 AND 460, STATE HIGHWAY SPECIFICATIONS.
7. CONCRETE PAVING SPECIFICATIONS
   - 7.1. CONTRACTOR SHALL PROVIDE CONTROL JOINTS AND CONSTRUCTION JOINTS OF ONE-QUARTER CONCRETE THICKNESS AT AN EQUAL RATIO OF LENGTH TO WIDTH WHEREVER POSSIBLE WITH A MAXIMUM LENGTH BETWEEN JOINTS OF 8' ON CENTER
   - 7.2. CONTRACTOR SHALL PROVIDE 1/2" EXPANSION JOINTS IN SIDEWALKS AT ALL RAMP LOCATIONS, THOUGH DRIVEWAYS, AGAINST CURB & GUTTER, AT RADII, AND AT EVERY 200' OF SIDEWALK.
   - 7.3. ALL CONCRETE SURFACES TO BE SEALED WITH TYPE TK-26UV CONCRETE TREATMENT
   - 7.4. EXTERIOR CONCRETE SURFACES SHALL BE BROOM FINISHED.
   - 7.5. CONCRETE PAVING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTIONS 415 AND 416 OF THE STATE HIGHWAY SPECIFICATIONS.
   - 7.6. CONCRETE PAVEMENT SHALL BE REINFORCED WITH NOVOMESH 950 (OR EQUAL) FIBER REINFORCEMENT AT A RATE OF 5 LBS/CUBIC YARD.
   - 7.7. CURING COMPOUNDS SHALL CONFORM TO SECTION 415 OF THE STATE HIGHWAY SPECIFICATIONS.
   - 7.8. ALL CONCRETE SURFACES TO BE SEALED WITH TYPE TK-26UV CONCRETE SEALANT.
8. 2' x 5' TRUNCATED DOME WARNING DETECTION FIELD SHALL BE PLACED AT ALL SIDEWALK ADA RAMPS WITH 5' SIDEWALK AND 2' x 8' AT BIKE PATH.
9. ALL PAVEMENT MARKINGS INCLUDING: STOP BARS, CROSSWALKS, DIRECTIONAL ARROWS, PARKING STALL LINES, ADA STALL MARKINGS, NO PARKING ZONES, DROP-OFF/PICK-UP ZONES SHALL BE PAINTED WITH HIGH VISIBILITY EPOXY PAINT PER PAVEMENT MARKING PLAN AND CITY OF FITCHBURG SPECIFICATIONS.
10. USE 4" WIDE, HIGH VISIBILITY YELLOW LATEX PAINT FOR STALL LINES.
11. MARK AND STRIPE ADA PARKING SPACES APPROPRIATELY.

UTILITY NOTES:

1. IF ANY ERRORS, DISCREPANCIES, OR OMISSIONS WITHIN THE PLAN BECOME APPARENT, IT SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO CONSTRUCTION SO THAT CLARIFICATION OR REDESIGN MAY OCCUR.
2. LENGTHS OF ALL UTILITIES ARE TO CENTER OF STRUCTURES OR FITTINGS AND MAY VARY SLIGHTLY FROM PLAN. LENGTHS SHALL BE VERIFIED IN THE FIELD DURING CONSTRUCTION.
3. THE CONTRACTOR SHALL INSTALL A PEDESTRIAN FENCE AROUND ALL EXCAVATIONS TO BE LEFT OPEN OVER NIGHT AS REQUIRED.
4. THE PROPOSED IMPROVEMENTS MUST BE CONSTRUCTED IN ACCORDANCE WITH ENGINEERING PLANS DESIGNED TO MEET ORDINANCES AND REQUIREMENTS OF THE MUNICIPALITY AND WISDOT, WDSPS, AND WDNR.
3. ALL UTILITY WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN – AND ALL STATE AND LOCAL CODES AND SPECIFICATIONS. IT IS THE CONTRACTORS RESPONSIBILITY TO DETERMINE WHICH SPECIFICATIONS AND CODES APPLY, AND TO COORDINATE ALL CONSTRUCTION ACTIVITIES WITH THE APPROPRIATE LOCAL AND STATE AUTHORITIES.
4. SPECIFICATIONS SHALL COMPLY WITH THE CITY OF FITCHBURG SPECIAL PROVISIONS
5. PRIOR TO CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR:
   - * EXAMINING ALL SITE CONDITIONS RELATIVE TO THE CONDITIONS INDICATED ON THE ENGINEERING DRAWINGS. ANY DISCREPANCIES ARE TO BE REPORTED TO THE ENGINEER AND RESOLVED PRIOR TO THE START OF CONSTRUCTION.
   - * OBTAINING ALL PERMITS INCLUDING PERMIT COSTS, TAP FEES, METER DEPOSITS, BONDS, AND ALL OTHER FEES REQUIRED FOR PROPOSED WORK TO OBTAIN OCCUPANCY.
   - * VERIFYING UTILITY ELEVATIONS AND NOTIFYING ENGINEER OF ANY DISCREPANCY. NO WORK SHALL BE PERFORMED UNTIL THE DISCREPANCY IS RESOLVED.
   - * NOTIFYING ALL UTILITIES PRIOR TO THE INSTALLATION OF ANY UNDERGROUND IMPROVEMENTS.
   - * NOTIFYING THE DESIGN ENGINEER AND MUNICIPALITY 48 HOURS PRIOR TO THE START OF CONSTRUCTION TO ARRANGE FOR APPROPRIATE CONSTRUCTION OBSERVATION.
7. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE ENGINEER WITH AS-BUILT CONDITIONS OF THE DESIGNATED IMPROVEMENTS IN ORDER THAT THE APPROPRIATE DRAWINGS CAN BE PREPARED, IF REQUIRED. ANY CHANGES TO THE DRAWINGS OR ADDITIONAL ITEMS MUST BE REPORTED TO THE ENGINEER AS WORK PROGRESSES.
8. THE PRIME CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL CONSTRUCTION WITH OTHER CONTRACTORS INVOLVED WITH CONSTRUCTION OF THE PROPOSED DEVELOPMENT AND FOR REPORTING ANY ERRORS OR DISCREPANCIES BETWEEN THESE PLANS AND PLANS PREPARED BY OTHERS.
9. ANY SANITARY SEWER, SANITARY SEWER SERVICES, WATER MAIN, WATER SERVICES, STORM SEWER, OR OTHER UTILITIES, WHICH ARE DAMAGED BY THE CONTRACTORS, SHALL BE REPAIRED TO THE OWNER'S SATISFACTION AT THE CONTRACTOR'S EXPENSE.
10. CONTRACTOR IS RESPONSIBLE FOR SITE SAFETY DURING THE CONSTRUCTION OF IMPROVEMENTS.
11. CONTRACTOR SHALL CONTACT THE MUNICIPALITY'S PUBLIC WORKS DEPARTMENT A MINIMUM OF 48 HOURS BEFORE CONNECTING TO PUBLIC UTILITIES. CONTRACTOR TO VERIFY SIZE AND DEPTH OF EXISTING UTILITY SERVICES AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO CONNECTING.
12. CONTRACTOR MUST CONTACT AND IS REQUIRED TO NOTIFY THE MUNICIPAL WATER UTILITY 48 HOURS IN ADVANCE OF CONNECTING TO THE PUBLIC UTILITY.
13. ALL PRIVATE (NOT WITHIN R.O.W. OR PUBLIC EASEMENTS) SANITARY BUILDING PIPE AND TUBING SHALL CONFORM TO SPS 384.30-2.
14. STORM SEWER SPECIFICATIONS –
   - 14.1. PIPE – REINFORCED CONCRETE PIPE (RCP) SHALL MEET THE REQUIREMENTS OF ASTM CLASS III (MINIMUM) C-76 WITH RUBBER GASKET JOINTS CONFORMING TO ASTM C-443. HIGH DENSITY DUAL-WALL POLYETHYLENE CORRUGATED PIPE SHALL BE AS MANUFACTURED BY ADS OR EQUAL WITH WATER TIGHT JOINTS, AND SHALL MEET THE REQUIREMENTS OF AASHTO DESIGNATION M-294 TYPE "S".
   - 14.2. INLETS – INLETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH FILE. NO. 28 OF THE "STANDARD SPECIFICATIONS", OR APPROVED EQUAL WITH A 1'-8" X 2'-6" MAXIMUM OPENING. CURB FRAME & GRATE SHALL BE NEENAH R-3067 WITH TYPE R GRATE, OR EQUAL.
   - 14.3. BACKFILL AND BEDDING – STORM SEWER SHALL BE CONSTRUCTED WITH GRAVEL BACKFILL AND CLASS "B" BEDDING IN ALL PAVED AREAS AND TO A POINT 5 FEET BEYOND THE EDGE OF PAVEMENT. TRENCHES RUNNING PARALLEL TO AND LESS THAN 5 FEET FROM THE EDGE OF PAVEMENT SHALL ALSO REQUIRE GRAVEL BACKFILL. LANDSCAPED AREAS MAY BE BACKFILLED WITH EXCAVATED MATERIAL IN CONFORMANCE WITH SECTION 8.43.5 OF THE "STANDARD SPECIFICATIONS".
   - 14.4. MANHOLE FRAMES AND COVERS – MANHOLE FRAMES AND COVERS SHALL BE NEENAH R-1642 WITH TYPE "B" SELF SEALING LIDS, NON-ROCKING OR EQUAL.
   - 14.5. FIELD TILE CONNECTION – ALL FIELD TILE ENCOUNTERED DURING CONSTRUCTION SHALL BE INCLUDED IN THE UNIT PRICE(S) FOR STORM SEWER. TILE LINES CROSSED BY THE TRENCH SHALL BE REPLACED WITH THE SAME MATERIAL AS THE STORM SEWER.
   - 14.6. ALL PRIVATE (NOT WITHIN R.O.W. OR PUBLIC EASEMENTS) STORM BUILDING PIPE AND TUBING SHALL CONFORM TO SPS 384.30-3. ALL PRIVATE (NOT WITHIN R.O.W. OR PUBLIC EASEMENTS) STORM PIPE SHALL CONFORM TO SPS 382.40(8)(B)4.A
15. WATER MAIN SPECIFICATIONS –
   - 15.1. PIPE – DUCTILE IRON PIPE SHALL BE CLASS 52 CONFORMING TO AWWA C151 AND CHAPTER 8.18.0 OF THE "STANDARD SPECIFICATIONS". POLYVINYL CHLORIDE (PVC) PIPE SHALL MEET THE REQUIREMENTS OF AWWA STANDARD C-900, CLASS 150, DR-18, WITH CAST IRON O.D. AND INTEGRAL ELASTOMERIC BELL AND SPIGOT JOINTS. NON-METALLIC WATER MAINS SHALL BE INSTALLED WITH BLUE INSULATION TRACER WIRE AND CONFORM WITH SPS 382.30(11)(h).
   - 15.2. VALVES AND VALVE BOXES – GATE VALVES SHALL BE AWWA GATE VALVES MEETING THE REQUIREMENTS OF AWWA C-500 AND CHAPTER 8.27.0 OF THE "STANDARD SPECIFICATIONS". GATE VALVES AND VALVE BOXES SHALL CONFORM TO LOCAL PLUMBING ORDINANCES.
   - 15.3. HYDRANTS – HYDRANTS SHALL CONFORM TO THE SPECIFICATIONS OF THE CITY OF FITCHBURG. THE DISTANCE FROM THE GROUND LINE TO THE CENTERLINE OF THE LOWEST NOZZLE AND THE LOWEST CONNECTION OF THE FIRE DEPARTMENT SHALL BE NO LESS THAN 18-INCHES AND NO GREATER THAN 23-INCHES (SEE DETAIL).
   - 15.4. BEDDING AND COVER MATERIAL – PIPE BEDDING AND COVER MATERIAL SHALL BE SAND, CRUSHED STONE CHIPS OR CRUSHED STONE SCREENINGS CONFORMING TO CHAPTER 8.43.2 OF THE "STANDARD SPECIFICATIONS".
   - 15.5. BACKFILL – BACKFILL MATERIAL AND INSTALLATION SHALL BE IN ACCORDANCE WITH CHAPTER 2.6.0 OF THE "STANDARD SPECIFICATIONS". GRAVEL BACKFILL IS REQUIRED IN ALL PAVED AREAS AND TO A POINT 5 FEET BEYOND THE EDGE OF PAVEMENT. TRENCHES RUNNING PARALLEL TO AND LESS THAN 5 FEET FROM THE EDGE OF PAVEMENT SHALL ALSO REQUIRE GRAVEL BACKFILL. LANDSCAPED AREAS MAY BE BACKFILLED WITH
   - 15.6. ALL PRIVATE (NOT WITHIN R.O.W. OR PUBLIC EASEMENTS) PIPE AND TUBING FOR WATER SERVICE SHALL CONFORM TO SPS 384.30-4.
16. SANITARY SEWER SPECIFICATIONS –
   - 16.1. PIPE – SANITARY SEWER PIPE MATERIAL SHALL BE POLYVINYL CHLORIDE (PVC) MEETING REQUIREMENTS OF ASTM D 3034, SDR-35, WITH INTEGRAL BELL TYPE FLEXIBLE ELASTOMERIC JOINTS, MEETING THE REQUIREMENTS OF ASTM D-3212.
   - 16.2. BEDDING AND COVER MATERIAL – BEDDING AND COVER MATERIAL SHALL CONFORM TO THE APPROPRIATE SECTIONS OF THE "STANDARD SPECIFICATION" WITH THE FOLLOWING MODIFICATION: "COVER MATERIAL SHALL BE THE SAME AS USED FOR BEDDING AND SHALL CONFORM TO SECTION 8.43.2 (A). BEDDING AND COVER MATERIAL SHALL BE PLACED IN A MINIMUM OF THREE SEPARATE LIFTS, OR AS REQUIRED TO INSURE ADEQUATE COMPACTING OF THESE MATERIALS, WITH ONE LIFT OF BEDDING MATERIAL ENDING AT OR NEAR THE SPRINGLINE OF THE PIPE. THE CONTRACTOR SHALL TAKE CARE TO COMPLETELY WORK BEDDING MATERIAL UNDER THE HAUNCH OF THE PIPE TO PROVIDE ADEQUATE SIDE SUPPORT."
   - 16.3. BACKFILL – BACKFILL MATERIAL AND INSTALLATION SHALL BE IN ACCORDANCE CHAPTER 2.6.0 OF THE "STANDARD SPECIFICATIONS." GRAVEL BACKFILL IS REQUIRED IN ALL PAVED AREAS AND TO A POINT 5 FEET BEYOND THE EDGE OF PAVEMENT. TRENCHES RUNNING PARALLEL TO AND LESS THAN 5 FEET FROM THE EDGE OF PAVEMENT SHALL ALSO REQUIRE GRAVEL BACKFILL. LANDSCAPED AREAS MAY BE BACKFILLED WITH EXCAVATED MATERIAL IN CONFORMANCE WITH SECTION 8.43.5 OF THE "STANDARD SPECIFICATIONS."
   - 16.4. MANHOLES – MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH FILE NOS. 12, 13 AND 15 OF THE "STANDARD SPECIFICATIONS" AND ALL SPECIAL PROVISIONS OF THE CITY OF FITCHBURG.
   - 16.5. MANHOLE FRAMES AND COVERS – MANHOLE FRAMES AND COVERS SHALL BE NEENAH R-1642 WITH TYPE "B" SELF SEALING LIDS, NON-ROCKING OR EQUAL.
17. ALL PRIVATE (NOT WITHIN R.O.W. OR PUBLIC EASEMENTS) PIPE SHALL BE INSTALLED PER SPS 382.40-8 INCLUDING AT LEAST 8' OF HORIZONTAL DISTANCE BETWEEN WATER PIPING AND SANITARY SEWER FROM CENTER OF PIPE TO CENTER OF PIPE AND 6' OF SEPARATION BETWEEN STORM SEWER AND WATER PIPING.
18. ALL LOCATIONS WHERE STORM SEWER AND WATER MAIN ARE CROSSING AND LESS THAN 3 FEET OF VERTICAL/HORIZONTAL SEPERATION IS PROVIDED, WATER MAIN SHALL BE INSULATED PER CITY OF FITCHBURG SPECIFICATIONS.
19. ALL CONSTRUCTION SIGNING TO BE IN ACCORDANCE WITH THE CITY OF FITCHBURG AND WISCONSIN DEPARTMENT OF TRANSPORTATION REQUIREMENTS.
20. ALL SANITARY SEWER PIPES WITHIN THE RIGHT-OF-WAY SHALL BE PVC PIPE CONFORMING TO ASTM SDR 26 SPECIFICATIONS.
21. ALL PUBLIC WATERMAIN TO MAINTAIN A 10-FOOT MINIMUM HORIZONTAL SEPARATION BETWEEN SEWER AND WATERMAINS. PROVIDE 18" MINIMUM VERTICAL SEPARATION WHERE SEWER CROSSES OVER WATER, AND 6" MINIMUM VERTICAL SEPARATION WHERE WATER CROSSES OVER SEWER.
22. RESTORATION OF THE EXISTING ROADWAY RIGHT-OF-WAYS ARE CONSIDERED INCIDENTAL AND SHOULD BE PART OF THE COST OF THE UNDERGROUND IMPROVEMENTS AND SHOULD INCLUDE CURB & GUTTER, SIDEWALK, TOPSOIL, FERTILIZER, SEEDING AND HYDROMULCHING.
23. ALL UTILITY CROSSINGS SHALL BE MADE PRIOR TO PROOF ROLLING AND PLACEMENT OF BASE COARSE.
24. HYDRANTS AND HYDRANT VALVES SHALL BE LOCATED WITHIN THE TERRACE.
25. WATER VALVES WITH MORE THAN 7 FOOT OF COVER ARE REQUIRED TO HAVE VALVE EXTENSIONS.
26. ALL SANITARY LATERALS SHALL BE INSTALLED AT 2.0% SLOPE.
27. WATER MAIN SHALL ONLY BE DEFLECTED AS SHOWN ON PLANS.
28. SCOTCH MARKER BALL MARKERS ARE REQUIRED ABOVE SANITARY LATERAL AT EVERY HORIZONTAL BEND AND WITHIN 2' FROM RIGHT-OF-WAY. MARKERS SHALL BE PLACED 3.5' TO 4.5' FROM FINAL SURFACE.
29. PUBLIC SANITARY SEWER SHOWN ON SHEETS C8.13-C8.17 SHALL COMPLY WITH THE FOLLOWING: TRENCH SHALL BE EXCAVATED TO NATIVE SOILS AND BACKFILLED WITH SELECT GRANULAR FILL COMPACTED PER CITY OF FITCHBURG SPECIFICATIONS. IF NATIVE SOILS ARE NOT ENCOUNTERED WITHIN 3 FEET BELOW INVERT OF PROPOSED PIPE, PIPE SHALL BE INSTALLED AT 1.0% MINIMUM SLOPE WITH GEOGRID REINFORCEMENT CONFORMING TO UTILITY TRENCH DETAIL ON SHEET C6.1. CONTRACTOR SHALL NOTIFY ENGINEER IF NATIVE SOILS ARE NOT ENCOUNTERED DURING TRENCH EXCAVATION.
30. TRANSFORMER PADS SHALL CONFORM TO UTILITY OWNER DETAILS AND SPECIFICATIONS.
31. TRANSFORMER AND ELECTRIC UTILITY CONDUITS LOCATIONS ARE CONCEPTUAL AND SHALL BE COORDINATED WITH THE UTILITY (MGE)

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PRELIMINARY
NOT FOR CONSTRUCTION

PROJECT:
NINE SPRINGS

PROJECT LOCATION:
FITCHBURG, WI 53711
DANE COUNTY

PLAN MODIFICATIONS:

#	Date:	Description:
1	03.25.22	P-PLAT SUBMITTAL
2	04.12.22	RESPONSE TO P-PLAT COMMENTS
3	06.21.22	ADR SUBMITTAL
4	12.14.22	P-PLAT SUBMITTAL
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Designed By: MSS
Reviewed By: ACG
Approved By:

SHEET TITLE:
NOTES

SHEET NUMBER:
C1.0

JSD PROJECT NO: 21-10566

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CONSTRUCTION SEQUENCING

1. INSTALL PERIMETER SILT FENCE, INLET PROTECTION AND TEMPORARY CONSTRUCTION ENTRANCE.
2. STRIP AND STOCKPILE TOPSOIL, INSTALL SILT FENCE AROUND PERIMETER OF STOCKPILE.
3. ROUGH GRADE WET POND AND INSTALL POND OUTLET.
4. CONDUCT ROUGH GRADING EFFORTS AND INSTALL CHECK DAMS WITHIN DRAINAGE DITCHES AS NEEDED.
5. INSTALL UTILITY PIPING AND STRUCTURES, IMMEDIATELY INSTALL INLET PROTECTION.
6. COMPLETE FINAL GRADING, INSTALLATION OF GRAVEL BASE COURSES, PLACEMENT OF CURBS, PAVEMENTS, WALKS, ETC.
7. PLACE TOPSOIL AND IMMEDIATELY STABILIZE DISTURBED AREAS WITH EROSION CONTROL MEASURES AS INDICATED ON PLANS.
8. RESTORE WET POND (FINAL GRADE RETENTION POND PER PLAN REQUIREMENTS)
9. EROSION CONTROLS SHALL NOT BE REMOVED UNTIL SITE IS FULLY STABILIZED OR 70% VEGETATIVE COVER IS ESTABLISHED.

CONTRACTOR MAY MODIFY SEQUENCING AFTER ITEM NO. 1 AS NEEDED TO COMPLETE CONSTRUCTION IF EROSION CONTROLS ARE MAINTAINED IN ACCORDANCE WITH THE CONSTRUCTION SITE EROSION CONTROL REQUIREMENTS.

STORMWATER FACILITIES CONSTRUCTION NOTES

1. ENGINEER SHALL BE NOTIFIED PRIOR TO INSTALLATION OF STORMWATER MANAGEMENT FACILITIES. CONSTRUCTION OF STORMWATER MANAGEMENT FACILITIES SHALL BE OBSERVED AND DOCUMENTED BY THE ENGINEER, OR AN OWNER'S REPRESENTATIVE.
2. STORMWATER MANAGEMENT FACILITIES SHALL BE INSTALLED AFTER SUBSTANTIAL COMPLETION OF FINAL SITE GRADING AND SOILS HAVE BEEN STABILIZED.
3. AREAS USED FOR TEMPORARY SEDIMENT BASINS SHALL BE REMOVED IN THEIR ENTIRETY AFTER CONSTRUCTION OF STORMWATER MANAGEMENT FACILITIES.
4. CONSTRUCTION TRAFFIC, HEAVY EQUIPMENT AND SOIL STOCKPILES SHALL NOT BE PLACED IN AREAS WHERE PROPOSED STORMWATER MANAGEMENT FACILITIES ARE LOCATED.
5. NATIVE SOIL INFILTRATION RATES BELOW STORMWATER FACILITIES SHALL BE VERIFIED BY THE OWNER'S GEOTECHNICAL ENGINEER PRIOR INSTALLATION OF FACILITIES. NATIVE SOIL INFILTRATION RATES SHALL BE EQUAL TO OR GREATER THAN DESIGN INFILTRATION RATES.
6. NATIVE SOILS SHALL BE BLENDED A MINIMUM OF TWO FEET PRIOR TO INSTALLATION OF STORMWATER INFILTRATION FACILITIES TO BREAKUP ANY LOWER PERMEABILITY SEAMS THAT MAY BE PRESENT.
7. THICKER SILT OR CLAY LAYERS SHALL BE OVER-EXCAVATED AND BACKFILLED WITH GRANULAR MATERIALS CONFORMING TO SPECIFICATIONS PER WDNR TECH STANDARD 1004.

GRADING AND SEEDING NOTES

1. ALL PROPOSED GRADES SHOWN ARE FINISHED GRADES. CONTRACTOR SHALL VERIFY ALL GRADES, MAKE SURE ALL AREAS DRAIN PROPERLY AND SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO CONSTRUCTION.
2. CONTRACTOR SHALL ASSUME SOLE RESPONSIBILITY FOR COMPUTATIONS OF ALL GRADING QUANTITIES. WHILE JSD PROFESSIONAL SERVICES, INC. ATTEMPTS TO PROVIDE A COST EFFECTIVE APPROACH TO BALANCE EARTHWORK, GRADING DESIGN IS BASED ON MANY FACTORS, INCLUDING SAFETY, AESTHETICS, AND COMMON ENGINEERING STANDARDS OF CARE. THEREFORE, NO GUARANTEE CAN BE MADE FOR A BALANCED SITE.
3. PARKING LOT AND DRIVEWAY ELEVATIONS ARE PAVEMENT GRADES, NOT TOP OF CURB GRADES, UNLESS OTHERWISE NOTED.
4. ANY WORK WITHIN RIGHT-OF-WAY SHALL BE PROPERLY PERMITTED AND COORDINATED WITH THE APPROPRIATE OFFICIALS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES. ALL GRADING WITHIN RIGHT-OF-WAY IS SUBJECT TO APPROVAL BY SAID OFFICIALS.
5. CONTRACTOR SHALL PROVIDE NOTICE TO THE MUNICIPALITY IN ADVANCE OF ANY SOIL DISTURBING ACTIVITIES, IN ACCORDANCE WITH MUNICIPAL REQUIREMENTS.
6. ALL DISTURBED AREAS SHALL BE SODDED AND/OR SEEDED AND MULCHED IMMEDIATELY FOLLOWING GRADING ACTIVITIES. SOD/SEED MIX TO BE IN ACCORDANCE WITH LANDSCAPE PLAN.
7. CONTRACTOR SHALL CHISEL-PLOW OR DEEP TILL WITH DOUBLE TINES ALL STORMWATER MANAGEMENT FACILITIES JUST PRIOR TO SODDING AND/OR SEEDING AND MULCHING TO PROMOTE INFILTRATION.
8. CONTRACTOR SHALL WATER ALL NEWLY SODDED/SEEDED AREAS DURING THE SUMMER MONTHS WHENEVER THERE IS A 7 DAY LAPSE WITH NO SIGNIFICANT RAINFALL.
9. CONTRACTOR TO DEEP TILL ALL COMPACTED PERVIOUS SURFACES PRIOR TO SODDING AND/OR SEEDING AND MULCHING.
10. ALL EXPOSED SOIL AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE OR ON WHICH LAND DISTURBING ACTIVITIES WILL NOT BE PERFORMED FOR A PERIOD GREATER THAN 30 DAYS AND REQUIRE VEGETATIVE COVER FOR LESS THAN 1 YEAR, REQUIRE TEMPORARY SEEDING FOR EROSION CONTROL. SEEDING FOR EROSION CONTROL SHALL BE IN ACCORDANCE WITH WDNR TECHNICAL STANDARD 1059 AND CITY OF FITCHBURG ORDINANCE.
11. **NON-PRAIRIE GRASS SEEDED SLOPES: ALL SLOPES 4:1 OR GREATER SHALL BE STABILIZED WITH CLASS I, TYPE A URBAN EROSION MATTING AND DRAINAGE SWALES SHALL BE STABILIZED WITH CLASS II, TYPE C EROSION MATTING, WITHIN 7 DAYS OF REACHING FINAL GRADE AND/OR AS SOON AS CONDITIONS ALLOW. REFER BELOW TO "CSECR" NOTE NO. SIXTEEN (16) FOR STABILIZATION PRACTICES FOR POTENTIAL INTERIM STABILIZATION.**
12. **REFER TO LANDSCAPE DETAILS, NOTES AND SPECIFICATIONS FOR STABILIZATION SPECIFICATIONS WITHIN PRAIRIE SEED MIX AREAS.**

SITE EROSION CONTROL REQUIREMENTS NOTES:

1. ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE DESIGNED AND IMPLEMENTED IN ACCORDANCE WITH THE CURRENT DEPARTMENT OF NATURAL RESOURCES EROSION AND SEDIMENT CONTROL TECHNICAL STANDARDS WHICH ARE AVAILABLE AT: http://dnr.wi.gov/topic/stormwater/
2. INSTALL EROSION CONTROL MEASURES PRIOR TO ANY SITE WORK, INCLUDING GRADING OR DISTURBANCE OF EXISTING SURFACE MATERIALS AS SHOWN ON PLAN. MODIFICATIONS TO SEDIMENT CONTROL DESIGN MAY BE CONDUCTED TO MEET UNFORESEEN FIELD CONDITIONS IF MODIFICATIONS CONFORM TO WDNR TECHNICAL STANDARDS AND ARE APPROVED BY CITY OF FITCHBURG ENGINEER.
3. INSPECTIONS AND MAINTENANCE OF ALL EROSION CONTROL MEASURES SHALL BE ROUTINE (ONCE PER WEEK MINIMUM) TO ENSURE PROPER FUNCTION OF EROSION CONTROLS AT ALL TIMES. EROSION CONTROL MEASURES ARE TO BE IN WORKING ORDER AT THE END OF EACH WORK DAY.
4. INSPECT EROSION CONTROL MEASURES AFTER EACH 1/2" OR GREATER RAINFALL. REPAIR ANY DAMAGE OBSERVED DURING THE INSPECTION.
5. TEMPORARY SEDIMENT BASINS SHALL BE REMOVED AND THE WET BASIN, BIORETENTION BASINS, AND SEDIMENT BASIN SHALL BE INSTALLED ONCE A UNIFORM PERENNIAL VEGETATIVE COVER HAS BEEN ESTABLISHED. COVER SHOULD BE ESTABLISHED WITH A DENSITY OF AT LEAST 70% FOR UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES OR THAT EMPLOY EQUIVALENT PERMANENT STABILIZATION MEASURES.
6. EROSION CONTROL MEASURES SHALL NOT BE REMOVED UNTIL ALL LAND DISTURBING CONSTRUCTION ACTIVITY AT THE SITE HAS BEEN COMPLETED INCLUDING CONSTRUCTION OF THE WET BASIN, BIORETENTION BASINS, AND SEDIMENT BASIN.
7. INSTALL A TRACKING PAD, 50' LONG, 24' WIDE, AND NO LESS THAN 12" THICK BY USE OF 3" CLEAR STONE. TRACKING PADS ARE TO BE MAINTAINED BY THE CONTRACTOR IN A CONDITION WHICH WILL PREVENT THE TRACKING OF MUD OR DRY SEDIMENT ONTO THE ADJACENT PUBLIC STREETS AFTER EACH WORKING DAY OR MORE FREQUENTLY AS REQUIRED.
8. INSTALL EROSION CONTROLS ON THE DOWNSTREAM SIDE OF STOCKPILES.
9. INSTALL TEMPORARY SEDIMENT TRAPS PER LATEST EDITION OF WDNR STORM WATER CONSTRUCTION TECHNICAL CONSTRUCTION SITE EROSION & SEDIMENT CONTROL STANDARDS NOTE 1063. SEDIMENT TRAPS SHALL BE SIZED BASED ON MEDIUM SOIL TEXTURAL CLASS. SEDIMENT TRAPS SHALL BE INSPECTED WITHIN 24 HOURS AFTER EVERY RAIN EVENT PRODUCING 0.5 INCHES OF RAIN OR MORE AND AT A MINIMUM SEDIMENT SHALL BE REMOVED WHEN SEDIMENT REACHES A DEPTH OF 1 FOOT OR WHEN OUTLET BECOMES CLOGGED. SEDIMENT TRAPS SHALL BE REMOVED AND THE LOCATION STABILIZED AFTER THE DISTURBED AREA DRAINING TO THE SEDIMENT TRAP IS STABILIZED AND NO LONGER SUSCEPTIBLE TO EROSION. ALL SEDIMENT SHALL BE PROPERLY DISPOSED.
10. INSTALL CHECK DAMS WITHIN DRAINAGE DITCHES AND IN FRONT OF SILT FENCING IN ANY LOW AREA ALL IN ACCORDANCE WITH WDNR TECHNICAL STANDARDS.
11. EROSION CONTROL FOR UTILITY CONSTRUCTION (STORM SEWER, SANITARY SEWER, WATER MAIN, ETC.):
    A. PLACE EXCAVATED TRENCH MATERIAL ON THE HIGH SIDE OF THE TRENCH.
    B. BACKFILL, COMPACT, AND STABILIZE THE TRENCH IMMEDIATELY AFTER PIPE CONSTRUCTION.
    C. DISCHARGE TRENCH WATER INTO A SEDIMENTATION BASIN OR FILTERING TANK IN ACCORDANCE WITH THE DEWATERING TECHNICAL STANDARD NO. 1061 PRIOR TO RELEASE INTO THE STORM SEWER, RECEIVING STREAM, OR DRAINAGE DITCH.
12. ADDITIONAL EROSION CONTROL MEASURES, AS REQUESTED BY STATE INSPECTORS, LOCAL INSPECTORS, AND/OR ENGINEER SHALL BE INSTALLED WITHIN 24 HOURS OF REQUEST.
13. CONTRACTOR/OWNER SHALL FILE A NOTICE OF TERMINATION UPON VEGETATIVE STABILIZATION AND/OR PROPERTY SALE IN ACCORDANCE WITH WDNR REQUIREMENTS.
14. CONTRACTOR SHALL TAKE ALL NECESSARY STEPS TO CONTROL DUST ARISING FROM CONSTRUCTION OPERATIONS. REFER TO WDNR TECHNICAL STANDARD 1068.
15. ADDITIONAL EROSION CONTROL MEASURES, AS REQUESTED BY STATE INSPECTORS, LOCAL INSPECTORS, COUNTY INSPECTORS AND/OR ENGINEER OF RECORD SHALL BE INSTALLED WITHIN 24 HOURS OF REQUEST.
16. INSPECTIONS AND MAINTENANCE OF ALL EROSION CONTROL MEASURES SHALL BE ROUTINE (ONCE PER WEEK MINIMUM) TO ENSURE PROPER FUNCTION OF EROSION CONTROLS AT ALL TIMES. EROSION CONTROL MEASURES ARE TO BE IN WORKING ORDER AT THE END OF EACH WORK DAY.
17. PAVED SURFACES ADJACENT TO CONSTRUCTION SITE VEHICLE ACCESS SHALL BE SWEPT AND/OR SCRAPED TO REMOVE ACCUMULATED SOIL, DIRT AND/OR DUST AFTER THE END OF EACH WORK DAY AND AS REQUESTED BY THE CITY OF FITCHBURG.
18. INLET PROTECTION SHALL BE IMMEDIATELY FITTED AT THE INLET OF ALL INSTALLED STORM SEWER AND SILT FENCE SHALL BE IMMEDIATELY FITTED AT ALL INSTALLED CULVERT INLETS TO PREVENT SEDIMENT DEPOSITION WITHIN STORM SEWER SYSTEMS.
19. INSTALL EROSION CONTROLS ON THE DOWNSTREAM SIDE OF STOCKPILES. IF STOCKPILE REMAINS UNDISTURBED FOR MORE THAN SEVEN (7) DAYS, TEMPORARY SEEDING AND STABILIZATION IN ACCORDANCE WITH BEST MANAGEMENT PRACTICES IS REQUIRED. IF DISTURBANCE OCCURS BETWEEN NOVEMBER 15TH AND MAY 15TH, THE MULCHING SHALL BE PERFORMED BY HYDRO-MULCHING WITH A "TACKIFIER."
20. EROSION CONTROL MEASURES SHALL NOT BE REMOVED UNTIL ALL LAND DISTURBING CONSTRUCTION ACTIVITY AT THE SITE HAS BEEN COMPLETED AND THAT A UNIFORM PERENNIAL VEGETATIVE COVER HAS BEEN ESTABLISHED WITH A DENSITY OF AT LEAST 70% FOR UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES OR THAT EMPLOY EQUIVALENT PERMANENT STABILIZATION MEASURES.
21. STABILIZATION PRACTICES:
    - 20.1. * STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED. NO MORE THAN SEVEN (7) DAYS SHALL PASS AFTER CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS CEASED UNLESS:
    - 20.2. * THE INITIATION STABILIZATION MEASURES BY THE SEVENTH (7) DAY AFTER CONSTRUCTION ACTIVITY HAS CEASED IS PRECLUDED BY SNOW COVER. IN THAT EVENT, STABILIZATION SHALL BE INITIATED AS SOON AS PRACTICABLE.
    - 20.3. * CONSTRUCTION ACTIVITY WILL RESUME ON A PORTION OF THE SITE WITHIN FOURTEEN (14) DAYS FROM WHEN ACTIVITY CEASED, (I.E. THE TOTAL TIME PERIOD THAT THE CONSTRUCTION ACTIVITY IS TEMPORARILY CEASED IS LESS THAN FOURTEEN (14) DAYS) IN THAT EVENT, STABILIZATION MEASURES DO NOT HAVE TO BE INITIATED ON THAT PORTION OF THE SITE BY THE SEVENTH (7) DAY AFTER CONSTRUCTION ACTIVITY HAS TEMPORARILY CEASED.
    - 20.4. * STABILIZATION MEASURES WITHIN PUBLIC R.O.W. SHALL CONFORM TO CITY OF FITCHBURG SPECIFICATIONS. THE FOLLOWING ARE ACCEPTABLE STABILIZATION MEASURES:
      - * PERMANENT SEEDING; IN ACCORDANCE WITH APPROVED CONSTRUCTION SPECIFICATION
      - * TEMPORARY SEEDING; MAY CONSIST OF SPRING OATS(100LBS/ACRE) AND/OR WHEAT OR CEREAL RYE (150LB/ACRE)
      - * HYDRO-MULCHING WITH A TACKIFIER
      - * GEOTEXTILE EROSION MATTING
      - * SODDING

SIGNAGE AND LIGHTING NOTES:

1. ALL SIGNS SHALL HAVE PREMIUM PROTECTIVE OVERLAY FILM; 3M SERIES 1160
2. ALL SIGN MATERIALS SHALL BE DIAMOND GRADE
3. REFER TO THE LIGHTING SPECIFICATIONS FOR FIXTURE CUT SHEETS.

TRAFFIC CONTROL

1. WORK IN THE CTH MM RIGHT OF WAY SHALL BE COORDINATED WITH THE CTH MM IMPROVEMENTS WORK.
2. TEMPORARY TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE MUTCD AND WISDOT STANDARD DETAILS.
3. TEMPORARY LANE CLOSURES SHALL BE REPORTED TO THE CITY OF FITCHBURG POLICE DEPARTMENT, DANE COUNTY HIGHWAY DEPARTMENT AND DANE COUNTY SHERIFF A MINIMUM OF 72 HOURS PRIOR.

LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY
- EASEMENT LINE
- BUILDING OUTLINE
- BUILDING OVERHANG
- BUILDING SETBACK LINE
- PAVEMENT SETBACK LINE
- EDGE OF PAVEMENT
- STANDARD CURB AND GUTTER
- REJECT CURB AND GUTTER
- MOUNTABLE CURB AND GUTTER
- 8" CONCRETE RIBBON CURB
- ASPHALT PAVEMENT
- HEAVY DUTY ASPHALT PAVEMENT
- CONCRETE PAVEMENT
- HEAVY DUTY CONCRETE PAVEMENT
- 959 PROPOSED 1 FOOT CONTOUR
- 960 PROPOSED 5 FOOT CONTOUR
- 959 EXISTING 1 FOOT CONTOUR
- 960 EXISTING 5 FOOT CONTOUR
- DRAINAGE DIRECTION
- GRADE BREAK
- STORMWATER MANAGEMENT AREA
- RETAINING WALL
- BOULDER WALL
- RAILING
- FENCE
- LIGHT POLE (REFER TO PHOTOMETRIC PLAN)
- ADA PARKING SIGN
- FLAG POLE
- BOLLARD
- BOLLARD WITH ADA PARKING SIGN
- BIKE RACK
- TREE REMOVAL
- SHRUB REMOVAL
- SAWCUT EXISTING PAVEMENT
- SANITARY SEWER
- WATERMAIN
- STORM SEWER
- 8'x4'x4" INSULATION (PLAN VIEW)
- 8'x4'x4" INSULATION (PROFILE VIEW)
- SILT FENCE
- RIP-RAP
- CONSTRUCTION ENTRANCE
- EROSION MATTING
- TURF REINFORCEMENT MATTING
- SPOT ELEVATION (FG: XXX.XX)
  - EP - EDGE OF PAVEMENT
  - FG - FINISH GRADE
  - EC - EDGE OF CONCRETE
  - BOC - BACK OF CURB
  - MATCH - MATCH EXISTING GRADE
  - HP - HIGH POINT
  - SW - SIDEWALK
- DITCH CHECK
- INLET PROTECTION
- DEMOLITION - REMOVAL OF STORM PIPE
- DEMOLITION - REMOVAL OF GRAVEL SURFACES
- DEMOLITION - REMOVAL OF FENCE
- DEMOLITION - REMOVAL OF TREES AND UNDERGROWTH
- TREE REMOVAL

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PROJECT LOCATION:
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Designed By: MSS
Reviewed By: ACG
Approved By:

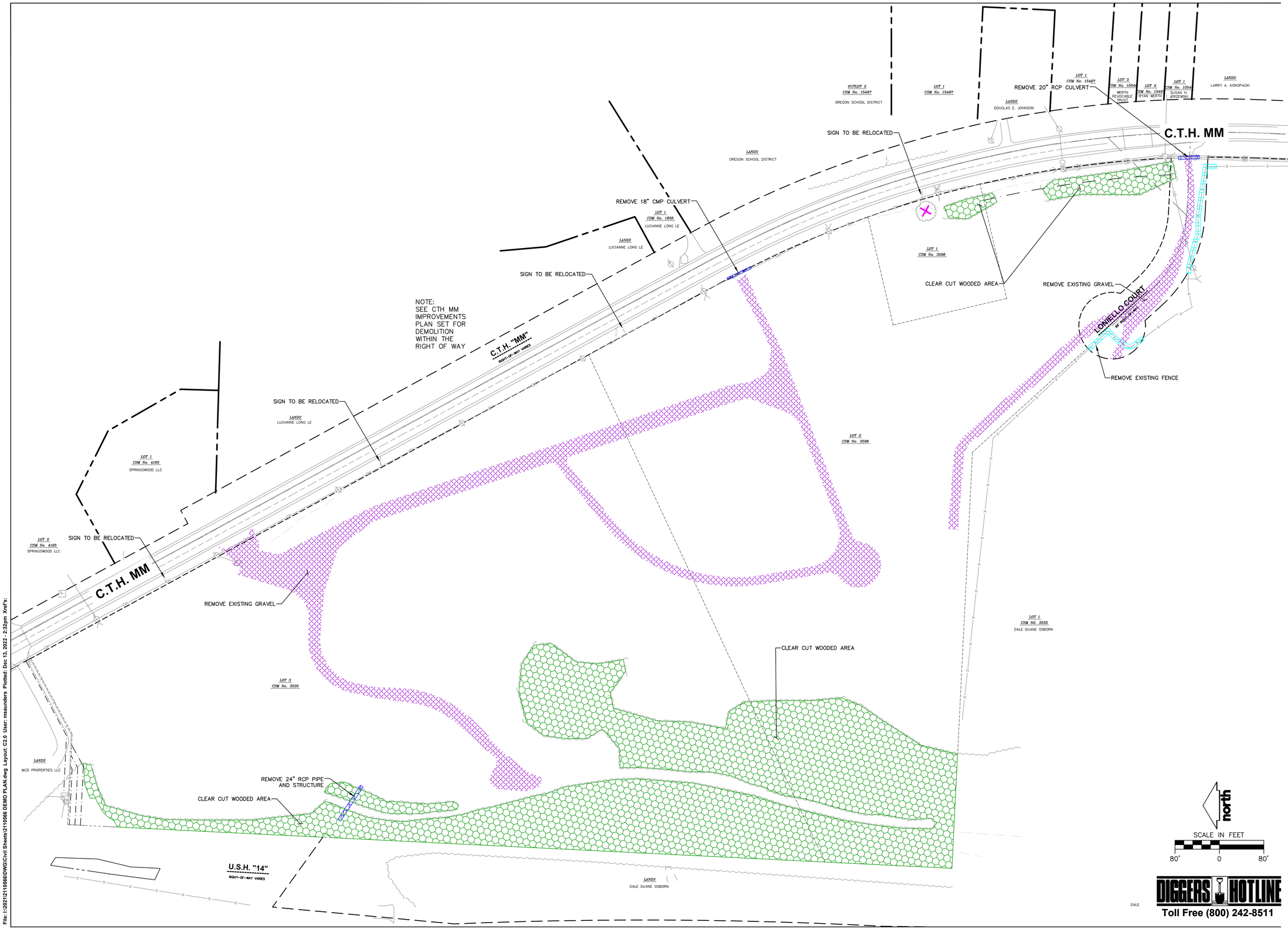
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NOTES & LEGEND

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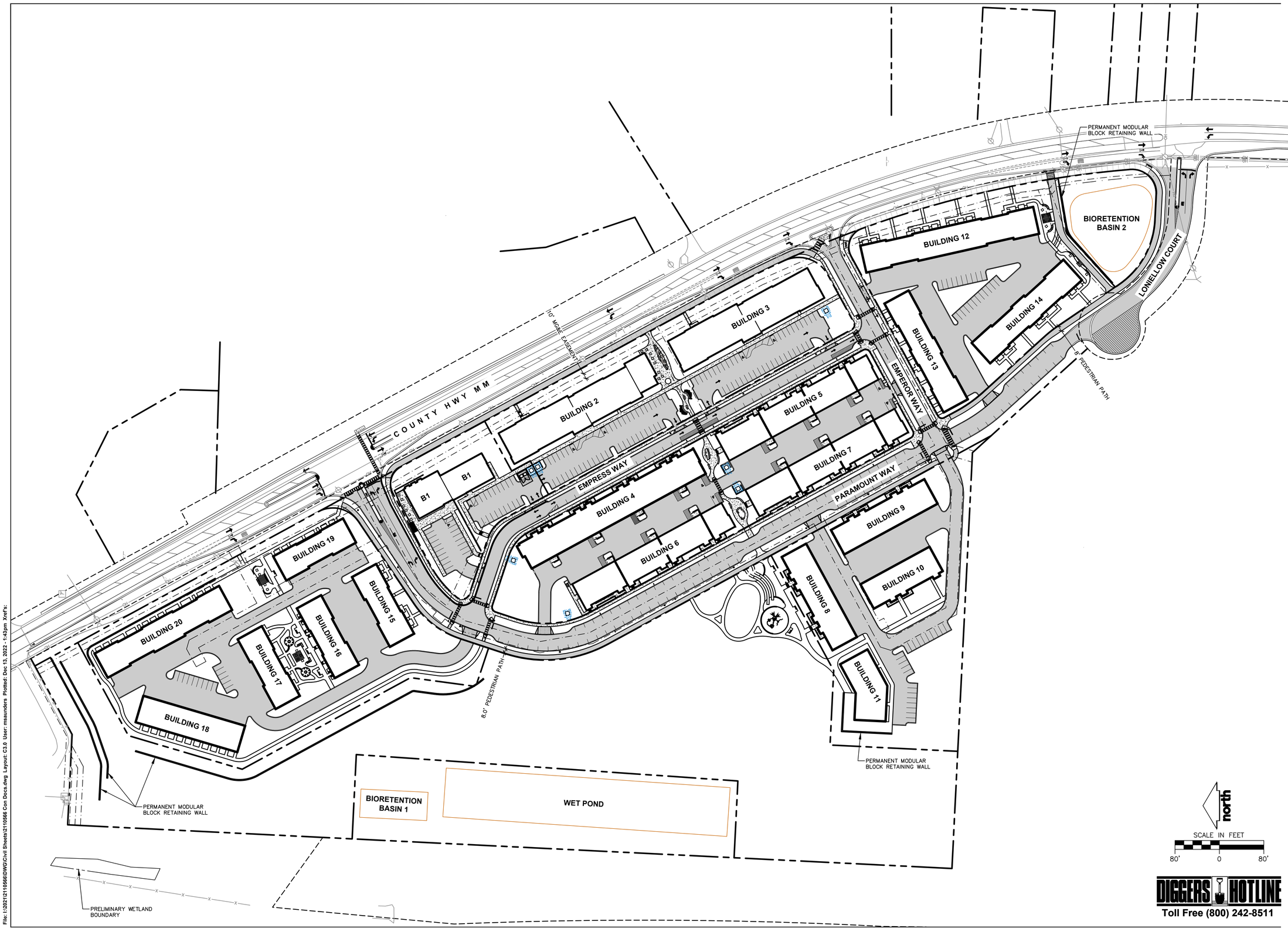
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DEMOLITION PLAN

SHEET NUMBER:
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north

SCALE IN FEET

80' 0 80'

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File: I:\2021\21-10566\DWG\Civil Sheets\2110566 Con Docs.dwg Layout: C3.0 User: msaunders Plotted: Dec 13, 2022 - 1:43pm Xref's:

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CLIENT:
ROYAL CAPITAL

CLIENT ADDRESS:
710 N PLANKINTON AVE. SUITE 300
MILWAUKEE, WI 53203

PRELIMINARY
NOT FOR CONSTRUCTION

PROJECT:
NINE SPRINGS

PROJECT LOCATION:
FITCHBURG, WI 53711
DANE COUNTY

PLAN MODIFICATIONS:

#	Date:	Description:
1	03.25.22	P-PLAT SUBMITTAL
2	04.12.22	RESPONSE TO P-PLAT COMMENTS
3	06.21.22	ADR SUBMITTAL
4	12.14.22	P-PLAT SUBMITTAL
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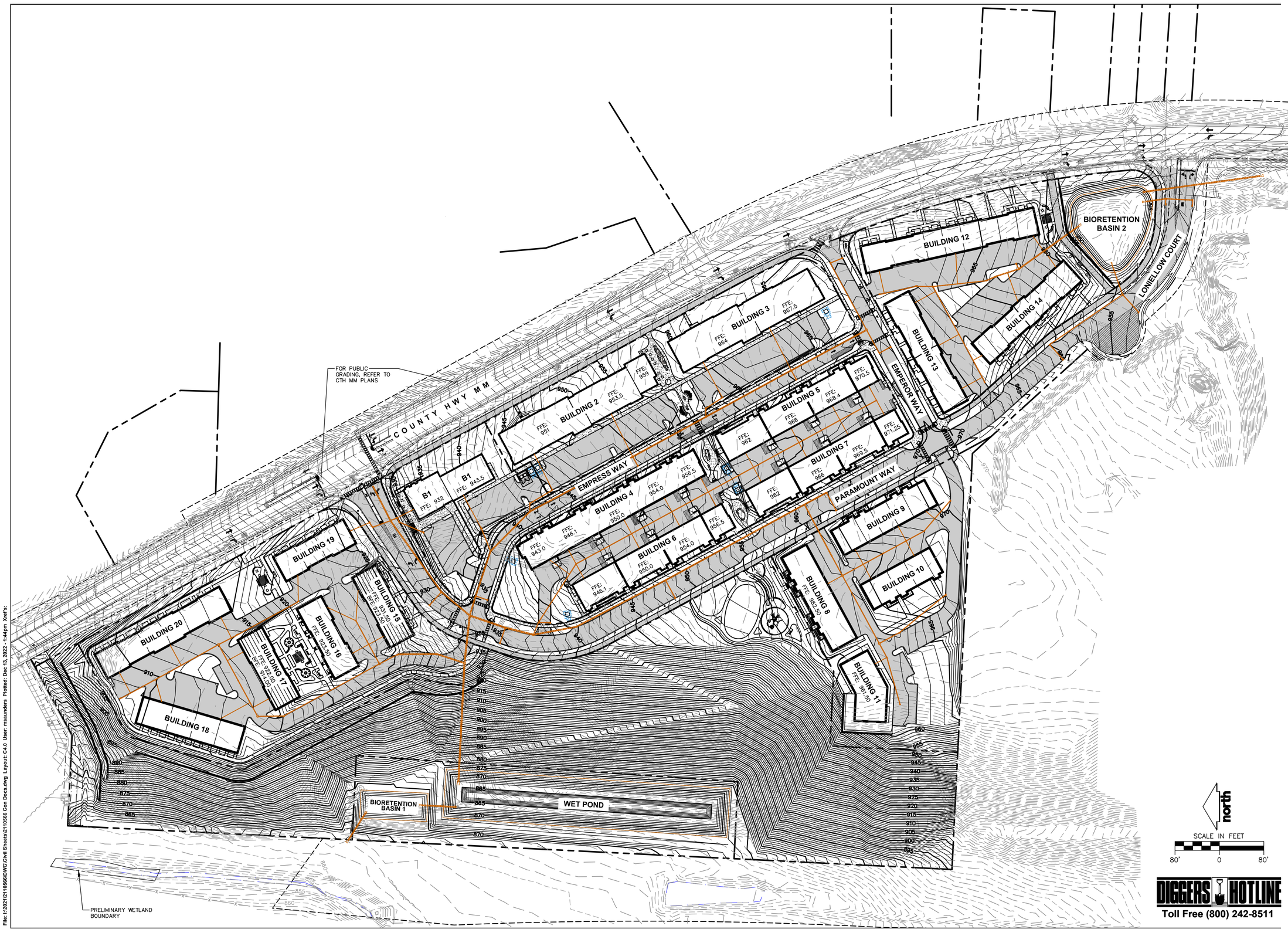
Designed By: MSS
Reviewed By: ACG
Approved By:

SHEET TITLE:
SITE PLAN

SHEET NUMBER:
C3.0

JSD PROJECT NO: 21-10566

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PRELIMINARY
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PROJECT:
NINE SPRINGS

PROJECT LOCATION:
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DANE COUNTY

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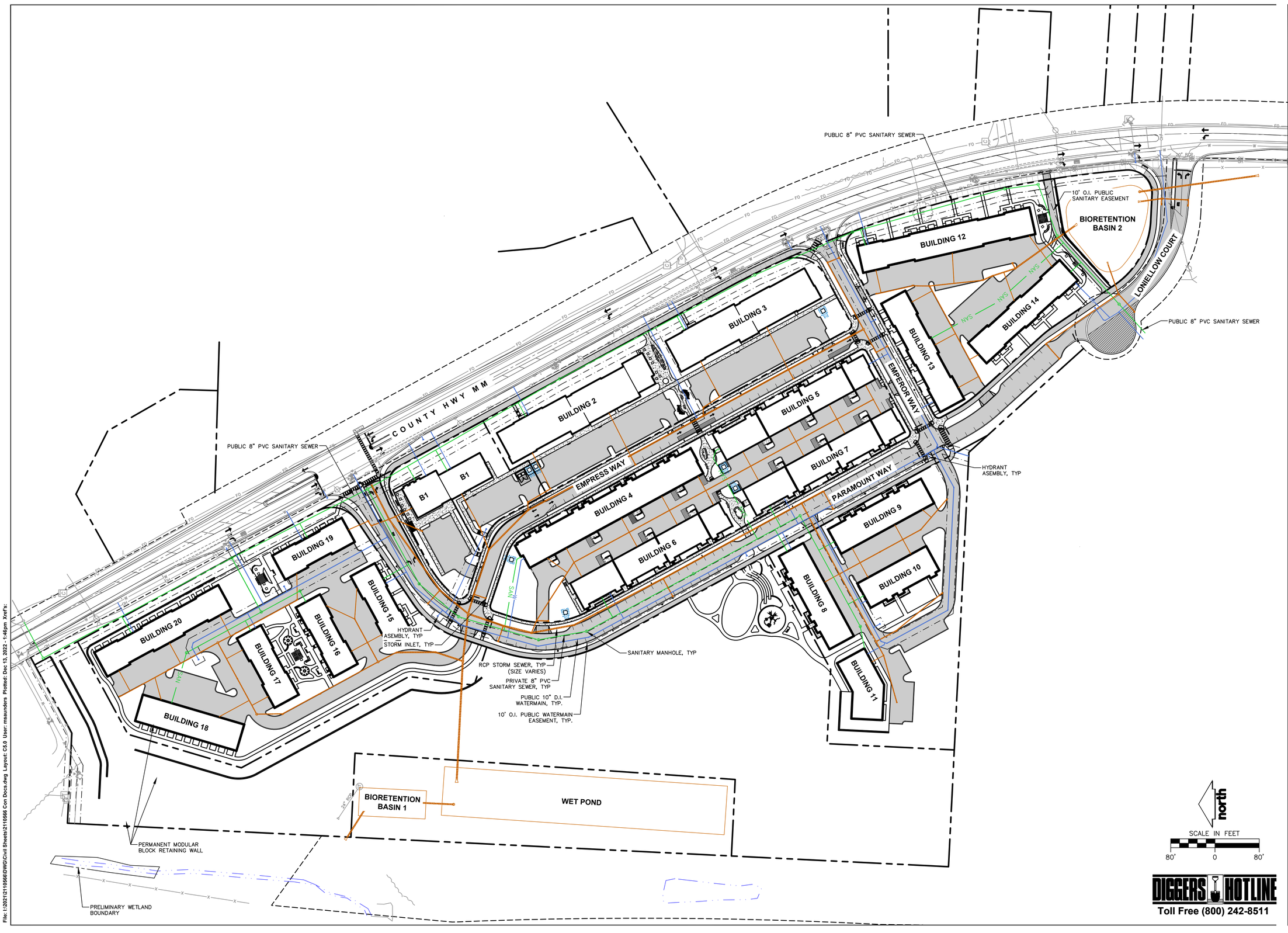
Designed By: MSS
Reviewed By: ACG
Approved By:

SHEET TITLE:
GRADING PLAN

SHEET NUMBER:
C4.0

JSD PROJECT NO: 21-10566

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north

SCALE IN FEET

80' 0 80'

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PRELIMINARY
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PROJECT:
NINE SPRINGS

PROJECT LOCATION:
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Designed By: MSS
Reviewed By: ACG
Approved By:

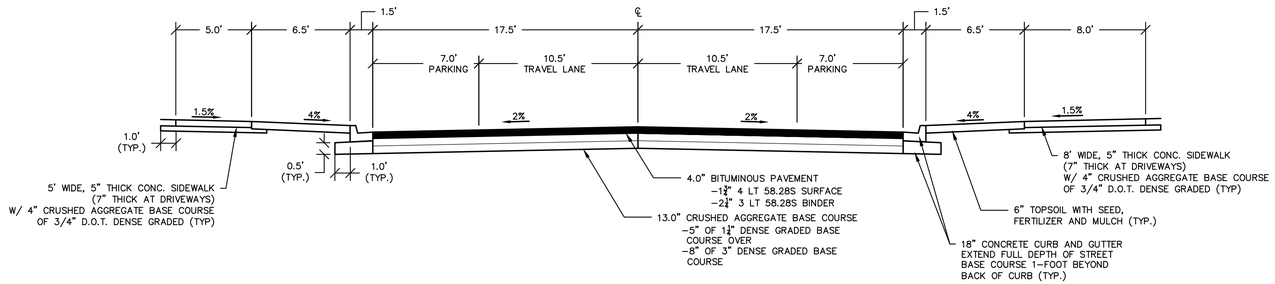
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UTILITY PLAN

SHEET NUMBER:
C5.0

JSD PROJECT NO: 21-10566

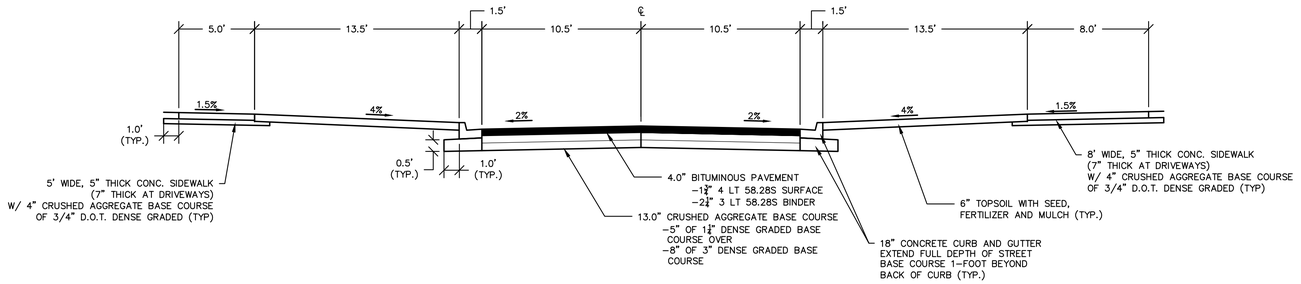
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NOTE:
1. SEE TYPICAL FINISHED SECTION W/ UTILITY TRENCH SHEET C6.1 FOR GEOGRID PLACEMENT.
2. WHERE STORM SEWER IS THE ONLY UTILITY TO BE CONSTRUCTED OR NO UTILITIES ARE TO BE INSTALLED UNDER PAVEMENT, AREAS OUTSIDE OF UTILITY TRENCH GEOGRID SHALL BE PLACED A MINIMUM OF 4 FEET BELOW FINISHED GRADE AND BACKFILLED WITH SELECT IMPORTED FILL, GRANULAR MATERIAL.



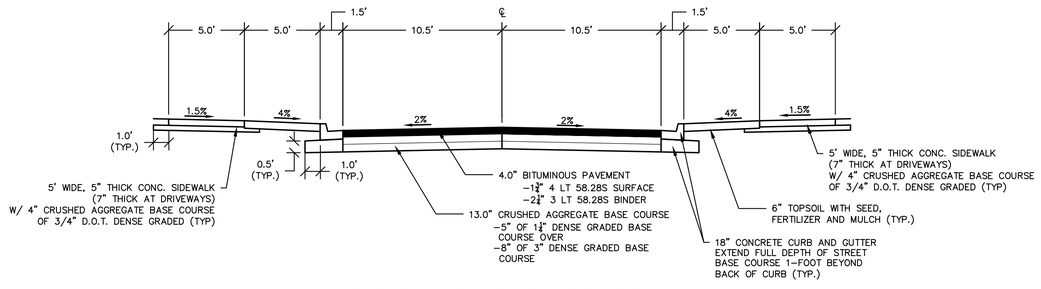
TYPICAL FINISHED SECTION

STREET A STA: 105+76 – 107+87; 110+18 – 112+55; 113+65 – 116+74



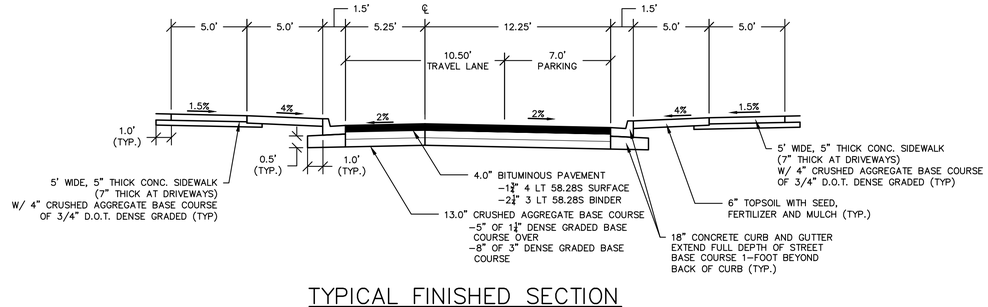
TYPICAL FINISHED SECTION

STREET A STA: 103+67.02 – 104+18; 109+22 – 109+56; 112+99 – 113+22



TYPICAL FINISHED SECTION

STREET B (TWO WAY) STA: 25+47 – 27+23



TYPICAL FINISHED SECTION

STREET B STA (ONE WAY): 27+42 – 30+30; 31+06 – 33+76

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NINE SPRINGS

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FITCHBURG, WI 53711
DANE COUNTY

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Designed By: MSS
Reviewed By: ACG
Approved By:

SHEET TITLE:
TYPICAL ROAD SECTIONS

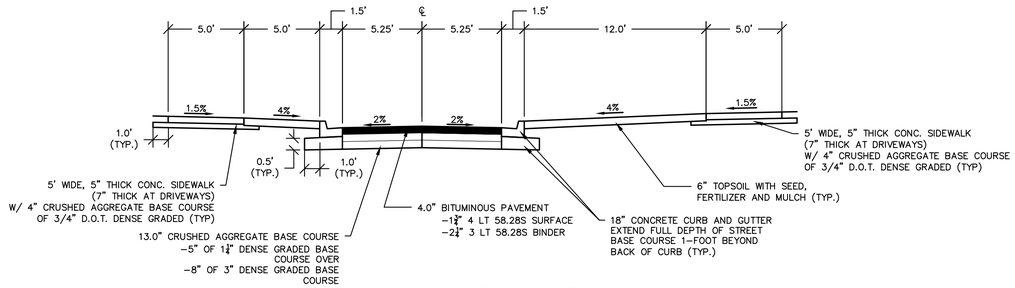
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C6.0

JSD PROJECT NO: 21-10566

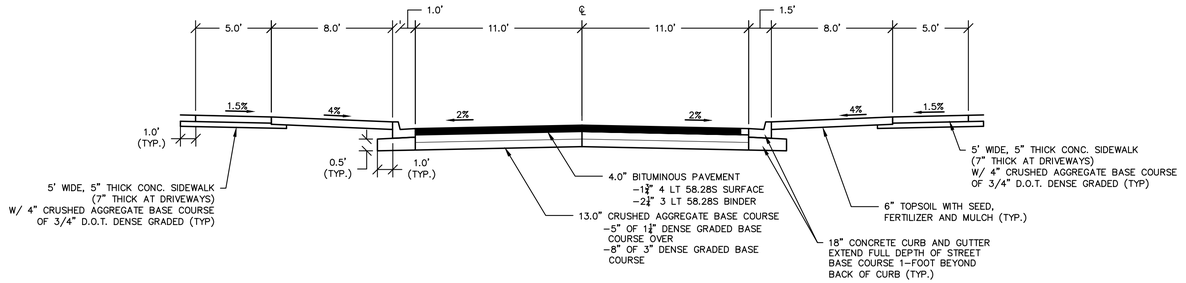
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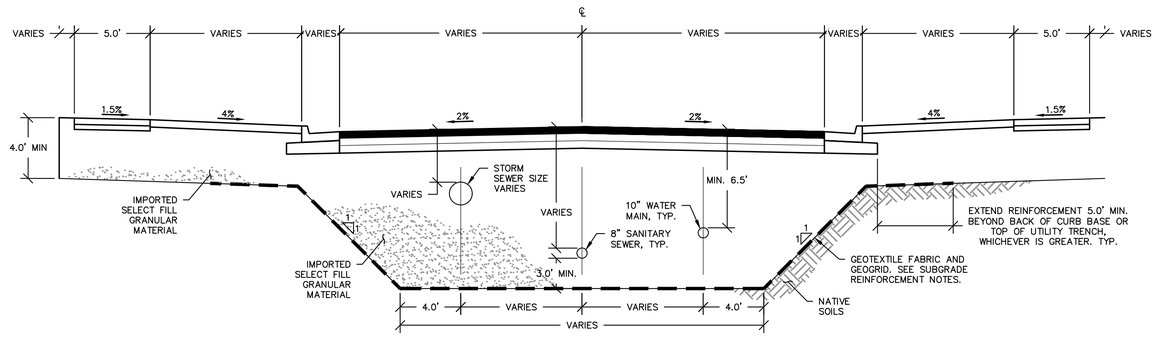
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TYPICAL FINISHED SECTION
STREET B STA (ONE WAY): 30+48 – 30+88



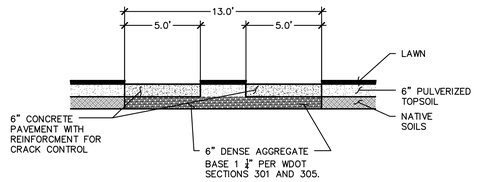
TYPICAL FINISHED SECTION
STREET C STA: 50+94 – 54+37



TYPICAL FINISHED SECTION W/UTILITY TRENCH

SUBGRADE REINFORCEMENT NOTES

1. PLACE GEOTEXTILE FABRIC AGAINST SUBGRADE.
2. PLACE GEOGRID OVER GEOTEXTILE FABRIC.
3. PLACE 4–IN THICK LAYER OF 1–1/4" DENSE GRADED BASE COURSE OVER GEOGRID.
4. GEOTEXTILE FABRIC SHALL CONFORM TO WISDOT SECTION 645.2.2.2 GEOTEXTILE, TYP SAS.
5. GEOGRID SHALL CONFORM TO WISDOT SECTION 645.2.3.2 GEOGRID, TYPE SR.



TYPICAL EMERGENCY VEHICLE ACCESS (HEAVY DUTY CONCRETE) SECTION

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CLIENT:
ROYAL CAPITAL

CLIENT ADDRESS:
710 N PLANKINTON AVE. SUITE 300
MILWAUKEE, WI 53203

PRELIMINARY
NOT FOR CONSTRUCTION

PROJECT:
NINE SPRINGS

PROJECT LOCATION:
FITCHBURG, WI 53711
DANE COUNTY

PLAN MODIFICATIONS:

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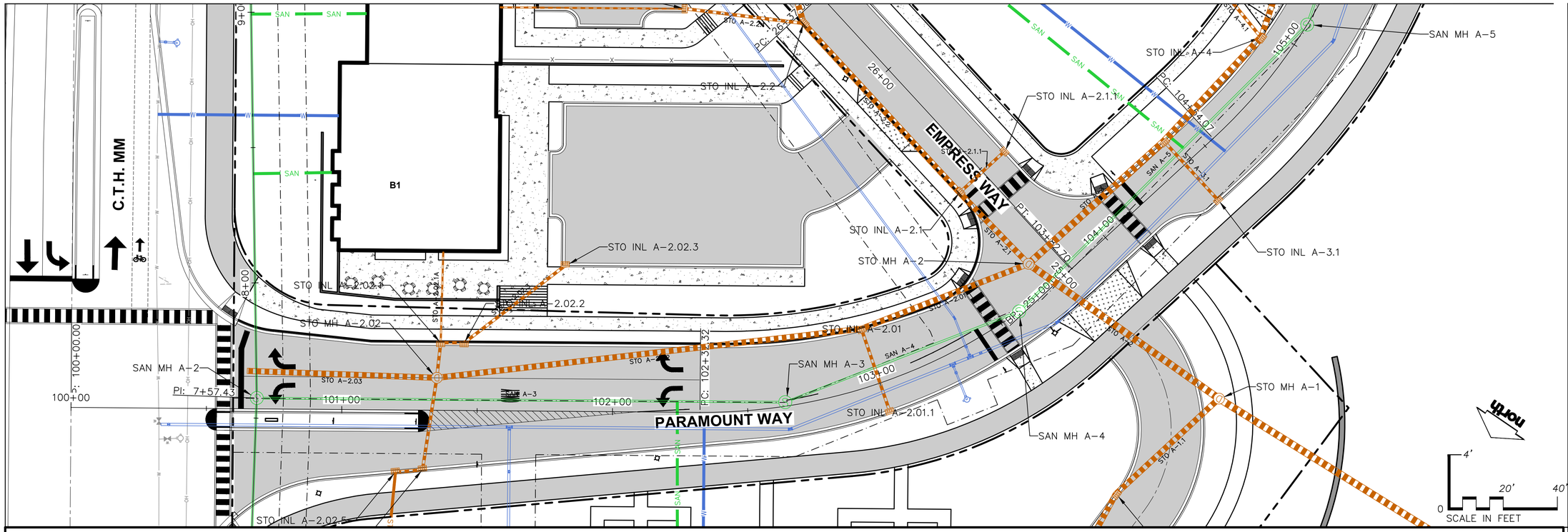
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Reviewed By: ACG
Approved By:

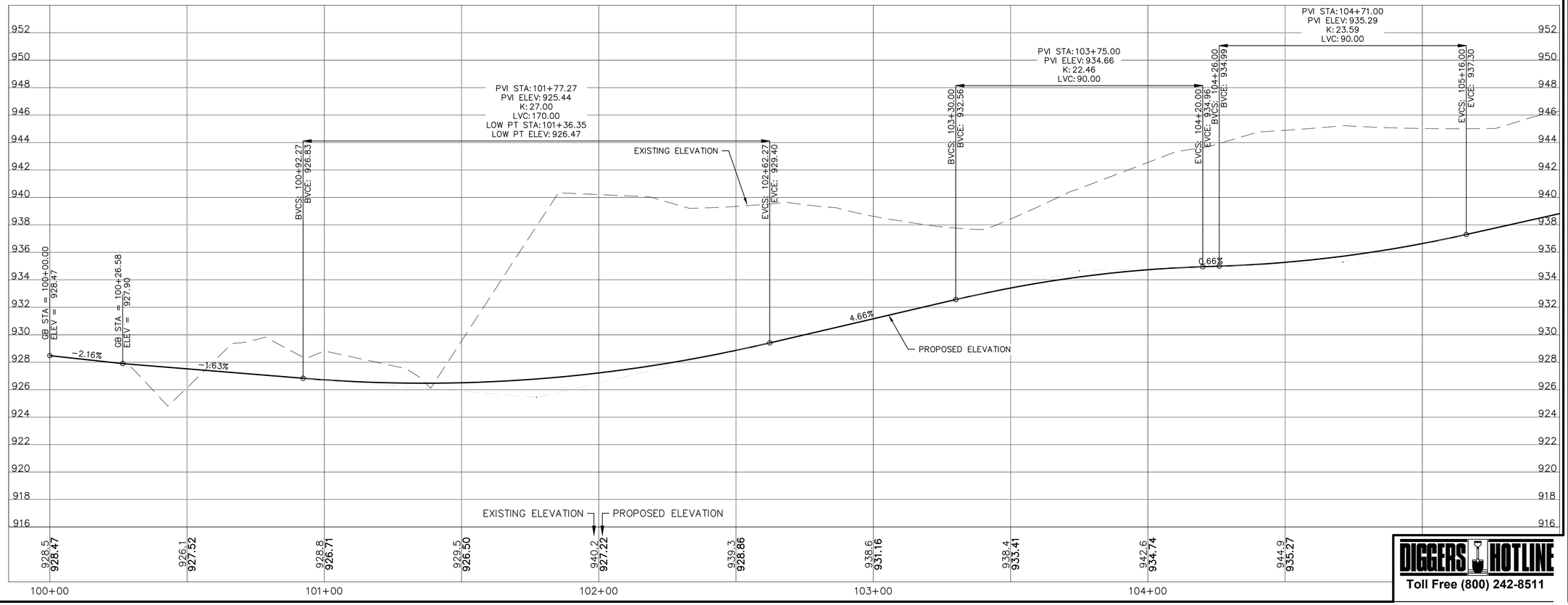
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TYPICAL ROAD SECTIONS

SHEET NUMBER:
C6.1

JSD PROJECT NO: 21-10566

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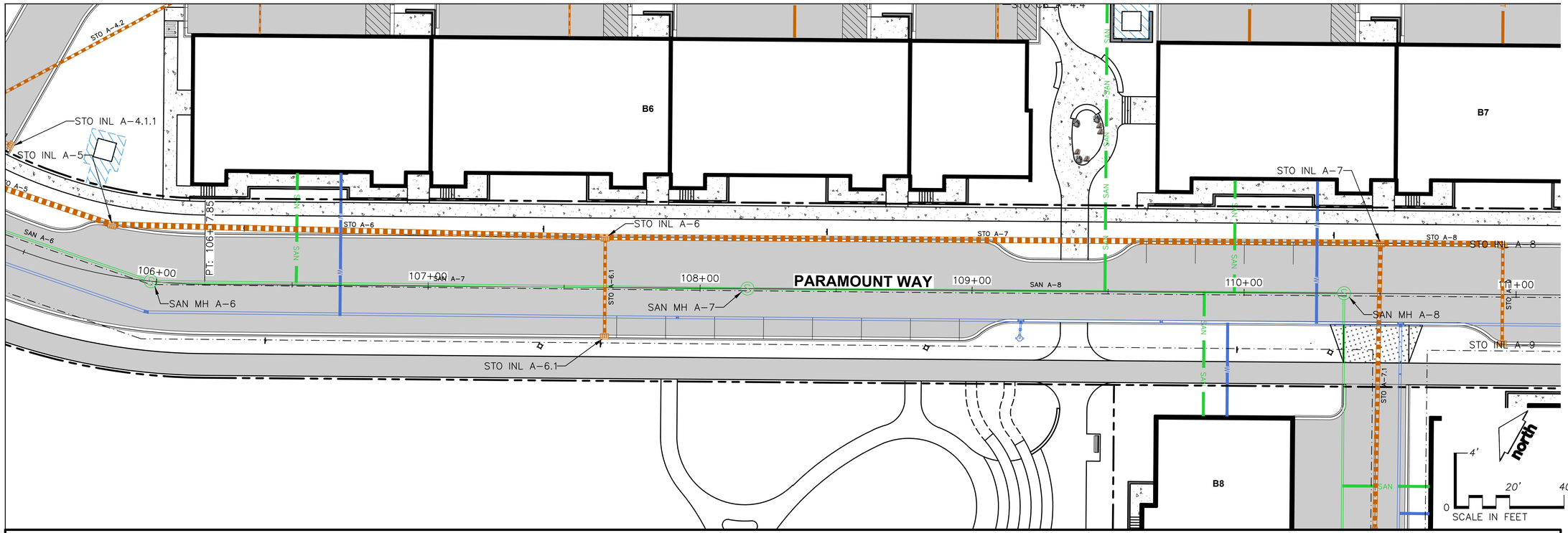
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PLAN & PROFILE - PARAMOUNT WAY STA: 100+00 - 105+50

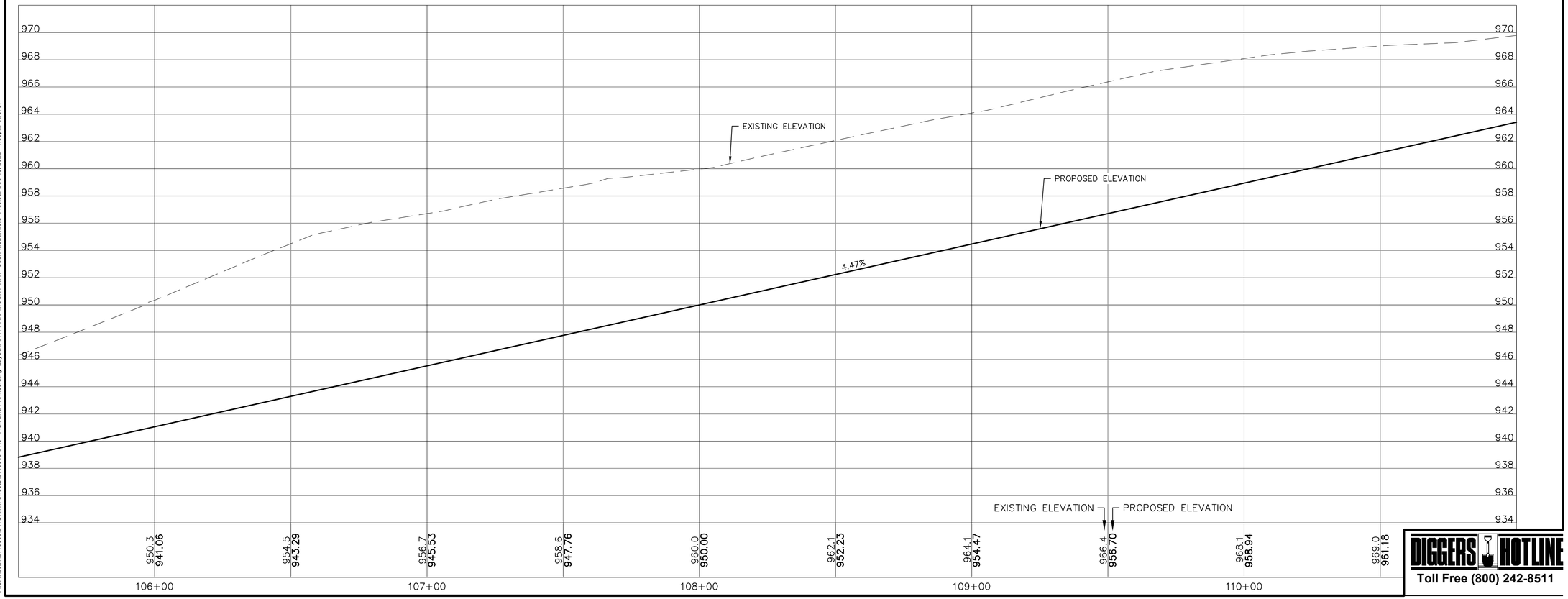
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JSD PROJECT NO: 21-10566

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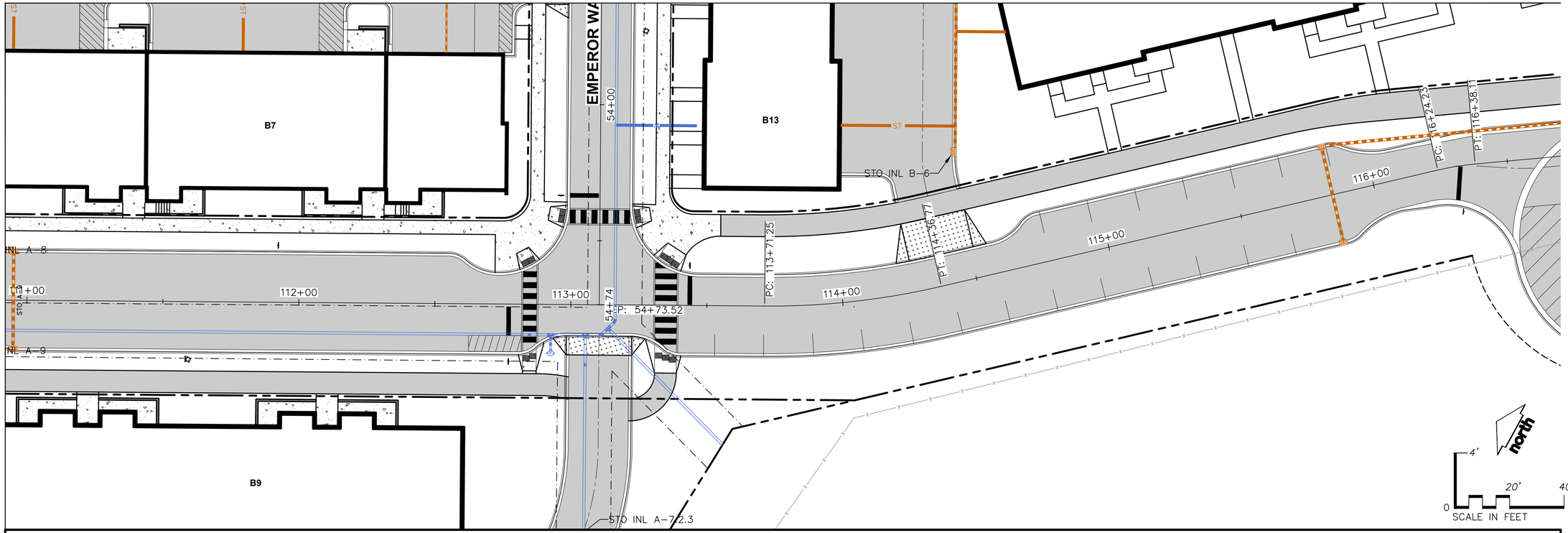
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PLAN & PROFILE - PARAMOUNT WAY STA: 105+50 - 111+00

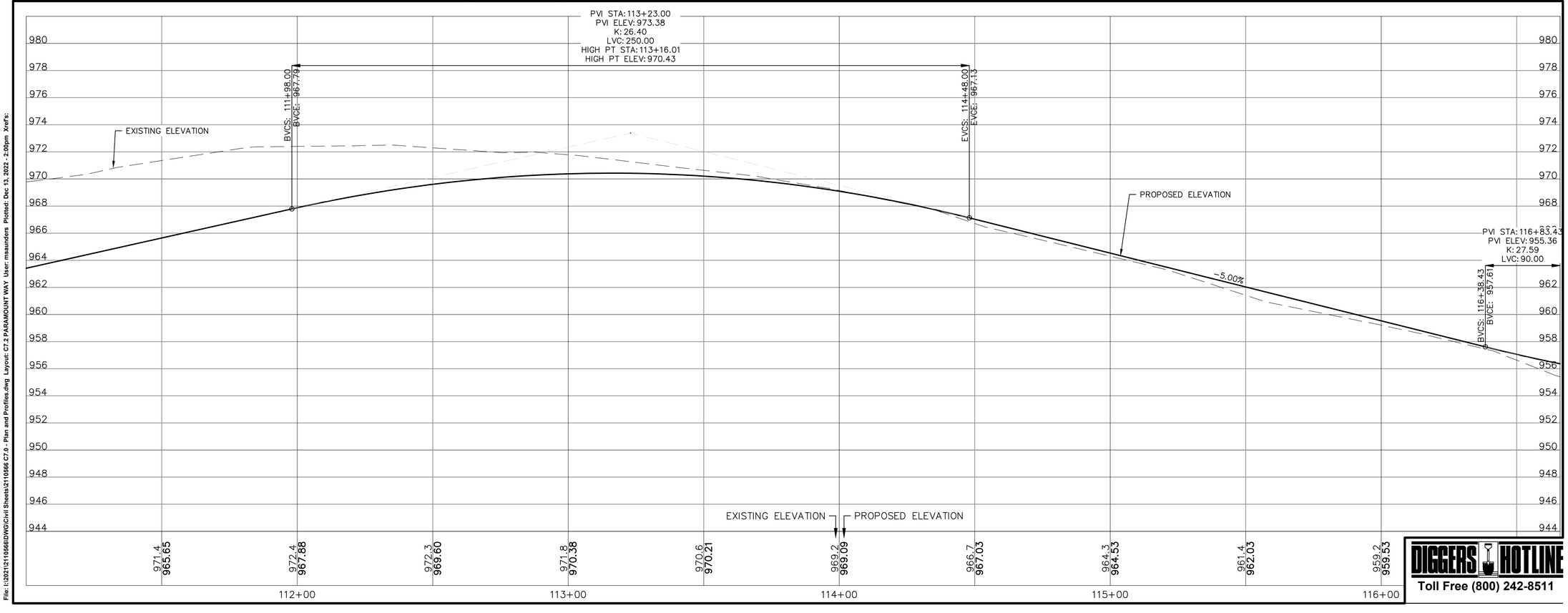
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JSD PROJECT NO: 21-10566

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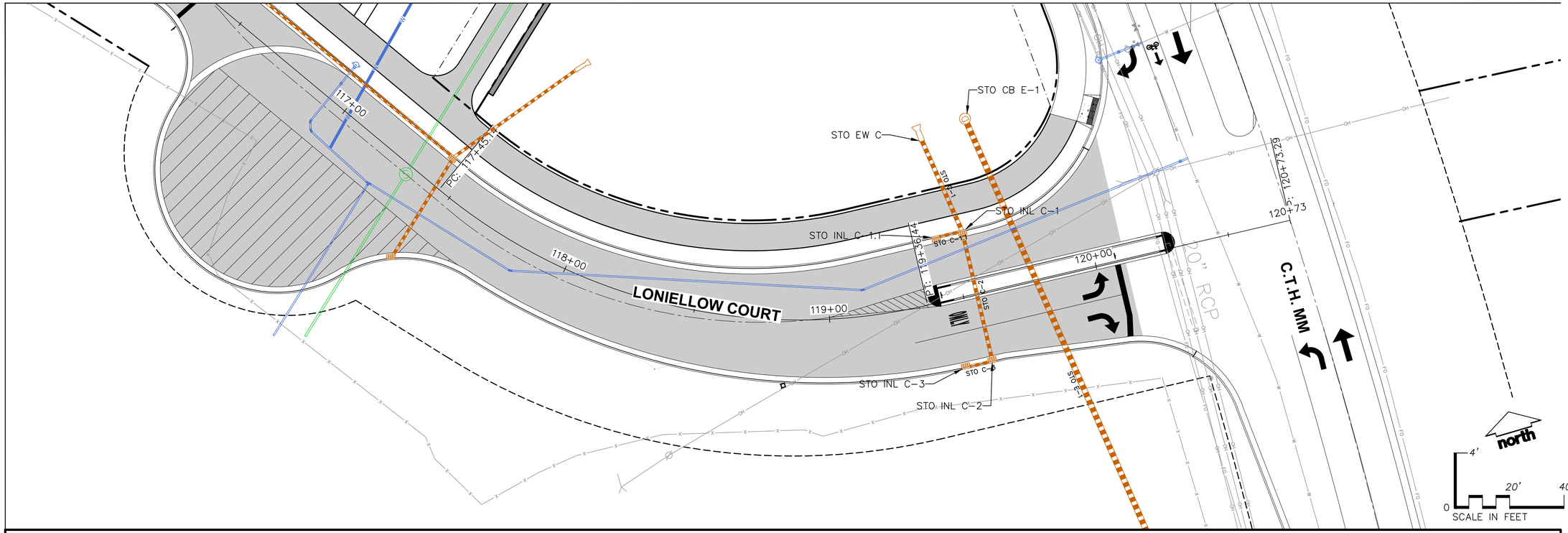
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PLAN & PROFILE - PARAMOUNT WAY STA: 111+00 - 116+50

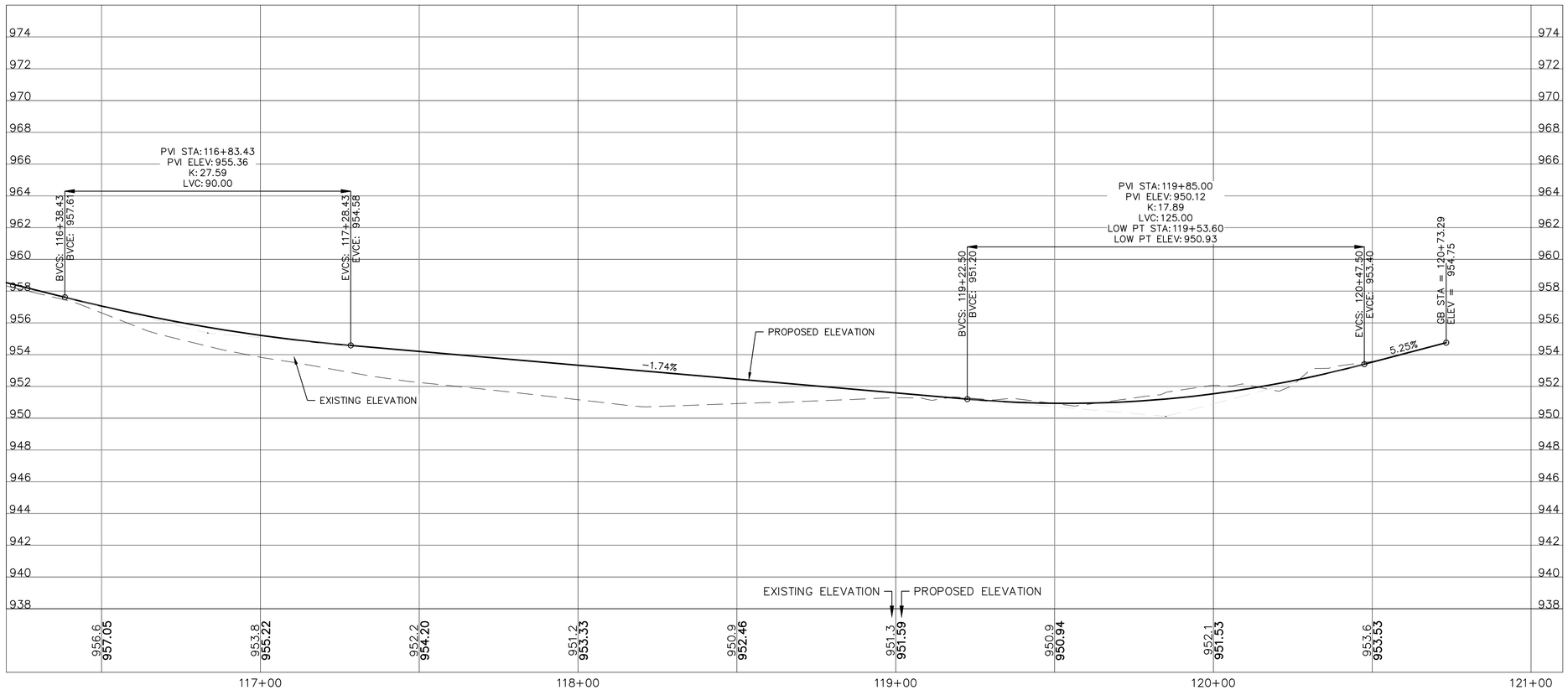
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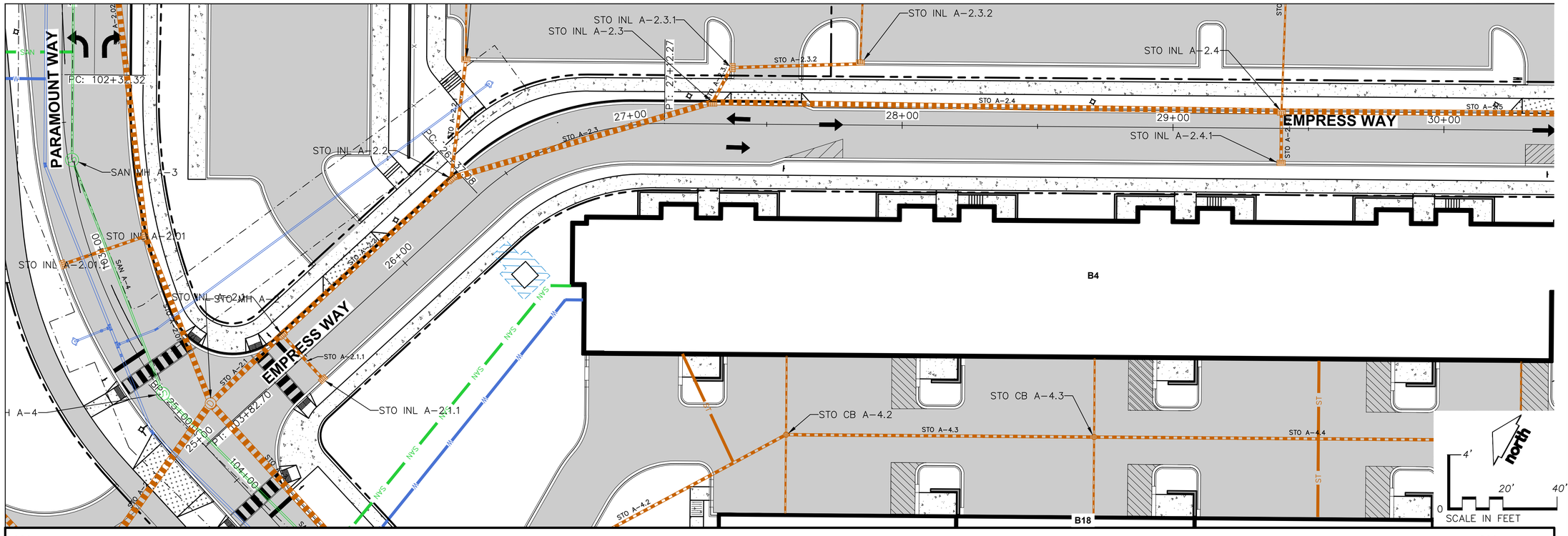
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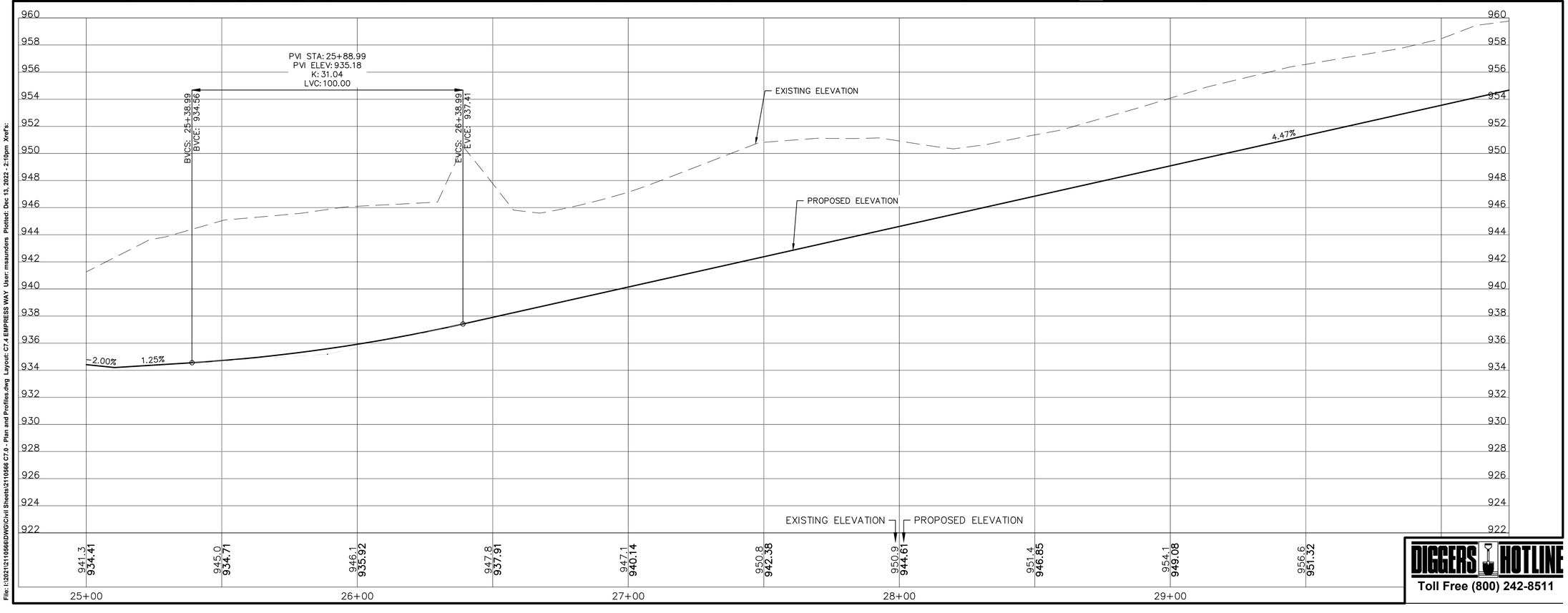
SHEET NUMBER:
C7.3

JSD PROJECT NO: 21-10566

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PRELIMINARY
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Designed By: MSS
Reviewed By: ACG
Approved By:

SHEET TITLE:
PLAN & PROFILE - EMPRESS WAY STA: 25+00 - 30+00

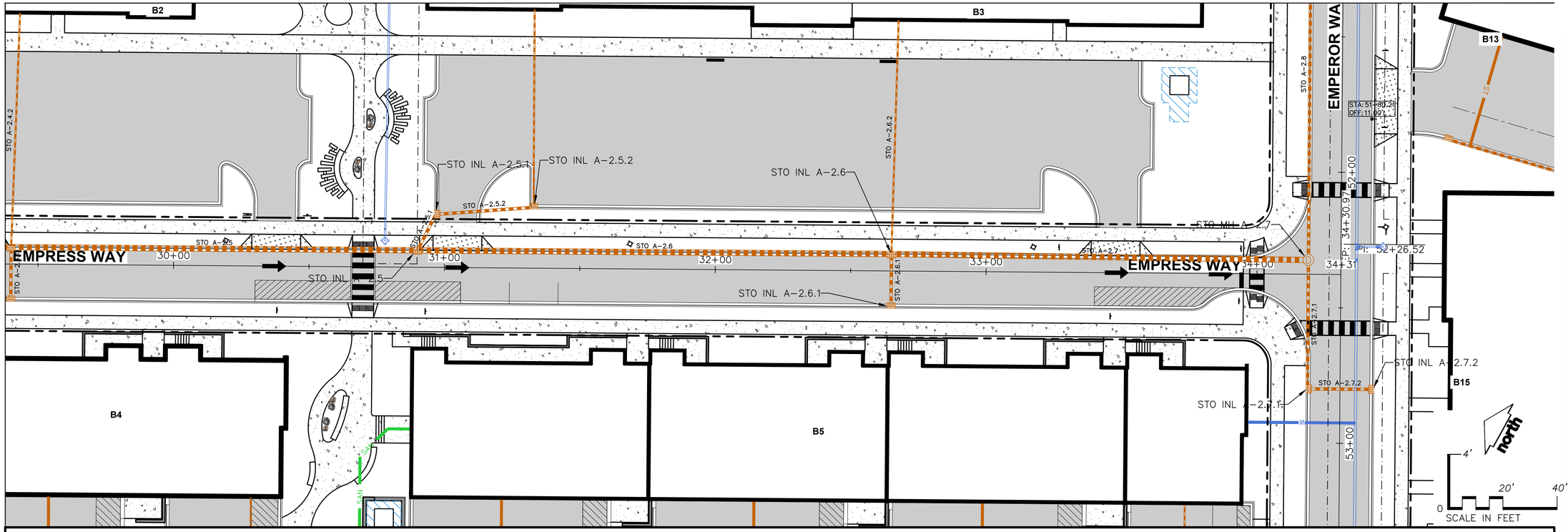
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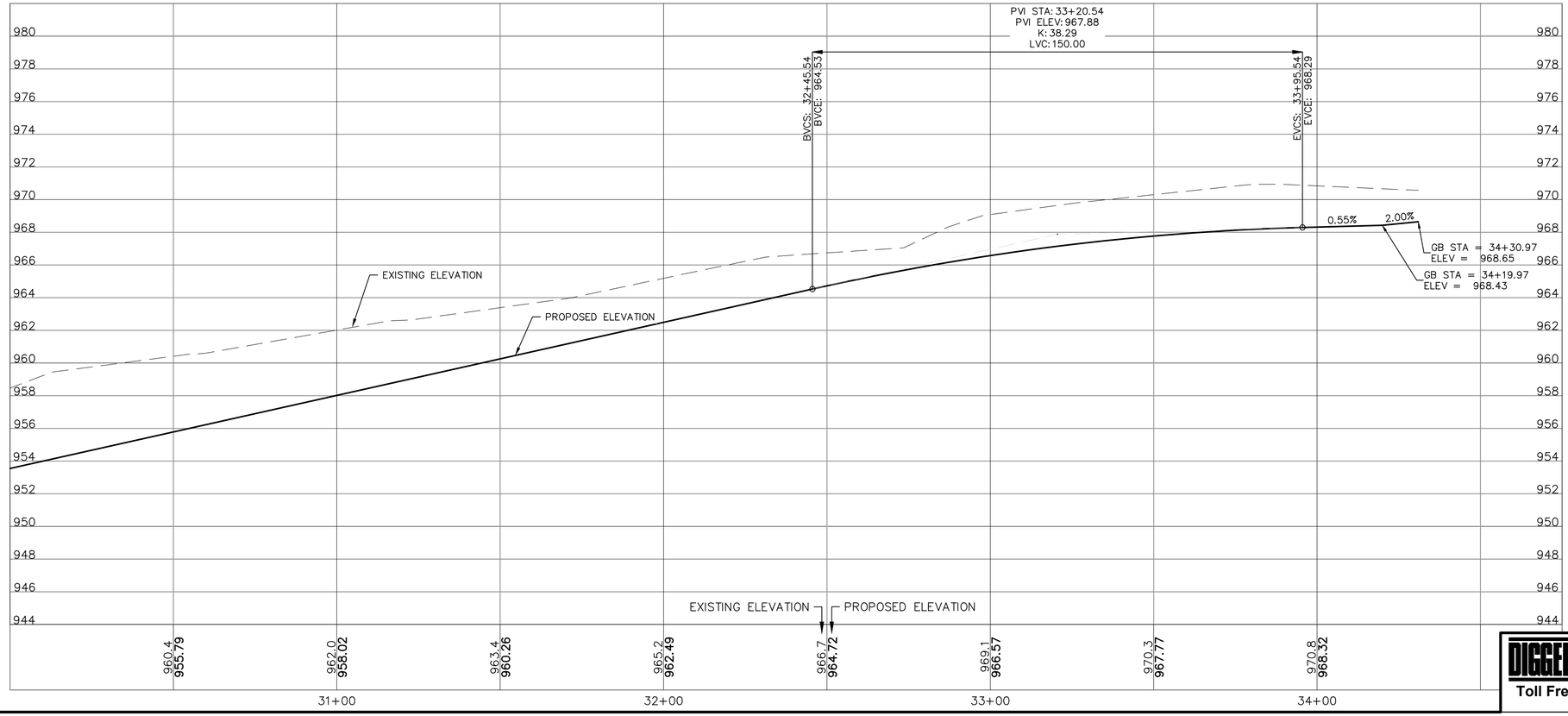
JSD PROJECT NO: 21-10566

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jsdinc.com
MADISON REGIONAL OFFICE
161 HORIZON DRIVE, SUITE 101
VERONA, WISCONSIN 53593
P. 608.848.5060

CLIENT:
ROYAL CAPITAL

CLIENT ADDRESS:
710 N PLANKINTON AVE. SUITE 300
MILWAUKEE, WI 53203

PRELIMINARY
NOT FOR CONSTRUCTION

PROJECT:
NINE SPRINGS

PROJECT LOCATION:
FITCHBURG, WI 53711
DANE COUNTY

PLAN MODIFICATIONS:

#	Date:	Description:
1	03.25.22	P-PLAT SUBMITTAL
2	04.12.22	RESPONSE TO P-PLAT COMMENTS
3	06.21.22	ADR SUBMITTAL
4	12.14.22	P-PLAT SUBMITTAL
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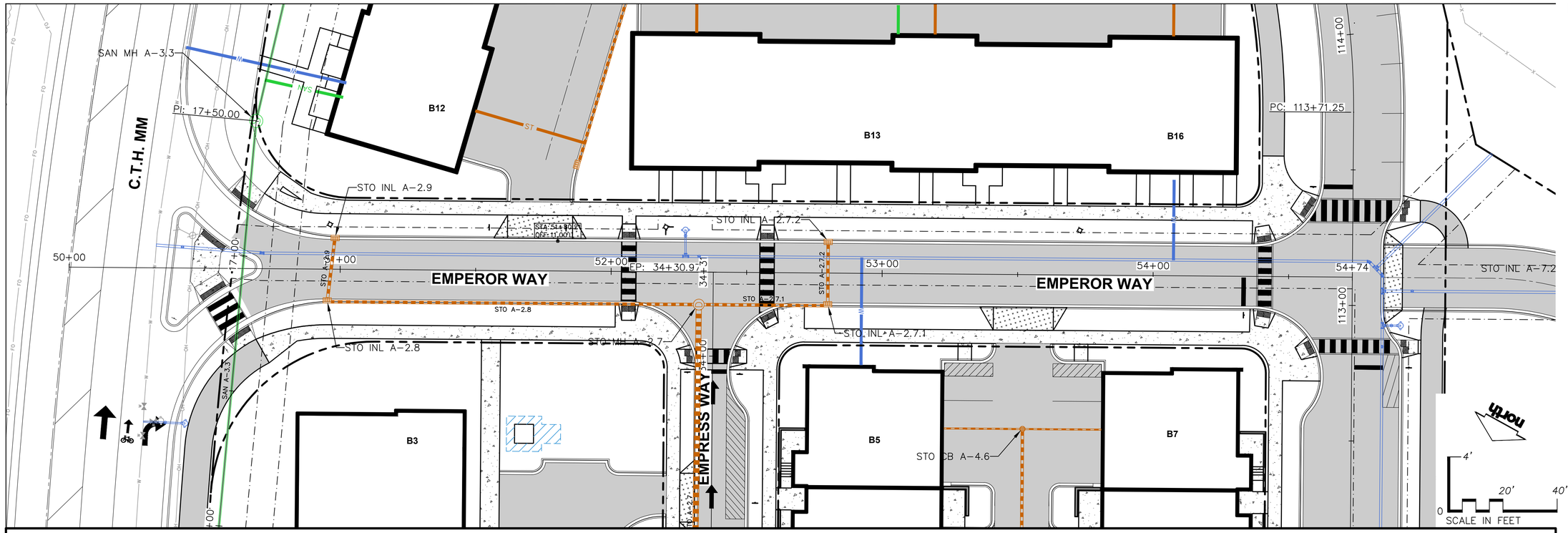
Designed By: MSS
Reviewed By: ACG
Approved By:

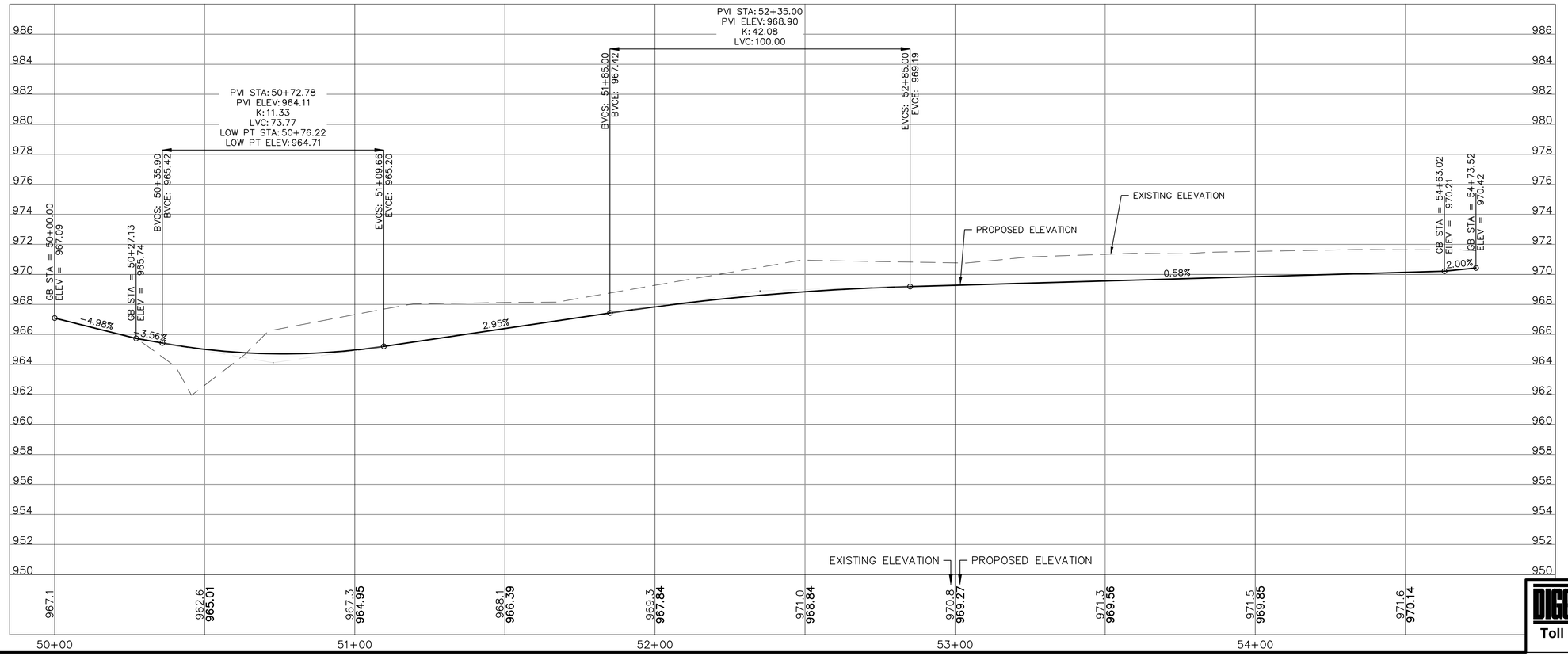
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SHEET NUMBER:
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JSD PROJECT NO: 21-10566

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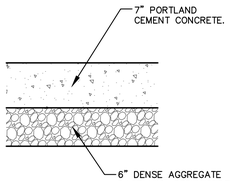
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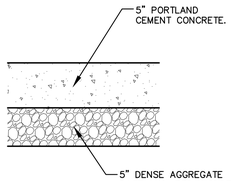
JSD PROJECT NO: 21-10566

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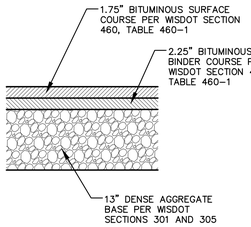
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HEAVY–DUTY CONCRETE SECTION



CONCRETE SIDEWALK SECTION



STANDARD ASPHALT PATH SECTION

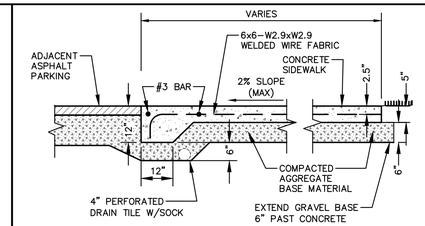
GENERAL NOTES:

1. REFER TO PAVEMENT RECOMMENDATIONS IN THE GEOTECHNICAL INVESTIGATION REPORT, PREPARED BY CGC, INC., NUMMELIN, AND AECOME DATED JULY 2017, JULY 26 2017, AND APRIL 13 2013 RESPECTIVELY DISCREPANCIES BETWEEN THIS DETAIL AND THE PAVEMENT RECOMMENDATIONS PROVIDED IN THE GEOTECHNICAL INVESTIGATION REPORT, THE GEOTECHNICAL REPORT SHALL GOVERN.
2. WISDOT STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, INCLUDING SUPPLEMENTAL SPECIFICATIONS, COMPACTION REQUIREMENTS:
   – BITUMINOUS CONCRETE: REFER TO SECTION 460–3.
   – BASE COURSE: REFER TO SECTION 301.3.4.2, STANDARD COMPACTION.

PAVEMENT SECTIONS

N.T.S.

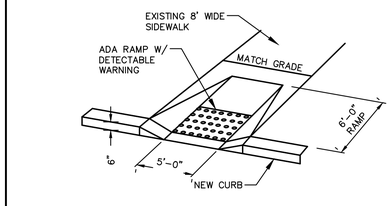
REV. 7–01–2019



THICKENED EDGE SIDEWALK - FLUSH

N.T.S.

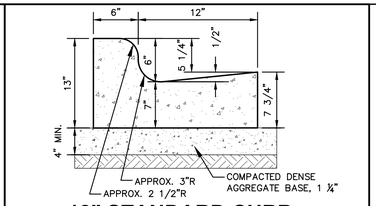
REV. 07–14–2020



ADA ACCESSIBLE RAMP - INLINE

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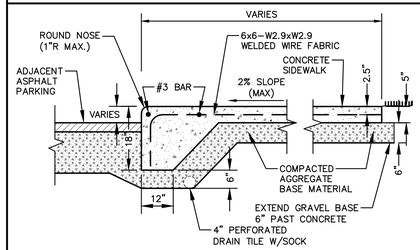
REV. 11–20–2018



18" STANDARD CURB & GUTTER

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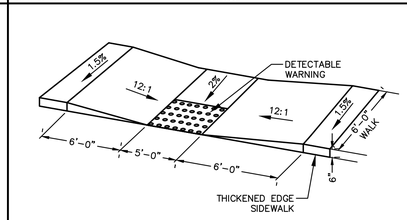
REV. 12–17–2018



THICKENED EDGE SIDEWALK

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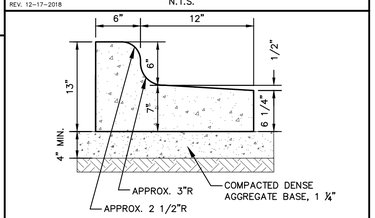
REV. 07–14–2020



ADA ACCESSIBLE RAMP

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REV. 11–20–2018

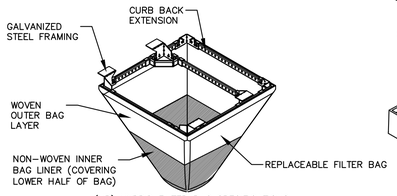


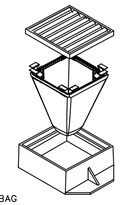
18" REJECT CURB & GUTTER

N.T.S.

REV. 12–17–2018

FLEXSTORM INLET FILTERS TO MEET DANE COUNTY EROSION CONTROL STANDARDS





(HB) HYBRID FILTER BAG SPECIFICATIONS:

INSTALLATION INSTRUCTIONS:
1. REMOVE GRATE FROM THE DRAINAGE STRUCTURE
2. CLEAN STONE AND DIRT FROM LEDGE (LIP) OF DRAINAGE STRUCTURE
3. DROP THE INLET FILTER THROUGH THE CLEAR OPENING SUCH THAT THE HANGERS REST FIRMLY ON THE LIP OF THE STRUCTURE
4. REPLACE THE GRATE AND CONFIRM IT IS NOT ELEVATED MORE THAN 1/8"

MAINTENANCE GUIDELINES:
1. EMPTY THE SEDIMENT BAG IF MORE THAN HALF FILLED WITH SEDIMENT AND DEBRIS
2. REMOVE THE GRATE, ENGAGE THE LIFTING POINTS, AND LIFT FILTER FROM THE DRAINAGE STRUCTURE.
3. DISPOSE OF SEDIMENT AND DEBRIS BY THE ENGINEERING OR MAINTENANCE CONTRACT 4. ALTERNATIVELY, AN INDUSTRIAL VACUUM CAN BE USED TO COLLECT SEDIMENT FROM THE FILTER BAG

CATCH-IT INLET FILTER (Temporary Inlet Protection)

Neenah Casting	Inlet Type	Grate Size	Opening Size	Bag Cap (ft^3)	Flow Ratings (CFS)		ADS P/N
					HB (Hybrid Bag)	Bypass	
3067	Curb Box	35.25 x 17.75	33.0 x 15.0	4.4	2.0	5.8	62LCBEXTHB
3246A	Curb Box	35.75 x 23.875	33.5 x 21.0	4.2	1.1	3.3	62LCB3624HB
3030	Square/Rect (SQ)	23 x 16	20.5 x 13.5	1.6	0.7	2.2	62MCB2316HB
3067-C	Square/Rect (SQ)	35.25 x 17.75	33 x 15	3.2	1.0	5.2	62LSQ3618HB
R-2501	Round (RD)	–26	–24	2.3	0.8	5.2	62MRD26HB
R-1772/2560	Round (RD)	22.25-23.5	20.5-21	1.5	0.6	4.6	62MRD22HB

Woven and Non-Woven Geotextile Filter Bag Properties (Minimum Average Roll Values)

PROPERTY	TEST METHOD	WOVEN (OUTER)	NON-WOVEN (LINER)
TENSILE STRENGTH	ASTM D4632	350 x 225 Lbs	100 Lbs
ELONGATION	ASTM D4632	20% x 15%	50%
CBR PUNCTURE	ASTM D6241	1000 Lbs	65 Lbs
TRAPEZOIDAL TEAR	ASTM D4533	110 x 75 Lbs	45 Lbs
UV RESISTANCE	ASTM D4355	90%	70%
OPENING SIZE (AOS)	ASTM D4751	20 US STD SIEVE	40 US STD SIEVE
PERMITTIVITY	ASTM D4491	$1.5 sec^{-1}$	$2.0 sec^{-1}$
WATER FLOW RATE	ASTM D4491	200 gal/min/ft^2	145 gal/min/ft^2
MINIMUM FILTER BAG V OLUME		2 CUBIC FT	

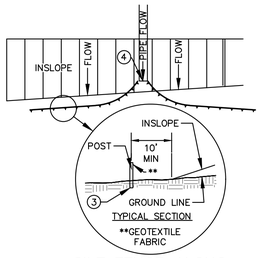
FRAMED INLET PROTECTION

N.T.S.

REV. 7–01–2019

FLEXSTORM INLET FILTERS CATCH IT

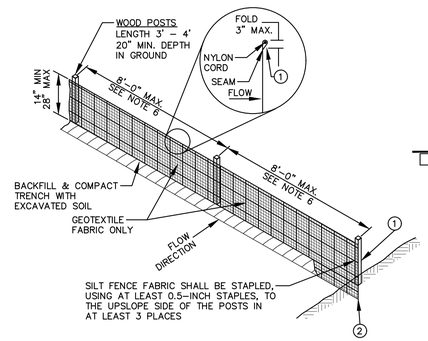
SIZE C | DRAWN BY | DATE | SCALE | IPP Flexstorm HD Specification | SHEET 1 OF 1

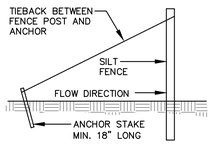


SILT FENCE ALONG SLOPES & OUTFALLS

NOTE:
ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS.

TRENCH DETAIL



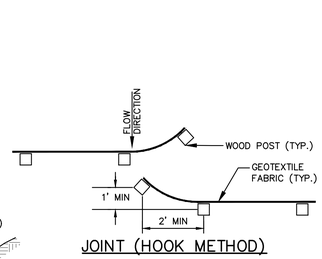


SILT FENCE TIE BACK
(WHEN ADDITIONAL SUPPORT REQUIRED)

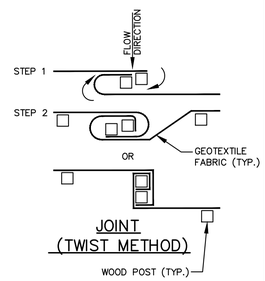
SILT FENCE

N.T.S.

REV. 7–01–2019



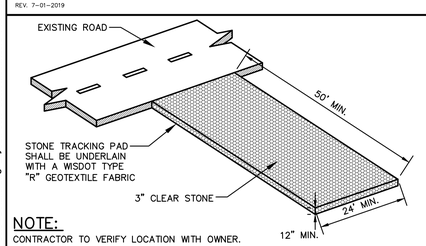
JOINT (HOOK METHOD)



JOINT (TWIST METHOD)

GENERAL NOTES:

1. SILT FENCE SHALL BE ANCHORED BY SPREADING AT LEAST 8–INCHES OF FABRIC IN A 4–INCH WIDE AND 6–INCH DEEP TRENCH OR 6–INCH DEEP V–TRENCH ON THE UPSLOPE SIDE OF THE FENCE. TRENCHES SHALL NOT BE EXCAVATED WIDER OR DEEPER THAN NECESSARY FOR PROPER INSTALLATION.
2. FOLD MATERIAL TO FIT TRENCH AND BACKFILL AND COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL BE A MINIMUM SIZE OF 1.125–INCHES x 1.125–INCHES OF DRIED OAK OR HICKORY.
4. SILT FENCE TO EXTEND ABOVE THE TOP OF PIPE.
5. SILT FENCE CONSTRUCTION AND GEOTEXTILE FABRIC SHALL CONFORM TO WDNR TECHNICAL STANDARD 1056.
6. POST SPACING SHALL BE SELECTED BASED ON GEOTEXTILE FABRIC (8–FEET FOR WOVEN & 3–FEET FOR NON–WOVEN)

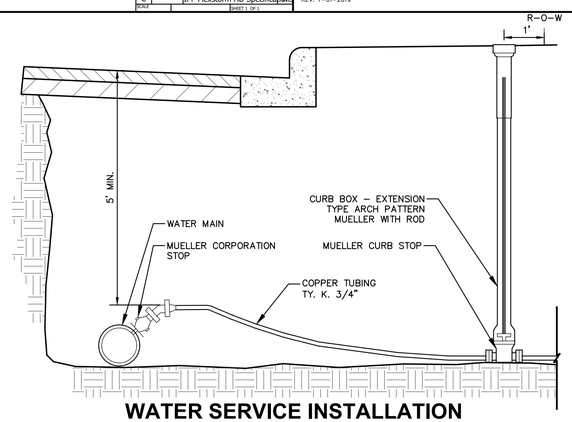


NOTE:
CONTRACTOR TO VERIFY LOCATION WITH OWNER.

CONSTRUCTION ENTRANCE

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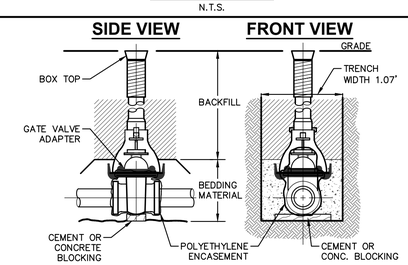
REV. 12–10–2018



WATER SERVICE INSTALLATION

N.T.S.

REV. 12–04–2018



GATE VALVE BOX SETTING

N.T.S.

REV. 12–04–2018

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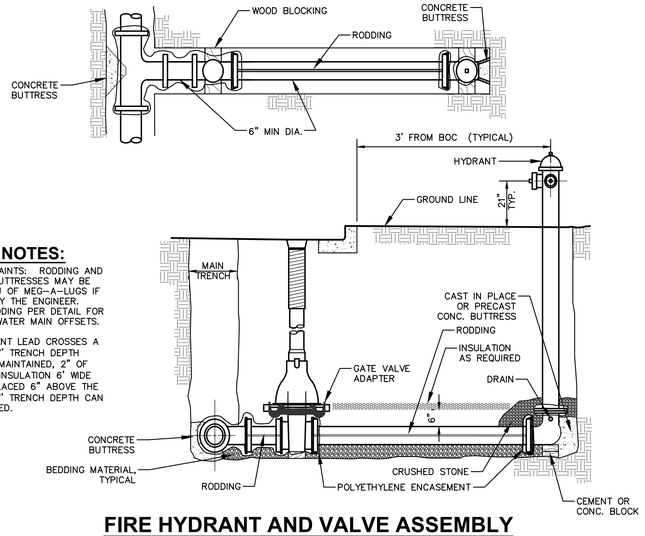
SHEET TITLE:
DETAILS

SHEET NUMBER:
C8.0

JSD PROJECT NO: 21-10566

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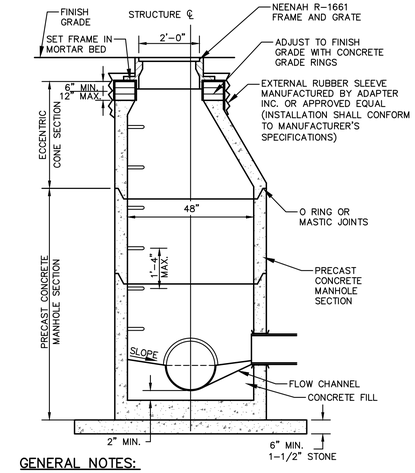
GENERAL NOTES:

1. JOINT RESTRAINTS: RODDING AND CONCRETE BUTTRESSES MAY BE USED IN LIEU OF MEG-A-LUGS IF APPROVED BY THE ENGINEER. PROVIDE RODDING PER DETAIL FOR STRAPPING WATER MAIN OFFSETS.
2. WHEN HYDRANT LEAD CROSSES A DITCH & A 7' TRENCH DEPTH CANNOT BE MAINTAINED, 2" OF STYROFOAM INSULATION 6' WIDE SHALL BE PLACED 6" ABOVE THE PIPE UNTIL 7' TRENCH DEPTH CAN BE MAINTAINED.

FIRE HYDRANT AND VALVE ASSEMBLY

N.T.S.

REV. 12-03-2018



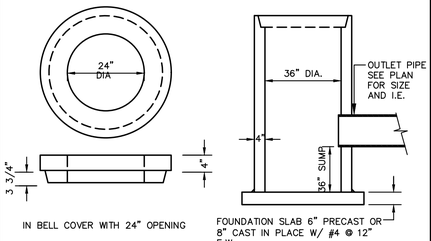
GENERAL NOTES:

1. MANHOLE CONSTRUCTION TO MEET REQUIREMENTS OF ASTM C478.
2. JOINTS SHALL BE WATERTIGHT. USE BUTYL RUBBER GASKET.
3. USE MORTAR FOR PIPE CONNECTIONS.
4. ALL MANHOLES SHALL HAVE RUBBER CHIMNEY BOOT SEALS.

SANITARY SEWER MANHOLE

N.T.S.

REV. 12-6-2018



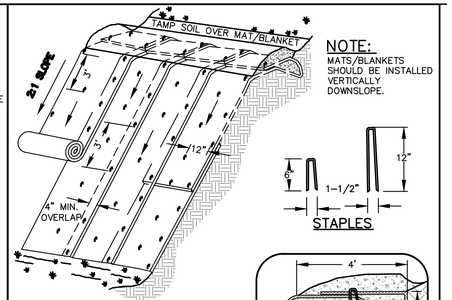
GENERAL NOTES:

1. GRATE SHALL BE IN BELL FITTING TO THE PRECAST STRUCTURE SPECIFICATIONS
2. GRATES SHALL BE AASHTO H20 LOAD RATED
3. GRATE SHALL SET FLUSH WITH TOP OF CATCH BASIN BELL
4. PRECAST REINFORCED CONCRETE CATCH BASIN IS MANUFACTURED TO MEET ASTM C-478 AND AASHTO M199 SPECIFICATIONS
5. STANDARD CATCH BASIN BARREL HEIGHTS: 0'-6", 1'-0", 2'-0", 3'-0" AND 4'-0"
6. STOCK 36" DIA. CATCH BASINS AVAILABLE WITH OR WITHOUT A 6" THICK INTEGRAL BASE OR AS SPECIFIED
7. CATCH BASIN JOINT MATERIAL: CONSEAL CS-102 AND/OR CS-202 AS MANUFACTURED BY CONCRETE SEALANTS INC., WHICH MEETS OR EXCEEDS REQUIREMENTS OF FEDERAL SPECIFICATION SS-S-210 (210A), AASHTO M-198B AND ASTM C-990
8. PIPE TO CATCH BASIN CONNECTORS: KOR-N-SEAL AS MANUFACTURED BY NPC INC., WHICH MEETS OR EXCEEDS REQUIREMENTS OF ASTM C-923

36" DIA. STORM INLET W/ SUMP

N.T.S.

REV. 12-7-2018



ISOMETRIC VIEW TYPICAL SLOPE SOIL STABILIZATION

NOTE: MATS/BLANKETS SHOULD BE INSTALLED VERTICALLY DOWNSLOPE.

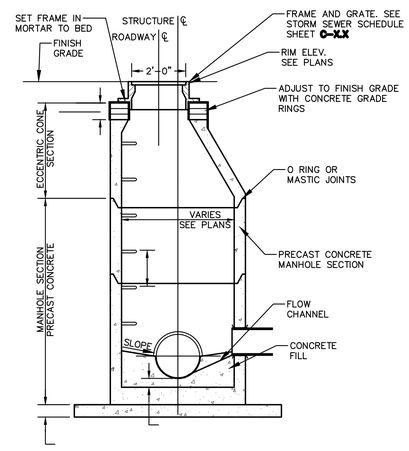
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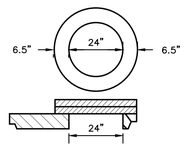
1. EROSION MAT CONSTRUCTION SHALL BE IN ACCORDANCE WITH WISCONSIN DNR TECHNICAL STANDARD 1052 "NON-CHANNEL EROSION MAT".
2. ONLY WisDOT EROSION CONTROL PRODUCT ACCEPTABILITY LIST (PAL) APPROVED MATS SHALL BE ALLOWED. REFER TO EROSION CONTROL PLAN FOR EXACT MAT CLASSIFICATION.
3. APPLY PERMANENT SEEDING BEFORE PLACING BLANKETS.
4. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.
5. ONLY WisDOT EROSION CONTROL PRODUCT ACCEPTABILITY LIST (PAL) APPROVED MATS SHALL BE ALLOWED. REFER TO EROSION CONTROL PLAN FOR EXACT MAT CLASSIFICATION.

EROSION MATTING

N.T.S.

REV. 11-19-2018





FLAT TOP SLAB

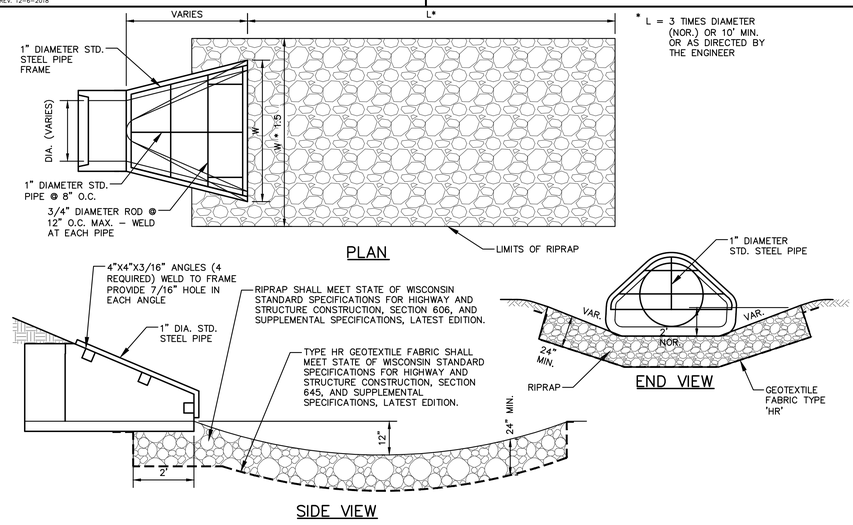
GENERAL NOTES:

1. MANHOLE CONSTRUCTION TO MEET REQUIREMENTS OF ASTM C478.
2. PROVIDE FLAT TOP SLAB FOR MANHOLES 5' OR LESS IN DEPTH. FLAT TOP SLABS TO BE IN-BELL TYPE.
3. JOINTS SHALL BE WATERTIGHT. USE BUTYL RUBBER GASKET.
4. USE MORTAR FOR PIPE CONNECTIONS.
5. ECCENTRIC CONE SECTION OF MANHOLE TO BE SET OUTSIDE OF VEHICULAR WHEEL PATH NEAR ℄ ROADWAY.

STORM MANHOLE

N.T.S.

REV. 12-07-2018

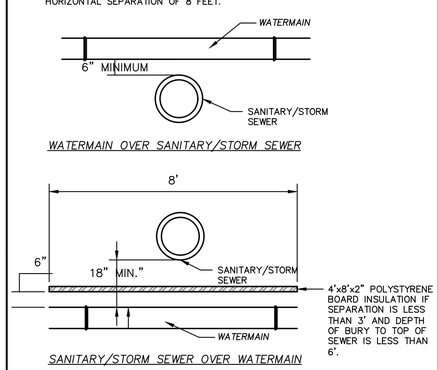


APRON ENDWALL W/ GRATE - RIPRAP

N.T.S.

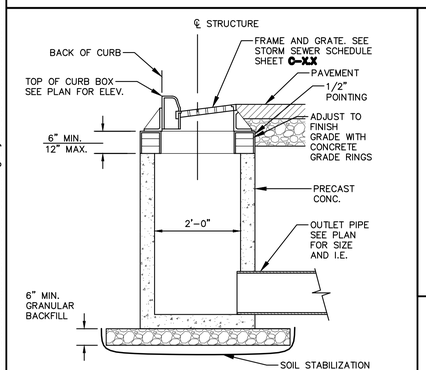
REV. 12-7-2018

NOTE:
AT CROSSING, ONE FULL 18 FOOT LENGTH OF WATERMAIN SHALL BE CENTERED ON THE SEWER. MAINTAIN A MINIMUM HORIZONTAL SEPARATION OF 8 FEET.



WATERMAIN - SEWER SEPARATION

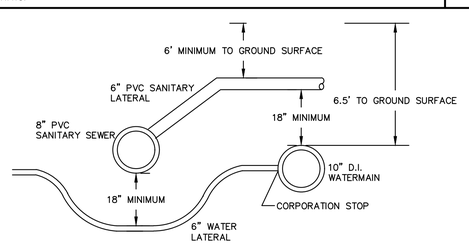
N.T.S.



STORM INLET

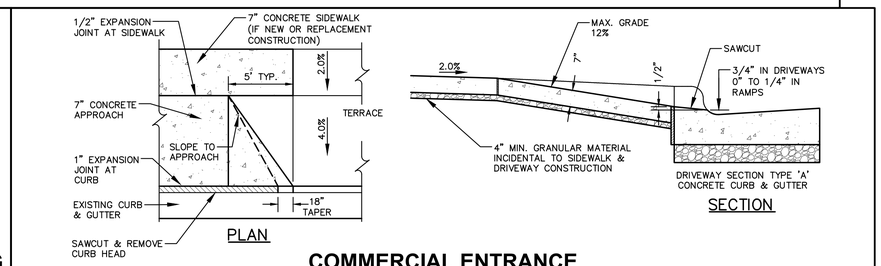
N.T.S.

REV. 11-26-2018



SANITARY AND WATER LATERAL CROSSING

N.T.S.



COMMERCIAL ENTRANCE

N.T.S.

REV. 2-12-2021

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P. 608.848.5060

CLIENT:
ROYAL CAPITAL

CLIENT ADDRESS:
710 N PLANKINTON AVE. SUITE 300
MILWAUKEE, WI 53203

PRELIMINARY NOT FOR CONSTRUCTION

PROJECT:
NINE SPRINGS

PROJECT LOCATION:
FITCHBURG, WI 53711
DANE COUNTY

PLAN MODIFICATIONS:

#	Date:	Description:
1	03.25.22	P-PLAT SUBMITTAL
2	04.12.22	RESPONSE TO P-PLAT COMMENTS
3	06.21.22	ADR SUBMITTAL
4	12.14.22	P-PLAT SUBMITTAL
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Designed By: MSS
Reviewed By: ACG
Approved By:

SHEET TITLE:
DETAILS

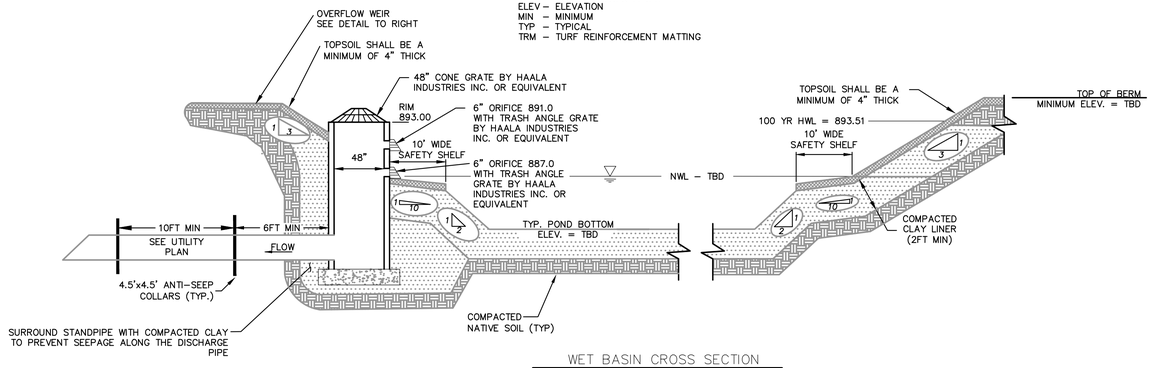
SHEET NUMBER:
C8.1

JSD PROJECT NO: 21-10566

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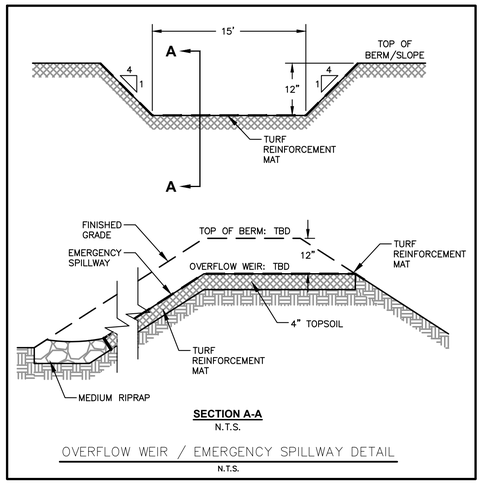
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DETAIL ABBREVIATIONS
HWL – HIGH WATER LEVEL
NWL – NORMAL WATER LEVEL
ELEV – ELEVATION
MIN – MINIMUM
TYP – TYPICAL
TRM – TURF REINFORCEMENT MATTING



WET BASIN CROSS SECTION

N.T.S.



SECTION A-A
N.T.S.

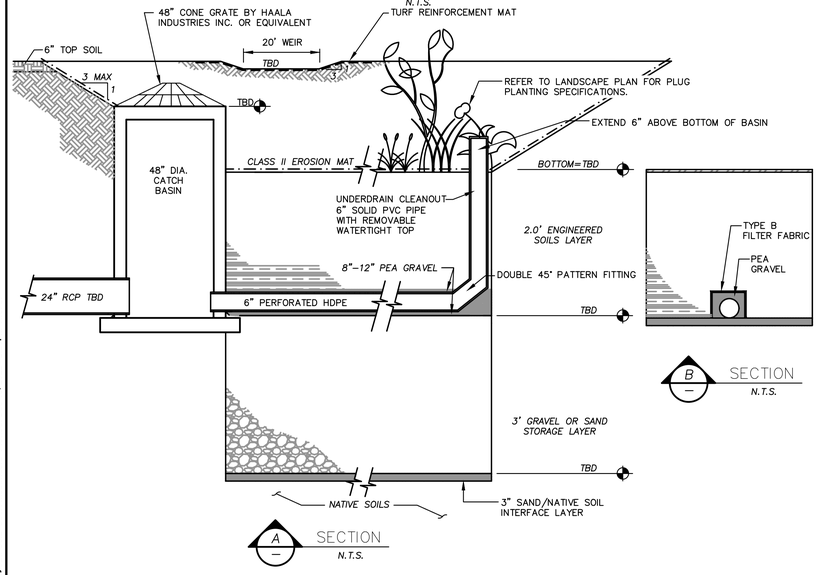
OVERFLOW WEIR / EMERGENCY SPILLWAY DETAIL

N.T.S.

GENERAL NOTES:

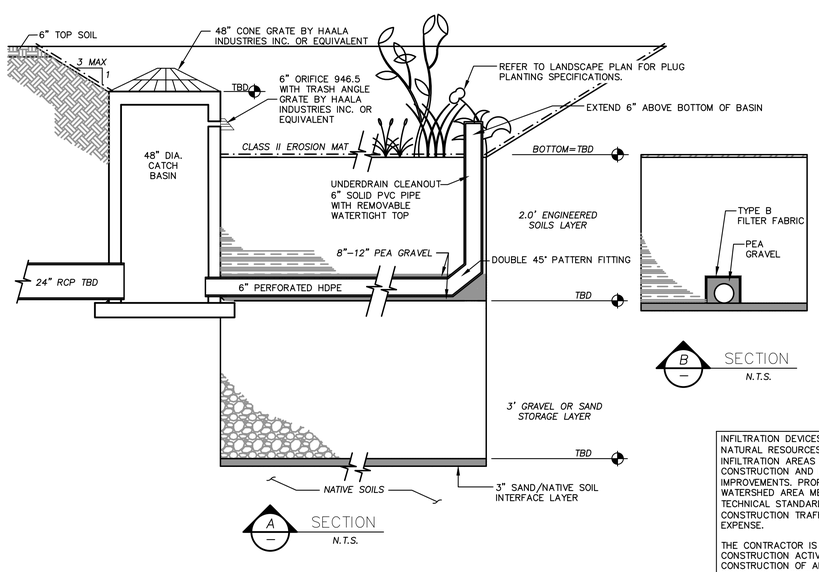
1. ALL CONSTRUCTION SHALL MEET THE SPECIFICATIONS OF "WDNR WET DETENTION BASIN TECHNICAL STANDARD 1001".
2. ALL WORK TO BE CONDUCTED IN CONFORMANCE WITH THE STORM WATER MANAGEMENT PLAN FOR THE PROJECT SITE AS APPROVED BY THE REGULATORY ENGINEER OF RECORD.
3. CLAY LINER SHALL BE A MINIMUM OF 2–FEET THICK. CLAY SHALL BE COMPACTED AT ±2.0% OPTIMAL MOISTURE CONTENT TO 90% MODIFIED PROCTOR. MEDIUM STIFF TO STIFF CLAYS PRESENT IN–PLACE AT THE POND SIDE SLOPES OR BOTTOM OR OTHER ONSITE MEDIUM STIFF TO STIFF CLAYS MAY BE USED AT THE DISCRETION OF THE GEOTECHNICAL ENGINEER OF RECORD.
4. FOR CONSTRUCTED EMBANKMENTS WHERE THE PERMANENT POOL IS PONDED 3–FEET OR MORE AGAINST THE EMBANKMENT, THERE SHALL BE A CORE TRENCH OR KEYWAY ALONG THE CENTERLINE OF THE EMBANKMENT UP TO THE PERMANENT POOL ELEVATION. THE CORE TRENCH OR KEYWAY SHALL BE A MINIMUM OF 2–FEET DEEP AND 8–FEET WIDE WITH A SIDE SLOPE OF 1:1 OR FLATTER.
5. IMMEDIATELY INSTALL FILTER FABRIC OVER ALL OUTLETS TO PREVENT SEDIMENT DEPOSITION IN THE PIPING. (REMOVE FOLLOWING CONTRIBUTING AREA STABILIZATION)

THE STORMWATER MANAGEMENT FEATURES CONTAINED WITHIN THIS PLAN SET HAVE BEEN DESIGNED IN ACCORDANCE WITH APPLICABLE STANDARDS SET FORTH IN WISCONSIN DNR NR151 AND LOCAL ORDINANCES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE PROPER CONSTRUCTION PRACTICES HAVE BEEN UTILIZED AND THAT STORMWATER MANAGEMENT FEATURES HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH APPROVED DESIGN PLANS. JSD PROFESSIONAL SERVICES, INC. (JSD) SHALL NOT BE LIABLE FOR ANY CONSTRUCTION PRACTICES OR INSTALLATION WHICH DEVIATES FROM THE APPROVED PLAN SET. ONCE THE OWNER HAS PROVIDED FINAL APPROVAL TO THE WORK PERFORMED BY THE CONTRACTOR AND ENSURED COMPLIANCE WITH THE PLAN, IT IS THE OWNER'S RESPONSIBILITY TO MAINTAIN STORMWATER MANAGEMENT FEATURES IN ACCORDANCE WITH THE RECORDED MAINTENANCE AGREEMENT. PROPER OPERATION IS DEPENDENT ON A MULTITUDE OF VARIABLES INCLUDING WEATHER. THESE COMPONENTS REQUIRE ONGOING MAINTENANCE FOR WHICH THE OWNER IS RESPONSIBLE. JSD TAKES NO RESPONSIBILITY FOR PROPER OPERATION OF THE WATER QUALITY COMPONENTS.



BIORETENTION DEVICE 1

N.T.S.



BIORETENTION DEVICE 2

N.T.S.

GENERAL NOTES:

1. *ALL CONSTRUCTION PRACTICES SHALL MEET THE SPECIFICATIONS OF THE WDNR TECHNICAL STANDARD 1004 – BIORETENTION FOR INFILTRATION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN A COPY OF THIS STANDARD AND CONSTRUCT THE BIORETENTION DEVICE IN ACCORDANCE WITH THE REQUIREMENTS OUTLINED THEREIN.*
2. *CONTRACTOR SHALL INSTALL 36" OF ENGINEERED SOIL CONSISTING OF: 85% ASTM C33 SAND AND 15% CERTIFIED COMPOST.*
3. *CERTIFIED COMPOST SHALL CONSIST OF: >40% ORGANIC MATTER, <60% ASH CONTENT, pH OF 6–8, AND MOISTURE CONTENT OF 35–50% BY WEIGHT.*
4. *ASTM C33 SAND OR WASHED STONE SHALL BE PLACED IN THE FIRST 36" BELOW THE PERFORATED PIPE. SOILS SHALL BE CONFIRMED BY GEOTECHNICAL ENGINEER PRIOR TO BACKFILLING.*
5. *ANNUAL RYE GRASS SHALL BE SEEDED AT 40 LB/ACRE WITH THE SEED MIX IN THE AREAS SURROUNDING THE BASIN, ON SIDE SLOPES, AND OVER ANY LAND THAT DISCHARGES INTO THE BASIN FOR EROSION CONTROL WHEN BASIN IS BROUGHT ON–LINE. RODTSTOP AND PLUGS ARE REQUIRED TO ESTABLISH VEGETATION AT THE INVERT OF THE BASIN. REFER TO AREA DELINEATED ON SHEET L100 FOR PLANTING AREA. IT SHALL BE THE OWNERS/OWNERS CONTRACT REPRESENTATIVE'S RESPONSIBILITY TO DETERMINE TYPE OF VEGETATIVE COVER AT THE INVERT OF THE BIORETENTION BASIN. REFER TO DETAIL 1/401 AND 1(ALT)/401 FOR VEGETATION TYPE OPTIONS FOR BIORETENTION BASIN.*
6. *RUNOFF MUST INFILTRATE WITHIN 24–HOURS. BASINS UNABLE TO MAINTAIN THESE RATES MUST BE DEEP TILLED, REGRADED, AND IF NECESSARY REPLANTED TO RESTORE ORIGINAL INFILTRATION RATES.*
7. *ALL WORK TO BE CONDUCTED IN CONFORMANCE WITH APPLICABLE LOCAL, REGIONAL, AND STATE STORMWATER STANDARDS FOR THE PROJECT SITE AS APPROVED BY THE REGULATORY ENGINEER.*
8. *OWNER OR CONTRACTOR MUST CONSULT LANDSCAPE ARCHITECT OR ECOLOGICAL PLANTING AGENCY FOR APPROPRIATE PLANTS AND PLANTING CONFIGURATIONS – SEE SHEET L200.*

INFILTRATION DEVICES ARE DESIGNED IN ACCORDANCE WITH THE SPECIFICATIONS OF THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES (WDNR), COUNTY, MUNICIPALITY, AND ENGINEERING STANDARD OF CARE. ALL DESIGNATED INFILTRATION AREAS (e.g. RAIN GARDENS, INFILTRATION BASINS, BIORETENTION DEVICES) SHALL BE FENCED PRIOR TO CONSTRUCTION AND REMAIN UNDISTURBED AND PROTECTED DURING THE CONSTRUCTION OF PROPOSED SITE IMPROVEMENTS. PROPOSED BIORETENTION DEVICES SHALL NOT BE CONSTRUCTED UNTIL THE DEVICE'S CONTRIBUTING WATERSHED AREA MEETS ESTABLISHED VEGETATION REQUIREMENTS SET FORTH WITHIN THE RESPECTIVE WDNR TECHNICAL STANDARDS. IF THE LOCATION OF THE INFILTRATION AREA CONFLICTS WITH CONSTRUCTION STAGING AND/OR CONSTRUCTION TRAFFIC AND IS DISTURBED, COMPACTION MITIGATION WILL BE REQUIRED AT THE CONTRACTOR'S EXPENSE.

THE CONTRACTOR IS REQUIRED TO PROVIDE QUALIFIED STAFF FOR INSPECTION AND OBSERVATION OF THE CONSTRUCTION ACTIVITIES RELATING TO ALL JOB SITE REGULATORY COMPLIANCE INCLUDING THE PROTECTION AND CONSTRUCTION OF ALL STORMWATER MANAGEMENT FEATURES. ANY OBSERVATION OF PLAN OR SITE DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER OF RECORD PRIOR TO CONSTRUCTION.

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CLIENT:
ROYAL CAPITAL

CLIENT ADDRESS:
710 N PLANKINTON AVE. SUITE 300
MILWAUKEE, WI 53203

PRELIMINARY
NOT FOR CONSTRUCTION

PROJECT:
NINE SPRINGS

PROJECT LOCATION:
FITCHBURG, WI 53711
DANE COUNTY

PLAN MODIFICATIONS:

#	Date:	Description:
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Designed By: MSS
Reviewed By: ACG
Approved By:

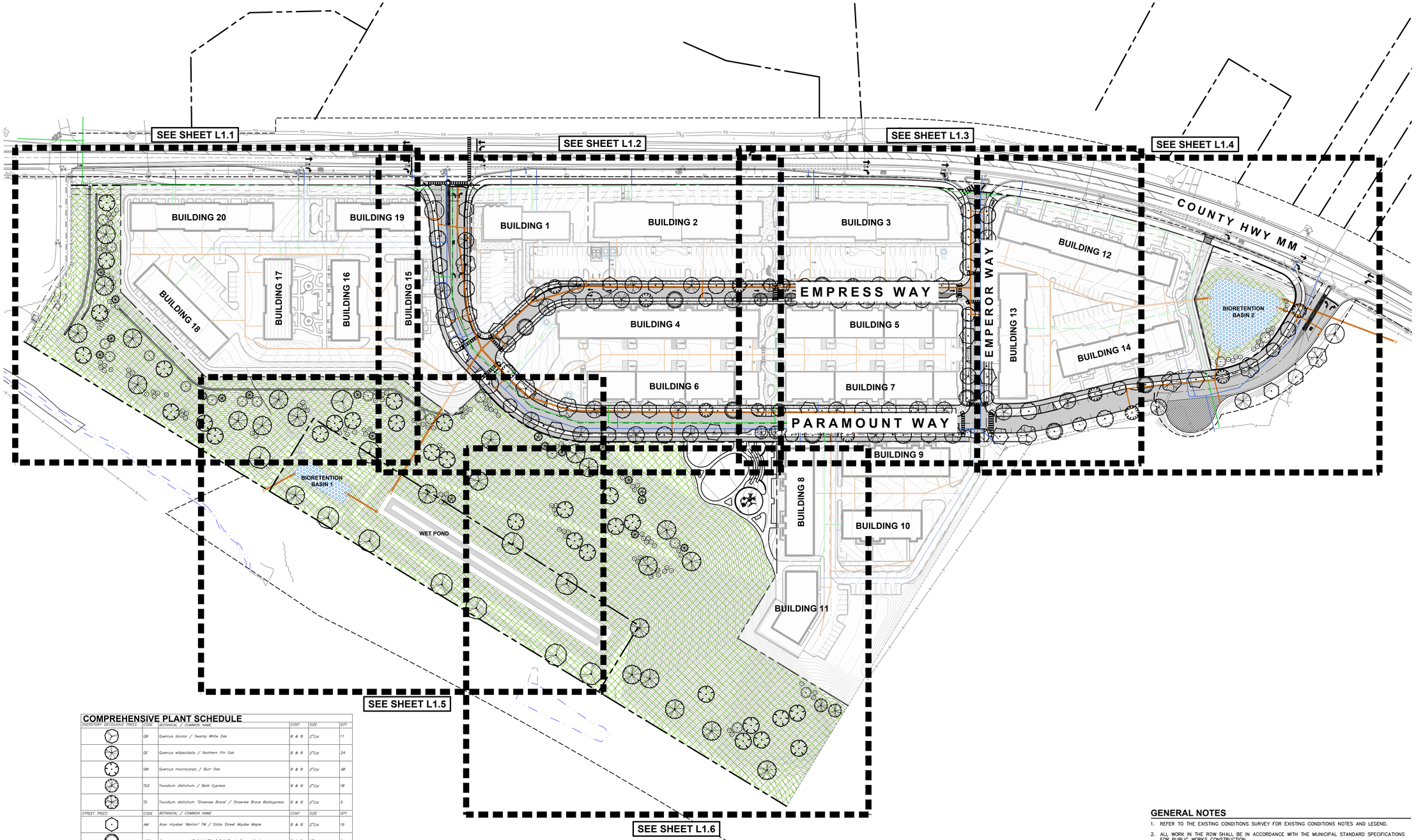
SHEET TITLE:
STORMWATER DETAILS

SHEET NUMBER:
C8.2

JSD PROJECT NO: 21-10566

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COMPREHENSIVE PLANT SCHEDULE

OVERSTORY DECIDUOUS TREES	CODE	BOTANICAL / COMMON NAME	CONT	SIZE	QTY
	QB	*Quercus bicolor* / Swamp White Oak	B & B	2"Cal	11
	QE	*Quercus ellipsoidalis* / Northern Pin Oak	B & B	2"Cal	24
	QM	*Quercus macrocarpa* / Burr Oak	B & B	2"Cal	38
	TD2	*Taxodium distichum* / Bald Cypress	B & B	2"Cal	18
	TD	*Taxodium distichum 'Shawnee Brave'* / Shawnee Brave Baldcypress	B & B	2"Cal	5
STREET TREES	CODE	BOTANICAL / COMMON NAME	CONT	SIZE	QTY
	AM	*Acer miyabei 'Morton' TM* / State Street Miyabe Maple	B & B	2"Cal	19
	AB2	*Acer saccharum 'Bailsta' TM* / Fall Fiesta Sugar Maple	B & B	2"Cal	9
	CC2	*Celtis occidentalis* / Common Hackberry	B & B	2"Cal	11
	GBA	*Ginko biloba 'Autumn Gold'* / Autumn Gold Ginko	B & B	2"Cal	23
	GTS	*Gymnocladus dioica 'McKBranched'* / Decaf Kentucky Coffeetree	B & B	2"Cal	4
	PA2	*Platanus x acerifolia 'Exclamation!'* / London Planetree	B & B	1.5"Cal	14
	QE2	*Quercus ellipsoidalis* / Northern Pin Oak	B & B	2"Cal	8
	TC2	*Tilia cordata 'Greenspire'* / Greenspire Linden	B & B	2"Cal	8
	UN2	*Ulmus americana 'New Horizon'* / New Horizon American Elm	B & B	2"Cal	8
	UC2	*Ulmus x 'Frontier'* / American Elm	B & B	2"Cal	9
TALL EVERGREEN TREES	CODE	BOTANICAL / COMMON NAME	CONT	SIZE	QTY
	PG	*Picea glauca 'Densata'* / Black Hills Spruce	B & B	Min. 4' Ht.	19
	PGM	*Picea glauca densata 'MonChet'* / Sunburst Black Hills Spruce	B & B	Min. 4' Ht.	14
DECIDUOUS SHRUBS	CODE	BOTANICAL / COMMON NAME	CONT	SIZE	QTY
	RG4	*Rhus glabra* / Smooth Sumac	3 gal	3–4' Ht.	137
PERENNIALS	CODE	BOTANICAL / COMMON NAME	CONT	SIZE	QTY
	PA3	*Perovskia atriplicifolia 'Little Spire' TM* / Little Spire Russian Sage	1 gal	Cont.	38
	RS3	*Rudbeckia subtomentosa* / Sweet Black-eyed Susan	1 gal	Min. 18"–24"	48
	SAJ	*Sedum x 'Autumn Joy'* / Autumn Joy Sedum	1 gal	Cont.	18
ORNAMENTAL GRASSES	CODE	BOTANICAL / COMMON NAME	CONT	SIZE	QTY
	CK2	*Calamagrostis x acutiflora 'Karl Foerster'* / Feather Reed Grass	1 gal	18–12" Ht.	38

GENERAL NOTES

1. REFER TO THE EXISTING CONDITIONS SURVEY FOR EXISTING CONDITIONS NOTES AND LEGEND.
2. ALL WORK IN THE ROW SHALL BE IN ACCORDANCE WITH THE MUNICIPAL STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
3. JSD SHALL BE HELD HARMLESS AND DOES NOT WARRANT ANY DEVIATIONS BY THE OWNER/CONTRACTOR FROM THE APPROVED CONSTRUCTION PLANS THAT MAY RESULT IN DISCIPLINARY ACTIONS BY ANY OR ALL REGULATORY AGENCIES.
4. DRAWING FOR REVIEW – NOT FOR CONSTRUCTION UNLESS OTHERWISE NOTED IN THE TITLE BLOCK.
5. THE LANDSCAPE CONTRACTOR SHALL COORDINATE ALL FINE GRADING AND TOPSOILING WITH GENERAL CONTRACTOR
6. REFER TO "LANDSCAPE DETAILS AND NOTES" SHEET FOR ADDITIONAL DETAILS, NOTES AND SPECIFICATION INFORMATION INCLUDING MATERIALS, GUARANTEE AND EXECUTION RELATED TO LANDSCAPE PLAN
7. CONTRACTOR SHALL REVIEW SITE CONDITIONS FOR UTILITY CONFLICTS, DRAINAGE ISSUES, SUBSURFACE ROCK, AND PLANT PLACEMENT CONFLICTS PRIOR TO PLANT INSTALLATION. REPORT ANY CONDITIONS THAT MAY HAVE ADVERSE IMPACT ON PLANTING OPERATIONS TO LANDSCAPE ARCHITECT
8. DO NOT COMMENCE PLANTING OPERATIONS UNTIL ALL ADJACENT SITE IMPROVEMENTS, IRRIGATION INSTALLATION (IF APPLICABLE), AND FINISH GRADING ARE COMPLETE

LEGEND

PROPERTY LINE

PRAIRIE SEED MIX

NATIVE VEGETATIVE MAT (NVM)

north

SCALE IN FEET

70' 0 70'

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CLIENT:
ROYAL CAPITAL

CLIENT ADDRESS:
710 N. PLANKINTON AVE. SUITE 300
MILWAUKEE, WI 53203

PROJECT:
NINE SPRINGS

PROJECT LOCATION:
FITCHBURG, WI 53711
DANE COUNTY

PRELIMINARY
NOT FOR CONSTRUCTION

PLAN MODIFICATIONS:

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1	06.21.2022	ADR SUBMITTAL
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Design/Drawn:
Approved:

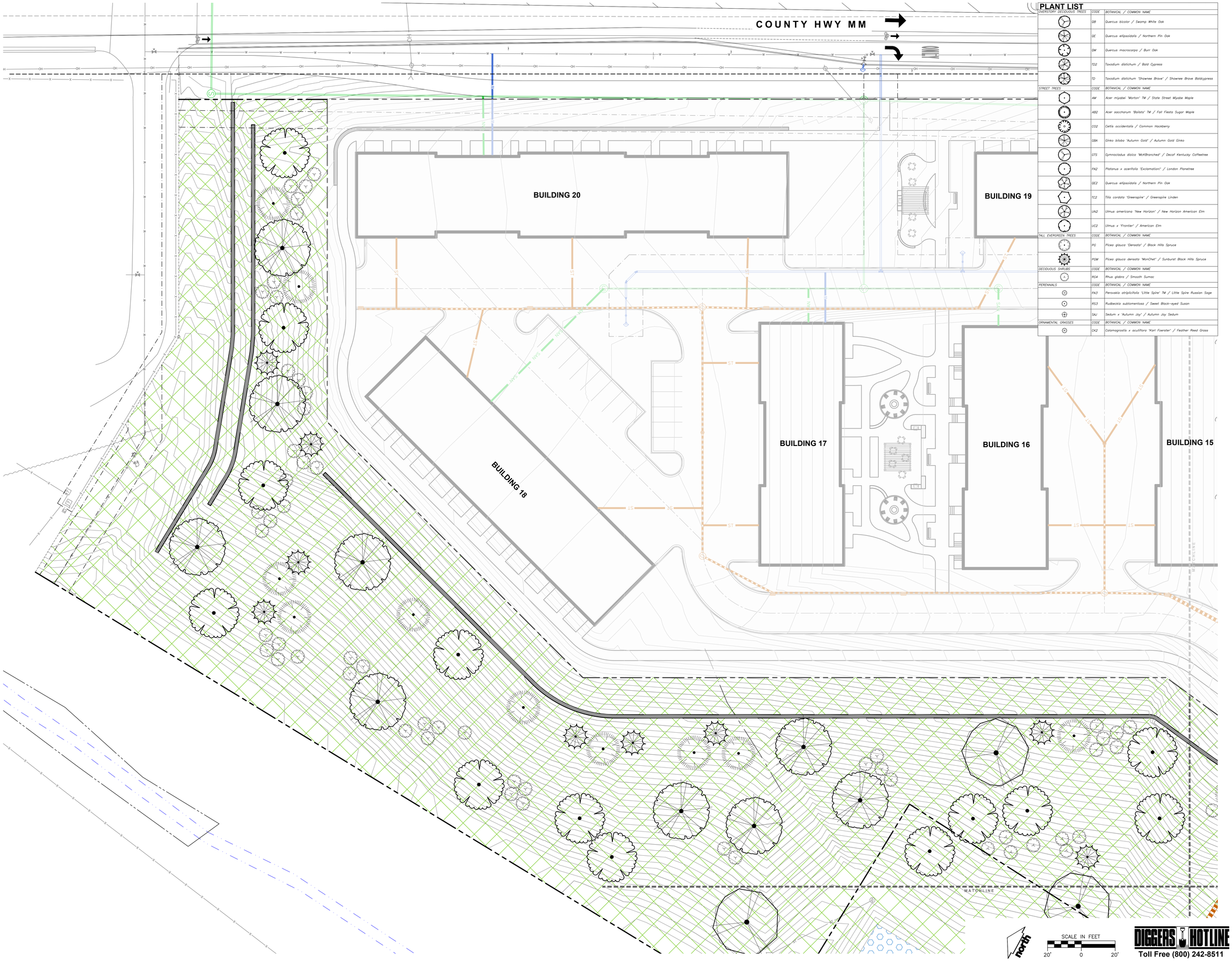
SHEET TITLE:
LANDSCAPE PLAN - OVERALL

SHEET NUMBER:
L1.0

JSD PROJECT NO: 21-10566

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PLANT LIST

OVERSTORY DECIDUOUS TREES	CODE	BOTANICAL / COMMON NAME
	QB	Quercus bicolor / Swamp White Oak
	QE	Quercus ellipsoidalis / Northern Pin Oak
	QM	Quercus macrocarpa / Burr Oak
	TD2	Taxodium distichum / Bald Cypress
	TD	Taxodium distichum 'Shawnee Brave' / Shawnee Brave Baldcypress
STREET TREES	**CODE**	**BOTANICAL / COMMON NAME**
	AM	Acer miyabei 'Morton' TM / State Street Miyabe Maple
	AB2	Acer saccharum 'Bailsta' TM / Fall Fiesta Sugar Maple
	CO2	Celtis occidentalis / Common Hackberry
	GBA	Ginko biloba 'Autumn Gold' / Autumn Gold Ginko
	GTS	Gymnocladus dioica 'McKBranched' / Decaf Kentucky Coffeetree
	PA2	Platanus x acerifolia 'Exclamation!' / London Planetree
	QE2	Quercus ellipsoidalis / Northern Pin Oak
	TC2	Tilia cordata 'Greenspire' / Greenspire Linden
	UN2	Ulmus americana 'New Horizon' / New Horizon American Elm
	UC2	Ulmus x 'Frontier' / American Elm
TALL EVERGREEN TREES	**CODE**	**BOTANICAL / COMMON NAME**
	PG	Picea glauca 'Densata' / Black Hills Spruce
	PGM	Picea glauca densata 'MonChet' / Sunburst Black Hills Spruce
DECIDUOUS SHRUBS	**CODE**	**BOTANICAL / COMMON NAME**
	RG4	Rhus glabra / Smooth Sumac
PERENNIALS	**CODE**	**BOTANICAL / COMMON NAME**
	PA3	Perovskia atriplicifolia 'Little Spire' TM / Little Spire Russian Sage
	RS3	Rudbeckia subtomentosa / Sweet Black-eyed Susan
	SAJ	Sedum x 'Autumn Joy' / Autumn Joy Sedum
ORNAMENTAL GRASSES	**CODE**	**BOTANICAL / COMMON NAME**
	CK2	Calamagrostis x acutiflora 'Karl Foerster' / Feather Reed Grass

north

SCALE IN FEET
20' 0 20'

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Design/Drawn: MRA/MWS
Approved: KJY

SHEET TITLE:
LANDSCAPE PLAN - DETAILED

SHEET NUMBER:
L1.1

JSD PROJECT NO: 21-10566

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File: I:\2021\21106683\WD\Landscape Sheets\21106683WD Landscape Sheets (P-Plat).dwg Layout: L1.1 User: mammel Plotted: Dec 13, 2022 - 5:47pm Xrefs:

COUNTY HWY MM

BUILDING 1

BUILDING 2

BUILDING 4

BUILDING 5

BUILDING 6

BUILDING 7

EMPRESS WAY

PARAMOUNT WAY

MATCHLINE

(18) RS3
(18) SAJ
(12) CK2
(1) GTS
(1) AM
(18) PA3
(18) RS3
(1) PA2
(1) GBA
(1) QE2
(1) TC2
(1) UN2
(1) AB2
(1) CO2
(1) TD2
(1) UC2

PLANT LIST

OVERSTORY DECIDUOUS TREES	CODE	BOTANICAL / COMMON NAME
	QB	Quercus bicolor / Swamp White Oak
	QE	Quercus ellipsoidalis / Northern Pin Oak
	QM	Quercus macrocarpa / Burr Oak
	TD2	Taxodium distichum / Bald Cypress
	TD	Taxodium distichum 'Shawnee Brave' / Shawnee Brave Baldcypress
STREET TREES	**CODE**	**BOTANICAL / COMMON NAME**
	AM	Acer miyabei 'Morton' TM / State Street Miyabe Maple
	AB2	Acer saccharum 'Bailsta' TM / Fall Fiesta Sugar Maple
	CO2	Celtis occidentalis / Common Hackberry
	GBA	Ginko biloba 'Autumn Gold' / Autumn Gold Ginko
	GTS	Gymnocladus dioica 'McKBranched' / Decaf Kentucky Coffeetree
	PA2	Platanus x acerifolia 'Exclamation!' / London Planetree
	QE2	Quercus ellipsoidalis / Northern Pin Oak
	TC2	Tilia cordata 'Greenspire' / Greenspire Linden
	UN2	Ulmus americana 'New Horizon' / New Horizon American Elm
	UC2	Ulmus x 'Frontier' / American Elm
TALL EVERGREEN TREES	**CODE**	**BOTANICAL / COMMON NAME**
	PG	Picea glauca 'Densata' / Black Hills Spruce
	PGM	Picea glauca densata 'MonChet' / Sunburst Black Hills Spruce
DECIDUOUS SHRUBS	**CODE**	**BOTANICAL / COMMON NAME**
	RG4	Rhus glabra / Smooth Sumac
PERENNIALS	**CODE**	**BOTANICAL / COMMON NAME**
	PA3	Perovskia atriplicifolia 'Little Spire' TM / Little Spire Russian Sage
	RS3	Rudbeckia subtomentosa / Sweet Black-eyed Susan
	SAJ	Sedum x 'Autumn Joy' / Autumn Joy Sedum
ORNAMENTAL GRASSES	**CODE**	**BOTANICAL / COMMON NAME**
	CK2	Calamagrostis x acutiflora 'Karl Foerster' / Feather Reed Grass

north

SCALE IN FEET
20' 0 20'

DIGGERS HOTLINE
Toll Free (800) 242-8511

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jsdinc.com
MADISON REGIONAL OFFICE
161 HORIZON DRIVE, SUITE 101
VERONA, WISCONSIN 53593
P. 608.848.5060

CLIENT:
ROYAL CAPITAL

CLIENT ADDRESS:
710 N. PLANKINTON AVE. SUITE 300
MILWAUKEE, WI 53203

PROJECT:
NINE SPRINGS

PROJECT LOCATION:
FITCHBURG, WI 53711
DANE COUNTY

PRELIMINARY
NOT FOR CONSTRUCTION

PLAN MODIFICATIONS:

#	Date:	Description:
1	06.21.2022	ADR SUBMITTAL
2	12.14.2022	P-PLAT SUBMITTAL
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Design/Drawn: MRA/MWS
Approved: KJT

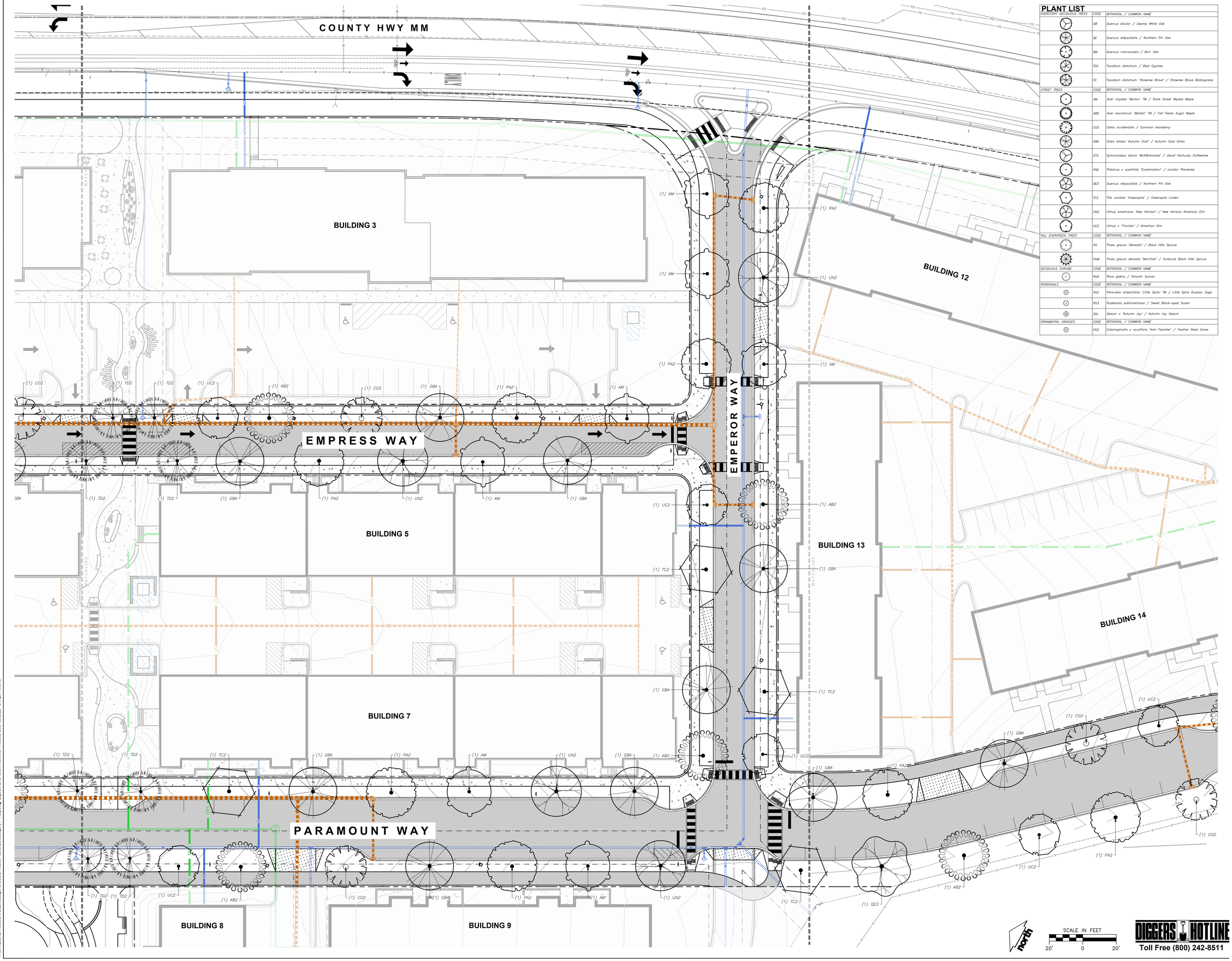
SHEET TITLE:
LANDSCAPE PLAN - DETAILED

SHEET NUMBER:
L1.2

JSD PROJECT NO: 21-10566

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PLANT LIST

OVERSTORY DECIDUOUS TREES	CODE	BOTANICAL / COMMON NAME
	QB	Quercus bicolor / Swamp White Oak
	QE	Quercus ellipsoidalis / Northern Pin Oak
	QM	Quercus macrocarpa / Burr Oak
	TD2	Taxodium distichum / Bald Cypress
	TD	Taxodium distichum 'Shawnee Brave' / Shawnee Brave Baldcypress
STREET TREES	**CODE**	**BOTANICAL / COMMON NAME**
	AM	Acer miyabei 'Morton' TM / State Street Miyabe Maple
	AB2	Acer saccharum 'Bailsta' TM / Fall Fiesta Sugar Maple
	CO2	Celtis occidentalis / Common Hackberry
	GBA	Ginko biloba 'Autumn Gold' / Autumn Gold Ginko
	GTS	Gymnocladus dioica 'McKBranched' / Decaf Kentucky Coffeetree
	PA2	Platanus x acerifolia 'Exclamation!' / London Planetree
	QE2	Quercus ellipsoidalis / Northern Pin Oak
	TC2	Tilia cordata 'Greenspire' / Greenspire Linden
	UN2	Ulmus americana 'New Horizon' / New Horizon American Elm
	UC2	Ulmus x 'Frontier' / American Elm
TALL EVERGREEN TREES	**CODE**	**BOTANICAL / COMMON NAME**
	PG	Picea glauca 'Densata' / Black Hills Spruce
	PGM	Picea glauca densata 'MonChet' / Sunburst Black Hills Spruce
DECIDUOUS SHRUBS	**CODE**	**BOTANICAL / COMMON NAME**
	RG4	Rhus glabra / Smooth Sumac
PERENNIALS	**CODE**	**BOTANICAL / COMMON NAME**
	PA3	Perovskia atriplicifolia 'Little Spire' TM / Little Spire Russian Sage
	RS3	Rudbeckia subtomentosa / Sweet Black-eyed Susan
	SAJ	Sedum x 'Autumn Joy' / Autumn Joy Sedum
ORNAMENTAL GRASSES	**CODE**	**BOTANICAL / COMMON NAME**
	CK2	Calamagrostis x acutiflora 'Karl Foerster' / Feather Reed Grass

north

SCALE IN FEET
20' 0 20'

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DANE COUNTY

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Design/Drawn: MRA/MWS
Approved: KJT

SHEET TITLE:
LANDSCAPE PLAN - DETAILED

SHEET NUMBER:
L1.3

JSD PROJECT NO: 21-10566

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PLANT LIST

OVERSTORY DECIDUOUS TREES	CODE	BOTANICAL / COMMON NAME
	QB	Quercus bicolor / Swamp White Oak
	QE	Quercus ellipsoidalis / Northern Pin Oak
	QM	Quercus macrocarpa / Burr Oak
	TD2	Taxodium distichum / Bald Cypress
	TD	Taxodium distichum 'Shawnee Brave' / Shawnee Brave Baldcypress
STREET TREES	**CODE**	**BOTANICAL / COMMON NAME**
	AM	Acer miyabei 'Morton' TM / State Street Miyabe Maple
	AB2	Acer saccharum 'Bailsta' TM / Fall Fiesta Sugar Maple
	CO2	Celtis occidentalis / Common Hackberry
	GBA	Ginko biloba 'Autumn Gold' / Autumn Gold Ginko
	GTS	Gymnocladus dioica 'McKBranched' / Decaf Kentucky Coffeetree
	PA2	Platanus x acerifolia 'Exclamation!' / London Planetree
	QE2	Quercus ellipsoidalis / Northern Pin Oak
	TC2	Tilia cordata 'Greenspire' / Greenspire Linden
	UN2	Ulmus americana 'New Horizon' / New Horizon American Elm
	UC2	Ulmus x 'Frontier' / American Elm
TALL EVERGREEN TREES	**CODE**	**BOTANICAL / COMMON NAME**
	PG	Picea glauca 'Densata' / Black Hills Spruce
	PGM	Picea glauca densata 'MonChet' / Sunburst Black Hills Spruce
DECIDUOUS SHRUBS	**CODE**	**BOTANICAL / COMMON NAME**
	RG4	Rhus glabra / Smooth Sumac
PERENNIALS	**CODE**	**BOTANICAL / COMMON NAME**
	PA3	Perovskia atriplicifolia 'Little Spire' TM / Little Spire Russian Sage
	RS3	Rudbeckia subtomentosa / Sweet Black-eyed Susan
	SAJ	Sedum x 'Autumn Joy' / Autumn Joy Sedum
ORNAMENTAL GRASSES	**CODE**	**BOTANICAL / COMMON NAME**
	CK2	Calamagrostis x acutiflora 'Karl Foerster' / Feather Reed Grass

COUNTY HWY MM

BUILDING 12

BUILDING 13

BUILDING 14

BIORETENTION BASIN 2

EMPEROR WAY

PARAMOUNT WAY

LONIELLOW COURT

(1) PA2
(1) UN2
(1) AM
(1) AB2
(1) GBA
(1) TC2
(1) UC2
(1) CO2
(1) QE2
(1) GTS
(1) PG
(3) RG4
(4) RG4
(10) RS3
(10) PA3
(20) CK2

north

SCALE IN FEET
20' 0 20'

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MILWAUKEE, WI 53203

PROJECT:
NINE SPRINGS

PROJECT LOCATION:
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DANE COUNTY

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Design/Drawn: MRA/MWS
Approved: KJY

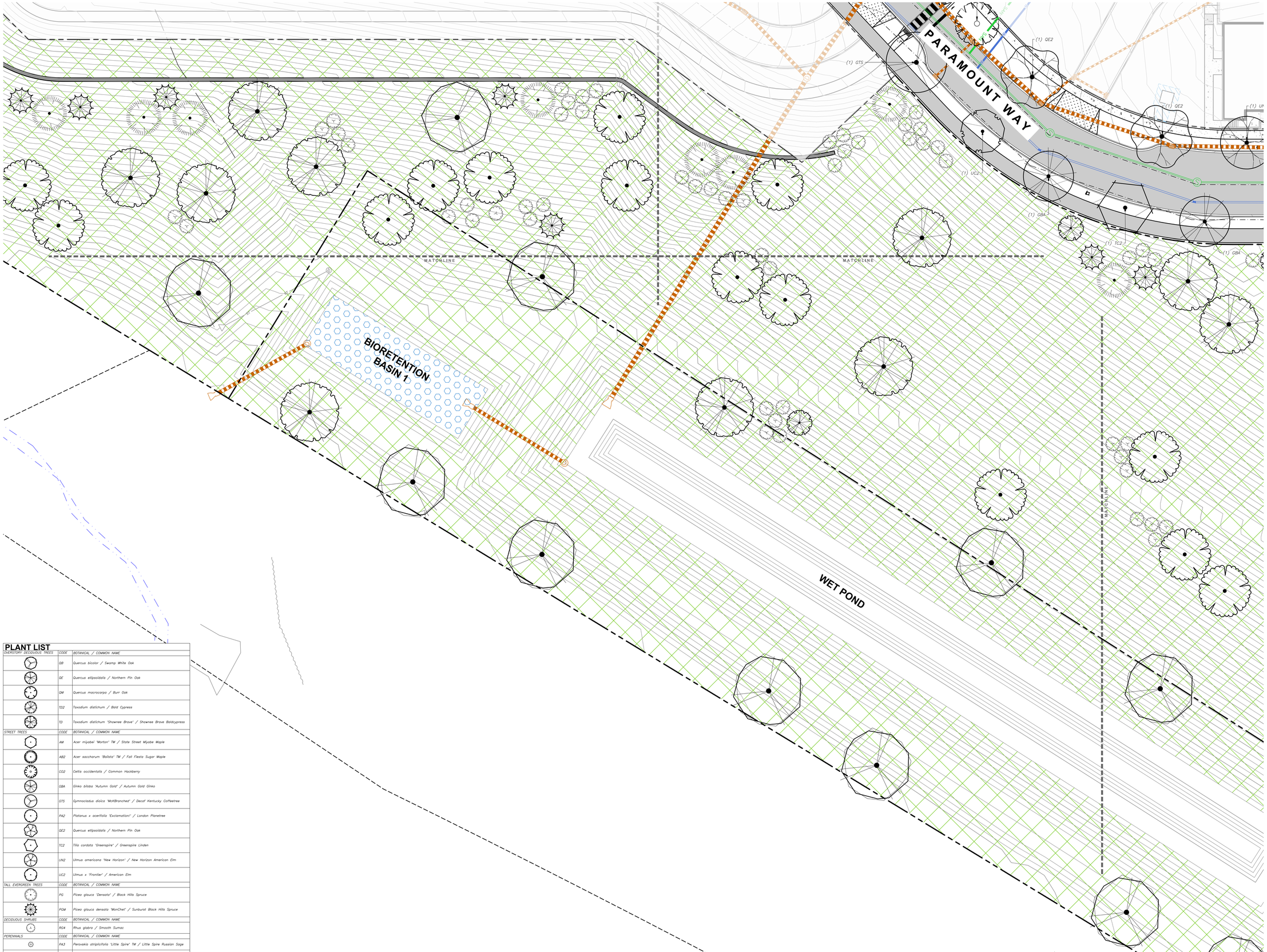
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SHEET NUMBER:
L1.4

JSD PROJECT NO: 21-10566

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PLANT LIST

OVERSTORY DECIDUOUS TREES	CODE	BOTANICAL / COMMON NAME
	QB	Quercus bicolor / Swamp White Oak
	QE	Quercus ellipsoidalis / Northern Pin Oak
	QM	Quercus macrocarpa / Burr Oak
	TD2	Taxodium distichum / Bald Cypress
	TD	Taxodium distichum 'Shawnee Brave' / Shawnee Brave Baldcypress
STREET TREES	CODE	BOTANICAL / COMMON NAME
	AM	Acer miyabei 'Morton' TM / State Street Miyabe Maple
	AB2	Acer saccharum 'Bailsta' TM / Fall Fiesta Sugar Maple
	CO2	Celtis occidentalis / Common Hackberry
	GBA	Ginko biloba 'Autumn Gold' / Autumn Gold Ginko
	GTS	Gymnocladus dioica 'McKBranched' / Decaf Kentucky Coffeetree
	PA2	Platanus x acerifolia 'Exclamation!' / London Planetree
	QE2	Quercus ellipsoidalis / Northern Pin Oak
	TC2	Tilia cordata 'Greenspire' / Greenspire Linden
	UN2	Ulmus americana 'New Horizon' / New Horizon American Elm
	UC2	Ulmus x 'Frontier' / American Elm
TALL EVERGREEN TREES	CODE	BOTANICAL / COMMON NAME
	PG	Picea glauca 'Densata' / Black Hills Spruce
	PGM	Picea glauca densata 'MonChet' / Sunburst Black Hills Spruce
DECIDUOUS SHRUBS	CODE	BOTANICAL / COMMON NAME
	RG4	Rhus glabra / Smooth Sumac
PERENNIALS	CODE	BOTANICAL / COMMON NAME
	PA3	Perovskia atriplicifolia 'Little Spire' TM / Little Spire Russian Sage
	RS3	Rudbeckia subtomentosa / Sweet Black-eyed Susan
	SA1	Sedum x 'Autumn Joy' / Autumn Joy Sedum
ORNAMENTAL GRASSES	CODE	BOTANICAL / COMMON NAME
	CK2	Calamagrostis x acutiflora 'Karl Foerster' / Feather Reed Grass

north

SCALE IN FEET
20' 0 20'

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PROJECT:
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PROJECT LOCATION:
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DANE COUNTY

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Design/Drawn: MRA/MWS
Approved: KJY

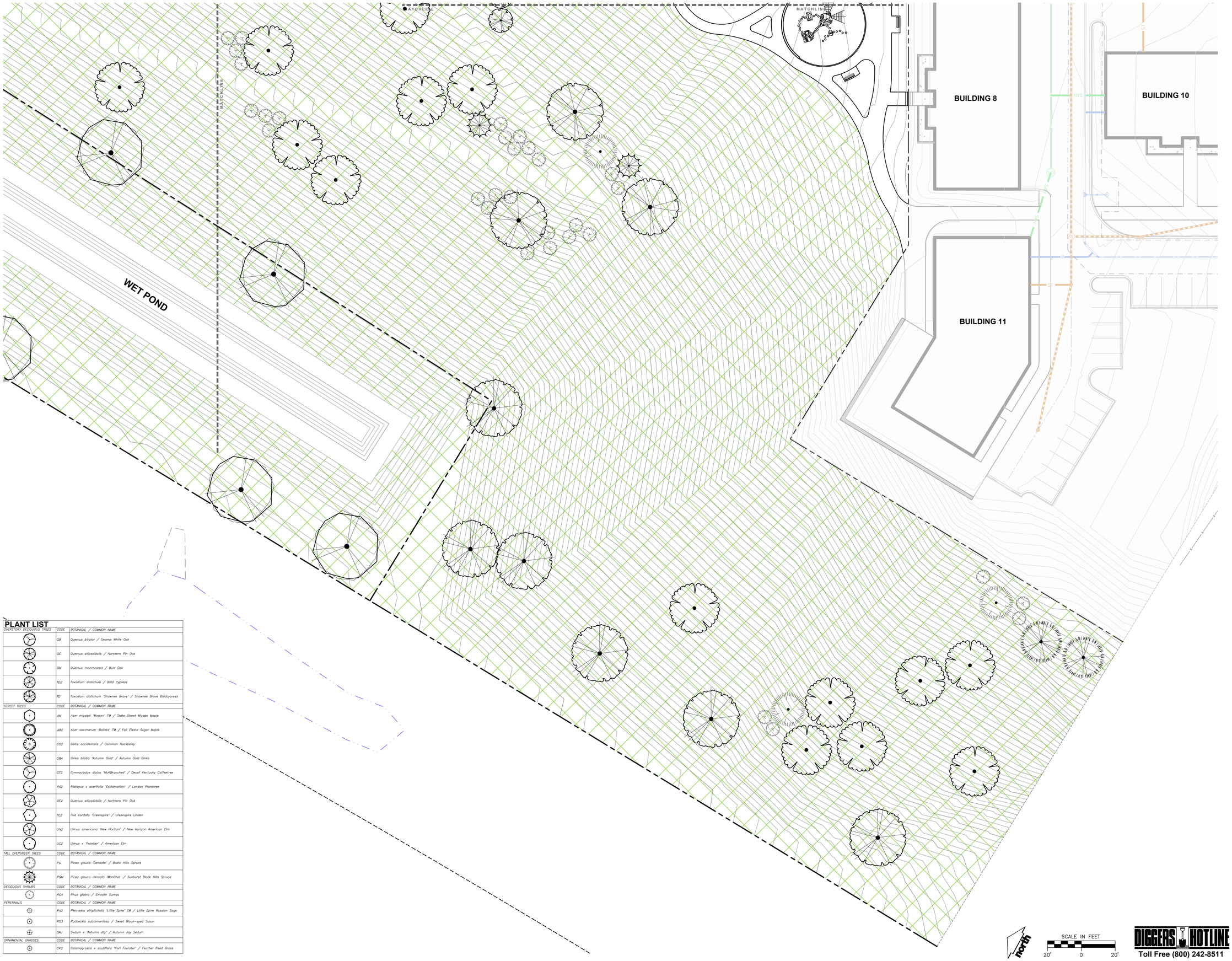
SHEET TITLE:
LANDSCAPE PLAN - DETAILED

SHEET NUMBER:
L1.5

JSD PROJECT NO: 21-10566

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File: I:\2021\21105682\WG\Landscape Sheets\21105682 Public Landscape (1-Plat).dwg Layout: L1.6 User: mammel Plotted: Dec 13, 2022 - 8:47pm Xref's:

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CLIENT:
ROYAL CAPITAL

CLIENT ADDRESS:
710 N. PLANKINTON AVE. SUITE 300
MILWAUKEE, WI 53203

PROJECT:
NINE SPRINGS

PROJECT LOCATION:
FITCHBURG, WI 53711
DANE COUNTY

PRELIMINARY
NOT FOR CONSTRUCTION

PLAN MODIFICATIONS:

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1	06.21.2022	ADR SUBMITTAL
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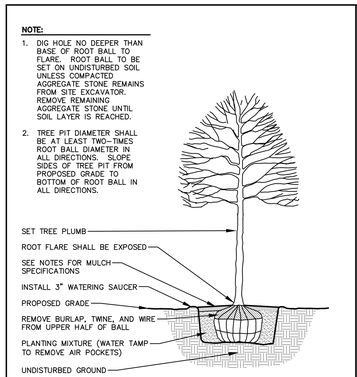
Design/Drawn: MRA/MWS
Approved: KJY

SHEET TITLE:
LANDSCAPE PLAN - DETAILED

SHEET NUMBER:
L1.6

JSD PROJECT NO: 21-10566

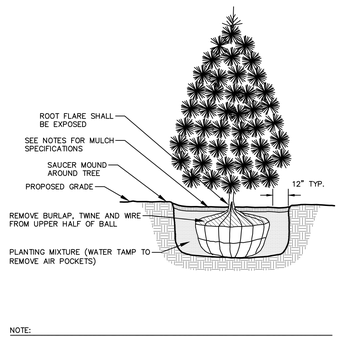
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DECIDUOUS TREE PLANTING DETAIL

N.T.S.

REV. 10-29-2021



NOTE:
1. DIG HOLE NO DEEPER THAN BASE OF ROOT BALL TO FLARE. ROOT BALL TO BE SET ON UNDISTURBED SOIL UNLESS COMPACTED AGGREGATE STONE REMAINS FROM SITE EXCAVATOR. REMOVE REMAINING AGGREGATE STONE UNTIL SOIL LAYER IS REACHED

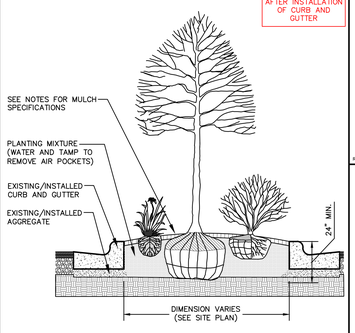
EVERGREEN TREE PLANTING DETAIL

N.T.S.

REV. 01-03-2019

MOUND TOPSOIL 12" ABOVE CURB WITH TOPSOIL PLANT MIX OR AMENDED NATIVE SOILS

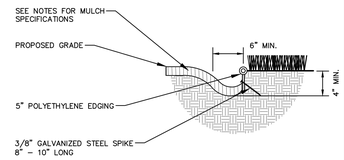
PARKING ISLAND TO BE DUG FREE OF AGGREGATE TO A MINIMUM DEPTH OF 24" AND PREPARED FOR PLANTINGS AFTER INSTALLATION OF CURB AND GUTTER



PARKING ISLAND LANDSCAPE DETAIL

N.T.S.

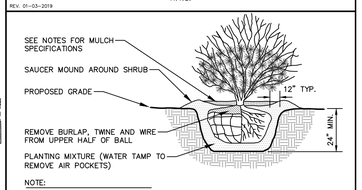
REV. 01-03-2019



POLYETHYLENE LANDSCAPE EDGING DETAIL

N.T.S.

REV. 01-03-2019

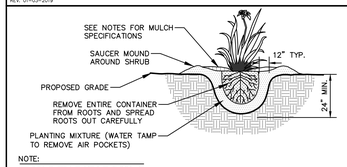


NOTE:
1. ROOT FLARE TO BE EXPOSED.

SHRUB PLANTING DETAIL

N.T.S.

REV. 01-03-2019



NOTE:
1. ROOT FLARE TO BE EXPOSED

PERENNIAL/ORNAMENTAL GRASS PLANTING DETAIL

N.T.S.

REV. 01-03-2019

COMPREHENSIVE PLANT SCHEDULE

OVERSTORY DECIDUOUS TREES	CODE	BOTANICAL / COMMON NAME	CONT	SIZE	QTY
	QB	Quercus bicolor / Swamp White Oak	B & B	2"Cal	11
	QE	Quercus ellipsoidalis / Northern Pin Oak	B & B	2"Cal	24
	QM	Quercus macrocarpa / Burr Oak	B & B	2"Cal	3Ø
	TD2	Taxodium distichum / Bald Cypress	B & B	2"Cal	1Ø
	TD	Taxodium distichum 'Shawnee Brave' / Shawnee Brave Baldcypress	B & B	2"Cal	5
STREET TREES	CODE	BOTANICAL / COMMON NAME	CONT	SIZE	QTY
	AM	Acer miyabei 'Morton' TM / State Street Miyabe Maple	B & B	2"Cal	19
	AB2	Acer saccharum 'Bailsta' TM / Fall Fiesta Sugar Maple	B & B	2"Cal	9
	CO2	Celtis occidentalis / Common Hackberry	B & B	2"Cal	11
	GBA	Ginko biloba 'Autumn Gold' / Autumn Gold Ginko	B & B	2"Cal	23
	GTS	Gymnocladus dioica 'McKBranched' / Decaf Kentucky Coffeetree	B & B	2"Cal	4
	PA2	Platanus x acerifolia 'Exclamation!' / London Planetree	B & B	1.5"Cal	14
	QE2	Quercus ellipsoidalis / Northern Pin Oak	B & B	2"Cal	8
	TC2	Tilia cordata 'Greenspire' / Greenspire Linden	B & B	2"Cal	8
	UN2	Ulmus americana 'New Horizon' / New Horizon American Elm	B & B	2"Cal	8
	UC2	Ulmus x 'Frontier' / American Elm	B & B	2"Cal	9
TALL EVERGREEN TREES	CODE	BOTANICAL / COMMON NAME	CONT	SIZE	QTY
	PG	Picea glauca 'Densata' / Black Hills Spruce	B & B	Min. 4' Ht.	19
	PGM	Picea glauca densata 'MonChet' / Sunburst Black Hills Spruce	B & B	Min. 4' Ht.	14
DECIDUOUS SHRUBS	CODE	BOTANICAL / COMMON NAME	CONT	SIZE	QTY
	RG4	Rhus glabra / Smooth Sumac	3 gal	3-4' Ht.	137
PERENNIALS	CODE	BOTANICAL / COMMON NAME	CONT	SIZE	QTY
	PA3	Perovskia atriplicifolia 'Little Spire' TM / Little Spire Russian Sage	1 gal	Cont.	3Ø
	RS3	Rudbeckia subtomentosa / Sweet Black-eyed Susan	1 gal	Min. 18"-24"	4Ø
	SAJ	Sedum x 'Autumn Joy' / Autumn Joy Sedum	1 gal	Cont.	1Ø
ORNAMENTAL GRASSES	CODE	BOTANICAL / COMMON NAME	CONT	SIZE	QTY
	CK2	Calamagrostis x acutiflora 'Karl Foerster' / Feather Reed Grass	1 gal	1Ø-12" Ht.	38

GENERAL NOTES

1. GENERAL: ALL WORK IN THE R-O-W AND PUBLIC EASEMENTS SHALL BE IN ACCORDANCE WITH LOCAL MUNICIPAL REQUIREMENTS. JSD SHALL BE HELD HARMLESS AND DOES NOT WARRANT ANY DEVIATIONS BY THE OWNER/CONTRACTOR FROM THE APPROVED CONSTRUCTION PLANS THAT MAY RESULT IN DISCIPLINARY ACTIONS BY ANY OR ALL REGULATORY AGENCIES. LOCATE ALL UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE DONE TO UTILITIES. CONTRACTOR MUST CALL 1-800-242-8511 FOR UTILITY LOCATIONS AT LEAST THREE DAYS PRIOR TO DIGGING. HAND DIG AND INSTALL ALL PLANTS THAT ARE NEAR EXISTING UTILITIES. PROTECT PREVIOUSLY INSTALLED WORK OF OTHER TRADES. CONTRACTOR IS RESPONSIBLE FOR STAKING THE PLANT MATERIALS FOR REVIEW BY OWNER PRIOR TO DIGGING AND PLACEMENT AND SHALL COORDINATE ALL FINE GRADING AND RESTORATION WITH THE GRADING CONTRACTOR.

2. DELIVERY AND HANDLING: DO NOT DELIVER MORE PLANT MATERIALS THAN CAN BE PLANTED IN ONE DAY, UNLESS ADEQUATE, APPROPRIATE AND SECURE STORAGE IS PROVIDED AND APPROVED BY OWNER'S REPRESENTATIVE. AT ALL TIMES, PROTECT ALL PLANT MATERIALS FROM WIND AND DIRECT SUN. PROTECT PLANTS WITH LEGIBLE IDENTIFICATION LABELS. PROTECT PLANTS DURING DELIVERY AND DO NOT PRUNE PRIOR TO DELIVERY. ALL TREES AND SHRUBS SHALL BE PLANTED ON THE DAY OF DELIVERY; IF THIS IS NOT POSSIBLE, PROTECT THE PLANT MATERIALS NOT PLANTED BY STORING THEM IN A SHADED, SECURE AREA, PROTECTING THE ROOT MASS WITH WET SOIL, MULCH, HAY OR OTHER SUITABLE MEDIUM. CONTRACTOR TO KEEP ALL PLANT MATERIALS ADEQUATELY WATERED TO PREVENT ROOT DESICCATION. DO NOT REMOVE CONTAINER GROWN STOCK FROM CONTAINERS BEFORE TIME OF PLANTING. DO NOT PICK UP CONTAINER OR BALLED PLANTS BY STEM OR ROOTS. ALL PLANTS SHALL BE LIFTED AND HANDLED FROM THE BOTTOM OF THE CONTAINER OR BALL. PERFORM ACTUAL PLANTING ONLY WHEN WEATHER AND SOIL CONDITIONS ARE SUITABLE IN ACCORDANCE WITH LOCALLY ACCEPTED BEST HORTICULTURAL PRACTICES.

3. MATERIALS - PLANTS: ALL PLANTS SHALL CONFORM TO THE LATEST VERSION OF THE AMERICAN STANDARD FOR NURSERY STOCK ANSI Z60.1. PLANTS SHALL BE TRUE TO SPECIES AND VARIETY SPECIFIED AND NURSERY GROWN IN ACCORDANCE WITH GOOD HORTICULTURAL PRACTICES UNDER CLIMATIC CONDITIONS SIMILAR TO THOSE IN THE LOCALITY OF THE PROJECT FOR AT LEAST 2 YEARS. PLANTS SHALL BE FRESHLY DUG (DURING THE MOST RECENT FAVORABLE HARVEST SEASON). PLANTS SHALL BE SO TRAINED IN DEVELOPMENT AND APPEARANCE AS TO BE UNQUESTIONABLY SUPERIOR IN FORM, COMPACTNESS, AND SYMMETRY. PLANTS SHALL BE SOUND, HEALTHY, VIGOROUS, WELL BRANCHED AND DENSELY FOLIATED WHEN IN LEAF, AND FREE OF DISEASE AND INSECTS (ADULT EGGS, PUPAE OR LARVAE). THEY SHALL HAVE HEALTHY, WELL-DEVELOPED ROOT SYSTEMS AND SHALL BE FREE FROM PHYSICAL DAMAGE OR OTHER CONDITIONS THAT WOULD PREVENT THRIVING GROWTH OR PREMATURE MORTALITY. PLANTS SHALL BE OF THE HIGHEST QUALITY, POSSESS TYPICAL GROWTH HABITS AND FORM FOR THEIR SPECIES AND BE FREE OF INJURY. PARKWAY TREES AND PARKING LOT TREES SHALL HAVE A MINIMUM BRANCHING HEIGHT OF SIX (6) FEET ABOVE THE GROUND TO ALLOW ADEQUATE VISUAL AND PHYSICAL CLEARANCE.

4. PRUNING: THE CONTRACTOR SHALL PRUNE ALL TREES AND REPAIR ANY INJURIES THAT OCCURRED DURING THE PLANTING PROCESS. DOUBLE LEADERS, DEAD BRANCHES, AND LIMBS DAMAGED OR BROKEN DURING THE PLANTING PROCESS, SHALL BE PRUNED. THIS SHALL BE THE ONLY PRUNING ALLOWED AT PLANTING. PRUNING SHALL CONFORM TO THE LATEST VERSION OF THE AMERICAN STANDARD FOR TREE CARE OPERATIONS, ANSI A300. PRUNE TREES IN ACCORDANCE WITH NAA GUIDELINES. DO NOT TOP TREES. PRUNE SHRUBS ACCORDING TO STANDARD HORTICULTURAL PRACTICES. ON CUTS OVER 3/4" IN DIAMETER AND BRUISES OR SCARS ON BARK, TRACE THE INJURED CAMBIUM LAYER BACK TO LIVING TISSUE AND REMOVE. SMOOTH AND SHAPE WOUNDS SO AS NOT TO RETAIN WATER. TREAT THE AREA WITH AN APPROVED INCONSPICUOUS LATEX BASED ANTISEPTIC TREE PAINT, IF PRUNING OCCURS "IN SEASON". DO NOT PRUNE ANY OAK TREES DURING THE MONTHS FROM APRIL TO OCTOBER.

5. CLEANUP: THE WORK AREA SHALL BE KEPT SAFE AND NEAT AT ALL TIMES. DISPOSED OF EXCESS SOIL, REMOVE ALL CUTTINGS AND WASTE MATERIALS. SOIL AND BRANCHES. BIND AND WRAP THESE MATERIALS, ANY REJECTED PLANTS, AND ANY OTHER DEBRIS RESULTING FROM ALL PLANTING TASKS AND PROMPTLY CLEAN UP AND REMOVE FROM THE PROJECT SITE. UNDER NO CIRCUMSTANCES SHALL THE ACCUMULATION OF SOIL, BRANCHES OR OTHER DEBRIS BE ALLOWED UPON A PUBLIC PROPERTY IN SUCH A MANNER AS TO RESULT IN A PUBLIC SAFETY HAZARD OR DAMAGE. LIKEWISE, UNDER NO CIRCUMSTANCES SHALL ANY DEBRIS OR INCIDENTAL MATERIALS BE ALLOWED UPON ADJACENT PRIVATE PROPERTY.

6. ANY SUBSTITUTIONS IN PLANT TYPE, LOCATION, OR SIZE SHALL BE APPROVED BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.

7. CONTRACTOR TO VERIFY PLANT MATERIAL QUANTITIES AND SQUARE FOOTAGES. QUANTITIES SHOWN ON PLAN TAKE PRECEDENCE OVER THOSE ON SCHEDULE.

LANDSCAPE MATERIAL NOTES

1. MATERIALS - PLANTING MIXTURE: ALL HOLES EXCAVATED FOR TREES, SHRUBS, PERENNIALS AND ORNAMENTAL GRASSES SHALL BE BACKFILLED WITH TWO (2) PARTS TOPSOIL, ONE (1) PART SAND AND ONE (1) PART COMPOST. SOIL MIXTURE SHALL BE WELL BLENDED PRIOR TO INSTALLATION.

2. MATERIALS - TOPSOIL: TOPSOIL TO BE CLEAN, FRIABLE LOAM FROM A LOCAL SOURCE, FREE FROM STONES OR DEBRIS OVER 3/4" IN DIAMETER, AND FREE FROM TOXINS OR OTHER DELETERIOUS MATERIALS. TOPSOIL SHALL HAVE A pH VALUE BETWEEN 6 AND 7. TOPSOIL AND PLANTING SOIL SHALL BE TESTED TO ENSURE CONFORMANCE WITH THESE SPECIFICATIONS AND SHALL BE AMENDED TO MEET THESE SPECIFICATIONS. PROVIDE TEST RESULTS TO OWNER'S REPRESENTATIVE PRIOR TO PLACEMENT. DO NOT PLACE FROZEN OR MUDDY TOPSOIL. APPLY SOIL AMENDMENTS TO ALL LANDSCAPE AREAS PER SOIL TEST.

3. MATERIALS - SHREDDED HARDWOOD BARK MULCH: ALL PLANTING AREAS LABELED ON PLAN SHALL RECEIVE CERTIFIED WEED FREE SHREDDED HARDWOOD BARK MULCH INSTALLED TO A MINIMUM AND CONSISTENT DEPTH OF 3-INCHES. SHREDDED HARDWOOD BARK MULCH SIZE & COLOR TO BE APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION. FERTILIZER SHALL BE IN ACCORDANCE WITH APPLICABLE LOCAL, COUNTY AND STATE REQUIREMENTS. SHREDDED HARDWOOD BARK MULCH AREAS SHALL NOT RECEIVE WOVEN WEED BARRIER FABRIC.

4. MATERIALS - STONE MULCH: ALL PLANTING AREAS LABELED ON PLAN SHALL RECEIVE DECORATIVE STONE MULCH SPREAD TO A MINIMUM AND CONSISTENT DEPTH OF 3-INCHES. DECORATIVE STONE MULCH TYPE, SIZE & COLOR TO BE APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION. FERTILIZER SHALL BE IN ACCORDANCE WITH APPLICABLE LOCAL, COUNTY AND STATE REQUIREMENTS. STONE MULCH AREAS SHALL RECEIVE WOVEN WEED BARRIER FABRIC. NO PLASTIC/IMPERVIOUS BARRIERS WILL BE PERMITTED. EXAMPLE: BLACK VISQUEEN.

5. MATERIALS - TREE & SHRUB RINGS: ALL TREES AND/OR SHRUBS PLANTED IN SEEDED LAWN AREAS TO BE INSTALLED WITH A MINIMUM 4' DIAMETER SHREDDED HARDWOOD BARK MULCH TREE RING SPREAD TO A CONSISTENT DEPTH OF 3-INCHES. ALL TREE RINGS SHOULD BE INSTALLED WITH A 5" DEPTH SHOVEL CUT EDGE, ANGLED 45 DEGREES INTO SOIL AT A 5' DIAMETER ABOUT THE CENTER OF THE TREE PLANTING. A PRE-EMERGENT GRANULAR HERBICIDE WEED-PREVENTER SHOULD BE MIXED WITH MULCH USED TO INSTALL TREE RING AS WELL AS TOPICALLY APPLIED TO COMPLETED INSTALLATION OF TREE RING.

6. MATERIALS - POLYETHYLENE EDGING: EDGING SHALL BE 5" DEEP, POLYETHYLENE EDGING. OWNER'S REPRESENTATIVE SHALL APPROVE PRODUCT SPECIFICATION PROVIDED BY LANDSCAPE CONTRACTOR.

7. MATERIALS - TREE PROTECTION: ALL TREES TO BE INSTALLED WITH LDPE TREE GUARDS AS MANUFACTURED BY A.M. LEONARD HORTICULTURAL TOOL & SUPPLY CO., OR APPROVED EQUAL.

8. MATERIALS - (ALTERNATE 1): TREE WATERING BAGS: ALL TREES TO BE INSTALLED WITH ONE (1) WATER BAG. PRODUCT TO BE "TREE GATOR ORIGINAL SLOW RELEASE WATERING BAG," PRODUCT NO. 98183-R OR APPROVED EQUAL. INSTALL IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

SEEDING & POND VEGETATION NOTES

1. MATERIALS - PRAIRIE SEED MIX: DISTURBED LAWN AREAS LABELED ON PLAN AS SUCH, SHALL BE BROADCAST SEEDED WITH "DIVERSE PRAIRIE FOR MEDIUM SOILS" SEED MIX, AS PROVIDED BY PRAIRIE NURSERY, P.O. BOX 306, WESTFIELD, WISCONSIN, 53964, TEL. 608-296-3679 (OR APPROVED EQUIVALENT). INSTALL SEED WITH SUPPLEMENTAL MATERIALS AND AMENDMENTS AS RECOMMENDED BY SEED SUPPLIER AND AT RATES AND OPTIMUM TIMES OF THE YEAR AS RECOMMENDED BY THE SEED SUPPLIER TO ENSURE SUCCESSFUL GERMINATION AND SEED/ROOT ZONE GROWTH DEVELOPMENT. REFER TO PRODUCT SPECIFICATIONS AND MANUFACTURERS RECOMMENDATIONS FOR INSTALLATION.

2. MULCHING/SLOPE STABILIZATION: PLACE MULCH OVER ALL PRAIRIE SEED MIX AREAS IN ACCORDANCE WITH WISCONSIN STATE STANDARD SPECIFICATIONS, SUBSECTION 627.3.2.3 (METHOD C), WITH THE FOLLOWING EXCEPTIONS:

   1) HAY MAY NOT BE USED FOR MULCHING DUE TO THE PRESENCE OF WEED SEEDS AND OTHER UNDESIRABLE PLANT CONTAMINANTS. USE CERTIFIED WEED FREE STRAW ONLY.

   2) WOOD CHIPS SHALL NOT BE USED FOR MULCHING NATIVE PRAIRIE SEEDINGS.

   3) EROSION MATS SHALL CONSIST OF LIGHT DUTY STRAW OR EXCELSIOR MATERIAL, WITH AN UPPER PLASTIC NETTING WITH ¾ INCH BY ¾ INCH OPENINGS IN THE MESH.

3. MATERIALS - BIORETENTION BASIN PLUG PLANTINGS: PLUG PLANTINGS TO BE INSTALLED 1'-0" ON CENTER, MIXING SPECIES INTEGRALLY IN FLATS OF 20 AT A TIME. REFER TO WDNR PLUG PLANTING TECHNICAL STANDARDS FOR ROOTSTOCK AND INSTALLATION SPECIFICATIONS.

OR

4. MATERIALS - BIORETENTION BASIN NATIVE VEGETATIVE MAT (NVM): AREAS SPECIFIED ON PLANS SHALL RECEIVE AGRECOL "RAINWATER RENEWAL" NATIVE VEGETATIVE MAT - DEGRADABLE CORE. CONTRACTOR SHALL CONTACT AGRECOL NATIVE NURSERY 16 WEEKS IN ADVANCE OF INSTALLATION FOR PROPER GROWING LEAD TIME. CONTRACTOR SHALL ASSUME AVAILABLE DELIVERY DATE TO BE BETWEEN MID-JUNE THROUGH THE END OF OCTOBER DUE TO THE NMV GROWING SEASON. REFER TO PRODUCT SPECIFICATIONS AND MANUFACTURERS RECOMMENDATIONS FOR INSTALLATION PROCEDURES.

CONTRACTOR AND OWNER RESPONSIBILITY NOTES

1. **GUARANTEE: THE CONTRACTOR SHALL GUARANTEE ALL PLANTS THROUGH ONE (1) YEAR AFTER ACCEPTANCE BY THE OWNER'S REPRESENTATIVE. PLANTS SHALL BE ALIVE AND IN HEALTHY AND FLOURISHING CONDITION AT THE END OF THE GUARANTEE PERIOD. THE CONTRACTOR SHALL REPLACE (AT NO COST TO OWNER) ANY PLANTS THAT ARE DEAD OR NOT IN A VIGOROUS THRIVING CONDITION. REPLACEMENT PLANTS SHALL BE OF THE SAME KIND AND SIZE AS ORIGINALLY SPECIFIED UNLESS OTHERWISE DIRECTED BY OWNER'S REPRESENTATIVE. RESTORE BEDS AS NECESSARY FOLLOWING PLANT REPLACEMENT, INCLUDING BUT NOT LIMITED TO BEDDING, EDGING, MULCH, ETC. REPLACE PLANTS DAMAGED AT TIME OF PLANTING. REPAIR AREAS DISTURBED IN ANY WAY DURING PLANT REPLACEMENT AT NO COST TO OWNER. CONTRACTOR SHALL PROVIDE A ONE (1)-YEAR STRAIGHTENING GUARANTEE FOR ALL TREES.**

2. **CONTRACTOR IS RESPONSIBLE FOR STAKING THE PLANT MATERIALS FOR REVIEW BY OWNER'S REPRESENTATIVE PRIOR TO DIGGING AND PLACEMENT AND SHALL COORDINATE ALL FINE GRADING AND RESTORATION WITH THE GRADING CONTRACTOR.**

3. **MAINTENANCE: (CONTRACTOR) FOR ALL PLANTINGS, SEEDED AND/OR SODDED LAWN AREAS: THE CONTRACTOR SHALL MAINTAIN ALL PLANTINGS AND LAWN AREAS FOR A MINIMUM TIME PERIOD OF 60 DAYS, UNTIL FINAL ACCEPTANCE BY OWNER'S REPRESENTATIVE. THE CONTRACTOR IS RESPONSIBLE FOR ADEQUATELY WATERING PLANTS AND LAWN/TURFGRASS DURING THIS 60 DAY ESTABLISHMENT PERIOD. CONTRACTOR IS RESPONSIBLE FOR THE ESTABLISHMENT OF HEALTHY VIGOROUS PLANT MATERIALS AND LAWN/TURFGRASS GROWTH. CONTRACTOR IS ALSO RESPONSIBLE FOR ANY PRUNING OF PLANT MATERIALS, AND SHAPING AND/OR REPLACEMENT OR SUPPLEMENT OF DEFICIENT SHREDDED HARDWOOD BARK MULCH DURING THIS PERIOD. LONG TERM PLANT MATERIALS AND LAWN/TURFGRASS MAINTENANCE AND ANY PROGRAM FOR SUCH IS THE RESPONSIBILITY OF THE OWNER. ALL PLANTINGS AND LAWN/TURFGRASS AREAS SHALL BE MAINTAINED IN A MANICURED CONDITION UNTIL THE TIME WHEN THE OWNER'S ACCEPTANCE IS GIVEN.**

4. **MAINTENANCE: (OWNER) THE OWNER IS RESPONSIBLE FOR THE CONTINUED MAINTENANCE, REPAIR AND REPLACEMENT OF ALL LANDSCAPING MATERIALS AND WEED BARRIER FABRIC AS NECESSARY FOLLOWING THE ONE (1) YEAR CONTRACTOR GUARANTEE PERIOD.**

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ROYAL CAPITAL

CLIENT ADDRESS:
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MILWAUKEE, WI 53203

PROJECT:
NINE SPRINGS

PROJECT LOCATION:
FITCHBURG, WI 53711
DANE COUNTY

PRELIMINARY
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PLAN MODIFICATIONS:

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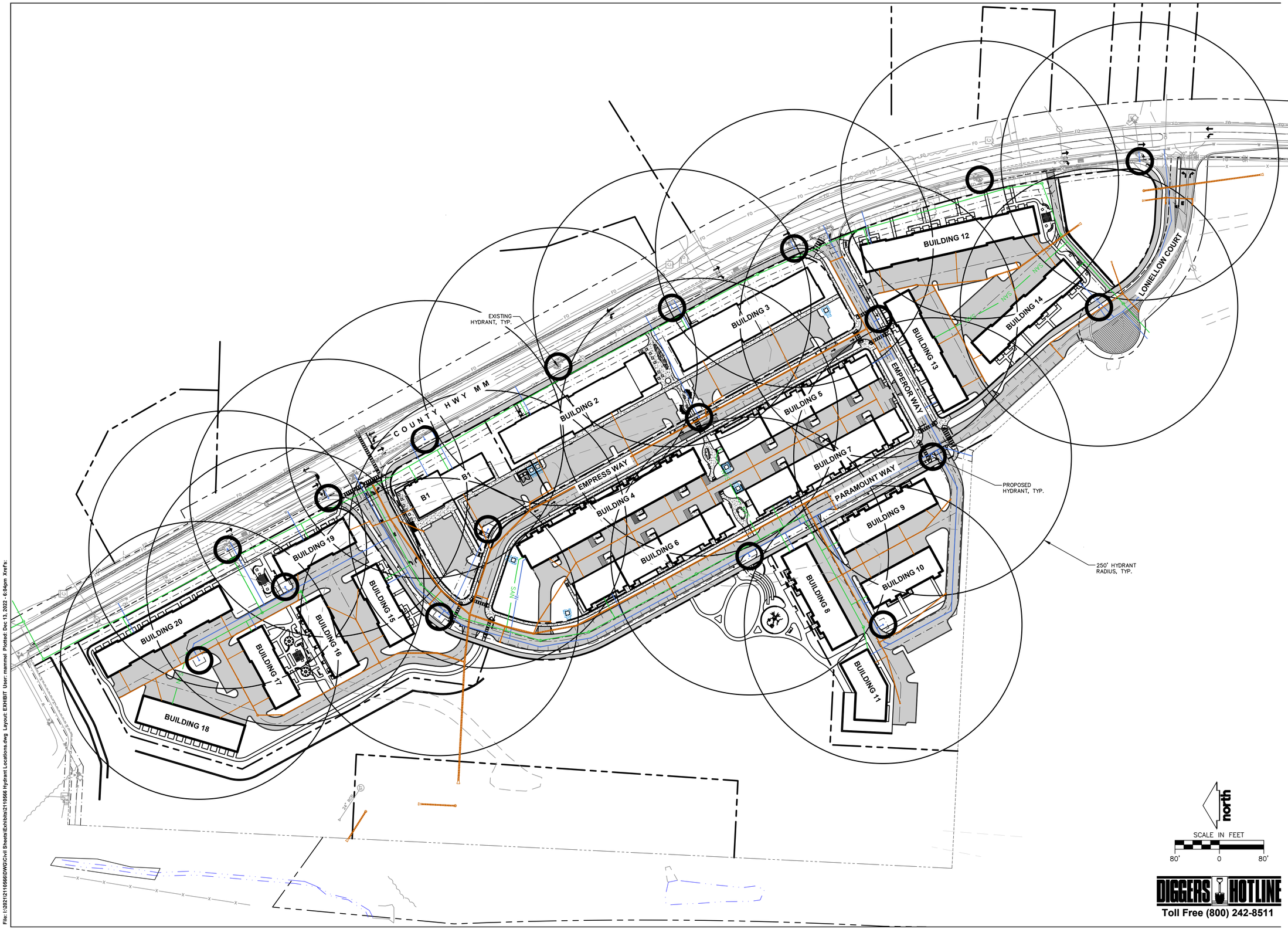
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LANDSCAPE - DETAILS & NOTES

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PROJECT LOCATION:
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DANE COUNTY

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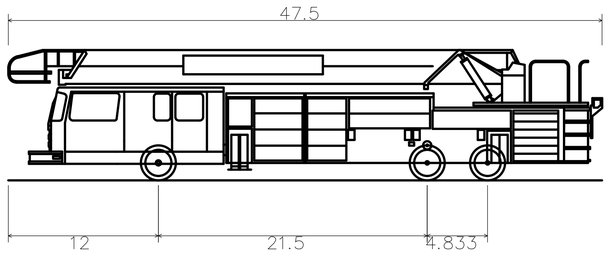
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Approved By:

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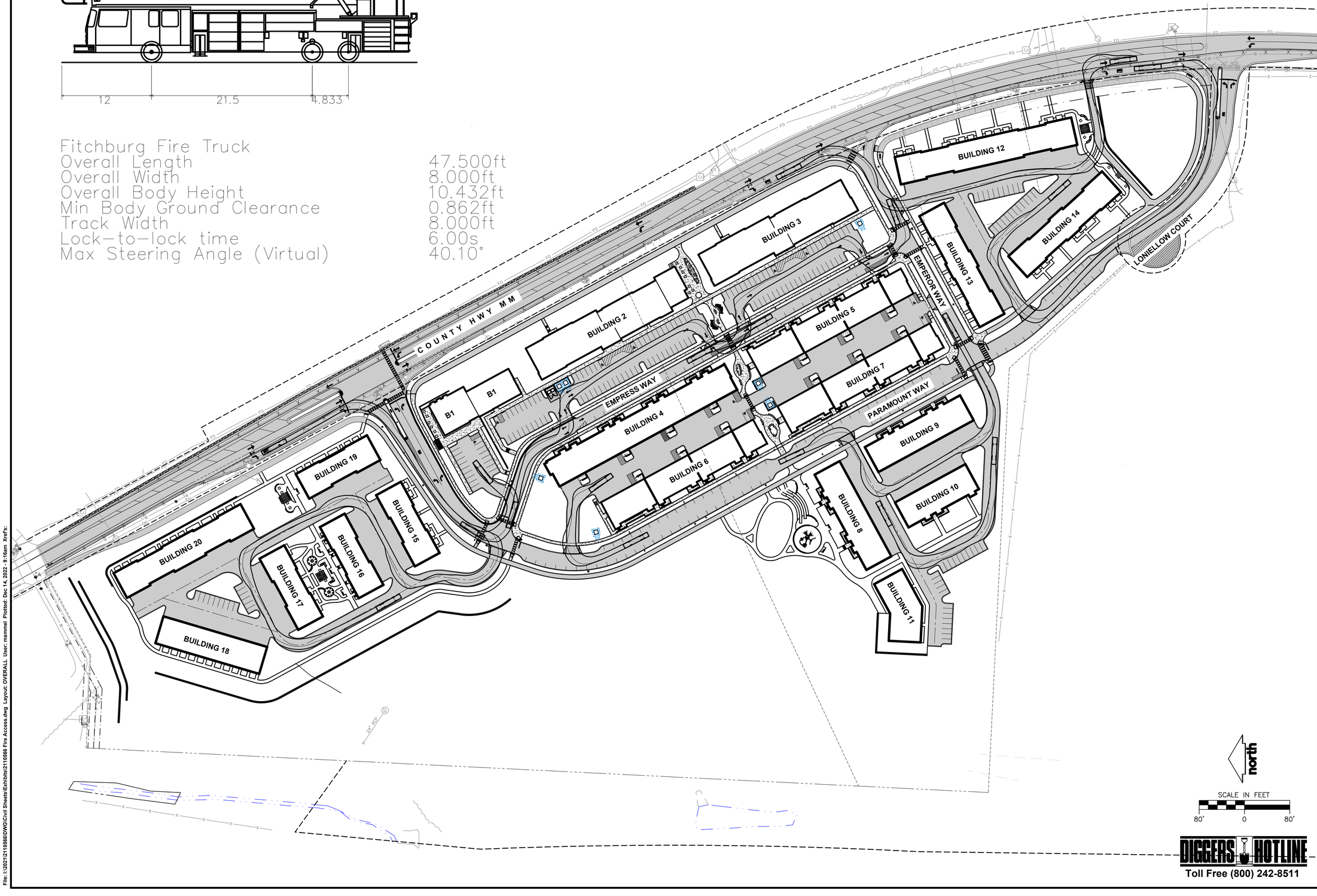
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Fitchburg Fire Truck	
Overall Length	47.500ft
Overall Width	8.000ft
Overall Body Height	10.432ft
Min Body Ground Clearance	0.862ft
Track Width	8.000ft
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	40.10°



north

SCALE IN FEET

80' 0 80'

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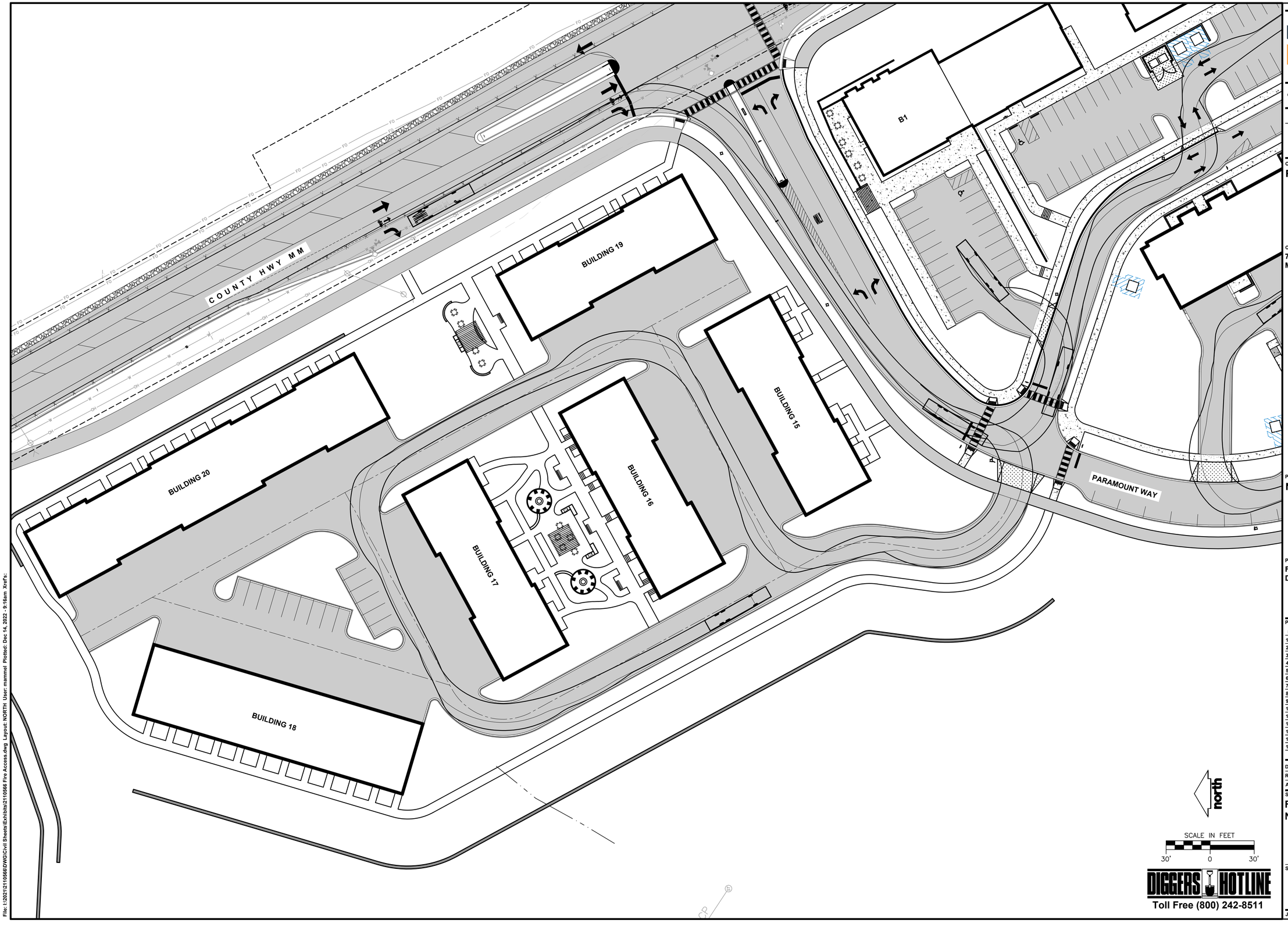
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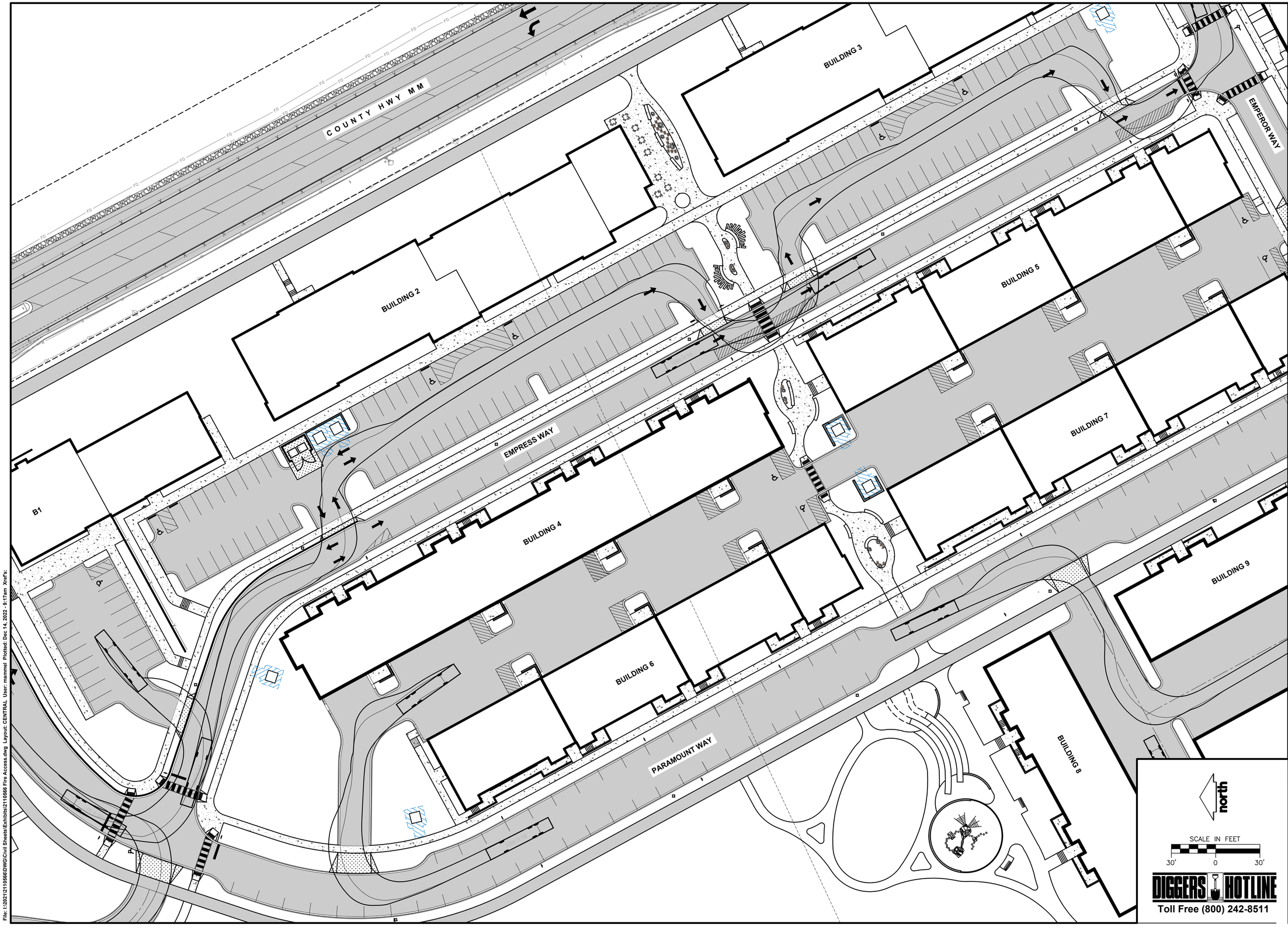
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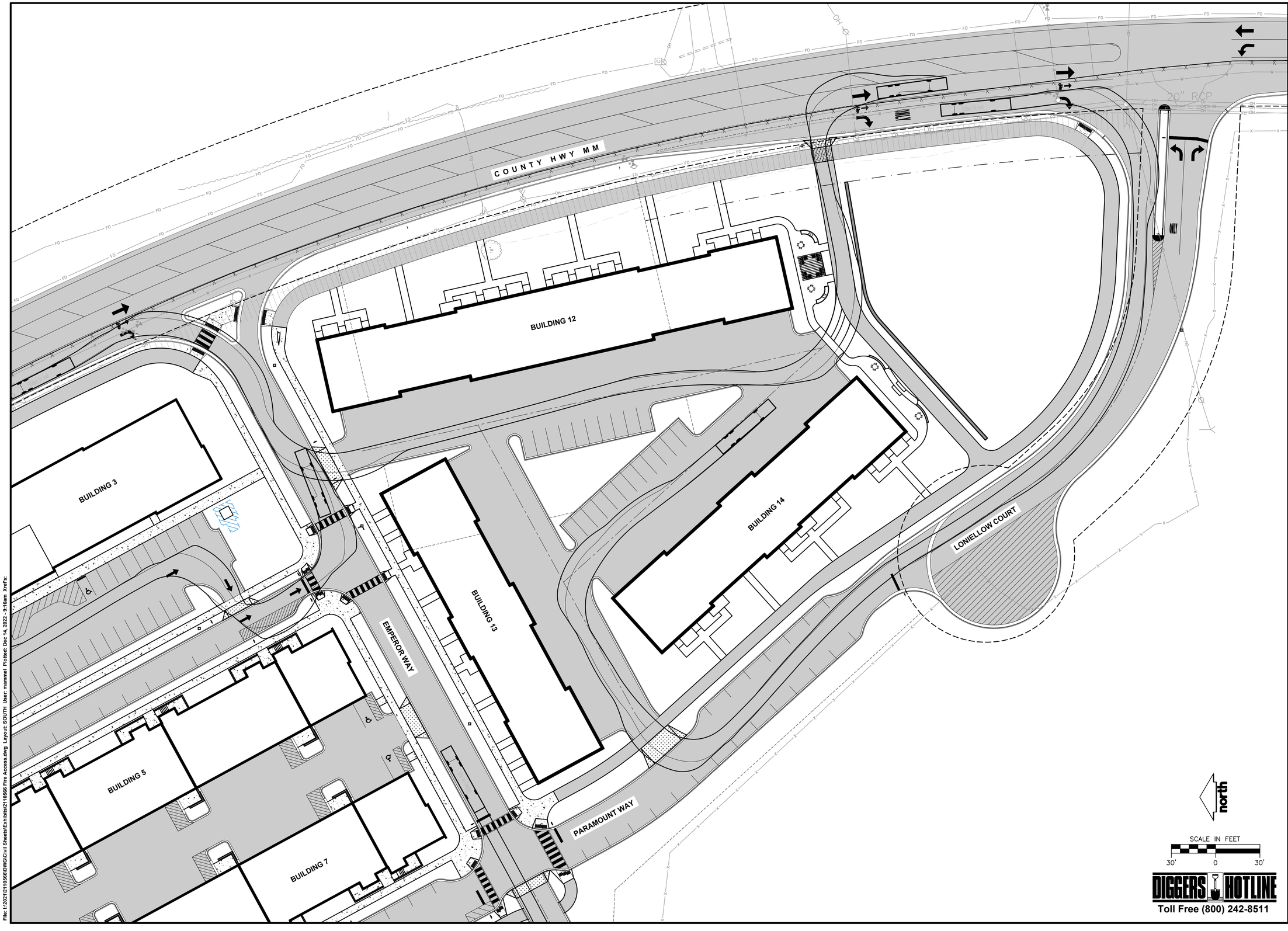
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CLIENT:
ROYAL CAPITAL

CLIENT ADDRESS:
710 N PLANKINTON AVE. SUITE 300
MILWAUKEE, WI 53203

PRELIMINARY
NOT FOR CONSTRUCTION

PROJECT:
NINE SPRINGS

PROJECT LOCATION:
FITCHBURG, WI 53711
DANE COUNTY

PLAN MODIFICATIONS:

#	Date:	Description:
1	03.25.22	P-PLAT SUBMITTAL
2	04.12.22	RESPONSE TO P-PLAT COMMENTS
3	06.21.22	ADR SUBMITTAL
4	12.14.22	P-PLAT SUBMITTAL
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Designed By:
Reviewed By:
Approved By:

SHEET TITLE:
FIRE ACCESS EXHIBIT
WEST

SHEET NUMBER:
EXHIBIT

JSD PROJECT NO: 21-10566

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Stormwater Management Plan & Erosion Control Report

Nine-Springs

Report Date: December 14, 2022

Prepared for:

Royal Capital
710 North Plankinton Ave. Suite 300
Milwaukee, WI 53203

Prepared by:

JSD Professional Services, Inc.
161 Horizon Drive, Suite 101
Verona, WI 53593

JSD Project No. 21-10566

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1.0 INTRODUCTION

The proposed Nine-Springs project is located in the northwest quarter of the southwest quarter and part of the southwest quarter of the southwest quarter all located in section 1, township 6 north, range 9 east, City of Fitchburg, Dane County, Wisconsin. The project is generally located south of the intersection of County Highway MM and McCoy Road, between Highway 14 and County highway MM in City of Fitchburg. See **Appendix 1** for the Existing Conditions Map.

The Nine-Springs project is a proposed multi-tenant work space with live-work units, residential apartment complexes, townhomes, commercial buildings, and a senior living building totaling 32.4 acres across two parcels of land; Lot 3 of Certified Survey Map (CSM) #3535, and Lot 2 of CSM #3598. Four lots and three outlots for stormwater management and open space will be created. The development proposal includes 20 new buildings, multiple social amenity locations, walking paths and stormwater basins. Additional improvements include approximately 3,400 linear feet of roadways, parking lots, County Highway MM improvements, private storm and sanitary sewer, and public water mains. For more detail see **Appendix 2** for proposed construction plans.

The site will be considered new development and will need to meet stormwater standards of City of Fitchburg, Dane County, and WI DNR. Proposed stormwater facilities will consist of a wet pond followed by a bioretention basin to the west and a bioretention basin to the south. An existing sediment basin to the west treating the neighboring quarry area will also be reconstructed and is included in the modeling.

2.0 EXISTING CONDITIONS

Historically, the site was excavated approximately 30 years ago for the construction of US Highway 14 and used as a construction fill site. The land is currently filled with a combination of soil, stone, brick, blacktop, concrete, and limited amount of organic material such as tree trunks and shavings. A significant amount of concrete is laced with steel rebar and plastic duct work. The site will require site remediation and clean-up prior to development. For more detailed soil evaluation, refer to the geotechnical investigation in **Appendix 3.**

The site is significantly sloped with an elevation difference of approximately 100 feet from north to south. The site splits into two watersheds draining north or south. There are existing dry basins on site from past construction activities, one in either watershed. The majority of the site drains to the north, approximately 40 acres. The remainder of the site, approximately 7.6 acres, drains to the south of the property. An existing watershed map is located in **Appendix 4.**

3.0 DESIGN CRITERIA

3.1 Municipal Code of the City of Fitchburg, Wisconsin

Title III, Chapter 30, Article II, Section 27 – Erosion Control Plan Requirements
Title III, Chapter 30, Article II, Section 28– Stormwater Management Plan Requirements

3.2 Dane County Code of Ordinances

Chaper 14 – Erosion Control and Stormwater Management

3.2 Wisconsin Administrative Code

WDNR – Technical Standards (NR 151 and NR 216)

The site will need to meet the criteria for a new development site. Therefore, the requirements for this site include:

- Reduce the total suspended solids by 80% during the 1-year, 24-hour storm event
- Treat the first 0.5-inch of runoff for oil and grease
- Maintain pre-development peak runoff rates for the 1, 2, 10, 100, and 200-year, 24-hour storm event
- Infiltrate 90% of the pre-development infiltration volume
- Reduce the temperature of runoff

4.0 ANALYSIS

This stormwater management plan has been written and analyzed for full build-out conditions of Nine-Springs with current standards. Future development changes may require further analysis

HydroCAD© stormwater modeling system (Version 10.00-25) has been used to analyze stormwater characteristics for the development. HydroCAD uses the accepted TR-55 – Urban Hydrology for Small Watersheds methodology for determining peak discharge runoff rates. The NOAA Atlas 14 rainfall depths for City of Fitchburg and the MSE 4 rainfall distribution were used in the hydrologic model. Refer to **Appendix 4** for proposed HydroCAD modeling.

WinSLAMM version 10.4.1 was used to model the suspended solids reduction. WinSLAMM was also used to determine the sites infiltration volume. Refer to **Appendix 5** for WinSLAMM modeling input and output.

The storm sewer peak flow rates were calculated using the Rational Method to determine peak flow rates for the 10-year storm events. The storm sewer was analyzed per the Wisconsin Department of Transportation Facility Development Manual (FDM) for a closed conduit system. Refer to **Appendix 6** for further information on the storm sewer sizing.

5.0 DESIGN

The proposed development will maintain a north and south watershed condition. The existing north pond will be removed and a wet detention pond is proposed to the west. Test pit locations were selected where native soil conditions exist on-site and are shown in **Appendix 3.** Existing subsurface soils in this section of the site (test pits 1-4) are silty clay loams with an infiltration rate of 0.04 inch/hour. Per NR 151.124(4)(c) silty clay loam is an exemptible soil from post construction infiltration requirements. JSD has requested and received an exemption from the WDNR and City of Fitchburg for the 90% pre-development infiltration volume requirement for the northern watershed. A copy of the correspondence may be referenced in **Appendix 3.** The wet pond has been sized to provide TSS reduction and peak flow control for the north watershed. A bioretention basin will be located after the wet pond to provide oil and grease removal prior to stormwater being discharged.

The existing south pond will be removed and replaced with a bioretention basin. The existing subsurface soils in this section of the site (test pits 5 & 6) are sandy loams with an infiltration rate of 0.50 inch/hour. While this watershed shows a greater infiltration potential than the north watershed, it is not feasible to route additional area to this site due to the steep grade

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difference. The bioretention basin has been sized to maximize the infiltration for this watershed. Existing infiltration volume calculations were based on the watershed areas that drain to the south including watersheds E-D and E-E. This area is greater than the area draining to the bioretention basin resulting in a conservative volume. A separate WinSLAMM model was utilized to determine infiltration volumes. The basin will also provide oil and grease removal, TSS reduction, and peak flow rate control for the south watershed. A proposed watershed map is located in **Appendix 4.** Infiltration calculations can be found in **Appendix 5.**

Stormwater from the some of the future proposed MM improvements is also being captured and treated in the wet pond and south bioretention basin. The improvements will increase the impervious area by approximately one-acre and approximately two-acres will be treated in the stormwater facilities reducing the undetailed roadway area. Refer to **Appendix 4** for the CTH MM watershed map.

5.1 Sediment Control

City of Fitchburg Code of Ordinances 30-28(b)(1) Sediment control

Reduce total suspended solids load leaving the site by 80 percent, based on the average annual rainfall, as compared to no runoff management controls.

Sediment control has been met for the proposed development through the use of the proposed wet pond and bioretention basins. The overall site will reduce off-site sediment discharge by approximately 80-percent. More specifically the wet pond and north bioretention basin will reduce sediment by approximately 81-percent and the south bioretention basin by approximately 95-percent. Refer to **Appendix 6** for WinSLAMM calculations.

5.2 Oil and Grease Control

City of Fitchburg Code of Ordinances 30-28(b)(2) Oil and Grease Control

For all stormwater plans for commercial or industrial developments and all other uses where the potential for pollution by oil or grease, or both, exists, the first 0.5 inches of runoff will be treated using the best oil and grease removal technology available.

Oil and grease control will be treated through the bioretention basins engineered soil layers.

5.3 Runoff Rate Control – Hydrologic Calculations

City of Fitchburg Code of Ordinances 30-28(b)(3). Runoff Rate Control – Hydrologic Calculations

All runoff calculations shall be according to the methodology described in the Natural Resources Conservation Service's Technical Release 55, "Urban Hydrology for Small Watersheds" (commonly known as TR-55), or other methodology approved by the county conservationist. The maximum pre-development runoff curve number and minimum post-development runoff curve numbers that may be used in the calculations are shown in section 30-35. The post-development soil permeability class for heavily disturbed sites shall be lowered one permeability class unless deep tilling or similar practices have been implemented to restore soil structure to pre-developed conditions. Lightly disturbed areas require no permeability class modification.

The existing watershed has been developed with curve numbers that represent the existing site. Grassed areas throughout the site were assigned a curve number of 61. Curve number 86 was used for areas where there are large amounts of concrete riprap and asphalt. A curve number of 74 was used for an area to the north of the site that has thin amount of topsoil over a gravel area. Curve

number 79 was used in an area where there were more gravel outcrops with spots of grass and topsoil. There were also 3 gravel areas within watershed area B that were shown on the survey as gravel that did not consist of heavily graveled area for the use of a 98 curve number. Two of these areas had a higher amount of gravel and were still used as drive areas, these areas were represented with a curve number of 79. The other area was primary grasses and a curve number of 61 was used. Refer to **Appendix 4** for the existing and proposed watershed maps and HydroCAD calculations.

5.4 Runoff Rate Control – Design Standards

Dane County Code of Ordinances 14-12(2)(c). Runoff Rate Control – Design Standards

Except for redevelopment projects, all stormwater facilities shall be designed, installed and maintained to effectively accomplish the following:

1. *Maintain predevelopment peak runoff rates for the 1-year, 24-hour storm event (2.49 inches over 24 hours duration using the MSE4 NRCS Rainfall Distribution).*
2. *Maintain predevelopment peak runoff rates for the 2-year, 24-hour storm event (2.84 inches over 24 hours duration using the MSE4 NRCS Rainfall Distribution).*
3. *Maintain predevelopment peak runoff rates for the 5-year, 24-hour storm event (3.45 inches over 24 hours duration using the MSE4 NRCS Rainfall Distribution).*
4. *Maintain predevelopment peak runoff rates for the 10-year, 24-hour storm event (4.09 inches over 24 hours duration using the MSE4 NRCS Rainfall Distribution.)*
5. *Maintain predevelopment peak runoff rates for the 100-year, 24-hour storm event (6.66 inches over 24 hours duration using the MSE4 NRCS Rainfall Distribution).*
6. *Maintain predevelopment peak runoff rates for the 200-year, 24-hour storm event (7.53 inches over 24 hours duration using the MSE4 NRCS Rainfall Distribution).*

The proposed wet basin reduces the peak discharges for the 1-, 2-, 10-, 100- and 200-year, 24-hour design storms and safely passes them. Refer to Table 1 for peak runoff rates for pre-development, and post-development peak runoff rates for the specified storm events. For further information see HydroCAD calculations located in **Appendix 4.**

TABLE 1: PRE-DEVELOPMENT VERSUS POST-DEVELOPMENT PEAK RUNOFF RATES

	1-year	2-year	10-year	100-year	200-year
Rainfall for each 24-hour storm event (inches)	2.49	2.84	4.09	6.66	7.53
Pre-development peak discharge rate (cfs)	3.89	9.21	33.37	71.55	83.14
Post-Development peak discharge rate without controls (cfs)	34.74	43.09	75.16	145.42	169.8
Post-Development peak discharge rate with detention (cfs)	2.64	3.38	13.47	55.64	66.21
Difference: Post-Development peak discharge rates with detention vs. Pre-Development peak discharge Rate (cfs)	-1.25	-5.83	-19.9	-15.91	-16.93

5.5 Outlets

City of Fitchburg Code of Ordinances 30-28(b)(5). Outlets

Discharges from new construction sites must have a stable outlet capable of carrying designed flow as required in subsection (b)(4) of this section, at a non-erosive velocity. Outlet design must consider flow capacity and flow duration. This requirement applies to both the site outlet and the ultimate outlet to stormwater conveyance or water body.

Stormwater from this site will be piped to the proposed stormwater features where it will be discharged in to riprap beds at all locations. Refer to **Appendix 6** for riprap calculations.

5.6 Infiltration

City of Fitchburg Code of Ordinances 30-2(3)(f). Infiltration

Discharges Developments within the City of Madison, regardless of development type, shall be required to infiltrate sufficient runoff volume so that the post-development infiltration volume shall be at least ninety percent (90%) of the pre-development infiltration volume, based on an average annual rainfall, regardless of area necessary for this requirement.

Infiltration has been exempt for the northern watershed, Watershed A. Infiltration for the southern portion of the site has been completed though Bioretention Basin 2. A separate WinSLAMM model was run to determine the infiltration volume for just the southern portion of the site. The infiltration basin will infiltrate approximately 90-percent of the pre-development infiltration volume. Refer to **Appendix 5** for the WinSLAMM modeling.

5.7 Thermal Control Reduction

City of Fitchburg Code of Ordinances 30-28(b)(7). Thermal Control

The stormwater management plan shall include provisions and practices to reduce the temperature of runoff for sites located within the watershed of a river or stream identified by the Wisconsin Department of Natural Resources as:

a. A cold water community as identified through Wis. Admin. Code § NR 102.04(3)(a), Wis. Admin. Code ch. NR 104, and Class I, Class II, and Class III Trout Streams identified in "Wisconsin Trout Streams," DNR publication PUB-FH-806-2002 or its successor.
b. Rivers or streams proposed by the state department of natural resources as cold water communities and class I, II, and III trout streams.

The site is not located in a cold-water community and thermal control is not required. However, the site will decrease any thermal pollution by routing the stormwater though the bioretention basins.

6.0 EROSION CONTROL

Erosion control measures onsite will conform to the Wisconsin Department of Natural Resources Technical Standards, Dane County Erosion Control and Stormwater Management Manual, and City of Fitchburg requirements. Future erosion control permits will be required for any future building construction. These measures include, but are not limited to; construction entrances, silt fencing, inlet protection, seeding, mulching, erosion matting, and sediment basins. General construction sequencing shall be as follows:

1. Install silt fence in the appropriate locations and stone tracking pad on the entrances to be used by the construction vehicles to access the site.
2. Clear and grubbing
3. Install sediment basins
4. Topsoil removal and stockpile, place erosion control measures around the stockpile and temporarily seed.
5. Complete site grading.
6. Install all erosion control measures as noted on the Grading and Erosion Control Plan.
7. Begin footing and foundation construction.
8. Install all utilities.

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9. Install aggregate base course.
10. Install pavement.
11. Place topsoil
12. Seed and mulch
13. Remove temporary sediment basins and install permanent stormwater management facilities
14. Remove temporary erosion control practices.

For more detailed requirements regarding erosion control and grading efforts, refer to the proposed construction plans in **Appendix 2** and Universal Soil Loss Equation (USLE) worksheet in **Appendix 7.** Future construction will require additional erosion measures and erosion control permits.

7.0 CONCLUSION

Stormwater management features for Nine-Springs have been designed in accordance with applicable standards per Chapter 30 of the Municipal Code of the City of Fitchburg, Chapter 14 of the Dane County Code of Ordinances, and WDNR standards NR151 and NR216. Site stormwater management features a wet pond and two bioretention basins. Onsite stormwater treatment and conveyance will be a private system owned and maintained by the site ownership group. Erosion control practices will limit the soil loss rate to 5.0 tons per acre annually, and regulate soil transportation within project site boundaries.

APPENDIX 1

Existing Conditions Survey

EXISTING CONDITIONS SURVEY

LOT 3, CERTIFIED SURVEY MAP No. 3535, RECORDED IN VOLUME 14, PAGES 124–125, AS DOCUMENT 1676937 AND LOTS 1 AND 2, CERTIFIED SURVEY MAP No. 3895, RECORDED IN VOLUME 14, PAGES 234–235, AS DOCUMENT 1691387, LOCATED IN THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER AND THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 01, TOWNSHIP 06 NORTH, RANGE 09 EAST, CITY OF FITCHBURG, DANE COUNTY, WISCONSIN.

LEGEND

- GOVERNMENT CORNER
- 3/4" REBAR FOUND
- CONTROL POINT
- SETTLING PLATE
- BOLLARD
- SIGN
- STORM MANHOLE
- ENDWALL/END OF PIPE
- POWER POLE W/GUY
- TELEPHONE PEDESTAL
- DECIDUOUS TREE
- PARCEL BOUNDARY
- SECTION LINE
- RIGHT-OF-WAY LINE
- CENTERLINE
- CHORD LINE
- PLATTED LOT LINE
- EASEMENT LINE
- FENCE LINE
- EDGE OF GRAVEL
- WATER LINE
- STORM SEWER
- OHP — OVERHEAD LINE
- UNDERGROUND TELEPHONE
- EDGE OF WOODS OR BRUSH
- 955 — INDEX CONTOUR
- 954 — INTERMEDIATE CONTOUR
- +954.29 — SPOT ELEVATION
- DITCH LINE
- BITUMINOUS PAVEMENT
- GRAVEL
- EDGE OF BITUMINOUS
- ( ) DENOTES RECORD DATA DEPICTING THE SAME LINE ON THE GROUND AS RETRACED BY THIS SURVEY

NOTES

1. FIELD WORK COMPLETED BY JSD PROFESSIONAL SERVICES, INC. ON MAY & SEPTEMBER 2017.
2. BEARINGS FOR THIS SURVEY AND MAP ARE BASED ON THE WISCONSIN COUNTY COORDINATE SYSTEM, (WCCS), DANE COUNTY ZONE. THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 01–06–09, BEARS N 85°59'25" W.
3. ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). BENCHMARK IS A RAIL ROAD SPIKE MARKING THE SOUTH 1/4 CORNER OF SECTION 01, T06N, R09E, ELEVATION = 946.82'
4. CONTOUR INTERVAL IS ONE FOOT.
5. SUBSURFACE UTILITIES AND FEATURES SHOWN ON THIS MAP HAVE BEEN APPROXIMATED BY LOCATING SURFICIAL FEATURES AND APPURTENANCES, LOCATING DIGGERS HOTLINE FIELD MARKINGS AND BY REFERENCE TO UTILITY RECORDS AND MAPS. DIGGER'S HOTLINE TICKET NO. 20212307420, 20212307439, 20212307456, AND 20212307473, WITH A CLEAR DATE OF JUNE 4, 2021.
6. UTILITY COMPANIES CONTACTED THRU DIGGERS HOTLINE:
   - CITY OF FITCHBURG
   - CHARTER COMMUNICATIONS
   - MG&E (ELECTRIC AND GAS)
   - MADISON METROPOLITAN SEWERAGE DISTRICT
   - CITY OF MADISON ENGINEERING DEPT.
   - WIN LLC (WISCONSIN INDEPENDANT NETWORK)
   - AT&T
   - OREGON SCHOOL DISTRICT
7. BEFORE EXCAVATION, APPROPRIATE UTILITY COMPANIES SHOULD BE CONTACTED. FOR EXACT LOCATION OF UNDERGROUND UTILITIES, CONTACT DIGGERS HOTLINE, AT 1.800.242.8511.
8. JSD PROFESSIONAL SERVICES, INC. DOES NOT GUARANTEE THAT THE CONTROL POINT ELEVATIONS LISTED ON THIS MAP HAVE NOT BEEN DISTURBED SINCE THE DATE OF THIS SURVEY AND SHOULD BE VERIFIED PRIOR TO CONSTRUCTION ACTIVITIES.
9. THIS PARCEL IS SUBJECT TO ALL EASEMENTS AND AGREEMENTS, BOTH RECORDED AND UNRECORDED.
10. LOT 2, CERTIFIED SURVEY MAP No. 3598–"ANY FUTURE DEVELOPMENT OF LOT 2 SHALL CONFORM TO THE CITY OF MADISON SUBDIVISION REGULATIONS."
11. LOT 1, CERTIFIED SURVEY MAP No. 3598–"LOT 1 SHALL ONLY BE USED FOR A WELL AND UNDERGROUND RESERVOIR SITE."
12. COUNTY TRUNK HIGHWAY MM IS A CONTROLLED ACCESS HIGHWAY PURSUANT TO CHAPTER 79 OF THE DANE COUNTY CODE OF ORDINANCES.
13. U.S.H. "14" IS A CONTROLLED ACCESS HIGHWAY PER STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION 233.
14. WETLAND BOUNDARY DETERMINED BY HEARTLAND ECOLOGICAL GROUP, INC AND IS NOT MARKED IN THE FIELD.

BENCHMARKS

CONTROL POINT	ELEVATION	DESCRIPTION
BM–200	956.98	3/4" REBAR
BM–201	964.66	3/4" REBAR
BM–202	951.35	3/4" REBAR
BM–203	915.54	3/4" REBAR

LINE TABLE

LINE	BEARING	DISTANCE
L–1	N87°10'45"W (N87°33'12"W)	96.57' (96.55')
L–2	N42°09'51"W (N42°33'12"W)	40.02' (40.00')

CURVE TABLE

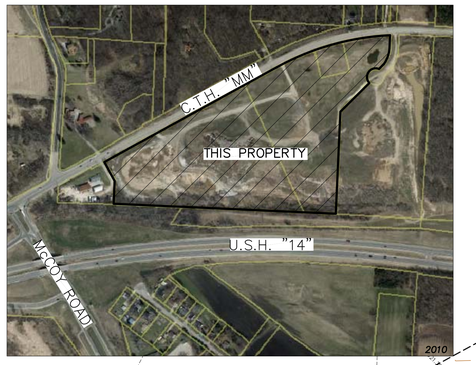
CURVE	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD
C–1	136.66' (NR)	174.00' (174.00')	44°59'55" (45°00'00")	N64°40'24"W (N65°03'12"E)	133.17' (133.17')
C–2	153.53' (NR)	59.97' (60.00')	146°40'38" (146°37'58")	N58°52'26"W (N59°14'12"W)	114.91' (114.95')
C–3	850.01' (NR)	1863.60' (1863.34')	26°07'59" (26°08'14")	S15°29'06"E (S15°51'49"E)	842.66' (842.67')

NR=NO RECORD

LEGAL DESCRIPTION

LOT 3, CERTIFIED SURVEY MAP NO. 3535, RECORDED IN VOLUME 14 OF DANE COUNTY CERTIFIED SURVEY MAPS ON PAGES 124–125 AS DOCUMENT NUMBER 1676937 AND LOTS 1 AND 2, CERTIFIED SURVEY MAP NO. 3598, RECORDED IN VOLUME 14 OF DANE COUNTY CERTIFIED SURVEY MAPS ON PAGES 234–235 AS DOCUMENT NUMBER 1691387, TOWN OF FITCHBURG (NOW CITY OF FITCHBURG), LOCATED IN THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER AND THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 01, TOWNSHIP 06 NORTH, RANGE 09 EAST, CITY OF FITCHBURG, DANE COUNTY, WISCONSIN.

TAX KEY NO: 225/0609–013–8170–4, 225/0609–013–9940–0, 225/0609–013–9540–4



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PLAN MODIFICATIONS:

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Design/Drawn: JK 06/08/21
Approved: TJB 06/10/21

SHEET TITLE:
EXISTING CONDITION SURVEY

SHEET NUMBER:
1 OF 1

JSD PROJECT NO: 21-10566

JSD Professional Services, Inc.
Engineers • Surveyors • Planners

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KENOSHA | APPLETON | WAUSAU

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CLIENT:
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PROJECT:
NINE SPRINGS

PROJECT LOCATION:
CITY OF FITCHBURG
DANE COUNTY, WISCONSIN

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APPENDIX 2

Proposed Construction Plans

NINE SPRINGS

CITY OF FITCHBURG, WISCONSIN

NE1/4, SW 1/4, SECTION 01, TOWNSHIP 06 NORTH, RANGE 09 EAST

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C4.0	GRADING PLAN
C5.0	UTILITY PLAN
C6.0	TYPICAL ROAD SECTIONS
C6.1	TYPICAL ROAD SECTIONS

PLAN & PROFILES

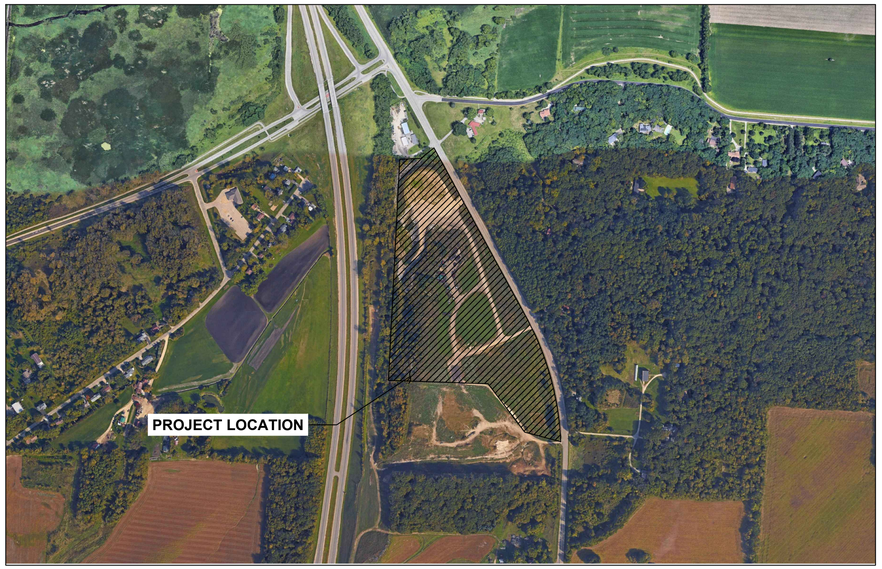
C7.0	PARAMOUNT WAY
C7.1	PARAMOUNT WAY
C7.2	PARAMOUNT WAY
C7.3	LONIELLOW COURT
C7.4	EMPRESS WAY
C7.5	EMPRESS WAY
C7.6	EMPEROR WAY

DETAILS

C8.0	DETAILS
C8.1	DETAILS
C8.2	DETAILS

LANDSCAPE

L1.0	OVERALL LANDSCAPE PLAN
L1.1	DETAILED LANDSCAPE PLAN
L1.2	DETAILED LANDSCAPE PLAN
L1.3	DETAILED LANDSCAPE PLAN
L1.4	DETAILED LANDSCAPE PLAN
L1.5	DETAILED LANDSCAPE PLAN
L1.6	DETAILED LANDSCAPE PLAN
L2.0	LANDSCAPE DETAILS & NOTES



PROJECT AREA

NOT TO SCALE

north

PROJECT INFORMATION

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CLIENT:
ROYAL CAPITAL

CLIENT ADDRESS:
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MILWAUKEE, WI 53203

PRELIMINARY
NOT FOR CONSTRUCTION

PROJECT:
NINE SPRINGS

PROJECT LOCATION:
FITCHBURG, WI 53711
DANE COUNTY

PLAN MODIFICATIONS:

#	Date:	Description:
1	03.25.22	P-PLAT SUBMITTAL
2	04.12.22	RESPONSE TO P-PLAT COMMENTS
3	06.21.22	ADR SUBMITTAL
4	12.14.22	P-PLAT SUBMITTAL
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

Designed By: MSS
Reviewed By: ACG
Approved By:

SHEET TITLE:
TITLE SHEET

SHEET NUMBER:
C0.0

JSD PROJECT NO: 21-10566

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EXISTING CONDITIONS SURVEY

LOT 3, CERTIFIED SURVEY MAP No. 3535, RECORDED IN VOLUME 14, PAGES 124–125, AS DOCUMENT 1676937 AND LOTS 1 AND 2, CERTIFIED SURVEY MAP No. 3895, RECORDED IN VOLUME 14, PAGES 234–235, AS DOCUMENT 1691387, LOCATED IN THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER AND THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 01, TOWNSHIP 06 NORTH, RANGE 09 EAST, CITY OF FITCHBURG, DANE COUNTY, WISCONSIN.

LEGEND

- GOVERNMENT CORNER
- 3/4" REBAR FOUND
- CONTROL POINT
- SETTLING PLATE
- BOLLARD
- SIGN
- STORM MANHOLE
- ENDWALL/END OF PIPE
- POWER POLE W/GUY
- TELEPHONE PEDESTAL
- DECIDUOUS TREE
- PARCEL BOUNDARY
- SECTION LINE
- RIGHT-OF-WAY LINE
- CENTERLINE
- CHORD LINE
- PLATTED LOT LINE
- EASEMENT LINE
- FENCE LINE
- EDGE OF GRAVEL
- WATER LINE
- STORM SEWER
- OHP — OVERHEAD LINE
- UNDERGROUND TELEPHONE
- EDGE OF WOODS OR BRUSH
- 955 — INDEX CONTOUR
- 954 — INTERMEDIATE CONTOUR
- +954.29 — SPOT ELEVATION
- DITCH LINE
- BITUMINOUS PAVEMENT
- GRAVEL
- EDGE OF BITUMINOUS
- ( ) DENOTES RECORD DATA DEPICTING THE SAME LINE ON THE GROUND AS RETRACED BY THIS SURVEY

NOTES

1. FIELD WORK COMPLETED BY JSD PROFESSIONAL SERVICES, INC. ON MAY & SEPTEMBER 2017.
2. BEARINGS FOR THIS SURVEY AND MAP ARE BASED ON THE WISCONSIN COUNTY COORDINATE SYSTEM, (WCCS), DANE COUNTY ZONE. THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 01–06–09, BEARS N 85°59'25" W.
3. ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). BENCHMARK IS A RAIL ROAD SPIKE MARKING THE SOUTH 1/4 CORNER OF SECTION 01, T06N, R09E, ELEVATION = 946.82'
4. CONTOUR INTERVAL IS ONE FOOT.
5. SUBSURFACE UTILITIES AND FEATURES SHOWN ON THIS MAP HAVE BEEN APPROXIMATED BY LOCATING SURFICIAL FEATURES AND APPURTENANCES, LOCATING DIGGERS HOTLINE FIELD MARKINGS AND BY REFERENCE TO UTILITY RECORDS AND MAPS. DIGGER'S HOTLINE TICKET NO. 20212307420, 20212307439, 20212307456, AND 20212307473, WITH A CLEAR DATE OF JUNE 4, 2021.
6. UTILITY COMPANIES CONTACTED THRU DIGGERS HOTLINE:
   - CITY OF FITCHBURG
   - CHARTER COMMUNICATIONS
   - MG&E (ELECTRIC AND GAS)
   - MADISON METROPOLITAN SEWERAGE DISTRICT
   - CITY OF MADISON ENGINEERING DEPT.
   - WIN LLC (WISCONSIN INDEPENDANT NETWORK)
   - AT&T
   - OREGON SCHOOL DISTRICT
7. BEFORE EXCAVATION, APPROPRIATE UTILITY COMPANIES SHOULD BE CONTACTED. FOR EXACT LOCATION OF UNDERGROUND UTILITIES, CONTACT DIGGERS HOTLINE, AT 1.800.242.8511.
8. JSD PROFESSIONAL SERVICES, INC. DOES NOT GUARANTEE THAT THE CONTROL POINT ELEVATIONS LISTED ON THIS MAP HAVE NOT BEEN DISTURBED SINCE THE DATE OF THIS SURVEY AND SHOULD BE VERIFIED PRIOR TO CONSTRUCTION ACTIVITIES.
9. THIS PARCEL IS SUBJECT TO ALL EASEMENTS AND AGREEMENTS, BOTH RECORDED AND UNRECORDED.
10. LOT 2, CERTIFIED SURVEY MAP No. 3598–"ANY FUTURE DEVELOPMENT OF LOT 2 SHALL CONFORM TO THE CITY OF MADISON SUBDIVISION REGULATIONS."
11. LOT 1, CERTIFIED SURVEY MAP No. 3598–"LOT 1 SHALL ONLY BE USED FOR A WELL AND UNDERGROUND RESERVOIR SITE."
12. COUNTY TRUNK HIGHWAY MM IS A CONTROLLED ACCESS HIGHWAY PURSUANT TO CHAPTER 79 OF THE DANE COUNTY CODE OF ORDINANCES.
13. U.S.H. "14" IS A CONTROLLED ACCESS HIGHWAY PER STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION 233.
14. WETLAND BOUNDARY DETERMINED BY HEARTLAND ECOLOGICAL GROUP, INC AND IS NOT MARKED IN THE FIELD.

BENCHMARKS

CONTROL POINT	ELEVATION	DESCRIPTION
BM–200	956.98	3/4" REBAR
BM–201	964.66	3/4" REBAR
BM–202	951.35	3/4" REBAR
BM–203	915.54	3/4" REBAR

LINE TABLE

LINE	BEARING	DISTANCE
L–1	N87°10'45"W (N87°33'12"W)	96.57' (96.55')
L–2	N42°09'51"W (N42°33'12"W)	40.02' (40.00')

CURVE TABLE

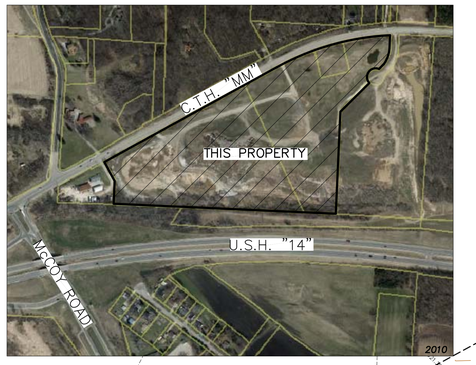
CURVE	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD
C–1	136.66' (NR)	174.00' (174.00')	44°59'55" (45°00'00")	N64°40'24"W (N65°03'12"E)	133.17' (133.17')
C–2	153.53' (NR)	59.97' (60.00')	146°40'38" (146°37'58")	N58°52'26"W (N59°14'12"W)	114.91' (114.95')
C–3	850.01' (NR)	1863.60' (1863.34')	26°07'59" (26°08'14")	S15°29'06"E (S15°51'49"E)	842.66' (842.67')

NR=NO RECORD

LEGAL DESCRIPTION

LOT 3, CERTIFIED SURVEY MAP NO. 3535, RECORDED IN VOLUME 14 OF DANE COUNTY CERTIFIED SURVEY MAPS ON PAGES 124–125 AS DOCUMENT NUMBER 1676937 AND LOTS 1 AND 2, CERTIFIED SURVEY MAP NO. 3598, RECORDED IN VOLUME 14 OF DANE COUNTY CERTIFIED SURVEY MAPS ON PAGES 234–235 AS DOCUMENT NUMBER 1691387, TOWN OF FITCHBURG (NOW CITY OF FITCHBURG), LOCATED IN THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER AND THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 01, TOWNSHIP 06 NORTH, RANGE 09 EAST, CITY OF FITCHBURG, DANE COUNTY, WISCONSIN.

TAX KEY NO: 225/0609–013–8170–4, 225/0609–013–9940–0, 225/0609–013–9540–4



VICINITY MAP
NOT TO SCALE

north

SCALE IN FEET
60 0 60

PLAN MODIFICATIONS:

#	Date:	Description:
1	12/01/21	ADDED HYDRANTS AND VALVES
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

Design/Drawn: JK 06/08/21
Approved: TJB 06/10/21

SHEET TITLE:
EXISTING CONDITION SURVEY

SHEET NUMBER:
1 OF 1

JSD PROJECT NO: 21-10566

JSD Professional Services, Inc.
Engineers • Surveyors • Planners

CREATE THE VISION ❯❯ TELL THE STORY

MADISON | MILWAUKEE
KENOSHA | APPLETON | WAUSAU

MADISON REGIONAL OFFICE
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CLIENT:
ROYAL CAPITAL GROUP LLC

CLIENT ADDRESS:
710 N. PLANKINTON AVE., STE. 300
MILWAUKEE, WI 53203

PROJECT:
NINE SPRINGS

PROJECT LOCATION:
CITY OF FITCHBURG
DANE COUNTY, WISCONSIN

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GENERAL NOTES:

1. REFER TO THE EXISTING CONDITIONS SURVEY FOR EXISTING CONDITIONS NOTES AND LEGENDS.
2. ALL WORK IN THE ROW AND/OR PUBLIC EASEMENTS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE CITY OF FITCHBURG STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (CITY SPECIFICATIONS).
3. EXISTING GRADE SPOT ELEVATIONS SHOWN FOR INFORMATIONAL PURPOSES. DURING CONSTRUCTION MATCH EXISTING GRADES AT CONSTRUCTION LIMITS.
4. NO SITE GRADING OUTSIDE OR DOWNSLOPE OF PROPOSED SILT FENCE LOCATION. NO LAND DISTURBANCE BEYOND PROPERTY LINES.
5. JSD SHALL BE HELD HARMLESS AND DOES NOT WARRANT ANY DEVIATIONS BY THE OWNER/CONTRACTOR FROM THE APPROVED CONSTRUCTION PLANS THAT MAY RESULT IN DISCIPLINARY ACTIONS BY ANY OR ALL REGULATORY AGENCIES.
6. SEE COUNTY HIGHWAY MM IMPROVEMENTS PLANS FOR WORK WITHIN CTH MM RIGHT OF WAY.

DEMOLITION NOTES

1. THIS PLAN INDICATES ITEMS ON THE PROPERTY INTENDED FOR DEMOLITION BASED ON THE CURRENT SITE DESIGN THAT HAVE BEEN IDENTIFIED BY A REASONABLE OBSERVATION OF THE EXISTING CONDITIONS THROUGH FIELD SURVEY RECONNAISSANCE, "DIGGER'S HOTLINE" LOCATION, AND GENERAL "STANDARD OF CARE". THERE MAY BE ADDITIONAL ITEMS THAT CAN NOT BE IDENTIFIED BY A REASONABLE ABOVE GROUND OBSERVATION, OF WHICH THE ENGINEER WOULD HAVE NO KNOWLEDGE OR MAY BE A PART OF ANOTHER DESIGN DISCIPLINE. IT IS THE CONTRACTOR'S/BIDDER'S RESPONSIBILITY TO REVIEW THE PLANS, INSPECT THE SITE AND PROVIDE HIS OWN DUE DILIGENCE TO INCLUDE IN HIS BID WHAT ADDITIONAL ITEMS, IN HIS OPINION, MAY BE NECESSARY FOR DEMOLITION. ANY ADDITIONAL ITEMS IDENTIFIED BY THE CONTRACTOR/BIDDER SHALL BE IDENTIFIED IN THE BID AND REPORTED TO THE ENGINEER OF RECORD. JSD TAKES NO RESPONSIBILITY FOR ITEMS ON THE PROPERTY THAT COULD NOT BE LOCATED BY A REASONABLE OBSERVATION OF THE PROPERTY OR OF WHICH THEY WOULD HAVE NO KNOWLEDGE.
2. CONTRACTOR SHALL KEEP ALL STREETS AND PRIVATE DRIVES FREE AND CLEAR OF ALL CONSTRUCTION RELATED DIRT, DUST AND DEBRIS.
3. ALL TREES WITHIN THE CONSTRUCTION LIMITS SHALL BE REMOVED UNLESS SPECIFICALLY CALLED OUT FOR PROTECTION. ALL TREES TO BE REMOVED SHALL BE REMOVED IN THEIR ENTIRETY AND STUMPS SHALL BE GROUND TO PROPOSED SUBGRADE.
4. ABANDONED/REMOVED ITEMS SHALL BE DISPOSED OF OFF SITE UNLESS OTHERWISE NOTED.
5. CONTRACTOR TO REPLACE ALL SIDEWALK AND CURB AND GUTTER ABUTTING THE PROPERTIES, WHICH IS DAMAGED BY THE CONSTRUCTION, OR ANY SIDEWALK AND CURB AND GUTTER THAT THE CITY ENGINEER DETERMINES NEEDS TO BE REPLACED BECAUSE IT IS NOT AT A DESIRABLE GRADE REGARDLESS OF WHETHER THE CONDITION EXISTED PRIOR TO BEGINNING CONSTRUCTION.
6. PRIOR TO CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR:
   - 6.1. EXAMINE ALL SITE CONDITIONS RELATIVE TO THE CONDITIONS INDICATED ON THE ENGINEERING DRAWINGS. ANY DISCREPANCIES ARE TO BE REPORTED IMMEDIATELY TO THE ENGINEER AND RESOLVED PRIOR TO THE START OF CONSTRUCTION.
   - 6.2. VERIFYING UTILITY ELEVATIONS AND NOTIFYING ENGINEER OF ANY DISCREPANCIES. NO WORK SHALL BE PERFORMED UNTIL THE DISCREPANCIES ARE RESOLVED.
   - 6.3. NOTIFYING ALL UTILITIES PRIOR TO THE REMOVAL OF ANY UNDERGROUND UTILITIES.
   - 6.4. NOTIFYING THE DESIGN ENGINEER AND LOCAL CONTROLLING MUNICIPALITY 48 HOURS PRIOR TO THE START OF CONSTRUCTION TO ARRANGE FOR APPROPRIATE CONSTRUCTION INSPECTION.
7. ANY SANITARY SEWER, SANITARY SEWER SERVICES, WATER MAIN, WATER SERVICES, STORM SEWER, OR OTHER UTILITIES, WHICH ARE DAMAGED BY THE CONTRACTORS, SHALL BE REPAIRED TO THE OWNER'S SATISFACTION AT THE CONTRACTOR'S EXPENSE.
8. CONTRACTOR IS RESPONSIBLE FOR SITE SAFETY DURING THE CONSTRUCTION OF THESE IMPROVEMENTS.
9. CONTRACTOR TO COORDINATE PRIVATE UTILITY REMOVAL / ABANDONMENT AND NECESSARY RELOCATION WITH RESPECTIVE UTILITY COMPANY. COORDINATION REQUIRED PRIOR TO CONSTRUCTION.
10. ALL DEMOLITION SHALL BE IN ACCORDANCE WITH THE APPROVED MUNICIPALITY RECYCLING PLAN.
11. ANY CONTAMINATED SOILS SHALL BE REMOVED IN ACCORDANCE WITH FEDERAL AND STATE REGULATIONS TO AN APPROVED LANDFILL.
12. ALL EXISTING UTILITIES TO BE FIELD LOCATED AND FLAGGED BY CONTRACTOR.
13. EXISTING FIBER OPTIC LINE TO BE CLEARLY MARKED PRIOR TO ANY EXCAVATION. CONTRACTOR TO NOTIFY ENGINEER IMMEDIATELY IF ANY DISCREPANCIES OCCUR IN THE LOCATION SHOWN OR PROPOSED IMPROVEMENTS IMPACTING EXISTING FIBER OPTIC LINE LOCATION.
14. ALL PERIMETER EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO THE START OF DEMOLITION ACTIVITIES. CONTRACTOR SHALL KEEP ALL STREETS AND PAVEMENT FREE AND CLEAR OF ALL CONSTRUCTION RELATED DIRT, DUST AND DEBRIS.
15. SAWCUT LOCATIONS SHOWN ON THE PLAN ARE SUBJECT TO ADJUSTMENT BY THE ENGINEER IN THE FIELD. THE LINE OF SUCH SAWCUTS WILL BE NEATLY DELINEATED THRU THE ASPHALT.

GRADING AND SEEDING NOTES

1. **ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED IMMEDIATELY FOLLOWING GRADING ACTIVITIES. SEED MIX TO BE IN ACCORDANCE WITH LANDSCAPE PLAN.**
2. ALL PROPOSED GRADES SHOWN ARE FINISHED GRADES. CONTRACTOR SHALL VERIFY ALL GRADES, MAKE SURE ALL AREAS DRAIN PROPERLY AND SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO CONSTRUCTION.
3. CONTRACTOR SHALL PROTECT ADJACENT PROPERTIES WITH SILT FENCING FOR EROSION CONTROL UNTIL CONSTRUCTION IS COMPLETED AND NOTICE OF TERMINATION FILED.
4. CONTRACTOR SHALL CHISEL-PLOW OR DEEP TILL WITH DOUBLE TINES ALL STORMWATER MANAGEMENT FACILITIES JUST PRIOR TO SODDING AND/OR SEEDING AND MULCHING TO PROMOTE INFILTRATION.
5. CONTRACTOR SHALL WATER ALL NEWLY SEEDED AREAS DURING THE SUMMER MONTHS WHENEVER THERE IS A 7 DAY LAPSE WITH NO SIGNIFICANT RAINFALL.
6. CONTRACTOR TO DEEP TILL ALL COMPACTED PERVIOUS SURFACES PRIOR TO SEEDING AND MULCHING.
7. THE CONTRACTOR SHALL NOTIFY THE CITY OF FITCHBURG TWO (2) WORKING DAYS IN ADVANCE OF ANY SOIL DISTURBING ACTIVITY.
8. IF GRADING ACTIVITIES CEASE ON ANY PORTION OF THE SITE FOR 14 OR MORE CALENDAR DAYS, THE AREA IN QUESTION MUST BE TEMPORARILY STABILIZED IN ACCORDANCE WITH CSECR NOTE 16.
9. ALL SLOPES 20% OR GREATER SHALL BE TEMPORARY SEEDED, MULCHED, OR OTHER MEANS OF COVER PLACED ON THEM WITHIN 2 WEEKS OF DISTURBANCE IN ACCORDANCE WITH CSECR NOTE 16.

SITE PLAN NOTES

1. ALL DIMENSIONS TO FACE OF CURB AND/OR EDGING OF CONCRETE UNLESS OTHERWISE NOTED.
2. ALL RADII TO FACE OF CURB AND/OR EDGING OF CONCRETE UNLESS OTHERWISE NOTED.
3. ANY REQUIRED REPLACEMENT OF PUBLIC CURB AND GUTTER SHALL MATCH EXISTING AND MEET THE REQUIREMENTS OF THE CITY OF FITCHBURG.
4. ALL PAVING SHALL CONFORM TO "STATE OF WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY & STRUCTURE CONSTRUCTION, LATEST EDITION, APPLICABLE CITY OF FITCHBURG ORDINANCES AND THE GEOTECHNICAL REPORT PREPARED BY AECOM DATED 4/13/2018.
5. SURFACE PREPARATION – NOTIFY ENGINEER/OWNER OF UNSATISFACTORY CONDITIONS. DO NOT BEGIN PAVING WORK UNTIL DEFICIENT SUBBASE AREAS HAVE BEEN CORRECTED AND ARE READY TO RECEIVE PAVING.
6. ASPHALTIC CONCRETE PAVING SPECIFICATIONS
   - 6.1. CODES AND STANDARDS – THE PLACING, CONSTRUCTION AND COMPOSITION OF THE ASPHALTIC BASE COURSE AND ASPHALTIC CONCRETE SURFACE COURSE SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTIONS 450, 455, 460 AND 465 OF THE STATE OF WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, CURRENT EDITION. HEREAFTER, THIS PUBLICATION WILL BE REFERRED TO AS STATE HIGHWAY SPECIFICATIONS.
   - 6.2. WEATHER LIMITATIONS – APPLY TACK COATS WHEN AMBIENT TEMPERATURE IS ABOVE 50° F (10° C) AND WHEN TEMPERATURE HAS NOT BEEN BELOW 35° F (1° C) FOR 12 HOURS IMMEDIATELY PRIOR TO APPLICATION. DO NOT APPLY WHEN BASE IS WET OR CONTAINS EXCESS OF MOISTURE. CONSTRUCT ASPHALTIC CONCRETE SURFACE COURSE WHEN ATMOSPHERIC TEMPERATURE IS ABOVE 40° F (4° C) AND WHEN BASE IS DRY AND WHEN WEATHER IS NOT RAINY. BASE COURSE MAY BE PLACED WHEN AIR TEMPERATURE IS ABOVE 30° F (–1° C).
   - 6.3. GRADE CONTROL – ESTABLISH AND MAINTAIN REQUIRED LINES AND ELEVATIONS FOR EACH COURSE DURING CONSTRUCTION.
   - 6.4. CRUSHED AGGREGATE BASE COURSE – THE TOP LAYER OF BASE COURSE SHALL CONFORM TO SECTIONS 301 AND 305, STATE HIGHWAY SPECIFICATIONS.
   - 6.5. BINDER COURSE AGGREGATE – THE AGGREGATE FOR THE BINDER COURSE SHALL CONFORM TO SECTIONS 460 AND 315, STATE HIGHWAY SPECIFICATIONS.
   - 6.6. SURFACE COURSE AGGREGATE – THE AGGREGATE FOR THE SURFACE COURSE SHALL CONFORM TO SECTIONS 460 AND 465, STATE HIGHWAY SPECIFICATIONS.
   - 6.7. ASPHALTIC MATERIALS – THE ASPHALTIC MATERIALS SHALL CONFORM TO SECTION 455 AND 460, STATE HIGHWAY SPECIFICATIONS.
7. CONCRETE PAVING SPECIFICATIONS
   - 7.1. CONTRACTOR SHALL PROVIDE CONTROL JOINTS AND CONSTRUCTION JOINTS OF ONE-QUARTER CONCRETE THICKNESS AT AN EQUAL RATIO OF LENGTH TO WIDTH WHEREVER POSSIBLE WITH A MAXIMUM LENGTH BETWEEN JOINTS OF 8' ON CENTER
   - 7.2. CONTRACTOR SHALL PROVIDE 1/2" EXPANSION JOINTS IN SIDEWALKS AT ALL RAMP LOCATIONS, THOUGH DRIVEWAYS, AGAINST CURB & GUTTER, AT RADII, AND AT EVERY 200' OF SIDEWALK.
   - 7.3. ALL CONCRETE SURFACES TO BE SEALED WITH TYPE TK-26UV CONCRETE TREATMENT
   - 7.4. EXTERIOR CONCRETE SURFACES SHALL BE BROOM FINISHED.
   - 7.5. CONCRETE PAVING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTIONS 415 AND 416 OF THE STATE HIGHWAY SPECIFICATIONS.
   - 7.6. CONCRETE PAVEMENT SHALL BE REINFORCED WITH NOVOMESH 950 (OR EQUAL) FIBER REINFORCEMENT AT A RATE OF 5 LBS/CUBIC YARD.
   - 7.7. CURING COMPOUNDS SHALL CONFORM TO SECTION 415 OF THE STATE HIGHWAY SPECIFICATIONS.
   - 7.8. ALL CONCRETE SURFACES TO BE SEALED WITH TYPE TK-26UV CONCRETE SEALANT.
8. 2' x 5' TRUNCATED DOME WARNING DETECTION FIELD SHALL BE PLACED AT ALL SIDEWALK ADA RAMPS WITH 5' SIDEWALK AND 2' x 8' AT BIKE PATH.
9. ALL PAVEMENT MARKINGS INCLUDING: STOP BARS, CROSSWALKS, DIRECTIONAL ARROWS, PARKING STALL LINES, ADA STALL MARKINGS, NO PARKING ZONES, DROP-OFF/PICK-UP ZONES SHALL BE PAINTED WITH HIGH VISIBILITY EPOXY PAINT PER PAVEMENT MARKING PLAN AND CITY OF FITCHBURG SPECIFICATIONS.
10. USE 4" WIDE, HIGH VISIBILITY YELLOW LATEX PAINT FOR STALL LINES.
11. MARK AND STRIPE ADA PARKING SPACES APPROPRIATELY.

UTILITY NOTES:

1. IF ANY ERRORS, DISCREPANCIES, OR OMISSIONS WITHIN THE PLAN BECOME APPARENT, IT SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO CONSTRUCTION SO THAT CLARIFICATION OR REDESIGN MAY OCCUR.
2. LENGTHS OF ALL UTILITIES ARE TO CENTER OF STRUCTURES OR FITTINGS AND MAY VARY SLIGHTLY FROM PLAN. LENGTHS SHALL BE VERIFIED IN THE FIELD DURING CONSTRUCTION.
3. THE CONTRACTOR SHALL INSTALL A PEDESTRIAN FENCE AROUND ALL EXCAVATIONS TO BE LEFT OPEN OVER NIGHT AS REQUIRED.
4. THE PROPOSED IMPROVEMENTS MUST BE CONSTRUCTED IN ACCORDANCE WITH ENGINEERING PLANS DESIGNED TO MEET ORDINANCES AND REQUIREMENTS OF THE MUNICIPALITY AND WISDOT, WDSPS, AND WDNR.
3. ALL UTILITY WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN – AND ALL STATE AND LOCAL CODES AND SPECIFICATIONS. IT IS THE CONTRACTORS RESPONSIBILITY TO DETERMINE WHICH SPECIFICATIONS AND CODES APPLY, AND TO COORDINATE ALL CONSTRUCTION ACTIVITIES WITH THE APPROPRIATE LOCAL AND STATE AUTHORITIES.
4. SPECIFICATIONS SHALL COMPLY WITH THE CITY OF FITCHBURG SPECIAL PROVISIONS
5. PRIOR TO CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR:
   - * EXAMINING ALL SITE CONDITIONS RELATIVE TO THE CONDITIONS INDICATED ON THE ENGINEERING DRAWINGS. ANY DISCREPANCIES ARE TO BE REPORTED TO THE ENGINEER AND RESOLVED PRIOR TO THE START OF CONSTRUCTION.
   - * OBTAINING ALL PERMITS INCLUDING PERMIT COSTS, TAP FEES, METER DEPOSITS, BONDS, AND ALL OTHER FEES REQUIRED FOR PROPOSED WORK TO OBTAIN OCCUPANCY.
   - * VERIFYING UTILITY ELEVATIONS AND NOTIFYING ENGINEER OF ANY DISCREPANCY. NO WORK SHALL BE PERFORMED UNTIL THE DISCREPANCY IS RESOLVED.
   - * NOTIFYING ALL UTILITIES PRIOR TO THE INSTALLATION OF ANY UNDERGROUND IMPROVEMENTS.
   - * NOTIFYING THE DESIGN ENGINEER AND MUNICIPALITY 48 HOURS PRIOR TO THE START OF CONSTRUCTION TO ARRANGE FOR APPROPRIATE CONSTRUCTION OBSERVATION.
7. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE ENGINEER WITH AS-BUILT CONDITIONS OF THE DESIGNATED IMPROVEMENTS IN ORDER THAT THE APPROPRIATE DRAWINGS CAN BE PREPARED, IF REQUIRED. ANY CHANGES TO THE DRAWINGS OR ADDITIONAL ITEMS MUST BE REPORTED TO THE ENGINEER AS WORK PROGRESSES.
8. THE PRIME CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL CONSTRUCTION WITH OTHER CONTRACTORS INVOLVED WITH CONSTRUCTION OF THE PROPOSED DEVELOPMENT AND FOR REPORTING ANY ERRORS OR DISCREPANCIES BETWEEN THESE PLANS AND PLANS PREPARED BY OTHERS.
9. ANY SANITARY SEWER, SANITARY SEWER SERVICES, WATER MAIN, WATER SERVICES, STORM SEWER, OR OTHER UTILITIES, WHICH ARE DAMAGED BY THE CONTRACTORS, SHALL BE REPAIRED TO THE OWNER'S SATISFACTION AT THE CONTRACTOR'S EXPENSE.
10. CONTRACTOR IS RESPONSIBLE FOR SITE SAFETY DURING THE CONSTRUCTION OF IMPROVEMENTS.
11. CONTRACTOR SHALL CONTACT THE MUNICIPALITY'S PUBLIC WORKS DEPARTMENT A MINIMUM OF 48 HOURS BEFORE CONNECTING TO PUBLIC UTILITIES. CONTRACTOR TO VERIFY SIZE AND DEPTH OF EXISTING UTILITY SERVICES AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO CONNECTING.
12. CONTRACTOR MUST CONTACT AND IS REQUIRED TO NOTIFY THE MUNICIPAL WATER UTILITY 48 HOURS IN ADVANCE OF CONNECTING TO THE PUBLIC UTILITY.
13. ALL PRIVATE (NOT WITHIN R.O.W. OR PUBLIC EASEMENTS) SANITARY BUILDING PIPE AND TUBING SHALL CONFORM TO SPS 384.30-2.
14. STORM SEWER SPECIFICATIONS –
   - 14.1. PIPE – REINFORCED CONCRETE PIPE (RCP) SHALL MEET THE REQUIREMENTS OF ASTM CLASS III (MINIMUM) C-76 WITH RUBBER GASKET JOINTS CONFORMING TO ASTM C-443. HIGH DENSITY DUAL-WALL POLYETHYLENE CORRUGATED PIPE SHALL BE AS MANUFACTURED BY ADS OR EQUAL WITH WATER TIGHT JOINTS, AND SHALL MEET THE REQUIREMENTS OF AASHTO DESIGNATION M-294 TYPE "S".
   - 14.2. INLETS – INLETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH FILE. NO. 28 OF THE "STANDARD SPECIFICATIONS", OR APPROVED EQUAL WITH A 1'-8" X 2'-6" MAXIMUM OPENING. CURB FRAME & GRATE SHALL BE NEENAH R-3067 WITH TYPE R GRATE, OR EQUAL.
   - 14.3. BACKFILL AND BEDDING – STORM SEWER SHALL BE CONSTRUCTED WITH GRAVEL BACKFILL AND CLASS "B" BEDDING IN ALL PAVED AREAS AND TO A POINT 5 FEET BEYOND THE EDGE OF PAVEMENT. TRENCHES RUNNING PARALLEL TO AND LESS THAN 5 FEET FROM THE EDGE OF PAVEMENT SHALL ALSO REQUIRE GRAVEL BACKFILL. LANDSCAPED AREAS MAY BE BACKFILLED WITH EXCAVATED MATERIAL IN CONFORMANCE WITH SECTION 8.43.5 OF THE "STANDARD SPECIFICATIONS".
   - 14.4. MANHOLE FRAMES AND COVERS – MANHOLE FRAMES AND COVERS SHALL BE NEENAH R-1642 WITH TYPE "B" SELF SEALING LIDS, NON-ROCKING OR EQUAL.
   - 14.5. FIELD TILE CONNECTION – ALL FIELD TILE ENCOUNTERED DURING CONSTRUCTION SHALL BE INCLUDED IN THE UNIT PRICE(S) FOR STORM SEWER. TILE LINES CROSSED BY THE TRENCH SHALL BE REPLACED WITH THE SAME MATERIAL AS THE STORM SEWER.
   - 14.6. ALL PRIVATE (NOT WITHIN R.O.W. OR PUBLIC EASEMENTS) STORM BUILDING PIPE AND TUBING SHALL CONFORM TO SPS 384.30-3. ALL PRIVATE (NOT WITHIN R.O.W. OR PUBLIC EASEMENTS) STORM PIPE SHALL CONFORM TO SPS 382.40(8)(B)4.A
15. WATER MAIN SPECIFICATIONS –
   - 15.1. PIPE – DUCTILE IRON PIPE SHALL BE CLASS 52 CONFORMING TO AWWA C151 AND CHAPTER 8.18.0 OF THE "STANDARD SPECIFICATIONS". POLYVINYL CHLORIDE (PVC) PIPE SHALL MEET THE REQUIREMENTS OF AWWA STANDARD C-900, CLASS 150, DR-18, WITH CAST IRON O.D. AND INTEGRAL ELASTOMERIC BELL AND SPIGOT JOINTS. NON-METALLIC WATER MAINS SHALL BE INSTALLED WITH BLUE INSULATION TRACER WIRE AND CONFORM WITH SPS 382.30(11)(h).
   - 15.2. VALVES AND VALVE BOXES – GATE VALVES SHALL BE AWWA GATE VALVES MEETING THE REQUIREMENTS OF AWWA C-500 AND CHAPTER 8.27.0 OF THE "STANDARD SPECIFICATIONS". GATE VALVES AND VALVE BOXES SHALL CONFORM TO LOCAL PLUMBING ORDINANCES.
   - 15.3. HYDRANTS – HYDRANTS SHALL CONFORM TO THE SPECIFICATIONS OF THE CITY OF FITCHBURG. THE DISTANCE FROM THE GROUND LINE TO THE CENTERLINE OF THE LOWEST NOZZLE AND THE LOWEST CONNECTION OF THE FIRE DEPARTMENT SHALL BE NO LESS THAN 18-INCHES AND NO GREATER THAN 23-INCHES (SEE DETAIL).
   - 15.4. BEDDING AND COVER MATERIAL – PIPE BEDDING AND COVER MATERIAL SHALL BE SAND, CRUSHED STONE CHIPS OR CRUSHED STONE SCREENINGS CONFORMING TO CHAPTER 8.43.2 OF THE "STANDARD SPECIFICATIONS".
   - 15.5. BACKFILL – BACKFILL MATERIAL AND INSTALLATION SHALL BE IN ACCORDANCE WITH CHAPTER 2.6.0 OF THE "STANDARD SPECIFICATIONS". GRAVEL BACKFILL IS REQUIRED IN ALL PAVED AREAS AND TO A POINT 5 FEET BEYOND THE EDGE OF PAVEMENT. TRENCHES RUNNING PARALLEL TO AND LESS THAN 5 FEET FROM THE EDGE OF PAVEMENT SHALL ALSO REQUIRE GRAVEL BACKFILL. LANDSCAPED AREAS MAY BE BACKFILLED WITH
   - 15.6. ALL PRIVATE (NOT WITHIN R.O.W. OR PUBLIC EASEMENTS) PIPE AND TUBING FOR WATER SERVICE SHALL CONFORM TO SPS 384.30-4.
16. SANITARY SEWER SPECIFICATIONS –
   - 16.1. PIPE – SANITARY SEWER PIPE MATERIAL SHALL BE POLYVINYL CHLORIDE (PVC) MEETING REQUIREMENTS OF ASTM D 3034, SDR-35, WITH INTEGRAL BELL TYPE FLEXIBLE ELASTOMERIC JOINTS, MEETING THE REQUIREMENTS OF ASTM D-3212.
   - 16.2. BEDDING AND COVER MATERIAL – BEDDING AND COVER MATERIAL SHALL CONFORM TO THE APPROPRIATE SECTIONS OF THE "STANDARD SPECIFICATION" WITH THE FOLLOWING MODIFICATION: "COVER MATERIAL SHALL BE THE SAME AS USED FOR BEDDING AND SHALL CONFORM TO SECTION 8.43.2 (A). BEDDING AND COVER MATERIAL SHALL BE PLACED IN A MINIMUM OF THREE SEPARATE LIFTS, OR AS REQUIRED TO INSURE ADEQUATE COMPACTING OF THESE MATERIALS, WITH ONE LIFT OF BEDDING MATERIAL ENDING AT OR NEAR THE SPRINGLINE OF THE PIPE. THE CONTRACTOR SHALL TAKE CARE TO COMPLETELY WORK BEDDING MATERIAL UNDER THE HAUNCH OF THE PIPE TO PROVIDE ADEQUATE SIDE SUPPORT."
   - 16.3. BACKFILL – BACKFILL MATERIAL AND INSTALLATION SHALL BE IN ACCORDANCE CHAPTER 2.6.0 OF THE "STANDARD SPECIFICATIONS." GRAVEL BACKFILL IS REQUIRED IN ALL PAVED AREAS AND TO A POINT 5 FEET BEYOND THE EDGE OF PAVEMENT. TRENCHES RUNNING PARALLEL TO AND LESS THAN 5 FEET FROM THE EDGE OF PAVEMENT SHALL ALSO REQUIRE GRAVEL BACKFILL. LANDSCAPED AREAS MAY BE BACKFILLED WITH EXCAVATED MATERIAL IN CONFORMANCE WITH SECTION 8.43.5 OF THE "STANDARD SPECIFICATIONS."
   - 16.4. MANHOLES – MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH FILE NOS. 12, 13 AND 15 OF THE "STANDARD SPECIFICATIONS" AND ALL SPECIAL PROVISIONS OF THE CITY OF FITCHBURG.
   - 16.5. MANHOLE FRAMES AND COVERS – MANHOLE FRAMES AND COVERS SHALL BE NEENAH R-1642 WITH TYPE "B" SELF SEALING LIDS, NON-ROCKING OR EQUAL.
17. ALL PRIVATE (NOT WITHIN R.O.W. OR PUBLIC EASEMENTS) PIPE SHALL BE INSTALLED PER SPS 382.40-8 INCLUDING AT LEAST 8' OF HORIZONTAL DISTANCE BETWEEN WATER PIPING AND SANITARY SEWER FROM CENTER OF PIPE TO CENTER OF PIPE AND 6' OF SEPARATION BETWEEN STORM SEWER AND WATER PIPING.
18. ALL LOCATIONS WHERE STORM SEWER AND WATER MAIN ARE CROSSING AND LESS THAN 3 FEET OF VERTICAL/HORIZONTAL SEPERATION IS PROVIDED, WATER MAIN SHALL BE INSULATED PER CITY OF FITCHBURG SPECIFICATIONS.
19. ALL CONSTRUCTION SIGNING TO BE IN ACCORDANCE WITH THE CITY OF FITCHBURG AND WISCONSIN DEPARTMENT OF TRANSPORTATION REQUIREMENTS.
20. ALL SANITARY SEWER PIPES WITHIN THE RIGHT-OF-WAY SHALL BE PVC PIPE CONFORMING TO ASTM SDR 26 SPECIFICATIONS.
21. ALL PUBLIC WATERMAIN TO MAINTAIN A 10-FOOT MINIMUM HORIZONTAL SEPARATION BETWEEN SEWER AND WATERMAINS. PROVIDE 18" MINIMUM VERTICAL SEPARATION WHERE SEWER CROSSES OVER WATER, AND 6" MINIMUM VERTICAL SEPARATION WHERE WATER CROSSES OVER SEWER.
22. RESTORATION OF THE EXISTING ROADWAY RIGHT-OF-WAYS ARE CONSIDERED INCIDENTAL AND SHOULD BE PART OF THE COST OF THE UNDERGROUND IMPROVEMENTS AND SHOULD INCLUDE CURB & GUTTER, SIDEWALK, TOPSOIL, FERTILIZER, SEEDING AND HYDROMULCHING.
23. ALL UTILITY CROSSINGS SHALL BE MADE PRIOR TO PROOF ROLLING AND PLACEMENT OF BASE COARSE.
24. HYDRANTS AND HYDRANT VALVES SHALL BE LOCATED WITHIN THE TERRACE.
25. WATER VALVES WITH MORE THAN 7 FOOT OF COVER ARE REQUIRED TO HAVE VALVE EXTENSIONS.
26. ALL SANITARY LATERALS SHALL BE INSTALLED AT 2.0% SLOPE.
27. WATER MAIN SHALL ONLY BE DEFLECTED AS SHOWN ON PLANS.
28. SCOTCH MARKER BALL MARKERS ARE REQUIRED ABOVE SANITARY LATERAL AT EVERY HORIZONTAL BEND AND WITHIN 2' FROM RIGHT-OF-WAY. MARKERS SHALL BE PLACED 3.5' TO 4.5' FROM FINAL SURFACE.
29. PUBLIC SANITARY SEWER SHOWN ON SHEETS C8.13-C8.17 SHALL COMPLY WITH THE FOLLOWING: TRENCH SHALL BE EXCAVATED TO NATIVE SOILS AND BACKFILLED WITH SELECT GRANULAR FILL COMPACTED PER CITY OF FITCHBURG SPECIFICATIONS. IF NATIVE SOILS ARE NOT ENCOUNTERED WITHIN 3 FEET BELOW INVERT OF PROPOSED PIPE, PIPE SHALL BE INSTALLED AT 1.0% MINIMUM SLOPE WITH GEOGRID REINFORCEMENT CONFORMING TO UTILITY TRENCH DETAIL ON SHEET C6.1. CONTRACTOR SHALL NOTIFY ENGINEER IF NATIVE SOILS ARE NOT ENCOUNTERED DURING TRENCH EXCAVATION.
30. TRANSFORMER PADS SHALL CONFORM TO UTILITY OWNER DETAILS AND SPECIFICATIONS.
31. TRANSFORMER AND ELECTRIC UTILITY CONDUITS LOCATIONS ARE CONCEPTUAL AND SHALL BE COORDINATED WITH THE UTILITY (MGE)

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PRELIMINARY
NOT FOR CONSTRUCTION

PROJECT:
NINE SPRINGS

PROJECT LOCATION:
FITCHBURG, WI 53711
DANE COUNTY

PLAN MODIFICATIONS:

#	Date:	Description:
1	03.25.22	P-PLAT SUBMITTAL
2	04.12.22	RESPONSE TO P-PLAT COMMENTS
3	06.21.22	ADR SUBMITTAL
4	12.14.22	P-PLAT SUBMITTAL
5		
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13		
14		
15		

Designed By: MSS
Reviewed By: ACG
Approved By:

SHEET TITLE:
NOTES

SHEET NUMBER:
C1.0

JSD PROJECT NO: 21-10566

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File: I:\2021\21-10566\DWG\Civil Sheets\21-10566 Notes and Typical Sections.dwg Layout: C1.0 User: msaunders Plotted: Dec 13, 2022 - 2:22pm Xref's:

CONSTRUCTION SEQUENCING

1. INSTALL PERIMETER SILT FENCE, INLET PROTECTION AND TEMPORARY CONSTRUCTION ENTRANCE.
2. STRIP AND STOCKPILE TOPSOIL, INSTALL SILT FENCE AROUND PERIMETER OF STOCKPILE.
3. ROUGH GRADE WET POND AND INSTALL POND OUTLET.
4. CONDUCT ROUGH GRADING EFFORTS AND INSTALL CHECK DAMS WITHIN DRAINAGE DITCHES AS NEEDED.
5. INSTALL UTILITY PIPING AND STRUCTURES, IMMEDIATELY INSTALL INLET PROTECTION.
6. COMPLETE FINAL GRADING, INSTALLATION OF GRAVEL BASE COURSES, PLACEMENT OF CURBS, PAVEMENTS, WALKS, ETC.
7. PLACE TOPSOIL AND IMMEDIATELY STABILIZE DISTURBED AREAS WITH EROSION CONTROL MEASURES AS INDICATED ON PLANS.
8. RESTORE WET POND (FINAL GRADE RETENTION POND PER PLAN REQUIREMENTS)
9. EROSION CONTROLS SHALL NOT BE REMOVED UNTIL SITE IS FULLY STABILIZED OR 70% VEGETATIVE COVER IS ESTABLISHED.

CONTRACTOR MAY MODIFY SEQUENCING AFTER ITEM NO. 1 AS NEEDED TO COMPLETE CONSTRUCTION IF EROSION CONTROLS ARE MAINTAINED IN ACCORDANCE WITH THE CONSTRUCTION SITE EROSION CONTROL REQUIREMENTS.

STORMWATER FACILITIES CONSTRUCTION NOTES

1. ENGINEER SHALL BE NOTIFIED PRIOR TO INSTALLATION OF STORMWATER MANAGEMENT FACILITIES. CONSTRUCTION OF STORMWATER MANAGEMENT FACILITIES SHALL BE OBSERVED AND DOCUMENTED BY THE ENGINEER, OR AN OWNER'S REPRESENTATIVE.
2. STORMWATER MANAGEMENT FACILITIES SHALL BE INSTALLED AFTER SUBSTANTIAL COMPLETION OF FINAL SITE GRADING AND SOILS HAVE BEEN STABILIZED.
3. AREAS USED FOR TEMPORARY SEDIMENT BASINS SHALL BE REMOVED IN THEIR ENTIRETY AFTER CONSTRUCTION OF STORMWATER MANAGEMENT FACILITIES.
4. CONSTRUCTION TRAFFIC, HEAVY EQUIPMENT AND SOIL STOCKPILES SHALL NOT BE PLACED IN AREAS WHERE PROPOSED STORMWATER MANAGEMENT FACILITIES ARE LOCATED.
5. NATIVE SOIL INFILTRATION RATES BELOW STORMWATER FACILITIES SHALL BE VERIFIED BY THE OWNER'S GEOTECHNICAL ENGINEER PRIOR INSTALLATION OF FACILITIES. NATIVE SOIL INFILTRATION RATES SHALL BE EQUAL TO OR GREATER THAN DESIGN INFILTRATION RATES.
6. NATIVE SOILS SHALL BE BLENDED A MINIMUM OF TWO FEET PRIOR TO INSTALLATION OF STORMWATER INFILTRATION FACILITIES TO BREAKUP ANY LOWER PERMEABILITY SEAMS THAT MAY BE PRESENT.
7. THICKER SILT OR CLAY LAYERS SHALL BE OVER-EXCAVATED AND BACKFILLED WITH GRANULAR MATERIALS CONFORMING TO SPECIFICATIONS PER WDNR TECH STANDARD 1004.

GRADING AND SEEDING NOTES

1. ALL PROPOSED GRADES SHOWN ARE FINISHED GRADES. CONTRACTOR SHALL VERIFY ALL GRADES, MAKE SURE ALL AREAS DRAIN PROPERLY AND SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO CONSTRUCTION.
2. CONTRACTOR SHALL ASSUME SOLE RESPONSIBILITY FOR COMPUTATIONS OF ALL GRADING QUANTITIES. WHILE JSD PROFESSIONAL SERVICES, INC. ATTEMPTS TO PROVIDE A COST EFFECTIVE APPROACH TO BALANCE EARTHWORK, GRADING DESIGN IS BASED ON MANY FACTORS, INCLUDING SAFETY, AESTHETICS, AND COMMON ENGINEERING STANDARDS OF CARE. THEREFORE, NO GUARANTEE CAN BE MADE FOR A BALANCED SITE.
3. PARKING LOT AND DRIVEWAY ELEVATIONS ARE PAVEMENT GRADES, NOT TOP OF CURB GRADES, UNLESS OTHERWISE NOTED.
4. ANY WORK WITHIN RIGHT-OF-WAY SHALL BE PROPERLY PERMITTED AND COORDINATED WITH THE APPROPRIATE OFFICIALS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES. ALL GRADING WITHIN RIGHT-OF-WAY IS SUBJECT TO APPROVAL BY SAID OFFICIALS.
5. CONTRACTOR SHALL PROVIDE NOTICE TO THE MUNICIPALITY IN ADVANCE OF ANY SOIL DISTURBING ACTIVITIES, IN ACCORDANCE WITH MUNICIPAL REQUIREMENTS.
6. ALL DISTURBED AREAS SHALL BE SODDED AND/OR SEEDED AND MULCHED IMMEDIATELY FOLLOWING GRADING ACTIVITIES. SOD/SEED MIX TO BE IN ACCORDANCE WITH LANDSCAPE PLAN.
7. CONTRACTOR SHALL CHISEL-PLOW OR DEEP TILL WITH DOUBLE TINES ALL STORMWATER MANAGEMENT FACILITIES JUST PRIOR TO SODDING AND/OR SEEDING AND MULCHING TO PROMOTE INFILTRATION.
8. CONTRACTOR SHALL WATER ALL NEWLY SODDED/SEEDED AREAS DURING THE SUMMER MONTHS WHENEVER THERE IS A 7 DAY LAPSE WITH NO SIGNIFICANT RAINFALL.
9. CONTRACTOR TO DEEP TILL ALL COMPACTED PERVIOUS SURFACES PRIOR TO SODDING AND/OR SEEDING AND MULCHING.
10. ALL EXPOSED SOIL AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE OR ON WHICH LAND DISTURBING ACTIVITIES WILL NOT BE PERFORMED FOR A PERIOD GREATER THAN 30 DAYS AND REQUIRE VEGETATIVE COVER FOR LESS THAN 1 YEAR, REQUIRE TEMPORARY SEEDING FOR EROSION CONTROL. SEEDING FOR EROSION CONTROL SHALL BE IN ACCORDANCE WITH WDNR TECHNICAL STANDARD 1059 AND CITY OF FITCHBURG ORDINANCE.
11. **NON-PRAIRIE GRASS SEEDED SLOPES: ALL SLOPES 4:1 OR GREATER SHALL BE STABILIZED WITH CLASS I, TYPE A URBAN EROSION MATTING AND DRAINAGE SWALES SHALL BE STABILIZED WITH CLASS II, TYPE C EROSION MATTING, WITHIN 7 DAYS OF REACHING FINAL GRADE AND/OR AS SOON AS CONDITIONS ALLOW. REFER BELOW TO "CSECR" NOTE NO. SIXTEEN (16) FOR STABILIZATION PRACTICES FOR POTENTIAL INTERIM STABILIZATION.**
12. **REFER TO LANDSCAPE DETAILS, NOTES AND SPECIFICATIONS FOR STABILIZATION SPECIFICATIONS WITHIN PRAIRIE SEED MIX AREAS.**

SITE EROSION CONTROL REQUIREMENTS NOTES:

1. ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE DESIGNED AND IMPLEMENTED IN ACCORDANCE WITH THE CURRENT DEPARTMENT OF NATURAL RESOURCES EROSION AND SEDIMENT CONTROL TECHNICAL STANDARDS WHICH ARE AVAILABLE AT: http://dnr.wi.gov/topic/stormwater/
2. INSTALL EROSION CONTROL MEASURES PRIOR TO ANY SITE WORK, INCLUDING GRADING OR DISTURBANCE OF EXISTING SURFACE MATERIALS AS SHOWN ON PLAN. MODIFICATIONS TO SEDIMENT CONTROL DESIGN MAY BE CONDUCTED TO MEET UNFORESEEN FIELD CONDITIONS IF MODIFICATIONS CONFORM TO WDNR TECHNICAL STANDARDS AND ARE APPROVED BY CITY OF FITCHBURG ENGINEER.
3. INSPECTIONS AND MAINTENANCE OF ALL EROSION CONTROL MEASURES SHALL BE ROUTINE (ONCE PER WEEK MINIMUM) TO ENSURE PROPER FUNCTION OF EROSION CONTROLS AT ALL TIMES. EROSION CONTROL MEASURES ARE TO BE IN WORKING ORDER AT THE END OF EACH WORK DAY.
4. INSPECT EROSION CONTROL MEASURES AFTER EACH 1/2" OR GREATER RAINFALL. REPAIR ANY DAMAGE OBSERVED DURING THE INSPECTION.
5. TEMPORARY SEDIMENT BASINS SHALL BE REMOVED AND THE WET BASIN, BIORETENTION BASINS, AND SEDIMENT BASIN SHALL BE INSTALLED ONCE A UNIFORM PERENNIAL VEGETATIVE COVER HAS BEEN ESTABLISHED. COVER SHOULD BE ESTABLISHED WITH A DENSITY OF AT LEAST 70% FOR UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES OR THAT EMPLOY EQUIVALENT PERMANENT STABILIZATION MEASURES.
6. EROSION CONTROL MEASURES SHALL NOT BE REMOVED UNTIL ALL LAND DISTURBING CONSTRUCTION ACTIVITY AT THE SITE HAS BEEN COMPLETED INCLUDING CONSTRUCTION OF THE WET BASIN, BIORETENTION BASINS, AND SEDIMENT BASIN.
7. INSTALL A TRACKING PAD, 50' LONG, 24' WIDE, AND NO LESS THAN 12" THICK BY USE OF 3" CLEAR STONE. TRACKING PADS ARE TO BE MAINTAINED BY THE CONTRACTOR IN A CONDITION WHICH WILL PREVENT THE TRACKING OF MUD OR DRY SEDIMENT ONTO THE ADJACENT PUBLIC STREETS AFTER EACH WORKING DAY OR MORE FREQUENTLY AS REQUIRED.
8. INSTALL EROSION CONTROLS ON THE DOWNSTREAM SIDE OF STOCKPILES.
9. INSTALL TEMPORARY SEDIMENT TRAPS PER LATEST EDITION OF WDNR STORM WATER CONSTRUCTION TECHNICAL CONSTRUCTION SITE EROSION & SEDIMENT CONTROL STANDARDS NOTE 1063. SEDIMENT TRAPS SHALL BE SIZED BASED ON MEDIUM SOIL TEXTURAL CLASS. SEDIMENT TRAPS SHALL BE INSPECTED WITHIN 24 HOURS AFTER EVERY RAIN EVENT PRODUCING 0.5 INCHES OF RAIN OR MORE AND AT A MINIMUM SEDIMENT SHALL BE REMOVED WHEN SEDIMENT REACHES A DEPTH OF 1 FOOT OR WHEN OUTLET BECOMES CLOGGED. SEDIMENT TRAPS SHALL BE REMOVED AND THE LOCATION STABILIZED AFTER THE DISTURBED AREA DRAINING TO THE SEDIMENT TRAP IS STABILIZED AND NO LONGER SUSCEPTIBLE TO EROSION. ALL SEDIMENT SHALL BE PROPERLY DISPOSED.
10. INSTALL CHECK DAMS WITHIN DRAINAGE DITCHES AND IN FRONT OF SILT FENCING IN ANY LOW AREA ALL IN ACCORDANCE WITH WDNR TECHNICAL STANDARDS.
11. EROSION CONTROL FOR UTILITY CONSTRUCTION (STORM SEWER, SANITARY SEWER, WATER MAIN, ETC.):
    A. PLACE EXCAVATED TRENCH MATERIAL ON THE HIGH SIDE OF THE TRENCH.
    B. BACKFILL, COMPACT, AND STABILIZE THE TRENCH IMMEDIATELY AFTER PIPE CONSTRUCTION.
    C. DISCHARGE TRENCH WATER INTO A SEDIMENTATION BASIN OR FILTERING TANK IN ACCORDANCE WITH THE DEWATERING TECHNICAL STANDARD NO. 1061 PRIOR TO RELEASE INTO THE STORM SEWER, RECEIVING STREAM, OR DRAINAGE DITCH.
12. ADDITIONAL EROSION CONTROL MEASURES, AS REQUESTED BY STATE INSPECTORS, LOCAL INSPECTORS, AND/OR ENGINEER SHALL BE INSTALLED WITHIN 24 HOURS OF REQUEST.
13. CONTRACTOR/OWNER SHALL FILE A NOTICE OF TERMINATION UPON VEGETATIVE STABILIZATION AND/OR PROPERTY SALE IN ACCORDANCE WITH WDNR REQUIREMENTS.
14. CONTRACTOR SHALL TAKE ALL NECESSARY STEPS TO CONTROL DUST ARISING FROM CONSTRUCTION OPERATIONS. REFER TO WDNR TECHNICAL STANDARD 1068.
15. ADDITIONAL EROSION CONTROL MEASURES, AS REQUESTED BY STATE INSPECTORS, LOCAL INSPECTORS, COUNTY INSPECTORS AND/OR ENGINEER OF RECORD SHALL BE INSTALLED WITHIN 24 HOURS OF REQUEST.
16. INSPECTIONS AND MAINTENANCE OF ALL EROSION CONTROL MEASURES SHALL BE ROUTINE (ONCE PER WEEK MINIMUM) TO ENSURE PROPER FUNCTION OF EROSION CONTROLS AT ALL TIMES. EROSION CONTROL MEASURES ARE TO BE IN WORKING ORDER AT THE END OF EACH WORK DAY.
17. PAVED SURFACES ADJACENT TO CONSTRUCTION SITE VEHICLE ACCESS SHALL BE SWEPT AND/OR SCRAPED TO REMOVE ACCUMULATED SOIL, DIRT AND/OR DUST AFTER THE END OF EACH WORK DAY AND AS REQUESTED BY THE CITY OF FITCHBURG.
18. INLET PROTECTION SHALL BE IMMEDIATELY FITTED AT THE INLET OF ALL INSTALLED STORM SEWER AND SILT FENCE SHALL BE IMMEDIATELY FITTED AT ALL INSTALLED CULVERT INLETS TO PREVENT SEDIMENT DEPOSITION WITHIN STORM SEWER SYSTEMS.
19. INSTALL EROSION CONTROLS ON THE DOWNSTREAM SIDE OF STOCKPILES. IF STOCKPILE REMAINS UNDISTURBED FOR MORE THAN SEVEN (7) DAYS, TEMPORARY SEEDING AND STABILIZATION IN ACCORDANCE WITH BEST MANAGEMENT PRACTICES IS REQUIRED. IF DISTURBANCE OCCURS BETWEEN NOVEMBER 15TH AND MAY 15TH, THE MULCHING SHALL BE PERFORMED BY HYDRO-MULCHING WITH A "TACKIFIER."
20. EROSION CONTROL MEASURES SHALL NOT BE REMOVED UNTIL ALL LAND DISTURBING CONSTRUCTION ACTIVITY AT THE SITE HAS BEEN COMPLETED AND THAT A UNIFORM PERENNIAL VEGETATIVE COVER HAS BEEN ESTABLISHED WITH A DENSITY OF AT LEAST 70% FOR UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES OR THAT EMPLOY EQUIVALENT PERMANENT STABILIZATION MEASURES.
21. STABILIZATION PRACTICES:
    - 20.1. * STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED. NO MORE THAN SEVEN (7) DAYS SHALL PASS AFTER CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS CEASED UNLESS:
    - 20.2. * THE INITIATION STABILIZATION MEASURES BY THE SEVENTH (7) DAY AFTER CONSTRUCTION ACTIVITY HAS CEASED IS PRECLUDED BY SNOW COVER. IN THAT EVENT, STABILIZATION SHALL BE INITIATED AS SOON AS PRACTICABLE.
    - 20.3. * CONSTRUCTION ACTIVITY WILL RESUME ON A PORTION OF THE SITE WITHIN FOURTEEN (14) DAYS FROM WHEN ACTIVITY CEASED, (I.E. THE TOTAL TIME PERIOD THAT THE CONSTRUCTION ACTIVITY IS TEMPORARILY CEASED IS LESS THAN FOURTEEN (14) DAYS) IN THAT EVENT, STABILIZATION MEASURES DO NOT HAVE TO BE INITIATED ON THAT PORTION OF THE SITE BY THE SEVENTH (7) DAY AFTER CONSTRUCTION ACTIVITY HAS TEMPORARILY CEASED.
    - 20.4. * STABILIZATION MEASURES WITHIN PUBLIC R.O.W. SHALL CONFORM TO CITY OF FITCHBURG SPECIFICATIONS. THE FOLLOWING ARE ACCEPTABLE STABILIZATION MEASURES:
      - * PERMANENT SEEDING; IN ACCORDANCE WITH APPROVED CONSTRUCTION SPECIFICATION
      - * TEMPORARY SEEDING; MAY CONSIST OF SPRING OATS(100LBS/ACRE) AND/OR WHEAT OR CEREAL RYE (150LB/ACRE)
      - * HYDRO-MULCHING WITH A TACKIFIER
      - * GEOTEXTILE EROSION MATTING
      - * SODDING

SIGNAGE AND LIGHTING NOTES:

1. ALL SIGNS SHALL HAVE PREMIUM PROTECTIVE OVERLAY FILM; 3M SERIES 1160
2. ALL SIGN MATERIALS SHALL BE DIAMOND GRADE
3. REFER TO THE LIGHTING SPECIFICATIONS FOR FIXTURE CUT SHEETS.

TRAFFIC CONTROL

1. WORK IN THE CTH MM RIGHT OF WAY SHALL BE COORDINATED WITH THE CTH MM IMPROVEMENTS WORK.
2. TEMPORARY TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE MUTCD AND WISDOT STANDARD DETAILS.
3. TEMPORARY LANE CLOSURES SHALL BE REPORTED TO THE CITY OF FITCHBURG POLICE DEPARTMENT, DANE COUNTY HIGHWAY DEPARTMENT AND DANE COUNTY SHERIFF A MINIMUM OF 72 HOURS PRIOR.

LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY
- EASEMENT LINE
- BUILDING OUTLINE
- BUILDING OVERHANG
- BUILDING SETBACK LINE
- PAVEMENT SETBACK LINE
- EDGE OF PAVEMENT
- STANDARD CURB AND GUTTER
- REJECT CURB AND GUTTER
- MOUNTABLE CURB AND GUTTER
- 8" CONCRETE RIBBON CURB
- ASPHALT PAVEMENT
- HEAVY DUTY ASPHALT PAVEMENT
- CONCRETE PAVEMENT
- HEAVY DUTY CONCRETE PAVEMENT
- 959 PROPOSED 1 FOOT CONTOUR
- 960 PROPOSED 5 FOOT CONTOUR
- 959 EXISTING 1 FOOT CONTOUR
- 960 EXISTING 5 FOOT CONTOUR
- DRAINAGE DIRECTION
- GRADE BREAK
- STORMWATER MANAGEMENT AREA
- RETAINING WALL
- BOULDER WALL
- RAILING
- FENCE
- LIGHT POLE (REFER TO PHOTOMETRIC PLAN)
- ADA PARKING SIGN
- FLAG POLE
- BOLLARD
- BOLLARD WITH ADA PARKING SIGN
- BIKE RACK
- TREE REMOVAL
- SHRUB REMOVAL
- SAWCUT EXISTING PAVEMENT
- SANITARY SEWER
- WATERMAIN
- STORM SEWER
- 8'x4'x4" INSULATION (PLAN VIEW)
- 8'x4'x4" INSULATION (PROFILE VIEW)
- SILT FENCE
- RIP-RAP
- CONSTRUCTION ENTRANCE
- EROSION MATTING
- TURF REINFORCEMENT MATTING
- SPOT ELEVATION (FG: XXX.XX)
  - EP - EDGE OF PAVEMENT
  - FG - FINISH GRADE
  - EC - EDGE OF CONCRETE
  - BOC - BACK OF CURB
  - MATCH - MATCH EXISTING GRADE
  - HP - HIGH POINT
  - SW - SIDEWALK
- DITCH CHECK
- INLET PROTECTION
- DEMOLITION - REMOVAL OF STORM PIPE
- DEMOLITION - REMOVAL OF GRAVEL SURFACES
- DEMOLITION - REMOVAL OF FENCE
- DEMOLITION - REMOVAL OF TREES AND UNDERGROWTH
- TREE REMOVAL

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CLIENT:
ROYAL CAPITAL

CLIENT ADDRESS:
710 N PLANKINTON AVE. SUITE 300
MILWAUKEE, WI 53203

PRELIMINARY
NOT FOR CONSTRUCTION

PROJECT:
NINE SPRINGS

PROJECT LOCATION:
FITCHBURG, WI 53711
DANE COUNTY

PLAN MODIFICATIONS:

#	Date:	Description:
1	03.25.22	P-PLAT SUBMITTAL
2	04.12.22	RESPONSE TO P-PLAT COMMENTS
3	06.21.22	ADR SUBMITTAL
4	12.14.22	P-PLAT SUBMITTAL
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Designed By: MSS
Reviewed By: ACG
Approved By:

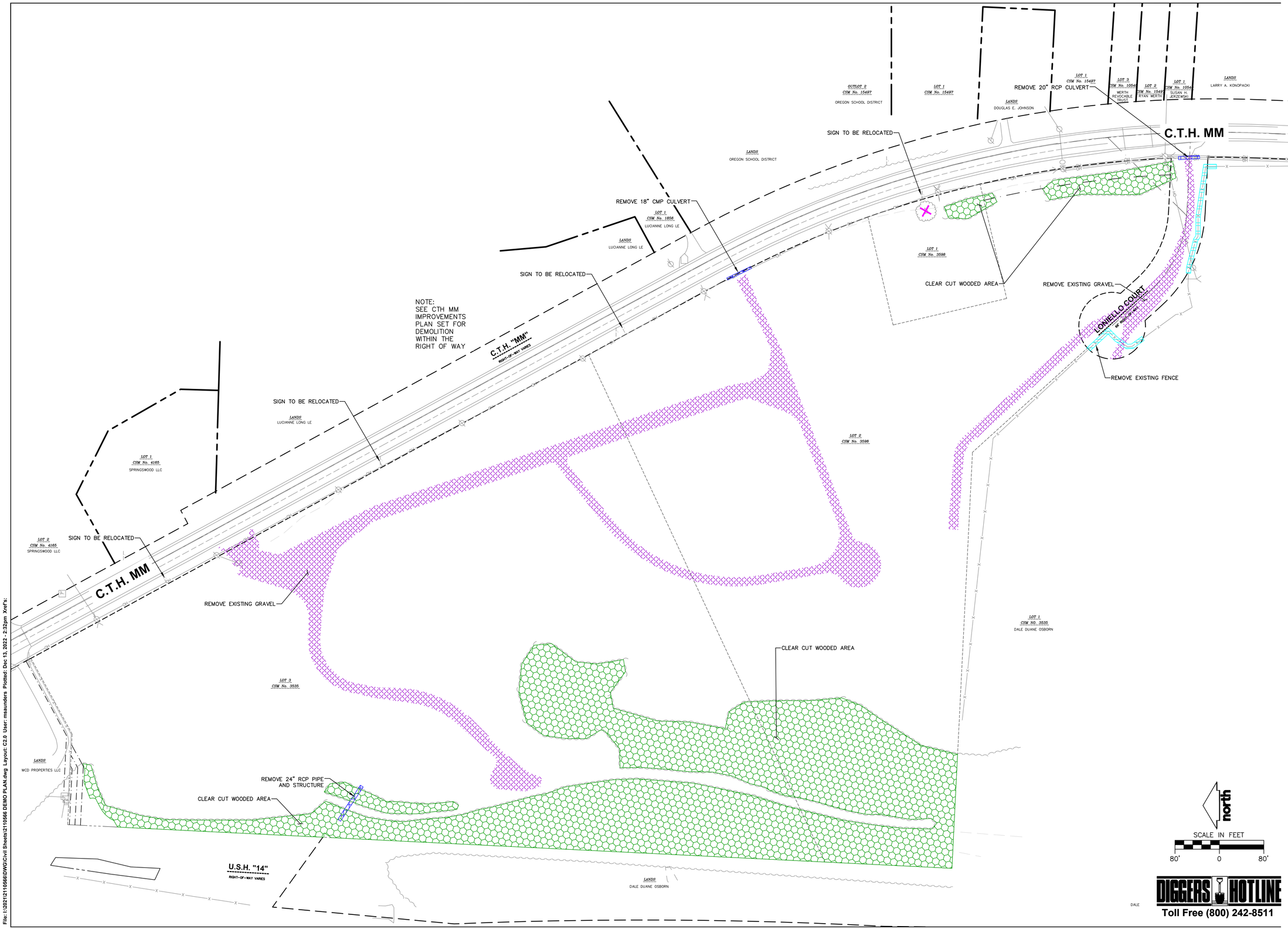
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NOTES & LEGEND

SHEET NUMBER:
C1.1

JSD PROJECT NO: 21-10566

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PRELIMINARY
NOT FOR CONSTRUCTION

PROJECT:
NINE SPRINGS

PROJECT LOCATION:
FITCHBURG, WI 53711
DANE COUNTY

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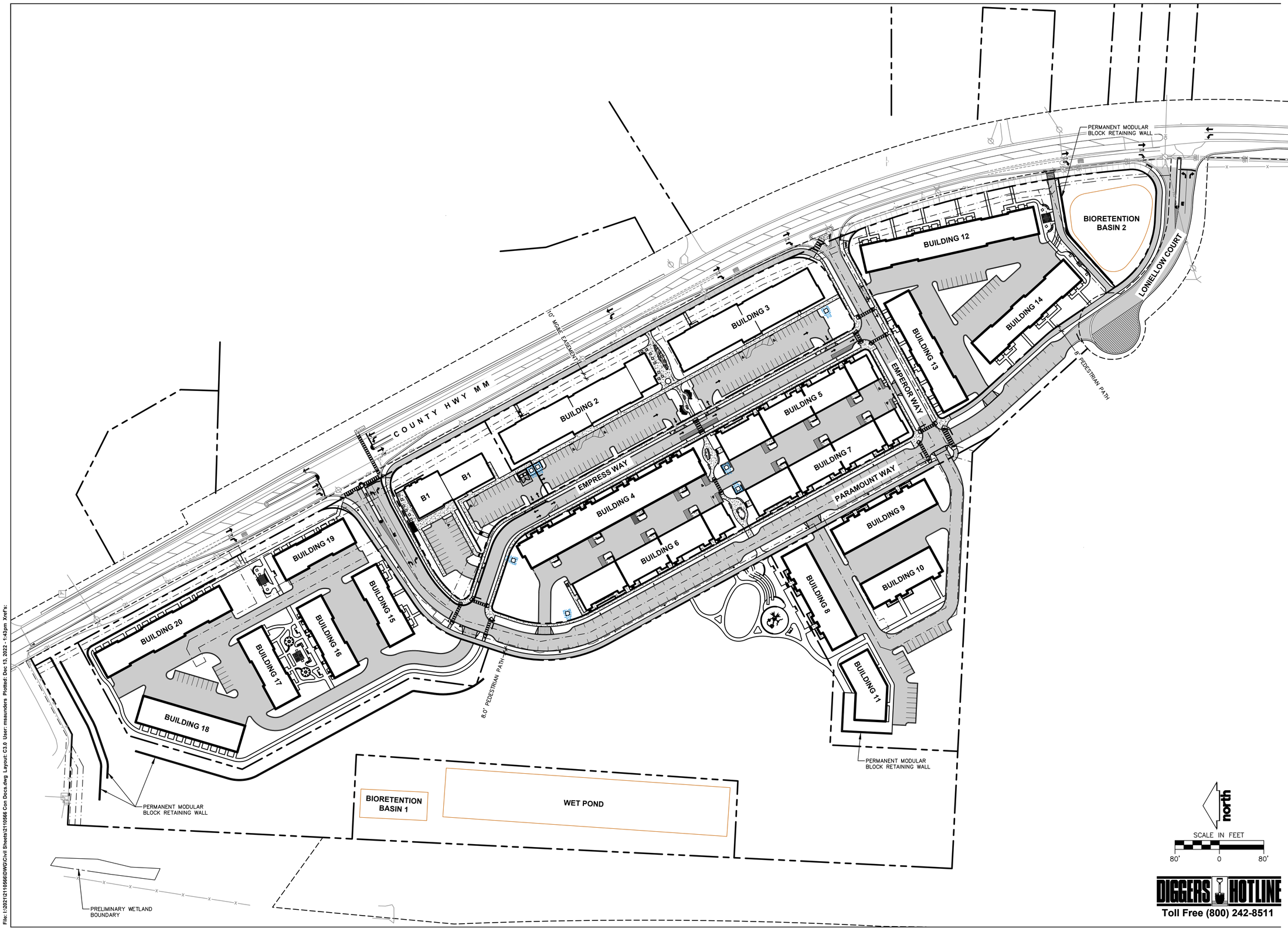
Designed By: MSS/CTD
Reviewed By: ACG
Approved By:

SHEET TITLE:
DEMOLITION PLAN

SHEET NUMBER:
C2.0

JSD PROJECT NO: 21-10566

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north

SCALE IN FEET

80' 0 80'

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PROJECT:
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PROJECT LOCATION:
FITCHBURG, WI 53711
DANE COUNTY

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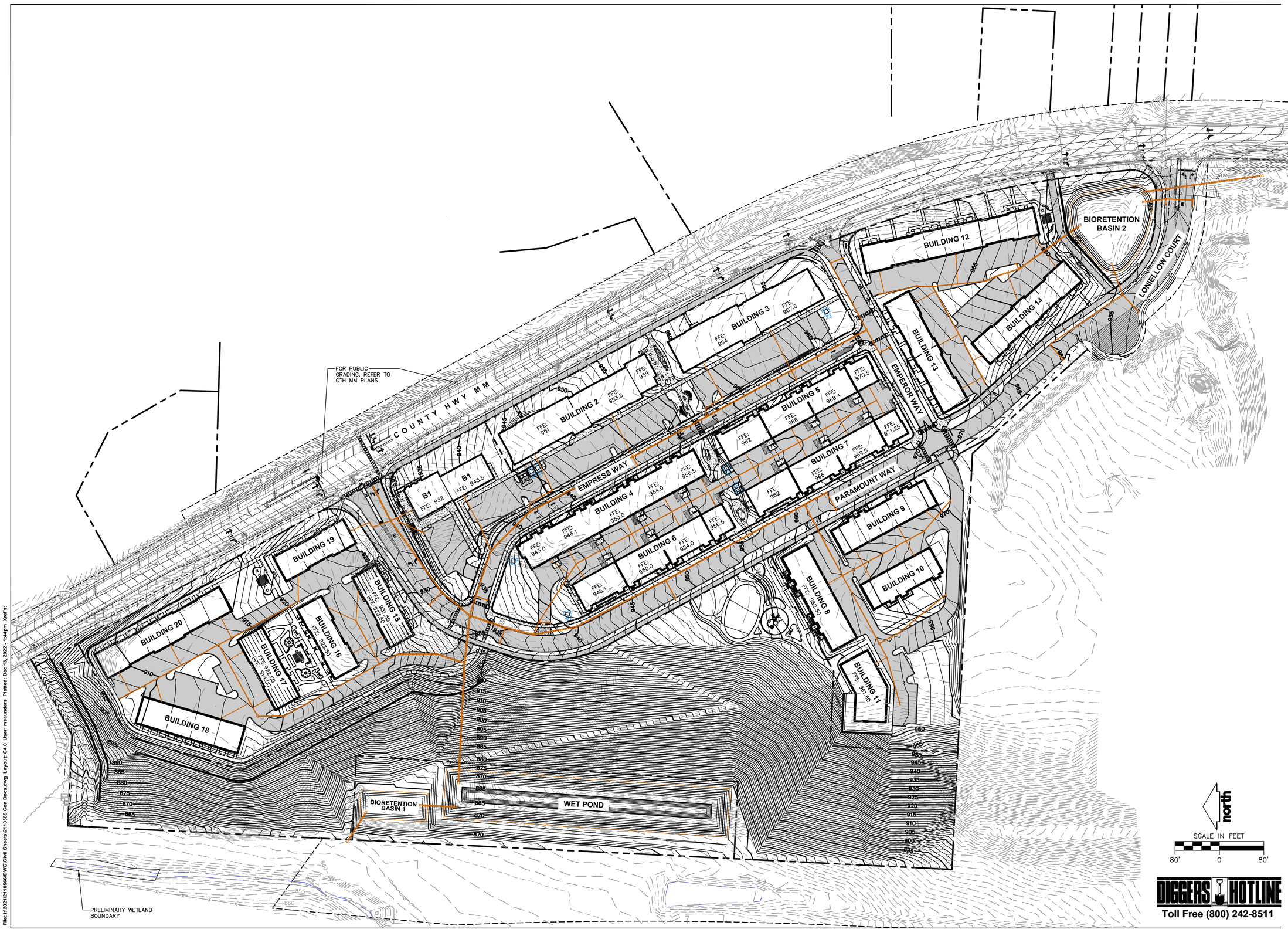
Designed By: MSS
Reviewed By: ACG
Approved By:

SHEET TITLE:
SITE PLAN

SHEET NUMBER:
C3.0

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PRELIMINARY
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PROJECT:
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PROJECT LOCATION:
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DANE COUNTY

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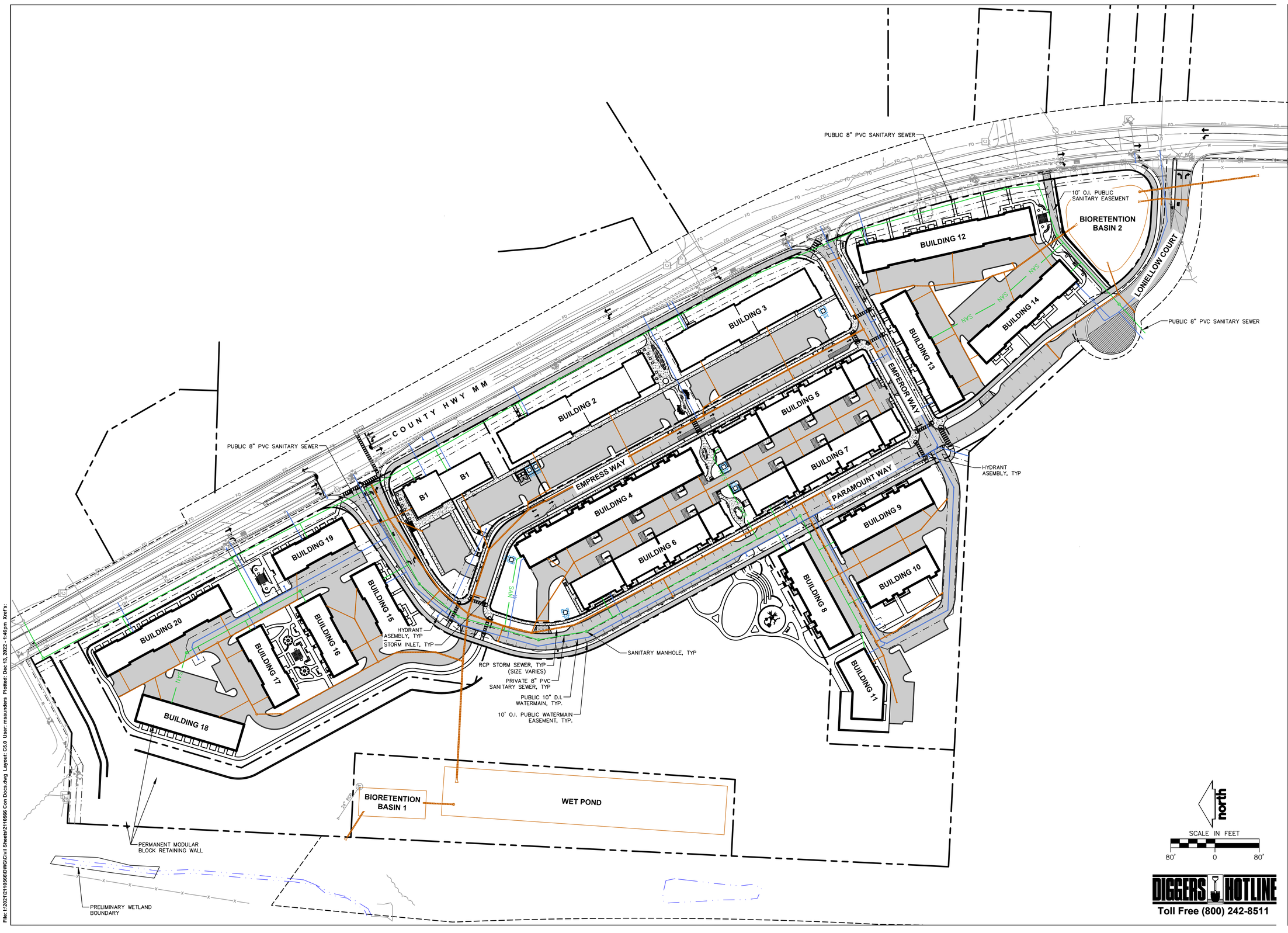
Designed By: MSS
Reviewed By: ACG
Approved By:

SHEET TITLE:
GRADING PLAN

SHEET NUMBER:
C4.0

JSD PROJECT NO: 21-10566

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north

SCALE IN FEET

80' 0 80'

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MILWAUKEE, WI 53203

PRELIMINARY
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PROJECT:
NINE SPRINGS

PROJECT LOCATION:
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DANE COUNTY

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Designed By: MSS
Reviewed By: ACG
Approved By:

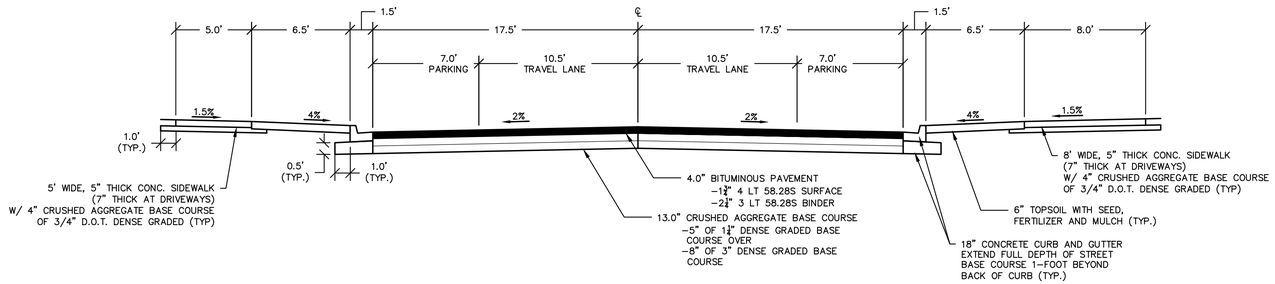
SHEET TITLE:
UTILITY PLAN

SHEET NUMBER:
C5.0

JSD PROJECT NO: 21-10566

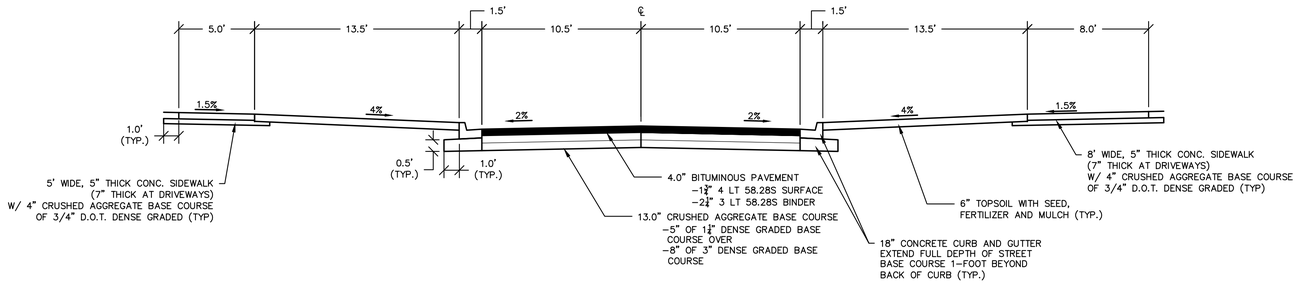
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NOTE:
1. SEE TYPICAL FINISHED SECTION W/ UTILITY TRENCH SHEET C6.1 FOR GEOGRID PLACEMENT.
2. WHERE STORM SEWER IS THE ONLY UTILITY TO BE CONSTRUCTED OR NO UTILITIES ARE TO BE INSTALLED UNDER PAVEMENT, AREAS OUTSIDE OF UTILITY TRENCH GEOGRID SHALL BE PLACED A MINIMUM OF 4 FEET BELOW FINISHED GRADE AND BACKFILLED WITH SELECT IMPORTED FILL, GRANULAR MATERIAL.



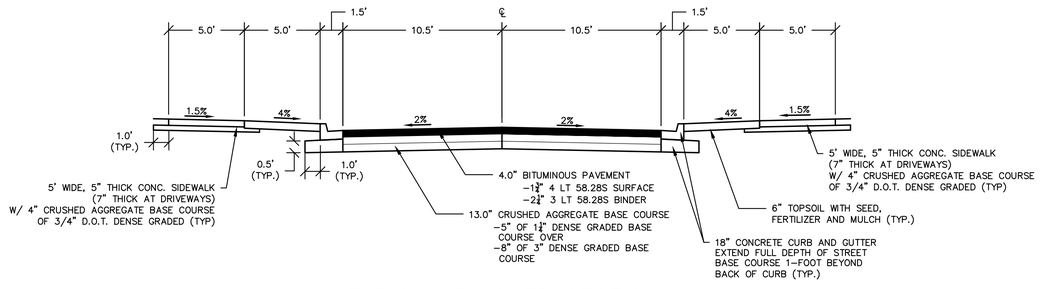
TYPICAL FINISHED SECTION

STREET A STA: 105+76 – 107+87; 110+18 – 112+55; 113+65 – 116+74



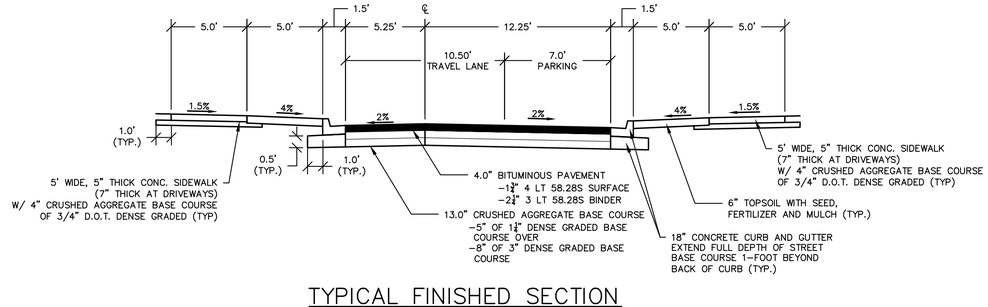
TYPICAL FINISHED SECTION

STREET A STA: 103+67.02 – 104+18; 109+22 – 109+56; 112+99 – 113+22



TYPICAL FINISHED SECTION

STREET B (TWO WAY) STA: 25+47 – 27+23



TYPICAL FINISHED SECTION

STREET B STA (ONE WAY): 27+42 – 30+30; 31+06 – 33+76

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PRELIMINARY
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PROJECT:
NINE SPRINGS

PROJECT LOCATION:
FITCHBURG, WI 53711
DANE COUNTY

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Designed By: MSS
Reviewed By: ACG
Approved By:

SHEET TITLE:
TYPICAL ROAD SECTIONS

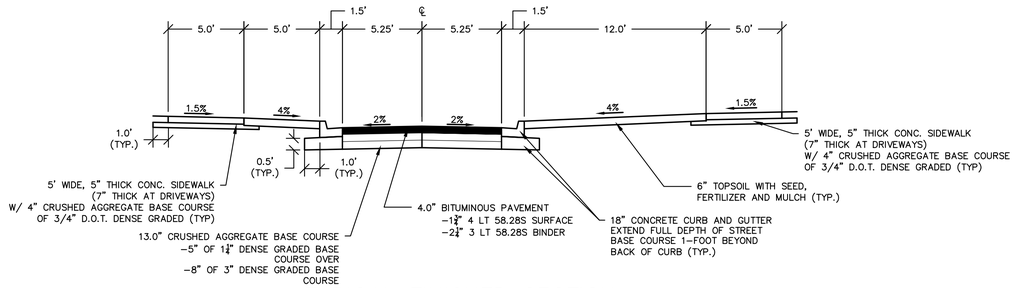
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C6.0

JSD PROJECT NO: 21-10566

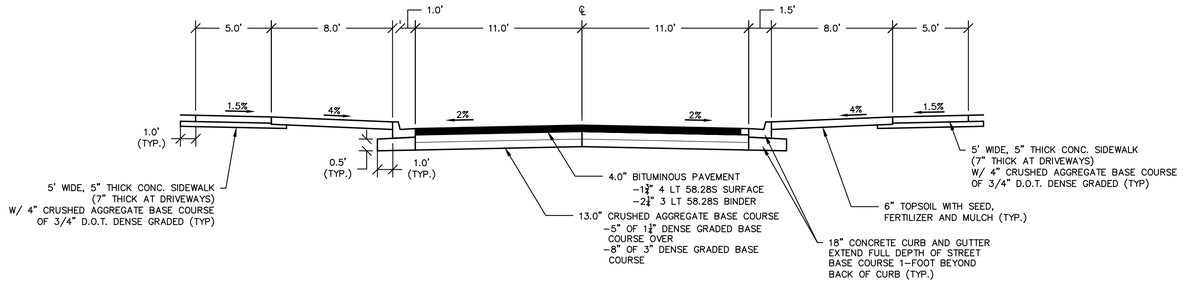
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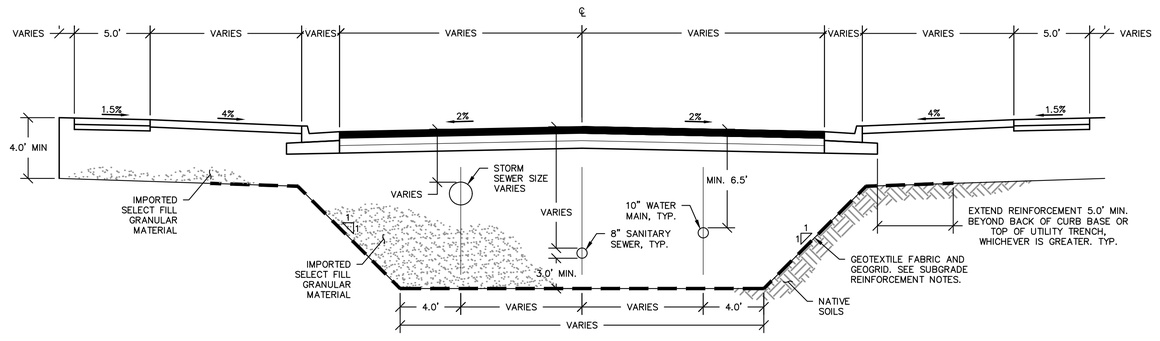
NOTE:
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TYPICAL FINISHED SECTION
STREET B STA (ONE WAY): 30+48 – 30+88



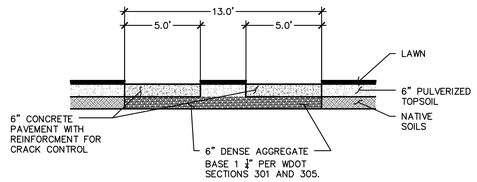
TYPICAL FINISHED SECTION
STREET C STA: 50+94 – 54+37



TYPICAL FINISHED SECTION W/UTILITY TRENCH

SUBGRADE REINFORCEMENT NOTES

1. PLACE GEOTEXTILE FABRIC AGAINST SUBGRADE.
2. PLACE GEOGRID OVER GEOTEXTILE FABRIC.
3. PLACE 4–IN THICK LAYER OF 1–1/4" DENSE GRADED BASE COURSE OVER GEOGRID.
4. GEOTEXTILE FABRIC SHALL CONFORM TO WISDOT SECTION 645.2.2.2 GEOTEXTILE, TYP SAS.
5. GEOGRID SHALL CONFORM TO WISDOT SECTION 645.2.3.2 GEOGRID, TYPE SR.



TYPICAL EMERGENCY VEHICLE ACCESS (HEAVY DUTY CONCRETE) SECTION

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CLIENT:
ROYAL CAPITAL

CLIENT ADDRESS:
710 N PLANKINTON AVE. SUITE 300
MILWAUKEE, WI 53203

PRELIMINARY
NOT FOR CONSTRUCTION

PROJECT:
NINE SPRINGS

PROJECT LOCATION:
FITCHBURG, WI 53711
DANE COUNTY

PLAN MODIFICATIONS:

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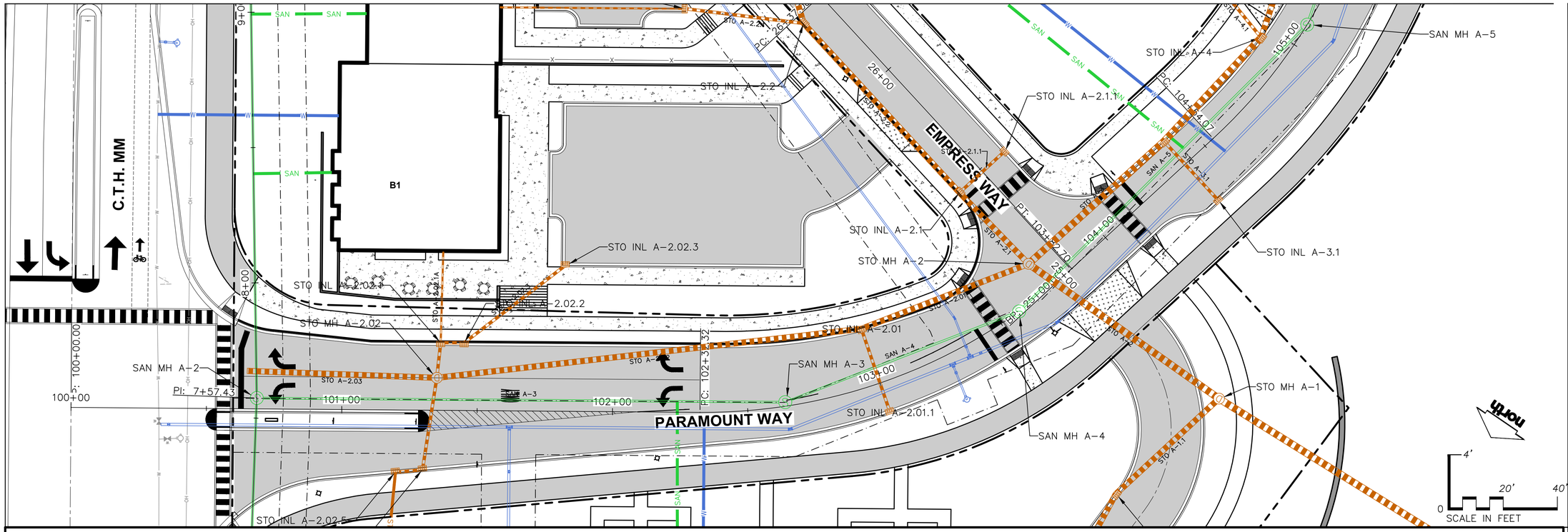
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Reviewed By: ACG
Approved By:

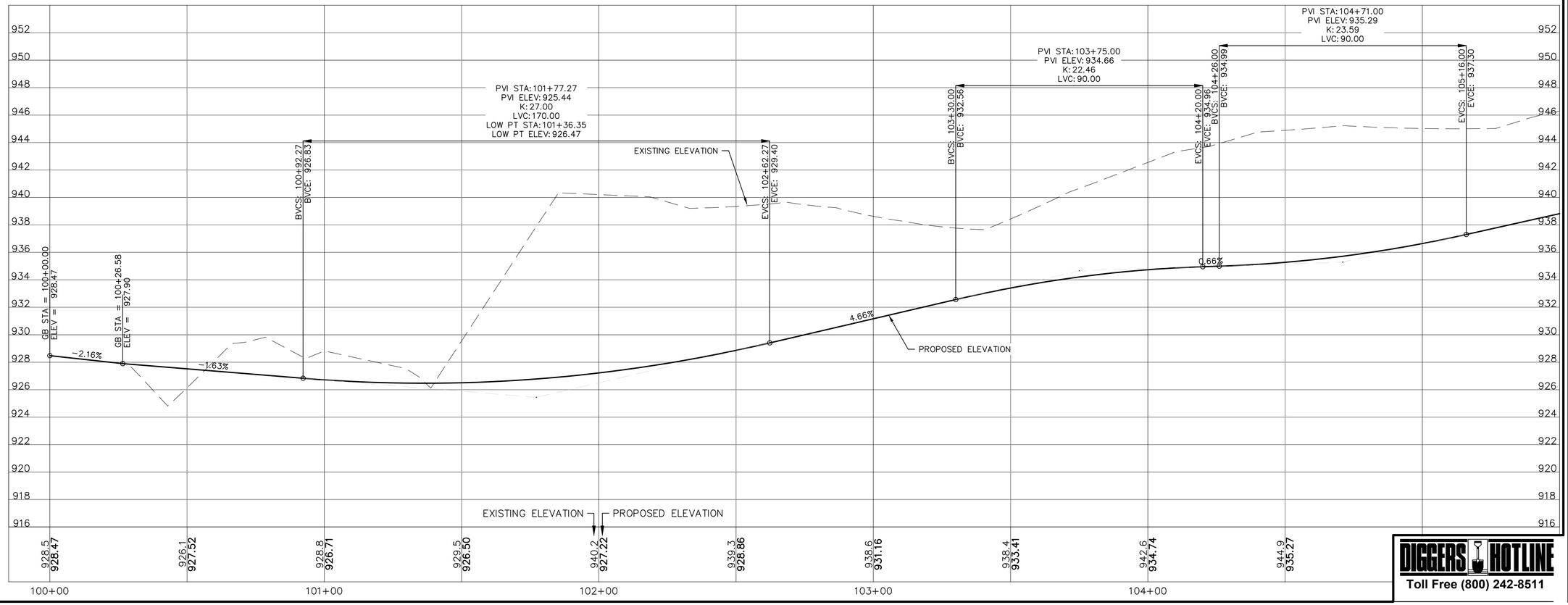
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TYPICAL ROAD SECTIONS

SHEET NUMBER:
C6.1

JSD PROJECT NO: 21-10566

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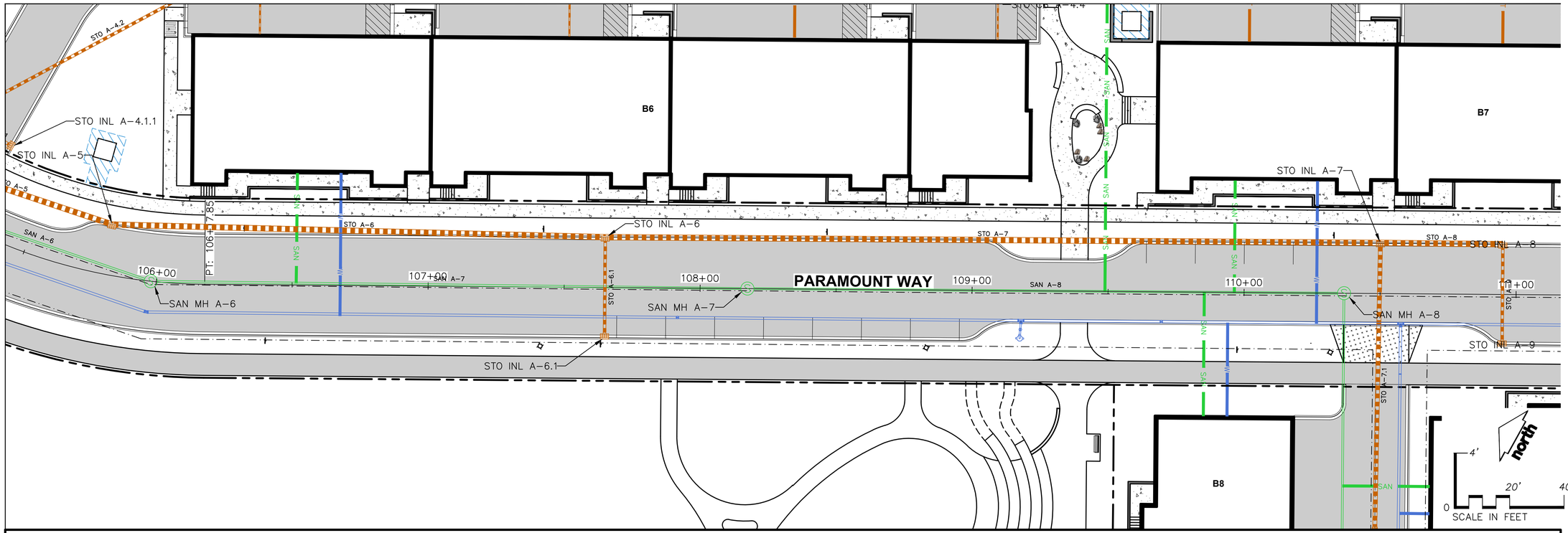
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PLAN & PROFILE - PARAMOUNT WAY STA: 100+00 - 105+50

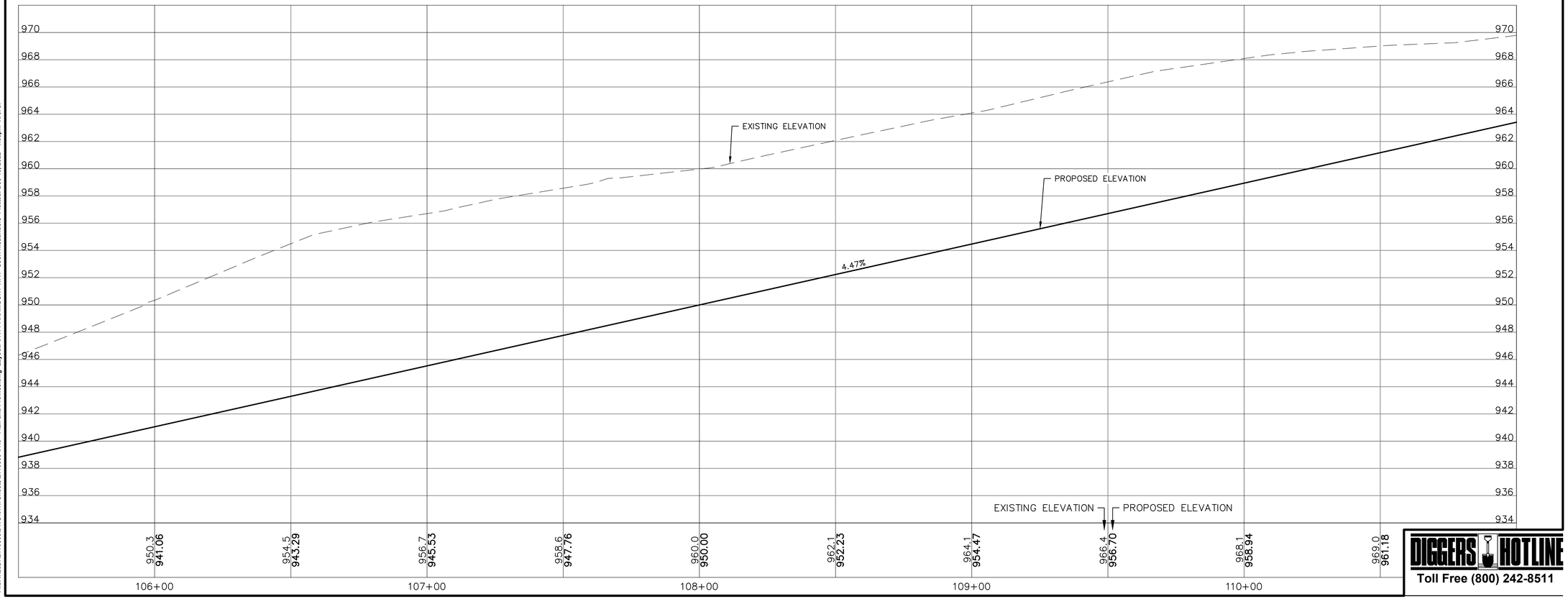
SHEET NUMBER:
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JSD PROJECT NO: 21-10566

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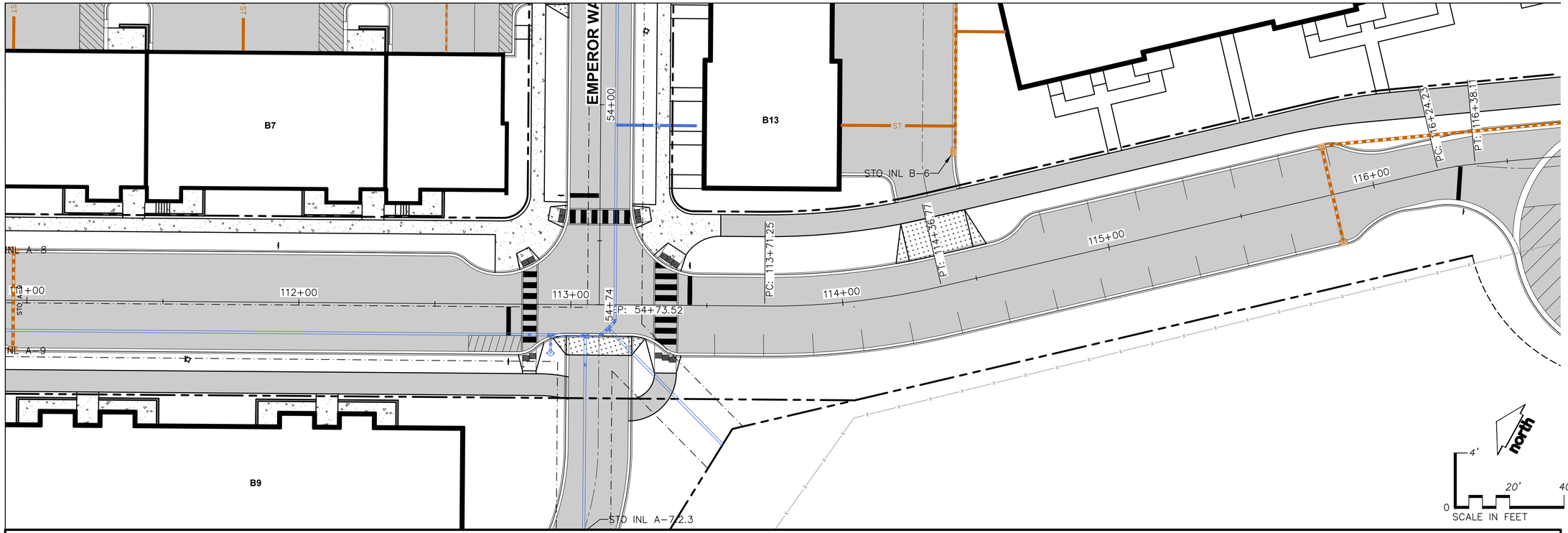
SHEET TITLE:
PLAN & PROFILE - PARAMOUNT WAY STA: 105+50 - 111+00

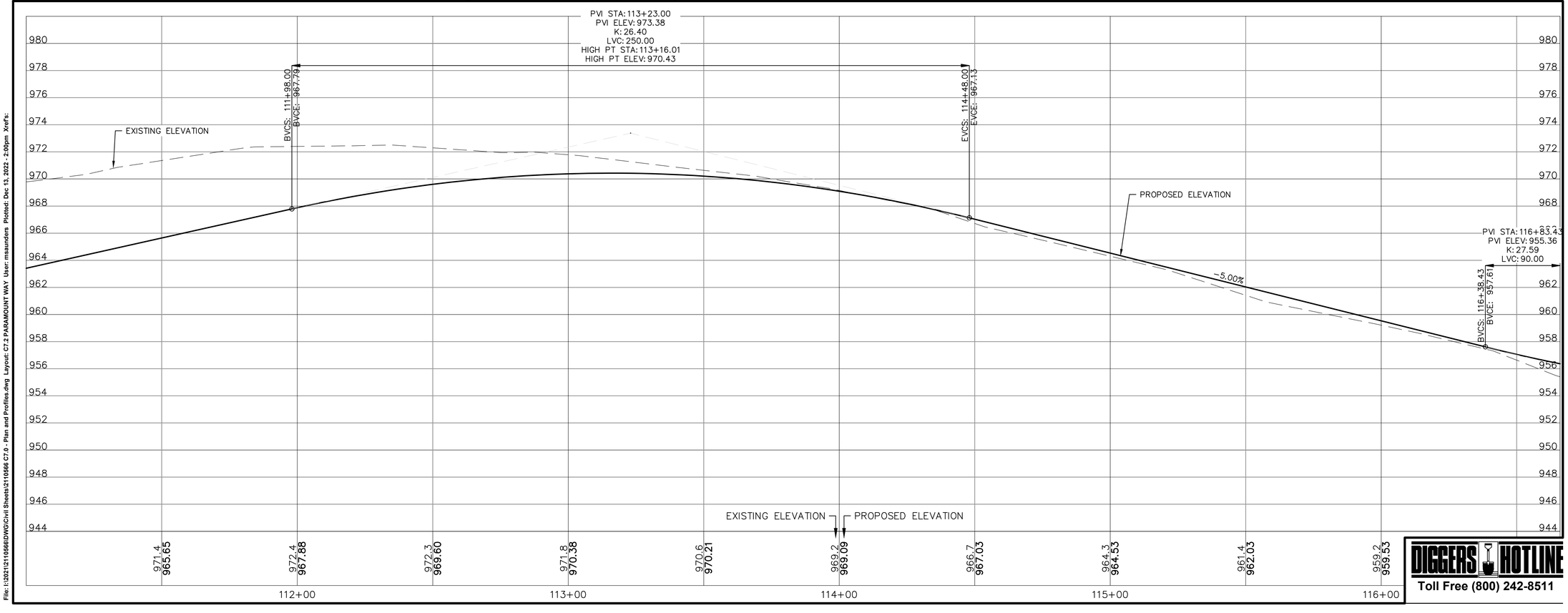
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JSD PROJECT NO: 21-10566

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P. 608.848.5060

CLIENT:
ROYAL CAPITAL

CLIENT ADDRESS:
710 N PLANKINTON AVE. SUITE 300
MILWAUKEE, WI 53203

PRELIMINARY
NOT FOR CONSTRUCTION

PROJECT:
NINE SPRINGS

PROJECT LOCATION:
FITCHBURG, WI 53711
DANE COUNTY

PLAN MODIFICATIONS:

#	Date:	Description:
1	03.25.22	P-PLAT SUBMITTAL
2	04.12.22	RESPONSE TO P-PLAT COMMENTS
3	06.21.22	ADR SUBMITTAL
4	12.14.22	P-PLAT SUBMITTAL
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Designed By: MSS
Reviewed By: ACG
Approved By:

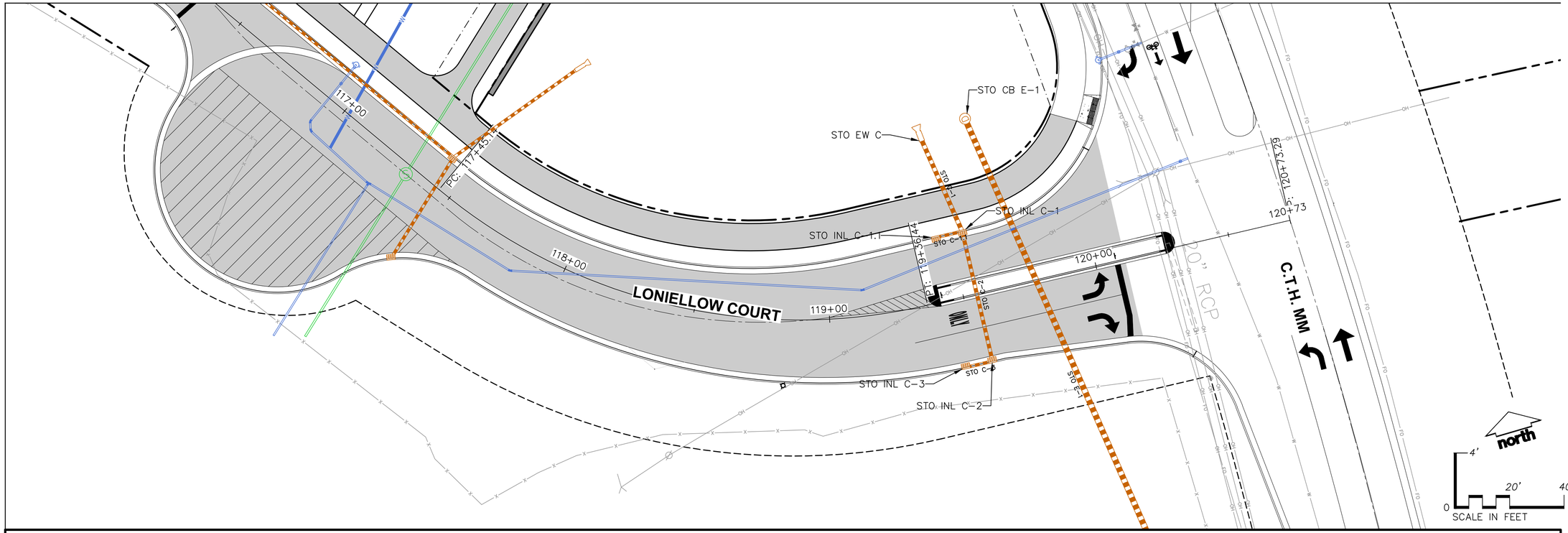
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PLAN & PROFILE - PARAMOUNT WAY STA: 111+00 - 116+50

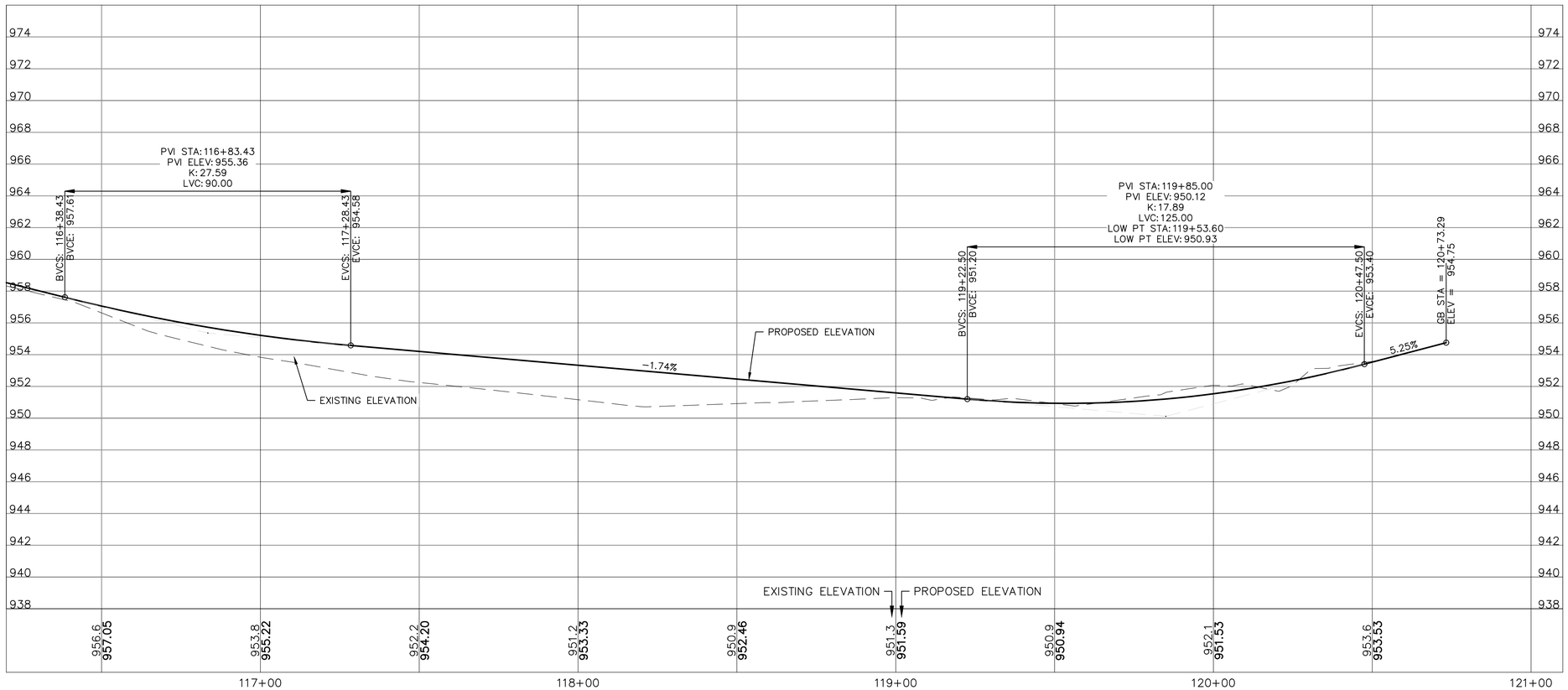
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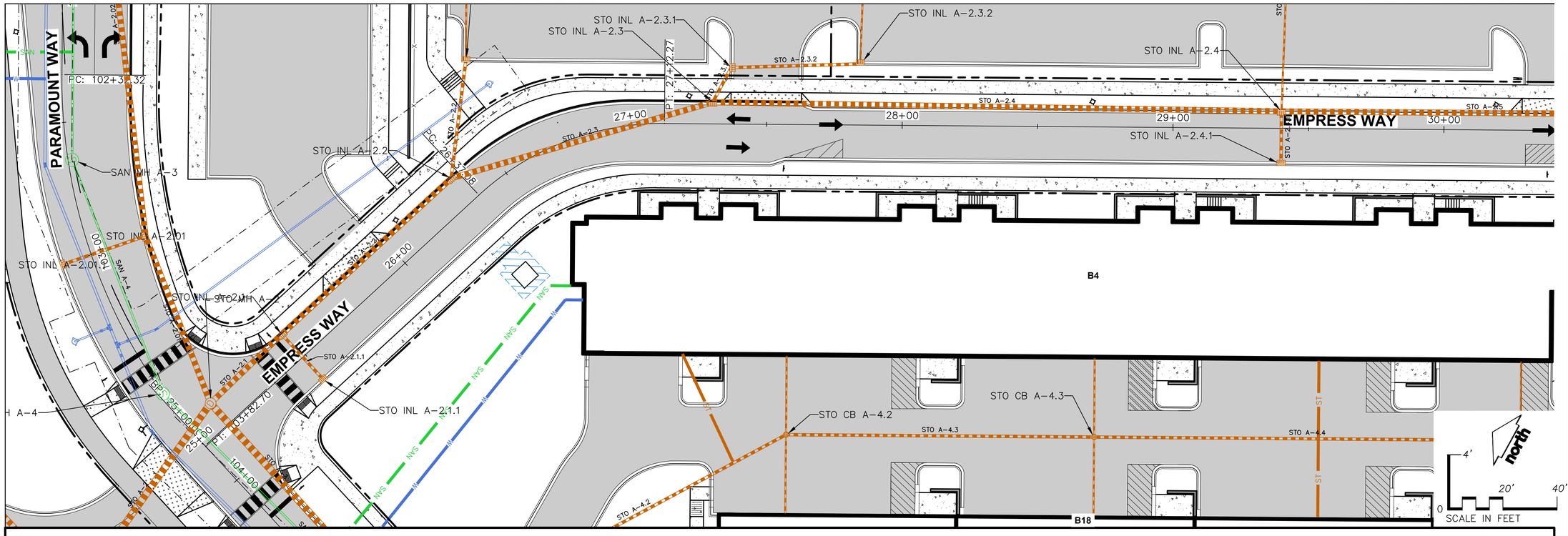
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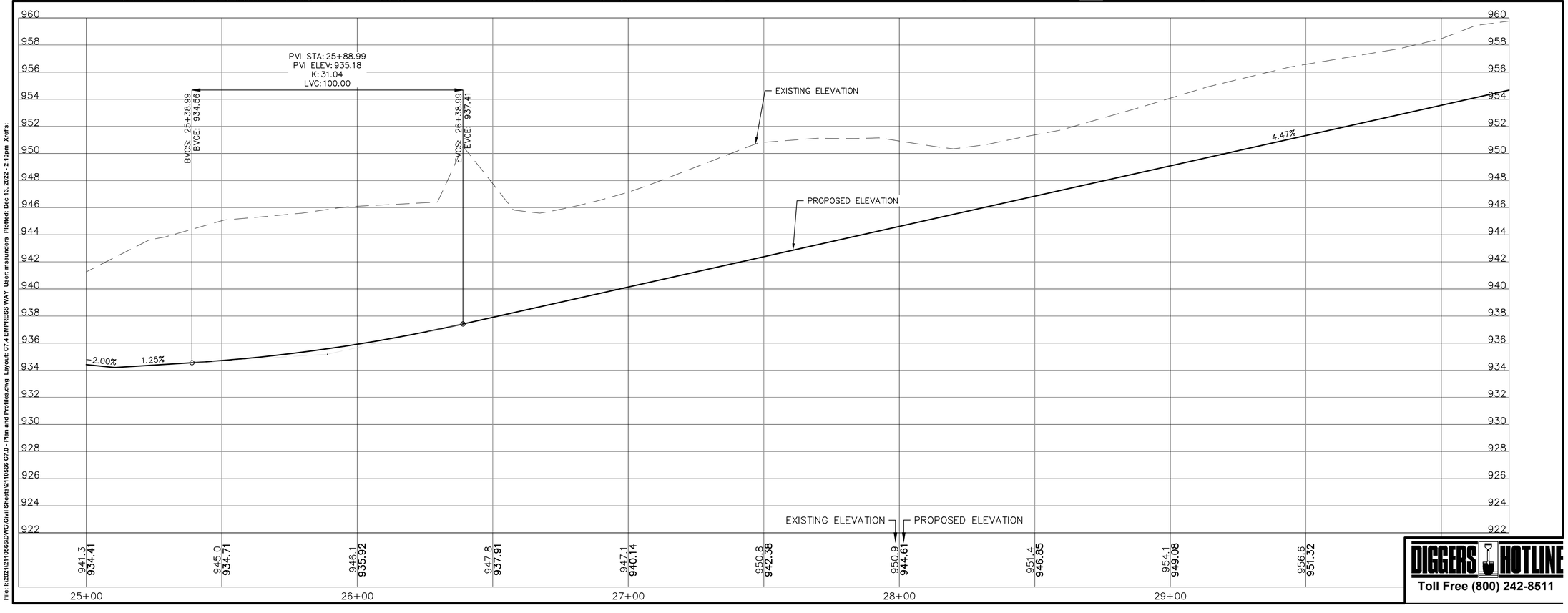
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JSD PROJECT NO: 21-10566

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PRELIMINARY
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PROJECT:
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DANE COUNTY

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Designed By: MSS
Reviewed By: ACG
Approved By:

SHEET TITLE:
PLAN & PROFILE - EMPRESS WAY STA: 25+00 - 30+00

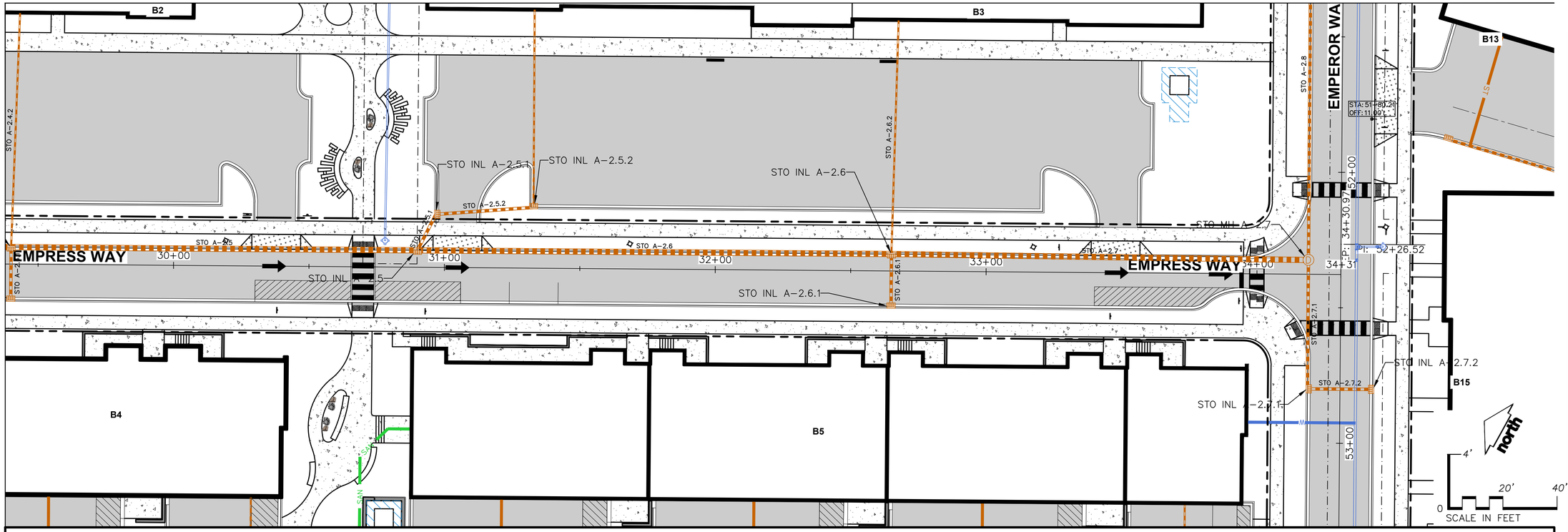
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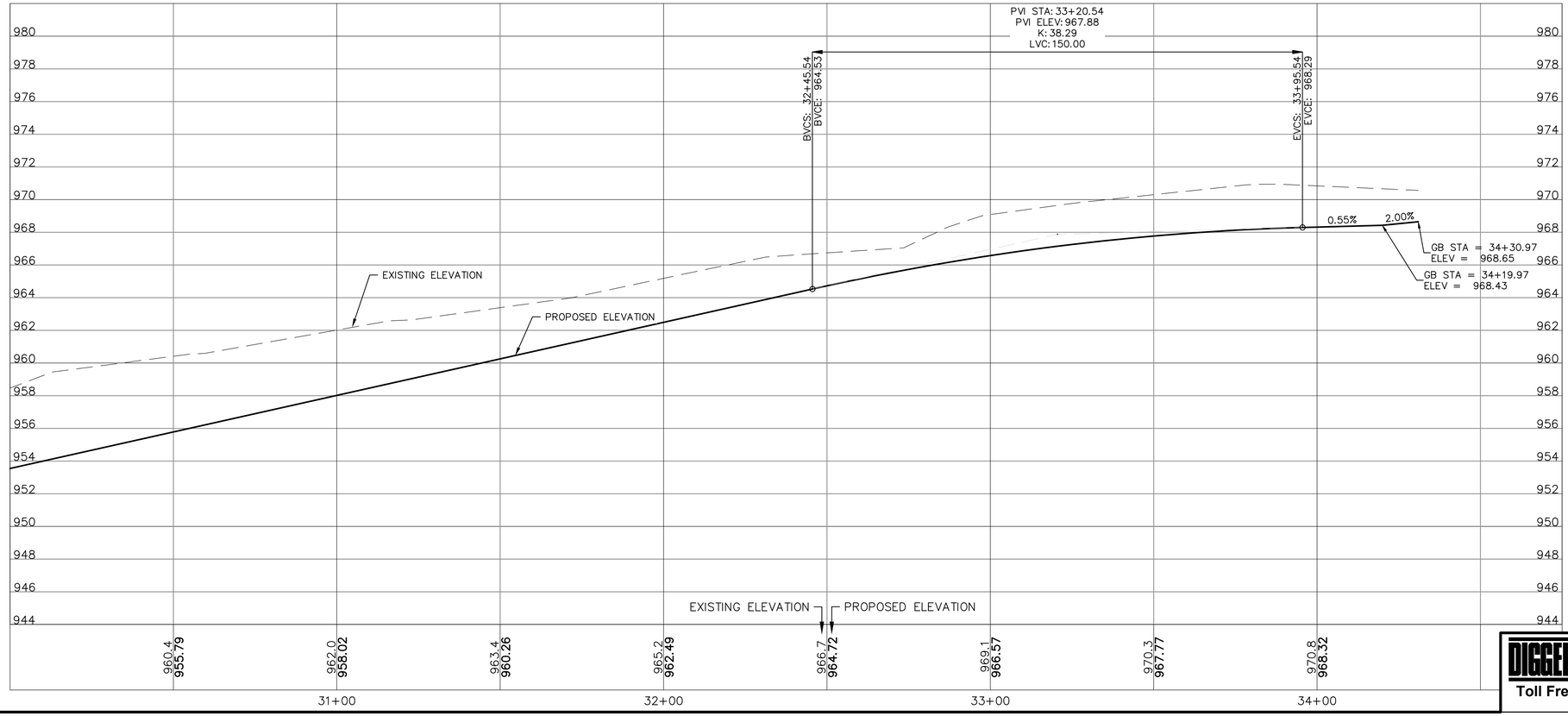
JSD PROJECT NO: 21-10566

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File: I:\2021\21105660\DWG\Civil Sheets\21105660 C7.0 - Plan and Profiles.dwg Layout: C7.5 EMPRESS WAY User: msaunders Plotted: Dec 13, 2022 - 2:11pm Xrefs:

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PROJECT:
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PROJECT LOCATION:
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DANE COUNTY

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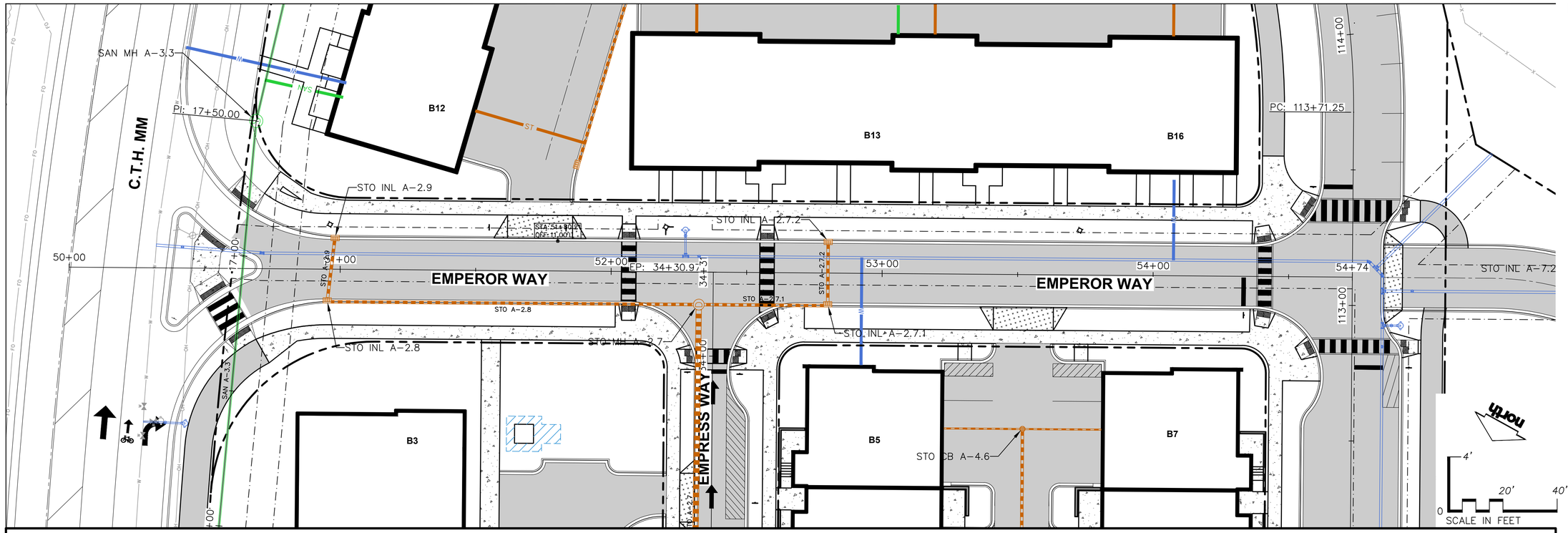
Designed By: MSS
Reviewed By: ACG
Approved By:

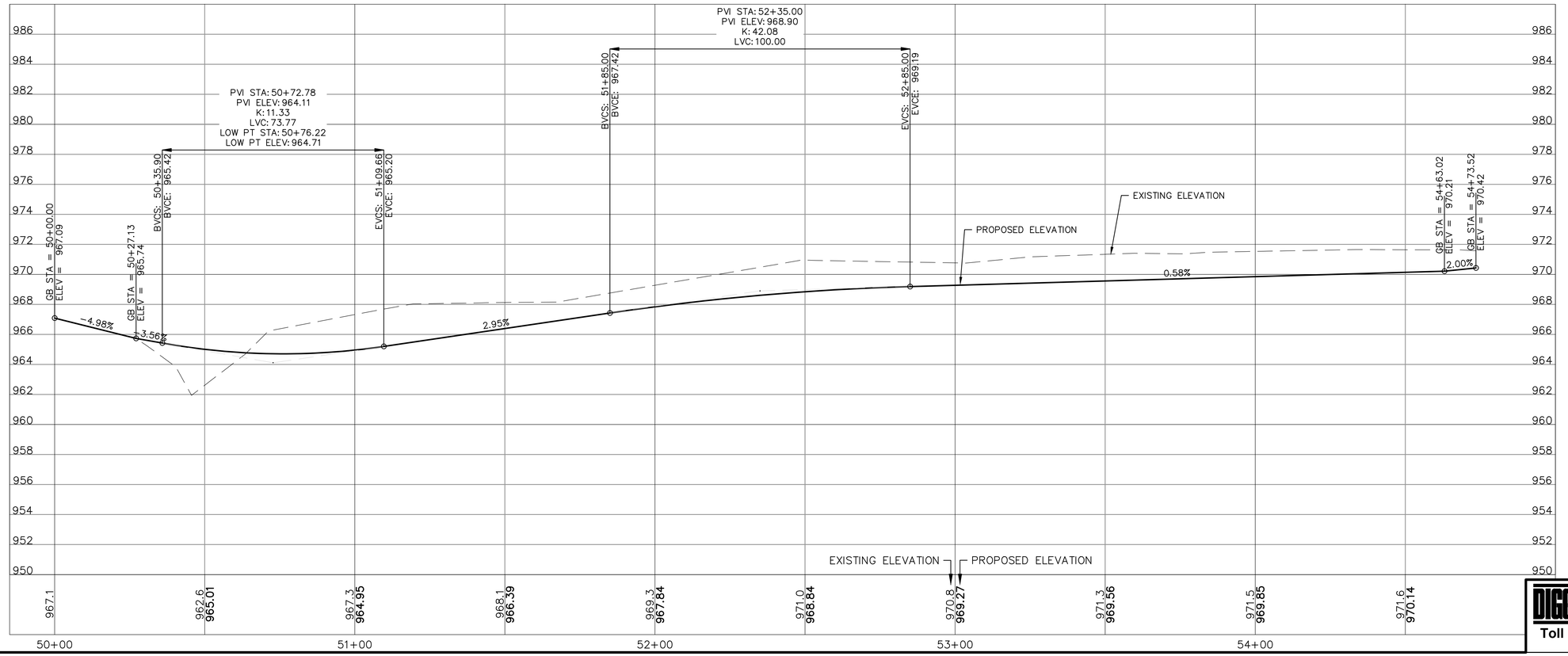
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JSD PROJECT NO: 21-10566

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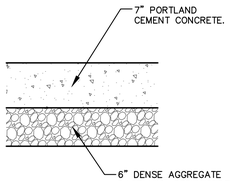
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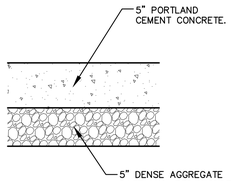
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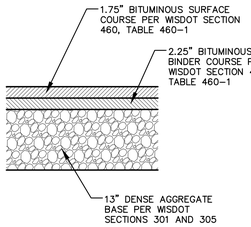
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HEAVY–DUTY CONCRETE SECTION



CONCRETE SIDEWALK SECTION



STANDARD ASPHALT PATH SECTION

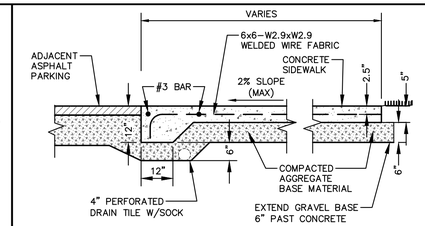
GENERAL NOTES:

1. REFER TO PAVEMENT RECOMMENDATIONS IN THE GEOTECHNICAL INVESTIGATION REPORT, PREPARED BY CGC, INC., NUMMELIN, AND AECOME DATED JULY 2017, JULY 26 2017, AND APRIL 13 2013 RESPECTIVELY DISCREPANCIES BETWEEN THIS DETAIL AND THE PAVEMENT RECOMMENDATIONS PROVIDED IN THE GEOTECHNICAL INVESTIGATION REPORT, THE GEOTECHNICAL REPORT SHALL GOVERN.
2. WISDOT STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, INCLUDING SUPPLEMENTAL SPECIFICATIONS, COMPACTION REQUIREMENTS:
   – BITUMINOUS CONCRETE: REFER TO SECTION 460–3.
   – BASE COURSE: REFER TO SECTION 301.3.4.2, STANDARD COMPACTION.

PAVEMENT SECTIONS

N.T.S.

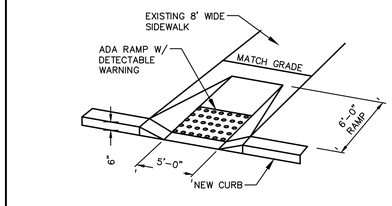
REV. 7–01–2019



THICKENED EDGE SIDEWALK - FLUSH

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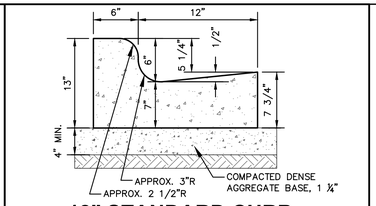
REV. 07–14–2020



ADA ACCESSIBLE RAMP - INLINE

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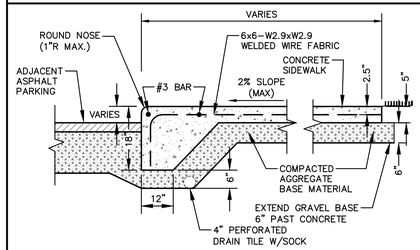
REV. 11–20–2018



18" STANDARD CURB & GUTTER

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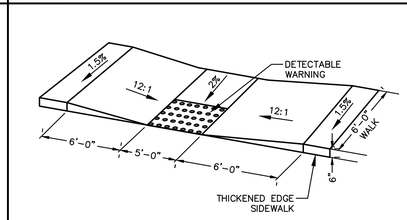
REV. 12–17–2018



THICKENED EDGE SIDEWALK

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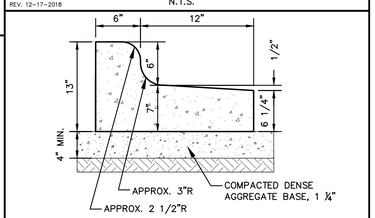
REV. 07–14–2020



ADA ACCESSIBLE RAMP

N.T.S.

REV. 11–20–2018

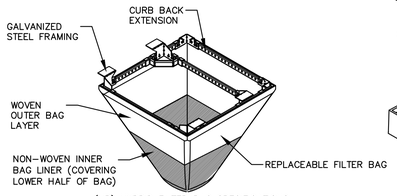


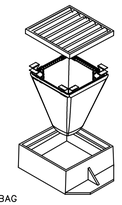
18" REJECT CURB & GUTTER

N.T.S.

REV. 12–17–2018

FLEXSTORM INLET FILTERS TO MEET DANE COUNTY EROSION CONTROL STANDARDS





(HB) HYBRID FILTER BAG SPECIFICATIONS:

INSTALLATION INSTRUCTIONS:
1. REMOVE GRATE FROM THE DRAINAGE STRUCTURE
2. CLEAN STONE AND DIRT FROM LEDGE (LIP) OF DRAINAGE STRUCTURE
3. DROP THE INLET FILTER THROUGH THE CLEAR OPENING SUCH THAT THE HANGERS REST FIRMLY ON THE LIP OF THE STRUCTURE
4. REPLACE THE GRATE AND CONFIRM IT IS NOT ELEVATED MORE THAN 1/8"

MAINTENANCE GUIDELINES:
1. EMPTY THE SEDIMENT BAG IF MORE THAN HALF FILLED WITH SEDIMENT AND DEBRIS
2. REMOVE THE GRATE, ENGAGE THE LIFTING POINTS, AND LIFT FILTER FROM THE DRAINAGE STRUCTURE.
3. DISPOSE OF SEDIMENT AND DEBRIS BY THE ENGINEERING OR MAINTENANCE CONTRACT 4. ALTERNATIVELY, AN INDUSTRIAL VACUUM CAN BE USED TO COLLECT SEDIMENT FROM THE FILTER BAG

CATCH-IT INLET FILTER (Temporary Inlet Protection)

Neenah Casting	Inlet Type	Grate Size	Opening Size	Bag Cap (ft^3)	Flow Ratings (CFS)		ADS P/N
					HB (Hybrid Bag)	Bypass	
3067	Curb Box	35.25 x 17.75	33.0 x 15.0	4.4	2.0	5.8	62LCBEXTHB
3246A	Curb Box	35.75 x 23.875	33.5 x 21.0	4.2	1.1	3.3	62LCB3624HB
3030	Square/Rect (SQ)	23 x 16	20.5 x 13.5	1.6	0.7	2.2	62MCB2316HB
3067-C	Square/Rect (SQ)	35.25 x 17.75	33 x 15	3.2	1.0	5.2	62LSQ3618HB
R-2501	Round (RD)	–26	–24	2.3	0.8	5.2	62MRD26HB
R-1772/2560	Round (RD)	22.25-23.5	20.5-21	1.5	0.6	4.6	62MRD22HB

Woven and Non-Woven Geotextile Filter Bag Properties (Minimum Average Roll Values)

PROPERTY	TEST METHOD	WOVEN (OUTER)	NON-WOVEN (LINER)
TENSILE STRENGTH	ASTM D4632	350 x 225 Lbs	100 Lbs
ELONGATION	ASTM D4632	20% x 15%	50%
CBR PUNCTURE	ASTM D6241	1000 Lbs	65 Lbs
TRAPEZOIDAL TEAR	ASTM D4533	110 x 75 Lbs	45 Lbs
UV RESISTANCE	ASTM D4355	90%	70%
OPENING SIZE (AOS)	ASTM D4751	20 US STD SIEVE	40 US STD SIEVE
PERMITTIVITY	ASTM D4491	$1.5 sec^{-1}$	$2.0 sec^{-1}$
WATER FLOW RATE	ASTM D4491	200 gal/min/ft^2	145 gal/min/ft^2
MINIMUM FILTER BAG V OLUME		2 CUBIC FT	

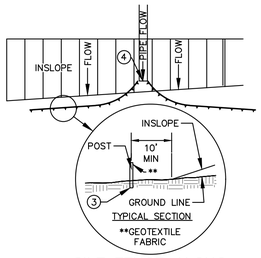
FRAMED INLET PROTECTION

N.T.S.

REV. 7–01–2019

FLEXSTORM INLET FILTERS CATCH IT

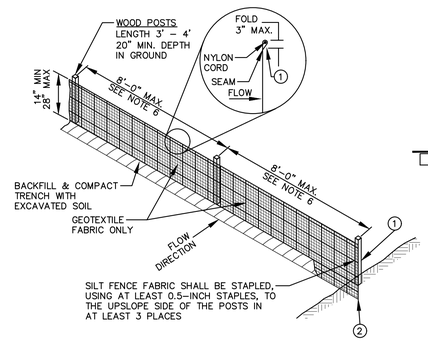
SIZE C | DRAWN BY | DATE | SCALE | IPP Flexstorm HD Specification | SHEET 1 OF 1

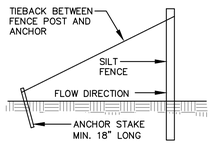


SILT FENCE ALONG SLOPES & OUTFALLS

NOTE:
ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS.

TRENCH DETAIL



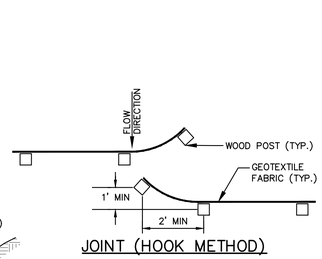


SILT FENCE TIE BACK
(WHEN ADDITIONAL SUPPORT REQUIRED)

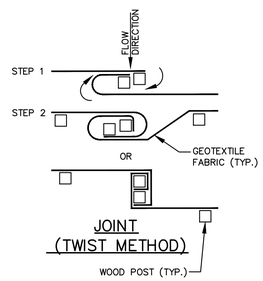
SILT FENCE

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REV. 7–01–2019



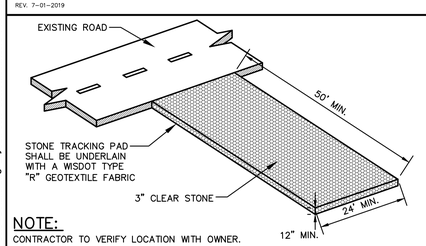
JOINT (HOOK METHOD)



JOINT (TWIST METHOD)

GENERAL NOTES:

1. SILT FENCE SHALL BE ANCHORED BY SPREADING AT LEAST 8–INCHES OF FABRIC IN A 4–INCH WIDE AND 6–INCH DEEP TRENCH OR 6–INCH DEEP V–TRENCH ON THE UPSLOPE SIDE OF THE FENCE. TRENCHES SHALL NOT BE EXCAVATED WIDER OR DEEPER THAN NECESSARY FOR PROPER INSTALLATION.
2. FOLD MATERIAL TO FIT TRENCH AND BACKFILL AND COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL BE A MINIMUM SIZE OF 1.125–INCHES x 1.125–INCHES OF DRIED OAK OR HICKORY.
4. SILT FENCE TO EXTEND ABOVE THE TOP OF PIPE.
5. SILT FENCE CONSTRUCTION AND GEOTEXTILE FABRIC SHALL CONFORM TO WDNR TECHNICAL STANDARD 1056.
6. POST SPACING SHALL BE SELECTED BASED ON GEOTEXTILE FABRIC (8–FEET FOR WOVEN & 3–FEET FOR NON–WOVEN)

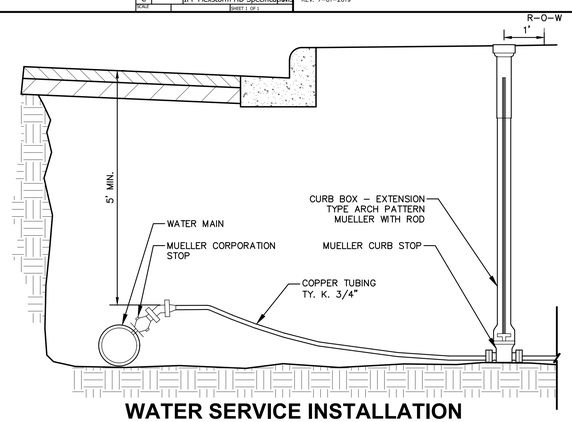


NOTE:
CONTRACTOR TO VERIFY LOCATION WITH OWNER.

CONSTRUCTION ENTRANCE

N.T.S.

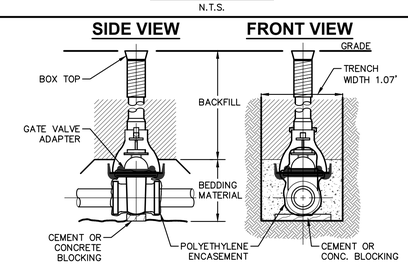
REV. 12–10–2018



WATER SERVICE INSTALLATION

N.T.S.

REV. 12–04–2018



GATE VALVE BOX SETTING

N.T.S.

REV. 12–04–2018

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P. 608.848.5060

CLIENT:
ROYAL CAPITAL

CLIENT ADDRESS:
710 N PLANKINTON AVE. SUITE 300
MILWAUKEE, WI 53203

PRELIMINARY NOT FOR CONSTRUCTION

PROJECT:
NINE SPRINGS

PROJECT LOCATION:
FITCHBURG, WI 53711
DANE COUNTY

PLAN MODIFICATIONS:

#	Date:	Description:
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Designed By: MSS
Reviewed By: ACG
Approved By:

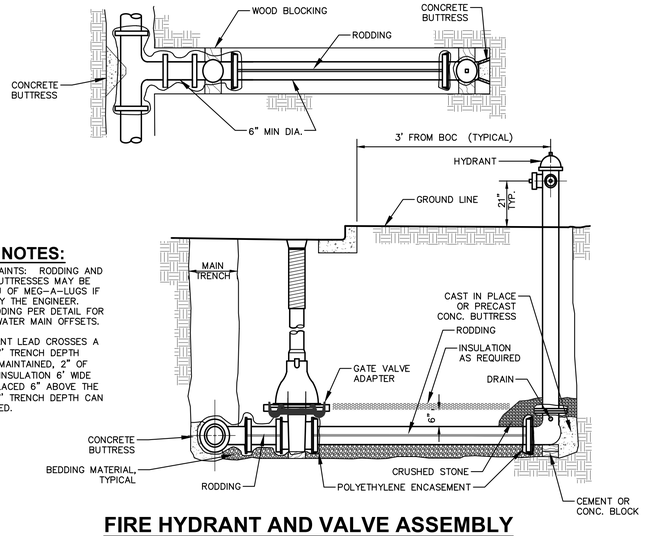
SHEET TITLE:
DETAILS

SHEET NUMBER:
C8.0

JSD PROJECT NO: 21-10566

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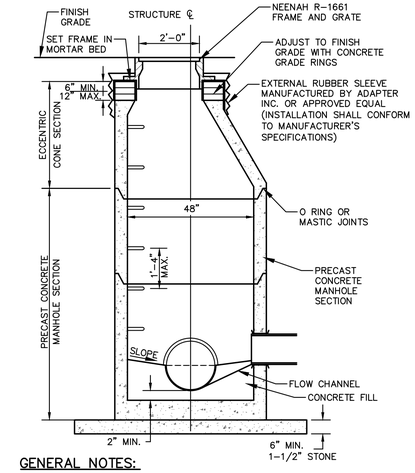
GENERAL NOTES:

1. JOINT RESTRAINTS: RODDING AND CONCRETE BUTTRESSES MAY BE USED IN LIEU OF MEG-A-LUGS IF APPROVED BY THE ENGINEER. PROVIDE RODDING PER DETAIL FOR STRAPPING WATER MAIN OFFSETS.
2. WHEN HYDRANT LEAD CROSSES A DITCH & A 7' TRENCH DEPTH CANNOT BE MAINTAINED, 2" OF STYROFOAM INSULATION 6' WIDE SHALL BE PLACED 6" ABOVE THE PIPE UNTIL 7' TRENCH DEPTH CAN BE MAINTAINED.

FIRE HYDRANT AND VALVE ASSEMBLY

N.T.S.

REV. 12-03-2018



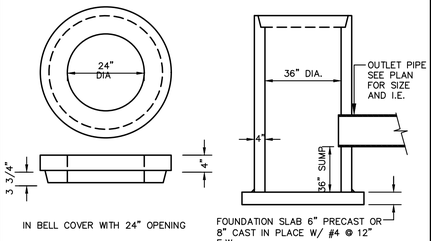
GENERAL NOTES:

1. MANHOLE CONSTRUCTION TO MEET REQUIREMENTS OF ASTM C478.
2. JOINTS SHALL BE WATERTIGHT. USE BUTYL RUBBER GASKET.
3. USE MORTAR FOR PIPE CONNECTIONS.
4. ALL MANHOLES SHALL HAVE RUBBER CHIMNEY BOOT SEALS.

SANITARY SEWER MANHOLE

N.T.S.

REV. 12-6-2018



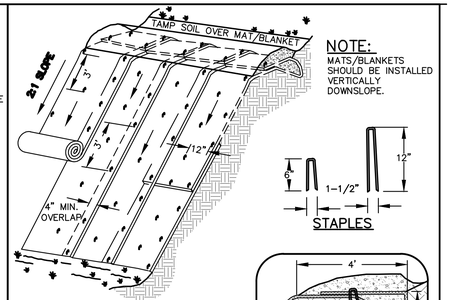
GENERAL NOTES:

1. GRATE SHALL BE IN BELL FITTING TO THE PRECAST STRUCTURE SPECIFICATIONS
2. GRATES SHALL BE AASHTO H20 LOAD RATED
3. GRATE SHALL SET FLUSH WITH TOP OF CATCH BASIN BELL
4. PRECAST REINFORCED CONCRETE CATCH BASIN IS MANUFACTURED TO MEET ASTM C-478 AND AASHTO M199 SPECIFICATIONS
5. STANDARD CATCH BASIN BARREL HEIGHTS: 0'-6", 1'-0", 2'-0", 3'-0" AND 4'-0"
6. STOCK 36" DIA. CATCH BASINS AVAILABLE WITH OR WITHOUT A 6" THICK INTEGRAL BASE OR AS SPECIFIED
7. CATCH BASIN JOINT MATERIAL: CONSEAL CS-102 AND/OR CS-202 AS MANUFACTURED BY CONCRETE SEALANTS INC., WHICH MEETS OR EXCEEDS REQUIREMENTS OF FEDERAL SPECIFICATION SS-S-210 (210A), AASHTO M-198B AND ASTM C-990
8. PIPE TO CATCH BASIN CONNECTORS: KOR-N-SEAL AS MANUFACTURED BY NPC INC., WHICH MEETS OR EXCEEDS REQUIREMENTS OF ASTM C-923

36" DIA. STORM INLET W/ SUMP

N.T.S.

REV. 12-7-2018



ISOMETRIC VIEW TYPICAL SLOPE SOIL STABILIZATION

NOTE: MATS/BLANKETS SHOULD BE INSTALLED VERTICALLY DOWNSLOPE.

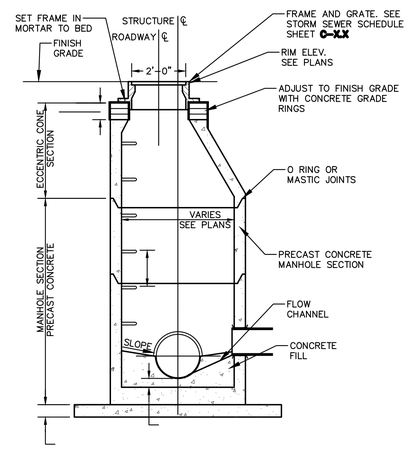
GENERAL NOTES:

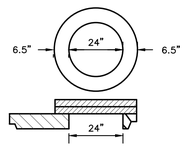
1. EROSION MAT CONSTRUCTION SHALL BE IN ACCORDANCE WITH WISCONSIN DNR TECHNICAL STANDARD 1052 "NON-CHANNEL EROSION MAT".
2. ONLY WisDOT EROSION CONTROL PRODUCT ACCEPTABILITY LIST (PAL) APPROVED MATS SHALL BE ALLOWED. REFER TO EROSION CONTROL PLAN FOR EXACT MAT CLASSIFICATION.
3. APPLY PERMANENT SEEDING BEFORE PLACING BLANKETS.
4. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.
5. ONLY WisDOT EROSION CONTROL PRODUCT ACCEPTABILITY LIST (PAL) APPROVED MATS SHALL BE ALLOWED. REFER TO EROSION CONTROL PLAN FOR EXACT MAT CLASSIFICATION.

EROSION MATTING

N.T.S.

REV. 11-19-2018





FLAT TOP SLAB

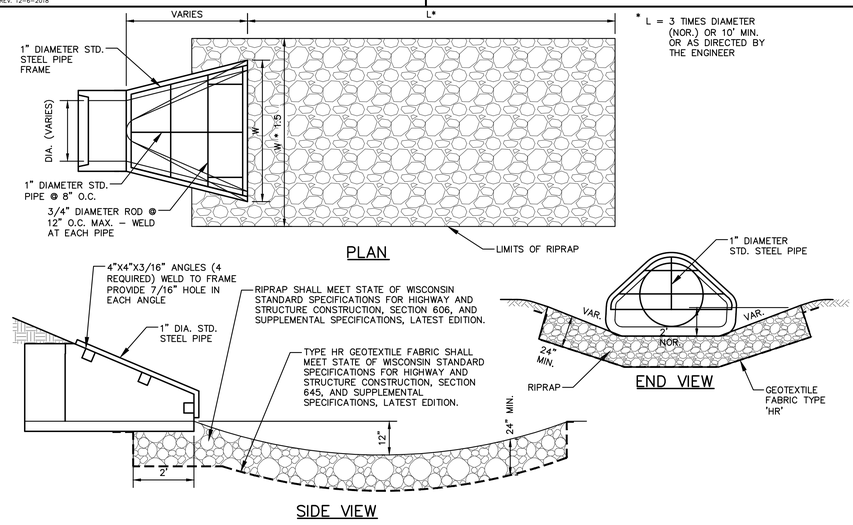
GENERAL NOTES:

1. MANHOLE CONSTRUCTION TO MEET REQUIREMENTS OF ASTM C478.
2. PROVIDE FLAT TOP SLAB FOR MANHOLES 5' OR LESS IN DEPTH. FLAT TOP SLABS TO BE IN-BELL TYPE.
3. JOINTS SHALL BE WATERTIGHT. USE BUTYL RUBBER GASKET.
4. USE MORTAR FOR PIPE CONNECTIONS.
5. ECCENTRIC CONE SECTION OF MANHOLE TO BE SET OUTSIDE OF VEHICULAR WHEEL PATH NEAR ℄ ROADWAY.

STORM MANHOLE

N.T.S.

REV. 12-07-2018

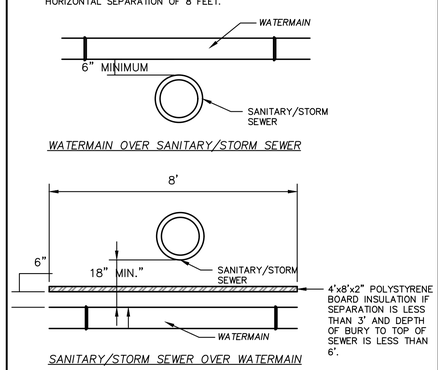


APRON ENDWALL W/ GRATE - RIPRAP

N.T.S.

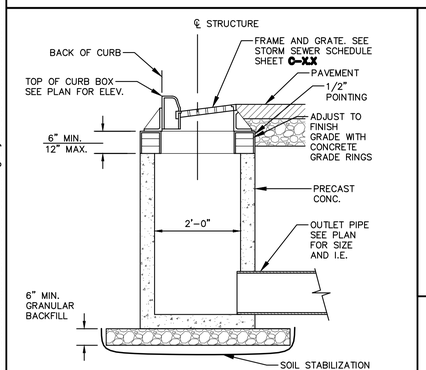
REV. 12-7-2018

NOTE:
AT CROSSING, ONE FULL 18 FOOT LENGTH OF WATERMAIN SHALL BE CENTERED ON THE SEWER. MAINTAIN A MINIMUM HORIZONTAL SEPARATION OF 8 FEET.



WATERMAIN - SEWER SEPARATION

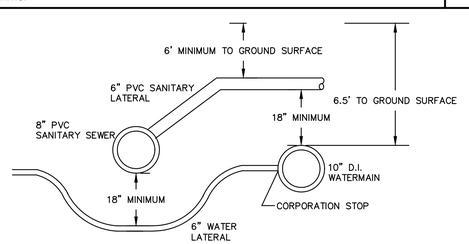
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STORM INLET

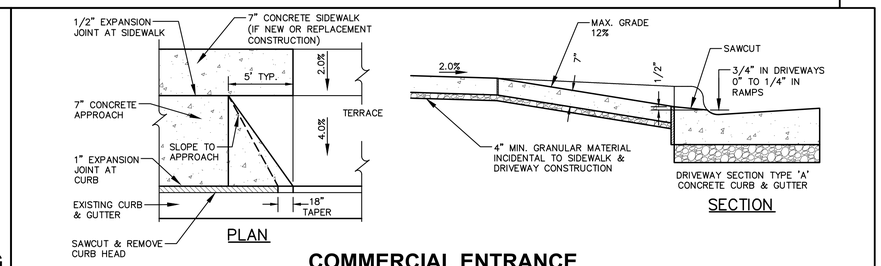
N.T.S.

REV. 11-26-2018



SANITARY AND WATER LATERAL CROSSING

N.T.S.



COMMERCIAL ENTRANCE

N.T.S.

REV. 2-12-2021

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MILWAUKEE, WI 53203

PRELIMINARY NOT FOR CONSTRUCTION

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NINE SPRINGS

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DANE COUNTY

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Designed By: MSS
Reviewed By: ACG
Approved By:

SHEET TITLE:
DETAILS

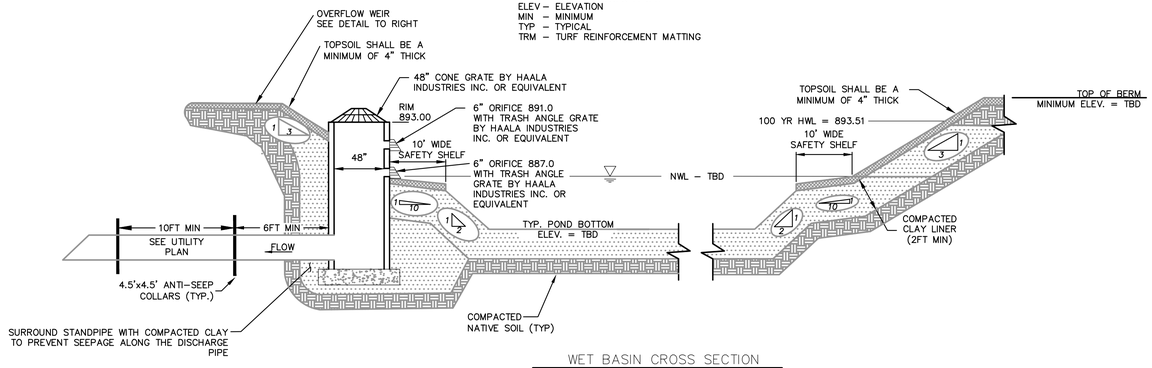
SHEET NUMBER:
C8.1

JSD PROJECT NO: 21-10566

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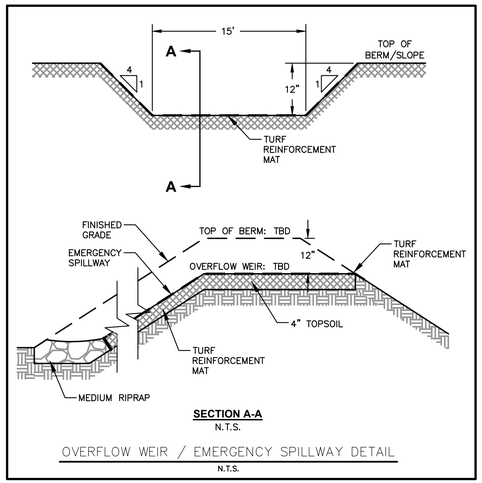
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DETAIL ABBREVIATIONS
HWL – HIGH WATER LEVEL
NWL – NORMAL WATER LEVEL
ELEV – ELEVATION
MIN – MINIMUM
TYP – TYPICAL
TRM – TURF REINFORCEMENT MATTING



WET BASIN CROSS SECTION

N.T.S.



SECTION A-A
N.T.S.

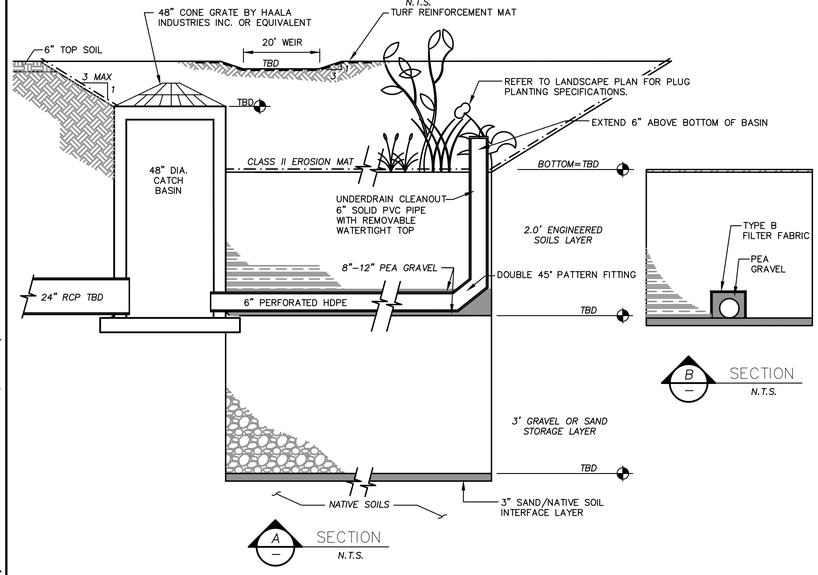
OVERFLOW WEIR / EMERGENCY SPILLWAY DETAIL

N.T.S.

GENERAL NOTES:

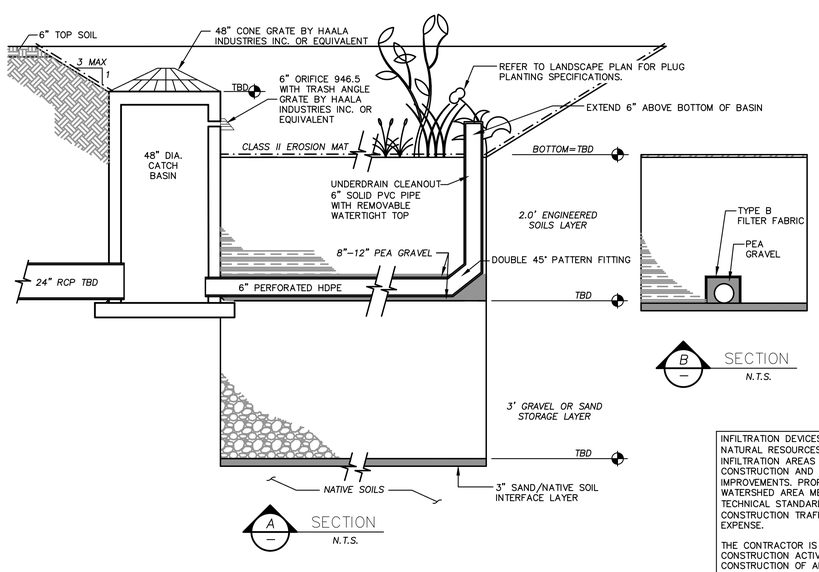
1. ALL CONSTRUCTION SHALL MEET THE SPECIFICATIONS OF "WDNR WET DETENTION BASIN TECHNICAL STANDARD 1001".
2. ALL WORK TO BE CONDUCTED IN CONFORMANCE WITH THE STORM WATER MANAGEMENT PLAN FOR THE PROJECT SITE AS APPROVED BY THE REGULATORY ENGINEER OF RECORD.
3. CLAY LINER SHALL BE A MINIMUM OF 2–FEET THICK. CLAY SHALL BE COMPACTED AT ±2.0% OPTIMAL MOISTURE CONTENT TO 90% MODIFIED PROCTOR. MEDIUM STIFF TO STIFF CLAYS PRESENT IN–PLACE AT THE POND SIDE SLOPES OR BOTTOM OR OTHER ONSITE MEDIUM STIFF TO STIFF CLAYS MAY BE USED AT THE DISCRETION OF THE GEOTECHNICAL ENGINEER OF RECORD.
4. FOR CONSTRUCTED EMBANKMENTS WHERE THE PERMANENT POOL IS PONDED 3–FEET OR MORE AGAINST THE EMBANKMENT, THERE SHALL BE A CORE TRENCH OR KEYWAY ALONG THE CENTERLINE OF THE EMBANKMENT UP TO THE PERMANENT POOL ELEVATION. THE CORE TRENCH OR KEYWAY SHALL BE A MINIMUM OF 2–FEET DEEP AND 8–FEET WIDE WITH A SIDE SLOPE OF 1:1 OR FLATTER.
5. IMMEDIATELY INSTALL FILTER FABRIC OVER ALL OUTLETS TO PREVENT SEDIMENT DEPOSITION IN THE PIPING. (REMOVE FOLLOWING CONTRIBUTING AREA STABILIZATION)

THE STORMWATER MANAGEMENT FEATURES CONTAINED WITHIN THIS PLAN SET HAVE BEEN DESIGNED IN ACCORDANCE WITH APPLICABLE STANDARDS SET FORTH IN WISCONSIN DNR NR151 AND LOCAL ORDINANCES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE PROPER CONSTRUCTION PRACTICES HAVE BEEN UTILIZED AND THAT STORMWATER MANAGEMENT FEATURES HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH APPROVED DESIGN PLANS. JSD PROFESSIONAL SERVICES, INC. (JSD) SHALL NOT BE LIABLE FOR ANY CONSTRUCTION PRACTICES OR INSTALLATION WHICH DEVIATES FROM THE APPROVED PLAN SET. ONCE THE OWNER HAS PROVIDED FINAL APPROVAL TO THE WORK PERFORMED BY THE CONTRACTOR AND ENSURED COMPLIANCE WITH THE PLAN, IT IS THE OWNER'S RESPONSIBILITY TO MAINTAIN STORMWATER MANAGEMENT FEATURES IN ACCORDANCE WITH THE RECORDED MAINTENANCE AGREEMENT. PROPER OPERATION IS DEPENDENT ON A MULTITUDE OF VARIABLES INCLUDING WEATHER. THESE COMPONENTS REQUIRE ONGOING MAINTENANCE FOR WHICH THE OWNER IS RESPONSIBLE. JSD TAKES NO RESPONSIBILITY FOR PROPER OPERATION OF THE WATER QUALITY COMPONENTS.



BIORETENTION DEVICE 1

N.T.S.



BIORETENTION DEVICE 2

N.T.S.

GENERAL NOTES:

1. *ALL CONSTRUCTION PRACTICES SHALL MEET THE SPECIFICATIONS OF THE WDNR TECHNICAL STANDARD 1004 – BIORETENTION FOR INFILTRATION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN A COPY OF THIS STANDARD AND CONSTRUCT THE BIORETENTION DEVICE IN ACCORDANCE WITH THE REQUIREMENTS OUTLINED THEREIN.*
2. *CONTRACTOR SHALL INSTALL 36" OF ENGINEERED SOIL CONSISTING OF: 85% ASTM C33 SAND AND 15% CERTIFIED COMPOST.*
3. *CERTIFIED COMPOST SHALL CONSIST OF: >40% ORGANIC MATTER, <60% ASH CONTENT, pH OF 6–8, AND MOISTURE CONTENT OF 35–50% BY WEIGHT.*
4. *ASTM C33 SAND OR WASHED STONE SHALL BE PLACED IN THE FIRST 36" BELOW THE PERFORATED PIPE. SOILS SHALL BE CONFIRMED BY GEOTECHNICAL ENGINEER PRIOR TO BACKFILLING.*
5. *ANNUAL RYE GRASS SHALL BE SEEDED AT 40 LB/ACRE WITH THE SEED MIX IN THE AREAS SURROUNDING THE BASIN, ON SIDE SLOPES, AND OVER ANY LAND THAT DISCHARGES INTO THE BASIN FOR EROSION CONTROL WHEN BASIN IS BROUGHT ON–LINE. RODTSTOP AND PLUGS ARE REQUIRED TO ESTABLISH VEGETATION AT THE INVERT OF THE BASIN. REFER TO AREA DELINEATED ON SHEET L100 FOR PLANTING AREA. IT SHALL BE THE OWNERS/OWNERS CONTRACT REPRESENTATIVE'S RESPONSIBILITY TO DETERMINE TYPE OF VEGETATIVE COVER AT THE INVERT OF THE BIORETENTION BASIN. REFER TO DETAIL 1/401 AND 1(ALT)/401 FOR VEGETATION TYPE OPTIONS FOR BIORETENTION BASIN.*
6. *RUNOFF MUST INFILTRATE WITHIN 24–HOURS. BASINS UNABLE TO MAINTAIN THESE RATES MUST BE DEEP TILLED, REGRADED, AND IF NECESSARY REPLANTED TO RESTORE ORIGINAL INFILTRATION RATES.*
7. *ALL WORK TO BE CONDUCTED IN CONFORMANCE WITH APPLICABLE LOCAL, REGIONAL, AND STATE STORMWATER STANDARDS FOR THE PROJECT SITE AS APPROVED BY THE REGULATORY ENGINEER.*
8. *OWNER OR CONTRACTOR MUST CONSULT LANDSCAPE ARCHITECT OR ECOLOGICAL PLANTING AGENCY FOR APPROPRIATE PLANTS AND PLANTING CONFIGURATIONS – SEE SHEET L200.*

INFILTRATION DEVICES ARE DESIGNED IN ACCORDANCE WITH THE SPECIFICATIONS OF THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES (WDNR), COUNTY, MUNICIPALITY, AND ENGINEERING STANDARD OF CARE. ALL DESIGNATED INFILTRATION AREAS (e.g. RAIN GARDENS, INFILTRATION BASINS, BIORETENTION DEVICES) SHALL BE FENCED PRIOR TO CONSTRUCTION AND REMAIN UNDISTURBED AND PROTECTED DURING THE CONSTRUCTION OF PROPOSED SITE IMPROVEMENTS. PROPOSED BIORETENTION DEVICES SHALL NOT BE CONSTRUCTED UNTIL THE DEVICE'S CONTRIBUTING WATERSHED AREA MEETS ESTABLISHED VEGETATION REQUIREMENTS SET FORTH WITHIN THE RESPECTIVE WDNR TECHNICAL STANDARDS. IF THE LOCATION OF THE INFILTRATION AREA CONFLICTS WITH CONSTRUCTION STAGING AND/OR CONSTRUCTION TRAFFIC AND IS DISTURBED, COMPACTION MITIGATION WILL BE REQUIRED AT THE CONTRACTOR'S EXPENSE.

THE CONTRACTOR IS REQUIRED TO PROVIDE QUALIFIED STAFF FOR INSPECTION AND OBSERVATION OF THE CONSTRUCTION ACTIVITIES RELATING TO ALL JOB SITE REGULATORY COMPLIANCE INCLUDING THE PROTECTION AND CONSTRUCTION OF ALL STORMWATER MANAGEMENT FEATURES. ANY OBSERVATION OF PLAN OR SITE DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER OF RECORD PRIOR TO CONSTRUCTION.

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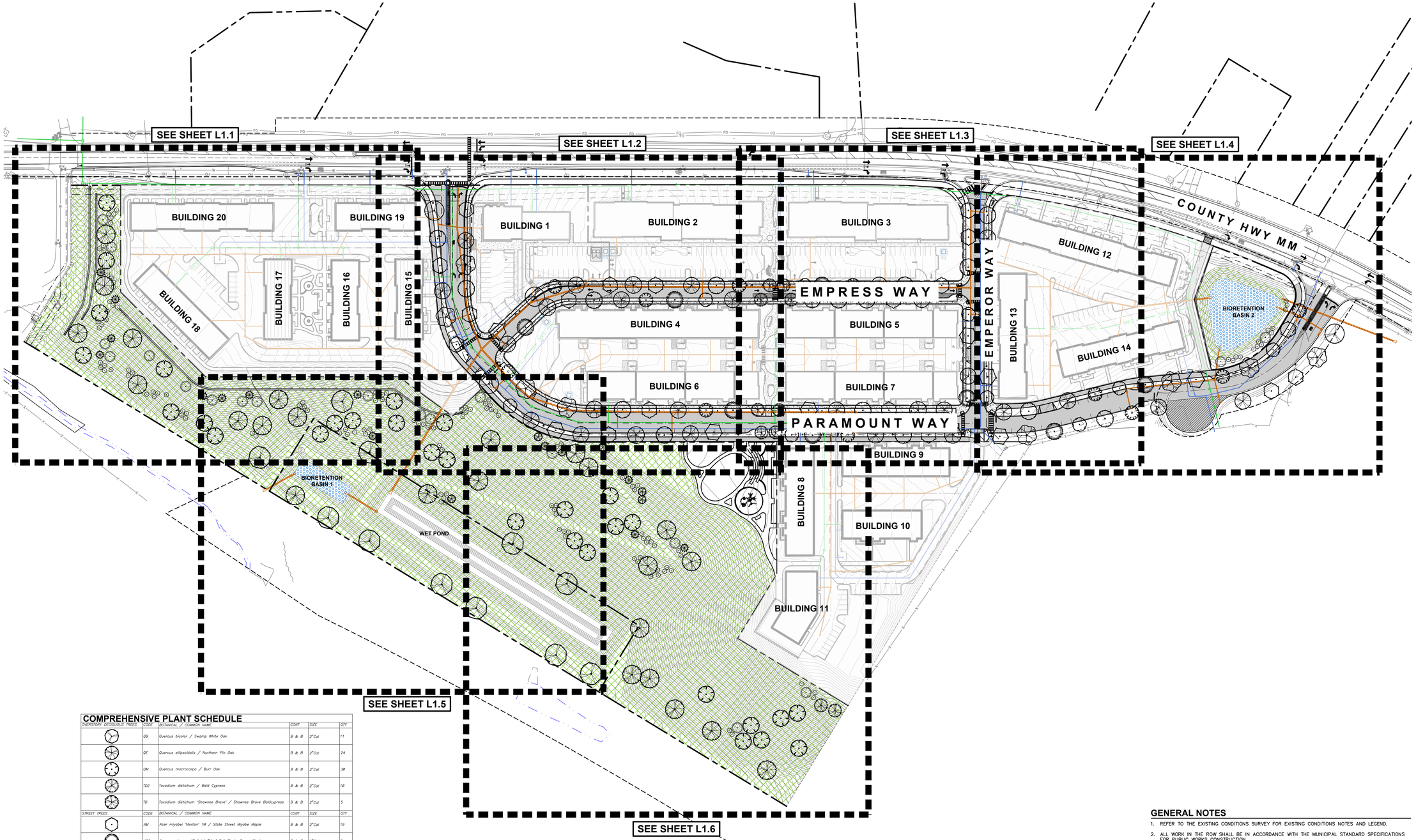
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STORMWATER DETAILS

SHEET NUMBER:
C8.2

JSD PROJECT NO: 21-10566

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COMPREHENSIVE PLANT SCHEDULE

OVERSTORY DECIDUOUS TREES	CODE	BOTANICAL / COMMON NAME	CONT	SIZE	QTY
	QB	*Quercus bicolor* / Swamp White Oak	B & B	2"Cal	11
	QE	*Quercus ellipsoidalis* / Northern Pin Oak	B & B	2"Cal	24
	QM	*Quercus macrocarpa* / Burr Oak	B & B	2"Cal	38
	TD2	*Taxodium distichum* / Bald Cypress	B & B	2"Cal	18
	TD	*Taxodium distichum 'Shawnee Brave'* / Shawnee Brave Baldcypress	B & B	2"Cal	5
STREET TREES	CODE	BOTANICAL / COMMON NAME	CONT	SIZE	QTY
	AM	*Acer miyabei 'Morton' TM* / State Street Miyabe Maple	B & B	2"Cal	19
	AB2	*Acer saccharum 'Bailsta' TM* / Fall Fiesta Sugar Maple	B & B	2"Cal	9
	CC2	*Celtis occidentalis* / Common Hackberry	B & B	2"Cal	11
	GBA	*Ginko biloba 'Autumn Gold'* / Autumn Gold Ginko	B & B	2"Cal	23
	GTS	*Gymnocladus dioica 'McKBranched'* / Decaf Kentucky Coffeetree	B & B	2"Cal	4
	PA2	*Platanus x acerifolia 'Exclamation!'* / London Planetree	B & B	1.5"Cal	14
	QE2	*Quercus ellipsoidalis* / Northern Pin Oak	B & B	2"Cal	8
	TC2	*Tilia cordata 'Greenspire'* / Greenspire Linden	B & B	2"Cal	8
	UN2	*Ulmus americana 'New Horizon'* / New Horizon American Elm	B & B	2"Cal	8
	UC2	*Ulmus x 'Frontier'* / American Elm	B & B	2"Cal	9
TALL EVERGREEN TREES	CODE	BOTANICAL / COMMON NAME	CONT	SIZE	QTY
	PG	*Picea glauca 'Densata'* / Black Hills Spruce	B & B	Min. 4' Ht.	19
	PGM	*Picea glauca densata 'MonChet'* / Sunburst Black Hills Spruce	B & B	Min. 4' Ht.	14
DECIDUOUS SHRUBS	CODE	BOTANICAL / COMMON NAME	CONT	SIZE	QTY
	RG4	*Rhus glabra* / Smooth Sumac	3 gal	3–4' Ht.	137
PERENNIALS	CODE	BOTANICAL / COMMON NAME	CONT	SIZE	QTY
	PA3	*Perovskia atriplicifolia 'Little Spire' TM* / Little Spire Russian Sage	1 gal	Cont.	38
	RS3	*Rudbeckia subtomentosa* / Sweet Black-eyed Susan	1 gal	Min. 18"–24"	48
	SAJ	*Sedum x 'Autumn Joy'* / Autumn Joy Sedum	1 gal	Cont.	18
ORNAMENTAL GRASSES	CODE	BOTANICAL / COMMON NAME	CONT	SIZE	QTY
	CK2	*Calamagrostis x acutiflora 'Karl Foerster'* / Feather Reed Grass	1 gal	18–12" Ht.	38

GENERAL NOTES

1. REFER TO THE EXISTING CONDITIONS SURVEY FOR EXISTING CONDITIONS NOTES AND LEGEND.
2. ALL WORK IN THE ROW SHALL BE IN ACCORDANCE WITH THE MUNICIPAL STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
3. JSD SHALL BE HELD HARMLESS AND DOES NOT WARRANT ANY DEVIATIONS BY THE OWNER/CONTRACTOR FROM THE APPROVED CONSTRUCTION PLANS THAT MAY RESULT IN DISCIPLINARY ACTIONS BY ANY OR ALL REGULATORY AGENCIES.
4. DRAWING FOR REVIEW – NOT FOR CONSTRUCTION UNLESS OTHERWISE NOTED IN THE TITLE BLOCK.
5. THE LANDSCAPE CONTRACTOR SHALL COORDINATE ALL FINE GRADING AND TOPSOILING WITH GENERAL CONTRACTOR
6. REFER TO "LANDSCAPE DETAILS AND NOTES" SHEET FOR ADDITIONAL DETAILS, NOTES AND SPECIFICATION INFORMATION INCLUDING MATERIALS, GUARANTEE AND EXECUTION RELATED TO LANDSCAPE PLAN
7. CONTRACTOR SHALL REVIEW SITE CONDITIONS FOR UTILITY CONFLICTS, DRAINAGE ISSUES, SUBSURFACE ROCK, AND PLANT PLACEMENT CONFLICTS PRIOR TO PLANT INSTALLATION. REPORT ANY CONDITIONS THAT MAY HAVE ADVERSE IMPACT ON PLANTING OPERATIONS TO LANDSCAPE ARCHITECT
8. DO NOT COMMENCE PLANTING OPERATIONS UNTIL ALL ADJACENT SITE IMPROVEMENTS, IRRIGATION INSTALLATION (IF APPLICABLE), AND FINISH GRADING ARE COMPLETE

LEGEND

PROPERTY LINE

PRAIRIE SEED MIX

NATIVE VEGETATIVE MAT (NVM)

north

SCALE IN FEET

70' 0 70'

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MADISON REGIONAL OFFICE
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P. 608.848.5060

CLIENT:
ROYAL CAPITAL

CLIENT ADDRESS:
710 N. PLANKINTON AVE. SUITE 300
MILWAUKEE, WI 53203

PROJECT:
NINE SPRINGS

PROJECT LOCATION:
FITCHBURG, WI 53711
DANE COUNTY

PRELIMINARY
NOT FOR CONSTRUCTION

PLAN MODIFICATIONS:

#	Date:	Description:
1	06.21.2022	ADR SUBMITTAL
2	12.14.2022	P-PLAT SUBMITTAL
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Design/Drawn:
Approved:

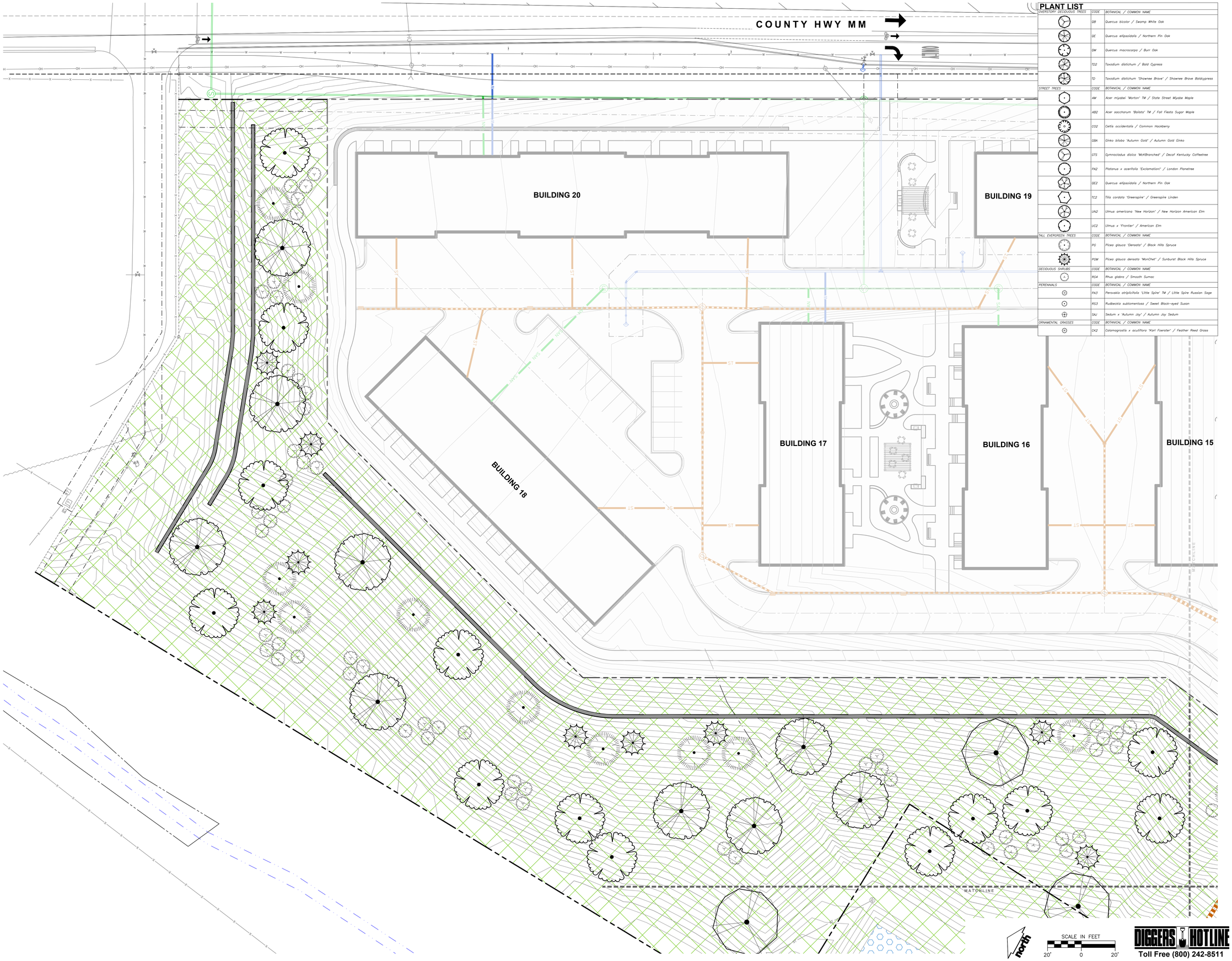
SHEET TITLE:
LANDSCAPE PLAN - OVERALL

SHEET NUMBER:
L1.0

JSD PROJECT NO: 21-10566

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File: I:\2021\21105660\DWG\Landscape Sheets\21105660 Public Landscape (P Plat).dwg Layout: L1.0 User: mammel Plotted: Dec 13, 2022 - 8:47pm Xrefs:



PLANT LIST

OVERSTORY DECIDUOUS TREES	CODE	BOTANICAL / COMMON NAME
	QB	Quercus bicolor / Swamp White Oak
	QE	Quercus ellipsoidalis / Northern Pin Oak
	QM	Quercus macrocarpa / Burr Oak
	TD2	Taxodium distichum / Bald Cypress
	TD	Taxodium distichum 'Shawnee Brave' / Shawnee Brave Baldcypress
STREET TREES	**CODE**	**BOTANICAL / COMMON NAME**
	AM	Acer miyabei 'Morton' TM / State Street Miyabe Maple
	AB2	Acer saccharum 'Bailsta' TM / Fall Fiesta Sugar Maple
	CO2	Celtis occidentalis / Common Hackberry
	GBA	Ginko biloba 'Autumn Gold' / Autumn Gold Ginko
	GTS	Gymnocladus dioica 'McKBranched' / Decaf Kentucky Coffeetree
	PA2	Platanus x acerifolia 'Exclamation!' / London Planetree
	QE2	Quercus ellipsoidalis / Northern Pin Oak
	TC2	Tilia cordata 'Greenspire' / Greenspire Linden
	UN2	Ulmus americana 'New Horizon' / New Horizon American Elm
	UC2	Ulmus x 'Frontier' / American Elm
TALL EVERGREEN TREES	**CODE**	**BOTANICAL / COMMON NAME**
	PG	Picea glauca 'Densata' / Black Hills Spruce
	PGM	Picea glauca densata 'MonChet' / Sunburst Black Hills Spruce
DECIDUOUS SHRUBS	**CODE**	**BOTANICAL / COMMON NAME**
	RG4	Rhus glabra / Smooth Sumac
PERENNIALS	**CODE**	**BOTANICAL / COMMON NAME**
	PA3	Perovskia atriplicifolia 'Little Spire' TM / Little Spire Russian Sage
	RS3	Rudbeckia subtomentosa / Sweet Black-eyed Susan
	SAJ	Sedum x 'Autumn Joy' / Autumn Joy Sedum
ORNAMENTAL GRASSES	**CODE**	**BOTANICAL / COMMON NAME**
	CK2	Calamagrostis x acutiflora 'Karl Foerster' / Feather Reed Grass

north

SCALE IN FEET
20' 0 20'

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710 N. PLANKINTON AVE. SUITE 300
MILWAUKEE, WI 53203

PROJECT:
NINE SPRINGS

PROJECT LOCATION:
FITCHBURG, WI 53711
DANE COUNTY

PRELIMINARY
NOT FOR CONSTRUCTION

PLAN MODIFICATIONS:

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Design/Drawn: MRA/MWS
Approved: KJY

SHEET TITLE:
LANDSCAPE PLAN - DETAILED

SHEET NUMBER:
L1.1

JSD PROJECT NO: 21-10566

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File: I:\2021\21106683\WD\Landscape Sheets\21106683WD Landscape Sheets (P-Plat).dwg Layout: L1.1 User: mammel Plotted: Dec 13, 2022 - 5:47pm Xrefs:

COUNTY HWY MM

BUILDING 1

BUILDING 2

BUILDING 4

BUILDING 5

BUILDING 6

BUILDING 7

EMPRESS WAY

PARAMOUNT WAY

MATCHLINE

(18) RS3
(18) SAJ
(12) CK2
(1) GTS
(1) AM
(18) PA3
(18) RS3
(1) PA2
(1) GBA
(1) QE2
(1) TC2
(1) UN2
(1) AB2
(1) CO2
(1) TD2
(1) UC2

PLANT LIST

OVERSTORY DECIDUOUS TREES	CODE	BOTANICAL / COMMON NAME
	QB	Quercus bicolor / Swamp White Oak
	QE	Quercus ellipsoidalis / Northern Pin Oak
	QM	Quercus macrocarpa / Burr Oak
	TD2	Taxodium distichum / Bald Cypress
	TD	Taxodium distichum 'Shawnee Brave' / Shawnee Brave Baldcypress
STREET TREES	**CODE**	**BOTANICAL / COMMON NAME**
	AM	Acer miyabei 'Morton' TM / State Street Miyabe Maple
	AB2	Acer saccharum 'Bailsta' TM / Fall Fiesta Sugar Maple
	CO2	Celtis occidentalis / Common Hackberry
	GBA	Ginko biloba 'Autumn Gold' / Autumn Gold Ginko
	GTS	Gymnocladus dioica 'McKBranched' / Decaf Kentucky Coffeetree
	PA2	Platanus x acerifolia 'Exclamation!' / London Planetree
	QE2	Quercus ellipsoidalis / Northern Pin Oak
	TC2	Tilia cordata 'Greenspire' / Greenspire Linden
	UN2	Ulmus americana 'New Horizon' / New Horizon American Elm
	UC2	Ulmus x 'Frontier' / American Elm
TALL EVERGREEN TREES	**CODE**	**BOTANICAL / COMMON NAME**
	PG	Picea glauca 'Densata' / Black Hills Spruce
	PGM	Picea glauca densata 'MonChet' / Sunburst Black Hills Spruce
DECIDUOUS SHRUBS	**CODE**	**BOTANICAL / COMMON NAME**
	RG4	Rhus glabra / Smooth Sumac
PERENNIALS	**CODE**	**BOTANICAL / COMMON NAME**
	PA3	Perovskia atriplicifolia 'Little Spire' TM / Little Spire Russian Sage
	RS3	Rudbeckia subtomentosa / Sweet Black-eyed Susan
	SAJ	Sedum x 'Autumn Joy' / Autumn Joy Sedum
ORNAMENTAL GRASSES	**CODE**	**BOTANICAL / COMMON NAME**
	CK2	Calamagrostis x acutiflora 'Karl Foerster' / Feather Reed Grass

north

SCALE IN FEET
20' 0 20'

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CLIENT ADDRESS:
710 N. PLANKINTON AVE. SUITE 300
MILWAUKEE, WI 53203

PROJECT:
NINE SPRINGS

PROJECT LOCATION:
FITCHBURG, WI 53711
DANE COUNTY

PRELIMINARY
NOT FOR CONSTRUCTION

PLAN MODIFICATIONS:

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Design/Drawn: MRA/MWS
Approved: KJT

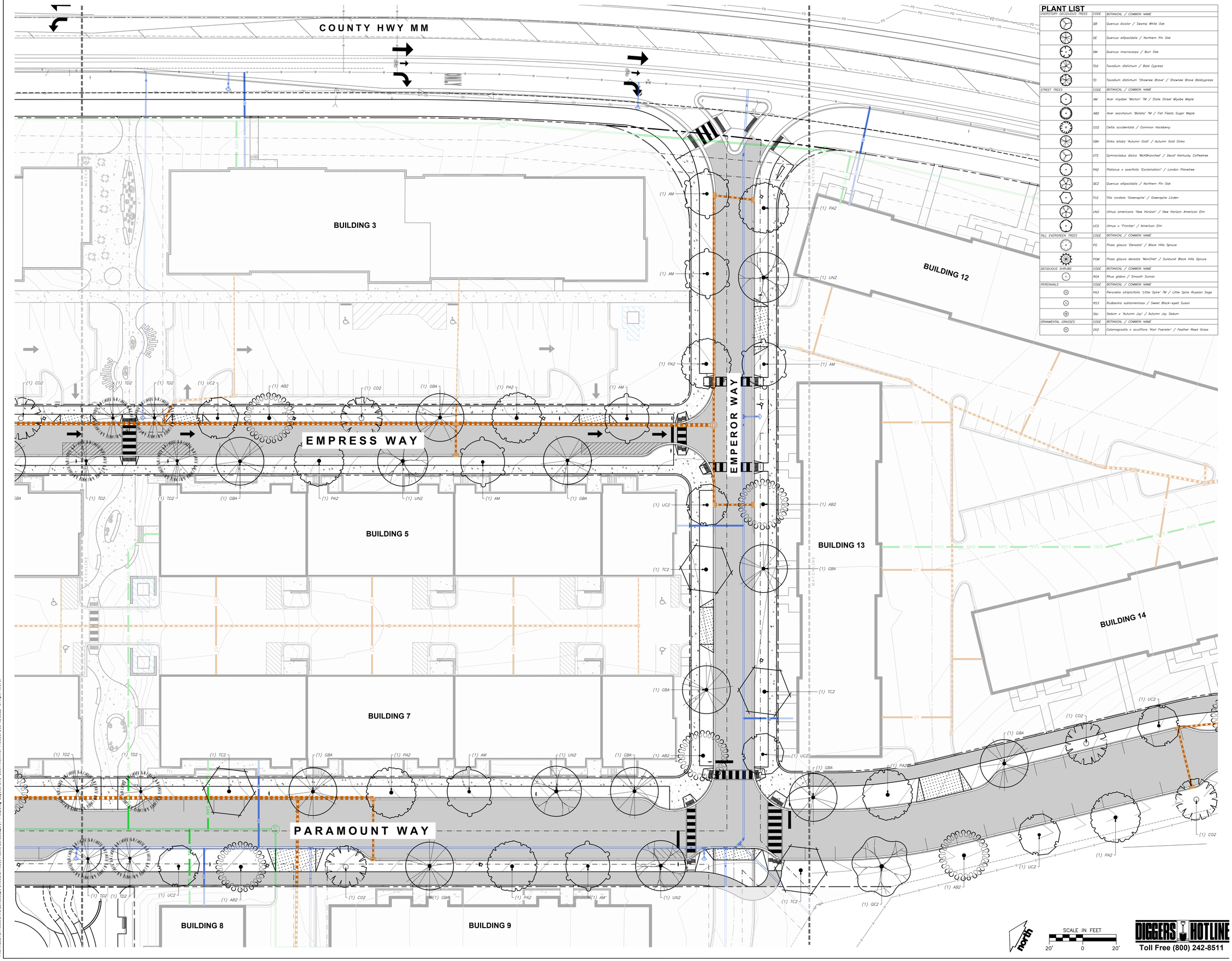
SHEET TITLE:
LANDSCAPE PLAN - DETAILED

SHEET NUMBER:
L1.2

JSD PROJECT NO: 21-10566

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PLANT LIST

OVERSTORY DECIDUOUS TREES	CODE	BOTANICAL / COMMON NAME
	QB	Quercus bicolor / Swamp White Oak
	QE	Quercus ellipsoidalis / Northern Pin Oak
	QM	Quercus macrocarpa / Burr Oak
	TD2	Taxodium distichum / Bald Cypress
	TD	Taxodium distichum 'Shawnee Brave' / Shawnee Brave Baldcypress
STREET TREES	**CODE**	**BOTANICAL / COMMON NAME**
	AM	Acer miyabei 'Morton' TM / State Street Miyabe Maple
	AB2	Acer saccharum 'Bailsta' TM / Fall Fiesta Sugar Maple
	CO2	Celtis occidentalis / Common Hackberry
	GBA	Ginko biloba 'Autumn Gold' / Autumn Gold Ginko
	GTS	Gymnocladus dioica 'McKBranched' / Decaf Kentucky Coffeetree
	PA2	Platanus x acerifolia 'Exclamation!' / London Planetree
	QE2	Quercus ellipsoidalis / Northern Pin Oak
	TC2	Tilia cordata 'Greenspire' / Greenspire Linden
	UN2	Ulmus americana 'New Horizon' / New Horizon American Elm
	UC2	Ulmus x 'Frontier' / American Elm
TALL EVERGREEN TREES	**CODE**	**BOTANICAL / COMMON NAME**
	PG	Picea glauca 'Densata' / Black Hills Spruce
	PGM	Picea glauca densata 'MonChet' / Sunburst Black Hills Spruce
DECIDUOUS SHRUBS	**CODE**	**BOTANICAL / COMMON NAME**
	RG4	Rhus glabra / Smooth Sumac
PERENNIALS	**CODE**	**BOTANICAL / COMMON NAME**
	PA3	Perovskia atriplicifolia 'Little Spire' TM / Little Spire Russian Sage
	RS3	Rudbeckia subtomentosa / Sweet Black-eyed Susan
	SAJ	Sedum x 'Autumn Joy' / Autumn Joy Sedum
ORNAMENTAL GRASSES	**CODE**	**BOTANICAL / COMMON NAME**
	CK2	Calamagrostis x acutiflora 'Karl Foerster' / Feather Reed Grass

north

SCALE IN FEET
20' 0 20'

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CLIENT:
ROYAL CAPITAL

CLIENT ADDRESS:
710 N. PLANKINTON AVE. SUITE 300
MILWAUKEE, WI 53203

PROJECT:
NINE SPRINGS

PROJECT LOCATION:
FITCHBURG, WI 53711
DANE COUNTY

PRELIMINARY
NOT FOR CONSTRUCTION

PLAN MODIFICATIONS:

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Design/Drawn: MRA/MWS
Approved: KJT

SHEET TITLE:
LANDSCAPE PLAN - DETAILED

SHEET NUMBER:
L1.3

JSD PROJECT NO: 21-10566

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PLANT LIST

OVERSTORY DECIDUOUS TREES	CODE	BOTANICAL / COMMON NAME
	QB	Quercus bicolor / Swamp White Oak
	QE	Quercus ellipsoidalis / Northern Pin Oak
	QM	Quercus macrocarpa / Burr Oak
	TD2	Taxodium distichum / Bald Cypress
	TD	Taxodium distichum 'Shawnee Brave' / Shawnee Brave Baldcypress
STREET TREES	**CODE**	**BOTANICAL / COMMON NAME**
	AM	Acer miyabei 'Morton' TM / State Street Miyabe Maple
	AB2	Acer saccharum 'Bailsta' TM / Fall Fiesta Sugar Maple
	CO2	Celtis occidentalis / Common Hackberry
	GBA	Ginko biloba 'Autumn Gold' / Autumn Gold Ginko
	GTS	Gymnocladus dioica 'McKBranched' / Decaf Kentucky Coffeetree
	PA2	Platanus x acerifolia 'Exclamation!' / London Planetree
	QE2	Quercus ellipsoidalis / Northern Pin Oak
	TC2	Tilia cordata 'Greenspire' / Greenspire Linden
	UN2	Ulmus americana 'New Horizon' / New Horizon American Elm
	UC2	Ulmus x 'Frontier' / American Elm
TALL EVERGREEN TREES	**CODE**	**BOTANICAL / COMMON NAME**
	PG	Picea glauca 'Densata' / Black Hills Spruce
	PGM	Picea glauca densata 'MonChet' / Sunburst Black Hills Spruce
DECIDUOUS SHRUBS	**CODE**	**BOTANICAL / COMMON NAME**
	RG4	Rhus glabra / Smooth Sumac
PERENNIALS	**CODE**	**BOTANICAL / COMMON NAME**
	PA3	Perovskia atriplicifolia 'Little Spire' TM / Little Spire Russian Sage
	RS3	Rudbeckia subtomentosa / Sweet Black-eyed Susan
	SAJ	Sedum x 'Autumn Joy' / Autumn Joy Sedum
ORNAMENTAL GRASSES	**CODE**	**BOTANICAL / COMMON NAME**
	CK2	Calamagrostis x acutiflora 'Karl Foerster' / Feather Reed Grass

COUNTY HWY MM

BUILDING 12

BUILDING 13

BUILDING 14

BIORETENTION BASIN 2

EMPEROR WAY

PARAMOUNT WAY

LONIELLOW COURT

(1) PA2
(1) UN2
(1) AM
(1) AB2
(1) GBA
(1) TC2
(1) UC2
(1) CO2
(1) QE2
(1) GTS
(1) PG
(3) RG4
(4) RG4
(10) RS3
(10) PA3
(20) CK2

north

SCALE IN FEET
20' 0 20'

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ROYAL CAPITAL

CLIENT ADDRESS:
710 N. PLANKINTON AVE. SUITE 300
MILWAUKEE, WI 53203

PROJECT:
NINE SPRINGS

PROJECT LOCATION:
FITCHBURG, WI 53711
DANE COUNTY

PRELIMINARY
NOT FOR CONSTRUCTION

PLAN MODIFICATIONS:

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Design/Drawn: MRA/MWS
Approved: KJY

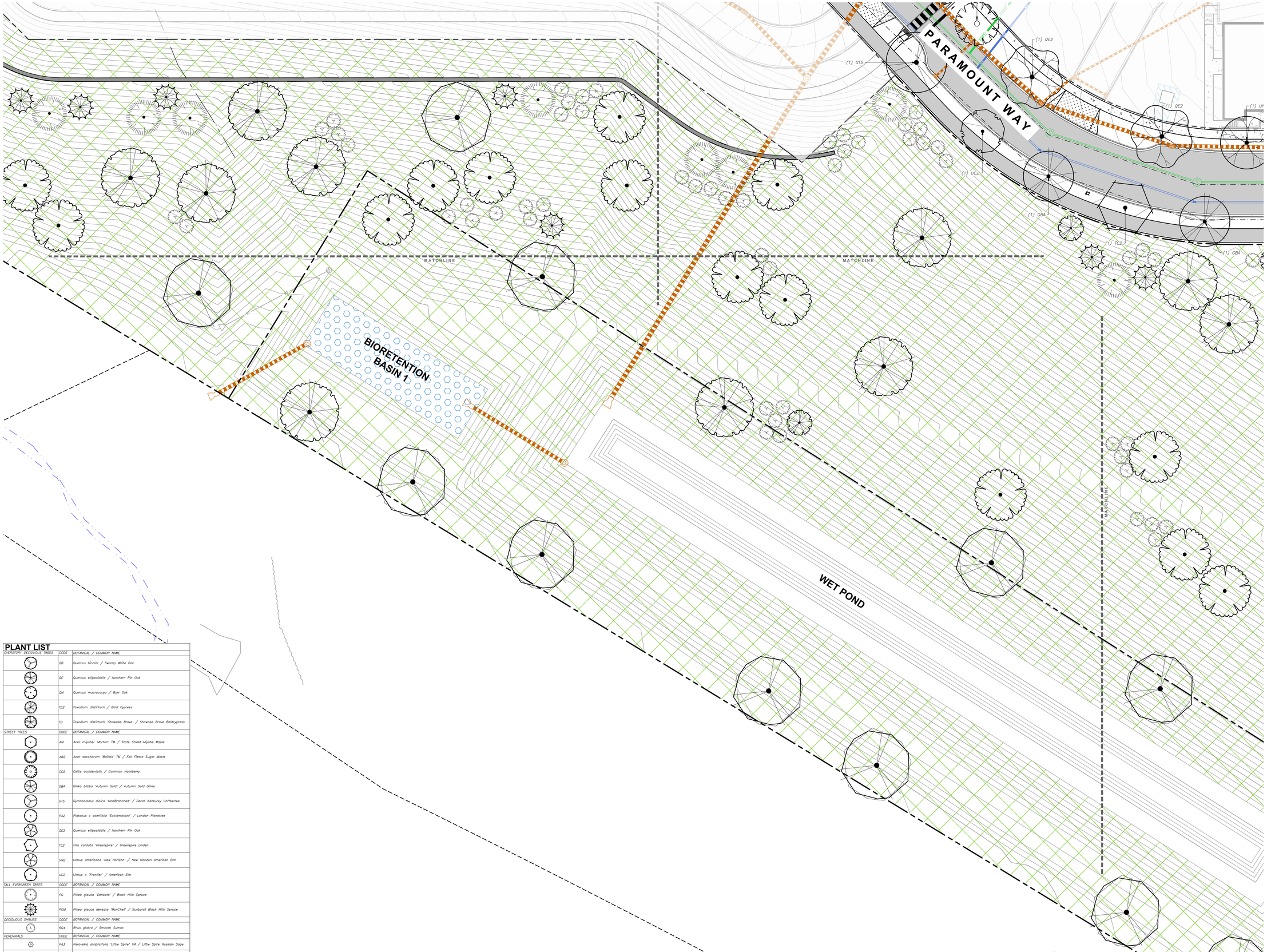
SHEET TITLE:
LANDSCAPE PLAN - DETAILED

SHEET NUMBER:
L1.4

JSD PROJECT NO: 21-10566

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PLANT LIST

OVERSTORY DECIDUOUS TREES	CODE	BOTANICAL / COMMON NAME
	QB	Quercus bicolor / Swamp White Oak
	QE	Quercus ellipsoidalis / Northern Pin Oak
	QM	Quercus macrocarpa / Burr Oak
	TD2	Taxodium distichum / Bald Cypress
	TD	Taxodium distichum 'Shawnee Brave' / Shawnee Brave Baldcypress
STREET TREES	CODE	BOTANICAL / COMMON NAME
	AM	Acer miyabei 'Morton' TM / State Street Miyabe Maple
	AB2	Acer saccharum 'Bailsta' TM / Fall Fiesta Sugar Maple
	CO2	Celtis occidentalis / Common Hackberry
	GBA	Ginko biloba 'Autumn Gold' / Autumn Gold Ginko
	GTS	Gymnocladus dioica 'McKBranched' / Decaf Kentucky Coffeetree
	PA2	Platanus x acerifolia 'Exclamation!' / London Planetree
	QE2	Quercus ellipsoidalis / Northern Pin Oak
	TC2	Tilia cordata 'Greenspire' / Greenspire Linden
	UN2	Ulmus americana 'New Horizon' / New Horizon American Elm
	UC2	Ulmus x 'Frontier' / American Elm
TALL EVERGREEN TREES	CODE	BOTANICAL / COMMON NAME
	PG	Picea glauca 'Densata' / Black Hills Spruce
	PGM	Picea glauca densata 'MonChet' / Sunburst Black Hills Spruce
DECIDUOUS SHRUBS	CODE	BOTANICAL / COMMON NAME
	RG4	Rhus glabra / Smooth Sumac
PERENNIALS	CODE	BOTANICAL / COMMON NAME
	PA3	Perovskia atriplicifolia 'Little Spire' TM / Little Spire Russian Sage
	RS3	Rudbeckia subtomentosa / Sweet Black-eyed Susan
	SA1	Sedum x 'Autumn Joy' / Autumn Joy Sedum
ORNAMENTAL GRASSES	CODE	BOTANICAL / COMMON NAME
	CK2	Calamagrostis x acutiflora 'Karl Foerster' / Feather Reed Grass

north

SCALE IN FEET
20' 0 20'

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MILWAUKEE, WI 53203

PROJECT:
NINE SPRINGS

PROJECT LOCATION:
FITCHBURG, WI 53711
DANE COUNTY

PRELIMINARY
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Design/Drawn: MRA/MWS
Approved: KJY

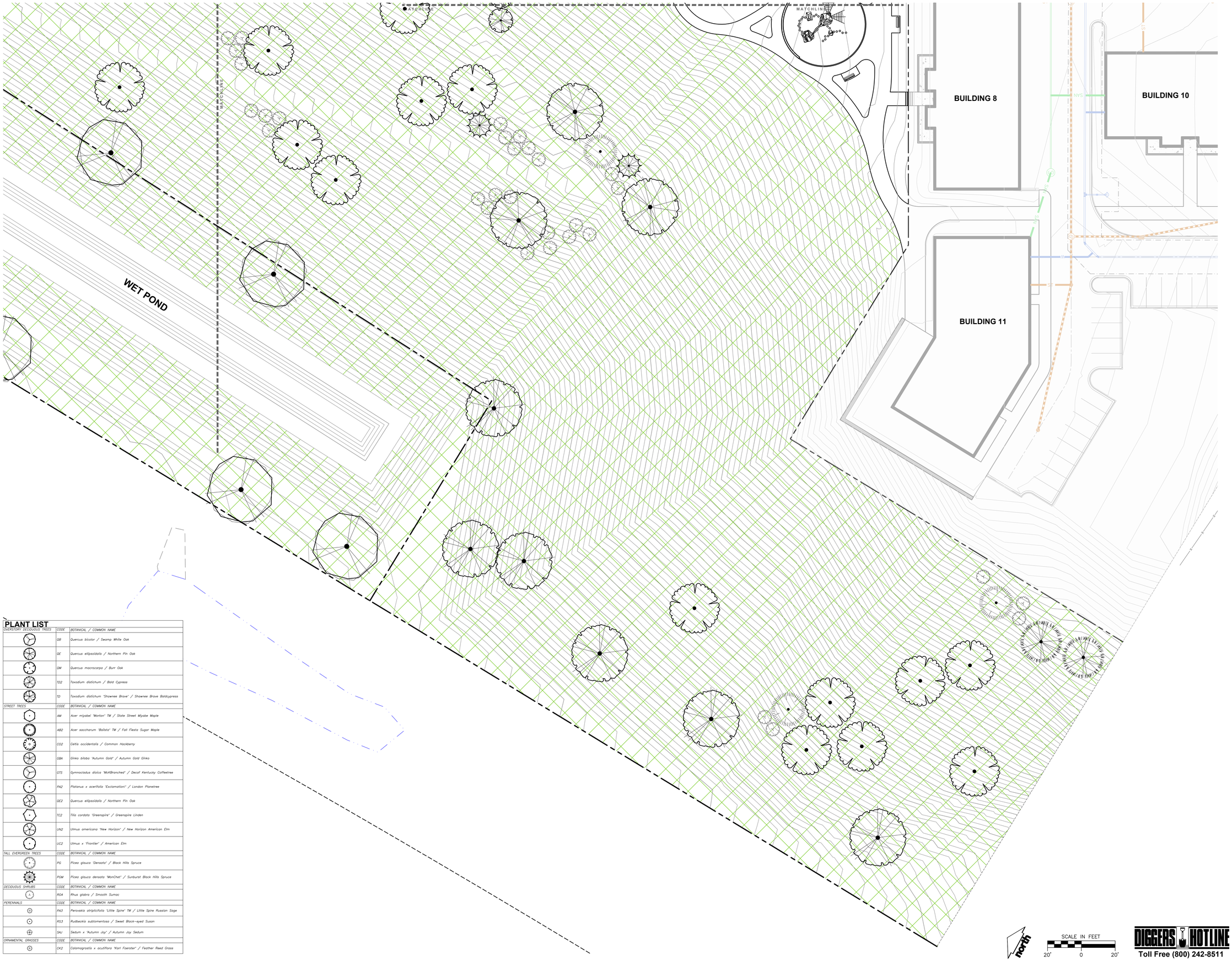
SHEET TITLE:
LANDSCAPE PLAN - DETAILED

SHEET NUMBER:
L1.5

JSD PROJECT NO: 21-10566

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P. 608.848.5060

CLIENT:
ROYAL CAPITAL

CLIENT ADDRESS:
710 N. PLANKINTON AVE. SUITE 300
MILWAUKEE, WI 53203

PROJECT:
NINE SPRINGS

PROJECT LOCATION:
FITCHBURG, WI 53711
DANE COUNTY

PRELIMINARY
NOT FOR CONSTRUCTION

PLAN MODIFICATIONS:

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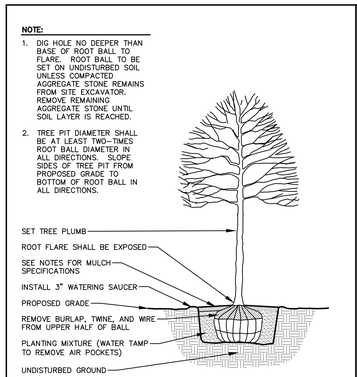
Design/Drawn: MRA/MWS
Approved: KJY

SHEET TITLE:
LANDSCAPE PLAN - DETAILED

SHEET NUMBER:
L1.6

JSD PROJECT NO: 21-10566

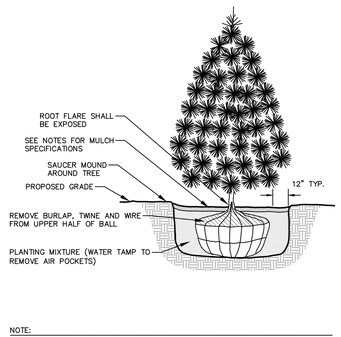
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DECIDUOUS TREE PLANTING DETAIL

N.T.S.

REV. 10-29-2021



NOTE:
1. DIG HOLE NO DEEPER THAN BASE OF ROOT BALL TO FLARE. ROOT BALL TO BE SET ON UNDISTURBED SOIL UNLESS COMPACTED AGGREGATE STONE REMAINS FROM SITE EXCAVATOR. REMOVE REMAINING AGGREGATE STONE UNTIL SOIL LAYER IS REACHED

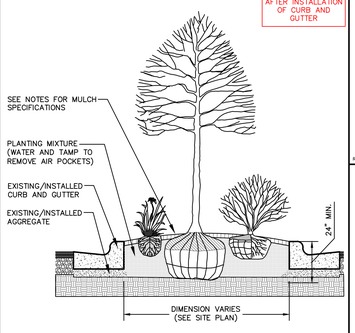
EVERGREEN TREE PLANTING DETAIL

N.T.S.

REV. 01-03-2019

MOUND TOPSOIL 12" ABOVE CURB WITH TOPSOIL PLANT MIX OR AMENDED NATIVE SOILS

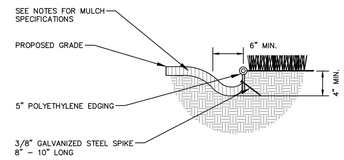
PARKING ISLAND TO BE DUG FREE OF AGGREGATE TO A MINIMUM DEPTH OF 24" AND PREPARED FOR PLANTINGS AFTER INSTALLATION OF CURB AND GUTTER



PARKING ISLAND LANDSCAPE DETAIL

N.T.S.

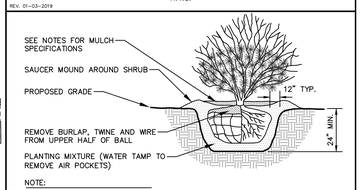
REV. 01-03-2019



POLYETHYLENE LANDSCAPE EDGING DETAIL

N.T.S.

REV. 01-03-2019

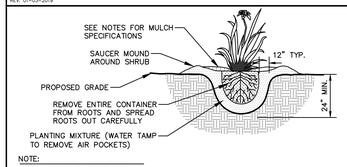


NOTE:
1. ROOT FLARE TO BE EXPOSED.

SHRUB PLANTING DETAIL

N.T.S.

REV. 01-03-2019



NOTE:
1. ROOT FLARE TO BE EXPOSED

PERENNIAL/ORNAMENTAL GRASS PLANTING DETAIL

N.T.S.

REV. 01-03-2019

COMPREHENSIVE PLANT SCHEDULE

OVERSTORY DECIDUOUS TREES	CODE	BOTANICAL / COMMON NAME	CONT	SIZE	QTY
	QB	Quercus bicolor / Swamp White Oak	B & B	2"Cal	11
	QE	Quercus ellipsoidalis / Northern Pin Oak	B & B	2"Cal	24
	QM	Quercus macrocarpa / Burr Oak	B & B	2"Cal	3Ø
	TD2	Taxodium distichum / Bald Cypress	B & B	2"Cal	1Ø
	TD	Taxodium distichum 'Shawnee Brave' / Shawnee Brave Baldcypress	B & B	2"Cal	5
STREET TREES	CODE	BOTANICAL / COMMON NAME	CONT	SIZE	QTY
	AM	Acer miyabei 'Morton' TM / State Street Miyabe Maple	B & B	2"Cal	19
	AB2	Acer saccharum 'Bailsta' TM / Fall Fiesta Sugar Maple	B & B	2"Cal	9
	CO2	Celtis occidentalis / Common Hackberry	B & B	2"Cal	11
	GBA	Ginko biloba 'Autumn Gold' / Autumn Gold Ginko	B & B	2"Cal	23
	GTS	Gymnocladus dioica 'McKBranched' / Decaf Kentucky Coffeetree	B & B	2"Cal	4
	PA2	Platanus x acerifolia 'Exclamation!' / London Planetree	B & B	1.5"Cal	14
	QE2	Quercus ellipsoidalis / Northern Pin Oak	B & B	2"Cal	8
	TC2	Tilia cordata 'Greenspire' / Greenspire Linden	B & B	2"Cal	8
	UN2	Ulmus americana 'New Horizon' / New Horizon American Elm	B & B	2"Cal	8
	UC2	Ulmus x 'Frontier' / American Elm	B & B	2"Cal	9
TALL EVERGREEN TREES	CODE	BOTANICAL / COMMON NAME	CONT	SIZE	QTY
	PG	Picea glauca 'Densata' / Black Hills Spruce	B & B	Min. 4' Ht.	19
	PGM	Picea glauca densata 'MonChet' / Sunburst Black Hills Spruce	B & B	Min. 4' Ht.	14
DECIDUOUS SHRUBS	CODE	BOTANICAL / COMMON NAME	CONT	SIZE	QTY
	RG4	Rhus glabra / Smooth Sumac	3 gal	3-4' Ht.	137
PERENNIALS	CODE	BOTANICAL / COMMON NAME	CONT	SIZE	QTY
	PA3	Perovskia atriplicifolia 'Little Spire' TM / Little Spire Russian Sage	1 gal	Cont.	3Ø
	RS3	Rudbeckia subtomentosa / Sweet Black-eyed Susan	1 gal	Min. 18"-24"	4Ø
	SAJ	Sedum x 'Autumn Joy' / Autumn Joy Sedum	1 gal	Cont.	1Ø
ORNAMENTAL GRASSES	CODE	BOTANICAL / COMMON NAME	CONT	SIZE	QTY
	CK2	Calamagrostis x acutiflora 'Karl Foerster' / Feather Reed Grass	1 gal	1Ø-12" Ht.	38

GENERAL NOTES

1. GENERAL: ALL WORK IN THE R-O-W AND PUBLIC EASEMENTS SHALL BE IN ACCORDANCE WITH LOCAL MUNICIPAL REQUIREMENTS. JSD SHALL BE HELD HARMLESS AND DOES NOT WARRANT ANY DEVIATIONS BY THE OWNER/CONTRACTOR FROM THE APPROVED CONSTRUCTION PLANS THAT MAY RESULT IN DISCIPLINARY ACTIONS BY ANY OR ALL REGULATORY AGENCIES. LOCATE ALL UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE DONE TO UTILITIES. CONTRACTOR MUST CALL 1-800-242-8511 FOR UTILITY LOCATIONS AT LEAST THREE DAYS PRIOR TO DIGGING. HAND DIG AND INSTALL ALL PLANTS THAT ARE NEAR EXISTING UTILITIES. PROTECT PREVIOUSLY INSTALLED WORK OF OTHER TRADES. CONTRACTOR IS RESPONSIBLE FOR STAKING THE PLANT MATERIALS FOR REVIEW BY OWNER PRIOR TO DIGGING AND PLACEMENT AND SHALL COORDINATE ALL FINE GRADING AND RESTORATION WITH THE GRADING CONTRACTOR.

2. DELIVERY AND HANDLING: DO NOT DELIVER MORE PLANT MATERIALS THAN CAN BE PLANTED IN ONE DAY, UNLESS ADEQUATE, APPROPRIATE AND SECURE STORAGE IS PROVIDED AND APPROVED BY OWNER'S REPRESENTATIVE. AT ALL TIMES, PROTECT ALL PLANT MATERIALS FROM WIND AND DIRECT SUN. PROTECT PLANTS WITH LEGIBLE IDENTIFICATION LABELS. PROTECT PLANTS DURING DELIVERY AND DO NOT PRUNE PRIOR TO DELIVERY. ALL TREES AND SHRUBS SHALL BE PLANTED ON THE DAY OF DELIVERY; IF THIS IS NOT POSSIBLE, PROTECT THE PLANT MATERIALS NOT PLANTED BY STORING THEM IN A SHADED, SECURE AREA, PROTECTING THE ROOT MASS WITH WET SOIL, MULCH, HAY OR OTHER SUITABLE MEDIUM. CONTRACTOR TO KEEP ALL PLANT MATERIALS ADEQUATELY WATERED TO PREVENT ROOT DESICCATION. DO NOT REMOVE CONTAINER GROWN STOCK FROM CONTAINERS BEFORE TIME OF PLANTING. DO NOT PICK UP CONTAINER OR BALLED PLANTS BY STEM OR ROOTS. ALL PLANTS SHALL BE LIFTED AND HANDLED FROM THE BOTTOM OF THE CONTAINER OR BALL. PERFORM ACTUAL PLANTING ONLY WHEN WEATHER AND SOIL CONDITIONS ARE SUITABLE IN ACCORDANCE WITH LOCALLY ACCEPTED BEST HORTICULTURAL PRACTICES.

3. MATERIALS - PLANTS: ALL PLANTS SHALL CONFORM TO THE LATEST VERSION OF THE AMERICAN STANDARD FOR NURSERY STOCK ANSI Z60.1. PLANTS SHALL BE TRUE TO SPECIES AND VARIETY SPECIFIED AND NURSERY GROWN IN ACCORDANCE WITH GOOD HORTICULTURAL PRACTICES UNDER CLIMATIC CONDITIONS SIMILAR TO THOSE IN THE LOCALITY OF THE PROJECT FOR AT LEAST 2 YEARS. PLANTS SHALL BE FRESHLY DUG (DURING THE MOST RECENT FAVORABLE HARVEST SEASON). PLANTS SHALL BE SO TRAINED IN DEVELOPMENT AND APPEARANCE AS TO BE UNQUESTIONABLY SUPERIOR IN FORM, COMPACTNESS, AND SYMMETRY. PLANTS SHALL BE SOUND, HEALTHY, VIGOROUS, WELL BRANCHED AND DENSELY FOLIATED WHEN IN LEAF, AND FREE OF DISEASE AND INSECTS (ADULT EGGS, PUPAE OR LARVAE). THEY SHALL HAVE HEALTHY, WELL-DEVELOPED ROOT SYSTEMS AND SHALL BE FREE FROM PHYSICAL DAMAGE OR OTHER CONDITIONS THAT WOULD PREVENT THRIVING GROWTH OR PREMATURE MORTALITY. PLANTS SHALL BE OF THE HIGHEST QUALITY, POSSESS TYPICAL GROWTH HABITS AND FORM FOR THEIR SPECIES AND BE FREE OF INJURY. PARKWAY TREES AND PARKING LOT TREES SHALL HAVE A MINIMUM BRANCHING HEIGHT OF SIX (6) FEET ABOVE THE GROUND TO ALLOW ADEQUATE VISUAL AND PHYSICAL CLEARANCE.

4. PRUNING: THE CONTRACTOR SHALL PRUNE ALL TREES AND REPAIR ANY INJURIES THAT OCCURRED DURING THE PLANTING PROCESS. DOUBLE LEADERS, DEAD BRANCHES, AND LIMBS DAMAGED OR BROKEN DURING THE PLANTING PROCESS, SHALL BE PRUNED. THIS SHALL BE THE ONLY PRUNING ALLOWED AT PLANTING. PRUNING SHALL CONFORM TO THE LATEST VERSION OF THE AMERICAN STANDARD FOR TREE CARE OPERATIONS, ANSI A300. PRUNE TREES IN ACCORDANCE WITH NAA GUIDELINES. DO NOT TOP TREES. PRUNE SHRUBS ACCORDING TO STANDARD HORTICULTURAL PRACTICES. ON CUTS OVER 3/4" IN DIAMETER AND BRUISES OR SCARS ON BARK, TRACE THE INJURED CAMBIUM LAYER BACK TO LIVING TISSUE AND REMOVE. SMOOTH AND SHAPE WOUNDS SO AS NOT TO RETAIN WATER. TREAT THE AREA WITH AN APPROVED INCONSPICUOUS LATEX BASED ANTISEPTIC TREE PAINT, IF PRUNING OCCURS "IN SEASON". DO NOT PRUNE ANY OAK TREES DURING THE MONTHS FROM APRIL TO OCTOBER.

5. CLEANUP: THE WORK AREA SHALL BE KEPT SAFE AND NEAT AT ALL TIMES. DISPOSED OF EXCESS SOIL, REMOVE ALL CUTTINGS AND WASTE MATERIALS. SOIL AND BRANCHES. BIND AND WRAP THESE MATERIALS, ANY REJECTED PLANTS, AND ANY OTHER DEBRIS RESULTING FROM ALL PLANTING TASKS AND PROMPTLY CLEAN UP AND REMOVE FROM THE PROJECT SITE. UNDER NO CIRCUMSTANCES SHALL THE ACCUMULATION OF SOIL, BRANCHES OR OTHER DEBRIS BE ALLOWED UPON A PUBLIC PROPERTY IN SUCH A MANNER AS TO RESULT IN A PUBLIC SAFETY HAZARD OR DAMAGE. LIKEWISE, UNDER NO CIRCUMSTANCES SHALL ANY DEBRIS OR INCIDENTAL MATERIALS BE ALLOWED UPON ADJACENT PRIVATE PROPERTY.

6. ANY SUBSTITUTIONS IN PLANT TYPE, LOCATION, OR SIZE SHALL BE APPROVED BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.

7. CONTRACTOR TO VERIFY PLANT MATERIAL QUANTITIES AND SQUARE FOOTAGES. QUANTITIES SHOWN ON PLAN TAKE PRECEDENCE OVER THOSE ON SCHEDULE.

LANDSCAPE MATERIAL NOTES

1. MATERIALS - PLANTING MIXTURE: ALL HOLES EXCAVATED FOR TREES, SHRUBS, PERENNIALS AND ORNAMENTAL GRASSES SHALL BE BACKFILLED WITH TWO (2) PARTS TOPSOIL, ONE (1) PART SAND AND ONE (1) PART COMPOST. SOIL MIXTURE SHALL BE WELL BLENDED PRIOR TO INSTALLATION.

2. MATERIALS - TOPSOIL: TOPSOIL TO BE CLEAN, FRIABLE LOAM FROM A LOCAL SOURCE, FREE FROM STONES OR DEBRIS OVER 3/4" IN DIAMETER, AND FREE FROM TOXINS OR OTHER DELETERIOUS MATERIALS. TOPSOIL SHALL HAVE A pH VALUE BETWEEN 6 AND 7. TOPSOIL AND PLANTING SOIL SHALL BE TESTED TO ENSURE CONFORMANCE WITH THESE SPECIFICATIONS AND SHALL BE AMENDED TO MEET THESE SPECIFICATIONS. PROVIDE TEST RESULTS TO OWNER'S REPRESENTATIVE PRIOR TO PLACEMENT. DO NOT PLACE FROZEN OR MUDDY TOPSOIL. APPLY SOIL AMENDMENTS TO ALL LANDSCAPE AREAS PER SOIL TEST.

3. MATERIALS - SHREDDED HARDWOOD BARK MULCH: ALL PLANTING AREAS LABELED ON PLAN SHALL RECEIVE CERTIFIED WEED FREE SHREDDED HARDWOOD BARK MULCH INSTALLED TO A MINIMUM AND CONSISTENT DEPTH OF 3-INCHES. SHREDDED HARDWOOD BARK MULCH SIZE & COLOR TO BE APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION. FERTILIZER SHALL BE IN ACCORDANCE WITH APPLICABLE LOCAL, COUNTY AND STATE REQUIREMENTS. SHREDDED HARDWOOD BARK MULCH AREAS SHALL NOT RECEIVE WOVEN WEED BARRIER FABRIC.

4. MATERIALS - STONE MULCH: ALL PLANTING AREAS LABELED ON PLAN SHALL RECEIVE DECORATIVE STONE MULCH SPREAD TO A MINIMUM AND CONSISTENT DEPTH OF 3-INCHES. DECORATIVE STONE MULCH TYPE, SIZE & COLOR TO BE APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION. FERTILIZER SHALL BE IN ACCORDANCE WITH APPLICABLE LOCAL, COUNTY AND STATE REQUIREMENTS. STONE MULCH AREAS SHALL RECEIVE WOVEN WEED BARRIER FABRIC. NO PLASTIC/IMPERVIOUS BARRIERS WILL BE PERMITTED. EXAMPLE: BLACK VISQUEEN.

5. MATERIALS - TREE & SHRUB RINGS: ALL TREES AND/OR SHRUBS PLANTED IN SEEDED LAWN AREAS TO BE INSTALLED WITH A MINIMUM 4' DIAMETER SHREDDED HARDWOOD BARK MULCH TREE RING SPREAD TO A CONSISTENT DEPTH OF 3-INCHES. ALL TREE RINGS SHOULD BE INSTALLED WITH A 5" DEPTH SHOVEL CUT EDGE, ANGLED 45 DEGREES INTO SOIL AT A 5' DIAMETER ABOUT THE CENTER OF THE TREE PLANTING. A PRE-EMERGENT GRANULAR HERBICIDE WEED-PREVENTER SHOULD BE MIXED WITH MULCH USED TO INSTALL TREE RING AS WELL AS TOPICALLY APPLIED TO COMPLETED INSTALLATION OF TREE RING.

6. MATERIALS - POLYETHYLENE EDGING: EDGING SHALL BE 5" DEEP, POLYETHYLENE EDGING. OWNER'S REPRESENTATIVE SHALL APPROVE PRODUCT SPECIFICATION PROVIDED BY LANDSCAPE CONTRACTOR.

7. MATERIALS - TREE PROTECTION: ALL TREES TO BE INSTALLED WITH LDPE TREE GUARDS AS MANUFACTURED BY A.M. LEONARD HORTICULTURAL TOOL & SUPPLY CO., OR APPROVED EQUAL.

8. MATERIALS - (ALTERNATE 1): TREE WATERING BAGS: ALL TREES TO BE INSTALLED WITH ONE (1) WATER BAG. PRODUCT TO BE "TREE GATOR ORIGINAL SLOW RELEASE WATERING BAG," PRODUCT NO. 98183-R OR APPROVED EQUAL. INSTALL IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

SEEDING & POND VEGETATION NOTES

1. MATERIALS - PRAIRIE SEED MIX: DISTURBED LAWN AREAS LABELED ON PLAN AS SUCH, SHALL BE BROADCAST SEEDED WITH "DIVERSE PRAIRIE FOR MEDIUM SOILS" SEED MIX, AS PROVIDED BY PRAIRIE NURSERY, P.O. BOX 306, WESTFIELD, WISCONSIN, 53964, TEL. 608-296-3679 (OR APPROVED EQUIVALENT). INSTALL SEED WITH SUPPLEMENTAL MATERIALS AND AMENDMENTS AS RECOMMENDED BY SEED SUPPLIER AND AT RATES AND OPTIMUM TIMES OF THE YEAR AS RECOMMENDED BY THE SEED SUPPLIER TO ENSURE SUCCESSFUL GERMINATION AND SEED/ROOT ZONE GROWTH DEVELOPMENT. REFER TO PRODUCT SPECIFICATIONS AND MANUFACTURERS RECOMMENDATIONS FOR INSTALLATION.

2. MULCHING/SLOPE STABILIZATION: PLACE MULCH OVER ALL PRAIRIE SEED MIX AREAS IN ACCORDANCE WITH WISCONSIN STATE STANDARD SPECIFICATIONS, SUBSECTION 627.3.2.3 (METHOD C), WITH THE FOLLOWING EXCEPTIONS:

   1) HAY MAY NOT BE USED FOR MULCHING DUE TO THE PRESENCE OF WEED SEEDS AND OTHER UNDESIRABLE PLANT CONTAMINANTS. USE CERTIFIED WEED FREE STRAW ONLY.

   2) WOOD CHIPS SHALL NOT BE USED FOR MULCHING NATIVE PRAIRIE SEEDINGS.

   3) EROSION MATS SHALL CONSIST OF LIGHT DUTY STRAW OR EXCELSIOR MATERIAL, WITH AN UPPER PLASTIC NETTING WITH ¾ INCH BY ¾ INCH OPENINGS IN THE MESH.

3. MATERIALS - BIORETENTION BASIN PLUG PLANTINGS: PLUG PLANTINGS TO BE INSTALLED 1'-0" ON CENTER, MIXING SPECIES INTEGRALLY IN FLATS OF 20 AT A TIME. REFER TO WDNR PLUG PLANTING TECHNICAL STANDARDS FOR ROOTSTOCK AND INSTALLATION SPECIFICATIONS.

OR

4. MATERIALS - BIORETENTION BASIN NATIVE VEGETATIVE MAT (NVM): AREAS SPECIFIED ON PLANS SHALL RECEIVE AGRECOL "RAINWATER RENEWAL" NATIVE VEGETATIVE MAT - DEGRADABLE CORE. CONTRACTOR SHALL CONTACT AGRECOL NATIVE NURSERY 16 WEEKS IN ADVANCE OF INSTALLATION FOR PROPER GROWING LEAD TIME. CONTRACTOR SHALL ASSUME AVAILABLE DELIVERY DATE TO BE BETWEEN MID-JUNE THROUGH THE END OF OCTOBER DUE TO THE NMV GROWING SEASON. REFER TO PRODUCT SPECIFICATIONS AND MANUFACTURERS RECOMMENDATIONS FOR INSTALLATION PROCEDURES.

CONTRACTOR AND OWNER RESPONSIBILITY NOTES

1. **GUARANTEE: THE CONTRACTOR SHALL GUARANTEE ALL PLANTS THROUGH ONE (1) YEAR AFTER ACCEPTANCE BY THE OWNER'S REPRESENTATIVE. PLANTS SHALL BE ALIVE AND IN HEALTHY AND FLOURISHING CONDITION AT THE END OF THE GUARANTEE PERIOD. THE CONTRACTOR SHALL REPLACE (AT NO COST TO OWNER) ANY PLANTS THAT ARE DEAD OR NOT IN A VIGOROUS THRIVING CONDITION. REPLACEMENT PLANTS SHALL BE OF THE SAME KIND AND SIZE AS ORIGINALLY SPECIFIED UNLESS OTHERWISE DIRECTED BY OWNER'S REPRESENTATIVE. RESTORE BEDS AS NECESSARY FOLLOWING PLANT REPLACEMENT, INCLUDING BUT NOT LIMITED TO BEDDING, EDGING, MULCH, ETC. REPLACE PLANTS DAMAGED AT TIME OF PLANTING. REPAIR AREAS DISTURBED IN ANY WAY DURING PLANT REPLACEMENT AT NO COST TO OWNER. CONTRACTOR SHALL PROVIDE A ONE (1)-YEAR STRAIGHTENING GUARANTEE FOR ALL TREES.**

2. **CONTRACTOR IS RESPONSIBLE FOR STAKING THE PLANT MATERIALS FOR REVIEW BY OWNER'S REPRESENTATIVE PRIOR TO DIGGING AND PLACEMENT AND SHALL COORDINATE ALL FINE GRADING AND RESTORATION WITH THE GRADING CONTRACTOR.**

3. **MAINTENANCE: (CONTRACTOR) FOR ALL PLANTINGS, SEEDED AND/OR SODDED LAWN AREAS: THE CONTRACTOR SHALL MAINTAIN ALL PLANTINGS AND LAWN AREAS FOR A MINIMUM TIME PERIOD OF 60 DAYS, UNTIL FINAL ACCEPTANCE BY OWNER'S REPRESENTATIVE. THE CONTRACTOR IS RESPONSIBLE FOR ADEQUATELY WATERING PLANTS AND LAWN/TURFGRASS DURING THIS 60 DAY ESTABLISHMENT PERIOD. CONTRACTOR IS RESPONSIBLE FOR THE ESTABLISHMENT OF HEALTHY VIGOROUS PLANT MATERIALS AND LAWN/TURFGRASS GROWTH. CONTRACTOR IS ALSO RESPONSIBLE FOR ANY PRUNING OF PLANT MATERIALS, AND SHAPING AND/OR REPLACEMENT OR SUPPLEMENT OF DEFICIENT SHREDDED HARDWOOD BARK MULCH DURING THIS PERIOD. LONG TERM PLANT MATERIALS AND LAWN/TURFGRASS MAINTENANCE AND ANY PROGRAM FOR SUCH IS THE RESPONSIBILITY OF THE OWNER. ALL PLANTINGS AND LAWN/TURFGRASS AREAS SHALL BE MAINTAINED IN A MANICURED CONDITION UNTIL THE TIME WHEN THE OWNER'S ACCEPTANCE IS GIVEN.**

4. **MAINTENANCE: (OWNER) THE OWNER IS RESPONSIBLE FOR THE CONTINUED MAINTENANCE, REPAIR AND REPLACEMENT OF ALL LANDSCAPING MATERIALS AND WEED BARRIER FABRIC AS NECESSARY FOLLOWING THE ONE (1) YEAR CONTRACTOR GUARANTEE PERIOD.**

DIGGERS HOTLINE
Toll Free (800) 242-8511

JSD
CREATE THE VISION TELL THE STORY
jsdinc.com
MADISON REGIONAL OFFICE
161 HORIZON DRIVE, SUITE 101
VERONA, WISCONSIN 53593
P. 608.848.5060

CLIENT:
ROYAL CAPITAL

CLIENT ADDRESS:
710 N. PLANKINTON AVE. SUITE 300
MILWAUKEE, WI 53203

PROJECT:
NINE SPRINGS

PROJECT LOCATION:
FITCHBURG, WI 53711
DANE COUNTY

PRELIMINARY
NOT FOR CONSTRUCTION

PLAN MODIFICATIONS:

#	Date:	Description:
1	06.21.2022	ADR SUBMITTAL
2	12.14.2022	P-PLAT SUBMITTAL
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

Design/Drawn:
Approved:

SHEET TITLE:
LANDSCAPE - DETAILS & NOTES

SHEET NUMBER:
L2.0

JSD PROJECT NO: 21-10566

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File: I:\2021\21-10566\DWG\Landscape Sheets\21-10566 Public Landscape (P-Plat).dwg Layout: L2.0 User: mammel Plotted: Dec 14, 2022 - 7:18am Xrefs: 21-10566-ST Nine Springs Street Tree

APPENDIX 3

Soils Information

NUMMELIN TESTING SERVICES, INC.

CENTRAL WISCONSIN AREA:
3217 Whiting Avenue
P.O. Box 127
Stevens Point, WI 54481
(715) 341-7974 • Fax (715) 341-8654

MADISON AREA:
5620 Woodland Drive
Waunakee, WI 53597
(608) 849-9120 • Fax (608) 849-9122

Populance
104 King Street
Madison, WI 53703

July 26, 2017
Revised: 09/22/17
Report: 7806805_obs

ATTN: Mr. Christopher Gosch, cgosch@populance.com

PROJECT: Proposed Development
2991 County Highway MM
Fitchburg, Wisconsin

SOILS OBSERVATIONS

A. INTRODUCTION, METHODS, AND SITE HISTORY

Revisions of this report of any substance are included within the summary section, located at the end of this report.

As requested, Nummelin Testing Services, Inc. (NTS) visited the above-named site on July 21, 2017. The purpose of this site visit was to observe subsurface soils by means of test pits. Test pits were excavated to gain a general knowledge of site subsurface conditions and this investigation was not performed for any specific structure, utility, or roadway. This report is intended to provide information to prepare the site for development. Twelve test pits were excavated with a Link-belt 330LX tracked backhoe by an excavator selected by our client (the excavator owns and lives on the neighboring property to the south of the subject site). Test-pit locations were selected by NTS with the intent to gain knowledge of general site conditions across the property. Test-pit locations are indicated on a site plan provided by the client. Soil conditions described in this report are considered representative of the locations of the test pits. If soils are found to be significantly different at locations away from the test pits, it may be necessary to modify our recommendations.

During this site visit, relative density and consistency of soils were roughly evaluated by inserting a one-half-inch diameter steel rod under body weight and noting the resistance to penetration. For clayey soils, the unconfined compressive strength was estimated using a spring penetrometer. For typical clayey soils, the unconfined compressive strength can be assumed to be roughly equal to the bearing capacity.

The property consists of a 34-acre former borrow site that was active approximately 30 years ago during construction of Highway 14, located to the west of the property. The site has been used as a construction dump site since. We understand the borrow site was filled with a combination of soil, stone, brick, asphaltic concrete, Portland cement concrete, and a limited amount of organic material such as tree trunks and shavings. We understand that a significant amount of concrete

contains steel rebar and plastic duct work. The fill thickness is reported to range between 20 and 70 feet, with an average of about 30 feet. We were informed that eighty percent of the site was filled prior to 2006, and twenty percent of the site was filled between 2006 and 2012. We understand that no fill has been added to the site since 2012.

Proposed site improvements are primarily residential and small commercial 2- to 2 ½ -story wood-framed or light-gauge steel buildings, along with roads and utilities.

Ten settlement plates were installed at the site by others on March 23, 2017. As of July 5, 2017, available data indicates that seven of the plates have settled one-eighth of an inch or less, two plates have settled less than one-quarter inch, and one plate has settled approximately 0.4 inches. The most recent settlement plate data is appended to this report.

B. OBSERVATIONS

General

The site is located west of County Highway MM, between that road and State Trunk Highway 14. The majority of the site was weed-covered at the time of the investigation. Trees lined the western edge of the property and gravel roads crossed the property at several locations. Large trash dumpsters were stored near the center of the property.

Ground elevations vary across the site. The area is mapped as ground moraine, which typically consists of sand with varying amounts of silt and clay.

Descriptions of soil conditions at the locations of the test pits are provided below.

Material at Test Pit Locations

Test pits were excavated to depths between 10 and 12 feet. Subsurface conditions were very similar from one location to the next, and therefore, materials observed at each location are not discussed individually unless they vary from the norm.

In general, the test pits encountered a mixture of materials including clay, sand, gravel, cobbles, boulders, asphaltic concrete, Portland cement concrete, and very small amounts of wood. The relative percentage of each material varied somewhat from one test location to the next but this is also expected to be the case across the site, between and away from test pit locations. No large void spaces were noted at the test pit locations, and materials were generally firm. Clays typically had an estimated unconfined compressive strength of 1.5 tons per square foot or greater, and sandy soils were generally medium-dense. The following tables show test-pit location descriptions (Table 1) and notable variations from average conditions at each test pit location (Table 2).

Table 1 – Test Pit Location Description

Test Pit	Location Description (approximate)
1	45’ north and 45’ east of fence corner
2	240’ west of Settlement Plate (SP) 9 and 60’ north of fence
3	Between SP7 and SP8 – about 120 feet from each
4	80’ north and 45’ west of SP6
5	Midway between SP5 and CTH MM
6	120’ north of SP5
7	75’ north of SP4
8	65’ north/northeast of SP3
9	45’ east of SP1
10	165’ west of CTH MM, 25’ north of field road
11	75’ north of fence line, 150’ west of CTH MM
12	25’ south and 100’ east of SP10

Table 2 – Materials Encountered at the Test Pit Locations

Test Pit	General Conditions
All	Typically a mixture including clay, sand, gravel, cobbles, boulders, asphaltic concrete, Portland cement concrete, and very small amounts of wood (FILL).

Test Pit	Notable Condition That Varies From Average	Test Pit Depth
1	A pocket of wet sand was encountered at 6’	11’
2	A large concrete slab was encountered	11’
3	Shallow trapped water ran into the test pit	10’
4	-	10’
5	The top 4’ of material was lean clay with no rubble	11’
6	-	11’
7	More concrete rubble than typical	11’
8	Soils were wetter than typical, easier digging than typical	12’
9	1’ or clay, 5’ of dense fine sand, average conditions below 6’	12’
10	-	12’
11	The top 5’ of material was clay with no rubble	11’
12	A small tree stump was encountered	11’

C. DISCUSSION AND RECOMMENDATIONS

General

There is an inherent risk of settlement when building on a fill site such as this one, and therefore, site improvement is recommended. The recommendations for site improvement are expected to result in site conditions where lightly-loaded structures can be constructed within the realm of practical budgeting.

If site grades are to be raised at any location, this should be done as early as possible before planned construction, and the filled location should be monitored for settlement by means of settlement plates, described later.

We recommend that all building foundations be well-reinforced such that they can span a zone of zero support along 10 feet of any wall line. Individual columns, such as those typically used for support of interior bearing walls within residential basements, should be adjustable so they can accommodate for any possible future settlement.

After the recommended site improvements are made, we recommend using a design footing pressure of up to 3,000 pounds per square foot.

Recommendations for Site Improvement – Prior to any Construction

At a minimum, we recommend that all dedicated building sites be improved by use of a rolling surcharge. The full height surcharge should extend outside all proposed building edges by a distance not less than 20 feet. Surcharging can be completed in stages prior to phases in development or can be done in entirety prior to any construction. Where buildings are closely spaced, consider use of a continuous rolling surcharge rather than attempting to 'skip' over small 'green' areas or roadways or small parking lots. If proposed locations of buildings and roadways may change over time, consider surcharging all of the site that is not dedicated to 'green' space. A benefit to surcharging all of the site not dedicated to 'green' space is that the risk of building over a non-surcharged are is significantly reduced. While surcharging roadway and parking lot locations may improve those locations, it is not considered mandatory. Prior to placement of the surcharge, all site grading should be completed where the grade will be raised. Monitor filled locations for settlement by use of settlement platforms as describe below.

Surcharging requires the placement of a large pile of soil which applies pressure to the existing soil far greater than that which is ever expected due to structures and fill needed to raise the grade (or previously-placed grade-raising fill). Consider the unit weight of the surcharge soil as 100 pounds per cubic foot (a 10 foot high soil pile applies approximately 1,000 pounds per square foot). The purpose of the surcharge is to increase the density of existing soils. The recommended height of a surcharge at this site is 10 to 15 feet. In winter months frost should be ripped to expose non-frozen soil prior to placement of the surcharge.

Settlement of the filled or surcharged areas is monitored by means of settlement platforms. Settlement platforms are reinforced metal platforms that rest on the original ground surface or on

the stripped surface (not on top of a recently-placed fill layer). A known length of pipe extends upward from the platform, and through the surcharge fill. Settlement of the original ground surface is measured by noting the elevation change of the top of the pipe. At this site, we recommend that the rolling surcharge be left in place until settlement has ceased, or for a couple of days where no settlement is noted. We expect that the surcharge will not have to be left in any one location for more than one week. A diagram of a typical settlement platform is appended to this report. The recommended number of settlement platforms will depend upon the overall size of the rolling surcharge. Settlement platforms should be spaced with the intent to gain a representative knowledge of site conditions. Only that area within the top of the pile is considered to be fully loaded. NTS should review all settlement data prior to moving or removal of a surcharge.

While using a surcharge to improve sites has been quite successful, the owner should be aware that surcharging may not fully compress all soft soils or loose material. Surcharging is used as an economical soil-improvement technique, performed with the understanding that future settlement is possible and may have some adverse effect on any building proposed for the site. Therefore, provisions which consider minor continuing settlement are recommended for any structure on site. Simple-span roof frame systems and lightweight, jointed walls should be planned. Sewers should have a strong slope, above any code minimums, to allow for possible reduction in slope due to settlement. Buildings and their contents should be relatively light.

We recommend that NTS be notified prior to any placement of the surcharge. Prior to the surcharge placement, NTS will provide recommendations for settlement plate placement. While the surcharge is being placed, extreme caution should be used to not disturb the settlement platform or bend the pipe. A bent pipe may severely hinder accurate analysis of settlement data. We recommend that NTS by retained to oversee the surcharge placement. A meeting with the contractor that will place the surcharge should be held prior to commencement of any site work. This meeting will outline the surcharge procedure and address other concerns, should there be any.

Recommendations for Individual Building Locations

After the site has been graded and the rolling surcharge has been completed, building construction may begin. We recommend that all building footprints be undercut and backfilled with engineered fill. The undercut depth should be such that the resulting foundation pressure on the existing fill soils does not exceed 1,000 pounds per square foot. The recommended depth of undercut at this site is four feet below bottom-of-footing grade for the proposed lightly-loaded buildings. If poor soil conditions are encountered at the base of the undercut, an increase in undercut depth may be recommended. Undercut excavations should extend outside the exterior footing edges by a distance equal to the depth of undercutting below bottom-of-footing grade. Compact the base of the undercut with a high-energy compactor, such as a backhoe-mounted tamping plate (hoe pack) or large vibratory roller, prior to placing undercut backfill.

We understand that surcharging the building sites may be cost prohibitive and that heavily-reinforced mat foundations are being considered for each building. If these foundations are used

without a surcharge, we recommend that each building be undercut two feet so that the mat foundation bears on engineered fill. The mat foundation should be designed to distribute the building loads so that the bearing pressure at any location is minimized. We understand that a slab can be designed that will apply a maximum contact pressure of 400 pounds per square foot or less. If such a mat foundation is used with no surcharge keep in mind that while the foundation may reduce some adverse effects of differential settlement, it will not prevent or reduce future total settlement of the entire site. At this time, it is unclear how much, if any, future settlement may occur.

The proposed grading plan was not available at the time this report was prepared. As stated above, if site grades are raised, at any location, this should be done as early as possible before planned construction, and the filled location should be monitored for settlement by means of settlement plates. The risk of future settlement is increased at or near locations where grades are raised. Conversely, the future risk of settlement is decreased where site grades are cut by several feet. Lowering the site grade effectively results in a surcharge having been placed at that location, with the surcharge height being the thickness of the cut. The overall effectiveness of the 'surcharge' depends on the volume of material being removed, with both the thickness and square footage of removed material being considered.

Recommendations for Roadways and Utilities

Excavation of trenches and bedding for utilities should follow municipal standards. Sewers should have a strong slope, above any code minimums, to allow for possible reduction in slope due to settlement. Consider flexible connections were utilities enter buildings or other structures. There is a large amount of concrete and other rubble within the fill at this site. This material is not recommended for use as utility trench backfill. We recommend the use of imported engineered fill for use as trench backfill. Since excavation for various utilities typically encompasses a significant width of a roadway, consider undercutting the entire width of the roadway and right-of-way where utilities will be placed and replacing that material with imported engineered fill. This will provide a more uniform roadway subgrade and will reduce the potential for voids occurring beneath the roadway where large slabs of concrete might otherwise be pulled from trench sidewalls. This will also make future excavations or horizontal drilling beneath the roadway easier. We recommend that the base of all excavations be compacted with a high-energy compactor.

Roadway sub-base preparation should follow industry standards. The stability of the roadway subgrade should be evaluated prior to paving by proof-rolling with a heavy truck, such as a fully-loaded quad-axle dump truck with the extra axles raised. All locations should receive at least three passes of the proof roller.

Summary

If the recommended site improvements are made, the site is expected to be suitable for the proposed development. We have been involved with several projects regarding end-dumped fill sites and they have been successfully developed using the recommended site improvements discussed above. Where the site has effectively been overloaded/surcharged by either lowering

the existing site elevation by several feet, or by placement and subsequent removal of a surcharge pile, adequate support for public utilities and roadways would be expected.

NTS has been asked to provide specific examples of projects we have been involved with that are similar in nature to this project. One such project is in the City of Columbus near the intersection of USH 151 and STH 16/60. Not less than 15 feet (the terminal depth of test pits) of very loose end-dumped fill was present at this site. The fill consisted of a mixture of clay, sand, concrete, and asphalt. At this site it was recommended that the building pads as well as locations of buried utilities be surcharged because of the nature of the observed fill. A clinic was constructed on the site after surcharging was completed in 2010. We are not aware of any settlement-related issues with this project.

A second site where as surcharge was used was the location of Bobby G's Bowling Alley in Columbus, WI. This site is located near the 'clinic' site described above. This project was constructed in 2006. Based on surrounding topography, and the height of one face of the fill pad, it appeared that as much as 25 feet of end-dumped fill occurred at this site, with fill placement occurring over a period of roughly 40 years, though most had been placed not long before 2006. Fill contained soil, concrete, wood, tree branches, and construction debris. A rolling surcharge was used. It does not appear that locations of buried utilities were surcharged but this cannot be verified. We are not aware of any settlement-related issues with this project.

Respectfully,

NUMMELIN TESTING SERVICES, INC.

Michael J. Krawczyk, P.E.
Director of Operations

Attachments: (3)

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Respectfully,

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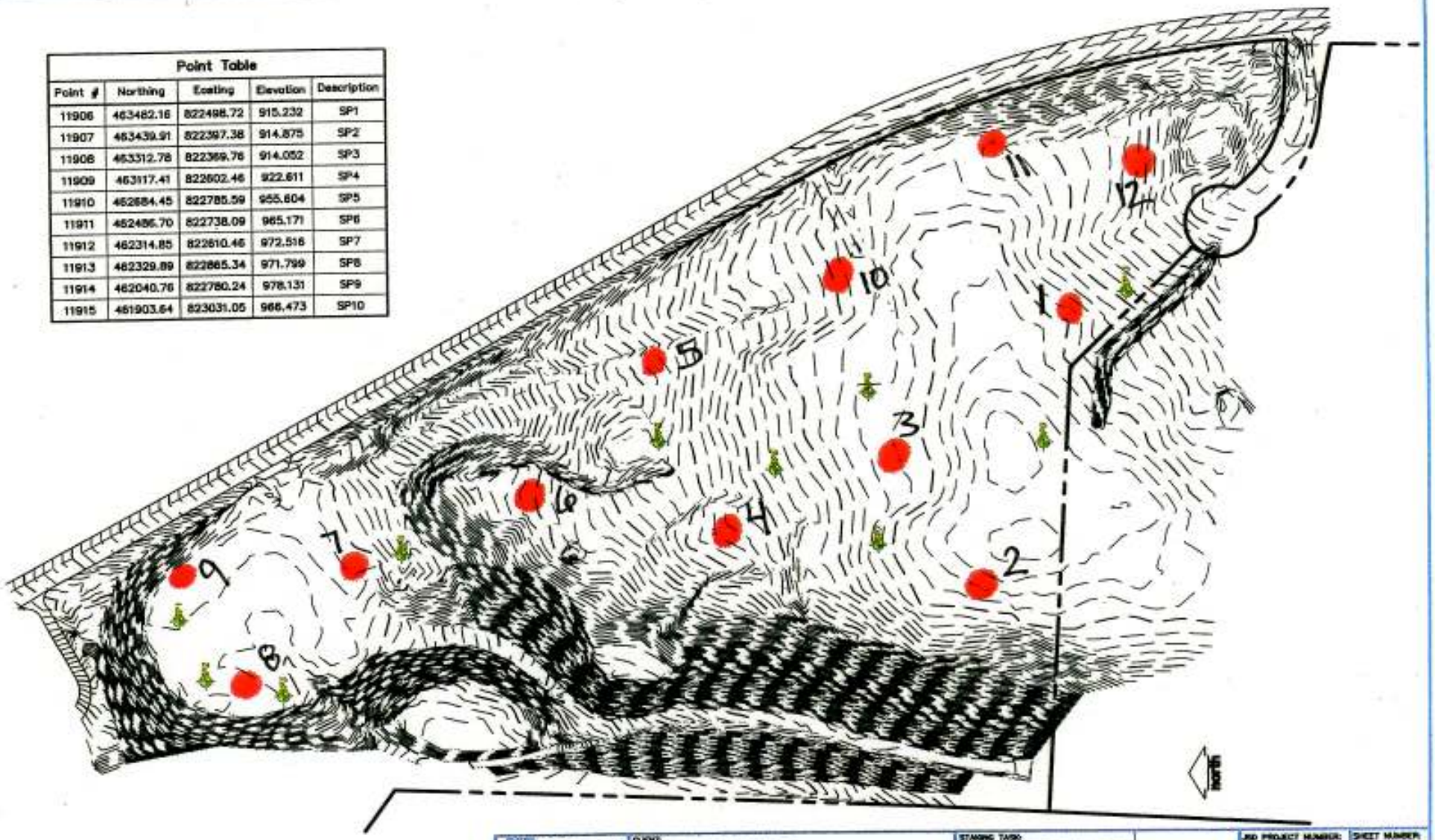
Michael J. Krawczyk, P.E.
Director of Operations

Attachments: (3)

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Point Table				
Point #	Northing	Easting	Elevation	Description
11906	463482.16	822498.72	915.232	SP1
11907	463439.91	822397.38	914.875	SP2
11908	463312.78	822369.76	914.052	SP3
11909	463117.41	822602.46	922.611	SP4
11910	462684.45	822785.59	955.604	SP5
11911	462486.70	822738.09	965.171	SP6
11912	462314.85	822610.46	972.516	SP7
11913	462329.89	822865.34	971.799	SP8
11914	462040.76	822780.24	978.131	SP9
11915	461903.64	823031.05	966.473	SP10

NTS 780.68



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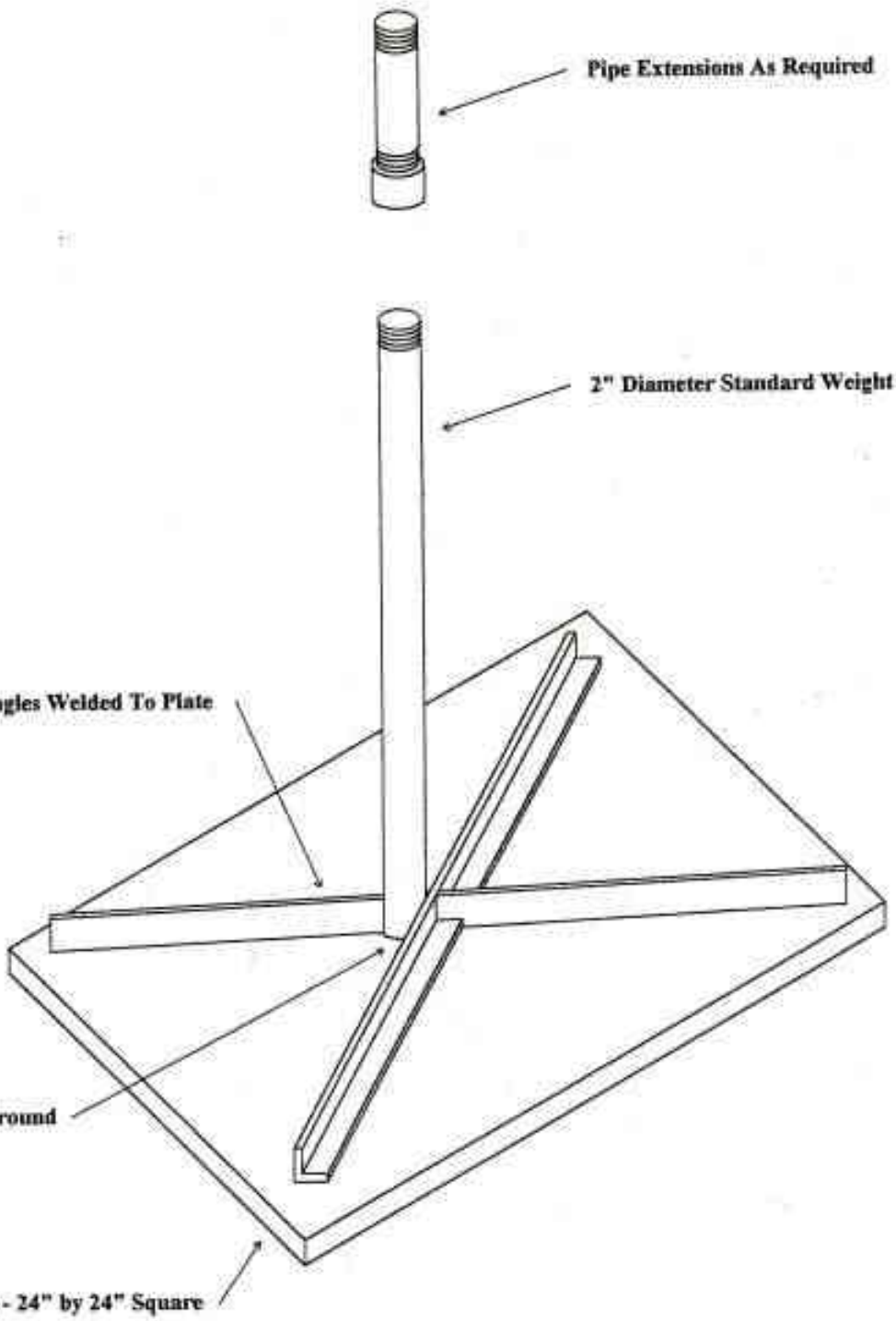
CLIENT: RANDY ALLEXANDER
PROJECT: FOSEID NINE SPRINGS

STAGING TASK: SETTLEMENT PLATES

JSD PROJECT NUMBER: 16-7678
DRAWN BY: MAD CHECKED BY:
DATE: 3-23-17

SHEET NUMBER: 1

File: J:\2016\167678\SRC\167678 Boomerang Layout SETTLE PLATES 3-23-17 User: eduffy Plotted: Mar 23, 2017 - 8:29am



Typical Settlement Platform Detail

It is recommended that NTS be contacted for installation instructions.

NUMMELIN TESTING SERVICES, INC.

NTS 780.68

Foseid Nine Springs Monitoring

Alexander

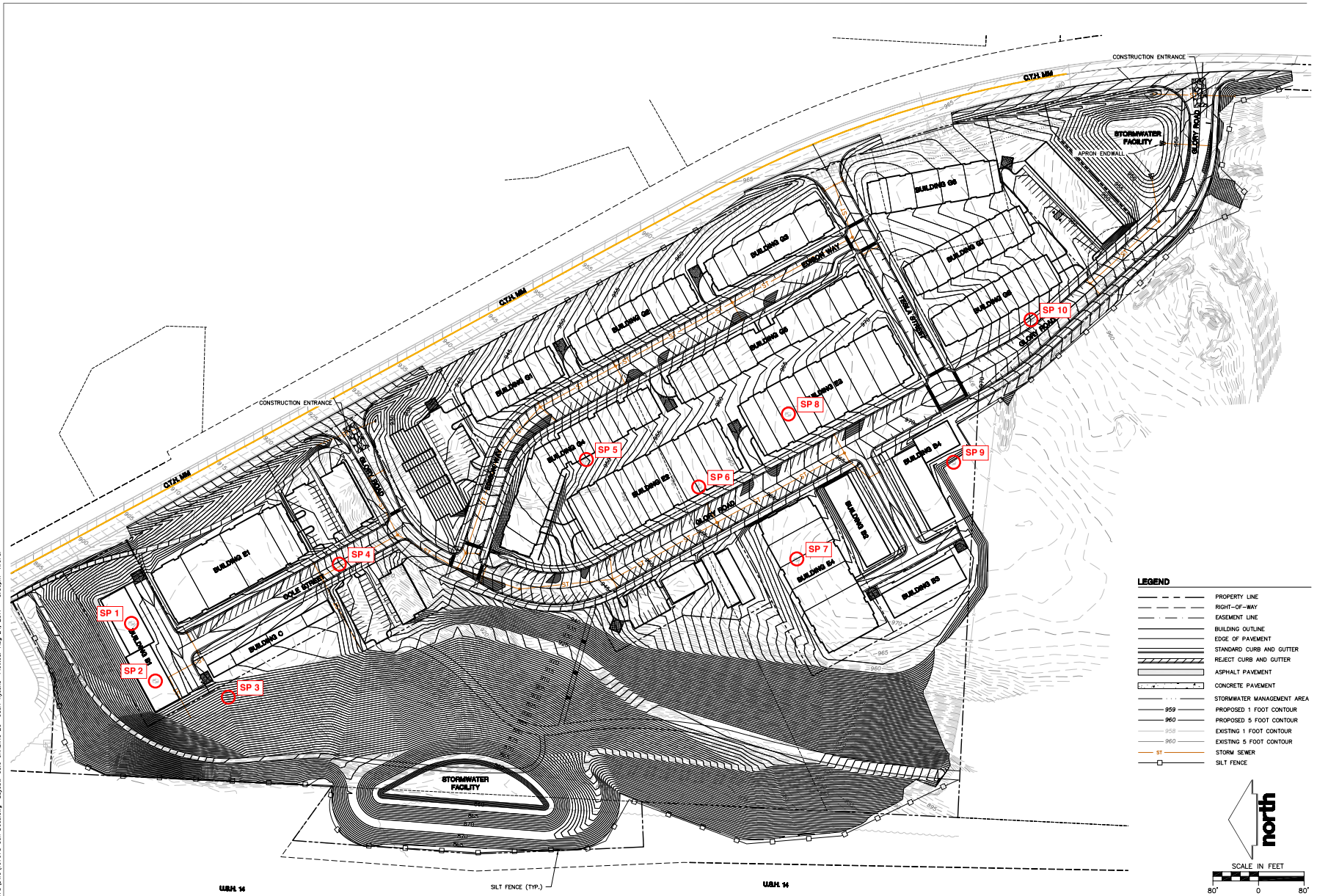
JSD Job #: 16-7678

Calc. By: ZMR

Chk. By: TJB

JSD Professional Services, Inc.
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Settlement Plate #	1	2	3	4	5	6	7	8	9	10
Baseline Elev. 3/23/17	915.232	914.875	914.052	922.611	955.604	965.171	972.516	971.799	978.131	966.473
Monitor Date 3/29/17	915.230	914.871	914.049	922.610	955.599	965.166	972.515	971.794	978.131	966.466
ΔElev from 3/23/17	-0.002	-0.004	-0.003	-0.001	-0.005	-0.005	-0.001	-0.005	0.000	-0.007
Monitor Date 4/5/17	915.230	914.869	914.044	922.605	955.602	965.174	972.527	971.803	978.138	966.474
ΔElev from 3/23/17	-0.002	-0.006	-0.008	-0.006	-0.002	0.003	0.011	0.004	0.007	0.001
Monitor Date 5/5/17	915.207	914.867	914.046	922.608	955.601	965.163	972.526	971.800	978.148	966.495
ΔElev from 3/23/17	-0.025	-0.008	-0.006	-0.003	-0.003	-0.008	0.010	0.001	0.017	0.022
Monitor Date 6/1/17	915.205	914.867	914.044	922.606	955.607	965.173	972.522	971.800	978.135	966.475
ΔElev from 3/23/17	-0.027	-0.008	-0.008	-0.005	0.003	0.002	0.006	0.001	0.004	0.002
Monitor Date 7/5/17	915.199	914.862	914.046	922.611	955.594	965.162	972.509	971.786	978.134	966.477
ΔElev from 3/23/17	-0.033	-0.013	-0.006	0.000	-0.010	-0.009	-0.007	-0.013	0.003	0.004



LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY
- EASEMENT LINE
- BUILDING OUTLINE
- EDGE OF PAVEMENT
- STANDARD CURB AND GUTTER
- REJECT CURB AND GUTTER
- ASPHALT PAVEMENT
- CONCRETE PAVEMENT
- STORMWATER MANAGEMENT AREA
- 959 PROPOSED 1 FOOT CONTOUR
- 960 PROPOSED 5 FOOT CONTOUR
- 958 EXISTING 1 FOOT CONTOUR
- 960 EXISTING 5 FOOT CONTOUR
- ST STORM SEWER
- SILT FENCE

north

SCALE IN FEET

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161 HORIZON DRIVE, SUITE 101
VERONA, WISCONSIN 53593
P. 608.848.5060

CLIENT:
TORQUE FOCUSED REAL ESTATE

CLIENT ADDRESS:
2797 LAYLOR ROAD
OREGON, WI 53575

PRELIMINARY NOT FOR CONSTRUCTION

PROJECT:
@EDGE LIVE/WORK

PROJECT LOCATION:
FITCHBURG, WI
DANE COUNTY

PLAN MODIFICATIONS:

#	Date:	Description:
1	08.22.17	PRELIMINARY PLAT
2		
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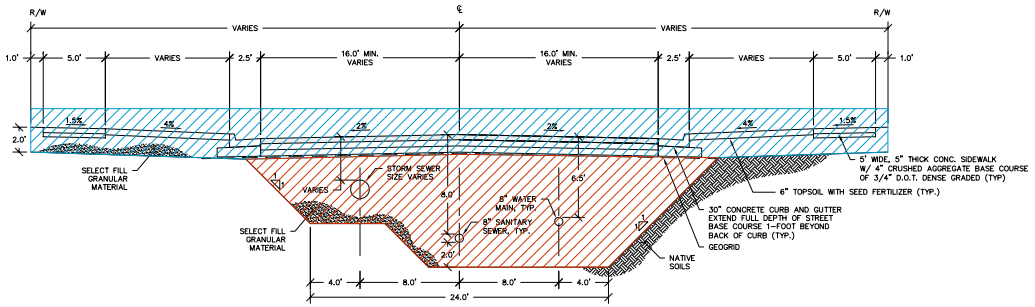
Design/Drawn: MGG
Approved: MGG

SHEET TITLE:
GRADING AND EROSION CONTROL PLAN

SHEET NUMBER:
C5.0

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TYPICAL FINISHED SECTION W/UTILITY TRENCH

N.T.S.

EXPORT VOLUME TO ROUGH GRADE PROPOSED PUBLIC R.O.W.

EXPORT VOLUME FOR UTILITY TRENCHES WITHIN PROPOSED PUBLIC R.O.W.

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VERONA, WISCONSIN 53593
P. 608.848.5060

CLIENT:
TORQUE FOCUSED REAL ESTATE

CLIENT ADDRESS:
2797 LAYLOR ROAD
OREGON, WI 53575

PRELIMINARY
NOT FOR CONSTRUCTION

PROJECT:
@EDGE LIVE/WORK

PROJECT LOCATION:
FITCHBURG, WI
DANE COUNTY

PLAN MODIFICATIONS:

#	Date:	Description:
1	08.22.17	PRELIMINARY PLAT
2		
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15		

Design/Drawn:	MGG
Approved:	MGG

SHEET TITLE:
TYPICAL ROAD SECTION

SHEET NUMBER:
EXHIBIT

JSD PROJECT NO: 16-7678

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FINK HOREJSH, LLC
STRUCTURAL ENGINEERS

Carl N Fink, PE, SE --- 608-658-1257 --- cnf@finkhorejsh.com
Derek Horejsh, PE, SE --- 608-239-3754 --- deh@finkhorejsh.com
PO Box 52
141 N Main St
Monticello, WI 53570

August 1, 2017

Mr. Chris Gosch, AIA
Populance
104 King Street
Madison, WI 53703

Re: @Edge Foundation Type
Fitchburg, WI

Dear Chris:

We have reviewed the geotechnical report by NTS for this project and are of the opinion that standard strip and spread footing foundations supported on engineered fill below the footings or enhanced mat slabs are appropriate foundation types for this site. As either are acceptable options, the decision should be based on economy, schedule, and available materials and labor. Lightweight flexible buildings limited to a maximum of 4 supported levels of wood construction have been considered.

Our experience on sites similar to this has been positive and we look forward to continuing on this project.

Building Pads:

Option 1:
4'-0" of excavation and engineered fill under slab and footings -Standard slabs and footings would then be constructed
Use 6x6-W2.9xW2.9 at 0.45 psf for slab reinforcement

Option 2:
-24” undercut or engineered fill
-Crushed stone building pad prep, proof rolled
-Enhanced mat slab per attached drawings
-Drawing 1-1 is slab and reinforcement at underground parking buildings (Type "G")
-Drawing 1-2 is typical slab and reinforcement at all other buildings (slab on grade)

At Type “G” Buildings (regardless of building pad type):
Footings: 30”w x 12” deep- no steel required
Parking structure walls (basement walls):
9’-0” tall, 10” thick w/(1) layer #5s EW, or 3psf of mild reinforcing steel.

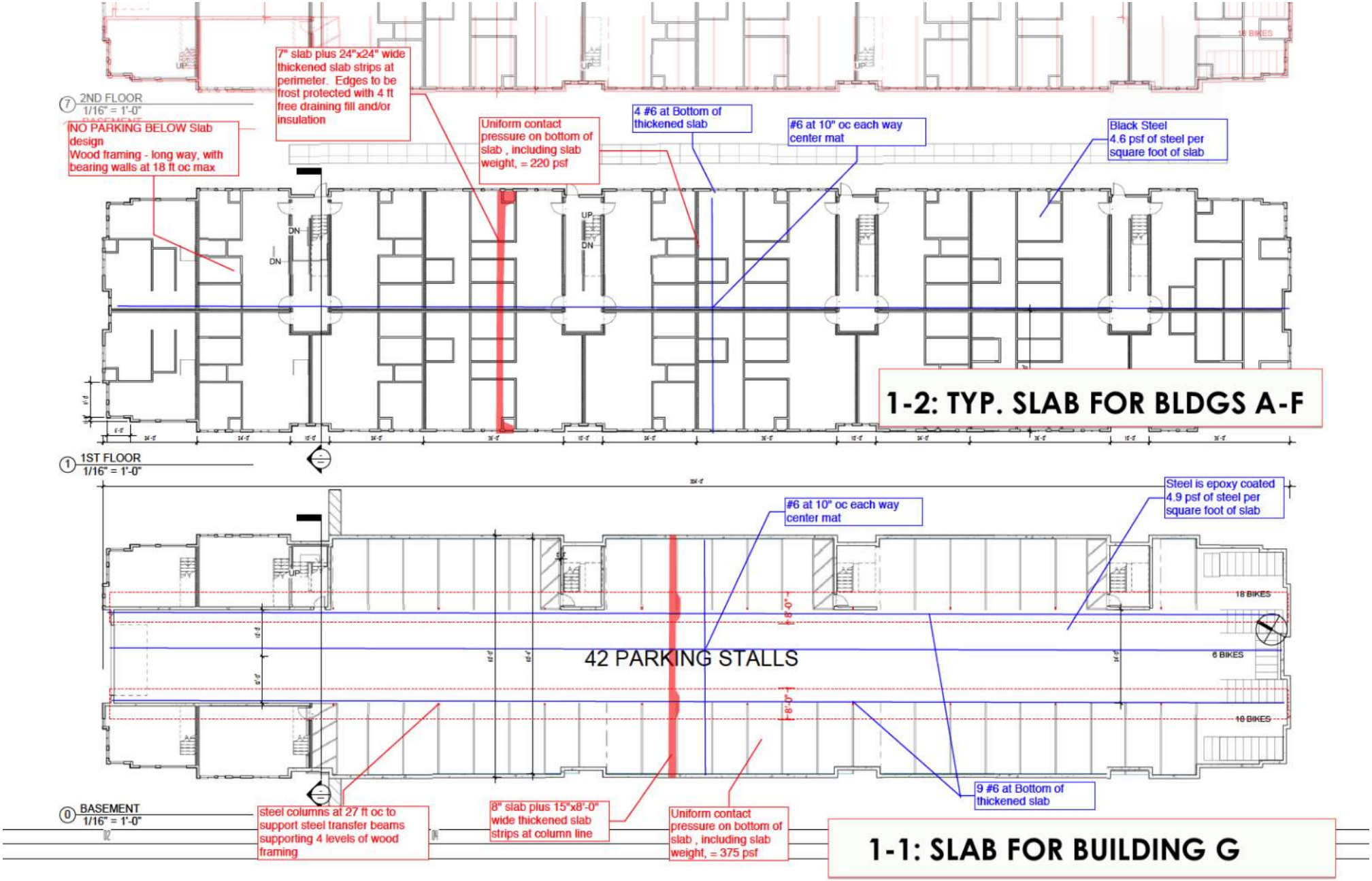
Roadways and utilities are explained in the report and no input is needed from us on those components

Sincerely,

FINK HOREJSH, LLC



Carl N. Fink, PE, SE
Partner


7" slab plus 24"x24" wide thickened slab strips at perimeter. Edges to be frost protected with 4 ft free draining fill and/or insulation
Uniform contact pressure on bottom of slab , including slab weight, = 220 psf
4 #6 at Bottom of thickened slab
#6 at 10" oc each way center mat
Black Steel 4.6 psf of steel per square foot of slab
7 2ND FLOOR 1/16" = 1'-0"
NO PARKING BELOW Slab design
Wood framing - long way, with bearing walls at 18 ft oc max
1-2: TYP. SLAB FOR BLDGS A-F
1 1ST FLOOR 1/16" = 1'-0"
#6 at 10" oc each way center mat
Steel is epoxy coated 4.9 psf of steel per square foot of slab
42 PARKING STALLS
18 BIKES
6 BIKES
18 BIKES
9 #6 at Bottom of thickened slab
0 BASEMENT 1/16" = 1'-0"
steel columns at 27 ft oc to support steel transfer beams supporting 4 levels of wood framing
8" slab plus 15"x8'-0" wide thickened slab strips at column line
Uniform contact pressure on bottom of slab , including slab weight, = 375 psf
1-1: SLAB FOR BUILDING G

POPULANCE
ARCHITECTURE AND DEVELOPMENT
104 King St, Madison, WI 53703

@EDGE SUB-SURFACE CONDITIONS
Prepared for : Torque Companies
attn: Randall Alexander

09.15.17

Mr. Alexander:

We would like to address the sub-surface conditions and solutions for the @Edge Mixed use project located on CTH MM in Fitchburg, WI as the Architect of Record.

The initial discussion between the design and development team members was an assumption to limit building heights to approximately 2-3 Stories based on the history of the site and the team's experience with other sites of this nature.

We also wanted to provide a lightweight and highly efficient construction solution for the buildings as well as minimizing site disturbances. This was to be achieved through undercutting and placement of engineered fill at building pad and utility locations, well thought out placement of the buildings on the site utilizing the existing grades, and efficient road and utility layouts.

Test pits were dug and reviewed by Nummelin Testing Services in July 2017 and preliminary analyses have been reviewed by the Architect and Engineering team.

Based on the findings and recommendations of the Soils Engineer and Structural Engineer, we are very comfortable with the results of the investigations and the proposed foundation solutions.

We have had experience with other sites with historical fill and other significant issues. The sites we completed on the 700 and 800 blocks of East Washington Avenue had the following issues:

-Was a historic fill site (milk bottles, shoes, misc. garbage)
-High water table (approx. 6'-0" below surface)
-Very poor soil composition primarily consisting of organics and silt.

The high rise portions of the projects utilized driven pipe piles, however the lower 2-4 story portions used either mat slabs or a widely spaced geopier system. The on site utilities were placed on a 24" gravel bed. To date no unusual conditions have been experienced or reported.

END

Mike Grzesiak

From: Bill Balke <Bill.Balke@fitchburgwi.gov>
Sent: Thursday, July 27, 2017 4:59 PM
To: Mike Grzesiak; Rortvedt, Eric - DNR
Cc: Hans P. Justeson; Kevin Yeska; Randy Alexander; djc@torquecompanies.com; Cory Horton
Subject: RE: @Edge Live/Work Infiltration Test Pit Results

Mike,

I would agree with Eric Rortvedt's comments on assessing the site for infiltration. The development would be exempt from infiltration standards for sites 1-4 , while 5-6 are not exempt. What other sites were evaluated throughout the development that might meet infiltration standards. Attached is Eric's email below.

Gratefully,
Bill

William Balke, P.E., Env-SP
Environmental Engineer
City of Fitchburg, WI
Desk: 608-270-4264
Cell: 608-215-6239
Bill.Balke@fitchburgwi.gov

THE CITY OF Fitchburg ENGINEERING

Mike,

Your email implies that the location of the infiltration basins were selected before taking into account whether those locations are suitable for infiltration. An infiltration site assessment of the overall site is to be used to determine suitable locations for infiltration facilities. DNR has a guidance memo and Site Evaluation Standard 1002 to help clarify this process:
Meeting infiltration performance standard of NR 151:
http://dnr.wi.gov/topic/stormwater/documents/InfiltrationPerformanceStandardGuidance.pdf
Site Evaluation Standard 1002: http://dnr.wi.gov/topic/stormwater/documents/techstd1002.pdf

DNR considers the test pit locations 1 through 4 to be exempt from infiltration as suitable soil for infiltration is not accessible within 5 feet of grade. Test pit locations 5 and 6 are not exempt and it is unclear to me whether other areas of the site were evaluated for infiltration.

Eric S. Rortvedt, P.E.
Phone: (608) 273-5612

From: Mike Grzesiak [mailto:Mike.Grzesiak@JSDinc.com]
Sent: Thursday, July 20, 2017 5:54 PM
To: Bill Balke <Bill.Balke@fitchburgwi.gov>; Rortvedt, Eric - DNR <Eric.Rortvedt@wisconsin.gov>
Cc: Hans P. Justeson <hans.justeson@jsdinc.com>; Kevin Yeska <Kevin.Yeska@jsdinc.com>; Randy Alexander <rpa@torquecompanies.com>; djc@torquecompanies.com
Subject: @Edge Live/Work Infiltration Test Pit Results

Bill,

Regarding infiltration for the @Edge Live/Work project in Fitchburg (Nine Springs). Several test pits have been dug and analyzed by geotech for infiltration design, please see attached. It is likely the owner will be purchasing land from the neighboring property west of the parcel. Stormwater facilities would be located near pits #TP-2 and TP-3. Test pit results indicate that at depths where the infiltration device/native soil interface exists, the predominate soil type is silty clay loam with a design infiltration rate of 0.04 in/hr.

Per NR 151.124(4)(c) *Infiltration rate exemptions.* Infiltration practices located in the following areas may be credited toward meeting the requirement under the following conditions, but the decision to infiltrate under these conditions is optional

2. Where the least permeable soil horizon to 5 feet below the proposed bottom of the infiltration system using the U.S. department of agriculture method of soils analysis is one of the following: sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay, or clay.

Infiltration facilities located within 0.04 in/hr soils will not drain down within 24 hr without a significant footprint to do so. We are seeking concurrence for infiltration exemption based on test pit results.

If desired we can schedule a conference call to discuss. Please advise.

Thank you,

Michael G. Grzesiak, P.E.
Project Engineer

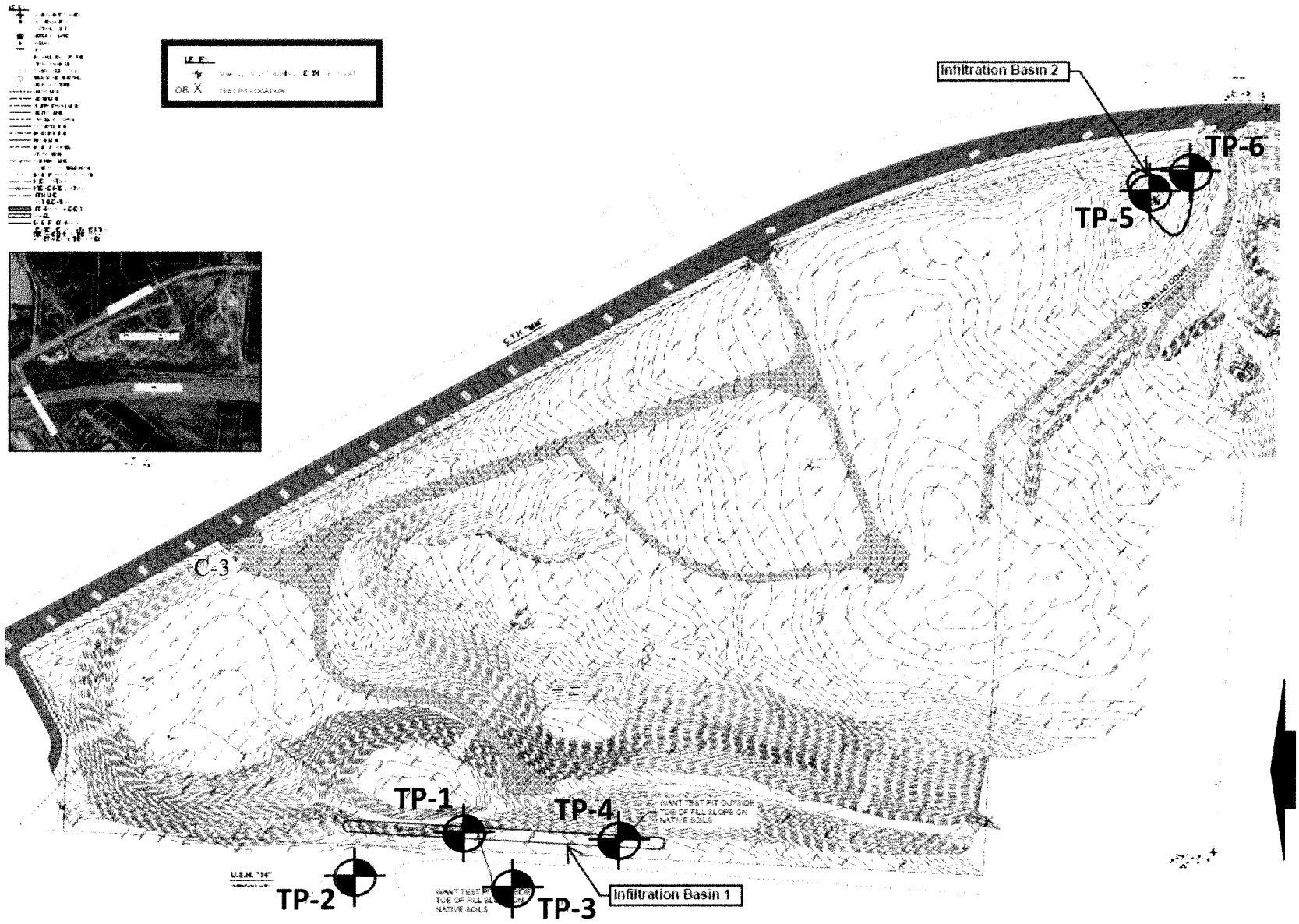
JSD Professional Services, Inc.
· Engineers · Surveyors · Planners ·

Madison Regional Office
161 Horizon Drive, Suite 101
Verona, WI 53593
608.848.5060 phone 608.848.2255 fax

mike.grzesiak@jsdinc.com www.jsdinc.com

Please consider your environmental responsibility before printing this email.

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Legend

Denotes Test Pit Location and Number

Notes

1. Test Pits excavated by Dale Osborne on July 17, 2017.
2. Base map provided by Torque Companies.
3. Test pit locations are approximate.

Scale: Reduced

Job No. C17089	CGC, Inc.	**TEST PIT LOCATION EXHIBIT** **@Edge – Live Work** **CTH MM** **City of Fitchburg, Dane Co., WI**
Date: 07/2017		

Wisconsin Department of Safety & Professional Services
Division of Safety and Buildings

SOIL EVALUATION - STORM

in accordance with Comm 82.365 & 85, Wis. Adm. Code

Attach complete site plan on paper not less than 8 1/2 x 11 inches in size. Plan must include, but not limited to: vertical and horizontal reference point (BM), direction and percent slope, scale or dimensions, north arrow, and BM referenced to nearest road.

Please print all information.

Personal information you provide may be used for secondary purposes (Privacy Law, s.15.04 (1) (m)).

County: Dane

Parcel I.D.: 060901395404

Review by: Date:

Property Owner

Nine Springs Hill, Inc.

Property Owner's Mailing Address

2721 Stevens St.

City	State	Zip Code	Phone Number
Madison	WI	53705	

Property Location

Govt. Lot: SE 1/4 SW 1/4 S 1 T 06 N R 09 E

Lot #: 2 Block #: Subd. Name or CSM#: CSM 03598

[X] City [ ] Village [X] Town

Nearest Road: CTH MM

Fitchburg

Drainage area_____ [ ] sq. ft. [ ] acres

Optional:

Test Site Suitable for (check all that apply)

[ ] Irrigation [ ] Bioretention trench [ ] Trench(es)

[ ] Rain Garden [ ] Grassed Swale [ ] Reuse

[ ] Infiltration trench [ ] SDS (>15' wide) [ ] Other _____

Hydraulic Application Test Method

[X] Morphological Evaluation

[ ] Double-Ring Infiltrometer

[ ] Other (Specify)_____

1 Obs. # [ ] Boring [X] Pit Ground Surface Elev. 866.5 ft Depth to limiting factor 30, 60 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
1	0 - 30	10 YR 3/2, 4/3	None	SiCL (Fill)	Variable	Variable	as	<5	0.04
2	30 - 60	10 YR 6/1	C2D 10 YR 5/6	SiCL	2msbk/0m	mfi/mvfr	gs	<5	0.04
3	60 - 108	10 YR 4/4, 6/1, 5/6	None	SL/SiCL	1msbk/0m	mvfr	gs	<5	0.04
4	108 - 144	10 YR 6/1	None	SiCL	0m	mvfr		<5	0.04

The limiting condition of redox in the upper part of Horizon 2 may be from perched infiltrating groundwater, but free/seeping water (limiting layer) noted near 5 ft.

4 Obs. # [ ] Boring [X] Pit Ground Surface Elev. 870 ft Depth to limiting factor 48 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
1	0 - 36	10 YR 4/3, 5/4, 3/2	None	SL/SiCL (Fill)	Variable	Variable	as	<5	0.04
2	36 - 48	10 YR 3/2	None	SiL	1msbk	mfi	gs	<5	0.04
3	48 - 84	10 YR 4/3	C2D 10 YR 5/2	SiCL	2msbk/0m	mfi/0m	gs	<5	0.04
4	84 - 126	10 YR 4/3, 7.5 YR 5/4	F2D 10 YR 5/2	SL/SCL	1msbk/0m	mvfr		<5	0.11

The limiting condition of redox in Horizons 3 and 4 may be from perched infiltrating groundwater, as free water not encountered in test pit, although Horizon 4 soils fairly moist.

CST/PSS Name (Please Print)	Signature	CST/PSS Number
DAVID A STAAB	D.A. Staab	1042602

Address	Date Evaluation Conducted	Telephone Number
641 PIPER DRIVE, MADISON, WI	7/17/2016	608/279-4530

SBD-10793 (R.1/05)

Property Owner Nine Springs Hill, Inc. Parcel ID# 60901395404 Page 2 of 2

5 Obs. # ☐ Boring ☒ Pit Ground Surface Elev. 952 ft Depth to limiting factor >144 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
1	0 - 15	10 YR 3/1, 3/2	None	SiCL, SiL (Fill)	Variable	Variable	as	<5	0.04
2	15 - 60	10 YR 5/4	None	SL/FS	3msbk	mfi	gs	<5	0.5(1)
3	60 - 120	10 YR 7/2	None	S/SiL	0sg	ml	gs	<5 - 25	0.13(2)
4	120 - 144	10 YR 7/2	None	FS	0sg	ml		<5	0.5

(1) Horizon 2 is quite dense, which will likely limit infiltration rate to less than the estimated rate per DNR Technical Standard 1002, Table 2 value. Recommend excavating and turning over (or deep tilling) this layer to improve infiltration rate.

(2) Silt loam seams will limit the infiltration rate of this layer; infiltration rate can likely be improved by excavating and turning over (or deep tilling) this layer.

6 Obs. # ☐ Boring ☒ Pit Ground Surface Elev. 953 ft Depth to limiting factor >144 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
1	0 - 9	10 YR 3/2	None	SiCL (Fill)	Variable	Variable	as	<5	0.04
2	9 - 114	10 YR 5/4	None	GRSL	3msbk	mfi	gs	<5	0.5(1)
3	114 - 138	10 YR 7/3	None	FS/SiL	0sg	ml	gs	<5 - 25	0.13(2)
4	138 - 144	10 YR 4/3	None	SiL/FS	0m	mvfr		<5	0.13

(1) Horizon 2 is quite dense, which will likely limit infiltration rate to less than the estimated rate per DNR Technical Standard 1002, Table 2 value. Recommend excavating and turning over (or deep tilling) this layer to improve infiltration rate.

(2) Silt loam seams will limit the infiltration rate of this layer; infiltration rate can likely be improved by excavating and turning over (or deep tilling) this layer.

Obs. # ☐ Boring ☐ Pit Ground Surface Elev. _____ ft Depth to limiting factor _____ in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr

Comments: The light gray shallow clay soils with redox (high value/low chroma) indicate presence of saturation in TP-1 and TP-4. The saturation may be from regularly-occuring ponded surface water infiltrating into the subsurface. Free water noted in TP-1 near 5 ft near transition from clay to sand.

Wisconsin Department of Safety & Professional Services
Division of Safety and Buildings

SOIL EVALUATION - STORM

in accordance with Comm 82.365 & 85, Wis. Adm. Code

Attach complete site plan on paper not less than 8 1/2 x 11 inches in size. Plan must include, but not limited to: vertical and horizontal reference point (BM), direction and percent slope, scale or dimensions, north arrow, and BM referenced to nearest road.

Please print all information.

Personal information you provide may be used for secondary purposes (Privacy Law, s.15.04 (1) (m)).

County: Dane

Parcel I.D.: 06091393752

Review by: Date:

Property Owner

Dale Duane Osborne c/o Darcy Cottrill

Property Location

Govt. Lot: SW 1/4 SW 1/4 S 1 T 06 N R 09 E

Property Owner's Mailing Address

5136 Lacy Road

Lot #: Block #: Subd. Name or CSM#:

City	State	Zip Code	Phone Number
Fitchburg	WI	53711	

[X] City [ ] Village [X] Town — Nearest Road: CTH MM

Drainage area_____ [ ] sq. ft. [ ] acres

Optional:

Test Site Suitable for (check all that apply)

[ ] Irrigation [ ] Bioretention trench [ ] Trench(es)

[ ] Rain Garden [ ] Grassed Swale [ ] Reuse

[ ] Infiltration trench [ ] SDS (>15' wide) [ ] Other _____

Hydraulic Application Test Method

[X] Morphological Evaluation

[ ] Double-Ring Infiltrometer

[ ] Other (Specify)_____

2 Obs. #

[ ] Boring [X] Pit

Ground Surface Elev. 860 ft

Depth to limiting factor 24, 66 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
1	0 - 18	10 YR 3/2, 4/3	None	SiCL (Fill)	Variable	Variable	as	<5	0.04
2	18 - 24	10 YR 3/1	None	SiL	1msbk	mvfr	gs	<5	0.13
3	24 - 84	10 YR 6/1, 6/2	C2D 7.5 YR 5/6	SiCL	2msbk/0m	mfi/mvfr	gs	<5	0.04
4	84 - 114	10 YR 6/1, 5/6, 6/3	None	LS/SiCL	0m	mvfr		<5	0.04

Shallow redox (a limiting layer) in Horizon 3 may be from infiltrating water, but free/seeping water noted near 5.5 ft.

3 Obs. #

[ ] Boring [X] Pit

Ground Surface Elev. 862 ft

Depth to limiting factor 36, 66 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
1	0 - 15	10 YR 3/1	None	SiL	1msbk	mvfr	as	<5	0.13
2	15 - 36	10 YR 4/4	None	SiCL	2msbk	mfi	gs	<5	0.04
3	36 - 120	10 YR 6/1, 6/2	C2P 7.5 YR 5/6	SiCL	2msbk/0m	mfi/0m		<5	0.04

Shallow redox (a limiting layer) in Horizon 3 may be from perched infiltrating groundwater, with free water near 5.5 ft below grade.

CST/PSS Name (Please Print)	Signature	CST/PSS Number
DAVID A STAAB	D. Staab	1042602

Address	Date Evaluation Conducted	Telephone Number
641 PIPER DRIVE, MADISON, WI	7/17/2016	608/279-4530

Property Owner Dale Duane Osborne c/o Darcy Cottrill Parcel ID# 6091393752 Page 2 of 2

Obs. # ☐ Boring ☐ Pit Ground Surface Elev. _____ ft Depth to limiting factor _____ in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr

Obs. # ☐ Boring ☐ Pit Ground Surface Elev. _____ ft Depth to limiting factor _____ in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr

Obs. # ☐ Boring ☐ Pit Ground Surface Elev. _____ ft Depth to limiting factor _____ in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr

Comments: The light gray shallow clay soils with redox (high value/low chroma) indicate presence of saturation. The saturation may be from regularly-occuring ponded surface water infiltrating into the subsurface. Free water noted in TP-2 and TP-3 near 5 to 5.5 ft near transition where sand content increases.

CGC Inc.

LOG OF TEST PIT

Project: @Edge Live/Work
CTH MM/USH 14
Location: Fitchburg, WI

Pit No. 1
Surface Elevation 866.5±
Job No. C17089
Sheet 1 of 1

2921 PERRY STREET, MADISON, WIS. 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE No.	SAMPLE TYPE	SAMPLE Rec (in.)	SAMPLE Moist	SAMPLE N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	Probe (in.)
						FILL: Dark Gray/Brown/Dark Brown Lean Clay and Topsoil USDA: 10YR 3/2, 4/3 Silty Clay Loam (Fill)					
						Gray/Brown (Mottled) Lean CLAY, Trace Sand (CL) USDA: 10YR 6/1 Silty Clay Loam (Redox: C2D 10YR 5/6)					
					▽ 5	Seeping Water Near 5 ft Brown Fine to Medium SAND, Some Silt, Scattered Clay Seams (SM) USDA: 10YR 4/4, 6/1, 5/6 Sandy Loam, Scattered Silty Clay Loam Seams					
					10	Light Gray Silty to Lean CLAY (CL-ML/CL) USDA: 10YR 6/1 Silty Clay Loam					
						End of Test Pit at 12 ft					
					15						

WATER LEVEL OBSERVATIONS

While Excavating ▽ 5.0' Upon Completion of Digging _____
Time After Excavating _____
Depth to Water _____ ▼
Depth to Cave in _____

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 7/17/17 End 7/17/17
Exc. _____ Operator _____
Logger DAS Editor DAS
Equip. Used: Track Excavator

CGC Inc.

LOG OF TEST PIT

Project: @Edge Live/Work
CTH MM/USH 14
Location: Fitchburg, WI

Pit No. 2
Surface Elevation 860±
Job No. C17089
Sheet 1 of 1

2921 PERRY STREET, MADISON, WIS. 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N	Depth (ft)		qu (qa) (tsf)	W	LL	PL	Probe (in.)
						FILL: Dark Brown Lean Clay, Scattered to Numerous Roots USDA: 10YR 3/2, 4/3 Silty Clay Loam (Fill)					
						Dark Gray Silty TOPSOIL (OL) USDA: 10YR 3/1 Silt Loam					
						Light Gray/Brown (Mottled) Lean CLAY, Trace Sand (CL) USDA: 10YR 6/1, 6/2 Silty Clay Loam (Redox: C2P 7.5YR 5/6)					
					5	Increasing Sand Near 5 ft					
					▽	Water Seepage Near 5.5 ft					
						Light Gray/Red-Brown/Brown Fine to Medium SAND, Little to Some Silt, Scattered Clay Seams (SP-SM/SM) USDA: 10YR 6/1, 5/6, 6/3 Loamy Sand, Scattered Silty Clay Loam Seams					
						Grades to Sand with Trace Silt (SP) Near 9 ft					
						End of Test Pit at 9.5 ft					
					10						
					15						

WATER LEVEL OBSERVATIONS

While Excavating ▽ 5.5' Upon Completion of Digging _____
Time After Excavating _____
Depth to Water _____ ▼
Depth to Cave in _____

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 7/17/17 End 7/17/17
Exc. _____ Operator _____
Logger DAS Editor DAS
Equip. Used: Track Excavator

CGC Inc.

LOG OF TEST PIT

Project: @Edge Live/Work
CTH MM/USH 14
Location: Fitchburg, WI

Pit No. 3
Surface Elevation 864±
Job No. C17089
Sheet 1 of 1

2921 PERRY STREET, MADISON, WIS. 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	Probe (in.)
					0	15 in. TOPSOIL (OL) USDA: 10YR 3/1 Silt Loam					
						Brown Lean CLAY, Trace Sand (CL) USDA: 10YR 4/4 Silty Clay Loam					
			M/W			Gray/Brown (Mottled) Lean CLAY, Trace Sand (CL) USDA: 10YR 6/1, 6/2 Silty Clay Loam (Redox: C2P 7.5YR 5/6)					
			W		5 ▽	Water Seepage Near 5.5 ft					
			W			Increasing Sand Near 6.5 ft					
					10	End of Test Pit at 10 ft					
					15						
					20						
					25						
					30						
					35						
					40						

WATER LEVEL OBSERVATIONS

While Excavating ▽ 5.5' Upon Completion of Digging _____
Time After Excavating _____
Depth to Water _____ ▼
Depth to Cave in _____

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 7/17/17 End 7/17/17
Exc. _____ Operator _____
Logger DAS Editor DAS
Equip. Used: Track Excavator

CGC Inc.

LOG OF TEST PIT

Project: @Edge Live/Work
CTH MM/USH 14
Location: Fitchburg, WI

Pit No. 4
Surface Elevation 870±
Job No. C17089
Sheet 1 of 1

2921 PERRY STREET, MADISON, WIS. 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N	Depth (ft)		qu (qa) (tsf)	W	LL	PL	Probe (in.)
						FILL: Brown/Brown Gray/Dark Gray Fine to Medium Sand, Some Silt, Little Roots, Scattered Clay Seams/Pockets USDA: 10YR 4/3, 5/4, 3/2 Sandy Loam and Silty Clay Loam (Fill)					
						Dark Gray Silty TOPSOIL (OL) USDA: 10YR 3/2 Silt Loam					
					5	Brown/Gray (Mottled) Silty to Lean CLAY (CL-ML/CL) USDA: 10YR 4/3 Silty Clay Loam (Redox: C2D 10YR 5/2) Scattered Sand Seams with Depth					
			W			Brown Fine to Medium SAND, Some Silt, Scattered Sandy Clay Seams (SM) USDA: 10YR 4/3, 7.5YR 5/4 Sandy Loam, Scattered Sandy Clay Loam Seams (Redox: F2D 10YR 5/2)					
			W		10	Sand layer was fairly wet but no free water/seepage observed during excavation of test pit.					
						End of Test Pit at 10.5 ft					
					15						

WATER LEVEL OBSERVATIONS

While Excavating ▽ NW Upon Completion of Digging NW
Time After Excavating
Depth to Water ▼
Depth to Cave in

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 7/17/17 End 7/17/17
Exc. Operator
Logger DAS Editor DAS
Equip. Used: Track Excavator

CGC Inc.

LOG OF TEST PIT

Project: @Edge Live/Work
CTH MM/USH 14
Location: Fitchburg, WI

Pit No. 5
Surface Elevation 952±
Job No. C17089
Sheet 1 of 1

2921 PERRY STREET, MADISON, WIS. 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE No.	SAMPLE TYPE	SAMPLE Rec (in.)	SAMPLE Moist	SAMPLE N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	Probe (in.)
					0	FILL: 15 in. Dark Gray/Brown Topsoil and Clay USDA: 10YR 3/1, 3/2 Silty Clay Loam and Silt Loam (Fill)					
			M			Brown Silty Fine to Medium SAND, Some Gravel, Scattered Thin Fine Sand Seams with Trace Silt (SM) USDA: 10YR 5/4 Sandy Loam with Fine Sand Seams					
					5	Light Brown Fine to Medium SAND, Trace to Little Gravel, Trace Silt (SP) USDA: 10YR 7/2 Sand Gray/Brown Silt (Silt Loam) Seams/Layers Near 6.5 ft					
			M			Increasing Gravel in the Sand Seams/Layers Near 7.5 ft					
					10	Fewer Silt Seams Below 8-9 ft (Sample near 10 ft) Grades Finer (Fine Sand) Near 10 ft P200 Near 10 ft: 1.7% (95.2% Fine Sand)					
			M			End of Test Pit at 12 ft Note: Standing surface water nearby, as this is local low area.					
					15						

WATER LEVEL OBSERVATIONS

While Excavating ▽ NW Upon Completion of Digging NW
Time After Excavating
Depth to Water ▼
Depth to Cave in

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 7/17/17 End 7/17/17
Exc. Operator
Logger DAS Editor DAS
Equip. Used: Track Excavator

CGC Inc.

LOG OF TEST PIT

Project: @Edge Live/Work
CTH MM/USH 14
Location: Fitchburg, WI

Pit No. 6
Surface Elevation 953±
Job No. C17089
Sheet 1 of 1

2921 PERRY STREET, MADISON, WIS. 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N	Depth (ft)		qu (qa) (tsf)	W	LL	PL	Probe (in.)
						9 in. Dark Gray TOPSOIL FILL (OL) USDA: 10YR 3/2 Silty Clay Loam (Fill)					
						Brown Silty Fine to Medium SAND, Some Gravel, Scattered Cobbles/Boulders, Scattered Sand Seams with Trace Silt (SM) USDA: 10Y 5/4 Gravelly Sandy Loam					
					5	P200 Near 6 ft: 36.3%					
					10	Light Brown Fine SAND, Trace Silt, Scattered Silt Seams (SP) USDA: 10YR 7/3 Fine Sand, Scattered Silt Loam Seams Scattered to Numerous Silt Loam Seams Near 11 ft					
						Grades to Brown/Gray SILT, Little Sand, Scattered Fine Sand Seams (ML) USDA: 10YR 4/3 Silt Loam, Scattered Fine Sand Seams Moist to Wet Near 12 ft					
					15	End of Test Pit at 12 ft					

WATER LEVEL OBSERVATIONS

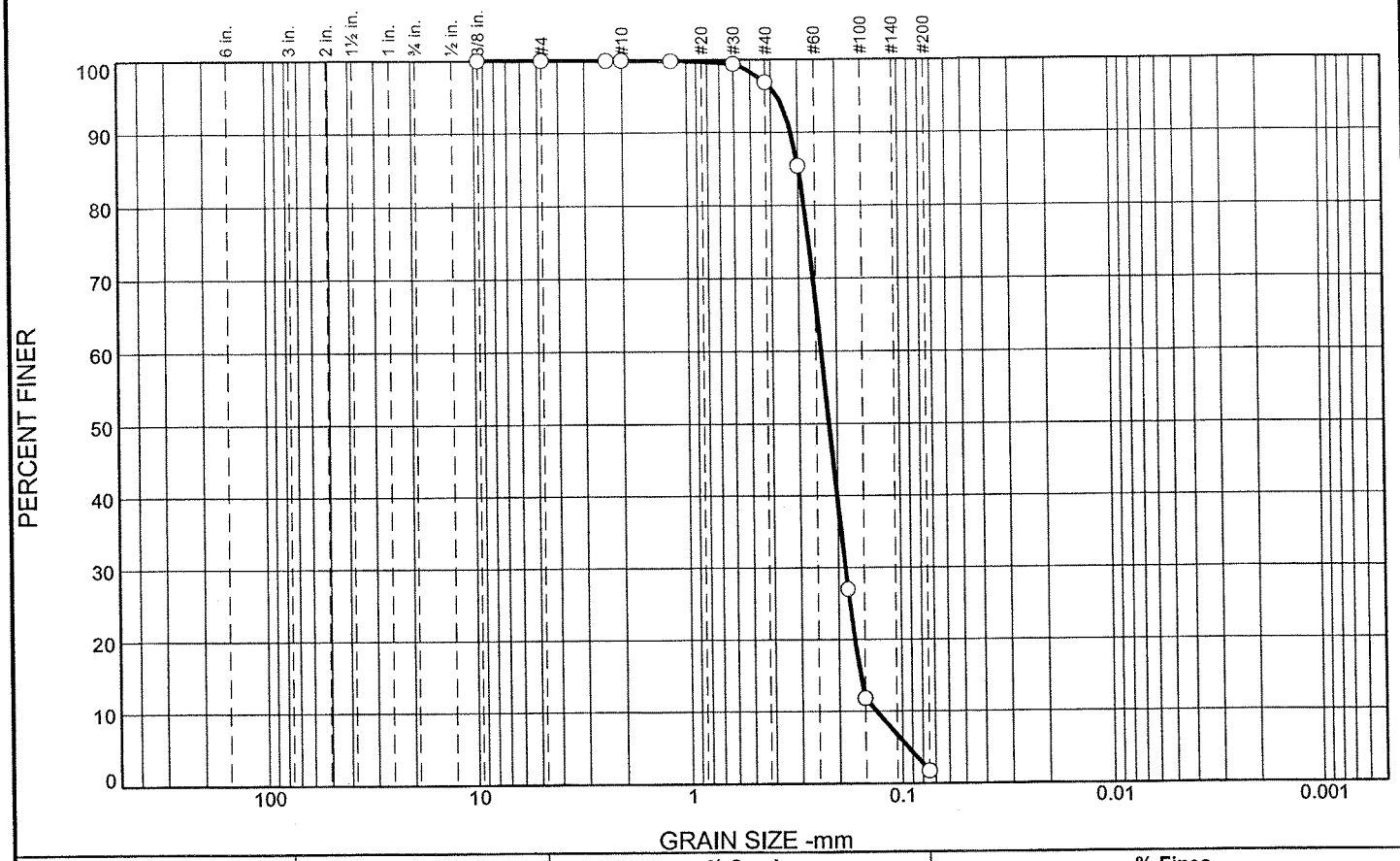
While Excavating ▽ NW Upon Completion of Digging NW
Time After Excavating
Depth to Water ▼
Depth to Cave in

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 7/17/17 End 7/17/17
Exc. Operator
Logger DAS Editor DAS
Equip. Used: Track Excavator

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	3.0	95.2	1.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/8	100.0		
#4	100.0		
#8	99.9		
#10	99.9		
#16	99.8		
#30	99.4		
#40	96.9		
#50	85.4		
#80	27.0		
#100	11.8		
#200	1.7		

* (no specification provided)

Material Description

Brown Fine Sand, Trace Silt

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.3228 D_{85}= 0.2984 D_{60}= 0.2360
D_{50}= 0.2182 D_{30}= 0.1851 D_{15}= 0.1571
D_{10}= 0.1323 C_u= 1.78 C_c= 1.10

Classification

USCS= SP AASHTO=

Remarks

Sample Number: TP-5 **Depth:** 10'

Date: 7/19/17

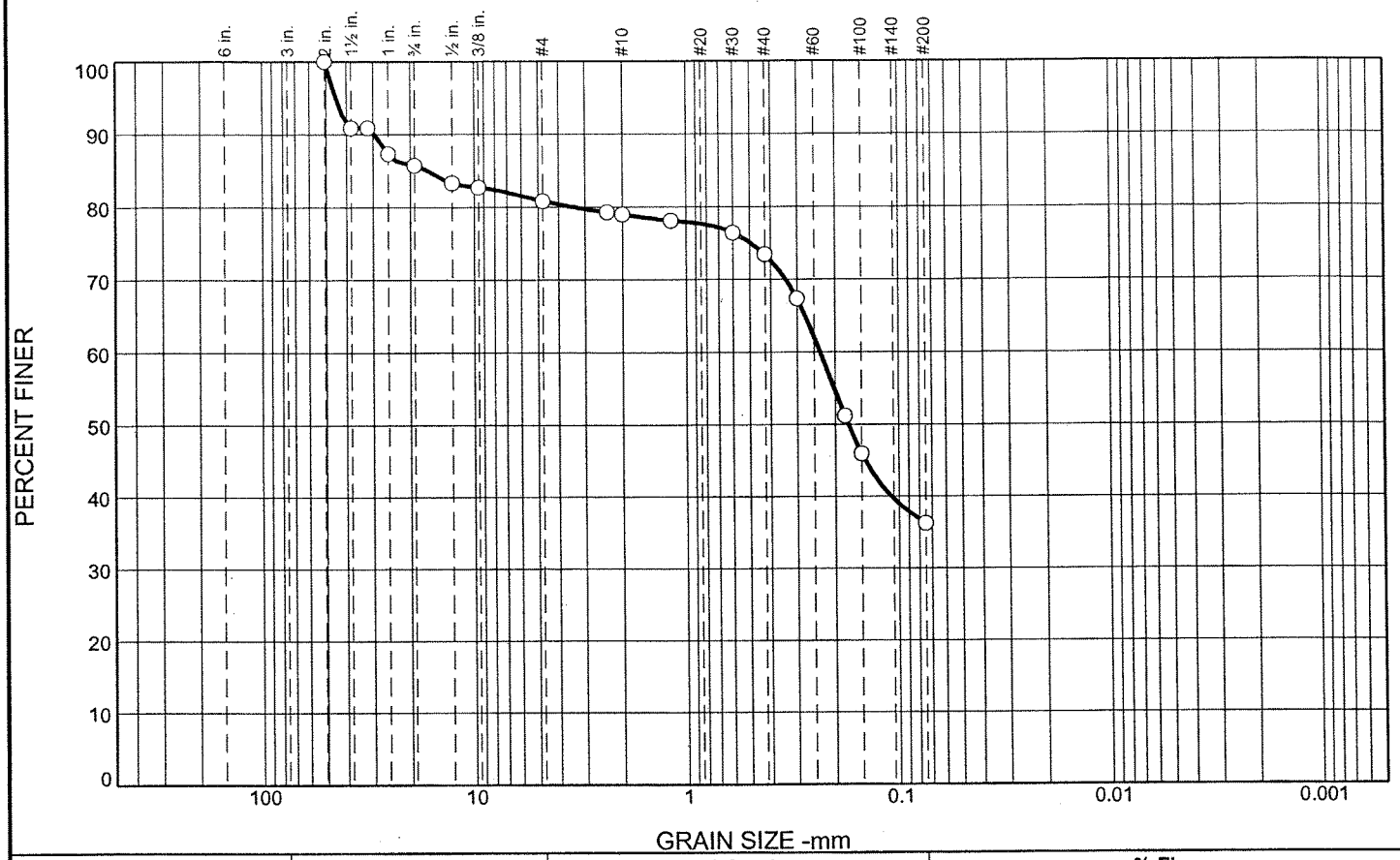
CGC, Inc.

Client: TORQUE Companies, LLC
Project: @Edge Live/Work

Project No: C17089 **Figure**

Tested By: DRW **Checked By:** DAS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	14.3	4.9	1.8	5.6	37.1	36.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2	100.0		
1.5	90.8		
1.25	90.8		
1	87.3		
3/4	85.7		
1/2	83.3		
3/8	82.7		
#4	80.8		
#8	79.3		
#10	79.0		
#16	78.1		
#30	76.4		
#40	73.4		
#50	67.3		
#80	51.2		
#100	46.0		
#200	36.3		

* (no specification provided)

Material Description

Brown Silty Fine to Medium Sand, Some Gravel

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 29.4832 D_{85}= 16.6080 D_{60}= 0.2345
D_{50}= 0.1734 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

Sample Number: TP-6 **Depth:** 6'

Date: 7/19/17

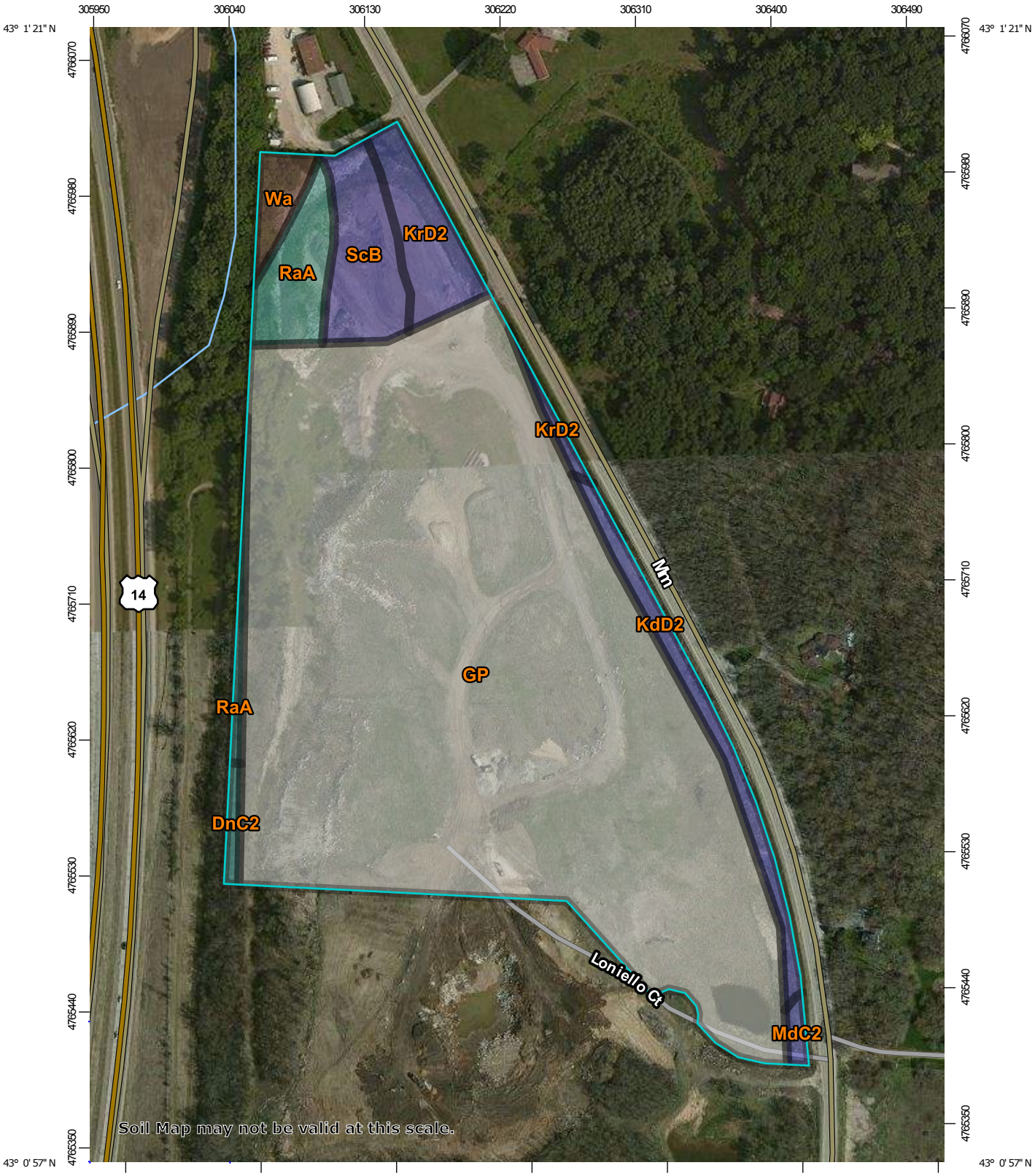
CGC, Inc.

Client: TORQUE Companies, LLC
Project: @Edge Live/Work

Project No: C17089 **Figure**

Tested By: DRW **Checked By:** DAS

Hydrologic Soil Group—Dane County, Wisconsin
(16-7678 Property Boundary)



Map Scale: 1:3,660 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N 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 1:15,800.

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:
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: Dane County, Wisconsin
Survey Area Data: Version 15, Sep 27, 2016

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

Date(s) aerial images were photographed: Apr 29, 2011—Aug 29, 2013

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.

Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — Dane County, Wisconsin (WI025)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
DnC2	Dodge silt loam, 6 to 12 percent slopes, eroded	C	0.2	0.5%
GP	Gravel pit		26.9	82.1%
KdD2	Kidder loam, 12 to 20 percent slopes, eroded	B	1.0	3.2%
KrD2	Kidder soils, 10 to 20 percent slopes, eroded	B	1.3	4.1%
MdC2	McHenry silt loam, 6 to 12 percent slopes, eroded	B	0.1	0.4%
RaA	Radford silt loam, 0 to 3 percent slopes	C	1.3	3.9%
ScB	St. Charles silt loam, 2 to 6 percent slopes	B	1.4	4.3%
Wa	Wacousta silty clay loam, 0 to 2 percent slopes	B/D	0.5	1.4%
Totals for Area of Interest			**32.8**	**100.0%**

Description

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.

Rating Options

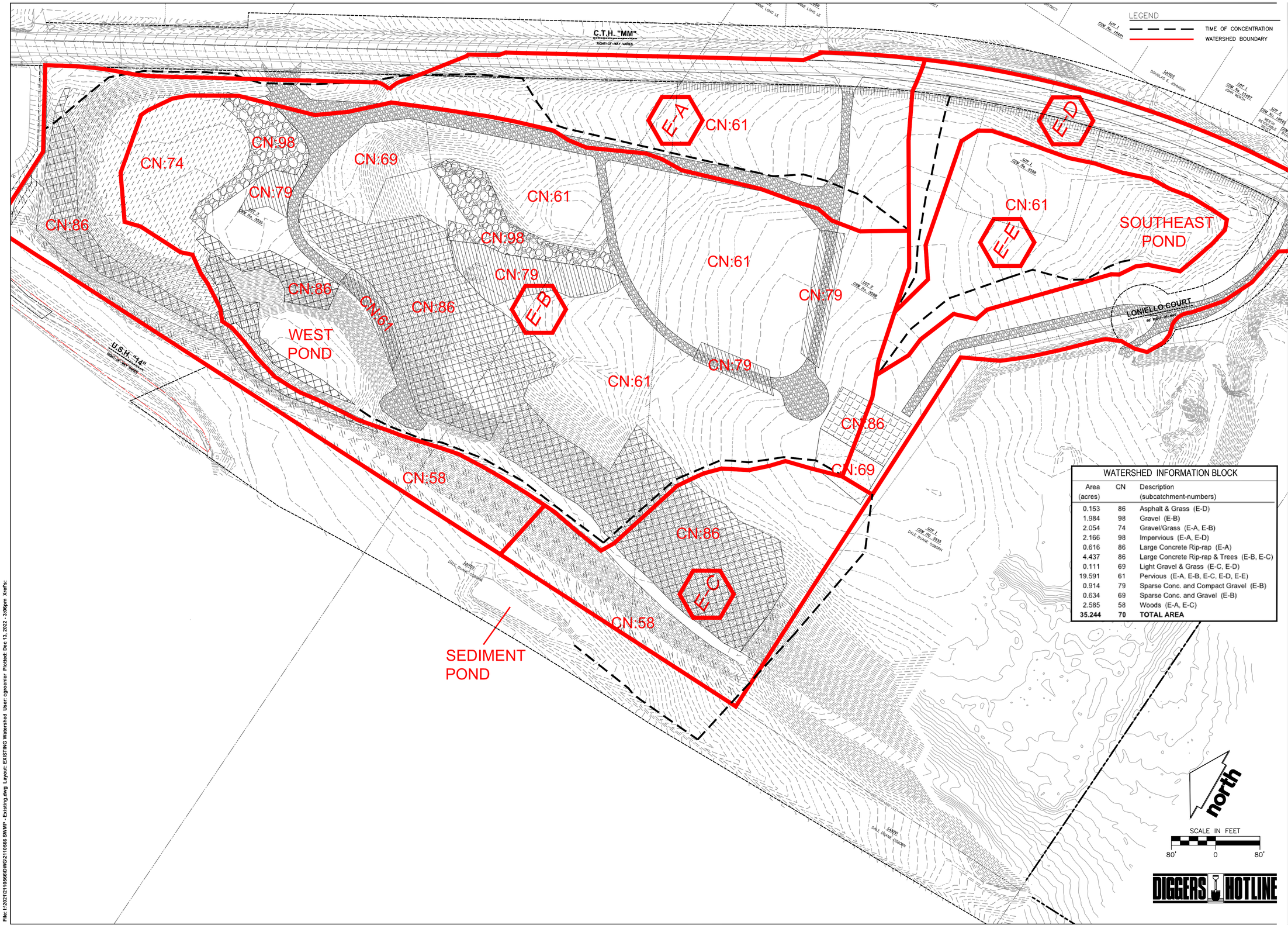
Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

APPENDIX 4

Watershed Maps & HydroCAD Calculations



WATERSHED INFORMATION BLOCK

Area (acres)	CN	Description (subcatchment-numbers)
0.153	86	Asphalt & Grass (E-D)
1.984	98	Gravel (E-B)
2.054	74	Gravel/Grass (E-A, E-B)
2.166	98	Impervious (E-A, E-D)
0.616	86	Large Concrete Rip-rap (E-A)
4.437	86	Large Concrete Rip-rap & Trees (E-B, E-C)
0.111	69	Light Gravel & Grass (E-C, E-D)
19.591	61	Pervious (E-A, E-B, E-C, E-D, E-E)
0.914	79	Sparse Conc. and Compact Gravel (E-B)
0.634	69	Sparse Conc. and Gravel (E-B)
2.585	58	Woods (E-A, E-C)
35.244	**70**	**TOTAL AREA**

DIGGERS HOTLINE

JSD
CREATE THE VISION TELL THE STORY
jsdinc.com
MADISON REGIONAL OFFICE
161 HORIZON DRIVE, SUITE 101
VERONA, WISCONSIN 53593
P. 608.848.5060

CLIENT:
ROYAL CAPITAL

CLIENT ADDRESS:
710 N PLANKINTON AVE. SUITE 300
MILWAUKEE, WI 53203

PRELIMINARY
NOT FOR CONSTRUCTION

PROJECT:
NINE SPRINGS

PROJECT LOCATION:
FITCHBURG, WI 53711
DANE COUNTY

PLAN MODIFICATIONS:

#	Date:	Description:
1	03.25.22	P-PLAT SUBMITTAL
2	04.12.22	RESPONSE TO P-PLAT COMMENTS
3	06.21.22	ADR SUBMITTAL
4	12.14.22	P-PLAT SUBMITTAL
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

Designed By:
Reviewed By:
Approved By:

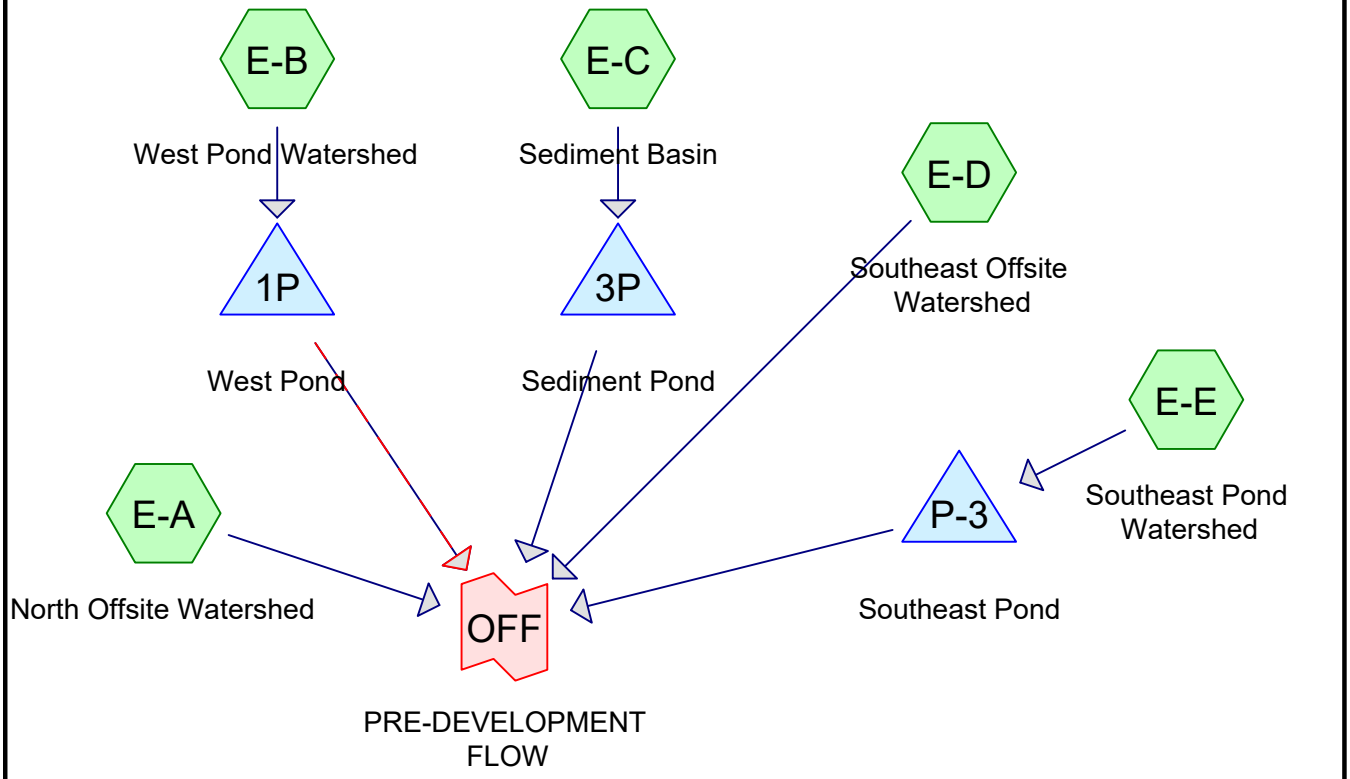
SHEET TITLE:
EXISTING WATERSHED MAP

SHEET NUMBER:
EXHIBIT

JSD PROJECT NO: 21-10566

THESE PLANS AND DESIGNS ARE COPYRIGHT PROTECTED AND MAY NOT BE USED IN WHOLE OR IN PART WITHOUT THE WRITTEN CONSENT OF JSD PROFESSIONAL SERVICES, INC.

File: I:\2021\21-10566\DWG\21105660 SWMP - Existing.dwg Layout: EXISTING Watershed User: cgroenier Plotted: Dec 13, 2022 - 3:06pm Xref's:



Subcat Reach Pond Link

Routing Diagram for 16-7678 Existing

Prepared by JSD Professional Services Inc, Printed 12/13/2022

HydroCAD® 10.20-2f s/n 01985 © 2022 HydroCAD Software Solutions LLC

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-yr	MSE 24-hr	4	Default	24.00	1	2.49	2
2	2-yr	MSE 24-hr	4	Default	24.00	1	2.84	2
3	10-yr	MSE 24-hr	4	Default	24.00	1	4.09	2
4	100-yr	MSE 24-hr	4	Default	24.00	1	6.66	2
5	200-yr	MSE 24-hr	4	Default	24.00	1	7.53	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.153	86	Asphalt & Grass (E-D)
1.984	98	Gravel (E-B)
2.054	74	Gravel/Grass (E-A, E-B)
2.166	98	Impervious (E-A, E-D)
0.616	86	Large Concrete Rip-rap (E-A)
4.437	86	Large Concrete Rip-rap & Trees (E-B, E-C)
0.111	69	Light Gravel & Grass (E-C, E-D)
19.591	61	Pervious (E-A, E-B, E-C, E-D, E-E)
0.914	79	Sparse Conc. and Compact Gravel (E-B)
0.634	69	Sparse Conc. and Gravel (E-B)
2.585	58	Woods (E-A, E-C)
35.244	**70**	**TOTAL AREA**

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points x 2
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 E-A: North Offsite Runoff Area=349,025 sf 13.32% Impervious Runoff Depth=0.42"
Flow Length=1,684' Tc=26.3 min CN=69 Runoff=2.17 cfs 0.278 af

Subcatchment E-B: West Pond Watershed Runoff Area=720,507 sf 12.00% Impervious Runoff Depth=0.52"
Flow Length=997' Tc=21.0 min CN=72 Runoff=7.06 cfs 0.721 af

Subcatchment E-C: Sediment Basin Runoff Area=147,982 sf 0.00% Impervious Runoff Depth=0.42"
Flow Length=840' Tc=13.8 min CN=69 Runoff=1.29 cfs 0.118 af

Subcatchment E-D: Southeast Offsite Runoff Area=195,650 sf 24.46% Impervious Runoff Depth=0.49"
Flow Length=405' Tc=31.1 min CN=71 Runoff=1.39 cfs 0.182 af

Subcatchment E-E: Southeast Pond Runoff Area=122,075 sf 0.00% Impervious Runoff Depth=0.19"
Flow Length=530' Tc=22.4 min CN=61 Runoff=0.22 cfs 0.045 af

Pond 1P: West Pond Peak Elev=868.29' Storage=12,357 cf Inflow=7.06 cfs 0.721 af
Primary=2.08 cfs 0.477 af Secondary=0.00 cfs 0.000 af Outflow=2.08 cfs 0.477 af

Pond 3P: Sediment Pond Peak Elev=868.80' Storage=5,133 cf Inflow=1.29 cfs 0.118 af
Outflow=0.00 cfs 0.000 af

Pond P-3: Southeast Pond Peak Elev=952.52' Storage=1,963 cf Inflow=0.22 cfs 0.045 af
Outflow=0.00 cfs 0.000 af

Link OFF: PRE-DEVELOPMENTFLOW Inflow=3.89 cfs 0.937 af
Primary=3.89 cfs 0.937 af

Total Runoff Area = 35.244 ac Runoff Volume = 1.344 af Average Runoff Depth = 0.46"
88.23% Pervious = 31.094 ac 11.77% Impervious = 4.150 ac

Summary for Subcatchment E-A: North Offsite Watershed

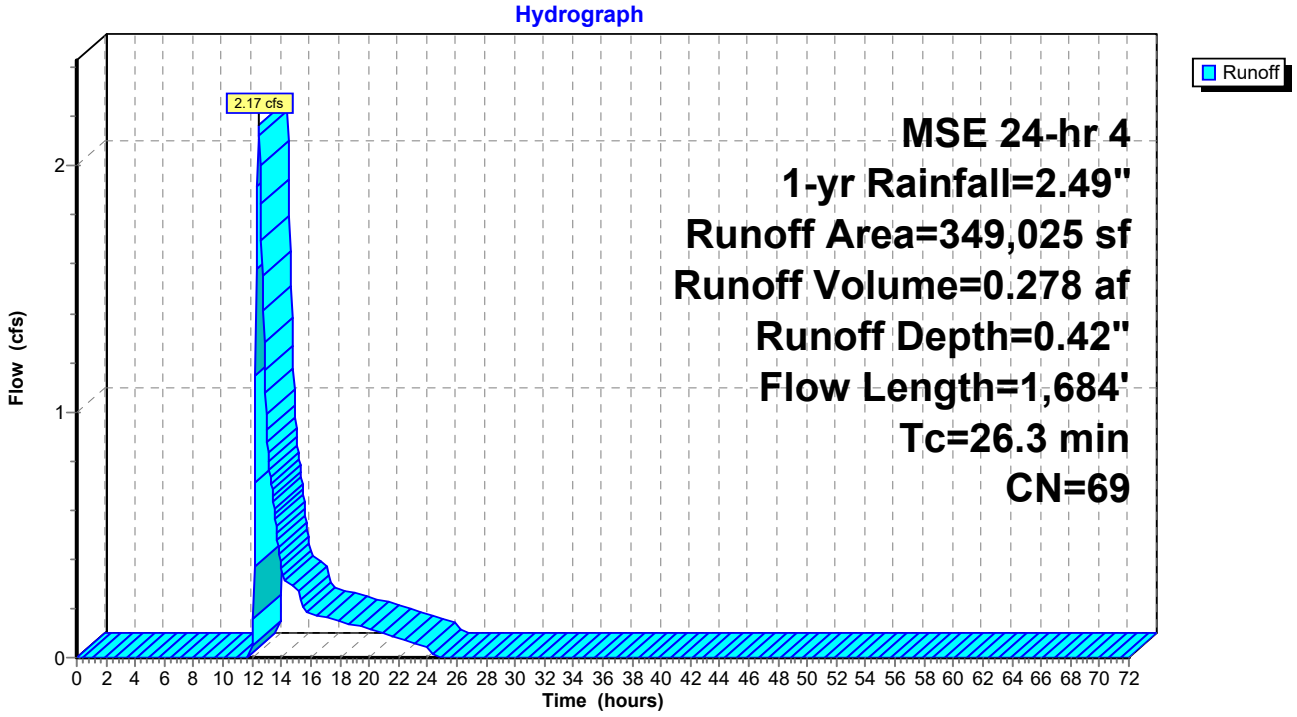
Runoff = 2.17 cfs @ 12.45 hrs, Volume= 0.278 af, Depth= 0.42"
Routed to Link OFF : PRE-DEVELOPMENT FLOW

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 1-yr Rainfall=2.49"

	Area (sf)	CN	Description
*	168,502	61	Pervious
*	46,485	98	Impervious
*	63,585	58	Woods
*	26,823	86	Large Concrete Rip-rap
*	43,630	74	Gravel/Grass
	349,025	69	Weighted Average
	302,540		86.68% Pervious Area
	46,485		13.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.5	300	0.0330	0.24		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.84"
5.8	1,384	0.0600	3.94		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
26.3	1,684	Total			

Subcatchment E-A: North Offsite Watershed



Summary for Subcatchment E-B: West Pond Watershed

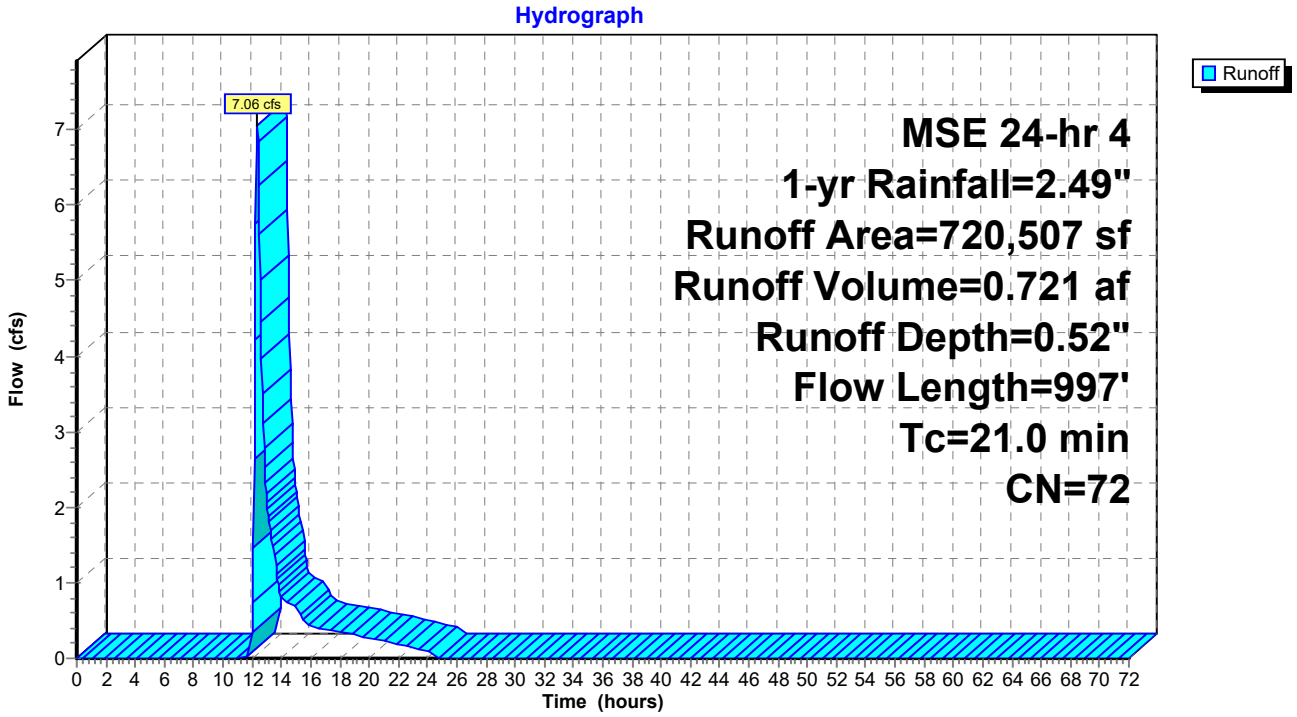
Runoff = 7.06 cfs @ 12.35 hrs, Volume= 0.721 af, Depth= 0.52"
Routed to Pond 1P : West Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 1-yr Rainfall=2.49"

	Area (sf)	CN	Description
*	380,850	61	Pervious
*	86,430	98	Gravel
*	139,982	86	Large Concrete Rip-rap & Trees
*	27,609	69	Sparse Conc. and Gravel
*	39,813	79	Sparse Conc. and Compact Gravel
*	45,823	74	Gravel/Grass
	720,507	72	Weighted Average
	634,077		88.00% Pervious Area
	86,430		12.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.4	300	0.0430	0.27		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.84"
0.3	190	0.3160	9.05		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.3	507	0.0530	3.71		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
21.0	997	Total			

Subcatchment E-B: West Pond Watershed



Summary for Subcatchment E-C: Sediment Basin

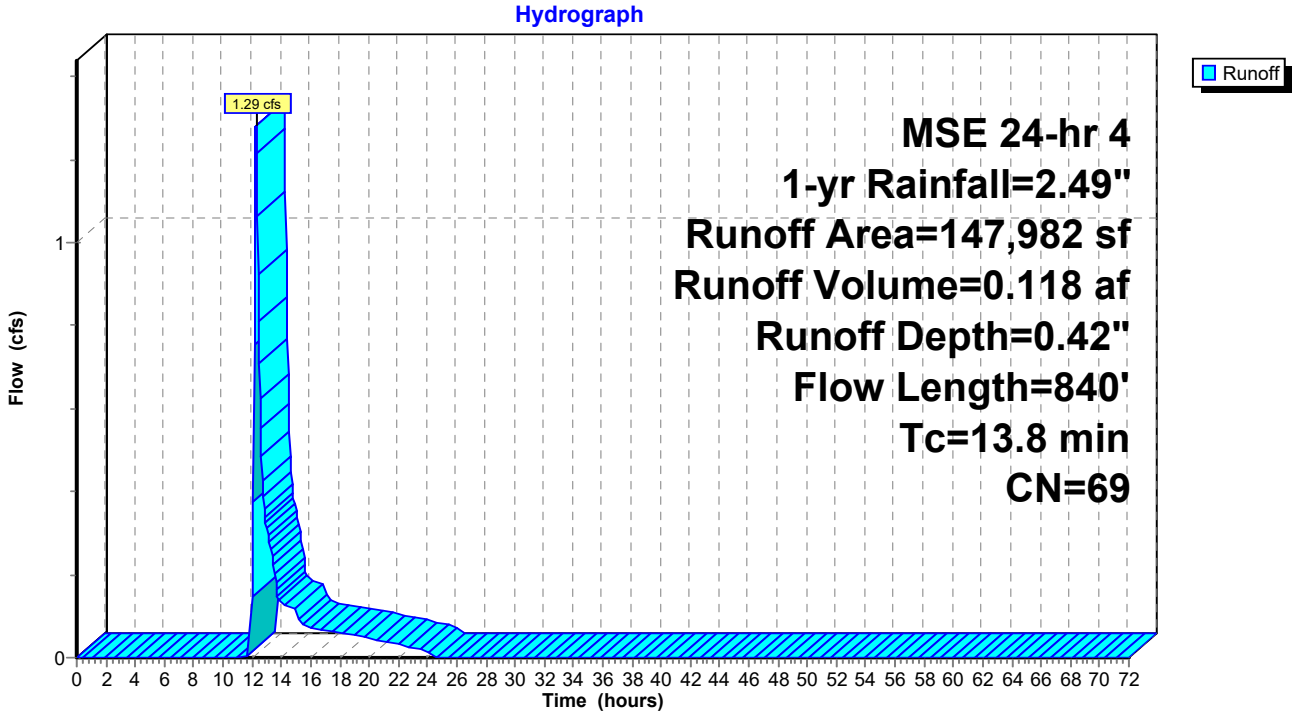
Runoff = 1.29 cfs @ 12.26 hrs, Volume= 0.118 af, Depth= 0.42"
Routed to Pond 3P : Sediment Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 1-yr Rainfall=2.49"

	Area (sf)	CN	Description
*	49,038	58	Woods
*	44,038	61	Pervious
*	53,295	86	Large Concrete Rip-rap & Trees
*	1,611	69	Light Gravel & Grass
	147,982	69	Weighted Average
	147,982		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.2	300	0.1200	0.41		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.84"
1.6	540	0.1300	5.80		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
13.8	840	Total			

Subcatchment E-C: Sediment Basin



Summary for Subcatchment E-D: Southeast Offsite Watershed

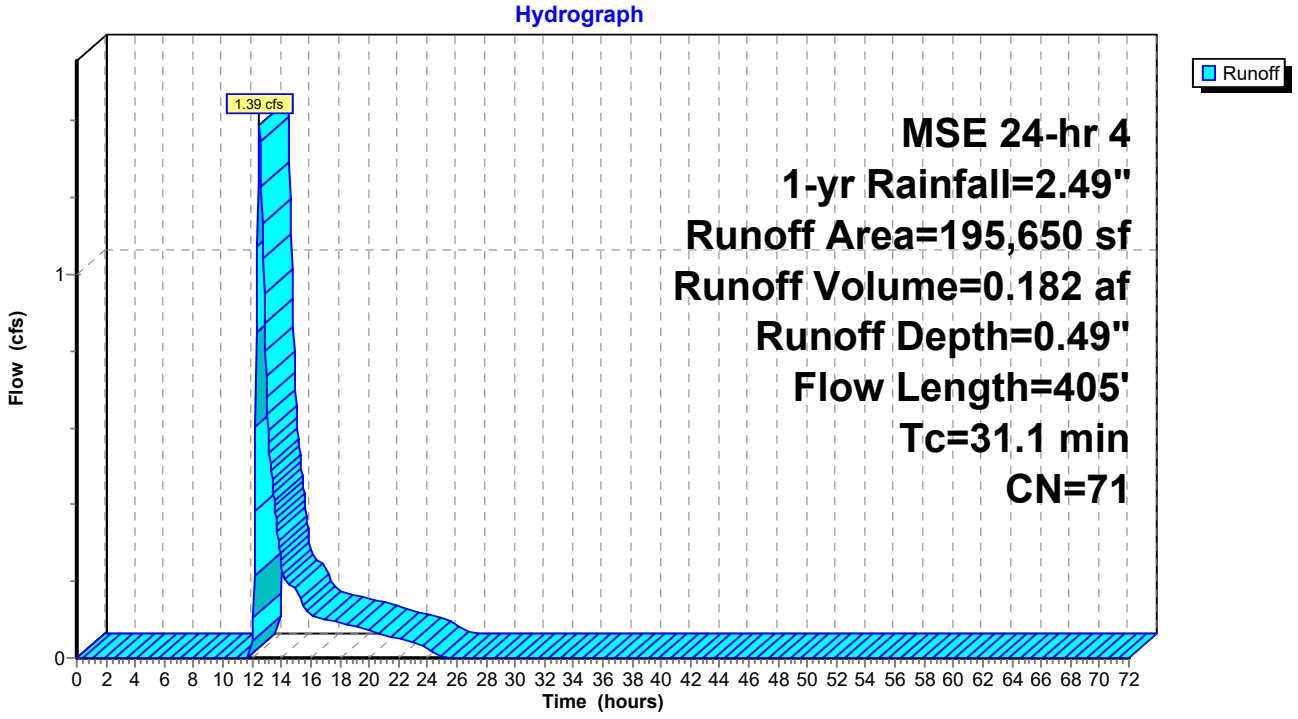
Runoff = 1.39 cfs @ 12.51 hrs, Volume= 0.182 af, Depth= 0.49"
Routed to Link OFF : PRE-DEVELOPMENT FLOW

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 1-yr Rainfall=2.49"

	Area (sf)	CN	Description
*	137,901	61	Pervious
*	47,853	98	Impervious
*	3,223	69	Light Gravel & Grass
*	6,673	86	Asphalt & Grass
	195,650	71	Weighted Average
	147,797		75.54% Pervious Area
	47,853		24.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.7	300	0.0120	0.16		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.84"
0.4	105	0.0670	4.17		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
31.1	405	Total			

Subcatchment E-D: Southeast Offsite Watershed



Summary for Subcatchment E-E: Southeast Pond Watershed

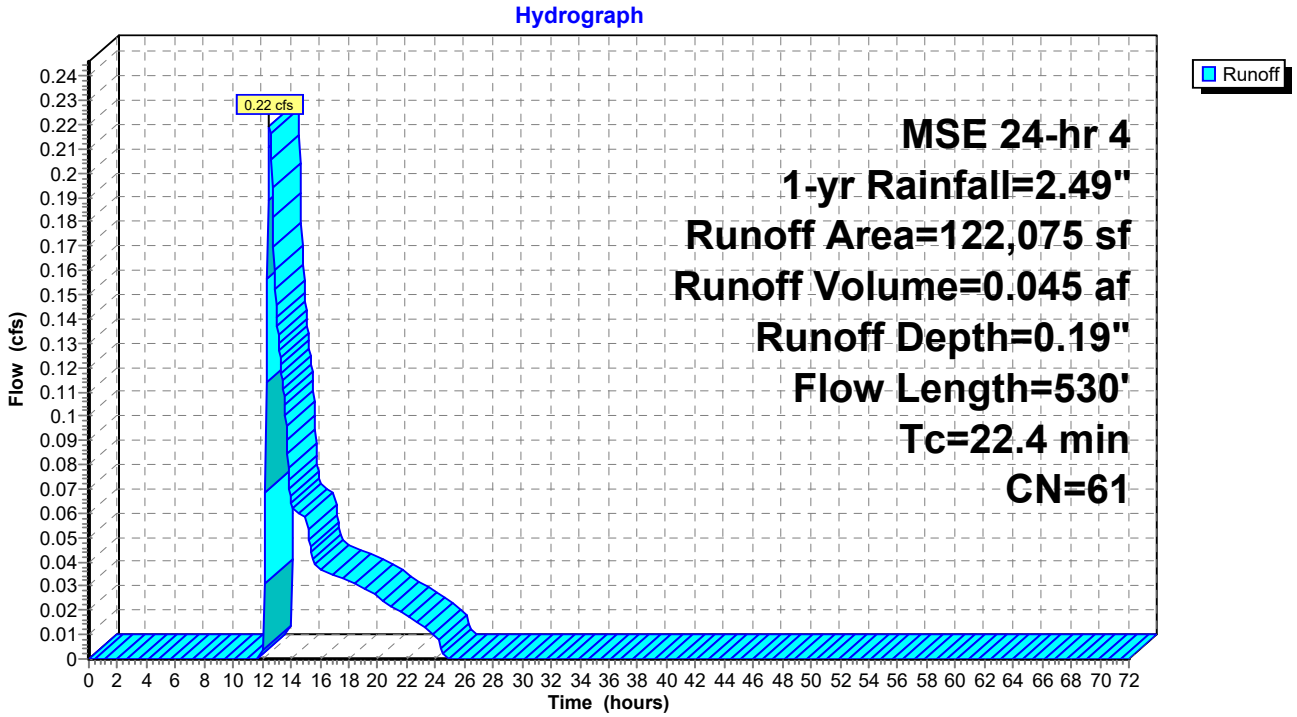
Runoff = 0.22 cfs @ 12.53 hrs, Volume= 0.045 af, Depth= 0.19"
Routed to Pond P-3 : Southeast Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 1-yr Rainfall=2.49"

	Area (sf)	CN	Description
*	122,075	61	Pervious
	122,075		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.3	300	0.0300	0.23		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.84"
1.1	230	0.0460	3.45		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
22.4	530	Total			

Subcatchment E-E: Southeast Pond Watershed



Summary for Pond 1P: West Pond

Inflow Area = 16.541 ac, 12.00% Impervious, Inflow Depth = 0.52" for 1-yr event
Inflow = 7.06 cfs @ 12.35 hrs, Volume= 0.721 af
Outflow = 2.08 cfs @ 12.99 hrs, Volume= 0.477 af, Atten= 70%, Lag= 38.4 min
Primary = 2.08 cfs @ 12.99 hrs, Volume= 0.477 af
Routed to Link OFF : PRE-DEVELOPMENT FLOW
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link OFF : PRE-DEVELOPMENT FLOW

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 868.29' @ 12.99 hrs Surf.Area= 12,857 sf Storage= 12,357 cf

Plug-Flow detention time= 200.4 min calculated for 0.477 af (66% of inflow)
Center-of-Mass det. time= 91.2 min (970.8 - 879.6)

Volume	Invert	Avail.Storage	Storage Description
#1	867.00'	161,721 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

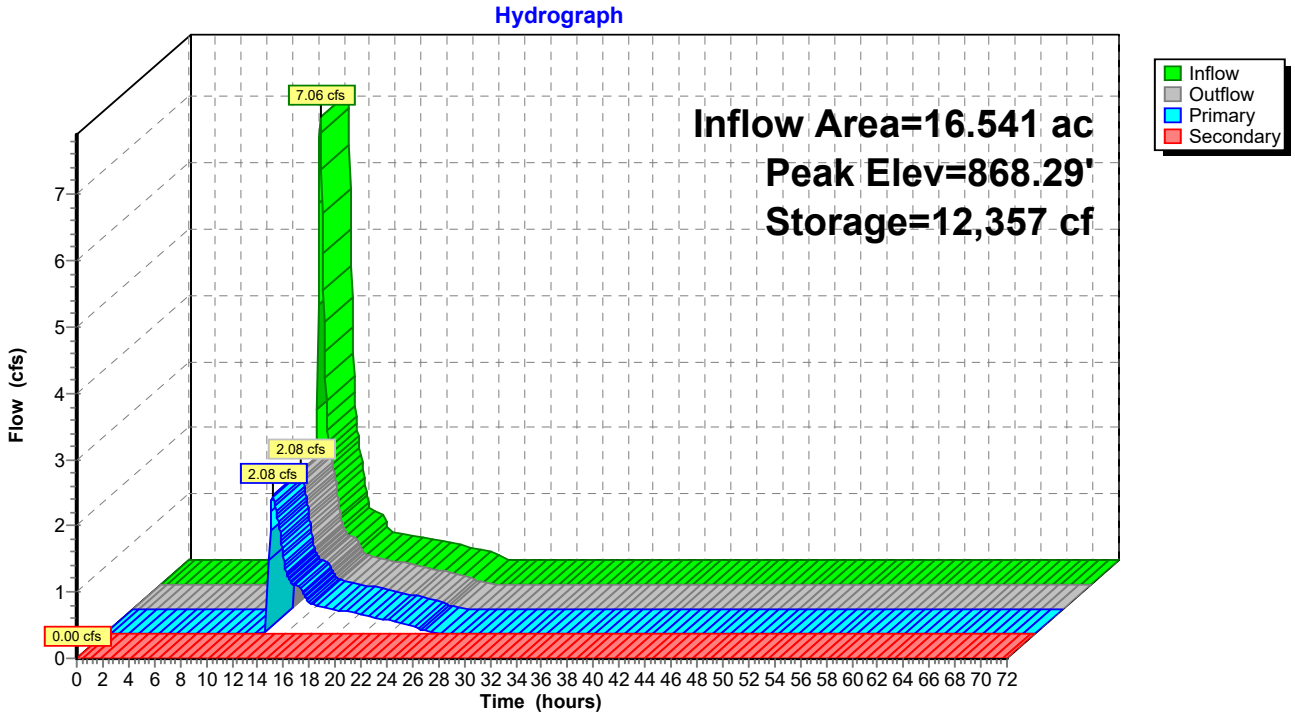
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
867.00	6,098	0	0
868.00	11,597	8,848	8,848
869.00	15,988	13,793	22,640
870.00	19,104	17,546	40,186
871.00	21,785	20,445	60,631
872.00	23,758	22,772	83,402
873.00	25,317	24,538	107,940
874.00	26,885	26,101	134,041
875.00	28,476	27,681	161,721

Device	Routing	Invert	Outlet Devices
#1	Primary	864.48'	**24.0" Round Culvert** L= 70.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 864.48' / 862.54' S= 0.0277 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 3.14 sf
#2	Device 1	868.15'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Secondary	874.50'	**Asymmetrical Weir, C= 3.27** Offset (feet) -55.50 -39.75 -8.50 8.50 39.75 55.50 Height (feet) 1.00 0.50 0.00 0.00 0.50 1.00

Primary OutFlow Max=2.08 cfs @ 12.99 hrs HW=868.29' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Passes 2.08 cfs of 22.36 cfs potential flow)
↑—**2=Orifice/Grate** (Weir Controls 2.08 cfs @ 1.21 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=867.00' TW=0.00' (Dynamic Tailwater)
↑—**3=Asymmetrical Weir** (Controls 0.00 cfs)

Pond 1P: West Pond



Summary for Pond 3P: Sediment Pond

Inflow Area = 3.397 ac, 0.00% Impervious, Inflow Depth = 0.42" for 1-yr event
Inflow = 1.29 cfs @ 12.26 hrs, Volume= 0.118 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link OFF : PRE-DEVELOPMENT FLOW

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 868.80' @ 24.85 hrs Surf.Area= 7,225 sf Storage= 5,133 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

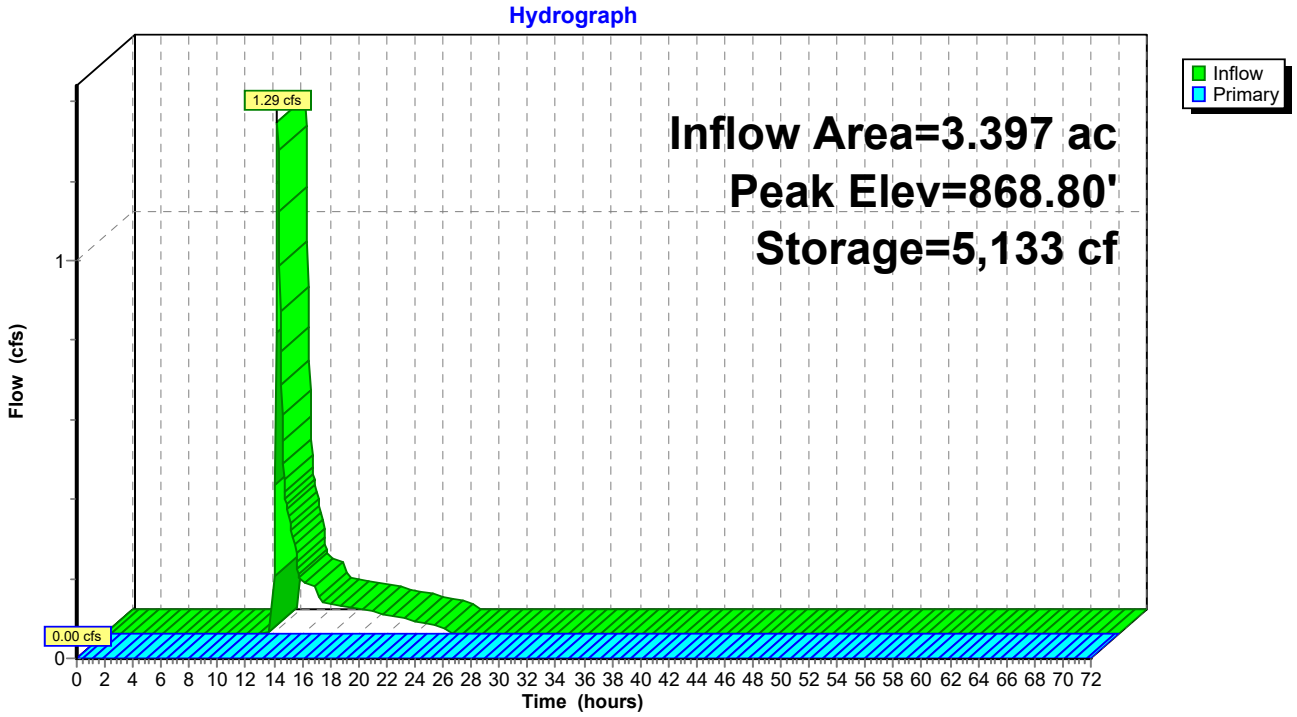
Volume	Invert	Avail.Storage	Storage Description
#1	868.00'	30,213 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
868.00	5,499	0	0
868.50	6,669	3,042	3,042
869.00	7,592	3,565	6,607
870.00	9,838	8,715	15,322
870.50	11,326	5,291	20,613
871.00	13,295	6,155	26,769
871.25	14,263	3,445	30,213

Device	Routing	Invert	Outlet Devices
#1	Primary	869.25'	**14.0' long x 15.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=868.00' TW=0.00' (Dynamic Tailwater)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 3P: Sediment Pond



Summary for Pond P-3: Southeast Pond

Inflow Area = 2.802 ac, 0.00% Impervious, Inflow Depth = 0.19" for 1-yr event
Inflow = 0.22 cfs @ 12.53 hrs, Volume= 0.045 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link OFF : PRE-DEVELOPMENT FLOW

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 952.52' @ 25.35 hrs Surf.Area= 4,795 sf Storage= 1,963 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

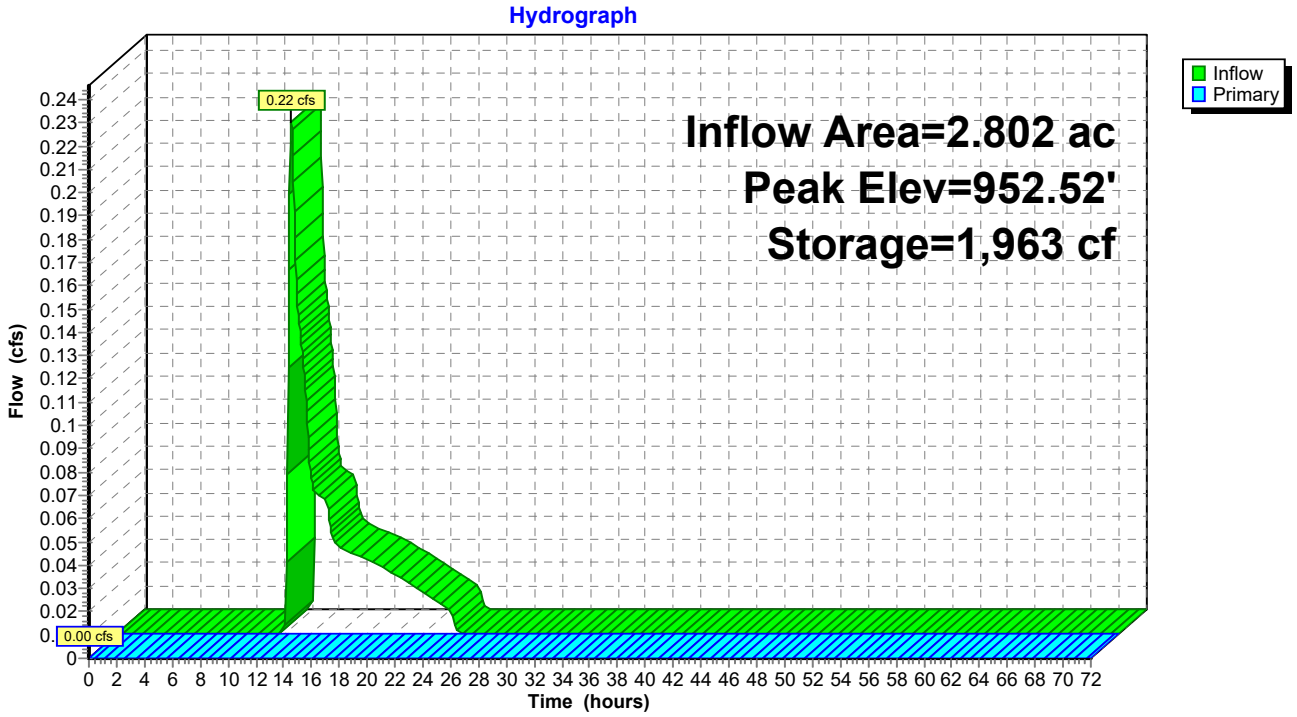
Volume	Invert	Avail.Storage	Storage Description
#1	952.00'	34,587 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
952.00	2,720	0	0
952.50	4,726	1,862	1,862
953.00	6,338	2,766	4,628
954.00	8,782	7,560	12,188
955.00	11,171	9,977	22,164
955.50	12,527	5,925	28,089
956.00	13,466	6,498	34,587

Device	Routing	Invert	Outlet Devices
#1	Primary	955.50'	**Asymmetrical Weir, C= 3.27** Offset (feet) -97.00 -27.50 27.50 97.00 Height (feet) 0.50 0.00 0.00 0.50

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=952.00' TW=0.00' (Dynamic Tailwater)
↑—**1=Asymmetrical Weir** (Controls 0.00 cfs)

Pond P-3: Southeast Pond

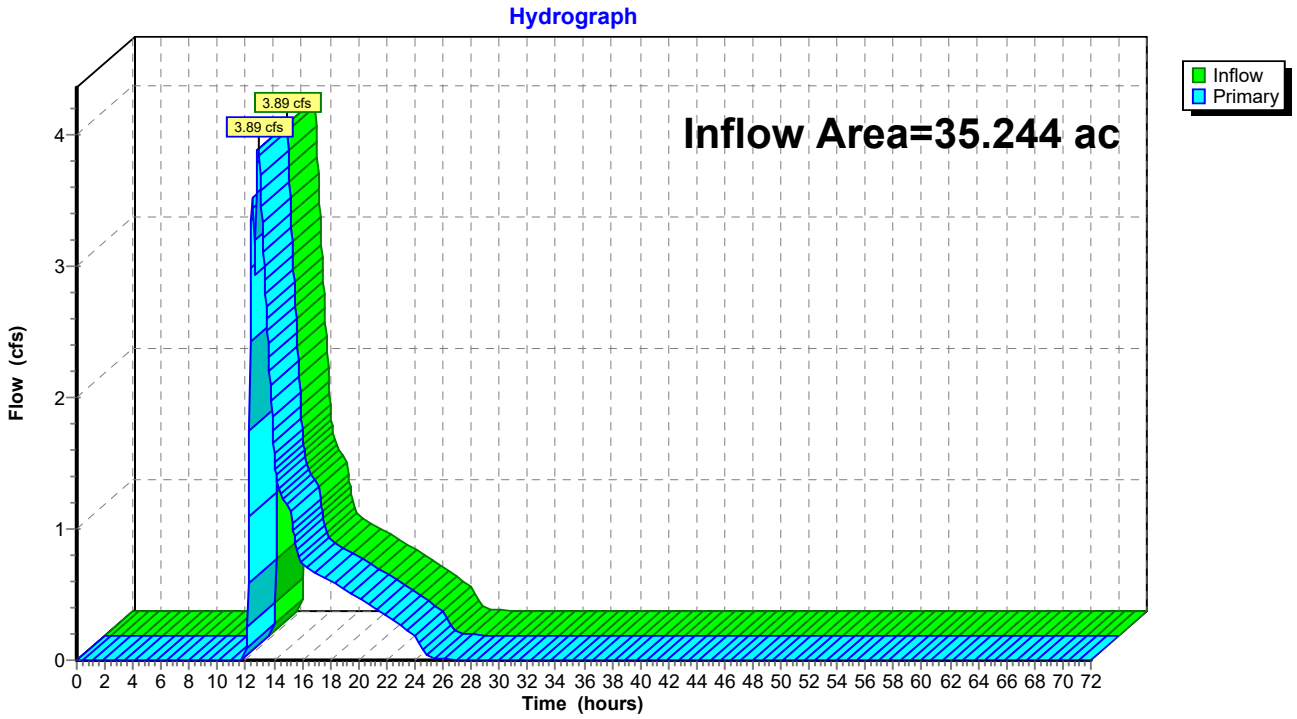


Summary for Link OFF: PRE-DEVELOPMENT FLOW

Inflow Area = 35.244 ac, 11.77% Impervious, Inflow Depth = 0.32" for 1-yr event
Inflow = 3.89 cfs @ 12.87 hrs, Volume= 0.937 af
Primary = 3.89 cfs @ 12.87 hrs, Volume= 0.937 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link OFF: PRE-DEVELOPMENT FLOW



Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points x 2
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 E-A: North Offsite Runoff Area=349,025 sf 13.32% Impervious Runoff Depth=0.59"
Flow Length=1,684' Tc=26.3 min CN=69 Runoff=3.36 cfs 0.391 af

Subcatchment E-B: West Pond Watershed Runoff Area=720,507 sf 12.00% Impervious Runoff Depth=0.71"
Flow Length=997' Tc=21.0 min CN=72 Runoff=10.25 cfs 0.985 af

Subcatchment E-C: Sediment Basin Runoff Area=147,982 sf 0.00% Impervious Runoff Depth=0.59"
Flow Length=840' Tc=13.8 min CN=69 Runoff=1.99 cfs 0.166 af

Subcatchment E-D: Southeast Offsite Runoff Area=195,650 sf 24.46% Impervious Runoff Depth=0.67"
Flow Length=405' Tc=31.1 min CN=71 Runoff=2.06 cfs 0.251 af

Subcatchment E-E: Southeast Pond Runoff Area=122,075 sf 0.00% Impervious Runoff Depth=0.31"
Flow Length=530' Tc=22.4 min CN=61 Runoff=0.46 cfs 0.072 af

Pond 1P: West Pond Peak Elev=868.40' Storage=13,778 cf Inflow=10.25 cfs 0.985 af
Primary=5.00 cfs 0.741 af Secondary=0.00 cfs 0.000 af Outflow=5.00 cfs 0.741 af

Pond 3P: Sediment Pond Peak Elev=869.08' Storage=7,224 cf Inflow=1.99 cfs 0.166 af
Outflow=0.00 cfs 0.000 af

Pond P-3: Southeast Pond Peak Elev=952.75' Storage=3,117 cf Inflow=0.46 cfs 0.072 af
Outflow=0.00 cfs 0.000 af

Link OFF: PRE-DEVELOPMENTFLOW Inflow=9.21 cfs 1.383 af
Primary=9.21 cfs 1.383 af

Total Runoff Area = 35.244 ac Runoff Volume = 1.864 af Average Runoff Depth = 0.63"
88.23% Pervious = 31.094 ac 11.77% Impervious = 4.150 ac

Summary for Subcatchment E-A: North Offsite Watershed

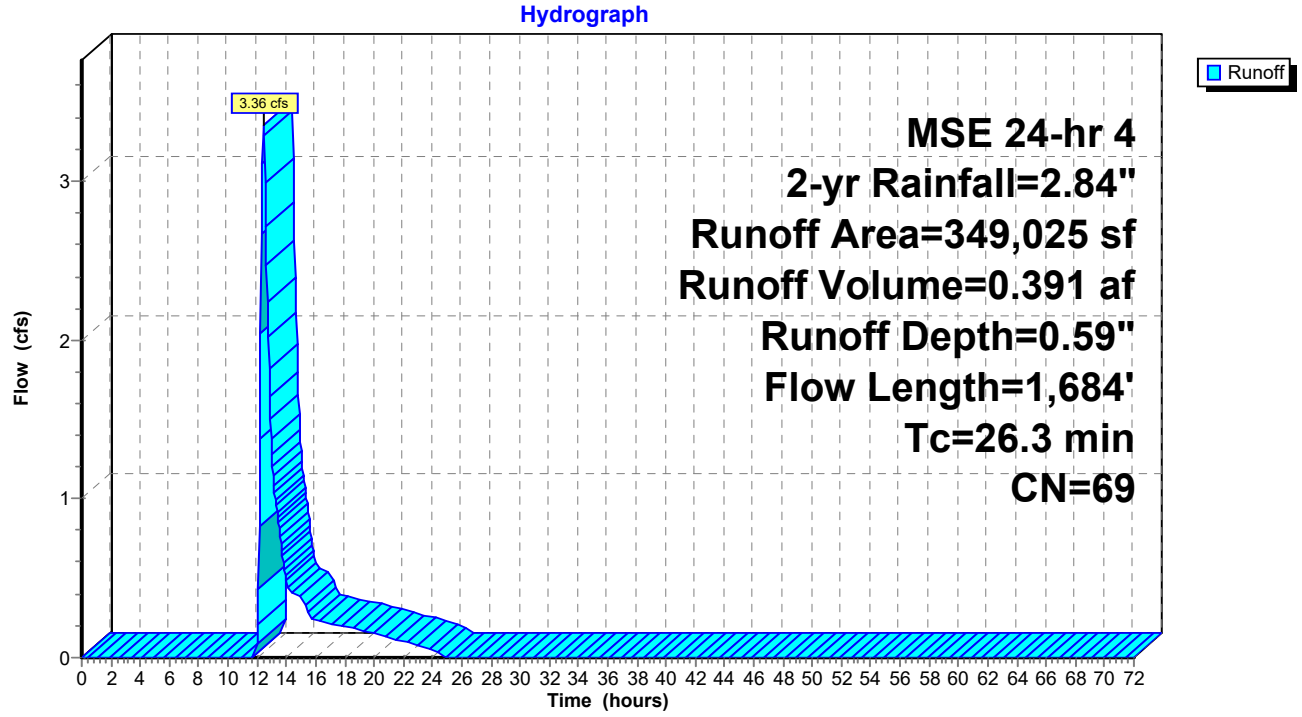
Runoff = 3.36 cfs @ 12.43 hrs, Volume= 0.391 af, Depth= 0.59"
Routed to Link OFF : PRE-DEVELOPMENT FLOW

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 2-yr Rainfall=2.84"

	Area (sf)	CN	Description
*	168,502	61	Pervious
*	46,485	98	Impervious
*	63,585	58	Woods
*	26,823	86	Large Concrete Rip-rap
*	43,630	74	Gravel/Grass
	349,025	69	Weighted Average
	302,540		86.68% Pervious Area
	46,485		13.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.5	300	0.0330	0.24		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.84"
5.8	1,384	0.0600	3.94		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
26.3	1,684	Total			

Subcatchment E-A: North Offsite Watershed



Summary for Subcatchment E-B: West Pond Watershed

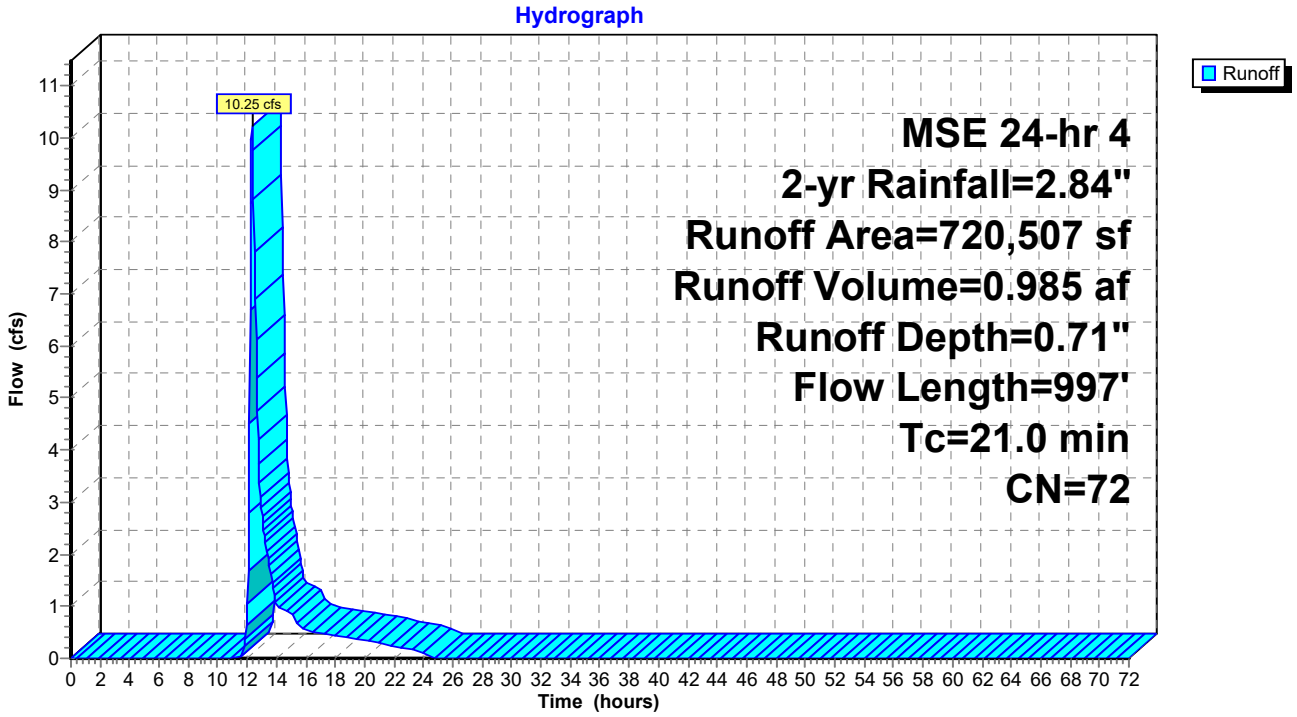
Runoff = 10.25 cfs @ 12.34 hrs, Volume= 0.985 af, Depth= 0.71"
Routed to Pond 1P : West Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 2-yr Rainfall=2.84"

	Area (sf)	CN	Description
*	380,850	61	Pervious
*	86,430	98	Gravel
*	139,982	86	Large Concrete Rip-rap & Trees
*	27,609	69	Sparse Conc. and Gravel
*	39,813	79	Sparse Conc. and Compact Gravel
*	45,823	74	Gravel/Grass
	720,507	72	Weighted Average
	634,077		88.00% Pervious Area
	86,430		12.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.4	300	0.0430	0.27		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.84"
0.3	190	0.3160	9.05		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.3	507	0.0530	3.71		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
21.0	997	Total			

Subcatchment E-B: West Pond Watershed



Summary for Subcatchment E-C: Sediment Basin

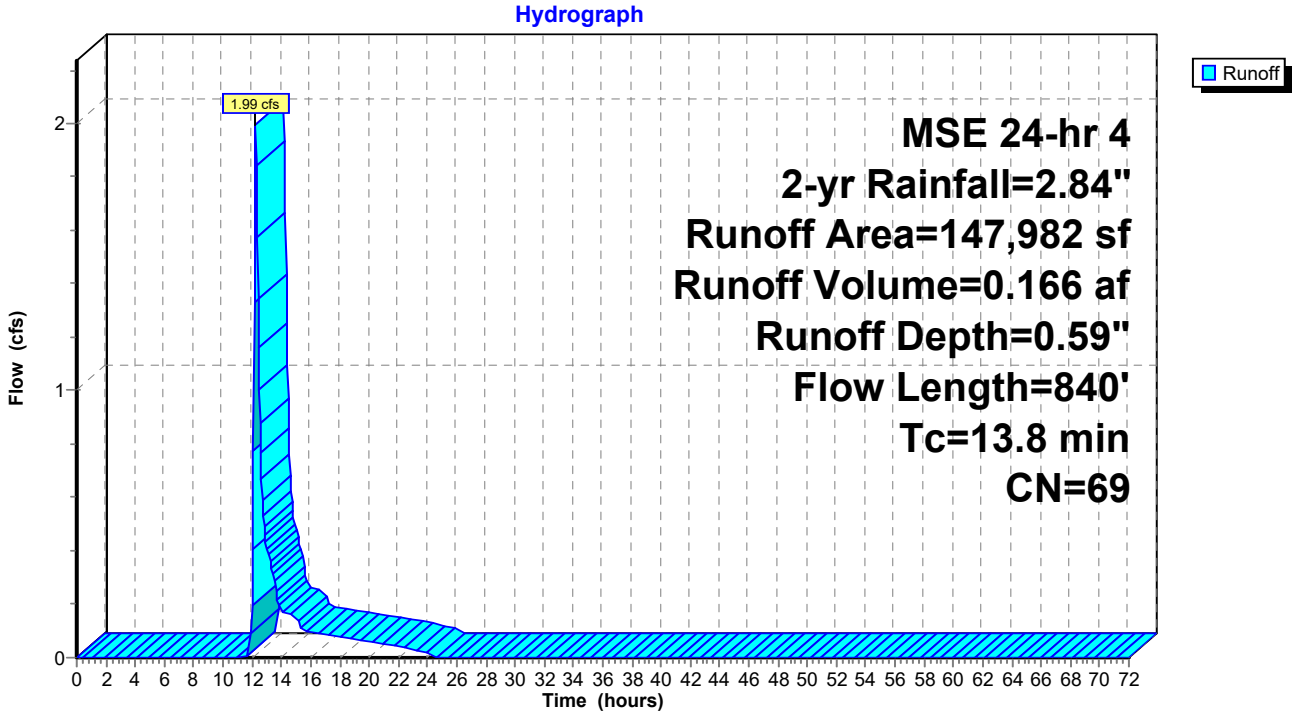
Runoff = 1.99 cfs @ 12.25 hrs, Volume= 0.166 af, Depth= 0.59"
Routed to Pond 3P : Sediment Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 2-yr Rainfall=2.84"

	Area (sf)	CN	Description
*	49,038	58	Woods
*	44,038	61	Pervious
*	53,295	86	Large Concrete Rip-rap & Trees
*	1,611	69	Light Gravel & Grass
	147,982	69	Weighted Average
	147,982		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.2	300	0.1200	0.41		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.84"
1.6	540	0.1300	5.80		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
13.8	840	Total			

Subcatchment E-C: Sediment Basin



Summary for Subcatchment E-D: Southeast Offsite Watershed

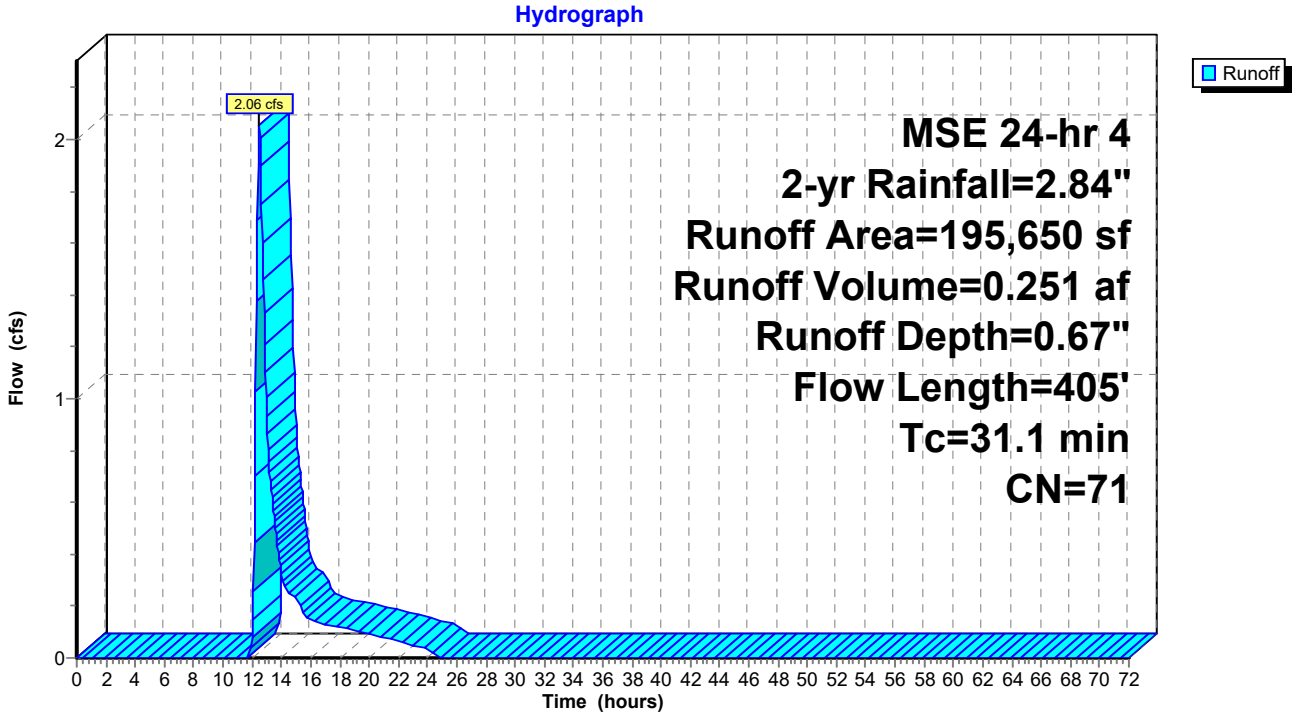
Runoff = 2.06 cfs @ 12.49 hrs, Volume= 0.251 af, Depth= 0.67"
Routed to Link OFF : PRE-DEVELOPMENT FLOW

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 2-yr Rainfall=2.84"

	Area (sf)	CN	Description
*	137,901	61	Pervious
*	47,853	98	Impervious
*	3,223	69	Light Gravel & Grass
*	6,673	86	Asphalt & Grass
	195,650	71	Weighted Average
	147,797		75.54% Pervious Area
	47,853		24.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.7	300	0.0120	0.16		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.84"
0.4	105	0.0670	4.17		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
31.1	405	Total			

Subcatchment E-D: Southeast Offsite Watershed



Summary for Subcatchment E-E: Southeast Pond Watershed

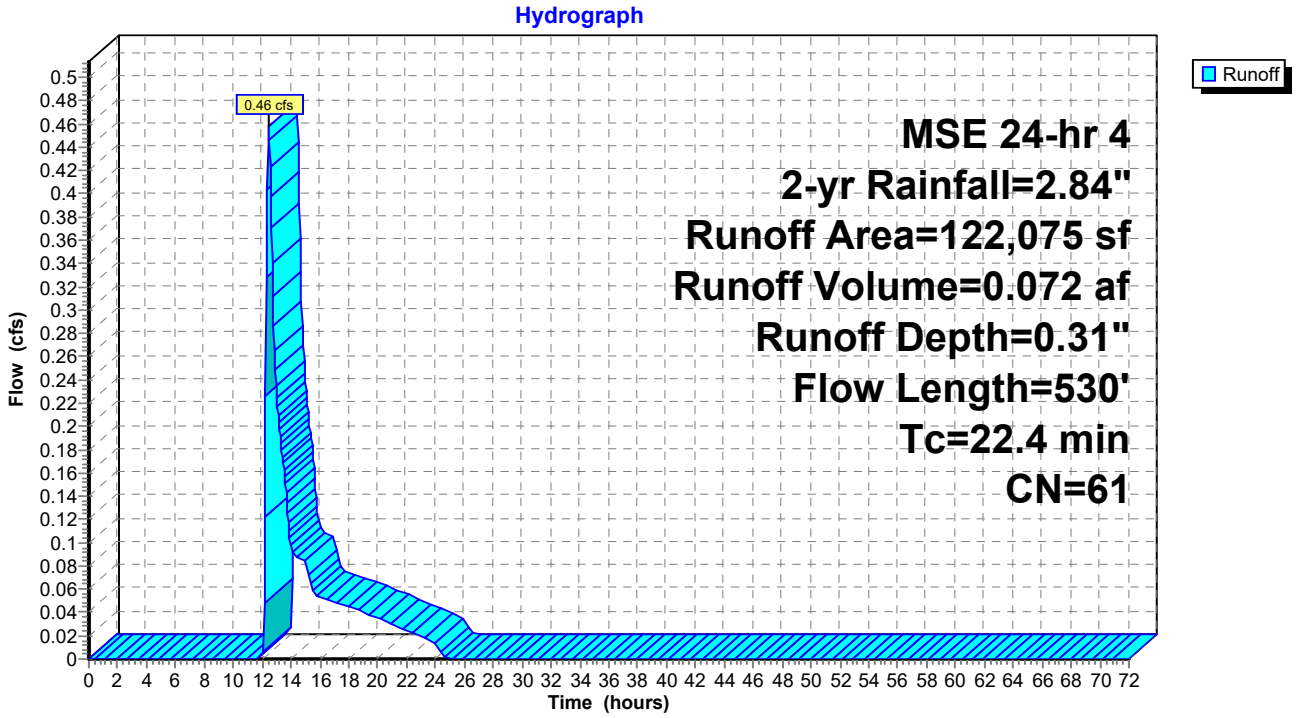
Runoff = 0.46 cfs @ 12.45 hrs, Volume= 0.072 af, Depth= 0.31"
Routed to Pond P-3 : Southeast Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 2-yr Rainfall=2.84"

	Area (sf)	CN	Description
*	122,075	61	Pervious
	122,075		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.3	300	0.0300	0.23		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.84"
1.1	230	0.0460	3.45		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
22.4	530	Total			

Subcatchment E-E: Southeast Pond Watershed



Summary for Pond 1P: West Pond

Inflow Area = 16.541 ac, 12.00% Impervious, Inflow Depth = 0.71" for 2-yr event
Inflow = 10.25 cfs @ 12.34 hrs, Volume= 0.985 af
Outflow = 5.00 cfs @ 12.68 hrs, Volume= 0.741 af, Atten= 51%, Lag= 20.5 min
Primary = 5.00 cfs @ 12.68 hrs, Volume= 0.741 af
Routed to Link OFF : PRE-DEVELOPMENT FLOW
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link OFF : PRE-DEVELOPMENT FLOW

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 868.40' @ 12.68 hrs Surf.Area= 13,334 sf Storage= 13,778 cf

Plug-Flow detention time= 152.1 min calculated for 0.741 af (75% of inflow)
Center-of-Mass det. time= 61.9 min (932.1 - 870.1)

Volume	Invert	Avail.Storage	Storage Description
#1	867.00'	161,721 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

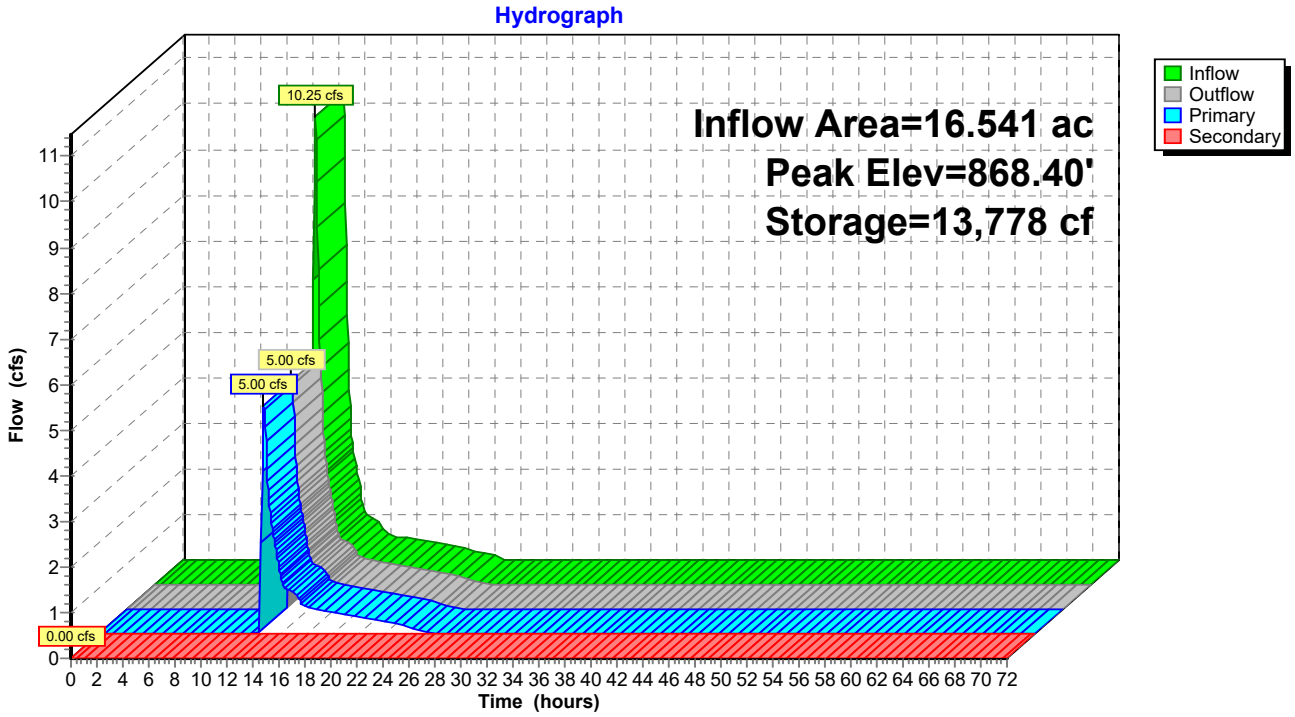
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
867.00	6,098	0	0
868.00	11,597	8,848	8,848
869.00	15,988	13,793	22,640
870.00	19,104	17,546	40,186
871.00	21,785	20,445	60,631
872.00	23,758	22,772	83,402
873.00	25,317	24,538	107,940
874.00	26,885	26,101	134,041
875.00	28,476	27,681	161,721

Device	Routing	Invert	Outlet Devices
#1	Primary	864.48'	**24.0" Round Culvert** L= 70.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 864.48' / 862.54' S= 0.0277 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 3.14 sf
#2	Device 1	868.15'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Secondary	874.50'	**Asymmetrical Weir, C= 3.27** Offset (feet) -55.50 -39.75 -8.50 8.50 39.75 55.50 Height (feet) 1.00 0.50 0.00 0.00 0.50 1.00

Primary OutFlow Max=4.98 cfs @ 12.68 hrs HW=868.39' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Passes 4.98 cfs of 22.79 cfs potential flow)
↑—**2=Orifice/Grate** (Weir Controls 4.98 cfs @ 1.62 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=867.00' TW=0.00' (Dynamic Tailwater)
↑—**3=Asymmetrical Weir** (Controls 0.00 cfs)

Pond 1P: West Pond



Summary for Pond 3P: Sediment Pond

Inflow Area = 3.397 ac, 0.00% Impervious, Inflow Depth = 0.59" for 2-yr event
Inflow = 1.99 cfs @ 12.25 hrs, Volume= 0.166 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link OFF : PRE-DEVELOPMENT FLOW

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 869.08' @ 24.85 hrs Surf.Area= 7,772 sf Storage= 7,224 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

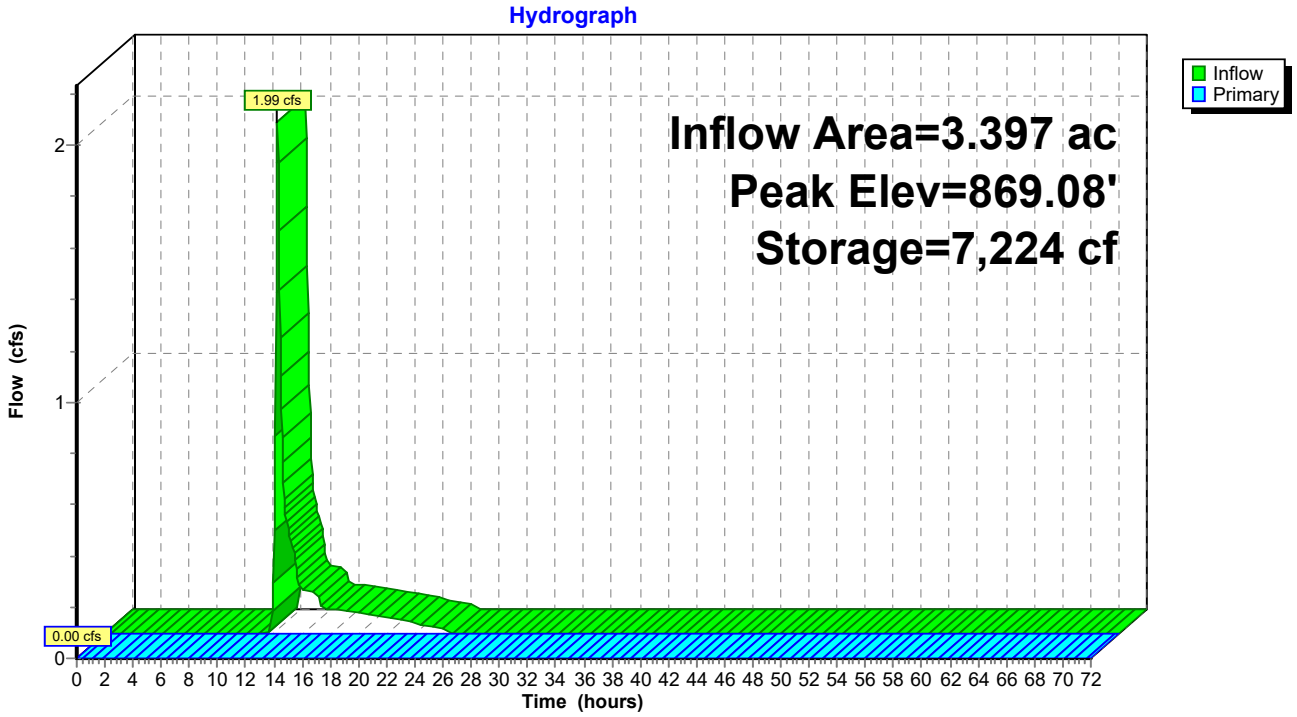
Volume	Invert	Avail.Storage	Storage Description
#1	868.00'	30,213 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
868.00	5,499	0	0
868.50	6,669	3,042	3,042
869.00	7,592	3,565	6,607
870.00	9,838	8,715	15,322
870.50	11,326	5,291	20,613
871.00	13,295	6,155	26,769
871.25	14,263	3,445	30,213

Device	Routing	Invert	Outlet Devices
#1	Primary	869.25'	**14.0' long x 15.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=868.00' TW=0.00' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: Sediment Pond



Summary for Pond P-3: Southeast Pond

Inflow Area = 2.802 ac, 0.00% Impervious, Inflow Depth = 0.31" for 2-yr event
Inflow = 0.46 cfs @ 12.45 hrs, Volume= 0.072 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link OFF : PRE-DEVELOPMENT FLOW

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 952.75' @ 25.35 hrs Surf.Area= 5,517 sf Storage= 3,117 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

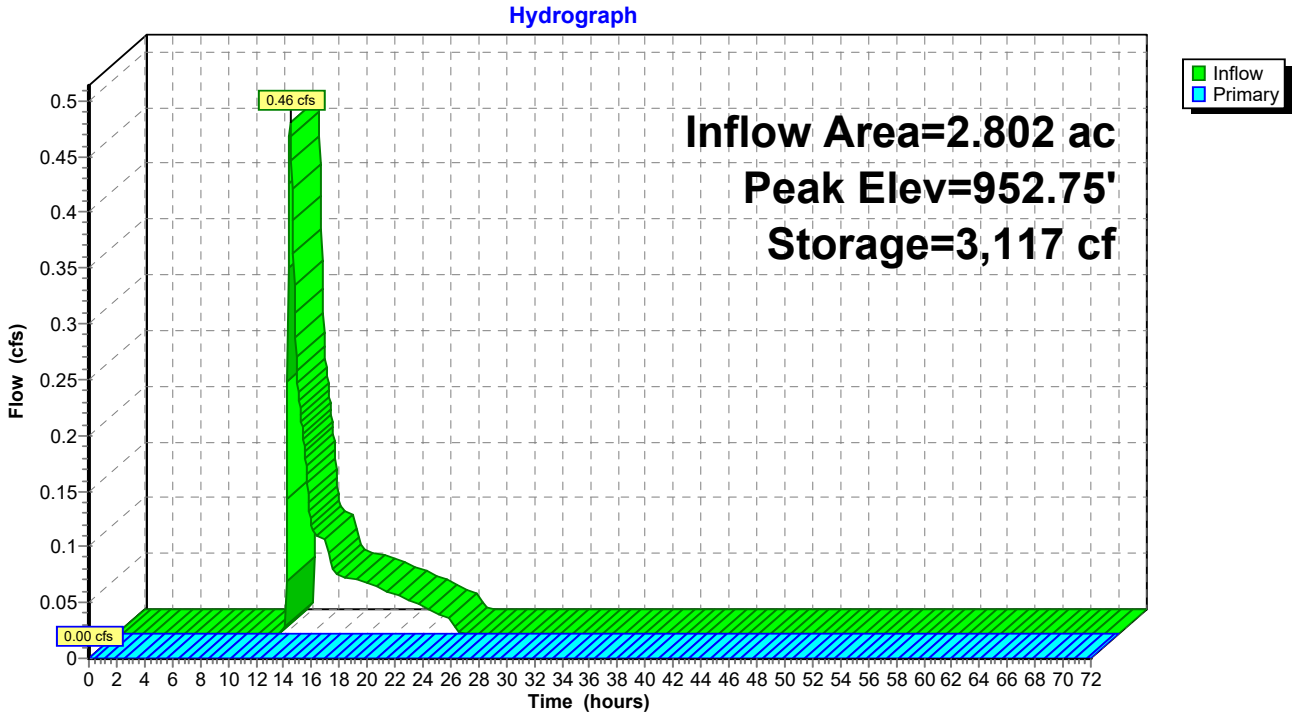
Volume	Invert	Avail.Storage	Storage Description
#1	952.00'	34,587 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
952.00	2,720	0	0
952.50	4,726	1,862	1,862
953.00	6,338	2,766	4,628
954.00	8,782	7,560	12,188
955.00	11,171	9,977	22,164
955.50	12,527	5,925	28,089
956.00	13,466	6,498	34,587

Device	Routing	Invert	Outlet Devices
#1	Primary	955.50'	**Asymmetrical Weir, C= 3.27** Offset (feet) -97.00 -27.50 27.50 97.00 Height (feet) 0.50 0.00 0.00 0.50

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=952.00' TW=0.00' (Dynamic Tailwater)
↑—**1=Asymmetrical Weir** (Controls 0.00 cfs)

Pond P-3: Southeast Pond

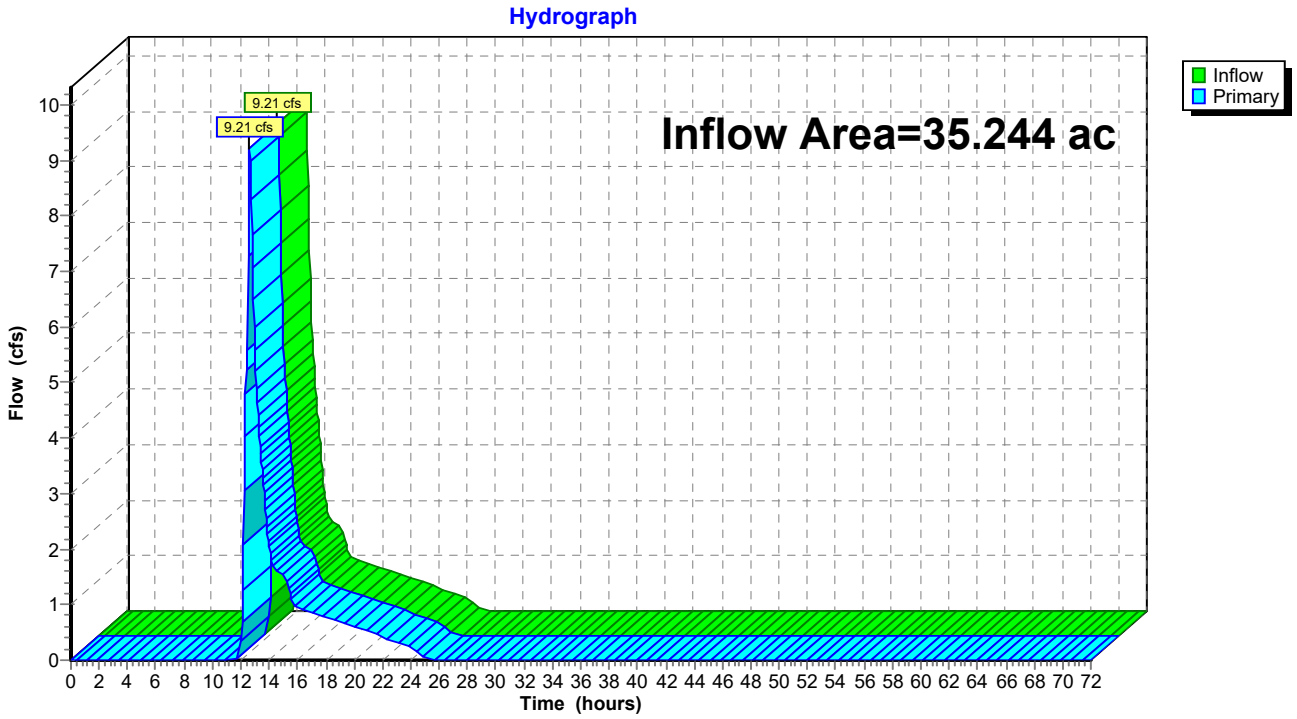


Summary for Link OFF: PRE-DEVELOPMENT FLOW

Inflow Area = 35.244 ac, 11.77% Impervious, Inflow Depth = 0.47" for 2-yr event
Inflow = 9.21 cfs @ 12.63 hrs, Volume= 1.383 af
Primary = 9.21 cfs @ 12.63 hrs, Volume= 1.383 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link OFF: PRE-DEVELOPMENT FLOW



Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points x 2
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 E-A: North Offsite Runoff Area=349,025 sf 13.32% Impervious Runoff Depth=1.33"
Flow Length=1,684' Tc=26.3 min CN=69 Runoff=8.68 cfs 0.885 af

Subcatchment E-B: West Pond Watershed Runoff Area=720,507 sf 12.00% Impervious Runoff Depth=1.52"
Flow Length=997' Tc=21.0 min CN=72 Runoff=23.79 cfs 2.100 af

Subcatchment E-C: Sediment Basin Runoff Area=147,982 sf 0.00% Impervious Runoff Depth=1.33"
Flow Length=840' Tc=13.8 min CN=69 Runoff=5.08 cfs 0.375 af

Subcatchment E-D: Southeast Offsite Runoff Area=195,650 sf 24.46% Impervious Runoff Depth=1.46"
Flow Length=405' Tc=31.1 min CN=71 Runoff=4.94 cfs 0.545 af

Subcatchment E-E: Southeast Pond Runoff Area=122,075 sf 0.00% Impervious Runoff Depth=0.86"
Flow Length=530' Tc=22.4 min CN=61 Runoff=1.90 cfs 0.201 af

Pond 1P: West Pond Peak Elev=868.77' Storage=19,039 cf Inflow=23.79 cfs 2.100 af
Primary=19.93 cfs 1.856 af Secondary=0.00 cfs 0.000 af Outflow=19.93 cfs 1.856 af

Pond 3P: Sediment Pond Peak Elev=869.32' Storage=9,143 cf Inflow=5.08 cfs 0.375 af
Outflow=0.68 cfs 0.178 af

Pond P-3: Southeast Pond Peak Elev=953.58' Storage=8,735 cf Inflow=1.90 cfs 0.201 af
Outflow=0.00 cfs 0.000 af

Link OFF: PRE-DEVELOPMENTFLOW Inflow=33.37 cfs 3.464 af
Primary=33.37 cfs 3.464 af

Total Runoff Area = 35.244 ac Runoff Volume = 4.106 af Average Runoff Depth = 1.40"
88.23% Pervious = 31.094 ac 11.77% Impervious = 4.150 ac

Summary for Subcatchment E-A: North Offsite Watershed

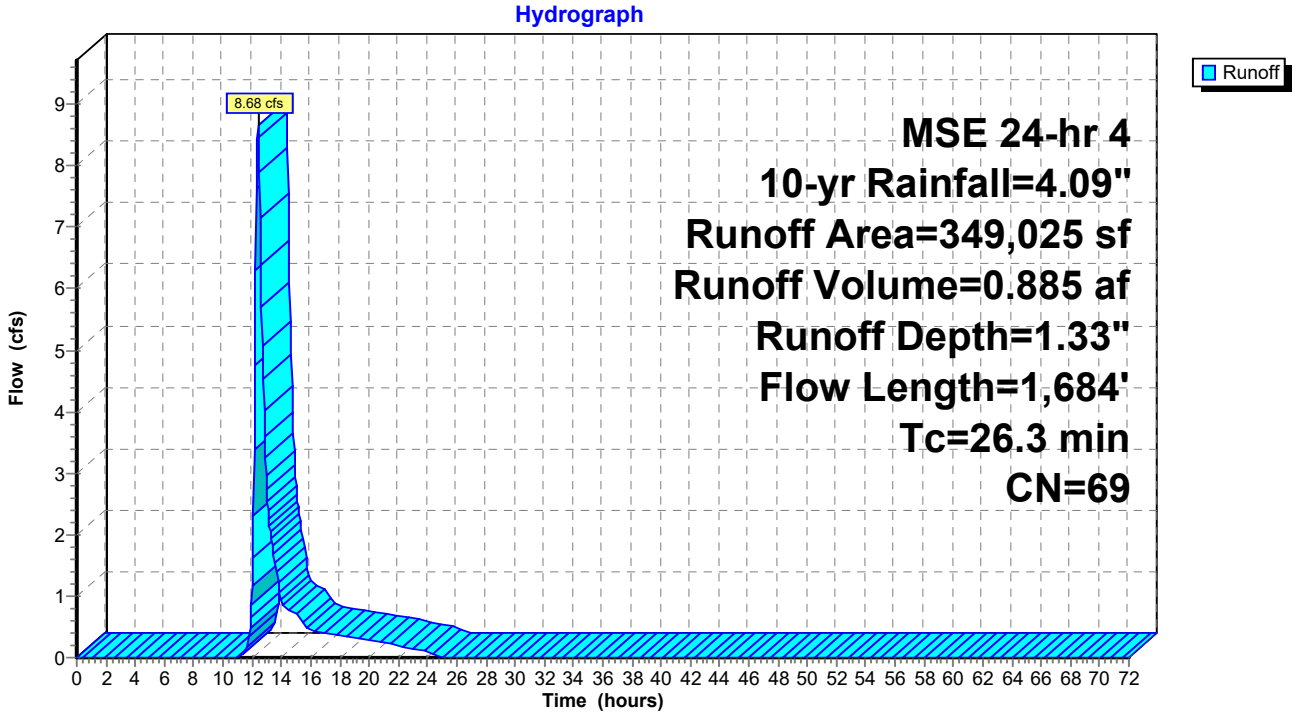
Runoff = 8.68 cfs @ 12.40 hrs, Volume= 0.885 af, Depth= 1.33"
Routed to Link OFF : PRE-DEVELOPMENT FLOW

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 10-yr Rainfall=4.09"

	Area (sf)	CN	Description
*	168,502	61	Pervious
*	46,485	98	Impervious
*	63,585	58	Woods
*	26,823	86	Large Concrete Rip-rap
*	43,630	74	Gravel/Grass
	349,025	69	Weighted Average
	302,540		86.68% Pervious Area
	46,485		13.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.5	300	0.0330	0.24		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.84"
5.8	1,384	0.0600	3.94		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
26.3	1,684	Total			

Subcatchment E-A: North Offsite Watershed



Summary for Subcatchment E-B: West Pond Watershed

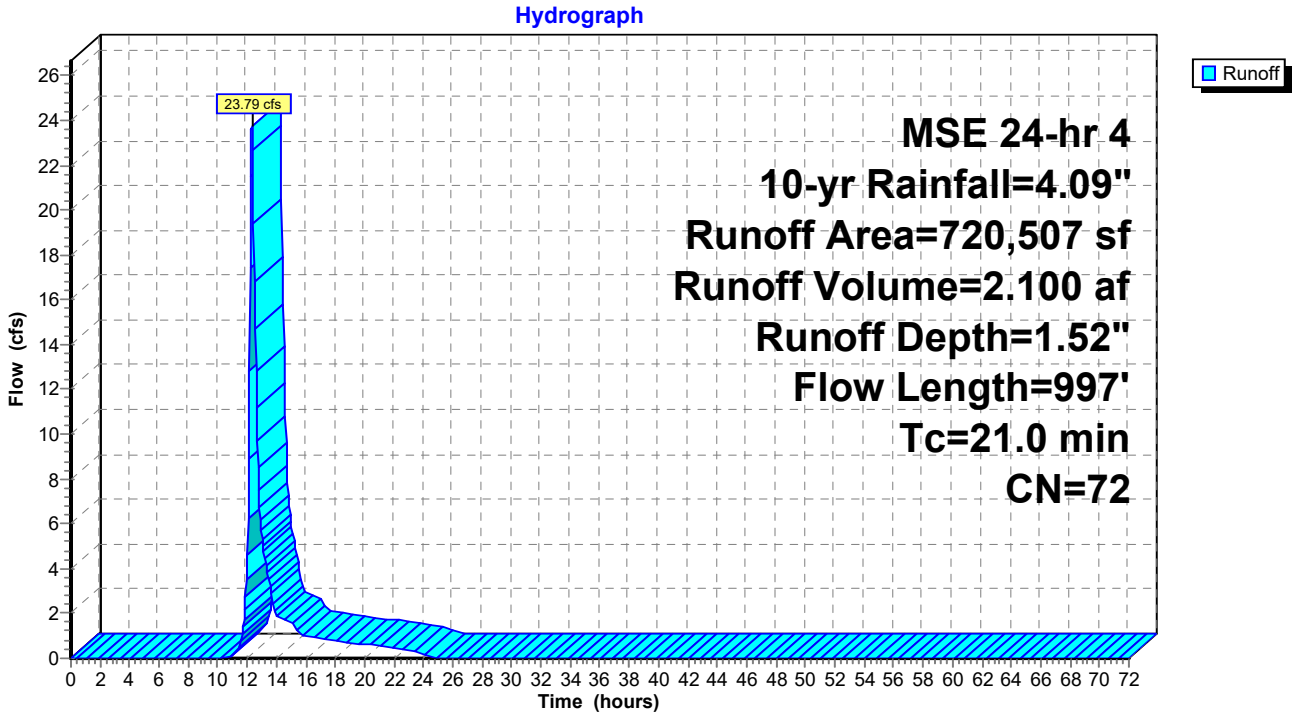
Runoff = 23.79 cfs @ 12.32 hrs, Volume= 2.100 af, Depth= 1.52"
Routed to Pond 1P : West Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 10-yr Rainfall=4.09"

	Area (sf)	CN	Description
*	380,850	61	Pervious
*	86,430	98	Gravel
*	139,982	86	Large Concrete Rip-rap & Trees
*	27,609	69	Sparse Conc. and Gravel
*	39,813	79	Sparse Conc. and Compact Gravel
*	45,823	74	Gravel/Grass
	720,507	72	Weighted Average
	634,077		88.00% Pervious Area
	86,430		12.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.4	300	0.0430	0.27		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.84"
0.3	190	0.3160	9.05		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.3	507	0.0530	3.71		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
21.0	997	Total			

Subcatchment E-B: West Pond Watershed



Summary for Subcatchment E-C: Sediment Basin

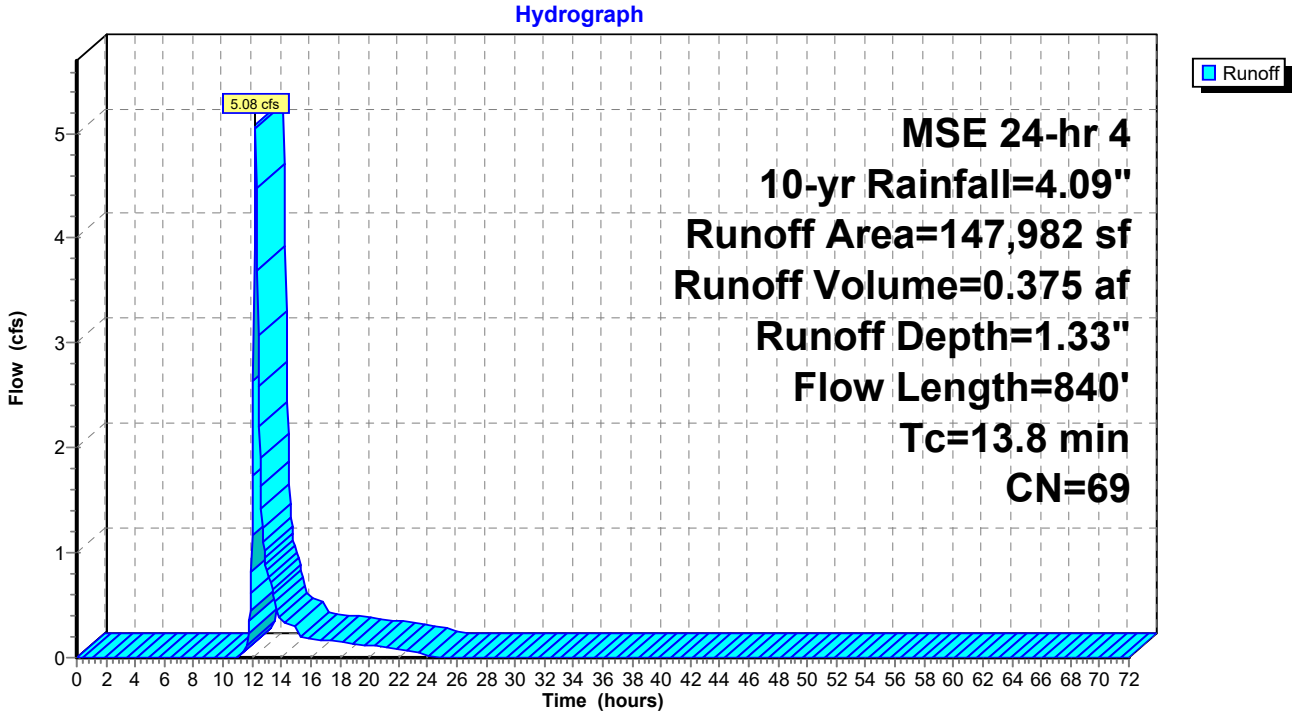
Runoff = 5.08 cfs @ 12.23 hrs, Volume= 0.375 af, Depth= 1.33"
Routed to Pond 3P : Sediment Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 10-yr Rainfall=4.09"

	Area (sf)	CN	Description
*	49,038	58	Woods
*	44,038	61	Pervious
*	53,295	86	Large Concrete Rip-rap & Trees
*	1,611	69	Light Gravel & Grass
	147,982	69	Weighted Average
	147,982		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.2	300	0.1200	0.41		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.84"
1.6	540	0.1300	5.80		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
13.8	840	Total			

Subcatchment E-C: Sediment Basin



Summary for Subcatchment E-D: Southeast Offsite Watershed

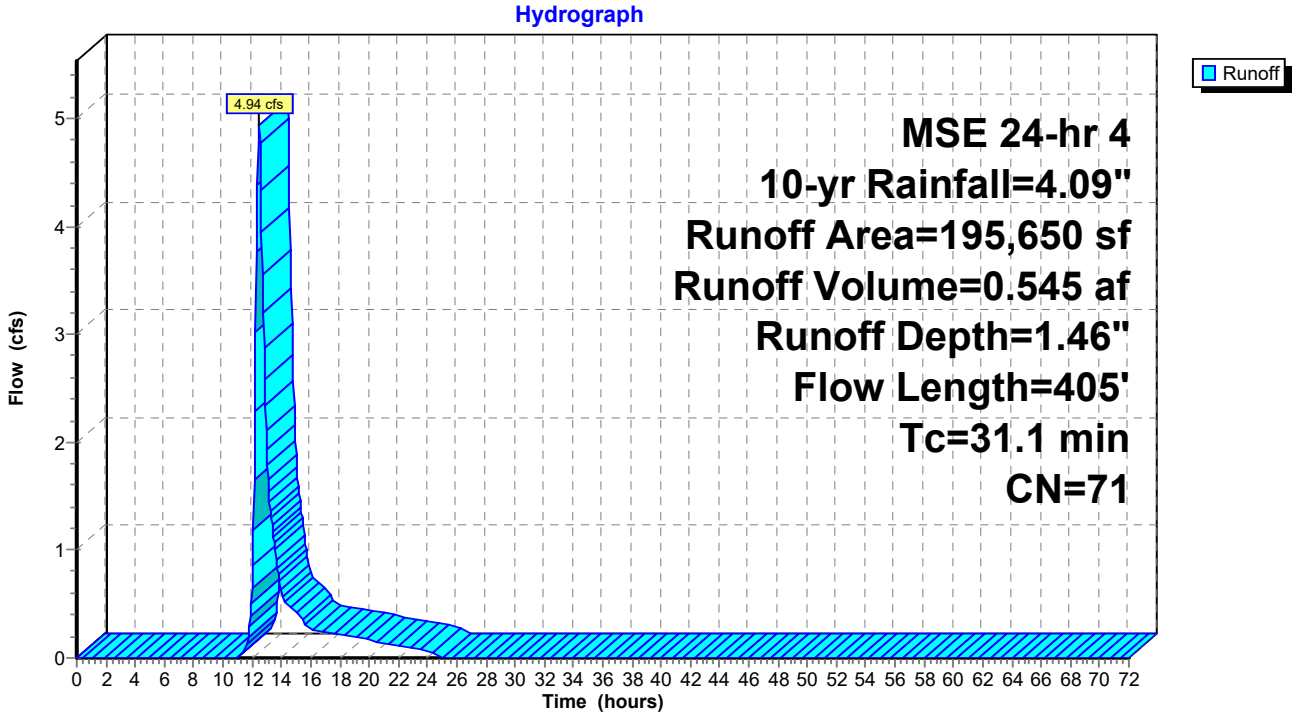
Runoff = 4.94 cfs @ 12.46 hrs, Volume= 0.545 af, Depth= 1.46"
Routed to Link OFF : PRE-DEVELOPMENT FLOW

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 10-yr Rainfall=4.09"

	Area (sf)	CN	Description
*	137,901	61	Pervious
*	47,853	98	Impervious
*	3,223	69	Light Gravel & Grass
*	6,673	86	Asphalt & Grass
	195,650	71	Weighted Average
	147,797		75.54% Pervious Area
	47,853		24.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.7	300	0.0120	0.16		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.84"
0.4	105	0.0670	4.17		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
31.1	405	Total			

Subcatchment E-D: Southeast Offsite Watershed



Summary for Subcatchment E-E: Southeast Pond Watershed

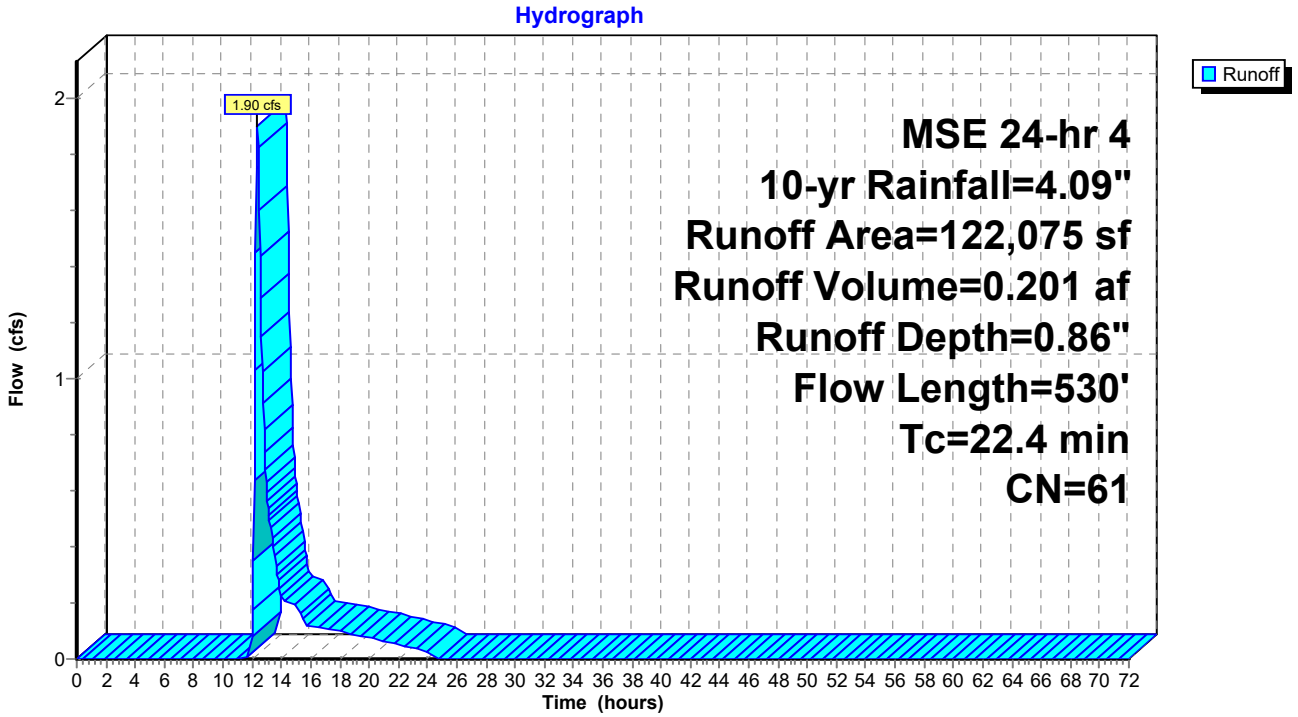
Runoff = 1.90 cfs @ 12.37 hrs, Volume= 0.201 af, Depth= 0.86"
Routed to Pond P-3 : Southeast Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 10-yr Rainfall=4.09"

	Area (sf)	CN	Description
*	122,075	61	Pervious
	122,075		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.3	300	0.0300	0.23		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.84"
1.1	230	0.0460	3.45		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
22.4	530	Total			

Subcatchment E-E: Southeast Pond Watershed



Summary for Pond 1P: West Pond

Inflow Area = 16.541 ac, 12.00% Impervious, Inflow Depth = 1.52" for 10-yr event
Inflow = 23.79 cfs @ 12.32 hrs, Volume= 2.100 af
Outflow = 19.93 cfs @ 12.45 hrs, Volume= 1.856 af, Atten= 16%, Lag= 7.3 min
Primary = 19.93 cfs @ 12.45 hrs, Volume= 1.856 af
Routed to Link OFF : PRE-DEVELOPMENT FLOW
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link OFF : PRE-DEVELOPMENT FLOW

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 868.77' @ 12.45 hrs Surf.Area= 14,966 sf Storage= 19,039 cf

Plug-Flow detention time= 81.9 min calculated for 1.856 af (88% of inflow)
Center-of-Mass det. time= 29.6 min (879.2 - 849.6)

Volume	Invert	Avail.Storage	Storage Description
#1	867.00'	161,721 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

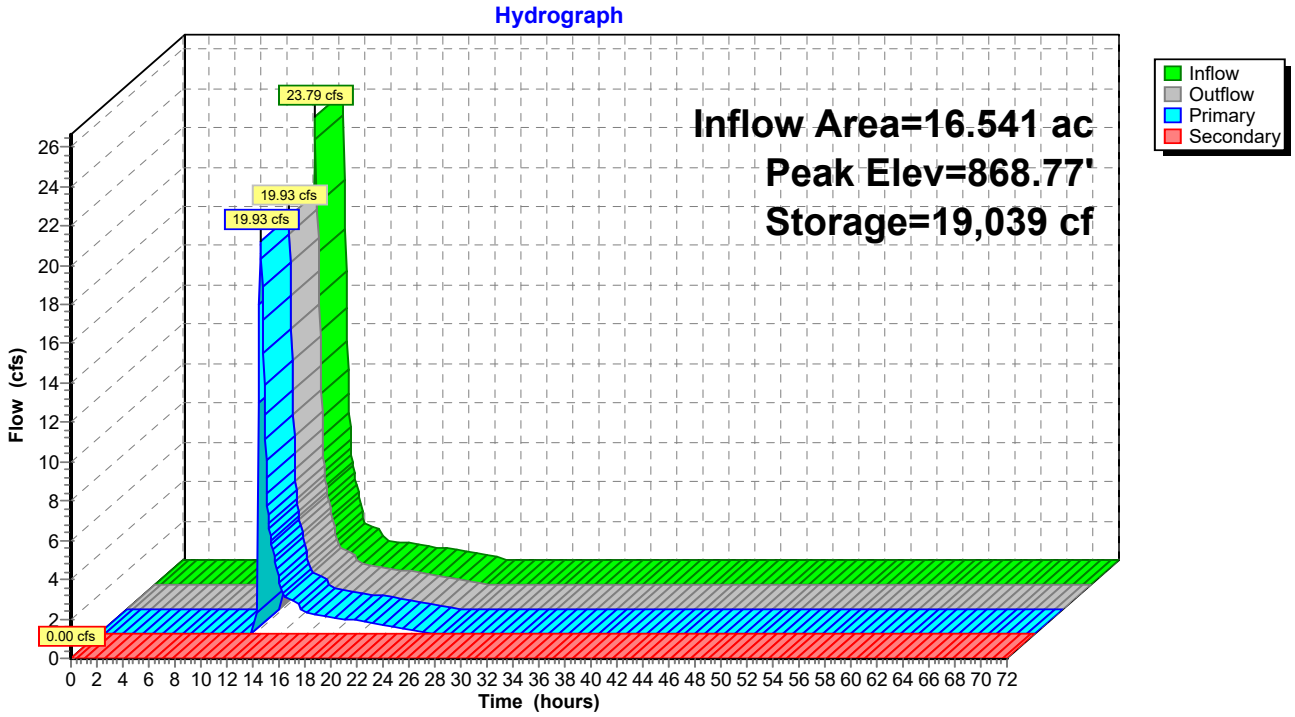
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
867.00	6,098	0	0
868.00	11,597	8,848	8,848
869.00	15,988	13,793	22,640
870.00	19,104	17,546	40,186
871.00	21,785	20,445	60,631
872.00	23,758	22,772	83,402
873.00	25,317	24,538	107,940
874.00	26,885	26,101	134,041
875.00	28,476	27,681	161,721

Device	Routing	Invert	Outlet Devices
#1	Primary	864.48'	**24.0" Round Culvert** L= 70.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 864.48' / 862.54' S= 0.0277 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 3.14 sf
#2	Device 1	868.15'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Secondary	874.50'	**Asymmetrical Weir, C= 3.27** Offset (feet) -55.50 -39.75 -8.50 8.50 39.75 55.50 Height (feet) 1.00 0.50 0.00 0.00 0.50 1.00

Primary OutFlow Max=19.87 cfs @ 12.45 hrs HW=868.77' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Passes 19.87 cfs of 24.20 cfs potential flow)
↑—**2=Orifice/Grate** (Weir Controls 19.87 cfs @ 2.57 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=867.00' TW=0.00' (Dynamic Tailwater)
↑—**3=Asymmetrical Weir** (Controls 0.00 cfs)

Pond 1P: West Pond



Summary for Pond 3P: Sediment Pond

Inflow Area = 3.397 ac, 0.00% Impervious, Inflow Depth = 1.33" for 10-yr event
Inflow = 5.08 cfs @ 12.23 hrs, Volume= 0.375 af
Outflow = 0.68 cfs @ 13.32 hrs, Volume= 0.178 af, Atten= 87%, Lag= 64.9 min
Primary = 0.68 cfs @ 13.32 hrs, Volume= 0.178 af
Routed to Link OFF : PRE-DEVELOPMENT FLOW

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 869.32' @ 13.32 hrs Surf.Area= 8,308 sf Storage= 9,143 cf

Plug-Flow detention time= 259.5 min calculated for 0.178 af (48% of inflow)
Center-of-Mass det. time= 144.2 min (994.5 - 850.3)

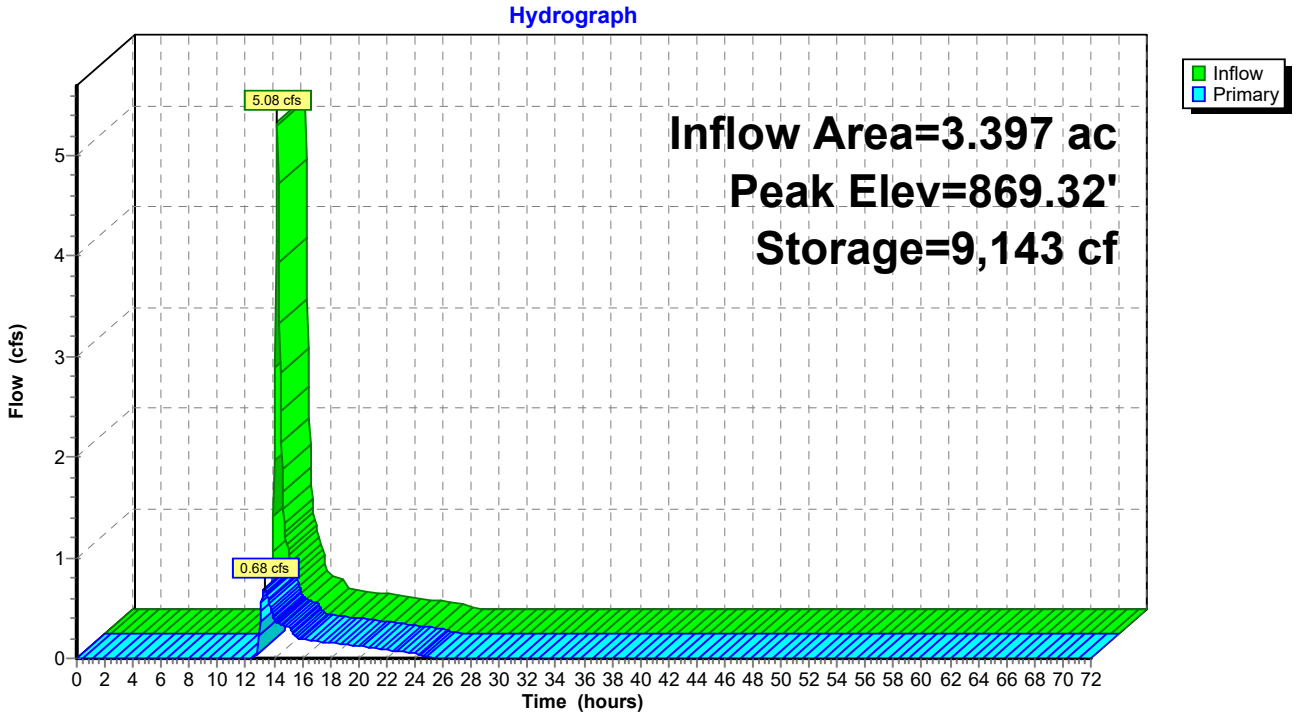
Volume	Invert	Avail.Storage	Storage Description
#1	868.00'	30,213 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
868.00	5,499	0	0
868.50	6,669	3,042	3,042
869.00	7,592	3,565	6,607
870.00	9,838	8,715	15,322
870.50	11,326	5,291	20,613
871.00	13,295	6,155	26,769
871.25	14,263	3,445	30,213

Device	Routing	Invert	Outlet Devices
#1	Primary	869.25'	**14.0' long x 15.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.68 cfs @ 13.32 hrs HW=869.32' TW=0.00' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.68 cfs @ 0.70 fps)

Pond 3P: Sediment Pond



Summary for Pond P-3: Southeast Pond

Inflow Area = 2.802 ac, 0.00% Impervious, Inflow Depth = 0.86" for 10-yr event
Inflow = 1.90 cfs @ 12.37 hrs, Volume= 0.201 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link OFF : PRE-DEVELOPMENT FLOW

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 953.58' @ 25.35 hrs Surf.Area= 7,762 sf Storage= 8,735 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

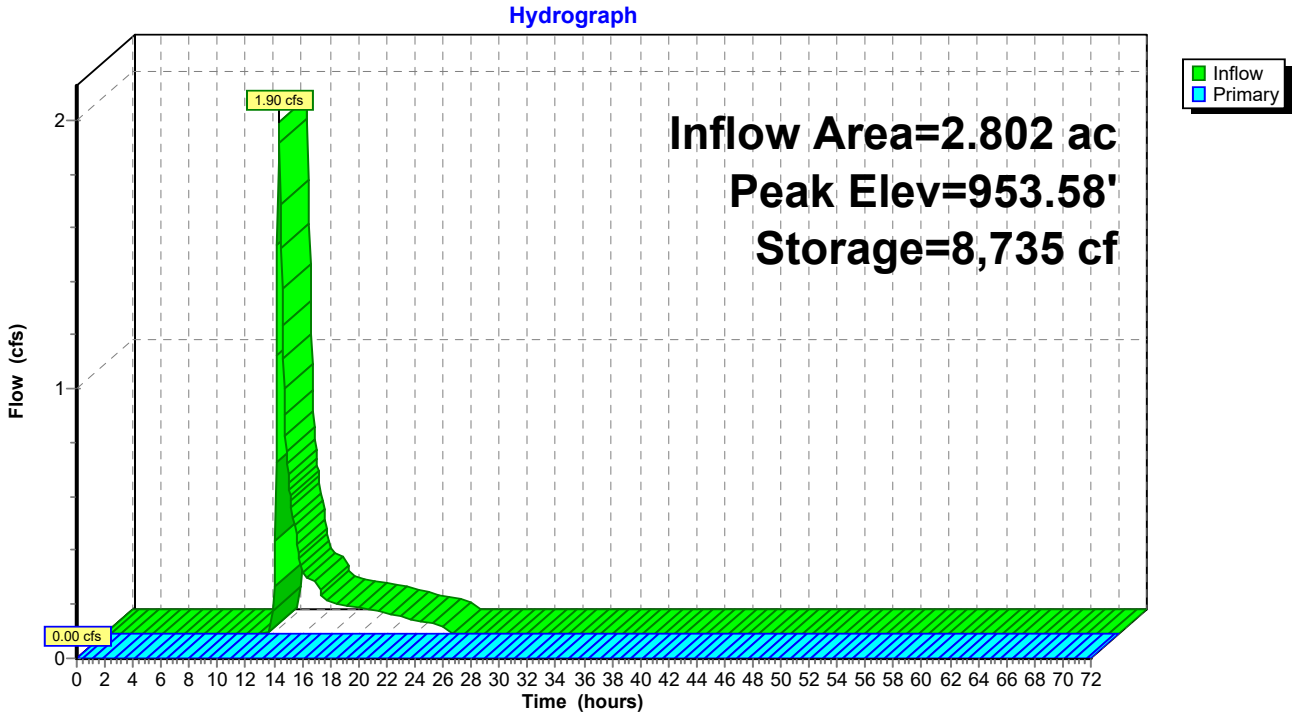
Volume	Invert	Avail.Storage	Storage Description
#1	952.00'	34,587 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
952.00	2,720	0	0
952.50	4,726	1,862	1,862
953.00	6,338	2,766	4,628
954.00	8,782	7,560	12,188
955.00	11,171	9,977	22,164
955.50	12,527	5,925	28,089
956.00	13,466	6,498	34,587

Device	Routing	Invert	Outlet Devices
#1	Primary	955.50'	**Asymmetrical Weir, C= 3.27** Offset (feet) -97.00 -27.50 27.50 97.00 Height (feet) 0.50 0.00 0.00 0.50

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=952.00' TW=0.00' (Dynamic Tailwater)
↑—**1=Asymmetrical Weir** (Controls 0.00 cfs)

Pond P-3: Southeast Pond

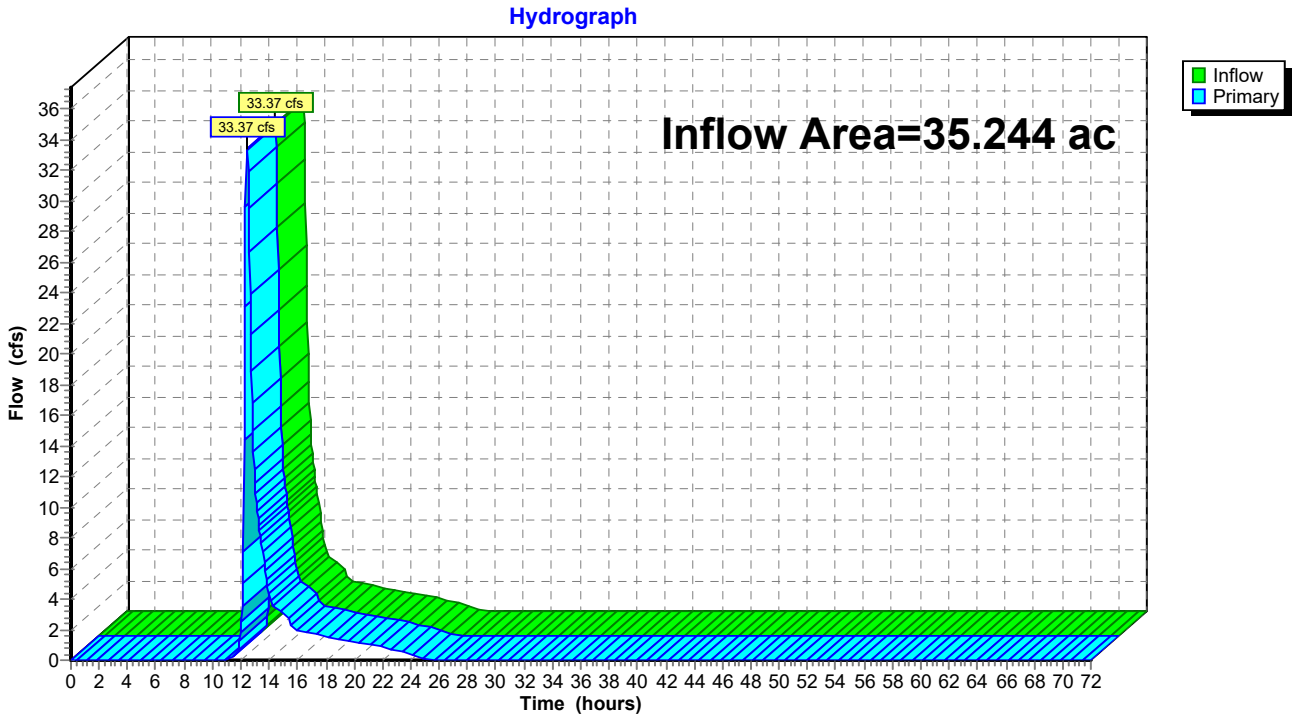


Summary for Link OFF: PRE-DEVELOPMENT FLOW

Inflow Area = 35.244 ac, 11.77% Impervious, Inflow Depth = 1.18" for 10-yr event
Inflow = 33.37 cfs @ 12.44 hrs, Volume= 3.464 af
Primary = 33.37 cfs @ 12.44 hrs, Volume= 3.464 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link OFF: PRE-DEVELOPMENT FLOW



Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points x 2
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 E-A: North Offsite Runoff Area=349,025 sf 13.32% Impervious Runoff Depth=3.24"
Flow Length=1,684' Tc=26.3 min CN=69 Runoff=22.27 cfs 2.161 af

Subcatchment E-B: West Pond Watershed Runoff Area=720,507 sf 12.00% Impervious Runoff Depth=3.54"
Flow Length=997' Tc=21.0 min CN=72 Runoff=56.83 cfs 4.881 af

Subcatchment E-C: Sediment Basin Runoff Area=147,982 sf 0.00% Impervious Runoff Depth=3.24"
Flow Length=840' Tc=13.8 min CN=69 Runoff=12.97 cfs 0.916 af

Subcatchment E-D: Southeast Offsite Runoff Area=195,650 sf 24.46% Impervious Runoff Depth=3.44"
Flow Length=405' Tc=31.1 min CN=71 Runoff=12.12 cfs 1.287 af

Subcatchment E-E: Southeast Pond Runoff Area=122,075 sf 0.00% Impervious Runoff Depth=2.46"
Flow Length=530' Tc=22.4 min CN=61 Runoff=6.29 cfs 0.574 af

Pond 1P: West Pond Peak Elev=870.41' Storage=48,242 cf Inflow=56.83 cfs 4.881 af
Primary=29.64 cfs 4.637 af Secondary=0.00 cfs 0.000 af Outflow=29.64 cfs 4.637 af

Pond 3P: Sediment Pond Peak Elev=869.65' Storage=12,039 cf Inflow=12.97 cfs 0.916 af
Outflow=9.65 cfs 0.720 af

Pond P-3: Southeast Pond Peak Elev=955.25' Storage=25,019 cf Inflow=6.29 cfs 0.574 af
Outflow=0.00 cfs 0.000 af

Link OFF: PRE-DEVELOPMENTFLOW Inflow=71.55 cfs 8.805 af
Primary=71.55 cfs 8.805 af

Total Runoff Area = 35.244 ac Runoff Volume = 9.820 af Average Runoff Depth = 3.34"
88.23% Pervious = 31.094 ac 11.77% Impervious = 4.150 ac

Summary for Subcatchment E-A: North Offsite Watershed

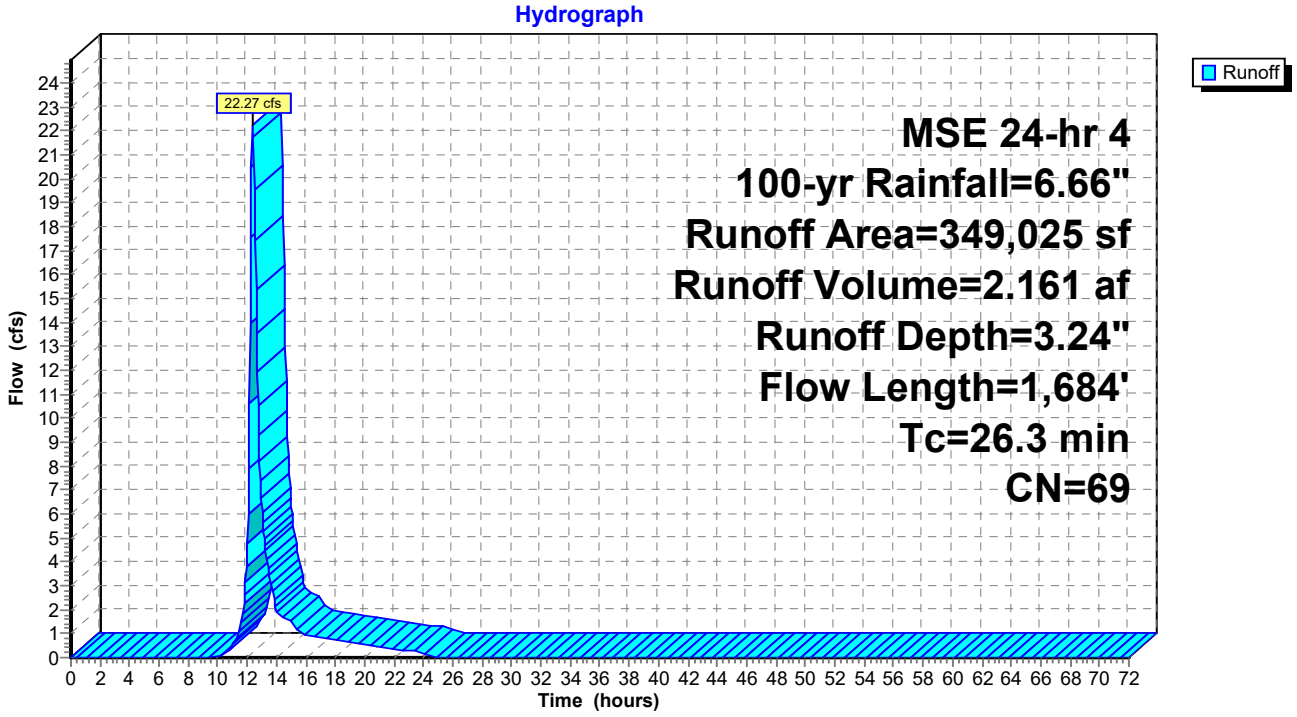
Runoff = 22.27 cfs @ 12.38 hrs, Volume= 2.161 af, Depth= 3.24"
Routed to Link OFF : PRE-DEVELOPMENT FLOW

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 100-yr Rainfall=6.66"

	Area (sf)	CN	Description
*	168,502	61	Pervious
*	46,485	98	Impervious
*	63,585	58	Woods
*	26,823	86	Large Concrete Rip-rap
*	43,630	74	Gravel/Grass
	349,025	69	Weighted Average
	302,540		86.68% Pervious Area
	46,485		13.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.5	300	0.0330	0.24		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.84"
5.8	1,384	0.0600	3.94		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
26.3	1,684	Total			

Subcatchment E-A: North Offsite Watershed



Summary for Subcatchment E-B: West Pond Watershed

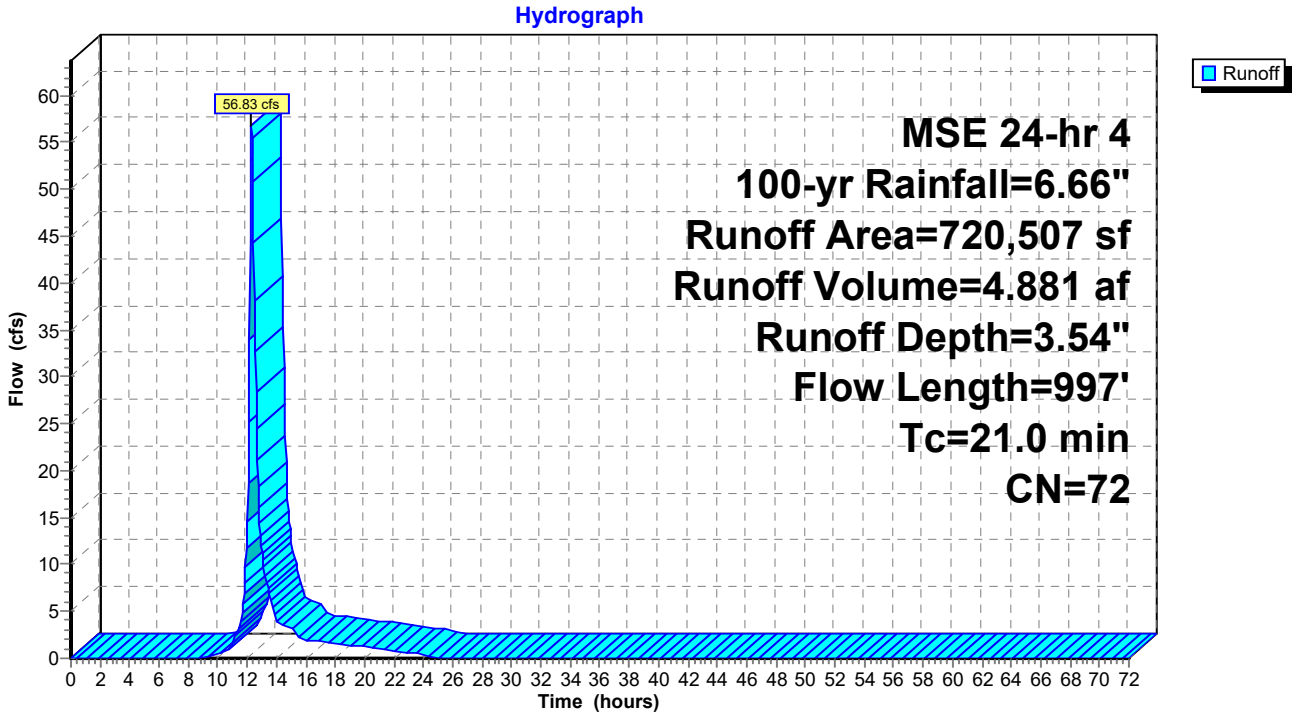
Runoff = 56.83 cfs @ 12.31 hrs, Volume= 4.881 af, Depth= 3.54"
Routed to Pond 1P : West Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 100-yr Rainfall=6.66"

	Area (sf)	CN	Description
*	380,850	61	Pervious
*	86,430	98	Gravel
*	139,982	86	Large Concrete Rip-rap & Trees
*	27,609	69	Sparse Conc. and Gravel
*	39,813	79	Sparse Conc. and Compact Gravel
*	45,823	74	Gravel/Grass
	720,507	72	Weighted Average
	634,077		88.00% Pervious Area
	86,430		12.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.4	300	0.0430	0.27		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.84"
0.3	190	0.3160	9.05		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.3	507	0.0530	3.71		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
21.0	997	Total			

Subcatchment E-B: West Pond Watershed



Summary for Subcatchment E-C: Sediment Basin

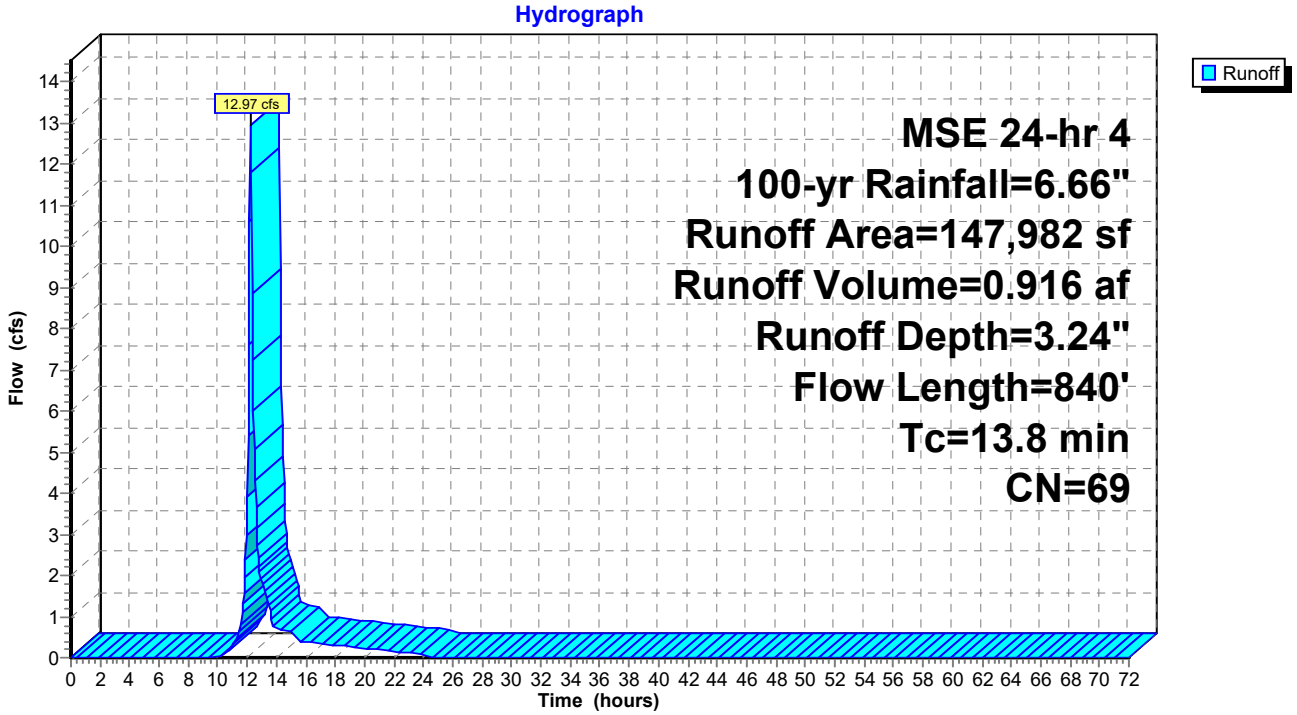
Runoff = 12.97 cfs @ 12.22 hrs, Volume= 0.916 af, Depth= 3.24"
Routed to Pond 3P : Sediment Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 100-yr Rainfall=6.66"

	Area (sf)	CN	Description
*	49,038	58	Woods
*	44,038	61	Pervious
*	53,295	86	Large Concrete Rip-rap & Trees
*	1,611	69	Light Gravel & Grass
	147,982	69	Weighted Average
	147,982		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.2	300	0.1200	0.41		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.84"
1.6	540	0.1300	5.80		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
13.8	840	Total			

Subcatchment E-C: Sediment Basin



Summary for Subcatchment E-D: Southeast Offsite Watershed

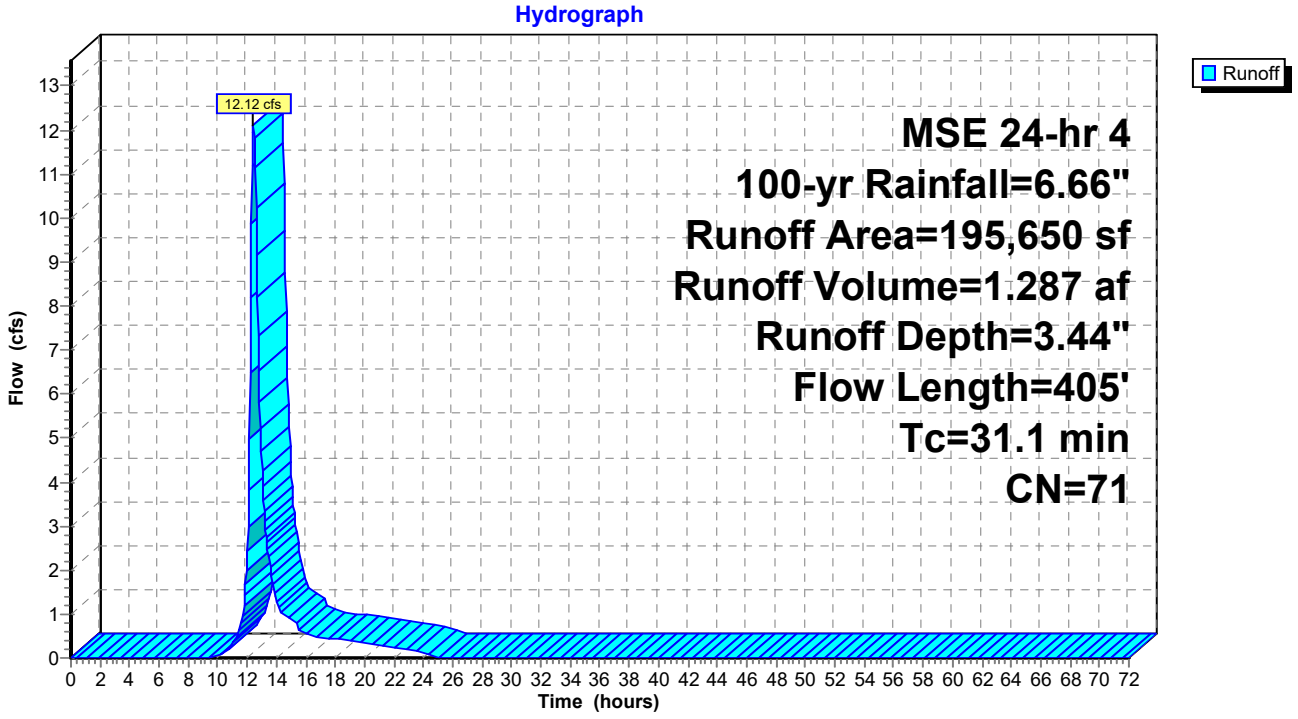
Runoff = 12.12 cfs @ 12.44 hrs, Volume= 1.287 af, Depth= 3.44"
Routed to Link OFF : PRE-DEVELOPMENT FLOW

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 100-yr Rainfall=6.66"

	Area (sf)	CN	Description
*	137,901	61	Pervious
*	47,853	98	Impervious
*	3,223	69	Light Gravel & Grass
*	6,673	86	Asphalt & Grass
	195,650	71	Weighted Average
	147,797		75.54% Pervious Area
	47,853		24.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.7	300	0.0120	0.16		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.84"
0.4	105	0.0670	4.17		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
31.1	405	Total			

Subcatchment E-D: Southeast Offsite Watershed



Summary for Subcatchment E-E: Southeast Pond Watershed

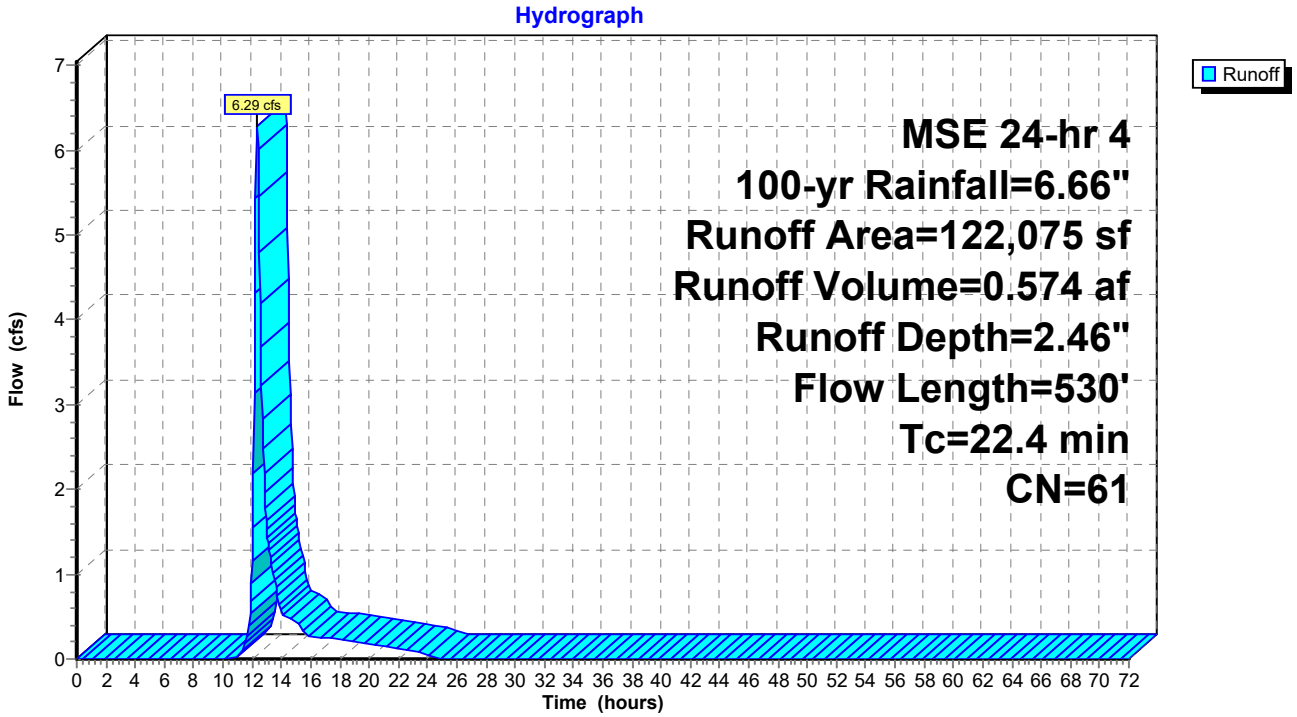
Runoff = 6.29 cfs @ 12.34 hrs, Volume= 0.574 af, Depth= 2.46"
Routed to Pond P-3 : Southeast Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 100-yr Rainfall=6.66"

	Area (sf)	CN	Description
*	122,075	61	Pervious
	122,075		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.3	300	0.0300	0.23		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.84"
1.1	230	0.0460	3.45		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
22.4	530	Total			

Subcatchment E-E: Southeast Pond Watershed



Summary for Pond 1P: West Pond

Inflow Area = 16.541 ac, 12.00% Impervious, Inflow Depth = 3.54" for 100-yr event
Inflow = 56.83 cfs @ 12.31 hrs, Volume= 4.881 af
Outflow = 29.64 cfs @ 12.59 hrs, Volume= 4.637 af, Atten= 48%, Lag= 16.4 min
Primary = 29.64 cfs @ 12.59 hrs, Volume= 4.637 af
Routed to Link OFF : PRE-DEVELOPMENT FLOW
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link OFF : PRE-DEVELOPMENT FLOW

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 870.41' @ 12.59 hrs Surf.Area= 20,203 sf Storage= 48,242 cf

Plug-Flow detention time= 48.4 min calculated for 4.634 af (95% of inflow)
Center-of-Mass det. time= 22.8 min (851.8 - 829.1)

Volume	Invert	Avail.Storage	Storage Description
#1	867.00'	161,721 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

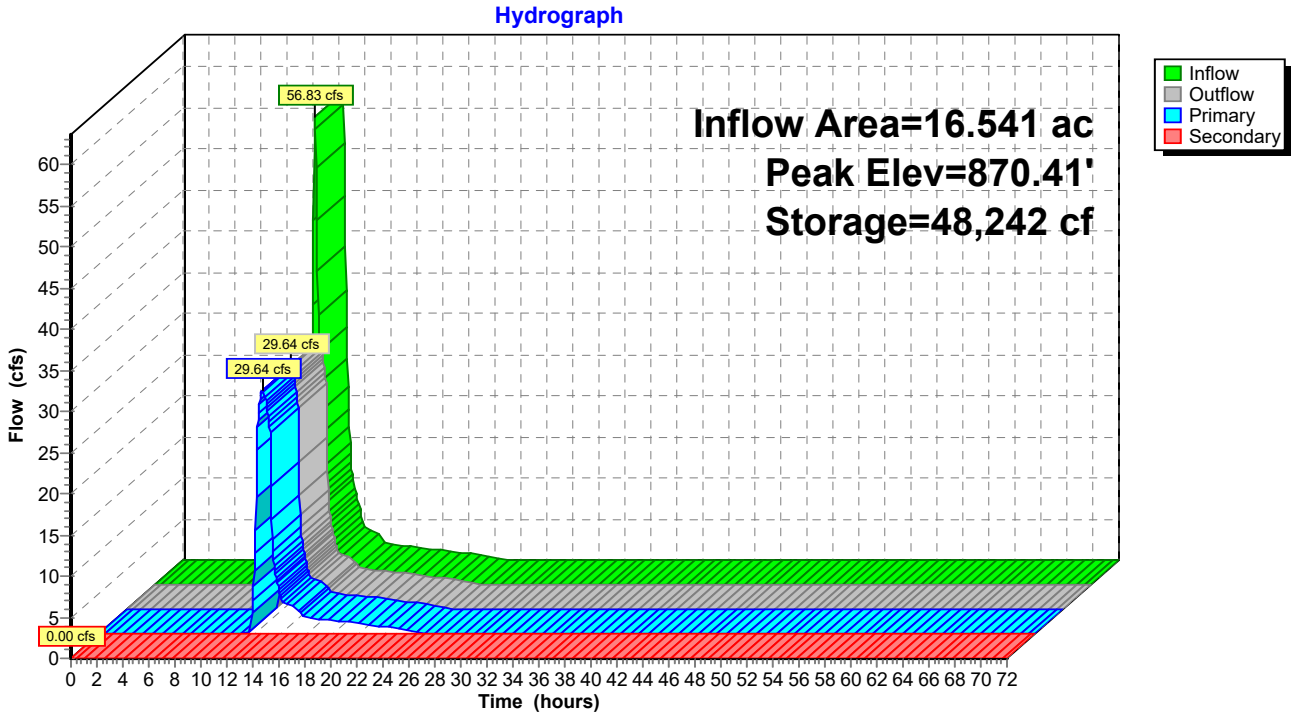
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
867.00	6,098	0	0
868.00	11,597	8,848	8,848
869.00	15,988	13,793	22,640
870.00	19,104	17,546	40,186
871.00	21,785	20,445	60,631
872.00	23,758	22,772	83,402
873.00	25,317	24,538	107,940
874.00	26,885	26,101	134,041
875.00	28,476	27,681	161,721

Device	Routing	Invert	Outlet Devices
#1	Primary	864.48'	**24.0" Round Culvert** L= 70.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 864.48' / 862.54' S= 0.0277 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 3.14 sf
#2	Device 1	868.15'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Secondary	874.50'	**Asymmetrical Weir, C= 3.27** Offset (feet) -55.50 -39.75 -8.50 8.50 39.75 55.50 Height (feet) 1.00 0.50 0.00 0.00 0.50 1.00

Primary OutFlow Max=29.62 cfs @ 12.59 hrs HW=870.41' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 29.62 cfs @ 9.43 fps)
↑—**2=Orifice/Grate** (Passes 29.62 cfs of 90.88 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=867.00' TW=0.00' (Dynamic Tailwater)
↑—**3=Asymmetrical Weir** (Controls 0.00 cfs)

Pond 1P: West Pond



Summary for Pond 3P: Sediment Pond

Inflow Area = 3.397 ac, 0.00% Impervious, Inflow Depth = 3.24" for 100-yr event
Inflow = 12.97 cfs @ 12.22 hrs, Volume= 0.916 af
Outflow = 9.65 cfs @ 12.34 hrs, Volume= 0.720 af, Atten= 26%, Lag= 6.9 min
Primary = 9.65 cfs @ 12.34 hrs, Volume= 0.720 af
Routed to Link OFF : PRE-DEVELOPMENT FLOW

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 869.65' @ 12.34 hrs Surf.Area= 9,057 sf Storage= 12,039 cf

Plug-Flow detention time= 119.4 min calculated for 0.720 af (79% of inflow)
Center-of-Mass det. time= 43.7 min (871.7 - 828.0)

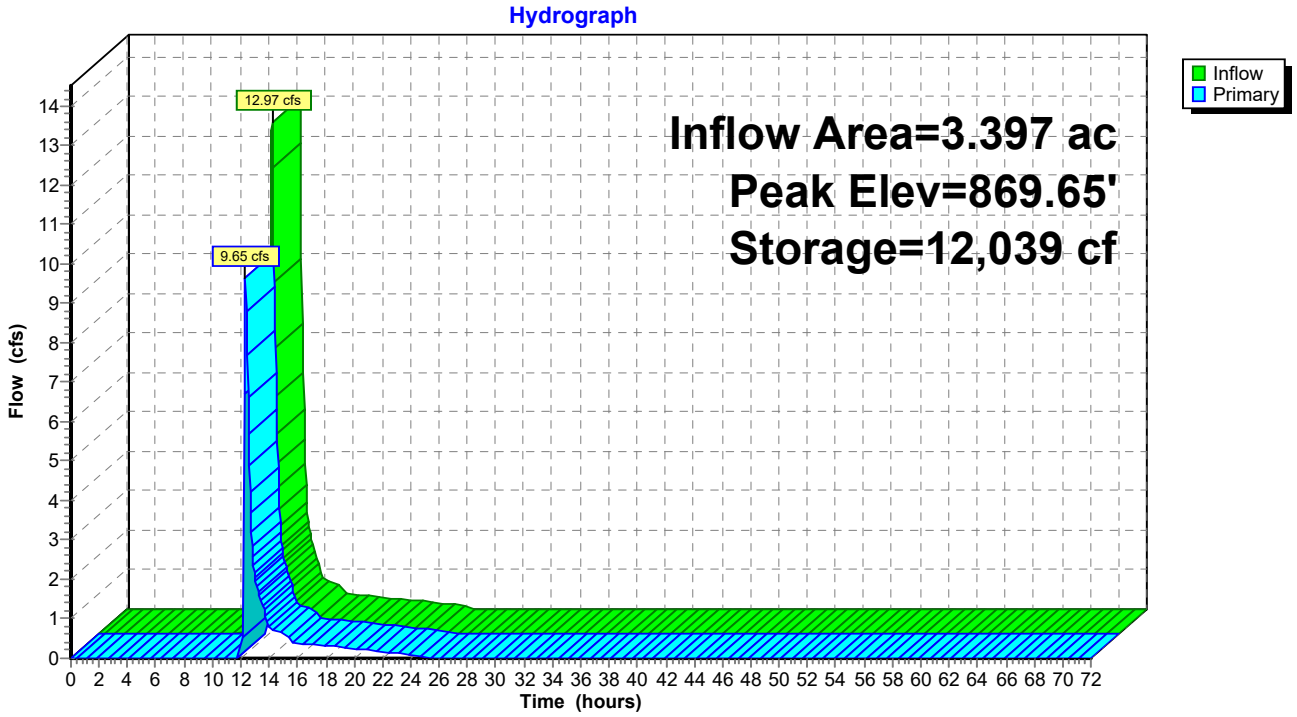
Volume	Invert	Avail.Storage	Storage Description
#1	868.00'	30,213 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
868.00	5,499	0	0
868.50	6,669	3,042	3,042
869.00	7,592	3,565	6,607
870.00	9,838	8,715	15,322
870.50	11,326	5,291	20,613
871.00	13,295	6,155	26,769
871.25	14,263	3,445	30,213

Device	Routing	Invert	Outlet Devices
#1	Primary	869.25'	**14.0' long x 15.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=9.55 cfs @ 12.34 hrs HW=869.65' TW=0.00' (Dynamic Tailwater)
1=Broad-Crested Rectangular Weir (Weir Controls 9.55 cfs @ 1.71 fps)

Pond 3P: Sediment Pond



Summary for Pond P-3: Southeast Pond

Inflow Area = 2.802 ac, 0.00% Impervious, Inflow Depth = 2.46" for 100-yr event
Inflow = 6.29 cfs @ 12.34 hrs, Volume= 0.574 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link OFF : PRE-DEVELOPMENT FLOW

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 955.25' @ 25.35 hrs Surf.Area= 11,844 sf Storage= 25,019 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

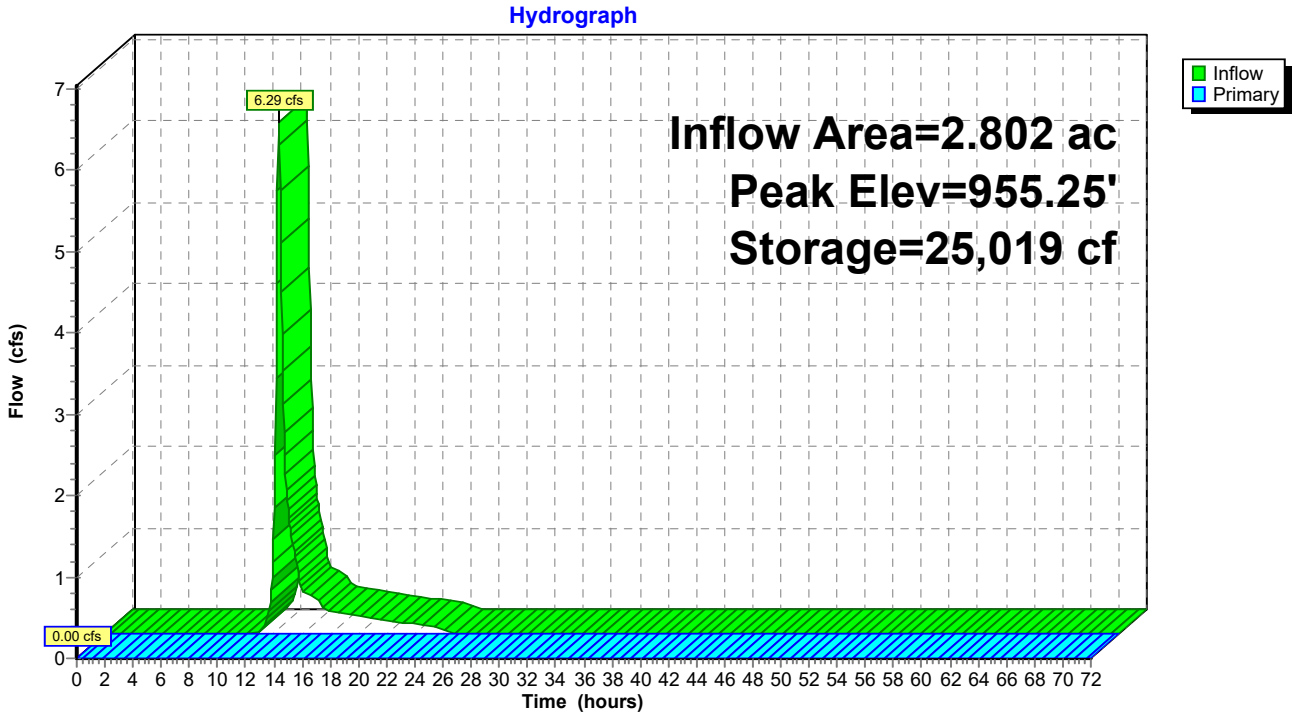
Volume	Invert	Avail.Storage	Storage Description
#1	952.00'	34,587 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
952.00	2,720	0	0
952.50	4,726	1,862	1,862
953.00	6,338	2,766	4,628
954.00	8,782	7,560	12,188
955.00	11,171	9,977	22,164
955.50	12,527	5,925	28,089
956.00	13,466	6,498	34,587

Device	Routing	Invert	Outlet Devices
#1	Primary	955.50'	**Asymmetrical Weir, C= 3.27** Offset (feet) -97.00 -27.50 27.50 97.00 Height (feet) 0.50 0.00 0.00 0.50

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=952.00' TW=0.00' (Dynamic Tailwater)
↑**1=Asymmetrical Weir** (Controls 0.00 cfs)

Pond P-3: Southeast Pond

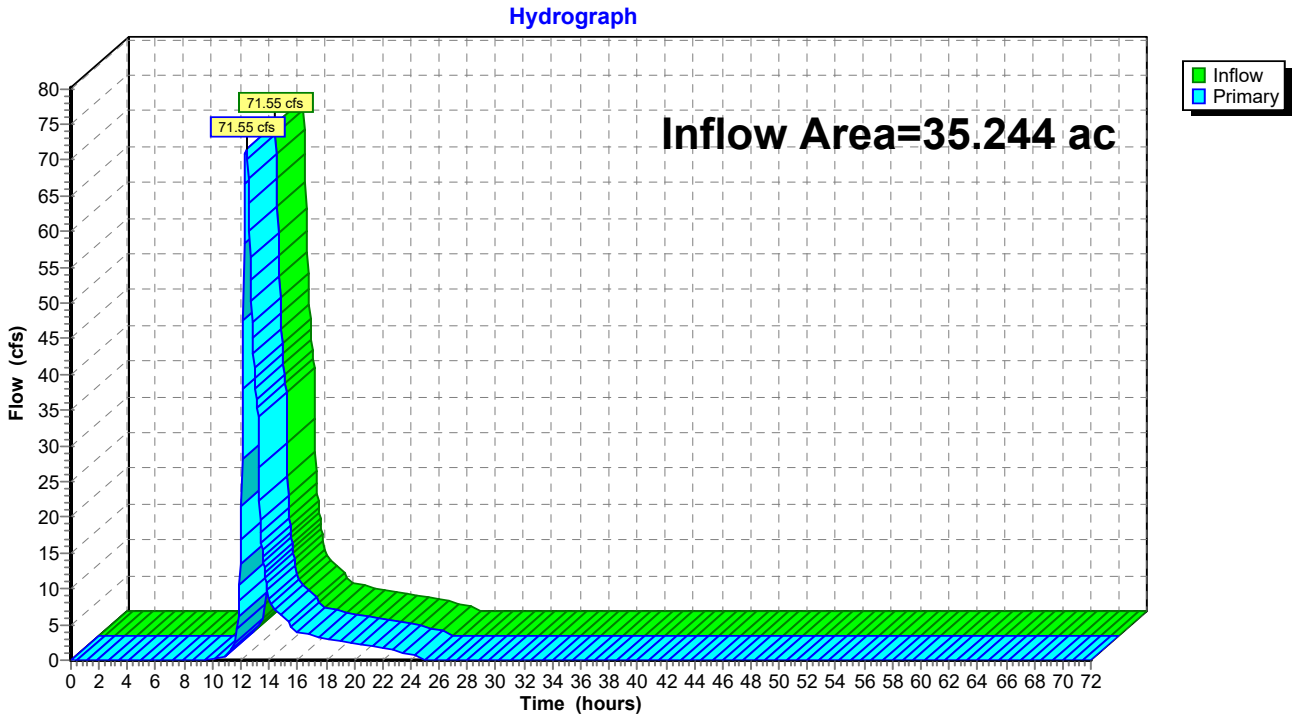


Summary for Link OFF: PRE-DEVELOPMENT FLOW

Inflow Area = 35.244 ac, 11.77% Impervious, Inflow Depth = 3.00" for 100-yr event
Inflow = 71.55 cfs @ 12.39 hrs, Volume= 8.805 af
Primary = 71.55 cfs @ 12.39 hrs, Volume= 8.805 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link OFF: PRE-DEVELOPMENT FLOW



Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points x 2
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 E-A: North Offsite Runoff Area=349,025 sf 13.32% Impervious Runoff Depth=3.95"
Flow Length=1,684' Tc=26.3 min CN=69 Runoff=27.29 cfs 2.640 af

Subcatchment E-B: West Pond Watershed Runoff Area=720,507 sf 12.00% Impervious Runoff Depth=4.28"
Flow Length=997' Tc=21.0 min CN=72 Runoff=68.77 cfs 5.906 af

Subcatchment E-C: Sediment Basin Runoff Area=147,982 sf 0.00% Impervious Runoff Depth=3.95"
Flow Length=840' Tc=13.8 min CN=69 Runoff=15.86 cfs 1.119 af

Subcatchment E-D: Southeast Offsite Runoff Area=195,650 sf 24.46% Impervious Runoff Depth=4.17"
Flow Length=405' Tc=31.1 min CN=71 Runoff=14.74 cfs 1.562 af

Subcatchment E-E: Southeast Pond Runoff Area=122,075 sf 0.00% Impervious Runoff Depth=3.09"
Flow Length=530' Tc=22.4 min CN=61 Runoff=8.01 cfs 0.722 af

Pond 1P: West Pond Peak Elev=871.11' Storage=63,131 cf Inflow=68.77 cfs 5.906 af
Primary=31.68 cfs 5.662 af Secondary=0.00 cfs 0.000 af Outflow=31.68 cfs 5.662 af

Pond 3P: Sediment Pond Peak Elev=869.75' Storage=12,943 cf Inflow=15.86 cfs 1.119 af
Outflow=13.41 cfs 0.922 af

Pond P-3: Southeast Pond Peak Elev=955.51' Storage=28,236 cf Inflow=8.01 cfs 0.722 af
Outflow=0.24 cfs 0.077 af

Link OFF: PRE-DEVELOPMENTFLOW Inflow=83.14 cfs 10.863 af
Primary=83.14 cfs 10.863 af

Total Runoff Area = 35.244 ac Runoff Volume = 11.948 af Average Runoff Depth = 4.07"
88.23% Pervious = 31.094 ac 11.77% Impervious = 4.150 ac

Summary for Subcatchment E-A: North Offsite Watershed

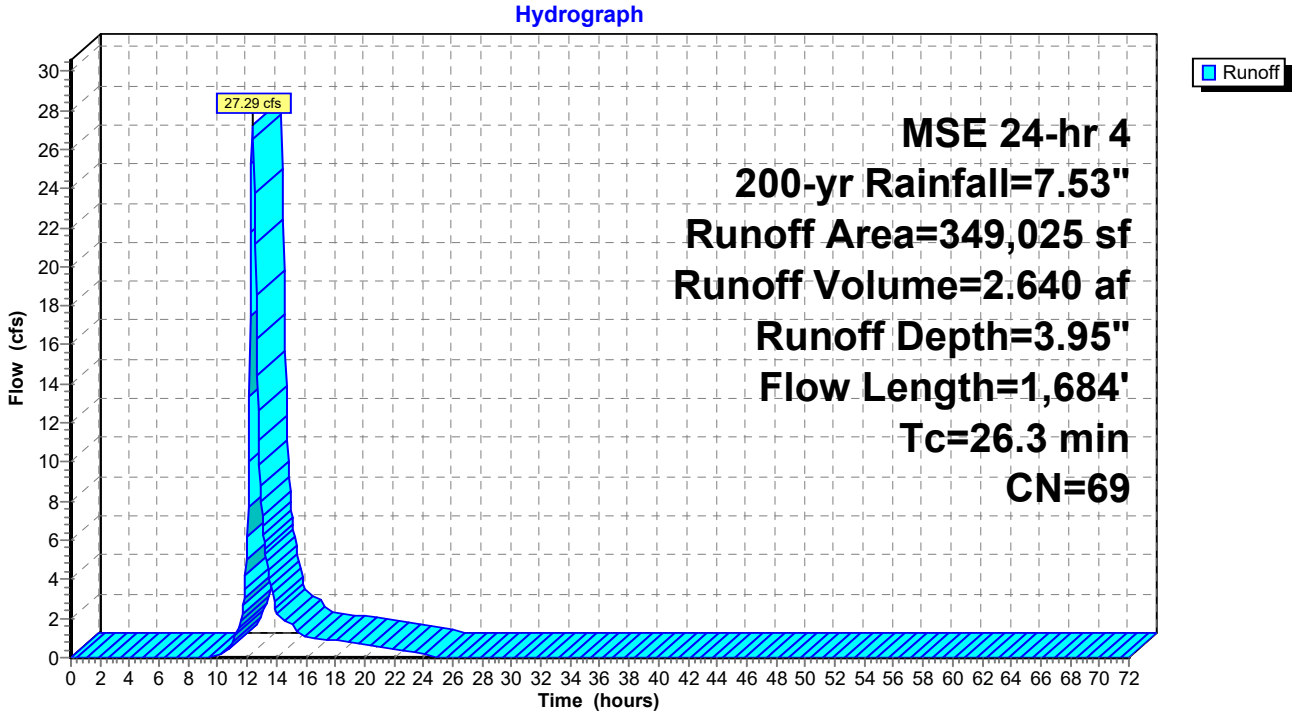
Runoff = 27.29 cfs @ 12.38 hrs, Volume= 2.640 af, Depth= 3.95"
Routed to Link OFF : PRE-DEVELOPMENT FLOW

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 200-yr Rainfall=7.53"

	Area (sf)	CN	Description
*	168,502	61	Pervious
*	46,485	98	Impervious
*	63,585	58	Woods
*	26,823	86	Large Concrete Rip-rap
*	43,630	74	Gravel/Grass
	349,025	69	Weighted Average
	302,540		86.68% Pervious Area
	46,485		13.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.5	300	0.0330	0.24		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.84"
5.8	1,384	0.0600	3.94		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
26.3	1,684	Total			

Subcatchment E-A: North Offsite Watershed



Summary for Subcatchment E-B: West Pond Watershed

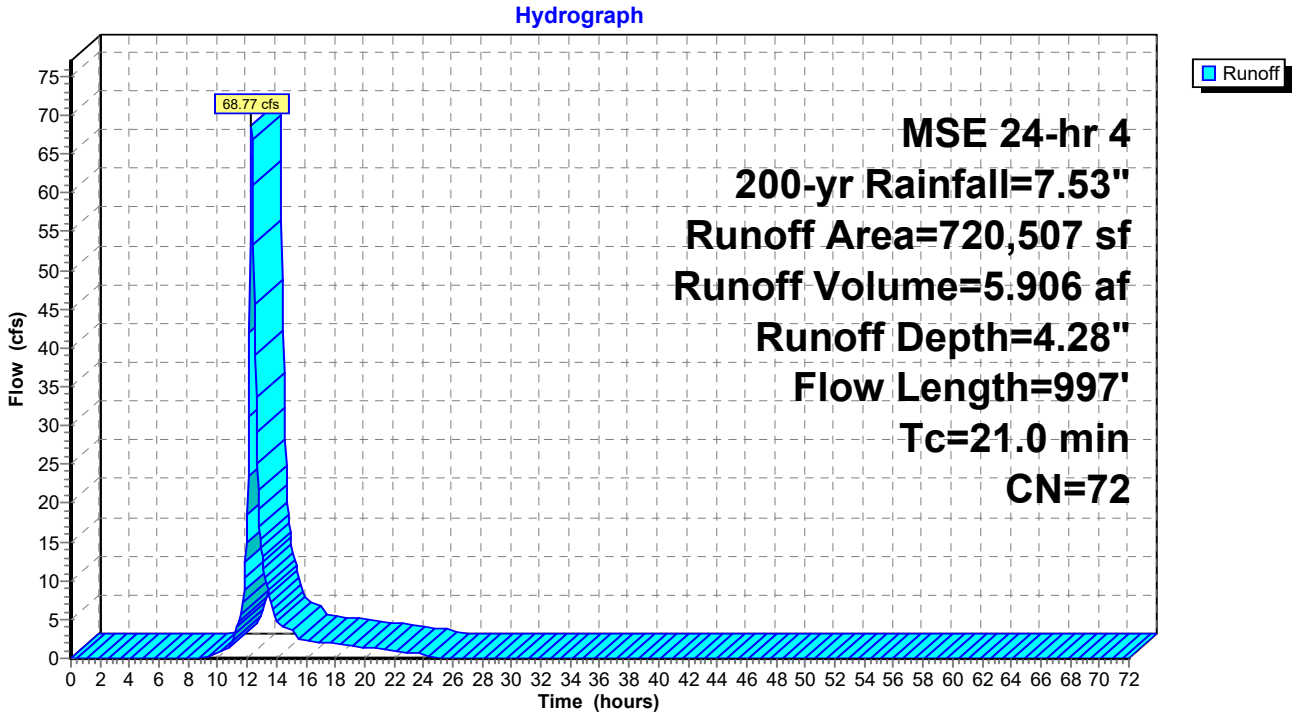
Runoff = 68.77 cfs @ 12.31 hrs, Volume= 5.906 af, Depth= 4.28"
Routed to Pond 1P : West Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 200-yr Rainfall=7.53"

	Area (sf)	CN	Description
*	380,850	61	Pervious
*	86,430	98	Gravel
*	139,982	86	Large Concrete Rip-rap & Trees
*	27,609	69	Sparse Conc. and Gravel
*	39,813	79	Sparse Conc. and Compact Gravel
*	45,823	74	Gravel/Grass
	720,507	72	Weighted Average
	634,077		88.00% Pervious Area
	86,430		12.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.4	300	0.0430	0.27		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.84"
0.3	190	0.3160	9.05		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.3	507	0.0530	3.71		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
21.0	997	Total			

Subcatchment E-B: West Pond Watershed



Summary for Subcatchment E-C: Sediment Basin

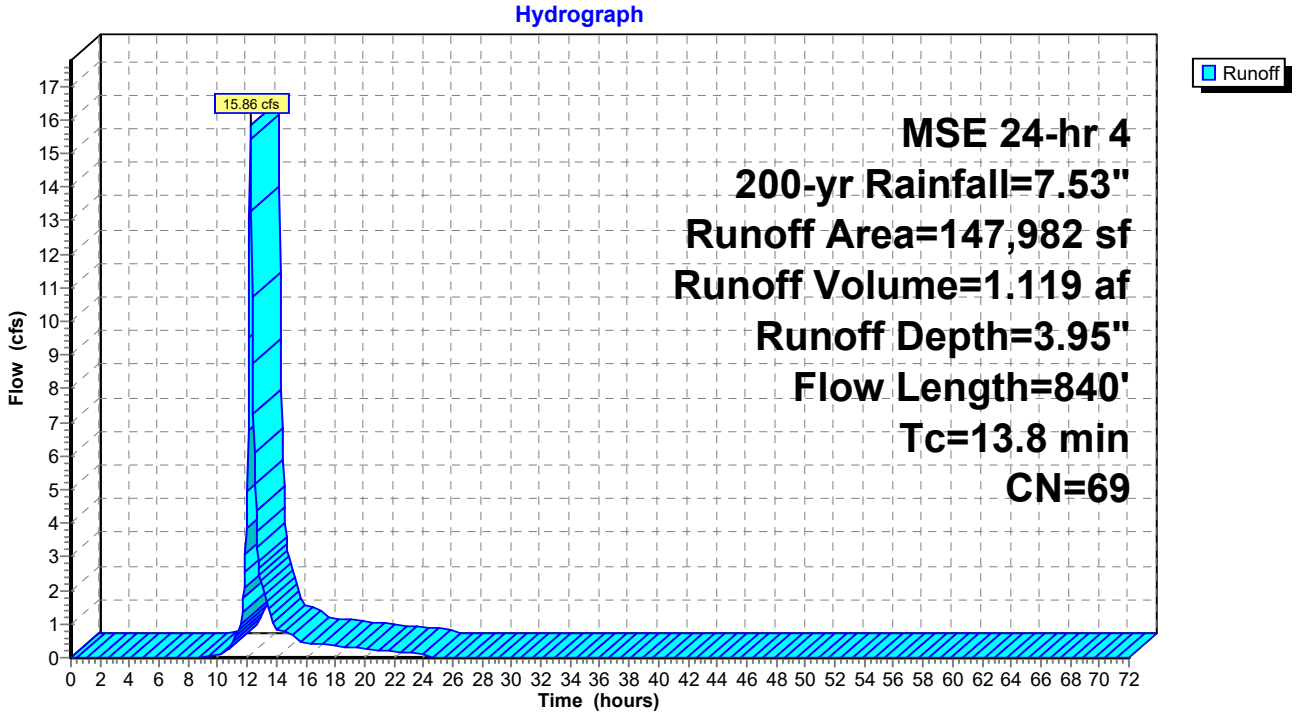
Runoff = 15.86 cfs @ 12.22 hrs, Volume= 1.119 af, Depth= 3.95"
Routed to Pond 3P : Sediment Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 200-yr Rainfall=7.53"

	Area (sf)	CN	Description
*	49,038	58	Woods
*	44,038	61	Pervious
*	53,295	86	Large Concrete Rip-rap & Trees
*	1,611	69	Light Gravel & Grass
	147,982	69	Weighted Average
	147,982		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.2	300	0.1200	0.41		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.84"
1.6	540	0.1300	5.80		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
13.8	840	Total			

Subcatchment E-C: Sediment Basin



Summary for Subcatchment E-D: Southeast Offsite Watershed

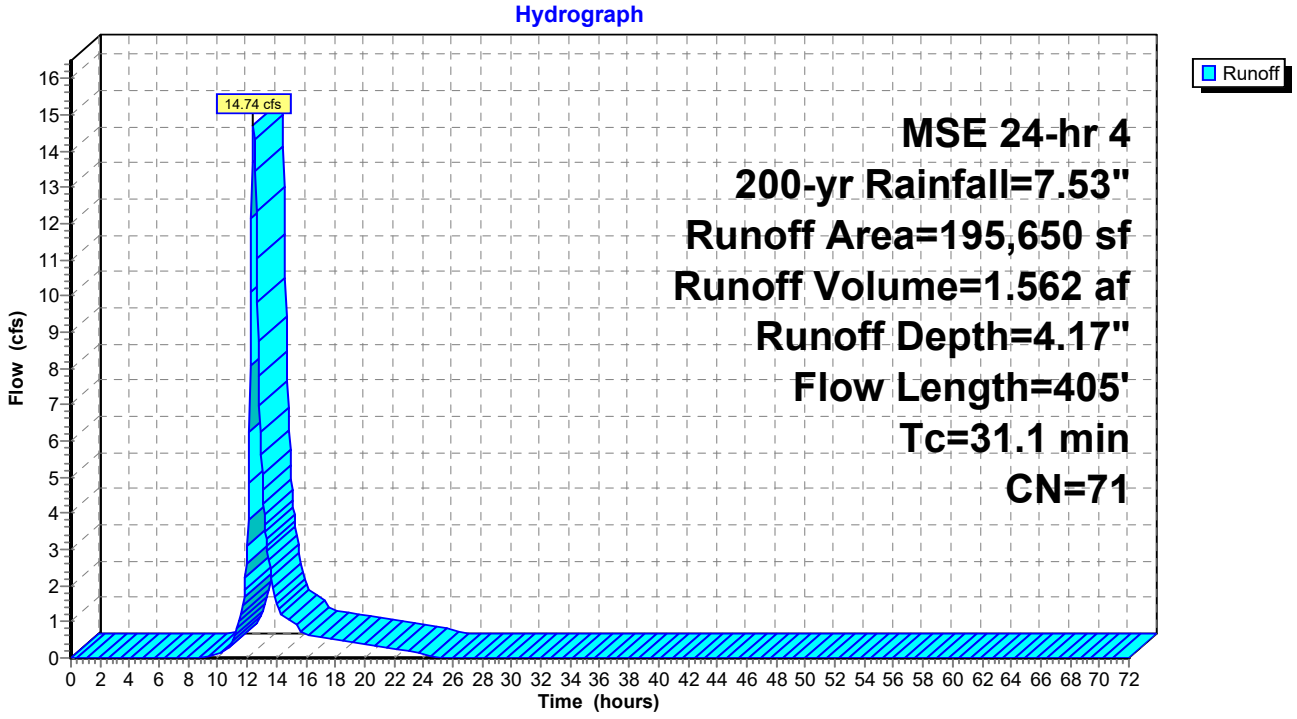
Runoff = 14.74 cfs @ 12.44 hrs, Volume= 1.562 af, Depth= 4.17"
Routed to Link OFF : PRE-DEVELOPMENT FLOW

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 200-yr Rainfall=7.53"

	Area (sf)	CN	Description
*	137,901	61	Pervious
*	47,853	98	Impervious
*	3,223	69	Light Gravel & Grass
*	6,673	86	Asphalt & Grass
	195,650	71	Weighted Average
	147,797		75.54% Pervious Area
	47,853		24.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.7	300	0.0120	0.16		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.84"
0.4	105	0.0670	4.17		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
31.1	405	Total			

Subcatchment E-D: Southeast Offsite Watershed



Summary for Subcatchment E-E: Southeast Pond Watershed

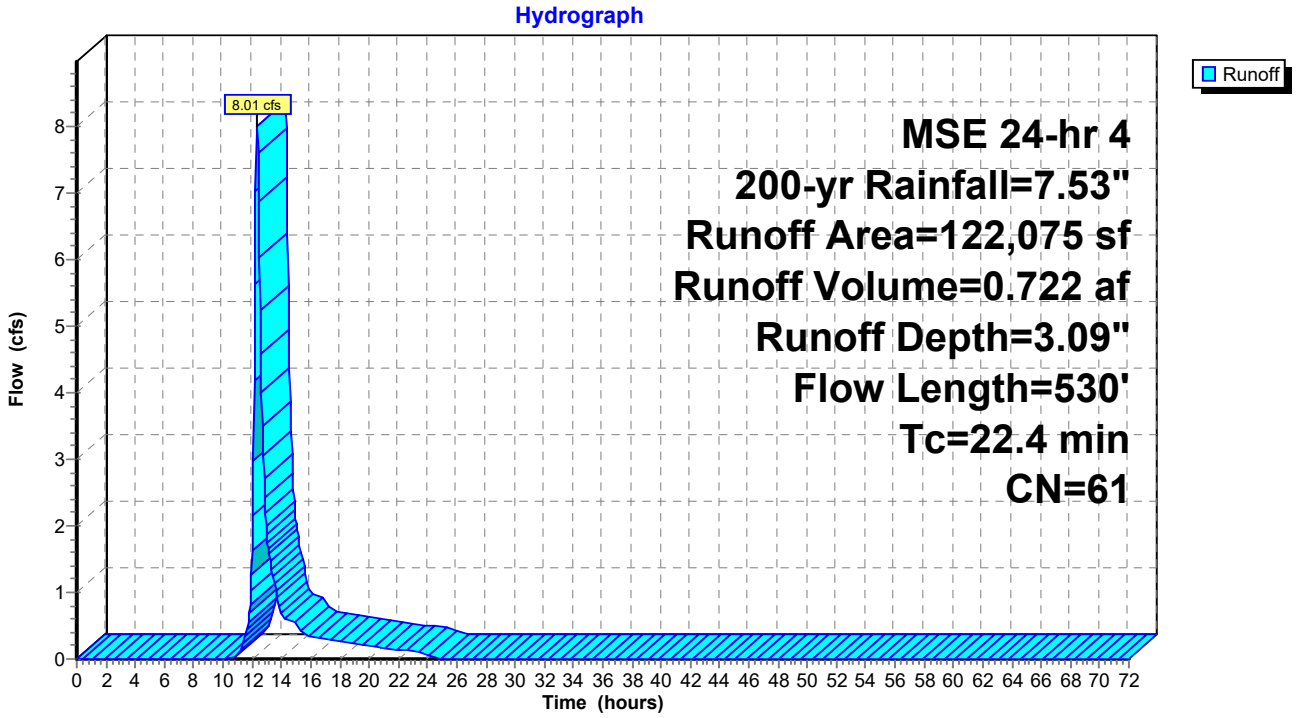
Runoff = 8.01 cfs @ 12.34 hrs, Volume= 0.722 af, Depth= 3.09"
Routed to Pond P-3 : Southeast Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 200-yr Rainfall=7.53"

	Area (sf)	CN	Description
*	122,075	61	Pervious
	122,075		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.3	300	0.0300	0.23		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.84"
1.1	230	0.0460	3.45		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
22.4	530	Total			

Subcatchment E-E: Southeast Pond Watershed



Summary for Pond 1P: West Pond

Inflow Area = 16.541 ac, 12.00% Impervious, Inflow Depth = 4.28" for 200-yr event
Inflow = 68.77 cfs @ 12.31 hrs, Volume= 5.906 af
Outflow = 31.68 cfs @ 12.62 hrs, Volume= 5.662 af, Atten= 54%, Lag= 18.7 min
Primary = 31.68 cfs @ 12.62 hrs, Volume= 5.662 af
Routed to Link OFF : PRE-DEVELOPMENT FLOW
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link OFF : PRE-DEVELOPMENT FLOW

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 871.11' @ 12.62 hrs Surf.Area= 22,010 sf Storage= 63,131 cf

Plug-Flow detention time= 46.0 min calculated for 5.658 af (96% of inflow)
Center-of-Mass det. time= 24.3 min (848.8 - 824.6)

Volume	Invert	Avail.Storage	Storage Description
#1	867.00'	161,721 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

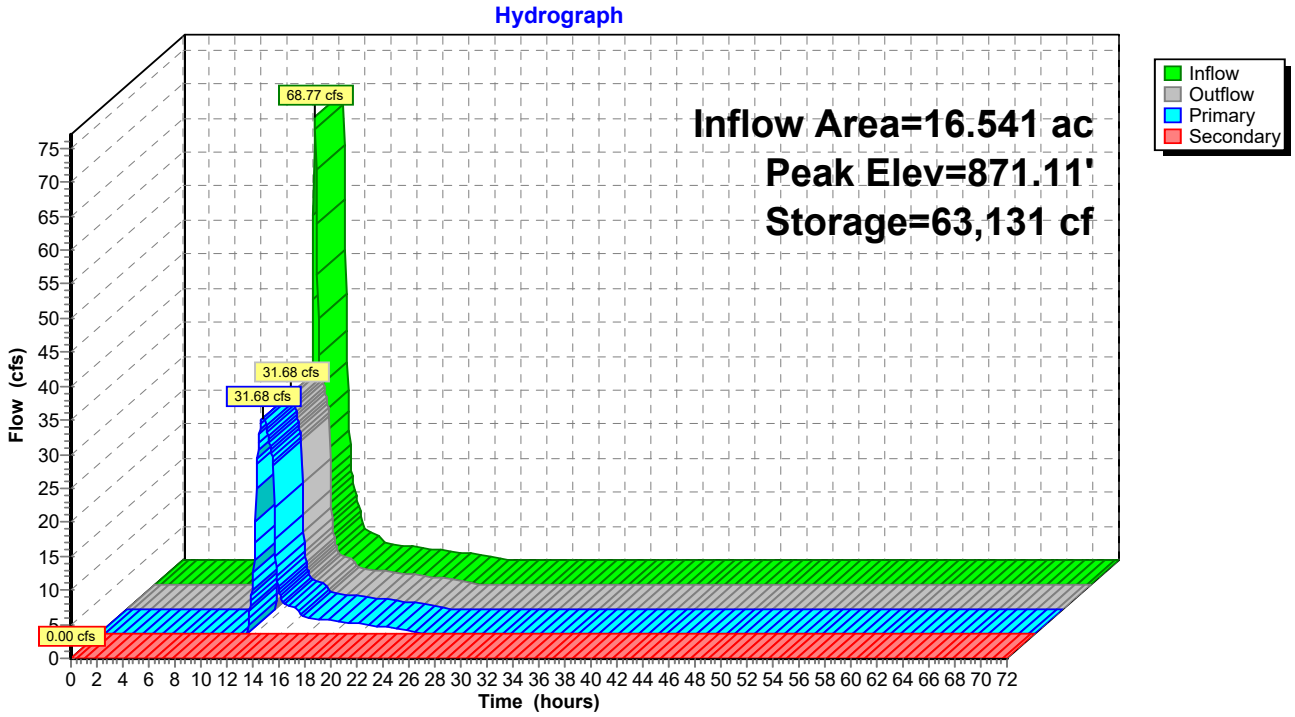
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
867.00	6,098	0	0
868.00	11,597	8,848	8,848
869.00	15,988	13,793	22,640
870.00	19,104	17,546	40,186
871.00	21,785	20,445	60,631
872.00	23,758	22,772	83,402
873.00	25,317	24,538	107,940
874.00	26,885	26,101	134,041
875.00	28,476	27,681	161,721

Device	Routing	Invert	Outlet Devices
#1	Primary	864.48'	**24.0" Round Culvert** L= 70.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 864.48' / 862.54' S= 0.0277 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 3.14 sf
#2	Device 1	868.15'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Secondary	874.50'	**Asymmetrical Weir, C= 3.27** Offset (feet) -55.50 -39.75 -8.50 8.50 39.75 55.50 Height (feet) 1.00 0.50 0.00 0.00 0.50 1.00

Primary OutFlow Max=31.67 cfs @ 12.62 hrs HW=871.11' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 31.67 cfs @ 10.08 fps)
↑—**2=Orifice/Grate** (Passes 31.67 cfs of 104.08 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=867.00' TW=0.00' (Dynamic Tailwater)
↑—**3=Asymmetrical Weir** (Controls 0.00 cfs)

Pond 1P: West Pond



Summary for Pond 3P: Sediment Pond

Inflow Area = 3.397 ac, 0.00% Impervious, Inflow Depth = 3.95" for 200-yr event
Inflow = 15.86 cfs @ 12.22 hrs, Volume= 1.119 af
Outflow = 13.41 cfs @ 12.31 hrs, Volume= 0.922 af, Atten= 15%, Lag= 5.0 min
Primary = 13.41 cfs @ 12.31 hrs, Volume= 0.922 af
Routed to Link OFF : PRE-DEVELOPMENT FLOW

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 869.75' @ 12.31 hrs Surf.Area= 9,279 sf Storage= 12,943 cf

Plug-Flow detention time= 102.8 min calculated for 0.922 af (82% of inflow)
Center-of-Mass det. time= 36.7 min (859.9 - 823.2)

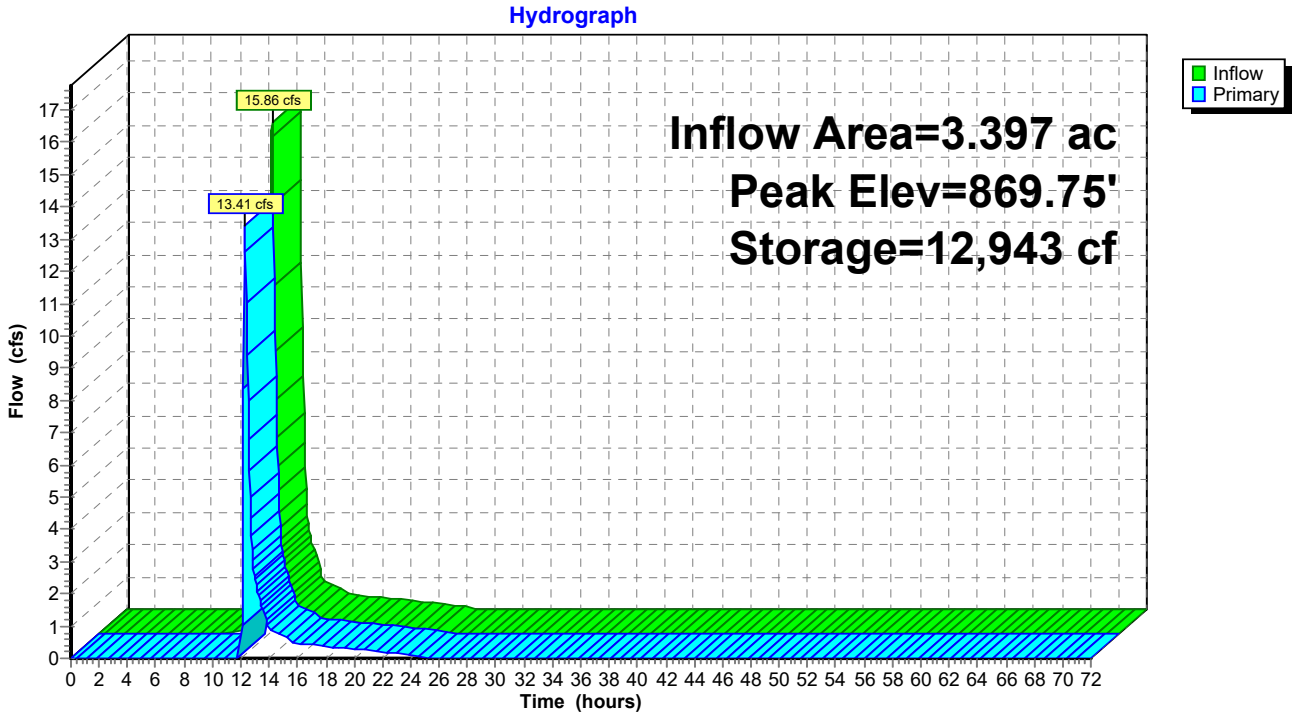
Volume	Invert	Avail.Storage	Storage Description
#1	868.00'	30,213 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
868.00	5,499	0	0
868.50	6,669	3,042	3,042
869.00	7,592	3,565	6,607
870.00	9,838	8,715	15,322
870.50	11,326	5,291	20,613
871.00	13,295	6,155	26,769
871.25	14,263	3,445	30,213

Device	Routing	Invert	Outlet Devices
#1	Primary	869.25'	**14.0' long x 15.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=13.31 cfs @ 12.31 hrs HW=869.75' TW=0.00' (Dynamic Tailwater)
↑**1=Broad-Crested Rectangular Weir** (Weir Controls 13.31 cfs @ 1.91 fps)

Pond 3P: Sediment Pond



Summary for Pond P-3: Southeast Pond

Inflow Area = 2.802 ac, 0.00% Impervious, Inflow Depth = 3.09" for 200-yr event
Inflow = 8.01 cfs @ 12.34 hrs, Volume= 0.722 af
Outflow = 0.24 cfs @ 19.03 hrs, Volume= 0.077 af, Atten= 97%, Lag= 401.7 min
Primary = 0.24 cfs @ 19.03 hrs, Volume= 0.077 af
Routed to Link OFF : PRE-DEVELOPMENT FLOW

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 955.51' @ 19.03 hrs Surf.Area= 12,549 sf Storage= 28,236 cf

Plug-Flow detention time= 546.1 min calculated for 0.077 af (11% of inflow)
Center-of-Mass det. time= 415.4 min (1,261.0 - 845.7)

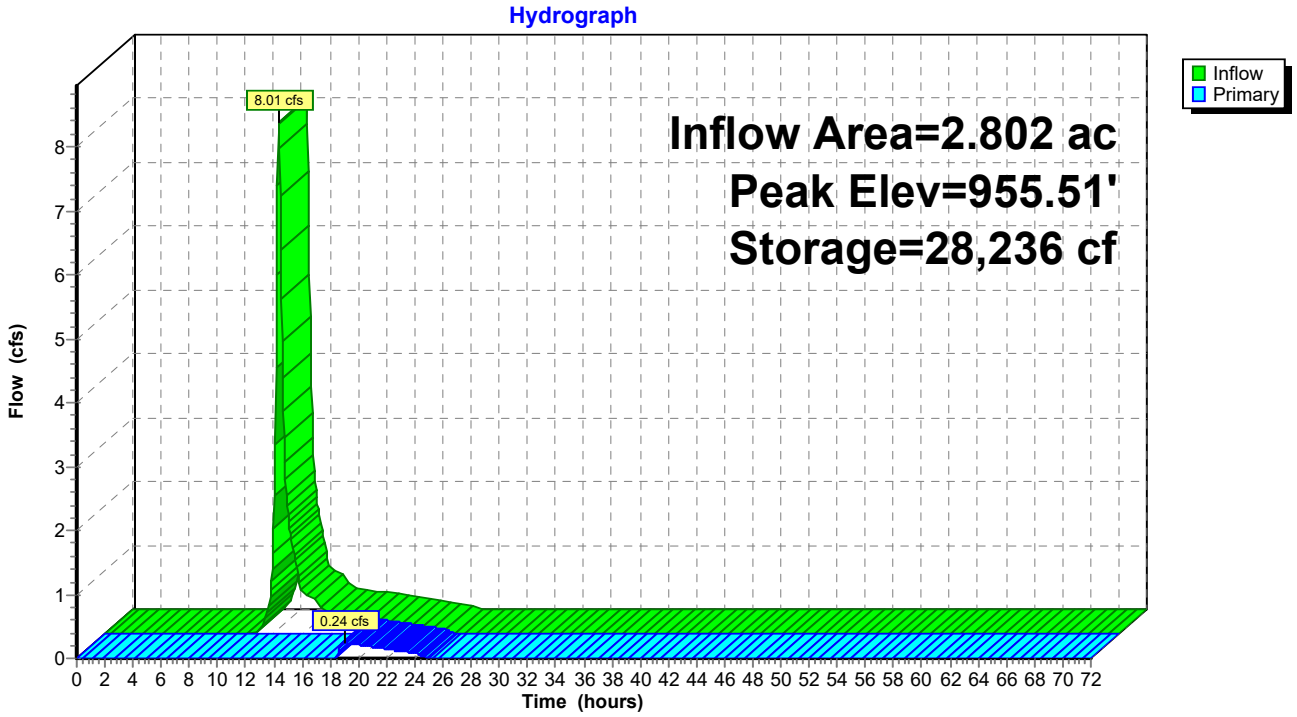
Volume	Invert	Avail.Storage	Storage Description
#1	952.00'	34,587 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
952.00	2,720	0	0
952.50	4,726	1,862	1,862
953.00	6,338	2,766	4,628
954.00	8,782	7,560	12,188
955.00	11,171	9,977	22,164
955.50	12,527	5,925	28,089
956.00	13,466	6,498	34,587

Device	Routing	Invert	Outlet Devices
#1	Primary	955.50'	**Asymmetrical Weir, C= 3.27** Offset (feet) -97.00 -27.50 27.50 97.00 Height (feet) 0.50 0.00 0.00 0.50

Primary OutFlow Max=0.24 cfs @ 19.03 hrs HW=955.51' TW=0.00' (Dynamic Tailwater)
↑└**1=Asymmetrical Weir** (Weir Controls 0.24 cfs @ 0.34 fps)

Pond P-3: Southeast Pond



Summary for Link OFF: PRE-DEVELOPMENT FLOW

Inflow Area = 35.244 ac, 11.77% Impervious, Inflow Depth = 3.70" for 200-yr event
Inflow = 83.14 cfs @ 12.38 hrs, Volume= 10.863 af
Primary = 83.14 cfs @ 12.38 hrs, Volume= 10.863 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link OFF: PRE-DEVELOPMENT FLOW

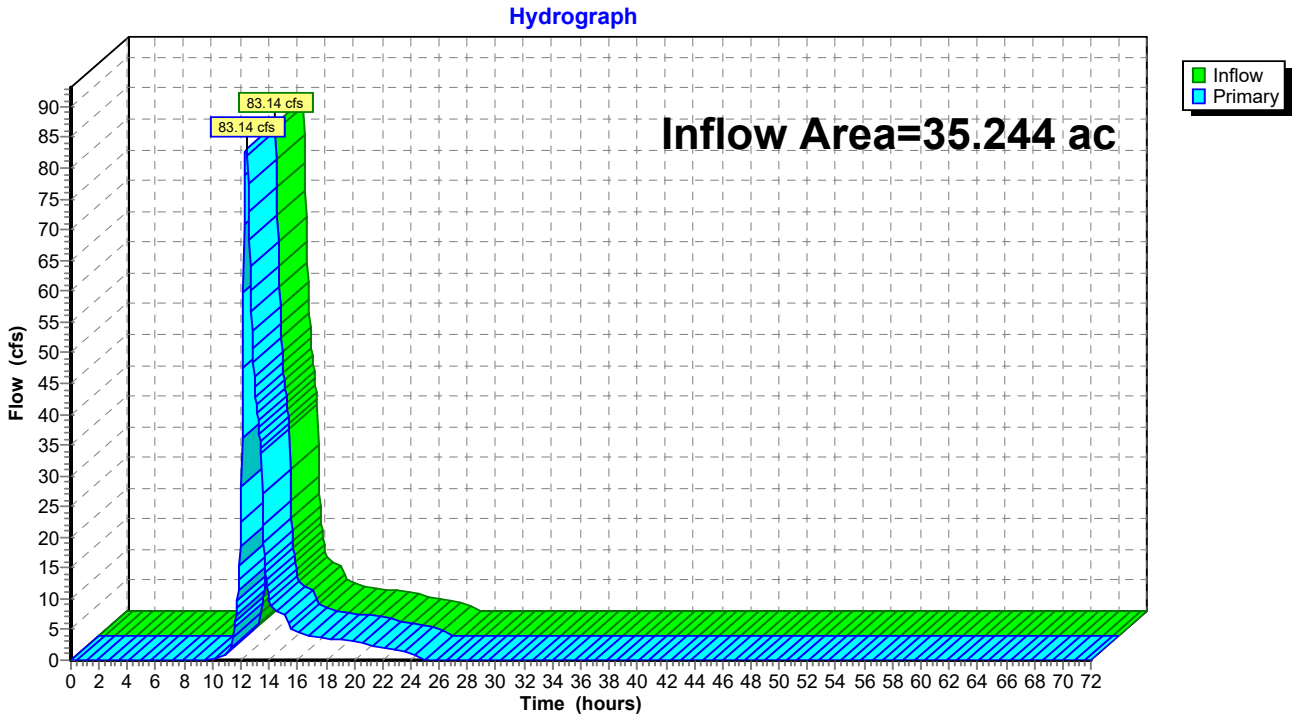


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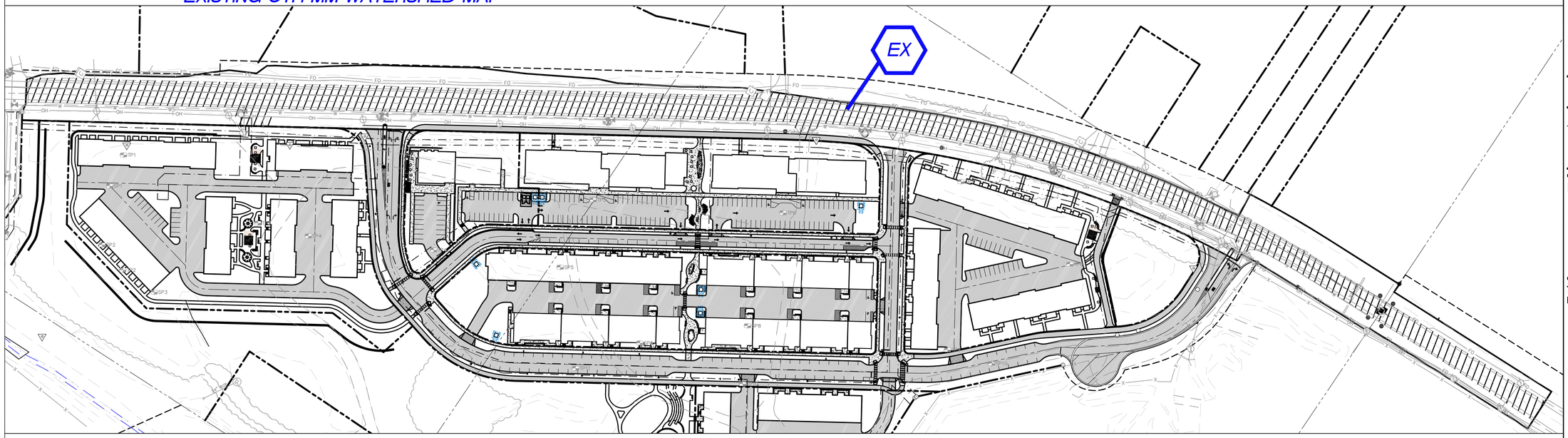
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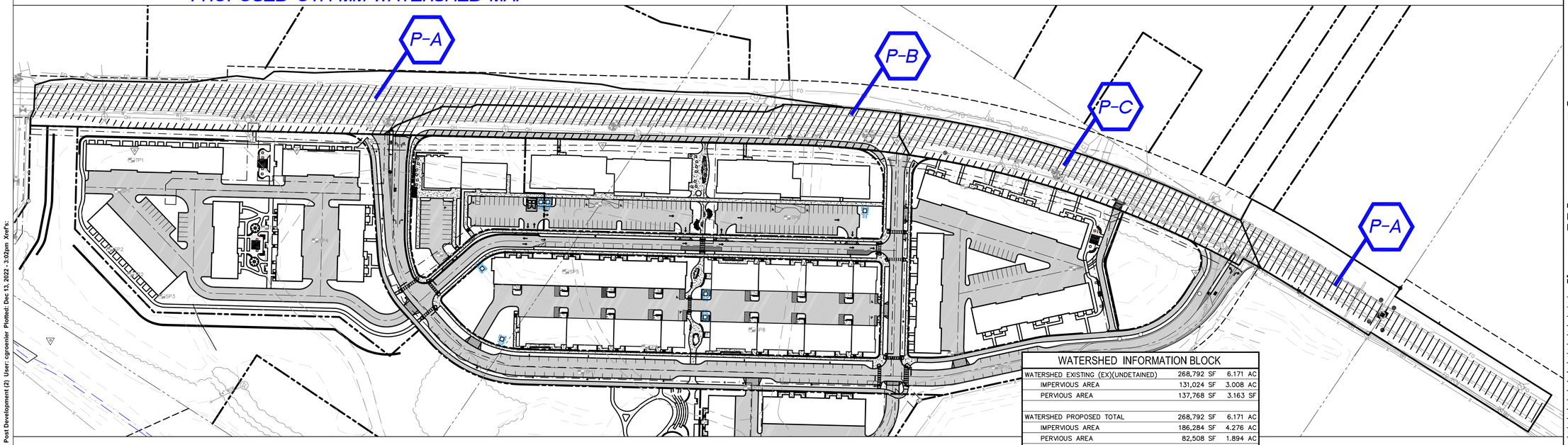
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EXISTING CTH MM WATERSHED MAP



PROPOSED CTH MM WATERSHED MAP



WATERSHED INFORMATION BLOCK		
WATERSHED EXISTING (EX)(UNDETAINED)	268,792 SF	6.171 AC
IMPERVIOUS AREA	131,024 SF	3.008 AC
PERVIOUS AREA	137,768 SF	3.163 SF
WATERSHED PROPOSED TOTAL	268,792 SF	6.171 AC
IMPERVIOUS AREA	186,284 SF	4.276 AC
PERVIOUS AREA	82,508 SF	1.894 AC
WATERSHED PROPOSED P-A (UNDETAINED)	160,112 SF	3.676 AC
IMPERVIOUS AREA	96,222 SF	2.209 AC
ROADWAY AREA	89,594 SF	2.057 AC
SIDEWALK AREA	6,628 SF	0.152 AC
PERVIOUS AREA	63,890 SF	1.467 AC
WATERSHED PROPOSED P-B (TO WET POND)	57,763 SF	1.326 AC
IMPERVIOUS AREA	46,104 SF	1.058 AC
ROADWAY AREA	37,614 SF	0.863 AC
SIDEWALK AREA	8,490 SF	0.195 AC
PERVIOUS AREA	11,659 SF	0.268 AC
WATERSHED PROPOSED P-C (TO BIO BASIN)	50,917 SF	1.169 AC
IMPERVIOUS AREA	44,030 SF	1.011 AC
ROADWAY AREA	38,263 SF	0.878 AC
SIDEWALK AREA	5,767 SF	0.078 AC
PERVIOUS AREA	6,887 SF	0.158 AC

north

SCALE IN FEET

100' 0 100'

DIGGERS HOTLINE

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P. 608.848.5060

CLIENT:
ROYAL CAPITAL

CLIENT ADDRESS:
710 N PLANKINTON AVE. SUITE 300
MILWAUKEE, WI 53203

PRELIMINARY
NOT FOR CONSTRUCTION

PROJECT:
NINE SPRINGS

PROJECT LOCATION:
FITCHBURG, WI 53711
DANE COUNTY

PLAN MODIFICATIONS:

#	Date:	Description:
1	03.25.22	P-PLAT SUBMITTAL
2	04.12.22	RESPONSE TO P-PLAT COMMENTS
3	06.21.22	ADR SUBMITTAL
4	12.14.22	P-PLAT SUBMITTAL
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

Designed By: MSS
Reviewed By:
Approved By:

SHEET TITLE:
CTH MM WATERSHED MAP

SHEET NUMBER:
EXHIBIT

JSD PROJECT NO: 21-10566

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LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY
- EASEMENT LINE
- BUILDING OUTLINE
- EDGE OF PAVEMENT
- STANDARD CURB AND GUTTER
- ASPHALT PAVEMENT
- CONCRETE PAVEMENT
- HEAVY DUTY CONCRETE PAVEMENT
- 959 PROPOSED 1 FOOT CONTOUR
- 960 PROPOSED 5 FOOT CONTOUR
- 959 EXISTING 1 FOOT CONTOUR
- 960 EXISTING 5 FOOT CONTOUR
- DRAINAGE DIRECTION
- RETAINING WALL
- STORM SEWER
- WATERSHED BOUNDARY

A

BIORETENTION BASIN 2

B

C

E

D

BIORETENTION BASIN 1

WET POND

C

A		
Total	756237	sf
Building	198228	sf
Pavement	290641	sf
Sidewalk	75253	sf
Pervious	192115	sf

B		
Total	246965	sf
Building	37473	sf
Pavement	106097	sf
Sidewalk	21266	sf
Water	11516	sf
Pervious	70613	sf

C		
Total	220188	sf
Sidewalk	8093	sf
Pervious	212095	sf

D		
Total	268234	sf
Water	21649	sf
Sidewalk	11656	sf
Pervious	234929	sf

E		
Total	43591	sf
Water	3000	sf
Sidewalk	1267	sf
Pervious	39324	sf

north

SCALE IN FEET

100' 0 100'

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Reviewed By:
Approved By:

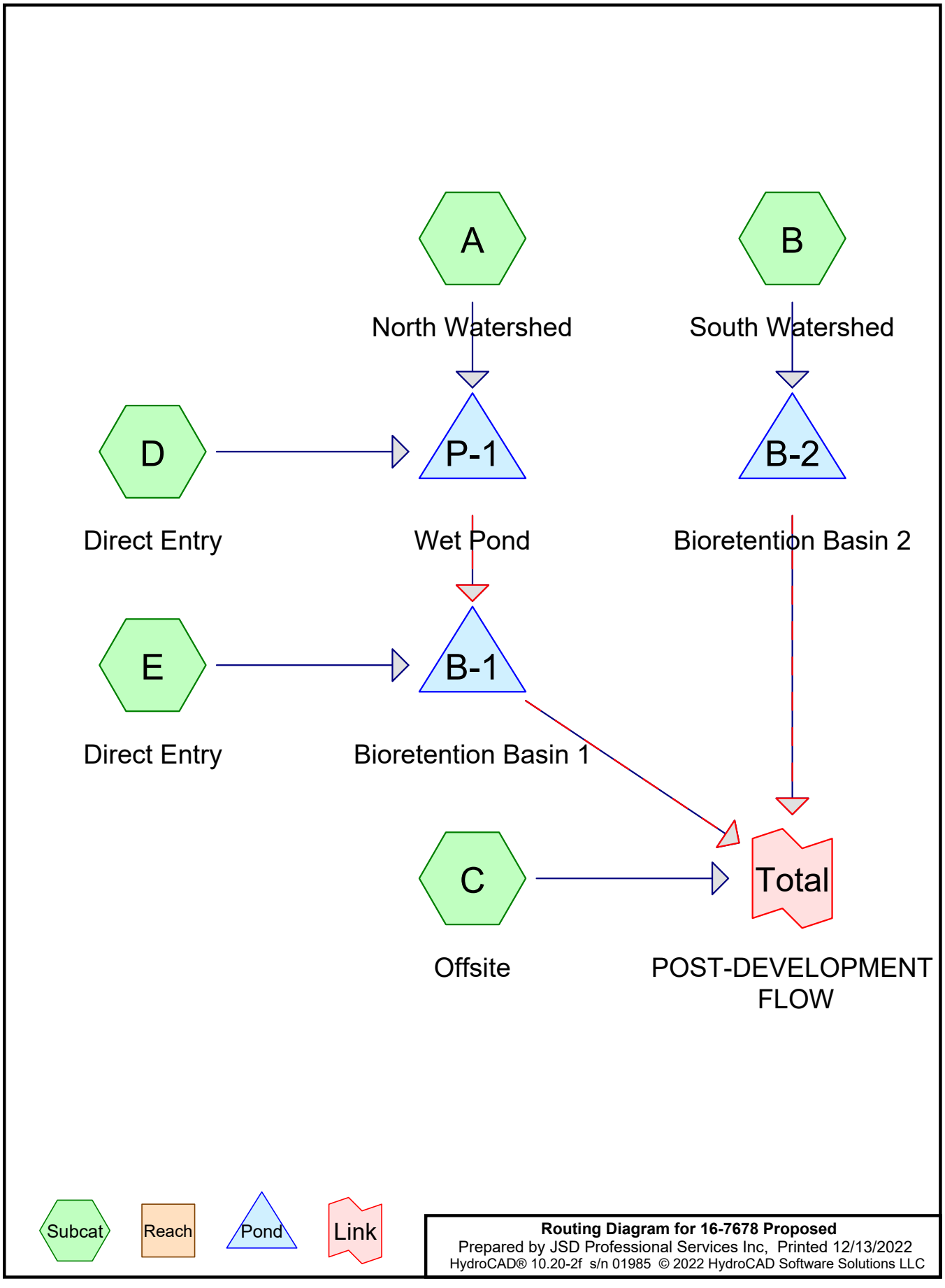
SHEET TITLE:
PROPOSED WATERSHED MAP

SHEET NUMBER:
EXHIBIT

JSD PROJECT NO: 21-10566

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Routing Diagram for 16-7678 Proposed
Prepared by JSD Professional Services Inc, Printed 12/13/2022
HydroCAD® 10.20-2f s/n 01985 © 2022 HydroCAD Software Solutions LLC

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-yr	MSE 24-hr	4	Default	24.00	1	2.49	2
2	2-yr	MSE 24-hr	4	Default	24.00	1	2.84	2
3	10-yr	MSE 24-hr	4	Default	24.00	1	4.09	2
4	100-yr	MSE 24-hr	4	Default	24.00	1	6.66	2
5	200-yr	MSE 24-hr	4	Default	24.00	1	7.53	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
9.108	98	Pavement (A, B)
17.196	61	Pervious (A, B, C, D, E)
5.411	98	Roof (A, B)
2.698	98	Sidewalk (A, B, C, D, E)
0.830	100	Water (B, D, E)
35.244	**80**	**TOTAL AREA**

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points x 2
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 A: North Watershed Runoff Area=756,237 sf 74.60% Impervious Runoff Depth=1.45"
Flow Length=2,397' Tc=19.1 min CN=89 Runoff=25.47 cfs 2.092 af

Subcatchment B: South Watershed Runoff Area=246,965 sf 71.41% Impervious Runoff Depth=1.37"
Flow Length=540' Tc=21.3 min CN=88 Runoff=7.49 cfs 0.649 af

Subcatchment C: Offsite Runoff Area=220,188 sf 3.68% Impervious Runoff Depth=0.22"
Flow Length=256' Tc=15.4 min CN=62 Runoff=0.56 cfs 0.091 af

Subcatchment D: Direct Entry Runoff Area=268,234 sf 12.42% Impervious Runoff Depth=0.32"
Tc=6.0 min CN=66 Runoff=2.21 cfs 0.165 af

Subcatchment E: Direct Entry Runoff Area=43,591 sf 9.79% Impervious Runoff Depth=0.29"
Tc=6.0 min CN=65 Runoff=0.30 cfs 0.024 af

Pond B-1: Bioretention Basin 1 Peak Elev=867.54' Storage=7,658 cf Inflow=2.17 cfs 2.259 af
Primary=1.61 cfs 2.259 af Secondary=0.00 cfs 0.000 af Outflow=1.61 cfs 2.259 af

Pond B-2: Bioretention Basin 2 Peak Elev=948.05' Storage=12,135 cf Inflow=7.49 cfs 0.649 af
Primary=0.92 cfs 0.649 af Secondary=0.00 cfs 0.000 af Outflow=0.92 cfs 0.649 af

Pond P-1: Wet Pond Peak Elev=868.43' Storage=59,364 cf Inflow=26.70 cfs 2.257 af
Primary=2.07 cfs 2.234 af Secondary=0.00 cfs 0.000 af Outflow=2.07 cfs 2.234 af

Link Total: POST-DEVELOPMENTFLOW Inflow=2.64 cfs 2.999 af
Primary=2.64 cfs 2.999 af

Total Runoff Area = 35.244 ac Runoff Volume = 3.022 af Average Runoff Depth = 1.03"
48.79% Pervious = 17.196 ac 51.21% Impervious = 18.047 ac

Summary for Subcatchment A: North Watershed

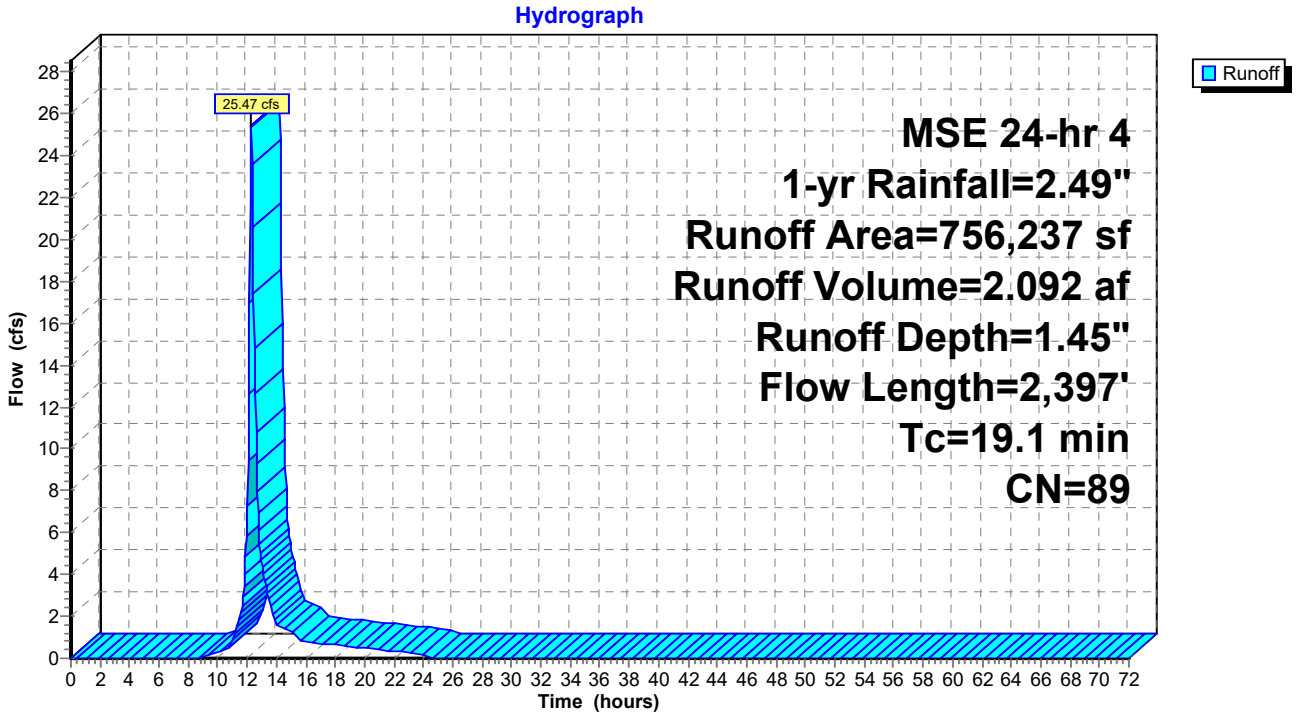
Runoff = 25.47 cfs @ 12.28 hrs, Volume= 2.092 af, Depth= 1.45"
Routed to Pond P-1 : Wet Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 1-yr Rainfall=2.49"

	Area (sf)	CN	Description
*	192,115	61	Pervious
*	75,253	98	Sidewalk
*	290,641	98	Pavement
*	198,228	98	Roof
	756,237	89	Weighted Average
	192,115		25.40% Pervious Area
	564,122		74.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	214	0.0510	0.27		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.84"
5.3	1,470	0.0511	4.59		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.7	713	0.0600	17.74	87.07	**Pipe Channel,** 30.0" Round Area= 4.9 sf Perim= 7.9' r= 0.63' n= 0.015 Concrete sewer w/manholes & inlets
19.1	2,397	Total			

Subcatchment A: North Watershed



Summary for Subcatchment B: South Watershed

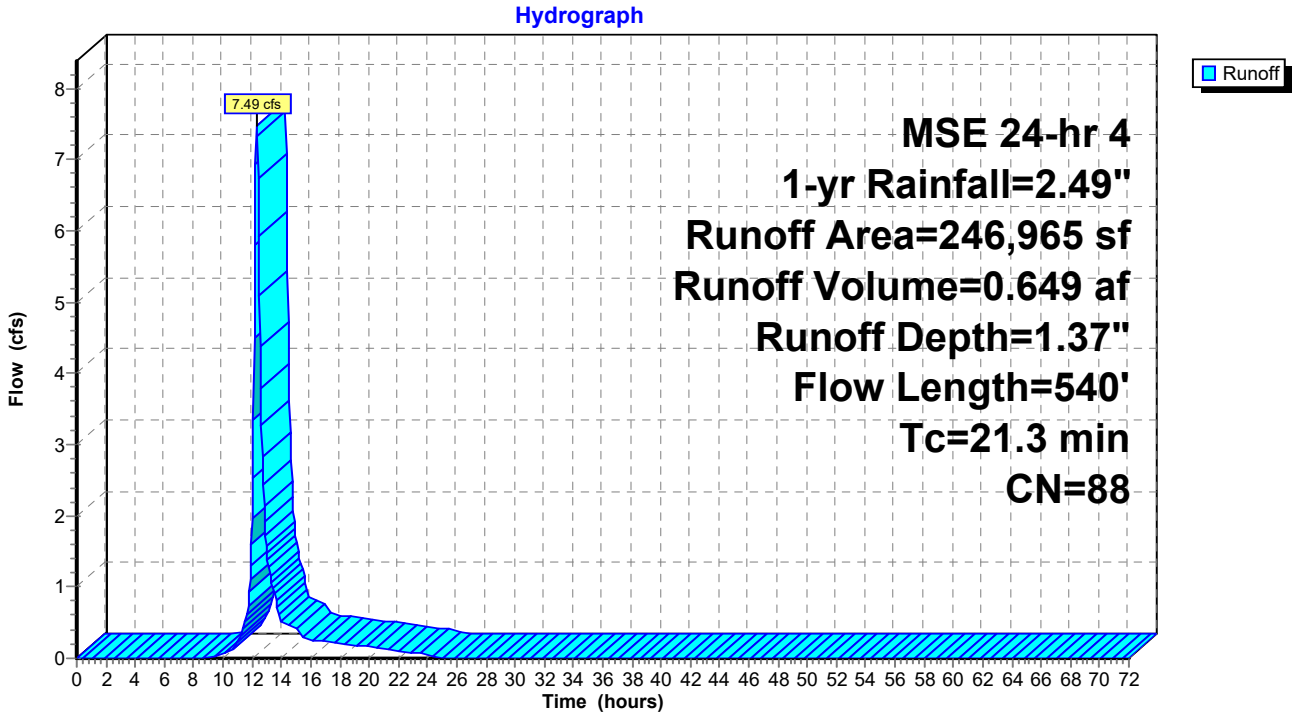
Runoff = 7.49 cfs @ 12.32 hrs, Volume= 0.649 af, Depth= 1.37"
Routed to Pond B-2 : Bioretention Basin 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 1-yr Rainfall=2.49"

	Area (sf)	CN	Description
*	70,613	61	Pervious
*	11,516	100	Water
*	21,266	98	Sidewalk
*	106,097	98	Pavement
*	37,473	98	Roof
	246,965	88	Weighted Average
	70,613		28.59% Pervious Area
	176,352		71.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.9	233	0.0215	0.20		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.84"
1.3	260	0.0269	3.33		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.1	47	0.0240	9.67	30.37	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.015 Concrete sewer w/manholes & inlets
21.3	540	Total			

Subcatchment B: South Watershed



Summary for Subcatchment C: Offsite

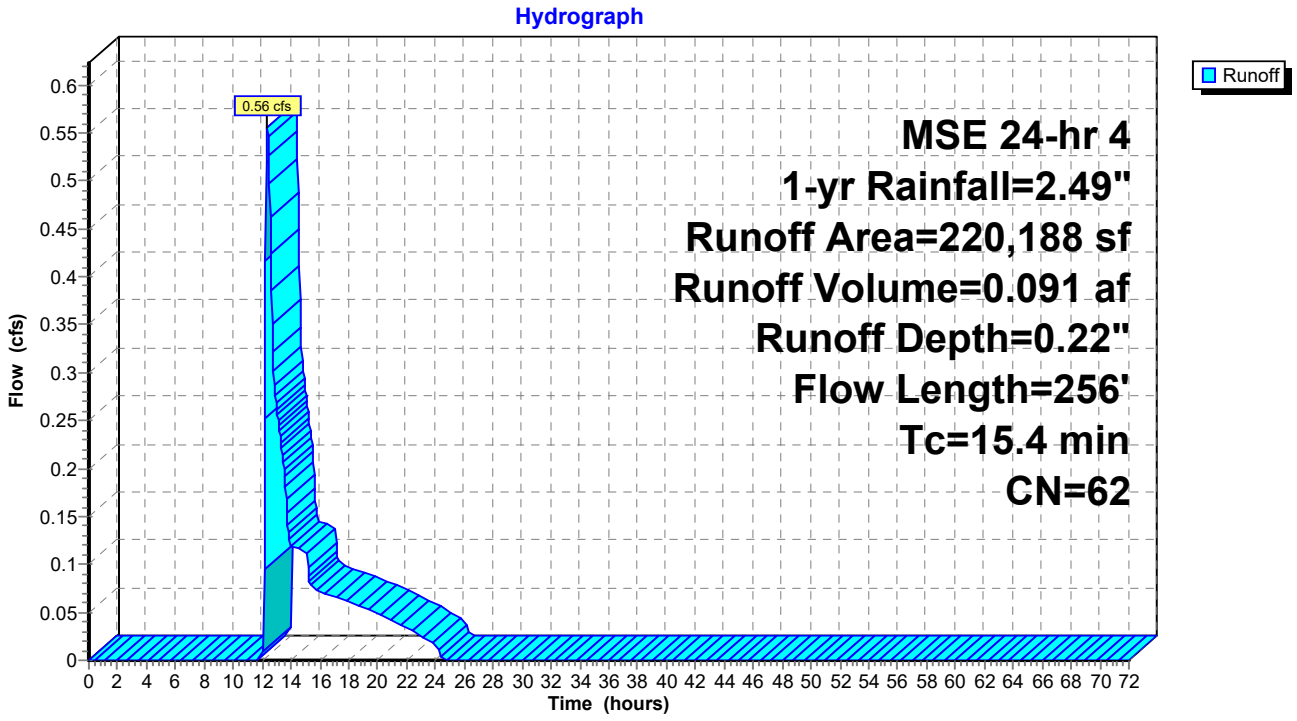
Runoff = 0.56 cfs @ 12.37 hrs, Volume= 0.091 af, Depth= 0.22"
Routed to Link Total : POST-DEVELOPMENT FLOW

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 1-yr Rainfall=2.49"

	Area (sf)	CN	Description
*	212,095	61	Pervious
*	8,093	98	Sidewalk
	220,188	62	Weighted Average
	212,095		96.32% Pervious Area
	8,093		3.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	45	0.0200	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.84"
9.9	211	0.2600	0.36		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.84"
15.4	256	Total			

Subcatchment C: Offsite



Summary for Subcatchment D: Direct Entry

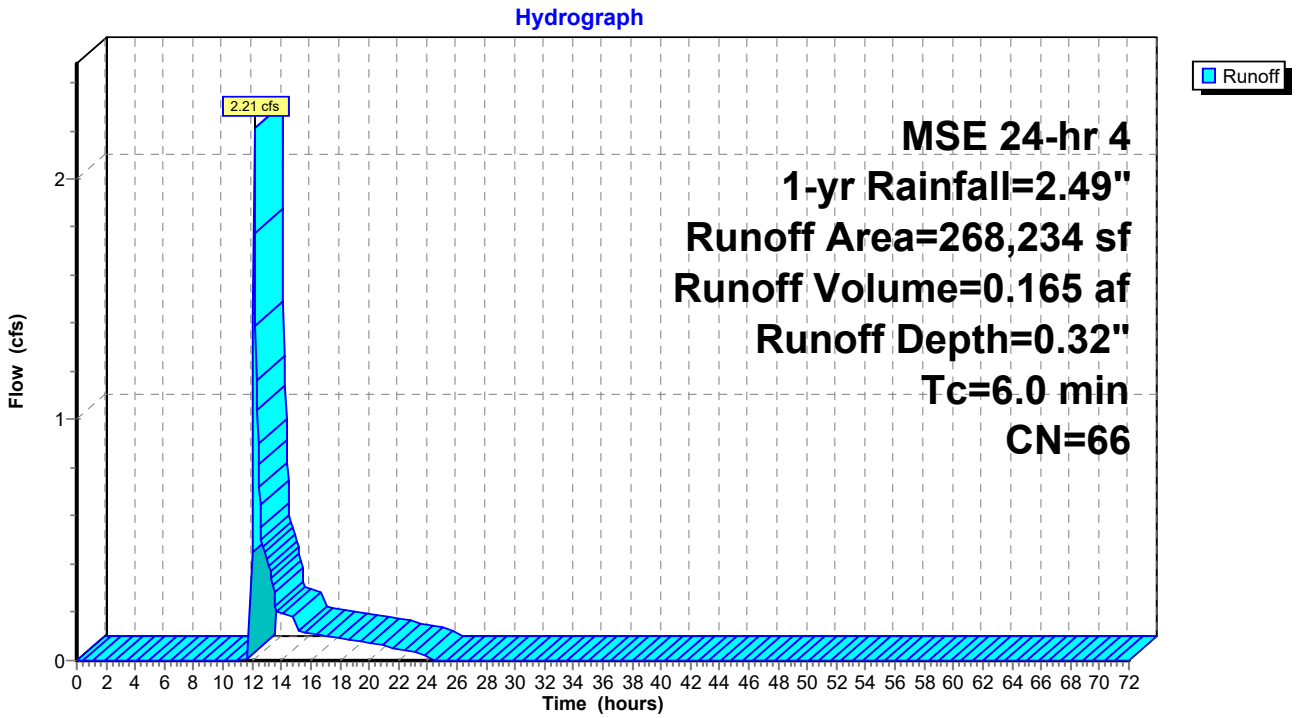
Runoff = 2.21 cfs @ 12.16 hrs, Volume= 0.165 af, Depth= 0.32"
Routed to Pond P-1 : Wet Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 1-yr Rainfall=2.49"

	Area (sf)	CN	Description
*	234,929	61	Pervious
*	21,649	100	Water
*	11,656	98	Sidewalk
	268,234	66	Weighted Average
	234,929		87.58% Pervious Area
	33,305		12.42% Impervious Area

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

Subcatchment D: Direct Entry



Summary for Subcatchment E: Direct Entry

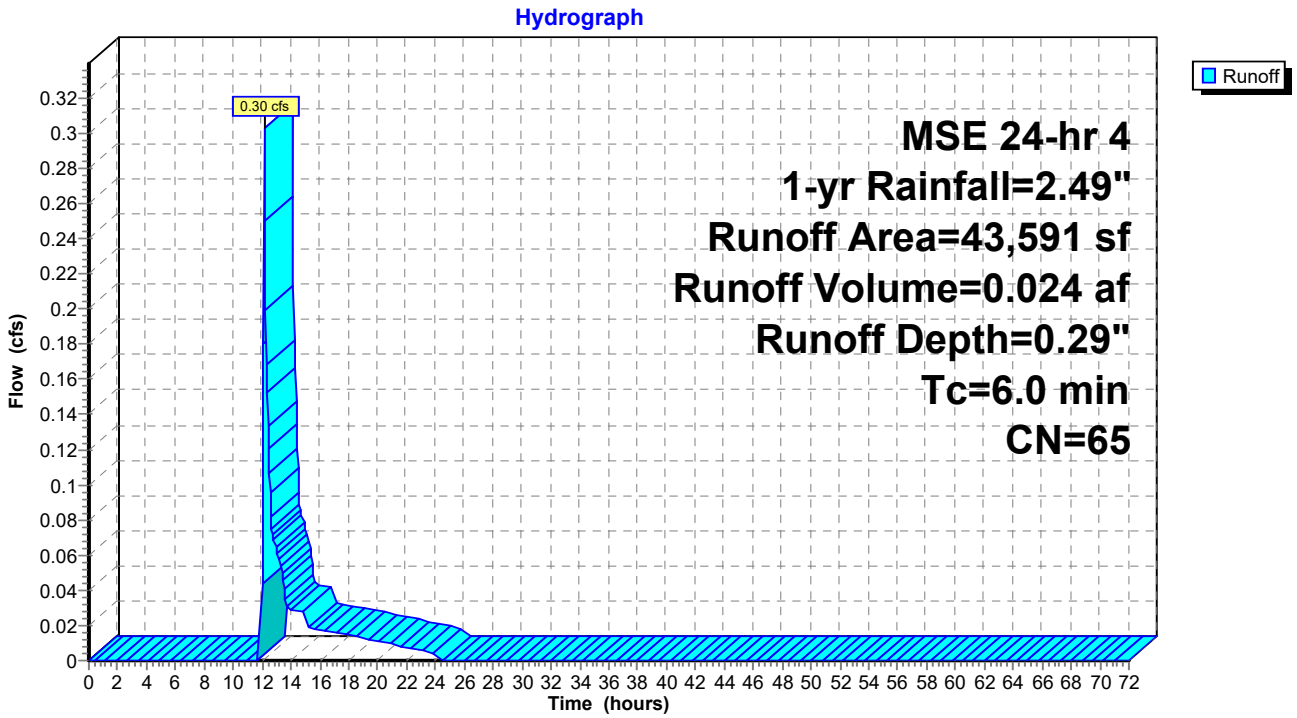
Runoff = 0.30 cfs @ 12.16 hrs, Volume= 0.024 af, Depth= 0.29"
Routed to Pond B-1 : Bioretention Basin 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 1-yr Rainfall=2.49"

	Area (sf)	CN	Description
*	39,324	61	Pervious
*	3,000	100	Water
*	1,267	98	Sidewalk
	43,591	65	Weighted Average
	39,324		90.21% Pervious Area
	4,267		9.79% Impervious Area

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

Subcatchment E: Direct Entry



Summary for Pond B-1: Bioretention Basin 1

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=230)

Inflow Area = 24.519 ac, 56.34% Impervious, Inflow Depth > 1.11" for 1-yr event
Inflow = 2.17 cfs @ 12.54 hrs, Volume= 2.259 af
Outflow = 1.61 cfs @ 14.71 hrs, Volume= 2.259 af, Atten= 26%, Lag= 130.0 min
Primary = 1.61 cfs @ 14.71 hrs, Volume= 2.259 af
Routed to Link Total : POST-DEVELOPMENT FLOW
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link Total : POST-DEVELOPMENT FLOW

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 867.54' @ 14.71 hrs Surf.Area= 4,644 sf Storage= 7,658 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 103.2 min (1,514.4 - 1,411.2)

Volume	Invert	Avail.Storage	Storage Description
#1	865.50'	18,422 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) x 0.95

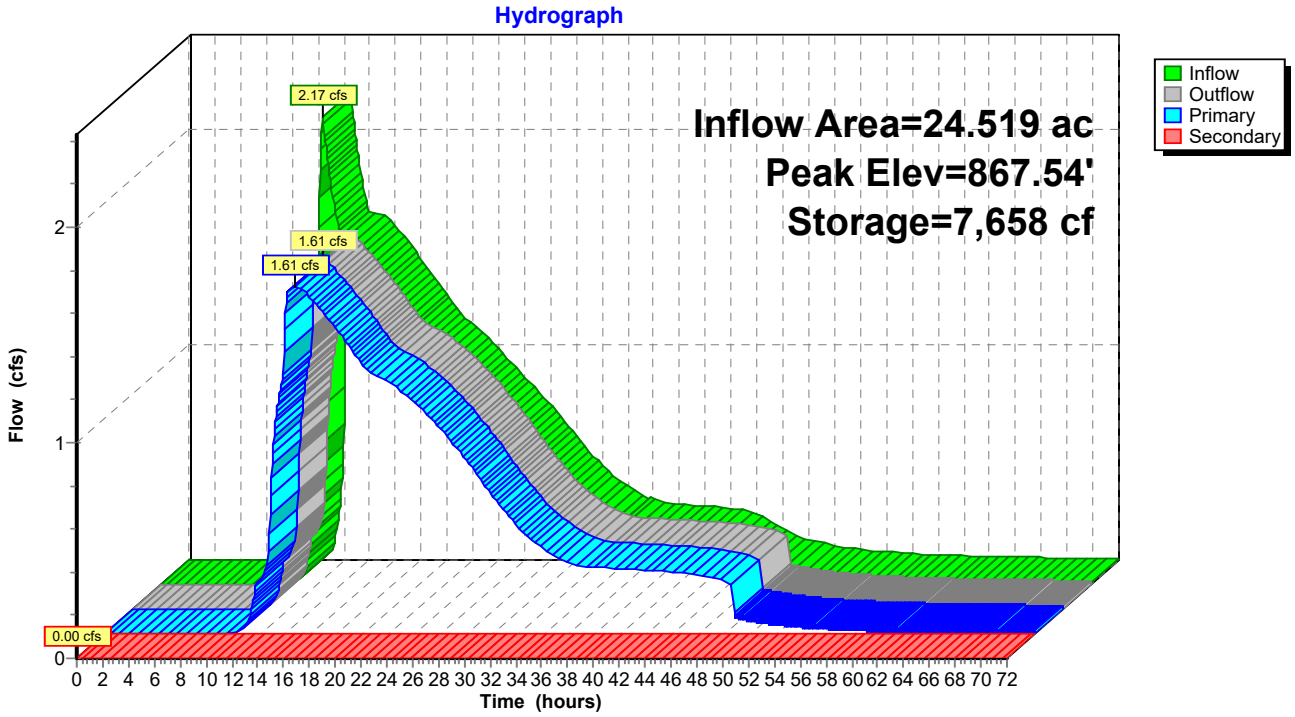
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
865.50	3,000	0	0
869.50	6,696	19,392	19,392

Device	Routing	Invert	Outlet Devices
#1	Primary	863.00'	**24.0" Round Culvert** L= 53.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 863.00' / 862.89' S= 0.0021 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 3.14 sf
#2	Device 1	865.50'	**3.600 in/hr Exfiltration over Surface area from 862.99' - 963.01'** Excluded Surface area = 0 sf
#3	Device 1	866.50'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	867.50'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Secondary	868.75'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=1.61 cfs @ 14.71 hrs HW=867.54' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Passes 1.61 cfs of 25.13 cfs potential flow)
  ├─**2=Exfiltration** (Exfiltration Controls 0.39 cfs)
  ├─**3=Orifice/Grate** (Orifice Controls 0.84 cfs @ 4.29 fps)
  └─**4=Orifice/Grate** (Weir Controls 0.38 cfs @ 0.68 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=865.50' TW=0.00' (Dynamic Tailwater)
└─**5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond B-1: Bioretention Basin 1



Summary for Pond B-2: Bioretention Basin 2

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=52)

Inflow Area = 5.670 ac, 71.41% Impervious, Inflow Depth = 1.37" for 1-yr event
Inflow = 7.49 cfs @ 12.32 hrs, Volume= 0.649 af
Outflow = 0.92 cfs @ 13.50 hrs, Volume= 0.649 af, Atten= 88%, Lag= 71.3 min
Primary = 0.92 cfs @ 13.50 hrs, Volume= 0.649 af
Routed to Link Total : POST-DEVELOPMENT FLOW
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link Total : POST-DEVELOPMENT FLOW

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 948.05' @ 13.50 hrs Surf.Area= 12,265 sf Storage= 12,135 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 110.6 min (937.6 - 827.0)

Volume	Invert	Avail.Storage	Storage Description
#1	947.00'	53,892 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) x 0.95

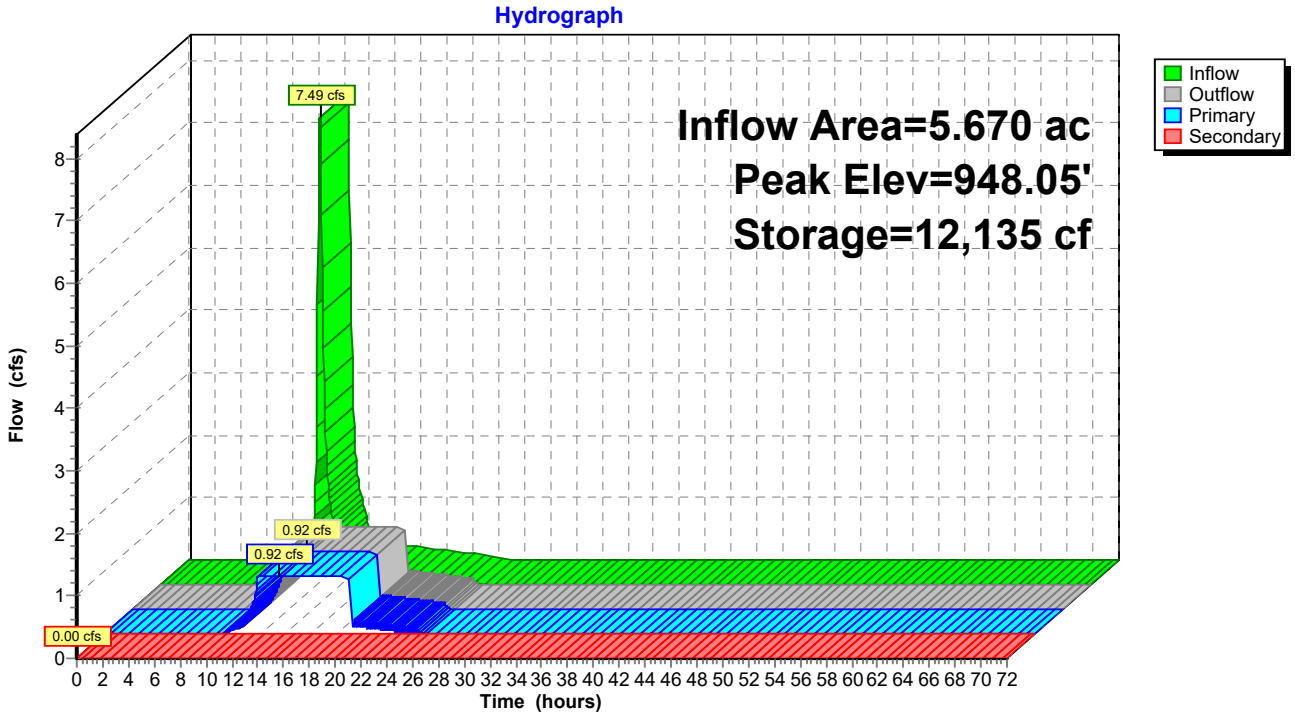
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
947.00	11,516	0	0
951.00	16,848	56,728	56,728

Device	Routing	Invert	Outlet Devices
#1	Primary	943.00'	**24.0" Round Culvert** L= 192.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 943.00' / 942.50' S= 0.0026 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 3.14 sf
#2	Device 1	947.00'	**3.600 in/hr Exfiltration over Surface area from 946.99' - 947.01'** Excluded Surface area = 0 sf
#3	Device 1	948.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	949.00'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Secondary	950.00'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.92 cfs @ 13.50 hrs HW=948.05' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Passes 0.92 cfs of 25.70 cfs potential flow)
  ├─**2=Exfiltration** (Exfiltration Controls 0.91 cfs)
  ├─**3=Orifice/Grate** (Orifice Controls 0.01 cfs @ 0.73 fps)
  └─**4=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=947.00' TW=0.00' (Dynamic Tailwater)
└─**5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond B-2: Bioretention Basin 2



Summary for Pond P-1: Wet Pond

Inflow Area = 23.519 ac, 58.32% Impervious, Inflow Depth = 1.15" for 1-yr event
Inflow = 26.70 cfs @ 12.28 hrs, Volume= 2.257 af
Outflow = 2.07 cfs @ 12.55 hrs, Volume= 2.234 af, Atten= 92%, Lag= 16.5 min
Primary = 2.07 cfs @ 12.55 hrs, Volume= 2.234 af
Routed to Pond B-1 : Bioretention Basin 1
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond B-1 : Bioretention Basin 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 868.43' @ 14.68 hrs Surf.Area= 28,374 sf Storage= 59,364 cf

Plug-Flow detention time= 596.3 min calculated for 2.234 af (99% of inflow)
Center-of-Mass det. time= 590.3 min (1,416.9 - 826.6)

Volume	Invert	Avail.Storage	Storage Description
#1	866.00'	267,516 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) x 0.95

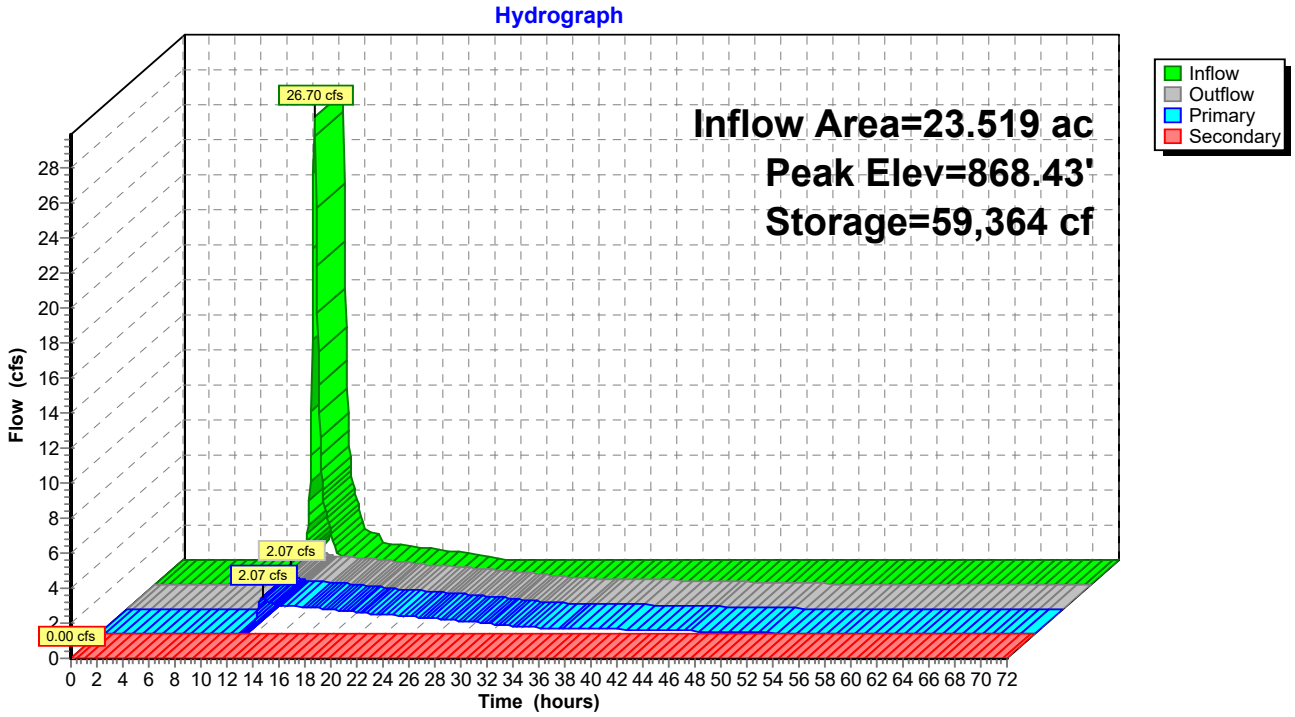
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
866.00	21,649	0	0
874.00	48,750	281,596	281,596

Device	Routing	Invert	Outlet Devices
#1	Primary	866.00'	**24.0" Round Culvert** L= 46.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 866.00' / 865.50' S= 0.0109 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 3.14 sf
#2	Device 1	866.00'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	870.00'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	873.50'	**50.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=2.07 cfs @ 12.55 hrs HW=867.91' TW=866.39' (Dynamic Tailwater)
└**1=Culvert** (Passes 2.07 cfs of 12.83 cfs potential flow)
└**2=Orifice/Grate** (Orifice Controls 2.07 cfs @ 5.93 fps)
└**3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=866.00' TW=865.50' (Dynamic Tailwater)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P-1: Wet Pond

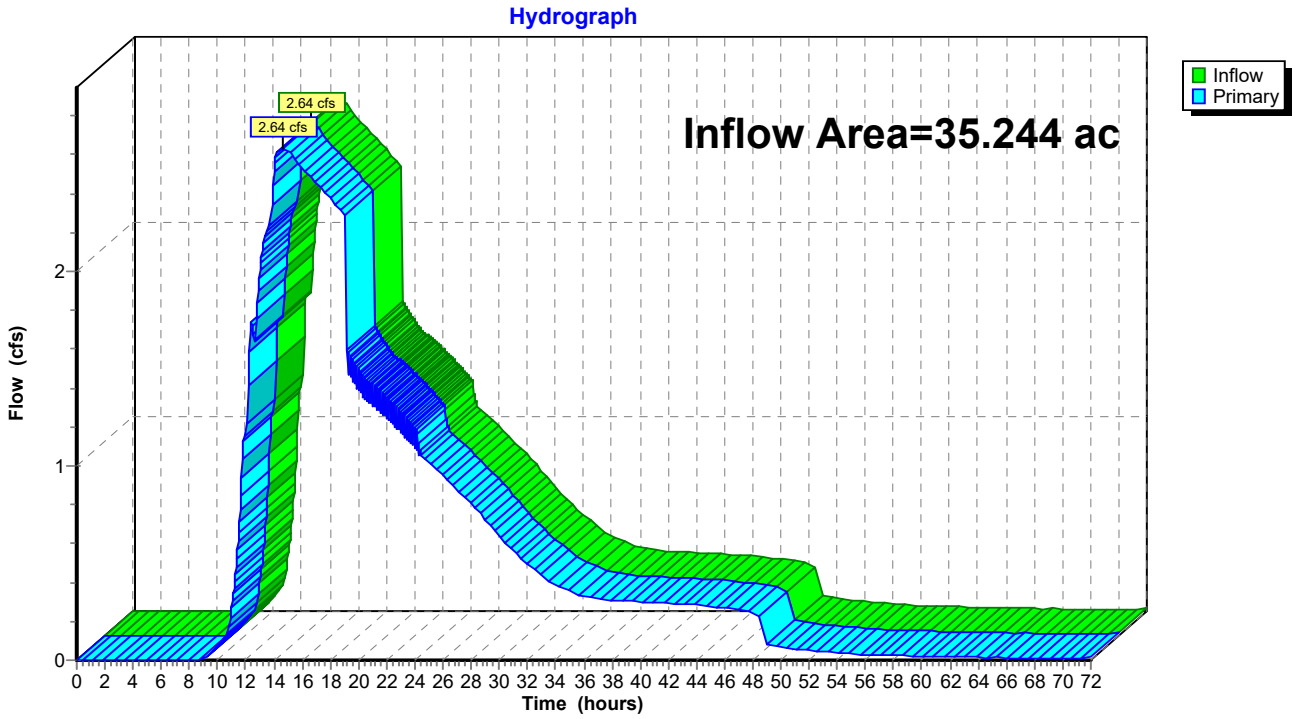


Summary for Link Total: POST-DEVELOPMENT FLOW

Inflow Area = 35.244 ac, 51.21% Impervious, Inflow Depth > 1.02" for 1-yr event
Inflow = 2.64 cfs @ 14.57 hrs, Volume= 2.999 af
Primary = 2.64 cfs @ 14.57 hrs, Volume= 2.999 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link Total: POST-DEVELOPMENT FLOW



Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points x 2
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 A: North Watershed Runoff Area=756,237 sf 74.60% Impervious Runoff Depth=1.76"
Flow Length=2,397' Tc=19.1 min CN=89 Runoff=30.84 cfs 2.540 af

Subcatchment B: South Watershed Runoff Area=246,965 sf 71.41% Impervious Runoff Depth=1.68"
Flow Length=540' Tc=21.3 min CN=88 Runoff=9.13 cfs 0.792 af

Subcatchment C: Offsite Runoff Area=220,188 sf 3.68% Impervious Runoff Depth=0.34"
Flow Length=256' Tc=15.4 min CN=62 Runoff=1.16 cfs 0.142 af

Subcatchment D: Direct Entry Runoff Area=268,234 sf 12.42% Impervious Runoff Depth=0.47"
Tc=6.0 min CN=66 Runoff=3.75 cfs 0.241 af

Subcatchment E: Direct Entry Runoff Area=43,591 sf 9.79% Impervious Runoff Depth=0.43"
Tc=6.0 min CN=65 Runoff=0.54 cfs 0.036 af

Pond B-1: Bioretention Basin 1 Peak Elev=867.57' Storage=7,782 cf Inflow=2.34 cfs 2.793 af
Primary=2.01 cfs 2.793 af Secondary=0.00 cfs 0.000 af Outflow=2.01 cfs 2.793 af

Pond B-2: Bioretention Basin 2 Peak Elev=948.31' Storage=15,457 cf Inflow=9.13 cfs 0.792 af
Primary=1.16 cfs 0.792 af Secondary=0.00 cfs 0.000 af Outflow=1.16 cfs 0.792 af

Pond P-1: Wet Pond Peak Elev=868.95' Storage=74,675 cf Inflow=32.72 cfs 2.782 af
Primary=2.18 cfs 2.757 af Secondary=0.00 cfs 0.000 af Outflow=2.18 cfs 2.757 af

Link Total: POST-DEVELOPMENTFLOW Inflow=3.38 cfs 3.727 af
Primary=3.38 cfs 3.727 af

Total Runoff Area = 35.244 ac Runoff Volume = 3.752 af Average Runoff Depth = 1.28"
48.79% Pervious = 17.196 ac 51.21% Impervious = 18.047 ac

Summary for Subcatchment A: North Watershed

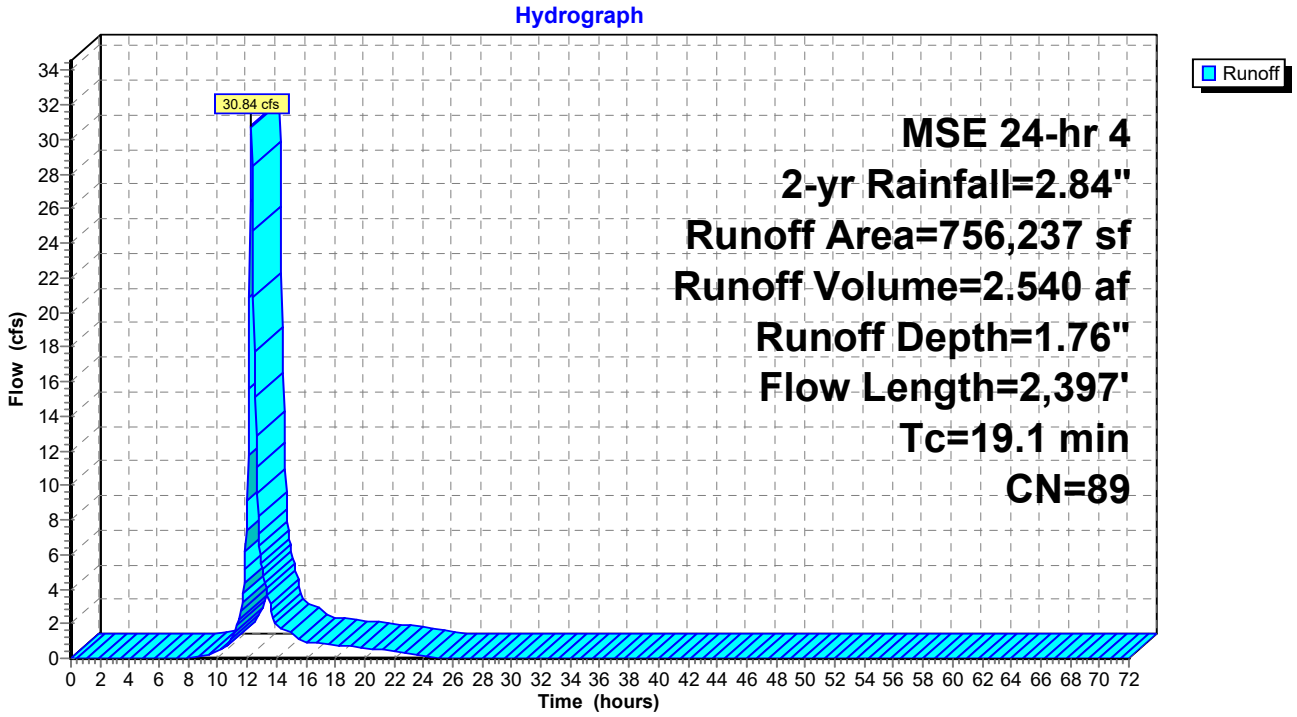
Runoff = 30.84 cfs @ 12.28 hrs, Volume= 2.540 af, Depth= 1.76"
Routed to Pond P-1 : Wet Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 2-yr Rainfall=2.84"

	Area (sf)	CN	Description
*	192,115	61	Pervious
*	75,253	98	Sidewalk
*	290,641	98	Pavement
*	198,228	98	Roof
	756,237	89	Weighted Average
	192,115		25.40% Pervious Area
	564,122		74.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	214	0.0510	0.27		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.84"
5.3	1,470	0.0511	4.59		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.7	713	0.0600	17.74	87.07	**Pipe Channel,** 30.0" Round Area= 4.9 sf Perim= 7.9' r= 0.63' n= 0.015 Concrete sewer w/manholes & inlets
19.1	2,397	Total			

Subcatchment A: North Watershed



Summary for Subcatchment B: South Watershed

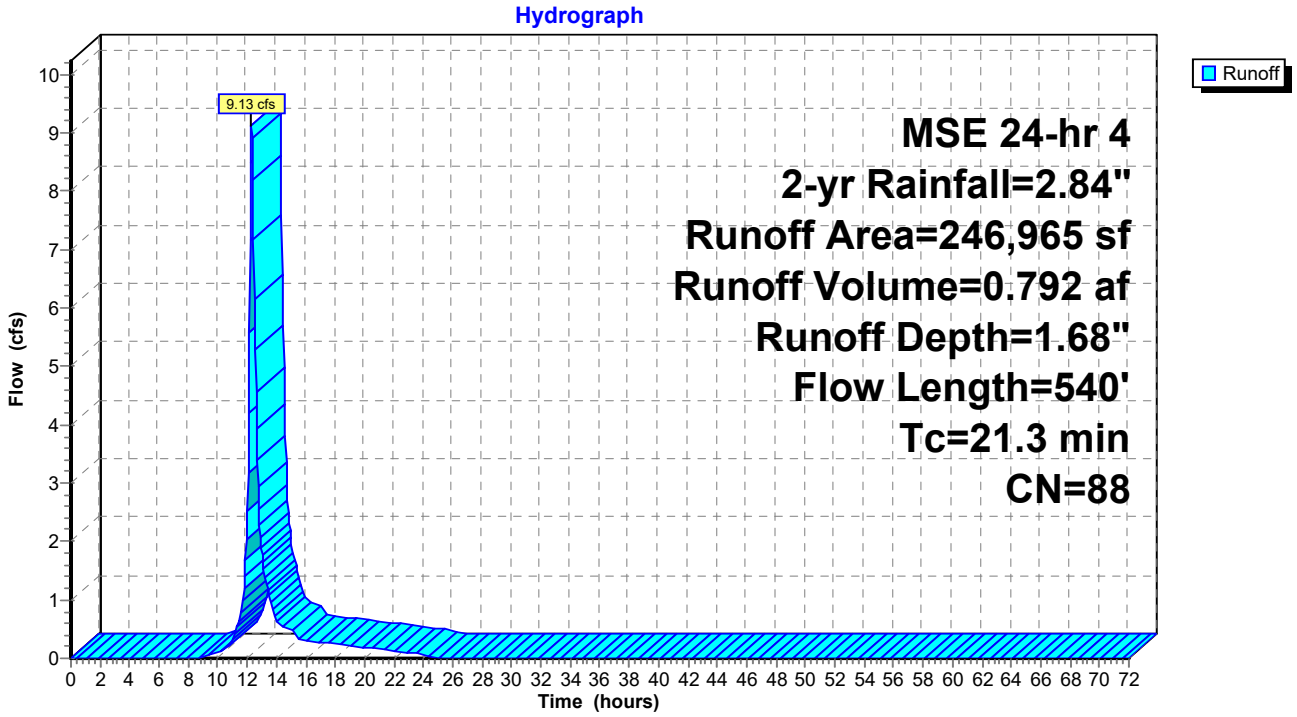
Runoff = 9.13 cfs @ 12.31 hrs, Volume= 0.792 af, Depth= 1.68"
Routed to Pond B-2 : Bioretention Basin 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 2-yr Rainfall=2.84"

	Area (sf)	CN	Description
*	70,613	61	Pervious
*	11,516	100	Water
*	21,266	98	Sidewalk
*	106,097	98	Pavement
*	37,473	98	Roof
	246,965	88	Weighted Average
	70,613		28.59% Pervious Area
	176,352		71.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.9	233	0.0215	0.20		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.84"
1.3	260	0.0269	3.33		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.1	47	0.0240	9.67	30.37	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.015 Concrete sewer w/manholes & inlets
21.3	540	Total			

Subcatchment B: South Watershed



Summary for Subcatchment C: Offsite

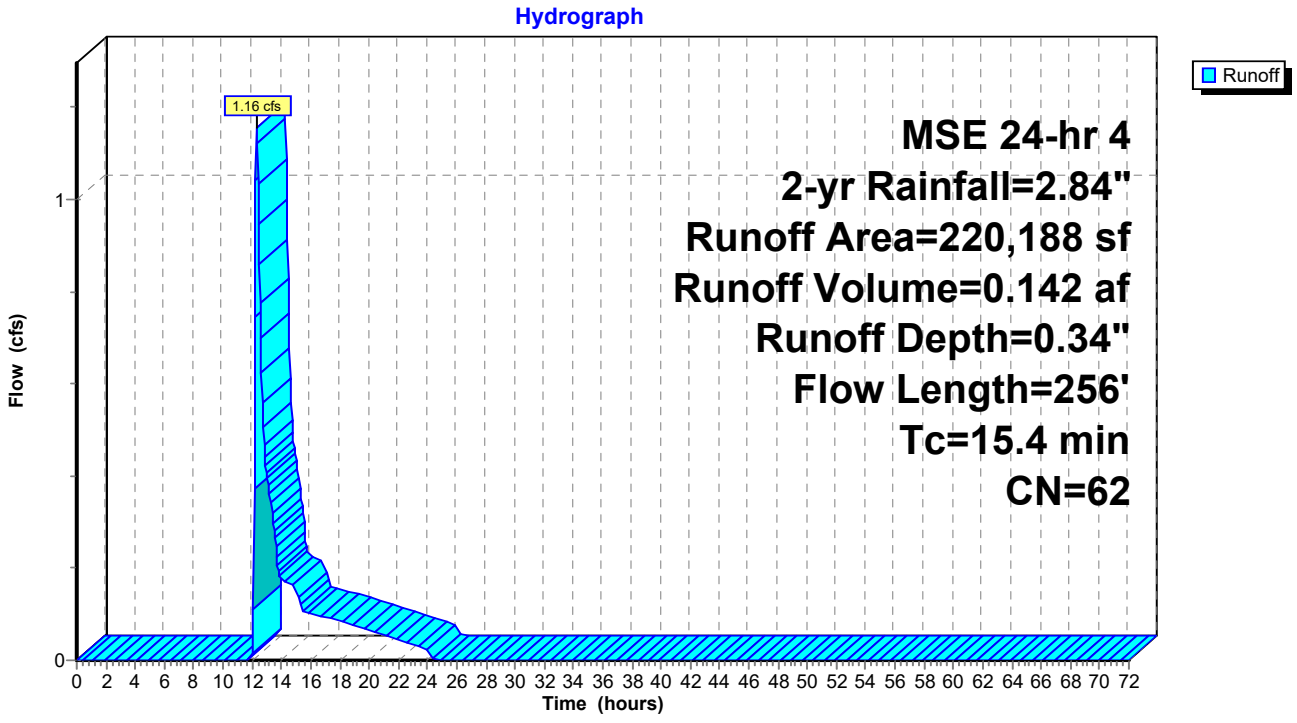
Runoff = 1.16 cfs @ 12.31 hrs, Volume= 0.142 af, Depth= 0.34"
Routed to Link Total : POST-DEVELOPMENT FLOW

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 2-yr Rainfall=2.84"

	Area (sf)	CN	Description
*	212,095	61	Pervious
*	8,093	98	Sidewalk
	220,188	62	Weighted Average
	212,095		96.32% Pervious Area
	8,093		3.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	45	0.0200	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.84"
9.9	211	0.2600	0.36		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.84"
15.4	256	Total			

Subcatchment C: Offsite



Summary for Subcatchment D: Direct Entry

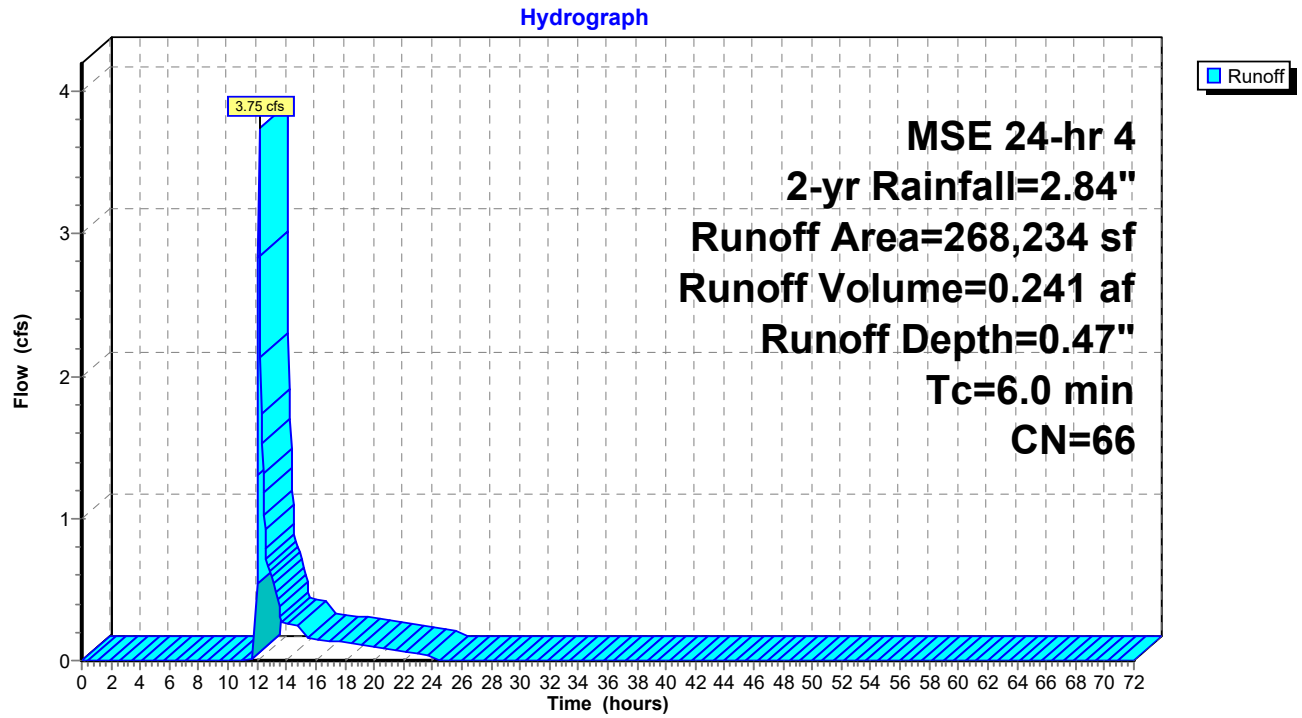
Runoff = 3.75 cfs @ 12.15 hrs, Volume= 0.241 af, Depth= 0.47"
Routed to Pond P-1 : Wet Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 2-yr Rainfall=2.84"

	Area (sf)	CN	Description
*	234,929	61	Pervious
*	21,649	100	Water
*	11,656	98	Sidewalk
	268,234	66	Weighted Average
	234,929		87.58% Pervious Area
	33,305		12.42% Impervious Area

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

Subcatchment D: Direct Entry



Summary for Subcatchment E: Direct Entry

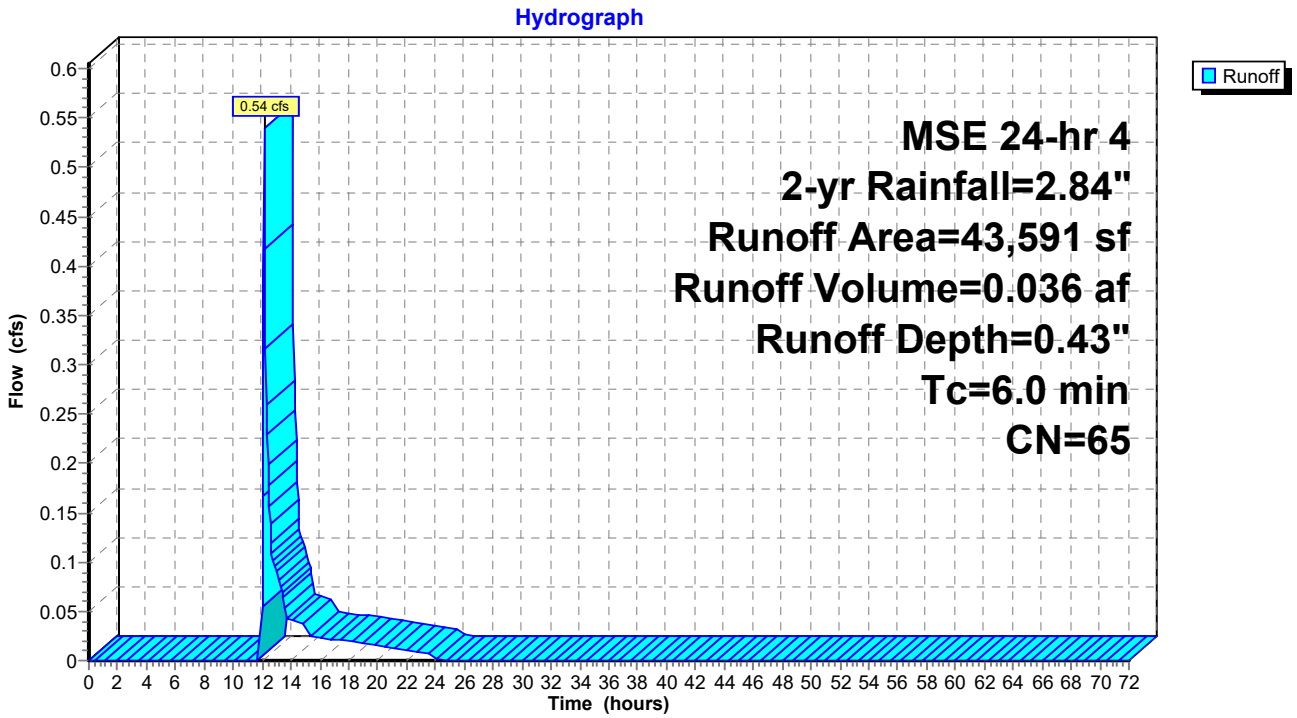
Runoff = 0.54 cfs @ 12.15 hrs, Volume= 0.036 af, Depth= 0.43"
Routed to Pond B-1 : Bioretention Basin 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 2-yr Rainfall=2.84"

	Area (sf)	CN	Description
*	39,324	61	Pervious
*	3,000	100	Water
*	1,267	98	Sidewalk
	43,591	65	Weighted Average
	39,324		90.21% Pervious Area
	4,267		9.79% Impervious Area

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

Subcatchment E: Direct Entry



Summary for Pond B-1: Bioretention Basin 1

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=209)

Inflow Area = 24.519 ac, 56.34% Impervious, Inflow Depth > 1.37" for 2-yr event
Inflow = 2.34 cfs @ 12.45 hrs, Volume= 2.793 af
Outflow = 2.01 cfs @ 14.29 hrs, Volume= 2.793 af, Atten= 14%, Lag= 110.5 min
Primary = 2.01 cfs @ 14.29 hrs, Volume= 2.793 af
Routed to Link Total : POST-DEVELOPMENT FLOW
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link Total : POST-DEVELOPMENT FLOW

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 867.57' @ 14.29 hrs Surf.Area= 4,667 sf Storage= 7,782 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 93.0 min (1,502.9 - 1,409.9)

Volume	Invert	Avail.Storage	Storage Description
#1	865.50'	18,422 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) x 0.95

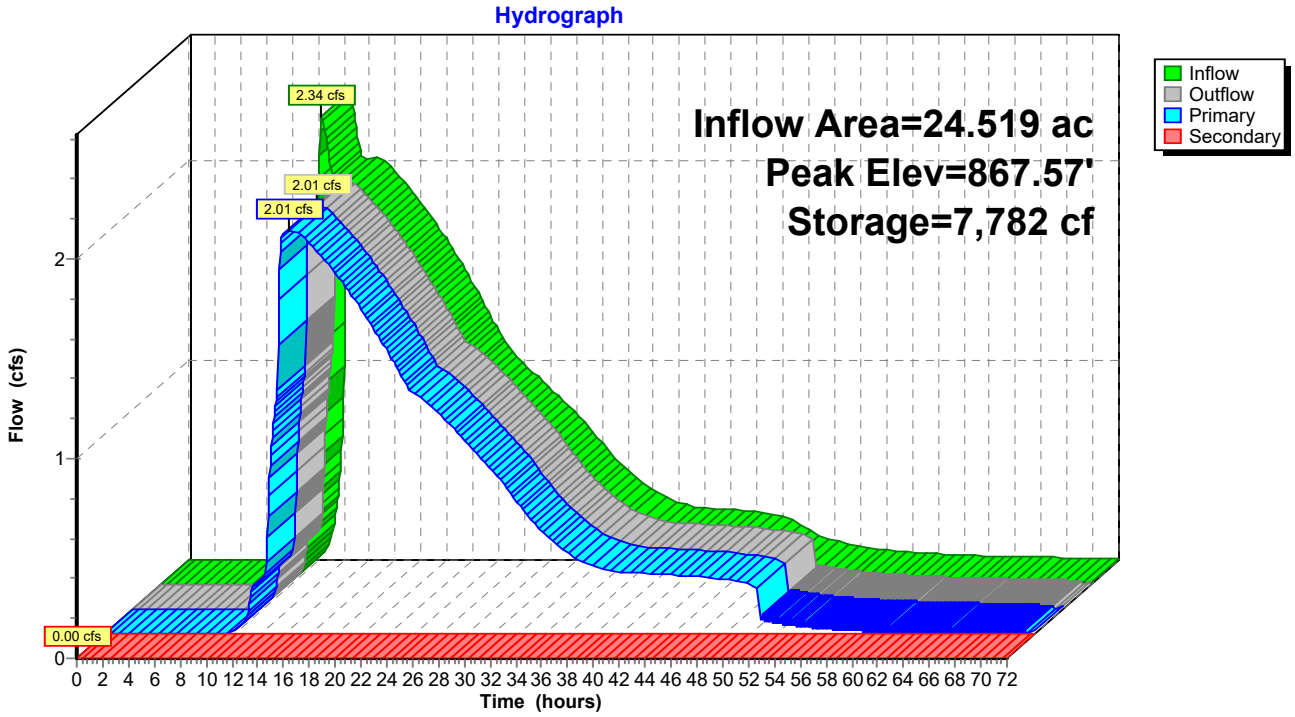
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
865.50	3,000	0	0
869.50	6,696	19,392	19,392

Device	Routing	Invert	Outlet Devices
#1	Primary	863.00'	**24.0" Round Culvert** L= 53.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 863.00' / 862.89' S= 0.0021 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 3.14 sf
#2	Device 1	865.50'	**3.600 in/hr Exfiltration over Surface area from 862.99' - 963.01'** Excluded Surface area = 0 sf
#3	Device 1	866.50'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	867.50'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Secondary	868.75'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=2.01 cfs @ 14.29 hrs HW=867.57' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Passes 2.01 cfs of 25.22 cfs potential flow)
  ├─**2=Exfiltration** (Exfiltration Controls 0.39 cfs)
  ├─**3=Orifice/Grate** (Orifice Controls 0.86 cfs @ 4.36 fps)
  └─**4=Orifice/Grate** (Weir Controls 0.77 cfs @ 0.87 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=865.50' TW=0.00' (Dynamic Tailwater)
└─**5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond B-1: Bioretention Basin 1



Summary for Pond B-2: Bioretention Basin 2

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=39)

Inflow Area = 5.670 ac, 71.41% Impervious, Inflow Depth = 1.68" for 2-yr event
Inflow = 9.13 cfs @ 12.31 hrs, Volume= 0.792 af
Outflow = 1.16 cfs @ 13.43 hrs, Volume= 0.792 af, Atten= 87%, Lag= 67.1 min
Primary = 1.16 cfs @ 13.43 hrs, Volume= 0.792 af
Routed to Link Total : POST-DEVELOPMENT FLOW
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link Total : POST-DEVELOPMENT FLOW

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 948.31' @ 13.43 hrs Surf.Area= 12,603 sf Storage= 15,457 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 134.3 min (956.5 - 822.2)

Volume	Invert	Avail.Storage	Storage Description
#1	947.00'	53,892 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) x 0.95

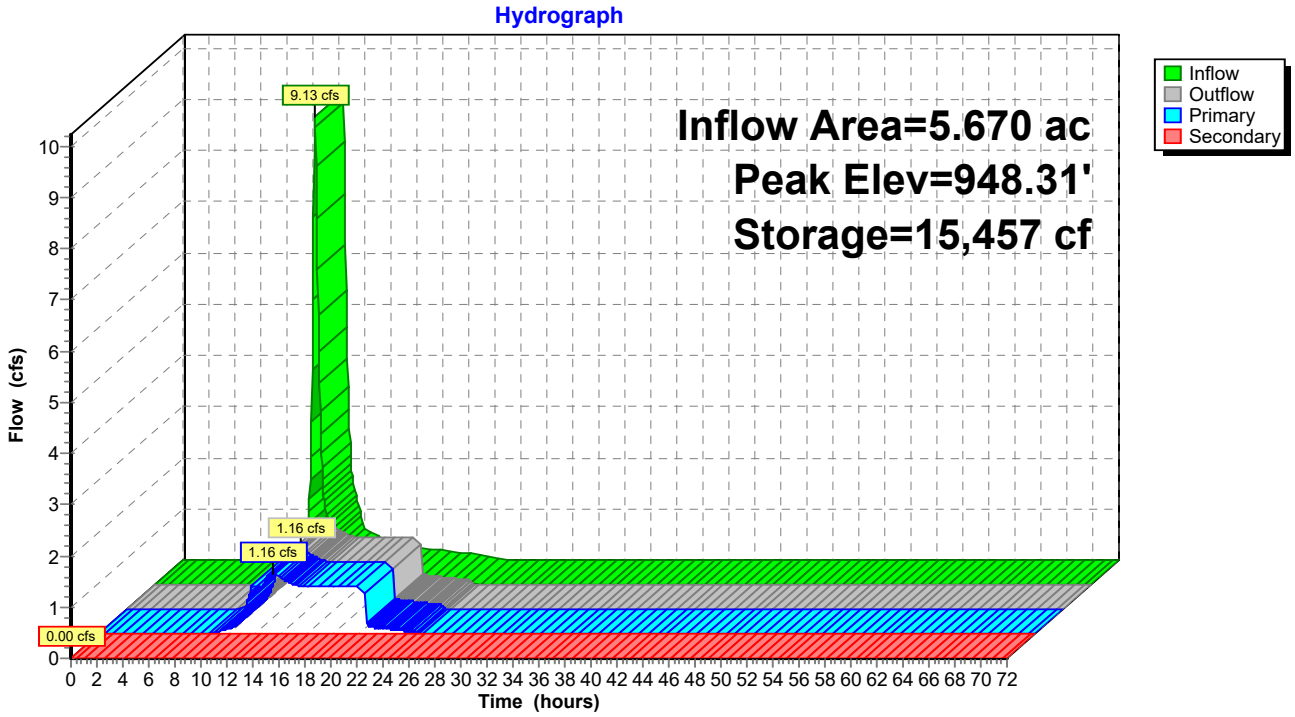
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
947.00	11,516	0	0
951.00	16,848	56,728	56,728

Device	Routing	Invert	Outlet Devices
#1	Primary	943.00'	**24.0" Round Culvert** L= 192.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 943.00' / 942.50' S= 0.0026 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 3.14 sf
#2	Device 1	947.00'	**3.600 in/hr Exfiltration over Surface area from 946.99' - 947.01'** Excluded Surface area = 0 sf
#3	Device 1	948.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	949.00'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Secondary	950.00'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=1.16 cfs @ 13.43 hrs HW=948.31' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Passes 1.16 cfs of 26.65 cfs potential flow)
  ├─**2=Exfiltration** (Exfiltration Controls 0.91 cfs)
  ├─**3=Orifice/Grate** (Orifice Controls 0.25 cfs @ 1.90 fps)
  └─**4=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=947.00' TW=0.00' (Dynamic Tailwater)
└─**5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond B-2: Bioretention Basin 2



Summary for Pond P-1: Wet Pond

Inflow Area = 23.519 ac, 58.32% Impervious, Inflow Depth = 1.42" for 2-yr event
Inflow = 32.72 cfs @ 12.28 hrs, Volume= 2.782 af
Outflow = 2.18 cfs @ 12.55 hrs, Volume= 2.757 af, Atten= 93%, Lag= 16.5 min
Primary = 2.18 cfs @ 12.55 hrs, Volume= 2.757 af
Routed to Pond B-1 : Bioretention Basin 1
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond B-1 : Bioretention Basin 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 868.95' @ 14.31 hrs Surf.Area= 30,060 sf Storage= 74,675 cf

Plug-Flow detention time= 599.9 min calculated for 2.757 af (99% of inflow)
Center-of-Mass det. time= 594.7 min (1,416.8 - 822.1)

Volume	Invert	Avail.Storage	Storage Description
#1	866.00'	267,516 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) x 0.95

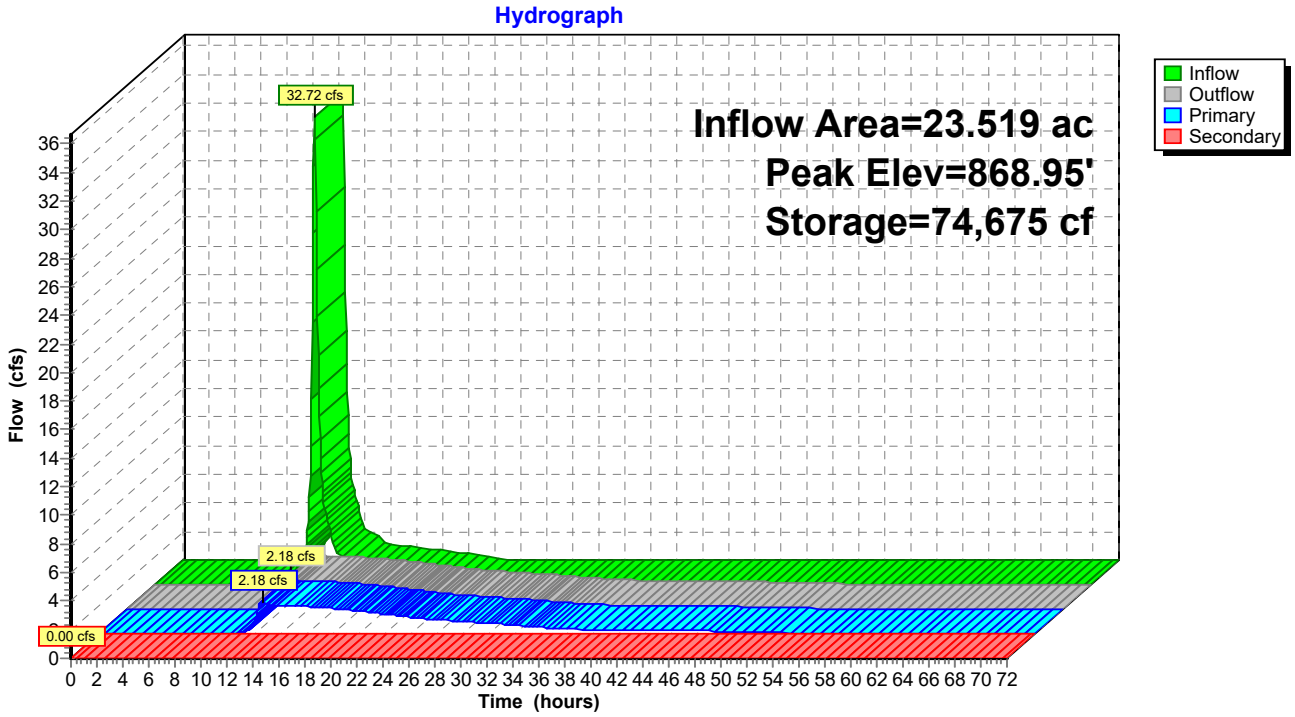
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
866.00	21,649	0	0
874.00	48,750	281,596	281,596

Device	Routing	Invert	Outlet Devices
#1	Primary	866.00'	**24.0" Round Culvert** L= 46.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 866.00' / 865.50' S= 0.0109 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 3.14 sf
#2	Device 1	866.00'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	870.00'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	873.50'	**50.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=2.18 cfs @ 12.55 hrs HW=868.34' TW=866.66' (Dynamic Tailwater)
└─**1=Culvert** (Passes 2.18 cfs of 15.45 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 2.18 cfs @ 6.25 fps)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=866.00' TW=865.50' (Dynamic Tailwater)
└─**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P-1: Wet Pond

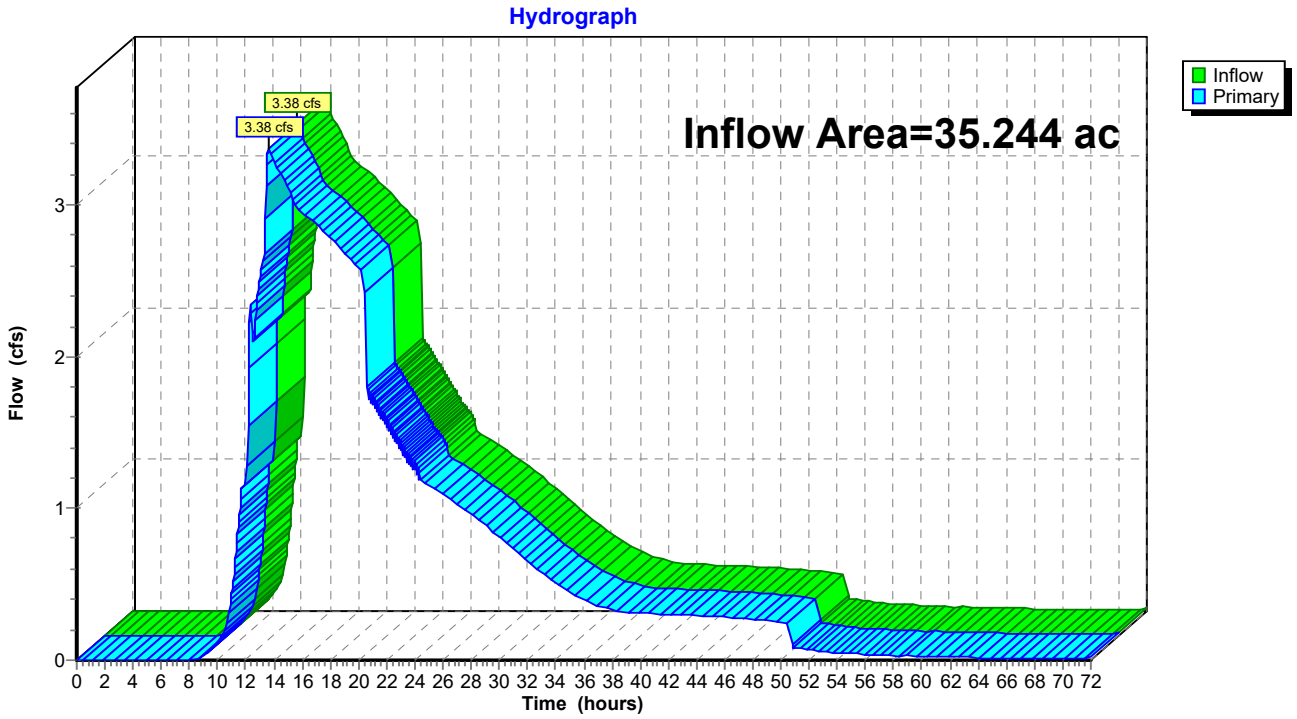


Summary for Link Total: POST-DEVELOPMENT FLOW

Inflow Area = 35.244 ac, 51.21% Impervious, Inflow Depth > 1.27" for 2-yr event
Inflow = 3.38 cfs @ 13.63 hrs, Volume= 3.727 af
Primary = 3.38 cfs @ 13.63 hrs, Volume= 3.727 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link Total: POST-DEVELOPMENT FLOW



Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points x 2
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 A: North Watershed Runoff Area=756,237 sf 74.60% Impervious Runoff Depth=2.91"
Flow Length=2,397' Tc=19.1 min CN=89 Runoff=50.33 cfs 4.207 af

Subcatchment B: South Watershed Runoff Area=246,965 sf 71.41% Impervious Runoff Depth=2.81"
Flow Length=540' Tc=21.3 min CN=88 Runoff=15.15 cfs 1.329 af

Subcatchment C: Offsite Runoff Area=220,188 sf 3.68% Impervious Runoff Depth=0.91"
Flow Length=256' Tc=15.4 min CN=62 Runoff=4.52 cfs 0.384 af

Subcatchment D: Direct Entry Runoff Area=268,234 sf 12.42% Impervious Runoff Depth=1.14"
Tc=6.0 min CN=66 Runoff=10.60 cfs 0.585 af

Subcatchment E: Direct Entry Runoff Area=43,591 sf 9.79% Impervious Runoff Depth=1.08"
Tc=6.0 min CN=65 Runoff=1.62 cfs 0.090 af

Pond B-1: Bioretention Basin 1 Peak Elev=867.84' Storage=9,050 cf Inflow=9.41 cfs 4.853 af
Primary=9.38 cfs 4.853 af Secondary=0.00 cfs 0.000 af Outflow=9.38 cfs 4.853 af

Pond B-2: Bioretention Basin 2 Peak Elev=949.11' Storage=25,918 cf Inflow=15.15 cfs 1.329 af
Primary=3.31 cfs 1.329 af Secondary=0.00 cfs 0.000 af Outflow=3.31 cfs 1.329 af

Pond P-1: Wet Pond Peak Elev=870.29' Storage=118,010 cf Inflow=55.17 cfs 4.792 af
Primary=9.21 cfs 4.763 af Secondary=0.00 cfs 0.000 af Outflow=9.21 cfs 4.763 af

Link Total: POST-DEVELOPMENTFLOW Inflow=13.47 cfs 6.567 af
Primary=13.47 cfs 6.567 af

Total Runoff Area = 35.244 ac Runoff Volume = 6.595 af Average Runoff Depth = 2.25"
48.79% Pervious = 17.196 ac 51.21% Impervious = 18.047 ac

Summary for Subcatchment A: North Watershed

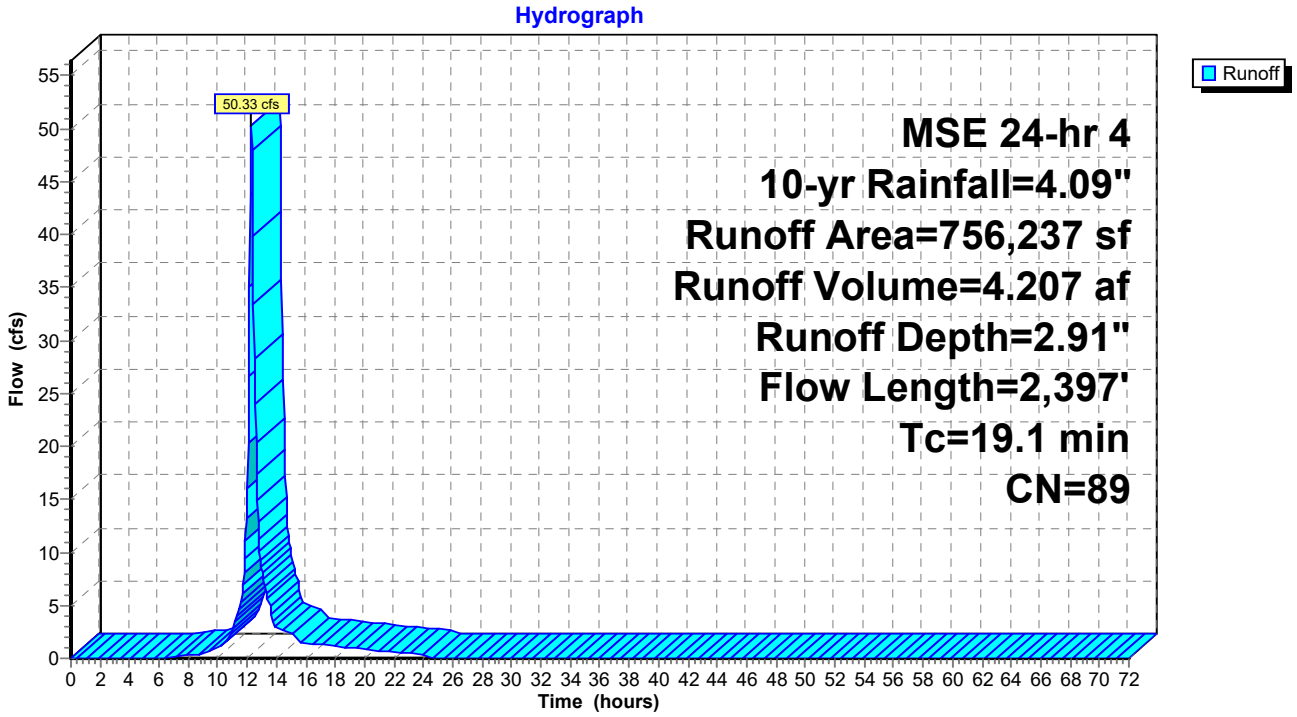
Runoff = 50.33 cfs @ 12.28 hrs, Volume= 4.207 af, Depth= 2.91"
Routed to Pond P-1 : Wet Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 10-yr Rainfall=4.09"

	Area (sf)	CN	Description
*	192,115	61	Pervious
*	75,253	98	Sidewalk
*	290,641	98	Pavement
*	198,228	98	Roof
	756,237	89	Weighted Average
	192,115		25.40% Pervious Area
	564,122		74.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	214	0.0510	0.27		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.84"
5.3	1,470	0.0511	4.59		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.7	713	0.0600	17.74	87.07	**Pipe Channel,** 30.0" Round Area= 4.9 sf Perim= 7.9' r= 0.63' n= 0.015 Concrete sewer w/manholes & inlets
19.1	2,397	Total			

Subcatchment A: North Watershed



Summary for Subcatchment B: South Watershed

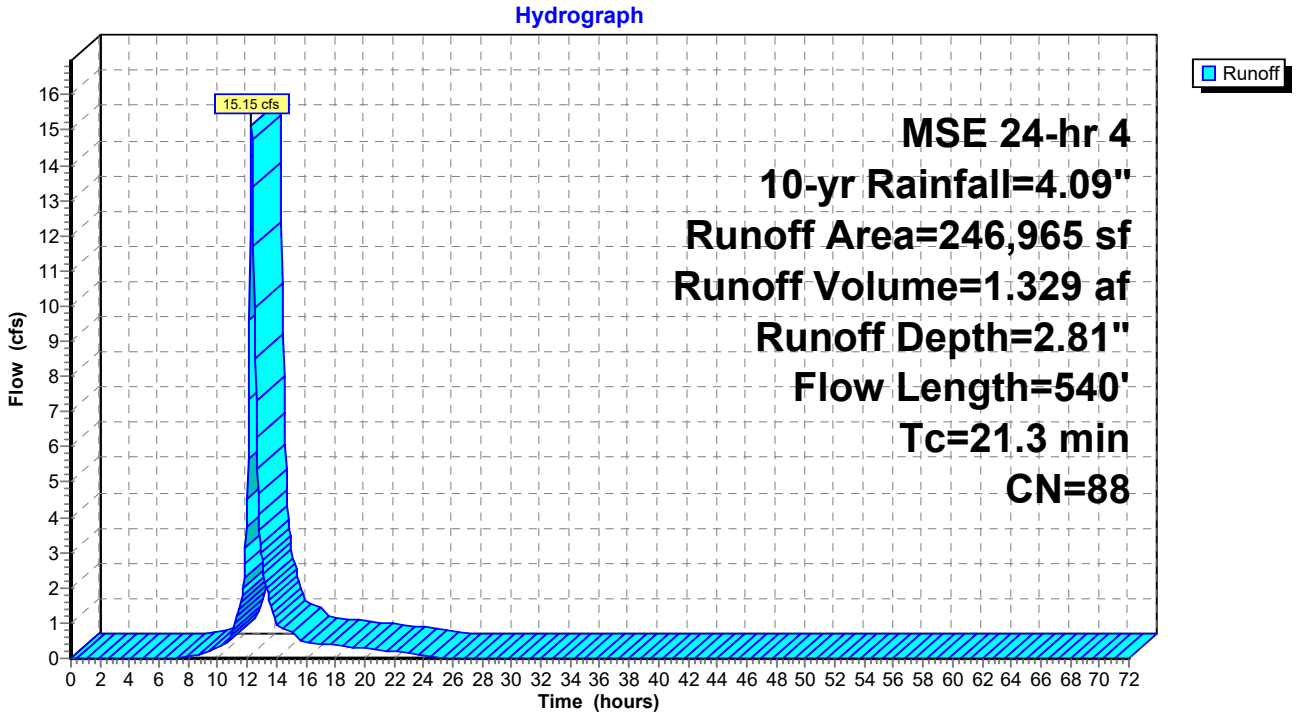
Runoff = 15.15 cfs @ 12.31 hrs, Volume= 1.329 af, Depth= 2.81"
Routed to Pond B-2 : Bioretention Basin 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 10-yr Rainfall=4.09"

	Area (sf)	CN	Description
*	70,613	61	Pervious
*	11,516	100	Water
*	21,266	98	Sidewalk
*	106,097	98	Pavement
*	37,473	98	Roof
	246,965	88	Weighted Average
	70,613		28.59% Pervious Area
	176,352		71.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.9	233	0.0215	0.20		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.84"
1.3	260	0.0269	3.33		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.1	47	0.0240	9.67	30.37	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.015 Concrete sewer w/manholes & inlets
21.3	540	Total			

Subcatchment B: South Watershed



Summary for Subcatchment C: Offsite

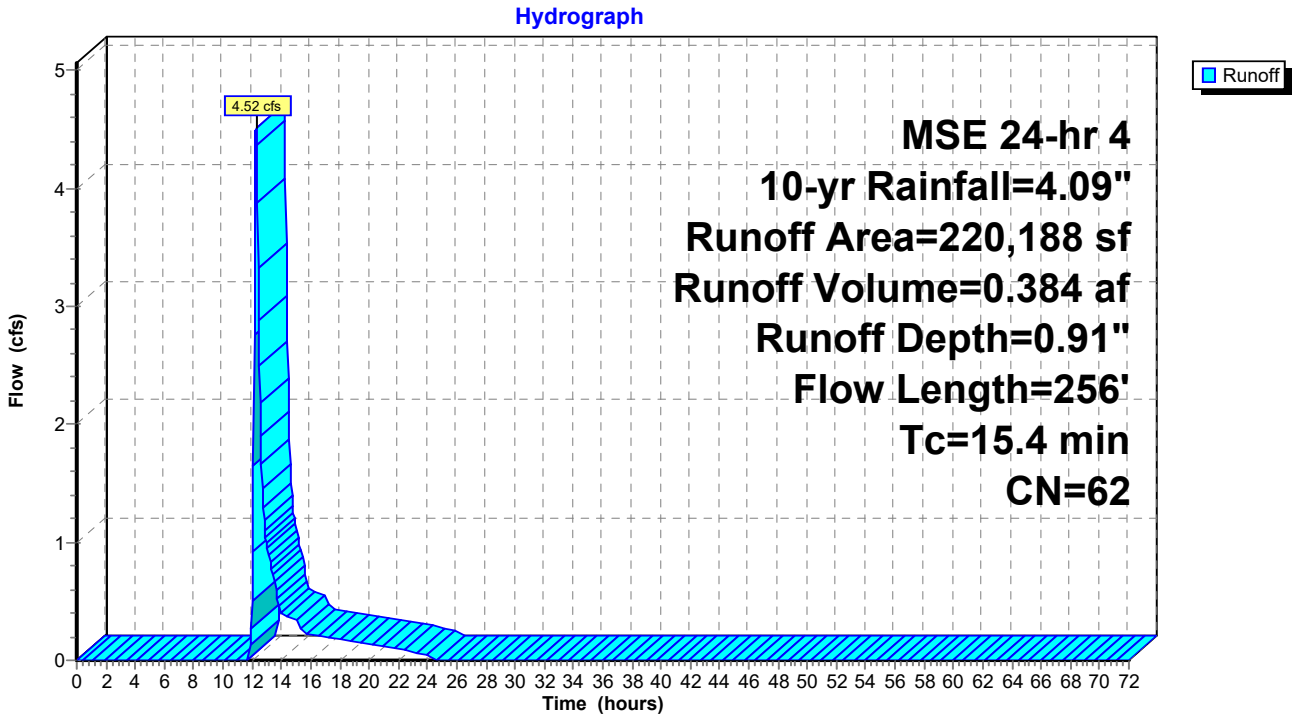
Runoff = 4.52 cfs @ 12.27 hrs, Volume= 0.384 af, Depth= 0.91"
Routed to Link Total : POST-DEVELOPMENT FLOW

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 10-yr Rainfall=4.09"

	Area (sf)	CN	Description
*	212,095	61	Pervious
*	8,093	98	Sidewalk
	220,188	62	Weighted Average
	212,095		96.32% Pervious Area
	8,093		3.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	45	0.0200	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.84"
9.9	211	0.2600	0.36		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.84"
15.4	256	Total			

Subcatchment C: Offsite



Summary for Subcatchment D: Direct Entry

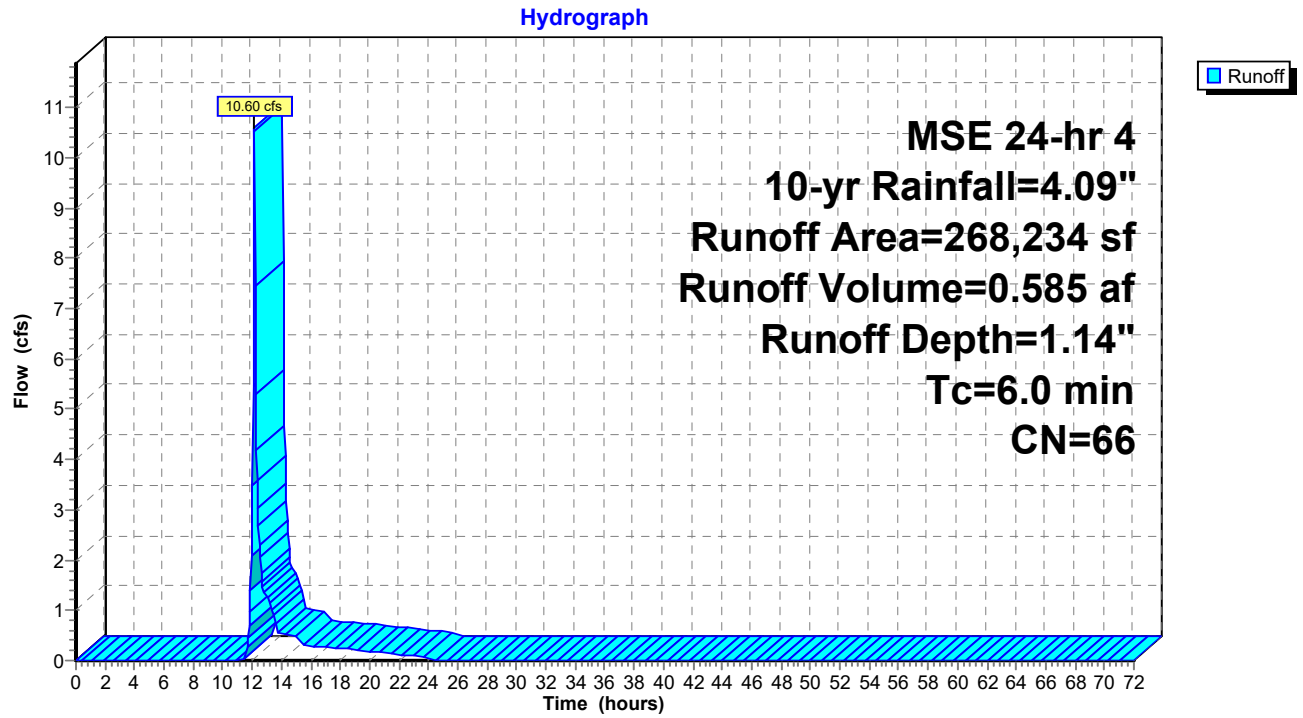
Runoff = 10.60 cfs @ 12.14 hrs, Volume= 0.585 af, Depth= 1.14"
Routed to Pond P-1 : Wet Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 10-yr Rainfall=4.09"

	Area (sf)	CN	Description
*	234,929	61	Pervious
*	21,649	100	Water
*	11,656	98	Sidewalk
	268,234	66	Weighted Average
	234,929		87.58% Pervious Area
	33,305		12.42% Impervious Area

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

Subcatchment D: Direct Entry



Summary for Subcatchment E: Direct Entry

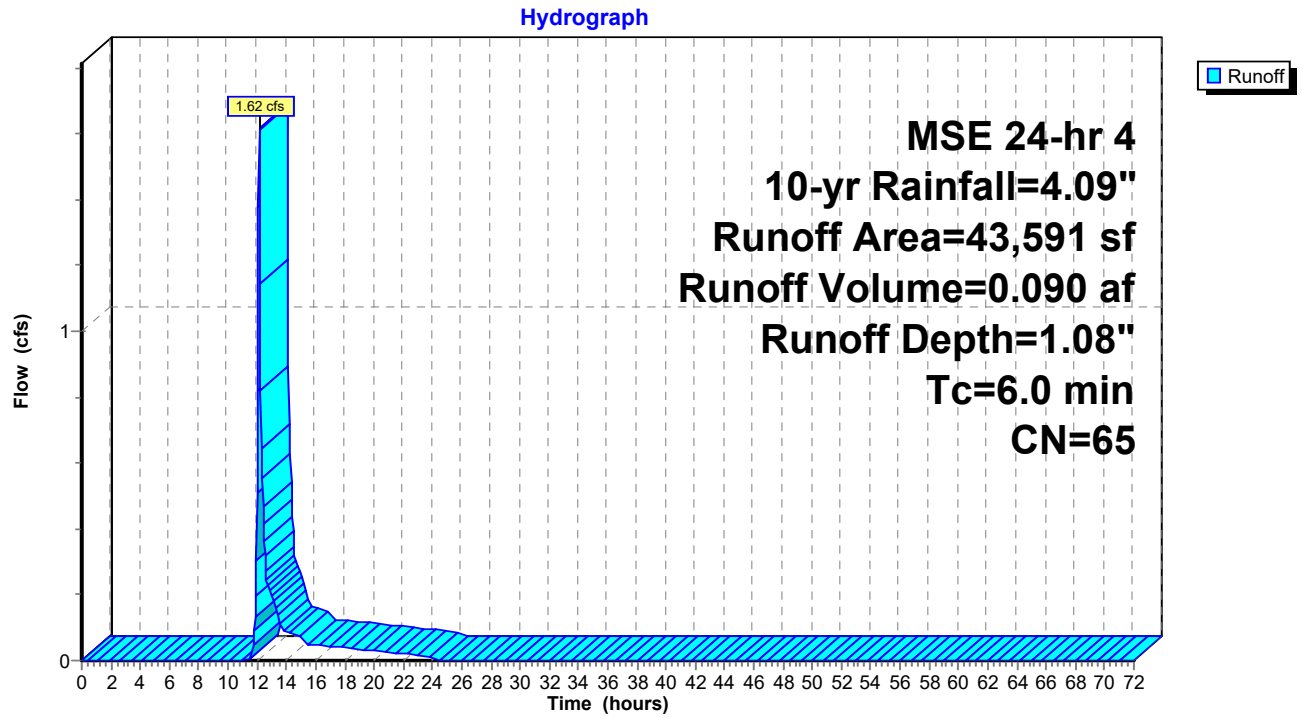
Runoff = 1.62 cfs @ 12.14 hrs, Volume= 0.090 af, Depth= 1.08"
Routed to Pond B-1 : Bioretention Basin 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 10-yr Rainfall=4.09"

	Area (sf)	CN	Description
*	39,324	61	Pervious
*	3,000	100	Water
*	1,267	98	Sidewalk
	43,591	65	Weighted Average
	39,324		90.21% Pervious Area
	4,267		9.79% Impervious Area

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

Subcatchment E: Direct Entry



Summary for Pond B-1: Bioretention Basin 1

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=96)

Inflow Area = 24.519 ac, 56.34% Impervious, Inflow Depth > 2.38" for 10-yr event
Inflow = 9.41 cfs @ 13.01 hrs, Volume= 4.853 af
Outflow = 9.38 cfs @ 13.05 hrs, Volume= 4.853 af, Atten= 0%, Lag= 2.6 min
Primary = 9.38 cfs @ 13.05 hrs, Volume= 4.853 af
Routed to Link Total : POST-DEVELOPMENT FLOW
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link Total : POST-DEVELOPMENT FLOW

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 867.84' @ 13.05 hrs Surf.Area= 4,900 sf Storage= 9,050 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 66.0 min (1,407.2 - 1,341.3)

Volume	Invert	Avail.Storage	Storage Description
#1	865.50'	18,422 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) x 0.95

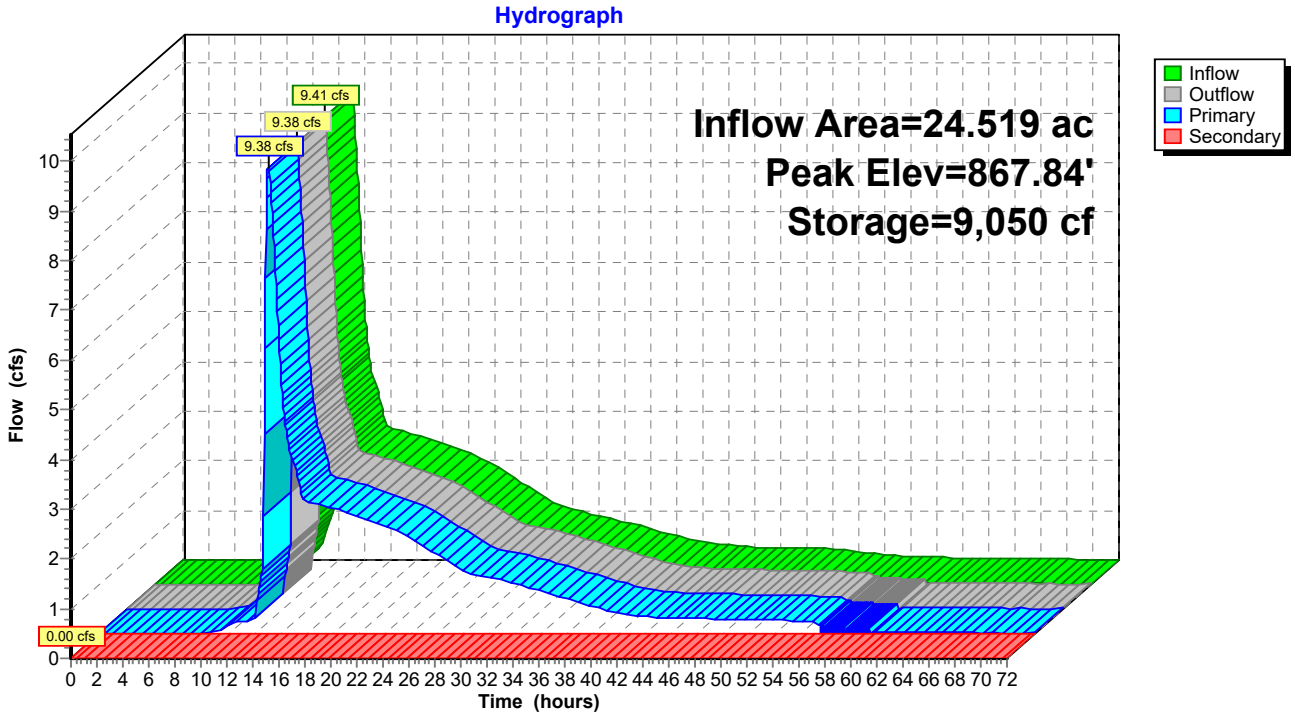
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
865.50	3,000	0	0
869.50	6,696	19,392	19,392

Device	Routing	Invert	Outlet Devices
#1	Primary	863.00'	**24.0" Round Culvert** L= 53.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 863.00' / 862.89' S= 0.0021 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 3.14 sf
#2	Device 1	865.50'	**3.600 in/hr Exfiltration over Surface area from 862.99' - 963.01'** Excluded Surface area = 0 sf
#3	Device 1	866.50'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	867.50'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Secondary	868.75'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=9.38 cfs @ 13.05 hrs HW=867.84' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Passes 9.38 cfs of 26.14 cfs potential flow)
  ├─**2=Exfiltration** (Exfiltration Controls 0.41 cfs)
  ├─**3=Orifice/Grate** (Orifice Controls 0.99 cfs @ 5.02 fps)
  └─**4=Orifice/Grate** (Weir Controls 7.99 cfs @ 1.89 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=865.50' TW=0.00' (Dynamic Tailwater)
└─**5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond B-1: Bioretention Basin 1



Summary for Pond B-2: Bioretention Basin 2

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=10)

Inflow Area = 5.670 ac, 71.41% Impervious, Inflow Depth = 2.81" for 10-yr event
Inflow = 15.15 cfs @ 12.31 hrs, Volume= 1.329 af
Outflow = 3.31 cfs @ 12.90 hrs, Volume= 1.329 af, Atten= 78%, Lag= 35.3 min
Primary = 3.31 cfs @ 12.90 hrs, Volume= 1.329 af
Routed to Link Total : POST-DEVELOPMENT FLOW
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link Total : POST-DEVELOPMENT FLOW

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 949.11' @ 12.90 hrs Surf.Area= 13,614 sf Storage= 25,918 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 156.9 min (966.9 - 810.0)

Volume	Invert	Avail.Storage	Storage Description
#1	947.00'	53,892 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) x 0.95

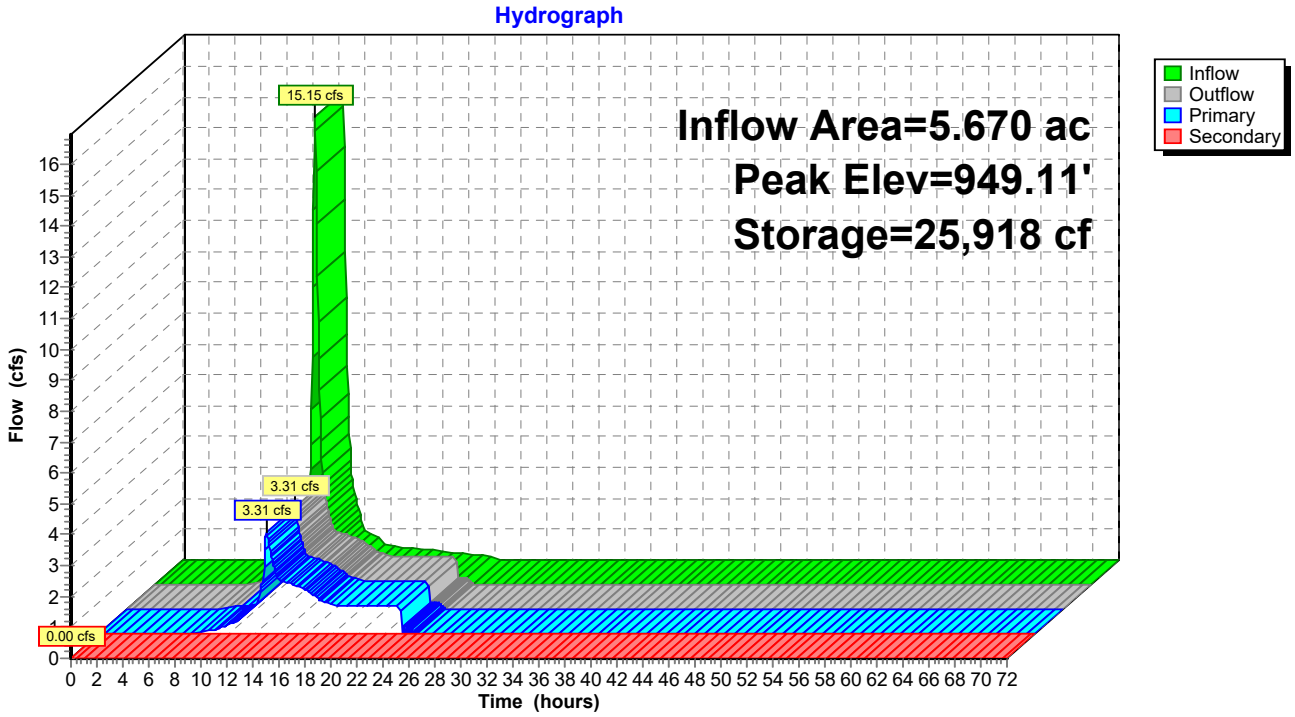
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
947.00	11,516	0	0
951.00	16,848	56,728	56,728

Device	Routing	Invert	Outlet Devices
#1	Primary	943.00'	**24.0" Round Culvert** L= 192.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 943.00' / 942.50' S= 0.0026 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 3.14 sf
#2	Device 1	947.00'	**3.600 in/hr Exfiltration over Surface area from 946.99' - 947.01'** Excluded Surface area = 0 sf
#3	Device 1	948.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	949.00'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Secondary	950.00'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=3.31 cfs @ 12.90 hrs HW=949.11' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Passes 3.31 cfs of 29.30 cfs potential flow)
  ├─**2=Exfiltration** (Exfiltration Controls 0.91 cfs)
  ├─**3=Orifice/Grate** (Orifice Controls 0.88 cfs @ 4.47 fps)
  └─**4=Orifice/Grate** (Weir Controls 1.52 cfs @ 1.09 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=947.00' TW=0.00' (Dynamic Tailwater)
└─**5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond B-2: Bioretention Basin 2



Summary for Pond P-1: Wet Pond

Inflow Area = 23.519 ac, 58.32% Impervious, Inflow Depth = 2.44" for 10-yr event
Inflow = 55.17 cfs @ 12.27 hrs, Volume= 4.792 af
Outflow = 9.21 cfs @ 13.01 hrs, Volume= 4.763 af, Atten= 83%, Lag= 44.7 min
Primary = 9.21 cfs @ 13.01 hrs, Volume= 4.763 af
Routed to Pond B-1 : Bioretention Basin 1
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond B-1 : Bioretention Basin 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 870.29' @ 13.01 hrs Surf.Area= 34,388 sf Storage= 118,010 cf

Plug-Flow detention time= 542.2 min calculated for 4.760 af (99% of inflow)
Center-of-Mass det. time= 540.1 min (1,350.5 - 810.5)

Volume	Invert	Avail.Storage	Storage Description
#1	866.00'	267,516 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) x 0.95

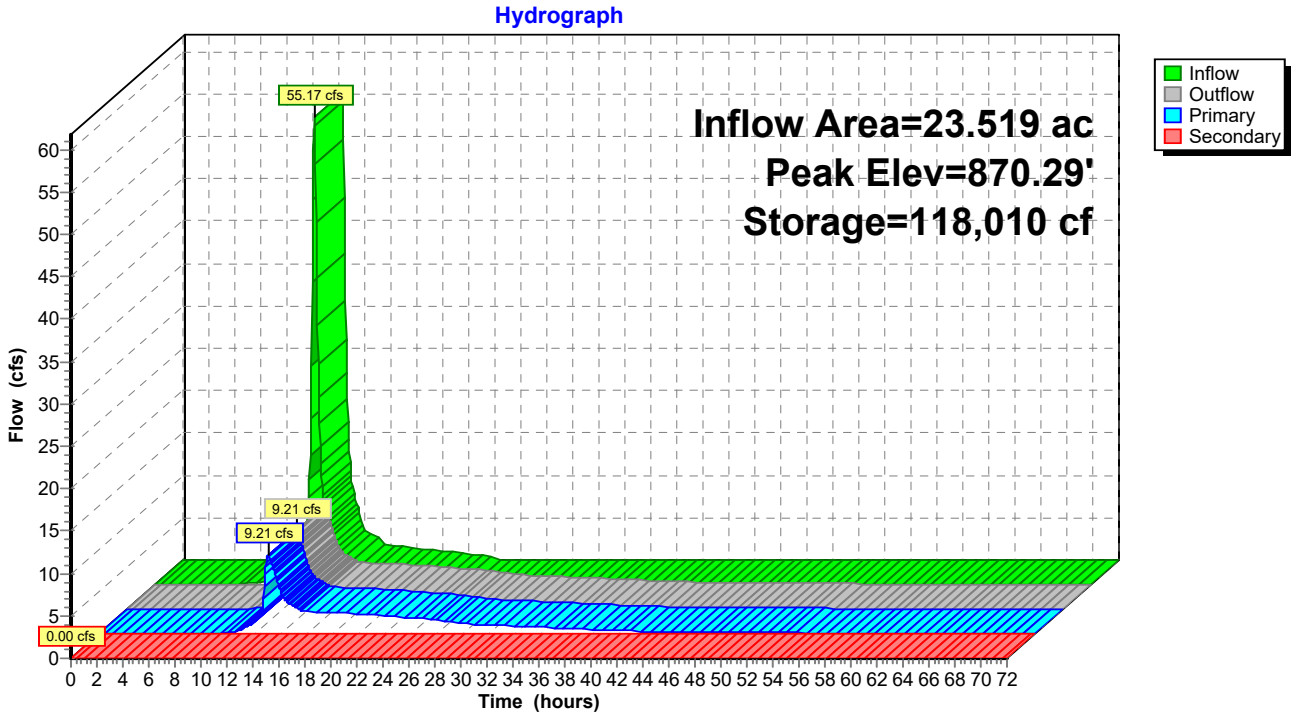
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
866.00	21,649	0	0
874.00	48,750	281,596	281,596

Device	Routing	Invert	Outlet Devices
#1	Primary	866.00'	**24.0" Round Culvert** L= 46.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 866.00' / 865.50' S= 0.0109 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 3.14 sf
#2	Device 1	866.00'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	870.00'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	873.50'	**50.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=9.21 cfs @ 13.01 hrs HW=870.29' TW=867.83' (Dynamic Tailwater)
1=Culvert (Passes 9.21 cfs of 20.93 cfs potential flow)
2=Orifice/Grate (Orifice Controls 2.64 cfs @ 7.55 fps)
3=Orifice/Grate (Weir Controls 6.57 cfs @ 1.77 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=866.00' TW=865.50' (Dynamic Tailwater)
4=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond P-1: Wet Pond

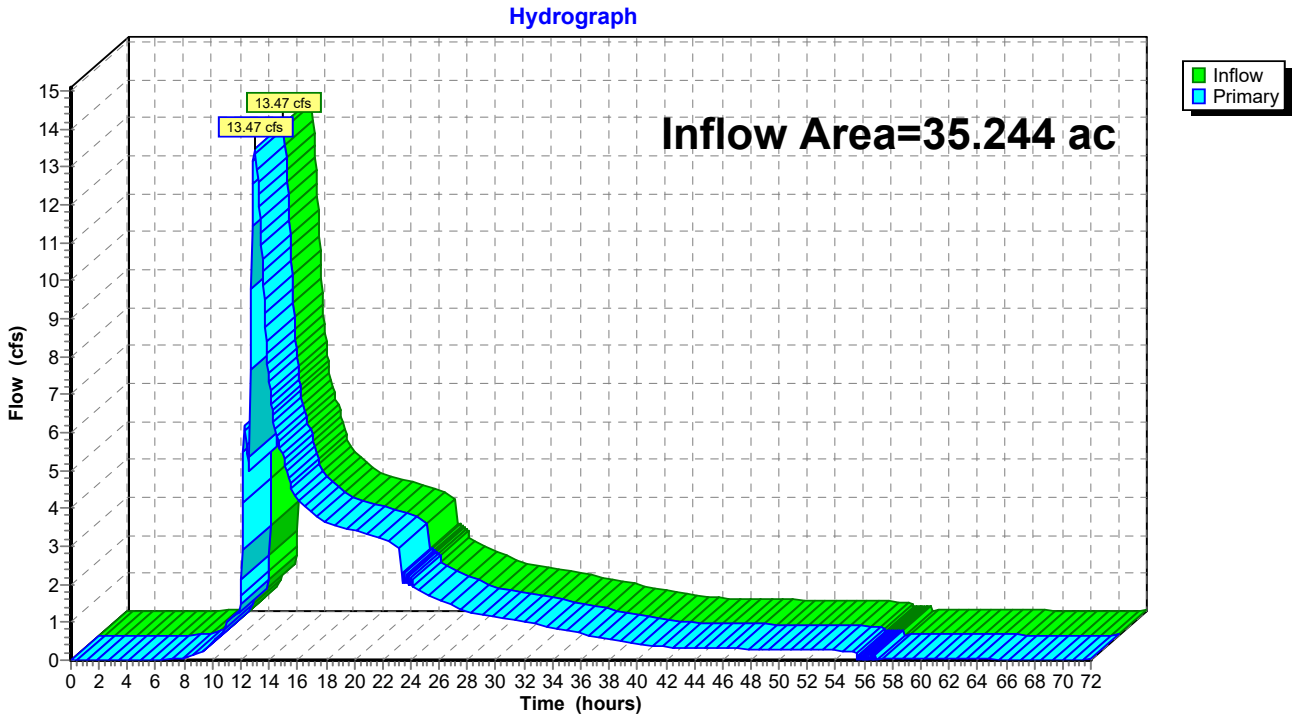


Summary for Link Total: POST-DEVELOPMENT FLOW

Inflow Area = 35.244 ac, 51.21% Impervious, Inflow Depth > 2.24" for 10-yr event
Inflow = 13.47 cfs @ 12.99 hrs, Volume= 6.567 af
Primary = 13.47 cfs @ 12.99 hrs, Volume= 6.567 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link Total: POST-DEVELOPMENT FLOW



Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points x 2
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 A: North Watershed Runoff Area=756,237 sf 74.60% Impervious Runoff Depth=5.38"
Flow Length=2,397' Tc=19.1 min CN=89 Runoff=90.70 cfs 7.778 af

Subcatchment B: South Watershed Runoff Area=246,965 sf 71.41% Impervious Runoff Depth=5.26"
Flow Length=540' Tc=21.3 min CN=88 Runoff=27.59 cfs 2.487 af

Subcatchment C: Offsite Runoff Area=220,188 sf 3.68% Impervious Runoff Depth=2.55"
Flow Length=256' Tc=15.4 min CN=62 Runoff=14.24 cfs 1.076 af

Subcatchment D: Direct Entry Runoff Area=268,234 sf 12.42% Impervious Runoff Depth=2.94"
Tc=6.0 min CN=66 Runoff=28.40 cfs 1.509 af

Subcatchment E: Direct Entry Runoff Area=43,591 sf 9.79% Impervious Runoff Depth=2.84"
Tc=6.0 min CN=65 Runoff=4.46 cfs 0.237 af

Pond B-1: Bioretention Basin 1 Peak Elev=868.26' Storage=11,195 cf Inflow=27.68 cfs 9.492 af
Primary=27.54 cfs 9.492 af Secondary=0.00 cfs 0.000 af Outflow=27.54 cfs 9.492 af

Pond B-2: Bioretention Basin 2 Peak Elev=949.60' Storage=32,700 cf Inflow=27.59 cfs 2.487 af
Primary=21.03 cfs 2.488 af Secondary=0.00 cfs 0.000 af Outflow=21.03 cfs 2.488 af

Pond P-1: Wet Pond Peak Elev=872.39' Storage=196,999 cf Inflow=102.70 cfs 9.287 af
Primary=27.14 cfs 9.255 af Secondary=0.00 cfs 0.000 af Outflow=27.14 cfs 9.255 af

Link Total: POST-DEVELOPMENTFLOW Inflow=55.64 cfs 13.056 af
Primary=55.64 cfs 13.056 af

Total Runoff Area = 35.244 ac Runoff Volume = 13.087 af Average Runoff Depth = 4.46"
48.79% Pervious = 17.196 ac 51.21% Impervious = 18.047 ac

Summary for Subcatchment A: North Watershed

[47] Hint: Peak is 104% of capacity of segment #3

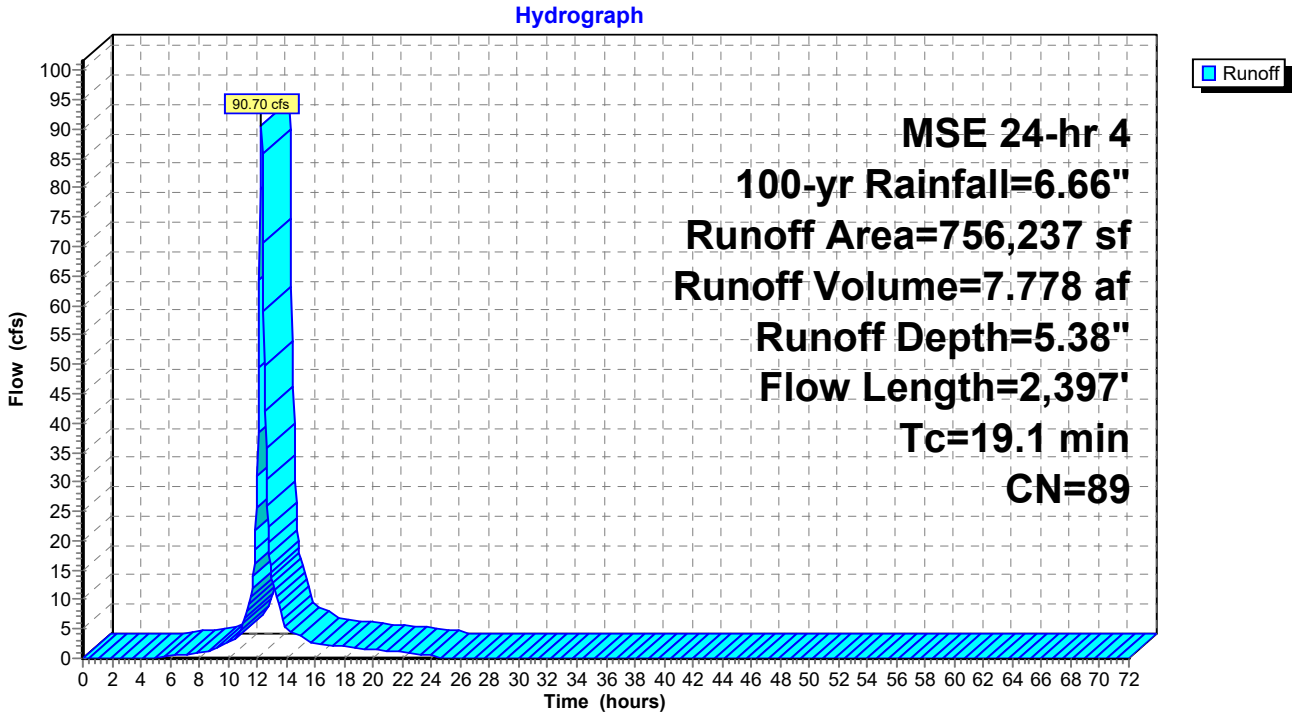
Runoff = 90.70 cfs @ 12.27 hrs, Volume= 7.778 af, Depth= 5.38"
Routed to Pond P-1 : Wet Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 100-yr Rainfall=6.66"

	Area (sf)	CN	Description
*	192,115	61	Pervious
*	75,253	98	Sidewalk
*	290,641	98	Pavement
*	198,228	98	Roof
	756,237	89	Weighted Average
	192,115		25.40% Pervious Area
	564,122		74.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	214	0.0510	0.27		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.84"
5.3	1,470	0.0511	4.59		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.7	713	0.0600	17.74	87.07	**Pipe Channel,** 30.0" Round Area= 4.9 sf Perim= 7.9' r= 0.63' n= 0.015 Concrete sewer w/manholes & inlets
19.1	2,397	Total			

Subcatchment A: North Watershed



Summary for Subcatchment B: South Watershed

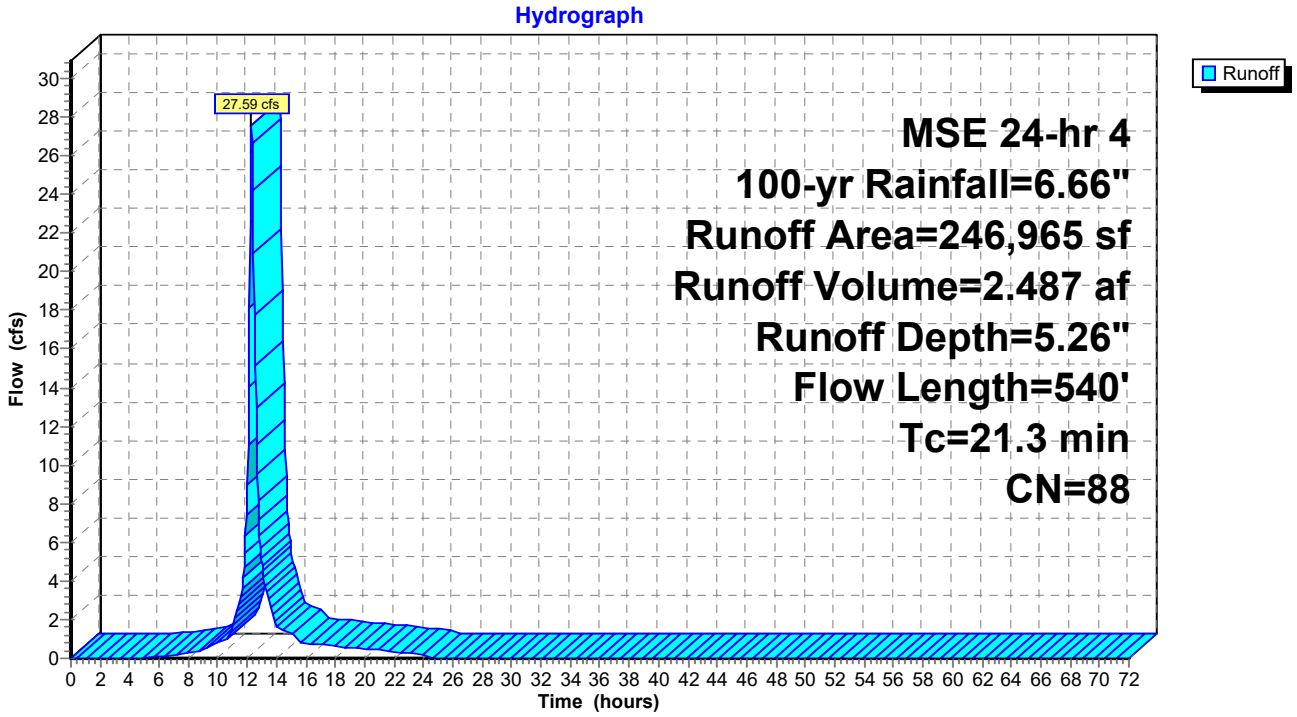
Runoff = 27.59 cfs @ 12.30 hrs, Volume= 2.487 af, Depth= 5.26"
Routed to Pond B-2 : Bioretention Basin 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 100-yr Rainfall=6.66"

	Area (sf)	CN	Description
*	70,613	61	Pervious
*	11,516	100	Water
*	21,266	98	Sidewalk
*	106,097	98	Pavement
*	37,473	98	Roof
	246,965	88	Weighted Average
	70,613		28.59% Pervious Area
	176,352		71.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.9	233	0.0215	0.20		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.84"
1.3	260	0.0269	3.33		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.1	47	0.0240	9.67	30.37	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.015 Concrete sewer w/manholes & inlets
21.3	540	Total			

Subcatchment B: South Watershed



Summary for Subcatchment C: Offsite

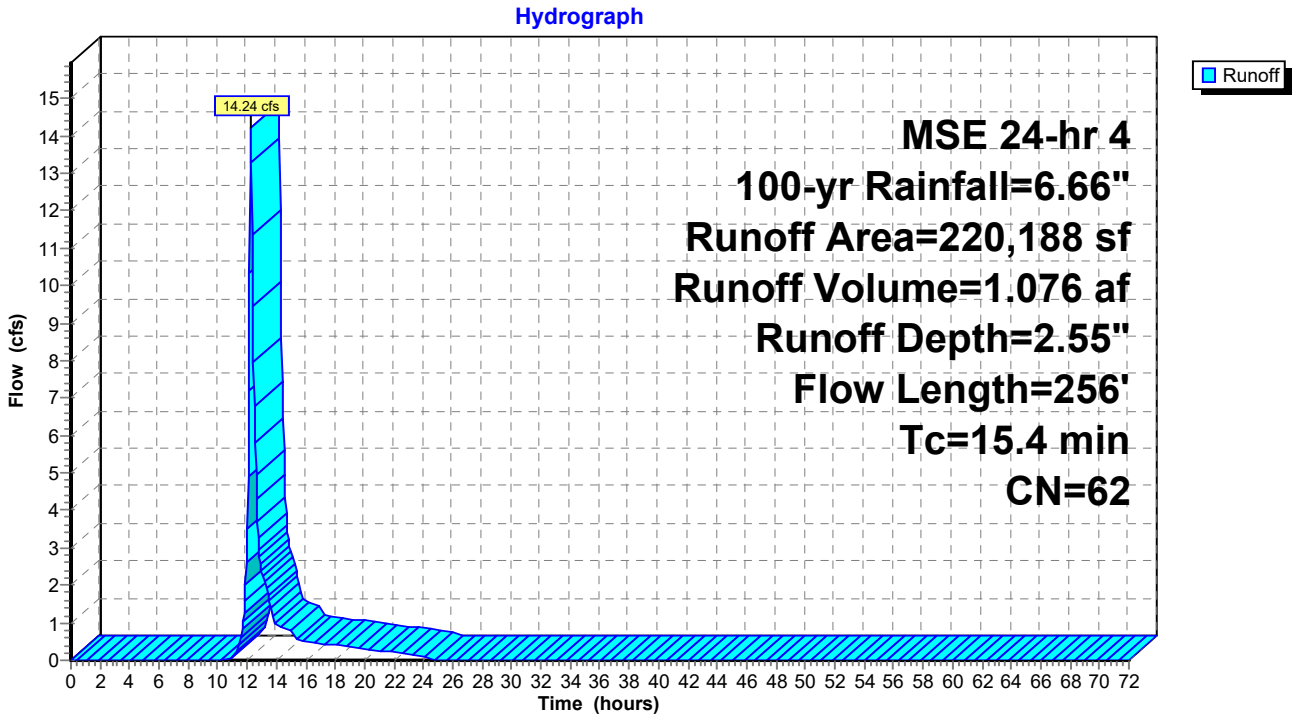
Runoff = 14.24 cfs @ 12.25 hrs, Volume= 1.076 af, Depth= 2.55"
Routed to Link Total : POST-DEVELOPMENT FLOW

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 100-yr Rainfall=6.66"

	Area (sf)	CN	Description
*	212,095	61	Pervious
*	8,093	98	Sidewalk
	220,188	62	Weighted Average
	212,095		96.32% Pervious Area
	8,093		3.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	45	0.0200	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.84"
9.9	211	0.2600	0.36		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.84"
15.4	256	Total			

Subcatchment C: Offsite



Summary for Subcatchment D: Direct Entry

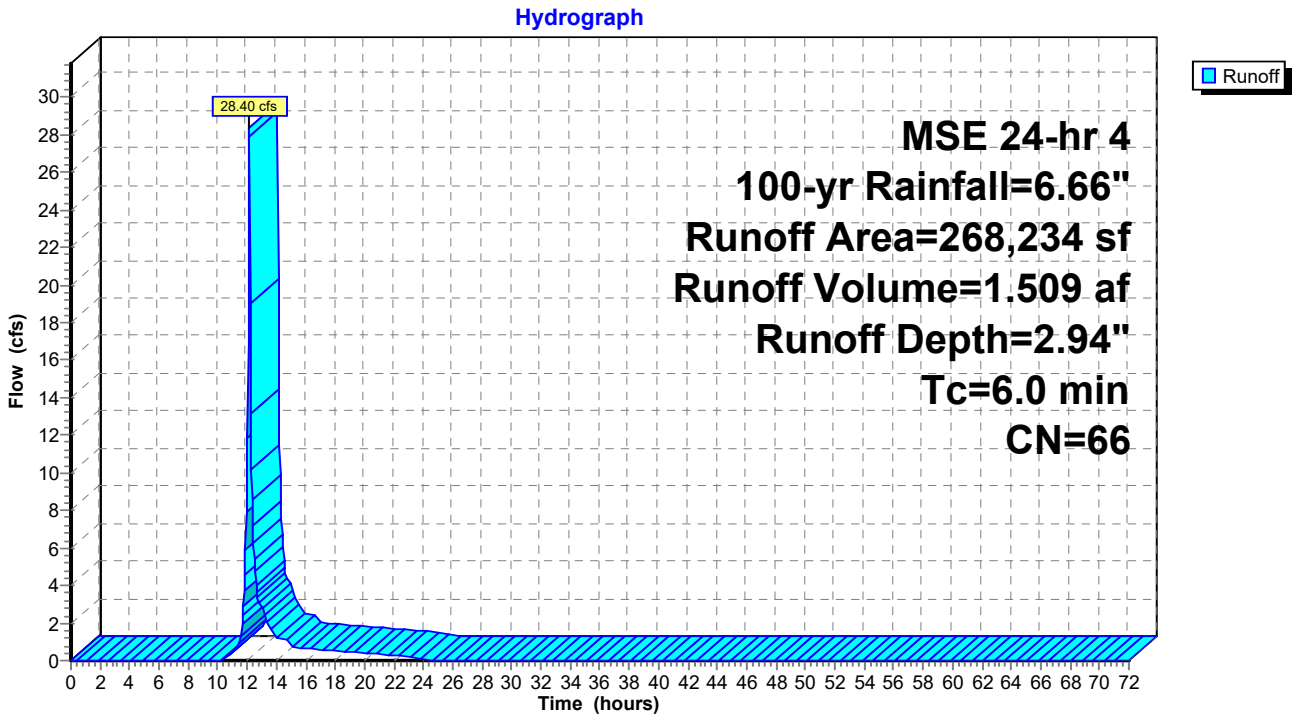
Runoff = 28.40 cfs @ 12.14 hrs, Volume= 1.509 af, Depth= 2.94"
Routed to Pond P-1 : Wet Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 100-yr Rainfall=6.66"

	Area (sf)	CN	Description
*	234,929	61	Pervious
*	21,649	100	Water
*	11,656	98	Sidewalk
	268,234	66	Weighted Average
	234,929		87.58% Pervious Area
	33,305		12.42% Impervious Area

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

Subcatchment D: Direct Entry



Summary for Subcatchment E: Direct Entry

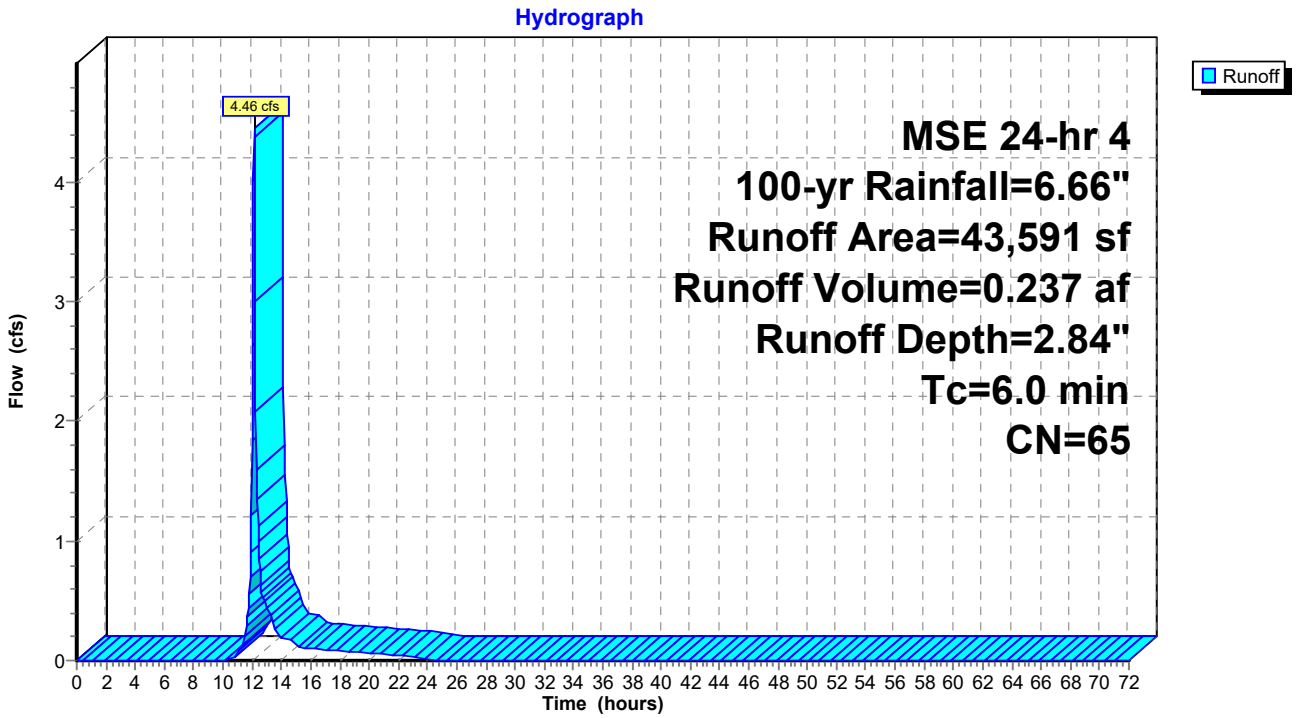
Runoff = 4.46 cfs @ 12.14 hrs, Volume= 0.237 af, Depth= 2.84"
Routed to Pond B-1 : Bioretention Basin 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 100-yr Rainfall=6.66"

	Area (sf)	CN	Description
*	39,324	61	Pervious
*	3,000	100	Water
*	1,267	98	Sidewalk
	43,591	65	Weighted Average
	39,324		90.21% Pervious Area
	4,267		9.79% Impervious Area

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

Subcatchment E: Direct Entry



Summary for Pond B-1: Bioretention Basin 1

Inflow Area = 24.519 ac, 56.34% Impervious, Inflow Depth > 4.65" for 100-yr event
Inflow = 27.68 cfs @ 12.69 hrs, Volume= 9.492 af
Outflow = 27.54 cfs @ 12.83 hrs, Volume= 9.492 af, Atten= 1%, Lag= 8.1 min
Primary = 27.54 cfs @ 12.83 hrs, Volume= 9.492 af
Routed to Link Total : POST-DEVELOPMENT FLOW
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link Total : POST-DEVELOPMENT FLOW

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 868.26' @ 12.83 hrs Surf.Area= 5,270 sf Storage= 11,195 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 38.6 min (1,174.0 - 1,135.5)

Volume	Invert	Avail.Storage	Storage Description
#1	865.50'	18,422 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) x 0.95

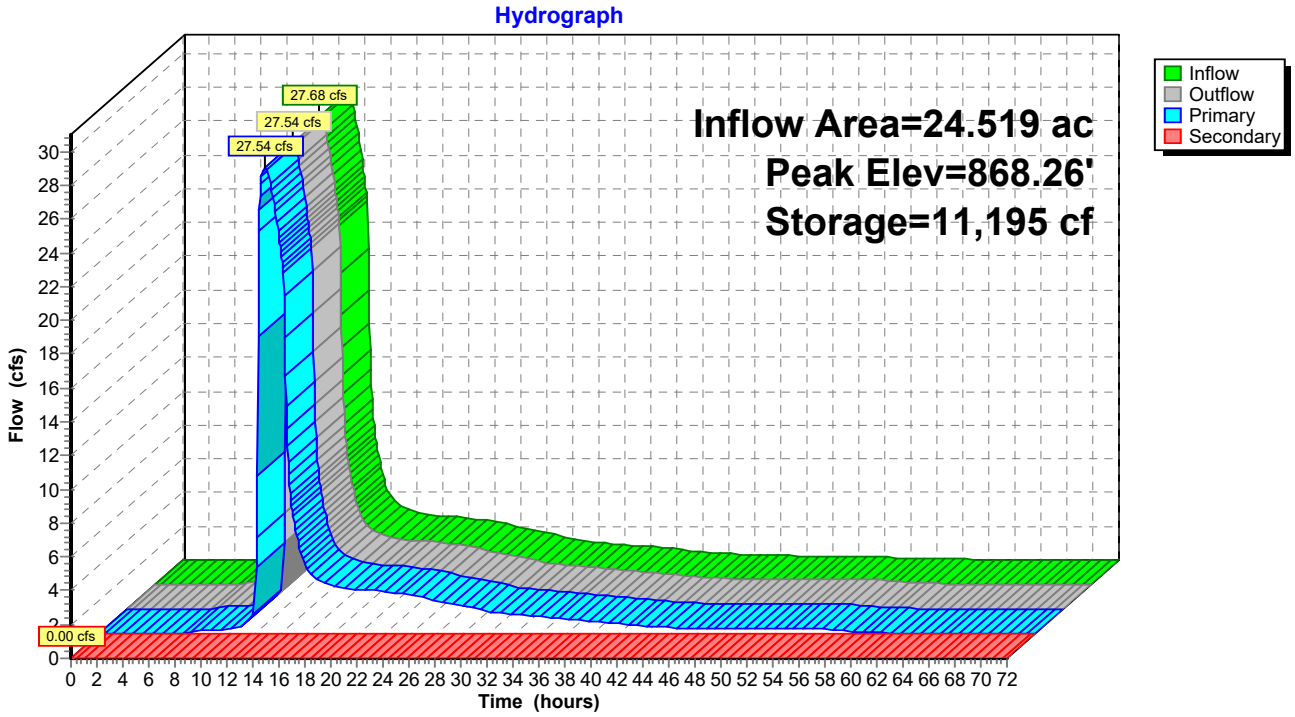
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
865.50	3,000	0	0
869.50	6,696	19,392	19,392

Device	Routing	Invert	Outlet Devices
#1	Primary	863.00'	**24.0" Round Culvert** L= 53.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 863.00' / 862.89' S= 0.0021 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 3.14 sf
#2	Device 1	865.50'	**3.600 in/hr Exfiltration over Surface area from 862.99' - 963.01'** Excluded Surface area = 0 sf
#3	Device 1	866.50'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	867.50'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Secondary	868.75'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=27.54 cfs @ 12.83 hrs HW=868.26' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 27.54 cfs @ 8.77 fps)
├**2=Exfiltration** (Passes < 0.44 cfs potential flow)
├**3=Orifice/Grate** (Passes < 1.16 cfs potential flow)
└**4=Orifice/Grate** (Passes < 27.06 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=865.50' TW=0.00' (Dynamic Tailwater)
└**5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond B-1: Bioretention Basin 1



Summary for Pond B-2: Bioretention Basin 2

Inflow Area = 5.670 ac, 71.41% Impervious, Inflow Depth = 5.26" for 100-yr event
Inflow = 27.59 cfs @ 12.30 hrs, Volume= 2.487 af
Outflow = 21.03 cfs @ 12.46 hrs, Volume= 2.488 af, Atten= 24%, Lag= 9.1 min
Primary = 21.03 cfs @ 12.46 hrs, Volume= 2.488 af
Routed to Link Total : POST-DEVELOPMENT FLOW
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link Total : POST-DEVELOPMENT FLOW

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 949.60' @ 12.46 hrs Surf.Area= 14,231 sf Storage= 32,700 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 114.9 min (910.2 - 795.4)

Volume	Invert	Avail.Storage	Storage Description
#1	947.00'	53,892 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) x 0.95

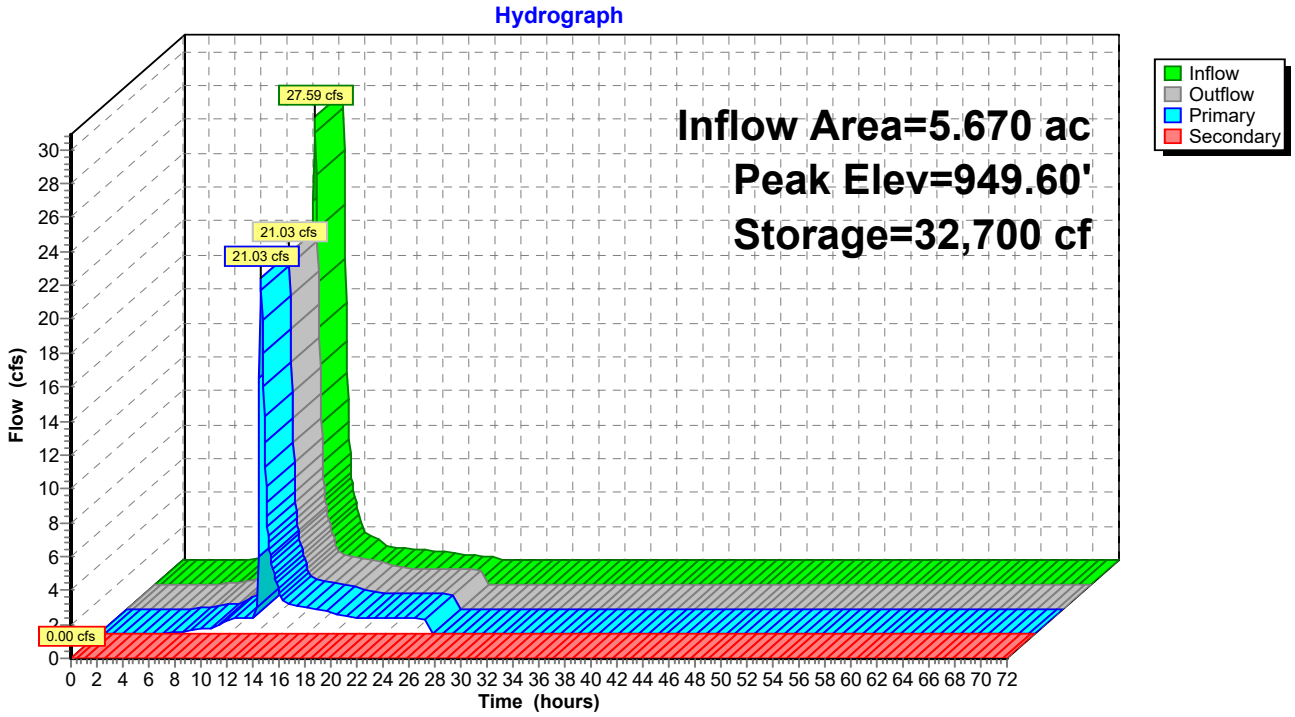
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
947.00	11,516	0	0
951.00	16,848	56,728	56,728

Device	Routing	Invert	Outlet Devices
#1	Primary	943.00'	**24.0" Round Culvert** L= 192.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 943.00' / 942.50' S= 0.0026 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 3.14 sf
#2	Device 1	947.00'	**3.600 in/hr Exfiltration over Surface area from 946.99' - 947.01'** Excluded Surface area = 0 sf
#3	Device 1	948.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	949.00'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Secondary	950.00'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=20.90 cfs @ 12.46 hrs HW=949.60' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Passes 20.90 cfs of 30.80 cfs potential flow)
├**2=Exfiltration** (Exfiltration Controls 0.91 cfs)
├**3=Orifice/Grate** (Orifice Controls 1.10 cfs @ 5.59 fps)
└**4=Orifice/Grate** (Weir Controls 18.89 cfs @ 2.52 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=947.00' TW=0.00' (Dynamic Tailwater)
└**5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond B-2: Bioretention Basin 2



Summary for Pond P-1: Wet Pond

Inflow Area = 23.519 ac, 58.32% Impervious, Inflow Depth = 4.74" for 100-yr event
Inflow = 102.70 cfs @ 12.25 hrs, Volume= 9.287 af
Outflow = 27.14 cfs @ 12.71 hrs, Volume= 9.255 af, Atten= 74%, Lag= 27.7 min
Primary = 27.14 cfs @ 12.71 hrs, Volume= 9.255 af
Routed to Pond B-1 : Bioretention Basin 1
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond B-1 : Bioretention Basin 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 872.39' @ 12.73 hrs Surf.Area= 41,121 sf Storage= 196,999 cf

Plug-Flow detention time= 347.4 min calculated for 9.249 af (100% of inflow)
Center-of-Mass det. time= 346.9 min (1,143.3 - 796.4)

Volume	Invert	Avail.Storage	Storage Description
#1	866.00'	267,516 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) x 0.95

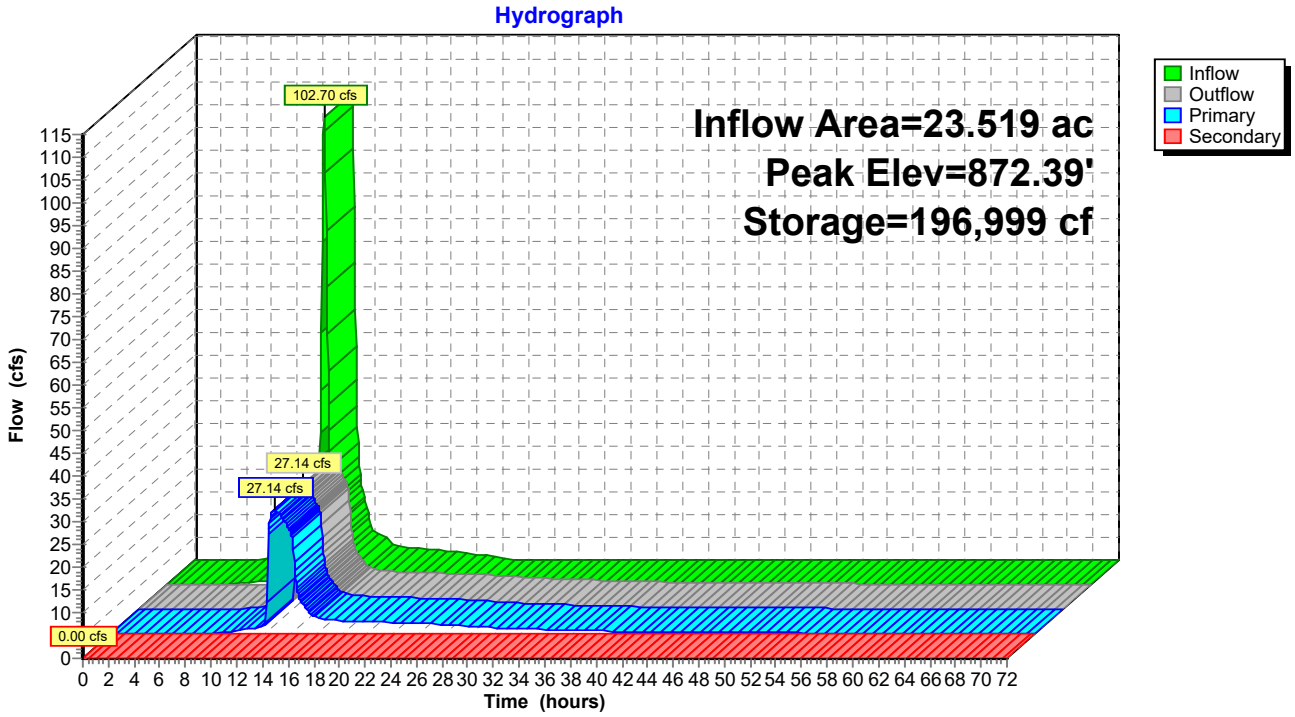
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
866.00	21,649	0	0
874.00	48,750	281,596	281,596

Device	Routing	Invert	Outlet Devices
#1	Primary	866.00'	**24.0" Round Culvert** L= 46.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 866.00' / 865.50' S= 0.0109 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 3.14 sf
#2	Device 1	866.00'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	870.00'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	873.50'	**50.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=27.14 cfs @ 12.71 hrs HW=872.38' TW=868.25' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 27.14 cfs @ 8.64 fps)
├─**2=Orifice/Grate** (Passes < 3.42 cfs potential flow)
└─**3=Orifice/Grate** (Passes < 93.44 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=866.00' TW=865.50' (Dynamic Tailwater)
└─**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P-1: Wet Pond

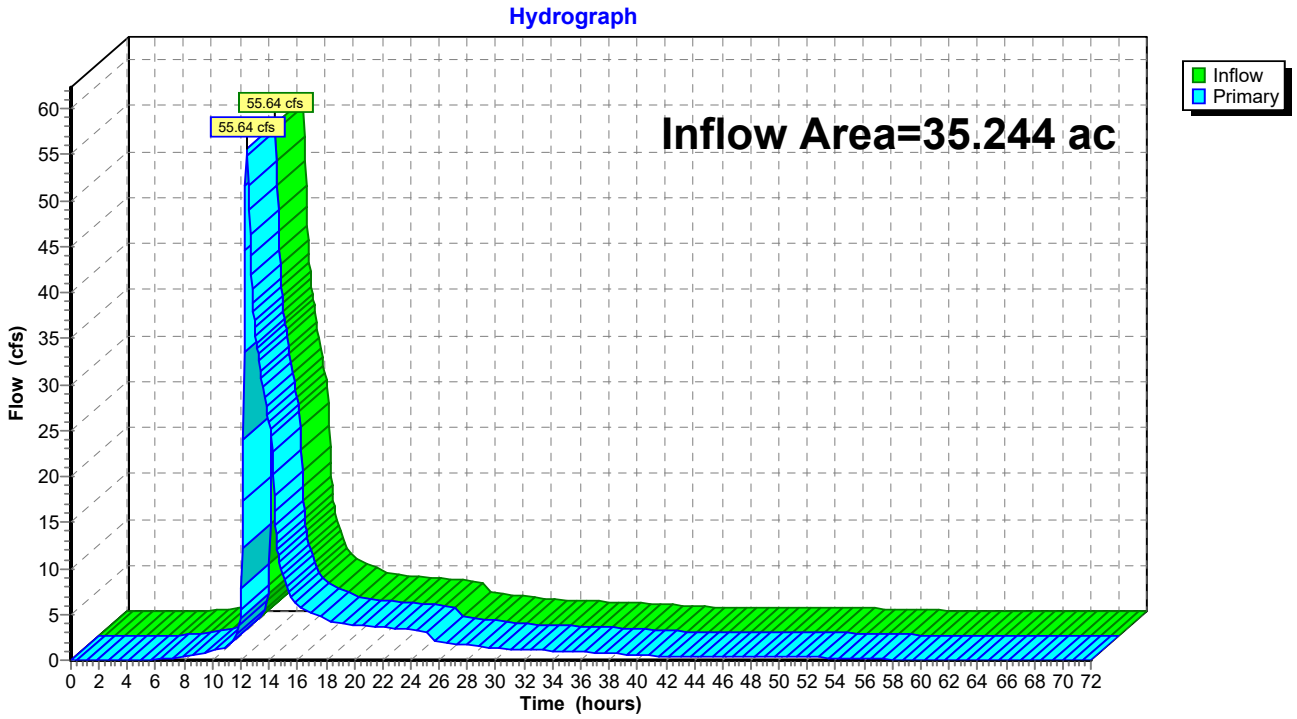


Summary for Link Total: POST-DEVELOPMENT FLOW

Inflow Area = 35.244 ac, 51.21% Impervious, Inflow Depth > 4.45" for 100-yr event
Inflow = 55.64 cfs @ 12.44 hrs, Volume= 13.056 af
Primary = 55.64 cfs @ 12.44 hrs, Volume= 13.056 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link Total: POST-DEVELOPMENT FLOW



Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points x 2
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 A: North Watershed Runoff Area=756,237 sf 74.60% Impervious Runoff Depth=6.23"
Flow Length=2,397' Tc=19.1 min CN=89 Runoff=104.20 cfs 9.008 af

Subcatchment B: South Watershed Runoff Area=246,965 sf 71.41% Impervious Runoff Depth=6.11"
Flow Length=540' Tc=21.3 min CN=88 Runoff=31.77 cfs 2.886 af

Subcatchment C: Offsite Runoff Area=220,188 sf 3.68% Impervious Runoff Depth=3.20"
Flow Length=256' Tc=15.4 min CN=62 Runoff=17.99 cfs 1.346 af

Subcatchment D: Direct Entry Runoff Area=268,234 sf 12.42% Impervious Runoff Depth=3.63"
Tc=6.0 min CN=66 Runoff=35.01 cfs 1.861 af

Subcatchment E: Direct Entry Runoff Area=43,591 sf 9.79% Impervious Runoff Depth=3.52"
Tc=6.0 min CN=65 Runoff=5.52 cfs 0.293 af

Pond B-1: Bioretention Basin 1 Peak Elev=868.65' Storage=13,353 cf Inflow=29.63 cfs 11.129 af
Primary=28.79 cfs 11.130 af Secondary=0.00 cfs 0.000 af Outflow=28.79 cfs 11.130 af

Pond B-2: Bioretention Basin 2 Peak Elev=949.71' Storage=34,349 cf Inflow=31.77 cfs 2.886 af
Primary=26.82 cfs 2.887 af Secondary=0.00 cfs 0.000 af Outflow=26.82 cfs 2.887 af

Pond P-1: Wet Pond Peak Elev=873.25' Storage=233,548 cf Inflow=118.94 cfs 10.868 af
Primary=28.88 cfs 10.836 af Secondary=0.00 cfs 0.000 af Outflow=28.88 cfs 10.836 af

Link Total: POST-DEVELOPMENTFLOW Inflow=66.21 cfs 15.363 af
Primary=66.21 cfs 15.363 af

Total Runoff Area = 35.244 ac Runoff Volume = 15.395 af Average Runoff Depth = 5.24"
48.79% Pervious = 17.196 ac 51.21% Impervious = 18.047 ac

Summary for Subcatchment A: North Watershed

[47] Hint: Peak is 120% of capacity of segment #3

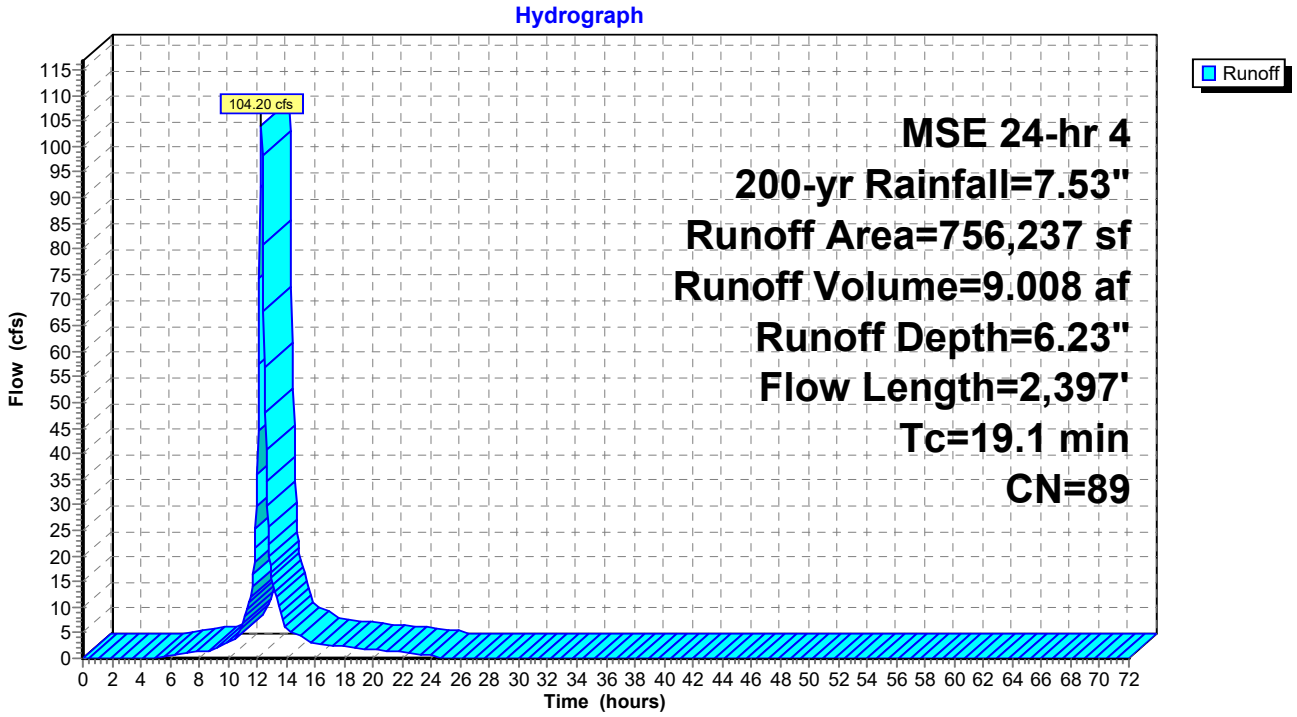
Runoff = 104.20 cfs @ 12.27 hrs, Volume= 9.008 af, Depth= 6.23"
Routed to Pond P-1 : Wet Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 200-yr Rainfall=7.53"

	Area (sf)	CN	Description
*	192,115	61	Pervious
*	75,253	98	Sidewalk
*	290,641	98	Pavement
*	198,228	98	Roof
	756,237	89	Weighted Average
	192,115		25.40% Pervious Area
	564,122		74.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	214	0.0510	0.27		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.84"
5.3	1,470	0.0511	4.59		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.7	713	0.0600	17.74	87.07	**Pipe Channel,** 30.0" Round Area= 4.9 sf Perim= 7.9' r= 0.63' n= 0.015 Concrete sewer w/manholes & inlets
19.1	2,397	Total			

Subcatchment A: North Watershed



Summary for Subcatchment B: South Watershed

[47] Hint: Peak is 105% of capacity of segment #3

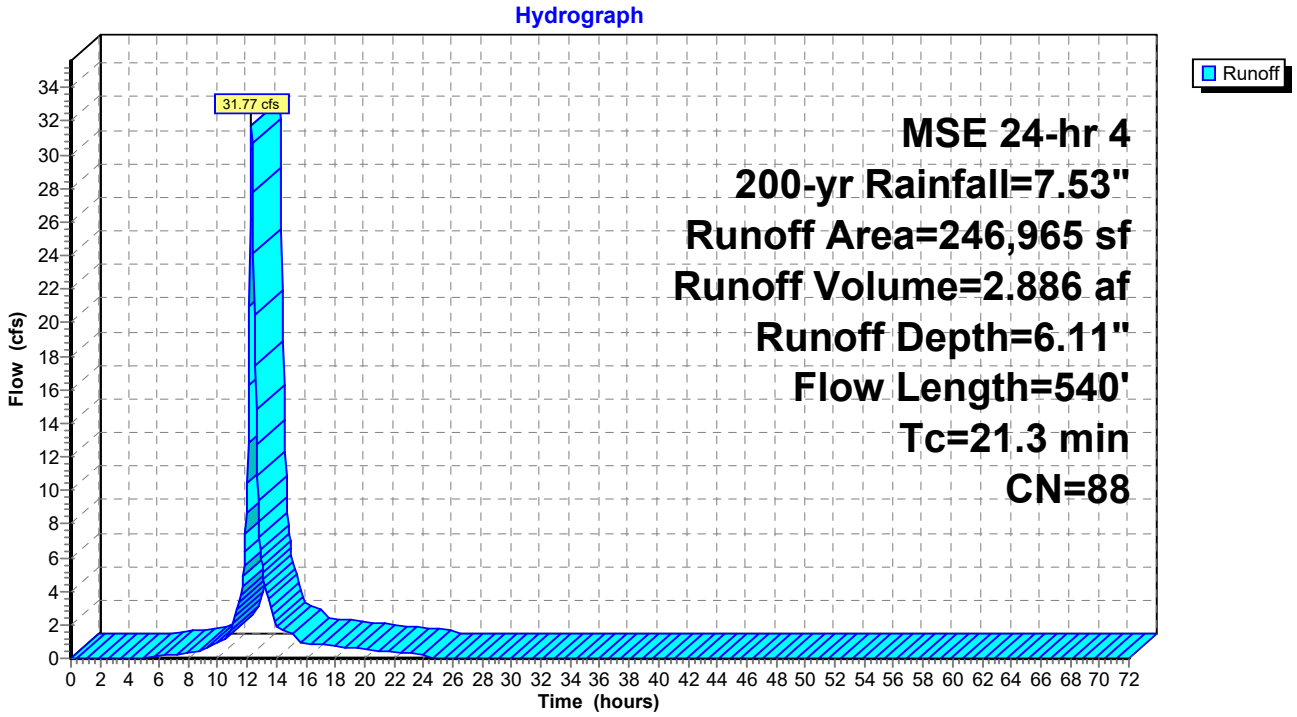
Runoff = 31.77 cfs @ 12.30 hrs, Volume= 2.886 af, Depth= 6.11"
Routed to Pond B-2 : Bioretention Basin 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 200-yr Rainfall=7.53"

	Area (sf)	CN	Description
*	70,613	61	Pervious
*	11,516	100	Water
*	21,266	98	Sidewalk
*	106,097	98	Pavement
*	37,473	98	Roof
	246,965	88	Weighted Average
	70,613		28.59% Pervious Area
	176,352		71.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.9	233	0.0215	0.20		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.84"
1.3	260	0.0269	3.33		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.1	47	0.0240	9.67	30.37	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.015 Concrete sewer w/manholes & inlets
21.3	540	Total			

Subcatchment B: South Watershed



Summary for Subcatchment C: Offsite

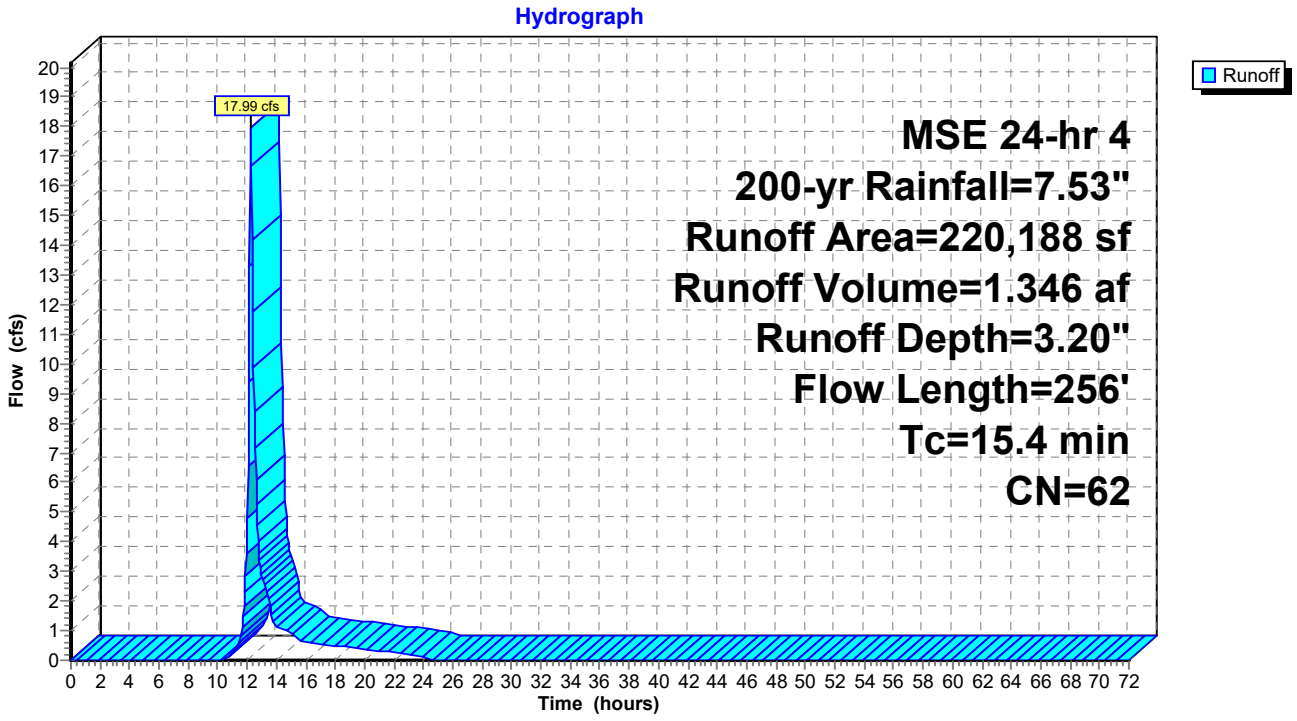
Runoff = 17.99 cfs @ 12.25 hrs, Volume= 1.346 af, Depth= 3.20"
Routed to Link Total : POST-DEVELOPMENT FLOW

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 200-yr Rainfall=7.53"

	Area (sf)	CN	Description
*	212,095	61	Pervious
*	8,093	98	Sidewalk
	220,188	62	Weighted Average
	212,095		96.32% Pervious Area
	8,093		3.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	45	0.0200	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.84"
9.9	211	0.2600	0.36		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.84"
15.4	256	Total			

Subcatchment C: Offsite



Summary for Subcatchment D: Direct Entry

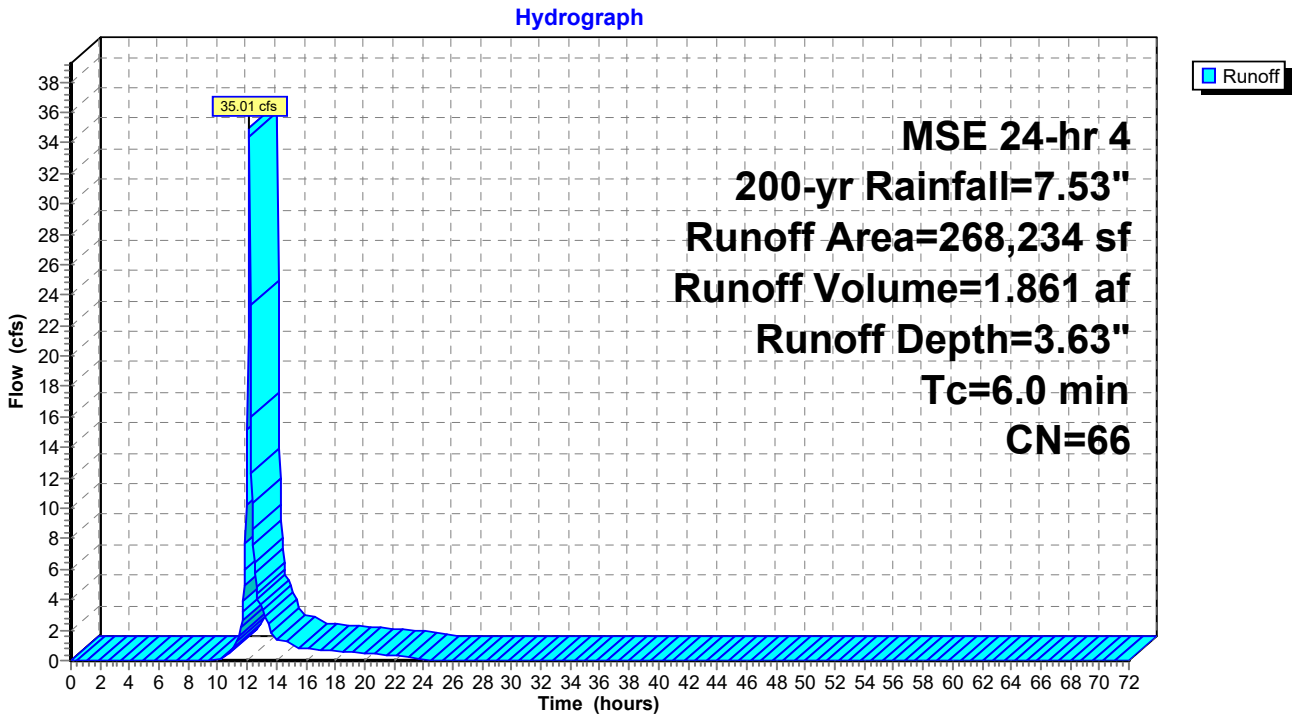
Runoff = 35.01 cfs @ 12.13 hrs, Volume= 1.861 af, Depth= 3.63"
Routed to Pond P-1 : Wet Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 200-yr Rainfall=7.53"

	Area (sf)	CN	Description
*	234,929	61	Pervious
*	21,649	100	Water
*	11,656	98	Sidewalk
	268,234	66	Weighted Average
	234,929		87.58% Pervious Area
	33,305		12.42% Impervious Area

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

Subcatchment D: Direct Entry



Summary for Subcatchment E: Direct Entry

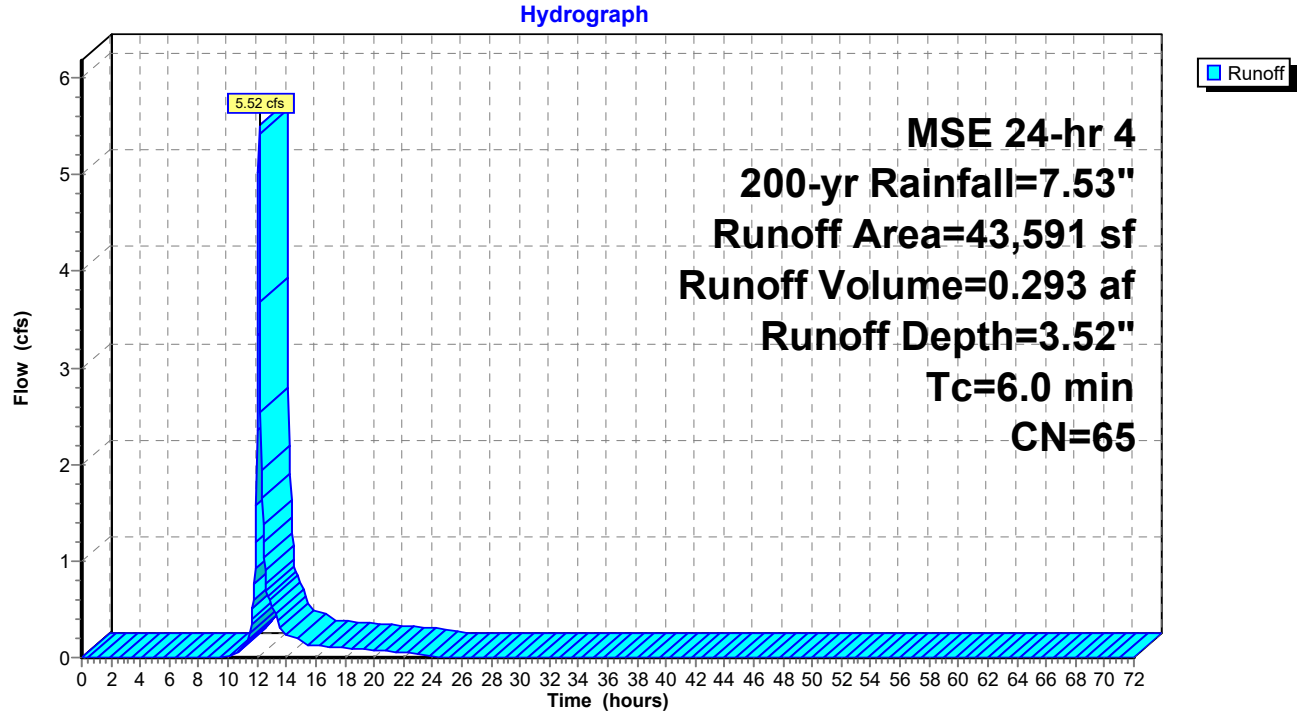
Runoff = 5.52 cfs @ 12.13 hrs, Volume= 0.293 af, Depth= 3.52"
Routed to Pond B-1 : Bioretention Basin 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 200-yr Rainfall=7.53"

	Area (sf)	CN	Description
*	39,324	61	Pervious
*	3,000	100	Water
*	1,267	98	Sidewalk
	43,591	65	Weighted Average
	39,324		90.21% Pervious Area
	4,267		9.79% Impervious Area

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

Subcatchment E: Direct Entry



Summary for Pond B-1: Bioretention Basin 1

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=8)

Inflow Area = 24.519 ac, 56.34% Impervious, Inflow Depth > 5.45" for 200-yr event
Inflow = 29.63 cfs @ 12.57 hrs, Volume= 11.129 af
Outflow = 28.79 cfs @ 13.01 hrs, Volume= 11.130 af, Atten= 3%, Lag= 26.3 min
Primary = 28.79 cfs @ 13.01 hrs, Volume= 11.130 af
Routed to Link Total : POST-DEVELOPMENT FLOW
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link Total : POST-DEVELOPMENT FLOW

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 868.65' @ 13.01 hrs Surf.Area= 5,618 sf Storage= 13,353 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 34.3 min (1,138.2 - 1,103.9)

Volume	Invert	Avail.Storage	Storage Description
#1	865.50'	18,422 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) x 0.95

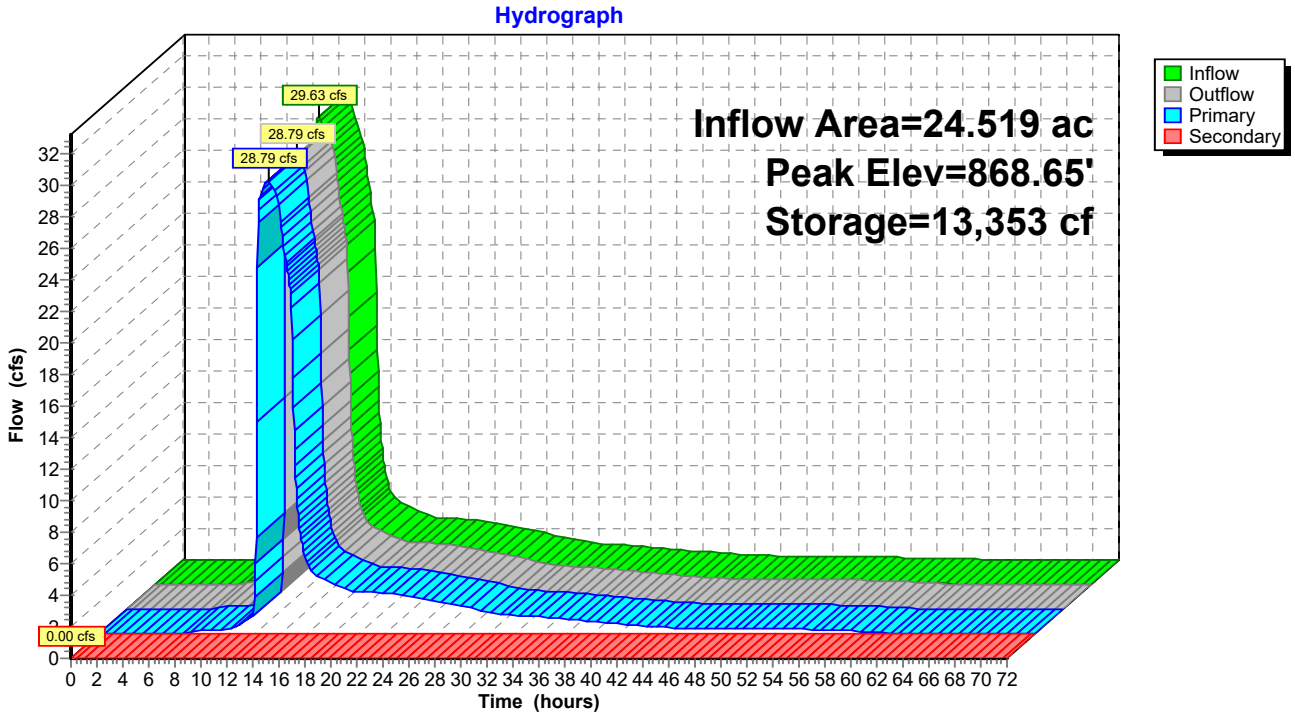
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
865.50	3,000	0	0
869.50	6,696	19,392	19,392

Device	Routing	Invert	Outlet Devices
#1	Primary	863.00'	**24.0" Round Culvert** L= 53.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 863.00' / 862.89' S= 0.0021 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 3.14 sf
#2	Device 1	865.50'	**3.600 in/hr Exfiltration over Surface area from 862.99' - 963.01'** Excluded Surface area = 0 sf
#3	Device 1	866.50'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	867.50'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Secondary	868.75'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=28.79 cfs @ 13.01 hrs HW=868.65' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 28.79 cfs @ 9.16 fps)
  ├─**2=Exfiltration** (Passes < 0.47 cfs potential flow)
  ├─**3=Orifice/Grate** (Passes < 1.30 cfs potential flow)
  └─**4=Orifice/Grate** (Passes < 50.90 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=865.50' TW=0.00' (Dynamic Tailwater)
└─**5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond B-1: Bioretention Basin 1



Summary for Pond B-2: Bioretention Basin 2

Inflow Area = 5.670 ac, 71.41% Impervious, Inflow Depth = 6.11" for 200-yr event
Inflow = 31.77 cfs @ 12.30 hrs, Volume= 2.886 af
Outflow = 26.82 cfs @ 12.42 hrs, Volume= 2.887 af, Atten= 16%, Lag= 6.9 min
Primary = 26.82 cfs @ 12.42 hrs, Volume= 2.887 af
Routed to Link Total : POST-DEVELOPMENT FLOW
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link Total : POST-DEVELOPMENT FLOW

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 949.71' @ 12.42 hrs Surf.Area= 14,377 sf Storage= 34,349 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 107.1 min (899.1 - 792.0)

Volume	Invert	Avail.Storage	Storage Description
#1	947.00'	53,892 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) x 0.95

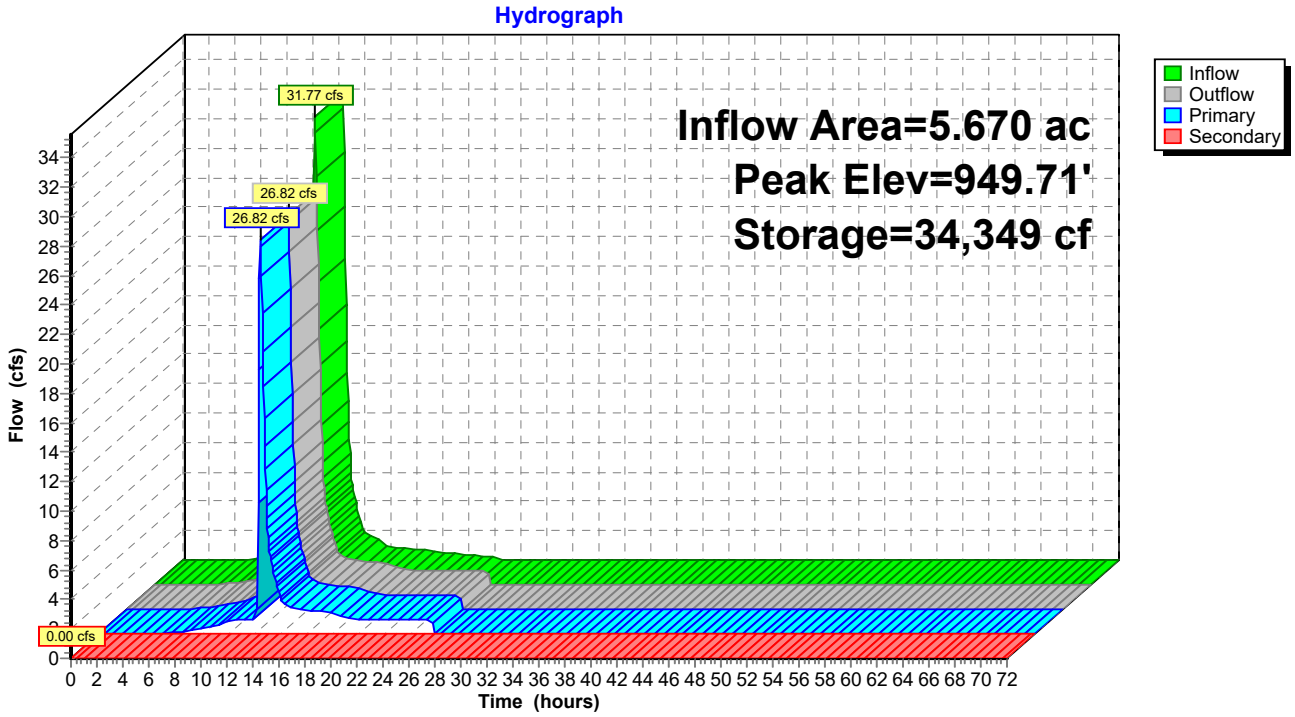
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
947.00	11,516	0	0
951.00	16,848	56,728	56,728

Device	Routing	Invert	Outlet Devices
#1	Primary	943.00'	**24.0" Round Culvert** L= 192.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 943.00' / 942.50' S= 0.0026 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 3.14 sf
#2	Device 1	947.00'	**3.600 in/hr Exfiltration over Surface area from 946.99' - 947.01'** Excluded Surface area = 0 sf
#3	Device 1	948.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	949.00'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Secondary	950.00'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=26.49 cfs @ 12.42 hrs HW=949.71' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Passes 26.49 cfs of 31.14 cfs potential flow)
├**2=Exfiltration** (Exfiltration Controls 0.91 cfs)
├**3=Orifice/Grate** (Orifice Controls 1.14 cfs @ 5.81 fps)
└**4=Orifice/Grate** (Weir Controls 24.44 cfs @ 2.75 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=947.00' TW=0.00' (Dynamic Tailwater)
└**5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond B-2: Bioretention Basin 2



Summary for Pond P-1: Wet Pond

Inflow Area = 23.519 ac, 58.32% Impervious, Inflow Depth = 5.55" for 200-yr event
Inflow = 118.94 cfs @ 12.25 hrs, Volume= 10.868 af
Outflow = 28.88 cfs @ 12.66 hrs, Volume= 10.836 af, Atten= 76%, Lag= 24.8 min
Primary = 28.88 cfs @ 12.66 hrs, Volume= 10.836 af
Routed to Pond B-1 : Bioretention Basin 1
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond B-1 : Bioretention Basin 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 873.25' @ 12.76 hrs Surf.Area= 43,889 sf Storage= 233,548 cf

Plug-Flow detention time= 318.6 min calculated for 10.829 af (100% of inflow)
Center-of-Mass det. time= 318.4 min (1,111.5 - 793.1)

Volume	Invert	Avail.Storage	Storage Description
#1	866.00'	267,516 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) x 0.95

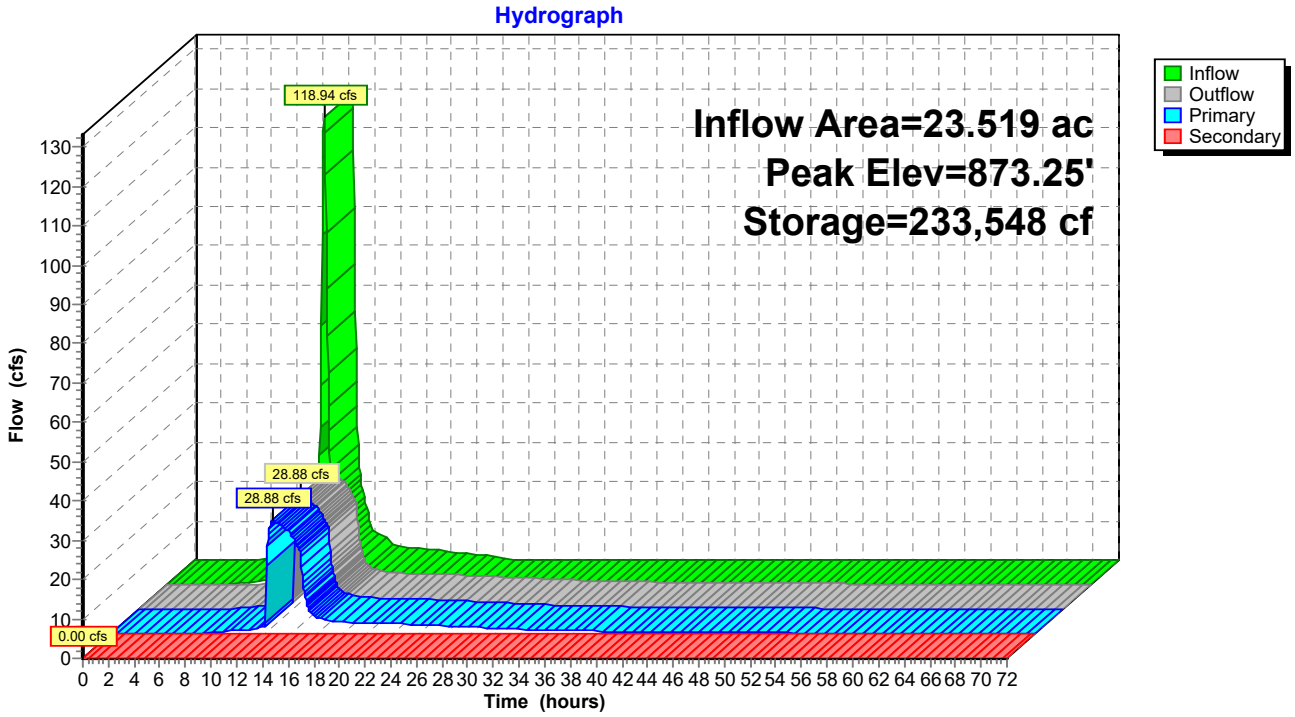
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
866.00	21,649	0	0
874.00	48,750	281,596	281,596

Device	Routing	Invert	Outlet Devices
#1	Primary	866.00'	**24.0" Round Culvert** L= 46.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 866.00' / 865.50' S= 0.0109 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 3.14 sf
#2	Device 1	866.00'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	870.00'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	873.50'	**50.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=28.88 cfs @ 12.66 hrs HW=873.21' TW=868.53' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 28.88 cfs @ 9.19 fps)
├─**2=Orifice/Grate** (Passes < 3.64 cfs potential flow)
└─**3=Orifice/Grate** (Passes < 108.43 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=866.00' TW=865.50' (Dynamic Tailwater)
└─**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P-1: Wet Pond



Summary for Link Total: POST-DEVELOPMENT FLOW

Inflow Area = 35.244 ac, 51.21% Impervious, Inflow Depth > 5.23" for 200-yr event
Inflow = 66.21 cfs @ 12.38 hrs, Volume= 15.363 af
Primary = 66.21 cfs @ 12.38 hrs, Volume= 15.363 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link Total: POST-DEVELOPMENT FLOW

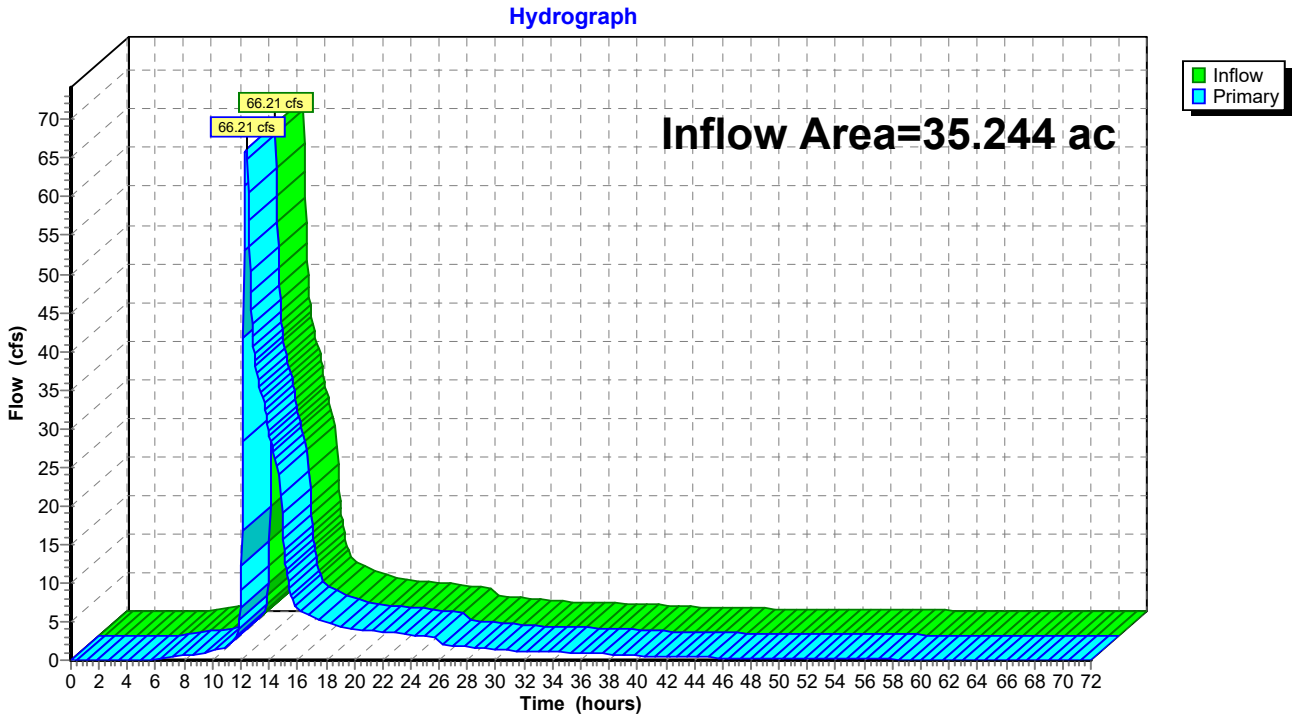


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46 Pond P-1: Wet Pond
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100-yr Event
49 Node Listing
50 Subcat A: North Watershed
52 Subcat B: South Watershed
54 Subcat C: Offsite

55 Subcat D: Direct Entry
56 Subcat E: Direct Entry
57 Pond B-1: Bioretention Basin 1
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63 Link Total: POST-DEVELOPMENT FLOW

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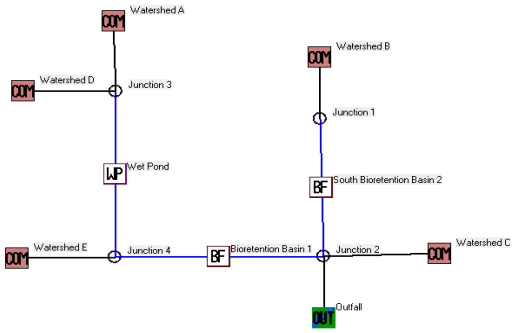
APPENDIX 5

WinSLAMM Calculations

Madison Regional Office
161 Horizon Drive, Suite 101
Verona, WI 53593
608.848.5060

WinSLAMM Infiltration Calculations

9-Springs
December 13, 2022



File Name:
I:\2021\2110566\04 Civil\SWMP\Modeling\21-10566_Post-Development.mdb

Outfall Output Summary

	Runoff Volume (cu. ft.)	Percent Runoff Reduction	Runoff Coefficient (Rv)	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction
Total of All Land Uses without Controls	1.522E+06		0.37	94.51	8980	
Outfall Total with Controls	1.181E+06	22.40 %	0.29	24.37	1797	79.99 %
Current File Output: Annualized Total After Outfall Controls	1.184E+06	Years in Model Run:	1.00		1802	

Print Output Summary to .csv File
Print Output Summary to Text File
Print Output Summary to Printer

Total Area Modeled (ac): 35.244

Total Control Practice Costs

Capital Cost	N/A
Land Cost	N/A
Annual Maintenance Cost	N/A
Present Value of All Costs	N/A
Annualized Value of All Costs	N/A

Perform Outfall Flow Duration Curve Calculations

Receiving Water Impacts Due To Stormwater Runoff

(DWP Impervious Cover Model)

	Calculated Rv	Approximate Urban Stream Classification
Without Controls	0.37	Poor
With Controls	0.29	Poor

Runoff Volume | Part. Solids Yield (lbs) | Part. Solids Conc. (mg/L) | **Summary Table**

Data File: I:\2021\2110566\04 Civil\SWMP\Modeling\21-10566_Post-Development.mdb
Rain File: WisReg - Madison WI 1981.RAN
Date: 12-13-22 Time: 2:32:37 PM
Site Description:

Col. #:	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Control Practice No.	Control Practice Type	Control Practice Name or Location	Total Inflow Volume (cf)	Total Outflow Volume (cf)	Percent Volume Reduction	Total Influent Load (lbs)	Total Effluent Load (lbs)	Percent Load Reduction	Flow Weighted Influent Conc (mg/L)	Flow Weighted Effluent Conc (mg/L)	Percent Conc. Reduction	Influent Median Part. Size (microns)	Effluent Median Part. Size (microns)	Notes	Maximum Flushing Ratio	Maximum Peak Reduction Factor	Maximum Stage (ft)	Hydraulic Volume Out (cf)
1	Biofilter	South Bioretention Basin 2	328722	72746	77.87	1960	93.06	95.25	95.53	20.49	78.548	7.80	1.68	No Biofilter Overflows			5.05	73159
2	Biofilter	Bioretention Basin 1	1.152E+06	1.064E+06	7.639	1858	1205	35.15	25.84	18.15	29.773	2.04	1.66	No Biofilter Overflows			6.12	1052639
3	Wet Detention Pond	Wet Pond	1.134E+06	1.137E+06	-0.265	6429	1767	72.52	90.86	24.90	72.590	7.80	2.00	No Pond Overflows	2.8	0.95	7.91	1136578

Runoff Volume | Part. Solids Yield (lbs) | Part. Solids Conc. (mg/L) | **Summary Table**

Data File: I:\2021\2110566\04 C
Rain File: WisReg - Madison WI
Date: 12-13-22 Time: 2:32:37 PM
Site Description:

Col. #:	2	16	17	18	19	20	27	28	29	30	31	32	33	34	35	39	54	57	58	61
Control Practice No.	Control Practice Type	Maximum Flushing Ratio	Maximum Peak Reduction Factor	Maximum Stage (ft)	Hydraulic Volume Out (cf)	Minimum Volume (cf)	Maximum Surface Ponding Time (hrs)	Maximum Subsurface Ponding Time (hrs)	Volume Infiltrated (cf)	Underdrain Discharge Vol. (cf)	Evapo-Transpir. Vol. (cf)	Minimum Soil Moist. (frac)	Surface Discharge Bypass Vol. (cf)	Evap. Vol. (cf)	Volume Supplemtl. Irrig.(cf)	Surface Ponding Events >72 hrs (Count)	Residence Time in Media (hrs)	Volume to WWTP (cf)	Water Withdrawl Volume (cf)	Runoff Producing Events/ Ttl. Rains
1	Biofilter			5.05	73159		8.6	18.25	256437.40	72800			0.00			0	1.80			10/90
2	Biofilter			6.12	1052639		37.1	69.20	97589.50	496870			213026.40			0	1.80			56/90
3	Wet Detention Pond	2.8	0.95	7.91	1136578	48353			0									0	0	90/90

Data file name: I:\2021\2110566\04
Civil\SWMP\Modeling\21-10566_Post-Development.mdb
WinSLAMM Version 10.4.1
Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Madison WI 1981.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban
Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust
Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust
Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust
Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban
Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance:
 False
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source
Area PSD Files.csv
Cost Data file name:
Seed for random number generator: -42
Study period starting date: 01/01/81   Study period ending date: 12/31/81
Start of Winter Season: 12/02   End of Winter Season: 03/12
Date: 12-13-2022   Time: 14:21:49
Site information:

Pre-Development Area Description	Pre-Development Area (ac)	Pre-Development CN
Existing	35.240	70
Total Area (ac)/Composite CN	35.240	70

LU# 1 - Commercial: Watershed B   Total area (ac): 5.669
     1 - Roofs 1: 0.860 ac.   Flat   Connected   Source Area PSD File:
C:\WinSLAMM Files\NURP.cpz
     13 - Paved Parking 1: 2.436 ac.   Connected   Source Area PSD File:
C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1: 0.488 ac.   Connected   Source Area PSD File: C:\WinSLAMM
Files\NURP.cpz
     51 - Small Landscaped Areas 1: 1.621 ac.   Normal Silty   Source Area PSD
File: C:\WinSLAMM Files\NURP.cpz
     70 - Water Body Areas: 0.264 ac.   Source Area PSD File:

LU# 2 - Commercial: Watershed A   Total area (ac): 17.361
     1 - Roofs 1: 4.551 ac.   Flat   Connected   Source Area PSD File:
C:\WinSLAMM Files\NURP.cpz
     13 - Paved Parking 1: 6.672 ac.   Connected   Source Area PSD File:
C:\WinSLAMM Files\NURP.cpz

31 - Sidewalks 1: 1.728 ac. Disconnected Moderately Compacted Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
51 - Small Landscaped Areas 1: 4.410 ac. Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 3 - Commercial: Watershed D Total area (ac): 6.158
31 - Sidewalks 1: 0.268 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 5.393 ac. Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
70 - Water Body Areas: 0.497 ac. Source Area PSD File:

LU# 4 - Commercial: Watershed E Total area (ac): 1.001
31 - Sidewalks 1: 0.029 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 0.903 ac. Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
70 - Water Body Areas: 0.069 ac. Source Area PSD File:

LU# 5 - Commercial: Watershed C Total area (ac): 5.055
31 - Sidewalks 1: 0.186 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 4.869 ac. Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

Control Practice 1: Biofilter CP# 1 (DS) - South Bioretention Basin 2

1. Top area (square feet) = 16848
2. Bottom aea (square feet) = 11516
3. Depth (ft): 8
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 0.5
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.01
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 2
10. Porosity of rock filled volume = 0.33
11. Engineered soil infiltration rate: 3.6
12. Engineered soil depth (ft) = 2
13. Engineered soil porosity = 0.27
14. Percent solids reduction due to flow through engineered soil = 80
15. Biofilter peak to average flow ratio = 3.8
16. Number of biofiltration control devices = 1
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0

```
   Soil Data                          Soil Type Fraction in Eng. Soil
       User-Defined Soil Type           1.000
   Biofilter Outlet/Discharge Characteristics:
       Outlet type:  Broad Crested Weir
               1.  Weir crest length (ft):   20
               2.  Weir crest width (ft):   10
               3.  Height of datum to bottom of weir opening:   7
       Outlet type:  Vertical Stand Pipe
               1.  Stand pipe diameter (ft):   4
               2.  Stand pipe height above datum (ft):   6
       Outlet type:  Surface Discharge Pipe
               1.  Surface discharge pipe outlet diameter (ft):   0.5
               2.  Pipe invert elevation above datum (ft):   5
               3.  Number of surface pipe outlets:   1
       Outlet type:  Drain Tile/Underdrain
               1.  Underdrain outlet diameter (ft):   0.5
               2.  Invert elevation above datum (ft):   1.5
               3.  Number of underdrain outlets:   1


Control Practice 2:  Biofilter CP# 2 (DS) - Bioretention Basin 1
   1.  Top area (square feet) =  6696
   2.  Bottom aea (square feet) =  3000
   3.  Depth (ft):   8
   4.  Biofilter width (ft) - for Cost Purposes Only:   10
   5.  Infiltration rate (in/hr) =  0.13
   6.  Random infiltration rate generation?  No
   7.  Infiltration rate fraction (side):   0.01
   8.  Infiltration rate fraction (bottom):   1
   9.  Depth of biofilter that is rock filled (ft) 2
   10.  Porosity of rock filled volume =  0.33
   11.  Engineered soil infiltration rate:   3.6
   12.  Engineered soil depth (ft) =  2
   13.  Engineered soil porosity =  0.27
   14. Percent solids reduction due to flow through engineered soil =  80
   15. Biofilter peak to average flow ratio =  3.8
   16. Number of biofiltration control devices =  1
   17. Particle size distribution file:  Not needed - calculated by program
   18. Initial water surface elevation (ft):   0
   Soil Data                          Soil Type Fraction in Eng. Soil
       User-Defined Soil Type           1.000
   Biofilter Outlet/Discharge Characteristics:
       Outlet type:  Broad Crested Weir
               1.  Weir crest length (ft):   20
               2.  Weir crest width (ft):   10
               3.  Height of datum to bottom of weir opening:   7.25
       Outlet type:  Vertical Stand Pipe
               1.  Stand pipe diameter (ft):   4
               2.  Stand pipe height above datum (ft):   6
       Outlet type:  Surface Discharge Pipe
```

1. Surface discharge pipe outlet diameter (ft): 0.5
2. Pipe invert elevation above datum (ft): 5
3. Number of surface pipe outlets: 1

Outlet type: Drain Tile/Underdrain

1. Underdrain outlet diameter (ft): 0.5
2. Invert elevation above datum (ft): 1.5
3. Number of underdrain outlets: 1

Control Practice 3: Wet Detention Pond CP# 1 (DS) - Wet Pond

Particle Size Distribution file name: Not needed - calculated by program

Initial stage elevation (ft): 5

Peak to Average Flow Ratio: 3.8

Maximum flow allowed into pond (cfs): No maximum value entered

Outlet Characteristics:

Outlet type: Orifice 1

1. Orifice diameter (ft): 0.67
2. Number of orifices: 1
3. Invert elevation above datum (ft): 5

Outlet type: Broad Crested Weir

1. Weir crest length (ft): 50
2. Weir crest width (ft): 10
3. Height from datum to bottom of weir opening: 12.5

Outlet type: Vertical Stand Pipe

1. Stand pipe diameter (ft): 4
2. Stand pipe height above datum (ft): 9

Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.10	0.1000	0.00	0.00
2	4.00	0.2690	0.00	0.00
3	5.00	0.4970	0.00	0.00
4	12.00	1.0360	0.00	0.00
5	13.00	1.1190	0.00	0.00

Data file name: I:\2021\2110566\04 Civil\SWMP\Modeling\21-10566_Post-Development.mdb
WinSLAMM Version 10.4.1
Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Madison WI 1981.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
Seed for random number generator: -42
Study period starting date: 01/01/81 Study period ending date: 12/31/81
Start of Winter Season: 12/02 End of Winter Season: 03/12
Date: 12-13-2022 Time: 14:18:24
Site information:

LU# 1 - Commercial: Watershed B Total area (ac): 5.669
1 - Roofs 1: 0.860 ac. Flat Connected PSD File: C:\WinSLAMM Files\NURP.cpz
13 - Paved Parking 1: 2.436 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
31 - Sidewalks 1: 0.488 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
51 - Small Landscaped Areas 1: 1.621 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz
70 - Water Body Areas: 0.264 ac. PSD File:

LU# 2 - Commercial: Watershed A Total area (ac): 17.361
1 - Roofs 1: 4.551 ac. Flat Connected PSD File: C:\WinSLAMM Files\NURP.cpz
13 - Paved Parking 1: 6.672 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
31 - Sidewalks 1: 1.728 ac. Disconnected Moderately Compacted Silty PSD File: C:\WinSLAMM Files\NURP.cpz
51 - Small Landscaped Areas 1: 4.410 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 3 - Commercial: Watershed D Total area (ac): 6.158
31 - Sidewalks 1: 0.268 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 5.393 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz
70 - Water Body Areas: 0.497 ac. PSD File:

LU# 4 - Commercial: Watershed E Total area (ac): 1.001
31 - Sidewalks 1: 0.029 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 0.903 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz
70 - Water Body Areas: 0.069 ac. PSD File:

LU# 5 - Commercial: Watershed C Total area (ac): 5.055
31 - Sidewalks 1: 0.186 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 4.869 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz

Control Practice 1: Biofilter CP# 1 (DS) - South Bioretention Basin 2

1. Top area (square feet) = 15286
2. Bottom aea (square feet) = 10153
3. Depth (ft): 8
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 0.5
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.01
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 2
10. Porosity of rock filled volume = 0.33
11. Engineered soil infiltration rate: 3.6
12. Engineered soil depth (ft) = 2
13. Engineered soil porosity = 0.27
14. Percent solids reduction due to flow through engineered soil = 80
15. Biofilter peak to average flow ratio = 3.8
16. Number of biofiltration control devices = 1
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0

Soil Data — Soil Type Fraction in Eng. Soil

User-Defined Soil Type 1.000

Biofilter Outlet/Discharge Characteristics:

Outlet type: Broad Crested Weir

1. Weir crest length (ft): 20
2. Weir crest width (ft): 10
3. Height of datum to bottom of weir opening: 7

Outlet type: Vertical Stand Pipe

1. Stand pipe diameter (ft): 4
2. Stand pipe height above datum (ft): 6

Outlet type: Surface Discharge Pipe

1. Surface discharge pipe outlet diameter (ft): 0.5
2. Pipe invert elevation above datum (ft): 5
3. Number of surface pipe outlets: 1

Outlet type: Drain Tile/Underdrain

1. Underdrain outlet diameter (ft): 0.5
2. Invert elevation above datum (ft): 1.5
3. Number of underdrain outlets: 1

Control Practice 2: Biofilter CP# 2 (DS) - Bioretention Basin 1

1. Top area (square feet) = 6696
2. Bottom aea (square feet) = 3000
3. Depth (ft): 8
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 0.13
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.01
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 2
10. Porosity of rock filled volume = 0.33
11. Engineered soil infiltration rate: 3.6
12. Engineered soil depth (ft) = 2
13. Engineered soil porosity = 0.27
14. Percent solids reduction due to flow through engineered soil = 80
15. Biofilter peak to average flow ratio = 3.8
16. Number of biofiltration control devices = 1
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0

Soil Data — Soil Type Fraction in Eng. Soil

User-Defined Soil Type 1.000

Biofilter Outlet/Discharge Characteristics:

Outlet type: Broad Crested Weir

1. Weir crest length (ft): 20
2. Weir crest width (ft): 10
3. Height of datum to bottom of weir opening: 7

Outlet type: Vertical Stand Pipe

1. Stand pipe diameter (ft): 4
2. Stand pipe height above datum (ft): 6

Outlet type: Surface Discharge Pipe

1. Surface discharge pipe outlet diameter (ft): 0.5
2. Pipe invert elevation above datum (ft): 5
3. Number of surface pipe outlets: 1

Outlet type: Drain Tile/Underdrain

1. Underdrain outlet diameter (ft): 0.5
2. Invert elevation above datum (ft): 1.5
3. Number of underdrain outlets: 1

Data file name: I:\2021\2110566\04 Civil\SWMP\Modeling\21-10566_Post-Development.mdb
WinSLAMM Version 10.4.1
Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Madison WI 1981.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std

Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
Seed for random number generator: -42
Study period starting date: 01/01/81 Study period ending date: 12/31/81
Start of Winter Season: 12/02 End of Winter Season: 03/12
Date: 12-13-2022 Time: 14:18:28
Site information:

LU# 1 - Commercial: Watershed B Total area (ac): 5.669
1 - Roofs 1: 0.860 ac. Flat Connected PSD File: C:\WinSLAMM Files\NURP.cpz
13 - Paved Parking 1: 2.436 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
31 - Sidewalks 1: 0.488 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
51 - Small Landscaped Areas 1: 1.621 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz
70 - Water Body Areas: 0.264 ac. PSD File:

LU# 2 - Commercial: Watershed A Total area (ac): 17.361
1 - Roofs 1: 4.551 ac. Flat Connected PSD File: C:\WinSLAMM Files\NURP.cpz
13 - Paved Parking 1: 6.672 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
31 - Sidewalks 1: 1.728 ac. Disconnected Moderately Compacted Silty PSD File: C:\WinSLAMM Files\NURP.cpz
51 - Small Landscaped Areas 1: 4.410 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 3 - Commercial: Watershed D Total area (ac): 6.158
31 - Sidewalks 1: 0.268 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 5.393 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz
70 - Water Body Areas: 0.497 ac. PSD File:

LU# 4 - Commercial: Watershed E Total area (ac): 1.001
31 - Sidewalks 1: 0.029 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 0.903 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz
70 - Water Body Areas: 0.069 ac. PSD File:

LU# 5 - Commercial: Watershed C Total area (ac): 5.055
31 - Sidewalks 1: 0.186 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 4.869 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz

Control Practice 1: Biofilter CP# 1 (DS) - South Bioretention Basin 2
1. Top area (square feet) = 15286
2. Bottom aea (square feet) = 10153
3. Depth (ft): 8
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 0.5

6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.01
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 2
10. Porosity of rock filled volume = 0.33
11. Engineered soil infiltration rate: 3.6
12. Engineered soil depth (ft) = 2
13. Engineered soil porosity = 0.27
14. Percent solids reduction due to flow through engineered soil = 80
15. Biofilter peak to average flow ratio = 3.8
16. Number of biofiltration control devices = 1
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0

Soil Data Soil Type Fraction in Eng. Soil
User-Defined Soil Type 1.000

Biofilter Outlet/Discharge Characteristics:

Outlet type: Broad Crested Weir
1. Weir crest length (ft): 20
2. Weir crest width (ft): 10
3. Height of datum to bottom of weir opening: 7

Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 4
2. Stand pipe height above datum (ft): 6

Outlet type: Surface Discharge Pipe
1. Surface discharge pipe outlet diameter (ft): 0.5
2. Pipe invert elevation above datum (ft): 5
3. Number of surface pipe outlets: 1

Outlet type: Drain Tile/Underdrain
1. Underdrain outlet diameter (ft): 0.5
2. Invert elevation above datum (ft): 1.5
3. Number of underdrain outlets: 1

Control Practice 2: Biofilter CP# 2 (DS) - Bioretention Basin 1
1. Top area (square feet) = 6696
2. Bottom aea (square feet) = 3000
3. Depth (ft): 8
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 0.13
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.01
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 2
10. Porosity of rock filled volume = 0.33
11. Engineered soil infiltration rate: 3.6
12. Engineered soil depth (ft) = 2
13. Engineered soil porosity = 0.27
14. Percent solids reduction due to flow through engineered soil = 80
15. Biofilter peak to average flow ratio = 3.8
16. Number of biofiltration control devices = 1
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0

Soil Data Soil Type Fraction in Eng. Soil
User-Defined Soil Type 1.000

Biofilter Outlet/Discharge Characteristics:

Outlet type: Broad Crested Weir
1. Weir crest length (ft): 20
2. Weir crest width (ft): 10
3. Height of datum to bottom of weir opening: 7

Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 4
2. Stand pipe height above datum (ft): 6

Outlet type: Surface Discharge Pipe
1. Surface discharge pipe outlet diameter (ft): 0.5
2. Pipe invert elevation above datum (ft): 5
3. Number of surface pipe outlets: 1

Outlet type: Drain Tile/Underdrain
1. Underdrain outlet diameter (ft): 0.5
2. Invert elevation above datum (ft): 1.5
3. Number of underdrain outlets: 1

Data file name: I:\2021\2110566\04 Civil\SWMP\Modeling\21-10566_Post-Development.mdb
WinSLAMM Version 10.4.1
Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Madison WI 1981.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
Seed for random number generator: -42
Study period starting date: 01/01/81 Study period ending date: 12/31/81

Start of Winter Season: 12/02 End of Winter Season: 03/12
Date: 12-13-2022 Time: 14:19:02
Site information:

LU# 1 - Commercial: Watershed B Total area (ac): 5.669
1 - Roofs 1: 0.860 ac. Flat Connected PSD File: C:\WinSLAMM Files\NURP.cpz
13 - Paved Parking 1: 2.436 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
31 - Sidewalks 1: 0.488 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
51 - Small Landscaped Areas 1: 1.621 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz
70 - Water Body Areas: 0.264 ac. PSD File:

LU# 2 - Commercial: Watershed A Total area (ac): 17.361
1 - Roofs 1: 4.551 ac. Flat Connected PSD File: C:\WinSLAMM Files\NURP.cpz
13 - Paved Parking 1: 6.672 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
31 - Sidewalks 1: 1.728 ac. Disconnected Moderately Compacted Silty PSD File: C:\WinSLAMM Files\NURP.cpz
51 - Small Landscaped Areas 1: 4.410 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 3 - Commercial: Watershed D Total area (ac): 6.158
31 - Sidewalks 1: 0.268 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 5.393 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz
70 - Water Body Areas: 0.497 ac. PSD File:

LU# 4 - Commercial: Watershed E Total area (ac): 1.001
31 - Sidewalks 1: 0.029 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 0.903 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz
70 - Water Body Areas: 0.069 ac. PSD File:

LU# 5 - Commercial: Watershed C Total area (ac): 5.055
31 - Sidewalks 1: 0.186 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 4.869 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz

Control Practice 1: Biofilter CP# 1 (DS) - South Bioretention Basin 2
1. Top area (square feet) = 15286
2. Bottom aea (square feet) = 10153
3. Depth (ft): 8
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 0.5
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.01
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 2
10. Porosity of rock filled volume = 0.33
11. Engineered soil infiltration rate: 3.6
12. Engineered soil depth (ft) = 2
13. Engineered soil porosity = 0.27
14. Percent solids reduction due to flow through engineered soil = 80
15. Biofilter peak to average flow ratio = 3.8

16. Number of biofiltration control devices = 1
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0

Soil Data Soil Type Fraction in Eng. Soil
User-Defined Soil Type 1.000

Biofilter Outlet/Discharge Characteristics:

Outlet type: Broad Crested Weir
1. Weir crest length (ft): 20
2. Weir crest width (ft): 10
3. Height of datum to bottom of weir opening: 7

Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 4
2. Stand pipe height above datum (ft): 6

Outlet type: Surface Discharge Pipe
1. Surface discharge pipe outlet diameter (ft): 0.5
2. Pipe invert elevation above datum (ft): 5
3. Number of surface pipe outlets: 1

Outlet type: Drain Tile/Underdrain
1. Underdrain outlet diameter (ft): 0.5
2. Invert elevation above datum (ft): 1.5
3. Number of underdrain outlets: 1

Control Practice 2: Biofilter CP# 2 (DS) - Bioretention Basin 1

1. Top area (square feet) = 6696
2. Bottom aea (square feet) = 3000
3. Depth (ft): 8
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 0.13
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.01
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 2
10. Porosity of rock filled volume = 0.33
11. Engineered soil infiltration rate: 3.6
12. Engineered soil depth (ft) = 2
13. Engineered soil porosity = 0.27
14. Percent solids reduction due to flow through engineered soil = 80
15. Biofilter peak to average flow ratio = 3.8
16. Number of biofiltration control devices = 1
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0

Soil Data Soil Type Fraction in Eng. Soil
User-Defined Soil Type 1.000

Biofilter Outlet/Discharge Characteristics:

Outlet type: Broad Crested Weir
1. Weir crest length (ft): 20
2. Weir crest width (ft): 10
3. Height of datum to bottom of weir opening: 7

Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 4
2. Stand pipe height above datum (ft): 6

Outlet type: Surface Discharge Pipe
1. Surface discharge pipe outlet diameter (ft): 0.5
2. Pipe invert elevation above datum (ft): 5
3. Number of surface pipe outlets: 1

Outlet type: Drain Tile/Underdrain
1. Underdrain outlet diameter (ft): 0.5
2. Invert elevation above datum (ft): 1.5
3. Number of underdrain outlets: 1

Data file name: I:\2021\2110566\04 Civil\SWMP\Modeling\21-10566_Post-Development.mdb
WinSLAMM Version 10.4.1
Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Madison WI 1981.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
Seed for random number generator: -42
Study period starting date: 01/01/81 Study period ending date: 12/31/81
Start of Winter Season: 12/02 End of Winter Season: 03/12
Date: 12-13-2022 Time: 14:21:56
Site information:

LU# 1 - Commercial: Watershed B Total area (ac): 5.669

1 - Roofs 1: 0.860 ac. Flat Connected PSD File: C:\WinSLAMM Files\NURP.cpz
13 - Paved Parking 1: 2.436 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
31 - Sidewalks 1: 0.488 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
51 - Small Landscaped Areas 1: 1.621 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz
70 - Water Body Areas: 0.264 ac. PSD File:

LU# 2 - Commercial: Watershed A Total area (ac): 17.361
1 - Roofs 1: 4.551 ac. Flat Connected PSD File: C:\WinSLAMM Files\NURP.cpz
13 - Paved Parking 1: 6.672 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
31 - Sidewalks 1: 1.728 ac. Disconnected Moderately Compacted Silty PSD File: C:\WinSLAMM Files\NURP.cpz
51 - Small Landscaped Areas 1: 4.410 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 3 - Commercial: Watershed D Total area (ac): 6.158
31 - Sidewalks 1: 0.268 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 5.393 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz
70 - Water Body Areas: 0.497 ac. PSD File:

LU# 4 - Commercial: Watershed E Total area (ac): 1.001
31 - Sidewalks 1: 0.029 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 0.903 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz
70 - Water Body Areas: 0.069 ac. PSD File:

LU# 5 - Commercial: Watershed C Total area (ac): 5.055
31 - Sidewalks 1: 0.186 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 4.869 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz

Control Practice 1: Biofilter CP# 1 (DS) - South Bioretention Basin 2
1. Top area (square feet) = 16848
2. Bottom aea (square feet) = 11516
3. Depth (ft): 8
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 0.5
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.01
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 2
10. Porosity of rock filled volume = 0.33
11. Engineered soil infiltration rate: 3.6
12. Engineered soil depth (ft) = 2
13. Engineered soil porosity = 0.27
14. Percent solids reduction due to flow through engineered soil = 80
15. Biofilter peak to average flow ratio = 3.8
16. Number of biofiltration control devices = 1
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0

Soil Data Soil Type Fraction in Eng. Soil
User-Defined Soil Type 1.000

Biofilter Outlet/Discharge Characteristics:
Outlet type: Broad Crested Weir
1. Weir crest length (ft): 20
2. Weir crest width (ft): 10
3. Height of datum to bottom of weir opening: 7

Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 4
2. Stand pipe height above datum (ft): 6

Outlet type: Surface Discharge Pipe
1. Surface discharge pipe outlet diameter (ft): 0.5
2. Pipe invert elevation above datum (ft): 5
3. Number of surface pipe outlets: 1

Outlet type: Drain Tile/Underdrain
1. Underdrain outlet diameter (ft): 0.5
2. Invert elevation above datum (ft): 1.5
3. Number of underdrain outlets: 1

Control Practice 2: Biofilter CP# 2 (DS) - Bioretention Basin 1

1. Top area (square feet) = 6696
2. Bottom aea (square feet) = 3000
3. Depth (ft): 8
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 0.13
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.01
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 2
10. Porosity of rock filled volume = 0.33
11. Engineered soil infiltration rate: 3.6
12. Engineered soil depth (ft) = 2
13. Engineered soil porosity = 0.27
14. Percent solids reduction due to flow through engineered soil = 80
15. Biofilter peak to average flow ratio = 3.8
16. Number of biofiltration control devices = 1
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0

Soil Data Soil Type Fraction in Eng. Soil
User-Defined Soil Type 1.000

Biofilter Outlet/Discharge Characteristics:

Outlet type: Broad Crested Weir
1. Weir crest length (ft): 20
2. Weir crest width (ft): 10
3. Height of datum to bottom of weir opening: 7.25

Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 4
2. Stand pipe height above datum (ft): 6

Outlet type: Surface Discharge Pipe
1. Surface discharge pipe outlet diameter (ft): 0.5
2. Pipe invert elevation above datum (ft): 5
3. Number of surface pipe outlets: 1

Outlet type: Drain Tile/Underdrain
1. Underdrain outlet diameter (ft): 0.5
2. Invert elevation above datum (ft): 1.5
3. Number of underdrain outlets: 1

Data file name: I:\2021\2110566\04 Civil\SWMP\Modeling\21-10566_Post-Development.mdb
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Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
Seed for random number generator: -42
Study period starting date: 01/01/81 Study period ending date: 12/31/81
Start of Winter Season: 12/02 End of Winter Season: 03/12
Date: 12-13-2022 Time: 14:22:04
Site information:

LU# 1 - Commercial: Watershed B Total area (ac): 5.669
1 - Roofs 1: 0.860 ac. Flat Connected PSD File: C:\WinSLAMM Files\NURP.cpz
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31 - Sidewalks 1: 0.488 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
51 - Small Landscaped Areas 1: 1.621 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz
70 - Water Body Areas: 0.264 ac. PSD File:

LU# 2 - Commercial: Watershed A Total area (ac): 17.361
1 - Roofs 1: 4.551 ac. Flat Connected PSD File: C:\WinSLAMM Files\NURP.cpz
13 - Paved Parking 1: 6.672 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
31 - Sidewalks 1: 1.728 ac. Disconnected Moderately Compacted Silty PSD File: C:\WinSLAMM Files\NURP.cpz
51 - Small Landscaped Areas 1: 4.410 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 3 - Commercial: Watershed D Total area (ac): 6.158
31 - Sidewalks 1: 0.268 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 5.393 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz

70 - Water Body Areas: 0.497 ac. PSD File:

LU# 4 - Commercial: Watershed E Total area (ac): 1.001
31 - Sidewalks 1: 0.029 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 0.903 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz
70 - Water Body Areas: 0.069 ac. PSD File:

LU# 5 - Commercial: Watershed C Total area (ac): 5.055
31 - Sidewalks 1: 0.186 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 4.869 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz

Control Practice 1: Biofilter CP# 1 (DS) - South Bioretention Basin 2
1. Top area (square feet) = 16848
2. Bottom aea (square feet) = 11516
3. Depth (ft): 8
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 0.5
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.01
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 2
10. Porosity of rock filled volume = 0.33
11. Engineered soil infiltration rate: 3.6
12. Engineered soil depth (ft) = 2
13. Engineered soil porosity = 0.27
14. Percent solids reduction due to flow through engineered soil = 80
15. Biofilter peak to average flow ratio = 3.8
16. Number of biofiltration control devices = 1
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0

Soil Data Soil Type Fraction in Eng. Soil
User-Defined Soil Type 1.000

Biofilter Outlet/Discharge Characteristics:
Outlet type: Broad Crested Weir
1. Weir crest length (ft): 20
2. Weir crest width (ft): 10
3. Height of datum to bottom of weir opening: 7

Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 4
2. Stand pipe height above datum (ft): 6

Outlet type: Surface Discharge Pipe
1. Surface discharge pipe outlet diameter (ft): 0.5
2. Pipe invert elevation above datum (ft): 5
3. Number of surface pipe outlets: 1

Outlet type: Drain Tile/Underdrain
1. Underdrain outlet diameter (ft): 0.5
2. Invert elevation above datum (ft): 1.5

3. Number of underdrain outlets: 1

Control Practice 2: Biofilter CP# 2 (DS) - Bioretention Basin 1

1. Top area (square feet) = 6696
2. Bottom aea (square feet) = 3000
3. Depth (ft): 8
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 0.13
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.01
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 2
10. Porosity of rock filled volume = 0.33
11. Engineered soil infiltration rate: 3.6
12. Engineered soil depth (ft) = 2
13. Engineered soil porosity = 0.27
14. Percent solids reduction due to flow through engineered soil = 80
15. Biofilter peak to average flow ratio = 3.8
16. Number of biofiltration control devices = 1
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0

Soil Data Soil Type Fraction in Eng. Soil

User-Defined Soil Type 1.000

Biofilter Outlet/Discharge Characteristics:

Outlet type: Broad Crested Weir

1. Weir crest length (ft): 20
2. Weir crest width (ft): 10
3. Height of datum to bottom of weir opening: 7.25

Outlet type: Vertical Stand Pipe

1. Stand pipe diameter (ft): 4
2. Stand pipe height above datum (ft): 6

Outlet type: Surface Discharge Pipe

1. Surface discharge pipe outlet diameter (ft): 0.5
2. Pipe invert elevation above datum (ft): 5
3. Number of surface pipe outlets: 1

Outlet type: Drain Tile/Underdrain

1. Underdrain outlet diameter (ft): 0.5
2. Invert elevation above datum (ft): 1.5
3. Number of underdrain outlets: 1

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Data file name: I:\2021\2110566\04 Civil\SWMP\Modeling\21-10566_Post-Development.mdb
WinSLAMM Version 10.4.1
Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Madison WI 1981.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
Seed for random number generator: -42
Study period starting date: 01/01/81 Study period ending date: 12/31/81
Start of Winter Season: 12/02 End of Winter Season: 03/12
Model Run Start Date: 01/01/81 Model Run End Date: 12/31/81
Date of run: 12-13-2022 Time of run: 14:32:44
Total Area Modeled (acres): 35.244
Years in Model Run: 1.00

	Runoff Volume (cu ft)	Percent Runoff Volume Reduction	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction
Total of all Land Uses without Controls:	1.522E+06	-	94.51	8980	-
Outfall Total with Controls:	1.181E+06	22.40%	24.37	1797	79.99%
Annualized Total After Outfall Controls:	1.184E+06			1802	

Madison Regional Office
161 Horizon Drive, Suite 101
Verona, WI 53593
608.848.5060

WinSLAMM Infiltration Calculations

9-Springs
December 13, 2022

Existing			**Proposed**		
Drainage Area	5.67	acres	Drainage Area	5.67	acres
	246,965	sf		246,965	sf
Flow Off-Site	15,548	ft^3/year (From WinSLAMM)(See below)	Flow Off-Site	72,751	ft^3 (From WinSLAMM)(See below)
Runoff			**Runoff**		
Depth of Rain Off-Site (Area/Flow)	0.0630	ft	Depth of Rain Off-Site (Area/Flow)	0.2946	ft
	0.7555	in		3.5350	in
Total Depth of Rain	28.81	in/year	Total Depth of Rain	28.81	in/year
Rain Stay-On	**28.05**	in/year	**Rain Stay-On**	**25.28**	in/year
90% stay-on	**25.25**	in/year			
				90.09	% Infiltrated

WinSLAMM

Runoff Volume (cf) | Part. Solids Yield (lbs)

Data File: I:\2021\2110566\04 Civil\SWMP\Modeling\20-10566 South Watershed For Infiltration - New Layout.mdb
Rain File: WisReg - Madison WI 1981.RAN
Date: 12-13-22 Time: 1:42:56 PM
Site Description:

Runoff Volume Total (cf) at the Outfall

Rain Number	Start Date	Rain Total (in)	Outfall Total (cf)	Rv	Total Losses (in.)	Calculated CN*	Event Peak Flow (cfs)	Pre-Dev Runoff Vol.
Minimum:		0.00	0	0.000	0.01	72.1	0.000	0.0
Maximum:		2.59	25240	0.473	1.47	87.9	0.824	8118.0
Average:		0.26	667.4	0.019	0.23	83.6	0.707	1554.8
Total:		28.81	72751		25.27			15548.00

* Note: NRCS does not recommend using CN method for rains < 0.5 in.
See 'PreDevelopment Areas and CN' Help for more info.

Data file name: I:\2021\2110566\04 Civil\SWMP\Modeling\20-10566 South Watershed For Infiltration - New Layout.mdb
WinSLAMM Version 10.4.1
Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Madison WI 1981.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
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Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
Seed for random number generator: -42
Study period starting date: 01/01/81 Study period ending date: 12/31/81
Start of Winter Season: 12/02 End of Winter Season: 03/12
Date: 12-13-2022 Time: 13:45:05
Site information:

LU# 1 - Commercial: Watershed B Total area (ac): 5.670
1 - Roofs 1: 0.860 ac. Flat Connected PSD File: C:\WinSLAMM Files\NURP.cpz
13 - Paved Parking 1: 2.436 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
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51 - Small Landscaped Areas 1: 1.622 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz
70 - Water Body Areas: 0.264 ac. PSD File:

Control Practice 1: Biofilter CP# 1 (DS) - South Bioretention Basin 2
1. Top area (square feet) = 16848
2. Bottom aea (square feet) = 11516
3. Depth (ft): 8
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 0.5
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.01
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 2
10. Porosity of rock filled volume = 0.33
11. Engineered soil infiltration rate: 3.6
12. Engineered soil depth (ft) = 2
13. Engineered soil porosity = 0.27
14. Percent solids reduction due to flow through engineered soil = 80
15. Biofilter peak to average flow ratio = 3.8
16. Number of biofiltration control devices = 1
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0
Soil Data Soil Type Fraction in Eng. Soil
User-Defined Soil Type 1.000
Biofilter Outlet/Discharge Characteristics:
Outlet type: Broad Crested Weir
1. Weir crest length (ft): 20
2. Weir crest width (ft): 10
3. Height of datum to bottom of weir opening: 7
Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 4
2. Stand pipe height above datum (ft): 6
Outlet type: Surface Discharge Pipe
1. Surface discharge pipe outlet diameter (ft): 0.5
2. Pipe invert elevation above datum (ft): 5
3. Number of surface pipe outlets: 1
Outlet type: Drain Tile/Underdrain
1. Underdrain outlet diameter (ft): 0.5
2. Invert elevation above datum (ft): 1.5
3. Number of underdrain outlets: 1

SLAMM for Windows Version 10.4.1
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Data file name: I:\2021\2110566\04 Civil\SWMP\Modeling\20-10566 South Watershed For Infiltration - New Layout.mdb
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Cost Data file name:
Seed for random number generator: -42
Study period starting date: 01/01/81 Study period ending date: 12/31/81
Start of Winter Season: 12/02 End of Winter Season: 03/12
Model Run Start Date: 01/01/81 Model Run End Date: 12/31/81
Date of run: 12-13-2022 Time of run: 13:45:28
Total Area Modeled (acres): 5.670
Years in Model Run: 1.00

	Runoff Volume (cu ft)	Percent Runoff Volume Reduction	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction
Total of all Land Uses without Controls:	328729	-	95.53	1960	-
Outfall Total with Controls:	72751	77.87%	20.49	93.08	95.25%
Annualized Total After Outfall Controls:	72951			93.34	

APPENDIX 6

Pipe Sizing Calculations

Project Name: @Edge Live/Work Date: 04/02/18 Title: Storm Sewer Sizing Black - manually entered in the cell Green - calculation performed Blue - referenced from another source

Pipe Run		Manhole	Length	Pipe	Slope	Pipe	Drainage Areas				Runoff	Upstream	Area x C		Time of Conc.		Rainfall	Design	Total	Design	Percent
From	To	Size		Diameter		Material	Location	Imp.	Perv.	Total	Coef.	End	Increment	Total	To Structure	Pipe	Intensity	Storm	Runoff	Capacity	Full
		(in.)	(ft.)	(inches)	(%)			(acres)	(acres)	(acres)	C	(Y/N)			(min.)	(min.)	(in/hr)	Event	(cfs)	(cfs)	(%)
G7	STO-2.3	4	19	10	1.50	HDPE	G7	0.324	0.000	0.324	0.95	Y	0.31	0.31	6.0	0.05	8.00	100	2.47	3.18	77.5%
STO-2.3	STO-2.2	4	99	12	1.50	RCP						N	0.00	0.31	6.1	0.30	8.00	100	2.47	4.38	56.3%
G8	STO-2.2	4	34	10	1.50	HDPE	G8	0.324	0.000	0.324	0.95	Y	0.31	0.31	6.0	0.10	8.00	100	2.47	3.18	77.5%
STO-2.2	STO-2.1	4	40	18	0.50	RCP						N	0.00	0.62	6.4	0.16	8.00	100	4.93	7.45	66.2%
G9	STO-2.1	4	39	10	1.50	HDPE	G9	0.325	0.000	0.325	0.95	Y	0.31	0.31	6.0	0.11	8.00	100	2.47	3.18	77.7%
STO-2.1	INL-2.1	4	63	18	1.50	HDPE						N	0.00	0.93	6.5	0.12	7.80	100	7.22	15.25	47.3%
INL-2.2	INL-2.1	2X3	45	18	0.60	RCP	A	0.536	0.731	1.267	0.55	Y	0.69	0.69	21.1	0.16	5.15	100	3.56	8.16	43.7%
INL-2.1	STO-2	2X3	20	18	1.50	RCP	D	0.202	0.157	0.359	0.64	N	0.23	1.85	21.3	0.05	5.15	100	9.52	12.90	73.8%
INL-2.3	STO-2	2X3	39	12	1.50	RCP	E	0.252	0.077	0.329	0.79	Y	0.26	0.26	6.0	0.12	8.00	100	2.07	4.38	47.3%
STO-2	STO-1	4	120	18	3.10	RCP						N	0.00	2.11	21.3	0.19	5.15	100	10.85	18.54	58.5%
STO-1	AEW-1	4	97	24	1.00	RCP						N	0.00	2.11	21.5	0.22	5.10	100	10.75	22.68	47.4%
INL-3.2,3.3	INL-3.0,3.1	2X3	49	15	0.50	RCP	C	0.442	0.081	0.523	0.84	Y	0.44	0.44	6.0	0.22	8.00	100	3.52	4.58	76.9%
INL-3.0,3.1	AEW-2	2X3	32	18	1.00	RCP	B	0.439	0.108	0.547	0.81	N	0.44	0.88	6.2	0.09	8.00	100	7.07	10.53	67.2%
CB-16.6	CB-16.5	4	84	12	0.50	RCP	N4+B5	0.123	0.089	0.212	0.65	Y	0.14	0.14	6.0	0.44	8.00	100	1.11	2.53	43.9%
CB-16.5	INL-16.4	2X3	78	12	0.50	RCP	N3+0.5B4	0.150	0.000	0.150	0.95	N	0.14	0.28	6.4	0.40	8.00	100	2.25	2.53	89.1%
INL-16.7	INL-16.4	2X3	24	12	0.79	RCP	O2	0.293	0.000	0.293	0.95	Y	0.28	0.28	6.8	0.10	7.80	100	2.17	3.18	68.5%
INL-16.4	INL-16.2, INL-16.3	2X3	53	12	2.00	RCP	N2+0.5B4	0.312	0.000	0.312	0.95	N	0.30	0.58	6.8	0.14	7.80	100	4.50	5.05	89.1%
INL-16.1, INL-16.2	INL-16.2, INL-16.3	2X3	24	12	4.79	RCP	O	0.052	0.000	0.052	0.95	Y	0.05	0.05	6.0	0.04	8.00	100	0.40	7.82	5.1%
INL-16.2, INL-16.3	INL-15.2	2X3	29	18	0.80	RCP	N	0.102	0.006	0.109	0.91	N	0.10	0.73	7.0	0.09	7.80	100	5.66	9.42	60.1%
INL-15.2	STO-15	2X3	46	18	1.00	RCP	M	0.084	0.037	0.121	0.74	N	0.09	0.81	7.1	0.13	7.80	100	6.36	10.53	60.3%
INL-15.1	STO-15	2X3	19	12	4.00	RCP	L+E3	0.824	0.041	0.865	0.92	Y	0.79	0.79	6.0	0.03	8.00	100	6.34	7.14	88.8%
STO-15	STO-14.4	4	133	24	2.00	RCP						N	0.00	1.61	7.2	0.22	7.80	100	12.54	32.08	39.1%
CB-14.5	STO-14.4	3	62	12	4.50	RCP	P2	0.055	0.180	0.234	0.41	Y	0.10	0.10	6.0	0.11	8.00	100	0.77	7.58	10.2%
STO-14.4	STO-14	4	156	24	2.38	RCP						N	0.00	1.70	6.0	0.23	8.00	100	13.64	34.99	39.0%
CB-14.3	INL-14.1	3	38	18	3.76	RCP	A4+W2+E4	0.944	0.066	1.010	0.90	Y	0.91	0.91	6.0	0.05	8.00	100	7.31	20.42	35.8%
INL-14.1	STO-14	2X3	39	18	2.00	RCP	P	0.257	0.063	0.320	0.81	N	0.26	1.17	6.0	0.08	8.00	100	9.39	14.90	63.0%
INL-14.2	STO-14	2X3	18	18	2.00	RCP	Q+E2	1.017	0.143	1.160	0.86	Y	1.00	1.00	6.0	0.04	8.00	100	8.02	14.90	53.8%
STO-14	STO-13	4	202	24	3.09	RCP						N	0.00	3.78	7.4	0.27	7.80	100	29.51	39.87	74.0%
INL-13.1	INL-13.2	2X3	52	12	0.85	RCP	XX	0.327	0.000	0.327	0.95	Y	0.31	0.31	6.0	0.21	8.00	100	2.48	3.29	75.4%
INL-13.2	STO-13	2X3	39	12	3.20	RCP	W	0.183	0.100	0.282	0.70	N	0.20	0.51	6.2	0.08	8.00	100	4.07	6.39	63.7%
INL-13.3	STO-13	2X3	20	12	3.00	RCP	V	0.143	0.071	0.214	0.72	Y	0.15	0.15	6.0	0.04	8.00	100	1.23	6.19	19.8%
STO-13	STO-12	4	151	24	3.25	RCP						N	0.00	4.45	7.7	0.19	7.50	100	33.34	40.89	81.5%
	STO-12	3	53	12	3.06	RCP	YY	0.207	0.578	0.785	0.43	Y	0.34	0.34	6.0	0.11	8.00	100	2.73	6.25	43.6%
STO-12	STO-11	4	67	24	3.06	RCP						N	0.00	4.79	7.9	0.09	7.50	100	35.90	39.68	90.5%
INL-11.1	STO-11	2X3	12	12	7.66	RCP	X	0.221	0.038	0.259	0.85	Y	0.22	0.22	6.0	0.02	8.00	100	1.75	9.89	17.7%
STO-11	STO-10	4	54	24	3.50	RCP	YY	0.207	0.578	0.785	0.43	N	0.34	5.35	8.0	0.07	7.50	100	40.10	42.44	94.5%
STO-10	STO-9	4	112	30	3.00	RCP						N	0.00	5.35	8.0	0.13	7.50	100	40.10	71.24	56.3%
INL-9.3	STM-9.1	2X3	14	12	2.45	RCP	BB+A3	0.488	0.285	0.773	0.69	Y	0.54	0.54	6.0	0.03	8.00	100	4.28	5.59	76.5%
INL-9.4,INL-9.5	STM-9.1	2X3	30	12	1.00	RCP	CC	0.109	0.073	0.182	0.67	Y	0.12	0.12	6.0	0.11	8.00	100	0.97	3.57	27.2%
STM-26	STM-9.1	5	89	24	1.00	RCP						N	0.00	0.48	6.7	0.21	7.80	100	3.77	22.68	16.6%
STM-9.1	STO-9	2X3	92	24	1.00	RCP						N	0.00	1.02	6.0	0.21	8.00	100	8.14	22.68	35.9%
STO-9	STO-6	4	156	30	2.48	RCP						N	0.00	6.36	8.2	0.20	7.50	100	47.73	64.77	73.7%
A1	INL-8.1		62	10	2.00	HDPE	A1	0.138	0.000	0.138	0.95	Y	0.13	0.13	6.0	0.15	8.00	100	1.05	3.67	28.6%
INL-8.1	INL-8.2	2X3	22	12	9.35	RCP	GG	0.191	0.017	0.208	0.89	N	0.19	0.32	6.0	0.03	8.00	100	2.53	10.92	23.2%
INL-8.2	STO-8	2X3	9	12	11.58	RCP	DD	0.102	0.033	0.135	0.78	N	0.11	0.42	6.0	0.01	8.00	100	3.37	12.16	27.8%
INL-8.4	INL-8.3	2X3	25	12	6.38	RCP	FF	0.195	0.007	0.202	0.93	Y	0.19	0.19	6.0	0.04	8.00	100	1.50	9.02	16.6%

Project Name: @Edge Live/Work Date: 04/02/18 Title: Storm Sewer Sizing Black - manually entered in the cell Green - calculation performed Blue - referenced from another source

Pipe Run		Manhole	Length	Pipe	Slope	Pipe	Drainage Areas				Runoff	Upstream	Area x C		Time of Conc.		Rainfall	Design	Total	Design	Percent
From	To	Size		Diameter		Material	Location	Imp.	Perv.	Total	Coef.	End	Increment	Total	To Structure	Pipe	Intensity	Storm	Runoff	Capacity	Full
		(in.)	(ft.)	(inches)	(%)			(acres)	(acres)	(acres)	C	(Y/N)			(min.)	(min.)	(in/hr)	Event	(cfs)	(cfs)	(%)
INL-8.3	STO-8	2X3	29	12	4.00	RCP	EE	0.214	0.132	0.346	0.68	N	0.24	0.42	6.0	0.05	8.00	100	3.39	7.14	47.4%
STO-8	STO-6	4	21	24	0.50	RCP						N	0.00	1.60	8.4	0.07	7.50	100	12.00	16.04	74.8%
STO-6	STO-5	4	162	30	3.50	RCP						N	0.00	7.96	8.4	0.17	7.50	100	59.73	76.94	77.6%
STO-5	AEW-5	4	131	30	4.00	RCP	A2	0.219	0.000	0.219	0.95	N	0.21	9.77	8.6	0.13	7.30	100	71.34	82.26	86.7%
Bier Road																					
INL-24.1	INL-24.2	2X3	5	12	2.00	RCP	I	0.081	0.022	0.104	0.80	Y	0.08	0.08	6.0	0.01	8.00	100	0.66	5.05	13.1%
INL-24.2	STO-24	2X3	10	12	2.24	RCP						N	0.00	0.08	6.0	0.02	8.00	100	0.66	5.35	12.4%
CB-24	STO-24	3	17	12	1.00	RCP	H	0.121	0.108	0.229	0.62	Y	0.14	0.14	6.0	0.06	8.00	100	1.14	3.57	31.8%
STO-24	STO-23	4	93	12	0.52	RCP						N	0.00	0.23	6.0	0.47	8.00	100	1.80	2.58	69.9%
INL-23.2	INL-23.1	2X3	34	12	1.00	RCP	F	0.140	0.103	0.243	0.65	Y	0.16	0.16	6.0	0.12	8.00	100	1.27	3.57	35.6%
INL-23.1	STO-23	2X3	47	12	2.00	RCP	G	0.147	0.070	0.217	0.72	N	0.16	0.32	6.1	0.12	8.00	100	2.53	5.05	50.0%
Eineada Road																					
STO-23	STO-22	4	240	12	2.67	RCP						N	0.00	0.54	6.5	0.54	7.80	100	4.22	5.84	72.3%
INL-22.1	STO-22	2X3	37	12	1.75	RCP	K+G6	0.562	0.061	0.623	0.88	Y	0.55	0.55	6.0	0.10	8.00	100	4.39	4.73	92.9%
INL-22.2	STO-22	2X3	7	12	2.00	RCP	J+G3	0.513	0.046	0.560	0.89	Y	0.50	0.50	6.0	0.02	8.00	100	3.99	5.05	79.0%
STO-22	STO-21	4	233	18	3.27	RCP						N	0.00	1.59	7.0	0.36	7.80	100	12.40	19.05	65.1%
INL-21.1	STO-21	2X3	37	12	2.00	RCP	R+G5	0.577	0.054	0.631	0.89	Y	0.56	0.56	6.0	0.10	8.00	100	4.49	5.05	88.9%
INL-21.2	STO-21	2X3	7	12	2.00	RCP	S+G2	0.525	0.041	0.566	0.90	Y	0.51	0.51	6.0	0.02	8.00	100	4.07	5.05	80.6%
STO-21	STO-20	4	151	18	4.49	RCP						N	0.00	2.66	7.4	0.20	7.80	100	20.75	22.32	93.0%
STO-20.1	STO-20	2X3	39	12	1.94	RCP	U	0.113	0.031	0.144	0.80	Y	0.12	0.12	6.0	0.10	8.00	100	0.92	4.98	18.6%
STO-20.2	STO-20	2X3	7	12	2.00	RCP	T+G1	0.391	0.033	0.423	0.90	Y	0.38	0.38	6.0	0.02	8.00	100	3.03	5.05	60.1%
STO-20	STO-19	4	110	18	4.94	RCP						N	0.00	3.15	7.6	0.14	5.30	10	16.72	23.41	71.4%
STO-19	STO-18	4	55	24	4.31	RCP	G4	0.409	0.000	0.409	0.95	N	0.39	3.54	7.7	0.06	7.50	100	26.57	47.09	56.4%
INL-18.2	INL-18.1	3	109	12	1.30	RCP	AAA	0.206	0.019	0.225	0.89	Y	0.20	0.20	6.0	0.35	8.00	100	1.60	4.07	39.4%
INL-18.1	STO-18	2X3	22	12	2.83	RCP						N	0.00	0.20	6.4	0.05	8.00	100	1.60	6.01	26.7%
STO-18	STO-17	4	122	24	3.27	RCP						N	0.00	3.74	7.8	0.16	7.50	100	28.08	41.02	68.4%
INL-17.1	STO-17	2X3	15	12	1.00	RCP	AA	0.217	0.130	0.348	0.69	Y	0.24	0.24	6.0	0.05	8.00	100	1.91	3.57	53.5%
INL-17.3	STO-17	2X3	28	12	1.73	RCP	Z	0.243	0.113	0.356	0.73	Y	0.26	0.26	6.0	0.08	8.00	100	2.07	4.70	44.0%
STO-17	STO-10	4	19	24	2.88	RCP						N	0.00	4.24	8.0	0.03	7.50	100	31.81	38.49	82.6%
INL-25.3	STO-25	2X3	29	12	1.00	RCP	II	0.430	0.036	0.466	0.90	Y	0.42	0.42	6.0	0.11	8.00	100	3.34	3.57	93.4%
INL-25.2	STO-25	2X3	9	12	1.58	RCP	HH	0.333	0.087	0.420	0.80	Y	0.34	0.34	6.1	0.03	8.00	100	2.70	4.49	60.2%
STO-25	STO-8	4	254	18	0.50	RCP						N	0.00	0.76	6.1	1.00	8.00	100	6.04	7.45	81.1%
MM																					
INL-30.1	MH-30	2X3	14.5	15	2.00	RCP	MM-A	0.376	0.131	0.376	0.77	Y	0.29	0.29	6.0	0.03	8.00	100	2.32	9.16	25.3%
MH-30	MH-29	4	267	15	2.73	RCP						N	0.00	0.29	6.0	0.51	8.00	100	2.32	10.70	21.6%
INL-29.1	MH-29	2X3	8	15	2.00	RCP	MM-B	0.375	0.079	0.375	0.83	Y	0.31	0.31	6.0	0.02	8.00	100	2.48	9.16	27.1%
MH-29	FES-29	4	36	24	2.40	RCP						N	0.00	0.60	6.0	0.05	8.00	100	4.80	35.14	13.7%
MM																					
INL-28.1	MH-28	2X3	15	15	2.00	RCP	MM-C	0.445	0.312	0.445	0.66	Y	0.29	0.29	6.0	0.03	8.00	100	2.36	9.16	25.7%
MH-28	MH-27	4	434	15	5.15	RCP						N	0.00	0.29	6.0	0.60	8.00	100	2.36	14.70	16.0%
INL-27.1	MH-27	2X3	17	15	2.00	RCP	MM-D	0.360	0.563	0.360	0.52	Y	0.19	0.19	6.0	0.04	8.00	100	1.50	9.16	16.4%
MH-27	MH-26	4	134	24	5.70	RCP						N	0.00	0.48	6.6	0.13	7.80	100	3.77	54.16	7.0%
MM																					
FES-32	MH-32	FES	16	18	8.00	RCP	MM-E	0.522	8.222	0.522	0.29	Y	0.15	0.15	10.0	0.02	7.00	100	1.07	29.79	3.6%
MH-32	INL-31.1	4	131	18	4.00	RCP						N	0.00	0.15	10.0	0.18	7.00	100	1.07	21.07	5.1%
INL-31.1	MH-31	2X3	19	24	2.00	RCP	MM-F	0.390	0.336	0.390	0.63	N	0.24	0.40	10.2	0.03	7.00	100	2.78	32.08	8.7%
MH-31	MH-30	4	311	24	5.66	RCP						N	0.00	0.40	10.2	0.30	7.00	100	2.78	53.97	5.1%

Project Name: @Edge Live/Work Date: 04/02/18 Title: Storm Sewer Sizing Black - manually entered in the cell Green - calculation performed Blue - referenced from another source

Pipe Run		Manhole	Length	Pipe	Slope	Pipe	Drainage Areas				Runoff	Upstream	Area x C		Time of Conc.		Rainfall	Design	Total	Design	Percent
From	To	Size		Diameter		Material	Location	Imp.	Perv.	Total	Coef.	End	Increment	Total	To Structure	Pipe	Intensity	Storm	Runoff	Capacity	Full
		(in.)	(ft.)	(inches)	(%)			(acres)	(acres)	(acres)	C	(Y/N)			(min.)	(min.)	(in/hr)	Event	(cfs)	(cfs)	(%)
INL-30.1	MH-30	2X3	18	15	1.71	RCP	MM-G	0.262	0.464	0.262	0.50	Y	0.13	0.13	6.0	0.04	8.00	100	1.06	8.47	12.5%
MH-30	FES-30	5	36	24	1.43	RCP						N	0.00	0.53	10.5	0.07	6.80	100	3.59	27.13	13.2%

POST-DEVELOPMENT DRAINAGE AREA CALCULATIONS										
Area No.	Total Area (sf)	Pervious (sf)	SW	PAVE	Impervious (sf)	Total Area (ac)	Total Perv (ac)	Total Imp (ac)	Runoff Coeff.	CA
Storm System A										
A	55,195	31,838	13,183	10,174	23,357	1.27	0.73	0.54	0.55	0.69
A5	11,406	0			11,406	0.26	0.00	0.26	0.95	0.25
G7	14,131	0			14,131	0.32	0.00	0.32	0.95	0.31
G8	14,131	0			14,131	0.32	0.00	0.32	0.95	0.31
G9	14,167	0			14,167	0.33	0.00	0.33	0.95	0.31
B	23,845	4,724	1,895	17,226	19,121	0.55	0.11	0.44	0.81	0.44
C	22,769	3,517	4,121	15,131	19,252	0.52	0.08	0.44	0.84	0.44
D	15,628	6,835	1,976	6,817	8,793	0.36	0.16	0.20	0.64	0.23
E	14,334	3,365	2,842	8,127	10,969	0.33	0.08	0.25	0.79	0.26
F	10,581	4,478	1,481	4,622	6,103	0.24	0.10	0.14	0.65	0.16
G	9,442	3,043	1,635	4,764	6,399	0.22	0.07	0.15	0.72	0.16
H	9,996	4,719	1,233	4,044	5,277	0.23	0.11	0.12	0.62	0.14
I	4,513	964	638	2,911	3,549	0.10	0.02	0.08	0.80	0.08
J	8,432	2,016	2,015	4,401	6,416	0.19	0.05	0.15	0.78	0.15
J+G3	24,375	2,016			22,359	0.56	0.05	0.51	0.89	0.50
K	11,194	2,665	2,331	6,198	8,529	0.26	0.06	0.20	0.78	0.20
K+G6	27,138	2,665			24,473	0.62	0.06	0.56	0.88	0.55
G3	15,943	0			15,943	0.37	0.00	0.37	0.95	0.35
G6	15,944	0			15,944	0.37	0.00	0.37	0.95	0.35
G5	16,945	0			16,945	0.39	0.00	0.39	0.95	0.37
L	6,240	1,776	1,379	3,085	4,464	0.14	0.04	0.10	0.75	0.11
L+E3	37,661	1,776			35,885	0.86	0.04	0.82	0.92	0.79
M	5,255	1,593	926	2,736	3,662	0.12	0.04	0.08	0.74	0.09
N	4,732	270	751	3,711	4,462	0.11	0.01	0.10	0.91	0.10
N2	10,544	0		10,544	10,544	0.24	0.00	0.24	0.95	0.23
N2+0.5B4	13,578	0			13,578	0.31	0.00	0.31	0.95	0.30
N3	3,503	0		3,503	3,503	0.08	0.00	0.08	0.95	0.08
N3+0.5B4	6,537	0			6,537	0.15	0.00	0.15	0.95	0.14
N4	4,247	3,893	354		354	0.10	0.09	0.01	0.31	0.03
N4+B5	9,231	3,893			5,338	0.21	0.09	0.12	0.65	0.14
B4	6,067	0			6,067	0.14	0.00	0.14	0.95	0.13
O	2,270	0		2,270	2,270	0.05	0.00	0.05	0.95	0.05
O2	12,780	0		12,780	12,780	0.29	0.00	0.29	0.95	0.28
B5	4,984	0			4,984	0.11	0.00	0.11	0.95	0.11
B3	8,351	0			8,351	0.19	0.00	0.19	0.95	0.18
E4	30,867	0			30,867	0.71	0.00	0.71	0.95	0.67
E3	31,421	0			31,421	0.72	0.00	0.72	0.95	0.69
P	13,935	2,723	2,279	8,933	11,212	0.32	0.06	0.26	0.81	0.26
P2	10,212	7,833	2,379	0	2,379	0.23	0.18	0.05	0.41	0.10
A4+W2+E4	44,016	2,890			41,126	1.01	0.07	0.94	0.90	0.91
P2+B3	18,563	7,833			10,730	0.43	0.18	0.25	0.65	0.28
Q	19,126	6,243	1,667	11,216	12,883	0.44	0.14	0.30	0.72	0.32
R	10,522	2,337	2,032	6,153	8,185	0.24	0.05	0.19	0.79	0.19
R+G5	27,467	2,337			25,130	0.63	0.05	0.58	0.89	0.56
S	7,779	1,768	2,262	3,749	6,011	0.18	0.04	0.14	0.79	0.14
S+G2	24,644	1,768			22,876	0.57	0.04	0.53	0.90	0.51
G2	16,865	0			16,865	0.39	0.00	0.39	0.95	0.37
T	5,563	1,423	1,458	2,682	4,140	0.13	0.03	0.10	0.77	0.10
T+G1	18,440	1,423			17,017	0.42	0.03	0.39	0.90	0.38
U	6,286	1,343	1,221	3,722	4,943	0.14	0.03	0.11	0.80	0.12
A4	9,173	0			9,173	0.21	0.00	0.21	0.95	0.20
V	9,311	3,094	984	5,233	6,217	0.21	0.07	0.14	0.72	0.15
Q+E2	50,547	6,243			44,304	1.16	0.14	1.02	0.86	1.00
W	12,285	4,335	2,427	5,523	7,950	0.28	0.10	0.18	0.70	0.20
W2	3,976	2,890	1,086		1,086	0.09	0.07	0.02	0.44	0.04
X	11,273	1,655	2,244	7,374	9,618	0.26	0.04	0.22	0.85	0.22
XX	14,238	0			14,238	0.33	0.00	0.33	0.95	0.31
Y	11,643	3,628	1,035	6,980	8,015	0.27	0.08	0.18	0.73	0.20
YY	34,195	25,191	6,152	2,852	9,004	0.79	0.58	0.21	0.43	0.34
E2	31,421	0			31,421	0.72	0.00	0.72	0.95	0.69
G1	12,877	0			12,877	0.30	0.00	0.30	0.95	0.28
Z	15,492	4,928	3,409	7,155	10,564	0.36	0.11	0.24	0.73	0.26
Z+G4	33,296	4,928			28,368	0.76	0.11	0.65	0.85	0.65
G4	17,804	0			17,804	0.41	0.00	0.41	0.95	0.39
AA	15,146	5,675	4,144	5,327	9,471	0.35	0.13	0.22	0.69	0.24
AAA	9,817	840	1,162	7,815	8,977	0.23	0.02	0.21	0.89	0.20
A3	8,173	0			8,173	0.19	0.00	0.19	0.95	0.18
BB	25,518	12,429	2,328	10,761	13,089	0.59	0.29	0.30	0.61	0.36
BB+A3	33,691	12,429			21,262	0.77	0.29	0.49	0.69	0.54
CC	7,914	3,177	1,068	3,669	4,737	0.18	0.07	0.11	0.67	0.12
A2	9,527	0			9,527	0.22	0.00	0.22	0.95	0.21

A1	6,017	0			6,017	0.14	0.00	0.14	0.95	0.13
DD	5,885	1,447	1,332	3,106	4,438	0.14	0.03	0.10	0.78	0.11
EE	15,068	5,754	3,515	5,799	9,314	0.35	0.13	0.21	0.68	0.24
EE+A2	24,595	5,754			18,841	0.56	0.13	0.43	0.79	0.44
FF	8,802	301	1,047	7,454	8,501	0.20	0.01	0.20	0.93	0.19
GG	9,063	753	1,495	6,899	8,310	0.21	0.02	0.19	0.89	0.19
GG+A1	15,080	753			14,327	0.35	0.02	0.33	0.92	0.32
HH	18,304	3,810	1,945	12,549	14,494	0.42	0.09	0.33	0.80	0.34
HH+E1	45,875	3,810			42,065	1.05	0.09	0.97	0.89	0.94
II	20,295	1,585		18,710	18,710	0.47	0.04	0.43	0.90	0.42
E1	27,571	0			27,571	0.63	0.00	0.63	0.95	0.60
B2	11,796	0			11,796	0.27	0.00	0.27	0.95	0.26
MM-A	22,105	5,710	1,272	15,123	16,395	0.51	0.13	0.38	0.77	0.39
MM-B	19,795	3,457	1,267	15,071	16,338	0.45	0.08	0.38	0.83	0.38
MM-C	33,011	13,606	1,483	17,922	19,405	0.76	0.31	0.45	0.66	0.50
MM-D	40,216	24,545	2,057	13,614	15,671	0.92	0.56	0.36	0.52	0.48
MM-E	380,886	358,161	0	22,725	22,725	8.74	8.22	0.52	0.29	2.55
MM-F	31,609	14,618	1,644	15,347	16,991	0.73	0.34	0.39	0.63	0.45
MM-G	31,664	20,230	2,851	8,583	11,434	0.73	0.46	0.26	0.50	0.37

TP-40 Madison Intensities (from IDF Curve)

Tc (min)	Return Period		
	2	10	100
6	3.8	6.8	8
7	3.6	5.5	7.8
8	3.4	5.3	7.5
9	3.2	5	7.3
10	3.1	4.9	7
11		4.8	6.8
11		4.8	6.8
12		4.6	6.5
13		4.5	6.2
14	2.7	4.3	6
15	2.6	4.2	5.9
16		4.1	5.7
17		4	5.6
18		3.9	5.5
19		3.8	5.4
19		3.8	5.4
20		3.7	5.25
20		3.7	5.25
21		3.6	5.15
22		3.55	5.1
22		3.55	5.1
23		3.5	5.05
24		3.4	5
25		3.3	4.9
25		3.3	4.9
25		3.3	4.9
25		3.3	4.9
25		3.3	4.9
25		3.3	4.9
25		3.3	4.9
26		3.25	4.8
27		3.2	4.7
28		3.15	4.6
29		3.1	4.5

C (Previous)	0.25
C (Impervious)	0.95

Black - manually entered in the cell

Green - calculation performed

Blue - referenced from another source

Blue - referenced from another source

			Rainfall Characteristics												Inlet Characteristics						
Inlet Name	Drainage Area	Inlet Type	Design Storm Event	Drainage Area	Runoff Coefficient C	Rainfall Intensity	Runoff Flow	Carry Over Flow	Total Gutter Flow	Long Slope	Pavement Cross Slope	Gutter Cross Slope	Spread of Flow T	Depth of Flow	COVER TYPE	Percent Open Space	Weir Perimeter	Open Area	Capacity of Inlet	Carry Over Flow	Excess Capacity
				(acres)		(in/hr)	(cfs)	(cfs)	(cfs)	(ft/ft)	(ft/ft)	(ft/ft)	(ft)	(ft)		%	(ft)	(sf)	(cfs)	(cfs)	(cfs)
INL-2.1	D	On-Grade	100	0.359	0.644	5.15	1.19	0.00	1.19	0.0447	0.020	0.0420	6.14	0.17	R-3067, TYPE L GRATE	100%	5.9	2.1	1.24	0.00	0.05
INL-3.0,3.1	B	Sump	100	0.547	0.811	8.00	1.78	1.08	2.86	0.0283	0.020	0.0420	8.55	0.36	R-3067, TYPE L GRATE	75%	5.9	2.1	2.86	0.00	0.00
INL-3.0,3.1	B	Sump	100	FLANKING INLET			1.78	1.08	2.86	0.0283	0.020	0.0420	8.55	0.36	R-3067, TYPE L GRATE	75%	5.9	2.1	2.86	0.00	0.00
INL-2.3	E	On-Grade	100	0.329	0.786	8.00	2.07	0.00	2.07	0.0447	0.020	0.0420	6.59	0.18	R-3067, TYPE L GRATE	100%	5.9	2.1	1.35	0.72	-0.72
INL-3.2,3.3	C	Sump	100	0.523	0.842	8.00	1.76	0.36	2.12	0.0283	0.020	0.0420	7.01	0.29	R-3067, TYPE L GRATE	75%	5.9	2.1	2.12	0.00	0.00
INL-3.2,3.3	C	Sump	100	FLANKING INLET			1.76	0.36	2.12	0.0283	0.020	0.0420	7.01	0.29	R-3067, TYPE L GRATE	75%	5.9	2.1	2.12	0.00	0.00
INL-15.1	L	On-Grade	100	0.143	0.751	6.80	0.73	0.00	0.73	0.0341	0.020	0.0420	4.74	0.14	R-3067, TYPE L GRATE	100%	5.9	2.1	0.93	0.00	0.20
INL-14.2	Q	On-Grade	100	0.439	0.722	6.80	2.15	0.00	2.15	0.0341	0.020	0.0420	7.34	0.19	R-3067, TYPE L GRATE	100%	5.9	2.1	1.47	0.69	-0.69
INL-13.3	V	On-Grade	100	0.214	0.717	6.80	1.04	0.69	1.73	0.0600	0.020	0.0420	4.74	0.14	R-3067, TYPE L GRATE	100%	5.9	2.1	0.93	0.80	-0.80
INL-11.2	Y	On-Grade	100	0.267	0.732	6.80	1.33	0.80	2.13	0.0625	0.020	0.0420	5.39	0.15	R-3067, TYPE L GRATE	100%	5.9	2.1	1.03	1.11	-1.11
INL-17.3	Z	Sump	100	0.356	0.727	6.80	0.88	0.74	1.62	0.0080	0.020	0.0420	5.85	0.25	R-3067, TYPE L GRATE	75%	5.9	2.1	1.62	0.00	0.00
INL-17.3	Z	Sump	100	FLANKING INLET			0.88	0.74	1.62	0.0080	0.020	0.0420	5.85	0.25	R-3067, TYPE L GRATE	75%	5.9	2.1	1.62	0.00	0.00
INL-15.2	M	On-Grade	100	0.121	0.738	6.80	0.61	0.00	0.61	0.0341	0.020	0.0420	4.99	0.14	R-3067, TYPE L GRATE	100%	5.9	2.1	0.93	0.00	0.32
INL-16.2, INL-16.3	N	Sump	100	0.109	0.910	6.80	0.34	0.00	0.34	0.0050	0.020	0.0420	2.05	0.09	R-3067, TYPE L GRATE	75%	5.9	2.1	0.34	0.00	0.00
INL-16.2, INL-16.3	N	Sump	100	FLANKING INLET			0.34	0.00	0.34	0.0050	0.020	0.0420	2.05	0.09	R-3067, TYPE L GRATE	75%	5.9	2.1	0.34	0.00	0.00
INL-16.5	N3	On-Grade	100	0.080	0.950	6.80	0.52	0.00	0.52	0.0200	0.020	0.0420	11.20	0.28	R-2050, TYPE D GRATE (OPEN GRATE)	100%	6	0.9	2.67	0.00	2.15
INL-16.4	N2	On-Grade	100	0.242	0.950	6.80	1.56	0.00	1.56	0.0050	0.020	0.0420	9.59	0.24	R-3067, TYPE L GRATE	100%	5.9	2.1	2.08	0.00	0.52
INL-16.6	N4	On-Grade	100	0.097	0.308	6.80	0.20	0.00	0.20	0.0050	0.020	0.0420	9.20	0.23	R-2050, TYPE D GRATE (OPEN GRATE)	100%	6	0.9	1.99	0.00	1.78
INL-16.7	O2	On-Grade	100	0.293	0.950	6.80	0.95	0.00	0.95	0.0050	0.020	0.0420	7.20	0.18	R-3067, TYPE L GRATE	100%	5.9	2.1	1.35	0.00	0.40
INL-16, INL-16.1	O	On-Grade	100	0.052	0.950	6.80	0.17	0.00	0.17	0.0050	0.020	0.0420	8.65	0.21	R-3067, TYPE L GRATE	100%	5.9	2.1	1.70	0.00	1.54
INL-16, INL-16.1	O	On-Grade	100	FLANKING INLET			0.17	0.00	0.17	0.0050	0.020	0.0420	8.65	0.21	R-3067, TYPE L GRATE	100%	5.9	2.1	1.70	0.00	1.54
INL-14.1	P	On-Grade	100	0.320	0.813	6.80	0.88	0.00	0.88	0.0341	0.020	0.0420	7.00	0.18	R-3067, TYPE L GRATE	100%	5.9	2.1	1.35	0.00	0.47
INL-13.2	W	On-Grade	100	0.282	0.703	6.80	1.35	0.00	1.35	0.0600	0.020	0.0420	7.05	0.18	R-3067, TYPE L GRATE	100%	5.9	2.1	1.35	0.00	0.00
INL-13.1	XX	On-Grade	100	0.327	0.950	6.80	2.11	0.00	2.11	0.0100	0.020	0.0420	9.59	0.24	R-3067, TYPE L GRATE	100%	5.9	2.1	2.08	0.03	-0.03
INL-11.1	X	On-Grade	100	0.259	0.847	6.80	1.49	0.03	1.52	0.0600	0.020	0.0420	6.45	0.17	R-3067, TYPE L GRATE	100%	5.9	2.1	1.24	0.28	-0.28
INL-8.3	EE	On-Grade	100	0.346	0.683	6.80	1.61	0.28	1.89	0.0740	0.020	0.0420	6.55	0.17	R-3067, TYPE L GRATE	100%	5.9	2.1	1.24	0.65	-0.65
INL-25.3, INL-25.4	II	Sump	100	0.466	0.895	6.80	1.42	0.32	1.74	0.0050	0.020	0.0420	6.15	0.26	R-3067, TYPE L GRATE	75%	5.9	2.1	1.74	0.00	0.00
INL-25.3, INL-25.4	II	Sump	100	FLANKING INLET			1.42	0.32	1.74	0.0050	0.020	0.0420	6.15	0.26	R-3067, TYPE L GRATE	75%	5.9	2.1	1.74	0.00	0.00
INL-8.4	FF	Sump	100	0.202	0.926	6.80	0.34	0.00	0.87	0.0238	0.020	0.0420	3.18	0.13	R-3067, TYPE L GRATE	100%	5.9	2.1	0.87	0.00	0.00
INL-23.1	G	On-Grade	100	0.217	0.724	6.80	1.07	0.00	1.07	0.0083	0.020	0.0420	7.64	0.20	R-3067, TYPE L GRATE	100%	5.9	2.1	1.58	0.00	0.52
INL-22.1	K	On-Grade	100	0.257	0.783	6.80	1.37	0.00	1.37	0.0463	0.020	0.0420	5.35	0.15	R-3067, TYPE L GRATE	100%	5.9	2.1	1.03	0.34	-0.34
INL-21.1	R	On-Grade	100	0.242	0.795	6.80	1.31	0.34	1.65	0.0463	0.020	0.0420	5.80	0.16	R-3067, TYPE L GRATE	100%	5.9	2.1	1.13	0.51	-0.51
INL-20.1	U	On-Grade	100	0.144	0.800	6.80	0.79	0.51	1.30	0.0587	0.020	0.0420	4.95	0.14	R-3067, TYPE L GRATE	100%	5.9	2.1	0.93	0.37	-0.37
INL-23.2	F	On-Grade	100	0.243	0.654	6.80	1.08	0.00	1.08	0.0083	0.020	0.0420	7.99	0.20	R-3067, TYPE L GRATE	100%	5.9	2.1	1.58	0.00	0.50
INL-24.3, 24.4	H	On-Grade	100	0.229	0.620	6.80	0.48	0.00	0.48	0.0295	0.020	0.0420	2.62	0.11	R-3067, TYPE L GRATE	75%	5.9	2.1	0.48	0.00	0.00
INL-24.3, 24.4	H	On-Grade	100	FLANKING INLET			0.48	0.00	0.48	0.0295	0.020	0.0420	2.62	0.11	R-3067, TYPE L GRATE	75%	5.9	2.1	0.48	0.00	0.00
INL-24.1, 24.2	I	On-Grade	100	0.104	0.800	6.80	0.28	0.00	0.28	0.0295	0.020	0.0420	1.83	0.08	R-3067, TYPE L GRATE	75%	5.9	2.1	0.28	0.00	0.00
INL-24.1, 24.2	I	On-Grade	100	FLANKING INLET			0.28	0.00	0.28	0.0295	0.020	0.0420	1.83	0.08	R-3067, TYPE L GRATE	75%	5.9	2.1	0.28	0.00	0.00
INL-22.2	J	On-Grade	100	0.194	0.783	6.80	1.03	0.00	1.03	0.0451	0.020	0.0420	4.70	0.14	R-3067, TYPE L GRATE	100%	5.9	2.1	0.93	0.10	-0.10
INL-21.2	S	On-Grade	100	0.179	0.791	6.80	0.96	0.10	1.06	0.0475	0.020	0.0420	4.70	0.14	R-3067, TYPE L GRATE	100%	5.9	2.1	0.93	0.14	-0.14
INL-20.2	T	On-Grade	100	0.128	0.771	6.80	0.67	0.14	0.81	0.0535	0.020	0.0420	4.00	0.12	R-3067, TYPE L GRATE	100%	5.9	2.1	0.74	0.07	-0.07
INL-17.1, 17.2	AA	On-Grade	100	0.348	0.688	6.80	0.81	0.03	0.85	0.0080	0.020	0.0420	3.80	0.16	R-3067, TYPE L GRATE	75%	5.9	2.1	0.85	0.00	0.00
INL-17.1, 17.2	AA	On-Grade	100	FLANKING INLET			0.81	0.03	0.85	0.0080	0.020	0.0420	3.80	0.16	R-3067, TYPE L GRATE	75%	5.9	2.1	0.85	0.00	0.00
INL-9.3, INL-9.4	BB	Sump	100	0.586	0.609	6.80	1.21	1.64	2.85	0.0100	0.020	0.0420	8.54	0.36	R-3067, TYPE L GRATE	75%	5.9	2.1	2.85	0.00	0.00
INL-9.3, INL-9.4	BB	Sump	100	FLANKING INLET			1.21	1.64	2.85	0.0100	0.020	0.0420	8.54	0.36	R-3067, TYPE L GRATE	75%	5.9	2.1	2.85	0.00	0.00
INL-9.1, INL-9.2	CC	Sump	100	0.182	0.669	6.80	0.41	0.00	0.41	0.0100	0.020	0.0420	2.36	0.10	R-3067, TYPE L GRATE	75%	5.9	2.1	0.41	0.00	0.00
INL-9.1, INL-9.2	CC	Sump	100	FLANKING INLET			0.41	0.00	0.41	0.0100	0.020	0.0420	2.36	0.10	R-3067, TYPE L GRATE	75%	5.9	2.1	0.41	0.00	0.00
INL-8.2	DD	On-Grade	100	0.135	0.778	6.80	0.71	0.00	0.71	0.0740	0.020	0.0420	3.79	0.12	R-3067, TYPE L GRATE	100%	5.9	2.1	0.74	0.00	0.02
INL-25.3, INL-25.4	HH	Sump	100	0.420	0.804	6.80	1.15	0.00	1.15	0.0050	0.020	0.0420	4.66	0.20	R-3067, TYPE L GRATE	75%	5.9	2.1	1.15	0.00	0.00
INL-25.3, INL-25.4	HH	Sump	100	FLANKING INLET			1.15	0.00	1.15	0.0050	0.020	0.0420	4.66	0.20	R-3067, TYPE L GRATE	75%	5.9	2.1	1.15	0.00	0.00
INL-8.1	GG	On-Grade	100	0.208	0.892	6.80	1.26	0.00	1.26	0.0200	0.020	0.0420	6.69	0.18	R-3067, TYPE L GRATE	100%	5.9	2.1	1.35	0.00	0.09
INL-28.1	MM-C	On-Grade	100	0.758	0.661	6.80	3.41	0.00	3.41	0.0485	0.020	0.0420	7.90	0.20	R-3067, TYPE L GRATE	100%	5.9	2.1	1.58	1.83	-1.83
INL-27.1	MM-D	On-Grade	100	0.923	0.523	6.80	3.28	1.83	5.11	0.0606	0.020	0.0420	8.90	0.22	R-3067, TYPE L GRATE	100%	5.9	2.1	1.83	3.28	-3.28
INL-30.1	MM-A	On-Grade	100	0.507	0.769	6.80	2.65	0.00	2.65	0.0559	0.020	0.0420	7.35	0.19	R-3067, TYPE L GRATE	100%	5.9	2.1	1.47	1.19	-1.19
INL-29.1	MM-B	On-Grade	100	0.454	0.828	6.80	2.56	1.19	3.75	0.0575	0.020	0.0420	7.90	0.20	R-3067, TYPE L GRATE	100%	5.9	2.1	1.58	2.16	-2.16
INL-32.1	MM-F	On-Grade	100	0.726	0.626	6.80	3.09	0.00	3.09	0.0597	0.020	0.0420	7.25	0.19	R-3067, TYPE L GRATE	100%	5.9	2.1	1.47	1.62	-1.62
INL-31.1	MM-G	On-Grade	100	0.727	0.503	6.80	2.49	1.62	4.11	0.0646	0.020	0.0420	8.05	0.21	R-3067, TYPE L GRATE	100%	5.9	2.1	1.70	2.41	-2.41

JSD Professional Services, Inc.
• Engineers • Surveyors • Planners

RIPRAP CALCULATIONS

TW* =	**0.8**	**ft**
Q =**	**1.87**	**cfs**
D_o =	**2**	**ft**

COMPUTED BY: MSS
DATE: 3/28/2018

LOCATION OF RIPRAP: AEW-6 (North Bioretention Basin)

SIZING

$$d_{50} = 0.02\, D_O \left(\frac{D_o}{TW}\right)\left(\frac{Q}{D_o^{5/2}}\right)^{4/3} = 0.023 \text{ FT}$$

AVERAGE RIPRAP SIZE SHALL BE AT LEAST 0.3 INCHE(S)

LENGTH

$$L_{SP} = 1.7 \left(\frac{Q}{D_o^{3/2}}\right) + 8D_o = 17.12 \text{ FT}$$

RIPRAP BLANKET LENGTH SHALL BE AT LEAST 17.1 FT LONG

WIDTH

$$W_{SP} = 3\ D_o = 6.000 \text{ FT}$$

RIPRAP BLANKET LENGTH SHALL BE AT LEAST 6.0 FT WIDE

*Tailwater assumed to be 0.4 pipe diameter.
**Flow based on a 10-year 24-hour storm event. Value from HydroCAD.

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RIPRAP CALCULATIONS

TW* =	**1**	**ft**
Q =**	**50.1**	**cfs**
D_o =	**2.5**	**ft**

COMPUTED BY: MSS
DATE: 3/28/2018

LOCATION OF RIPRAP: AEW-5 (North Wet Pond)

SIZING

$$d_{50} = 0.02\, D_O \left(\frac{D_o}{TW}\right)\left(\frac{Q}{D_o^{5/2}}\right)^{4/3} = 1.089 \text{ FT}$$

AVERAGE RIPRAP SIZE SHALL BE AT LEAST 13.1 INCHE(S)

LENGTH

$$L_{SP} = 1.7 \left(\frac{Q}{D_o^{3/2}}\right) + 8D_o = 41.55 \text{ FT}$$

RIPRAP BLANKET LENGTH SHALL BE AT LEAST 41.5 FT LONG

WIDTH

$$W_{SP} = 3\ D_o = 7.500 \text{ FT}$$

RIPRAP BLANKET LENGTH SHALL BE AT LEAST 7.5 FT WIDE

*Tailwater assumed to be 0.4 pipe diameter.
**Flow based on a 10-year 24-hour storm event. Value from HydroCAD.

JSD Professional Services, Inc.
• Engineers • Surveyors • Planners

RIPRAP CALCULATIONS

TW* =	**0.8**	**ft**
Q =**	**7.48**	**cfs**
D_o =	**2**	**ft**

COMPUTED BY: MSS
DATE: 3/28/2018

LOCATION OF RIPRAP: AEW-1 (South Bioretention Basin 2)

SIZING

$$d_{50} = 0.02\, D_O \left(\frac{D_o}{TW}\right)\left(\frac{Q}{D_o^{5/2}}\right)^{4/3} = 0.145 \text{ FT}$$

AVERAGE RIPRAP SIZE SHALL BE AT LEAST 1.7 INCHE(S)

LENGTH

$$L_{SP} = 1.7 \left(\frac{Q}{D_o^{3/2}}\right) + 8D_o = 20.50 \text{ FT}$$

RIPRAP BLANKET LENGTH SHALL BE AT LEAST 20.5 FT LONG

WIDTH

$$W_{SP} = 3\ D_o = 6.000 \text{ FT}$$

RIPRAP BLANKET LENGTH SHALL BE AT LEAST 6.0 FT WIDE

*Tailwater assumed to be 0.4 pipe diameter.
**Flow based on a 10-year 24-hour storm event. Value from pipe sizing spreadsheet.

APPENDIX 7

USLE Information

Soil Loss & Sediment Discharge Calculation Tool

for use on Construction Sites in the State of Wisconsin

WDNR Version 2.0 (06-29-2017)

WISCONSIN DEPT. OF NATURAL RESOURCES

YEAR 1

Developer:

Project: Nine-Springs

Date: 03/24/22

County: Dane

Version 1.0

Activity (1)	Begin Date (2)	End Date (3)	Period % R (4)	Annual R Factor (5)	Sub Soil Texture (6)	Soil Erodibility K Factor (7)	Slope (%) (8)	Slope Length (ft) (9)	LS Factor (10)	Land Cover C Factor (11)	Soil loss A (tons/acre) (12)	SDF (13)	Sediment Control Practice (14)	Sediment Discharge (t/ac) (15)
Bare Ground	04/01/23	09/01/23	76.0%	150	Silt Loam	0.43	3.6%	200	0.47	1.00	23.1	1.044	Sediment Basin	4.8
Seed with Mulch or En	09/01/23	11/15/23	18.0%	150	Silt Loam	0.43	3.6%	200	0.47	0.10	0.5	1.044	Sediment Basin	0.1
End	11/15/23	-----	-----	-----	-------	-----	3.6%	200	0.47	------	-----	0.000		0.0
		-----	-----	-----	-------	-----	3.6%	200	0.47	-----	-----	0.000		0.0
		-----	-----	-----	-------	-----	3.6%	0	-----	-----	-----	0.000		0.0
		-----	-----	-----	-------	-----	0.0%	0	-----	-----	-----	0.000		0.0
										TOTAL	**23.6**		**TOTAL**	**4.9**
													% Reduction Required	**NONE**

Notes:

See Help Page for further descriptions of variables and items in drop-down boxes.
The last land disturbing activity on each sheet must be 'End'. This is either 12 months from the start of construction or final stabilization.
For periods of construction that exceed 12 months, please demonstrate that 5 tons/acre/year is not exceeded in any given 12 month period.

NOTE: THIS TOOL ONLY ADDRESSED SOIL EROSION DUE TO SHEET FLOW. MEASURES TO CONTROL CHANNEL EROSION MAY ALSO BE REQUIRED TO MEET SEDIMENT DISCHARGE REQUIREMENTS.

Recommended Permanent Seeding Dates:

4/1-5/15	and	8/7-8/29	Turf, introduced grasses and legumes
Thaw-6/30			Native Grasses, forbs, and legumes

Designed By:	MSS
Date	3/24/2022

APPENDIX 8

Maintenance Agreement

DECLARATION OF CONDITIONS, CONVENANTS AND RESTRICTIONS FOR MAINTENANCE OF STORMWATER MANAGEMENT MEASURES

This space reserved for recording data

Return to:
City of Fitchburg
5520 Lacy Road
Fitchburg, WI 53711

PIN#:
225/0609-013-8170-4
225/0609-013-9940-0
225/0609-013-9540-4

RECITALS:

A. Royal Capital Group LLC ("Owner") is the owner of Nine-Springs, more particularly described on Exhibit A attached hereto (the "Property").

B. Owner desires to construct stormwater management measures on the Property in accordance with certain plans and specifications approved by the City of Fitchburg (the "City").

C. The City requires Owner to record this Declaration of Conditions, Covenants and Restrictions for Maintenance of Stormwater Management Measures (this "Declaration") regarding maintenance of certain stormwater management measures ("Stormwater Management Measures") to be located on the Property all as more particularly described on Exhibit A. Owner agrees to maintain the Stormwater Management Measures and to grant to the City the rights set forth below.

NOW, THEREFORE, in consideration of the declarations herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the owner agrees as follows:

1. Maintenance. Owner and its successors and assigns shall be responsible to repair and maintain the Stormwater Management Measures located on the Property in good condition and in working order and such that the measures comply with approved plans on file with the City. Said maintenance shall be solely at the Owner's cost and expense. Owner will conduct such maintenance or repair work in accordance with all applicable laws, codes, regulations, and similar requirements. *Any specific maintenance tasks and their schedules shall be conducted in accordance with Exhibit A.*

2. Easement to City. If Owner fails to maintain the Stormwater Management Measures as required in Section 1, then the City shall have the right, after providing Owner with written notice of the maintenance issue (each, a "Maintenance Notice") and thirty (30) days to comply with the City's Maintenance Notice, to enter the Property in order to conduct the maintenance specified in the Maintenance Notice. The City will conduct such maintenance work in accordance with all applicable laws, codes, regulations, and similar requirements and will not unreasonably interfere with Owner's use of Property. All costs and expenses incurred by the City in conducting such maintenance may be charged to Owner by placing the amount on the tax roll for the Property as a special assessment in accordance with Section 66.0703, Wis. Stats.

3. Term/Termination. The term of this Declaration shall commence on the date that this Declaration is field of record with the Register of Deeds Office for Dane County, Wisconsin, and except as otherwise herein specifically provided, shall continue in perpetuity. Notwithstanding the foregoing, this Declaration may be terminated by recording with the Register of Deeds Office for Dane County, Wisconsin, a written instrument of termination signed by the City and all of the then-owners of the Property.

4. Miscellaneous.

(a) Notices. Any notice, request or demand required or permitted under this Declaration shall be in writing and shall be deemed given when personally served or three (3) days after the same has been deposited with the United States Post Office, registered or certified mail, return receipt requested, postage prepaid and addressed as follows:

If to Owner: Royal Capital Group LLC
Attn: Terrell Walter
710 North Plankinton Avenue, Suite 300
Milwaukee, WI 53203

If to the City: City Engineering Division
5520 Lacy Road
Fitchburg, WI 53711
Attn: City Engineer

Any party may change its address for the receipt of notice by written notice to the other.

(b) Governing Law. This Declaration shall be governed and construed in accordance with the laws of the State of Wisconsin.

(c) Amendments or Further Agreements to be in Writing. This Declaration may not be modified in whole or in part unless such agreement is in writing and signed by all parties bound hereby.

(d) Covenants Running with the Land. All of the easements, restrictions, covenants, and agreements set forth in this Declaration are intended to be and shall be construed as covenants running with the land, binding upon, inuring to the benefit of, and enforceable by the parties hereto and their respective successors and assigns.

(e) Partial Invalidity. If any provisions, or portions thereof, of this Declaration or the application thereof to any person or circumstance shall, to any extent, be invalid or unenforceable, the remainder of this Declaration, or the application of such provision, or portion thereof, to any other persons or circumstances shall be affected thereby and each provision of this Declaration shall be valid and enforceable to the fullest extend permitted by law.

IN WITNESS WHEREOF, we have hereunto set our hands and seals this ____ day of _____, 20 __.

_____
Owner:

By: _____

STATE OF WISCONSIN)
) ss
COUNTY OF DANE)

Personally came before me this ____ day of _____, 20__, the above named _____, to me known to be the person who executed the foregoing instrument and acknowledged the same.

_____
NOTARY PUBLIC SIGNATURE

_____
PRINTED NAME OF NOTARY PUBLIC

My Commission Expires: _____

EXHIBIT A

Legal Description of Property:

LOT 3, CERTIFIED SURVEY MAP NO. 3535, RECORDED IN VOLUME 14 OF DANE COUNTY CERTIFIED SURVEY MAPS ON PAGES 124-125 AS DOCUMENT NUMBER 1676937 AND LOTS 1 AND 2, CERTIFIED SURVEY MAP NO. 3598, RECORDED IN VOLUME 14 OF DANE COUNTY CERTIFIED SURVEY MAPS ON PAGES 234-235 AS DOCUMENT NUMBER 1691387, TOWN OF FITCHBURG (NOW CITY OF FITCHBURG), LOCATED IN THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER AND THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 01, TOWNSHIP 06 NORTH, RANGE 09 EAST, CITY OF FITCHBURG, DANE COUNTY, WISCONSIN.

Stormwater Management Measures Included in this Agreement (as shown on Sheet(s)_____, hereby made a part of Exhibit A):

- All site storm sewer pipes, structures, and apron endwalls
- Wet pond
- Bioretention basins

Specific Maintenance Requirements:

Short Term Maintenance (during construction and/or restoration):

- The building construction contractor at the owner's expense or as agreed to by the owner and contractor shall perform inspection of all facilities during construction and until site stabilization.
- Inspections during construction shall be weekly and/or after a rainfall event of 0.5" or more.
- Repairs necessary to restore the facility to design performance will be made within 48 hours of the inspection.
- Deficiencies include, but are not limited to, rill erosion, sediment deposition in the Bioretention Basin or behind perimeter control, and deposition of sediment on the tracking pad.
- Tracking on the public right-of-way shall be inspected regularly during days that construction traffic is leaving the construction site. Any excessive sediment tracked onto the public right-of-way shall be scraped immediately. Thorough sweeping, with appropriate equipment that physically picks up and removes the sediment (vs. pushing it to other locations within the public right-of-way) shall be conducted at the end of each working day during construction activities.

Long Term Maintenance:

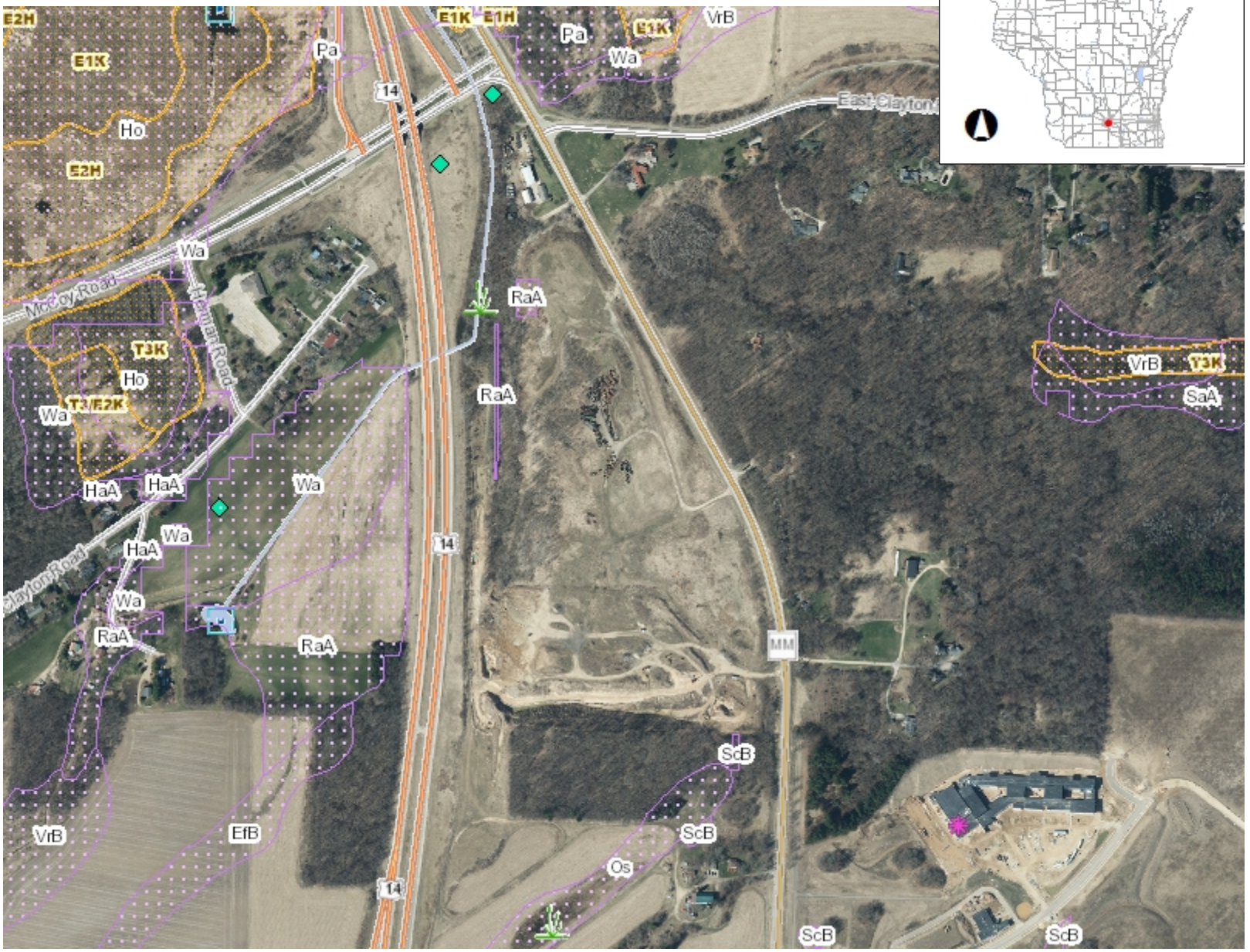
- Inspector qualifications for Long Term Maintenance: Inspectors under this item shall maintain a current Registered Professional Engineer License in the State of Wisconsin or possess an alternate certification approved by the **City of Fitchburg's** Public Works Department.
- All stormwater provisions constructed as part of this project are permanent in location and function over time. The constructed stormwater provisions such as the bioretention basin's, wet pond, and storm structures shall not be removed or significantly altered without written permission from the **City of Fitchburg's** Public Works Department. Owner shall maintain records of inspections and maintenance as described below in accordance with Chapter 30 – Article II of the **City of Fitchburg** Municipal Code of Ordinances. Inspections and maintenance reports shall be submitted to the **City of Fitchburg's** Public Works Department on an annual basis.
- To maximize filtration, mowing in the bioretention basins should be minimized. If occasional mowing is necessary, the mowing height is recommended to be no shorter than 6 inches. Applications of fertilizer, herbicide, pesticide or other chemicals are discouraged unless an approved chemical application plan is on file with the **City of Fitchburg's** Public Works Department.

- Facilities showing signs of soil erosion should be repaired with emphasis put on grassed waterways being maintained for proper stormwater conveyance.
- Facilities or parts of facilities with no vegetation shall be restored to good vegetated catch.
- Inspections of the bioretention basins and wet pond shall be done at least semi-annually in early spring and early fall. Inspections shall include apron endwall and overflow spillway for indication of failure. Note the condition of vegetation as part of inspection.
- If standing water is observed over 50% of a bioretention basin floor 24-hours after rainfall, the bioretention basin is clogged and measures should be undertaken to unclog it. Acceptable measures include removing the top 2 to 3 inches, chisel plowing and adding topsoil and engineered compost material. If deep tilling is used, the bioretention basin shall be drained and the soils dried to a depth of 8 inches. After procedures, the owner /operator shall replant with State-approved native plugs.
- Inspections of the storm sewer structures shall be done at least semi-annually in early spring and early fall. Inlet grates shall be cleared of any debris.
- The Owner shall visually inspect the wet pond, outfalls and outlet structure annually. Any debris or litter shall be removed from the pond and associated outlet structures. Any areas of erosion or animal burrowing shall be repaired to the original design. The wet pond shall be mowed a minimum of twice per year. Mowing shall maintain a minimum grass height of 6 to 8 inches. All undesirable vegetation and volunteer tree growth shall be removed, including close proximity to any outfall and the outlet structure. No structures of any kind are permitted within the wet pond area, without prior written approval of the City Engineer. Any sediment accumulation within three feet of the normal water surface shall be removed. Sediment in the basin shall be dredged and disposed offsite in accordance with NR 528.

APPENDIX 9

Surface Water Data Viewer

Surface Water Data Viewer Map





Legend

- Wetland Indicators
- Wetland Class Areas
- Wetland Class Points
  - Dammed pond
  - Excavated pond
  - Filled/drained wetland
  - Wetland too small to delineate
  - Filled excavated pond
- Filled Points
- Wetland Class Areas
- Filled Areas
- Wetland Class Areas
- Wetland Class Points
  - Dammed pond
  - Excavated pond
  - Filled/drained wetland
  - Wetland too small to delineate
  - Filled excavated pond
- Filled Points
- Wetland Class Areas
- Filled Areas
- Wetland Identifications and Confirmations
- NRCS Wetspots
- Municipality
- State Boundaries
- County Boundaries
- Major Roads
  - Interstate Highway
  - State Highway
  - US Highway
- County and Local Roads
  - County HWY
  - Local Road
- Railroads

Notes

0.3 0 0.13 0.3 Miles

NAD_1983_HARN_Wisconsin_TM

1: 7,920

DISCLAIMER: The information shown on these maps has been obtained from various sources, and are of varying age, reliability and resolution. These maps are not intended to be used for navigation, nor are these maps an authoritative source of information about legal land ownership or public access. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map. For more information, see the DNR Legal Notices web page: http://dnr.wi.gov/legal/

APPENDIX 10

Photo Survey

Madison Regional Office
161 Horizon Drive, Suite 101
Verona, WI 53593
608.848.5060

Photo Survey- Nine-Springs

Photos taken on 3/19/2018



Photo 1: Looking south from the north existing entrance off of CTH MM.



Photo 2: Looking south from the northwest end of the site.

Madison Regional Office
161 Horizon Drive, Suite 101
Verona, WI 53593
608.848.5060



Photo 3: Looking north at the north entrance off of CTH MM.



Photo 4: Looking north from south side of the exsitng west pond area

Madison Regional Office
161 Horizon Drive, Suite 101
Verona, WI 53593
608.848.5060



Photo 5: Looking north from the existing high point of CTH MM.



Photo 6: Looking west from the existing south entrance (Lionello Court) off of CTH MM.

APPENDIX 11

Preliminary Opinion of Probable Construction Cost

Preliminary Opinion of Probable Construction Costs

Project *Nine-Springs*
Location *Fitchburg, Wisconsin*

JSD Project No. *21-10566*
Date: *3/24/2022*
Prepared For: *Royal Capital Group*

Erosion Control Improvements

No.	Item	Quantity	Unit	Unit Cost	Amount
1	Silt Fence	5,042	LF	$ 1.70	$ 8,571.40
2	Stone Tracking Pad	2	EA	$ 1,800.00	$ 3,600.00
3	Inlet Protection	64	EA	$ 90.00	$ 5,760.00
4	Erosion Matting	59,354	SY	$ 1.50	$ 89,031.00
5	Straw Waddles	9,000	LF	$ 10.00	$ 90,000.00
6	Ditch Check	4	EA	$ 150.00	$ 600.00
7	Erosion Bales	40	EA	$ 12.00	$ 480.00
8	Rip Rap	179	SY	$ 50.00	$ 8,944.44
9	Geotextile Fabric, Type HR	179	SY	$ 3.00	$ 536.67
10	Seed, Mulch, & Fertilizer	23	AC	$ 2,800.00	$ 64,400.00
				Estimated Costs =	**$ 271,923.51**
				110% of Estimated Cost	**$ 299,115.86**

Note: All unit costs reflect delivered and installed.

JSD REGIONAL OFFICES

Madison, WI

Milwaukee, WI

Wausau, WI

Appleton, WI

Kenosha, WI

Chicago, IL

Coeur d'Alene, ID

www.jsdinc.com