k:\whp_civil\112130011_carvana buffalo_newstead, ny\7. civil\2. cad\plansheets\C-7.0 CONSTRUCTION DETAILS.dwg



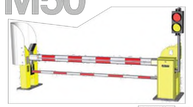
Features:

- **Rating:** The power to stop a truck in its tracks, with approximately 1 meter of penetration*.
- **No-Power:** StrongArm M30 NP/M50 NP (No-power) models defend high security, low traffic, sites that do not have power.
- **Models:** International certification models (CE) available.
- **Speed:** Open access points in as quick as six seconds, reducing traffic backups by minimizing gate open times.
- **Design:** Patented dual arm design prevents vehicles of all sizes from breaching the secure perimeter.
- **Safety:** Monitored photo eye stops arm when obstructed for enhanced safety.
- **Tough:** Aircraft-grade hydraulics and steel components provide the highest durability.
- **Arm:** Full 90° opening prevents tall vehicles from clipping arm.
- **Made in USA:** Designed, tested and built within USA from globally sourced materials.

HySecurity

StrongArm® M30/M50

High Security Anti-Ram



powered by SmartTouch

Technical Specifications

Model	StrongArmCrash M30	StrongArmCrash M30 CE	StrongArmCrash M50	StrongArmCrash M50 CE	StrongArmCrash M30 NP	StrongArmCrash M50 NP
Crash Certified	ASTM F2656-07 M30-P1*	ASTM F2656-07 M30-P1*	ASTM F2656-07 M50-P2*		ASTM F2656-07 M30-P1*	ASTM F2656-07 M50-P2*
Full Open Angle	90°				Adjustable 88° ± 2°	
Duty Cycle	100 cycles/hr**				Manually operated with rotary crank	
Horsepower	2 hp				n/a	
Drive	Hydraulic					
Open/Close Time	6 to 8 seconds depending on arm length				Open time: approx. 1 to 3 minutes depending on arm length; Close time: approx. 15 to 25 seconds depending on arm length	
Emergency Fast Operate	5 to 7 seconds depending on arm length					
Clear Opening	12 to 24 ft in 2 ft increments (366 to 732 cm in 61 cm increments). Call for custom arm length.					
UPS Battery Backup Cycles	Optional 230VAC Power Supply w/Hyinverter™ AC for single-phase AC operators				n/a	
Temperature Rating	-40° to 158° F (-40° to 70° C) or -10° to 158° F (-23° to 70° C) Using biodegradeable fluid.					
Single Phase Voltages	208/230V 50/60Hz				n/a	
Three Phase Voltages	208/230V 50/60Hz or 380/460V 50/60Hz				n/a	
Included Accessories	Operator ships with one traffic light and wired through beam photo eye					
Communication	RS-232, RS-485				n/a	
User Controls	Smart Touch Controller with 70+ configurable settings. Smart Touch keypad and 32 character, OLED display or a PC using S.T.A.R.T. software.				n/a	
Relays	Two configurable user relays: 250VAC, 10A electromechanical; Optional HyBRelay™ for 8 additional relay outputs				n/a	
Finish	Hot dipped galvanized standard. Optional textured powder coat over zinc-based undercoat.					
Foundation	Shallow mount: 6 x 6 x 2 ft (183 x 183 x 61 cm), 4,000 psi concrete or (CO = 8 ft) 6 x 6 x 1 ft (CO -244 cm) x 183 x 30.5 cm), 5,000 psi concrete. Deep mount: 4 x 4 x 4 ft (122 x 122 x 122 cm) 4,000 psi concrete. #6 rebar, grade 60		6 x 6 x 4 ft (183 x 183 x 122 cm) 4,000 psi concrete, #6 rebar, grade 60		Shallow mount: 6 x 6 x 2 ft (183 x 183 x 61 cm), 4,000 psi concrete or (CO = 8 ft) 6 x 6 x 1 ft (CO -244 cm) x 183 x 30.5 cm), 5,000 psi concrete. Deep mount: 4 x 4 x 4 ft (122 x 122 x 122 cm) 4,000 psi concrete. #5 rebar, grade 60	6 x 6 x 4 ft (183 x 183 x 122 cm) 4,000 psi concrete, #6 rebar, grade 60
ETL Listed	Certified to UL 508A by ETL				n/a	
Warranty	5 year w/product registration					

Note: Deep mount foundation is used for M30 crash test.
* P1 and P2 rated for 12 ft clear opening. StrongArm M30 features an ASTM F2656-07 M30 P1 rating (1m penetration). StrongArm M50 features an ASTM F2656-07 M50 P2 rating (1.2m penetration). Contact HySecurity to receive a copy of the ASTM F2656-07 M30 or M50 Test Certification.
** The operator's normal duty cycle and the actual number of arm cycles available from battery depends upon arm length/weight, battery size, state of charge and health, ambient temperature, accessory power draw and frequency of arm cycles during power outage. ExtremeCycle option available.
*** 208/230VAC, single-phase AC operators only. See AC Power Supply with Hyinverter AC for more information.
Only HySecurity authorized distributors and installers, trained or authorized by HySecurity in proper installation techniques, operation and maintenance, are eligible to purchase HySecurity crash-rated barrier products. Patented dual arm design U.S. Pat. No. 9,822,501 B2

HySecurity a Nice company
support.hysecurity.com

Nice/HySecurity is an industry leader of automated gate and perimeter security solutions.

The HySecurity brand provides high-quality, ultra-reliable industrial gate operators and crash-rated, Hostile Vehicle Mitigation (HVM) vehicle barriers designed to secure and protect critical infrastructure and facilities worldwide.

Niceforyou.com

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945159823 Rev-C 05/2023 D0800

GATE DETAIL

N.T.S. SOURCE: HYSECURITY

NovaCHARGE Engineering The Future®

Charge Rigs Omega DC Fast Chargers

Universal Product Interoperability
Open standards focus ensures compatibility.

Supports Flexible Business Models
Custom billing arrangements enable business agility.

Scalability that Promotes Reliability
Remote management guarantees smooth operation.

Modular power unit design delivers 60kW to 240kW of power to quickly charge vehicle batteries and get you back on the road.



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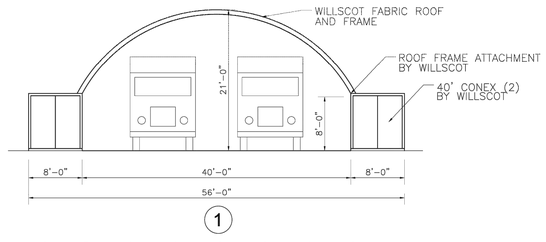
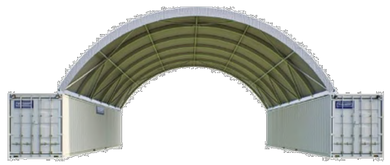
EV CHARGING - DC FAST DETAIL

N.T.S. SOURCE: NOVACHARGE



TRUCK MAINT. SHED OPTION A - EXTERIOR ELEVATIONS

SCALE: 3/32" = 1'-0"



TRUCK MAINT. SHED OPTION A - VENDOR PHOTO



TRUCK MAINT. SHED OPTION A - VENDOR PHOTO

STINGER PARKING STRUCTURE

N.T.S. SOURCE: BIG TOP MANUFACTURING, INC

NovaCHARGE Empowering The Future®

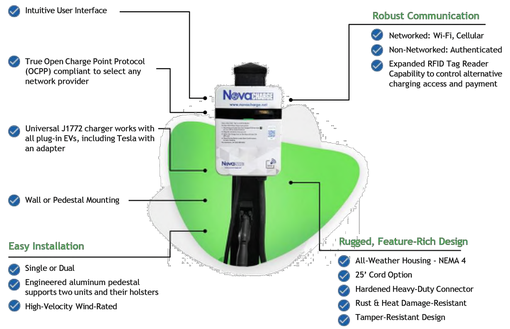
NC8000 Series EV Charging Stations

Universal Product Interoperability
Open standards focus ensures compatibility.

Supports Flexible Business Models
Custom rules & billing options enable business agility.

Next-gen Cloud Administration
Guarantees worry-free operation.

Proven utility-grade reliability built on open standards for future-proof investment



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EV CHARGING - L2 DETAIL

N.T.S. SOURCE: NOVACHARGE

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New York
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1 HORNING ROAD, SUITE 505
WHITE PLAINS, NY 10601
PHONE: 914-368-8200
WWW.KIMLEY-HORN.COM

CARVANA

STATE OF NEW YORK
TRENTON ALLAN SUDDETH
111067
LICENSED PROFESSIONAL ENGINEER
10/12/2026

KHA PROJECT 112130011
DATE 10/12/2026
SCALE: AS SHOWN
DESIGNED BY: KH
DRAWN BY: KH
CHECKED BY: KH

CONSTRUCTION DETAILS

CARVANA - BUFFALO
12200 MAIN STREET
AKRON, NEW YORK 14001
TOWN OF NEWSTEAD NEW YORK

SHEET NUMBER
C-7.1

Saved Monday, October 12, 2026 3:42:24 PM TRENT SUDDETH Plotted Monday, October 12, 2026 5:16:49 PM Suddeth, Trent
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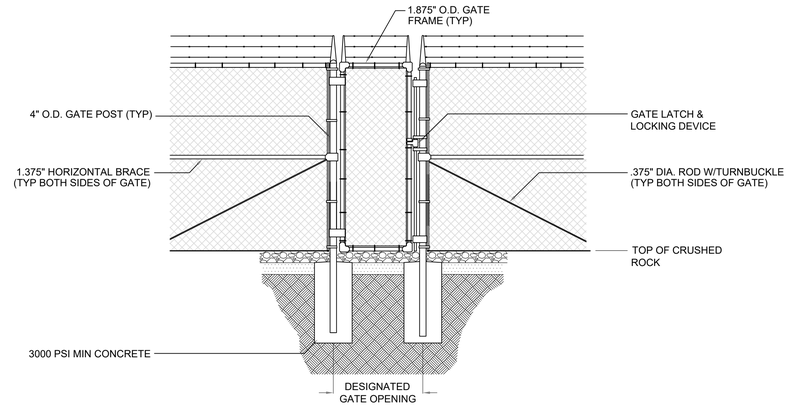
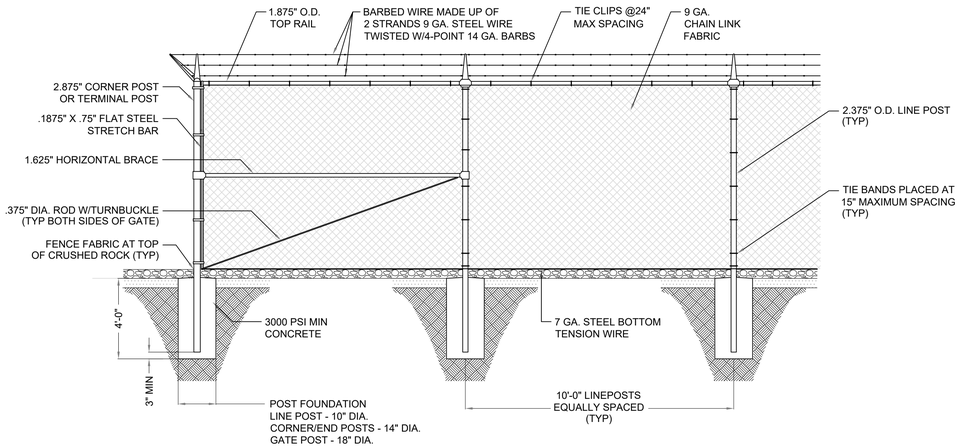


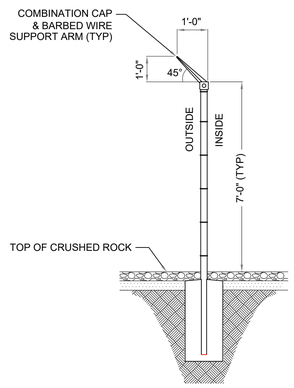
DETAIL 1A

TYPICAL PERSONNEL GATE INSTALLATION



DETAIL 1B

TYPICAL FENCE INSTALLATION



NOTES:

FENCE HEIGHT SHALL BE 7'-0" WITH 3 STRANDS OF 4 POINT BARBED WIRE ATTACHED TO SINGLE EXTENSION ARMS ALONG TOP OF FENCE.

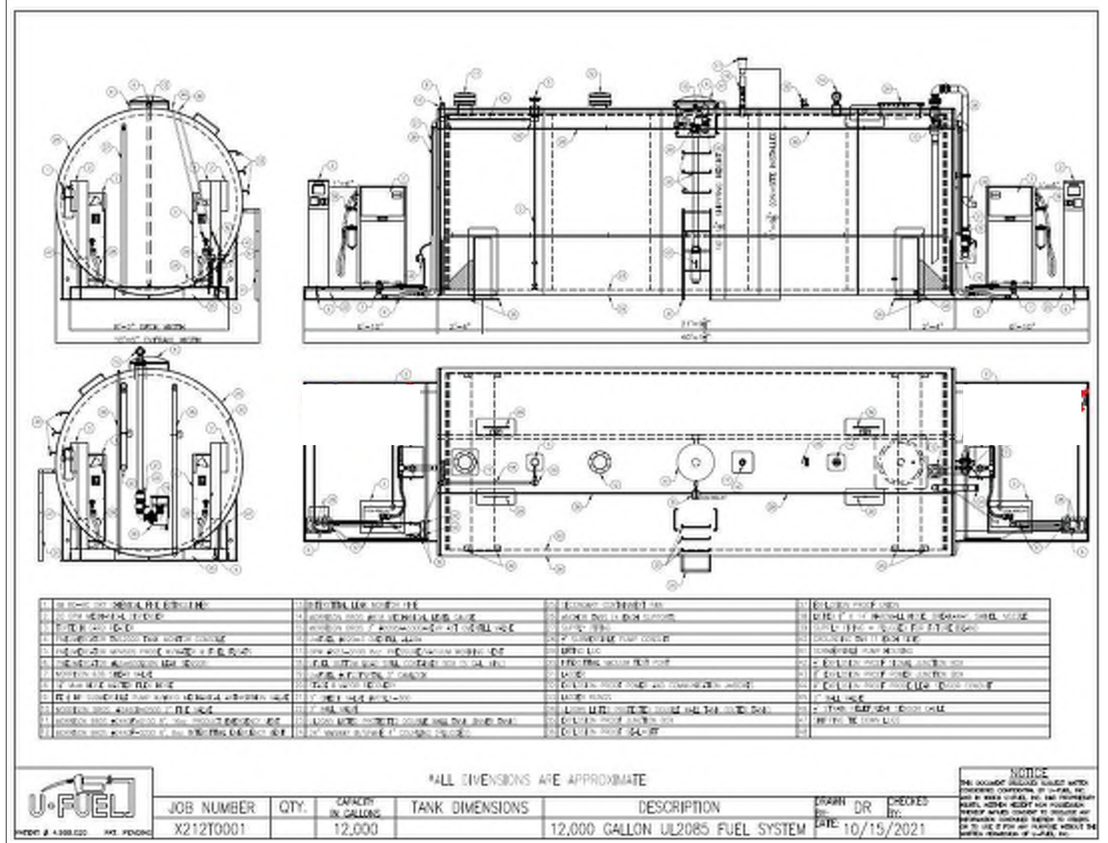
EXTENSION ARMS FOR BARBED WIRE SHALL POINT OUTWARD AT AN ANGLE OF 45 DEGREES.

PROVIDE ONE GATE KEEPER PER DOUBLE SWING GATE AND ANCHOR IN PLACE. PURPOSE OF THE KEEPER IS TO HOLD THE GATE OPEN ONCE USED.

FENCE FABRIC TO BE ASTM A392, 2" DIAMOND MESH, NINE GAUGE STEEL WIRE, GALVANIZED CLASS 2, 2.0 OUNCE PER SQ FT OF WIRE SURFACE. TOP SELVAGE TO BE TWISTED AND BARBED, BOTTOM SELVAGE TO BE KNUCKLED.

FENCE DETAIL

N.T.S. SOURCE: KIMLEY-HORN



FUEL TANK SYSTEM

N.T.S. SOURCE: U-FUEL

NO.	REVISIONS	DATE	BY
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1 HOWITT LOCKWOOD AVENUE, SUITE 505
WHITE PLAINS, NY 10601
PHONE: 914-368-8200
WWW.KIMLEY-HORN.COM

CARVANA

STATE OF NEW YORK TRENTON ALLAN SUDDETH LICENSED PROFESSIONAL ENGINEER 111067
10/12/2026

KHA PROJECT	112130011
DATE	10/12/2026
SCALE:	AS SHOWN
DESIGNED BY:	KH
DRAWN BY:	KH
CHECKED BY:	KH

CONSTRUCTION DETAILS

CARVANA - BUFFALO
12200 MAIN STREET
AKRON, NEW YORK 14001
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SHEET NUMBER
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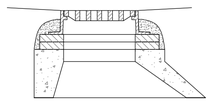
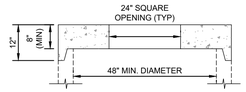
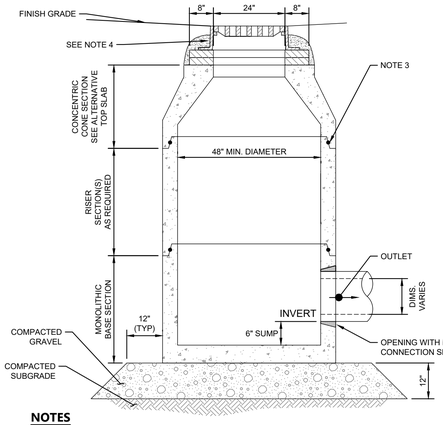


ALTERNATIVE ECCENTRIC CONE SECTION



ALTERNATIVE TOP SLAB

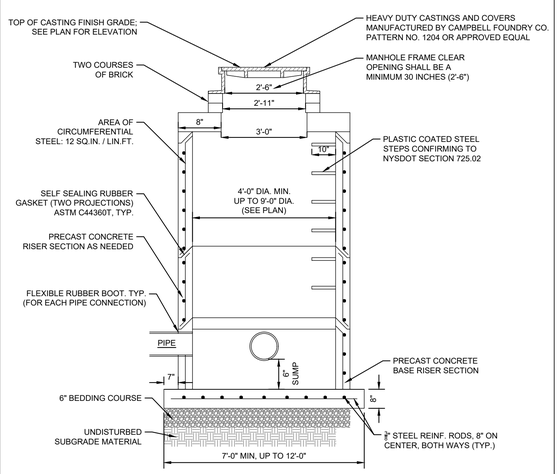


NOTES

1. ALL SECTIONS SHALL BE DESIGNED FOR HS-20 LOADING.
2. PROVIDE OPENINGS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS.
3. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
4. CATCH BASIN FRAME AND GRATE SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM).

FIELD INLET (FI)

N.T.S. SOURCE: KIMLEY-HORN

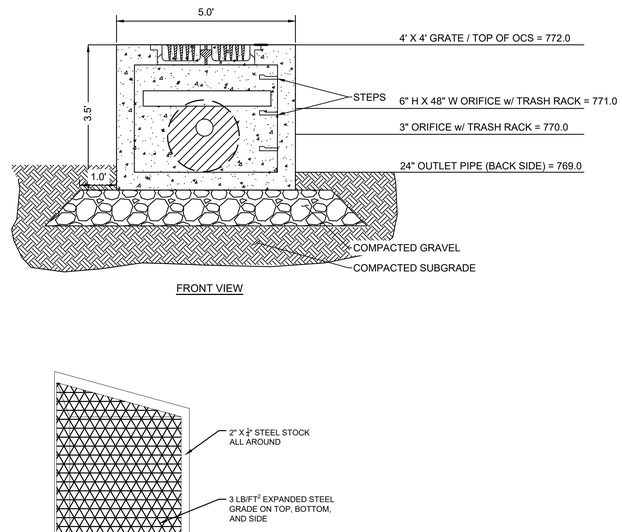


NOTES:

1. ALL STRUCTURES AND CASTINGS TO SUPPORT H-20 LOADING.
2. CONTRACTOR SHALL SUBMIT SITE-SPECIFIC FABRICATION SHOP DRAWINGS FOR APPROVAL.
3. AS MANUFACTURED BY OLD CASTLE OR APPROVED EQUAL

STORM DRAINAGE PRECAST MANHOLE

N.T.S. SOURCE: KIMLEY-HORN

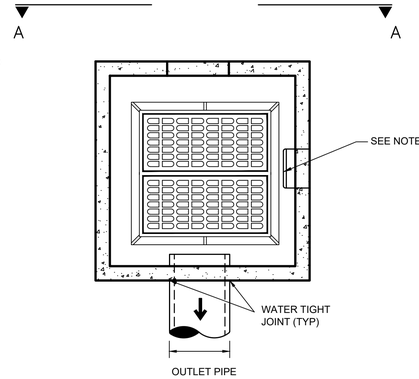


FRONT VIEW

TRASH RACK DETAIL
SOURCE: NYSDEC STORMWATER DESIGN MANUAL

NOTES

1. CONTRACTOR TO PLACE TRASH RACK OVER EACH ORIFICE OPENING TO THE PROPOSED SIZE.
2. TRASH RACK TO BE CENTERED OVER OPENING.
3. STEEL TO CONFORM TO ASTM A-36.
4. ALL SURFACES TO BE COATED WITH ZRC COLD GALVANIZING COMPOUND AFTER WELDING



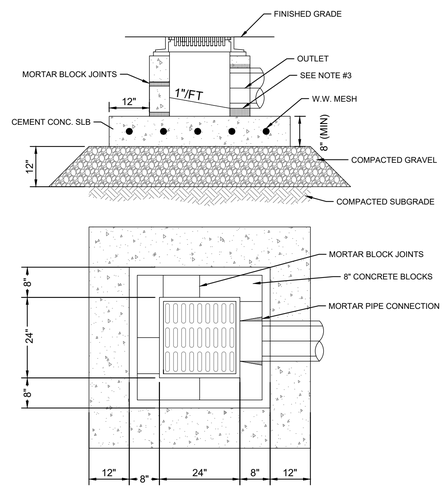
TOP VIEW

Notes:

1. COPOLYMER STEPS SHALL BE INSTALLED AT 12" O.C. FOR THE FULL DEPTH OF THE STRUCTURE.
2. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
3. OUTLET PIPES ARE SHOWN ON THE SECTION AA - FRONT VIEW FOR CLARITY. ALL OUTLET PIPES WILL BE ON THE BACK SIDE OF THE OCS STRUCTURE.

OUTLET CONTROL STRUCTURE

N.T.S. SOURCE: KIMLEY-HORN

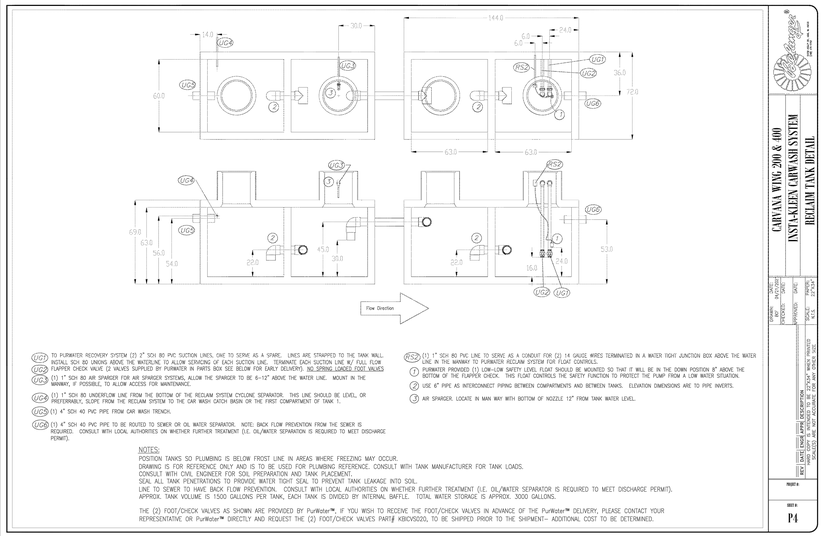


NOTES:

1. FRAMES AND GRATE SHALL BE SET IN FULL BED OF MORTAR. ADJUST TO GRADE WITH CLAY BRICKS AND MORTAR AS REQUIRED.
2. CONSTRUCTION MATERIAL FOR STRUCTURE TO CONSIST OF SOLID CONCRETE BLOCK SET IN MORTAR OR PRECAST CONCRETE DESIGNED FOR H-20 LOADING.
3. PROVE "V" OPENINGS FOR PIPES WITH 2" CLEARANCE TO OUTSIDE OF PIPE (IF PRECAST). MORTAR ALL PIPE CONNECTIONS
4. MORTAR ALL JOINTS

SHALLOW INLET

N.T.S. SOURCE: KIMLEY-HORN



(UC1) TO PURWATER RECOVERY SYSTEM (2) 2" SCH 80 PVC SUCTION LINES, ONE TO SERVE AS A SPARE. LINES ARE STRAPPED TO THE TANK WALL. INSTALL SCH 80 UNIONS ABOVE THE WATERLINE TO ALLOW SERVICING OF EACH SUCTION LINE. TERMINATE EACH SUCTION LINE W/ FULL FLOW.

(UC2) FLAPPER CHECK VALVE (2 VALVES SUPPLIED BY PURWATER IN PARTS BOX SEE BELOW FOR EARLY DELIVERY). NO SPRING LOADED FOOT VALVES

(UC3) (1) 1" SCH 80 AIR SPARGER FOR AIR SPARGER SYSTEM, ALLOW THE SPARGER TO BE 6-12" ABOVE THE WATER LINE. MOUNT IN THE MANWAY, IF POSSIBLE, TO ALLOW ACCESS FOR MAINTENANCE.

(UC4) (1) 1" SCH 40 UNDERFLOW LINE FROM THE BOTTOM OF THE RECLAIM SYSTEM CYCLONE SEPARATOR. THIS LINE SHOULD BE LEVEL, OR PREFERRABLY, SLOPE FROM THE RECLAIM SYSTEM TO THE CAR WASH CATCH BASIN OR THE FIRST COMPARTMENT OF TANK 1.

(UC5) (1) 4" SCH 40 PVC PIPE FROM CAR WASH TRENCH.

(UC6) (1) 4" SCH 40 PVC PIPE TO BE ROUTED TO SEWER OR OIL WATER SEPARATOR.. NOTE: BACK FLOW PREVENTION FROM THE SEWER IS REQUIRED. CONSULT WITH LOCAL AUTHORITIES ON WHETHER FURTHER TREATMENT (I.E. OIL/WATER SEPARATION IS REQUIRED TO MEET DISCHARGE PERMIT).

(PC2) (1) 1" SCH 80 PVC LINE TO SERVE AS A CONDUIT FOR (2) 14 GAUGE WIRES TERMINATED IN A WATER TIGHT JUNCTION BOX ABOVE THE WATER LINE IN THE MANWAY TO PURWATER RECLAIM SYSTEM FOR FLOAT CONTROLS.

(1) PURWATER PROVIDED (1) LOW-LOW SAFETY LEVEL FLOAT SHOULD BE MOUNTED SO THAT IT WILL BE IN THE DOWN POSITION 8" ABOVE THE BOTTOM OF THE FLAPPER CHECK. THIS FLOAT CONTROLS THE SAFETY FUNCTION TO PROTECT THE PUMP FROM A LOW WATER SITUATION.

(2) USE 6" PIPE AS INTERCONNECT PIPING BETWEEN COMPARTMENTS AND BETWEEN TANKS. ELEVATION DIMENSIONS ARE TO PIPE INVERTS.

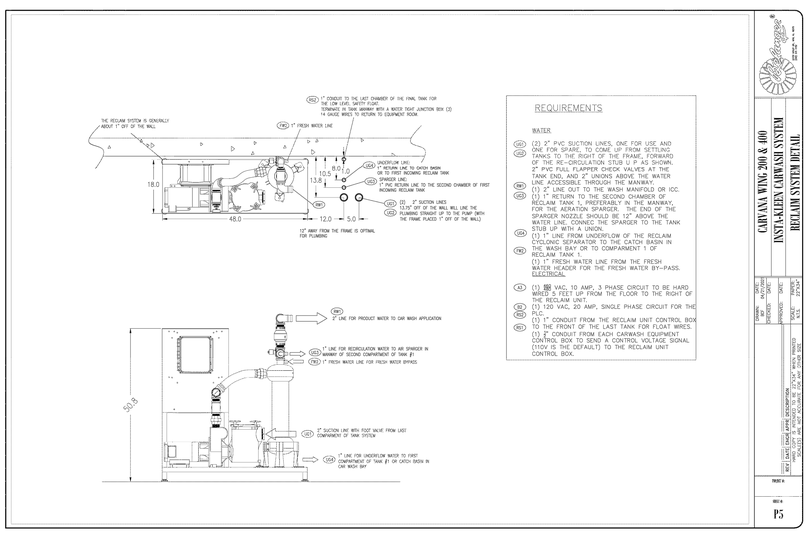
(3) AIR SPARGER. LOCATE IN MAN WAY WITH BOTTOM OF NOZZLE 12" FROM TANK WATER LEVEL.

NOTES:
POSITION TANKS SO PLUMBING IS BELOW FROST LINE IN AREAS WHERE FREEZING MAY OCCUR.
DRAWING IS FOR REFERENCE ONLY AND IS TO BE USED FOR PLUMBING REFERENCE. CONSULT WITH TANK MANUFACTURER FOR TANK LOADS.
CONSULT WITH CIVIL ENGINEER FOR SOIL PREPARATION AND TANK PLACEMENT.
SEAL ALL TANK PENETRATIONS TO PROVIDE WATER TIGHT SEAL TO PREVENT TANK LEAKAGE INTO SOIL.
LINE TO SEWER TO HAVE BACK FLOW PREVENTION. CONSULT WITH LOCAL AUTHORITIES ON WHETHER FURTHER TREATMENT (I.E. OIL/WATER SEPARATOR IS REQUIRED TO MEET DISCHARGE PERMIT).
APPROX. TANK VOLUME IS 1500 GALLONS PER TANK, EACH TANK IS DIVIDED BY INTERNAL BAFFLE. TOTAL WATER STORAGE IS APPROX. 3000 GALLONS.

THE (3) FOOT/CHECK VALVES AS SHOWN ARE PROVIDED BY PurWater™. IF YOU WISH TO RECEIVE THE FOOT/CHECK VALVES IN ADVANCE OF THE PurWater™ DELIVERY, PLEASE CONTACT YOUR REPRESENTATIVE OR PurWater™ DIRECTLY AND REQUEST THE (2) FOOT/CHECK VALVES PART# KBXCVS020, TO BE SHIPPED PRIOR TO THE SHIPMENT- ADDITONAL COST TO BE DETERMINED.

CAR WASH RECLAIM SYSTEM

N.T.S. SOURCE: BELANGER



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		DATE
		REVISIONS
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1 HOMEN CENTER DRIVE, SUITE 550
WHITE PLAINS, NY 10601
PHONE: 914-368-8200
WWW.KIMLEY-HORN.COM

CARVANA

LICENSED PROFESSIONAL ENGINEER
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KHA PROJECT	112130011
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CONSTRUCTION DETAILS

CARVANA - BUFFALO
12200 MAIN STREET
AKRON, NEW YORK 14001
TOWN OF NEWSTEAD NEW YORK

SHEET NUMBER
C-7.3

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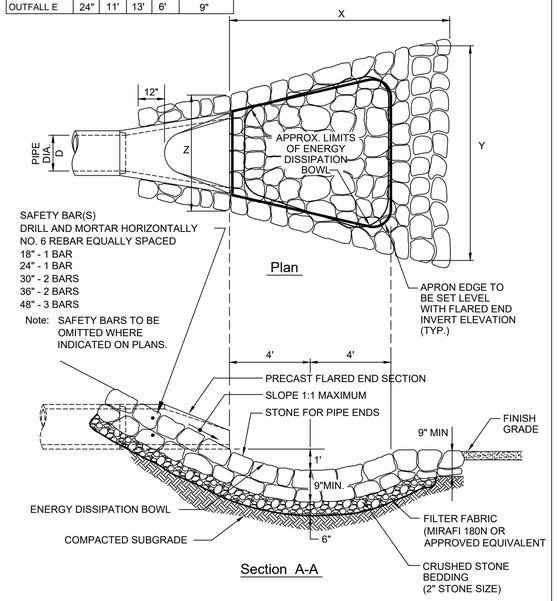
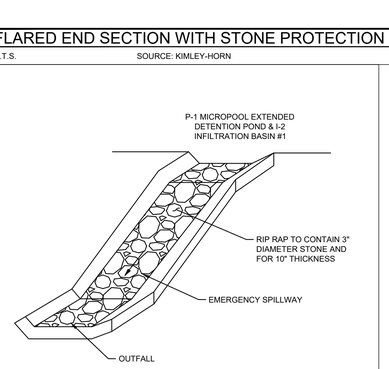
Saved Monday, October 12, 2026 3:42:34 PM TRENT.SUDDETH Plotted Monday, October 12, 2026 5:17:08 PM Suddeth, Trent

FES NO.	D	X	Y	Z	STONE DIA. (D_{50})
OUTLET A1	18"	8'	10'	6'	9"
OUTLET A2	18"	8'	10'	6'	9"
OUTFALL A	24"	11'	13'	6'	9"
OUTFALL E	24"	11'	13'	6'	9"



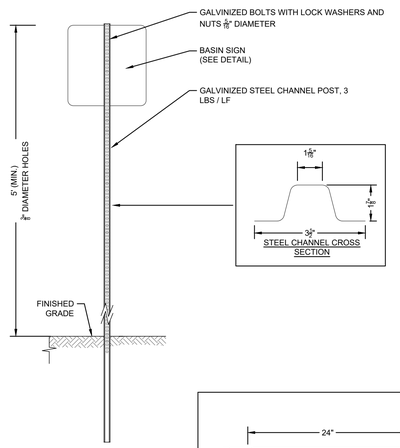
FLARED END SECTION WITH STONE PROTECTION

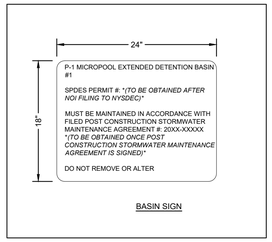
N.T.S. SOURCE: KIMLEY-HORN



EMERGENCY SPILLWAY RIP RAP

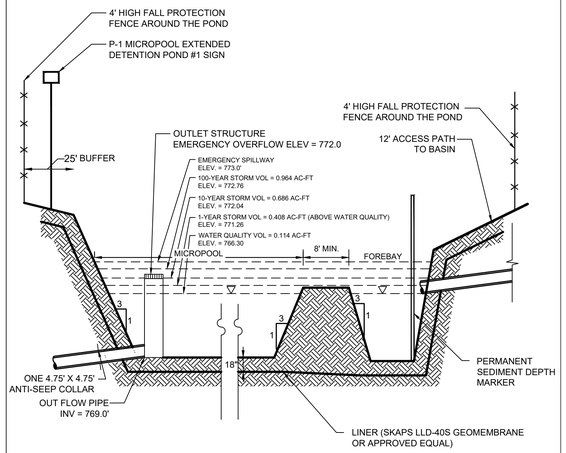
N.T.S. SOURCE: KIMLEY-HORN





P-1 MICROPOOL EXTENDED DETENTION BASIN #1 SIGN

N.T.S. SOURCE: KIMLEY-HORN

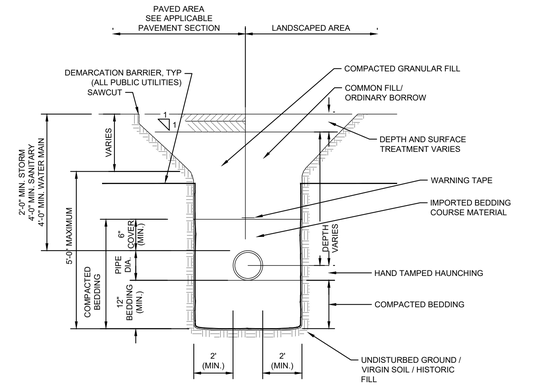


Notes:

1. SIDE SLOPES SHALL BE 2:1 MAX.
2. SEE PHASE 1 GRADING AND DRAINAGE PLAN AND DETAIL SHEETS FOR LOCATIONS AND INVERTS OF PIPES AND OUTLET CONTROL STRUCTURE.
3. SEE PLANS FOR LOCATIONS OF THE EXISTING STORMWATER POND SIGN AND PERMANENT SEDIMENT DEPTH MARKER.
4. SEDIMENT SHALL BE REMOVED WHEN SEDIMENT ELEVATION REACHES 771'.

P-1 MICROPOOL EXTENDED DETENTION POND #1

N.T.S. SOURCE: KIMLEY-HORN



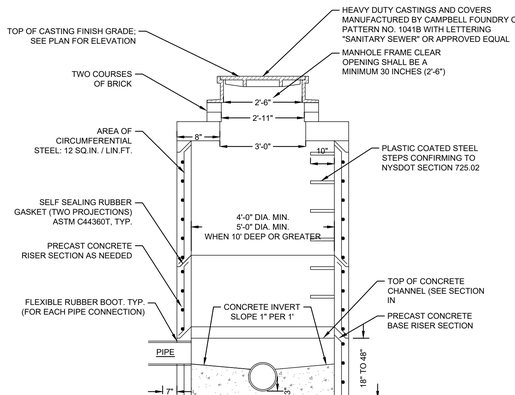
NOTES

1. WHERE UTILITY TRENCHES ARE CONSTRUCTED THROUGH DETENTION BASIN BERMS OR OTHER SUCH SPECIAL SECTIONS, PLACE TRENCH BACKFILL WITH MATERIALS SIMILAR TO THE SPECIAL SECTION REQUIREMENTS.
2. USE METALLIC TRACING/WARNING TAPE OVER ALL PIPES.
3. BACKFILL TO 95% RELATIVE MATERIAL COMPACTED DRY DENSITY AT OPTIMUM MOISTURE UNDER PAVED AND STRUCTURAL AREAS AND 90% UNDER LANDSCAPED AREAS.
4. BACKFILL WITH 90 PSI FLOWABLE CONCRETE IN VILLAGE R.O.W. (EXISTING PAVEMENT AREAS ONLY).
5. WHEN PIPES ARE TO BE INSTALLED IN FILL SECTIONS, THE CONTRACTOR SHALL INSTALL CRUSHED STONE, GRAVEL OR APPROVED STRUCTURAL FILL.

FOR 48" HDPE PIPE AND SMALLER MINIMAL GRAVEL DEPTH FROM THE TOP OF THE PIPE TO BOTTOM OF BITUMINOUS IS 12 INCHES.

UTLITY TRENCH DETAIL (STORM / SANITARY / WATER)

N.T.S. SOURCE: KIMLEY-HORN



NOTES:

1. ALL STRUCTURES AND CASTINGS TO SUPPORT H-20 LOADING.
2. CONTRACTOR SHALL SUBMIT SITE-SPECIFIC FABRICATION SHOP DRAWINGS FOR APPROVAL.
3. AS MANUFACTURED BY OLD CASTLE OR APPROVED EQUAL

SANITARY SEWER MANHOLE

N.T.S. SOURCE: KIMLEY-HORN

NO.	REVISIONS	DATE	BY

FOR PERMIT REVIEW

Kimley»Horn
New York
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1 HORNTH LOOP LANE, SUITE 505
WHITE PLAINS, NY 10601
PHONE: 914-368-8200
WWW.KIMLEY-HORN.COM

CARVANA



KHA PROJECT	112130011
DATE	10/12/2026
SCALE:	AS SHOWN
DESIGNED BY:	KH
DRAWN BY:	KH
CHECKED BY:	KH

CONSTRUCTION DETAILS

CARVANA - BUFFALO
12200 MAIN STREET
AKRON, NEW YORK 14001
TOWN OF NEWSTEAD NEW YORK

SHEET NUMBER
C-7.4

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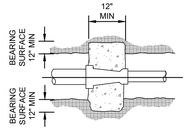
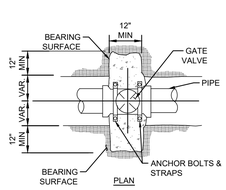
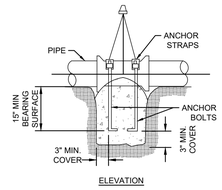
k:\whp_civil\112130011_carvana buffalo_newstead, ny\7. civil\2. cad\plansheets\C-7.0 CONSTRUCTION DETAILS.dwg

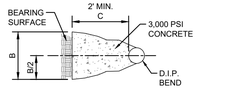


THRUST BLOCK AT REDUCER

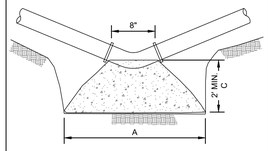




THRUST BLOCK AT VALVES



SECTION VIEW

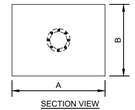


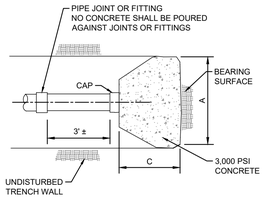
PLAN VIEW

BLOCK DIMENSIONS FOR THRUST BLOCK AT HORIZONTAL BENDS

PIPE DIA. (IN.)	BEND	A (FT.)	B (FT.)	C (FT.)	CONC. (CF.)	CONC. (CY.)
12	90°	9.4	4.0	2.0	75.2	2.8
	45°	5.8	3.5	2.0	40.6	1.5
	22.5°	4.2	2.5	2.0	21.0	0.8
	11.25°	2.6	2.0	2.0	10.4	0.4
10	90°	6.7	4.0	2.0	53.6	2.0
	45°	5.8	2.5	2.0	29.0	1.1
	22.5°	3.7	2.0	2.0	14.8	0.5
	11.25°	2.5	1.5	2.0	7.5	0.3
8	90°	5.1	3.5	2.0	35.7	1.3
	45°	3.8	2.5	2.0	19.0	0.7
	22.5°	3.3	1.5	2.0	9.9	0.4
	11.25°	2.5	1.0	2.0	5.0	0.2
6	90°	4.1	2.5	2.0	20.5	0.8
	45°	2.8	2.0	2.0	11.2	0.4
	22.5°	2.8	1.0	2.0	5.6	0.2
	11.25°	1.4	1.0	2.0	2.8	0.1
3	90°	4.1	2.5	2.0	20.5	0.8
	45°	2.8	2.0	2.0	11.2	0.4
	22.5°	2.8	1.0	2.0	5.6	0.2
	11.25°	1.4	1.0	2.0	2.8	0.1

THRUST BLOCK AT HORIZONTAL BEND





PLAN VIEW

THRUST BLOCK AT CAP

BLOCK DIMENSIONS FOR THRUST BLOCK AT CAPPED ENDS

BRANCH DIA. (IN.)	A (FT.)	B (FT.)	C (FT.)	CONC. (CF.)	CONC. (CY.)
12	6.7	4.0	2.0	53.6	2.0
10	6.3	3.0	2.0	37.8	1.4
8	5.0	2.5	2.0	25.0	0.9
6	3.7	2.0	2.0	14.8	0.5
3	3.7	2.0	2.0	14.8	0.5

BLOCK DIMENSIONS FOR THRUST BLOCK AT VERTICAL BENDS

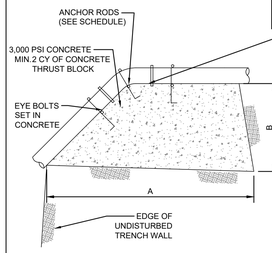
PIPE DIA. (IN.)	BEND	A (FT.)	B (FT.)	C (FT.)	CONC. (CF.)	CONC. (CY.)
12	90°	9.4	4.0	2.0	75.2	2.8
	45°	5.8	3.5	2.0	40.6	1.5
	22.5°	4.2	2.5	2.0	21.0	0.8
	11.25°	2.6	2.0	2.0	10.4	0.4
10	90°	6.7	4.0	2.0	53.6	2.0
	45°	5.8	2.5	2.0	29.0	1.1
	22.5°	3.7	2.0	2.0	14.8	0.5
	11.25°	2.5	1.5	2.0	7.5	0.3
8	90°	5.1	3.5	2.0	35.7	1.3
	45°	3.8	2.5	2.0	19.0	0.7
	22.5°	3.3	1.5	2.0	9.9	0.4
	11.25°	2.5	1.0	2.0	5.0	0.2
6	90°	4.1	2.5	2.0	20.5	0.8
	45°	2.8	2.0	2.0	11.2	0.4
	22.5°	2.8	1.0	2.0	5.6	0.2
	11.25°	1.4	1.0	2.0	2.8	0.1
3	90°	4.1	2.5	2.0	20.5	0.8
	45°	2.8	2.0	2.0	11.2	0.4
	22.5°	2.8	1.0	2.0	5.6	0.2
	11.25°	1.4	1.0	2.0	2.8	0.1

GRAVITY BLOCKS
1. GRAVITY BLOCKS SHALL REQUIRE A MINIMUM OF 2 CY CONCRETE PER INSTALLATION.
2. REFER TO "GRAVITY BLOCK RESTRAINT INSTALLATION DETAIL".
3. REFER TO "THRUST BLOCK NOTES" FOR INSTALLATION REQUIREMENTS WHERE APPLICABLE.

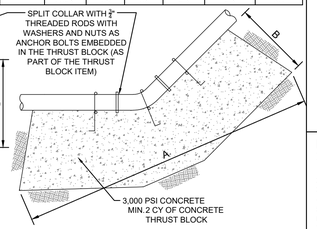
ANCHOR SCHEDULE FOR GRAVITY BLOCKS

PIPE DIA. (IN.)	RODS	MIN. EMBED LENGTH (IN.)
12	(3) #4	18.0
10	(3) #4	12.0
8	(2) #5	12.0
6	(2) #5	12.0
3	(2) #5	12.0

1. ALL EMBEDDED RODS SHOULD HAVE STANDARD ACI HOOKS.
2. IN SOME CASES, IT WILL BE NECESSARY TO INCREASE THE MINIMUM DIMENSIONS SHOWN TO ATTAIN THE MINIMUM CONCRETE VOLUMES.

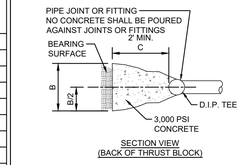


RESTRAINT FOR VERTICAL CREST BENDS

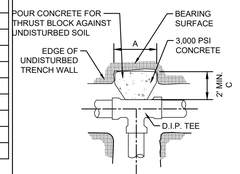


RESTRAINT FOR VERTICAL SAG BENDS

THRUST BLOCK AT VERTICAL BEND



SECTION VIEW
(BACK OF THRUST BLOCK)



PLAN VIEW

BLOCK DIMENSIONS FOR THRUST BLOCK AT TEE

BRANCH DIA. (IN.)	A (FT.)	B (FT.)	C (FT.)	CONC. (CF.)	CONC. (CY.)
12	6.7	4.0	2.0	53.6	2.0
10	6.3	3.0	2.0	37.8	1.4
8	5.0	2.5	2.0	25.0	0.9
6	3.7	2.0	2.0	14.8	0.5
3	3.7	2.0	2.0	14.8	0.5

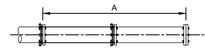
THRUST BLOCK AT TEE

NOTES:
1. ALL THRUST BOCKS SIZED IN ACCORDANCE WITH AWWA DUCTILE IRON PIPE AND FITTINGS, AWWA MANUAL M41 SECTION EDITION, DUCTILE IRON PIPE RESEARCH THRUST RESTRAINT DESIGN FOR DUCTILE IRON PIPE.
2. CALCULATIONS APPLY A FACTOR OF SAFETY OF 1.5.
3. CALCULATIONS BASED UPON A MINIMUM PRESSURE CLASS OF PIPE WITH STANDARD CEMENT MORTAR LINING.
4. CALCULATIONS BASED UPON A SOIL BEARING PRESSURE OF 1,000 POUNDS PER SQUARE FOOT.
5. CALCULATIONS BASED UPON A 130 PSI TEST PRESSURE, MAXIMUM.
6. DIMENSIONS ESTABLISHED BASED UPON TRUNCATED TRIANGULAR SHAPED THRUST BLOCK GEOMETRY.
7. ALL CONCRETE SHALL BE A MINIMUM OF 3,000 PSI.
8. ALL THRUST BLOCKS SHALL BE POURED AGAINST UNDISTURBED SOILS.
9. NO CONCRETE SHALL BE POURED AGAINST PIPE JOINTS.
10. THRUST BLOCKS SHOWN ARE MINIM SIZES.
11. THRUST BLOCK FOR 90 DEGREE BENDS SHALL ONLY BE PERMITTED ON FJ TO FJ CONNECTIONS
12. TEST CYLINDERS ARE TO BE TAKEN FROM EACH TRUCK LOAD OF CONCRETE AND TESTED AT 28 DAYS.

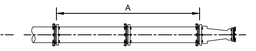
THRUST BLOCK
N.T.S. SOURCE: KIMLEY-HORN

RESTRAIN ALL JOINTS AT FITTING AND WITHIN "A" FEET IN DIRECTION SHOWN FOR THE FOLLOWING PIPE DIAMETERS

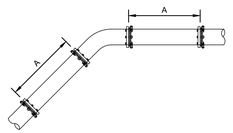
FITTING TYPE	BEND	12"	8"	6"	3"
HORIZONTAL BEND	90°	20	12	8	8
	45°	7	5	5	5
	22.5°	4	3	3	3
	11.25°	2	2	2	2
TEE		2	2	2	2
CROSS		2	2	2	2
DEAD END		40	30	25	25
VERTICAL CREST BEND	45°	20	12	8	8
	22.5°	8	6	5	5
	11.25°	4	3	3	3
VERTICAL SAG BEND	45°	7	5	4	4
	22.5°	4	3	3	3
	11.25°	2	2	2	2
REDUCER	8 x 3	-	15	-	15
	8 x 6	-	15	15	-
	12 x 6	20	-	20	-
	12 x 8	22	22	-	-
VALVE		22	22	20	20



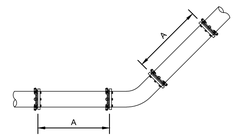
RESTRAINT AT DEAD ENDS



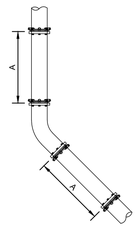
RESTRAINTS AT REDUCERS AND VALVES



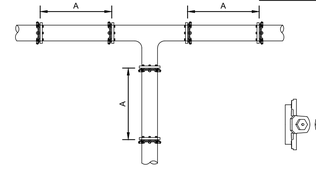
RESTRAINT FOR VERTICAL CREST BENDS



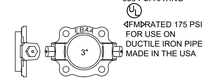
RESTRAINT FOR VERTICAL SAG BENDS



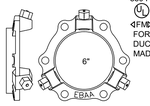
RESTRAINT FOR VERTICAL CREST BENDS



RESTRAINTS FOR TEE AND CROSSES

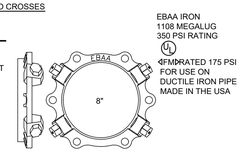


EBAA IRON
1103 MEGALUG
350 PSI RATING
FM RATED 175 PSI FOR USE ON DUCTILE IRON PIPE MADE IN THE USA

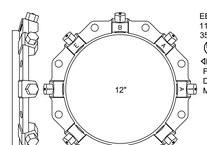


EBAA IRON
1106 MEGALUG
350 PSI RATING
FM RATED 175 PSI FOR USE ON DUCTILE IRON PIPE MADE IN THE USA

NOTES:
1. ALL BENDS AND FITTINGS MUST USE MEGALUG RETAINER GLANDS / "FIELD LOK" GASKETS OR APPROVED EQUAL ARE REQUIRED AT PIPE JOINTS THAT ARE AT LEAST ONE FULL PIPE LENGTH BEFORE AND AFTER FITTINGS. IF A SINGLE FULL PIPE LENGTH CANNOT BE ACHIEVED FROM THE JOINT WITH THE FITTING THEN "FIELD LOK" GASKETS ARE REQUIRED AT ALL PIPE JOINTS UNTIL THE EQUIVALENT OF A FULL PIPE LENGTH FROM THE FITTING IS REACHED.
2. FOR PUSH-ON TYPE JOINT GASKETS MUST BE STANDARDS "TYTON" OR "FIELD LOK" GASKETS AS DIRECTED BY THE ENGINEER. A MINIMUM OF TWO BRASS WEDGES PER JOINT SHALL BE USED TO MAINTAIN CONDUCTIVITY AND FACILITATE LOCK-ON.
3. MEGALUG JOINT RESTRAINT DETAILS OBTAINED FROM EBAA INC. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR PROPER INSTALLATION PROCEDURES.
4. RESTRAINT LENGTHS ARE BASED UPON: 1) CLASS 52 DUCTILE IRON PIPE, 20 WORKING PRESSURE OF 150 PSI, 3) 4' MINIMUM COVER, 4) COMPACTED GRANULAR MATERIAL TO TOP OF PIPE, AND 5) 90 PERCENT STANDARD PROCTOR COMPACTION.



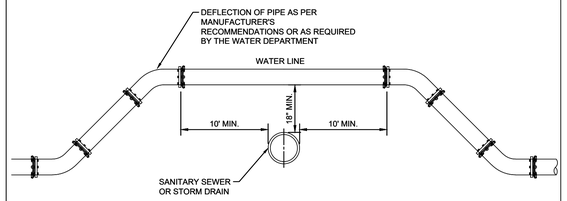
EBAA IRON
1108 MEGALUG
350 PSI RATING
FM RATED 175 PSI FOR USE ON DUCTILE IRON PIPE MADE IN THE USA

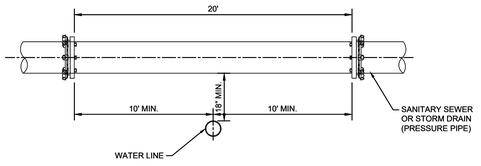


EBAA IRON
1112 MEGALUG
350 PSI RATING
FM RATED 175 PSI FOR USE ON DUCTILE IRON PIPE MADE IN THE USA

MEGALUG SERIES 1100 MECHANICAL JOINT RESTRAINTS

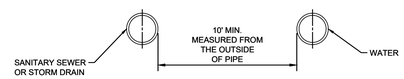
WATER MAIN RESTRAINT JOINT DETAIL
N.T.S. SOURCE: KIMLEY-HORN





NOTES:
1. FOR ANY CONDITIONS OTHER THAN SHOWN AT RIGHT, THE FOLLOWING REQUIREMENTS SHALL BE MET. THE JOINTS OF THE SANITARY SEWER OR STORM DRAIN SHALL BE A MINIMUM OF 10 FEET FROM THE POINT OF CROSSING. THE SANITARY SEWER SHALL BE CLASS 150 PRESSURE PIPE AND THE STORM DRAIN SHALL BE LOCK JOINT PRESSURE PIPE. WHERE THE ABOVE CONDITIONS CANNOT BE MET, THE WESTCHESTER COUNTY DEPARTMENT OF HEALTH WILL BE NOTIFIED AND THEIR APPROVAL REQUIRED.
2. WHERE THE WATER LINE CROSSES BENEATH THE SANITARY SEWER OR STORM DRAIN, THE JOINTS OF THE PIPE SHALL BE A MINIMUM OF 10 FEET FROM THE POINT OF CROSSING. SANITARY SEWER PIPE SHALL BE CLASS 150 PRESSURE PIPE AND THE STORM DRAIN SHALL BE LOCK JOINT PRESSURE PIPE.
3. REQUIREMENTS AS STATED IN THE ABOVE CONDITIONS WILL ALSO APPLY WHEN HORIZONTAL SEPARATION BETWEEN THE SANITARY SEWER AND WATER IS LESS THAN 10 FEET AND VERTICAL SEPARATION IS LESS THAN 18 INCHES. WHERE THE ABOVE CONDITIONS CANNOT BE MET, THE WESTCHESTER COUNTY DEPARTMENT OF HEALTH WILL BE NOTIFIED AND THEIR APPROVAL REQUIRED.
4. WHERE SEPARATION IS LESS THAN 18 INCHES VERTICALLY OR 10 FEET HORIZONTALLY, CONCRETE ENCASE A MINIMUM OF 10 FEET IN EACH DIRECTION

CROSSING OF WATER LINE AND STORM / SANITARY SEWER
N.T.S. SOURCE: KIMLEY-HORN



NOTES:
1. REQUIREMENTS AS STATED IN THE ABOVE CONDITIONS WILL ALSO APPLY WHEN HORIZONTAL SEPARATION BETWEEN THE SANITARY SEWER AND WATER IS LESS THAN 10 FEET AND VERTICAL SEPARATION IS LESS THAN 18 INCHES. WHERE THE ABOVE CONDITIONS CANNOT BE MET, THE WESTCHESTER COUNTY DEPARTMENT OF HEALTH WILL BE NOTIFIED AND THEIR APPROVAL REQUIRED.
2. WHERE SEPARATION IS LESS THAN 18 INCHES VERTICALLY OR 10 FEET HORIZONTALLY, CONCRETE ENCASE A MINIMUM OF 10 FEET IN EACH DIRECTION.

MIN. HORIZONTAL SEPARATION BETWEEN WATER AND STORM/SANITARY PIPES
N.T.S. SOURCE: KIMLEY-HORN

FILL NOTES
1. TYPICAL CLEAN FILL SIEVE ANALYSIS REQUIREMENTS FOR ALL UTILITY AND PIPING BACKFILL REQUIREMENTS.
2. ENGINEERED FILL MATERIAL SHALL BE WELL-TO-MODERATELY WELL-GRADED GRANULAR SOILS AS EXCAVATED, IMPORTED, SCREENED, OR BLENDED, OR PROCESSED ROCK FROM ON-SITE SOURCES MEETING THE FOLLOWING REQUIREMENTS:

TRENCH BACKFILL REQUIREMENTS

SIEVE OPENING	TOTAL PERCENT PASSING BY WEIGHT
4 INCH	100
3/4 INCH	70-100
NO. 4	40-100
NO. 10	20-100
NO. 40	5-40
NO. 100	0-30
NO. 200	0-12

TRENCH FILL MATERIAL SPECIFICATIONS
N.T.S. SOURCE: KIMLEY-HORN

	BY
	DATE
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New York
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1 HORNTHAL STREET, SUITE 505
WHITE PLAINS, NY 10601
PHONE: 914-368-8200
WWW.KIMLEY-HORN.COM

CARVANA

STATE OF NEW YORK — TRENTON ALLAN SUDDETH — LICENSED PROFESSIONAL ENGINEER — 111067 — 10/12/2026

KHA PROJECT:	112130011
DATE:	10/12/2026
SCALE:	AS SHOWN
DESIGNED BY:	KH
DRAWN BY:	KH
CHECKED BY:	KH

CONSTRUCTION DETAILS

CARVANA - BUFFALO
12200 MAIN STREET
AKRON, NEW YORK 14001
TOWN OF NEWSTEAD NEW YORK

SHEET NUMBER
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WATER MAIN NOTES

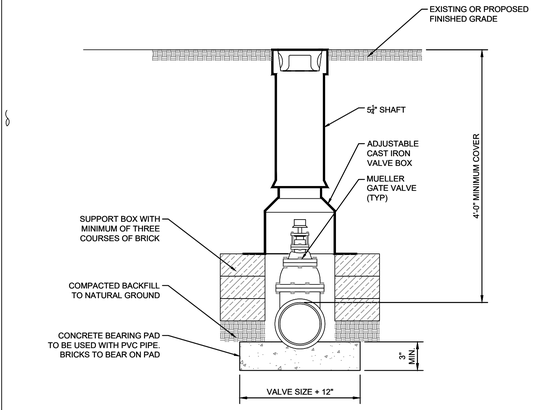
1. ALL WATER MAIN PIPING SHALL BE 6" DUCTILE IRON, CLASS 52, DOUBLE CEMENT LINED PIPE, AS SHOWN ON THE PLANS. WATER MAINS SHALL HAVE AT LEAST A MINIMUM OF 4'-0" COVER. WHEN 4 FEET OF COVER CANNOT BE ACHIEVED, THE CONTRACTOR SHALL PROVIDE INSULATION IN ACCORDANCE WITH THE "WATER MAIN TRENCH INSULATION DETAIL" SHOWN ON THIS SHEET AND IN ACCORDANCE APPLICABLE VILLAGE AND WCDOH REQUIREMENTS.
2. DEFLECTION OF JOINTS ON WATER MAINS SHALL NOT EXCEED 50% OF THE MAXIMUM DEFLECTION RECOMMENDED BY THE MANUFACTURER, OR AS DIRECTED BY THE ENGINEER.
3. ALL HORIZONTAL AND VERTICAL BENDS REQUIRE THRUST BLOCKS. SEE THRUST BLOCK DETAIL FOR SCHEDULE OF MINIMUM REQUIREMENTS.
4. ALL PIPING, VALVES, HYDRANTS, AND FITTINGS TO BE APPROVED BY THE VILLAGE OF SLEEPY HOLLOW WATER DEPARTMENT.
5. ALL WATER MAINS TO BE DISINFECTED IN ACCORDANCE WITH A.W.W.A. SPECIFICATION C651.14 EXCEPT FOR SECTION 5.1, LATEST REVISION. ACCEPTABLE RESULTS OF BACTERIOLOGICAL ANALYSIS OF SAMPLES OF WATER COLLECTED FROM THE NEW DISTRIBUTION MAIN AFTER DISINFECTION SHALL BE SUBMITTED TO THE VILLAGE OF SLEEPY HOLLOW AND THE WESTCHESTER COUNTY DEPARTMENT OF HEALTH AND ACCEPTED BY BOTH AGENCIES PRIOR TO USE. WCDOH MUST BE NOTIFIED A MINIMUM OF 48 HOURS PRIOR TO ANY LEAKAGE TESTS.
6. PRESSURE AND LEAKAGE TESTS WILL BE DONE IN ACCORDANCE WITH THE LATEST A.W.W.A. STANDARDS.
7. THE PROPOSED WATER MAIN WILL BE INSTALLED A MINIMUM OF 10'-0" HORIZONTALLY AND 18" VERTICALLY FROM ALL STORM AND SANITARY SEWERS, EXCEPT WHERE SHOWN IN THE PROFILES. 6" THICK CONCRETE ENCASEMENT SHALL BE USED WHERE MINIMUM SEPARATION DISTANCE CANNOT BE MET.
8. IN DEEPER UTILITY EXCAVATIONS NEAR THE ANTICIPATED GROUNDWATER TABLE ADDITIONAL CORROSION PROTECTION OF DUCTILE IRON PIPE WILL BE REQUIRED. THIS PROTECTION SHOULD CONSIST OF A POLYETHYLENE WRAP AROUND THE DUCTILE IRON PIPE. GROUNDWATER IS EXPECTED TO BE ENCOUNTERED AT OR BELOW APPROXIMATE EL. 6.0 BASED ON FIELD TESTING. THE GEOTECHNICAL ENGINEER WILL MAKE A FIELD DETERMINATION AS TO IF CORROSION PROTECTION IS WARRANTED BASED ON ACTUAL FIELD CONDITIONS ENCOUNTERED DURING CONSTRUCTION.
9. ALL BENDS AND FITTINGS MUST USE MEGALUG RETAINER GLANDS / "FIELD LOK" GASKETS OR APPROVED EQUAL ARE REQUIRED AT PIPE JOINTS THAT ARE AT LEAST ONE FULL PIPE LENGTH BEFORE AND AFTER FITTINGS. IF A SINGLE FULL PIPE LENGTH CANNOT BE ACHIEVED FROM THE JOINT WITH THE FITTINGS, THEN "FIELD LOK" GASKETS ARE REQUIRED AT ALL PIPE JOINTS UNTIL THE EQUIVALENT OF A FULL PIPE LENGTH FROM THE FITTINGS IS REACHED.
10. PUSH ON TYPE JOINT GASKETS MUST BE STANDARDS "TYTON" OR "FIELD LOK" GASKETS AS DIRECTED BY THE ENGINEER. A MINIMUM OF TWO BRASS WEDGES PER JOINT SHALL BE USED TO MAINTAIN CONDUCTIVITY AND FACILITATE LOCK-ON.
11. PIPE AND JOINT MATERIALS WHICH DO NOT ALLOW PERMEATION OF ORGANIC COMPOUNDS SHALL BE USED. NON-PERMEABLE MATERIALS SHALL BE USED FOR ALL PORTIONS OF THE SYSTEM INCLUDING: PIPE, JOINT MATERIALS, HYDRANT LEADS, AND SERVICE CONNECTIONS.

ADDITIONAL NOTES:

1. ALL WATER MAINS TO BE DUCTILE IRON PIPE, CLASS 52, DOUBLE CEMENT LINED.
2. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF 4 DAYS NOTICE TO THE LICENSED PROFESSIONAL ENGINEER PRIOR TO ANY TESTING SO THAT THE LICENSED PROFESSIONAL ENGINEER CAN PROVIDE THE REQUIRED MINIMUM 48 HOUR NOTICE TO THE WESTCHESTER COUNTY DEPARTMENT OF HEALTH PRIOR TO ANY TESTING.
3. PRESSURE LEAKAGE TESTS SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF THE A.W.W.A. STANDARDS C600-10.
4. DISINFECTION AND BACTERIOLOGICAL TESTS SHALL BE PERFORMED IN ACCORDANCE WITH A.W.W.A. STANDARD C651-14, EXCEPT FOR SECTION 5.1.
5. THE MINIMUM WATER MAIN INSTALLATION DEPTH WILL BE AT LEAST FOUR (4'-0") FEET BELOW THE FINISHED GROUND SURFACE (MEASURED FROM THE TOP OF THE PIPE). THE MINIMUM REQUIRED SEPARATION BETWEEN WATER AND SANITARY SEWER / STORM DRAIN PIPING SHALL BE 10'-0" HORIZONTALLY AND 18" VERTICALLY. THIS SEPARATION REQUIREMENT IS ALSO APPLICABLE BETWEEN WATER MAINS AND SANITARY SEWER MANHOLES, STORM DRAIN MANHOLES, AND CATCH BASINS (TO THE MAXIMUM EXTENT PRACTICAL).

WATER MAIN NOTES

N.T.S. SOURCE: KIMLEY-HORN



NOTES:

1. SIMILAR INSTALLATION FOR CURB BOX OR SERVICE LINE. VALVE TO OPEN LEFT

TYPICAL VALVE INSTALLATION BOX

N.T.S. SOURCE: KIMLEY-HORN

SANITARY SEWER MAIN NOTES

1. ALL SANITARY SEWER MAIN PIPING SHALL BE 8" & 10" DUCTILE IRON, CLASS 52, GASKETED GRAVITY SEWER PIPE, AS SHOWN ON THE PLANS.
2. ALL INDIVIDUAL SEWER SERVICES SHALL BE 6 INCH D.I.P. PRESSURE CLASS 350 GASKETED GRAVITY SEWER PIPE UP TO 5 FEET OF THE BUILDING FOUNDATION. WITHIN 5 FEET OF THE BUILDING FOUNDATION THE SEWER SERVICE PIPE SHALL BE PER LOCAL BUILDING CODES. CLEANOUTS WILL BE REQUIRED AT ALL CHANGES IN DIRECTION AND EVERY 50 FEET.
3. SANITARY SEWER MANHOLES SHALL HAVE LETTERS "SEWER" CAST ON THE COVERS.
4. THE PRECAST STRUCTURE SHALL COMPLY WITH ASTM SPECIFICATION C-478. ALL NECESSARY PATCHING SHALL BE ACCOMPLISHED WITH NON-SHRINK CEMENT GROUT EQUAL TO "SIKA-SET" AS MANUFACTURED BY SIKA CHEMICAL COMPANY.
5. THE PROPOSED SEWER MAINS WILL BE INSTALLED AT MINIMUM 10 FEET HORIZONTALLY AND 18 INCHES VERTICALLY FROM ALL WATER MAINS.
6. ALL SEWER MANHOLES ARE TO BE CONSTRUCTED WITH COMPRESSION TYPE RESILIENT SEAL ASSEMBLY.
7. GASKETS OR COLLARS FOR SANITARY SEWER PIPE CONNECTIONS TO MANHOLES SHALL BE WATER TIGHT AND COMPATIBLE WITH THE TYPE OF PIPING BEING USED.
8. THE LENGTH OF SANITARY SEWER PIPES ENTERING OR LEAVING ANY MANHOLE SHALL BE GREATER THAN 2 FEET AND LESS THAN 6 FEET.
9. EXFILTRATION/INFILTRATION TESTS: LEAKAGE SHALL NOT EXCEED 100 GALLONS PER INCH OF PIPE DIAMETER PER MILE PER DAY. WATER TESTS SHALL BE PERFORMED UNDER A MINIMUM POSITIVE HEAD OF TWO (2) FEET [FIVE (5) FEET FOR WCDEF SEWERS]. LOW PRESSURE AIR TESTING IS PERMITTED FOR PIPE LINES AND SHOULD CONFORM TO ASTM C-828. VACUUM TESTING IS PERMITTED FOR MANHOLES, BUT IS NOT PERMISSIBLE FOR PIPELINES.
10. UPON COMPLETION AND PRIOR TO USE, TWO SETS OF AS-BUILT PLANS MUST BE SUBMITTED TO THE WCDOH TOGETHER WITH A NYS LICENSED PROFESSIONAL ENGINEER'S CERTIFICATION OF CONSTRUCTION AND ACCEPTABLE RESULTS OF AIR OR WATER TESTING OF THE SEWER PIPES AND MANHOLES. THE SURVEY SHALL BE SIGNED BY A LICENSED NYS SURVEYOR.
11. A MINIMUM OF 48 HOUR ADVANCED NOTIFICATION TO THE WCDOH IS REQUIRED FOR ANY LEAKAGE TESTING OF THE SEWER MAIN AND MANHOLES.
12. IN DEEPER UTILITY EXCAVATIONS NEAR THE ANTICIPATED GROUNDWATER TABLE ADDITIONAL CORROSION PROTECTION OF DUCTILE IRON PIPE WILL BE REQUIRED. THIS PROTECTION SHOULD CONSIST OF A POLYETHYLENE WRAP AROUND THE DUCTILE IRON PIPE. GROUNDWATER IS EXPECTED TO BE ENCOUNTERED AT OR BELOW APPROXIMATE EL. 6.0 BASED ON FIELD TESTING. THE GEOTECHNICAL ENGINEER WILL MAKE A FIELD DETERMINATION AS TO IF CORROSION PROTECTION IS WARRANTED BASED ON ACTUAL FIELD CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

ADDITIONAL NOTES:

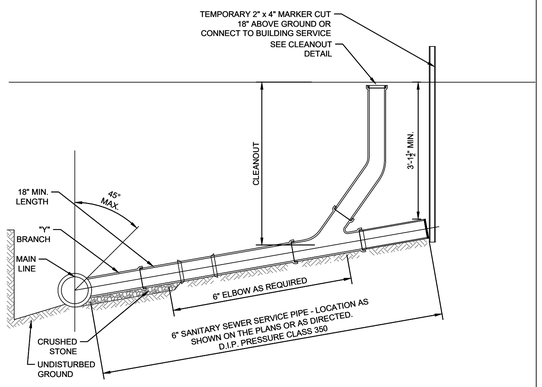
1. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF 4 DAYS NOTICE TO THE LICENSED PROFESSIONAL ENGINEER PRIOR TO ANY TESTING SO THAT THE LICENSED PROFESSIONAL ENGINEER CAN PROVIDE THE REQUIRED MINIMUM 48 HOUR NOTICE TO THE WESTCHESTER COUNTY DEPARTMENT OF HEALTH PRIOR TO ANY TESTING.
2. SANITARY SEWER PIPES SHALL BE AIR TESTED IN ACCORDANCE WITH ASTM C 828.
3. SANITARY SEWER MANHOLES SHALL BE AIR TESTED IN ACCORDANCE WITH ASTM C 1244.
4. THE MINIMUM SEWER INSTALLATION DEPTH SHALL BE AT LEAST 4 FEET BELOW THE FINISHED GROUND SURFACE (MEASURED FROM THE TOP OF THE PIPE). THE MINIMUM SEPARATION BETWEEN WATER MAIN AND SANITARY SEWER/STORM DRAIN PIPING SHALL BE 18 INCHES VERTICALLY AND 10 FEET HORIZONTALLY. SEPARATION IS ALSO APPLICABLE BETWEEN WATER MAINS AND SANITARY SEWER MANHOLES, STORM DRAIN MANHOLES AND CATCH BASINS.

SANITARY SEWER NOTES

N.T.S. SOURCE: KIMLEY-HORN

NOTES:

1. MINIMUM SLOPE OF LATERAL IS ¼" PER FOOT, EXCEPT WHERE NOTED OTHERWISE ON THE UTILITY PLAN.
2. MAXIMUM SLOPE OF LATERAL IS DETERMINED BY GRADES OF MAIN LINE AND HOUSE ELEVATION.
3. NO CHIMNEY TYPE CONSTRUCTION SHALL BE PERMITTED. LATERALS MUST REST ON UNDISTURBED GROUND.
4. CLEANOUTS TO BE INSTALLED EVERY 50 FEET OR WHERE SHOWN ON THE PLANS OR AS DIRECTED.
5. SEE CLEANOUT DETAIL FOR MORE INFORMATION.

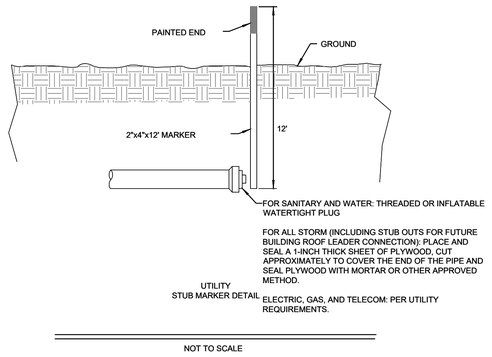


SANITARY SERVICE LINE

N.T.S. SOURCE: KIMLEY-HORN

NOTES:

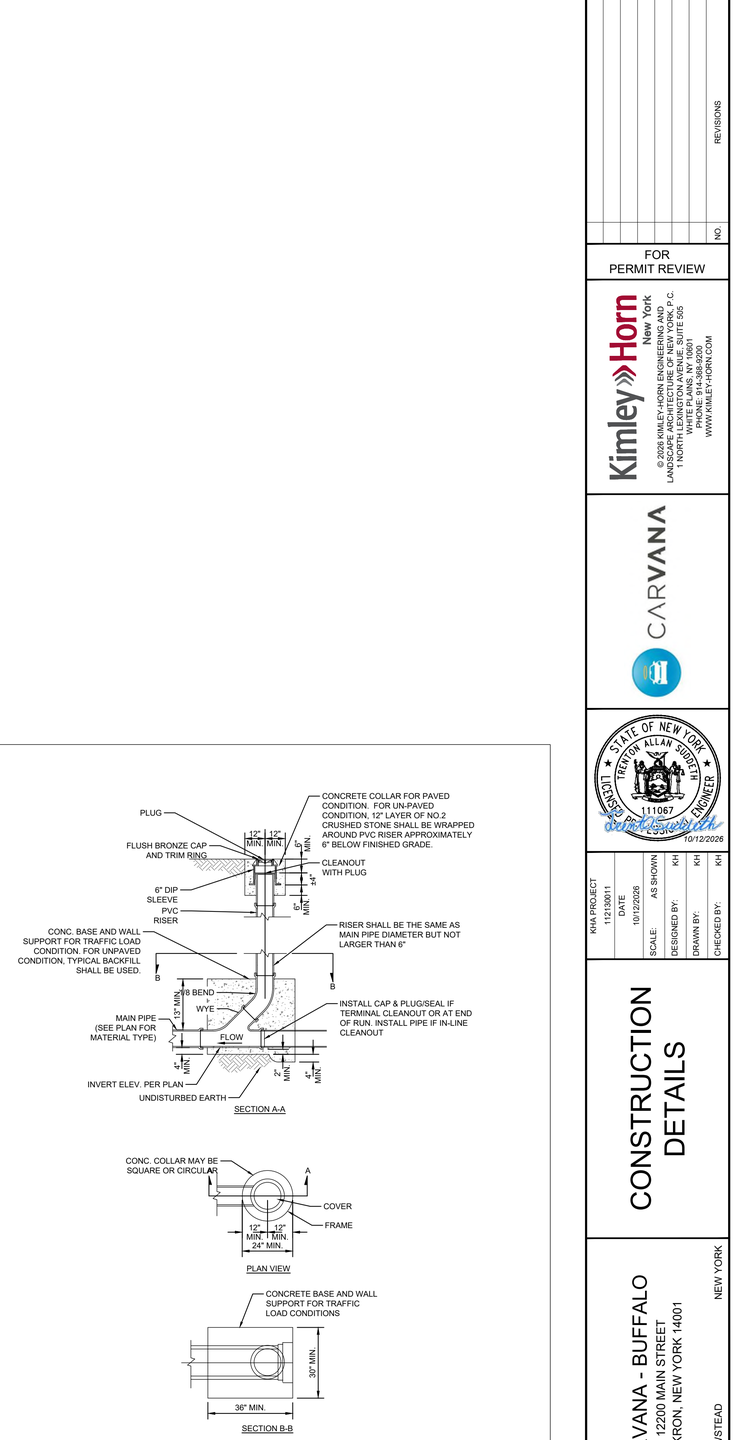
1. THE END OF ALL LATERALS SHALL BE PLUGGED WATERTIGHT AND MARKED BY A TWELVE (12) FOOT LONG 2X4 PIECE OF LUMBER. THE LENGTH SHALL BE EXACT SO THAT THE DEPTH OF THE LATERAL CAN BE DETERMINED BY THE LENGTH OF THE 2X4 PROTRUDING FROM THE SURFACE. SANITARY SERVICE SHALL HAVE GREEN PAINT, WATER BLUE PAINT, STORM RED PAINT ON THE END OF THE 2X4, AND "SAN, WATER, OR STM" STENCILED IN 2.5" LETTERS. THE 2X4 SHALL BE EVEN WITH THE INVERT AND PLUMB.
2. PIPES THAT ARE CAPPED SHALL REMAIN CAPPED UPSTREAM UNTIL FUTURE CONNECTION (TO THE BUILDING OR FUTURE PHASES) IS ESTABLISHED.



NOT TO SCALE

CAPPING OF FUTURE UTILITY AND STUB MARKER

N.T.S. SOURCE: KIMLEY-HORN



STORM AND SANITARY SEWER CLEANOUT (TYPICAL)

N.T.S. SOURCE: KIMLEY-HORN

NO.	REVISIONS	DATE	BY

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1 HOWITT LANE, SUITE 305
WHITE PLAINS, NY 10601
PHONE: 914-368-8200
WWW.KIMLEY-HORN.COM

CARVANA

STATE OF NEW YORK · TRENTON ALLAN SUDDETH · LICENSED PROFESSIONAL ENGINEER · 111067 · 10/12/2026

KHA PROJECT:	112130011
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CHECKED BY:	KH

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k:\whp_civil\112130011_carvana buffalo_newstead, ny\7. civil\2. cad\plansheets\L-1.0 LANDSACPE PLAN.dwg

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SCALE: 1" = 1,200'

PLANT SCHEDULE

SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE / TYPE
SEED MIX					
	X5C	213,441 sf 979.99 lbs	5311 Conservation Mix	Ernst Seeds	---
	RB	22,571 sf 20.73 lbs	Retention Basin Floor Mix – Low Maintenance	Ernst Seeds	---
	RB2	27,385 sf 12.57 lbs	Retention Basin Wildlife Mix	Ernst Seeds	---

NOTE: ALL AREAS CONVERTED FROM PAVEMENT OR GRAVEL TO SEEDED LAWN SHALL RECEIVE A MINIMUM OF 6 INCHES OF TOPSOIL AFTER REMOVAL OF EXISTING IMPERVIOUS MATERIALS AND AGGREGATE BASE

NORTH

GRAPHIC SCALE IN FEET
0 20 40 80

NO.	REVISIONS	DATE	BY

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1 NORTH LEXINGTON AVENUE, SUITE 505
WHITE PLAINS, NY 10601
PHONE: 914-368-9200
WWW.KIMLEY-HORN.COM

CARVANA

REGISTERED LANDSCAPE ARCHITECT MICHAEL JOSEPH BARNICLE 002653 STATE OF NEW YORK
10/12/2026

KHA PROJECT	112130011
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CHECKED BY:	KH

LANDSACPE PLAN

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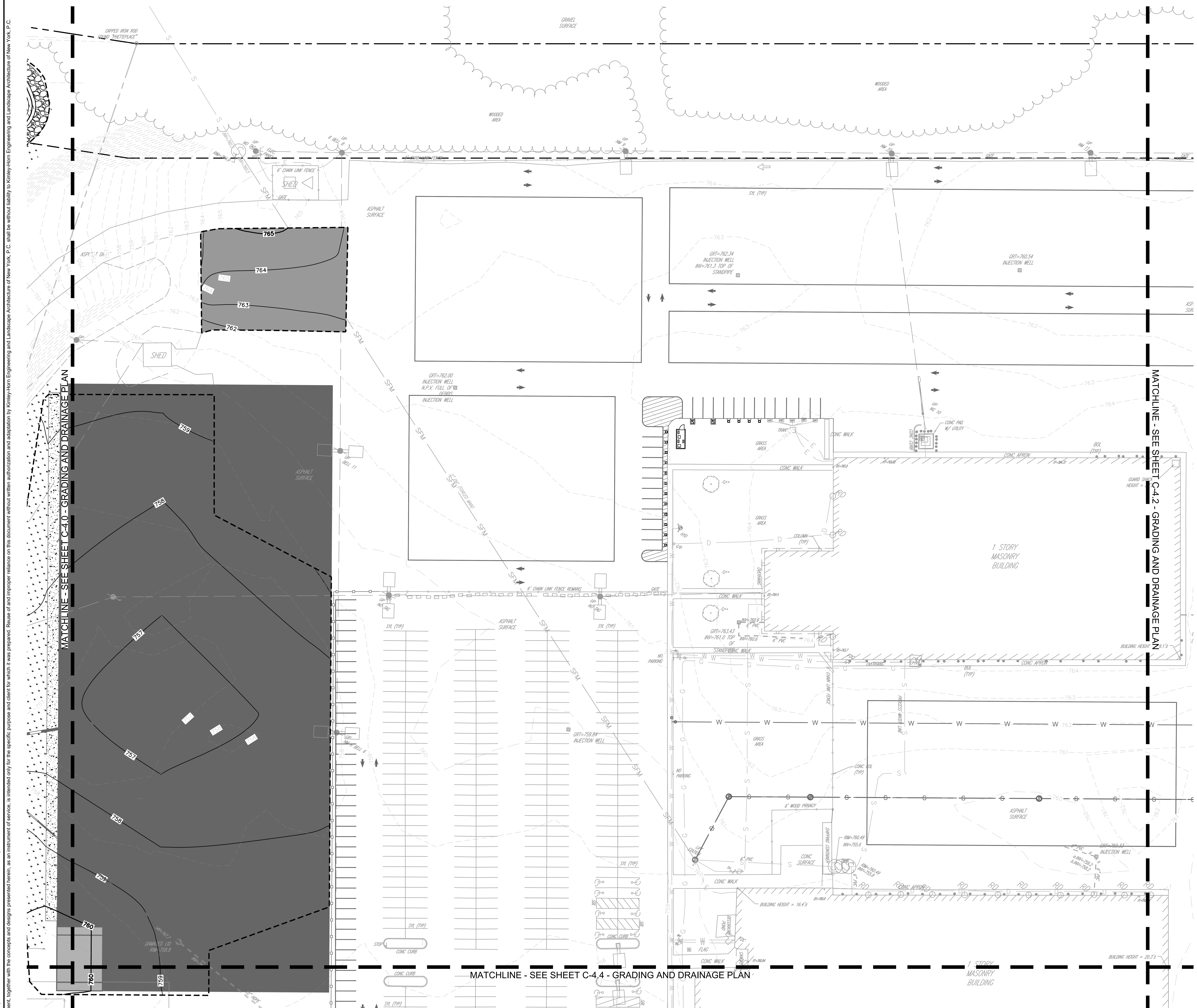



SCALE: 1" = 1,200'

PLANT SCHEDULE

SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE / TYPE
SEED MIX					
	X5C	213,441 sf 979.99 lbs	5311 Conservation Mix	Ernst Seeds	---
	RB	22,571 sf 20.73 lbs	Retention Basin Floor Mix – Low Maintenance	Ernst Seeds	---
	RB2	27,385 sf 12.57 lbs	Retention Basin Wildlife Mix	Ernst Seeds	---

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NORTH

GRAPHIC SCALE IN FEET
0 20 40 80

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WWW.KIMLEY-HORN.COM

CARVANA

REGISTERED LANDSCAPE ARCHITECT MICHAEL JOSEPH BARNICLE 002653 STATE OF NEW YORK
10/12/2026

KHA PROJECT	112130011
DATE	10/12/2026
SCALE:	AS SHOWN
DESIGNED BY:	KH
DRAWN BY:	KH
CHECKED BY:	KH

LANDSACPE PLAN

CARVANA - BUFFALO
12200 MAIN STREET
AKRON, NEW YORK 14001

TOWN OF NEWSTEAD NEW YORK

SHEET NUMBER
LA-1.1

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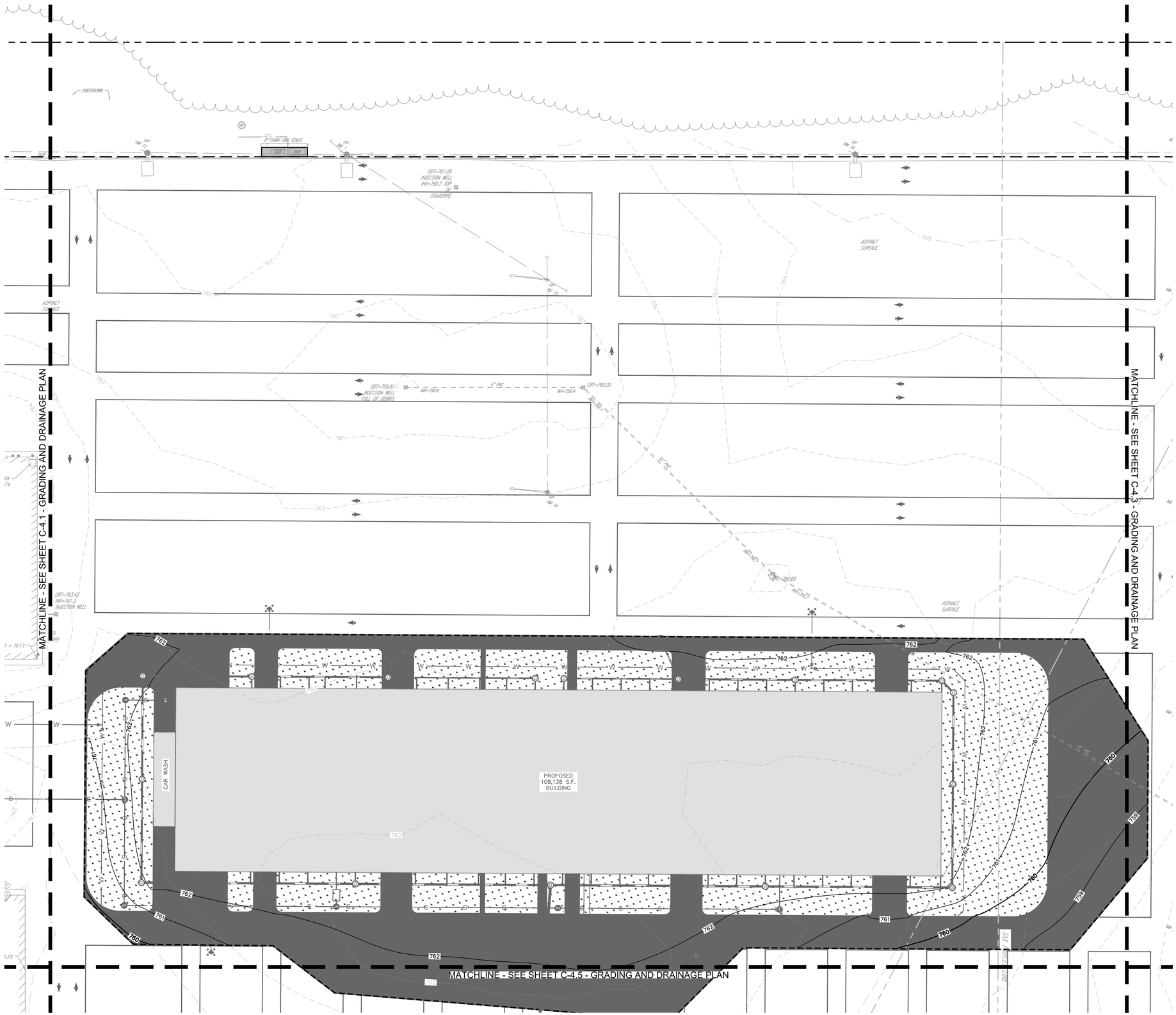



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WWW.KIMLEY-HORN.COM

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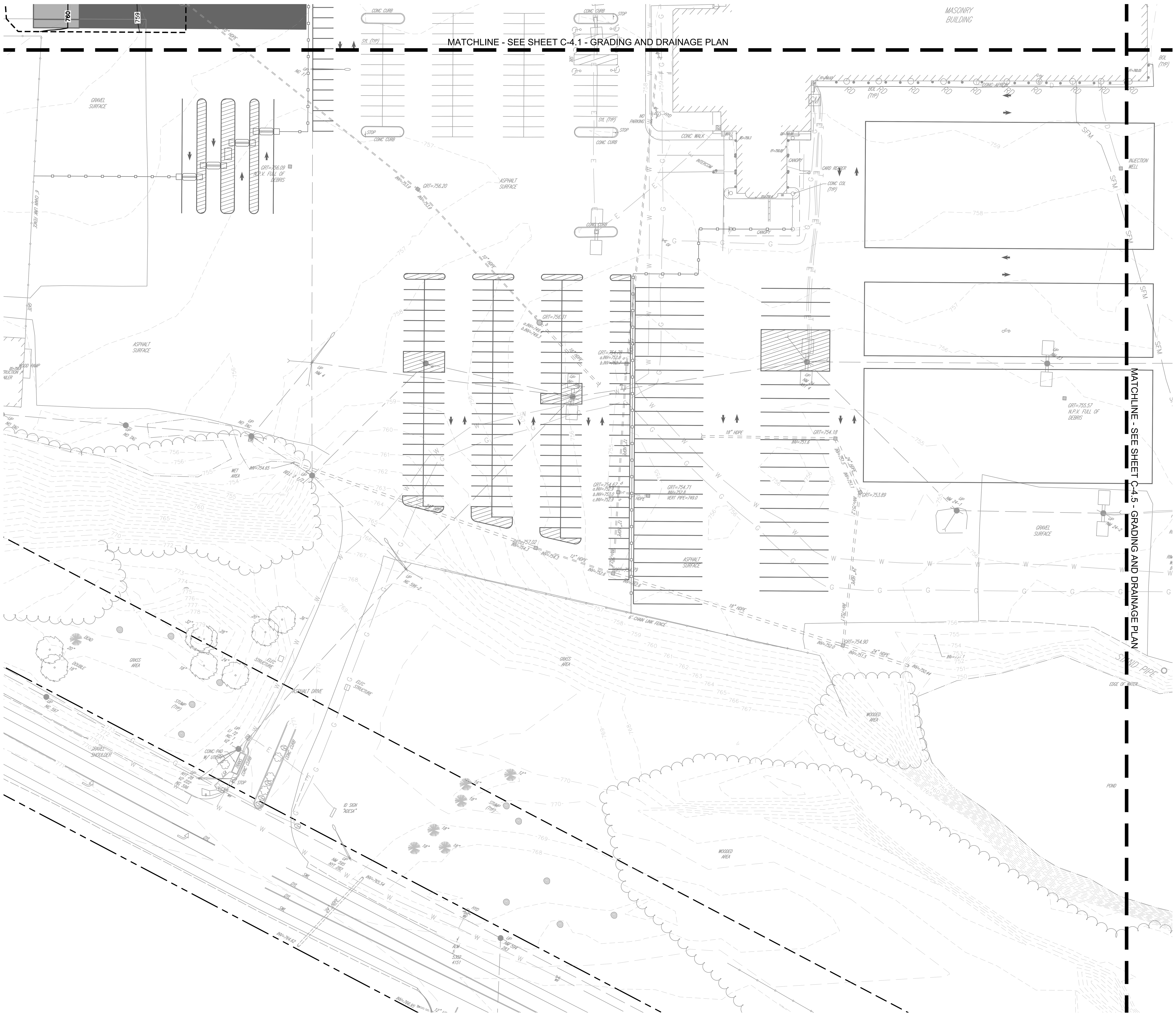

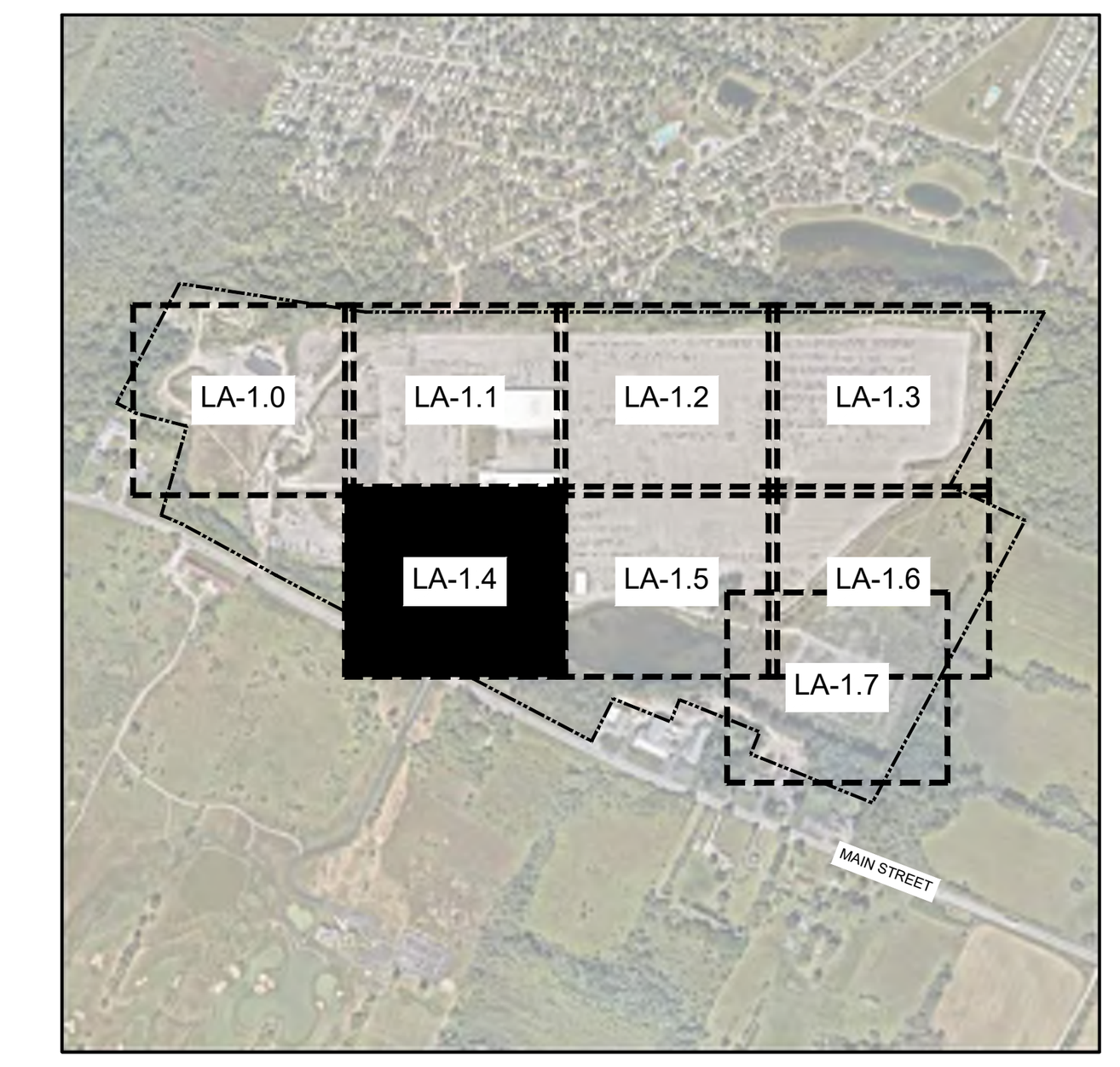

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MATCHLINE - SEE SHEET C-4.2 - GRADING AND DRAINAGE PLAN

MATCHLINE - SEE SHEET C-4.4 - GRADING AND DRAINAGE PLAN

MATCHLINE - SEE SHEET C-4.6 - GRADING AND DRAINAGE PLAN



SCALE: 1" = 1,200'

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NORTH

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0 20 40 80

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PHONE: 914-368-8200
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CARVANA

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MICHAEL JOSEPH BARTLETT
002653
STATE OF NEW YORK
10/12/2026

KHA PROJECT	112130011
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DESIGNED BY:	KH
DRAWN BY:	KH
CHECKED BY:	KH

LANDSACPE PLAN

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MATCHLINE - SEE SHEET C-4.3 - GRADING AND DRAINAGE PLAN

MATCHLINE - SEE SHEET C-4.5 - GRADING AND DRAINAGE PLAN



SCALE: 1" = 1,200'

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PROPOSED P-1
MICROPOOL
EXTENDED
DETENTION BASIN #1

NORTH

GRAPHIC SCALE IN FEET
0 20 40 80

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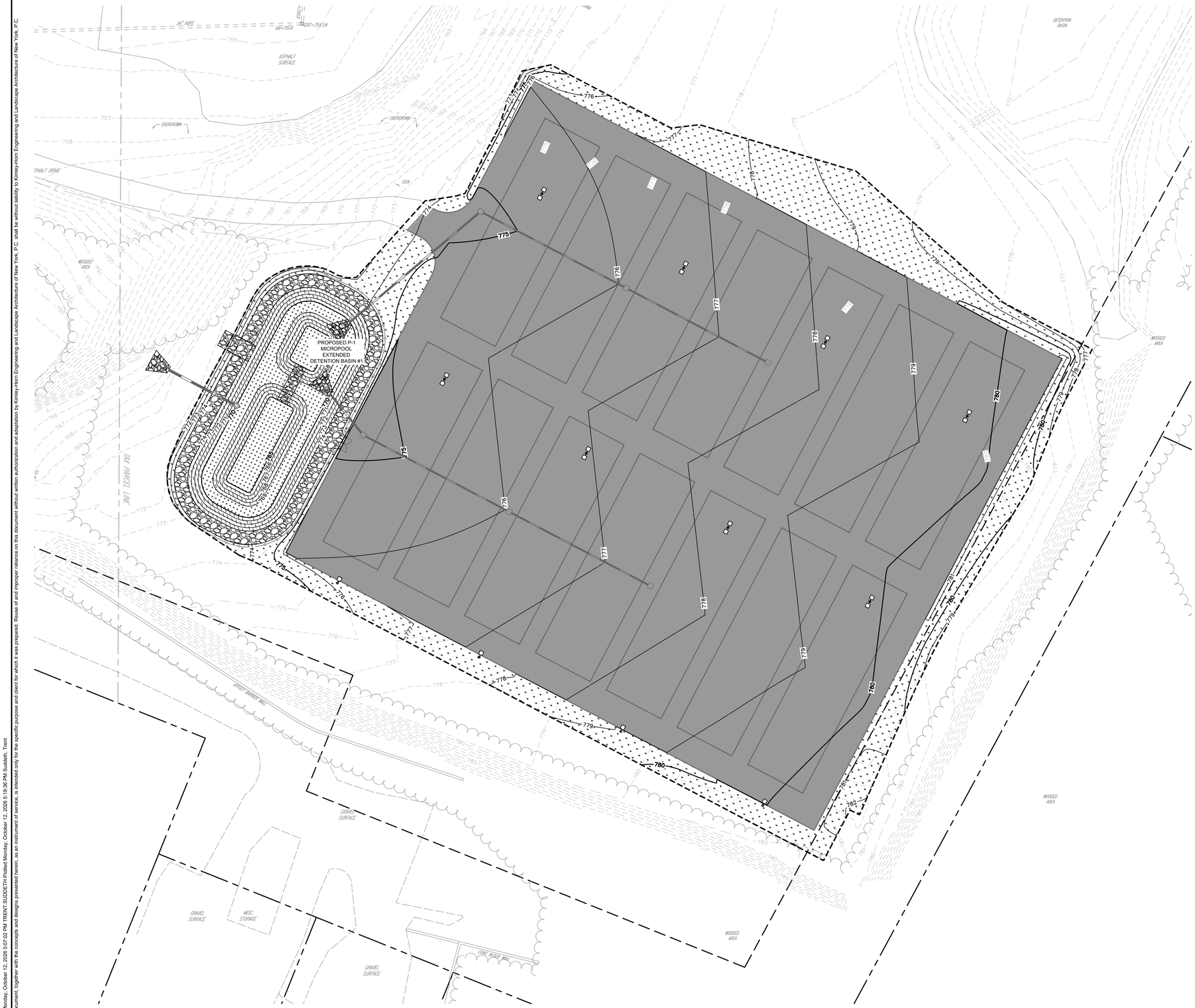



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CARVANA

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PERFORMANCE SPECIFICATION

I. PLANTS

A. General

1. Live healthy plants free of dead branches and parts
2. Free of disease, insect, injury and damage
3. Unbroken, intact, dense and solid rootballs and containers, without cracks, flat sides or previously repaired damage.
4. Free of girdling roots or rootbound/circling container conditions
5. Plants of consistent in growth habit and healthy character
6. Free of compromising growth conditions such as weak crotch connections, crossed branches, snags and scars
7. Point of origin growing location within 100 miles of project site
8. Graded, standards, caliper, sizes and stock consistent with *ANSI Z60.1, American Standard for Nursery Stock* most current edition
9. Species identified consistent with the most current editions of: *Hortus Third: Concise Dictionary of Plants Cultivated in the United States and Canada*, and *Manual of Woody Plants: Their Identification, Ornamental Characteristics, Culture, Propagation and Uses*
10. All disturbed areas shall be grass seed unless otherwise identified on landscape plans

B. Trees:

1. **Deciduous Single Trunk**
   a. Full, straight and upright with consistent symmetrical natural branching pattern throughout
   b. Branching Height-seven (7) feet to lowest branch in two years unless otherwise required by local jurisdiction
2. **Deciduous Multi-Trunk**
   a. Full and upright with straight consistent symmetrical natural branching pattern throughout
   b. Canes evenly spaced and of similar growth habit
   c. Free of suckers and extraneous branching
3. **Evergreen Single-Trunk**
   a. Full and upright with continuous symmetrical dense natural habit
   b. Clear branching height twelve (12) inches above top of football
   c. Free of suckers and extraneous branching
   d. Do not shear or otherwise prune to shape plantings

C. Evergreen and Deciduous Shrubs

1. Full, dense and naturally symmetrical.
2. Consistent with container and/or balled and burlapped size
3. Free of suckers and extraneous branching
4. Do not shear or otherwise prune or shape plantings

D. Evergreen and Deciduous Groundcover

1. Full and dense in pots or flats

E. Perennials and Seasonal Color

1. Full and dense in pots or flats

F. Turf Grass

1. **Subgrade**
   a. Soil Mix-10% Compost, 90% topsoil by volume
   b. Preparation-loosen subgrade to a minimum depth of four (4) inches. Remove all non-natural materials including litter, stones, sticks and all items greater than ¾ inch in any dimension
   c. Preparation-spread soil mix at a depth of four (4) inches continuously to meet grade elevations shown on drawings. Allow for thickness of sod when applicable
2. **Grass Sod**
   a. Install not longer than twenty-four (24) hours from harvest
   b. Grass bed not less than two (2) inches in continuous thickness
   c. 100% continuous live sod coverage after first growing season and at end of warranty period.
   d. Of uniform non-varying density and continuous texture quality capable of growth and development immediately upon installation. Weed and noxious plant free
   e. Stagger installation rows and place aligned parallel to contours
   f. Fill joints solidly with planting bed preparation soil
   g. Provide anchor pins at twenty-four (24) inches on center for slopes greater than 4:1
3. **Grass Seed**
   a. Mix approved by the Landscape Architect
   b. Provide first and new of year seed crops in mix free of weed seeds and deleterious matter
   c. Provide seed mix not greater than 15% annual or perennial rye
   d. Coverage 85% continuous coverage live stand after first growing season and at end of warranty
   e. Replacement or overseeding mixes consistent with original application/installation
   f. Provide erosion blankets or other slope retention methods as noted on drawings

II. Materials and Appurtenances

A. Testing

1. Materials testing information/certificates/dated labels shall be current to the project and performed/certified not greater than 120 calendar previous days from current date of submittal for review

B. Top Soil

1. Neutral Ph balance 5.5 -7.5. Friable and containing 2.0-5.0% organic matter by dry weight. Continuously free of non-soil items such as stones, debris, sticks, trash, and deleterious matter greater than ¾ inch in any direction. Clay content shall not exceed 25%.Gravel content shall not exceed 10%. Silt shall not exceed 25%

C. Use of Existing Topsoil

1. Existing topsoil on-site may be repurposed with prior Owner approval. Contractor shall provide soil testing and additive program that demonstrates consistent performance and characteristics and composition as identified herein. Owner shall approve soil testing and soil amendment/additive methods and procedures

D. Shredded Hardwood Mulch

1. 100% organic shredded first year hardwood free of deleterious matter, rock, gravel and weed seed. Neutral Ph balance 5.5-7.5

E. Compost Ph

1. Balanced 5.0-8.5 mature, stable and weed free produced by natural aerobic decomposition. Free of visible contaminants and toxic substances. Not greater than 5% sand, silt, clay or rock by dry weight. Consistent with US-EPA CFR Title 40 Part 503 Standards for Class A biosolids

G. Compost Testing

1. Prior to delivery on-site, the following items are required for approval by Owner: Feedstock percentage in final compost product; statement that the products meets federal, state and local health safety requirements
2. Provide copy of lab analysis less than 120 calendar days old verifying that the product meets described physical requirements; chemical contaminants; Ph; physical contaminants; biological contaminants (including a statement that fecal coliform and salmonella testing and results comply with requirements of the US Composting Council Seal of Testing approval programs

H. Planting Mix

1. 85% topsoil and 15% Compost

I. Fertilizer

1. Granular 10% nitrogen, 6% Phosphorous, 4% Potassium granular form with 50% Nitrogen in organic form. Product and Material Safety Data as approved by Owner

J. Herbicide

1. Product and Material Safety Data as approved by Owner

K. Water

1. Potable only unless otherwise approved by Owner

L. Hardwood Stakes

1. 2 x 2 x 48 inch square of sound hardwood, painted flat black on all sides

M. Tree Ties

1. Villa Non-Abrasive Rubber Tree Ties or approved equal

N. Filter Fabric

1. Mirafi 140-N or approved equal

O. Steel Edging

1. 1/8-inch x 4-inch in full sections. Ryerson, Timec or approved equal with integral stakes. No open corners. Corners shall be formed and trued to compliant angle or welded closed

P. River Stone

1. Locally sourced, river rounded, unfaceted river stone/cobbles.
2. Size shall not exceed 3 total inches in any dimension.
3. Color and texture approved by Owner
4. When placed in concrete or mortar setting bed, tamp to secure and brush clear joints.
5. Concrete or mortar as approved by owner.

III. Execution

A. Site Conditions

1. Inspect site and notify Owner in writing of acceptance with indication that project conditions are acceptable are suitable to proceed with work. Notify Owner of any existing damage and/or other conflicting conditions.
2. Do not proceed with work until unsatisfactory conditions have been satisfactorily remedied. Notify Owner of acceptance prior to commencement of work.
3. Notify Owner in writing of any conditions that may preclude successful completion of work including items such as coordination with other trades, incomplete work, drainage, soil temperature and/or composition, access to storage/work areas, damage to conditions, etc.
4. Notify Owner in writing immediately of any items that may influence work schedule, timing of tasks, materials delivery and/or installation and warranty responsibilities.
5. Coordinate and cooperate with other trades working in and adjacent to work areas. Examine drawings of other trades which show development of the entire project and become familiar with the scope of required work by others.

B. Planting Seasons

Recommended seasons are a general guide based on historical climatic data and typical performance of plantings, and which vary dependent on project-specific environmental conditions. Due to construction schedules, recommended planting seasons may/may not coincide with request(s) for certificate of occupancy for projects. Coordination of planting installation and seasons shall be reviewed with Owner on an individual project basis.

1. **Deciduous and Evergreen Trees**

Do not install/plant the following trees between September 15 and March 15
1. Oaks (Quercus Sp., Such as Q. rubra, Q. alba, Q. phellos, Q. coccinnea)
2. Dogwood (Cornus Sp.)
3. Sweetgum (Liquidambar Sp.)
4. All Conifers and Evergreens except White Pine (Pinus strobus Sp.)

2. **Deciduous and Evergreen Shrubs**
   a. Install/plant between March 15 and June 15 and/or September 15 and November 30
3. **Perennials**
   a. Install/plant between March 15 and June 15 and/or September 15 and November 30
4. **Spring Flowering Bulbs**
   a. Install/plant between September 15 and December 15
5. **Seasonal Annuals**
   a. Install/plant in season per approved schedule
6. **Turf Grass**
   a. Install/plant between March 15 and May 15 and/or September 15 and November 30
   b. Do not install/plant seed or sod turf grass areas when ambient air temperature is below forty (40) degrees Fahrenheit, or forecast for a twelve (12) hour period after completion of work
7. **No Plant Installation**
   a. Do not install plantings or turf grass between June 15 and September 15, without approval by Owner

C. Positioning & Location of Plantings

1. Position plants to show the most-prominent and well-formed face to most-public view
2. Field locate plants and location/spacing/dimension of planting beds on project site prior to beginning installation
3. Verify location of individual plants and plant beds prior to beginning installation. Do not proceed without Owner approval

D. Implementation

1. Pursue work continuously without delay or interruption until completion unless notified otherwise by Owner
2. Provide project submittals ahead of commencement of work. Landscape Architect requires a minimum of ten (10) working days from date of receipt for review of submittals and response to Owner and Contractor. Plan accordingly for procurement of materials
3. Continuously update implementation schedule and notify Owner of progress. Delays related to material availability are not cause for non-completion of scheduled delivery of work.
4. Report delays due to weather or site conditions immediately upon finding. Provide recommendation for remedy of schedule delays. Do not work, place or modify frozen soil
5. Report delays due to extraordinary natural or other conditions beyond control of Contractor

E. Clean Up

1. Remove trash, debris and work materials from site prior to request for substantial completion. Thoroughly clean surfaces impacted by work including building, parking areas, roadways, sidewalks, signs, lights, site furnishings, etc.
2. Repair any damage to existing conditions that occurred during execution of work.
3. All clean-up and demobilization procedures shall be performed to satisfaction of the Owner and Landscape Architect.

F. **Maintenance of Planted Areas**

A. The Subcontractor's responsibility for maintenance is to be continuous to at least the time of substantial completion and/or the final acceptance of the work (whichever is later). The Subcontractor shall maintain all planted areas for a minimum of 90 days.
1. The Subcontractor is responsible for checking the planted areas before watering to avoid excessive moisture content in soil.
2. Refilling of rain-washed gullies and rutted areas.
3. Weeding, cultivating, control of insects. fungus and other diseases by means of spraying with an all-purpose insecticide and fungicide as specified herein.
4. Pruning, adjustment and repair of stakes, anchors and wire.
5. Removal of weeds within the mulched area around each tree as often as required. Under no circumstances are weeds to be allowed to attain more than 6 inches of growth. The cost of maintenance is to be included in the Contract Price.
6. All seeded areas shall be mechanically planted. Broadcast seeding is prohibited unless the seed is incorporated into the soil by a mechanical method such as Cultipacker or an equivalent method that insures the seed makes full contact with the prepared seed bed. Once the seed has been planted, a weed free, natural straw mulch product shall spread uniformly over the seeded area and the mulch product shall be anchored to the seedbed to resist wind and stormwater erosion. The mulch product must be anchored by crimping or hydro mulch. Hydro mulch alone, without straw, is not acceptable.

G. **Substantial Completion**

1. The Subcontractor shall submit for Construction Manager's use, a proposed maintenance schedule specifying men, materials, and equipment required to comply with maintenance provisions. The proposed maintenance shall commence immediately after the date of final acceptance.

H. **Maintenance of Lawn Work**

1.1 General Maintenance

1. Maintenance shall begin immediately after each portion of lawn is installed.
Maintenance shall include watering, re-sodding & reseeding, repair of ruts and erosion, repair of protective devices, weeding, fertilizing, cutting and the repeating of any or all phases of lawn work construction specified herein and that may be required to obtain a uniform, thick, and well developed stand of grass.
Lawn work shall be maintained on daily basis, weekends and holidays excluded, except as otherwise required herein, until acceptance for Substantial Completion of Project Contract work as determined by Owner.

1.2 Protection

1. All newly sodded and seeded grass areas shall be continuously protected from being disturbed. Erect and maintain temporary protect barriers such as 4'-0' high "snow fence" and appropriate signage. Remove temporary protections at Substantial Completion.

1.3 Watering

1. The Contractor shall provide all labor and arrange for all watering necessary for establishment of lawn areas. In the absence of adequate rainfall, watering shall be performed daily or as often as necessary and in sufficient quantities to continuously maintain moist (not soaked) soil to a depth of at least four inches (4").
2. Once the sod and seed have been established, the frequency of waterings can be reduced while increasing the duration of each watering as approved by Owner.

1.4 Mowing of Sodded and Seeded Grass Areas

1. The first mowing shall not be attempted until the sod and seed are firmly rooted, secure in place, and areas are fully established. Not more than1/3 of the grass leaf shall be removed by the initial cutting or subsequent cuttings.
2. Grass height shall be maintained between 2 ½" and 3.
3. All lawn cutting shall be done with a reel-type mower.

1.5 Repairs and Replacements

1. After the grass has been established, all areas which fail to show a uniformly thick and well developed stand of grass and all scattered base or dead spots, for any reason whatsoever, shall be re-sodded repeatedly until all areas are covered with a satisfactory growth of grass.
2. Lawn areas shall show no joints or dead at time Substantial Completion as determined by Owner and shall be anchored to the underlying planting soil bed with vigorous, healthy root growth.
3. Prior to Substantial Completion, damage resulting from erosion, gullies, washouts, deleterious effects caused by maintenance procedures, damage due to lack of adequate protection, or other causes shall be repaired by filling with planting soil, tamping, re-fertilizing and re-sodding to meet the requirements specified at no additional cost to Owner.

GENERAL NOTES

1. Plants shall be healthy, vigorous material, free of pests and diseases and are subject to approval/rejection of the Landscape Architect prior to, during and after installation.
2. Contractor shall identify all materials at growing location prior to purchase and submit digital photographs, and source list to the Landscape Architect for approval at a minimum of six (6) calendar weeks prior to installation. Plants not approved shall be resourced and resubmitted.
3. Planting beds and individual tree plantings shall be mulched continuously as specified.
4. Prior to construction the contractor shall be responsible for locating underground utilities and execute work in a manner that avoids damage to utilities during the course of work. Contractor shall be responsible or remedy of any damage to utilities, structures, site appurtenances that occur as a result of landscape related work.
5. Contractor is responsible for verifying quantities shown on documents. Field adjustments shall be approved by Landscape Architect prior to installation. Quantities indicated on drawings are for reference. It is the Contractor's responsibility to ensure full coverage of plants at the indicated spacing.
6. Contractor is responsible for maintenance of all plantings including, but not limited to watering, mowing, edging, spraying, mulching, fertilizing, of plantings and turf areas for one (1) calendar year from date of certificate of occupancy. Contractor is responsible for warranty of all plant material for a period of one (1) calendar year from date of certificate of occupancy. Warranty replacement planting shall meet or exceed the original specification identified on drawings. Replacement planting shall extend the same warranty as originally installed materials. Plantings and grass areas shall be flourishing and fully thriving at end of warranty period.
7. Plants identified for replacement by Owner, Landscape Architect shall be replaced immediately by the Contractor unless otherwise agreed upon. Plantings (trees, shrubs, groundcover) subject to replacement by warranty shall exhibit characteristics of 30% dead-per individual plant, non-contributing or disease compromised. Grass areas suitable for acceptance shall demonstrate 85% sustained/consistent and continuous, densely established coverage. Contractor shall perform a site review at end of warranty period and provide the Owner with written documentation of the site, including plant health, warranty replacement items, and conditions that may be influencing plant health. Contractor shall remove from plants and site, all staking and guying material at end of warranty period.
8. Contractor shall comply with all local, state and federal requirements, codes and regulations related to the work undertaken.
9. All material including planting operation appurtenances shall be of domestic origin manufacture and sourced within 100 miles of the project site.
10. Contractor is responsible for coordination among trades operating on site. Coordination and if necessary resulting modifications to schedules are responsibility of the Contractor.

ERNMX-114 5311 Conservation Mix

Scientific Name	Common Name	Mature Height	Seeding Rate	Total Seeding Acreage	LBS seed per species.	Total LBS seed
Festuca rubra	Creeping Red Fescue	1-3 ft	150lb/ac	4.9 a.c.	220.50 lb	735 lb
Poa pratensis, 'Argyle'	Kentucky Bluegrass, 'Argyle'	1-2.5 ft			183.75 lb	
Poa pratensis, 'Baron'	Kentucky Bluegrass, 'Baron'	1-2.5 ft			183.75 lb	
Lolium perenne, 'Blackhawk'	Perennial Ryegrass, 'Blackhawk' (turf type)	1-3 ft			73.50 lb.	
Lolium multiflorum	Annual Ryegrass	2-4 ft			73.50 lb.	

ERNMX-126 Retention Basin Floor Mix

Scientific Name	Common Name	Mature Height	Seeding Rate	Total Seeding Acreage	LBS seed per species.	Total LBS seed
Panicum clandestinum, Tioga	Deertongue, Tioga	1-3 ft	30 lb/ac	0.52 ac	3.10 lb	15.55 lb
Puccinellia distans, Fults	Alkaligrass, Fults	4-24 in			3.10 lb	
Elymus virginicus, Madison-NY Ecotype	Virginia Wildrye, Madison-NY Ecotype	2-4 ft			2.80 lb	
Agrostis stolonifera, 'PC 2.0'	Creeping Bentgrass, 'PC 2.0	6-24 in			2. 24 lb	
Poa palustris	Fowl Bluegrass	2-4 ft			1.55 lb	
Carex vulpinoidea, PA Ecotype	Fox Sedge, PA Ecotype	2-3 ft			0.16 lb	
Juncus effusus	Soft Rush	2-4 ft			0.16 lb	
Carex lurida, PA Ecotype	Lurid Sedge, PA Ecotype	1.5- 3 ft			0.08 lb	
Panicum rigidulum, PA Ecotype	Redtop Panicgrass, PA Ecotype	3-5 ft			0.08 lb	

ERNMX-127 Retention Basin Wildlife Mix

Scientific Name	Common Name	Mature Height	Seeding Rate	Total Seeding Acreage	LBS seed per species.	Total LBS seed
Panicum clandestinum, Tioga	Deertongue, Tioga	2-4 ft	20 lb/ ac	0.63 ac	3.78 lb	12.60 lb
Carex vulpinoidea, PA Ecotype	Fox Sedge, PA Ecotype	2-3 ft			3.78 lb	
Elymus virginicus, Madison-NY Ecotype	Virginia Wildrye, Madison-NY Ecotype	2-4 ft			2. 52 lb	
Panicum rigidulum, PA Ecotype	Redtop Panicgrass, PA Ecotype	3-5 ft			1. 35 lb	
Carex scoparia, PA Ecotype	Blunt Broom Sedge, PA Ecotype	2-4 ft			0.44 lb	
Heliopsis helianthoides, PA Ecotype	Oxeye Sunflower, PA Ecotype	3-5 ft			0.20 lb	
Juncus effusus	Soft Rush	2-4 ft			0.20 lb	
Verbena hastata, PA Ecotype	Blue Vervain, PA Ecotype	3-6 ft			0.13 lb	
Scirpus cyperinus, PA Ecotype	Wbolgrass, PA Ecotype	4-7 ft			0.063 lb	
Agrostis perennans, Albany Pine Bush-NY Ecotype	Autumn Bentgrass, Albany Pine Bush-NY Ecotype	2-4 ft			0.063 lb	
Asclepias incarnata, PA Ecotype	Swamp Milkweed, PA Ecotype	3-5 ft			0.063 lb	
Aster pilosus, PA Ecotype	Heath Aster, PA Ecotype	2-4 ft			0.013 lb	
Lobelia siphilitica, PA Ecotype	Great Blue Lobelia, PA Ecotype	2-4 ft			0.013 lb	
Mimulus ringens, PA Ecotype	Square Stemmed Monkeyflower, PA Ecotype	2-4 ft			0.013 lb	

UPDATED 04.03.2026

PLANT SCHEDULE

SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE / TYPE
SEED MIX					
	X5C	213,441 sf 979.99 lbs	5311 Conservation Mix	Ernst Seeds	---
	RB	22,571 sf 20.73 lbs	Retention Basin Floor Mix – Low Maintenance	Ernst Seeds	---
	RB2	27,385 sf 12.57 lbs	Retention Basin Wildlife Mix	Ernst Seeds	---

NOTE: ALL AREAS CONVERTED FROM PAVEMENT OR GRAVEL TO SEEDED LAWN SHALL RECEIVE A MINIMUM OF 6 INCHES OF TOPSOIL AFTER REMOVAL OF EXISTING IMPERVIOUS MATERIALS AND AGGREGATE BASE

NO.	REVISIONS	DATE	BY

FOR PERMIT REVIEW

Kimley»Horn
New York
© 2026 KIMLEY-HORN ENGINEERING AND LANDSCAPE ARCHITECTURE OF NEW YORK, P.C.
1 HORNBLOWER WAY, SUITE 505
WHITE PLAINS, NY 10601
PHONE: 914-368-8200
WWW.KIMLEY-HORN.COM

CARVANA

REGISTERED LANDSCAPE ARCHITECT MICHAEL JOSEPH BALTER 002653 STATE OF NEW YORK
10/12/2026

KHA PROJECT	112130011	SCALE:	AS SHOWN	DESIGNED BY:	KH
DATE	10/12/2026			DRAWN BY:	KH
				CHECKED BY:	KH

LANDSCAPE NOTES

CARVANA - BUFFALO
12200 MAIN STREET
AKRON, NEW YORK 14001
TOWN OF NEWSTEAD NEW YORK

SHEET NUMBER
LA-1.8

Saved Monday, October 12, 2026 4:19:37 PM TRENT SUDDETH Plotted Monday, October 12, 2026 5:20:01 PM Suddeth, Trent
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LIGHTING LEGEND

SYMBOL	TYPE	MODEL NUMBER	MOUNTING HEIGHT	MOUNTING TYPE	DESCRIPTION
□⊕□	PARKING LIGHTS	DSX1-LED-P9-30K-70CRI-TFTM-HS	30'	POLE MOUNTED	DOUBLE AT 180°
⊕□	PARKING LIGHTS	DSX1-LED-P9-30K-70CRI-TFTM-HS	30'	POLE MOUNTED	SINGLE

DESIGN CRITERIA

PARKING LOT REGION

ILLUMINANCE (Fc)

MINIMUM = 0.50 MAX/MIN = 15:1

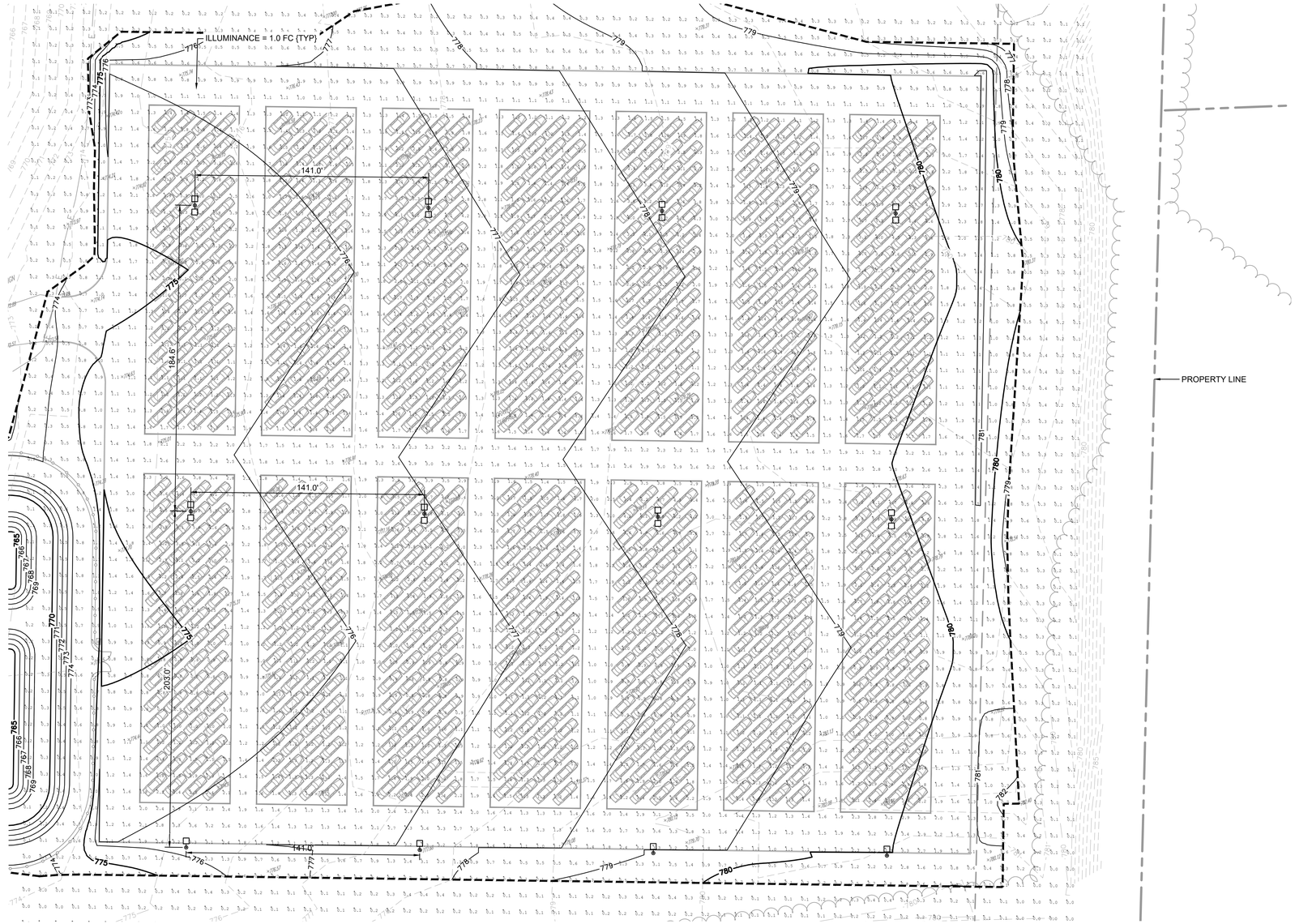
*IES RP-8-18 CHAPTER 17 TABLE 17-2

CALCULATION SUMMARY

PARKING LOT REGION

ILLUMINANCE (Fc)

MINIMUM = 0.8 MAX/MIN = 8.5:1



A PARKING LOT PHOTOMETRIC LAYOUT

NORTH

GRAPHIC SCALE IN FEET
0 17.5 35 70



SCALE: 1" = 1,200'

LIGHTING ANALYSIS NOTES

1. LIGHT SPACING SHOWN MEET FOOT CANDLE VALUES IN DESIGN CRITERIA. EXACT LAYOUT OF WIP AREA LIGHT FIXTURES ARE DEPENDENT ON CIVIL SITE STRIPING LAYOUT AND CIVIL SITE COORDINATION.
2. ALL WORK AND MATERIALS SHALL COMPLY WITH ALL CITY/COUNTY/STATE REGULATION AND CODES.
3. ALL PHOTOMETRIC VALUES SHOWN ON SITE PLAN IN TABLES ARE IN FOOTCANDLES (FC). 1 FC = 10.76 LUX.
4. CALCULATED VALUES ARE DERIVED THROUGH A COMPUTER BASED MODEL WITH LIGHT FIXTURE DATA AS SUPPLIED BY MANUFACTURER THROUGH IES FILES.
5. ANY DEVIATION FROM SPECIFIED FIXTURE MODELS AND MOUNTING HEIGHTS IN THIS EXHIBIT WILL DISCOUNT THE VALIDITY OF THESE CALCULATIONS.
6. THE PHOTOMETRIC ANALYSIS EXCLUDES ALL EXISTING PROPOSED OFF SITE STREET LIGHTING AND LANDSCAPE LIGHTING.
7. ALL LUMINARIE SYMBOLS ARE DIAGRAMMATIC ONLY. CONTRACTOR TO FIELD COORDINATE EXACT LOCATIONS AND SETBACKS AGAINST UNDERGROUND UTILITY AND OTHER OBSTRUCTIONS.
8. ALL SIGHT LIGHTING POLES TO BE AT MOUNTING HEIGHT OF 30'.
9. ALL PROPOSED LUMINARIES SHALL BE DARK SKY COMPLIANT AND SHALL HAVE A CORRELATED COLOR TEMPERATURE (CCT) OF 3000K OR LOWER. LUMINARIES SHALL BE DESIGNED AND INSTALLED TO MINIMIZE UPLIGHT, GLARE, AND LIGHT TRESPASS IN ACCORDANCE WITH APPLICABLE LOCAL ORDINANCES.
10. REFER TO ARCHITECTURAL PLANS FOR NEW BUILDING LIGHTING

NO.	REVISIONS	DATE	BY

FOR PERMIT REVIEW

Kimley»Horn
New York
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1 HORIZON ROAD, FAIRFIELD, NJ 07004 SUITE 505
WHITE PLAINS, NY 10601
PHONE: 914-368-8200
WWW.KIMLEY-HORN.COM

CARVANA

10/12/2026

KHA PROJECT:	112130011
DATE:	10/12/2026
SCALE:	AS SHOWN
DESIGNED BY:	KH
DRAWN BY:	KH
CHECKED BY:	KH

LIGHTING PLAN

CARVANA - BUFFALO
12200 MAIN STREET
AKRON, NEW YORK 14001
TOWN OF NEWSTEAD NEW YORK

SHEET NUMBER
LT-1.0

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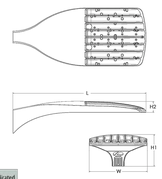
D-Series Size 1
LED Area Luminaire

d^series

Specifications

EPA:	0.69 ft² (0.06 m²)
Length:	32.71" (83.1 cm)
Width:	14.26" (36.2 cm)
Height H1:	7.88" (20.0 cm)
Height H2:	2.73" (6.9 cm)
Weight:	34 lbs (15.4 kg)



Design Select options indicated by this color background.

Catalog Number

Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

Introduction

The modern styling of the D-Series features a highly refined aesthetic that blends seamlessly with its environment. The D-Series offers the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire.

The photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. D-Series outstanding photometry aids in reducing the number of poles required in area lighting applications with typical energy savings of 65% and expected service life of over 100,000 hours.

design select

Items marked by a shaded background qualify for the Design Select program and ship in 15 days or less. To learn more about Design Select, visit www.acuitybrands.com/designselect.
*See ordering tree for details

Ordering Information

EXAMPLE: DSX1 LED P7 40K 70CRI T3M MVOLT SPA NLTAIR2 PIRHN DDBXD

DSX1 LED

Series	LEDs	Color temperature	Color Rendering Index	Distribution		Voltage	Mounting
DSX1 LED	**Forward optics** (this section 70CRI only) P1 P6 P2 P7 P3 P8 P4 P9 P5 **Rotated optics** P10[1] P12[1] P11[1] P13[1]	30K 3000K 40K 4000K 50K 5000K 27K 2700K 30K 3000K 35K 3500K 40K 4000K 50K 5000K	70CRI 70CRI 70CRI 80CRI 80CRI 80CRI 80CRI 80CRI	AFR Automotive front row T1S Type I short T2M Type II medium T3M Type III medium T3LG Type III low glare[1] T4M Type IV medium T4LG Type IV low glare[1] TFTM Forward throw medium	T5M Type V medium T5LG Type V low glare T5W Type V wide BLC3 Type III backlight control[1] BLC4 Type IV backlight control[1] LCCO Left corner cutoff[1] RCCO Right corner cutoff[1]	MVOLT (120V-277V)[2,3] HVOLT (347V-480V)[2,4] XVOLT (277V - 480V)[2,5]	**Shipped included** SPA Square pole mounting (#8 drilling) RPA Round pole mounting (#8 drilling) SPA5 Square pole mounting #5 drilling[6] RPA5 Round pole mounting #5 drilling[6] SPA8N Square narrow pole mounting #8 drilling WBA Wall bracket[10] MA Mast arm adapter (mounts on 2 3/8" OD horizontal tenon)

Control options		Other options		Finish (required)	
Shipped installed		**Shipped installed**		DDBXD	Dark Bronze
NLTAIR2 PIRHN	nLight AIR gen 2 enabled with bi-level motion / ambient sensor, 8–40' mounting height, ambient sensor enabled at 2fc.[7,8,18,21]	SPD20KV 20KV surge protection		DBLXD	Black
PIR	High/low, motion/ambient sensor, 8–40' mounting height, ambient sensor enabled at 2fc.[18,20,21]	HS Houseside shield (black finish standard)[22]		DNAXD	Natural Aluminum
PER	NEMA twist-lock receptacle only (controls ordered separately)[12]	L90 Left rotated optics[1]		DWHXD	White
PER5	Five-pin receptacle only (controls ordered separately)[4,21]	R90 Right rotated optics[1]		DDBTXD	Textured dark bronze
PER7	Seven-pin receptacle only (controls ordered separately)[4,21]	CCE Coastal Construction[23]		DBLBXD	Textured black
FAO	Field adjustable output[13,21]	HA 50°C ambient operation[24]		DNATXD	Textured natural aluminum
BL30	Bi-level switched dimming, 30%[14,21]	BAA Buy America(n) Act and/or Build America Buy America Qualified		DWHGXD	Textured white
BL50	Bi-level switched dimming, 50%[14,21]	SF Single fuse (120, 277, 347V)[25]			
DMG	0–10v dimming wires pulled outside fixture (for use with an external control, ordered separately)[17]	DF Double fuse (208, 240, 480V)[25]			
DS	Dual switching[15,19,21]	**Shipped separately**			
		EGSR External Glare Shield (reversible, field install required, matches housing finish)			
		BSDB Bird Spikes (field install required)			

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Ordering Information

Accessories

Ordered and shipped separately.

DLL127F 1.5 JU	Photocell - SSL twist-lock (120-277V)[26]
DLL347F 1.5 CUL JU	Photocell - SSL twist-lock (347V)[26]
DLL480F 1.5 CUL JU	Photocell - SSL twist-lock (480V)[26]
DSHORT SBK	Shorting cap[26]
DSX1HS PV	House-side shield (color package number 1-13 in place of P)
DSXRPA (FINISH)	Round pole adapter (#8 drilling, specify finish)
DSXSPA5 (FINISH)	Square pole adapter #5 drilling (specify finish)
DSXRPA5 (FINISH)	Round pole adapter #5 drilling (specify finish)
DSX1EGSR (FINISH)	External glare shield (specify finish)
DSX1BSDB (FINISH)	Bird spikes detterent bracket (specify finish)

NOTES
1 Rotated optics available with packages P10, P11, P12 and P13. Must be combined with option L90 or R90.
2 30K, 40K, and 50K available in 70CRI and 80CRI. 27K and 35K only available with 80CRI. Contact Technical Support for other possible combinations.
3 T3LG, T4LG, BLC3, BLC4, LCCO, RCCO not available with option HS.
4 MVOLT driver operates on any line voltage from 120-277V (50/60 Hz).
5 HVOLT driver operates on any line voltage from 347-480V (50/60 Hz).
6 HVOLT not available with package P1 and P10 when combined with option NLTAIR2 PIRHN or option PIR.
7 XVOLT operates with any voltage between 277V and 480V (50/60 Hz).
8 XVOLT not available in packages P1 or P10. XVOLT not available with P1 ,P2, P5, P7, P9, P10, P11 and P13 when combined with option NLTAIR2 PIRHN or PIR. XVOLT not available with fusing (SF or DF).
9 SPA5 and RPA5 for use with #5 drilling only (Not for use with #8 drilling).
10 WBA cannot be combined with Type 5 distributions plus photocell (PER).
11 NLTAIR2 and PIRHN must be ordered together. For more information on nLight AIR2 visit this link.
12 PER, PER5 and PER7 are available with other controls including PIR, PER, PER5, PER7, FAO, BL30, BL50, DMG and DS. NLTAIR2 PIRHN not available with P1 and P10 using NXQX.
13 PIR not available with NLTAIR2 PIRHN, PER, PER5, PER7, FAO, BL30, BL50, DMG and DS.
14 PER/PER5/PER7 not available with NLTAIR2 PIRHN, PIR, BL30, BL50, FAO, DMG and DS. Photocell ordered and shipped as a separate line item from Acuity Brands Controls. See accessories. Shorting Cap included.
15 FAO not available with other dimming control options NLTAIR2 PIRHN, PIR, PERS, PER7, BL30, BL50, DMG and DS.
16 BL30 and BL50 are not available with NLTAIR2 PIRHN, PIR, PER, PERS, PER7, FAO, DMG and DS. BL30 or BL50 must specify 120 or 277V.
17 DMG not available with NLTAIR2 PIRHN, PIR, PER, PERS, PER7, BL30, BL50, FAO and DS.
18 DS not available with NLTAIR2 PIRHN, PIR, PER, PERS, PER7, BL30, BL50, FAO and DMG.
19 DS requires (2) separately switched circuits. DS provides 50/50 fixture operation via (2) different sets of leads using (2) drivers. DS only available with packages P8, P9, P10, P11, P12 and P13.
20 Reference Motion Sensor Default Settings table on page 4 to see functionality.
21 Reference Controls Options table on page 4.
22 Not available with P1, P2, P3, P4, BLC4, LCCO and RCCO distribution. Also available as a separate accessory; see Accessories information.
23 CCE option not available with options BS and EGSR. Contact Technical Support for availability.
24 Optional, not available with performance packages P4, P5, P7, P8, P9 and P13.
25 Requires luminaire to be specified with PER, PER5 or PER7 option. See Controls Table on page 4.
26 Single fuse (SF) requires 120V, 277V, or 347V. Double fuse (DF) requires 208V, 240V or 480V. XVOLT not available with fusing (SF or DF).

Shield Accessories



External Glare Shield (EGSR)



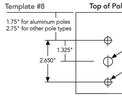
House Side Shield (HS)

Drilling

HANDHOLE ORIENTATION



Template #8



Tenon Mounting Slipfitter

Tenon O.D.	Mounting	Single Unit	2 @ 180	2 @ 90	3 @ 90	3 @ 120	4 @ 90
2-3/8"	RPA	AS3-5 190	AS3-5 280	AS3-5 290	AS3-5 390	AS3-5 320	AS3-5 490
2-7/8"	RPA	AST25-190	AST25-280	AST25-290	AST25-390	AST25-320	AST25-490
4"	RPA	AST35-190	AST35-280	AST35-290	AST35-390	AST35-320	AST35-490

Mounting Option	Drilling Template	Single	2 @ 180	2 @ 90	3 @ 90	3 @ 120	4 @ 90
Head Location		Side B	Side B & D	Side B & C	Side B, C & D	Round Pole Only	Side A, B, C & D
Drill Nomenclature	#8	DM19AS	DM28AS	DM29AS	DM39AS	DM32AS	DM49AS
		Maximum Acceptable Outside Pole Dimension					
SPA	#8	3.5"	3.5"	3.5"	3.5"		3.5"
RPA	#8	3"	3"	3"	3"	3"	3"
SPA5	#5	3"	3"	3"	3"		3"
RPA5	#5	3"	3"	3"	3"	3"	3"
SPA8N	#8	3"	3"	3"	3"		3"

DSX1 Area Luminaire - EPA

*Includes luminaire and integral mounting arm. Other tenons, arms, brackets or other accessories are not included in this EPA data.

Fixture Quantity & Mounting Configuration	Single DM19	2 @ 180 DM28	2 @ 90 DM29	3 @ 90 DM39	3 @ 120 DM32	4 @ 90 DM49
Mounting Type						
DSX1 with SPA	0.69	1.38	1.23	1.54	---	1.58
DSX1 with SPA5, SPA8N	0.70	1.40	1.30	1.66	---	1.68
DSX1 with RPA, RPA5	0.70	1.40	1.30	1.66	1.60	1.68
DSX1 with MA	0.83	1.66	1.50	2.09	2.09	2.09

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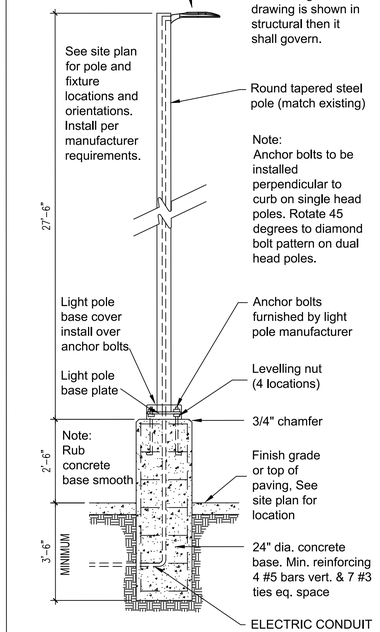
1 DSX1 LED P9 30K 70CRI TFTM HS
E-110 NTS



2 TYPICAL LIGHT POLE DETAIL
E-110 NTS

NO.	REVISIONS	DATE	BY

FOR PERMIT REVIEW

Kimley»Horn
New York
LANDSCAPE ARCHITECTURE OF NEW YORK, P.C.
1 THORNTREE LANE, SUITE 505
WHITE PLAINS, NY 10601
PHONE: 914-368-8200
WWW.KIMLEY-HORN.COM
© 2026 KIMLEY-HORN ENGINEERING AND

CARVANA

STATE OF NEW YORK NICHOLAS J. ALTOBELLI 107672 LICENSED PROFESSIONAL ENGINEER
10/12/2026

KHA PROJECT	112130011
DATE	10/12/2026
SCALE:	AS SHOWN
DESIGNED BY:	KH
DRAWN BY:	KH
CHECKED BY:	KH

LIGHTING DETAILS

CARVANA - BUFFALO
12200 MAIN STREET
AKRON, NEW YORK 14001
TOWN OF NEWSTEAD NEW YORK

SHEET NUMBER
LT-1.1

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