GREEN AREA RATIO SUMMARY:

Green Area Ratio Scoresheet

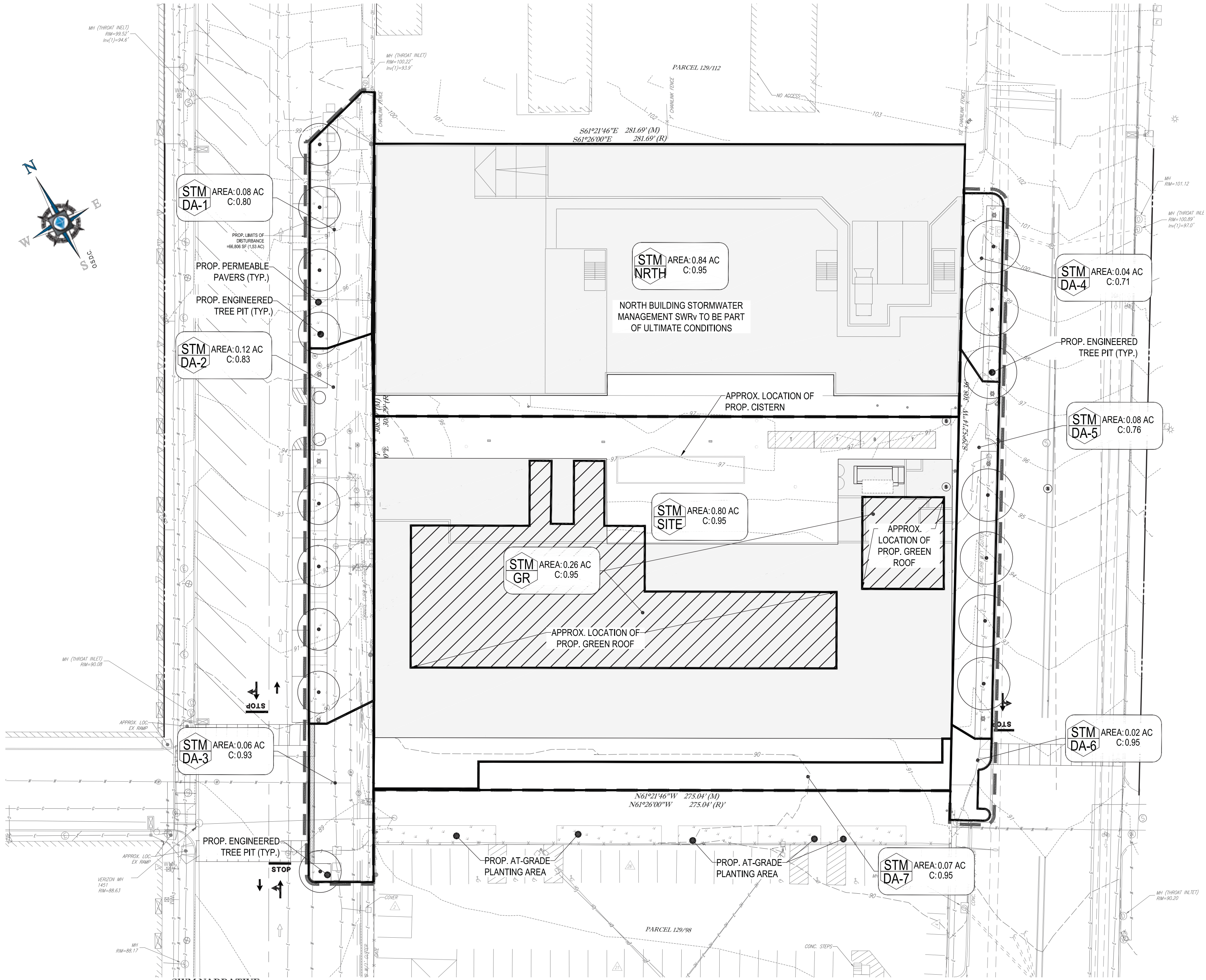
Address: 1308 5th Street NE
Other / BZA Order: PUD 14-12
Lot size (enter this value first) *: 42,910
SCORE: 0.201

	Landscape Elements	Entered value	Square Ft.	Factor	Total
A	**Landscaped areas (select one of the following for each area)**				
1	Landscaped areas with a soil depth of less than 24"		0	0.3	-
2	Landscaped areas with a soil depth of 24" or greater		1,500	0.6	900.0
3	Bioretention facilities		0	0.4	-
B	**Plantings (credit for plants in landscaped areas from Section A)**				
1	Groundcovers, or other plants less than 2' tall at maturity		1,500	0.2	300.0
2	Plants, not including grasses, 2' or taller at maturity - calculated at 9 sq ft per plant (typically planted no closer than 18" on center)	180	[illegible]	0.3	486.0
3	Tree canopy for all new trees 2.5" to 6" diameter or equivalent - calculated at 50 sq ft per tree	0	[illegible]	0.5	-
4	Tree canopy for new trees 6" diameter or larger or equivalent - calculated at 250 sq ft per tree	0	[illegible]	0.6	-
5	Tree canopy for preservation of existing tree 6" to 12" diameter or larger or equivalent - calculated at 250 sq ft per tree	0	[illegible]	0.7	-
6	Tree canopy for preservation of existing tree 12" to 18" diameter or larger or equivalent - calculated at 600 sq ft per tree	0	[illegible]	0.7	-
7	Tree canopy for preservation of all existing trees 18" to 24" dia. or equivalent - calculated at 1300 sq ft per tree	0	[illegible]	0.7	-
8	Tree canopy for preservation of all existing trees 24" diameter or larger or equivalent - calculated at 2000 sq ft per tree	0	[illegible]	0.8	-
9	Vegetated wall, plantings on a vertical surface			0.6	-
C	**Vegetated or "green" roofs**				
1	Over at least 2" and less than 8" of growth medium		11,200	0.6	6,720.0
2	Over at least 8" of growth medium			0.8	-
D	**Permeable Paving*** **				
1	Permeable paving over at least 6" and less than 24" of soil or gravel		0	0.4	-
2	Permeable paving over at least 24" of soil or gravel		0	0.5	-
E	**Other**				
1	Enhanced tree growth systems***		0	0.4	-
2	Renewable energy generation		0	0.5	-
3	Approved water features		0	0.2	-
	sub-total of sq ft =		[illegible]		
H	**Bonuses**				
1	Native plant species		0	0.1	-
2	Landscaping in food cultivation		2,000	0.1	200.0
3	Harvested stormwater irrigation		0	0.1	-
	Green Area Ratio numerator =				8,606

*** Permeable paving and structural soil together may not qualify for more than one third of the Green Area Ratio score.
Total square footage of all permeable paving and enhanced tree growth: -

NOTE:

LANDSCAPED ELEMENTS INCLUDING, BUT NOT LIMITED TO, GREEN ROOF AND LANDSCAPED AREAS ARE USED TO APPROXIMATE THE GAR SCORE FOR THE PROPOSED PROJECT. THE GAR FOR THE PROPOSED PROJECT IS FOR ONE-HALF OF THE EXISTING LOT. THE NORTH BUILDING WILL PROVIDE GREEN AREA TO SATISFY THE REMAINING HALF OF THE LOT REQUIREMENT. THE LANDSCAPE ELEMENTS AND THEIR AREAS ARE SUBJECT TO CHANGE. ALL GAR SCORE AND STORMWATER MANAGEMENT STORAGE AREAS AND/OR VOLUMES ARE TO MEET CODE REQUIREMENTS IF THE DESIGN GEOMETRIES OR LAYOUT ARE MODIFIED.



20 10 5 0 20
1"= 20'

SWM NARRATIVE:

I. SITE DESCRIPTION:

THE SUBJECT SITE IS LOCATED BETWEEN 5TH STREET, N.E. AND 6TH STREET, N.E. TO THE NORTH OF NEAL PLACE, N.E. THE SITE CONSISTS OF ONE PARCEL APPROXIMATELY 85,819 S.F. (1.97 AC) TOTAL. ULTIMATE CONDITIONS FOR BOTH THE NORTH AND SOUTH BUILDING WILL DISTURB APPROXIMATELY 103,243 SQUARE FEET (2.37 AC). FOR THE PURPOSES OF THIS PUD, THE STORMWATER MANAGEMENT FOR THE SOUTH BUILDING HAS BEEN DESIGNED AND DETAILED FOR THE SOUTH BUILDING IMPACTS ONLY. THE PROPOSED PROJECT WILL DISTURB APPROXIMATELY:

PRIVATE SPACE - 49,384 S.F. (1.13 AC)
PUBLIC SPACE - 17,424 S.F. (0.40 AC)

II. METHODOLOGY:

THE CURRENT DDOE STORMWATER REGULATIONS WERE UTILIZED TO CALCULATE THE REQUIRED STORMWATER RETENTION VOLUMES FOR PRIVATE AND PUBLIC RIGHT-OF-WAY DRAINAGE AREAS. THE PRIVATE AND PUBLIC STORMWATER RETENTION CALCULATIONS ARE SHOWN BELOW.

ULTIMATE CONDITIONS ON-SITE SWRv REQUIREMENT:

$$SWRv: \frac{[P \times [(RvI \times \%I) + (RvC \times \%C) + (RvN \times \%N) \times SA] \times 7.48}{12}$$

$$SWRv = \frac{[1.2 \times [(0.95 \times 1.0) + (0.25 \times 0.0) \times 85{,}819] \times 7.48}{12}$$

$$= 8{,}153 \text{ CF}$$

PRIVATE ON-SITE SWRv REQUIREMENT (FOR PUD PURPOSES):

$$SWRv: \frac{[P \times [(RvI \times \%I) + (RvC \times \%C) + (RvN \times \%N) \times SA] \times 7.48}{12}$$

$$SWRv = \frac{[1.2 \times [(0.95 \times 1.0) + (0.25 \times 0.0) \times 49{,}384] \times 7.48}{12}$$

$$= 4{,}692 \text{ CF}$$

PUBLIC ROW SWRv REQUIREMENT:

$$SWRv = \frac{[1.2 \times [(0.95 \times 1.0) + (0.25 \times 0.0) \times 17{,}424] \times 7.48}{12}$$

$$= 1{,}655 \text{ CF}$$

III. STORMWATER RETENTION VOLUME (ON-SITE):

ON-SITE STORMWATER RETENTION WILL BE PROVIDED THROUGH THE IMPLEMENTATION OF BOTH A GREEN ROOF AND CISTERN FOR WATER REUSE INTERNAL TO THE BUILDING. THE PROPOSED GREEN ROOF AREAS HAVE BEEN SIZED AS FOLLOWS:

$$Sv = \frac{SA \times [(D \times n1) + (DL \times n2)]}{12}$$

AREAS WITH 8" DEPTH:

$$Sv = \frac{11{,}200 \times [(8 \times 0.15)]}{12}$$

$$Sv = 1{,}120 \text{ CF}$$

THE REMAINING VOLUME WILL BE CAPTURED AND REUSED ON-SITE BY THE MECHANICAL SYSTEM. THE PROPOSED PROJECT WILL INCLUDE THE CONSTRUCTION OF A 40,000 GALLON CISTERN, WHICH ALLOWS FOR A 85% RETENTION VOLUME CREDIT, PROVIDING A STORAGE VOLUME IS 4,341CF.

THE TOTAL COMBINED STORAGE VOLUME FOR THE GREEN ROOF AREAS ABOVE AND CISTERN REUSE IS 5,461 CF.

IV. STORMWATER RETENTION VOLUME (OFF-SITE):
PUBLIC RIGHT-OF-WAY STORMWATER RETENTION WILL BE PROVIDED THROUGH ENGINEERED TREE PITS (BIORETENTION BMP) WITH CONTINUOUS SOIL PANEL BELOW THE TREE/PLANTING AREAS, PERMEABLE PAVERS BETWEEN THE PLANTER AREAS AND ADJACENT CONVENTIONAL PAVEMENT.

THE PROPOSED BIORETENTION DESIGN WILL HAVE A UNDERDRAIN, BUT NO INFILTRATION SUMP, SO IT HAS BEEN CALCULATED AS STANDARD BIORETENTION. THE PROPOSED STORAGE VOLUME IS CALCULATED AS FOLLOWS:

$$Rv = 0.6 \times Sv$$

$$Sv = SA \times [(dm \times nm) + (dg \times ng)] + (SA \times dp)$$

$$Sv = 3{,}187 \times [(6 \times 0.15) + (0.17 \times 0.15)] + (3{,}187 \times 0)$$
$$= 2{,}949 \text{ CF}$$

$$Rv = 0.6 \times 2{,}949 = 1{,}769 \text{ CF}$$

THE PROPOSED PERMEABLE PAVER AREAS RECEIVE A RETENTION VALUE OF 4.5 CUBIC FEET PER 100 SQUARE FEET OF PRACTICE AREA. BASED ON AN AREA OF 224 SQUARE FEET, THE PROPOSED PERMEABLE PAVEMENT VOLUME HAS BEEN CALCULATED AS FOLLOWS:

$$Rv = \frac{4.5 \text{ CF}}{100 \text{ SF}} \times 224 \text{ SF}$$

$$Rv = 10 \text{ CF}$$

TOTAL PUBLIC RIGHT-OF-WAY STORAGE VOLUME = 1,779 CF

V. ON-SITE STORM SEWER NETWORK:

THE PROPOSED STORM SEWER SYSTEM CONVEYS AND FILTERS ONSITE STORMWATER THROUGH THE GREEN ROOF. ANY AREA NOT ABLE TO REACH THE GREEN ROOF DIRECTLY WILL BE COLLECTED INTERNALLY AND DRAIN TO A CISTERN FOR REUSE WITHIN THE BUILDING. STORMWATER FLOWS ABOVE THE 1.2" STORM EVENT WILL DISCHARGE TO A STORM LATERAL THAT CONNECTS TO THE PUBLIC STORM SEWER LINE IN ADJACENT STREETS.

VI. OFF-SITE STORM SEWER NETWORK:

THE EXISTING SITE IS TRIBUTARY TO THE EXISTING PUBLIC 24" DIAMETER STORM SEWER IN 5TH STREE,T N.E. AND THE EXISTING 2'X3' STORM SEWER IN 6TH STREET, N.E.

VII. SUMMARY:

ON-SITE RUNOFF FROM THE PROPOSED DEVELOPMENT IS STORED IN THE PROPOSED GREEN ROOFS AND CISTERN FOR BUILDING REUSE. STORM EVENTS IN EXCESS OF 1.2" WILL BE CONVEYED TO A PROPOSED STORM SEWER LATERAL, WHICH CONNECTS INTO THE EXISTING PUBLIC STORM SEWER UNDER 5TH STREET N.E. THE TOTAL STORAGE VOLUME CAPACITY PROVIDED IN THE GREEN ROOFS AND CISTERN REUSE MEETS STORAGE VOLUME REQUIREMENTS (4,692 CF) PLUS PROVIDING AN ADDITIONAL 769 CF OF STORAGE.

OFF-SITE RUNOFF FROM THE PROPOSED DEVELOPMENT IS STORED IN THE PROPOSED BIORETENTION AREA AND CONTINUOUS SOIL PANEL WITHIN THE PUBLIC RIGHT OF WAY. THE PUBLIC SPACE BMPS MEET STORAGE VOLUME REQUIREMENTS BY SATISFYING THE VOLUME REQUIRED (1,655 CF) PLUS PROVIDING AN ADDITIONAL 124 CF OF STORAGE.

NOTE:

AREAS AND/OR VOLUMES USED FOR GREEN AREA RATIO SCORING AND FOR STORMWATER MANAGEMENT RETENTION VOLUME COMPUTATIONS ARE APPROXIMATE AND ARE SUBJECT TO CHANGE DUE TO SITE LAYOUT AND DESIGN CHANGES. ALL GAR SCORE AND STORMWATER MANAGEMENT STORAGE AREAS AND/OR VOLUMES ARE TO MEET CODE REQUIREMENTS IF THE DESIGN GEOMETRIES OR LAYOUT ARE MODIFIED.

HATCH LEGEND

PROP. GREEN ROOF (8" MIN. SOIL DEPTH)

BOHLER DC

REVISIONS

REV	DATE	COMMENT	BY

THE FOLLOWING STATES REQUIRE NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATE. IN VIRGINIA, MARYLAND, THE DISTRICT OF COLUMBIA, NORTH CAROLINA AND DELAWARE CALL - **811**
(WV 1-800-245-4848) (PA 1-800-242-1776) (DC 1-800-257-7777) (VA 1-800-552-7001) (MD 1-800-257-7777) (DE 1-800-282-8555)

NOT APPROVED FOR CONSTRUCTION

PROJECT No.:	DC112124
DRAWN BY:	JCB
CHECKED BY:	KAR
DATE:	12/15/14
SCALE:	1" = 20'
CAD I.D.:	SS0

PROJECT: PUD PRESENTATION PLAN FOR EDENS

LOCATION OF SITE
FLORIDA AVE., NE
WASHINGTON, DC

BOHLER DC
1301 PENNSYLVANIA AVE., NW, STE. 825
WASHINGTON, DC 20004
Phone: (202) 524-5700
Fax: (202) 524-5701
DC@BohlerEng.com

SHEET TITLE: STORMWATER MANAGEMENT AND GREEN AREA RATIO PLAN

SHEET NUMBER: C-200

1309 - 1329 5TH STREET NE WASHINGTON, DC

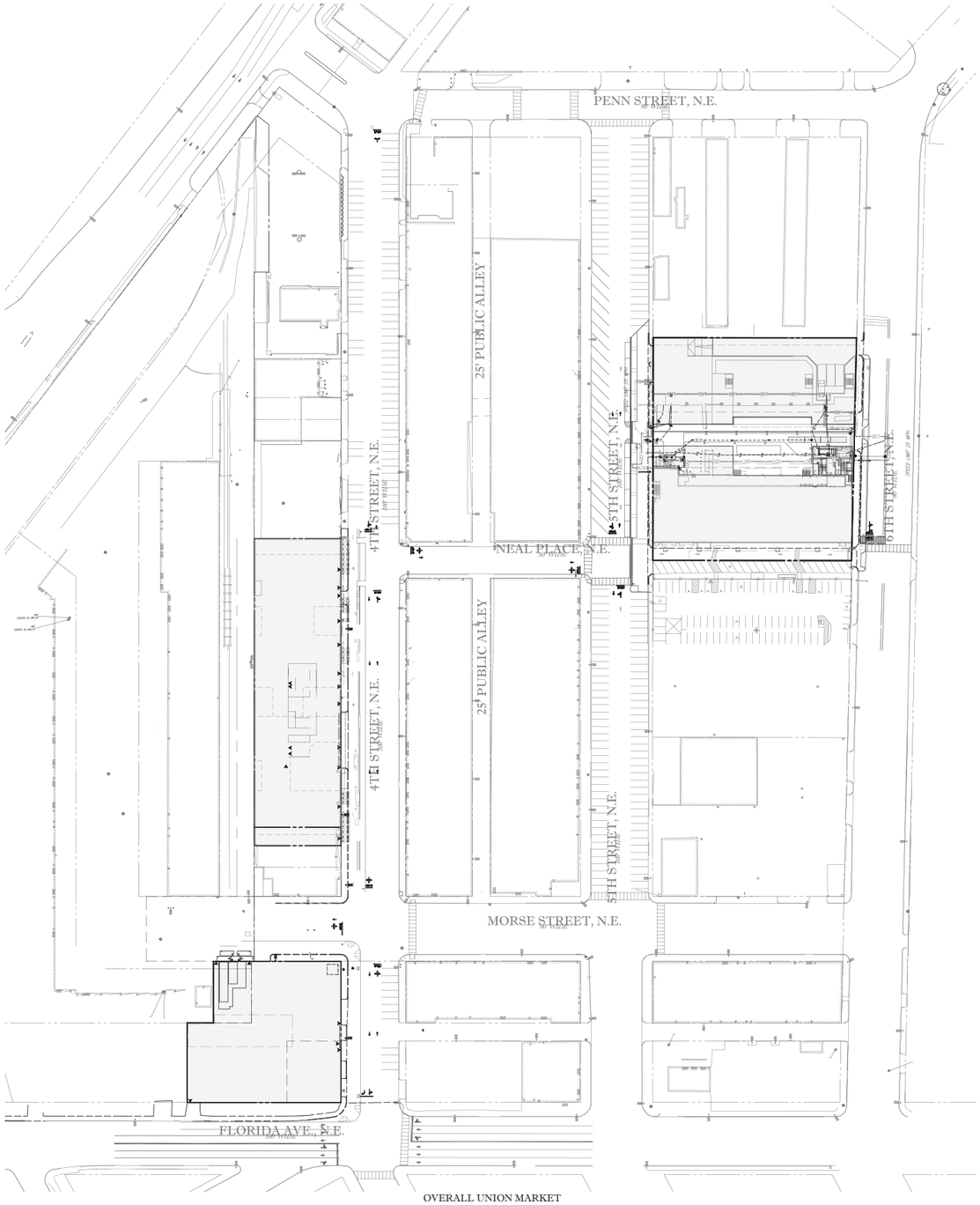
PUD SUBMISSION 2014 JULY 3
(REVISED 2014 DECEMBER 16)

STORMWATER MANAGEMENT PLAN C-200

EDENS

shalom baranes associates architects

ZONING COMMISSION
District of Columbia
CASE NO.14-12
EXHIBIT NO.19A8



OVERALL UNION MARKET
SCALE 1" = 60

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VA 1-800-552-7001) (MD 1-800-257-7777) (DE 1-800-282-8555)

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PROJECT No.:	DC131214
DRAWN BY:	JCB
CHECKED BY:	KAR
DATE:	12/15/14
SCALE:	1" = 60'
CAD I.D.:	TTG

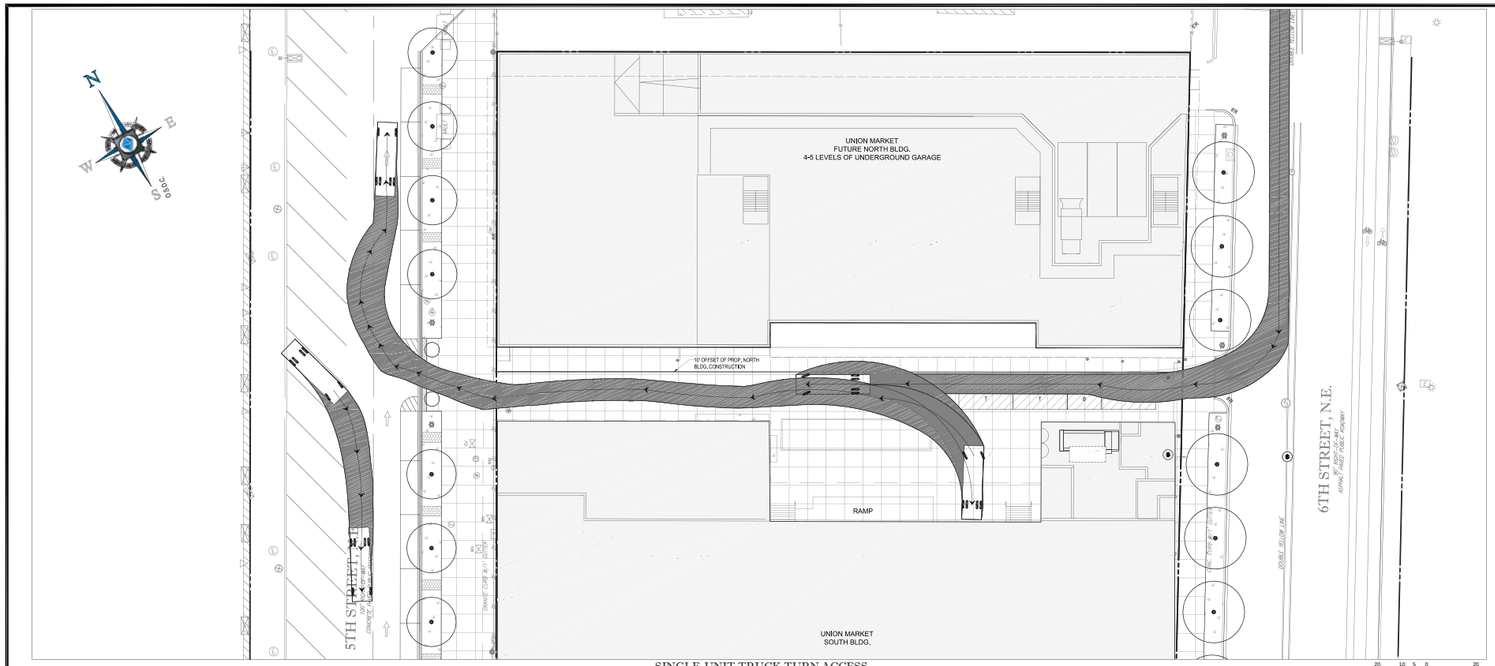
PROJECT:
PUD PRESENTATION PLAN
FOR
EDENS

LOCATION OF SITE:
FLORIDA AVE., NE
WASHINGTON, DC

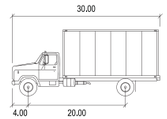
BOHLER DC
1301 PENNSYLVANIA AVE., NW, STE. 825
WASHINGTON, DC 20004
Phone: (202) 524-5700
Fax: (202) 524-5701
dc@BohlerEng.com

SHEET TITLE:
TRUCK TURN ACCESS PLAN

SHEET NUMBER:
C-300

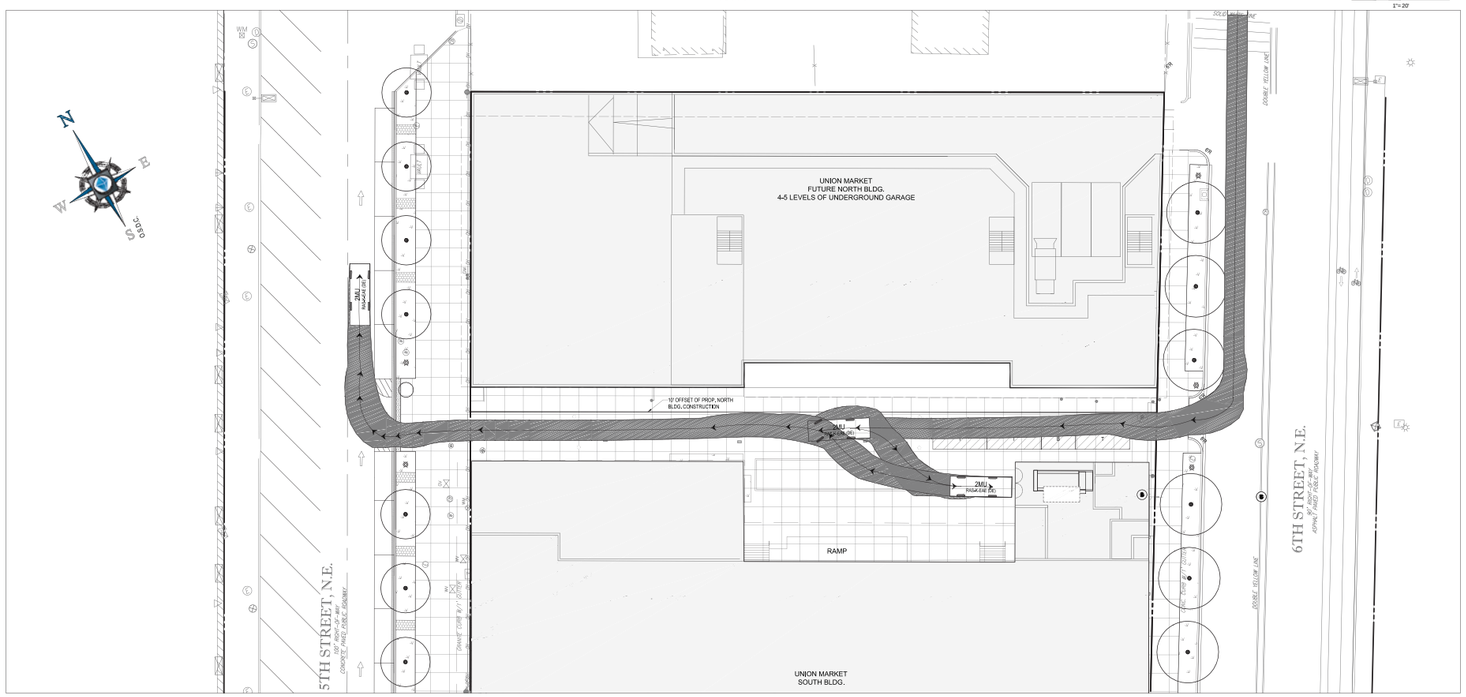


SINGLE-UNIT TRUCK TURN ACCESS
SCALE 1" = 20'

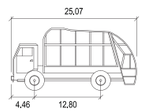


SU-30 feet

Width	: 8.00
Track	: 8.00
Lock to Lock Time	: 6.0
Steering Angle	: 31.8



TRASH TRUCK TURN ACCESS
SCALE 1" = 20'



2MU feet

Width	: 8,20
Track	: 8,20
Lock to Lock Time	: 6,0
Steering Angle	: 40,8

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PROJECT No.:	DC112124
DRAWN BY:	JCB
CHECKED BY:	KAR
DATE:	12/15/14
SCALE:	1" = 20'
CAD I.D.:	530

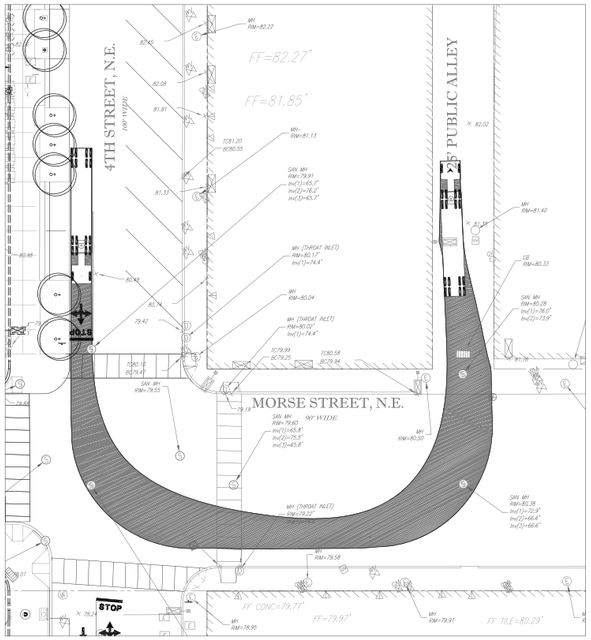
PROJECT:
PUD PRESENTATION PLAN
FOR
EDENS

LOCATION OF SITE
FLORIDA AVE., NE
WASHINGTON, DC

BOHLER DC
1301 PENNSYLVANIA AVE., NW, STE. 825
WASHINGTON, DC 20004
Phone: (202) 524-5700
Fax: (202) 524-5701
dc@BohlerEng.com

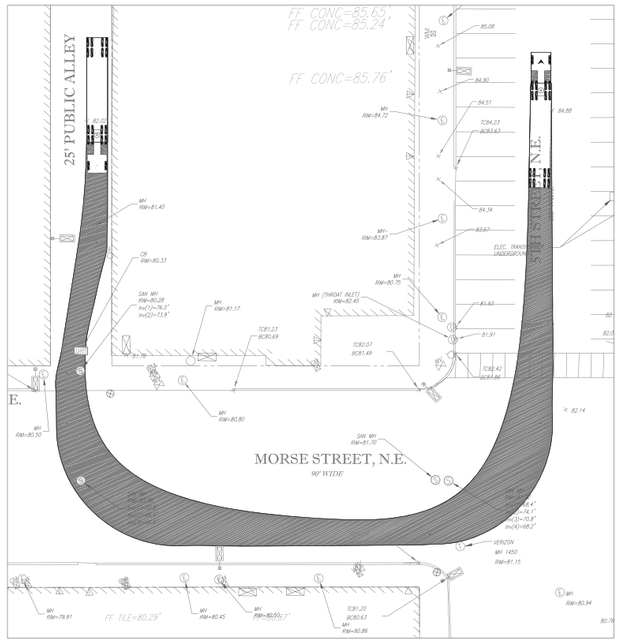
SHEET TITLE:
TRUCK TURN ACCESS PLAN

SHEET NUMBER:
C-301



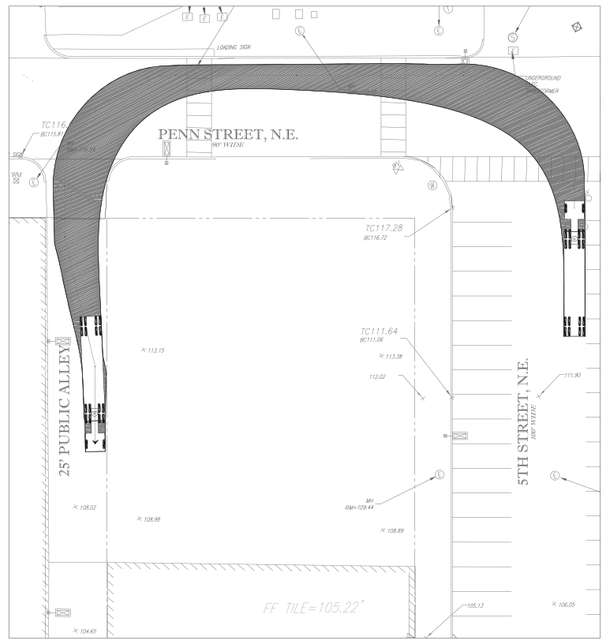
4TH STREET, LEFT ON MORSE LEFT INTO ALLEY

SCALE 1" = 20'



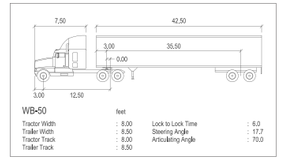
ALLEY, LEFT ON MORSE LEFT ONTO 5TH STREET

SCALE 1" = 20'



5TH STREET, LEFT ON PENN, LEFT INTO ALLEY

SCALE 1" = 20'



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OHIO 1-800-362-2764 (OUPS) 1-800-925-0988 (OUPS)
WEST VIRGINIA 1-800-245-4848 1-800-552-7001 (MISS UTILITY)
KENTUCKY 1-800-752-6007 (KENTUCKY 811) 1-800-752-6007 (KENTUCKY 811)

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SCALE:	1" = 20'
CAD I.D.:	SSD

PROJECT:
PUD PRESENTATION PLAN
FOR
EDENS

LOCATION OF SITE
FLORIDA AVE., NE
WASHINGTON, DC

BOHLER DC
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WASHINGTON, DC 20004
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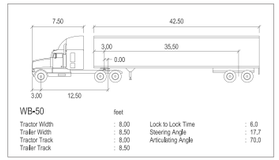
Fax: (202) 524-5701
dc@BohlerEng.com

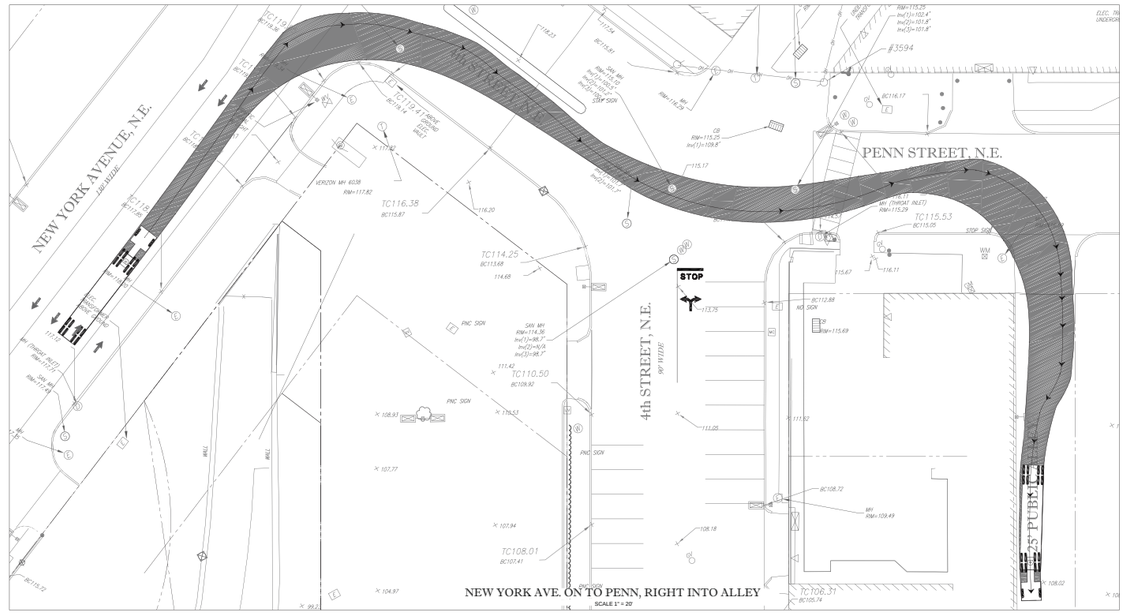
SHEET TITLE:
TRUCK TURN ACCESS PLAN

SHEET NUMBER:
C-302



WB-50 feet

Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 17.7
Tractor Track	: 8.00	Articulating Angle	: 70.0
Trailer Track	: 8.50		

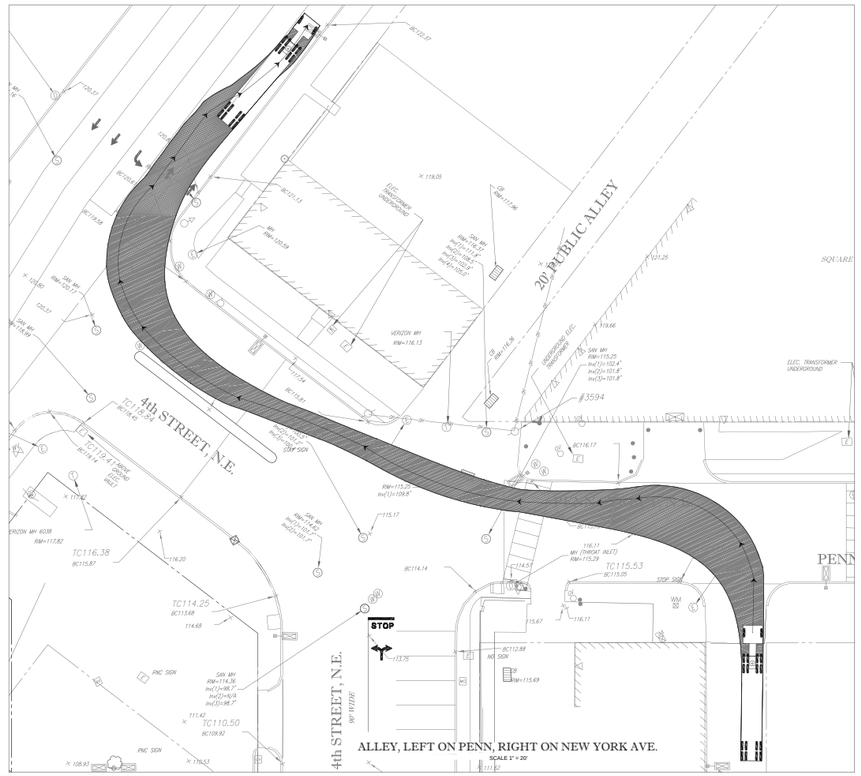


NEW YORK AVE. ON TO PENN, RIGHT INTO ALLEY

SCALE 1" = 20'

20 10 5 0 20

1"= 20'



ALLEY, LEFT ON PENN, RIGHT ON NEW YORK AVE.

SCALE 1" = 20'

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MD: 1-800-257-7777 (DE 1-800-282-8555)

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PROJECT No.:	DC112124
DRAWN BY:	JCB
CHECKED BY:	KAR
DATE:	12/13/14
SCALE:	1" = 20'
CAD I.D.:	SSP

PROJECT:

PUD PRESENTATION PLAN

FOR

EDENS

LOCATION OF SITE
FLORIDA AVE., NE
WASHINGTON, DC

BOHLER DC
1301 PENNSYLVANIA AVE., NW, STE. 825
WASHINGTON, DC 20004
Phone: (202) 524-5700
Fax: (202) 524-5701
DC@BohlerEng.com

SHEET TITLE:

TRUCK TURN ACCESS PLAN

SHEET NUMBER:

C-303