

# **EXHIBIT C**



## MEMORANDUM

To: Jonathan Rogers DDOT – PPSA

From: Robert B. Schiesel, P.E.  
Daniel B. VanPelt, P.E., PTOE  
Maris E. Fry

Date: March 6, 2015

Subject: Responses to DDOT Comments on EDENS Shapiro CTR (14-07)

This following contains Gorove/Slade’s responses to DDOT’s comments on the CTR for EDENS Shapiro, also known as the 1270 4<sup>th</sup> Street NE PUD. Specifically, this memorandum responds to comments emailed by DDOT on February 20, 2015. The original DDOT comments are listed below, with Gorove/Slade’s response in **red**.

- Miscellaneous Comment
  - Pg i references a 3rd Street dedication. Conversations about the future street network on DMPED controlled property are just beginning. It is possible that the streets/alleys may be private and no DDOT dedication will occur.
  
- Queuing
  - The report does not include any analysis, results, and discussion on queues. The scoping form states “We will provide queue results for each movement and compare those results to the available storage space.” The New York and Florida Avenue corridors are important arterials. Evaluation of queuing along these corridors is important to assessing the impacts the development has on the transportation network.
  - Provide available/proposed lane length in the queue tables for each movement. Identify the locations where turn lane pockets or through lane length are not sufficient to accommodate the back of queue and provide mitigation measures.
  - Florida Avenue & 4th Street: The 95th percentile queue length for the eastbound lane along Florida Avenue increases from 39 feet in 2017 background condition to #240 feet in the full build-out traffic conditions. This is a substantial increase and will result in spillover due to limited turn lane pocket. Subsequently, the left-turning vehicles would block the through lanes along Florida Avenue. Please discuss and propose mitigations.

**Gorove/Slade response: A queuing table was provided in the technical appendix. We have attached the same table to this memo, revised to clearly show queuing space available and where storage capacity is exceeded. Also attached are tables containing a summary of locations where storage length is exceeded and potential mitigation measures:**

Of note, the eastbound left turn lane on Florida Avenue at 4<sup>th</sup> Street has a turn pocket lane of 380 feet based on the latest plans from the Florida Avenue Multimodal Study, and thus can accommodate the projected 95<sup>th</sup> percentile queues.

- 4th Street and Morse Street
  - Control Changes: Any recommendation for change in traffic control such as signalization and/or four-way stop control should be accompanied by MUTCD warrants justifying the need for it. Accordingly, please provide All-Way stop warrants based on MUTCD criteria justifying the conversion of traffic control from two-way to all-way STOP.

Gorove/Slade response: MUTCD states that all-way stop sign installation should be considered based on the following criteria of which at least one must be satisfied:

- Five or more reported crashes in a 12-month period that are susceptible to correction by a multi-way stop installation. Such crashes include right-turn and left-turn collisions as well as right-angle collisions.
- Minimum volumes:
  - The vehicle volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day; and
  - The combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour.

The intersection of 4<sup>th</sup> Street and Morse Street was observed to have 26 crashes over a three year period (5 in 2011, 9 in 2012, and 12 in 2013). Of these 26 crashes only 3 are categorized as right-turn, left-turn, or right-angle collisions. Therefore, the intersection does not warrant an all-way stop based on crash data.

Although 8 hour count data was not available at the intersection of Morse Street and 4<sup>th</sup> Street, the peak hour count data was used to extrapolate the highest 8 hour volume counts. This data combined with the anticipated bike and pedestrian traffic at this intersection was used to determine if the intersection warrants an all-way stop based on vehicular and non-vehicular traffic volumes. As shown on the table below, the intersection DOES warrant an all-way stop based on volumes.

**All-Way Stop Warrant Analysis: 4<sup>th</sup> Street & Morse Street**

Highest Volume Hours	2017 Volumes			2020 Volumes		
	Major	Minor		Major	Minor	
	Vehicular	Vehicular	Peds+Bikes	Vehicular	Vehicular	Peds+Bikes
1	442	370	30	436	376	58
2	424	355	29	419	361	56
3	415	348	28	410	353	55
4	354	296	24	349	301	46
5	336	281	23	331	286	44
6	301	252	20	296	256	39
7	278	233	19	275	237	37
8	265	222	18	262	226	35
Average	352	295	24	347	299	46
Major Vehicular Traffic > 300 veh/hr?						
		yes				yes
Minor Vehicular + Peds + Bike > 200 units/hr?						
		yes				yes
All-way stop warranted?						
		yes				yes

- Neal Place trigger: Per recent discussions, the trigger language to open Neal Place needs to be determined.

**Gorove/Slade response:** The Applicant is reviewing the current wording and will send new language regarding the opening of the Neal Place extension to vehicular traffic in a separate document.

- Loading

- Please coordinate with Bohler to provide PDF files showing truck turning diagrams accessing the alley and loading berths. Analysis should be completed for the largest truck accessing the berth and a trash truck.
- DDOT’s freight planner needs to review analysis before fully evaluating the loading management plan.
- Indicate how many parking spaces, if needed, will need to be removed to accommodate truck maneuvers.

**Gorove/Slade response:** The truck turning diagrams are attached to this memorandum.

- Site generated traffic volumes

- Provide the total site-generated trips assigned on the study area network for AM/PM peak hours. These are not provided for the site trips specifically, so it is not clear how many development trips are assigned in and out of the site.

**Gorove/Slade response:** Diagrams are attached to this memorandum.

- Public space and trees

- The public space treatment depicted on the site plan (page 14) has not been approved by DDOT. The streetscape guidelines will help determine the public space design, which will ultimately be determined through public space permitting.

- See attached memo from UFA.

Gorove/Slade response: Comment noted, and memo passed along to the project's design team.

- Mitigations

- Similar to Angelika, a commitment to provide a curbside management plan for 4th Street between Morse and Penn will be requested by DDOT.

Gorove/Slade response: Comment noted. The Applicant has no objection to this commitment.

- TDM

- Provide additional detail on the locations of the transit screens. How many screens will be provided and where?

Gorove/Slade response: There will be two (2) transit screens provided, one in the South Building's residential library, and one in the North Building's residential lobby.

- Similar to Angelika, the financial incentive amount should be increased to cover the cost of an annual carshare or bikeshare membership.

- Gorove/Slade response: The Applicant agrees to increase the financial incentive from \$40 to \$75, with the incentive language changed to the following: "The Applicant will provide each new resident for the first year after the issuance of the certificate of occupancy for each building with a \$75 subsidy for a car-sharing or bike-sharing program, up to a maximum of \$35,000."

In addition, the Applicant is now agreeing to provide two carsharing spaces within the garage.

Intersection	Approach	Storage Length (ft)	Background Conditions (2017)				Future Conditions (2017)				Future Conditions (2017) - with Mitigations				2020 Background Conditions				2020 Future Conditions (Phase 1 & 2)				2020 Future Conditions (Phase 1 & 2) - with Mitigations				
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		
			50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	
<b>4th Street/Penn Street &amp; New York Ave NE</b>	Westbound Left	106	59	89	47	79	59	89	47	79	54	82	43	71	59	89	51	83	59	89	51	136	55	82	45	75	
	Westbound Right	106	0	36	80	149	0	41	121	#238	1	39	118	192	0	41	130	#265	0	43	83	#281	13	52	132	210	
	Northbound	1800	176	203	277	307	176	203	277	307	216	249	398	442	184	212	283	313	184	212	283	313	226	261	407	451	
	Southbound	2110	185	204	89	101	187	207	93	105	298	329	165	186	192	211	95	107	192	212	96	108	306	336	169	190	
<b>Penn Street &amp; 4th Street/Alley NE</b>	Northeastbound		Queue lengths not available due to configuration of intersection																								
	Southwestbound		Queue lengths not available due to configuration of intersection																								
	Northwestbound		Queue lengths not available due to configuration of intersection																								
	Southeastbound		Queue lengths not available due to configuration of intersection																								
<b>Neal Place &amp; 4th Street NE</b>	Eastbound	116	--	--	--	--	--	--	--	--									7	--	10						
	Westbound	239	--	12	--	8	--	16	--	11			No Change			17	--	11	--	18	--	11			No Change		
	Northbound Left	439	--	--	--	--	--	--	--	--										0	--	0			No Change		
	Southbound Left	549	--	5	--	2	--	5	--	3						5	--	3	--	5	--	3			No Change		
<b>Morse Street &amp; 4th Street NE</b>	Eastbound	122	--	22	--	3	--	97	--	240						105	--	258	--	86	--	114			Queue lengths not available in HCM analysis for all-way stop intersection		
	Westbound	223	--	10	--	2	--	28	--	70			Queue lengths not available in HCM analysis for all-way stop intersection			34	--	158	--	37	--	201			Queue lengths not available in HCM analysis for all-way stop intersection		
	Northbound Left	202	--	2	--	0	--	6	--	13						6	--	13	--	6	--	15			Queue lengths not available in HCM analysis for all-way stop intersection		
	Southbound Left	439	--	1	--	2	--	1	--	1						1	--	1	--	1	--	1			Queue lengths not available in HCM analysis for all-way stop intersection		
<b>Florida Ave &amp; 3rd Street/Driveway NE</b>	Eastbound	375	91	112	142	181	100	122	175	221			175	221	121	145	183	231	122	147	191	239			191	239	
	Westbound Left	--	--	--	--	--	--	--	--	--			--	--	--	--	--	--	--	--	--	--			--	--	
	Westbound Thru	380	23	30	48	61	42	55	97	227			No Change	97	224	44	58	205	274	48	68	213	282		No Change	283	347
	Northbound	681	12	31	103	152	12	31	103	152					103	152	12	31	103	152	12	31	103	152		103	152
Southbound	30	11	21	7	16	11	21	7	16					7	16	11	21	7	16	11	21	7	16		7	16	
<b>Florida Ave &amp; 4th Street NE</b>	Eastbound Left	380	29	66	14	m39	61	#140	116	#157			116	#157	93	#218	131	#197	100	#231	~104	#240			~104	#240	
	Eastbound TR	380	162	92	277	352	165	224	272	346			272	346	190	255	280	356	190	255	281	355			281	355	
	Westbound Left	180	92	114	59	124	91	116	56	121			No Change	70	126	90	118	56	118	88	188	56	118		No Change	66	118
	Westbound TR	230	66	65	81	137	66	68	79	136					151	201	69	70	92	151	68	69	93	152		163	212
	Southbound Left	202	4	16	9	27	7	23	15	37					15	37	7	23	15	37	8	25	16	39		16	39
	Southbound TR	202	49	102	57	111	80	158	133	221			133	221	82	162	155	#273	92	179	172	#303			172	#303	
<b>Florida Ave &amp; 5th Street NE</b>	Eastbound Left		--	--	--	--	--	--	--	--			--	--	--	--	--	--	--	--	--	--			--	--	
	Eastbound TR	240	188	277	8	9	192	241	11	11			11	11	218	270	11	11	218	270	11	11			11	11	
	Westbound Left		--	--	--	--	--	--	--	--			--	--	--	--	--	--	--	--	--	--			--	--	
	Westbound TR	240	31	65	34	39	31	67	34	39			No Change	31	36	30	63	42	47	31	71	42	47		No Change	38	44
	Northbound	306	40	66	58	107	51	80	87	147					87	147	61	90	91	153	62	92	97	161		97	161
	Southbound Left	200	4	13	4	13	8	20	4	13					4	13	8	20	10	25	9	24	12	27		12	27
Southbound	200	61	91	10	26	70	101	22	43					22	43	73	104	37	64	75	106	38	66		38	66	
<b>Florida Ave &amp; 6th Street NE</b>	Eastbound Left	180	17	#70	9	27	17	#70	9	#30			~65	#160	~75	#227	12	#152	~74	#277	13	#152			~97	#205	
	Eastbound	240	12	15	42	88	13	16	48	94			48	#132	12	14	52	104	12	15	53	106			54	#186	
	Westbound	240	283	361	191	240	286	365	202	253			237	296	293	375	205	256	294	375	207	258			243	302	
	Northbound	137	166	244	219	320	166	244	219	320			No Change	173	252	199	288	224	327	199	288	224	327		No Change	176	258
	Southbound Left	203	~518	m#619	~353	#497	~522	m#613	~361	#503			288	#431	~558	#599	~417	#559	~560	m#598	~417	#556			~345	#484	
	Southbound Thru	203	--	--	--	--	--	--	--	--			--	--	--	--	--	--	--	--	--	--			--	--	
	Southbound Right	203	35	m47	28	53	37	m48	30	m57			40	m74	38	m44	46	m86	38	m43	47	m87			59	m98	
<b>Florida Ave &amp; N Street NE</b>	Northbound	255	--	3	--	6	--	3	--	6			No Change	--	3	--	6	--	3	--	6			No Change			

**Comments on Intersections where Queues Exceed Storage Length**

Intersections with Queuing concerns in Existing/Background Conditions

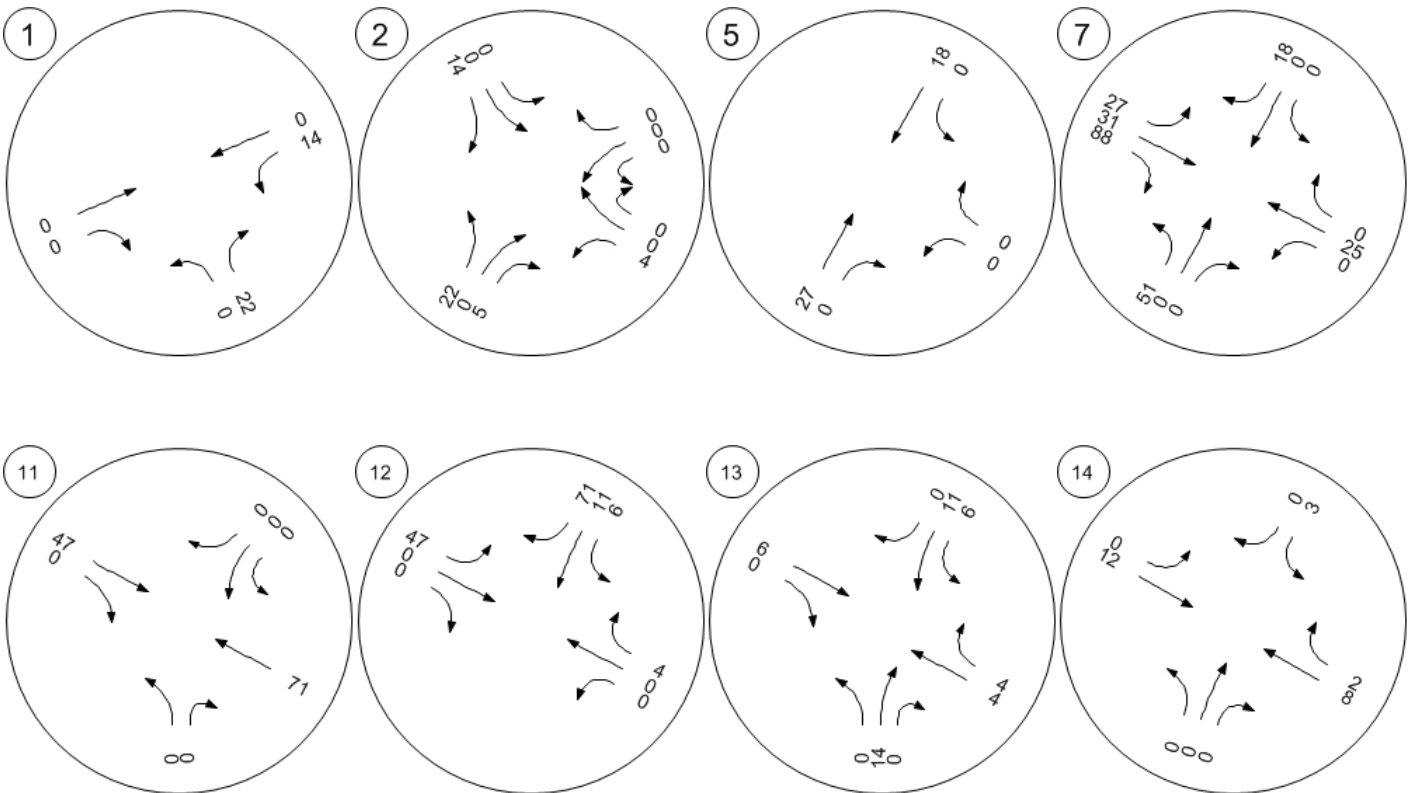
Intersection	Approach	Peak Hour	50th %	95th %	Possible Mitigation Measures
4th Street/Penn Street & New York Ave NE	Westbound Right	PM		x	Queuing issues at this intersection are primarily caused by the 150 second cycle length and how queuing space at 4th Street/Penn Street is very limited. New York Avenue is a major commuting corridor and therefore it receives the vast majority of green time. More green time can be allocated to 4th Street/Penn Street; however, the detriment to New York Avenue may outweigh the improvement to 4th Street/Penn Street.
Florida Ave & 5th Street NE	Eastbound	AM		x	Queuing issues at this intersection could be solved by allocated more green time to Florida Avenue and less to 5th Street. This would improve the queuing along Florida Avenue without causing excessive delay or queues along 5th Street.
Florida Ave & 6th Street NE	Eastbound Left	AM		x	Queuing issues at this intersection are primarily caused by the new lane configuration suggested as part of the <i>Florida Avenue Multimodal Transportation Study</i> that converts 6th Street to one way northbound just south of the intersection. For this reason queuing increases greatly along nearly all movements with the exception of northbound, which improves as part of the changes. All issues observed at this intersection are a direct result of background roadway changes or volumes with site-generated trips showing a minimal impact. Shifts to the signal timings can help decrease some of the queues, but not enough to fit within the designated storage lengths.
	Westbound	AM, PM	x (AM)	x (AM, PM)	
	Northbound	AM, PM	x (AM, PM)	x (AM, PM)	
	Southbound Left	AM, PM	x (AM, PM)	x (AM, PM)	

### Comments on Intersections where Queues Exceed Storage Length

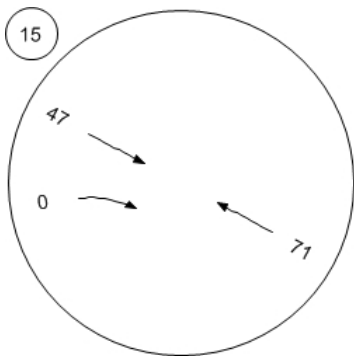
Intersections with Queuing concerns in Total Future Conditions

Intersection	Approach	Peak Hour	50th %	95th %	Possible Mitigation Measures
4th Street/Penn Street & New York Ave NE	Westbound Right	PM	x	x	Queuing issues at this intersection are primarily caused by the 150 second cycle length and how queuing space at 4th Street/Penn Street is very limited. New York Avenue is a major commuting corridor and therefore it receives the vast majority of green time. Some green time was shifted to the westbound approach which mitigated the left-turn queues. More green time can be allocated to 4th Street/Penn Street to improve the right-turn queues; however, the detriment to New York Avenue may outweigh the improvement to 4th Street/Penn Street.
	Westbound Left	PM		x	
Morse Street & 4th Street NE	Eastbound	PM		x	This intersection is improved as part of the 2020 Future Conditions by changing the intersection control from two-way to all-way stop-controlled. The subsequent SimTraffic analysis shows that altered queuing patterns associated with the all-way stop do not exceed the storage lengths. Additionally, the southbound lane configuration was changed to an exclusive right-turn lane and a thru-left lane. This was shown to improve the queuing along the southbound approach such that no spillover occurs.
	Southbound TR	AM		x	
Florida Ave & 4th Street NE	Westbound Left	AM		x	The queue exceeds the storage length by 8 feet and only for the 95th percentile queue. Therefore, no mitigation measures at this intersection, as changes to operations would have detrimental impacts to other movements greater than the benefit gained.

Fair Share - Site-Generated Volumes - South Building

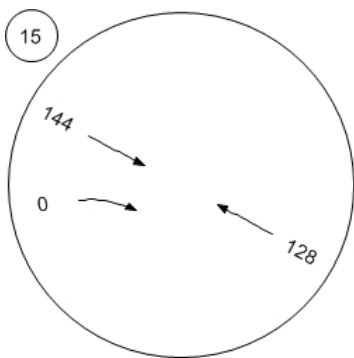


Fair Share - Site-Generated Volumes - South Building

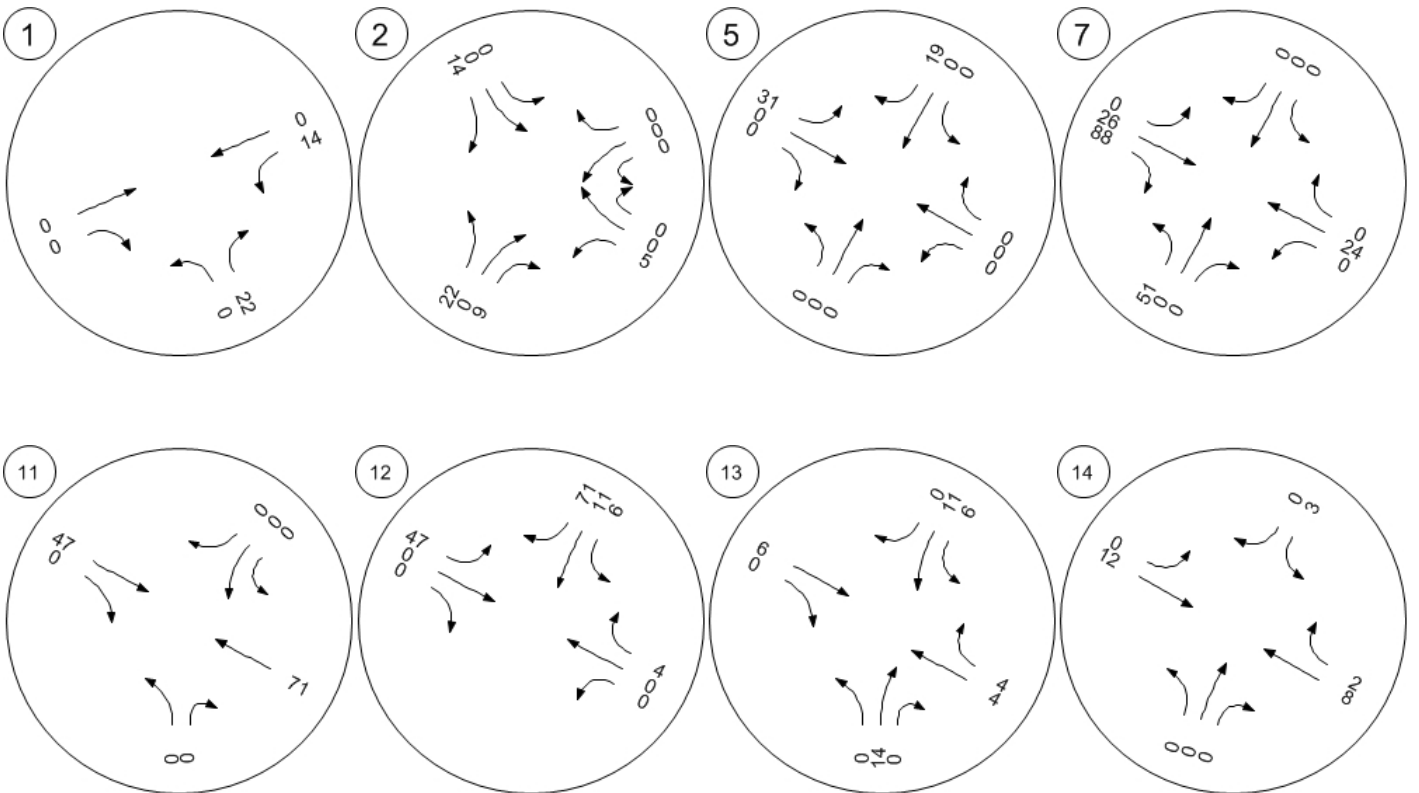




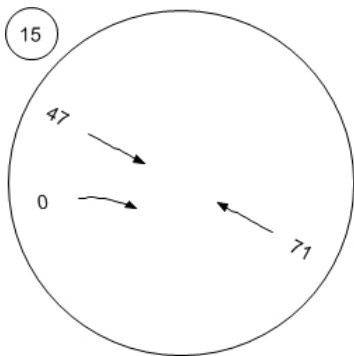
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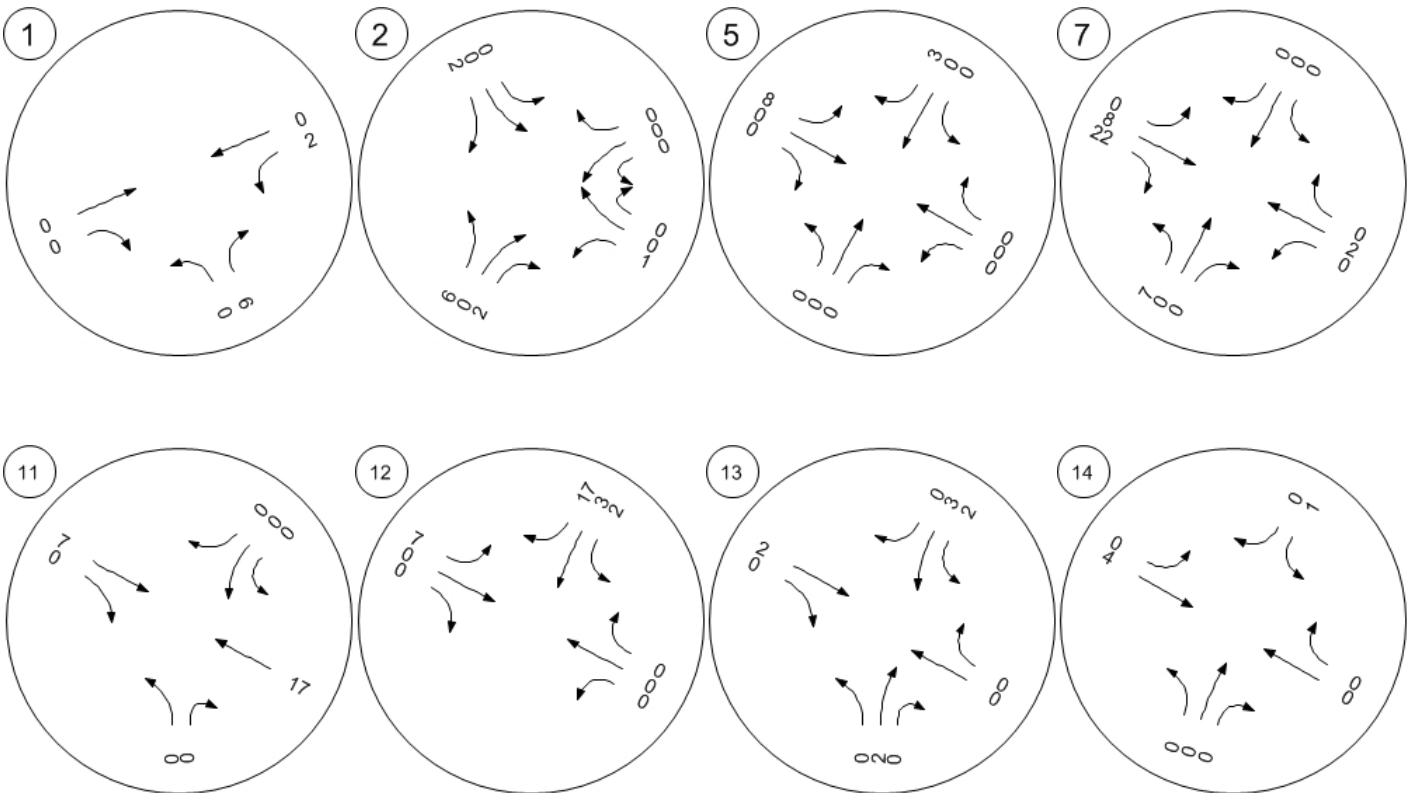
Fair Share - Site-Generated Volumes - South Building



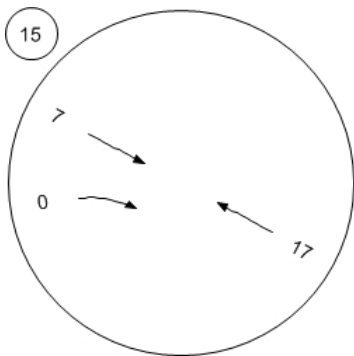
Fair Share - Site-Generated Volumes - South Building



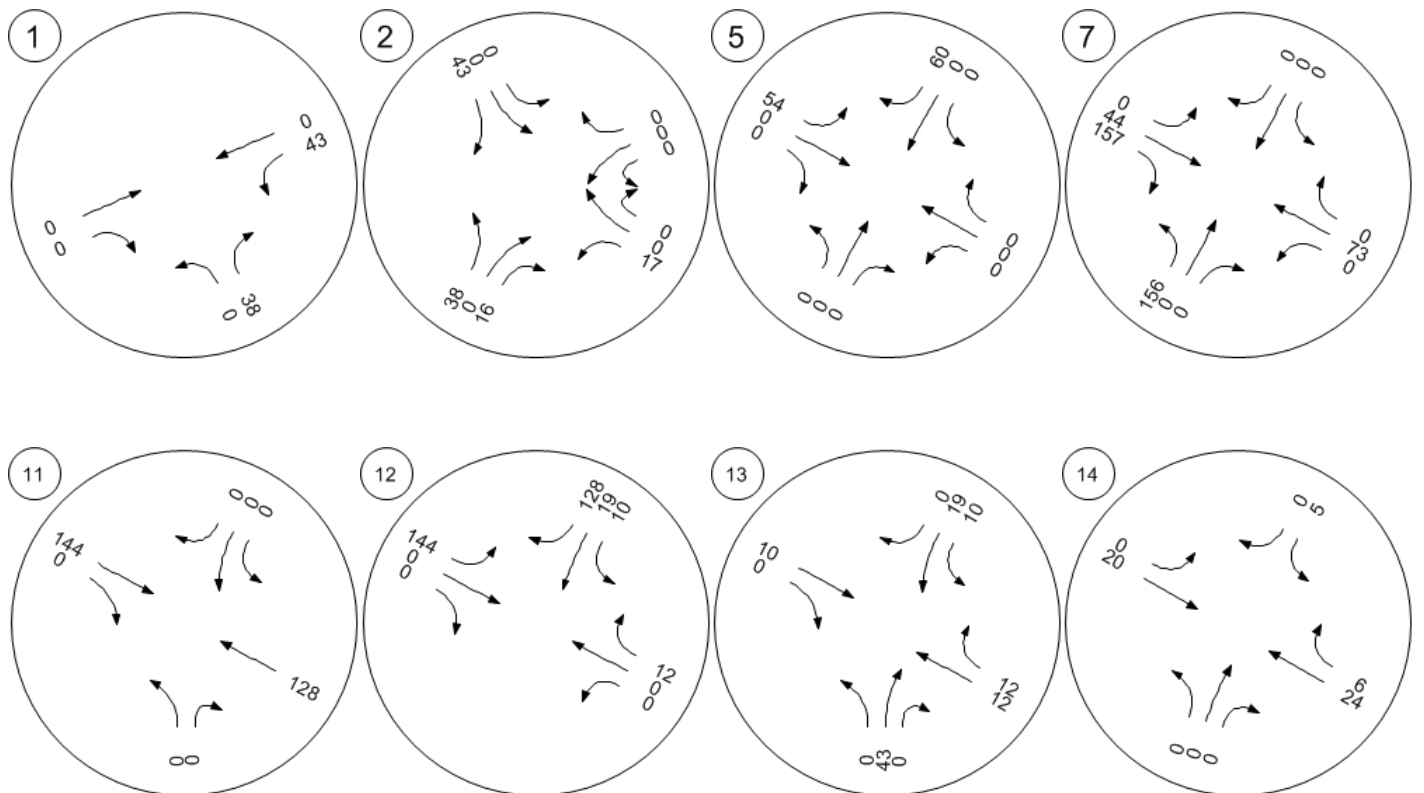
Fair Share - Site-Generated Volumes - North Building



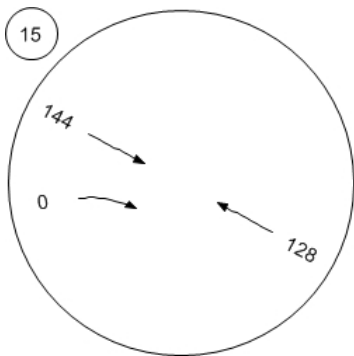
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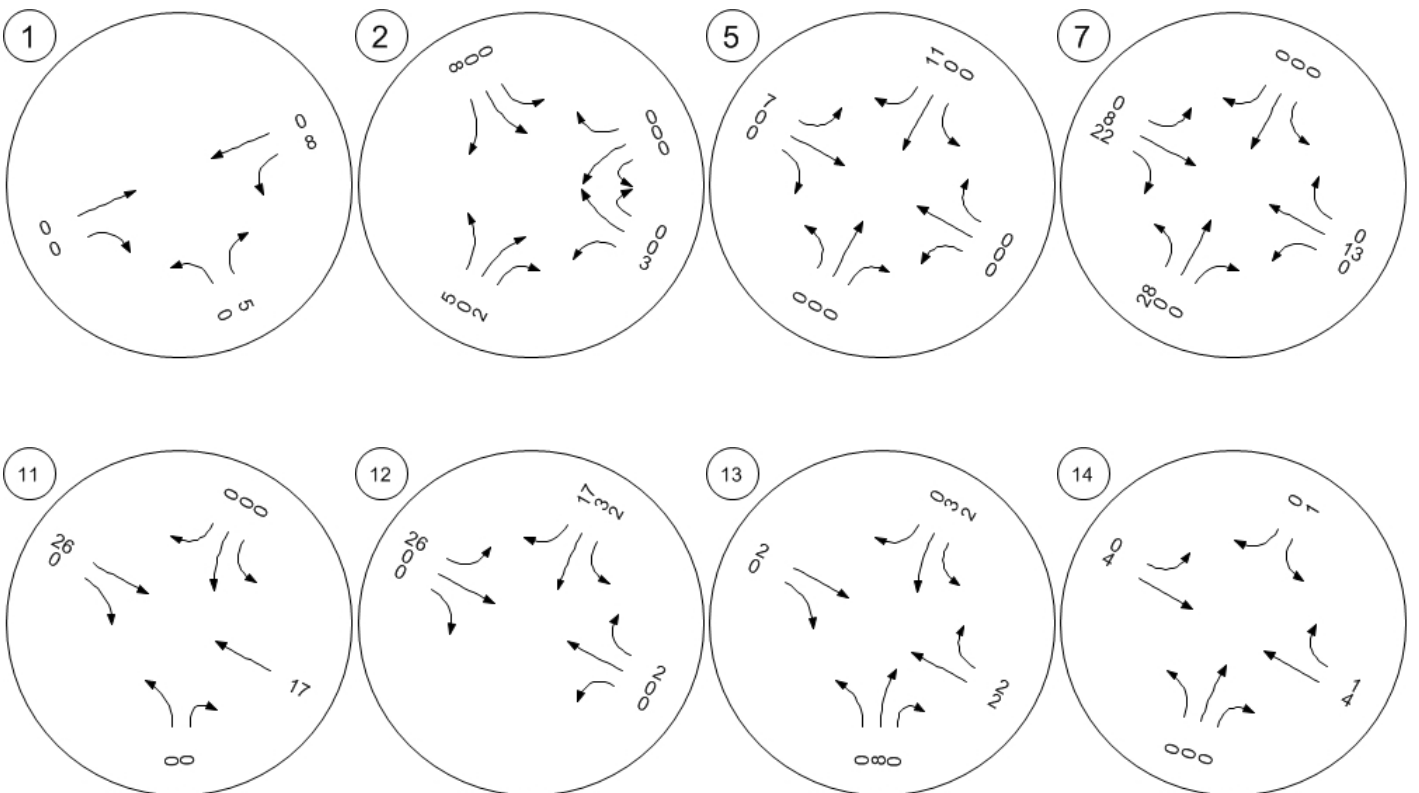
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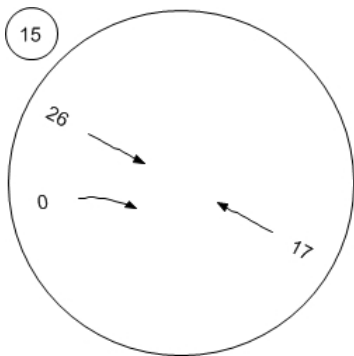
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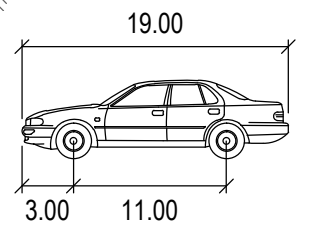
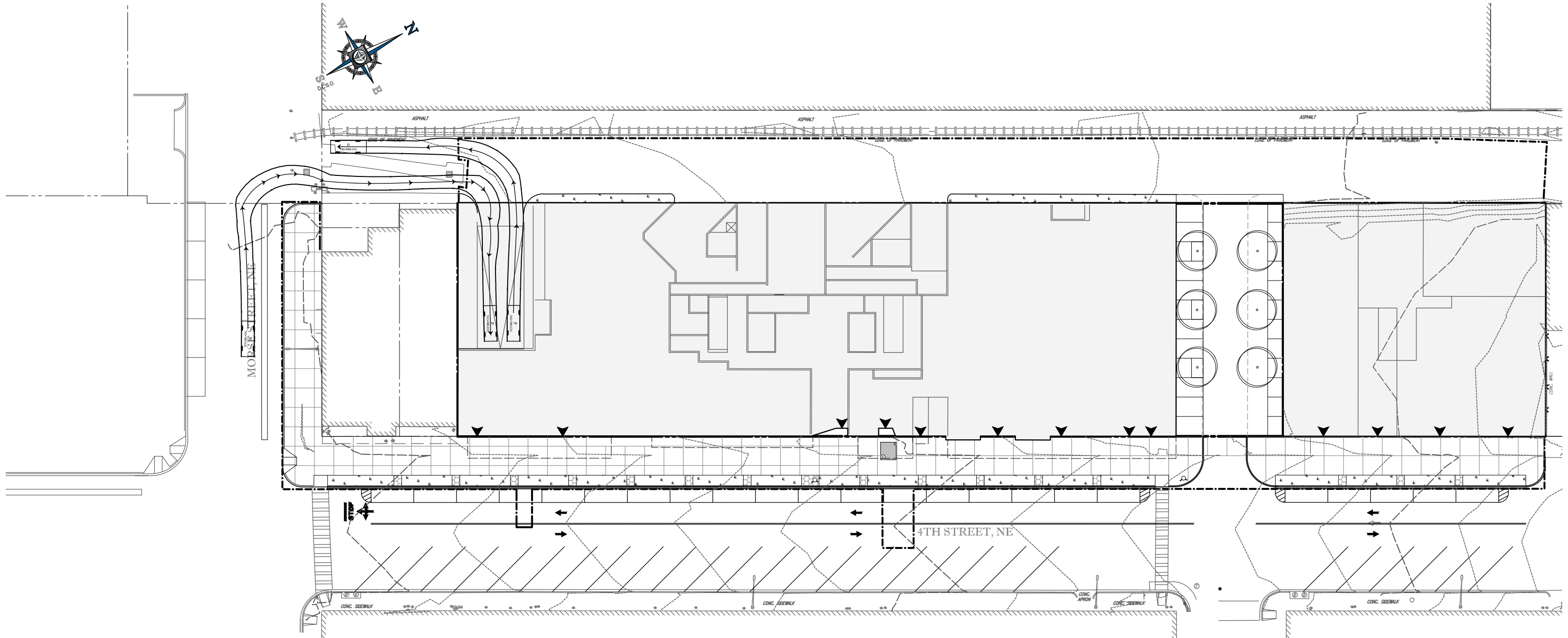
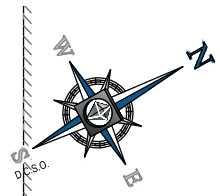


Fair Share - Site-Generated Volumes - North Building



Fair Share - Site-Generated Volumes - North Building





P	feet
Width	: 7.00
Track	: 6.00
Lock to Lock Time	: 6.0
Steering Angle	: 31.6

EDENS

1270 4TH ST NE Washington DC

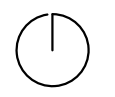
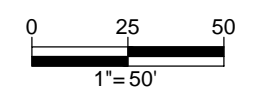
february 26, 2015 C-6.0

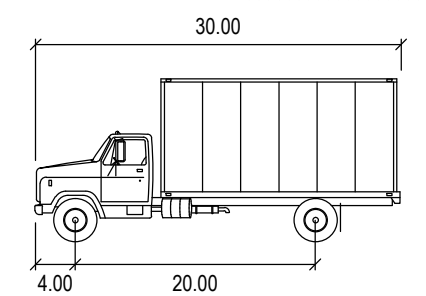
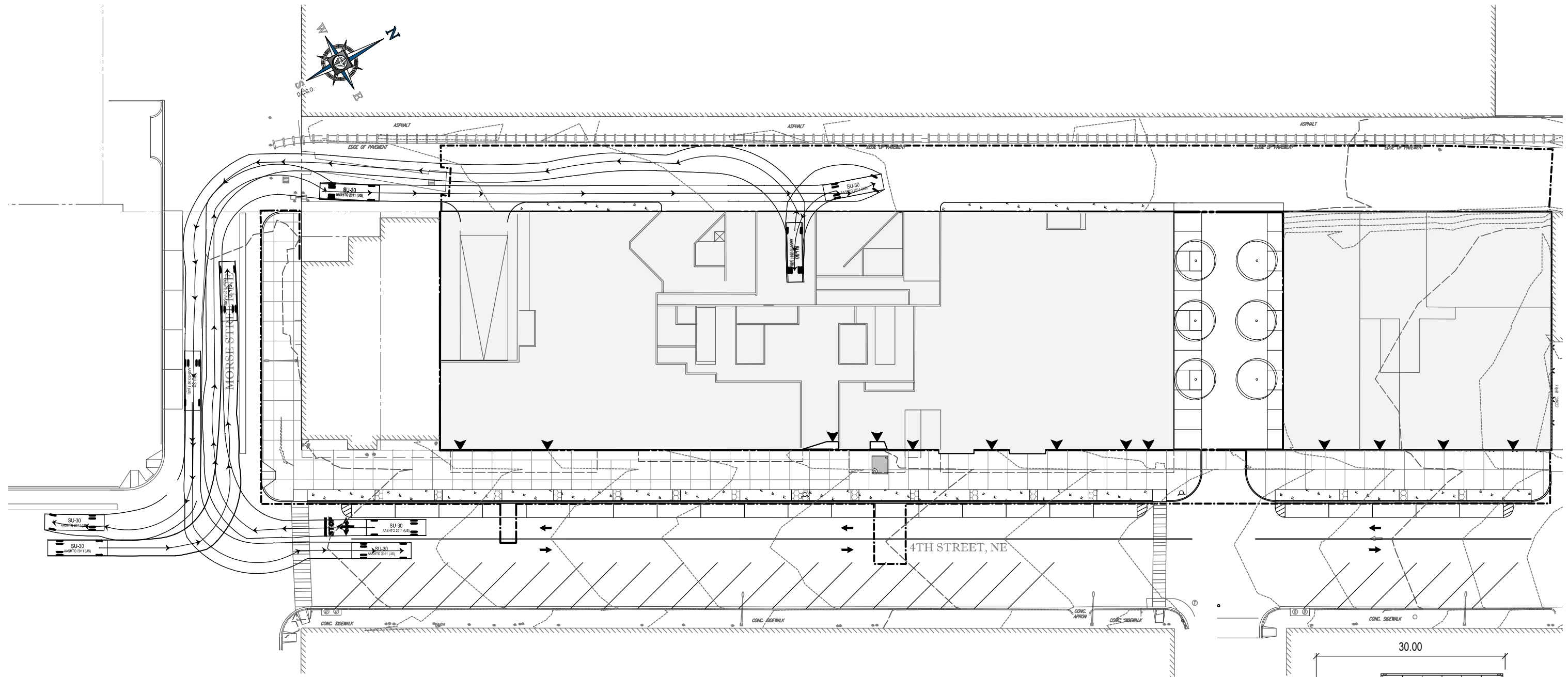
shalom baranes associates



PASSENGER CAR TURNS

DRAFT - FOR INTERNAL REVIEW ONLY





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

EDENS

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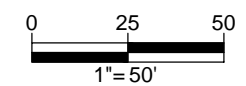


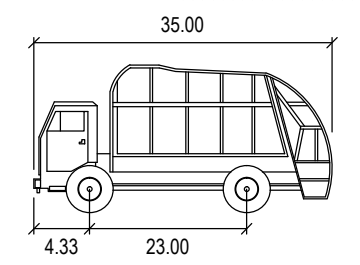
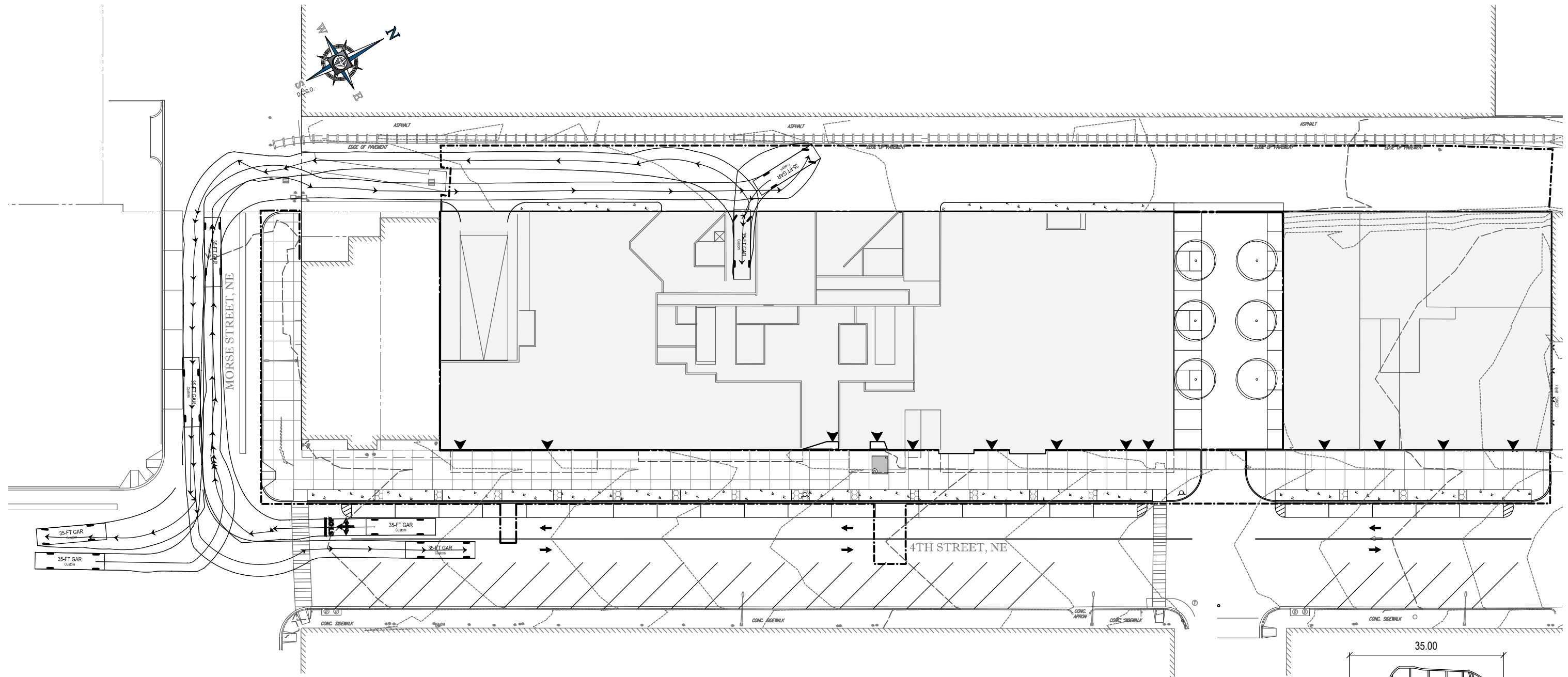
1270 4TH ST NE Washington DC

SU-30 TRUCK TURNS

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february 26, 2015 C-6.1





35-FT GAR	feet
Width	: 8.34
Track	: 8.20
Lock to Lock Time	: 6.0
Steering Angle	: 37.3

EDENS

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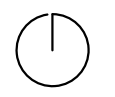
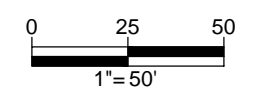


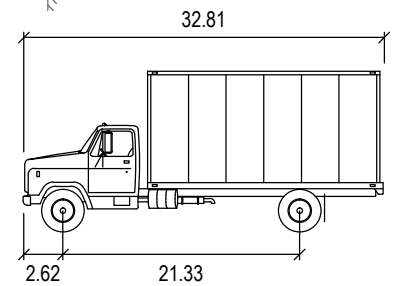
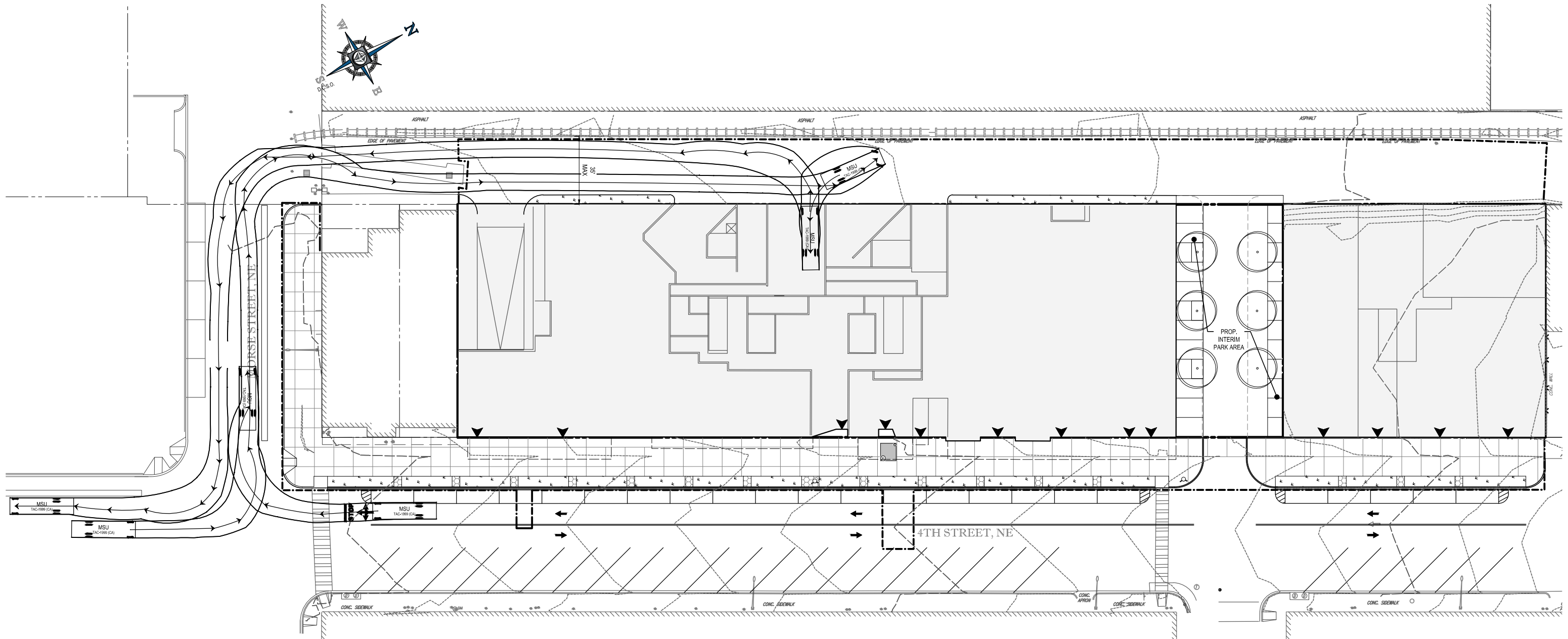
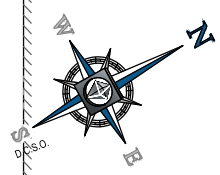
1270 4TH ST NE | Washington DC

GARBAGE TRUCK TURNS

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february 26, 2015 | C-6.2





MSU	feet
Width	: 8.53
Track	: 8.53
Lock to Lock Time	: 6.0
Steering Angle	: 40.1

EDENS

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MSU TRUCK TURNS

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