THE CITY OF
LAKE FOREST
CHARTERED 1861

December 6, 2014

Mr. Bruce Christensen
Planning Liaison
Lake County Council of Mayors
600 West Winchester Road
Libertyville, Illinois 60048

Re: CMAQ Project Application – IL 43 and Everett Rd Intersection Improvements

Dear Mr. Christensen:

Please accept this project application as an expressed interest in pursuing a Congestion Mitigation and Air Quality (CMAQ) grant for a City of Lake Forest-sponsored Traffic Flow Improvement project that will improve traffic operations and air quality while reducing traffic congestion and delays at the intersection of Waukegan Road (IL 43) and Everett Road in Lake Forest, Illinois. The project will also enhance bicycle access along Waukegan Road, in an area adjacent to the Lake Forest West Metra Station.

The City has already made a substantial investment ($228,000) towards the improvement of this intersection by conducting a traffic study of Everett Road, coordinating with IDOT and Metra to improve the traffic signal interconnect with the railroad, coordinating with the Illinois Department of Transportation (IDOT) on the preparation of a final Preliminary Site Investigation report, constructing a northbound right-turn lane on Telegraph Road to the immediate west of the Waukegan Road intersection, and preparing Phase I engineering plans for the project that have since been approved by IDOT, Metra and the Illinois Commerce Commission (ICC). The City also has already had a project kick-off meeting with IDOT and the ICC.

At this time the City is seeking a CMAQ grant to fund a portion of the Phase II engineering, right-of-way acquisition, and Phase III construction costs of the project. We estimate the total costs of these phases to be $2,379,000 of which the City of Lake Forest will provide the 20 percent local match ($475,800).

Thank you for your review of our application. If there are any elements of the application that need to be revised in advance of your submission of the application to the Chicago Metropolitan Agency for Planning (CMAP), please do not hesitate to contact me at (847) 810-3672 or Robert Ells, Superintendent of Engineering, at (847) 810-3555.

Sincerely,

Robert R. Kiely, Jr.
City Manager

Waukegan Road (IL 43) / Everett Road Intersection Improvement Project

CMAQ PROJECT APPLICATION

CMAP FY 2016-2020

Submitted By:

THE CITY OF LAKE FOREST

February 6, 2015

Table of Contents

CMAP FY 2016-2020 CMAQ PROJECT APPLICATION
TRAFFIC FLOW IMPROVEMENTS

I. PROJECT IDENTIFICATION

Project Sponsor **City of Lake Forest, IL**	Contact Information – Name, Title, Agency, Address, Phone, e-mail (e-mail required) **Robert W. Ells** **Superintendent of Engineering** **City of Lake Forest** **800 North Field Drive** **Lake Forest, Illinois 60045** **Phone: (847) 810-3555 Fax: (847) 615-4295** **Email: EllsR@cityoflakeforest.com**
Other Agencies Participating In Project	
☒ New Project ☐ Existing CMAQ Project ☐ Add CMAQ to Existing Project	TIP ID if project already has one

II. PROJECT LOCATION

- Projects not readily identified by location must provide a title on the last line of this section
- Attach a map sufficient to accurately locate this project in a GIS system

Name Of Street Or Facility To Be Improved **Waukegan Road**	Marked Route # **IL 43**	
Project Limits: North/West Reference Point/Cross St/Intersection **Everett Road**	Marked Route #	Municipality & County **Lake Forest, Lake County**
Project Limits: South/East Reference Point/Cross St/Intersection	Marked Route #	Municipality & County
Other Project Location Information Or Project Title		

III. PROJECT FINANCING & CMAQ FUNDING REQUEST

Please review the instructions.

	Starting Federal Fiscal Year*	Total Phase Costs	(New) CMAQ Funds Requested	Other Federal Funds Including prior CMAQ awards	
				Fund Type	Amount
Engineering Phase 1	**2011**	**$44.5**	**$0**		**$**
Engineering Phase 2	**2016**	**$205**	**$164**		**$**
Right-Of-Way Acquisition	**2016**	**$25**	**$20**		**$**
Construction (Including Construction Engineering)	**2017**	**$2,149**	**$1,719.2**		**$**
Engineering (For Implementation Projects)		**$**	**$**		**$**
Implementation		**$**	**$**		**$**
Alternatives Analysis		**$**	**$**		**$**
*Phase must be accomplished within 3 years Total Project Costs		**$2,423.5**	**$1,903.2**		

Source Of Local Matching Funds	City Capital Fund
If Soft Matching Funds Are Intended To Be Used, Please Contact CMAP Staff.	
Have the Matching Funds Been Secured? (Provide Details):	Yes, the intersection improvements are listed as a Priority 1 Funded Project the City's 5-yr Capital Improvement Program. Incremental intersection improvements has already been completed.

CMAP FY 2016-2020 CMAQ PROJECT APPLICATION
TRAFFIC FLOW IMPROVEMENTS – PAGE 2

IV. PROJECT EMISSIONS BENEFIT DATA

Type of Project (Check All that Apply):

Intersection Type:	Bottleneck Eliminations:	
☐ Roundabout	☐ Highway-Rail Grade Separation	☐ Remove Obstruction
☐ Restricted Crossing U-Turn (J-Turn)	☐ Two-Way Left Turn Lane	☐ Vertical Clearance
☐ Median U-Turn	☐ Realignment	☐ Truck Route Improvement
☐ Diverging Diamond Interchange		
☐ Conventional		

Turn Lanes:	Reconstruction:	Signals:
☐ Add Dual Left Turn Lanes	☐ Full Intersection Reconstruction (existing signal)	☒ Signal Modernization
☐ Add Single Left Turn Lanes	☐ Traditional Interchange Reconstruction	☐ New Signalization
☒ Add Right Turn Lanes		
☐ Multiple Turn Lane Types		

Project Length (Miles – Bottleneck Elimination And Multiple Intersections Only): _____

Posted Speeds (Miles Per Hour For Each Street): **Waukegan Road (IL 43): 35 mph** **Everett Road: 35 mph**

Bi-Directional AADTs by Approach: North Leg (North Approach): **_12,000**_____; South Leg: **_10,200**_____;
West Leg: **__6,850**_____; East Leg: **__4,800**_____;
Year: **_Waukegan Rd – 2013; Everett Rd - 2011**___

Do queues currently clear on the major street at signalized intersections in the pm peak period? ☒ Yes ☐ No
Except during frequent train events

Are the subject roadways included as part of the Congestion Management Process Highway System? ☐ Yes ☒ No

Is the project location identified in IDOT's 5% Safety Location report? ☐ Yes ☒ No
If "Yes" is checked, indicate in the project description how the project will address the safety issues.

Will bicycle facilities be added as part of this project? ☒ Yes ☐ No
If "Yes" is checked, describethe bicycle facility in the project description providing details asked for on the bicycle facility application form.

V. PROGRAM MANAGEMENT INFORMATION

Is right-of-way acquisition required for this project? ☒ Yes ☐ No
If so, has right-of-way been acquired? ☐ Yes ☒ No

Preliminary Design Status: ☐ N.A. ☐ Not Begun ☐ Agreement executed by Central Office ☐ Engineering Underway
☐ Submitted for review ☐ Responding to review comments
☐ Agreement sent to District 1for signatures ☒ Design approval granted
Date approval is anticipated or was granted:__**3/6/2015**_____

Estimated Completion Year: **_2017**_____

VI. PROJECT DESCRIPTION

Please describe project, including any qualitative travel time reliability improvements listed on pages 8-9 of application booklet.

This congestion relief project entails the construction of a southbound right-turn lane on Waukegan Rd (IL 43) and the extension of the existing eastbound right-turn lane on Everett Rd. The project is adjacent to the Lake Forest West Metra station on the Milwaukee District North Line. Immediately west and within 150' of the Waukegan/Everett intersection is a grade crossing carrying 90 trains per day (Metra, Amtrak, CP freight) on weekdays and 60 trains per day on weekends. Less than 500' west of the Waukegan/Everett intersection is the intersection of Everett Rd/Telegraph Rd, which is stop controlled on Telegraph. Telegraph Rd provides access to the Metra station parking lot to the north of Everett Rd, an elementary school less than ½-mile to the south of Everett Rd, and Lake Forest Fire Station Two immediately south of Everett Rd. Pace buses, private employer shuttle buses, school buses, and emergency vehicles all traverse the Waukegan/Everett Intersection and cross the railroad tracks throughout the day.

The existing eastbound right-turn lane on Everett Rd is only 50' long. Typical vehicle queues in the eastbound through and left-turn lanes block access to the right-turn lane, which accentuates the total queue length on the eastbound approach of Everett Rd at Waukegan Rd. Eastbound vehicle queues during the AM peak hour typically extend ¼-mile west of Waukegan Rd. The right-turn lane would be extended west across the grade crossing to Telegraph Rd, increasing the vehicle storage length to 298'. The rail crossing would be widened and made safer by the addition of a barrier median supporting additional crossing gates to prevent vehicles from bypassing the gates. The widened rail crossing would require relocation of the grade crossing signals and switching equipment.

In addition, the lack of a southbound right-turn lane on Waukegan Rd results in lengthy vehicle queues in the outside through lane by right-turning traffic delayed by the frequent train events, which limits the high volume of through traffic to a single lane. Crash data at this intersection indicates an average of approximately 14 crashes per year, 68% of which are rear-end collisions on Waukegan Road. The proposed right-turn lane is an effective crash reduction strategy that would improve travel time realiability qualitatively. The turn lane would provide 295' of vehicle storage and the need for 17' of additional right-of-way (7,414 sf) along the length of the improvement. Within this right-of-way, the existing 5' sidewalk will be replaced with an 8' multi-use path that will ultimately extend along Waukegan Road to the northern and southern limits of the City per the City's bicycle plan. There are crosswalks and pedestrian signals on all approaches of the intersection.

The traffic levels on Everett Rd and Waukegan Rd result in congested traffic conditions and extensive vehicle queuing and delays on eastbound Everett Rd, particularly during the AM peak hour when Metra-oriented traffic and school auto/bus traffic is intermixed with other commuter rush hour traffic. This condition is created, in part, due to the short spacing between Telegraph Rd and Waukegan Rd and the frequent train activity on Everett Rd, and in part due to the turn lane capacity constraints at the intersection. The rail crossing is blocked by trains a total of approximately 7½ minutes during the PM peak hour.

The City has already made a substantial investment ($228,000) towards reducing traffic congestion by conducting a traffic study of Everett Rd, coordinating with IDOT and Metra to improve the traffic signal interconnect with the railroad, coordinating with IDOT on the preparation of a Preliminary Environmental Site Assessment and a final Preliminary Site Investigation report, constructing a northbound right-turn lane on Telegraph Road at Everett Road, and preparing Phase I engineering plans for the intersection improvement project that have since been approved by IDOT, Metra and ICC.

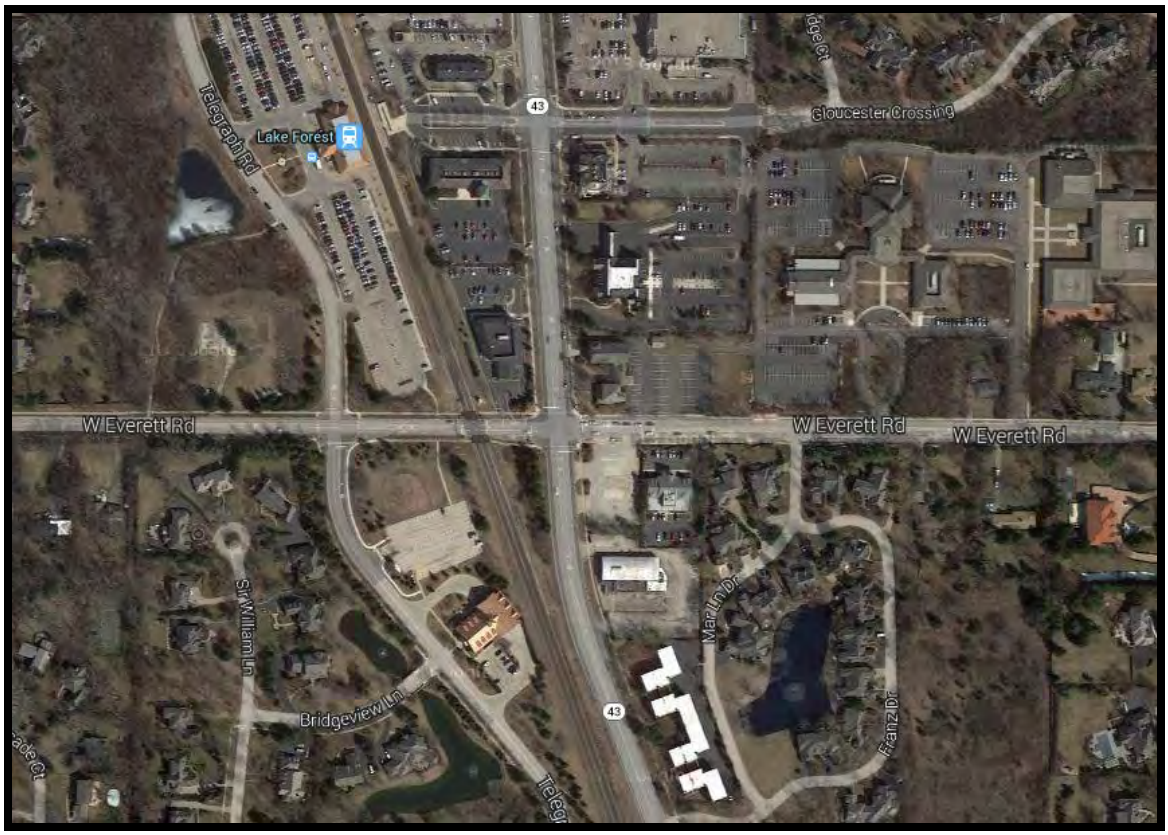
The City has also made a substantial investment ($275,000) on improving pedestrian and bicycle access to the adjacent Metra station by conducting engineering studies and preparing Ph. 2 engineering plans for a pedestrian underpass beneath the railroad and adjacent to the station. This project, which was partially funded with a separate CMAQ grant, is nearing final design approval by IDOT and has been tentatively scheduled on the 4/24/2015 State letting. The project is seen as a precursor to establishing an Amtrak stop at the station, which would be the first Amtrak stop in Lake County. It is anticipated that up to 12 of the 16 daily Amtrak trains will stop at the station.

The Wauken Rd/Everett Rd intersection improvement project will reduce traffic congestion and vehicle delays, which advances the efforts of the GO TO 2040 Direct Emissions Reduction Focus Group (DER) by reducing emissions and vehicle idling. The project also achieves the criteria adopted by the Bicycle and Pedestrian Taskforce (BPTF) as it (1) converts a 5' sidewalk into an 8' bikeway/multi-use path, (2) increases capacity for both pedestrian and bicycle access to the Metra station, (3) is included in the City's Capital Improvement Plan and has been approved by IDOT, (4) provides direct access to an activity/employment center along Waukegan Rd as well as shopping, restaurant, church, and Metra station destinations, (5) will improve the attractiveness of the facility for biking by upgrading the Waukegan Rd 5' sidewalk (arterial with some accommodation) to an 8' multi-use sidepath.

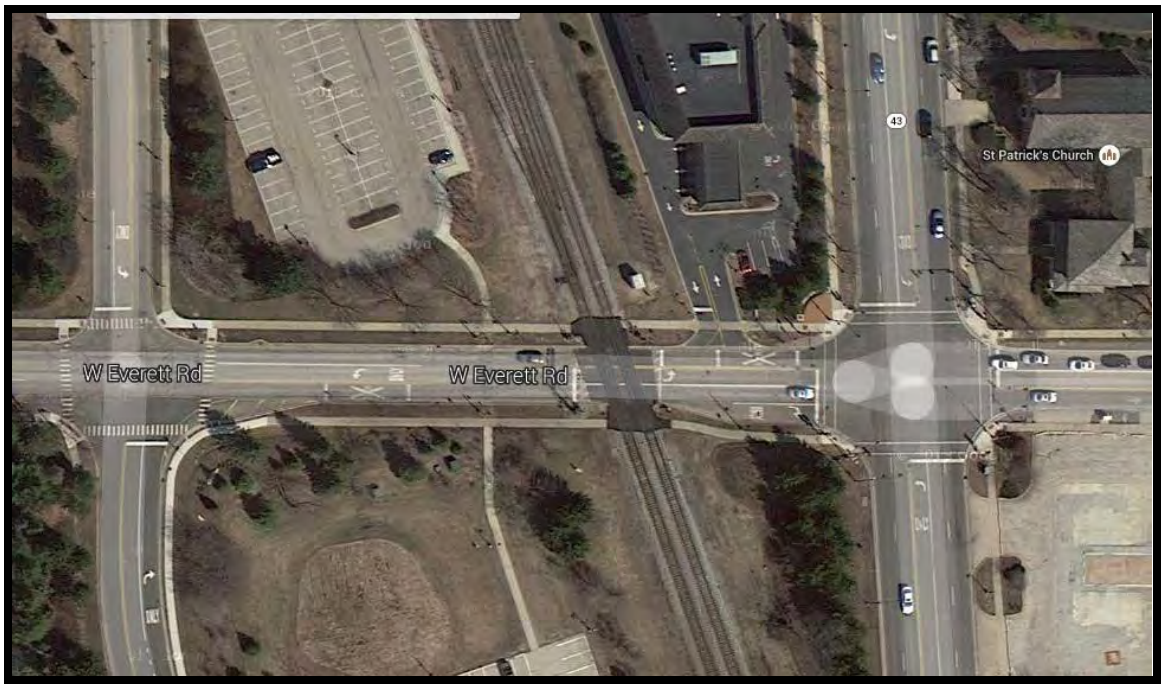
Per the Lake County FEMA map and IDOT Environmental Site Assessment, there are no IDNR documented or possible wetlands, flood plains, floodways, no parks or forest preserves impacted, and no cultural or biological resources involved. Per IDOT's Final Preliminary Site Investigation, there are no hazardous materials involved and minimal contaminated soil potential. There are also no unusual soil conditions. Utilities involved include electrical, gas, telephone, cable, sewer, and water, and some utility relocations will be required. The project has an urban drainage system and detention is not required. Special safety considerations relate to the railroad crossing and interconnection between the traffic signal and rail crossing signals and gates.

The bicycle/pedestrian improvement will most immediately serve a ½-mile transit zone surrounding the Metra Station that contains approximately 1,045 residents and provides approximately 1,822 jobs. Approximately 8.5% of these residents take public transportation to work with 9% walking or biking to the station. Another 3% of area residents walk or bike to other jobs in the area. Area residents also walk and bike through the intersection as they travel to/from their neigbhorhoods and the many shopping destinations within the commercial district along Waukegan Rd between In total, there are approximately 1,200 weekday boardings/alightings at the station. The intersection has experienced approximately 4.3 crashes/year over the past 10 years; approximately 7% have involved pedestrians or bicyclists.

There is local public support for this project and the public has been involved in several public meetings including those held on 7/28/09, 9/10/09, 12/7/09, 9/20/10, and 10/4/10.



Aerial View of Project Area



Aerial View Zoom-In on Project Area

CMAQ FY 2016-2020 INPUT MODULE WORKSHEET

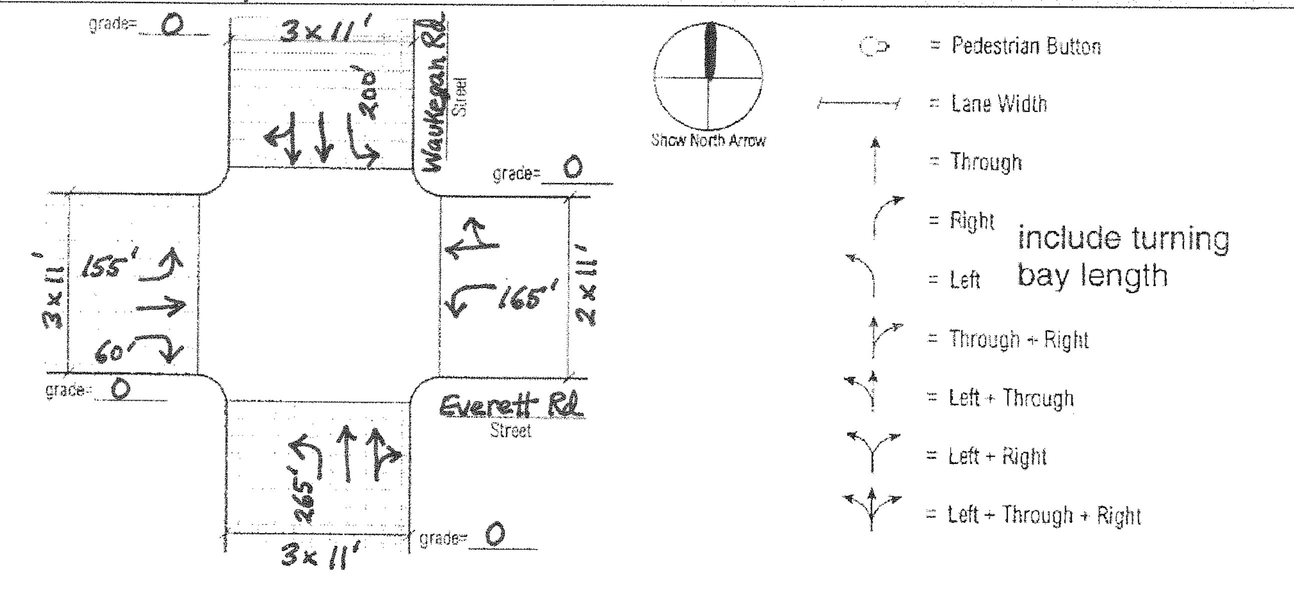
(Complete one worksheet for before conditions and one worksheet for after conditions

☒ Before Improvement

☐ After Improvement

General Information	Site Information
Analysis Time Period: **PM Peak**	Intersection Waukegan Road / Everett Road
Analysis Year 2009	Area Type ☐ CBD ☒ Other Jurisdiction IDOT

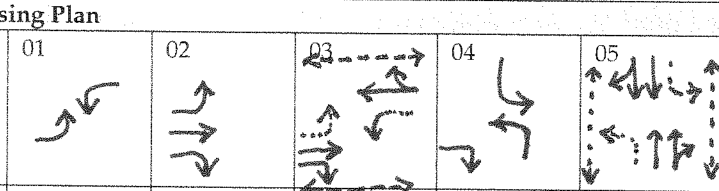
Intersection Geometry (draw or attach)



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT[1]	LT	TH	RT[1]	LT	TH	RT[1]	LT	TH	RT[1]
Volume, V (veh/h)	191	100	90	20	128	68	214	1255	39	96	505	243
% heavy vehicles, % HV	2	2	2	2	2	2	2	5	2	2	5	2
Peak-hour factor, PHF	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95
Pretimed (P) or actuated (A)	A	A	A	A	A	A	A	A	A	A	A	A
Start-up lost time, l_1 (s)	2	2	2	2	2		2	2		2	2	
Extension of effective green time, e (s)	2	2	2	2	2		2	2		2	2	
Arrival type, AT	3	3	3	3	3		3	3		4	4	
Approach pedestrian volume,[2] v_{ped} (p/h)	50			50			50			50		
Approach bicycle volume,[2] v_{bic} (bicycles/h)	0			0			0			0		
Parking (Y or N)	N			N			N			N		
Parking maneuvers, N_m, (maneuvers/h)	0			0			0			0		
Bus Stopping, N_B (buses/h)	0			0			0			0		
Min. timing for pedestrians,[3] G_p (s)	24			21			15			18		

Signal Phasing Plan



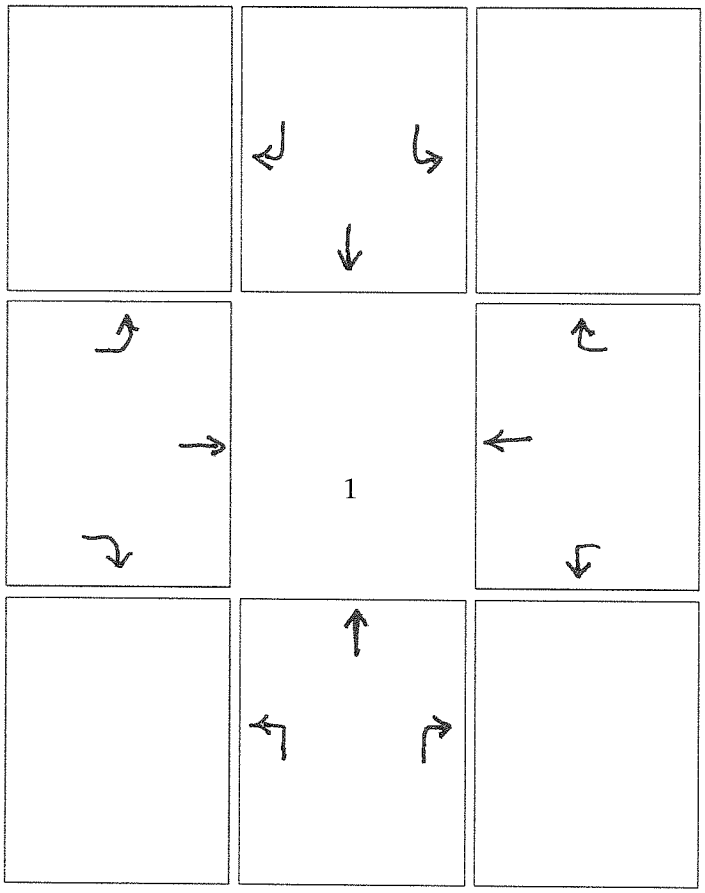
	01	02	03	04	05	06	07	08
Timing	G= 11s Y= 3s	G= 2s Y= 3s	G= 28s Y= 6s	G= 13s Y= 3s	G= 55s Y= 6s	G= Y=	G= Y=	G= Y=

Protected turns — Permitted turns — Pedestrian — Cycle length, C = 130 s

Notes

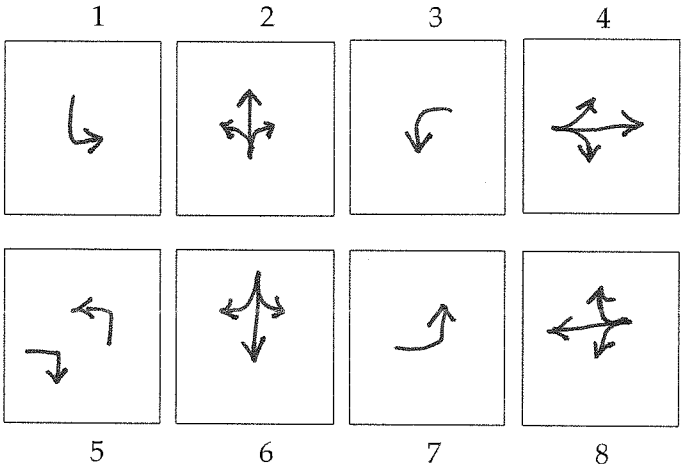
1. RT volumes, as shown, exclude ROR
2. Approach pedestrian and bicycle volumes are those that conflict with right turns from the subject approach.
3. Refer to Equation 16-2

ACTUATED CONTROLLER PRPOERTIES



Scheme: _____

☐ Reverse



☐ Reverse

Phase Settings (All times are in seconds)

Phase	1	2	3	4	5	6	7	8
Max Green	11	58	10	33	14	55	15	28
Min Green	3	15	4	8	3	15	4	8
Amber	3.0	4.5	3.0	4.5	3.0	4.5	3.0	4.5
All Red	0.0	1.5	0.0	1.5	0.0	1.5	0.0	1.5
Veh. Ext.	2.5	7.0	2.5	4.0	2.5	7.0	2.5	4.0
Min Recall	☐	☒	☐	☐	☐	☒	☐	☐
Max Recall	☐	☐	☐	☐	☐	☐	☐	☐

ACTUATED CONTROLLER COORDINATION

Use Coordination ☒

Note: All times are in seconds

Phase	1	2	3	4	5	6	7	8
Force-off	69	0	16	52	72	0	21	52
Phase can terminate before force-off	☒	☐	☒	☒	☒	☐	☒	☒
Permissive 1	☐	☐	☐	☐	☐	☐	☐	☐
Period 2	☐	☐	☐	☐	☐	☐	☐	☐
Flags	☐	☐	☐	☐	☐	☐	☐	☐

Yield Point: 72

Cycle Length: 130

Extended Side-Street Leading Left-Turn Phases

Phase _____ Duration _____

Phase _____ Duration _____

Permissive Periods

Begin Times

1 _____ 2 _____ 3 _____

End Times

1 _____ 2 _____ 3 _____

HCS+: Signalized Intersections Release 5.21

Analyst: KC
Agency: KLOA
Date: 1/10/2011
Period: PM Peak
Project ID: 09-054
E/W St: Everett Rd

Inter.: waukegan/everett
Area Type: All other areas
Jurisd: IDOT
Year : Existing

N/S St: Waukegan Rd

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	1	1	1	0	1	2	0	1	2	0
LGConfig	L	T	R	L	TR		L	TR		L	TR	
Volume	191	100	90	20	128	68	214	1255	39	96	505	243
Lane Width	11.0	11.0	11.0	11.0	11.0		11.0	11.0		11.0	11.0	
RTOR Vol			0			0			0			0

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination		1	2	3	4			5	6	7	8
EB	Left	A	A	A		NB	Left	A	A		
	Thru		A	A			Thru		A		
	Right		A	A			Right		A		
	Peds		X	X			Peds		X		
WB	Left	A		A		SB	Left	A	A		
	Thru			A			Thru		A		
	Right			A			Right		A		
	Peds			X			Peds		X		
NB	Right					EB	Right	A			
SB	Right					WB	Right				
Green		11.0	2.0	28.0				13.0	55.0		
Yellow		3.0	3.0	4.0				3.0	4.0		
All Red		0.0	0.0	2.0				0.0	2.0		

Cycle Length: 130.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	375	1642	0.54	0.38	30.4	C		
T	481	1895	0.22	0.25	38.5	D	31.3	C
R	576	1441	0.16	0.40	25.2	C		
Westbound								
L	387	1608	0.05	0.30	32.3	C		
TR	359	1665	0.58	0.22	48.0	D	46.5	D
Northbound								
L	372	1683	0.60	0.57	18.8	B		
TR	1401	3312	0.97	0.42	54.5	D	49.4	D
Southbound								
L	225	1702	0.45	0.57	25.5	C		
TR	1327	3137	0.59	0.42	25.8	C	25.8	C

Intersection Delay = 40.1 (sec/veh) Intersection LOS = D

CMAQ FY 2016-2020 INPUT MODULE WORKSHEET

(Complete one worksheet for before conditions and one worksheet for after conditions

☐ Before Improvement

☒ After Improvement

General Information	Site Information
Analysis Time Period: **PM Peak**	Intersection Waukegan Road / Everett Road
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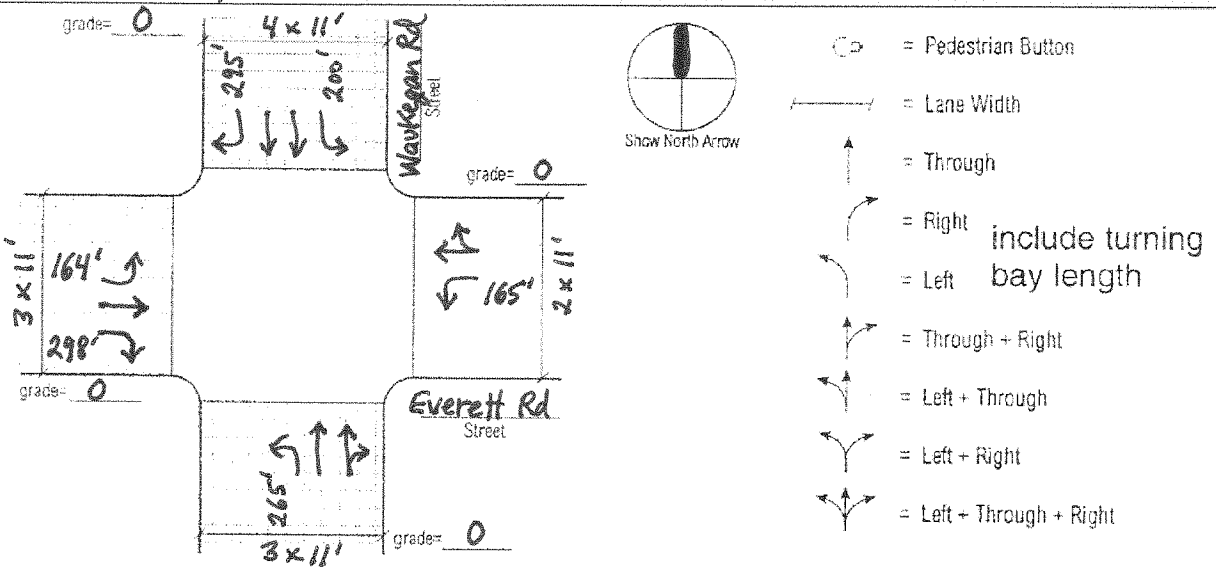
Intersection Geometry (draw or attach)



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT[1]	LT	TH	RT[1]	LT	TH	RT[1]	LT	TH	RT[1]
Volume, V (veh/h)	195	160	105	25	175	80	240	1290	40	100	505	243
% heavy vehicles, % HV	2	2	2	2	2	2	2	5	2	2	5	2
Peak-hour factor, PHF	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95
Pretimed (P) or actuated (A)	A	A	A	A	A	A	A	A	A	A	A	A
Start-up lost time, l_1 (s)	2	2	2	2	2		2	2		2	2	
Extension of effective green time, e (s)	2	2	2	2	2		2	2		2	2	
Arrival type, AT	3	3	3	3	3		3	3		4	4	
Approach pedestrian volume,[2] v_{ped} (p/h)	50			50			50			50		
Approach bicycle volume,[2] v_{bic} (bicycles/h)	0			0			0			0		
Parking (Y or N)	N			N			N			N		
Parking maneuvers, N_m, (maneuvers/h)	0			0			0			0		
Bus Stopping, N_B (buses/h)	0			0			0			0		
Min. timing for pedestrians,[3] G_p (s)	24			24			15			18		

Signal Phasing Plan

Diagram	01	02	03	04	05	06	07	08
Timing	G= 9s Y= 3s	G= 31s Y= 6s	G= 8s Y= 3s	G= 64s Y= 6s	G= Y=	G= Y=	G= Y=	G= Y=

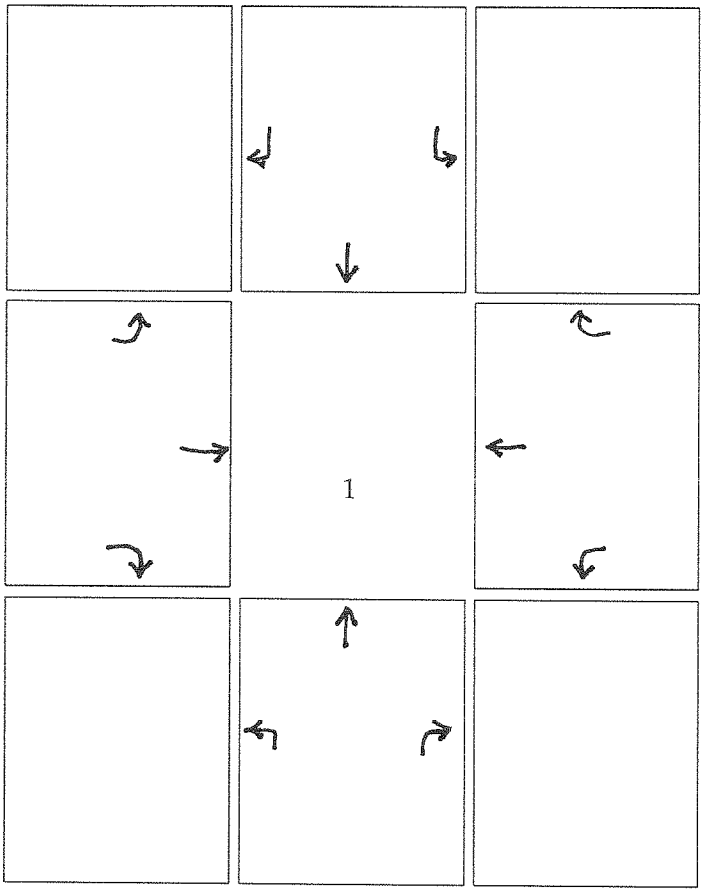
Protected turns ⟶ Permitted turns - - - Pedestrian

Cycle length, C = 130 s

Notes

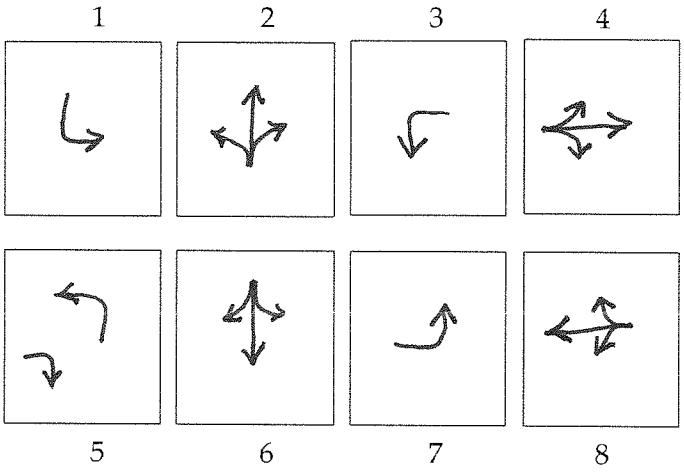
1. RT volumes, as shown, exclude ROR
2. Approach pedestrian and bicycle volumes are those that conflict with right turns from the subject approach.
3. Refer to Equation 16-2

ACTUATED CONTROLLER PRPOERTIES



Scheme: _____

☐ Reverse



☐ Reverse

Phase Settings (All times are in seconds)

Phase	1	2	3	4	5	6	7	8
Max Green	8	64	9	31	8	64	9	31
Min Green	3	15	4	8	3	15	4	8
Amber	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
All Red	0.0	2.0	0.0	2.0	0.0	2.0	0.0	2.0
Veh. Ext.	3.0	7.0	3.0	4.0	3.0	7.0	3.0	4.0
Min Recall	☐	☒	☐	☐	☐	☒	☐	☐
Max Recall	☐	☐	☐	☐	☐	☐	☐	☐

ACTUATED CONTROLLER COORDINATION

Use Coordination ☒

Note: All times are in seconds

Phase	1	2	3	4	5	6	7	8
Force-off	67	0	15	50	67	0	15	50
Phase can terminate before force-off	☒	☐	☒	☒	☒	☐	☒	☒
Permissive 1	☐	☐	☐	☐	☐	☐	☐	☐
Period 2	☐	☐	☐	☐	☐	☐	☐	☐
Flags	☐	☐	☐	☐	☐	☐	☐	☐

Yield Point: 74

Cycle Length: 130

Extended Side-Street Leading Left-Turn Phases

Phase _____ Duration _____

Phase _____ Duration _____

Permissive Periods

Begin Times

1 _____ 2 _____ 3 _____

End Times

1 _____ 2 _____ 3 _____

HCS+: Signalized Intersections Release 5.21

Analyst: ER
Agency: KLOA
Date: 02/13/2012
Period: PM Peak
Project ID: 09-054
E/W St: Everett Rd

Inter.: waukegan/everett
Area Type: All other areas
Jurisd: IDOT
Year : 2012

N/S St: IL Route 43 (Waukegan Rd)

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	1	1	1	0	1	2	0	1	2	1
LGConfig	L	T	R	L	TR		L	TR		L	T	R
Volume	195	160	105	25	175	80	240	1290	40	100	505	245
Lane Width	11.0	11.0	11.0	11.0	11.0		11.0	11.0		11.0	11.0	11.0
RTOR Vol			0			0			0			0

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination		1	2	3	4			5	6	7	8
EB	Left	A	A			NB	Left	A	A		
	Thru		A				Thru		A		
	Right		A				Right		A		
	Peds		X				Peds		X		
WB	Left	A	A			SB	Left	A	A		
	Thru		A				Thru		A		
	Right		A				Right		A		
	Peds		X				Peds		X		
NB	Right					EB	Right	A			
SB	Right					WB	Right				
Green		9.0	31.0					8.0	64.0		
Yellow		3.0	4.0					3.0	4.0		
All Red		0.0	2.0					0.0	2.0		

Cycle Length: 130.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	272	1657	0.75	0.35	51.7	D		
T	452	1895	0.37	0.24	41.9	D	43.4	D
R	497	1435	0.22	0.35	30.3	C		
Westbound								
L	346	1640	0.08	0.35	28.1	C		
TR	401	1682	0.67	0.24	49.1	D	47.2	D
Northbound								
L	480	1672	0.53	0.60	18.4	B		
TR	1631	3313	0.86	0.49	33.9	C	31.5	C
Southbound								
L	170	1703	0.62	0.60	29.2	C		
T	1726	3506	0.31	0.49	15.5	B	18.6	B
R	715	1453	0.36	0.49	20.7	C		

Intersection Delay = 31.1 (sec/veh) Intersection LOS = C

DETAILED ESTIMATE OF COSTS

Item	Description	Unit	Quantity	Unit Price	Total
	See Attachment				
				TOTAL COST OF ITEMS:	

ESTIMATES MUST BE BASED UPON QUANTITIES AND UNIT COSTS WHENEVER POSSIBLE.
LUMP SUM AMOUNTS ARE NOT ACCEPTABLE

SPACECO INC.

CONSULTING ENGINEERS
SITE DEVELOPMENT ENGINEERS
LAND SURVEYORS

CONCEPTUAL
ENGINEER'S OPINION OF
PROBABLE CONSTRUCTION COST

PROJECT: **Waukegan Rd and Everett Road Improvements**

LOCATION: Lake Forest, Illinois

PROJECT NO.: 6181.02

CLIENT : KLOA, Inc.

DATE PREPARED: 8/15/2012
LAST REVISED: 11/24/2014

PREPARED BY: RJB
CHECKED BY: BD

GROUP MANAGER: _____
(HAND WRITTEN INITIALS)

THE PRICES USED IN THIS LIST ARE BASED ON THE AVERAGE PRICES FROM CONTRACTOR'S BID PRICES REVIEWED WITHIN THE PAST YEAR BY SPACECO, INC. FOR SIMILAR PROJECTS AND/OR AVAILABLE MATERIAL & LABOR COST DATA. SOME UNIT PRICES HAVE BEEN ADJUSTED TO ALLOW FOR SPECIAL CONDITIONS. THESE UNIT PRICES DO NOT INCLUDE ENGINEERING FEES.

CONSULTING ENGINEERS * SITE DEVELOPMENT ENGINEERS * LAND SURVEYORS

SPACECO, INC.

Engineer's Opinion of Probable Construction Cost

ITEM		QNTY	UNIT	UNIT PRICE	AMOUNT
EVERETT ROAD & WAUKEGAN ROAD IMPROVMENTS					
A. Landscaping					
1. LANDSCAPE REMOVAL	TREE & BUSHES	1	LSUM	$6,000.00	$6,000
2. LANDSCAPING		1	LSUM	$8,000.00	$8,000
3. RETAINING WALL		600	SFF	$30.00	$18,000
	A. Landscaping			Sub-Total =	$32,000
B. Soil Erosion Sediment Control					
1. INLET EROSION CONTROL		14	EACH	$200.00	$2,800
2. SODDING		1	L.SUM	$5,000.00	$5,000
	B. Soil Erosion Sediment Control			Sub-Total =	$7,800
C. Earthwork Improvements					
1. EARTHWORK	STRIP & HAUL OFFSITE	1	L.SUM	$35,000.00	$35,000
2. TOPSOIL	STRIP & HAUL OFFSITE	1	L.SUM	$5,000.00	$5,000
3. TOPSOIL	RESPREAD, 6"	1	L.SUM	$5,000.00	$5,000
	C. Earthwork Improvements			Sub-Total =	$45,000
D. Drainage Improvements					
1. CATCH BASIN	48" DIA., TYPE-A	6	EACH	$3,000.00	$18,000
2. INLET,	24" DIA.	2	EACH	$2,200.00	$4,400
3. ADJUST EXIST FRAME/GRATE		3	EACH	$500.00	$1,500
4. REMOVE EXISTING MH/CB		7	EACH	$500.00	$3,500
5. REMOVE EXISTING PIPE,	12"-33"	50	L.F.	$35.00	$1,750
6. STORM SEWER, RCP, CL IV	12"	120	L.F.	$80.00	$9,600
7. STORM TRENCH BACKFILL	<18" DIA.	120	L.F.	$25.00	$3,000
	D. Drainage Improvements			Sub-Total =	$41,750
E. Roadway Improvements					
1. REMOVE PVMT, BITUMINOUS	FULL DEPTH	2,023	S.Y.	$30.00	$60,690
2. REMOVE	CURB & GUTTER	1,341	L.F.	$11.00	$14,751
3. REMOVE	PCC SIDEWALK	5,743	S.F.	$8.00	$45,944
4. REMOVE PAVEMENT, BIT	DRIVEWAY	135	S.Y.	$20.00	$2,700
HMA Pavement					
4. BITUMINOUS SURFACE COURSE	1.5", CL I	3,375	S.Y.	$10.00	$33,750
5. BITUMINOUS BINDER COURSE	2.5", CL I	3,375	S.Y.	$18.00	$60,750
6. BITUMINOUS BASE CSE (BAM)	6"	3,375	S.Y.	$40.00	$135,000
7. PCC BASE COURSE	9"	3,375	S.Y.	$70.00	$236,250
8. AGGREGATE BASE, TYPE B	4"	3,375	S.Y.	$8.00	$27,000
9. PAVEMENT MARKING	THERMOPLASTIC	1	LSUM	$10,000.00	$10,000
10. DRIVEWAY PAVEMENT - REMOVE/REPLACE		1	LSUM	$75,000.00	$75,000
Curb & Gutter					
11. CURB & GUTTER, (w/ AGGR)	B-6.12	1,077	L.F.	$17.00	$18,309
12. CURB & GUTTER, (w/ AGGR)	B-6.24	621	L.F.	$20.00	$12,420
13. CURB & GUTTER, (w/ AGGR)	M-4.12	390	L.F.	$17.00	$6,630
Concrete Pavement					
14. PCC SIDEWALK	5" THICK,4" CA-6	5,970	S.F.	$10.00	$59,700
15. AGGREGATE BASE, TYPE B	6"	162	S.Y.	$12.00	$1,944
16. PCC MEDIAN PAVEMENT	8"	152	S.Y.	$60.00	$9,120
15. CORRUGATED CONC. MEDIAN		32	S.F.	$20.00	$640
	E. Roadway Improvements			Sub-Total =	$810,598

SPACECO, INC.

Engineer's Opinion of Probable Construction Cost

ITEM		QNTY	UNIT	UNIT PRICE	AMOUNT
F. Watermain					
1. MOVE EXISTING	FIRE HYDRANT	2	EACH	$3,000.00	$6,000
2. ADJUST EXISTING VALVE VAULT		2	EACH	$500.00	$1,000
3. ADJUST EXISTING VALVE BOX		5	EACH	$300.00	$1,500
	F. Watermain			Sub-Total =	$8,500
G. Utility Relocation					
1. RELOCATE EXISTING	SIGN	10	EACH	$1,000.00	$10,000
2. RELOCATE EXISTING	STREET LIGHT	10	EACH	$3,000.00	$30,000
3. R.R. CROSSING IMPROVEMENTS		1	LSUM	$450,000.00	$450,000
4. GAS FACILITY RELOCATION			LSUM	TBD	
5. COMED RELOCATION			LSUM	TBD	
6. AT&T RELOCATION			LSUM	TBD	
	G. Utility Relocation			Sub-Total =	$490,000
H. Miscellaneous					
1. TRAFFIC CONTROL		1	LSUM	$25,000.00	$25,000
2. TRAFFIC SIGNAL MODERNIZATION - SEE KLOA ESTIMATE ATTACHED		1	LSUM	$286,412.00	$286,412
	H. Miscellaneous			Sub-Total =	$311,412
	HARD COSTS SUBTOTAL =				$1,747,060
	CONTINGENCY - 15% =				$262,059
	TOTAL HARD COSTS=				**$2,009,119**
Phase 2 Design Costs					
1. Phase 2 ENGINEERING		*	COST =		$205,000
	Phase 2 Design Costs			Sub-Total =	$205,000
Right of Way Acquisition					
1. Right of Way Acquisition			COST =		$25,000
	Right of Way Acquisition			Sub-Total =	$25,000
Phase 3 Design Costs					
1. CONSTRUCTION LAYOUT & OBSERVATION		8% *	COST =		$139,765
	Phase 3 Design Costs			Sub-Total =	$139,765
				TOTAL=	**$2,378,884**

NOTES:

1. This estimate is prepared as a guide only. SPACECO makes no warranty that actual costs will not vary from the amounts indicated, and assumes no liability for such variance.
2. This estimate DOES NOT include: PERMIT FEES, BOND, REVIEW FEES
3. Pavement section is per IDOT plans for Waukegan Road dated June 1984.
4. Traffic signal modernization cost has been assumed for budgeting purposes. Final cost depends on ultimate scope of work.
5. Driveway Replacement cost has been assumed for budgeting purposes. Final cost depends on ultimate scope of work.
6. Rail Road crossing improvement cost has been assumed for budgeting purposes. Final cost to be provided by Rail Road company.
7. Traffic Control assumes that Everett Road will be closed between Telegraph and Waukegan during the reconstruction of Everett Road and a detour will be in place.
8. Utility relocate, design, and cost will be provided by utility companies.

* Applied to Subtotal of Hard Costs prior to addition of Contingency

PRELIMINARY ESTIMATE OF COST - TRAFFIC SIGNALS

LOCATION: IL Rte 42 (Waukegan Rd @ Everett Rd; Lake Forest, ILLINOIS

(FOR COMPLETE INFORMATION COVERING THESE ITEMS, SEE PLANS AND SPECIFICATIONS.)

ITEM NO.	CODE NO.	QUAN.	UNIT	ITEM DESCRIPTION	UNIT PRICE	COST
1	72000100	26	SQ FT	SIGN PANEL - TYPE 1	27.00	702.00
2	80500010	1	EACH	SERVICE INSTALLATION - GROUND MOUNTED	4000.00	4000.00
3	81028200	1000	FOOT	UNDERGROUND CONDUIT, GALVANIZED STEEL, 2" DIA.	18.00	18000.00
4	81028210	40	FOOT	UNDERGROUND CONDUIT, GALVANIZED STEEL, 2 1/2" DIA.	20.00	800.00
5	81028220	50	FOOT	UNDERGROUND CONDUIT, GALVANIZED STEEL, 3" DIA.	24.00	1200.00
6	81028240	300	FOOT	UNDERGROUND CONDUIT, GALVANIZED STEEL, 4" DIA.	30.00	9000.00
7	81400100	6	EACH	HANDHOLE	1200.00	7200.00
8	81400200	3	EACH	HEAVY-DUTY HANDHOLE	1600.00	4800.00
9	81400300	2	EACH	DOUBLE HANDHOLE	2400.00	4800.00
10	86400100	1	EACH	TRANSCEIVER - FIBER OPTIC	3700.00	3700.00
11	87300925	1000	FOOT	ELECTRIC CABLE IN CONDUIT, TRACER, NO. 14 1C	1.30	1300.00
12	87301215	1200	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 2C	1.30	1560.00
13	87301225	1200	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C	1.40	1680.00
14	87301245	1000	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C	1.60	1600.00
15	87301255	1500	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C	1.90	2850.00
16	87301305	1800	FOOT	ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR	1.25	2250.00
17	87301750	400	FOOT	ELECTRIC CABLE IN CONDUIT, RAILROAD, NO. 14 3C	2.00	800.00
18	87301805	110	FOOT	ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2 C	4.50	495.00
19	87301900	400	FOOT	ELECTRIC CABLE IN CONDUIT, EQUIPMENT GROUNDING CONDUCTOR, NO. 6 1C	2.00	800.00
20	87502500	3	EACH	TRAFFIC SIGNAL POST, GALVANIZED STEEL 16 FT.	900.00	2700.00

PRELIMINARY ESTIMATE OF COST - TRAFFIC SIGNALS

LOCATION: IL Rte 42 (Waukegan Rd @ Everett Rd; Lake Forest, ILLINOIS

(FOR COMPLETE INFORMATION COVERING THESE ITEMS, SEE PLANS AND SPECIFICATIONS.)

ITEM NO.	CODE NO.	QUAN.	UNIT	ITEM DESCRIPTION	UNIT PRICE	COST
21	87700200	1	EACH	STEEL MAST ARM ASSEMBLY AND POLE, 32 FT.	5500.00	5500.00
22	87700260	1	EACH	STEEL MAST ARM ASSEMBLY AND POLE, 44 FT.	7400.00	7400.00
23	87700290	1	EACH	STEEL MAST ARM ASSEMBLY AND POLE, 50 FT.	8200.00	8200.00
24	87703224	1	EACH	STEEL MAST ARM ASSEMBLY AND POLE WITH DUAL MAST ARMS, 48 FT. AND 24 FT.	11000.00	11000.00
25	87800100	16	FOOT	CONCRETE FOUNDATION, TYPE A	200.00	3200.00
26	87800150	4	FOOT	CONCRETE FOUNDATION, TYPE C	375.00	1500.00
27	87800400	13.5	FOOT	CONCRETE FOUNDATION, TYPE E 30-INCH DIAMETER	150.00	2025.00
28	87800415	44	FOOT	CONCRETE FOUNDATION, TYPE E 36-INCH DIAMETER	200.00	8800.00
29	87900200	1	EACH	DRILL EXISTING HANDHOLE	250.00	250.00
30	88030020	6	EACH	SIGNAL HEAD, LED, 1-FACE, 3-SECTION, MAST ARM MOUNTED	990.00	5940.00
31	88030100	2	EACH	SIGNAL HEAD, LED, 1-FACE, 5-SECTION, BRACKET MOUNTED	1405.00	2810.00
32	88030110	6	EACH	SIGNAL HEAD, LED, 1-FACE, 5-SECTION, MAST ARM MOUNTED	1465.00	8790.00
33	88030220	1	EACH	SIGNAL HEAD, LED, 2-FACE, 5-SECTION, BRACKET MOUNTED	2770.00	2770.00
34	88102710	6	EACH	PEDESTRIAN SIGNAL HEAD, LED, 1-FACE, BRACKET MOUNTED	850.00	5100.00
35	88102740	1	EACH	PEDESTRIAN SIGNAL HEAD, LED, 2-FACE, BRACKET MOUNTED	1450.00	1450.00
36	88200210	11	EACH	TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINUM	125.00	1375.00
37	88500100	11	EACH	INDUCTIVE LOOP DETECTOR	190.00	2090.00
38	88600100	800	FOOT	DETECTOR LOOP, TYPE I	16.00	12800.00
39	88700200	2	EACH	LIGHT DETECTOR	1100.00	2200.00
40	88700300	1	EACH	LIGHT DETECTOR AMPLIFIER	2100.00	2100.00

PRELIMINARY ESTIMATE OF COST - TRAFFIC SIGNALS

LOCATION: IL Rte 42 (Waukegan Rd @ Everett Rd; Lake Forest, ILLINOIS

(FOR COMPLETE INFORMATION COVERING THESE ITEMS, SEE PLANS AND SPECIFICATIONS.)

ITEM NO.	CODE NO.	QUAN.	UNIT	ITEM DESCRIPTION	UNIT PRICE	COST
41	88800100	8	EACH	PEDESTRIAN PUSH-BUTTON	225.00	1800.00
42	89000100	1	EACH	TEMPORARY TRAFFIC SIGNAL INSTALLATION	50000.00	50000.00
43	89100400	4	EACH	ILLUMINATED SIGN, LED	3500.00	14000.00
44	89502375	1	EACH	REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT	2000.00	2000.00
45	89502380	11	EACH	REMOVE EXISTING HANDHOLE	275.00	3025.00
46	89502385	9	EACH	REMOVE EXISTING CONCRETE FOUNDATION	300.00	2700.00
47	X8570230	1	EACH	FULL-ACTUATED CONTROLLER AND CABINET, TYPE V, SPECIAL	18000.00	18000.00
48	X8620200	1	EACH	UNINTERRUPTABLE POWER SUPPLY, SPECIAL	8500.00	8500.00
49	X8710040	1000	FOOT	FIBER OPTIC CABLE IN CONDUIT, NO. 62.5/125 MM24F SM12F	4.00	4000.00
50	X8730250	300	FOOT	ELECTRIC CABLE IN CONDUIT, NO. 20 3/C, TWISTED, SHIELDED	1.50	450.00
51	Z0033046	1	EACH	RE-OPTIMIZE TRAFFIC SIGNAL SYSTEM LEVEL 2	5000.00	5000.00
52	Z0048665	1	LSUM	RAILROAD PROTECTIVE LIABILITY INSURANCE	7400.00	7400.00
53	Z0073510	1	EACH	TEMPORARY TRAFFIC SIGNAL TIMING	4000.00	4000.00
				TOTAL		286412.00

PROJECT MILESTONE SCHEDULE

Municipality: Lake Forest, IL
Project: Waukegan Rd/Everett Rd Intersection Improvements
Scope of Work: Waukegan Rd/Everett Rd Intersection Improvements
TIP #:
TIP Years (Ph II / Const):
Section #:
Last Constr & E3 Cost (date): $
Current Constr & E3 Cost (date:): $

Contact Information

Municipality	Robert Ells, City of Lake Forest
Council/Liaison	Bruce Christensen, Lake County Council of Mayors
Consultant	Eric Russell, KLOA, Inc.
IDOT	Alex Househ, Bureau of Local Roads

Date Prepared: 2/6/2015 Date Revised:

	Projected Dates			
	Initial Est.	Kick-Off	Revised/Actual	
1. Project Scoping		7/12/2010		Notes
2. IDOT Phase I Kick-off Meeting		2/8/2012	2/8/2012	Attendees: IDOT Local Roads, City of Lake Forest, ICC,
3. 1st State/Federal Coordination Meeting				Lake County DOT Coordinator & consultants
4. Categorical Exclusion Concurrence				
5. Design Variance Concurrence				
6. Submit Draft Phase I Report (PDR) to IDOT (a)				
7. Public Hearing/Meeting (or N/A)	N/A			
8. Right-of-Way Kick-off Meeting (or N/A)	1/2/2016			
9. Submit Final Phase I Report (PDR) to IDOT (b)			2/6/2015	
10. Submit Phase II Engr. Agreem't to IDOT (or N/A)	2/1/2016			
11. Phase I Design Approval	3/6/2015			
12. ROW Aquistion Initiation (or N/A) (c)	3/1/2016			
13. Phase II Engr. Agreement Approval (or N/A)	5/1/2016			
14. Submit Pre-Final Plans and Estimates (d)	11/1/2016			
15. Submit Phase III Engr. Agreement to IDOT	12/1/2016			
16. Submit Final Plans, Specs & Estimates (PS&E) (e)	2/1/2017			
17. ROW Acquisition Complete	3/2/2017			
18. Construction Letting	4/21/2017			

Notes:

(a) 3 to 6 month review required per complexity and submittal quality
(b) 1 to 3 month review
(c) Minimum 9 to 18 months required from plats to acquisition
(d) 1 to 4 month review
(e) 7 to 10 days before Springfield BLR due date

See IDOT Local Roads' **Mechanics of Project Management** "Federal Aid Project Initiation to Completion" Flow Chart for sequence of events and estimated review times.

5-Year Capital Improvement Plan

FY 15 *thru* **FY 19**

City of Lake Forest, Illinois

Department PW-Engineering
Contact Robert Ells

Project # **PW-ENG-12-13**
Project Name **Waukegan & Everett Intersection Improvements**

Type Improvement
Useful Life 30 Years
Category Streets, Roadways & Lots
Priority 1nf

Start Date FY 2011
End Date FY 2015
Phone #: 847-810-3552
l Mth and Cal Yr March 2015

Description

Based on the analysis of existing and projected traffic conditions, a series of traffic calming measures are required to improve existing traffic operations on Everett Road between Telegraph Rd and Waukegan Rd and to reduce traffic congestion along with mitigating traffic impacts of the planned developments. Capacity improvements to Everett Road, Waukegan Road, and Telegraph Road will help the roadway network better accommodate existing and projected traffic volumes. Council accepted the Everett Road Traffic Study report prepared by KLOA dated Oct 26, 2009 and recommended the following priorities:

Opt # 5 - Wauk Rd/Everett Rd intersection traffic signal timing modifications - Completed in 2011
Opt # 1 - Extend eastbound right-turn lane on Everett Rd at Wauk Rd
Opt # 2 - Add right-turn lane on northbound Telegraph Rd at Everett Rd - Completed in 2011
Opt # 4 - Add southbound right-turn lane on Wauk Rd at Everett Rd
Opt # 7- Implement Pedestrian Safety Measures - Completed in 2010 and 2011

Justification

Based on the traffic study done by KLOA to analyze the existing and projected traffic conditions, a series of traffic calming measures are required to improve existing traffic operations on Everett Road between Telegraph Rd and Waukegan Rd. These planned improvements will minimize traffic congestion along with mitigating traffic impacts to any future developments in the corridor.

City is actively seeking State and Federal grant funds to perform Ph II design and Ph III construction work.

Expenditures	FY 15	FY 16	FY 17	FY 18	FY 19	Total
Planning/Design	5,000					5,000
Construction		225,000	2,149,000			2,374,000
Total	**5,000**	**225,000**	**2,149,000**			**2,379,000**

Funding Sources	FY 15	FY 16	FY 17	FY 18	FY 19	Total
Capital Fund	5,000	45,000	429,800			479,800
Grant-Federal-Capital Fund		180,000	1,719,200			1,899,200
Total	**5,000**	**225,000**	**2,149,000**			**2,379,000**

Illinois Department of Transportation

201 West Center Court
Schaumburg, IL 60196-1096

VVUbns
URSIPEH
12.S12
1/18/13

Informal Transmittal

To:	Pete Harmet
Bureau:	Programming (Geometrics Unit)
Attn.:	Jason Salley
Date:	December 4, 2012

From:	Chris Holt
Bureau:	Local Roads & Streets
	Kaamil Tayyab
Subject:	Lake Forest: IL-43 (Waukegan Rd.) at Everett Rd.
	Sec.: 11-00091-00-CH

(7TH SUBMITTAL)

Please check appropriate box below:

- ☒ Take Necessary Action
- ☐ For Your Comments
- ☐ Per Your Request
- ☒ For Your Approval
- ☐ For Your Information
- ☐ See Me About the Attached
- ☐ Draft (Letter)(Memo) For My signature
- ☒ Reply
- ☒ Return
- ☐ Route
- ☐ File

Message

Jason,

Attached are the following for your review and approval/comments.

- Revised Intersection Design Study
- Design Exception Forms and Tables
- Original Red-Line Mark-Up's
- Disposition of Comments

Please review and provide further comments and/or approval.

Feel free to email me or call me at (847)705-4236 with any further questions or comments.

Thanks.

Kaamil Tayyab
Signature

Copies to	File		

Response 1/2/2013

KAAMIL - THIS PROJECT'S GEOMETRY & IDS ARE APPROVED.

THANKS,
JASON SALLEY x 4085
Signature

CC: BOT
BDE
ICC

transmem - Revised 2/19/98

Illinois Department of Transportation

Informal Transmittal

To:	Chris Holt
Attn:	Kaamil Tayyab
Bureau:	Local Roads & Streets
Phone:	(847) 705-4236
Date:	January 2, 2013

From:	Jason Salley
Bureau:	Programming/Geometrics Unit
Phone:	(847) 705-4085
Subject:	Geometric Approval - IL 43 at Everett Rd. | Lake Forest, Lake Co.
	Section No. 11-00091-00-CH

Please check appropriate box below:

- ☒ Take Necessary Action
- ☐ For Your Comments
- ☐ Per Your Request
- ☐ For Your Approval
- ☐ For Your Information
- ☐ See Me About the Attached
- ☐ Draft (Letter)(Memo) For My signature
- ☐ Reply
- ☐ Return
- ☐ Route
- ☒ File

Message

Kaamil,
This project's Design Exceptions were approved by BDE on December 27, 2012 and all other Design Elements meet current BDE Policy.

PDF copy of the Final IDS has been received by the Geometrics Studies Unit and has been placed on the District's H Drive for future reference.

Therefore, the Geometrics Studies Unit approves this project's Geometry and Intersection Design Study. BDE Form 2602 will be forwarded to IDOT BDE for their records.

Please contact me if you have any questions or comments.

Thanks,

Jason Salley, P.E.
Signature

Copies to

File	BDE	BOT

Response

Signature

S:\WP\p&es\GEO\Geometric Approvals\2013\IL 43 at Everett Rd (LR&S) 010213.doc

PLOT DATE = 11/28/2012
FILE NAME = $FILE1$
PLOT SCALE = $dfPrintDialogScale$
USER NAME = $USER$

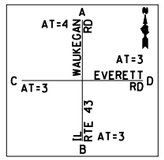
SIGNALIZED INTERSECTION

CAPACITY ANALYSIS

HIGHWAY CAPACITY SOFTWARE

PROGRAM NAME HCS+

VERSION 5.3



BASIC CONDITIONS

AREA: CBD (OTHER) PHF 0.95 (CIRCLE ONE)

SIGNAL TYPE ACTUATED ARRIVAL TYPE 3/4

C = SIGNAL CYCLE = 130 SEC. A.M. ΣA/C 21 / 130 = 16.2% (A.M.)

130 SEC. P.M. ΣA/C 18 / 130 = 13.8% (P.M.)

	PHASE 1		PHASE 2		PHASE 3		PHASE 4		PHASE 5	
A.M.		AMBER		AMBER + ALL RED		AMBER		AMBER		AMBER + ALL RED
	G/C=0.062 G =8.0 Sec.	3 Sec.	G/C=0.431 G =56.0 Sec.	6 Sec.	G/C=0.062 G =8.0 Sec.	3 Sec.	G/C=0.077 G =10.0 Sec.	3 Sec.	G/C=0.208 G =27.0 Sec.	6 Sec.
P.M.		AMBER		AMBER + ALL RED		AMBER		AMBER + ALL RED		
	G/C=0.062 G =8.0 Sec.	3 Sec.	G/C=0.492 G =64.0 Sec.	6 Sec.	G/C=0.069 G =9.0 Sec.	3 Sec.	G/C=0.238 G =31.0 Sec.	6 Sec.		

APPR. A GR: 0 % A.M. T= 5 % R= 0 % L= 0 % PKG 0 (MNV/HR) BUS 0 (STOP/HR) PEDS/HR 50 BIKES/HR 0

P.M. T= 5 % R= 0 % L= 0 % PKG 0 (MNV/HR) BUS 0 (STOP/HR) PEDS/HR 50 BIKES/HR 0

	MOVEMENT	L/W	DHV	PHF	BASE SAT.	V/S	USED G/C	CAP C	V/C	DELAY d	LOS	APPR. DELAY	APPR. LOS	95TH % QUEUE	RED-TIME QUEUE
A.M.	AD	1/11'	70	0.95	1900	0.04	0.54	440	0.17	15.2	B	24.2	C	70	71
	AB	2/11'	840	0.95	2000	0.25	0.43	1510	0.59	24.8	C			533	453
	AC	1/11'	190	0.95	1900	0.14	0.43	621	0.32	24.8	C			248	199
P.M.	AD	1/11'	100	0.95	1900	0.06	0.60	170	0.62	29.2	C	18.6	B	103	138
	AB	2/11'	505	0.95	2000	0.15	0.49	1726	0.31	15.5	B			230	243
	AC	1/11'	245	0.95	1900	0.18	0.49	715	0.36	20.7	C			295	229

APPR. B GR: 0 % A.M. T= 5 % R=13.2% L= 0 % PKG 0 (MNV/HR) BUS 0 (STOP/HR) PEDS/HR 50 BIKES/HR 0

P.M. T= 5 % R= 5.8% L= 0 % PKG 0 (MNV/HR) BUS 0 (STOP/HR) PEDS/HR 50 BIKES/HR 0

	MOVEMENT	L/W	DHV	PHF	BASE SAT.	V/S	USED G/C	CAP C	V/C	DELAY d	LOS	APPR. DELAY	APPR. LOS	95TH % QUEUE	RED-TIME QUEUE
A.M.	BC	1/11'	55	0.95	1900	0.03	0.54	281	0.21	16.7	B	23.6	C	55	64
	BA+BD	2/11'	425	0.95	1900	0.14	0.43	1416	0.32	24.5	C			285	229
P.M.	BC	1/11'	240	0.95	1900	0.21	0.60	480	0.53	18.4	B	31.5	C	215	207
	BA+BD	2/11'	1330	0.95	1900	0.42	0.49	1631	0.86	33.9	C			1108	640

APPR. C GR: 0 % A.M. T= 2 % R= 0 % L= 0 % PKG 0 (MNV/HR) BUS 0 (STOP/HR) PEDS/HR 50 BIKES/HR 0

P.M. T= 2 % R= 0 % L= 0 % PKG 0 (MNV/HR) BUS 0 (STOP/HR) PEDS/HR 50 BIKES/HR 0

	MOVEMENT	L/W	DHV	PHF	BASE SAT.	V/S	USED G/C	CAP C	V/C	DELAY d	LOS	APPR. DELAY	APPR. LOS	95TH % QUEUE	RED-TIME QUEUE
A.M.	CA	1/11'	220	0.95	1900	0.14	0.42	438	0.53	27.9	C	29.3	C	285	276
	CD	1/11'	175	0.95	2000	0.10	0.31	583	0.32	34.8	C			263	223
	CB	1/11'	175	0.95	1900	0.13	0.42	605	0.30	25.7	C			233	188
P.M.	CA	1/11'	195	0.95	1900	0.16	0.35	272	0.75	51.7	D	43.4	D	293	280
	CD	1/11'	160	0.95	2000	0.09	0.24	452	0.37	41.9	D			263	224
	CB	1/11'	105	0.95	1900	0.08	0.35	497	0.22	30.3	C			150	126

APPR. D GR: 0 % A.M. T= 2 % R=35.1% L= 0 % PKG 0 (MNV/HR) BUS 0 (STOP/HR) PEDS/HR 50 BIKES/HR 0

P.M. T= 2 % R=31.4% L= 0 % PKG 0 (MNV/HR) BUS 0 (STOP/HR) PEDS/HR 50 BIKES/HR 0

	MOVEMENT	L/W	DHV	PHF	BASE SAT.	V/S	USED G/C	CAP C	V/C	DELAY d	LOS	APPR. DELAY	APPR. LOS	95TH % QUEUE	RED-TIME QUEUE
A.M.	DB	1/11'	30	0.95	1900	0.02	0.24	277	0.12	38.6	D	46.9	D	48	40
	DC+DA	1/11'	185	0.95	1900	0.12	0.21	345	0.56	48.3	D			328	270
P.M.	DB	1/11'	25	0.95	1900	0.02	0.35	346	0.08	28.1	C	47.2	D	33	33
	DC+DA	1/11'	255	0.95	1900	0.16	0.24	401	0.67	49.1	D			450	358

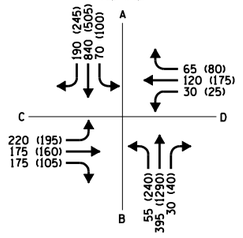
INTERSECTION DELAY 27.4 (A.M.), 31.1 (P.M.)

INTERSECTION LOS C (A.M.), C (P.M.)

TRAFFIC DATA

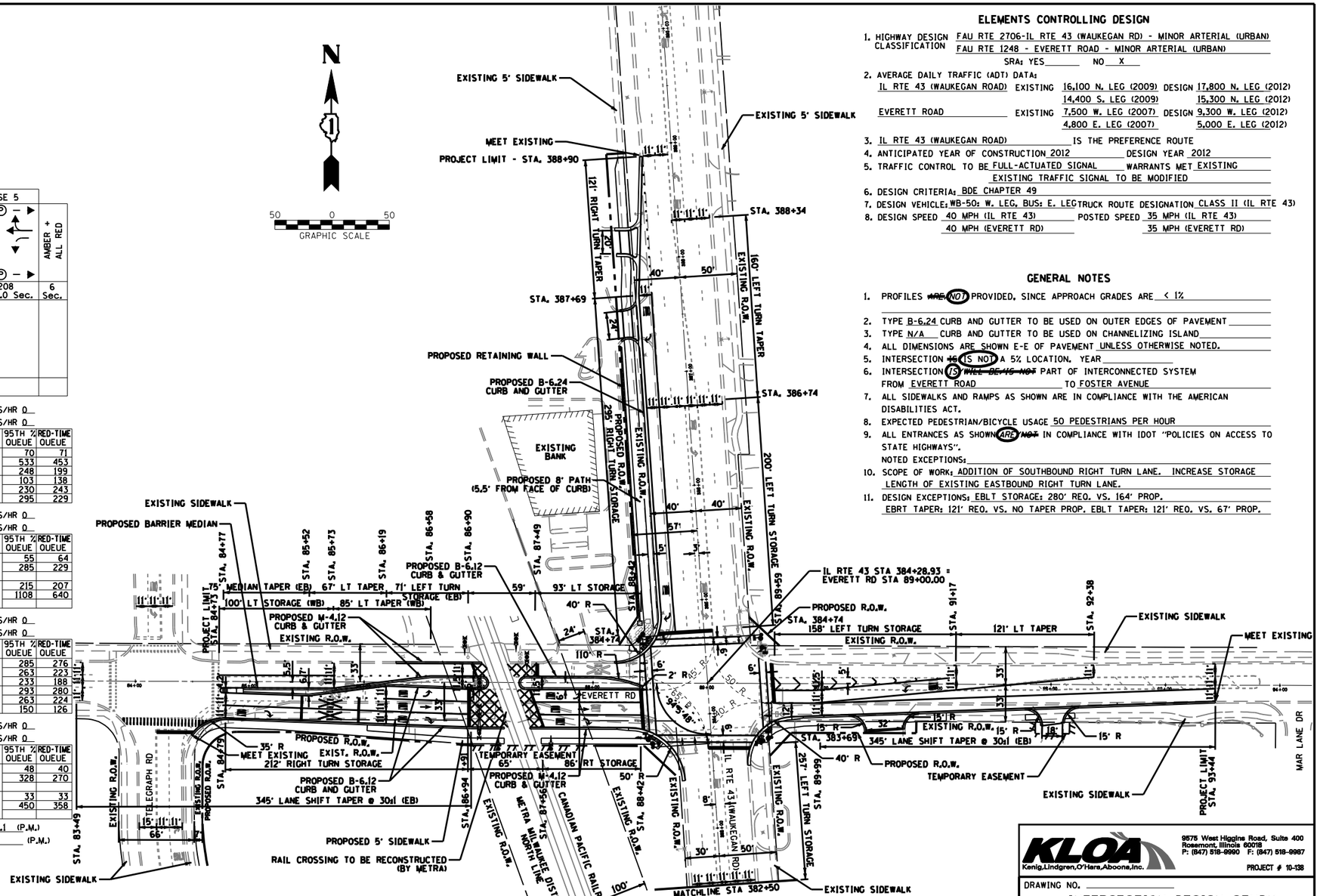
MOVEMENT	YEAR 2009 30TH MAXIMUM HOUR TRAFFIC A.M.	YEAR 2009 30TH MAXIMUM HOUR TRAFFIC P.M.	PERCENT TRUCK TRAFFIC IN 30TH MAX HOUR	ESTIMATED PERCENT INCREASE BY 2012	YEAR 2012 30TH MAXIMUM HOUR TRAFFIC A.M.	YEAR 2012 30TH MAXIMUM HOUR TRAFFIC P.M.
AB	840	505	5%	0%	840	505
AD	66	96	2%	4%	70	100
AC	188	243	2%	1%	190	245
BA	385	1255	5%	3%	395	1290
BC	46	214	2%	12%	55	240
BD	29	39	2%	3%	30	40
CD	158	100	2%	60%	175	160
CA	214	191	2%	2%	220	195
CB	167	90	2%	17%	175	105
DC	102	128	2%	37%	120	175
DB	28	20	2%	25%	30	25
DA	60	68	2%	18%	65	80
TOTAL A	1753	2358			1780	2415
TOTAL B	1495	2123			1525	2205
TOTAL C	875	966			935	1120
TOTAL D	443	451			490	580

2012 DHV
AM (PM)



2012

APPROACH	8TH MAX. HOUR TRAFFIC
A (NORTH)	1325
B (SOUTH)	1215
C (WEST)	615
D (EAST)	315



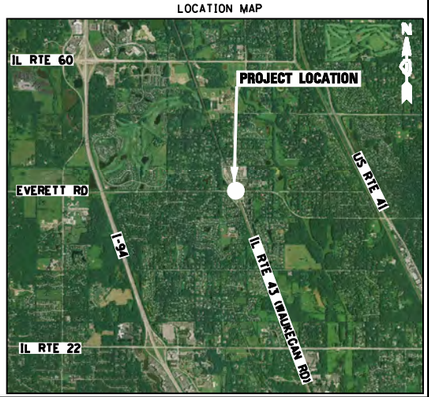
ELEMENTS CONTROLLING DESIGN

1. HIGHWAY DESIGN CLASSIFICATION: FAU RTE 2706-IL RTE 43 (WAUKEGAN RD) - MINOR ARTERIAL (URBAN)
   FAU RTE 1248 - EVERETT ROAD - MINOR ARTERIAL (URBAN)
   SRA: YES _____ NO X
2. AVERAGE DAILY TRAFFIC (ADT) DATA:
   IL RTE 43 (WAUKEGAN ROAD) EXISTING 16,100 N. LEG (2009) 14,400 S. LEG (2009) DESIGN 17,800 N. LEG (2012) 15,300 N. LEG (2012)
   EVERETT ROAD EXISTING 7,500 W. LEG (2007) 4,800 E. LEG (2007) DESIGN 9,300 W. LEG (2012) 5,000 E. LEG (2012)
3. IL RTE 43 (WAUKEGAN ROAD) IS THE PREFERENCE ROUTE
4. ANTICIPATED YEAR OF CONSTRUCTION 2012 DESIGN YEAR 2012
5. TRAFFIC CONTROL TO BE FULL-ACTUATED SIGNAL WARRANTS MET EXISTING
   EXISTING TRAFFIC SIGNAL TO BE MODIFIED
6. DESIGN CRITERIA: BDE CHAPTER 49
7. DESIGN VEHICLE: WB-50: W. LEG, BUS: E. LEG TRUCK ROUTE DESIGNATION CLASS II (IL RTE 43)
8. DESIGN SPEED 40 MPH (IL RTE 43) POSTED SPEED 35 MPH (IL RTE 43)
   40 MPH (EVERETT RD) 35 MPH (EVERETT RD)

GENERAL NOTES

1. PROFILES ~~WERE~~ (NOT) PROVIDED. SINCE APPROACH GRADES ARE < 1%
2. TYPE B-6.24 CURB AND GUTTER TO BE USED ON OUTER EDGES OF PAVEMENT
3. TYPE N/A CURB AND GUTTER TO BE USED ON CHANNELIZING ISLAND
4. ALL DIMENSIONS ARE SHOWN E-E OF PAVEMENT UNLESS OTHERWISE NOTED.
5. INTERSECTION ~~IS~~ (IS NOT) A 5% LOCATION. YEAR
6. INTERSECTION (IS) ~~WILL BE/IS NOT~~ PART OF INTERCONNECTED SYSTEM
   FROM EVERETT ROAD TO FOSTER AVENUE
7. ALL SIDEWALKS AND RAMPS AS SHOWN ARE IN COMPLIANCE WITH THE AMERICAN DISABILITIES ACT.
8. EXPECTED PEDESTRIAN/BICYCLE USAGE 50 PEDESTRIANS PER HOUR
9. ALL ENTRANCES AS SHOWN (ARE) ~~NOT~~ IN COMPLIANCE WITH IDOT "POLICIES ON ACCESS TO STATE HIGHWAYS".
   NOTED EXCEPTIONS:
10. SCOPE OF WORK: ADDITION OF SOUTHBOUND RIGHT TURN LANE. INCREASE STORAGE LENGTH OF EXISTING EASTBOUND RIGHT TURN LANE.
11. DESIGN EXCEPTIONS: EBLT STORAGE: 280' REQ. VS. 164' PROP.
    EBRT TAPER: 121' REQ. VS. NO TAPER PROP. EBLT TAPER: 121' REQ. VS. 67' PROP.

LOCATION MAP



KLOA
Kenig,Lindgren,O'Hara,Aboona,Inc.
9575 West Higgins Road, Suite 400
Rosemont, Illinois 60018
P: (847) 518-9990 F: (847) 518-9987

PROJECT # 10-138

DRAWING NO. _____

INTERSECTION DESIGN STUDY

FAU ROUTE 2706 IL RTE 43 (WAUKEGAN ROAD)
WITH
FAU ROUTE 1248 EVERETT ROAD

SEC. NO. 11-00091-00-CH PROJ. NO. _____

SCALE 1" = 50' COUNTY LAKE

SJN : _____ REV. NO. ___

PROJECT MANAGER: ERIC D. RUSSELL, PE, PTOE, PTP
PROJECT ENGINEER: DANA M. SCHNABEL, PE, PTOE

DATE	NAME	REMARKS
01/25/11	DMS	INITIAL SUBMITTAL
05/12/11	DMS	REV PER IDOT COMMENTS
07/01/11	DMS	REV PER IDOT COMMENTS
02/27/12	DMS	REV PER METRA/IDOT COMMENTS
05/25/12	DMS	REV PER IDOT COMMENTS
07/12/12	DMS	REV PER ICC/METRA COMMENTS
09/10/12	DMS	REV PER IDOT COMMENTS
11/28/12	DMS	REV PER IDOT COMMENTS

CADD FILE NAME: Idsi waukegan everett.dgn

REF FILE NAME: _____

I.D.S. SHEET 1 OF 5

BDE-9409

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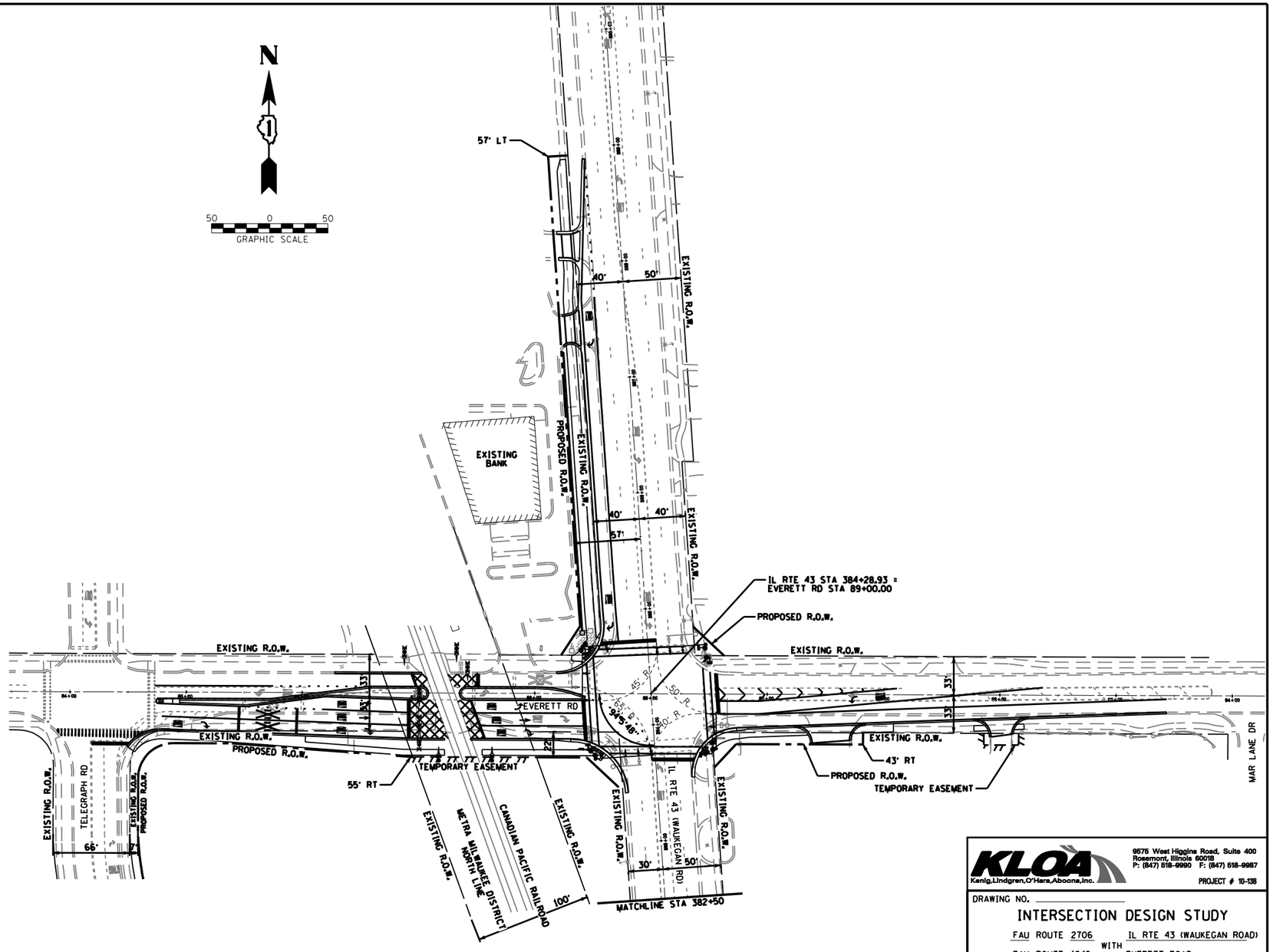

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01/25/11	DMS	INITIAL SUBMITTAL
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07/01/11	DMS	REV PER IDOT COMMENTS
02/27/12	DMS	REV PER METRA/IDOT COMMENTS
05/25/12	DMS	REV PER IDOT COMMENTS
07/12/12	DMS	REV PER ICC/METRA COMMENTS
09/10/12	DMS	REV PER IDOT COMMENTS
11/28/12	DMS	REV PER IDOT COMMENTS

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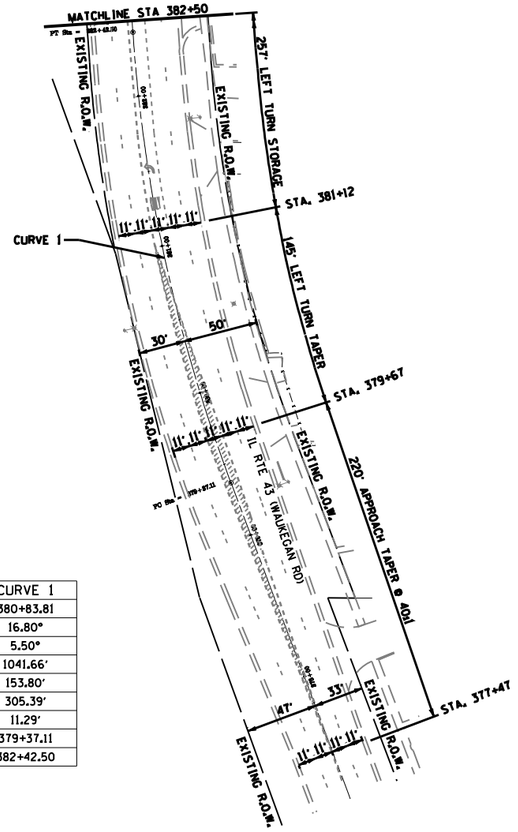
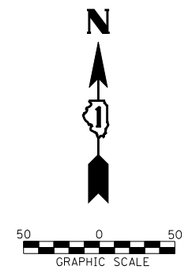


	CURVE 1
PI STA	380+83.81
Δ	16.80°
D	5.50°
R	1041.66'
T	153.80'
L	305.39'
E	11.29'
PC STA	379+37.11
PT STA	382+42.50



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PROJECT # 10-138

DRAWING NO. _____

INTERSECTION DESIGN STUDY

FAU ROUTE 2706 IL RTE 43 (WAUKEGAN ROAD)
WITH
FAU ROUTE 1248 EVERETT ROAD

SEC. NO. 11-00091-00-CH PROJ. NO. _____

SCALE 1" = 50' COUNTY LAKE

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PROJECT MANAGER: ERIC D. RUSSELL, PE, PTOE, PTP
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05/25/12	DMS	REV PER IDOT COMMENTS
07/12/12	DMS	REV PER ICC/METRA COMMENTS
09/10/12	DMS	REV PER IDOT COMMENTS
11/280/12	DMS	REV PER IDOT COMMENTS

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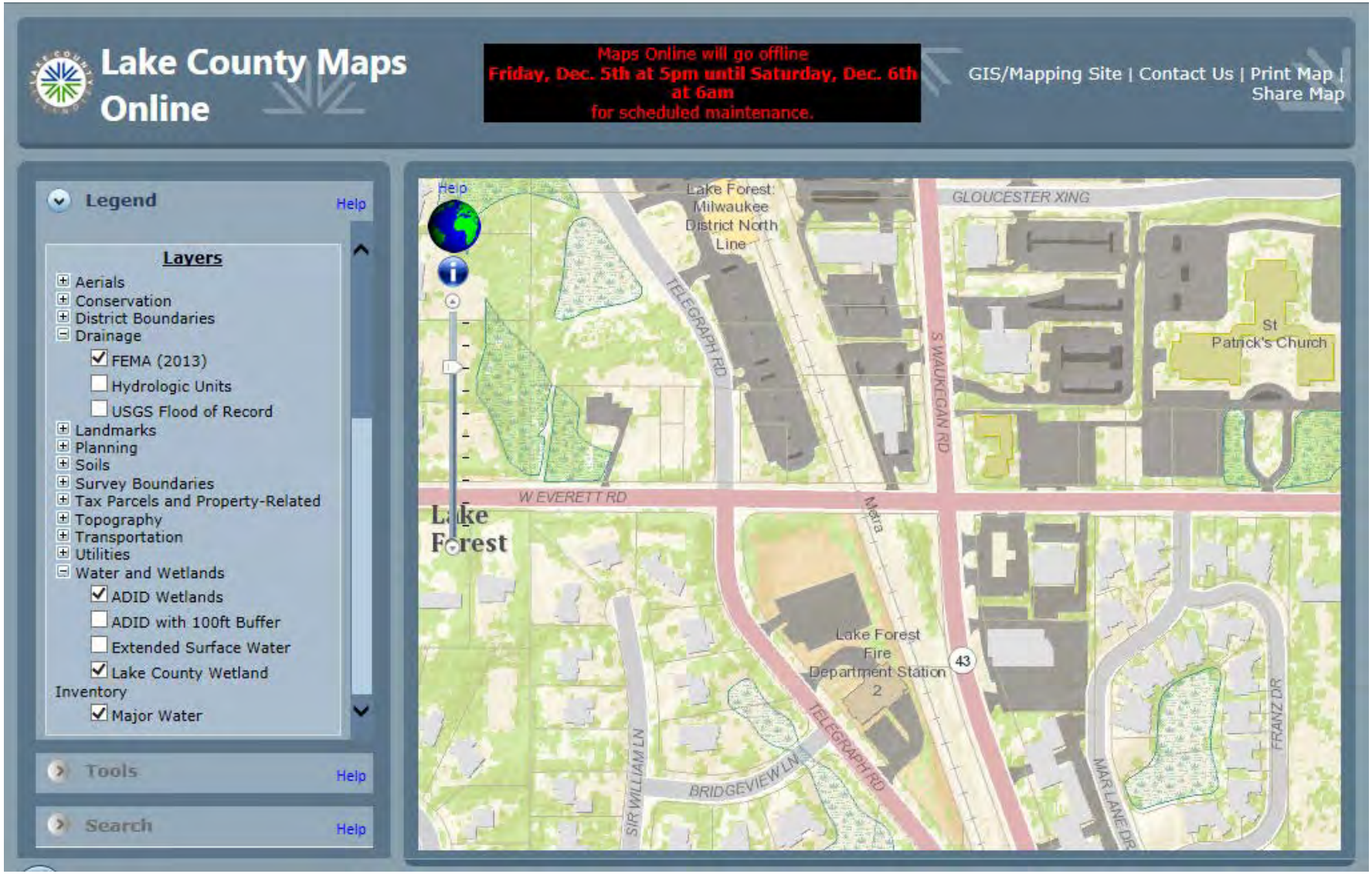
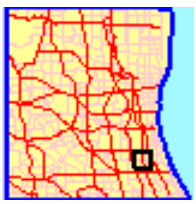
I.D.S. SHEET 3 OF 5

BDE-9409


Lake County Maps Online
Maps Online will go offline
Friday, Dec. 5th at 5pm until Saturday, Dec. 6th at 6am
for scheduled maintenance.
GIS/Mapping Site | Contact Us | Print Map | Share Map
Legend
Help
Layers
Aerials
Conservation
District Boundaries
Drainage
FEMA (2013)
Hydrologic Units
USGS Flood of Record
Landmarks
Planning
Soils
Survey Boundaries
Tax Parcels and Property-Related
Topography
Transportation
Utilities
Water and Wetlands
ADID Wetlands
ADID with 100ft Buffer
Extended Surface Water
Lake County Wetland Inventory
Major Water
Tools
Help
Search
Help
Lake Forest Milwaukee District North Line
GLOUCESTER XING
TELEGRAPH RD
S WAUKEGAN RD
St Patrick's Church
W EVERETT RD
Metra
Lake Forest
Lake Forest Fire Department Station 2
43
SIR WILLIAM LN
BRIDGEVIEW LN
TELEGRAPH RD
MAR LANE DR
FRANZ DR

Locations of Mapped FEMA Floodplains in Lake County, Illinois



LakeCounty
Geographic Information System

Lake County Department of
Information Technology
18 N County St
Waukegan IL 60085

Map Printed on 3/7/2011
Parcel 1607200075 is shaded.

N

FEMA FIRM Panel(s)

17097C0276F 9/3/1997

170374 LAKE FOREST

- Parcels
- Zone X
- Zone X - 500 Yr Flood
- SFHA - 100 Yr Flood
- Zones A, AE and AH
- Floodway
- Railroads
- Major Water
- Parcels

Disclaimer: Property boundaries indicated are provided as a courtesy for general locational purposes. Floodplain limits shown are approximate and should not be used to determine setbacks for structures or as a basis for purchasing property. A topographic survey is required to determine existing floodplain boundaries. This map is intended to be viewed and printed in color.

Attention: Central Office BD&E
Environment Section
Room 330

Environmental Survey Request

A. Project Information ☑ Bio ☑ Cultural ☐ Wetlands ☑ Special Waste

Submittal Date: 08/17/2011 Sequence No: 16771
District: 1 Requesting Agency: Local Project No:
Contract #: Job No.:
Counties: Lake
Route: FAU 2706 Marked: IL Route 43
Street: Waukegan Road Section:
Municipality(ies) Lake Forest Project Length: 0.241 km 0.15 miles
FromTo (At): Everett Road to Gloucester Crossing
Quadrangle: Highland Park Township-Range-Section: T43N - R12E - S7
Anticipated Design Approval: 12/31/2011

B. Reason for Submittal: (Check all that apply)

☑ Acquisition of additional ROW or easement 0.0485622 ha/ 0.12 acres
☐ In-Stream Work Stream Name:
☐ Other:

C. Project Description: Widening of Waukegan Road for a southbound right-turn-lane at Everett Road; Intersection improvements at Waukegan Road and Everett Road.

Proposed Work: ☑ Highway ☐ Bridge ☐ Bike Trail ☐ Other

D. Tree Removal?: Yes Number?: 9 ha/ acres

Historic District Involved? No Historic Buildings Involved? No
Section 4(f) Lands Involved? No Section 6(f) Lands Involved? No
Wetland delineation performed by: BDE End. Species Consultation performed by: BDE

E. Funding: ☑ Federal ☐ State ☐ TBP ☐ MFT ☐ Local Non-MFT
☐ 404 Permit Required Anticipated Processing:

F.

Contact Person:	Kevin Stallworth	Local Contact Person:	Ramesh Kanapareddy
Telephone #:	(847) 705-4169 ext.	Telephone #:	(847) 810-3552 ext.
Env.Contact:	Sam Mead	E-Mail:	kanaparr@cityoflakeforest.
Telephone #:	8477054101	Title/Company:	

☐ Field Sign Off (Bio & Cultural Only) ☐ Received in CO ☐ SW Received

BIOLOGICAL & WETLAND RESOURCES
NO SURVEY OR FURTHER COORDINATION REQUIRED
Thomas C Brooks 8-30-11
SIGNED DATE

Project Overview

Submittal Date: 08/17/2011 **Sequence No:** 16771
District: 1 **Requesting Agency:** Local **Project No:**
Contract #: **Job No.:**
Counties: Lake
Route: FAU 2706 **Marked:** IL Route 43
Street: Waukegan Road **Section:**
Municipality(ies): Lake Forest **Project Length:** 0.2414 **km** 0.15 **miles**
FromTo (At): Everett Road to Gloucester Crossing
Quadrangle: Highland Park **Township-Range-Section:** T43N - R12E - S7
Anticipated Design Appr.: 03/01/2011 **Anticipated Processing:**

Funding: ☑ **Federal** ☐ **State** ☐ **TBP** ☐ **MFT** ☐ **Local Non-MFT**

Consultant:

PTB No.: **Item No.:** **PTB Date:** **Prequal Level:**

Sequence No: 16771

	Biological	Wetlands	Cultural	Special Waste
Entered By	BDE	No	BDE	BDE
Cleared for DA	8/30/2011		8/23/2011	
Cleared for Letting	8/30/2011		8/23/2011	
Resubmittal				
ResubmittalCleared				

Section: **Job No.:**
FromTo (At): Everett Road to Gloucester Crossing

Intent	Available			Public Info Meeting(s)		Notice of Public Hearing(s)	Public Hearing(s)		ROD/FONSI
	Local	Federal Register		Set 1	Set 2				
		DEIS	FEIS						

Comments:

Inactive Date: **Change in Anticipated Processing:**

Project Phase Comments:

Information Systems and Technology
a Strategic Research Initiative funded by the Illinois Council on Food and Agricultural Research

ILLINOIS DEPARTMENT OF NATURAL RESOURCES

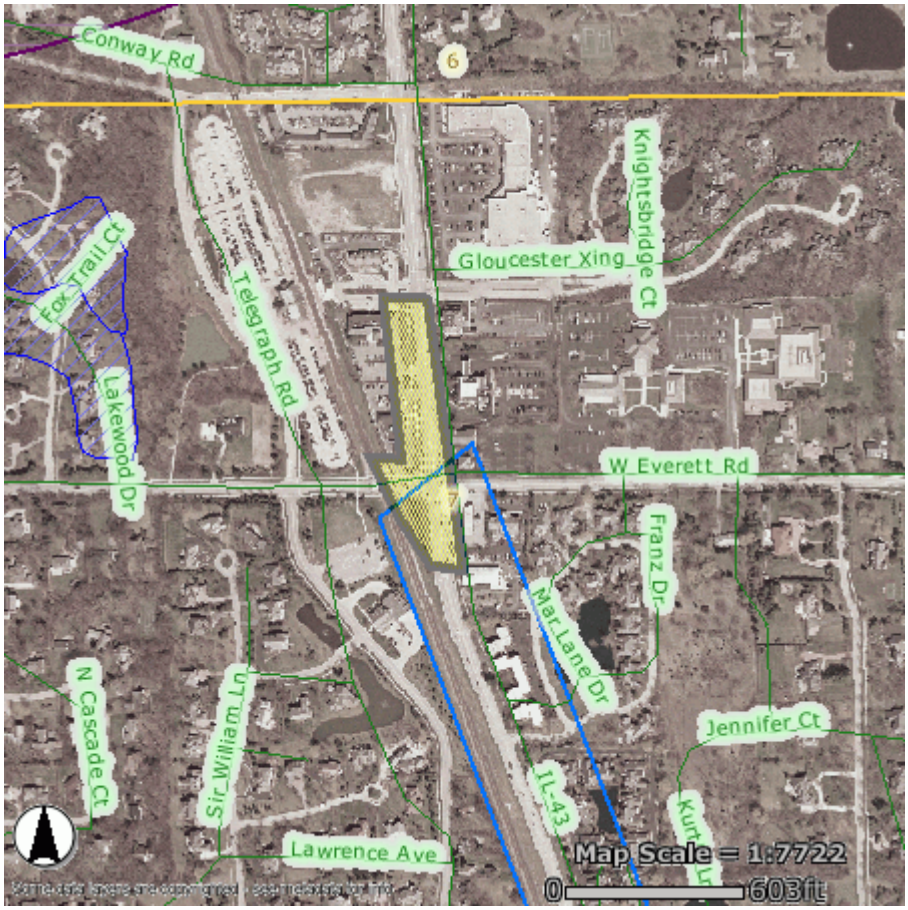
Wetland Impact Review Tool Report: Report of Possible Resource Conflicts.

Resource in Vicinity of Project Polygon Resource within Buffer No Resource Found

- Threatened and Endangered Species
- Natural Area Inventory
- Nature Preserve/LWR
- National Wetlands Inventory (NWI)
- Class 3 Ground Water
- ADID Wetlands

County: LAKE. Section (PLSS): 343N12E 7.

Area: 0.005 square miles = 3.479 acres



Report generated by: Janel Veile

Fri Aug 26 14:12:11 CDT 2011

Biological Resources

Submittal Date: 08/17/2011 **Sequence No:** 16771

District: 1 **Requesting Agency:** Local **Project No:**

Contract #: **Job No.:**

Counties: Lake

Route: FAU 2706 **Marked:** IL Route 43

Street: Waukegan Road **Section:**

Municipality(ies): Lake Forest **Project Length:** 0.2414 **km** 0.15 **miles**

FromTo (At): Everett Road to Gloucester Crossing

Quadrangle: Highland Park **Township-Range-Section:** T43N - R12E - S7

Anticipated Design Approval: 03/01/2011 **Cleared for Design Approval:** 08/30/2011

Cleared for Letting: 08/30/2011 **Anticipated Processing:**

☑ **Acquisition of additional ROW or easement** 0.0485622 **ha/** 0.12 **acres**

Tree Removal?: Yes **Number?:** 9 **ha/** **acres**

☐ **In-Stream Work** **Class I Stream Involved:**

Wetland(s) Survey: No

T&E Species: No **Natural Areas:** No **Nature Preserves:** No

Prairie: Yes **Railroad ROW:** **Abandoned Railroad:**

Biological Sign Off: 08/30/2011 **Field Sign Off:** **District Sign Off:**

Wetland Sign Off: 08/30/2011 **Surveys Performed:** No **Commitments:** Yes

BRR

District Notified	IDNR Notified	USFWS Notified	NPS Notified	IDNR Response			USFWS Response	NPS Response	District Notified		
				☐ Comments	☐ Concurrence				IDNR	USFW	NPS
	☐	☐	☐						☐	☐	☐

☐ **ITA** ☐ **Translocation**

Comments: See Commitments Screen for Prairie recommendations. (JMV)

Endangered Species Consultation

NRRT (Natural Resources Review Tool) 08/26/2011

EcoCAT (Ecological Compliance Assessment Tool)

Submitted	Initial Consultation		Final Consultation		NRRT(OLD)
		Terminated		Terminated	☐
Resubmitted	**Consultation Renewal**		**NRRTor EcoCAT:**		
		Terminated			

Biological Assessment

IDNR Notified	USFWS Notified	IDNR Response	USFWS Response		District Notified		IDNR Consultation		USFWS Opinion	
					IDNR	USFWS				
					☐	☐				

Comments: No wetlands on NWI. Urban. Prairie Site #14 in project corridor. Reseed impacted area with seed mix 4 and 5a. (JMV)

Further Studies	Federal Species *	Tasked	Report Due Date	Results Received
Bio/Cover Type:				
Mammals:	☐			
Birds:	☐			
Plants:	☐			
Herps:	☐			
Fish:	☐			
Mussels:	☐			
Inverts:	☐			
Other:				

Comments:

Cultural Resources

Submittal Date: 08/17/2011 **Sequence No:** 16771

District: 1 **Requesting Agency:** Local **Project No:**

Contract #: **Job No.:**

Counties: Lake

Route: FAU 2706 **Marked:** IL Route 43

Street: Waukegan Road **Section:**

Municipalityies): Lake Forest **Project Length:** 0.2414 **km** 0.15 **miles**

FromTo (At): Everett Road to Gloucester Crossing

Quadrangle: Highland Park **Township-Range-Section:** T43N - R12E - S7

Anticipated Design Approval: 03/01/2011 **Cleared for Design Approval:** 08/23/2011

Cleared for Letting: 08/23/2011 **Anticipated Processing:**

Project Description: Widening of Waukegan Road for a southbound right-turn-lane at Everett Road; Intersection improvements at Waukegan Road and Everett Road.

Funding: ☑ **Federal** ☐ **State** ☐ **TBP** ☐ **MFT** ☐ **Local Non-MFT**

Proposed Work: ☑ **Highway** ☐ **Bridge** ☐ **Bike Trail** ☐ **Other**

☑ **Acquisition of additional ROW or easement** 0.0485622 **ha/** 0.12 **acres**

Overall Cultural Resource

Yes **In-House Cultural Resources Clearance** 08/23/2011 **District Notified:** 08/23/2011

Archaeological Resources

In-House Archeology Only Clearance **District Notified:**

Sent for Survey ITARP: **SHPO Concurrence:**

Architectural Resources (Standing Structures)

In-House Architectural Only Clearance **District Notified:**

Historic District Involved: No **Historic Building Involved:** No

Architectural Photos Requested: **Photos Received:**

Sent for Architectural Survey: **SHPO Concurrence:**

Historic Bridges

In-House Historic Bridge Only Clearance **District Notified:**

Sent for Archival Recordation: **Substitute Bridge Identification:**

SHPO Submittal:

Comments:

Illinois Department of Transportation

Memorandum

To:	Darrell W. Lewis		
From:	Scott E. Stitt	By:	Thomas C. Brooks Thomas C. Brooks
Subject:	Biological Resources Review		
Date:	August 29, 2011		

FAU 2706 (IL Route 43)
From Everett Road to Gloucester Crossing
No Section Number
BDE Seq. No. 16771
Lake County

The Natural Resources Unit has reviewed this project. The project, as described on the Environmental Survey Request Form, does not require biological or wetland surveys. The IDNR Natural Resources Review Tool has no records of listed species, natural areas or nature preserves within the project corridor (IDNR NRRT/WIRT Report dated August 26, 2011). In accordance with the 2011 Memorandum of Understanding by and between IDNR and IDOT, consultation is terminated.

A preliminary review was performed of the project area for the potential impact on threatened or endangered species pursuant to Section 7 of the Endangered Species Act as amended. The following threatened or endangered species are listed by the United States Fish and Wildlife Service (USFWS) as occurring in Lake County, IL: Eastern prairie fringed orchid (*Platanthera leucophaea*), Karner blue butterfly (*Lycaeides melissa samuelis*), Pitcher's thistle (*Cirsium pitcheri*) and Piping plover (*Charadrius melodus*). This office has determined that there will be no effect to any of the species listed for Lake County, IL. The project corridor is not comprised of the required habitat necessary to support these species. Please keep this memorandum in your project files as it documents and concludes consultation with the IDNR and USFWS.

The IDOT Inventory of Roadside Prairies depicts native prairie within the project corridor. Prairie Site #14 is a grade D dry-mesic prairie located along IL Route 43 from Everett Road to North Avenue. The GPS Coordinates are as follows: Starting UTM 16T 0428075-4674318; Ending UTM 16T 0429451-4670251. In order to minimize damage to the prairie it is recommended to:

- Minimize the construction limits along the prairie remnants as much as possible.

- Place temporary fence at the construction limits along the prairie to keep workers and equipment out of the prairie area. This fencing should be shown on the plans and listed in the Special Provisions.

- Reseed with an appropriate native mix (Class 4 and 5A) in accordance with Section 250 (Seeding) of the Standard Specifications for Road and Bridge Construction (IDOT 2007).

By agreement, no coordination with the Illinois Department of Natural Resources and the U.S. Fish and Wildlife Service is necessary.

Attachment

JMV

Site: District 1 **N# 14**

Date: 10/30/03 **Evaluator(s):** William C. Handel & Jason Koontz

Location: Route 43, Everett Road to North Avenue

County: Lake **GPS Data: Starting UTM** 16T 0428075- 4674318
GPS Data Ending UTM 16T 0429451- 4670251

Quality Class: 3 **Natural Community Type(s):** Dry-mesic prairie
(Quality Classes: 1=Grades A or B, 2 =C, 3=D)

Threats: exotics, mowing

Scientific Name	Common Name
Bromus inermis	smooth brome grass
Lythrum salicaria	purple loosestrife
Phalaris arundinacea	reed canary grass
Phragmites australis	common red reed

Prairie Width: 15 m **Signs or Evidence of Management:** No

Dist. from Pavement: 2 m **Railroad Activity:** Abandoned

Prairie Length: 1.5 miles **Prairie present on opposite side of track:** No

Significant or Exceptional Features: None

Comments: None

Plant List for Site N#14

Scientific Name	Common Name	RAV
Andropogon gerardii	big bluestem	3
Aster ericoides	heath aster	2
Bromus inermis	smooth brome grass	3
Conyza canadensis	horseweed	2
Dipsacus laciniatus	cut-leaved teasel	3
Elymus canadensis	Canada wild rye	2
Eupatorium altissimum	tall boneset	3
Lythrum salicaria	purple loosestrife	3
Monarda fistulosa	wild bergamot	2
Muhlenbergia mexicana	leafy satin grass	2
Phalaris arundinacea	reed canary grass	4
Phragmites australis	common red reed	3
Schizachyrium scoparium	little bluestem	2
Silphium terebinthinaceum	prairie dock	2
Solidago rigida	rigid goldenrod	2
Sorghastrum nutans	Indian grass	1
Sporobolus asper	drop seed	3
Typha latifolia	cattail	3

Illinois Department of Transportation

Memorandum

To:	John Fortmann	Attn: Pete Harmet
From:	John D. Baranzelli	
Subject:	Final Preliminary Site Investigation Report	
Date:	December 12, 2013	John Baranzelli

Refer to: FAU 2706 (IL 43)
Job No. P91-138-11
Everett Road to Gloucester Crossing
Lake County
ISGS #2478 Sequence #16771
Weston8 Work Order #008

Attached is a copy of the completed Preliminary Site Investigation (PSI) Report submitted November 14, 2013 by Weston Solutions regarding the above referenced project. Based on the recommendations of the PSI report, if the District wants to pursue construction in the area of soil contamination, then the Contractor shall be responsible for hiring an Environmental Firm with at least five (5) documented leaking underground storage tanks (LUST) cleanups or that is pre-qualified in hazardous waste by the Department to remediate the soil contamination and monitor for worker protection.

An estimated quantity of potentially non-special waste has been included in the PSI report. The impacted soils would be classified as a non-special waste. The estimated cost associated with contaminated soil is $5,500 at The Private Bank, $12,000 at the Fifth Third Bank, $3,900 at the Wooded Land #1, and $2,700 at the Wooded Land #2. All utility companies relocating within the following areas should be notified of the potential soil contamination and the attached special provision shall be included in the contract plans.

- Station 383+00 to Station 384.25 0 to 120 feet LT (Wooded Land, PESA Site 2478-6, 1010 South Waukegan Road). This material meets the criteria of Article 669.09(a)(5) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Benzene and Manganese.
- Station 384+25 to Station 387+80 0 to 140 feet LT (Fifth Third Bank, PESA Site 2478-4, 990 South Waukegan Road). This material meets the criteria of Article 669.09(a)(1) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Benzo(a)Pyrene and Manganese.
- Station 387+80 to Station 389+00 0 to 120 feet LT (The Private Bank, PESA Site 2478-1, 920 South Waukegan Road). This material meets the criteria of Article 669.09(a)(1) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Arsenic and Manganese.

- Station 383+00 to Station 384+25 0 to 100 feet RT (Vacant Land, PESA Site 2478-7, 1015 South Waukegan Road). This material meets the criteria of Article 669.09(a)(1) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Lead and Manganese.
- Station 90+00 to Station 91+00 0 to 50 feet RT (Vacant Land, PESA Site 2478-7, 1015 South Waukegan Road). This material meets the criteria of Article 669.09(a)(1) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Lead and Manganese.
- Station 384+25 to Station 385+10 0 to 100 feet RT (Saint Patrick's Church, PESA Site 2478-5, 991 South Waukegan Road). This material meets the criteria of Article 669.09(a)(3) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Benzo(a)Pyrene.

Any waste generated as a special waste or a waste not certified as a non-special waste from this project should be manifested off-site using the generator number associated with Lake County**. The generator number for Lake County is 0978995044.**

The pay item in the Special Provision should be included in the contact plans with the following quantities.

Pay Item Number	**Pay Item**	**Quantity**
66900200	NON-SPECIAL WASTE DISPOSAL.	330 cubic yards
66900450	SPECIAL WASTE PLANS AND REPORTS.	Lump Sum
66900530	SOIL DISPOSAL ANALYSIS.	2 Each

It is the opinion of this office in consultation with Chief Council, that the remedial work be documented for potential illegal trespass action. If you have any questions or comments, please contact Steven Gobelman at 217/785-4246.

Attachment

S:\GEN\WPDOCS\- Environment Section\Geo & Waste Unit\Districts\Distr1\PSI\Weston8\08psidf w8.docx

cc: Weston Solutions (w/o attachments)
Central Land Acquisition (w/o attachments)
District Land Acquisition (w/o attachments)
District Utilities Coordinator (w/o attachments)

Illinois Environmental Protection Agency

Bureau of Land • 1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276

Uncontaminated Soil Certification by Licensed Professional Engineer or Licensed Professional Geologist for Use of Uncontaminated Soil as Fill in a CCDD or Uncontaminated Soil Fill Operation LPC-663

Revised in accordance with 35 Ill. Adm. Code 1100, as amended by PCB R2012-009 (eff. Aug. 27, 2012)

This certification form is to be used by professional engineers and professional geologists to certify, pursuant to 35 Ill. Adm. Code 1100.205(a)(1)(B), that soil (i) is uncontaminated soil and (ii) is within a pH range of 6.26 to 9.0. If you have questions about this form, please telephone the Bureau of Land Permit Section at 217/524-3300.

This form may be completed online, saved locally, printed and signed, and submitted to prospective clean construction or demolition debris (CCDD) fill operations or uncontaminated soil fill operations.

I. Source Location Information

(Describe the location of the source of the uncontaminated soil)

Project Name: IL Rte 43 (Waukegan Rd) at Everett Rd Office Phone Number, if available: _____

Physical Site Location (address, incldluding number and street):
991 South Waukegan Road

City: Lake Forest State: IL Zip Code: _____

County: Lake Township: _____

Lat/Long of approximate center of site in decimal degrees (DD.ddddd) to five decimal places (e.g., 40.67890, -90.12345):

Latitude: 42.221954879 (Decimal Degrees) Longitude: -87.872833858 (-Decimal Degrees)

Identify how the lat/long data were determined:

☒ GPS ☐ Map Interpolation ☐ Photo Interpolation ☐ Survey ☐ Other

IEPA Site Number(s), if assigned: BOL: _____ BOW: _____ BOA: _____

II. Owner/Operator Information for Source Site

Site Owner		Site Operator	
Name:	Illinois Department of Transportation	Name:	Illinois Department of Transportation
Street Address:	201 West Center Court	Street Address:	201 West Center Court
PO Box:		PO Box:	
City:	Schaumburg State: IL	City:	Schaumburg State: IL
Zip Code:	60196-1096 Phone: 847-705-4101	Zip Code:	60196-1096 Phone: 847-705-4101
Contact:	Sam Mead	Contact:	Sam Mead
Email, if available:	Sam.Mead@illinois.gov	Email, if available:	Sam.Mead@illinois.gov

Project Name: IL Rte 43 (Waukegan Rd) at Everett Rd

Latitude: 42.221954879 Longitude: -87.872833858

Uncontaminated Site Certification

III. Basis for Certification and Attachments

For each item listed below, reference the attachments to this form that provide the required information.

a. A Description of the soil sample points and how they were determined to be sufficient in number and appropriately located 35 Ill. Adm. Code 1100.610(a)]:

LOCATION SP-1 WAS SAMPLED ADJACENT TO ISGS SITE No. 2478-5. SEE FIGURE 3-1 AND TABLE 4-1 OF THE REVISED PRELIMINARY SITE INVESTIGATION REPORT FOR SAMPLING DETAILS.

b. Analytical soil testing results to show that soil chemical constituents comply with the maximum allowable concentrations established pursuant to 35 Ill. Adm. Code Part 1100, Subpart F and that the soil pH is within the range of 6.25 to 9.0, including the documentation of chain of custody control, a copy of the lab analysis; the accreditation status of the laboratory performing the analysis; and certification by an authorized agent of the laboratory that the analysis has been performed in accordance with the Agency's rules for the accreditation of environmental and the scope of the accreditation [35 Ill. Adm. Code 1100.201(g), 1100.205(a), 1100.610]:

TEST AMERICA ANALYTICAL REPORT - JOB ID: 500-61514-1.

IV. Certification Statement, Signature and Seal of Licensed Professional Engineer or Licensed Professional Geologist

I, Steven Gobelman, P.E., L.P.G (name of licensed professional engineer or geologist) certify under penalty of law that the information submitted, including but not limited to, all attachments and other information, is to the best of my knowledge and belief, true, accurate and complete. In accordance with the Environmental Protection Act [415 ILCS 5/22.51 or 22.51a] and 35 Ill. Adm. Code 1100.205(a), I certify that the soil from this site is uncontaminated soil. I also certify that the soil pH is within the range of 6.25 to 9.0. In addition, I certify that the soil has not been removed from the site as part of a cleanup or removal of contaminants. All necessary documentation is attached.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

Company Name: Illinois Department of Transporation

Street Address: 2300 South Dirksen Parkway

City: Springfield State: IL Zip Code: 62764

Phone: 217-785-4246

Steven Gobelman, P.E., L.P.G
Printed Name:

Licensed Professional Engineer or
Licensed Professional Geologist Signature:

12/12/13
Date:

P.E. or L.P.G. Seal:

STEVEN GOBELMAN
196-000598
LICENSED
PROFESSIONAL
GEOLOGIST
STATE OF ILLINOIS

Summary Table of ISGS Site No. 2478-5
Comparison of Detected Constituents to Applicable Reference Concentrations
Soil Analytical Results
Illinois Department of Transportation
FAU 2706 Illinois Route 43 (Waukegan Road) at Everett Road
Lake Forest, Lake County, Illinois

Field Sample ID	SP-1(0-5)-082013	SP-1(9-15)-082013	Soil Reference Concentrations[A]
Sample Date	8/20/2013	8/20/2013	
Location ID	SP-1	SP-1	
Depth	0 - 5	9 - 15	
Parameter			
Laboratory pH	8.31	8.75	<6.25, >9.0
VOCs (ug/kg)	None Detected		
SVOCs (ug/kg)			
Acenaphthene	11 J	ND	570000
Anthracene	43	ND	1.20E+07
Benzo(a)anthracene	230	53	900 / 1100 / 1800
Benzo(a)pyrene	170	42	90 / 1300 / 2100
Benzo(b)fluoranthene	270	55	900 / 1500 / 2100
Benzo(g,h,i)perylene	110	37 J	2300000
Benzo(k)fluoranthene	98	19 J	9000
Chrysene	220	52	88000
Dibenzo(a,h)anthracene	46	ND	90 / 200 / 420
Fluoranthene	380	82	3100000
Fluorene	16 J	ND	560000
Indeno(1,2,3-cd)pyrene	94	17 J	900
Phenanthrene	200	50	210000
Pyrene	280	86	2300000
TCL Metals (mg/kg)			
Aluminum, Total	8800 B	7700 B	9200 / 9500
Arsenic, Total	7.4	5	11.3
Barium, Total	42	41	1500
Beryllium, Total	0.67	0.57	22
Cadmium, Total	0.43	0.6	5.2
Calcium, Total	73000 B	85000 B	---
Chromium, Total	16	14	21
Cobalt, Total	8.9	8.8	20
Copper, Total	29 B	20 B	2900
Iron, Total	19000	16000	15000
Lead, Total	42 B	20 B	107
Magnesium, Total	36000 B	40000 B	325000
Manganese, Total	470 B	520 B	630
Mercury, Total	0.03	0.023	0.89
Nickel, Total	25 B	22 B	100
Potassium, Total	2300	2200	---
Silver, Total	0.035 J	0.031 J	4.4
Sodium, Total	200 B	260 B	---
Strontium, Total	47 J	48 J	84
Thallium, Total	ND	0.32 J	2.6
Vanadium, Total	19 B	16 B	550
Zinc, Total	70 B	80 B	5100
TCLP Metals (mg/l)			
Barium, TCLP	1.1 B	1.1 B	2
Cobalt, TCLP	0.019 J	ND	1
Manganese, TCLP	1.7	1	0.15
Nickel, TCLP	0.043	0.013 J	0.1
Zinc, TCLP	0.55	0.53	5
SPLP Metals (mg/l)			
Barium, SPLP	0.78 B	0.91 B	2
Chromium, SPLP	0.021 J	0.012 J	0.1
Cobalt, SPLP	0.0051 J	ND	1
Copper, SPLP	0.021 J	0.014 J	0.65
Iron, SPLP	11	4.2	5
Lead, SPLP	0.017	ND	0.0075
Manganese, SPLP	0.096	0.052	0.15
Nickel, SPLP	0.015 J	ND	0.1
Zinc, SPLP	0.65 B	0.78 B	5

Notes:

--- - not applicable or value not available.

[A] - Soil reference concentrations from MAC Table. Background values for Chicago corporate limits

ND - Constituent not detected above the reporting limit.

B - Constituent detected in the blank and investigative sample.

J - Estimated concentration.

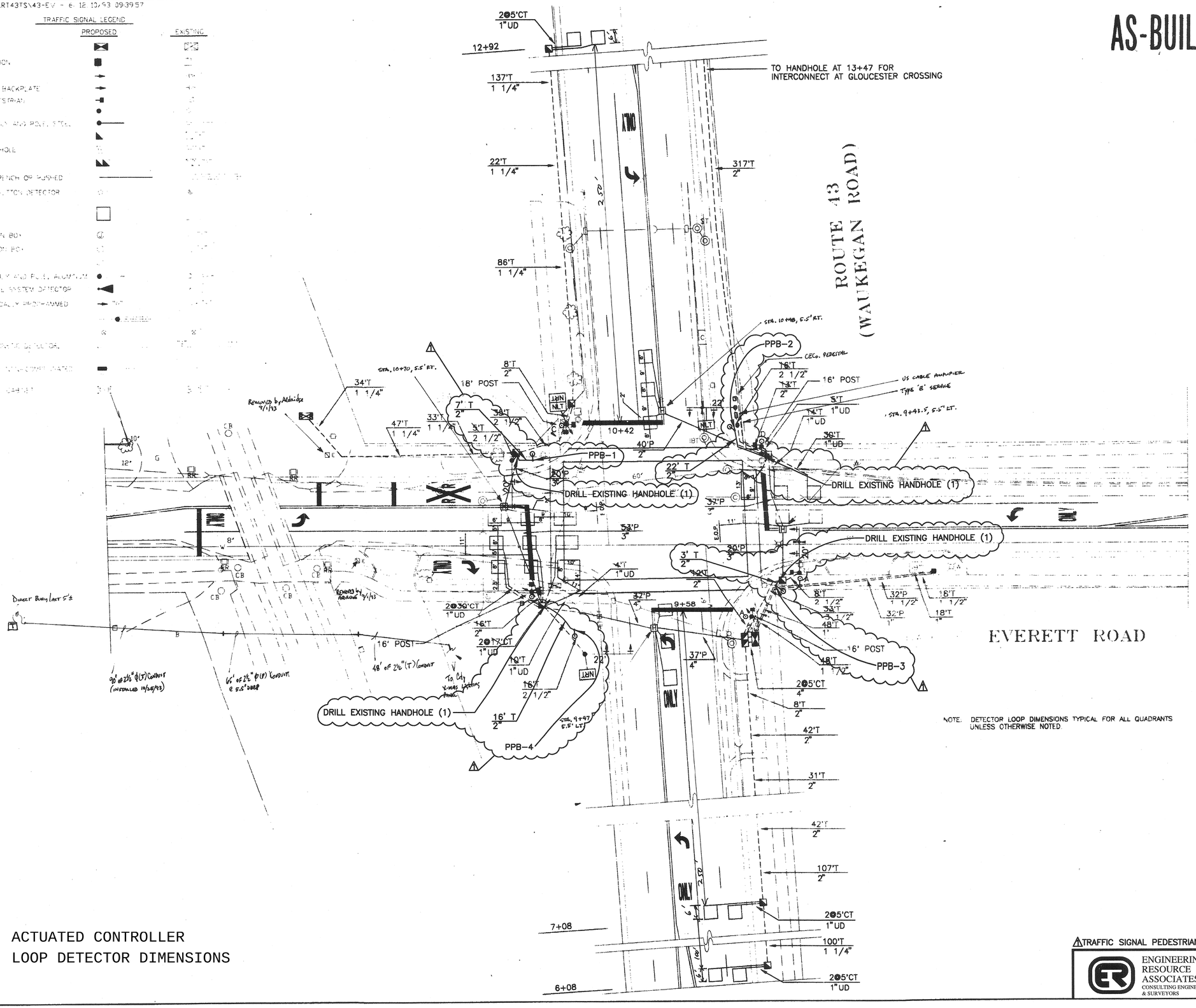
Shaded values indicate concentration **exceeds** Reference Concentration.

C:\ACAD\NDWGS\LF\RT43TS\43-EV - 6. 12. 13/93 09:39:57

AS-BUILT

TRAFFIC SIGNAL LEGEND

	PROPOSED	EXISTING
CONTROLLER		
SERVICE INSTALLATION		
SIGNAL HEAD		
SIGNAL HEAD WITH BACKPLATE		
SIGNAL HEAD, PEDESTRIAN		
SIGNAL POST		
MAST ARM ASSEMBLY AND POLE, STEEL		
HANDHOLE		
HEAVY DUTY HANDHOLE		
DOUBLE HANDHOLE		
G.S. CONDUIT IN TRENCH OR PUSHED		
PEDESTRIAN PUSH BUTTON DETECTOR		
JUNCTION BOX		
CONCRETE JUNCTION BOX		
CAST IRON JUNCTION BOX		
COMMON TRENCH		
MAST ARM ASSEMBLY AND POLE, ALUMINUM		
EMERGENCY VEHICLE SYSTEM DETECTOR		
SIGNAL HEAD OPTICALLY PROGRAMMED		
CONDUIT SPLICE		
WOOD POLE		
PAVEMENT FOR MAGNETIC DETECTOR, TYPE I OR TYPE II		
VEHICLE DETECTOR (ELECTRONIC MASTER MAGNETIC)		
RAILROAD CONTROL CABINET		



NOTE. DETECTOR LOOP DIMENSIONS TYPICAL FOR ALL QUADRANTS UNLESS OTHERWISE NOTED.

ACTUATED CONTROLLER
LOOP DETECTOR DIMENSIONS

⚠TRAFFIC SIGNAL PEDESTRIAN PUSH BUTTON MODIFICATIONS

ENGINEERING RESOURCE ASSOCIATES, INC.
CONSULTING ENGINEERS, SCIENTISTS & SURVEYORS

SCALE: 1"=20'
DATE: JUNE 2009
JOB NO: 280113
SHEET 7 OF 28

McCLURE ENGINEERING ASSOCIATES, INC.
CONSULTING ENGINEERS, PLANNERS, SURVEYORS
MAUKEGAN DIVISION
2175 NORTHWEST PKWY. AVE. WAUKEGAN, IL 60087
TEL: 708 336-7755 FAX 708 336-7755

border revised 9/93

ROUTE 43 WIDENING IMPROVEMENTS
THE CITY OF LAKE FOREST
LAKE COUNTY, ILLINOIS
LF-31-28-91-055

Rt. 43/EVERETT ROAD
TRAFFIC SIGNAL PLAN

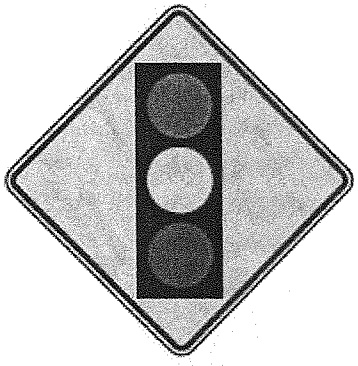
SHEET DATE
12/30/93
REVISIONS
2/22/94
4/27/94
SHEET NO.
22 OF 53

G:\PROJECTS\Lake Forest, City of\280113 (Waukegan Rd Streetscape)\CAD\280113_Traffic Signal Plan.dwg Updated by: blapich 4/28/2010

Illinois Department of Transportation

District One

Traffic Signal Design Guidelines

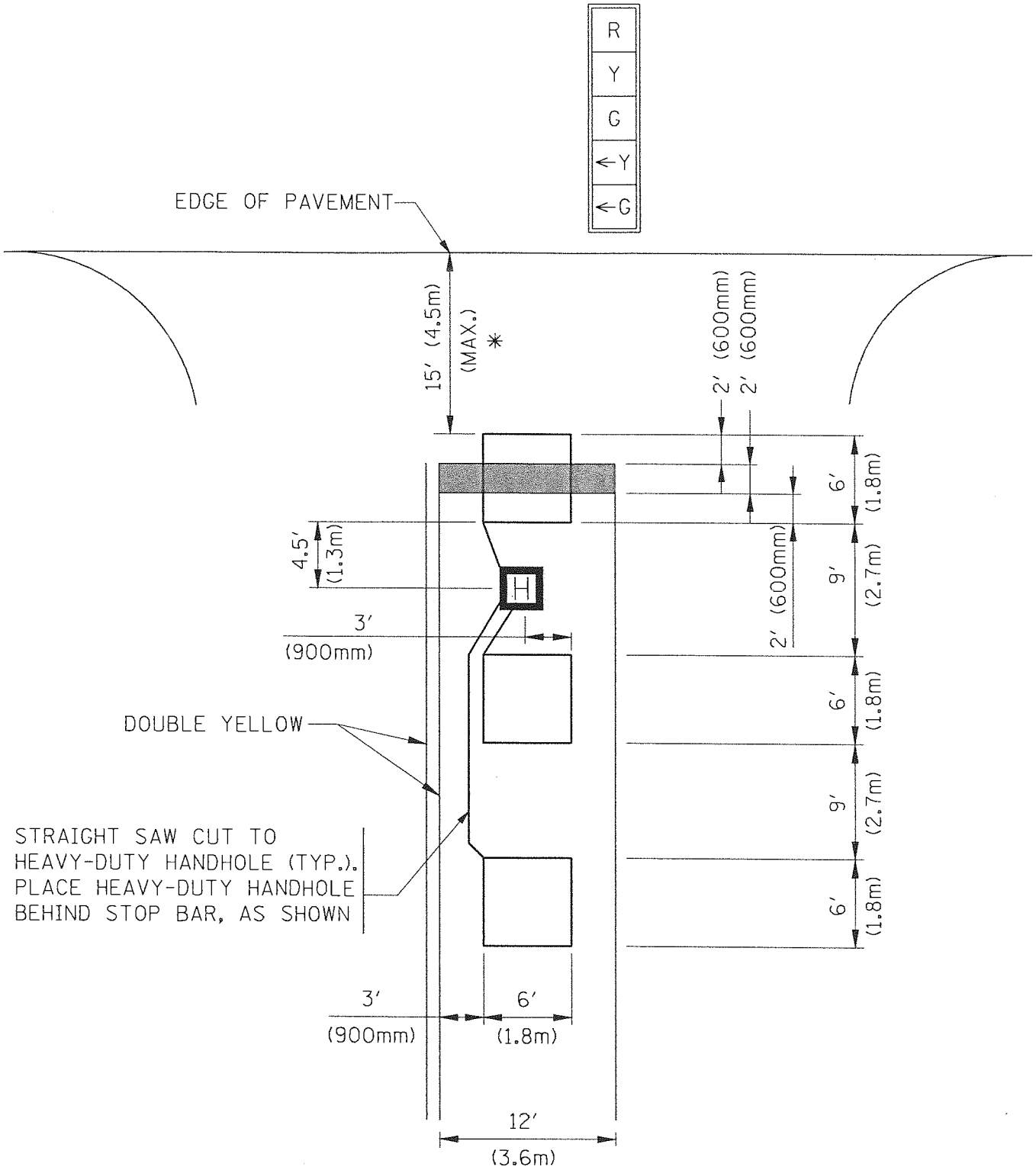


October 2009

EXAMPLE D-1

LEFT TURN LANE WITHOUT MEDIAN

(PROTECTED / PERMITTED LEFT TURN PHASING)

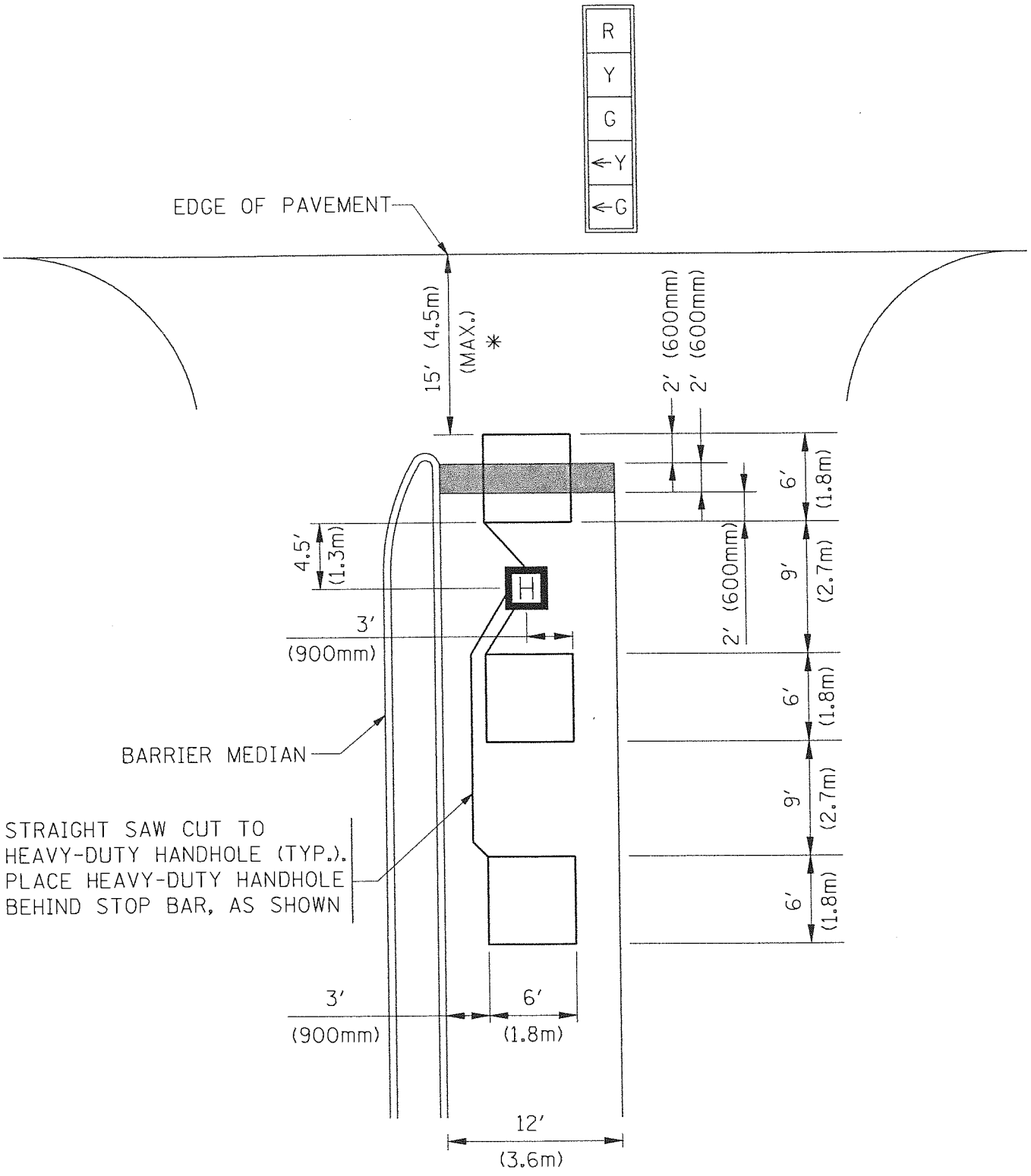


* NOTE:
FOR INTERSECTIONS WHERE STOP BAR IS SET BACK FARTHER, PLACE THE LOOP 15 FEET (MAX.) FROM THE EDGE OF PAVEMENT. HEAVY-DUTY HANDHOLE SHOULD BE PLACED BEHIND STOP BAR REGARDLESS OF LOOP CONFIGURATION.

EXAMPLE D-2

LEFT TURN LANE WITH MEDIAN

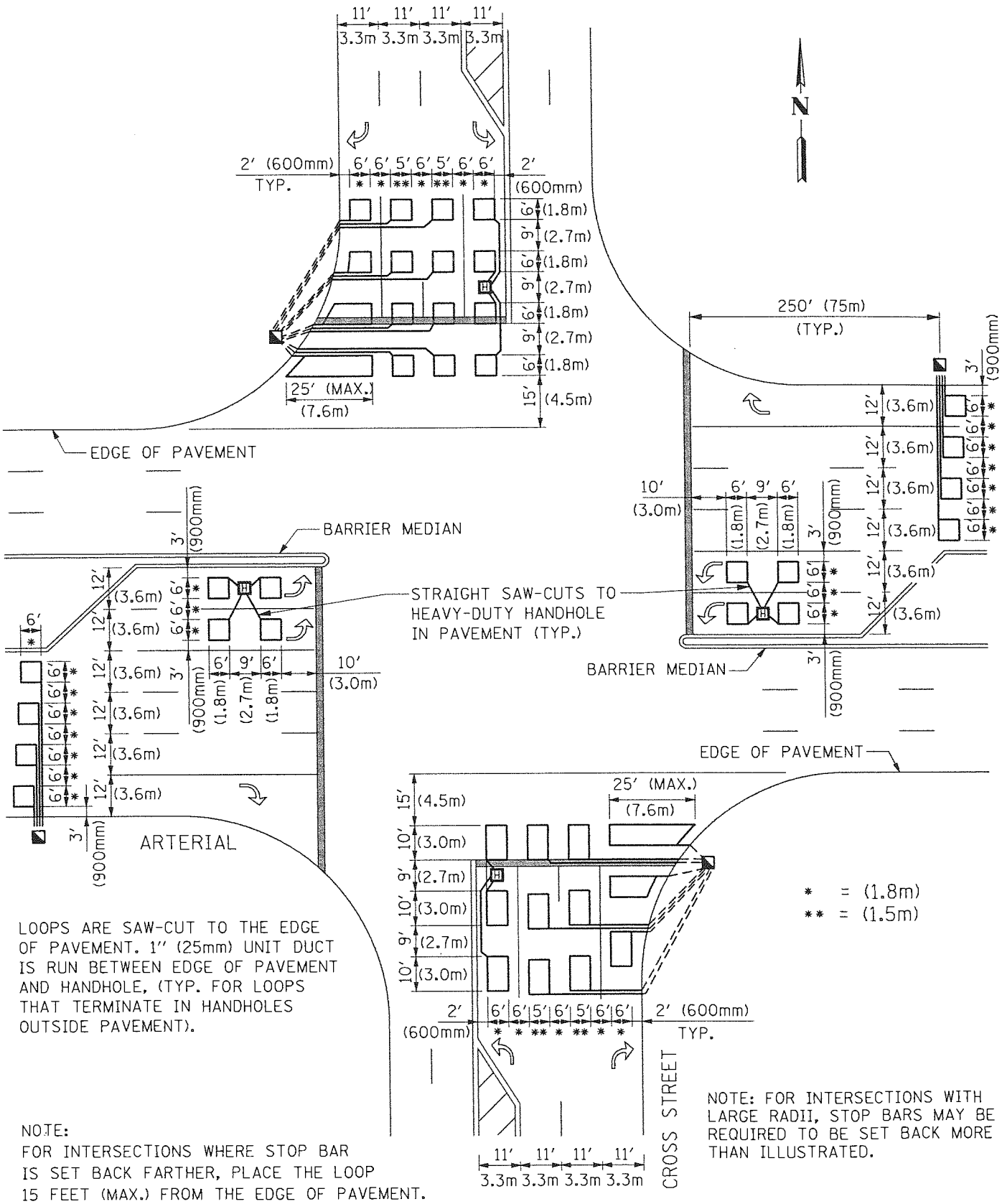
(PROTECTED / PERMITTED LEFT TURN PHASING)



* NOTE:
FOR INTERSECTIONS WHERE STOP BAR IS SET BACK FARTHER, PLACE THE LOOP 15 FEET (MAX.) FROM THE EDGE OF PAVEMENT. HEAVY-DUTY HANDHOLE SHOULD BE PLACED BEHIND STOP BAR REGARDLESS OF LOOP CONFIGURATION.

EXAMPLE D-6

ARTERIAL-VOLUME DENSITY ("FAR BACK" DETECTION)
CROSS STREET-PRESENCE ("UPTIGHT" DETECTION)



LOOPS ARE SAW-CUT TO THE EDGE OF PAVEMENT. 1" (25mm) UNIT DUCT IS RUN BETWEEN EDGE OF PAVEMENT AND HANDHOLE, (TYP. FOR LOOPS THAT TERMINATE IN HANDHOLES OUTSIDE PAVEMENT).

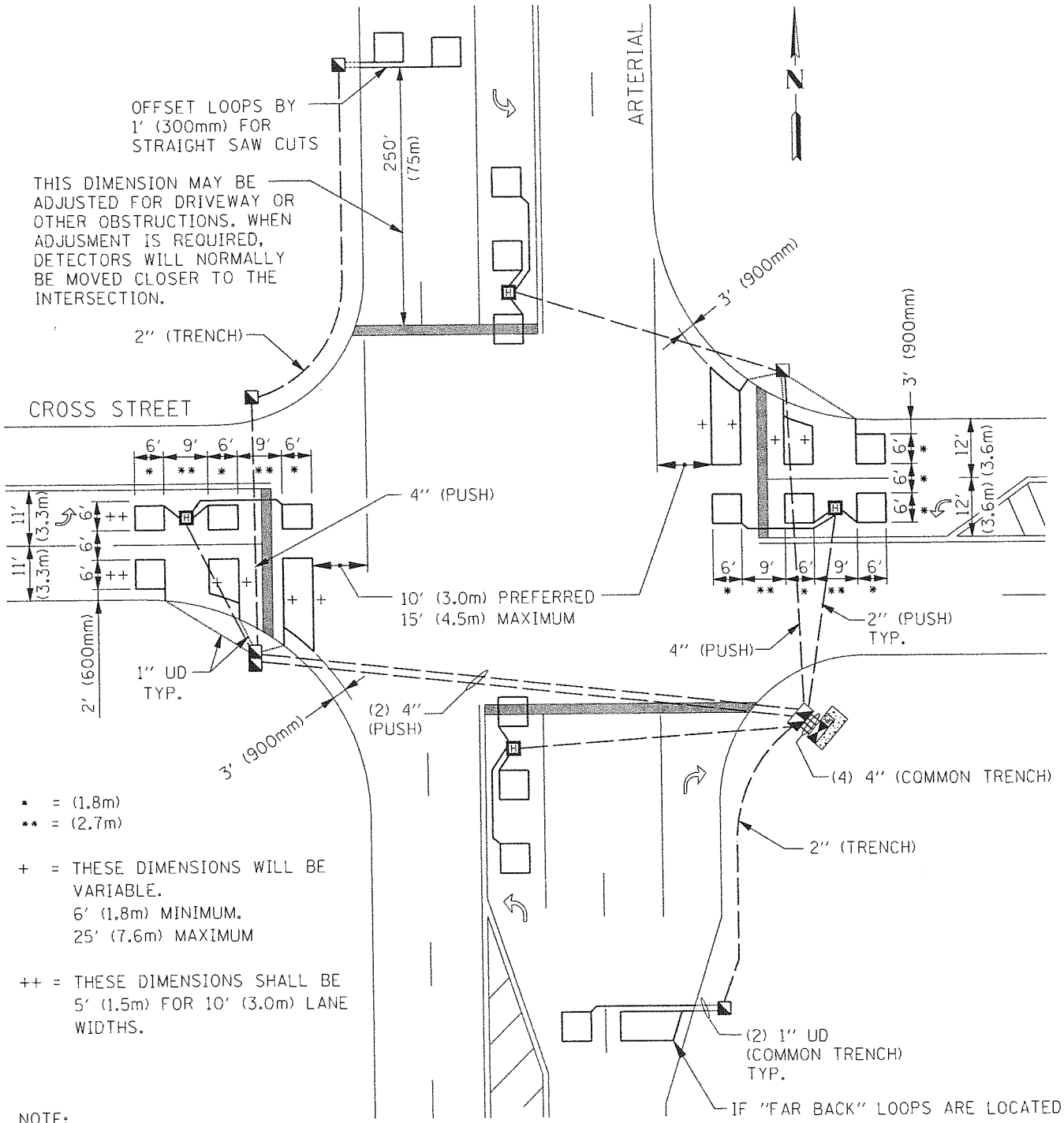
NOTE:
FOR INTERSECTIONS WHERE STOP BAR IS SET BACK FARTHER, PLACE THE LOOP 15 FEET (MAX.) FROM THE EDGE OF PAVEMENT. HEAVY-DUTY HANDHOLE SHOULD BE PLACED BEHIND STOP BAR REGARDLESS OF LOOP CONFIGURATION.

NOTE: FOR INTERSECTIONS WITH LARGE RADII, STOP BARS MAY BE REQUIRED TO BE SET BACK MORE THAN ILLUSTRATED.

N.T.S.

EXAMPLE D-7

ARTERIAL-VOLUME DENSITY ("FAR BACK" DETECTION)
CROSS STREET-PRESENCE ("UPTIGHT" DETECTION)
(WITH EXAMPLE CONDUIT ROUTING)



* = (1.8m)
** = (2.7m)

\+ = THESE DIMENSIONS WILL BE VARIABLE.
6' (1.8m) MINIMUM.
25' (7.6m) MAXIMUM

++ = THESE DIMENSIONS SHALL BE 5' (1.5m) FOR 10' (3.0m) LANE WIDTHS.

NOTE:
FOR INTERSECTIONS WHERE STOP BAR IS SET BACK FARTHER, PLACE THE LOOP 15 FEET (MAX.) FROM THE EDGE OF PAVEMENT. HEAVY-DUTY HANDHOLE SHOULD BE PLACED BEHIND STOP BAR REGARDLESS OF LOOP CONFIGURATION.

N.T.S.