3-GIS

DYCOM

Don’t Miss a Beat, Change Your Engineering Workflow and Move Faster

1 million premises and counting …

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Use a Data Model

Many options with different use-cases

Simple Google Earth

“Utility Network Management Extension”

“Fiber Network Data Model”

Asset Management Systems and Partner Apps

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Communicate via Data

There are many communications in multiple places make sure they are captured and accessible.

? Phone ? Message ? Email ? Chat ? Pictures ?
Dropbox, Google Drive, SharePoint
GeoDatabase, Collector, Explorer
Partner Apps

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Automate Where Possible

Whether it be data quality, design QA, design pathing, design generation or workflow process.

Workflow and triggers
ArcMap Python
Partner Apps
Auto Design Vendors

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Traditional workflow

Field	Draft/Plan	Review	Permitting	Build + As built
2 - 5 Days	3 - 5 Days	0.5 Days	1-10 Days	5-10 Days
Create pathing and major design items which will affect the design: cabinet siteing, obstructions, and expensive or difficult build areas.	Read then interpret field notes and laydown plus document cable and splices. Iterate of feedback then share deliverable.	Examine the drawings and documents provide feedback and sign-off.	Accept the work packet, go through permits.	Construct the area. Markup the prints, redline and comment. Send to head office transform notes into digital. Submit to client.

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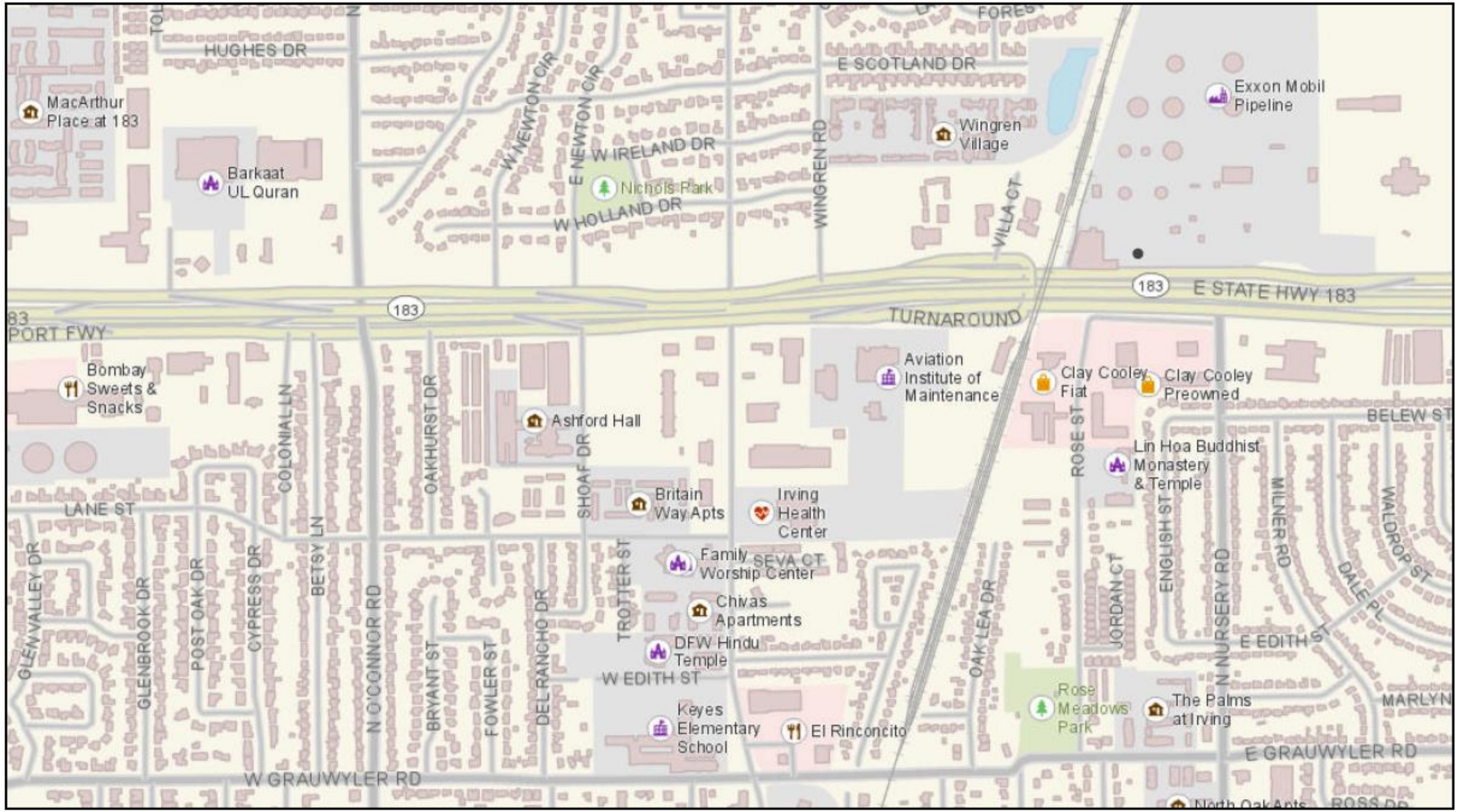
City of Irving - General Information



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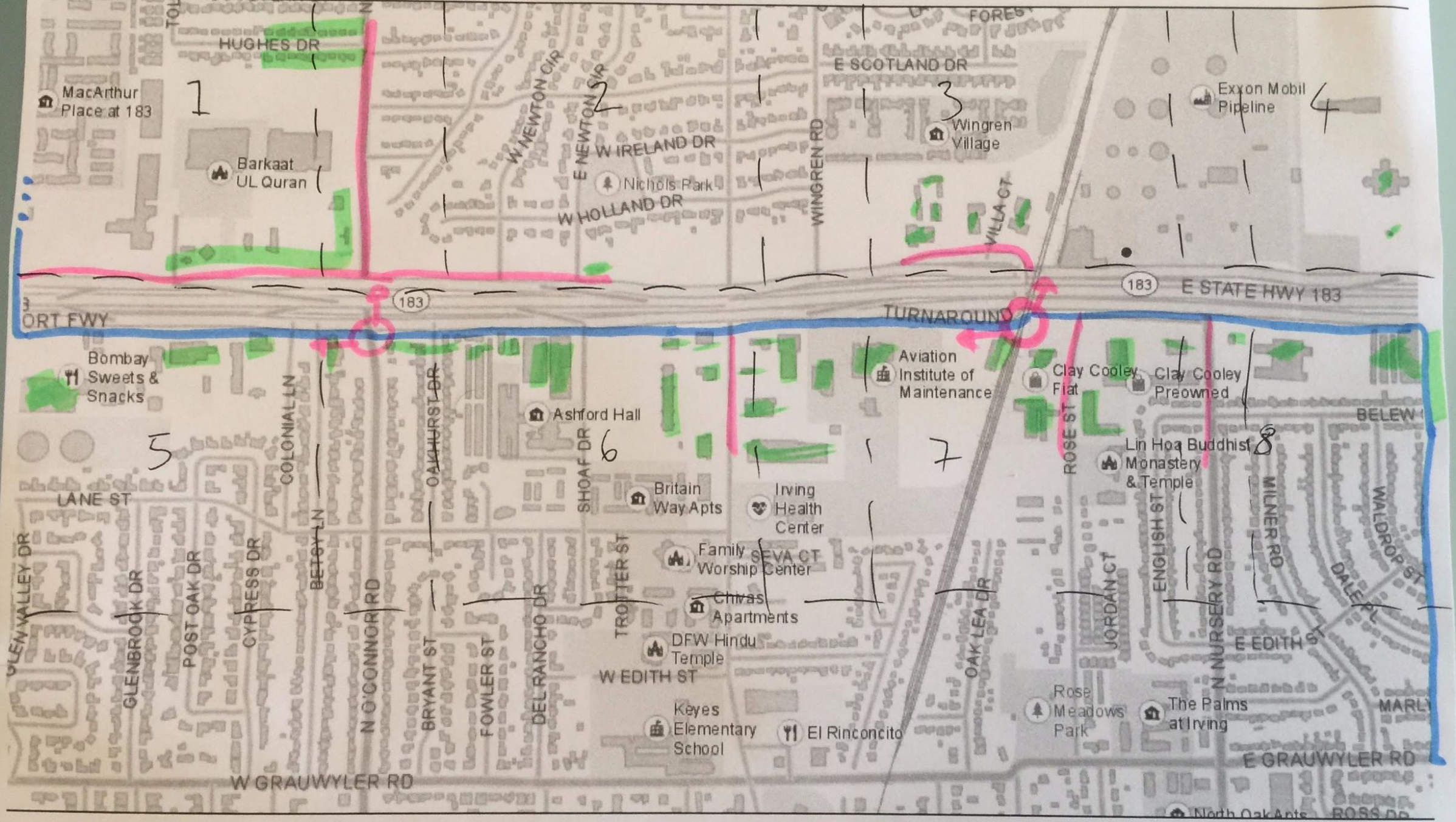
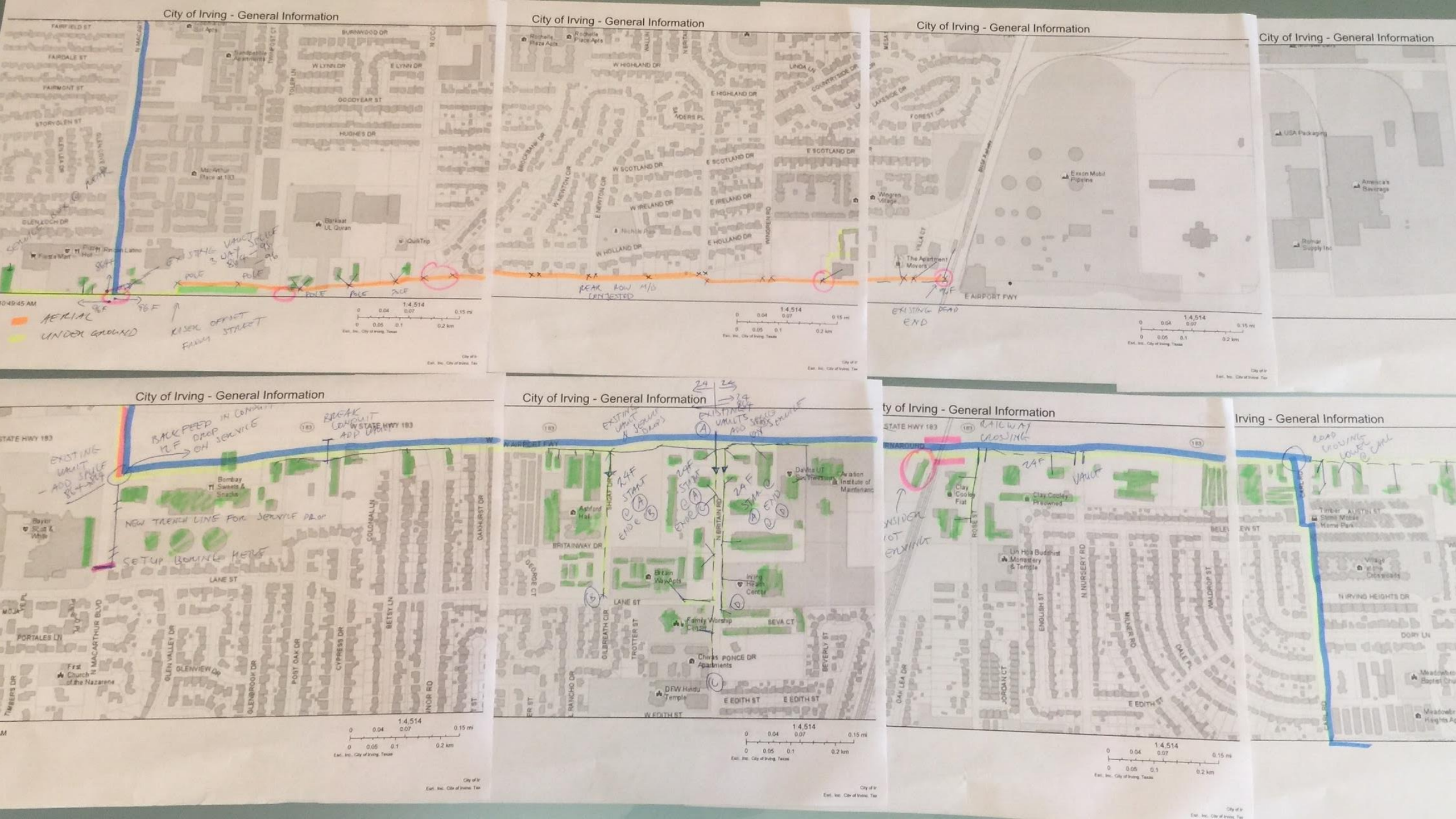
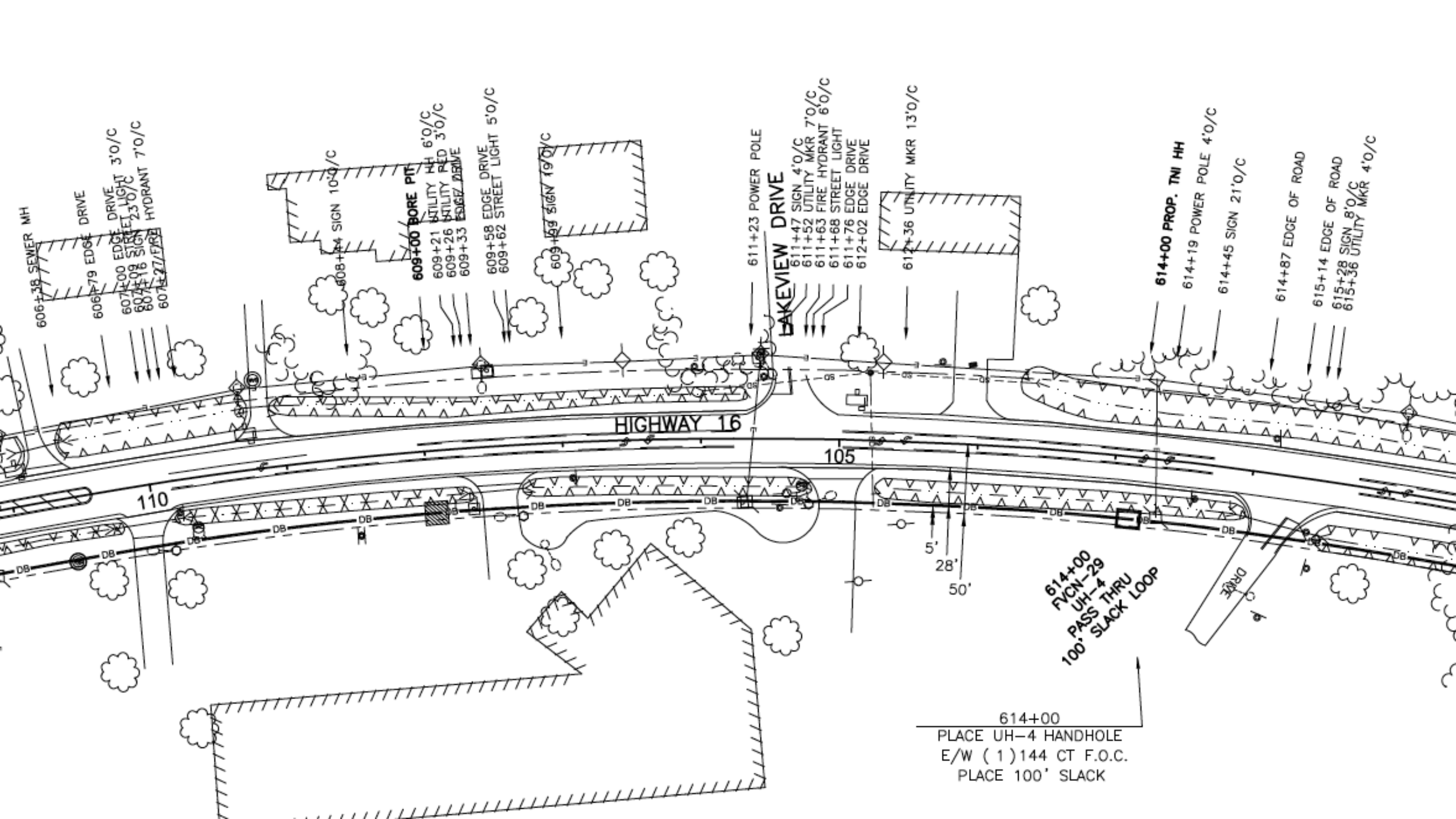
0 0.07 0.15 0.3 mi

City of Irving - General Information




City of Irving - General Information
FAIRFIELD ST
FAIRDALE ST
FAIRMONT ST
STORYGLEN ST
BURNWOOD DR
W LYNN DR
E LYNN DR
GOODYEAR ST
HUGHES DR
MacArthur Place at 183
Barkaat UL Quran
QuikTrip
GLENLOCH DR
Fiesta Mart
Rincon Latino
EXISTING VAULT 3 WAY SPLICE
POLE
AERIAL
UNDER GROUND
RISER OFFSET FROM STREET
1:4,514
City of Irving - General Information
Rochelle Plaza Apts
W HIGHLAND DR
E HIGHLAND DR
W SCOTLAND DR
E SCOTLAND DR
W IRELAND DR
E IRELAND DR
W HOLLAND DR
E HOLLAND DR
REAR ROW M/D CONGESTED
1:4,514
City of Irving - General Information
FOREST CIR
Exxon Mobil Pipeline
Wingren Village
The Apartment Movers
E AIRPORT FWY
EXISTING DEAD END
1:4,514
City of Irving - General Information
USA Packaging
America's Beverage
Romar Supply Inc
City of Irving - General Information
STATE HWY 183
BACKFEED IN CONDUIT 12F DROP ON SERVICE
BREAK CONDUIT ADD VAULT
EXISTING VAULT - ADD SPLICE
Bombay Sweets & Snacks
NEW TRENCH LINE FOR SERVICE DROP
SETUP BORING HERE
LANE ST
PORTALES LN
First Church of the Nazarene
GLENVIEW DR
GLENBROOK DR
POST OAK DR
CYPRESS DR
BETSY LN
COLONIAL LN
OAKHURST DR
1:4,514
City of Irving - General Information
EXISTING VAULT & SERVICE DROPS
EXISTING VAULTS ADD SERVICE ON SERVICE
24F START @ A END @ B
24F START @ A END @ C
24F START @ A END @ D
Davita UT Southwestern
Aviation Institute of Maintenance
Ashford Hall
BRITAINWAY DR
Britain Way Apts
Irving Health Center
LANE ST
Family Worship Center
SEVA CT
Chivas Apartments
PONCE DR
DFW Hindu Temple
E EDITH ST
W EDITH ST
1:4,514
ty of Irving - General Information
STATE HWY 183
RAILWAY CROSSING
24F
VAULT
Clay Cooley Fiat
Clay Cooley Preowned
Un Hoa Buddhist Monastery & Temple
ENGLISH ST
N NURSERY RD
MILNER RD
WALDROP ST
DALE PL
E EDITH ST
1:4,514
Irving - General Information
ROAD CROSSING LOWER @ CARL
Timber Stone Mobile Home Park
AUSTIN ST
Village at the Crossroads
N IRVING HEIGHTS DR
DORY LN
Meadowbrook Baptist Church
Meadowbrook Heights Apts


606+38 SEWER MH
606+79 EDGE DRIVE
607+00 EDGE DRIVE
607+09 STREET LIGHT 23'O/C
607+16 SIGN
607+27 HYDRANT 7'O/C
608+24 SIGN 10'O/C
609+00 BORE PIT
609+21 UTILITY HH 6'O/C
609+26 UTILITY RED 3'O/C
609+33 EDGE DRIVE
609+58 EDGE DRIVE
609+62 STREET LIGHT 5'O/C
609+69 SIGN 19'O/C
611+23 POWER POLE
LAKEVIEW DRIVE
611+47 SIGN 4'O/C
611+52 UTILITY MKR 7'O/C
611+63 FIRE HYDRANT 6'O/C
611+68 STREET LIGHT
611+76 EDGE DRIVE
612+02 EDGE DRIVE
612+36 UTILITY MKR 13'O/C
614+00 PROP. TNI HH
614+19 POWER POLE 4'O/C
614+45 SIGN 21'O/C
614+87 EDGE OF ROAD
615+14 EDGE OF ROAD
615+28 SIGN 8'O/C
615+36 UTILITY MKR 4'O/C
HIGHWAY 16
110
105
DB
5'
28'
50'
614+00
FVCN-29
UH-4
PASS THRU
100' SLACK LOOP
DRIVE
614+00
PLACE UH-4 HANDHOLE
E/W (1)144 CT F.O.C.
PLACE 100' SLACK

port Fwy Irving, Texas
Google
2D

Manual Splice Sheet

	A	B	C	D	E
1	SPLICE-001				
2	CABLE-ABC123-144			CABLE-ABC124-12	
3	BLUE	1	X	BLUE	1
4	BLUE	2	X	BLUE	2
5	BLUE	3	X	BLUE	3
6	BLUE	4	X	BLUE	4
7	BLUE	5		BLUE	5
8	BLUE	6		BLUE	6
9	BLUE	7		BLUE	7
10	BLUE	8		BLUE	8
11	BLUE	9		BLUE	9
12	BLUE	10		BLUE	10
13	BLUE	11		BLUE	11
14	BLUE	12		BLUE	12
15	ORANGE	1			
16	ORANGE	2			
17	ORANGE	3			
18	ORANGE	4			
19	ORANGE	5			
20	ORANGE	6			
21	ORANGE	7			
22	ORANGE	8			
23	ORANGE	9			
24	ORANGE	10			
25	ORANGE	11			
26	ORANGE	12			

Digital Workflow

Base map	Plan/ Design	Field	Contract	As built

Integrated data, with oversight and review - Human and Automated processes

5-10 Days

Source the most accurate data possible. Clean the data by fielding, programmatically and worst case manually. Deliver this data to DB.

5-10 Days

Using a network architecture doc create a desktop design from which the deliverables can be “generated”. Created in the design platform.

5-10 Days

Capture data based on the actual design components in a digital structured manner. Post to the DB.

30 Days

All parties can access the design data and communicate in the same location. Build from and adjust live data.

5 Days

Provide QA and make final adjustments such that the updates from construct are valid.

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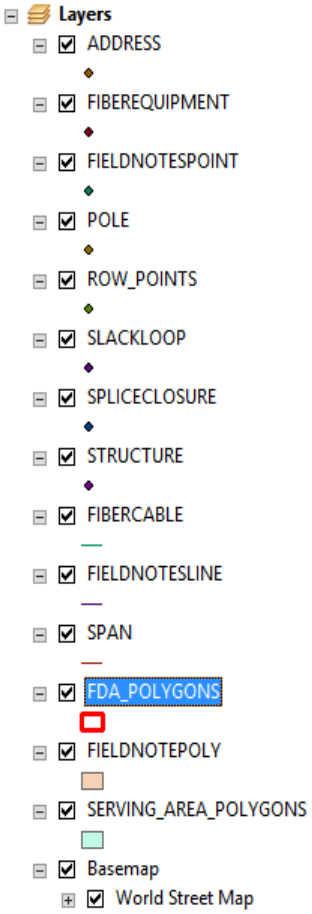
Digital Workflow



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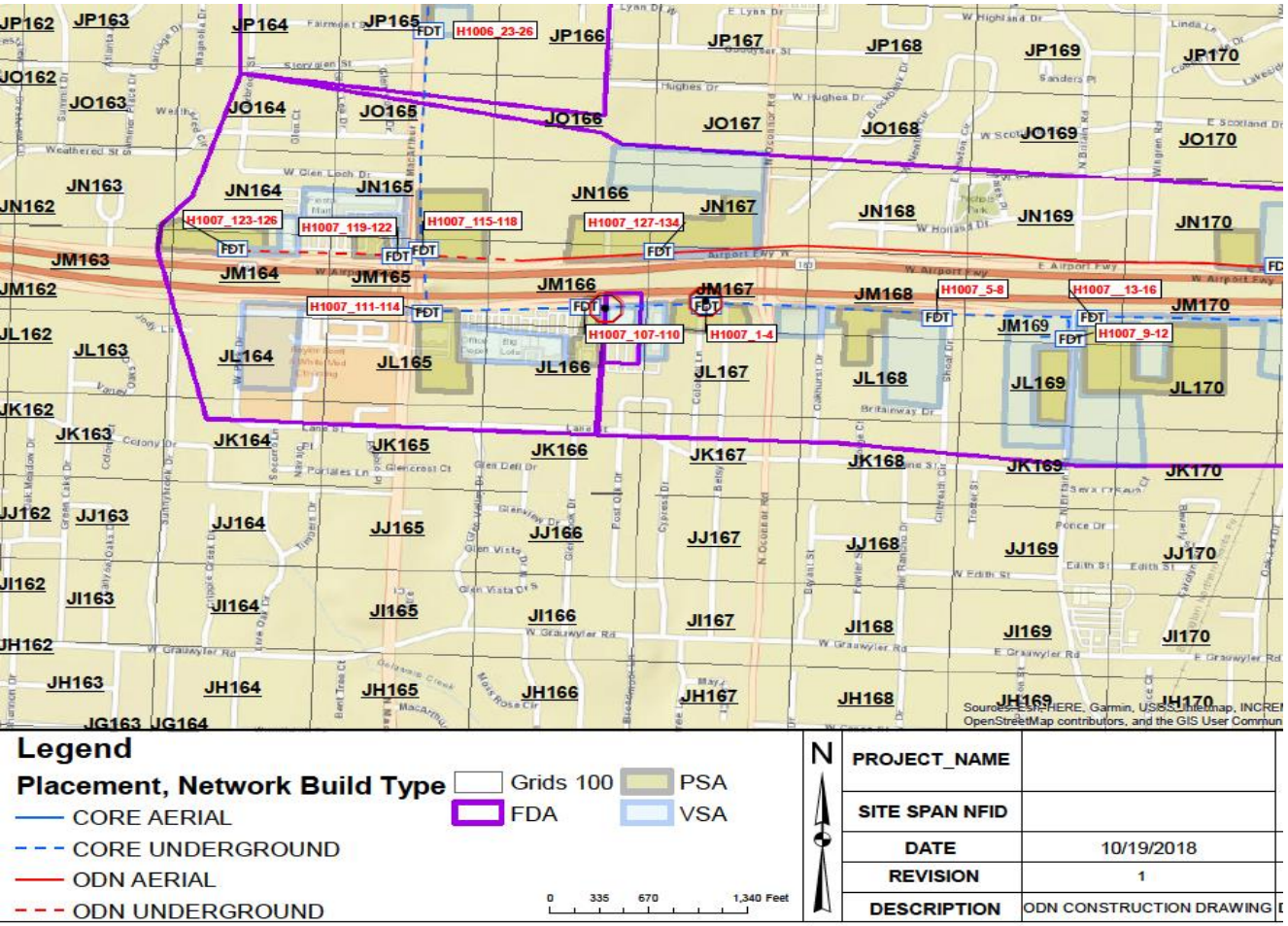
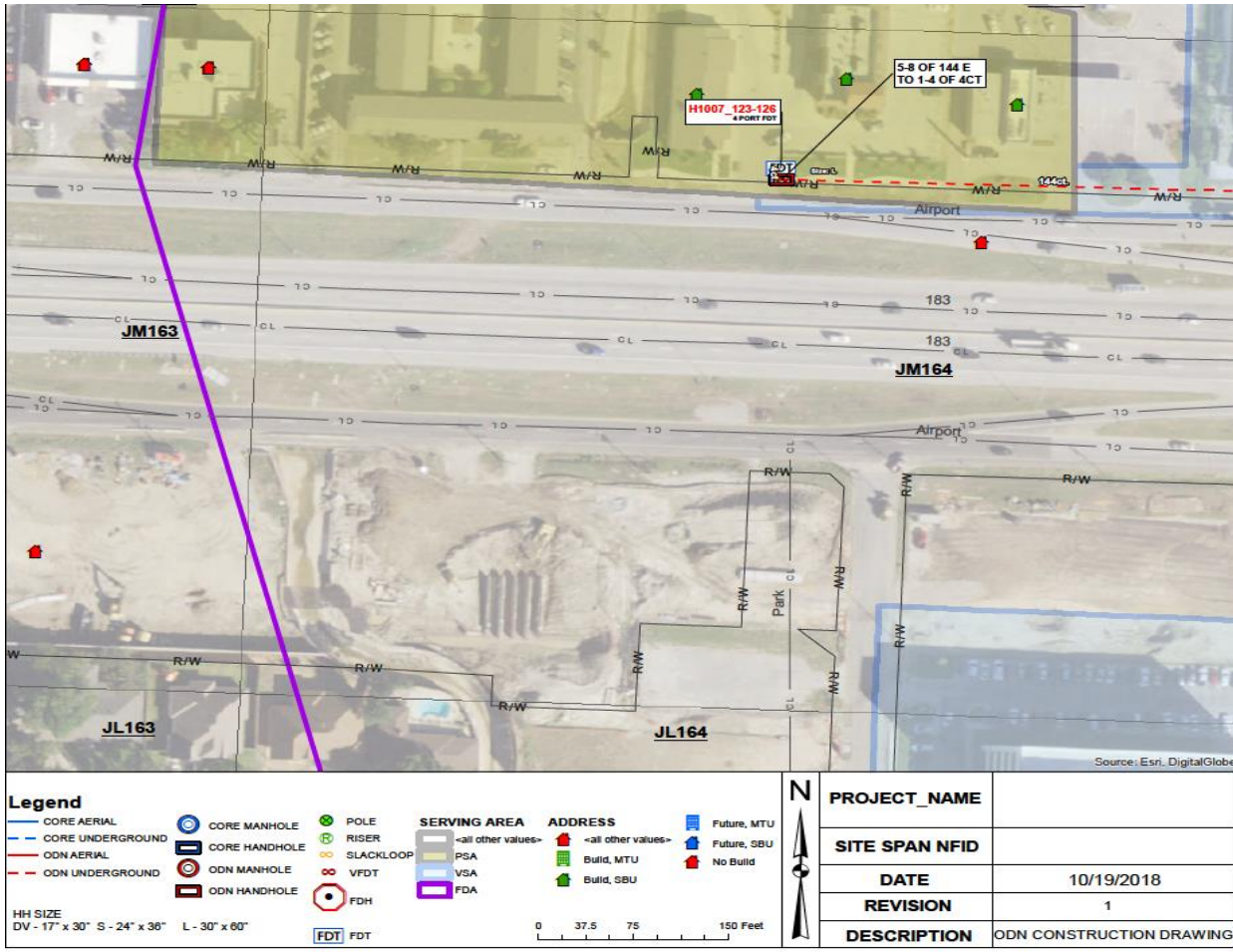
Prints - Generated programmatically





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Splicing - Generated programmatically

FDH-ABC-001

	INPUT	1	2	...
Splitter Module 9	OPEN	OPEN	OPEN	...
Splitter Module 8	OPEN	OPEN	OPEN	...
Splitter Module 7	OPEN	OPEN	OPEN	...
Splitter Module 6	OPEN	OPEN	OPEN	...
Splitter Module 5	OPEN	OPEN	OPEN	...
Splitter Module 4	OPEN	OPEN	OPEN	...
Splitter Module 3	OPEN	OPEN	OPEN	...
Splitter Module 2	2	111	112	...
Splitter Module 1	1	1	2	...

F1 1-24	1	2	3	4		
	505	506	507	508		
	1	2	X	X		F1 Fiber
F1 25-48	25	26	27	28	48	- INPUT PORT
					41	- OUTPUT PORT
	X	X	X	X	X	Fiber Equipm F2 Fiber
F1 48-72	49	50	51	52		
	X	X	X	X		

F2 1-24	1	2	3	4	
	1	2	3	4	
	H1007_1-4	H1007_1-4	H1007_1-4	H1007_1-4	Unnassigned Ports
F2 25-48	25	26	27	28	
	#REF!	#REF!	#REF!	#REF!	
	1007_25-2	1007_25-2	1007_25-2	1007_25-2	Direct Splice
F2 48-72	49	50	51	52	
	#REF!	#REF!	#REF!	#REF!	
	R	R	R	R	864 E
F2 73-96	73	74	75	76	
	#REF!	#REF!	#REF!	#REF!	
	R	R	R	R	864 W
F2 97-120	97	98	99	100	
	#REF!	#REF!	#REF!	#REF!	
	S	S	S	S	
F2 121-144	121	122	123	124	
	#REF!	#REF!	#REF!	#REF!	
	007_119-1	007_119-1	007_123-1	007_123-1	
F2 145-168	145	146	147	148	
	#REF!	#REF!	#REF!	#REF!	
	R	R	R	R	
F2 169-192	169	170	171	172	
	#REF!	#REF!	#REF!	#REF!	S = SPARE
	R	R	R	R	
F2 193-216	193	194	195	196	
	#REF!	#REF!	#REF!	#REF!	R = RESERV
	R	R	R	R	

	FDTs	RESERVED	SPARE	TOTAL
	4	0	0	4
	FDTs	RESERVED	SPARE	TOTAL
	24	61	17	102
	FDTs	RESERVED	SPARE	TOTAL
	32	72	21	125
	FDTs	RESERVED	SPARE	TOTAL
	0	0	0	0
	FDTs	RESERVED	SPARE	TOTAL
				0
TOT	60	133	38	231

0

FDH SPLICE ASSIGNMENT

505-528 OF 864 E TO 1-24 OF FDH_IN, 1-4 OF FDH_OUT TO 1-4 OF 4CT, 5-106 OF FDH_OUT TO 613-714 OF 864 E, 107-231 OF FDH_OUT TO 613-736 OF 864 W

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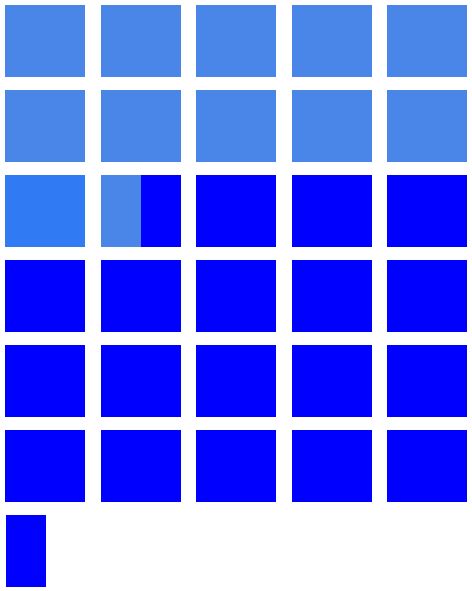
Let’s Compare

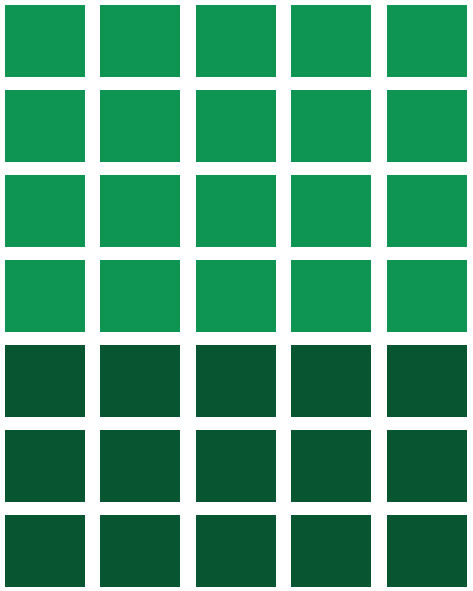
Traditional

11.5 - 30.5 Days



Digital

20 - 35 Days



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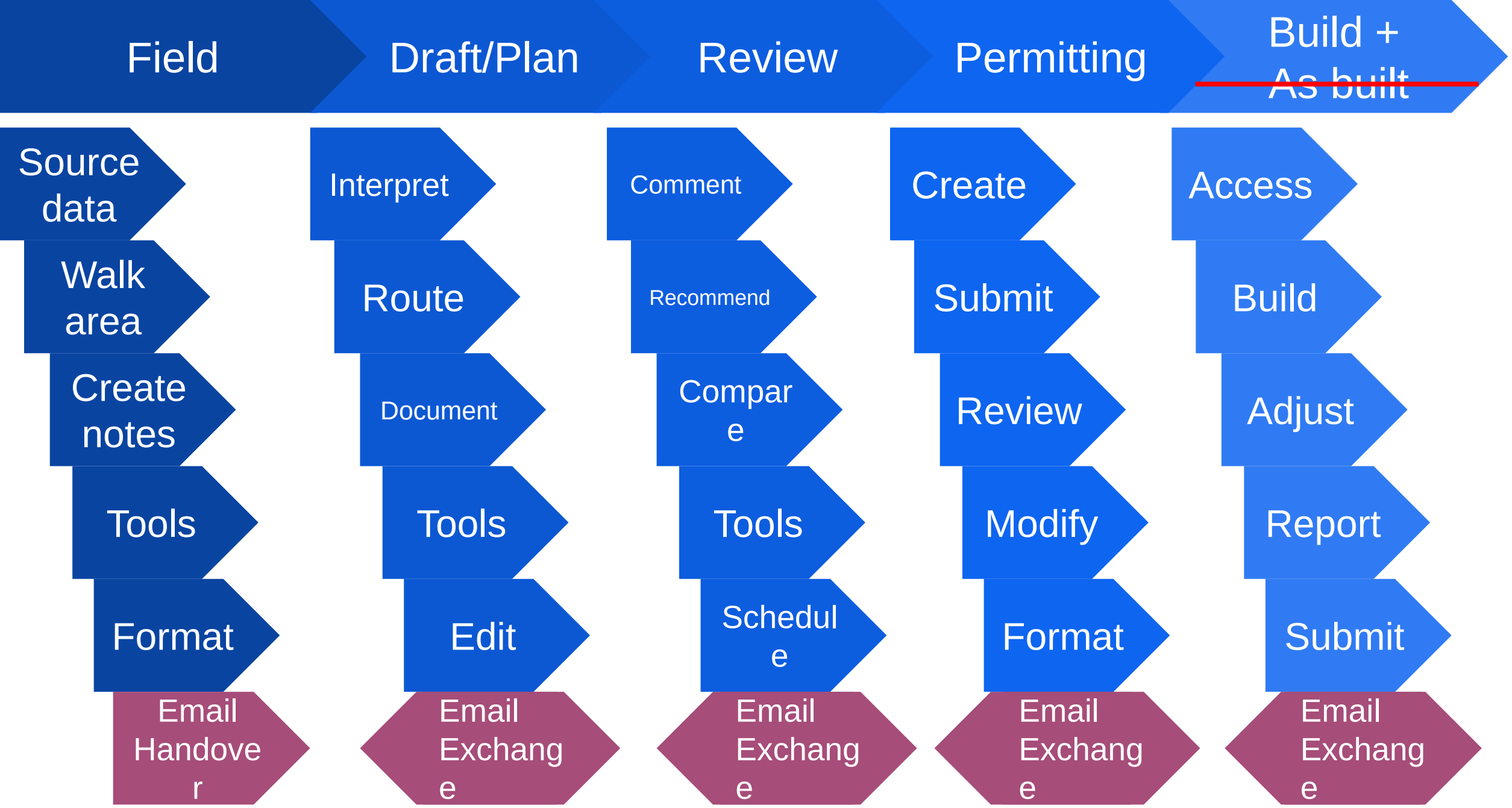
Yes, but...

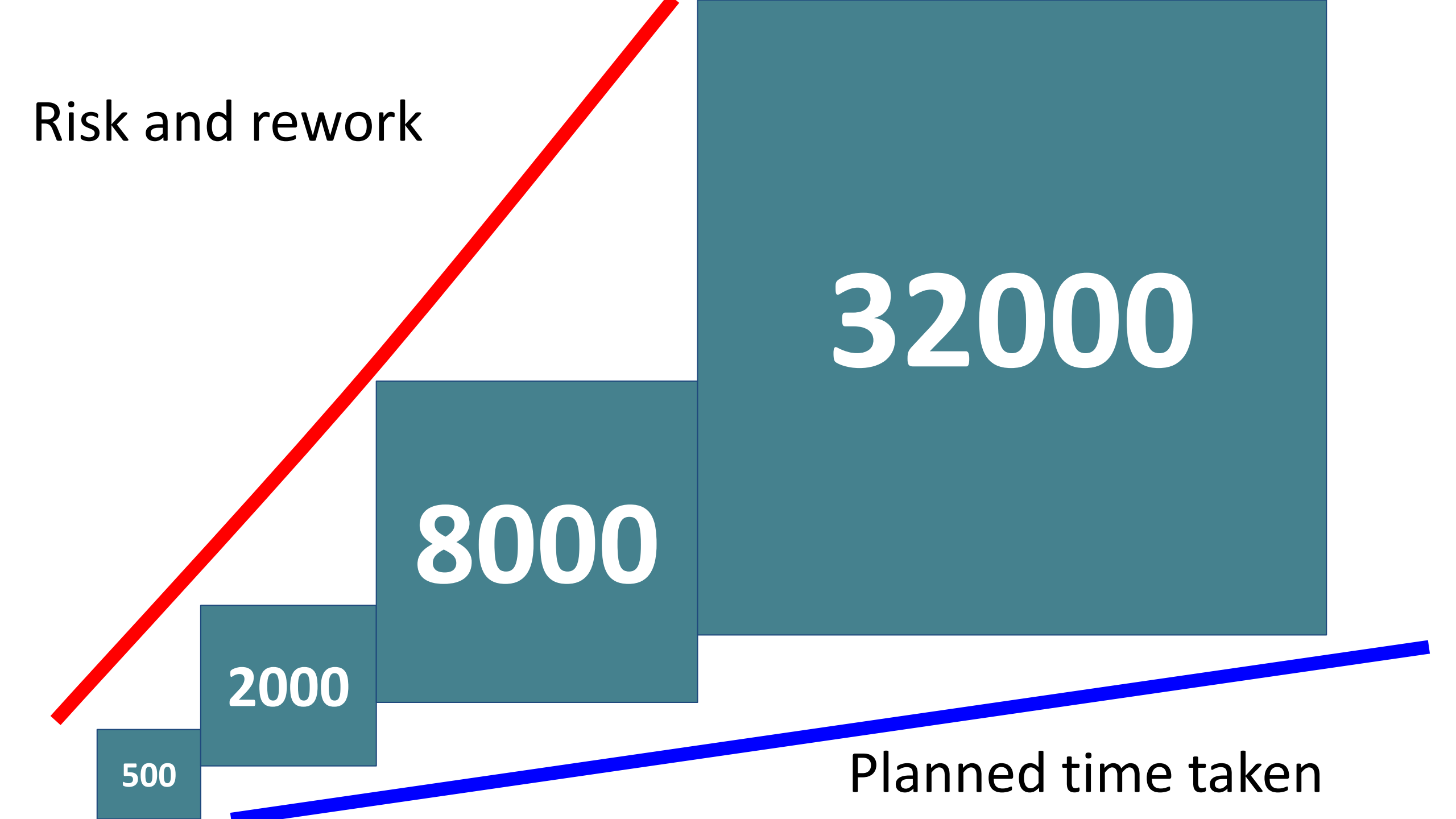

Field
Draft/Plan
Review
Permitting
Build + As built
Source data
Walk area
Create notes
Tools
Format
Email Handover
Interpret
Route
Document
Tools
Edit
Email Exchange
Comment
Recommend
Compare
Tools
Schedule
Email Exchange
Create
Submit
Review
Modify
Format
Email Exchange
Access
Build
Adjust
Report
Submit
Email Exchange

And, now ...

100,000

3

2


Risk and rework
32000
8000
2000
500
Planned time taken

Bottlenecks, Roles & What if's?

Who are the bottlenecks? Who is time poor?

Which issues cause the most rework?

Where are the sunk costs? How much does backtracking cost?

How flexible is the process? How scalable is the process?

Is the deliverable malleable?

Does everyone have the same deliverable?

Is project completion seamless and does the final design match data submitted?

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Summary

1. Know your scale, requirements, complexity and critical path.
2. Understand the impact of change and the robustness of your process.
3. When choosing a manual or data less process understand the impacts.
4. If possible ensure access for all to the latest version of data.
5. Track handoffs, keep metrics and improve as the project continues.

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