

EXTERIOR PLANNING

AN

ENGINEERING

PERSPECTIVE



Today's Presenters



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SETTING UP THE SCENE

Andy Petersen, P.E.



Setting the scene

- Need to build on a new site or expand on your existing site?
- Need a process to determine the following:
 - Find Possible Location(s)
 - Due Diligence
 - Feasibility
 - Compliance
 - Funding
 - Property Acquisition
 - Design & Construction



SELECTING THE BEST SITE

Andy Petersen, P.E.



Site Feasibility



Goal is to Build What You Want



Identify Constraints



Develop a Feasible Project Plan

Site Feasibility

What Are the Goals?

- Expansion or new build?
- Suitable Site?
- Meet District Educational Needs?
- Funding?



Site Feasibility

Key Subjects

- Location & Accessibility
- Size of Parcel & Zoning
- Demographics & Population Growth
- Environmental Assessment
- Historical Land Use
- Transportation & Utility Infrastructure
- Drainage
- Regulatory Compliance
- Community & Stakeholder Input
- Costs and Funding
- Future Expansion & Flexibility



Site Feasibility

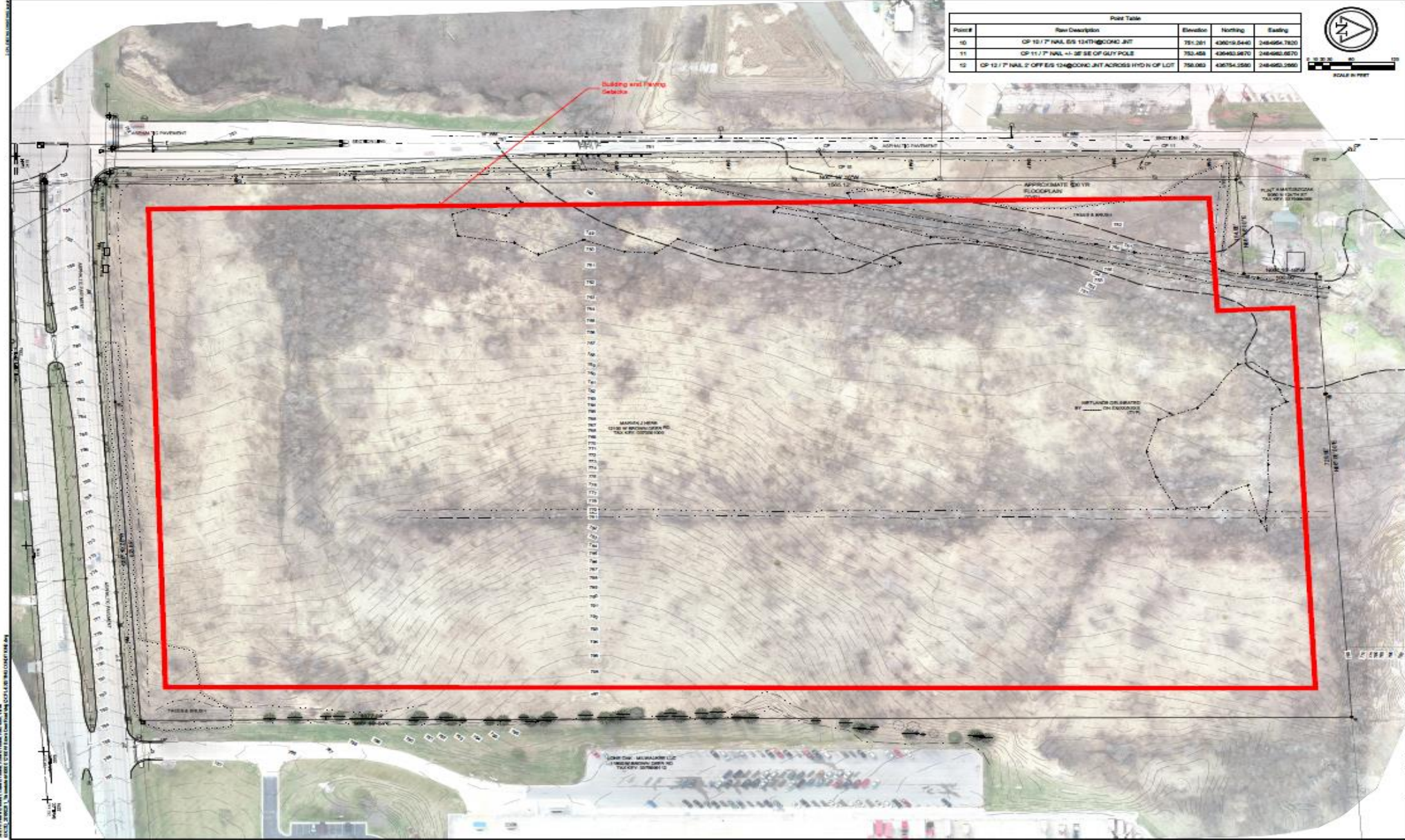
What subject is Most Important?

- They all are!
- Does this site meet our goals?

Where do we start?

- Depends on perspective
- Engineer's perspective





Point Table				
Point #	Raw Description	Elevation	Northing	Easting
10	OP 10 1/2" NAL 8/5 13471@CONC JKT	751.201	436015.6440	2484954.7820
11	OP 11 1/2" NAL 11-35 SE OF GUY POLE	752.458	436043.9870	2484963.8570
12	OP 12 1/2" NAL 2" OFF E/S 124@CONC JKT ACROSS HYD N OF LOT	756.063	436074.1550	2484963.5560



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1510 W BROWN DEER ROAD EXISTING CONDITIONS AND REMOVALS TRANSMISSION MILWAUKEE COUNTY, WISCONSIN	
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SITE OVERVIEW

Kaley Simonis



Where You Can & Can't Build

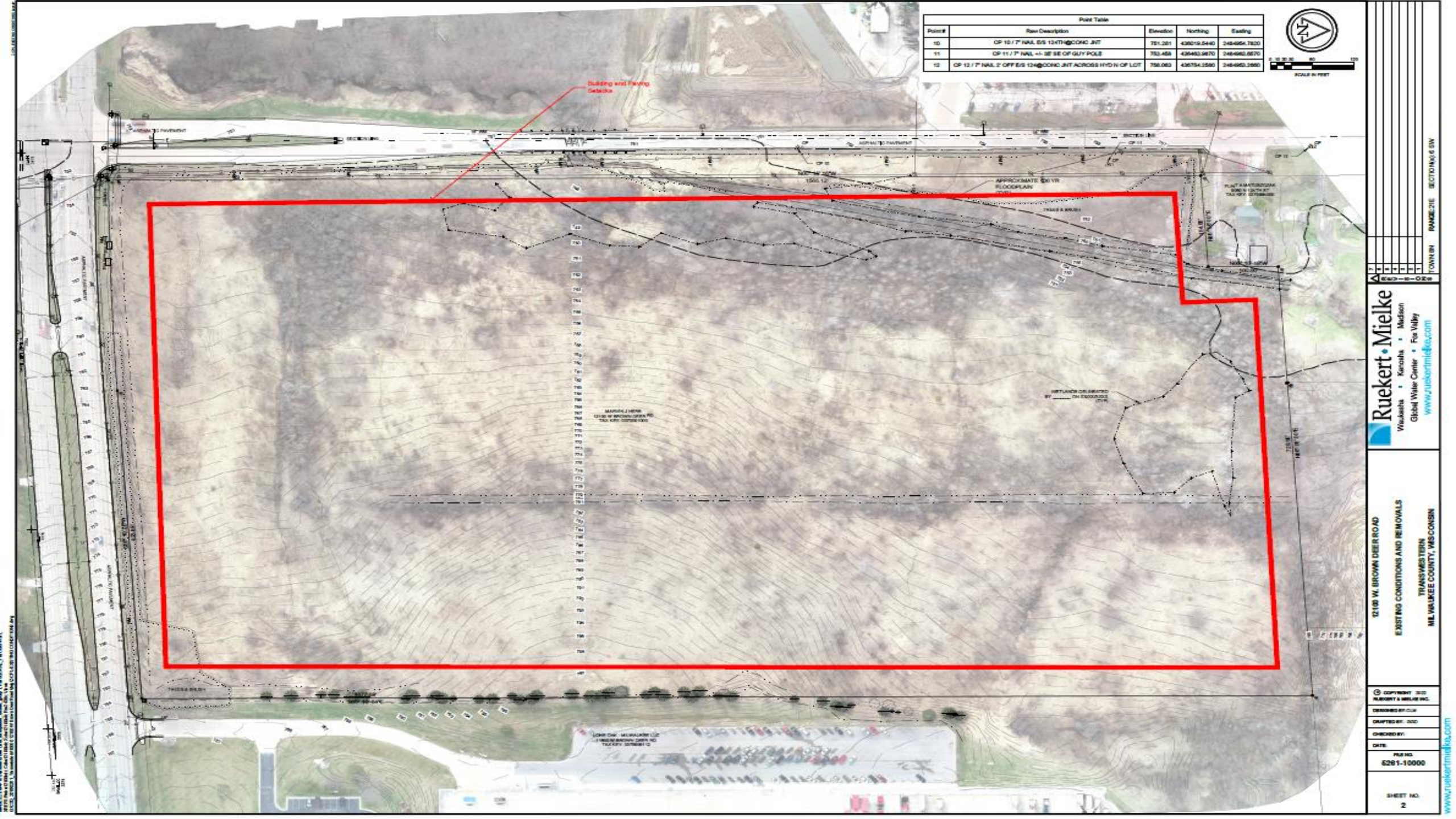
- There are multiple constraints to review prior to final site selection
- A few with the most drastic implications are usually 'hidden' in plain view



Where You Can & Can't Build

- Building & Paving Setbacks
- Existing Easements
- Environmental Constraints
- Wetland Setbacks
- Waterway Setbacks
- Airport Height Restrictions
- Zoning Restrictions/Overlays





Point #	Raw Description	Elevation	Northing	Easting
10	CP 12.7" NAIL BS 134TH@CONC JNT	751.281	430019.5440	2484954.7820
11	CP 11.7" NAIL 41-38 SE OF GUY POLE	752.458	430493.9870	2484963.0270
12	CP 12.7" NAIL 2' OFF E/S 124@CONC JNT ACROSS HYD N OF LOT	756.083	430754.3560	2484963.3960



Building and Parking Deck

APPROXIMATE 50 YR FLOODPLAIN

PLANT MATERIALS SPEC N 12/24/21 TALL OFF 12' TO 18'

MARKING HERE TO BE IN BRICKS OR CONCRETE TO BE SET AT CONSTRUCTION

INFLUENCE OR SHARED BY ON EXISTING CITY

7.5' E

TOWN	RANGE	SECTION
W	N	E
18	18	18
19	19	19
20	20	20
21	21	21
22	22	22
23	23	23
24	24	24
25	25	25
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31	31	31
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45	45	45
46	46	46
47	47	47
48	48	48
49	49	49
50	50	50

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ENVIRONMENTAL ASSESSMENT

Kaley Simonis



Environmental Reviews



Threatened and Endangered Species



Air Quality



Contamination and Toxic Substances



Assured Wetland & Waterway Delineations



Drainage Ditches



Floodplain Management



Shoreland Zoning



Culturally, Historically, & Architecturally Significant Features



EPA Justice40 Initiative Sites



Noise Abatement and Control



Coastal Barrier Resources (Coastal Zone Management)



Aboveground Storage Tanks



Farmland Protection



Sole Source Aquifers



Wild and Scenic Rivers



Geology

Endangered Species

- Start with preliminary desktop analysis: WDNR NHI & USFWS IPaC
- Can result in construction timing implications
- If managed early during planning, you can minimize project implications
- Substantial timing issues if it is prime habitat for a species



Endangered Species



Culturally Significant, Archaeological, or Historic Resources

- Wisconsin maintains a 'confidential' database of known archaeologically sensitive resources
 - A data records request can be performed, or reaching out to a consultant with access will allow you to perform a desktop review
- There is also a public viewer for Nationally Registered Historic Places
- These typically can't stop you from performing your project, just require mitigation (ex. relocating known burials, performing a Phase I Archaeological Survey, etc...)



Potential Contamination

- Phase I Environmental Site Assessment is performed during the Financing phase of the project
- If contamination is found, additional coordination with the NR700 team is required
 - Once you are designated as the "Generator" the contamination is YOUR problem



Wetlands

- WDNR maintains the Surface Water Data Viewer
- If a field visit is required, Delineations are only performed during the growing season
- Lack of vegetation/previously drained farms don't alter the presence of a wetland
- No more than 10,000 sq. ft. of temporary + permanent disturbance can occur under the General Permit
- State and Federal authorization



Local Specialties



To facilitate our clients, we have relationships with Archaeological Firms to move burial sites or Mussel specialists to perform relocations

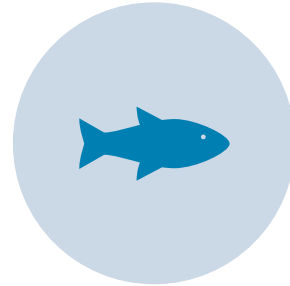


We understand that school districts are on a tight timeline, and we want to provide the most comprehensive turn-key service available to meet those deadlines

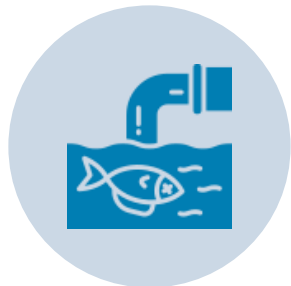
Regulatory Compliance Timelines



To set up a project that doesn't have hiccups, performing a preliminary environmental screening sets up a more accurate permit timeline



Knowing that species aren't present ahead of time will allow you to slide through the Endangered Resources Review needs



Knowing contamination is within a specific part of the parcel, that area can be avoided



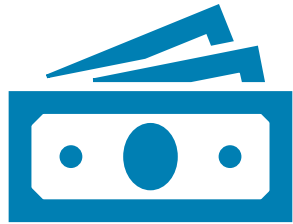
Avoiding wetland and waterway disturbance minimizes oversight and regulatory burden



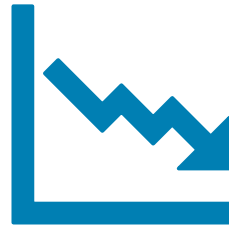
**US Army Corps
of Engineers**®



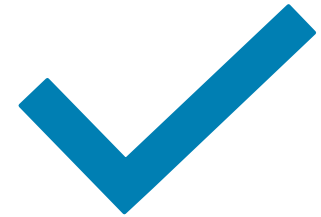
What Do Environmental Assessments Provide?



Lowers Unexpected
Costs

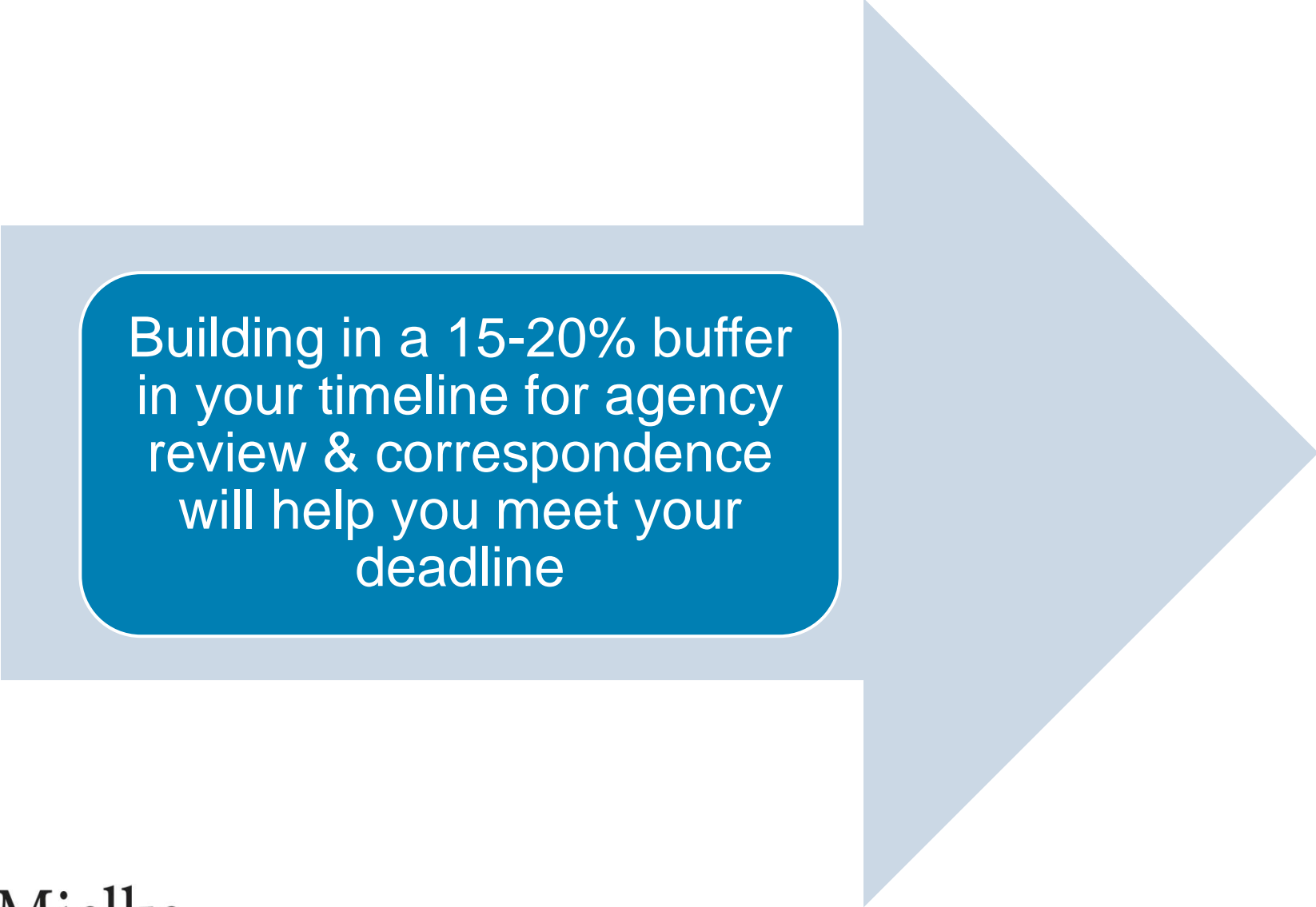


Lowers Risk



Meets Expected
Timeline

Set a Realistic Schedule

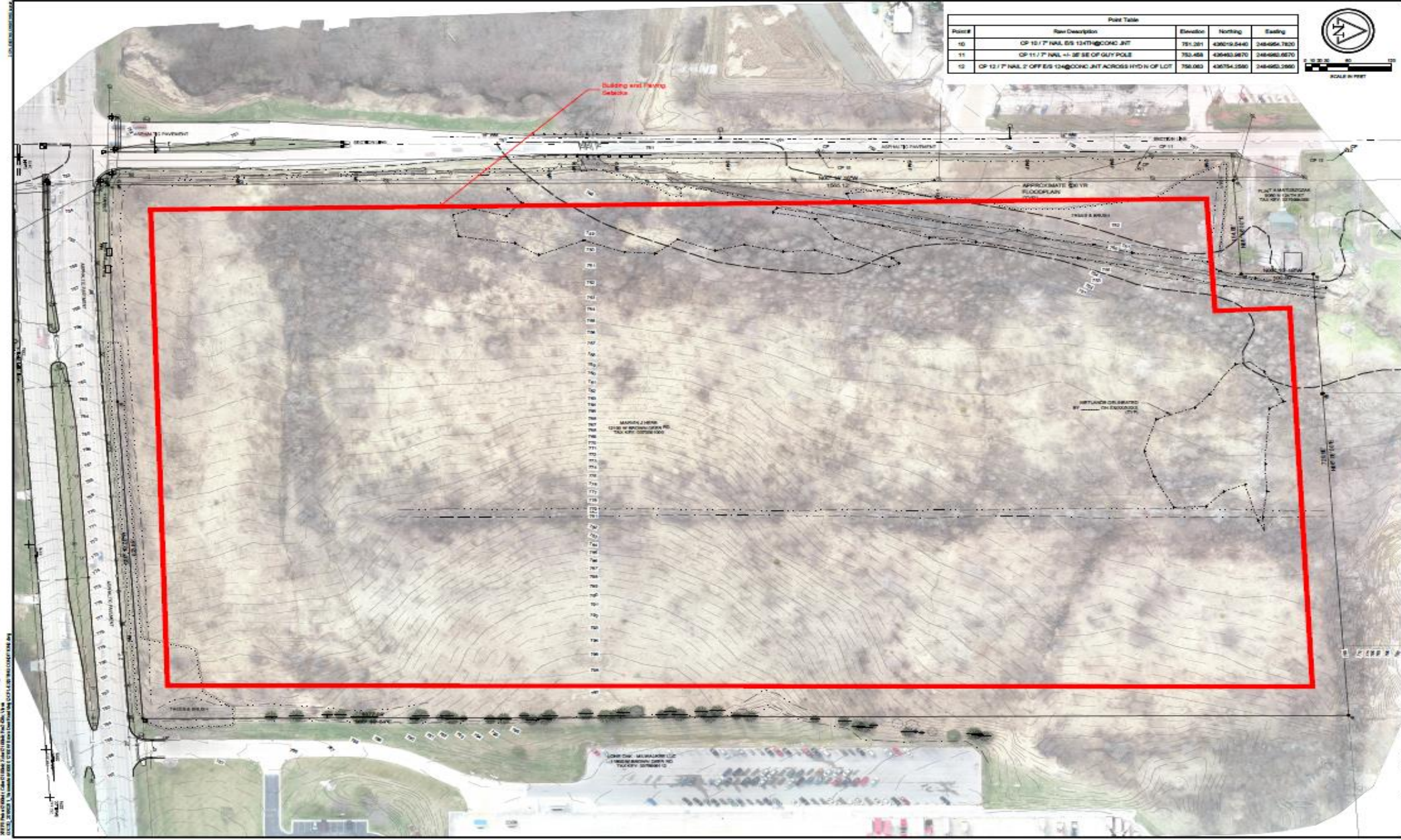


Building in a 15-20% buffer
in your timeline for agency
review & correspondence
will help you meet your
deadline

PROJECT IMPLICATIONS IN ACTION

Kaley Simonis





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TOWNEN PARCEL# SECTION# 6 SW

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Restricted Access

Building and Paving Obstacles

Contamination Area

Wetland

100 Year Flood Plain

Wetland

Historical Site

Endangered Resources

Point #	Raw Description	Elevation	Northing	Easting
10	CP 10.1 7" NAIL BS 124TH @ CONC JNT	751.281	436219.5440	2484954.7820
11	CP 11.1 7" NAIL +/- 3E SE OF GUY POLE	753.458	436483.9870	2484963.0570
12	CP 12.1 7" NAIL 2' OFF BS 124 @ CONC JNT ACROSS HYD IN OF LOT	756.063	436754.2580	2484963.2980



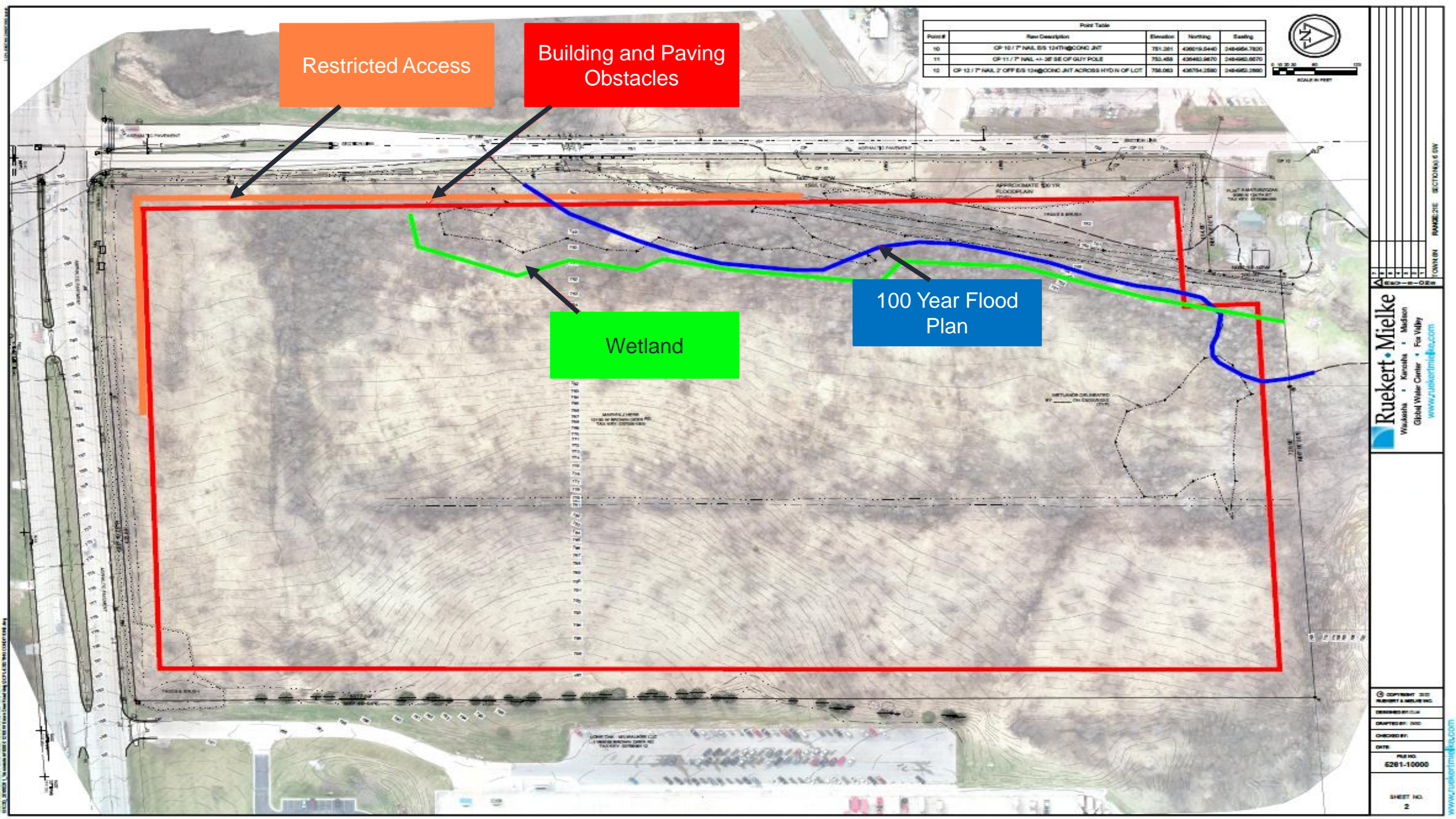
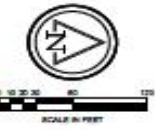
Restricted Access

Building and Paving Obstacles

Wetland

100 Year Flood Plan

Point #	Point Description	Elevation	Northing	Easting
10	CP 10 / 7" NAIL E/S 124TH @ CONC JNT	751.261	436019.5440	3484954.7800
11	CP 11 / 7" NAIL +/- 30' SE OF GUY POLE	753.458	436463.9870	3484963.0570
12	CP 12 / 7" NAIL 2' OFF E/S 124 @ CONC JNT ACROSS HYD N OF LOT	756.063	436754.2580	3484952.2960



TOWN 8N
 RANGE 21E
 SECTION 6 SW
 A
 11
 12
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TRANSPORTATION, UTILITIES, DRAINAGE

Andy Petersen, P.E.

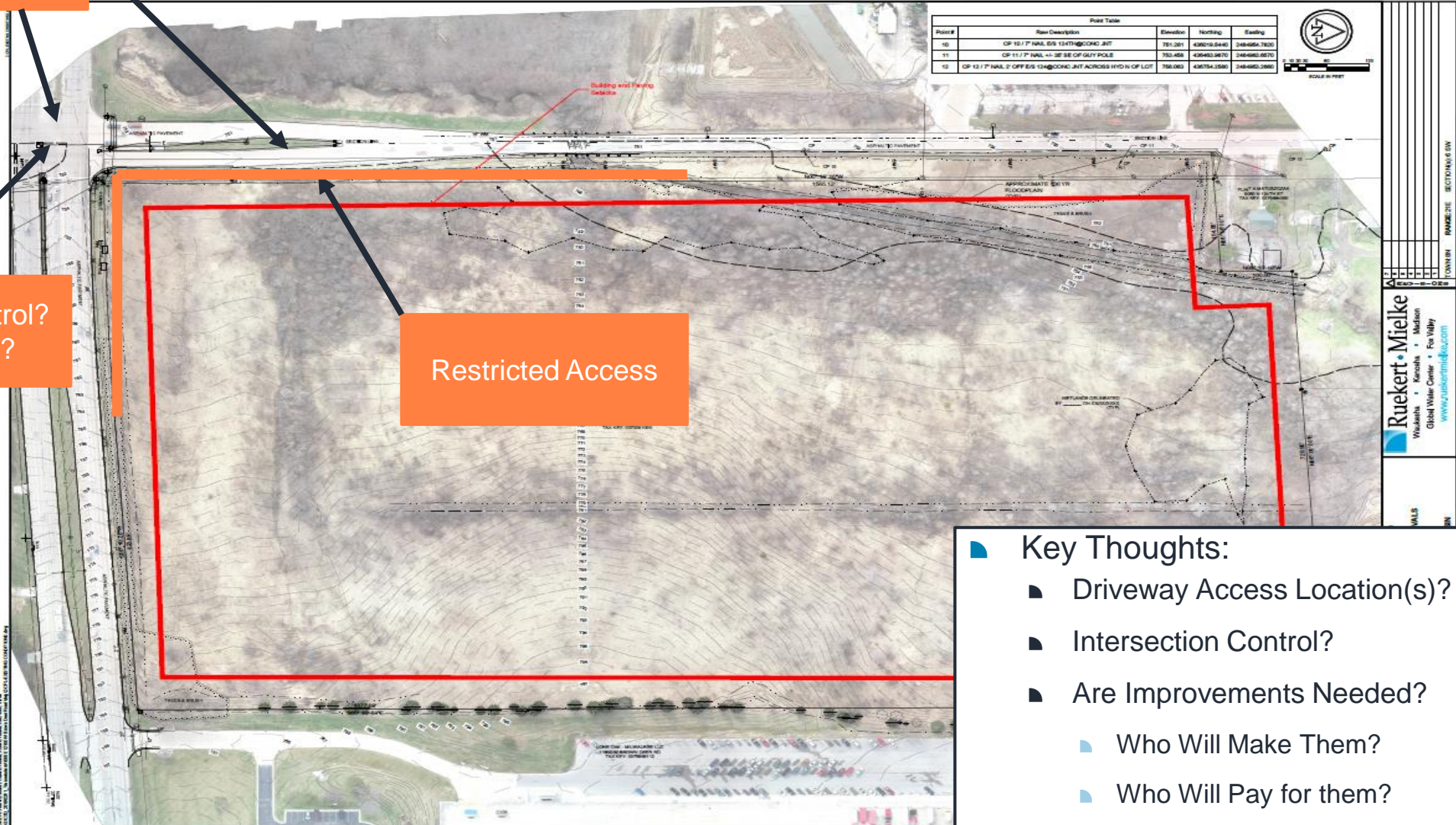


Transportation

Access to Existing Collector and Arterial Streets

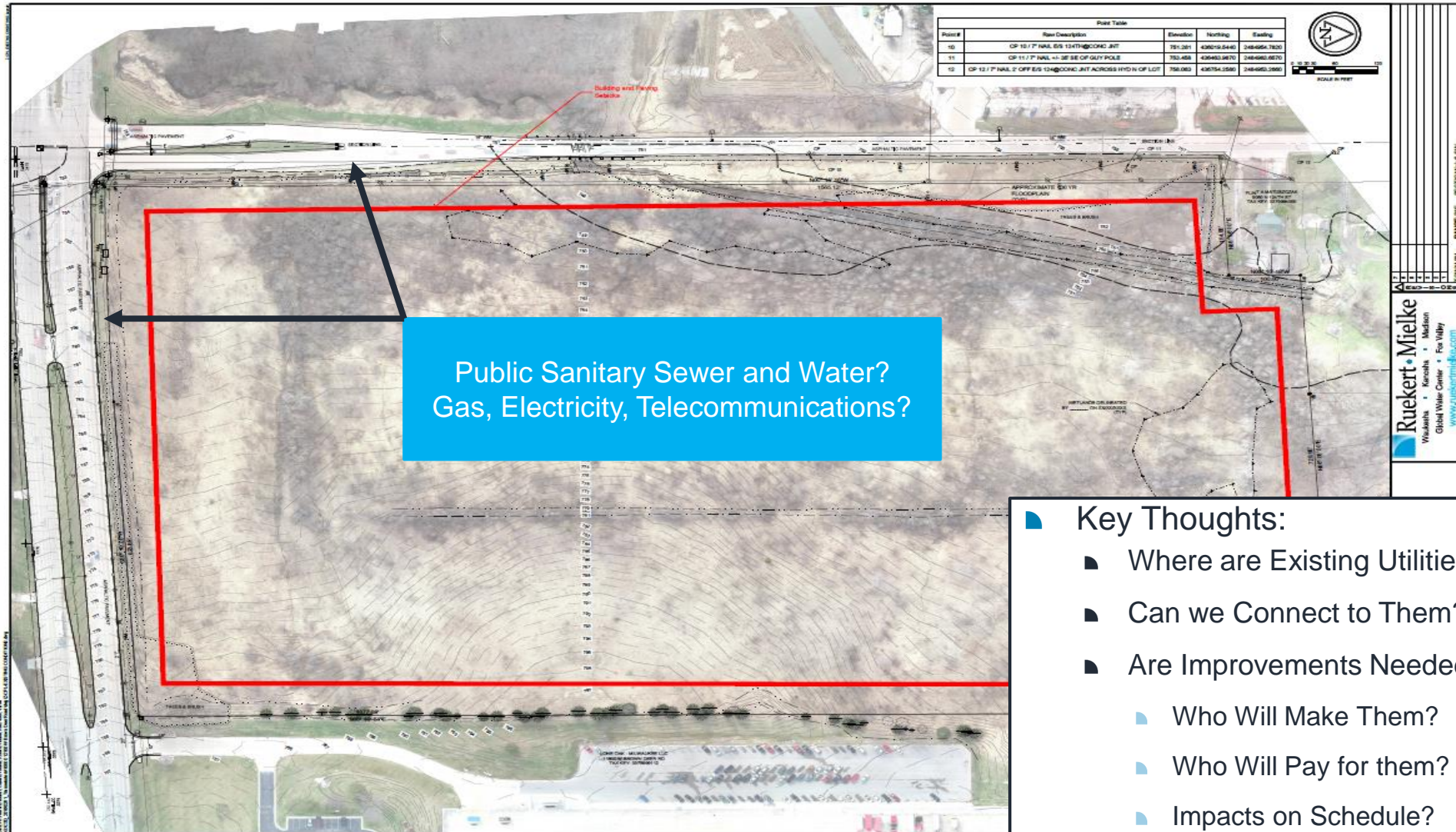
Intersection Control?
Traffic Signals?

Restricted Access



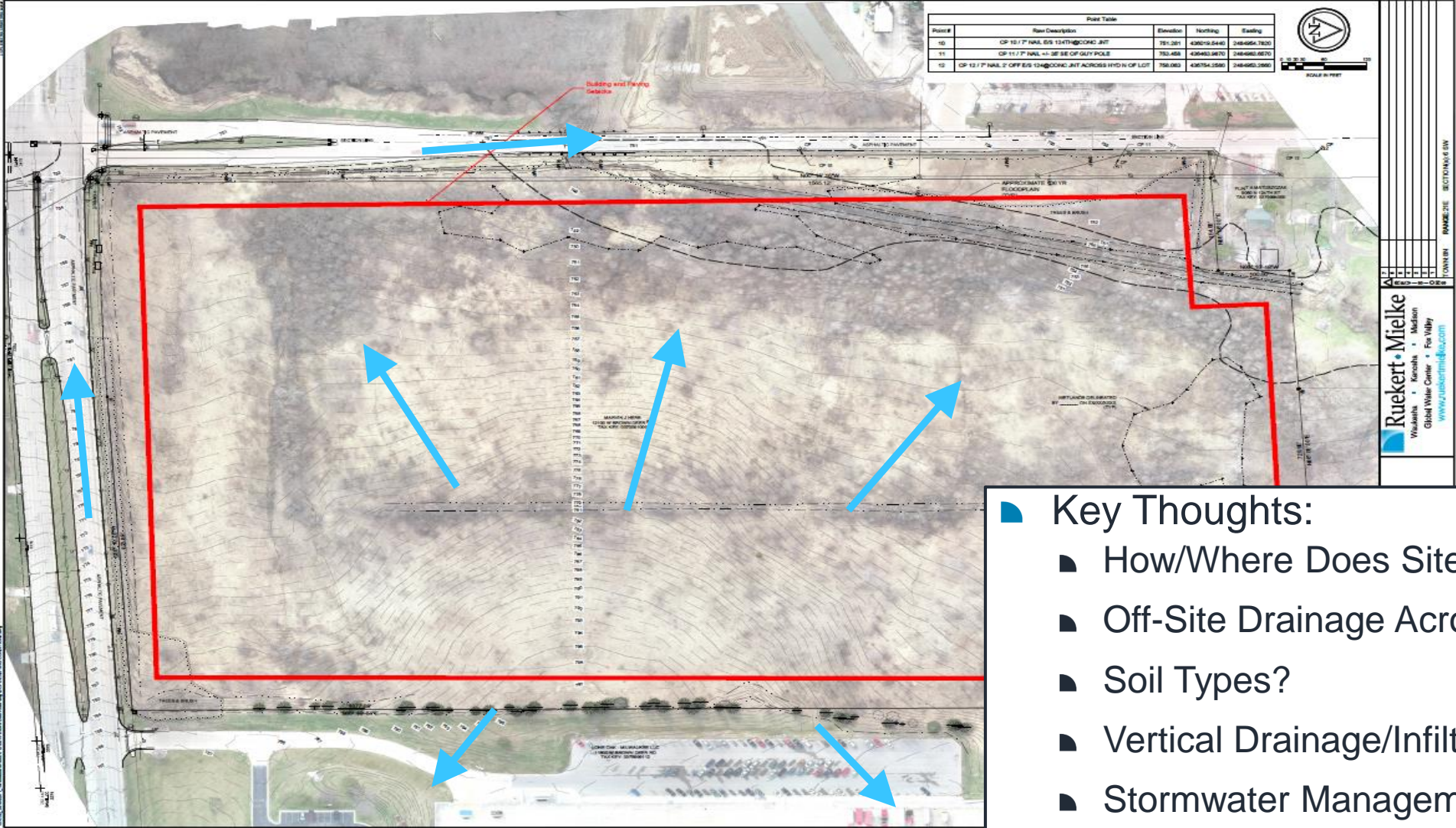
- Key Thoughts:
- Driveway Access Location(s)?
 - Intersection Control?
 - Are Improvements Needed?
 - Who Will Make Them?
 - Who Will Pay for them?
 - Impacts on Schedule?

Utilities



- Key Thoughts:
- Where are Existing Utilities?
 - Can we Connect to Them?
 - Are Improvements Needed?
 - Who Will Make Them?
 - Who Will Pay for them?
 - Impacts on Schedule?

Drainage



- Key Thoughts:
- How/Where Does Site Drain?
 - Off-Site Drainage Across Site?
 - Soil Types?
 - Vertical Drainage/Infiltration?
 - Stormwater Management?

Storm Water Requirements

- Big impact on overall design and site cost.
- Work with municipalities to meet their MS4 permit requirements.
- Municipal rules (local and/or adopted regional)
- Additional requirements
 - Subject to more restrictions due to existing flooding issues within the area



REGULATORY COMPLIANCE

Andy Petersen, P.E.



Communication



Early Discussion
is Best



Concept Review
Meeting



Post Submittal Edits or
Construction Changes

Understanding Expectations

Understand the Municipality's Process

- R/M conducts reviews for several communities
- Local or regional requirements?
- Level of detail
- Submittals at 60%, 90%, or 100%?
- Timing needed to receive and address comments



Development Agreements

May be Needed for Public Infrastructure Improvements

- May have separate plan requirements
- May involve TIF funding
- May require additional permits
- May extend permitting timelines
- May increase cost for additional design/construction oversight



SUMMARY

Andy Petersen, P.E.



Summary



Collect information
upfront



Surprises are
generally not a
good thing



Spending \$ up front
can improve
scheduling and
save \$\$\$ later

Questions?



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