IOWA DOT

Form 517001 (10-19)

CONCEPT STATEMENT FOR LOCAL PUBLIC AGENCY FEDERAL-AID PROJECTS

Please Note: Before completing this form, refer to the Concept Statement Instructions located in Instructional Memorandum (I.M.) 3.020 Concept Statement Instructions.

GENERAL INFORMATION:

County: Clinton City: Clinton Date Submitted: 5/152020 ☒ Original Submittal ☐ Revised

Project No: STBG-SWAP-1415(634)--SG-23 In STIP? ☒ Y ☐ N STIP Year(s): 2013 Estimated Letting Date: 1/19/2022

Contact Person: Bhooshan Karnik Phone Number: 515-964-1229

Title: Project Manager

Address: McClure, 1360 NW 121st Street, Clive, IA 50325 E-mail: bkarnik@mecresults.com

1.a Project Location Map(s) (include road or street name(s) (include 'N' arrow and scale): **ATTACH A DETAILED LOCATION MAP**

Manufacturing Drive Reconstruction, US 30 to College Avenue

1.b Description: Reconstruction of 1.6 miles of roadway

Section: 11,14,15 Township: 81N Range: 6E TPMS ID No.: 35633

2. Type of Work (check all that apply):

☐ HMA Paving	☒ Grading	☐ PCC Widening	☒ Bicycle or pedestrian facilities
☒ HMA Resurfacing	☒ Intersection Modifications	☐ RCB Culvert	☒ Scenic or landscaping improvements
☐ HMA Widening	☒ Lighting	☒ Traffic Signals	☐ Historic restoration or renovation
☒ Bridge Replacement	☒ Patching	☒ Other (describe):	Storm Sewer Improvements
☐ Bridge Rehabilitation	☒ PCC Paving		

3. Project Length: 1.6 miles (to nearest tenth)

4. Existing Bridge Information: FHWA No.: Year Built: Size:

Type: See attached document

5. Project Costs: For each item that applies, indicate if Federal-aid reimbursement will be requested. If yes, enter the estimated cost.

Federal-aid?	Cost Item	Estimated Cost
☐ Yes ☒ No	Estimated Cost	$ 10,629,30
☐ Yes ☒ No	Preliminary engineering (if yes, see I.M. 3.310 for procedures)	$
☐ Yes ☒ No	Construction engineering (if yes, see I.M. 3.310 for procedures)	$
☐ Yes ☒ No	Acquisition of land or property rights (if yes, see I.M. 3.600)	$
☒ Yes ☐ No	Construction (SWAP Funding)	$ 3,900,000
☐ Yes ☒ No	Utility relocation (if yes, see I.M. 3.640 and I.M. 3.650)	$
☐ Yes ☒ No	Railroad work (if yes, see I.M. 3.670 and I.M. 3.680)	$
☐ Yes ☒ No	In-kind contribution (attach documentation as per I.M. 3.050)	$

6. Total Federal-Aid (as shown in the STIP): $ 3,900,000 Total Estimated Project Cost: $ 14,529,305

7. Estimate of Land or Property Acquisition Impacts: - - Will the proposed project: **ANSWER ALL SIX QUESTIONS**

a. Require temporary construction easements? ☒ Yes ☐ No If yes, indicate the approximate area (acres): 7
b. Require permanent easement(s) or fee title? ☒ Yes ☐ No If yes, indicate the approximate area (acres): 2
c. Require borrow material? ☐ Yes ☒ No If yes, indicate the proposed source (check all that apply):
☐ New borrow area ☐ Contractor furnished ☐ Existing borrow area ☐ Within existing right-of-way ☐ Not yet determined
d. Require total property acquisition(s)? ☒ Yes ☐ No If yes, approx. how many properties will be totally acquired? 6(3 previously acquired)
e. Involve relocation assistance for displaced person(s) and/or businesses? ☐ Yes ☒ No
If yes, approximately how many relocations will be required? _____
f. Involve a change in property access which results in damage to the remainder parcel? ☐ Yes ☒ No
If Item 7a, 7b, or 7c are marked Yes, provide an aerial map with project limits and proposed ROW/Temporary Construction Easement need lines.

8. Public Acceptance: Is it anticipated that the proposed project will receive a substantial degree of public opposition? ☐ Yes ☒ No
If yes, explain:

ENVIRONMENTAL IMPACTS: - - Will the proposed project: **ANSWER ALL QUESTIONS**

9. Involve any ground disturbance, per the example Cross Section?

☐ Yes ☒ No a. If yes, Form 231033, Cultural Resources Assessment (CRA) Form, and an archaeological assessment or survey will be required. Refer to I.M. 4.120

b. If no, LPA shall complete Form 231033, Cultural Resources Assessment (CRA) Form, and submit to Location and Environment with the Concept Statement, or soon thereafter. The CRA form can be completed with the LPA's local Historic Preservation Commission (HPC), Historical Society (HS), or SOI Qualified Professional.

10. Be in the proximity of a recreational area (i.e. park, playground, trail, greenbelt, etc.) or wildlife refuge? ☐ Yes ☒ No
If no, skip to No. 11; If yes, provide a map showing the project location and park location and amenities, and answer the following questions:

☐ Yes ☐ No a. Is the property used as a recreational area or wildlife refuge?

☐ Yes ☐ No b. Is the property publicly owned? Who is the owner? _____

☐ Yes ☐ No c. If it is a recreational area, is it open to the public?

☐ Yes ☐ No d. Will access to the recreational area be impacted by the project?

☐ Yes ☐ No e. Has the official with jurisdiction over the property or facility (recreational area or wildlife refuge) been contacted?

f. List and describe the recreational areas or wildlife refuges, and their total area in acres.

	Description (include name of agency with jurisdiction)	Total property area (acres)
a.		
b.		
c.		
d.		
e.		
f.		
g.		

☐ Yes ☐ No g. Will any part of the identified properties be acquired as permanent right-of-way?

Describe what part will be acquired, using approximate area, the anticipated severity of impacts, why the property can't be avoided, and the steps that will be taken to mitigate or minimize impacts.

☐ Yes ☐ No h. Will any part of the identified properties be acquired as temporary easement?

☐ Yes ☐ No i. Were any of the identified properties originally acquired or developed with Federal Land and Water Conservation Act (LWCN) or similar type funds?

☐ Yes ☐ No j. Will the property sustain permanent adverse physical impacts?

☐ Yes ☐ No k. Will any of the recreational features (ball diamond, playground, picnic area, etc.) be impacted within any permanent or temporary easement?

☐ Yes ☐ No l. After the work is complete, will the property be changed from its original condition?

If the answer to j, k or l is no, is the agency with jurisdiction over the property in agreement with all these determinations? Attach documentation from the agency with jurisdiction.

For any yes answers to j, k or l, list the properties and specifically describe what part will be acquired, including approximate area, the anticipated severity of the impacts, why the property can't be avoided, and the steps that will be taken to minimize or mitigate the impacts.

☒ Yes ☐ No 11. Determine if the project is in the proximity of known Federal or State threatened or endangered species or their habitat by completing and submitting the T&E form, as per I.M. 4.110

☐ Yes ☒ No 12. Will the project involve placement of fill or dredged material into waters of the United States, including wetlands? If yes, refer to I.M. 4.130 to determine if a 404 permit is needed.

☒ Yes ☐ No 13. Will the project disturb 1 or more acres of land? If yes, NPDES General Permit No. 2 will be required by the Iowa DNR. When estimating the amount of disturbed land, include all areas where soil will be exposed at any time to erosive forces. Refer to I.M. 4.140 Storm Water Permits for more information.

☒ Yes ☐ No 14. Will the project require a Floodplain Permit or a Sovereign Lands permit from the Iowa DNR? Refer to I.M. 4.150 for more information.

☒ Yes ☐ No 15. Will the project meet the backwater and freeboard requirements shown in I.M. 4.150?

☒ Yes ☐ No 16. Is the proposed structure located in an area where the 100-year flood water surface elevations have been determined by a Flood Insurance Rate Map (FIRM)? Refer to I.M. 3.500 for more information.

☐ Yes ☒ No 17. Will the project involve the acquisition of more than 5 acres of farmland in any one mile (or less) length of the project? Is it a water storage area? Is the area designated for city land use plan? If yes, refer to I.M. 4.170 for more information. If no, the Farmland Conversion Rating Form is not required.

☐ Yes ☒ No 18. Is there potential for the cleanup of any known hazardous materials? This would include areas where gas stations, dry cleaners, or other potentially hazardous sites were previous located, or would include items containing asbestos or lead paint. Refer to this site for more information: https://programs.iowadnr.gov/contaminatedsites/

☐ Yes ☒ No 19. Will the project have significant noise, air quality, or water quality impacts that may raise public concern or warrant special mitigation measures? If yes, describe the types of impacts anticipated and the proposed mitigation, if any.

☐ Yes ☒ No a. Noise impacts? Specifically describe:

☐ Yes ☒ No b. Aesthetic impacts? Specifically describe:

☐ Yes ☒ No c. Reduced access? Specifically describe:

☒ Yes ☒ No d. Vibration impacts? Specifically describe:

☐ Yes ☒ No e. Is the project in an air quality non-attainment zone?

☐ Yes ☒ No 20. Is the project in a special landscape area of the Loess Hills?

☐ Yes ☒ No 21. Is the project in the National Rivers Inventory? Refer to this site for more information: https://www.nps.gov/subjects/rivers/nationwide-rivers-inventory.htm

☐ Yes ☒ No 22. Will the proposed project be within a 20,000 foot radius of a public airport? Create a map to verify. If yes, refer to I.M. 4.190 and provide documentation with concept statement submittal.

☐ Yes ☒ No 23. Will the Federal Aviation Administration (FAA) need to be notified?

☒ Yes ☐ No 24. Will the proposed project have a railroad crossing or railroad signals within the project limits? If yes, contact the railroad company to develop an agreement. Refer to I.M. 3.670 and I.M. 3.680.
Which railroad is affected? Chicago & Northwestern Railroad

☐ Yes ☒ No 25. Is the distance from the railroad crossing at a side road less than 100 feet? If so, the railroad crossing will need further review to determine if adequate traffic control, warning devices, and crossing surfaces are in place.

☒ Yes ☐ No 26. Will the proposed project include Intelligent Transportation System (ITS) elements? If yes, include a map showing the approximate areas of impacts

25. Project Design Elements - - Provide the project design information requested below. If the project involves multiple facilities, or significantly different sections on the same facility, complete a separate page for each. For design elements that are not applicable for the facility listed below, enter "N/A" in the appropriate space. If the project does not involve a roadway, bicycle trail, or shared use path, this page may be left blank.

Facility Name: **Manufacturing Drive - US 30 to railroad tracks north of Valley W. Court**

Federal Functional Classification: ☐ Interstate ☐ Other Principal Arterial ☒ Minor Arterial
☐ Rural Major Collector ☐ Rural Minor Collector ☐ Urban Collector ☐ Local ☐ N/A (trail or path)

Traffic Volumes: Existing AADT: 4,870 (Year = 2018) Design Year AADT: 7,400 (Year = 2046) % Trucks: 4%

Design Speed: 45 mph **Posted Speed:** 40 mph

Terrain: ☒ Level ☐ Rolling **Type of Area:** ☒ Commercial or Industrial ☐ Fringe or Residential ☐ Rural

Design Guidelines (check only one):

For urban roadways, use the design guidelines contained in SUDAS Chapter 5 or Iowa DOT Design Manual Manual Chapter 1c-1 and indicate which table was used below:

☒ SUDAS Preferred Criteria ☐ SUDAS Acceptable Criteria* ☐ Urban 3R Guidelines** ☐ Other: _____

For rural roadways, use the design guidelines contained in I.M.s.3.210 or 3.220 and indicate which table was used below:

☐ Design Aids for Rural Collectors ☐ AASHTO Guidelines for Rural Collectors*

☐ Design Aids for Rural Local Roads ☐ AASHTO Guidelines for Rural Local Roads*

☐ Other: _____

☐ 3R Table for Rural Collectors** (if checked, indicate type of improvement: ☐ Rehabilitation ☐ Restoration ☐ Resurfacing)

* If any of these tables are used, explain reasons for not using the "Aids" tables.

** If used, provide documentation for using 3R criteria per I.M. 3.220.

☒ For bicycle trails or shared use paths, use the most current edition of the SUDAS Chapter 12 or Iowa DOT Design Manual Chapter 12.

Design Exceptions: Will a design exception be required? ☐ Yes ☒ No If yes, attach documentation for each exception requested.
Refer to I.M. 3.260 for Design Exception information.

Design Element	Existing	Proposed
All Roadways (urban or rural)		
Number of traffic lanes	4	3
Travel lane width (ft)	10.5	12
Traveled way surface type	PCC	PCC w/ HMA Overlay
Urban Roadways		
Total roadway width (ft) (back-of-curb to back-of-curb)	44	44
Curb and gutter width (ft)	1	3
Median width (ft) and type	None ☐ raised ☐ painted	None ☐ raised ☐ painted
On-street parking lane width (ft)	None	None
Horizontal clearance (ft)	16	16 min. depending on AADT
Rural Roadways		
Roadway top width (ft) (should-to-shoulder)		
Shoulder surface type		
Shoulder width (ft)		
Fore slope ratio (horizontal: vertical)		
Clear zone distance (ft). See I.M. 3.240.		
Bridges (urban or rural)		
Bridge roadway width (ft)		N/A
Is guardrail present?	☐ Yes ☐ No	N/A
Is guardrail proposed?		☐ Yes ☐ No
Will channel change be required?		☐ Yes ☐ No
Bicycle Trails or Shared Use Paths		
Trail or path surface width (ft) and traffic direction	None ☐ 2-way ☐ 1-way	10 ☒ 2-way ☐ 1-way
Trail or path surface type		PCC
Shoulder width (ft)		None
Lateral clearance (ft)		2
Vertical clearance (ft)		10
Clear width of path on bridge (ft)		N/A
Traffic Signals		
If new traffic signals are proposed, are MUTCD warrants met?	N/A	☐ Yes ☐ No ☒ N/A
If yes, which warrants are met?	N/A	

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25. Project Design Elements - - Provide the project design information requested below. If the project involves multiple facilities, or significantly different sections on the same facility, complete a separate page for each. For design elements that are not applicable for the facility listed below, enter "N/A" in the appropriate space. If the project does not involve a roadway, bicycle trail, or shared use path, this page may be left blank.

Facility Name: **Manufacturing Drive - Railroad Tracks north of Valley W. Court to S. 19th Street**

Federal Functional Classification: ☐ Interstate ☐ Other Principal Arterial ☒ Minor Arterial
☐ Rural Major Collector ☐ Rural Minor Collector ☐ Urban Collector ☐ Local ☐ N/A (trail or path)

Traffic Volumes: Existing AADT: 9,600 (Year = 2018) Design Year AADT: 14,400 (Year = 2046) % Trucks: 4%

Design Speed: 45 mph **Posted Speed:** 40 mph

Terrain: ☒ Level ☐ Rolling **Type of Area:** ☒ Commercial or Industrial ☐ Fringe or Residential ☐ Rural

Design Guidelines (check only one):

For urban roadways, use the design guidelines contained in SUDAS Chapter 5 or Iowa DOT Design Manual Manual Chapter 1c-1 and indicate which table was used below:

☒ SUDAS Preferred Criteria ☐ SUDAS Acceptable Criteria* ☐ Urban 3R Guidelines** ☐ Other: _____

For rural roadways, use the design guidelines contained in I.M.s.3.210 or 3.220 and indicate which table was used below:

☐ Design Aids for Rural Collectors ☐ AASHTO Guidelines for Rural Collectors*

☐ Design Aids for Rural Local Roads ☐ AASHTO Guidelines for Rural Local Roads*

☐ Other: _____

☐ 3R Table for Rural Collectors** (if checked, indicate type of improvement: ☐ Rehabilitation ☐ Restoration ☐ Resurfacing)

* If any of these tables are used, explain reasons for not using the "Aids" tables.

** If used, provide documentation for using 3R criteria per I.M. 3.220.

☒ For bicycle trails or shared use paths, use the most current edition of the SUDAS Chapter 12 or Iowa DOT Design Manual Chapter 12.

Design Exceptions: Will a design exception be required? ☐ Yes ☒ No If yes, provide comments here: _____
or attach documentation for each exception requested. Refer to I.M. 3.260 for Design Exception information.

Design Element	Existing	Proposed
All Roadways (urban or rural)		
Number of traffic lanes	2	3
Travel lane width (ft)	12	12
Traveled way surface type	PCC	PCC
Urban Roadways		
Total roadway width (ft) (back-of-curb to back-of-curb)	31	44
Curb and gutter width (ft)	3.5	3
Median width (ft) and type	None ☐ raised ☐ painted	None ☐ raised ☐ painted
On-street parking lane width (ft)	None	None
Horizontal clearance (ft)	16	16 min. depending on AADT
Rural Roadways		
Roadway top width (ft) (should-to-shoulder)		
Shoulder surface type		
Shoulder width (ft)		
Fore slope ratio (horizontal: vertical)		
Clear zone distance (ft). See I.M. 3.240.	N/A	
Bridges (urban or rural)		
Bridge roadway width (ft)		
Is guardrail present?	☐ Yes ☐ No	N/A
Is guardrail proposed?	N/A	☐ Yes ☐ No
Will channel change be required?	N/A	☐ Yes ☐ No
Bicycle Trails or Shared Use Paths		
Trail or path surface width (ft) and traffic direction	None ☐ 2-way ☐ 1-way	10 ☒ 2-way ☐ 1-way
Trail or path surface type		PCC
Shoulder width (ft)		None
Lateral clearance (ft)		2
Vertical clearance (ft)		10
Clear width of path on bridge (ft)		
Traffic Signals		
If new traffic signals are proposed, are MUTCD warrants met?	N/A	☐ Yes ☐ No ☒ N/A
If yes, which warrants are met?	N/A	

IOWA DOT

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25. Project Design Elements - - Provide the project design information requested below. If the project involves multiple facilities, or significantly different sections on the same facility, complete a separate page for each. For design elements that are not applicable for the facility listed below, enter "N/A" in the appropriate space. If the project does not involve a roadway, bicycle trail, or shared use path, this page may be left blank.

Facility Name: **Manufacturing Drive/South Bluff Blve - S. 19th Street to College Ave.**

Federal Functional Classification: ☐ Interstate ☐ Other Principal Arterial ☒ Minor Arterial
☐ Rural Major Collector ☐ Rural Minor Collector ☐ Urban Collector ☐ Local ☐ N/A (trail or path)

Traffic Volumes: Existing AADT: 9,300 (Year = 2018) Design Year AADT: 14,100 (Year = 2046) % Trucks: 4%

Design Speed: 45 mph **Posted Speed:** 40 mph

Terrain: ☒ Level ☐ Rolling **Type of Area:** ☐ Commercial or Industrial ☒ Fringe or Residential ☐ Rural

Design Guidelines (check only one):

For urban roadways, use the design guidelines contained in SUDAS Chapter 5 or Iowa DOT Design Manual Manual Chapter 1c-1 and indicate which table was used below:

☒ SUDAS Preferred Criteria ☒ SUDAS Acceptable Criteria* ☐ Urban 3R Guidelines** ☐ Other: _____

For rural roadways, use the design guidelines contained in I.M.s.3.210 or 3.220 and indicate which table was used below:

☐ Design Aids for Rural Collectors ☐ AASHTO Guidelines for Rural Collectors*

☐ Design Aids for Rural Local Roads ☐ AASHTO Guidelines for Rural Local Roads*

☐ Other: _____

☐ 3R Table for Rural Collectors** (if checked, indicate type of improvement: ☐ Rehabilitation ☐ Restoration ☐ Resurfacing)

* If any of these tables are used, explain reasons for not using the "Aids" tables.

** If used, provide documentation for using 3R criteria per I.M. 3.220.

☒ For bicycle trails or shared use paths, use the most current edition of the SUDAS Chapter 12 or Iowa DOT Design Manual Chapter 12.

Design Exceptions: Will a design exception be required? ☐ Yes ☒ No If yes, provide comments here: _____
or attach documentation for each exception requested. Refer to I.M. 3.260 for Design Exception information.

Design Element	Existing	Proposed
All Roadways (urban or rural)		
Number of traffic lanes	2	3
Travel lane width (ft)	12	12
Traveled way surface type	PCC	PCC
Urban Roadways		
Total roadway width (ft) (back-of-curb to back-of-curb)	24	42
Curb and gutter width (ft)	None	2
Median width (ft) and type	None ☐ raised ☐ painted	None ☐ raised ☐ painted
On-street parking lane width (ft)	None	None
Horizontal clearance (ft)	6	4 min./6 preferred
Rural Roadways		
Roadway top width (ft) (should-to-shoulder)		
Shoulder surface type		
Shoulder width (ft)		
Fore slope ratio (horizontal: vertical)		
Clear zone distance (ft). See I.M. 3.240.	N/A	
Bridges (urban or rural)		
Bridge roadway width (ft)		
Is guardrail present?	☐ Yes ☐ No	N/A
Is guardrail proposed?	N/A	☐ Yes ☐ No
Will channel change be required?	N/A	☐ Yes ☐ No
Bicycle Trails or Shared Use Paths		
Trail or path surface width (ft) and traffic direction	None ☐ 2-way ☐ 1-way	8 ☒ 2-way ☐ 1-way
Trail or path surface type		PCC
Shoulder width (ft)		None
Lateral clearance (ft)		2
Vertical clearance (ft)		10
Clear width of path on bridge (ft)		N/A
Traffic Signals		
If new traffic signals are proposed, are MUTCD warrants met?	N/A	☐ Yes ☐ No ☒ N/A
If yes, which warrants are met?	N/A	

STBG-SWAP-1415()—SG-23

Bridge Information Sheet

Manufacturing Drive over Hart's Mill Creek

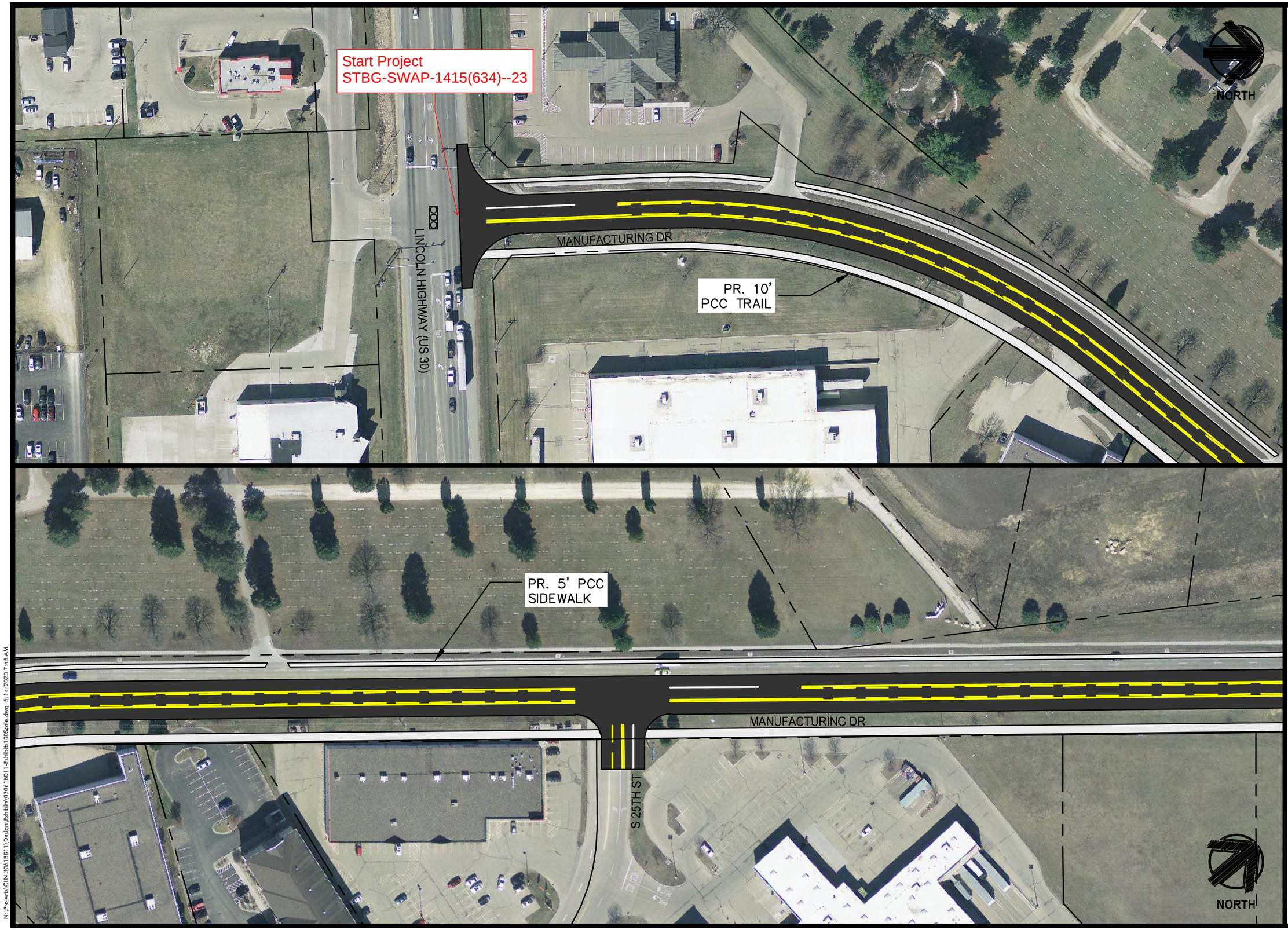
- Existing Bridge
  - FHWA No.: 002110
  - Year Built: 1993
  - Size: 118' x 41'
  - Type: Continuous Concrete Slab Bridge
  - Roadway Width: 32'
  - Guardrail Present: Yes
- Proposed Bridge
  - Roadway Width: 44'
  - Guardrail: No *(assume a concrete approach barrier, turned down to match curbed approach section instead of guardrail)*
  - Channel Change Required: No

Manufacturing Drive over Mill Creek

- Existing Bridge
  - FHWA No.: 002100
  - Year Built: 1992
  - Size: 191' x 41'
  - Type: Continuous Concrete Slab Bridge
  - Roadway Width: 32'
  - Guardrail Present: Yes
- Proposed Bridge
  - Roadway Width: 44'
  - Guardrail: No *(assume a concrete approach barrier, turned down to match curbed approach section instead of guardrail)*
  - Channel Change Required: No

Widths based on:

- 1'-7 edge barrier, 5'-0 sidewalk, 1'-0 separation barrier, 3'-0 shoulder, 12'-0 lane, 14'-0 turn lane, 12'-0 lane, 3'-0 shoulder, 1'-0 separation barrier, 10'-0 path, 1'-7 edge barrier
- Total width = 64'-2 => rounded up to 65'-0



MANUFACTURING DR/BLUFF BLVD. - US 30 TO 7TH AVE N.

McCLURE™
ENGINEERING Co.

building strong communities.

1740 Lininger Lane,
North Liberty, Iowa 52317
319-626-9090
fax 515-964-2370

LEGEND

- RESURFACING
- RECONSTRUCTION
- SIGNALIZED INTERSECTION

0 50 100
GRAPHIC SCALE

MANUFACTURING DR
BLUFF BLVD:
US 30 TO 7TH AVE N.

CLINTON
CLN 030618011
JULY 11, 2018

REVISIONS

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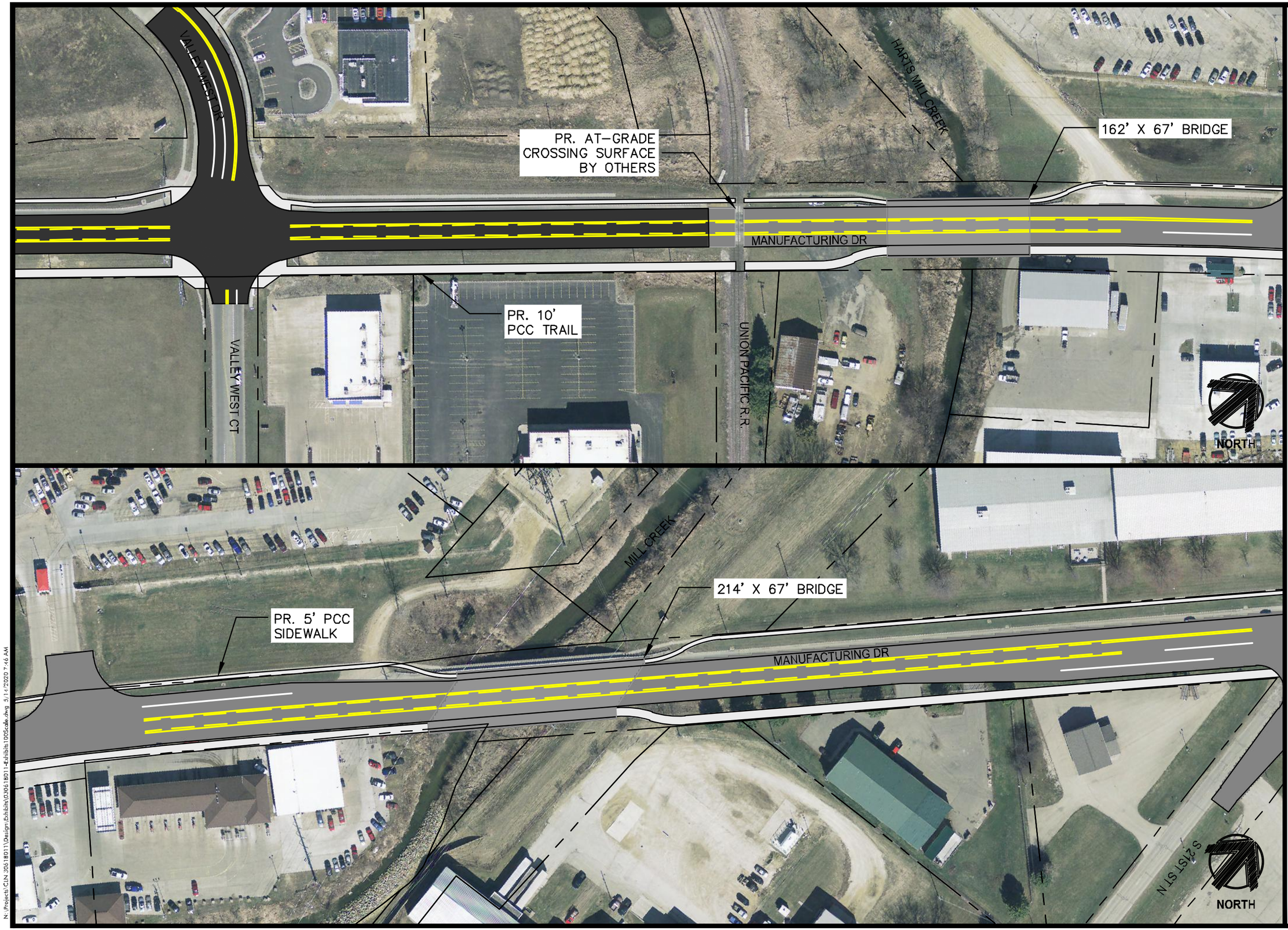

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North Liberty, Iowa 52317
319-626-9090
fax 515-964-2370

LEGEND

- RESURFACING
- RECONSTRUCTION
- SIGNALIZED INTERSECTION

0 50 100
GRAPHIC SCALE

MANUFACTURING DR
BLUFF BLVD:
US 30 TO 7TH AVE N.

CLINTON
CLN 030618011
JULY 11, 2018

REVISIONS

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MANUFACTURING DR/BLUFF BLVD. - US 30 TO 7TH AVE N.

McCLURE ENGINEERING COMPANY

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MANUFACTURING DR/BLUFF BLVD. - US 30 TO 7TH AVE N.

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1740 Lininger Lane,
North Liberty, Iowa 52317
319-626-9090
fax 515-964-2370

LEGEND

- RESURFACING
- RECONSTRUCTION
- SIGNALIZED INTERSECTION

0 50 100

GRAPHIC SCALE

MANUFACTURING DR
BLUFF BLVD:
US 30 TO 7TH AVE N.

CLINTON
CLN 030618011
JULY 11, 2018

REVISIONS

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MANUFACTURING DR/BLUFF BLVD. - US 30 TO 7TH AVE N.

END PROJECT
STBG-SWAP-1415(634)-SG--23

S BLUFF BLVD

S 18TH ST

COLLEGE AVE

BLUFF HEIGHTS RD

SETBACK TO ROAD
DIFFICULT ACCESS
–PARCEL HAS
BEEN ACQUIRED

MANUFACTURING DR

PR. 10'
PCC TRAIL

SETBACK
TO ROAD

DIFFICULT
ACCESS

13TH AVE S

14TH AVE

S 17TH ST

12TH AVE S

NORTH

PR. 5' PCC
SIDEWALK

BRIARWOOD ST

S BLUFF BLVD

NORTH

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ENGINEERING Co.

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LEGEND

- RESURFACING
- RECONSTRUCTION
- SIGNALIZED INTERSECTION

0 50 100
GRAPHIC SCALE

MANUFACTURING DR
BLUFF BLVD:
US 30 TO 7TH AVE N.

CLINTON
CLN 030618011
JULY 11, 2018

REVISIONS

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McCLURE ENGINEERING COMPANY

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McCLURE ENGINEERING Co.

Manufacturing Drive and South Bluff Boulevard
Design Criteria

Manufacturing Drive (US 30 to South 19th Street)		
Design Criteria	Value	Source
General		
Functional Classification	Minor Arterial	Iowa DOT
Design Speed / Posted	45 mph / 45 mph	City
Manufacturing Drive AADT	2,470 to 10,100	Iowa DOT
Intersection Curb Return Radii	30 ft	SUDAS
Driveway Type	Type A or B w/ Flares	SUDAS
Typical Section		
Travel Lane Width	12 ft	SUDAS
Travel Lane Slope	2%	SUDAS
Center Lane Width (TWLTL) – Raised Median	14 ft	SUDAS
Center Lane Slope	2% (Crowned)	SUDAS
Curb & Gutter Width	3.0 ft	SUDAS
Min Roadway Width	31.0 ft	SUDAS
Clear Zone	16-28 ft	SUDAS
Object Setback	3 ft	SUDAS
Sidewalk Width	5 ft	
Sidewalk Material & Thickness	PCC, 4 in	SUDAS
Trail Width	10 ft	
Sidewalk/Trail Cross Slope	1.5%	PROWAG
Trail Material & Thickness	PCC, 5 in	City
Roadway Pavement Material & Thickness	PCC, 9 in	City
Sideroad Pavement Material & Thickness	PCC, 7 in	City
Subbase Type	Granular Subbase	
Subgrade Treatment		
Intersection Geometry		
Turn Lane Taper	15:1 (180 ft)	SUDAS
Min. Storage Distance	220 ft	SUDAS
Alignment		
Min. Horizontal Curve Radius	1,039 ft	SUDAS
Stopping Sight Distance	360 ft	SUDAS
Min. Vertical Curve Length	135 ft	SUDAS
Min. Rate of Vert. Curvature, Crest (K)	98	SUDAS
Min. Rate of Vert. Curvature, Sag (K)	79	SUDAS
Min. Gradient	0.6%	SUDAS
Max. Gradient	5.0%	SUDAS

McCLURE ENGINEERING Co.

Manufacturing Drive and South Bluff Boulevard
Design Criteria

Manufacturing Drive and South Bluff Boulevard (South 19th Street to North 5th Street) Design Criteria	Value	Source
General		
Functional Classification	Minor Arterial	Iowa DOT
Design Speed / Posted: 19th St. to 15th St	35 mph / 30 mph	City
Design Speed / Posted: 15th St to 14th St.	35 mph / 25 mph	City
Design Speed / Posted: 14th St. to 5th St.	35 mph / 30 mph	City
Manufacturing Drive AADT	12,500	Iowa DOT
South Bluff Boulevard AADT	6,500 to 15,600	Iowa DOT
Intersection Curb Return Radii	30 ft	SUDAS
Driveway Type	Type A or B w/ Flares	SUDAS
Typical Section		
Travel Lane Width	11 ft	SUDAS
Travel Lane Slope	2%	SUDAS
Center Lane Width (TWLTL) – Raised Median	13 ft	SUDAS
Center Lane Slope	2% (Crowned)	SUDAS
Curb & Gutter Width	3.0 ft	SUDAS
Clear Zone	7-10 ft	SUDAS
Object Setback	3 ft	SUDAS
Sidewalk Width	5 ft	
Sidewalk Material & Thickness	PCC, 4 in	SUDAS
Trail Width	10 ft	
Sidewalk/Trail Cross Slope	1.5%	PROWAG
Trail Material & Thickness	PCC, 5 in	City
Roadway Pavement Material & Thickness	PCC, 9 in	City
Sideroad Pavement Material & Thickness	PCC, 7 in	City
Subbase Type	Granular Subbase	
Subgrade Treatment		
Intersection Geometry		
Turn Lane Taper	10:1 (120 ft)	SUDAS
Min. Storage Distance	150 ft	SUDAS
Alignment		
Min. Horizontal Curve Radius	510 ft	SUDAS
Stopping Sight Distance	250 ft	SUDAS
Min. Vertical Curve Length	105 ft	SUDAS
Min. Rate of Vert. Curvature, Crest (K)	47	SUDAS
Min. Rate of Vert. Curvature, Sag (K)	49	SUDAS
Min. Gradient	0.6%	SUDAS
Max. Gradient	5.0%	SUDAS