

HISTORIC PRESERVATION COMMISSION WORK SESSION MEETING

CITY OF DAVENPORT, IOWA

TUESDAY, FEBRUARY 9, 2021; 5:30 PM

CITY HALL, 226 W 4TH ST, COUNCIL CHAMBERS

WORK SESSION *A PARTIALLY ELECTRONIC MEETING IS BEING HELD BECAUSE A FULLY "IN PERSON" MEETING IS IMPRACTICAL DUE TO CONCERNS FOR THE HEALTH AND SAFETY OF COUNCIL MEMBERS, STAFF, AND THE PUBLIC PRESENTED BY COVID-19, AND TO FOLLOW THE GOVERNOR'S PROCLAMATION AND THE MAYOR'S EXECUTIVE ORDER DIRECTING SOCIAL DISTANCING AND PLACING RESTRICTIONS ON GATHERINGS. IN PERSON ATTENDANCE BY THE GENERAL PUBLIC AT ANY CITY OF DAVENPORT PUBLIC MEETING WITHIN ITS FACILITIES SHALL BE LIMITED TO 10 PERSONS.*

I. Call to Order

II. Topics for Discussion

A. Retaining Wall on Alley at 510 West 6th Street

III. Adjourn

IV. Next Commission Meeting: March 9, 2021

City of Davenport
Historic Preservation Commission Work Session

Department: DNS
Contact Info: Matt Werderitch 563.888.2221

Date
2/9/2021

Subject:
Retaining Wall on Alley at 510 West 6th Street

ATTACHMENTS:

Type	Description
▣ Backup Material	Background
▣ Backup Material	Project Photos
▣ Backup Material	Example of Reinforced Concrete
▣ Backup Material	Project Communication

REVIEWERS:

Department	Reviewer	Action	Date
Community Planning & Economic Development	Berkley, Laura	Approved	2/5/2021 - 12:05 PM

510 W 6th Street alley retaining wall

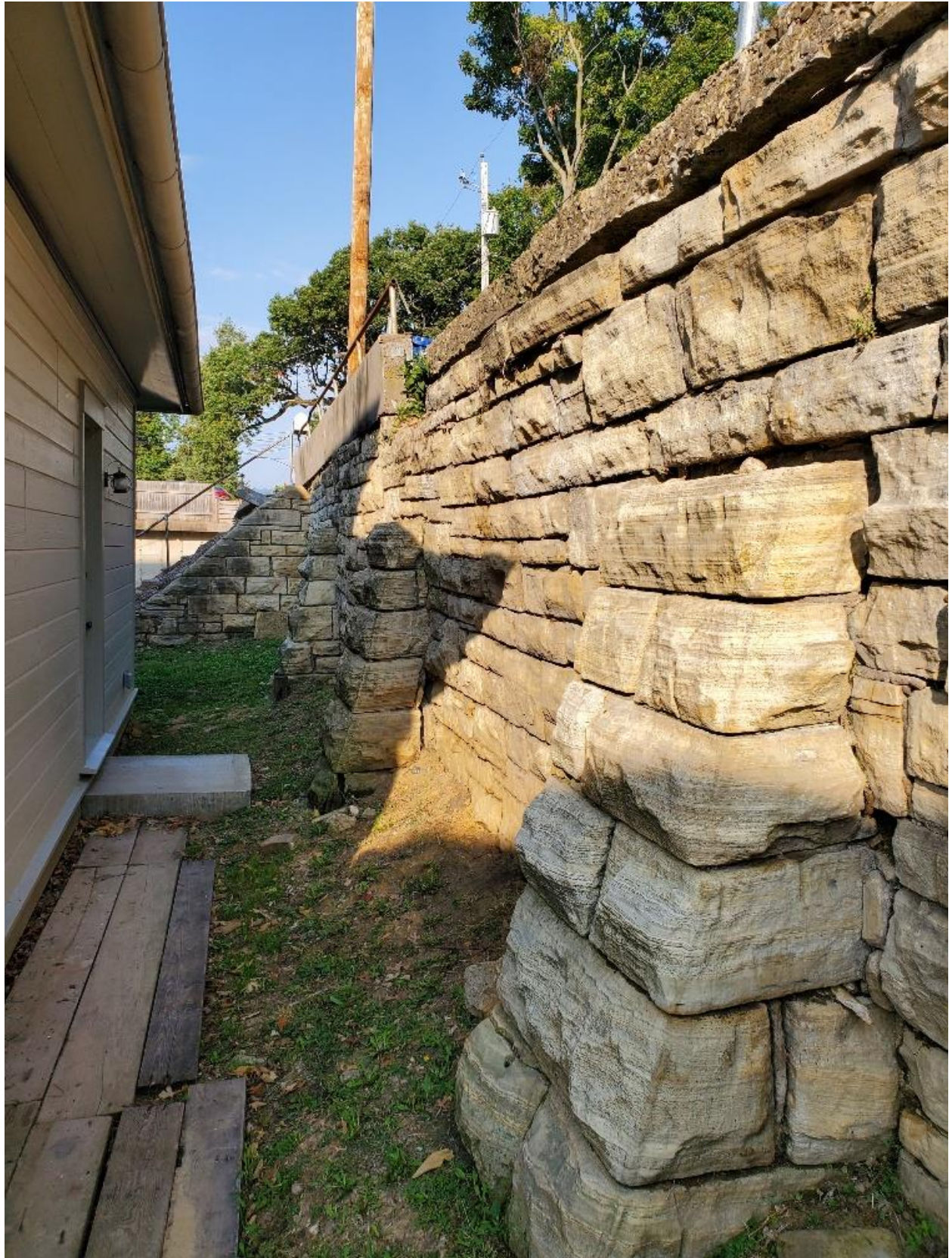


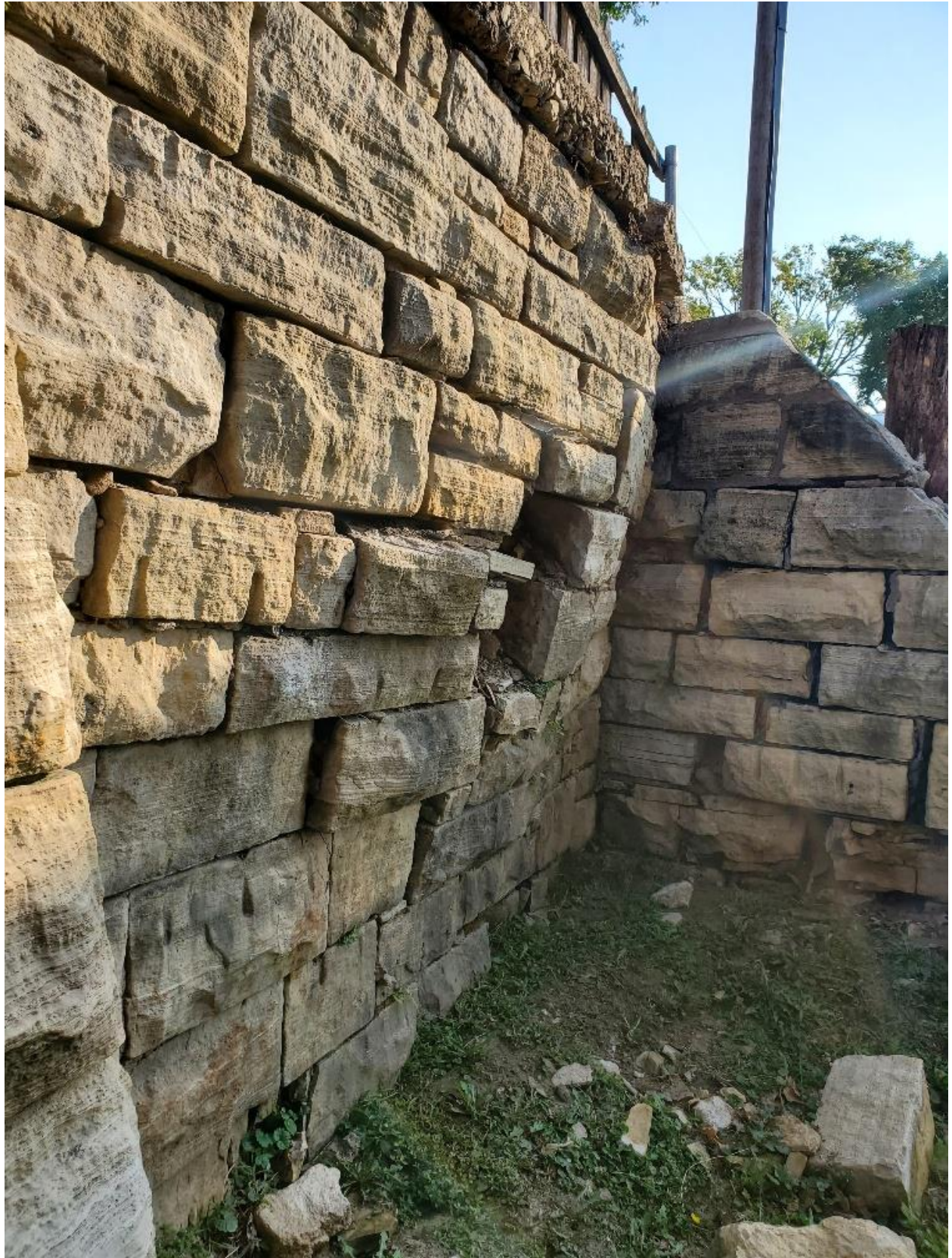
The alley retaining wall is in need of repair or replacement. The location is just west of the Scott Street Stairs in the local Hamburg Historic District. The City is looking for guidance from the Historic Preservation Commission to provide to the engineering consultant. At this time we have not yet explored reuse of the existing material.

We have had initial contact with IMEG for structural review and design of a replacement wall. Portions of the wall have clearly shifted. We cannot predict what continued movement there might be. There is no current funding for the design or construction of a new wall. A CIP request form has been submitted for funding next year.

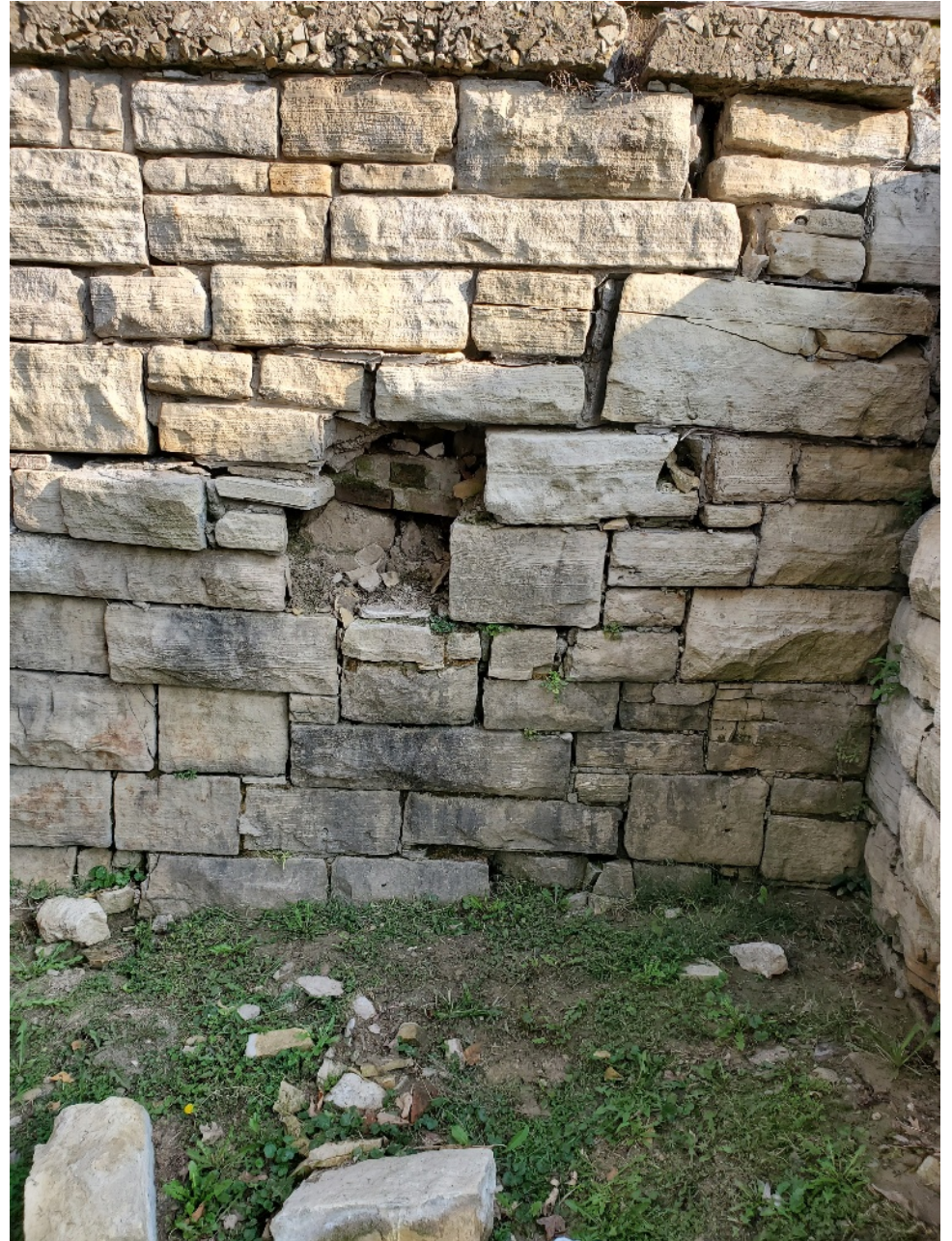
Steps already taken include patching of a hole in the alley which was allowing stormwater to wash in behind the wall and barricading along the wall to direct traffic to the north side of the alley. Solid waste is collecting the nearby customers with small trucks.

Due the proximity of the house to the south and another wall on the north side of the alley our consultant's initial opinion is that the new construction should be comprised of a segmental block wall. This would cause the least disturbance to the surrounding structures.





Retaining Wall North of W 6th Street, between Western Avenue and Scott Street



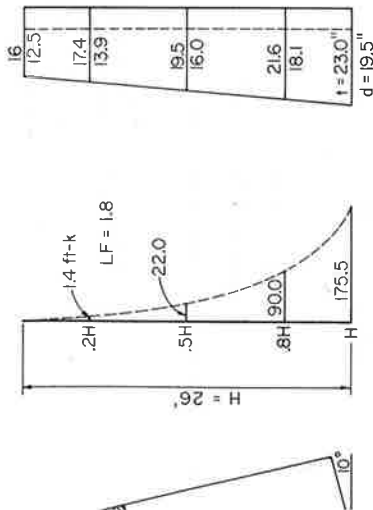


View from Alley



Example Retaining Walls





average height of soil on heel for downward pressure; include $P_{av} = 2.6$ kips;

$$q = 3.45 - 0.70 - 0.32x$$

$$V = 2.75x - \frac{0.32x^2}{2} + P_{av} = 14.3 \text{ kips}$$

$$M = \frac{2.75x^2}{2} - \frac{0.32x^3}{6} + P_{av}x = 107.2 \text{ ft} \cdot \text{kips}$$

Check base-slab shear stress using largest base V , $LF = 1.8$, $d = 2.417 - 0.29 = 2.13$ ft:

$$v = \frac{14.3(1.8)}{12(25.5)} = 0.084 < 0.093 \quad \text{O.K.}$$

we could reduce the base slab by about 1 to 1.5 in. Leave at 2 ft 5 in.

5. Compute toe (bottom of footing) and heel (top of footing) reinforcing-steel requirements:

$p_{\max} = 0.016$ (Table 8-1)

$$P_{\min} = \frac{200}{f_v} = 0.0033$$

$$0.5a = 0.5 \frac{A_s f_y}{0.85 f'_c b} = 0.98 A_s$$

wheel and $d = 29 - 3.5 = 25.5$ in

$$A_s(25.5 - 0.98A_s) = \frac{107.2(12)(1.8)}{0.9(60)}$$

Note: Use 3in clear concrete cover on all steel where the concrete is in contact with soil

From this it is evident minimum $(200/f_p)$ requirements control top half of wall.

Use 3 No. 8 bars/ft ($A_s = 2.37 \text{ in}^2$) in bottom $\frac{1}{2}$ of wall.

Point	M , ft · kips	Wall thickness	d	A_s^*	p (used)
0	0	16.0	12.5	0.5	0.0033
0.5H	22.0	19.5	16.0	0.64	0.0033
0.8H	90.0	21.60	18.1	1.18	0.005
H	175.8	23.0	19.5	2.26	0.010

* in²/ft

* in²/ft

From this it is evident minimum $(200/f_v)$ requirements control top half of wall.

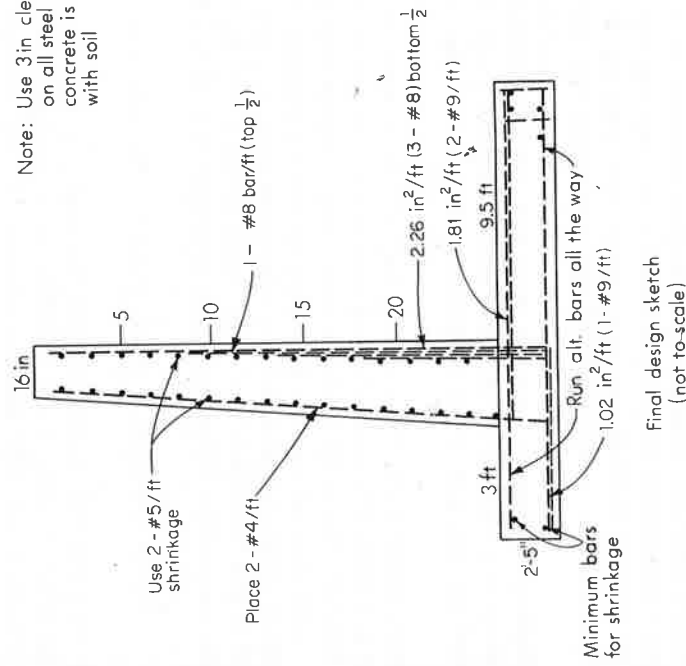


Figure E12-4c

For toe

$$A_s^2 - 26.02A_s = -43.76$$

$$A_s = 1.81 \text{ in}^2/\text{ft} \quad p = 0.006$$

For toe

$$A_s^2 - 26.02A_s = -8.49$$

$$A_r = 0.33 \text{ in}^2 \quad p = 0.0011 < 0.0033$$

$$A_c = 0.0033(12)(25.5) = 1.02 \text{ in}^2/\text{ft}$$

Step 7 Compute stem steel at top, $0.5H$, $0.8H$, and H using $LF = 1.8$.

From: [Forryth, Jim](#)
To: [Leabhart, Tom](#)
Cc: [Merritt, Clay](#); [Kriz, Nichole](#); [Schadt, Brian](#)
Subject: RE: [EXT] RE: Retaining Wall at 510 W. 6th St
Date: Monday, October 22, 2020 1:25:48 PM

Tom,

Unfortunately, Risk does not.

Jim

Jim Forsyth
Risk Manager | Human Resources - Risk Division
City of Davenport
T 563-326-7747 | M 563-949-7626
226 W 4th St, Davenport, IA 52801
davenportiowa.com

-----Original Message-----
From: Leabhart, Tom <Tom.Leabhart@davenportiowa.com>
Sent: Monday, October 12, 2020 1:27 PM
To: Forsyth, Jim <Jim.Forsyth@davenportiowa.com>
Cc: Merritt, Clay <Clay.Merritt@davenportiowa.com>; Kriz, Nichole <Nichole.Kriz@davenportiowa.com>; Schadt, Brian <Brian.Schadt@davenportiowa.com>
Subject: RE: [EXT] RE: Retaining Wall at 510 W. 6th St

Jim,

Do you have any funding for this situation, either the design or construction?

FYI to all, the wall goes to the HPC tomorrow for initial review. They may want it reconstructed with original materials or at least some similar looking material.

Tom Leabhart, PE
Chief of Design | Public Works - Engineering City of Davenport
T 563-327-5155 | M 563-349-4296
1200 E 46th St, Davenport, IA 52807
davenportiowa.com

-----Original Message-----
From: Leabhart, Tom <Tom.Leabhart@davenportiowa.com>
Sent: Tuesday, October 06, 2020 8:49 AM
To: Forsyth, Jim <Jim.Forsyth@davenportiowa.com>; Schadt, Brian <Brian.Schadt@davenportiowa.com>
Cc: Merritt, Clay <Clay.Merritt@davenportiowa.com>; Kriz, Nichole <Nichole.Kriz@davenportiowa.com>
Subject: RE: [EXT] RE: Retaining Wall at 510 W. 6th St

To summarize, AlI and I had a phone discussion yesterday. He visited the site again.

1. Drainage behind the wall should be corrected ASAP. The alley has sunk creating an area which ponds and directs runoff into the hole continuing to wash out the wall backfill and directing the water at house at 510. The hole needs to be filled with rock and a leveling patch needs to be placed in the alley to direct the water to east-west. Heavy equipment and vibration should be avoided.
2. New construction using a segmental block wall is recommended. This would cause the least disturbance to the surrounding structures.
3. He feels that the wall on the north side can be protected.

Steps already taken as I understand them is to have barricaded the hole for protection and to move traffic away from the wall and we have begun using small trucks to collect the solid waste.

I can contact Ron to patch and correct the drainage.

Otherwise let me know what our next steps should be. Shall we sign AlI's proposal or is more discussion needed?

Tom Leabhart, PE
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-----Original Message-----
From: Ali A. Gharani <Ali.A.Gharani@imegcorp.com>
Sent: Tuesday, October 06, 2020 8:20 AM
To: Leabhart, Tom <Tom.Leabhart@davenportiowa.com>
Cc: Forsyth, Jim <Jim.Forsyth@davenportiowa.com>; Schadt, Brian <Brian.Schadt@davenportiowa.com>; Merritt, Clay <Clay.Merritt@davenportiowa.com>; Kriz, Nichole <Nichole.Kriz@davenportiowa.com>
Subject: RE: [EXT] RE: Retaining Wall at 510 W. 6th St

Tom,

Based on my site visit today the wall height is approximately 9' and the distance from north wall to our wall is approximately 19.5' (width of the alley) so we are on the edge of 2 to 1 rule of thumb, so I do not think it is a problem.

Segmental wall is the way to go, do not want pile driving next to the house.

I do think we need to think about drainage ??

We can discuss in more details if you want. Just let me know.

Thanks

Ali A Gharani, PE, SE
Principal / Structural Engineering Specialist IMEG Corp.
623 26th Avenue, Rock Island, IL 61201
tel (309) 788-0673 x 36568
mobile (309) 314-1052
fax (309) 786-5967
Ali.A.Gharani@imegcorp.com
<https://www.imegcorp.com>

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-----Original Message-----
From: Leabhart, Tom <Tom.Leabhart@davenportiowa.com>
Sent: Monday, October 5, 2020 11:21 AM
To: Ali A. Gharani <Ali.A.Gharani@imegcorp.com>
Cc: Forsyth, Jim <Jim.Forsyth@davenportiowa.com>; Schadt, Brian <Brian.Schadt@davenportiowa.com>; Merritt, Clay <Clay.Merritt@davenportiowa.com>; Kriz, Nichole <Nichole.Kriz@davenportiowa.com>
Subject: RE: [EXT] RE: Retaining Wall at 510 W. 6th St

CAUTION: Email originated outside of the organization.

AlI,

We have a few follow up questions to make sure we have as much as possible covered in the proposal.

Do you have any initial thoughts on the new wall construction, concrete, segmental, sheet pile? Precautions necessary to protect the house?

Do you think a new wall can be constructed without disturbing the wall on the north side of the alley?

Maybe we abandon this section of the alley making it a dead end, which would still require wall removal and some type of mitigation.

Any outside of the box suggestions would be appreciated.

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-----Original Message-----
From: Ali A. Gharani <Ali.A.Gharani@imegcorp.com>
Sent: Friday, October 02, 2020 1:52 PM
To: Leabhart, Tom <Tom.Leabhart@davenportiowa.com>; Schadt, Brian <Brian.Schadt@davenportiowa.com>; Merritt, Clay <Clay.Merritt@davenportiowa.com>
Subject: RE: [EXT] RE: Retaining Wall at 510 W. 6th St

No problem, thanks.

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Ali.A.Gharani@imegcorp.com

<https://nam04.safelinks protection.outlook.com/?url=https%3A%2F%2Fwww.imegcorp.com%2F&data=01%7CD0%7CAlI.A.Gharani%40imegcorp.com%7C3c3afeb3d40b4aa555508d8694aa169%7C7b8f7acce1c9467a86e967b144da7881%7C1&cdat=FRZBwJMbkhdlJduDs4DS10EFTmHiesXnmk2KJTg9%2FU%3D&reserved=0>

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-----Original Message-----
From: Leabhart, Tom <Tom.Leabhart@davenportiowa.com>
Sent: Friday, October 2, 2020 1:14 PM
To: Ali A. Gharani <Ali.A.Gharani@imegcorp.com>; Leabhart, Tom <Tom.Leabhart@davenportiowa.com>; Schadt, Brian <Brian.Schadt@davenportiowa.com>; Merritt, Clay <Clay.Merritt@davenportiowa.com>
Subject: RE: [EXT] RE: Retaining Wall at 510 W. 6th St

CAUTION: Email originated outside of the organization.

We got it AlI, probably get back to you Monday.

Tom
mmwygys_always mobile

----- Original message -----
From: "Ali A. Gharani" <Ali.A.Gharani@imegcorp.com>
Date: 10/2/20 1:04 PM (GMT-06:00)
To: "Leabhart, Tom" <Tom.Leabhart@davenportiowa.com>; "Schadt, Brian" <Brian.Schadt@davenportiowa.com>
Subject: FW: [EXT] RE: Retaining Wall at 510 W. 6th St

Did you guys receive my previous email with the proposal ? I just want to make sure you have it and that you are not waiting on me.
Please let me that you got it.
Thanks and have a good weekend.

Ali A Gharani, PE, SE
Principal / Structural Engineering Specialist

IMEG Corp. | <https://nam04.safelinks protection.outlook.com/?url=https%3A%2F%2Fwww.imegcorp.com%2F&data=01%7CD0%7CAlI.A.Gharani%40imegcorp.com%7C3c3afeb3d40b4aa555508d8694aa169%7C7b8f7acce1c9467a86e967b144da7881%7C1&cdat=FRZBwJMbkhdlJduDs4DS10EFTmHiesXnmk2KJTg9%2FU%3D&reserved=0>
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url=http%3A%2F%2Fwww.davenportwa.com%2F&mpdata=01%7C01%7CAII.A.Gharani%40imgcorp.com%7C3c3afeb3dd0b4aa555500b80694aa169%7C7b87acce1c0467a86e9678144da7881%7C1&mpdata=gu8AJ48%2R2nXmpZCaZ3XSFTV0sYqjajVVW%2FkqV1h8f%3D&mpreserved=0>

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