

PROPOSED DETENTION POND 1 PLAN

SCALE: 1"=20'

PERVIOUS PAVERS

- Richard F Gosselin, Jr Chairman _____
- Paul A Pikelis Vice Chairman _____
- Terry Burke Dotson Member _____
- Francis Desimone Alternate Member _____
- Bruce M Devault Member _____

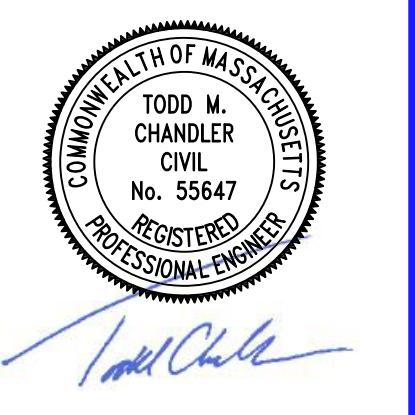
STORM EVENT	*PRE-DEVELOPMENT RELEASE RATE (CFS)	**ROUTED RELEASE RATE (CFS)	ELEVATION IN FEET	VOLUME PROVIDED
2	4.21	5.17	511.98	3,467 CUFT
10	10.05	10.68	512.51	6,265 CUFT
25	14.63	14.15	512.86	8,237 CUFT
50	19.43	16.95	513.26	10,492 CUFT
100	24.34	19.58	513.68	12,820 CUFT

- #### LEGEND
- RIGHT OF WAY LINE
 - EXISTING WATER LINE
 - EXISTING SANITARY SEWER LINE
 - EXISTING STORM SEWER LINE
 - WATER LINE
 - SANITARY SEWER LINE
 - STORM SEWER LINE
 - EXISTING CONTOURS MAJOR
 - EXISTING CONTOURS MINOR
 - PROPOSED CONTOURS MAJOR
 - PROPOSED CONTOURS MINOR
 - SANITARY SEWER MANHOLE
 - STORM SEWER MANHOLE
 - ⊕ WATER METER
 - ⊕ WATER VALVE
 - ⊕ FIRE HYDRANT
 - ⊕ THRUST BLOCK

BRANSON SURVEYING & ENGINEERING, LLC
 ID No. 00158776
 231 ROCKPOINT DRIVE
 WALNUT SHADE, MO 65771
 417-860-9697

Project Name and Address
SINGLETARY ARMS
 115 W MAIN STREET, 119 W MAIN STREET
 3 BURBANK STREET, 4 BURBANK STREET
 MILLBURY, MA 01527

Sheet Title
PROPOSED DETENTION POND 1 PLAN



03/01/2021
 Date

No.	Revision/Issue	Date
1	RESPONSE TO CITY/STANTEC COMMENTS	09/28/2020
2	RESPONSE TO CITY/STANTEC COMMENTS	10/22/2020
3	RESPONSE TO CITY/STANTEC COMMENTS	12/09/2020
4	RESPONSE TO CITY/STANTEC COMMENTS	01/29/2021
5	RESPONSE TO CITY/STANTEC COMMENTS	03/01/2021

Project No. ***
 Date 03/06/2021
 Scale AS NOTED

Sheet
C-20



SCALE: 1"=20'

PERVIOUS PAVERS

12" HDPE ROOF DRAIN CONNECTION @ MIN 0.5% SLOPE TYP. ONCE ACTUAL DOWNSPOUT LOCATIONS ARE PROVIDED, PIPING DESIGN WILL BE COMPLETED.

- Richard F Gosselin, Jr Chairman _____
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- Terry Burke Dotson Member _____
- Francis Desimone Alternate Member _____
- Bruce M Devault Member _____

LEGEND

	RIGHT OF WAY LINE
	EXISTING WATER LINE
	EXISTING SANITARY SEWER LINE
	EXISTING STORM SEWER LINE
	WATER LINE
	SANITARY SEWER LINE
	STORM SEWER LINE
	EXISTING CONTOURS MAJOR
	EXISTING CONTOURS MINOR
	PROPOSED CONTOURS MAJOR
	PROPOSED CONTOURS MINOR
	SANITARY SEWER MANHOLE
	STORM SEWER MANHOLE
	WATER METER
	WATER VALVE
	FIRE HYDRANT
	THRUST BLOCK

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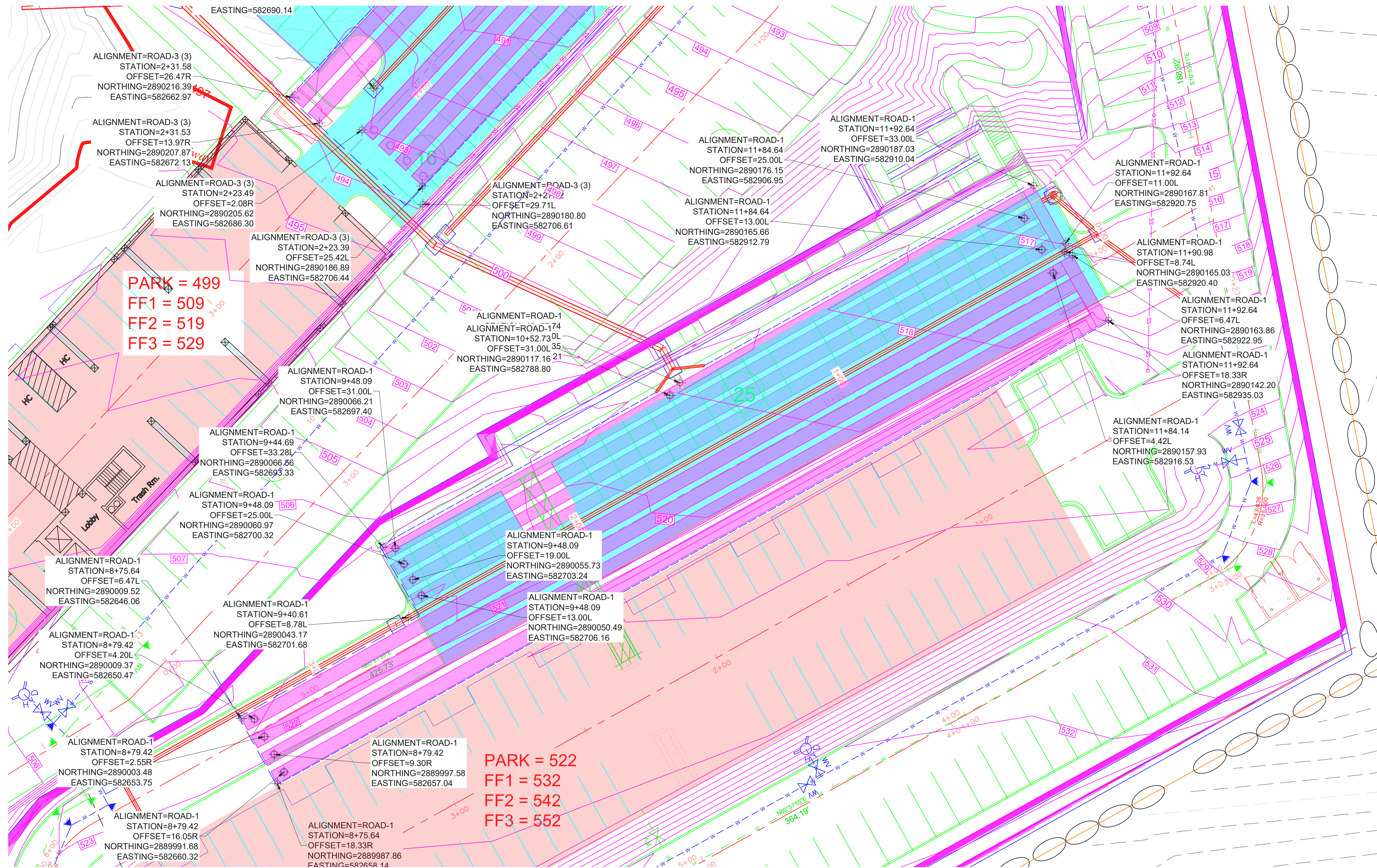
Project Name and Address
SINGLETARY ARMS
 115 W MAIN STREET, 119 W MAIN STREET
 3 BURBANK STREET, 4 BURBANK STREET
 MILLBURY, MA 01527

Sheet Title
**PROPOSED DETENTION POND 1
 UNDER-DRAIN PLAN**

02/15/2021
Date

No.	Revision/Issue	Date
1	RESPONSE TO CITY/STANTEC COMMENTS	09/28/2020
2	RESPONSE TO CITY/STANTEC COMMENTS	10/22/2020
3	RESPONSE TO CITY/STANTEC COMMENTS	12/09/2020
4	RESPONSE TO CITY/STANTEC COMMENTS	01/29/2021
5	RESPONSE TO CITY/STANTEC COMMENTS	03/01/2021

Project No. ***
 Date 03/06/2020
 Scale AS NOTED
 Sheet C-20.1



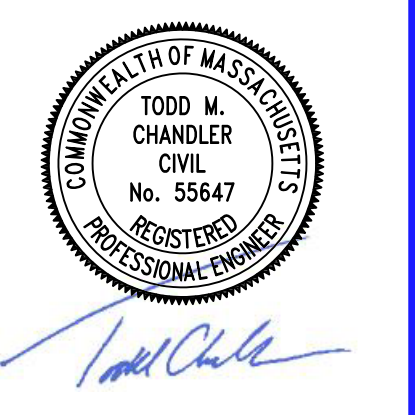
SCALE: 1"=20'

- Richard F Gosselin, Jr Chairman _____
- Paul A Pikelis Vice Chairman _____
- Terry Burke Dotson Member _____
- Francis Desimone Alternate Member _____
- Bruce M Devault Member _____

BRANSON SURVEYING & ENGINEERING, LLC
 ID No. 00158776
 231 ROCKPOINT DRIVE
 WALNUT SHADE, MO 65771
 417-860-9697

Project Name and Address
SINGLETARY ARMS
 115 W MAIN STREET, 119 W MAIN STREET
 3 BURBANK STREET, 4 BURBANK STREET
 MILLBURY, MA 01527

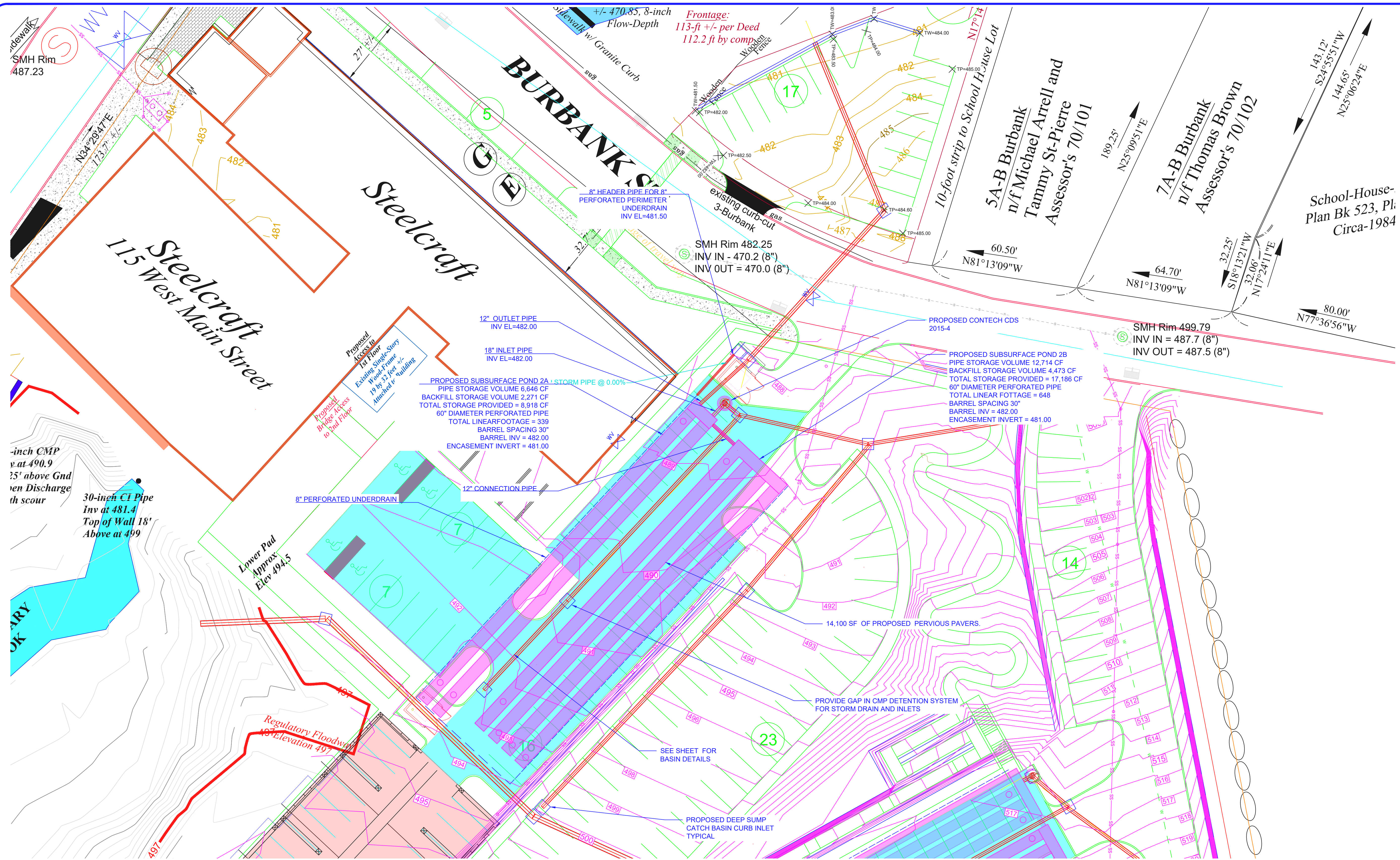
Sheet Title
**PROPOSED DETENTION POND 1
 DIMENSION PLAN**



03/01/2021
 Date

No.	Revision/Issue	Date
1	RESPONSE TO CITY/STANTEC COMMENTS	09/28/2020
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Project No. ***
 Date 03/06/2020
 Scale AS NOTED
 Sheet C-20.3



PRE-DEVELOPMENT ALLOWABLE RELEASE RATES & ACTUAL ROUTED RELEASE RATES

* = FROM PRE-DEV. HYDROGRAPH
** = FROM RATING TABLE

STORM EVENT	*PRE-DEVELOPMENT RELEASE RATE (CFS)	**ROUTED RELEASE RATE (CFS)	ELEVATION IN FEET	VOLUME PROVIDED
2	2.73	2.75	483.03	10,070 CUFT
10	6.41	4.18	483.72	15,355 CUFT
25	9.29	4.85	484.15	18,754 CUFT
50	12.28	5.43	484.56	22,122 CUFT
100	15.33	5.95	484.98	25,510 CUFT

PROPOSED DETENTION POND 2 PLAN

SCALE: 1"=20'

PERVIOUS PAVERS

- LEGEND**
- RIGHT OF WAY LINE
 - EXISTING WATER LINE
 - EXISTING SANITARY SEWER LINE
 - EXISTING STORM SEWER LINE
 - WATER LINE
 - SANITARY SEWER LINE
 - STORM SEWER LINE
 - EXISTING CONTOURS MAJOR
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 - PROPOSED CONTOURS MAJOR
 - PROPOSED CONTOURS MINOR
 - ⊙ SANITARY SEWER MANHOLE
 - ⊙ STORM SEWER MANHOLE
 - ⊙ WATER METER
 - ⊙ WATER VALVE
 - ⊙ FIRE HYDRANT
 - ⊙ THRUST BLOCK

- Richard F Gosselin, Jr Chairman _____
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- Terry Burke Dotson Member _____
- Francis Desimone Alternate Member _____
- Bruce M Devault Member _____

BRANSON SURVEYING & ENGINEERING, LLC
123 N. 80158776
231 ROCKPOINT DRIVE
WALNUT SHADE, MO 65771
417-860-9697

SINGLETARY ARMS
Project Name and Address
115 W MAIN STREET, 119 W MAIN STREET
3 BURBANK STREET, 4 BURBANK STREET
MILLBURY, MA 01527

Sheet Title
PROPOSED DETENTION POND 2 PLAN

COMMONWEALTH OF MASSACHUSETTS
TODD W CHANDLER
CIVIL
No. 55647
REGISTERED
PROFESSIONAL ENGINEER

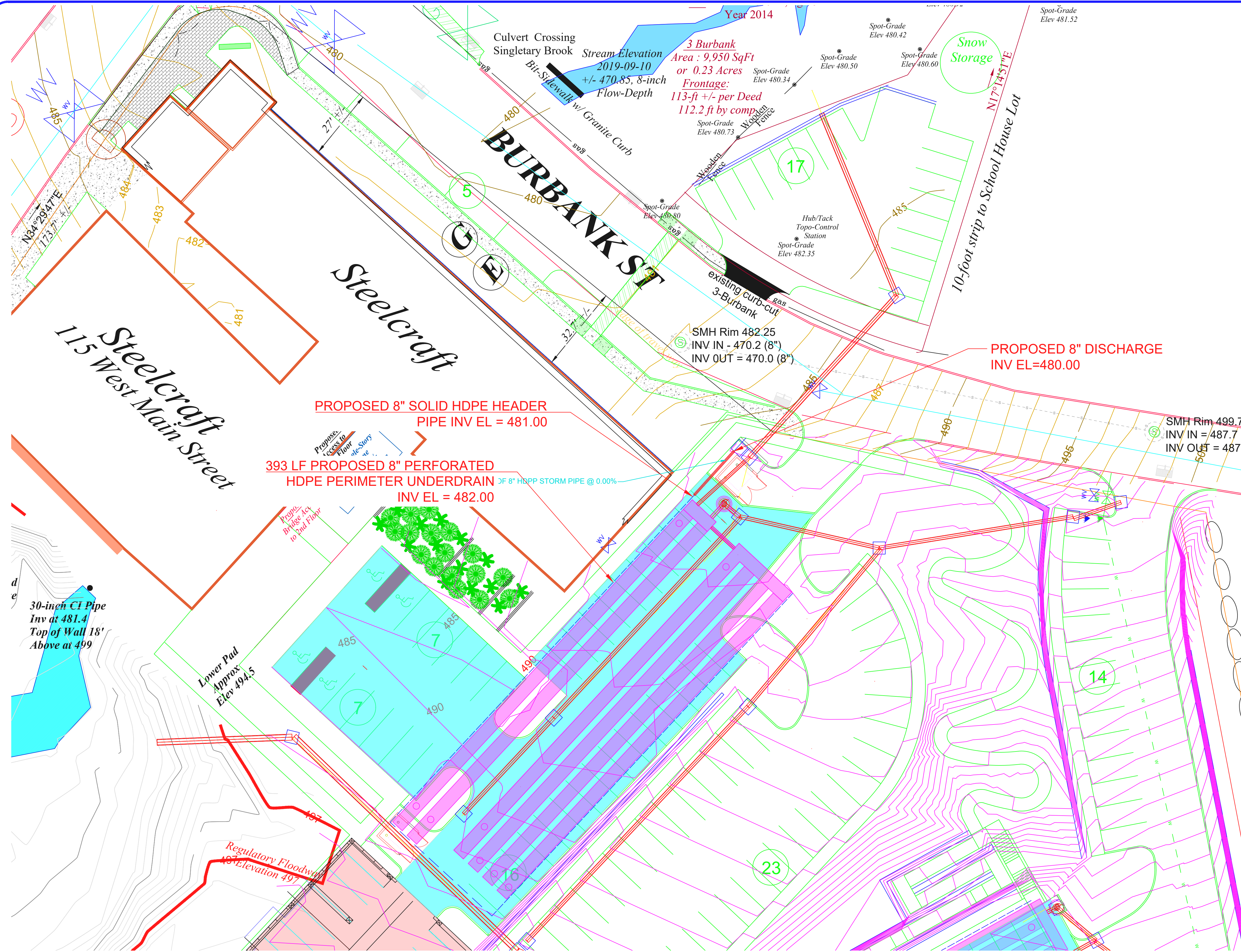
Todd Chandler

03/01/2021
Date

No.	Revision/Issue	Date
1	RESPONSE TO CITY/STANTEC COMMENTS	09/28/2020
2	RESPONSE TO CITY/STANTEC COMMENTS	10/22/2020
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5	RESPONSE TO CITY/STANTEC COMMENTS	03/01/2021

Project No. ***
Date 03/06/2020
Scale AS NOTED

Sheet
C-21



LEGEND

- RIGHT OF WAY LINE
- EXISTING WATER LINE
- EXISTING SANITARY SEWER LINE
- EXISTING STORM SEWER LINE
- WATER LINE
- SANITARY SEWER LINE
- STORM SEWER LINE
- EXISTING CONTOURS MAJOR
- EXISTING CONTOURS MINOR
- PROPOSED CONTOURS MAJOR
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SCALE: 1"=20'



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BRANSON SURVEYING &
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Project Name and Address
SINGLETARY ARMS
115 W MAIN STREET, 119 W MAIN STREET
3 BURBANK STREET, 4 BURBANK STREET
MILLBURY, MA 01527

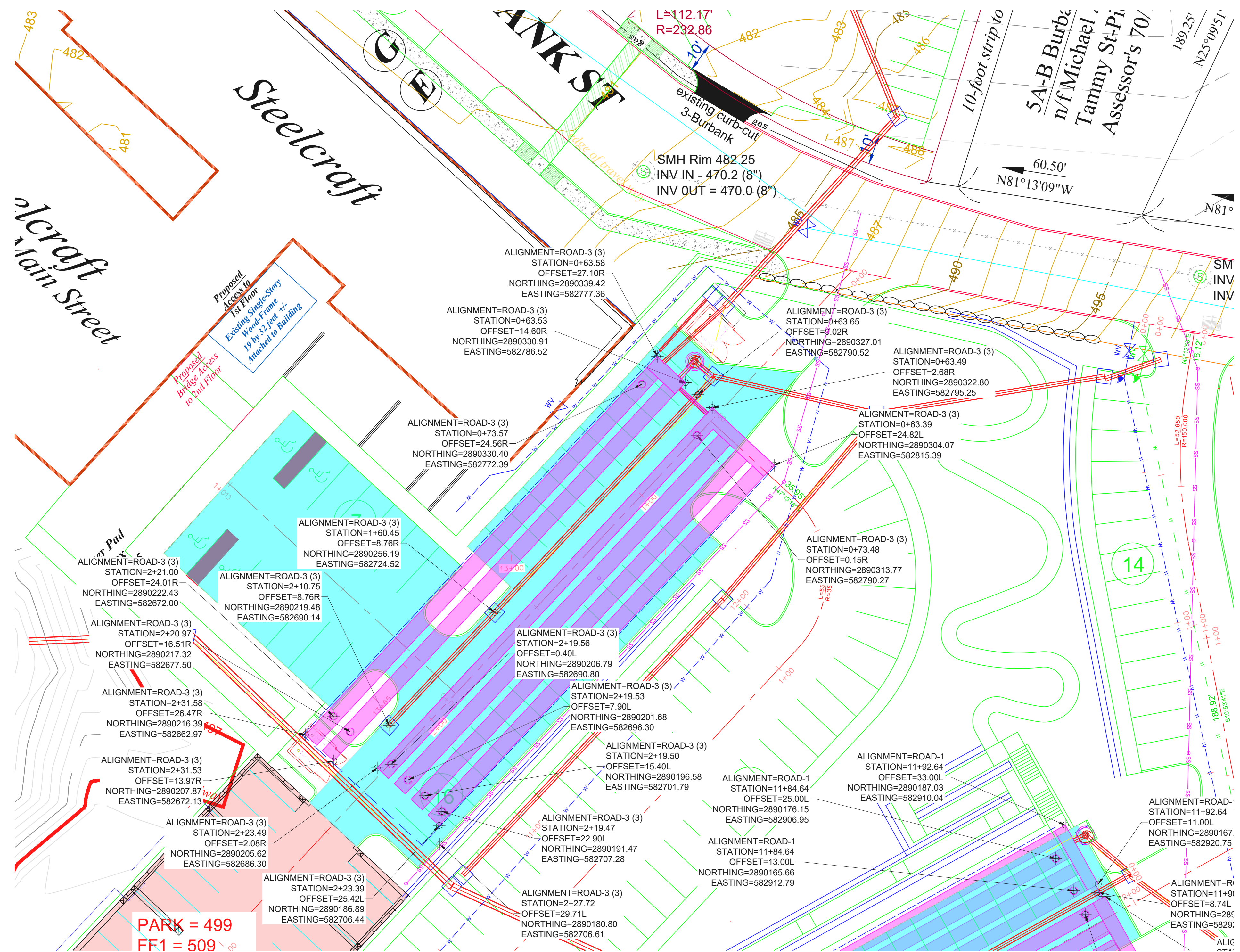
Sheet Title
**PROPOSED DETENTION POND 2
UNDER DRAIN PLAN**

Todd M. Chandler
03/01/2021
Date

No.	Revision/Issue	Date
1	RESPONSE TO CITY/STANTEC COMMENTS	09/28/2020
2	RESPONSE TO CITY/STANTEC COMMENTS	10/22/2020
3	RESPONSE TO CITY/STANTEC COMMENTS	12/09/2020
4	RESPONSE TO CITY/STANTEC COMMENTS	01/20/2021
5	RESPONSE TO CITY/STANTEC COMMENTS	03/01/2021

Project No. ***
Date 03/06/2020
Scale AS NOTED

Sheet C-21.1



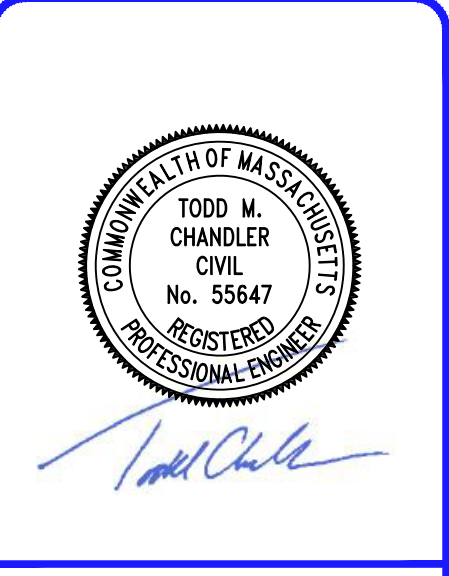
SCALE: 1"=20'

- Richard F Gosselin, Jr Chairman _____
- Paul A Piktelis Vice Chairman _____
- Terry Burke Dotson Member _____
- Francis Desimone Alternate Member _____
- Bruce M Devault Member _____

BRANSON SURVEYING & ENGINEERING, LLC
 ID No. 00156576
 231 ROCKPOINT DRIVE
 WALNUT SHADE, MO 65771
 417-860-9697

Project Name and Address
SINGLETARY ARMS
 115 W MAIN STREET, 119 W MAIN STREET
 3 BURBANK STREET, 4 BURBANK STREET
 MILLBURY, MA 01527

Sheet Title
**PROPOSED DETENTION POND 2
 DIMENSION PLAN**



03/01/2021
Date

No.	Revision/Issue	Date
1	RESPONSE TO CITY/STANTEC COMMENTS	09/28/2020
2	RESPONSE TO CITY/STANTEC COMMENTS	10/22/2020
3	RESPONSE TO CITY/STANTEC COMMENTS	12/09/2020
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5	RESPONSE TO CITY/STANTEC COMMENTS	03/01/2021

Project No. ***
 Date 03/06/2020
 Scale AS NOTED

Sheet
C-21.3



Crushed Stone with $(\phi) = 40^\circ$ over Native Soil with $(\phi) = 34^\circ$
Non Reinforced Walls with 41" Wide Blocks and Crushed Stone Backfill
 Load Condition A, B, and C

Place planter blocks to approximate average batter angle.

LOAD CONDITION	LOAD CONDITION A			LOAD CONDITION B			LOAD CONDITION C		
	Wall Height	Min. Bury Depth	Leveling Pad	Wall Height	Min. Bury Depth	Leveling Pad	Wall Height	Min. Bury Depth	Leveling Pad
0 Planters	7'-6"	6"	6"	7'-6"	6"	6"	7'-6"	6"	6"
	9'-0"	6"	1'-0"	9'-0"	6"	1'-0"	9'-0"	6"	1'-0"
	10'-6"	6"	1'-0"	10'-6"	6"	1'-0"	10'-6"	6"	1'-0"
	12'-0"	1'-0"	1'-0"	12'-0"	1'-0"	1'-0"	12'-0"	1'-0"	1'-0"
	13'-6"	1'-0"	1'-0"						
1 Planter	9'-0"	6"	1'-0"	9'-0"	6"	1'-0"	9'-0"	6"	1'-0"
	10'-6"	6"	1'-0"	10'-6"	6"	1'-0"	10'-6"	6"	1'-0"
	12'-0"	1'-0"	1'-0"	12'-0"	1'-0"	1'-0"	12'-0"	1'-0"	1'-0"
	13'-6"	1'-0"	1'-0"	13'-6"	1'-0"	1'-0"	13'-6"	1'-0"	1'-0"
	15'-0"	1'-0"	1'-0"	15'-0"	1'-0"	1'-0"			
2 Planters	12'-0"	1'-0"	1'-0"	12'-0"	1'-0"	1'-0"	12'-0"	1'-0"	1'-0"
	13'-6"	1'-0"	1'-0"	13'-6"	1'-0"	1'-0"	13'-6"	1'-0"	1'-0"
	15'-0"	1'-0"	1'-0"	15'-0"	1'-0"	1'-0"	15'-0"	1'-0"	1'-0"
	16'-6"	1'-0"	1'-0"						
	18'-0"	1'-6"	1'-0"						

The above chart was prepared by Redi-Rock™ International for estimating and conceptual design purposes only. All information is believed to be true and accurate, however, Redi-Rock™ International assumes no responsibility for the use of these design charts for actual construction. Determination of the suitability of each chart is the sole responsibility of the user. Final designs for construction purposes must be performed by a registered Professional Engineer, using the actual conditions of the proposed site.

Other Notes:

- Unit weight of 28", 30", 34" and 40" soils is assumed to be 120pcf.
- Minimum factors of safety are 1.5 for sliding, 1.5 for overturning, 2.0 for bearing capacity and 1.3 for global stability.
- Wall stability should be verified in the final design for site specific conditions.
- The wall design shall address both internal and external drainage and shall be evaluated by the Professional Engineer who is responsible for the final wall design.
- Backfill material to be compacted to 95% standard proctor density.
- All Redi-Rock™ International Wall System Specifications are to be followed.



Crushed Stone with $(\phi) = 40^\circ$ over Native Soil with $(\phi) = 28^\circ$
Non Reinforced Walls with 60" and 41" Wide Blocks
 Load Condition A, B, and C

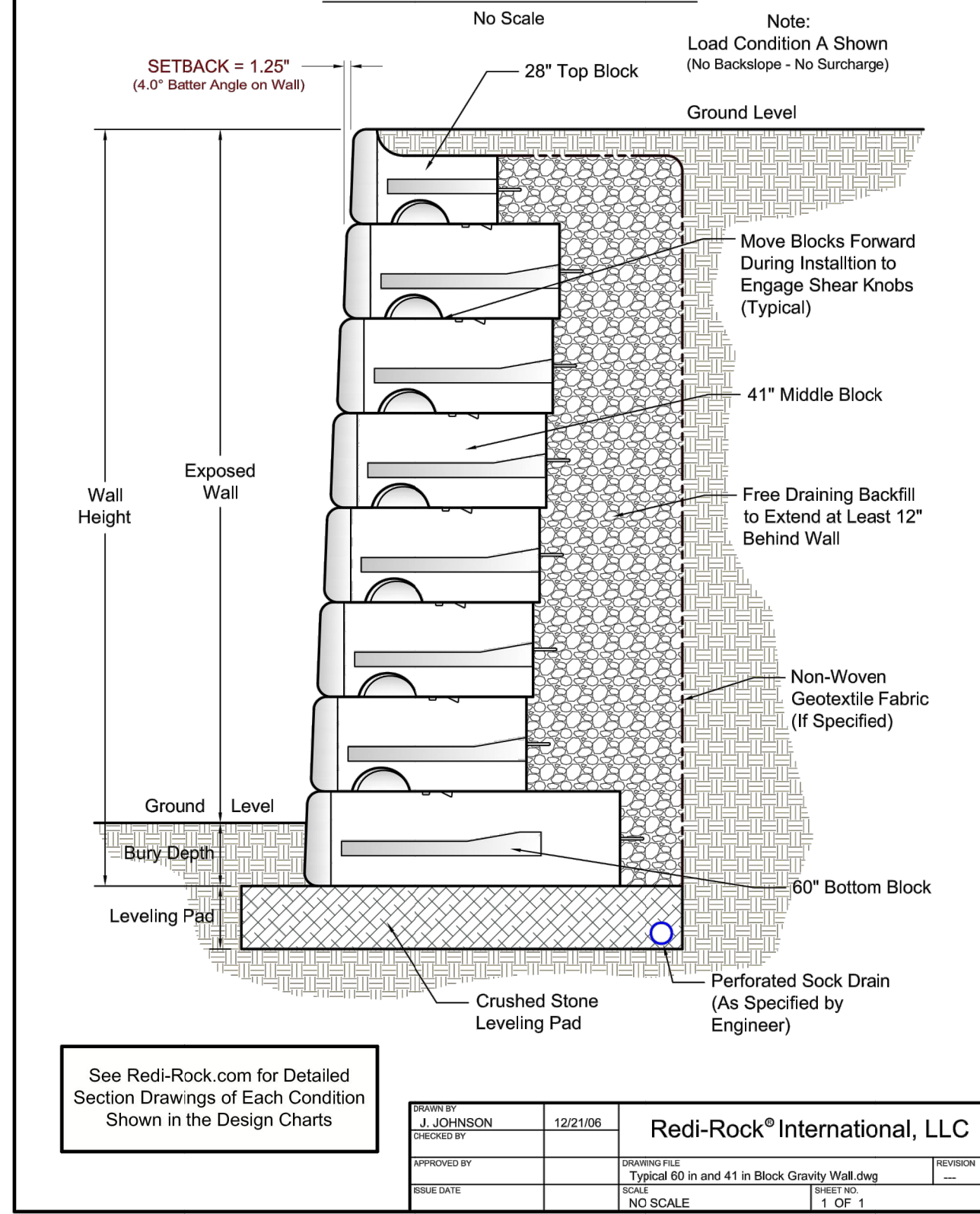
LOAD CONDITION	LOAD CONDITION A			LOAD CONDITION B			LOAD CONDITION C		
	Wall Height	Min. Bury Depth	Leveling Pad	Wall Height	Min. Bury Depth	Leveling Pad	Wall Height	Min. Bury Depth	Leveling Pad
(1) 60" Block	13'-6"	1'-0"	1'-0"	10'-6"	1'-0"	1'-0"	10'-6"	1'-6"	1'-0"
	15'-0"	1'-0"	1'-0"	12'-0"	1'-0"	1'-0"	12'-0"	2'-0"	1'-0"
				13'-6"	1'-6"	1'-0"			
(2) 60" Blocks	16'-6"	1'-6"	1'-0"	15'-0"	1'-6"	1'-0"	13'-6"	2'-6"	1'-0"
(3) 60" Blocks	18'-0"	2'-0"	1'-0"	16'-6"	2'-0"	1'-0"	15'-0"	3'-0"	1'-0"

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 - Wall stability should be verified in the final design for site specific conditions.
 - The wall design shall address both internal and external drainage and shall be evaluated by the Professional Engineer who is responsible for the final wall design.
 - Backfill material to be compacted to 95% standard proctor density.
 - All Redi-Rock™ International Wall System Specifications are to be followed.



Typical Gravity Wall with 60" and 41" Blocks



Project Name and Address
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 115 W MAIN STREET, 119 W MAIN STREET
 3 BURBANK STREET, 4 BURBANK STREET
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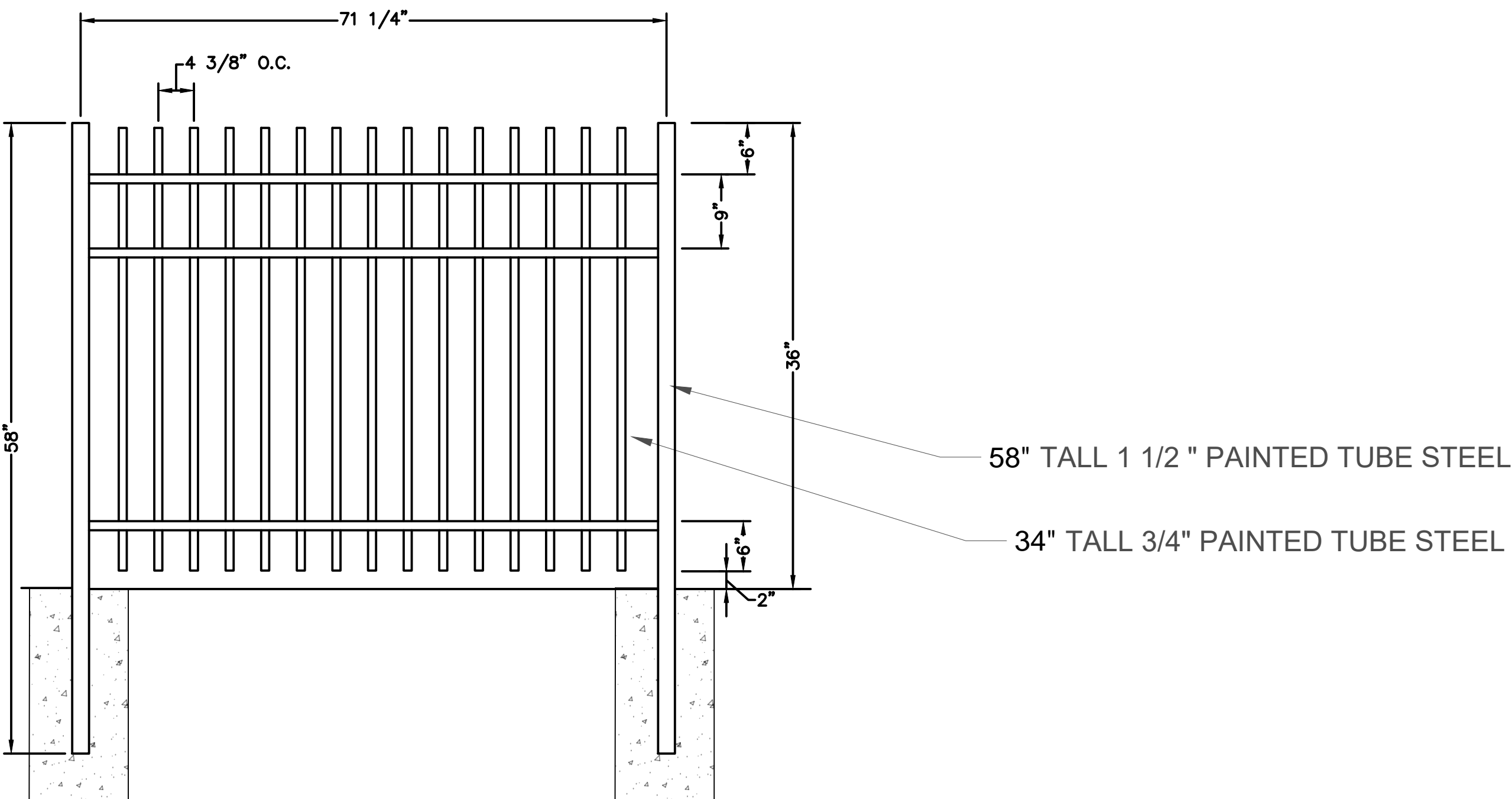
Sheet Title
ALTERNATE RETAINING WALL DETAILS

Date

No.	Revision/Issue	Date
1	RESPONSE TO CITY/STANTEC COMMENTS	09/28/2020
2	RESPONSE TO CITY/STANTEC COMMENTS	10/22/2020
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5	RESPONSE TO CITY/STANTEC COMMENTS	03/01/2021

Project No. ***
 Date 03/06/2020
 Scale AS NOTED
 Sheet C-25.1

- Richard F Gosselin, Jr Chairman _____
- Paul A Pikelis Vice Chairman _____
- Terry Burke Dotson Member _____
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- Bruce M Devault Member _____



RETAINING WALL FENCE DETAIL