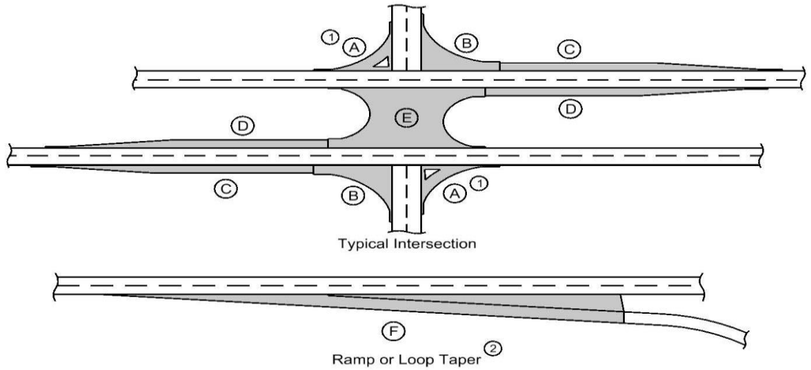
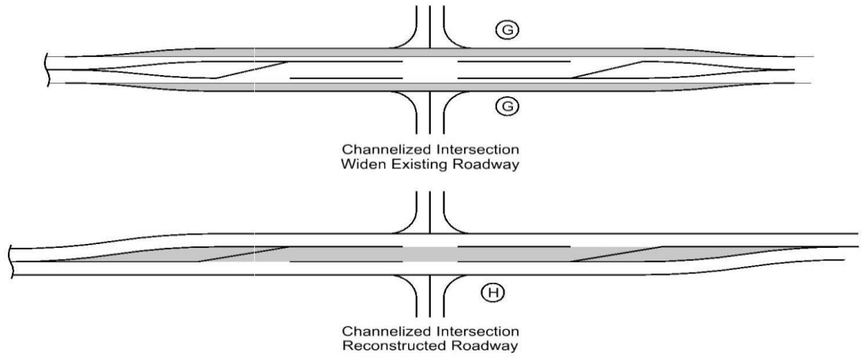
PCC PAVEMENT





(1) Does not include raised island area or curb. Refer to tabulation 112-4 for quantities.

(2) Refer to PV-410, PV-411, PV-412, and PV-414.

(3) Quantity includes Pavement Header.

Location				Mainline			Area (3)								Total Area By Pavement Thickness		Special Backfill	Modified Subbase	Granular Subbase	Remarks
Road Identification	Direction of Travel	Station to Station		Width	Length	Area	A (1)	B	C	D	E	F (2)	G	H	SY					
				FT	FT	SY	SY	SY	SY	SY	SY	SY	SY	SY	10 IN	11½ IN	CY	CY	SY	
I-29 (MLE029N)	NB	8536+50.00	8538+30.00	36.0	180.0	720.0										720.0	240.0		720.0	
I-29 (MLE029N)	NB	8538+30.00	8544+00.00	0-12	570.0	380.0										380.0	126.7		380.0	
I-29 (MLE029N)	NB	8538+30.00	8544+00.00	36.0	570.0	2280.0										2280.0	760.0		2280.0	
I-29 (MLE029N)	NB	8544+00.00	8551+46.00	48.0	746.0	3978.7										3978.7	1326.2		3978.7	
I-29 (MLE029N)	NB	8555+78.60	8557+40.00	0-10.8	161.4	96.5										96.5	32.2		96.5	
I-29 (MLE029N)	NB	8555+78.60	8559+50.00	48.0	371.4	1980.8										1980.8	660.3		1980.8	
I-80 (ML080)	WB	7535+00.00	7539+00.00	4-12	400.0	340.0										340.0	113.3		340.0	
I-80 (ML080)	WB	7535+00.00	7539+00.00	36.0	400.0	1600.0										1600.0	533.3		1600.0	
I-80 (ML080)	WB	7539+00.00	7551+47.00	48.0	1247.0	6650.7										6650.7	2216.9		6650.7	
I-80 (ML080)	WB	7555+78.55	7559+53.83	36.0	375.3	1501.1						820.1				2321.2	773.7		2321.2	
IA192 LOOP A (IA192A)		51546+00.00	51551+40.00	18.0	540.0	1109.2									1109.2			369.7		
													TOTAL:		1109.2	20347.9	6782.6	369.7	20347.9	

FILE NO.	ENGLISH	DESIGN TEAM Strum\Brinkman\Janus	POTTAWATTAMIE COUNTY	PROJECT NUMBER IM-NHS-080-1(459)3--03-78	SHEET NUMBER C.7

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MSE WALL GENERAL NOTES

1. The MSE wall shall be installed in accordance with the special provision for MSE wall with lightweight foamed concrete fill (LFCF).
2. The MSE wall shall be designed according to AASHTO LRFD bridge design specification (2014).
3. The selected wall supplier shall submit a detailed design and shop drawings for approval.
4. The permanent wall shall be designed for a minimum service life of 100 years.
5. The temporary wall shall be designed for a minimum service life of 5 years.
6. Light weight foamed concrete shall have a maximum unit weight of 48 pcf.
7. The anticipated MSE wall total settlement is less than 4 inches. The anticipated total settlement of the wall over the life time after completion of the wall construction is less than 2 inches.
8. The ground improvement with rigid inclusion under the MSE wall is designed to support maximum service applied bearing pressure of 2350 psf for the MSE walls in front of the sign truss foundations and 2100 psf for the reminder of the MSE wall.
9. ~~The MSE wall vendor shall design the straps around the drilled shafts for sign structure to account for the additional pressure from the sign structure. Each of the north side drilled shafts are supporting service loading of 10 kips lateral load and 150 kips-feet bending moment at the top of shaft. The drilled shaft for the south wall supports service loading of 16 kips lateral load and 560 kips-feet bending moment at the top of shaft~~
10. The length of the MSE reinforcement for all the walls shall be the greater of 10 feet and 0.7H. where H is the wall height from the finished grade as shown in the Q.2 to top of leveling pad
11. MSE wall straps shall be deflected as needed around proposed abutment piles and the proposed sign structure foundations.
12. MSE wall strap location are shown for schematic purposes only.
13. The top lift of the LFCF shall have minimum of 6 inches cover above the reinforcing straps
14. Rebar stakes and horizontal rebars may be needed to keep the straps horizontal within the LFCF.
15. New fill material used to widen the considered roadways or placed in front of the MSE wall, to attain the final design elevations should be structural fill material with minimum effective friction angle of 30 degrees and total unit weight of 120 ±5 pcf. Pre-approved, compacted, granular soil from the borrow # 32 would be acceptable as structural fill as long it has effective friction angle of 30 degrees and total unit weight of 120 ±5 pcf. Embankment fill material should be placed in accordance with section 2107 of the standard specifications, and compacted with a compactor appropriate for the soil type.
16. Bench cuts are required for fills placed on existing grades that have a slope of 3H:1V or steeper and are more than 10 feet in height.Refer to the IOWA standard specifications Section 2107.03 for the benching details when constructing against existing embankment.

PROPOSED CONSTRUCTION SEQUENCE:

1. Excavate to elevation 973 feet, remove unsuitable soil and prepare the subgrade.
2. Drive the piles and install the Corrugated Metal pipe around them.
3. Install the rigid inclusions as shown in the plans, after installing the working pad to elecation 975 feet.
4. Install the drilled shafts for the sign structures and wrap the drilled shaft portion within the MSE wall with Yellow Jacket. The drilled shaft can be installed before the rigid inclusions or simultaneously.
5. The contractor shall coordinate the placement of the LFCF with the construction of the storm sewer pipe. The contractor can slope the top of the LFCF at the pipe invert elevation to match the pipe inclination and install the pipe after that. Alternatively, the contractor can place the LFCF in steps, install shims, bricks, concrete blocks, or MACADAM crushed stones to allow the installation of the pipe at the proposed inclination. After the installation of the pipe, the contractor shall placed LFCF around and above the pipe carefully such that the pipe is not misaligned horizontally or vertically. Any cost of forming, shims, stone, should be at no additional cost to the department.
6. Begin the construction of the MSE walls with light weight foam concrete fill (LFCF). MSE wall panels and LFCF are placed simultaneously up to the bottom of the abutments.
7. After the completion the MSE wall, wait for a minimum of 30 days before paving.

9. The MSE wall vendor shall design the straps around the drilled shafts supporting the sign structure to account for the additional pressure from the sign structure. Reinforcement Straps for the MSE wall panels between wall stations 5312+75 and 5313+25 and between stations 5313+75 and 5314+25 shall be designed for an additional lateral service pressure of 500 psf applied between elevation 997 and 977 feet.

MSE GENERAL NOTES AND CONSTRUCTION SEQUENCE

FILE NO.	ENGLISH	DESIGN TEAM IOWA DOT\CH2M	POTTAWATTAMIE COUNTY	PROJECT NUMBER IM-NHS-080-1(459)3--03-78	SHEET NUMBER Q.22

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Proposed Lightweight Foamed Concrete Fill

140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140

1010 1000 990 980 970

979.14
110.82
977.56
106.07
33.3%
977.56
96.07
980.98
98.27
98.16
82.76
100.43
70.10
1.50
1.58
1.60

8555+25.00

1000 990 980

8555+00.00

980

8554+75.00

980

8554+50.00

8554+25.00

8554+00.00

8553+75.00

140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140

FILE NO.	ENGLISH	DESIGN TEAM Strum \ Brinkman \ Janus	POTTAWATTAMIE COUNTY	PROJECT NUMBER IM-NHS-080-1(459)3--03-78	SHEET NUMBER W.55

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Proposed Lightweight Foamed Concrete Fill

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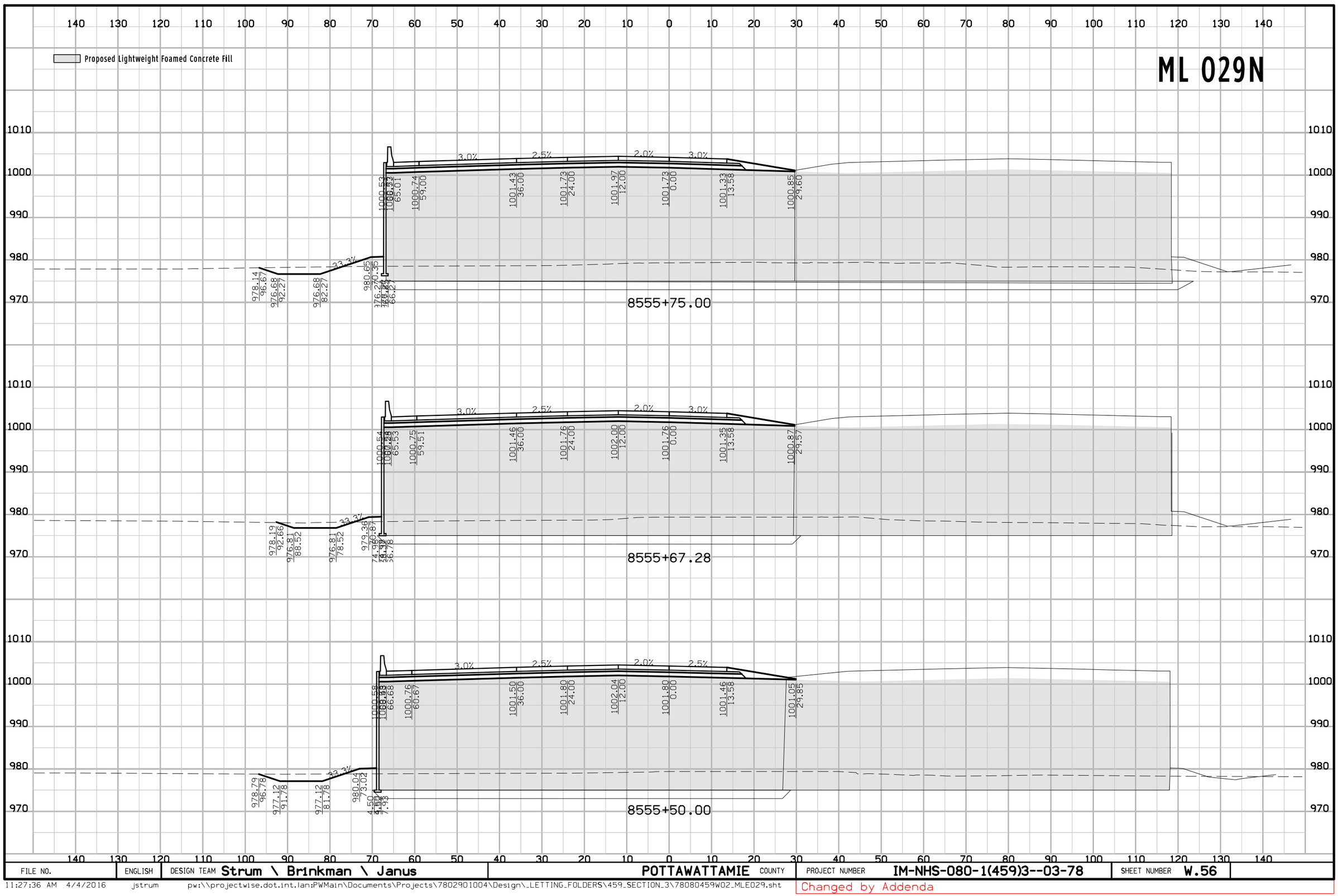

FILE NO.	ENGLISH	DESIGN TEAM Strum \ Brinkman \ Janus	POTTAWATTAMIE COUNTY	PROJECT NUMBER IM-NHS-080-1(459)3--03-78	SHEET NUMBER W.56

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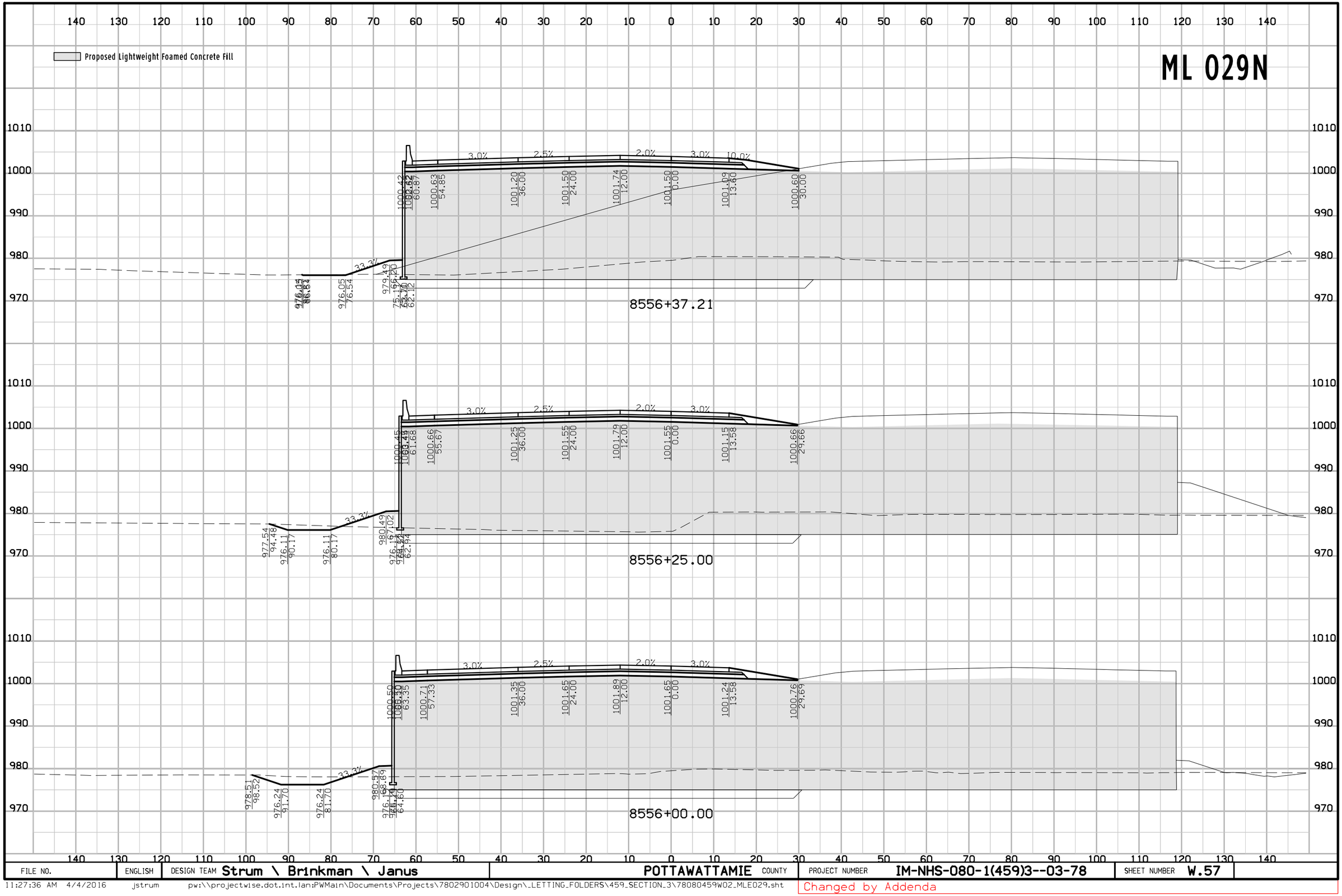
Proposed Lightweight Foamed Concrete Fill



FILE NO.	ENGLISH	DESIGN TEAM Strum \ Brinkman \ Janus	POTTAWATTAMIE COUNTY	PROJECT NUMBER IM-NHS-080-1(459)3--03-78	SHEET NUMBER W.57

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