GENERAL NOTES

1. Noise Abatement Wall drilled shaft foundation diameter, depth and spacing to be determined by the Contractor.
2. Contractor shall verify location of existing utilities prior to construction. Contractor shall locate drilled shafts to provide at least 5 feet clearance to existing and proposed underground utilities. Damage to any utilities shall be repaired by the Contractor at no additional cost to the Department.
3. Wall stations and offsets are measured relative to ℄ Richards Street (Sta. 53+10.00 to Sta. 54+65.45) or ℄ Richards Ramp B (Sta. 10+72.00 to Sta. 19+90.00) and are measured to the centerline of wall.
4. For top of wall, bottom of wall and ground elevations, see Sheets N1-1 to N1-2.
5. The maximum center-to-center post spacing shall be 20 feet.
6. The finish shall consist of a rolled Ashlar Stone finish and shall have a minimum 0.75 in impression.
7. Any rock excavation required for noise wall construction will not be paid for separately and will be included with Noise Abatement Wall, Ground Mounted. Based on the estimated top of rock elevations in the soil boring logs, rock excavation will only be required for construction of the drilled shafts.
8. Theoretical top of wall elevations, theoretical bottom of wall elevations, existing grade elevations at front face of wall and finished grade elevations at front face of wall shall be taken as straight lines in the segments between the stations shown in the Noise Wall Data Table.
9. Provide access doors every 1000' spaced evenly along length of wall. Access door location shown in the plans is approximate. Only locate doors where the grade at both faces of noise wall is even.

INDEX OF SHEETS

LEGEND

- Exist. Underground Telephone
- Exist. Underground Electric
- Exist. Underground Gas
- Exist. Underground Fiber Optic
- Exist. Underground Cable TV
- Exist. Underground Water
- Exist. Underground Oil
- Exist. Access Control and ROW
- Exist. Aerial Line
- Exist. Guardrail
- Exist. Storm Sewer
- Exist. Lighting
- Prop. Access Control and ROW Fence
- Prop. Guardrail
- Prop. Storm Sewer
- Prop. Underdrain
- Prop. Drainage
- Prop. Drainage Flow
- Prop. Lighting
- Soil Boring

TOP OF ROCK ELEVATIONS

Boring No.	Sta.	T/Rock Elev.
NWB-012	53+16.00	553.00
NWB-013	11+00.00	544.00
NWB-014	12+99.00	546.70
NWB-015	15+00.00	552.70
NWB-016	17+00.00	555.60
NWB-017	19+00.00	557.80
SGB-131	52+86.70	561.80
SGB-132	12+71.14	548.30
SGB-133	15+73.42	549.70
SGB-134	18+92.00	556.70
SGB-138	12+31.87	564.40
SGB-139	15+86.57	562.10

Note: See boring logs for additional information.

NOISE WALL DATA TABLE

Station	Offset (Rt.) to ℄ of Wall (ft.)	Theoretical Top of Wall Elev.	Ex. Grade Elev. at Front Face of Wall	Finished Grade Elev. at Front Face of Wall	Finished Grade Elev. at Back Face of Wall	Theoretical Bottom of Wall Elev.	Wall Height above Low Finished Grade "H" (ft.)
53+10	87.96	577.00	564.78	564.80	565.04	564.14	12.22
53+50	88.15	577.00	564.35	564.28	564.96	563.62	12.72
54+00	88.38	577.00	564.39	564.24	564.53	563.57	12.76
54+50	88.61	577.50	562.32	562.14	563.38	561.47	15.36
54+65.45	88.70	577.72	561.33	561.44	563.27	560.77	16.39
10+72	36.53	577.72	561.33	561.44	563.27	560.77	16.39
11+00	38.23	578.00	562.32	562.09	563.25	561.42	15.91
11+50	41.26	578.00	562.48	562.33	563.22	561.66	15.67
12+00	44.30	578.00	562.61	562.60	563.22	561.93	15.40
12+50	47.33	578.50	563.73	563.72	563.19	562.52	14.78
12+95	50.00	578.95	564.95	564.87	565.15	564.20	14.08
13+00	49.77	579.00	564.87	564.82	565.15	564.16	14.18
13+50	46.03	579.50	564.45	564.37	564.77	563.71	15.13
14+00	42.29	580.00	563.92	563.73	564.59	563.06	16.27
14+50	38.55	580.50	564.93	564.29	565.19	563.62	16.21
15+00	34.81	581.00	563.80	563.45	565.55	562.78	17.55
15+23	32.53	580.54	562.99	562.60	565.35	561.93	17.94
15+50	32.19	580.00	563.36	563.02	565.76	562.35	16.98
16+00	28.76	579.00	564.91	564.58	566.34	563.91	14.42
16+50	21.53	578.00	563.67	563.03	566.74	562.36	14.97
16+58	20.00	577.84	563.50	562.84	566.77	562.17	15.00
17+00	20.00	577.00	563.52	562.81	566.92	562.14	14.19
17+50	20.00	577.50	563.99	563.30	567.00	562.63	14.20
18+00	20.00	578.00	564.02	563.30	565.31	562.63	14.70
18+50	20.00	578.00	563.53	563.31	563.88	562.64	14.69
18+59	20.00	578.00	563.46	563.28	563.62	562.62	14.72
19+00	20.90	578.00	563.31	563.36	563.64	562.69	14.69
19+50	22.00	578.00	563.98	564.10	564.02	563.35	14.02
19+70	22.00	574.00	564.09	564.21	564.17	563.50	9.91
19+90	22.00	570.00	564.25	564.32	564.32	563.65	5.75

DESIGN STRESSES

FIELD UNITS

f'c = 4,000 psi
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (Struct. Steel, M270 Grade 50, posts)
fy = 36,000 psi (Struct. Steel, M270 Grade 36, all other structural steel)

PRECAST UNITS

f'c = 4,500 psi
fy = 60,000 psi (Reinforcement)
fy = 65,000 psi (Welded Wire Reinforcement)

DESIGN SPECIFICATIONS

2020 AASHTO LRFD Bridge Design Specifications, 9th Edition

DESIGN LOADS

Factored Strength III or V Wind: 35 psf
Factored Service I Wind: 15 psf
*Max. Factored Service I active earth pressure: 190 psf (based on equivalent fluid pressure of 55 psf)
*Factored Service I live load surcharge load: 110 psf

*Load applied only where noise wall acts as a retaining wall.

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Name Plates	Each	1
Noise Abatement Wall, Ground Mounted	Sq. Ft.	16,638
Geocomposite Wall Drain	Sq. Yd.	524
Pipe Underdrains for Structures 4"	Foot	1,067

NOISE REDUCTION DATA

Noise Wall	Noise Wall Str. No.	Face	From Sta.	To Sta.	Noise Reduction Coefficient	Comments
B30	099-N1003	Richards St face	53+10	54+65.45	Reflective	-
		residential face			Reflective	-
B30	099-N1003	Ramp B face	10+72	16+57	Reflective	-
		residential face			~~Reflective~~	-
B30	099-N1003	Ramp B face	16+57	19+90	Absorptive = 0.80 min.	-
		residential face			~~Reflective~~	-

1

1 REVISED SHEET 4/15/2024

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GARZA KARHOFF ENGINEERING, LLC

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PLOT DATE =		CHECKED -	LM	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NOISE WALL B30 (SN 099-N1003)
NOISE WALL DETAILS 1
SHEET N1-3 OF N1-13 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
354	99-4B-2-BR	WILL	320	190
		CONTRACT NO. 62380		
	ILLINOIS	FED. AID PROJECT		

GENERAL NOTES

1. Noise Abatement Wall drilled shaft foundation diameter, depth and spacing to be determined by the Contractor.
2. Contractor shall verify location of existing utilities prior to construction. Contractor shall locate drilled shafts to provide at least 5 feet clearance to existing and proposed underground utilities. Damage to any utilities shall be repaired by the Contractor at no additional cost to the Department.
3. Wall stations and offsets are measured relative to ℄ Richards Ramp C (Sta. 100+00.00 to Sta. 114+20.00) or ℄ I-80 (Sta. 745+61.00 to Sta. 755+00.00) and are measured to the centerline of wall.
4. For top of wall, bottom of wall and ground elevations, see Sheets N2-1 to N2-2.
5. The maximum center-to-center post spacing shall be 20 feet.
6. The finish shall consist of a rolled Ashlar Stone finish and shall have a minimum 0.75 in impression.
7. Any rock excavation required for noise wall construction will not be paid for separately and will be included with Noise Abatement Wall, Ground Mounted. Based on the estimated top of rock elevations in the soil boring logs, rock excavation will only be required for construction of the drilled shafts.
8. Theoretical top of wall elevations, theoretical bottom of wall elevations, existing grade elevations at front face of wall and finished grade elevations at front face of wall shall be taken as straight lines in the segments between the stations shown in the Noise Wall Data Table.
9. Provide access doors every 1000' spaced evenly along length of wall. Access door location shown in the plans is approximate. Only locate doors where the grade at both faces of noise wall is even.

INDEX OF SHEETS

LEGEND

- Exist. Underground Telephone
- Exist. Underground Electric
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- Exist. Underground Fiber Optic
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- Exist. Underground Water
- Exist. Underground Oil
- Exist. Access Control and ROW
- Exist. Aerial Line
- Exist. Guardrail
- Exist. Storm Sewer
- Exist. Lighting
- Prop. Access Control and ROW Fence
- Prop. Guardrail
- Prop. Storm Sewer
- Prop. Underdrain
- Prop. Drainage
- Prop. Drainage Flow
- Prop. Lighting
- Soil Boring

TOP OF ROCK ELEVATIONS

Boring No.	Sta.	T/Rock Elev.
NWB-001	114+15	531.09
NWB-002	111+86	525.64
NWB-003	106+72	558.16
NWB-004	104+64	559.82
NWB-005	102+74	559.72
NWB-006	100+98	557.38
NWB-007	746+17	558.42
NWB-008	749+07	562.06
NWB-009	751+00	570.90
NWB-010	753+08	564.58

Note: See boring logs for additional information.

NOISE WALL DATA TABLE

Station	Offset to ℄ of Wall (ft.)	Theoretical Top of Wall Elev.	Ex. Grade Elev. at Front Face of Wall	Finished Grade Elev. at Front Face of Wall	Finished Grade Elev. at Back Face of Wall	Theoretical Bottom of Wall Elev.	Wall Height above Low Finished Grade "H" (ft.)
114+20.00	65.00	553.00	536.86	536.78	537.83	536.11	16.23
114+00.00	63.89	553.83	538.78	538.68	539.52	538.02	15.15
113+50.00	61.11	555.91	540.41	540.25	540.87	539.59	15.66
113+00.00	58.34	558.00	542.23	542.19	544.98	541.52	15.81
112+50.00	55.56	560.50	544.30	544.16	544.85	543.50	16.34
112+00.00	52.78	563.00	546.22	546.01	546.81	545.34	16.99
111+50.00	50.00	564.00	548.26	548.05	548.76	547.38	15.96
111+00.00	42.84	565.00	549.09	548.93	550.71	548.27	16.07
110+50.00	34.74	566.50	552.03	551.83	552.78	551.16	14.67
110+00.00	25.27	568.00	555.22	554.93	556.15	554.27	13.07
109+75.00	20.00	569.00	556.07	555.90	558.21	555.23	13.11
109+50.00	20.51	570.00	557.57	557.08	559.49	556.41	12.93
109+00.00	20.54	572.00	559.84	559.45	561.56	558.79	12.55
108+50.00	19.27	574.00	561.38	560.77	563.18	560.10	13.23
108+00.00	16.69	576.00	562.95	562.41	564.17	561.74	13.59
107+50.00	12.86	576.50	563.91	563.62	565.01	562.95	12.88
107+32.00	11.35	576.80	564.16	563.91	565.17	563.25	12.89
107+05.00	11.35	576.95	564.47	564.38	565.42	563.71	12.57
107+00.00	11.53	577.00	564.50	564.44	565.44	563.77	12.57
106+50.00	13.21	577.50	564.71	564.92	565.35	564.25	12.79
106+00.00	14.90	578.00	564.95	565.14	565.47	564.47	13.05
105+50.00	16.58	578.00	565.25	565.38	565.96	564.71	12.75
105+00.00	18.27	578.00	565.39	565.60	566.36	564.93	12.61
104+50.00	19.95	579.00	565.83	566.04	566.75	565.38	13.17
104+00.00	21.64	579.00	566.21	566.41	567.13	565.75	12.79
103+50.00	23.32	579.00	566.63	566.77	567.35	566.10	12.38
103+00.00	25.00	579.00	566.68	566.85	567.52	566.18	12.32
102+50.00	25.03	580.00	566.90	566.69	567.72	566.02	13.31
102+00.00	25.06	580.50	566.61	566.20	566.80	565.53	14.30
101+50.00	25.09	581.00	567.03	566.65	567.28	565.99	14.35
101+20.65	25.00	581.00	567.29	566.95	567.56	566.28	14.05
101+00.00	26.20	581.00	567.57	567.27	567.82	566.60	13.73
100+50.00	28.88	581.00	568.34	568.05	568.45	567.38	12.95
100+00.00	31.55	582.00	569.43	569.05	569.07	568.38	12.95
745+61.00	82.00	582.00	569.43	569.05	569.07	568.38	12.95
746+00.00	82.00	583.00	570.31	569.80	569.56	568.89	13.20
746+50.00	82.00	584.00	571.37	570.86	570.19	569.52	13.14
747+00.00	82.00	585.00	571.63	571.63	570.81	570.14	13.37
747+50.00	82.00	585.00	571.84	571.85	571.43	570.77	13.16
748+00.00	82.00	585.00	572.60	572.52	572.06	571.39	12.48
748+50.00	82.00	585.00	572.17	572.38	572.68	571.72	12.83
749+00.00	85.20	585.00	572.65	572.90	572.91	572.23	12.36
749+50.00	88.39	585.50	573.03	573.32	573.13	572.46	12.47
750+00.00	91.59	586.00	572.44	572.94	573.36	572.28	13.56
750+50.00	94.78	586.00	572.04	572.54	572.90	571.87	13.97
751+00.00	97.98	586.00	571.68	572.18	572.40	571.51	14.32
751+50.00	101.18	585.00	571.43	571.93	571.96	571.26	13.58
752+00.00	104.37	584.00	571.35	571.85	571.53	570.86	12.65
752+50.00	107.57	583.50	570.60	571.10	571.19	570.44	12.90
753+00.00	110.76	583.00	570.30	570.80	570.86	570.13	12.70
753+50.00	113.96	583.00	569.98	570.48	570.52	569.82	13.02
754+00.00	117.22	583.00	569.24	569.74	570.18	569.08	13.76
754+50.00	120.88	583.00	569.06	569.55	569.84	568.88	13.94
755+00.00	125.00	583.00	568.94	569.44	569.50	568.77	14.07

DESIGN STRESSES

FIELD UNITS

f'c = 4,000 psi
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (Struct. Steel, M270 Grade 50, posts)
fy = 36,000 psi (Struct. Steel, M270 Grade 36, all other structural steel)

PRECAST UNITS

f'c = 4,500 psi
fy = 60,000 psi (Reinforcement)
fy = 65,000 psi (Welded Wire Reinforcement)

DESIGN SPECIFICATIONS

2020 AASHTO LRFD Bridge Design Specifications, 9th Edition

DESIGN LOADS

Factored Strength III or V Wind: 35 psf
Factored Service I Wind: 15 psf
*Max. Factored Service I active earth pressure: 190 psf (based on equivalent fluid pressure of 55 psf)
*Factored Service I live load surcharge load: 110 psf

*Load applied only where noise wall acts as a retaining wall.

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Name Plates	Each	1
Noise Abatement Wall, Ground Mounted	Sq. Ft.	33,405
Geocomposite Wall Drain	Sq. Yd.	630
Pipe Underdrains for Structures 4"	Foot	1,342

NOISE REDUCTION DATA

Noise Wall	Noise Wall Str. No.	Face	From Sta.	To Sta.	Noise Reduction Coefficient	Comments
B31	099-N1004	Ramp C face	114+20	109+00	Reflective	-
		residential face			Reflective	-
B31	099-N1004	Ramp C face	109+00	104+00	Absorptive = 0.80 min.	-
		residential face			Reflective	-
B31	099-N1004	Ramp C face	104+00	100+00	Reflective	-
		residential face			Reflective	-
B31	099-N1004	I-80 face	745+61	755+00	Reflective	-
		residential face			Reflective	-

1

1 REVISED SHEET 4/15/2024

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NOISE WALL B31 (SN 099-N1004)
NOISE WALL DETAILS 1
SHEET N2-3 OF N2-12 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
354	99-4B-2-BR	WILL	320	203
		CONTRACT NO. 62380		
	ILLINOIS	FED. AID PROJECT		