

SOLDIER PILE & LAGGING WALL WAR-SR48-6.65

CHOICE ONE ENGINEERING CORP SR-48 AND BUTTERWORTH ROAD LOVELAND, OHIO

REVIEW COMPLETE

PM	_____
BRIDGES	_____
CONSTRUCT	_____
DRAINAGE	_____
ENVIRON	_____
GEOTECH	Casey Carriere, P.E. 3/13/2026
ITS	_____
MOT	_____
PAVEMENT	_____
ROADWAY	_____
R/W	_____
SURVEY	_____
TRAFFIC	_____
UTILITIES	_____
OTHER	_____
OTHER	_____

REV.	DATE	BY	DESCRIPTION
1	2/6/2026	JDH	UPDATED STATIONING & DETAILS

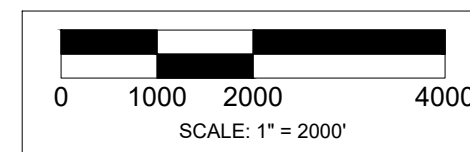
COVER & TITLE SHEET
WAR-SR48-6.65
CHOICE ONE ENGINEERING CORP
SR-48 AND BUTTERWORTH ROAD
LOVELAND, OHIO

Terracon
Explore with us
611 LUNKEN PARK DRIVE
PH. (513) 321-5816
CINCINNATI, OHIO 45226
FAX. (513) 321-4540

DESIGNED BY: JDH
DRAWN BY: RLC
APPVD. BY: DWW
SCALE: AS NOTED
DATE: 9/5/2025
JOB NO. N1255021
SHEET NO.: 1 OF 12

SHEET 1

SITE VICINITY MAP



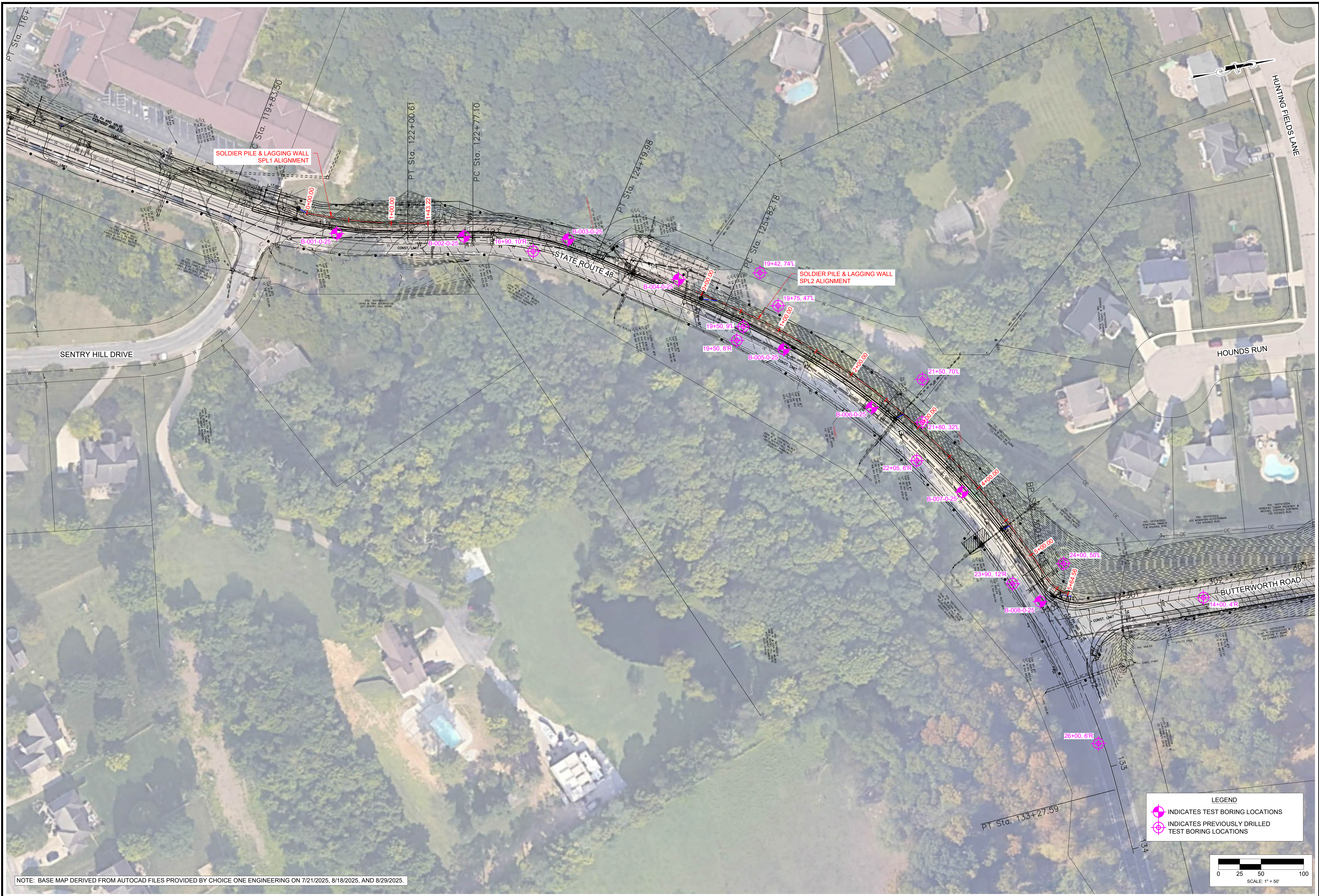
SHEET INDEX

- SHEET 1 - COVER & TITLE SHEET
- SHEET 2 - OVERALL SITE PLAN
- SHEET 3 - SOLDIER PILE & LAGGING WALL PLAN & PROFILE - SPL1
- SHEET 4 - SOLDIER PILE & LAGGING WALL PLAN & PROFILE - SPL2
- SHEET 5 - SOLDIER PILE & LAGGING WALL PLAN & PROFILE - SPL2
- SHEET 6 - SOLDIER PILE & LAGGING WALL DETAILS
- SHEET 7 - SOLDIER PILE & LAGGING WALL SCHEDULE - SPL1
- SHEET 8 - SOLDIER PILE & LAGGING WALL SCHEDULE - SPL2
- SHEET 9 - GENERAL NOTES & SOLDIER PILE UNDERDRAIN DETAIL
- SHEET 10 - 2025 BORING LOGS
- SHEET 11 - HISTORIC BORING INFORMATION
- SHEET 12 - HISTORIC BORING INFORMATION

GENERAL DRAWING NOTES

1. THESE PLANS ARE SIZED FOR 34 INCHES BY 22 INCHES PAPER.
2. THESE PLANS ARE INTENDED TO BE PRINTED IN COLOR.
3. THE BID DRAWINGS ARE TO AN APPROXIMATE SCALE BASED ON SITE TOPOGRAPHIC MAPPING. WHILE REASONABLE ATTEMPTS WERE MADE TO PROVIDE THE BIDDERS WITH ACCURATE SCALED PLANS THAT REFLECT CURRENT CONDITIONS, MINOR ERRORS ARE EVIDENT. THE BIDDERS SHOULD VERIFY QUANTITIES BY PERFORMING A THOROUGH SITE VISIT AND OBTAINING HIS OWN TAKE OFF OF REQUIRED QUANTITIES FOR THE WORK ON THE PROJECT. TERRACON WILL NOT BE RESPONSIBLE FOR ADDITIONAL COSTS RESULTING FROM THE BIDDER NOT PERFORMING A THOROUGH SITE VISIT.

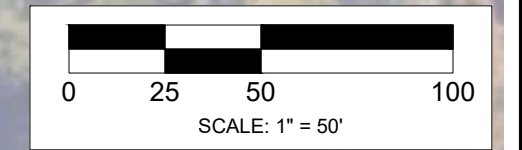
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NOTE: BASE MAP DERIVED FROM AUTOCAD FILES PROVIDED BY CHOICE ONE ENGINEERING ON 7/21/2025, 8/18/2025, AND 8/29/2025.

LEGEND

- INDICATES TEST BORING LOCATIONS
- INDICATES PREVIOUSLY DRILLED TEST BORING LOCATIONS



REV.	DATE	BY	DESCRIPTION
1	2/6/2026	JDH	UPDATED STATIONING

OVERALL SITE PLAN
 WAR-SR48-6.65
CHOICE ONE ENGINEERING CORP
 SR-48 AND BUTTERWORTH ROAD
 LOVELAND, OHIO

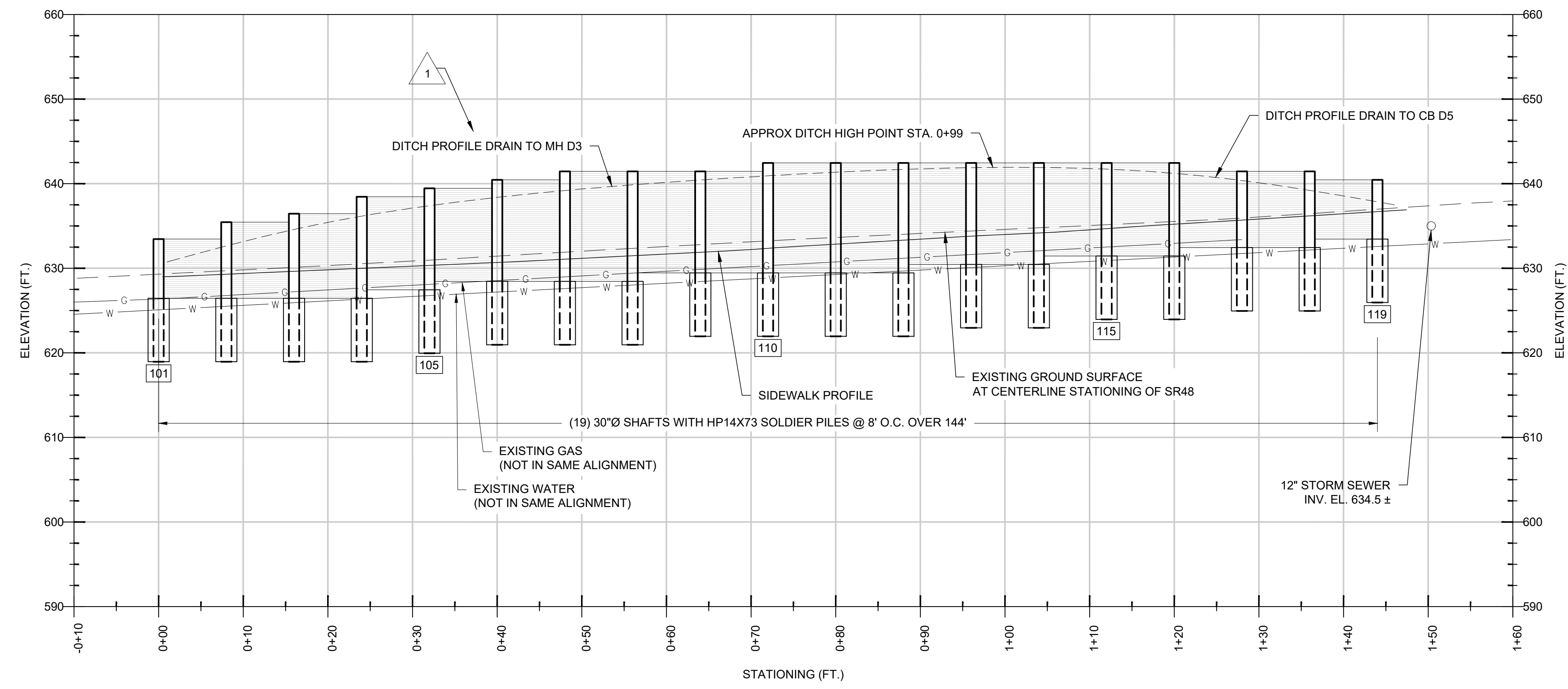
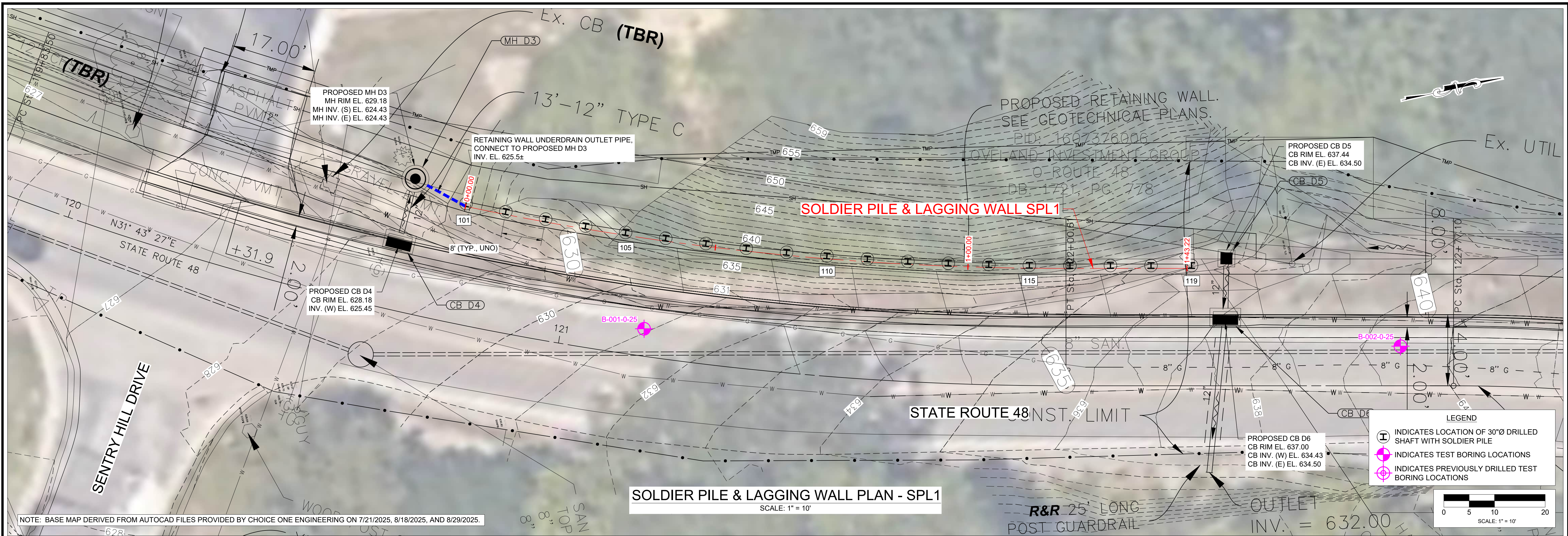
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SHEET 2

DESIGNED BY:	JDH
DRAWN BY:	RLC
APPVD. BY:	DWW
SCALE:	AS NOTED
DATE:	9/5/2025
JOB NO.:	N1255021
SHEET NO.:	2 OF 12

Date: 2/3/2026 3:11 PM File Path: C:\USERS\RLC\APPION\DRIVE - TERRACON CONSULTANTS INC\PROJECTS\N1255021\WAR-SR48-6.65 - GENERAL\07 WORKING FILES\03 MODELS\CAD\N1255021 SPL WALL PLANS.DWG



DESCRIPTION	UPDATED STATIONING AND DITCH PROFILE
REV. DATE BY	1 2/6/2026 JDH

SOLDIER PILE & LAGGING WALL PLAN & PROFILE - SPL1

WAR-SR48-6.65

CHOICE ONE ENGINEERING CORP
SR-48 AND BUTTERWORTH ROAD
LOVELAND, OHIO

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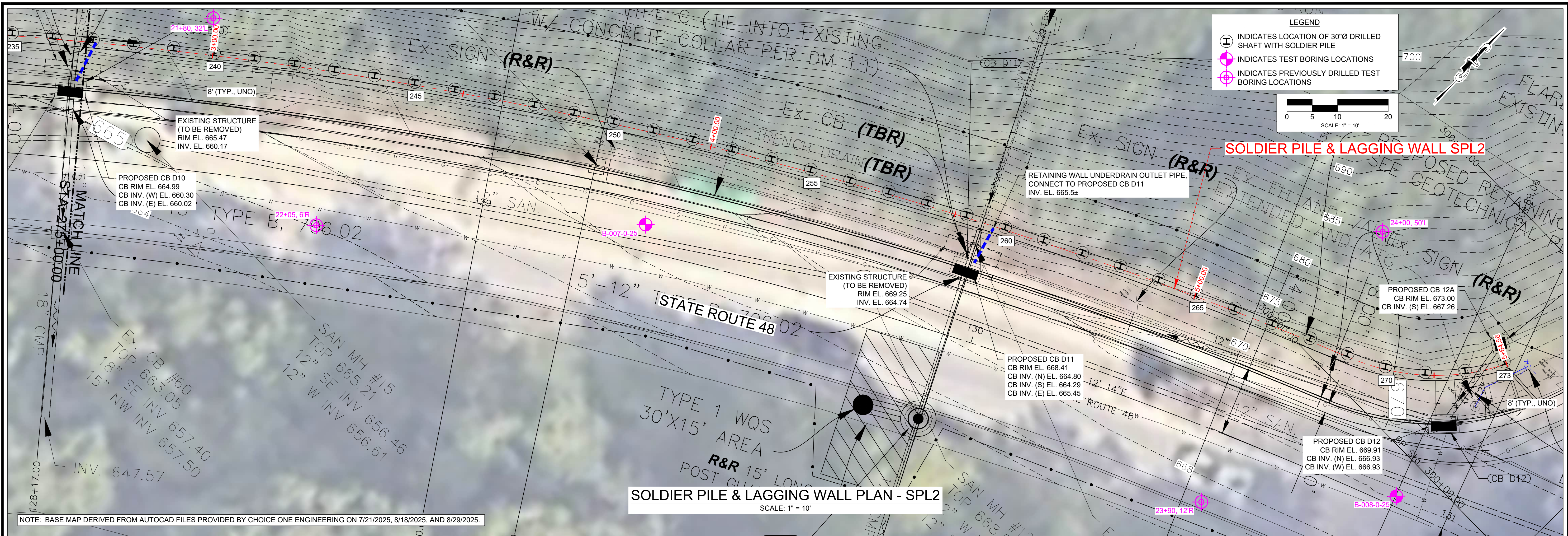
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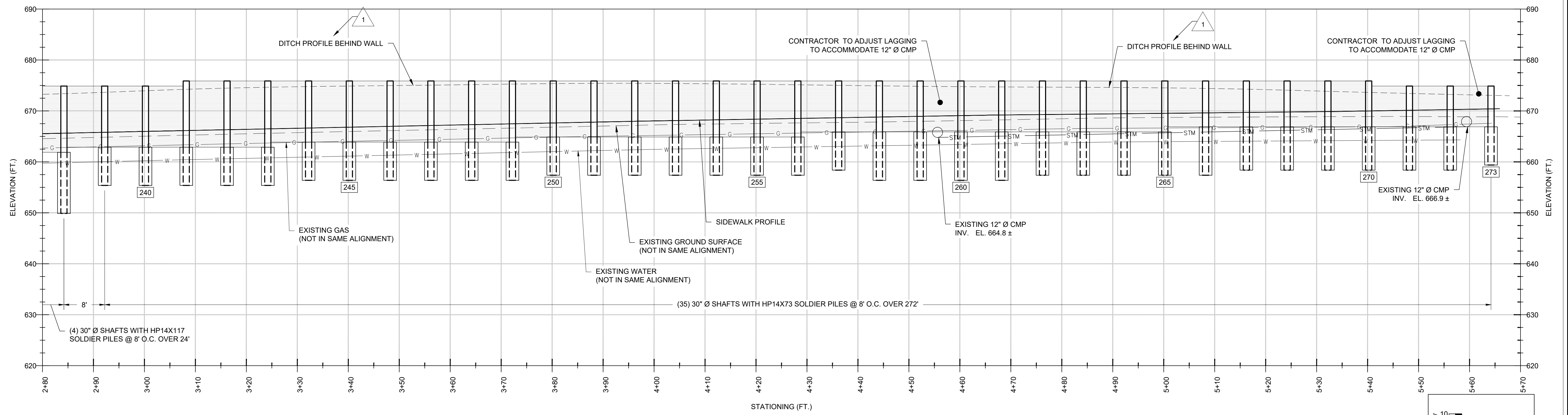
SHEET 3

DESIGNED BY:	JDH
DRAWN BY:	RLC
APPVD. BY:	DWW
SCALE:	AS NOTED
DATE:	9/5/2025
JOB NO.	N1255021
SHEET NO.:	3 OF 12

Date: 2/3/2026 3:11 PM File Path: C:\USERS\RCLAPPIONE\DRIVE - TERRACON CONSULTANTS INC\PROJECTS\N1255021\WAR-SR48-6.65 - GENERAL\07 WORKING FILES\03 MODELS\CAD\N1255021 SPL WALL PLANS.DWG



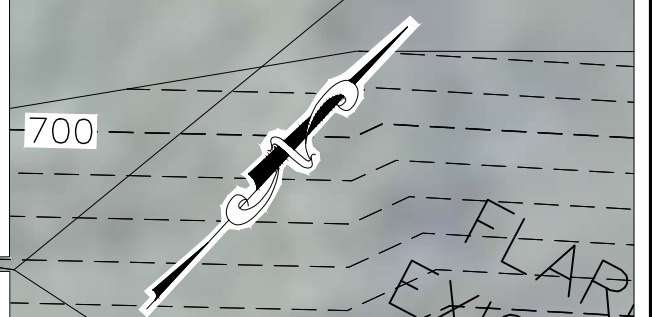
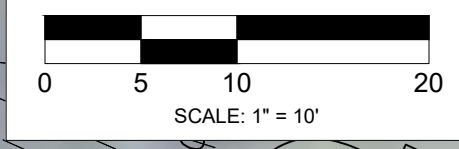
NOTE: BASE MAP DERIVED FROM AUTOCAD FILES PROVIDED BY CHOICE ONE ENGINEERING ON 7/21/2025, 8/18/2025, AND 8/29/2025.



SOLDIER PILE & LAGGING WALL PROFILE - SPL2
SCALE: 1" = 10'

LEGEND

- ⊕ INDICATES LOCATION OF 30" Ø DRILLED SHAFT WITH SOLDIER PILE
- ⊙ INDICATES TEST BORING LOCATIONS
- ⊕ INDICATES PREVIOUSLY DRILLED TEST BORING LOCATIONS



REV.	DATE	BY	DESCRIPTION
1	2/6/2026	JDH	UPDATED STATIONING AND DITCH PROFILE

SOLDIER PILE & LAGGING WALL PLAN & PROFILE - SPL2

WAR-SR48-6.65

CHOICE ONE ENGINEERING CORP

SR-48 AND BUTTERWORTH ROAD
LOVELAND, OHIO

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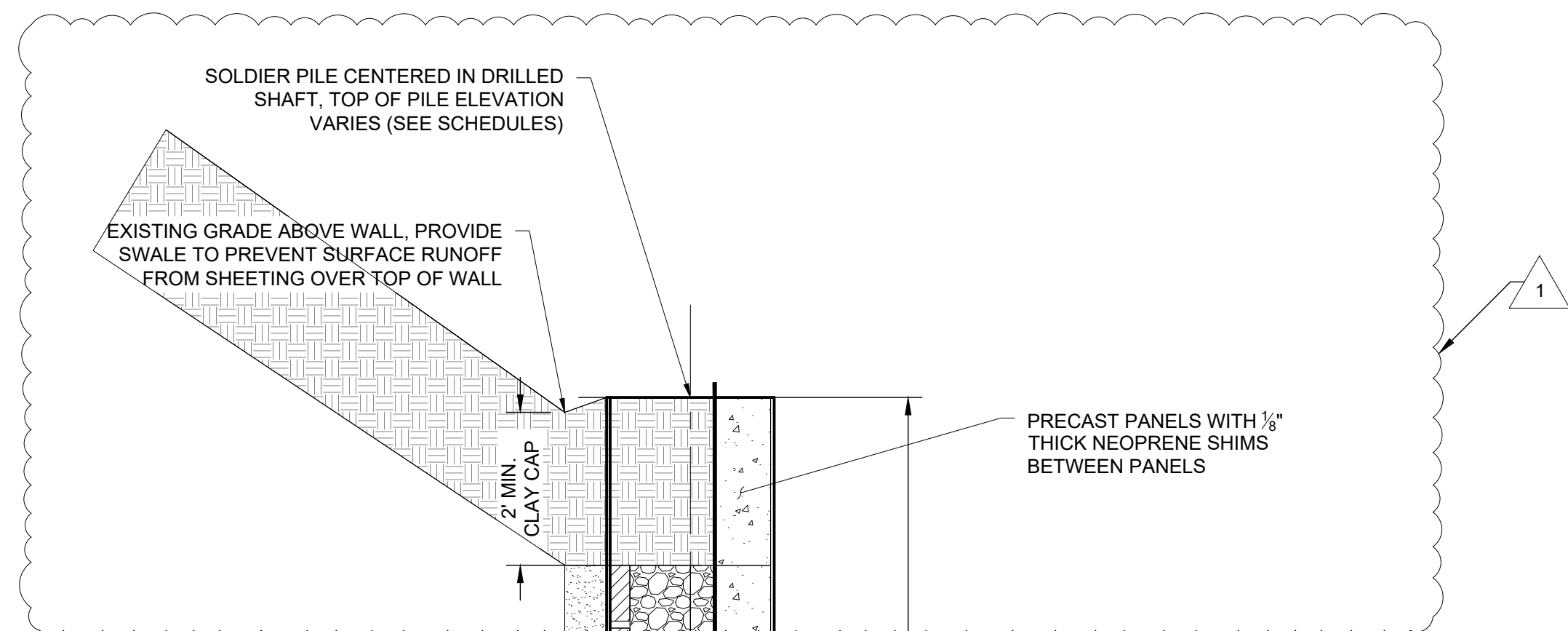
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SHEET 5

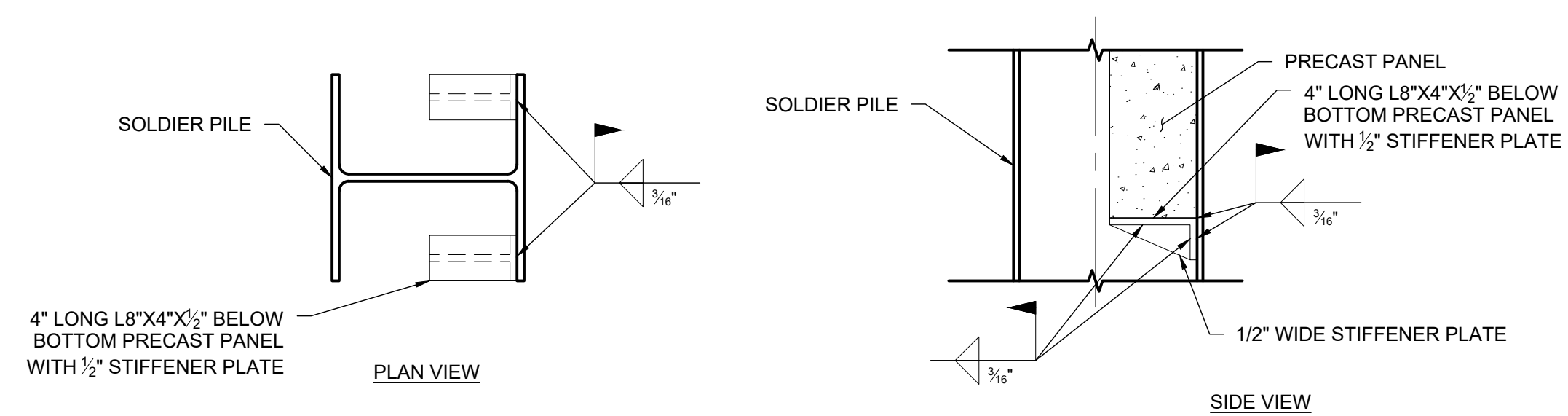
DESIGNED BY:	JDH
DRAWN BY:	RLC
APPVD. BY:	DWW
SCALE:	AS NOTED
DATE:	9/5/2025
JOB NO.:	N1255021
SHEET NO.:	5 OF 12

Date: 2/3/2026 3:11 PM File Path: C:\USERS\RLC\APP\DRIVE - TERRACON CONSULTANTS INC\PROJECTS\N1255021\WAR-SR48-6.65 - GENERAL\07 WORKING FILES\03 MODELS\CAD\N1255021 SPL WALL PLANS.DWG

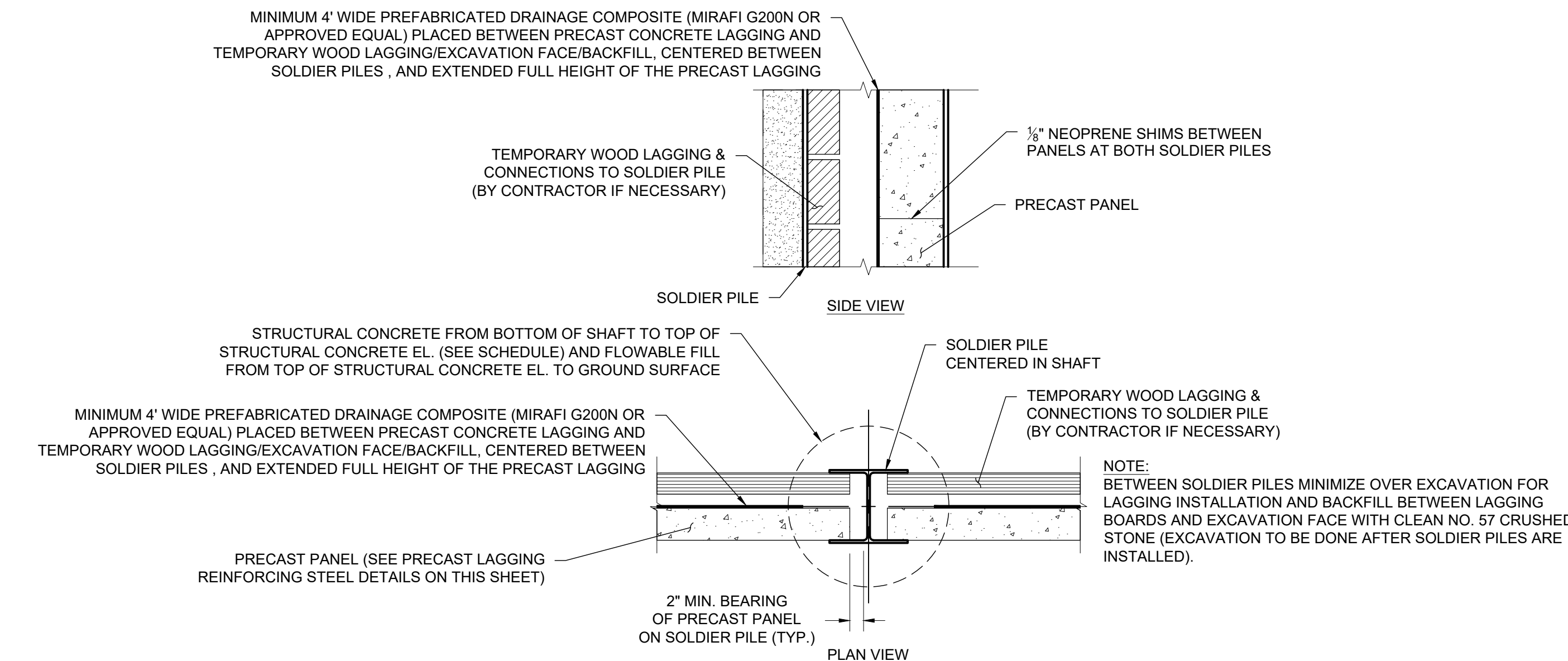


1
DRILLED SHAFT/SOLDIER PILE LAGGING DETAIL
NOT TO SCALE

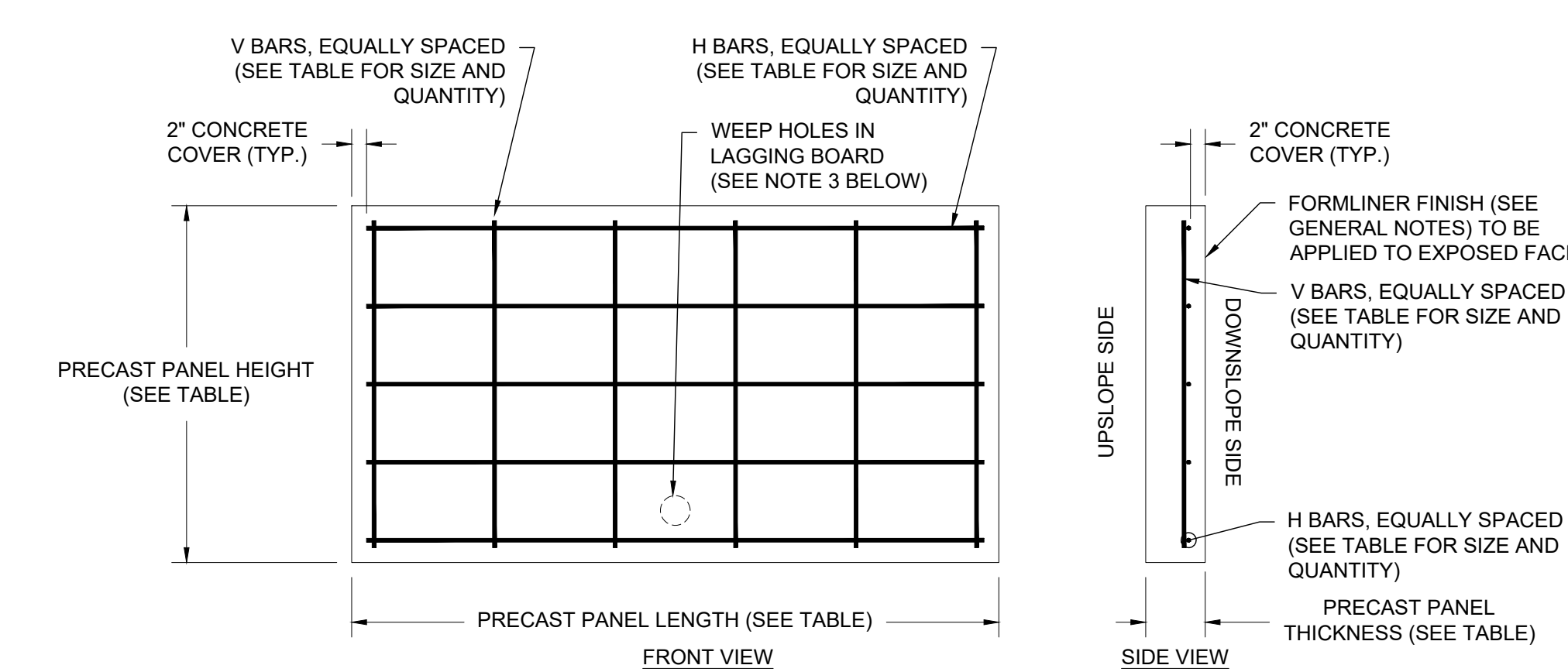
NOTES:
1. THE PRECAST PANELS SHALL BE LAID OUT SO THAT THE HORIZONTAL JOINTS BETWEEN PANELS ARE ALIGNED BETWEEN CONSECUTIVE SOLDIER PILES (SEE GENERAL NOTES).



NOTE: CONTRACTOR OPTION TO USE SEAT ANGLE OR SUPPORT PRECAST PANELS ON FLOWABLE FILL OR STRUCTURAL CONCRETE BACKFILL OF DRILLED SHAFT
3
ANGLE SUPPORT FOR BOTTOM PRECAST PANEL DETAILS
NOT TO SCALE



4
PRECAST LAGGING DETAILS
NOT TO SCALE

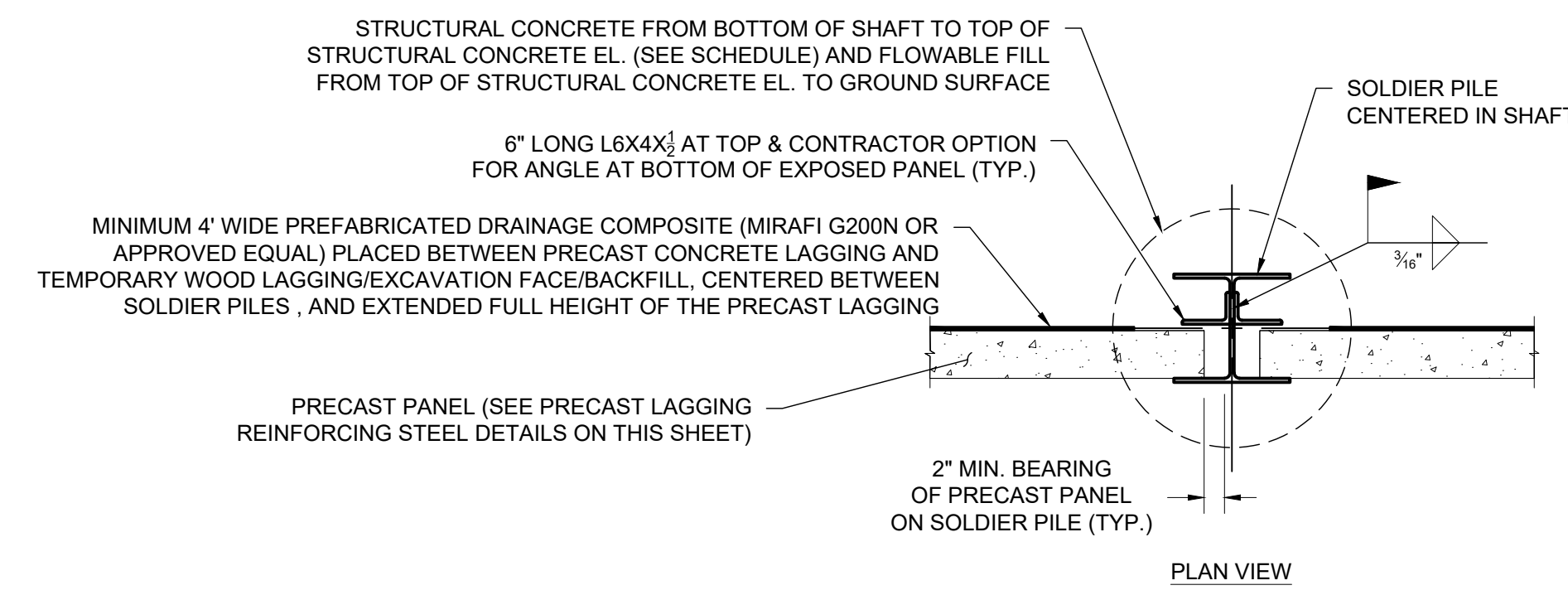


SOLDIER PILE C-C SPACING	PRECAST PANEL LENGTH	PRECAST PANEL HEIGHT	PRECAST PANEL THICKNESS*	MIN. H BARS** (QTY. & SIZE)	MIN. V BARS** (QTY. & SIZE)
8'-0"	7'-8"	VARIES	6"	#5 @ 10" O.C.	#4 @ 16" O.C.
4'-0"	3'-8"	VARIES	6"	#5 @ 10" O.C.	#4 @ 16" O.C.

* PRECAST PANEL THICKNESS EXCLUDES THE RELIEF FROM THE FORMLINER
** ADDITIONAL REINFORCING STEEL FOR PRECASTING BY OTHERS

- NOTES:
1. REINFORCING STEEL SHALL BE EPOXY COATED.
2. HORIZONTAL REINFORCING STEEL SHALL BE 2 INCHES CLEAR OF THE RELIEF ON THE FORMLINER FOR THE PRECAST PANELS.
3. ONE 4-INCH-DIAMETER WEEP HOLE SHALL BE CAST 6 INCHES CLEAR OF THE BOTTOM OF THE BOTTOM LAGGING PANEL BETWEEN EACH SET OF SOLDIER PILES. AT LEAST 2 INCHES OF CONCRETE CLEAR COVER SHALL BE PROVIDED BETWEEN THE WEEP HOLE AND ADJACENT REINFORCING STEEL. THE WEEP HOLE SHALL BE CAST NEAR THE MID-LENGTH OF THE PANEL.
4. THE PRECAST PANELS SHALL BE LAID OUT SO THAT THE HORIZONTAL JOINTS BETWEEN PANELS ARE ALIGNED BETWEEN CONSECUTIVE SOLDIER PILES (SEE GENERAL NOTES).
5. WHERE STORM PIPES CROSS BETWEEN SOLDIER PILES (E.G. BETWEEN SOLDIER PILES 202 AND 203, 236 AND 237, 259 AND 260, AND 272 AND 273), THE CONTRACTOR SHALL FIELD LOCATE THE EXISTING SEWER AND PREPARE SHOP DRAWINGS FOR REVIEW AND APPROVAL BY THE DESIGN ENGINEER THAT DETAIL THE PRECAST PANEL AROUND THE STORM SEWER PIPES.

5
PRECAST LAGGING REINFORCING STEEL DETAILS
NOT TO SCALE



2
ANGLE CONNECTION FOR ABOVE-GRADE PRECAST PANELS DETAIL
NOT TO SCALE

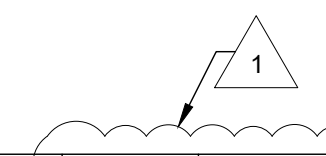
REV.	DATE	BY	DESCRIPTION
1	2/6/2026	JDH	DETAIL EDITS FOR REVISED DITCH PROFILE

SOLDIER PILE & LAGGING WALL DETAILS
 WAR-SR48-6.65
CHOICE ONE ENGINEERING CORP
 SR-48 AND BUTTERWORTH ROAD
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SHEET 6

DESIGNED BY:	JDH
DRAWN BY:	RLC
APPVD. BY:	DWW
SCALE:	AS NOTED
DATE:	9/5/2025
JOB NO.	N1255021
SHEET NO.:	6 OF 12




DRILLED SHAFT/ PILE NO.	DRILLED SHAFT DIAMETER (IN.)	PILE SIZE	NORTHING (FT.)*	EASTING (FT.)*	STATION**	OFFSET**	APPROX. EXISTING GROUND SURFACE EL. (FT.)	ESTIMATED BEDROCK SURFACE EL. (FT.)***	MINIMUM BEDROCK SOCKET LENGTH BELOW BOTTOM OF LAGGING (FT.)****	MAXIMUM DEPTH TO BEDROCK FROM TOP OF PILE (FT.)****	ESTIMATED BOTTOM OF SHAFT/PILE EL. (FT.)*****	TOP OF PILE EL. (FT.)	APPROX. PILE LENGTH (FT.)*****	TOP OF STRUCTURAL CONCRETE EL. IN SHAFT (FT.)	TOP OF LAGGING EL. (FT.)*****	BOTTOM OF LAGGING EL. (FT.)*****	DRILLED SHAFT/ PILE NO.
101	30	HP14X73	282,063.93	135,450.86	0+00.00	0.0	630.5	625.5	7.5	13	618.9	633.4	14.5	626.4	633.4	626.4	101
102	30	HP14X73	282,071.24	135,454.11	0+08.00	0.0	632.6	627.6	7.5	13	618.9	635.4	16.5	626.4	635.4	626.4	102
103	30	HP14X73	282,078.59	135,457.26	0+16.00	0.0	634.6	629.6	7.5	13	618.9	636.4	17.5	626.4	636.4	626.4	103
104	30	HP14X73	282,085.99	135,460.31	0+24.00	0.0	636.2	631.2	7.5	13	618.9	638.4	19.5	626.4	638.4	627.4	104
105	30	HP14X73	282,093.43	135,463.26	0+32.00	0.0	637.4	632.4	7.5	13	619.9	639.4	19.5	627.4	639.4	628.4	105
106	30	HP14X73	282,100.91	135,466.10	0+40.00	0.0	638.4	633.4	7.5	13	620.9	640.4	19.5	628.4	640.4	628.4	106
107	30	HP14X73	282,108.42	135,468.84	0+48.00	0.0	639.2	634.2	7.5	13	620.9	641.4	20.5	628.4	641.4	628.4	107
108	30	HP14X73	282,115.98	135,471.47	0+56.00	0.0	639.9	634.9	7.5	13	620.9	641.4	20.5	628.4	641.4	629.4	108
109	30	HP14X73	282,123.57	135,474.00	0+64.00	0.0	640.4	635.4	7.5	13	621.9	641.4	19.5	629.4	641.4	629.4	109
110	30	HP14X73	282,131.19	135,476.42	0+72.00	0.0	640.9	635.9	7.5	13	621.9	642.4	20.5	629.4	642.4	629.4	110
111	30	HP14X73	282,138.65	135,478.74	0+80.00	0.0	641.4	636.4	7.5	13	621.9	642.4	20.5	629.4	642.4	629.4	111
112	30	HP14X73	282,146.54	135,480.95	0+88.00	0.0	641.6	636.6	7.5	13	621.9	642.4	20.5	629.4	642.4	630.4	112
113	30	HP14X73	282,154.26	135,483.05	0+96.00	0.0	641.8	636.8	7.5	13	622.9	642.4	19.5	630.4	642.4	630.4	113
114	30	HP14X73	282,162.01	135,485.04	1+04.00	0.0	641.8	636.8	7.5	13	622.9	642.4	19.5	630.4	642.4	631.4	114
115	30	HP14X73	282,169.78	135,486.93	1+12.00	0.0	641.5	636.5	7.5	13	623.9	642.4	18.5	631.4	642.4	631.4	115
116	30	HP14X73	282,177.58	135,488.70	1+20.00	0.0	641.1	636.1	7.5	13	623.9	642.4	18.5	631.4	641.4	632.4	116
117	30	HP14X73	282,185.39	135,490.44	1+28.00	0.0	640.4	635.4	7.5	13	624.9	641.4	16.5	632.4	641.4	632.4	117
118	30	HP14X73	282,193.20	135,492.18	1+36.00	0.0	639.2	634.2	7.5	13	624.9	641.4	16.5	632.4	640.4	633.4	118
119	30	HP14X73	282,201.00	135,493.93	1+44.00	0.0	637.9	632.9	7.5	13	625.9	640.4	14.5	633.4	-	-	119

* THE DRILLED SHAFT COORDINATES ARE PROVIDED AS NORTHINGS AND EASTINGS BASED ON THE OHIO SOUTH STATE PLANE COORDINATE SYSTEM (NAD 83).
 ** THE SPL RETAINING WALL STATIONING BASELINE IS ALONG THE FACING OF THE WALL.
 *** IF THE ACTUAL BEDROCK SURFACE ELEVATION ENCOUNTERED IN THE FIELD IS LOWER THAN THE TABULATED DESIGN VALUE SUCH THAT THE MAXIMUM DEPTH TO BEDROCK FROM THE TOP OF THE PILE IS EXCEEDED, THE DESIGN ENGINEER SHALL BE NOTIFIED TO REVIEW AND EVALUATE WHETHER THE SHAFT/PILE CONSTRUCTION CAN BE COMPLETED AS DETAILED WITH THE SCHEDULED MINIMUM BEDROCK SOCKET AND SOLDIER PILE.
 **** THE BOTTOM OF THE SHAFT/PILE ELEVATIONS ARE APPROXIMATIONS BASED ON THE SUBSURFACE INFORMATION OBTAINED FROM THE BORINGS. THE MINIMUM BEDROCK SOCKET LENGTHS SHALL DICTATE THE ACTUAL BOTTOM OF SHAFT ELEVATIONS AND TOTAL SHAFT LENGTHS. HOWEVER, THE BOTTOMS OF PILES SHALL EXTEND DOWN TO AT LEAST THE MINIMUM BOTTOM OF SHAFT/PILE ELEVATION THAT IS TABULATED.
 ***** THE TOP AND BOTTOM OF LAGGING ELEVATIONS ARE FOR THE SECTIONS TO THE RIGHT OF THE DESIGNATED SHAFT/PILE NO.

REV.	DATE	BY	DESCRIPTION
1	2/6/2026	JDH	EXISTING GROUND SURFACE REVISIONS

SOLDIER PILE & LAGGING WALL SCHEDULE - SPL1
 WAR-SR48-6.65
CHOICE ONE ENGINEERING CORP
 SR-48 AND BUTTERWORTH ROAD
 LOVELAND, OHIO



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SHEET 7	
DESIGNED BY:	JDH
DRAWN BY:	RLC
APPVD. BY:	DWW
SCALE:	AS NOTED
DATE:	9/5/2025
JOB NO.	N1255021
SHEET NO.:	7 OF 12

Date: 2/3/2026 3:11 PM File Path: C:\USERS\RCLAPP\DRIVE - TERRACON CONSULTANTS\INC\PROJECTS\N1255021\WAR-SR48-6.65 - GENERAL\07 WORKING FILES\03 MODELS\CAD\N1255021 SPL WALL PLANS.DWG

DRILLED SHAFT/ PILE NO.	DRILLED SHAFT DIAMETER (IN.)	PILE SIZE	NORTHING (FT.)	EASTING (FT.)	STATION**	OFFSET**	APPROX. EXISTING GROUND SURFACE EL. (FT.)	ESTIMATED BEDROCK SURFACE EL. (FT.)***	MINIMUM BEDROCK SOCKET LENGTH BELOW BOTTOM OF LAGGING (FT.)****	MAXIMUM DEPTH TO BEDROCK FROM TOP OF PILE (FT.)****	ESTIMATED BOTTOM OF SHAFT/PILE EL. (FT.)*****	TOP OF PILE EL. (FT.)	APPROX. PILE LENGTH (FT.)*****	TOP OF STRUCTURAL CONCRETE EL. IN SHAFT (FT.)	TOP OF LAGGING EL. (FT.)*****	BOTTOM OF LAGGING EL. (FT.)*****	DRILLED SHAFT/ PILE NO.
201	30	HP14X73	282,489.26	135,639.90	0+07.79	0.0	658.0	654.0	7.5	13	644.4	658.9	14.5	651.9	658.9	651.9	201
202	30	HP14X73	282,492.50	135,642.25	0+03.79	0.0	658.5	654.5	9.5	13	642.4	658.9	16.5	651.9	658.9	651.9	202
203	30	HP14X73	282,498.97	135,646.95	0+04.21	0.0	659.4	655.4	9.5	13	642.4	660.9	18.5	651.9	660.9	651.9	203
204	30	HP14X73	282,505.45	135,651.64	0+12.21	0.0	660.0	656.0	8.5	13	643.4	661.9	18.5	651.9	661.9	652.9	204
205	30	HP14X73	282,511.92	135,656.34	0+20.21	0.0	660.6	656.6	9.5	13	643.4	661.9	18.5	652.9	661.9	652.9	205
206	30	HP14X73	282,518.40	135,661.04	0+28.21	0.0	661.3	657.3	8.5	13	644.4	663.9	19.5	652.9	663.9	652.9	206
207	30	HP14X73	282,524.87	135,665.75	0+36.21	0.0	662.1	658.1	8.5	13	644.4	663.9	19.5	652.9	663.9	653.9	207
208	30	HP14X73	282,531.30	135,670.52	0+44.21	0.0	663.0	659.0	8.5	13	645.4	664.9	19.5	653.9	664.9	653.9	208
209	30	HP14X73	282,537.68	135,675.35	0+52.21	0.0	663.8	659.8	8.5	13	645.4	664.9	19.5	653.9	664.9	654.9	209
210	30	HP14X73	282,544.02	135,680.24	0+60.21	0.0	664.5	660.5	9.5	13	645.4	665.9	20.5	654.9	665.9	654.9	210
211	30	HP14X73	282,550.31	135,685.19	0+68.21	0.0	665.0	661.0	8.5	13	646.4	665.9	19.5	654.9	665.9	654.9	211
212	30	HP14X73	282,556.56	135,690.20	0+76.21	0.0	665.4	661.4	8.5	13	646.4	666.9	20.5	654.9	666.9	655.9	212
213	30	HP14X73	282,562.75	135,695.27	0+84.21	0.0	665.9	661.9	8.5	13	647.4	666.9	19.5	655.9	666.9	655.9	213
214	30	HP14X73	282,568.90	135,700.40	0+92.21	0.0	666.4	662.4	8.5	13	647.4	667.9	20.5	655.9	667.9	656.9	214
215	30	HP14X73	282,575.00	135,705.58	1+00.21	0.0	666.9	662.9	8.5	13	647.4	667.9	20.5	655.9	667.9	656.9	215
216	30	HP14X73	282,581.05	135,710.83	1+08.21	0.0	667.4	663.4	8.5	13	648.4	668.9	20.5	656.9	668.9	656.9	216
217	30	HP14X73	282,587.05	135,716.13	1+16.21	0.0	667.8	663.8	8.5	13	648.4	668.9	20.5	656.9	668.9	656.9	217
218	30	HP14X73	282,593.00	135,721.48	1+24.21	0.0	668.2	664.2	7.5	13	649.4	669.9	20.5	656.9	669.9	657.9	218
219	30	HP14X73	282,598.89	135,726.90	1+32.21	0.0	668.6	664.6	7.5	13	650.4	669.9	19.5	657.9	669.9	657.9	219
220	30	HP14X73	282,604.74	135,732.36	1+40.21	0.0	669.0	665.0	7.5	13	650.4	670.9	20.5	657.9	670.9	657.9	220
221	30	HP14X73	282,610.53	135,737.89	1+48.21	0.0	669.4	665.4	7.5	13	650.4	670.9	20.5	657.9	670.9	658.9	221
222	30	HP14X73	282,616.27	135,743.47	1+56.21	0.0	669.8	665.8	7.5	13	651.4	670.9	19.5	658.9	670.9	658.9	222
223	30	HP14X73	282,621.96	135,749.10	1+64.21	0.0	670.0	666.0	7.5	13	651.4	670.9	19.5	658.9	670.9	658.9	223
224	30	HP14X73	282,627.60	135,754.79	1+72.21	0.0	670.2	666.2	7.5	13	651.4	671.9	20.5	658.9	671.9	658.9	224
225	30	HP14X73	282,633.18	135,760.53	1+80.21	0.0	670.4	666.4	7.5	13	651.4	671.9	20.5	658.9	671.9	659.9	225
226	30	HP14X73	282,638.70	135,766.32	1+88.21	0.0	670.6	666.6	7.5	13	652.4	671.9	19.5	659.9	671.9	659.9	226
227	30	HP14X73	282,644.17	135,772.16	1+96.21	0.0	670.9	666.9	7.5	13	652.4	671.9	19.5	659.9	671.9	659.9	227
228	30	HP14X73	282,649.59	135,778.06	2+04.21	0.0	671.1	667.1	7.5	13	652.4	672.9	20.5	659.9	672.9	660.9	228
229	30	HP14X73	282,654.95	135,784.01	2+12.21	0.0	671.4	667.4	7.5	13	653.4	672.9	19.5	660.9	672.9	660.9	229
230	30	HP14X73	282,660.25	135,790.01	2+20.21	0.0	671.7	667.7	7.5	13	653.4	672.9	19.5	660.9	672.9	660.9	230
231	30	HP14X73	282,665.49	135,796.05	2+28.21	0.0	672.0	668.0	7.5	13	653.4	672.9	19.5	660.9	672.9	660.9	231
232	30	HP14X73	282,670.68	135,802.15	2+36.21	0.0	672.3	668.3	7.5	13	653.4	673.9	20.5	660.9	673.9	660.9	232
233	30	HP14X73	282,675.81	135,808.30	2+44.21	0.0	672.6	668.6	7.5	13	653.4	673.9	20.5	660.9	673.9	661.9	233
234	30	HP14X73	282,680.88	135,814.49	2+52.21	0.0	672.8	668.8	7.5	13	654.4	673.9	19.5	661.9	673.9	661.9	234
235	30	HP14X117	282,685.89	135,820.74	2+60.21	0.0	672.9	668.9	13.0	13	648.9	673.9	25.0	661.9	673.9	661.9	235
236	30	HP14X117	282,690.84	135,827.02	2+68.21	0.0	673.0	669.0	13.0	13	648.9	673.9	25.0	661.9	673.9	661.9	236
237	30	HP14X117	282,695.74	135,833.36	2+76.21	0.0	673.2	669.2	12.0	13	649.9	674.9	25.0	661.9	674.9	661.9	237

* THE DRILLED SHAFT COORDINATES ARE PROVIDED AS NORTHINGS AND EASTINGS BASED ON THE OHIO SOUTH STATE PLANE COORDINATE SYSTEM (NAD 83).
 ** THE SPL RETAINING WALL STATIONING BASELINE IS ALONG THE FACING OF THE WALL.
 *** IF THE ACTUAL BEDROCK SURFACE ELEVATION ENCOUNTERED IN THE FIELD IS LOWER THAN THE TABULATED DESIGN VALUE SUCH THAT THE MAXIMUM DEPTH TO BEDROCK FROM THE TOP OF THE PILE IS EXCEEDED, THE DESIGN ENGINEER SHALL BE NOTIFIED TO REVIEW AND EVALUATE WHETHER THE SHAFT/PILE CONSTRUCTION CAN BE COMPLETED AS DETAILED WITH THE SCHEDULED MINIMUM BEDROCK SOCKET AND SOLDIER PILE.
 **** THE BOTTOM OF THE SHAFT/PILE ELEVATIONS ARE APPROXIMATIONS BASED ON THE SUBSURFACE INFORMATION OBTAINED FROM THE BORINGS. THE MINIMUM BEDROCK SOCKET LENGTHS SHALL DICTATE THE ACTUAL BOTTOM OF SHAFT ELEVATIONS AND TOTAL SHAFT LENGTHS. HOWEVER, THE BOTTOMS OF PILES SHALL EXTEND DOWN TO AT LEAST THE MINIMUM BOTTOM OF SHAFT/PILE ELEVATION THAT IS TABULATED.
 ***** THE TOP AND BOTTOM OF LAGGING ELEVATIONS ARE FOR THE SECTIONS TO THE RIGHT OF THE DESIGNATED SHAFT/PILE NO.

DRILLED SHAFT/ PILE NO.	DRILLED SHAFT DIAMETER (IN.)	PILE SIZE	NORTHING (FT.)	EASTING (FT.)	STATION**	OFFSET**	APPROX. EXISTING GROUND SURFACE EL. (FT.)	ESTIMATED BEDROCK SURFACE EL. (FT.)***	MINIMUM BEDROCK SOCKET LENGTH BELOW BOTTOM OF LAGGING (FT.)****	MAXIMUM DEPTH TO BEDROCK FROM TOP OF PILE (FT.)****	ESTIMATED BOTTOM OF SHAFT/PILE EL. (FT.)*****	TOP OF PILE EL. (FT.)	APPROX. PILE LENGTH (FT.)*****	TOP OF STRUCTURAL CONCRETE EL. IN SHAFT (FT.)	TOP OF LAGGING EL. (FT.)*****	BOTTOM OF LAGGING EL. (FT.)*****	DRILLED SHAFT/ PILE NO.
238	30	HP14X117	282,700.57	135,839.74	2+84.21	0.0	673.4	669.4	12.0	13	649.9	674.9	25.0	661.9	674.9	662.9	238
239	30	HP14X73	282,705.34	135,846.17	2+92.21	0.0	673.7	669.7	7.5	13	655.4	674.9	19.5	662.9	674.9	662.9	239
240	30	HP14X73	282,710.05	135,852.64	3+00.21	0.0	674.0	670.0	7.5	13	655.4	674.9	19.5	662.9	674.9	662.9	240
241	30	HP14X73	282,714.70	135,859.16	3+08.21	0.0	674.2	670.2	7.5	13	655.4	675.9	20.5	662.9	675.9	662.9	241
242	30	HP14X73	282,719.29	135,865.72	3+16.21	0.0	674.5	670.5	7.5	13	655.4	675.9	20.5	662.9	675.9	662.9	242
243	30	HP14X73	282,723.81	135,872.33	3+24.21	0.0	674.6	670.6	7.5	13	655.4	675.9	20.5	662.9	675.9	663.9	243
244	30	HP14X73	282,728.27	135,878.98	3+32.21	0.0	674.8	670.8	7.5	13	656.4	675.9	19.5	663.9	675.9	663.9	244
245	30	HP14X73	282,732.67	135,885.66	3+40.21	0.0	674.9	670.9	7.5	13	656.4	675.9	19.5	663.9	675.9	663.9	245
246	30	HP14X73	282,737.00	135,892.39	3+48.21	0.0	675.0	671.0	7.5	13	656.4	675.9	19.5	663.9	675.9	663.9	246
247	30	HP14X73	282,741.27	135,899.17	3+56.21	0.0	675.1	671.1	7.5	13	656.4	675.9	19.5	663.9	675.9	663.9	247
248	30	HP14X73	282,745.48	135,905.98	3+64.21	0.0	675.2	671.2	7.5	13	656.4	675.9	19.5	663.9	675.9	663.9	248
249	30	HP14X73	282,749.62	135,912.83	3+72.21	0.0	675.3	671.3	7.5	13	656.4	675.9	19.5	663.9	675.9	664.9	249
250	30	HP14X73	282,753.70	135,919.72	3+80.21	0.0	675.4	671.4	7.5	13	657.4	675.9	18.5	664.9	675.9	664.9	250
251	30	HP14X73	282,757.71	135,926.65	3+88.21	0.0	675.4	671.4	7.5	13	657.4	675.9	18.5	664.9	675.9	664.9	251
252	30	HP14X73	282,761.65	135,933.61	3+96.21	0.0	675.4	671.4	7.5	13	657.4	675.9	18.5	664.9	675.9	664.9	252
253	30	HP14X73	282,765.53	135,940.62	4+04.21	0.0	675.4	671.4	7.5	13	657.4	675.9	18.5	664.9	675.9	664.9	253
254	30	HP14X73	282,769.34	135,947.66	4+12.21	0.0	675.3	671.3	7.5	13	657.4	675.9	18.5	664.9	675.9	664.9	254
255	30	HP14X73	282,773.09	135,954.73	4+20.21	0.0	675.2	671.2	7.5	13	657.4	675.9	18.5	664.9	675.9	664.9	255
256	30	HP14X73	282,776.76	135,961.84	4+28.21	0.0	675.1	671.1	7.5	13	657.4	675.9	18.5	664.9	675.9	665.9	256
257	30	HP14X73	282,780.37	135,968.99	4+36.21	0.0	675.0	671.0	7.5	13	658.4	675.9	17.5	665.9	675.9	665.9	257
258	30	HP14X73	282,783.91	135,976.17	4+44.21	0.0	674.9	670.9	9.5	13	656.4	675.9	19.5	665.9	675.9	665.9	258
259	30	HP14X73	282,787.39	135,983.38	4+52.21	0.0	674.8	670.8	9.5	13	656.4	675.9	19.5	665.9	675.9	665.9	259
260	30	HP14X73	282,790.79	135,990.62	4+60.21	0.0	674.8	670.8	9.5	13	656.4	675.9	19.5	665.9	675.9	665.9	260
261	30	HP14X73	282,794.13	135,997.90	4+68.21	0.0	674.7	670.7	9.5	13	656.4	675.9	19.5	665.9	675.9	665.9	261
262	30	HP14X73	282,797.40	136,005.21	4+												

GENERAL NOTES

IN THE FOLLOWING NOTES, THE ENGINEER SHALL BE HELD TO MEAN THE DESIGN ENGINEER FROM TERRACON. THE OWNER SHALL BE HELD TO MEAN THE CITY OF LOVELAND. THE PROJECT PLANS SHALL BE HELD TO MEAN THESE PLANS PREPARED BY TERRACON. ODOT CMS SHALL BE HELD TO MEAN THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIALS SPECIFICATIONS, CURRENT EDITION.

- THE CONTRACTOR SHALL REFER TO THE PROJECT PLANS AND THESE GENERAL NOTES, AND SHALL SATISFY THE REQUIREMENTS OF BOTH. ANY DISCREPANCIES BETWEEN THE PROJECT PLANS AND THESE GENERAL NOTES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN WRITING. THE RESOLUTION OF ANY DISCREPANCY SHALL BE AT THE SOLE DISCRETION OF THE ENGINEER.
- THE CONTRACTOR SHALL OBTAIN ANY NECESSARY PERMITS THAT ARE REQUIRED FOR THIS WORK PRIOR TO PERFORMANCE OF THIS WORK.
- THE CONTRACTOR SHALL COORDINATE A STAGING AREA, ACCEPTABLE TO THE ENGINEER AND OWNER, FOR STOCKPILING MATERIALS, INCLUDING DRILLING AND EXCAVATION SPOILS.
- THE CONTRACTOR SHALL DEVELOP A MAINTENANCE OF TRAFFIC CONTROL (MOT) PLAN AND ESTABLISH THE WORK ZONE WITHIN THE LIMITS OF THE ROADWAY IN ACCORDANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD). THESE SHALL BE COORDINATED WITH THE OWNER PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL COORDINATE WITH THE OWNER, OH 811, AND ALL UTILITY COMPANIES TO CHECK FOR UNDERGROUND UTILITIES WITHIN THE WORK AREA BEFORE THE SHAFTS ARE DRILLED. THE ENGINEER SHALL BE NOTIFIED OF ANY EXISTING UTILITIES, STRUCTURES, OR OTHER INFRASTRUCTURE WITHIN THE PROPOSED DRILLED SHAFT LOCATIONS THAT DEVIATE FROM THE LOCATIONS SHOWN ON THE PROJECT PLANS OR ARE NOT SHOWN ON THE PROJECT PLANS BEFORE WORK BEGINS. SHOULD THE PRESENCE OF UNDERGROUND FEATURES NEGATIVELY IMPACT THE DESIGN OF THE SOLDIER PILE AND LAGGING WALL, A REASONABLE ALLOTMENT OF TIME SHALL BE PROVIDED IN THE CONSTRUCTION SCHEDULE TO MAKE DESIGN REVISIONS WHERE APPROPRIATE.
- OVERHEAD UTILITIES SHALL BE PROTECTED AND/OR RELOCATED AS NECESSARY FOR CONSTRUCTION.
- THE CONTRACTOR SHALL COORDINATE THE PROJECT PLANS AND THE FIELD CONDITIONS. THE ENGINEER SHALL APPROVE OF THE ADJUSTMENTS AND ADJUST THE REINFORCEMENT DESIGN AND/OR BEDROCK SOCKET LENGTH, IF NECESSARY.
- STAKING OF THE DRILLED SHAFTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- ALL DRILLED SHAFT EXCAVATIONS SHALL BE REVIEWED BY THE ENGINEER, OR A REPRESENTATIVE THEREOF, DURING DRILLING AND PRIOR TO PLACING SOLDIER PILES AND CONCRETE. FINAL INTERPRETATION OF THE SOLDIER PILE AND LAGGING WALL PLANS AND THE GENERAL NOTES SHALL BE AT THE DISCRETION OF THE ENGINEER. MATERIAL TESTING AND SPECIAL INSPECTIONS OF THE SOLDIER PILE AND LAGGING WALL SHALL BE CONTRACTED SEPARATED BY THE OWNER; HOWEVER, THE CONTRACTOR SHALL BE FAMILIAR WITH THE REQUIRED SPECIAL INSPECTIONS AND THEIR FREQUENCY. SHALL SCHEDULE THE ENGINEER, OR A REPRESENTATIVE THEREOF, AND SHALL PROVIDE SAFE ACCESS FOR THE REQUIRED TESTING AND REVIEWS.
- THE DRILLED SHAFTS SHALL BE DRILLED WITH DRY DRILLING METHODS AND SHALL BE DRILLED SO THAT THEY DO NOT COLLAPSE DURING DRILLING, PLACEMENT OF SOLDIER PILES, AND/OR CONCRETING. CASING OF THE DRILLED SHAFTS SHALL BE PROVIDED, AS NECESSARY, TO CONTROL CAVING SOILS AND/OR EXCESSIVE GROUNDWATER SEEPAGE.
- THE DRILLED SHAFTS SHALL BE EXCAVATED PLUMB, AND THE BOTTOMS SHALL BE RELATIVELY LEVEL AND REASONABLY FREE OF LOOSE AND DISTURBED MATERIAL PRIOR TO PLACING CONCRETE. THE OUT-OF-PLUMB TOLERANCE SHALL BE 1.5 PERCENT OF THE SHAFT LENGTH. THE DRILLED SHAFT EXCAVATIONS WILL EXTEND INTO THE INTERBEDDED SHALE AND LIMESTONE BEDROCK, AND THE CONTRACTOR SHALL BE PREPARED TO DRILL THROUGH THE BEDROCK WITH THE PROPER EQUIPMENT.
- THE SOLDIER PILE WALL WILL DERIVE ITS LATERAL RESISTANCE FROM BEDROCK SOCKETS. DISTURBANCE OF BEDROCK WITHIN 8 FEET HORIZONTALLY OF THE DRILLED SHAFTS SHALL BE PROHIBITED UNLESS REVIEWED BY THE ENGINEER, INCLUDING FOR NEW STORM SEWERS AND REMOVAL OF OLD STORM SEWERS. CONSEQUENTLY, THE CONTRACTOR SHALL EMPLOY CARE WHEN COMPLETING EXCAVATIONS, INCLUDING TRENCH EXCAVATIONS FOR UTILITIES TO AVOID OVERBREAK OF THE BEDROCK THAT MAY COMPROMISE THE BEDROCK SOCKETS FOR THE SOLDIERS. EXCAVATIONS WITHIN THE NOTED LIMITS SHALL BE BACKFILLED WITH FLOWABLE FILL THAT HAS A MINIMUM COMPRESSIVE STRENGTH OF 100 PSI, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- THE DRILLED SHAFTS SHALL BE REINFORCED AND FILLED WITH CONCRETE THE SAME DAY THAT THE ENTIRE BEDROCK SOCKET (TOP TO BOTTOM) IS DRILLED. IF CONCRETE CANNOT BE PLACED THE SAME DAY AS THE BEDROCK SOCKET IS DRILLED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER FOR DIRECTION, WHICH MAY INVOLVE EXTENDING THE DRILLED SHAFT DEEPER AND/OR REDRILLING THE SHAFT WITH A LARGER DIAMETER AUGER, ETC. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ADDITIONAL COSTS ASSOCIATED WITH NOT FILLING THE DRILLED SHAFT WITH CONCRETE THE SAME DAY THAT THE BEDROCK SOCKET IS DRILLED.
- DRILLING AND EXCAVATION SPOILS SHALL BE WASTED OFF SITE OR MAY BE USED FOR FILL (IF ACCEPTABLE MATERIAL) WHERE INDICATED ON THE CIVIL PLANS.
- CONCRETE:
 - CONCRETE FOR THE DRILLED SHAFTS SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH (F_c) OF 3,000 PSI. SHALL HAVE A MAXIMUM AGGREGATE SIZE OF 1.5 INCHES, AND SHALL BE PLACED AT A SLUMP OF 5 TO 7 INCHES.
 - CONCRETE SHALL NOT BE PLACED THROUGH MORE THAN 3 INCHES OF STANDING WATER THAT MAY ACCUMULATE AT THE BOTTOM OF ANY DRILLED SHAFT EXCAVATION. CONCRETE PLACEMENT FOR ANY GIVEN DRILLED SHAFT SHALL BE CONTINUOUS. IF CASING IS REQUIRED DURING THE DRILLED SHAFT EXCAVATIONS, THE TEMPORARY CASING SHALL BE EXTRACTED AT SUCH A RATE AND IN SUCH A MANNER THAT THE OVERBURDEN SOILS DO NOT CAVE INTO THE SHAFT DURING CONCRETE PLACEMENT AND THAT POCKETS OF AIR AND SOIL ARE NOT INTRODUCED INTO THE CONCRETE. THE TOP 6 FEET OF CONCRETE IN THE DRILLED SHAFTS SHALL BE VIBRATED WITH A CONCRETE VIBRATOR.

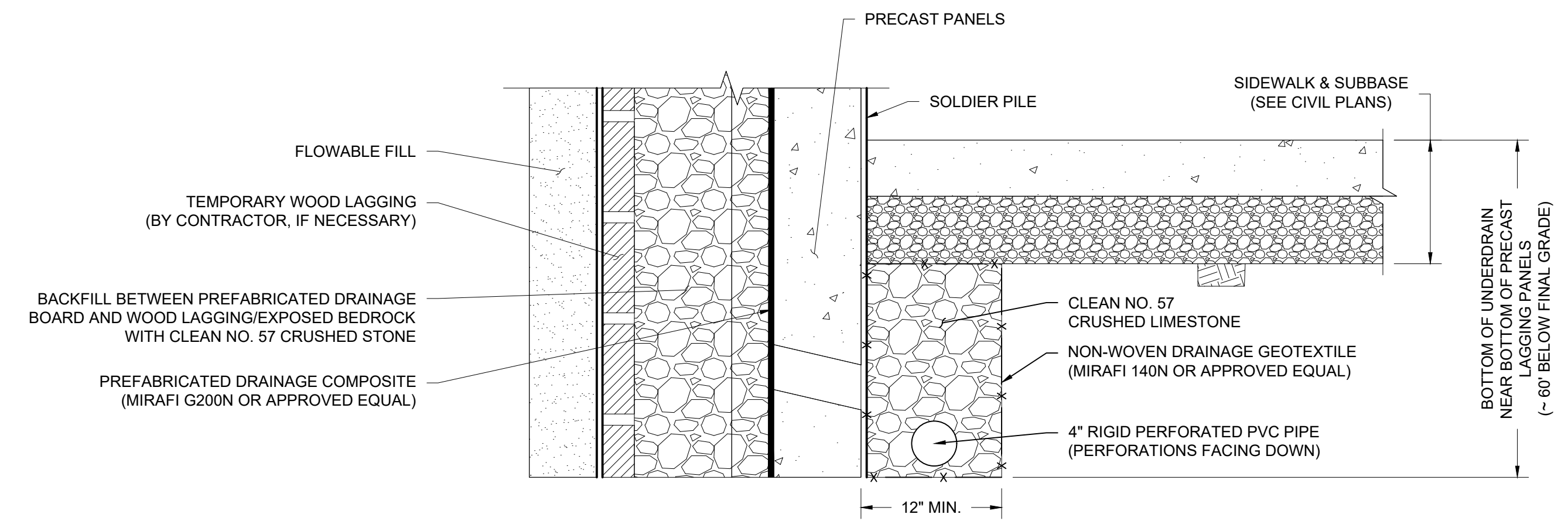
- CONCRETE FOR THE PRECAST LAGGING PANELS SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH (F_c) OF 4,000 PSI, A MAXIMUM AGGREGATE SIZE OF 3/4 INCHES, AND SHALL CONTAIN 4 TO 6 PERCENT ENTRAINED AIR.
 - THE CONTRACTOR SHALL FOLLOW THE GUIDELINES WITHIN ACI 301, "STANDARD SPECIFICATIONS FOR STRUCTURAL CONCRETE," AND, WHEN NECESSARY, SHALL IMPLEMENT THE PRACTICES OUTLINED WITHIN ACI 305, "HOT WEATHER CONCRETING," OR ACI 306, "COLD WEATHER CONCRETING."
- FLOWABLE FILL, WHERE USED, SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH BETWEEN 20 AND 100 PSI, UNLESS NOTED OTHERWISE IN THESE PROJECT PLANS.
 - THE REINFORCING STEEL BARS FOR THE PRECAST LAGGING PANELS SHALL CONFORM TO ASTM A615, GRADE 60 AND SHALL HAVE A MINIMUM YIELD STRENGTH (F_y) OF 60,000 PSI (60 KSI), UNLESS NOTED OTHERWISE. ALL REINFORCING STEEL CONSTRUCTION AND PLACEMENT SHALL BE IN CONFORMANCE WITH ACI 318-19. ALL REINFORCING STEEL SHALL BE RELATIVELY CLEAN OF RUST, SOIL, AND OTHER DEBRIS IMMEDIATELY PRIOR TO THE PLACEMENT OF CONCRETE. UNLESS NOTED OTHERWISE, ALL REINFORCING STEEL SHALL HAVE MINIMUM CLEAR COVER OF 3 INCHES WHERE THE CONCRETE IS CAST AGAINST SOIL OR BEDROCK AND 2 INCHES WHERE THE CONCRETE IS CAST AGAINST FORMS.
 - LAP SPLICES MAY BE USED FOR THE NO. 10 AND SMALLER BARS PER ACI 318-19.
 - THE SOLDIER PILES SHALL BE ROLLED STEEL HP-SHAPED MEMBERS AS SHOWN ON THE DRAWINGS. THE HP-SHAPES SHALL CONFORM TO ASTM A572, GRADE 50 ($F_y = 50$ KSI). PROVIDE PILES FREE OF CAMBER OR TWIST THAT WOULD AFFECT THEIR STRUCTURAL CAPACITY. SPLICING OF THE SOLDIER PILES SHALL NOT BE PERMITTED WITHOUT REVIEW AND WRITTEN PERMISSION BY THE ENGINEER.
 - EXPOSED PORTIONS OF THE SOLDIER PILES SHALL BE PAINTED USING COLOR FS 30117 (EARTH RED OR EARTH RED BROWN), OR AN ALTERNATE APPROVED BY THE OWNER. THE PAINT SHALL CONFORM TO SECTION 708 OF THE ODOT CMS, AND SHALL BE APPLIED IN ACCORDANCE WITH SECTION 514 OF THE ODOT CMS.
 - PRECAST PANELS SHALL BE PROVIDED WITH AN ARCHITECTURAL FINISH SIMILAR TO CUSTOMROCK FORMLINER PATTERN #2003 PLANO ASHLAR STONE, OR EQUAL TO BE APPROVED BY THE OWNER.
 - PRECAST PANELS SHALL BE LAID OUT SO THAT THE HORIZONTAL JOINTS BETWEEN PANELS ARE ALIGNED BETWEEN CONSECUTIVE SOLDIER PILES. THE CONTRACTOR SHALL PREPARE SHOP DRAWINGS FOR REVIEW AND APPROVAL BY THE ENGINEER AND OWNER THAT ILLUSTRATE THE PANEL SIZES AND LAYOUT OF HORIZONTAL JOINTS.
 - PRECAST PANELS SHALL BE PAINTED USING A COLOR OF PAINT THAT MATCHES THE COLOR USED FOR THE SOLDIER PILES. THE PAINT TYPE AND APPLICATION SHALL CONFORM TO MANUFACTURER RECOMMENDATIONS, INCLUDING THE PRECAST PANEL FABRICATOR AND PAINT MANUFACTURER. AN ANTI-GRAFFITI COATING SHALL BE APPLIED TO THE PRECAST PANELS AFTER THEY ARE PAINTED AND SHALL CONSIST OF MONOCHEM PERMASHIELD® PREMIUM, OR EQUAL TO BE APPROVED BY THE OWNER AND DESIGN ENGINEER.
 - TEMPORARY WOOD LAGGING SHALL CONSIST OF 3" WIDE BY 8" HIGH, ROUGH CUT, NO. 2 OR BETTER SOUTHERN YELLOW PINE OR MIXED HARDWOOD LAGGING, UNLESS NOTED OTHERWISE. TEMPORARY LAGGING SHALL BE INSTALLED INCREMENTALLY AS THE EXCAVATION PROCEEDS IN ACCORDANCE WITH OSHA CRITERIA.
 - EXCAVATION AND DISTURBANCE OF THE BEDROCK BELOW THE PRECAST CONCRETE LAGGING AND HORIZONTAL BEDROCK EXCAVATION BETWEEN THE SOLDIER PILES SHALL BE MINIMIZED.
 - PREFABRICATED DRAINAGE COMPOSITE (MIRAFI G200N OR APPROVED EQUAL) SHALL BE PROVIDED BETWEEN THE PRECAST CONCRETE LAGGING AND TEMPORARY WOOD LAGGING/BEDROCK EXCAVATION/BACKFILL.
 - PLATE STEEL, STEEL ANGLES, THREADED RODS, AND PLATE WASHERS FOR CLAMPING WOOD LAGGING TO SOLDIER PILES SHALL CONFORM TO ASTM A36 ($F_y = 36$ KSI).
 - ALL WELDING MATERIALS AND PROCEDURES SHALL CONFORM TO AWS D1.1 "STRUCTURAL WELDING CODE". ALL WELDING ELECTRODES SHALL HAVE A MINIMUM TENSILE STRENGTH OF 70 KSI. ALL FIELD WELDS SHALL BE VISUALLY REVIEWED BY A CERTIFIED WELDING INSPECTOR, OR A QUALIFIED REPRESENTATIVE THEREOF, EXCLUSIVE OF TACK WELDING.
 - ANY VOIDS BEHIND THE LAGGING SHALL BE FILLED WITH CLEAN NO. 57 STONE.
 - CLAY BACKFILL SHALL CONSIST OF CLEAN LEAN CLAY SOILS, CLASSIFYING AS CL ACCORDING TO THE UNIFIED SOIL CLASSIFICATION SYSTEM (USCS) WITH A MAXIMUM LIQUID LIMIT OF 45% AND A MAXIMUM PLASTICITY INDEX OF 24%. CLAY BACKFILL SHALL BE COMPACTED TO AT LEAST 98 PERCENT OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D698). BEDROCK SHALL BE EXCLUDED FROM CLAY BACKFILL.
 - WALK-BEHIND COMPACTORS SHALL BE USED FOR COMPACTION WITHIN THE LIMITING HORIZONTAL DISTANCE BEHIND THE BACK OF THE WALL, WHERE THE LIMITING HORIZONTAL DISTANCE IS DEFINED AS THE GREATER OF 5 FEET AND 50 PERCENT OF THE EXPOSED WALL HEIGHT. HEAVY EQUIPMENT SHALL ALSO NOT BE PERMITTED OR OPERATED WITHIN THIS LIMITING HORIZONTAL DISTANCE.
 - NON-WOVEN DRAINAGE GEOTEXTILE SHALL CONSIST OF MIRAFI 140N OR AN APPROVED EQUIVALENT.
 - DISTURBED AREAS SHALL BE SEEDED AND COVERED WITH A TEMPORARY EROSION CONTROL MAT, CONFORMING TO ODOT CMS ITEM 712.11, UNLESS OTHERWISE NOTED ON THE CIVIL PLANS.
 - REFER TO THE CIVIL PLANS FOR RESTORATION OF ANY PAVEMENT DAMAGED BY THE SOLDIER PILE AND LAGGING WALL CONSTRUCTION.
 - REFER TO THE BORING LOGS ON SHEET 10 OF THESE PROJECT PLANS FOR SUBSURFACE INFORMATION, AS WELL AS THE HISTORIC BORING INFORMATION ON SHEETS 11 AND 12.

remove

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36. TERRACON HAS DESIGNED THE SOLDIER PILE AND LAGGING WALL TO SUPPORT THE LATERAL EARTH PRESSURES GENERATED FROM THE PROPOSED GRADES SHOWN ON THE PROJECT PLANS PLUS UP TO A 3 FOOT-TALL TOE BULGE THAT MAY DEVELOP ABOVE THE TOP OF THE WALL. THE OWNER IS RESPONSIBLE FOR REGULAR SITE VISITS TO EVALUATE IF MATERIAL IS BEGINNING TO BUILD UP ABOVE THE WALL. ONCE MATERIAL BEGINS TO BUILD ABOVE THE WALL, THE OWNER SHALL BE RESPONSIBLE FOR SCHEDULING MAINTENANCE TO REMOVE THE ACCUMULATED MATERIAL BACK TO THE PROPOSED DESIGN GRADES ABOVE THE WALL.

- TERRACON ASSUMES NO RESPONSIBILITY FOR, BUT NOT LIMITED TO, THE FOLLOWING ITEMS:
 - LOCATION AND PROTECTION OF EXISTING UNDERGROUND OR ABOVE GROUND UTILITIES.
 - COORDINATION AND VERIFICATION OF DIMENSIONS AND DETAILS WITH EXISTING ON-SITE CONDITIONS.
 - CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF PERSONS AND PROPERTY DURING CONSTRUCTION.
 - TRAFFIC CONTROL
 - SLOPE MOVEMENT UPSLOPE AND BEYOND THE LIMITS OF THE PROPOSED RETAINING WALL.



NOTES

- TRENCHED UNDERDRAIN SHALL BE EXCAVATED AFTER THE NEW COMPACTED AND TESTED FILL HAS BEEN PLACED TO THE TOP OF SUBGRADE ON THE LOW SIDE OF THE WALL, AND SHALL EXPOSE THE WEEPHOLES IN THE BOTTOM PRECAST CONCRETE LAGGING PANELS OF THE SOLDIER PILE AND LAGGING WALL.
- WEEPHOLES SHALL BE CLEANED AND CLEARED OF ANY DEBRIS PRIOR TO INSTALLING UNDERDRAIN MATERIALS.
- THE BOTTOM OF THE EXCAVATION FOR THE TRENCHED UNDERDRAIN SHALL BE TRIMMED SMOOTH AND SLOPED TO DRAIN AT A MINIMUM OF 1 PERCENT.
- THE CLEAN NO. 57 CRUSHED LIMESTONE SHALL CONTAIN LESS THAN 5 PERCENT FINES AND BE COMPACTED TO 75 PERCENT RELATIVE DENSITY, AS DETERMINED BY ASTM D4253 AND D4254.
- THE CLEAN NO. 57 CRUSHED LIMESTONE SHALL BE WRAPPED WITH AN APPROVED NON-WOVEN GEOTEXTILE (E.G., MIRAFI 140N), AND SHALL BE LAPPED A MINIMUM OF 6 INCHES.
- THE WRAPPED NO. 57 STONE SHALL BE IN CONTACT WITH EACH WEEPHOLE.
- THE 4-INCH DIAMETER RIGID PERFORATED PVC PIPE SHALL BE SLOPED TO DRAIN AT A MINIMUM OF 1 PERCENT AND SHALL BE CONNECTED TO SOLID 6-INCH DIAMETER RIGID PVC OUTLET PIPE (OUTLET PIPE) THAT IS SLOPED TO DRAIN AT A MINIMUM OF 1 PERCENT TOWARD PROPOSED/EXISTING STORM SEWER SYSTEM. THE OUTLET PIPES SHALL BE LOCATED AT LEAST 1 FOOT ABOVE THE OUTLET INVERT OF THE STORM SEWER STRUCTURES THAT THEY CONNECT TO.
- THE PERFORATED AND SOLID PVC PIPES SHALL BE SDR 35 OR BETTER.

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SOLDIER PILE WALL UNDERDRAIN DETAIL
NOT TO SCALE

REV.	DATE	BY	DESCRIPTION
1	2/6/2026	JDH	EXISTING GROUND SURFACE REVISIONS & PRECAST PANEL/SOLDIER PILE FINISHING REVISIONS

GENERAL NOTES & SOLDIER PILE WALL UNDERDRAIN DETAIL

WAR-SR48-6.65

CHOICE ONE ENGINEERING CORP

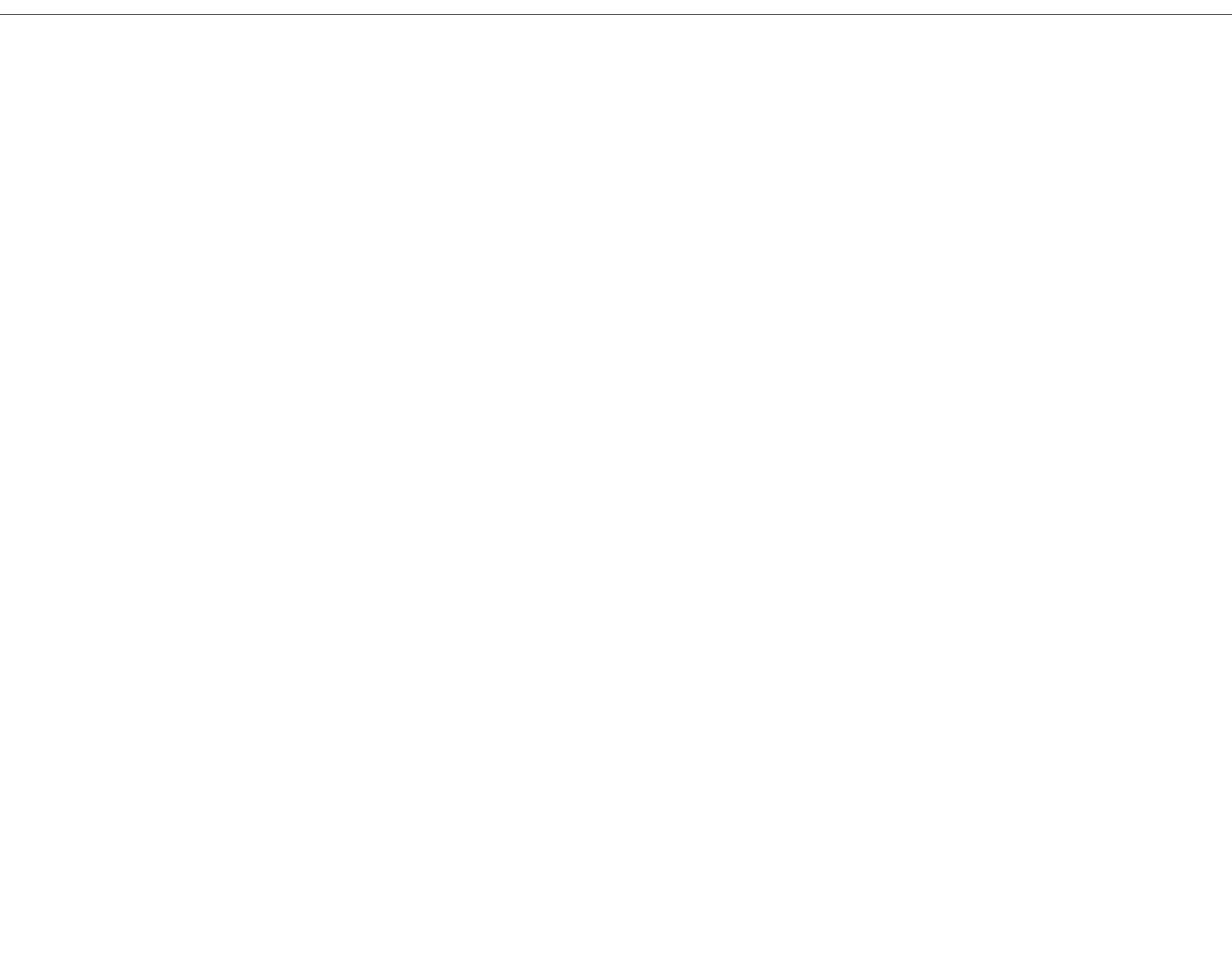
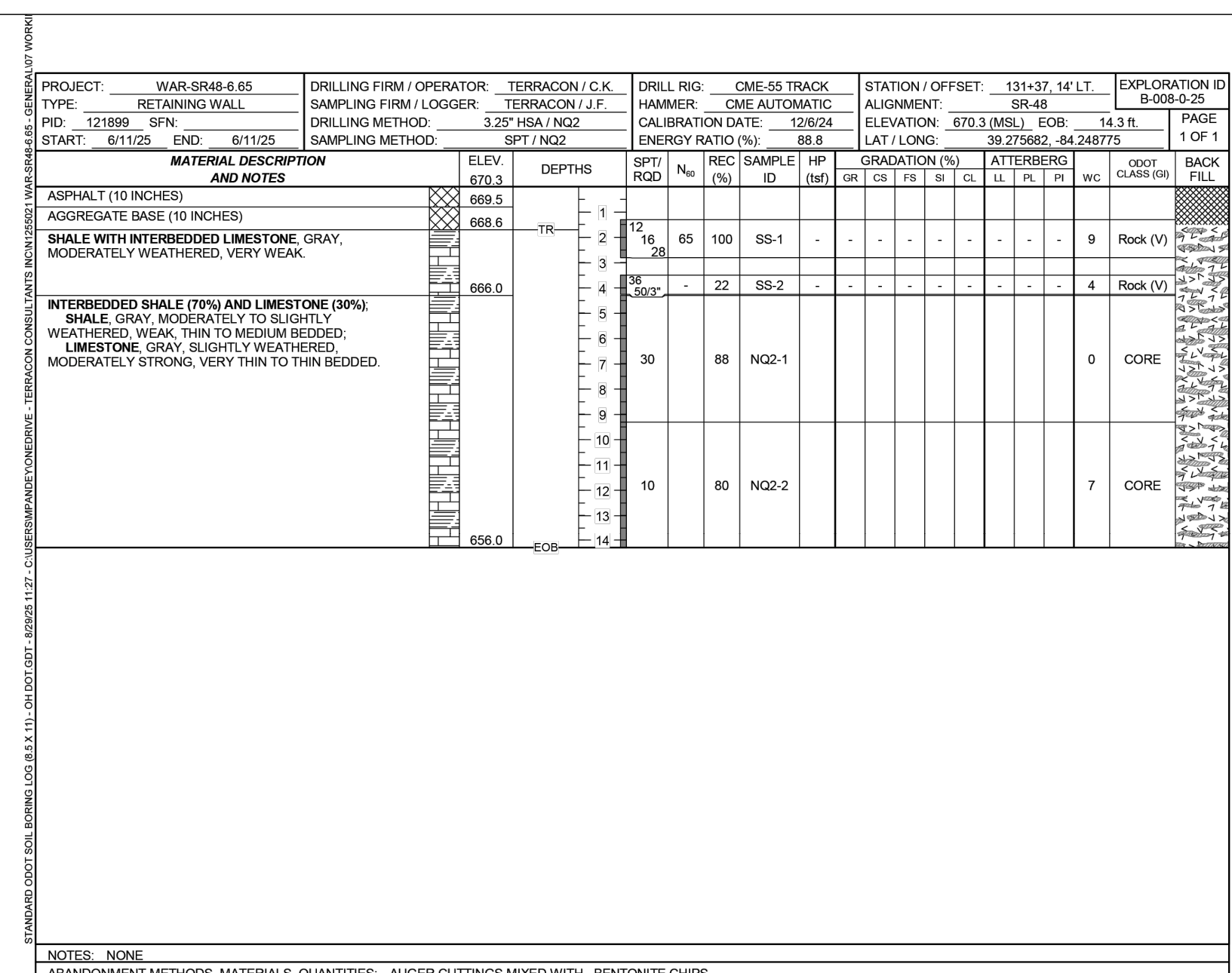
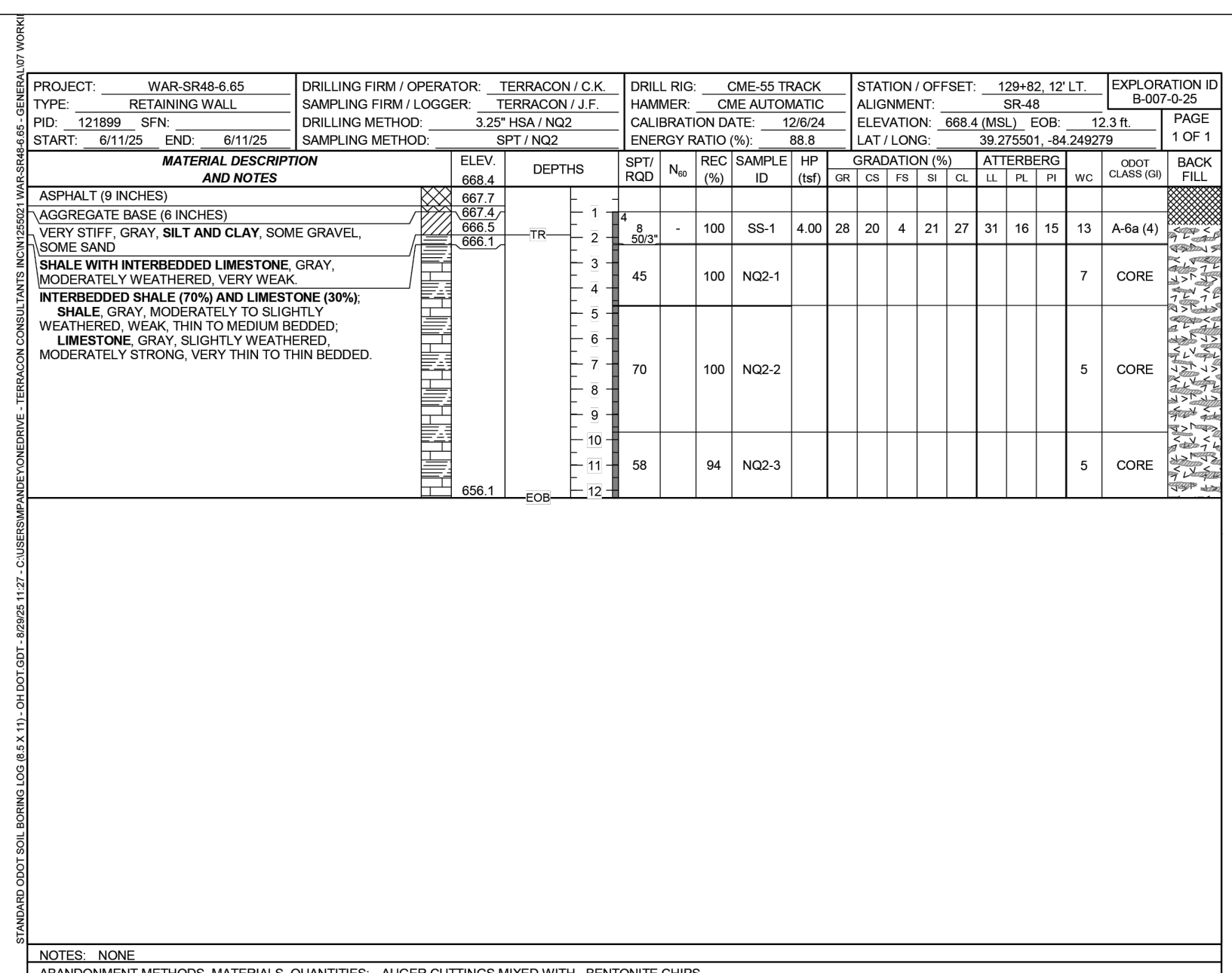
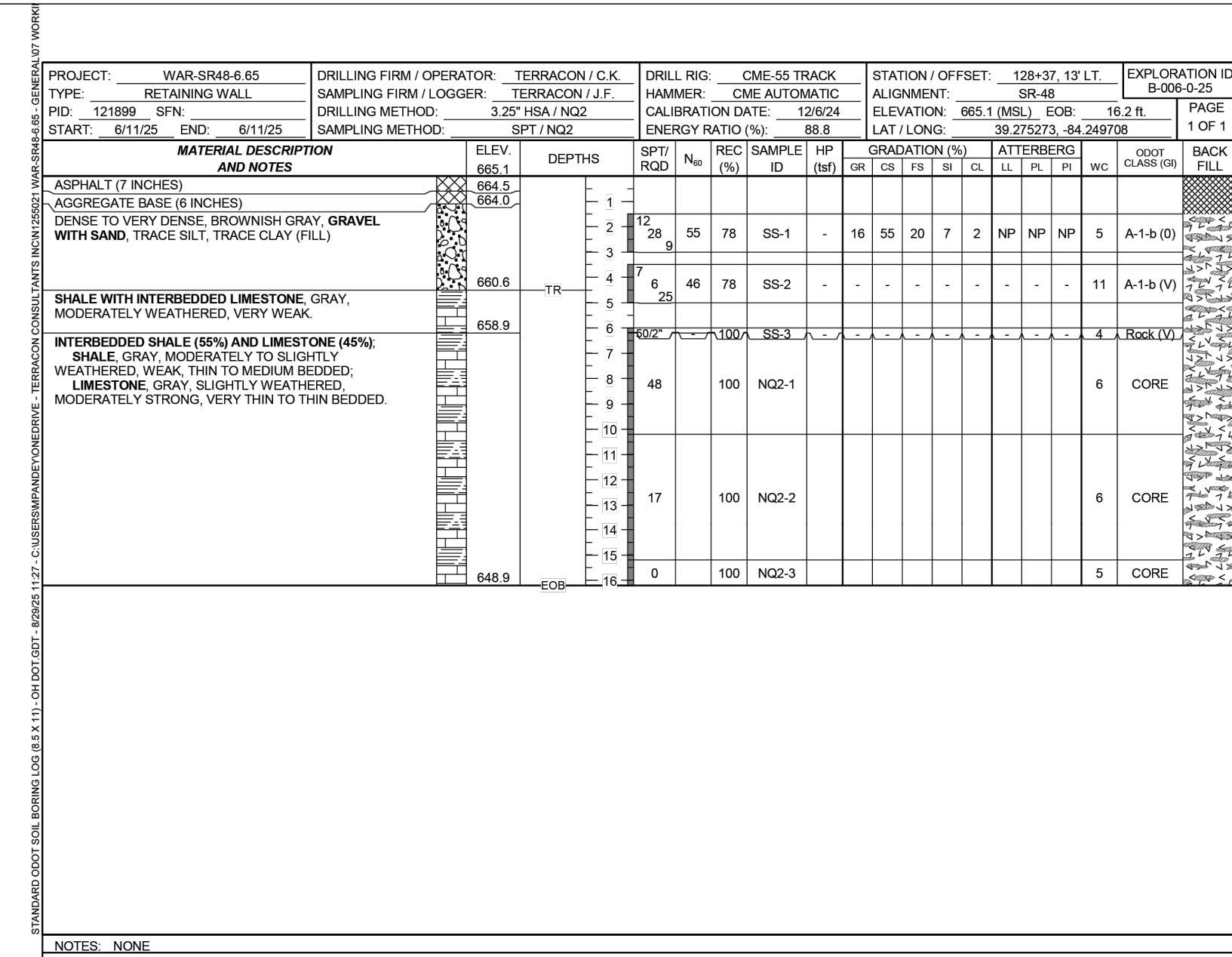
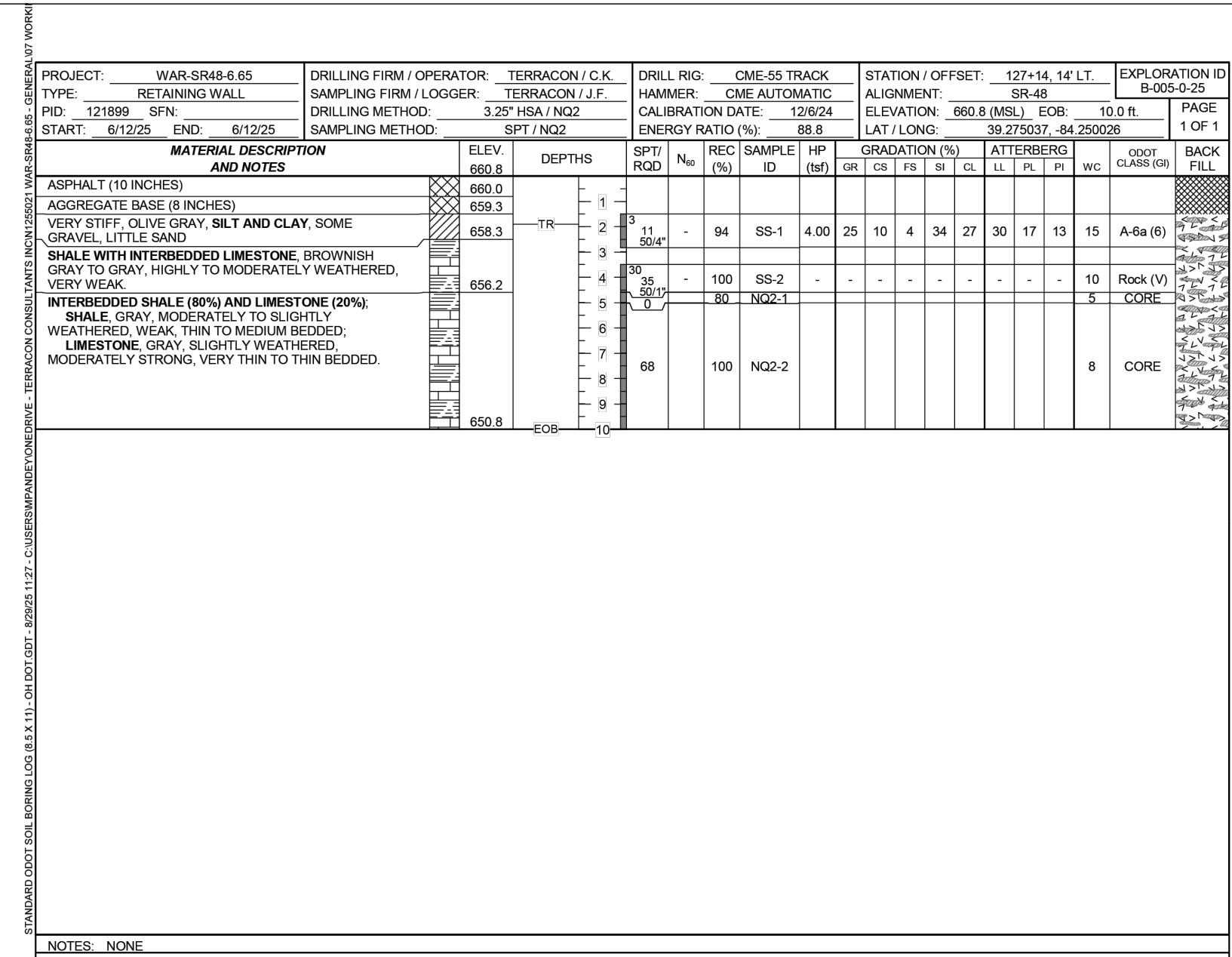
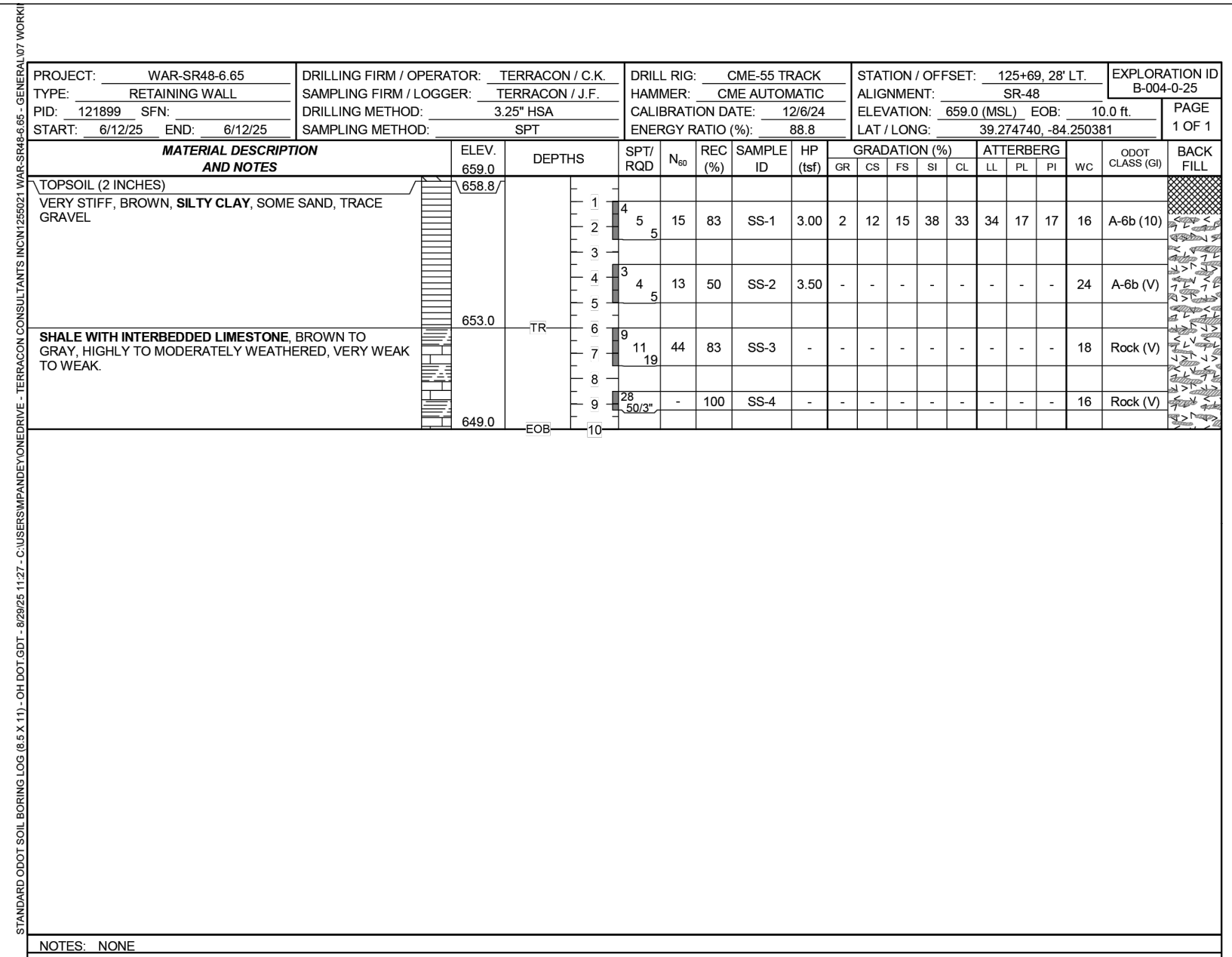
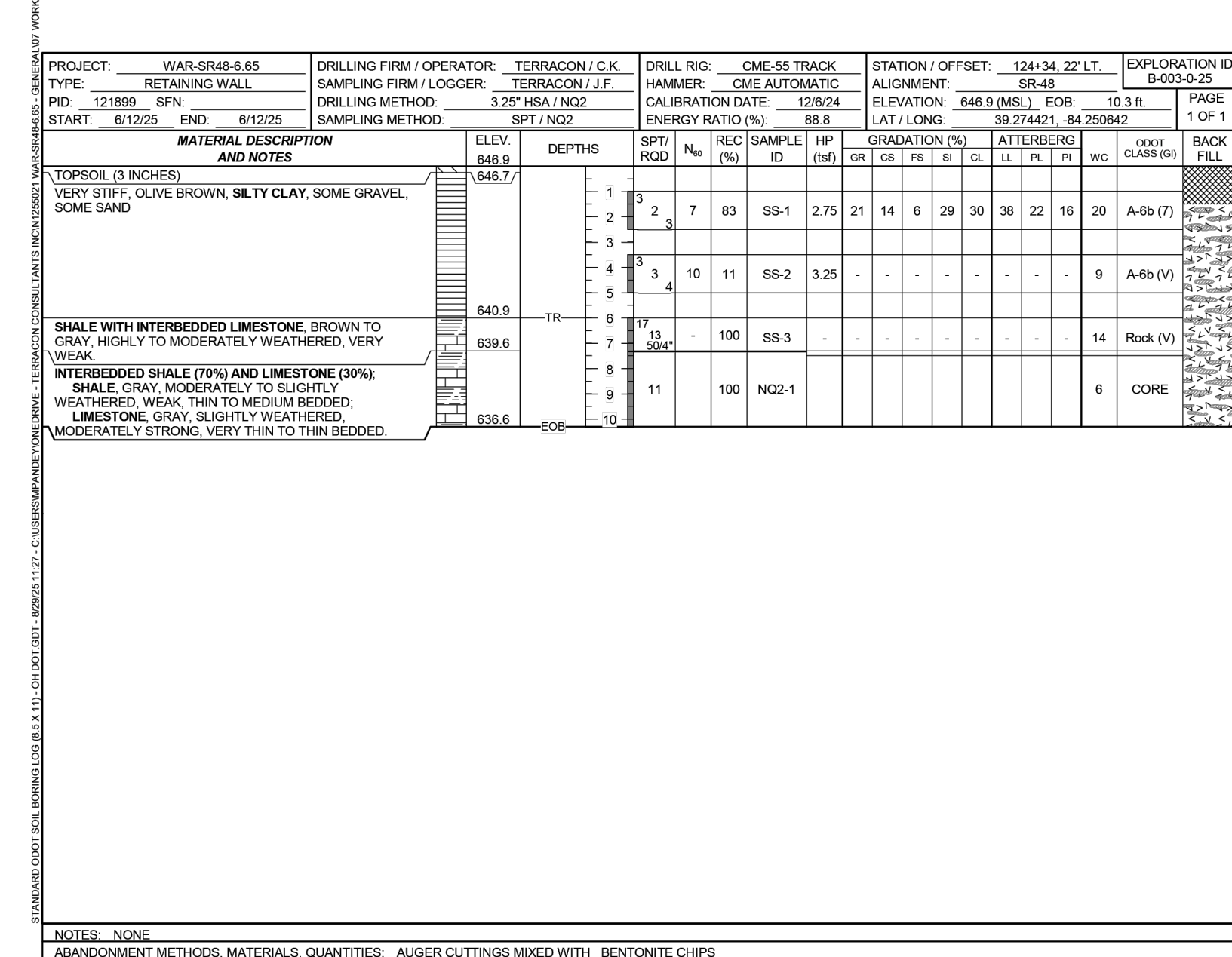
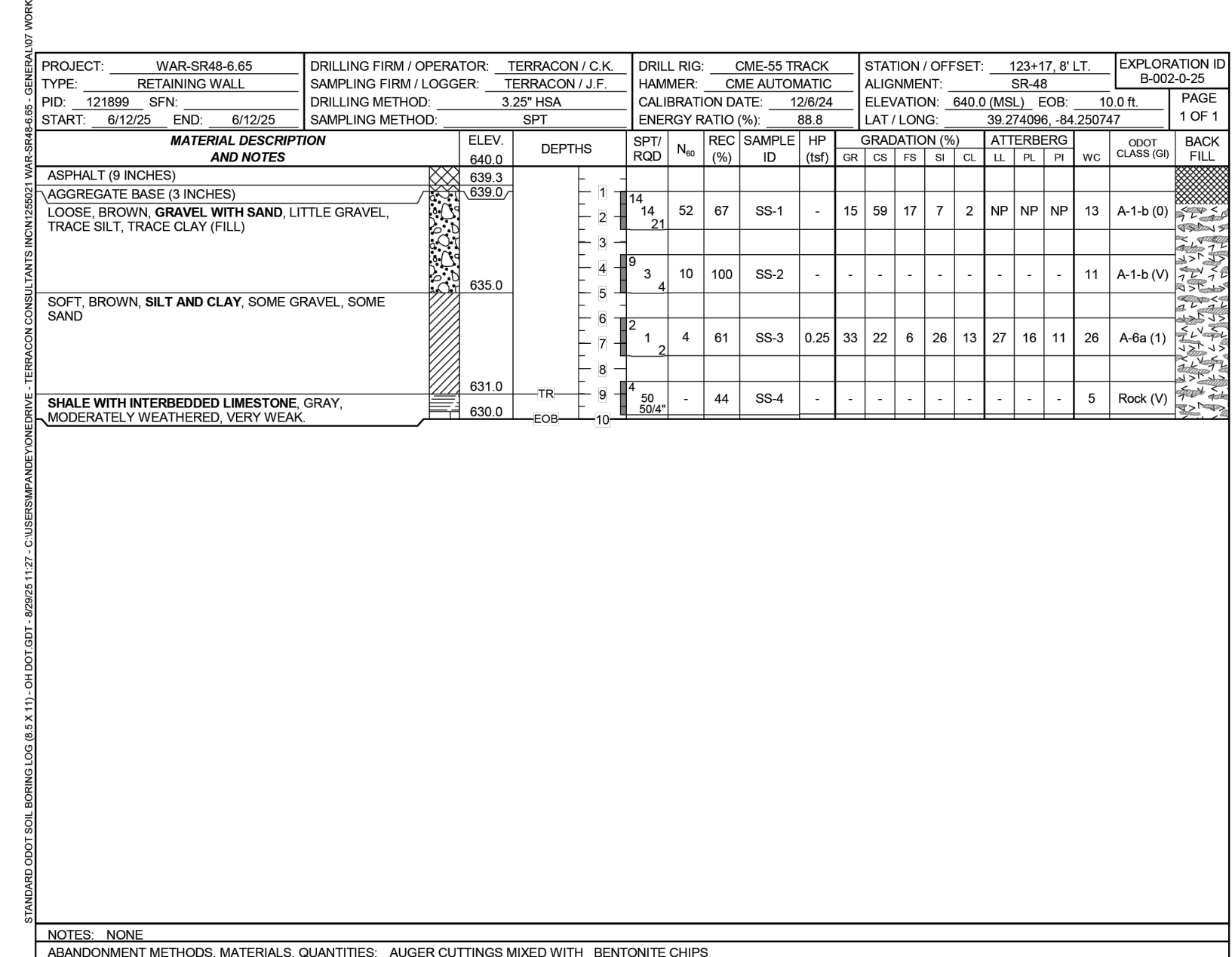
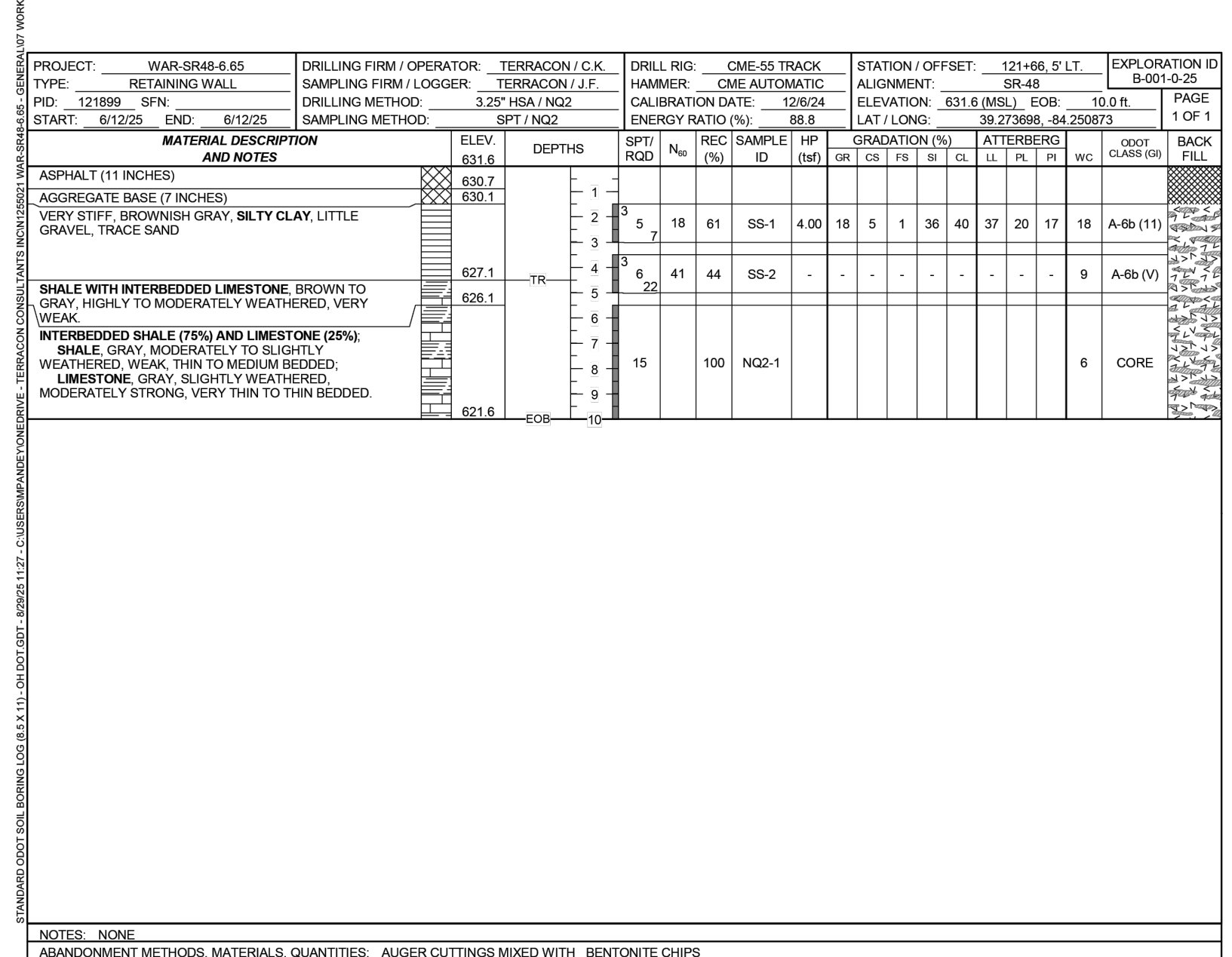
SR-48 AND BUTTERWORTH ROAD
LOVELAND, OHIO

611 LUNKEN PARK DRIVE
PH. (513) 321-5816

CINCINNATI, OHIO 45226
FAX. (513) 321-4540

SHEET 9

DESIGNED BY:	JDH
DRAWN BY:	RLC
APPVD. BY:	DWW
SCALE:	N.T.S.
DATE:	9/5/2025
JOB NO.	N1255021
SHEET NO.:	9 OF 12



REV.	DATE	BY	DESCRIPTION

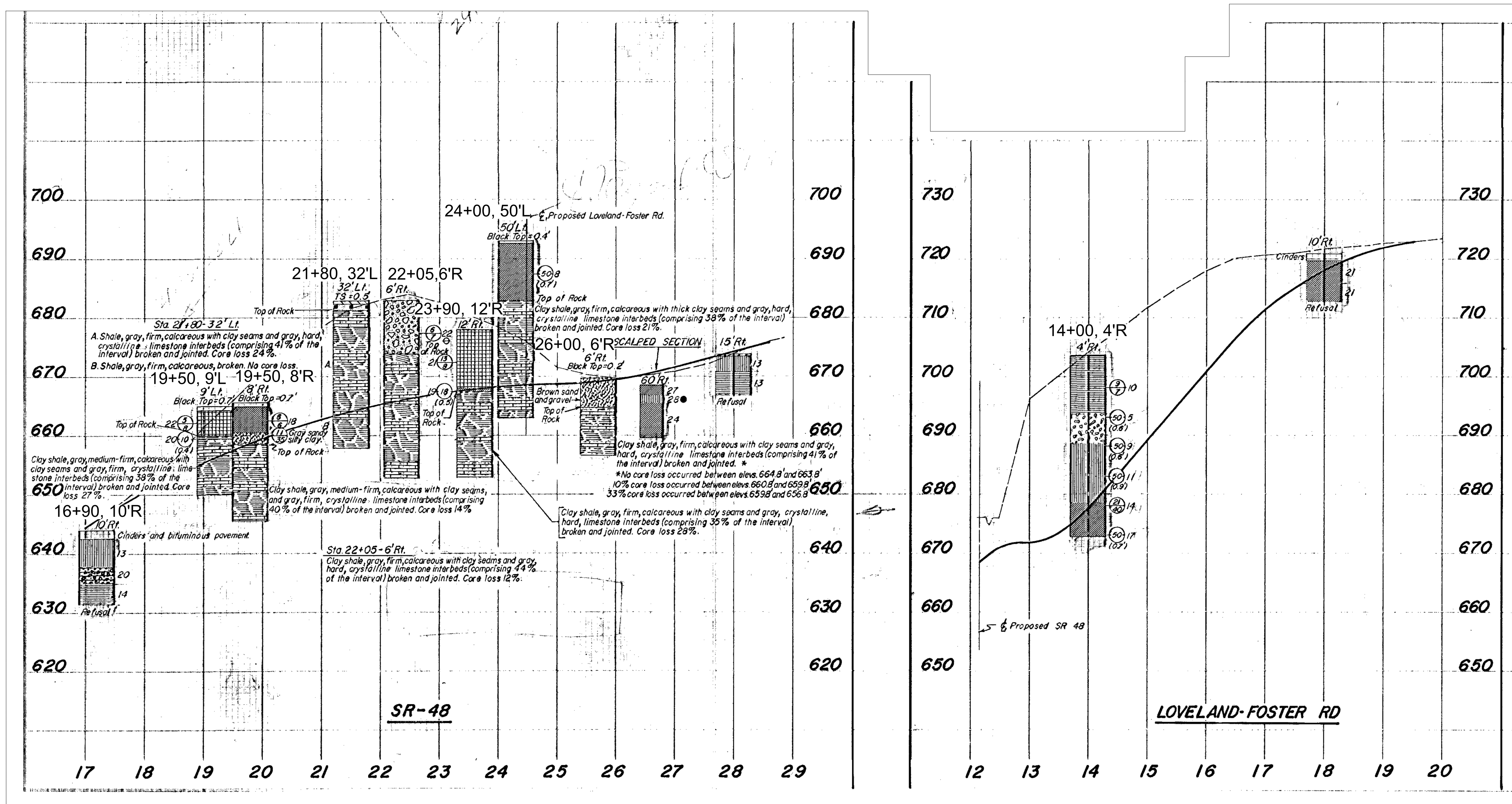
2025 BORING LOGS
WAR-SR48-6.65
CHOICE ONE ENGINEERING CORP
SR-48 AND BUTTERWORTH ROAD
LOVELAND, OHIO

Terracon
Explore with us

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CINCINNATI, OHIO 45226
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Date: 2/3/2026 3:11 PM File Path: C:\USERS\RLC\APP\DRIVE - TERRACON CONSULTANTS INC\PROJECTS\N1255021 - WAR-SR48-6.65 - GENERAL\07 WORKING FILES\03 MODELS\CAD\N1255021 SPL WALL PLANS.DWG



REV.	DATE	BY	DESCRIPTION

HISTORIC BORING INFORMATION
 WAR-SR48-6.65
CHOICE ONE ENGINEERING CORP
 SR-48 AND BUTTERWORTH ROAD
 LOVELAND, OHIO

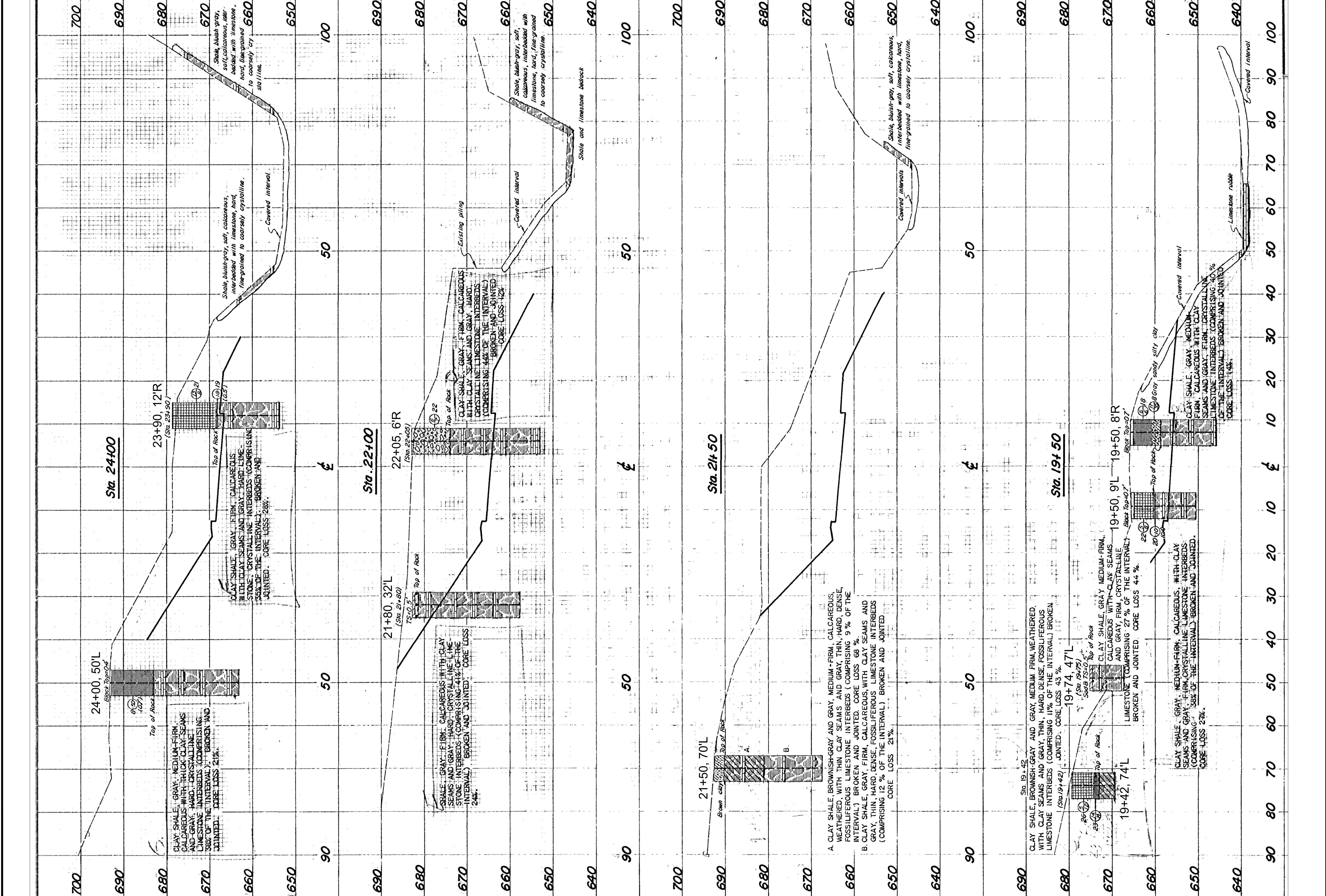
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SHEET 11

DESIGNED BY:	JDH
DRAWN BY:	RLC
APPVD. BY:	DWW
SCALE:	N.T.S.
DATE:	9/5/2025
JOB NO.	N1255021
SHEET NO.:	11 OF 12



A. CLAY SHALE, BROWNISH-GRAY AND GRAY, MEDIUM-FIRM, CALCAREOUS, WEATHERED, WITH THIN CLAY SEAMS AND GRAY, THIN, HARD, DENSE, FOSSILIFEROUS LIMESTONE INTERBEDS (COMPRISING 9% OF THE INTERVAL) BROKEN AND JOINTED. CORE LOSS 9%.

B. CLAY SHALE, GRAY, FIRM, CALCAREOUS, WITH CLAY SEAMS AND GRAY, THIN, HARD, DENSE, FOSSILIFEROUS LIMESTONE INTERBEDS (COMPRISING 12% OF THE INTERVAL) BROKEN AND JOINTED. CORE LOSS 21%.

<p>TERRACON Explore with us</p> <p>611 LUNKEN PARK DRIVE CINCINNATI, OHIO 45226 PH. (513) 321-5816 FAX. (513) 321-4540</p>		<p>HISTORIC BORING INFORMATION</p> <p>WAR-SR48-6.65</p> <p>CHOICE ONE ENGINEERING CORP</p> <p>SR-48 AND BUTTERWORTH ROAD LOVELAND, OHIO</p>	<p>DESIGNED BY: JDH</p> <p>DRAWN BY: RLC</p> <p>APP'D BY: DWW</p> <p>SCALE: N.T.S.</p> <p>DATE: 9/5/2025</p> <p>JOB NO: N1255021</p> <p>SHEET NO.: 12 OF 12</p>
REV.	DATE	BY	DESCRIPTION