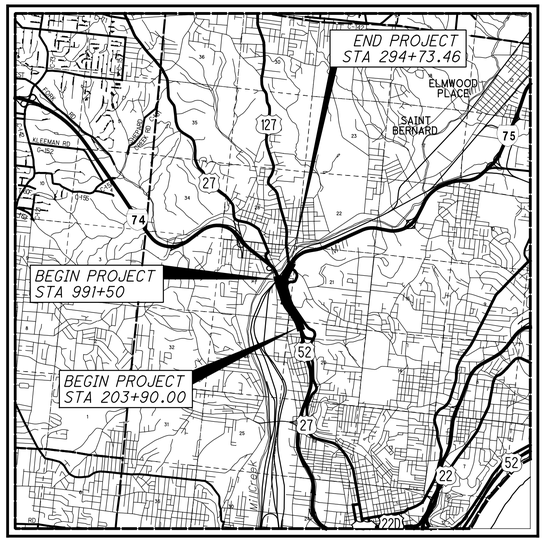

LOCATION MAP

LATITUDE: 39° 09′ 03″ LONGITUDE: -84° 32′ 24″

SCALE IN MILES

0 1 2 3 4

N

PORTION TO BE IMPROVED
INTERSTATE HIGHWAY
FEDERAL ROUTES
STATE ROUTES
COUNTY & TOWNSHIP ROADS
OTHER ROADS

STATE OF OHIO

DEPARTMENT OF TRANSPORTATION

HAM-75-3.84 RETAINING WALLS (BU-9)

HAMILTON COUNTY
CITY OF CINCINNATI

ENGINEERS SEAL: FOR ENTIRE PLAN EXCEPT STRUCTURES OVER 20′	ENGINEERS SEAL: FOR STRUCTURES OVER 20′
STATE OF OHIO · BRUCE FRASER E-59019 · REGISTERED PROFESSIONAL ENGINEER	STATE OF OHIO · SAGE J FLANNAGAN E-71958 · REGISTERED PROFESSIONAL ENGINEER
SIGNED: Bruce Fraser	SIGNED:
DATE: 2/19/2019	DATE: 2/19/2019

DESIGN DESIGNATION

	IR 75 SOUTH OF MITCHELL	IR 75 SOUTH OF IR 74	IR 74 WEST OF BEEKMAN	IR 74 EAST OF BEEKMAN	DIRECTIONAL ROADWAY IR 75 NB TO IR 74 WB	DIRECTIONAL ROADWAY IR 74 EB TO IR 75 SB
CURRENT ADT (2010)	149,400	152,100	75,000	88,300	25,300	25,300
DESIGN YEAR ADT (2030)	174,300	179,200	89,300	102,000	29,800	29,800
DESIGN HOURLY VOLUME (2030)	14,640	15,050	8,040	9,180	4,100	4,380
DIRECTIONAL DISTRIBUTION	0.54	0.70	0.72	0.73	1.00	1.00
TRUCKS (24 HOUR B&C)	0.16	0.13	0.15	0.13	0.03	0.08
DESIGN SPEED	60 MPH	60 MPH	60 MPH	60 MPH	50 MPH	50 MPH
LEGAL SPEED	55 MPH	55 MPH	55 MPH	55 MPH	50 MPH	50 MPH
DESIGN FUNCTIONAL CLASSIFICATION:	03 URBAN INTERSTATE	03 URBAN INTERSTATE	03 URBAN INTERSTATE	03 URBAN INTERSTATE	03 URBAN INTERSTATE	03 URBAN INTERSTATE
NHS PROJECT	YES					

DESIGN EXCEPTIONS

DESIGN FEATURE	APPROVAL DATES	SHEET NUMBERS
STOP. SIGHT DIST. - SB IR 75 (CURVE 6)	4/6/18	SEE BU-14
SHOULDER WIDTH - IR 74-1892R BRIDGE	4/10/18	
SHOULDER WIDTH - RAMP P 1908S BRIDGE	12/12/18	
CURVE RADIUS - RAMP P 1908S BRIDGE	12/12/18	
STOP. SIGHT DIST. - RAMP P 1908S BRIDGE	12/12/18	
S.E. RATE - IR 74 EB CURVE 13, 1908R BRIDGE	4/26/18	

INDEX OF SHEETS:

PROJECT DESCRIPTION

THIS IS PHASE 5A OF THE HAMILTON 75 CORRIDOR PROJECTS (MCE). THE PROJECT ADDS A LANE TO IR 75 SB, PROVIDES 4-LANE CONTINUITY NB, AND RECONFIGURES IR 74 EB RAMPS TO IR 75. THE PROJECT ALSO INCLUDES SURFACE COURSE AND ADDITIONAL PAVEMENT WORK TO THE SOUTH AND IMPROVEMENTS TO RAMP A AT THE HOPPLE ST INTERCHANGE.

BUILDABLE UNIT 9 DESCRIPTION

THIS BUILDABLE UNIT INCLUDES THE CONSTRUCTION OF RETAINING WALLS NO. 4, 5 AND 7 ALONG IR 75 SB AND RETAINING WALLS NO. 2 AND 21 ALONG IR 75 NB.

LIMITED ACCESS

THIS IMPROVEMENT IS ESPECIALLY DESIGNED FOR THROUGH TRAFFIC AND HAS BEEN DECLARED A LIMITED ACCESS HIGHWAY OR FREEWAY BY ACTION OF THE DIRECTOR IN ACCORDANCE WITH THE PROVISIONS OF SECTION 5511.02 OF THE OHIO REVISED CODE.

2016 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PLANS AND CHANGES LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

SUPPLEMENTAL SPECIFICATIONS

800-2016	1/19/18	814	7/15/16	866	4/21/17	914	7/15/16
804	1/15/16	821	4/20/12	867	4/15/16	921	4/20/12
806	3/2/15	832	1/17/14	902	12/31/12	939	7/17/15
808	10/16/15	839	7/17/15	904	7/15/16		
809	1/19/18	840	4/15/16	908	10/20/17		

STANDARD CONSTRUCTION DRAWINGS

BP-1.1	7/28/00	MH-1.1	1/15/16	RM-1.1	7/18/14	HL-10.11	1/19/18	MT-95.30	7/21/17	TC-7.65	1/15/16	ITS-10.10	7/17/15
BP-2.1	7/17/15	MH-1.2	1/15/16	RM-4.1	7/21/17	HL-10.12	1/20/17	MT-95.31	7/21/17	TC-9.10	1/19/18	ITS-10.11	1/19/18
BP-2.2	7/18/08			RM-4.3	7/18/14	HL-10.13	1/20/17	MT-95.32	7/21/17	TC-9.30	1/19/18	ITS-13.10	7/17/15
BP-2.3	7/18/14	DM-1.1	7/21/17	RM-4.4	7/21/17	HL-10.15	7/17/15	MT-95.40	1/20/17	TC-12.30	1/19/18	ITS-14.10	7/17/15
BP-2.4	7/19/13	DM-1.2	1/18/13	RM-4.5	7/21/17	HL-10.31	1/19/18	MT-95.45	7/21/17	TC-15.115	10/18/13	ITS-14.11	7/17/15
BP-3.1	7/18/14	DM-1.3	7/18/14	RM-4.6	7/19/13	HL-20.11	4/21/17	MT-95.50	7/21/17	TC-16.21	1/19/18	ITS-15.10	7/17/15
BP-6.1	7/19/13	DM-2.1	1/18/13			HL-20.13	1/19/18	MT-95.73	1/19/18	TC-21.10	7/21/17	ITS-15.11	7/17/15
BP-8.1	7/18/08	DM-4.1	1/15/16	A-1-69	7/19/02	HL-20.21	1/19/18	MT-98.10	1/20/17	TC-21.20	1/19/18	ITS-50.10	1/19/18
		DM-4.2	7/20/12	AS-1-15	7/17/15	HL-20.24	1/19/18	MT-98.11	1/20/17	TC-21.50	7/15/16	ITS-50.11	1/15/16
CB-1.1	1/15/16	DM-4.3	1/15/16	AS-2-15	1/19/18	HL-30.11	1/19/18	MT-98.20	7/18/14	TC-22.10	10/18/13	ITS-50.12	1/19/18
CB-1.2	1/15/16	DM-4.4	1/15/16	EXJ-4-87	1/19/18	HL-30.21	1/17/14	MT-98.21	7/18/14	TC-22.20	1/17/14	ITS-60.10	7/15/16
CB-1.3	1/15/16			GSD-1-96	7/19/02	HL-30.22	1/17/14	MT-98.29	1/20/17	TC-41.30	10/18/13		
CB-2.1	1/15/16	MGS-1.1	1/19/18	PCB-91	1/18/13	HL-30.31	1/17/14	MT-98.30	7/21/17	TC-42.10	10/18/13		
CB-2.2	1/15/16	MGS-2.1	1/19/18	PSID-1-13	7/15/16	HL-30.32	1/17/14	MT-99.30	1/19/18	TC-42.20	10/18/13		
CB-2.3	1/15/16	MGS-3.1	1/19/18	RB-1-55	7/19/13	HL-30.33	1/17/14	MT-99.60	7/15/16	TC-52.10	10/18/13		
CB-3.1	1/15/16	MGS-3.2	1/18/13	SBR-1-13	1/14/14	HL-30.41	1/19/18	MT-101.70	1/17/14	TC-52.20	1/19/18		
CB-3.3	1/15/16	MGS-4.2	7/19/13	SBR-2-13	1/14/14	HL-40.10	1/20/17	MT-101.75	7/15/16	TC-61.30	1/20/17		
		MGS-4.3	1/18/13	SICD-1-96	7/18/14	HL-40.20	1/20/17	MT-101.80	1/16/18	TC-65.10	1/17/14		
I-2.1	1/15/16	MGS-5.2	7/15/16	SICD-2-14	7/18/14	HL-50.11	1/16/15	MT-101.90	7/21/17	TC-65.11	7/21/17		
I-2.2	1/15/16	MGS-5.3	7/15/16	VPF-1-90	1/19/18	HL-50.21	1/19/18	MT-102.10	1/20/17	TC-71.10	1/19/18	SPECIAL PROVISIONS	
I-2.3	1/15/16	MGS-6.1	1/19/18			HL-60.12	7/15/16	MT-102.20	7/18/14	TC-72.20	7/15/16		
I-2.4	1/15/16					HL-60.21	1/16/15	MT-103.10	1/19/18	TC-73.20	7/21/17		
						HL-60.31	7/21/17	MT-104.10	10/16/15				
								MT-105.10	7/19/13				

AS BUILT PLANS
8/23/2022

UNDERGROUND UTILITIES
Contact Two Working Days Before You Dig
OHIO811.org Before You Dig
OHIO811, 8-1-1, or 1-800-362-2764
(Non-members must be called directly)

PLAN PREPARED BY:
AMERICAN STRUCTUREPOINT INC.
2550 CORPORATE EXCHANGE DR. STE 300
COLUMBUS, OH 43231
TEL 614.901.2235 FAX 614.901.2236
www.structurepoint.com

FEDERAL PROJECT NO. E170 (713)
PID NO. 104667
CONSTRUCTION PROJECT NO. 183000
RAILROAD INVOLVEMENT CSXT (CSX OP# OH1179) NORFOLK SOUTHERN
HAM-75-3.84

CBettinger
11/1/2021 10:09:02 AM
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GENERAL NOTES - MSE RETAINING WALLS (WALL 5)

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS:

REFER TO THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:

840 REVISED 07-20-18

DESIGN SPECIFICATIONS:

THE STRUCTURE CONFORMS TO THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 8TH EDITION, AND THE ODOT BRIDGE DESIGN MANUAL, 2007.

SEALING OF CONCRETE SURFACES (PERMANENT GRAFFITI PROTECTION):

APPLY A PERMANENT GRAFFITI COATING QUALIFIED ACCORDING TO SUPPLEMENT 1083 THAT IS COMPATIBLE WITH THE CONCRETE SEALER OVER WHICH IT IS APPLIED. APPLY THE GRAFFITI COATING IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTRUCTIONS.

FOUNDATION BEARING RESISTANCE:

THE FOUNDATION BEARING RESISTANCE IS LISTED IN THE TABLE BELOW.

FOUNDATION BEARING RESISTANCE

WALL NUMBER	WALL LIMITS		FACTORED BEARING RESISTANCE
	FROM STA.	TO STA.	
5	265+35.00	260+58.32	4.5

SEALING OF CONCRETE SURFACES (EPOXY-URETHANE):

THE FINISH COAT COLOR SHALL BE FEDERAL COLOR NO. 595B-17778, LIGHT NEUTRAL.

AESTHETIC SURFACE TREATMENT:

ALL MSE PANELS SHALL HAVE A "FRACTURED FIN" FINISH WITH A RELIEF OF $1\frac{1}{2}$". THE MANUFACTURER SHALL FABRICATE AND THE CONTRACTOR INSTALL THE PANELS SUCH THAT THE VERTICAL FINS AND VALLEYS IN THE FRACTURED FIN AESTHETIC TREATMENT ALIGN VERTICALLY ACROSS ADJACENT PANELS FROM THE BOTTOM OF THE WALL TO THE TOP.

THE "FRACTURED FIN" FINISH ON ALL THE WALLS SHALL MATCH AND SHALL BE SUPPLIED BY THE SAME FORMLINER MANUFACTURER.

GENERAL NOTES - CIP CONCRETE RETAINING WALLS (WALLS 2A, 4 AND 7)

DESIGN DATA:

CONCRETE, CLASS QC1 - COMPRESSIVE STRENGTH 4.0 KSI (RETAINING WALL)

REINFORCING STEEL - MINIMUM YIELD STRENGTH 60 KSI EPOXY COATED PER CMS 509

DESIGN SPECIFICATIONS:

THE STRUCTURE CONFORMS TO THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 8TH EDITION, AND THE ODOT BRIDGE DESIGN MANUAL, 2007.

SEALING OF CONCRETE SURFACES (PERMANENT GRAFFITI PROTECTION):

APPLY A PERMANENT GRAFFITI COATING QUALIFIED ACCORDING TO SUPPLEMENT 1083 THAT IS COMPATIBLE WITH THE CONCRETE SEALER OVER WHICH IT IS APPLIED. APPLY THE GRAFFITI COATING IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTRUCTIONS.

FOUNDATION BEARING RESISTANCE:

FOOTINGS, AS DESIGNED, PRODUCE A MAXIMUM SERVICE BEARING PRESSURE AND STRENGTH BEARING PRESSURE AS LISTED IN THE TABLE BELOW.

FOUNDATION BEARING RESISTANCE

WALL NUMBER	SERVICE BEARING PRESSURE (KSF)	STRENGTH BEARING PRESSURE (KSF)	FACTORED BEARING RESISTANCE (KSF)
2A	1.22	1.36	7.1
4	2.03	2.44	4.25
7	1.65	2.11	4.40

SEALING OF CONCRETE SURFACES (EPOXY-URETHANE):

THE FINISH COAT COLOR SHALL BE FEDERAL COLOR NO. 595B-17778, LIGHT NEUTRAL.

AESTHETIC SURFACE TREATMENT:

THE FRONT FACE OF CIP RETAINING WALLS SHALL HAVE A "FRACTURED FIN" FINISH WITH A RELIEF OF $1\frac{1}{2}$" APPLIED TO THE LIMITS SHOWN IN THE PLANS. THE VERTICAL FINS AND VALLEYS IN THE FRACTURED FIN AESTHETIC TREATMENT SHALL ALIGN VERTICALLY FROM THE BOTTOM OF THE WALL TO THE TOP.

THE "FRACTURED FIN" FINISH ON ALL THE WALLS SHALL MATCH AND SHALL BE SUPPLIED BY THE SAME FORMLINER MANUFACTURER.

GENERAL NOTES - SOLDIER PILE RETAINING WALLS (WALLS 2B AND 21)

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS:

REFER TO THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:

866 REVISED 04-21-17

DESIGN DATA:

CONCRETE, CLASS QC1 - COMPRESSIVE STRENGTH 4.0 KSI (CIP FACING)

CONCRETE, CLASS QC MISC. - COMPRESSIVE STRENGTH 4.0 KSI (LEVELING PAD)

REINFORCING STEEL - MINIMUM YIELD STRENGTH 60 KSI EPOXY COATED PER CMS 509

STRUCTURAL STEEL - ASTM A 709 GRADE 50 - YIELD STRENGTH 50 KSI (MISC. STEEL ATTACHMENTS)
ASTM A 53 GRADE B - YIELD STRENGTH 35 KSI (ANCHOR ASSEMBLY PIPE)

STEEL H-PILES - ASTM A572 - YIELD STRENGTH 50 KSI

TIMBER LAGGING - BENDING STRENGTH (Fb) 950 PSI

DESIGN SPECIFICATIONS:

THE STRUCTURE CONFORMS TO THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 8TH EDITION, AND THE ODOT BRIDGE DESIGN MANUAL, 2007.

SEALING OF CONCRETE SURFACES (PERMANENT GRAFFITI PROTECTION):

APPLY A PERMANENT GRAFFITI COATING QUALIFIED ACCORDING TO SUPPLEMENT 1083 THAT IS COMPATIBLE WITH THE CONCRETE SEALER OVER WHICH IT IS APPLIED. APPLY THE GRAFFITI COATING IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTRUCTIONS.

SEALING OF CONCRETE SURFACES (EPOXY-URETHANE):

THE FINISH COAT COLOR SHALL BE FEDERAL COLOR NO. 595B-17778, LIGHT NEUTRAL.

AESTHETIC SURFACE TREATMENT:

THE FRONT FACE OF CIP FACING SHALL HAVE A "FRACTURED FIN" FINISH WITH A RELIEF OF $1\frac{1}{2}$" APPLIED TO THE LIMITS SHOWN IN THE PLANS. THE VERTICAL FINS AND VALLEYS IN THE FRACTURED FIN AESTHETIC TREATMENT SHALL ALIGN VERTICALLY FROM THE BOTTOM OF THE WALL TO THE TOP.

THE "FRACTURED FIN" FINISH ON ALL THE WALLS SHALL MATCH AND SHALL BE SUPPLIED BY THE SAME FORMLINER MANUFACTURER.

DRILLED SHAFTS ABOVE BEDROCK:
DRILLED SHAFTS INTO BEDROCK:

THIS WORK CONSISTS OF FURNISHING AND INSTALLING DRILLED SHAFTS FOR SOLDIER PILE AND LAGGING WALLS. THE DRILLED SHAFTS ARE REINFORCED WITH SOLDIER PILES INSTEAD OF REINFORCING STEEL CAGES. THE SOLDIER PILES EXTEND ABOVE THE TOP OF THE DRILLED SHAFT. FURNISH AND INSTALL THE DRILLED SHAFTS IN ACCORDANCE WITH CMS 524 EXCEPT AS MODIFIED AND SUPPLEMENTED BELOW.

EXCAVATE THE HOLE FOR THE DRILLED SHAFT WITHIN 3 INCHES OF THE PLAN LOCATION. PLACE THE SOLDIER PILE WITHIN THE HOLE SO IT IS VERTICAL AND NOT INCLINED MORE THAN $\frac{1}{4}$ INCH PER FOOT. PLACE THE SOLDIER PILE SO THAT THE FLANGES ARE PARALLEL TO THE CENTERLINE OF THE ROW OF DRILLED SHAFTS. DO NOT ALLOW THE ORIENTATION OF THE FLANGES TO VARY BY MORE THAN 10 DEGREES. SUPPORT THE SOLDIER PILE SO THAT IT DOES NOT MOVE DURING CONCRETE PLACEMENT.

USE CLASS QC1 CONCRETE ACCORDING TO CMS 511. PLACE CONCRETE TO THE ELEVATION FOR THE TOP OF THE DRILLED SHAFT. THE CONTRACTOR MAY PLACE CONCRETE USING THE FREE FALL METHOD PROVIDED THE DEPTH OF WATER IS LESS THAN 6 INCHES AND THE CONCRETE FALLS WITHOUT STRIKING THE SIDES OF THE HOLE. POURING CONCRETE ALONG THE WEB OF THE SOLDIER PILE IS ACCEPTABLE.

CHECK THE POSITION, THE VERTICAL ALIGNMENT AND ORIENTATION OF THE SOLDIER PILE IMMEDIATELY AFTER CONCRETE PLACEMENT. MAKE CORRECTIONS AS NECESSARY TO MEET THE ABOVE TOLERANCES. AS SHOWN ON THE PLANS, FILL THE HOLE ABOVE THE BOTTOM OF THE LAGGING TO THE EXISTING GROUND SURFACE WITH ITEM C&MS 613 LOW STRENGTH MORTAR BACKFILL (LSM).

REMOVE CONCRETE AND LSM AS NECESSARY FROM AROUND THE SOLDIER PILE IN ORDER TO PLACE THE LAGGING. PLACE LAGGING SO THAT THE SOLDIER PILE FLANGE OVERLAPS THE END OF THE LAGGING BY AT LEAST 3 INCHES AT BOTH ENDS OF THE LAGGIING. WAIT AT LEAST 12 HOURS AFTER PLACING CONCRETE BEFORE PLACING LAGGING.

GENERAL NOTES - SOLDIER PILE RETAINING (WALLS 2B AND 21)

TIMBER LAGGING:

THIS ITEM CONSISTS OF FURNISHING AND PLACING TIMBER LAGGING AS TEMPORARY SUPPORT FOR THE RETAINED SOIL. FURNISH TIMBER LAGGING CONSISTING OF CONSTRUCTION GRADE, UNTREATED HARDWOOD WITH A MINIMUM THICKNESS OF 3 INCHES. TO PERMIT DRAINAGE, PROVIDE $\frac{1}{4}$ TO $\frac{1}{2}$ SPACES BETWEEN LAGGING BOARDS USING $\frac{3}{8}$ SPACER BLOCKS OR OTHER MEANS ACCEPTABLE TO THE ENGINEER. EXCAVATION FOR PLACEMENT OF THE LAGGING SHALL BE PERFORMED IN SUCH A MANNER THAT THE LAGGING IS TIGHT AGAINST THE EXCAVATION CUT FACE. ANY VOIDS BEHIND THE LAGGING SHALL BE BACKFILLED WITH NO. 57 STONE. THE COST OF ANY SUCH BACKFILLING REQUIRED, INCLUDING MATERIAL, PLACEMENT AND COMPACTION, SHALL BE INCIDENTAL TO THE COST OF LAGGING.

PREFABRICATED GEOCOMPOSITE DRAIN (J-DRAIN 400/420):

THIS WORK CONSISTS OF FURNISHING AND PLACING PREFABRICATED GEOCOMPOSITE DRAIN (PGD) STRIPS AGAINST TIMBER LAGGING.

FURNISH PGD STRIPS CONSISTING OF A POLYMERIC CORE WRAPPED IN A FABRIC CONFORMING TO C&MS 712.09, TYPE A. USE CORE MATERIAL THAT IS RESISTANT TO PETROLEUM-BASED CHEMICALS, NATURALLY OCCURING SOIL CHEMICALS, AND ROAD DE-ICING SALTS. THE CORE MATERIAL SHALL HAVE SUFFICIENT FLEXIBILITY TO WITHSTAND BENDING AND HANDLING DURING INSTALLATION WITHOUT DAMAGE. THE REQUIRED MINIMUM COMPRESSIVE STRENGTH OF THE CORE IS 40 POUNDS PER SQUARE INCH ACCORDING TO ASTM D 1621 PROCEDURE A. THE MINIMUM (SINGLE SIDE) CORE FLOW CAPACITY IS 10 GALLONS PER MINUTE PER FOOT OF WIDTH FOR A 0.1 GRADIENT AT 10 POUNDS PER SQUARE INCH BLADDER LOAD ACCORDING TO ASTM D 4716. FURNISH THE MANUFACTURER'S CERTIFIED TEST DATA.

PLACE PGD STRIPS BETWEEN THE SOLDIER PILES, FROM EDGE OF SOLDIER PILE TO EDGE OF SOLDIER PILE. PLACE THE SIDE FACED WITH GEOTEXTILE AGAINST THE TIMBER LAGGING, FACING TOWARDS THE RETAINED GROUND, AND SECURE THE DRAIN TO THE LAGGING. USE NAILS AND WASHERS AT LEAST 1-INCH DIAMETER IN SIZE TO SECURE THE PGD ALONG THE EDGES OF THE PGD AND AT A MAXIMUM SPACING OF 3 FEET. REPAIR ANY DAMAGE TO THE GEOTEXTILE FABRIC BY COVERING WITH A PATCH WHICH OVERLAPS THE DAMAGED AREA BY AT LEAST 12 INCHES. IF THE CORE OF THE PGD IS DAMAGED, REPLACE IT WITH A NEW SECTION OF PGD AND SPLICE THE NEW SECTION WITH AT LEAST A 12-INCH OVERLAPSUCH THAT THE FLOW OF WATER IS NOT IMPEDED WITHIN THE DRAIN. TAPE ALL JOINTS IN THE PGD STRIP TO PREVENT CONCRETE INTRUSION DURING PLACEMENT.

INSTALL POROUS BACKFILL AT THE BASE OF THE SOLDIER PILE WALL AS SHOWN IN THE PLANS. ENSURE THE BOTTOM OF EACH PGD STRIP EXTENDS INTO THE POROUS BACKFILL SO THAT WATER FLOW IS NOT INTERRUPTED.

WELDED STUD SHEAR CONNECTORS:

WELD HEADED STEEL STUDS TO THE FLANGES OF THE SOLDIER PILE IN ORDER TO CONNECT THE CONCRETE WALL FACING TO THE SOLDIER PILE. ATTACH HEADED STUDS ACCORDING TO C&MS 513.22 AND AS SHOWN IN THE PLANS. THE CONTRACTOR MAY ATTACH THE STUDS EITHER IN A TOP DOWN MANNER AS EXCAVATION PROGRESSES OR AFTER EXCAVATION IN FRONT OF THE WALL IS COMPLETE. PROTECT THE HEADED STUDS FROM DAMAGE UNTIL THE CONCRETE WALL FACING IS POURED. REPAIR OR REPLACE DAMAGED HEADED STUDS AT NO EXPENSE TO THE DEPARTMENT.

SOLDIER PILES:

THIS WORK CONSISTS OF FURNISHING AND PLACING STEEL SOLDIER PILES INTO DRILLED HOLES. FURNISH SOLDIER PILES CONSISTING OF STRUCTURAL STEEL MEMBERS THAT MEET THE PLAN REQUIREMENTS AND CONFORM TO ASTM A572, GRADE 50. DO NOT FIELD WELD OR SPLICE STEEL SOLDIER PILES.

GENERAL NOTES - ALL WALLS

DUKE ENERGY ELECTRIC:

AT NO TIME SHOULD WORKERS VIOLATE THE CLEARANCE DISTANCE ESTABLISHED BY OSHA OR THEIR OWN COMPANY'S SAFETY STANDARDS IN REGARDS TO DUKE'S ELECTRIC LINES AND SAFE WORKING DISTANCE. ANY COVER UP REQUIRED FROM DUKE ELECTRIC IS ONLY GOOD FOR VISUAL IDENTIFICATION ONLY AND NOT TO BE USED FOR INSULATION PURPOSES. TO REQUEST COVER UP, THE CONTRACTOR MUST CALL 1-800-544-6900 AT LEAST FIVE (5) WORKING DAYS IN ADVANCE OF NEEDING THIS SERVICE. PROCEED WITH CAUTION WHEN WORKING IN CLOSE PROXIMITY TO ELECTRIC OVERHEAD AND/OR UNDERGROUND FACILITIES. THE CONTRACTOR SHOULD ALSO BE INFORMED TO CALL OUPS AT 811 BEFORE DIGGING TO HAVE UNDERGROUND FACILITIES LOCATED AND MARKED).

ABBREVIATION LIST:

THE FOLLOWING STANDARD ABBREVIATIONS ARE USED THROUGHOUT THE RETAINING WALL PLANS.

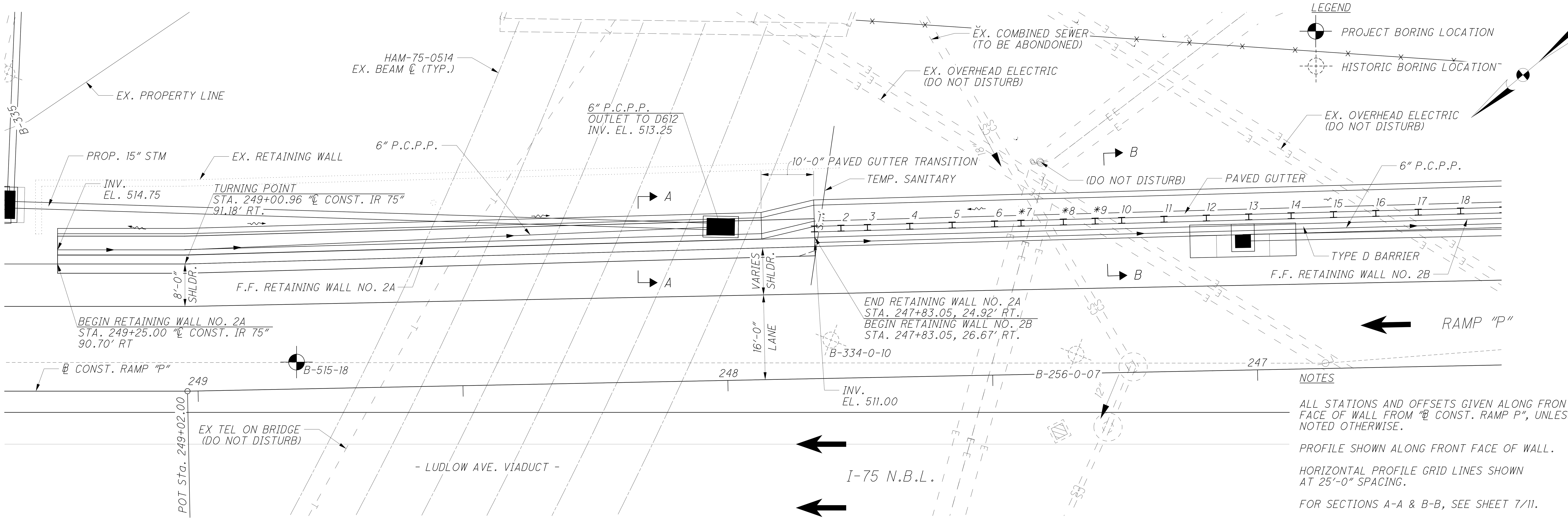
ABUT.	= ABUTMENT
ACT.	= ACTUAL
APP.	= APPROACH
BRG.	= BEARING
BOT.	= BOTTOM
BTA.	= BRIDGE TERMINAL ASSEMBLY
BTW.	= BETWEEN
CB	= CATCH BASIN
C.I.P.	= CAST-IN-PLACE
C.J.	= CONSTRUCTION JOINT
CLR.	= CLEARANCE
CONST	= CONSTRUCTION
CONT.	= CONTINUOUS
DIA.	= DIAMETER
DIM.	= DIMENSION
DWG.	= DRAWING
E.F.	= EACH FACE
EL.	= ELEVATION
EQ.	= EQUAL
EST.	= ESTIMATED
EX.	= EXISTING
EXP.	= EXPANSION
F.A.	= FORWARD ABUTMENT
F.D.S.	= FINAL DECK SURFACE
F.F.	= FRONT FACE
FTG.	= FOOTING
FWD.	= FORWARD
GR.	= GUARDRAIL
HMWM	= HIGH MOLECULAR WEIGHT METHACRYLATE
INT.	= INTERIOR
INV.	= INVERT
NPCCP	= NON-PERFORATED CORRUGATED PLASTIC PIPE
O.C.J.	= OPTIONAL CONSTRUCTION JOINT
PCCP	= PERFORATED CORRUGATED PLASTIC PIPE
PEJF	= PREFORMED EXPANSION JOINT FILLER
PERP.	= PERPENDICULAR
PROP.	= PROPOSED
PT.	= POINT
R.A.	= REAR ABUTMENT
R.F.	= REAR FACE
REQD.	= REQUIRED
SER.	= SERIES
SHLD.	= SHOULDER
SPA.	= SPACES
STA.	= STATION
STD.	= STANDARD
STM	= STORM SEWER LINE
T&B	= TOP AND BOTTOM
T.O.H.	= TOP OF HAUNCH
T/S	= TOP OF SLOPE
TYP.	= TYPICAL
U.N.	= UNLESS NOTED

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED SJF | CHECKED CLB | DRAWN SJF | REVISED | REVIEWED MDS | DATE 01/18/19 | STRUCTURE FILE NUMBER

GENERAL NOTES - 2
RETAINING WALLS NO. 2, 4, 5, 7 & 21

HAM-75-3.84
PID No. 104667



PLAN

NOTES

ALL STATIONS AND OFFSETS GIVEN ALONG FRONT FACE OF WALL FROM "℄ CONST. RAMP P", UNLESS NOTED OTHERWISE.

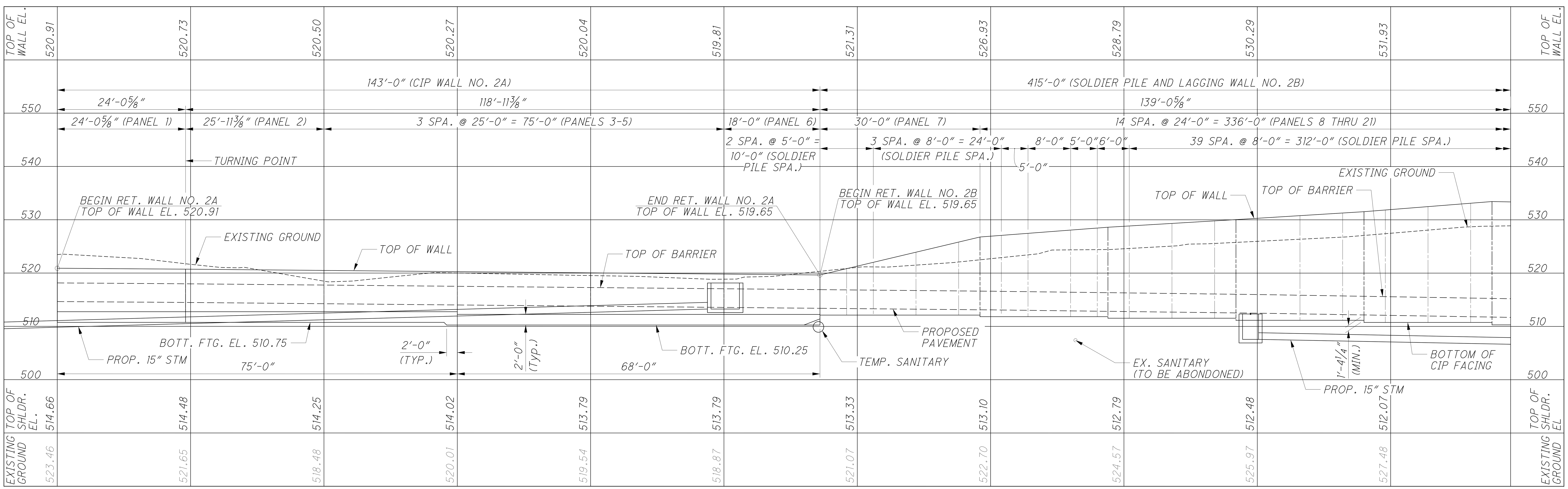
PROFILE SHOWN ALONG FRONT FACE OF WALL.

HORIZONTAL PROFILE GRID LINES SHOWN AT 25'-0" SPACING.

FOR SECTIONS A-A & B-B, SEE SHEET 7/11.

FOR ℄ CONST. IR 75 & ℄ CONST. RAMP P SPIRAL DATA SEE BU-14.

* ADJUST PILE SPACING AS NECESSARY TO AVOID UTILITY IMPACTS (8'-0" MAX.)



PROFILE
ALONG F.F. RETAINING WALL NO. 2

RETAINING WALL NO. 2 DETAILS
ALONG RAMP "P" AND IR 75 NB

DESIGN AGENCY
STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	BMP	MDS	01/18/19
CHECKED	REVISED		STRUCTURE FILE NUMBER
CLB			

HAM-75-3.84
PID No. 104667

1/11

NOTES

ALL STATIONS AND OFFSETS GIVEN ALONG FRONT FACE OF WALL FROM "℗ CONST. RAMP P", UNLESS NOTED OTHERWISE.

PROFILE SHOWN ALONG FRONT FACE OF WALL.

HORIZONTAL PROFILE GRID LINES SHOWN AT 25'-0" SPACING.

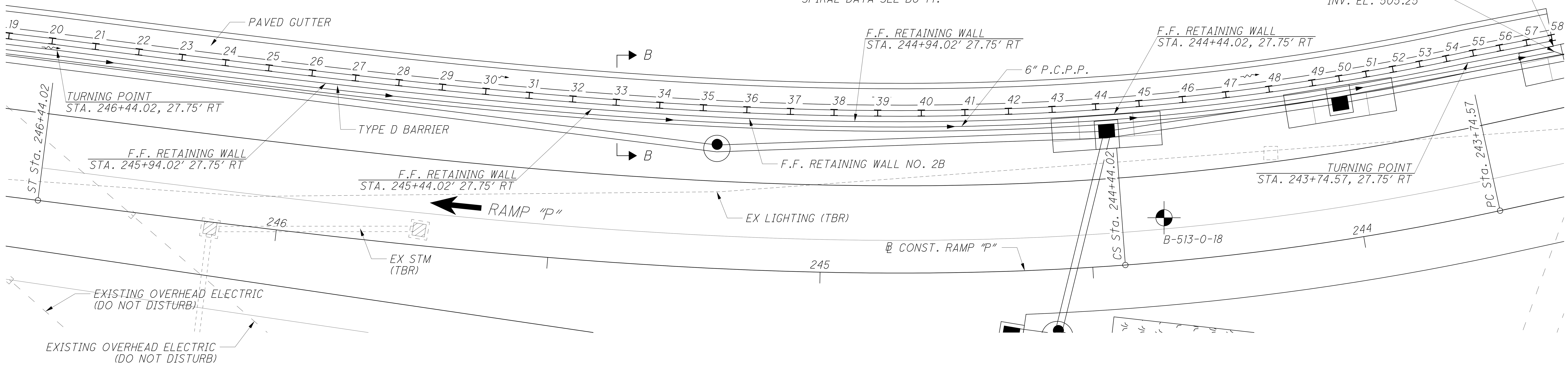
FOR SECTIONS A-A & B-B, SEE SHEET 7/11.

FOR ℄ CONST. IR 75 & ℗ CONST. RAMP P SPIRAL DATA SEE BU-14.

LEGEND

PROJECT BORING LOCATION

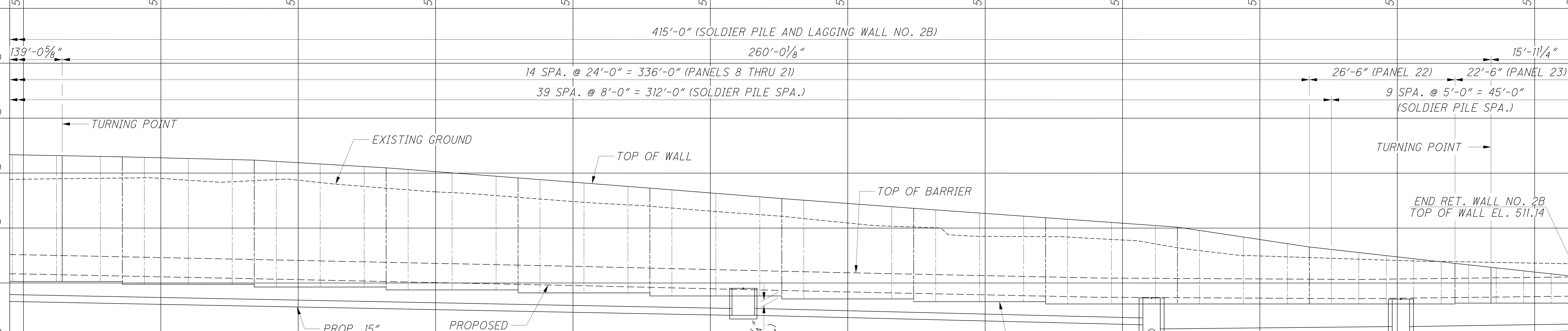
HISTORIC BORING LOCATION



B-333-0-10
B-513-1-18
END RETAINING WALL NO. 2B
STA. 243+58.63, 27.39' RT
6" P.C.P.P.
OUTLET TO D517
INV. EL. 505.25
PAVED GUTTER
F.F. RETAINING WALL
STA. 244+94.02' 27.75' RT
F.F. RETAINING WALL
STA. 244+44.02, 27.75' RT
6" P.C.P.P.
TURNING POINT
STA. 246+44.02, 27.75' RT
TYPE D BARRIER
B
B
ST Sta. 246+44.02
F.F. RETAINING WALL
STA. 245+94.02' 27.75' RT
F.F. RETAINING WALL
STA. 245+44.02' 27.75' RT
F.F. RETAINING WALL NO. 2B
TURNING POINT
STA. 243+74.57, 27.75' RT
PC Sta. 243+74.57
CS Sta. 244+44.02
RAMP "P"
EX LIGHTING (TBR)
B-513-0-18
246
245
244
EX STM
(TBR)
℗ CONST. RAMP "P"
EXISTING OVERHEAD ELECTRIC
(DO NOT DISTURB)
EXISTING OVERHEAD ELECTRIC
(DO NOT DISTURB)

PLAN

TOP OF WALL EL.	533.32	532.81	531.92	530.29	528.37	526.42	524.50	522.68	520.90	517.94	514.79	512.02	511.14



415'-0" (SOLDIER PILE AND LAGGING WALL NO. 2B)
139'-0⅝"
260'-0⅛"
15'-11¼"
14 SPA. @ 24'-0" = 336'-0" (PANELS 8 THRU 21)
26'-6" (PANEL 22)
22'-6" (PANEL 23)
39 SPA. @ 8'-0" = 312'-0" (SOLDIER PILE SPA.)
9 SPA. @ 5'-0" = 45'-0"
(SOLDIER PILE SPA.)
TURNING POINT
EXISTING GROUND
TOP OF WALL
TOP OF BARRIER
TURNING POINT
END RET. WALL NO. 2B
TOP OF WALL EL. 511.14
550
540
530
520
510
500
PROP. 15"
STM (TYP.)
PROPOSED
PAVEMENT
1'-4¼" (MIN.)
BOTTOM OF
CIP FACING

TOP OF SHLDR. EL	511.66	511.14	510.63	510.09	509.56	508.97	508.39	507.86	507.41	507.27	507.25	507.55	507.64
EXISTING GROUND	528.91	529.06	528.73	526.61	524.85	523.11	520.94	518.52	517.85	514.95	514.13	513.65	513.51

PROFILE

ALONG F.F. RETAINING WALL NO. 2

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED SJF | CHECKED CLB | DRAWN BMP | REVIEWED MDS | DATE 01/18/19

STRUCTURE FILE NUMBER

RETAINING WALL NO. 2 DETAILS
ALONG RAMP "P" AND IR 75 NB

HAM-75-3.84
PID No. 104667

2/11

5/48

jwade
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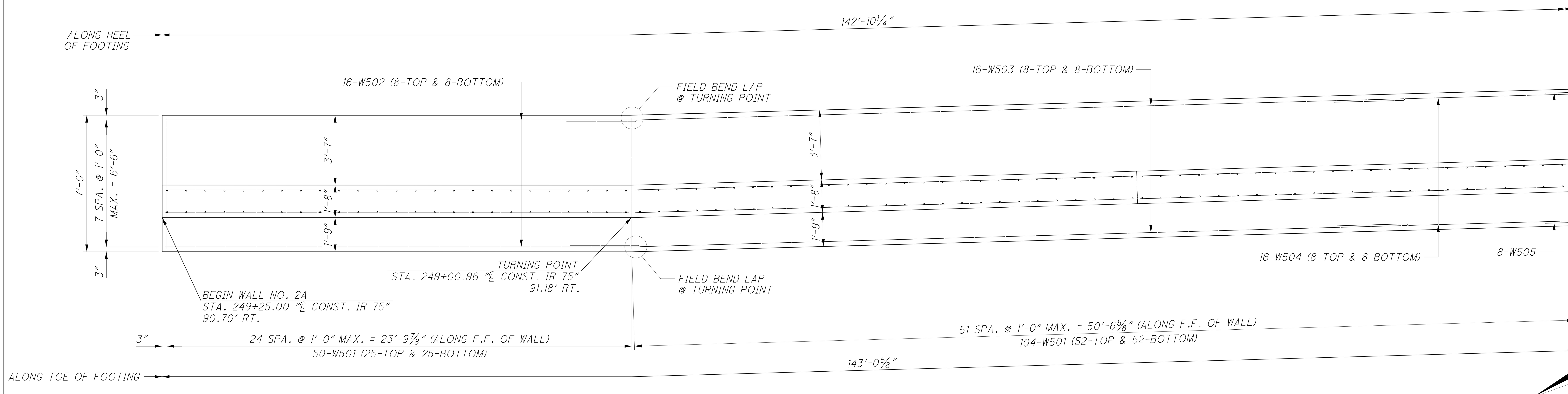
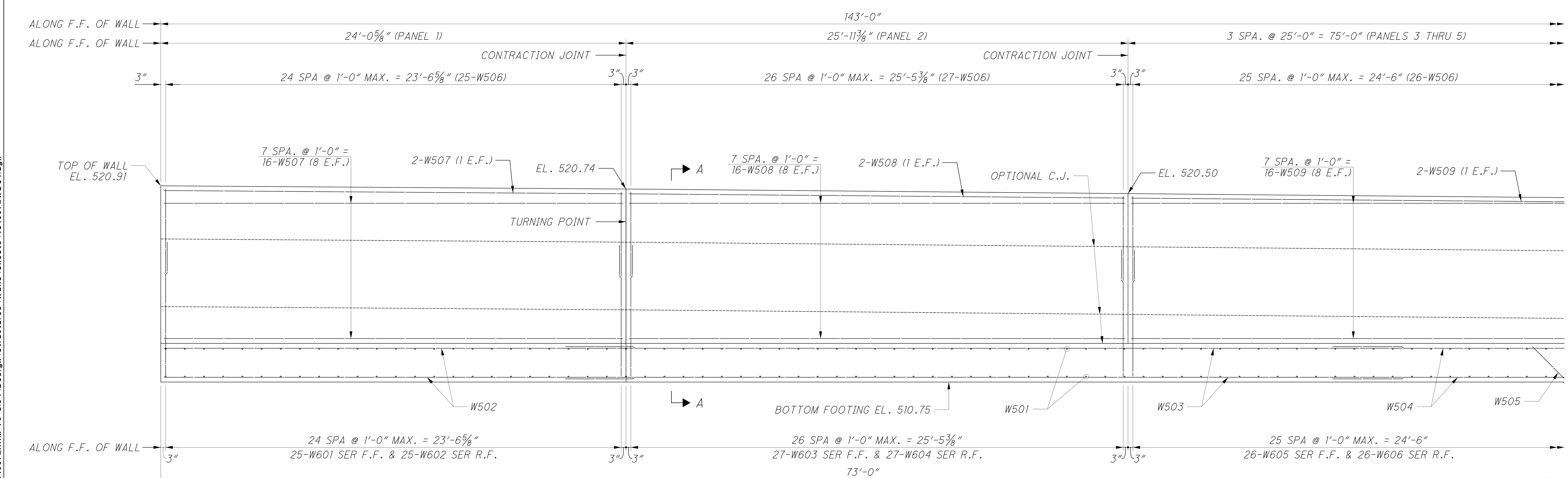


PARTIAL PLAN



PARTIAL ELEVATION

MINIMUM BAR LAP	
#5 (VERTICAL)	2'-7"
#5 (HORIZONTAL)	3'-7"

NOTES

FOR SECTION A-A, SEE SHEET 7/11.

FOR CONTRACTION AND EXPANSION JOINT DETAILS, SEE SHEET 7/11.

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	CHECKED	DRAWN	REVISED	REVIEWED	DATE
SJF	CLB	BMP		MDS	01/18/19

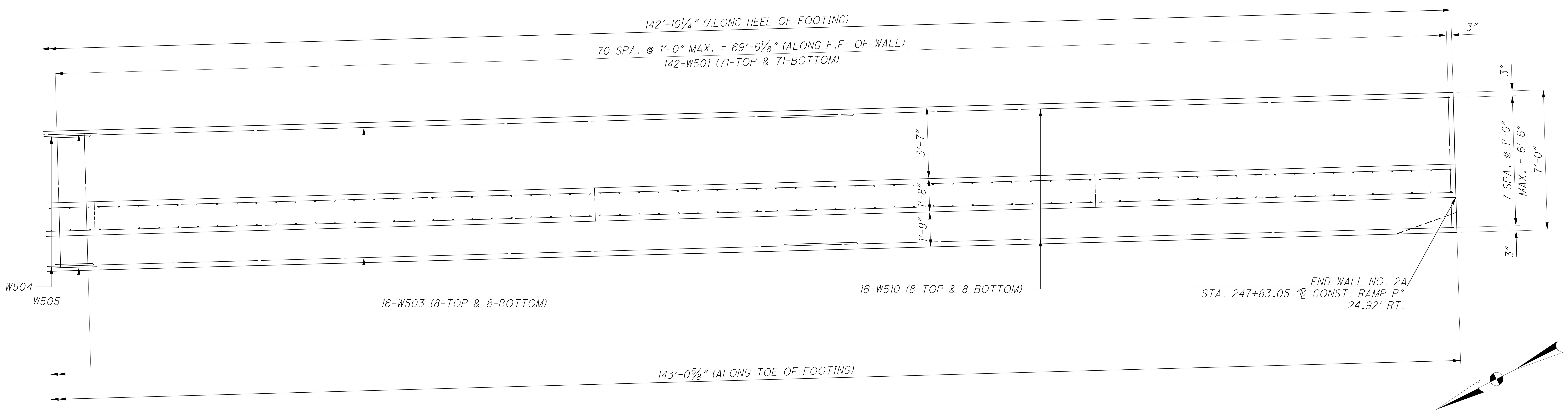
STRUCTURE FILE NUMBER

RETAINING WALL NO. 2A DETIALS

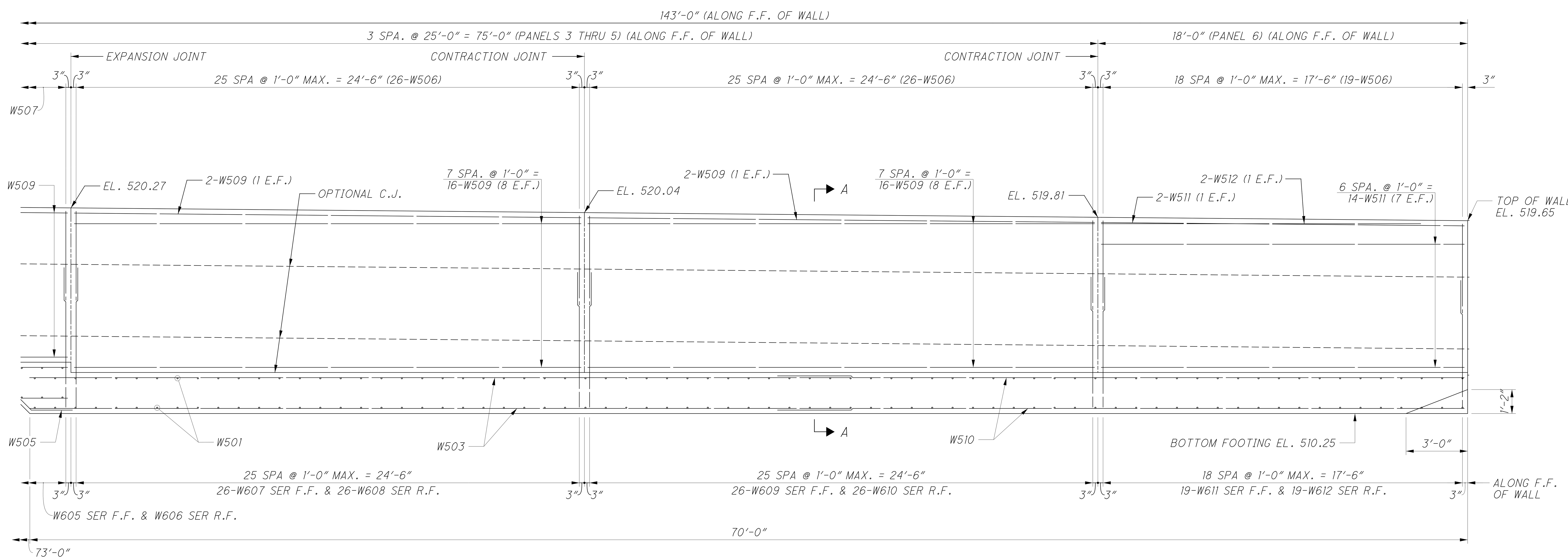
ALONG RAMP "P" AND IR 75 NB

HAM-75-3.84

PID No. 104667



PARTIAL PLAN



PARTIAL ELEVATION

MINIMUM BAR LAP	
#5 (VERTICAL)	2'-7"
#5 (HORIZONTAL)	3'-7"

NOTES

FOR SECTION A-A, SEE SHEET 7/11.

FOR CONTRACTION AND EXPANSION JOINT DETAILS, SEE SHEET 7/11.

DESIGN AGENCY: STRUCTUREPOINT

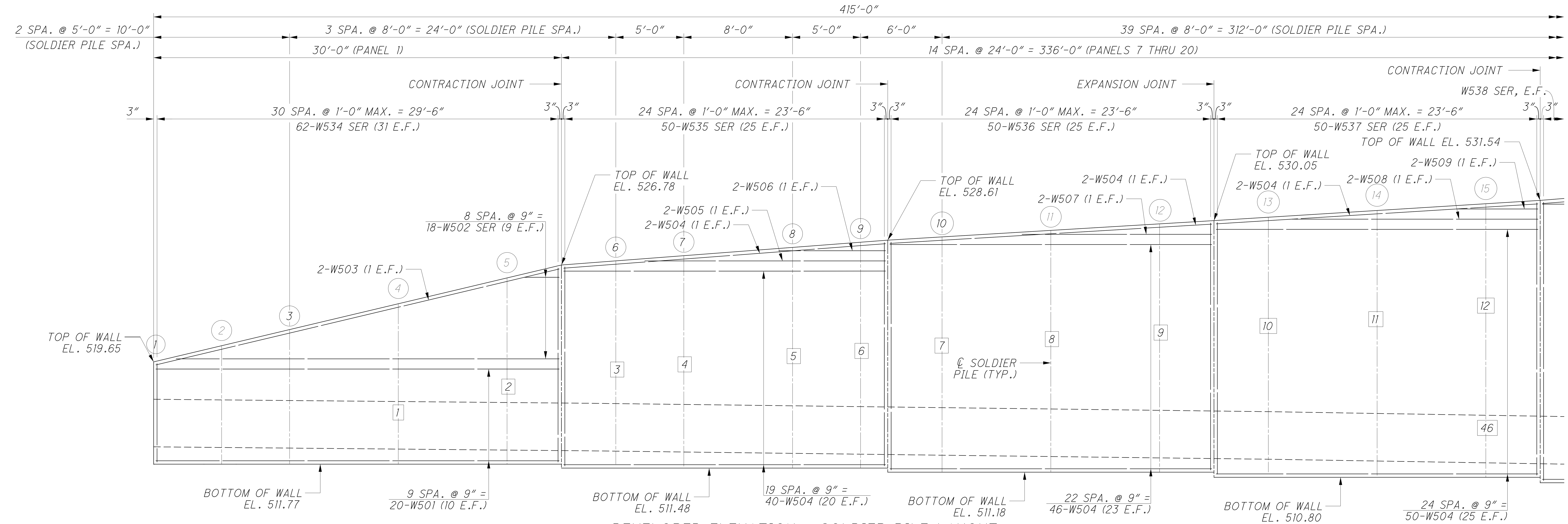
DESIGNED SJF | CHECKED CLB | DRAWN BMP | REVISED | REVIEWED MDS | DATE 01/18/19 | STRUCTURE FILE NUMBER

RETAINING WALL NO. 2A DETIALS
ALONG RAMP "P" AND IR 75 NB

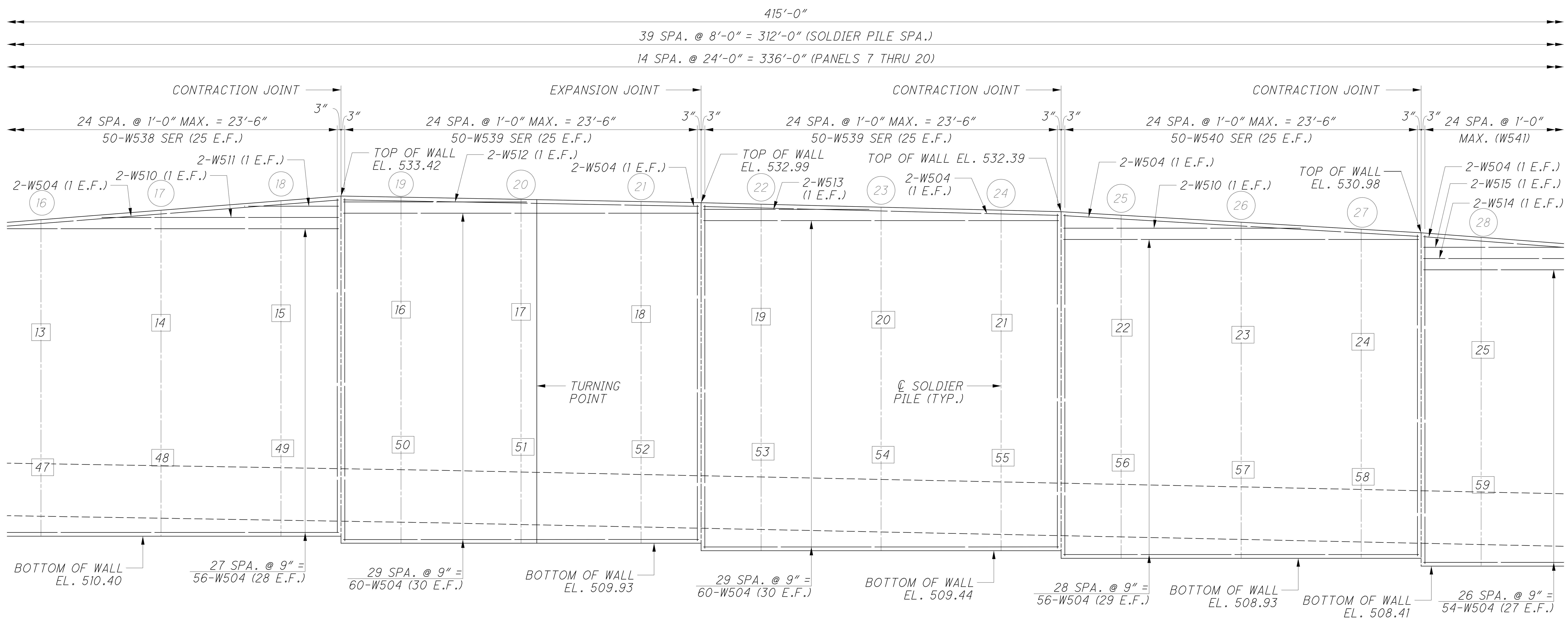
HAM-75-3.84
PID No. 104667

4/11

7/48



DEVELOPED ELEVATION - SOLDIER PILE LAYOUT



DEVELOPED ELEVATION - SOLDIER PILE LAYOUT

NOTES

ALL DIMENSIONS GIVEN ALONG FRONT FACE OF WALL.

FOR ADDITIONAL WALL DETAILS, SEE SHEETS 7 THRU 9.

(X) - SOLDIER PILE NUMBER.

[X] - ANCHOR NUMBER

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	BMP	MDS	01/18/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB			

RETAINING WALL NO. 2B DETAILS
ALONG RAMP "P" AND IR 75 NB

HAM-75-3.84
PID No. 104667

5 / 11

8 / 48

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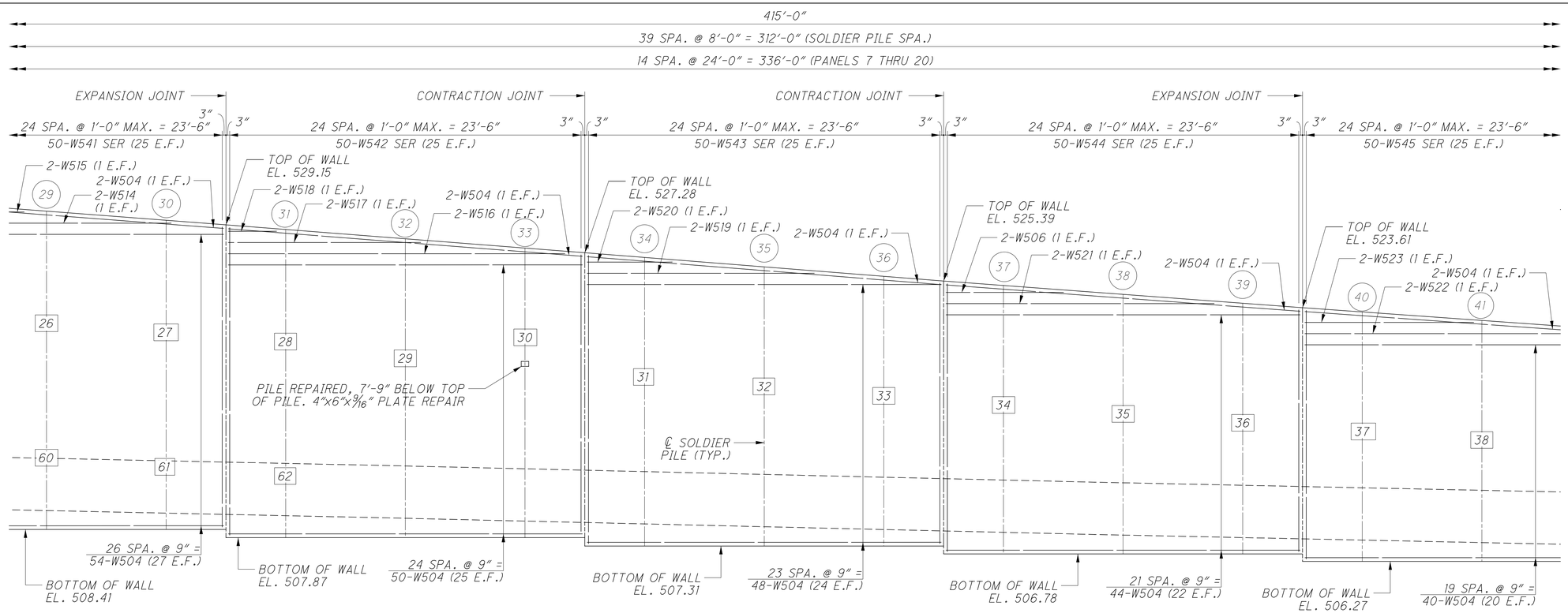
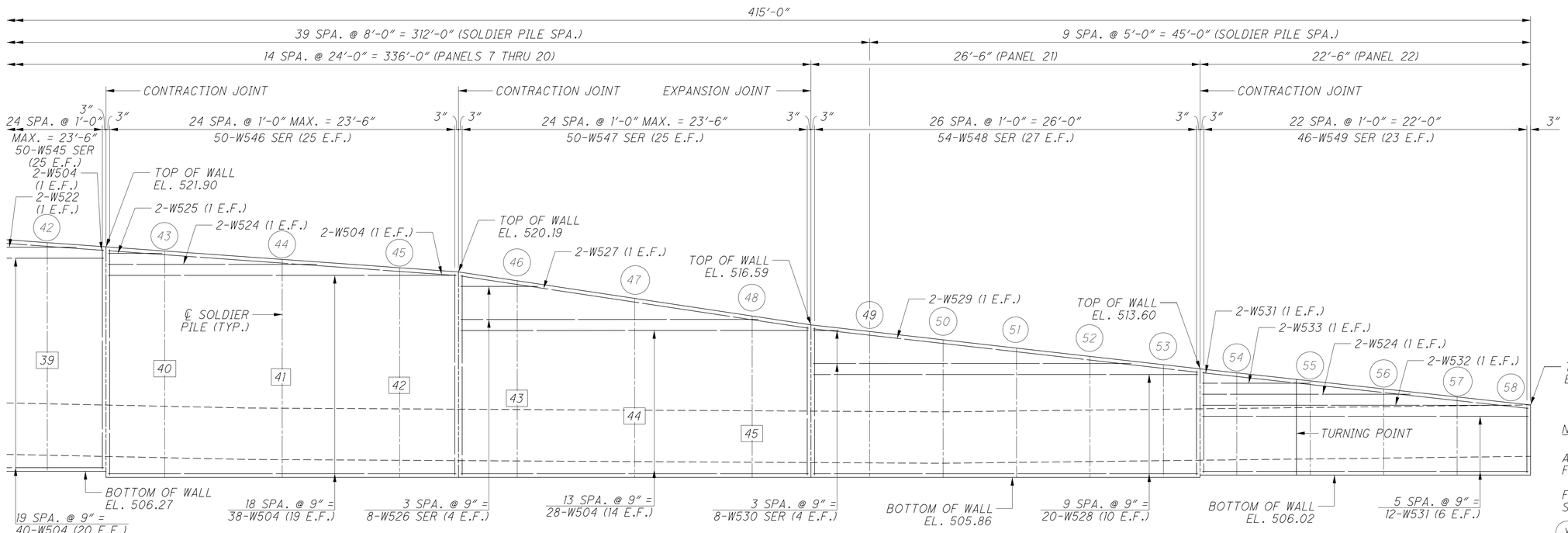


DEVELOPED ELEVATION - SOLDIER PILE LAYOUT



DEVELOPED ELEVATION - SOLDIER PILE LAYOUT

NOTES

ALL DIMENSIONS GIVEN ALONG FRONT FACE OF WALL.

FOR ADDITIONAL WALL DETAILS, SEE SHEETS 7 THRU 9.

(X) - SOLDIER PILE NUMBER.

[X] - ANCHOR NUMBER

DESIGN AGENCY
STRUCTUREPOINT LLC
2000 CORPORATE EXCHANGE DR. STE 300
COLUMBUS, OH 43231
TEL 614.901.7900 www.structurepoint.com

DESIGNED	DRAWN	REVIEWED	DATE
SJF	BMP	MDS	01/18/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB			

RETAINING WALL NO. 2B DETAILS
ALONG RAMP "P" AND IR 75 NB

HAM-75-3.84
PID No. 104667

6 / 11

9 / 48

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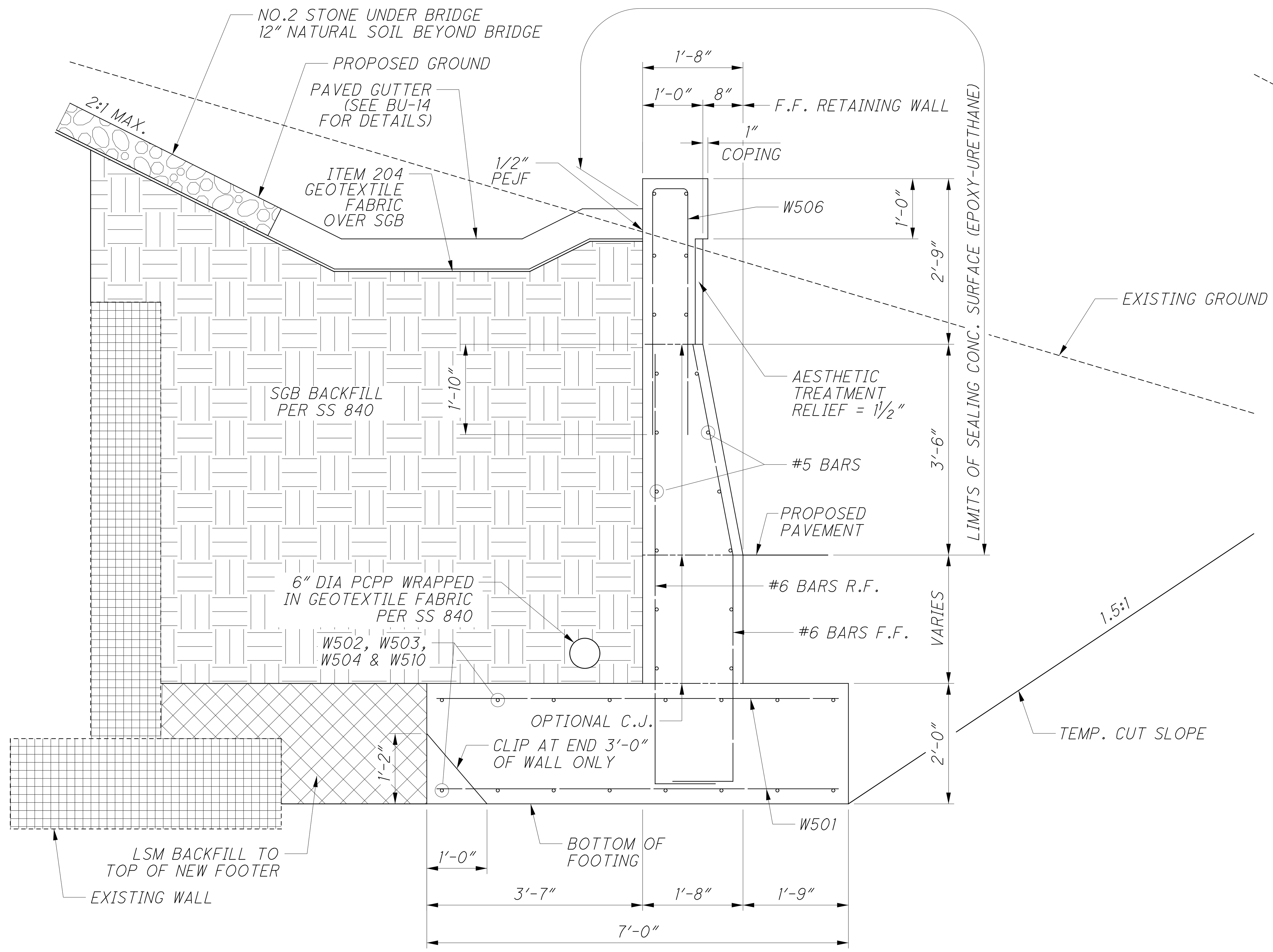
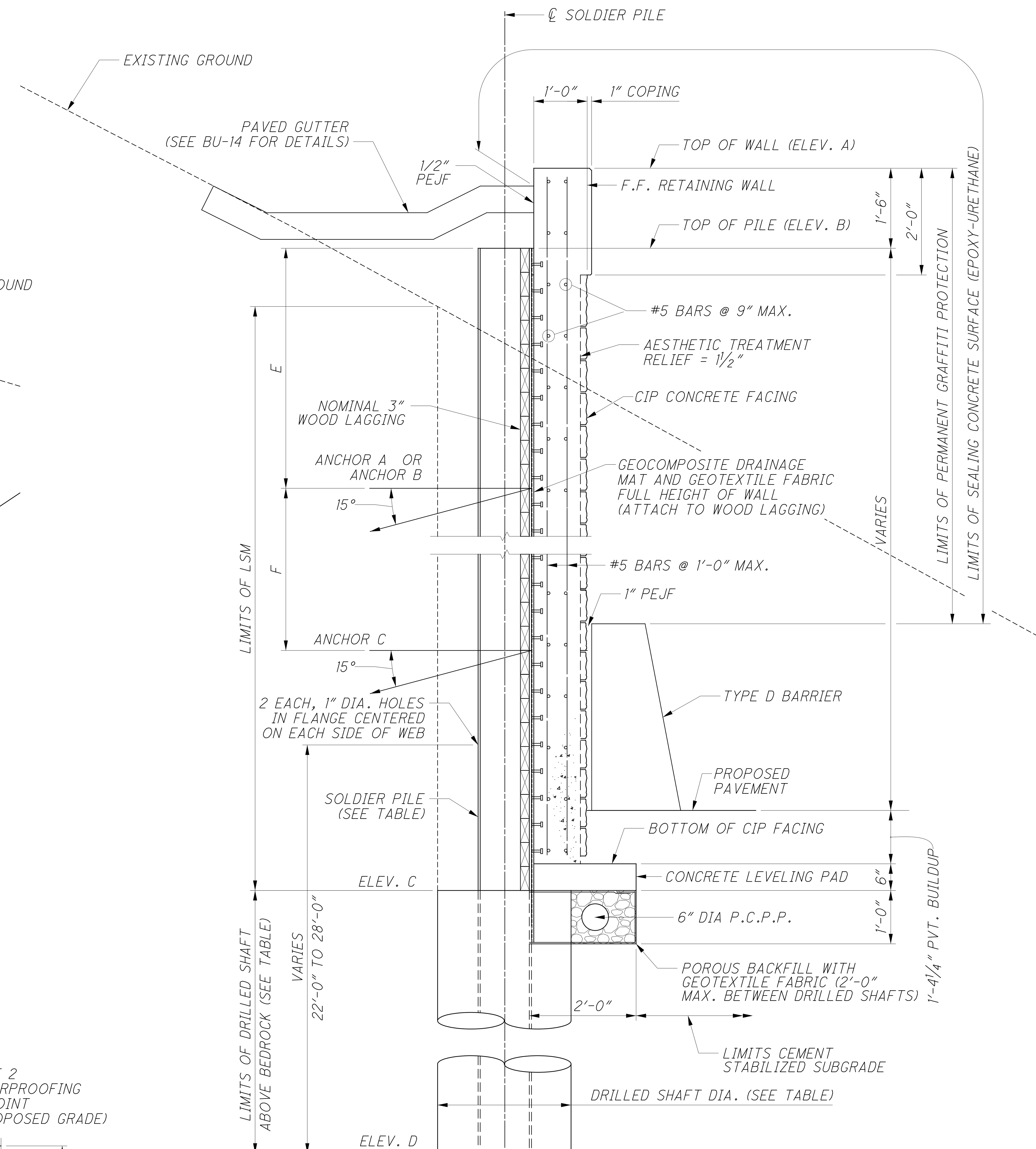


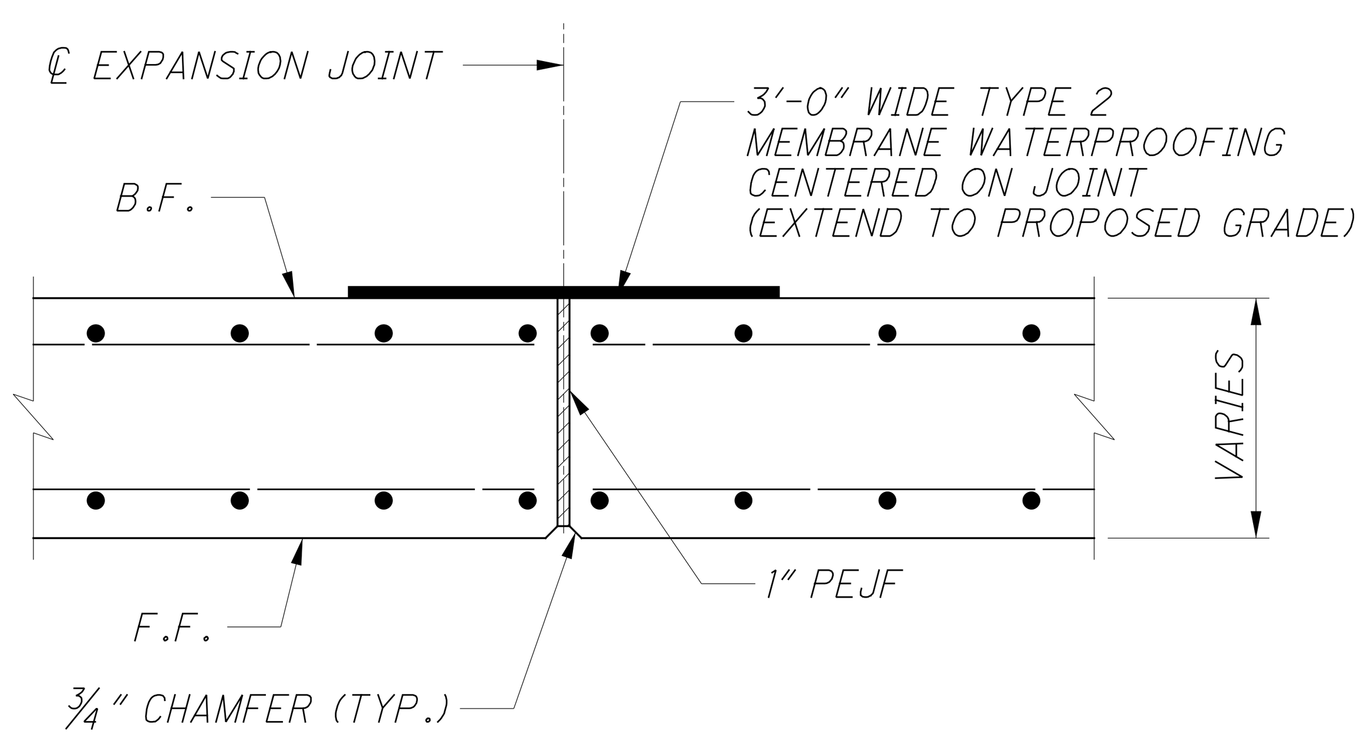
SECTION A-A

(WALL 2A)



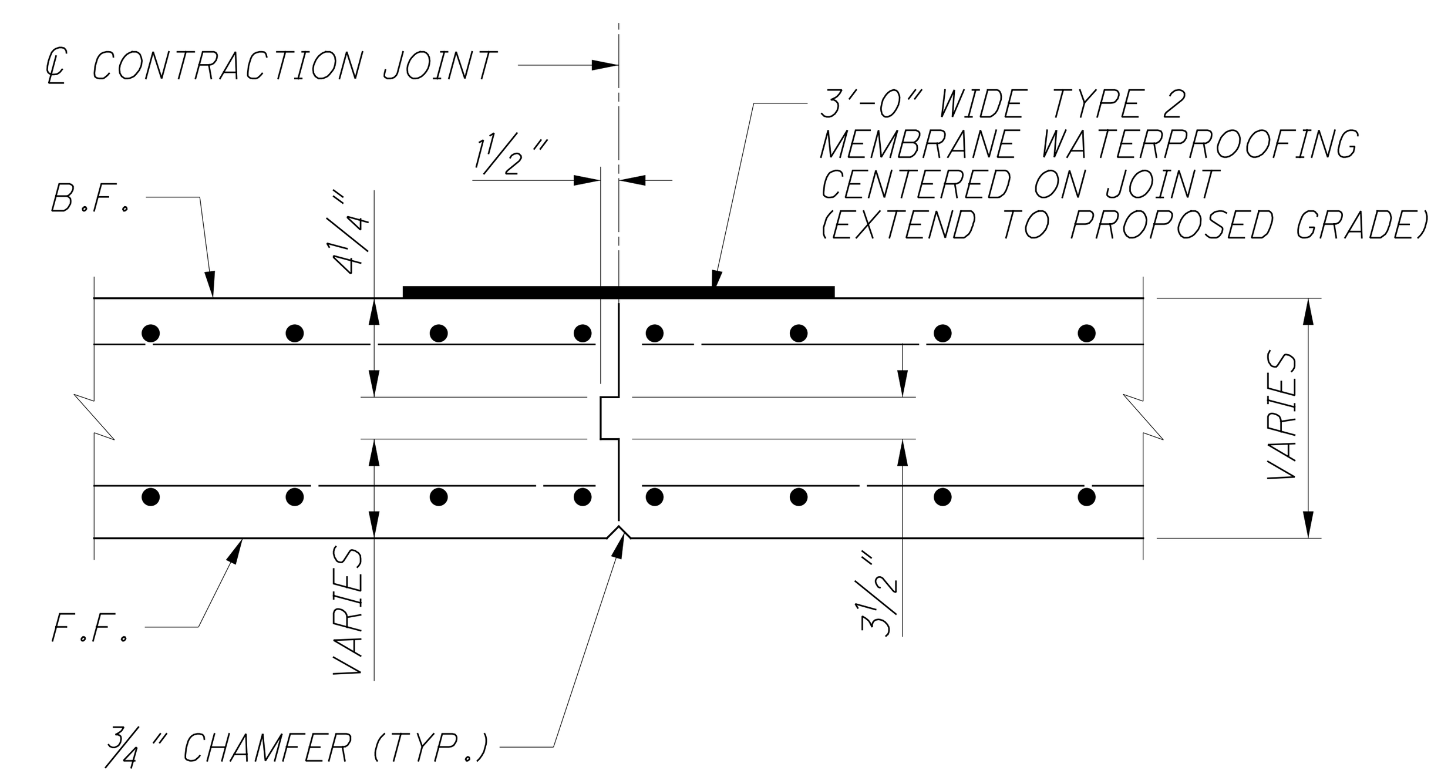
SECTION B-B

(WALL 2B)



EXPANSION JOINT DETAIL

(WALL 2A)



CONTRACTION JOINT DETAIL

(WALL 2A)

ANCHOR DESIGN DATA TABLE					
ANCHOR #	ANCHOR	DESIGN LOAD (K)	LOCK OFF LOAD (K)	MIN. UNBONDED LENGTH (FT)	MIN. BONDED LENGTH (FT)
1-11, 29-45	A	150	105	15	15
12-28	B	133	93	15	20
46-62	C	103	72	15	15

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	BMP	MDS	01/18/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB			

RETAINING WALL NO. 2A & 2B DETAILS

ALONG RAMP "P" AND IR 75 NB

HAM-75-3.84

PID No. 104667

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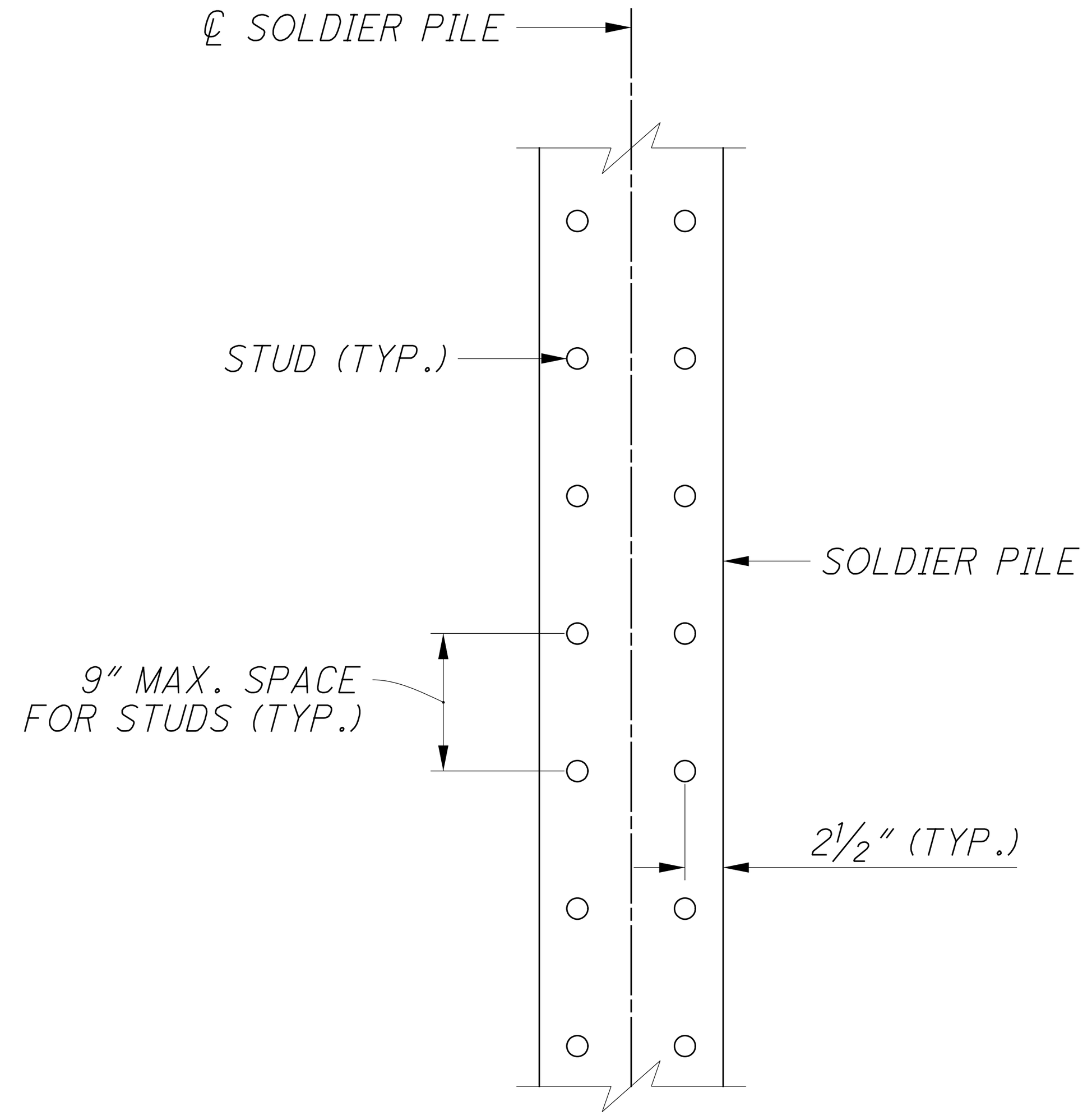
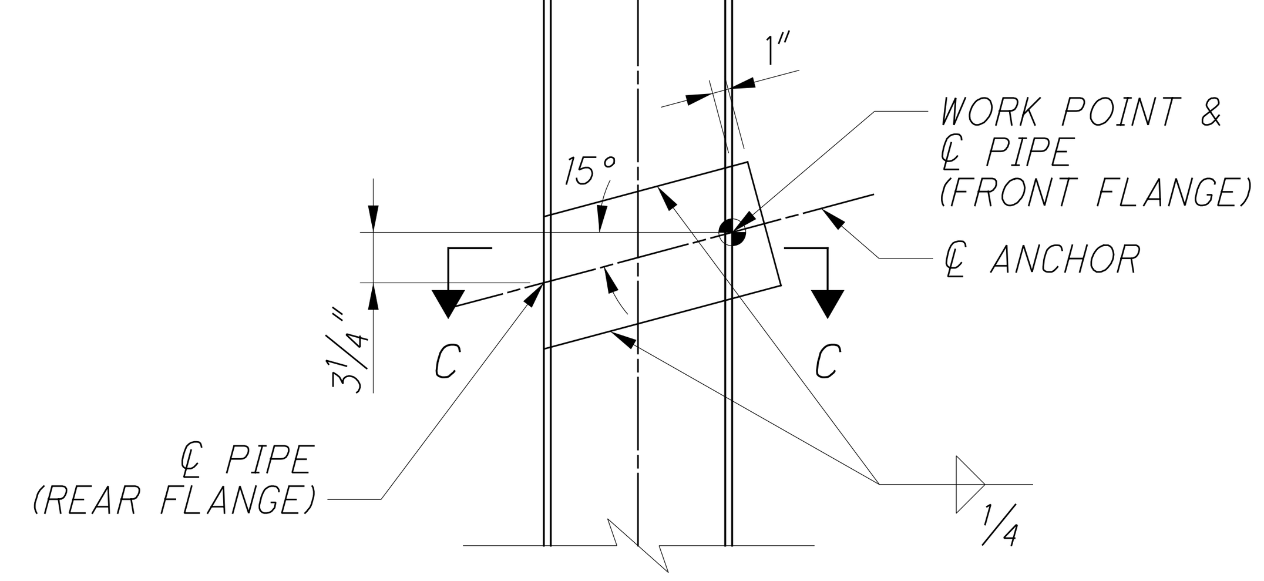
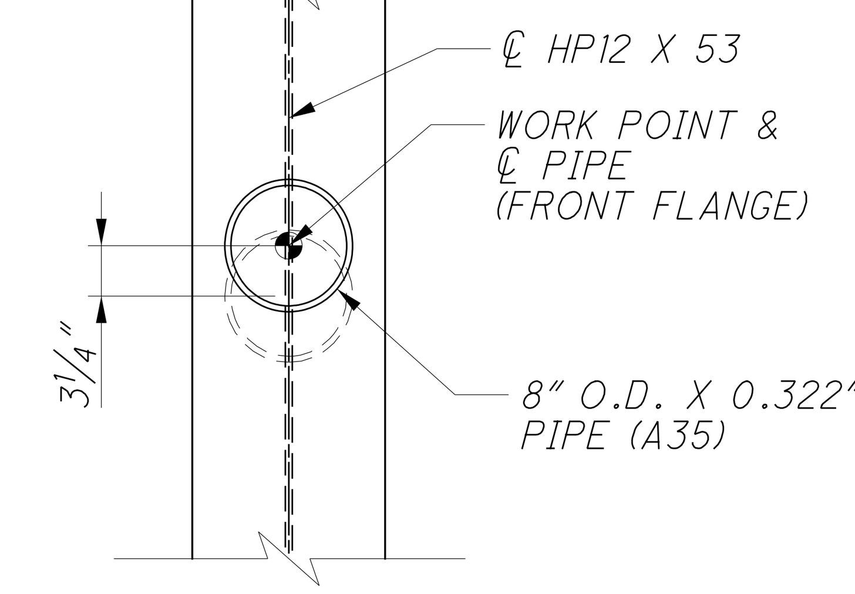


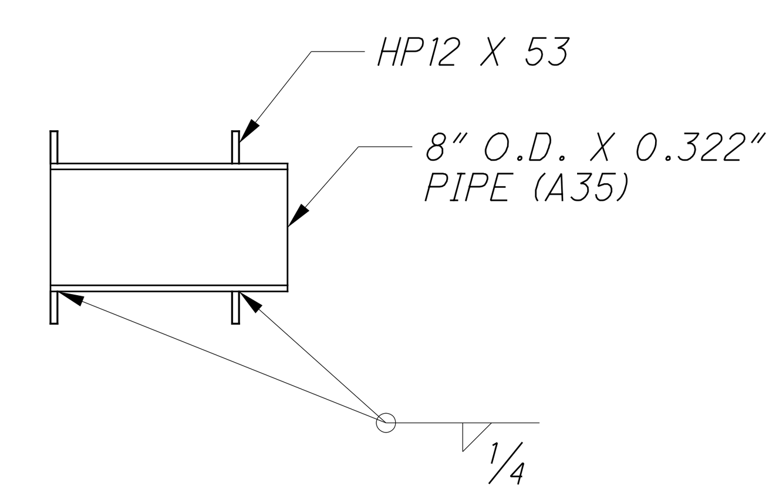
SOLDIER PILE
PARTIAL ELEVATION



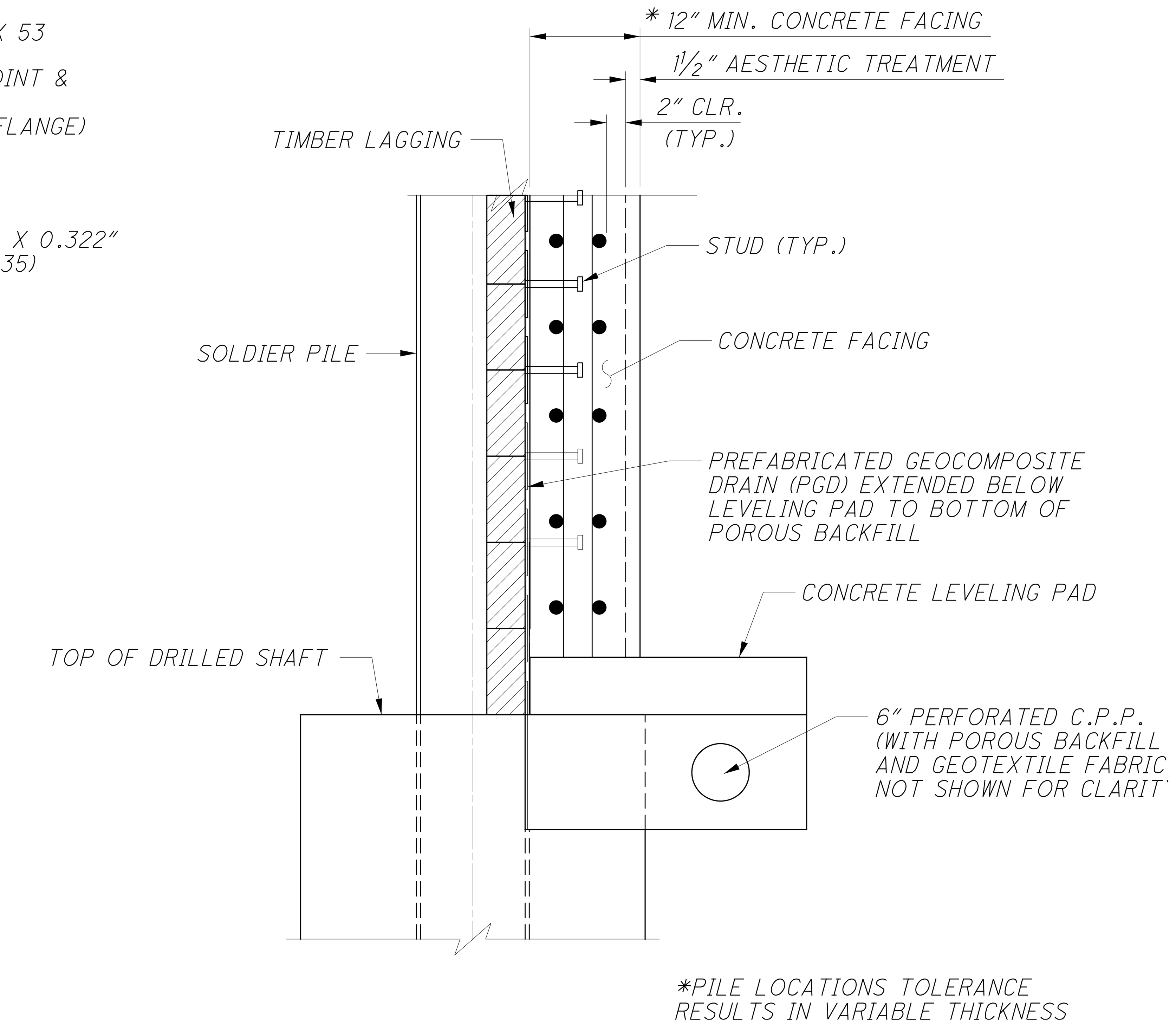
AT ANCHOR LOCATION
PARTIAL SECTION



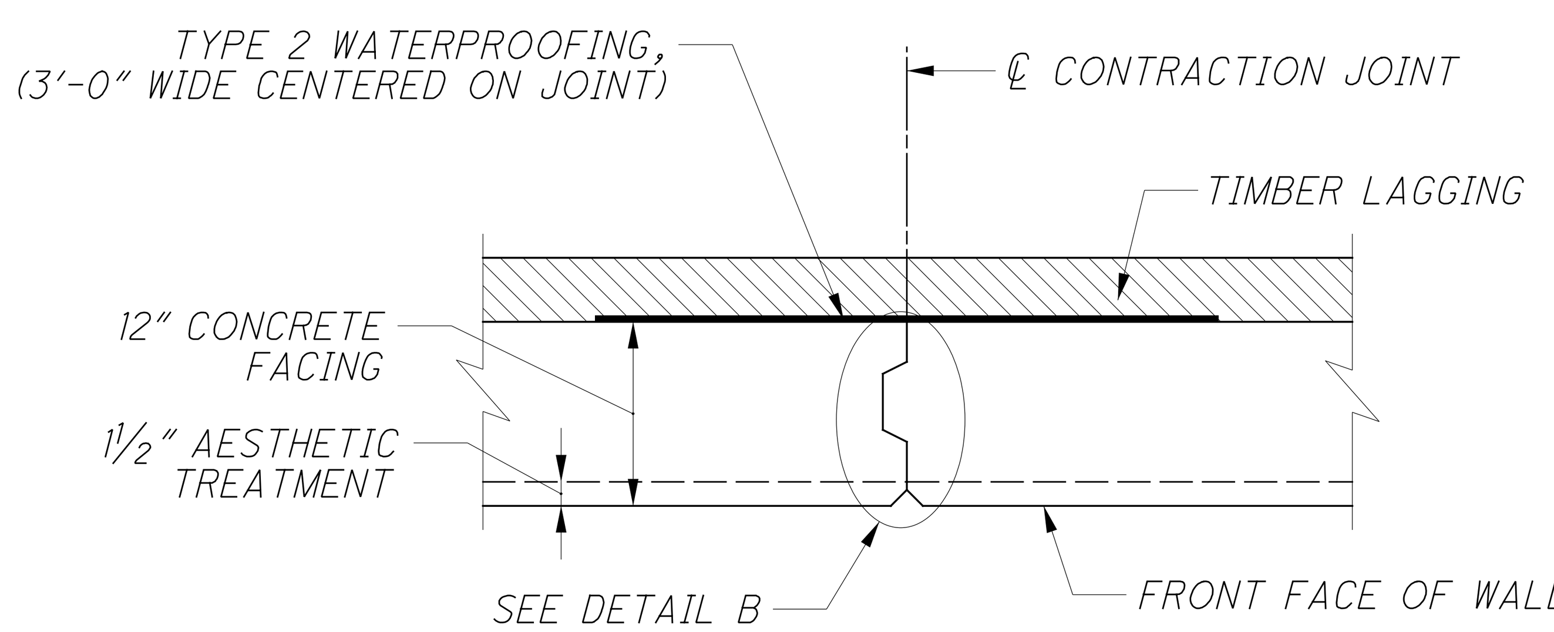
AT ANCHOR LOCATION
PARTIAL ELEVATION



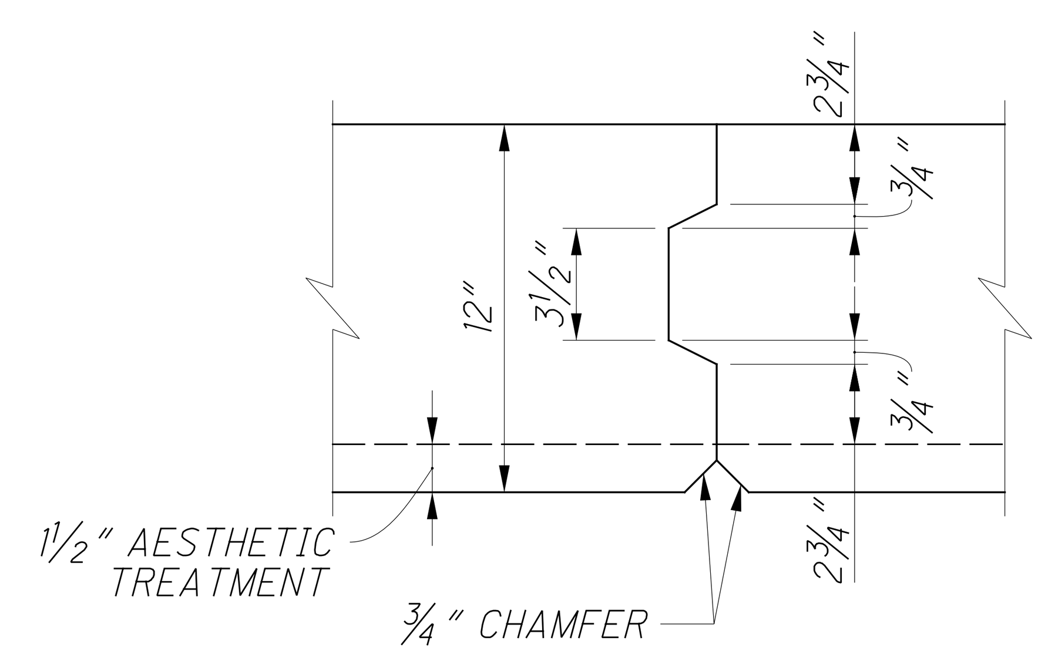
SECTION C-C



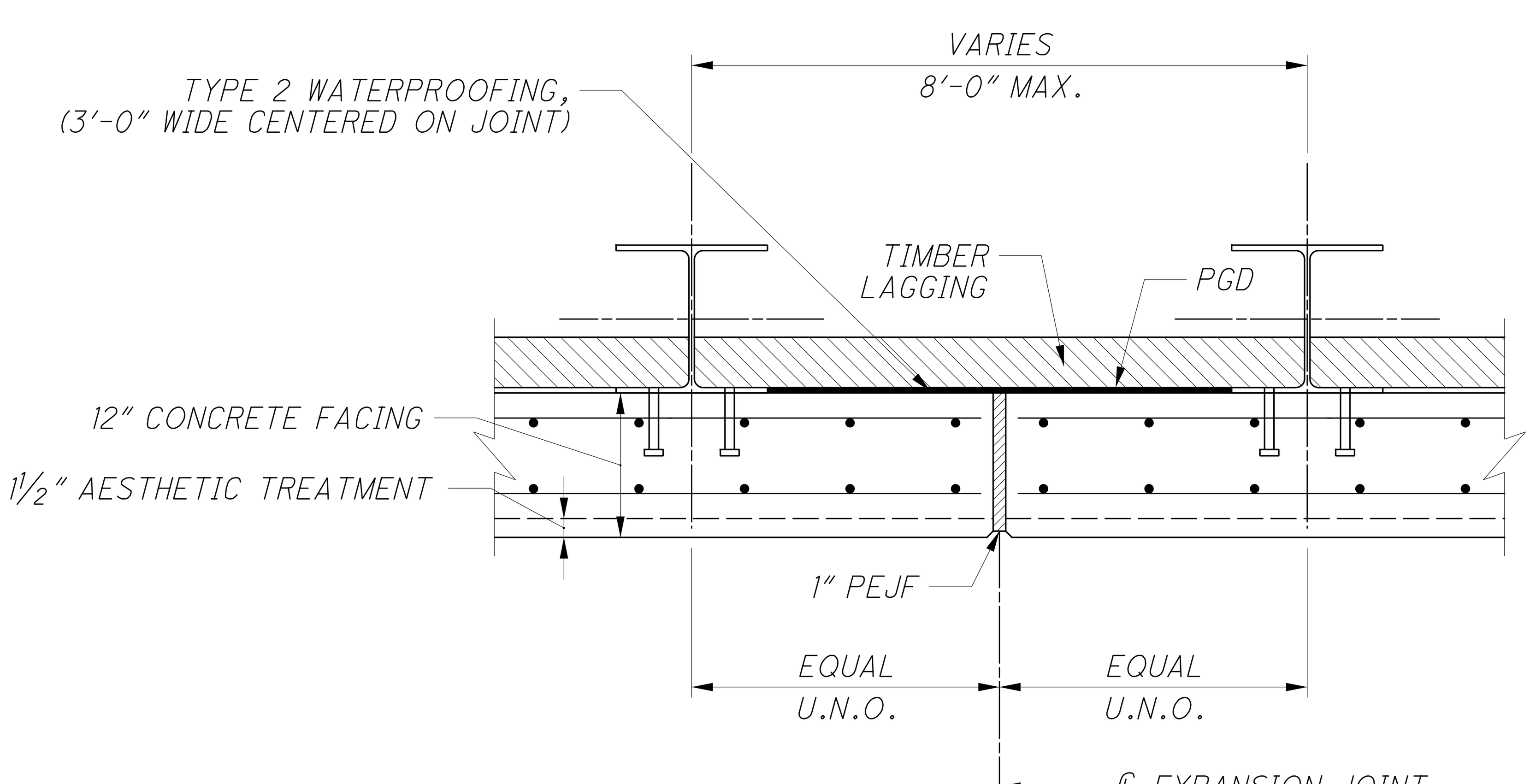
WALL DRAINAGE DETAIL



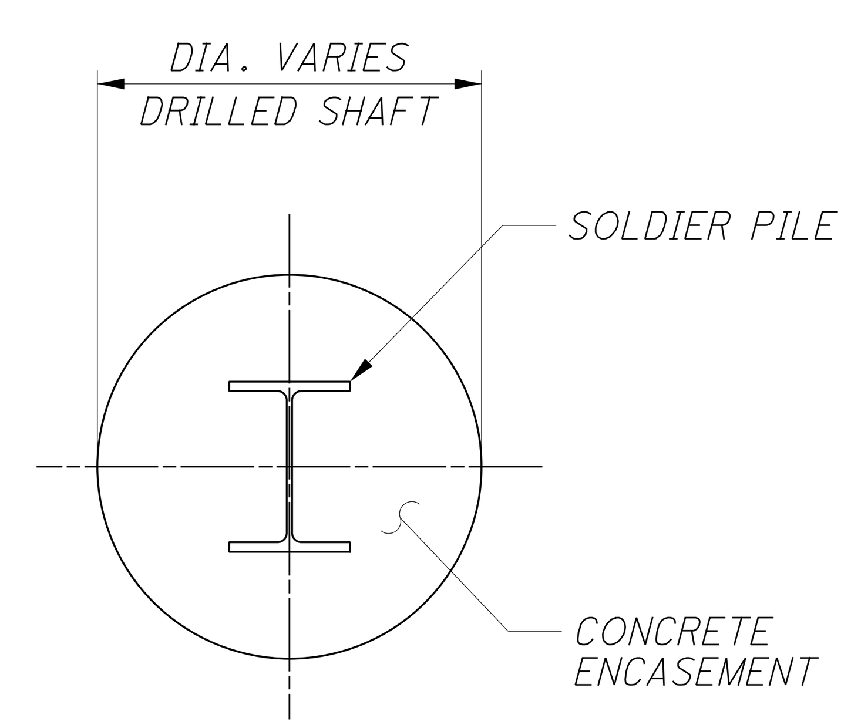
CONTRACTION JOINT DETAIL



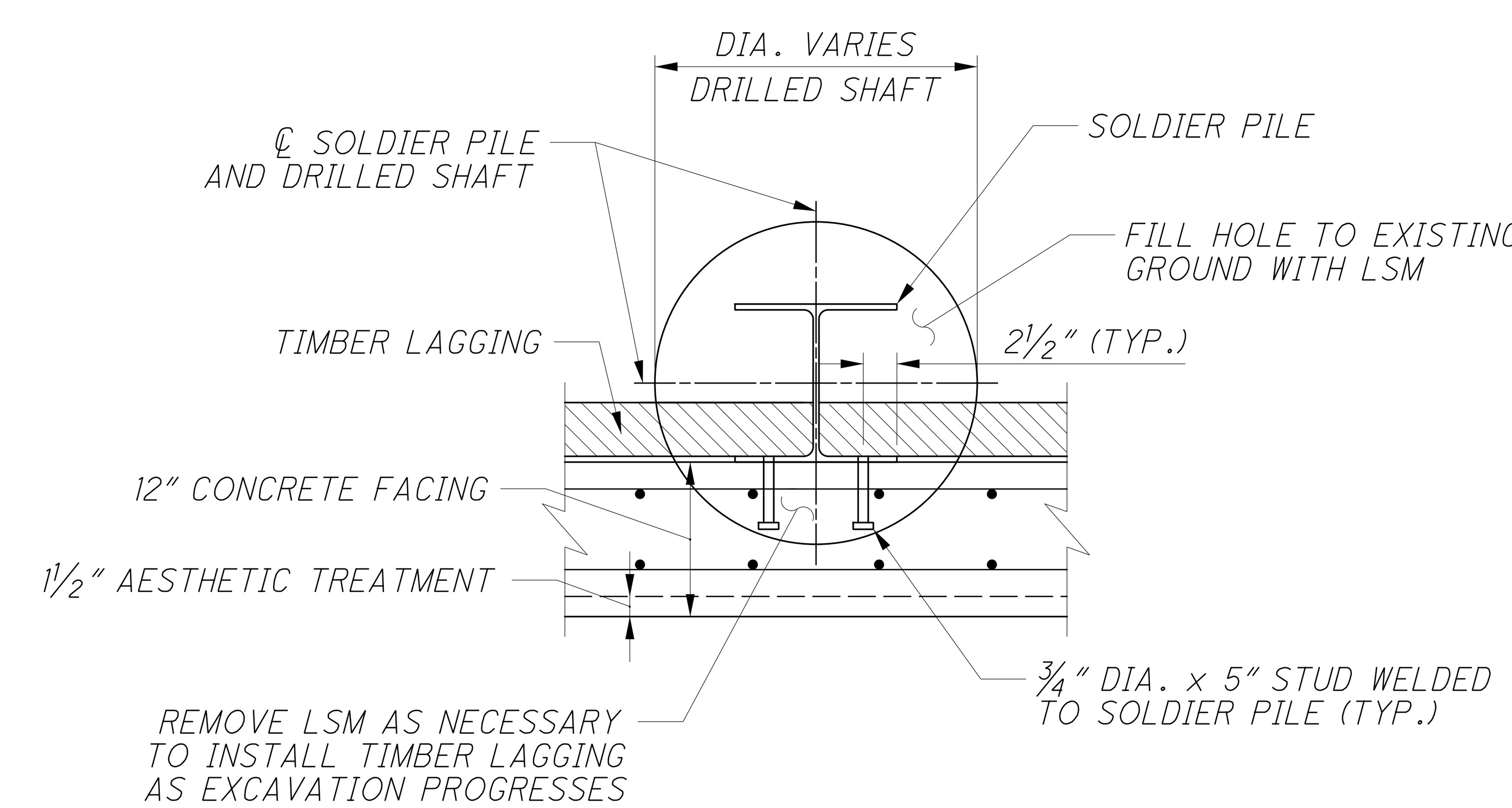
DETAIL B



EXPANSION JOINT DETAIL



SECTION A-A



SECTION B-B

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	CHECKED	DRAWN	REVISED	REVIEWED	DATE
SJF	CLB	DSH		MDS	01/18/19

STRUCTURE FILE NUMBER

RETAINING WALL NO.2 DETAILS
ALONG RAMP "P" AND IR-75 NB

HAM-75-3.84
PID No. 104667

8 / 11

11 / 48

jwade
8/22/2022 9:14:07 AM
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ESTIMATED RETAINING WALL NO. 2B DETAIL TABLE											AS- BUILT INFORMATION	
SOLDIER PILE NUMBER	PILE STATION	PILE SIZE	TOP OF WALL EL. A	TOP OF PILE EL. B	TOP OF DRILLED SHAFT EL. C	DRILLED SHAFT ABOVE BEDROCK	PILE TIP EL. D	DRILLED SHAFT DIA. (FT)	DISTANCE TO TOP ANCHOR "E"	DISTANCE BETWEEN ANCHORS "F"	DRILLED SHAFT LENGTH MEASURED (FT)	PILE LENGTH MEASURED (FT)
1	247+83.07	HP12x53	519.65	518.15	511.77	20.00	491.77	2.00	-	-	26.08	26.50
2	247+78.07	HP12x53	520.84	519.34	511.77	20.00	491.77	2.00	-	-	26.33	27.60
3	247+73.07	HP12x53	522.02	520.52	511.77	20.00	491.77	2.00	-	-	26.50	29.75
4	247+65.07	HP12x53	523.93	522.43	511.77	16.00	495.77	3.00	6.50	-	23.17	27.00
5	247+57.07	HP12x53	525.83	524.33	511.77	16.00	495.77	3.00	6.50	-	25.75	28.60
6	247+49.07	HP12x53	527.08	525.58	511.48	16.00	495.48	3.00	6.50	-	25.20	33.20
7	247+44.07	HP12x53	527.47	525.97	511.48	16.00	495.48	3.00	6.50	-	25.20	31.50
8	247+36.07	HP12x53	528.07	526.57	511.48	16.00	495.48	3.00	6.50	-	26.75	31.20
9	247+30.07	HP12x53	528.46	526.96	511.48	16.00	495.48	3.00	6.50	-	26.40	31.50
10	247+25.07	HP12x53	528.85	527.35	511.18	16.00	495.18	3.00	6.50	-	27.83	32.20
11	247+17.07	HP12x53	529.33	527.83	511.18	16.00	495.18	3.00	6.50	-	29.50	32.75
12	247+09.07	HP12x53	529.81	528.31	511.18	16.00	495.18	3.00	6.50	-	29.17	33.75
13	247+01.07	HP12x53	530.29	528.79	510.80	16.00	494.80	3.00	6.50	-	N/A	N/A
14	246+93.07	HP12x53	530.79	529.29	510.80	16.00	494.80	3.00	6.50	-	N/A	N/A
15	246+85.07	HP12x53	531.29	529.79	510.80	20.00	490.80	3.00	6.00	9.00	N/A	N/A
16	246+77.07	HP12x53	531.85	530.35	510.40	20.00	490.40	3.00	6.00	9.00	N/A	N/A
17	246+69.07	HP12x53	532.48	530.98	510.40	20.00	490.40	3.00	6.00	9.00	N/A	N/A
18	246+61.07	HP12x53	533.11	531.61	510.40	20.00	490.40	3.00	6.00	9.00	N/A	N/A
19	246+53.07	HP12x53	533.36	531.86	509.93	20.00	489.93	3.00	6.00	9.00	37.67	42.25
20	246+45.07	HP12x53	533.21	531.71	509.93	20.00	489.93	3.00	6.00	9.00	37.00	42.25
21	246+37.07	HP12x53	533.06	531.56	509.93	20.00	489.93	3.00	6.00	9.00	38.42	42.00
22	246+29.05	HP12x53	532.89	531.39	509.44	20.00	489.44	3.00	6.00	9.00	38.43	42.25
23	246+21.00	HP12x53	532.69	531.19	509.44	20.00	489.44	3.00	6.00	9.00	39.17	42.00
24	246+12.94	HP12x53	532.49	530.99	509.44	20.00	489.44	3.00	6.00	9.00	38.83	41.75
25	246+04.86	HP12x53	532.15	530.65	508.93	20.00	488.93	3.00	6.00	9.00	39.50	42.25
26	245+96.75	HP12x53	531.68	530.18	508.93	20.00	488.93	3.00	6.00	9.00	39.67	42.00
27	245+88.63	HP12x53	531.22	529.72	508.93	20.00	488.93	3.00	6.00	9.00	37.83	34.30
28	245+80.49	HP12x53	530.68	529.18	508.41	20.00	488.41	3.00	6.00	9.00	38.50	40.80
29	245+72.33	HP12x53	530.07	528.57	508.41	20.00	488.41	3.00	6.00	9.00	39.50	40.20
30	245+64.16	HP12x53	529.46	527.96	508.41	20.00	488.41	3.00	6.00	9.00	37.00	39.60
31	245+55.96	HP12x53	528.84	527.34	507.87	20.00	487.87	3.00	6.00	9.00	32.50	39.50
32	245+47.74	HP12x53	528.22	526.72	507.87	16.00	491.87	3.00	6.50	-	32.50	34.90
33	245+39.50	HP12x53	527.60	526.10	507.87	16.00	491.87	3.00	6.50	-	32.33	34.30
34	245+31.24	HP12x53	526.97	525.47	507.31	16.00	491.31	3.00	6.50	-	32.50	34.20
35	245+22.96	HP12x53	526.34	524.84	507.31	16.00	491.31	3.00	6.50	-	31.50	33.60
36	245+14.66	HP12x53	525.71	524.21	507.31	16.00	491.31	3.00	6.50	-	31.33	33.00
37	245+06.34	HP12x53	525.09	523.59	506.78	16.00	490.78	3.00	6.50	-	31.10	32.90
38	244+98.00	HP12x53	524.50	523.00	506.78	16.00	490.78	3.00	6.50	-	31.25	32.30
39	244+89.64	HP12x53	523.90	522.40	506.78	16.00	490.78	3.00	6.50	-	29.75	31.70
40	244+81.25	HP12x53	523.32	521.82	506.27	16.00	490.27	3.00	6.50	-	30.20	31.60
41	244+72.85	HP12x53	522.75	521.25	506.27	16.00	490.27	3.00	6.50	-	30.10	31.00
42	244+64.42	HP12x53	522.18	520.68	506.27	16.00	490.27	3.00	6.50	-	30.58	30.50
43	244+55.97	HP12x53	521.61	520.11	505.86	16.00	489.86	3.00	6.50	-	29.92	30.30
44	244+47.51	HP12x53	521.04	519.54	505.86	16.00	489.86	3.00	6.50	-	29.00	29.70
45	244+39.02	HP12x53	520.48	518.98	505.86	16.00	489.86	3.00	6.50	-	28.30	29.20
46	244+30.53	HP12x53	519.59	518.09	505.86	16.00	489.86	3.00	6.50	-	29.50	28.30
47	244+22.04	HP12x53	518.39	516.89	505.86	16.00	489.86	3.00	6.50	-	26.00	27.10
48	244+13.55	HP12x53	517.19	515.69	505.86	16.00	489.86	3.00	6.50	-	25.00	25.90
49	244+05.06	HP12x53	516.14	514.64	505.86	20.00	485.86	2.00	-	-	27.25	28.80
50	243+99.75	HP12x53	515.58	514.08	505.86	20.00	485.86	2.00	-	-	27.83	28.30
51	243+94.44	HP12x53	515.01	513.51	505.86	20.00	485.86	2.00	-	-	26.40	27.70
52	243+89.14	HP12x53	514.45	512.95	505.86	20.00	485.86	2.00	-	-	25.92	27.10
53	243+83.83	HP12x53	513.88	512.38	505.86	20.00	485.86	2.00	-	-	26.10	26.50
54	243+78.52	HP12x53	513.32	511.82	506.02	20.00	486.02	2.00	-	-	24.30	25.80
55	243+73.32	HP12x53	512.78	511.28	506.02	20.00	486.02	2.00	-	-	24.20	25.30
56	243+68.32	HP12x53	512.23	510.73	506.02	20.00	486.02	2.00	-	-	22.10	24.80
57	243+63.32	HP12x53	511.69	510.19	506.02	20.00	486.02	2.00	-	-	22.10	23.70
58	243+58.63	HP12x53	511.14	509.64	506.02	20.00	486.02	2.00	-	-	20.40	N/A

LEGEND

N/A - NOT AVAILABLE

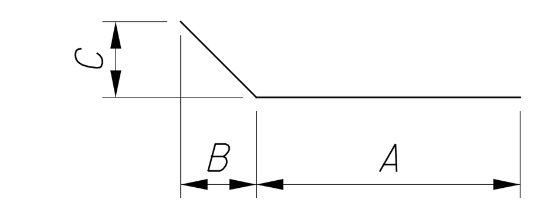
DESIGN AGENCY
STRUCTUREPOINT

DESIGNED SJF | DRAWN BMP | REVIEWED MDS | DATE 01/18/19
CHECKED CLB | REVISED | STRUCTURE FILE NUMBER

RETAINING WALL NO. 2B DETAIL TABLE
ALONG RAMP "P" AND IR 75 NB

HAM-75-3.84
PID No. 104667

MARK	NUMBER / TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
WALL NO. 2A											
W501	296	6'-8"	2058	STR							
W502	16	24'-3"	405	STR							
W503	32	40'-0"	1335	STR							
W504	16	17'-8"	295	STR							
W505	8	5'-7"	47	19	2'-7"	2'-2"	2'-2"				
W506	149	9'-2"	1425	2	4'-5"	0'-7"	4'-5"				
W507	18	23'-8"	444	STR							
W508	18	25'-7"	480	STR							
W509	54	24'-8"	1389	STR							
W510	16	33'-5"	558	STR							
W511	16	17'-8"	295	STR							
W512	2	15'-6"	32	STR							
	1 SR	7'-9"					3'-5"				
W601	OF	TO	294	37	0'-8"	3'-4"	TO	1'-0"			1/8"
	25	7'-11"					3'-7"				
	1 SR	7'-7"				6'-9"					
W602	OF	TO	288	1	1'-0"	TO					1/8"
	25	7'-9"				6'-11"					
	1 SR	7'-6"					3'-2"				
W603	OF	TO	309	37	0'-8"	3'-4"	TO	1'-0"			1/4"
	27	7'-9"					3'-5"				
	1 SR	7'-4"				6'-6"					
W604	OF	TO	304	1	1'-0"	TO					1/4"
	27	7'-7"				6'-9"					
	1 SR	7'-3"					2'-11"				
W605	OF	TO	288	37	0'-8"	3'-4"	TO	1'-0"			1/4"
	26	7'-6"					3'-2"				
	1 SR	7'-2"				6'-4"					
W606	OF	TO	286	1	1'-0"	TO					1/4"
	26	7'-5"				6'-7"					
	1 SR	7'-6"					3'-2"				
W607	OF	TO	298	37	0'-8"	3'-4"	TO	1'-0"			1/4"
	26	7'-9"					3'-5"				
	1 SR	7'-4"				6'-6"					
W608	OF	TO	293	1	1'-0"	TO					1/4"
	26	7'-7"				6'-9"					
	1 SR	7'-4"					3'-0"				
W609	OF	TO	292	37	0'-8"	3'-4"	TO	1'-0"			1/4"
	26	7'-6"					3'-2"				
	1 SR	7'-2"				6'-4"					
W610	OF	TO	283	1	1'-0"	TO					1/4"
	26	7'-4"				6'-6"					
	1 SR	7'-2"					2'-10"				
W611	OF	TO	207	37	0'-8"	3'-4"	TO	1'-0"			1/4"
	19	7'-4"					3'-0"				
	1 SR	7'-0"				6'-2"					
W612	OF	TO	202	1	1'-0"	TO					1/8"
	19	7'-2"				6'-4"					
		SUB-TOTAL	12,107								



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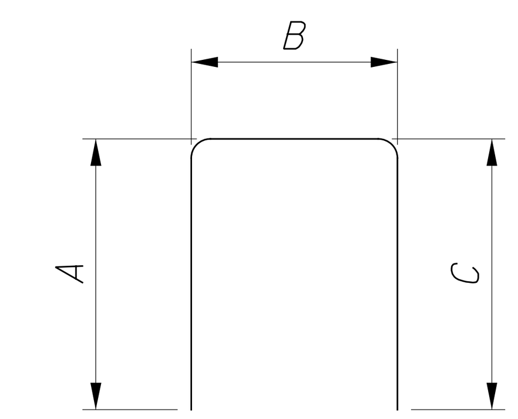

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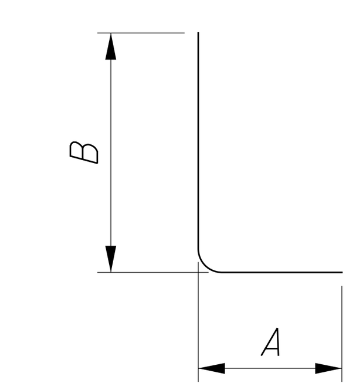

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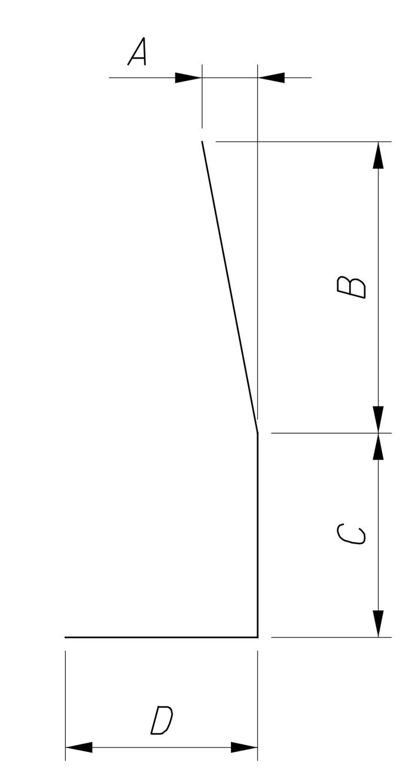


TYPE-37

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED SJF | CHECKED CLB | DRAWN BMP | REVISED | REVIEWED MDS | DATE 01/18/19 | STRUCTURE FILE NUMBER

RETAINING WALL NO. 2A REINFORCING STEEL LIST
ALONG RAMP "P" AND IR 75 NB

HAM-75-3.84
PID No. 104667

10/11

MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
					WALL NO. 2B						
W501	20	29'-8"	619	STR							
	2 SR	2'-7"									
W502	OF	TO	289	STR							3'-2 1/2"
	9	28'-2"									
W503	2	30'-5"	63	STR							
W504	696	23'-8"	17181	STR							
W505	2	17'-8"	37	STR							
W506	4	7'-10"	33	STR							
W507	2	13'-11"	29	STR							
W508	2	18'-1"	38	STR							
W509	2	5'-11"	12	STR							
W510	4	15'-9"	66	STR							
W511	2	6'-3"	13	STR							
W512	2	12'-1"	25	STR							
W513	2	11'-0"	23	STR							
W514	2	20'-2"	42	STR							
W515	2	10'-4"	22	STR							
W516	2	22'-6"	47	STR							
W517	2	12'-1"	25	STR							
W518	2	3'-2"	7	STR							
W519	2	15'-2"	32	STR							
W520	2	5'-8"	12	STR							
W521	2	17'-11"	37	STR							
W522	2	21'-9"	45	STR							
W523	2	11'-3"	23	STR							
W524	4	14'-2"	59	STR							
W525	2	3'-6"	7	STR							
	2 SR	5'-3"									
W526	OF	TO	106	STR							5'-0"
	4	20'-3"									
W527	2	23'-11"	50	STR							
W528	20	26'-2"	546	STR							
W529	2	26'-4"	55	STR							
	2 SR	1'-9"									
W530	OF	TO	98	STR							6'-7 3/4"
	4	21'-8"									
W531	14	22'-2"	324	STR							
W532	2	21'-0"	44	STR							
W533	2	7'-3"	15	STR							
	2 SR	7'-3"									
W534	OF	TO	695	STR							2 3/4"
	31	14'-3"									
	2 SR	14'-8"									
W535	OF	TO	810	STR							1"
	25	16'-5"									

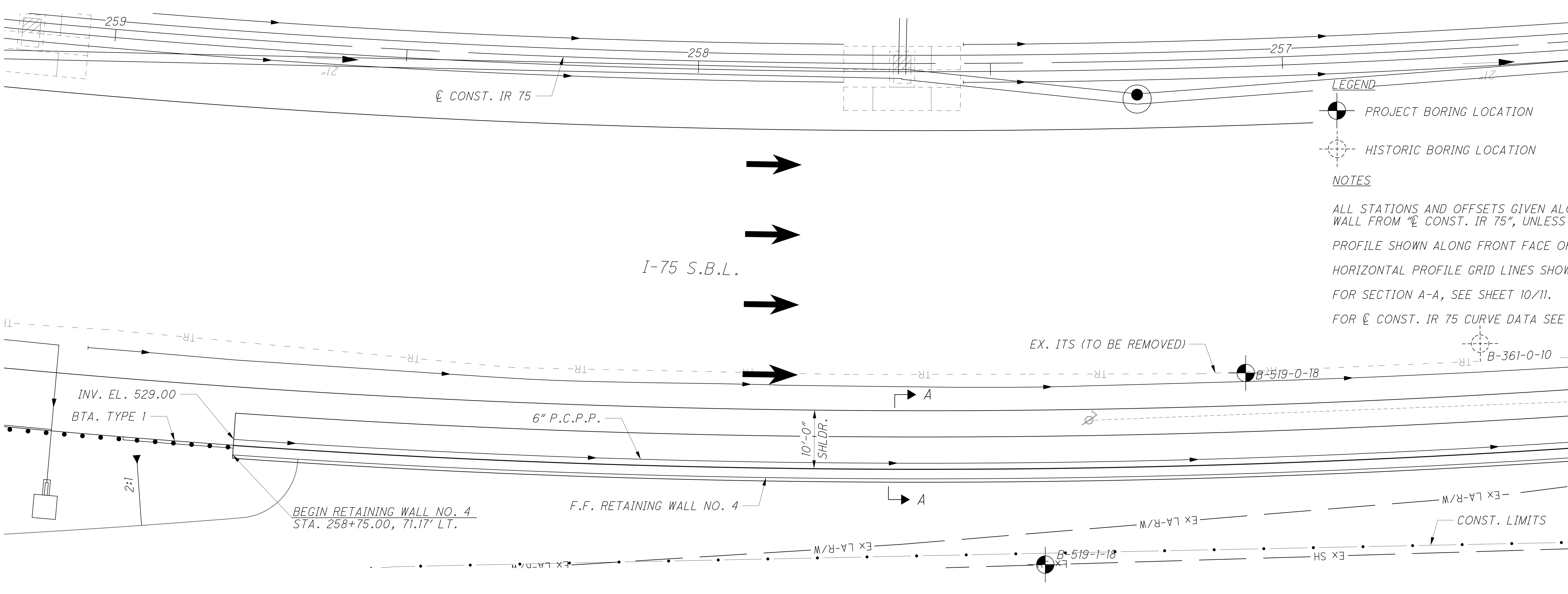
MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
					WALL NO. 2B CONTINUED						
	2 SR	16'-9"									
W536	OF	TO	910	STR							3/4"
	25	18'-2"									
	2 SR	18'-6"									
W537	OF	TO	1004	STR							3/4"
	25	20'-0"									
	2 SR	20'-6"									
W538	OF	TO	1115	STR							7/8"
	25	22'-3"									
	4 SR	22'-3"									
W539	OF	TO	2351	STR							1/4"
	25	22'-10"									
	2 SR	21'-5"									
W540	OF	TO	1152	STR							3/4"
	25	22'-9"									
	2 SR	20'-1"									
W541	OF	TO	1093	STR							7/8"
	25	21'-10"									
	2 SR	18'-9"									
W542	OF	TO	1023	STR							7/8"
	25	20'-6"									
	2 SR	17'-5"									
W543	OF	TO	956	STR							1"
	25	19'-3"									
	2 SR	16'-2"									
W544	OF	TO	889	STR							7/8"
	25	17'-11"									
	2 SR	14'-11"									
W545	OF	TO	824	STR							7/8"
	25	16'-8"									
	2 SR	13'-8"									
W546	OF	TO	756	STR							3/4"
	25	15'-4"									
	2 SR	10'-1"									
W547	OF	TO	617	STR							1 3/4"
	25	13'-7"									
	2 SR	7'-1"									
W548	OF	TO	481	STR							1 3/8"
	27	10'-0"									
	2 SR	4'-6"									
W549	OF	TO	272	STR							1 1/4"
	23	6'-10"									
	SUB-TOTAL		34,972								

DESIGN AGENCY
STRUCTUREPOINT

DESIGNED SJF | CHECKED CLB | DRAWN BMP | REVISED | REVIEWED MDS | DATE 01/18/19 | STRUCTURE FILE NUMBER

RETAINING WALL NO. 2B REINFORCING STEEL LIST
ALONG RAMP "P" AND IR 75 NB

HAM-75-3.84
PID No. 104667



PLAN

LEGEND

- PROJECT BORING LOCATION
- HISTORIC BORING LOCATION

NOTES

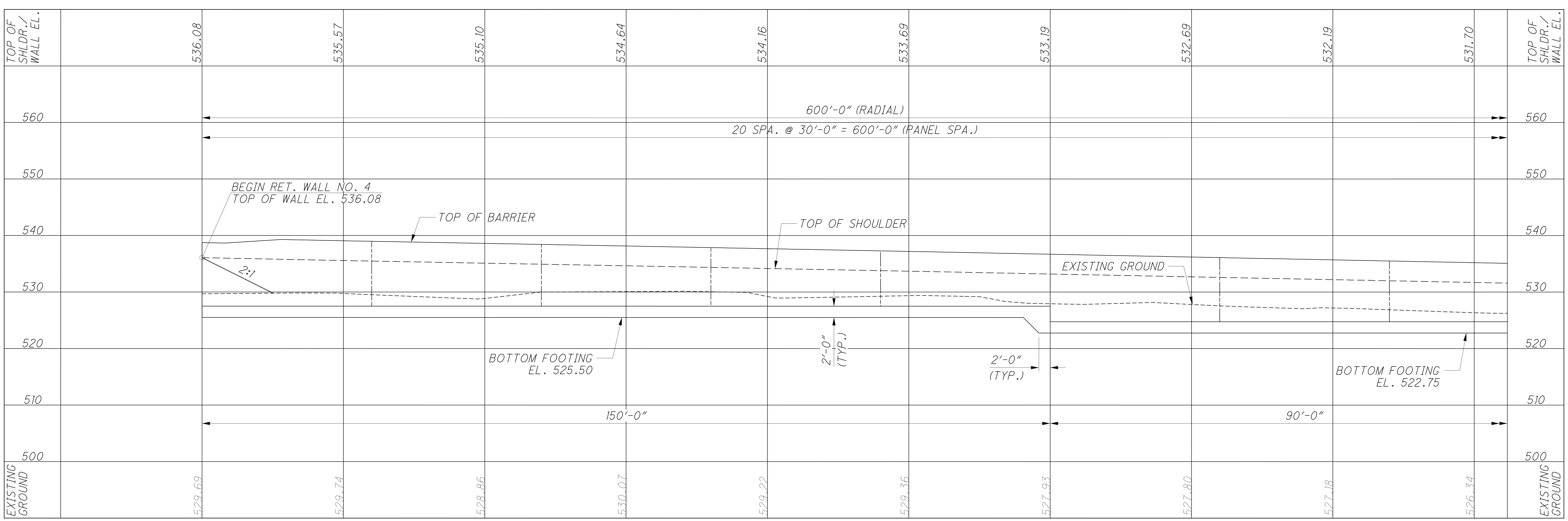
ALL STATIONS AND OFFSETS GIVEN ALONG FRONT FACE OF WALL FROM "℄ CONST. IR 75", UNLESS NOTED OTHERWISE.

PROFILE SHOWN ALONG FRONT FACE OF WALL.

HORIZONTAL PROFILE GRID LINES SHOWN AT 25'-0" SPACING.

FOR SECTION A-A, SEE SHEET 10/11.

FOR ℄ CONST. IR 75 CURVE DATA SEE BU-14.



PROFILE
ALONG F.F. RETAINING WALL NO. 4

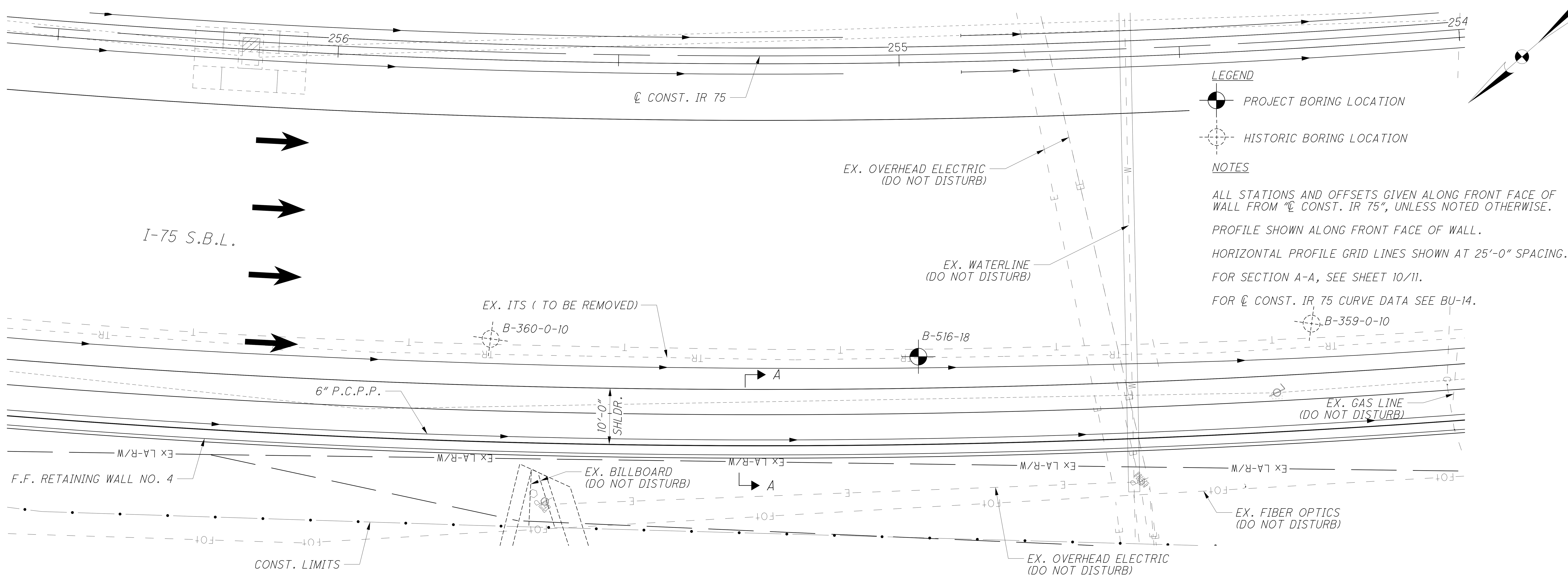
DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	CHECKED	DRAWN	REVISED	REVIEWED	DATE	STRUCTURE FILE NUMBER
SJF	CLB	BMP		MDS	01/18/19	

RETAINING WALL NO. 4 DETAILS
ALONG IR 75 SB

HAM-75-3.84
PID No. 104667

1/11



LEGEND

PROJECT BORING LOCATION

HISTORIC BORING LOCATION

NOTES

ALL STATIONS AND OFFSETS GIVEN ALONG FRONT FACE OF WALL FROM "℄ CONST. IR 75", UNLESS NOTED OTHERWISE.

PROFILE SHOWN ALONG FRONT FACE OF WALL.

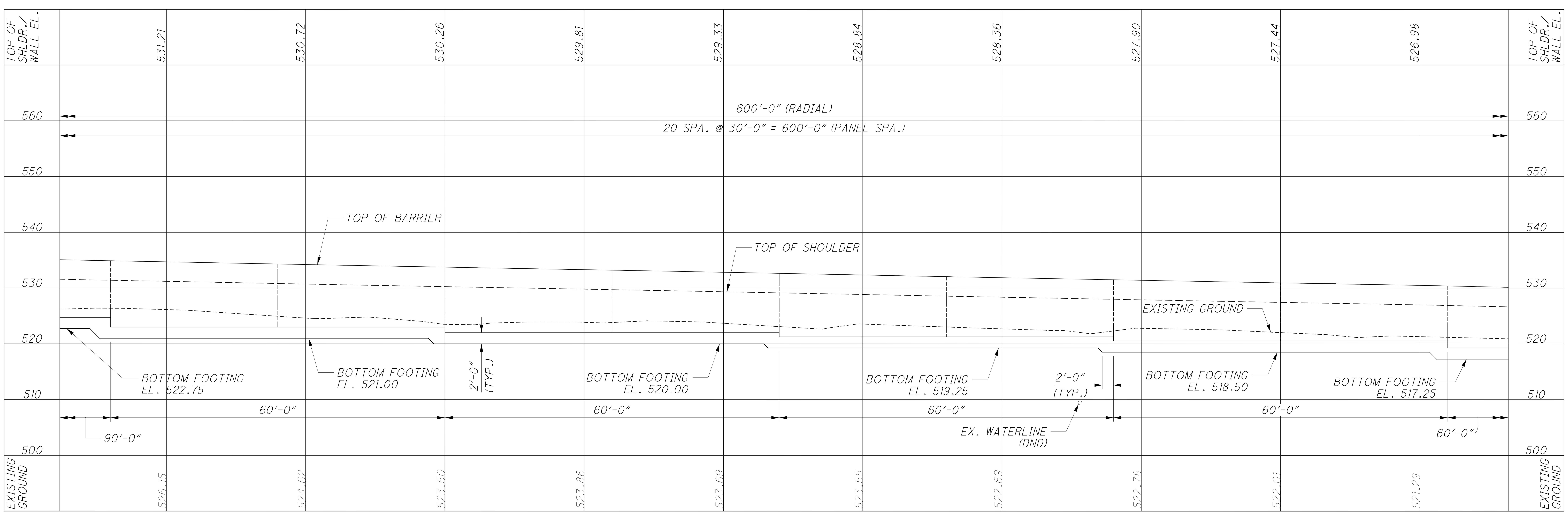
HORIZONTAL PROFILE GRID LINES SHOWN AT 25'-0" SPACING.

FOR SECTION A-A, SEE SHEET 10/11.

FOR ℄ CONST. IR 75 CURVE DATA SEE BU-14.

PLAN

TOP OF SHLDR./WALL EL.	531.21	530.72	530.26	529.81	529.33	528.84	528.36	527.90	527.44	526.98
EXISTING GROUND	526.15	524.62	523.50	523.86	523.69	523.55	522.69	522.78	522.01	521.29



PROFILE

ALONG F.F. RETAINING WALL NO. 4

DESIGN AGENCY STRUCTUREPOINT

DESIGNED SJF | CHECKED CLB | DRAWN BMP | REVISED | REVIEWED MDS | DATE 01/18/19 | STRUCTURE FILE NUMBER

RETAINING WALL NO. 4 DETAILS

ALONG IR 75 SB

HAM-75-3.84

PID No. 104667

2/11

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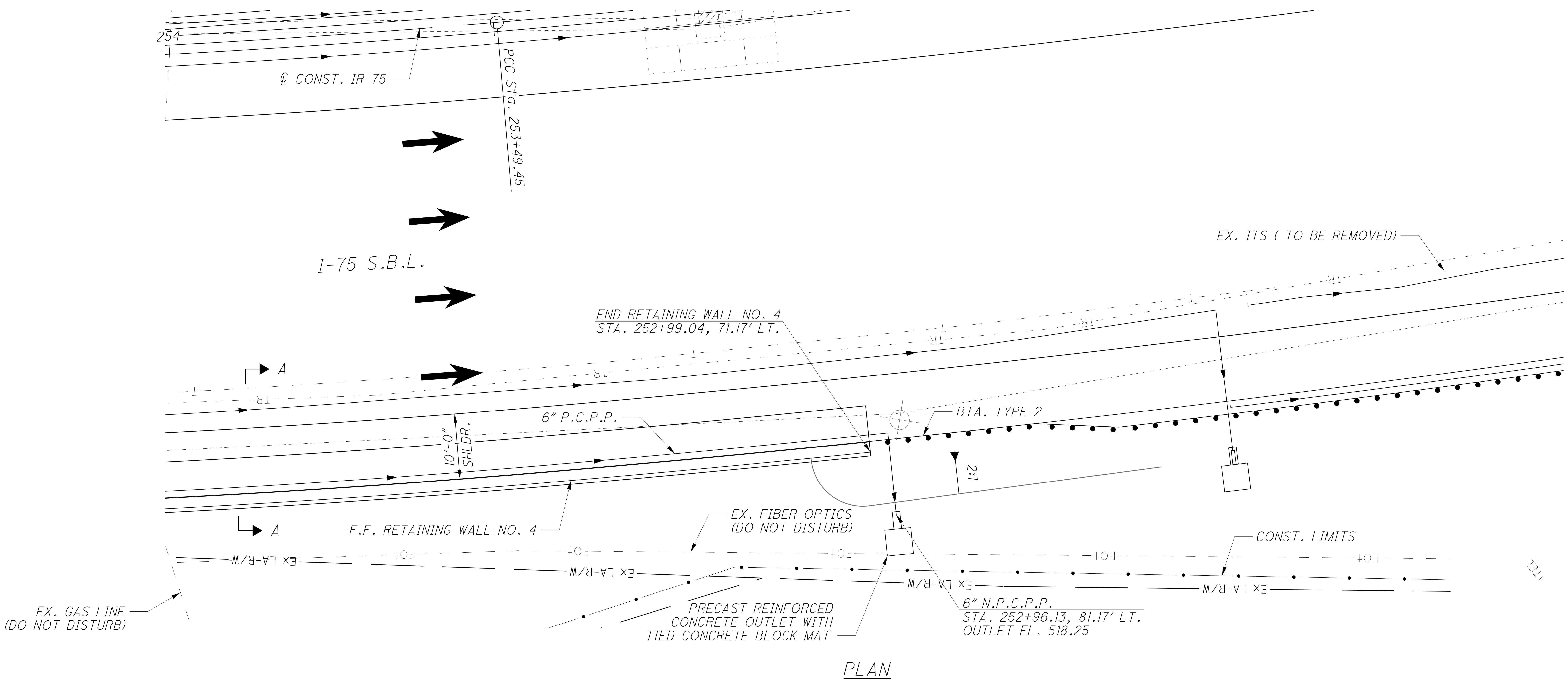
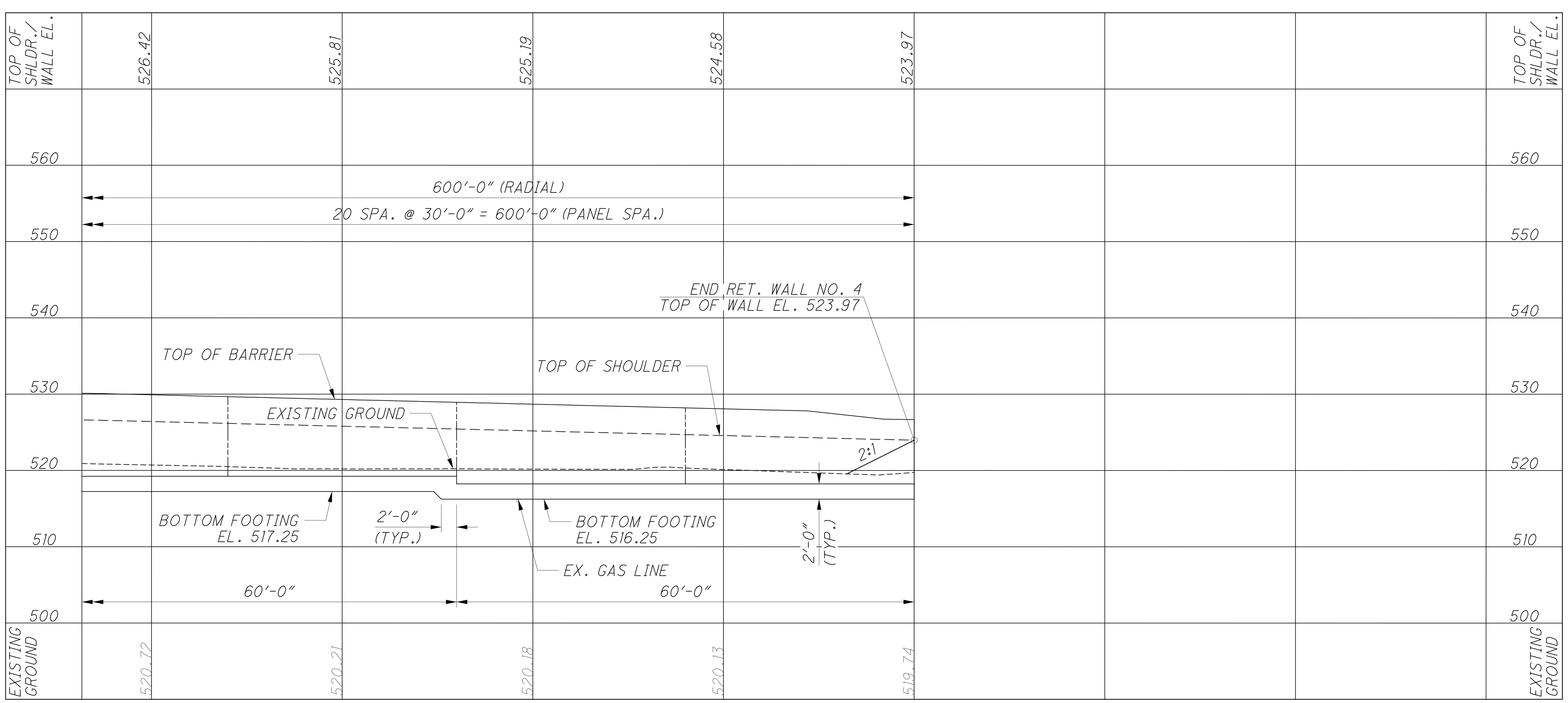


PLAN



PROFILE
ALONG F.F. RETAINING WALL NO. 4

LEGEND

PROJECT BORING LOCATION

HISTORIC BORING LOCATION

NOTES

ALL STATIONS AND OFFSETS GIVEN ALONG FRONT FACE OF WALL FROM "℄ CONST. IR 75", UNLESS NOTED OTHERWISE.

PROFILE SHOWN ALONG FRONT FACE OF WALL.

HORIZONTAL PROFILE GRID LINES SHOWN AT 25'-0" SPACING.

FOR SECTION A-A, SEE SHEET 10/11.

FOR ℄ CONST. IR 75 CURVE DATA SEE BU-14.

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	BMP	MDS	01/18/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB			

RETAINING WALL NO. 4 DETAILS
ALONG IR 75 SB

HAM-75-3.84
PID No. 104667

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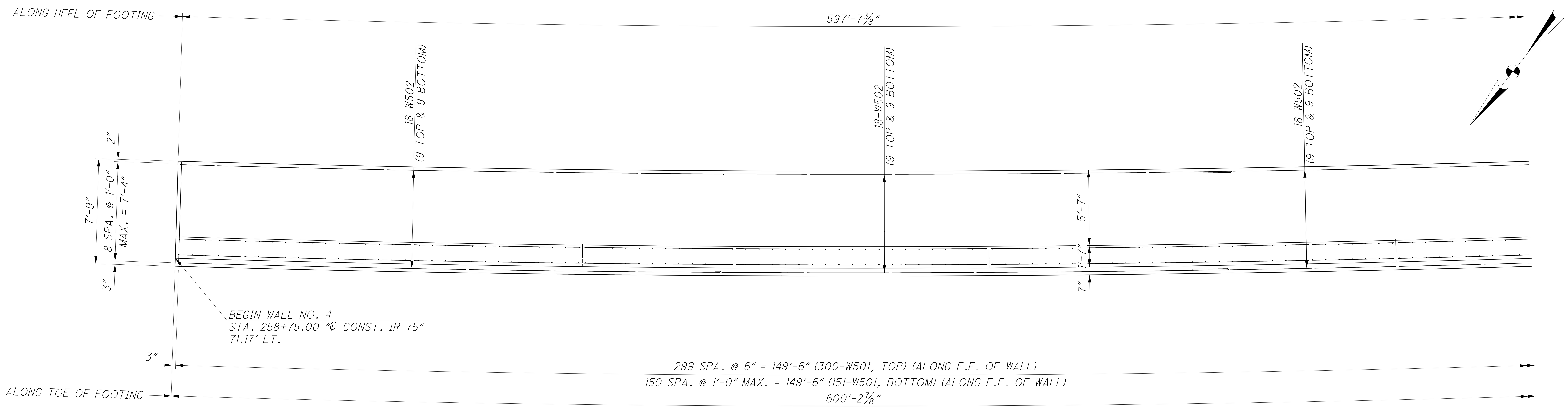
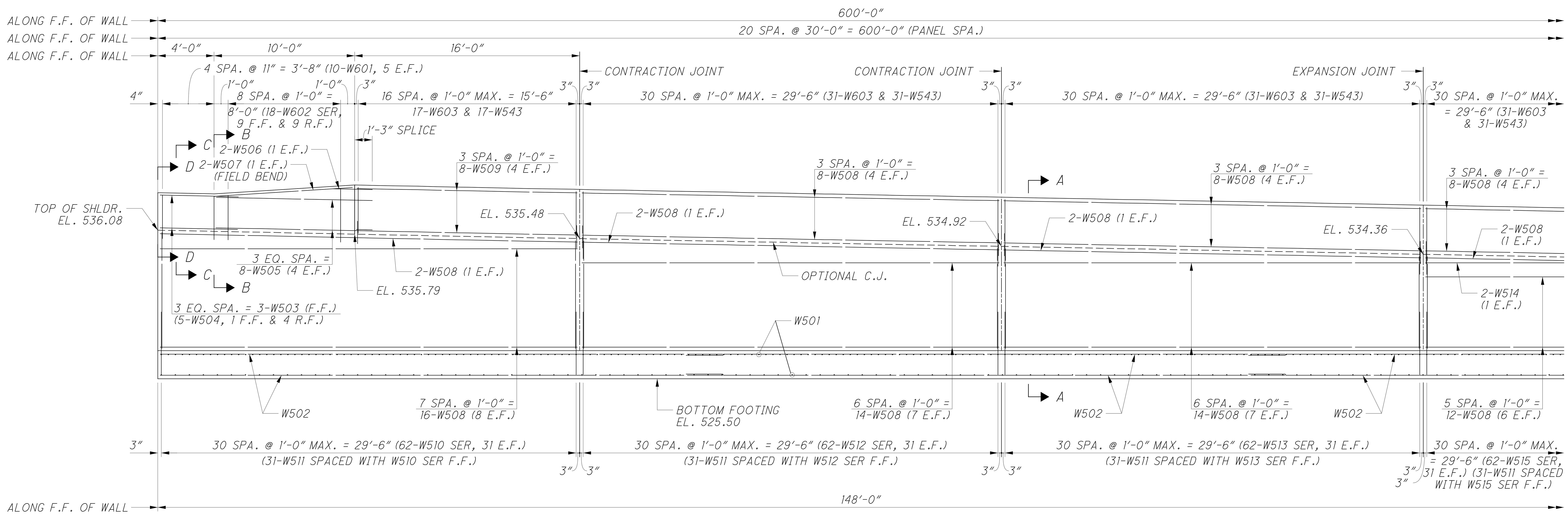


PARTIAL PLAN



PARTIAL ELEVATION

MINIMUM BAR LAP	
#5 (VERTICAL)	2'-7"
#5 (HORIZONTAL)	3'-7"

NOTES

FOR SECTIONS A-A THRU D-D, SEE SHEET 10/11.

FOR CONTRACTION AND EXPANSION JOINT DETAILS, SEE SHEET 10/11.

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED SJF | CHECKED CLB | DRAWN BMP | REVISED | REVIEWED MDS | DATE 01/18/19 | STRUCTURE FILE NUMBER

RETAINING WALL NO. 4 DETAILS

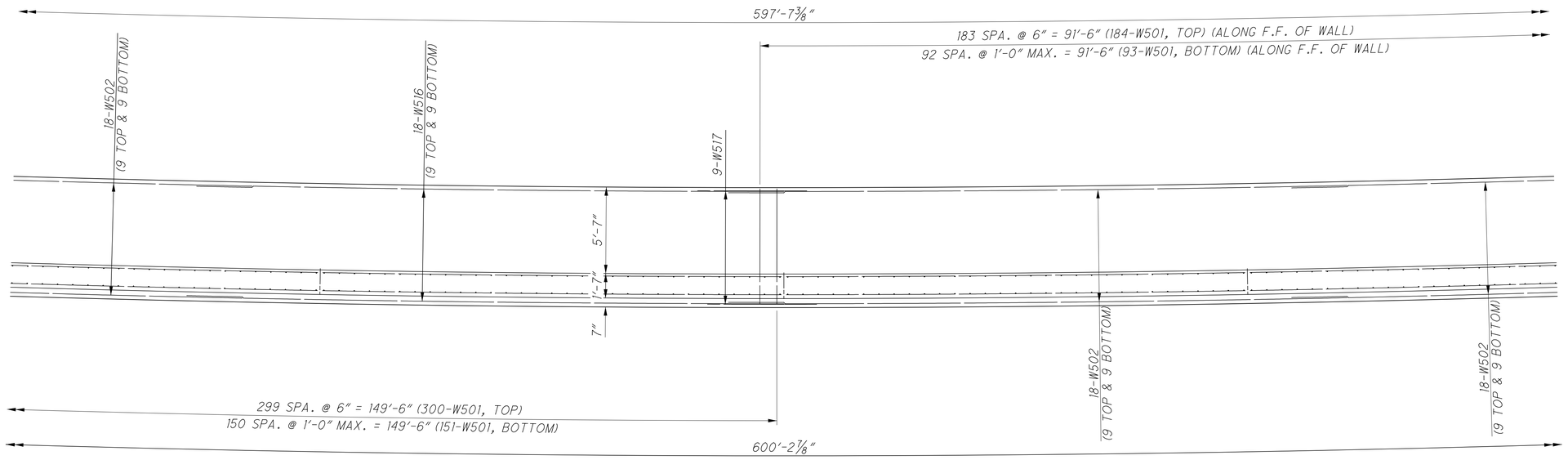
ALONG IR 75 SB

HAM-75-3.84

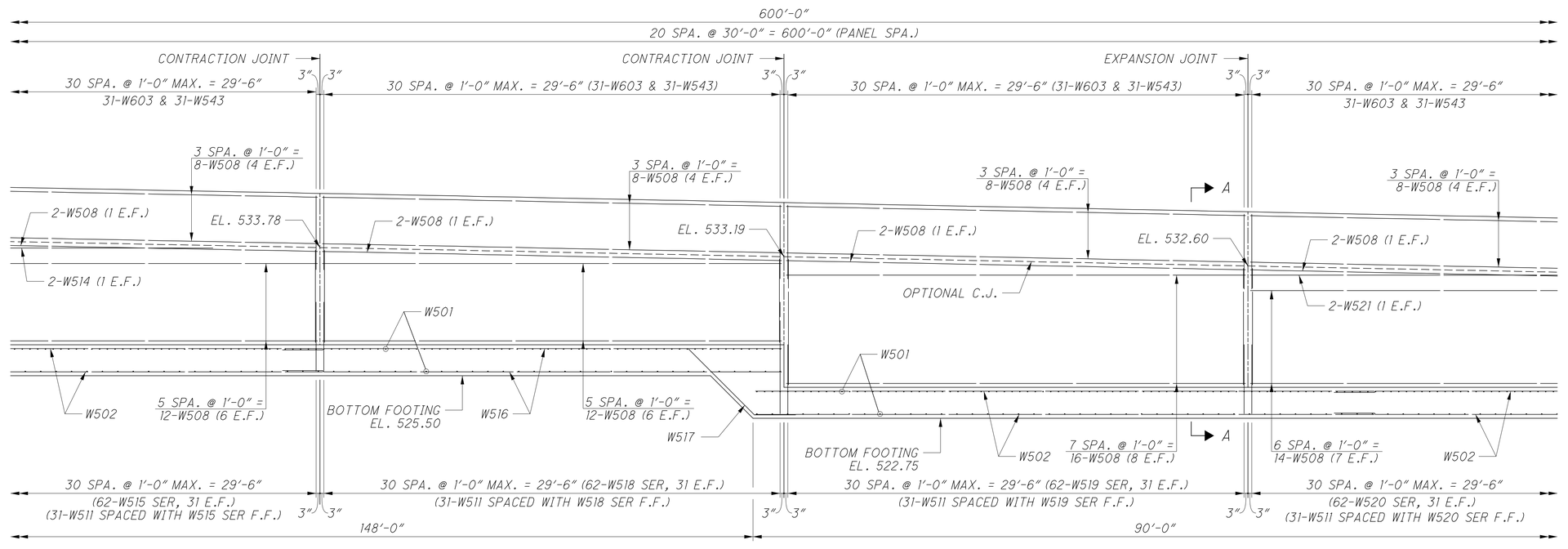
PID No. 104667

4/11

jwade 8/22/2022 9:14:14 AM O:\2017\01113\C. Design\104667_HAM-75-3.84\Design\Structures\Walls\Sheets\104667_WD43.dgn



PARTIAL PLAN



PARTIAL ELEVATION

MINIMUM BAR LAP	
#5 (VERTICAL)	2'-7"
#5 (HORIZONTAL)	3'-7"

NOTES

FOR SECTION A-A, SEE SHEET 10/11.

FOR CONTRACTION AND EXPANSION JOINT DETAILS, SEE SHEET 10/11.

DESIGN AGENCY

STRUCTUREPOINT LLC

DESIGNED SJF | DRAWN BMP | REVIEWED MDS | DATE 01/18/19 | CHECKED CLB | REVISED | STRUCTURE FILE NUMBER

RETAINING WALL NO. 4 DETAILS
ALONG IR 75 SB

HAM-75-3.84
PID No. 104667

5 / 11

19 / 48

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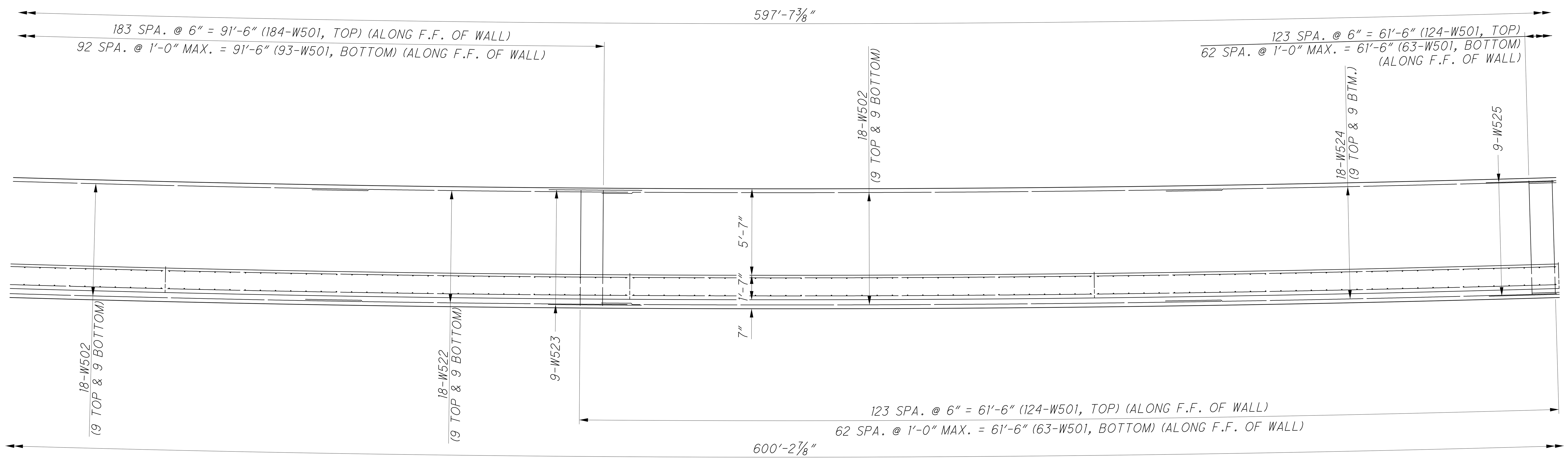
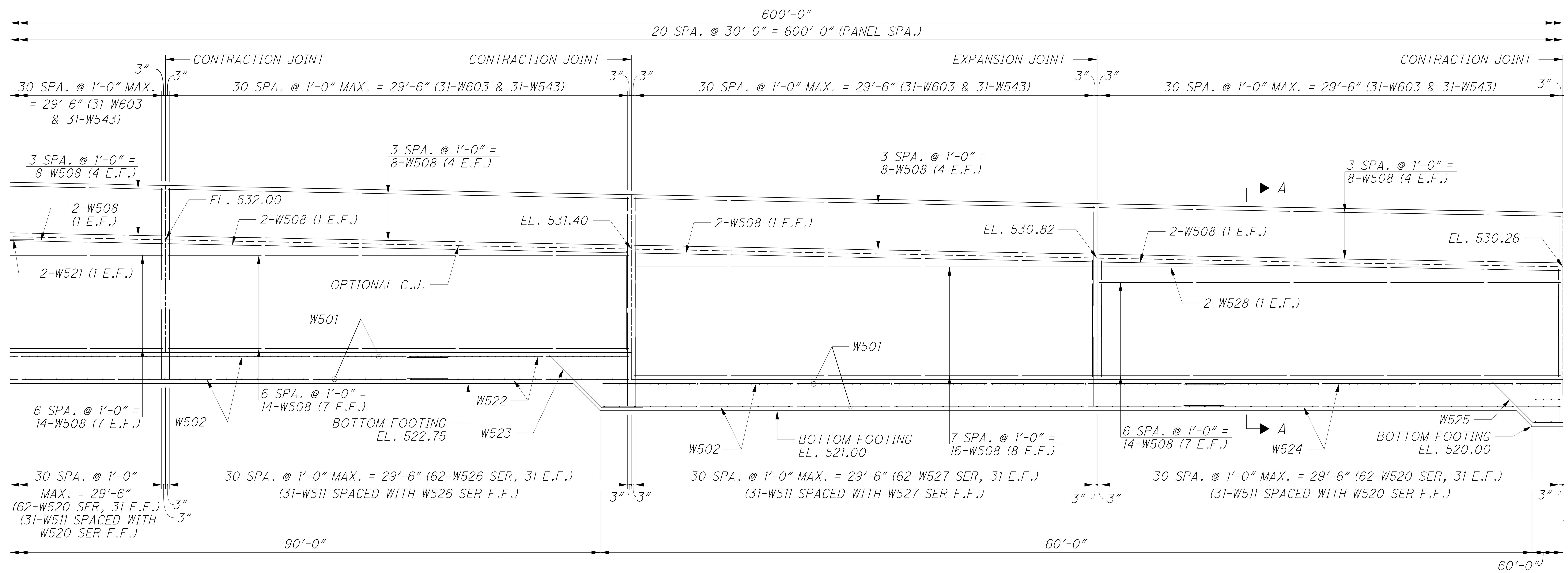


PARTIAL PLAN



PARTIAL ELEVATION

MINIMUM BAR LAP	
#5 (VERTICAL)	2'-7"
#5 (HORIZONTAL)	3'-7"

NOTES

FOR SECTION A-A, SEE SHEET 10/11.

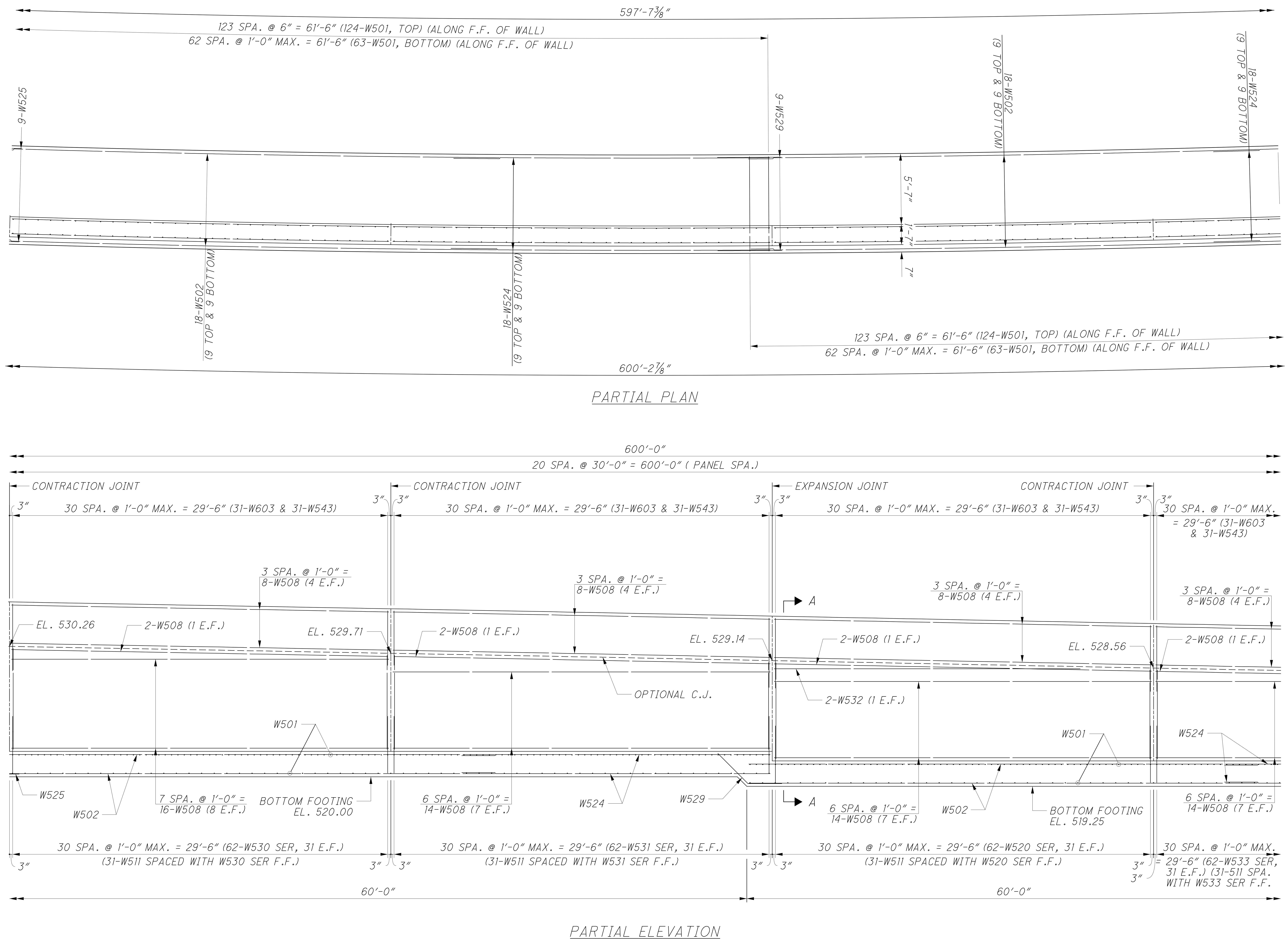
FOR CONTRACTION AND EXPANSION JOINT DETAILS, SEE SHEET 10/11.

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED SJF | DRAWN BMP | REVIEWED MDS | DATE 01/18/19 | CHECKED CLB | REVISED | STRUCTURE FILE NUMBER

RETAINING WALL NO. 4 DETAILS
ALONG IR 75 SB

HAM-75-3.84
PID No. 104667



MINIMUM BAR LAP	
#5 (VERTICAL)	2'-7"
#5 (HORIZONTAL)	3'-7"

NOTES

FOR SECTION A-A, SEE SHEET 10/11.

FOR CONTRACTION AND EXPANSION JOINT DETAILS, SEE SHEET 10/11.

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED SJF | CHECKED CLB | DRAWN BMP | REVISED | REVIEWED MDS | DATE 01/18/19 | STRUCTURE FILE NUMBER

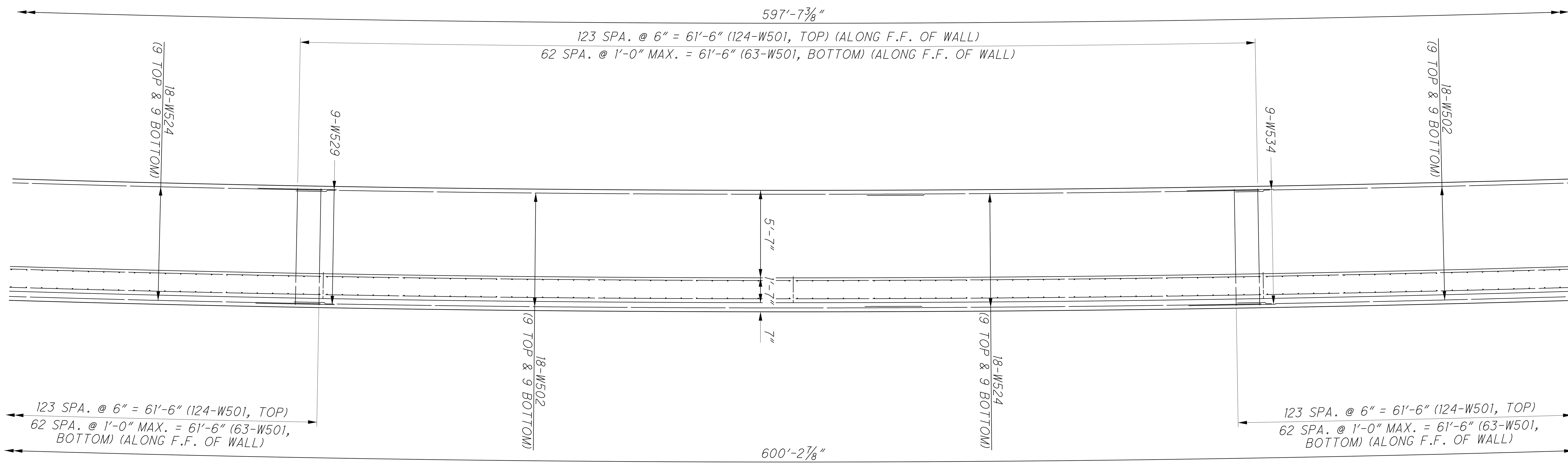
RETAINING WALL NO. 4 DETAILS

ALONG IR 75 SB

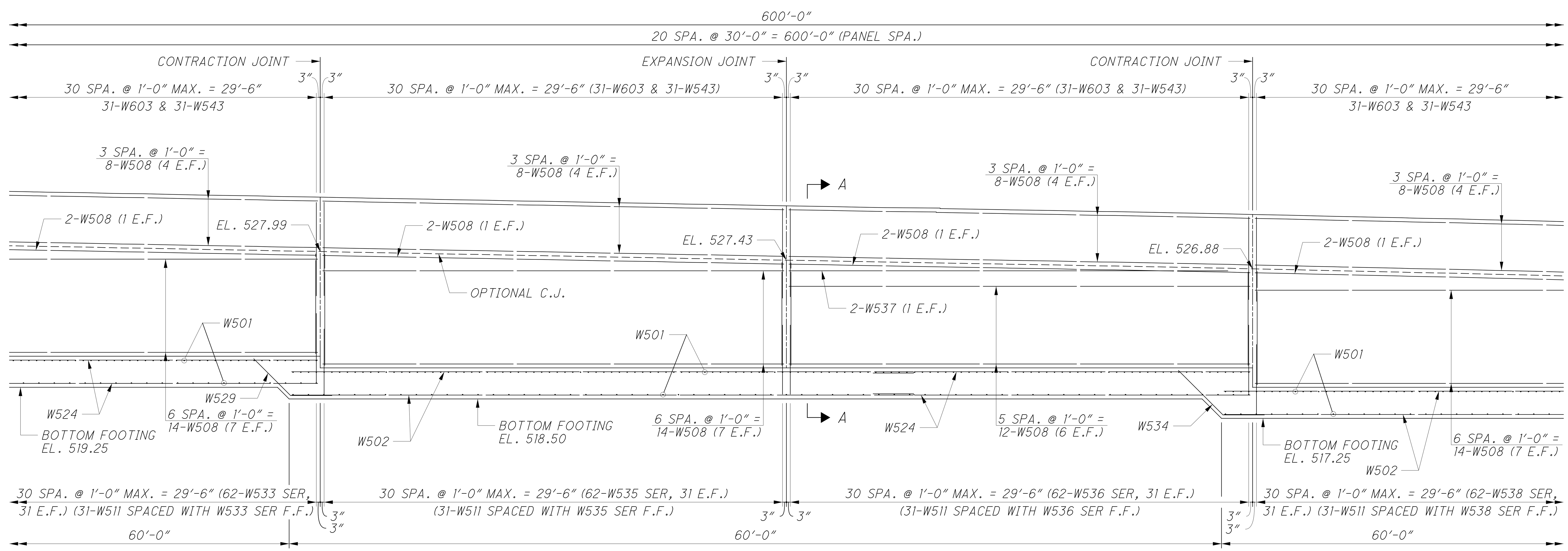
HAM-75-3.84

PID No. 104667

7 / 11



PARTIAL PLAN



PARTIAL ELEVATION

MINIMUM BAR LAP	
#5 (VERTICAL)	2'-7"
#5 (HORIZONTAL)	3'-7"

NOTES

FOR SECTION A-A, SEE SHEET 10/11.

FOR CONTRACTION AND EXPANSION JOINT DETAILS, SEE SHEET 10/11.

DESIGN AGENCY
AMERICAN STRUCTUREPOINT INC.
2550 CORPORATE EXCHANGE DR, STE 300
COLUMBUS, OH 43231
TEL 614.901.2235 FAX 614.901.2236
www.structurepoint.com

DESIGNED	DRAWN	REVIEWED	DATE
SJF	BMP	MDS	01/18/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB			

RETAINING WALL NO. 4 DETAILS
ALONG IR 75 SB

HAM-75-3.84
PID No. 104667

8 / 11

jwade
8/22/2022 9:14:18 AM
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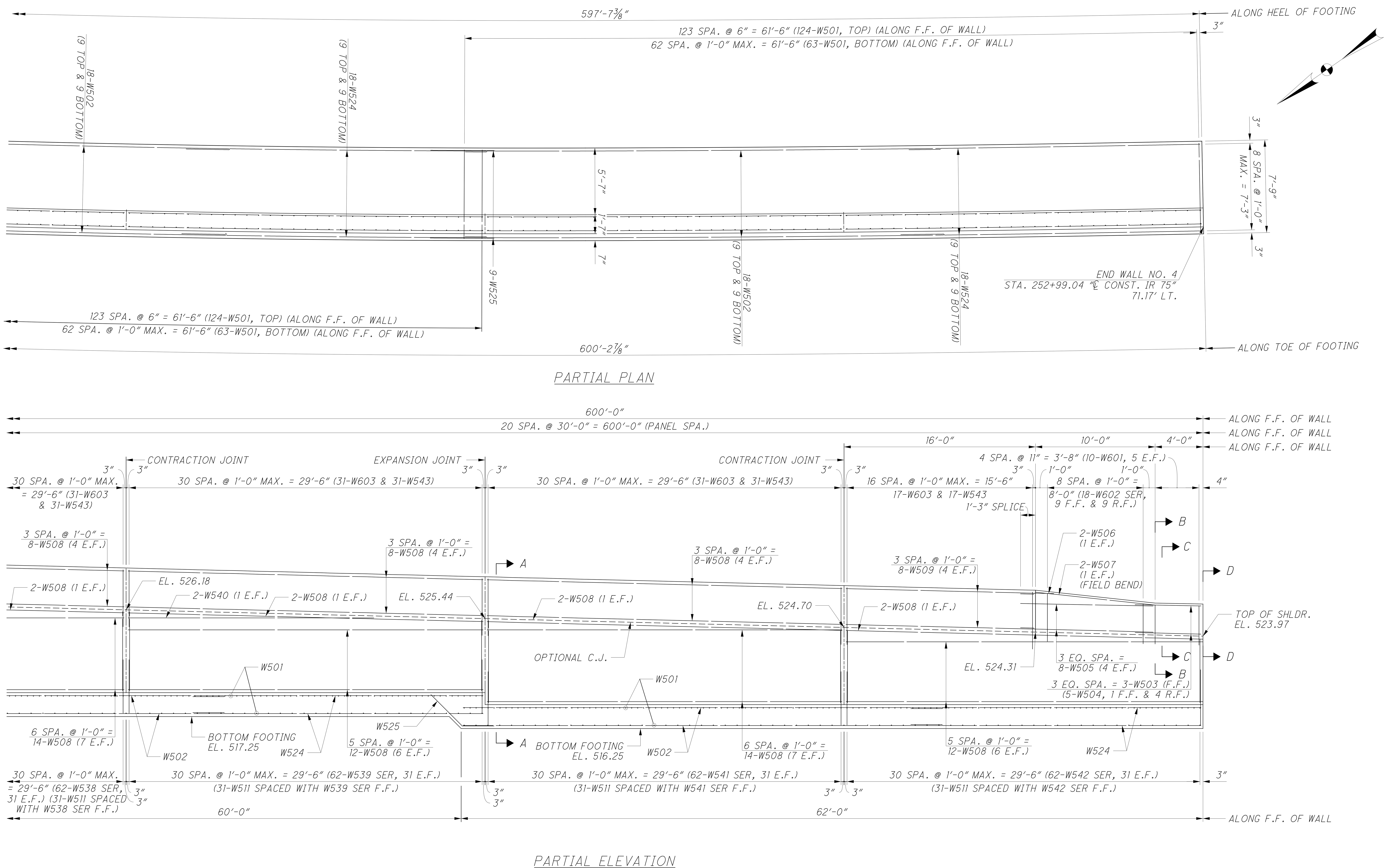


MINIMUM BAR LAP	
#5 (VERTICAL)	2'-7"
#5 (HORIZONTAL)	3'-7"

NOTES

FOR SECTIONS A-A THRU D-D, SEE SHEET 10/11.

FOR CONTRACTION AND EXPANSION JOINT DETAILS, SEE SHEET 10/11.

DESIGN AGENCY: STRUCTUREPOINT

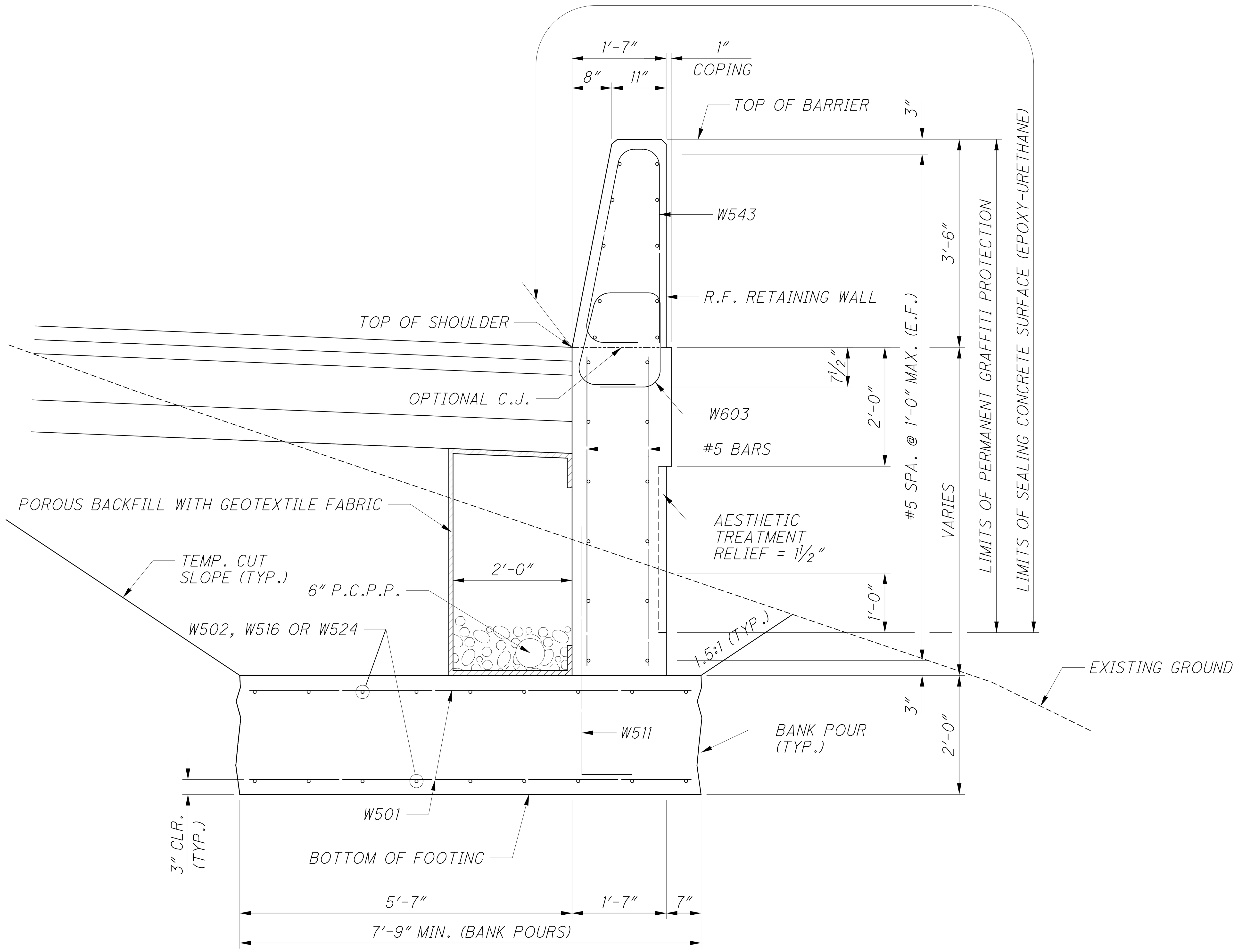
DESIGNED SJF | CHECKED CLB | DRAWN BMP | REVISED | REVIEWED MDS | DATE 01/18/19 | STRUCTURE FILE NUMBER

RETAINING WALL NO. 4 DETAILS
ALONG IR 75 SB

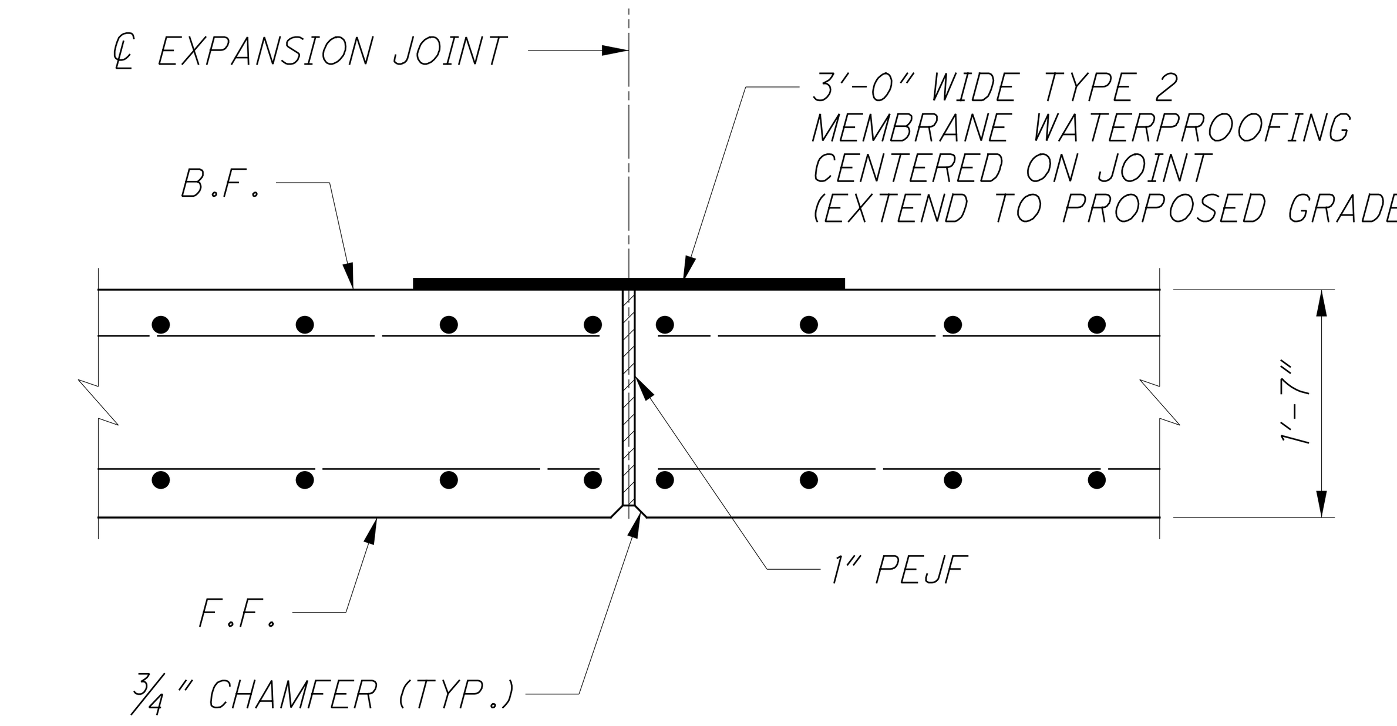
HAM-75-3.84
PID No. 104667

9/11

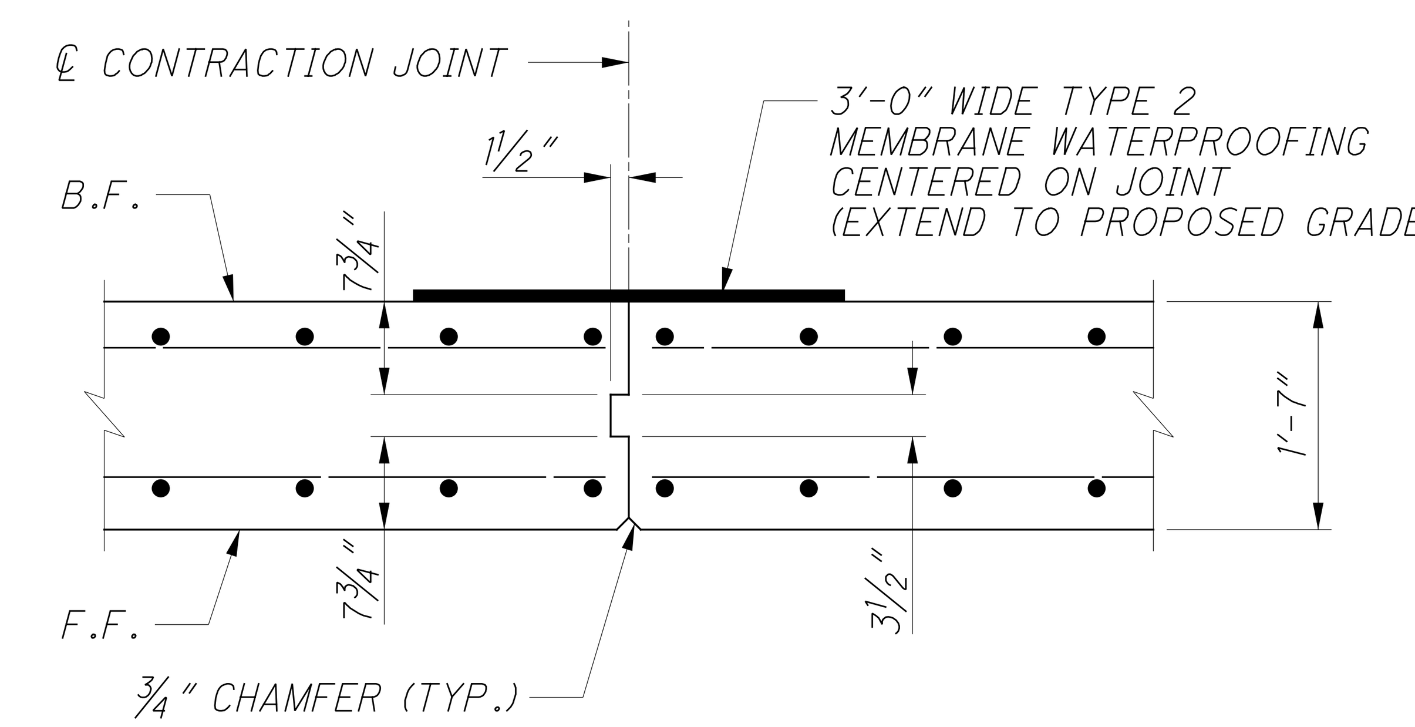
jwade 8/22/2022 9:14:19 AM O:\2017\01113\C. Design\104667_HAM-75-3.84\Design\Structures\Walls\Sheets\104667_WD48.dgn



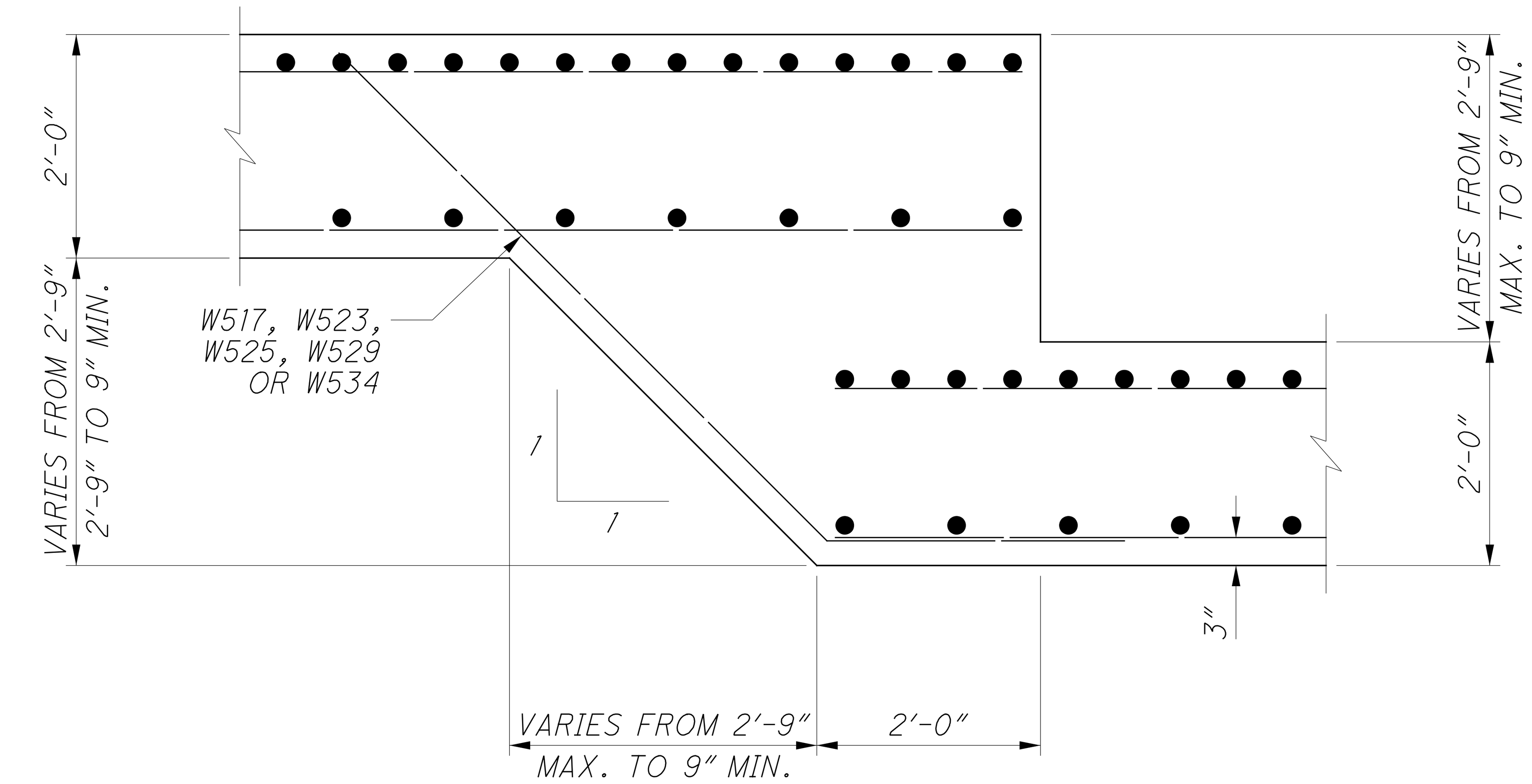
SECTION A-A



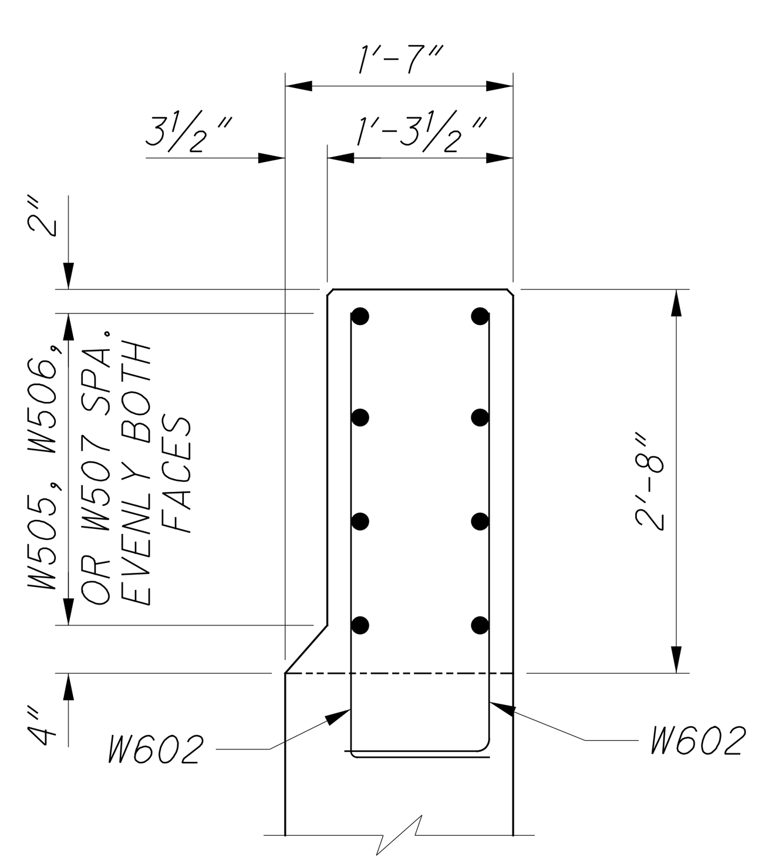
EXPANSION JOINT DETAIL



CONTRACTION JOINT DETAIL



FOOTING STEP



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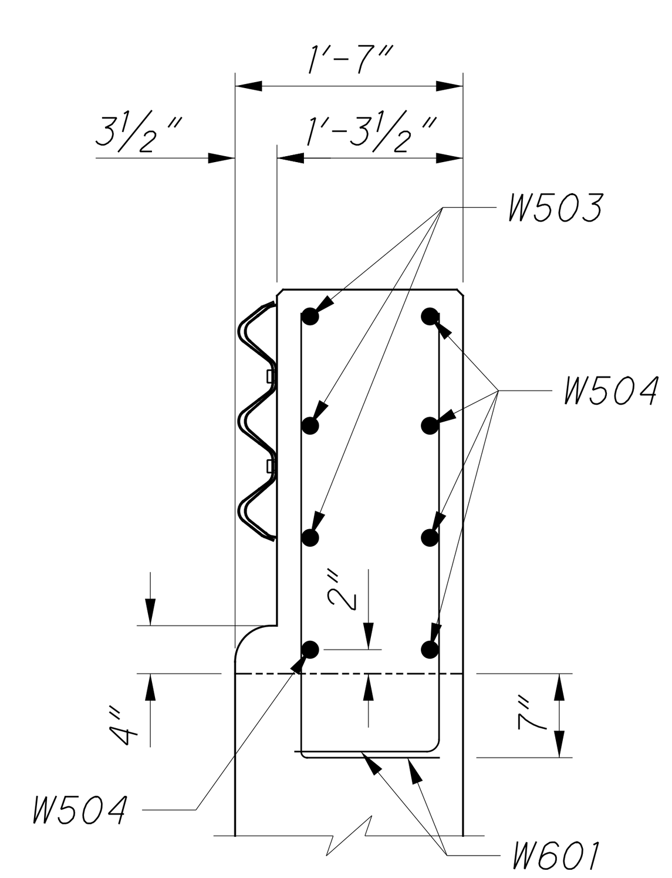

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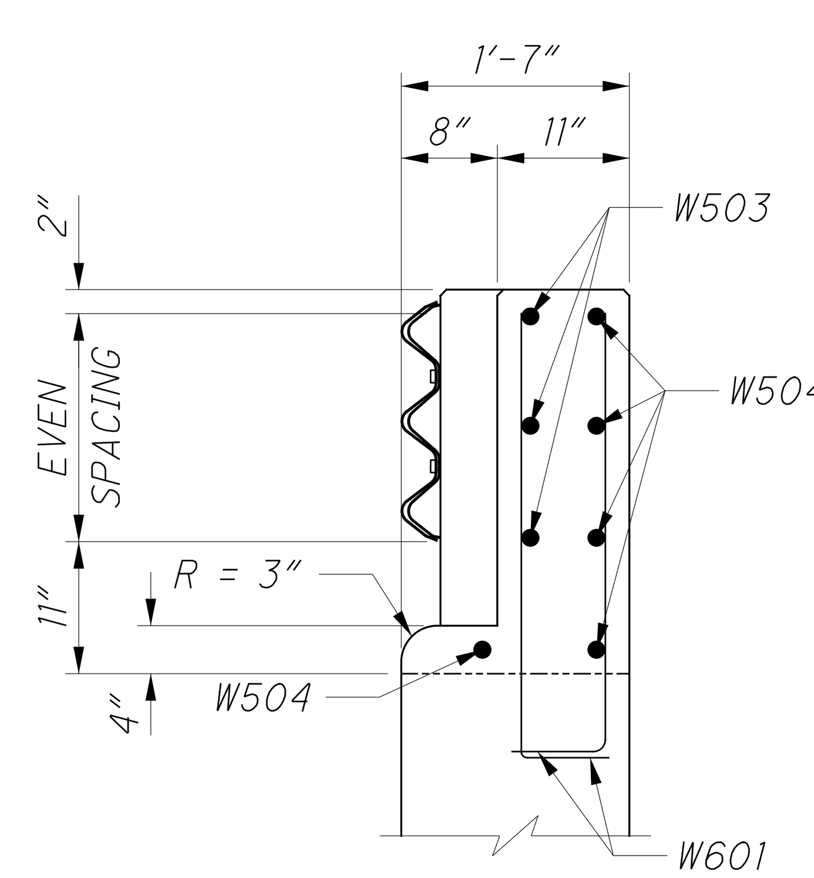

SECTION D-D

NOTES

FOR BRIDGE TERMINAL ASSEMBLY, SEE STANDARD CONSTRUCTION DRAWING MSG 3.1 AND 3.2.

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED SJF | DRAWN BMP | REVIEWED MDS | DATE 01/18/19
CHECKED CLB | REVISED | STRUCTURE FILE NUMBER

RETAINING WALL NO. 4 DETAILS
ALONG IR 75 SB

HAM-75-3.84
PID No. 104667

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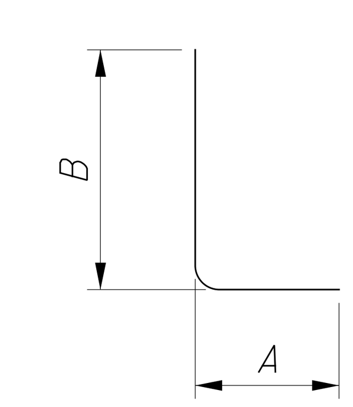
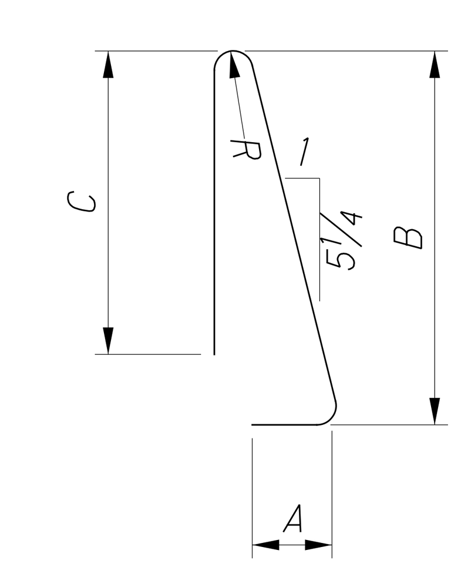
MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	A	B	C	D	E	R	INC
WALL NO. 4											
W501	1850	7'-5"	14311	STR							
W502	198	40'-0"	8261	STR							
W503	6	5'-7"	35	25	1'-8"	2'-5"	1'-5"	1½"	6½"		
W504	10	5'-6"	57	STR							
W505	16	11'-1"	185	STR							
W506	4	3'-6"	15	STR							
W507	4	11'-3"	47	STR							
W508	462	29'-8"	14296	STR							
W509	16	15'-8"	261	STR							
	2 SR	7'-7"									
W510	OF	TO	509	STR							¼"
	31	8'-2"									
W511	620	5'-1"	3287	1	0'-10"	4'-5"					
	2 SR	7'-1"									
W512	OF	TO	474	STR							¼"
	31	7'-7"									
	2 SR	6'-6"									
W513	OF	TO	440	STR							¼"
	31	7'-1"									
W514	2	22'-10"	48	STR							
	2 SR	5'-11"									
W515	OF	TO	401	STR							¼"
	31	6'-6"									
W516	18	40'-5"	759	STR							
W517	9	8'-9"	82	19	2'-8"	4'-4"	4'-4"				
	2 SR	5'-4"									
W518	OF	TO	364	STR							¼"
	31	5'-11"									
	2 SR	7'-6"									
W519	OF	TO	505	STR							¼"
	31	8'-1"									
	6 SR	6'-11"									
W520	OF	TO	1398	STR							¼"
	31	7'-6"									
W521	2	21'-4"	45	STR							
W522	18	18'-10"	354	STR							
W523	9	7'-4"	69	19	2'-8"	3'-4"	3'-4"				
W524	108	25'-3"	2844	STR							
W525	18	6'-3"	117	19	2'-8"	2'-7"	2'-7"				
	2 SR	6'-3"									
W526	OF	TO	423	STR							¼"
	31	6'-10"									
	2 SR	7'-5"									
W527	OF	TO	498	STR							¼"
	31	8'-0"									
W528	2	21'-1"	44	STR							
W529	18	5'-11"	111	19	2'-8"	2'-4"	2'-4"				
	2 SR	7'-4"									
W530	OF	TO	493	STR							¼"
	31	7'-11"									
	2 SR	6'-9"									
W531	OF	TO	455	STR							¼"
	31	7'-4"									
W532	2	24'-0"	50	STR							
	2 SR	6'-4"									
W533	OF	TO	428	STR							¼"
	31	6'-11"									
W534	9	6'-8"	63	19	2'-8"	2'-10"	2'-10"				
	2 SR	6'-7"									
W535	OF	TO	445	STR							¼"
	31	7'-2"									
	2 SR	6'-0"									
W536	OF	TO	407	STR							¼"
	31	6'-7"									

MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	A	B	C	D	E	R	INC
WALL NO. 4 CONT.											
W537	2	28'-2"	59	STR							
	2 SR	6'-7"									
W538	OF	TO	447	STR							¼"
	31	7'-3"									
	2 SR	5'-9"									
W539	OF	TO	399	STR							¼"
	31	6'-7"									
W540	2	20'-6"	43	STR							
	2 SR	6'-1"									
W541	OF	TO	415	STR							¼"
	31	6'-9"									
	2 SR	5'-3"									
W542	OF	TO	366	STR							¼"
	31	6'-1"									
W543	592	10'-4"	6380	23	0'-11"	4'-9"	4'-6"			3½"	
W601	20	4'-1"	123	1	1'-0"	3'-3"					
	4 SR	4'-0"				3'-2"					
W602	OF	TO	234	1	1'-0"	TO					1"
	9	4'-8"				3'-10"					
W603	592	5'-8"	5042	40	1'-2"	1'-0"	1'-7"	1'-7"			
		SUB-TOTAL	66,089								



TYPE-1



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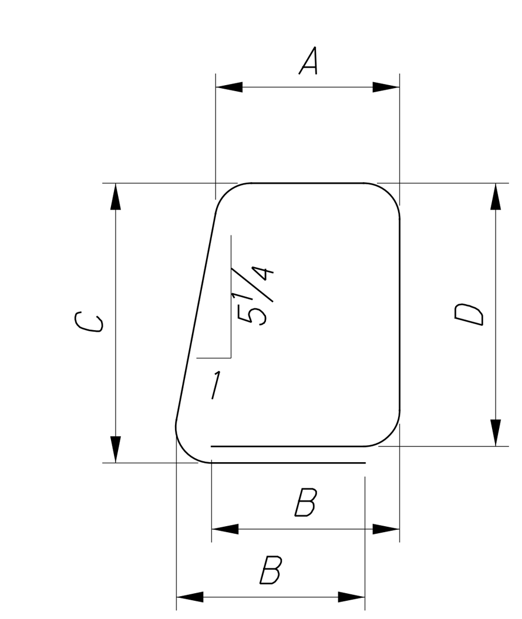
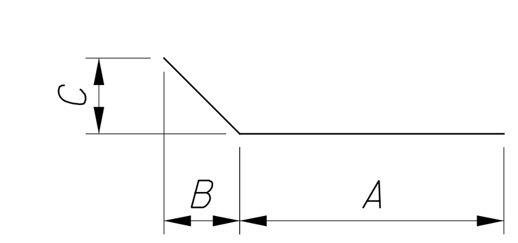


TYPE-40



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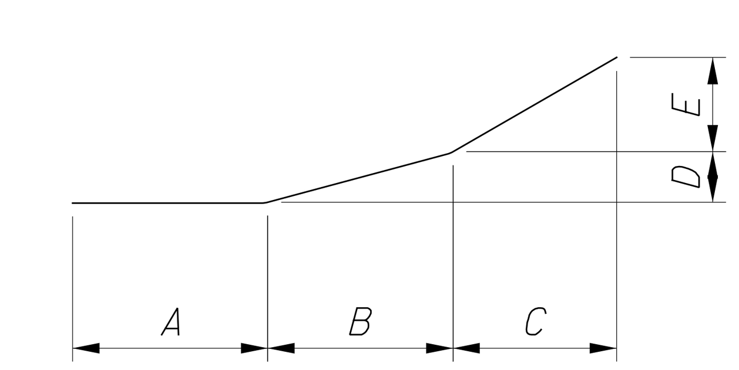


TYPE-25

DESIGN AGENCY STRUCTUREPOINT

DESIGNED BMP | CHECKED SJF | DRAWN BMP | REVISED | REVIEWED MDS | DATE 01/18/19 | STRUCTURE FILE NUMBER

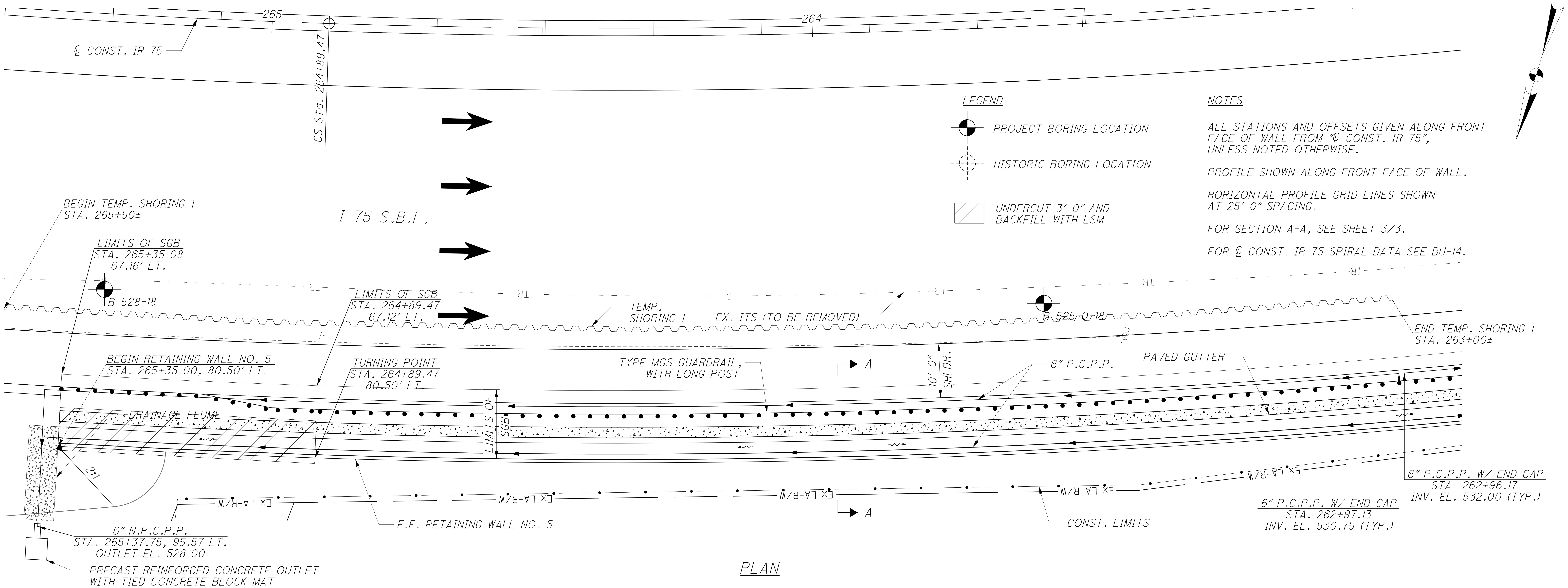
RETAINING WALL NO. 4 REINFORCING STEEL LIST
ALONG IR 75 SB

HAM-75-3.84
PID No. 104667

11 / 11

25 / 48

jwade 8/22/2022 9:14:21 AM O:\2017\01113\C. Design\104667_HAM-75-3.84\Design\Structures\Walls\Sheets\104667_WD50.dgn



NOTES

ALL STATIONS AND OFFSETS GIVEN ALONG FRONT FACE OF WALL FROM "℄ CONST. IR 75", UNLESS NOTED OTHERWISE.

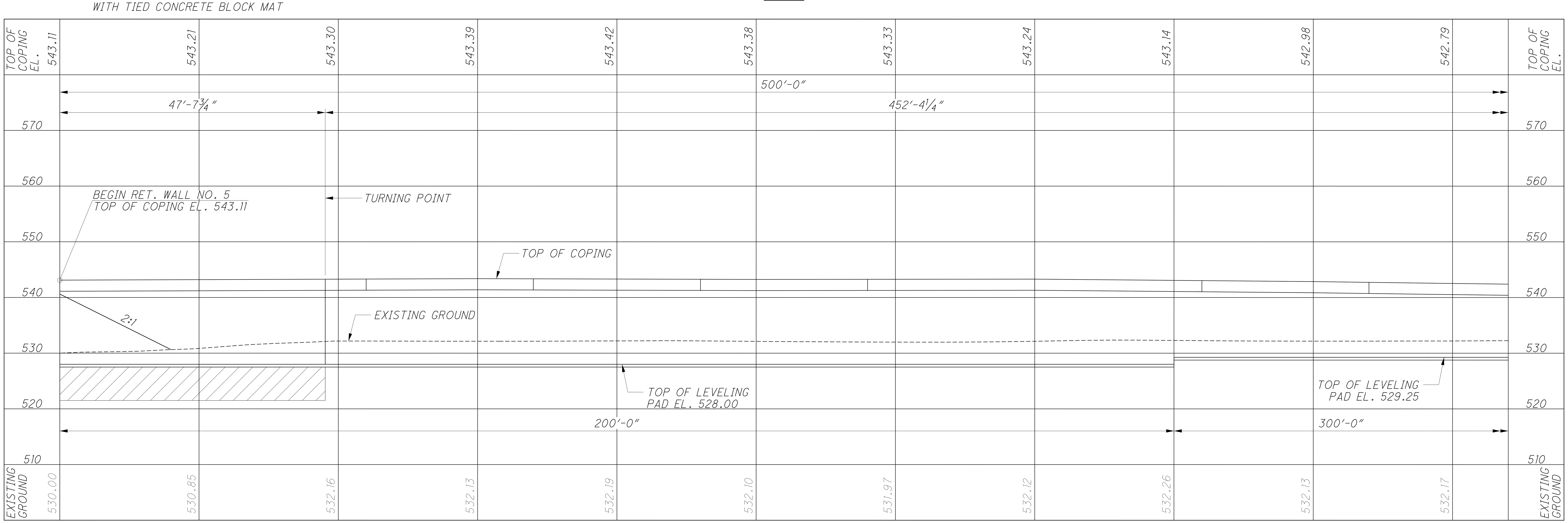
PROFILE SHOWN ALONG FRONT FACE OF WALL.

HORIZONTAL PROFILE GRID LINES SHOWN AT 25'-0" SPACING.

FOR SECTION A-A, SEE SHEET 3/3.

FOR ℄ CONST. IR 75 SPIRAL DATA SEE BU-14.

PLAN



PROFILE

ALONG F.F. RETAINING WALL NO. 5

DESIGN AGENCY: AMERICAN STRUCTUREPOINT INC., 2550 CORPORATE EXCHANGE DR, STE 300, COLUMBUS, OH 43231, TEL 614.901.2235 FAX 614.901.2236, www.structurepoint.com

DESIGNED	DRAWN	REVIEWED	DATE
SJF	BMP	MDS	01/18/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB			

RETAINING WALL NO. 5 DETAILS

ALONG IR 75 SB

HAM-75-3.84

PID No. 104667

1/3

jwade
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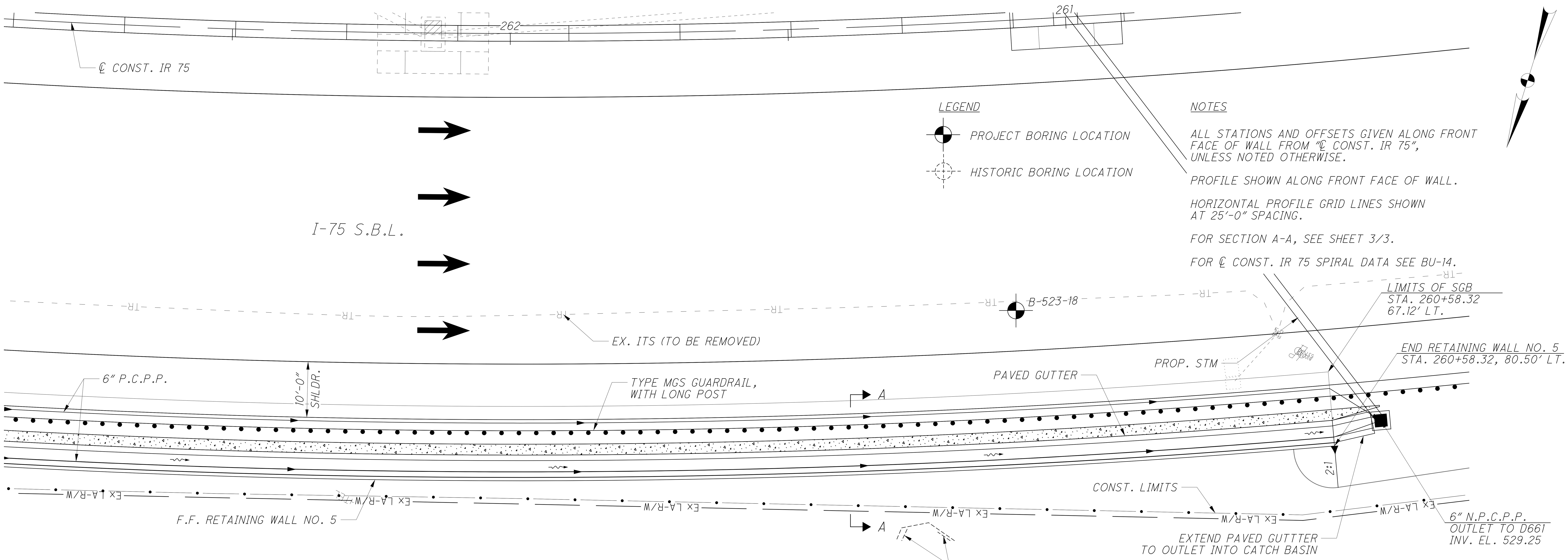


LEGEND

- PROJECT BORING LOCATION
- HISTORIC BORING LOCATION

NOTES

ALL STATIONS AND OFFSETS GIVEN ALONG FRONT FACE OF WALL FROM "℄ CONST. IR 75", UNLESS NOTED OTHERWISE.

PROFILE SHOWN ALONG FRONT FACE OF WALL.

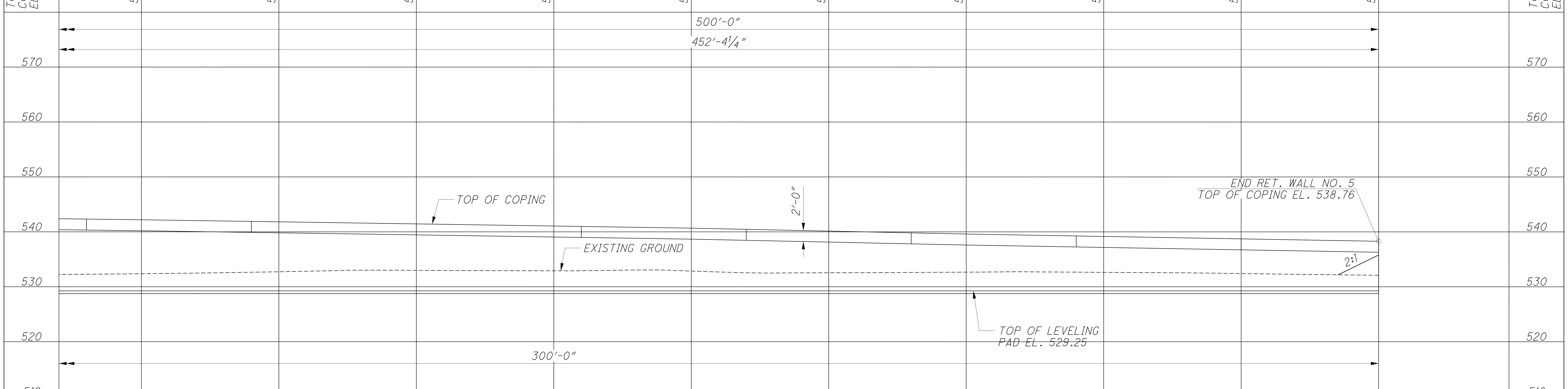
HORIZONTAL PROFILE GRID LINES SHOWN AT 25'-0" SPACING.

FOR SECTION A-A, SEE SHEET 3/3.

FOR ℄ CONST. IR 75 SPIRAL DATA SEE BU-14.

PLAN

TOP OF COPING EL.	542.50	542.20	541.83	541.46	541.06	540.67	540.21	539.75	539.26	538.76
EXISTING GROUND	532.34	532.70	532.96	532.87	532.82	532.51	532.62	532.58	532.36	532.03



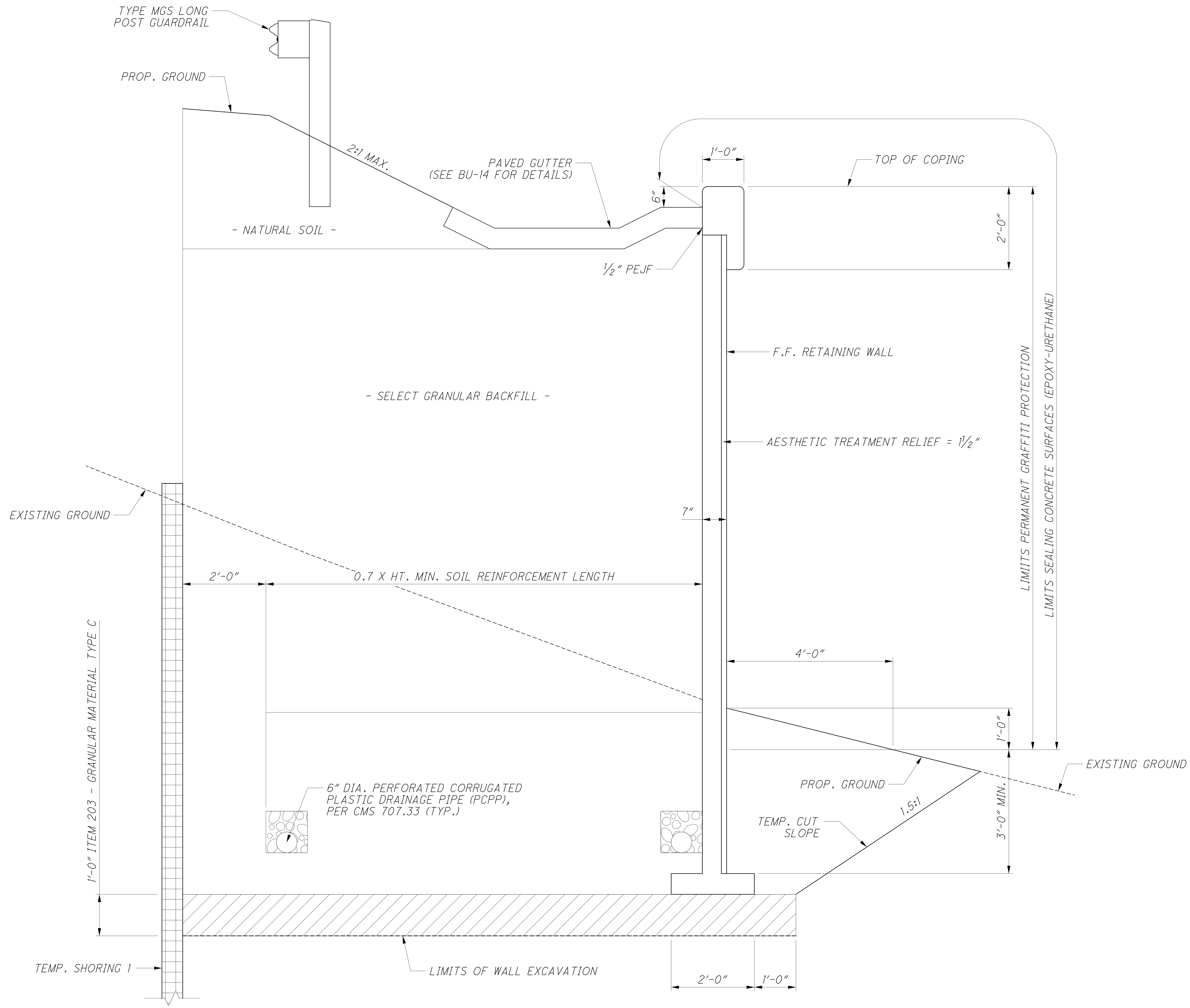
PROFILE
ALONG F.F. RETAINING WALL NO. 5

DESIGN AGENCY STRUCTUREPOINT

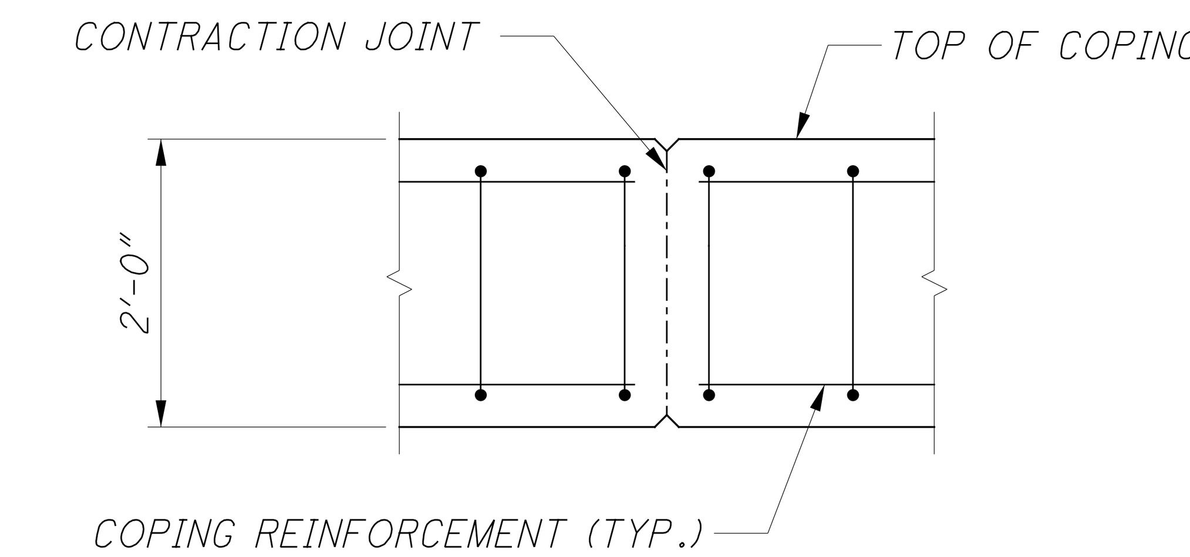
DESIGNED SJF | DRAWN BMP | REVIEWED MDS | DATE 01/18/19 | CHECKED CLB | REVISED | STRUCTURE FILE NUMBER

RETAINING WALL NO. 5 DETAILS
ALONG IR 75 SB

HAM-75-3.84
PID No. 104667



SECTION A-A



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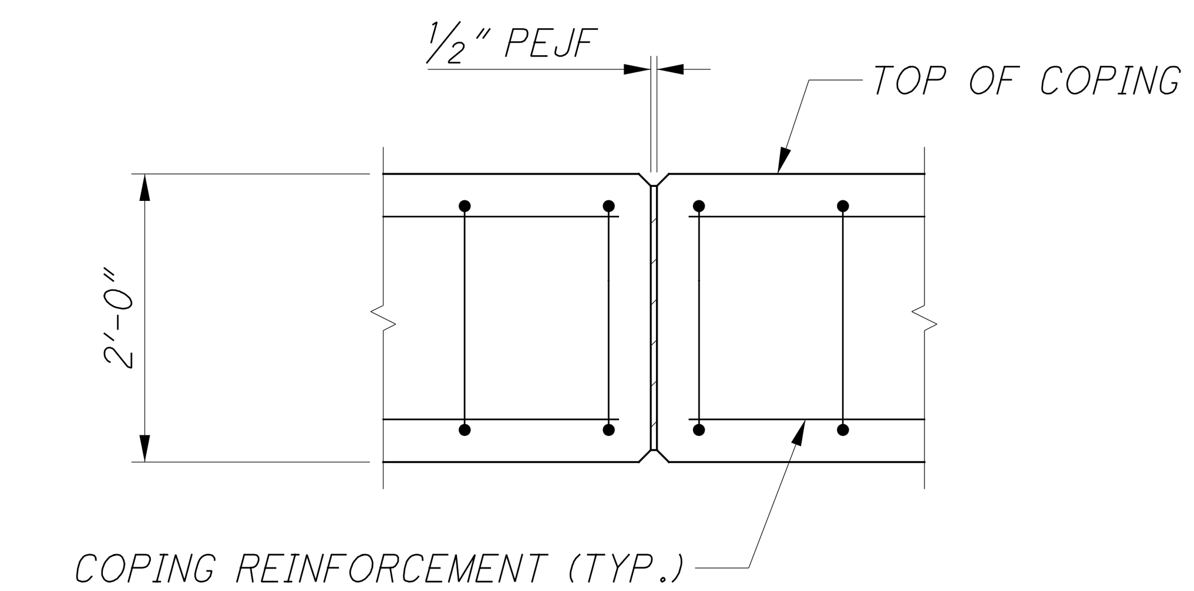
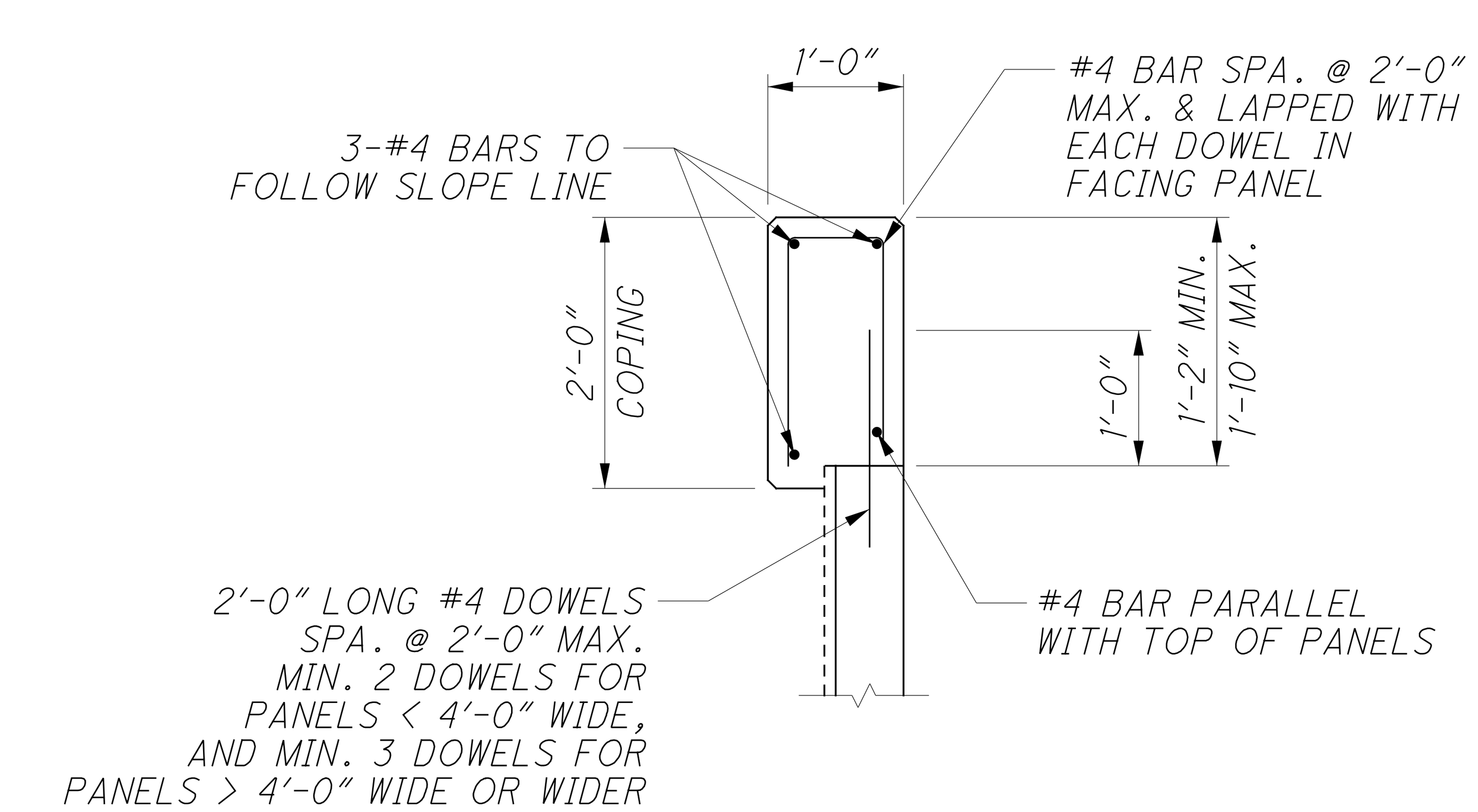


COPING EXPANSION JOINT



COPING DETAIL

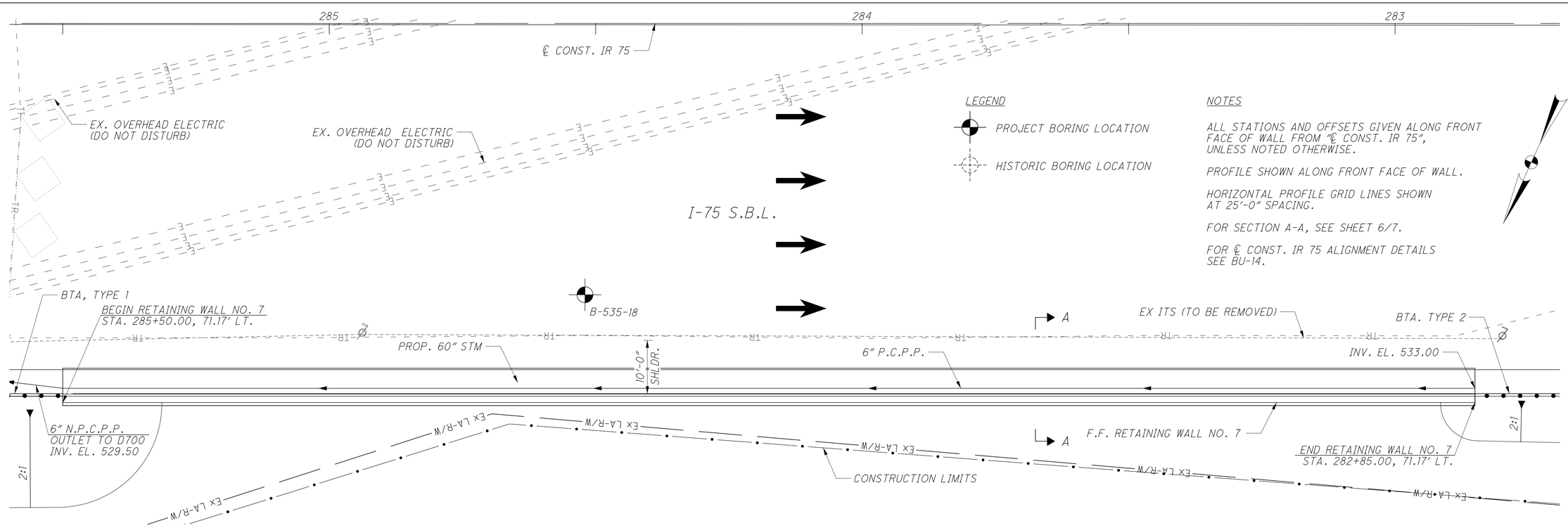
DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	BMP	MDS	01/18/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB			

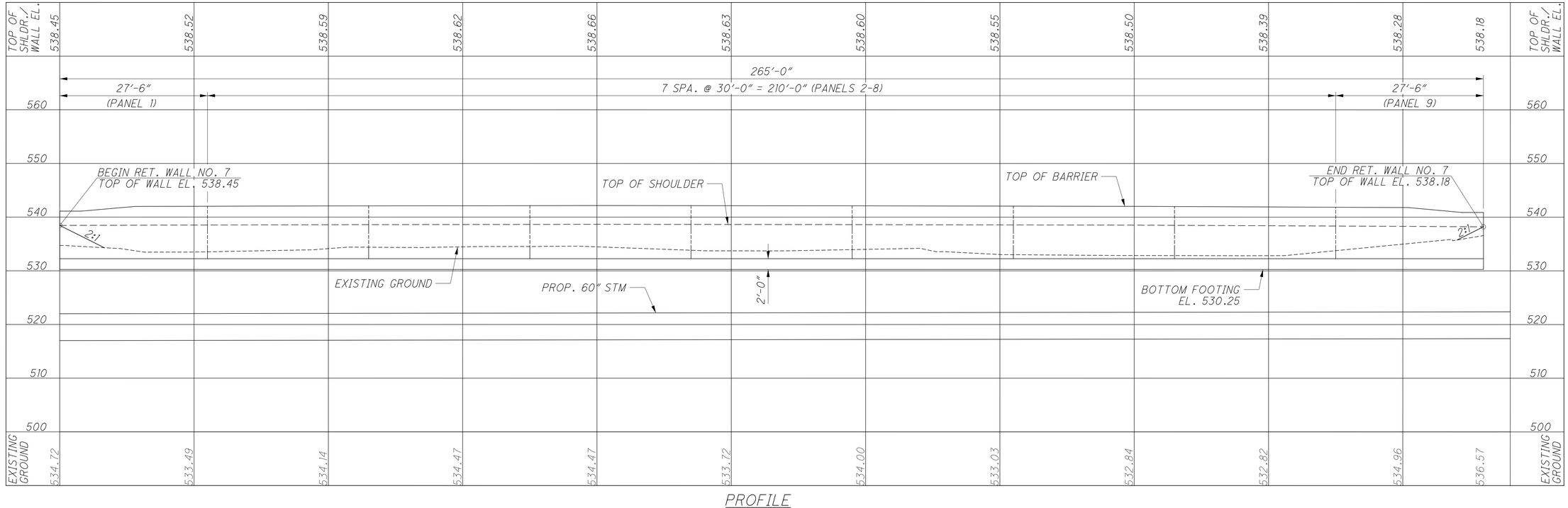
RETAINING WALL NO. 5 DETAILS
ALONG IR-75 SB

HAM-75-3.84
PID No. 104667

3 / 3



PLAN



PROFILE
ALONG F.F. RETAINING WALL NO. 7

DESIGN AGENCY
STRUCTUREPOINT LLC
2500 CORPORATE EXCHANGE DR. STE 200
COLUMBIA, OH 43231
TEL: 614.901.7900 FAX: 614.901.7901
www.structurepoint.com

DESIGNED	DRAWN	REVIEWED	DATE
SJF	BMP	MDS	01/18/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB			

RETAINING WALL NO. 7 DETAILS
ALONG IR 75 SB

HAM-75-3.84
PID No. 104667

1 / 7

29
48

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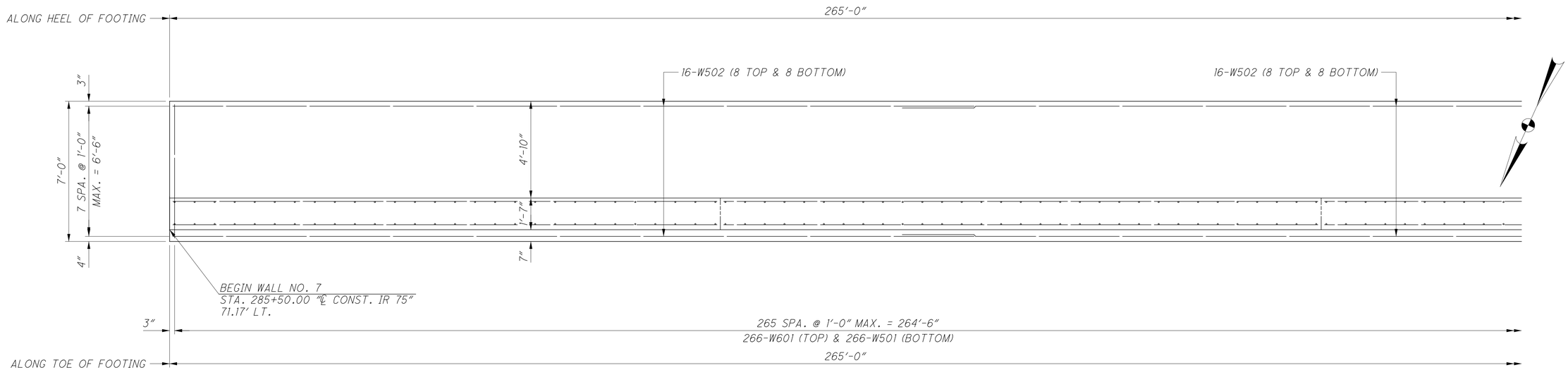
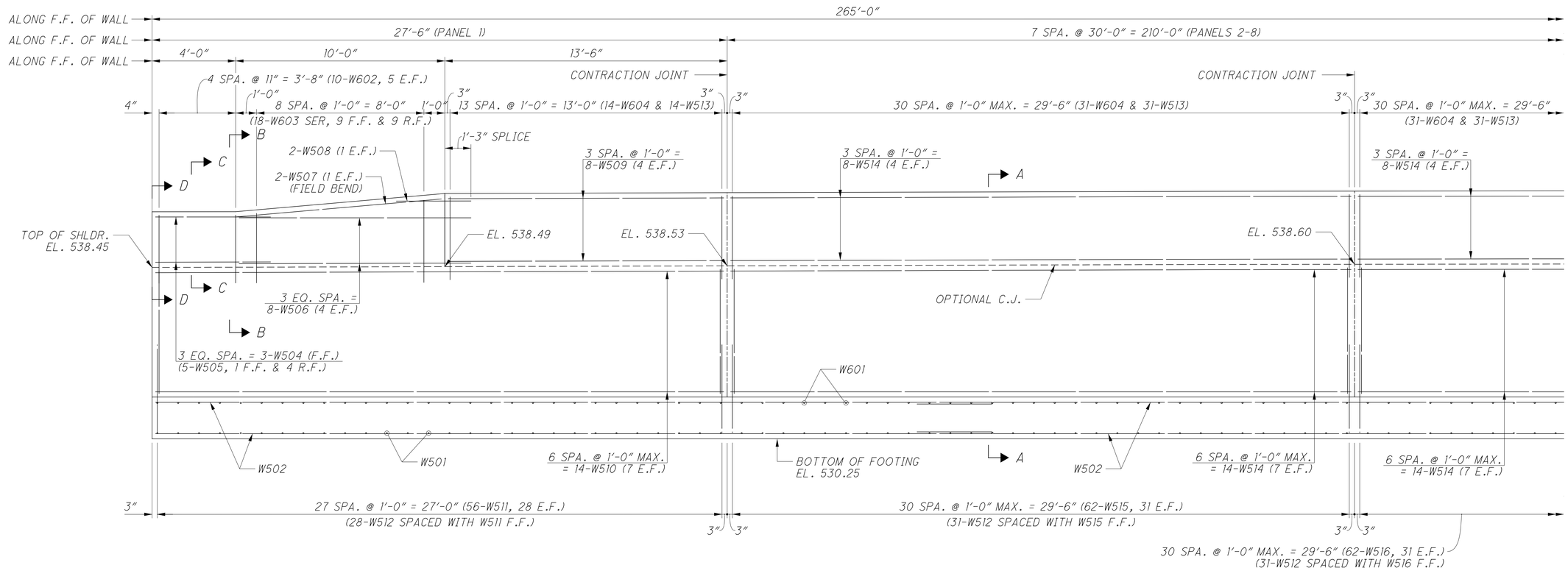


PARTIAL PLAN



PARTIAL ELEVATION

MINIMUM BAR LAP	
#5 (VERTICAL)	2'-7"
#5 (HORIZONTAL)	3'-7"

NOTES

FOR SECTIONS A-A THRU D-D, SEE SHEET 6/7.

FOR CONTRACTION AND EXPANSION JOINT DETAILS, SEE SHEET 6/7.

DESIGN AGENCY
STRUCTUREPOINT LLC
2500 CORPORATE EXCHANGE DR. STE 200
COLUMBIA, OH 43231
TEL 614.901.7900 FAX 614.901.7901
www.structurepoint.com

DESIGNED	DRAWN	REVIEWED	DATE
SJF	BMP	MDS	01/18/19
CHECKED	REVISED		STRUCTURE FILE NUMBER
CLB			

RETAINING WALL NO. 7 DETAILS
ALONG IR 75 SB

HAM-75-3.84
PID No. 104667

2 / 7

30
48

jwade
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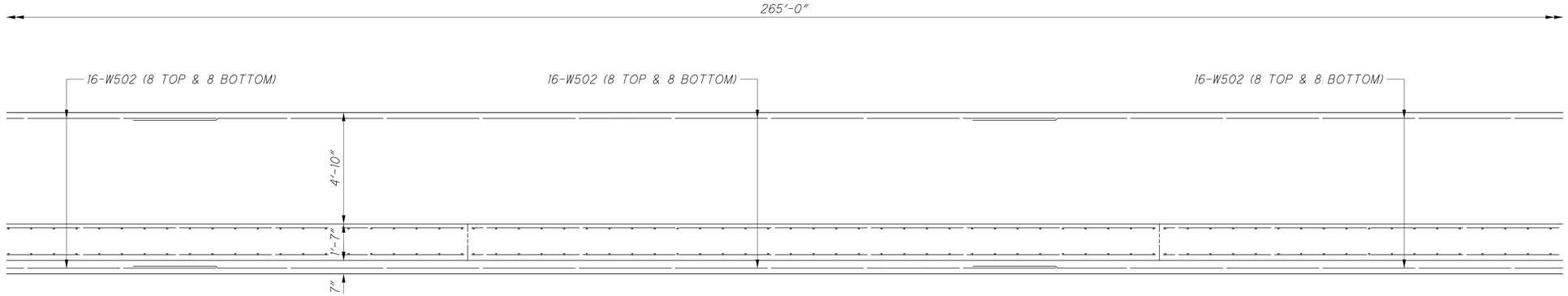
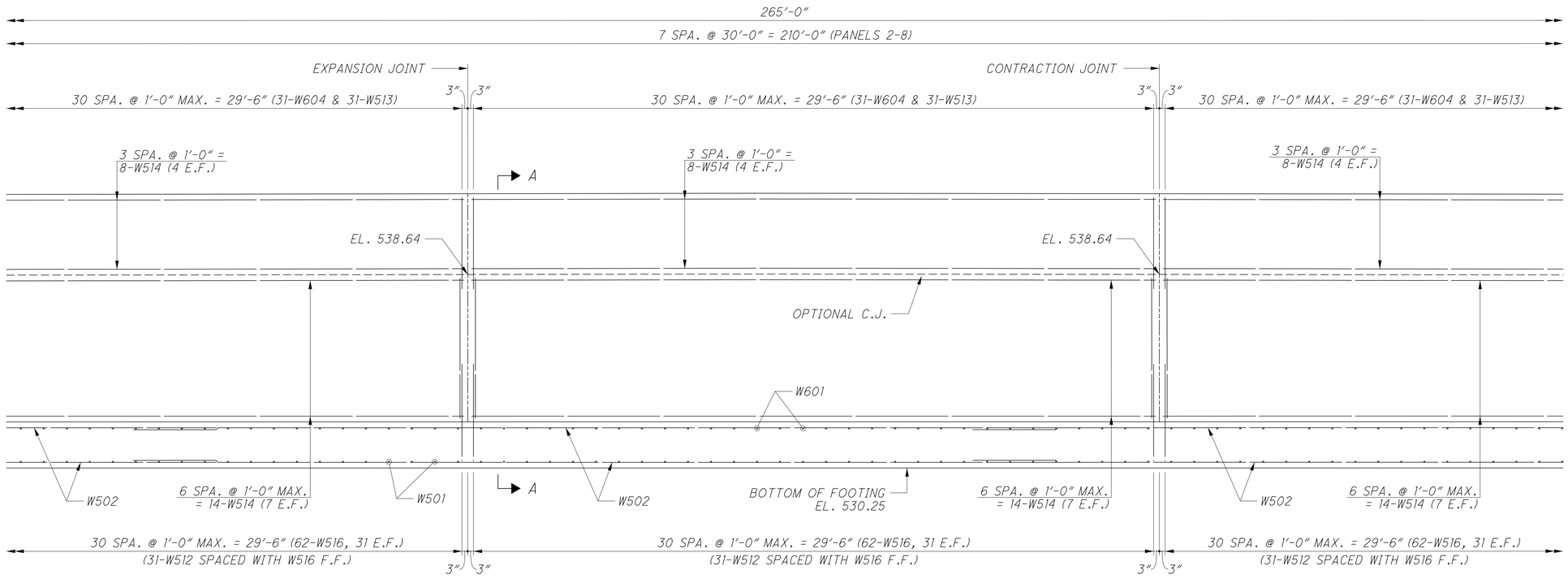


PARTIAL PLAN



PARTIAL ELEVATION

MINIMUM BAR LAP	
#5 (VERTICAL)	2'-7"
#5 (HORIZONTAL)	3'-7"

NOTES

FOR SECTIONS A-A THRU D-D, SEE SHEET 6/7.

FOR CONTRACTION AND EXPANSION JOINT DETAILS, SEE SHEET 6/7.

DESIGN AGENCY

STRUCTUREPOINT LLC

DESIGNED	DRAWN	REVIEWED	DATE
SJF	BMP	MDS	01/18/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB			

RETAINING WALL NO. 7 DETAILS

ALONG IR 75 SB

HAM-75-3.84

PID No. 104667

3 / 7

31 / 48

jwade
8/22/2022 9:14:28 AM
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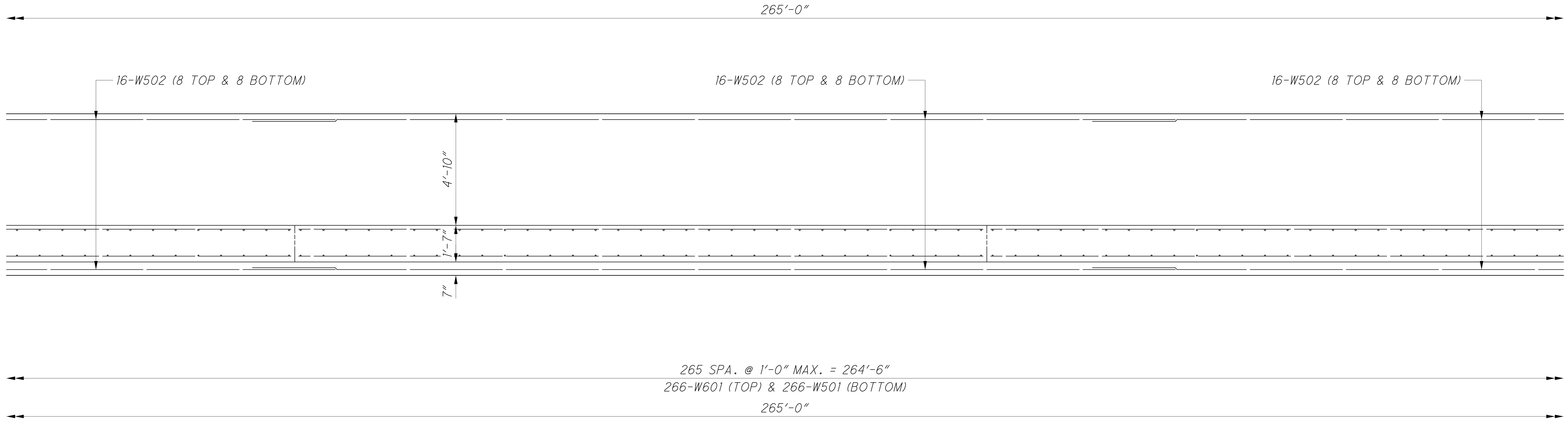
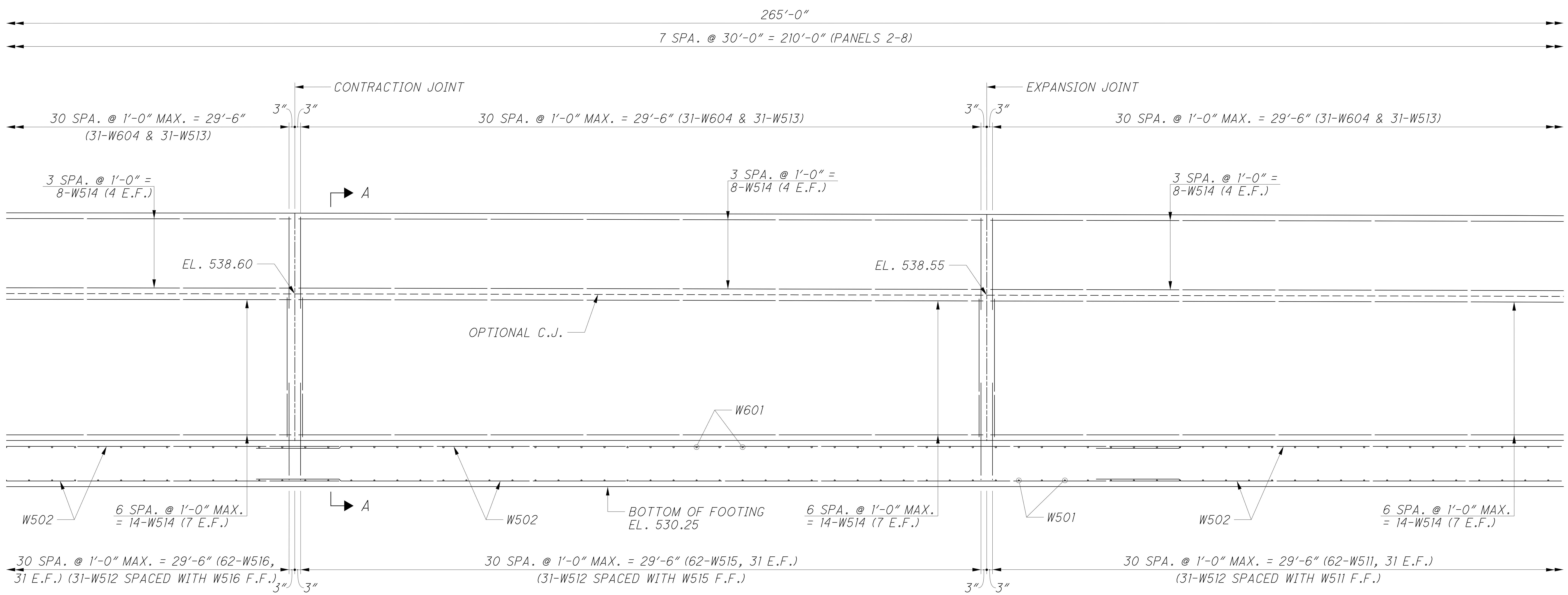


PARTIAL PLAN



PARTIAL ELEVATION

MINIMUM BAR LAP	
#5 (VERTICAL)	2'-7"
#5 (HORIZONTAL)	3'-7"

NOTES

FOR SECTIONS A-A THRU D-D, SEE SHEET 6/7.

FOR CONTRACTION AND EXPANSION JOINT DETAILS, SEE SHEET 6/7.

RETAINING WALL NO. 7 DETAILS
ALONG IR 75 SB

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED SJF | CHECKED CLB | DRAWN BMP | REVISED | REVIEWED MDS | DATE 01/18/19 | STRUCTURE FILE NUMBER

HAM-75-3.84
PID No. 104667

jwade
8/22/2022 9:14:29 AM
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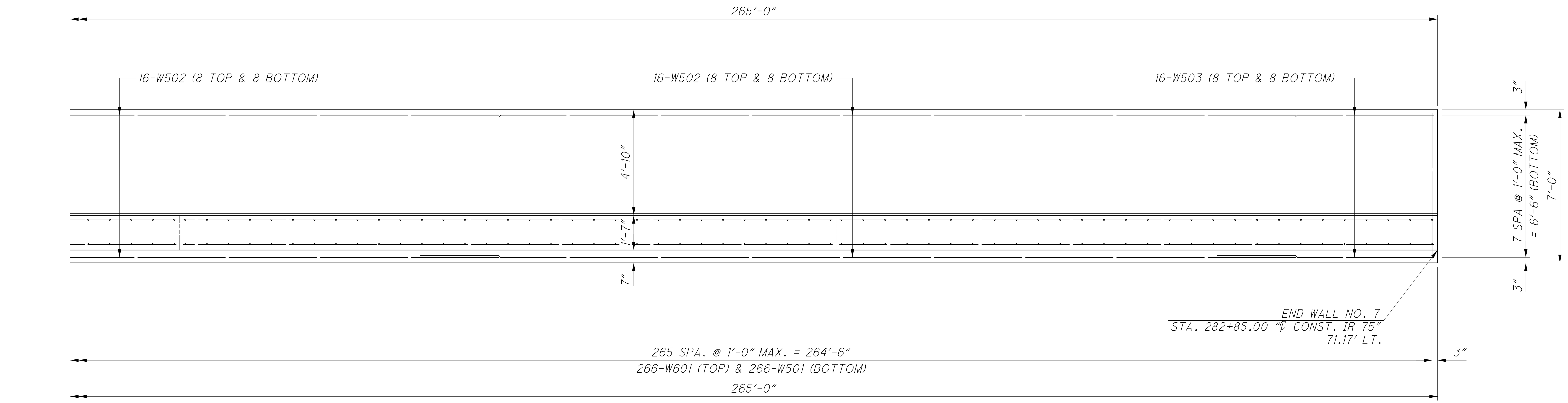
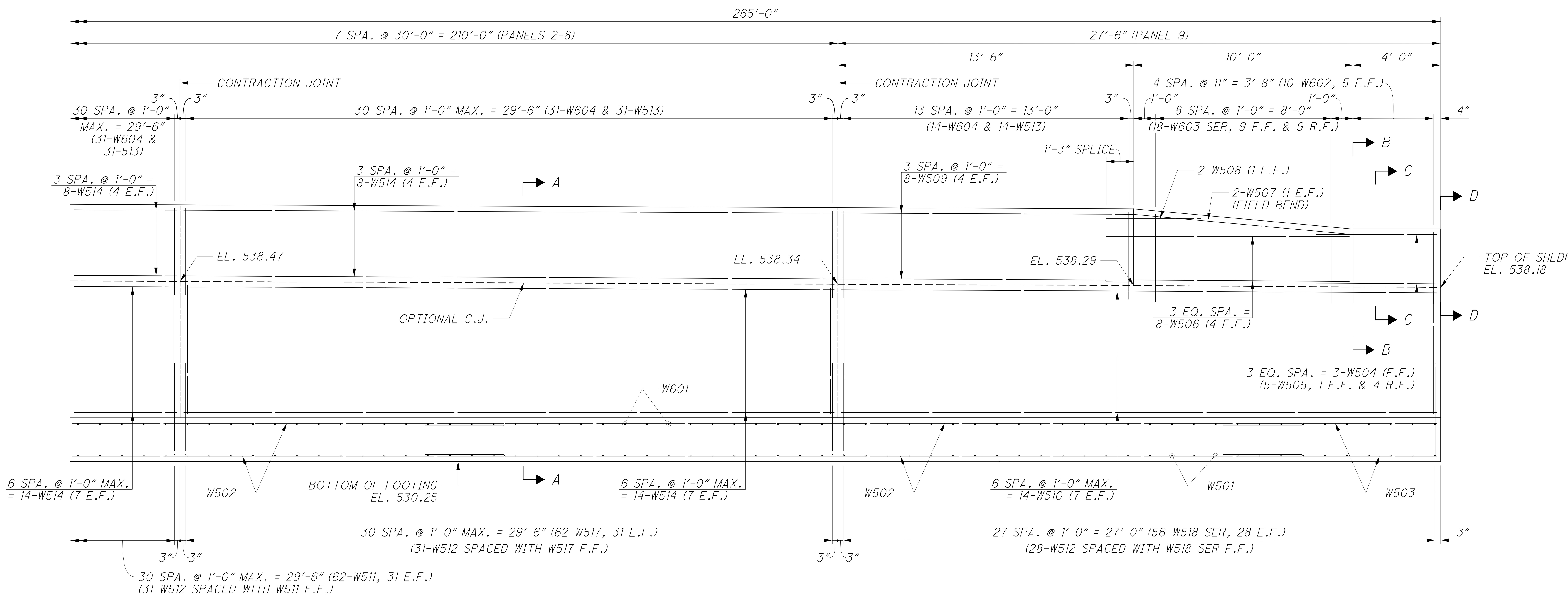


PARTIAL PLAN



PARTIAL ELEVATION

MINIMUM BAR LAP	
#5 (VERTICAL)	2'-7"
#5 (HORIZONTAL)	3'-7"

NOTES

FOR SECTIONS A-A THRU D-D, SEE SHEET 6/7.

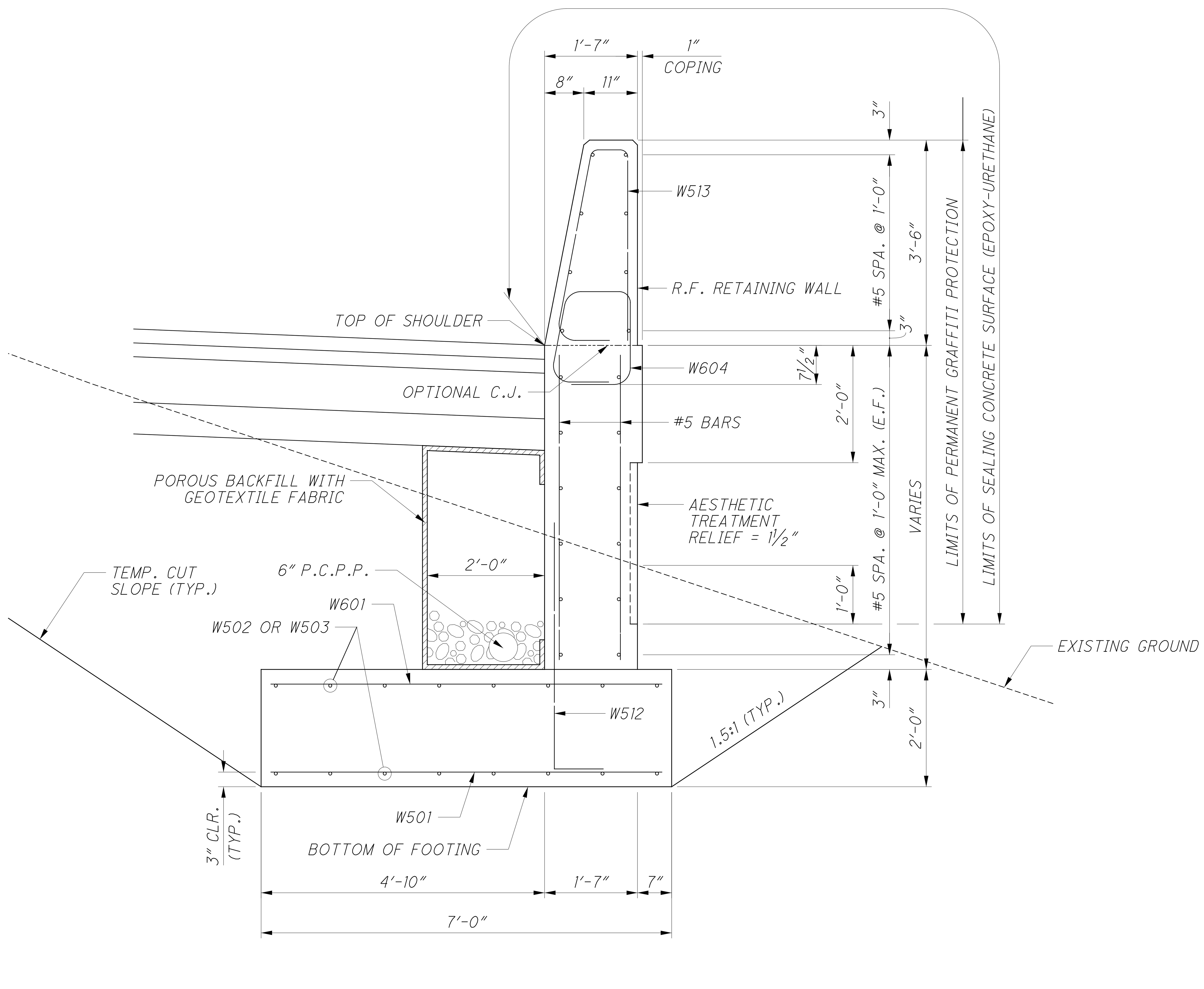
FOR CONTRACTION AND EXPANSION JOINT DETAILS, SEE SHEET 6/7.

DESIGN AGENCY: STRUCTUREPOINT

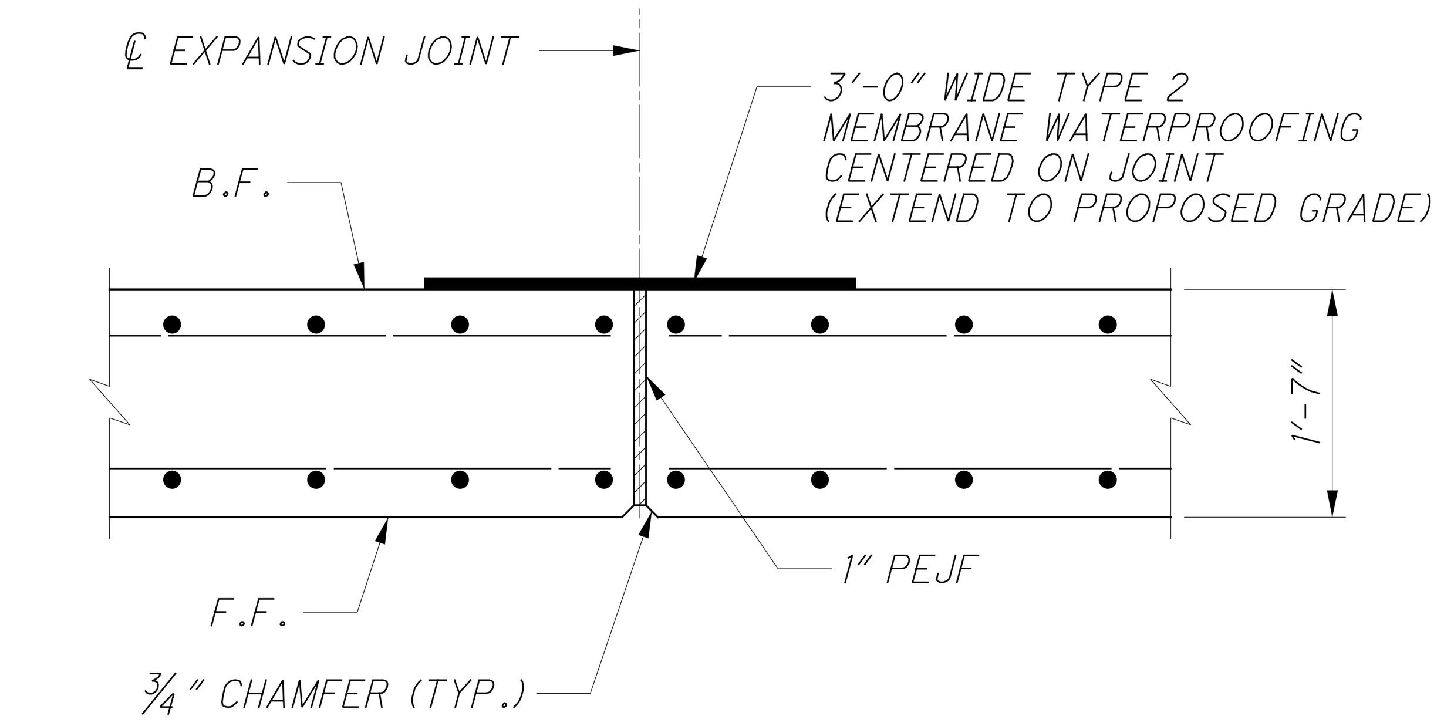
DESIGNED	DRAWN	REVIEWED	DATE
SJF	BMP	MDS	01/18/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB			

RETAINING WALL NO. 7 DETAILS
ALONG IR 75 SB

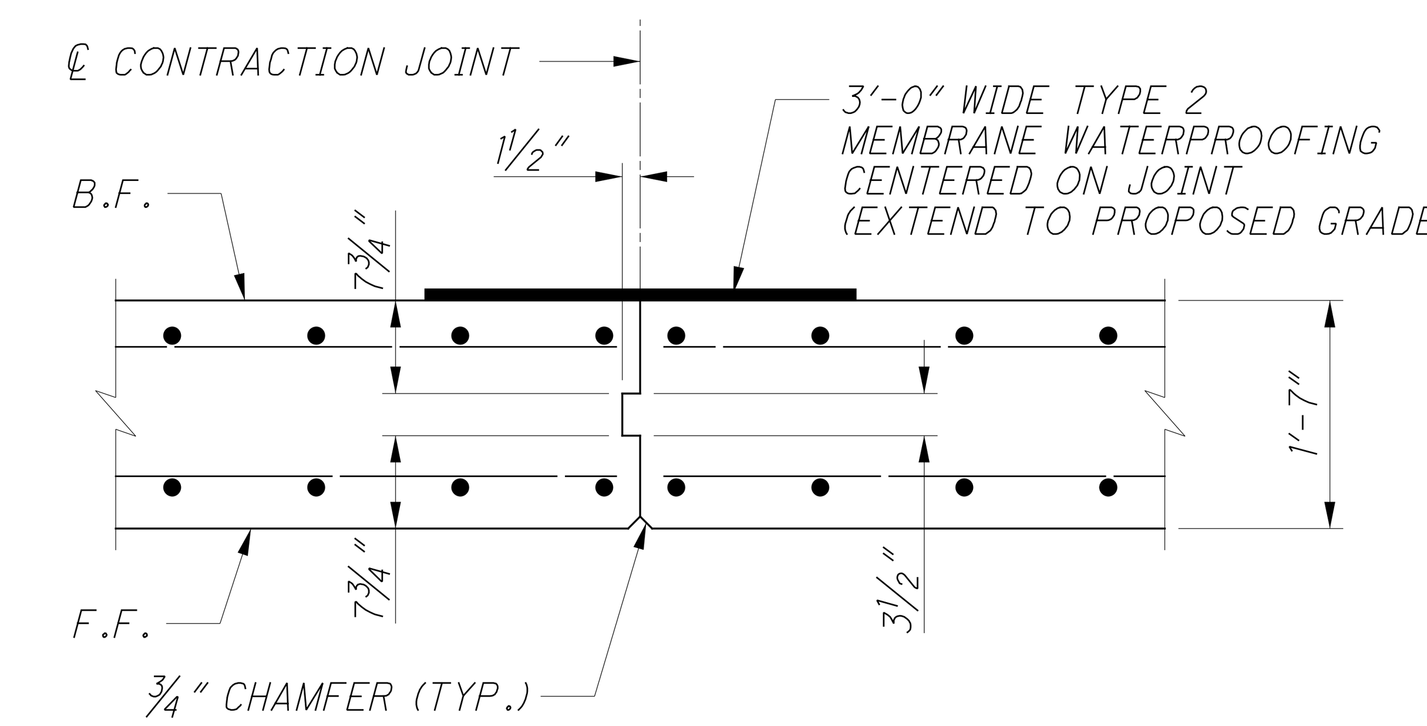
HAM-75-3.84
PID No. 104667



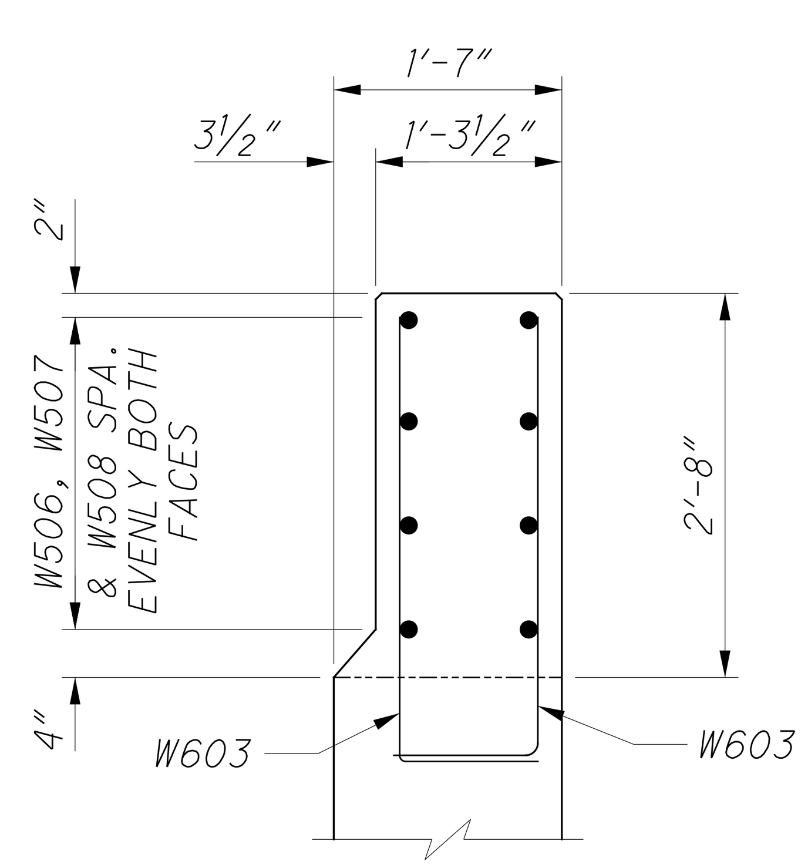
SECTION A-A



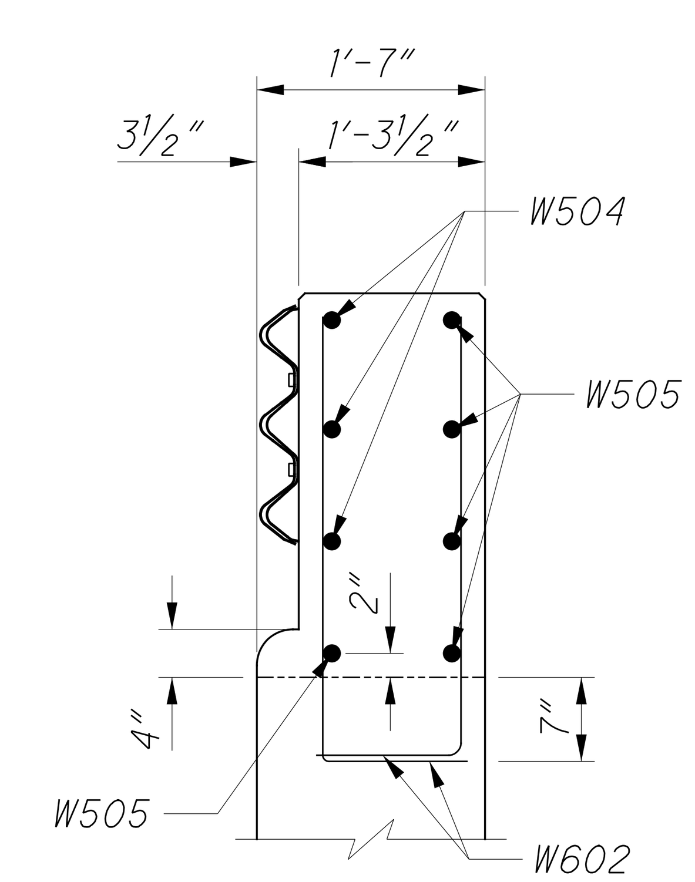
EXPANSION JOINT DETAIL



CONTRACTION JOINT DETAIL



SECTION B-B



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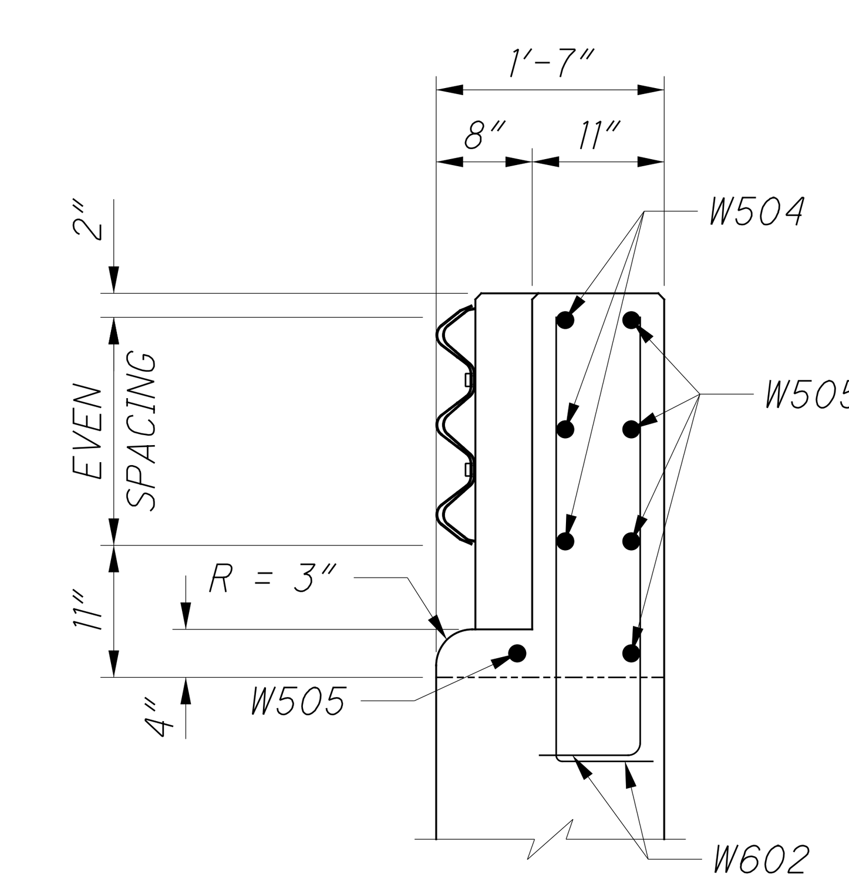


SECTION D-D

NOTES

FOR BRIDGE TERMINAL ASSEMBLY, SEE STANDARD CONSTRUCTION DRAWING MSG 3.1 AND 3.2.

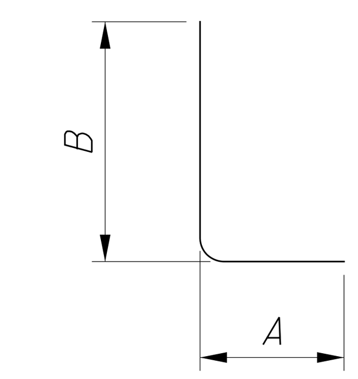
DESIGN AGENCY: STRUCTUREPOINT

DESIGNED SJF | CHECKED CLB | DRAWN BMP | REVISED | REVIEWED MDS | DATE 01/18/19 | STRUCTURE FILE NUMBER

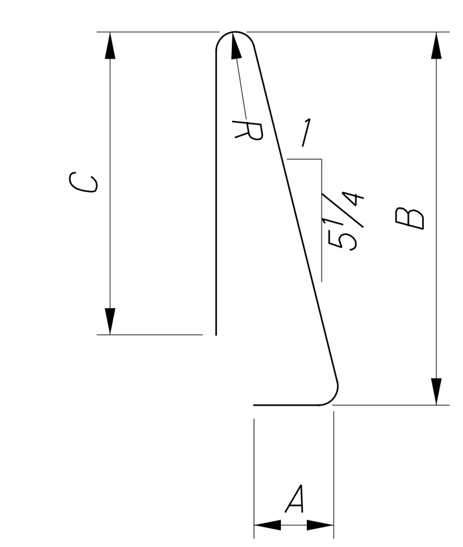
RETAINING WALL NO. 7 DETAILS
ALONG IR 75 SB

HAM-75-3.84
PID No. 104667

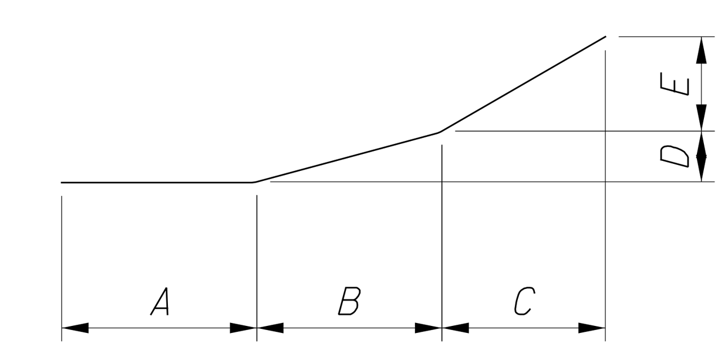
MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
WALL NO. 7											
W501	266	6'-8"	1850	STR							
W502	112	40'-0"	4673	STR							
W503	16	9'-11"	165	STR							
W504	6	5'-7"	35	25	1'-8"	2'-5"	1'-5"	1½"	6½"		
W505	10	5'-6"	57	STR							
W506	16	11'-1"	185	STR							
W507	4	11'-3"	47	STR							
W508	4	3'-6"	15	STR							
W509	16	13'-2"	220	STR							
W510	28	27'-2"	793	STR							
W511	118	5'-10"	718	STR							
W512	273	5'-1"	1447	1	0'-10"	4'-5"					
W513	245	7'-4"	1874	23	0'-11"	3'-3"	3'-0"			3½"	
W514	154	29'-8"	4765	STR							
W515	124	5'-11"	765	STR							
W516	186	6'-0"	1164	STR							
W517	62	5'-9"	372	STR							
	2 SR	5'-6"									
W518	OF	TO	329	STR							⅛"
	28	5'-9"									
W601	266	6'-8"	2664	STR							
W602	20	4'-1"	123	1	1'-0"	3'-3"					
	4 SR	4'-2"				3'-4"					
W603	OF	TO	243	1	1'-0"	TO					⅞"
	9	4'-9"				3'-11"					
W604	245	5'-8"	2085	40	1'-2"	1'-0"	1'-7"	1'-7"			
	SUB-TOTAL		24,589								



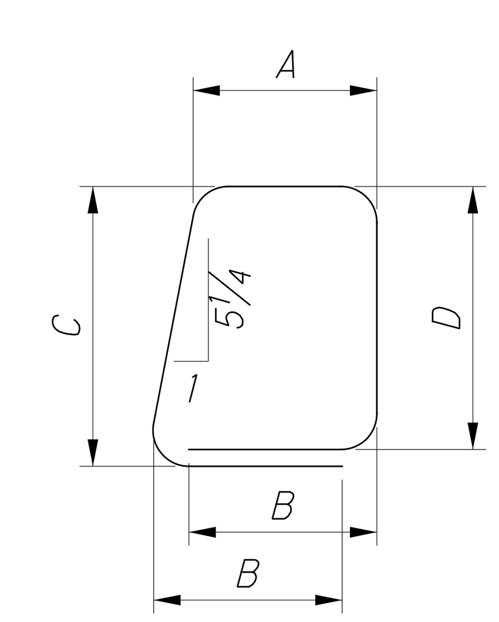
TYPE-1



TYPE-23



TYPE-25



TYPE-40

DESIGN AGENCY
STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
BMP	BMP	MDS	01/18/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SJF			

RETAINING WALL NO. 7 REINFORCING STEEL LIST
ALONG IR 75 SB

HAM-75-3.84
PID No. 104667

7 / 7

35 / 48

jwade
8/22/2022 9:14:31 AM
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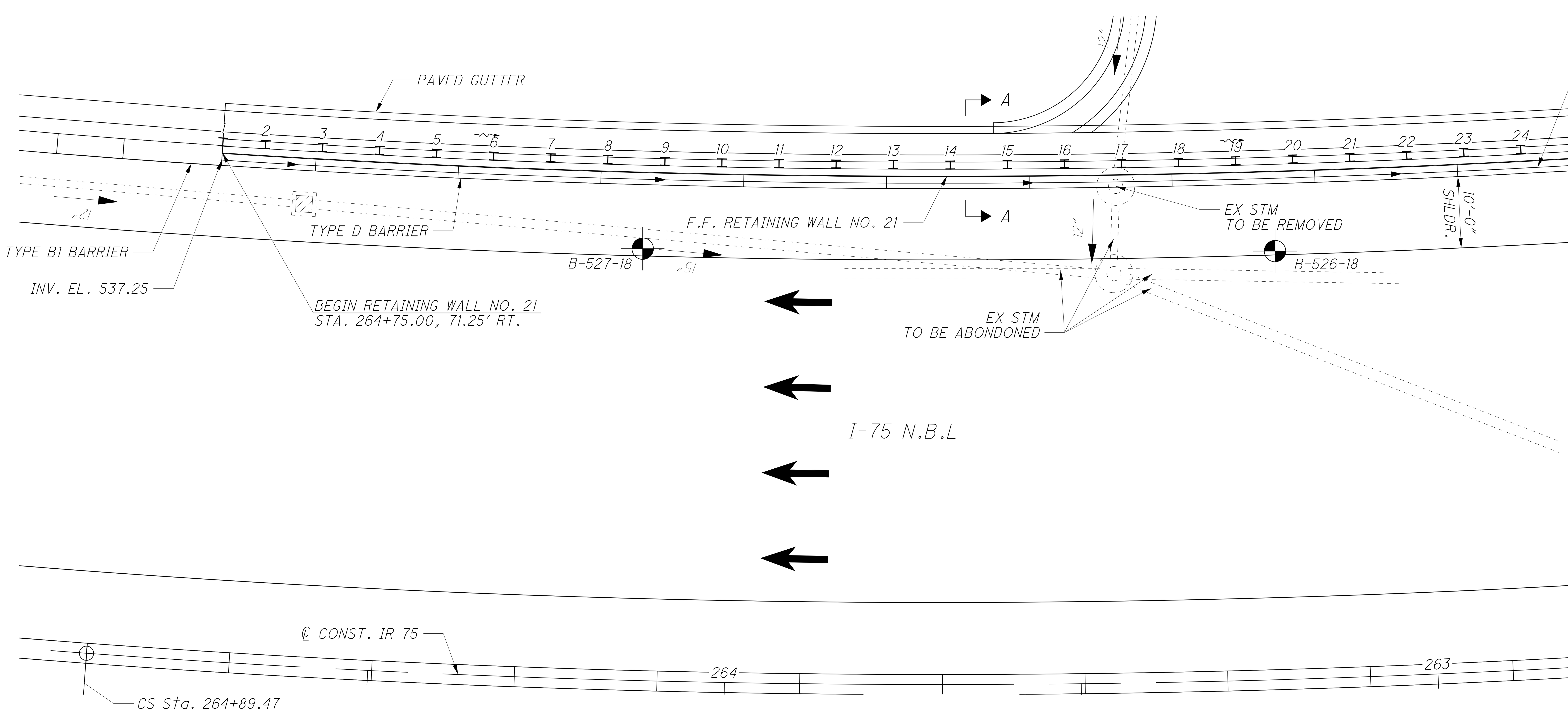


LEGEND

PROJECT BORING LOCATION

HISTORIC BORING LOCATION

NOTES

ALL STATIONS AND OFFSETS GIVEN ALONG FRONT FACE OF WALL FROM "℄ CONST. IR 75" UNLESS NOTED OTHERWISE.

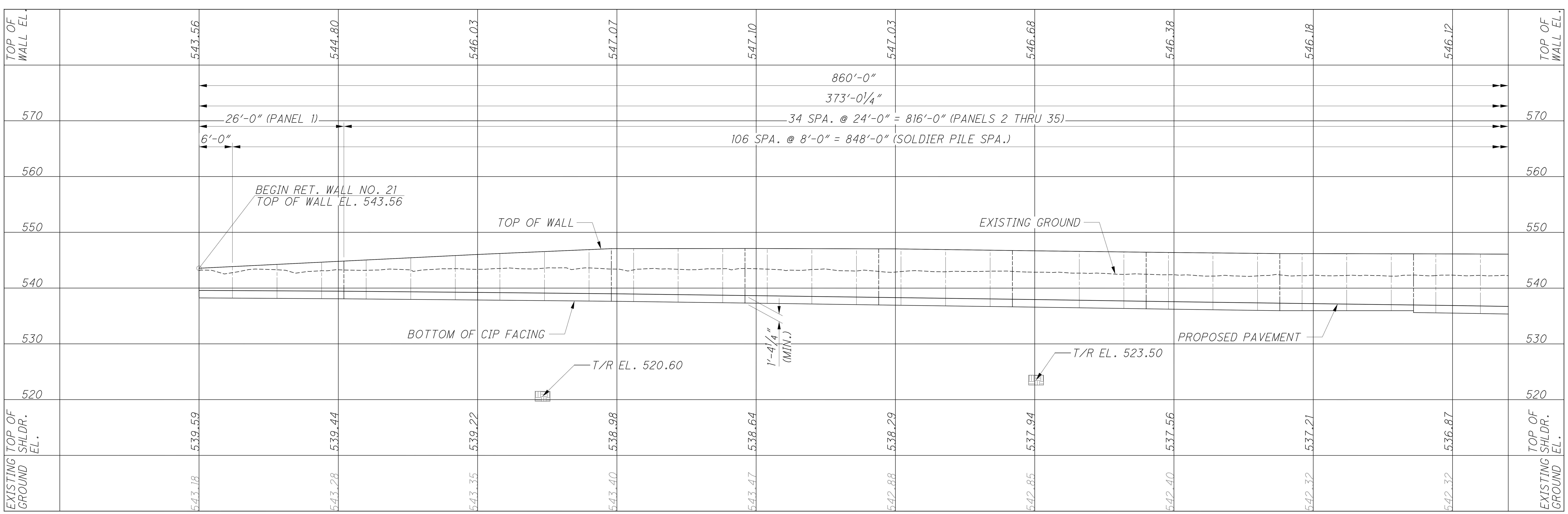
PROFILE SHOWN ALONG FRONT FACE OF WALL.

HORIZONTAL PROFILE GRID LINES SHOWN AT 25'-0" SPACING.

FOR SECTION A-A, SEE SHEET 10/13.

FOR ℄ CONST. IR 75 SPIRAL DATA SEE BU-14.

PLAN



PROFILE

ALONG F.F. RETAINING WALL NO. 21

DESIGN AGENCY STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	BMP	MDS	01/18/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB			

RETAINING WALL NO. 21 DETAILS
ALONG IR 75 NB

HAM-75-3.84
PID No. 104667

1/13

36/48

jwade
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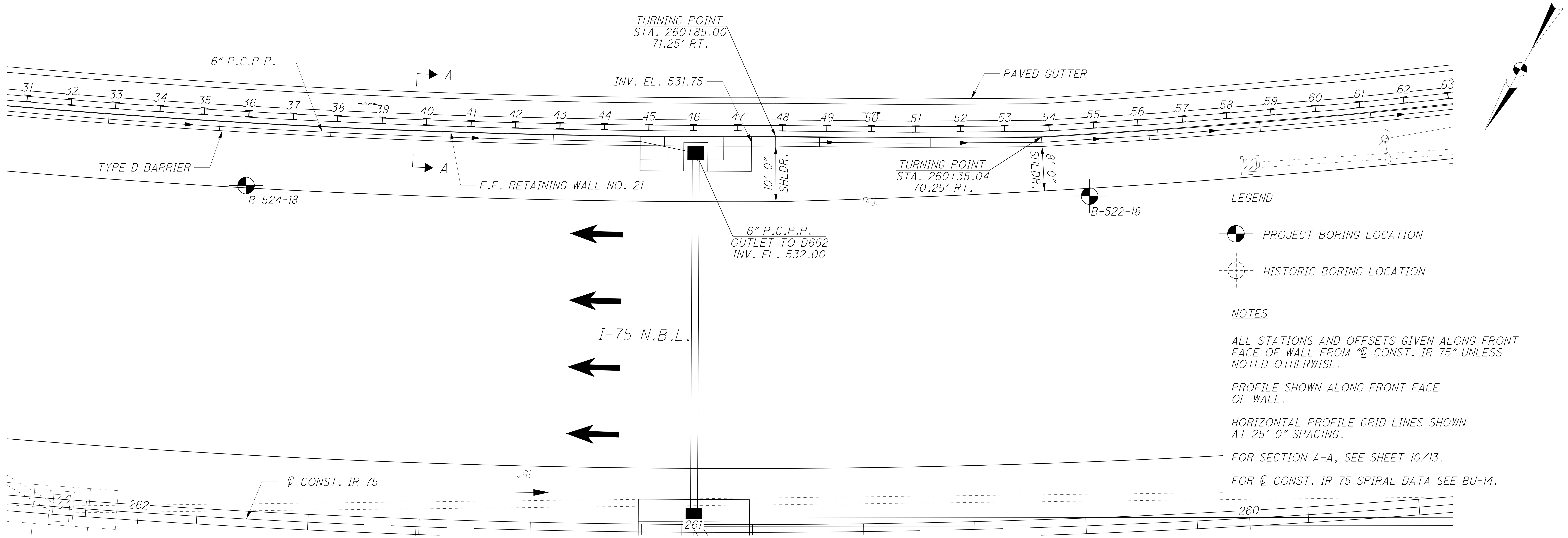


LEGEND

- PROJECT BORING LOCATION
- HISTORIC BORING LOCATION

NOTES

ALL STATIONS AND OFFSETS GIVEN ALONG FRONT FACE OF WALL FROM "℄ CONST. IR 75" UNLESS NOTED OTHERWISE.

PROFILE SHOWN ALONG FRONT FACE OF WALL.

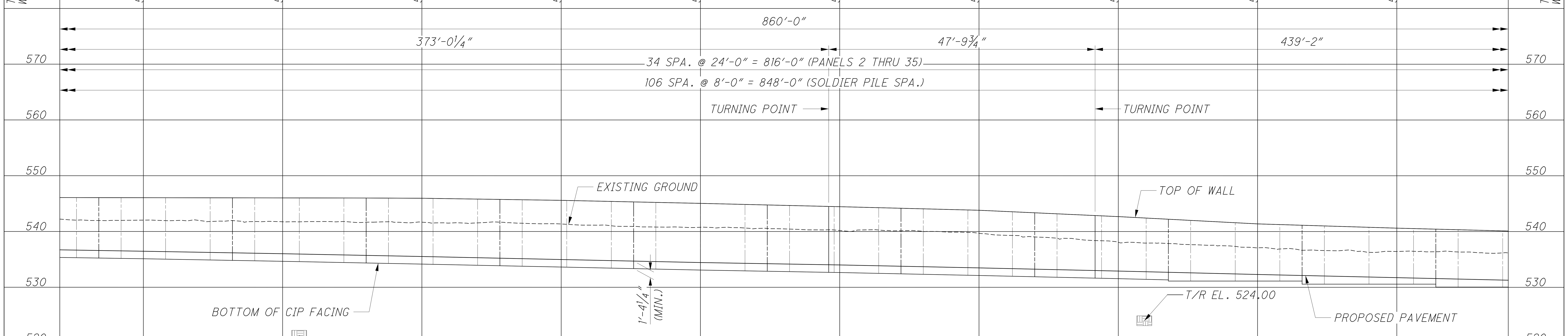
HORIZONTAL PROFILE GRID LINES SHOWN AT 25'-0" SPACING.

FOR SECTION A-A, SEE SHEET 10/13.

FOR ℄ CONST. IR 75 SPIRAL DATA SEE BU-14.

PLAN

TOP OF WALL EL.	546.10	546.08	545.96	545.59	545.05	544.44	543.81	542.67	541.37	540.60
TOP OF SHLDR. EL.	536.46	536.01	535.51	534.98	534.43	533.94	533.47	532.90	532.29	531.72
EXISTING GROUND	542.04	541.74	541.67	541.34	540.75	540.18	539.68	538.06	537.08	536.42



PROFILE
ALONG F.F. RETAINING WALL NO. 21

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	BMP	MDS	01/18/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB			

RETAINING WALL NO. 21 DETAILS
ALONG IR 75 NB

HAM-75-3.84
PID No. 104667

jwade
8/22/2022 9:14:33 AM
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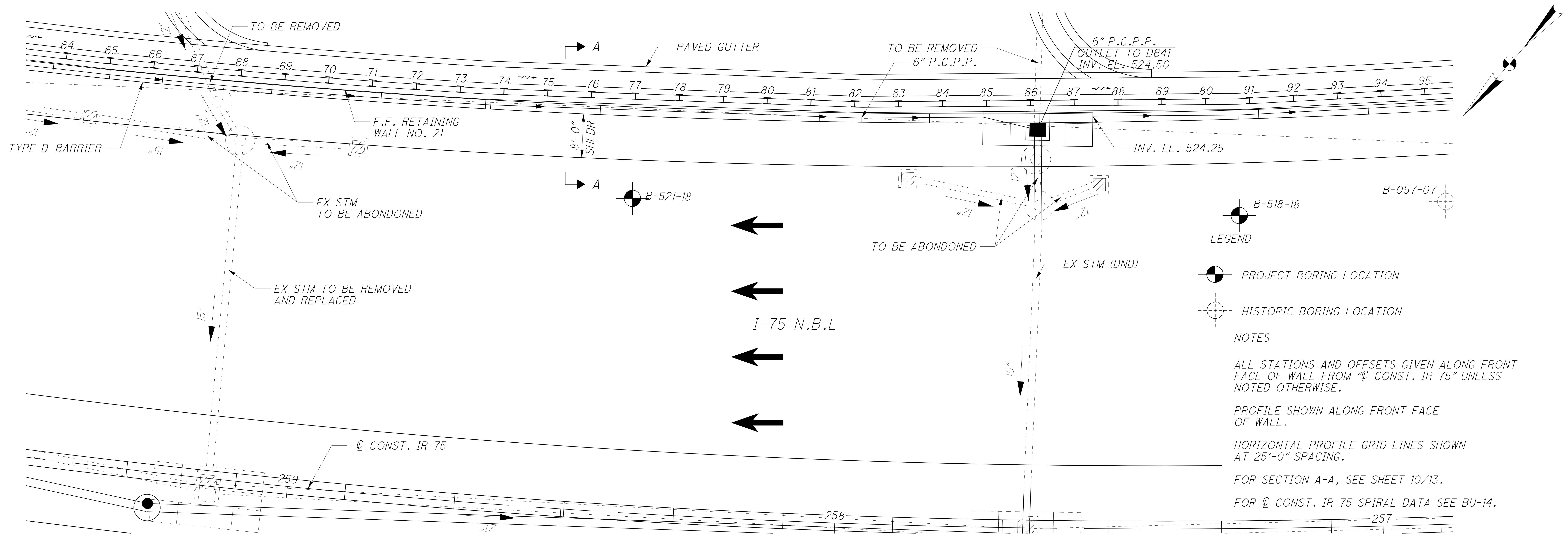


NOTES

ALL STATIONS AND OFFSETS GIVEN ALONG FRONT FACE OF WALL FROM "℄ CONST. IR 75" UNLESS NOTED OTHERWISE.

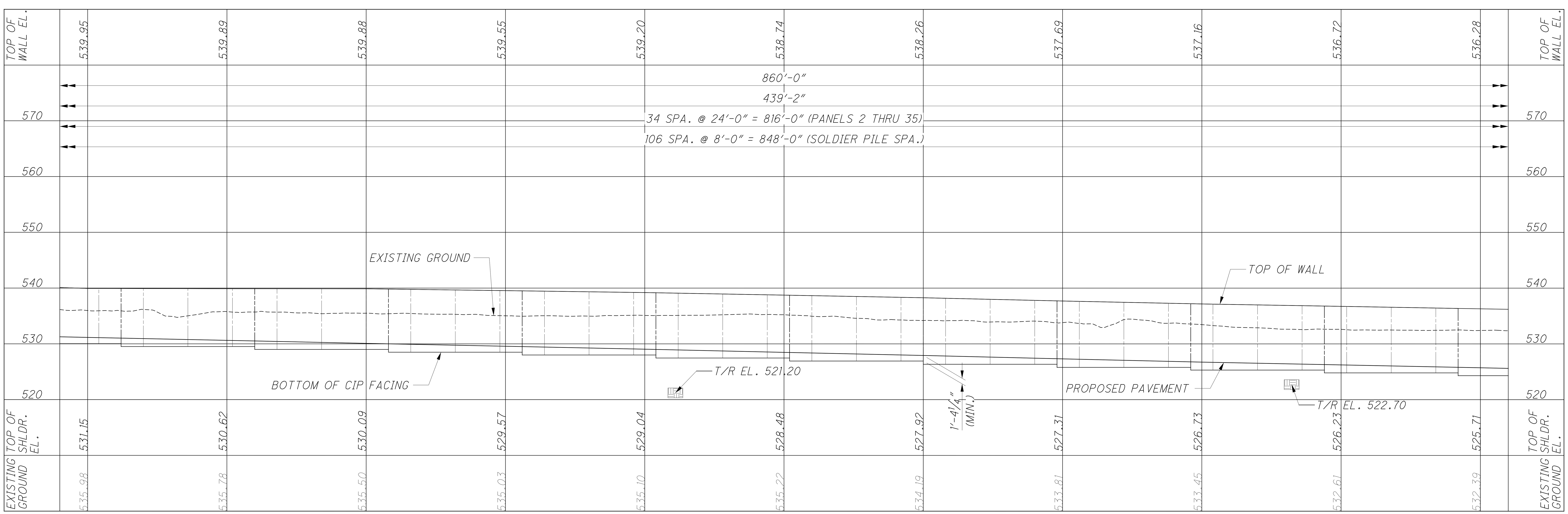
PROFILE SHOWN ALONG FRONT FACE OF WALL.

HORIZONTAL PROFILE GRID LINES SHOWN AT 25'-0" SPACING.

FOR SECTION A-A, SEE SHEET 10/13.

FOR ℄ CONST. IR 75 SPIRAL DATA SEE BU-14.

PLAN



PROFILE
ALONG F.F. RETAINING WALL NO. 21

DESIGN AGENCY
STRUCTUREPOINT
DESIGNED SJF | CHECKED CLB | DRAWN BMP | REVISED | REVIEWED MDS | DATE 01/18/19 | STRUCTURE FILE NUMBER

RETAINING WALL NO. 21 DETAILS
ALONG IR 75 NB

HAM-75-3.84
PID No. 104667

3/13

38/48

jwade
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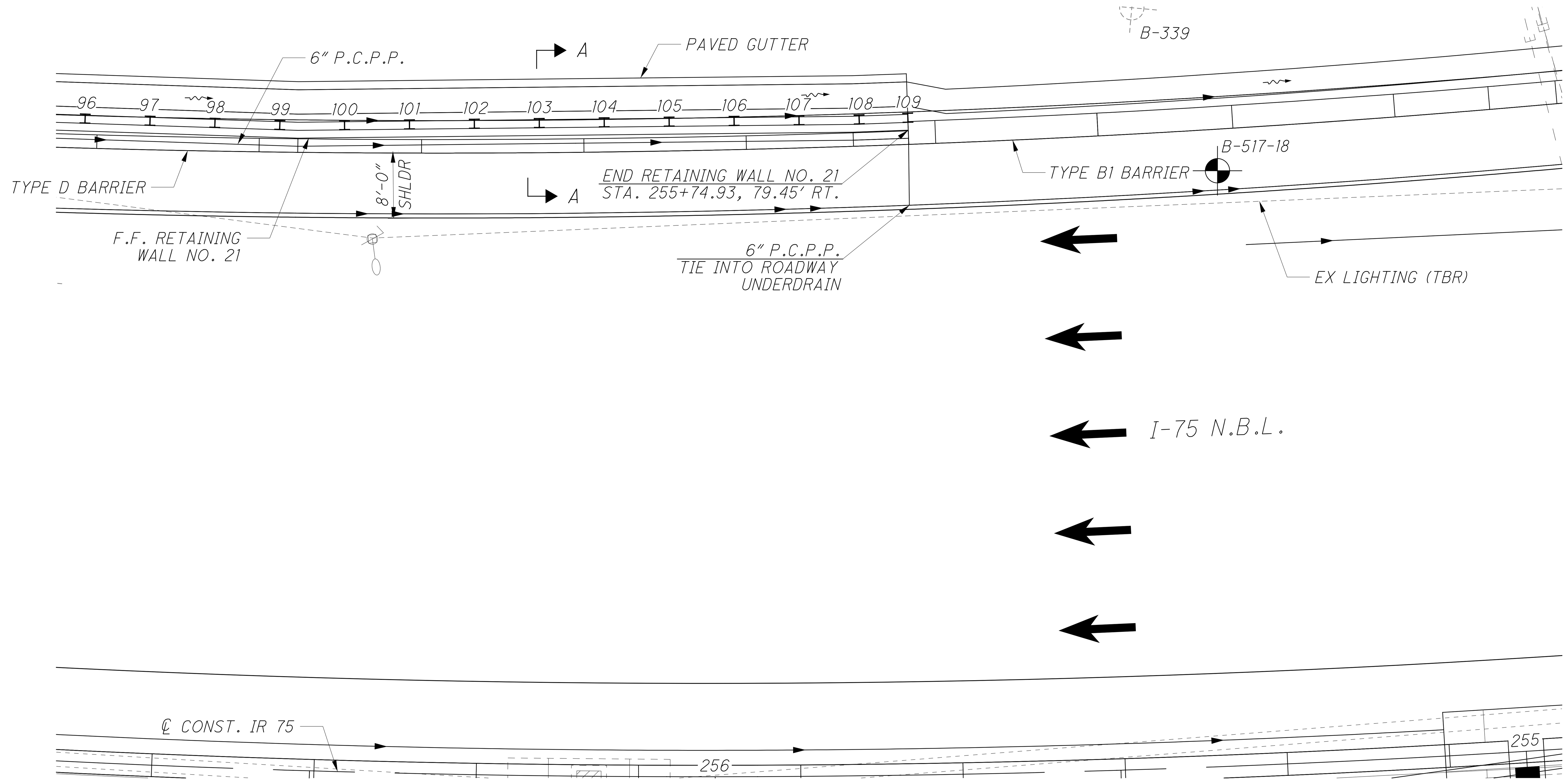
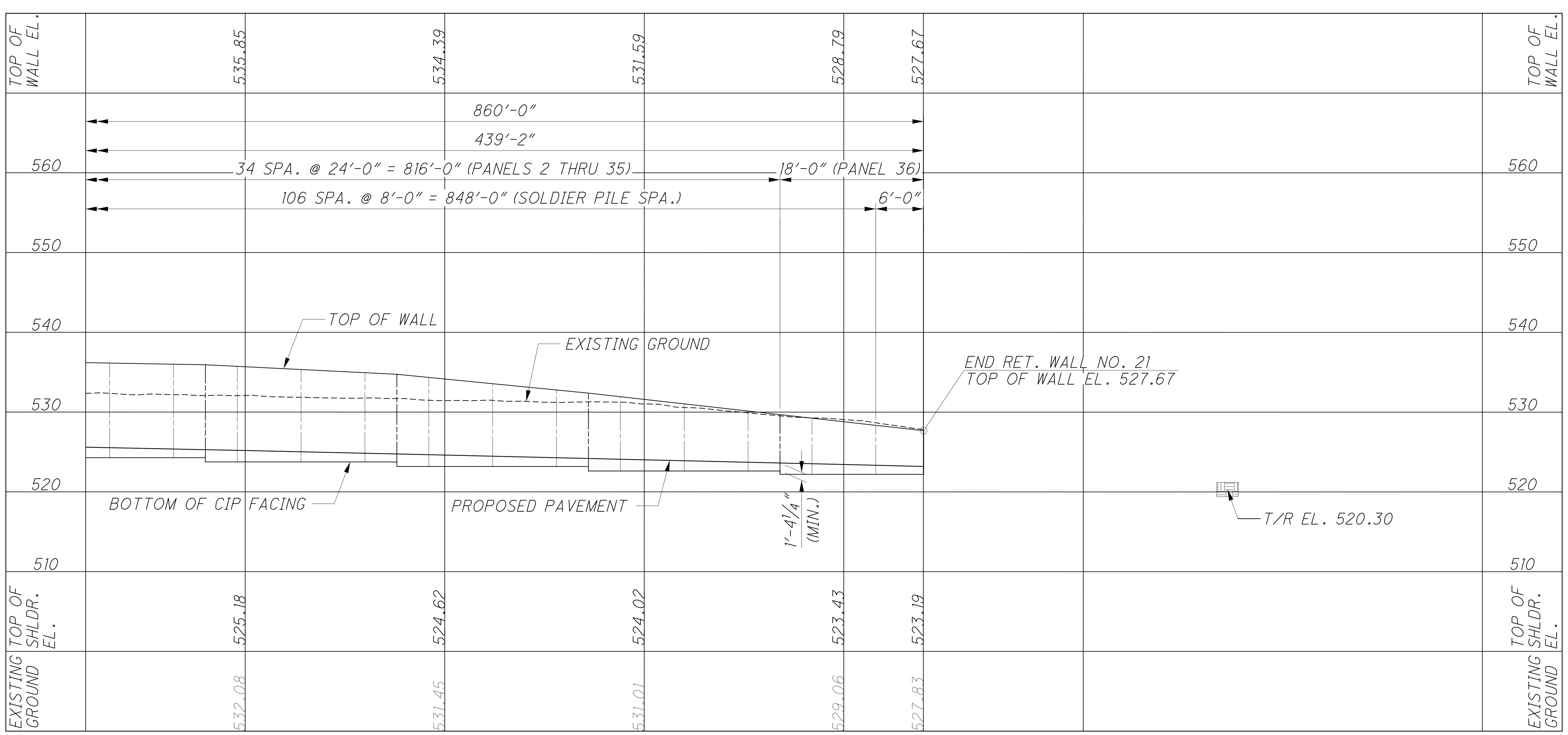


PLAN



PROFILE

ALONG F.F. RETAINING WALL NO. 21

LEGEND

PROJECT BORING LOCATION

HISTORIC BORING LOCATION

NOTES

ALL STATIONS AND OFFSETS GIVEN ALONG FRONT FACE OF WALL FROM "℄ CONST. IR 75" UNLESS NOTED OTHERWISE.

PROFILE SHOWN ALONG FRONT FACE OF WALL.

HORIZONTAL PROFILE GRID LINES SHOWN AT 25'-0" SPACING.

FOR SECTION A-A, SEE SHEET 10/13.

FOR ℄ CONST. IR 75 SPIRAL DATA SEE BU-14.

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED SJF | DRAWN BMP | REVIEWED MDS | DATE 01/18/19 | CHECKED CLB | REVISED | STRUCTURE FILE NUMBER

RETAINING WALL NO. 21 DETAILS

ALONG IR 75 NB

HAM-75-3.84

PID No. 104667

4/13

jwade
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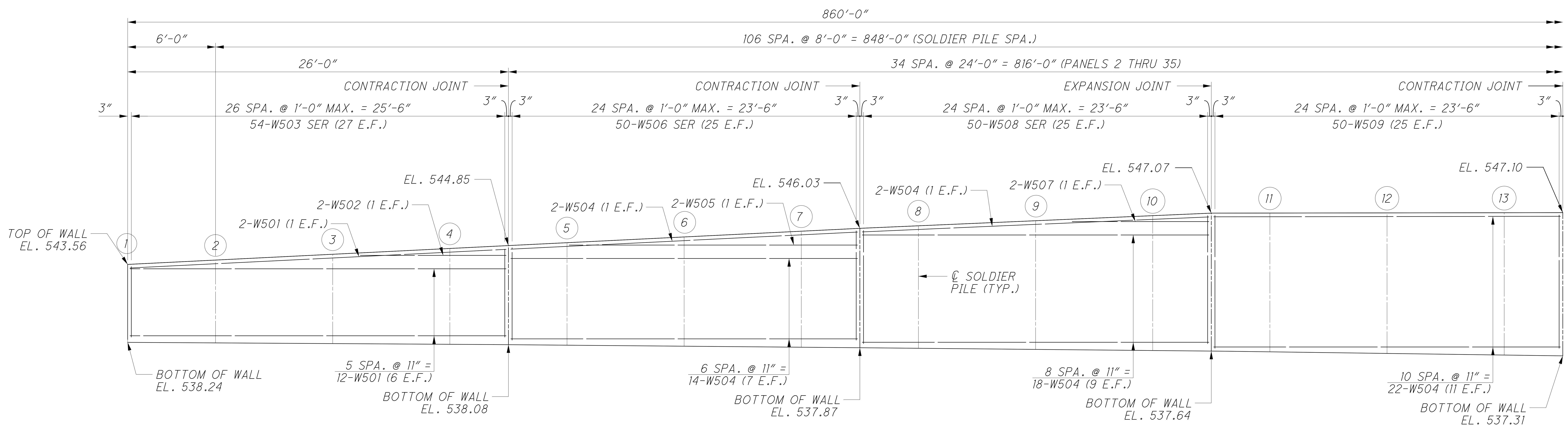
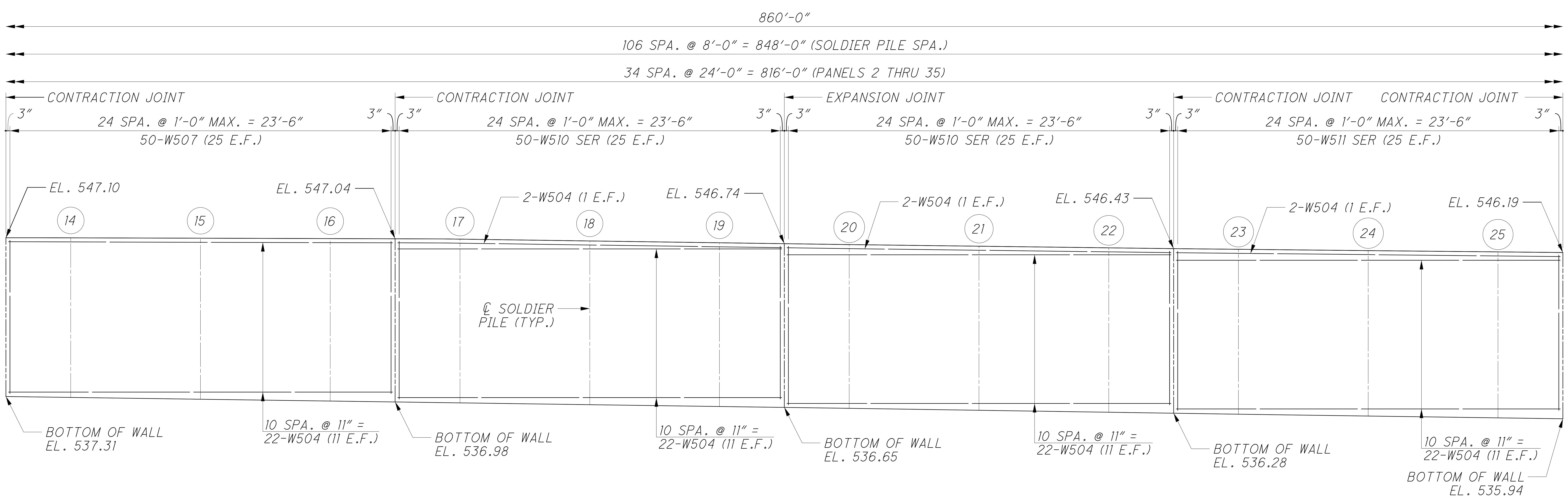


DEVELOPED ELEVATION - SOLDIER PILE LAYOUT



DEVELOPED ELEVATION - SOLDIER PILE LAYOUT

NOTES

ALL DIMENSIONS GIVEN ALONG FRONT FACE OF WALL.

FOR ADDITIONAL WALL DETAILS, SEE SHEETS 10 THRU 12.

(X) - SOLDIER PILE NUMBER.

DESIGN AGENCY: STRUCTUREPOINT

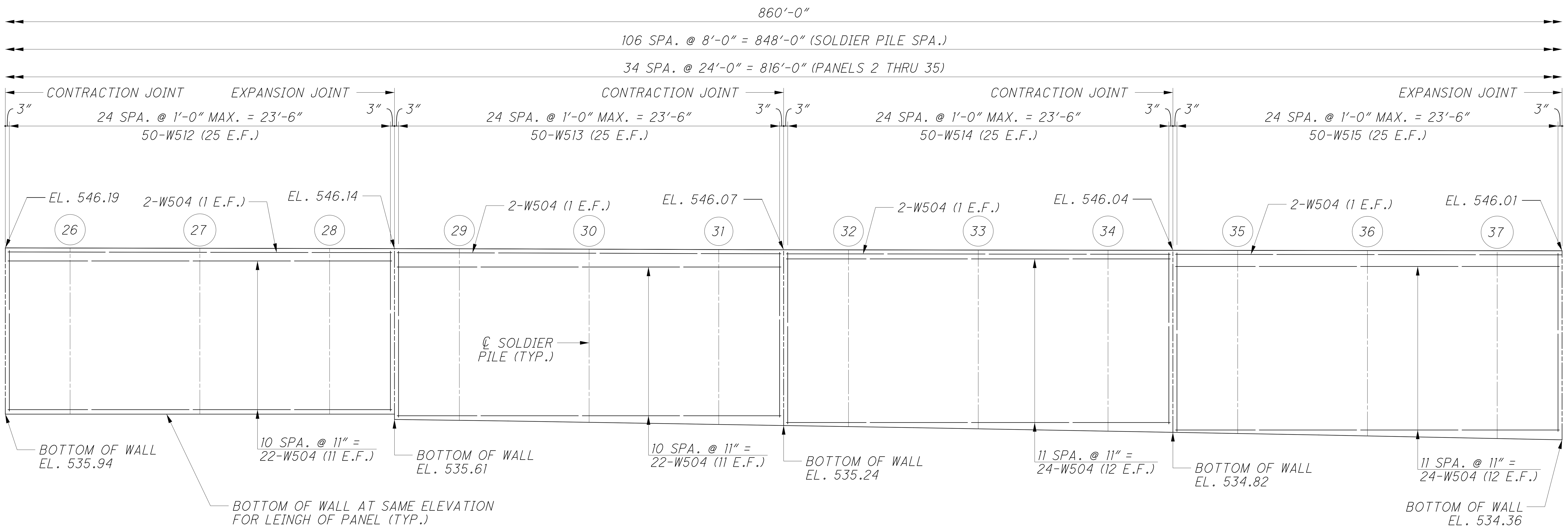
DESIGNED	DRAWN	REVIEWED	DATE
CLB	BMP	MDS	01/18/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SJF			

RETAINING WALL NO. 21 DETAILS
ALONG IR 75 NB

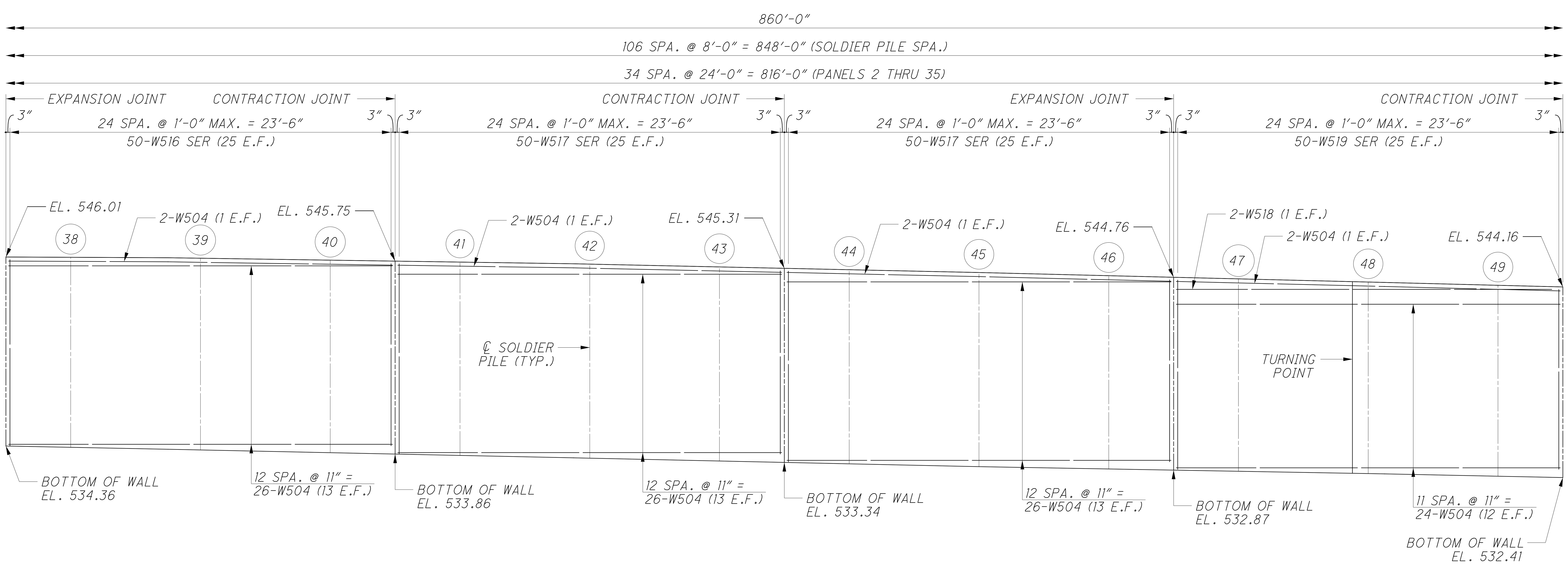
HAM-75-3.84
PID No. 104667

5/13

40/48



DEVELOPED ELEVATION - SOLDIER PILE LAYOUT



DEVELOPED ELEVATION - SOLDIER PILE LAYOUT

NOTES

ALL DIMENSIONS GIVEN ALONG FRONT FACE OF WALL.

FOR ADDITIONAL WALL DETAILS, SEE SHEETS 10 THRU 12.

(X) - SOLDIER PILE NUMBER.

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
CLB	BMP	MDS	01/18/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SJF			

RETAINING WALL NO. 21 DETAILS
ALONG IR 75 NB

HAM-75-3.84
PID No. 104667

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8/22/2022 9:14:37 AM
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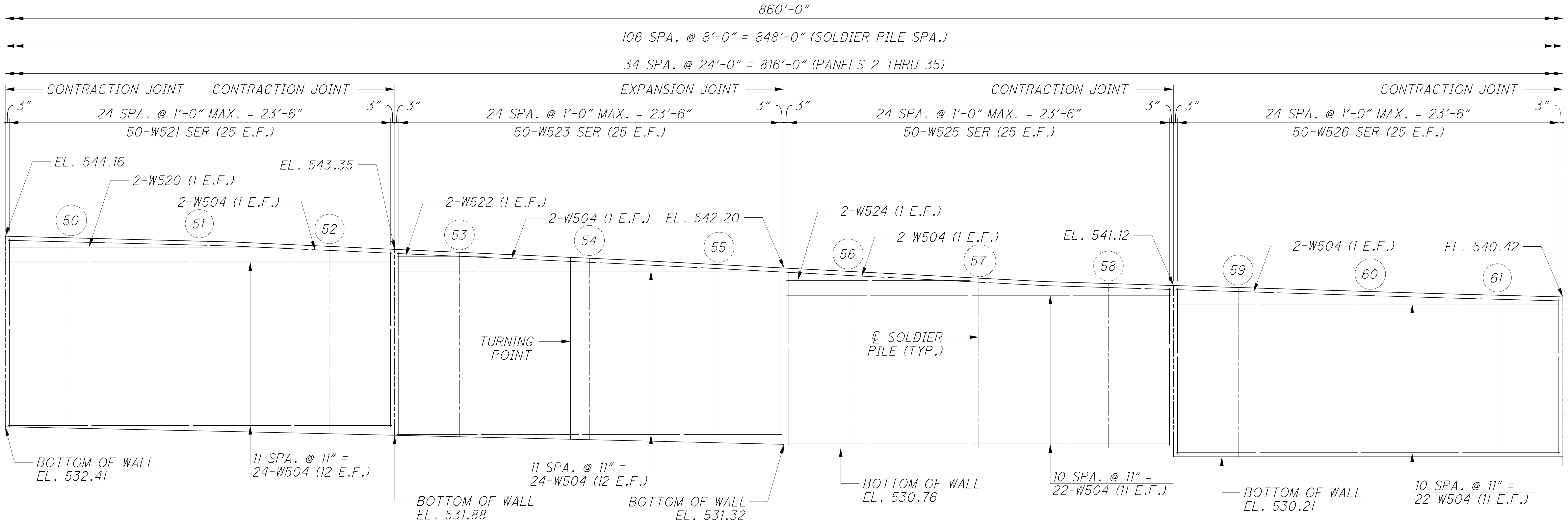
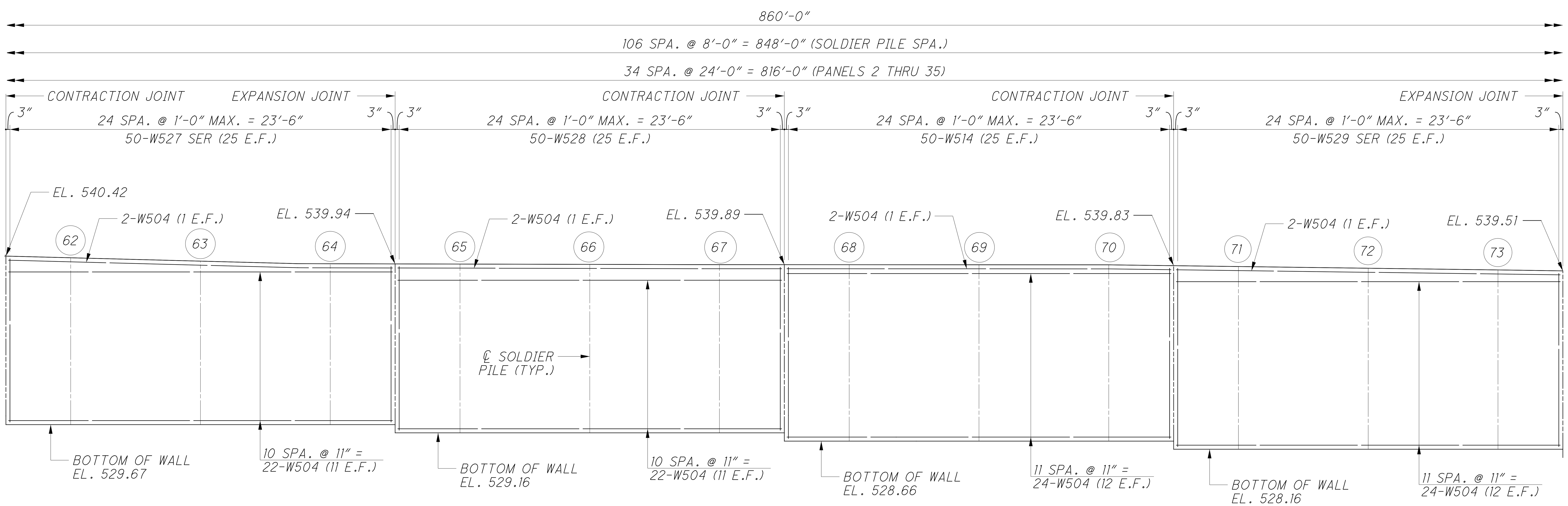


DEVELOPED ELEVATION - SOLDIER PILE LAYOUT



DEVELOPED ELEVATION - SOLDIER PILE LAYOUT

NOTES

ALL DIMENSIONS GIVEN ALONG FRONT FACE OF WALL.

FOR ADDITIONAL WALL DETAILS, SEE SHEETS 10 THRU 12.

(X) - SOLDIER PILE NUMBER.

DESIGN AGENCY: STRUCTUREPOINT

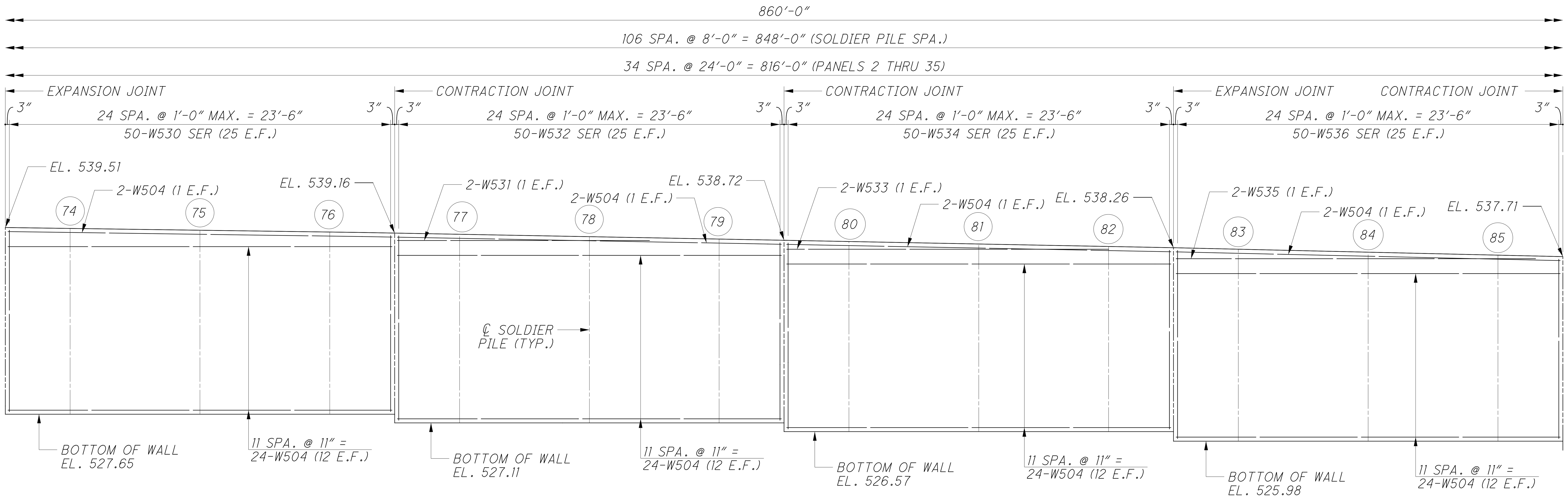
DESIGNED	DRAWN	REVIEWED	DATE
CLB	BMP	MDS	01/18/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SJF			

RETAINING WALL NO. 21 DETAILS

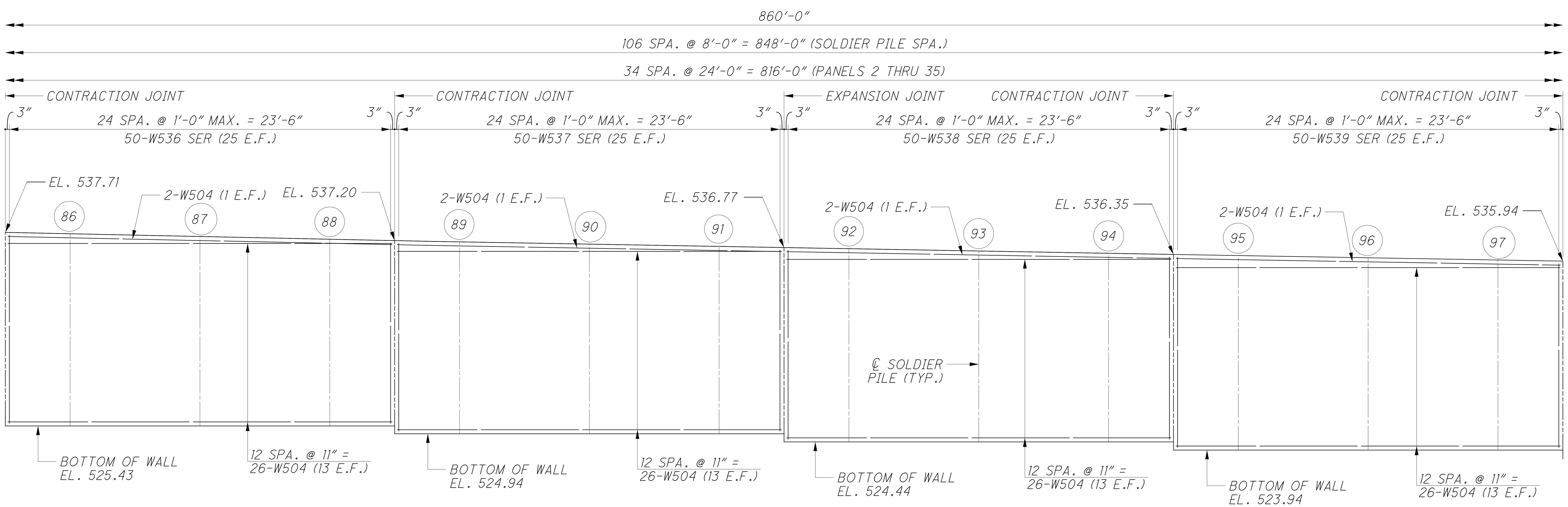
ALONG IR 75 NB

HAM-75-3.84

PID No. 104667



DEVELOPED ELEVATION - SOLDIER PILE LAYOUT



DEVELOPED ELEVATION - SOLDIER PILE LAYOUT

NOTES

ALL DIMENSIONS GIVEN ALONG FRONT FACE OF WALL.

FOR ADDITIONAL WALL DETAILS, SEE SHEETS 10 THRU 12.

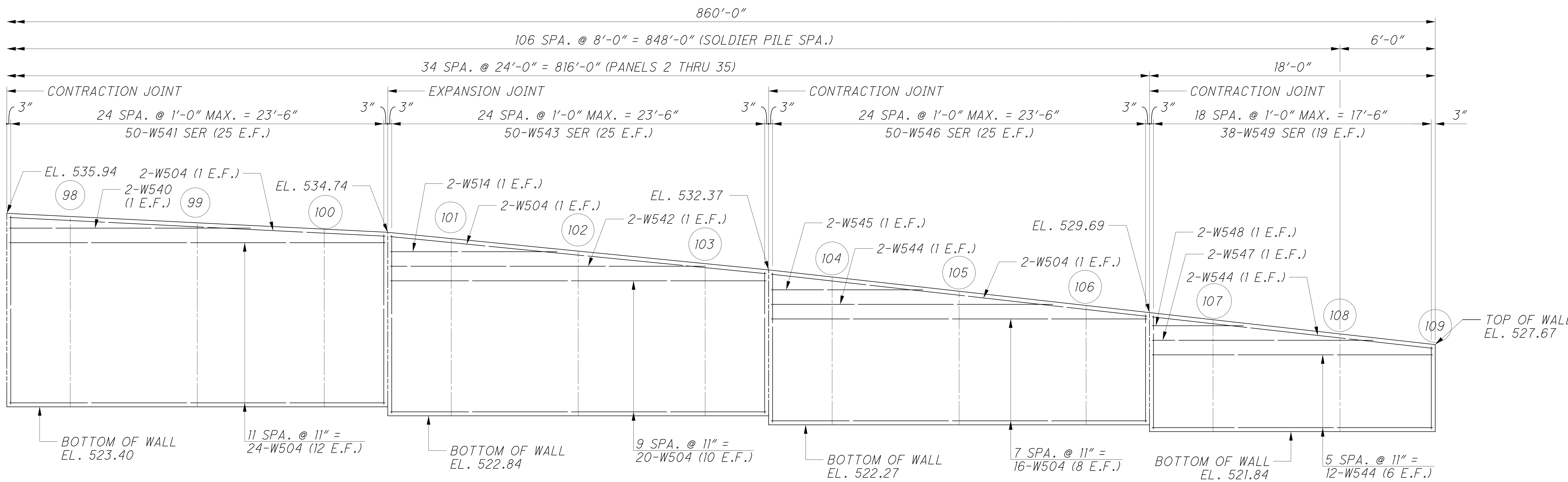
(X) - SOLDIER PILE NUMBER.

DESIGN AGENCY STRUCTUREPOINT

DESIGNED CLB | DRAWN BMP | REVIEWED MDS | DATE 01/18/19
CHECKED SJF | REVISED | STRUCTURE FILE NUMBER

RETAINING WALL NO. 21 DETAILS
ALONG IR 75 NB

HAM-75-3.84
PID No. 104667



DEVELOPED ELEVATION - SOLDIER PILE LAYOUT

NOTES

ALL DIMENSIONS GIVEN ALONG FRONT FACE OF WALL.

FOR ADDITIONAL WALL DETAILS, SEE SHEETS 10 THRU 12.

(X) - SOLDIER PILE NUMBER.

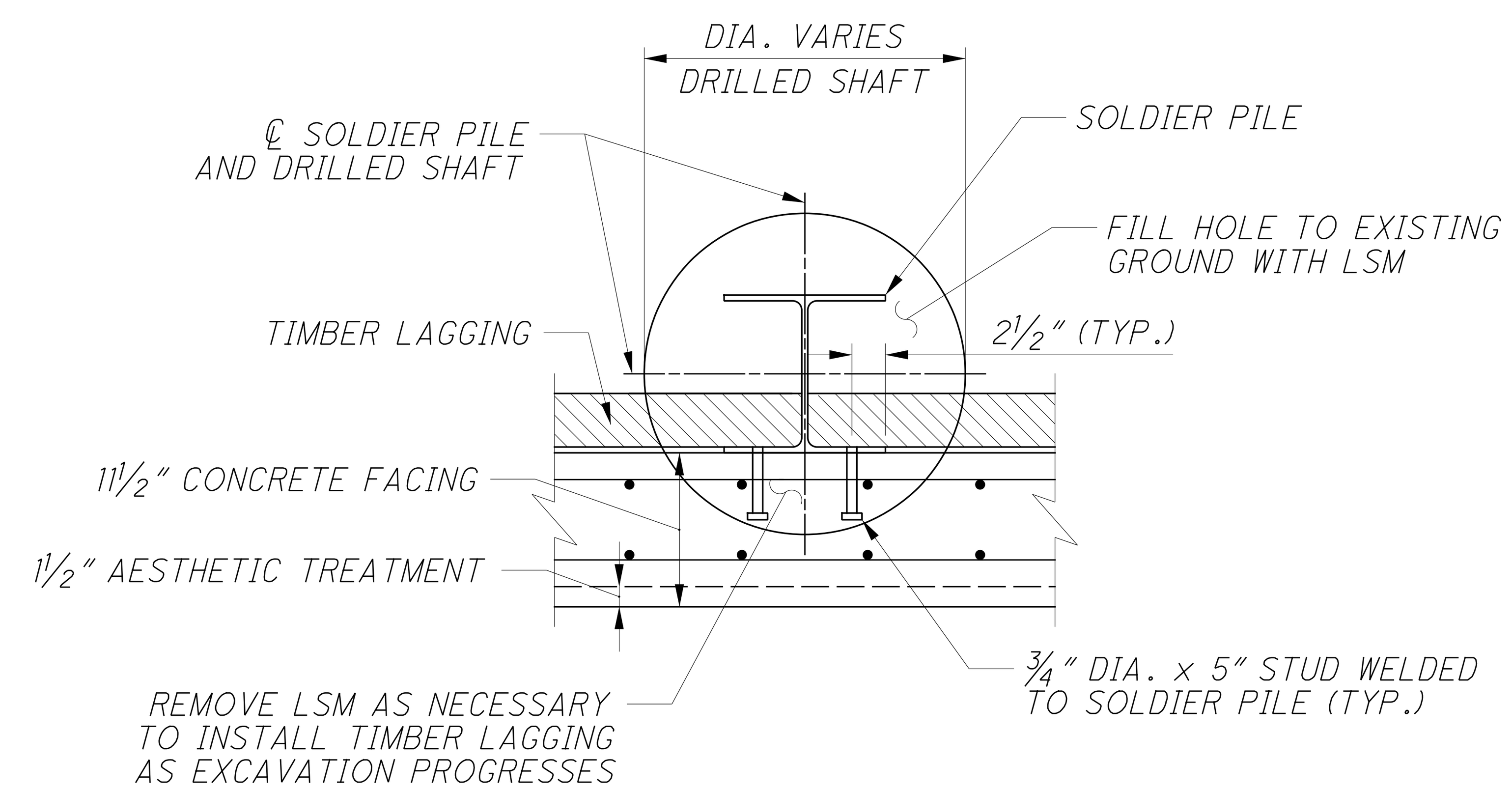
DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
CLB	BMP	MDS	01/18/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SJF			

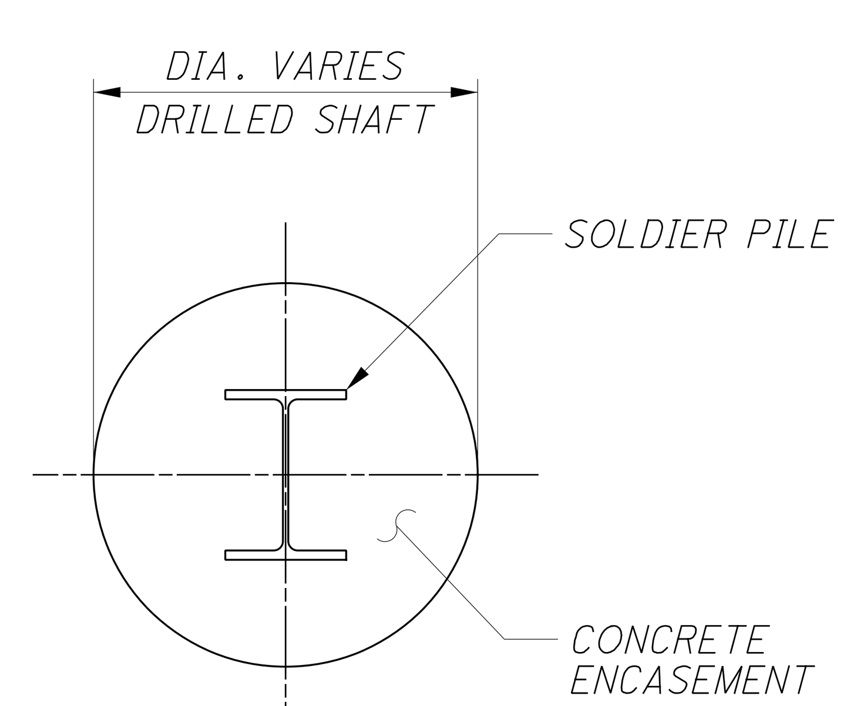
RETAINING WALL NO. 21 DETAILS
ALONG IR 75 NB

HAM-75-3.84
PID No. 104667

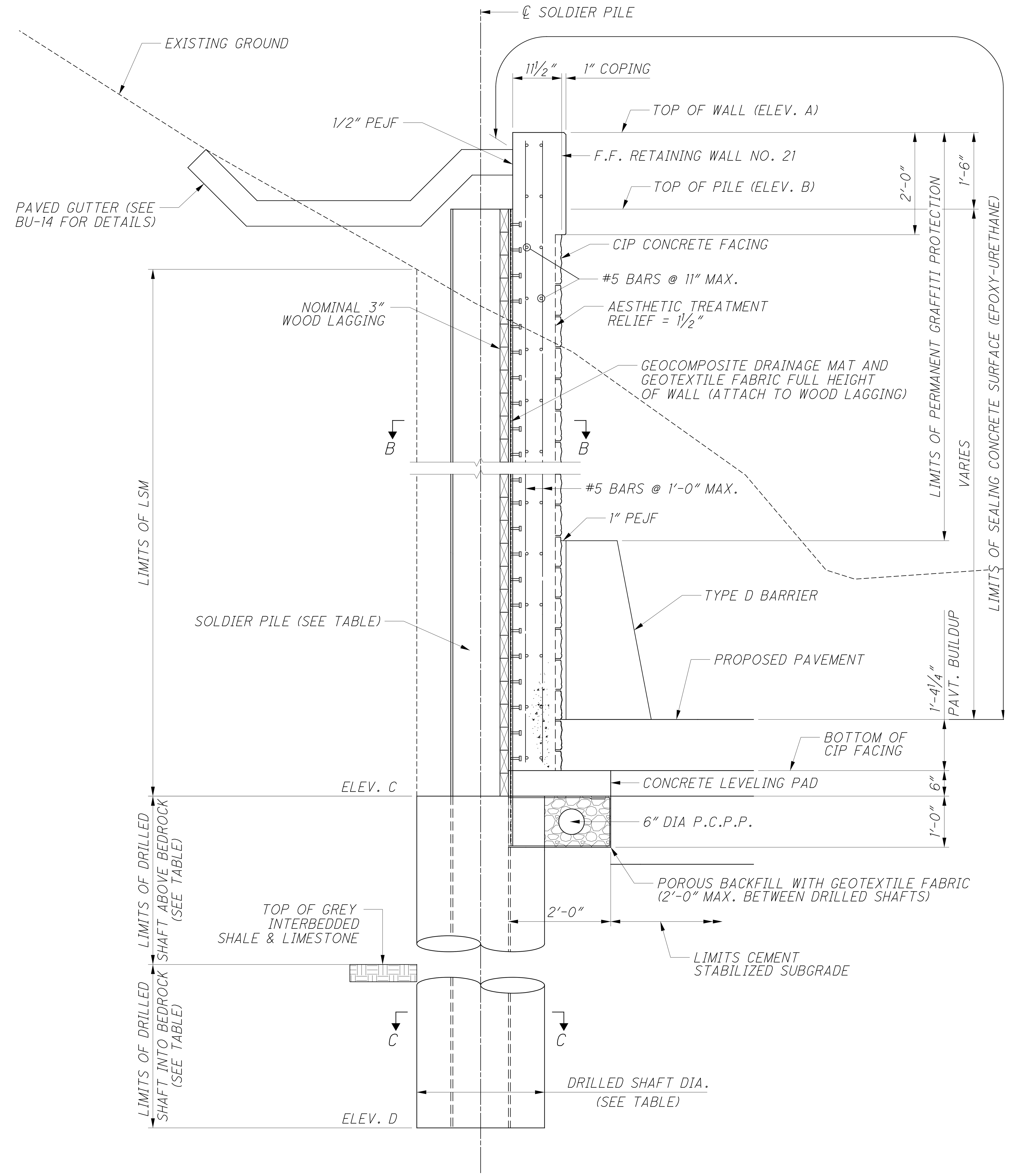
9 / 13



SECTION B-B



SECTION C-C



SECTION A-A

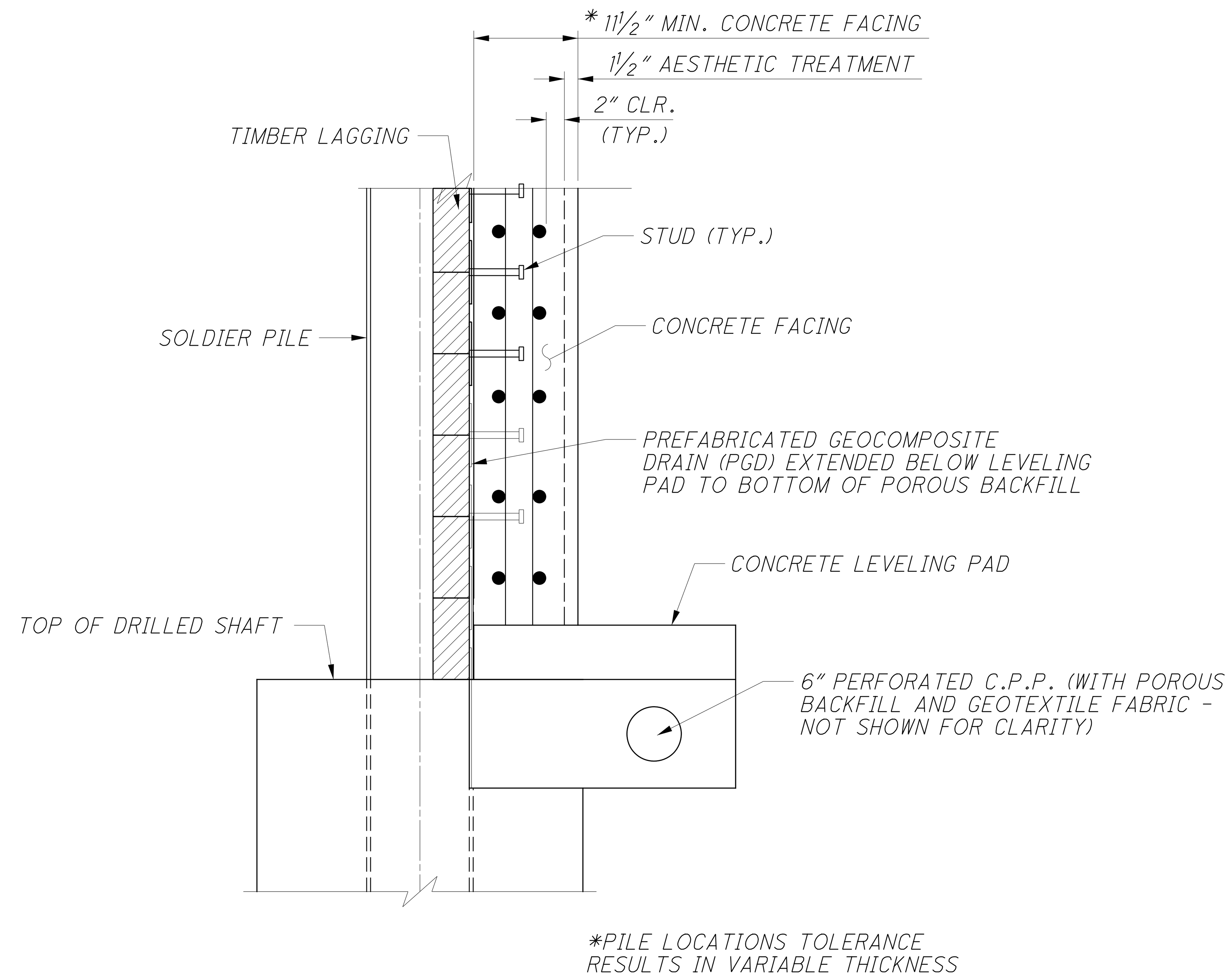
NOTE
FOR SOLDIER PILE DESIGN DATA TABLE SEE SHEET 12/13.

DESIGN AGENCY: STRUCTUREPOINT

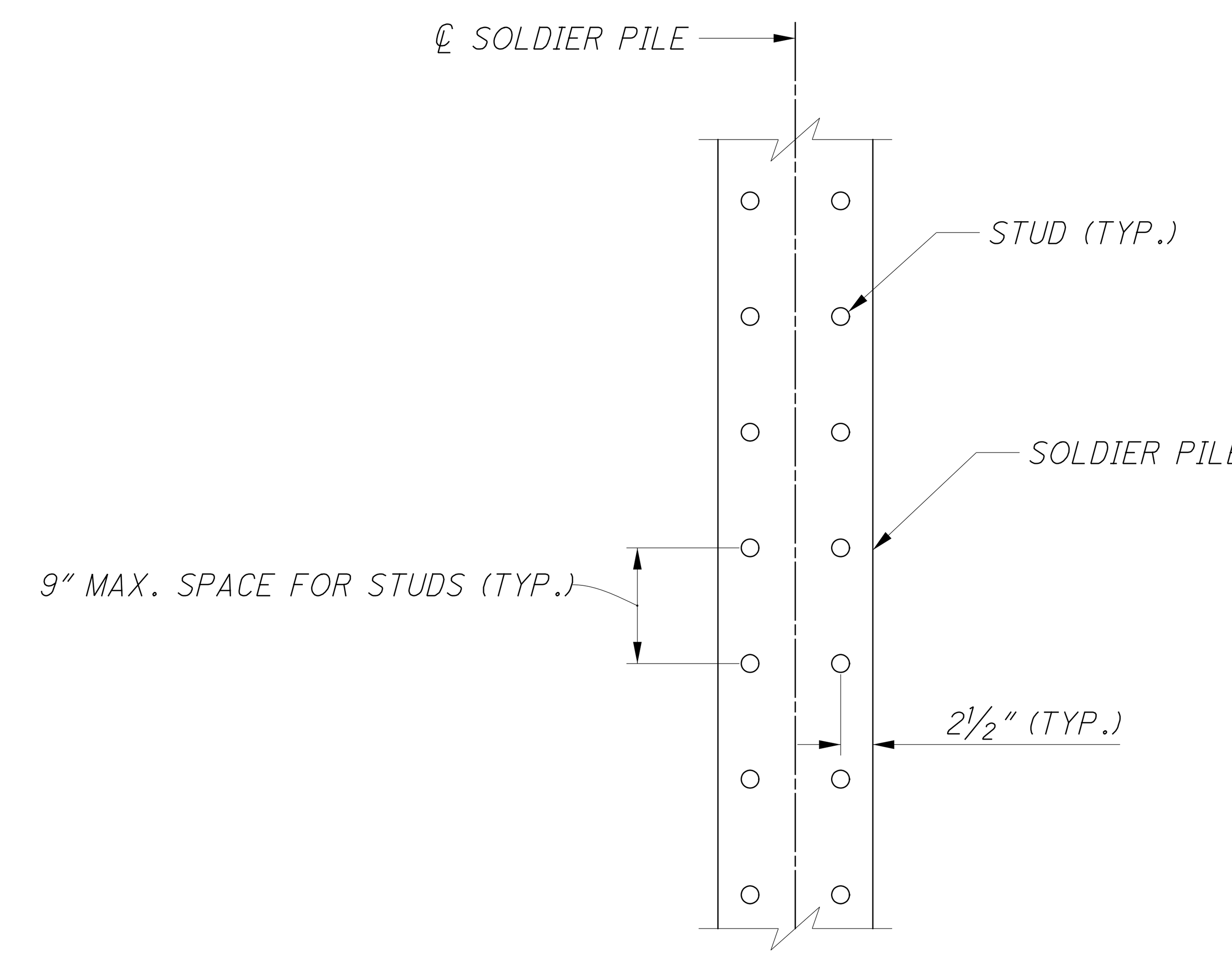
DESIGNED	DRAWN	REVIEWED	DATE
SJF	BMP	MDS	01/18/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB			

RETAINING WALL NO. 21 DETAILS
ALONG IR 75 NB

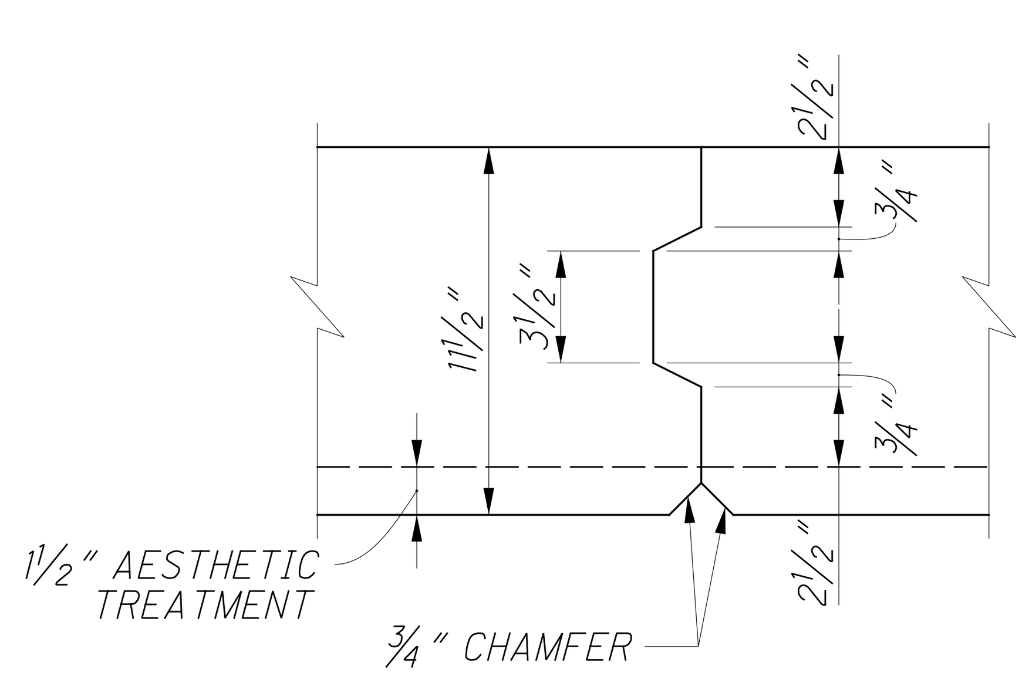
HAM-75-3.84
PID No. 00000



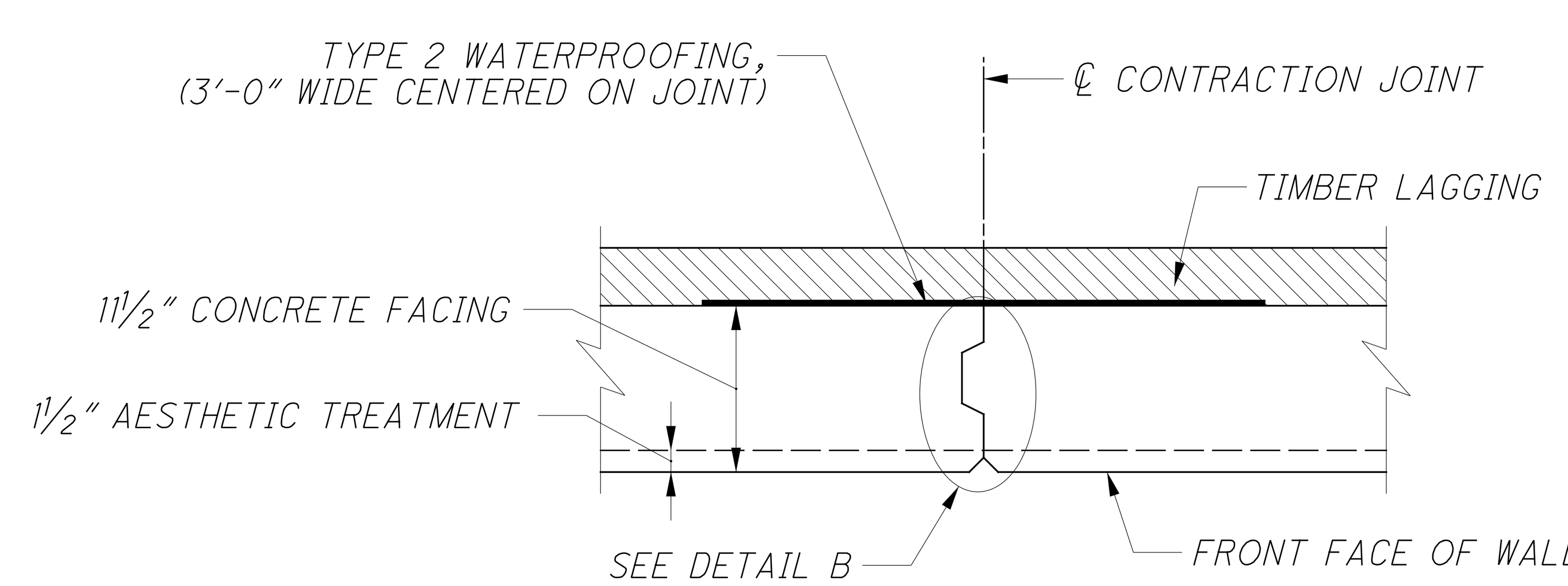
WALL DRAINAGE DETAIL



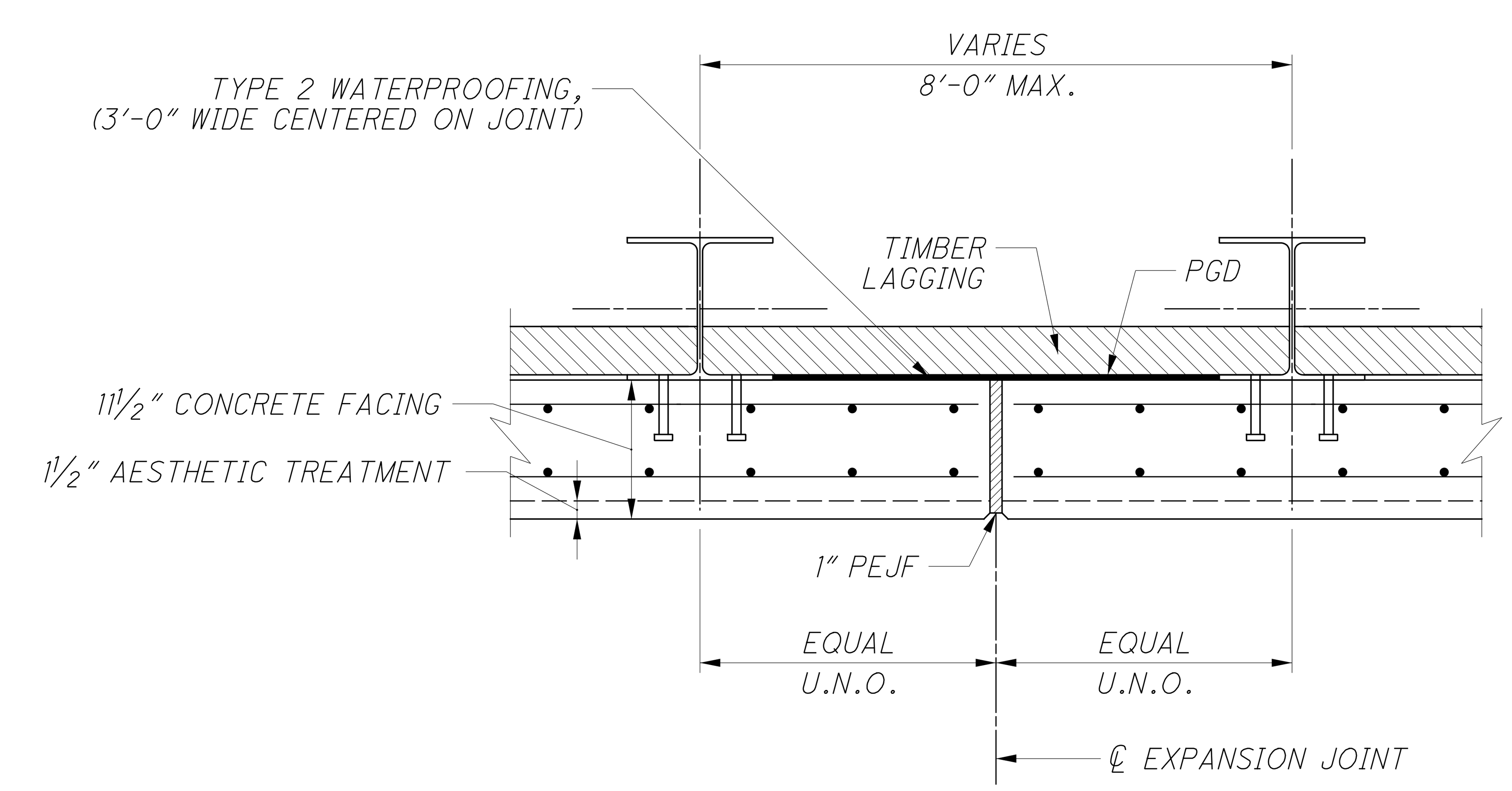
SOLDIER PILE ELEVATION



DETAIL B



CONTRACTION JOINT DETAIL



EXPANSION JOINT DETAIL

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED SJF | CHECKED CLB | DRAWN BMP | REVISED | REVIEWED MDS | DATE 01/18/19 | STRUCTURE FILE NUMBER

RETAINING WALL NO. 21 DETAILS
ALONG IR 75 NB

HAM-75-3.84
PID No. 104667

RETAINING WALL NO. 21 DETAIL TABLE										AS- BUILT INFORMATION		
SOLDIER PILE NUMBER	PILE STATION	PILE SIZE	TOP OF WALL EL. A	TOP OF PILE EL. B	TOP OF DRILLED SHAFT EL. C	PILE TIP EL. D	DRILLED SHAFT DIA. (FT)	DRILLED SHAFT ABOVE BEDROCK LENGTH (FT)	MIN. DRILLED SHAFT INTO BEDROCK LENGTH (FT)	DRILLED SHAFT ABOVE BEDROCK LENGTH MEASURED (FT)	DRILLED SHAFT INTO BEDROCK LENGTH MEASURED (FT)	PILE LENGTH MEASURED (FT)
1	264+75.00	W21x83	543.56	542.06	538.08	514.10	2.50	17.48	6.50	N/A	N/A	N/A
2	264+68.73	W21x83	543.86	542.36	538.08	514.10	2.50	17.48	6.50	17.41	11.59	28.92
3	264+60.36	W21x83	544.25	542.75	538.08	514.10	2.50	17.48	6.50	N/A	N/A	N/A
4	264+52.00	W21x83	544.65	543.15	538.08	514.10	2.50	17.48	6.50	16.02	13.06	29.75
5	264+43.63	W21x83	545.05	543.55	537.87	514.10	2.50	17.27	6.50	16.33	12.50	29.92
6	264+35.27	W21x83	545.44	543.94	537.87	514.10	2.50	17.27	6.50	18.37	10.80	30.92
7	264+26.91	W21x83	545.83	544.33	537.87	514.10	2.50	17.27	6.50	16.75	12.67	30.92
8	264+18.54	W21x83	546.20	544.70	537.64	514.10	2.50	17.04	6.50	18.63	11.17	31.25
9	264+10.18	W21x83	546.55	545.05	537.64	514.10	2.50	17.04	6.50	17.75	11.75	31.25
10	264+01.81	W21x83	546.89	545.39	537.64	514.10	2.50	17.04	6.50	17.68	11.52	31.75
11	263+93.45	W21x83	547.07	545.57	537.32	514.10	2.50	16.72	6.50	16.74	12.34	31.67
12	263+85.09	W21x83	547.08	545.58	537.32	514.10	2.50	16.72	6.50	16.72	13.08	31.75
13	263+76.72	W21x83	547.10	545.60	537.32	514.10	2.50	16.72	6.50	15.56	12.77	31.83
14	263+68.36	W21x83	547.09	545.59	536.98	514.10	2.50	16.38	6.50	15.49	13.16	31.92
15	263+59.99	W21x101	547.07	545.57	536.98	513.70	2.50	13.48	9.80	N/A	N/A	N/A
16	263+51.63	W21x101	547.05	545.55	536.98	513.70	2.50	13.48	9.80	15.23	13.67	32.35
17	263+43.27	W21x101	546.99	545.49	536.65	513.70	2.50	13.15	9.80	15.25	13.00	31.92
18	263+34.90	W21x101	546.89	545.39	536.65	513.70	2.50	13.15	9.80	15.75	13.50	32.11
19	263+26.54	W21x101	546.79	545.29	536.65	513.70	2.50	13.15	9.80	N/A	N/A	N/A
20	263+18.17	W21x101	546.69	545.19	536.29	513.70	2.50	12.79	9.80	N/A	N/A	N/A
21	263+09.81	W21x101	546.58	545.08	536.29	513.70	2.50	12.79	9.80	N/A	N/A	N/A
22	263+01.45	W21x101	546.48	544.98	536.29	513.70	2.50	12.79	9.80	N/A	N/A	N/A
23	262+93.08	W21x101	546.39	544.89	535.94	513.70	2.50	12.44	9.80	N/A	N/A	N/A
24	262+84.72	W21x101	546.31	544.81	535.94	513.70	2.50	12.44	9.80	N/A	N/A	N/A
25	262+76.35	W21x101	546.23	544.73	535.94	513.70	2.50	12.44	9.80	N/A	N/A	N/A
26	262+67.99	W21x101	546.18	544.68	535.62	513.70	2.50	12.12	9.80	N/A	N/A	N/A
27	262+59.63	W21x101	546.17	544.67	535.62	513.70	2.50	12.12	9.80	N/A	N/A	N/A
28	262+51.26	W21x101	546.15	544.65	535.62	513.70	2.50	12.12	9.80	N/A	N/A	N/A
29	262+42.90	W21x101	546.13	544.63	535.24	511.00	3.00	13.84	10.40	N/A	N/A	N/A
30	262+34.53	W21x101	546.11	544.61	535.24	511.00	3.00	13.84	10.40	N/A	N/A	N/A
31	262+26.17	W21x101	546.08	544.58	535.24	511.00	3.00	13.84	10.40	N/A	N/A	N/A
32	262+17.81	W21x101	546.07	544.57	534.82	511.00	3.00	13.42	10.40	N/A	N/A	N/A
33	262+09.44	W21x101	546.06	544.56	534.82	511.00	3.00	13.42	10.40	14.67	15.08	34.06
34	262+01.08	W21x101	546.05	544.55	534.82	511.00	3.00	13.42	10.40	15.66	14.84	33.97
35	261+92.71	W21x101	546.03	544.53	534.36	511.00	3.00	12.96	10.40	12.42	17.00	33.86
36	261+84.35	W21x101	546.02	544.52	534.36	511.00	3.00	12.96	10.40	12.28	17.30	34.10
37	261+75.99	W21x101	546.01	544.51	534.36	511.00	3.00	12.96	10.40	16.40	18.11	34.33
38	261+67.62	W21x101	545.97	544.47	533.86	511.00	3.00	12.46	10.40	12.33	18.50	34.08
39	261+59.26	W21x101	545.88	544.38	533.86	511.00	3.00	12.46	10.40	12.00	18.33	33.83
40	261+50.89	W21x101	545.80	544.30	533.86	511.00	3.00	12.46	10.40	11.66	18.67	33.75
41	261+42.53	W21x101	545.68	544.18	533.35	511.00	3.00	11.95	10.40	12.42	18.58	33.92
42	261+34.17	W21x101	545.53	544.03	533.35	511.00	3.00	11.95	10.40	11.92	18.00	33.67
43	261+25.80	W21x101	545.38	543.88	533.35	511.00	3.00	11.95	10.40	11.62	16.63	33.30
44	261+17.44	W21x101	545.22	543.72	532.87	511.00	3.00	11.47	10.40	N/A	N/A	N/A
45	261+09.07	W21x101	545.03	543.53	532.87	511.00	3.00	11.47	10.40	10.92	17.50	33.11
46	261+00.71	W21x73	544.85	543.35	532.87	513.30	2.50	8.87	10.70	11.08	16.00	30.67
47	260+92.35	W21x73	544.66	543.16	532.41	513.30	2.50	8.41	10.70	10.33	15.59	30.33
48	260+83.98	W21x73	544.46	542.96	532.41	513.30	2.50	8.41	10.70	11.48	15.35	30.01
49	260+75.62	W21x73	544.26	542.76	532.41	513.30	2.50	8.41	10.70	11.66	14.26	29.83
50	260+67.26	W21x73	544.03	542.53	531.89	513.30	2.50	7.89	10.70	11.92	13.75	29.75
51	260+58.90	W21x73	543.76	542.26	531.89	513.30	2.50	7.89	10.70	11.25	14.00	29.34
52	260+50.54	W21x73	543.49	541.99	531.89	513.30	2.50	7.89	10.70	10.66	14.42	29.11
53	260+42.18	W21x73	543.16	541.66	531.33	513.30	2.50	7.33	10.70	11.00	14.17	28.69
54	260+33.82	W21x73	542.78	541.28	531.33	513.30	2.50	7.33	10.70	11.09	13.66	27.65
55	260+25.47	W21x73	542.39	540.89	531.33	513.30	2.50	7.33	10.70	11.92	13.08	28.00
56	260+17.11	W21x73	542.02	540.52	530.76	513.30	2.50	6.76	10.70	11.00	12.42	27.67
57	260+08.75	W21x73	541.66	540.16	530.76	513.30	2.50	6.76	10.70	11.34	12.33	26.33
58	260+00.39	W21x73	541.30	539.80	530.76	513.30	2.50	6.76	10.70	11.58	11.75	26.92
59	259+92.03	W21x73	541.01	539.51	530.21	513.30	2.50	6.21	10.70	11.09	11.83	26.75
60	259+83.66	W21x73	540.77	539.27	530.21	513.30	2.50	6.21	10.70	10.41	11.92	26.33
61	259+75.30	W21x73	540.54	539.04	530.21	513.30	2.50	6.21	10.70	10.58	12.09	26.17
62	259+66.94	W21x73	540.34	538.84	529.67	513.30	2.50	5.67	10.70	10.38	11.87	25.92
63	259+58.57	W21x73	540.18	538.68	529.67	513.30	2.50	5.67	10.70	9.92	11.75	25.83
64	259+50.21	W21x73	540.02	538.52	529.67	513.30	2.50	5.67	10.70	10.00	11.83	25.75
65	259+41.84	W21x73	539.93	538.43	529.16	513.30	2.50	5.16	10.70	9.92	12.50	25.67
66	259+33.47	W21x73	539.91	538.41	529.16	513.30	2.50	5.16	10.70	9.42	11.91	25.83
67	259+25.10	W21x62	539.90	538.40	529.16	514.80	2.50	1.46	12.90	5.25	15.00	23.83
68	259+16.73	W21x62	539.88	538.38	528.66	514.80	2.50	0.96	12.90	5.00	17.00	23.92
69	259+08.36	W21x62	539.86	538.36	528.66	514.80	2.50	0.96	12.90	5.89	14.03	24.17
70	258+99.99	W21x62	539.84	538.34	528.66	514.80	2.50	0.96	12.90	6.00	12.92	24.00
71	258+91.62	W21x62	539.77	538.27	528.16	514.80	2.50	0.46	12.90	6.40	13.10	25.50
72	258+83.25	W21x62	539.67	538.17	528.16	514.80	2.50	0.46	12.90	6.59	12.91	25.37
73	258+74.88	W21x62	539.56	538.06	528.16	514.80	2.50	0.46	12.90	6.20	13.22	25.17
74	258+66.50	W21x62	539.45	537.95	527.65	514.75	2.50	0.00	12.90	5.70	13.13	25.50
75	258+58.13	W21x62	539.34	537.84	527.65	514.75	2.50	0.00	12.90	6.00	13.11	25.25
76	258+49.76	W21x62	539.22	537.72	527.65	514.75	2.50	0.00	12.90	5.22	13.16	25.25
77	258+41.38	W21x62	539.09	537.59	527.11	514.21	2.50	0.00	12.90	4.70	13.80	25.50
78	258+33.00	W21x62	538.94	537.44	527.11	514.21	2.50	0.00	12.90	5.28	13.22	25.12
79	258+24.62	W21x62	538.80	537.30	527.11	514.21	2.50	0.00	12.90	5.20	13.30	24.83
80	258+16.23	W21x62	538.64	537.14	526.57	513.67	2.50	0.00	12.90	5.83	13.00	25.17
81	258+07.85	W21x62	538.49	536.99	526.57	513.67	2.50	0.00	12.90	4.50	14.42	25.25
82	257+99.47	W21x62	538.34	536.84	526.57	513.67	2.50	0.00	12.90	3.00	15.50	25.08
83	257+91.08	W21x62	538.17	536.67	525.98	513.08	2.50	0.00	12.90	3.00	16.08	24.83
84	257+82.70	W21x62	537.99	536.49	525.98	513.08	2.50	0.00	12.90	2.50	16.25	24.67
85	257+74.32	W21x62	537.80	536.30	525.98	513.08	2.50	0.00	12.90	2.58	16.25	24.58
86	257+65.93	W21x83	537.63	536.13	525.43	509.50	2.50	2.73	13.20	2.33	20.67	27.17
87	257+57.54	W21x83	537.46	535.96	525.43	509.50	2.50	2.73	13.20	2.25	20.58	26.92
88	257+49.15	W21x83	537.29	535.79	525.43	509.50	2.50	2.73	13.20	2.00	21.50	26.83
89	257+40.46	W21x83	537.13	535.63	524.94	509.50	2.50	2.24	13.20	2.50	20.92	26.83
90	257+32.37	W21x83	536.99	535.49	524.94	509.50	2.50	2.24	13.20	2.50	21.33	26.42
91	257+23.98	W21x83	536.84	535.34	524.94	509.50	2.50	2.24	13.20	2.50	21.33	26.33
92	257+15.59	W21x83	536.70	535.20	524.44	509.50	2.50	1.74	13.20	2.50	21.17	26.17
93	257+07.20	W21x83	536.56	535.06	524.44	509.50	2.50	1.74	13.20	2.75	20.25	26.08
94	256+98.81	W21x83	536.42	534.92	524.44	509.50	2.50	1.74	13.20	2.75	20.33	25.83
95	256+90.41	W21x83	536.28	534.78	523.94	509.50	2.50	1.24	13.20	2.75	19.67	25.83
96	256+82.02	W21x83	536.14	534.64	523.94	509.50	2.50	1.24	13.20	2.75	19.67	25.67
97	256+73.62	W21x83	536.01	534.51	523.94	509.50	2.50	1.24	13.20	2.25	25.00	25.58
98	256+65.22	W21x83	535.74	534.24	523.40	509.50	2.50	0.70	13.20	2.25	20.83	25.33
99	256+56.82	W21x83	535.34	533.84	523.40	509.50	2.50	0.70	13.20	2.75	18.50	24.83
100	256+48.42	W21x83	534.94	533.44	523.40	509.50	2.50	0.70	13.20	3.25	17.75	24.75
101	256+40.03	W21x73	534.35	532.85	522.84	507.50	2.50	2.54	12.80	3.25	19.50	25.92
102	256+31.63	W21x73	533.56	532.06	522.84	507.50	2.50	2.54	12.80	3.50	19.33	25.25
103	256+23.23	W21x73	532.77	531.27	522.84	507.50	2.50	2.54	12.80	3.00	19.33	25.67
104	256+14.82	W21x73	531.93	530.43	522.27	507.50	2.50	1.97	12.80	3.75	17.50	24.08
105	256+06.42	W21x73	531.03	529.53	522.27	507.50	2.50	1.97	12.80	4.00	17.25	23.33
106	255+98.01	W21x73	530.13	528.63	522.27	507.50	2.50	1.97	12.80	4.25	16.08	21.92
107	255+89.60	W21x73	529.24	527.74	521.84	507.50	2.50	1.54	12.80	4.25	15.67	21.00
108	255+81.20	W21x73	528.34	526.84	521.84	507.50	2.50	1.54	12.80	4.25	14.67	21.08
109	255+74.93	W21x73	527.67	526.17	521.84	507.50	2.50	1.54	12.80	4.75	14.58	19.25

LEGEND

N/A - NOT AVAILABLE

DESIGN AGENCY
STRUCTUREPOINT

DESIGNED SJF | CHECKED CLB | DRAWN BMP | REVISED | REVIEWED MDS | DATE 01/18/19 | STRUCTURE FILE NUMBER

RETAINING WALL NO. 21 DETAILS
ALONG IR 75 NB

HAM-75-3.84
PID No. 104667

12 / 13

RETAINING WALL NO. 21 REINFORCING STEEL LIST

ALONG IR 75 NB

MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
WALL NO. 21											
W501	14	25'-8"	375	STR							
W502	2	9'-11"	21	STR							
	2 SR	4'-9"									
W503	OF	TO	303	STR							1/2"
	27	6'-0"									
W504	844	23'-8"	20834	STR							
W505	2	19'-8"	41	STR							
	2 SR	6'-3"									
W506	OF	TO	356	STR							1/2"
	25	7'-5"									
W507	52	9'-4"	506	STR							
	2 SR	7'-8"									
W508	OF	TO	426	STR							1/2"
	25	8'-8"									
W509	50	9'-0"	469	STR							
	4 SR	9'-4"									
W510	OF	TO	991	STR							1/4"
	25	9'-8"									
	2 SR	9'-6"									
W511	OF	TO	502	STR							1/8"
	25	9'-9"									
W512	50	9'-10"	513	STR							
W513	50	10'-1"	526	STR							
W514	102	10'-6"	1117	STR							
W515	50	10'-11"	569	STR							
	2 SR	11'-2"									
W516	OF	TO	589	STR							1/8"
	25	11'-5"									
	4 SR	11'-3"									
W517	OF	TO	1195	STR							1/4"
	25	11'-8"									
W518	2	23'-1"	48	STR							
	2 SR	11'-0"									
W519	OF	TO	589	STR							1/4"
	25	11'-7"									
W520	2	17'-1"	36	STR							
	2 SR	10'-9"									
W521	OF	TO	583	STR							1/2"
	25	11'-7"									
W522	2	5'-5"	11	STR							
	2 SR	10'-2"									
W523	OF	TO	558	STR							1/2"
	25	11'-3"									
W524	2	11'-3"	23	STR							
	2 SR	9'-8"									
W525	OF	TO	533	STR							1/2"
	25	10'-9"									
	2 SR	9'-6"									
W526	OF	TO	513	STR							1/4"
	25	10'-2"									
	2 SR	9'-7"									
W527	OF	TO	511	STR							1/4"
	25	10'-0"									
W528	50	10'-0"	522	STR							
	2 SR	10'-8"									
W529	OF	TO	563	STR							1/8"
	25	10'-11"									
	2 SR	10'-10"									
W530	OF	TO	574	STR							1/4"
	25	11'-2"									
W531	2	15'-6"	32	STR							
	2 SR	10'-11"									
W532	OF	TO	582	STR							1/4"
	25	11'-4"									

MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
WALL NO. 21 CONT.											
W533	2	19'-10"	41	STR							
	2 SR	11'-0"									
W534	OF	TO	585	STR							1/4"
	25	11'-5"									
W535	2	22'-1"	46	STR							
	4 SR	11'-0"									
W536	OF	TO	1178	STR							1/4"
	25	11'-7"									
	2 SR	11'-1"									
W537	OF	TO	589	STR							1/4"
	25	11'-6"									
	2 SR	11'-2"									
W538	OF	TO	593	STR							1/4"
	25	11'-7"									
	2 SR	11'-3"									
W539	OF	TO	598	STR							1/4"
	25	11'-8"									
W540	2	15'-2"	32	STR							
	2 SR	10'-8"									
W541	OF	TO	587	STR							1/2"
	25	11'-10"									
W542	2	19'-9"	41	STR							
	2 SR	8'-10"									
W543	OF	TO	522	STR							1 1/4"
	25	11'-2"									
W544	16	17'-8"	295	STR							
W545	2	9'-6"	20	STR							
	2 SR	6'-9"									
W546	OF	TO	419	STR							1 1/4"
	25	9'-4"									
W547	2	13'-11"	29	STR							
W548	2	5'-8"	12	STR							
	2 SR	5'-2"									
W549	OF	TO	243	STR							1 1/4"
	19	7'-1"									
	SUB-TOTAL		40,841								

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED BMP | CHECKED SJF | DRAWN BMP | REVISED | REVIEWED MBS | DATE 01/18/19 | STRUCTURE FILE NUMBER

HAM-75-3.84

PID No. 104667

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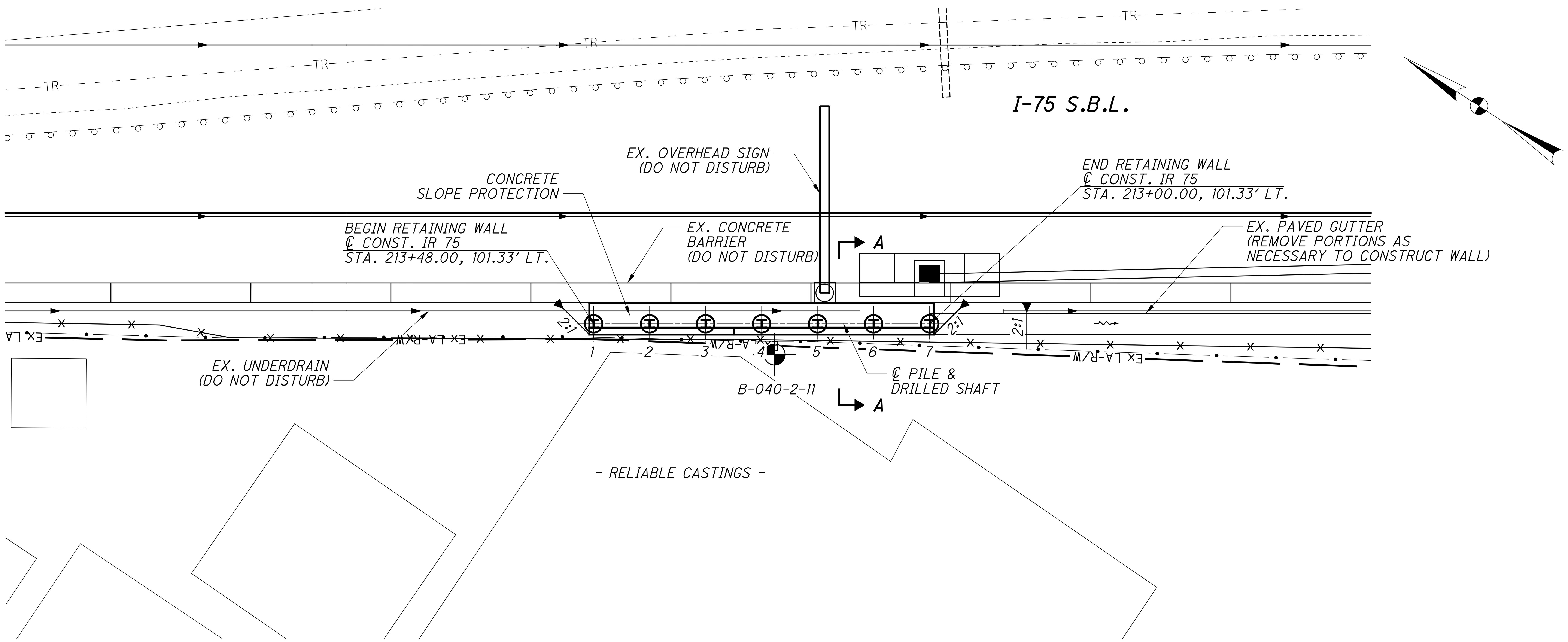

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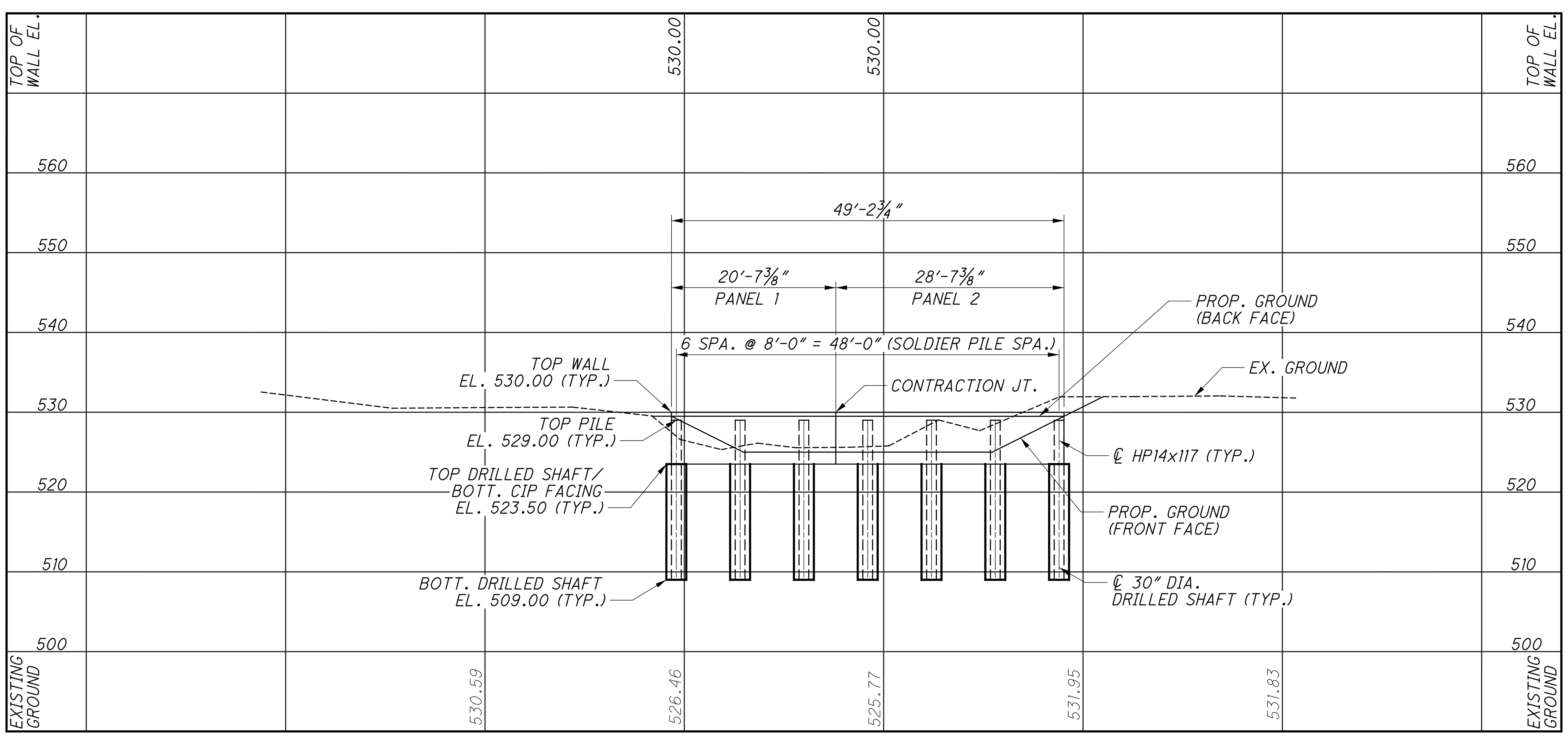

PROFILE

ALONG F.F. RETAINING WALL

LEGEND

PROJECT BORING LOCATION

NOTES

ALL STATIONS AND OFFSETS GIVEN ALONG FRONT FACE OF WALL FROM "℄ CONST. IR 75", UNLESS NOTED OTHERWISE.

PROFILE SHOWN ALONG FRONT FACE OF WALL.

HORIZONTAL PROFILE GRID LINES SHOWN AT 25'-0" SPACING.

FOR SECTION A-A, SEE SHEET 2/3.

FOR ℄ CONST. IR 75 ALIGNMENT DETAILS SEE BU-14.

FOR GENERAL NOTES SEE BU-9, SHEETS 2&3/48.

DESIGN AGENCY: STRUCTUREPOINT

REVIEWED: - DATE: 06/25/21

STRUCTURE FILE NUMBER

DESIGNED: SJF DRAWN: SJF REVISED

CHECKED: CLB

RETAINING WALL (RELIABLE CASTINGS) DETAILS

ALONG IR 75 SB

HAM-75-3.84

PID No. 104667

1/3

48A/48

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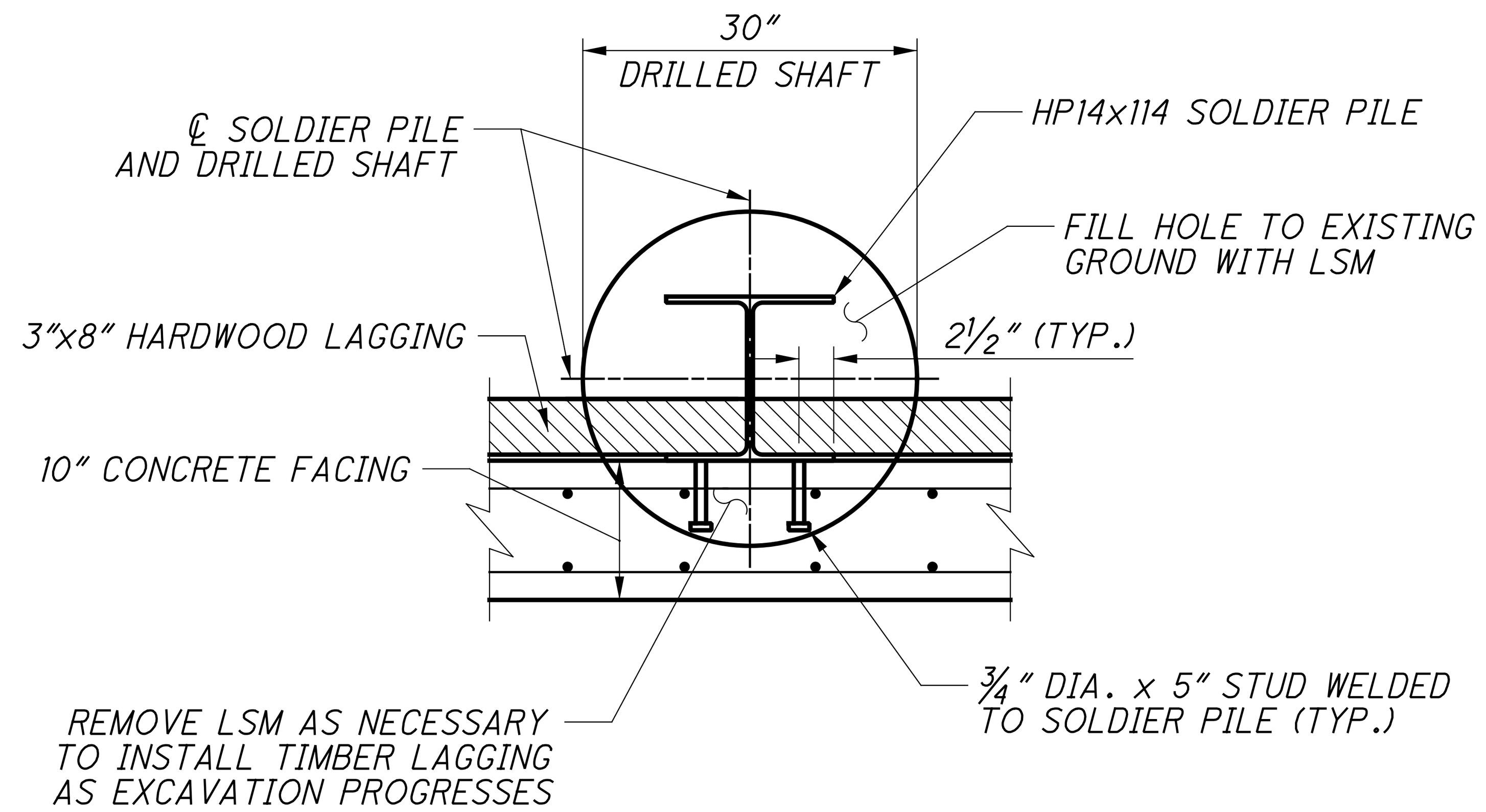
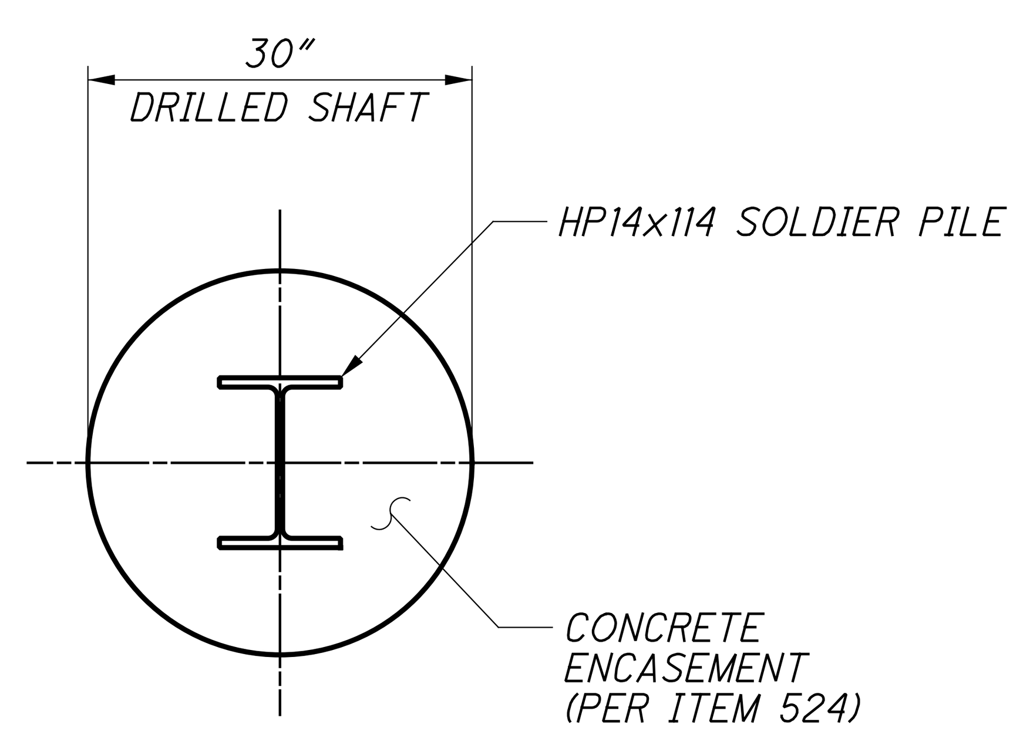


SECTION B-B



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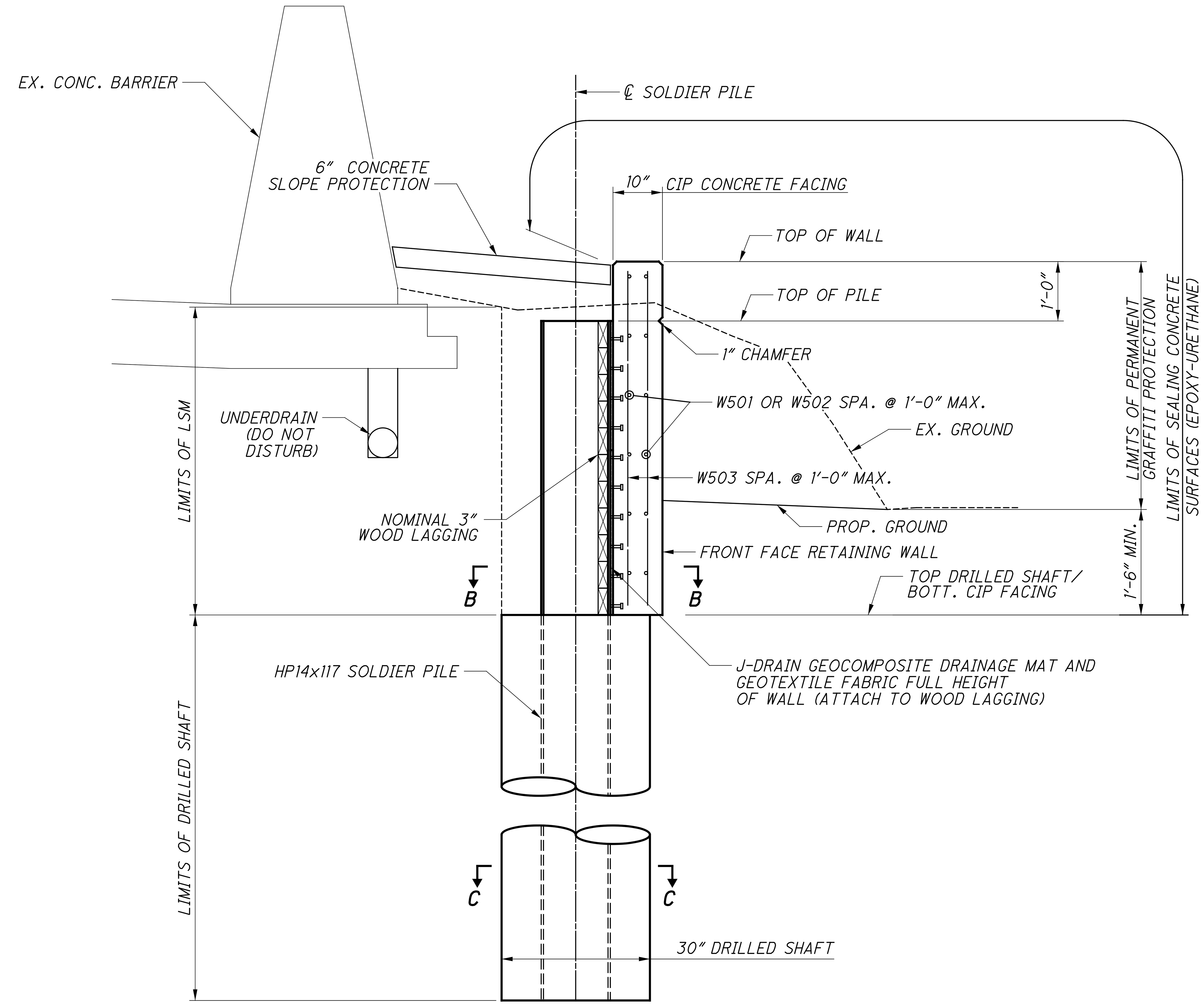

SECTION A-A

MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
					RELIABLE CASTINGS WALL						
W501	14	20′-1″	294	STR							
W502	14	28′-1″	411	STR							
W503	100	6′-0″	626	STR							
		SUB-TOTAL	1,331								

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	SJF		06/25/21
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB			

RETAINING WALL (RELIABLE CASTINGS) DETAILS

ALONG IR 75 SB

HAM-75-3.84

PID No. 104667

2 / 3

48B / 48

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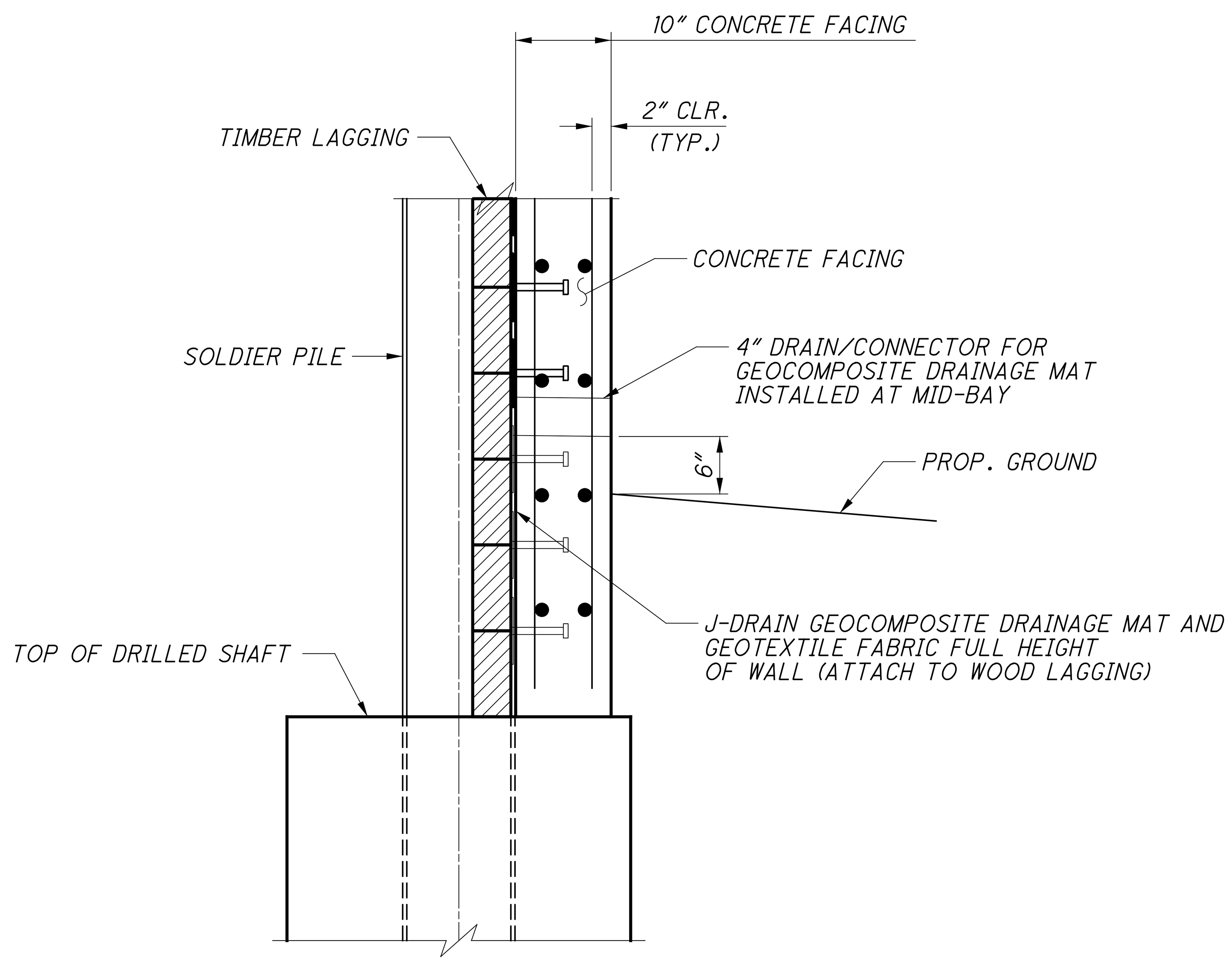
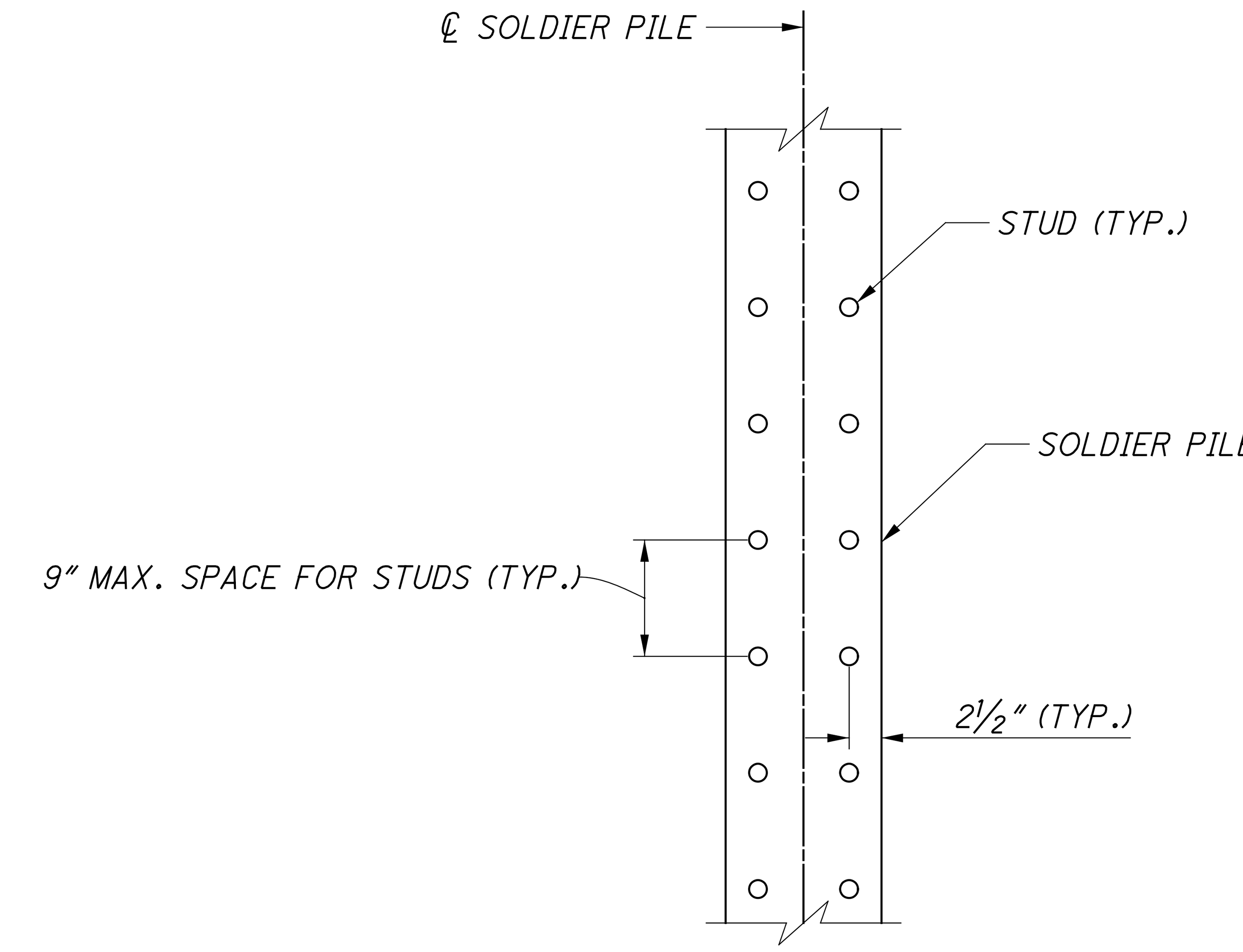
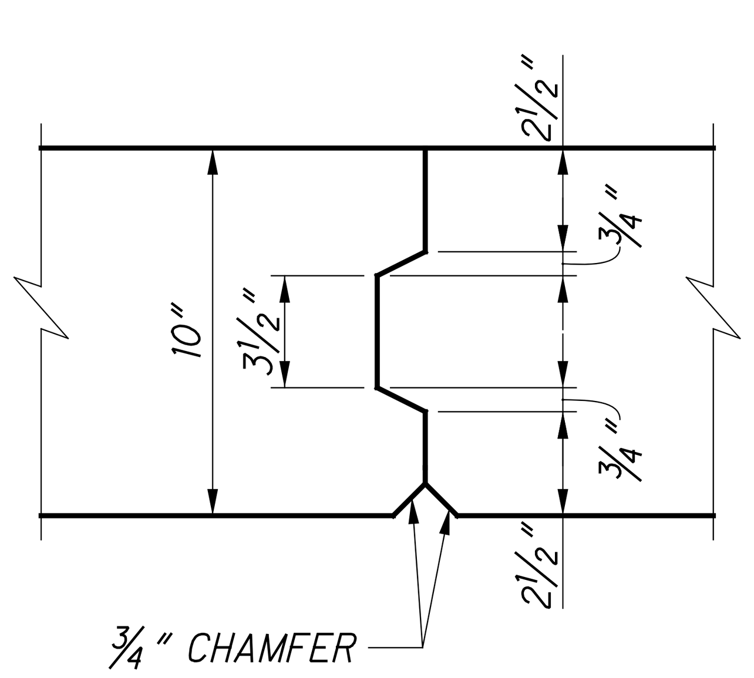


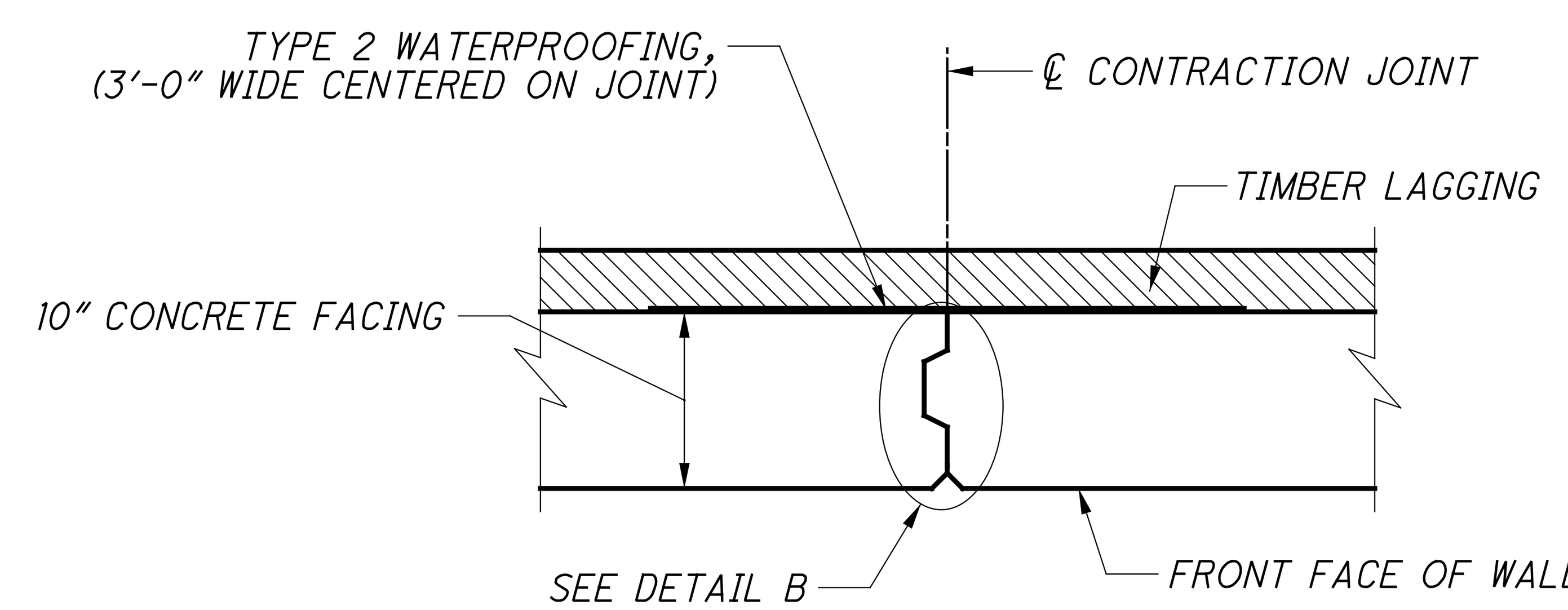
WALL DRAINAGE DETAIL



SOLDIER PILE ELEVATION



DETAIL B



CONTRACTION JOINT DETAIL

DESIGN AGENCY
STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	SJF		06/25/21
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB			

RETAINING WALL (RELIABLE CASTINGS) DETAILS
ALONG IR 75 SB

HAM-75-3.84
PID No. 104667

3 / 3

48C
48

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PROJECT DESCRIPTION
AS PART OF THE HAM-75-3.84 WIDENING AND REALIGNMENT PROJECT, TWO (2) RETAINING WALLS WILL BE ADDED ALONG NORTHBOUND I-75 AND THREE (3) WALLS ALONG SOUTHBOUND I-75. THE PROPOSED RETAINING WALLS WILL CONSIST OF EITHER CAST-IN-PLACE (CIP), SOLDIER PILE AND LAGGING (SPL), OR MECHANICALLY STABILIZED EARTH (MSE) RETAINING WALLS BASED ON VARIATIONS IN THE DEPTH TO BEDROCK, THE ANTICIPATED LOADS, AND SPACE CONSTRAINTS AT EACH PROPOSED RETAINING WALL LOCATION.

HISTORIC RECORDS
THE ON-LINE ODOT TRANSPORTATION INFORMATION MAPPING SYSTEM (TIMS) RECORDS WERE SEARCHED FOR HISTORIC BORING INFORMATION FOR THE EXISTING BRIDGE. ADDITIONALLY, ODOT PROVIDED S&ME WITH BORING INFORMATION FROM THE HAM-75-3.85 PROJECT. HISTORIC BORING INFOMRATION IS SHOWN ON THE STRUCTURE FOUNDATION EXPLORATION SHEETS.

GEOLOGY
GEOLOGIC REFERENCES INDICATE THAT THIS PROJECT SITE IS LOCATED WITHIN THE ILLINOIAN TILL PLAIN PHYSIOGRAPHIC REGION OF OHIO. SURFICIAL GEOLOGY MAPPING INDICATES THAT INTERLAYERED SILT AND CLAY ARE PREDOMINATE WITH INTERBEDS OF FINE SAND, GENERALLY OF WISCONSINAN-AGE, ALSO BEING PRESENT. ALLUVIAL MATERIALS WITHIN THE MILL CREEK VALLEY ARE ALSO PRESENT. GEOLOGIC BEDROCK MAPPING (BEDROCK GEOLOGY OF THE CINCINNATI WEST, OHIO QUADRANGLE, OHIO DEPARTMENT OF NATURAL RESOURCES (ODNR)) INDICATES THE UPPERMOST BEDROCK CONSISTS OF THE KOPE AND POINT PLEASANT FORMATIONS OF THE ORDOVICIAN SYSTEM, WHICH ARE COMPOSED OF INTERLAYERED SHALE (40 TO 75 PERCENT) AND LIMESTONE (25 TO 60 PERCENT). SURFICIAL GEOLOGY MAPPING INDICATES THE TOP OF BEDROCK RANGES FROM ELEVATION 400 TO ELEVATION 500 (MSL) IN THIS AREA. BORINGS PERFORMED FOR THIS PROJECT ENCOUNTERED SHALE AND SHALE INTERBEDDED WITH LIMESTONE BEDROCK AT DEPTHS RANGING FROM 1.5 TO 57 FEET BELOW THE EXISTING GROUND SURFACE.

A REVIEW OF THE ODNR "OHIO KARST AREAS" MAP INDICATES THE SITE LIES IN AN AREA NOT KNOWN TO CONTAIN KARST FEATURES. A REVIEW OF THE ODNR "LANDSLIDES IN OHIO" MAP REVEALS THE SITE IS IN AN AREA SUSCEPTIBILE TO LANDSLIDES DUE TO THE KOPE FORMATION, AND THE ODNR "ABANDONED UNDERGROUND MINES OF OHIO" MAP INDICATES THESE SITES LIE IN AREAS WITH NO MAPPED ABANDONED MINES NEAR THE AREA OF THE PROJECT SITE.

RECONNAISSANCE
FROM JULY 17 TO 26, 2018, S&ME PERFORMED A SITE RECONNAISSANCE OF THE PROJECT SITE TO OBSERVE CURRENT CONDITIONS AND TO STAKE THE PLANNED BORING LOCATIONS. THE SITE CONSISTS OF SEVERAL INTERSTATE HIGHWAY RAMPS FOR I-74 AND I-75, THE NORTHBOUND AND SOUTHBOUND LANES OF I-75, AND OFF ROAD SECTIONS COVERED WITH GRASS, SHRUBS, AND TREES. DURING THESE RECONNAISSANCE VISITS, NO SIGNS OF SLOPE INSTABILITY WERE OBSERVED AT ANY OF THE FIVE (5) PLANNED RETAINING WALL LOCATIONS.

SUBSURFACE EXPLORATION
BETWEEN AUGUST 2 AND 30, 2018 AND JANUARY 25, 2018, TWENTY-FOUR (24) BORINGS WERE PERFORMED FOR THE RETAINING WALLS EXPLORATION FOR THE PROJECT. THE BORINGS WERE NUMBERED B-513-0-18, B-513-1-18, B-514-0-18, B-514-1-18, B-515-0-18 THROUGH B-519-0-18, B-519-1-18, B-520-0-18 THROUGH B-525-0-18, B-525-1-18, B-526-0-18 THROUGH B-528-0-18, AND B-533-0-18 THROUGH B-535-0-18. THE LOCATIONS OF THE BORINGS ARE SHOWN ON THE PLAN OF BORINGS INCLUDED AS FIGURES 2A THROUGH 2E OF APPENDIX A. THE SURVEYED LOCATIONS AND ELEVATIONS WERE PROVIDED BY ASI.

THESE BORINGS WERE PERFORMED BY EITHER AN ATV-MOUNTED OR A TRUCK-MOUNTED DRILLING RIG USING A 3¼-INCH OR 4¼-INCH I.D. HOLLOW-STEM AUGER TO ADVANCE THE BORINGS BETWEEN SAMPLING ATTEMPTS. DISTURBED BUT REPRESENTATIVE SOIL SAMPLES WERE OBTAINED BY LOWERING A 2-INCH O.D. SPLIT-BARREL SAMPLER THROUGH THE AUGER STEM TO THE BOTTOM OF THE BORING AND THEN DRIVING THE SAMPLER INTO THE SOIL WITH BLOWS FROM A 140-POUND HAMMER FREELY FALLING 30 INCHES (ASTM D1586 - STANDARD PENETRATION TEST). SPT SAMPLES WERE EXAMINED IMMEDIATELY AFTER RECOVERY AND REPRESENTATIVE PORTIONS WERE PRESERVED IN AIRTIGHT GLASS JARS. AT SELECTED LOCATIONS, UNDISTURBED SAMPLES WERE OBTAINED HYDRAULICALLY PRESSING A SEAMLESS STEEL (SHELBY) TUBE INTO THE SOIL. THE RECOVERED SHELBY TUBES WERE SEALED WITH WAX IN THE FIELD. ADDITIONALLY, 5 TO 28.9 FEET OF BEDROCK WAS CORED IN TWELVE BORINGS USING AN NQ2 CORE BARREL WITH A DIAMOND BIT UTILIZING WATER AS A CIRCULATING FLUID.

IN ACCORDANCE WITH THE CURRENT ODOT SPECIFICATIONS FOR GEOTECHNICAL EXPLORATIONS (SGE), THE HAMMER SYSTEM ON THE DRILL RIG HAD BEEN CALIBRATED IN ACCORDANCE WITH ASTM D4633 TO DETERMINE THE DRILL ROD ENERGY RATIO (75.5 AND 81.8%). SAMPLING INTERVALS RANGED FROM 2.5 TO 5-FOOT INTERVALS AS REQUIRED BY THE ODOT SGE.

EXPLORATION FINDINGS
BENEATH THE SURFICIAL MATERIALS, THE BORINGS GENERALLY ENCOUNTERED EXISTING EMBANKMENT FILL OVER RESIDUAL SOIL OVERLYING BEDROCK. THE SUBSURFACE CONDITIONS ENCOUNTERED IN THE BORINGS PERFORMED FOR THE CURRENT EXPLORATION AT THIS SITE MAY BE DESCRIBED, IN DESCENDING ORDER AS FOLLOWS:

EXISTING FILL FOR THE RETAINING WALL BORINGS RANGED IN THICKNESS FROM 1.5 TO 47 FEET AND CONSISTED OF BOTH NON-COHESIVE AND COHESIVE SOILS.

NATURAL SOILS ENCOUNTERED BELOW THE SURFICIAL MATERIALS AND/OR THE EXISTING FILL CONSISTED MAINLY OF SANDY SILT (A-4A), SILT (A-4B), SILT AND CLAY (A-6A), SILTY CLAY (A-6B), AND CLAY (A-7-6).

TEN OF THE BORINGS WERE TERMINATED AFTER AUGERING INTO WEATHERED SHALE BEDROCK AND TWELVE OF THE BORINGS WERE TERMINATED AFTER CORING 5 TO 28.9 FEET OF INTERBEDDED SHALE AND LIMESTONE.
GROUNDWATER WAS ENCOUNTERED WHILE DRILLING OR PRIOR TO COMPLETION IN TEN BORINGS.

SPECIFICATIONS
THIS GEOTECHNICAL EXPLORATION WAS PERFORMED IN ACCORDANCE WITH THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, OFFICE OF GEOTECHNICAL ENGINEERING, SPECIFICATIONS FOR GEOTECHNICAL EXPLORATIONS, DATED JULY 2017.

LEGEND

DESCRIPTION	ODOT CLASS	CLASSIFIED MECH.	CLASSIFIED VISUAL
GRAVEL	A-1-a	4	7
GRAVEL W/ SAND AND SILT	A-2-4	1	0
COARSE AND FINE SAND	A-3a	0	2
SANDY SILT	A-4a	4	4
SILT	A-4b	2	2
SILT AND CLAY	A-6a	7	22
SILTY CLAY	A-6b	3	47
CLAY	A-7-6	25	40
	TOTAL	47	124
SHALE			
LIMESTONE			
INTERBEDDED SHALE AND LIMESTONE			
PAVEMENT OR BASE = X = APPROXIMATE THICKNESS	VISUAL		
UNCONTROLLED FILL	VISUAL		
SOD AND TOPSOIL = X = APPROXIMATE THICKNESS	VISUAL		

BORING LOCATION - PLAN VIEW.

HISTORIC BORING LOCATION - PLAN VIEW.

DRIVE SAMPLE AND/OR ROCK CORE BORING PLOTTED TO VERTICAL SCALE ONLY. HORIZONTAL BAR INDICATES A CHANGE IN STRATIGRAPHY.

WC — INDICATES WATER CONTENT IN PERCENT.

N_{60} — INDICATES STANDARD PENETRATION RESISTANCE NORMALIZED TO 60% DRILL ROD ENERGY RATIO.

X/Y/Z — NUMBER OF BLOWS FOR STANDARD PENETRATION TEST (SPT):
X= NUMBER OF BLOWS FOR FIRST 6 INCHES.
Y= NUMBER OF BLOWS FOR SECOND 6 INCHES.
Z= NUMBER OF BLOWS FOR THIRD 6 INCHES.

X/Y/D" — NUMBER OF BLOWS FOR STANDARD PENETRATION TEST (SPT):
X= NUMBER OF BLOWS FOR FIRST 6 INCHES (UNCORRECTED).
Y/D"= NUMBER OF BLOWS (UNCORRECTED) FOR D" OF PENETRATION AT REFUSAL.

W — INDICATES FREE WATER ELEVATION.

● — INDICATES A PLASTIC MATERIAL WITH A MOISTURE CONTENT EQUAL TO OR GREATER THAN THE LIQUID LIMIT MINUS 3.

⊖ — INDICATES A NON-PLASTIC MATERIAL WITH A MOISTURE CONTENT GREATER THAN 25 % OR GREATER THAN 19 % WITH A WET APPEARANCE.

* — INDICATES A SAMPLE TAKEN WITHIN 3 FT OF PROPOSED GRADE.

SS — INDICATES A SPLIT SPOON SAMPLE.

NP — INDICATES A NON-PLASTIC SAMPLE.

- FILL — INDICATES BOTTOM OF EXISTING FILL

-TR — INDICATES TOP OF BEDROCK.

STATE OF OHIO BENJAMIN C. DUSINA E-72255 REGISTERED PROFESSIONAL ENGINEER

Ben Dusina
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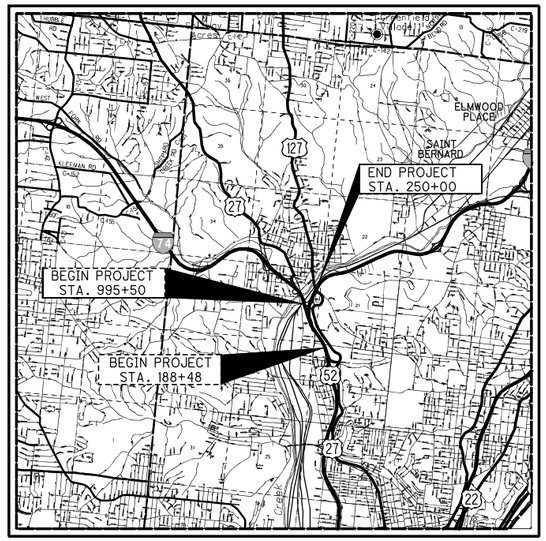


LOCATION MAP
SCALE IN MILES
0 1 2 3 4

PARTICLE SIZE DEFINITIONS

12"	3"	2.0 mm	0.42 mm	0.074 mm	0.005 mm
BOULDERS	COBBLES	GRAVEL	COARSE SAND	FINE SAND	SILT	CLAY
		No. 10 SIEVE	No. 40 SIEVE	No. 200 SIEVE	

HISTORIC BORINGS	ODOT CLASS	CLASSIFIED MECH.	CLASSIFIED VISUAL
GRAVEL	A-1-a	1	--
GRAVEL W/ SAND	A-1-b	4	7
GRAVEL W/ SAND AND SILT	A-2-4	3	10
GRAVEL W/ SAND, SILT AND CLAY	A-2-7	3	1
FINE SAND	A-3	--	1
COURSE AND FINE SAND	A-3a	2	2
SANDY SILT	A-4a	12	9
SILT	A-4b	7	4
SILT AND CLAY	A-6a	14	25
SILTY CLAY	A-6b	14	64
CLAY	A-7-6	31	47
	TOTAL	91	170
SEVERELY WEATHERED SHALE			
SHALE			
INTERBEDDED SHALE AND LIMESTONE			

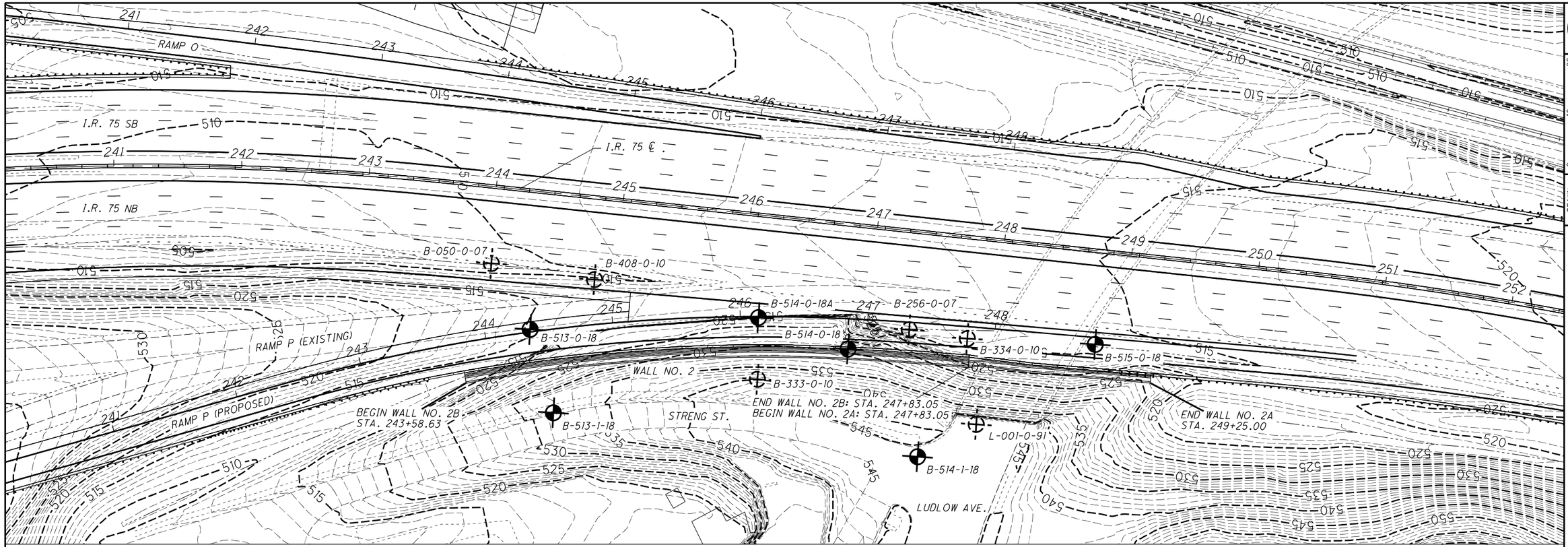
AVAILABLE INFORMATION
ALL AVAILABLE SOIL AND BEDROCK INFORMATION THAT CAN BE CONVENIENTLY SHOWN ON THE GEOTECHNICAL EXPLORATION SHEETS HAS BEEN SO REPORTED. ADDITIONAL EXPLORATIONS MAY HAVE BEEN MADE TO STUDY SOME SPECIAL ASPECT OF THE PROJECT. COPIES OF THIS DATA, IF ANY, MAY BE INSPECTED IN THE DISTRICT DEPUTY DIRECTOR'S OFFICE OR THE OFFICE OF GEOTECHNICAL ENGINEERING AT 1980 WEST BROAD STREET.

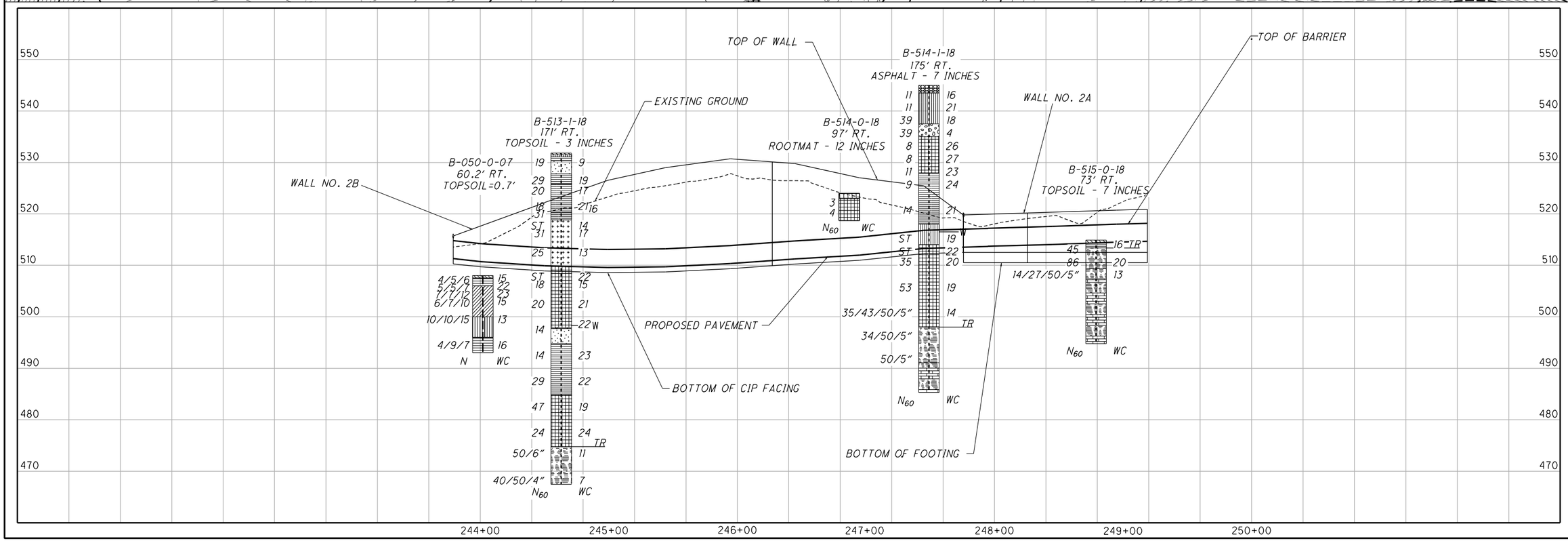
RECON. -	BCD / REP	7/17/18 TO 7/26/18
DRILLING -	S&ME	8/2/18 TO 8/30/18, 11/11/18
DRAWN -	DWM, KAH	3/30/18, 10/22/18, 1/22/19
REVIEWED -	BCD	8/31/18, 10/22/18, 1/22/19

PID NO. 104667

STRUCTURE FOUNDATION EXPLORATION*
HAM-75 RETAINING WALLS

HAM-75-3.85





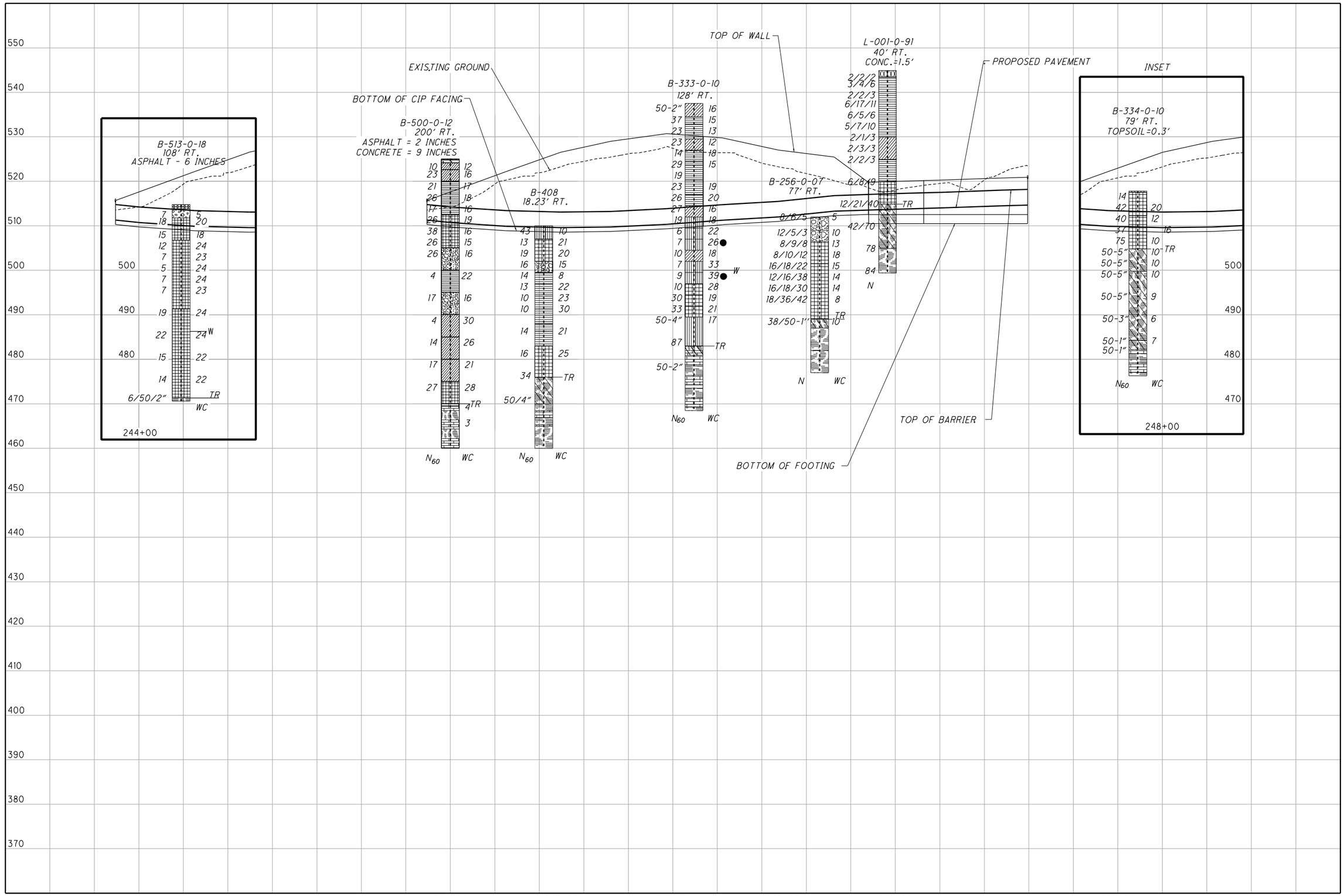
HORIZONTAL SCALE IN FEET
0 40 80

DRAWN K.AH
CHECKED BCD

STRUCTURE FOUNDATION EXPLORATION
RETAINING WALL NO. 2

HAM-75-3.84

2 / 54



HORIZONTAL SCALE IN FEET
0 40 80

DRAWN KAH
CHECKED BCD

STRUCTURE FOUNDATION EXPLORATION
RETAINING WALL NO. 2

HAM-75-3.84

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BEGIN WALL NO. 4
STA. 252+99.04

WALL NO. 4

END WALL NO. 4
STA. 258+75.00

WALL NO. 21

I.R. 75 ℄

B-359-0-10
B-360-0-10
B-361-0-10-025
B-519-1-18
B-056-0-07
B-516-0-18
B-519-0-18
B-520-0-18

INSET
B-056-0-07
70' LT.
ASPH.=0.5'
CONC.=1.2'
BASE=0.6'

TOP OF BARRIER
TOP OF SHOULDER
EXISTING GROUND
BOTTOM OF FOOTING

B-359-0-10
68' LT.
ASPH.=0.6'
CONC.=0.8'
GRAN.BASE=0.7'

B-516-0-18
53' LT.
ASPHALT - 8 INCHES

B-360-0-10
76' LT.
ASPH.=0.6'
CONC.=0.8'
GRAN.BASE=0.7'

B-361-0-10
80' LT.
ASPH.=0.6'
CONC.=0.8'
GRAN.BASE=0.7'

B-519-1-18
87' LT.

B-520-0-18
55' LT.
ASPHALT - 8.5 INCHES

INSET
B-519-0-18
55' LT
ASPHALT - 8 INCHES

253+00 254+00 255+00 256+00 257+00 258+00 259+00

HORIZONTAL SCALE IN FEET
0 20 40 80

DRAWN DWM
CHECKED BCD

STRUCTURE FOUNDATION EXPLORATION
RETAINING WALL NO. 4

HAM-75-3.84

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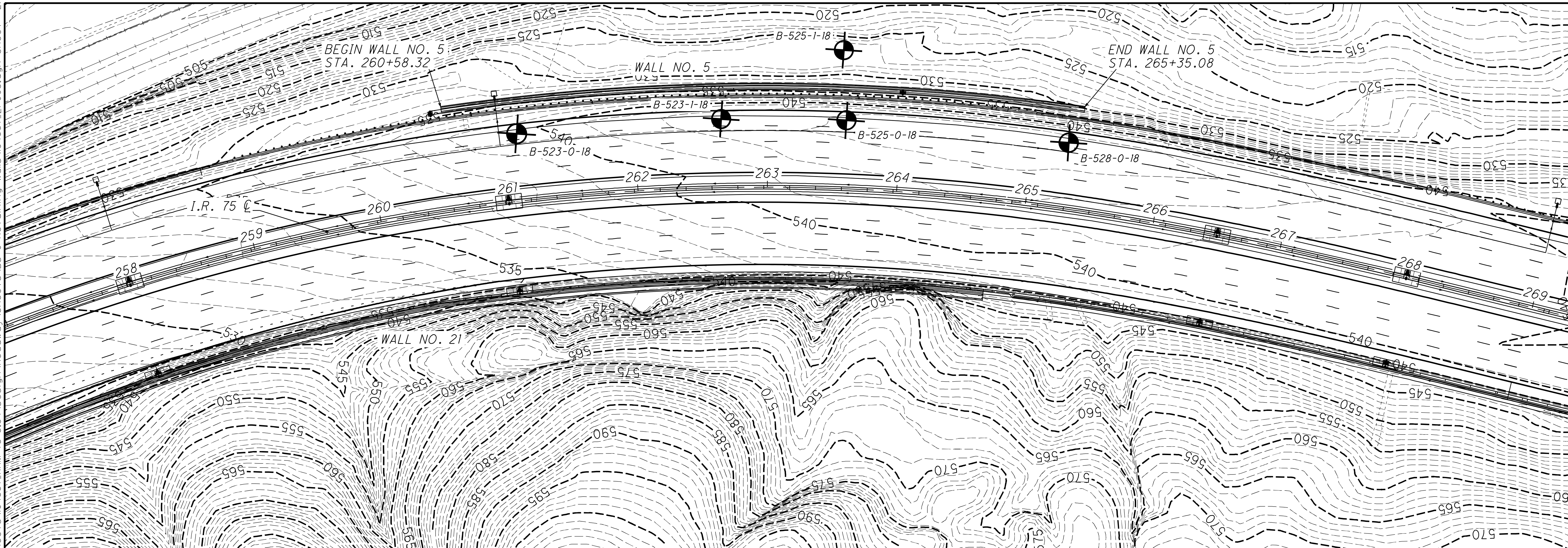

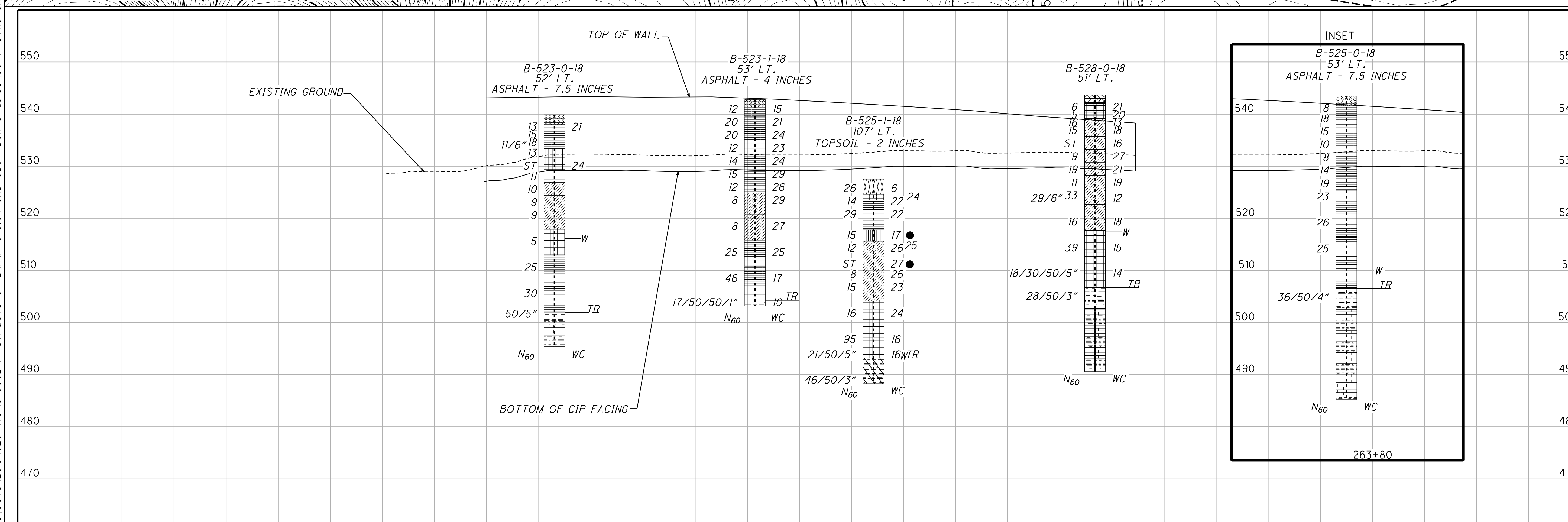

DRAWN DWM
CHECKED BCD

STRUCTURE FOUNDATION EXPLORATION
RETAINING WALL NO. 5

HAM-75-3.84

BEGIN WALL NO. 7
STA. 282+85.00

END WALL NO. 7
STA. 285+50.00

WALL NO. 7

B-034-0-18

B-033-0-18

B-035-0-18

I.R. 75 ℄

525 530 535 540 520

282 283 284 285 286 287

B-533-0-18
51' LT.
ASPHALT - 10 INCHES

18	20
20	22
22	16
16	12
9	23
ST	
43	18 W
13/39/50/4"	14
20/50/5"	12
	TR
28/50/6"	
50/2"	
N_{60}	WC

B-534-0-18
99' LT.
ROOTMAT - 5 INCHES

8	25 21
12	17
ST	
42	16
18	20 21
27	17
27	17
50/4"	12
104	11-W TR
20/50/5"	
50/3"	
N_{60}	WC

TOP OF BARRIER

TOP OF SHOULDER

B-535-0-18
51' LT.
ASPHALT - 9 INCHES

13	19
9	21
ST	17
12/6"	42 17 18
29	18
21	19
39	17
79	13 TR
24/50/5"	
50/5"	W
N_{60}	WC

EXISTING GROUND

TOP OF FOOTING

550 540 530 520 510 500 490 480 470

282+00 283+00 284+00 285+00 286+00 287+00

HORIZONTAL SCALE IN FEET
0 10 20 40

DRAWN DWM
CHECKED BCD

STRUCTURE FOUNDATION EXPLORATION RETAINING WALL NO. 7

HAM-75-3.84

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WALL NO. 4

WALL NO. 5

WALL NO. 21

BEGIN WALL NO. 21
STA. 255+74.93

END WALL NO. 21
STA. 264+75.00

B-517-0-18
B-518-0-18
B-521-0-18
B-522-0-18
B-524-0-18
B-526-0-18
B-527-0-18
B-339-0-10
B-340-0-10
B-341-0-10
B-342-0-10
B-343-0-10
B-344-0-10
B-345-0-10
B-004-0-06
B-005-0-06

B-518-0-18
59' RT.
ASPHALT PAVEMENT - 8 INCHES

B-004-0-06
180' RT.

B-521-0-18
57' RT.
ASPHALT - 10 INCHES

B-522-0-18
59' RT.
ASPHALT - 8.5 INCHES

B-524-0-18
60' RT.
ASPHALT - 8 INCHES

B-526-0-18
50' RT.
ASPHALT PAVEMENT - 8 INCHES

B-527-0-18
61' RT.
ASPHALT - 8 INCHES

B-517-0-18
73' RT.
TOPSOIL - 6 INCHES

N60 WC

255+00 256+00 257+00 258+00 259+00 260+00 261+00 262+00 263+00 264+00 265+00

HORIZONTAL SCALE IN FEET
0 20 40 80

DRAWN DWM
CHECKED BCD

STRUCTURE FOUNDATION EXPLORATION
RETAINING WALL NO. 21

HAM-75-3.84

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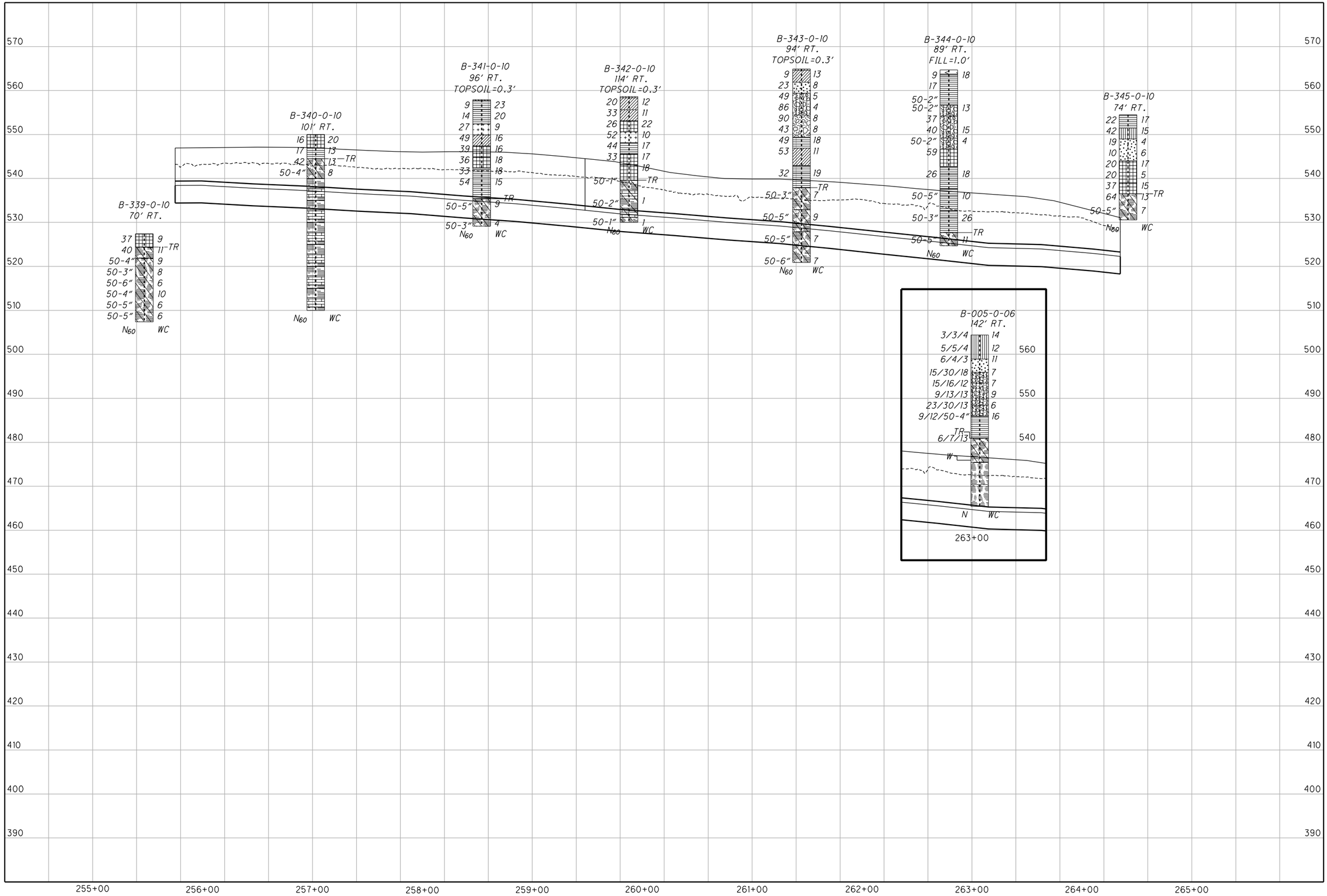

HORIZONTAL SCALE IN FEET
0 40 80

DRAWN KAH
CHECKED BCD

STRUCTURE FOUNDATION EXPLORATION
RETAINING WALL NO. 21

HAM-75-3.84

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S&ME JOB: 1178-18-006

PROJECT: HAM-75-3.84	DRILLING FIRM / OPERATOR: S&ME / S&ME	DRILL RIG: S&ME TRK 55 (R-44)	STATION / OFFSET: 244+38, 108' RT	EXPLORATION ID B-513-0-18
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: S&ME / J. HAYDU	HAMMER: CME AUTOMATIC	ALIGNMENT: I-75 CENTERLINE	
PID: 104667 BR ID: N/A	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 12/13/17	ELEVATION: 514.8 (MSL) EOB: 44.2 ft.	PAGE 1 OF 1
START: 8/24/18 END: 8/24/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 81.8	COORD: 39.153245 N, -84.538641 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N60	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
ASPHALT – 6 inches	514.8																	
AGGREGATE BASE – 6 inches	514.3																	
FILL: Loose gray GRAVEL, some fine to coarse sand, trace silt, trace clay, dry.	513.8		3 3 2	7	44	SS-1	–	82	9	3	4	2	–	–	–	5	A-1-a (V)	
FILL: Stiff gray and brown CLAY, some silt, little fine to coarse sand, trace fine gravel, damp.	511.8		8 3 10	18	33	SS-2	1.5	–	–	–	–	–	–	–	–	20	A-7-6 (V)	
			5 5 6	15	56	SS-3	2	10	5	6	32	47	43	20	23	18	A-7-6 (14)	
Medium-stiff to stiff grayish-brown to brown CLAY, some silt, little fine to coarse sand, trace fine gravel, contains limestone fragments, moist. – Attempted Shelby Tube at 8.0 feet, pushed 0.5 feet, no recovery.	506.8		3 5 4	12	44	SS-4	1.5	–	–	–	–	–	–	–	–	24	A-7-6 (V)	
			2 2 3	7	100	SS-5	1.5	6	5	7	28	54	44	19	25	23	A-7-6 (15)	
			1 1 3	5	56	SS-6	0.75	7	5	6	32	50	44	19	25	24	A-7-6 (15)	
			1 2 3	7	100	SS-7	–	–	–	–	–	–	–	–	–	24	A-7-6 (V)	
			1 2 3	7	83	SS-8	–	4	6	9	31	50	42	19	23	23	A-7-6 (14)	
Very-stiff brown and gray CLAY, some silt, trace to little fine to coarse sand, trace fine gravel, moist.	491.3		3 6 8	19	83	SS-9	–	8	4	5	29	54	46	20	26	24	A-7-6 (16)	
		W	3 8 8	22	39	SS-10	–	–	–	–	–	–	–	–	–	24	A-7-6 (V)	
			7 4 7	15	44	SS-11	–	–	–	–	–	–	–	–	–	22	A-7-6 (V)	
			5 5 5	14	33	SS-12	–	–	–	–	–	–	48	22	26	22	A-7-6 (V)	
SHALE, gray, highly weathered, very weak.	471.3	TR																
	470.6	EOB	6 50-2"	–	50	SS-13		–	–	–	–	–	–	–	–	–	Rock (V)	

– Boring caved at 11.8 feet after augers pulled.
– Encountered groundwater at 28.5 feet while drilling.
– Groundwater at 37.9 feet after drilling.
– Auger Refusal at 44.2 feet.

NOTES: SEE ABOVE.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; 20 LB. BENTONITE CHIPS; 2 BAGS CEMENT; 100 GAL. WATER

S&ME ODOT LOG (8.5X11) - SGE 07/2017 - OH DOT.GDT - 11/6/18 17:44 - T:\RESOURCES\CS\LABORATORY\GINTW\PROJECTS\1178180006.GPJ

S&ME JOB: 1178-18-006

PROJECT: HAM-75-3.84	DRILLING FIRM / OPERATOR: S&ME / S&ME	DRILL RIG: S&ME ATV D50 (SN226)	STATION / OFFSET: 244+63, 171' RT	EXPLORATION ID B-513-1-18
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: S&ME / J. HAYDU	HAMMER: AUTOMATIC	ALIGNMENT: I-75 CENTERLINE	
PID: 104667 BR ID: N/A	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 8/1/18	ELEVATION: 531.8 (MSL) EOB: 64.33 ft.	PAGE 1 OF 1
START: 8/7/18 END: 8/7/18	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 75.5	LAT / LONG: 39.153228 N, -84.538403 W	

MATERIAL DESCRIPTION AND NOTES	ELEV. 531.8	DEPTHS	SPT / RQD	N60	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
TOPSOIL - 3 inches	531.5																	
FILL: Loose brown SANDY SILT, damp.	531.1		5 7 8	19	67	SS-1A	3.0	–	–	–	–	–	–	–	–	–	A-6b (V)	
FILL: Very-stiff brown SILTY CLAY "and" fine to coarse sand, trace fine to coarse gravel, damp.	530.3					SS-1B	–	–	–	–	–	–	–	–	–	9	A-3a (V)	
FILL: Medium-dense brown COARSE AND FINE SAND, little silt, trace clay, damp. - Encountered cobbles from 3.5 to 4.5 feet.	527.8		4 16 7	29	28	SS-2	4.0	–	–	–	–	–	–	–	–	19	A-6b (V)	
FILL: Very-stiff gray becoming brown SILTY CLAY, little fine to coarse sand, little fine to coarse gravel, damp.	525.8		5 7 9	20	50	SS-3	3.5	–	–	–	–	–	–	–	–	17	A-6b (V)	
FILL: Very-stiff olive and gray SILTY CLAY, little fine to coarse sand, little fine to coarse gravel, damp.	523.3		4 6 8	18	56	SS-4	3.5-4.0	–	–	–	–	–	–	–	–	21	A-6b (V)	
FILL: Very-stiff brown, gray, and olive SILTY CLAY, little fine to coarse sand, little fine to coarse gravel, contains shale fragments, moist.	520.3		9 11 14	31	50	SS-5A	4.0	–	–	–	–	–	–	–	–	16	A-6b (V)	
						SS-5B	3.5	–	–	–	–	–	–	–	–	–	A-6b (V)	
FILL: Very-stiff gray to dark gray SILTY CLAY, little fine to coarse sand, slightly organic, moist.	518.8																	
FILL: Hard gray and olive SILT, some clay, little fine to coarse sand, trace fine to coarse gravel, contains shale and brick fragments, damp to moist.	509.8		ST		100	ST-6	4.5+	3	3	7	54	33	26	17	9	14	A-4b (8)	
			9 11 14	31	78	SS-7	4.5+	–	–	–	–	–	–	–	–	17	A-4b (V)	
			7 9 11	25	22	SS-8	4.5+	–	–	–	–	–	–	–	–	13	A-4b (V)	
FILL: Hard becoming very-stiff gray and olive CLAY, some silt, trace fine to coarse sand, trace fine to coarse gravel, contains shale and brick fragments, damp.	497.9	W	ST		100	ST-9	4.5+	3	3	6	24	64	41	21	20	22	A-7-6 (12)	
			6 7 7	18	39	SS-10	4.5+	–	–	–	–	–	–	–	–	15	A-7-6 (V)	
			2 5 11	20	89	SS-11	3.0-4.0	–	–	–	–	–	–	–	–	21	A-7-6 (V)	
FILL: Red brick fragments.	497.7		4 6 5	14	61	SS-12A	3.0	–	–	–	–	–	–	–	–	22	A-7-6 (V)	
						SS-12B	–	–	–	–	–	–	–	–	–	–	Visual (V)	
FILL: Medium-dense brown COARSE AND FINE SAND, trace fine to coarse gravel, trace silt, trace clay, wet.	494.8					SS-12C	–	–	–	–	–	–	–	–	–	–	A-3a (V)	
FILL: Very-stiff brown and gray SILTY CLAY, little fine to coarse sand, little fine to coarse gravel, contains decayed wood and brick fragments, moist to wet.	484.8		4 6 5	14	56	SS-13	2.0-3.0	–	–	–	–	–	–	–	–	23	A-6b (V)	
			7 10 13	29	33	SS-14	–	–	–	–	–	–	–	–	–	22	A-6b (V)	
Hard reddish-brown and gray CLAY, some silt, trace fine to coarse sand, trace fine to coarse gravel, contains rock fragments, damp to moist.	474.8	TR	12 14 23	47	78	SS-15	4.0	3	2	3	31	61	45	22	23	19	A-7-6 (14)	
			6 9 10	24	56	SS-16	3.0	–	–	–	–	–	–	–	–	24	A-7-6 (V)	
SHALE, gray, highly weathered, very weak.	467.5	EOB	50	–	100	SS-17	–	–	–	–	–	–	–	–	–	11	Rock (V)	
			40 50-4"	–	70	SS-18	–	–	–	–	–	–	–	–	–	7	Rock (V)	

- Encountered groundwater at 33.5 feet.
- Water had accumulated to 28.9 feet inside HSA at completion.

NOTES: SEE ABOVE.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 20 LB. BENTONITE CHIPS; 2 BAGS CEMENT; 100 GAL. WATER

S&ME ODOT LOG (8.5X11) - SGE 07/2017 - OH DOT.GDT - 11/6/18 17:45 - I:\RESOURCES\CS\LABORATORY\GINTW\PROJECTS\1178180006.GPJ

10/54	HAM-75-3.84	STRUCTURE FOUNDATION EXPLORATION RETAINING WALL NO. 2 BORING LOG B-513-1-18	DRAWN DWM	CHECKED BCD

S&ME JOB: 1178-18-006

PROJECT: HAM-75-3.84	DRILLING FIRM / OPERATOR: S&ME / S&ME	DRILL RIG: S&ME ATV D50 (SN226)	STATION / OFFSET: 247+50, 175' RT	EXPLORATION ID B-514-1-18
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: S&ME / J. HAYDU	HAMMER: AUTOMATIC	ALIGNMENT: I-75 CENTERLINE	
PID: 104667 BR ID: N/A	DRILLING METHOD: 3.25" HSA / NQ2	CALIBRATION DATE: 8/1/18	ELEVATION: 545.0 (MSL) EOB: 59.7 ft.	PAGE 1 OF 1
START: 8/7/18 END: 8/7/18	SAMPLING METHOD: SPT / ST / NQ2	ENERGY RATIO (%): 75.5	LAT / LONG: 39.153908 N, -84.537946 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N60	REC (%)	SAMPLE ID	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
ASPHALT – 7 inches	544.4																	
CONCRETE – 6 inches	543.9																	
AGGREGATE BASE – 5 inches	543.5		4 4 5	11	100	SS-1A	–	–	–	–	–	–	–	–	–	–	Visual (V)	
						SS-1B	–	8	16	22	27	27	25	15	10	16	A-4a (4)	
FILL: Very-stiff to hard brown and gray SANDY SILT, some clay, trace fine to coarse gravel, moist.			3 3 6	11	100	SS-2	3.5-4.5+	–	–	–	–	–	–	–	–	21	A-4a (V)	
	537.5		7 13 18	39	100	SS-3	3.0	–	–	–	–	–	–	–	–	18	A-4a (V)	
FILL: Dense brown GRAVEL, some fine to coarse sand, trace silt, trace clay, damp.	535.0		13 16 15	39	100	SS-4	–	63	13	10	7	7	NP	NP	NP	4	A-1-a (0)	
FILL: Stiff to very-stiff brown mottled with gray CLAY, some silt, little fine to coarse sand, trace fine to coarse gravel, slightly organic, contains wood fragments, moist.			2 3 3	8	100	SS-5	1.6	–	–	–	–	–	–	–	–	26	A-7-6 (V)	
			2 2 4	8	100	SS-6	3.0	–	–	–	–	–	–	–	–	27	A-7-6 (V)	
	528.0		2 4 5	11	100	SS-7	2.5	–	–	–	–	–	–	–	–	23	A-7-6 (V)	
FILL: Very-stiff brown SILTY CLAY, trace fine to coarse sand, trace fine to coarse gravel, moist.			2 3 4	9	100	SS-8	–	2	2	4	44	48	37	20	17	24	A-6b (11)	
			3 5 6	14	100	SS-9	3.5	–	–	–	–	–	–	–	–	21	A-6b (V)	
	518.0																	
Very-stiff brown SANDY SILT, some clay, trace fine gravel, damp to moist.		W																
– Rock encountered in ST-10, push ST-11 to ensure full recovery.			ST		67	ST-10	2.0	1	5	22	38	34	29	20	9	19	A-4a (7)	
	514.0																	
Very-stiff to hard brown and gray CLAY, some silt, trace fine to coarse sand, trace fine to coarse gravel, contains limestone fragments, moist.			ST		50	ST-11	3.0-3.5	3	1	4	28	64	49	23	26	22	A-7-6 (16)	
– Encountered cobbles at 33.0 feet.			10 11 17	35	78	SS-12	4.5+	–	–	–	–	–	–	–	–	20	A-7-6 (V)	
			7 15 27	53	67	SS-13	4.5+	–	–	–	–	–	–	–	–	19	A-7-6 (V)	
			35 43 50-5"	–	76	SS-14	4.5+	–	–	–	–	–	–	–	–	14	A-7-6 (V)	
– Encountered hard drilling from 45.0 to 48.5 feet.	498.0	TR																
SHALE, gray, highly weathered, very weak.			34 50-5"	–	64	SS-15A	–	–	–	–	–	–	–	–	–	–	Rock (V)	
– Limestone layer from 48.5 to 48.7 feet.						SS-15B	–	–	–	–	–	–	–	–	–	–	Rock (V)	
	491.1		50-5"	–	100	SS-16	–	–	–	–	–	–	–	–	–	–	Rock (V)	
Interbedded SHALE (90%) and LIMESTONE (10%), RQD 55%, REC 98%; SHALE, gray, moderately weathered, very weak to weak, thinly laminated, fractured to moderately fractured; LIMESTONE, light gray, slightly weathered, moderately strong, ranges in thickness from 0.5 to 2.0 inches.			0		80	NQ2-17											CORE	
			63		100	NQ2-18											CORE	
	485.3	EOB																

– Encountered groundwater at 28.5 feet.
– Water had accumulated to 33.0 feet inside HSA prior to coring rock.

NOTES: SEE ABOVE.

S&ME ODOT LOG (8.5X11) – SGE 07/2017 – OH DOT.GDT – 11/6/18 17:45 – T:\RESOURCES\CS\LABORATORY\GINTW\PROJECTS\117818006.GPJ

11/54	HAM-75-3.84	STRUCTURE FOUNDATION EXPLORATION RETAINING WALL NO. 2 BORING LOG B-514-1-18	DRAWN DWM CHECKED BCD

S&ME JOB: 1178-18-006

PROJECT: HAM-75-3.84	DRILLING FIRM / OPERATOR: S&ME / S&ME	DRILL RIG: S&ME ATV D50 (SN226)	STATION / OFFSET: 248+79, 73' RT	EXPLORATION ID B-515-0-18
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: S&ME / J. HAYDU	HAMMER: AUTOMATIC	ALIGNMENT: I-75 CENTERLINE	
PID: 104667 BR ID: N/A	DRILLING METHOD: 3.25" HSA / NQ2	CALIBRATION DATE: 8/1/18	ELEVATION: 514.9 (MSL) EOB: 20.1 ft.	PAGE 1 OF 1
START: 8/10/18 END: 8/10/18	SAMPLING METHOD: SPT / NQ2	ENERGY RATIO (%): 75.5	LAT / LONG: 39.154371 N, -84.538052 W	

MATERIAL DESCRIPTION AND NOTES	ELEV. 514.9	DEPTHS	SPT/ RQD	N60	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
TOPSOIL – 7 inches	514.3																	
FILL: Hard brown and gray SILTY CLAY, little fine to coarse sand, damp.	513.4	TR	5 10 26	45	7	SS-1A	4.5+	–	–	–	–	–	–	–	–	16	A-6b (V)	
						SS-1B	–	–	–	–	–	–	–	–	–	–	Rock (V)	
SHALE, brown and gray, severely weathered, very weak, contains thin limestone layers.	509.4		13 41 27	86	33	SS-2	–	–	–	–	–	–	–	–	–	20	Rock (V)	
SHALE, gray and brown, highly weathered, very weak, contains limestone layers.	507.4		14 27 50-5"	–	82	SS-3	–	–	–	–	–	–	–	–	–	13	Rock (V)	
Interbedded SHALE (92%) and LIMESTONE (8%), RQD 56%, REC 82%; SHALE, gray, moderately weathered, very weak to weak, thinly laminated, fractured to moderately fractured; LIMESTONE, light gray, slightly weathered, moderately strong, ranges in thickness from 1.0 to 2.0 inches.			0		23	NQ2-4												CORE
			67		95	NQ2-5												CORE
			75		100	NQ2-6												CORE
	494.8	EOB																

– No seepage noted.

NOTES: SEE ABOVE.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLASTIC HOLE PLUG DEVICE; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT LOG (8.5X11) - SGE 07/2017 - OH DOT.GDT - 11/6/18 17:45 - T:\RESOURCES\CS\LABORATORY\GINTW\PROJECTS\117818006.GPJ

S&ME JOB: 1178-18-006

PROJECT: HAM-75-3.84	DRILLING FIRM / OPERATOR: S&ME / S&ME	DRILL RIG: S&ME ATV D50 (SN226)	STATION / OFFSET: 254+97, 53' LT	EXPLORATION ID B-516-0-18
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: S&ME / J. HAYDU	HAMMER: AUTOMATIC	ALIGNMENT: I-75 CENTERLINE	
PID: 104667 BR ID: N/A	DRILLING METHOD: 3.25" HSA / NQ2	CALIBRATION DATE: 8/1/18	ELEVATION: 527.5 (MSL) EOB: 24.2 ft.	PAGE 1 OF 1
START: 8/22/18 END: 8/22/18	SAMPLING METHOD: SPT / ST / NQ2	ENERGY RATIO (%): 75.5	LAT / LONG: 39.156009 N, -84.537319 W	

MATERIAL DESCRIPTION AND NOTES	ELEV. 527.5	DEPTHS	SPT/ RQD	N60	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
ASPHALT – 8 inches	526.8																	
CONCRETE – 10 inches	526.0																	
AGGREGATE BASE – 10 inches	525.1		7 7 8	19	89	SS-1A	–	–	–	–	–	–	–	–	–	–	Visual (V)	
						SS-1B	–	–	–	–	–	–	–	–	–	9	A-6b (V)	
FILL: Very-stiff brown and gray SILTY CLAY some fine to coarse sand, some fine to coarse gravel, contains few brick and limestone fragments, moist.	521.5		3 4 7	14	78	SS-2	4.0	–	–	–	–	–	–	–	–	15	A-6b (V)	
Possible Fill: Very-stiff becoming stiff brown and gray CLAY, some silt, little fine to coarse sand, trace fine to coarse gravel, moist.	517.0		ST		92	ST-3	2.5	3	5	15	34	43	47	17	30	27	A-7-6 (17)	
			2 2 2	5	89	SS-4	1.0	–	–	–	–	–	–	–	–	24	A-7-6 (V)	
Medium-stiff brown and gray SILT, some clay, trace fine to coarse sand, trace fine gravel, moist.	516.0		2 2 3	6	56	SS-5A	0.5-1.0	2	3	5	68	22	27	19	8	22	A-4b (8)	
Very-stiff brown and gray SILTY CLAY, little fine to coarse sand, little fine to coarse gravel, contains few limestone fragments, moist.	512.0					SS-5B	2.0	–	–	–	–	–	–	–	–	19	A-6b (V)	
			2 3 6	11	89	SS-6	3.0	–	–	–	–	–	–	–	–	23	A-6b (V)	
Hard olive and gray SILTY CLAY, little fine to coarse sand, trace fine to coarse gravel, contains limestone layers, relic bedding, damp.	511.0	TR	10 34 50-2"	–	100	SS-7A	4.5+	–	–	–	–	–	–	–	–	14	A-6b (V)	
						SS-7B	–	–	–	–	–	–	–	–	–	–	Rock (V)	
SHALE, brown and gray, highly weathered, very weak, contains few limestone layers.			37 50-5"	–	100	SS-8	–	–	–	–	–	–	–	–	–	–	Rock (V)	
	503.3	EOB	37 50-2"	–	100	SS-9	–	–	–	–	–	–	–	–	–	–	Rock (V)	

– No seepage noted.

NOTES: SEE ABOVE.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; PLASTIC HOLE PLUG DEVICE; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT LOG (8.5X11) - SGE 07/2017 - OH DOT.GDT - 11/6/18 17:45 - T:\RESOURCES\CS\LABORATORY\GINTW\PROJECTS\117818006.GPJ

S&ME JOB: 1178-18-006

PROJECT: HAM-75-3.84	DRILLING FIRM / OPERATOR: S&ME / S&ME	DRILL RIG: S&ME ATV D50 (SN226)	STATION / OFFSET: 255+33, 73' RT	EXPLORATION ID B-517-0-18
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: S&ME / J. HAYDU	HAMMER: AUTOMATIC	ALIGNMENT: I-75 CENTERLINE	
PID: 104667 BR ID: N/A	DRILLING METHOD: 3.25" HSA / NQ2	CALIBRATION DATE: 8/1/18	ELEVATION: 524.3 (MSL) EOB: 19.4 ft.	PAGE 1 OF 1
START: 8/23/18 END: 8/23/18	SAMPLING METHOD: SPT / ST / NQ2	ENERGY RATIO (%): 75.5	LAT / LONG: 39.155867 N, -84.536888 W	

MATERIAL DESCRIPTION AND NOTES	ELEV. 524.3	DEPTHS	SPT/ RQD	N60	REC (%)	SAMPLE ID	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
TOPSOIL - 6 inches	523.8		1			SS-1A	-	-	-	-	-	-	-	-	-	31	Visual (V)	
Very-stiff brown mottled with gray CLAY, some to "and" silt, trace to little fine to coarse sand, trace fine gravel, damp.		1	2 4	8	78	SS-1B	3.0	14	8	6	32	40	45	22	23	20	A-7-6 (14)	
- Sample ST-1 obtained from 1.0 to 3.0 feet in offset boring.	522.3	TR 2	ST		60	ST-1		5	5	4	40	46	45	24	21	23	A-7-6 (13)	
SHALE, brown and gray, severely weathered, very weak.		3																
	520.3	4	50-5"	-	100	SS-2	-	-	-	-	-	-	-	-	-	8	Rock (V)	
Interbedded SHALE (85%) and LIMESTONE (15%), RQD 59%, REC 82%; SHALE, gray, moderately weathered, very weak to weak, thinly laminated, blocky/disturbed/seamy, good to fair; LIMESTONE, light gray, moderately to slightly weathered, moderately strong, blocky/disturbed/seamy, good, ranges in thickness from 1.0 to 5.0 inches.		5	0		40	NQ2-3	-										CORE	
		6																
		7	10		50	NQ2-4	-										CORE	
		8																
		9																
		10																
		11	90		98	NQ2-5	-										CORE	
		12																
		13																
		14																
		15																
		16	82		100	NQ2-6	-										CORE	
		17																
		18																
	504.9	19 EOB																

- No groundwater noted prior to coring rock.

NOTES: SEE ABOVE.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLASTIC HOLE PLUG DEVICE; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME JOB: 1178-18-006

PROJECT: HAM-75-3.84	DRILLING FIRM / OPERATOR: S&ME / S&ME	DRILL RIG: S&ME ATV D50 (SN226)	STATION / OFFSET: 257+24, 59' RT	EXPLORATION ID B-518-0-18
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: S&ME / J. HAYDU	HAMMER: AUTOMATIC	ALIGNMENT: I-75 CENTERLINE	
PID: 104667 BR ID: N/A	DRILLING METHOD: 3.25" HSA / NQ2	CALIBRATION DATE: 8/1/18	ELEVATION: 527.2 (MSL) EOB: 17.0 ft.	PAGE 1 OF 1
START: 8/2/18 END: 8/2/18	SAMPLING METHOD: SPT / NQ2	ENERGY RATIO (%): 75.5	LAT / LONG: 39.156260 N, -84.536483 W	

MATERIAL DESCRIPTION AND NOTES	ELEV. 527.2	DEPTHS	SPT/ RQD	N60	REC (%)	SAMPLE ID	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
ASPHALT PAVEMENT - 8 inches	526.5																	
CONCRETE - 10 inches	525.7																	
AGGREGATE BASE - 3 inches	525.4	TR 1																
SHALE, brown and gray, severely weathered, very weak.		2	7 8 15	29	100	SS-1	-	-	-	-	-	-	-	-	-	13	Rock (V)	
		3																
	522.7	4	25 50-1"	-	100	SS-2	-	-	-	-	-	-	-	-	-	-	Rock (V)	
Interbedded SHALE (85%) and LIMESTONE (15%), RQD 58%, REC 88%; SHALE, gray, moderately weathered, very weak to weak, thinly laminated, blocky/disturbed/seamy, good to fair; LIMESTONE, light gray, highly to slightly weathered, moderately strong, blocky/disturbed/seamy, good, ranges in thickness from 1.0 to 5.0 inches.		5	0		67	SS-3	-										CORE	
		6																
		7																
		8	52		80	SS-4	-										CORE	
		9																
		10																
		11																
		12	53		93	SS-5	-										CORE	
		13																
		14																
		15																
		16	100		100	SS-6	-										CORE	
	510.2	17 EOB																

- No groundwater noted prior to coring rock.

NOTES: SEE ABOVE.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; PLASTIC HOLE PLUG DEVICE; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT LOG (8.5X11) - SGE 07/2017 - OH DOT.GDT - 11/6/18 17:45 - T:\RESOURCES\CS\LABORATORY\GINTW\PROJECTS\117818006.GPJ

S&ME ODOT LOG (8.5X11) - SGE 07/2017 - OH DOT.GDT - 11/6/18 17:45 - T:\RESOURCES\CS\LABORATORY\GINTW\PROJECTS\117818006.GPJ

PLATE 7

HAM-75-3.84

STRUCTURE FOUNDATION EXPLORATION
RETAINING WALL NO. 21
BORING LOGS B-517-0-18, B-518-0-18

DRAWN DWM
CHECKED BCD

S&ME JOB: 1178-18-006

PROJECT: HAM-75-3.84	DRILLING FIRM / OPERATOR: S&ME / S&ME	DRILL RIG: S&ME ATV D50 (SN226)	STATION / OFFSET: 257+08, 55' LT	EXPLORATION ID B-519-0-18
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: S&ME / J. HAYDU	HAMMER: AUTOMATIC	ALIGNMENT: I-75 CENTERLINE	
PID: 104667 BR ID: N/A	DRILLING METHOD: 3.25" HSA / NQ2	CALIBRATION DATE: 8/1/18	ELEVATION: 531.8 (MSL) EOB: 24.3 ft.	PAGE 1 OF 1
START: 8/22/18 END: 8/22/18	SAMPLING METHOD: SPT / ST / NQ2	ENERGY RATIO (%): 75.5	LAT / LONG: 39.156450 N, -84.536804 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N60	REC (%)	SAMPLE ID	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
	531.8																	
ASPHALT – 8 inches	531.1																	
CONCRETE – 9.5 inches	530.3																	
AGGREGATE BASE – 5 inches	529.9		5 1 2	4	44	SS-1A	–	–	–	–	–	–	–	–	–	–	Visual (V)	
						SS-1B	1.0	–	–	–	–	–	–	–	–	15	A-6b (V)	
FILL: Medium-stiff brown and gray SILTY CLAY, some fine to coarse sand, little fine to coarse gravel, damp.	528.8																	
FILL: Medium-dense black GRAVEL some fine to coarse sand, trace silt, trace clay, contains limestone and brick fragments, moist.			4 6 4	13	0	--	–	–	–	–	–	–	–	–	–	–		
	525.6		4	–	100	SS-2	–	62	13	12	9	4	–	–	–	14	A-1-a (V)	
						SS-3A	–	–	–	–	–	–	–	–	–	18	A-1-a (V)	
Stiff brown CLAY, "and" silt, trace fine to coarse sand, trace fine gravel, moist.			1 2 2	5	67	SS-3B	1.0	–	–	–	–	–	–	–	–	25	A-7-6 (V)	
	521.3		2 2 3	6	100	SS-4	1.0–1.5	2	3	6	40	49	43	18	25	26	A-7-6 (15)	
Very-stiff brown and gray SILTY CLAY, little fine to coarse sand, little fine to coarse gravel, contains limestone fragments, moist. – ST-11 obtained from 11.0 to 13.0 feet in offset boring. – Limestone floater at 10.5 feet.			3 5 7	15	33	SS-5	3.0	–	–	–	–	–	–	–	–	21	A-6b (V)	
			ST		50	ST-11	3.5–4.0	–	–	–	–	–	–	–	–	–	A-6b (V)	
			4 5 5	13	78	SS-6	3.5	–	–	–	–	–	–	–	–	21	A-6b (V)	
	515.8																	
Hard olive and gray SILTY CLAY, little fine to coarse sand, trace fine to coarse gravel, contains limestone fragments, relic bedding, damp. – SS-7 driven on limestone.			10 15 20	44	17	SS-7	–	–	–	–	–	–	–	–	–	19	A-6b (V)	
	513.4	TR	50	–	100	SS-8	4.5+	–	–	–	–	–	–	–	–	18	A-6b (V)	
SHALE, brown and gray, highly weathered, very weak.			12 27 50-4"	–	100	SS-9	–	–	–	–	–	–	–	–	–	9	Rock (V)	
	507.5	EOB	24 50-3"	–	100	SS-10	–	–	–	–	–	–	–	–	–	8	Rock (V)	

– No seepage noted.

NOTES: SEE ABOVE.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; PLASTIC HOLE PLUG DEVICE; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT LOG (8.5X11) - SGE 07/2017 - OH DOT.GDT - 11/6/18 17:45 - T:\RESOURCES\CS\LABORATORY\GINTW\PROJECTS\117818006.GPJ

S&ME JOB: 1178-18-006

PROJECT: HAM-75-3.84	DRILLING FIRM / OPERATOR: S&ME / J. JONES	DRILL RIG: S&ME ATV D50 (SN226)	STATION / OFFSET: 257+42, 87' LT	EXPLORATION ID B-519-1-18
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: S&ME / J. HAYDU	HAMMER: AUTOMATIC	ALIGNMENT: I-75 CENTERLINE	
PID: 104667 BR ID: N/A	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 8/1/18	ELEVATION: 525.1 (MSL) EOB: 25.0 ft.	PAGE 1 OF 1
START: 8/30/18 END: 8/30/18	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 75.5	LAT / LONG: 39.156581 N, -84.536792 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N60	REC (%)	SAMPLE ID	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
	525.1																	
FILL: Medium-dense dark brown GRAVEL, some fine to coarse sand, trace silt, trace clay, moist to damp.			5 5 4	11	89	SS-1	–	66	16	9	7	2	NP	NP	NP	31	A-1-a (0)	
	519.6		2 2 1	4	94	SS-2	–	–	–	–	–	–	–	–	–	12	A-1-a (V)	
Medium-stiff dark brown SILT AND CLAY, some fine to coarse sand, trace fine to coarse gravel, moist.			2 1	–	89	SS-3A	–	–	–	–	–	–	–	–	–	29	A-6a (V)	
	517.6					SS-3B	–	–	–	–	–	–	–	–	–	–	A-6a (V)	
Stiff brown and gray SILT AND CLAY, trace fine to coarse sand, trace fine gravel, damp to moist.			ST		33	ST-1	–	0	3	13	48	36	–	–	–	20	A-6a (V)	
			2 3 4	9	94	SS-4	–	5	4	3	58	30	34	20	14	24	A-6a (10)	
			ST		0	ST	–	–	–	–	–	–	–	–	–	–	A-6a (V)	
			7 13 20	42	89	SS-5	–	–	–	–	–	–	–	–	–	–	A-6a (V)	
	507.1	TR																
SHALE, brown and gray, highly weathered, very weak.			17 38 50	111	83	SS-6	–	–	–	–	–	–	–	–	–	–	Rock (V)	
	500.1	EOB	33 50	–	50	SS-7	–	–	–	–	–	–	–	–	–	–	Rock (V)	

– No seepage noted.

NOTES: SEE ABOVE.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLASTIC HOLE PLUG DEVICE; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT LOG (8.5X11) - SGE 07/2017 - OH DOT.GDT - 11/6/18 17:45 - T:\RESOURCES\CS\LABORATORY\GINTW\PROJECTS\117818006.GPJ

S&ME JOB: 1178-18-006

PROJECT: HAM-75-3.84	DRILLING FIRM / OPERATOR: S&ME / S&ME	DRILL RIG: S&ME ATV D50 (SN226)	STATION / OFFSET: 259+31, 55' LT	EXPLORATION ID B-520-0-18
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: S&ME / J. HAYDU	HAMMER: AUTOMATIC	ALIGNMENT: I-75 CENTERLINE	
PID: 104667 BR ID: N/A	DRILLING METHOD: 3.25" HSA / NQ2	CALIBRATION DATE: 8/1/18	ELEVATION: 536.3 (MSL) EOB: 38.8 ft.	PAGE 1 OF 1
START: 8/21/18 END: 8/21/18	SAMPLING METHOD: SPT / ST / NQ2	ENERGY RATIO (%): 75.5	LAT / LONG: 39.156857 N, -84.536185 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N60	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
ASPHALT – 8.5 inches	536.3 535.6																	
CONCRETE – 10.5 inches	534.7																	
AGGREGATE BASE – 5 inches	534.3		3 5 7	15	89	SS-1A	–	–	–	–	–	–	–	–	–	–	Visual (V)	
FILL: Hard gray SILTY CLAY, some fine to coarse sand, some fine to coarse gravel, damp.	533.3					SS-1B	4.5+	–	–	–	–	–	–	–	–	13	A-6b (V)	
FILL: Very-stiff dark gray SILTY CLAY, some fine to coarse sand, some fine to coarse gravel, contains brick and cinder fragments, damp.	530.3		7 7 8	19	78	SS-2A	4.0	–	–	–	–	–	–	–	–	18	A-6b (V)	
						SS-2B	4.0	–	–	–	–	–	–	–	–	15	A-6b (V)	
Possible Fill: Very-stiff brown and gray CLAY, "and" silt, little fine to coarse sand, trace fine to coarse gravel, contains iron oxide stains, moist.	525.8		ST		92	ST-3	2.5–3.5	2	3	11	46	38	53	17	36	22	A-7-6 (19)	
			4 5 9	18	100	SS-4	3.0–4.0	–	–	–	–	–	–	–	–	21	A-7-6 (V)	
Very-stiff to hard brown and gray CLAY, "and" silt, trace fine to coarse sand, trace fine gravel, moist.	520.8		5 7 9	20	94	SS-5	4.0–4.5	3	2	1	36	58	43	21	22	24	A-7-6 (13)	
			3 4 6	13	100	SS-6	3.5	–	–	–	–	–	–	–	–	20	A-7-6 (V)	
Stiff gray SILT AND CLAY, little fine to coarse sand, trace fine gravel, (varved), moist.	518.3		3 4 5	11	100	SS-7	2.0	–	–	–	–	–	–	–	–	27	A-6a (V)	
Stiff to very-stiff gray SILT AND CLAY, some fine to coarse sand, contains fine sand and silt seams, (varved), moist to wet.	514.3	W	4 5 6	14	72	SS-8	1.5–2.5	–	–	–	–	–	–	–	–	30	A-6a (V)	
Stiff gray SILT AND CLAY, trace fine gravel, contains decayed wood, (varved), wet.	509.3		3 4 4	10	89	SS-9	1.5–2.0	1	0	0	58	41	29	18	11	27	A-6a (8)	
Very-stiff brown and gray SILTY CLAY, little fine to coarse sand, trace fine gravel, contains fossils, damp.	504.3		8 9 14	29	56	SS-10	4.0	–	–	–	–	–	–	–	–	18	A-6b (V)	
Hard olive and gray SILTY CLAY, little fine to coarse sand, trace fine gravel, contains few limestone fragments, relic bedding, damp.	501.7		10 15 48	79	100	SS-11A	4.5+	–	–	–	–	–	–	–	–	13	A-6b (V)	
SHALE, brown and gray, highly weathered, very weak.	497.5	TR EOB				SS-11B	–	–	–	–	–	–	–	–	–	–	Rock (V)	
			50-4"	–	100	SS-12	–	–	–	–	–	–	–	–	–	–	Rock (V)	

– Slight seepage at 18.5 feet.
– Boring "dry" at completion.

NOTES: SEE ABOVE.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; PLASTIC HOLE PLUG DEVICE; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT LOG (8.5X11) - SGE 07/2017 - OH DOT.GDT - 11/6/18 17:45 - T:\RESOURCES\CS\LABORATORY\GINTW\PROJECTS\1178180006.GPJ

S&ME JOB: 1178-18-006

PROJECT: HAM-75-3.84	DRILLING FIRM / OPERATOR: S&ME / S&ME	DRILL RIG: S&ME ATV D50 (SN226)	STATION / OFFSET: 258+39, 57' RT	EXPLORATION ID B-521-0-18
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: S&ME / J. HAYDU	HAMMER: AUTOMATIC	ALIGNMENT: I-75 CENTERLINE	PAGE 1 OF 1
PID: 104667 BR ID: N/A	DRILLING METHOD: 3.25" HSA / NQ2	CALIBRATION DATE: 8/1/18	ELEVATION: 529.7 (MSL) EOB: 18.5 ft.	
START: 8/22/18 END: 8/23/18	SAMPLING METHOD: SPT / NQ2	ENERGY RATIO (%): 75.5	LAT / LONG: 39.156464 N, -84.536195 W	

MATERIAL DESCRIPTION AND NOTES	ELEV. 529.7	DEPTHS	SPT/ RQD	N60	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
ASPHALT – 10 inches	528.8																	
CONCRETE – 10 inches	528.0																	
AGGREGATE BASE – 4 inches	527.7	TR	50-1"	–	0	--	–	–	–	–	–	–	–	–	–	–		
Interbedded SHALE (97%) and LIMESTONE (3%), RQD 7%, REC 12%; SHALE, gray, moderately weathered, very weak to weak, thinly laminated, blocky/disturbed/seamy, poor; LIMESTONE, light gray, slightly weathered, moderately strong, blocky/disturbed/seamy, good, ranges in thickness from 0.5 to 2.0 inches.	521.2		7		12	NQ2-1	–										CORE	
Interbedded SHALE (90%) and LIMESTONE (10%), RQD 61%, REC 95%; SHALE, gray, moderately weathered, very weak to weak, thinly laminated, blocky/disturbed/seamy, good to fair; LIMESTONE, light gray, slightly weathered, moderately strong, blocky/disturbed/seamy, good, ranges in thickness from 0.5 to 3.0 inches.			58		97	NQ2-2	–										CORE	
			63		93	NQ2-3	–										CORE	
	511.2	EOB																

– No groundwater noted prior to coring rock.
– Boring caved at 12.1 feet after augers pulled.

NOTES: SEE ABOVE.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; PLASTIC HOLE PLUG DEVICE; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT LOG (8.5X11) - SGE 07/2017 - OH DOT.GDT - 11/6/18 17:45 - T:\RESOURCES\CS\LABORATORY\GINTW\PROJECTS\117818006.GPJ

S&ME JOB: 1178-18-006

PROJECT: HAM-75-3.84	DRILLING FIRM / OPERATOR: S&ME / S&ME	DRILL RIG: S&ME ATV D50 (SN226)	STATION / OFFSET: 258+39, 57' RT	EXPLORATION ID B-521-0-18A
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: S&ME / J. HAYDU	HAMMER: AUTOMATIC	ALIGNMENT: I-75 CENTERLINE	PAGE 1 OF 1
PID: 104667 BR ID: N/A	DRILLING METHOD: 3.25" HSA / NQ2	CALIBRATION DATE: 8/1/18	ELEVATION: 529.7 (MSL) EOB: 17.4 ft.	
START: 8/23/18 END: 8/23/18	SAMPLING METHOD: NQ2	ENERGY RATIO (%): 75.5	LAT / LONG: 39.156464 N, -84.536195 W	

MATERIAL DESCRIPTION AND NOTES	ELEV. 529.7	DEPTHS	SPT/ RQD	N60	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
ASPHALT – 10.5 inches	528.8																	
CONCRETE – 10 inches	528.0																	
AGGREGATE BASE – 4 inches	527.6	TR																
Interbedded SHALE (90%) and LIMESTONE (10%), RQD 61%, REC 95%; SHALE, gray, moderately weathered, very weak to weak, thinly laminated, fractured to moderately fractured; LIMESTONE, light gray, highly to slightly weathered, moderately strong, ranges in thickness from 1.0 to 3.0 inches.			58		97	NQ2-2	–										CORE	
			63		93	NQ2-3	–										CORE	
	512.3	EOB																

– Boring "dry" prior to coring rock
– Boring caved at 8.8 feet after augers pulled.

NOTES: SEE ABOVE.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; PLASTIC HOLE PLUG DEVICE; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT LOG (8.5X11) - SGE 07/2017 - OH DOT.GDT - 11/6/18 17:45 - T:\RESOURCES\CS\LABORATORY\GINTW\PROJECTS\117818006.GPJ

HAM-75-3.84

STRUCTURE FOUNDATION EXPLORATION
RETAINING WALL NO. 21
BORING LOGS B-521-0-18, B-521-0-18A

DRAWN DWM
CHECKED BCD

S&ME JOB: 1178-18-006

PROJECT: HAM-75-3.84	DRILLING FIRM / OPERATOR: S&ME / S&ME	DRILL RIG: S&ME ATV D50 (SN226)	STATION / OFFSET: 260+26, 59' RT	EXPLORATION ID B-522-0-18
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: S&ME / J. HAYDU	HAMMER: AUTOMATIC	ALIGNMENT: I-75 CENTERLINE	
PID: 104667 BR ID: N/A	DRILLING METHOD: 3.25" HSA / NQ2	CALIBRATION DATE: 8/1/18	ELEVATION: 533.3 (MSL) EOB: 20.1 ft.	PAGE 1 OF 1
START: 8/2/18 END: 8/2/18	SAMPLING METHOD: SPT / NQ2	ENERGY RATIO (%): 75.5	LAT / LONG: 39.156751 N, -84.535681 W	

MATERIAL DESCRIPTION AND NOTES	ELEV. 533.3	DEPTHS	SPT/ RQD	N60	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
ASPHALT – 8.5 inches	532.6																	
CONCRETE – 9.5 inches	531.8																	
FILL: Medium–dense gray GRAVEL WITH SAND, trace silt, trace clay, dry.	529.8		6 6 4	13	100	SS-1	–	61	17	6	10	6	21	15	6	6	A-1-b (0)	
Very–stiff brown mottled with gray CLAY, some silt, trace fine to coarse sand, trace fine gravel, damp.	527.0		3 5 7	15	100	SS-2	–	7	5	4	34	50	43	20	23	15	A-7-6 (14)	
			1" ST		0	ST-3	–	–	–	–	–	–	–	–	–	–		
SHALE, brown and gray, severely weathered, very weak.	524.0	TR	6 12 22	43	100	SS-4	–	–	–	–	–	–	–	–	–	12	Rock (V)	
			22 50–3"	–	96	SS-5	–	–	–	–	–	–	–	–	–	10	Rock (V)	
Interbedded SHALE (91%) and LIMESTONE (9%), RQD 50%, REC 93%; SHALE, gray, moderately weathered, very weak to weak, thinly laminated, blocky/disturbed/seamy, good to fair; LIMESTONE, light gray, slightly weathered, moderately strong, blocky/disturbed/seamy, good, ranges in thickness from 1.0 to 4.0 inches.	513.2	EOB	0		31	NQ2-6	–										CORE	
			48		97	NQ2-7	–										CORE	
			60		100	NQ2-8	–										CORE	

– No groundwater noted prior to coring rock.
– Attempted Shelby tube at 5 feet. Crushed tube.

NOTES: SEE ABOVE.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; PLASTIC HOLE PLUG DEVICE; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT LOG (8.5X11) – SGE 07/2017 – OH DOT.GDT – 11/6/18 17:45 – T:\RESOURCES\CS\LABORATORY\GINTW\PROJECTS\1178180O6.GPJ

S&ME JOB: 1178-18-006

PROJECT: HAM-75-3.84	DRILLING FIRM / OPERATOR: S&ME / S&ME	DRILL RIG: S&ME ATV D50 (SN226)	STATION / OFFSET: 261+83, 60' RT	EXPLORATION ID B-524-0-18
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: S&ME / J. HAYDU	HAMMER: AUTOMATIC	ALIGNMENT: I-75 CENTERLINE	
PID: 104667 BR ID: N/A	DRILLING METHOD: 3.25" HSA / NQ2	CALIBRATION DATE: 8/1/18	ELEVATION: 536.4 (MSL) EOB: 26.0 ft.	PAGE 1 OF 1
START: 8/23/18 END: 8/23/18	SAMPLING METHOD: SPT / NQ2	ENERGY RATIO (%): 75.5	LAT / LONG: 39.156958 N, -84.535217 W	

MATERIAL DESCRIPTION AND NOTES	ELEV. 536.4	DEPTHS	SPT/ RQD	N60	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
ASPHALT – 8 inches	535.7																	
CONCRETE – 10.5 inches	534.9																	
AGGREGATE BASE – 6 inches	534.4																	
FILL: Medium–dense gray GRAVEL WITH SAND AND SILT, trace clay, dry. – Attempted ST from 3.0 to 5.0 feet in offset boring, no recovery.	532.9		4 7 3	13	72	SS-1	–	71	11	5	8	5	20	13	7	6	A-2-4 (0)	
Hard brown mottled with gray CLAY, some silt, trace fine to coarse sand, trace fine gravel, damp.	530.9		6 8 8	20	100	SS-2	4.5	6	2	2	31	59	48	22	26	18	A-7-6 (16)	
Hard olive–brown CLAY, some silt, little fine to coarse sand, trace fine to coarse gravel, moist.	525.9		7 6 9	19	61	SS-3	4.5	–	–	–	–	–	–	–	–	20	A-7-6 (V)	
			2 4 7	14	50	SS-4	4.5	–	–	–	–	–	–	–	–	20	A-7-6 (V)	
SHALE, brown and gray, severely weathered, very weak.	521.4	TR	3 10 25	44	61	SS-5	–	–	–	–	–	–	–	–	–	11	Rock (V)	
			11 24 48	91	100	SS-6	–	–	–	–	–	–	–	–	–	8	Rock (V)	
Interbedded SHALE (93%) and LIMESTONE (7%), RQD 53%, REC 85%; SHALE, gray, moderately weathered, very weak to weak, thinly laminated, blocky/disturbed/seamy, good to fair; LIMESTONE, light gray, slightly weathered, moderately strong, blocky/disturbed/seamy, good, ranges in thickness from 1.0 to 3.0 inches.	510.4	EOB	0		0	NQ2-7	–										CORE	
			33		87	NQ2-8	–										CORE	
			82		100	NQ2-9	–										CORE	

– No groundwater noted prior to coring rock.
– Boring caved at 14.1 feet after augers pulled.

NOTES: SEE ABOVE.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; PLASTIC HOLE PLUG DEVICE; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME JOB: 1178-18-006

PROJECT: HAM-75-3.84	DRILLING FIRM / OPERATOR: S&ME / S&ME	DRILL RIG: S&ME ATV D50 (SN226)	STATION / OFFSET: 261+12, 52' LT	EXPLORATION ID B-523-0-18
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: S&ME / J. HAYDU	HAMMER: AUTOMATIC	ALIGNMENT: I-75 CENTERLINE	
PID: 104667 BR ID: N/A	DRILLING METHOD: 3.25" HSA / NQ2	CALIBRATION DATE: 8/1/18	ELEVATION: 539.9 (MSL) EOB: 44.6 ft.	PAGE 1 OF 1
START: 8/21/18 END: 8/21/18	SAMPLING METHOD: SPT / ST / NQ2	ENERGY RATIO (%): 75.5	LAT / LONG: 39.157134 N, -84.535630 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N60	REC (%)	SAMPLE ID	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
	539.9							GRADATION (%)					ATTERBERG					
ASPHALT – 7.5 inches	539.2																	
CONCRETE – 10.5 inches	538.4																	
AGGREGATE BASE – 5 inches	538.0					SS-1A	–	–	–	–	–	–	–	–	–	–	Visual (V)	
FILL: Very-stiff dark gray and olive SILTY CLAY, little fine to coarse sand, trace fine to coarse gravel, moist.			4 3 7	13	72	SS-1B	4.0	–	–	–	–	–	–	–	–	21	A-6b (V)	
	534.9		7 4 8	15	72	SS-2	3.5–4.0	–	–	–	–	–	–	–	–	–	A-6b (V)	
FILL: Very-stiff brown SILTY CLAY, little fine to coars sand, trace fine to coarse gravel, moist.	533.4		8 7 7	18	0	--	–	–	–	–	–	–	–	–	–	–	A-6b (V)	
Possible Fill: Very-stiff brown CLAY, some silt, trace fine to coarse sand, trace fine gravel, damp.			11	–	100	SS-3	3.0–3.5	–	–	–	–	–	–	–	–	–	A-6b (V)	
	529.4		2 4 6	13	100	SS-4	2.0–3.0	–	–	–	–	–	–	–	–	–	A-7-6 (V)	
Very-stiff brown SILTY CLAY, little to some fine to coarse sand, contains many 0.5 to 1" silt seams (varved), moist.			ST		67	ST-5	2.0–3.0	2	4	3	30	61	46	24	22	24	A-7-6 (14)	
	526.9		3 4 5	11	100	SS-6	2.0–2.5	–	–	–	–	–	–	–	–	–	A-6b (V)	
Stiff brown to gray SILT AND CLAY, little fine to coarse sand, trace fine to coarse gravel, moist.	524.4		3 3 5	10	100	SS-7	1.5–2.0	–	–	–	–	–	–	–	–	–	A-6a (V)	
Stiff gray SILT AND CLAY, little fine to coarse sand, trace fine to coarse gravel, slightly organic, moist.			3 3 4	9	89	SS-8	1.5–2.0	–	–	–	–	–	–	–	–	–	A-6a (V)	
	517.9		3 3 4	9	100	SS-9	1.5–2.0	–	–	–	–	–	–	–	–	–	A-6a (V)	
Stiff gray CLAY, some silt, little fine to coarse sand, trace fine to coarse gravel, contains 2" fine sand and silt seams (varved), moist.		W	3 1 3	5	100	SS-10	1.0–1.5	–	–	–	–	–	–	–	–	–	A-7-6 (V)	
	512.9																	
Very-stiff mottled olive and gray SILTY CLAY, little fine to coarse sand, trace fine to coarse gravel, cotanins limestone fragments, damp to moist.			5 9 11	25	89	SS-11	4.0	–	–	–	–	–	–	–	–	–	A-6b (V)	
	506.9																	
Hard olive and gray SILTY CLAY, little fine to coarse sand, trace fine to coarse gravel, contains limestone fragments, contains relic bedding, damp to dry.			5 9 15	30	61	SS-12	4.5+	–	–	–	–	–	–	–	–	–	A-6b (V)	
	501.9	TR																
SHALE, gray, highly weathered, very weak.	500.3		50-5"	–	100	SS-13	–	–	–	–	–	–	–	–	–	–	Rock (V)	
Interbedded SHALE (90%) and LIMESTONE (10%), RQD 60%, REC 92%; SHALE, gray, moderately weathered, very weak to weak, thinly laminated, moderately fractured; LIMESTONE, light gray, slightly weathered, moderately strong, ranges in thickness from 1.0 to 2.0 inches.	495.3	EOB	60		92	NQ2-14	–										CORE	

– Sample SS-1B: Sulfate Content = 81 ppm.
– Slight seepage at 23.8 feet.
– No groundwater noted prior to coring rock.

NOTES: SEE ABOVE.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; PLASTIC HOLE PLUG DEVICE; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT LOG (8.5X11) - SGE 07/2017 - OH DOT.GDT - 11/6/18 17:45 - F:\RESOURCES\CS\LABORATORY\GINTW\PROJECTS\11781800G.GPJ

S&ME JOB: 1178-18-006

PROJECT: HAM-75-3.84	DRILLING FIRM / OPERATOR: S&ME / S&ME	DRILL RIG: S&ME TRK 55 (R-44)	STATION / OFFSET: 262+66, 53' LT	EXPLORATION ID B-523-1-18
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: S&ME / J. HAYDU	HAMMER: CME AUTOMATIC	ALIGNMENT: I-75 CENTERLINE	
PID: 104667 BR ID: N/A	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 12/13/17	ELEVATION: 542.8 (MSL) EOB: 39.6 ft.	PAGE 1 OF 1
START: 1/25/19 END: 1/25/19	SAMPLING METHOD: SPT	ENERGY RATIO (%): 81.8	COORD: 39.157338 N, -84.535129 W	

MATERIAL DESCRIPTION AND NOTES	ELEV. 542.8	DEPTHS	SPT/RQD	N60	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
ASPHALT – 4 inches	542.4																	
CONCRETE – 13 inches	541.8																	
AGGREGATE BASE – 6 inches	541.3																	
Possible Fill: Very-stiff brown mottled with gray SILTY CLAY, little fine to coarse sand, trace fine gravel, moist.	539.6		8 4 5	12	33	SS-1	–	–	–	–	–	–	–	–	–	15	Visual (V)	
Possible Fill: Very-stiff to hard gray mottled with brown SILTY CLAY, little fine to coarse sand, trace fine gravel, moist.	537.3		2 4 11	20	100	SS-2	–	–	–	–	–	–	–	–	–	21	A-6b (V)	
Very-stiff to hard brown mottled with dark-brown SILTY CLAY, little to some fine to coarse sand, trace fine gravel, moist.	529.8		3 7 8	20	100	SS-3	–	–	–	–	–	–	–	–	–	24	A-6b (V)	
			3 4 5	12	100	SS-4	–	–	–	–	–	–	–	–	–	23	A-6b (V)	
			3 4 6	14	56	SS-5	–	–	–	–	–	–	–	–	–	24	A-6b (V)	
Very-stiff grayish brown mottled with gray SILTY CLAY,some to trace fine to coarse sand, little to trace fine gravel, contains iron oxide stains and silt lenses, moist.	524.8		3 4 7	15	100	SS-6	–	–	–	–	–	–	–	–	–	29	A-6b (V)	
			2 4 5	12	100	SS-7	–	–	–	–	–	–	–	–	–	26	A-6b (V)	
Stiff brown and grayish brown SILT & CLAY, some fine to coarse sand, trace fine gravel, contains iron oxide stains, few cobbles, moist.	520.8		1 2 4	8	100	SS-8	–	–	–	–	–	–	–	–	–	29	A-6a (V)	
Very-stiff gray SILT & CLAY, trace fine to medium sand, contains many silt lenses, moist.	515.8		1 3 3	8	100	SS-9	–	–	–	–	–	–	–	–	–	27	A-6a (V)	
Medium-stiff gray to blueish gray SILTY CLAY, some fine to coarse gravel, little fine to coarse sand, few cobbles, moist.	510.8		7 7 11	25	17	SS-10	–	–	–	–	–	–	–	–	–	25	A-6b (V)	
Hard grayish brown mottled with gray SILTY CLAY, little fine to coarse sand, little fine to coarse gravel, contains cobbles, moist.	504.3		10 12 22	46	44	SS-11	–	–	–	–	–	–	–	–	–	17	A-6b (V)	
SHALE, gray, highly weathered, very weak.	503.2	TR EOB	17 50 50-1"	–	92	SS-12	–	–	–	–	–	–	–	–	–	10	Rock (V)	

– Encountered cobbles at 21.0 feet, 27.0 feet, and 27.9 feet.
– Slight seepage at 28.5 feet.

NOTES: SEE ABOVE.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; PLASTIC HOLE PLUG DEVICE; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME JOB: 1178-18-006

PROJECT: HAM-75-3.84	DRILLING FIRM / OPERATOR: S&ME / S&ME	DRILL RIG: S&ME ATV D50 (SN226)	STATION / OFFSET: 263+60, 53' LT	EXPLORATION ID B-525-0-18
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: S&ME / J. HAYDU	HAMMER: AUTOMATIC	ALIGNMENT: I-75 CENTERLINE	
PID: 104667 BR ID: N/A	DRILLING METHOD: 3.25" HSA / NQ2	CALIBRATION DATE: 8/1/18	ELEVATION: 543.5 (MSL) EOB: 58.3 ft.	PAGE 1 OF 1
START: 8/20/18 END: 8/21/18	SAMPLING METHOD: SPT / NQ2	ENERGY RATIO (%): 75.5	LAT / LONG: 39.157438 N, -84.534818 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N60	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
ASPHALT – 7.5 inches	543.5																	
CONCRETE – 10.5 inches	542.9																	
AGGREGATE BASE – 5 inches	542.0																	
FILL: Stiff to very-stiff brown, gray, and black SILTY CLAY, little fine to coarse sand, little fine to coarse gravel, contains roots, damp.	541.6		3 3 3	8	61	SS-1A SS-1B	– 2.0–3.0	–	–	–	–	–	–	–	–	–	Visual (V) A-6b (V)	
	538.0		4 5 9	18	39	SS-2	1.5–3.5	–	–	–	–	–	–	–	–	–	A-6b (V)	
FILL: Stiff to very-stiff reddish-brown and brown SILTY CLAY, some fine to coarse sand, some fine to coarse gravel, damp.			5 6 6	15	100	SS-3	2.0–3.0	–	–	–	–	–	–	–	–	–	A-6b (V)	
			3 4 4	10	100	SS-4	1.5–2.5	–	–	–	–	–	–	–	–	–	A-6b (V)	
	530.5		3 3 3	8	89	SS-5	1.5	–	–	–	–	–	–	–	–	–	A-6b (V)	
Possible Fill: Very-stiff brown mottled with gray and reddish-brown SILTY CLAY, little fine to coarse sand, contains iron oxide stains, damp. – Encountered cobbles from 13.0 to 18.0 feet.	528.0		5 5 6	14	100	SS-6	2.0–3.0	–	–	–	–	–	–	–	–	–	A-6b (V)	
Very-stiff reddish-brown SILTY CLAY, little to some fine to coarse sand, trace fine to coarse gravel, contains 2" silt seam at 17.1 feet, moist.	525.5		5 7 8	19	100	SS-7	3.0–4.0	–	–	–	–	–	–	–	–	–	A-6b (V)	
Very-stiff to hard brown and gray SILTY CLAY, little fine to coars sand, trace fine to coarse gravel, damp.			15 12 6	23	17	SS-8	–	–	–	–	–	–	–	–	–	–	A-6b (V)	
			5 9 12	26	78	SS-9	4.5+	–	–	–	–	–	–	–	–	–	A-6b (V)	
	516.5																	
Hard brown and gray SILTY CLAY, little fine to coarse sand, little fine to coarse gravel, contains limestone fragments, relic bedding, damp.			4 8 12	25	56	SS-10	4.5+	–	–	–	–	–	–	–	–	–	A-6b (V)	
		W	9 24 33	72	61	SS-11	4.5+	–	–	–	–	–	–	–	–	–	A-6b (V)	
	506.5	TR																
SHALE, brown and gray, severely weathered, very weak.			36 50-4"	–	100	SS-12	–	–	–	–	–	–	–	–	–	–	Rock (V)	
	502.5																	
Interbedded SHALE (93%) and LIMESTONE (7%), RQD 36%, REC 71%; SHALE, gray, moderately weathered, very weak to weak, thinly laminated, moderately fractured; LIMESTONE, light gray, slightly weathered, moderately strong, ranges in thickness from 0.5 to 1.0 inches.			0		12	NQ2-13											CORE	
			63		93	NQ2-14											CORE	
			40		100	NQ2-15											CORE	
	488.2																	
Interbedded SHALE (70%) and LIMESTONE (30%), RQD 85%, REC 100%; SHALE, gray, moderately weathered, very weak to weak, thinly laminated, moderately fractured; LIMESTONE, light gray, slightly weathered, moderately strong, ranges in thickness from 2.0 to 4.0 inches.	485.2	EOB	86		100	NQ2-16											CORE	

– Slight seepage at 16.5 feet.
– Encountered groundwater at 33.5 feet.
– Groundwater at 29.3 feet prior to coring rock and after heavy overnight rain.

NOTES: SEE ABOVE.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; 20 LB. BENTONITE CHIPS; 94 LB. CEMENT; 100 GAL. WATER

S&ME ODOT LOG (8.5X11) - SGE 07/2017 - OH DOT.GDT - 11/6/18 17:45 - T:\RESOURCES\CS\LABORATORY\GINTW\PROJECTS\11781806.GPJ

S&ME JOB: 1178-18-006

PROJECT: HAM-75-3.84	DRILLING FIRM / OPERATOR: S&ME / S&ME	DRILL RIG: S&ME TRK 55 (R-44)	STATION / OFFSET: 263+57, 107' LT	EXPLORATION ID B-525-1-18
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: S&ME / J. HAYDU	HAMMER: CME AUTOMATIC	ALIGNMENT: I-75 CENTERLINE	
PID: 104667 BR ID: N/A	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 12/13/17	ELEVATION: 527.6 (MSL) EOB: 39.3 ft.	PAGE 1 OF 1
START: 8/27/18 END: 8/28/18	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 81.8	LAT / LONG: 39.157574 N, -84.534897 W	

MATERIAL DESCRIPTION AND NOTES	ELEV. 527.6	DEPTHS	SPT/RQD	N60	REC (%)	SAMPLE ID	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
TOPSOIL - 2 inches	527.5																	
FILL: 304 stone	524.6		7 8 11	26	39	SS-1	-	-	-	-	-	-	-	-	-	6	A-1-a (V)	
FILL: Hard black and reddish-brown CLAY, "and" silt, some fine to coarse sand, trace fine to coarse gravel, moist.	523.5		3 4 6	14	89	SS-2A	4.5+	4	8	17	44	27	47	24	23	24	A-7-6 (14)	
FILL: Hard reddish-brown and gray SILTY CLAY, some fine to coarse sand, little fine to coarse gravel, damp to moist. - Encountered cobbles at 5.5 and 6.0 feet.						SS-2B	4.5+	-	-	-	-	-	-	-	-	22	A-6b (V)	
			7 8 13	29	39	SS-3	-	-	-	-	-	-	-	-	-	22	A-6b (V)	
- Encountered cobbles at 8.0 feet and from 8.4 to 9.9 feet.	517.8																	
Very-stiff brown SANDY SILT, little clay, trace fine to coarse gravel, contains 2" fine sand seams, moist to wet.	515.6		6 5 6	15	39	SS-4	2.5	1	16	22	43	18	18	15	3	17	A-4a (5)	
Very-stiff brown SILT AND CLAY, little fine to coarse sand, trace fine to coarse gravel, moist.	514.1		3 4 5	12	94	SS-5A	2.5	-	-	-	-	-	-	-	-	25	A-6a (V)	
						SS-5B	2.5-3.0	-	-	-	-	-	-	-	-	26	A-6a (V)	
Stiff to very-stiff gray SILT AND CLAY, trace fine sand, (varved), moist.			ST		100	ST-6	2.5-3.0	0	0	2	62	36	30	19	11	27	A-6a (8)	
			2 3 3	8	100	SS-7	1.0-1.5	-	-	-	-	-	-	-	-	26	A-6a (V)	
Limestone floater at 21.0 ft	504.1		3 5 6	15	72	SS-8	2.5-3.0	-	-	-	-	-	-	-	-	23	A-6a (V)	
Very-stiff to hard brown and gray CLAY, "and silt, trace fine to coarse sand, contains limestone fragments, moist to damp.			3 5 7	16	100	SS-9	2.0-4.5+	0	1	1	41	57	49	23	26	24	A-7-6 (16)	
			12 28 42	95	89	SS-10	4.5+	1	1	1	39	58	47	22	25	16	A-7-6 (15)	
	493.2	W TR	21 50-5"	-	100	SS-11	4.5+	-	-	-	-	-	-	-	-	16	A-7-6 (V)	
SHALE, brown and gray, highly weathered, very weak.	488.3	EOB	46 50-3"	-	67	SS-12	-	-	-	-	-	-	-	-	-	-	Rock (V)	

- Slight seepage at 34.0 feet.
- Boring "dry" at completion.

NOTES: SEE ABOVE.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 20 LB. BENTONITE CHIPS; 94 LB. CEMENT; 100 GAL. WATER

S&ME ODOT LOG (8.5X11) - SGE 07/2017 - OH DOT.GDT - 11/6/18 17:45 - T:\RESOURCES\CS\LABORATORY\GINTW\PROJECTS\1178180006.GPJ

S&ME JOB: 1178-18-006

PROJECT: HAM-75-3.84	DRILLING FIRM / OPERATOR: S&ME / S&ME	DRILL RIG: S&ME ATV D50 (SN226)	STATION / OFFSET: 263+21, 50' RT	EXPLORATION ID B-526-0-18
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: S&ME / J. HAYDU	HAMMER: AUTOMATIC	ALIGNMENT: I-75 CENTERLINE	
PID: 104667 BR ID: N/A	DRILLING METHOD: 3.25" HSA / NQ2	CALIBRATION DATE: 8/1/18	ELEVATION: 538.5 (MSL) EOB: 25.0 ft.	PAGE 1 OF 1
START: 8/24/18 END: 8/24/18	SAMPLING METHOD: SPT / ST / NQ2	ENERGY RATIO (%): 75.5	LAT / LONG: 39.157111 N, -84.534795 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N60	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
ASPHALT PAVEMENT – 8 inches	538.5 537.8																	
CONCRETE – 9 inches	537.0																	
AGGREGATE BASE – 6 inches	536.5																	
FILL: Very-stiff gray SILTY CLAY, "and" fine to coarse gravel, little fine to coarse sand, damp.	535.0	1	3 5 6	14	56	SS-1	2.5	50	8	4	17	21	36	18	18	12	A-6b (2)	
Hard brown mottled with gray CLAY, "and" silt, trace fine to coarse sand, trace fine to coarse gravel, damp.		2	3 5 7	15	89	SS-2	4.0–4.5+	–	–	–	–	–	–	–	–	19	A-7-6 (V)	
		3																
		4																
		5																
		6																
		7	ST		67	ST-3	4.5+	7	2	2	38	51	44	22	22	18	A-7-6 (14)	
		8																
		9	3 5 7	15	89	SS-4	4.5+	–	–	–	–	–	–	–	–	16	A-7-6 (V)	
	528.0	10																
SHALE, brown and gray, severely weathered, very weak.		TR 11																
		12	7 23 36	74	100	SS-5	–	–	–	–	–	–	–	–	–	12	Rock (V)	
		13																
	523.5	14	15 24 40	81	100	SS-6	–	–	–	–	–	–	–	–	–	15	Rock (V)	
Interbedded SHALE (91%) and LIMESTONE (9%), RQD 67%, REC 93%; SHALE, gray, moderately weathered, very weak to weak, thinly laminated, blocky/disturbed/seamy, good to fair; LIMESTONE, light gray, slightly weathered, moderately strong, blocky/disturbed/seamy, good, ranges in thickness from 1.0 to 2.0 inches.		15																
		16																
		17																
		18	57		87	NQ2-7	–										CORE	
		19																
		20																
		21																
		22																
		23	78		100	NQ2-8	–										CORE	
		24																
	513.5	EOB 25																

– No groundwater noted prior to coring rock.
– Boring caved at 12.3 feet after augers pulled.

NOTES: SEE ABOVE.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; PLASTIC HOLE PLUG DEVICE; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT LOG (8.5X11) - SGE 07/2017 - OH DOT.GDT - 11/6/18 17:45 - T:\RESOURCES\CS\LABORATORY\GINTW\PROJECTS\1178180006.GPJ

S&ME JOB: 1178-18-006

PROJECT: HAM-75-3.84	DRILLING FIRM / OPERATOR: S&ME / S&ME	DRILL RIG: S&ME ATV D50 (SN226)	STATION / OFFSET: 264+13, 61' RT	EXPLORATION ID B-527-0-18
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: S&ME / J. HAYDU	HAMMER: AUTOMATIC	ALIGNMENT: I-75 CENTERLINE	
PID: 104667 BR ID: N/A	DRILLING METHOD: 3.25" HSA / NQ2	CALIBRATION DATE: 8/1/18	ELEVATION: 539.1 (MSL) EOB: 34.7 ft.	PAGE 1 OF 1
START: 8/24/18 END: 8/24/18	SAMPLING METHOD: SPT / NQ2	ENERGY RATIO (%): 75.5	LAT / LONG: 39.157197 N, -84.534502 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N60	REC (%)	SAMPLE ID	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
	539.1																	
ASPHALT – 8 inches	538.4																	
CONCRETE – 8 inches	537.7																	
FILL: Medium-dense gray GRAVEL, some fine to coarse sand, little silt, trace clay, damp.	535.6		6 7 16	29	50	SS-1	–	52	22	11	10	5	NP	NP	NP	6	A-1-a (0)	
FILL: Loose to medium-dense brown and gray GRAVEL WITH SAND, SILT, trace clay, contains limestone fragments, damp.	531.6		15 9 8	21	33	SS-2	–	67	16	7	8	2	–	–	–	4	A-2-4 (V)	
			6 4 3	9	33	SS-3	–	–	–	–	–	–	–	–	–	10	A-2-4 (V)	
Hard olive-brown SILTY CLAY, little fine to coarse gravel, trace fine to coarse sand, contains limestone fragments, damp.	530.2	TR	9			SS-4A	4.5+	19	2	2	42	35	39	20	19	15	A-6b (12)	
SHALE, brown and gray, severely weathered, very weak.			11 20	39	39	SS-4B	–	–	–	–	–	–	–	–	–	–	Rock (V)	
– Encountered cobbles from 11.0 to 12.5 feet.			18 42 50-4"	–	19	SS-5	–	–	–	–	–	–	–	–	–	–	Rock (V)	
			10 50-4"	–	40	SS-6	–	–	–	–	–	–	–	–	–	–	Rock (V)	
			19 50-1"	–	100	SS-7	–	–	–	–	–	–	–	–	–	–	Rock (V)	
	520.6																	
Interbedded SHALE (85%) and LIMESTONE (15%), RQD 41%, REC 67%; SHALE, gray, moderately weathered, very weak to weak, thinly laminated, blocky/disturbed/seamy, good to fair; LIMESTONE, light gray, slightly weathered, moderately strong, blocky/disturbed/seamy, good, ranges in thickness from 1.0 to 3.0 inches.			0		0	NQ2-8	–										CORE	
			10		30	NQ2-9	–										CORE	
			63		88	NQ2-10	–										CORE	
			58		100	NQ2-11	–										CORE	
	504.4	EOB																

– Encountered seepage at 6.0 feet.
– No groundwater noted prior to coring rock.
– Boring caved at 6.4 feet after augers pulled.

NOTES: SEE ABOVE.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; PLASTIC HOLE PLUG DEVICE; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT LOG (8.5X11) - SGE 07/2017 - OH DOT.GDT - 11/6/18 17:45 - T:\RESOURCES\CS\LABORATORY\GINTW\PROJECTS\1178180006.GPJ

S&ME JOB: 1178-18-006

PROJECT: HAM-75-3.84	DRILLING FIRM / OPERATOR: S&ME / S&ME	DRILL RIG: S&ME ATV D50 (SN226)	STATION / OFFSET: 265+27, 51' LT	EXPLORATION ID B-528-0-18
TYPE: ROADWAY/RETAINING WALL	SAMPLING FIRM / LOGGER: S&ME / J. HAYDU	HAMMER: AUTOMATIC	ALIGNMENT: I-75 CENTERLINE	
PID: 104667 BR ID: N/A	DRILLING METHOD: 3.25" HSA / NQ2	CALIBRATION DATE: 8/1/18	ELEVATION: 543.7 (MSL) EOB: 53.1 ft.	PAGE 1 OF 1
START: 8/15/18 END: 8/17/18	SAMPLING METHOD: SPT / ST / NQ2	ENERGY RATIO (%): 75.5	COORD: 39.157584 N, -84.534233 W	

MATERIAL DESCRIPTION AND NOTES	ELEV. 543.7	DEPTHS	SPT/RQD	N60	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
ASPHALT – 8 inches	543.0																	
CONCRETE – 8 inches	542.3																	
ASPHALT – 2 inches	542.2					SS-1A	–	–	–	–	–	–	–	–	–	–	Visual (V)	
AGGREGATE BASE – 2 inches	542.0		4 2 3	6	39	SS-1B	4.0	–	–	–	–	–	–	–	–	21	A-7-6 (V)	
FILL: Very-stiff gray CLAY, some silt, little fine to coarse sand, trace fine to coarse gravel, damp.	540.7		0 2 2	5	78	SS-2	1.5–2.0	1	5	3	28	63	43	22	21	20	A-7-6 (13)	
FILL: Stiff brown and gray CLAY, some silt, trace fine to coarse sand, trace fine to coarse gravel, contains shale fragments, damp.	539.2		3 6 7	16	83	SS-3	4.5+	–	–	–	–	–	–	–	–	13	A-6a (V)	
FILL: Hard gray and brown SILT AND CLAY, some fine to coarse sand, trace fine to coarse gravel, contains many limestone fragments, contains decayed wood, damp.	535.7		4 5 7	15	100	SS-4	4.5+	4	19	14	29	34	33	20	13	18	A-6a (7)	
FILL: Hard gray SILT AND CLAY, little fine to coarse sand, trace fine gravel, damp.	533.2		ST		79	ST-5	–	5	3	9	41	42	31	18	13	16	A-6a (9)	
FILL: Stiff dark gray and black SILT AND CLAY, some fine to coarse sand, some fine to coarse gravel, contains organics, moist.	530.7		3 3 4	9	78	SS-6	1.5–2.0	–	–	–	–	–	–	–	–	27	A-6a (V)	
FILL: Very-stiff brown and gray SILT AND CLAY, little fine to coarse sand, little fine to coarse gravel, contains limestone fragments and hair roots, moist.	528.2		3 5 10	19	78	SS-7	3.0	–	–	–	–	–	–	–	–	21	A-6a (V)	
FILL: Very-stiff brown, gray, and reddish-brown SILT AND CLAY, little fine to coarse sand, little fine to coarse gravel, contains limestone fragments, moist.	522.7		5 4 5	11	72	SS-8	2.5	–	–	–	–	–	–	–	–	19	A-6a (V)	
			10 12 14	33	0	--	–	–	–	–	–	–	–	–	–	–	A-6a (V)	
			29	–	50	SS-9	–	–	–	–	–	–	–	–	–	12	A-6a (V)	
Very-stiff brown and gray SILT AND CLAY, little fine to coarse sand, little fine to coarse gravel, contains limestone fragments, moist.	517.7	W	4 5 8	16	100	SS-10	3.0–3.5	–	–	–	–	–	–	–	–	18	A-6a (V)	
Hard olive and gray CLAY "and" silt, little fine sand, little fine to coarse gravel, trace coarse sand, contains limestone fragments and fossils, contains relic bedding, moist to damp.	506.7		6 12 19	39	100	SS-11	4.5+	–	–	–	–	–	–	–	–	15	A-7-6 (V)	
			18 30 50-5"	–	100	SS-12	4.5+	–	–	–	–	–	–	–	–	14	A-7-6 (V)	
SHALE, brown and gray, highly weathered, very weak.	502.7	TR	28 50-3"	–	78	SS-13	–	–	–	–	–	–	–	–	–	–	Rock (V)	
Interbedded SHALE (90%) and LIMESTONE (10%), RQD 72%, REC 100%; SHALE, gray, moderately weathered, very weak to weak, thinly laminated, fractured to moderately fractured; LIMESTONE, light gray, slightly weathered, moderately strong, ranges in thickness from 0.5 to 2.0 inches.	490.6	EOB	72		100	NQ2-14	–										CORE	
			78		100	NQ2-15	–										CORE	
			61		100	NQ2-16	–										CORE	

– Sample SS-3: Sulfate Content = 452 ppm.
– Groundwater noted at 26.3 feet on 8/17/18 after recent heavy rains.

NOTES: SEE ABOVE.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; 20 LB. BENTONITE CHIPS; 1 BAG CEMENT; 90 GAL. WATER

S&ME ODOT LOG (8.5X11) - SGE 07/2017 - OH DOT.GDT - 11/6/18 17:45 - F:\RESOURCES\CS\LABORATORY\GINTW\PROJECTS\117818006.GPJ

S&ME JOB: 1178-18-006

PROJECT: HAM-75-3.84	DRILLING FIRM / OPERATOR: S&ME / S&ME	DRILL RIG: S&ME ATV D50 (SN226)	STATION / OFFSET: 282+61, 51' LT	EXPLORATION ID B-533-0-18
TYPE: ROADWAY/RETAINING WALL	SAMPLING FIRM / LOGGER: S&ME / J. HAYDU	HAMMER: AUTOMATIC	ALIGNMENT: I-75 CENTERLINE	
PID: 104667 BR ID: N/A	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 8/1/18	ELEVATION: 538.4 (MSL) EOB: 28.7 ft.	PAGE 1 OF 1
START: 8/14/18 END: 8/14/18	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 75.5	COORD: 39.159015 N, -84.528479 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N60	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
ASPHALT – 10 inches	538.4																	
CONCRETE – 10 inches	537.6																	
AGGREGATE BASE – 4 inches	536.8																	
FILL: Very-stiff to hard brown to reddish-brown CLAY, some silt, little fine to coarse sand, trace fine to coarse gravel, contains limestone fragments, moist.	536.5		5 6 8	18	72	SS-1A SS-1B	– 4.5+	–	–	–	–	–	–	–	–	– 20	Visual (V) A-7-6 (V)	
			6 6 10	20	78	SS-2	3.0	0	2	12	29	57	46	19	27	22	A-7-6 (16)	
			6 16 7	29	33	SS-3	3.0	–	–	–	–	–	–	–	–	19	A-7-6 (V)	
FILL: Very-stiff brown to reddish-brown SILT AND CLAY, little fine to coarse sand, trace fine gravel, damp.	532.3		4 6 7	16	61	SS-4	4.0	7	6	13	35	39	29	17	12	12	A-6a (9)	
FILL: Stiff brown SILTY CLAY, little fine to coarse sand, little fine to coarse gravel, damp to moist.	530.4		2 3 4	9	67	SS-5	1.0–1.5	–	–	–	–	–	–	–	–	23	A-6b (V)	
Possible Fill: Hard brown and gray CLAY, some fine to coarse gravel, some silt, trace fine to coarse sand, damp.	527.4		ST		71	ST-6	4.5+	–	–	–	–	–	–	–	–	–	A-7-6 (V)	
		W	12 15 19	43	72	SS-7	4.5+	27	7	3	25	38	41	23	18	18	A-7-6 (9)	
Hard brown and gray CLAY, some silt, little fine to coarse sand, trace fine to coarse gravel, contains few limestone floaters, contains relic bedding, damp to dry.	522.9		13 39 50-4"	–	69	SS-8	4.5+	–	–	–	–	–	–	–	–	14	A-7-6 (V)	
			20 50-5"	–	64	SS-9	–	–	–	–	–	–	–	–	–	12	A-7-6 (V)	
SHALE, brown and gray, highly weathered, very weak, contains occasional limestone layers.	516.4	TR	28 50	–	58	SS-10	–	–	–	–	–	–	–	–	–	–	Rock (V)	
	509.7	EOB	50-2"	–	50	SS-11	–	–	–	–	–	–	–	–	–	–	Rock (V)	

– Sample SS-1B: Sulfate Content = 162 ppm.
– Slight seepage at 14.6 feet.
– Boring "dry" at completion.

NOTES: SEE ABOVE.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; PLASTIC HOLE PLUG DEVICE; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT LOG (8.5X11) - SGE 07/2017 - OH DOT.GDT - 11/6/18 17:45 - T:\RESOURCES\CS\LABORATORY\GINTW\PROJECTS\1178180006.GPJ

S&ME JOB: 1178-18-006

PROJECT: HAM-75-3.84	DRILLING FIRM / OPERATOR: S&ME / S&ME	DRILL RIG: S&ME TRK 55 (R-44)	STATION / OFFSET: 283+44, 99' LT	EXPLORATION ID B-534-0-18
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: S&ME / J. HAYDU	HAMMER: CME AUTOMATIC	ALIGNMENT: I-75 CENTERLINE	
PID: 104667 BR ID: N/A	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 12/13/17	ELEVATION: 523.4 (MSL) EOB: 25.3 ft.	PAGE 1 OF 1
START: 8/28/18 END: 8/28/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 81.8	COORD: 39.159232 N, -84.528283 W	

MATERIAL DESCRIPTION AND NOTES	ELEV. 523.4	DEPTHS	SPT/RQD	N60	REC (%)	SAMPLE ID	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Rootmat – 5 inches	523.0		1			SS-1A	–	–	–	–	–	–	–	–	–	25	Visual (V)	
FILL: Very-stiff brown SILTY CLAY, little fine to coarse sand, contains roots, contains brick fragments, damp.	521.4	1	2 4	8	67	SS-1B	3.5	–	–	–	–	–	–	–	–	21	A-6b (V)	
Stiff to very-stiff brown and gray SILTY CLAY, some fine to coarse gravel, little fine to coarse sand, moist.		3	2 4 5	12	67	SS-2	1.5–3.5	21	6	9	35	29	38	19	19	17	A-6b (9)	
– ST at 5.0 feet refused after 0.75 feet, drove SS-3 instead.	517.7	5			0	--		–	–	–	–	–	–	–	–	–		
Possible Fill: Hard dark brown and gray CLAY, "and" silt, little fine to coarse gravel, trace fine to coarse sand, contains many limestone fragments, damp to moist. – Encountered cobbles at 7.0 feet. – Encountered cobbles from 7.5 to 12.5 feet.	515.1	6 7 8	25 20 11	42	100	SS-3	4.5	12	3	2	41	42	45	21	24	16	A-7-6 (15)	
			5 6 7	18	67	SS-4A	4.5	–	–	–	–	–	–	–	–	21	A-7-6 (V)	
						SS-4B	2.5–3.0	–	–	–	–	–	–	–	–	20	A-4a (V)	
Very-stiff brown and gray SILT AND CLAY, little fine to coarse sand, trace fine to coarse gravel, moist.	513.9																	
Hard brown and gray SILTY CLAY, little fine to coarse gravel, trace fine to coarse sand, contains many shale and limestone fragments, moist.	508.9	10 11 12 13	5 7 13	27	94	SS-5	4.5	12	5	3	31	49	–	–	–	17	A-6b (V)	
			5 7 13	27	89	SS-6	4.5+	–	–	–	–	–	–	–	–	17	A-6b (V)	
Hard CLAY, "and" silt, trace fine to coarse gravel, trace fine to coarse sand, contains relic bedding, damp. – Encountered alternating hard/soft drilling from 14.5 to 17.5 feet.		15	50-4"	–	50	SS-7	–	–	–	–	–	–	–	–	–	12	A-7-6 (V)	
	503.9	18	14 29 47	104	100	SS-8	4.5+	3	2	1	35	59	51	22	29	11	A-7-6 (18)	
SHALE, brown and gray, highly weathered, very weak, contains few limestone layers.	498.1	TR 20 21 22 23 24 EOB 25	20 50-5"	–	91	SS-9	–	–	–	–	–	–	–	–	–	–	Rock (V)	
			50-3"	–	33	SS-10	–	–	–	–	–	–	–	–	–	–	Rock (V)	

– Encountered seepage at 18.0 feet.
– Boring "dry" at completion.

NOTES: SEE ABOVE.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLASTIC HOLE PLUG DEVICE; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT LOG (8.5X11) – SGE 07/2018 – OH DOT.GDT – 11/14/18 11:01 – T:\RESOURCES\CS\LABORATORY\GINTW\PROJECTS\117818006.GPJ

PLATE 1

S&ME JOB: 1178-18-006

PROJECT: HAM-75-3.84	DRILLING FIRM / OPERATOR: S&ME / S&ME	DRILL RIG: S&ME ATV D50 (SN226)	STATION / OFFSET: 284+62, 51' LT	EXPLORATION ID B-535-0-18
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: S&ME / J. HAYDU	HAMMER: AUTOMATIC	ALIGNMENT: I-75 CENTERLINE	
PID: 104667 BR ID: N/A	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 8/1/18	ELEVATION: 539.0 (MSL) EOB: 28.9 ft.	PAGE 1 OF 1
START: 8/14/18 END: 8/14/18	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 75.5	LAT / LONG: 39.159242 N, -84.527871 W	

MATERIAL DESCRIPTION AND NOTES	ELEV. 539.0	DEPTHS	SPT/RQD	N60	REC (%)	SAMPLE ID	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
ASPHALT – 9 inches	538.2																	
CONCRETE – 9 inches	537.5																	
AGGREGATE BASE – 4 inches	537.2		5			SS-1A	–	–	–	–	–	–	–	–	–	–	Visual (V)	
FILL: Stiff to very-stiff brown and reddish-brown SANDY SILT, some clay, little fine to coarse gravel, moist.		2	5 5	13	61	SS-1B	4.0	–	–	–	–	–	–	–	–	19	A-4a (V)	
	531.0	4	2 3 4	9	39	SS-2	2.0–2.25	–	–	–	–	–	–	–	–	21	A-4a (V)	
FILL: Very-stiff brown and gray SILT AND CLAY, some fine to coarse sand, little fine gravel, damp. – SS-5 driven on limestone floater – Encountered many cobbles from 8.5 to 16.0 feet.	528.5	7 8 9 10	ST		75	ST-3	1.5–2.0	14	3	26	35	22	24	14	10	17	A-4a (4)	
			8 16 17	42	39	SS-4	3.0	12	18	8	23	39	32	18	14	17	A-6a (7)	
			12	–	67	SS-5		–	–	–	–	–	–	–	–	18	A-6a (V)	
Possible Fill: Very-stiff to hard brown and gray CLAY, some silt, trace fine to coarse sand, trace fine gravel, damp.	522.8	11 12 13 14 15 16	17 12 11	29	56	SS-6	4.0–4.5+	–	–	–	–	–	–	–	–	18	A-7-6 (V)	
			7 8 9	21	78	SS-7	4.0	1	3	2	31	63	42	21	21	19	A-7-6 (13)	
Hard gray CLAY, some silt, trace fine to coarse sand, trace fine gravel, damp.	519.0	17 18 19 TR 20 21 22 23	6 12 19	39	44	SS-8A	–	–	–	–	–	–	–	–	–	–	A-7-6 (V)	
						SS-8B	4.5+	–	–	–	–	–	–	–	–	17	A-7-6 (V)	
SHALE, brown and gray, highly weathered, very weak, contains few limestone layers.			10 23 40	79	72	SS-9	4.5+	2	6	3	27	62	48	21	27	13	A-7-6 (16)	
		24 25 26 27 28 W	24 50-5"	–	100	SS-10	–	–	–	–	–	–	–	–	–	–	Rock (V)	
	510.1	EOB	50-5"	–	80	SS-11	–	–	–	–	–	–	–	–	–	–	Rock (V)	

– Slight seepage at 17.5 feet.
– Water had accumulated to 28.2 feet inside HSA prior to completion.

NOTES: SEE ABOVE.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; PLASTIC HOLE PLUG DEVICE; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT LOG (8.5X11) – SGE 07/2017 – OH DOT.GDT – 11/6/18 17:45 – T:\RESOURCES\CS\LABORATORY\GINTW\PROJECTS\117818006.GPJ

LOG OF BORING

Date Started 7/23/07 Sampler: Type SS / ST Dia. 1.375" Project Identification: HAM-75-2.30 PID 76257
Date Completed 7/23/07 Casing: Length 15ft Dia. 3.25" Hamilton County, Ohio
Water Elev. Dry
Boring No. B-050 Station & Offset 244+01.9, 60.2 RT Surface Elev. 508.0ft CTL Project No. 04050070CIN

Elev. (ft)	Depth (ft)	Std. Pen./ RQD	Rec. (ft)	Loss (ft)			Description	Sample No.	Physical Characteristics % Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	ODOT Class
508.0	0																
508.0		AUGERED				0.5'	TOPSOIL (0.7')										VISUAL
507.5		4/5/6					STIFF, BROWN SILTY CLAY, LITTLE SAND, TRACE GRAVEL, MOIST	1	3	5	10	41	41	38	18	15	A-6b
506.0	2					2.0'											
		5/5/7					VERY STIFF, BROWN SILT AND CLAY, TRACE GRAVEL, TRACE SAND, DAMP	2	4	3	7	26	60	36	14	22	A-6a
504.5																	
	4	7/7/12						3								23	VISUAL
503.0																	
		6/7/10						4								15	VISUAL
	6																
500.0	8					8.0'											
499.5							VERY STIFF, GRAY SANDY SILT, SOME CLAY, TRACE GRAVEL, DAMP	5	8	6	15	46	25	21	6	13	A-4a
		10/10/15															
	10																
496.0	12					12.0'											
494.5							VERY STIFF, GRAY AND BROWN, MOTTLED, SILTY CLAY, LITTLE GRAVEL, TRACE SAND, MOIST										
	14	4/9/7						6								16	VISUAL
493.0						15.0'											

BOTTOM OF BORING = 15.0'

Particle Sizes: Agg => 2.00mm, Coarse Sand = 2.00-0.42mm, Fine Sand = 0.42-0.074mm, Silt = 0.074-0.005mm, Clay =< 0.005mm.

PLATE 50

OH DOT 2 CTL OH DOT.GDT ODOT LIBRARY BY DM 6-27-08 (TESTING).GLB 04120070G HAM-75 B BORINGS.GPJ 12/1/08

PROJECT: HAM-75-03.85	DRILLING FIRM / OPERATOR: CTL / MF	DRILL RIG: CTL CME 550 TRACK	STATION / OFFSET: 244+84, 64' RT.	EXPLORATION ID B-408
TYPE: STRUCTURE	SAMPLING FIRM / LOGGER: CTL / MF	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: IR-75	
PID: 83723 SFN: N/A	DRILLING METHOD: 3.25" HSA / NX	CALIBRATION DATE: 10/13/09	ELEVATION: 510.2 (MSL) EOB: 50.0 ft.	PAGE 1 OF 1
START: 9/14/10 END: 9/14/10	SAMPLING METHOD: SPT / NX	ENERGY RATIO (%): 86	COORD: 426652.6200 N, 1390536.2500 E	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
HARD, BROWN, **SANDY SILT**, LITTLE GRAVEL, DAMP	510.2		10 15 15	43	83	SS-1	-	-	-	-	-	-	-	-	-	10	A-4a (V)	
STIFF TO VERY STIFF, GRAY, **CLAY**, TRACE SAND, DAMP	507.2		4 4 5	13	78	SS-2	-	3	3	4	- 90 -		48	24	24	21	A-7-6 (15)	
			10 7 6	19	67	SS-3	-	-	-	-	-	-	-	-	-	20	A-7-6 (V)	
MEDIUM DENSE, BLACK, **GRAVEL AND/OR STONE FRAGMENTS WITH SAND AND SILT**, LITTLE CLAY, SOME WOOD FRAGMENTS, DAMP	502.2		5 5 6	16	83	SS-4	-	25	18	24	19	14	NP	NP	NP	15	A-2-4 (0)	
STIFF, GRAY, **SILTY CLAY**, TRACE GRAVEL, TRACE SAND, DAMP	499.7		3 5 5	14	56	SS-5	-	-	-	-	-	-	-	-	-	8	A-6b (V)	
STIFF, BROWN AND GRAY, **SILTY CLAY**, TRACE SAND, DAMP	497.2		3 4 5	13	72	SS-6	-	-	-	-	-	-	-	-	-	22	A-6b (V)	
STIFF, GRAY, **SILTY CLAY**, TRACE GRAVEL, TRACE SAND, MOIST	494.7		3 3 4	10	72	SS-7	-	4	2	2	39	53	39	23	16	23	A-6b (10)	
			2 3 4	10	83	SS-8	-	-	-	-	-	-	-	-	-	30	A-6b (V)	
STIFF, BROWN, **SILTY CLAY**, "AND" GRAVEL, DAMP	488.2		3 4 6	14	56	SS-9	-	-	-	-	-	-	-	-	-	21	A-6b (V)	
VERY STIFF, GRAY, **CLAY**, TRACE GRAVEL, TRACE SAND, "AND" SILT, MOIST	483.2		3 4 7	16	-	SS-10	-	1	1	3	54	41	43	23	20	25	A-7-6 (13)	
VERY WEAK, GRAY, **SEVERELY WEATHERED SHALE**	476.2	TR	7 10 14	34	0	SS-11	-	-	-	-	-	-	-	-	-	-		
			30 50/4"	-	80	SS-12	-	-	-	-	-	-	-	-	-	-	Rock (V)	
INTERBEDDED SHALE (97%) AND LIMESTONE (3%), RQD 13%, REC. 87%; **SHALE**, GRAY, SEVERELY WEATHERED, VERY WEAK, VERY THICK BEDDED; **LIMESTONE**, LIGHT GRAY, SLIGHTLY WEATHERED, STRONG, THIN BEDDED.	470.2		13		87	NX-1											CORE	
SHALE, GRAY, SEVERELY WEATHERED, VERY WEAK, VERY THICK BEDDED; RQD 22%, REC 100%.	465.2		22		100	NX-2											CORE	
	460.2	EOB																

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH CEMENT

STANDARD OHDOT SOIL BORING LOG (11 X 17) - OH.DOT.GDT - 2/6/17 10:17 - K:\04\50070\CIN\D_HAM-75-3.85\REPORTS\LOGS AND GINT\04050070CIND_IR-74 IR-75 INTERCHANGE.GPJ

PLATE 91

PROJECT: HAM-75-03.85 | DRILLING FIRM / OPERATOR: CTL / MF | DRILL RIG: CTL CME 550 TRACK | STATION / OFFSET: 246+19, 128 RT | EXPLORATION ID B-333
TYPE: STRUCTURE | SAMPLING FIRM / LOGGER: CTL / MF | HAMMER: AUTOMATIC HAMMER | ALIGNMENT: IR-75 | PAGE 1 OF 3
PID: 83723 BR ID: N/A | DRILLING METHOD: 3.25" HSA / NX | CALIBRATION DATE: 10/13/09 | ELEVATION: 537.5 (MSL) EOB: 69.0 ft.
START: 12/10/10 END: 12/10/10 | SAMPLING METHOD: SPT / NX | ENERGY RATIO (%): 86 | COORD: 426741.820 N, 1390655.900 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
HARD, BROWN, **SILT AND CLAY**, LITTLE GRAVEL, TRACE SAND, WITH COBBLES, DAMP (FILL)	537.5		50/2"	-	100	SS-1	-	-	-	-	-	-	-	-	-	16	A-6a (V)	
VERY STIFF TO HARD, BROWN, **SILTY CLAY**, TRACE GRAVEL, TRACE SAND, DAMP	534.5		10 10 16	37	50	SS-2	-	-	-	-	-	-	-	-	-	15	A-6b (V)	
VERY STIFF, GRAY, **SILT AND CLAY**, TRACE GRAVEL, LITTLE SAND, DAMP	529.5		7 6 10	23	61	SS-3	-	-	-	-	-	-	40	21	19	13	A-6b (V)	
STIFF, BROWN, **SILTY CLAY**, LITTLE GRAVEL, TRACE SAND, DAMP	527.0		6 7 9	23	67	SS-4	-	-	-	-	-	-	-	-	-	12	A-6a (V)	
VERY STIFF, BROWN AND GRAY, **SILTY CLAY**, LITTLE GRAVEL, LITTLE SAND, DAMP	524.5		4 4 6	14	61	SS-5	-	-	-	-	-	-	-	-	-	18	A-6b (V)	
VERY STIFF, BROWN, **SILTY CLAY**, LITTLE GRAVEL, TRACE SAND, DAMP	517.0		9 8 12	29	61	SS-6	-	11	7	9	34	39	39	20	19	15	A-6b (11)	
VERY STIFF, BROWN, **SILT AND CLAY**, LITTLE GRAVEL, LITTLE SAND, DAMP	514.5		5 6 7	19	0	SS-7	-	-	-	-	-	-	-	-	-	-		
MEDIUM DENSE, BROWN AND GRAY, **SANDY SILT**, TRACE GRAVEL, TRACE CLAY, MOIST	512.0		5 7 9	23	56	SS-8	-	-	-	-	-	-	-	-	-	19	A-6b (V)	
MEDIUM STIFF, BROWN AND GRAY, **SANDY SILT**, SOME CLAY, MOIST	509.5		7 8 10	26	56	SS-9	-	-	-	-	-	-	-	-	-	20	A-6b (V)	
			6 8 11	27	61	SS-10	-	-	-	-	-	-	-	-	-	16	A-6a (V)	
			5 7 6	19	56	SS-11	-	2	3	51	34	10	NP	NP	NP	18	A-4a (2)	
			2 2 2	6	61	SS-12	-	-	-	-	-	-	-	-	-	22	A-4a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 8/31/12 10:16 - K:\104050070CIN\D_HAM-75-3.85\REPORTS\LOGS AND GINT\104050070CIND_IR-74 IR-75 INTERCHANGE.GPJ

PLATE 58

PID: 83723 | BR ID: N/A | PROJECT: HAM-75-03.85 | STATION / OFFSET: 246+19, 128 RT | START: 12/10/10 | END: 12/10/10 | PG 2 OF 3 | B-333

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
	507.5																	
MEDIUM STIFF, GRAY, **SANDY SILT**, TRACE GRAVEL, SOME CLAY, MOIST	504.5		1 2 3	7	56	SS-13	-	1	6	23	41	29	28	19	9	26	A-4a (7)	
STIFF, GRAY, **SILT AND CLAY**, TRACE GRAVEL, LITTLE SAND, MOIST	502.0		1 3 4	10	72	SS-14	-	-	-	-	-	-	-	-	-	18	A-6a (V)	
MEDIUM STIFF, GRAY AND BLACK, **SANDY SILT**, SOME GRAVEL, LITTLE CLAY, MOIST	499.5	W	2 2 3	7	61	SS-15	-	-	-	-	-	-	-	-	-	33	A-4a (V)	
STIFF, GRAY, **SANDY SILT**, LITTLE GRAVEL, LITTLE CLAY, WET	497.0		2 3 3	9	-	SS-16	-	12	7	32	31	18	32	24	8	39	A-4a (3)	
STIFF, GRAY, **CLAY**, TRACE GRAVEL, TRACE SAND, SOME SILT, MOIST	494.5		1 3 4	10	61	SS-17	-	-	-	-	-	-	-	-	-	28	A-7-6 (V)	
VERY STIFF, BROWN AND GRAY, **CLAY**, TRACE GRAVEL, TRACE SAND, "AND" SILT, DAMP	492.0		5 8 13	30	61	SS-18	-	-	-	-	-	-	-	-	-	19	A-7-6 (V)	
HARD, BROWN, **CLAY**, TRACE GRAVEL, TRACE SAND, "AND" SILT, DAMP	489.5		14 11 12	33	56	SS-19	-	3	2	2	38	55	41	24	17	21	A-7-6 (11)	
HARD, BROWN, **SANDY SILT**, LITTLE GRAVEL, LITTLE CLAY, WITH LIMESTONE FRAGMENTS, MOIST			50/4"	-	75	SS-20	-	-	-	-	-	-	-	-	-	17	A-4a (V)	
@53.5': LIMESTONE COBBLE ENCOUNTERED	483.0	TR																
VERY WEAK, GRAY, **SEVERELY WEATHERED INTERBEDDED SHALE AND LIMESTONE**	478.5		18 25 36	87	6	SS-21	-	-	-	-	-	-	-	-	-	-		
			50/2"	-	100	SS-22	-	-	-	-	-	-	-	-	-	-	Rock (V)	
			48		97	NX-1											CORE	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 8/31/12 10:16 - K:\104050070CIN\D_HAM-75-3.85\REPORTS\LOGS AND GINT\104050070CIND_IR-74 IR-75 INTERCHANGE.GPJ

PLATE 59

PID: 83723	BR ID: N/A	PROJECT: HAM-75-03.85	STATION / OFFSET: 246+19, 128 RT	START: 12/10/10	END: 12/10/10	PG 3 OF 3	B-333

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
475.4																		
INTERBEDDED SHALE (97%) AND LIMESTONE (3%), RQD 48%, REC. 97%; **SHALE**, GRAY, HIGHLY WEATHERED, VERY WEAK TO WEAK, MEDIUM BEDDED; **LIMESTONE**, LIGHT GRAY, SLIGHTLY WEATHERED, STRONG, THIN BEDDED. *(continued)*	473.5	63 64 65																
INTERBEDDED SHALE (77%) AND LIMESTONE (23%), RQD 40%, REC. 52%; **SHALE**, GRAY, HIGHLY WEATHERED, VERY WEAK TO WEAK, MEDIUM BEDDED; **LIMESTONE**, LIGHT GRAY AND GRAY, SLIGHTLY WEATHERED, STRONG, THIN BEDDED.	468.5 EOB	66 67 68 69	40		52	NX-2											CORE	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH CEMENT

PLATE 60

LOG OF BORING

Northing: 426865.4 Easting: 1390664.8

Date Started 9/10/07 Sampler: Type SS / ST Dia. 1.375" Project Identification: HAM-75-2.30 PID 76257

Date Completed 9/10/07 Casing: Length 35.0ft Dia. 3.25" Hamilton County, Ohio

Alignment I-75 Water Elev. Dry

Boring No. B-256 Station & Offset 247+32.6, 77.4 RT Surface Elev. 510.5ft CTL Project No. 04050070CIN

Elev. (ft)	Depth (ft)	Std. Pen./ RQD	Rec. (ft)	Loss (ft)		Description	Sample No.	Physical Characteristics % Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	ODOT Class
510.5	0															
510.5		8/6/5				MEDIUM DENSE, BROWN GRAVEL AND/ OR STONE FRAGMENTS WITH SAND, LITTLE CLAY, TRACE SILT, CONCRETE FRAGMENTS, DAMP -FILL	1							5 5	VISUAL
	2				3.0'											
507.0	4	12/5/3				LOOSE, BROWN TO GRAY GRAVEL AND/ OR STONE FRAGMENTS WITH SAND, TRACE CLAY, LITTLE SILT MOIST (FILL)	2	29	33	19	16	3	NP	NP	10	A-1-b
					5.5'											
504.5	6	8/9/8				VERY STIFF, LIGHT BROWN AND GRAY, MOTTLED CLAY, SOME SILT, TRACE SAND, LITTLE GRAVEL, DAMP	3								13	VISUAL
	8															
502.0		8/10/12					4	12	3	2	27	56	52	27	18	A-7-6
	10				10.5'											
499.5		16/18/22				HARD, LIGHT BROWN TO DARK BROWN AND GRAY, MOTTLED CLAY, AND SILT, TRACE SAND, LITTLE GRAVEL, DAMP	5								15	VISUAL
	12															
497.0		12/16/38					6								14	VISUAL
	14															
494.5	16	16/18/30					7	11	5	5	39	40	46	22	14	A-7-6
	18															
492.0		18/36/42					8								8	VISUAL
	20															
	22															
					23.0'											
487.0	24	38/50-1"				SHALE, LIGHT BROWN AND GRAY HIGHLY WEATHERED, DAMP	9								10	VISUAL
485.5					25.0'											
	26					SHALE, MODERATE TO HIGHLY WEATHERED, LAMINATED TO THIN BEDDED, WEAK TO SLIGHTLY STRONG, INTERBEDDED 2"-4"LIMESTONE, STRONG FOSSILIFEROUS - UNIT RQD =15% - % LOSS = 40%	10									VISUAL
	28															
480.5	30				30.0'											
	32					SHALE, SLIGHTLY WEATHERED, VERY THIN TO LAMINATED, SLIGHTLY STRONG, INTERBEDDED 2"-4"LIMESTONE, STRONG FOSSILIFEROUS -UNIT RQD = 65% - % LOSS = 15%	11									VISUAL
	34															
475.5					35.0'											
						BOTTOM OF BORING = 35.0'										

Particle Sizes: Agg => 2.00mm, Coarse Sand = 2.00-0.42mm, Fine Sand = 0.42-0.074mm, Silt = 0.074-0.005mm, Clay =< 0.005mm.

PLATE 57

OH DOT 2 CTL OH DOT.GDT ODOT LIBRARY BY DM 6-27-08 (TESTING).GLB 04120070G HAM-75 B BORINGS.GPJ 1/14/15

PROJECT: HAM-75-03.85 | DRILLING FIRM / OPERATOR: CTL / ZF | DRILL RIG: CTL CME 75 TRUCK | STATION / OFFSET: 247+79, 79 RT | EXPLORATION ID B-334
TYPE: STRUCTURE | SAMPLING FIRM / LOGGER: CTL / ZF | HAMMER: AUTOMATIC HAMMER | ALIGNMENT: IR-75
PID: 83723 BR ID: N/A | DRILLING METHOD: 3.25" HSA / NX | CALIBRATION DATE: 11/3/09 | ELEVATION: 513.9 (MSL) EOB: 41.5 ft. | PAGE 1 OF 2
START: 10/26/10 END: 10/26/10 | SAMPLING METHOD: SPT / NX | ENERGY RATIO (%): 83 | COORD: 426905.450 N, 1390688.110 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
TOPSOIL (3")	513.7																	
NO RECOVERY			4 5 5	14	0	SS-1	-	-	-	-	-	-	-	-	-	-		
STIFF TO HARD, BROWN, **CLAY**, TRACE GRAVEL, TRACE SAND, SOME SILT, DAMP	508.4		8 10 20	42	67	SS-2	-	1	1	2	30	66	49	24	25	20	A-7-6 (16)	
HARD, BROWN, **CLAY**, LITTLE GRAVEL, TRACE SAND, SOME SILT, WITH SHALE FRAGMENTS, DAMP	500.9		13 13 16	40	67	SS-3	-	-	-	-	-	-	-	-	-	12	A-7-6 (V)	
			11 12 15	37	72	SS-4	-	15	2	3	30	50	47	24	23	16	A-7-6 (15)	
			12 19 35	75	67	SS-5	-	-	-	-	-	-	-	-	-	10	A-7-6 (V)	
VERY WEAK, GRAY AND BROWN, **SEVERELY WEATHERED SHALE**		TR	28 50/5"	-	55	SS-6	-	-	-	-	-	-	-	-	-	10	Rock (V)	
	495.9		34 50/5"	-	64	SS-7	-	-	-	-	-	-	-	-	-	10	Rock (V)	
VERY WEAK, GRAY, **SEVERELY WEATHERED SHALE**			39 50/5"	-	73	SS-8	-	-	-	-	-	-	-	-	-	10	Rock (V)	
			38 50/5"	-	55	SS-9	-	-	-	-	-	-	-	-	-	9	Rock (V)	
			29 50/3"	-	56	SS-10	-	-	-	-	-	-	-	-	-	6	Rock (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 8/31/12 10:16 - K:\04050070CIN\D_HAM-75-3.85\REPORTS\LOGS AND GINT\04050070CIND_IR-74 IR-75 INTERCHANGE.GPJ

PLATE 61

PID: 83723 | BR ID: N/A | PROJECT: HAM-75-03.85 | STATION / OFFSET: 247+79, 79 RT | START: 10/26/10 | END: 10/26/10 | PG 2 OF 2 | B-334

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
VERY WEAK, GRAY, **SEVERELY WEATHERED SHALE** *(continued)*	483.9																	
	480.4		50/1"	-	100	SS-11	-	-	-	-	-	-	-	-	-	7	Rock (V)	
VERY WEAK, GRAY, **SEVERELY WEATHERED INTERBEDDED SHALE AND LIMESTONE**	477.4		50/1"	-	100	SS-12	-	-	-	-	-	-	-	-	-	-	Rock (V)	
INTERBEDDED SHALE (97%) AND LIMESTONE (3%), RQD 65%, REC. 93%; **SHALE**, GRAY, MODERATELY WEATHERED, WEAK, VERY THICK BEDDED; **LIMESTONE**, LIGHT GRAY, SLIGHTLY WEATHERED, STRONG, THIN BEDDED.	472.4	EOB	65		93	NX-1											CORE	

NOTES: NONE
ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH CEMENT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 8/31/12 10:16 - K:\04050070CIN\D_HAM-75-3.85\REPORTS\LOGS AND GINT\04050070CIND_IR-74 IR-75 INTERCHANGE.GPJ

PLATE 62

L-001-0-91 LOG OF BORING

DATE STARTED 3-4-91 SAMPLER: TYPE SPLIT SPOON DIA. 2.0" O.D. WATER ELEVATION:

DATE COMPLETED 3-5-91 CASING: LENGTH HOLLOW STEM AUGER DIA. 3.25" I.D. IMMEDIATE 530.9

BORING NUMBER L-1 CORE BARREL: TYPE _____ SIZE _____ AFTER COMP. HRS. 529.9

STATION & OFFSET 2+88, 11'Lt. SURFACE ELEVATION 544.9

ELEV.	DEPTH	STD. PEN. (N)	DESCRIPTION	SA. NO.	PHYSICAL CHARACTERISTICS								
					% AGG	% CS	% FS	% SILT	% CLAY	% LL	% PI	% WC	SHTL CLASS
544.9	0												
543.4			CONCRETE										
	2	2-2-2	BROWN SILTY CLAY, SAND AND GRAVEL (FILL), MOIST – LOOSE	1		V	I	S	U	A	L		
541.9													
	4	3-4-6	BROWN AND GRAY SILTY CLAY AND CLAY, TRACE OF TOPSOIL, WOOD AND ROCK FRAGMENTS (FILL), MOIST – STIFF	2		V	I	S	U	A	L		
539.9													
	6	2-2-3		3		V	I	S	U	A	L		
	8		BROWN AND GRAY SILTY CLAY WITH LIMESTONE FRAGMENTS AND FLOATERS, TRACE OF TOPSOIL (FILL), MOIST – MEDIUM STIFF TO STIFF										
		6-17-11		4		V	I	S	U	A	L		
534.9	10												
		6-5-6		5		V	I	S	U	A	L		
	12		BROWN AND GRAY CLAY AND SILTY CLAY WITH LIMESTONE FRAGMENTS, TRACE OF SHALE FRAGMENTS (FILL), MOIST – STIFF										
	14	5-7-10		6		V	I	S	U	A	L		
529.9													
	16	2-1-3		7		V	I	S	U	A	L		
	18		BROWN AND GRAY SILT AND CLAY WITH ROCK FRAGMENTS (FILL), VERY MOIST – SOFT TO MEDIUM STIFF										
		2-3-3		8		V	I	S	U	A	L		
524.9	20												
		2-2-3		9		V	I	S	U	A	L		
	22		GRAY SILTY CLAY, TRACE OF ROCK FRAGMENTS (FILL), VERY MOIST – MEDIUM STIFF										
	24												A-7-6
519.9													
	26	6-8-9	BROWN CLAY, MOIST – VERY STIFF	10		V	I	S	U	A	L		
	28												
514.9	30												
	32	12-21-40	BROWN VERY SOFT HIGHLY WEATHERED SHALE	11		V	I	S	U	A	L		
	34												
509.9													
	36	42-70	BROWN VERY SOFT WEATHERED SHALE	12		V	I	S	U	A	L		
	38												
504.9	40												
		-78-	GRAY SOFT SHALE	13		V	I	S	U	A	L		
	42												
	44												
499.4		-84-		14		V	I	S	U	A	L		

BORING COMPLETED

PLATE 46

PROJECT: HAM-75-03.85
TYPE: STRUCTURE
PID: 83723 BR ID: N/A
START: 10/20/10 END: 10/20/10

DRILLING FIRM / OPERATOR: CTL / MF
SAMPLING FIRM / LOGGER: CTL / MF
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CTL CME 550 TRACK
HAMMER: AUTOMATIC HAMMER
CALIBRATION DATE: 10/13/09
ENERGY RATIO (%): 86

STATION / OFFSET: 254+24, 68 LT
ALIGNMENT: IR-75
ELEVATION: 525.5 (MSL) EOB: 23.6 ft.
COORD: 427532.010 N, 1390909.860 E

EXPLORATION ID B-359
PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
ASPHALT (7")	525.5																	
CONCRETE (10")	524.9																	
GRANULAR BASE (8")	524.1																	
VERY STIFF, BROWN, **SILT AND CLAY**, "AND" GRAVEL, DAMP	523.4		8 5 11	23	56	SS-1	-	-	-	-	-	-	-	-	-	17	A-6a (V)	
STIFF, GRAY, **SILT AND CLAY**, TRACE GRAVEL, LITTLE SAND, MOIST	522.5		2 3 5	11	83	SS-2	-	1	3	11	37	48	32	19	13	20	A-6a (9)	
STIFF, GRAY, **SILTY CLAY**, TRACE SAND, DAMP	520.0		2 6 3	13	56	SS-3	-	-	-	-	-	-	-	-	-	20	A-6b (V)	
STIFF, BROWN, **CLAY**, TRACE GRAVEL, TRACE SAND, "AND" SILT, DAMP	517.5		3 3 4	10	44	SS-4	-	1	2	3	36	58	45	24	21	22	A-7-6 (13)	
VERY STIFF, BROWN, **CLAY**, TRACE GRAVEL, TRACE SAND, "AND" SILT, DAMP	515.0		3 4 7	16	83	SS-5	-	-	-	-	-	-	-	-	-	20	A-7-6 (V)	
HARD, BROWN, **CLAY**, DAMP	512.5		6 7 22	42	100	SS-6	-	-	-	-	-	-	-	-	-	18	A-7-6 (V)	
VERY WEAK, GRAY, **SEVERELY WEATHERED INTERBEDDED SHALE AND LIMESTONE**	510.0	TR	19 50/5"	-	100	SS-7	-	-	-	-	-	-	-	-	-	6	Rock (V)	
			50	-	100	SS-8	-	-	-	-	-	-	-	-	-	7	Rock (V)	
	501.9	EOB	50/1"	-	100	SS-9	-	-	-	-	-	-	-	-	-	-	Rock (V)	

NOTES: NONE
ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH CEMENT

PLATE 88

PROJECT: HAM-75-03.85
TYPE: STRUCTURE
PID: 83723 BR ID: N/A
START: 10/20/10 END: 10/20/10

DRILLING FIRM / OPERATOR: CTL / MF
SAMPLING FIRM / LOGGER: CTL / MF
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CTL CME 550 TRACK
HAMMER: AUTOMATIC HAMMER
CALIBRATION DATE: 10/13/09
ENERGY RATIO (%): 86

STATION / OFFSET: 255+65, 76 LT
ALIGNMENT: IR-75
ELEVATION: 529.1 (MSL) EOB: 21.1 ft.
COORD: 427644.670 N, 1391003.470 E

EXPLORATION ID B-360
PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
ASPHALT (7")	529.1																	
CONCRETE (10")	528.5																	
GRANULAR BASE (8")	527.6																	
VERY STIFF, GRAY, **SILTY CLAY**, TRACE GRAVEL, DAMP	527.0		6 5 7	17	56	SS-1	-	-	-	-	-	-	-	-	-	14	A-6b (V)	
LOOSE, GRAY, **GRAVEL AND STONE FRAGMENTS WITH SAND**, LITTLE SILT, TRACE CLAY, DAMP	526.1		8 4 2	9	56	SS-2	-	43	19	20	11	7	NP	NP	NP	10	A-1-b (0)	
VERY SOFT, BROWN, **SILTY CLAY**, TRACE GRAVEL, LITTLE SAND, MOIST	523.6		0 0 1	1	56	SS-3	-	2	3	11	47	37	37	17	20	27	A-6b (12)	
STIFF, BROWN, **SILTY CLAY**, SOME GRAVEL, DAMP	521.1		2 3 3	9	28	SS-4	-	-	-	-	-	-	-	-	-	17	A-6b (V)	
STIFF, BROWN, **SILTY CLAY**, TRACE GRAVEL, SOME SAND, MOIST	518.6		4 4 5	13	39	SS-5	-	7	6	16	39	32	31	15	16	20	A-6b (10)	
VERY STIFF, GRAY, **SILTY CLAY**, DAMP	516.1		3 6 12	26	100	SS-6	-	-	-	-	-	-	-	-	-	19	A-6b (V)	
VERY WEAK, GRAY, **SEVERELY WEATHERED INTERBEDDED SHALE AND LIMESTONE**	513.6	TR	50	-	100	SS-7	-	-	-	-	-	-	-	-	-	10	Rock (V)	
			28 50/2"	-	100	SS-8	-	-	-	-	-	-	-	-	-	5	Rock (V)	
	508.0	EOB	50/1"	-	100	SS-9	-	-	-	-	-	-	-	-	-	-	Rock (V)	

NOTES: NONE
ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH CEMENT

PLATE 89

LOG OF BORING

Date Started 10/25/07 Sampler: Type SS / ST Dia. 1.375" Project Identification: HAM-75-2.30 PID 76257
Date Completed 10/25/07 Casing: Length 24.0ft Dia. 3.25" Hamilton County, Ohio
Water Elev. Dry
Boring No. B-056 Station & Offset 255+73.3, 69.7 LT Surface Elev. 529.1ft CTL Project No. 04050070CIN

Elev. (ft)	Depth (ft)	Std. Pen./ RQD	Rec. (ft)	Loss (ft)			Description	Sample No.	Physical Characteristics % Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	ODOT Class
529.1	0	AUGERED				0.5'	ASPHALT (.5')										VISUAL
528.6		AUGERED					CONCRETE (1.2')										VISUAL
527.4	2	AUGERED				1.7' 2.3'	BASE (.6')										VISUAL
525.6	4	5/7/5					STIFF, BROWNISH GRAY SILT AND CLAY, LITTLE SAND, LITTLE GRAVEL, ASPHALT FRAGMENTS, DAMP -FILL	1	12	5	11	35	37	33	14	14	A-6a
	6																
521.1	8	Undisturbed tube 8-10'				8.0'	BROWN AND GRAY SILT AND CLAY, LITTLE SAND, TRACE GRAVEL, DAMP -FILL		8	6	8	53	25	30	12	16	A-6a
519.1	10	3/4/4				10.0'	MEDIUM STIFF, BROWNISH GRAY SILT AND CLAY, LITTLE SAND, LITTLE GRAVEL, ASPHALT FRAGMENTS, DAMP -FILL	2									VISUAL
	12																
515.6	14	7/11/12				13.5'	VERY STIFF, LIGHT BROWN AND GRAY, MOTTLED CLAY, AND SILT, TRACE SAND,TRACE GRAVEL, DAMP	3	1	1	1	47	50	50	27	20	A-7-6
513.1	16	24/15/21				15.5'	SHALE, GRAY, SLIGHTLY WEATHERED	4								9	VISUAL
	18																
510.1	20					19.0'	SHALE, GRAY, SLIGHTLY WEATHERED, CONTAINS FOSSILIFEROUS DEPOSITS, INTERBEDDED CRYSTALLINE LIMESTONE, STRONG UNIT RQD = 40% % LOSS = 0										VISUAL
	22																
	24					24.0'											

OH DOT 2 CTL OH DOT.GDT ODOT LIBRARY BY DM 6-27-08 (TESTING).GLB 04120070G HAM-75 B BORINGS.GPJ 12/1/08

Particle Sizes: Agg => 2.00mm, Coarse Sand = 2.00-0.42mm, Fine Sand = 0.42-0.074mm, Silt = 0.074-0.005mm, Clay =< 0.005mm.

PLATE 51

PROJECT: HAM-75-03.85
TYPE: STRUCTURE
PID: 83723 BR ID: N/A
START: 10/20/10 END: 10/20/10

DRILLING FIRM / OPERATOR: CTL / MF
SAMPLING FIRM / LOGGER: CTL / MF
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CTL CME 550 TRACK
HAMMER: AUTOMATIC HAMMER
CALIBRATION DATE: 10/13/09
ENERGY RATIO (%): 86

STATION / OFFSET: 256+62, 80 LT
ALIGNMENT: IR-75
ELEVATION: 531.0 (MSL) EOB: 24.4 ft.
COORD: 427716.480 N, 1391073.840 E

EXPLORATION ID B-361
PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
ASPHALT (7")	530.4																	
CONCRETE (10")	529.6																	
GRANULAR BASE (8")	528.9																	
VERY STIFF, GRAY, **SILTY CLAY**, TRACE GRAVEL, DAMP	528.0		10 13 8	30	39	SS-1	-	-	-	-	-	-	-	-	-	14	A-6b (V)	
MEDIUM DENSE, BLACK, **GRAVEL AND STONE FRAGMENTS**, SOME SAND, TRACE SILT, TRACE CLAY, DAMP	525.5		9 5 4	13	56	SS-2	-	59	18	16	5	2	NP	NP	NP	8	A-1-a (0)	
STIFF TO VERY STIFF, BROWN, **SILT AND CLAY**, TRACE GRAVEL, LITTLE SAND, DAMP TO MOIST			6 6 3	13	67	SS-3	-	-	-	-	-	-	-	-	-	22	A-6a (V)	
			3 5 6	16	83	SS-4	-	1	3	10	52	34	32	19	13	18	A-6a (9)	
			5 5 9	20	0	SS-5	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
	516.5	TR	9 18 35	76	6	SS-6	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
VERY WEAK, GRAY, **SEVERELY WEATHERED INTERBEDDED SHALE AND LIMESTONE**			38 50/4"	-	100	SS-7	-	-	-	-	-	-	-	-	-	7	Rock (V)	
			50	-	100	SS-8	-	-	-	-	-	-	-	-	-	8	Rock (V)	
	506.6	EOB	50/5"	-	100	SS-9	-	-	-	-	-	-	-	-	-	13	Rock (V)	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH CEMENT

PLATE 90

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 8/31/12 10:18 - K:\104650070\CIN\D_HAM-75-3.85\REPORTS\LOGS AND GINT\104650070CIND_IR-74 IR-75 INTERCHANGE.GPJ

PROJECT: HAM-75-03.85
TYPE: STRUCTURE
PID: 83723 BR ID: N/A
START: 11/22/10 END: 11/22/10

DRILLING FIRM / OPERATOR: CTL / MF
SAMPLING FIRM / LOGGER: CTL / MF
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CTL CME 550 TRACK
HAMMER: AUTOMATIC HAMMER
CALIBRATION DATE: 10/13/09
ENERGY RATIO (%): 86

STATION / OFFSET: 255+47, 70 RT
ALIGNMENT: IR-75
ELEVATION: 527.4 (MSL) EOB: 20.0 ft.
COORD: 427528.640 N, 1391094.140 E

EXPLORATION ID B-339
PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
HARD, GRAY, **CLAY**, TRACE GRAVEL, TRACE SAND, SOME SILT, DAMP	527.4		6 6 20	37	78	SS-1	-	4	1	2	- 93 -		43	23	20	9	A-7-6 (13)	
VERY WEAK, BROWN AND GRAY, **SEVERELY WEATHERED SHALE**	524.4		8 10 18	40	56	SS-2	-	-	-	-	-	-	-	-	-	11	Rock (V)	
VERY WEAK, GRAY, **SEVERELY WEATHERED SHALE**	521.9	TR	20 50/4"	-	100	SS-3	-	-	-	-	-	-	-	-	-	9	Rock (V)	
			50/3"	-	100	SS-4	-	-	-	-	-	-	-	-	-	8	Rock (V)	
			50	-	83	SS-5	-	-	-	-	-	-	-	-	-	6	Rock (V)	
			50/4"	-	100	SS-6	-	-	-	-	-	-	-	-	-	10	Rock (V)	
			50/5"	-	100	SS-7	-	-	-	-	-	-	-	-	-	6	Rock (V)	
	507.4	EOB	50/5"	-	100	SS-8	-	-	-	-	-	-	-	-	-	6	Rock (V)	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH CEMENT

PLATE 64

PROJECT: HAM-75-03.85
TYPE: STRUCTURE
PID: 83723 BR ID: N/A
START: 11/22/10 END: 11/22/10

DRILLING FIRM / OPERATOR: CTL / MF
SAMPLING FIRM / LOGGER: CTL / MF
DRILLING METHOD: 3.25" HSA / NX
SAMPLING METHOD: SPT/NX

DRILL RIG: CTL CME 550 TRACK
HAMMER: AUTOMATIC HAMMER
CALIBRATION DATE: 10/13/09
ENERGY RATIO (%): 86

STATION / OFFSET: 257+03, 101 RT
ALIGNMENT: IR-75
ELEVATION: 550.1 (MSL) EOB: 40.0 ft.
COORD: 427608.180 N, 1391224.070 E

EXPLORATION ID B-340
PAGE 1 OF 2

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
VERY STIFF, BROWN, **CLAY**, TRACE GRAVEL, SOME SAND, LITTLE SILT, DAMP	550.1		6 5 6	16	78	SS-1	-	8	14	17	17	44	61	27	34	20	A-7-6 (16)	
VERY STIFF, BROWN, **SILTY CLAY**, TRACE SAND, DAMP	547.1		6 6 6	17	67	SS-2	-	0	1	5	55	39	36	20	16	13	A-6b (10)	
VERY WEAK, GRAY, **SEVERELY WEATHERED SHALE**	544.6	TR	6 9 20	42	89	SS-3	-	-	-	-	-	-	-	-	-	13	Rock (V)	
	540.1		40 50/4"	-	100	SS-4	-	-	-	-	-	-	-	-	-	8	Rock (V)	
INTERBEDDED SHALE (84%) AND LIMESTONE (16%), RQD 38%, REC. 96%; **SHALE**, GRAY, SEVERELY WEATHERED, VERY WEAK, THICK BEDDED; **LIMESTONE**, LIGHT GRAY, SLIGHTLY WEATHERED, STRONG, THIN BEDDED.	535.1		38		96	NX-1											CORE	
INTERBEDDED SHALE (89%) AND LIMESTONE (11%), RQD 50%, REC. 98%; **SHALE**, GRAY, SEVERELY WEATHERED, VERY WEAK, THICK BEDDED; **LIMESTONE**, LIGHT GRAY, SLIGHTLY WEATHERED, STRONG, THIN BEDDED.	530.1		50		98	NX-2											CORE	
INTERBEDDED SHALE (90%) AND LIMESTONE (10%), RQD 51%, REC. 97%; **SHALE**, GRAY, HIGHLY WEATHERED, VERY WEAK, THICK BEDDED; **LIMESTONE**, LIGHT GRAY, SLIGHTLY WEATHERED, STRONG, THIN BEDDED.	525.1		51		97	NX-3											CORE	
INTERBEDDED SHALE (95%) AND LIMESTONE (5%), RQD 57%, REC. 100%; **SHALE**, GRAY, HIGHLY WEATHERED, VERY WEAK, THICK BEDDED; **LIMESTONE**, LIGHT GRAY, SLIGHTLY WEATHERED, STRONG, THIN BEDDED.	520.1		57		100	NX-4											CORE	

PLATE 65

PID: 83723 | BR ID: N/A | PROJECT: HAM-75-03.85 | STATION / OFFSET: 257+03, 101 RT | START: 11/22/10 | END: 11/22/10 | PG 2 OF 2 | B-340

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
INTERBEDDED SHALE (91%) AND LIMESTONE (9%), RQD 55%, REC. 100%; **SHALE**, GRAY, SEVERELY TO HIGHLY WEATHERED, VERY WEAK, THICK BEDDED; **LIMESTONE**, LIGHT GRAY, SEVERELY TO HIGHLY WEATHERED, STRONG, THIN BEDDED.	520.1	31–35	55		100	NX-5											CORE	
INTERBEDDED SHALE (95%) AND LIMESTONE (5%), RQD 13%, REC. 97%; **SHALE**, GRAY, SEVERELY TO HIGHLY WEATHERED, VERY WEAK, THICK BEDDED; **LIMESTONE**, LIGHT GRAY, SLIGHTLY WEATHERED, STRONG, THIN BEDDED.	515.1	35–40	13		97	NX-6											CORE	
	510.1	EOB																

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH CEMENT

PLATE 66

PROJECT: HAM-75-03.85 | TYPE: STRUCTURE | PID: 83723 BR ID: N/A | START: 12/23/10 END: 12/23/10

DRILLING FIRM / OPERATOR: CTL / MF | SAMPLING FIRM / LOGGER: CTL / MF | DRILLING METHOD: 3.25" HSA | SAMPLING METHOD: SPT

DRILL RIG: CTL CME 550 TRACK | HAMMER: AUTOMATIC HAMMER | CALIBRATION DATE: 10/13/09 | ENERGY RATIO (%): 86

STATION / OFFSET: 258+54, 96 RT | ALIGNMENT: IR-75 | ELEVATION: 557.9 (MSL) EOB: 28.75 ft. | COORD: 427701.060 N, 1391332.750 E

EXPLORATION ID B-341 | PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
TOPSOIL (3")	557.7	1	3 3 3	9	61	SS-1	-	-	-	-	-	-	-	-	-	23	A-6b (V)	
STIFF, BROWN, **SILTY CLAY**, SOME SAND, MOIST	552.4	2–5	4 4 6	14	67	SS-2	-	0	5	27	32	36	39	18	21	20	A-6b (11)	
VERY STIFF, BROWN, **SILT**, TRACE GRAVEL, SOME SAND, SOME CLAY, DAMP	549.9	6–7	9 10 9	27	56	SS-3	-	1	2	22	52	23	24	17	7	9	A-4b (8)	
HARD, BROWN, **SILT AND CLAY**, TRACE SAND, WITH COBBLES, DAMP	547.4	8–10	6 10 24	49	50	SS-4	-	-	-	-	-	-	-	-	-	16	A-6a (V)	
HARD, GRAY, **CLAY**, LITTLE GRAVEL, DAMP	544.9	11–13	10 11 16	39	56	SS-5	-	-	-	-	-	-	-	-	-	16	A-7-6 (V)	
HARD, BROWN, **CLAY**, TRACE GRAVEL, TRACE SAND, "AND" SILT, DAMP	542.4	14–15	6 10 15	36	72	SS-6	-	2	2	2	41	53	56	24	32	18	A-7-6 (19)	
HARD, BROWN, **SILTY CLAY**, WITH WEATHERED SHALE FRAGMENTS, DAMP	535.4	16–22	8 11 12	33	56	SS-7	-	-	-	-	-	-	-	-	-	18	A-6b (V)	
			8 13 25	54	67	SS-8	-	-	-	-	-	-	-	-	-	15	A-6b (V)	
VERY WEAK, GRAY, **SEVERELY WEATHERED SHALE**		TR																
		23–24	25 50/5"	-	73	SS-9	-	-	-	-	-	-	-	-	-	9	Rock (V)	
	529.2	EOB	50/3"	-	100	SS-10	-	-	-	-	-	-	-	-	-	4	Rock (V)	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH CEMENT

PLATE 69

PROJECT: HAM-75-03.85
TYPE: STRUCTURE
PID: 83723 SFN: N/A
START: 12/29/10 END: 12/29/10

DRILLING FIRM / OPERATOR: CTL / MF
SAMPLING FIRM / LOGGER: CTL / MF
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CTL CME 550 TRACK
HAMMER: AUTOMATIC HAMMER
CALIBRATION DATE: 10/13/09
ENERGY RATIO (%): 86

STATION / OFFSET: 259+88, 114' RT.
ALIGNMENT: IR-75
ELEVATION: 558.6 (MSL) EOB: 28.6 ft.
COORD: 427758.2000 N, 1391447.5000 E

EXPLORATION ID B-342
PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
TOPSOIL (3")	558.4																	
VERY STIFF, BROWN, **SILT AND CLAY**, LITTLE SAND, DAMP	555.6		5 6 8	20	61	SS-1	-	-	-	-	-	-	-	-	-	12	A-6a (V)	
HARD, BROWN, **SILT AND CLAY**, TRACE GRAVEL, SOME SAND, WITH COBBLES, DAMP	553.1		5 9 14	33	67	SS-2	-	6	5	21	58	10	27	16	11	11	A-6a (7)	
VERY STIFF, BROWN, **CLAY**, DAMP	550.6		10 8 10	26	72	SS-3	-	-	-	-	-	-	-	-	-	22	A-7-6 (V)	
HARD, BROWN, **SILT**, LITTLE GRAVEL, TRACE SAND, LITTLE CLAY, DAMP	548.1		13 19 17	52	61	SS-4	-	14	2	7	61	16	27	19	8	10	A-4b (8)	
HARD, GRAY, **SILTY CLAY**, LITTLE GRAVEL, DAMP	545.6		26 15 16	44	39	SS-5	-	-	-	-	-	-	-	-	-	17	A-6b (V)	
HARD, BROWN, **CLAY**, TRACE GRAVEL, TRACE SAND, "AND" SILT, DAMP	543.1		7 9 14	33	56	SS-6	-	4	2	3	44	47	48	22	26	17	A-7-6 (16)	
HARD, BROWN AND GRAY, **CLAY**, DAMP	539.6	TR	7 11 17	40	61	SS-7	-	-	-	-	-	-	-	-	-	18	A-7-6 (V)	
VERY WEAK, GRAY, **SEVERELY WEATHERED INTERBEDDED SHALE AND LIMESTONE**	530.0	EOB	50/1"	-	0	SS-8	-	-	-	-	-	-	-	-	-	-		
			50/2"	-	100	SS-9	-	-	-	-	-	-	-	-	-	1	Rock (V)	
			50/1"	-	100	SS-10	-	-	-	-	-	-	-	-	-	1	Rock (V)	

NOTES: NONE
ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH CEMENT

PLATE 72

PROJECT: HAM-75-03.85
TYPE: STRUCTURE
PID: 83723 BR ID: N/A
START: 12/29/10 END: 12/29/10

DRILLING FIRM / OPERATOR: CTL / MF
SAMPLING FIRM / LOGGER: CTL / MF
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CTL CME 550 TRACK
HAMMER: AUTOMATIC HAMMER
CALIBRATION DATE: 10/13/09
ENERGY RATIO (%): 86

STATION / OFFSET: 261+45, 94 RT
ALIGNMENT: IR-75
ELEVATION: 564.9 (MSL) EOB: 44.0 ft.
COORD: 427849.340 N, 1391566.050 E

EXPLORATION ID B-343
PAGE 1 OF 2

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
TOPSOIL (4")	564.6																	
MEDIUM STIFF, BROWN, **SILT AND CLAY**, SOME GRAVEL, LITTLE SAND, MOIST	561.9		3 3 3	9	44	SS-1	-	-	-	-	-	-	-	-	-	13	A-6a (V)	
VERY STIFF, BROWN, **COARSE AND FINE SAND**, LITTLE SILT, LITTLE CLAY, DAMP	559.4		6 7 9	23	61	SS-2	-	0	22	50	15	13	22	19	3	8	A-3a (0)	
DENSE TO VERY DENSE, GRAY, **GRAVEL WITH SAND AND SILT**, LITTLE CLAY, DAMP	554.4		13 15 19	49	50	SS-3	-	56	4	9	16	15	-	-	-	5	A-2-4 (V)	
			23 30 30	86	61	SS-4	-	-	-	-	-	-	-	-	-	4	A-2-4 (V)	
VERY DENSE, GRAY, **GRAVEL WITH SAND**, LITTLE SILT, TRACE CLAY, DAMP	549.4		30 31 32	90	61	SS-5	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
			17 15 15	43	56	SS-6	-	65	10	6	14	5	NP	NP	NP	8	A-1-b (0)	
HARD, BROWN, **SILTY CLAY**, DAMP	546.9		9 15 19	49	67	SS-7	-	-	-	-	-	-	-	-	-	18	A-6b (V)	
HARD, GRAY, **SILT AND CLAY**, WITH LIMESTONE COBBLES, DAMP	542.9		6 20 17	53	50	SS-8	-	-	-	-	-	-	-	-	-	11	A-6a (V)	
HARD, GRAY, **SILTY CLAY**, DAMP	537.9		6 10 12	32	72	SS-9	-	1	1	2	42	54	45	21	24	19	A-6b (V)	
VERY WEAK, GRAY, **SEVERELY WEATHERED SHALE**		TR																
			50/3"	-	-	SS-10	-	-	-	-	-	-	-	-	-	7	Rock (V)	

PLATE 74

PID: 83723 | BR ID: N/A | PROJECT: HAM-75-03.85 | STATION / OFFSET: 261+45, 94 RT | START: 12/29/10 | END: 12/29/10 | PG 2 OF 2 | B-343

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
VERY WEAK, GRAY, **SEVERELY WEATHERED SHALE** *(continued)*	534.9																	
VERY WEAK, BROWN, **SEVERELY WEATHERED SHALE**	532.9	31 32 33	50/5"	-	100	SS-11	-	-	-	-	-	-	-	-	-	9	Rock (V)	
VERY WEAK, GRAY, **SEVERELY WEATHERED SHALE**	527.9	34 35 36 37 38	50/5"	-	100	SS-12	-	-	-	-	-	-	-	-	-	7	Rock (V)	
	520.9	EOB 39 40 41 42 43 44	50	-	100	SS-13	-	-	-	-	-	-	-	-	-	7	Rock (V)	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH CEMENT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 8/31/12 10:17 - K:\104050070CIN\D_HAM-75-3.85\REPORTS\LOGS AND GINT\104050070CIND_IR-74 IR-75 INTERCHANGE.GPJ

PLATE 75

PROJECT: HAM-75-03.85 | TYPE: STRUCTURE | PID: 83723 BR ID: N/A | START: 1/4/11 END: 1/4/11

DRILLING FIRM / OPERATOR: CTL / MF | SAMPLING FIRM / LOGGER: CTL / MF | DRILLING METHOD: 3.25" HSA | SAMPLING METHOD: SPT

DRILL RIG: CTL CME 550 TRACK | HAMMER: AUTOMATIC HAMMER | CALIBRATION DATE: 10/13/09 | ENERGY RATIO (%): 86

STATION / OFFSET: 262+79, 89 RT | ALIGNMENT: IR-75 | ELEVATION: 564.7 (MSL) EOB: 40.0 ft. | COORD: 427909.390 N, 1391678.990 E

EXPLORATION ID B-344 | PAGE 1 OF 2

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
FILL (12")	564.7																	
STIFF TO VERY STIFF, BROWN, **SILTY CLAY**, TRACE GRAVEL, MOIST	563.7	1 2	2 3 3	9	78	SS-1	-	-	-	-	-	-	-	-	-	18	A-6b (V)	
HARD, BROWN, **SILTY CLAY**, LITTLE GRAVEL, SOME SAND, DAMP	560.2	3 4 5	5 5 7	17	0	SS-2	-	-	-	-	-	-	-	-	-	-		
VERY DENSE, BROWN, **STONE FRAGMENTS WITH SAND AND SILT**, MOIST	556.7	6 7 8	6 12 50/2"	-	100	SS-3	-	18	7	14	41	20	38	19	19	-	A-6b (9)	
DENSE, BROWN, **STONE FRAGMENTS WITH SAND AND SILT**, LITTLE CLAY, DAMP	554.2	9 10 11	50/2"	-	100	SS-4	-	-	-	-	-	-	-	-	-	13	A-2-4 (V)	
VERY DENSE, BROWN, **GRAVEL WITH SAND AND SILT**, DAMP	549.2	12 13 14 15	12 11 15	37	56	SS-5	-	49	12	11	15	13	NP	NP	NP	-	A-2-4 (0)	
HARD, BROWN, **CLAY**, SOME GRAVEL, SOME SILT, MOIST	546.7	16 17 18	14 14 14	40	67	SS-6	-	-	-	-	-	-	-	-	-	15	A-2-4 (V)	
VERY STIFF, GRAY, **SILTY CLAY**, TRACE GRAVEL, MOIST	542.7	19 20 21 22 23	43 50/2"	-	50	SS-7	-	-	-	-	-	-	-	-	-	4	A-2-4 (V)	
HARD, GRAY, **SILTY CLAY**, WITH WEATHERED SHALE FRAGMENTS, MOIST	537.7	24 25 26 27 28 29	26 23 18	59	33	SS-8	-	-	-	-	-	-	-	-	-	-	A-7-6 (V)	
			11 8 10	26	56	SS-9	-	-	-	-	-	-	-	-	-	18	A-6b (V)	
			50/5"	-	100	SS-10	-	-	-	-	-	-	-	-	-	10	A-6b (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 8/31/12 10:17 - K:\104050070CIN\D_HAM-75-3.85\REPORTS\LOGS AND GINT\104050070CIND_IR-74 IR-75 INTERCHANGE.GPJ

PLATE 78

PID: 83723	BR ID: N/A	PROJECT: HAM-75-03.85	STATION / OFFSET: 262+79, 89 RT	START: 1/4/11	END: 1/4/11	PG 2 OF 2	B-344

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
HARD, GRAY, **SILTY CLAY**, WITH WEATHERED SHALE FRAGMENTS, MOIST *(continued)*	534.7																	
HARD, GRAY, **SILTY CLAY**, SOME GRAVEL, WET	532.7	31 32 33	60/3"	-	-	SS-11	-	-	-	-	-	-	-	-	-	26	A-6b (V)	
VERY WEAK, GRAY, **SEVERELY WEATHERED SHALE**	527.7	TR 37 38	50/5"	-	100	SS-12	-	-	-	-	-	-	-	-	-	11	Rock (V)	
	524.7	EOB 40																

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH CEMENT

PLATE 79

LOG OF BORING

Date Started 5/16/06 Sampler: Type SS / ST Dia. 1.375" Project Identification: HAM-75-2.30 PID 76257
Date Completed 5/16/06 Casing: Length 23.5ft Dia. 3.25" Hamilton County, Ohio
Water Elev. 535.9ft
Boring No. B-005-2006 Station & Offset N 427857.1, E 1391575.9 Surface Elev. 564.4ft CTL Project No. 04050070CIN

Elev. (ft)	Depth (ft)	Std. Pen./ RQD	Rec. (ft)	Loss (ft)		Description	Sample No.	Physical Characteristics % Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	ODOT Class
564.4	0															
564.4		3/3/4				Brown, medium stiff, **SANDY SILT**, trace gravel, trace clay, damp	1								14	VIS.
	2															
561.4		5/5/4				Brown, stiff, **SANDY SILT**, little gravel, trace clay, damp	2								12	VIS.
	4															
558.9		6/4/3			5.5'	Brown, loose, **COARSE AND FINE SAND**, trace clay, trace silt, damp	3								11	VIS.
	6															
	8															
555.9		15/30/18			8.5'	Brown, dense, **GRAVEL AND/OR STONE FRAGMENTS WITH SAND AND SILT**, little clay, with limestone fragments, wet	4								7	VIS.
	10															
553.4		15/16/12			11.0'	Brown, medium dense, **GRAVEL AND/OR STONE FRAGMENTS WITH SAND AND SILT**, little clay, with limestone fragments, wet	5	63	4	5	15	13	NP	NP	7	A-2-4
	12															
550.9		9/13/13				Brown, medium dense, **GRAVEL AND/OR STONE FRAGMENTS WITH SAND AND SILT**, little clay, with limestone fragments, wet	6								9	VIS.
	14															
548.4	16	23/30/13			16.0'	Brown, dense, **GRAVEL AND/OR STONE FRAGMENTS WITH SAND AND SILT**, little clay, with limestone fragments, wet	7								6	VIS.
	18															
545.9		9/12/50-4"			18.5'	Brown and gray, hard, **SILTY CLAY**, little gravel, trace sand, with limestone fragments, damp	8	12	2	2	32	52	40	17	16	A-6b
	20															
	22															
540.9		6/7/13			23.5'	**SHALE**, gray, very soft, augered	9									VIS.
	24															
	26															
	28															
535.4		58%	4.3	0.7	29.0'	**SHALE** (**85%**),gray, soft, thick bedded, with interbedded **LIMESTONE (15%)**, gray, fossiliferous, thin bedded, hard	RC-1									VIS.
	30															
	32															
530.4	34	42%	4.8	0.2	34.0'	**SHALE** (**73%**),gray, soft, thick bedded, with interbedded **LIMESTONE (27%)**, gray,	RC-2									VIS.

Particle Sizes: Agg => 2.00mm, Coarse Sand = 2.00-0.42mm, Fine Sand = 0.42-0.074mm, Silt = 0.074-0.005mm, Clay =< 0.005mm.

PLATE 48

OH DOT 2 CTL OH DOT.GDT ODOT LIBRARY BY DM 6-27-08 (TESTING).GLB 04120070G HAM-75 B BORINGS.GPJ 12/1/08

LOG OF BORING (Continued)

Project Identification: HAM-75-2.30 PID 76257
Hamilton County, Ohio

Boring No. B-005-2006

Elev. (ft)	Depth (ft)	Std. Pen./ RQD	Rec. (ft)	Loss (ft)			Description	Sample No.	Physical Characteristics								ODOT Class
									% Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	
529.4																	
	36						fossiliferous, thin bedded, hard										
	38																
525.4						39.0'											
							BOTTOM OF BORING										

PLATE 49

PROJECT: HAM-75-03.85
TYPE: STRUCTURE
PID: 83723 BR ID: N/A
START: 12/30/10 END: 12/30/10

DRILLING FIRM / OPERATOR: CTL / MF
SAMPLING FIRM / LOGGER: CTL / MF
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CTL CME 550 TRACK
HAMMER: AUTOMATIC HAMMER
CALIBRATION DATE: 10/13/09
ENERGY RATIO (%): 86

STATION / OFFSET: 264+42, 74 RT
ALIGNMENT: IR-75
ELEVATION: 554.5 (MSL) EOB: 23.9 ft.
COORD: 427979.610 N, 1391819.450 E

EXPLORATION ID B-345
PAGE 1 OF 1

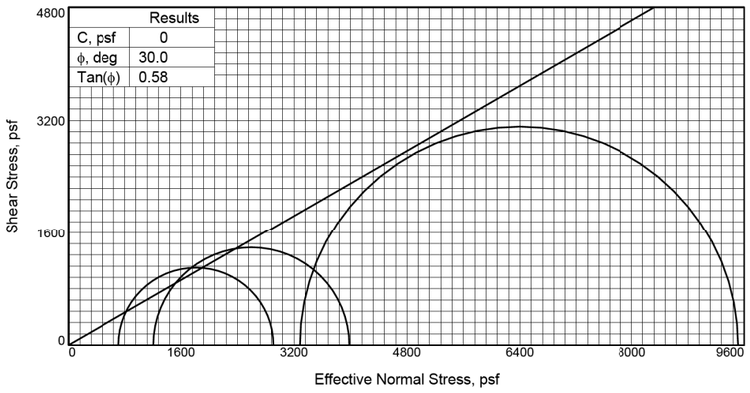
MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
VERY STIFF, BROWN, **SILTY CLAY**, SOME SAND, DAMP	554.5		4 5 10	22	61	SS-1	-	-	-	-	-	-	-	-	-	17	A-6b (V)	
HARD, BROWN, **SANDY SILT**, LITTLE CLAY, DAMP	551.5		11 11 18	42	22	SS-2	-	-	-	-	-	-	-	-	-	15	A-4a (V)	
LOOSE TO MEDIUM DENSE, BROWN, **COARSE AND FINE SAND**, LITTLE SILT, TRACE CLAY, DAMP	549.0		8 7 6	19	61	SS-3	-	0	1	83	14	2	NP	NP	NP	4	A-3a (0)	
			5 3 4	10	67	SS-4	-	-	-	-	-	-	-	-	-	6	A-3a (V)	
VERY STIFF, BROWN, **CLAY**, TRACE GRAVEL, TRACE SAND, "AND" SILT, DAMP	544.0		5 7 7	20	61	SS-5	-	-	-	-	-	-	-	-	-	17	A-7-6 (V)	
			5 6 8	20	50	SS-6	-	3	2	2	50	43	49	24	25	5	A-7-6 (16)	
HARD, GRAY, **CLAY**, "AND" SILT, DAMP	539.0		5 10 16	37	67	SS-7	-	-	-	-	-	-	-	-	-	15	A-7-6 (V)	
VERY WEAK, GRAY, **SEVERELY WEATHERED SHALE**	536.5	TR	11 18 27	64	67	SS-8	-	-	-	-	-	-	-	-	-	13	Rock (V)	
	530.6	EOB	50/5"	-	100	SS-9	-	-	-	-	-	-	-	-	-	7	Rock (V)	

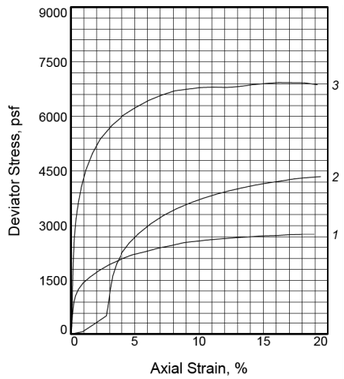
NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH CEMENT

PLATE 80

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 8/31/12 10:17 - K:\04050070\CIN\D_HAM-75-3.85\REPORTS\LOGS AND GINT\04050070CIND_IR-74 IR-75 INTERCHANGE.GPJ





Sample No.		1	2	3
Initial	Water Content, %	18.4	18.7	23.3
	Dry Density, pcf	109.9	110.9	103.4
	Saturation, %	92.9	97.1	99.8
	Void Ratio	0.5339	0.5204	0.6303
	Diameter, in.	2.87	2.85	2.87
	Height, in.	5.60	5.61	5.61
At Test	Water Content, %	17.5	17.4	20.1
	Dry Density, pcf	112.4	114.7	109.2
	Saturation, %	94.4	100.0	100.0
	Void Ratio	0.4995	0.4701	0.5430
	Diameter, in.	2.85	2.82	2.80
	Height, in.	5.56	5.53	5.57
Strain rate, %/min.		0.01	0.01	0.01
Back Pressure, psi		60.00	60.00	60.00
Cell Pressure, psi		72.24	84.39	112.55
Fail. Stress, psf		2196	2776	6227
Excess Pore Pr., psf		1050	2303	4282
Ult. Stress, psf		2760	4346	6871
Excess Pore Pr., psf		718	1676	3061
$\bar{\sigma}_1$ Failure, psf		2909	3984	9513
$\bar{\sigma}_3$ Failure, psf		713	1209	3285

Type of Test:
CU with Pore Pressures
Sample Type: Intact
Description: Sandy Silt (A-4a).

LL= 29 **PL=** 20 **PI=** 9
Assumed Specific Gravity= 2.7
Remarks: ASTM D4767
Plotted at approximately 5% strain.

Client: American Structurepoint, Inc.

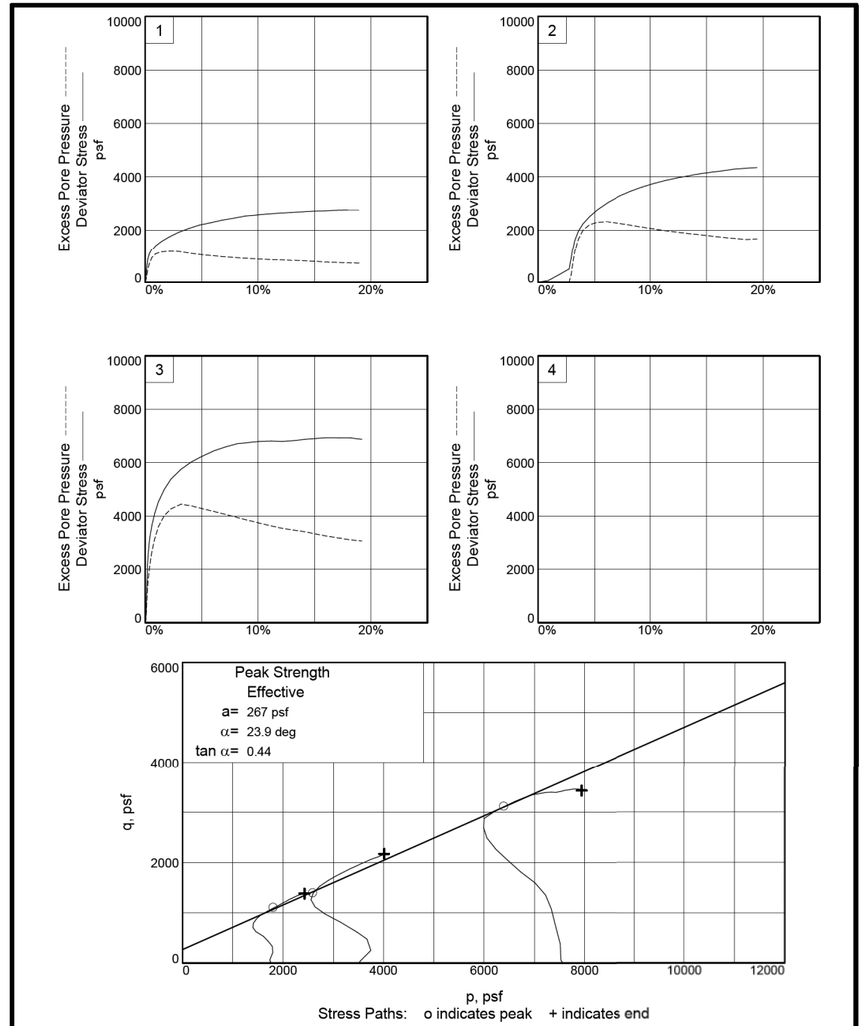
Project: HAM-75-3.84
Cincinnati, Ohio
Location: B-514-1-18 CU
Sample Number: ST-10, 11 **Depth:** 28.5'-32.0'
Proj. No.: 1178-18-006 **Date Sampled:** 8/3-10/2018

TRIAXIAL SHEAR TEST REPORT
S&ME, Inc.
Cincinnati, Ohio

C and phi are not test results but an interpretation of the test results. The designer is responsible for interpreting test data as provided by S&ME.

Figure 1

Tested By: PJM **Checked By:** NRR



Client: American Structurepoint, Inc.
Project: HAM-75-3.84
Location: B-514-1-18 CU **Depth:** 28.5'-32.0' **Sample Number:** ST-10, 11
Project No.: 1178-18-006

Figure 2

S&ME, Inc.

C and phi are not test results but an interpretation of the test results. The designer is responsible for interpreting test data as provided by S&ME.

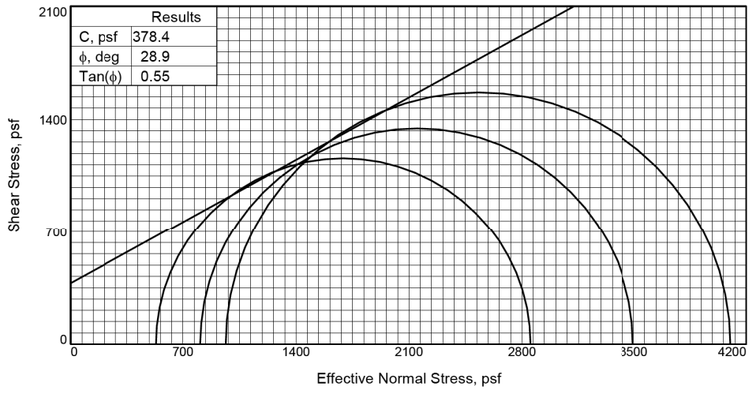
Tested By: PJM **Checked By:** NRR

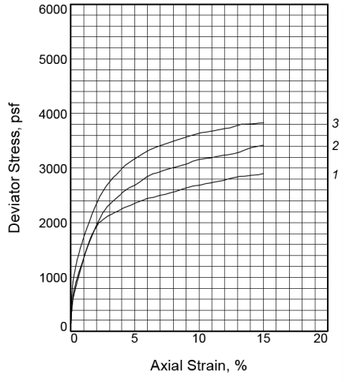
STRUCTURE FOUNDATION EXPLORATION
DATA SHEET - BORING B-514-1-18

DRAWN DWM
CHECKED BCD

HAM-75-3.84

N:\Projects\2018\GEO\178-18-006-Am StructurePt-HAM-75-3.84\Design\Roadway\Sheets\BU 9 Retaining Walls\104667_ZD001.dgn Sheet Profile Sheets\104667-HAM-75-3.84\Design\Roadway\Sheets\BU 9 Retaining Walls\104667_ZD001.dgn Sheet 1/22/20





Sample No.		1	2	3
Initial	Water Content, %	24.5	25.1	22.4
	Dry Density, pcf	101.3	100.8	102.0
	Saturation, %	97.5	98.4	90.7
	Void Ratio	0.6894	0.6987	0.6779
	Diameter, in.	2.875	2.870	2.868
	Height, in.	5.612	5.616	5.608
At Test	Water Content, %	24.5	25.1	23.8
	Dry Density, pcf	102.4	101.4	103.5
	Saturation, %	100.0	100.0	100.0
	Void Ratio	0.6724	0.6875	0.6535
	Diameter, in.	2.869	2.873	2.864
	Height, in.	5.579	5.569	5.543
Strain rate, %/min.		0.21	0.21	0.21
Eff. Cell Pressure, psi		3.000	6.000	12.000
Fail. Stress, psf		2320.3	2690.1	3135.8
Excess Pore Pr., psf		-100.8	57.6	763.2
Strain, %		4.7	5.0	4.8
Ult. Stress, psf		2897.4	3416.4	3828.0
Excess Pore Pr., psf		-504.0	-460.8	144.0
Strain, %		15.0	15.0	15.0
$\bar{\sigma}_1$ Failure, psf		2853.1	3496.5	4100.6
$\bar{\sigma}_3$ Failure, psf		532.8	806.4	964.8

Type of Test:
CU with Pore Pressures
Sample Type: Intact
Description: Clay (A-7-6)

LL= 53 **PL=** 17 **PI=** 36
Specific Gravity= 2.742
Remarks: ASTM D4767
Plotted at approximately 5% strain.

Client: American Structurepoint, Inc.

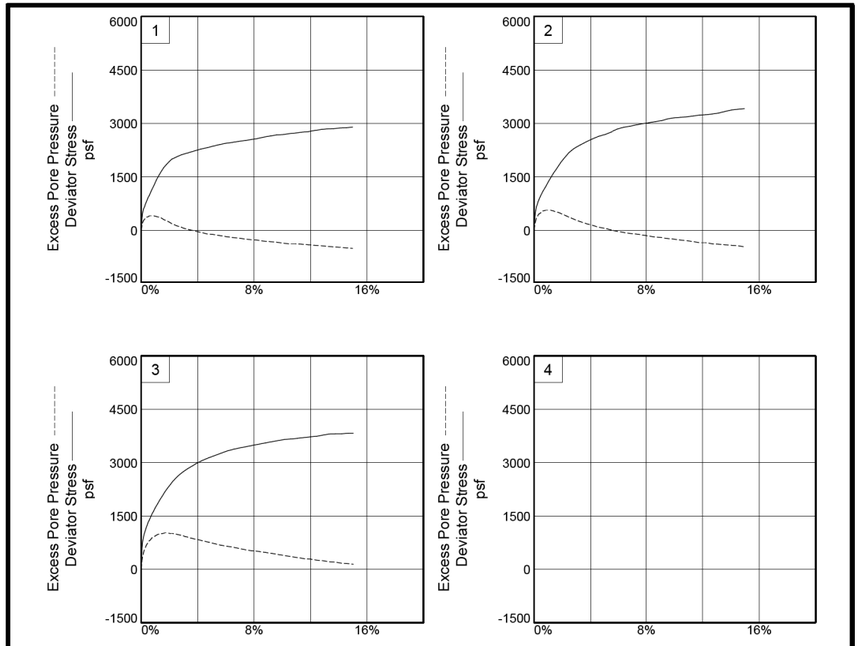
Project: HAM-75-3.84
Cincinnati, Ohio
Location: B-520-0-18
Sample Number: ST-3 **Depth:** 6.0 - 7.8
Proj. No.: 1178-18-006 **Date Sampled:** 08/21/18

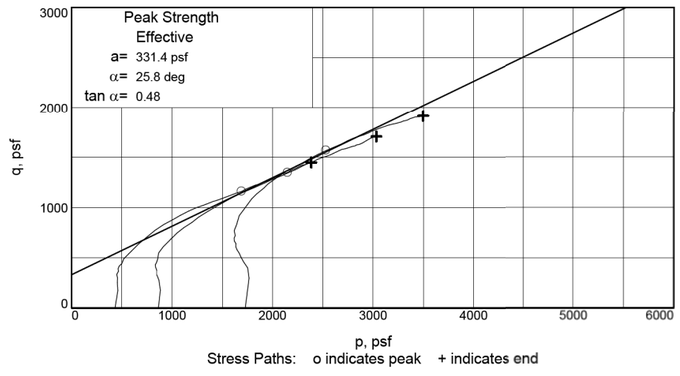
TRIAXIAL SHEAR TEST REPORT
S&ME, Inc.
Cincinnati, Ohio

C & phi are not test results but an interpretation of the test results. The designer is responsible for interpreting test data as provided by S&ME.

Figure Page 1 of 2

Tested By: M. Weber





Client: American Structurepoint, Inc.
Project: HAM-75-3.84
Location: B-520-18 **Depth:** 6.0 - 7.8 **Sample Number:** ST-3
Project No.: 1178-18-006 **Figure** Page 2 of 2

S&ME, Inc.

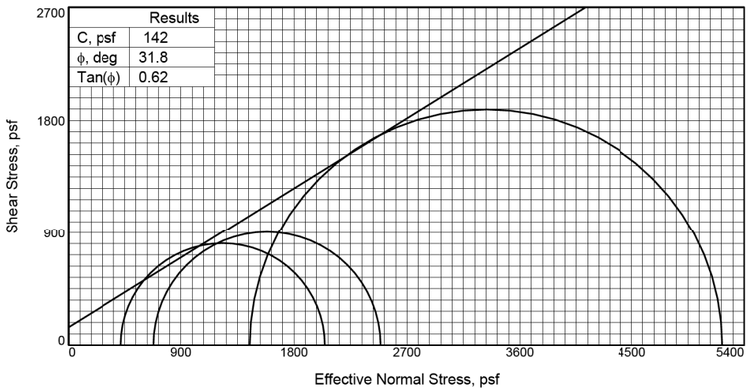
C & phi are not test results but an interpretation of the test results. The designer is responsible for interpreting test data as provided by S&ME.

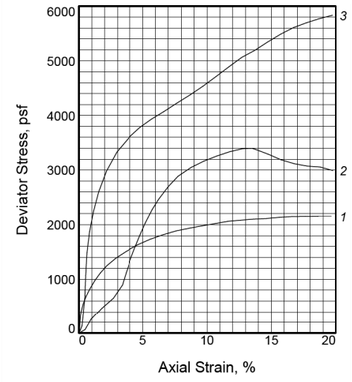
Tested By: M. Weber

STRUCTURE FOUNDATION EXPLORATION
DATA SHEET - BORING B-520-0-18

DRAWN DWM
CHECKED BCD

HAM-75-3.84





Sample No.		1	2	3
Initial	Water Content, %	23.0	24.0	18.2
	Dry Density, pcf	96.9	102.1	112.0
	Saturation, %	84.0	99.8	97.0
	Void Ratio	0.7391	0.6501	0.5054
	Diameter, in.	2.87	2.86	2.88
	Height, in.	5.61	5.60	5.61
At Test	Water Content, %	22.8	23.7	17.2
	Dry Density, pcf	98.2	102.8	114.0
	Saturation, %	85.9	100.0	96.9
	Void Ratio	0.7159	0.6397	0.4790
	Diameter, in.	2.85	2.86	2.86
	Height, in.	5.59	5.59	5.58
Strain rate, %/min.		0.02	0.02	0.01
Back Pressure, psi		60.00	60.00	60.00
Cell Pressure, psi		63.72	67.40	74.85
Fail. Stress, psf		1627	1810	3776
Excess Pore Pr., psf		117	385	690
Ult. Stress, psf		2153	2992	5835
Excess Pore Pr., psf		-336	-933	-532
$\bar{\sigma}_1$ Failure, psf		2046	2491	5224
$\bar{\sigma}_3$ Failure, psf		419	681	1448

Type of Test: CU with Pore Pressures
Sample Type: Intact
Description: Clay (A-7-6)

LL= 46 **PL=** 24 **PI=** 22
Assumed Specific Gravity= 2.7
Remarks: ASTM D4767
Plotted at approximately 5% strain.

Figure 1

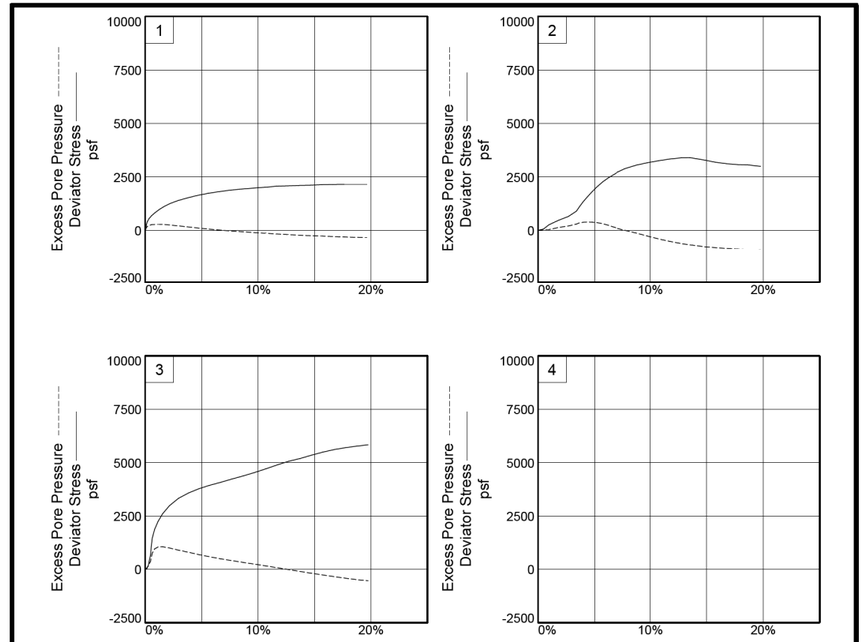
Client: American Structurepoint, Inc.

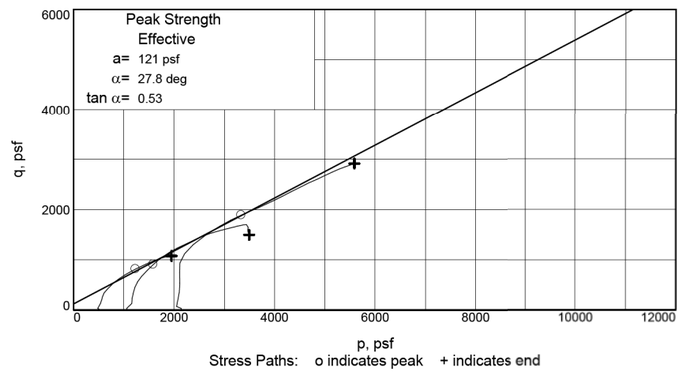
Project: HAM-75-3.84
Cincinnati, Ohio
Location: B-523-0-18 CU
Sample Number: ST-5 **Depth:** 8.5'-9.8'
Proj. No.: 1178-18-006 **Date Sampled:** 8/3-10/2018

TRIAXIAL SHEAR TEST REPORT
S&ME, Inc.
Cincinnati, Ohio

C and phi are not test results but an interpretation of the test results. The designer is responsible for interpreting test data as provided by S&ME.

Tested By: PJM **Checked By:** NRR





C and phi are not test results but an interpretation of the test results. The designer is responsible for interpreting test data as provided by S&ME.

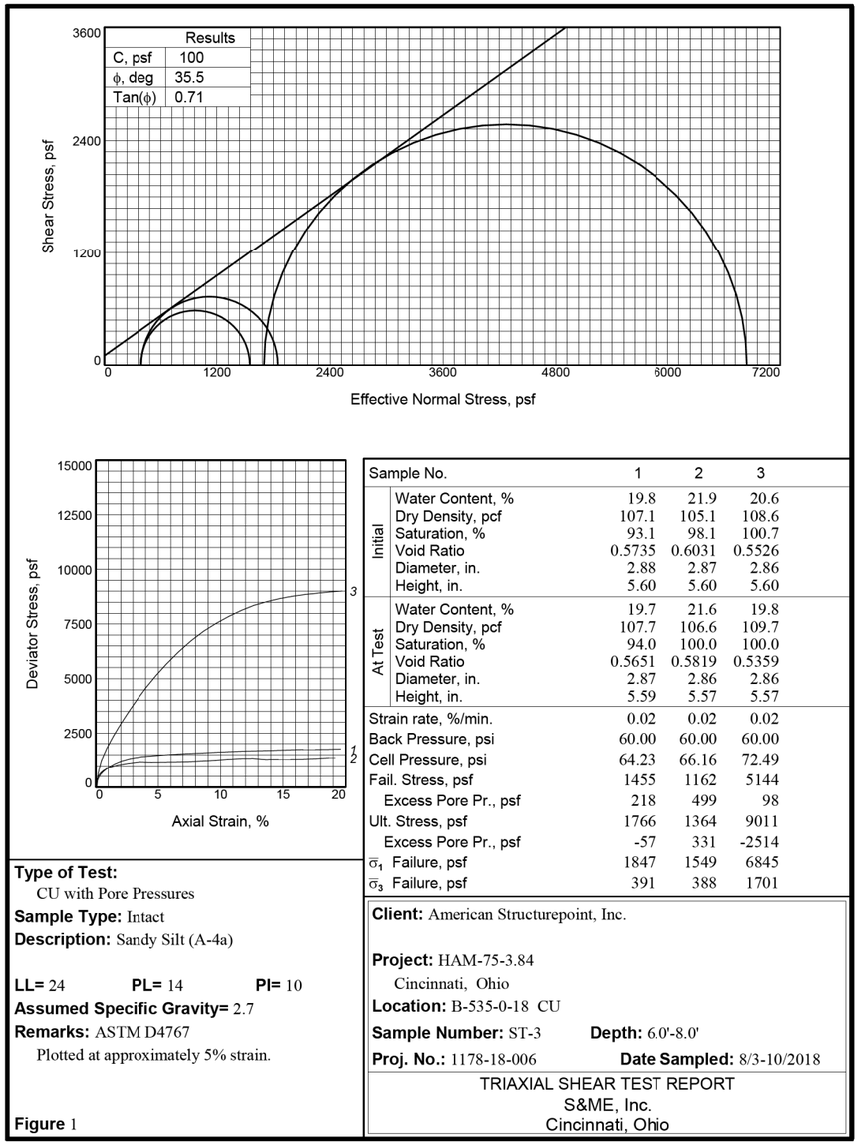
Client: American Structurepoint, Inc.
Project: HAM-75-3.84
Location: B-523-0-18 CU **Depth:** 8.5'-9.8' **Sample Number:** ST-5
Project No.: 1178-18-006 **Figure** 2 **S&ME, Inc.**

Tested By: PJM **Checked By:** NRR

STRUCTURE FOUNDATION EXPLORATION
DATA SHEET - BORING B-523-0-18

DRAWN DWM
CHECKED BCD

HAM-75-3.84



Sample No.		1	2	3
Initial	Water Content, %	19.8	21.9	20.6
	Dry Density, pcf	107.1	105.1	108.6
	Saturation, %	93.1	98.1	100.7
	Void Ratio	0.5735	0.6031	0.5526
	Diameter, in.	2.88	2.87	2.86
	Height, in.	5.60	5.60	5.60
At Test	Water Content, %	19.7	21.6	19.8
	Dry Density, pcf	107.7	106.6	109.7
	Saturation, %	94.0	100.0	100.0
	Void Ratio	0.5651	0.5819	0.5359
	Diameter, in.	2.87	2.86	2.86
	Height, in.	5.59	5.57	5.57
Strain rate, %/min.		0.02	0.02	0.02
Back Pressure, psi		60.00	60.00	60.00
Cell Pressure, psi		64.23	66.16	72.49
Fail. Stress, psf		1455	1162	5144
Excess Pore Pr., psf		218	499	98
Ult. Stress, psf		1766	1364	9011
Excess Pore Pr., psf		-57	331	-2514
$\bar{\sigma}_1$ Failure, psf		1847	1549	6845
$\bar{\sigma}_3$ Failure, psf		391	388	1701

Type of Test:
CU with Pore Pressures
Sample Type: Intact
Description: Sandy Silt (A-4a)

LL= 24 **PL=** 14 **PI=** 10
Assumed Specific Gravity= 2.7
Remarks: ASTM D4767
Plotted at approximately 5% strain.

Client: American Structurepoint, Inc.

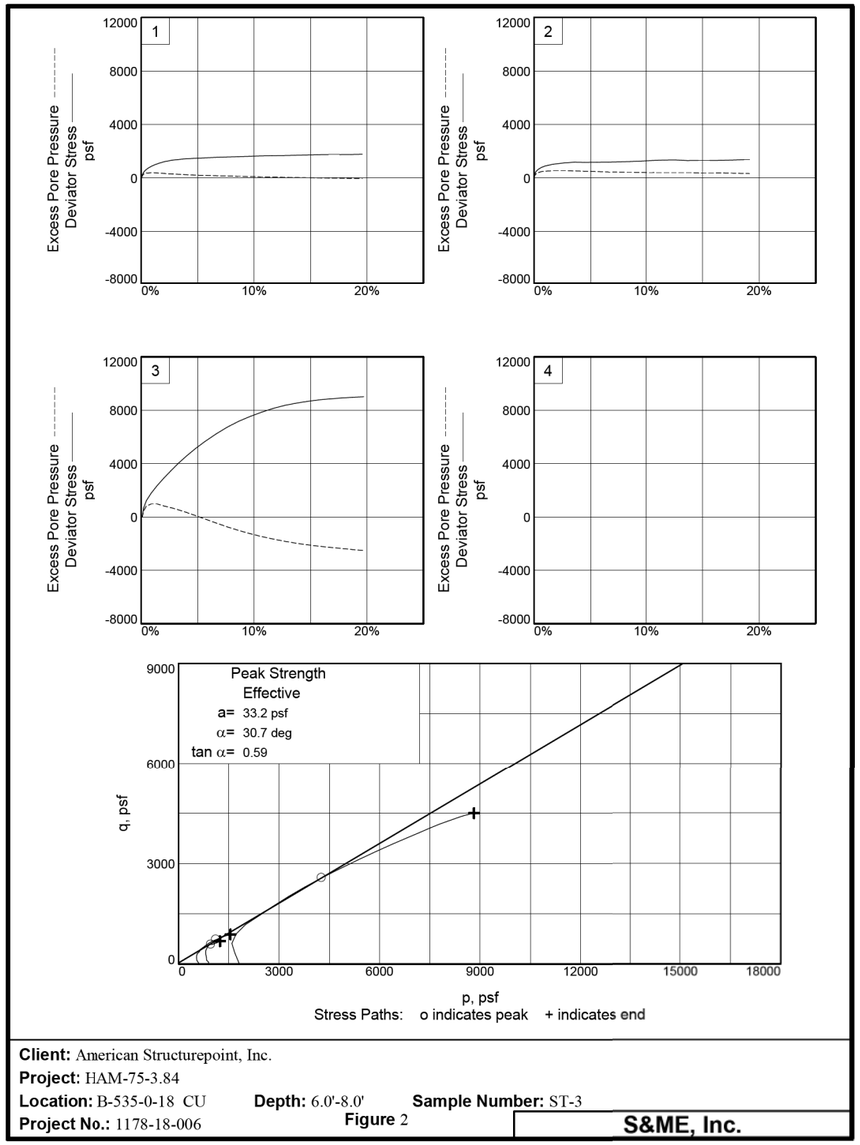
Project: HAM-75-3.84
Cincinnati, Ohio
Location: B-535-0-18 CU
Sample Number: ST-3 **Depth:** 6.0'-8.0'
Proj. No.: 1178-18-006 **Date Sampled:** 8/3-10/2018

TRIAXIAL SHEAR TEST REPORT
S&ME, Inc.
Cincinnati, Ohio

C and phi are not test results but an interpretation of the test results. The designer is responsible for interpreting test data as provided by S&ME.

Figure 1

Tested By: PJM **Checked By:** NRR



C and phi are not test results but an interpretation of the test results. The designer is responsible for interpreting test data as provided by S&ME.

Client: American Structurepoint, Inc.
Project: HAM-75-3.84
Location: B-535-0-18 CU **Depth:** 6.0'-8.0' **Sample Number:** ST-3
Project No.: 1178-18-006

Figure 2

S&ME, Inc.

Tested By: PJM **Checked By:** NRR

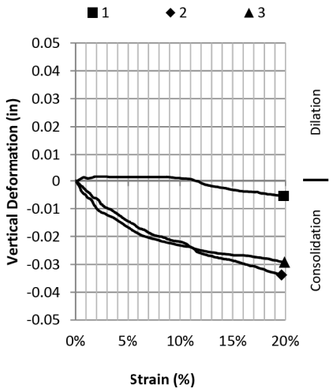
STRUCTURE FOUNDATION EXPLORATION
DATA SHEET - BORING B-535-0-18

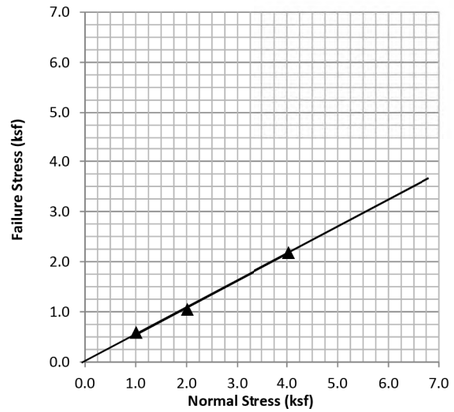
DRAWN DWM
CHECKED BCD

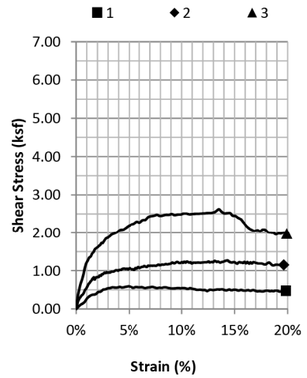
HAM-75-3.84

DIRECT SHEAR TEST REPORT

Results: C (ksf) = 0 ϕ (deg) = 28.0







Sample No.		1	2	3
Initial	Moisture Content (%)	19.86%	20.92%	20.26%
	Dry Density (pcf)	103.33	99.69	100.03
	Saturation (%)	86.6%	83.2%	81.3%
	Void Ratio	0.6125	0.6712	0.6656
	Diameter (in)	2.50	2.50	2.50
	Height (in)	1.00	1.00	1.00
At Test	Moisture Content (%)	22.83%	22.31%	20.73%
	Dry Density (pcf)	102.37	100.69	104.37
	Saturation (%)	97.2%	91.0%	92.8%
	Void Ratio	0.6275	0.6546	0.5964
	Diameter (in)	2.499	2.499	2.501
	Height (in)	0.99	0.98	0.96
Normal Stress (ksf)		1.01	2.02	4.03
Failure Stress (ksf)		0.59	1.05	2.18
- Strain at Failure (%)		4.95%	4.78%	4.93%
Ultimate Stress (ksf)		0.47	1.15	1.98
- Strain at Ultimate (%)		19.84%	19.64%	19.92%
Avg. Strain Rate (in/min)		0.0018	0.0010	0.0020

Sample Type: Shelby Tube
Sample Description:
Stiff brown CLAY (A-7-6(15))

Comments:
ASTM D3080
Plotted near 5% strain.

LL = 43 **PI =** 25
Specific Gravity = 2.670

Client:	American Structurepoint, Inc.
Project Name:	HAM-75-3.84
Project Location:	Cincinnati, Ohio
Project No.:	1178-18-006
Boring ID:	B-519-18
Sample ID:	ST-1
Sample Depth:	8.5'-9.2' Section T
Date(s) Tested:	9/27-10-2/2018

Tested By: PJM Checked By: BKS

Summary of Unconfined Compressive Tests on Bedrock

Boring	Specimen Depth (feet)	Specimen Elevation	Unconfined Compressive Strength (psi)	Bedrock Description
B-517-0-18	9.5 to 9.6	514.8 to 514.7	244	SHALE, gray, very weak
B-518-0-18	5.4 to 5.8	521.8 to 521.4	135	SHALE, gray, very weak
B-521-0-18	16.7 to 17.1	513.0 to 512.6	2,642	SHALE, gray, slightly strong
B-522-0-18	13.4 to 13.8	519.9 to 519.5	113	SHALE, gray, very weak
B-522-0-18	19.2 to 19.9	514.1 to 513.4	255	SHALE, gray, very weak
B-524-0-18	19.4 to 19.8	517.0 to 516.6	602	SHALE, gray, very weak
B-525-0-18	46.4 to 47.0	497.1 to 496.5	618	SHALE, gray, very weak
B-525-0-18	57.7 to 58.1	485.8 to 485.4	1,125	SHALE, gray, weak
B-526-0-18	16.2 to 16.7	522.3 to 521.8	181	SHALE, gray, very weak
B-527-0-18	25.9 to 26.6	513.2 to 512.5	439	SHALE, gray, very weak
B-527-0-18	26.8 to 27.3	512.3 to 511.8	492	SHALE, gray, very weak

Summary of Point Load Tests on Bedrock

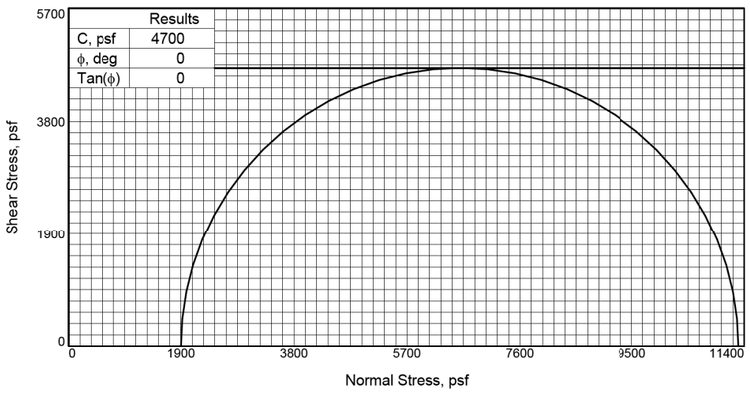
Boring	Specimen Depth (feet)	Specimen Elevation	Point Load, $I_{S(50)}$ (psi)*	Bedrock Description
B-518-0-18	5.4 to 5.8	521.8 to 521.4	19	SHALE, gray, very weak
B-525-0-18	46.4 to 47.0	497.1 to 496.5	6	SHALE, gray, very weak
B-525-0-18	57.7 to 58.1	485.8 to 485.4	100	SHALE, gray, slightly strong
B-526-0-18	16.2 to 16.7	522.3 to 521.8	15	SHALE, gray, very weak
B-527-0-18	25.9 to 26.6	513.2 to 512.5	788	LIMESTONE, gray, very strong
B-527-0-18	25.9 to 26.6	513.2 to 512.5	18	SHALE, gray, very weak
B-527-0-18	26.8 to 27.3	512.3 to 511.8	62	SHALE, gray, weak

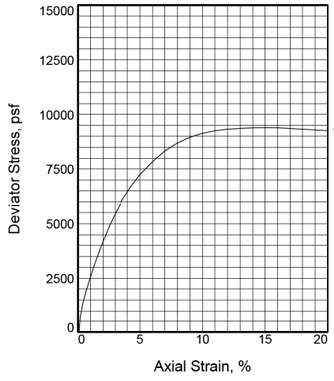
* Testing performed parallel to the plane of weakness

DRAWN DWM CHECKED BCD

STRUCTURE FOUNDATION EXPLORATION
DATA SHEET - BORING B-519-0-18
SUMMARY OF BEDROCK TESTING

HAM-75-3.84





Sample No.		1
Initial	Water Content, %	13.9
	Dry Density, pcf	121.3
	Saturation, %	96.1
	Void Ratio	0.3899
	Diameter, in.	2.87
	Height, in.	5.61
At Test	Water Content, %	14.2
	Dry Density, pcf	121.3
	Saturation, %	98.4
	Void Ratio	0.3899
	Diameter, in.	2.87
	Height, in.	5.61
Strain rate, %/min.		1.24
Back Pressure, psi		0.00
Cell Pressure, psi		13.20
Fail. Stress, psf		9400
Ult. Stress, psf		9260
σ_1 Failure, psf		11301
σ_3 Failure, psf		1901

Type of Test:
Unconsolidated Undrained
Sample Type: Intact
Description: Silt (A-4b)

LL= 26 **PL=** 17 **PI=** 9
Assumed Specific Gravity= 2.7
Remarks: ASTM D2850

Figure 1

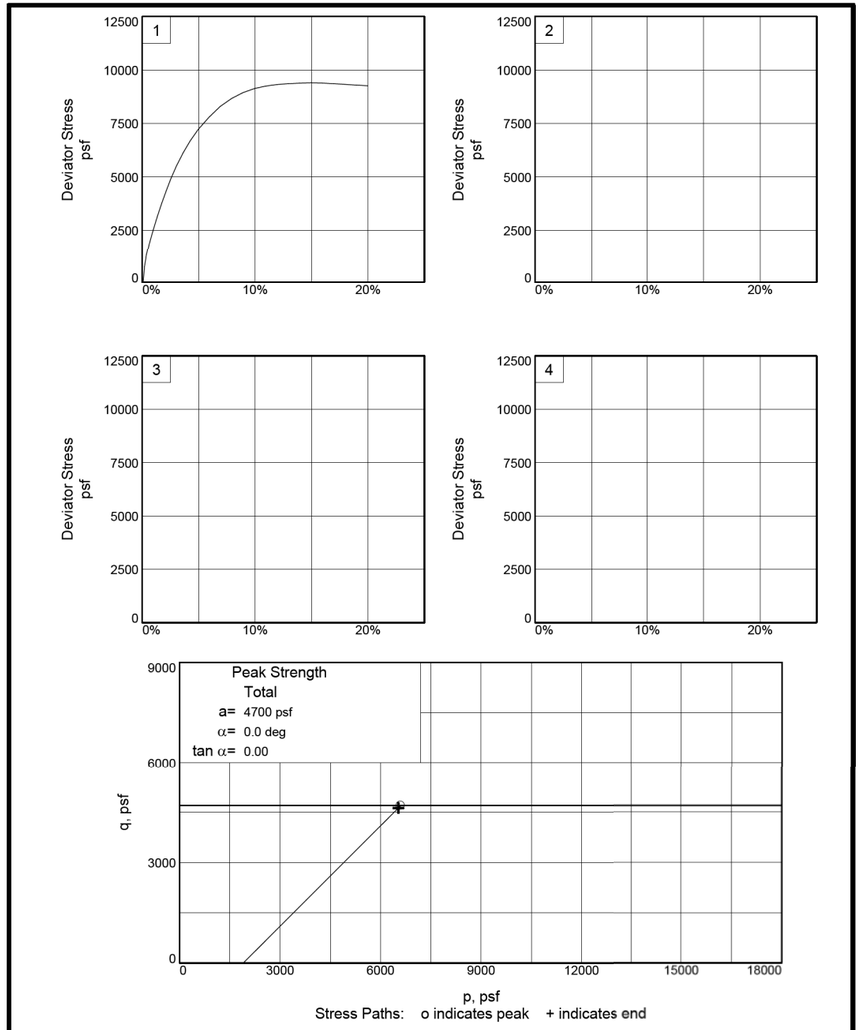
Client: American Structurepoint, Inc.

Project: HAM-75-3.84
Cincinnati, Ohio
Location: B-513-1-18 UU
Sample Number: ST-6 **Depth:** 13.5'-15.3'
Proj. No.: 1178-18-006 **Date Sampled:** 8/3-10/2018

TRIAXIAL SHEAR TEST REPORT
S&ME, Inc.
Cincinnati, Ohio

C and phi are not test results but an interpretation of the test results. The designer is responsible for interpreting test data as provided by S&ME.

Tested By: PJM **Checked By:** NRR



Client: American Structurepoint, Inc.
Project: HAM-75-3.84
Location: B-513-1-18 UU **Depth:** 13.5'-15.3' **Sample Number:** ST-6
Project No.: 1178-18-006 **Figure** 2

S&ME, Inc.

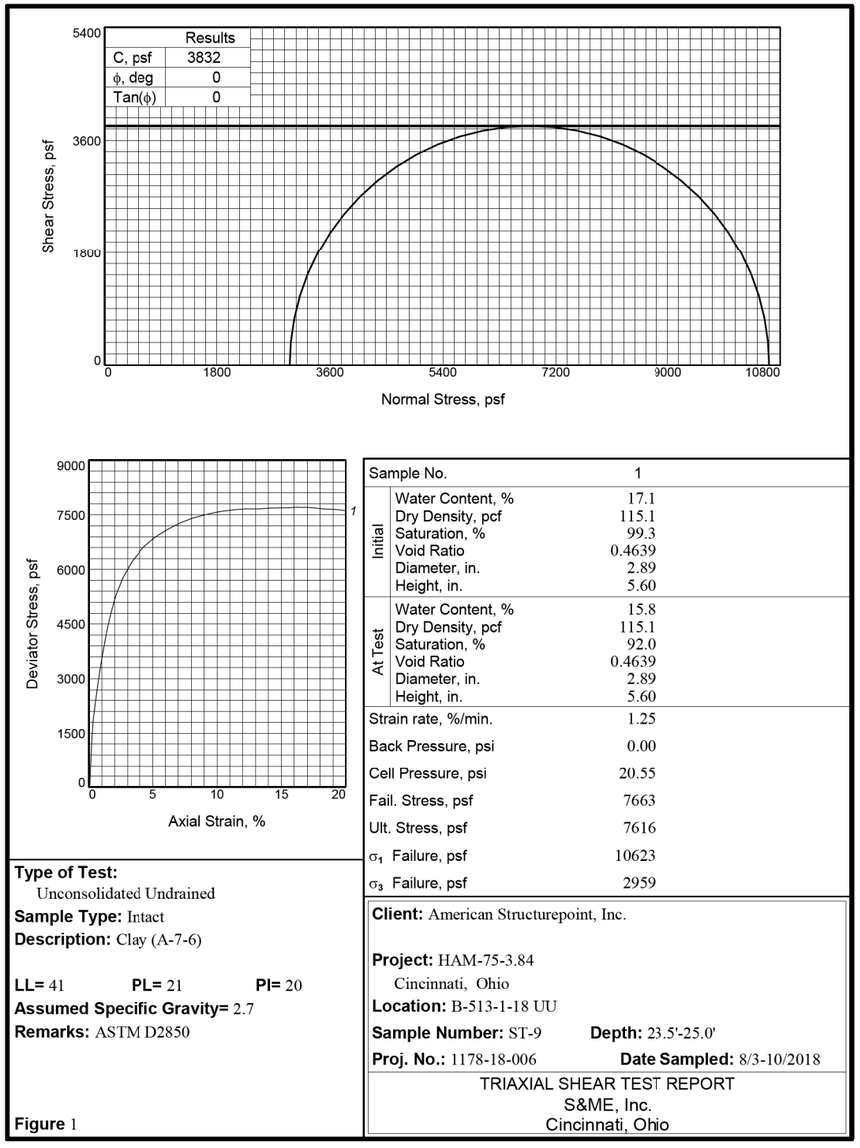
C and phi are not test results but an interpretation of the test results. The designer is responsible for interpreting test data as provided by S&ME.

Tested By: PJM **Checked By:** NRR

STRUCTURE FOUNDATION EXPLORATION
DATA SHEET - BORING B-513-1-18

HAM-75-3.84

DRAWN DWM
CHECKED BCD



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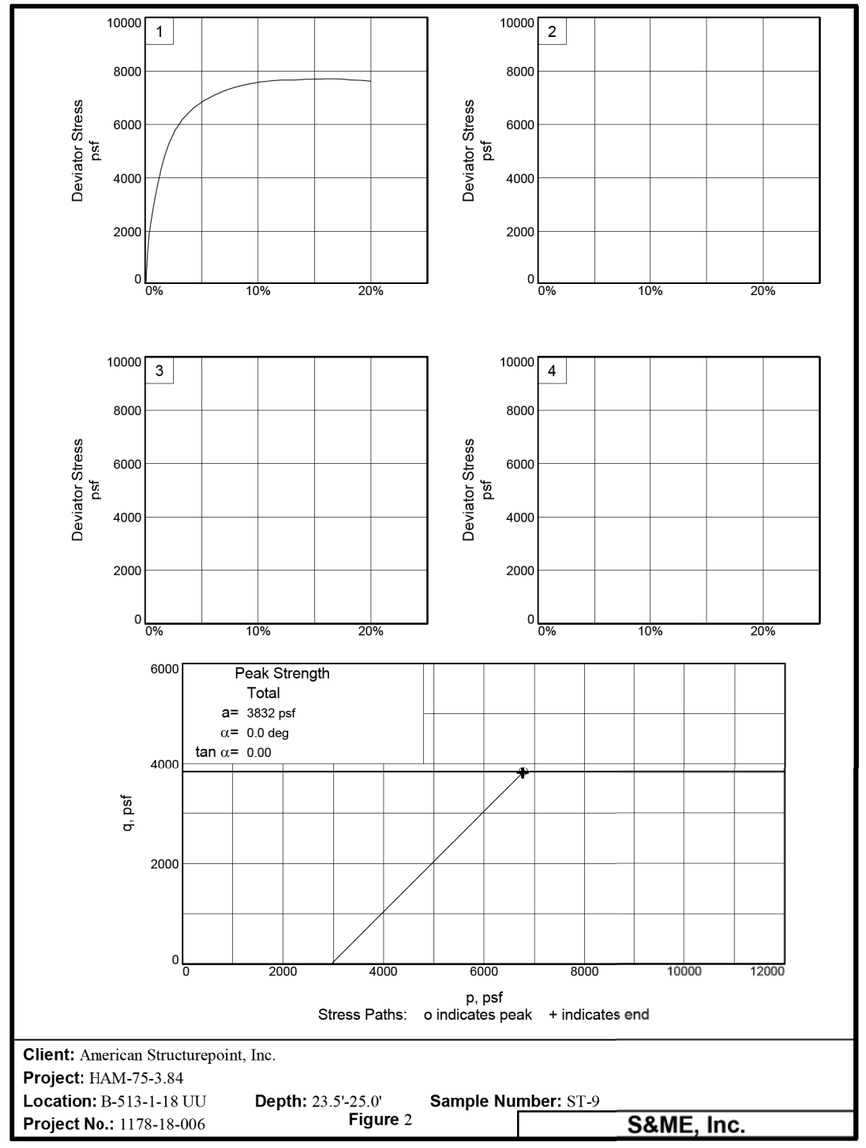
Tested By: PJM Checked By: NRR



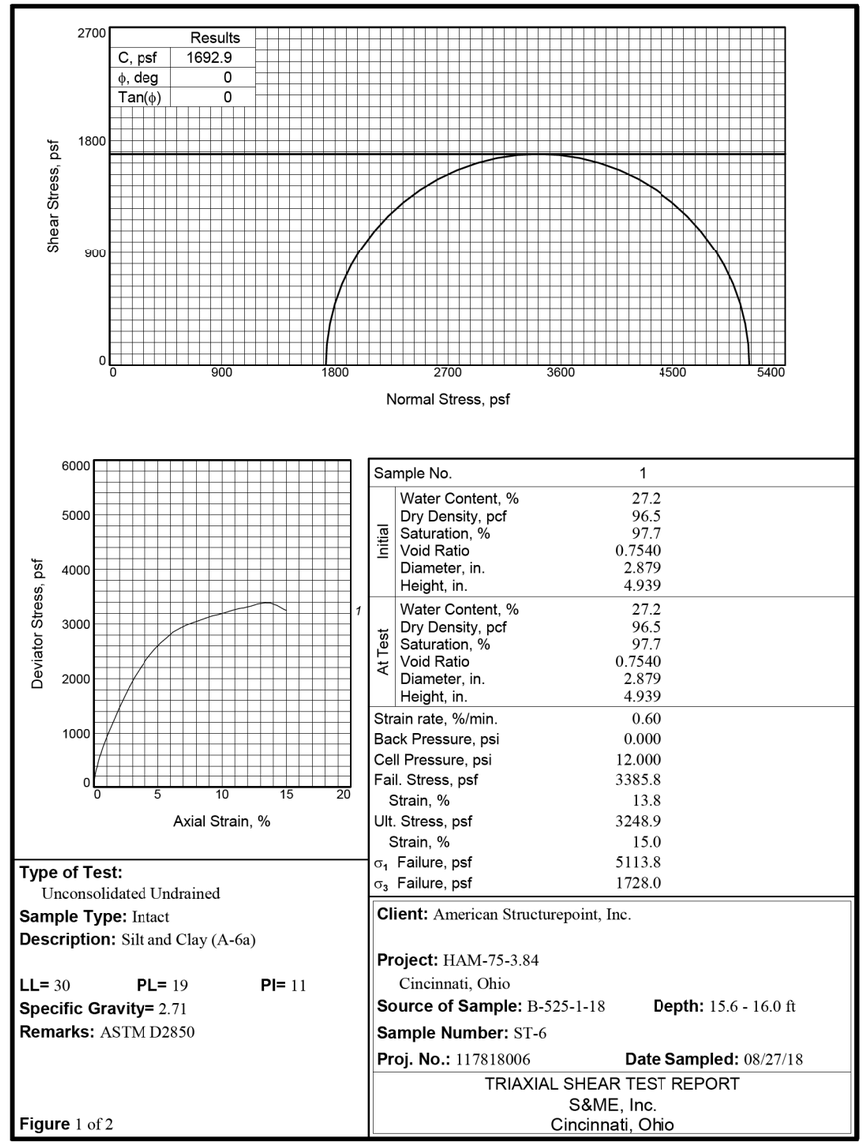
C and phi are not test results but an interpretation of the test results. The designer is responsible for interpreting test data as provided by S&ME.

Tested By: PJM Checked By: NRR

STRUCTURE FOUNDATION EXPLORATION
DATA SHEET - BORING B-513-1-18

DRAWN DWM
CHECKED BCD

HAM-75-3.84



Sample No.		1
Initial	Water Content, %	27.2
	Dry Density, pcf	96.5
	Saturation, %	97.7
	Void Ratio	0.7540
	Diameter, in.	2.879
	Height, in.	4.939
At Test	Water Content, %	27.2
	Dry Density, pcf	96.5
	Saturation, %	97.7
	Void Ratio	0.7540
	Diameter, in.	2.879
	Height, in.	4.939
Strain rate, %/min.		0.60
Back Pressure, psi		0.000
Cell Pressure, psi		12.000
Fail. Stress, psf		3385.8
Strain, %		13.8
Ult. Stress, psf		3248.9
Strain, %		15.0
σ_1 Failure, psf		5113.8
σ_3 Failure, psf		1728.0

Type of Test:
Unconsolidated Undrained
Sample Type: Intact
Description: Silt and Clay (A-6a)

LL= 30 **PL=** 19 **PI=** 11
Specific Gravity= 2.71
Remarks: ASTM D2850

Figure 1 of 2

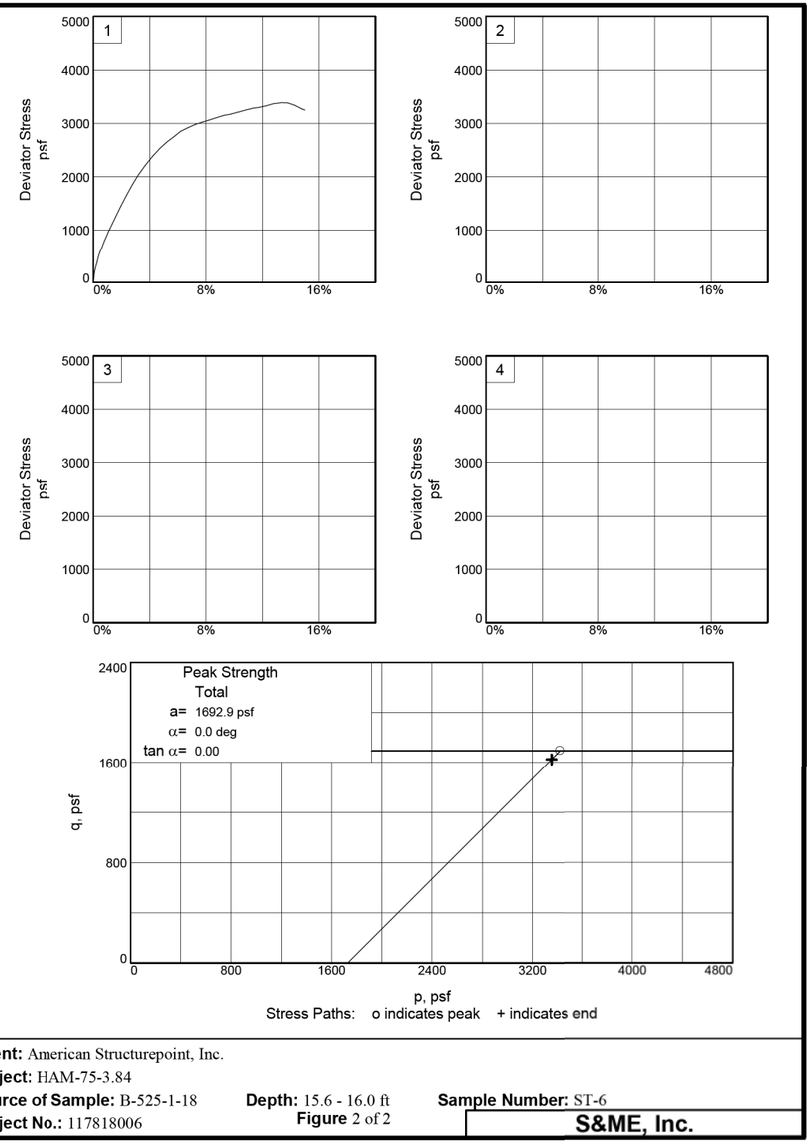
Client: American Structurepoint, Inc.

Project: HAM-75-3.84
Cincinnati, Ohio
Source of Sample: B-525-1-18 **Depth:** 15.6 - 16.0 ft
Sample Number: ST-6
Proj. No.: 117818006 **Date Sampled:** 08/27/18

TRIAXIAL SHEAR TEST REPORT
S&ME, Inc.
Cincinnati, Ohio

C & phi are not test results but an interpretation of the test results. The designer is responsible for interpreting test data as provided by S&ME.

Tested By: M. Weber **Checked By:** J. Folsom



Client: American Structurepoint, Inc.
Project: HAM-75-3.84
Source of Sample: B-525-1-18 **Depth:** 15.6 - 16.0 ft **Sample Number:** ST-6
Project No.: 117818006 **Figure** 2 of 2

S&ME, Inc.

C & phi are not test results but an interpretation of the test results. The designer is responsible for interpreting test data as provided by S&ME.

Tested By: M. Weber **Checked By:** J. Folsom

STRUCTURE FOUNDATION EXPLORATION
DATA SHEET - BORING B-525-1-18

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HAM-75-3.84

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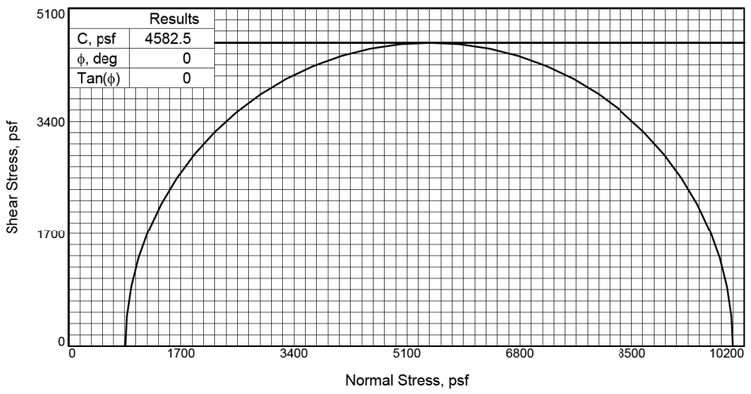
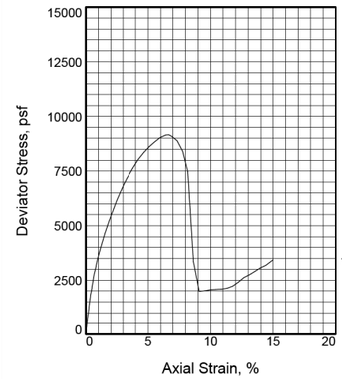




Sample No.		1
Initial	Water Content, %	17.9
	Dry Density, pcf	114.4
	Saturation, %	98.3
	Void Ratio	0.5011
	Diameter, in.	2.837
	Height, in.	5.622
At Test	Water Content, %	17.9
	Dry Density, pcf	114.4
	Saturation, %	98.3
	Void Ratio	0.5011
	Diameter, in.	2.837
	Height, in.	5.622
Strain rate, %/min.		0.60
Back Pressure, psi		0.000
Cell Pressure, psi		6.000
Fail. Stress, psf		9165.0
Strain, %		6.7
Ult. Stress, psf		3437.2
Strain, %		15.0
σ_1 Failure, psf		10029.0
σ_3 Failure, psf		864.0

Type of Test:
Unconsolidated Undrained
Sample Type: Intact
Description: Olive Lean clay (5Y 4/3)

LL= 44 **PL=** 22 **PI=** 22
Specific Gravity= 2.75
Remarks: ASTM D2850

Client: American Structurepoint, Inc.

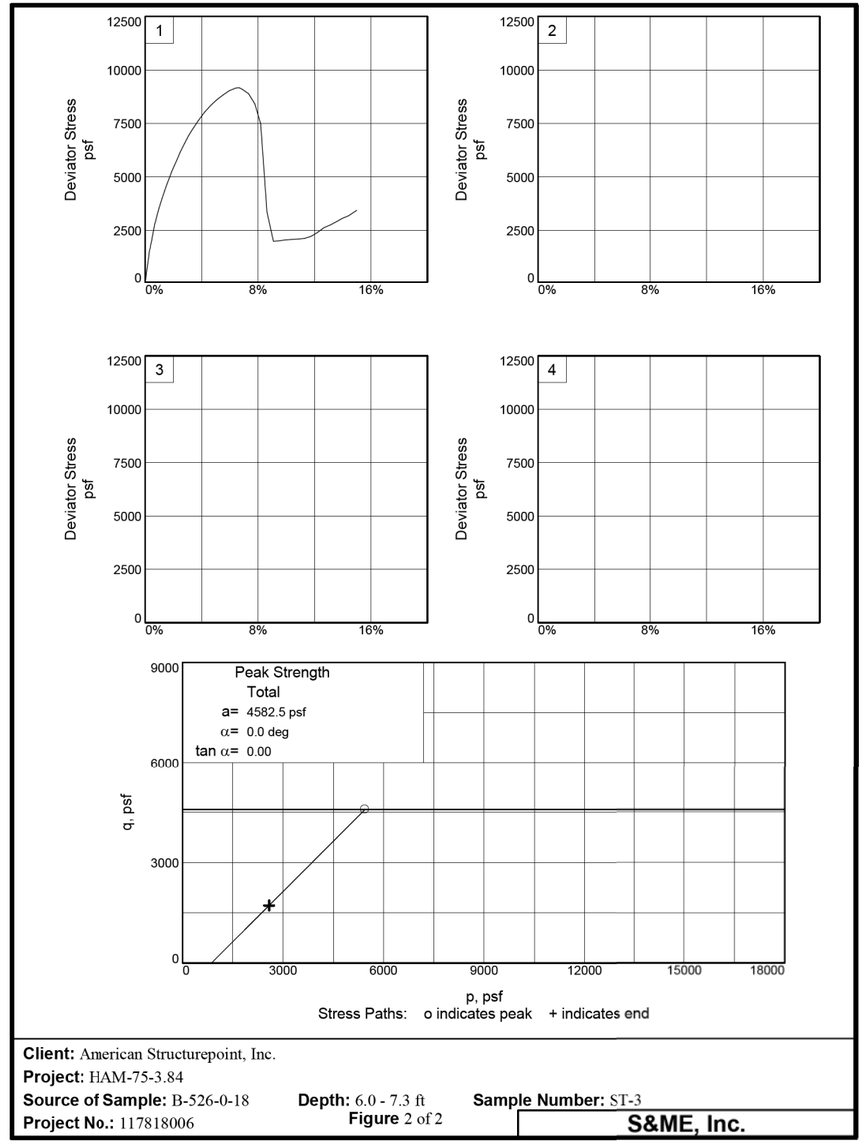
Project: HAM-75-3.84
Cincinnati, Ohio
Source of Sample: B-526-0-18 **Depth:** 6.0 - 7.3 ft
Sample Number: ST-3
Proj. No.: 117818006 **Date Sampled:** 08/24/18

TRIAXIAL SHEAR TEST REPORT
S&ME, Inc.
Cincinnati, Ohio

Figure 1 of 2

C & phi are not test results but an interpretation of the test results. The designer is responsible for interpreting test data as provided by S&ME.

Tested By: M. Weber **Checked By:** J. Folsom



Client: American Structurepoint, Inc.
Project: HAM-75-3.84
Source of Sample: B-526-0-18 **Depth:** 6.0 - 7.3 ft **Sample Number:** ST-3
Project No.: 117818006 **Figure** 2 of 2

S&ME, Inc.

C & phi are not test results but an interpretation of the test results. The designer is responsible for interpreting test data as provided by S&ME.

Tested By: M. Weber **Checked By:** J. Folsom

STRUCTURE FOUNDATION EXPLORATION DATA SHEET - BORING B-526-0-18

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HAM-75-3.84

53/54

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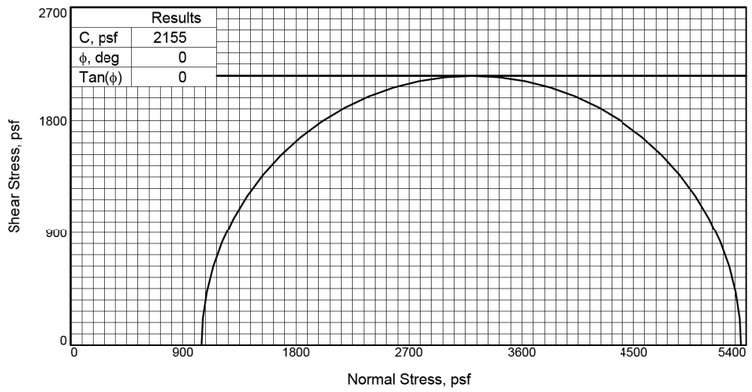
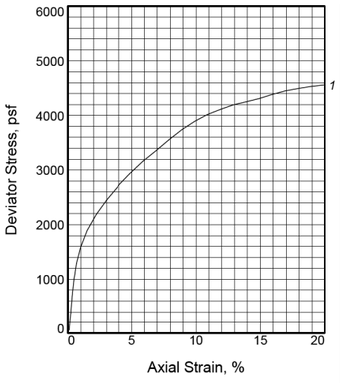




Sample No.		1
Initial	Water Content, %	22.3
	Dry Density, pcf	106.0
	Saturation, %	102.0
	Void Ratio	0.5904
	Diameter, in.	2.86
	Height, in.	5.60
At Test	Water Content, %	19.3
	Dry Density, pcf	106.0
	Saturation, %	88.1
	Void Ratio	0.5904
	Diameter, in.	2.86
	Height, in.	5.60
Strain rate, %/min.		1.03
Back Pressure, psi		0.00
Cell Pressure, psi		7.28
Fail. Stress, psf		4310
Ult. Stress, psf		4558
σ_1 Failure, psf		5358
σ_3 Failure, psf		1048

Type of Test:
Unconsolidated Undrained
Sample Type: Intact
Description: Silt and Clay (A-6a)

LL= 31 **PL=** 18 **PI=** 13
Assumed Specific Gravity= 2.7
Remarks: ASTM D2850

Client: American Structurepoint, Inc.

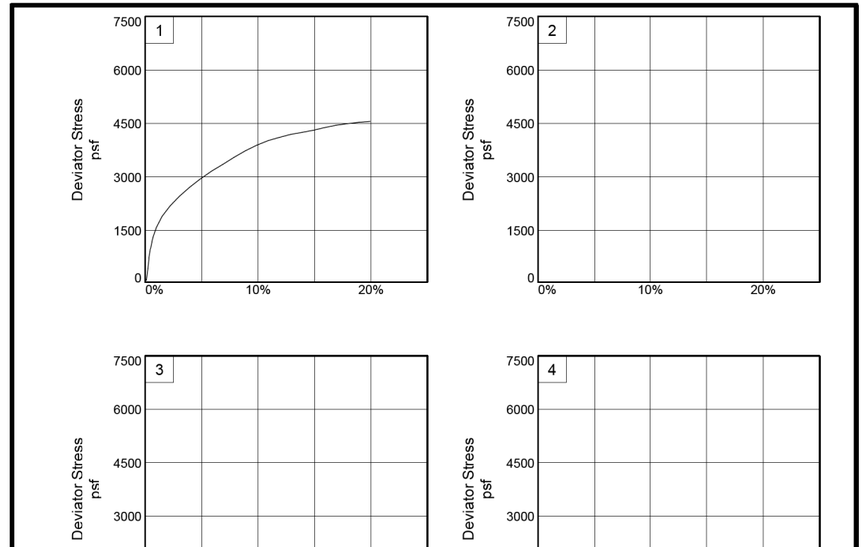
Project: HAM-75-3.84
Cincinnati, Ohio
Location: B-528-0-18 UU
Sample Number: ST-5 **Depth:** 8.0'-9.6'
Proj. No.: 1178-18-006 **Date Sampled:** 8/3-10/2018

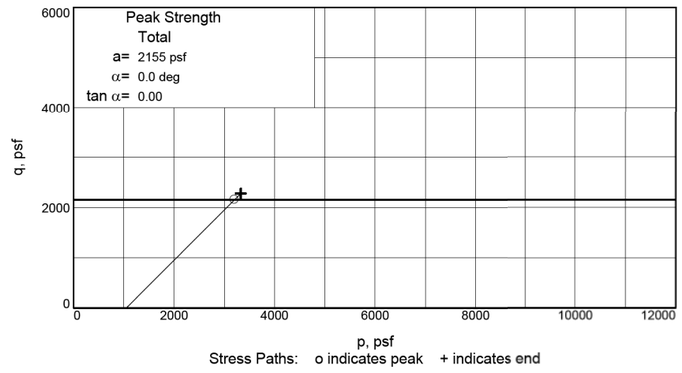
TRIAXIAL SHEAR TEST REPORT
S&ME, Inc.
Cincinnati, Ohio

Figure 1

C and phi are not test results but an interpretation of the test results. The designer is responsible for interpreting test data as provided by S&ME.

Tested By: PJM **Checked By:** NRR





Stress Paths: o indicates peak + indicates end

Client: American Structurepoint, Inc.
Project: HAM-75-3.84
Location: B-528-0-18 UU **Depth:** 8.0'-9.6' **Sample Number:** ST-5
Project No.: 1178-18-006 **Figure** 2

S&ME, Inc.

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Tested By: PJM **Checked By:** NRR

STRUCTURE FOUNDATION EXPLORATION
DATA SHEET - BORING B-528-0-18

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HAM-75-3.84