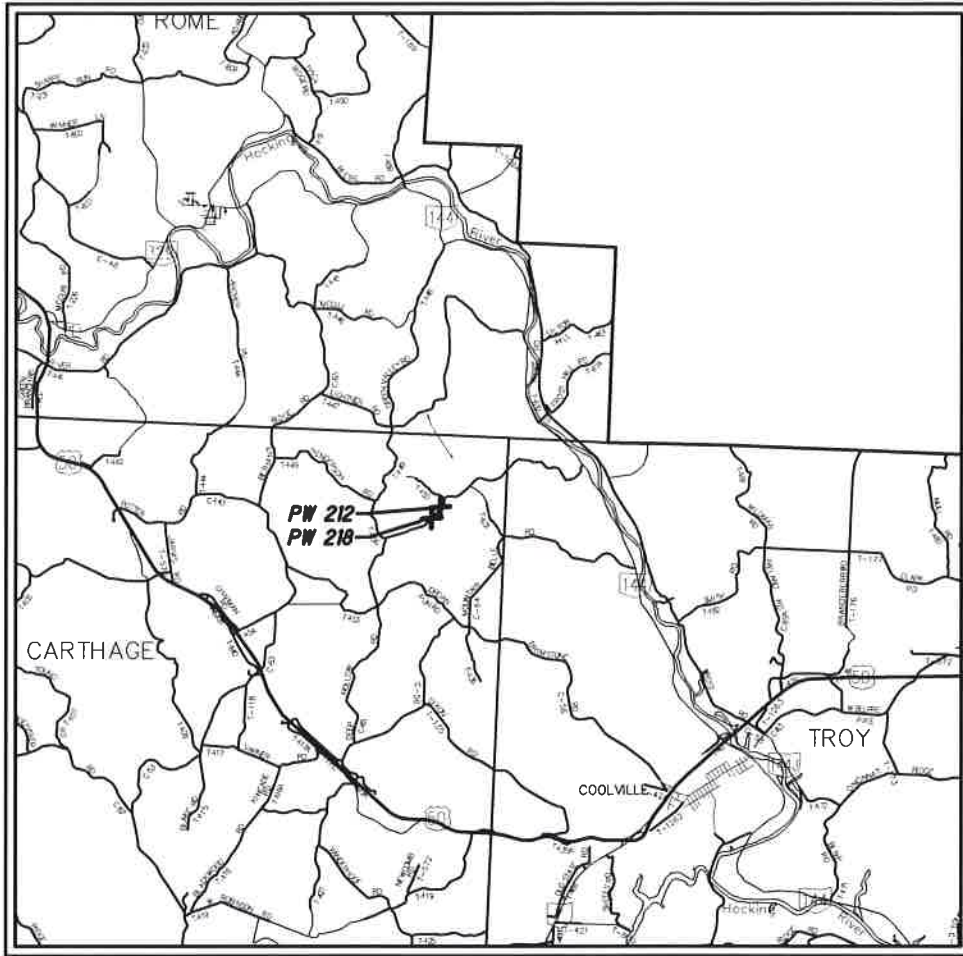


# ATHENS COUNTY ENGINEER

# ATH-FEMA LANDSLIDE REPAIRS PHASE 1



### LOCATION MAP

PW 212 - LATITUDE: N39°15'45"    LONGITUDE: W81°51'04"  
 PW 218 - LATITUDE: N39°15'40"    LONGITUDE: W81°51'09"



**UNDERGROUND UTILITIES**

CONTACT BOTH SERVICES  
CALL TWO WORKING DAYS  
**BEFORE YOU DIG**

CALL  
**1-800-362-2764**  
(TOLL FREE)

OHIO UTILITIES PROTECTION SERVICE  
NON-MEMBERS  
MUST BE CALLED DIRECTLY

OIL & GAS PRODUCERS UNDERGROUND  
PROTECTION SERVICE CALL: **1-800-925-0988**



PLANS PREPARED BY:  
 ATHENS COUNTY ENGINEER'S OFFICE  
 16000 CANAANVILLE RD  
 ATHENS, OHIO 45701

### INDEX OF SHEETS:

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GENERAL NOTES & GENERAL SUMMARIES	2
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### PROJECT DESCRIPTION

PW 212 CONSISTS OF THE CONSTRUCTION OF A DRIVEN SHEET PILE WALL AND GUARDRAIL ALONG DEEP HOLLOW RD (CR65) LOCATED APPROXIMATELY 0.10 MILES SOUTH OF THE INTERSECTION WITH TR 150.  
 PW 218 CONSISTS OF THE CONSTRUCTION OF A DRILLED PIER WALL AND GUARDRAIL ALONG DEEP HOLLOW RD (CR65) LOCATED APPROXIMATELY 0.23 MILES SOUTH OF THE INTERSECTION WITH TR 150.

### 2013 SPECIFICATIONS

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

ENGINEER'S SEAL	STANDARD CONSTRUCTION DRAWINGS	SUPPLEMENTAL SPECIFICATIONS
 SIGNED: <i>Rex Maiden</i> DATE: 12/01/14	DM-1.1    1-18-13	SS-800    10-17-14
	DM-1.4    1-18-13	SS-832    1-17-14
	MGS-1.1    7-19-13	
	MGS-4.2    7-19-13	
	MT-97.10    7-18-14	
	MT-101.60    7-19-13	
	MT-101.70    1-17-14	
	MT-105.10    7-19-13	

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CONTRACT SPECIFICATIONS

THE JANUARY 1, 2013 VERSION OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS AS PUBLISHED BY THE OHIO DEPARTMENT OF TRANSPORTATION SHALL GOVERN ALL ASPECTS OF THE CONTRACT WORK. THE CONTRACTOR SHOULD BE FAMILIAR WITH THESE SPECIFICATIONS AND THEIR PROCEDURAL REQUIREMENTS.

STANDARD DRAWINGS

REFERENCE SHOULD BE MADE TO THE STANDARD DRAWINGS SHOWN IN THE TABLE ON THE COVER SHEET.

O.U.P.S CALL:

THE CONTRACTOR IS RESPONSIBLE FOR CALLING THE OHIO UTILITIES PROTECTION SERVICE AT LEAST TWO DAYS BEFORE DIGGING. THE TOLL-FREE NUMBER IS (800) 362-2764.

UTILITIES

LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS:

(1) ELECTRIC AMERICAN ELECTRIC POWER  
9135 SR 682  
ATHENS, OHIO 45701  
CONTACT: CHRIS McDANIELS  
PHONE: 740-532-9927

(2) TELEPHONE WINDSTREAM COMMUNICATIONS  
9220 W CENTRAL AVENUE  
NAPOLEON, OHIO 43545  
PHONE: 877-610-2905

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNER OF THE UTILITIES AS REQUIRED BY SECTION 153.64 O.R.C.

UTILITY LINES

ALL EXPENSES INVOLVED IN RELOCATING (INSTALLING) THE AFFECTED UTILITY LINES SHALL BE BORNE BY THE UTILITY(IES). THE CONTRACTOR AND UTILITY ARE TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

WORK LIMITS

ALL PHYSICAL WORK SHALL BE COMPLETED WITHIN THE COUNTY RIGHT-OF-WAY ONLY. PROVIDE THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

ELEVATION DATUM

ALL ELEVATIONS ARE ORTHOMETRIC HEIGHTS USING THE NORTH AMERICAN VERTICAL DATUM OF 1988(NAVD 88) AND THE GEOID 12A. HORIZONTAL POSITIONS ARE BASED ON THE OHIO STATE PLANE SOUTH ZONE 3402.

PROFILE AND ALIGNMENT

PLACE THE PROPOSED 304 AGGREGATE BASE AND CHIP SEAL TO FOLLOW THE ALIGNMENT AND PROFILE OF THE EXISTING PAVEMENT.

CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED "AS DIRECTED BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED FOR SUCH ITEMS SHALL BE INCORPORATED INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

ITEM 201 - CLEARING AND GRUBBING

CONTRACTORS SHOULD INSPECT THE AREAS WHERE THE RETAINING WALLS ARE TO BE CONSTRUCTED TO FIND THE BULK OF THIS WORK. SPECIFIC TREES TO BE REMOVED HAVE NOT BEEN DENOTED ON THESE DRAWINGS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BECOME FAMILIAR WITH THE SCOPE OF WORK REQUIRED TO CLEAR THE AREAS NEEDED TO CONSTRUCT THE VARIOUS ELEMENTS OF THIS PROJECT.

UNCLASSIFIED EXCAVATION

THIS ITEM CONSISTS OF EXCAVATING A BENCH IN ORDER TO CONSTRUCT THE DRILLED SHAFTS OR SHEET PILE WALL, AND PLACING A COMPACTED FILL AFTER THE WALL IS CONSTRUCTED. CONTRACTOR SHALL COMPACT THE FILL BEHIND THE WALL USING EITHER A VIBRATORY "HO-PAC" OR SIMILAR COMPACTION DEVICE.

ITEM 422 - DOUBLE CHIP SEAL

THIS ITEM INCLUDES THE COST OF ALL LABOR, EQUIPMENT, AND MATERIALS TO FURNISH AND PLACE TWO LAYERS OF CHIP SEAL. THE FIRST LAYER SHALL CONSIST OF SPRAYING THE FINISHED 304 SURFACE WITH MWS150 AT A RATE OF 0.6 GAL/SY AND PLACING #67 AGGREGATE AT A RATE OF 25#/SY. THE SECOND LAYER SHALL CONSIST OF SPRAYING THE #67 CHIP SEAL SURFACE WITH MWS90 AT A RATE OF 0.4 GAL/SY AND PLACING #8 AGGREGATE AT A RATE OF 23#/SY. ALL LAYERS OF CHIP SEAL SHALL BE ROLLED WITH A RUBBER TIRED ROLLER AFTER SPREADING THE AGGREGATE.

ITEM 504 - STEEL SHEET PILING

SHEET PILING SHALL BE SCZ16, GRADE 50 STEEL. THE SHEET PILES SHALL BE 20 FEET LONG. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS TO FURNISH AND INSTALL THE SHEET PILING SHALL BE INCLUDED IN THE PER LINEAL FOOT OF SHEET PILE PRICE FOR 504, STEEL SHEET PILING (SCZ16).

ITEM 518 - POROUS BACKFILL WITH FILTER FABRIC

POROUS BACKFILL, 1.5' MAXIMUM THICKNESS, WILL BE PLACED BEHIND THE CONCRETE LAGGING. IT WILL EXTEND FROM THE BOTTOM OF THE LAGGING TO WITHIN 2 FEET OF THE FINISH GRADE SURFACE. FILTER FABRIC WILL BE PLACED AROUND THE POROUS BACKFILL.

ITEM 524 - DRILLED SHAFTS, MISC.: HP10x42, AS PER PLAN

HP10x42 STEEL BEAMS SHALL BE USED AS REINFORCEMENT. THE STEEL FOR THESE BEAMS SHALL CONFORM TO ASTM GRADE 50. THIS ITEM INCLUDES THE COST TO FURNISH AND PLACE THE STEEL PER THE PLANS. SEE PLAN & PROFILE ON SHEET 5 FOR CORRECT BEAM PLACEMENT AND ORDER LENGTHS. ALL CUT PIECES SHALL BECOME THE PROPERTY OF ATHENS COUNTY.

• SEQUENCE OF INSTALLATION:  
THE INSTALLATION SEQUENCE SHALL BE SUCH THAT NO DRILLED EXCAVATION OR A DRILLED SHAFT IS INSTALLED ADJACENT TO EITHER AN OPEN DRILLED SHAFT EXCAVATION OR A DRILLED SHAFT IN WHICH THE CONCRETE HAS LESS THAN A 24 HOUR CURE. INSTALLING THE SHAFTS IN AN ALTERNATING SEQUENCE OR ANY OTHER SEQUENCE THAT MEETS THIS CRITERIA IS PERMISSABLE.

• PROTECTION OF UNATTENDED OPEN SHAFTS:  
CARE SHALL BE EXERCISED AS TO COVER UNATTENDED OPEN SHAFTS. TEMPORARY COVERS SHALL BE OF ADEQUATE STRENGTH TO PROTECT A PERSON OR ANIMAL FROM FALLING IN.

• LOADING OF PILES:  
THE PILES SHALL NOT BE LOADED AND EXCAVATION PERFORMED IN FRONT OF THE WALL FOR 7 DAYS AFTER THE PLACING OF THE CONCRETE.

• ACCESS:  
ANY TEMPORARY GRADING, AGGREGATE, DRAINAGE, ETC. NEEDED FOR ACCESS TO THE WORK AREA SHALL BE INCLUDED IN THE BID PRICE FOR THE DRILLED SHAFTS.

ITEM 524 - DRILLED SHAFTS, 18" DIA., ABOVE BEDROCK

THIS ITEM INCLUDES THE COST TO DRILL AND FURNISH AND PLACE CONCRETE. THE ENGINEER HAS ASSUMED THAT AN EARTH BENCH WILL BE EXCAVATED AT THE BASE OF THE GALVANIZED LAGGING. CONTRACTOR MAY CHOOSE TO DRILL AT HIGHER ELEVATIONS AND EXCAVATE FOR LAGGING, BUT PAYMENT FOR THIS ITEM WILL BE THE CALCULATED QUANTITY (IN FEET) FROM BOTTOM OF THE GALVANIZED LAGGING TO TOP OF ROCK.

ITEM 524 - DRILLED SHAFTS, 18" DIA., INTO BEDROCK

THIS ITEM INCLUDES THE COST TO DRILL AND FURNISH AND PLACE CONCRETE AS SHOWN ON THE DETAIL ON SHEET 6. THE BORING LOGS HAVE BEEN INCLUDED IN SECTION VI OF THE BID SPECS FOR REVIEW OF THE TYPE AND QUALITY OF ROCK.

SPECIAL - STRUCTURE, MISC.: CORRUGATED GALVANIZED LAGGING

THE LAGGING PANELS SHALL BE 3"x9" 7 GAUGE, 50 KSI, CORRUGATED, GALVANIZED BRIDGE DECKING MINIMUM 18" LAYING WIDTH, 8'-0" LONG, OR APPROVED EQUAL. SEE SHEET 6 FOR CORRUGATED GALVANIZED LAGGING DETAILS.

ROAD CLOSED/MAINTENANCE OF TRAFFIC

COUNTY ROAD 65 WILL BE CLOSED FOR A MAXIMUM OF 45 DAYS FOR EACH SITE. LOCAL TRAFFIC WILL BE DETOURED.

ITEM 614 - MAINTAINING TRAFFIC

THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN STANDARD 48" X 30" - "ROAD CLOSED" SIGNS, SIGN SUPPORTS, BARRICADES, GATES, AND LIGHTS, AS DETAILED IN STANDARD CONSTRUCTION DRAWING MT-101.60 AT THE FOLLOWING LOCATIONS DURING PERIODS IN WHICH THE AFFECTED ROADS ARE CLOSED TO TRAFFIC:

(1) INTERSECTION OF COUNTY ROAD 65 DEEP HOLLOW RD AND TOWNSHIP ROAD 150 SAND ROCK RD.

(2) ALONG CR 65 1000 FEET SOUTH OF THE PW 218 SLIP.

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR 614, MAINTAINING TRAFFIC.

THE ATHENS COUNTY ENGINEER WILL PROVIDE THE SIGNS FOR THE DETOUR ROUTE, AND WILL MAINTAIN THE DETOUR SIGNS.

ITEM 659 - SEEDING AND MULCHING

SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL BETWEEN THE EASEMENT LINES. QUANTITY CALCULATIONS FOR SEEDING AND MULCHING ARE BASED ON THESE LIMITS.

PART 1: PW 212 - GENERAL SUMMARY

ITEM NO.	ITEM DESCRIPTION	QTY	UNIT
201	Clearing & Grubbing	1	LS
204	Subgrade Compaction	230	SY
606	Guardrail, Type 5	187.5	FT
606	Anchor Assembly, Type T	4	EA
659	Seeding & Mulching	220	SY
304	Aggregate Base	52	CY
422	Double Chip Seal	500	SY
503	Excavation including Embankment (Sheet Pile Wall)	1	LS
504	Steel Sheet Piling (SCZ16)	1120	FT
518	Porous Backfill with Filter Fabric	125	CY
518	6" Perforated Corrugated Plastic Pipe	132	FT
518	6" Non-Perforated Outlet Pipe	80	FT
103	Bond	1	LS
614	Maintaining Traffic	1	LS
623	Construction Layout Stakes	1	LS
624	Mobilization	1	LS

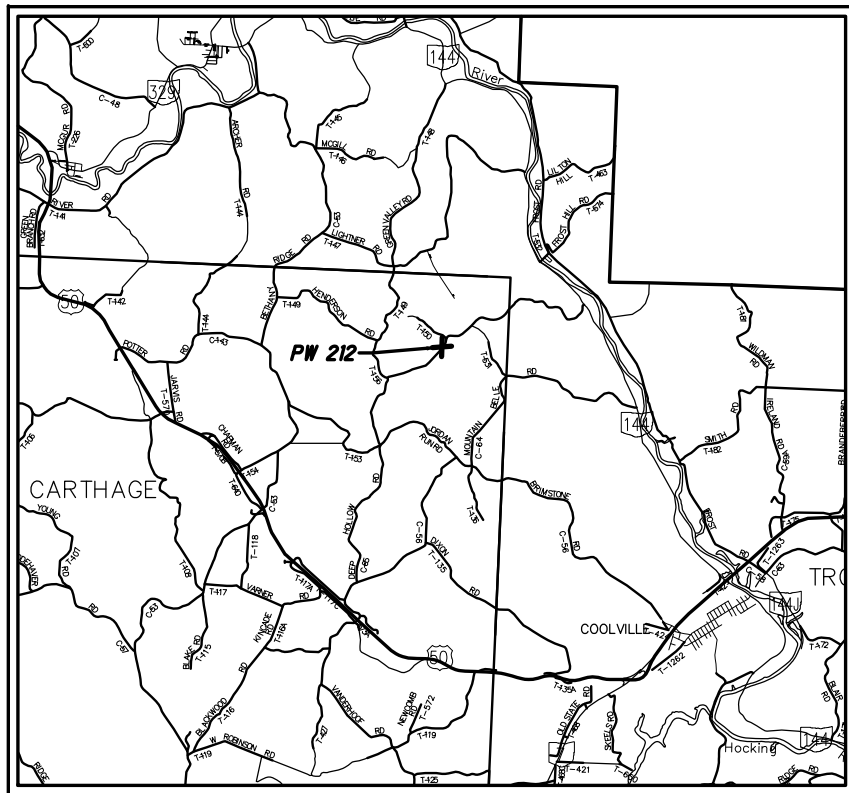
PART 2: PW 218 - GENERAL SUMMARY

ITEM NO.	ITEM DESCRIPTION	QTY	UNIT
201	Clearing & Grubbing	1	LS
203	Embankment	30	CY
204	Subgrade Compaction	140	SY
606	Guardrail, Type 5	150	FT
606	Anchor Assembly, Type T	2	EA
659	Seeding & Mulching	400	SY
304	Aggregate Base	105	CY
422	Double Chip Seal	472	SY
503	Unclassified Excavation	1	LS
518	Porous Backfill with Filter Fabric	29	CY
518	6" Perforated Corrugated Plastic Pipe	128	FT
518	6" Non-Perforated Outlet Pipe	40	FT
524	Drilled Shafts, 18" Diameter, Above Bedrock	43	FT
524	Drilled Shafts, 18" Diameter, Into Bedrock	102	FT
524	Drilled Shafts, Misc.: HP10x42, As Per Plan	340	FT
SPECIAL	Special - Structure, Misc.: Corrugated Galvanized Lagging	855	SF
103	Bond	1	LS
614	Maintaining Traffic	1	LS
623	Construction Layout Stakes	1	LS
624	Mobilization	1	LS

CALCULATED  
DES  
CHECKED  
RJM

GENERAL NOTES & GENERAL SUMMARIES

ATH-FEMA LANDSLIDE  
REPAIRS PHASE 1



**LOCATION MAP**  
 LATITUDE: N39°15'45" LONGITUDE: W81°51'04"  
 SCALE IN MILES

**2013 SPECIFICATIONS**

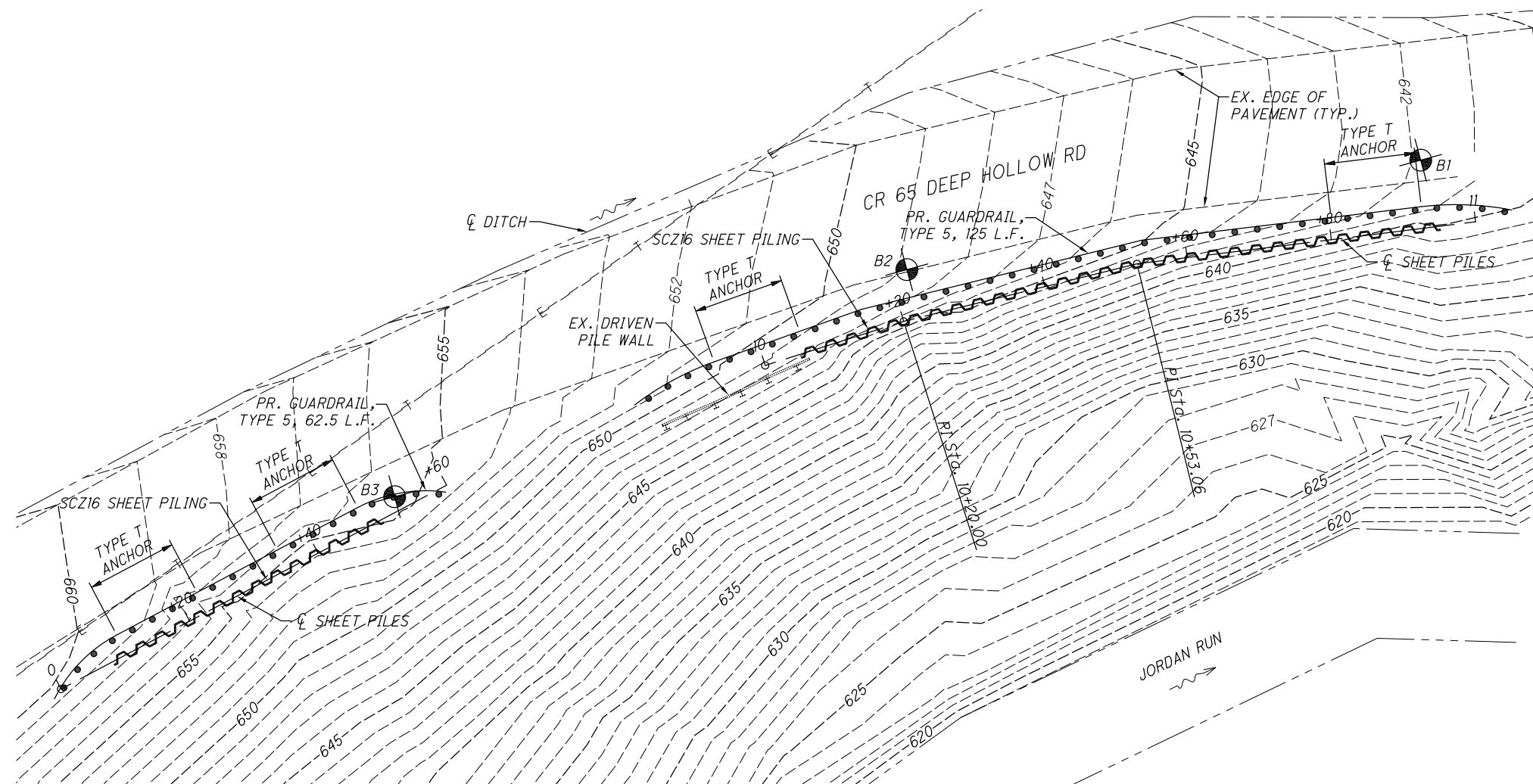
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**NOTES**

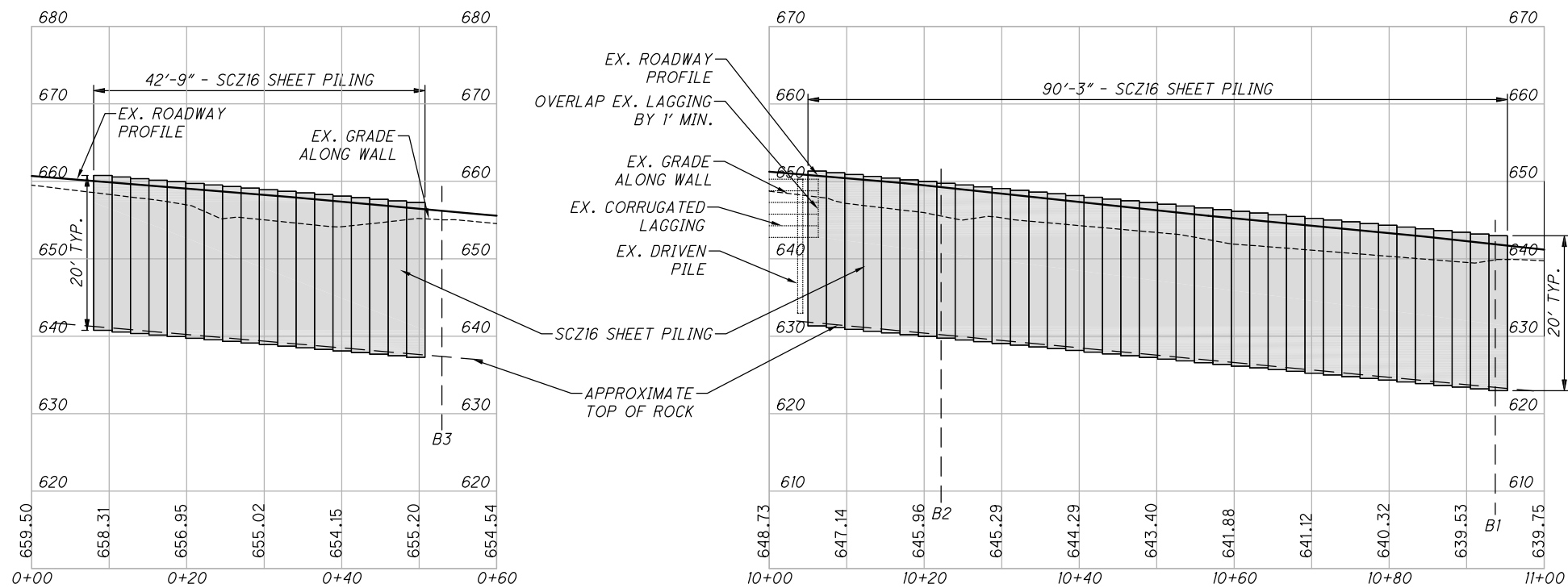
- THE ROAD WILL BE CLOSED DURING CONSTRUCTION SO THE CONTRACTOR SHALL SETUP AND MAINTAIN ROAD CLOSURE TRAFFIC CONTROL THROUGHOUT CONSTRUCTION

SOIL BORINGS				
BORING	STATION	OFFSET	EX. GROUND SURFACE ELEV.	APPROX. TOP OF ROCK
B1	10+93.69	8.88' Lt	641.9	623.4
B2	10+22.18	6.31' Lt	648.7	630.2
B3	0+52.94	1.44' Lt	655.4	637.4

ESTIMATED QUANTITIES			
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT
530	SCZ16 SHEET PILING	1,120	FT
608	GUARDRAIL, TYPE 5	187.5	FT



**SITE PLAN**

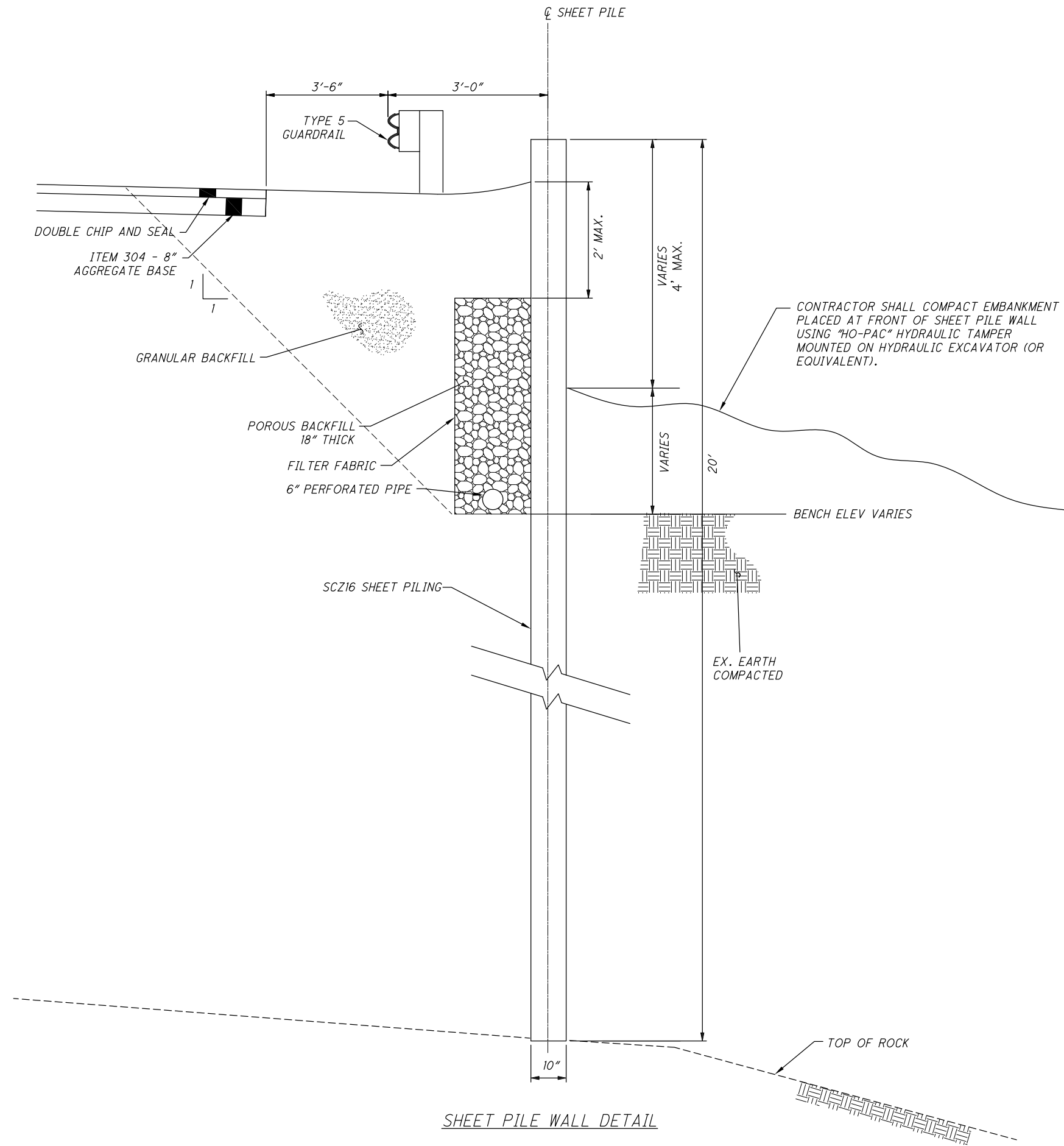


**SHEET PILE WALL PROFILES**



**PART 1 - PW212 - CR65 DEEP HOLLOW RD SLIP  
 RETAINING WALL PLAN AND PROFILE**

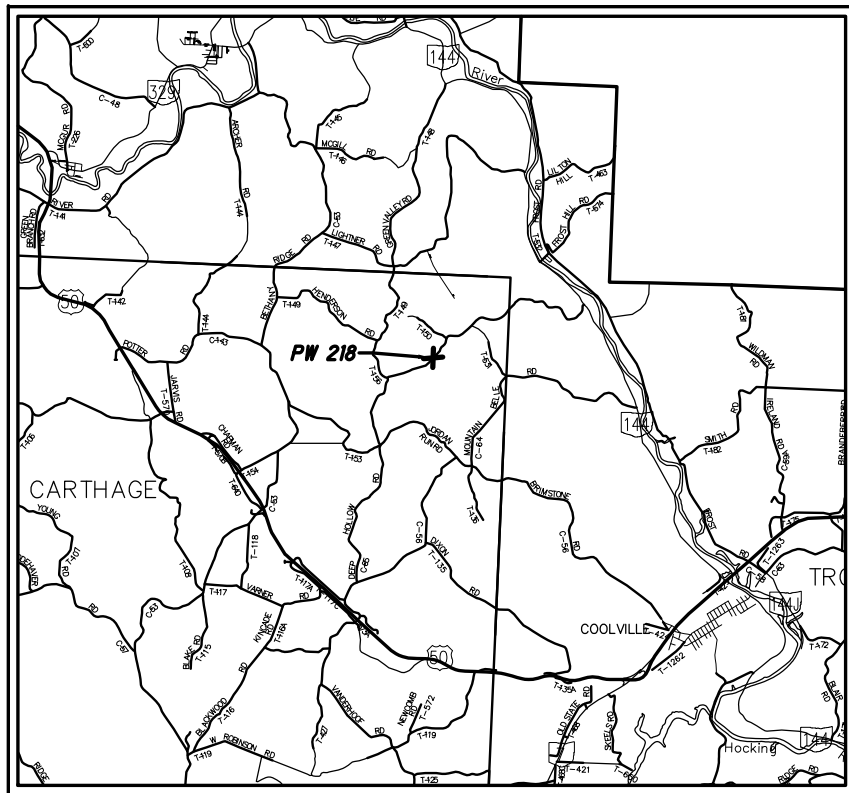
**ATH-FEMA LANDSLIDE  
 REPAIRS PHASE 1**



CALCULATED  
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PART 1 - PW212 - CR65 DEEP HOLLOW RD SLIP  
 SHEET PILE WALL DETAILS

ATH-FEMA LANDSLIDE  
 REPAIRS PHASE 1



**LOCATION MAP**  
 LATITUDE: N39°15'40" LONGITUDE: W81°51'09"  
 SCALE IN MILES

**2013 SPECIFICATIONS**

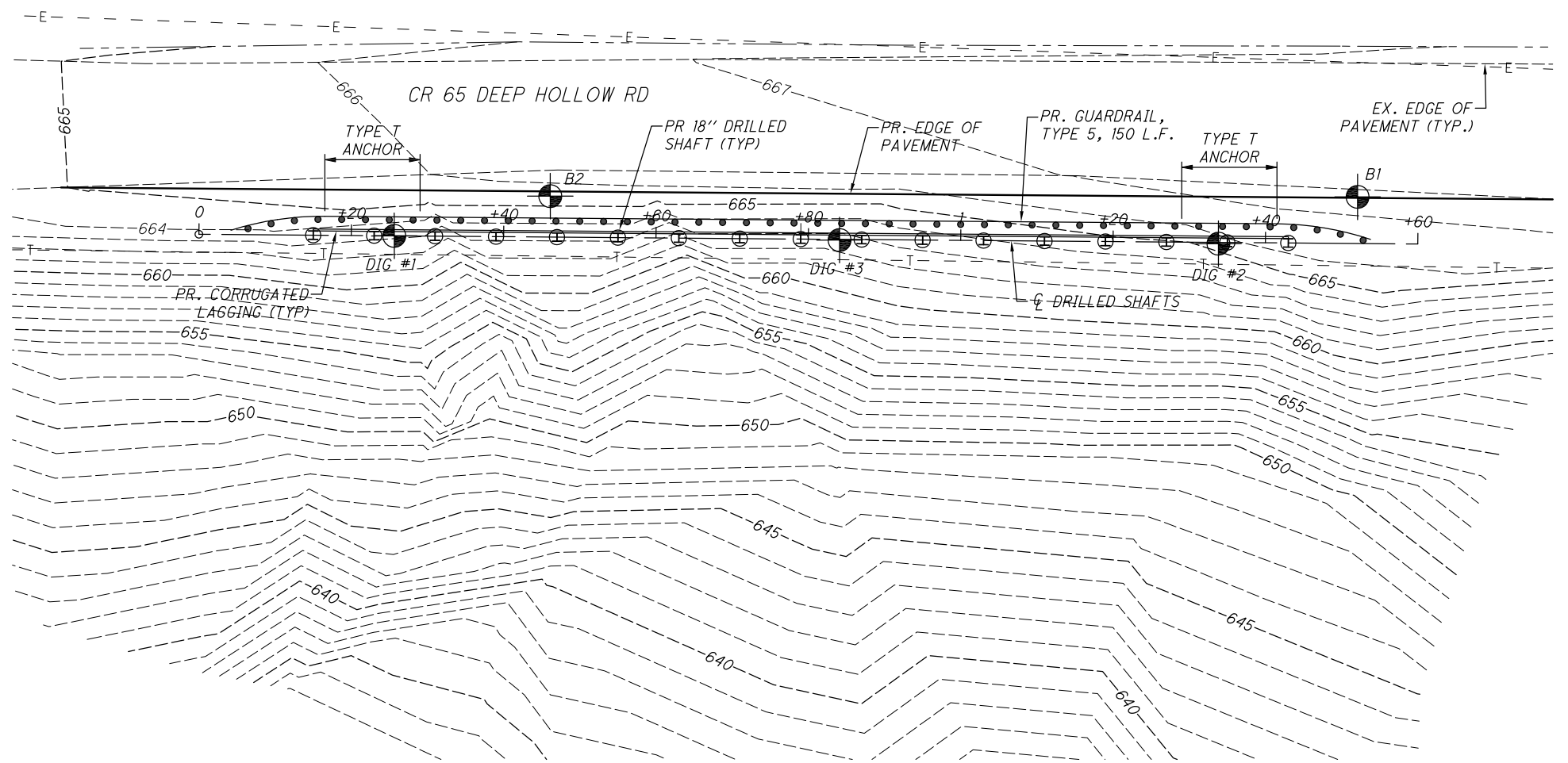
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**NOTES**

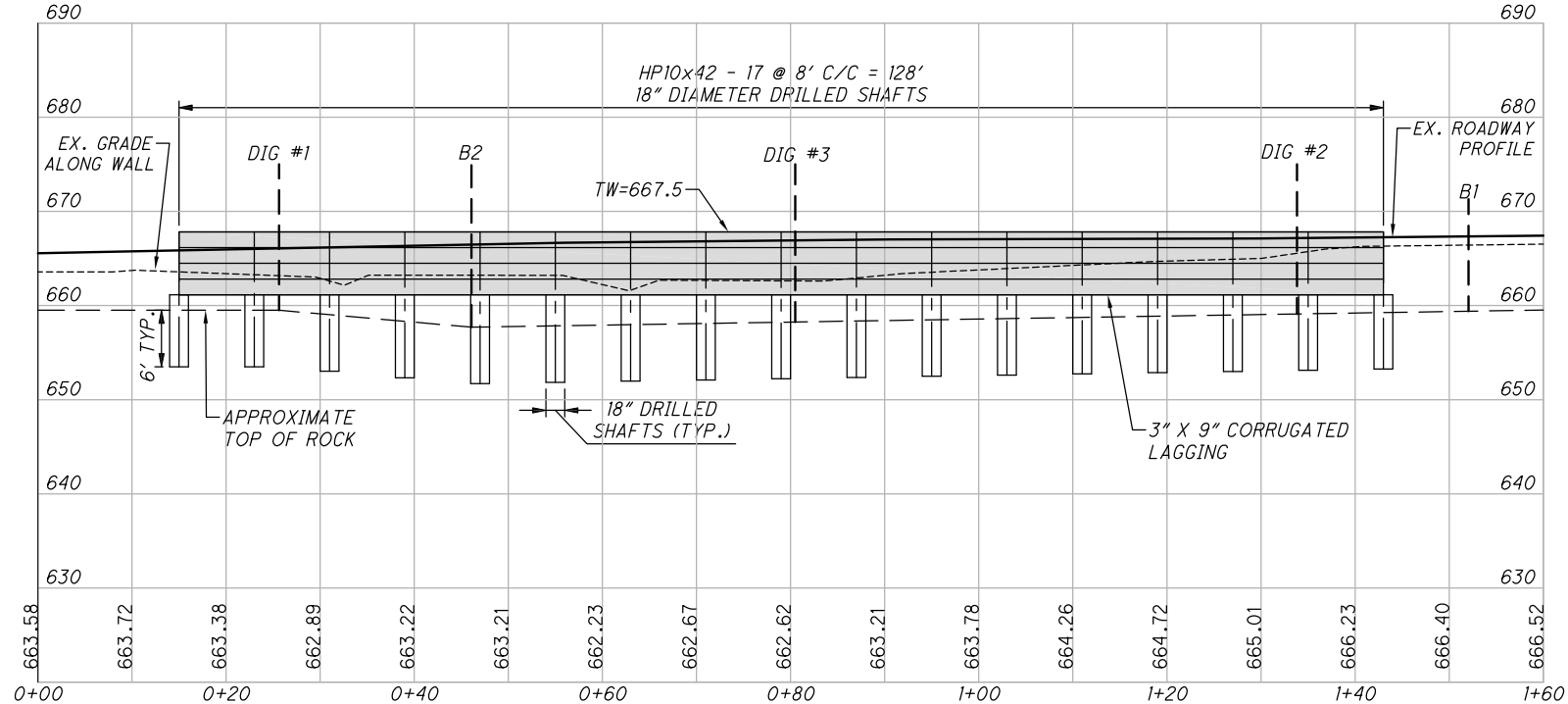
1. THE ROAD WILL BE CLOSED DURING CONSTRUCTION SO THE CONTRACTOR SHALL SETUP AND MAINTAIN ROAD CLOSURE TRAFFIC CONTROL THROUGHOUT CONSTRUCTION
2. ORDER THE HP10x42 PILES AT 20 FEET LONG. AFTER SETTING THE PILES, THEY SHALL BE CUT TO THE ELEVATIONS SHOWN ON THE PROFILE. THE CUT PIECES SHALL BECOME THE PROPERTY OF ATHENS COUNTY.

SOIL BORINGS				
BORING	STATION	OFFSET	EX. GROUND SURFACE ELEV.	APPROX. TOP OF ROCK
B1	1+52.05	6.13' L†	667.4	659.4
B2	0+46.08	5.37' L†	665.7	657.7
B3	-0+48.64	4.55' L†	663.7	655.2
DIG #1	0+25.63	0.00'		660.0
DIG #2	1+33.82	0.00'		659.6
DIG #3	0+84.08	0.00'		658.3

ESTIMATED QUANTITIES			
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT
524	DRILLED SHAFTS, 18" DIAMETER, ABOVE BEDROCK	43	FT
524	DRILLED SHAFTS, 18" DIAMETER, INTO BEDROCK	102	FT
524	DRILLED SHAFTS, MISC: HP10x42	340	FT
530	LAGGING - 3"x9" 7 GAUGE CORRUGATED DECKING	855	SF
608	GUARDRIAL, TYPE 5	150	FT



**SITE PLAN**

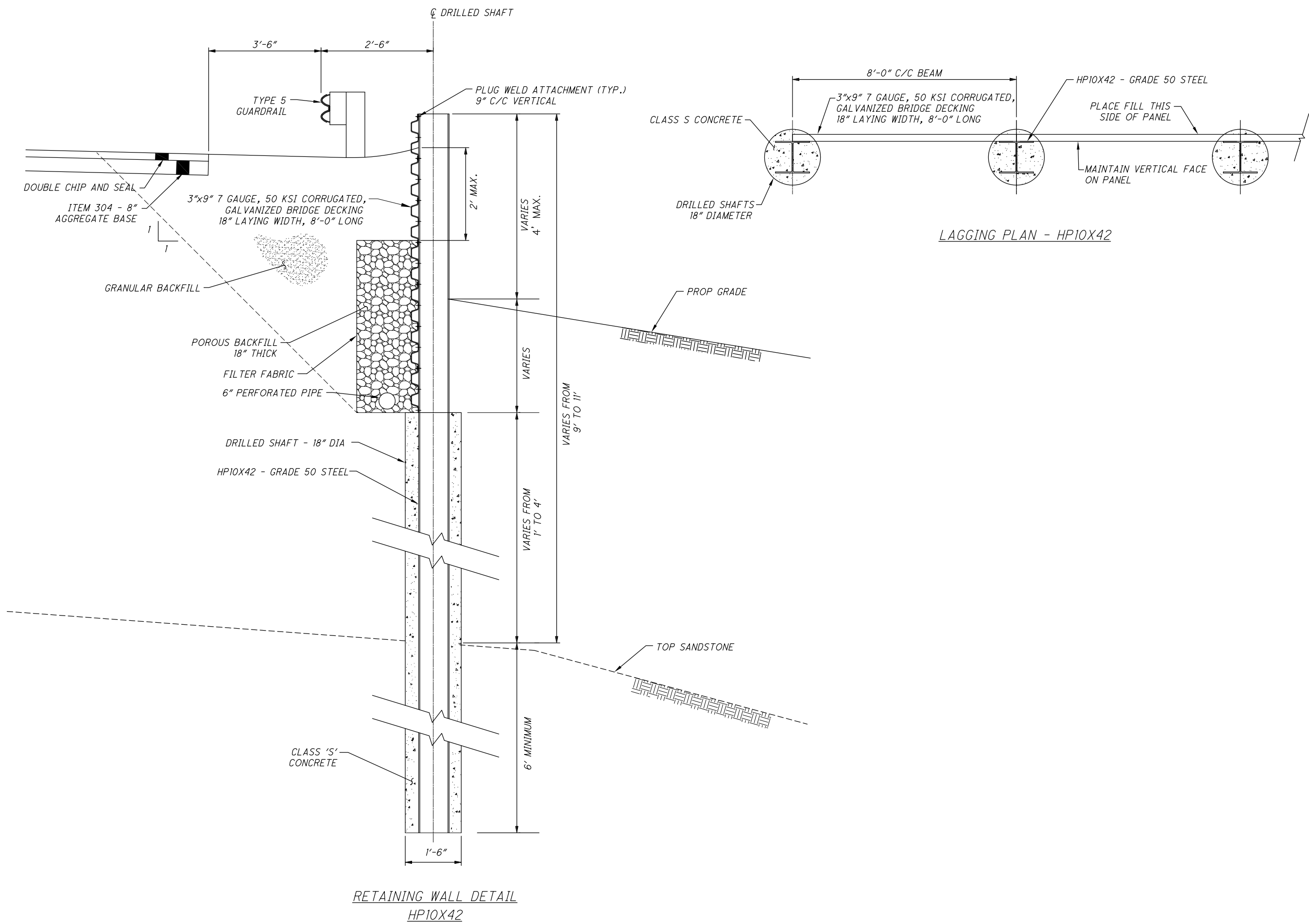


**PIER WALL PROFILE**



CALCULATED DESIGNED CHECKED RJM  
**PART 2 - PW218 - CR65 DEEP HOLLOW RD SLIP RETAINING WALL PLAN AND PROFILE**

ATH-FEMA LANDSLIDE REPAIRS PHASE 1



CALCULATED  
DES  
CHECKED  
RJM

**PART 2 - PW218 - CR65 DEEP HOLLOW RD SLIP  
RETAINING WALL DETAILS**

ATH-FEMA LANDSLIDE  
REPAIRS PHASE 1

