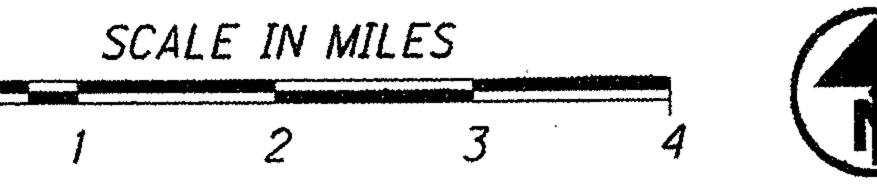
STA. 508+05

LOCATION MAP

LATITUDE: N41°01'20"

SCALE IN MILES



LONGITUDE: W84°17'32"

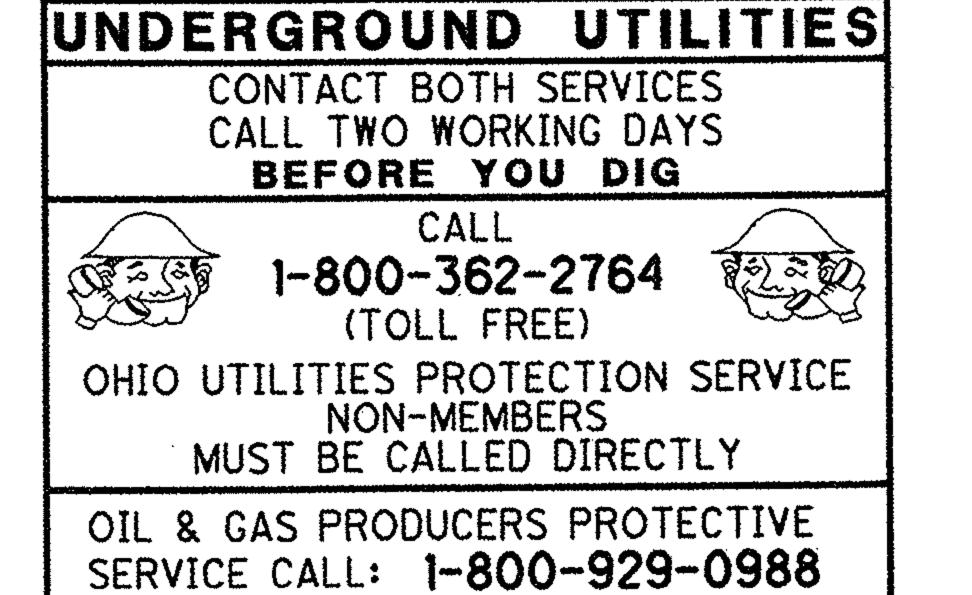
PORTION TO BE IMPROVED. INTERSTATE & DIVIDED HIGHWAY. UNDIVIDED STATE & FEDERAL ROUTES ._____

DESIGN DESIGNATION

DESIGN DESIGNATION	
CURRENT ADT (2009)	710
DESIGN YEAR ADT (2029)	850
DESIGN HOURLY VOLUME (2029)	102
DIRECTIONAL DISTRIBUTION	0.12
TRUCKS (24 HOUR B&C)	0.06
DESIGN SPEED	55
LEGAL SPEED.	55
DESIGN FUNCTIONAL CLASSIFICATION:	
MINOR COLLECTOR	
NHS PROJECT.	NO
,	

DESIGN EXCEPTIONS

NONE



PLAN PREPARED BY:

DISTRICT NO. 1 OHIO DEPARTMENT OF TRANSPORTATION

SIGNED: Eing.

STATE OF OHIO DEPARTMENT OF TRANSPORTATION

PUT-634-8.44/ 9.63/9.65

> PERRY TOWNSHIP PUTNAM COUNTY

INDEX OF SHEETS:

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PROJECT DESCRIPTION

8.44 - REPLACEMENT OF CULVERT AND RAISING OF PROFILE WITH CLEAR ZONE GRADING ALONG 0.12 MILES OF SR 634.

9.63 - REPLACEMENT OF CULVERT WITH CLEAR ZONE GRADING ALONG 0.06 MILES ON THE WEST SIDE OF SR 634 WITH GUARDRAIL ON THE EAST SIDE. 9.65 - REPAIR CULVERT AND SLOPE.

2.41 ACRES PROJECT EARTH DISTURBED AREA: ESTIMATED CONTRACTOR EARTH 0.92 ACRES DISTRUBED AREA: NOTICE OF INTENT EARTH 4.9 ACRES DISTURBED AREA:

2008 SPECIFICATIONS

SUPPLEMENTAL

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

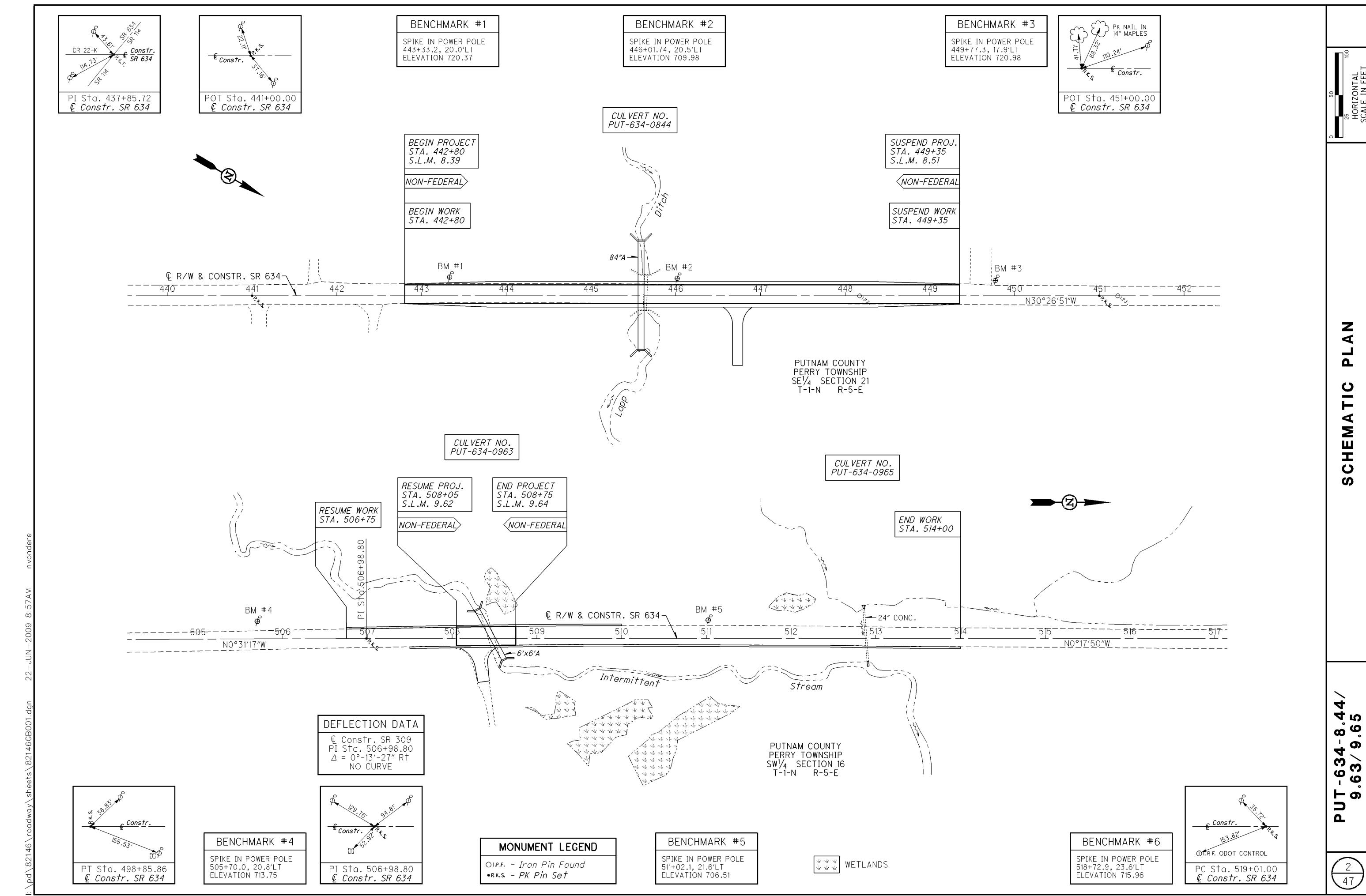
I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT DETOURS WILL BE PROVIDED AS INDICATED ON SHEET 6.

			STA	ANDARD	CONSTRU	UCTION	V DRAWI	NGS	SPECIFICATIONS
	BP-3.1	10/19/07	DM-1.1		MT-101.60 MT-105.10			1/19/01	800-2008 4/17/09 832 5/05/09
ENGINEERS SEAL:	GR-1.1 GR-2.1	7/16/04 1/16/04		4/17/09		17 107 03	TC-42.20 TC-52.10		
	GR-4.2	1/19/07	WQ-1.2	10/17/08			TC-52.20 TC-61.30	1/19/07 4/17/09	
	HW-2.2	7/30/07	·		·		TC-65.10	1/21/05	SPECIAL PROVISIONS
GNED: Ein J. Dehuebelhoff ATE: June 23rd, 2009									NIVP#14 09/15/08
TE: Deme 23 2009						•	1		

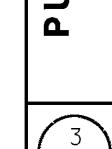
APPROVED Som Burkefile P.E.

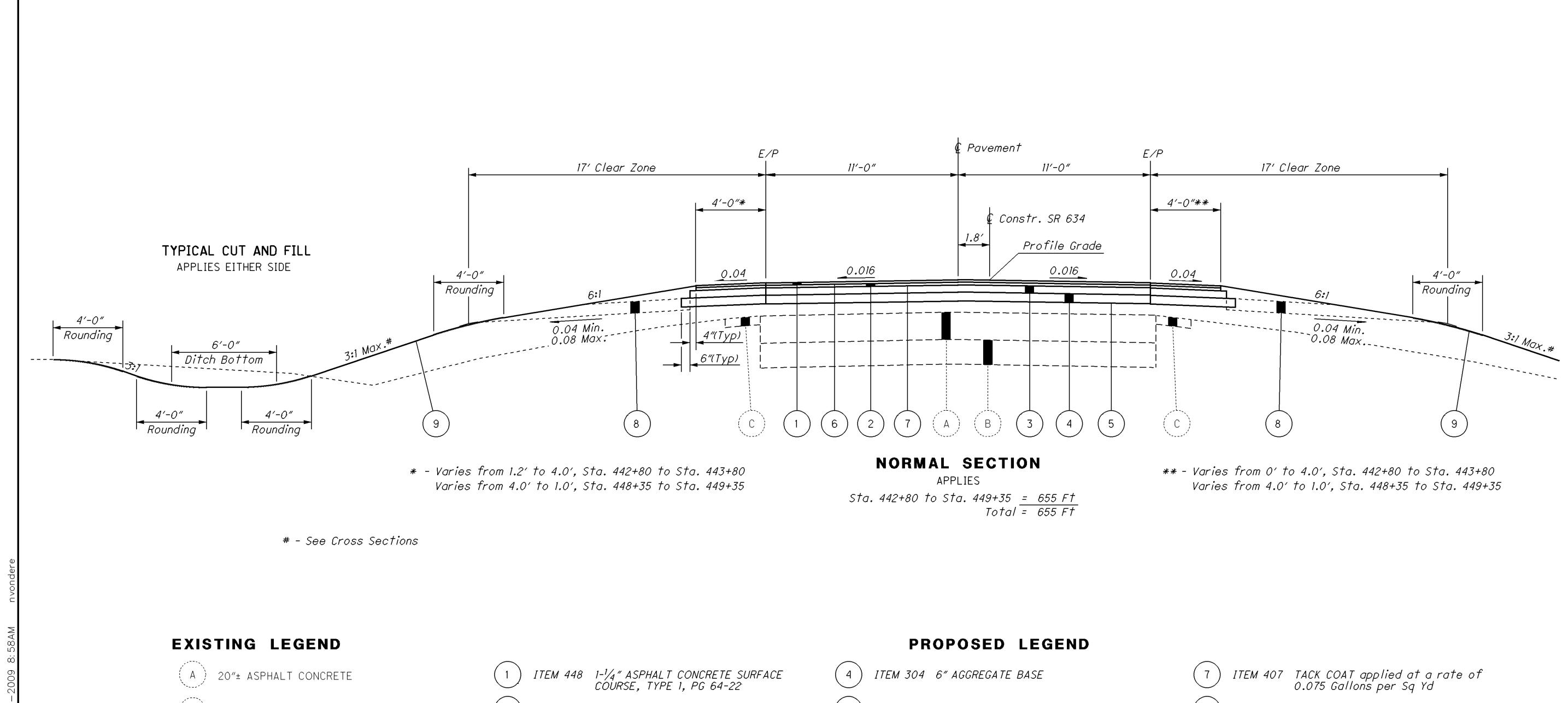
DATE 19/23/09 DISTRICT DEPUTY DIRECTOR

APPROVED Some M. Molitonio & DEPARTMENT OF TRANSPORTATION



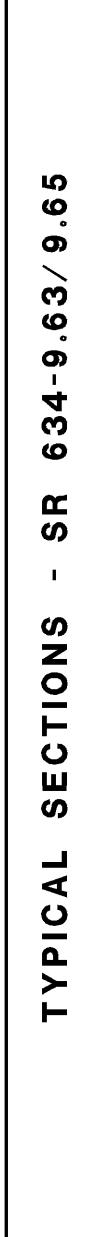
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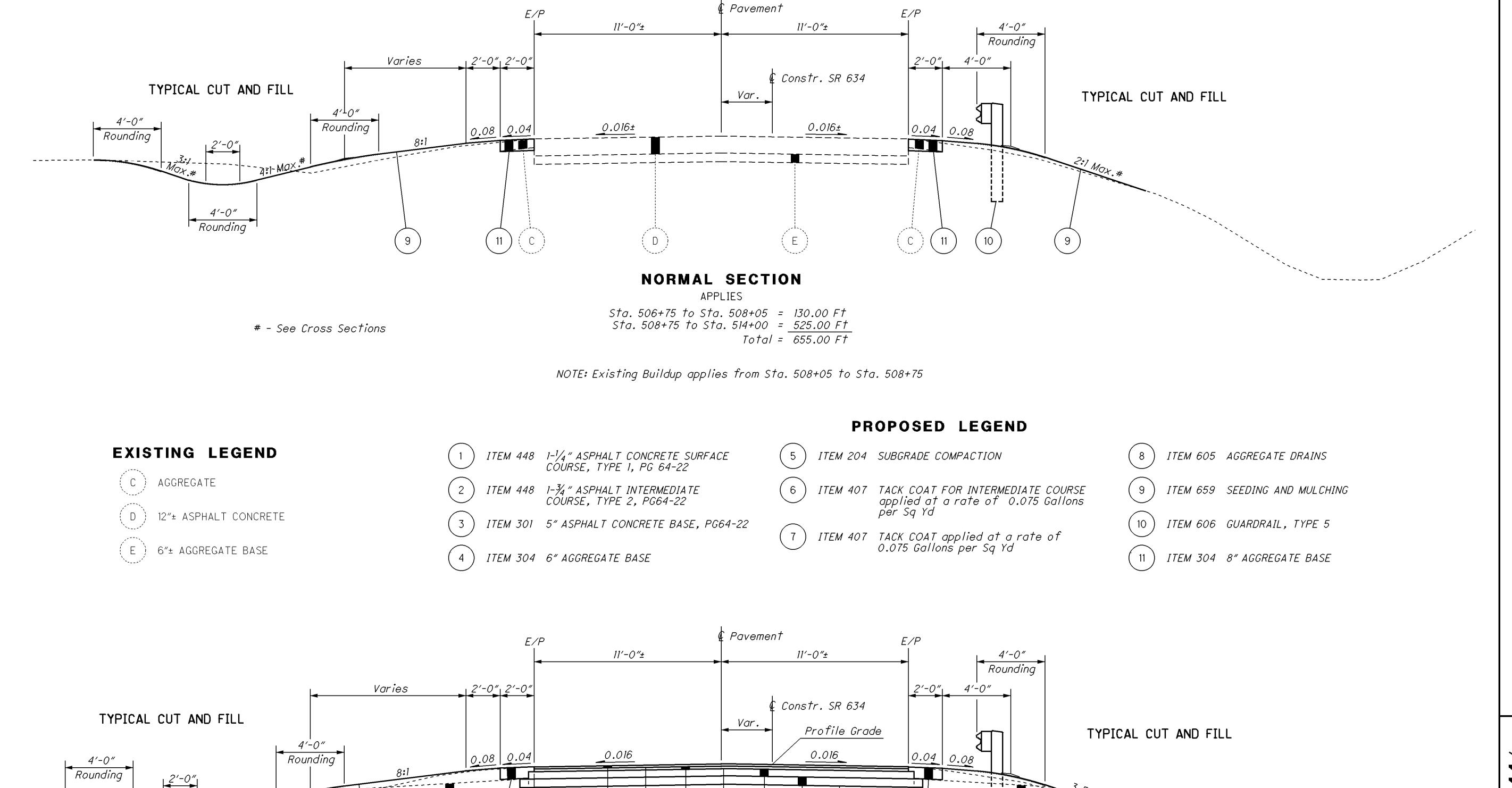


- (B) 18"± AGGREGATE BASE
- (C) AGGREGATE

- 2) ITEM 448 1-¾" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22
- 3) ITEM 301 5" ASPHALT CONCRETE BASE
- (5) ITEM 204 SUBGRADE COMPACTION
- 6) ITEM 407 TACK COAT FOR INTERMEDIATE COURSE applied at a rate of 0.075 Gallons per Sq Yd
- 8 ITEM 605 AGGREGATE DRAINS
- (9) ITEM 659 SEEDING AND MULCHING







NORMAL SECTION APPLIES

0.04 Min. 0.08 Max.

4'-0" Rounding

4" (Typ)

6″ (Typ)

Sta. 508+05 to Sta. 508+75 <u>= 70 Ft</u> Total = 70 Ft

0.04 Min. 0.08 Max.

(10)

THE ROUNDING AT SLOPE BREAKPOINTS SHOWN ON THE TYPICAL SECTIONS APPLY TO ALL CROSS-SECTIONS EVEN THOUGH OTHER-WISE SHOWN.

UTILITIES

LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PRO-JECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNFRS:

ELECTRIC

AMERICAN ELECTRIC POWER 369 E O'CONNER AVE. LIMA, OHIO 45801 419-999-6879

TELEPHONE

OTTOVILLE MUTUAL TELEPHONE P.O. BOX 427 OTTOVILLE, OHIO 45876 419-453-3324

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

ELEVATION DATUM

ALL ELEVATIONS ARE ORTHOMETRIC HEIGHTS USING THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) AND THE GEOIDO3 GEOID. HORIZONTAL POSITIONS ARE BASED ON THE OHIO STATE PLANE NORTH ZONE, A LAMBERT CONFORMAL CONIC MAP PROJECTION, THE NORTH AMERICAN DATUM OF 1983 ADJUSTED TO THE NATIONAL SPATIAL REFERENCE SYSTEM OF 2007 (NAD 83 (NSRS 2007)), AND THE GRS80 ELLIPSOID.

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. PROVIDE THE INSTALLATION AND OPERA-TION OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

CLEARING AND GRUBBING

THE DEPARTMENT HAS NOT MARKED INDIVIDUAL TREES AND STUMPS FOR REMOVAL. UNLESS SPECIFICALLY DESIGNATED AS "DO NOT DISTURB" IN THE PLANS, REMOVE ALL TREES AND STUMPS WITHIN THE CONSTRUCTION LIMITS UNDER THE LUMP SUM BID FOR ITEM 201 CLEARING AND GRUBBING.

ITEM 204, PROOF ROLLING

MARY TO ADDRESS LOCATIONS REQUIRING PROOF ROLLING.

ITEM 204 - PROOF ROLLING = 2 HOUR

SEEDING AND MULCHING

SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL BETWEEN THE RIGHT-OF-WAY LINES, AND WITHIN THE CONSTRUCTION LIMITS FOR AREAS OUTSIDE THE RIGHT-OF-WAY LINES COVERED BY WORK AGREEMENT OR SLOPE EASEMENT. QUANTITY CALCULATIONS FOR SEEDING AND MULCHING ARE BASED ON THESE LIMITS.

MONUMENT ASSEMBLIES

CONSTRUCT MONUMENT ASSEMBLIES IN ACCORDANCE WITH THE DETAILS SHOWN ON THE STANDARD CONSTRUCTION DRAWINGS AND AT THE LOCATIONS SHOWN ON SHEET NO. 40.

PAVEMENT RESTORATION FOR MONUMENT ASSEMBLY INSTALLATIONS

THE FOLLOWING QUANTITY IS PROVIDED FOR PAVEMENT RE-STORATION FOLLOWING INSTALLATION OF ITEM 604 MONUMENT ASSEMBLIES.

ITEM 301, ASPHALT CONCRETE BASE, PG64-22 = 1 CU YD

THE ABOVE QUANTITY IS BASED ON A 301 THICKNESS OF 9 INCHES AND A WIDTH OF TWO FEET AROUND THE PERIMETER OF THE MONUMENT ASSEMBLIES.

PROVIDE ANY MATERIALS USED OUTSIDE THE LIMITS STATED ABOVE AT NO ADDITIONAL COST.

REVIEW OF DRAINAGE FACILITIES

BEFORE ANY WORK IS STARTED ON THE PROJECT AND AGAIN BEFORE FINAL ACCEPTANCE BY THE STATE, REPRESENTATIVES OF THE STATE AND THE CONTRACTOR, ALONG WITH LOCAL REPRESENTATIVES, SHALL MAKE AN INSPECTION OF ALL EXIST-ING DRAINAGE WHÍCH IS TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCE SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTION SHALL BE KEPT IN WRITING BY THE STATE.

ALL NEW CONDUITS, INLETS, CATCH BASINS, AND MANHOLES CONSTRUCTED AS A PART OF THE PROJECT SHALL BE FREE OF ALL FOREIGN MATTER AND IN A CLEAN CONDITION BEFORE THE PROJECT WILL BE ACCEPTED BY THE STATE.

ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 603 CONDUIT ITEMS.

ITEM 605, AGGREGATE DRAINS

AGGREGATE DRAINS SHALL BE PLACED AT THE LOCATIONS SHOWN ON SHEET 10.

ITEM 606, ANCHOR ASSEMBLY, TYPE E-98

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING EITHER OF THE FOLLOWING GUARDRAIL END TERMINALS, OR AN APPROVED EQUAL AS LISTED ON ROADWAY ENGINEERING'S WEB PAGE AT WWW.DOT.STATE.OH.US/DRRC/ UNDER ROADSIDE SAFETY DEVICES FOR APPROVED GUARDRAIL END TREATMENTS:

1) THE ET-2000 (1997) MANUFACTURED BY TRINITY INDUSTRY, 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE: 330-545-4373).

THE LENGTH OF THE ET-2000 (1997) SYSTEM IS CONSIDERED TO BE 50'-0", INCLUSIVE OF TWO 25'-0" LONG RAIL ELEMENTS. IN-STALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICA-TIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

	. DRAWING NAME ET-2000 (1997) PLAN, ELEVATION AND SECTIONS	DWG./ REV. A DATE 6/20/97	DATE
SS142	ET2000 PLUS 50'-0" PLAN, ELEVATION AND SECTION 25'-0" RAIL, SLEEVE W/PL POSTS 1-4	4/12/00	7/31/00
SS141	ET2000 PLUS PLAN, ELEVATION AND SECTION 25'-0" RAIL, HBA POSTS 1-4	2/29/00	7/31/00

12'-6" PANELS AND HBA POSTS 1-4 PLAN, ELEVATION AND SECTION 2) THE SKT-350 MANUFACTURED BY ROAD SYSTEMS, INC.,

5/22/00 7/31/00

ET2000 PLUS 50'-0" WITH

2516 MALLORY LANE, STOW, OHIO, 44224,

(TELEPHONE: 330-346-0721).

DRAWINGS:

THE LENGTH OF THE SKT-350 SYSTEM IS CONSIDERED TO BE 50'-0", INCLUSIVE OF FOUR 12'-6" LONG RAIL ELEMENTS. IN-STALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICA-TIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP

DWG./ ODOTREV. APPROVAL DWG. NO. DRAWING NAME DATE DATE SKT-4M SEQUENTIAL KINKING 12/11/97 3/6/98 TERMINAL (SKT-350) ASSEMBLY WITH 4 FOUNDATION TUBES

THE FACE OF THE TYPE E-98 IMPACT HEAD SHALL BE COVERED WITH A SHEET OF TYPE G REFLECTIVE SHEETING, PER CMS 730.19, APPROXIMATELY 18" X 18". OR 12" X 18" IF APPLIED TO A RECTANGULAR ET-2000 "PLUS" EXTRUDER HEAD.

REFER TO THE MANUFACTURER'S INSTRUCTION REGARDING THE INSTALLATION OF. AND THE GRADING AROUND. THE FOUNDATION TUBES AND GROUND STRUT. THE TOP OF ANY FOUNDATION TUBE SHOULD BE LESS THAN 4 INCHES ABOVE THE GROUND, THE PLACE-MENT OF THE FOUNDATION TUBES SHOULD BE AN APPROPRIATE DEPTH BELOW THE LEVEL LINE IN ORDER TO MAINTAIN THE FINISHED GUARDRAIL HEIGHT OF 27-3/2 INCHES FROM THE EDGE OF THE SHOULDER.

ON-SITE GRADING IS REQUIRED IF THE TOP OF THE FOUNDATION

TUBES OR TOP OF THE GROUND STRUT DOES PROJECT MORE THAN 4-INCHES ABOVE THE GROUND LINE.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, ANCHOR ASSEMBLY, TYPE E-98, EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MA-TERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNC-TIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING ALL RELATED TRANSITIONS. REFLECTIVE SHEETING. HARDWARE. GRADING. EMBANKMENT AND EXCAVATION NOT SEPARATELY SPECIFIED. AS REQUIRED BY THE MANUFACTURER.

ENVIRONMENTAL COMMITMENTS

THE ENVIRONMENTAL DOCUMENT WAS APPROVED 1/13/09 AND CONTAINED THE FOLLOWING CONSTRUCTION RELATED ITEMS THAT THE CONTRACTOR AND PROJECT ENGINEER ARE TO ENSURE ARE CARRIED OUT. IF THEY CANNOT BE FOLLOWED, THE DIS-TRICT PLANNING AND PROGRAM ADMINISTRATOR SHOULD BE NOTIFIED IMMEDIATELY.

- 1. IN STREAM WORK (THE PLACEMENT OR REMOVAL OF TEMPOR-ARY AND/OR PERMANENT FILL MATERIALS BELOW ORDINARY HIGH WATER MARK) WILL BE LIMITED WHERE PRACTICABLE AND ONLY CLEAN NON-ERODIBLE MATERIAL WILL BE USED FOR TEMPORARY CONSTRUCTION ACCESS FILLS. TEMPORARY FILLS WILL BE CONSTRUCTED SO AS TO ALLOW FOR FISH PASSAGE AND WILL NOT BACK UP WATER. TEMPORARILY PLACED MATERIAL WILL BE REMOVED AND STREAM BOTTOM RESTORED TO NEAR PRECONSTRUCTION CONDITIONS WHEN THE WORK IS COMPLETED.
- 2. NO TREES THAT CONTAIN SUITABLE SUMMER BROOD REARING AND/OR ROOSTING HABITAT FOR THE INDIANA BAT WILL BE REMOVED BETWEEN 04/15 TO 09/15 WHEN THE BATS WOULD BE UTILIZING SUCH HABITATS. THESE TREES ARE SHOWN IN THE PLANS ON SHEETS 12, 13 AND 18 AND ARE NOTED AS "DESIGNATED INDIANA BAÍ TREE".
- 3. ONLY THE 0.02 ACRES OF CATEGORY 1 WETLANDS MARKED FOR DESTRUCTION BY THIS PROJECT, DUE TO GRADING AROUND THE PROPOSED CULVERT REPLACEMENT AT STATION 508+50 LT. (0.02 ACRES), ARE TO BE IMPACTED. DURING CONSTRUCTION, TEMPORÁRY FENCING WILL BE PLACED AROUND THE WETLAND REMNANT FOR PROTECTION ALONG THE CONSTRUCTION LIMITS WITHIN THE RIGHT OF WAY. THE CONSTRUCTION PROTECTIVE FENCING WILL BE INSTALLED BY THE CONTRACTOR AND PAID FOR UNDER ITEM 607 FENCE, MISC .: CONSTRUCTION PROTECTIVE FENCING.

ITEM 607 - FENCE, MISC.: CONSTRUCTION = 55 FT PROTECTIVE FENCING

POST CONSTRUCTION STORM WATER TREATMENT

THIS PLAN UTILIZES STRUCTURAL BEST MANAGEMENT PRACTICES (BMP'S) FOR POST CONSTRUCTION STORM WATER TREATMENT.

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THE FOLLOWING QUANTITY IS PROVIDED IN THE GENERAL SUM-

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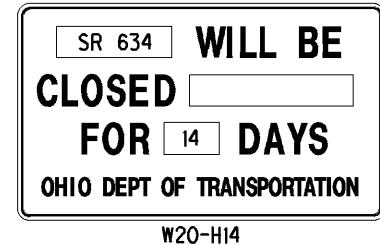
4

FOR THE 14 DAY DETOUR/CLOSURE AT SLM 9.63, THE FIRST DAY THAT THE DETOUR IS IN EFFECT SHALL BE CONSIDERED THE STARTING DATE OF THE 14 DAY DETOUR/CLOSURE LIMITA-TION. THE 14TH DAY OF THE 14 DAY DETOUR/CLOSURE LIMITA-TION SHALL BE CONSIDERED AS AN INTERIM COMPLETION DATE ON OR BEFORE THE 14TH DAY, THE ROADWAY SHALL BE OPENED TO THE SAFE AND CONVENIENT USE OF THE TRAVELING PUBLIC. IF THE ROADWAY IS NOT OPENED BY THIS INTERIM COMPLETION DATE, DISINCENTIVES SHALL BE ASSESSED AS PER THE ABOVE SPECIFICATION. ACCESS TO ADJACENT PROPERTY WITHIN THE WORK LIMITS SHALL BE MAINTAINED BY THE CONTRACTOR AT ALL TIMES AS PER 614.02(a).

THE CONTRACTOR SHALL NOTIFY THE DISTRICT ONE ROADWAY SERVICES ADMINISTRATOR A MINIMUM OF TWENTY-ONE (21) DAYS IN ADVANCE OF THE PLANNED DATE OF CLOSURE. THE CON-TRACTOR SHALL PROVIDE THE BELOW "NOTICE OF CLOSURE" SIGNS AND THEY SHALL BE ERECTED BY THE CONTRACTOR AT LEAST 14 DAYS IN ADVANCE OF THE SCHEDULED CLOSURE. THE SIGNS SHALL BE ERECTED ON THE RIGHT SIDE OF THE ROAD FACING TRAFFIC. THE SIGNS SHALL BE ERECTED AT THE POINT OF CLOSURE AND BE PLACED SO AS NOT TO INTERFERE WITH THE VISIBILITY OF ANY OTHER TRAFFIC CONTROL SIGNS. AFTER THE ROAD IS OPENED TO THROUGH TRAFFIC AND THE "NOTICE OF CLOSURE" SIGNS ARE NO LONGER NEEDED THE CONTRACTOR SHALL REMOVE THE SIGNS.

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH CMS 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 ITEM 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

PROVIDE AT/PRIOR TO SLM 9.63



NOTE: THE CONTRACTOR IS TO SUPPLY DATE.

DESIGNATED LOCAL DETOUR ROUTE

IN ADDITION TO THE OFFICIAL, SIGNED DETOUR ROUTE, A LOCAL ROUTE HAS BEEN DETERMINED TO BE THE SECONDARY, UNSIGNED DETOUR ROUTE OR "DESIGNATED LOCAL DETOUR ROUTE." THIS ROUTE IS SHOWN ON THIS SHEET. DURING THE TIME THAT TRAFFIC IS DETOURED, THE CONTRACTOR SHALL MAINTAIN THIS ROUTE IN A CONDITION WHICH IS REASONABLY SMOOTH AND FREE FROM HOLES, RUTS, RIDGES, BUMPS, DUST AND STANDING ONCE THÉ DETOUR IS RÉMOVED AND TRAFFIC RETURNED TO ITS NORMAL PATTERN, THE DESIGNATED LOCAL DETOUR ROUTE SHALL BE RESTORED TO A CONDITION THAT IS EQUIVA-LENT TO THAT WHICH EXISTED PRIOR TO ITS USE FOR THIS PURPOSE. ALL SUCH WORK SHALL BE PERFORMED WHEN AND AS DETERMINED BY THE ENGINEER. THE REPLACEMENT PAVEMENT FOR ITEM 253 PAVEMENT REPAIR SHALL CONSIST OF 1-1/4" ITEM 448, ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22 AND ITEM 407, TACK COAT PLACED ON 5" OF ITEM 301, ASPHALT CONCRETE BASE, PG64-22.

THE FOLLOWING ESTIMATED QUANTITIES ARE PROVIDED FOR USE AS DETERMINED BY THE ENGINEER TO MAINTAIN AND SUB-SEQUENTLY RESTORE THE DESIGNATED LOCAL DETOUR ROUTE.

ITEM 253, PAVEMENT REPAIR = 20 CU YD

ITEM 407. TACK COAT = 20 GALLON

ITEM 448, ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22 = 10 CU YD

ITEM 617, COMPACTED AGGREGATE = 50 CU YD

DUST CONTROL

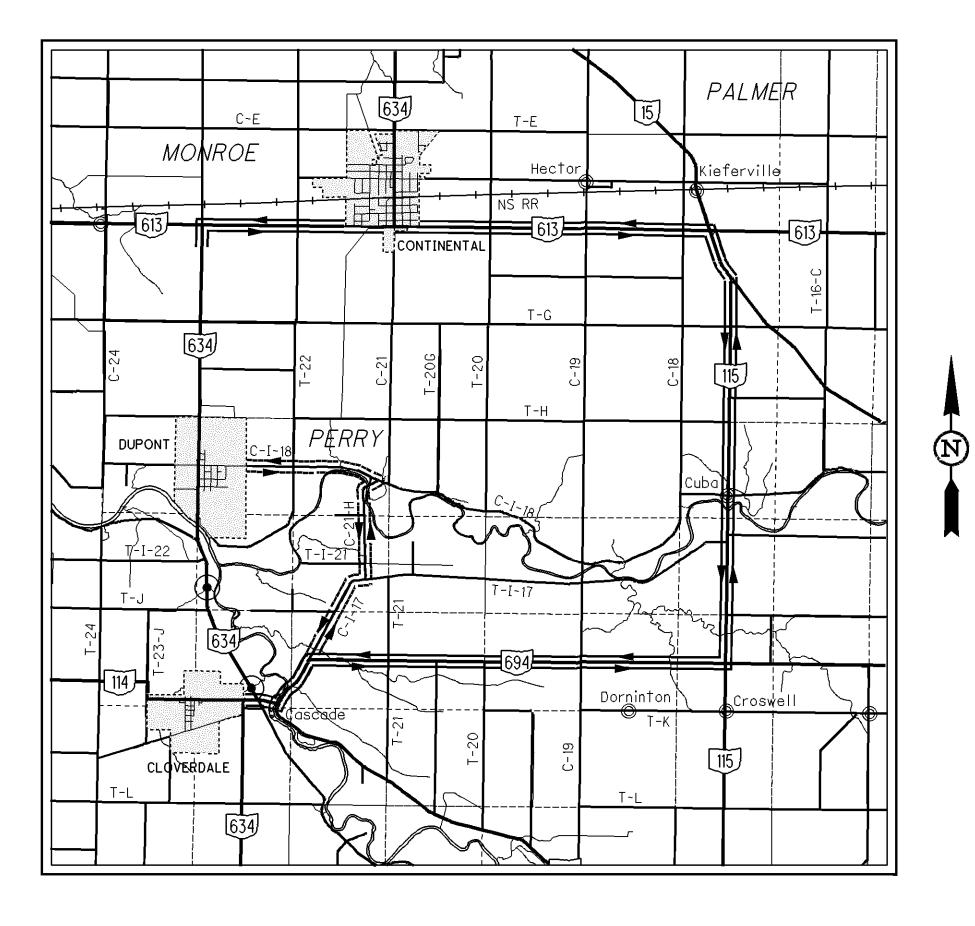
THE CONTRACTOR SHALL FURNISH AND APPLY WATER FOR DUST CONTROL AS DIRECTED BY THE ENGINEER. THE FOLLOWING CONTINGENCY QUANTITY HAS BEEN INCLUDED FOR DUST CONTROL PURPOSES:

ITEM 616, WATER = 23 M GAL

ITEM 614, WORK ZONE PAVEMENT MARKING

WORK ZONE PAVEMENT MARKING SHALL BE COMPLETE AND IN PLACE ON ALL NEW PAVEMENT PRIOR TO EXPOSING IT TO TRAF-FIC. THE FOLLOWING ESTIMATED QUANTITY FOR THIS ITEM HAS BEEN PROVIDED FOR USE AS DIRECTED BY THE ENGINEER.

ITEM 614. WORK ZONE CENTER LINE. CLASS II = 0.14 MILE



STATE DETOUR MAP - SR 634



- PROJECT LOCATION - OFFICIAL SIGNED DETOUR - DESIGNATED LOCAL DETOUR

NJV CHECKED

SUMMARY

GENERAL

UT-634-8.44/ 9.63/9.65

7 47

SHEET N	UMBER						ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
5	6	9	10	11	26	27			IOTAL			NO.
											TRAFFIC CONTROL	
			1				620	00500	1	EACH	DELINEATOR, POST MOUNTED	
						8	621 621	00100 54000	8	EACH EACH	RPM RAISED PAVEMENT MARKER REMOVED	
			6			/	626	00100	6	EACH	BARRIER REFLECTOR	
			•				727					
						110	630	02100	110	FT	GROUND MOUNTED SUPPORT, NO. 2 POST	
						14.4	630	80100	14.4	SQ FT	SIGN, FLAT SHEET	
						Δ	630	84900	Δ	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
						3	630	85100	3	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	
						8	630	86002	8	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
						4	630	97700	4	EACH	SIGNING, MISC.: REMOVAL OF SIGN POST REFLECTOR AND REERECTION	
						0.07	C 40		0.07	A 471 F	EDCE LINE	
						0.27	642 642	00090	0.27	MILE MILE	EDGE LINE CENTER LINE	
						0.17	072	00200	0.17	WILL	OCIVICIV CINC	
											STRUCTURES (UNDER 20')	
											STROCTORES CONDER 20 7	
											FOR CULVERT NO. PUT-634-0844 GENERAL SUMMARY	29
											FOR CULVERT NO. PUT-634-0963 GENERAL SUMMARY	34
											MAINTENANCE OF TRAFFIC	
	20						25.7	02000	20	CU VD	DAVENENT DEDAID	
	20 20						253 407	02000 10000	20 20	CU YD GALLON	PAVEMENT REPAIR TACK COAT	
	10						448	47020	10	CU YD	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	
	0.14						614	21400	0.14	MILE	WORK ZONE CENTERLINE, CLASS II	
	<i>23 50</i>						616 617	10000 10100	23 50	M GAL CU YD	WATER COMPACTED AGGREGATE	
	30						011	10100	30	COTD	COMI ACTED AGGNEGATE	
	LUMP						614	11000	LUMP		MAINTAINING TRAFFIC	
	LOWI						619	16010	4	MONTH	FIELD OFFICE, TYPE B	
							623	10000	LUMP		CONSTRUCTION LAYOUT STAKES	
							624	10000	LUMP		MOBILIZATION	
						+						
						-						
						-						
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NJV CHECKED

L SUMMARY

GENERAL SI

PUT-634-8.44/ 9.63/9.65

r-634-8.	9.63/8.6
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Pavement and 4 Paved Shoulder	FROM 442+80	TO 443+80	FT 100	AVE. WIDTH	TOTAL AREA	PAVEMENT REMOVED	SUBGRADE 50 COMPACTION 6	ASPHALT CONCRETE BASE, PG64-22 C	SREGATE BASE (T=6")	PEGATE BASE 60 (T=8")	EGATE BASE (T=16")	TACK COAT 0.075 GALLON per SO YD	TACK COAT FOR INTERMEDIATE COURSE® 0.075 GALLON per SQ YD	T CONCRETE FRMEDIATE SE, TYPE 2, 88 -22 (T=1-34")	T CONCRETE E COURSE, PG64-22 84
Pavement and A Paved Shoulder Pavement and A	FROM 442+80		FT 100		F	PAVEMENT REMOVED	SUBGRADE	T CONCRET. PG64-22 T=5″)	REGATE BA (T=6")	EGATE BA (T=8")	7E BA	CK COAT 275 GALLON 37 SQ YD	CK COAT VTERMEDIATE RSE@ 0.075 N per SQ YD	1 9 F 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	CONCRETE E COURSE, PG64-22
Pavement and A Paved Shoulder Pavement and A	442+80		100	FT	SQ YD		1	4	466,	AGGR	AGGRE	7.4 Ø 0.0	FOR IN COUF GALLO	ASPHAL INTE COUR' PG64-	ASPHALT CO SURFACE C TYPE 1, P
Paved Shoulder Pavement and		443+80				SQ YD	SQ YD	CU YD	CU YD	CU YD	CU YD	GALLON	GALLON	CU YD	CU YD
Paved Shoulder Pavement and		443+80		 											
Pavement and	443+80			26.6	295.6	250						22.2	22.2	14.4	10.3
	443+80		100	27.27	303.0			42.1	52.4					 	1
	443+80		100	28.27	314.1		700.0		52.4					 	
	443+80		100	29.6	328.9		328.9								
	, , , , , , ,	448+35	455	30.0	1516.7	1144						113.8	113.8	73.7	52.7
			455	30.67	1550.5			215.3							
			455	31.67	1601.1				266.9						
			455	33.0	1668.3		1668.3								
Pavement and	448+35	449+35	100	27	300.0	256						22.5	22.5	14.6	10.4
Paved Shoulder			100	27.67	307.4			42.7							
			100	28.67	318.6				53.1					<u> </u>	
			100	30	333.3		333.3								
Stone Shoulder 50	506+75 L†	508+05 L†	130	2	28.9					6.4					
50	507+50 R†	508+05 R†	55	2	12.2					2.7					
	500.05	500.75	7.0	00.1	171.0	171.0						10.0	10.0		
Pavement 5	508+05	508+75	70	22.1	171.9	171.9		24.0				12.9	12.9	8.4	6.0
			70 70	<i>22.77 23.77</i>	177.1 184.9			24.6	3/) O						1
			70 70	25.1	195.2		195.2		30.8					 	+
Stone Base Ove	ver Culvert F	PUT-634-0963	23.2	27	69.6		190.2				31				+
	508+05 L†	508+75 L†	70	2	15.6					3.5	<u> </u>				+
	508+05 R†	508+75 R†	70	2	15.6					3.5					+
			. ~		,,,,,					~ * * *					
Stone Shoulder 50	508+75 L†	510+00 L†	125	2	27.8					6.2					
50	508+75 Rt	514+00 R†	525	2	116.7					25.9					
					 Subtotals				403.2	48.2	31				
	.	OTALS TO	AFNE			1822	2526	325		482		171	171	111	79

				DRAIN	AGE	" D "						
				202		601		602	603			671
REF. NO.	SHEET NO.	STA	TION	PIPE REMOVED, 24" AND UNDER		ROCK CHANNEL PROTECTION, TYPE B, W/FILTER	ROCK CHANNEL PROTECTION, TYPE C, W/FILTER	CONCRE TE MASONRY	6" CONDUIT, TYPE F	15" CONDUIT, TYPE D	24" CONDUIT, TYPE C, 706.02	EROSION CONTROL MAT, TYPE C
		FROM	ТО	FT		CU YD	CU YD	CU YD	FT	FT	FT	SQ YD
1-D	12	444+50 L†	445+47 L†									90
2-D	12	444+50 R†	445+46 R†									94
3-D	13	445+72 R†	447+00 R†				8			34		70
4-D	18	508+08.0 R†	508+61.0 R†	42			3			45		
5-D	19	512+85.8 L†	512+88 L†	5			1	0.4	4		4	
6-D	19	512+30 Rt	513+25 R†			135					6	
Т	OTAL	S TO GENERA	L SUMMARY	47		135	12	0.4	4	79	10	254

			ROADWAY	" R "			
					202		604
REF. NO.	SHEET NO.	STAT	FENCE REMOVED	REMOVAL MISC.: 6" STEEL POST IN CONCRETE BASE REMOVED	REMOVAL MISC.: STEEL RAIL REMOVED	MONUMENT ASSEMBLY	
		FROM	ТО	FT	EACH	FT	EACH
1-R	12	442+98 R†	444+36 R†	138			
2-R	18	494+90.79, @ R/W					1
3-R	18	508+28.5 R†	508+45 R†		2	17	
Т	OTAL	S TO GENERAL	SUMMARY	138	2	17	1

		20	23	659
SHEET NO.	LOCATION	EXCA VA TION	EMBANKMENT	SEEDING AND MULCHING
		CU YD	CU YD	SQ YD
14	SR 634 - 8.44	256	673	942
15		224	4567	1635
16		255	3796	2774
17		200	809	1100
Correc	tion for Erosion Cont	rol Mat,	Type C	-254
20	SR 634 - 9.63/9.65	24	22	461
21		48	82	486
22		266	10	640
23		6	17	199
24		49	40	313
25		21	54	280

TOTALS TO GENERAL SUMMARY

1349 | 10,070 | 8576

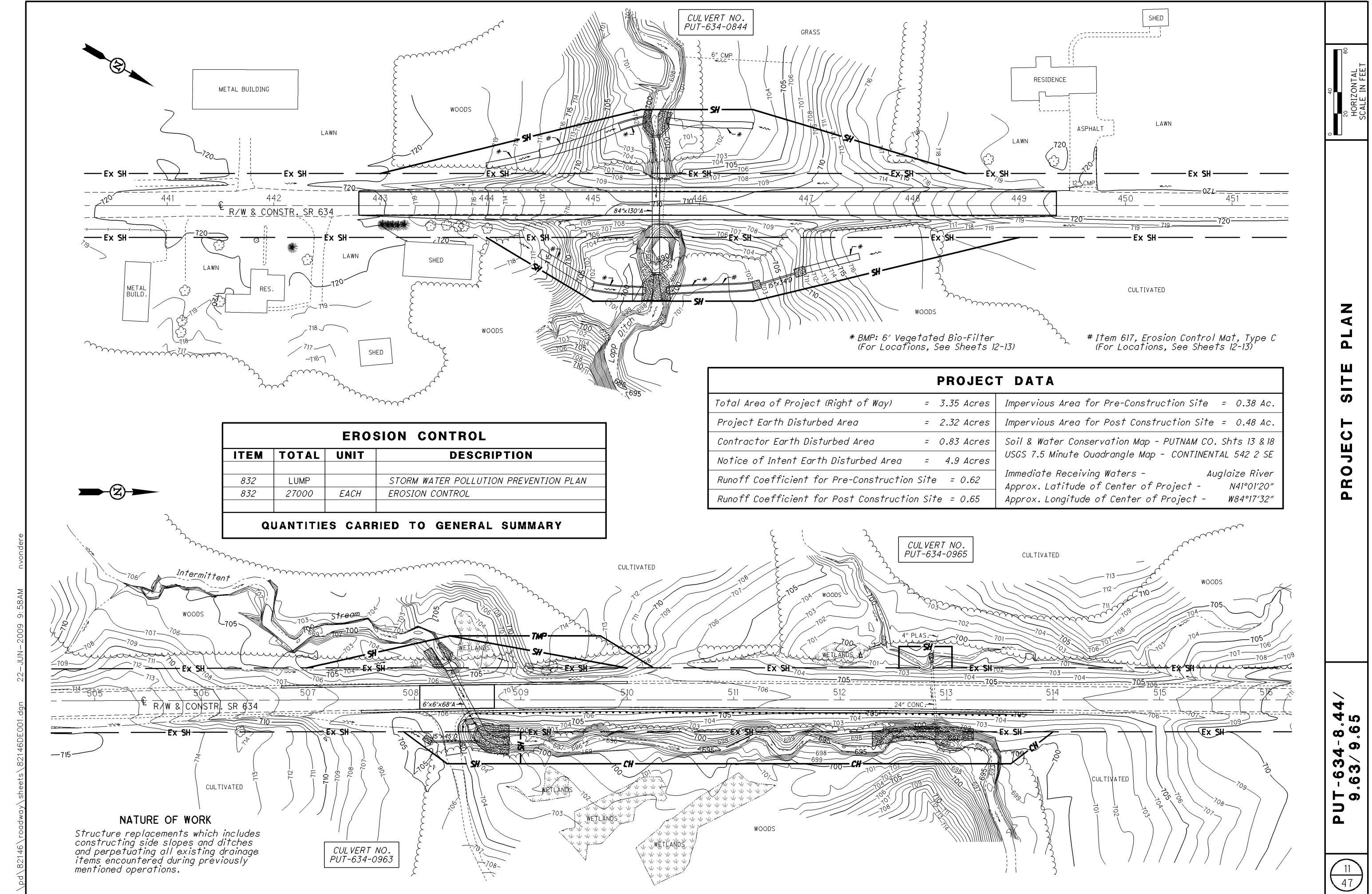
EARTHWORK AND SEEDING

CALCULATIONS
Seeding and Mulching and Erosion Control Mat (8576+254) = 8830 Sq Yd
659 COMMERCIAL FERTILIZER (8830)(9)(1/1000)(30)(1/2000) = 1.19 TON
659 WATER (2)(8830)(9)(1/1000)(300)(1/1000) = 48 M GAL
TOTALS TO GENERAL SUMMARY

	, , , , , , , , , , , , , , , , , , , 		GUARDRA	AIL "G				1	
					- 60	96		620	626
REF. NO.		STA	TION	GUARDRAIL, TYPE 5	GUARDRAIL, TYPE 5, AS PER PLAN	ANCHOR ASSEMBLY, TYPE E-98	ANCHOR ASSEMBLY, TYPE T	DELINEATOR, POST MOUNTED	BARRIER REFLECTOR
				STR.	15′R	4		TYPE C	TYPE A2
		FROM	ТО	FT	FT	EACH	EACH	EACH	EACH
1-G	18-19	508+45.07 R†	513+72.50 R†	462.50	25.00	1	1	1	6
7	 OTALS	S TO GENERA	L SUMMARY	462.50	25.00	1	1	1	6

NOTE: For Guardrail Post layout over Culvert and Note, See Sheet 33.

STATION	LENGTH	SPACING	AGCREGATE DRAINS
			FT
SR 634 - 8.44			
443+50 Lt to 448+50 Lt	14	50	154
444+25 Rt to 446+25 Rt	14	50	70
447+25 Rt to 448+75 Rt	14	50	56
SR 634 - 9.63/9.65			
508+10 L†	20		20
508+50 L†	20		20
508+70 R†	12		12
TOTAL TO GENERAL	SUMM	IARY	332

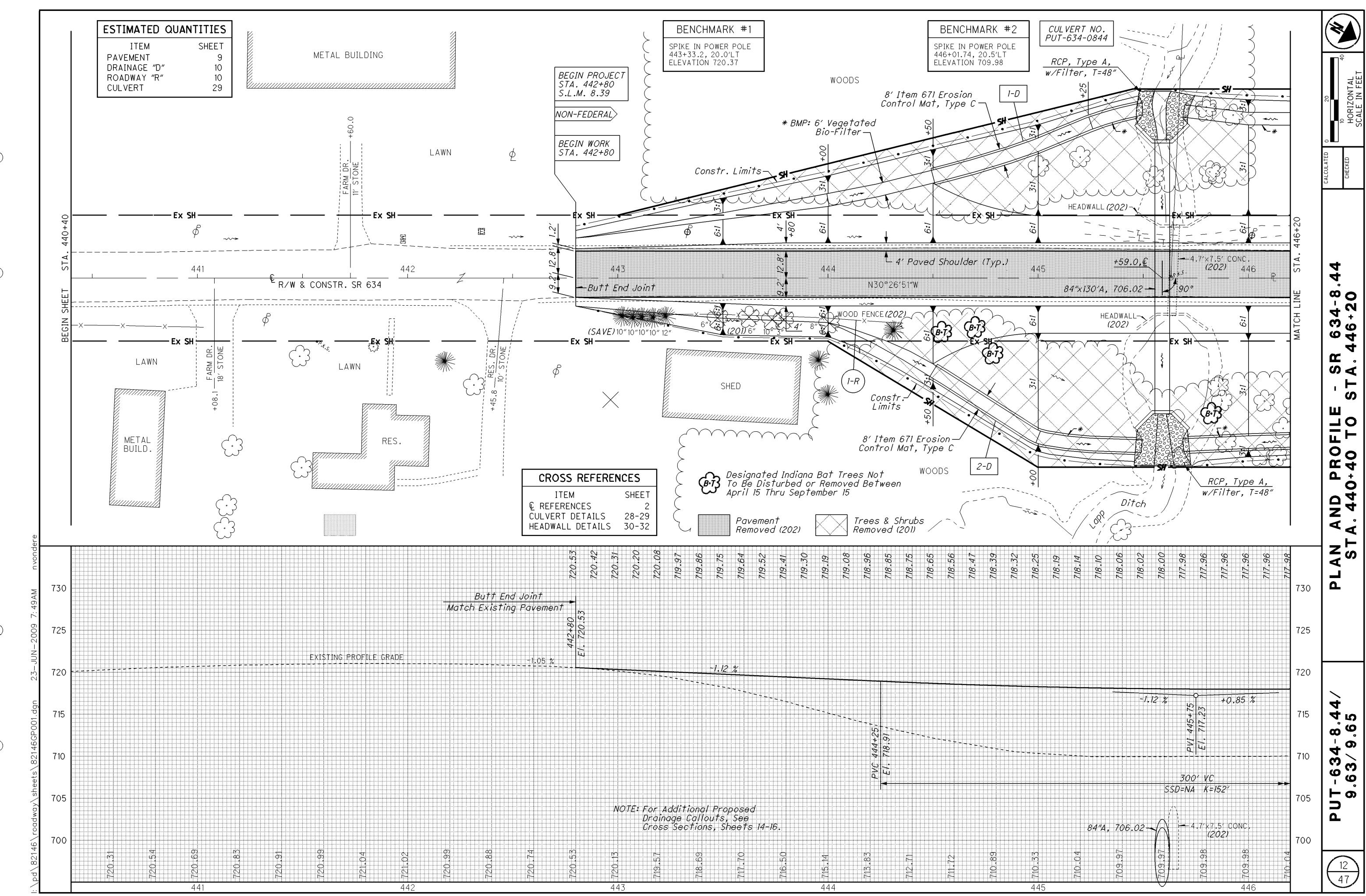


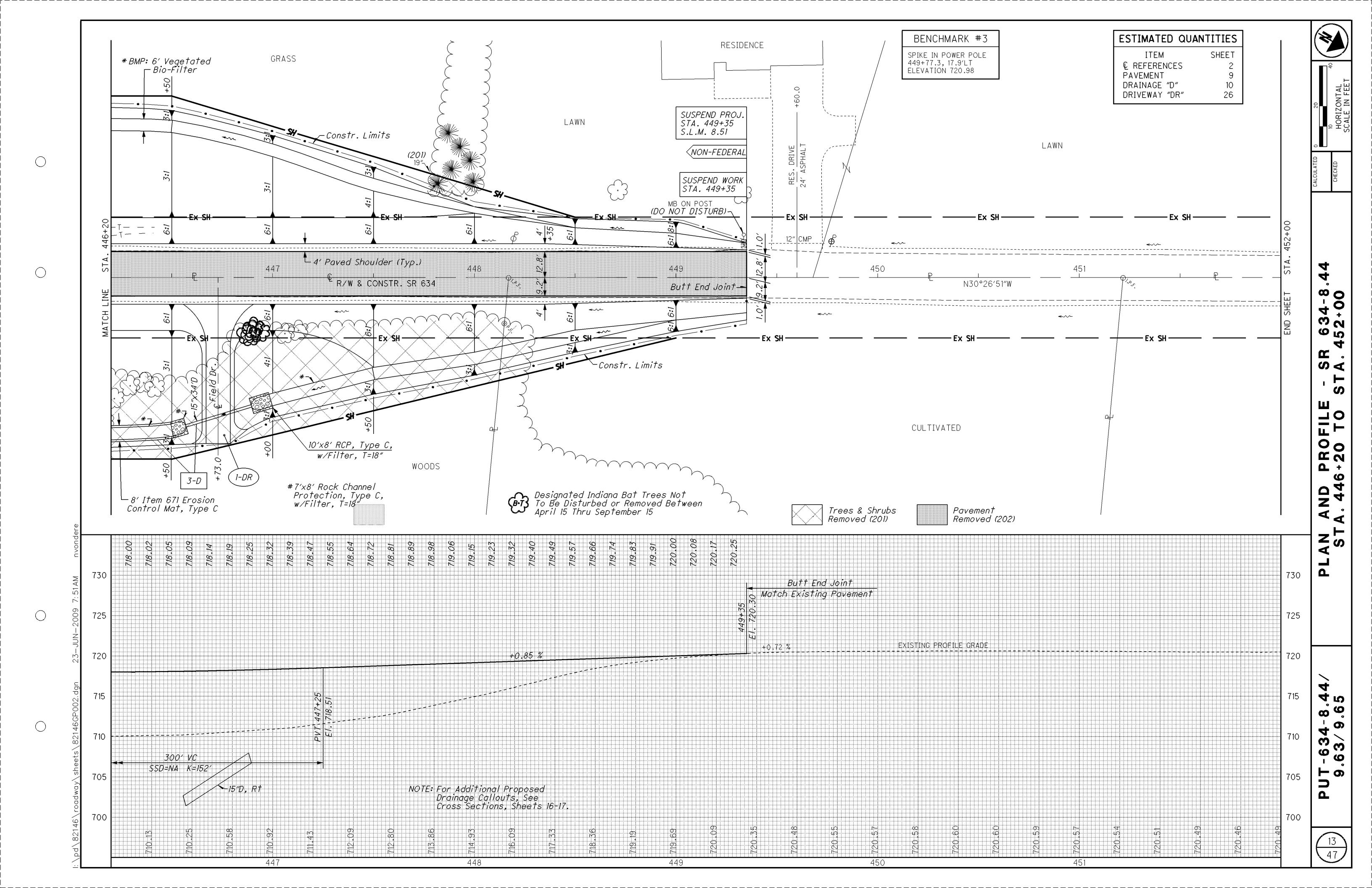
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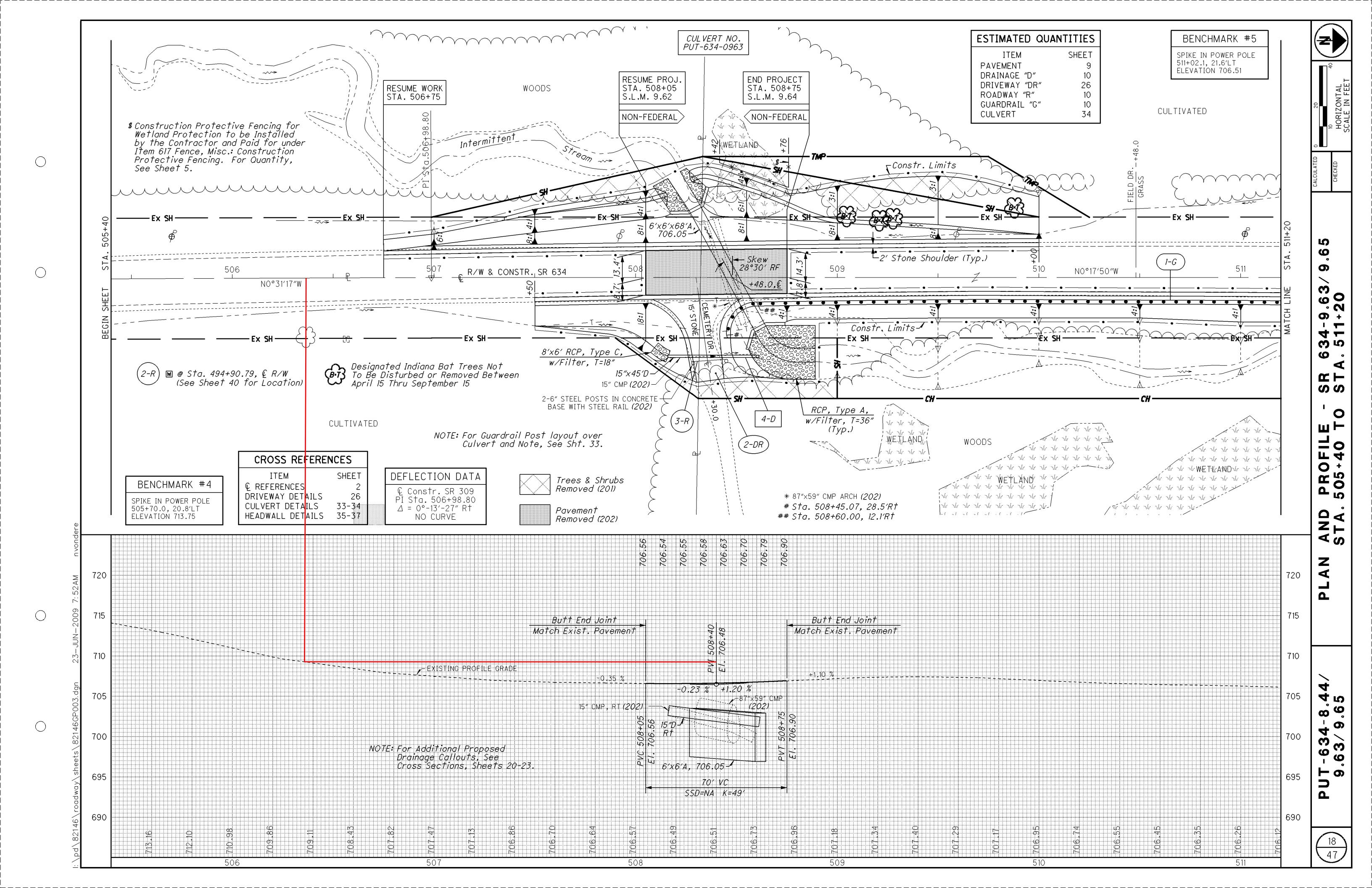


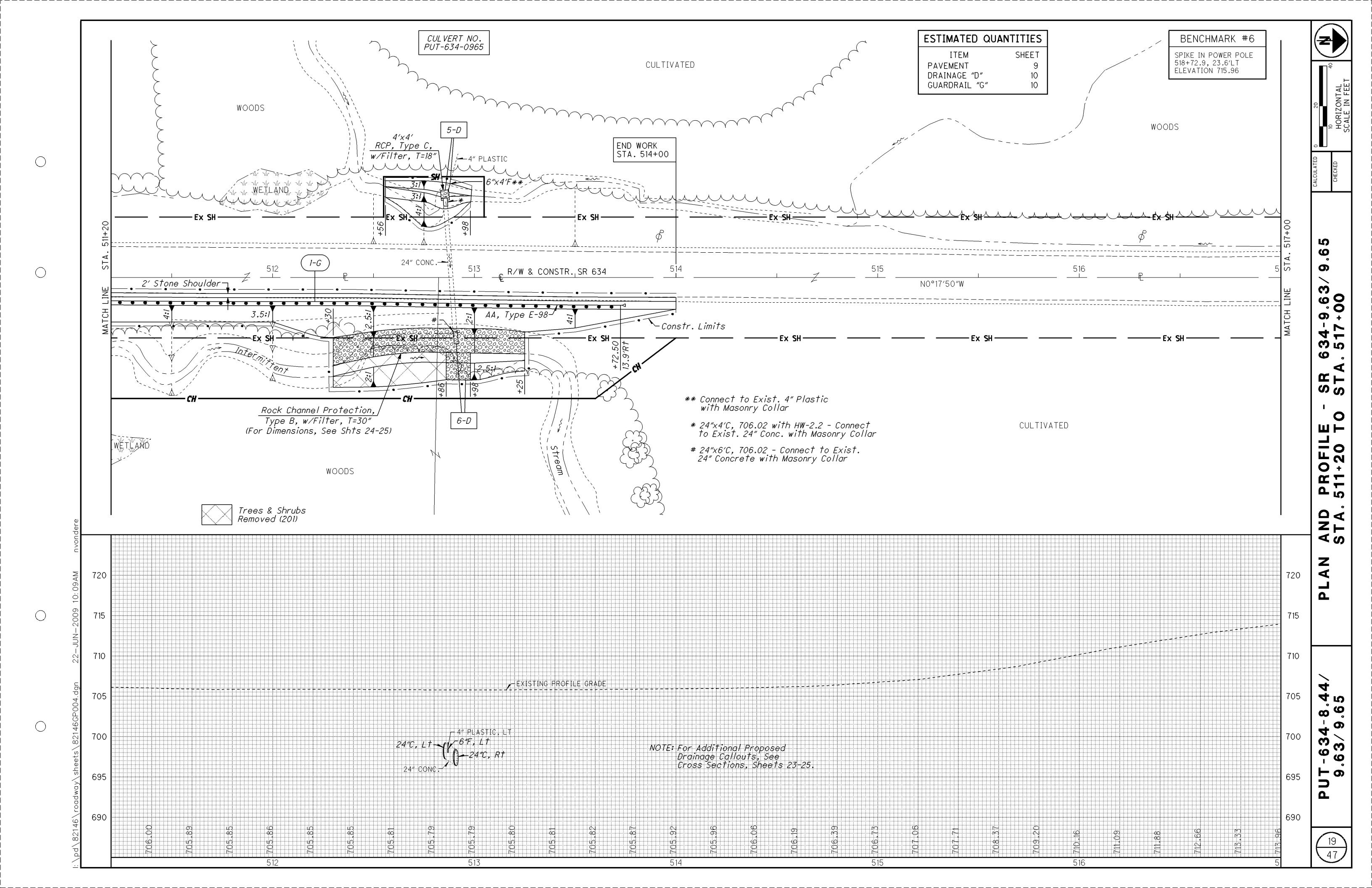
130 END WIDTH ₡ Constr. CUT FILL CUT FILL 98 93 | 290 7*18.65* **444+50** 712.16 -8.44 50 425 132 1 **6** 4 MA ı ô – ı , **ග** S O *55* 50 120 90 719.19 **444+00 ⊢** ∞ SEC 442+8 CROSS STA. 72 272 43 28 56 7*19.75* **443+50** 718.24 245 52 F-634-8,44/ Stσ. 442+80; AH | 12 | 710 720.53 442+80 720.53 BEGIN WORK & PROJECT АН, Sta. 442+80 20 PUT 9° Item 202 Pavement Removed 256 673 TOTALS *942* TOT AL € Constr. 0 10

END AREA SEEDING 130 VOLUME 120 120 110 100 60 50 20 100 END WIDTH ₡ Constr. CUT FILL CUT Sta. 446+00 38 965 Pavement 720 710 Inle† 84″A, @ € Culvert 445+59, 65.5″L† E El. 696.5 -125 | Correction for Culvert HEADWALL (202) -25 | 50 Correction for Culver HEADWALL (202) Outlet 84"A, @ @ Culvert 5 - 445+59, 64.5"Rt E El. 695.5 . 5 | 44° 700 700 $\sqrt{4.7}$ X7.5 CONC.(202) *156* **ω ω** ►84″×130′A, 706.02, 1500 D-Load Item 203 Embankment 34 690 717.99 **445**+65 ⊢Rock Channel Protection, Type A, w/Filter, T=48″ **`**Headwa∏ 64 100 | 2674 709.97 RA 680 680 INF , **ග** SECTIONS 445+00 TO 680 Pavement Item 671 Erosion Control & Mat, Type C SOSS STA. Item 671 Erosion Control Mat, Type C 法 710 150 34 960 CR 718.12 700 **445+25** 709.96 31 408 -634-8.44/ .63/9.65 34 | 820 7/8.25 **445+00** 710.33 PUT 9 672 118 1028 Item 202 Pavement Removed 5ta. 444+50 | 93 | 290 | 98 Sta. 444+50 224 4567 TOTALS **€** Constr. 0 10

SEEDING
END SQ.
WIDTH YDS END AREA 120 130 CUT FILL ₡ Constr. CUT FILL [Pavement 98 74 310 713.5 7*18.72* **447+50** 712.42 700 622 -8.44 50 118 | 796 126 53 550 SR TA. 708.5 **Q** 718.32 447+00 -Inlet 15°D 446+89.5, 63.6°R† £ Elev. 706.7 700 S O 00 00 00 FIELD DRIVE 446+73.0 -105 Correction for Drive, Rt Correction for Drive, Rt -25 88 | 1273 783 CROSS STA. *Pavement* End Item 671 Erosion Control Mat, Type C *156* 42 | 825 718.05 **446+50** 710.17 867 74 | 1657 F-634-8.44/ *156* 38 965 PUT 9° 7/7.96 **446+00** 709.98 607 Sta. 445+65 *156* 255 3796 TOTALS ⊈ Constr. 0 10

₡ Constr. CUT FILL CUT FILL 719.2 720.30 449+35 720.30 SUSPEND PROJECT & WORK 20 BK, Sta. 449+35 12 634-8.44 449+35 105 17 - SR STA SECTIONS 448+00 TO 720.00 **449+00** 21 14 CROSS STA. 38 82 43 27 68 719.57 4**48+50** 717.95 Item 202 Pavement Removed 51 244 314 70 28 195 719.15 **448+00** 714.93 94 | 468 467 Sta. 447+50 74 310 98 Sta. 447+50 200 809 € Constr. 0 10





60 CUT FILL ∉ Constr. CUT FILL 9.65 22 17 12 12 706.56 508+05 706.56 RESUME PROJECT 70 1-9.63/ 08+05 4 0 m . 9 A 20 342 SECTIONS A. 507+00 *42* 27 AH BK **507+50** 706.82 SS 80 CR 100 3 .8.44/ .65 **507+00** PUT 9 Sta. 506+75, AH RESUME WORK STA. 506+75 AH, Sta. 506+75 Item 202 Pavement Removed ⊈ Constr. 461

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						87"×59" CMP /	ARCH <i>(202)</i>				+61.0, 39.0°RT 1, 701.2				
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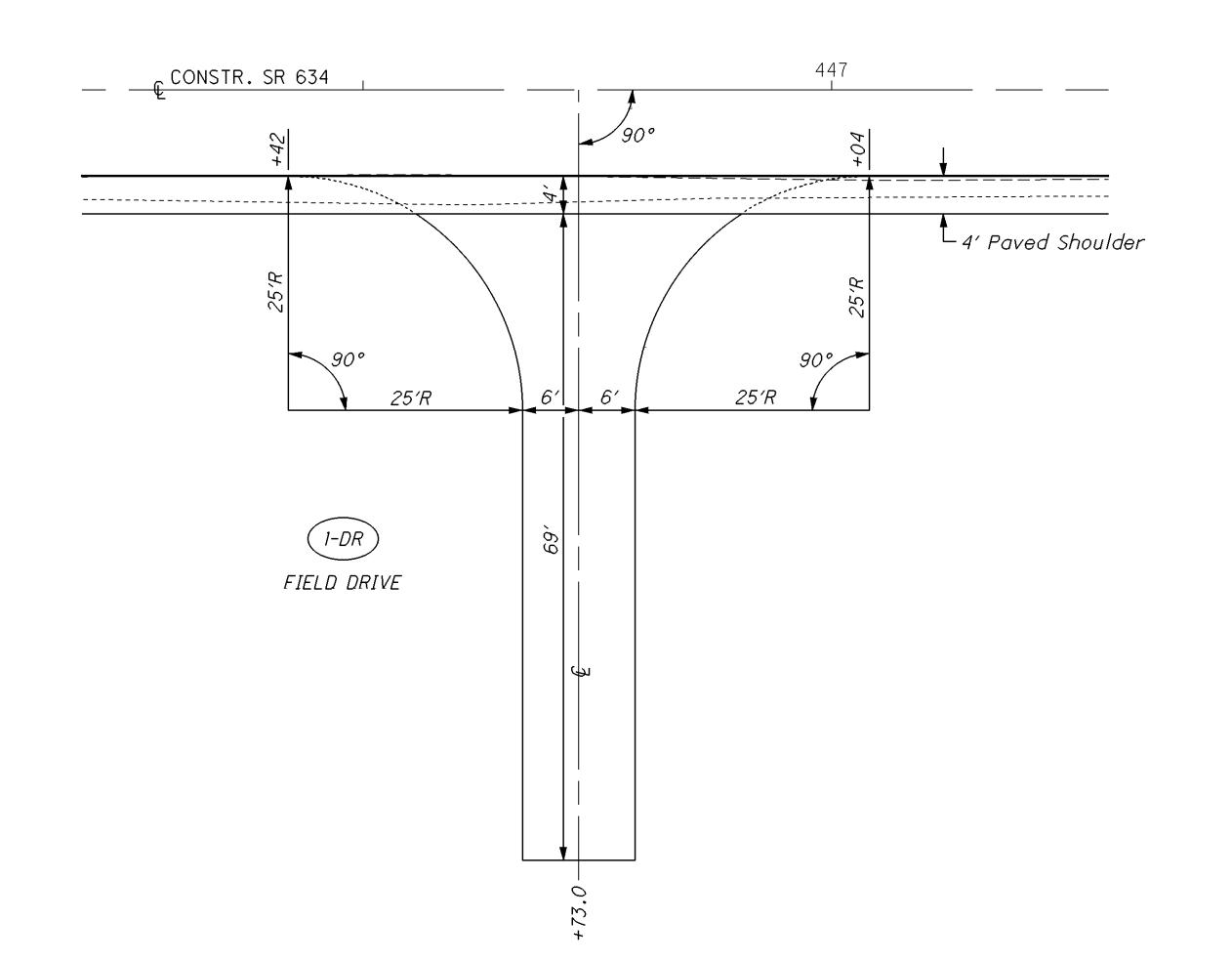
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€ Constr. Ŋ ô **O** 12 .63/ **9** — 40 A 6 S_T 2 510+50 S A 14 **511+00** 706.26 ST S 0 CR 69 FIELD DRIVE 510+48.0 .8.44/ .65 **510+50** 706.50 58 2 Sta. 510+00; AH 10 AH, Sta. 510+00 € Constr.

50 60 20 50 60 30 END WIDTH CUT FILL ∉ Constr. CUT 705 9.65 **512+75** 55 .63/+75 36 25 **6** 0 Rock Channel Protection, Type B, w/Fi/ter, T=30" 40 3 100 9 A 24 E S S 1 0 AH, 512+56 BK, 512+56 40 30 57a.512+56 32 20 00°+ 21 8 C) in Ш SA *32 36* 512+50 23 SOS ' 705.83 S 0 Rock Channel Protection. 4 Type B, w/Filter, T=30" CR 14 10 33 20 AH, 512+30 BK, 512+30 Sta. 512+30 53 -634-8.44/ .63/9.65 **512+00** 705.86 12 PUT 9 67 2 Sta, 511+50 12 Sta. 511+50 € Constr. 49 40

∉ Constr. CUT FILL END WORK STA. 514+00 Sta. 514+00, BK BK, Sta. 514+00 50 Ŋ . 0 513+50 700 .63/ 13 တက 4-51 40 (1) 4 Q SR ST AH, 513+25 BK, 513+25 16 21 Sta. 512+25 SNO+ 68 SE A. El. 700.Q **513+00** 705.79 ST 25 S 0 CR Rock Channel Protection,-Type B, w/Filter, T=30" AH, 512+98 BK, 512+98 24 32 36 -634-8.44/ .63/9.65 Intet 24°C, 706.02 512+85.53, 39.4°L† E El. 697.3 ¬ *15* 38 48 4" PLASTIC -512+88.0, Connect to Ex. 4"—/ Plastic with Masonry Collar —512+85.8, Connect to Ex. 24″ Conc. with Masonry Collar 512+90.5, Connect to Ex. 24″-Conc. with Masonry Collar 6"x4"F-¹ Outlet 6"F, 512+86.9;⁻¹ 42.6"Lt E El. 698.0 **512+90** 705.78 \ Rock Channel Protection, Type C, w/Filter, T=18″ -Rock Channel Protection, Type B, w/Filter, T=30″ 86 14 PU 690 Sta. 512+75 | 36 | 25 | 55 Sta. 512+75 21 54 TOTALS 280 ⊈ Constr.

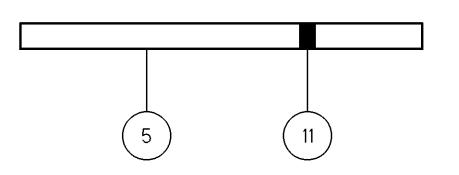
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508 CONSTR. SR 634	509
82°05'32"	
83°13'14" 30'R +27.25 34.71'Rt 20'R +30.5 51.9'Rt 13.5' 7.5' 20'R 43.8 50.1'Rt	2' Stone Shoulder

	DRIVEWAY "DR"						
					204	304	
REF. NO.	SHEET NO.	LOCATION	DRIVE TYPE	AREA	SUBGRADE COMPACTION	AGGREGATE BASE (T=8")	
					SQ YD	CU YD	
				SQ YD			
1-DR	13	446+73.0 R†	FIELD	107.7	107.7	23.9	
2-DR	18	508+30.0 R†	COMM.	87.3	87.3	19.4	
	TOTA	LS TO GENERAL	SUMM	IARY	195	43	

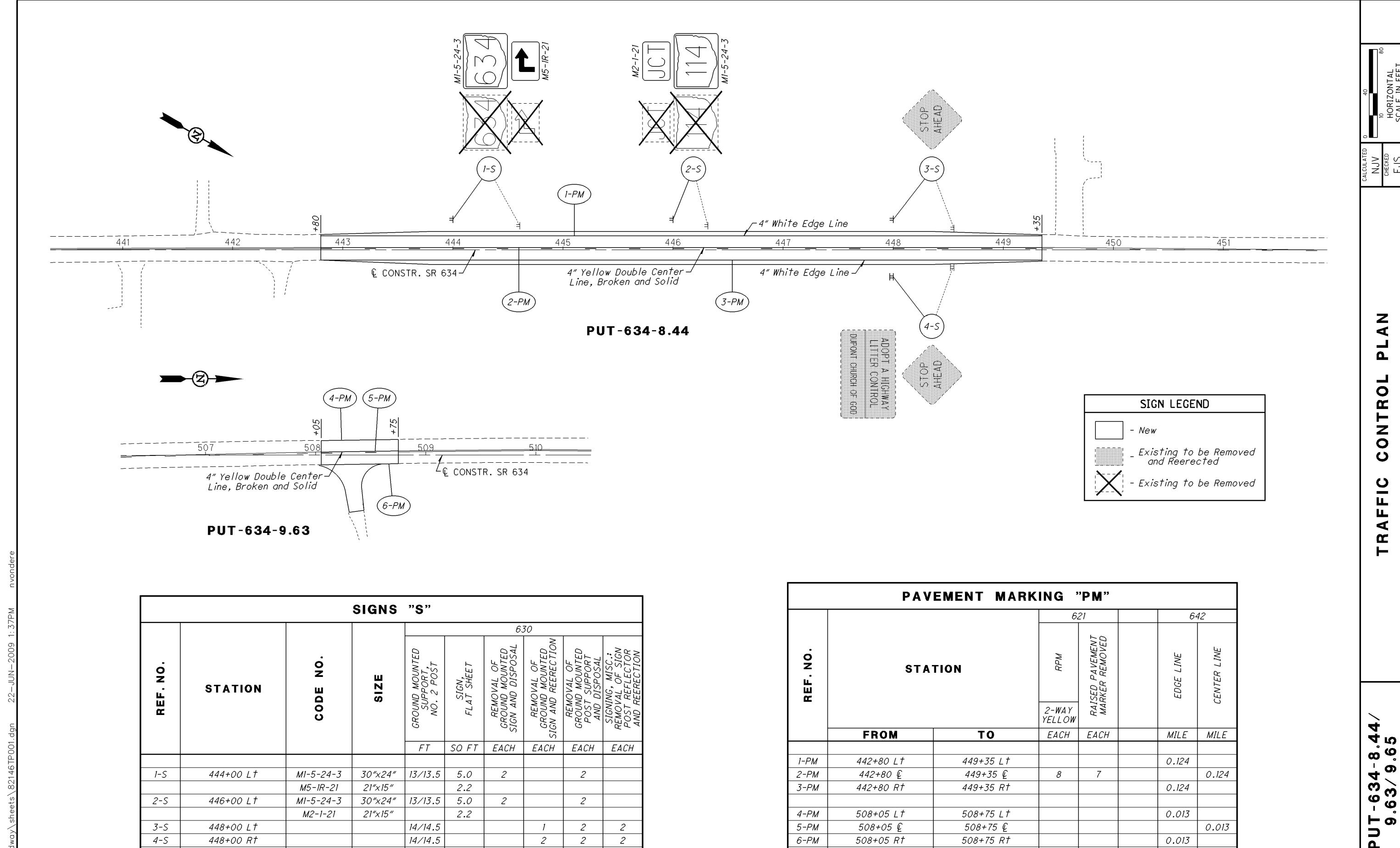
DRIVEWAY PAVEMENT BUILDUP



PROPOSED LEGEND

- 5) ITEM 204 SUBGRADE COMPACTION
 - 11) ITEM 304 8" AGGREGATE BASE

NOTE: For Drive Pipe Details and Quantities, See Sheets 10, 13 and 18.



TOTALS TO GENERAL SUMMARY

TOTALS TO GENERAL SUMMARY

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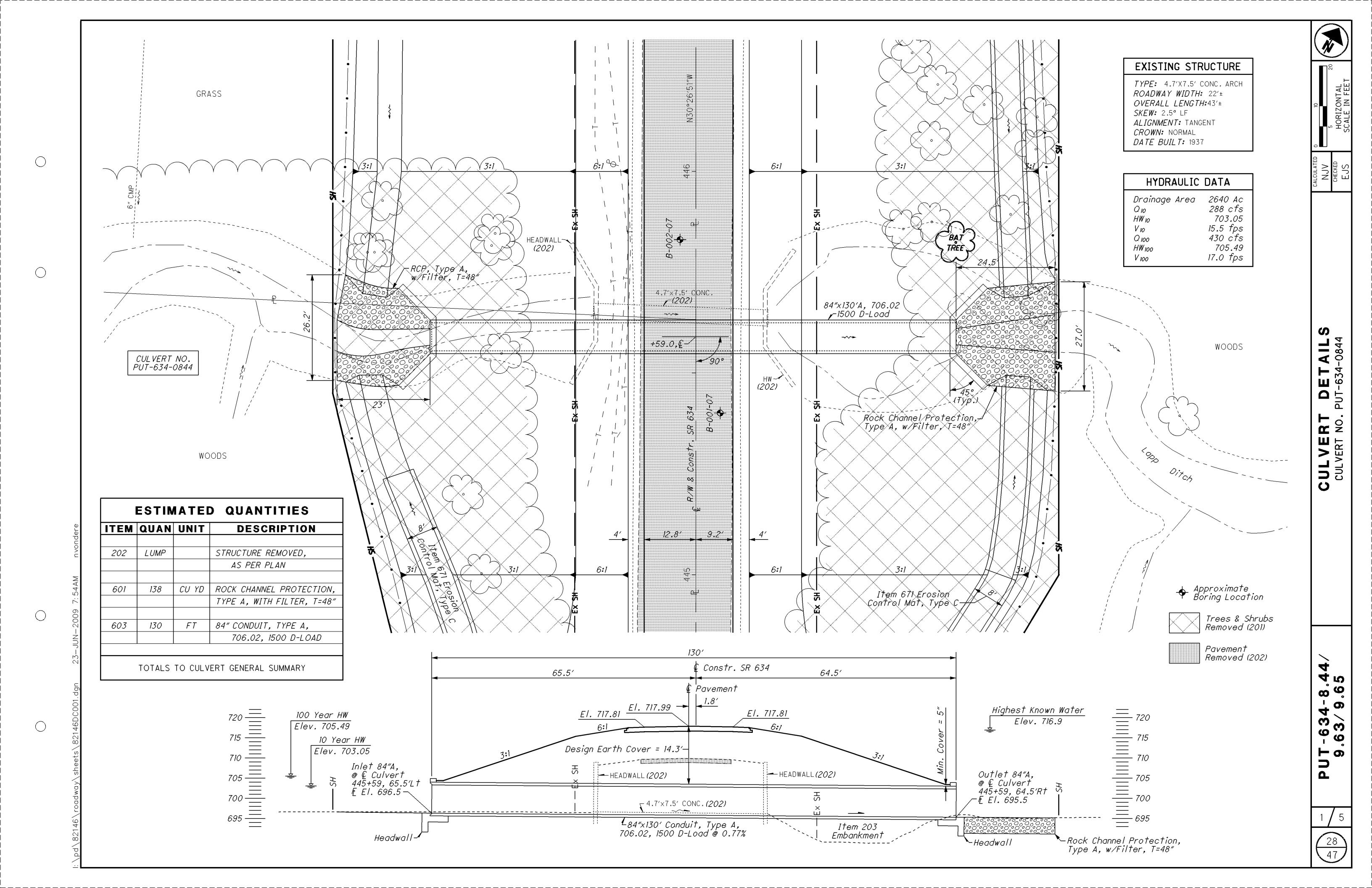
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DESIGN SPECIFICATIONS

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

DESIGN DATA

CAST-IN-PLACE STRUCTURES: CONCRETE CLASS C - COMPRESSIVE STRENGTH 4.0 KSI (SUBSTRUCTURE)

REINFORCING STEEL - MINIMUM YIELD STRENGTH 60 KSI

EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND/OR FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05 & 105.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED ON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

CONDUIT FABRICATION AND APPROVAL

PRIOR TO CLOSING THE ROADWAY TO TRAFFIC, THE CONTRACTOR SHALL HAVE THE ITEM 603 TYPE A CONDUIT SPECIFIED IN THESE PLANS FABRICATED AND APPROVED. ALL COSTS ASSOCIATED WITH THESE REQUIREMENTS SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE PERTINENT CONDUIT.

ITEM 512, SEALING OF CONCRETE SURFACES

THE FOLLOWING ESTIMATED QUANTITY FOR THIS ITEM HAS BEEN INCLUDED IN THE STRUCTURE GENERAL SUMMARY.

ITEM 512, SEALING OF CONCRETE SURFACES = 60 SQ YD
(FPOXY-URFTHANF)

ITEM 202, STRUCTURE REMOVED, AS PER PLAN

THIS ITEM SHALL INCLUDE THE REMOVAL OF THE EXISTING 4.7'x7.5' CONCRETE SLAB AND ADJACENT HEADWALLS.

ITEM 511, CLASS C CONCRETE, AS PER PLAN

IN ADDITION TO THE SPECIFICATIONS SHOWN FOR ITEM 511 IN THE CMS, THIS ITEM SHALL INCLUDE ANY AND ALL EXCAVATION AND EMBANKMENT NEEDED TO CONSTRUCT THE WINGWALLS. THE EXCAVATION AND EMBANKMENT SHALL FOLLOW THE SPECIFICATIONS OUTLINED IN THE CMS FOR ITEM 203 EXCAVATION AND ITEM 203 EMBANKMENT.

PAYMENT WILL BE AT THE CONTRACT BID PRICE PER CUBIC YARD FOR ITEM 511, CLASS C CONCRETE, AS PER PLAN. THE FOLLOWING ESTIMATED QUANTITY FOR THIS ITEM HAS BEEN INCLUDED IN THE STRUCTURE GENERAL SUMMARY FOR THE WORK NOTED ABOVE.

ITEM 511, CLASS C CONCRETE, AS PER PLAN = 23 CU YD

ITEM 511, CLASS C CONCRETE, FOOTING, AS PER PLAN

IN ADDITION TO THE SPECIFICATIONS SHOWN FOR ITEM 511 IN THE CMS, THIS ITEM SHALL INCLUDE ANY AND ALL EXCAVATION AND EMBANKMENT NEEDED TO CONSTRUCT THE FOOTINGS. THE EXCAVATION AND EMBANKMENT SHALL FOLLOW THE SPECIFICATIONS OUTLINED IN THE CMS FOR ITEM 203 EXCAVATION AND ITEM 203 EMBANKMENT.

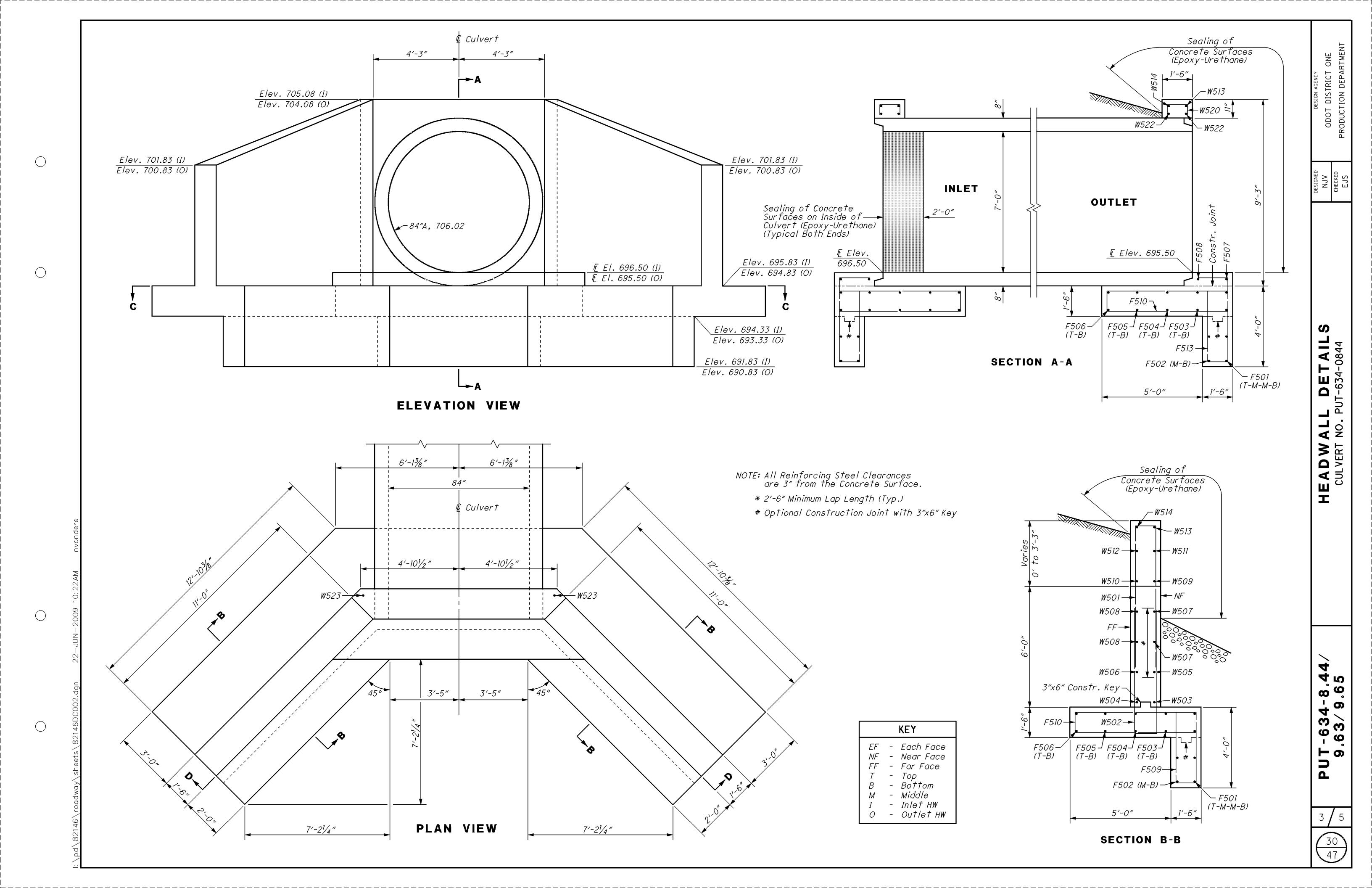
PAYMENT WILL BE AT THE CONTRACT BID PRICE PER CUBIC YARD FOR ITEM 511, CLASS C CONCRETE, FOOTING, AS PER PLAN. THE FOLLOWING ESTIMATED QUANTITY FOR THIS ITEM HAS BEEN INCLUDED IN THE STRUCTURE GENERAL SUMMARY FOR THE WORK NOTED ABOVE.

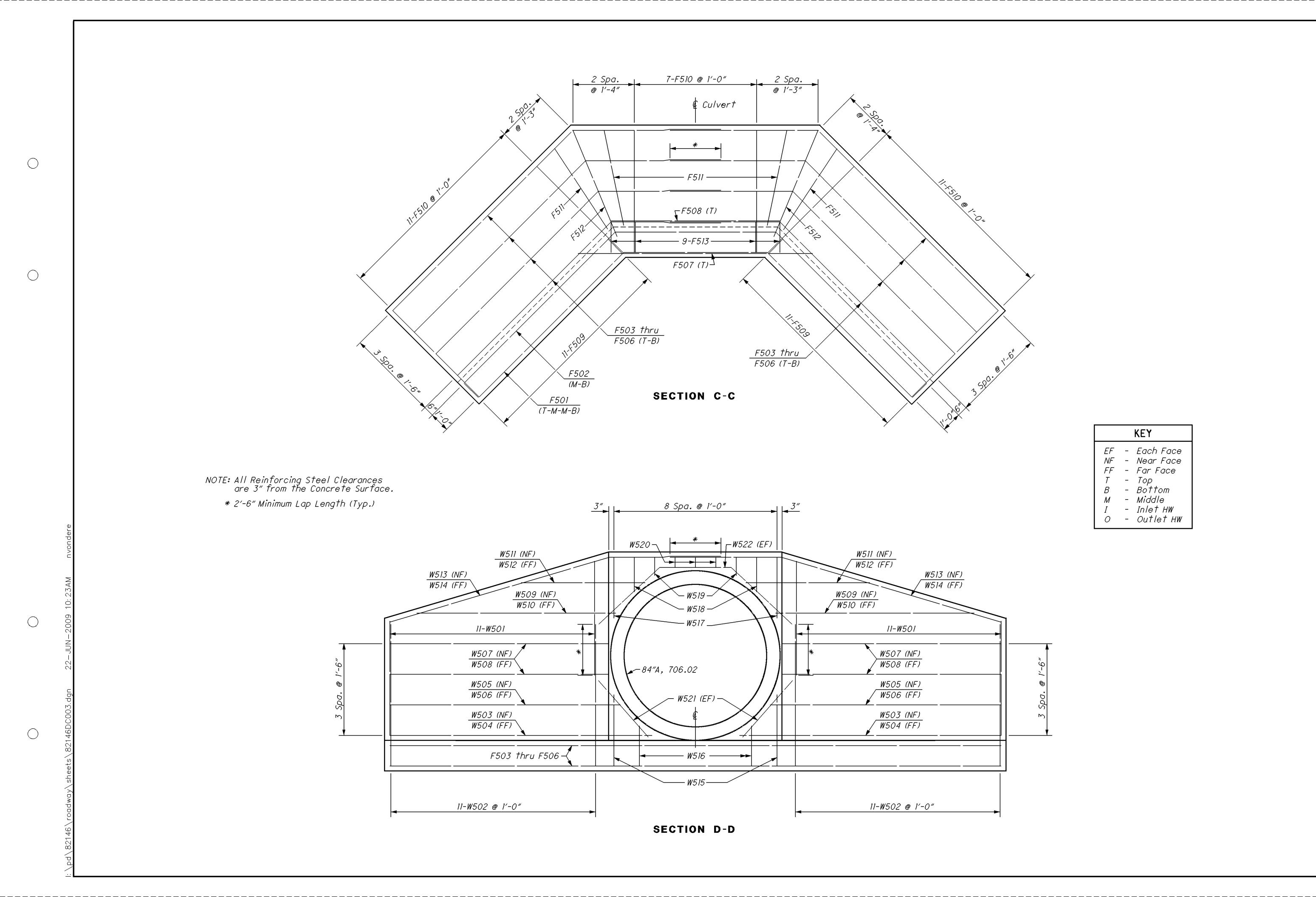
ITEM 511, CLASS C CONCRETE, FOOTING, AS PER PLAN = 33 CU YD

CULVERT GENERAL SUMMARY

SHE	ET NUM	IBER	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET
28	29	32		EXT.	TOTAL			NO.
LUMP			202	11001	LUMP		STRUCTURE REMOVED, AS PER PLAN	29
			503	11100	LUMP		COFFERDAMS, CRIBS AND SHEETING	
		4580	509	10000	4580	POUND	EPOXY COATED REINFORCING STEEL	
	23		511	46001	23	CU YD	CLASS C CONCRETE, AS PER PLAN	29
	33		511	46501	33	CU YD	CLASS C CONCRETE, FOOTING, AS PER PLAN	29
	60		512	10100	60	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
138			601	32000	138	CU YD	ROCK CHANNEL PROTECTION, TYPE A WITH FILTER	
130			603	28000	130	FT	84" CONDUIT, TYPE A. 706.02, 1500 D-LOAD	







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HEADWALL DETAILS CULVERT NO. PUT-634-0844

22-JUN	
46DC004.dgn	
sheets\821	
roadway	

		INL	ET		
IT	EM 509	EPOXY COAT	ED REINFO	RCING STA	EEL
MARK	NO.	FACE	LENGTH	SHAPE	WEIGHT
W501	22		12'-1"	ВТ	273.4
W502	22		14'-9"	ВТ	338.5
W503	2	NF	13'-0"	ВТ	27.1
W504	2	FF	13′-11″	ВТ	29.0
W505	2	NF	11′-6″	ВТ	24.0
W506	2	FF	12′-5″	ВТ	25.9
W507	4	NF	10'-10"	ST	45.2
W508	4	FF	11'-9"	ВТ	49.0
W509	2	NF	10'-0"	ВТ	20.9
W510	2	FF	10'-11"	ВТ	22.6
W511	2	NF	6'-4"	ВТ	13.2
W512	2	FF	7′-3″	ВТ	15.1
W513	2	NF	16′-0″	ВТ	33.4
W514	2	FF	16′-11″	ВТ	35.3
W515	2		7′-9″	ВТ	16.2
W516	2		4'-9"	ВТ	9.9
W517	2		6′-9″	ВТ	14.1
W518	2		4'-3"	ВТ	8.9
W519	2		2'-7"	ВТ	5 . 4
W520	3		1′-9″	ВТ	<i>5.5</i>
W521	4	EF	3′-9″	ST	<i>15.6</i>
W522	2	EF	11′-8″	ВТ	24.3
W523	2	FF	8′-9″	ST	18.3
F501	4	T-M-M-B	27′-1″	ВТ	113.0
F502	2	M-B	28′-11″	ВТ	60.3
F503	4	T-B	16'-1"	BT	67.1
F504	4	T-B	17′-5″	ВТ	72.7
F505	4	T-B	18′-7″	ВТ	77.5
F506	4	T-B	19′-11″	ВТ	83.1
F507	1	T	11'-6"	ST	12.0
F508	1	T	8'-4"	ST	8.7
F509	22		7′-9″	ВТ	177.8
F510	29		12′-9″	ВТ	385.6
F511	4		10'-3"	ВТ	42.8
F512	2		12'-1"	ВТ	25.2
F513	9		9'-10"	BT	92.3

TOTAL TO STRUCTURE GENERAL SUMMARY

KEY

EF - Each Face NF - Near Face FF - Far Face T - Top B - Bottom M - Middle BT - Bent Bar ST - Straight Bar

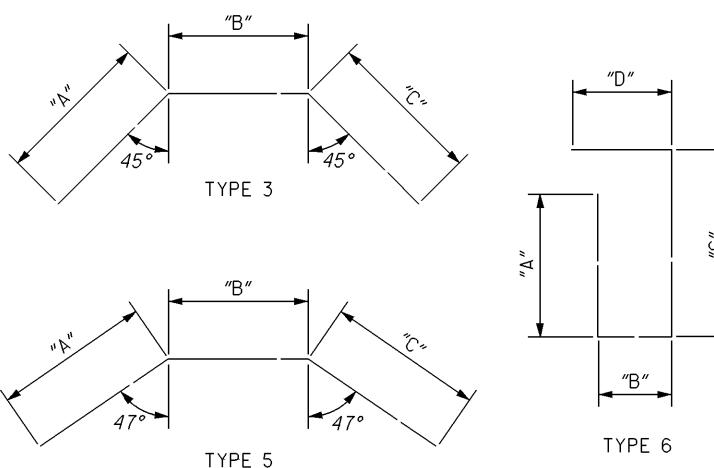
2290

<u> </u>	_ -	<u></u>		
" <i>A</i> "		"C"	" A"	/
		<u> </u>		
	TYPE 1			

R	EINF	ORCING	STEE	L LIS	Т
		ОПТ	LET		
ITI	EM 509	EPOXY COAT	ED REINFO	RCING ST	EEL
MARK	NO.	FACE	LENGTH	SHAPE	WEIGHT
W501	22		12'-1"	ВТ	273.4
W502	22		14′-9″	ВТ	338.5
W503	2	NF	13'-0"	ВТ	27.1
W504	2	FF	13′-11″	BT	29.0
W505	2	NF	11′-6″	ВТ	24.0
W506	2	FF	12′-5″	ВТ	25.9
W507	4	NF	10′-10″	ST	45.2
W508	4	FF	11′-9″	ВТ	49.0
W509	2	NF	10'-0"	ВТ	20.9
W510	2	FF	10′-11″	ВТ	22.6
W511	2	NF	6′-4″	ВТ	13.2
W512	2	FF	7′-3″	ВТ	15.1
W513	2	NF	16'-0"	ВТ	33.4
W514	2	FF	16′-11″	ВТ	35.3
W515	2		7′-9″	ВТ	16.2
W516	2		4'-9"	ВТ	9.9
W517	2		6'-9"	ВТ	14.1
W518	2		4'-3"	ВТ	8.9
W519	2		2'-7"	ВТ	5.4
W520	3		1'-9"	ВТ	5.5
W521	4	EF	3′-9″	ST	15.6
W522	2	EF	11′-8″	ВТ	24.3
W523	2	FF	8′-9″	ST	18.3
F501	4	T-M-M-B	27′-1″	ВТ	113.0
F502	2	M-B	28′-11″	ВТ	60.3
F503	4	Т-В	16′-1″	ВТ	67.1
F504	4	Т-В	17′-5″	ВТ	72.7
F505	4	Т-В	18′-7"	ВТ	77.5
F506	4	Т-В	19′-11″	ВТ	83.1
F507	1	Т	11'-6"	ST	12.0
F508	1	Т	8'-4"	ST	8.7
F509	22		7′-9″	ВТ	177.8
F510	29		12′-9″	ВТ	385.6
F511	4		10'-3"	ВТ	42.8
F512	2		12'-1"	BT	25.2
F513	9		9′-10″	ВТ	92.3
ТО	TAL TO S	STRUCTURE G	ENERAL SU	MMARY	2290

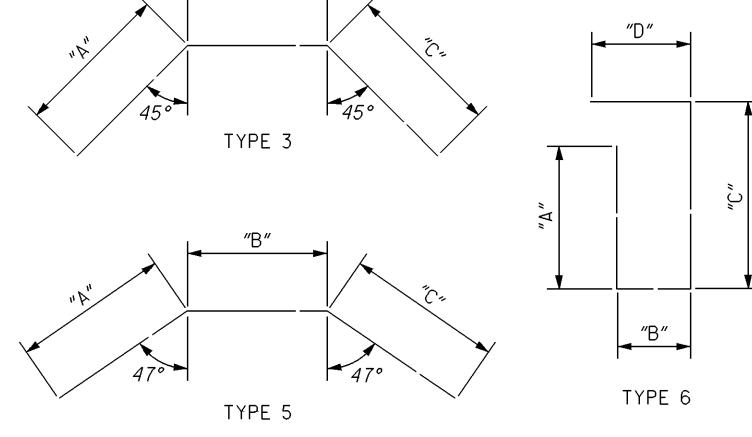
11 A1	45°
	TYPE 2

<u> </u>	"B" ►
	PLAN
450	TYPE 4



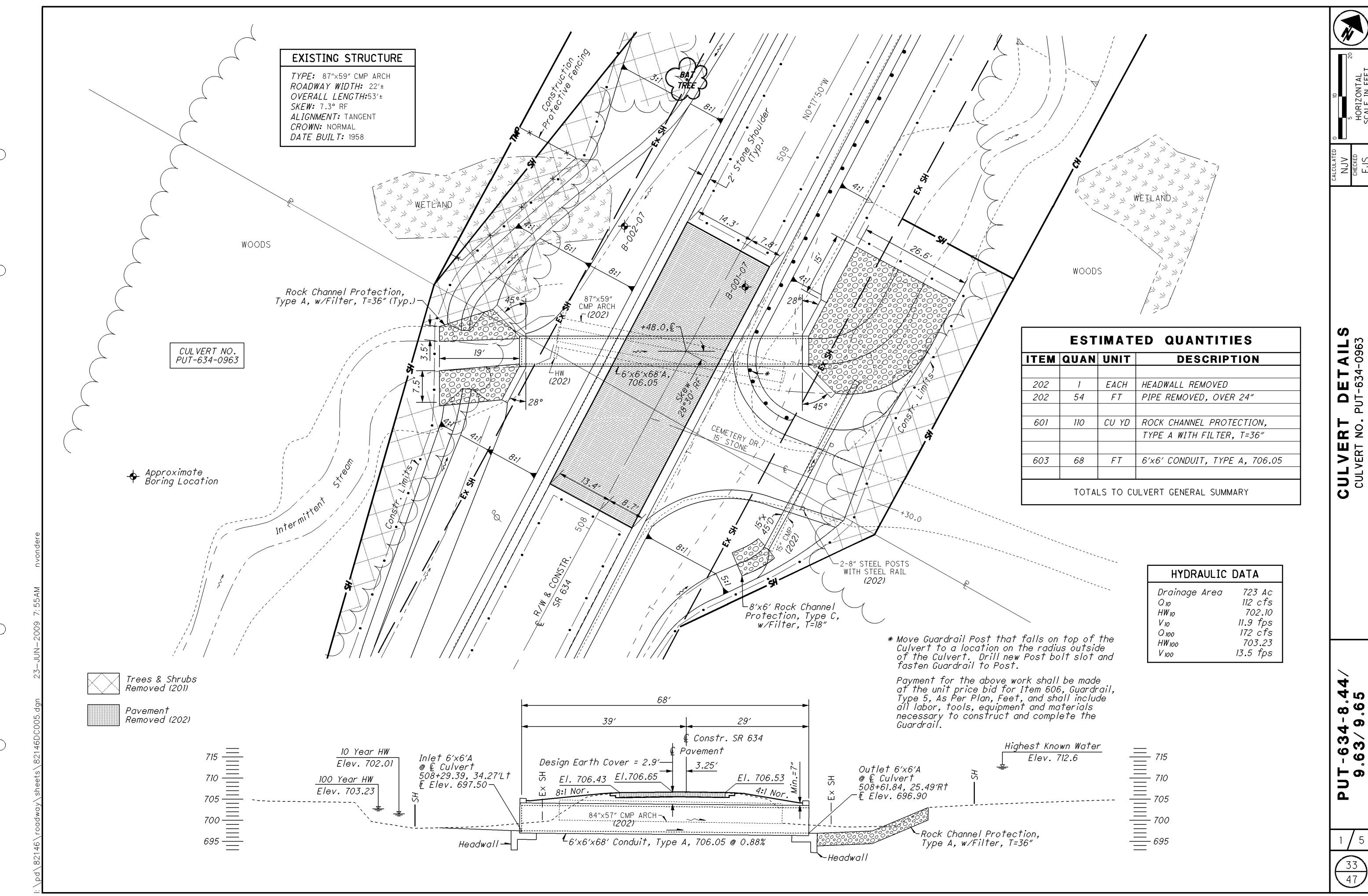
BEND TABLE							
MARK	TYPE	"A"	"B"	"C"	"D"		
W501	1	5′-7″	1′-0″	5′-7″			
W502	1	7'-0"	1'-0"	7'-0"			
W503	2	10'-10"	2'-2"	, ,			
W504	2	11'-4"	2'-7"				
W505	2	10'-10"	8"				
W506	2	11'-4"	1′-1″				
W508	2	11'-4"	5″				
W509	2	9'-6"	6"				
W510	2	10'-0"	11"				
W511	2	4'-5"	1′-11″				
W512	2	4'-11"	2'-4"				
W513	4	10'-4"	5′-8″				
W514	4	10'-10"	6'-1"				
W515	1	3′-6″	1'-0"	3'-6"			
W516	1	2'-0"	1'-0"	2'-0"			
W517	1	3′-0″	1'-0"	3'-0"			
W518	1	1′-9″	1'-0"	1'-9"			
W519	1	11"	1'-0"	11"			
W520	1	6"	1'-0"	6"			
W522	5	4'-1"	3′-6″	4'-1"			
F501	3	10'-0"	7′-1″	10'-0"			
F502	3	10′-6″	7′-11″	10′-6″			
F503	2	10′-8″	5′-5″				
F504	2	11'-4"	6'-1"				
F505	2	11′-11″	6′-8″				
F506	2	12'-7"	7′-4″				
F509	1	3′-6″	1'-0"	3′-6″			
F510	1	6′-0″	1'-0"	6'-0"			
F511	1	4′-9″	1'-0"	4'-9"			
F512	1	5′-8″	1'-0"	5′-8″			
F513 6 3		3′-6″	1'-0"	4'-2"	1'-6		

BENDING DIAGRAMS



F-634-8.44/ PUT.

HEADWALL DETAILS CULVERT NO. PUT-634-0844



ETAIL (1-634-0963 DI-TI-

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DESIGN SPECIFICATIONS

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

DESIGN DATA

CAST-IN-PLACE STRUCTURES: CONCRETE CLASS C - COMPRESSIVE STRENGTH 4.0 KSI (SUBSTRUCTURE) REINFORCING STEEL - MINIMUM YIELD STRENGTH 60 KSI

EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND/OR FROM FIELD OB-SERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05 & 105.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PRE-BID EXAMINATION OF THE EXISTING STRUCTURE BY THE CON-TRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED ON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

CONDUIT FABRICATION AND APPROVAL

PRIOR TO CLOSING THE ROADWAY TO TRAFFIC, THE CONTRACTOR SHALL HAVE THE ITEM 603 TYPE A CONDUIT SPECIFIED IN THESE PLANS FABRICATED AND APPROVED. ALL COSTS ASSO-CIATED WITH THESE REQUIREMENTS SHALL BE CONSIDERED IN-CIDENTAL TO THE COST OF THE PERTINENT CONDUIT.

PRECAST WINGWALLS, HEADWALLS AND FOOTERS

AT THE OPTION OF THE CONTRACTOR, A PRECAST WINGWALL, HEADWALL, OR FOOTER MAY BE FURNISHED PER ITEM 602.03 PRECAST STRUCTURES. THE PRECAST OPTION FURNISHED WILL MEET THE CAST-IN-PLACE STRUCTURAL DESIGN LOADINGS, DESIGN HEIGHT, AND DESIGN LENGTH DIMENSIONS.

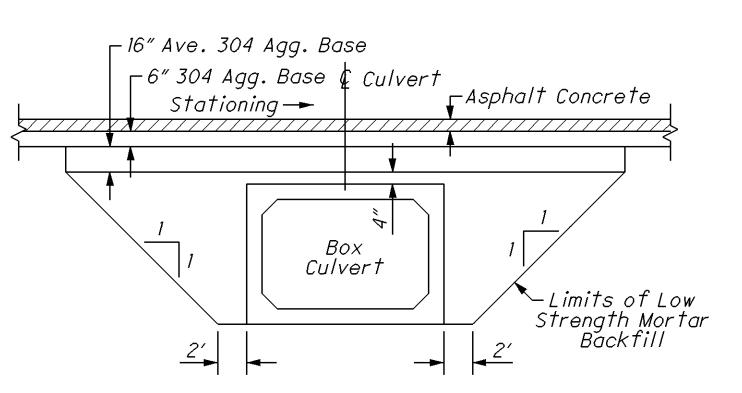
FULL COMPENSATION FOR THE PRECAST WINGWALL, HEADWALL, OR FOOTER IS THE NUMBER OF CUBIC YARDS OF ITEM 511 OR SUPPLEMENTAL SPECIFICATION 898, AND POUNDS OF ITEM 509 FOR THE CORRESPONDING CAST-IN-PLACE STRUCTURE.

ITEM 613, LOW STRENGTH MORTAR BACKFILL

LOW STRENGTH MORTAR BACKFILL SHALL BE PLACED AS SHOWN AND LATERALLY TO THE EDGE OF THE PAVED SHOULDER. PAY-MENT FOR LOW STRENGTH MORTAR BACKFILL SHALL BE MADE ONLY FOR BACKFILL PLACED TO THE LIMITS SHOWN.

THE FOLLOWING ESTIMATED QUANTITY FOR THIS ITEM HAS BEEN INCLUDED IN THE STRUCTURE GENERAL SUMMARY FOR THE WORK NOTED ABOVE.

ITEM 613. LOW STRENGTH MORTAR BACKFILL = 84 CU YD



ITEM 511, CLASS C CONCRETE, AS PER PLAN

IN ADDITION TO THE SPECIFICATIONS SHOWN FOR ITEM 511 IN THE CMS, THIS ITEM SHALL INCLUDE ANY AND ALL EXCAVATION AND EMBANKMENT NEEDED TO CONSTRUCT THE WINGWALLS. THE EXCAVATION AND EMBANKMENT SHALL FOLLOW THE SPECIFICA-TIONS OUTLINED IN THE CMS FOR ITEM 203 EXCAVATION AND ITEM 203 EMBANKMENT.

PAYMENT WILL BE AT THE CONTRACT BID PRICE PER CUBIC YARD FOR ITEM 511, CLASS C CONCRETE, AS PER PLAN. THE FOLLOWING ESTIMATED QUANTITY FOR THIS ITEM HAS BEEN INCLUDED IN THE STRUCTURE GENERAL SUMMARY FOR THE WORK NOTED ABOVE.

ITEM 511, CLASS C CONCRETE, AS PER PLAN = 18 CU YD

ITEM 511, CLASS C CONCRETE, FOOTING, AS PER PLAN

IN ADDITION TO THE SPECIFICATIONS SHOWN FOR ITEM 511 IN THE CMS, THIS ITEM SHALL INCLUDE ANY AND ALL EXCAVATION AND EMBANKMENT NEEDED TO CONSTRUCT THE FOOTINGS. THE EXCAVATION AND EMBANKMENT SHALL FOLLOW THE SPECIFICA-TIONS OUTLINED IN THE CMS FOR ITEM 203 EXCAVATION AND ITEM 203 EMBANKMENT.

PAYMENT WILL BE AT THE CONTRACT BID PRICE PER CUBIC YARD FOR ITEM 511, CLASS C CONCRETE, FOOTING, AS PER PLAN. THE FOLLOWING ESTIMATED QUANTITY FOR THIS ITEM HAS BEEN INCLUDED IN THE STRUCTURE GENERAL SUMMARY FOR THE WORK NOTED ABOVE.

ITEM 511, CLASS C CONCRETE, FOOTING, AS PER PLAN = 25 CU YD

ITEM 512, SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

THE FOLLOWING ESTIMATED QUANTITY FOR THIS ITEM HAS BEEN INCLUDED IN THE STRUCTURE GENERAL SUMMARY.

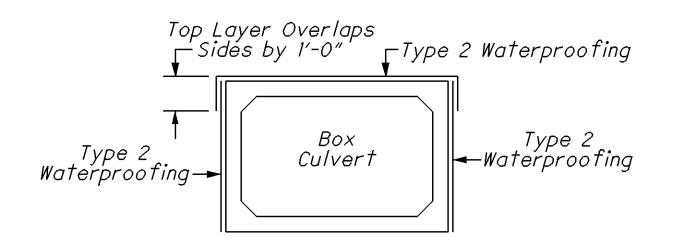
ITEM 512. SEALING OF CONCRETE SURFACES = 50 SQ YD (EPOXY-URETHANE)

ITEM 512, TYPE 2 WATERPROOFING

TYPE 2 WATERPROOFING SHALL BE APPLIED TO THE TOP SUR-FACE OF THE PRECAST CULVERT SECTIONS AND SHALL EXTEND VERTICALLY DOWN ALL SIDES FOR THE PORTIONS OF THE CUL-VERT WHICH SHALL BE IN CONTACT WITH THE BACKFILL. THE EXTERIOR JOINT GAP ON THE TOP AND SIDES BETWEEN THE PRECAST CULVERT SECTIONS SHALL BE FILLED WITH PORTLAND CEMENT MORTAR PRIOR TO INSTALLING THE TYPE 2 WATER-PROOFING. JOINT WRAP AS SPECIFIED IN 603.08 AND 603.09 AND CONCRETE SEALING AS SPECIFIED IN 603.08 ARE NOT RE-QUIRED UNDER THE LIMITS OF THE TYPE 2 WATERPROOFING.

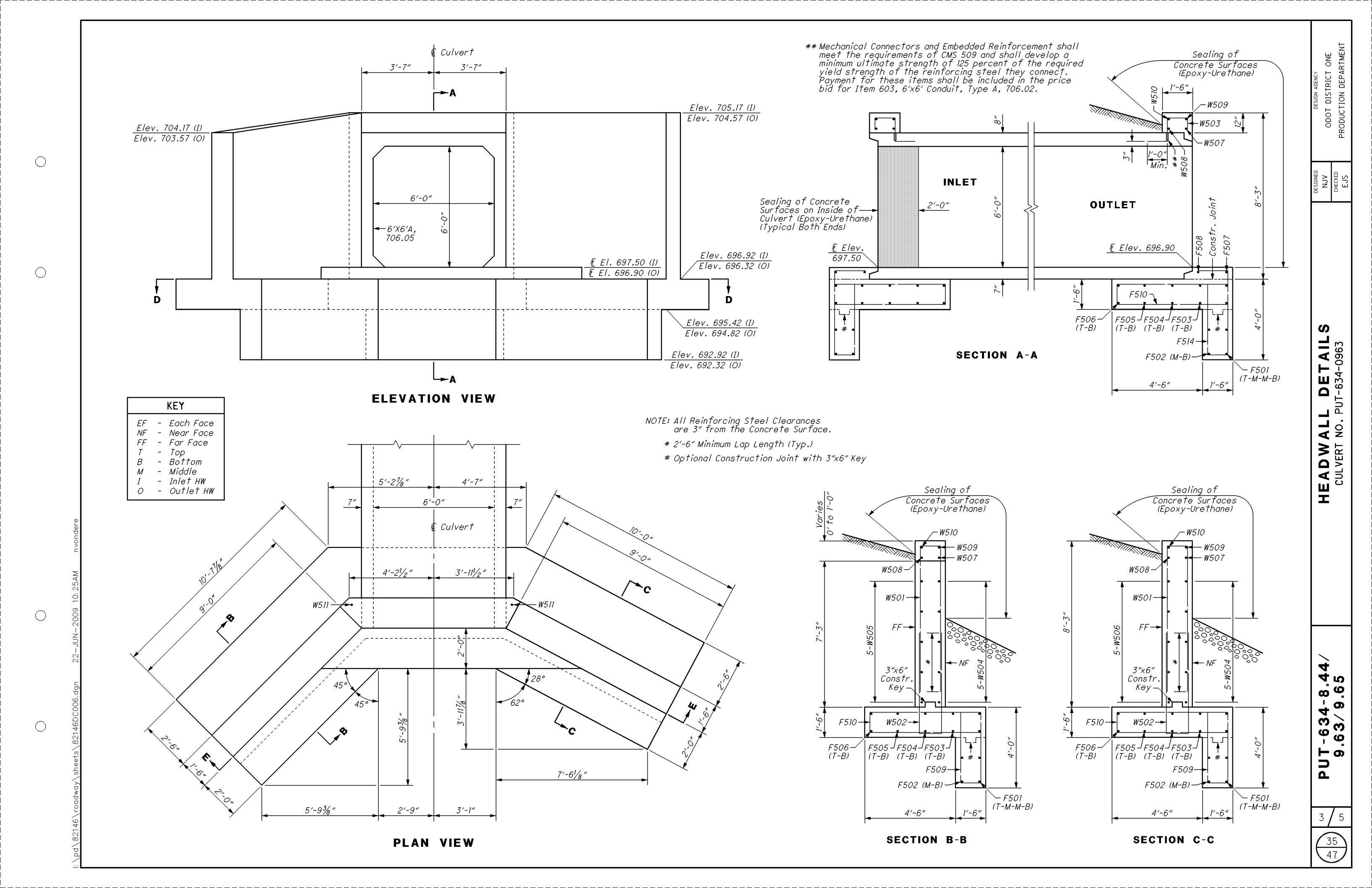
PAYMENT WILL BE AT THE CONTRACT BID PRICE PER SQUARE YARD FOR ITEM 512, TYPE 2 WATERPROOFING. THE FOLLOW-ING ESTIMATED QUANTITY FOR THIS ITEM HAS BEEN INCLUDED IN THE STRUCTURE GENERAL SUMMARY FOR THE WORK NOTED ABOVE.

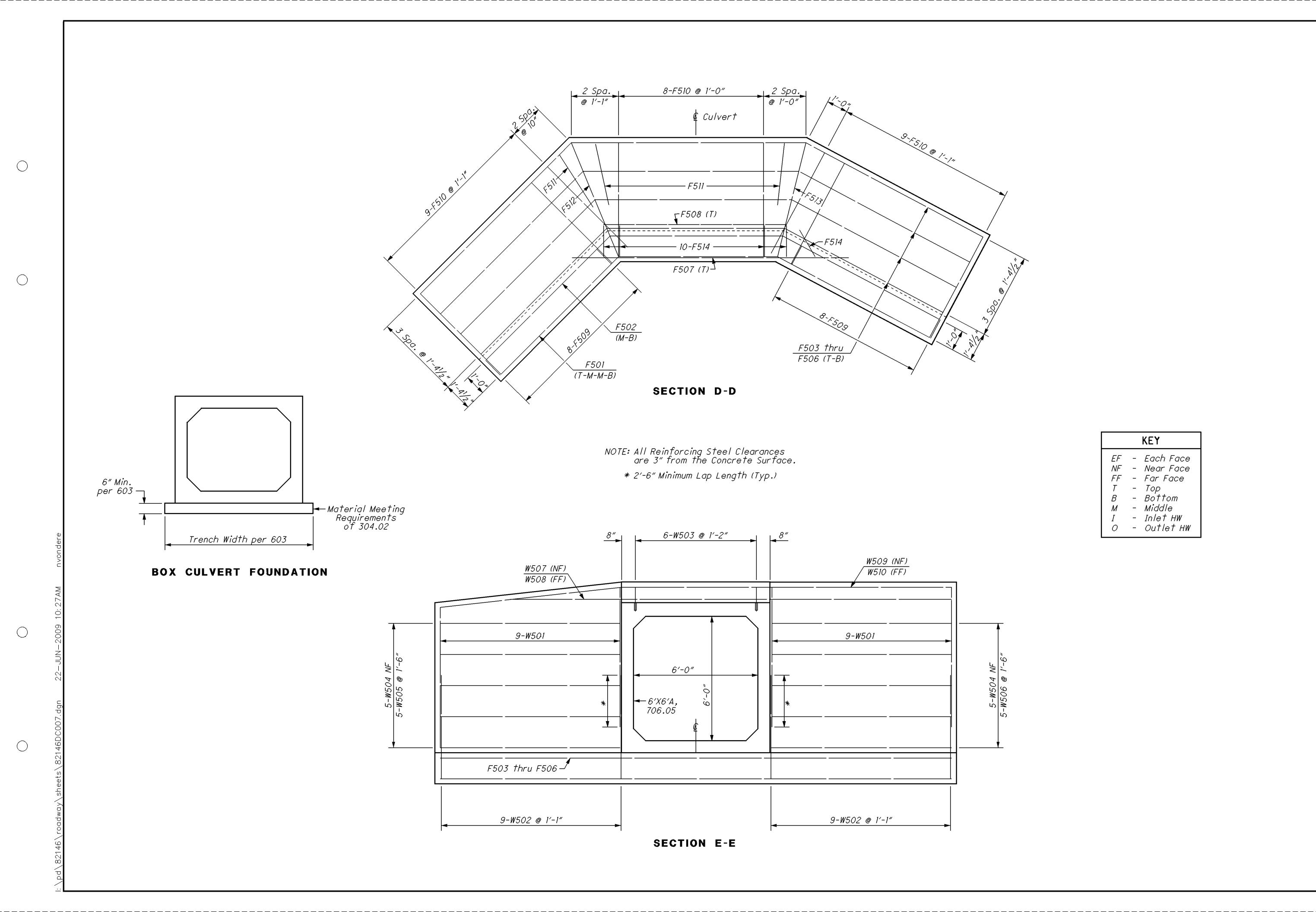
ITEM 512, TYPE 2 WATERPROOFING = 172 SQ YD



CULVERT GENERAL SUMMARY

SHEET NUMBER		SHEET NUMBER		ITEM Ext.	GRAND	UNIT	DESCRIPTION	SEE SHEET
33	34	37			IOIAL			NO.
1			202	20010	1	EACH	HEADWALL REMOVED	
54			202	35200	54	FT	PIPE REMOVED, OVER 24"	
			503	11100	LUMP		COFFERDAMS, CRIBS AND SHEETING	
		3640	509	10000	3640	POUND	EPOXY COATED REINFORCING STEEL	
	18		511	46001	18	CU YD	CLASS C CONCRETE, AS PER PLAN	34
	25		511	46501	25	CU YD	CLASS C CONCRETE, FOOTING, AS PER PLAN	34
	50		512	10100	50	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
	172		512	33000	172	SQ YD	TYPE 2 WATERPROOFING	
110			601	32000	110	CU YD	ROCK CHANNEL PROTECTION, TYPE A WITH FILTER	
68			603	94720	68	FT	6'x6' CONDUIT, TYPE A, 706.05	
	84		613	41200	84	CU YD	LOW STRENGTH MORTAR BACKFILL	





F-634-8,44/ **⊢** თ PU

HEADWALL DETAILS
CULVERT NO. PUT-634-0963

5	5
	37

TYPE 5

INLET									
ITEM 509 EPOXY COATED REINFORCING STEEL									
MARK	NO. FACE	LENGTH	SHAPE	WEIGHT					
N501	18		14'-3"	ВТ	267.5				
V502	18		10'-9"	BT	201.8				
V503	6		2'-4"	ВТ	14.6				
V504	10	NF	8'-9"	ST	91.3				
V505	5	FF	9'-8"	ВТ	50.4				
V 506	5	FF	9'-2"	ST	47.8				
<i>N507</i>	1	NF	21′-8″	ВТ	22.6				
W508	1	FF	23′-3″	ВТ	24.2				
N509	1	NF	25′-1″	ВТ	26.2				
W510	1	FF	26′-8″	ВТ	27.8				
W511	2	FF	7′-9″	ST	16.2				
F501	4	T-M-M-B	24'-1"	ВТ	100.5				
-502	2	M-B	25′-6″	ВТ	53.2				
-503	2	T-B	25′-11″	ВТ	54.1				
504	2	T-B	27′-8″	ВТ	57.7				
-505	2	T-B	29′-6″	ВТ	61.5				
-506	2	T-B	31′-5″	ВТ	65.5				
-507	1	T	13'-4"	ST	13.9				
-508	1	7	8′-10″	ST	9.2				
509	16	-	7′-9″	BT	129.3				
F510	26		11'-9"	BT	318.6				
F511	3		6'-9"	BT	21.1				
F512	1		12'-9"	BT	13.3				
F513	1		12'-3"	BT	12.8				
F514	11		10'-4"	BT	118.6				
	"		10 -4	<i>D1</i>	110.0				

R	EINF	ORCING	STEE	L LIS	Т			
INLET ITEM 509 EPOXY COATED REINFORCING STEEL								
WE 0.1	10		14/ 7//	0.7	007.5			
W501	18		14'-3"	BT DT	267.5			
W502	18		10'-9"	BT	201.8			
W503	6	A./.	2'-4"	BT	14.6			
W504	10	NF 55	8'-9"	ST	91.3			
W505	5	FF 55	9'-8"	BT	50.4			
W506	5	FF	9'-2"	ST	47.8			
W507	1	NF 	21′-8″	BT	22.6			
W508	1	FF -	23′-3″	BT	24.2			
W509	1	NF	25′-1″	BT	26.2			
W510	1	FF	26′-8″	BT	27.8			
W511	2	FF	7′-9″	ST	16.2			
F501	4	Т-М-М-В	24'-1"	ВТ	100.5			
F502	2	M-B	25′-6″	ВТ	<i>53.2</i>			
F503	2	T-B	25′-11″	ВТ	54.1			
F504	2	T-B	27′-8″	ВТ	<i>57.7</i>			
F505	2	T-B	29′-6″	ВТ	61.5			
F506	2	Т-В	31′-5″	ВТ	<i>65.5</i>			
F507	1	Т	13'-4"	ST	13.9			
F508	1	Т	8′-10″	ST	9.2			
F509	16		7′-9″	ВТ	129.3			
F510	26		11'-9"	ВТ	318.6			
F511	3		6'-9"	ВТ	21.1			
F512	1		12′-9″	ВТ	13.3			
F513	1		12′-3″	ВТ	12.8			
F514	11		10'-4"	ВТ	118.6			
-			·	_				
ТО	TAL TO S	TRUCTURE G	SENERAL SU	MMARY	1820			

MARK	TYPE	"A"	"B"	"C"	"D"
W501	1	6′-9″	1′-0″	6'-9"	
W502	1	5′-0″	1′-0″	5′-0″	
W503	1	1'-0"	1'-0"	7"	
W505	2	9'-4"	4"		
W507	3	5′-7″	7′-3″	8'-10"	
W508	3	6′-1″	8′-1″	9′-1″	
W509	4	9′-0″	7′-3″	8'-10"	
W510	4	9′-6″	8′-1″	9'-1"	
F501	3	8′-1″	7′-8″	8'-4"	
F502	3	8′-6″	8′-5″	8′-7″	
F503	3	8′-8″	8′-7″	8'-8"	
F504	3	9'-2"	9′-6″	9'-0"	
F505	3	9′-9″	10′-5″	9'-4"	
F506	3	10'-4"	11'-4"	9'-9"	
F509	1	3′-6″	1'-0"	3′-6″	
F510	1	5′-6″	1'-0"	5′-6″	
F511	1	3′-0″	1'-0"	3′-0″	
F512	1	6′-0″	1'-0"	6'-0"	
F513	1	5′-9″	1′-0″	5′-9″	
F514	5	1′-6″	4'-2"	1′-6″	3′-6″

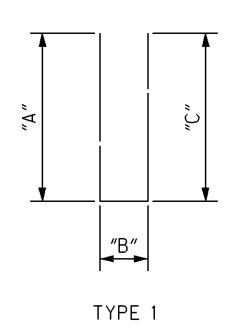
83.6° PROFILE 90°

BEND TABLE

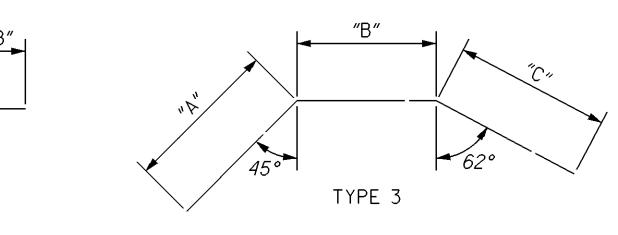
BENDING DIAGRAMS

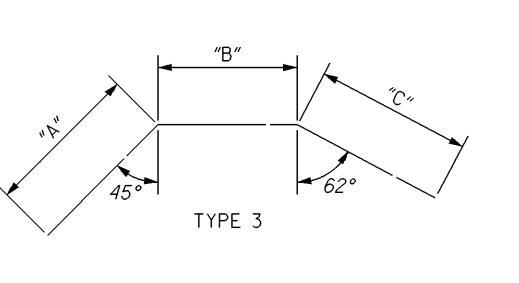
KEY

EF - Each Face NF - Near Face FF - Far Face T - Top B - Bottom M - Middle BT - Bent Bar ST - Straight Bar



TYPE 2





UTILITY OWNERSHIP TYPE NAME & ADDRESS AMERICAN ELECTRIC POWER 369 E O'CONNER AVE. LIMA, OHIO 45801 419-999-6879 ELECTRIC OTTOVILLE MUTUAL TELEPHONE P.O. BOX 427 OTTOVILLE, OHIO 45876 TELEPHONE 419-453-3324

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

RIGHT OF WAY LEGEND SHEET PUT-634-8.44/ 9.63/9.65

PUTNAM COUNTY PERRY TOWNSHIP SECS. 16 & 21, T-1-N, R-5-E

INDEX OF SHEETS

LEGEND SHEET	4
CENTERLINE PLAT	2-3
PROPERTY MAP	4-5
SUMMARY OF ADDITIONAL R/W	6
R/W DETAIL	7-10

LEGEND

WD = WARRANTY DEED

CH = CHANNEL EASEMENT

STRU	CT	UR	E	KE	Y
	RE	SIDE	NTI	AL	

SH = STANDARD HIGHWAY EASEMENT LA = LIMITED ACCESS EASEMENT T = TEMPORARY EASEMENT SL = SLOPE EASEMENT S = SEWER EASEMENT

CONVENTIONAL SYMBOLS

County Line Township Line	Property Line Symbol & , Example Break Line Symbol & , Example Tree (Pr) & , Tree (Ex) & , Shrub (Ex) & , Tree (Remove) & , Shrub (Remove) & , Evergreen (Ex) & , Stump (Remove) & , Evergreen (Remove) & , Stump (Remove) & , Wetland (Pr) & , Grass (Pr) & , Aerial Target & , Post (Ex) O , Mailbox (Ex) & , Mailbox (Pr) Light (Ex) & , Telephone Marker (Ex) + TEL Fire Hydrant (Ex) & , Water Meter (Ex) & , Water Valve (Ex) & , Utility Valve Unknown (Ex.) & , Telephone Pole (Ex) & , Power Pole (Ex) & ,
Eago of Shourds, City	

PROJECT DESCRIPTION

- 8.44 REPLACEMENT OF CULVERT AND RAISING OF PROFILE WITH CLEAR ZONE GRADING ALONG 0.12 MILES OF SR 634.
- 9.63 REPLACEMENT OF CULVERT WITH CLEAR ZONE GRADING ALONG 0.06 MILES ON THE WEST SIDE OF SR 634 WITH GUARDRAIL ON THE EAST SIDE.
- 9.65 REPAIR CULVERT AND SLOPE.

PROJECT CONTROL

BEARINGS ARE BASED ON THE STATE PLANE COOR-DINATE SYSTEM, OHIO NORTH ZONE NAD83, 2003 ADJUSTMENT AND ESTABLISHED USING GPS (VRS). ALL BEARINGS, DISTANCES AND COORDINATES SHOWN ARE GROUND MEASUREMENTS.

PLANS PREPARED BY:

FIRM NAME : OHIO DEPARTMENT OF TRANSPORTATION - DISTRICT ONE
PLANS PREPARED BY: Nick Vonderembse
FIELD REVIEW BY: Larry Flippin
DATE COMPLETED: 9-30-08
OWNERSHIP VERIFIED BY: Larry Flippin
DATE COMPLETED: 1-05-09
DATE COMPLETED: 1-14-09

I HEREBY CERTIFY THAT THIS PLAT IS A TRUE DELINEATION OF A SURVEY MADE FOR THE OHIO DEPARTMENT OF TRANSPORTATION IN LIMA, OHIO BY ODOT, DISTRICT 1, SURVEY DEPARTMENT.

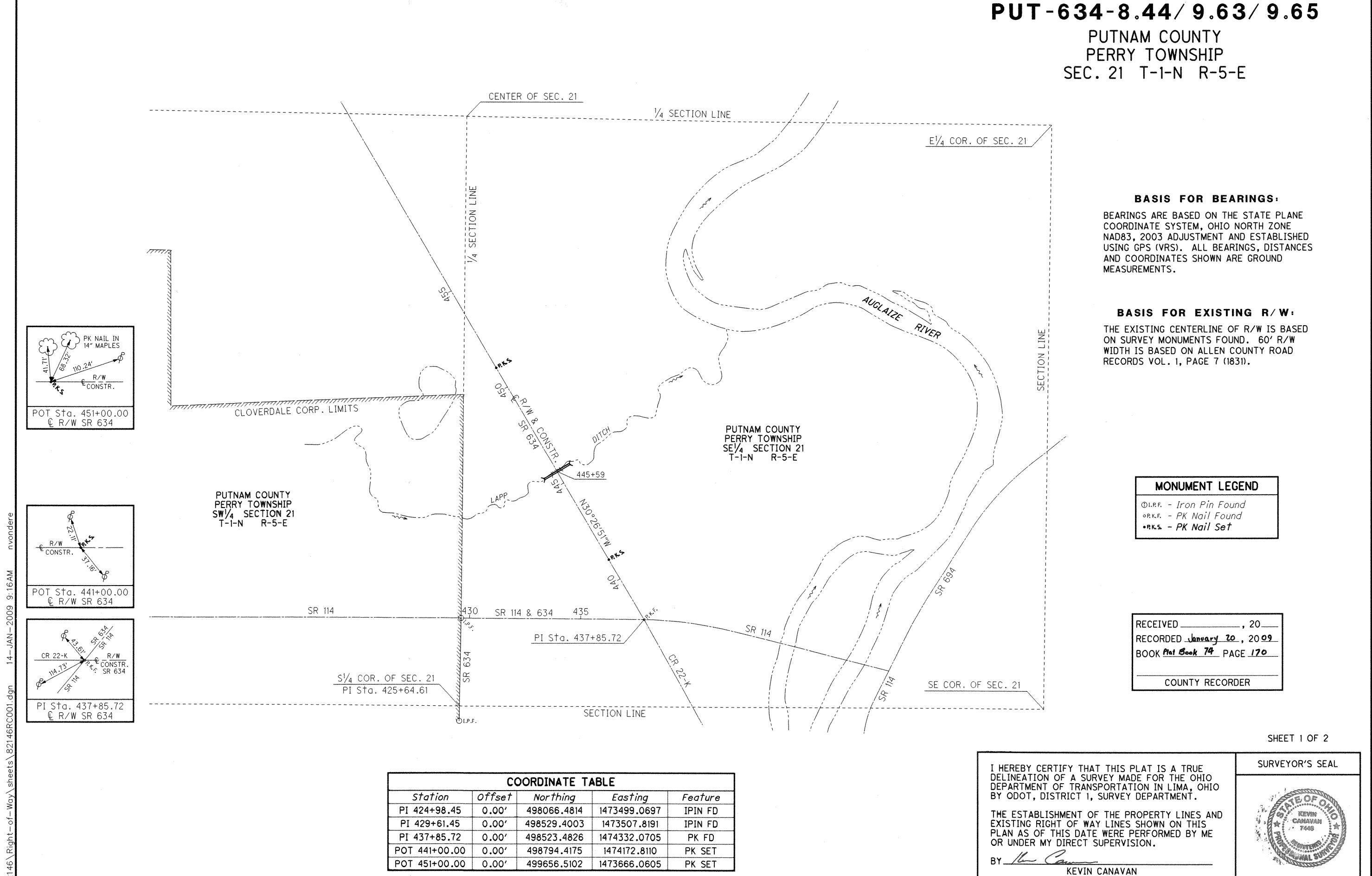
THE ESTABLISHMENT OF THE PROPERTY LINES AND EXISTING RIGHT OF WAY LINES SHOWN ON THIS PLAN AS OF THIS DATE WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION.

/au KEVIN CANAVAN

SURVEYOR NO. 7448 DATE JAN. 14, 2009

SIGNED

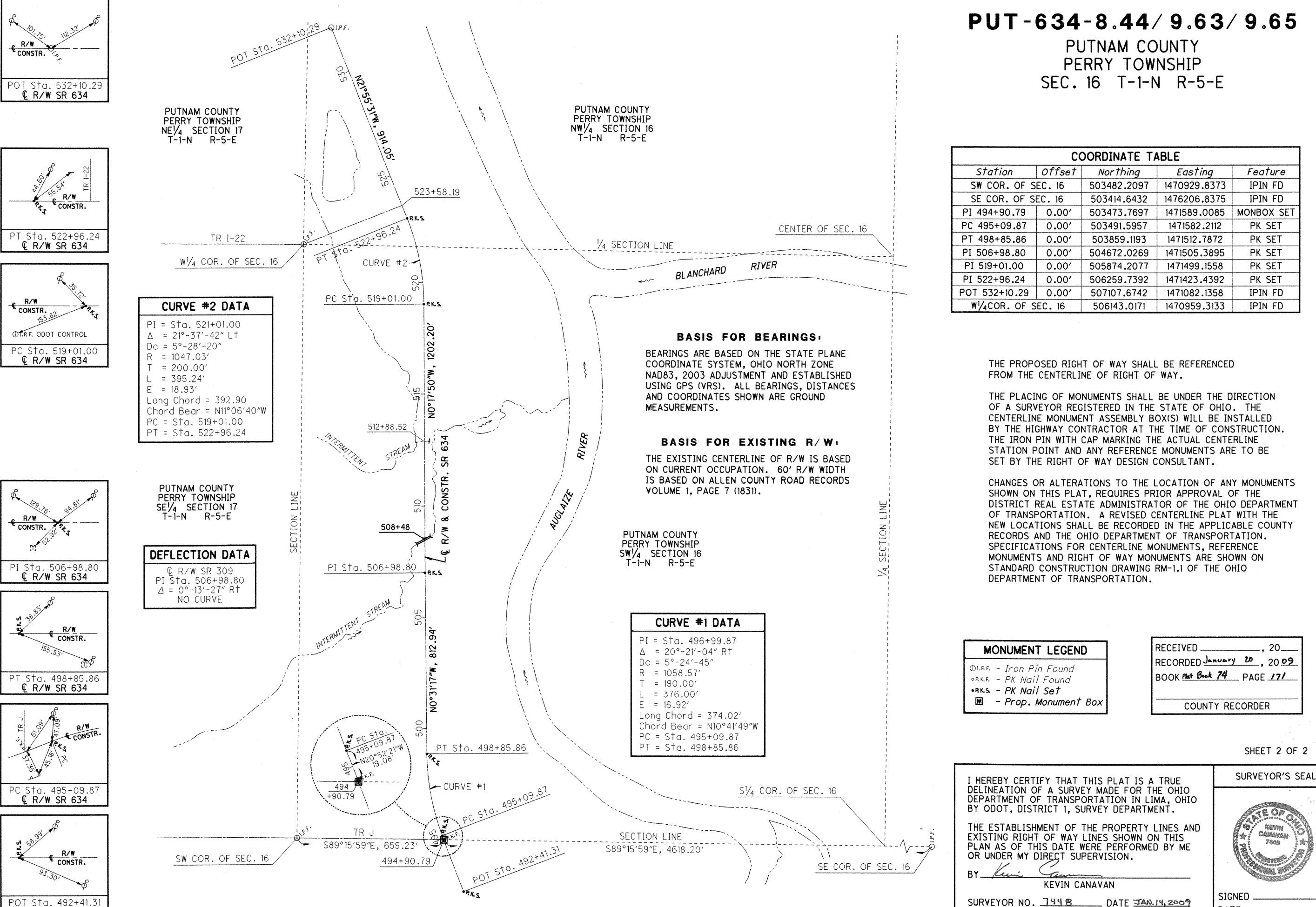
SURVEYOR'S SEAL



40 ထွယ့ 4.0 -63

SIGNED

SURVEYOR NO. 7448 DATE JAN.14,2009



€ R/W SR 634

PK SET

PK SET

S

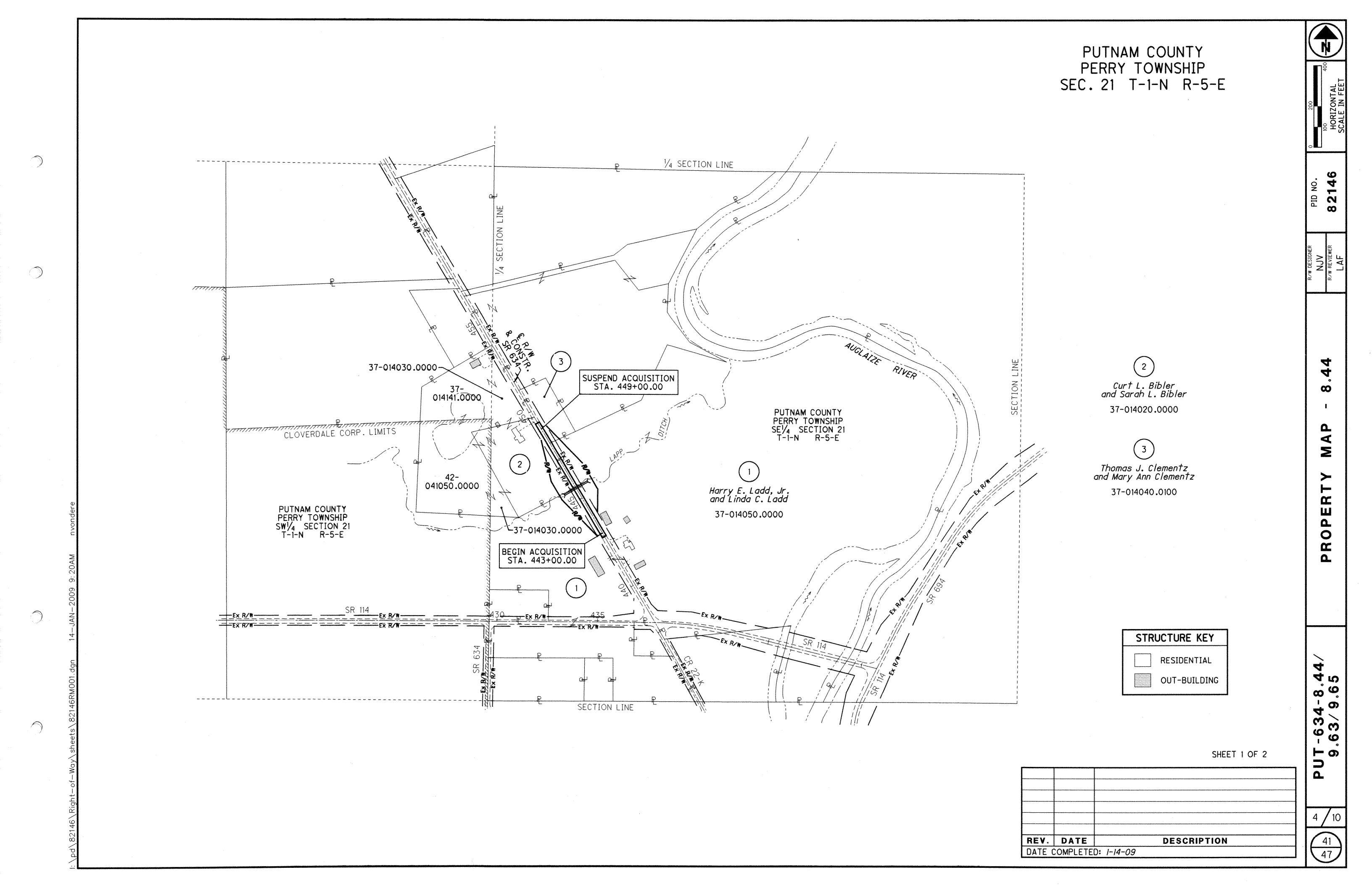
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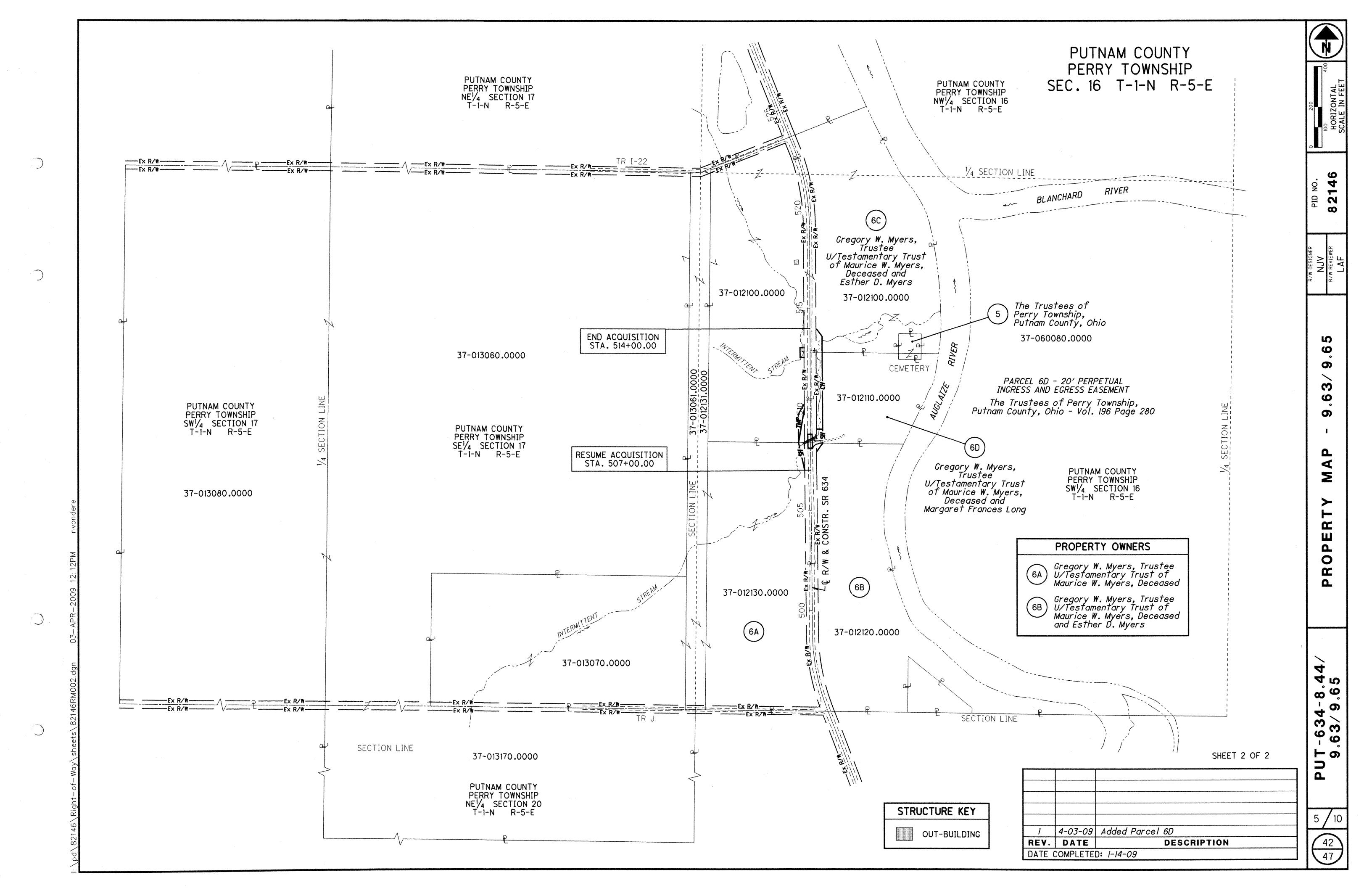
CAMAYAS.

SIGNED DATE .

40 47

<u>0</u>





NET RESIDUE = RECORD AREA - TOTAL PRO - NET TAKE

7 OWNERSHIPS O TOTAL TAKES

10 PARCELS 2 OWNERSHIPS W/ STRUCTURES INVOLVED

ALL AREAS IN ACRES

* DENOTES RIGHT OF WAY ENCROACHMENT

ADCEL		CHEET	OWNER	S'S REC.	AUDITOR'S	DECORD	TOTAL	CDOCC			CTDUC	NET D	ESIDUE	TVDE	T	AS AC	QUIRE	តា វិ
ARCEL NO.	OWNER		BOOK		AUDITOR'S Parcel	RECORD	TOTAL P.R.O.	GROSS TAKE	P.R.O. IN TAKE	NET Take	STRUC -TURE			TYPE FUND	REMARKS		PAGE	
-SH	Harry E. Ladd, Jr. and Linda C. Ladd	7-8	215	42	37-014050.0000	58.460	4.200	1.093	0.468	0.625		10.656	42.979	State	* Wood Fence		***************************************	
			209	629								***************************************	***************************************					
-SH	Curt L. Bibler and Sarah L. Bibler	7-8	450	298	37-014020.0000	3.280	0.281	0.451	0.198	0.253		2.746						
					37-014030.0000	1.470	0.265	0	0	0		1.205			No Take			
					37-014141.0000	2.130	0.017	0	0	0		2.113			No Take			
			AMERICAN STREET, STREE		42-041050.0000	3.620	0	0	0	0		3.620			No Take			
					TOTAL	10.500	0.563	0.451	0.198	0.253		9.684						
		metarranseed was an organized and the contract of the contract							***************************************									
							The state of the s											
SH	Thomas J. Clementz and Mary Ann Clementz	8	OR 443	240	37-014040.0100	1.000	0.210	0.079	0.058	0.021			0.769					
					TO THE WORLD CONTROL OF THE					THE RESERVE OF THE STREET,		TO THE THE TOTAL THE THE TOTAL AGENT THE TOTAL AGENT TO THE TOTAL AGEN						
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	Not Used									wassuura arakemaa a anan arakemaa arakema a suurakemaa arakemaa arakemaa arakemaa arakemaa arakemaa arakemaa a								
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			100	200	77 00000 0000	1 270					***************************************		**************************************		A1- 7-1-			
	The Trustees of Perry Township,	COLUMN TO THE PROPERTY OF THE	196	280	37-060080.0000	0.370									No Take			
	Putnam County, Ohio							and the state of t		,	·	· · · · · · · · · · · · · · · · · · ·	***************************************					
		andrew Stry of the square finds a significant of a significant of a strange on the significant in the same state and								THE THE PARTY OF T								
												,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						-
	Commence W. M. Marie Transfer LIVI and the company of the company	<u> </u>	372	176	37_0/2/30 0000	16.000	1 107	0 170	0.002	0 046	***************************************	14 767					······································	-
	Gregory W. Myers, Trustee U/Testamentary	<i>3</i>	1 3/2	135	37-012130.0000	16.000	1.187	0.138	0.092	0.046		14.767			No. 7 -/a			-
	Trust of Maurice W. Myers, Deceased	**************************************			37-012131.0000	3.088	0.048		0	0		3.040	AMANANA BIR JURASANO HARRANO PARA PINTANDO DE PORO PROPERTO DE PRO		No Take	DANGE CONTROL OF THE		
			and the state of t		37-013061.0000	3.073 19.250	0.046	0	0	0		3.027			No Take			
		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			37-013070.0000 TOTAL	41.411	1.863	<u> </u>	0 002	0 046		18.668			No Take			_
		المراورة والمراورة			IOIAL	41.471	1.003	0.138	0.092	0.046	***************************************	39.502				4		_
																		-
-SH	Gregory W. Myers, Trustee U/Testamentary	9	372	135	37-012120.0000	21.860	0.924	0.043	0.029	0.014	Yes	1000-1-1-100 B2 TTT ANTHEONY 12 PASSATTS BAR 100-100	20.922		6" Steel Post in Concrete Post with Rail			
	Trust of Maurice W. Myers, Deceased		213	812	31 012120.0000	27.000	V.J2.7	0.043	0.023	U.UI7	/60		20.322		O STEEL FOST III CONCLETE FOST WITH ROLL			~
	and Esther D. Myers		Since I will with the control of the	1 0/2								andra de la Periodo de la Per	en neutrice de la composition de la destalación de la composition de la composition de la composition de la co					_
	did Lailei D. Myela		anguna ka kinangan ka kinangan manangan manangan mangan mangan mangan mangan mangan mangan mangan mangan manga				CONTROL OF THE STATE OF THE STA			**************************************								-
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- SH	Gregory W. Myers, Trustee U/Testamentary	9-10	372	131	37-012100.0000	31.160(C)	1.973	0.406	0.325	0.081		14.911	14.195		Used Calculated Record Area; Auditor's RA=17.62 Acres			-
	Trust of Maurice W. Myers, Deceased	and the second s	213	812	37-013060.0000	137.730	1.791	0	0	0		135.939			No Take			-
	and Esther D. Myers				37-013080.0000	80.000	1.214	1 0	0	0		78.786			No Take			-
				- the second street of the second	37-013170.0000	79.080	1.207	0	0	0		77.873			No Take			-
		Maries and Leavy and Leaves (1991) and the Leavy and Commission of the Leavy Commission (1990)	our til milit glasser och frå knisk finnin och som frå det finns och den sider en som dennin som en sen som		TOTAL	327.970	6.185	0.406	0.325	0.081		307.509	14.195					-
		Mary Market Mark	and have a second to the seco														***************************************	
-CH		10			37-012100.0000		**************************************	0.068		0.068	and decreased the second contract of the seco			Annual Company of the	To Maintain Ditch		······································	
;-T		9			37-012100.0000			0.057		0.057					For Grading Backslope			
		Activated to the state of the s	H I manifesta S eptember 140 species on two months of the September 150 on Constitution (September 140 on the Sep															
										des et annun ett van de kantinen skalende et en								None
-SH	Gregory W. Myers, Trustee U/Testamentary	9	372	135	37-012110.0000	6.000	0.310	0.094	0.047	0.047	Yes	**************************************	5.643		6" Steel Post in Concrete Post with Rail			*****
	Trust of Maurice W. Myers, Deceased	generated as a communication of the square for a private a detailed or their contraction of the square as a square	180	310		<u> </u>			1			MANAGERIA (MANAGERIA MANAGERIA PARIS (MANAGERIA PARIS) MANAGERIA (MANAGERIA MANAGERIA (MANAGERIA MANAGERIA MA	an sama and na matha as side to the side of the land o					*****
	and Margaret Frances Long		172	199														-
)-CH	<u> </u>	9-10			37-012110.0000			0.263		0.263		ere en	THE PROPERTY OF THE PROPERTY O	State	To Maintain Ditch			***
L					**************************************													,
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LEGEND

SH = STANDARD HIGHWAY EASEMENT

CH = CHANNEL EASEMENT

T = TEMPORARY EASEMENT

NOTE: ALL TEMPORARY PARCELS TO BE OF 12 MONTH DURATION.

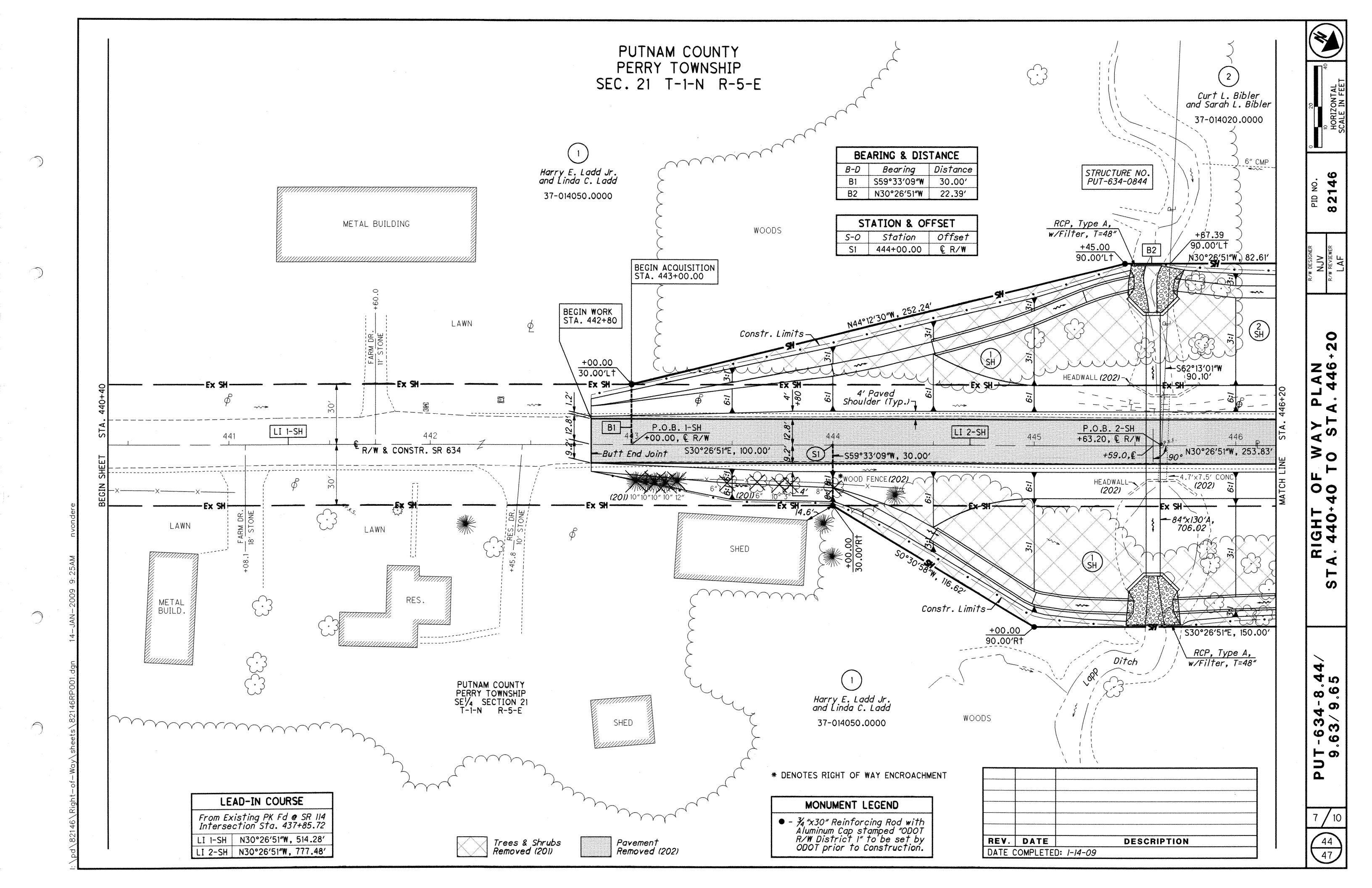
NOTE: UNDER NO CIRCUMSTANCES ARE TEMPORARY EASEMENTS TO BE USED FOR STORAGE OF MATERIAL OR EQUIPMENT BY THE CONTRACTOR UNLESS NOTED OTHERWISE.

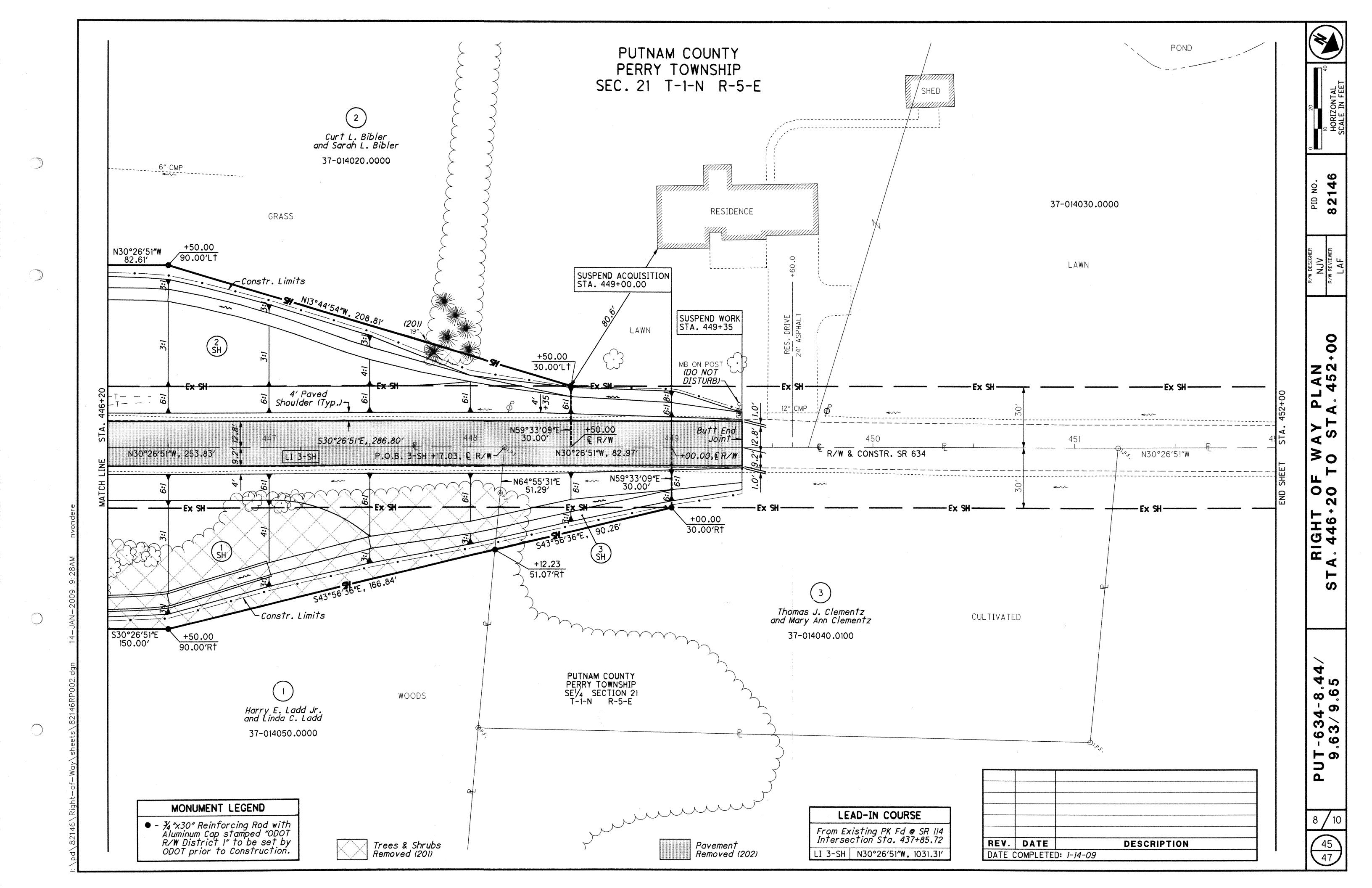
NOTE: RECORD AREAS SHOWN ARE FROM COUNTY AUDITOR'S RECORDS.

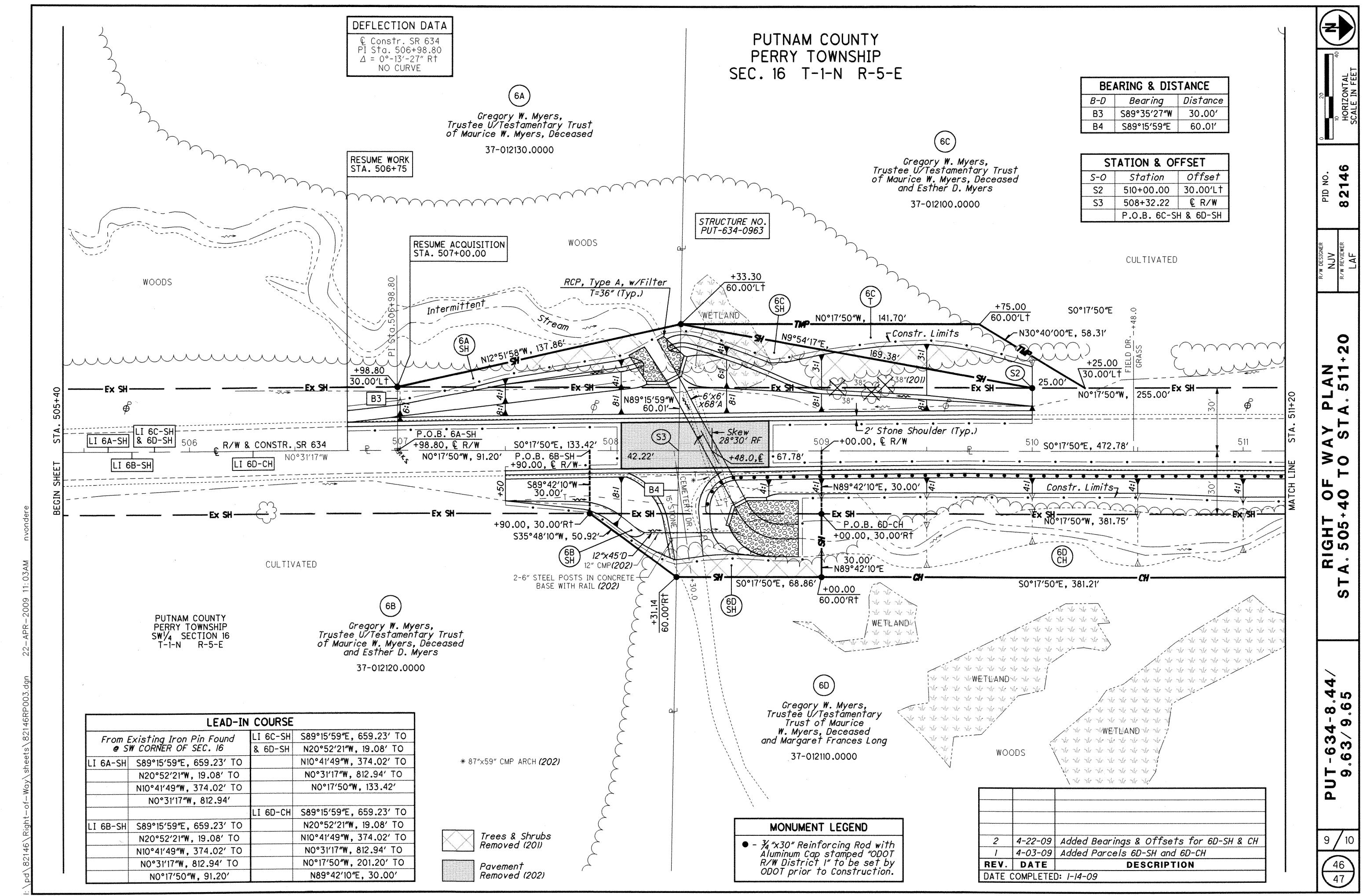
GRANTEE:

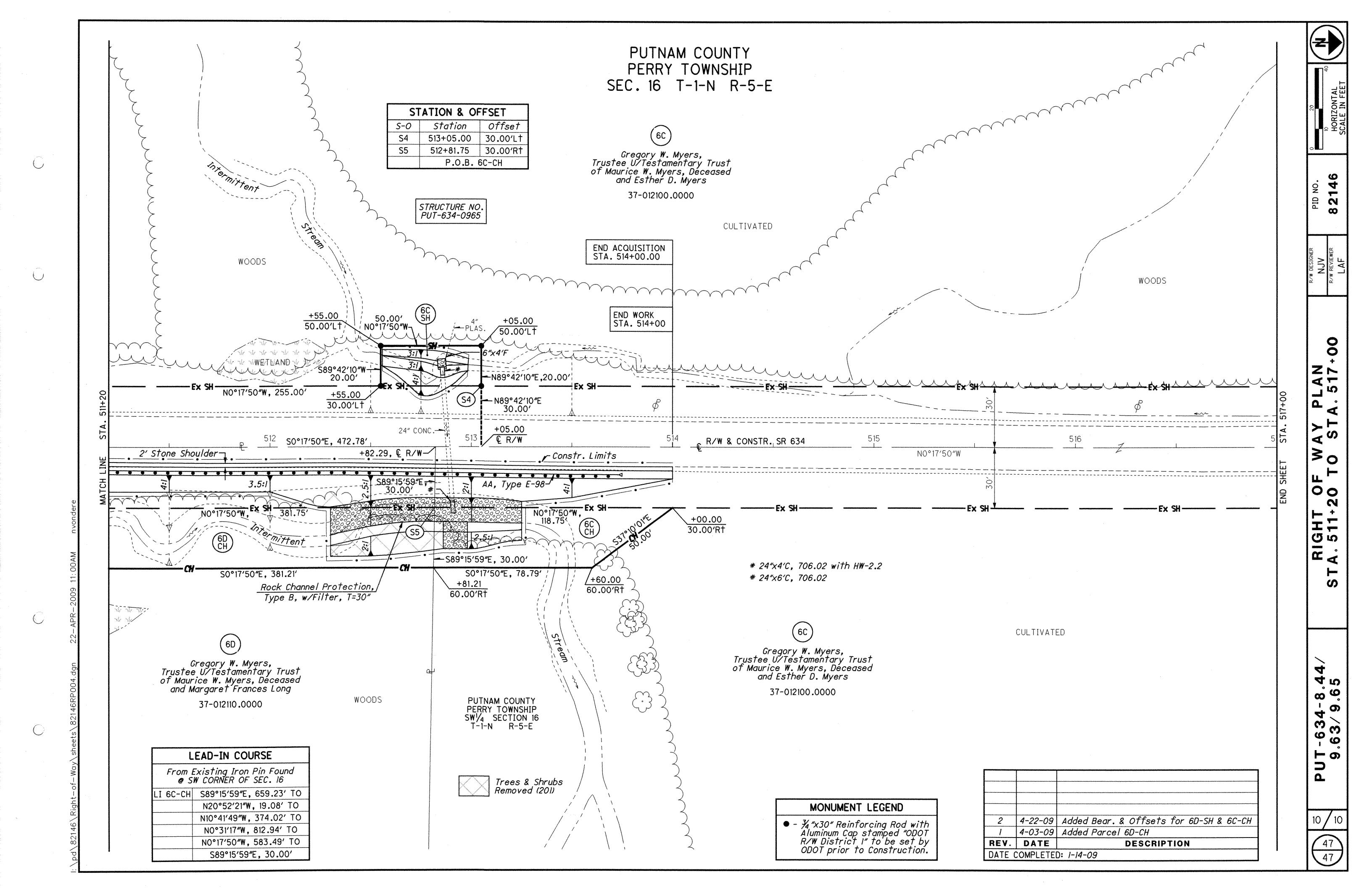
ALL RIGHT OF WAY ACQUIRED IN THE NAME OF STATE OF OHIO UNLESS OTHERWISE SHOWN.

				9-
700(13 41 41 41 41 41 41 41 41 41 41 41 41 41				۵
1	4-03-09	Added Parcels 6D-SH and	d 6D-CH	6/10
REV.	DATE	DESCRIP	TION	
FIELD	REVIEW BY	': Larry Flippin	DATE: 9-30-08	43
		FIED BY: Larry Flippin	DATE: 1-05-09	17
		): <i>I-14-09</i>		1 \ 7   /









#### PROJECT DESCRIPTION

REPLACEMENT OF CULVERT AND RAISING OF PROFILE WITH CLEAR ZONE GRADING ALONG 0.12 MILES OF SR 634.

#### HISTORIC RECORDS

NO HISTORICAL RECORDS WERE FOUND FOR THIS PROJECT.

#### <u>GEOLOGY</u>

THE PROJECT IS LOCATED WITHIN THE NEARLY FLAT LYING TERRAIN OF THE PAULDING CLAY BASIN OF THE HURON-ERIE LAKE PLAINS PHYSIOGRAPHIC PROVINCE. THIS AREA IS CHARACTERIZED BY THE LOW GRADIENT HIGHLY MEANDERING STREAMS CUTTING INTO THIN GLACIAL LACUSTRINE CLAY DEPOSITS. THE OVERBURDEN SOILS ARE UNDERLAIN BY SILURIAN AGED DOLOMITES OF THE SALINE GROUP WHICH CONTAINS THIN BEDS OF ANHYDRITE, GYPSUM AND SHALE.

## <u>RECONNAISSANCE</u>

BORING LOCATIONS WERE MARKED IN THE FIELD BY DISTRICT PERSONNEL. DURING THE SITE RECONNAISSANCE THE PAVEMENT WAS NOTED BEING IN GOOD CONDITIONS. THE SURROUNDING AREA IS DESCRIBED AS RURAL RESIDENTIAL WITH MOST THE IMMEDIATE AREA BEING A LOWER ELEVATION THAN THE SURROUND TERRAIN AND COMPRISING GRASS FIELDS WITH TREES.

## SUBSURFACE EXPLORATION

TWO (2) BORINGS, B-001-07 AND B-002-07, WERE COMPLETED AS PART OF THE SUBSURFACE EXPLORATION ON JULY 17, 2007. THE BORINGS WERE DRILLED WITH A TRUCK MOUNTED ROTARY DRILL RIG, USING 3 1/4-INCH I.D. HOLLOW STEM AUGERS TO ADVANCE THE BORINGS THROUGH SOIL. DISTURBED SAMPLES WERE COLLECTED IN ACCORDANCE WITH THE STANDARD PENETRATION TEST (AASHTO T206) AT 2.5 INTERVALS FOR THE SOIL DEPTH OF THE BORINGS. THE HAMMER SYSTEM USED WAS LAST CALIBRATED ON FEBRUARY 20, 2007, AND THE AVERAGE DRILL ROD ENERGY RATIO (ER) IS 81.9%. A BORING WAS ADVANCED INTO BEDROCK AND SAMPLED (AASHTO T225) USING AN N SERIES WIRELINE CORE BARREL, WATER METHOD.

### EXPLORATION FINDINGS

THE BORINGS GENERALLY ENCOUNTERED ASPHALT AND AGGREGATE BASE TO ELEVATION 706.9 FEET UNDERLAIN BY COHESIVE SOILS TO TOP OF ROCK. THE COHESIVE SOILS ENCOUNTERED CONSISTED PREDOMINATELY OF SILTY CLAY (A-6-b) AND CLAY (A-7-6) MATERIAL RANGING FROM STIFF TO HARD IN CONSISTENCY AND RANGED FROM DAMP TO MOIST. SOFT ELASTIC CLAY (A-7-5) IN MOIST CONDITION WAS ENCOUNTERED BETWEEN ELEVATION 702.4 AND 699.9 FEET IN B-001. HARD SANDY SILT (A-4a) WAS ENCOUNTERED IN BOTH BORING AT ELEVATION 692.4 FEET. BEDROCK WAS CORED IN B-001 TO CONFIRM THE CONDITION. MODERATELY STRONG LIMESTONE IN SLIGHTLY WEATHERED CONDITION WITH ARGILLACEOUS LAMINAE WAS ENCOUNTERED FROM ELEVATION 689.9 TO 687.6 FEET WITH A UNIT ROD OF 70% AND NO REPORTED LOSS. AT ELEVATION 687.6 FEET THE BORING ENCOUNTERED A MODERATELY STRONG LIMESTONE IN SLIGHTLY WEATHERED TO UNWEATHERED CONDITION WITH A UNIT RQD OF 80% AND NO REPORTED LOSS. THE BORING WAS TERMINATED IN THIS ROCK STRATUM.

WATER LEVELS WERE NOT RECORDED IN THE BORINGS.

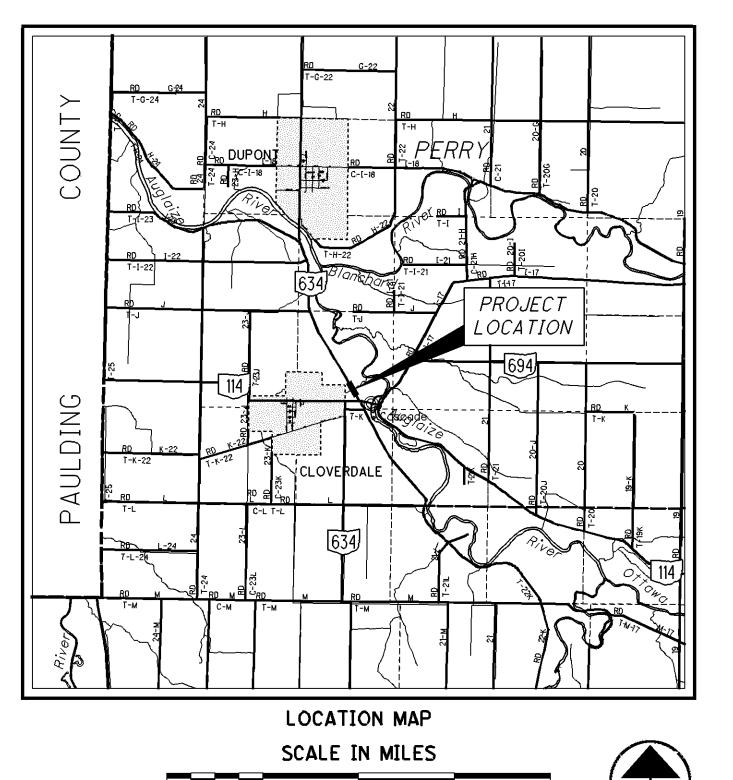
## <u>SPECIFICATIONS</u>

THIS GEOTECHNICAL EXPLORATION WAS PERFORMED IN ACCORDANCE WITH THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, OFFICE OF GEOTECHNICAL ENGINEERING. SPECÍFICATIONS FOR GEOTECHNICAL EXPLORATIONS, DATED APRIL 2007.

### 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, THE OFFICE OF GEOTECHNICAL ENGINEERING AT 1600 WEST BROAD STREET OR THE OFFICE OF STRUCTURAL ENGINEERING AT 1980 WEST BROAD STREET.

<u>LE</u>	<u>GEND</u>	ODOT	CLASS	IEIEN
	DESCRIPTION	CLASS (GI)	MECH./	
	GRAVEL AND/OR STONE FRAGMENTS WITH SAND	A-1-b (0)	1	0
	GRAVEL AND/OR STONE FRAGS. WITH SAND & SILT	A-2-4 (0)	1	0
	SANDY SILT	A-4a (4)	2	0
	SILTY CLAY	A-6b (11)	6	0
	ELASTIC CLAY	A-7-5 (18)	1	0
	CLAY	A-7-6 (16)	5	0
		TOTAL	16	0
	LIMESTONE	VISUAL		
XXXXX	PAVEMENT OR BASE = X = APPROXIMATE THICKNESS	VISUAL		
<b></b>	BORING LOCATION - PLAN VIEW.			
	DRIVE SAMPLE AND/OR ROCK CORE BORING PLOTTED HORIZONTAL BAR INDICATES A CHANGE IN STRATIGRAF		SCALE (	ONLY.
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 X= NUMBER OF BLOWS FOR FIRST 6 INCHES. Y= NUMBER OF BLOWS FOR SECOND 6 INCHES. Z= NUMBER OF BLOWS FOR THIRD 6 INCHES.	「 ( <i>SPT</i> ):		
WOH	INDICATES WEIGHT OF HAMMER.			
TR	INDICATES TOP OF ROCK.			
SS	INDICATES A SPLIT SPOON SAMPLE.			



## PARTICLE SIZE DEFINITIONS

1:	2" 3	2.0	mm	0.42	? mm	0.07	4 mm 0.00	)5 mm
BOULDERS	COBBLES	GRAVEL	COARSE	SAND	FINE	SAND	SILT	CLAY
	1	No. 10	SIEVE	No. 40	SIEVE	No. 200	SIEVE	1

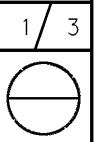
RECON. - DO1

**DRILLING** - AT 07/17/07

**DRAWN -** JAG 06/09

**REVIEWED -** MRS 06/09

Δ



**E** 0 **a** T ON STRUC

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PROJECT: PUT-634-8.44 Type: Striicture - Chi vert	FIRM /	IS DRILL RI FR HAMMFR:	- RIG: CME 75 MFR: CMF ALITOMA		STA / OFFS	SET: 445+40	+40.3, 3.5	, RT.	EXPLORATION R-001-07	FION ID:
PID: 82146   BRIDGE ID: N/A   START: 7/17/07   END: 7/17/07	1, NO2		TION DATE	.9 .9	ELEV: 709 LAT/LONG:	9 7 7	22886414 N, -	EOB: 25.5 FT - 84.2924621	Z7 E	PAGE 1 of 1
MATERIAL	DESCRIPTION AND NOTES	ELEV. 709.9	/(	N60 % (	HP SAMPLE (TSF) ID	GR	GRADATION (%)	ATTRBRG.	MC CF	ODOT SA (GI)
l !: .	SAND AND SILT, TRACE CLAY, DRY	708.0	- 1	σ _α		7 21	1- (A	7 21	C	(0) 7
STIFF BROWNISH GRAY CLAY, LITTLE MOIST	GRAVEL, LITTLE SILT, TRACE SAND,	; > -	& 4 ?		3.00	<u> </u>		2002	24 A-7-	(18)
@ 6.0'; GRAY, NO GRAVEL		707	6 2 4	7 87	200	C	2 00 76	54 22 32	30	(19)
SOFT GRAY WITH BLACK ELASTIC CLAY, SOME GRAVEL, SOME WOOD FRAGMENTS, MOIST	SILT, LITTLE SAND, LITTLE	J (	#OM #O			5	) (C	)   C		
STIFF GRAY CLAY, "AND" SILT, TRACE	SAND, MOIST		11 2 4 5 -	10 10 01	1.50	0 -	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	07 00 07 07 07 07 07 07 07 07 07 07 07 0	41 A - ( - )	(17)
VERY STIFF GRAY SILTY CLAY, SOME	SAND, DAMP	· - - - - -	13 — 14 — 6 — 12 — 15 — 15 — 15 — 17 — 17 — 17 — 17 — 17		S		D D	35 15 2	7	
@ 16.0'; HARD, SOME GRAVEL, TRACE	E SAND, MOIST	692.4	- 16 - 17 - 14 - 17 - 14 - 17 - 14 - 17 - 14 - 17 - 14 - 17 - 14 - 17 - 14 - 17 - 17	42 100 4	7-55+	25	5 25 42	34 17 17	9-A-6	(6)
HARD LIGHT GRAY SANDY SILT, LITTLE DAMP	LE GRAVEL, TRACE CLAY, GLACIAL TILL,	の の 必 必	18 - 20 - 19 - 20 18 - 18 - 18 - 18 - 18 - 18 - 18 - 18 -	2	+ C		45		13 A-4	(4)
LIMESTONE, LIGHT OLIVE GRAY TO PALE YELLOWISH BROWN, SLIGHTL WEATHERED, MODERATELY STRONG, VUGGY, CONTAINS ARGILLACEOUS CONTAINS OCCASIONAL STYOLITES, FRACTURED TO MODERATELY FRARADD 70%, NO LOSS.	Y Laminae, ctured;	687.	20			>			2	1
LIMESTONE, LIGHT GRAY, SLIGHTLY WEATHERED TO STRONG, STYOLITIC, SLIGHTLY VUGGY, FRACTURED FRACTURED; RQD 80%, NO LOSS.	)ERATELY									
NOTES: NONE		= 684.4 E	OB - 25 - 70	100	RC-1				CORE	

PROJECT: PUT-634-8.44  TYPE: STRUCTURE - CULVERT PID: 82146  BRIDGE ID: N/A START: 7/17/07 FND: 7/17/07  SAMPLING METHOD: 3.25" HSA SAMPLING METHOD: SPT	WILLIS DRIL URNER HAMN CALI	DRILL RIG: CME 75 HAMMER: CME AUTOMATIC CALIBRATION DATE: 2/20/07 FNFRGY RATIO (%): 81.9	STA / OFFSE ALIGNMENT: ELEV: 709.9	T: 445+83 © SR 634 FT (MSL)	6.4′ L EOB: N -84	19.5 FT	EXPLORATION ID:  B-002-07  PAGE  P I of 1
MATERIAL DESCRIPTION AND NO	ELEV. 709.9	SPT /   SPT /     DEPTHS   ROD   N6(	F (TSF)		(%) A (%) I CL   LL	ATTRBRG.	CLASS
	708.9	1 1					
_ _ _ _ _ _	706.9	6 4 14 61	- SS-1	62 13 8	12 5 NP	NP NP 4	1 A-1-b (0)
STIFF GRAY SILTY CLAY, LITTLE SAND, TRACE GRAVEL, MOIST		4 2 4 5 12 61	2.25 SS-2	8 4	28 51 36	17	19 A-6b (12)
	70.2 4	6 3	2-33	رب د	82 72 72 82 72 72	10 21	75 A-65 (12)
STIFF GRAY CLAY, "AND" SILT, LITTLE SAND, TRACE GRAVEL, MOIST	700				-	- J	
@ 8.5'; MODERATELY ORGANIC		9 1 2 2 2 5 61	1.50 SS-4	ν ν	44 38 41	21 20 3	7 A-7-6 (12)
@ 11.0'; TRACE SAND, NO GRAVEL		11 3					
HARD BROWN AND GRAY SILTY CLAY, SOME GRAVEL, LITTLE SAND, GLACIAL	697.4	13 — 7 15 100 — 13 —	2.75 SS-5	0	46 47 42	19 23	30 A-7-6 (14)
		- 14 4 10 - 15 34 100	4.5+ SS-6	23 6 12	28 31 31	15 16 1.	3 A-6b (7)
@ 16.0'; TRACE GRAVEL, TRACE SAND, MOIST	7 699	- 16 - 12 - 13 - 10 - 10 - 10 - 10 - 10 - 10 - 10	7 - 7 - 7 - 7	ر الر	20 72	10 00	10) V-6h
HARD LIGHT GRAY SANDY SILT, SOME GRAVEL, LITTLE CLAY, GLACIAL TILL, DAMP	4	18 1	-			2	
	<b>        </b> 690.4	OR   19	- SS-8	23 7 16	40 14 19	15 4 1	1 A-4g (4)
NOTES: IOR @ BOLLOM OF BORING (DRILLERS DESCRIPTION) ARANDONMENT METHODS MATERIALS OHANTITIES: NOT RECORDED							

REPLACEMENT OF CULVERT WITH CLEAR ZONE GRADING ALONG 0.06 MILES ON THE WEST SIDE OF SR 634 WITH GUARDRAIL ON THE EAST SIDE.

### HISTORIC RECORDS

NO HISTORICAL RECORDS WERE FOUND FOR THIS PROJECT.

#### <u>GEOLOGY</u>

THE PROJECT IS LOCATED WITHIN THE NEARLY FLAT LYING TERRAIN OF THE PAULDING CLAY BASIN OF THE HURON-ERIE LAKE PLAINS PHYSIOGRAPHIC PROVINCE. THIS AREA IS CHARACTERIZED BY THE LOW GRADIENT HIGHLY MEANDERING STREAMS CUTTING INTO THIN GLACIAL LACUSTRINE CLAY DEPOSITS. THE OVERBURDEN SOILS ARE UNDERLAIN BY SILURIAN AGED DOLOMITES OF THE SALINE GROUP WHICH CONTAINS THIN BEDS OF ANHYDRITE, GYPSUM AND SHALE.

## <u>RECONNAISSANCE</u>

BORING LOCATIONS WERE MARKED IN THE FIELD BY DISTRICT PERSONNEL. DURING THE SITE RECONNAISSANCE THE PAVEMENT WAS NOTED BEING IN GOOD CONDITIONS. THE SURROUNDING AREA IS DESCRIBED AS RURAL RESIDENTIAL WITH MOST THE IMMEDIATE AREA BEING A LOWER ELEVATION THAN THE SURROUND TERRAIN AND COMPRISING GRASS FIELDS WITH TREES.

#### SUBSURFACE EXPLORATION

TWO (2) BORINGS, B-001-07 AND B-002-07, WERE COMPLETED AS PART OF THE SUBSURFACE EXPLORATION ON JULY 11, 2007. THE BORINGS WERE DRILLED WITH A TRUCK MOUNTED ROTARY DRILL RIG, USING 3 1/4-INCH I.D. HOLLOW STEM AUGERS TO ADVANCE THE BORINGS THROUGH SOIL. DISTURBED SAMPLES WERE COLLECTED IN ACCORDANCE WITH THE STANDARD PENETRATION TEST (AASHTO T206) AT 2.5 INTERVALS FOR THE SOIL DEPTH OF THE BORINGS. THE HAMMER SYSTEM USED WAS LAST CALIBRATED ON FEBRUARY 20, 2007, AND THE AVERAGE DRILL ROD ENERGY RATIO (ER) IS 81.9%. A BORING WAS ADVANCED INTO BEDROCK AND SAMPLED (AASHTO T225) USING AN N SERIES WIRELINE CORE BARREL. WATER METHOD.

#### EXPLORATION FINDINGS

THE BORINGS GENERALLY ENCOUNTERED COHESIVE SOILS ENCOUNTERED CONSISTED RANGING FROM SANDY SILT (A-4a) TO CLAY (A-7-6) RANGING IN CONSISTENCY FROM STIFF NEAR THE GROUND SURFACE BECOMING HARD WITH DEPTH AND RANGED FROM DAMP TO MOIST. B-001 WAS CORED TO DETERMINE BEDROCK CONDITIONS, BUT REVEALED BOULDERS WITH SANDY SILT (A-4a) BETWEEN ELEVATION 683.1 AND 680.6 FEET. MODERATELY STRONG TO STRONG LIMESTONE WAS ENCOUNTERED AT ELEVATION 680.6 FEET IN WHICH THE BORING WAS TERMINATED. B-002 WAS TERMINATED AT SAMPLE REFUSAL AT ELEVATION 682.5 FEET.

WATER LEVELS WERE NOT RECORDED IN THE BORINGS.

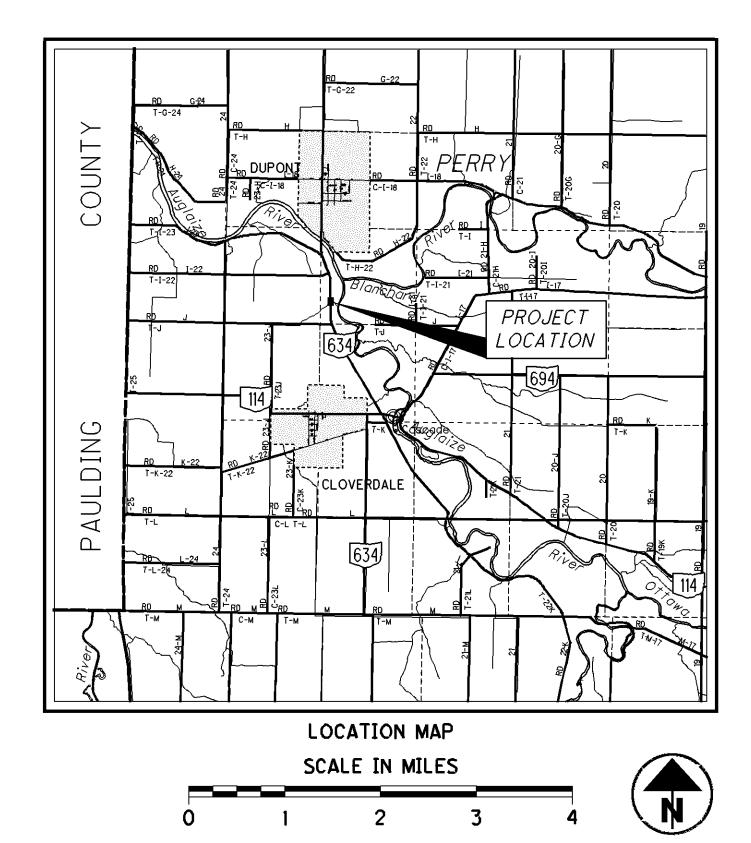
## **SPECIFICATIONS**

THIS GEOTECHNICAL EXPLORATION WAS PERFORMED IN ACCORDANCE WITH THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, OFFICE OF GEOTECHNICAL ENGINEERING, SPECIFICATIONS FOR GEOTECHNICAL EXPLORATIONS, DATED APRIL 2007.

#### 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, THE OFFICE OF GEOTÉCHNICAL ENGINEERING AT 1600 WEST BROAD STREET OR THE OFFICE OF STRUCTURAL ENGINEERING AT 1980 WEST BROAD STREET.

<u>LE</u>	<u>GEND</u>			
	DESCRIPTION	ODOT CLASS (GI)		
	SANDY SILT	A-4a (4)	5	0
	SILT AND CLAY	A-6a (8)	5	1
	SILTY CLAY	A-6b (10)	5	0
	CLAY	A-7-6 (14)	2	0
		TOTAL	17	1
	LIMESTONE	VISUAL		
	BOULDERY ZONE	VISUAL		
XXXXX	PAVEMENT OR BASE = X = APPROXIMATE THICKNESS	VISUAL		
	SOD AND TOPSOIL = X = APPROXIMATE THICKNESS	VISUAL		
<b>—</b>	BORING LOCATION - PLAN VIEW.			
	DRIVE SAMPLE AND/OR ROCK CORE BORING PLOTTED HORIZONTAL BAR INDICATES A CHANGE IN STRATIGRAP		SCALE	ONLY.
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 X= NUMBER OF BLOWS FOR FIRST 6 INCHES. Y= NUMBER OF BLOWS FOR SECOND 6 INCHES. Z= NUMBER OF BLOWS FOR THIRD 6 INCHES.	(SPT):		
TR	INDICATES TOP OF ROCK.			
SS	INDICATES A SPLIT SPOON SAMPLE.			



## PARTICLE SIZE DEFINITIONS

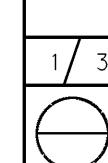
12	2″ 3	<i>"</i> 2.0	mm	0.42	mm	0.07	4 mm 0.00	5 mm
BOULDERS	COBBLES	GRAVEL	COARSE	SAND	FINE	SAND	SILT	CLAY
'		No. 10	SIEVE	No. 40	SIEVE	No. 200	SIEVE	I

RECON. - DO1

**DRILLING -** DML 07/11/07

**DRAWN -** JAG 06/09

**REVIEWED -** MRS 06/09



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PROJECT: PUT-634-9.63 TYPE: STRUCTURE - CULVERT PID: 82146 RRIDGE ID: N/A	DRILLING FIRM / OPERATOR: ODOT / WILLI SAMPLING FIRM / LOGGER: ODOT / LEWIS DRILLING METHOD: 3 25" HSA NO?	IS DRILL HAMME	G: CME 75 CME AUTON	STA / ALIGNM		508+67.5, SR 634 T (MSL)	1.8' RT. FOR: 2	, C	EXPLORATION B-001-07	ON ID:
/11/07 END: 7/11	METHOD: SPI	ENE	(%): 81.9	- LAT/I		<u>41.0382313</u> 66 N,	-84	301773183	<b>-</b> —	1 AGE 1 Of 1
MATERIAL DE	DESCRIPTION AND NOTES	ELEV. 706.8	SPT / REC REC NGO %	C HP SAMPLE (TSF) ID		RADATION ( CS   FS   SI	7	ATTRBRG. L   PL   PI	WC   CLASS (	T (G1)
12" ASPHALT (VISUAL)		-	-							
FF GRAY S	, LITTLE GRAVEL, MOIST		2 2 3 4 10 100	0 2.00 SS-	-1	10 14 28	3 32 36	16 20	21 A-6b	(6)
@ 3.5'; MEDIUM STIFF, TRACE SAND,	TRACE GRAVEL	7		(		1	0		<u> </u>	Ć
VERY STIFF GRAYISH BROWN CLAY, S MOIST	SOME SILT, LITTLE SAND, GLACIAL TILL,				N N	7	7	<u>n</u>	30 A - 6D	2
HARD GRAYISH BROWN SILTY CLAY, S DAMP	SOME GRAVEL, LITTLE SAND, GLACIAL TILL,	699.3		0 4.00 SS-	O M	20 33	1 56 43	19 24	21 A-7-6	(14)
HARD GRAY SILT AND CLAY, LITTLE	SAND, TRACE GRAVEL, GLACIAL TILL, DAMP	8.96.9	10 10 100	-SS 00°5 0	4 24	4 9 26	5 37 35	61	15 A-6b	(6)
			12 11 14 34 100 13 1	0 5.00 SS-	ى ص	5 10 32	2 44 29	14	13 A-6a	(10)
@ 13.5'; WITH BOULDERS			17 16 19 48 1	3 5.00 SS-	1	S	∀	1	13 A-6a	
@ 16.0'; SOME SAND, SOME GRAVEL			- 16 - 13 17 - 15 - 100	00.22-00	7	7 14 30	29	5	10 A-60	(5)
HARD LIGHT GRAY SANDY SILT, SOME DAMP	ME CLAY, LITTLE GRAVEL, GLACIAL TILL,		. (	) ()		. (	1 1			į
HARD LIGHT GRAY SILT AND CLAY, T	TRACE SAND, GLACIAL TILL, DAMP	000	75 - 3	3 5.00 SS-9		2 10 20	57 30	0 4 9	15 A-69	(10)
		683.1	— 22 — — 23 —							
IMESTONE, LIGHT OLIVE H ASPHALTIC INFILLING GRAY SANDY SILT, SOMI	GRAY, MODERATELY WEATHERED, STI E GRAVEL, SOME CLAY, TILL, DAMP	681.3								
WEATHÉREC FT	O UNWEATHERED, MOD STRONG	- P80 - TH	EOB <b>Co</b> -   78	8   RC-					CORE	
VENT N	N S OHANTITIES NOT BECORDED									

PROJECT: PUT-634-9.63  TYPE: STRUCTURE - CULVERI PID: 82146 BRIDGE ID: N/A START: 7/11/07 END: 7/11/07  PROJECT: PUT-634-9.63  DRILLING FIRM / OPERATOR: ODOT / WILLING NETHOD: 3.25" HSA START: 7/11/07 END: 7/11/07  SAMPLING METHOD: SPT	0 OMA	STA / OFFSET: 508+66.5, 30.2' LT.  ALIGNMENT: © SR 634  ALIGNMENT: (SR 634  COT ELEV: 704.2 FT (MSL)  LAT/LONG: 41.038255544 N84.301853730	EXPLORATION ID:  B-002-07  PAGE  1 of 1
MATERIAL DESCRIPTION AND NOTES	SPT / SPT / SPT / SPTHS ROD N6	REC HP SAMPLE GRADATION (%) ATTRBRG.	ODC CLASS
LITTLE GRAVEL, TRACE SAND, MOIST	703.2		
STIFF BROWNISH GRAY SILTY CLAY, LITTLE SAND, LITTLE GRAVEL, GLACIAL	701.2	100 2.00 SS-1 16 1 3 41 39 44 21 23 25	5 A-7-6 (14)
@ 6.0'; VERY STIFF, SOME GRAVEL		2.00 SS-2 11 5 14 28 42 37 16 21	
VERY STIFF GRAY SILT AND CLAY, LITTLE SAND, TRACE GRAVEL, GLACIAL TILL,	0 0	100 3.00 SS-3 20 4 10 27 39 36 19 17 21	1 A-6b (9)
@ 11.0'; HARD, SOME GRAVEL, DAMP	11 11 11 11 11 11 11 11 11 11 11 11 11	.50 SS-4 9 5 10 32 44 30 15 1	S A-6g (10)
HARD GRAY SANDY SILT, SOME GRAVEL, SOME CLAY, GLACIAL TILL, DAMP	691.7	100 5.00 SS-5 25 5 9 27 34 27 14 13 13 13	3 A-6g (6)
	- 14 - 15 - 15 - 14 40	100 5.00 5S-6 23 7 12 31 27 22 12 10 10	) A-4g (5)
	- 16 19 - 17 20 - 17 - 24 60	100 5.00 SS-7 23 5 13 31 28 22 12 10 9	) A-4g (5)
@ 18.5%; LITTLE CLAY	19 15 - 19 24 - 20 30 74	100 5.00 SS-8 26 10 18 29 17 18 11 7 9	A-40 (2)
	682.5 EOB 21 3475 -	100 5.00 5S-9 31 7 16 31 15 17 11 6 7	. A-4q (2)
NOTES: NONE Abandonment methods, materials, quantities: not recorded			

# SPECIAL PROVISIONS

# 404 PERMIT- WATERWAY PERMITS

CRS: PUT-634-8.44/9.63/9.65

PID: 82146

 404 PERMIT (NWP #14) FROM THE US ARMY CORPS OF ENGINEERS.
 (EFFECTIVE 9/15/2008, EXPIRES ON 03/18/2012)

## NATIONWIDE PERMIT #14- LINEAR TRANSPORTATION PROJECTS

Activities required for the construction, expansion, modification, or improvement of linear transportation projects (e.g., roads, highways, railways, trails, airport runways, and taxiways) in waters of the United States. For linear transportation projects in non-tidal waters, the discharge cannot cause the loss of greater than 1/2-acre of waters of the United States. For linear transportation projects in tidal waters, the discharge cannot cause the loss of greater than 1/3-acre of waters of the United States. Any stream channel modification, including bank stabilization, is limited to the minimum necessary to construct or protect the linear transportation project; such modifications must be in the immediate vicinity of the project.

This NWP also authorizes temporary structures, fills, and work necessary to construct the linear transportation project. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

This NWP cannot be used to authorize non-linear features commonly associated with transportation projects, such as vehicle maintenance or storage buildings, parking lots, train stations, or aircraft hangars.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if: (1) the loss of waters of the United States exceeds 1/10 acre; or (2) there is a discharge in a special aquatic site, including wetlands. (See general condition 27.) (Sections 10 and 404)

Note: Some discharges for the construction of farm roads or forest roads, or temporary roads for moving mining equipment, may qualify for an exemption under Section 404(f) of the Clean Water Act (see 33 CFR 323.4).

## WATER QUALITY CERTIFICATION

Pursuant to Section 401 of the Federal Water Pollution Control Act, 33 U.S.C. Section 1341; Ohio Revised Code Chapters 119 and 6111; Ohio 'Admtnistrati e'Ge e. (QAG) Chapters 3745-1, 3745-32, and 3745-47; and, Corps regional conditions public noticed on October 20, 2006, the director of the Ohio Environmental Protection Agency hereby certifies that the above referenced replacement Nationwide Permits (NWPs) I - as proposed in the March 12, 2007, Federal Register will comply with the applicable provisions of Sections 301, 302, 303, 306, and 307 of the Federal Water Pollution Control Act. These Certifications are specifically limited to 401 Certifications with respect to water pollution and do not relieve the applicant of further certifications or permits as may be necessary under applicable state and federal laws and/or local.

ordinances. Corps of Engineers Civil Works Projects in the State of Ohio are subject to the general and special limitations and conditions of this certification.

#### Water Quality Certification - Special Conditions:

The Ohio State Certification General Limitations and Conditions apply to this nationwide permit except as modified below:

Ohio State Certification Special Limitations and Conditions: Stream crossings shall not exceed a total of three per stream mile per stream.

#### NATIONWIDE PERMIT CONDITIONS

#### GENERAL CONDITIONS:

The following general conditions must be followed in order for any authorization by a NWP to be valid:

#### 1. Navigation.

(a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

- (c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.
- 2. Aquatic Life Movements. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. Culverts placed in streams must be installed to maintain low flow conditions.
- 3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.
- 4. Migratory Bird Breeding Areas. Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.
- 5. Shellfish Beds. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48.

- 6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).
- 7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.
- 8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.
- 9. Management of Water Flows. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).
- 10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.
- 11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.
- 12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.
- 13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.
- 14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety.
- 15. Wild and Scenic Rivers. No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined

in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency in the area (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).

16. Tribal Rights. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

17. Endangered Species.

(a) No activity is authorized under any NWP which is likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

- (c) Non-federal permittees shall notify the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that may be affected by the proposed work or that utilize the designated critical habitat that may be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been
- (d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific regional endangered species conditions to the NWPs.
- (e) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the U.S. FWS or the NMFS, both lethal and non-lethal "takes" of protected species are in violation of the ESA. Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the U.S. FWS and NMFS or their world wide Web pages at http://www.fws.gov/ and http://www.noaa.gov/fisheries.html respectively.

#### 18. Historic Properties.

- (a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.
- (b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.
- (c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties which the activity may have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been
- (d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR 800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed.
- (e) Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the

assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, explaining the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

- 19. Designated Critical Resource Waters. Critical resource waters include, NOAA-designated marine sanctuaries, National Estuarine Research Reserves, state natural heritage sites, and outstanding national resource waters or other waters officially designated by a state as having particular environmental or ecological significance and identified by the district engineer after notice and opportunity for public comment. The district engineer may also designate additional critical resource waters after notice and opportunity for comment.
  - (a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, and 50 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.
  - (b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 27, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.
- 20. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal:
  - (a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).
  - (b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.
  - (c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10 acre and require pre-construction notification, unless the district engineer determines in writing that some other form of mitigation would be more environmentally appropriate and provides a project-specific waiver of this requirement. For wetland losses of 1/10 acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered.
  - (d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream restoration, to

ensure that the activity results in minimal adverse effects on the aquatic environment.

- (e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2 acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2 acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWPs.
- (f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.
- (g) Permittees may propose the use of mitigation banks, in-lieu fee arrangements or separate activity-specific compensatory mitigation. In all cases, the mitigation provisions will specify the party responsible for accomplishing and/or complying with the mitigation plan.
- (h) Where certain functions and services of waters of the United States are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.
- 21. Water Quality. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.
- 22. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.
- 23. Regional and Case-By-Case Conditions. The activity must comply with any regional

conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

- 24. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.
- 25. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature: "When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

(Transferee)

(Date)

- 26. Compliance Certification. Each permittee who received an NWP verification from the Corps must submit a signed certification regarding the completed work and any required mitigation. The certification form must be forwarded by the Corps with the NWP verification letter and will include:
  - (a) A statement that the authorized work was done in accordance with the NWP authorization, including any general or specific conditions;
  - (b) A statement that any required mitigation was completed in accordance with the permit conditions; and
  - (c) The signature of the permittee certifying the completion of the work and mitigation.

#### 27. Pre-Construction Notification.

(a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, as a general rule, will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the

prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

(1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) Forty-five calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 17 that listed species or critical habitat might affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 18 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation (see 33 CFR 330.4(g)) is completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee cannot begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be inwriting and include the following information:

- (1) Name, address and telephone numbers of the prospective permittee;
- (2) Location of the proposed project;
- (3) A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause; any other NWP(s), regional general permit(s), or individual permit(s) used or intended

to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches

usually clarify the project and when provided result in a quicker decision);

(4) The PCN must include a delineation of special aquatic sites and other waters of the United States on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters of the United States, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the United States. Furthermore, the

45 day period will not start until the delineation has been submitted to or completed by the Corps, where appropriate;

(5) If the proposed activity will result in the loss of greater than 1/10 acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied. As an alternative, the prospective permittee may submit a conceptual or detailed

mitigation plan.

(6) If any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and

(7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

(c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used.

#### (d) Agency Coordination:

(1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level.

(2) For all NWP 48 activities requiring pre-construction notification and for other NWP activities requiring pre-construction notification to the district engineer that result in the loss of greater than 1/2-acre of waters of the United States, the district engineer will immediately provide (e.g., via facsimile transmission, overnight mail, or other expeditious manner) a copy of the PCN to the appropriate Federal or state offices (U.S. FWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will then have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame, but will provide no response

to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

- (3) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.
- (4) Applicants are encouraged to provide the Corps multiple copies of preconstruction notifications to expedite agency coordination.
- (5) For NWP 48 activities that require reporting, the district engineer will provide a copy of each report within 10 calendar days of receipt to the appropriate regional office of the NMFS.
- (e) District Engineer's Decision: In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. If the proposed activity requires a PCN and will result in a loss of greater than 1/10 acre of wetlands, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for projects with smaller impacts. The district engineer will consider any proposed compensatory mitigation the applicant has included in the proposal in determining whether the net adverse environmental effects to the aquatic environment of the proposed work are minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse effects on the aquatic environment are minimal, after considering mitigation, the district engineer will notify the permittee and include any conditions the district engineer deems necessary. The district engineer must approve any compensatory mitigation proposal before the permittee commences work. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure no more than minimal adverse effects on the aquatic environment. If the net adverse effects of the project on the aquatic environment (after consideration of the compensatory mitigation proposal) are determined by the district engineer to be minimal, the district engineer will provide a timely written response to the applicant. The response will state that the project can proceed under the terms and conditions of the NWP. If the district engineer determines that the adverse effects of the proposed work aremore than minimal, then the district engineer will notify the applicant either:

- (1) That the project does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit;
- (2) that the project is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level; or
- (3) that the project is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse effects occur to the aquatic environment, the activity will be authorized within the 45-day PCN period. The authorization will include the necessary conceptual or specific mitigation or a requirement that the applicant submit a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level. When mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan.

28. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

#### FURTHER INFORMATION

- 1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.
- 2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.
- 3. NWPs do not grant any property rights or exclusive privileges.
- 4. NWPs do not authorize any injury to the property or rights of others.
- 5. NWPs do not authorize interference with any existing or proposed Federal project

#### **DEFINITIONS**

Best management practices (BMPs): Policies, practices, procedures, or structures implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or non-structural.

Compensatory mitigation: The restoration, establishment (creation), enhancement, or preservation of aquatic resources for the purpose of compensating for unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Currently serviceable: Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Discharge: The term "discharge" means any discharge of dredged or fill material.

Enhancement: The manipulation of the physical, chemical, or biological characteristics of an

aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Ephemeral stream: An ephemeral stream has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

Establishment (creation): The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area.

Historic Property: Any prehistoric or historic district, site (including archaeological site), building, structure, or other object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (36 CFR part 60).

Independent utility: A test to determine what constitutes a single and complete project in the Corps regulatory program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Intermittent stream: An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

Loss of waters of the United States: Waters of the United States that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the United States is a threshold measurement of the impact to jurisdictional waters for determining whether a project may qualify for an NWP; it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and services. The loss of stream bed includes the linear feet of stream bed that is filled or excavated. Waters of the United States temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the United States. Impacts resulting from activities eligible for exemptions under Section 404(f) of the Clean Water Act are not considered.

when calculating the loss of waters of the United States.

Non-tidal wetland: A non-tidal wetland is a wetland that is not subject to the cbb and flow of tidal waters. The definition of a wetland can be found at 33 CFR 328.3(b). Non-tidal wetlands contiguous to tidal waters are located landward of the high tide line (i.e., spring high tide line).

Open water: For purposes of the NWPs, an open water is any area that in a year with normal patterns of precipitation has water flowing or standing above ground to the extent that an ordinary high water mark can be determined. Aquatic vegetation within the area of standing or flowing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. Examples of "open waters" include rivers, streams, lakes, and ponds.

Ordinary High Water Mark: An ordinary high water mark is a line on the shore established by the fluctuations of water and indicated by physical characteristics, or by other appropriate means that consider the characteristics of the surrounding areas (see 33 CFR 328.3(e)).

Perennial stream: A perennial stream has flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

Practicable: Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Pre-construction notification: A request submitted by the project proponent to the Corps for confirmation that a particular activity is authorized by nationwide permit. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Pre-construction notification may be required by the terms and conditions of a nationwide permit, or by regional conditions. A pre-construction notification may be voluntarily submitted in cases where pre-construction notification is not required and the project proponent wants confirmation that the activity is authorized by nationwide permit.

Preservation: The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area.

Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site

with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.

Riffle and pool complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a course substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Riparian areas: Riparian areas are lands adjacent to streams, lakes, and estuarine-marine shorelines. Riparian areas are transitional between terrestrial and aquatic ecosystems, through which surface and subsurface hydrology connects waterbodies with their adjacent uplands. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality. (See general condition 20.)

Shellfish seeding: The placement of shellfish seed and/or suitable substrate to increase shellfish production. Shellfish seed consists of immature individual shellfish or individual shellfish attached to shells or shell fragments (i.e., spat on shell). Suitable substrate may consist of shellfish shells, shell fragments, or other appropriate materials placed into waters for shellfish babitat

Single and complete project: The term "single and complete project" is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete project must have independent utility (see definition). For linear projects, a "single and complete project" is all crossings of a single water of the United States (i.e., a single waterbody) at a specific location. For linear projects crossing a single waterbody several times at separate and distant locations, each crossing is considered a single and complete project. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

Stormwater management: Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.

Stormwater management facilities: Stormwater management facilities are those facilities,

including but not limited to, stormwater retention and detention ponds and best management practices, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.

Stream bed: The substrate of the stream channel between the ordinary high water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the stream bed, but outside of the ordinary high water marks, are not considered part of the stream bed.

Stream channelization: The manipulation of a stream's course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. A channelized stream remains a water of the United States.

Structure: An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.

Tidal wetland: A tidal wetland is a wetland (i.e., water of the United States) that is inundated by tidal waters. The definitions of a wetland and tidal waters can be found at 33 CFR 328.3(b) and 33 CFR 328.3(f), respectively. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channelward of the high tide line, which is defined at 33 CFR 328.3(d).

Vegetated shallows: Vegetated shallows are special aquatic sites under the 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.

Waterbody: For purposes of the NWPs, a waterbody is a jurisdictional water of the United States that, during a year with normal patterns of precipitation, has water flowing or standing above ground to the extent that an ordinary high water mark (OHWM) or other indicators of jurisdiction can be determined, as well as any wetland area (see 33 CFR 328.3(b)). If a jurisdictional wetland is adjacent—meaning bordering, contiguous, or neighboring—to a jurisdictional waterbody displaying an OHWM or other indicators of jurisdiction, that waterbody and its adjacent wetlands are considered together as a single aquatic unit (see 33 CFR 328.4(c)(2)). Examples of "waterbodies" include streams, rivers, lakes, ponds, and wetlands.

OHIO STATE CERTIFICATION GENERAL LIMITATIONS AND CONDITIONS (WATER QUALITY CERTIFICATION)

#### A. STREAMS

- 1) Temporary or permanent impacts to streams are limited to 500 linear feet, of which no more than 200 linear feet can be impacts to intermittent or perennial streams [except for NWPs 3, 12, 13, 20, 21, 27, 32, 37, 38, 41, 45 and 47]. Impacts shall be measured linearly from upstream to downstream, including the length of permanent or temporary stream impoundments, when calculating the total length of stream impacts [except for NWP 12, for which impacts shall be measured bank-to-bank];
- 2) Temporary or permanent impacts to water bodies meeting any of the criteria set forth in a through d below, are prohibited [except for NWP 3, 20, 27, 32, 37, 38, 45, and 47 or maintenance activities covered under NWP 7 and 12]:
  - a. Exceptional Warmwater Habitat, Cold Water Habitat, Scasonal Salmonid, or any equivalent designation;
  - b. Waters bodies with an antidegradation category of Superior High Quality Water, Outstanding National Resource Waters or Outstanding High Quality Waters; and,
  - c. General high quality water bodies, such as Killbuck Creek in Coshocton County and Pymatuning Creek in Ashtabula County, which harbor federally listed threatened andlor endangered species.

For an alphabetical listing of the Superior High Quality Waters, go to

http://www.epa.state.oh. usfdsw/rules/antidegHQiistJulyO3.pdf

- 3) Stream reconstruction activities shall maintain or enhance the habitat values of the stream as determined by an appropriate habitat assessment method and adhere to "natural channel design" principles. Natural channel design means a technique that integrates knowledge of natural stream processes to create a stable stream that maintains its form and function over time and achieves a targeted habitat or biological endpoint.
- 4) Stream or buffer improvements and/or mitigative measures required by the Corps shall address the following:
  - a. In order of priority, these measures shall focus on the following:
    - the stream segment being impacted;
    - ii. upstream segments and tributaries; the receiving stream

The measures should, to the extent practicable, consider the causes and

sources of impairment of the stream where the measures would be undertaken if the stream is listed as impaired in the most recent final report submitted to the United States Environmental Protection Agency by the director of Ohio EPA to fulfill the requirements of Section 303(d) of the Clean Water Act. The current list of impaired streams, as of the date of this certification, can be found at on Ohio EPA's web site at:

http://www.epa.state.oh.usldsw/tmdl/20041ntReportIfinal_20041R_appB_2.pdf

- b. If the applicant cannot find appropriate mitigation on streams listed in Section "a" above, mitigation shall be in the Ohio EPA 8-digit watershed.
- c. Vegetative buffers on both stream banks shall be of an appropriate length (at least the length of the impacted stream segment), and, if practicable,
  - Provide a minimum width of 25 feet for preservation of existing vegetative buffers; or,
  - ii. Provide a minimum width of 50 feet for re-vegetating buffers cleared during construction.
  - iii. Buffer width is measured from the top of bank or level of bankfull discharge.
- d. Vegetated buffers shall be planted, or restored, as soon as practicable after instream work is complete and shall extend to the top of both stream banks, or beyond as stipulated by the Corps or Ohio EPA, using native tree and shrub species with rapid growth characteristics,
- e. Impacts to existing vegetative buffers shall be minimized to the maximum extent practicable. Entry to surface waters shall be through a single point of access on each side of the stream whenever practicable to minimize disturbance to buffer vegetation;
- 5) In-stream activities shall not result in the permanent destabilization of the stream banks or stream bed. The stream bed and substrates shall be restored to conditions that existed prior to work.
- 6) In-stream work shall be conducted during low-flow conditions whenever practicable in order to minimize adverse impacts to water quality away from the project site, except in emergency situations that threaten human life or property.
- 7) Culverts
  - a. For an individual stream, the combined length of an existing culvert and

- culvert extension shall not exceed 500 linear feet, and the individual culvert extension shall not exceed 200 linear feet if installed on an intermittent or perennial stream, or 500 linear feet if installed on an ephemeral stream.
- b. For new road construction, flood plain culverts shall be installed where the flood prone area is greater than twice the width of the stream at Ordinary High Water Mark (OHWM).
- c. New Culverts on Low Gradient Streams (<3% slope)
  - Culverts shall be installed at the existing streambed slope, not exceeding three percent, to allow for the natural movement of bedload and aquatic organisms.
  - ii. The culvert base or invert for intermittent and perennial streams with bottom substrate shall be installed below the sediment to allow natural channel bottom to develop and to be retained. The channel bottom substrate shall be similar to and contiguous with the immediate upstream and downstream reaches of the stream. The culvert shall be designed and sized to accommodate bankfull discharge and match the existing depth of flow to facilitate the passage of aquatic organisms.
  - iii. For perennial and intermittent streams, culverts with less than three percent grade or not installed on bedrock shall have the lower 10 percent of all culvert bottoms buried below the existing stream grade. Hydraulic design shall be based upon the remaining open portion of the culvert.
- 8) Compensatory mitigation for linear projects (e.g., highways) in streams may be mitigated for by the following, in descending order of practicability:
  - a. Stream impacts associated with a linear project may be mitigated on-site, defined as within one mile of the linear project, and within the samel4-digit watershed as shown in OAC 3745-1-54(F)(2); or,
  - b. Stream impacts associated with a linear project may be mitigated at a single stream mitigation location or stream mitigation bank acceptable to the director, within each Ohio EPA 8-digit watershed in which such impacts occur; or,
  - c. If no stream mitigation bank, acceptable to the director, is located within one or more of the Ohio EPA 8-digit watersheds in which the impact occurs, then mitigation may occur in another Ohio EPA 8-digit watershed impacted by the linear project; at a single stream mitigation location, or a stream mitigation bank, acceptable to the director; or,

d. If no stream mitigation bank exists within any of the watersheds connected with the linear project, then mitigation should occur within the watershed in which the largest impacts (in terms of area) occur.

#### B. WETLANDS

- 1) Temporary or permanent impacts to Category 3 wetlands are prohibited [except for NWP 27].
- 2) Temporary or permanent impacts to Category 1 and 2 wetlands are limited to a maximum total of one-half acre [except for NWP 20, 21, 27, 32, 37, 38, 45, and 47].
- 3) Wetland Mitigation
  - a. Ohio state certification for the use of any NWP to authorize the activities associated with the construction and or development of new mitigation banks is denied. Banks that have been approved for operation by the director of Ohio EPA may utilize NWPs for approved activities.
  - b. Wetland mitigation shall adhere to the requirements set forth in Ohio EPA's Wetland Water Quality Standards [OAC Chapter 3745-1].
  - c. When it is determined that use of a mitigation bank is the best option, mitigation shall only be authorized at those mitigation banks having an active instrument signed by the director of Ohio EPA.
- 4) Discharges or diversions of storm water into wetlands shall not negatively alter the wetland's natural hydrologic regime as required by OAC Rule 3745-1-51 (Wetland Narrative Criteria) and shall meet warmwater habitat chemical criteria as required by OAC Rule 3745-1-52 (Numeric Chemical Criteria for Waste Water Discharges to Wetlands) unless the applicant has obtained alternate criteria from the director.

#### C. LAKE ERIE

- 1) No nationwide permit may be used to divert water from outside of the Lake Erie drainage basin.
- 2) Temporary or permanent impacts to Lake Erie coastal wetlands, including coastal wetlands located on Lake Erie Islands and Sandusky Bay are prohibited [except for NWP 3 and 27].
- 3) Disposal of Dredge Material from Lake Erie, Lake Erie Islands, and Sandusky Bay.
  - a. Dredged material that is greater than 60 percent sand (0.063 mm grain size),

- as determined by grain size analysis, shall be disposed of in the littoral drift, downdrift of the project site.
- b. Dredged material that is less than 60 percent sand and is below the 75th percentile of the surficial background sediment contamination concentrations of the basin proposed for disposal (as identified in "Surficial Sediment Contamination in Lakes Erie and Ontario, (Table 1) 2002, Journal of Great Lakes Research Volume 28(3) pages 437-450 by Christopher H. Marvin et al) may be disposed of in the open lake.
- c. Sand and gravel suitable for nearshore disposal shall not be entombed by any structure, but should be removed prior to construction, and placed in the littoral system, downdrift of the project site.

#### D. GENERAL

- 1) NWPs cannot be combined to increase any of the aforementioned limitations.
- 2) Ohio state certification for the use of any NWP to authorize the activities associated with the construction and or development of new mitigation banks that do not possess a mitigation banking agreement signed by the director of Ohio EPA is denied. Banks that have been approved for operation by the director of Ohio EPA may utilize NWPs for approved activities.
- 3) Authorization under this Certification does not relieve the permittee from the responsibility of obtaining any other federal, state or local permits, approvals or authorizations required by law, including without limitation, National Pollutant Discharge Elimination System (NPDES) permits including general or individual stormwater permits, or Permits to Install (PTIs).
- 4) In nationwide permits where the district engineer has been granted authority to waive certain requirements, the corresponding limitations and conditions of this certification shall apply unless written authorization from the director of Ohio EPA is obtained to authorize additional impacts.
- 5) To the extent that this condition does not conflict with the Construction General Storm Water Permit in effect at the time of application, peak rates of runoff from an area after development may be no greater than the peak rates of runoff from the same area before development for all twenty-four-hour storms from one to one-hundred-year frequency.
- 6) To the extent that this condition does not conflict with the Construction General Storm Water Permit in effect at the time of application, locally required post development stormwater ponds shall incorporate specific design features for water quality such as those listed in Ohio's Rainwater and Land Development, Ohio's Standards for Storm Water Management, Land Development and Urban Stream Protection, 3"d Edition (2006),

available at <a href="http://www.dnr.state.oh.us/soilandwater/Rainwater.htm">http://www.dnr.state.oh.us/soilandwater/Rainwater.htm</a>, to the extent allowed by local stormwater requirements. These features include, but are not limited to, infiltration trenches, extended detention, wet pools, forebays, aquatic benches and vegetated shallows, optimum flow length, reverse flow pipe, optimum pool depth, shading and buffer plants, and runoff reuse.

7) To the extent that this condition does not conflict with the Construction General Storm Water Permit in effect at the time of application, the Best Management Practices (BMPs) listed below shall be utilized with all NWPs when applicable.

- a. Only suitable material, free of toxic contaminants in other than trace quantities, shall be used as fill material;
- b. The use of asphalt and rubber tires as fill is prohibited under this permit;
- c. Upon the cessation of temporary impacts authorized under a NWP, any hydric topsoil removed from a trench shall be separated and saved for later placement as the topmost back fill layer when the trench is refilled;
- d. The stockpiling of side-cast dredged material in wetlands in excess of three months is not authorized;
- e. The applicant shall comply with all final stabilization requirements contained in applicable NPDES construction stormwater permits for the site;
- f. Construction equipment shall not be placed below the Ordinary High Water Mark (OHWM) of any surface water, except when no other alternative is practicable;
- g. All dredged material placed at an upland site shall be controlled so that sediment runoff to adjacent surface waters is minimized to the maximum extent practicable; and,
- h. BMPs shall be installed and maintained to minimize sediment runoff to adjacent surface waters.
- 8) Representatives from Ohio EPA, Division of Surface Water will be allowed to inspect the authorized activity at any time deemed necessary to insure that it is being or has been accomplished in accordance with the terms and conditions of this water quality certification. This includes, but is not limited to, access to and copies of any records any records that must be kept under the conditions of this certification; and, authorization to sample and/or monitor any discharge activity or mitigation site. Ohio EPA will make a reasonable attempt to notify the applicant of its intention to inspect the site in advance of that inspection.