

**REVIEW OF DRAINAGE FACILITIES**

PRIOR TO THE START OF WORK AND AGAIN BEFORE FINAL ACCEPTANCE, PERFORM AN INSPECTION WITH REPRESENTATIVES OF THE DEPARTMENT, CONTRACTOR AND LOCALS OF ALL EXISTING DRAINAGE FACILITIES THAT ARE TO REMAIN IN SERVICE WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCES IS DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTION ARE MAINTAINED BY THE DEPARTMENT.

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.

CONFIRM ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE-MENTIONED PARTIES ARE MAINTAINED AND LEFT IN A CONDITION COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. THE CONTRACTOR IS RESPONSIBLE TO CORRECT ANY CHANGE IN THE CONDITION RESULTING FROM THEIR OPERATIONS AS DIRECTED AND APPROVED BY THE ENGINEER.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE IS INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 611 CONDUIT ITEMS.

**CROSSINGS AND CONNECTIONS TO EXISTING PIPES AND UTILITIES**

WHERE PLANS PROVIDE FOR A PROPOSED CONDUIT TO BE CONNECTED TO, OR CROSS OVER OR UNDER AN EXISTING SEWER OR UNDERGROUND UTILITY, LOCATE THE EXISTING PIPES OR UTILITIES BOTH AS TO LINE AND GRADE BEFORE STARTING TO LAY THE PROPOSED CONDUIT.

IF IT IS DETERMINED THAT THE ELEVATION OF THE EXISTING CONDUIT, OR EXISTING APPURTENANCE TO BE CONNECTED, DIFFERS FROM THE PLAN ELEVATION OR RESULTS IN A CHANGE IN THE PLAN CONDUIT SLOPE, NOTIFY THE ENGINEER BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WILL BE AFFECTED BY THE VARIANCE IN THE EXISTING ELEVATIONS.

IF IT IS DETERMINED THAT THE PROPOSED CONDUIT WILL INTERSECT AN EXISTING SEWER OR UNDERGROUND UTILITY IF CONSTRUCTED AS SHOWN ON THE PLAN, NOTIFY THE ENGINEER BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WOULD BE AFFECTED BY THE INTERFERENCE WITH AN EXISTING FACILITY.

PAYMENT FOR ALL THE OPERATIONS DESCRIBED ABOVE IS INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 611 CONDUIT ITEM.

**EXISTING SUBSURFACE DRAINAGE**

PROVIDE UNOBSTRUCTED OUTLETS FOR ALL EXISTING UNDERDRAINS OR AGGREGATE DRAINS ENCOUNTERED DURING CONSTRUCTION.

PROVIDE AN OUTLET PER STANDARD CONSTRUCTION DRAWING DM-1.1 FOR ALL UNDERDRAINS THAT OUTLET TO A SLOPE.

UNDERDRAINS THAT CAN BE CONNECTED TO THE NEW OR EXISTING UNDERDRAINS AT THE END OF THE PROJECT LIMITS AS WELL AS ALL NECESSARY BENDS OR BRANCHES REQUIRED FOR CONNECTION ARE INCLUDED IN THE BASIS OF PAYMENT FOR UNCLASSIFIED PIPE UNDERDRAINS.

**ITEM 613 - LOW STRENGTH MORTAR BACKFILL**

IF ANY OF THE SLIDES HAVE PROGRESSED TO THE POINT WHERE VOIDS ARE CREATED UNDER THE PAVEMENT, LOW STRENGTH MORTAR BACKFILL (LSM) SHOULD BE USED TO FILL THESE VOIDS. FORMS SHOULD BE PLACED TO MAKE SURE THE LSM DOES NOT RUN DOWN THE EMBANKMENT AND THE VOIDS ARE FILLED COMPLETELY. THE UNDERDRAINS SHOULD BE CHECKED, IF POSSIBLE, TO MAKE SURE THEY ARE STILL IN WORKING ORDER AND CARE SHALL BE TAKEN AS TO NOT DAMAGE THEM DURING THE POURING OF LSM AND OTHER CONSTRUCTION ACTIVITIES (SEE "EXISTING SUBSURFACE DRAINAGE" NOTE).

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE WORK NOTED ABOVE:

ITEM 613 - LOW STRENGTH MORTAR BACKFILL = 10 CY

**FENCE LENGTHS**

THE LENGTHS OF FENCE SHOWN IN THE PLANS ARE HORIZONTAL DIMENSIONS. MEASUREMENTS OF THE FINAL QUANTITIES WILL BE IN ACCORDANCE WITH ITEM 607.

**BENCHING OF FOUNDATION SLOPES**

ALTHOUGH CROSS-SECTIONS INDICATE SPECIFIC DIMENSIONS FOR PROPOSED BENCHING OF THE EMBANKMENT FOUNDATIONS IN CERTAIN AREAS, NO WAIVER OF THE SPECIFICATIONS IS INTENDED. BENCH ALL OTHER SLOPED EMBANKMENT AREAS AS SET FORTH IN SECTION 203.05 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS (C&MS). NO ADDITIONAL PAYMENT WILL BE MADE FOR BENCHING REQUIRED UNDER THE PROVISIONS OF SECTION 203.05.

**PAVEMENT RESTORATION FOR DRAINAGE STRUCTURE INSTALLATIONS**

THE FOLLOWING QUANTITY IS PROVIDED FOR PAVEMENT RESTORATION FOLLOWING INSTALLATION OF ITEM 611, DRAINAGE STRUCTURES.

ITEM 301, ASPHALT CONCRETE BASE, PG64-22 = 1 CY

THE ABOVE QUANTITY IS BASED ON A 301 THICKNESS OF 14 INCHES AND A WIDTH OF 1 FOOT AROUND THE PERIMETER OF THE DRAINAGE STRUCTURE.

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

**ITEM SPECIAL, MISC.: PLATE PILES  
DESCRIPTION OF WORK**

THIS ITEM OF WORK PROVIDES SLOPE STABILIZATION BY USING A PROPRIETARY AND PATENTED SLOPE REINFORCEMENT TECHNOLOGY (METHOD). THE PATENTED GEOPIER SRT SYSTEM (PLATE PILES) USES AN ARRAY OF STEEL PILES DRIVEN INTO THE SLOPE IN STAGGERED AND UNIFORMLY SPACED ROWS. A PRELIMINARY PLATE PILE DESIGN AND LAYOUT IS SUMMARIZED IN TABLE 1 AND ADDITIONAL DETAILS ARE PROVIDED IN FIGURES 1 AND 2. THE CONTRACTOR SHALL CONTACT THE BELOW COMPANY TO COORDINATE THE FINAL SLOPE STABILIZATION WORK:

GEOPIER FOUNDATION COMPANY  
 GEOPIER SRT SYSTEM  
 130 HARBOUR PLACE DRIVE, SUITE 280  
 DAVIDSON, NC 28036

THE GEOPIER SRT SYSTEM (PLATE PILES) IS A DESIGN/BUILD PRODUCT AND SHALL BE PER THE RECOMMENDATIONS OF THE GEOPIER FOUNDATION COMPANY. GEOPIER WILL FINALIZE THE DESIGN.

IN ADDITION TO THE SLOPE STABILIZATION WORK, THE CONTRACTOR WILL REGRADE THE SLOPE TO PROVIDE A UNIFORM SURFACE PRIOR TO THE INSTALLATION OF THE PLATE PILES AS NOTED IN THE PLANS. THIS SHALL BE TO THE SATISFACTION OF THE PROJECT ENGINEER. QUANTITIES FOR ITEM 203, EXCAVATION, AND ITEM 203 EMBANKMENT, HAVE BEEN INCLUDED IN THE PLANS FOR THIS WORK.

PER THE PROVIDED CONCEPTUAL DETAILS, THE PLATE PILES WILL BE INSTALLED 4-FEET ON-CENTER IN THE HORIZONTAL DIRECTION (I.E. PARALLEL TO THE ROADWAY) AND 7- FEET ON-CENTER IN THE VERTICAL DIRECTION (I.E. PERPENDICULAR TO THE ROADWAY). PLATE PILE ROWS SHOULD BE STAGGERED TO ALIGN EACH PLATE BETWEEN THE PLATES OF THE UPPER ROW. THE FIRST ROW OF PLATE PILES SHOULD BE INSTALLED NEAR THE HEAD OF THE SLOPE AND SUBSEQUENT ROWS DOWNSLOPE SHOULD BE SPACED AS INDICATED.

FOLLOWING THE INSTALLATION OF THE PLATE PILES, THE CONTRACTOR WILL REGRADE ANY AREAS DISTURBED DURING PLATE PILE INSTALLATION PRIOR TO INSTALLING EROSION CONTROL MEASURES. THIS EMBANKMENT AND REGRADING WORK SHALL BE AS NOTED IN THE PLANS AND TO THE SATISFACTION OF THE PROJECT ENGINEER. QUANTITIES FOR ITEM 203, EXCAVATION, AND ITEM 203, EMBANKMENT, HAVE BEEN INCLUDED IN THE PLANS FOR THIS WORK.

FOLLOWING THE INSTALLATION OF THE PLATE PILES AND THE REGRADING OF THE STABILIZED SLOPE, EROSION CONTROL AND VEGETATIVE PLANTING MUST BE PROVIDED BY THE CONTRACTOR TO ENSURE A FULLY FUNCTIONING SLOPE STABILIZATION SYSTEM.

**MATERIALS**

PLATE PILES SHALL BE CONSTRUCTED OF STEEL S3x5.7 S-SHAPES, Fy = 50 KSI, AND SHALL BE A MINIMUM OF 0.25 IN. THICK.

**METHOD OF MEASUREMENT**

THE DEPARTMENT WILL MEASURE THE QUANTITY OF AREA REPAIRED UTILIZING THE PLATE PILES AS TOTAL SQUARE YARDS MEASURED IN THE FIELD BASED ON THE AREAS DESIGNATED IN THE PLANS. THE REPAIRED AREA IS TO BE MEASURED ALONG THE SLOPE.

**BASIS OF PAYMENT**

THE ESTIMATED QUANTITY ON SHEET 8 HAS BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE ABOVE NOTED WORK.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE, UNLESS NOTED OTHERWISE, SHALL BE INCLUDED IN THE UNIT PRICE FOR THE PERTINENT 690 ITEMS.

SLIDE AREAS STATIONING		PILE LENGTH	UPSLOPE SPACING	PLATE DIMENSIONS	ESTIMATED PILE COUNT
FROM	TO	FT	FT	IN x IN x IN	EACH
495+50.00	497+75.00	10'	7'	40 x 12 x ¼"	427

SLIDE AREA LIMITS DEPICTED IN PLAN SHEETS

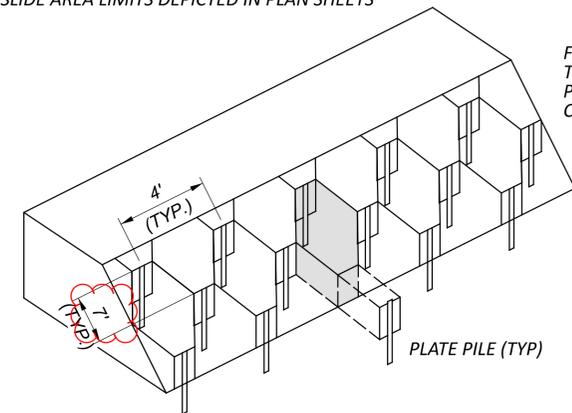


FIGURE 1  
TYPICAL PLATE PILE CONFIGURATION

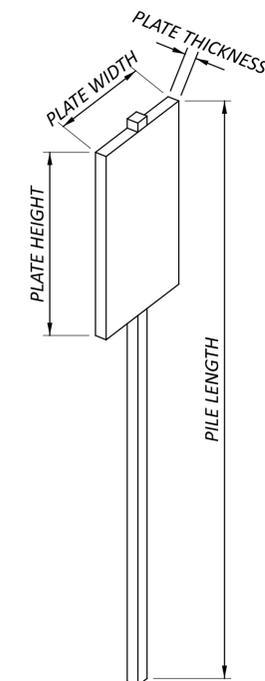


FIGURE 2  
PLATE PILE DETAIL

DESIGN AGENCY



DESIGNER

KCO

REVIEWER

AC 01-17-23

PROJECT ID

114235

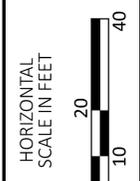
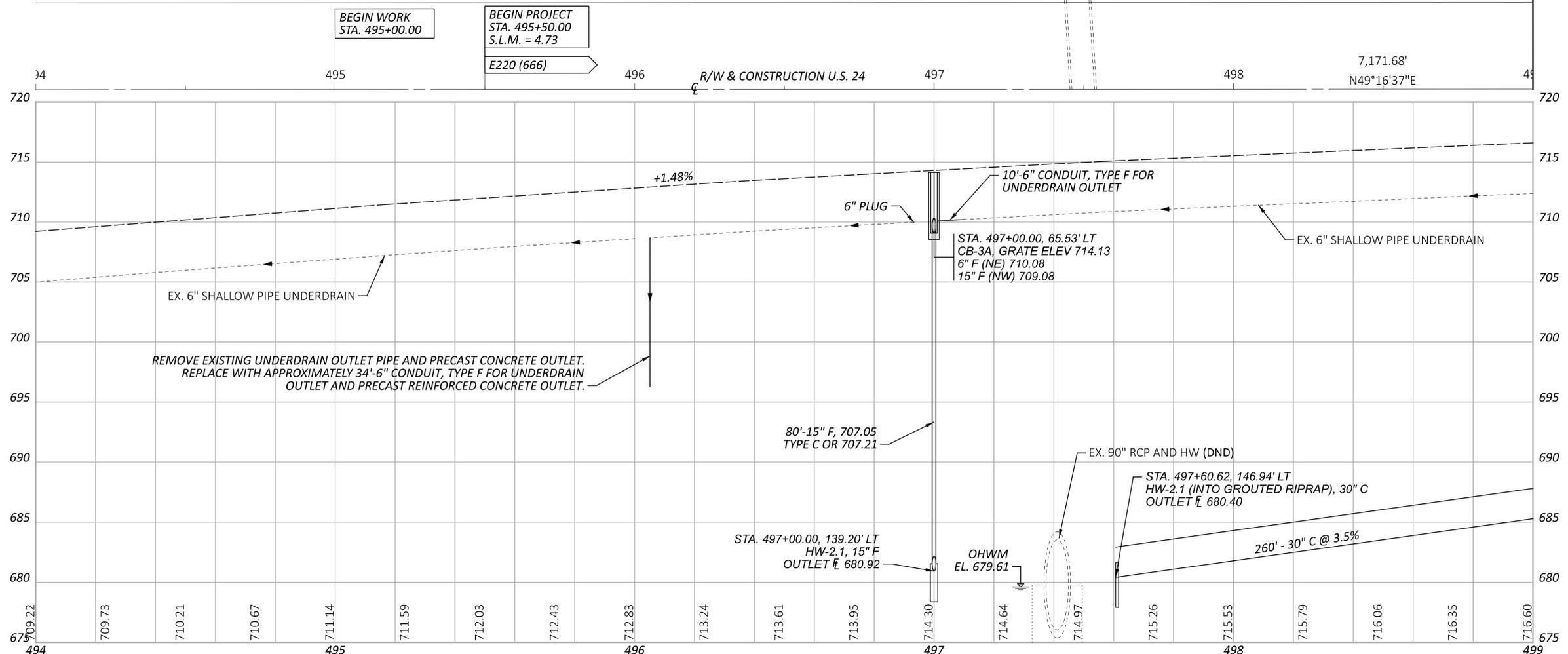
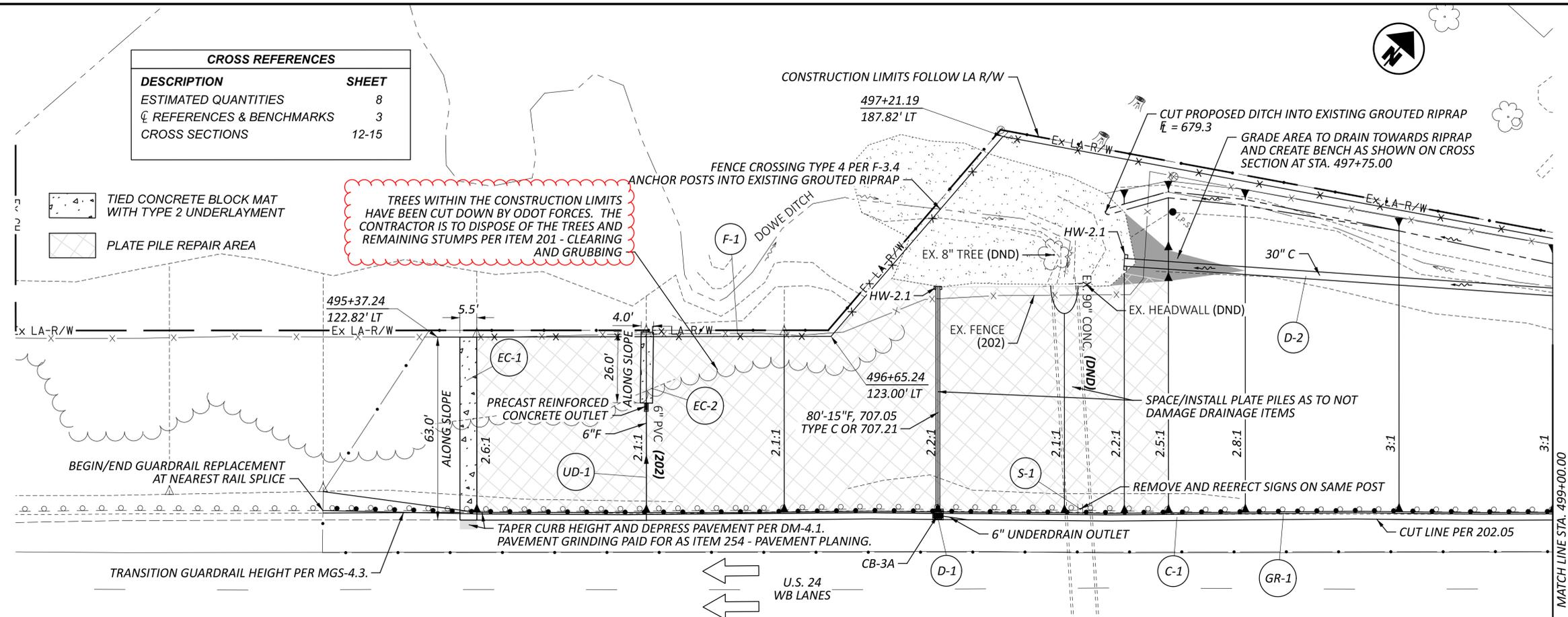
SHEET

P.4

TOTAL

38

CROSS REFERENCES	
DESCRIPTION	SHEET
ESTIMATED QUANTITIES	8
☐ REFERENCES & BENCHMARKS	3
CROSS SECTIONS	12-15



PLAN AND PROFILE  
 STA. 494+00.00 TO STA. 499+00.00

DESIGN AGENCY	
DESIGNER	KCO
REVIEWER	MJM 01-25-23
PROJECT ID	114235
SHEET	P.10
TOTAL	38