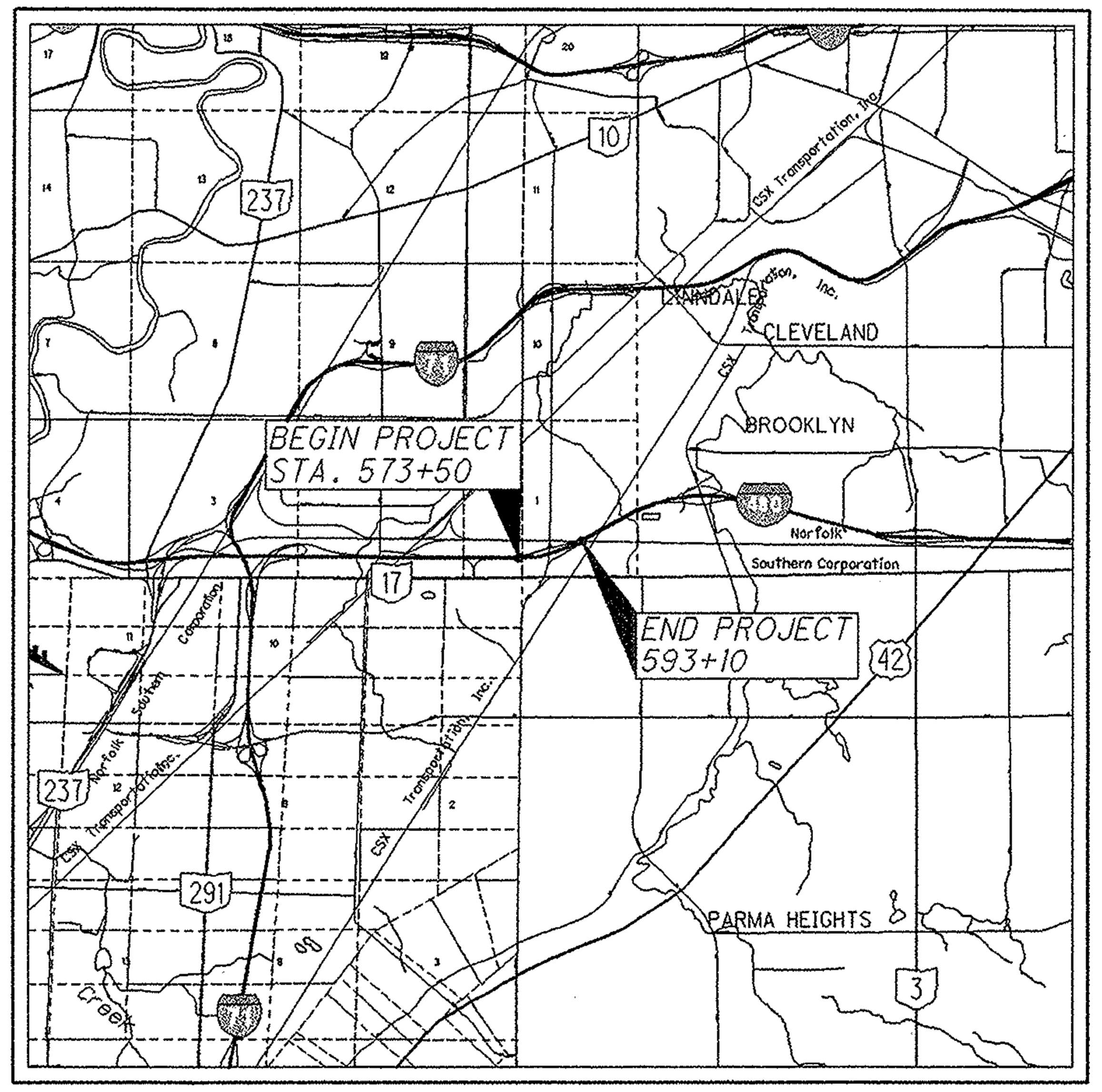

LOCATION MAP

LATITUDE: 41°25'15" LONGITUDE: 81°46'49"

SCALE IN MILES

0 1 2 3 4

N

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

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

CUY-480-10.36
RAMPS

CITY OF BROOK PARK
CITY OF CLEVELAND
CUYAHOGA COUNTY

INDEX OF SHEETS:

PROJECT DESCRIPTION

RECONSTRUCTION OF PAVEMENT ON RAMPS AT THE INTERCHAnGE OF I-480 AND W.130TH. WORK INCLUDES PAVEMENT, SUB-SURFACE DRAINAGE AND CURB RAMPS. TOTAL PROJECT LENGTH IS: 1960 FT.

PROJECT EARTH DISTURBED AREA:	4.0 ACRES
ESTIMATED CONTRACTOR EARTH DISTRUBED AREA:	0.50 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA:	4.50 ACRES

LIMITED ACCESS

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

2008 SPECIFICATIONS

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

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY EXCEPT AS NOTED ON SHEETS 13-18, AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

DESIGN DESIGNATION

	I-480	RAMP W-1	RAMP W-2	RAMP W-3
CURRENT ADT (2010)	139230	6100	6720	8560
DESIGN YEAR ADT (2030)	142810	6100	7170	8560
DESIGN HOURLY VOLUME (2030)	14281	610	717	856
DIRECTIONAL DISTRIBUTION	0.53	1.00	1.00	1.00
TRUCKS (24 HOUR B&C)	0.10	0.07	0.05	0.08
DESIGN SPEED	60 MPH	VARIES	VARIES	VARIES
LEGAL SPEED	60 MPH	VARIES	VARIES	VARIES

DESIGN FUNCTIONAL CLASSIFICATION:
URBAN INTERSTATE
NHS PROJECT

DESIGN EXCEPTIONS

NONE REQUIRED

UNDERGROUND UTILITIES
CONTACT BOTH SERVICES
CALL TWO WORKING DAYS
BEFORE YOU DIG
CALL
1-800-362-2764
(TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY
OIL & GAS PRODUCERS PROTECTIVE
SERVICE CALL: 1-800-925-0988

PLAN PREPARED BY:

DISTRICT 12 PRODUCTION
OHIO DEPARTMENT OF
TRANSPORTATION

ENGINEERS SEAL:

STATE OF OHIO
JASON THOMAS WISE
E-72224
REGISTERED
PROFESSIONAL ENGINEER

SIGNED: J.W.
DATE: 1-20-09

STANDARD CONSTRUCTION DRAWINGS

								SUPPLEMENTAL SPECIFICATIONS
BP-1.1	7/28/00	GR-2.1	1/16/04	TC-65.10	1/21/05			800-2008
BP-2.1	7/18/08	GR-3.2	1/19/07	TC-65.11	1/21/05			4/17/09
BP-2.2	7/18/08	GR-4.2	1/19/07	TC-71.10	1/19/07			832 5/05/09
BP-2.3	7/16/04			TC-72.20	1/21/05			
BP-5.1	7/28/00	HW-2.1	4/21/06	TC-73.10	1/19/01			
BP-6.1	7/28/00	HW-2.2	4/21/06	TC-82.10	4/19/02			
BP-7.1	1/19/07							
		RM-4.2	10/19/07					
CB-2.1	7/15/05							
		MT-98.29	10/19/07					SPECIAL PROVISIONS
DM-1.1	4/21/06	MT-101.60	9/20/06					
DM-1.2	10/21/05	MT-101.70	10/18/02					
DM-1.3	7/20/01	MT-105.10	10/18/02					
DM-1.4	4/21/06	MT-105.11	10/18/02					
GR-1.1	7/16/04	TC-61.10	1/19/01					

APPROVED [signature] PE
DATE 1/21/09 DISTRICT DEPUTY DIRECTOR

APPROVED Jolene M. Molitoris
DATE 6-16-09 DIRECTOR, DEPARTMENT OF TRANSPORTATION

FEDERAL PROJECT NO. E 090 (757)

PID NO. 84483

CONSTRUCTION PROJECT NO.

RAILROAD INVOLVEMENT NONE

CUY-480-10.36 RAMPS

CUY - IR-480-10.36
091089 PID - 84483
Dist 12 7/29/2009

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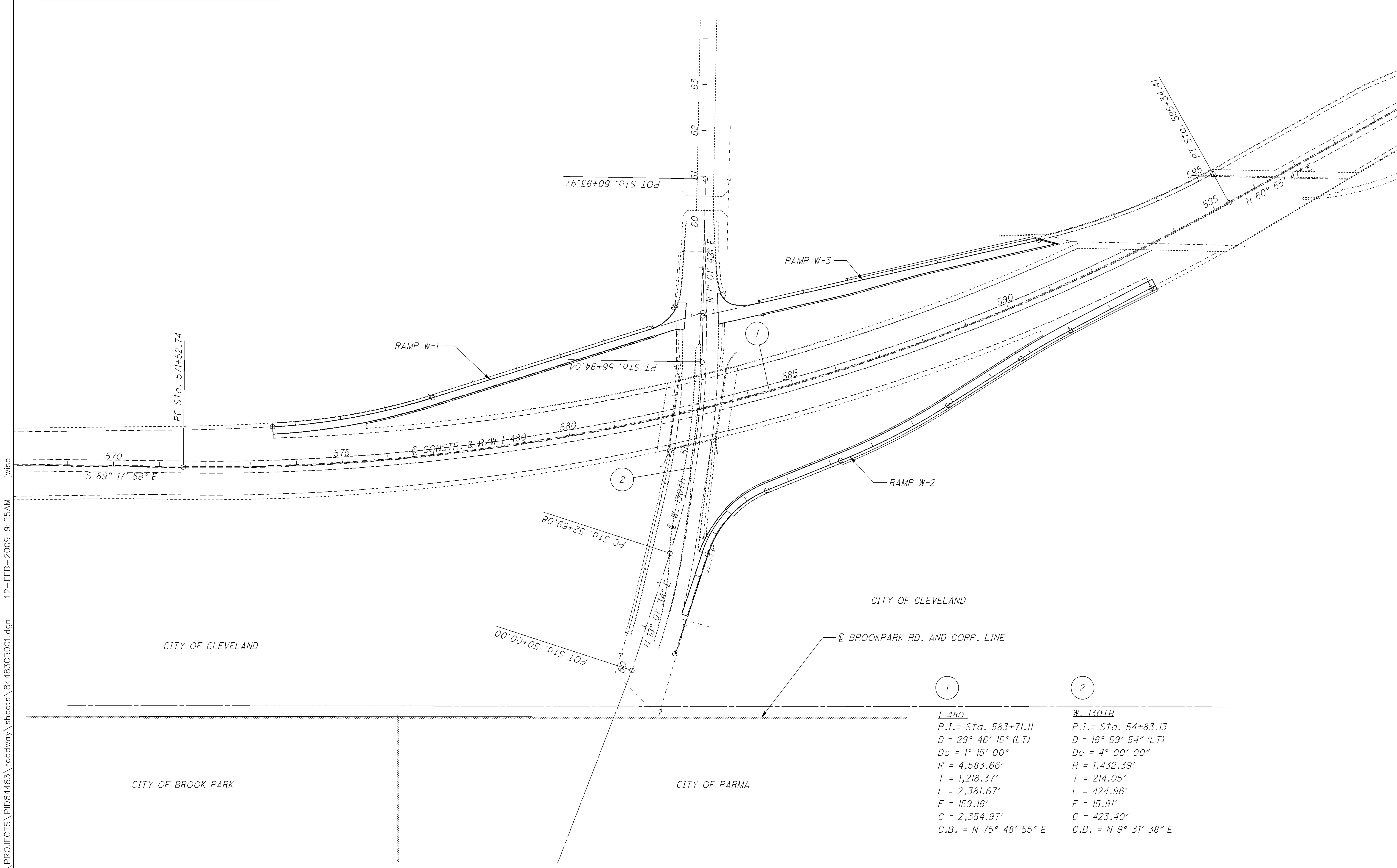
REFERENCE MONUMENT LOCATIONS

STATION	LOCATION
PC 571+52.74	℄ I-480
580+00	76′ RT. & LT. ℄ I-480
590+00	76′ RT. & LT. ℄ I-480
P.T. 595+34.41	85′ LT ℄ I-480



1	2
I-480	W. 130TH
P.I.= Sta. 583+71.11	P.I.= Sta. 54+83.13
D = 29° 46′ 15″ (LT)	D = 16° 59′ 54″ (LT)
Dc = 1° 15′ 00″	Dc = 4° 00′ 00″
R = 4,583.66′	R = 1,432.39′
T = 1,218.37′	T = 214.05′
L = 2,381.67′	L = 424.96′
E = 159.16′	E = 15.91′
C = 2,354.97′	C = 423.40′
C.B. = N 75° 48′ 55″ E	C.B. = N 9° 31′ 38″ E

0 50 100 200
HORIZONTAL SCALE IN FEET

CALCULATED JTW
CHECKED

SCHEMATIC PLAN

CUY-480-10.36
RAMPS

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3
RAMP W-1
P.I.= Sta. 575+29.15
D = 14° 15' 29" (LT)
Dc = 4° 00' 00"
R = 1,432.39'
T = 179.15'
L = 356.45'
E = 11.16'
C = 355.53'
C.B. = N 79° 40' 25" E

4
RAMP W-2
P.I.= Sta. 582+57.55
D = 50° 00' 04" (RT)
Dc = 25° 25' 35"
R = 225.34'
T = 105.08'
L = 196.65'
E = 23.30'
C = 190.47'
C.B. = N 43° 01' 34" E

5
RAMP W-2
P.I.= Sta. 586+55.33
D = 10° 33' 40" (LT)
Dc = 4° 00' 00"
R = 1,432.39'
T = 132.39'
L = 264.03'
E = 6.11'
C = 263.66'
C.B. = N 62° 44' 44" E

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0 25 50 100
HORIZONTAL
SCALE IN FEET

CALCULATED
JTW
CHECKED

SCHEMATIC PLAN

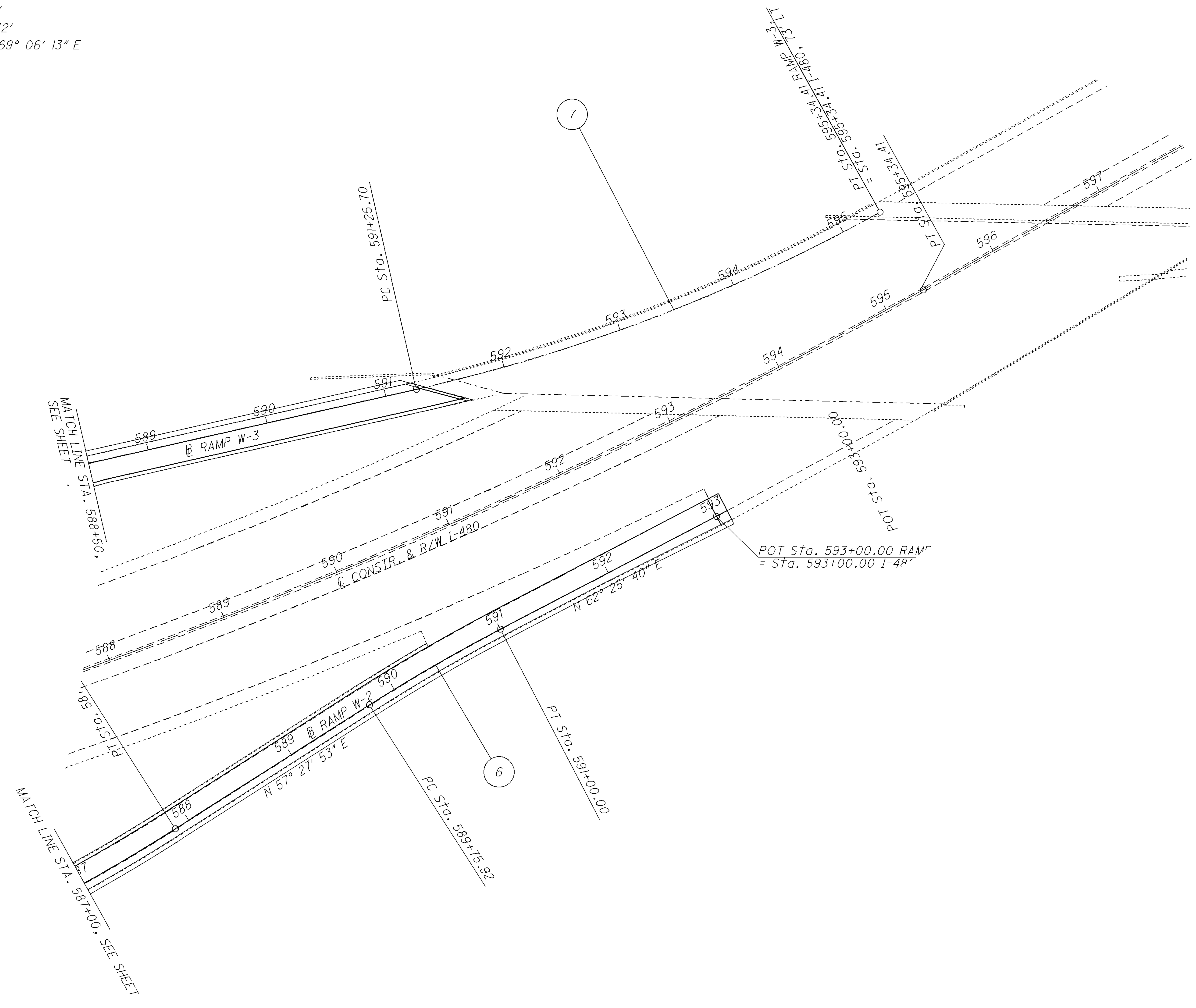
CUY-480-10.36
RAMPS

6

RAMP W-2
P.I.= Sta. 590+38.00
D = 4° 57′ 48″ (RT)
Dc = 4° 00′ 00″
R = 1,432.39′
T = 62.08′
L = 124.08′
E = 1.34′
C = 124.04′
C.B. = N 59° 56′ 47″ E

7

RAMP W-3
P.I.= Sta. 593+31.45
D = 16° 20′ 54″ (LT)
Dc = 4° 00′ 00″
R = 1,432.39′
T = 205.75′
L = 408.70′
E = 14.70′
C = 407.32′
C.B. = N 69° 06′ 13″ E



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0 25 50 100
HORIZONTAL SCALE IN FEET

CALCULATED JTW
CHECKED

SCHEMATIC PLAN

CUY-480-10.36 RAMPS

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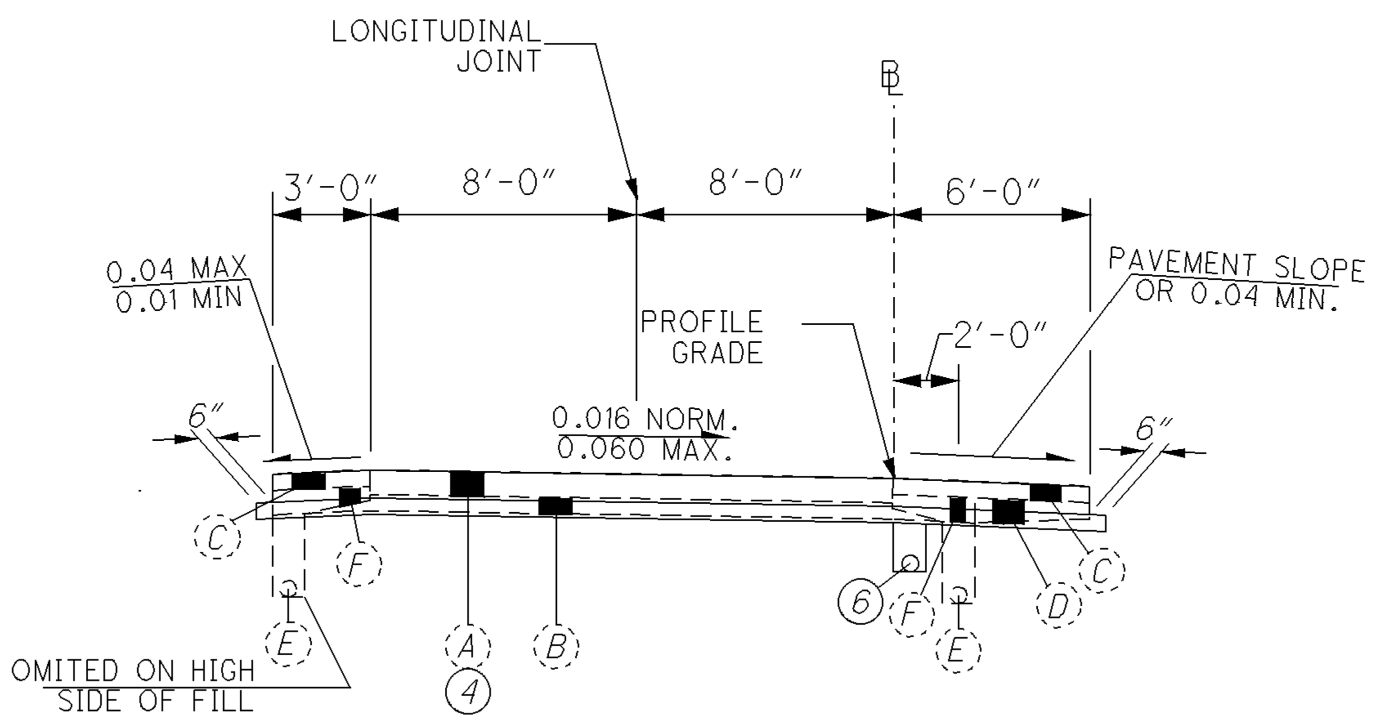
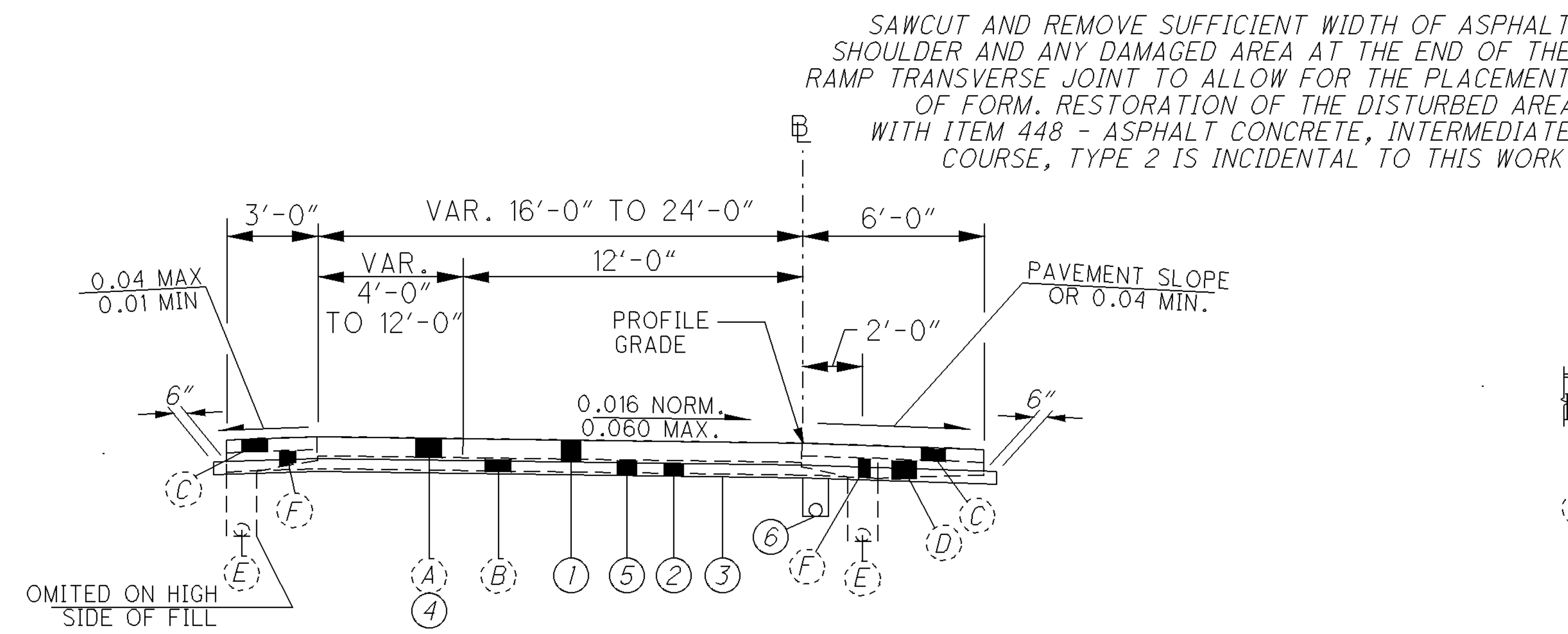
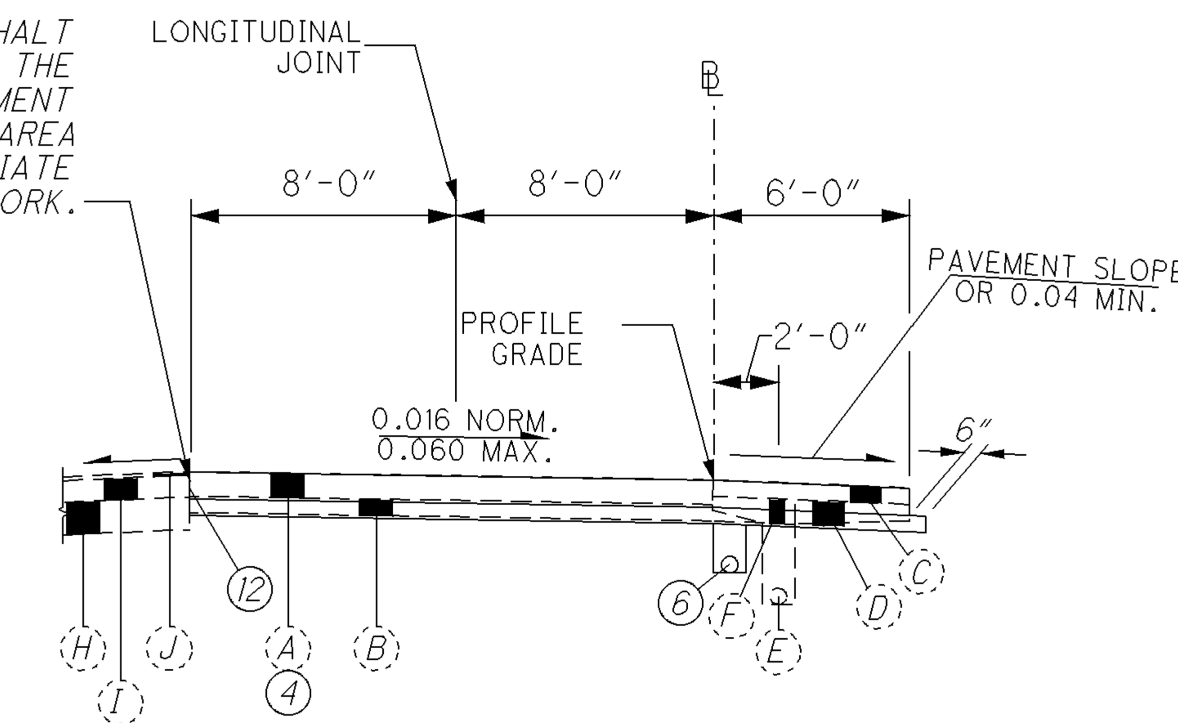


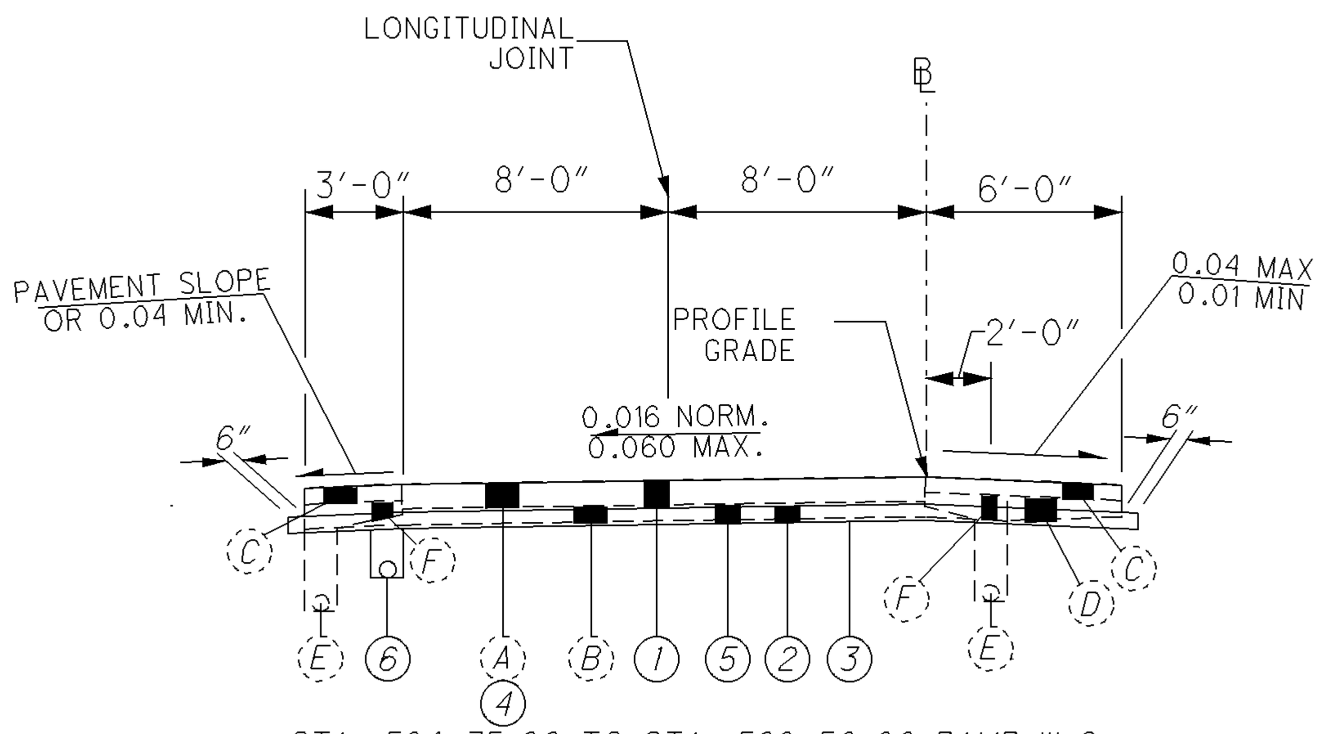
STA. 575+53.00 TO STA. 582+04.50 RAMP W-1
STA. 582+52.48 TO STA. 584+76.00 RAMP W-2
STA. 588+50.00 TO STA. 590+42.00 RAMP W-2
STA. 588+60.00 TO STA. 591+35.50 RAMP W-3



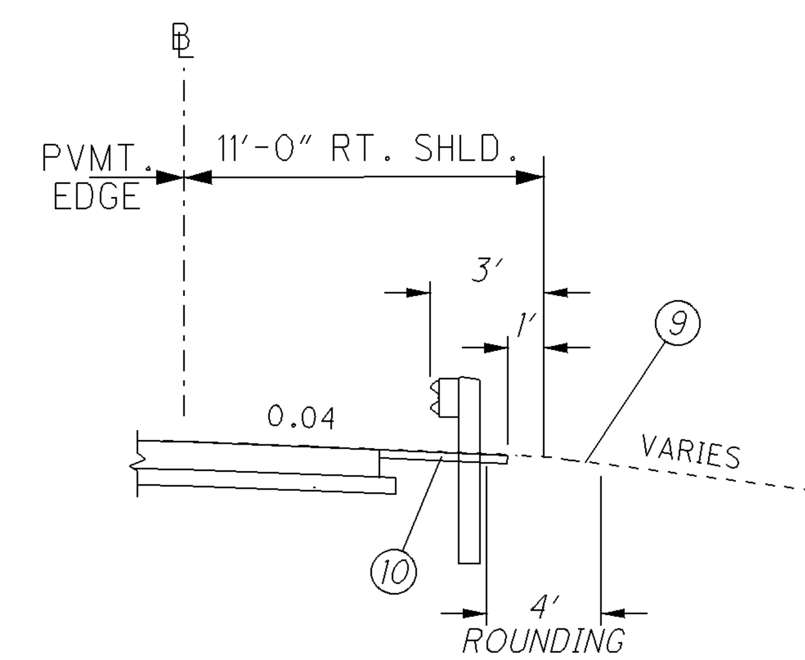
STA. 585+04.00 TO STA. 588+60.00 RAMP W-3

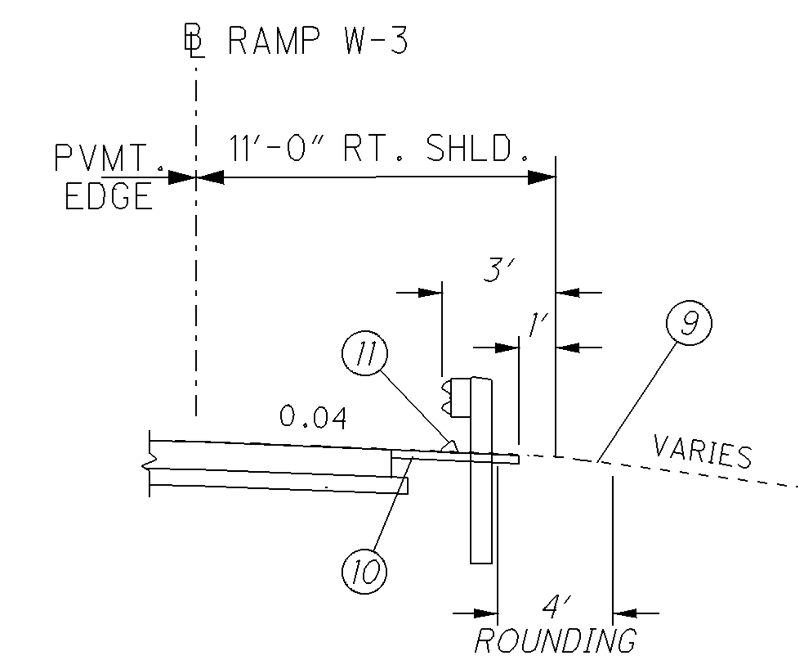


STA. 573+50.00 TO STA. 575+53.00 RAMP W-1
STA. 590+42.00 TO STA. 593+10.00 RAMP W-2

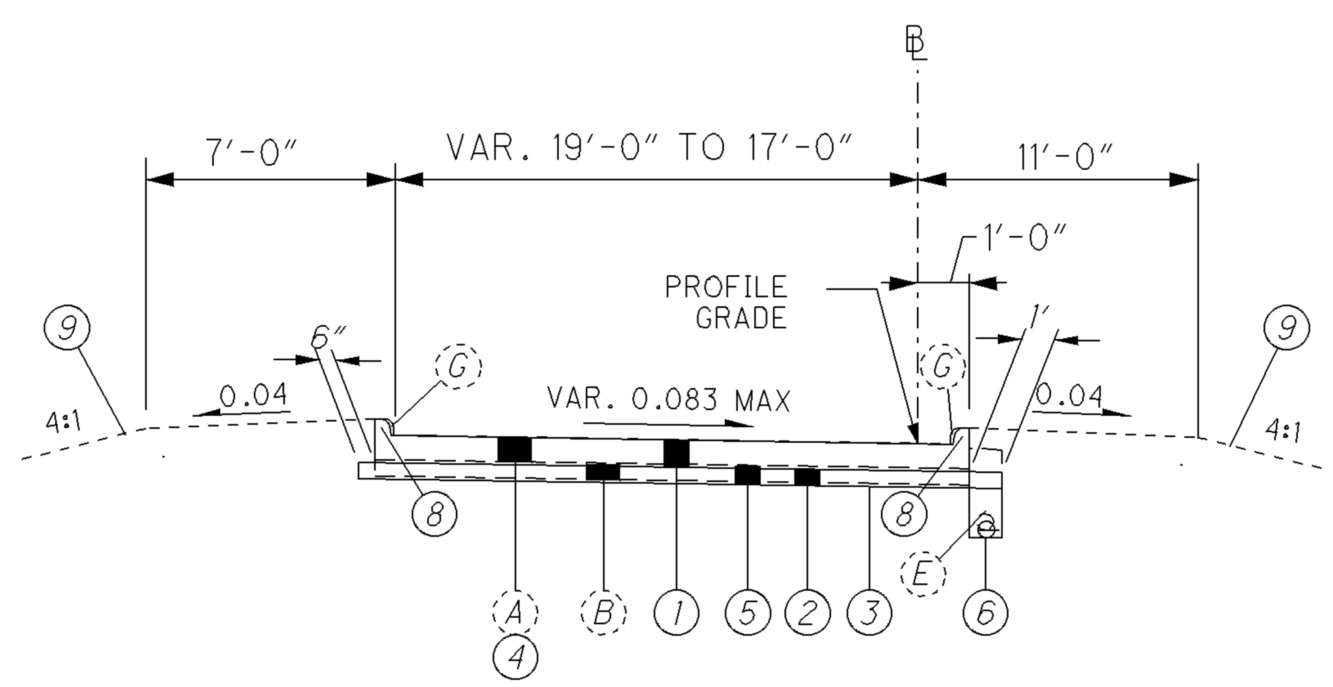


STA. 584+75.00 TO STA. 588+50.00 RAMP W-2
STA. 592+54.55 TO STA. 593+00.00 RAMP W-2

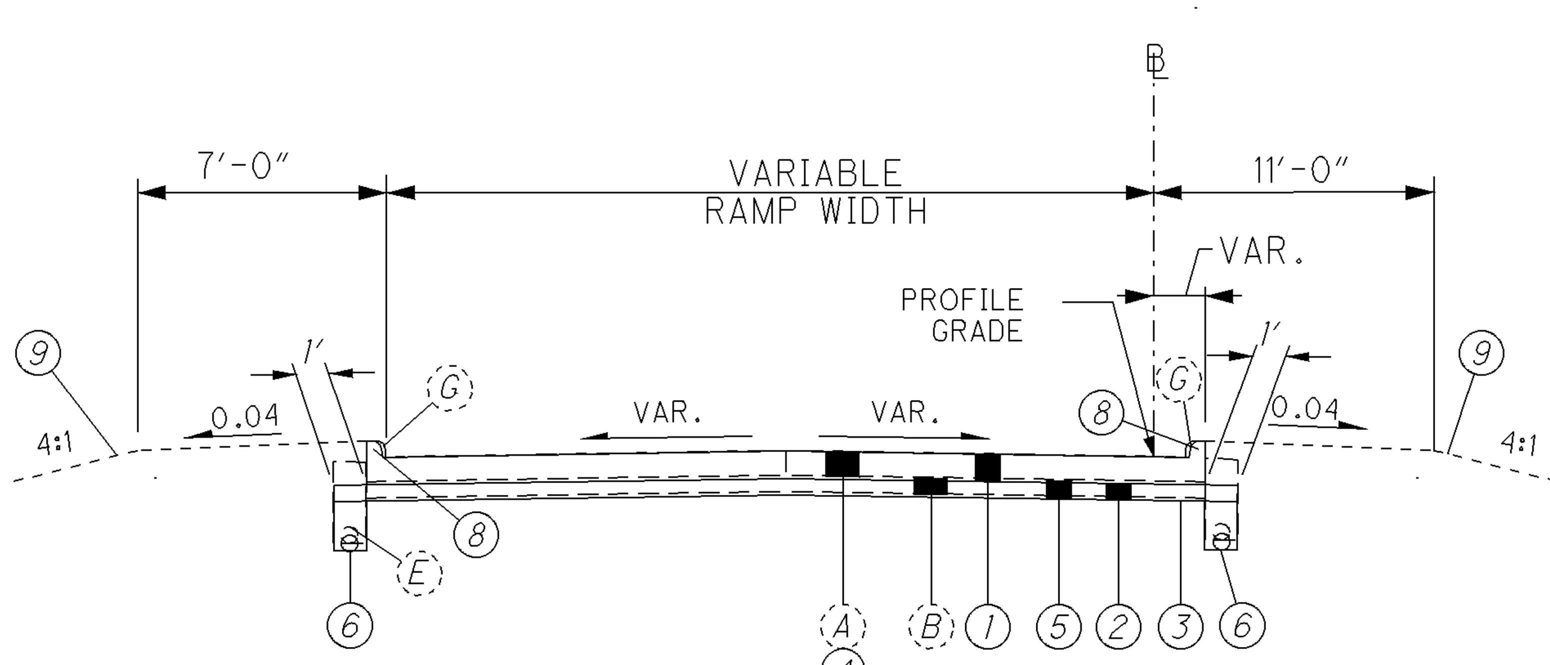




STA. 586+92.00 TO STA. 591+42.00 RAMP W-3



STA. 581+52.48 TO STA. 582+52.48 RAMP W-2



STA. 582+04.50 TO STA. 582+81.00 RAMP W-1
STA. 584+07.20 TO STA. 585+04.00 RAMP W-3

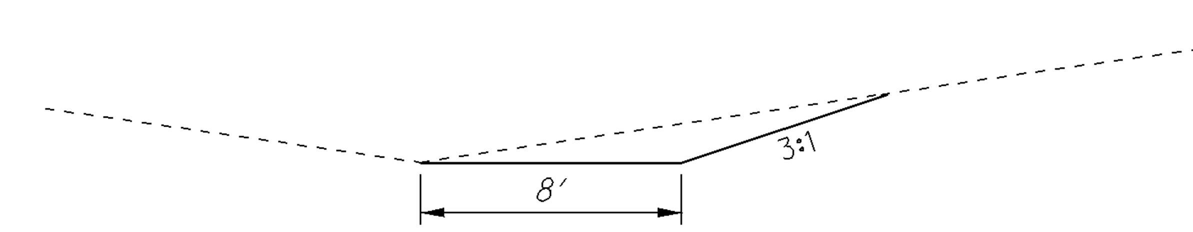
PROPOSED LEGEND

1. ITEM 452 - NON-REINFORCED CONCRETE PAVEMENT (T=10")
2. ITEM 304 - AGGREGATE BASE (T=6")
3. ITEM 204 - SUBGRADE COMPACTION
4. ITEM 202 - PAVEMENT REMOVED
5. ITEM 203 - EXCAVATION
6. ITEM 605 - 6" BASE PIPE UNDERDRAIN (18" NORMAL DEPTH), (50" FOR DEEP)
7. ITEM 606 - GUARDRAIL, TYPE 5
8. ITEM 609 - CURB, TYPE 6, APP
9. ITEM 659 - SEEDING AND MULCHING
10. ITEM 448 - ASPHALT CONCRETE, MISC.: UNDER GUARDRAIL
11. ITEM 609 - ASPHALT CONCRETE CURB, TYPE 1
12. ITEM 255 - FULL DEPTH PAVEMENT SAWING

EXISTING LEGEND

- A ITEM 451 - 9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT
- B ITEM 310 - 6" SUBBASE, TYPE 2
- C ITEM 301 - 6" BITUMINOUS AGGREGATE BASE
- D ITEM 310 - SUBBASE
- E SPECIAL DRAINAGE CONNECTION, USING No. 8 AGGREGATE
- F ITEM 605 - 6" UNDERDRAIN, SHALLOW 30" - DEEP 50" COVER
- G ITEM 609 - 6x7 INTEGRAL CURB
- H ITEM 304 - 12" AGGREGATE BASE
- I ITEM 302 - 8" BITUMINOUS AGGREGATE BASE
- J ITEM 446 - 1-1/4" ASPHALT CONCRETE SURFACE COURSE

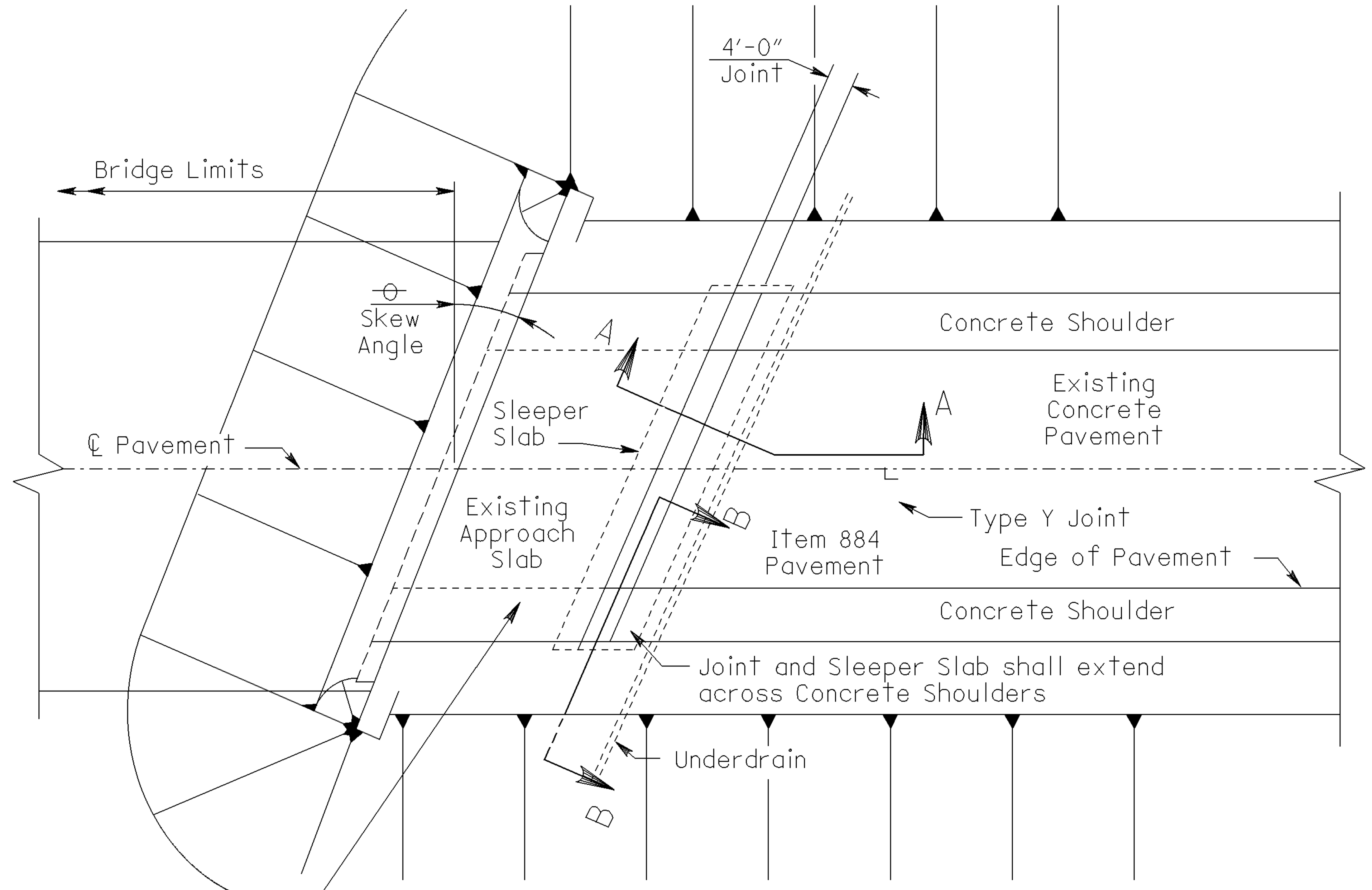
VEGETATED BIOFILTER - DITCH



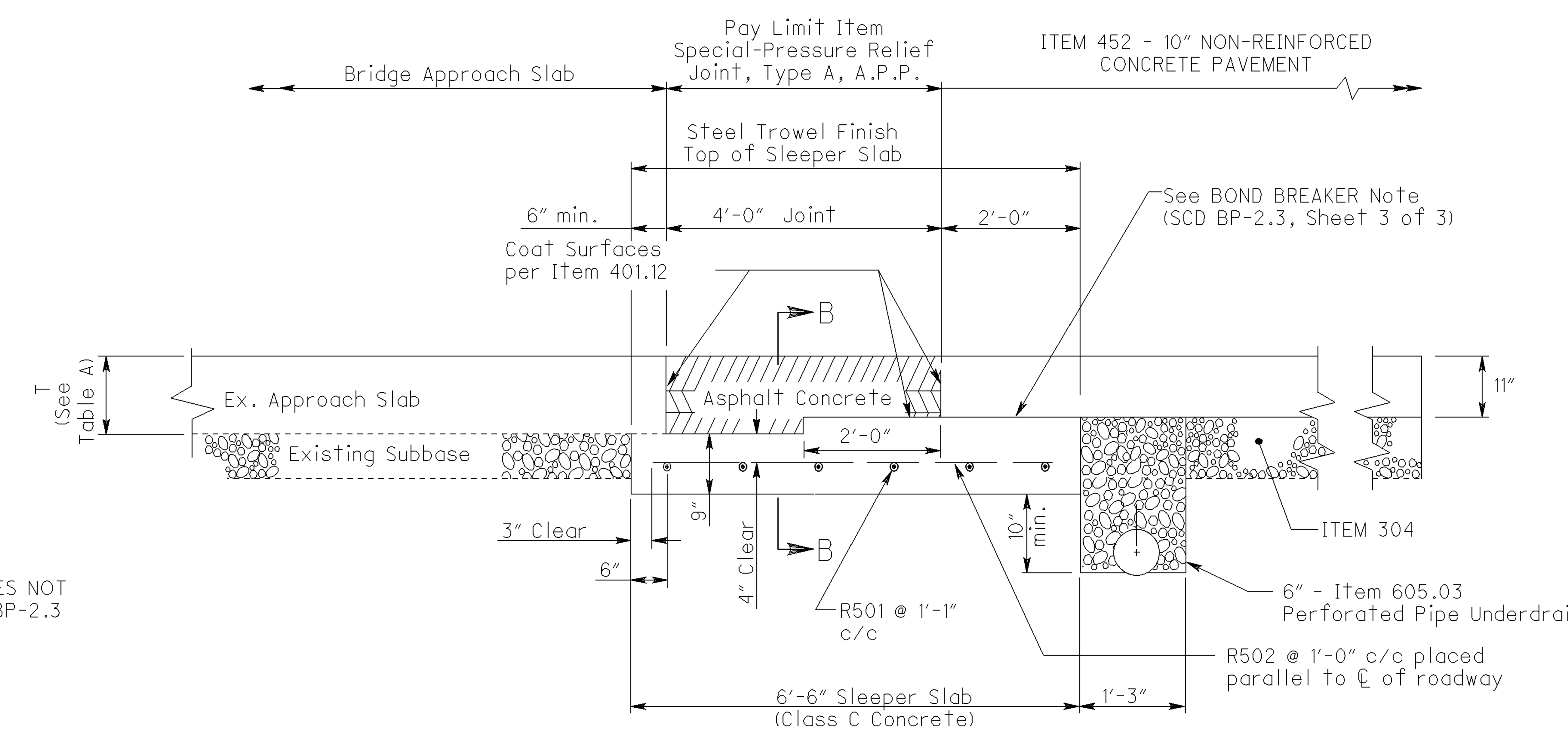
STA. 582+50.00 TO STA. 586+50.00 RAMP W-2

TYPICAL SECTIONS

CUY-480-10.36 RAMPS



PLAN VIEW
PRESSURE RELIEF JOINT, TYPE A, A.P.P.
AT EXISTING APPROACH SLAB



NOTES:
1. FOR DETAILS AND NOTES NOT SHOWN SEE ODOT SCD BP-2.3

SECTION A-A AT EXISTING APPROACH SLAB
SECTION B-B, SEE NOTE 1.

PRESSURE RELIEF JOINT TYPE A, A.P.P., TYPICAL SECTIONS

CUY-480-10.36
RAMPS

RIGHT OF WAY

ALL WORK IS TO BE PERFORMED WITHIN THE EXISTING RIGHT OF WAY.

CONTINGENCY QUANTITIES

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

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. THE INSTALLATION AND OPERATION OF ALL TEMPORARY TRAFFIC CONTROL AND TEMPORARY TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS SHALL BE PROVIDED BY THE CONTRACTOR WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

EQUIPMENT OPERATION AND MATERIAL STORAGE

IN ORDER TO PROVIDE FOR THE SAFETY OF THE TRAVELING PUBLIC, THE CONTRACTOR'S ATTENTION IS DIRECTED TO 614.03. IN ADDITION, THE FOLLOWING PROVISIONS SHALL APPLY:

1) ANY REMOVED ITEMS SHALL NOT BE STORED ON THE RIGHT-OF-WAY FOR MORE THAN 30 DAYS.

2) THE STORAGE OF EQUIPMENT, MATERIALS, AND VEHICLES WITHIN THE HIGHWAY RIGHT-OF-WAY WILL BE PERMITTED. THE NUMBER OF AREAS AND EXACT LOCATIONS SHALL BE APPROVED BY THE ENGINEER.

3) ALL DISTURBED AREAS SHALL BE RETURNED TO THEIR ORIGINAL CONDITION AT NO EXPENSE TO THE STATE.

4) ALL WORK VEHICLES AND EQUIPMENT THAT ENTERS THE WORK ZONE MORE THAN ONCE A DAY MUST BE EQUIPPED WITH AT LEAST ONE FLASHING, ROTATING, OR OSCILLATING AMBER LIGHT THAT IS VISIBLE IN ALL DIRECTIONS OF TRAFFIC FOR AT LEAST ONE QUARTER OF A MILE, DAY OR NIGHT.

ITEM 619 - FIELD OFFICE, TYPE B

A TYPE B FIELD OFFICE IS REQUIRED FOR THIS PROJECT. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 619 - FIELD OFFICE, TYPE B 5 MONTHS

UTILITIES

THE FOLLOWING UTILITIES AND OWNERS ARE LOCATED WITHIN THE WORK LIMITS OF THIS PROJECT. THE OHIO DEPARTMENT OF TRANSPORTATION HAS USED THE BEST AVAILABLE INFORMATION TO DETERMINE THE UTILITY COMPANIES SERVING THIS AREA, BUT CANNOT GUARANTEE THE UTILITY COMPANY LIST IS COMPLETE.

AT&T
13630 LORAIN AVE.
CLEVELAND, OHIO 44111
PH 216-476-6142
ATTN: ERIC WESTERBURG

CITY OF CLEVELAND DIVISION OF WATER
1201 LAKESIDE AVE.
CLEVELAND, OHIO 44114
PH 216-664-2444
ATTN: GUY SINGER

VERIZON BUSINESS
120 RAVINE ST.
AKRON, OHIO 44303
PH 330-253-8267
ATTN: AL GUEST

DOMINION EAST OHIO GAS COMPANY
1201 EAST 55TH STREET
CLEVELAND, OHIO 44103
PH 216-736-6675
ATTN: MIKE ANTONIUS

ILLUMINATING CO.
6896 MILLER ROAD
BRECKSVILLE, OHIO 44141
PH 440-717-6808
ATTN: JASON STEC

COOPERATION AMONG CONTRACTORS

THE CONTRACTOR SHALL COOPERATE AND COORDINATE HIS/HER OPERATIONS WITH THE CONTRACTORS ON OTHER PROJECTS THAT MAY BE IN FORCE DURING THE LIFE OF THE CONTRACT. NO WAIVER OF ANY PROVISIONS OF 105.08 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS IS INTENDED.

CLEARING AND GRUBBING

ALTHOUGH THERE ARE NO TREES OR STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THE PROJECT, A LUMP SUM QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY FOR ITEM 201, CLEARING AND GRUBBING. ALL PROVISIONS AS SET FORTH IN THE SPECIFICATIONS UNDER THIS ITEM SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING.

ITEM 202 – CURB REMOVED, AS PER PLAN

REMOVE EXISTING CURB AND ALL CONCRETE MATERIAL UP TO CUT LINE OF WALK FROM EXISTING CONCRETE BASE PAVEMENT AT THE LOCATIONS SHOWN IN THE PLANS. IN ADDITION TO THE REQUIREMENTS OF 202.05, USE A DIAMOND SAW BLADE TO MAKE A FULL DEPTH CUT OF EXISTING PAVEMENT AS DESCRIBED IN 255.03. LOCATE THE SAW CUT AT THE FACE OF CURB. THE SAW CUT IS INCIDENTAL TO THIS ITEM.

RIGHT OF WAY

ALL WORK SHALL BE PERFORMED WITHIN THE EXISTING RIGHT WAY OF WAY OR EASEMENTS.

ITEM 659 - SEEDING AND MULCHING

THE FOLLOWING QUANTITIES ARE PROVIDED TO PROMOTE GROWTH AND CARE OF PERMANENT SEEDED AREAS:

659 - SEEDING AND MULCHING .... 8424 SQ. YD.
659 – LIME .... 1.7 ACRE
659 - COMMERCIAL FERTILIZER .... 7.6 TON
659 - WATER .... 23 MGAL

SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL AT THE TWO IDENTIFIED LOCATIONS 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.

THE CONTRACTOR IS REQUIRED TO ESTABLISH A GOOD STAND OF GRASS OF UNIFORM COLOR AND DENSITY TO THE SATISFACTION OF THE ENGINEER.

AIRWAY/HIGHWAY CLEARANCE FOR AIRPORTS AND HELIPORTS

THIS PROJECT HAS BEEN IDENTIFIED AS BEING WITHIN THE INFLUENCE AREA OF A PUBLIC USE AIRPORT OR HELIPORT. NO TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT AT MAXIMUM OPERATING HEIGHT SHALL EXCEED A HEIGHT OF 121 FT.. IF ANY TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT WILL EXCEED THIS HEIGHT, FURTHER COORDINATION WITH THE FEDERAL AVIATION ADMINISTRATION (FAA), AND ODOT OFFICE OF AVIATION, WILL BE NECESSARY PRIOR TO ERECTING SUCH TEMPORARY STRUCTURES OR OPERATING SUCH EQUIPMENT ON THE PROJECT. THE CONTRACTOR WILL BE REQUIRED TO SUBMIT FORM 7460-1 TO THE FAA. A COPY OF THE SUBMISSION AND TWO COPIES OF FORM 7460-1 SHALL BE FORWARDED TO THE ODOT OFFICE OF AVIATION. NO TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT SHALL EXCEED THE PERMISSIBLE HEIGHT, UNTIL A COPY OF THE FAA APPROVAL AND ODOT OFFICE OF AVIATION PERMIT HAS BEEN FURNISHED TO THE PROJECT ENGINEER.

ITEM 202 – GUARDRAIL REMOVED, AS PER PLAN

THIS ITEM SHALL INCLUDE BOTH STANDARD AND BARRIER TYPE RAILS AND THRIE BEAM RAILS INCLUDING ALL ANCHOR ASSEMBLIES AND TERMINAL ASSEMBLIES.

ALL RAIL SECTIONS INCLUDING THRIE BEAM AND BRIDGE TERMINAL ASSEMBLY RAIL SECTIONS SHALL BE SALVAGED BY THE CONTRACTOR. ALONG WITH THESE RAIL SECTIONS, ALL ANCHOR ASSEMBLIES AND IMPACT ATTENUATORS SHALL BE SALVAGED.

THE SALVAGED RAIL SECTIONS AND ANCHOR ASSEMBLIES AND IMPACT ATTENUATORS SHALL BE TRANSPORTED BY THE CONTRACTOR TO:

ODOT WARRENSVILLE GARAGE
25609 EMERY ROAD
WARRENSVILLE HEIGHTS, OH 44128
PH 216-292-5840

GUARDRAIL REPLACEMENT

NO HAZARD SHALL BE LEFT UNPROTECTED EXCEPT FOR THE ACTUAL TIME NECESSARY TO REMOVE THE EXISTING GUARDRAIL, PREPARE THE SITE, AND INSTALL NEW GUARDRAIL IN A CONTINUOUS OPERATION. THE REMOVAL OF ALL GUARDRAIL SHALL AT ALL TIMES BE AS DIRECTED BY THE ENGINEER. NO GUARDRAIL SHALL BE REMOVED UNTIL THE REPLACEMENT MATERIAL IS ON THE SITE, READY FOR INSTALLATION. FAILURE TO COMPLY WITH THIS REQUIREMENT SHALL BE DEEMED SUFFICIENT CAUSE TO ORDER WORK SUSPENDED UNTIL SUCH TIME AS THE ENGINEER IS ASSURED OF COMPLIANCE.

ITEM 623 – CONSTRUCTION LAYOUT STAKES, AS PER PLAN

THE CONTRACTOR SHALL SURVEY THE BASELINE PROFILE OF ALL THREE RAMPS AND VERIFY THE PAVEMENT PROFILE ELEVATIONS SHOWN ON THE PLANS. IF NECESSARY, ADJUSTMENTS TO THE PAVEMENT ELEVATIONS IN THE PLANS SHOULD BE MADE TO ACCOMMODATE THE VARIANCES. THESE PROPOSED ADJUSTMENTS SHALL BE SUBMITTED TO THE ODOT DISTRICT 12 OFFICE OF PRODUCTION FOR APPROVAL PRIOR TO CONSTRUCTION OF THE RAMPS. PAYMENT FOR THIS WORK IN ADDITION TO THE STANDARD SPECIFICATIONS FOR ITEM 623 – CONSTRUCTION LAYOUT STAKES SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR ITEM 623 – CONSTRUCTION LAYOUT STAKES, AS PER PLAN.

LIGHTING PLANS FOR EXISTING LIGHTING

THE LIGHTING PLANS FOR THE EXISTING LIGHTING CIRCUITS ARE ON FILE AT ODOT DISTRICT 12, GARFIELD HEIGHTS.

STAGING AREAS

THERE ARE NO SPECIFIC AREAS GIVEN IN THE PLANS FOR CONTRACTOR TO USE AS A STAGING AREA(S). IF THE CONTRACTOR WANTS TO USE AN AREA(S) FOR STAGING, REGARDLESS IF IT FALLS WITHIN THE PROJECT LIMITS OR NOT, THE CONTRACTOR IS TO CONTACT JILL POWERS AT 216-584-2195 AT DISTRICT 12 IN ORDER TO APPLY FOR A PERMIT PER SECTION 107.02 OF THE CMS. IF A PERMIT IS GRANTED, ALL CONDITIONS OF THE PERMIT SHALL BE MET IN ADDITION TO THE REQUIREMENTS OF 104.04 OF THE CMS, AT NO ADDITIONAL COST TO THE STATE. IF THE PROJECT ENGINEERING DEEMS THAT ALL THE CONDITIONS OF THE PERMIT WERE NOT MET, THEN 10% OF THE CONTRACT BID AMOUNT FOR MOBILIZATION SHALL BE WITHHELD UNTIL ALL THE CONDITIONS OF THE PERMIT ARE SATISFIED.

PAVING UNDER GUARDRAIL

THIS OPERATION SHALL INCLUDE PREPARATION OF THE GRADED SHOULDER USING 209, LINEAR GRADING AS PER PLAN, AND PAVING UNDER THE GUARDRAIL USING 448 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, PG 64-22, UNDER GUARDRAIL, AS PER PLAN.

ITEM 209, LINEAR GRADING AS PER PLAN, SHALL CONSIST OF EXCAVATING TOPSOIL, PLACING GRANULAR MATERIAL AND APPLYING HERBICIDE AS SPECIFIED IN THE PLANS AND IN ACCORDANCE WITH THE FOLLOWING: ALL COLLECTED DEBRIS AND TOPSOIL, INCLUDING RHIZOMES, ROOTS AND OTHER VEGETATIVE PLANT MATERIAL SHALL BE REMOVED AND DISPOSED OF AS SPECIFIED IN 105.17. THE REMOVED MATERIAL SHALL BE REPLACED WITH COMPACTABLE GRANULAR MATERIAL CONFORMING TO 703.16 PLACED TO GRADE AS DETAILED ON THE TYPICAL SECTION OR AS APPROVED BY THE ENGINEER.

HERBICIDE SHALL BE EPA APPROVED FOR PAVING UNDER GUARDRAIL. IT SHALL BE APPLIED TO THE PREPARED AREA AFTER FINAL LEVELING AND GRADING HAS BEEN COMPLETED. THE APPLICATION SHALL BE JUST PRIOR TO PAVING AND SHALL STRICTLY ADHERE TO THE MANUFACTURER'S INSTRUCTIONS. EACH SUCCESSFUL BIDDER MUST BE LICENSED BY THE OHIO DEPARTMENT OF AGRICULTURE AS A COMMERCIAL APPLICATOR AND ALL PERSONS INVOLVED IN THE ACTUAL SPRAYING SHALL BE LICENSED AS COMMERCIAL OPERATORS IN THE APPROPRIATE SPRAY CATEGORY.

HERBICIDE LABEL, MATERIAL SAFETY DATA SHEET AND COPY OF APPLICATORS LICENSES SHALL BE SUBMITTED TO THE ENGINEER FOR VERIFICATION PRIOR TO COMMENCING WORK.

ALL EQUIPMENT, MATERIALS AND LABOR REQUIRED TO PERFORM THE WORK OUTLINED ABOVE SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 209, LINEAR GRADING, AS PER PLAN. PAVING UNDER GUARDRAIL SHALL CONSIST OF PLACING ITEM 448 TO THE DEPTH SPECIFIED USING ONE OF THE FOLLOWING, METHODS:

METHOD A:

1) SET GUARDRAIL POSTS
2) PLACE ITEM 448

METHOD B:

1) PLACE ITEM 448
2) BORE ASPHALT AT POST LOCATIONS (MAY BE OMITTED IF STEEL POSTS ARE USED)
3) SET GUARDRAIL POSTS
4) PATCH AROUND POSTS. THE MATERIALS USED FOR PATCHING SHALL BE AN ASPHALT CONCRETE APPROVED BY THE ENGINEER. PATCHED AREAS SHALL BE COMPACTED USING EITHER HAND OR MECHANICAL METHODS. FINISHED SURFACES SHALL BE SMOOTH AND SLOPED TO DRAIN AWAY FROM THE POSTS.

ALL EQUIPMENT, MATERIALS AND LABOR REQUIRED TO PERFORM THE WORK OUTLINED ABOVE, WITH THE EXCEPTION OF SETTING GUARDRAIL POSTS, SHALL BE INCLUDED FOR PAYMENT UNDER ,**ITEM 448 - ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, PH 64-22, UNDER GUARDRAIL, AS PER PLAN.**

ITEM 209 – LINEAR GRADING, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF EXCAVATING ALONG THE OUTSIDE EDGE OF THE PAVED SHOULDER, AS DETAILED ON THE TYPICAL SECTIONS, TO PREPARE AND COMPACT THE GROUND SURFACE FOR PAVING UNDER GUARDRAIL. THIS ITEM SHALL BE USED TO PREPARE PROPOSED GUARDRAIL AND EXISTING GUARDRAIL RUNS.

ALL COLLECTED DEBRIS SHALL BE REMOVED AND DISPOSED OF AS SPECIFIED IN SECTION 203.05 OF THE CONSTRUCTION AND MATERIAL SPECIFICATION.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT BID PRICE FOR ITEM 209, STA., LINEAR GRADING, AS PER PLAN AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO PERFORM THIS ITEM OF WORK.

ITEM 204 - PROOF ROLLING

THE FOLLOWING QUANTITY IS PROVIDED IN THE GENERAL SUMMARY TO ADDRESS LOCATIONS REQUIRING PROOF ROLLING:

ITEM 204 - PROOF ROLLING 5 HOUR

ITEM SPECIAL – PRESSURE RELIEF JOINT, TYPE A, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF CONSTRUCTING A PRESSURE RELIEF JOINT AS DETAILED ON SHEET 6 AT THE LOCATION SHOWN ON THE PLAN AND IN ACCORDANCE WITH SCD BP-2.3 AND THE APPLICABLE SECTIONS OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS.

CONNECTION BETWEEN EXISTING AND PROPOSED GUARDRAIL

WHEN IT IS NECESSARY TO SPLICE PROPOSED GUARDRAIL TO EXISTING GUARDRAIL, ONLY THE EXISTING GUARDRAIL SHALL BE CUT, DRILLED, OR PUNCHED. THE CONNECTION SHALL BE MADE USING A "W-BEAM RAIL SPLICE" AS SHOWN IN AASHTO M 180. PAYMENT SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE RESPECTIVE GUARDRAIL ITEMS.

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. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DWG. NO.	DRAWING NAME	DWG./ REV. DATE	ODOT APPROVAL DATE
SSS265M	ET-2000 (1997) PLAN, ELEVATION AND SECTIONS	6/20/97	3/6/98
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
SS158	ET2000 PLUS 50'-0" WITH 12'-6" PANELS AND HBA POSTS 1-4 PLAN, ELEVATION AND SECTION	5/22/00	7/31/00

2) THE SKT-350 MANUFACTURED BY ROAD SYSTEMS, INC.,
2516 MALLORY LANE, STOW, OHIO, 44224,
(TELEPHONE: 330-346-0721).

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

DWG. NO.	DRAWING NAME	DWG./ REV. DATE	ODOT APPROVAL DATE
SKT-4M	SEQUENTIAL KINKING	12/11/97	3/6/98

CALCULATED JTW CHECKED

GENERAL NOTES

CUY-480-10.36 RAMPS

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 PLACEMENT OF THE FOUNDATION TUBES SHOULD BE AN APPROPRIATE DEPTH BELOW THE LEVEL LINE IN ORDER TO MAINTAIN THE FINISHED GUARDRAIL HEIGHT OF 27-3/4-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 MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING ALL RELATED TRANSITIONS, REFLECTIVE SHEETING, HARDWARE, GRADING, EMBANKMENT AND EXCAVATION NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

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, THE CONTRACTOR SHALL 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, THE ENGINEER SHALL BE NOTIFIED 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, THE ENGINEER SHALL BE NOTIFIED 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 SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 603 CONDUIT ITEM.

ITEM 608 – CURB RAMP, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ITEM 608 – CURB RAMP, ALL EXISTING CURB RAMP AND WALK REQUIRED TO BE REMOVED FOR CONSTRUCTION OF NEW CURB RAMP SHALL BE INCLUDED IN THE BID ITEM, ITEM 606 – CURB RAMP, AS PER PLAN, SF, , IN ACCORDANCE WITH THE CONSTRUCTION AND MATERIAL SPECIFICATIONS ITEMS 202 – CURB RAMP REMOVED AND 202 – WALK REMOVED,

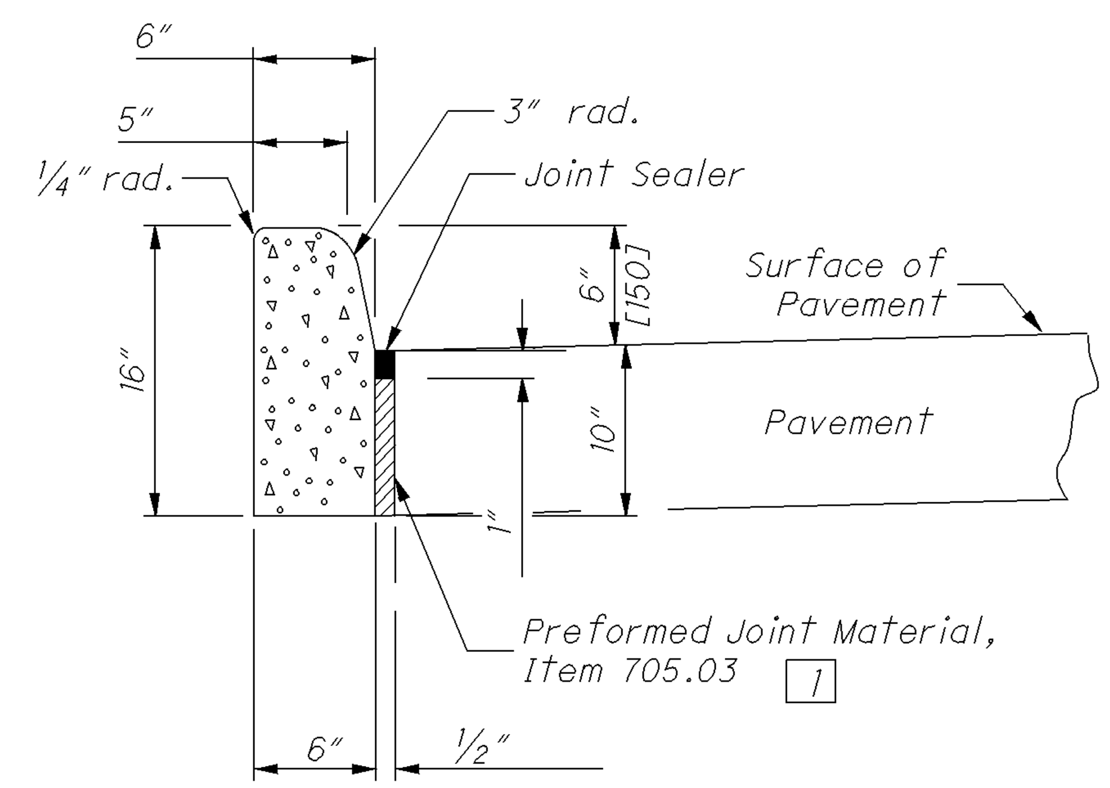
A+B BIDDING WITH MULTIPLE SECTIONS CONTRACT TABLE

USE THE FOLLOWING INFORMATION IN COMBINATION WITH THE PROPOSAL NOTE A + B BIDDING WITH MULTIPLE SECTIONS: THE CONTRACTOR WILL BID THE NUMBER OF CALENDAR DAYS TO COMPLETE EACH CONTRACT SEGMENT AS LISTED IN THE PROPOSAL.

CONTRACT SEGMENT-LOCATION OF CRITICAL WORK	MAXIMUM DAYS	INCENTIVE/DISINCENTIVE $ PER DAY	MAXIMUM INCENTIVE $
SEGMENT 1 – *RAMP W-1*	*21*	*$1,900*	*$13,300*
SEGMENT 2 – *RAMP W-2*	*21*	*$700*	*$4,900*
SEGMENT 3 – *RAMP W-3*	*21*	*$2,400*	*$16,800*

ITEM 609 – CURB, TYPE 6, AS PER PLAN

THE CURB SHALL BE CONTRUCTED AS PER THE STANDARD CONSTRUCITON DRAWINGS EXCEPT AS MODIFIED BELOW.



ITEM 632 – DETECTOR LOOP, AS PER PLAN

NEW LOOP DETECTORS SHALL BE PLACED AT THE LOCATION SHOWN ON PLAN SHEET 32. THE LOOP DETECTORS SHALL BE REPLACED TO THE PULL BOX UNDER ITEM 632 AND TC-82.10. NEW CABLE SLICE KITS SHALL BE INCLUDED IN THIS PAY ITEM.

DETECTOR LOOP COORDINATION

THE CONTRACTOR SHALL NOTIFY THE FOLLOWING FOR COORDINATION OF DETECTOR LOOP INSTALLATION AND CONNECTION ONE WEEK PRIOR TO DETECTOR LOOP PLACEMENT.

CITY OF CLEVELAND
DIVISION OF TRAFFIC ENGINEERING
601 LAKESIDE AVE., ROOM 518
CLEVELAND, OH 44114
RICH TUTIE PH. 216-420-8273
ANDREW CROSS PH. 216-664-3197

ITEM 603 - UNDERDRAINS

UNDERDRAINS SHALL BE PLACED PRIOR TO PLACEMENT OF ITEM 304 – AGGREGATE BASE.

UNDERCUTS

IF UNSUITABLE SUBGRADE MATERIALS ARE ENCOUNTERED, THE ENGINEER SHALL DIRECT THE CONTRACTOR TO REMOVE THE EXISTING SUBGRADE TO A DEPTH OF 24" AND REPLACED WITH 24" ITEM 204 – GRANULAR MATERIAL, TYPE B IN LOCATIONS INDENTIFIED BY THE ENGEINEER.

REMOVAL OF THE SUBGRADE MATERIAL SHALL BE PAID FOR UNDER ITEM 204 – EXCAVATION OF SUBGRADE. THE COST OF FURNISHING AND COMPACTING THE REPLACEMENT GRANULAR MATERIAL SHALL BE PAID FOR UNDER ITEM 204 – GRANULAR MATERIAL, TYPE B.

THE FOLLOWING ESTIAMTED QUANTITIES HAVE BEEN CARRIED FORWARD TO THE GENERAL SUMMARY FOR THIS WORK AND PAYMENT IS INCLUDED IN THIS CONTRACT UNIT PRICE BID FOR:

ITEM 204 – EXCAVATION OF SUBGRADE 100 CY
ITEM 204 – GRANULAR EMBANKMENT, TYPE B 100 CY

SLOPE RESTORATION

THE FOLLOWING QUANTITY FOR ITEM 203 – EMBANKMENT, IS INCLUDED FOR USE AS DIRECTED BY THE ENGINEER FOR REPAIR OF SEVERE EROSION OF THE NORTH SLOPE OF RAMP W-3. IF DIRECTED BY THE ENGINEER TO REPAIR THIS AREA, THIS RESTORATION WORK SHALL NOT COMMENCE UNTIL THE ASPHALT CONCRETE CURB IS PLACED.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED FORWARD TO THE GENERAL SUMMARY FOR THIS WORK AND PAYMENT IS INCLUDED IN THIS CONTRACT UNIT BID PRICE FOR:

ITEM 203 – EMBANKEMENT 250 CY

GENERAL

1. THE CONTRACTOR SHALL NOTIFY THE ENGINEER, THE RESPONSIBLE LAW ENFORCEMENT AGENCY AND THE OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 12 PUBLIC INFORMATION OFFICER (216-584-2006) NOT LESS THAN FOURTY-EITGHT (48) HOURS PRIOR TO A SCHEDULED DISRUPTION OF TRAFFIC.

2. NIGHTTIME WORK SHALL BE PERMITTED IN ACCORDANCE WITH THESE PLANS AND NOTES. THE CONTRACTOR SHALL PROVIDE FLOOD LIGHTING OF THE WORK AREA IN ORDER TO ASSURE THE SAFEST CONDITIONS DURING NIGHTTIME WORK. A LIGHTING PLAN FOR NIGHTTIME OPERATIONS SHALL BE PRESENTED TO AND APPROVED BY THE ENGINEER.

3. THE CONTRACTOR SHALL FURNISH, ERECT AND MAINTAIN ALL NEW WARNING AND INFORMATION SIGNS NECESSARY FOR MAINTAINING TRAFFIC. THE CONTRACTOR SHALL DETERMINE WHAT SIGNS ARE NEEDED AND ADVISE THE ENGINEER TWO (2) WEEKS IN ADVANCE OF HIS DETAILED PLANS.

SEE THE OMUTCD AND STANDARD DRAWINGS FOR THE MINIMUM SIGNAGE REQUIRED.

4. TRAFFIC CONTROL DEVICES SHALL BE SET UP PRIOR TO THE START OF CONSTRUCTION, AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SPECIAL CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS THEY ARE NEEDED AND SHALL BE IMMEDIATELY REMOVED THEREAFTER. WHERE OPERATIONS ARE PERFORMED IN STAGES, THERE SHALL BE IN PLACE ONLY THOSE DEVICES THAT APPLY TO THE CONDITION PRESENT DURING STAGE IN PROGRESS. ALL SIGNS WITH MESSAGES WHICH DO NOT APPLY DURING A CERTAIN PERIOD SHALL BE COVERED OR SET ASIDE OUT OF THE VIEW OF TRAFFIC.

5. NO STOPPAGE OF TRAFFIC SHALL OCCUR WITHOUT LAW ENFORCEMENT PERSONNEL AT EACH LOCATION TO DIRECT TRAFFIC.

6. WHENEVER A TOTAL CLOSURE IS IMPLEMENTED, THE CONTRACTOR SHALL PROVIDE A PORTABLE CHANGEABLE MESSAGE SIGN, TYPE FROM ODOT'S PRE-APPROVED LIST. IT SHALL BE PLACED 1.5 MILES TO 2 MILES IN ADVANCE OF THE CLOSURE OR AS DIRECTED BY THE ENGINEER.

7. FOR ANY OPERATION NOT SPECIFICALLY MENTIONED IN THESE PLANS, THE TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH THE "OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES".

8. ALL LABOR, MATERIALS, EQUIPMENT AND ANY INCIDENTALS REQUIRED TO COMPLETE THE WORK AS DESCRIBED ABOVE SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614, MAINTAINING TRAFFIC.

9. FLOODLIGHTING OF THE WORK SITE FOR OPERATIONS CONDUCTED DURING NIGHT TIME PERIODS SHALL BE ACCOMPLISHED SO THAT THE LIGHTS DO NOT CAUSE GLARE TO THE DRIVERS ON THE ROADWAY. TO ENSURE THE ADEQUACY OF THE FLOODLIGHT PLACEMENT, THE CONTRACTOR AND THE ENGINEER SHALL DRIVE THROUGH THE WORK SITE EACH NIGHT WHEN THE LIGHTING IS IN PLACE AND OPERATIONAL PRIOR TO COMMENCING ANY WORK. IF GLARE IS DETECTED THE LIGHT PLACEMENT AND SHIELDING SHALL BE ADJUSTED TO THE SATISFACTION OF THE ENGINEER BEFORE WORK PROCEEDS.

SUSPENSION OF WORK

IF THE CONTRACTOR FAILS TO COMPLY WITH THE PROVISIONS FOR TRAFFIC CONTROL AS SET FORTH IN THESE PLANS OR WITH PROVISIONS OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, THE ENGINEER SHALL SUSPEND WORK UNTIL THE CONTRACTOR COMPLIES WITH THE NECESSARY REQUIREMENTS.

MAINTENANCE OF TRAFFIC CONTROL ZONES

THE CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN THE SIGNS, DRUMS AND TEMPORARY PAVEMENT MARKINGS AT THE LOCATIONS DETAILED IN THE PLANS OR SPECIFIED IN THE STANDARD DRAWINGS. WHEN THE CONTRACTOR IS NOTIFIED OF DEFICIENCIES HE SHALL CORRECT THE DEFICIENCIES AS SOON AS POSSIBLE, PREFERABLY WITHIN 12 HOURS AND NO LATER THAN 24 HOURS. IF ANY NOTED DEFICIENCIES ARE NOT CORRECTED WITHIN 24 HOURS THE ENGINEER SHALL DEDUCT ONE DAY PAY FOR ITEM 614 MAINTAINING TRAFFIC, NOT AS A PENALTY BUT AS LIQUIDATED DAMAGES. THE CONTRACTOR SHALL BE SUBJECT TO THESE LIQUIDATED DAMAGES FOR EACH AND EVERY DAY THAT THESE PROVISIONS ARE NOT MET. ALL COSTS FOR MAINTAINING THE WORK ZONES AS DESCRIBED ABOVE SHALL BE INCLUDED UNDER ITEM 614 - MAINTAINING TRAFFIC.

NIGHT VEST

ALL OF THE CONTRACTOR'S AND SUB-CONTRACTOR'S PERSONNEL WORKING DURING THE HOURS OF DARKNESS SHALL WEAR A 100% SILVER REFLECTIVE SAFETY VEST OR ANSI CLASS 2 VEST. THE SAFETY VEST SHALL BE PROVIDED BY THE CONTRACTOR. THE VEST MAY HAVE SEVERAL LIME OR ORANGE STRIPES ON IT.

TRAFFIC CONTROL MATERIALS

A. SIGNS

SIGN DIMENSIONS AND SPECIFICATIONS, INCLUDING LETTER SIZES, SHALL BE AS PROVIDED IN THE "MANUAL", OR IN SIGN DESIGN DRAWINGS PROVIDED BY THE OHIO DEPARTMENT OF TRANSPORTATION. THE SIGNS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER PRIOR TO THE START OF THE PROJECT. ALL SIGNS SHALL HAVE A REFLECTORIZED BACKGROUND OF REFLECTIVE MATERIALS AS DESCRIBED IN THE "MANUAL".

B. SIGN SUPPORTS

TEMPORARY SIGN SUPPORTS SHALL BE AS SHOWN ON MT-105.10 AND MT-105.11.

C. DRUMS

DRUMS SHALL BE IN ACCORDANCE WITH PERTINENT SECTIONS OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. ALL PERMANENT LANE CLOSURES SHALL BE DELINEATED WITH DRUMS SPACED AT 50 FEET CENTER TO CENTER. ALL COSTS FOR INSTALLING, MAINTAINING, AND SUBSEQUENT REMOVAL OF SAID DRUMS SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR ITEM 614 - MAINTAINING TRAFFIC.

D. LIGHTING DEVICES

FLASHERS SHALL BE 12 VOLT BATTERY OPERATED MODELS WITH 7 INCH DIAMETER YELLOW LENSES ILLUMINATED BY RAPID INTERMITTENT FLASHES OF SHORT DURATION AND SHALL BE PLACED ON ALL SIGNS AT ALL TIMES. CONTINUOUS BURN LIGHTS SHALL BE 12 VOLT BATTERY OPERATED MODELS WITH MINIMUM 7 INCH DIAMETER YELLOW LENSES.

E. FLASHING ARROW PANEL

WHENEVER ANY PART OF THE TRAVELED SURFACE IS CLOSED, THE MOTORIST SHALL BE WARNED AND DIVERTED BY THE CONTRACTOR THROUGH THE USE OF ONE FLASHING ARROW PANEL FOR EACH LANE CLOSED. THE CONTRACTOR SHALL REFER TO STANDARD DRAWING MT-35.10 AND THE PROVISIONS SET FORTH IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS FOR ALL INFORMATION REGARDING FURNISHING, MAINTAINING, AND USE OF FLASHING ARROW PANELS. IF THE FLASHING ARROW PANEL IS WITHIN 300 FEET OF A RESIDENCE OR ON A SURFACE STREET, A SOLAR POWERED FLASHING ARROW PANEL SHALL BE USED. PAYMENT FOR THE ABOVE SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR ITEM 614 - MAINTAINING TRAFFIC.

CONTRACTOR'S EQUIPMENT - OPERATION AND STORAGE

VEHICLES AND EQUIPMENT SHALL ALWAYS MOVE WITH, AND NOT ACROSS OR AGAINST THE FLOW OF TRAFFIC. VEHICLES AND OTHER EQUIPMENT SHALL NOT PARK OR STOP EXCEPT WITHIN DESIGNATED WORK AREAS; AND SHALL NOT ENTER AND LEAVE WORK AREAS IN A MANNER WHICH WILL BE HAZARDOUS TO, OR INTERFERE WITH THE NORMAL TRAFFIC FLOW. PERSONAL VEHICLES WILL NOT BE PERMITTED TO PARK WITHIN THE RIGHT-OF-WAY EXCEPT IN SPECIFIC AREAS DESIGNATED BY THE ENGINEER.

EQUIPMENT, VEHICLES AND MATERIALS SHALL NOT BE STORED OR PARKED WITHIN 30 FEET OF THE TRAVELED WAY UNLESS 6 FEET BEHIND PCB OR GUARDRAIL.

ALL WORK VEHICLES AND EQUIPMENT THAT ENTERS THE WORK ZONE MORE THAN ONCE A DAY MUST BE EQUIPPED WITH AT LEAST ONE FLASHING, ROTATING, OR OSCILLATING AMBER LIGHT THAT IS VISIBLE IN ALL DIRECTIONS OF TRAFFIC FOR AT LEAST ONE QUARTER OF A MILE, DAY OR NIGHT.

ALL CONSTRUCTION TRAFFIC SHALL USE ACCEPTABLE TRUCK ROUTES TO ACCESS THE CONSTRUCTION AREA. USE OF LOCAL RESIDENTIAL STREETS IS STRICTLY PROHIBITED UNLESS ALLOWED IN WRITING BY THE LOCAL ENFORCEMENT AUTHORITY.

PERMITTED LANE CLOSURES

ALL LANE CLOSURES MAY ONLY BE IMPLEMENTED AT THE TIMES PERMITTED BY THE "DISTRICT 12, PERMITTED LANE CLOSURE TIMES" LIST, WHICH IS LOCATED ON THE ODOT WEB SITE:

http://www.dot.state.oh.us/districts/D12/HighwayManagement/Pages/PermittedLaneClosures.aspx

THE LATEST REVISION, AT 14 DAYS PRIOR TO THE BID DATE, SHALL BE IN EFFECT FOR THIS PROJECT. NO LANE OR SHOULDER CLOSURES SHALL BE IN PLACE WHEN NO WORK IS BEING PERFORMED.
NO WORK SHALL BE PERFORMED AND ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC DURING SPECIAL EVENTS AND THE FOLLOWING DESIGNATED HOLIDAYS: CHRISTMAS, NEW YEARS, MEMORIAL DAY, MOTHERS DAY, FOURTH OF JULY, LABOR DAY AND THANKSGIVING. IN ADDITION, NO LANE CLOSURES WILL BE PERMITTED FROM NOON ON THE FRIDAY PRECEDING A HOLIDAY WEEKEND TO 8:00 AM THE DAY FOLLOWING THE HOLIDAY. FOR HOLIDAYS NOT CELEBRATED ON MONDAY THE RESTRICTION SHALL START AT NOON THE DAY BEFORE THE HOLIDAY AND END AT 8:00 AM THE DAY AFTER THE HOLIDAY.

THE CONTRACTOR SHALL NOTIFY THE ENGINEER, THE RESPONSIBLE LAW ENFORCEMENT AGENCY AND THE OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 12 PUBLIC INFORMATION OFFICER ((216) 584-2007) NOT LESS THAN 24 HOURS PRIOR TO A SCHEDULED DISRUPTION OF TRAFFIC.

CALCULATED JTW CHECKED

MAINTENANCE OF TRAFFIC GENERAL NOTES

CUY-480-10.36 RAMPS

ITEM 614 - LAW ENFORCEMENT OFFICER WITH PATROL CAR

IN ADDITION TO THE REQUIREMENTS OF CMS 614 AND THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD), A UNIFORMED LAW ENFORCEMENT OFFICER AND OFFICIAL PATROL CAR WITH WORKING TOP MOUNTED EMERGENCY FLASHING LIGHTS SHALL BE PROVIDED FOR CONTROLLING TRAFFIC FOR THE FOLLOWING TASKS:

1. DURING THE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHEN A COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED.
2. DURING LANE CLOSURES ON FRIDAY AND SATURDAY NIGHTS, FOR THE HOURS BETWEEN 11:00 PM AND 3:00 AM.

LAW ENFORCEMENT OFFICERS (LEO'S) SHOULD NOT BE USED WHERE THE OMUTCD INTENDS THAT FLAGGERS BE USED. THE LEO'S ARE CONSIDERED TO BE EMPLOYED BY THE CONTRACTOR AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR ACTIONS. ALTHOUGH THEY ARE EMPLOYED BY THE CONTRACTOR, THE PROJECT ENGINEER SHALL HAVE CONTROL OVER THEIR PLACEMENT. THE OFFICIAL PATROL CAR SHALL BE A PUBLIC SAFETY VEHICLE AS REQUIRED BY THE OHIO REVISED CODE.

LAW ENFORCEMENT OFFICERS WITH PATROL CAR REQUIRED BY THE TRAFFIC MAINTENANCE TASKS ABOVE SHALL BE PAID FOR ON A UNIT PRICE (HOURLY) BASIS UNDER ITEM 614 LAW ENFORCEMENT OFFICER WITH PATROL CAR. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 614 LAW ENFORCEMENT OFFICER WITH PATROL CAR 100 HOURS

THE HOURS PAID SHALL INCLUDE MINIMUM SHOW-UP TIME REQUIRED BY THE LAW ENFORCEMENT AGENCY INVOLVED.

IF THE CONTRACTOR WISHES TO UTILIZE LEO'S FOR FLAGGING AND TRAFFIC CONTROL OTHER THAN FOR THAT REQUIRED IN THESE PLANS, HE MAY DO SO AT HIS OWN EXPENSE.

ITEM 614 - PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN

THE CONTRACTOR HALL FURNISH, INSTALL, MAINTAIN, AND REMOVE WHEN NO LONGER NEEDED A PORTABLE CHANGEABLE MESSAGE SIGN(S). THE PCMS SHALL BE OF THE TYPE SHOWN ON THE LIST OF APPROVED PCMS MAINTAINED BY THE DIRECTOR. THE PCMS SHALL BE A CLASS I OR II TYPE UNIT WITH MINIMUM LEGIBILITY DISTANCES OF 1250 FT., 850 FT., AND 650 FT., RESPECTIVELY.

EACH SIGN SHALL BE TRAILER-MOUNTED AND EQUIPPED WITH A FUNCTIONAL DIMMING MECHANISM, TO DIM THE SIGN DURING DARKNESS, AND A TAMPER ND VANDAL PROOF ENCLOSURE. EACH SIGN SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ON-SITE PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT. THE SIGN SHALL ALSO BE CAPABLE OF BEING POWERED BY AN ELECTRICAL SERVICE DROP FROM A LOCAL UTILITY COMPANY. PCMS TRAILERS SHOULD BE DELINEATED ON A PERMANENT BASIS BY AFFIXING RETROREFLECTIVE MATERIAL, IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER AS SEEN BY ONCOMING ROAD USERS.

PLACEMENT, OPERATION, MAINTENANCE AND ALL ACTIVATION OF THE SIGNS BY THE CONTRACTOR SHALL BE AS DIRECTED BY THE ENGINEER. THE PCMS SHALL BE LOCATED IN A HIGHLY VISIBLE POSITION YET PROTECTED FROM TRAFFIC. THE CONTRACTOR SHALL, AT THE DIRECTION OF THE ENGINEER, RELOCATE THE PCMS TO IMPROVE VISIBILITY OR ACCOMMODATE CHANGED CONDITIONS. WHEN NOT IN USE, THE PCMS SHALL BE TURNED OFF. ADDITIONALLY, WHEN NOT IN USE FOR EXTENDED PERIODS OF TIME, THE PCMS SHALL BE TURNED, FACING AWAY FROM ALL TRAFFIC, AND SHALL DISPLAY ONE OR MORE HIGH-INTENSITY YELLOW REFLECTIVE SHEETING SURFACES OF 9-INCH BY 15-INCH MINIMUM SIZE FACING TRAFFIC.

THE ENGINEER SHALL BE PROVIDED ACCESS TO EACH SIGN UNIT AND SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ODOT PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT, AND TO REVISE SIGN MESSAGES, IF NECESSARY.

ALL MESSAGES TO BE DISPLAYED ON THE SIGN WILL BE PROVIDED BY THE ENGINEER. A LIST OF ALL REQUIRED PRE-PROGRAMMED MESSAGES WILL BE GIVEN TO THE CONTRACTOR AT THE PROJECT PRECONSTRUCTION CONFERENCE. THE SIGN SHALL HAVE THE CAPABILITY TO STORE UP TO 99 MESSAGES. MESSAGE MEMORY OR PRE-PROGRAMMED DISPLAYS SHALL NOT BE LOST AS A RESULT OF POWER FAILURES TO THE ON-BOARD COMPUTER.

THE SIGN LEGEND SHALL BE CAPABLE OF BEING CHANGED IN THE FIELD. THREE-LINE PRESENTATION FORMATS WITH UP TO SIX MESSAGE PHASES SHALL BE SUPPORTED. PCMS FORMAT SHALL PERMIT THE COMPLETE MESSAGE FOR EACH PHASE TO BE READ AT LEAST ONCE.

THE PCMS SHALL CONTAIN AN ACCURATE CLOCK AND PROGRAMMING LOGIC WHICH WILL ALLOW THE SIGN TO BE ACTIVATED, DEACTIVATED OR MESSAGES CHANGED AUTOMATICALLY AT DIFFERENT TIMES OF THE DAY FOR DIFFERENT DAYS OF THE WEEK. THE PCMS SHALL CONTAIN A CELLULAR TELEPHONE DATA LINK WHICH WILL ALLOW REMOTE SIGN ACTIVATION, MESSAGE CHANGES, MESSAGE ADDITIONS AND REVISIONS TO TIME OF DAY PROGRAMS. THE SYSTEM SHALL ALSO PERMIT VERIFICATION OF CURRENT AND PROGRAMMED MESSAGES.

THE CONTRACTOR SHALL PROVIDE TO THE ENGINEER THE SOFTWARE NECESSARY TO CONTROL THE PCMS REMOTELY.

THE PCMS UNIT SHALL BE MAINTAINED IN GOOD WORKING ORDER BY THE CONTRACTOR IN ACCORDANCE WITH THE PROVISIONS OF CMS 614.07. THE CONTRACTOR SHALL, PRIOR TO ACTIVATING THE UNIT, MAKE ARRANGEMENTS, WITH AN AUTHORIZED SERVICE AGENT FOR THE PCMS, TO ASSURE PROMPT SERVICE IN THE EVENT OF FAILURE. ANY FAILURE SHALL NOT RESULT IN THE SIGN BEING OUT OF SERVICE FOR MORE THAN 12 HOURS, INCLUDING WEEKENDS. FAILURE TO COMPLY MAY RESULT IN AN ORDER TO STOP WORK AND OPEN ALL TRAFFIC LANES AND/OR IN THE DEPARTMENT TAKING APPROPRIATE ACTION TO SAFELY CONTROL TRAFFIC. THE ENTIRE COST TO CONTROL TRAFFIC, ACCRUED BY THE DEPARTMENT DUE TO THE CONTRACTOR'S NONCOMPLIANCE, WILL BE DEDUCTED FROM MONEYS DUE, OR TO BECOME DUE THE CONTRACTOR ON HIS CONTRACT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR 24-HOUR-PER-DAY OPERATION AND MAINTENANCE OF THESE SIGNS ON THE PROJECT FOR THE DURATION OF THE PHASES WHEN THE PLAN REQUIRES THEIR USE.

AT THE DIRECTION OF THE ENGINEER, THE PCMS MAY BE REMOVED FOR PERIODS OR TIMES WHEN NOT IN USE. NO PAYMENT WILL BE MADE FOR THESE TIMES (EX. WINTER MONTHS). THERE SHALL BE TWO (2) CLASS I OR II CHANGEABLE MESSAGE SIGNS AT 2 MONTHS EACH.

PAYMENT FOR THE ABOVE DESCRIBED ITEM SHALL BE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, FUELS, LUBRICATING OILS, SOFTWARE, HARDWARE AND INCIDENTALS TO PERFORM THE ABOVE DESCRIBED WORK.

ITEM 614 - PORTABLE CHANGEABLE MESSAGE SIGN, AS PERPLAN... 4 SIGN-MONTH

SEQUENCE OF CONTRUCTION

EACH RAMP SHALL BE CLOSED FOR A PERIOD NO LONGER THAN 21 CALENDER DAYS AS DETAILED IN THE MAINTENANCE OF TRAFFIC PLANS IN ACCOARDANCE WITH THE STANDARD DRAWINGS. ONLY ONE (1) RAMP SHALL BE CLOSED AT ANY GIVEN TIME. ALL WORK ASSOCIATED WITH THE SPECIFIC RAMP CLOSED SHALL BE COMPLETED PRIOR TO OPENING THE RAMP TO TRAFFIC. ALL MATERIALS, EQUIPMENT AND LABOR ASSOCIATED WITH CLOSING THE RAMPS ARE INCIDENTAL TO ITEM 614 – MAINTENANCE OF TRAFFIC, LUMP SUM.

ITEM 614, WORK ZONE IMPACT ATTENUATOR FOR 24" WIDE

HAZARDS (UNIDIRECTIONAL OR BIDIRECTIONAL) THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ONE OF THE FOLLOWING IMPACT ATTENUATORS:

1. THE QUADGUARD CZ, (24 INCHES WIDE SIX-BAY) wORK ZONE IMPACT ATTENUATOR MANUFACTURED BY ENERGY ABSORPTION SYSTEMS, INC., 35 EAST WACKER DRIVE, CHICAGO, IL 60601 (TELEPHONE: 312-467-6750).

THE LENGTH OF THE SIX-BAY QUADGUARD CZ IS 20'-9". INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE APPROVED SHOP DRAWINGS:

DRAWING NUMBER: QSCZCVR-T4

DRAWING NAME: QUADGUARD CZ SYSTEM FOR CONSTRUCTION ZONES

REVISION DATE: 5/13/99 REV. J

ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: 35-40-10

DRAWING NAME: QUADGUARD SYSTEM CONCRETE PAD, CZ, QG

REVISION DATE: 11/19/97 REV. D

ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: 35-40-16

DRAWING NAME: QUADGUARD SYSTEM BACKUP ASSEMBLY, CZ, QG

REVISION DATE: 7/30/99 REV. F

ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: 354051Z

DRAWING NAME: QUADGUARD CZ SYSTEM NOSE ASSEMBLY, CZ, QG, 24, 30, 36

REVISION DATE: 5/17/99

ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: 35-40-18

DRAWING NAME TRANSITION ASSEMBLY, 4 OFFSET, QG

REVISION DATE: 6/25/99 REV. F

ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: 35400260

DRAWING NAME: QUADGUARD SYSTEM PCMB ANCHOR ASSEMBLY

REVISION DATE: 11/19/97 REV. C

ODOT APPROVAL DATE: 8/27/99

2. THE TRACC (TRINITY ATTENUATING CRASH CUSHION) MANUFACTURED BY TRINITY INDUSTRY, 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE: 330-545-4373).

THE TRACC IS 21'-0" LONG AND 2'-7" WIDE. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DRAWING NUMBER: SS450

DRAWING NAME: CRASH-CUSHION ATTENUATING TERMINAL PLAN, ELEVATION & SECTIONS

REVISION DATE: 3/12/99 REV. 1

ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: SS455

DRAWING NAME: TRACC TRANSITION TO W-BEAM MEDIAN, BARRIER PLAN, ELEVATION & SECTIONS

REVISION DATE: 2/18/99

ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: SS461

DRAWING NAME: TRACC TRANSITION TO CONCRETE SAFETY SHAPE BARRIER PLAN, ELEVATION & SECTIONS

REVISION DATE: 6/30/99 REV. 1

ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: SS462

DRAWING NAME: TRACC TRANSITION TO CONCRETE BARRIER SINGLE SLOPE PLAN, ELEVATION & REVISION DATE: 6/30/99

ODOT APPROVAL DATE: 8/27/99

3. THE BARRIER SYSTEMS, INC. TAU-II IMPACT ATTENUATOR, DISTRIBUTED BY ROAD SYSTEMS INC., SALES SUPPORT,

2183 ELM TRACE, AUSTINTOWN, OH 44515, (TELEPHONE 330-799-9291)

THE TAU-II FOR THIS NOTE IS A PARALLEL 8-BAY UNIT (24' LONG AND 35" WIDE). INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIEDIN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DRAWING NUMBER: A040416

DRAWING NAME: UNIVERSAL TAU-II PARTS LIST

REVISION DATE: 4/22/04

ODOT APPROVAL DATE: 10/16/04

DRAWING NUMBER: A040420

DRAWING NAME: UNIVERSAL TAU-II FOUNDATION, FLUSH MOUNT BACKSTOP

REVISION DATE: 4/28/04

ODOT APPROVAL DATE: 10/16/04

DRAWING NUMBER: A040105

DRAWING NAME: UNIVERSAL TAU-II FOUNDATION, PCB BACKSTOP (REFERENCED ON A04020)

REVISION DATE: 1/07/04

ODOT APPROVAL DATE: 10/16/04

DRAWING NUMBER: BO40239

DRAWING NAME: APPLICATION, FLUSH MOUNT BACKSTOP

(TYPICAL FOR PARALLEL 60 MPH UNIT)

REVISION DATE: 4/21/04

ODOT APPROVAL DATE: 10/16/04

THE CONTRACTOR SHALL PROVIDE A REPLACEMENT UNIT WHEN AN IMPACT IS SEVERE ENOUGH TO REQUIRE COMPLETE REPLACEMENT OF THE ATTENUATOR. THE CONTRACTOR SHALL HAVE A SPARE PARTS PACKAGE AVAILABLE ON THE PROJECT SITE AT ALL TIMES WHEN AN ATTENUATOR IS IN PLACE. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF ONE COMPLETE SPARE PARTS PACKAGE FOR EVERY ONE TO SIX UNITS INSTALLED ON THE PROJECT SITE. FOR EXAMPLE, FIVE INSTALLED UNITS REQUIRE ONE SPARE PARTS PACKAGE AND SEVEN INSTALLED UNITS REQUIRE TWO SPARE PARTS PACKAGES.

WHEN BIDIRECTIONAL DESIGNS ARE SPECIFIED, THE CONTRACTOR SHALL SUPPLY APPROPRIATE TRANSITIONS. PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT, MAINTAIN AND REPAIR A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED BACKUPS, TRANSITIONS, LEVELING PADS, HARDWARE AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

ITEM 614 - MODIFIED AMERICAN RECOVERY AND REINVESTMENT ACT (ARRA) SIGN, FREEWAY/ EXPRESSWAY

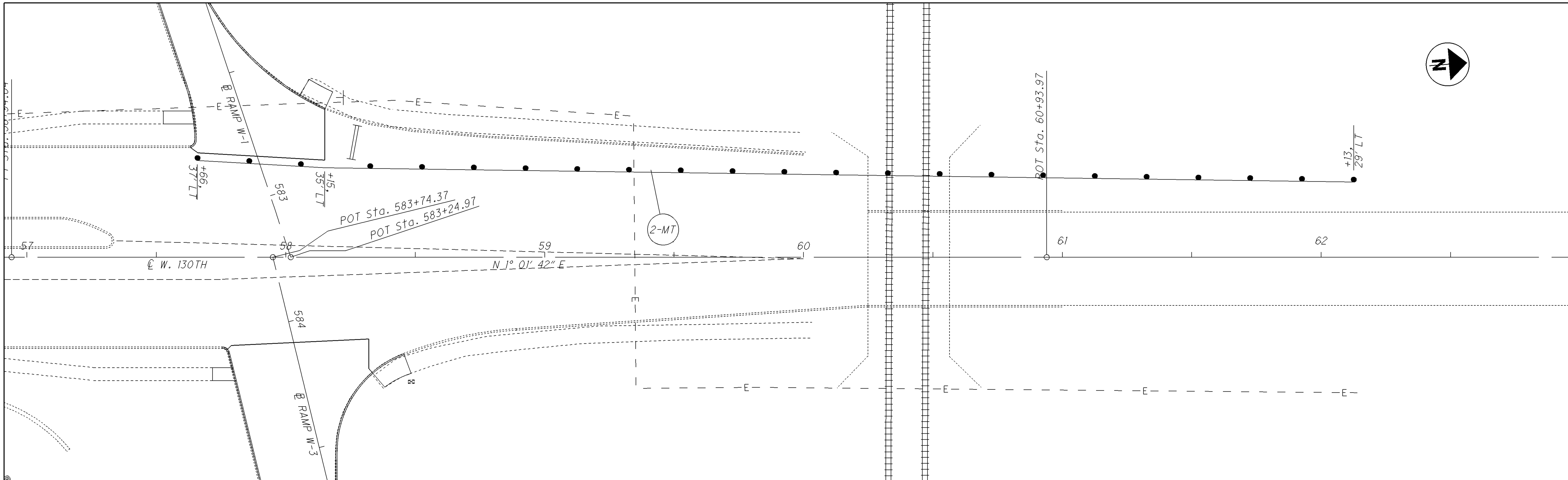
THIS ITEM SHALL CONSIST OF THE FURNISHING AND INSTALLING, RELOCATING AND SUBSEQUENT REMOVAL, OF MODIFIED AMERICAN RECOVERY AND REINVESTMENT ACT (ARRA) SIGNS ON YIELDING POST SUPPORTS.

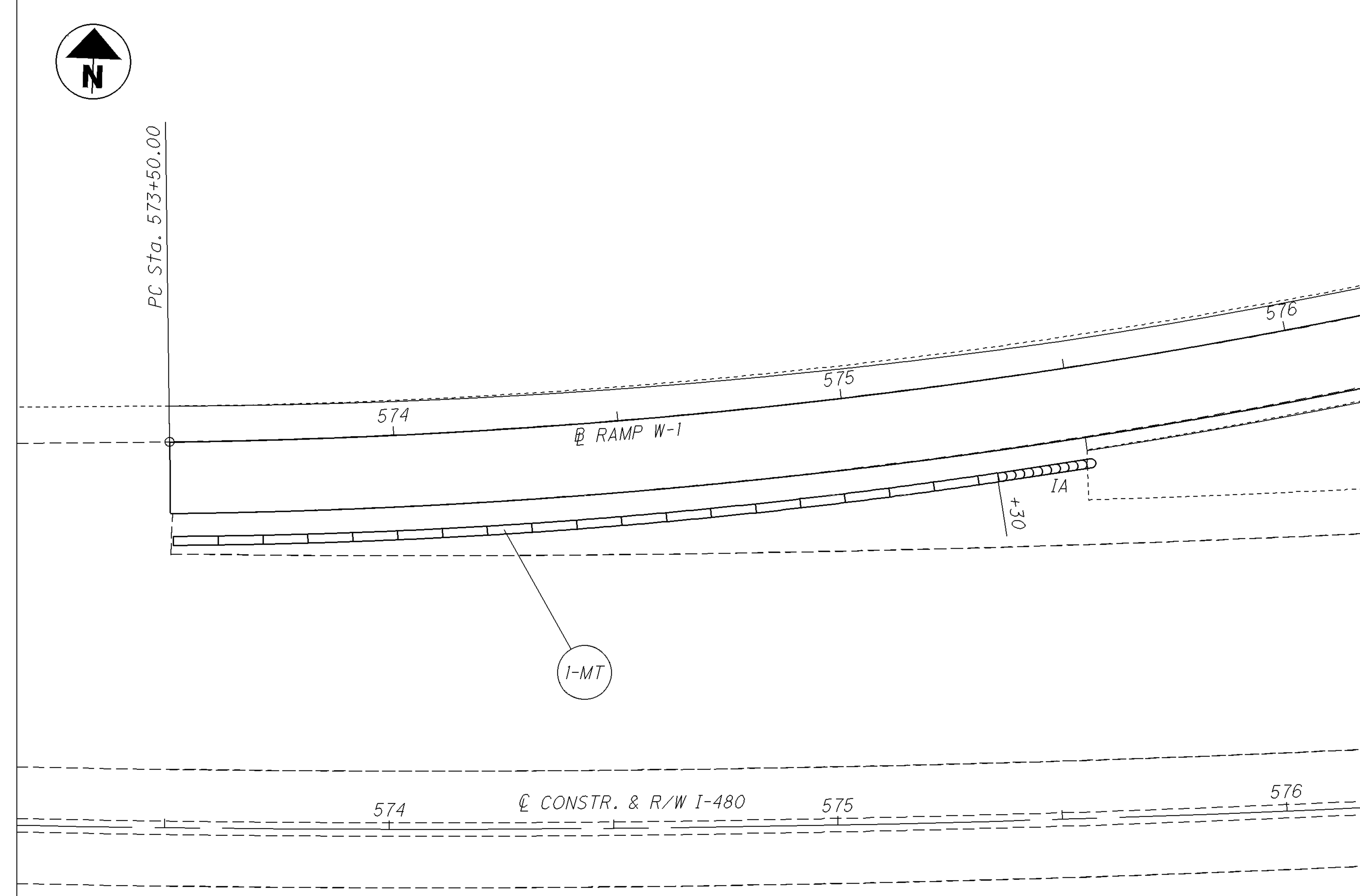
FOR EACH RAMP CLOSURE, INSTALL ONE ARRA SIGN NEAR THE BEGINNING OF THE RAMP IN A LOCATION AS APPROVED BY THE ENGINEER. AFTER WORK ON EACH RAMP IS COMPLETED, RELOCATE THE ARRA SIGN TO THE NEXT RAMP CLOSURE. THE ARRA SIGN CONSISTS OF ONE 120" X 84" WHITE ON GREEN EXTRUSHEET SIGN WITH PICTOGRAPHS, ONE 120" X 24" BLACK ON ORANGE EXTRUSHEET SIGN, AND ONE 24" X 24" DIAMOND FLAT SHEET SIGN. THE SIGN FABRICATION DETAILS ARE FOUND AT:

http://www.dot.state.oh.us/Divisions/HighwayOps/Traffic/Pages/OTEHomePage.aspx

INSTALL THE SIGN ON THREE NO. 3 YIELDING POSTS AS PER STANDARD DRAWING TC-41.20, WITH ONE POST ON SIGN CENTERLINE AND ONE POST 12" FROM EACH END. SIGNS IN PROTECTED LOCATIONS MAY BE INSTALLED ON OTHER SUPPORTS AS APPROVED BY THE ENGINEER. USED SIGNS ARE ALLOWED PROVIDED THEY ARE IN A CONDITION ACCEPTABLE TO THE ENGINEER. REMOVE THE ARRA SIGNS AND SUPPORTS AT THE END OF THE PROJECT. REMOVED ARRA SIGNS AND SUPPORTS ARE THE PROPERTY OF THE CONTRACTOR.

PAYMENT SHALL BE INCLUDED IN THE CONTRACT LUMP SUM BID PRICE FOR ITEM 614 MAINTAINING TRAFFIC AND SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS (INCLUDING SUPPORTS), TOOLS AND OTHER INCIDENTALS TO PROVIDE FOR A COMPLETE AND ACCEPTED ITEM OF WORK.





MAINTENANCE OF TRAFFIC SUBSUMMARY													
			614	614	614	614	622						
REFERENCE NUMBER	STATION TO STATION	SIDE	WZ IMPACT ATT. (UNIDIRECTIONAL)	BARRIER REFLECTOR, TYPE B2	OBJECT MARKER, TWO WAY	WZ EDGE LINE, CL 1	PORTABLE CONCRETE BARRIER, 32"						
			EA	EA	EA	MI	FT						
1-MT	573+50 TO 575+30	L	1	4	4		180						
2-MT	57+66 TO 62+13	R				0.09							
TOTALS TO SHEET 20			1	4	4	0.09	180						

LEGEND

BARRICADE
BARRELS
EDGE LINE

0 10 20 40
HORIZONTAL SCALE IN FEET

CALCULATED JTW
CHECKED

MAINTENANCE OF TRAFFIC PLAN
RAMP W-1

CUY-480-10.36
RAMPS

13
34

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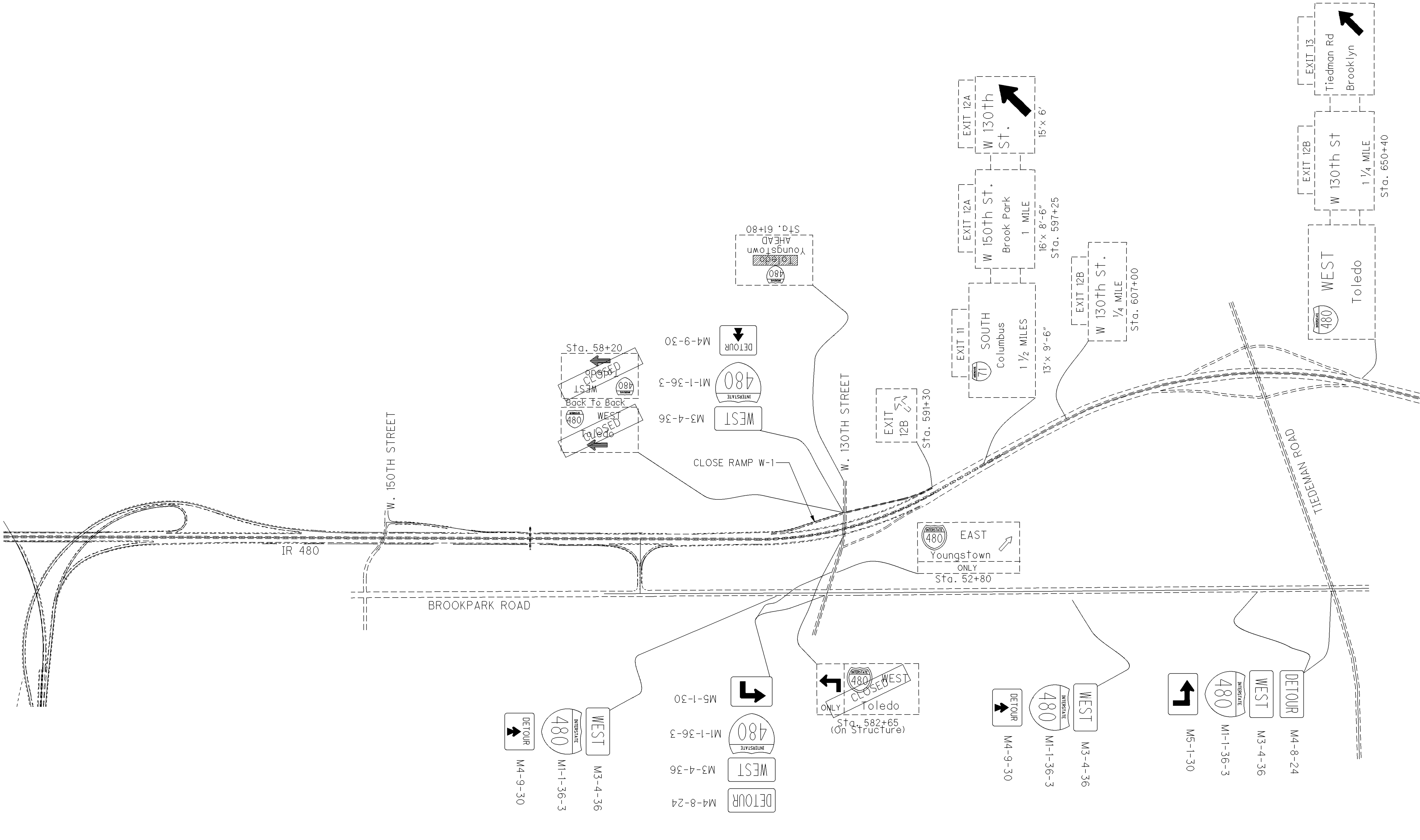

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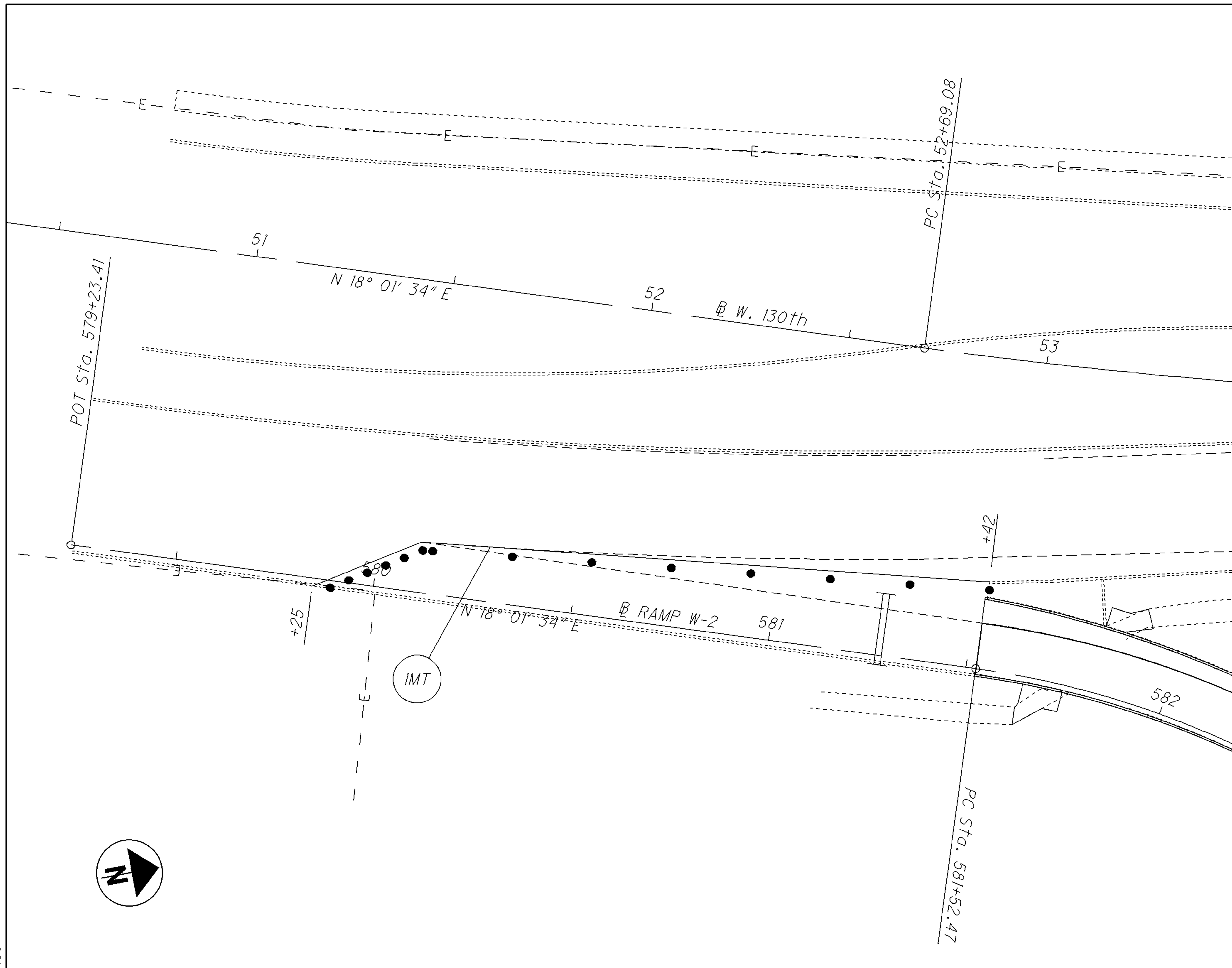
HORIZONTAL SCALE IN FEET

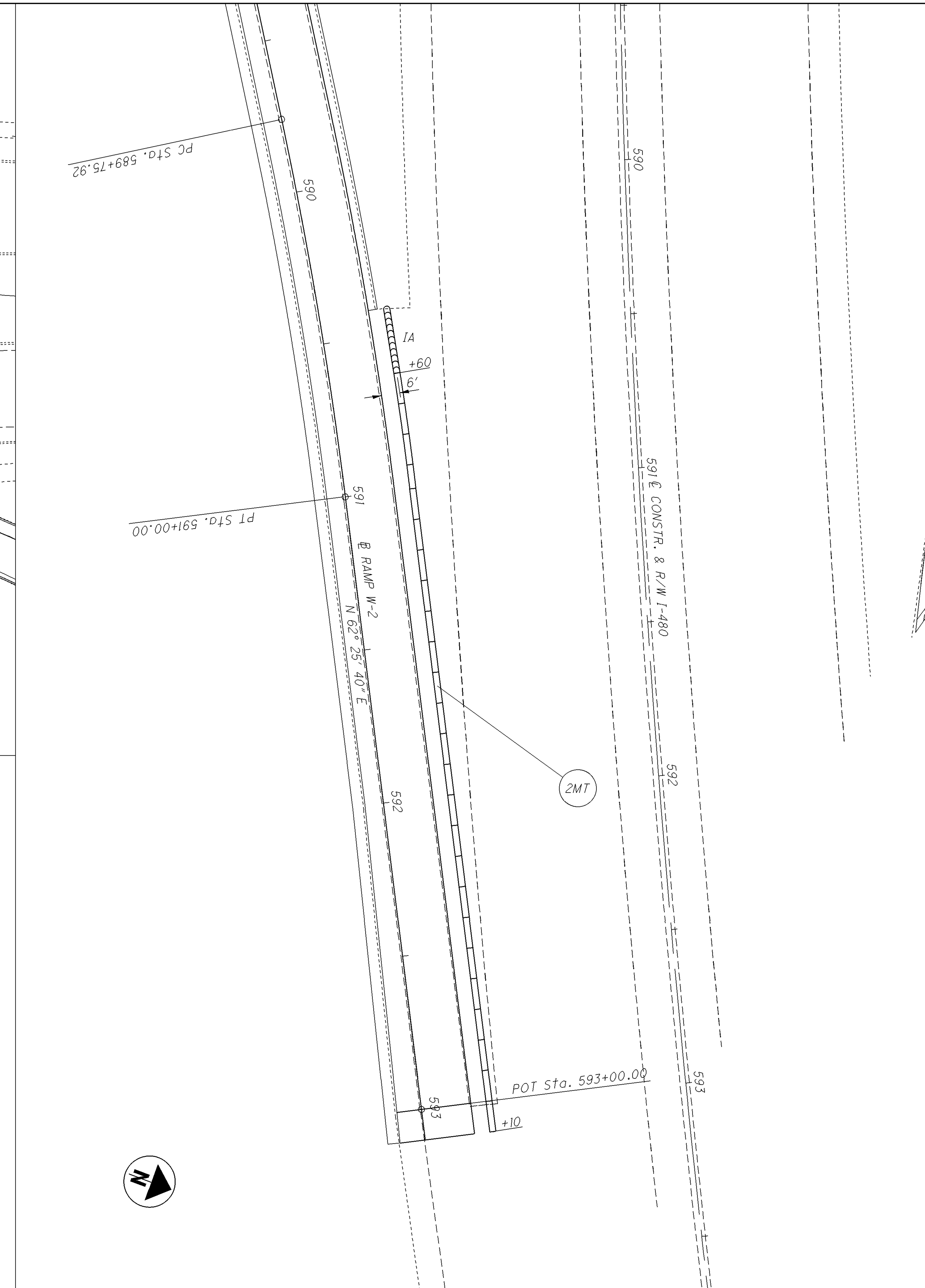
CALCULATED

CHECKED

MAINTENANCE OF TRAFFIC PLAN RAMP W-1 DETOUR

CUY-480-10.36 RAMPS





MAINTENANCE OF TRAFFIC SUBSUMMARY

REFERENCE NUMBER	STATION TO STATION	SIDE	614 WZ IMPACT ATT. (UNIDIRECTIONAL)	614 BARRIER REFLECTOR, TYPE B2	614 OBJECT MARKER, TWO WAY	614 WZ EDGE LINE, CL 1	622 PORTABLE CONCRETE BARRIER, 32"					
			EA	EA	EA	MI	FT					
1-MT	51+25 TO 52+42	R				0.02						
2-MT	590+60 TO 593+00	L	1	5	5		250					
	TOTALS TO SHEET 20		1	5	5	0.02	250					

LEGEND

BARRICADE
BARRELS
EDGE LINE

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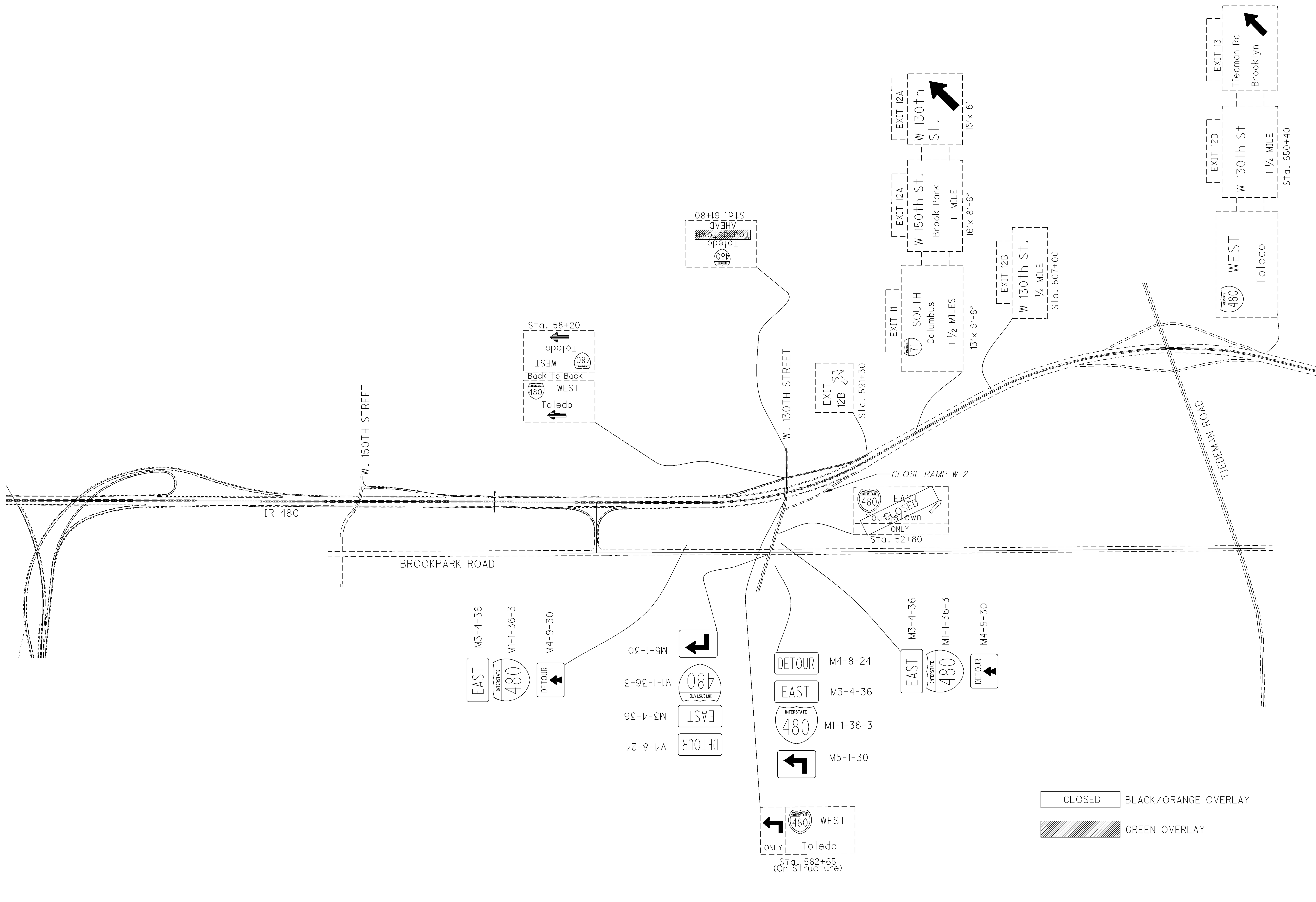
HORIZONTAL SCALE IN FEET 0 10 20 40

CALCULATED JTW
CHECKED

MAINTENANCE OF TRAFFIC PLAN RAMP W-2

CUY-480-10.36 RAMPS

15
34



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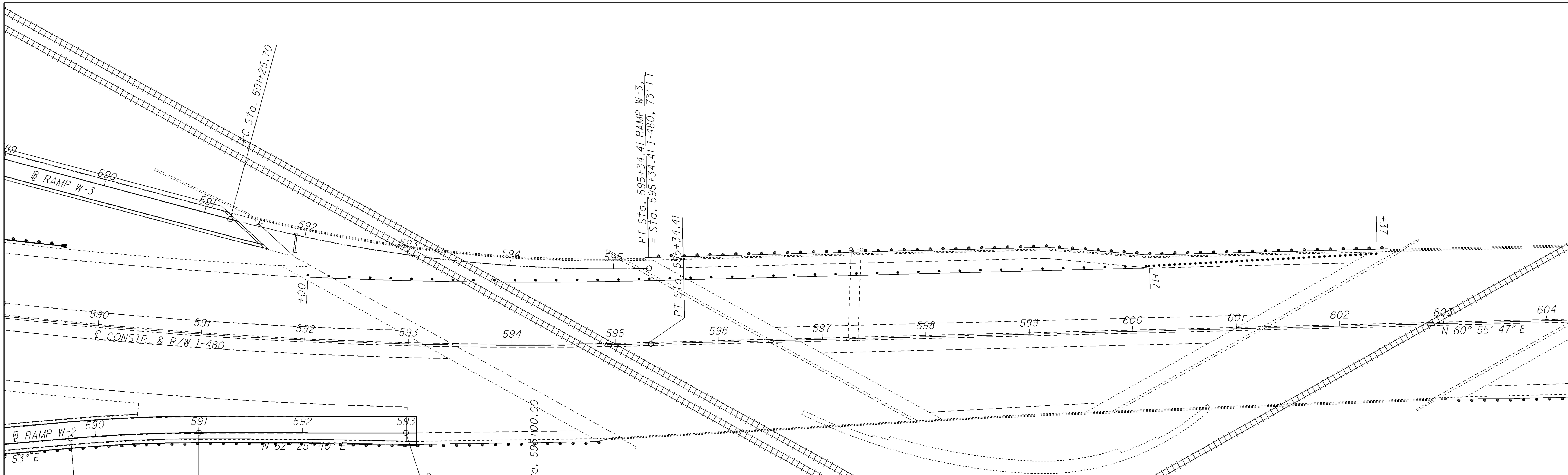
HORIZONTAL SCALE IN FEET

CALCULATED

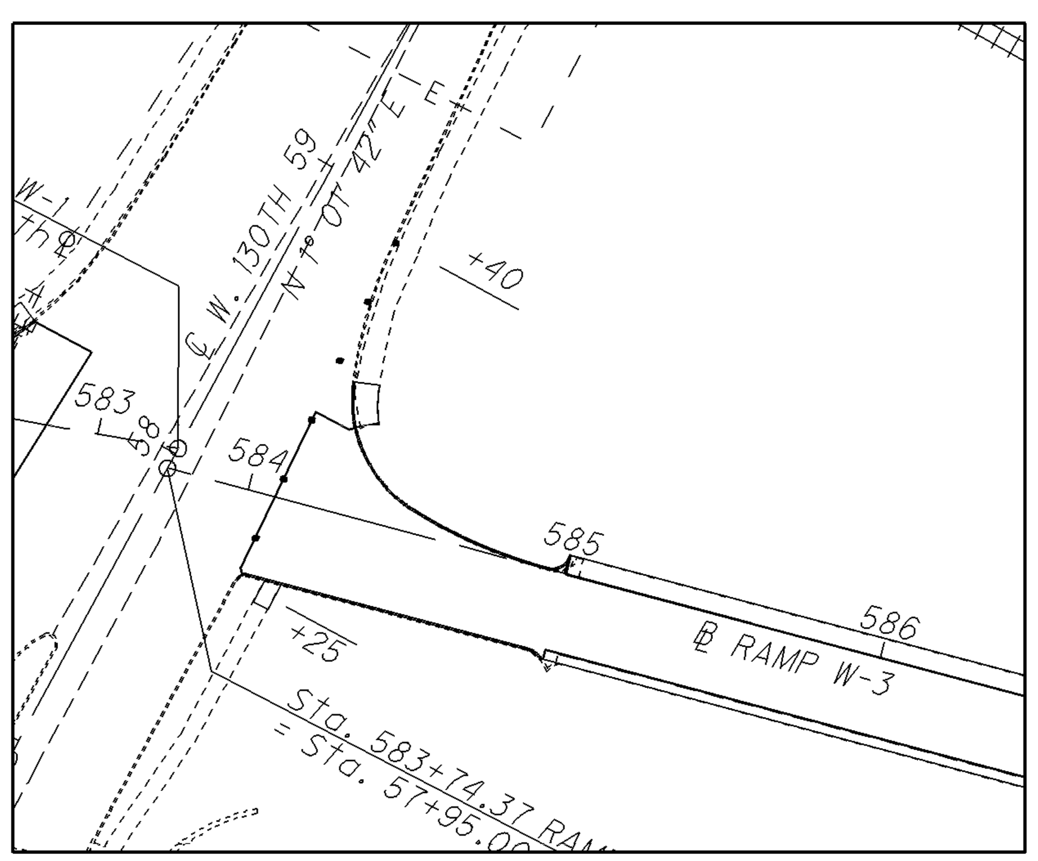
CHECKED

MAINTENANCE OF TRAFFIC PLAN
RAMP W-2 DETOUR

CUY-480-10.36 RAMPS



ITEM 614 - WORK ZONE EDGE LINE, CLASS I
STA. 592+00 TO STA. 600+17 = 0.15 MILE
CARRIED TO GENERAL SUMMARY, SHEET 20



LEGEND

- BARRICADE
- BARRELS
- EDGE LINE

CALCULATED JTW
CHECKED

HORIZONTAL SCALE IN FEET 0 25 50 100

MAINTENANCE OF TRAFFIC PLAN
RAMP W-3

CUY-480-10.36
RAMPS

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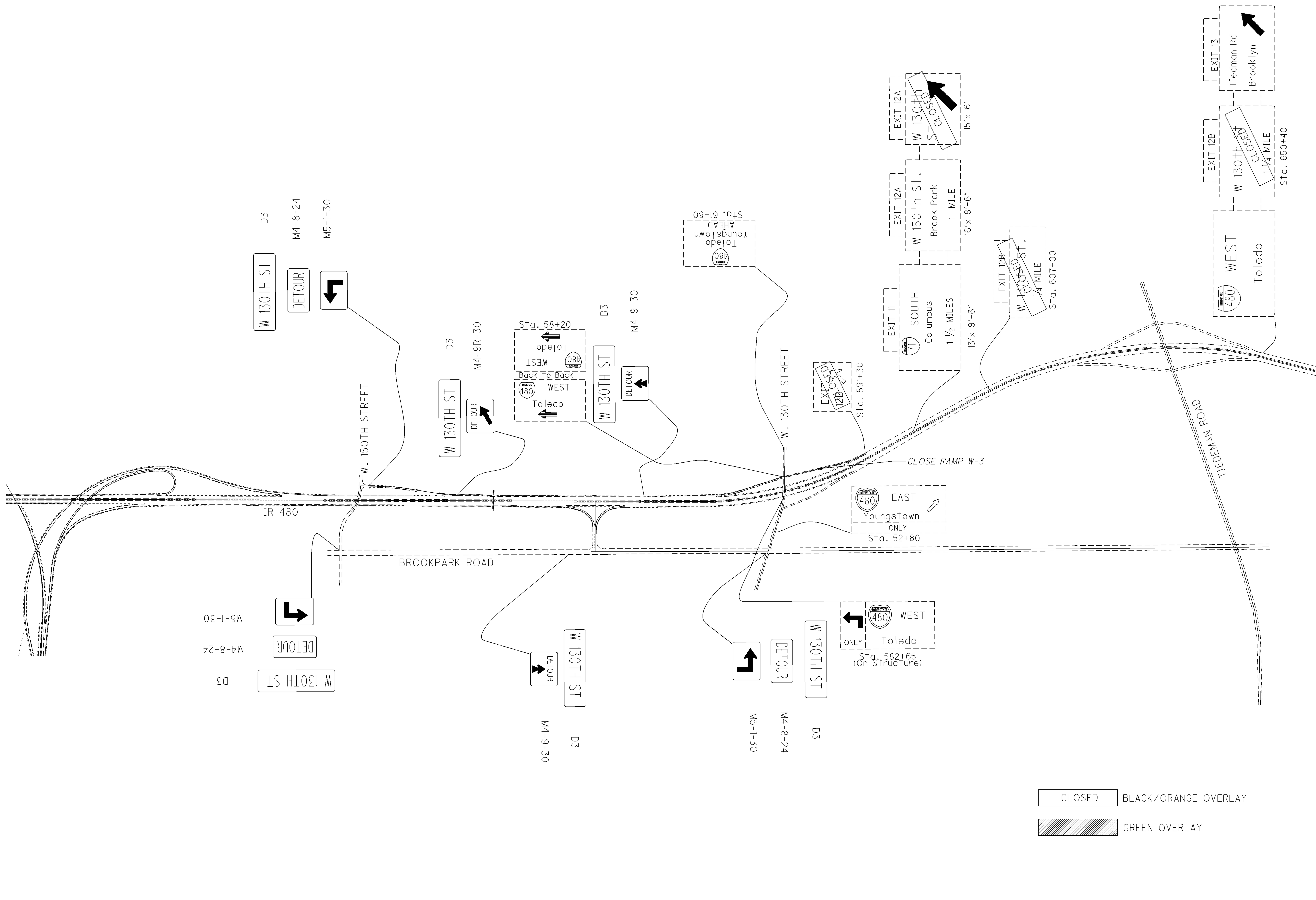

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HORIZONTAL SCALE IN FEET

CALCULATED

CHECKED

MAINTENANCE OF TRAFFIC PLAN
RAMP W-3 DETOUR

CUY-480-10.36
RAMPS

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GENERAL SUMMARY

CUY-480-10.36 RAMPS

CALCULATED JTW CHECKED

SHEET NUMBER 7	8	9	21	23	24	25	26	27	33	34	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
															ROADWAY	
											201	11000	LUMP		CLEARING AND GRUBBING	
			5900								202	23000	5900	SQ YD	PAVEMENT REMOVED	
			707								202	32000	707	FT	CURB REMOVED	
					6	26					202	35100	32	FT	PIPE REMOVED, 24" AND UNDER	
					750	437.5					202	38001	1187.5	FT	GUARDRAIL REMOVED, AS PER PLAN	7
					1						202	42010	1	EACH	ANCHOR ASSEMBLY REMOVED, TYPE E	
						1					202	42040	1	EACH	ANCHOR ASSEMBLY REMOVED, TYPE T	
					1						202	58100	1	EACH	CATCH BASIN REMOVED	
			2628				82	45			203	10000	2755	CU YD	EXCAVATION	
		250									203	20000	250	CU YD	EMBANKMENT	
			8938								204	10000	8938	SQ YD	SUBGRADE COMPACTION	
	5										204	45000	5	HOUR	PROOF ROLLING	
		100									204	13000	100	CU YD	EXCAVATION OF SUBGRADE	9
		100									204	30010	100	CU YD	GRANULAR MATERIAL, TYPE B	9
			12.4								209	60201	12.4	STATION	LINEAR GRADING, AS PER PLAN	8
					750	437.5					606	13000	1187.5	FT	GUARDRAIL, TYPE 5	
					1						606	22010	1	EACH	ANCHOR ASSEMBLY, TYPE E-98	
						1					606	26500	1	EACH	ANCHOR ASSEMBLY, TYPE T	
						1					606	35100	1	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 2	
			680								608	52001	680	SQ FT	CURB RAMP, AS PER PLAN	9
					8	5					626	00100	13	EACH	BARRIER REFLECTOR, TYPE A	
															EROSION CONTROL	
8424											659	10000	8424	SQ YD	SEEDING AND MULCHING	
7.6											659	20000	7.6	TON	COMMERCIAL FERTILIZER	
1.7											659	31000	1.7	ACRE	LIME	
23											659	35000	23	M GAL	WATER	
											832	15000	LUMP		STORM WATER POLLUTION PREVENTION PLAN	
											832	30000	20000	EACH	EROSION CONTROL	
															DRAINAGE	
						1.33					601	32304	1.33	CU YD	ROCK CHANNEL PROTECTION, TYPE D WITH FABRIC FILTER	
						0.27					602	20000	0.27	CU YD	CONCRETE MASONRY	
				65	46						603	00510	111	FT	6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS	
					10	35					603	01100	45	FT	6" CONDUIT, TYPE C	
					6						603	04600	6	FT	12" CONDUIT, TYPE C	
						26					603	06100	26	FT	15" CONDUIT, TYPE C	
					1						604	00400	1	EACH	CATCH BASIN, NO. 3	
				1	2						604	36600	3	EACH	PRECAST REINFORCED CONCRETE OUTLET	
				539	1322	643					605	11110	2504	FT	6" SHALLOW PIPE UNDERDRAINS WITH FABRIC WRAP	
				235							605	12210	235	FT	6" DEEP PIPE UNDERDRAINS WITH FABRIC WRAP	
				115							605	13410	115	FT	6" UNCLASSIFIED PIPE UNDERDRAINS WITH FABRIC WRAP	
															PAVEMENT	
			503								255	20000	503	FT	FULL DEPTH PAVEMENT SAWING	5
			1397								304	20000	1397	CU YD	AGGREGATE BASE	
			46								448	46061	46	CU YD	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, UNDER GUARDRAIL, PG64-22, APP	8
			8096								452	14000	8096	SQ YD	10" NON-REINFORCED CONCRETE PAVEMENT	
			52								451	30000	52	FT	SPECIAL - PRESSURE RELIEF JOINT, TYPE A	6
			450								609	10000	450	FT	ASPHALT CONCRETE CURB, TYPE 1	
			693								609	26001	693	FT	CURB, TYPE 6, AS PER PLAN	9
															TRAFFIC CONTROL	
									3		632	26501	3	EACH	DETECTOR LOOP, AS PER PLAN	9
									0.83		642	00090	0.83	MILE	EDGE LINE	
									1194		642	00390	1194	FT	CHANNELIZING LINE	
									46		642	00490	46	FT	STOP LINE	
									248		642	00590	248	FT	CROSSWALK LINE	
									6		642	01290	6	EACH	LANE ARROW	
									2		642	01390	2	EACH	WORD ON PAVEMENT, 72"	
										16	620	00500	16	EACH	DELINEATOR, POST MOUNTED	
										43	621	00100	43	EACH	RPM	

SHEET NUMBER 7	8	11	13	15	17	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
										MAINTENANCE OF TRAFFIC	
		100				614	11100	100	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR	
			4	5		614	13302	9	EACH	BARRIER REFLECTOR, TYPE B2	
			1	1		614	12336	2	EACH	WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)	
			4	5		614	13360	9	EACH	OBJECT MARKER, TWO WAY	
		4				614	18601	4	SIGN MNTH	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	11
			0.09	0.02	0.15	614	22000	0.26	MILE	WORK ZONE EDGE LINE, CLASS I	
			180	250		622	40020	430	FT	PORTABLE CONCRETE BARRIER, 32"	
						614	11000	LUMP		MAINTAINING TRAFFIC	
5						619	16010	5	MONTH	FIELD OFFICE, TYPE B	
	LUMP					623	10001	LUMP		CONSTRUCTION LAYOUT STAKES, AS PER PLAN	7
						624	10000	LUMP		MOBILIZATION	

CALCULATED JTW CHECKED

GENERAL SUMMARY

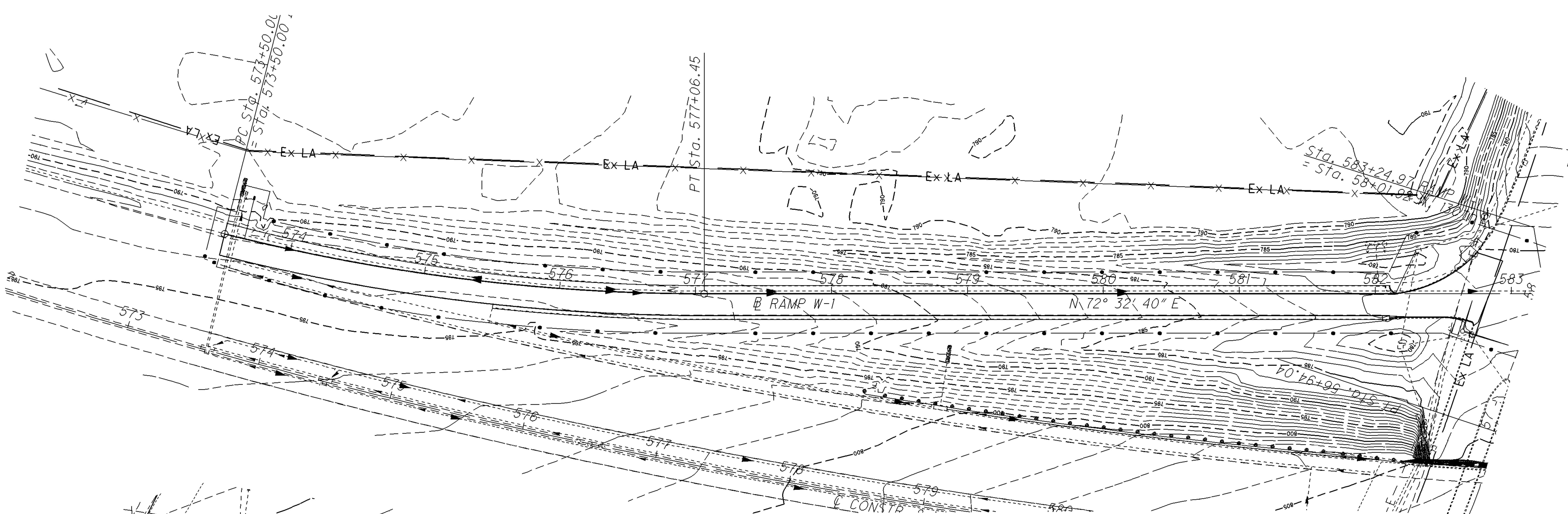
CUY-480-10.36
RAMPS

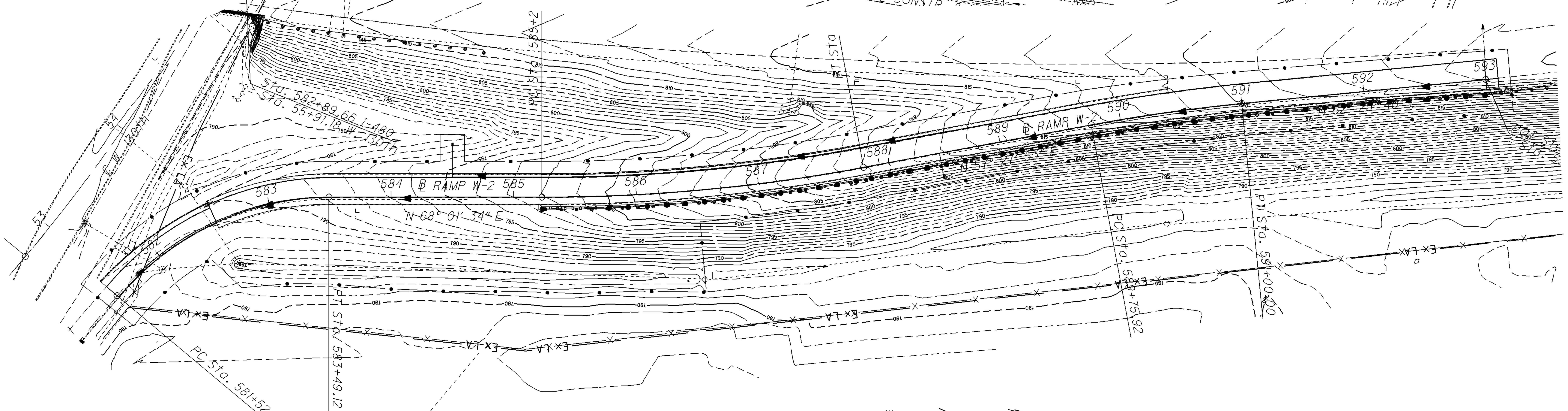
REFERENCE	SHEET	STATION TO STATION		LENGTH L	AVERAGE WIDTH W	SURFACE AREA A A=LxW	AREA BY CAD	204 SUBGRADE COMPACTION	202 PAVEMENT REMOVED	203 EXCAVATION	202 CURB REMOVED	304 6" AGGREGATE BASE	452 10" NON-REINFORCED CONCRETE	448 ASPHALT CONCRETE, MISC.: UNDER GUARDRAIL	609 ASPHALT CONCRETE CURB, TYPE 1	609 CURB, TYPE 6, AS PER PLAN	SPECIAL PRESSURE RELIEF JOINT, TYPE A	209 LINEAR GRADING, AS PER PLAN	608 CURB RAMP, AS PER PLAN	255 FULL DEPTH PAVEMENT SAWING
				FT	FT	SQ FT	SQ FT	SQ YD	SQ YD	CU YD	FT	CU YD	SQ YD	CU YD	FT	FT	FT	STA.	SQ FT	FT
		RAMP W-1																		
1-PR	28	573+50	582+10	860	16	13760			1528.9											
1-P	28	573+50	582+10	860	25	21500		2675.6		822.8		414.1	2388.9							
2-P	28	582+10	582+84				2427.4	269.7	269.7	52.4		45.0	269.7							
1-C	28	582+10.30	582+75								150.0					142.0				
1-CR	28	582+62																	125.0	
2-CR	28	582+60																	100.0	
1-SC	28	573+50.00	575+53	203																219.0
		RAMP W-2																		
2-PR	29	580+10.40	582+54	243.6	19	4628.4			514.3											
3-P	29	580+10.40	582+54				3848.75	427.6		83.2		71.3	427.6							
3-PR	29	582+54	590+42	788	16	12608			1400.9											
4-P	29	582+54	590+42	788	25	19700		2451.6		754.0		379.4	2188.9							
4-PR	29	590+42	593+00	258	16	4128			458.7											
5-P	29	590+42	593+00	258	22	5676		716.7		230.1		109.9	630.7							
2-C	29	580+10.40	582+54								352.0					352.0				
1-PU	29	585+22.50	593+10	787.5	4	3150								29.2				7.9		
3-CR	29	581+69																	125.0	
4-CR	29	581+82																	100.0	
2-SC	29	590+42.00	593+10	268																284.0
		RAMP W-3																		
6-P	28	584+08	585+00				3354.4	372.7	372.7	72.5		62.1	372.7							
5-PR	28	585+00	587+00	200	24	4800			533.3											
7-P	28	585+00	587+00	200	33	6600		800.0		225.9		125.9	733.3							
6-PR	29	587+00	588+60	160	20	3200			355.6											
8-P	29	587+00	588+60	160	20	3200		408.9		135.8		62.2	355.6							
7-PR	29	588+60	591+22	262	16	4192			465.8											
9-P	29	588+60	591+22	262	25	6550		815.1		250.7		126.1	727.8							
3-C	28	584+03	585+00								205.0					199.0				
2-PU	29	586+92	591+42	450	4	1800								16.7	450.0			4.5		
10-P	29	591+24.55	591+67.54														52.0			
5-CR	28	584+23																	150.0	
6-CR	28	584+12																	80.0	
		TOTALS						8938.0	5900.0	2628.0	707.0	1397.0	8096.0	46.0	450.0	693.0	52.0	12.4	680.0	503.0

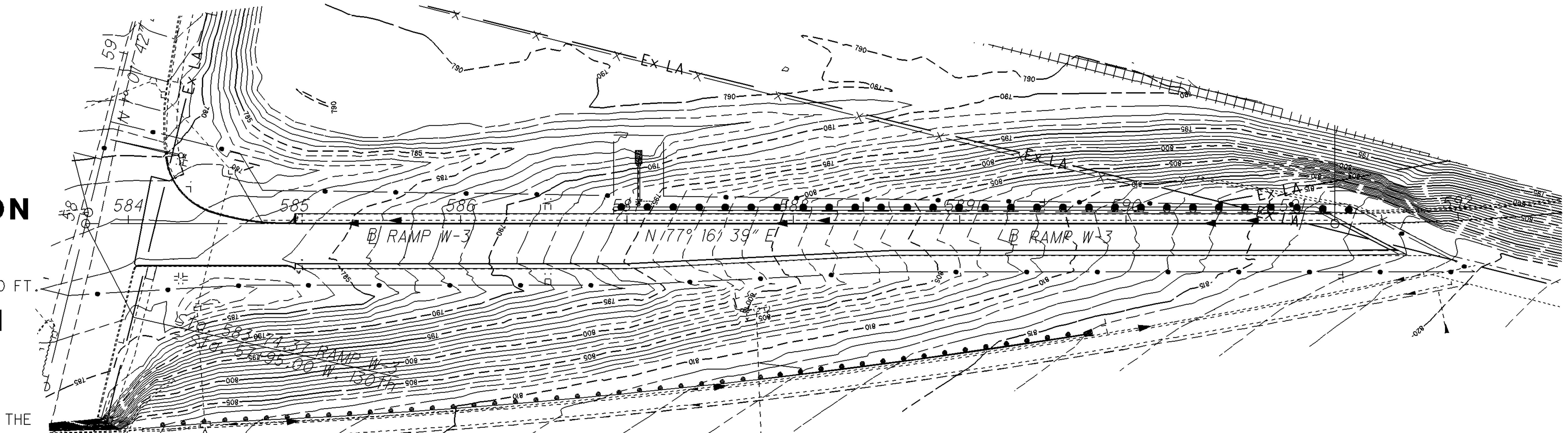
CALCULATED | CHECKED

CALCULATIONS

CUY-480-10.36 RAMPS







PROJECT DATA	
PROJECT EARTH DISTURBED AREA	4.02 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA	0.5 ACRES
NOI EARTH DISTURBED AREA	4.50 ACRES
IMPERVIOUS (PAVED) AREA FOR PRE-CONSTRUCTION SITE	1.77 ACRES
IMPERVIOUS (PAVED) AREA FOR POST-CONSTRUCTION SITE	1.77 ACRES
RUNOFF COEFFICENT FOR PRE-CONSTRUCTION SITE*	0.79
RUNOFF COEFFICENT FOR POST-CONSTRUCTION SITE*	0.79
SOIL AND WATER CONSERVATION MAPS	SOIL SURVEY OF CUYAHOGA COUNTY
IMMEDIATE RECEIVING WATERS	BIG CREEK
SUBSEQUENT RECEIVING WATERS	CUYAHOGA RIVER

*A RUNOFF COEFFICIENT OF 0.9 WAS USED FOR THE ENTIRE AREA WITHIN ODOT R/W FOR POST CONSTRUCTION BMP DESIGN.

USGS DATA

LAKEWOOD, OHIO

LONGITUDE: 81° 46' 49"
LATITUDE: 41° 25' 15"

PROJECT DESCRIPTION

RECONSTRUCTION OF PAVEMENT ON RAMPS AT THE INTERCHANGE OF I-480 AND W.130TH. WORK INCLUDES PAVEMENT, SUB-SURFACE DRAINAGE AND CURB RAMPS. TOTAL PROJECT LENGTH IS: 1960 FT.

POST CONSTRUCTION BMP'S

A VEGETATED BIOFILTER WAS DESIGNED FOR POST CONSTRUCTION BMP'S ON THIS PROJECT. 0.8 ACRES OF TREATMENT IS REQUIRED AND 1.19 ACRE OF ODOT DRAINAGE AREA IS TO BETREATED. THE RIGHT DITCH ON RAMP W-2 IS TO BE WIDENED TO AN 8' BOTTOM WIDTH FROM STA. 582+50 TO STA. 586+50 = 400' WITH A DEPTH OF APPROXIMATELY 2-3'. SEE SHEET 5 FOR TYPICAL SECTION AND SHEETS 26 TO 27 FOR CROSS-SECTIONS.

CALCULATED
CHECKED

PROJECT SITE PLAN

CUY-480-10.36
RAMPS

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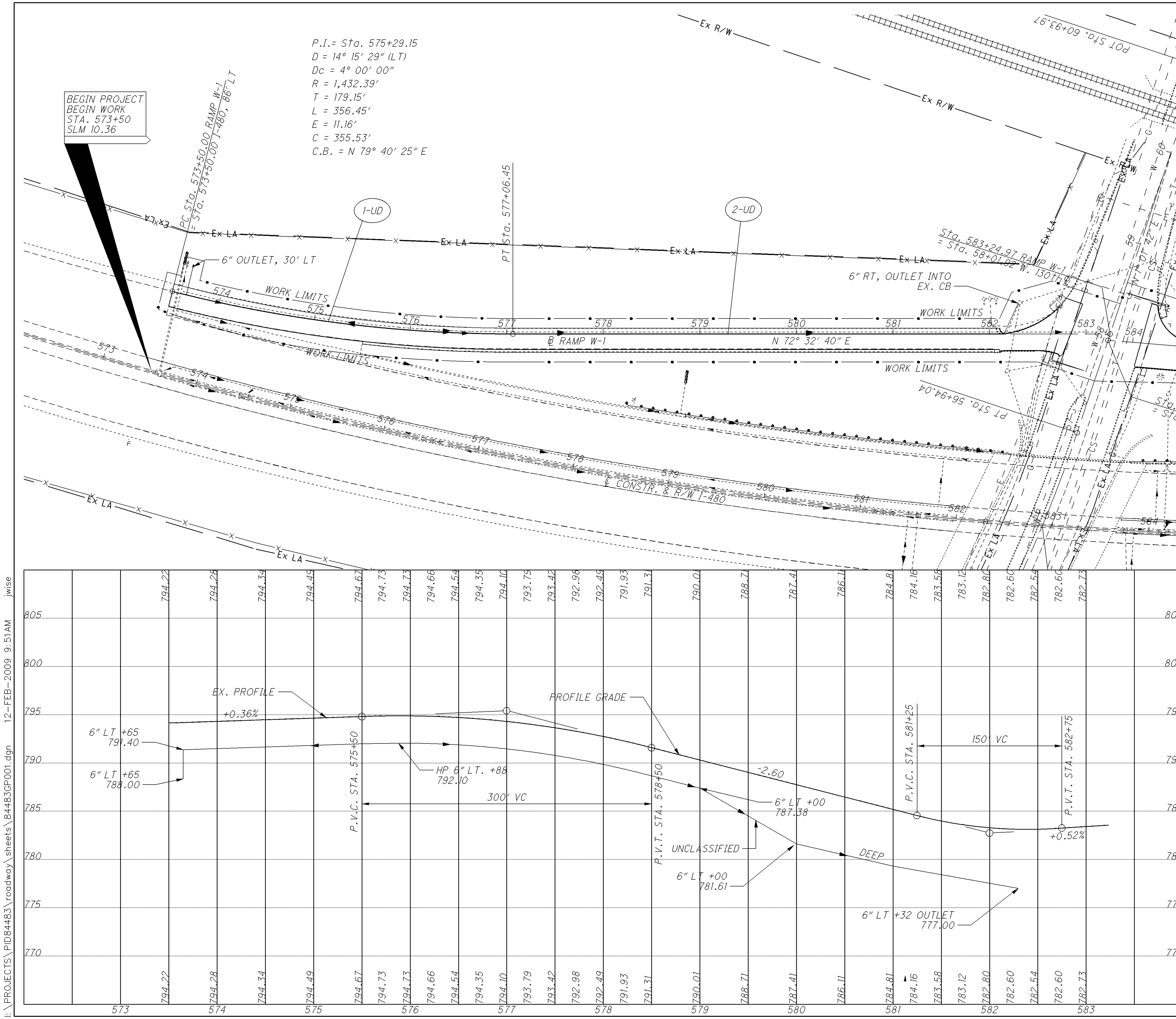

REF NO.	STATION FROM	STATION TO	SIDE	603 6" CONDUIT, TYPE F U.DRAIN OUTLETS FT	604 PRECAST REINFORCED CONCRETE OUTLET EA	605 6" SHALLOW PIPE UD W/ FW FT	605 6" UNCLASS. PIPE UD W/ FW FT	605 6" DEEP PIPE UD W/ FW FT
1-UD	573+65	575+88	LT	30	1	223		
2-UD	575+88	582+32	LT	35		316	115	235
TOTALS CARRIED TO GENERAL SUMMARY				65	1	539	115	235

PLAN AND PROFILE RAMP W-1

CALCULATED JTW CHECKED

HORIZONTAL SCALE IN FEET 0 25 50 100

CUY-480-10.36 RAMPS

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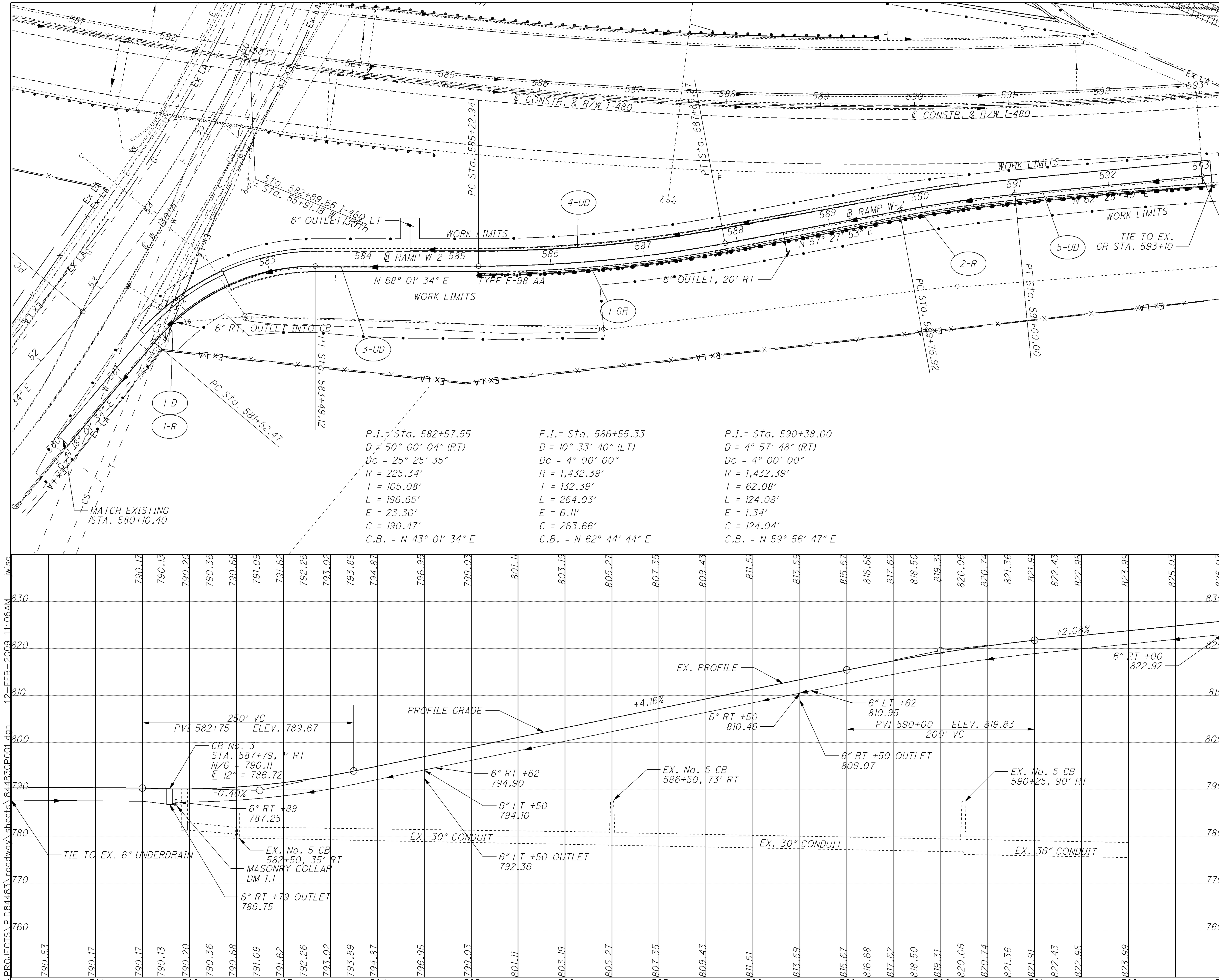


REF NO.	STATION FROM	STATION TO	SIDE	202 CATCH BASIN REMOVED (EA)	202 PIPE REMOVED, 24" AND UNDER (FT)	202 GUARDRAIL REMOVED, APP (FT)	202 ANCHOR ASSEMBLY REMOVED, TYPE E (FT)	603 6" CONDUIT, TYPE C (FT)	603 6" CONDUIT, TYPE F U.DRAIN OUTLETS (FT)	603 12" CONDUIT, TYPE C (FT)	604 CATCH BASIN, No. 3 (EA)	604 PRECAST REINFORCED CONCRETE OUTLET (EA)	605 6" SHALLOW PIPE UD W/ FW (FT)	606 GUARD-RAIL, TYPE 5 (FT)	606 ANCHOR ASSEMBLY, TYPE E-98 (EA)	626 BARRIER REFLECT., TYPE A (EA)
1-R	587+79	587+85	RT	1	6											
2-R	585+22.5	593+10	RT			750	1									
1-D	587+79	587+85	RT							6	1					
3-UD	580+10.40	584+62	LT					10					446			
4-UD	584+50	588+62	LT						26			1	421			
5-UD	588+50	593+00	LT						20			1	455			
1-GR	585+22.5	593+10	RT											750	1	8
TOTALS CARRIED TO GENERAL SUMMARY				1	6	750	1	10	46	6	1	2	1322	750	1	8

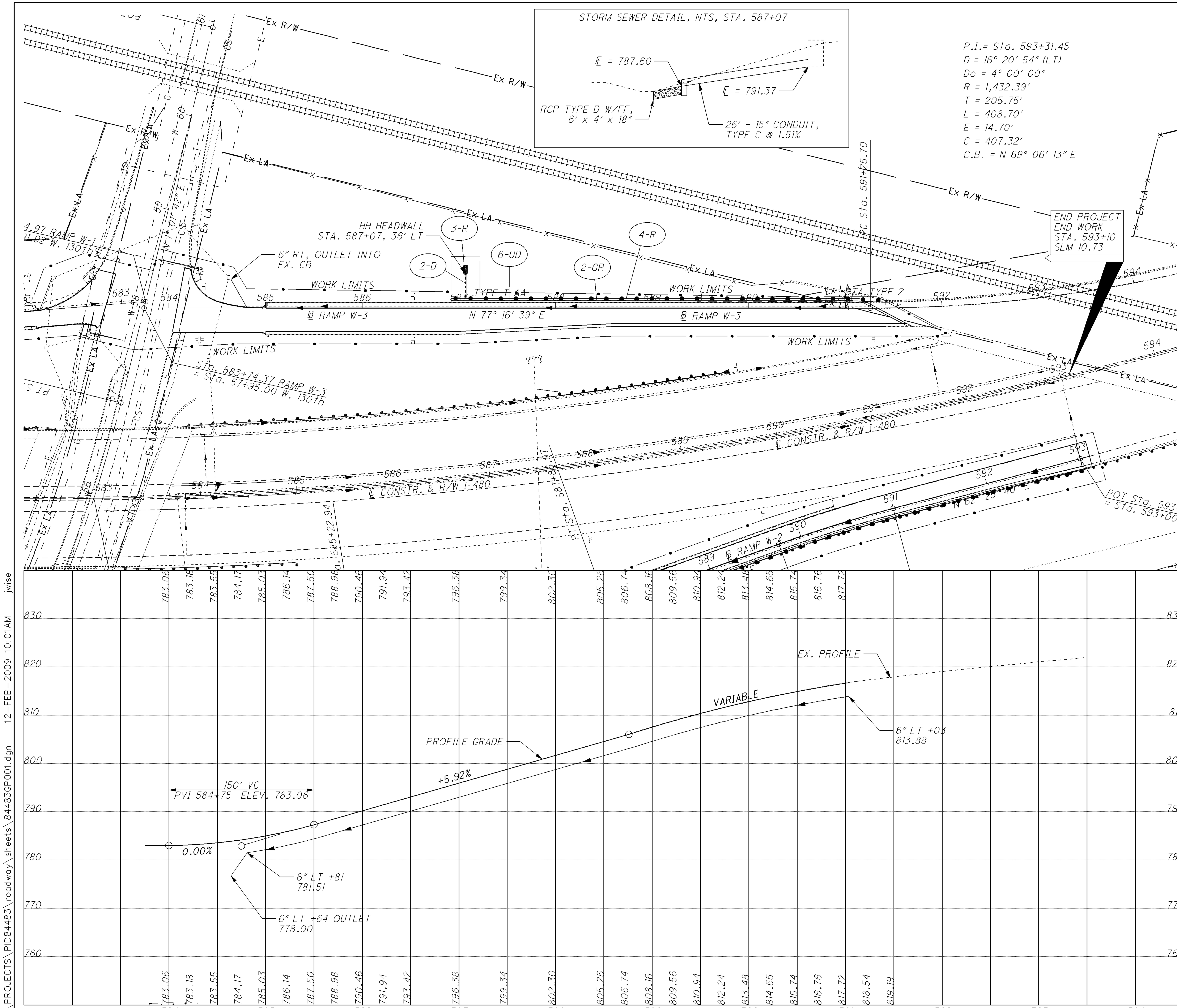
HORIZONTAL SCALE IN FEET

CALCULATED JTW

CHECKED

PLAN AND PROFILE RAMP W-2

CUY-480-10.36 RAMPS



REF NO.	STATION FROM	STATION TO	SIDE	202 PIPE REMOVED, 24" AND UNDER (FT)	202 GUARDRAIL REMOVED (FT)	202 ANCHOR ASSEMBLY REMOVED, TYPE T (FT)	601 RCP, TYPE D W/FF (CY)	602 CONCRETE MASONRY (CY)	603 6" CONDUIT, TYPE C (FT)	603 15" CONDUIT, TYPE C (FT)	605 6" SHALLOW PIPE UD W/ FW (FT)	606 GUARD-RAIL, TYPE 5 (FT)	606 ANCHOR ASSEMBLY, TYPE T (EA)	606 BRIDGE TERMINAL ASSEMBLY, TYPE 2 (EA)	626 BARRIER REFLECT., TYPE A (EA)
3-R	587+07	587+07	LT	26											
4-R	586+92	591+42	LT		437.5	1									
2-D	587+07	587+07	LT				1.33	0.27		26					
6-UD	584+64	591+03	LT						35		643				
2-GR	586+92	591+42	LT									437.5	1	1	
															5
TOTALS CARRIED TO GENERAL SUMMARY				26	437.5	1	1.33	0.27	35	26	643	437.5	1	1	5

HORIZONTAL SCALE IN FEET
CALCULATED JTW
CHECKED

PLAN AND PROFILE RAMP W-3

CUY-480-10.36 RAMPS

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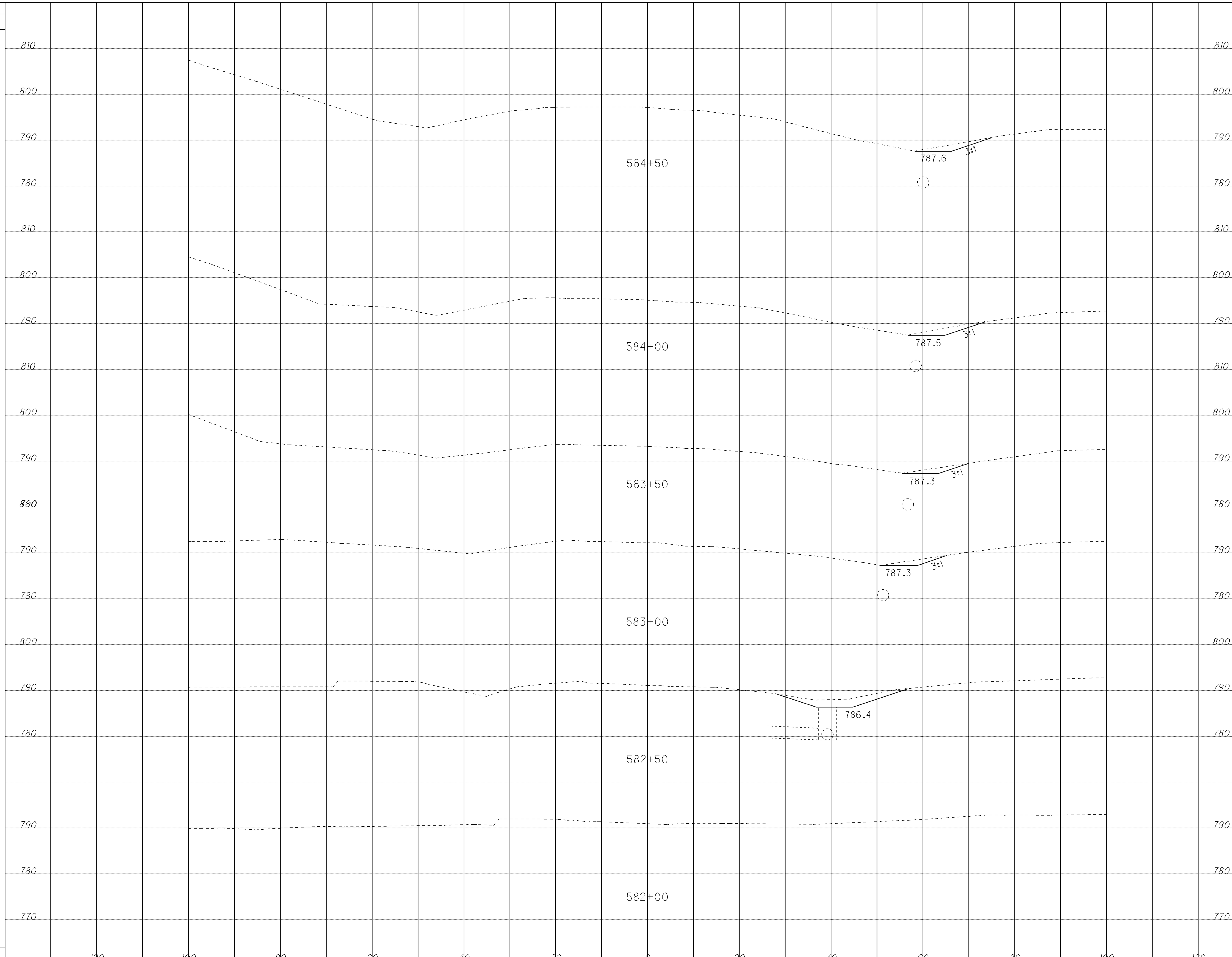
Station	SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
584+50	17		12			
		72			22	
584+00	9		12			
		44			19	
583+50	7		8			
		61			12	
583+00	15		9			
		125			29	
582+50	30		32			
		0			0	
582+00						
Total		302			82	



CALCULATED
CHECKED

DITCH CROSS SECTIONS
STA. 582+00.00 TO STA. 584+50.00

CUY-480-10.36
RAMPS

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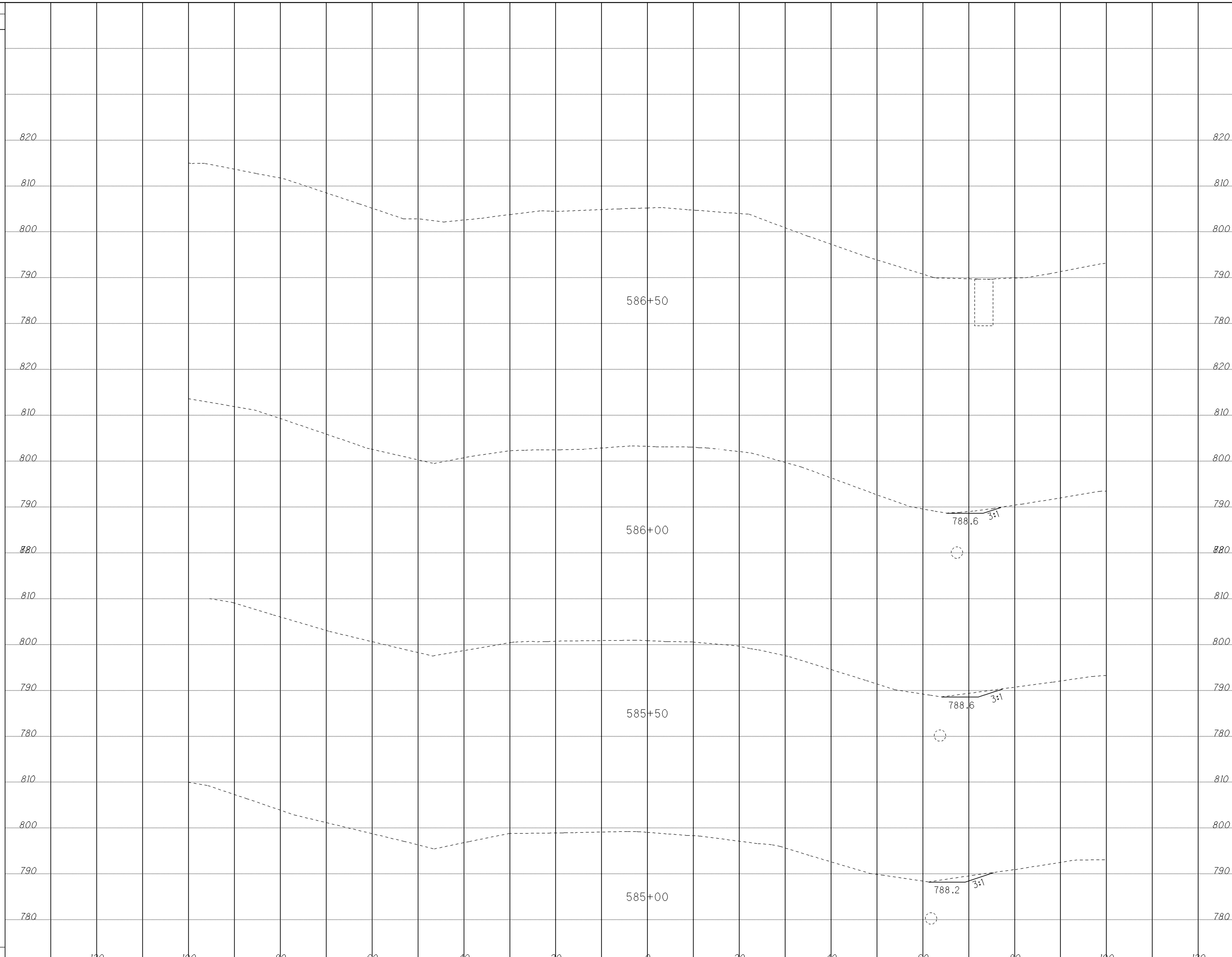
SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
12		4			
	50			11	
6		7			
	33			15	
6		9			
	64			19	
	147			45	

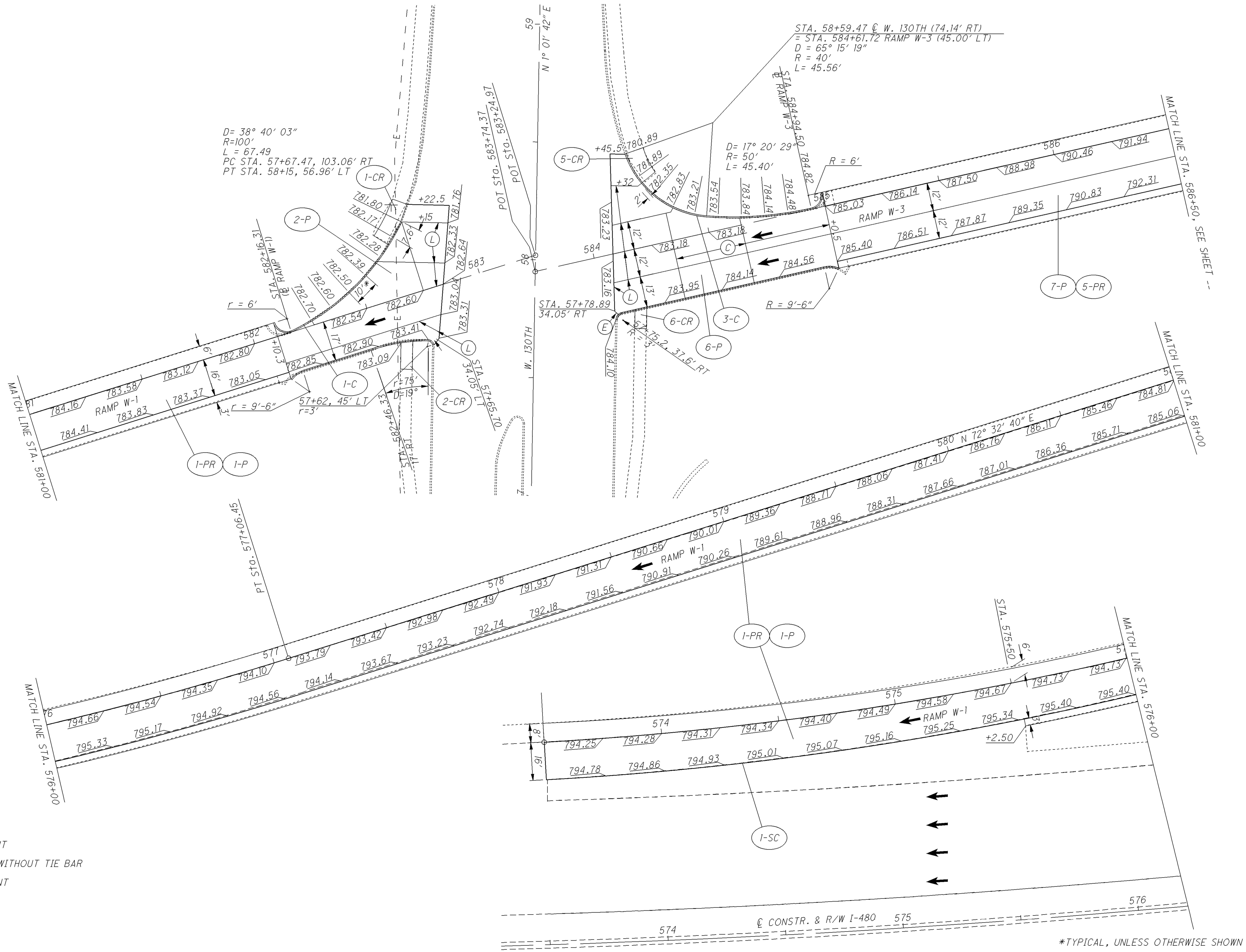


CALCULATED

CHECKED

DITCH CROSS SECTIONS
STA. 585+00.00 TO STA. 586+50.00

CUY-480-10.36
RAMPS



JOINT LEGEND

(C) CONTRACTION JOINT
(E) EXPANSION JOINT WITHOUT TIE BAR
(L) LONGITUDINAL JOINT

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JTW
CHECKED

PAVEMENT DETAILS RAMPS W-1 AND W-3

CUY-480-10.36 RAMPS

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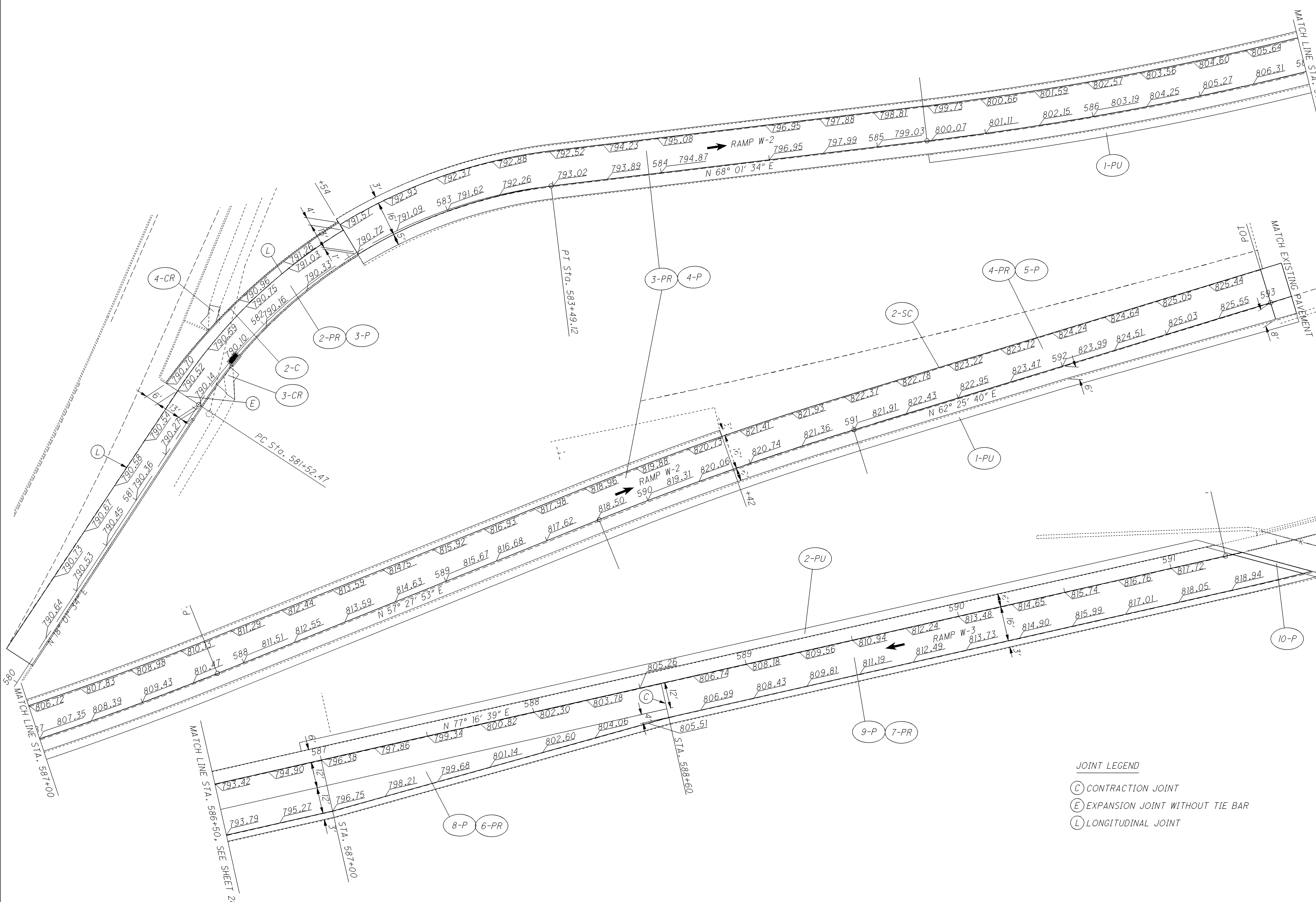

CALCULATED JTW

CHECKED

HORIZONTAL SCALE IN FEET 0 10 20 40

PAVEMENT DETAILS RAMPS W-2 AND W-3

CUY-480-10.36 RAMPS

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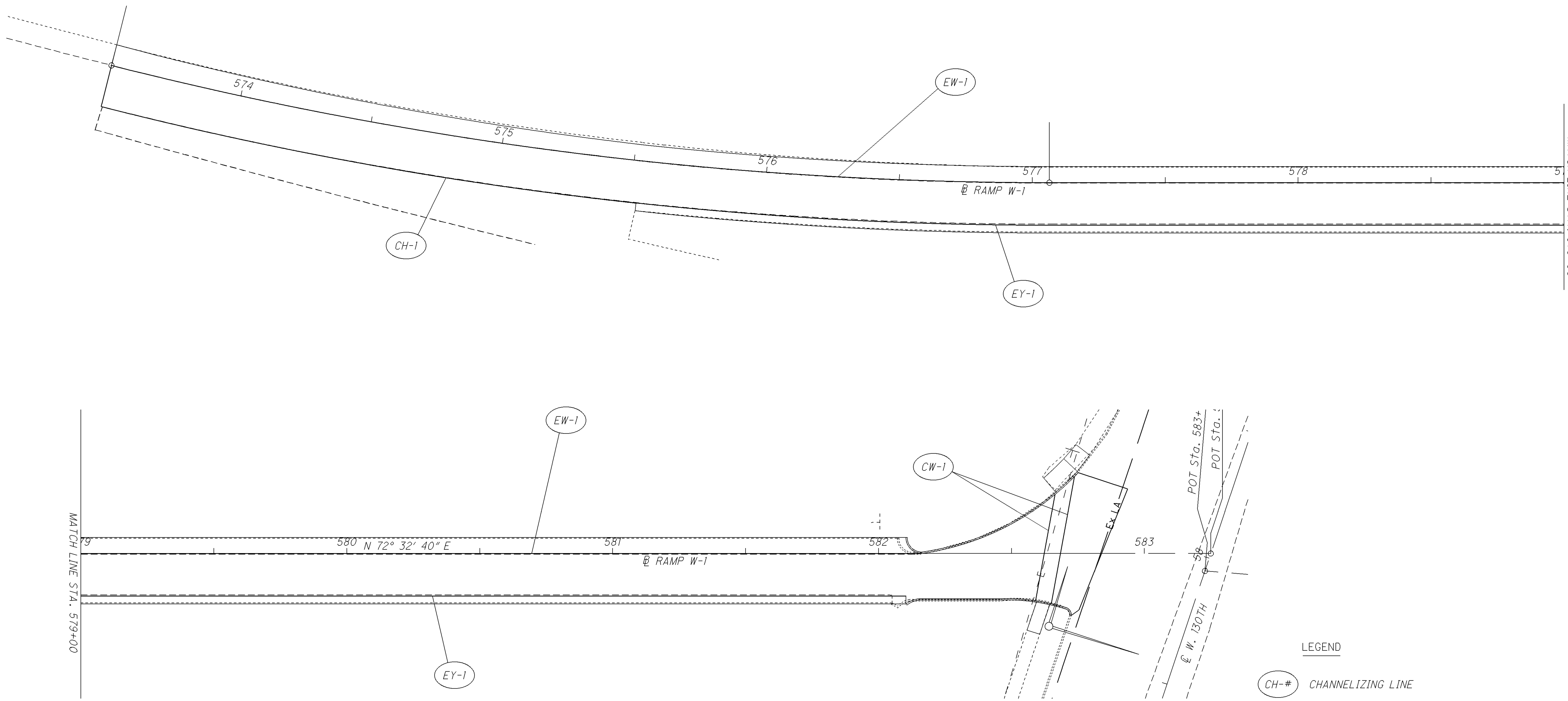


LEGEND

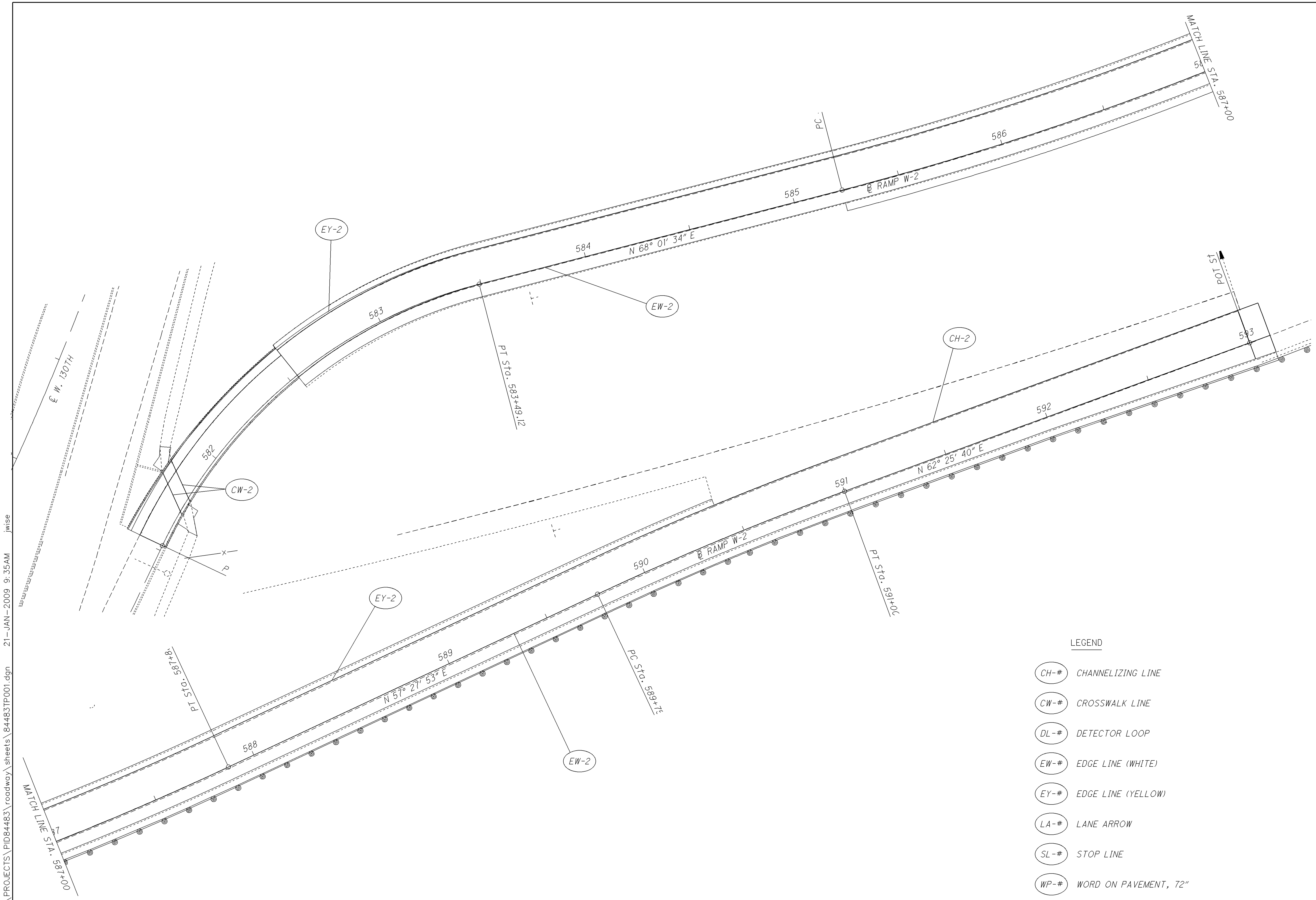
CH-#	CHANNELIZING LINE
CW-#	CROSSWALK LINE
DL-#	DETECTOR LOOP
EW-#	EDGE LINE (WHITE)
EY-#	EDGE LINE (YELLOW)
LA-#	LANE ARROW
SL-#	STOP LINE
WP-#	WORD ON PAVEMENT, 72″

HORIZONTAL SCALE IN FEET 0 10 20 40

CALCULATED JTW
CHECKED

PAVEMENT MARKING PLAN RAMP W-1

CUY-480-10.36 RAMPS



LEGEND

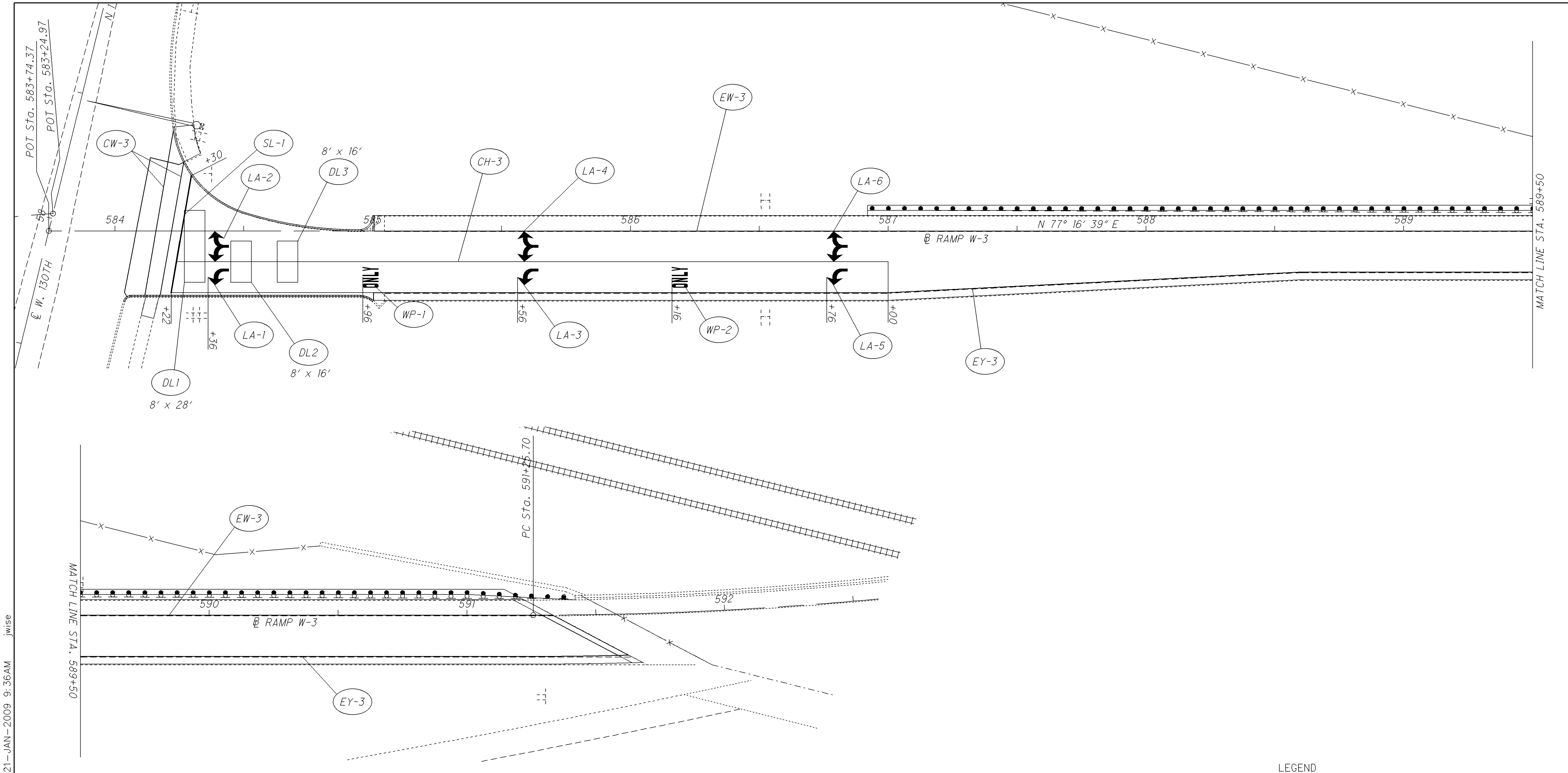
CH-#	CHANNELIZING LINE
CW-#	CROSSWALK LINE
DL-#	DETECTOR LOOP
EW-#	EDGE LINE (WHITE)
EY-#	EDGE LINE (YELLOW)
LA-#	LANE ARROW
SL-#	STOP LINE
WP-#	WORD ON PAVEMENT, 72"

0 10 20 40
HORIZONTAL SCALE IN FEET

CALCULATED JTW
CHECKED

PAVEMENT MARKING PLAN RAMP W-2

CUY-480-10.36 RAMPS



LEGEND

- CH-# CHANNELIZING LINE
- CW-# CROSSWALK LINE
- DL-# DETECTOR LOOP
- EW-# EDGE LINE (WHITE)
- EY-# EDGE LINE (YELLOW)
- LA-# LANE ARROW
- SL-# STOP LINE
- WP-# WORD ON PAVEMENT, 72"

HORIZONTAL SCALE IN FEET

0 10 20 40

CALCULATED JTW

CHECKED

PAVEMENT MARKING PLAN RAMP W-3

CUY-480-10.36 RAMPS

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PAVEMENT MARKING SUBSUMMARY

CUY-480-10.36
RAMPS

SHEET NO.	REFERENCE NO.	LOCATION	STATION FROM	STATION TO	SIDE	632 DETECTOR LOOP, AS PER PLAN (EA)	642 EDGE LINE, WHITE (MILE)	642 EDGE LINE, YELLOW (MILE)	642 CHANNELIZING LINE (FT)	642 STOP LINE (FT)	642 CROSSWALK LINE (FT)	642 LANE ARROW (EA)	642 WORD OF PAVEMENT, 72" (EA)
30	EW-1	RAMP W-1	573+50	582+16	LT		0.16						
30	EY-1		573+50	575+50	RT			0.04					
30	CH-1		575+50	582+10	RT				660				
30	CW-1		582+68		LT & RT						89		
31	EW-2	RAMP W-2	582+00	593+00	RT		0.21						
31	EY-2		582+00	590+42	LT			0.16					
31	CH-2		590+42	593+00	LT				258				
31	CW-2		581+71		LT & RT						42		
32	EW-3	RAMP W-3	584+95	591+33	LT		0.12						
32	EY-3		584+22	591+62	RT			0.14					
32	CH-3		584+24	587+00	RT				276				
32	CW-3		584+16		LT & RT						117		
32	SL-1		584+26		RT					46			
32	LA-1		584+36		RT							1	
32	LA-2		584+36		RT							1	
32	LA-3		585+56		RT							1	
32	LA-4		585+56		RT							1	
32	LA-5		586+76		RT							1	
32	LA-6		586+76		RT							1	
32	WP-1		584+96		RT								1
32	WP-2		586+16		RT								1
32	DL-1		584+27		LT & RT	1							
32	DL-2		584+45		LT & RT	1							
32	DL-3		584+63		LT & RT	1							
							0.49	0.34					
TOTALS CARRIED TO GENERAL SUMMARY						3	0.83		1194	46	248	6	2

CALCULATED JTW
CHECKED

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RPM AND DELINEATOR SUBSUMMARY

CUY-480-10.36 RAMPS

SHEET NO.	LOCATION	STATION FROM	STATION TO	SIDE	SPACING	620 DELINEATOR, TYPE C, POST MOUNTED (EA)	620 DELINEATOR, TYPE D, POST MOUNTED (EA)
30	RAMP W-1	573+50	582+00	RT	200		4
31	RAMP W-2	582+00	583+50	LT	50		3
		583+50	593+00	RT	200	5	
32	RAMP W-3	584+22	591+50	RT	200		4
					SUBTOTAL	5	11
					TOTALS CARRIED TO GENERAL SUMMARY	16	

SHEET NO.	LOCATION	STATION FROM	STATION TO	SIDE	SPACING	621 RAISED PAVEMENT MARKER, YELLOW/RED (EA)	621 RAISED PAVEMENT MARKER, WHITE/RED (EA)
30	RAMP W-1	573+50	575+50	RT	40		5
		575+50	582+00	RT	80	8	
31	RAMP W-2	582+00	590+42	LT	80	11	
		590+42	593+00	LT	40		7
32	RAMP W-3	584+22	591+62	RT	80	9	
		584+24	587+00	RT	80		4
					SUBTOTAL	28	15
					TOTALS CARRIED TO GENERAL SUMMARY	43	

CALCULATED JTW CHECKED

PROJECT DESCRIPTION

THE PROPOSED DEVELOPMENT WILL INCLUDE RECONSTRUCTION OF THE THREE RAMPS AT I-480 AND WEST 130TH STREET.

GEOLOGY

BASED UPON A PUBLISHED OHIO DEPARTMENT OF NATURAL RESOURCES (ODNR) MAP REFERENCE, THE PROJECT SITE LIES WITHIN THE GLACIATED PORTION OF NORTHEAST OHIO (WHITE, 1982, BULLETIN 68). THE SOILS IN THE VALLEY AREA AT THE TOE OF THE SLOPE ARE MAPPED AS ALLUVIUM, WHEREAS THE SOILS AT THE CREST OF THE SLOPE ARE MAPPED AS GLACIAL LACUSTRINE SOILS UNDERLAIN BY GLACIAL TILL.

BASED UPON A PUBLISHED ODNR GEOLOGIC MAP, THE UPPER BEDROCK FORMATIONS CONSIST OF MISSISSIPPIAN AGED WAVERLY AND MAXVILLE SHALE AT THE CREST OF THE SLOPE, TRANSITIONING TO OLDER DEVONIAN AGED OLENTANGY AND OHIO SHALE AT LOWER ELEVATIONS TOWARDS THE VALLEY.

SUBSURFACE EXPLORATION

THE PURPOSE OF THIS EXPLORATION WAS TO EVALUATE THE SOIL AND GROUNDWATER CONDITIONS AT THE SITE TO PROVIDE SOIL PROFILE FOR PAVEMENT DESIGN AND CONSTRUCTION, SITE PREPARATION AND OTHER CONSTRUCTION CONSIDERATIONS. THE SCOPE OF THE EXPLORATION AND ANALYSIS INCLUDED A RECONNAISSANCE OF THE PROJECT SITE, DRILLING A TOTAL OF TEN (10) TEST BORINGS, INCLUDED THREE (3) AT RAMP W-1, FOUR (4) AT RAMP W-2, AND THREE (3) AT RAMP W-3 WITHIN THE PROPOSED PAVEMENT RECONSTRUCTION AREAS. THE TEST BORINGS WERE DRILLED TO DEPTHS RANGING FROM APPROXIMATELY 6.75 TO 7.55 FEET BELOW THE EXISTING PAVEMENT GRADES AT THE APPROXIMATE LOCATIONS SHOWN ON THE BORING LOCATION PLAN. THE NUMBER AND LOCATION OF THE TEST BORINGS WERE SELECTED BY THE REPRESENTATIVES OF OHIO DEPARTMENT OF TRANSPORTATION AT DISTRICT 12 AND FIELD LOCATED BY THE REPRESENTATIVES OF PSI, INC. PRIOR TO THE FIELD DRILLING OPERATIONS.

EXPLORATION FINDINGS

THE SURFACE AT THE SITE OF THE TEST BORING LOCATIONS B-7 WAS COVERED BY ASPHALT CONCRETE ABOUT 11.5 INCHES IN THICKNESS. THE SURAFE AND ASPHALT CONCRETE AT ALL THE TEST BORING LOCATIONS B-1 THROUGH B-10 WERE COVERED BY CONCRETE RANGING IN THICKNESS APPROXIMATELY 5.5 TO 12.0 INCHES. THE ASPHALT CONCRETE AT THE TEST BORING LOCATION B-1 THROUGH B-6 AND B-8 THROUGH B-10 WERE UNDERLAIN BY SAND AND GRAVEL BASE RANGING IN THICKNESS APPROXIMATELY 6 TO 11 INCHES. HOWEVER, THE THICKNESS OF THE EXISTING ASPHALT CONCRETE, CONCRETE, AND BASE COURSE SHOULD BE EXPECTED TO VARY ACROSS THE SITE.

BENEATH THE SURFACE-COVER MATERIALS OUTLINED ABOVE, MISCELLANEOUS FILL MATERIALS WERE ENCOUNTERED AT THE TEST BORING LOCATIONS B-1, B-7 AND B-10 TO DEPTHS RANGING FROM APPROXIMATELY 3.0 TO 4.3 FEET BELOW THE EXISTING PAVEMENT SURFACE GRADES. THE FILL MATERIALS CONSISTED OF FINE TO COARSE SAND (A-3A), GRAVEL AND/OR STONE FRAGMENTS (A-1-A) SILT AND CLAY (A-6A), CONTAINING VARYING DEGREES OF RECYCLED CONCRETE, SLAG, AND ORGANICS. THE DEPTH AND ENGINEERING CHARACTERISTICS OF THE FILL MATERIALS SUCH AS STRENGTH, COMPOSITION AND COMPRESSIBILITY, WILL LIKELY BE VARIABLE.

UNDERLYING THE FILL MATERIALS, NATURAL SOILS WERE ENCOUNTERED TO THE TERMINAL DEPTHS AT ALL THE TEST BORING LOCATIONS B-1 THROUGH B-10. THE NATURAL SOILS CONSISTED OF SILT AND CLAY (A-6A), SILTY CLAY (A-6B), SANDY SILT (A-4A). THE GRANULAR NATURAL SOILS EXHIBITED A MEDIUM TO DENSE RELATIVE DENSITY AND THE COHESIVE SOILS EXHIBITED A STIFF TO HARD CONSISTENCY, BASED ON THE STANDARD PENETRATION TESTS. THE MOISTURE CONTENT OF THE NATURAL SOILS WAS 5 TO 29 PERCENT.

LEGEND

DESCRIPTION	ODOT CLASS	CLASSIFIED MECH.	CLASSIFIED VISUAL
GRAVEL AND/OR STONE FRAGMENTS	*A-1-a (0)*	*1*	*0*
COARSE AND FINE SAND	*A-3a (0)*	*1*	*0*
SANDY SILT	*A-4a (2)*	*2*	*1*
SILT AND CLAY	*A-6a (4)*	*15*	*11*
SILTY CLAY	*A-6b (7)*	*2*	*2*
	TOTAL	*21*	*14*
SAND SUBBASE	*VISUAL*		
PAVEMENT OR BASE = X = APPROXIMATE THICKNESS	*VISUAL*		
SOD AND TOPSOIL = X = APPROXIMATE THICKNESS	*VISUAL*		

EXPLORATION LOCATION - PLAN VIEW

AUGER BORING PLOTTED TO VERTICAL SCALE ONLY. HORIZONTAL BAR INDICATES A CHANGE IN STRATIGRAPHY.

WC INDICATES WATER CONTENT IN PERCENT.

W— INDICATES FREE WATER ELEVATION.

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

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

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

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

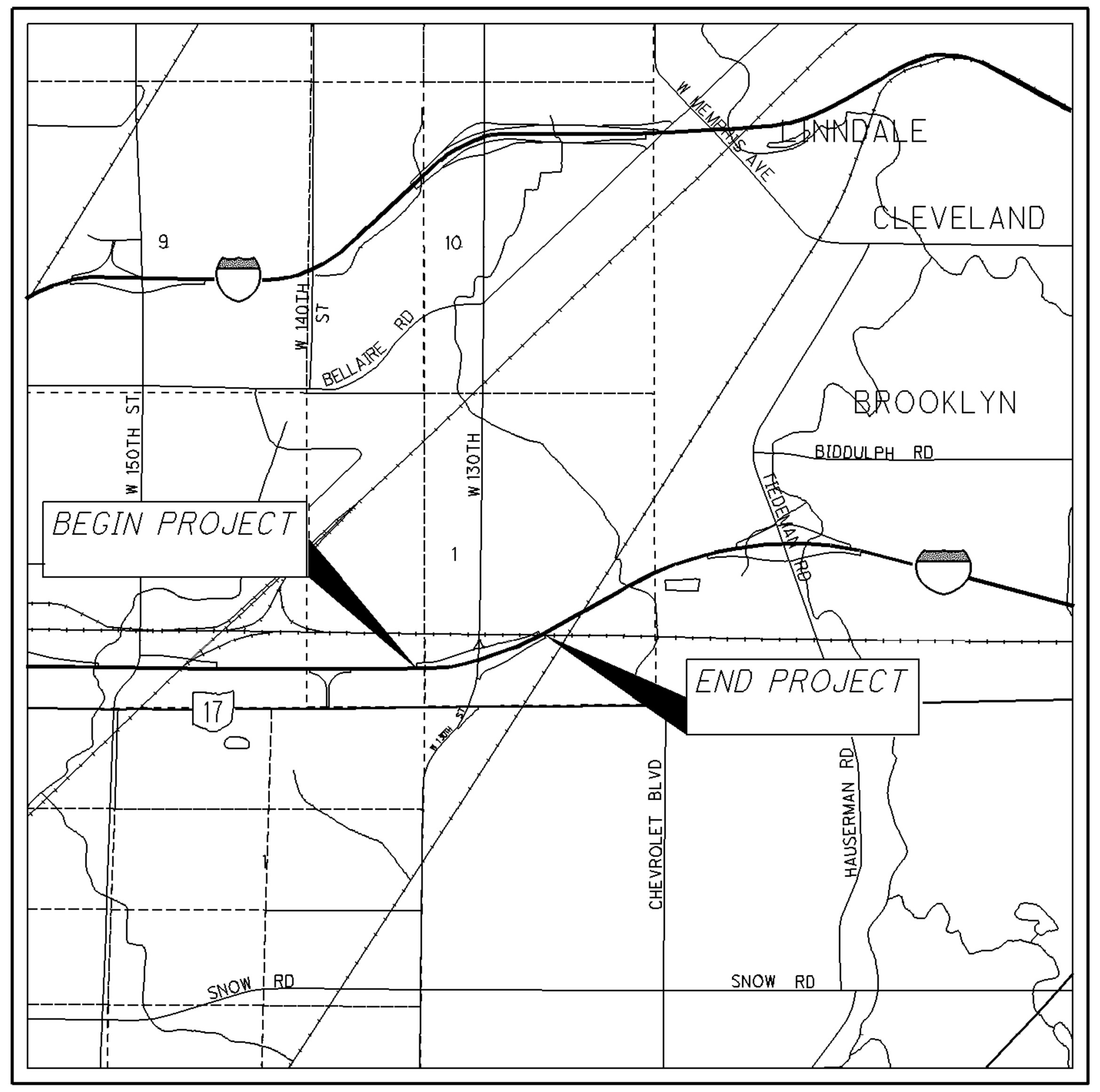
SS INDICATES A SPLIT-SPOON SAMPLE.

ST INDICATES A SHELBY TUBE SAMPLE.

HA INDICATES A HAND AUGER SAMPLE.

NP INDICATES A NON-PLASTIC SAMPLE.

TR INDICATES THE TOP OF ROCK.



LOCATION MAP

SCALE IN MILES

0 .5 1 1.5 2

N

PARTICLE SIZE DEFINITIONS

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

INDEX OF SHEETS						
LOCATION FROM STA. TO STA.	PLAN VIEW SHEET	PROFILE SHEET	CROSS-SECTION SHEET	CUT MAX.	FILL EMB. MAX.
RAMP W-1 573+50 583+25	3	3	-	0 FT	0 FT
RAMP W-2 581+50 593+00	4	4	-	0 FT	0 FT
RAMP W-3 583+75 591+50	5	5	-	0 FT	0 FT

DRILLING - PSI 12/08-09/08
DRAWN - POLYTECH 01/09
REVIEWED - ??? XX/XX

DESIGN AGENCY

PSI Geotechnical ●Environmental Services ●Engineering Materials Testing ●Roof Consulting ●Analytical Services 5555 Canal Road, Cleveland, OH 44125 (216) 447-1335

PID NO. 84483

SOIL PROFILE

CUY-480-10.36 RAMPS

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X / X

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SUMMARY OF SOIL TEST DATA

RAMP W-1

EXPLORATION NO., STATION & OFFSET	FROM		TO	SAMPLE ID	% REC	% AGG	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	OHIO CLASS
B-001-0-08	0.83	-	1.42	SS-1a	100%				SAND and Gravel					15	(VISUAL) *
STA. 574+00, 8.0' LT.	1.42	-	2.08	SS-1b	100%	24	23	33	16	4	NP	NP	NP	19	A-3a (FILL) *
	2.08	-	2.83	SS-1c	100%	21	9	18	32	20	36	22	14	18	A-6a (FILL) *
	2.83	-	3.50	SS-2a	100%				SAME AS SS-1c					17	(VISUAL)
	3.50	-	4.83	SS-2b	100%	17	9	17	37	20	28	19	9	11	A-4a
	4.83	-	6.83	SS-3	79%				SAME AS SS-2b					12	(VISUAL)
B-002-0-08	0.75	-	1.83	SS-1a	100%				SAND and Gravel					18	(VISUAL) *
STA. 578+00, 5.0' RT.	1.83	-	2.75	SS-1b	64%	5	6	12	35	42	36	21	15	19	A-6a *
	2.75	-	4.75	SS-2	100%	13	6	15	34	32	33	19	14	17	A-6a
	4.75	-	6.75	SS-3	63%				SAME AS SS-2					16	(VISUAL)
B-003-0-08	0.83	-	1.75	SS-1a	100%				SAND and Gravel					18	(VISUAL) *
STA. 582+00, 5.5' LT.	1.75	-	2.83	SS-1b	92%	7	7	19	36	31	29	17	12	12	A-6a *
	2.83	-	4.83	SS-2	100%	22	6	14	28	30	28	16	12	12	A-6a
	4.83	-	6.83	SS-3	100%				SAME AS SS-2					14	(VISUAL)

RAMP W-2

EXPLORATION NO., STATION & OFFSET	FROM		TO	SAMPLE ID	% REC	% AGG	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	OHIO CLASS
B-004-0-08	0.75	-	1.25	SS-1a	100%				SAND and Gravel					15	(VISUAL) *
STA. 581+00, 5.0' RT.	1.25	-	2.75	SS-1b	67%	2	5	9	42	42	31	19	12	16	A-6a *
	2.75	-	4.75	SS-2	75%	19	8	18	31	24	27	17	10	15	A-4a
	4.75	-	6.75	SS-3	100%				SAME AS SS-2					17	A-6a
B-005-0-08	0.75	-	1.42	SS-1a	100%				SAND and Gravel					16	(VISUAL) *
STA. 584+50, 5.5' LT.	1.42	-	2.75	SS-1b	69%	5	7	16	38	34	36	19	17	16	A-6b *
	2.75	-	3.75	SS-2a	100%	8	7	15	34	36	37	18	19	17	A-6b
	3.75	-	4.00	SS-2b	50%				SAME AS SS-2a					18	(VISUAL)
	4.00	-	6.75	SS-3	50%				SAME AS SS-2a					14	(VISUAL)
B-006-0-08	0.75	-	1.50	SS-1a	100%				SAND and Gravel					19	(VISUAL) *
STA. 588+50, 5.0' RT.	1.50	-	2.75	SS-1b	60%	10	7	18	33	32	31	18	13	11	A-6a *
	2.75	-	4.75	SS-2	50%	7	8	14	35	36	32	19	13	11	A-6a
	4.75	-	6.75	SS-3	75%				SAME AS SS-2					12	(VISUAL)
B-007-0-08	1.42	-	3.42	SS-1	75%	56	14	26	3	1	NP	NP	NP	18	A-1-a (FILL) *
STA. 592+50, 5.5' RT.	3.42	-	5.42	SS-2	67%	16	7	15	32	30	36	22	14	13	A-6a
	5.42	-	7.42	SS-3	75%				SAME AS SS-2					13	(VISUAL)

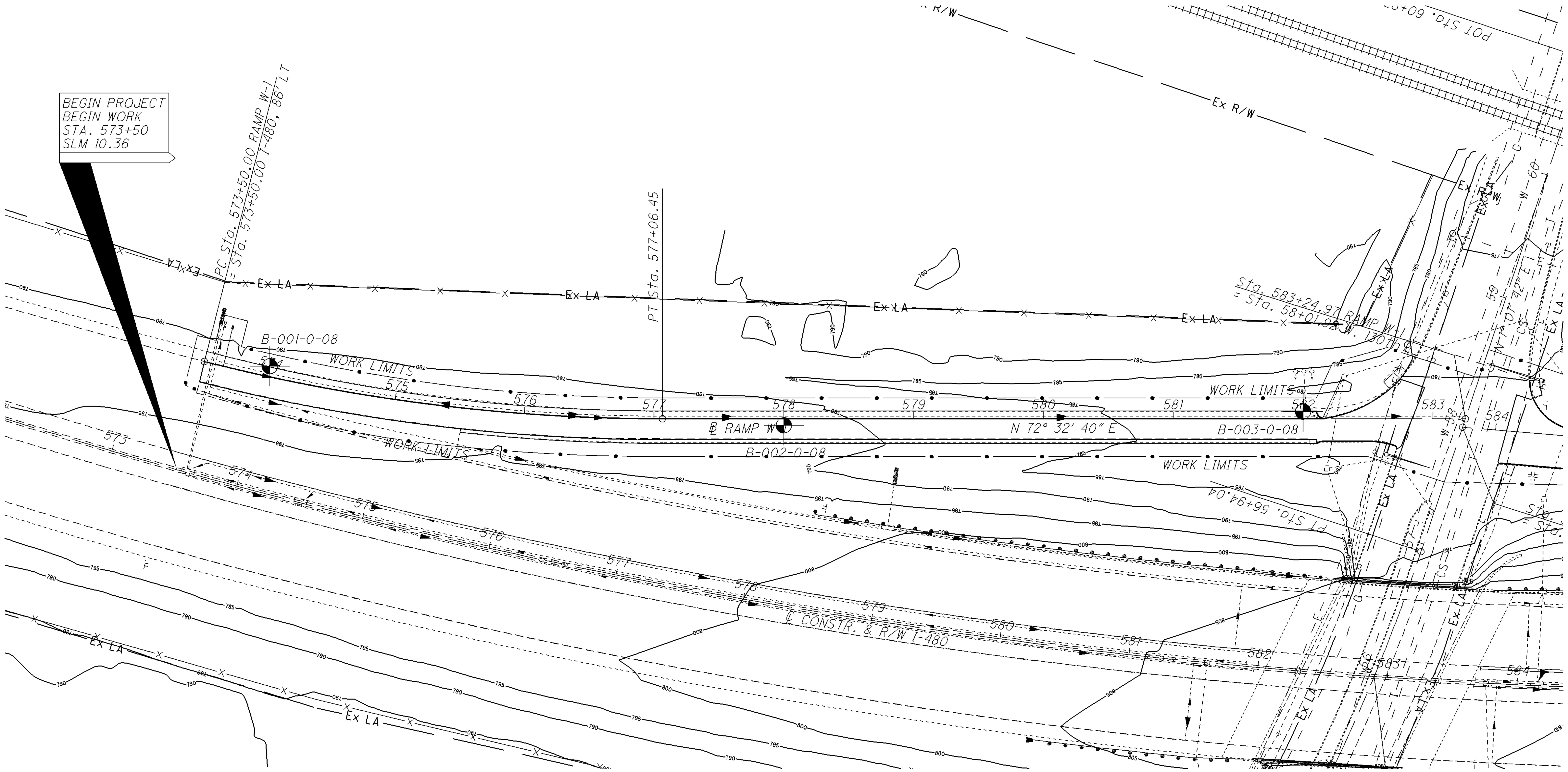
RAMP W-3

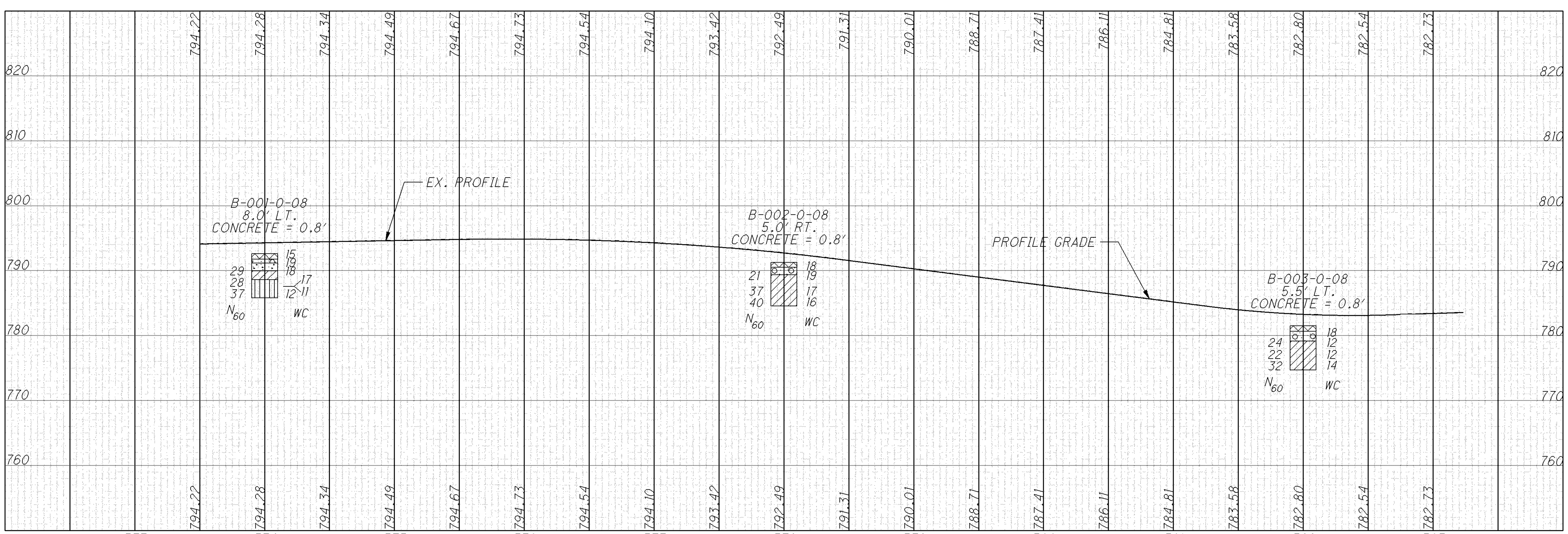
EXPLORATION NO., STATION & OFFSET	FROM		TO	SAMPLE ID	% REC	% AGG	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	OHIO CLASS
B-008-0-08	0.75	-	1.42	SS-1a	100%				SAND and Gravel					17	(VISUAL) *
STA. 584+50, 10.0' RT.	1.42	-	2.75	SS-1b	100%	19	6	16	29	30	31	19	12	13	A-6a *
	2.75	-	4.75	SS-2	100%	11	8	16	35	30	29	18	11	13	A-6a
	4.75	-	6.75	SS-3	0%				SAME AS SS-2					14	(VISUAL)
B-009-0-08	0.75	-	1.58	SS-1a	100%				SAND and Gravel					16	(VISUAL) *
STA. 588+00, 5.5' LT.	1.58	-	2.75	SS-1b	43%	21	8	14	31	26	35	21	14	11	A-6a *
	2.75	-	4.75	SS-2	75%	5	7	14	42	32	32	20	12	14	A-6a
	4.75	-	4.92	SS-3a	100%				SAME AS SS-2					29	(VISUAL)
	4.92	-	6.00	SS-3b	77%				SAME AS SS-2					12	(VISUAL)
B-010-0-08	1.00	-	1.50	SS-1a	100%				SAND and Gravel					24	(VISUAL) *
STA. 590+90, 3.5' RT.	1.50	-	3.00	SS-1b	100%	2	7	13	43	35	35	20	15	24	A-6a (FILL) *
	3.00	-	5.00	SS-2	54%	10	7	16	38	29	32	19	13	16	A-6a
	5.00	-	7.00	SS-3	100%				SAME AS SS-2					14	(VISUAL)

CALCULATED
CHECKED

SOIL PROFILE
SUMMARY OF SOIL TEST DATA

CUY-480-10.36
RAMPS





HORIZONTAL SCALE IN FEET

CALCULATED

CHECKED

SOIL PROFILE RAMP W-1

CUY-480-10.36 RAMPS

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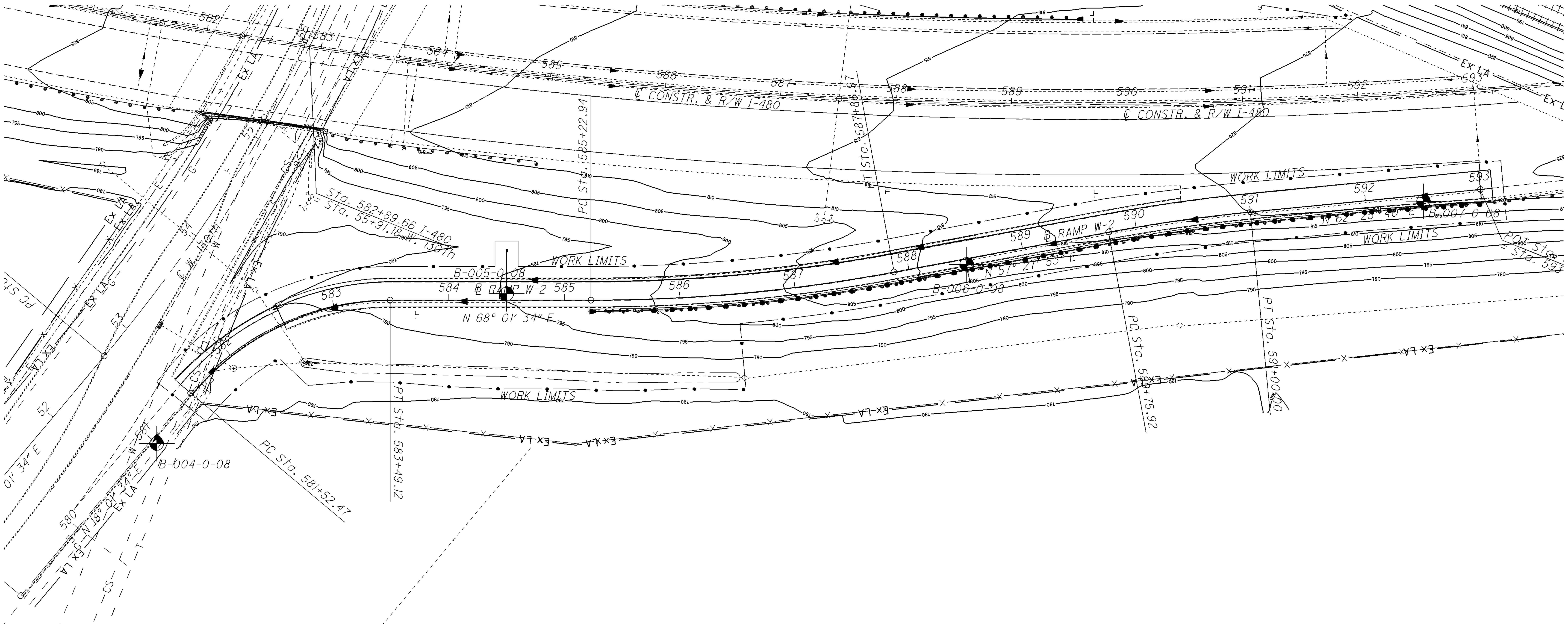

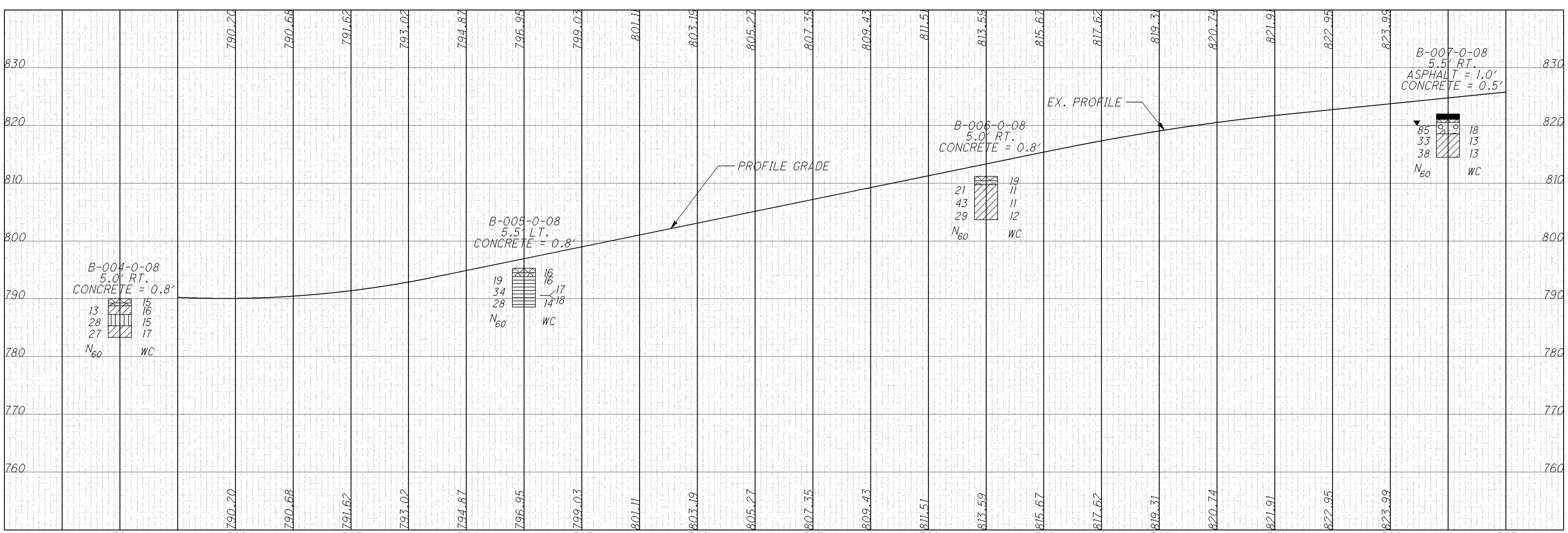

SOIL PROFILE
RAMP W-2

CUY-480-10.36
RAMPS

HORIZONTAL SCALE IN FEET

CALCULATED

CHECKED

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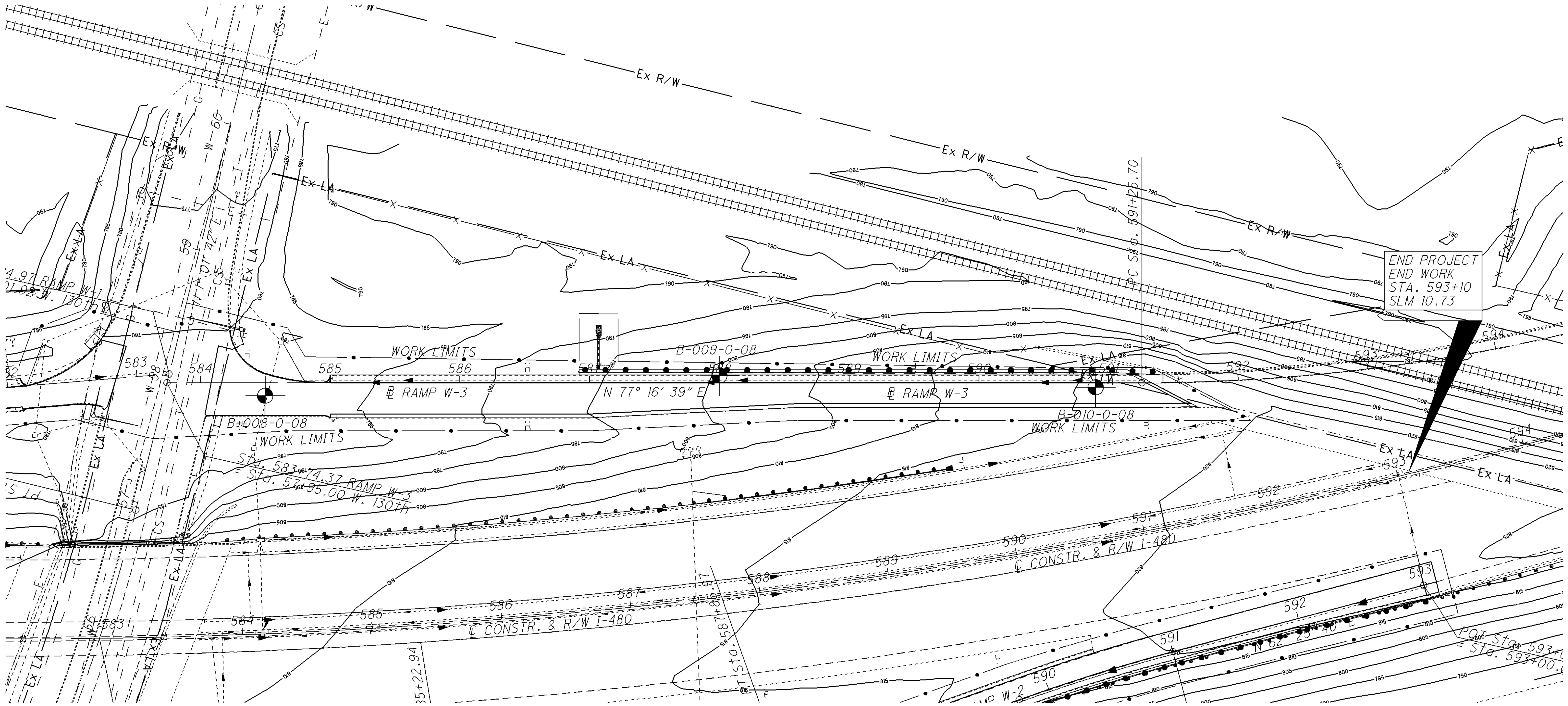

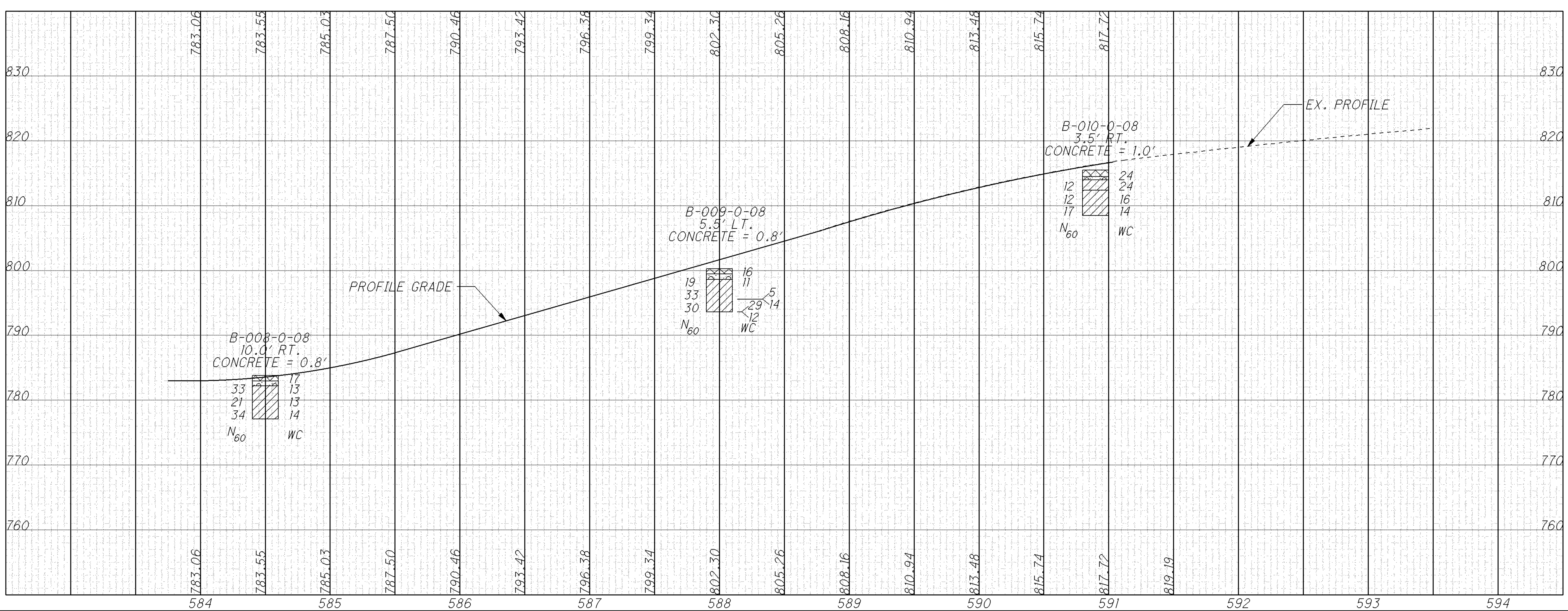

HORIZONTAL SCALE IN FEET

0 25 50 100

CALCULATED

CHECKED

SOIL PROFILE RAMP W-3

CUY-480-10.36 RAMPS

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