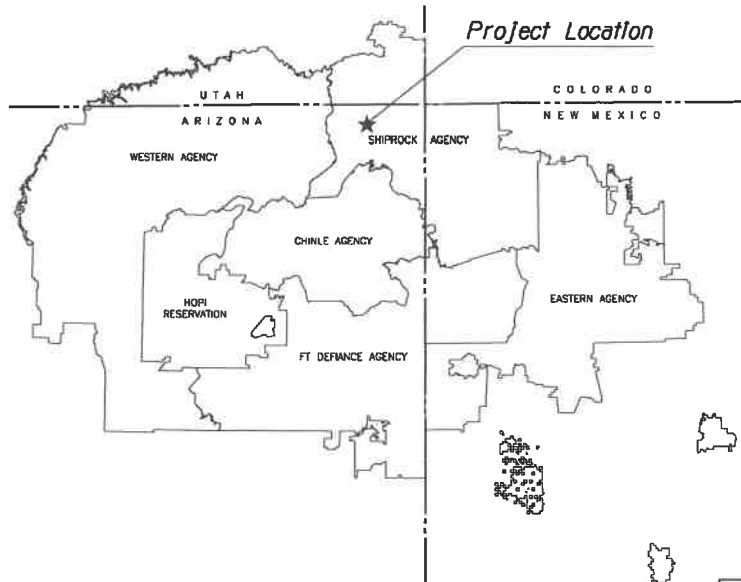


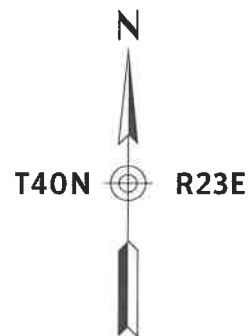
# NAVAJO DIVISION OF TRANSPORTATION

## PLANS FOR PROJECT DENNEHOTSO LOOP ROAD APACHE COUNTY, ARIZONA

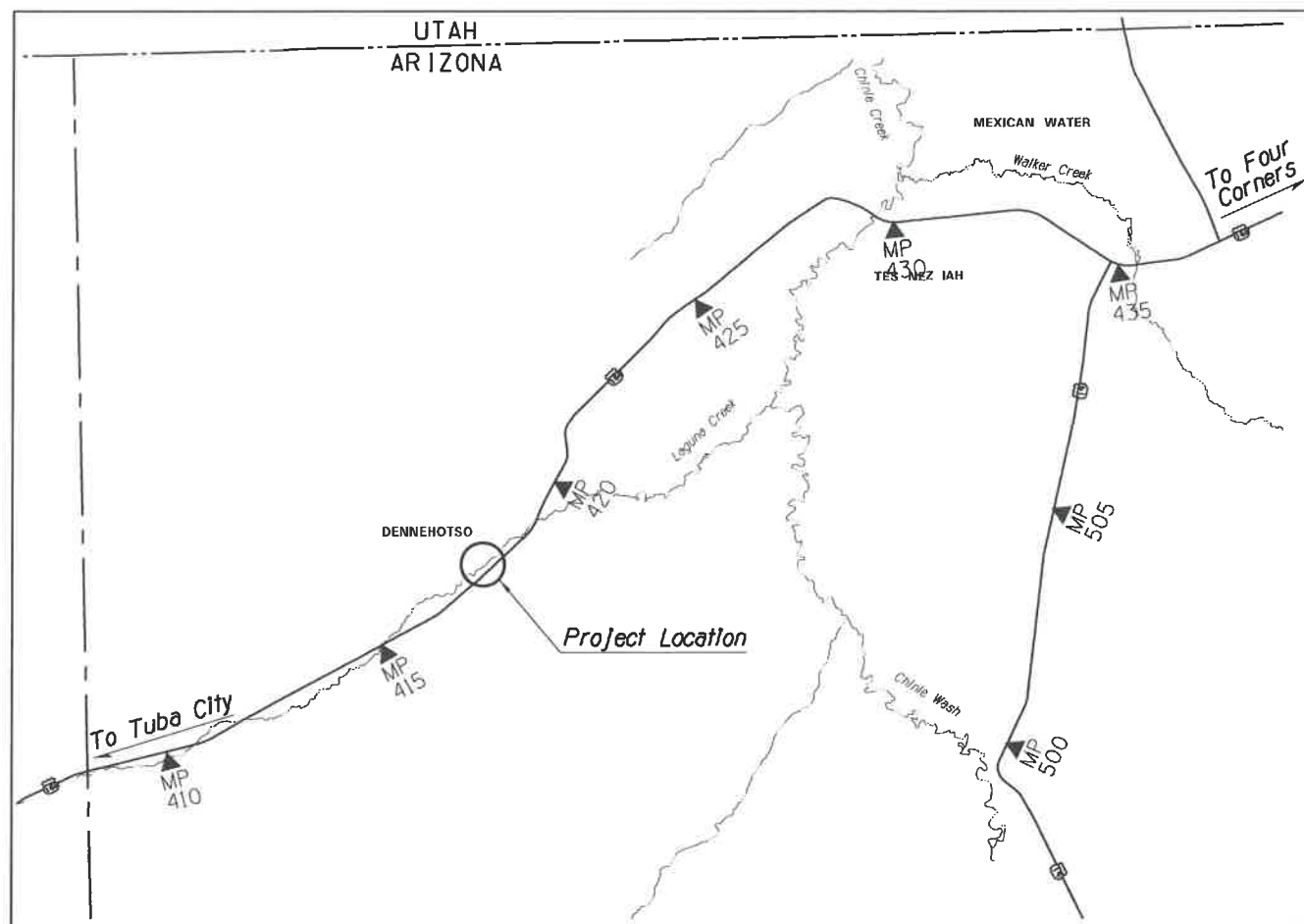
PROJECT N6461(1-2)/N6460(1)1,2&4  
GRADE, DRAIN, AGGREGATE BASE COURSE,  
HOT ASHALT PAVEMENT, GRS-IBS BRIDGE  
AND MISCELLANEOUS CONSTRUCTION  
LENGTH 2.99 MILES N6460  
LENGTH 2.73 MILES N6461



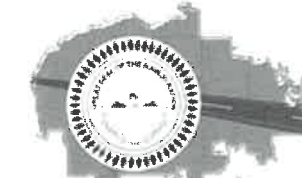
VICINITY MAP  
NTS



Apache County  
T40N R23E  
Secs 21, 22, 27, 28, 33 & 34



LOCATION MAP  
NTS



NAVAJO D.O.T.

### DRAWING INDEX

SHEET NO.	DWG. NO.	SHEET DESCRIPTION
1	-	Face Sheet
2	G-1.01	Design Data Sheet
3	G-1.02	Standard Notes
4	G-1.03	Key Map
5	G-1.04	Survey Control
6-7	G-1.05 - G-1.06	Typical Sections & Pavement Structural Sections
8-19	G-1.07 - G-1.18	Turnout Details
20	G-1.19	Ditch Control Points
21	G-1.20	Berm & Protective Slab Details
22	G-1.21	New Pipe Summary
23	G-1.22	Quantity Summary
24-27	G-1.23 - G-1.27G	Details
28-51	C-1.0 - C-23.0	Roadway Plan & Profile
51	T-1.01	Signing & Marking Plan
52-60	S-1.01 - S-1.09	Bridge Plans
61-65	SD-1.01 - SD-1.05	Structural Details
66-69	U-1.01 - U-1.04	Utility Plans & Details

RECOMMENDED:

*[Signature]* DATE: 4/3/24  
PRINCIPAL CIVIL ENGINEER  
NAVAJO DIVISION OF TRANSPORTATION

APPROVED:

*[Signature]* DATE: 4/14/2024  
DIRECTOR  
NAVAJO DIVISION OF TRANSPORTATION



**DIBBLE**



GENERAL NOTES

1. ALL WORKMANSHIP AND MATERIALS SHALL CONFORM TO THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF ROADS AND BRIDGES ON FEDERAL HIGHWAY PROJECTS (FP-14), AND THE SUPPLEMENTAL SPECIFICATIONS FOR THIS PROJECT.
2. ALL PERMANENT AND TEMPORARY ROADSIDE SIGNS, AND PAVEMENT MARKINGS SHALL BE PLACED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS (LATEST EDITION) AND IN ACCORDANCE WITH THE DETAILS ON THESE PLANS. PLACEMENT OF "STOP" BAR, PERMANENT TRAFFIC SIGNS AND PAVEMENT MARKINGS SHALL BE FIELD ADJUSTED AS DIRECTED BY THE CONSTRUCTION MANAGER (CM), AT NO ADDITIONAL COST TO THE GOVERNMENT.
3. THE TEMPORARY TRAFFIC CONTROL DETAILS SHOWN REFLECTS GENERAL REQUIREMENTS FOR THIS PROJECTS. THE CONTRACTOR IS RESPONSIBLE FOR PREPARING AND SUBMITTING A TRAFFIC CONTROL PLAN IN ACCORDANCE WITH THESE DETAILS, TAKING INTO ACCOUNT THE CONTRACTOR'S CONSTRUCTION SEQUENCING PLAN, MUTCD, AND THE SUPPLEMENTAL SPECIFICATIONS FOR SECTION 635-TEMPORARY TRAFFIC CONTROL.
4. THE DESIGN FEATURES INCLUDING HORIZONTAL AND VERTICAL ALIGNMENTS, TYPICAL SECTIONS, AND OTHER DESIGN DETAILS SHOWN ON THESE DESIGN PLANS SHALL NOT BE ALTERED OR MODIFIED IN ANYWAY DURING CONSTRUCTION WITHOUT THE EXPRESSED WRITTEN DIRECTION AND APPROVAL OF THE ENGINEER OF RECORD THROUGH THE (CM), UNLESS OTHERWISE NOTED IN THESE PLANS OR SPECIFICATIONS. DRAINAGE STRUCTURES AND TURNOUTS SHALL BE INSTALLED AS SHOWN ON THE PLANS WITH ONLY MINOR CORRECTIONS IN LOCATION, SKEW, AND/OR INVERT ELEVATIONS AS NEEDED TO FIT FIELD CONDITIONS. TURNOUTS MAY NOT BE SHIFTED MORE THAN 15 FEET FROM THE LOCATIONS SHOWN ON THE PLANS WITHOUT THE APPROVAL OF THE CM.
5. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY AND EXPENSE FOR DISPOSAL OF TRASH AND/OR CONSTRUCTION DEBRIS IN ACCORDANCE WITH SECTIONS 107 AND 203 OF THE FP-14 AS WELL AS ANY AND ALL PERMIT REQUIREMENTS. THIS WORK SHALL BE INCIDENTAL OBLIGATIONS OF THE CONTRACTOR.
6. THE BIDDER SHALL READ AND MAKE CAREFUL EXAMINATION OF THE PLANS, SPECIFICATIONS, QUANTITIES, MATERIAL, SURVEYING REQUIREMENTS, AND VISIT THE SITE OF THE PROPOSED CONSTRUCTION TO BECOME FAMILIAR WITH THE SITE CONDITIONS AND LIMITATIONS BEFORE MAKING A PROPOSAL. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY AND ALL ERRORS RESULTING FROM THE FAILURE TO MAKE SUCH AN EXAMINATION. ANY INFORMATION DERIVED FROM THE MAPS, PLANS, SPECIFICATIONS, PROFILES, DRAWINGS OR THE ENGINEER, SHALL NOT RELIEVE THE CONTRACTOR FROM ANY RISK OR FROM FULFILLING THE TERMS OF THE CONTRACT. THERE ARE SEVERAL AREAS WITH LIMITED WORKING ROOM WITHIN THE PROJECT RIGHT-OF-WAY, AND/OR WITH EXISTING FEATURES WITHIN OR NEAR THE PROJECT RIGHT-OF-WAY, THAT WILL REQUIRE 'SPECIAL' CONSTRUCTION METHODS.
7. THE CONTRACTOR IS REQUIRED TO SUBMIT A REVISED PIPE LIST, BASED ON THE FIELD STAKING IN ACCORDANCE WITH SECTION 152 OF THE CONTRACT SUPPLEMENTAL SPECIFICATION. THE APPROVAL OF ANY AND ALL REVISED PIPE LISTS WITH ACCOMPANYING DRAWINGS IS RENDERED AS A SERVICE ONLY AND IS NOT CONSIDERED A GUARANTEE OF MEASUREMENTS, QUANTITIES, INSTALLATION PROCEDURES, AND/OR DIMENSIONS, NOR SHALL IT BE CONSIDERED AS RELIEVING THE CONTRACTOR FROM COMPLYING WITH THE CONTRACT SPECIFICATIONS AND DESIGN PLANS. THE CONTRACTOR IS HEREBY NOTIFIED THAT UNDER NO CIRCUMSTANCE SHALL ANY DRAINAGE STRUCTURE(S) BE INSTALLED BELOW THE NATURAL FLOW LINE OF THE WASH, CHANNEL, ARROYO, OR DITCH LINE.
8. NO WORK SHALL BE PERFORMED OR GROUND DISTURBED OUTSIDE OF THE DESIGNATED CONSTRUCTION LIMITS IN ACCORDANCE WITH SECTION 107 OF THE FP-14 WITHOUT APPROVAL BY THE CM. IN NO CASE SHALL ANY WORK BE PERFORMED OUTSIDE THE DESIGNATED RIGHT-OF-WAY LIMITS WITHOUT WRITTEN APPROVAL FROM THE CM.
9. THE DETAILS SHOWN ON THE STORM WATER POLLUTION AND EROSION/SEDIMENT CONTROL DRAWINGS ARE GENERAL REQUIREMENTS TO BE USED BY THE CONTRACTOR IN PREPARING A STORM WATER POLLUTION PREVENTION PLAN ALONG WITH THE REQUIREMENTS IN SECTION 157. OF THE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL CONTRACT REQUIREMENTS.
10. THE QUANTITIES SHOWN ARE FOR ESTIMATING PURPOSES ONLY AND TO COMPARE AND CANVAS BIDS. ACTUAL PAY QUANTITIES WILL BE DETERMINED IN THE FIELD FOR AUTHORIZED CHANGES THAT AFFECT THE QUANTITIES. ANY OVER-RUN OR UNDER-RUN OF QUANTITIES SHALL BE SUBJECT TO STANDARD GENERAL CONDITIONS, ARTICLE 11.3.D.4, VARIATION IN ESTIMATED QUANTITY.
11. ALL TURNOUTS/DRIVEWAYS, AS CALLED FOR ON THESE PLANS, SHALL EITHER BE CONSTRUCTED, RESHAPED AND/OR REMOVED UP TO THE RIGHT-OF-WAY LIMITS. ALL TURNOUTS SHALL BE PAVED TO THE LIMITS AS SHOWN ON THE PLANS, THEN PLACE AGGREGATE BASE TO THE LIMITS AS SHOWN ON THE PLANS. THIS WORK SHALL BE PAID FOR UNDER THE APPROPRIATE BID ITEMS FOR THIS WORK AS SHOWN IN THE BID SCHEDULE.
12. THE CONTRACTOR SHALL BE REQUIRED TO OBLITERATE ALL EXISTING ABANDONED TURNOUTS AND ROADWAYS WITHIN THE RIGHT-OF-WAY LIMITS. FOLLOWS: SCARIFY THE EXISTING ROAD TO A DEPTH OF 12 INCHES AND LEAVING THE SURFACE ROUGH (4" TO 6" HIGH RIDGES PERPENDICULAR TO THE EXISTING ROAD CENTERLINE). ROADWAY OBLITERATION INCLUDES GRADING DRAINAGE CHANNELS ACROSS THE OLD ROADBED AND/OR DRAINAGE PIPE OPENINGS, AS MAY BE REQUIRED BY THE CM. THIS APPLIES TO ALL EXISTING ROADS LOCATED BETWEEN THE CONSTRUCTION CATCH POINTS AND THE RIGHT-OF-WAY LIMITS. OBLITERATION SHALL BE CONSIDERED AN INCIDENTAL OBLIGATION OF THE CONTRACTOR UNDER ITEMS 20304-0000. SEEDING AND STRAW MULCH SHALL BE APPLIED TO ALL DISTURBED AREAS OUTSIDE OF THE PAVED AREA. RESEEDING TO BE PAID UNDER ITEM 62510-1000.
13. STRUCTURAL EXCAVATION AND BEDDING/BACKFILL OF DRAINAGE STRUCTURES SHALL BE CONSIDERED INCIDENTAL TO THE INSTALLATION OF STRUCTURES. BEDDING AND BACKFILL MATERIAL SHALL MEET ALL REQUIREMENTS OF FP-14, SECTION 209. APPROVED EXCESS EXCAVATION MATERIAL MAY BE USED FOR TURNOUTS, DITCH BLOCKS, AND/OR PLACED ALONG ROADWAY SHOULDERS ONLY AS EMBANKMENT IN AREAS ADJACENT TO THE REMOVAL AND AS DIRECTED BY THE CM.

GENERAL NOTES (CONTINUED)

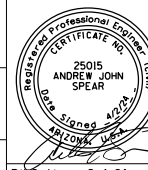
14. ALL FURROW DITCHES AND DRAINAGE DITCHES SHALL BE STAKED AND GRADED TO DRAIN UP TO THE RIGHT-OF-WAY LIMITS. EARTHEN DITCH BLOCKS, DIKES AND DITCHES SHALL BE CONSTRUCTED AS SHOWN ON THESE PLANS AND/OR ADDED AT THE LOCATIONS DESIGNATED BY THE CM. ALL DITCH BLOCKS, DIKES AND FURROW DITCHES SHALL BE PAID FOR UNDER THE APPROPRIATE BID ITEMS FOR THIS WORK AS SHOWN IN THE BID SCHEDULE.
15. IMMEDIATELY PRIOR TO PLACING AGGREGATE BASE MATERIAL, THE TOP 6 INCHES OF FINISHED SUBGRADE (INCLUDING TURNOUTS) SHALL BE CHECKED FOR COMPACTION AND GRADE. IF COMPACTION DOES NOT MEET THE MINIMUM SPECIFIED COMPACTION REQUIREMENTS, THE SUBGRADE SHALL BE WATERED AND/OR SCARIFIED AS NEEDED AND RE-COMPACTED TO THE REQUIRED DENSITY, AT THE CONTRACTOR'S EXPENSE. IN NO CASE SHALL ANY EMBANKMENT OR SURFACING MATERIAL BE PLACED ON FROZEN, MUDDY OR UNSTABLE NATURAL GROUND OR SUBGRADE. THIS WORK SHALL BE CONSIDERED AN INCIDENTAL OBLIGATION OF THE CONTRACTOR.
16. THE EARTHWORK TABLE SHOWN IS TO ASSIST THE CONTRACTOR IN ESTABLISHING A BID UNDER THE EARTHWORK ITEMS SHOWN IN THE BID SCHEDULE. ANY BORROW MATERIAL CALLED FOR ON THE PLANS SHALL BE TAKEN FROM CONTRACTOR IDENTIFIED SOURCES OUTSIDE THE RIGHT-OF-WAY LIMITS. IT IS THE SOLE RESPONSIBILITY AND EXPENSE OF THE CONTRACTOR TO PROVIDE ANY NECESSARY BORROW MATERIAL FOR THIS PROJECT INCLUDING ALL NECESSARY PERMITS. ALL EXCAVATION, BORROW, WASTE AND EMBANKMENT MATERIAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEMS 20401-0000 AND 20403-0000.
17. THE LOCATION OF UTILITIES SHOWN IN THESE PLANS ARE APPROXIMATE AND ARE ONLY TO ASSIST THE CONTRACTOR IN COMPLETING THE WORK. THE CONTRACTOR SHALL CONTACT ALL UTILITY OWNERS PRIOR TO STARTING ANY CONSTRUCTION ACTIVITIES. THIS INCLUDES THE NAVAJO TRIBAL UTILITY AUTHORITY AT 928-729-5721, AND FRONTIER COMMUNICATION COMPANY AT 928-871-3748. THE CONTRACTOR SHALL VERIFY ALL UTILITIES AND THEIR LOCATIONS WITH THE UTILITY OWNERS PRIOR TO CONSTRUCTION. ANY UTILITIES DAMAGED DUE TO NEGLIGENCE OF THE CONTRACTOR SHALL BE RESTORED TO CODE REQUIREMENTS AT THE CONTRACTOR'S EXPENSE.
18. THE CONTRACTOR SHALL REMOVE, AND DISPOSED OF ALL EXISTING CULVERTS, CATTLE GUARDS AND FENCING MATERIALS, ETC., AS CALLED FOR ON THESE PLANS AND SECTIONS 203 AND 607.
19. THE ROADWAY TYPICAL SECTION SHOWN IS THE BASIC TEMPLATE TO WHICH THE PROJECT IS TO BE STAKED AND BUILT. HOWEVER, THERE WILL BE LOCATIONS WHERE, DUE TO EXISTING GROUND CONDITIONS, TURNOUTS, CULVERTS OR OTHER STRUCTURES, ETC., THE SHOWN TYPICAL SLOPES CANNOT BE CONSTRUCTED. IN THIS CASE THE ENGINEER OF RECORD, THROUGH THE CM, SHALL BE CONSULTED FOR CHANGES IN THE TYPICAL SECTIONS, DESIGN SLOPES, AND/OR OTHER ADJUSTMENTS BEFORE PROCEEDING WITH THE WORK UNLESS NOTED OTHERWISE ON THE PLANS. THE FINAL CONSTRUCTED ROAD SECTION SHALL BE BASED ON THE GOVERNMENT FURNISHED CROSS SECTIONS AS ADJUSTED TO FIT FIELD CONDITIONS. THE CONTRACTOR SHALL STAY WITHIN THE LIMITS OF CONSTRUCTION, UNLESS OTHERWISE APPROVED. IN NO CASE SHALL THE CUT AND FILL BACK SLOPES BE BUILT STEEPER THAN THE MAXIMUM ALLOWED IN THE ROADWAY TYPICAL SECTION SHOWN.
20. THE CONTRACTOR SHALL SAW CUT (FULL DEPTH) THE EXISTING ASPHALT PAVEMENT WHERE NEW ASPHALT IS TO TIE INTO THE OLD ASPHALT PAVEMENT AT THE LOCATIONS NOTED ON THE PLANS. THE CONTRACTOR SHALL MATCH THE NEW ASPHALTIC CONCRETE PAVEMENT SURFACE TO EXISTING PAVEMENT SECTION AT TIE-IN POINTS AND TO PROVIDE FOR A SMOOTH TRANSITION AS DIRECTED BY THE CM. ALL SAWCUT PAVEMENT EDGES TO RECEIVE ASPHALT TACK COAT. THIS WORK SHALL BE INCIDENTAL TO BID ITEM 40201-0200 SHOWN IN THE BID SCHEDULE.
21. ANY EXISTING OR NEW ROADSIDE FEATURES OR OTHER IMPROVEMENTS NEGLIGENTLY DAMAGED BY THE CONTRACTOR, DURING CONSTRUCTION, SHALL BE RESTORED/REPLACED IN EQUAL OR BETTER CONDITION AT THE CONTRACTOR'S EXPENSE.
22. REMOVAL AND RE-ATTACHMENTS OF FENCING AT BOP CHAPTER AND SCHOOL COMPOUND, SHALL BE CONSIDERED INCIDENTAL OBLIGATIONS OF THE CONTRACTOR UNDER ITEM 619 FOR WORK REQUIRING REMOVAL, REPLACEMENT, AND/OR MODIFICATION OF EXISTING STRUCTURES.
23. GRADE AND SHAPE THE NEW SHOULDER (AS DIRECTED BY CM) FROM THE NEW SUBGRADE HINGE POINTS TO AND INCLUDING THE EXISTING DITCH LINE AREAS FOR THE CONSTRUCTION OF RIPRAP DITCH LININGS, SLOPE PROTECTION, AND RUNDOWNS. THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE RIPRAP ITEMS SHOWN IN THE BID SCHEDULE.
24. ALL RIGHT-OF-WAY REFERENCE MARKERS SHALL BE LABELED IN THE IMPERIAL UNITS OF MEASURE. ALL NEW BRASS CAPS SHALL BE STAMPED WITH BOTH ALIGNMENT STATIONING AND ELEVATIONS IN IMPERIAL, UNLESS OTHERWISE NOTED UNDER SECTION 152 OF THE SUPPLEMENTAL SPECIFICATION. THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEMS 62101-0000 AND 62102-0000.
25. THERE ARE A NUMBER OF ARCHAEOLOGICAL SITE MITIGATIONS THAT ARE NOTED ON THE PLANS. THE CONTRACTOR SHALL NOTIFY THE NAVAJO NATION HISTORIC PRESERVATION DEPARTMENT (NNHPD) AS REQUIRED PRIOR TO STARTING CONSTRUCTION ACTIVITIES IN THESE LOCATIONS. SEE THE SPECIAL CONTRACT REQUIREMENT SECTION OF THE CONTRACT FOR ADDITIONAL INFORMATION, AND REQUIREMENTS. THE CONTRACTOR SHALL PLACE TEMPORARY FLEXIBLE SAFETY FENCE SYSTEMS AROUND THE ARCHAEOLOGY SITE(S) AS SHOWN ON THE PLANS. THE FENCING MATERIAL SHALL BE SQUARE LINK (ORANGE COLOR) PLASTIC TYPE MADE OF HI-DENSITY HDPE.
26. THE GEOTECHNICAL REPORT FOR THESE PROJECTS SHALL BE PROVIDED UPON WRITTEN REQUEST FROM THE CONTRACTOR THRU CM.
27. ROADWAY END AREA AND PIPE CROSS SECTIONS WILL BE PROVIDED IN EITHER HARD COPY OR ELECTRONIC FORMAT UPON WRITTEN REQUEST FROM THE CONTRACTOR THRU CM.

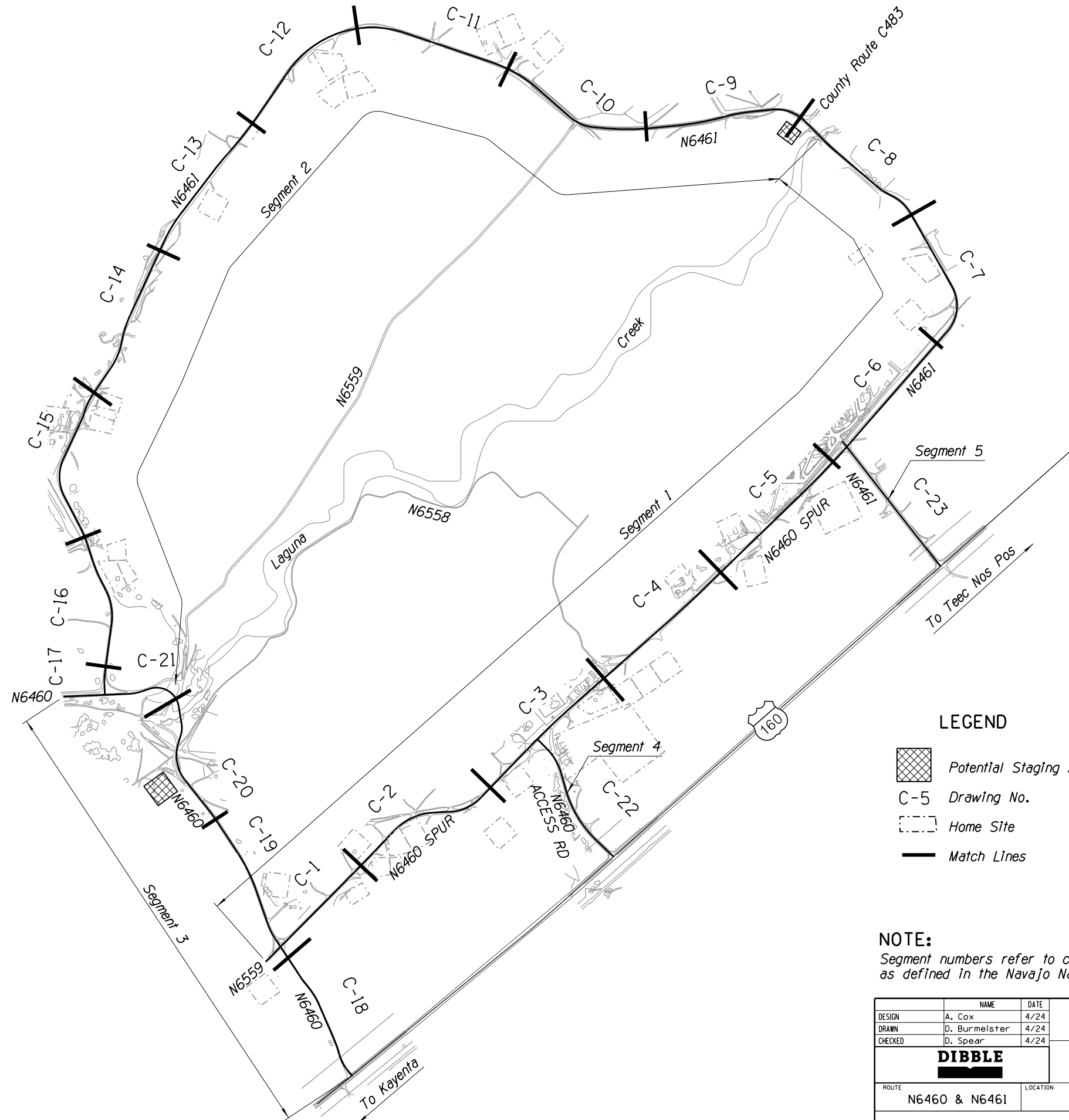
GENERAL NOTES (CONTINUED)

28. ANY EXISTING MAIL BOXES, ADVERTISING BILLBOARDS, OR HOUSE ADDRESS SIGNS LOCATED ALONG THE ROADWAY PRISM SHALL BE REMOVED AND RE-INSTALLED OUTSIDE OF THE RIGHT-OF-WAY LIMIT OR AS DIRECTED BY THE CM. THE CONTRACTOR SHALL NOTIFY THE US-POSTAL SERVICE AND ATTEMPT TO CONTACT ALL EFFECTED RESIDENTS TEN (10) WORKING DAYS PRIOR TO RESETTING MAIL BOXES). THIS WORK SHALL BE INCIDENTAL TO BID ITEM 20304-1000.
29. AT THE COMPLETION OF THE CONSTRUCTION, THE CONTRACTOR SHALL INSPECT THE INTERIOR OF ALL NEWLY INSTALLED OR EXTENDED/CLEANED CULVERTS, CATTLEGUARDS, AND OTHER EXISTING DRAINAGE STRUCTURES. THESE STRUCTURES SHALL BE MAINTAINED IN A CLEAN CONDITION, FREE OF SILT AND OTHER DEBRIS UNTIL FINAL ACCEPTANCE OF THE PROJECT. THIS WORK SHALL BE CONSIDERED AN INCIDENTAL OBLIGATIONS OF THE CONTRACTOR UNDER THE APPROPRIATE BID ITEMS, FOR SECTIONS 602, 603, 607, AND 619.

ENGINEER'S NOTES

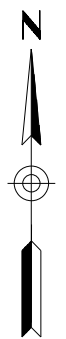
1. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL CONSTRUCTION STAKING FOR THE PROJECT. THE CONSTRUCTION STAKING SHALL BE PERFORMED BY A PROFESSIONAL SURVEYOR, REGISTERED WITH THE STATE OF ARIZONA.
2. PRIOR TO THE START OF ANY WORK ACTIVITIES, THE CONTRACTOR SHALL PROVIDE NOTIFICATION TO THE OWNER AND THE ENGINEER. A PRE-ACTIVITY MEETING (PRECONSTRUCTION CONFERENCE) MAY BE REQUIRED.
3. EXISTING UTILITIES AND OTHER FACILITIES HAVE BEEN SHOWN ON THE CONTRACT DRAWINGS BASED ON FIELD SURVEYS, EXISTING MAPS AND OTHER INFORMATION GATHERED BY THE ENGINEER DURING DESIGN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE EXACT LOCATIONS OF ALL UTILITIES IMPACTING CONSTRUCTION AND PROTECTION OF SAID UTILITIES. IF RELOCATION OF UTILITIES IS REQUIRED, THE CONTRACTOR SHALL COORDINATE THE RELOCATION WITH THE OWNER. UTILITIES DAMAGED BY CONTRACTOR'S ACTIVITIES SHALL BE REPAIRED WITH NEW MATERIALS AT NO COST TO THE OWNER AND TO THE OWNER'S SATISFACTION.
4. EXISTING FEATURES AND FACILITIES WHICH ARE NOT SPECIFICALLY LOCATED WITH HORIZONTAL AND VERTICAL CONTROLS ARE LOCATED APPROXIMATELY WITH THE BEST AVAILABLE INFORMATION. VARIATIONS BETWEEN PLAN LOCATION AND ACTUAL DIMENSIONS WILL NOT BE A BASIS FOR A MODIFICATION OF THE CONTRACT AMOUNT.
5. TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE GOVERNING AGENCY'S REQUIREMENTS. CONTRACTOR SHALL SUBMIT TRAFFIC CONTROL PLANS TO THE GOVERNING AGENCIES AS REQUIRED BY THE AGENCY.
6. CONTRACTOR'S WORK ACTIVITIES SHALL BE SCHEDULED AND PHASED SO AS NOT TO UNDULY IMPEDE OR PREVENT ACCESS TO PRIVATE RESIDENCES, PUBLIC FACILITIES, SCHOOLS, OR BUSINESS EXCEPT BY PRIOR WRITTEN AGREEMENT WITH THE IMPACTED OWNER(S) OR OPERATORS.
7. ALL EQUIPMENT, MATERIALS, VEHICLES AND CONSTRUCTION ACTIVITIES SHALL REMAIN WITHIN PUBLIC RIGHTS-OF-WAY OR DESIGNATED EASEMENTS.
8. ANY EXISTING FEATURES OR FACILITIES DISTURBED BY THE CONTRACTOR SHALL BE REPLACED IN KIND WITH NEW MATERIALS MEETING THE OWNER'S APPROVAL AT NO ADDITIONAL COST TO THE OWNER.
9. THE CONTRACTOR SHALL PROVIDE CLEAR AND ACCURATE REDLINES TO THE OWNER FOR PREPARATION OF RECORD DRAWINGS. THE REDLINES SHALL BE UPDATED ON A DAILY BASIS TO REFLECT THE CURRENT CONSTRUCTION ACTIVITIES AT ALL TIMES AND MAY BE INSPECTED BY THE OWNER/ENGINEER AT ANY TIME UPON REQUEST.
10. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SAFETY ON THE CONSTRUCTION SITE. THE CONTRACTOR SHALL IMPLEMENT AN APPROVED SAFETY PLAN, AND ALL PERSONNEL ON THE JOB SHALL FOLLOW THE APPROVED SAFETY PLAN.
11. THE CONTRACTOR SHALL PROVIDE SUITABLE PROTECTION FOR EXCAVATIONS. AT A MINIMUM, OSHA REGULATIONS REQUIRE PROTECTION FROM CAVE-INS FOR EXCAVATIONS GREATER THAN FIVE FEET IN DEPTH. WHERE EXCAVATIONS ARE DEEPER THAN TWENTY FEET, EXCAVATION PLANS AND SHORING SYSTEM DESIGN SHALL BE SIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF ARIZONA.
12. CONTRACTOR SHALL USED EXTREME CAUTION WHILE WORKING IN THE VICINITY OF ALL GAS AND POWER LINES. THE CONTRACTOR SHALL MAINTAIN THE INTEGRITY OF THE GAS AND POWER TRENCHES AND PIPELINES AT ALL TIMES. SPECIAL ATTENTION SHALL BE GIVEN TO BRACING AND SUPPORT FOR UNDERGROUND POWER CROSSINGS. POLE BRACING MAY BE REQUIRED BY THE POWER COMPANY WHEN EXCAVATING NEAR POWER POLES.
13. THE CONTRACTOR SHALL PRUNE TREES TO ACCOMMODATE THE PROJECT IMPROVEMENTS TO AVOID TREE REMOVAL AS DIRECTED BY THE ENGINEER.

DESIGN	A. Cox	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS	
DRAWN	D. Burmeister	4/24		
CHECKED	D. Spear	4/24		
<b>DIBBLE</b>			GENERAL NOTES	
ROUTE	N6460 & N6461	LOCATION	DENNEHOTSO LOOP ROAD	DWG No. G-1.01
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ	3 OF 69



**LEGEND**

- Potential Staging Area
- C-5 Drawing No.
- Home Site
- Match Lines

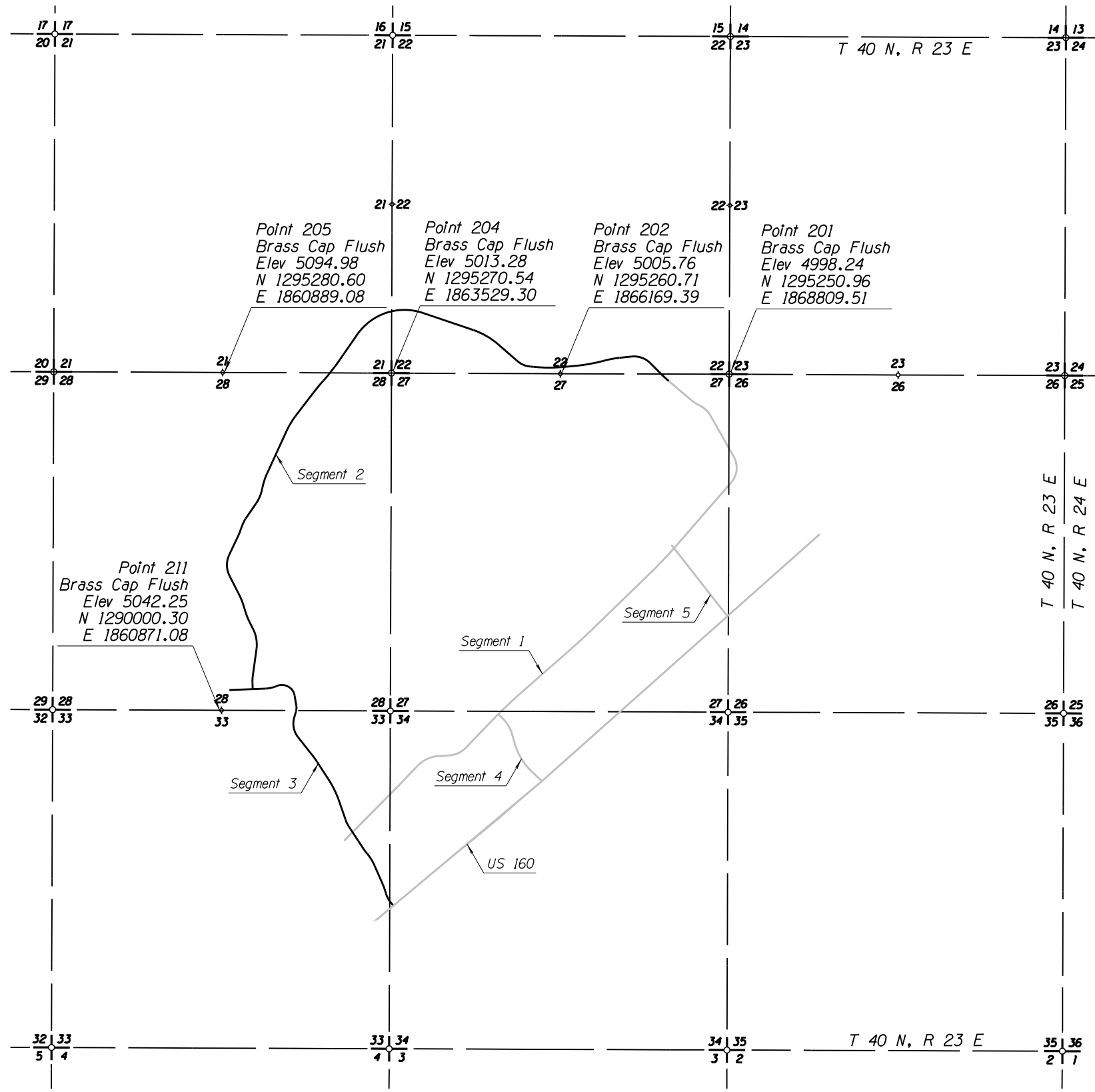


**NOTE:**  
Segment numbers refer to construction segments, not road sections as defined in the Navajo Nation GIS system.

DESIGN	A. Cox	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS	
DRAWN	D. Burmeister	4/24		
CHECKED	D. Spear	4/24		
<b>DIBBLE</b>			KEY MAP	
ROUTE	N6460 & N6461		LOCATION	Dennehotsu Loop Road
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ	DWG No. G-1.03
				4 OF 69

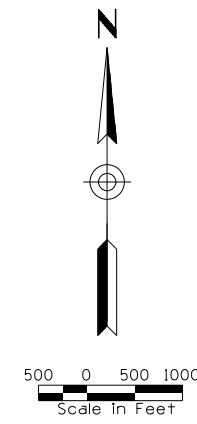


DATE: \_\_\_\_\_ LOCATION: \_\_\_\_\_ REVISIONS: \_\_\_\_\_ FINISHED PLANS: \_\_\_\_\_ SURVEY NO. \_\_\_\_\_ DATE: \_\_\_\_\_ LOCATION: \_\_\_\_\_ REVISIONS: \_\_\_\_\_ FINISHED PLANS: \_\_\_\_\_ SURVEY NO. \_\_\_\_\_

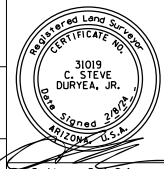


**SURVEYOR'S NOTES**

- CONTROL WAS PROVIDED BY NDOT.
- COORDINATES WERE VERIFIED IN THE FIELD USING REAL TIME KINEMATIC GPS OBSERVATIONS RELATIVE TO NGS PUBLISHED CONTROL POINTS.
- SURVEYED DURING THE MONTH OF NOVEMBER 2014.
- CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL CONTROLS IN THE FIELD PRIOR TO CONSTRUCTION.
- PROJECT META DATA  
 UNITS:  
 COORDINATES, DISTANCES AND ELEVATIONS ARE SHOWN IN INTERNATIONAL FEET.  
  
 HORIZONTAL DATUM:  
 LOCALIZED PROJECTION BASED ON NDOT PROVIDED DATA  
  
 VERTICAL DATUM:  
 NAVD '88  
  
 PRIMARY BENCHMARK PROVIDED BY NDOT:  
 POINT NUMBER = 201  
 NORTHING = 1295250.96  
 EASTING = 1868809.51  
 ELEVATION = 4998.24  
 LATITUDE: 36° 51' 10.8844" N  
 LONGITUDE: 109° 50' 26.2082" W  
 FOUND GLO BRASS CAP PROPERLY MARKED.  
  
 SECONDARY BENCHMARK PROVIDED BY NDOT:  
 POINT NUMBER = 202  
 NORTHING = 1295260.71  
 EASTING = 1866169.39  
 ELEVATION = 5005.76  
 LATITUDE: 36° 51' 12.7521" N  
 LONGITUDE: 109° 50' 58.6814" W  
 FOUND GLO BRASS CAP PROPERLY MARKED.
- THE COORDINATES PRESENTED ARE SHOWN TO THREE DECIMAL PLACES FOR CALCULATION PURPOSES AND ARE NOT REPRESENTATIVE OF THE PRECISION OF THE SURVEY MEASUREMENTS.
- THIS IS NOT A PROPERTY BOUNDARY SURVEY.

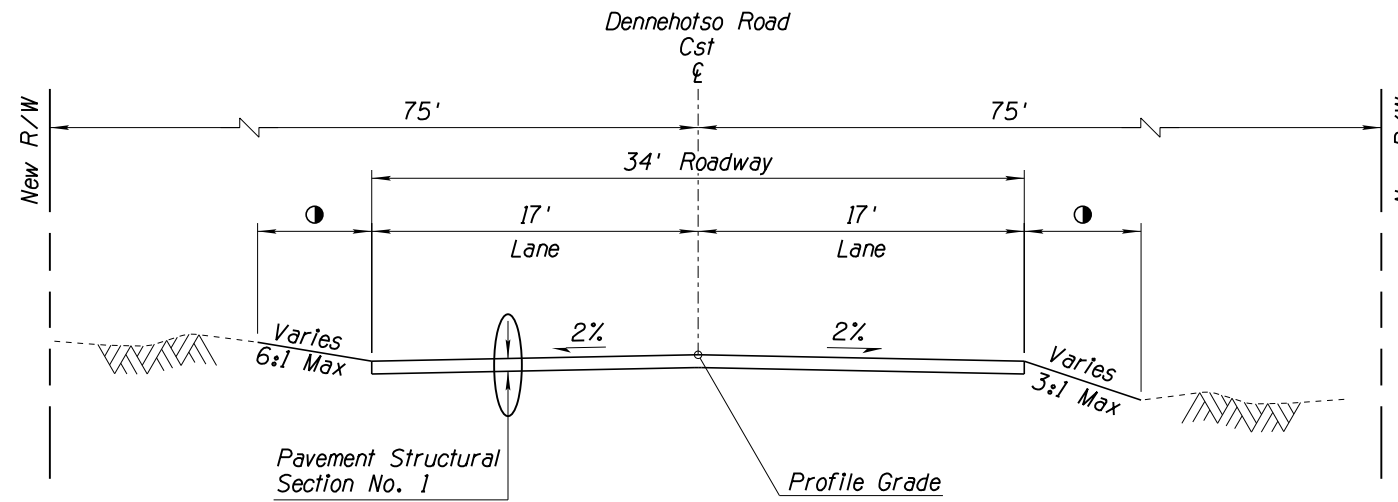


DESIGN	---	DATE	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS
DRAWN	D. Burmeister	DATE	4/24	
CHECKED	S. Dur'yea	DATE	4/24	
<b>DIBBLE</b>				SURVEY CONTROL
ROUTE	N6460 & N6461		LOCATION	DENNEHOTSO LOOP ROAD
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ	DWG No. G-1.04
				5 OF 69

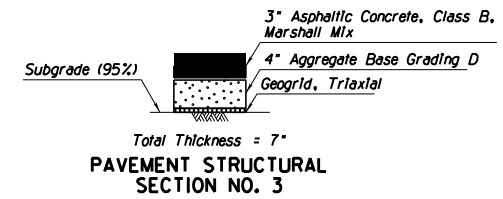
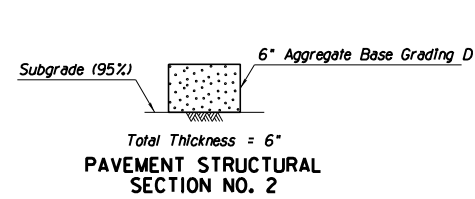
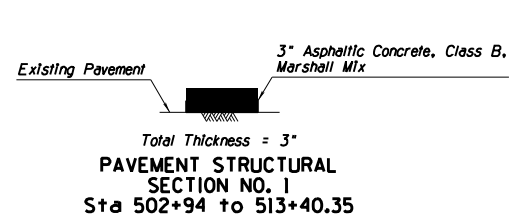




SURVEY NO. FINISHED PLANS LOCATION DATE REVISIONS FINISHED PLANS LOCATION DATE REVISIONS FINISHED PLANS LOCATION DATE

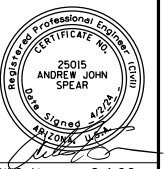


**SEGMENT 5**  
Sta 502+05.94 to Sta 514+14.39



**NOTE:**  
● *Varies, Refer to Roadway Plan & Profile Sheets*

	NAME	DATE	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS	TYPICAL SECTIONS
DESIGN	A. Cox	4/24		
DRAWN	D. Burmeister	4/24		
CHECKED	D. Spear	4/24	<b>DIBBLE</b>	
ROUTE	N6460 & N6461		LOCATION	APACHE COUNTY, AZ
DIBBLE PROJECT No. 101411.01			DWG No.	G-1.06
				7 OF 69



TURNOUTS


Number	Segment	Station	Side	Culvert, Wet Xing or No Xing	REFER TO TURNOUT PLAN DETAIL										Notes	Area AB (sf)	Thickness AB (in)	Length Pavement (ft)	Area Pavement (sf)	30101-2000	40201-0200	40504-0000			
					Detail Turnout Type	ROW Offset (ft)	W (ft)	R1 (ft)	L1 (ft)	L2 (ft)	R2 (ft)	L3 (ft)	Maximum Offset (ft)	Match Point Elevation (ft)						Aggregate Base (tons)	Asphaltic Concrete Pavement (ton)	Asphalt Binder (ton)			
1	1	17+61.19	LT	No Xing	Tangent	50	10	25	127.75				139.75	5035.36	Pave to 50' ROW	1,545.8	4	38	648.25	36	12	0.7			
2	1	21+20.61	LT	No Xing	Curve Right	50	10	25	20.28	15.71	80.00	26.65	75.00	5035.59	Pave to 50' ROW	894.7	4	38	648.25	21	12	0.7			
3	1	21+32.44	RT	No Xing	Tangent	50	10	25	38.00				50.00	5035.83	Pave to 50' ROW	648.3	4	38	648.25	16	12	0.7			
4	1	24+71.59	RT	Culvert	Tangent	60	10	25	63.00				75.00	5036.38	Pave to 50'	898.3	4	38	648.25	21	12	0.7			
5	1	29+73.80	RT	Culvert	Curve Right	50	10	25	13.58	48.12	80.00	1.78	75.00	5035.73	Pave to 50' ROW	903.1	4	38	648.25	21	12	0.7			
6	1	34+03.28	RT	No Xing	Curve Left	50	10	25	16.88	29.40	80.00	4.39	63.51	5035.89	Pave to 50' ROW	775.0	4	38	648.25	18	12	0.7			
7	1	38+20.74	LT	No Xing	Tangent	50	10	25	63.00				75.00	5032.64	Pave to 50' ROW	898.3	4	38	648.25	21	12	0.7			
8	1	40+61.06	RT	No Xing	Curve Right	50	20	20	20.00	41.74	30.00	20.00	65.01	2032.00	End Pavement at Gate	1,806.5	4	81.74	1806.48	42	34	2			
9	1	40+99.97	LT	No Xing	Tangent	50	10	25	63.00				75.00	5030.48	Pave to 50' ROW	898.3	4	38	648.25	21	12	0.7			
10	1	45+31.84	RT	Culvert	Tangent	50	10	25	64.00				75.00	5031.82	Pave to 50' ROW	908.3	4	38	648.25	22	12	0.7			
11	1	49+34.55	RT	No Xing	Tangent	50	10	25	64.00				75.00	5027.39	Pave to 50' ROW	908.3	4	38	648.25	22	12	0.7			
12	1	50+71.20	LT	Culvert	Special	200	30	50	159.52	12.74	35.00	18.21	202.81	5024.44	Turnout to Chapter House, Pave to Gate	6,787.1	6	159.52	5858.61	236	110	6.6			
13	1	51+99.25	RT	No Xing	Curve Right	50	10	25	14.73	65.16	80.00		88.56	5028.90	Pave to 50' ROW	1,067.2	4	38	648.25	25	12	0.7			
14	1	56+12.77	RT	No Xing	Tangent	50	10	25	78.00				90.00	5028.99	Pave to 50' ROW	1,048.3	4	38	648.25	25	12	0.7			
15	1	61+16.85	LT	No Xing	Tangent	75	10	25	63.00				75.00	5022.47	Pave to 50'	898.3	4	38	648.25	21	12	0.7			
16	1	65+76.77	LT	No Xing	Tangent	75	10	25	63.00				75.00	5020.64	Pave to 50' ROW	898.3	4	38	648.25	21	12	0.7			
17	1	66+39.40	LT	No Xing	Tangent	75	10	25	63.00				75.00	5020.49	Pave to 50' ROW	898.3	4	38	648.25	21	12	0.7			
18	1	68+20.80	RT	Culvert	Tangent	50	10	25	63.00				63.00	5023.10	Pave to 50' ROW	898.3	4	38	648.25	21	12	0.7			
19	1	68+53.36	LT	No Xing	Curve Left	75	10	25	6.43	58.10	80.00		74.88	5019.77	Pave to 50'	913.6	4	38	648.25	22	12	0.7			
20	1	69+61.85	LT	No Xing	Curve Left	75	18	25	25.98	30.35	150.00	5.99	75.00	5021.67	Pave to 75' ROW	1,390.0	4	63	1402.25	33	26	1.6			
21	1	71+24.35	RT	Culvert	Curve Left	75	10	25	29.62	25.43	80.00	7.17	75.00	5021.43	Pave to 50'	890.5	4	38	648.25	21	12	0.7			
22	1	74+50.60	RT	No Xing	Tangent	50	20	25	38.00				50.00	5017.38	Pave to 50' ROW	1,028.3	4	38	1028.25	24	19	1.2			
23	1	79+92.32	LT	No Xing	Special	62	30.63	50	60.98				61.41	5015.97	Pave to Gate	2,940.8	6	60.98	2940.83	103	55	3.3			
24	1	81+24.43	RT	Culvert	Curve Left	75	10	25	12.83	66.04	80.00		87.29	5016.75	Pave to 75' ROW	1,057.0	4	63	898.25	25	17	1			
25	1	95+83.10	LT	No Xing	Curve Left	50	10	25	26.23	35.81	80.00		75.00	5002.58	Pave to 50' ROW	888.7	4	38	648.25	21	12	0.7			
26	1	102+13.29	LT	Culvert	Curve Right	75	10	25	52.95	18.88	80.00	6.17	90.82	4999.92	Pave to 50'	1,048.3	4	38	648.25	25	12	0.7			
27	2	152+28.40	RT	No Xing	Curve Left	50	18	35	56.34	6.66	500.00		75.00	4999.22	Pave to 50' ROW	1,659.8	6	38	1209.77	58	23	1.4			
28	2	160+25.53	RT	Culvert	Curve Left	75	10	25	35.04	26.95	100.00		75.00	5002.18	Pave to 50'	888.2	4	38	648.25	21	12	0.7			
29	2	164+61.43	LT	No Xing	Curve Right	50	10	25	20.32	53.24	50.00		80.42	5002.68	Pave to 50' ROW	1,003.9	4	38	648.25	24	12	0.7			
30	2	180+29.01	RT	No Xing	Tangent	30	10	25	62.99				75.00	5006.88	Pave to 30' ROW	898.2	4	18	448.25	21	9	0.5			
31	2	181+38.06	RT	No Xing	Special	30	18	25	24.48	8.51	35.00	29.01	75.00	5007.81	Pave to 30' ROW	1,384.3	4	18	592.25	33	11	0.7			
32	2	187+68.03	RT	Culvert	Curve Right	75	18	25	15.87	46.55	100.00		75.00	5016.16	Pave to 75' ROW	1,391.8	4	63	1402.25	33	26	1.6			
33	2	188+27.03	LT	Culvert	Curve Right	75	18	25	17.40	43.25	80.00	2.16	75.00	5015.03	Pave to 75' ROW	1,398.8	4	63	1402.25	33	26	1.6			
34	2	188+29.51	RT	Culvert	Curve Left	75	10	25	28.29	32.36	250.00	1.81	75.00	5017.76	Pave to 50'	892.9	4	38	648.25	21	12	0.7			
35	2	197+32.23	LT	No Xing	Curve Right	50	10	25	22.20	73.43	90.00		100.00	5017.93	Pave to 50' ROW	1,224.6	4	41	678.25	29	13	0.8			
36	2	202+99.57	LT	Culvert	Tangent	50	10	25	82.72				91.72	5013.93	Pave to 50' ROW	1,095.5	4	41	678.25	26	13	0.8			
37															Deletec										
38	2	214+43.04	LT	No Xing	Curve Right	35	10	25	12.04	50.82	100.00	3.29	75.00	5027.11	Pave to 35' ROW	929.8	4	26	528.25	22	10	0.6			
39	2	219+30.85	LT	No Xing	Curve Right	35	10	25	19.22	59.89	60.00		82.57	5026.15	Pave to 35' ROW	1,059.4	4	26	528.25	25	10	0.6			
40	2	223+66.49	LT	Culvert	Curve Right	35	10	25	28.76	42.74	100.00		81.29	5026.17	Pave to 35' ROW	983.3	4	26	528.25	23	10	0.6			
41	2	235+30.71	LT	Culvert	Curve Left	40	10	25	6.42	61.40	80.00	0.79	75.00	5030.86	Pave to 40' ROW	954.4	4	31	578.25	23	11	0.7			
42	2	236+88.02	RT	No Xing	Special	25	10	25	46.94				75.13	5032.74	Pave to 25' ROW	737.7	4	16	428.25	18	8	0.5			
43	2	239+18.55	LT	Culvert	Tangent	40	10	25	66.00				75.00	5032.11	Pave to 40' ROW	928.3	4	31	578.25	22	11	0.7			
44	2	250+88.13	RT	No Xing	Tangent	50	10	25	66.00				75.00	5034.96	Pave to 50' ROW	928.3	4	41	678.25	22	13	0.8			
45	2	250+94.82	LT	No Xing	Special	50	10	25	66.00				75.00	5030.72	Pave to 50' ROW	928.3	4	41	678.25	22	13	0.8			
46	2	258+20.59	RT	No Xing	Tangent	50	10	25	113.18				122.18	5033.11	Pave to 50' ROW	1,400.1	4	41	678.25	33	13	0.8			
47	3	316+01.49	RT	No Xing	Curve Left	50	10	25	30.38	40.44	100.00		83.69	5036.13	Pave to 50' ROW	976.5	4	38	648.25	23	12	0.7			
48	3	329+81.56	RT	No Xing	Curve Right	50	10	25	25.30	28.60	100.00	15.00	81.31	5033.95	Pave to 50' ROW	957.3	4	38	648.25	23	12	0.7			
49	4	403+57.54	LT	No Xing	Curve Left	50	10	25	27.84	26.41	60.00	8.25	75.00	5040.50	No Pavement	893.3	4	0	268.25	21					
50	4	403+58.58	RT	No Xing	Tangent	50	10	25	63.01				75.00	5039.87	No Pavement	898.4	4	0	268.25	21					
51	4	406+12.50	RT	No Xing	Curve Left	50	10	25	10.13	57.44	60.00		75.00	5035.05	Pave to 6'	944.0	4	6	328.25	22	6	0.4			
52	4	409+71.11	LT	No Xing	Tangent	50	10	25	38.00				50.00	5031.37	Pave to 50' ROW	648.3	4	38	648.25	16	12	0.7			
53	4	410+27.90	RT	No Xing	Tangent	50	22	25	44.43				57.40	5032.40	Pave to Match Existing Pavement	1,245.7	4	44.43	1245.71	29	23	1.4			
54	5	506+53.92	LT	No Xing	Tangent	75	18	25	58.00				75.00	5022.71	Pave to 75' ROW	1,312.3	4	58	1312.25	31	25	1.5			
55	5	509+94.92	RT	No Xing	Tangent	75	10	25	58.00				75.00	5020.34	Pave to 75' ROW	848.3	4	58	848.25	20	16	1			
56	3	334+54.53	LT	No Xing	Special	200	10	25	20.74	34.19	100.00	145.15	207.21	5020.27	No Pavement	2,269.1	4			53					
57	1	106+00.00	RT	No Xing	Tangent	75	10	24	38.00				50.00	5003.30	Pave to 50'	627.2	4	38	627.22	15	12	0.7			
58	2	241+40.50	RT	No Xing	Tangent	25	10	16	16.00				25.00	5032.60	Pave to 25' ROW	269.9	4	16	269.88	7	5	0.3			
59	2	241+68.10	LT	No Xing	Tangent	40	10	16	16.00				40.00	5033.60	Pave to 40' ROW	269.9	4	31	419.88	7	8	0.5			
60	3	338+68.13	RT	No Xing	Curve Left	175	10	25	103.35	70.58	150		175.00	5026.77	Pave to 50'	2,007.6	4	38	648.25	47	12	0.7			
																			<b>TOTALS</b>				<b>1749</b>	<b>904.9</b>	<b>53.9</b>

NOTES:

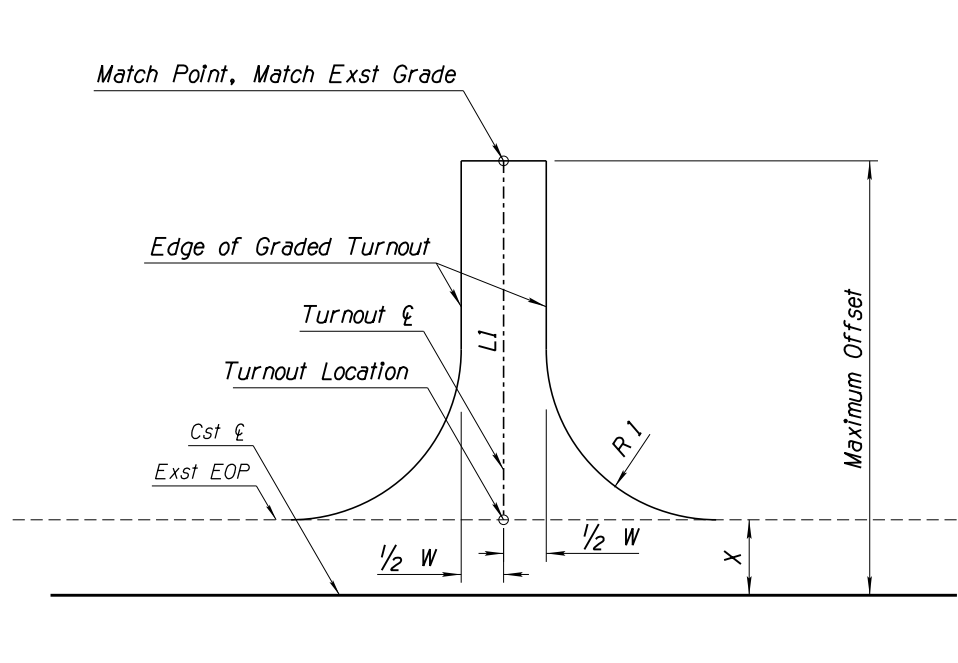
- 1. Turnout paving is 2" AC on AB as shown

# DETAIL A

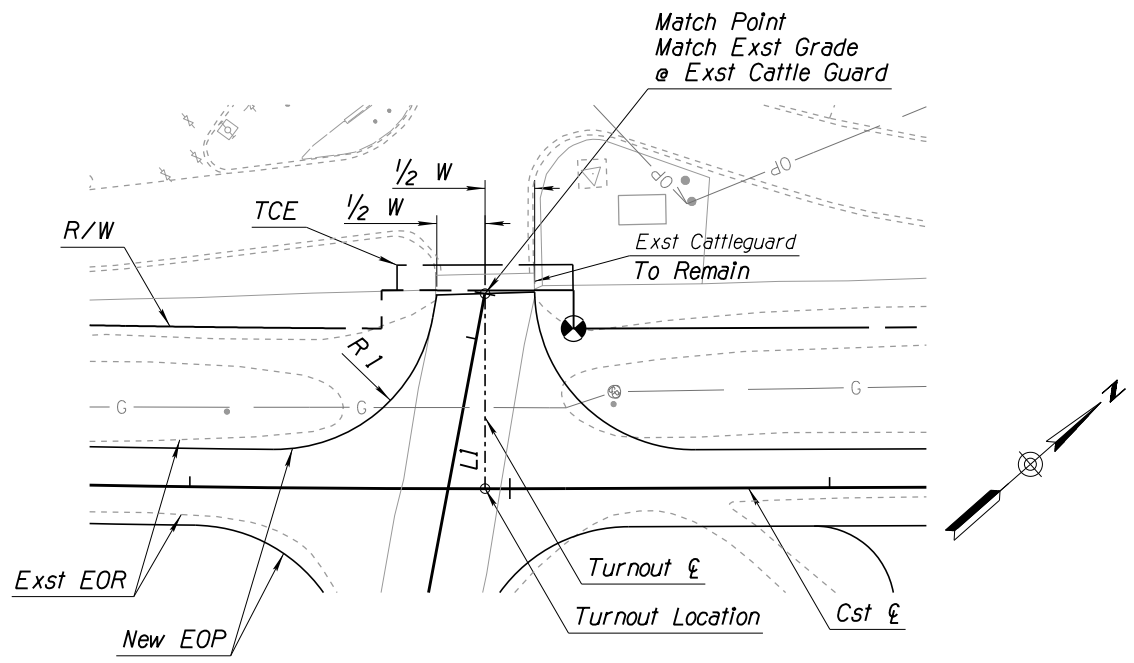
## TURN OUT DETAIL SHEET 1 OF 12

DESIGN	A. Cox	DATE	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS	
DRAWN	D. Burmeister	DATE	4/24		
CHECKED	D. Spear	DATE	4/24		
<b>DIBBLE</b>				TURNOUT DETAILS	
ROUTE					

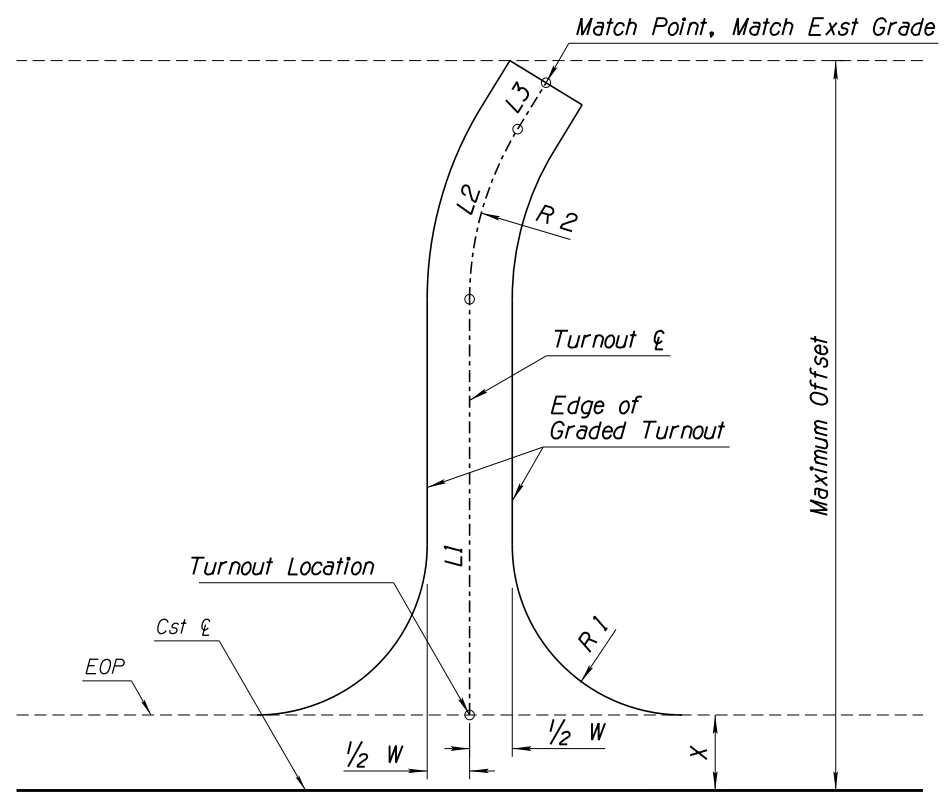
DATE- LOCATION- REVISIONS- FINISHED PLANS- SURVEY NO. DATE- LOCATION- REVISIONS- FINISHED PLANS- SURVEY NO.



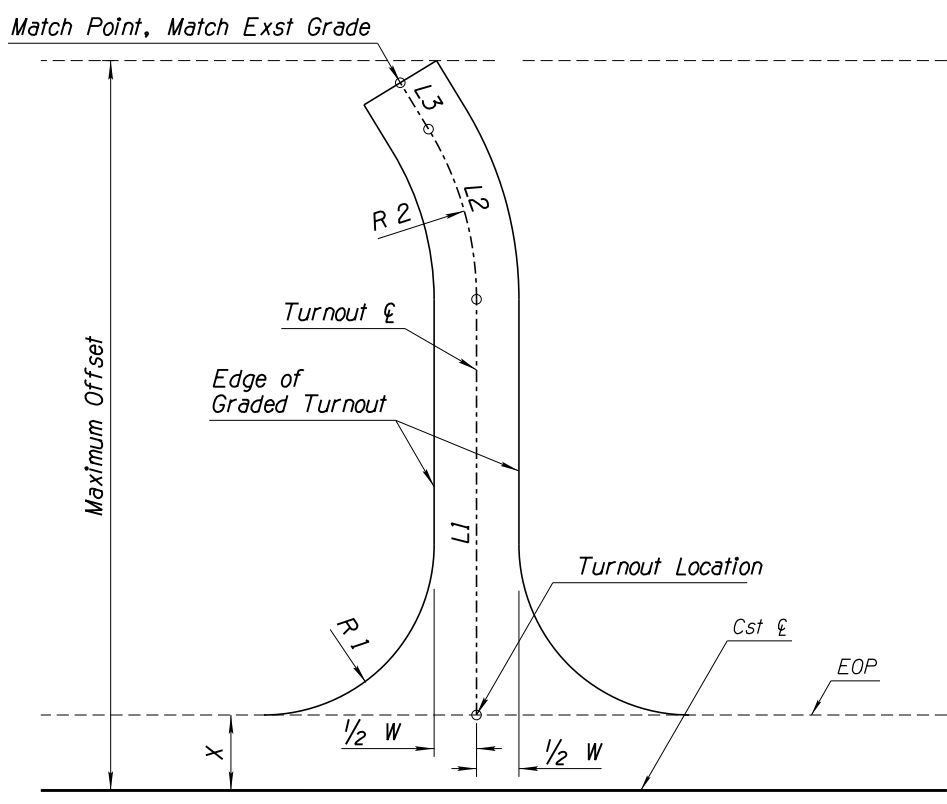
TURNOUT - TANGENT  
NTS



TURNOUT - STA 79+92.32 LT  
NTS



TURNOUT - CURVE RIGHT  
NTS



TURNOUT - CURVE LEFT  
NTS

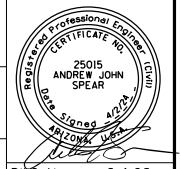
NOTE:  
Refer to Table on Detail A Sheet 1 of 4 for dimensions and elevations.

LEGEND  
L = Length  
R = Radius

# DETAIL A

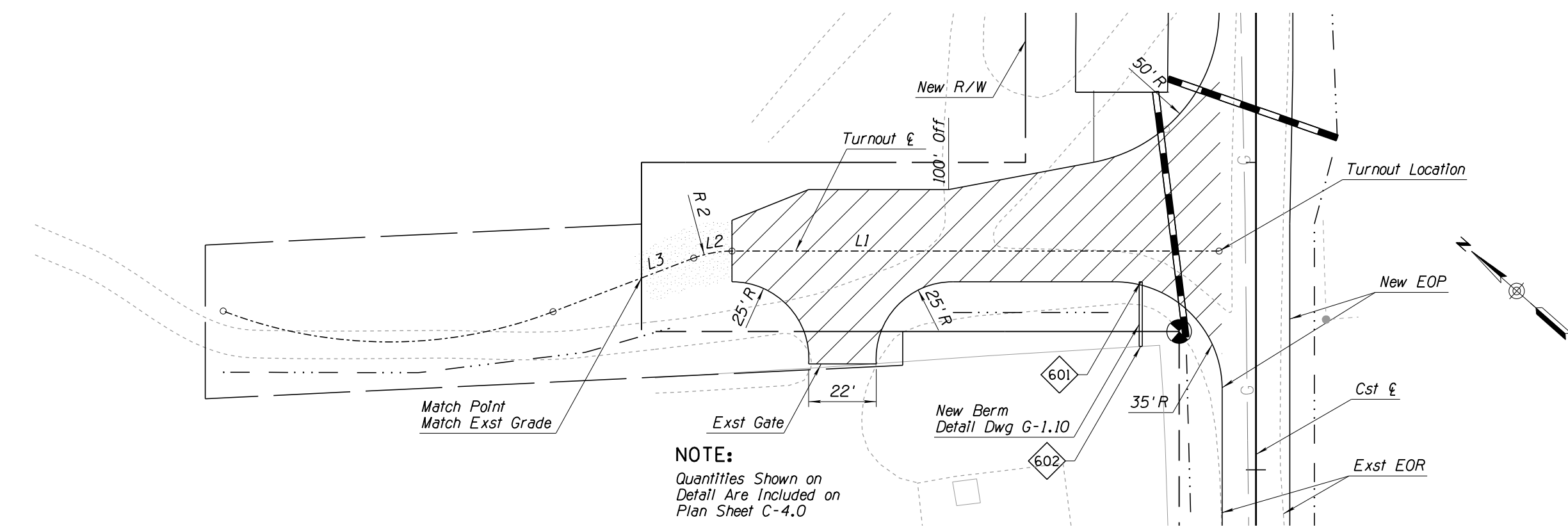
TURN OUT DETAIL  
SHEET 2 OF 12

DESIGN	A. Cox	DATE	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS
DRAWN	D. Burmeister	DATE	4/24	
CHECKED	D. Spear	DATE	4/24	
<b>DIBBLE</b>				TURNOUT DETAILS
ROUTE	N6460 & N6461	LOCATION	DENNEHOTSO LOOP ROAD	DWG No. G-1.08
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ	9 OF 69



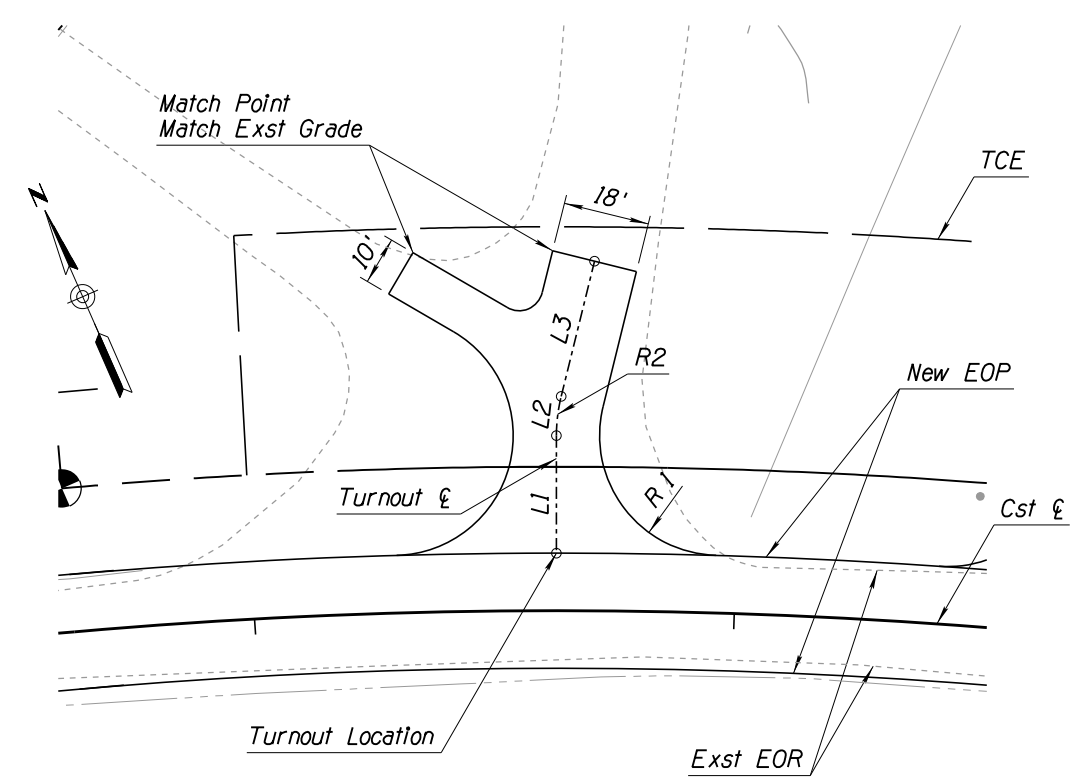


DATE- LOCATION- REVISIONS- FINISHED PLANS- SURVEY NO. DATE- LOCATION- REVISIONS- FINISHED PLANS- SURVEY NO.

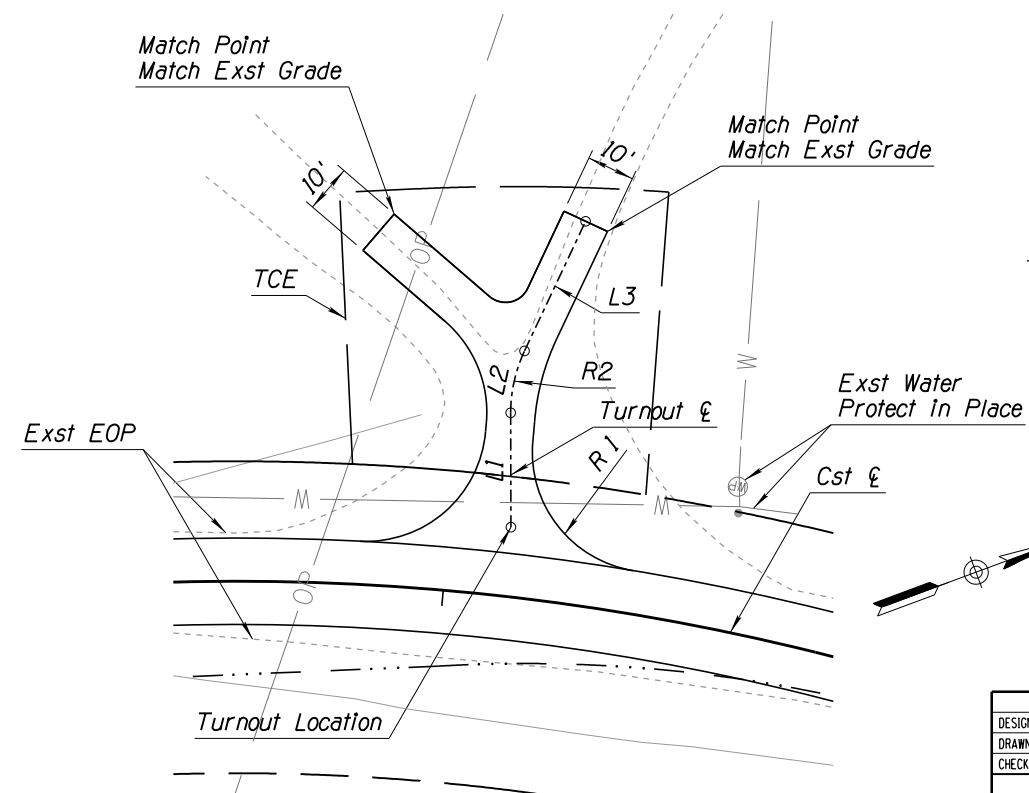


TURNOUT - STA 50+71.20 LT  
NTS

**NOTE:**  
Quantities Shown on Detail Are Included on Plan Sheet C-4.0



TURNOUT - STA 181+38.06 RT  
NTS



TURNOUT - STA 236+88.02 RT  
NTS

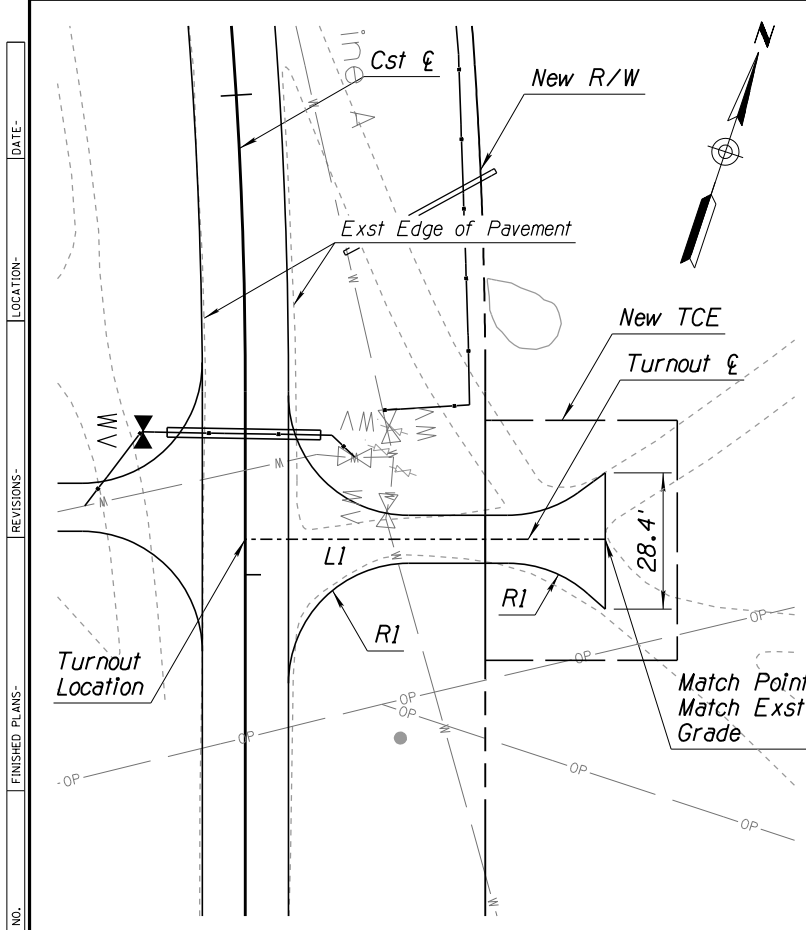
**NOTE:**  
Refer to Table on Detail A Sheet 1 of 3 for dimensions and elevations.

**LEGEND**  
L = Length  
R = Radius

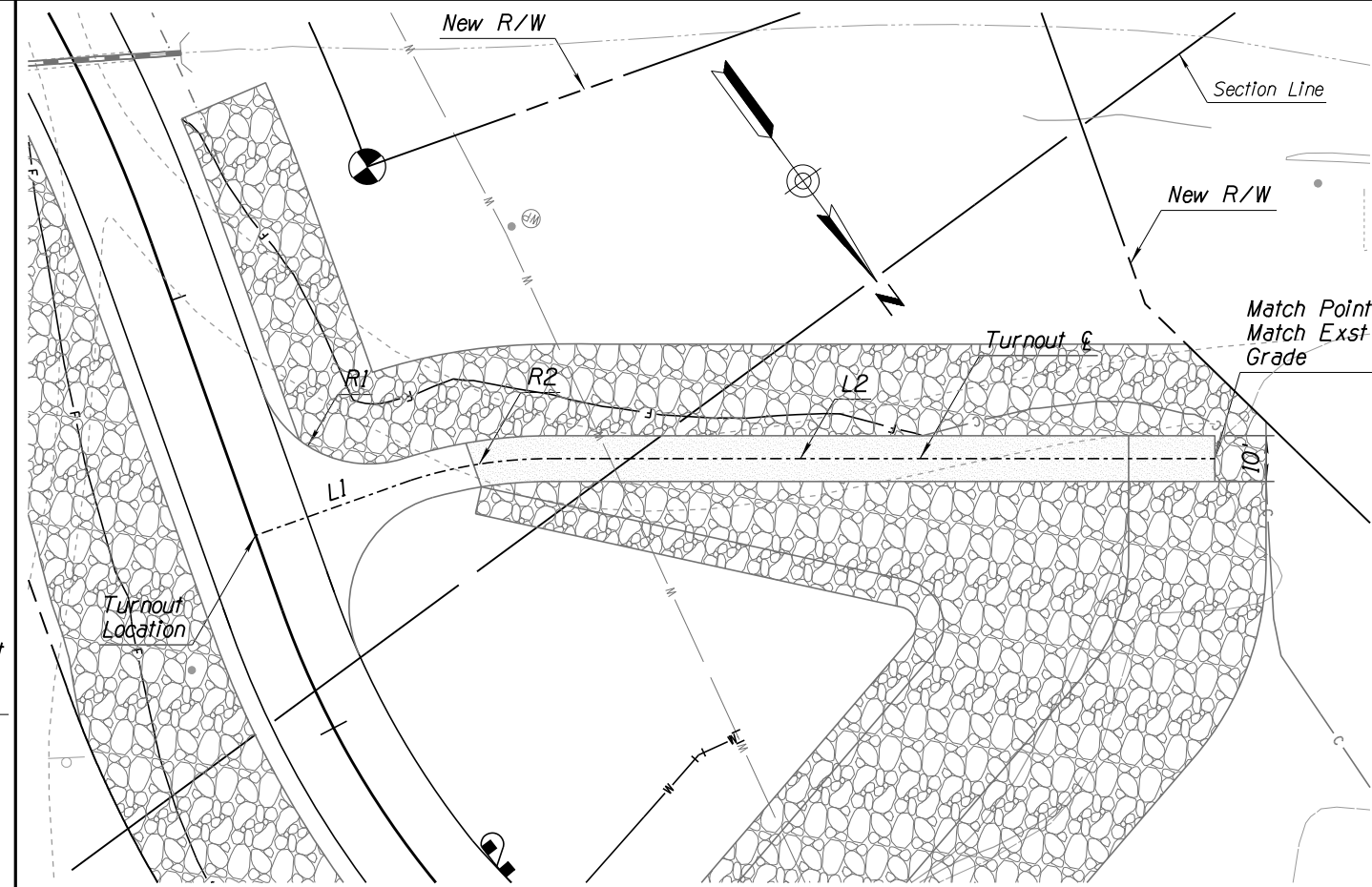
# DETAIL A

TURN OUT DETAIL  
SHEET 3 OF 12

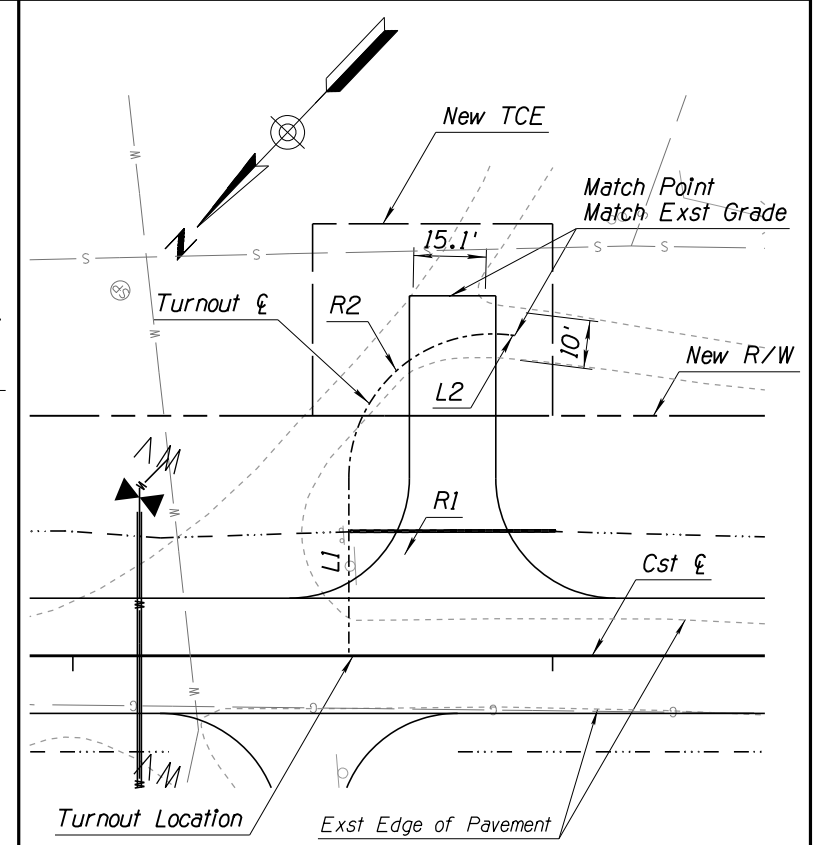
DESIGN	A. Cox	DATE	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS	
DRAWN	D. Burmeister	DATE	4/24		
CHECKED	D. Spear	DATE	4/24		
<b>DIBBLE</b>				TURNOUT DETAILS	
ROUTE	N6460 & N6461		LOCATION	DENNEHOTSO LOOP ROAD	
DIBBLE PROJECT No. 101411.01				APACHE COUNTY, AZ	DWG No. G-1.09
				10	OF 69



TURNOUT - STA 250+94.82 RT  
Scale: 1" = 20'



TURNOUT - STA 334+54.53 LT  
Scale: 1" = 20'



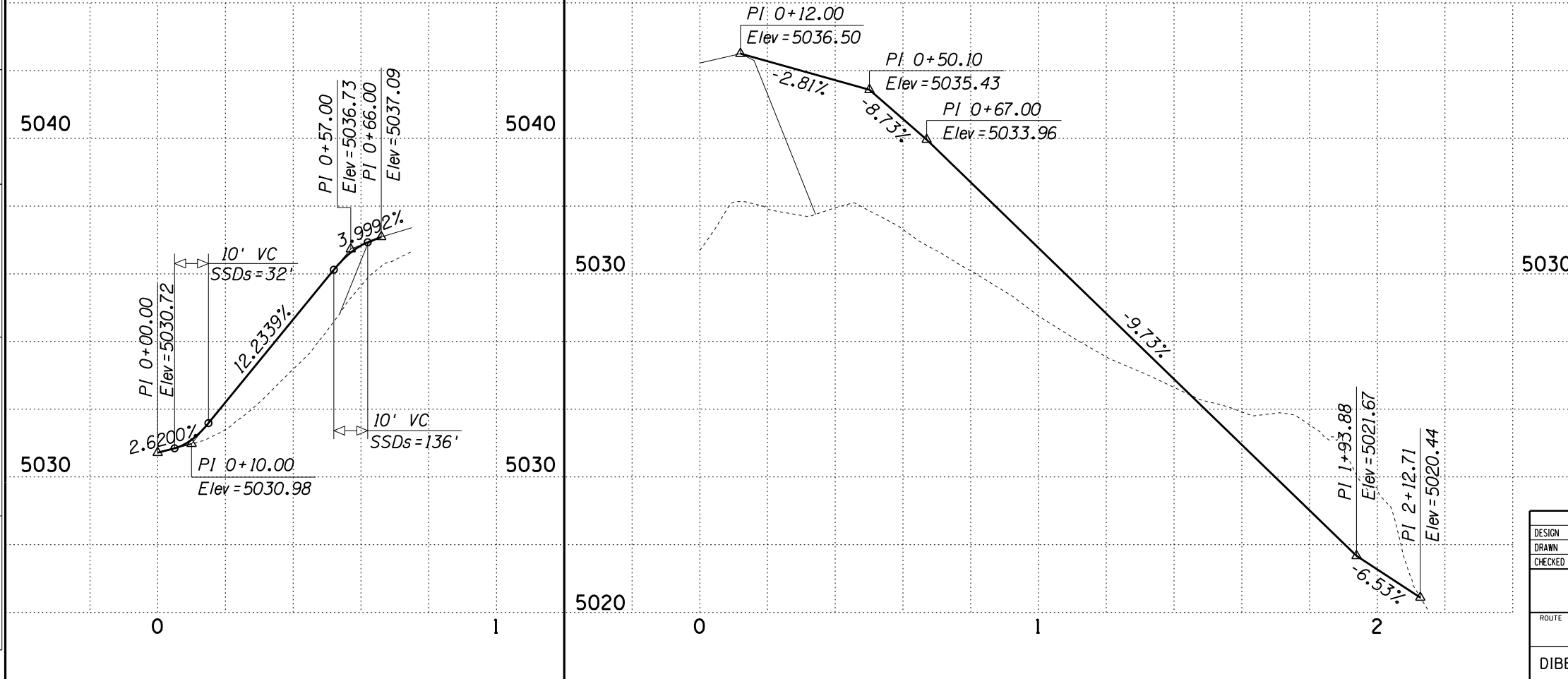
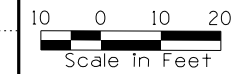
TURNOUT - STA 68+45.76 RT  
Scale: 1" = 20'

NOTE:  
Refer to Table on Detail A Sheet 1 of 3 for dimensions and elevations.  
Quantities are shown on Plan Sheets.

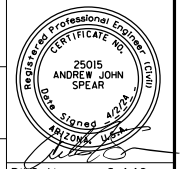
LEGEND  
L = Length  
R = Radius

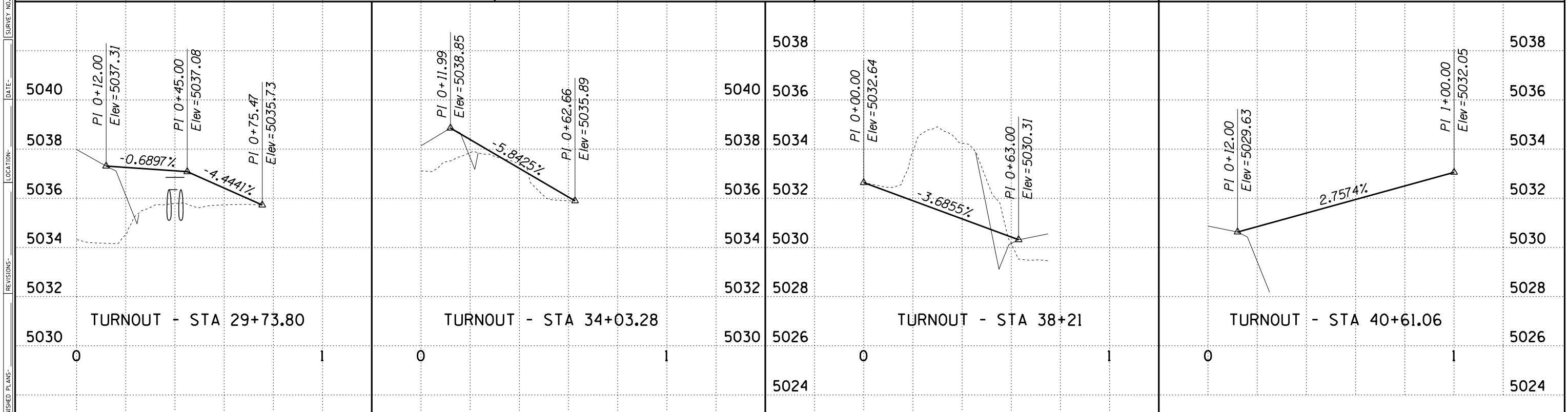
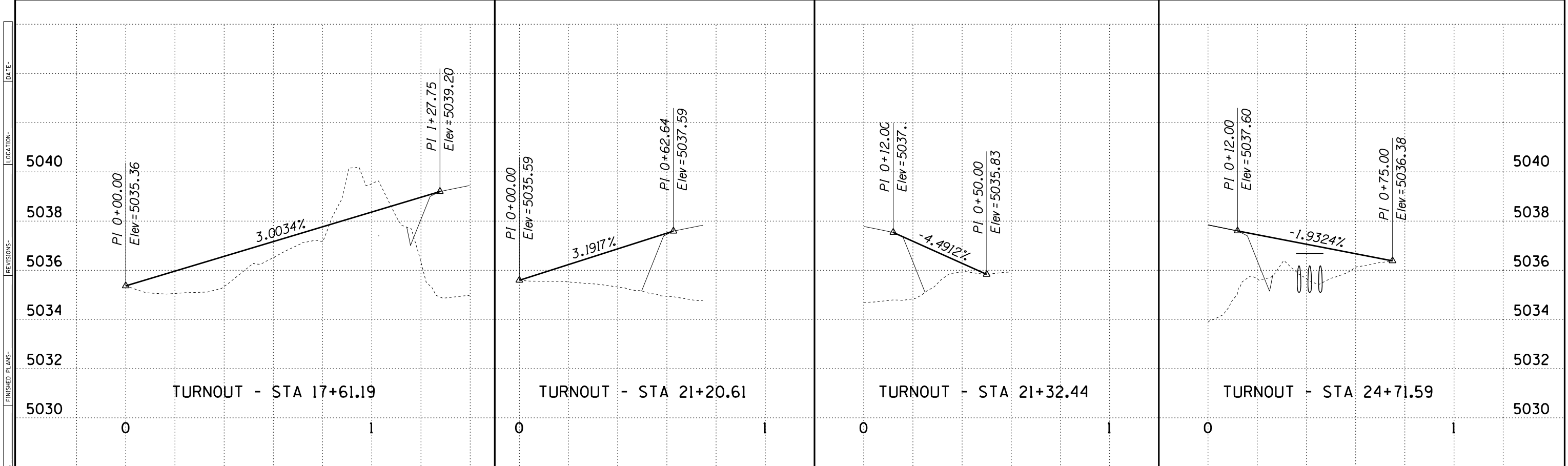
# DETAIL A

TURN OUT DETAIL  
SHEET 4 OF 12



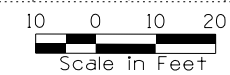
DESIGN	A. Cox	DATE	4/24
DRAWN	D. Burmeister	DATE	4/24
CHECKED	D. Spear	DATE	4/24
<b>DIBBLE</b>		NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS	
ROUTE N6460 & N6461		LOCATION DENNEHOTSO LOOP ROAD	
DIBBLE PROJECT No. 101411.01		APACHE COUNTY, AZ	
		DWG No. G-1.10	
		11 OF 69	



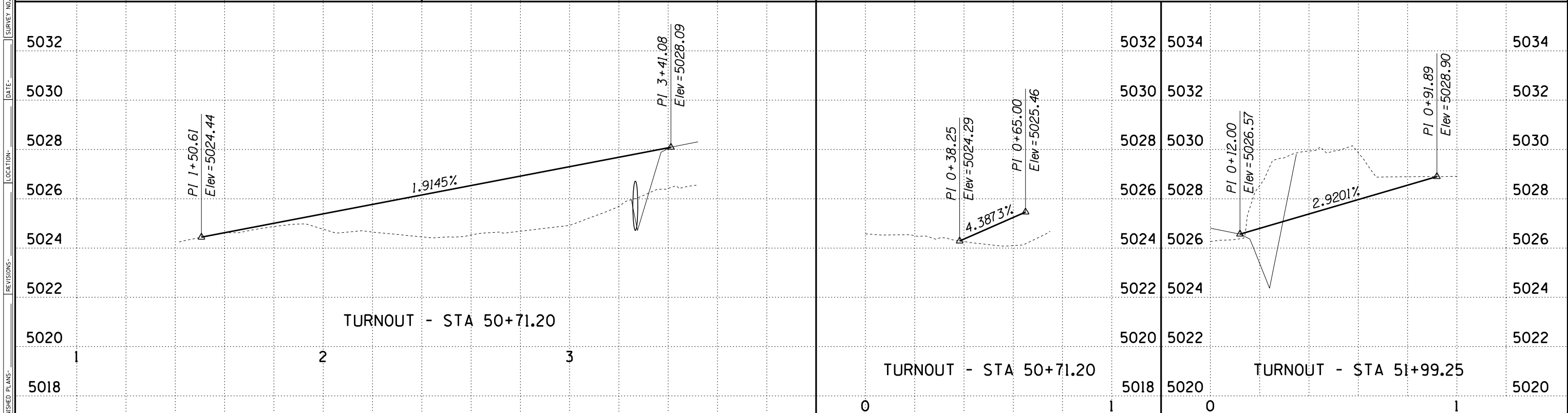
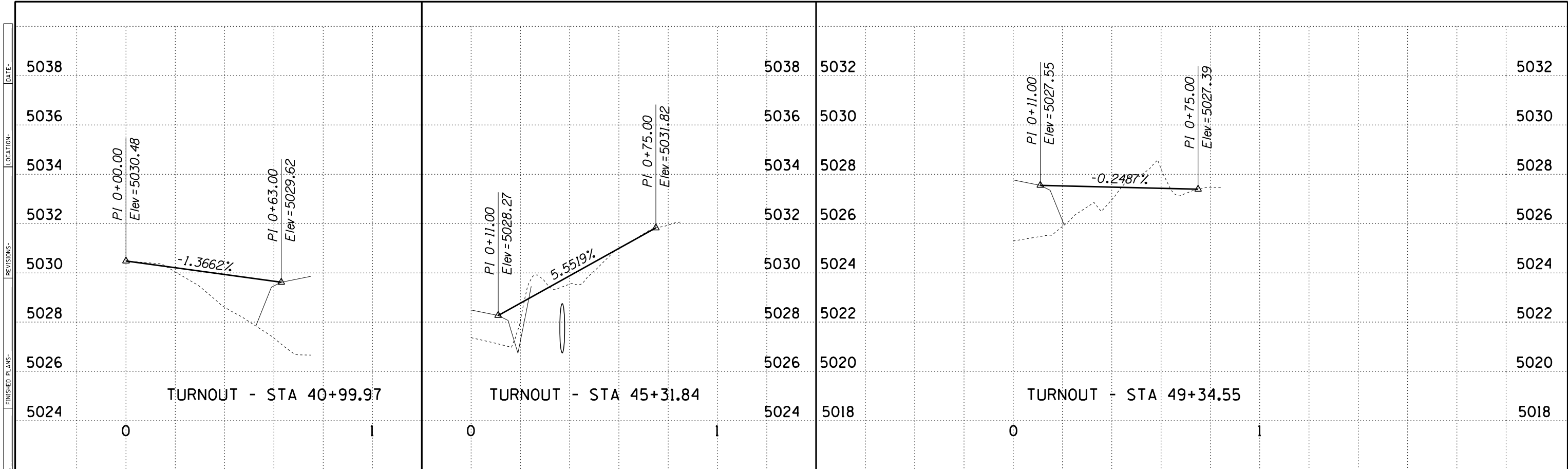


# DETAIL A

TURN OUT DETAIL  
SHEET 5 OF 12

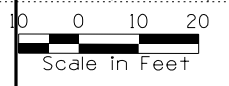


DESIGN	A. Cox	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS	
DRAWN	D. Burmeister	4/24		
CHECKED	D. Spear	4/24		
<b>DIBBLE</b>			TURNOUT DETAILS	
ROUTE	N6460 & N6461	LOCATION	DENNEHOTSO LOOP ROAD	DWG No. G-1.11
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ	12 OF 69



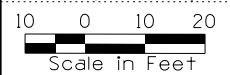
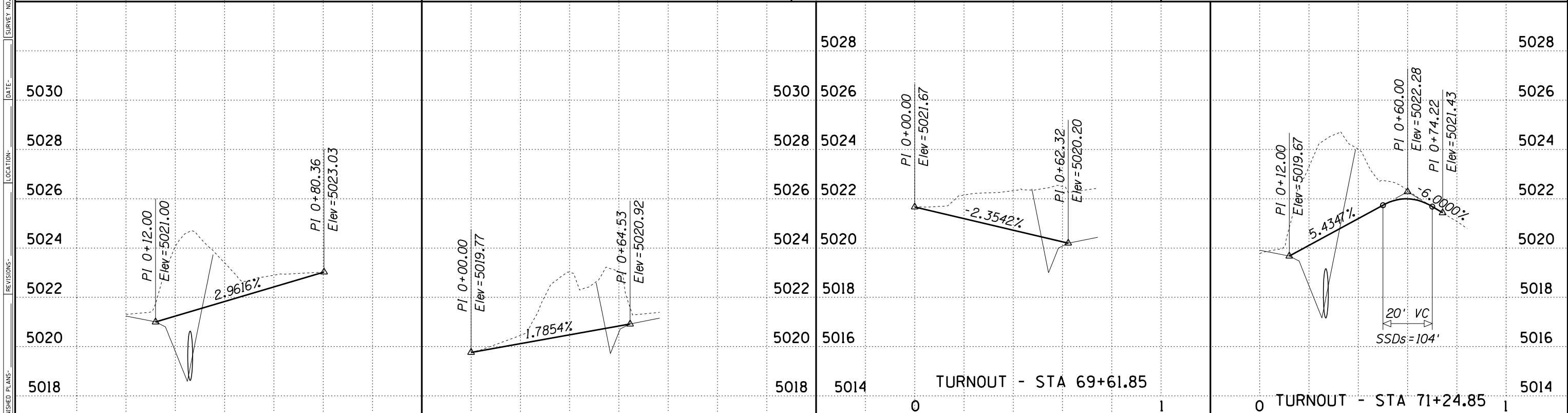
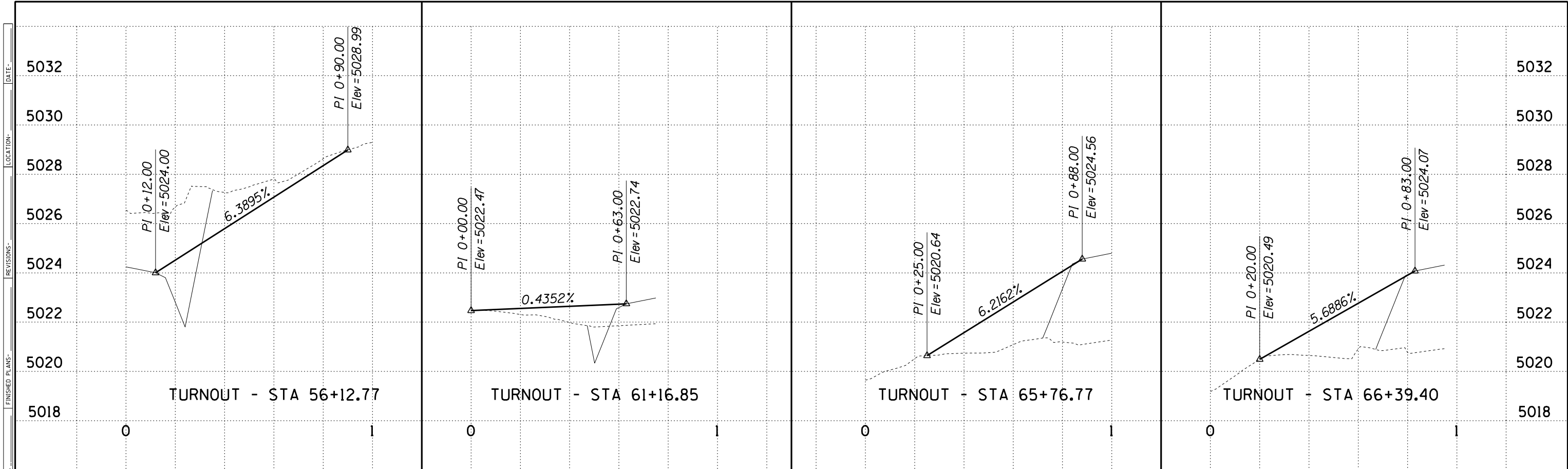
# DETAIL A

TURN OUT DETAIL  
SHEET 6 OF 12



DESIGN	A. Cox	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS	
DRAWN	D. Burmeister	4/24		
CHECKED	D. Spear	4/24		
<b>DIBBLE</b>			TURNOUT DETAILS	
ROUTE	N6460 & N6461		LOCATION	DENNEHOTSO LOOP ROAD
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ	DWG No. G-1.12

SURVEY NO. FINISHED PLANS DATE LOCATION REVISIONS DATE FINISHED PLANS SURVEY NO. DATE LOCATION REVISIONS DATE



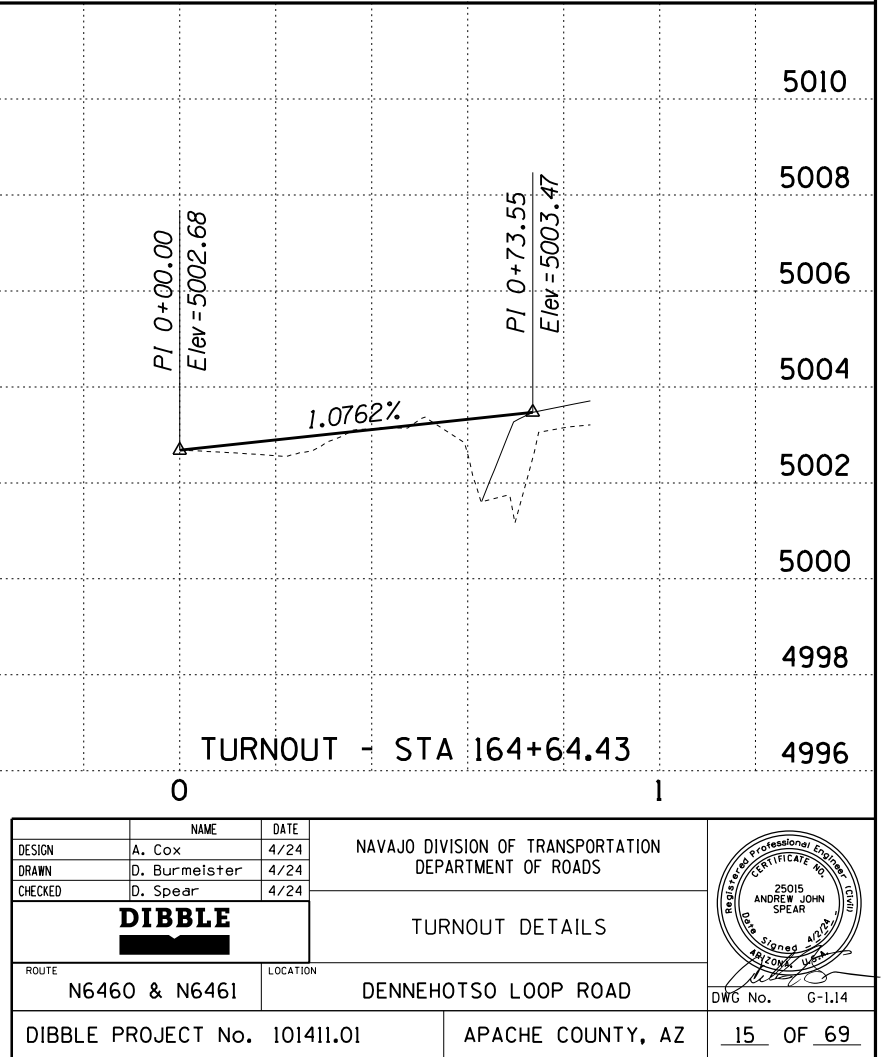
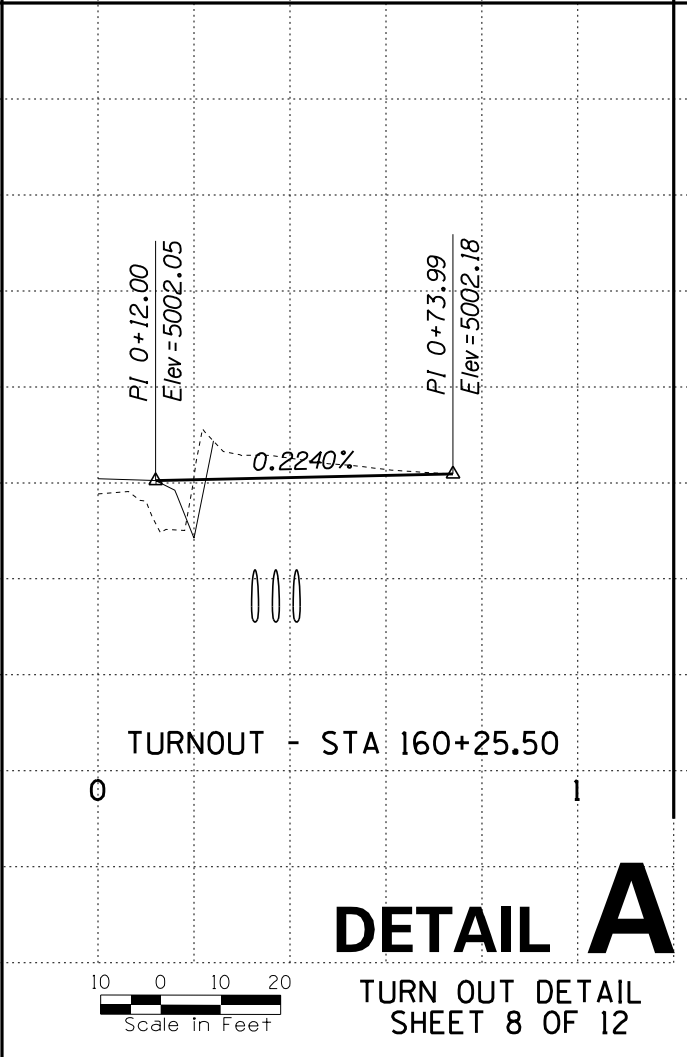
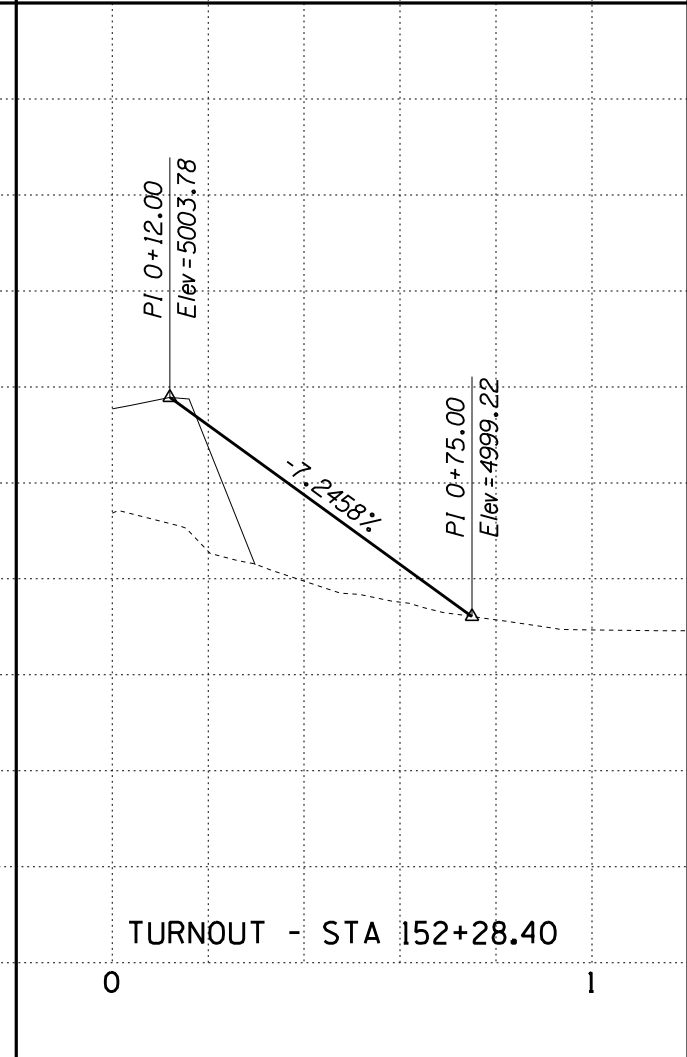
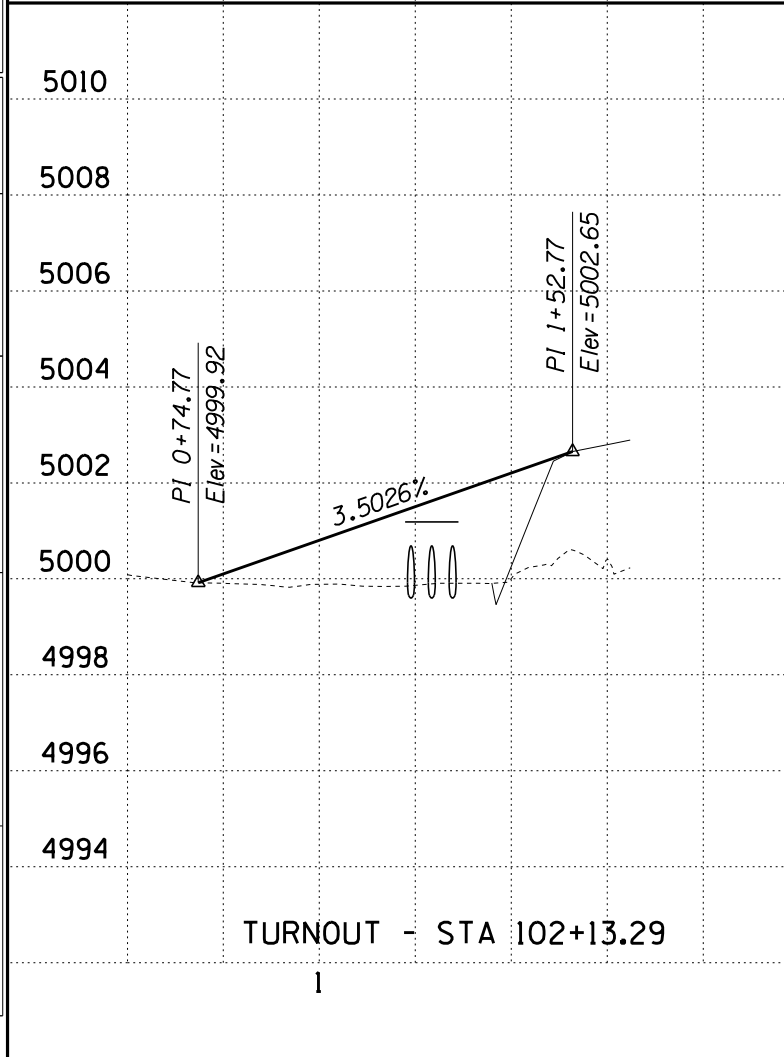
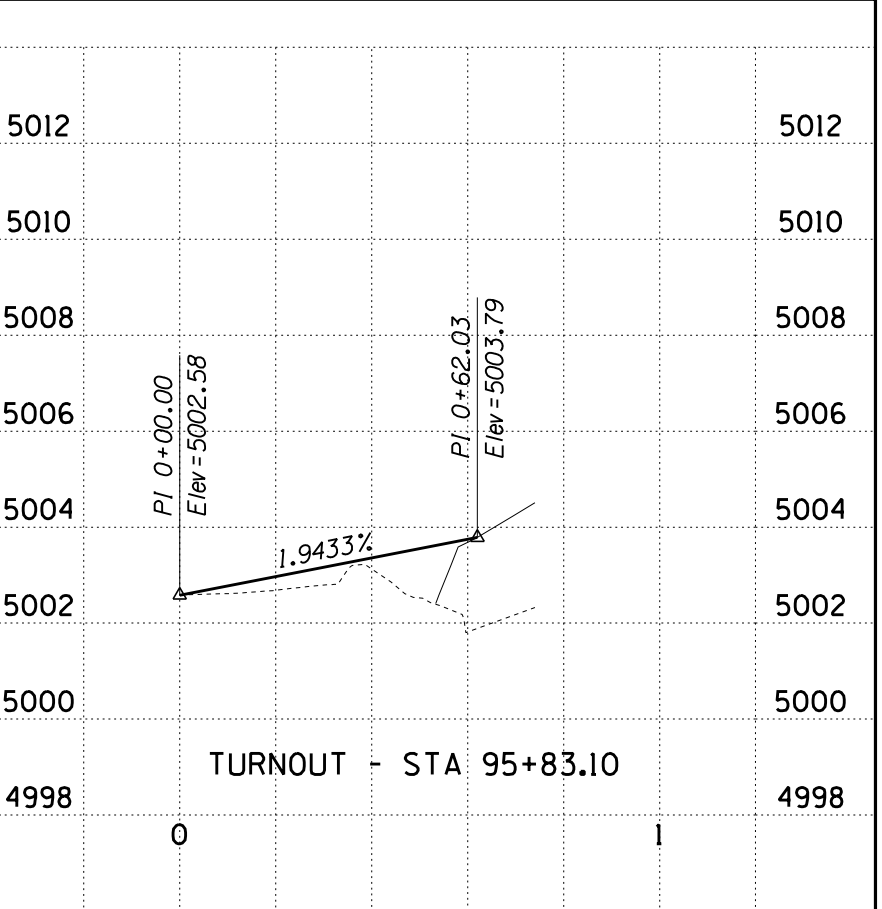
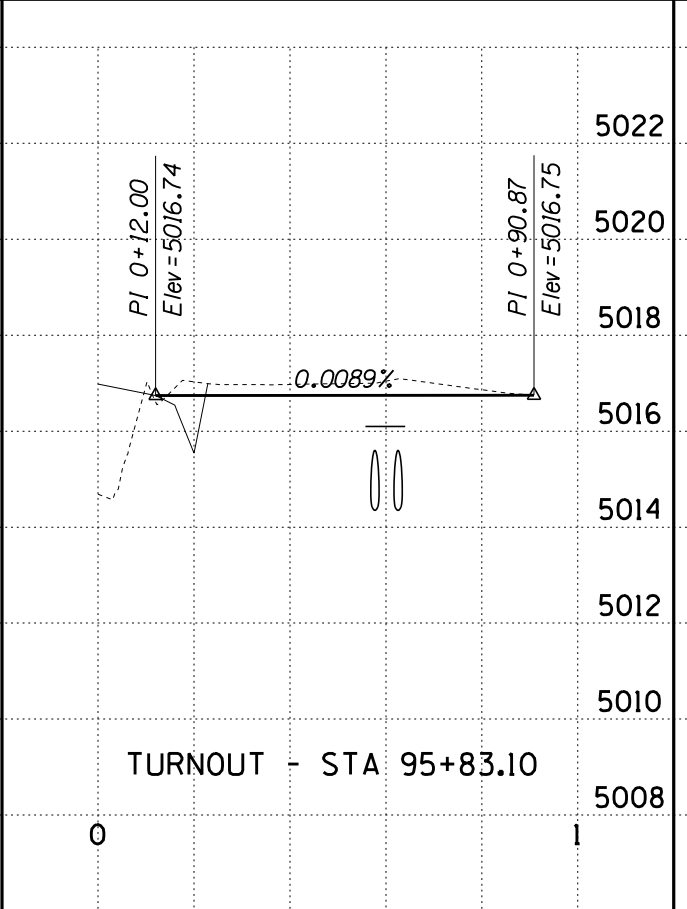
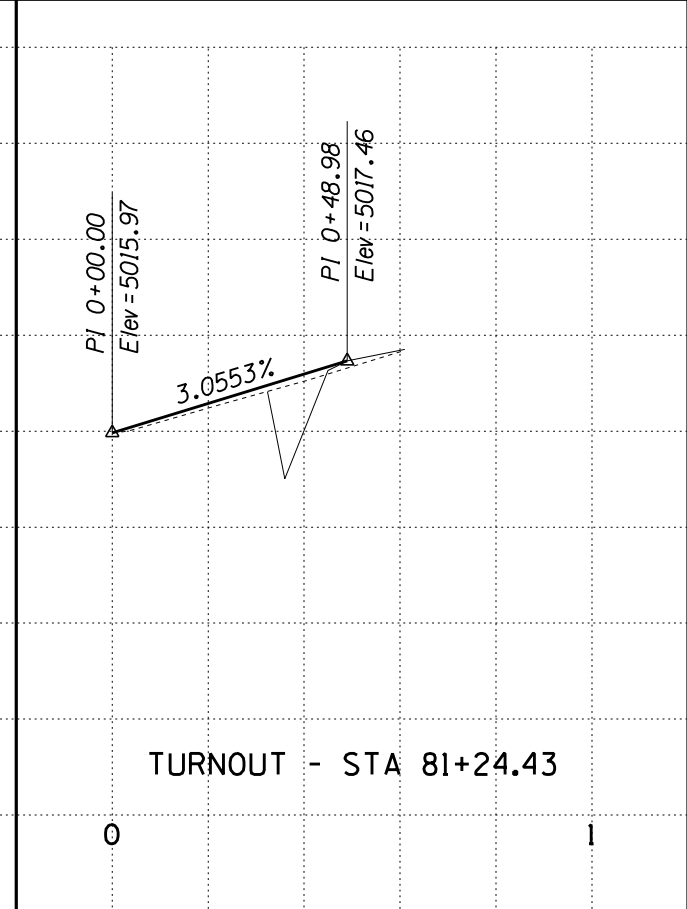
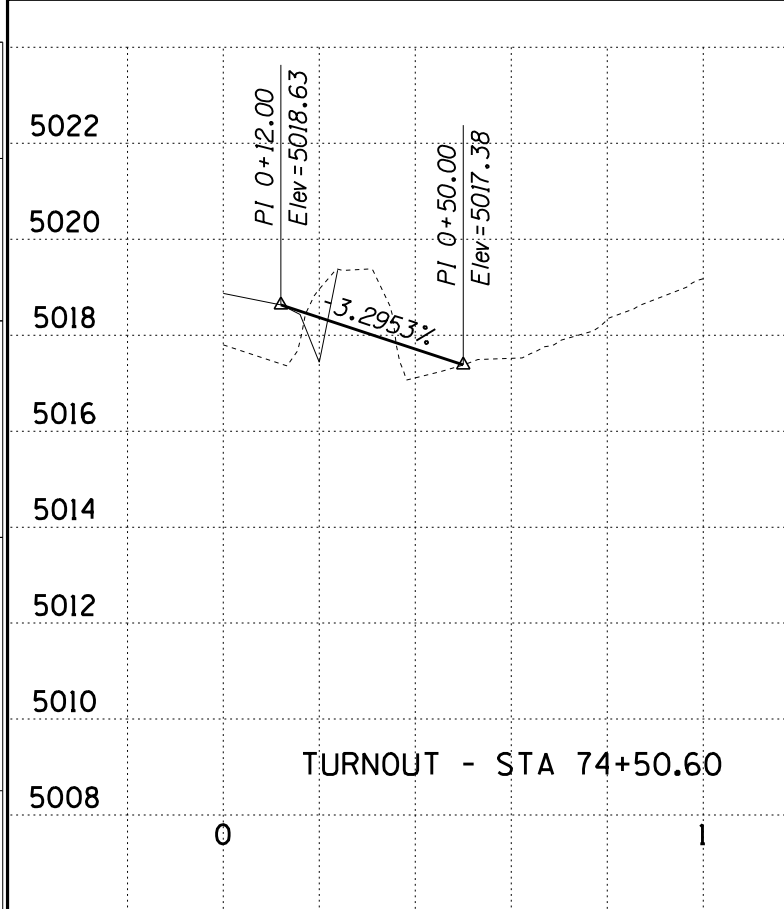
# DETAIL A

TURN OUT DETAIL  
SHEET 7 OF 12

DESIGN	A. Cox	DATE	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS  TURNOUT DETAILS	
DRAWN	D. Burmeister	DATE	4/24		
CHECKED	D. Spear	DATE	4/24		
<b>DIBBLE</b> PROJECT No. 101411.01		LOCATION DENNEHOTSO LOOP ROAD		DWG No. G-1.13	
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ		14 OF 69

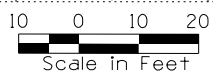


SURVEY NO. \_\_\_\_\_ FINISHED PLANS \_\_\_\_\_ LOCATION \_\_\_\_\_ DATE \_\_\_\_\_ REVISIONS \_\_\_\_\_ FINISHED PLANS \_\_\_\_\_ LOCATION \_\_\_\_\_ DATE \_\_\_\_\_ SURVEY NO. \_\_\_\_\_ FINISHED PLANS \_\_\_\_\_ LOCATION \_\_\_\_\_ DATE \_\_\_\_\_



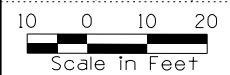
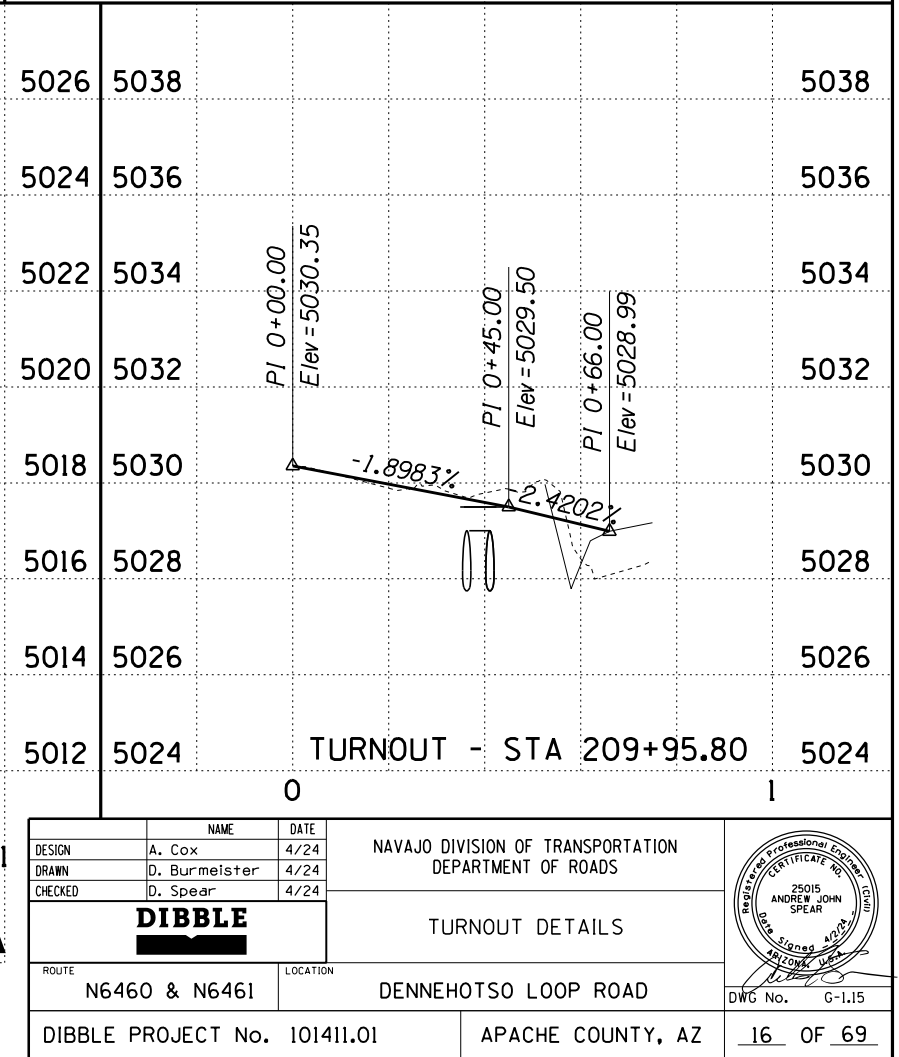
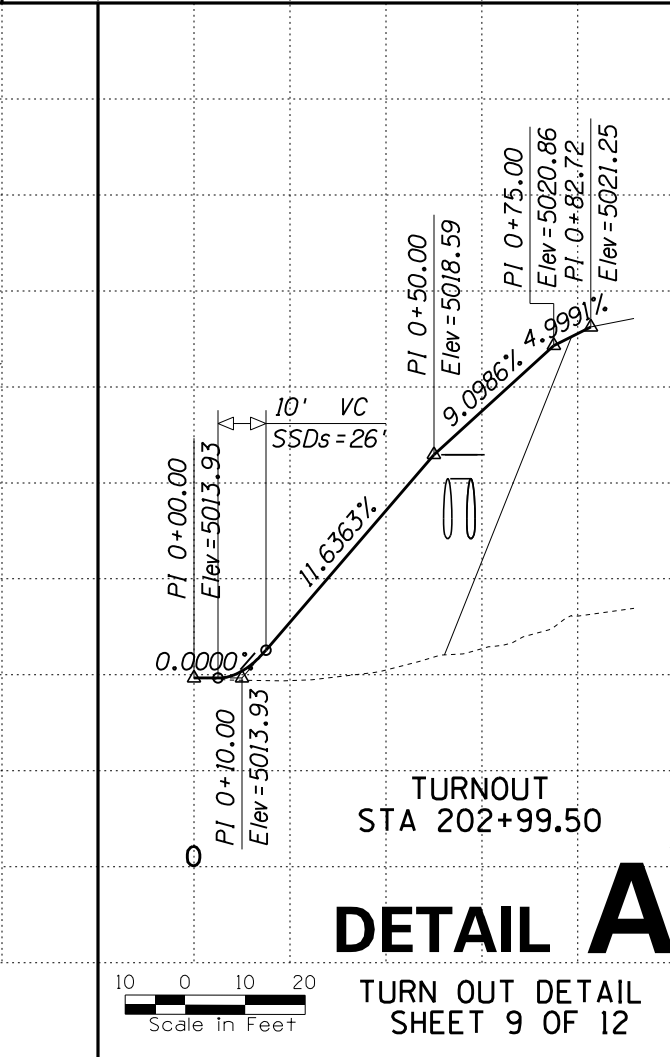
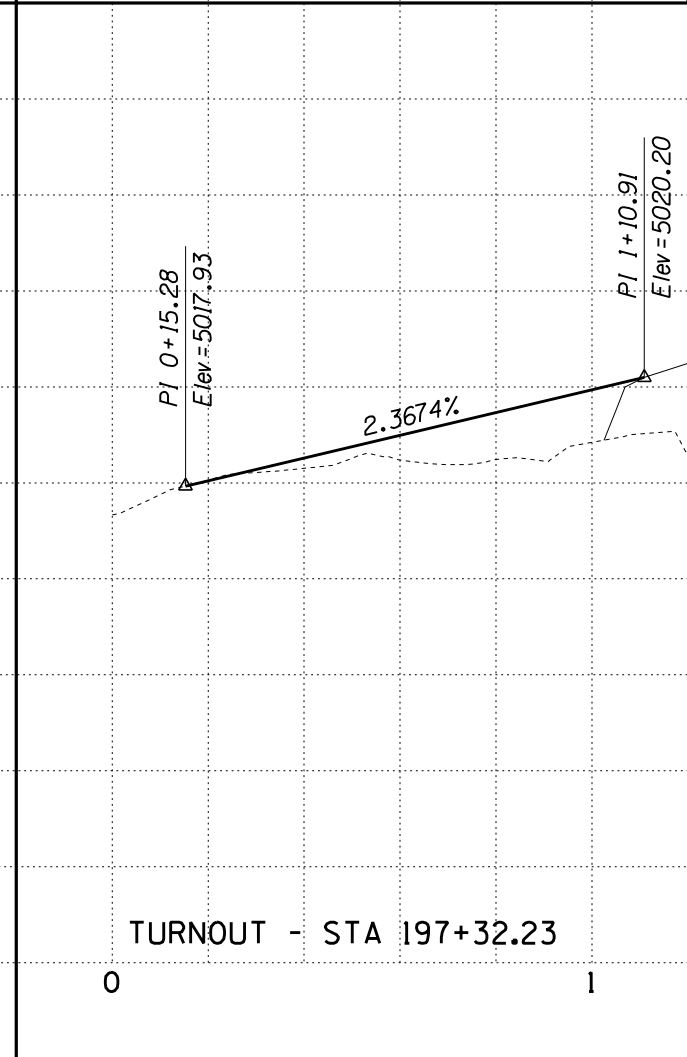
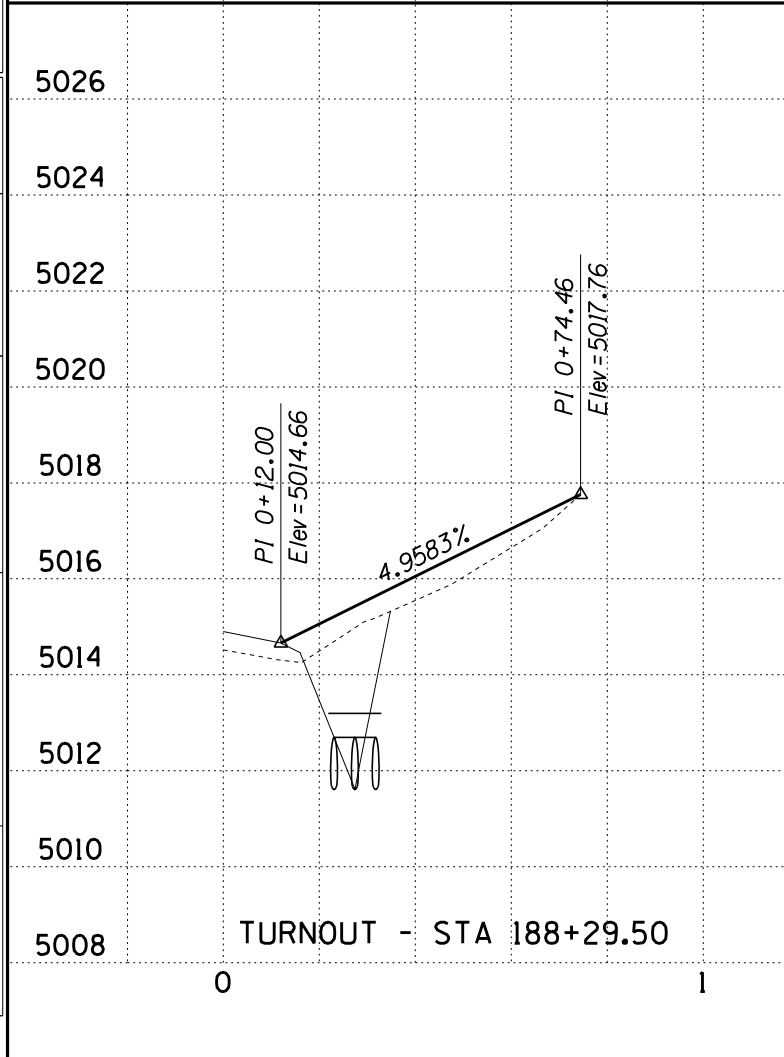
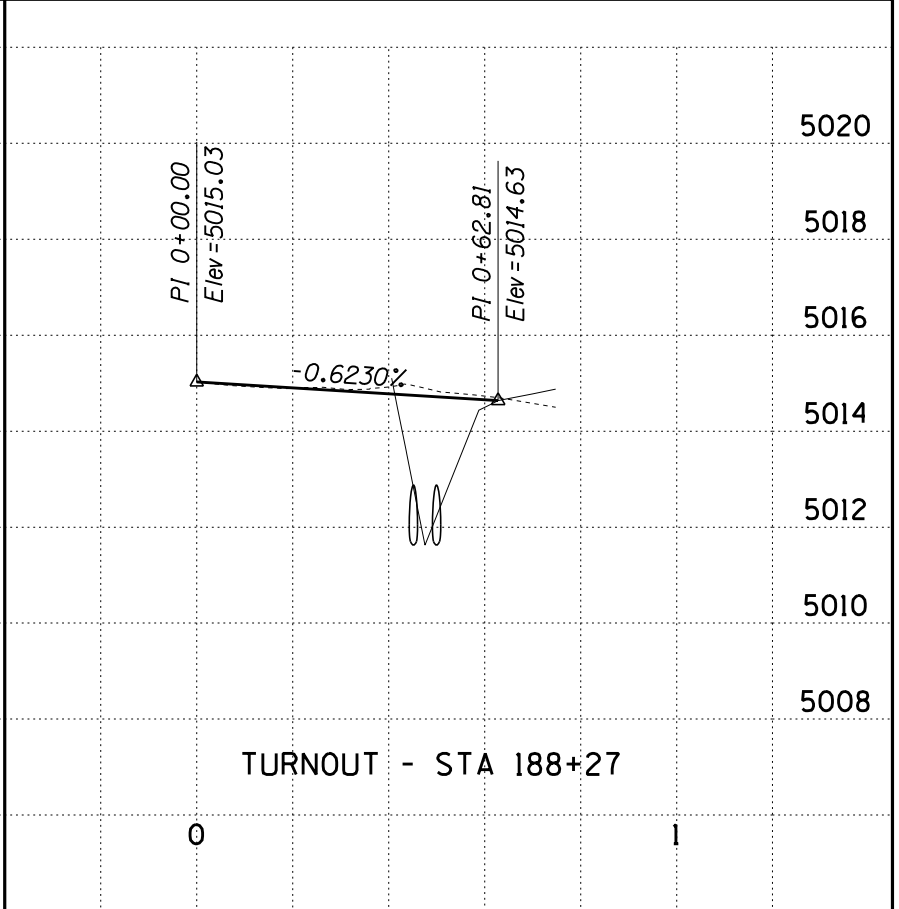
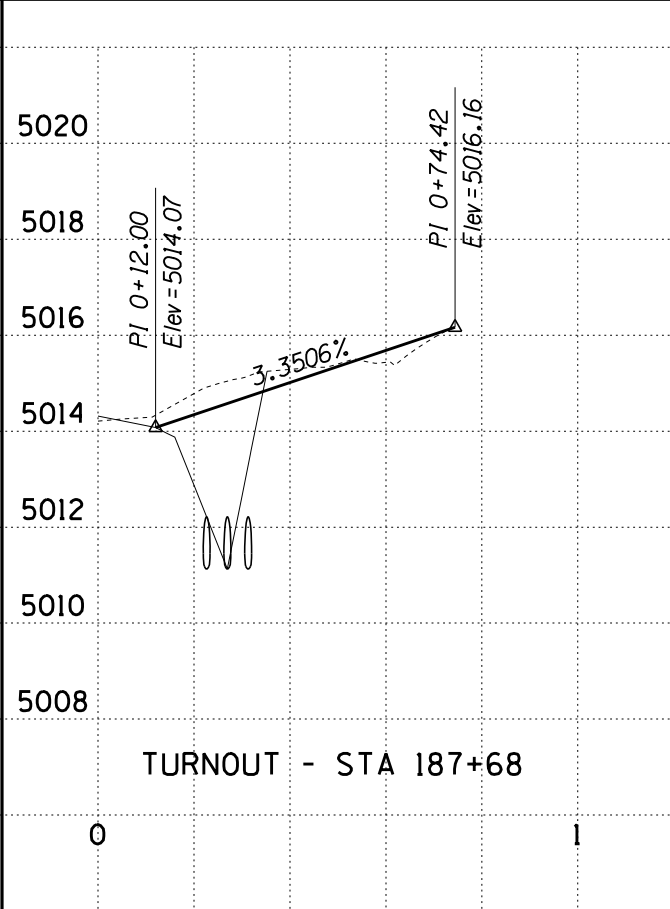
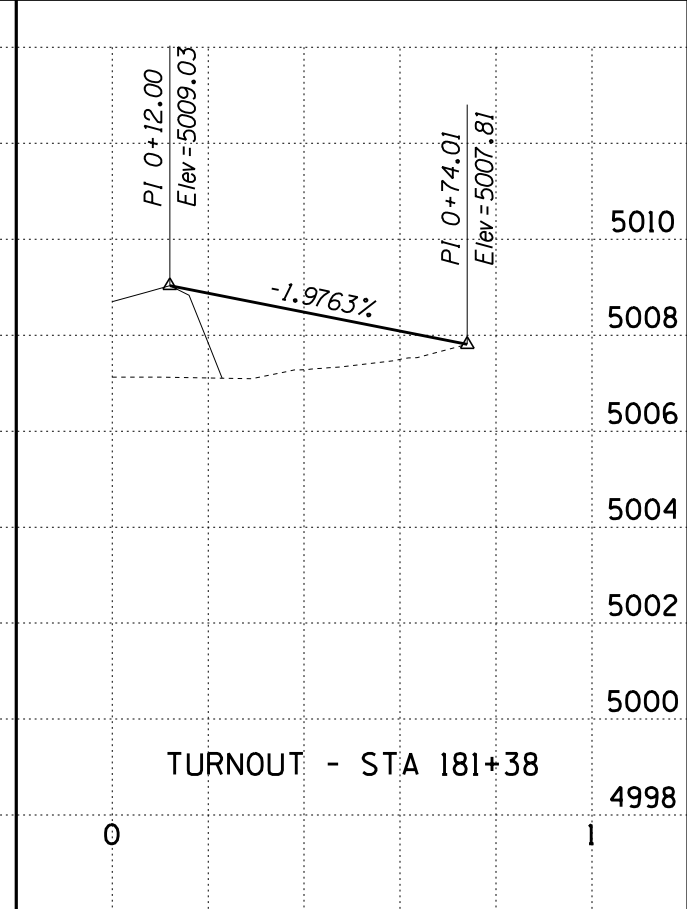
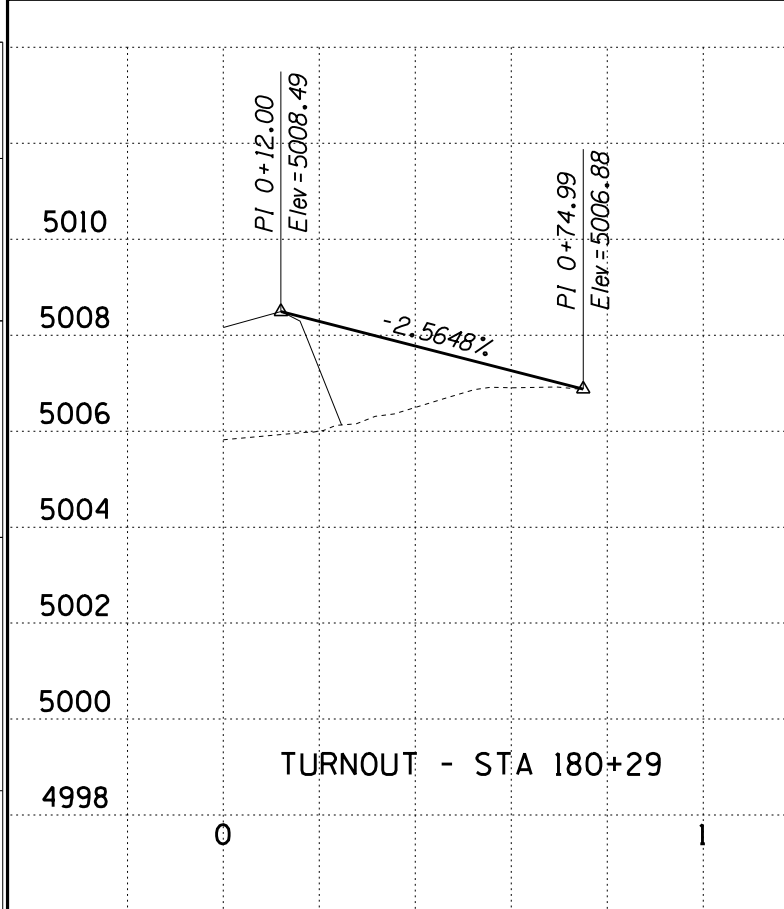
# DETAIL A

TURN OUT DETAIL  
SHEET 8 OF 12



DESIGN	A. Cox	DATE	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS  TURNOUT DETAILS	
DRAWN	D. Burmeister	DATE	4/24		
CHECKED	D. Spear	DATE	4/24		
<b>DIBBLE</b> PROJECT No. 101411.01		DENNEHOTSO LOOP ROAD APACHE COUNTY, AZ		DWG No.	G-1.14
					15 OF 69

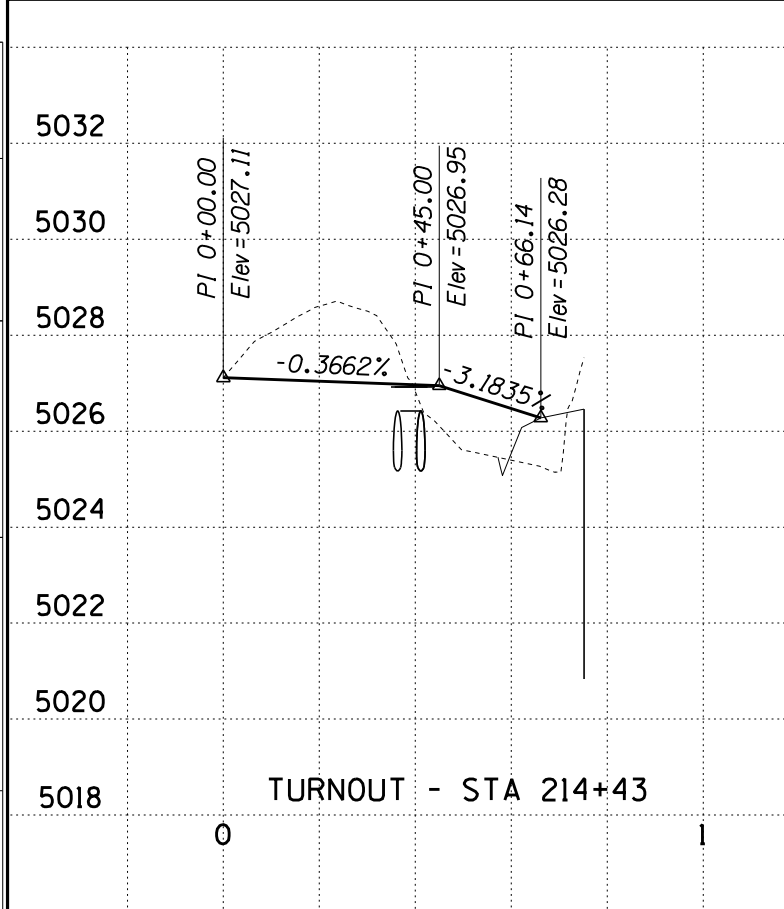
SURVEY NO. FINISHED PLANS LOCATION DATE REVISIONS FINISHED PLANS SURVEY NO. LOCATION DATE REVISIONS FINISHED PLANS SURVEY NO.



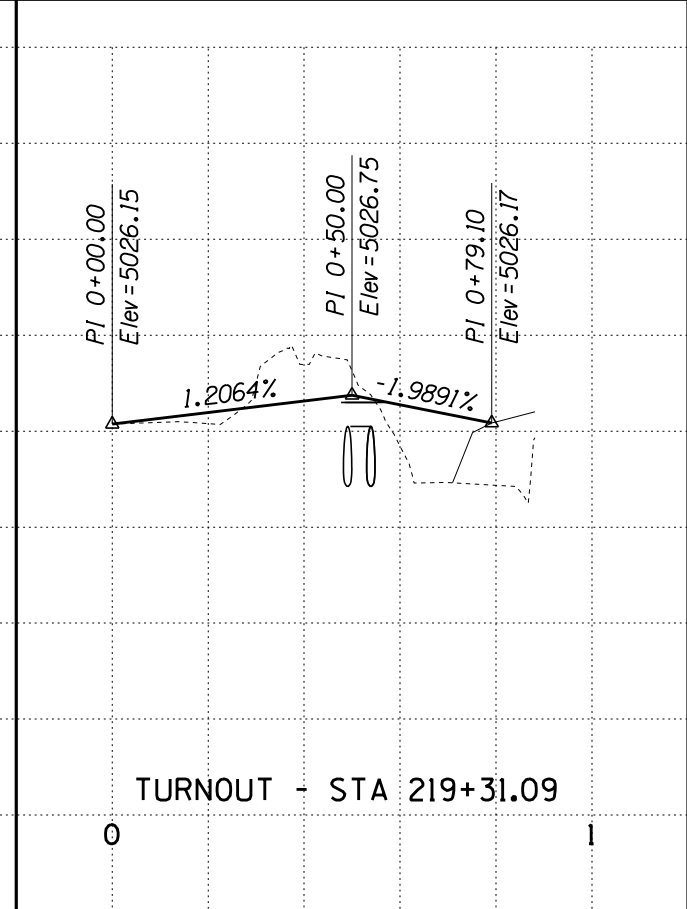
**DETAIL A**  
TURN OUT DETAIL  
SHEET 9 OF 12

DESIGN	A. Cox	DATE	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS  TURNOUT DETAILS	
DRAWN	D. Burmeister	DATE	4/24		
CHECKED	D. Spear	DATE	4/24		
<b>DIBBLE</b> PROJECT No. 101411.01		DENNEHOTSO LOOP ROAD APACHE COUNTY, AZ		DWG No. G-1.15 16 OF 69	

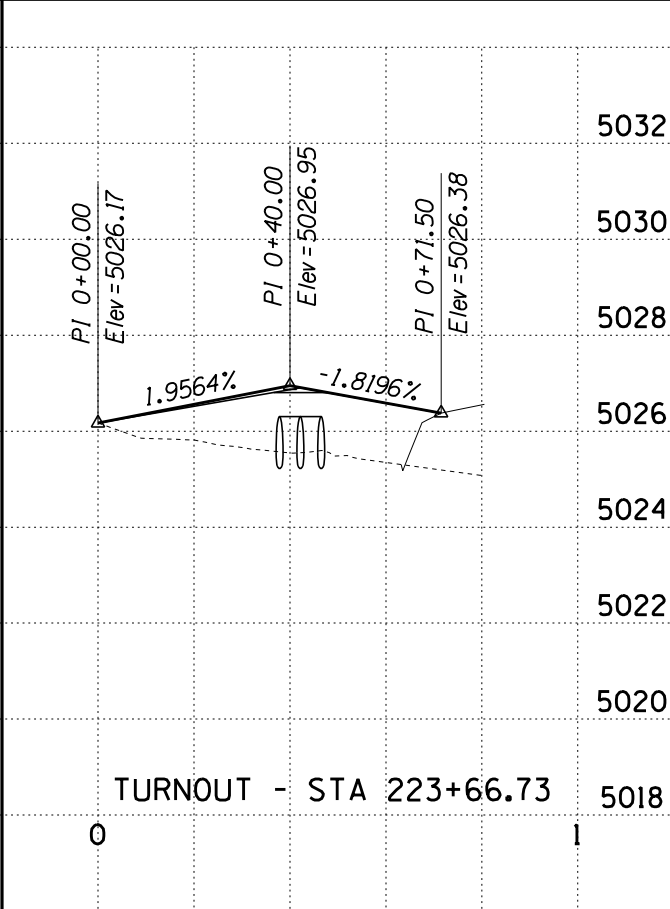
SURVEY NO. FINISHED PLANS DATE LOCATION REVISIONS DATE



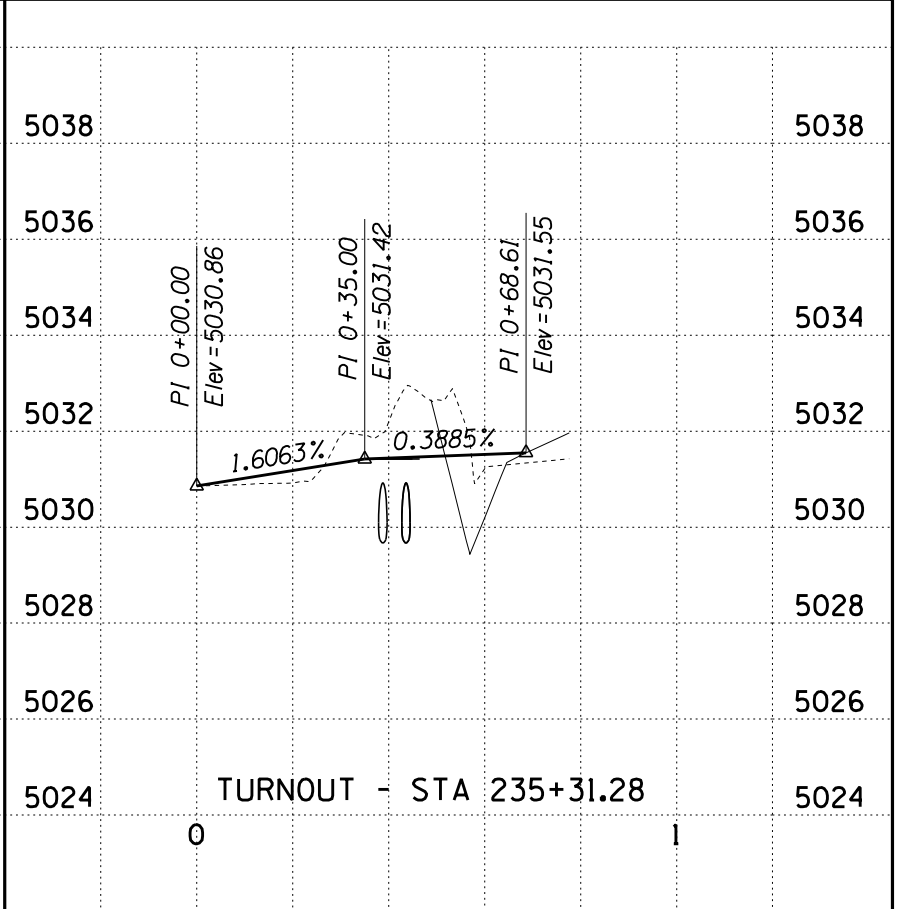
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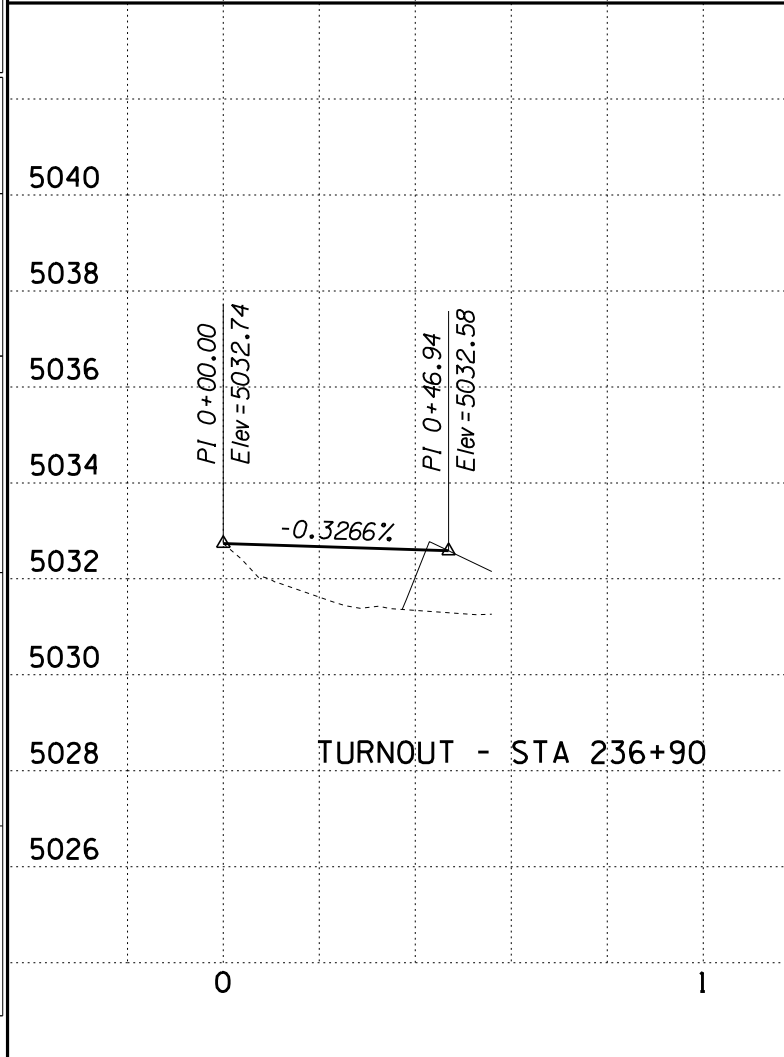
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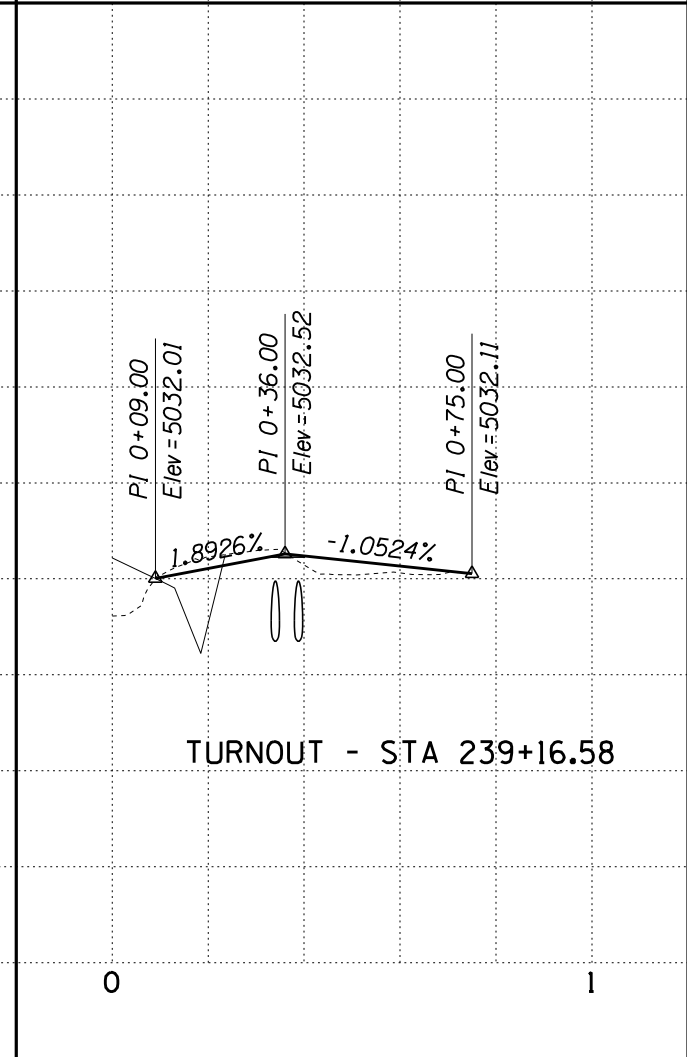
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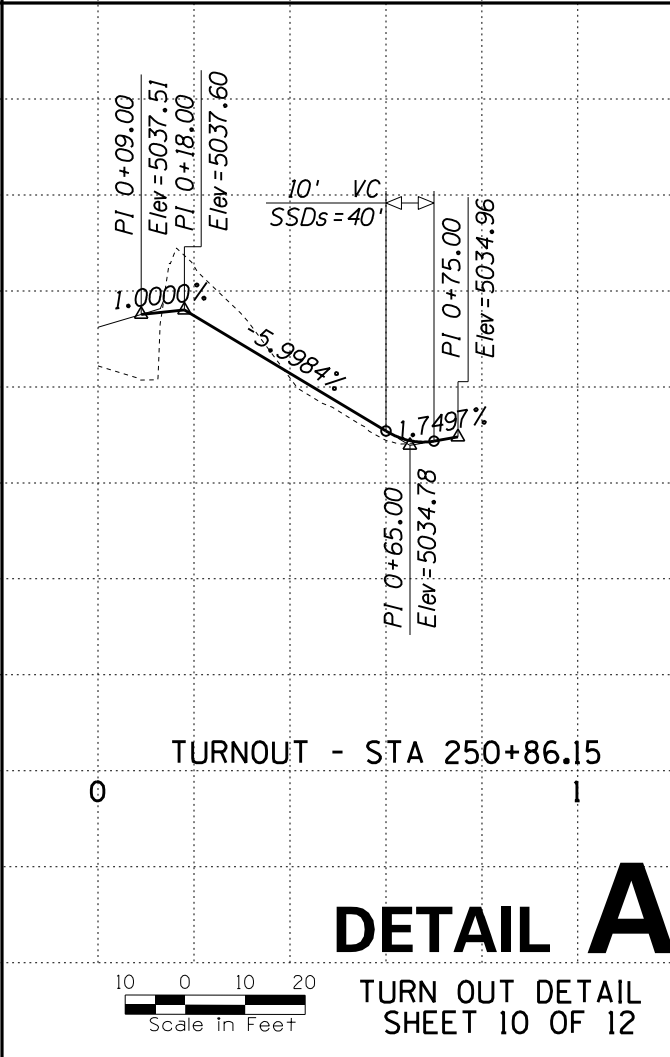
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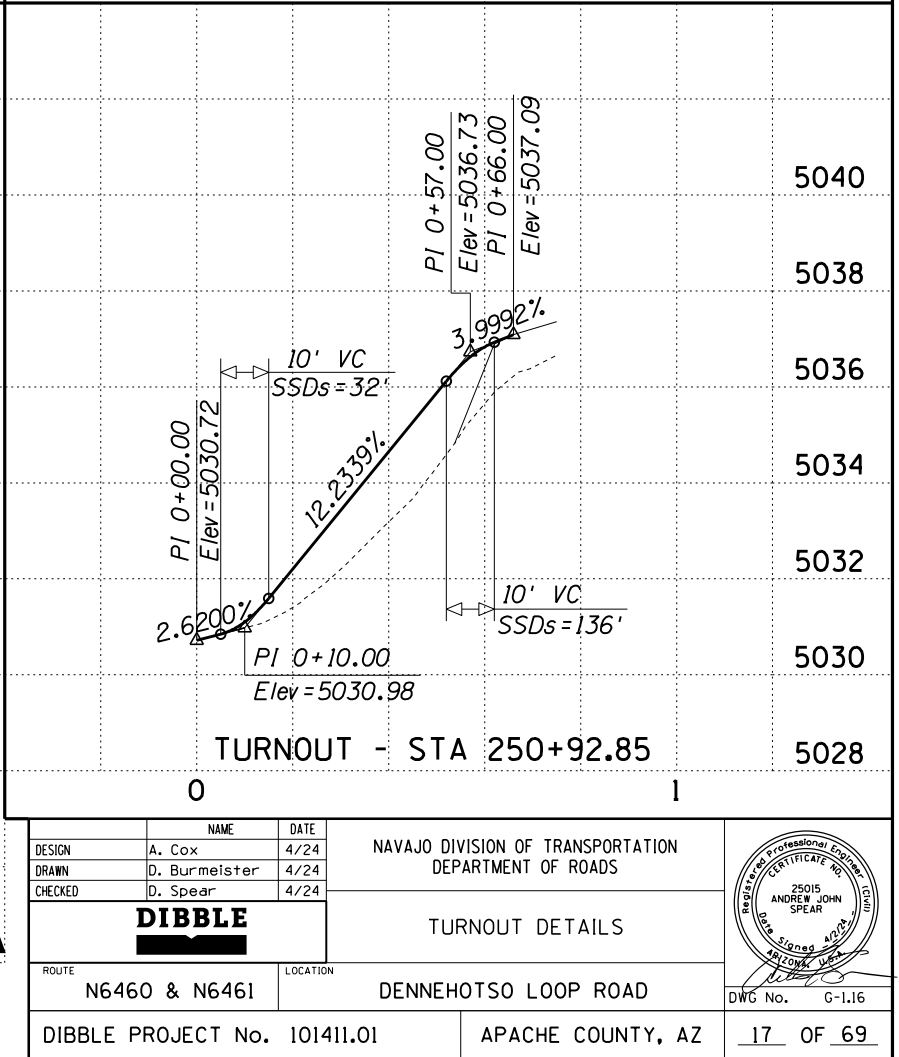
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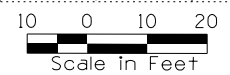
TURNOUT - STA 239+16.58



TURNOUT - STA 250+86.15



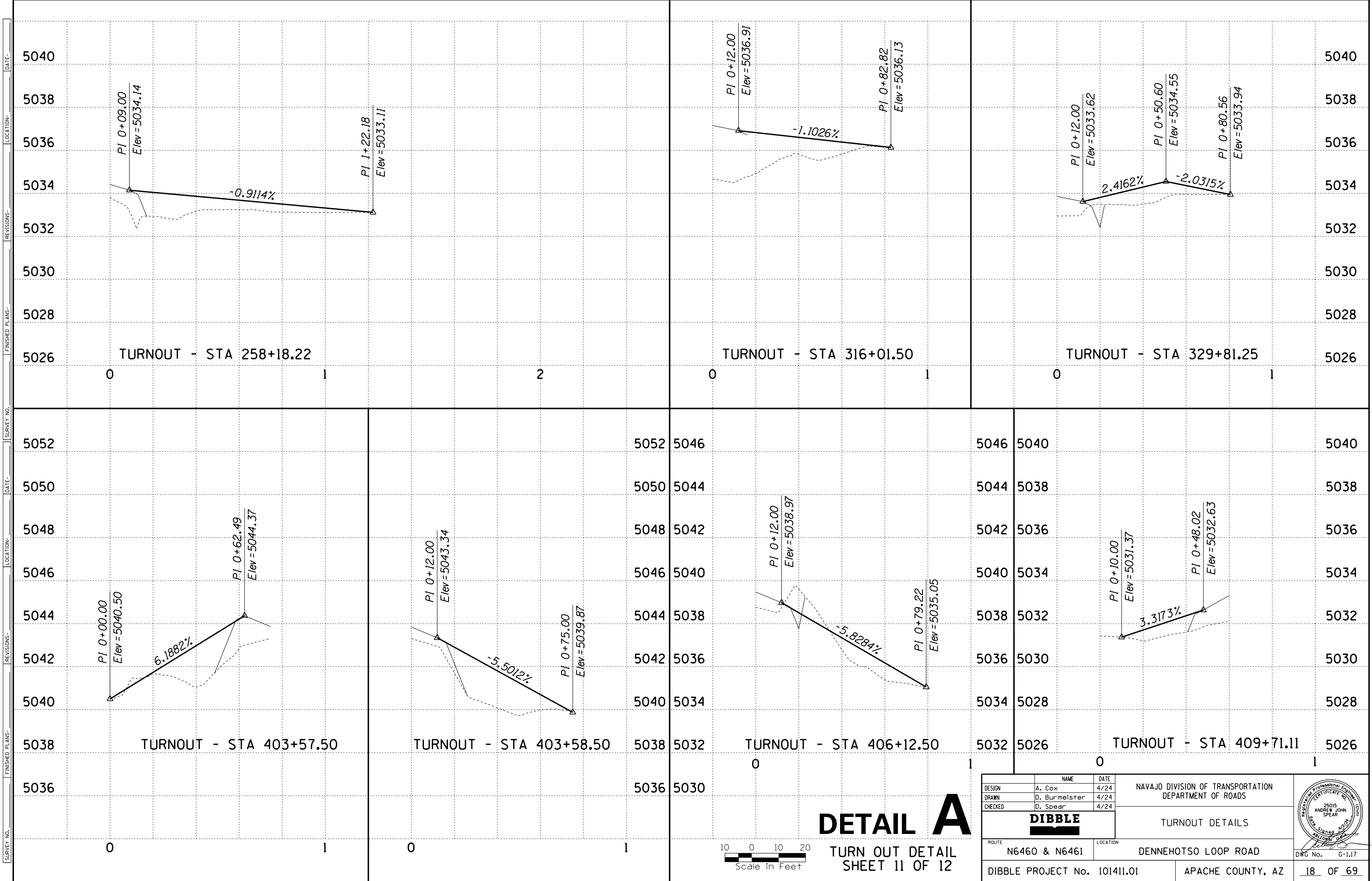
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# DETAIL A

TURN OUT DETAIL  
SHEET 10 OF 12

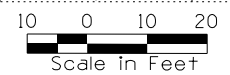
DESIGN	A. Cox	DATE	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS  TURNOUT DETAILS	
DRAWN	D. Burmeister	DATE	4/24		
CHECKED	D. Spear	DATE	4/24		
<b>DIBBLE</b>				ROUTE N6460 & N6461 LOCATION DENNEHOTSO LOOP ROAD DWG No. G-1.16	
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ		17 OF 69



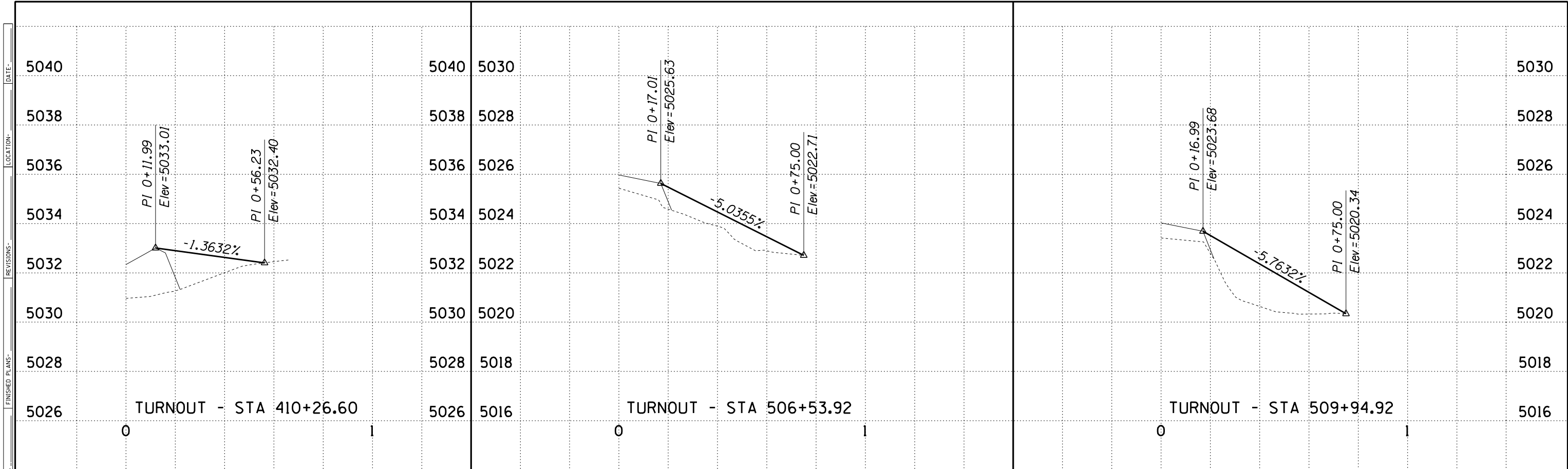
SURVEY NO. \_\_\_\_\_ FINISHED PLANS \_\_\_\_\_ REVISIONS \_\_\_\_\_ LOCATION \_\_\_\_\_ DATE \_\_\_\_\_

# DETAIL A

TURN OUT DETAIL SHEET 11 OF 12

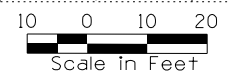


DESIGN	A. Cox	DATE	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS  TURNOUT DETAILS		
DRAWN	D. Burmeister	DATE	4/24			
CHECKED	D. Spear	DATE	4/24			
<b>DIBBLE</b>						
ROUTE	N6460 & N6461	LOCATION	DENNEHOTSO LOOP ROAD		DWG No.	G-1.17
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ		18	OF 69



SURVEY NO. FINISHED PLANS REVISIONS LOCATION DATE

# DETAIL A



TURN OUT DETAIL  
SHEET 12 OF 12

DESIGN	A. Cox	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS	
DRAWN	D. Burmeister	4/24		
CHECKED	D. Spear	4/24		
<b>DIBBLE</b>			TURNOUT DETAILS	
ROUTE	N6460 & N6461	LOCATION	DENNEHOTSO LOOP ROAD	DWG No. G-1.18
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ	19 OF 69



SURVEY NO. FINISHED PLANS DATE REVISIONS LOCATION DATE

SEGMENT 1 - DITCH CONTROL POINTS			
Point	Northing	Easting	Elevation
26	1288801.28	1863591.28	5036.22
27	1288837.18	1863683.39	5036.05
28	1288902.36	1863687.60	5036.08
29	1288890.48	1863736.17	5035.76
30	1288936.67	1863781.91	5035.51
31	1288963.80	1863808.82	5035.36
32	1289025.05	1863805.27	5036.19
33	1289018.13	1863863.12	5034.98
34	1289106.86	1863879.02	5035.93
35	1289081.86	1863926.16	5034.81
36	1289127.37	1863886.38	5033.92
37	1289151.77	1864001.08	5034.53
38	1289236.25	1864000.61	5033.88
39	1289268.07	1864057.08	5034.23
40	1289205.72	1864088.18	5034.50
41	1289271.02	1864067.35	5034.65
42	1289284.23	1864119.50	5036.39
43	1289287.60	1864135.07	5036.73
44	1289294.45	1864171.31	5037.21
45	1289295.31	1864176.48	5037.25
46	1289248.60	1864192.00	5034.90
47	1289306.89	1864279.72	5037.01
48	1289264.14	1864292.49	5035.28
49	1289310.48	1864354.63	5036.34
50	1289269.84	1864425.73	5036.11
51	1289315.27	1864443.44	5035.90
52	1289291.22	1864539.80	5036.53
53	1289351.48	1864571.29	5036.20
54	1289334.75	1864631.62	5036.71
55	1289370.30	1864673.79	5037.55
56	1289429.49	1864678.85	5035.89
57	1289401.72	1864707.64	5037.04
58	1289544.58	1864789.90	5033.20
59	1289547.82	1864848.62	5031.98
60	1289703.04	1864998.40	5028.51
61	1289846.01	1865080.77	5028.43
62	1289849.17	1865139.41	5028.42
63	1289939.04	1865171.93	5028.44
64	1289968.52	1865257.39	5028.15
65	1290010.15	1865242.65	5028.10
66	1289988.58	1865277.77	5028.07
67	1290023.44	1865257.64	5027.73
68	1289996.28	1865284.22	5027.73
69	1290150.86	1865391.57	5026.95
70	1290135.04	1865430.43	5026.87
71	1290175.42	1865474.62	5026.60
72	1290274.71	1865528.81	5026.14
73	1290246.16	1865553.89	5026.12
74	1290294.54	1865553.06	5026.34
75	1290361.00	1865627.79	5025.75
76	1290369.15	1865693.84	5025.60
77	1290427.45	1865702.52	5025.76
78	1290432.52	1865765.94	5026.49
79	1290505.60	1865786.94	5025.59
80	1290517.68	1865862.85	5027.07
81	1290530.55	1865888.82	5025.27
82	1290572.14	1865932.39	5024.83
83	1290612.23	1865978.01	5023.96
84	1290728.11	1866109.87	5022.39
85	1290825.28	1866145.02	5021.65
86	1290843.99	1866241.73	5021.89
87	1290898.43	1866229.60	5021.59
88	1290885.42	1866288.88	5021.73

SEGMENT 1 - DITCH CONTROL POINTS			
Point	Northing	Easting	Elevation
89	1290971.57	1866314.19	5021.54
90	1290935.52	1866345.88	5021.54
91	1291029.45	1866451.10	5021.19
92	1291096.58	1866453.58	5021.09
93	1291125.02	1866554.83	5020.84
94	1291220.17	1866585.65	5020.62
95	1291472.22	1866915.18	5022.52
96	1291493.10	1866936.73	5022.51
97	1291503.66	1866954.35	5021.30
98	1291522.43	1866961.26	5023.40
99	1291603.85	1867049.04	5021.64
100	1291646.47	1867031.81	5022.03
101	1291685.27	1867136.83	5019.03
102	1291726.29	1867114.22	5020.13
103	1291768.23	1867157.51	5019.46
104	1291737.36	1867189.68	5018.30
105	1291750.20	1867205.01	5017.85
106	1291803.99	1867194.42	5019.11
107	1291845.95	1867237.72	5018.90
108	1291815.09	1867271.09	5017.55
109	1291879.97	1867337.18	5017.40
110	1292013.07	1867410.15	5018.11
111	1292100.96	1867559.08	5017.52
112	1292115.74	1867573.72	5017.52
113	1292180.20	1867582.58	5017.37
114	1292164.28	1867623.37	5017.34
115	1292299.34	1867694.46	5015.87
116	1292273.56	1867734.05	5016.68
117	1292418.48	1867806.34	5015.40
118	1292382.83	1867844.74	5015.20
119	1292459.96	1867911.78	5015.61
120	1292508.80	1867893.82	5016.03
121	1292563.43	1868005.70	5014.57
122	1292607.78	1867983.59	5015.93
123	1292626.62	1868000.02	5015.78
124	1292606.84	1868037.44	5015.43
125	1292645.46	1868016.45	5015.63
126	1292652.87	1868076.00	5015.34
127	1292990.23	1868370.22	5010.88
128	1293026.04	1868348.39	5010.72
129	1293327.58	1868664.45	5005.14
130	1293406.63	1868680.32	5004.55
131	1293647.07	1868873.91	5002.97
132	1293704.51	1868895.02	5002.80
133	1293694.26	1868933.69	5004.24
134	1293812.64	1868905.22	5002.50
135	1293851.46	1868940.78	5003.85
136	1293878.28	1868939.29	5002.79
137	1293902.75	1868928.19	5003.73
138	1293951.90	1868863.14	5002.25
139	1293971.63	1868897.94	5003.40
140	1294066.20	1868844.32	5002.79
141	1294086.96	1868830.25	5003.22
142	1294117.62	1868769.19	5002.10
143	1294283.34	1868675.24	5001.61
144	1294296.88	1868658.56	4999.96
145	1294378.39	1868665.04	5002.36
146	1294460.16	1868618.68	5002.12
147	1294474.87	1868612.19	5001.68
148	1294564.48	1868506.66	4998.65
149	1294598.52	1868496.56	5000.35
150	1294638.38	1868470.33	5000.27
151	1294823.86	1868280.60	5002.98

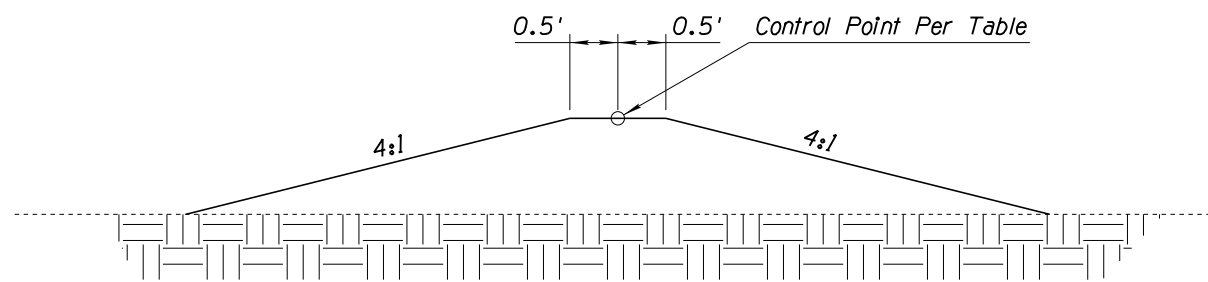
SEGMENT 1 - DITCH CONTROL POINTS			
Point	Northing	Easting	Elevation
152	1294840.32	1868256.73	5003.01
153	1294889.02	1868136.07	5002.98
154	1295003.49	1868062.85	5000.76
155	1294987.15	1868020.74	5000.51
156	1295100.87	1867948.76	4999.94
157	1295085.27	1867905.42	5000.18
158	1295120.96	1867926.45	5000.08
159	1295177.16	1867875.81	4999.24
160	1295142.92	1867820.30	5000.24

SEGMENT 2 - DITCH CONTROL POINTS			
Point	Northing	Easting	Elevation
200	1295488.50	1867446.19	5000.78
201	1295497.68	1867419.40	5001.17
202	1295540.15	1867420.95	5002.17
203	1295502.53	1867353.71	5000.46
204	1295558.87	1867353.75	5001.50
205	1295501.53	1867287.85	5004.60
206	1295525.74	1867060.34	5001.35
207	1295479.02	1867016.55	5000.53
208	1295508.83	1866955.43	5001.86
209	1295485.59	1866856.76	5000.98
210	1295443.36	1866854.30	5000.70
211	1295404.15	1866685.76	5001.09
212	1295422.07	1865589.60	5007.43
213	1295444.77	1865548.33	5007.45
214	1295585.12	1865382.88	5006.13
215	1295598.30	1865367.84	5006.10
216	1295794.06	1865138.47	5006.87
217	1295822.02	1865099.06	5007.00
218	1295795.77	1865066.39	5006.36
219	1295848.33	1865058.52	5007.12
220	1295849.95	1864975.76	5006.69
221	1295886.40	1864992.41	5007.38
222	1295909.36	1864947.02	5007.61
223	1295895.43	1864880.46	5007.27
224	1295951.01	1864848.69	5008.29
225	1295920.18	1864816.30	5007.78
226	1295921.80	1864811.66	5007.83
227	1295945.85	1864740.76	5008.58
228	1295958.69	1864702.88	5008.95
229	1295996.57	1864715.71	5008.95
230	1296118.09	1864382.06	5010.24
231	1296065.05	1864364.09	5010.24
232	1296119.97	1864203.21	5012.01
233	1296172.34	1864220.95	5012.00
234	1296166.68	1864213.75	5013.98
235	1296203.95	1864094.40	5015.91
236	1296164.17	1864080.92	5013.88
237	1296178.62	1864038.30	5014.70
238	1296244.27	1863969.71	5018.88
239	1296266.41	1863862.50	5020.60
240	1296232.67	1863796.17	5018.99
241	1296275.61	1863753.43	5021.57
242	1296220.50	1863548.37	5020.21
243	1295869.25	1863020.71	5018.35
244	1295855.00	1863010.32	5018.41
245	1295770.43	1862946.50	5018.67
246	1295746.06	1862927.20	5018.77
247	1295665.62	1862867.70	5019.28
248	1295550.34	1862788.04	5022.02
249	1295435.06	1862708.39	5026.99
250	1295318.28	1862621.42	5029.00
260	1294549.48	1862014.69	5026.40
261	1294467.13	1861961.46	5026.41
262	1294389.47	1861918.85	5024.99
263	1294278.86	1861867.84	5025.15
264	1294168.26	1861816.84	5025.09
265	1294074.75	1861773.91	5025.35
266	1293921.14	1861703.39	5026.59
267	1293767.52	1861632.86	5028.80
268	1293501.92	1861545.36	5028.39
269	1293438.63	1861531.03	5028.54
270	1293318.65	1861488.21	5028.75
271	1293271.77	1861463.28	5032.13

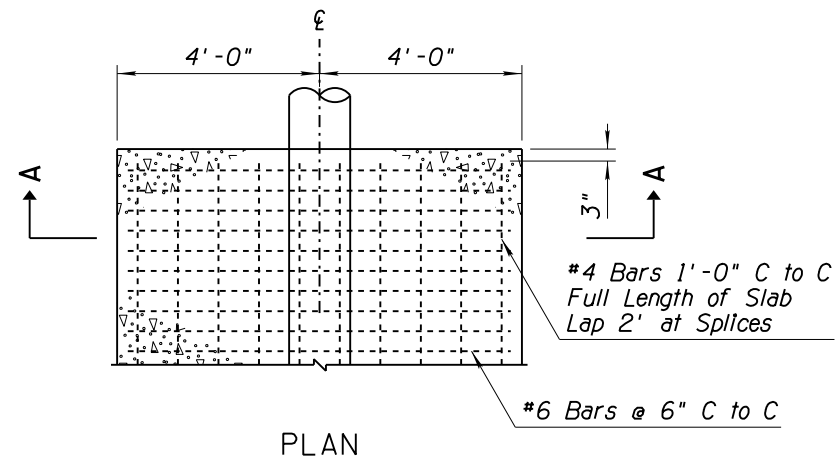
SEGMENT 2 - DITCH CONTROL POINTS			
Point	Northing	Easting	Elevation
272	1293209.97	1861421.75	5029.07
273	1293094.90	1861333.03	5029.33
274	1293032.48	1861284.93	5029.57
275	1292928.00	1861227.63	5029.91
276	1292767.68	1861170.74	5030.32
277	1292678.04	1861128.72	5030.58
278	1292543.80	1861064.85	5031.01
279	1292409.57	1861000.97	5031.32
280	1292253.07	1860973.79	5030.71
281	1292099.79	1861015.46	5030.16
282	1291939.95	1861098.22	5030.60
283	1291674.22	1861219.97	5035.41
284	1291664.72	1861223.09	5035.62
285	1291550.70	1861260.51	5036.85
286	1291508.21	1861274.56	5036.72
287	1291294.62	1861333.25	5033.66
288	1291281.17	1861339.89	5033

SURVEY NO. FINISHED PLANS DATE REVISIONS LOCATION DATE

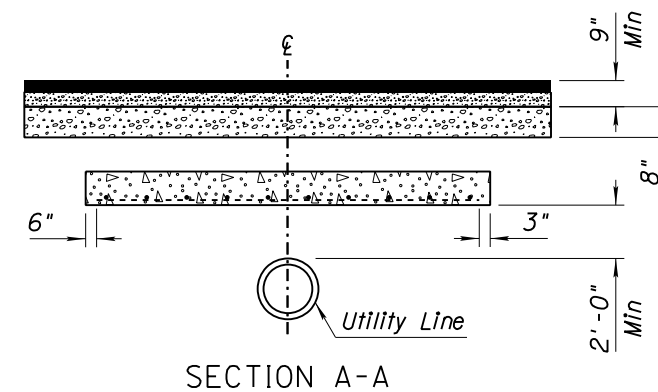
BERM CONTROL POINTS		
Point	Northing	Easting
500	1288958.68	1863840.50
501	1288973.26	1863854.45
502	1288980.48	1863861.36
503	1289016.02	1863895.38
504	1290533.82	1865795.62
505	1290547.71	1865811.43
506	1291256.95	1866564.06
507	1291266.71	1866574.25
508	1291273.64	1866581.46
509	1291281.20	1866589.32
510	1292398.06	1867925.18
511	1292456.06	1867977.44
512	1294526.59	1862032.54
513	1294502.75	1862016.42
514	1293375.74	1861521.98
515	1293349.23	1861512.44
516	1292767.34	1861199.79
517	1292715.18	1861175.26
518	1292706.13	1861171.01
519	1292693.58	1861165.11
520	1291734.59	1861237.14
521	1291708.43	1861212.57



BERM SECTION



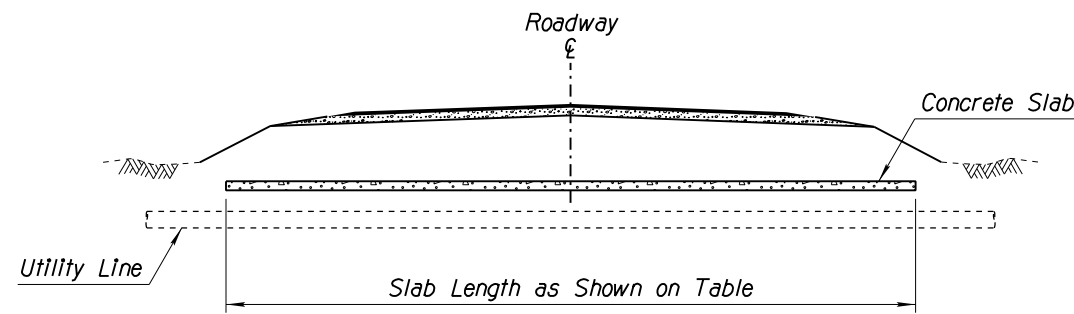
PLAN



SECTION A-A

Utility Line Protective Slab

CL Station	Utility	Length L (ft)
90+30	Sewer	32
96+75	Sewer	44
TOTAL		76
Minor Concrete (cy)	60101-0000	15.2
Reinforcing Steel (lbs)	55401-1000	2068



CROSS SECTION

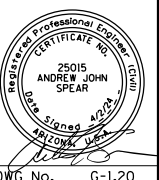
PROTECTIVE SLAB

**NOTE:**

If distance from bottom of slab to top of utility line is less than 2'-0", a 2" urethane foam pad shall be placed directly over the pipe for protection from settling (non-pay item).

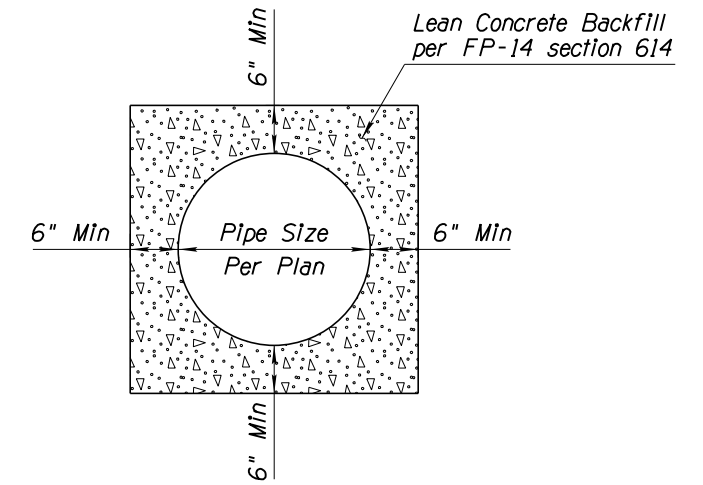
FOR SINGLE INSTALLATION	
QUANTITIES PER FT OF SLAB LENGTH	
Concrete	Reinforcing Steel
0.20 CY	27.21 Lbs

DESIGN	NAME	DATE	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS
DRAWN	A. Cox	4/24	
CHECKED	D. Burmeister	4/24	
<b>DIBBLE</b>			BERM AND PROTECTIVE SLAB DETAILS
ROUTE	N6460 & N6461	LOCATION	DENNEHOTSO LOOP ROAD
DIBBLE PROJECT No. 101411.01		APACHE COUNTY, AZ	
			DWG No. G-1.20
			21 OF 69

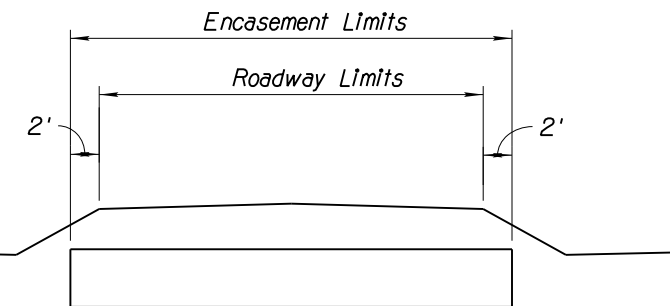


DATE- LOCATION- REVISIONS- FINISHED PLANS- SURVEY NO. DATE- LOCATION- REVISIONS- FINISHED PLANS- SURVEY NO.

Culvert Number	Number of Pipes	Size (in)	Length (ft)	Slurry Encased	Slurry (cy)	Metal End Section	Begin			End		
							Station	Offset	Elevation	Station	Offset	Elevation
102	1	17x13	44	Yes	5.2	2	24+50.59	37.00' Rt	5035.20	24+94.59	37.00' Rt	5035.00
103	1	24	62	No	0.0	2	28+10.00	30.16' Lt	5034.20	28+10.00	31.56' Rt	5034.50
104	1	21x15	44	Yes	6.4	2	29+47.22	37.00' Rt	5035.00	29+95.73	37.00' Rt	5035.20
106	1	24	44	Yes	9.2	2	45+10.72	37.00' Rt	5026.80	45+54.96	37.00' Rt	5026.70
107	1	24	80	Yes	9.2	2	50+43.20	22.80' Lt	5025.00	51+22.00	32.60' Lt	5024.00
108	1	24	58	Yes	9.2	2	51+08.00	28.60' Lt	5024.43	51+27.20	26.48' Rt	5025.09
109	1	24	54	No	0.0	2	65+50.00	29.88' Lt	5021.00	65+50.00	28.68' Rt	5021.30
110	1	24	35	Yes	9.2	2	68+27.43	26.00' Rt	5018.75	68+61.62	26.00' Rt	5018.50
111	1	24	44	Yes	9.2	2	71+06.82	26.00' Rt	5017.20	71+50.00	28.00' Rt	5017.00
112	1	24	53	Yes	9.2	2	78+00.00	25.80' Lt	5015.40	78+00.00	26.60' Rt	5015.20
113	1	21x15	60	Yes	6.4	2	80+94.48	59.00' Rt	5014.50	81+55.02	59.00' Rt	5014.30
114	1	21x15	44	Yes	6.4	2	101+92.29	37.00' Lt	5099.80	102+36.29	37.00' Lt	5599.60
115	1	36	42	Yes	16.3	Headwall	108+49.57	19.93' Lt	Match Existing	108+54.36	21.47' Rt	Match Existing
200	1	24	58	No	0.0	2	155+00.00	28.41' Rt	5001.50	155+10.00	28.45' Lt	5000.44
201	1	17x13	44	Yes	5.2	2	160+02.50	37.00' Rt	5599.00	160+46.89	37.00' Rt	5599.20
202	1	36	47	Yes	16.3	Headwall	173+12.81	22.02' Rt	Match Existing	173+30.73	21.27' Lt	Match Existing
203	1	17x13	44	Yes	5.2	2	187+44.43	28.00' Rt	5011.00	187+88.68	28.00' Rt	5011.20
204	1	21x15	44	Yes	6.4	2	188+04.38	28.00' Lt	5011.50	188+48.68	28.00' Lt	5011.80
205	1	17x13	44	Yes	5.2	2	188+06.51	28.00' Rt	5011.50	188+50.51	28.00' Rt	5011.80
206	1	24	56	Yes	9.2	2	202+10.00	28.94' Lt	5017.49	202+10.00	26.57' Rt	5018.99
211	1	17x13	44	Yes	5.2	2	223+43.49	34.00' Lt	5025.10	223+87.49	34.00' Lt	5025.20
212	1	21x15	46	Yes	6.4	2	235+04.12	34.00' Lt	5029.30	235+49.98	34.00' Lt	5029.40
213	1	21x15	44	Yes	6.4	2	238+95.82	34.03' Lt	5040.30	239+39.55	34.00' Lt	5030.40
303	1	24	48	Yes	9.2	Headwall	333+51.90	21.83' Lt	Match Existing	333+33.37	22.13' Rt	Match Existing
304	1	24	65	No	0	Headwall	339+43.59	23.87' Lt	Match Existing	339+17.03	35.63' Rt	Match Existing
500	1	24	76	No	0	2	512+76.65	36.18' Lt	5015.00	512+90.41	38.22' Rt	5014.70
TOTAL					170.9							



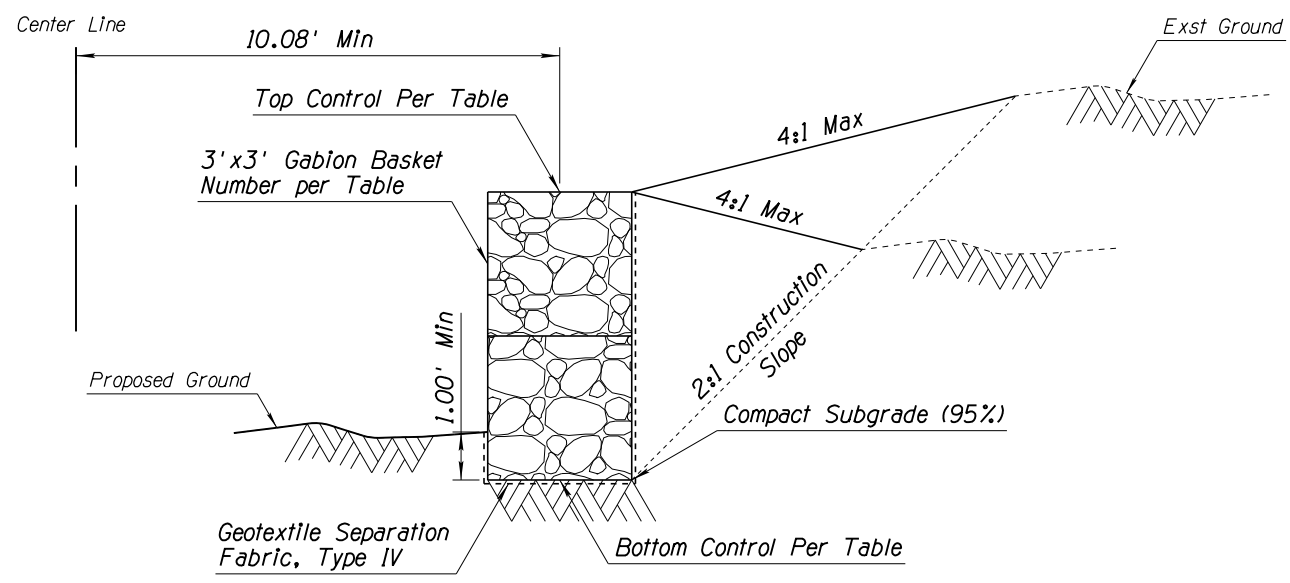
PIPE SLURRY ENCASEMENT



DESIGN	A. Cox	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS	
DRAWN	D. Burmeister	4/24		
CHECKED	D. Spear	4/24		
<b>DIBBLE</b>			NEW PIPE SUMMARY	
ROUTE	N6460 & N6461	LOCATION	DENNEHOTSO LOOP ROAD	
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ	DWG No. G-1.21

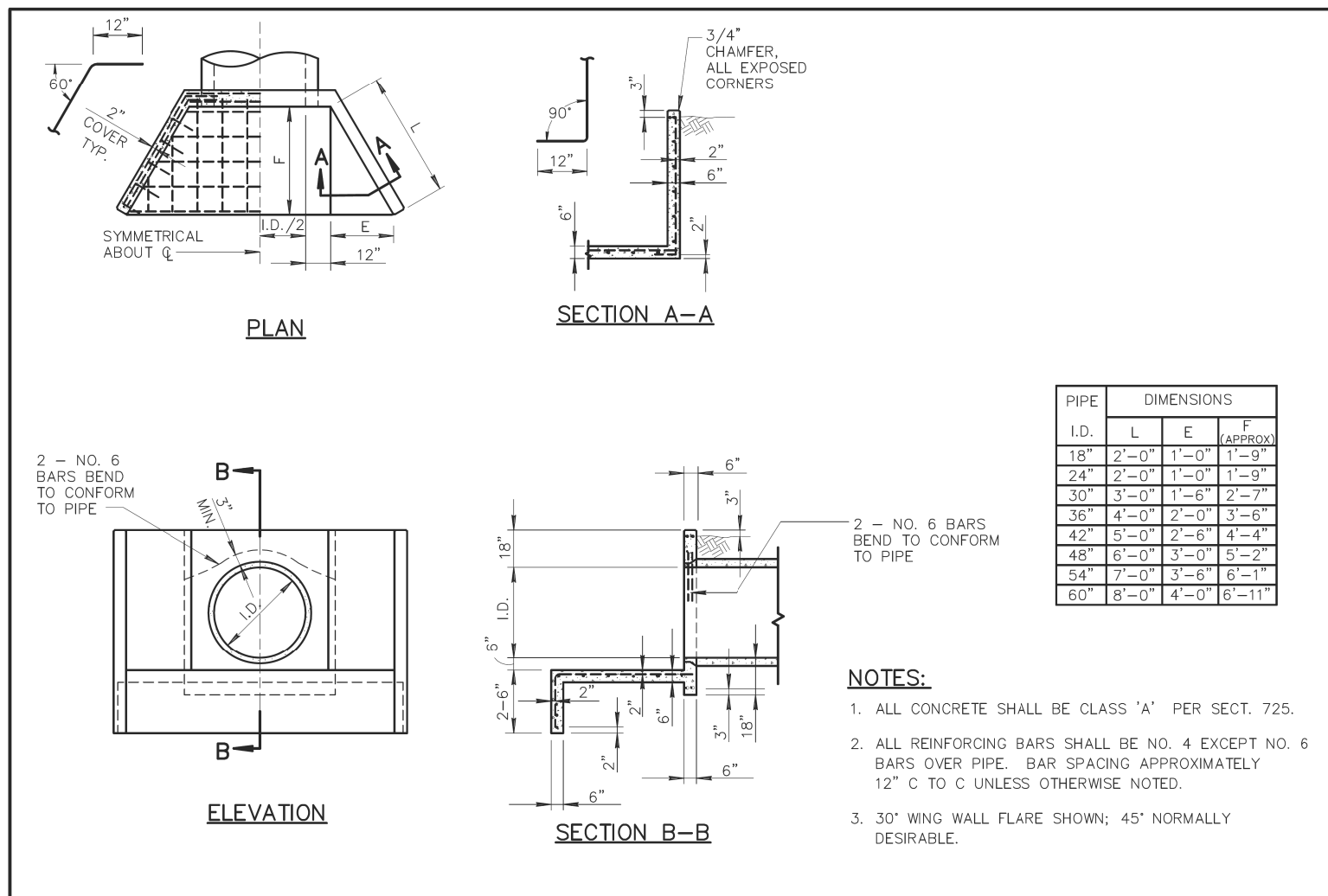


DATE: \_\_\_\_\_ LOCATION: \_\_\_\_\_ REVISIONS: \_\_\_\_\_ FINISHED PLANS: \_\_\_\_\_ SURVEY NO. \_\_\_\_\_ DATE: \_\_\_\_\_ REVISIONS: \_\_\_\_\_ FINISHED PLANS: \_\_\_\_\_ SURVEY NO. \_\_\_\_\_

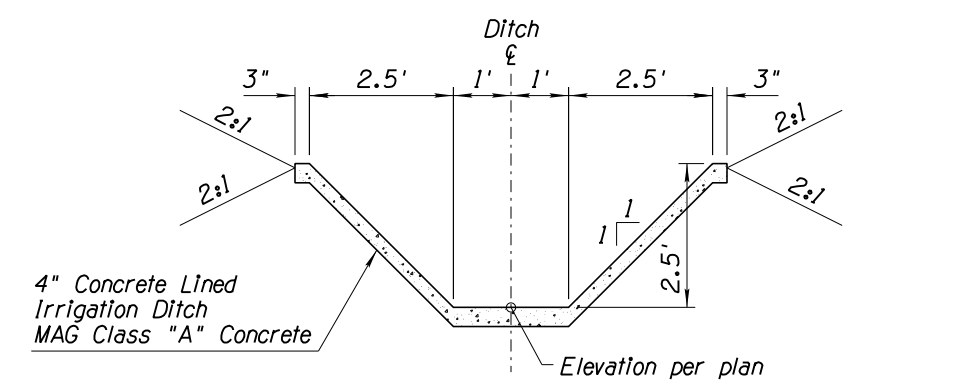


GABION RETAINING WALL CONTROL POINTS					
REFERENCE	STATION	OFFSET	BOTTOM ELEV	TOP ELEV	# GABIONS
A	43+40	20.00' Lt	5025.64	5031.64	2
	46+40	20.00' Lt	5024.57	5030.57	2
B	208+50	18.50' Rt	5028.96	5031.96	1
	209+90	18.50' Rt	5028.54	5034.54	2
	210+60	18.50' Rt	5027.74	5033.74	2
	211+50	18.50' Rt	5027.30	5030.30	1

GABION RETAINING WALL



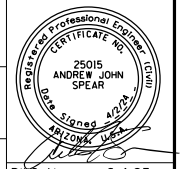
- NOTES:**
- ALL CONCRETE SHALL BE CLASS 'A' PER SECT. 725.
  - ALL REINFORCING BARS SHALL BE NO. 4 EXCEPT NO. 6 BARS OVER PIPE. BAR SPACING APPROXIMATELY 12" C TO C UNLESS OTHERWISE NOTED.
  - 30° WING WALL FLARE SHOWN; 45° NORMALLY DESIRABLE.



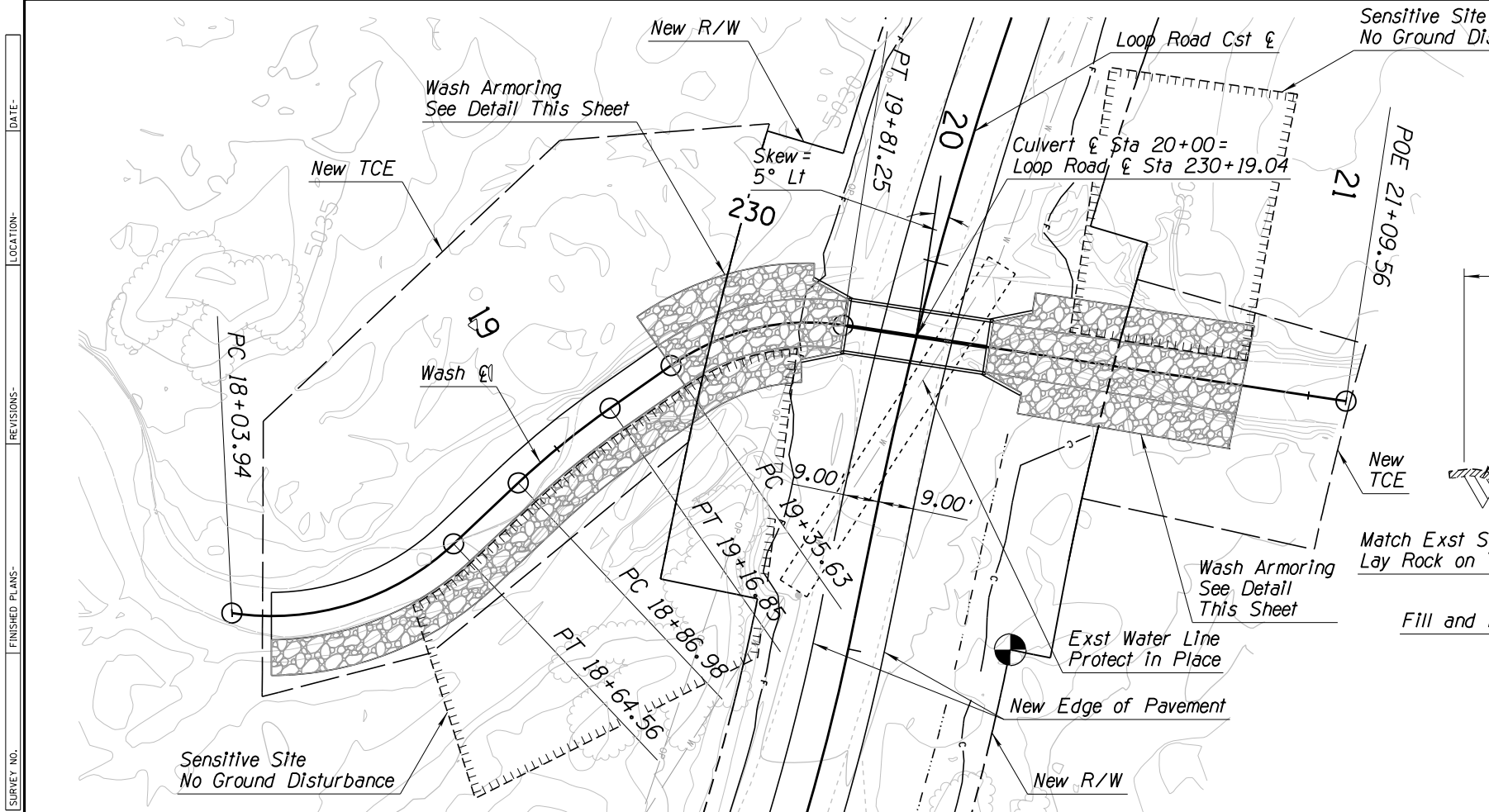
PAVED WATERWAY CONCRETE LINED IRRIGATION DITCH

DETAIL NO. 501-4	MARICOPA ASSOCIATION OF GOVERNMENTS	STANDARD DETAIL ENGLISH	HEADWALL IRRIGATION 18" TO 60" PIPE	REVISOR 01-01-1998	DETAIL NO. 501-4
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DESIGN	A. Cox	DATE	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS
DRAWN	D. Burmeister	DATE	4/24	
CHECKED	D. Spear	DATE	4/24	
<b>DIBBLE</b>				DETAILS
ROUTE	N6460 & N6461	LOCATION	DENNEHOTSO LOOP ROAD	
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ	DWG No. G-1.23

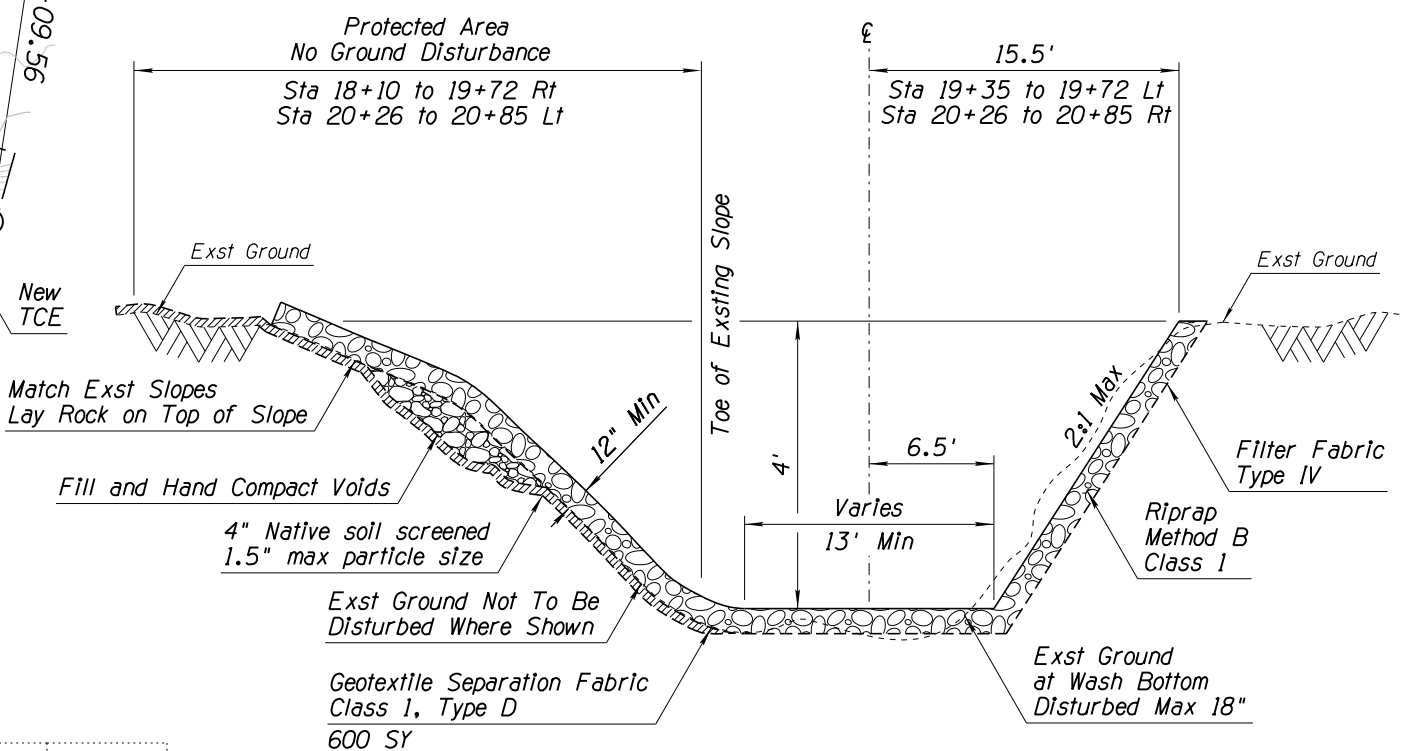






**NOTES:**

1. Construction shall conform to ADOT Structural Standards SD-6.20 sheets 1 thru 5 for precast concrete box culverts or ADOT Structural Standards SD-6.01 for cast-in-place concrete box culverts.
2. ADOT details are available online at <https://azdot.gov/business/engineering-and-construction/bridge/bridge-design-services/structure-detail-drawings>



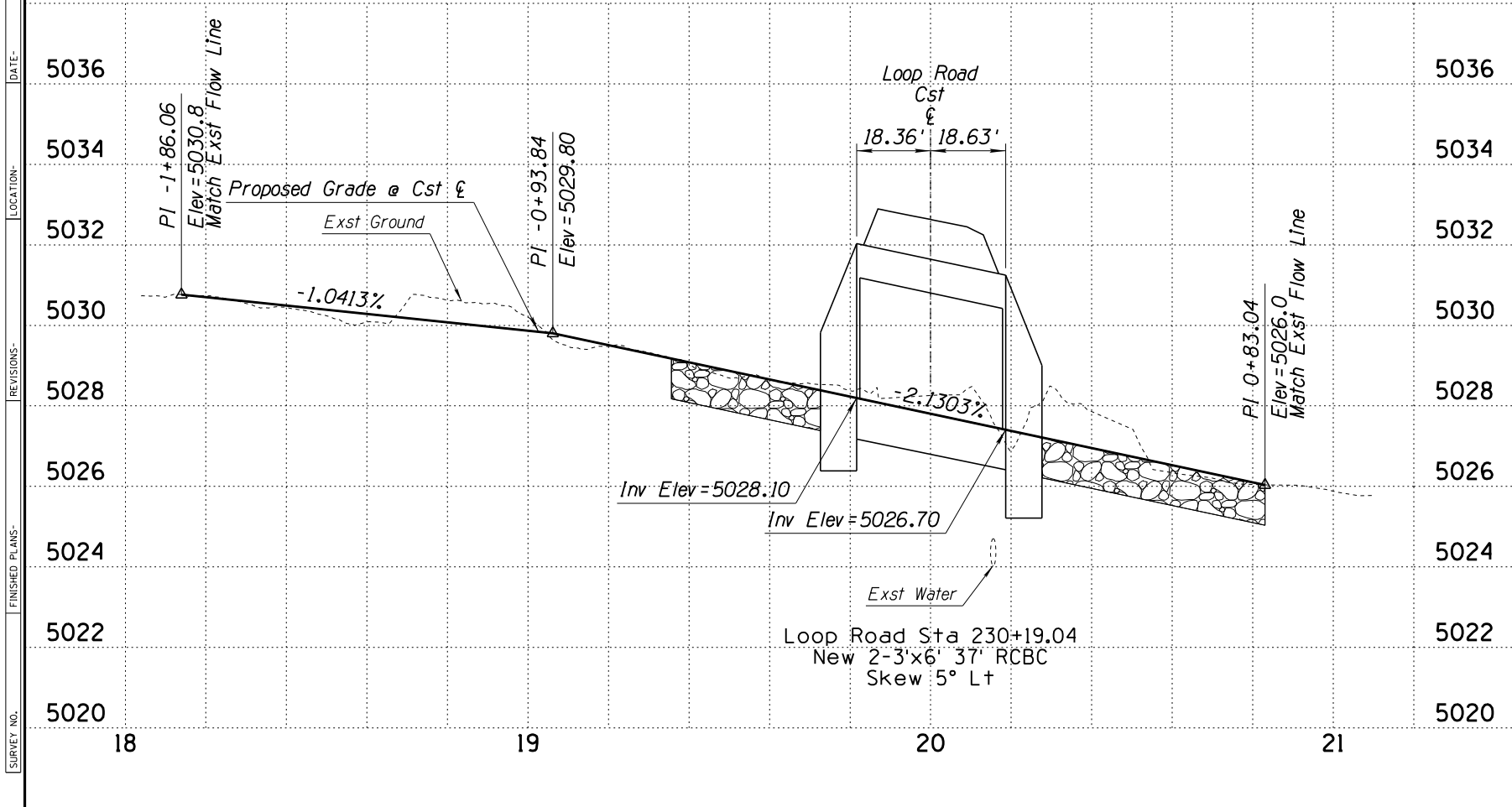
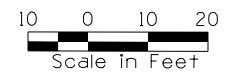
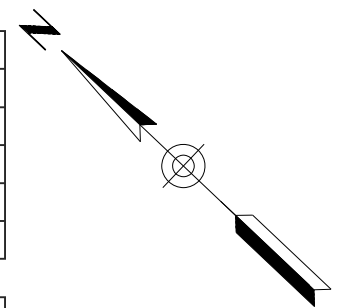
**PRESERVE IN PLACE AND WASH ARMORING DETAIL NTS**

**Preserve-In-Place Wash Armoring, Riprap Class 1, Method B Bank**

Station	to	Station	Side	L	W	Volume
18+10	to	19+76	Rt	166	15.5	95.3
19+35	to	19+76	Lt	41	15.5	23.5
20+24	to	20+85	Rt	61	15.5	35.0
20+24	to	20+85	Lt	61	24	54.2
						208.1

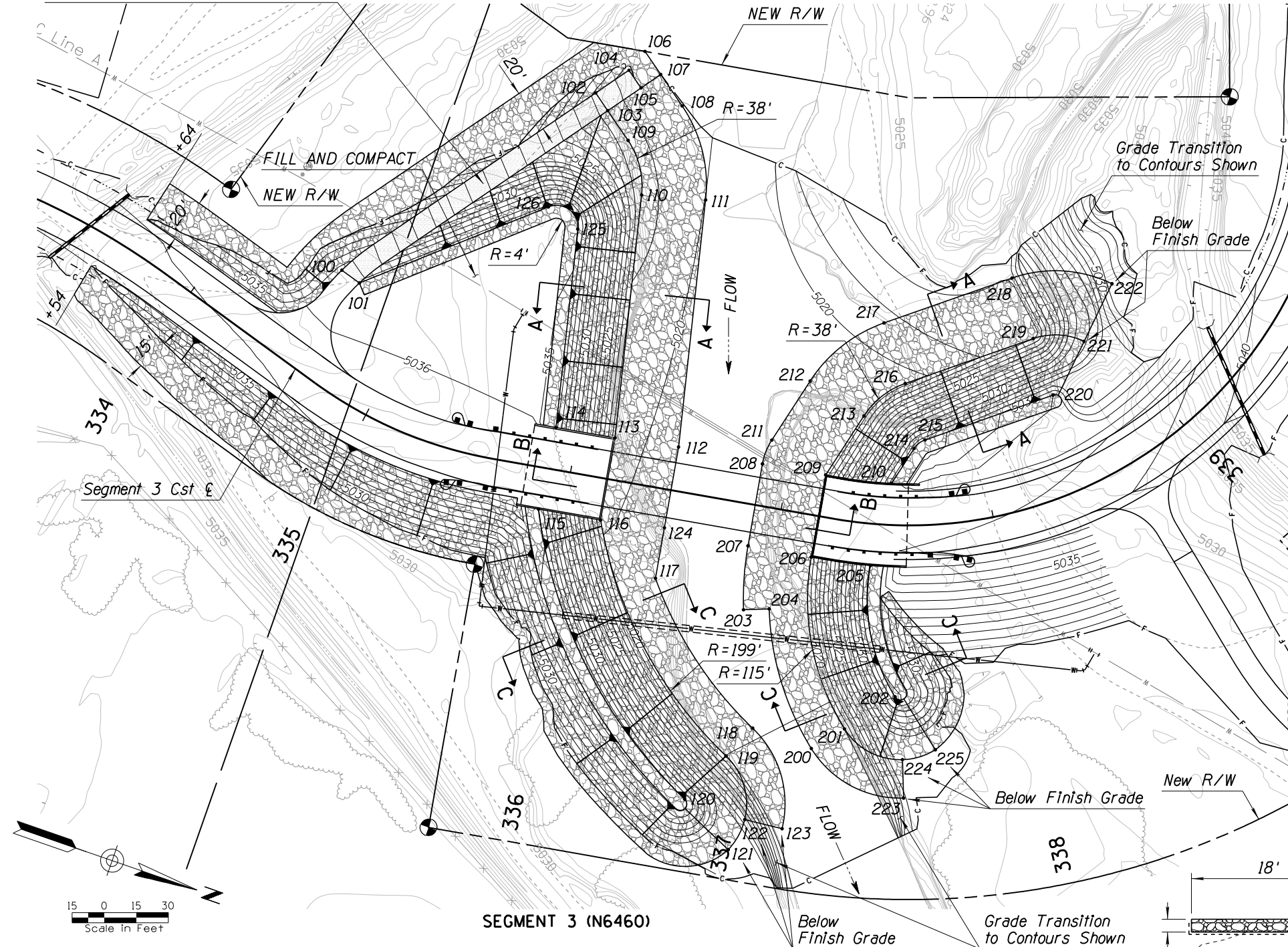
**Bottom**

Station	to	Station	T	L	W	Volume
19+35	to	19+82	1	47	14	24.4
20+18	to	20+85	1	67	14	34.7
						59.1
<b>Total</b>						<b>267.19</b>



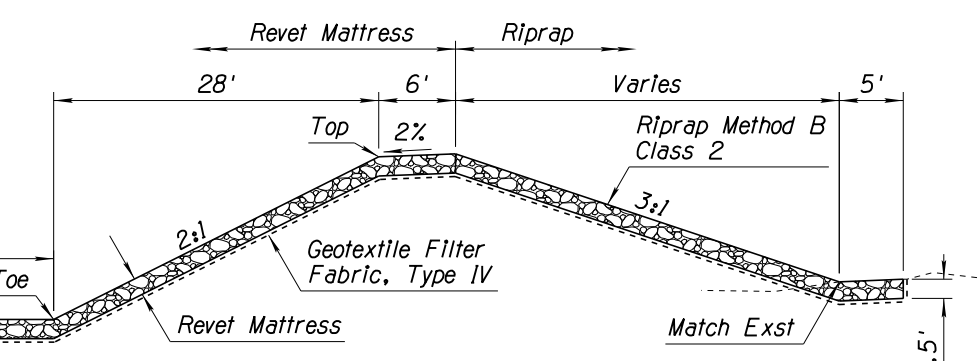
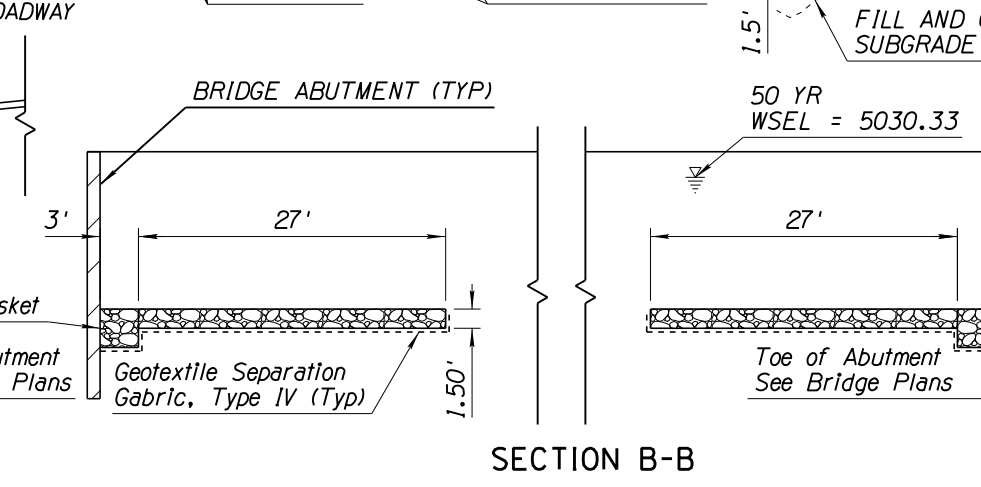
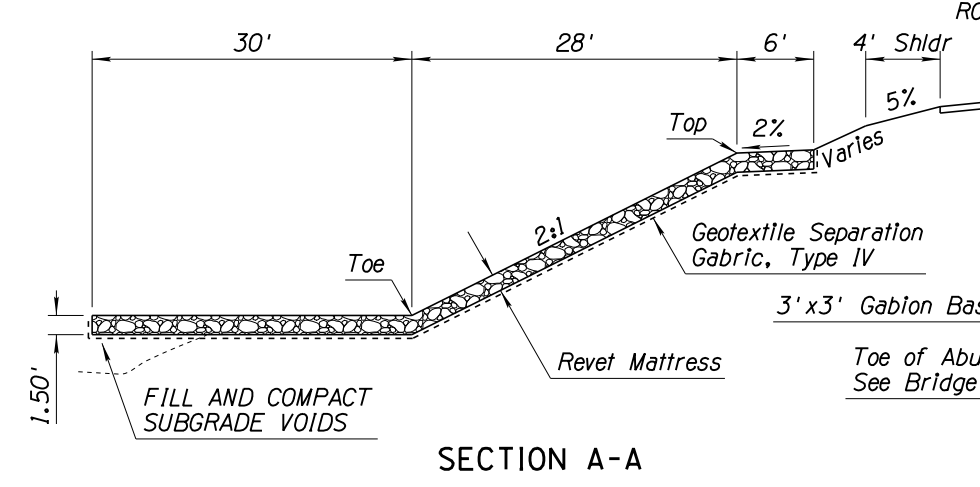
DESIGN	A. Cox	DATE	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS
DRAWN	D. Burmeister	DATE	4/24	
CHECKED	D. Spear	DATE	4/24	
<b>DIBBLE</b>				CULVERT PLAN AND PROFILE
ROUTE	N6460 & N6461		LOCATION	
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ	DWG No. G-1.24

ACCESS ROAD, SEE DETAIL G-1.09



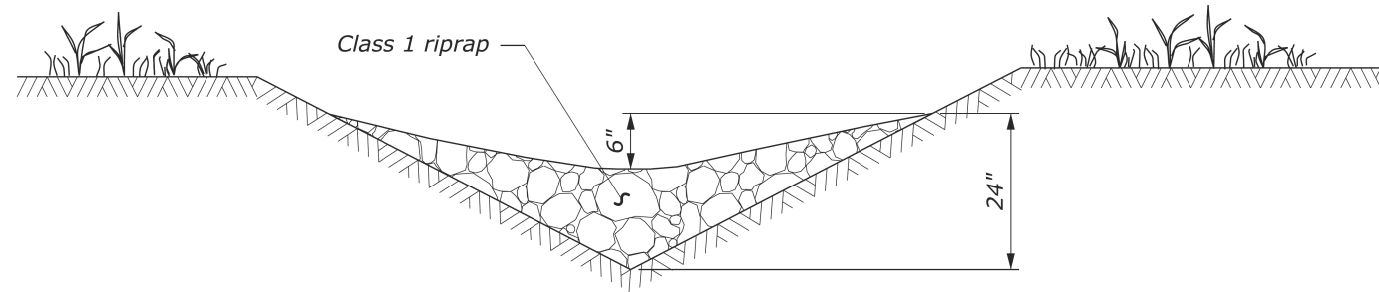
SCOUR PROTECTION - SOUTH BANK			
Point	Northing	Easting	Elevation
100	1289971.99	1861981.34	5035.53
101	1289981.70	1861984.32	5035.33
102	1290057.05	1861864.17	5021.77
103	1290065.08	1861870.14	5021.57
104	1290068.29	1861849.06	5020.45
105	1290076.31	1861855.02	5020.34
106	1290072.47	1861838.49	5020.30
107	1290082.97	1861846.06	5020.00
108	1290097.27	1861856.69	5020.20
109	1290078.60	1861880.19	5021.57
110	1290092.98	1861902.24	5021.34
111	1290122.02	1861894.64	5020.00
112	1290147.86	1862007.97	5019.89
113	1290118.40	1862013.69	5020.38
114	1290090.69	1862018.14	5034.38
115	1290095.45	1862056.88	5034.06
116	1290124.58	1862052.20	5020.06
117	1290157.76	1862069.54	5019.69
118	1290223.65	1862120.90	5019.03
119	1290216.16	1862137.26	5019.00
120	1290204.26	1862162.61	5033.00
121	1290231.45	1862178.35	5019.00
122	1290234.12	1862162.53	5019.00
123	1290252.04	1862160.83	5019.00
124	1290153.95	1862045.85	5019.82
125	1290069.92	1861927.07	5035.17
126	1290053.61	1861921.74	5035.34

SCOUR PROTECTION - NORTH BANK			
Point	Northing	Easting	Elevation
200	1290252.68	1862120.90	5018.95
201	1290264.35	1862107.19	5018.97
202	1290281.74	1862085.25	5032.95
203	1290201.47	1862069.96	5019.33
204	1290212.67	1862065.66	5019.26
205	1290250.82	1862030.98	5033.17
206	1290223.32	1862036.33	5019.24
207	1290193.70	1862041.09	5019.49
208	1290187.51	1862002.59	5019.60
209	1290217.13	1861997.83	5019.38
210	1290247.55	1861991.42	5033.43
211	1290188.00	1861990.64	5019.61
212	1290195.89	1861958.67	5019.76
213	1290225.02	1861965.86	5019.49
214	1290252.20	1861972.57	5033.49
215	1290255.70	1861967.13	5033.58
216	1290238.30	1861945.19	5019.58
217	1290219.66	1861921.69	5020.68
218	1290269.39	1861882.26	5022.57
219	1290288.03	1861905.77	5022.22
220	1290305.43	1861927.71	5036.00
221	1290310.92	1861899.27	5022.00
222	1290314.41	1861869.47	5022.00
223	1290301.05	1862128.73	5019.12
224	1290294.66	1862111.91	5019.12
225	1290307.67	1862102.51	5019.12

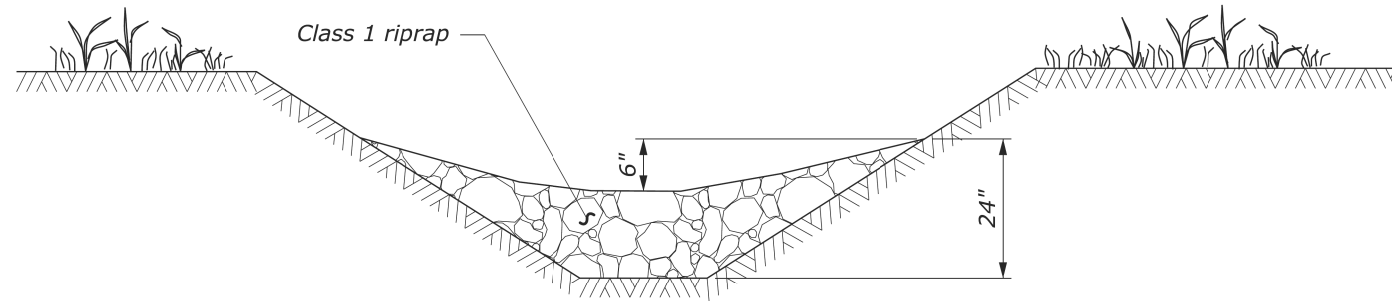


DESIGN	A. Cox	DATE	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS  LAGUNA CREEK BRIDGE SCOUR PROTECTION DETAIL	
DRAWN	D. Burmeister	DATE	4/24		
CHECKED	D. Spear	DATE	4/24		
<b>DIBBLE</b>					
ROUTE	N6460 & N6461		LOCATION	DENNEHOTSO LOOP ROAD	
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ		DWG No. G-1.25

DATE- LOCATION- REVISIONS- FINISHED PLANS- SURVEY NO. DATE- LOCATION- REVISIONS- FINISHED PLANS- SURVEY NO.



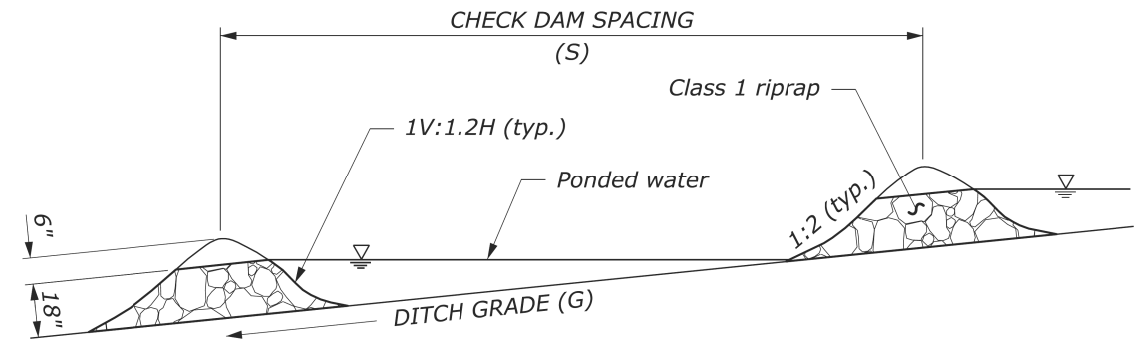
CROSS SECTION  
**V DITCH**



CROSS SECTION  
**TRAPEZOIDAL DITCH**

Check Dam  
Riprap Class 1, Method B

Sta	Off	V or Trap	Volume (cy)
306+60	Rt.	V	1.5
307+30	Rt.	V	1.5
308+00	Rt.	V	1.5
308+70	Rt.	V	1.5
309+40	Rt.	V	1.5
310+10	Rt.	V	1.5
310+80	Rt.	V	1.5
311+50	Rt.	V	1.5
312+20	Rt.	V	1.5
306+60	Lt.	V	1.5
307+30	Lt.	V	1.5
308+00	Lt.	V	1.5
308+70	Lt.	V	1.5
309+40	Lt.	V	1.5
310+10	Lt.	V	1.5
310+80	Lt.	V	1.5
311+50	Lt.	V	1.5
312+20	Lt.	V	1.5
			27



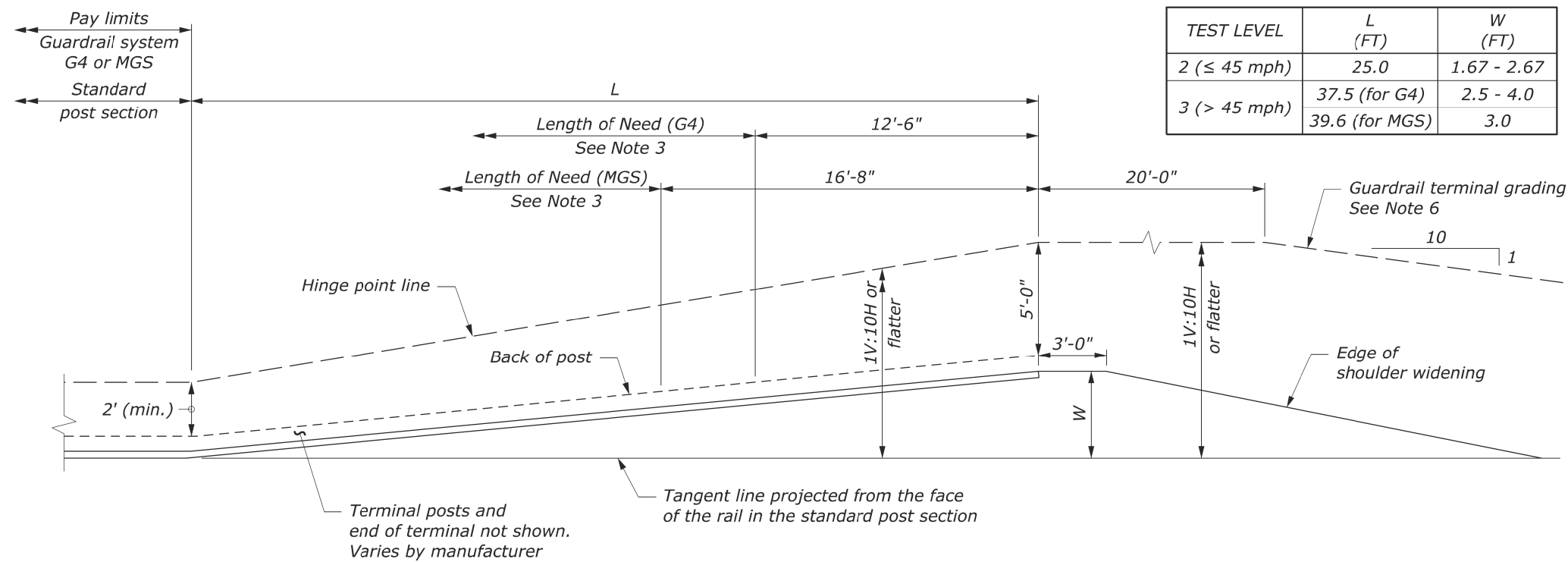
PROFILE VIEW  
**DITCH**

*DITCH GRADE (G)	CHECK DAM SPACING S (ft)
2%	75
3%	50
4%	40
5%	30
6%	25

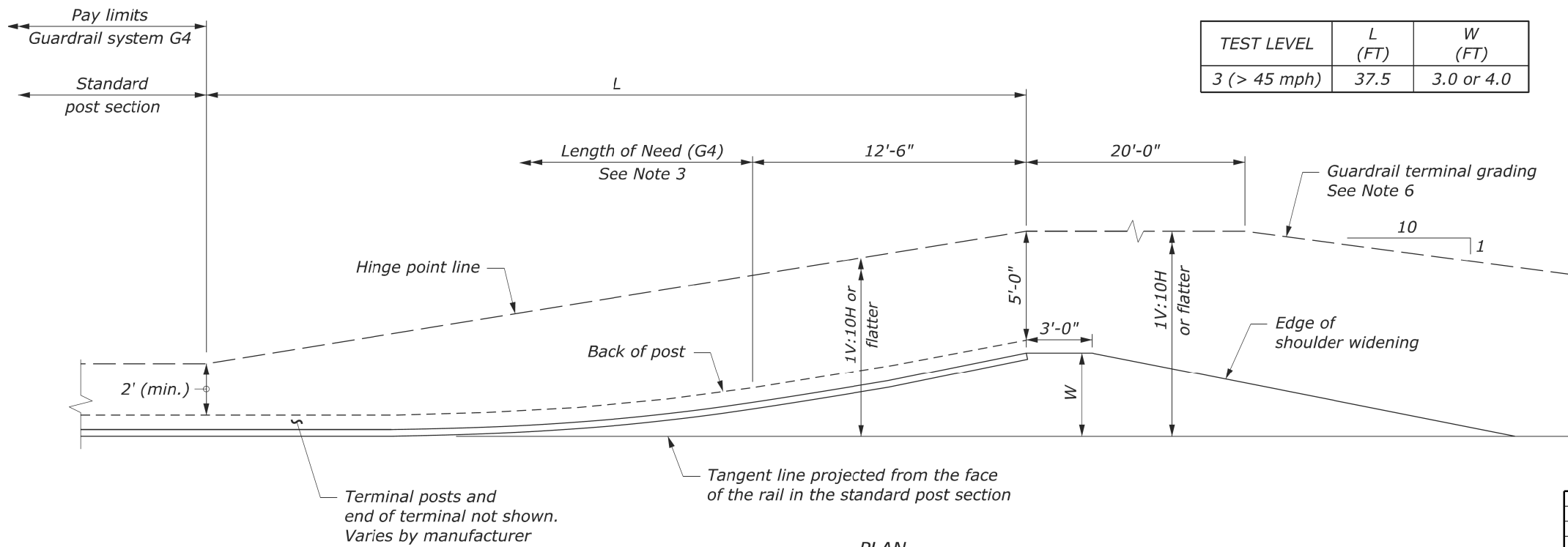
\* Do not use Check Dams below 2% or above 6% ditch grades.

DESIGN	A. Cox	DATE	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS	
DRAWN	D. Burmeister	DATE	4/24		
CHECKED	D. Spear	DATE	4/24		
<b>DIBBLE</b>				CHECK DAM DETAIL	
ROUTE	N6460 & N6461		LOCATION	DENNEHOTSO LOOP ROAD	
DIBBLE PROJECT No. 101411.01				APACHE COUNTY, AZ	DWG No. G-1.26

DATE - LOCATION - REVISIONS - FINISHED PLANS - SURVEY NO.



PLAN  
**STRAIGHT FLARED OPTION  
MGS AND G4 W-BEAM GUARDRAIL**

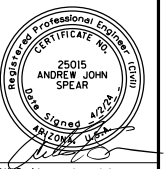


PLAN  
**PARABOLIC FLARED OPTION  
G4 W-BEAM GUARDRAIL**

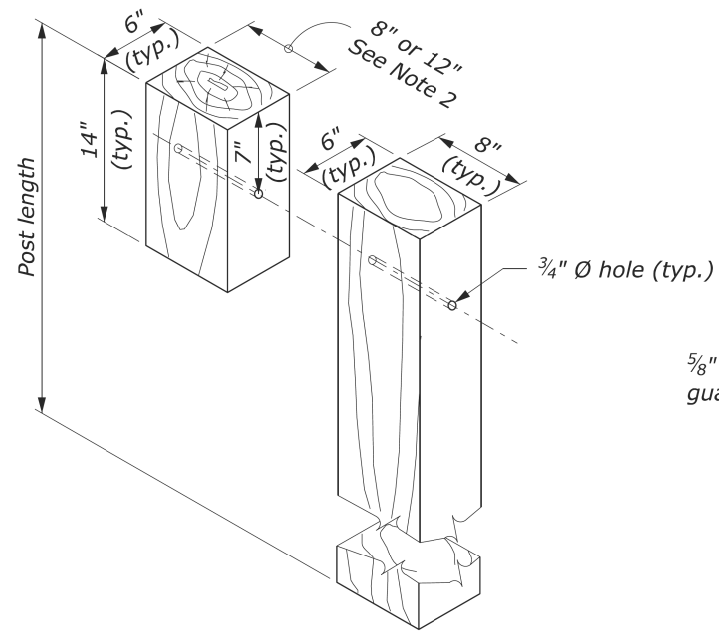
**NOTE:**

1. Install a flared W-beam guardrail terminal according to the manufacturer's recommendations. See manufacturer's drawings for other details.
2. Construct the terminal grading as shown in the staking notes or model. If no staking notes or model is provided, construct grading as shown on this sheet and as recommended by the manufacturer.
3. For design purposes, the length of need is assumed to begin as shown on the drawing. Verify the length of need with the manufacturer of a specific product. Adjust grading as necessary to install the flared terminal according to the manufacturer's recommendations.
4. Pave widened shoulder on both ends of guardrail runs when indicated on the plans.
5. Install a reflectorized object marker on the end of the terminal.
6. Construct a 1V:4H or flatter slope outside of the guardrail terminal grading extents where practical.

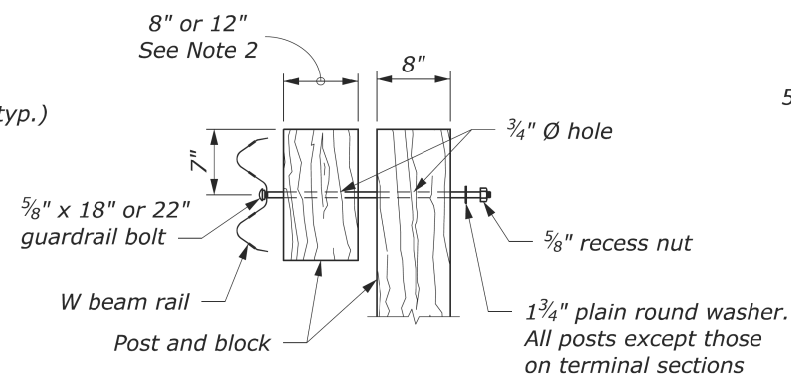
DESIGN	A. Cox	DATE	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS
DRAWN	D. Burmeister	DATE	4/24	
CHECKED	D. Spear	DATE	4/24	
<b>DIBBLE</b>				GUARDRAIL TERMINAL LAYOUTS
ROUTE	N6460 & N6461	LOCATION	DENNEHOTSO LOOP ROAD	DWG No. G-1.26A
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ	27A OF 69



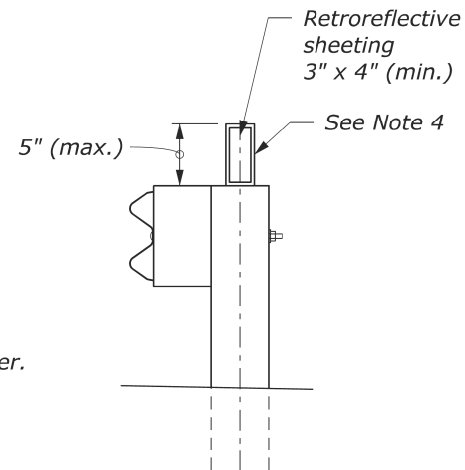
SURVEY NO. FINISHED PLANS DATE REVISIONS LOCATION DATE



**POST AND BLOCK**



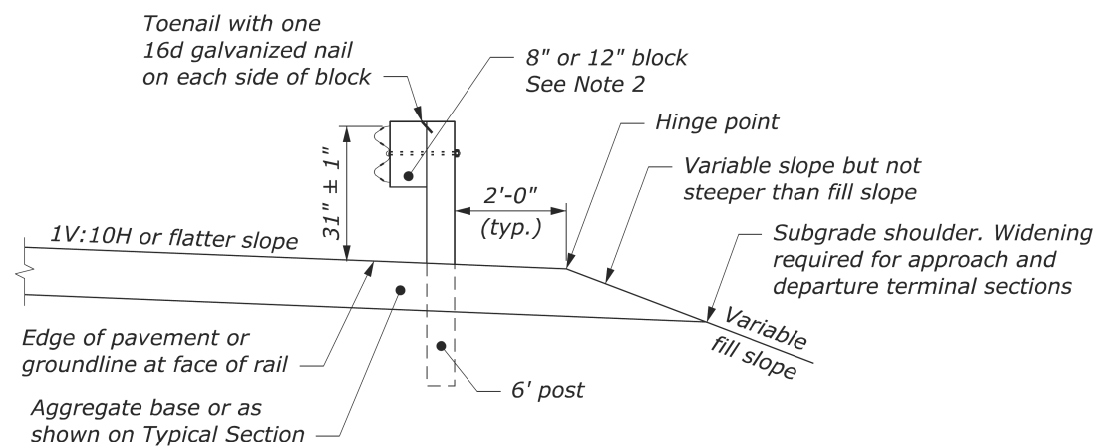
**POST BOLT ASSEMBLY**



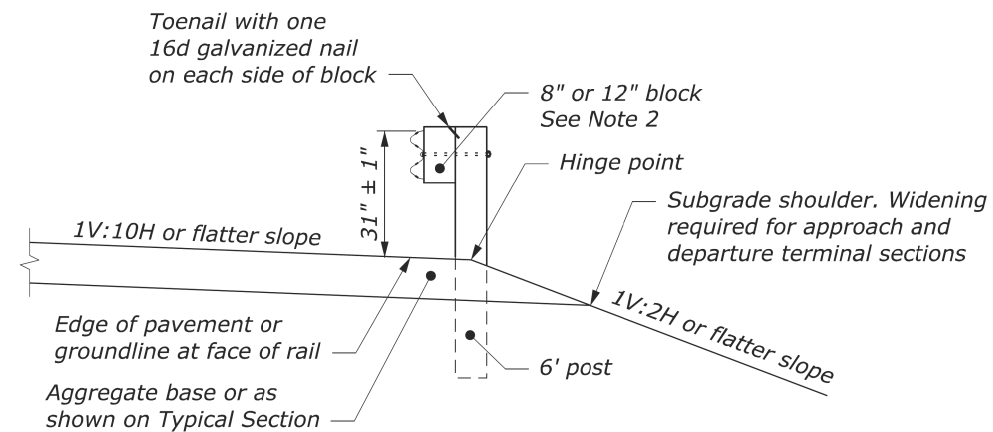
**FLEXIBLE DELINEATOR GUARDRAIL MOUNT**

**NOTE:**

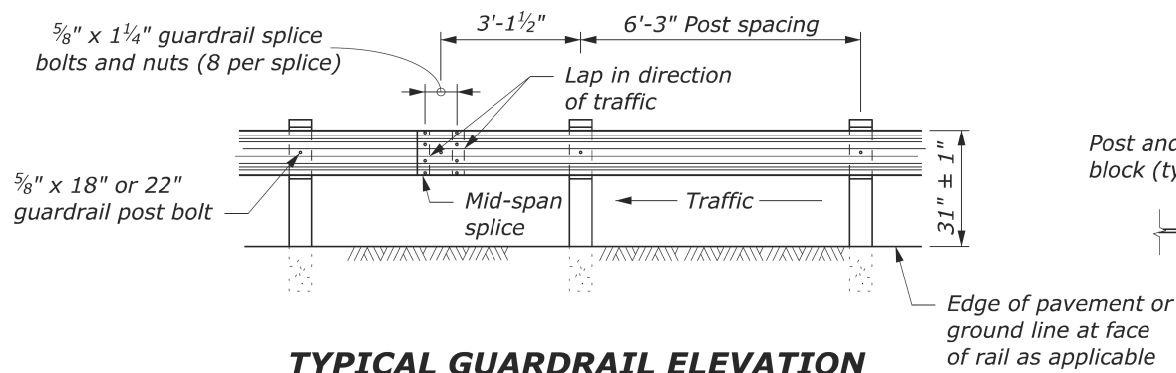
1. When encountering impenetrable material, one post may be omitted in locations where the typical guardrail cross section includes 2-feet (min.) between the back of the guardrail post and the hinge point. For all other locations, see Section 617 and Standard 617-13 or 617-37.
2. Size of block shown elsewhere on the plans. Use a single block or combination of blocks (no more than two) to achieve the actual 8-inch or 12-inch offset. Secure wood blocks to the posts with anti-rotation nails. If combination blocks are used, toenail the adjacent blocks with two 16d galvanized nails to prevent block rotation.
3. Dimensional tolerances not shown or implied are intended to be those consistent with the proper functioning of the part, including its appearance, and accepted manufacturing practices.
4. Install a flexible hinged delineator every fourth post. Fasten delineator to the top of the wood post using either an adhesive or mechanical means according to the manufacturer's recommendations.



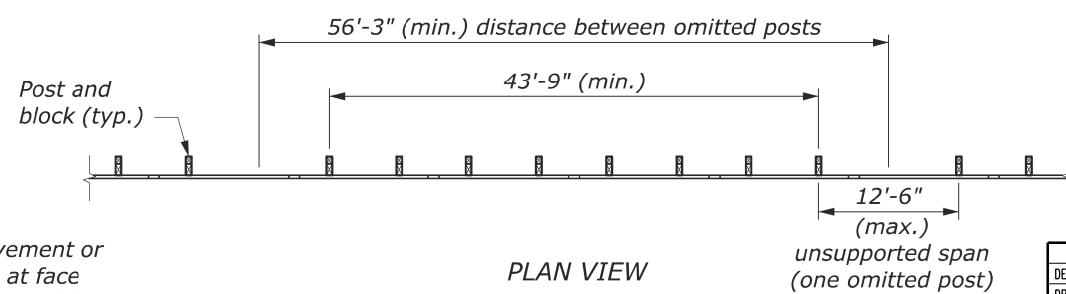
**TYPICAL GUARDRAIL CROSS SECTION 6' POST, 8" OR 12" BLOCK**



**TYPICAL GUARDRAIL CROSS SECTION 6' POST CENTERED ON HINGE, 8" OR 12" BLOCK**



**TYPICAL GUARDRAIL ELEVATION**



**PLAN VIEW OMITTED POST DETAIL**  
See Note 1

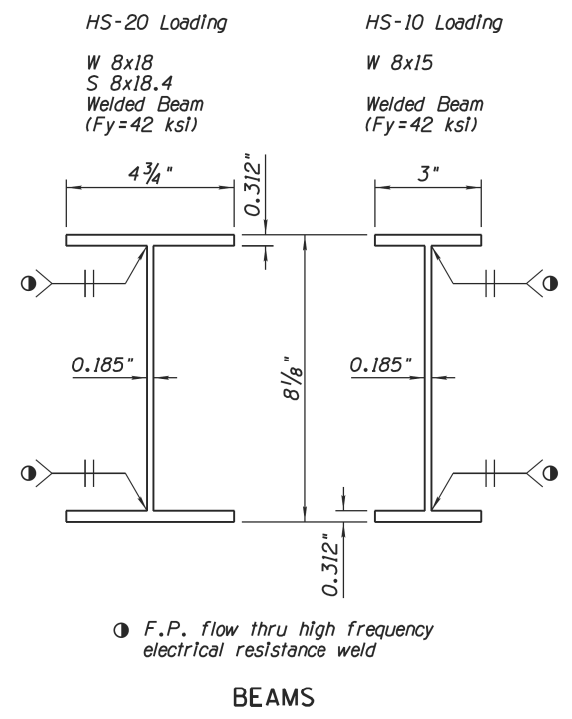
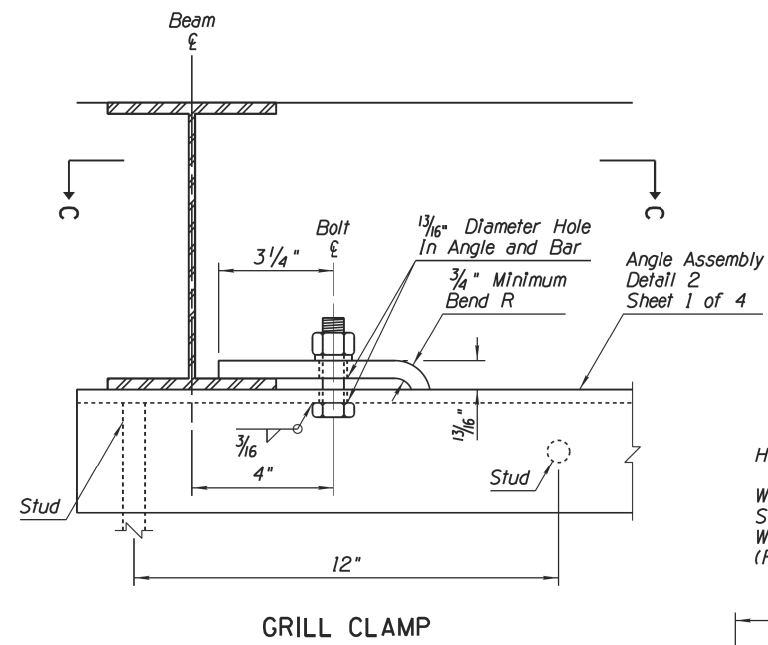
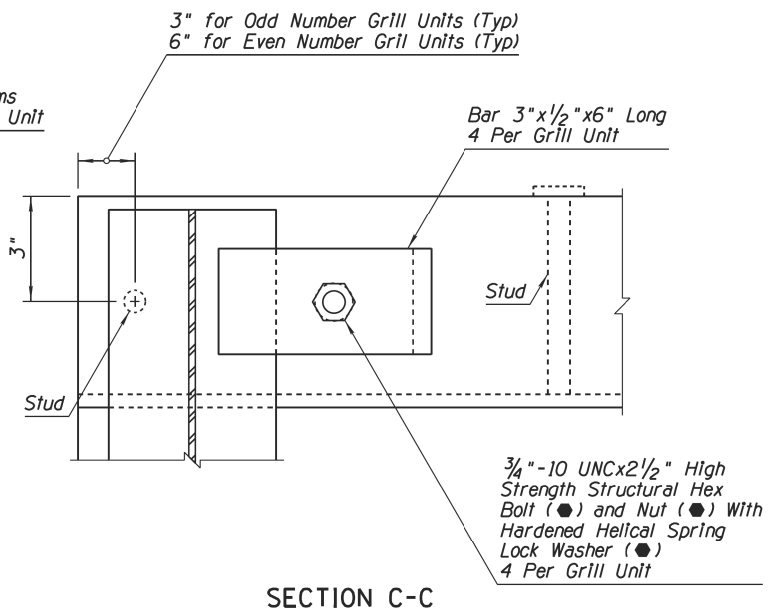
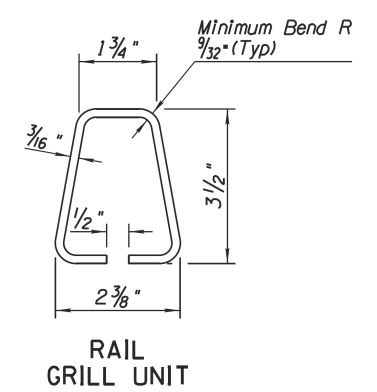
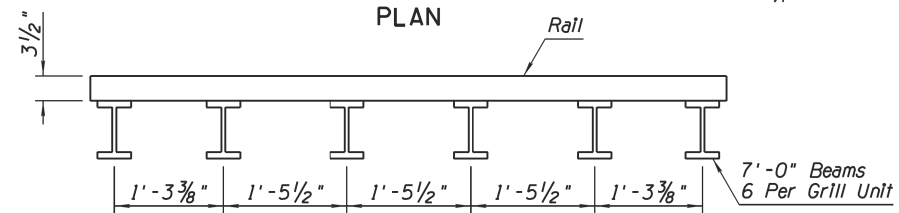
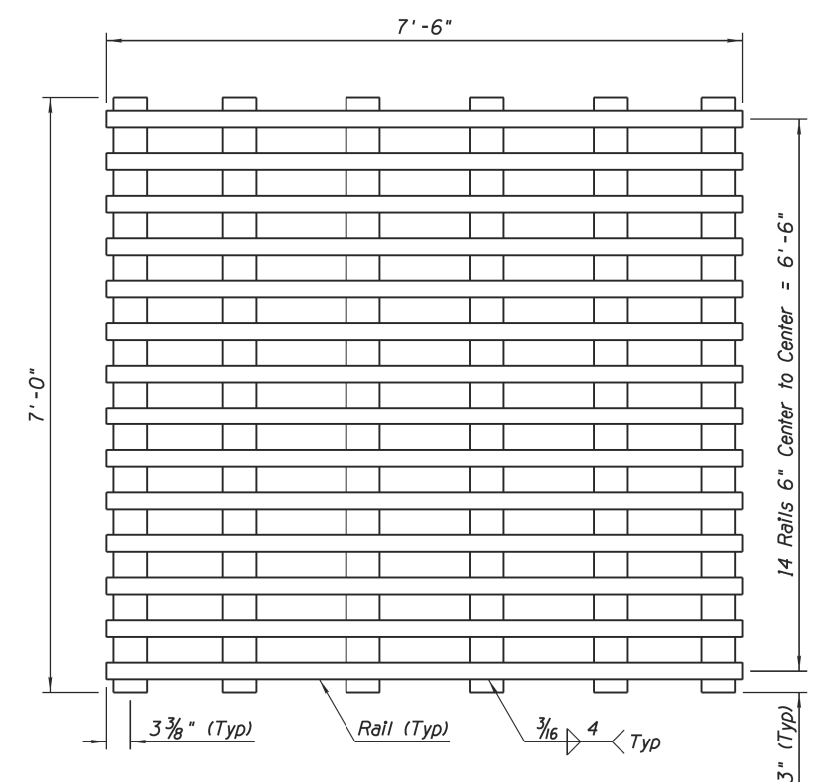
DESIGN	A. Cox	DATE	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS  GUARDRAIL DETAILS	
DRAWN	D. Burmeister	DATE	4/24		
CHECKED	D. Spear	DATE	4/24		
<b>DIBBLE</b> PROJECT NO. 101411.01		DENNEHOTSO LOOP ROAD		DWG No. G-1.26B	
ROUTE N6460 & N6461		LOCATION APACHE COUNTY, AZ		27B OF 69	



DATE: LOCATION: REVISIONS: FINISHED PLANS: SURVEY NO. DATE: LOCATION: REVISIONS: FINISHED PLANS: SURVEY NO. DATE: LOCATION: REVISIONS: FINISHED PLANS: SURVEY NO.

NO.	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	REISSUED STD DWG	RLF	4/06
2			
3			
4			

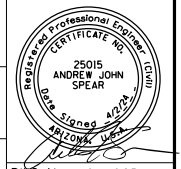
● - Indicates AASHTO, AGC & ARTBA Task Force 13 designation



APPROVED FOR DESIGN	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV. 5/12
APPROVED FOR DISTRIBUTION	ROADWAY CATTLE GUARD	DRAWING NO. C-11.10 Sheet 2 of 4

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DESIGN	NAME	DATE	ROUTE	LOCATION	DWG No.
DESIGN	A. Cox	4/24	N6460 & N6461	DENNEHOTSO LOOP ROAD	G-1.26D
DRAWN	D. Burmeister	4/24	DIBBLE PROJECT No. 101411.01		
CHECKED	D. Spear	4/24	APACHE COUNTY, AZ		
					27D OF 69

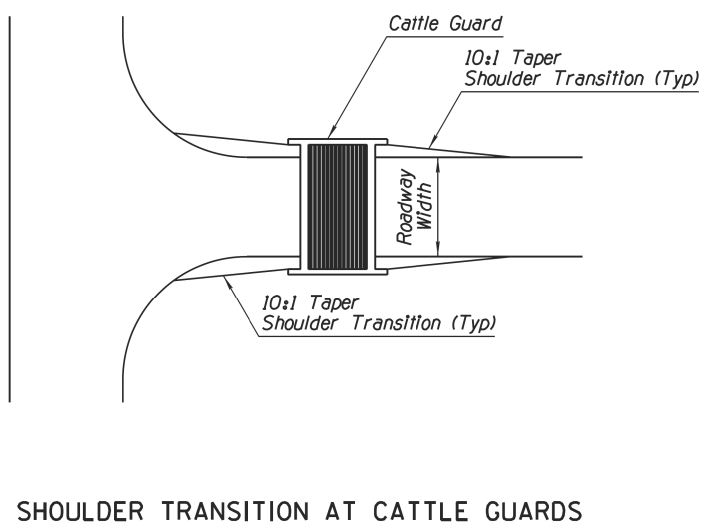
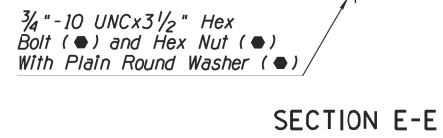
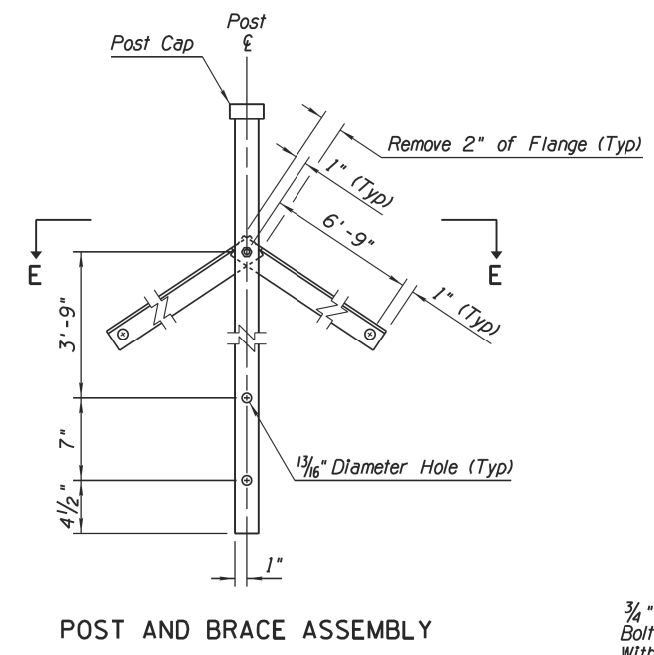
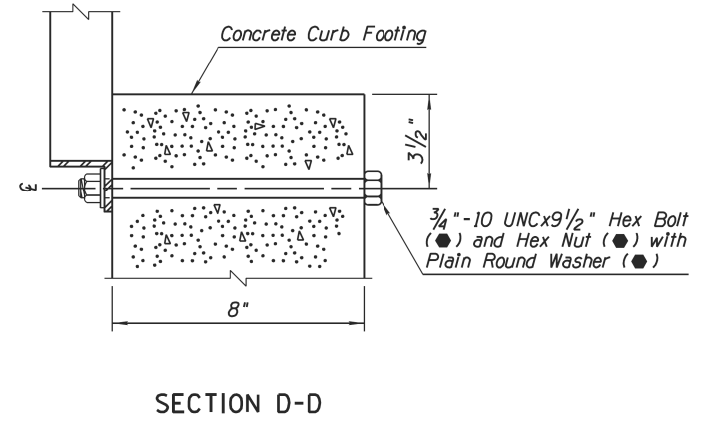
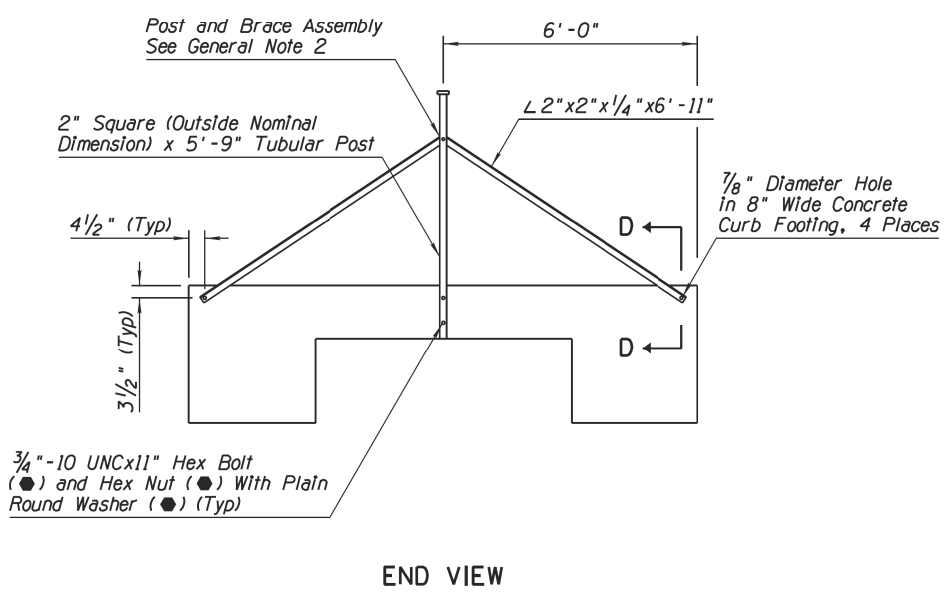




NO.	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	REISSUED STD DWG	RLF	4/06
2			
3			
4			

**GENERAL NOTES**

1. Material for shoulder transition shall be placed to the finished roadway elevation for the entire length of the transition. When the roadway is paved, aggregate subbase or AB shall be used. When the roadway is unpaved, a material equivalent to the existing roadway shall be used.
  2. On steeper grades, the post shall be installed plumb to align with adjacent fencing. The brace assembly may be modified as necessary to support the post.
- - Indicates AASHTO, AGC & ARTBA Task Force 13 designation



APPROVED FOR DESIGN	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV. 5/12
APPROVED FOR DISTRIBUTION	ROADWAY CATTLE GUARD	DRAWING NO. C-11.10 Sheet 3 of 4

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DESIGN	NAME	DATE	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS
DESIGN	A. Cox	4/24	<b>CATTLEGUARD DETAIL SHEET 3 OF 4</b>
DRAWN	D. Burmeister	4/24	
CHECKED	D. Spear	4/24	
<b>DIBBLE</b>			DENNEHOTSO LOOP ROAD DWG No. G-1.26E
ROUTE	N6460 & N6461	LOCATION	
DIBBLE PROJECT No. 101411.01		APACHE COUNTY, AZ	

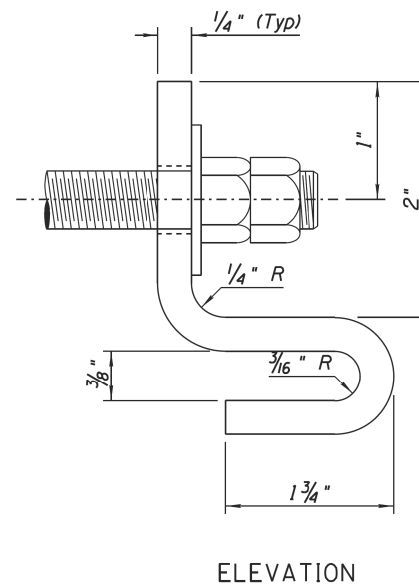
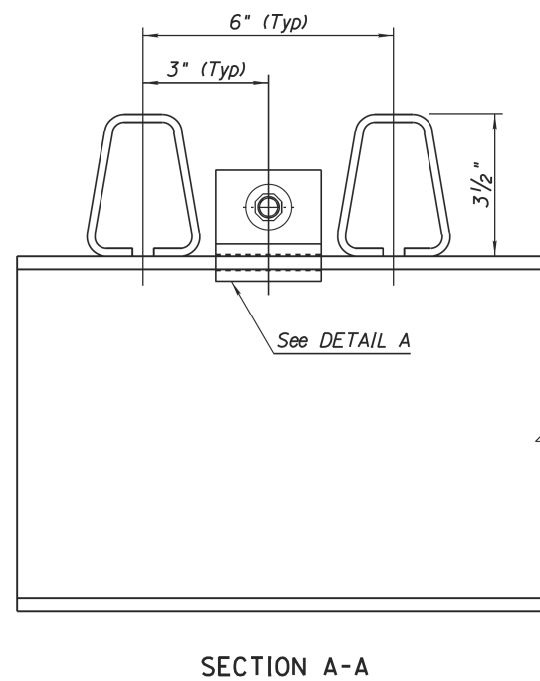
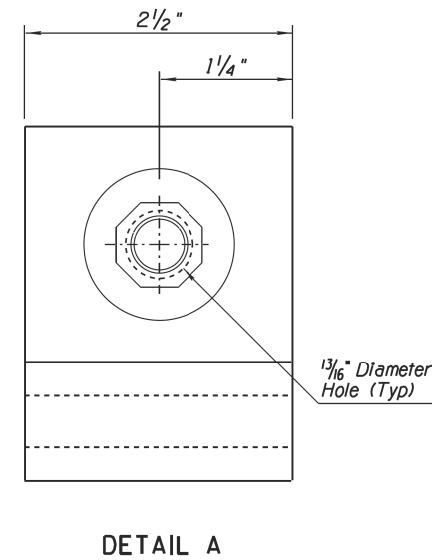
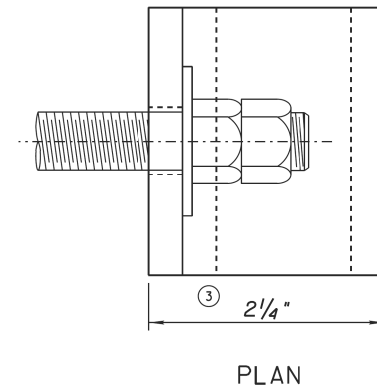
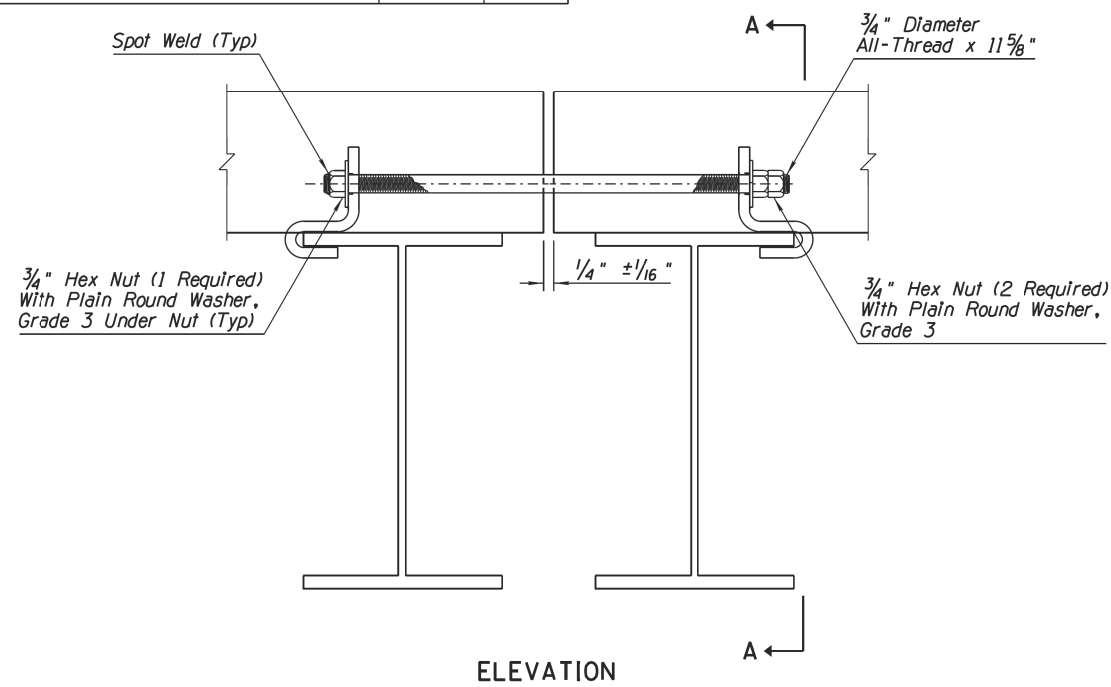


SURVEY NO. FINISHED PLANS DATE REVISIONS LOCATION DATE

NO.	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	REISSUED STD DWG	RLF	4/06
2	ADDED GENERAL NOTE	RLF	5/07
3	REVISED DIMENSION	RLF	5/12
4			

② GENERAL NOTES

1. Apply a heavy duty, high-strength anaerobic thread-locking compound to the threads before installing the double nuts.



APPROVED FOR DESIGN	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV. 5/12
APPROVED FOR DISTRIBUTION	ROADWAY CATTLE GUARD	DRAWING NO. C-11.10 Sheet 4 of 4

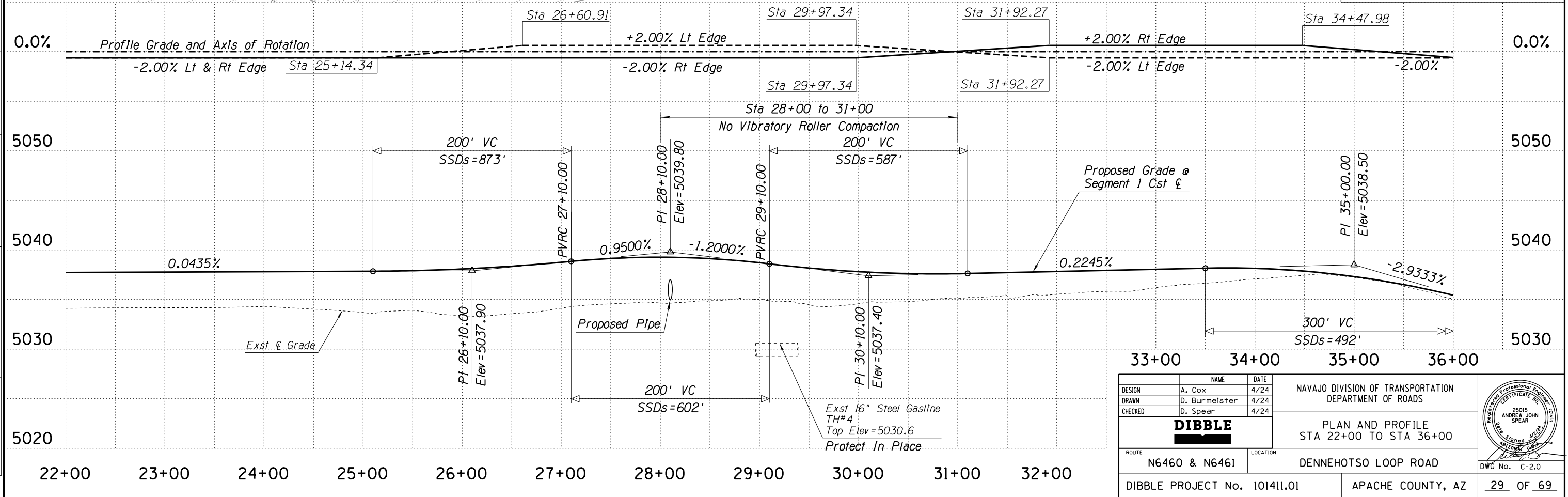
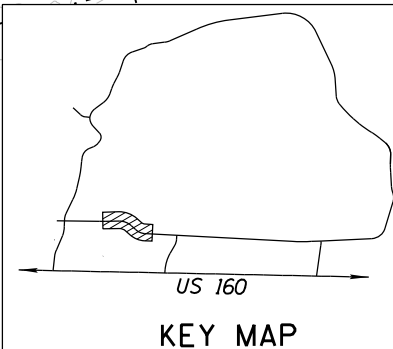
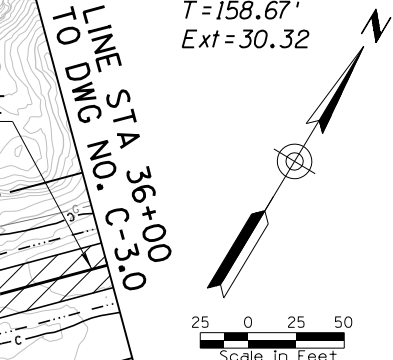
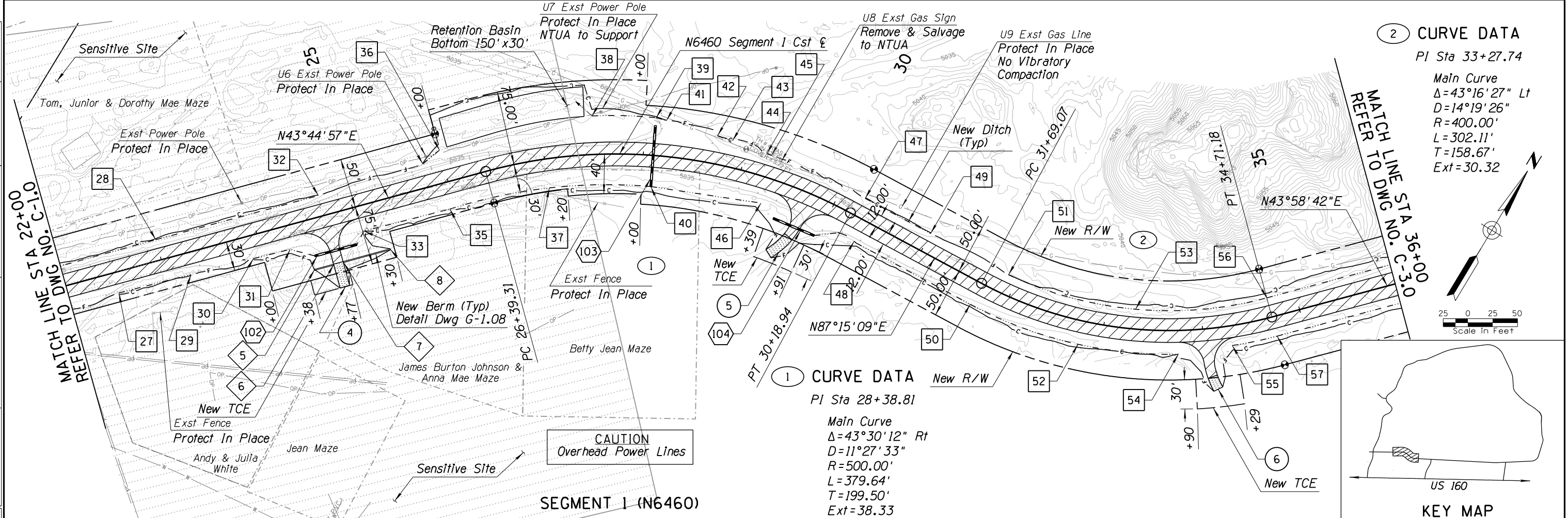
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DESIGN	A. Cox	DATE	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS
DRAWN	D. Burmeister	DATE	4/24	
CHECKED	D. Spear	DATE	4/24	
<b>DIBBLE</b>				CATTLEGUARD DETAIL SHEET 4 OF 4
ROUTE	N6460 & N6461	LOCATION	DENNEHOTSO LOOP ROAD	DWG No. G-1.26F
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ	27F OF 69



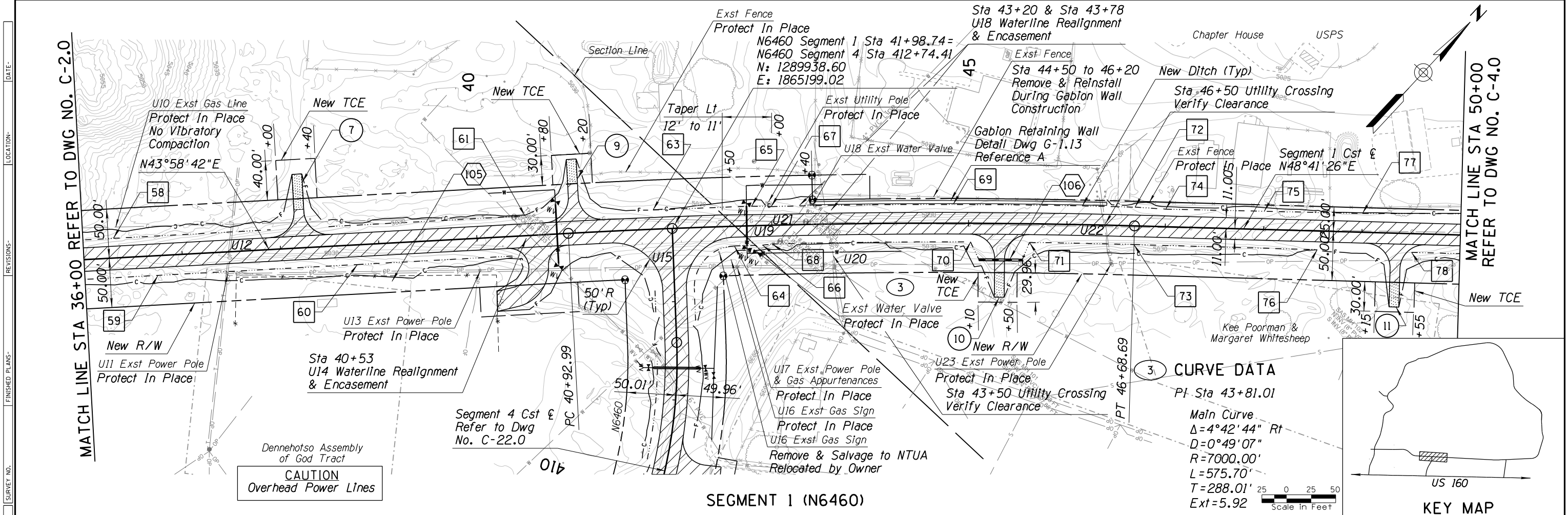






DESIGN	A. Cox	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS	
DRAWN	D. Burmeister	4/24		
CHECKED	D. Spear	4/24		
<b>DIBBLE</b>			PLAN AND PROFILE STA 22+00 TO STA 36+00	
ROUTE	N6460 & N6461		LOCATION	DENNEHOTSO LOOP ROAD
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ	DWG No. C-2.0 29 OF 69

DATE: \_\_\_\_\_ LOCATION: \_\_\_\_\_ REVISIONS: \_\_\_\_\_ FINISHED PLANS: \_\_\_\_\_ SURVEY NO.: \_\_\_\_\_

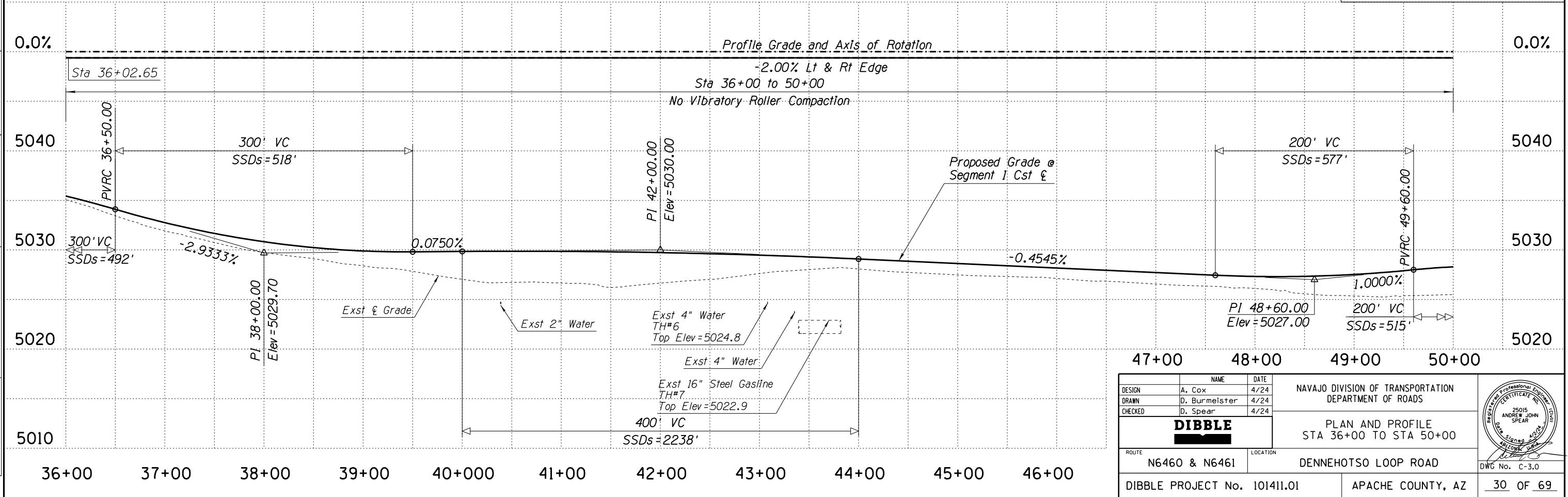
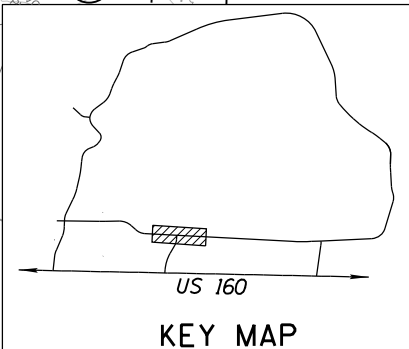


**3 CURVE DATA**

PI Sta 43+81.01

Main Curve  
 $\Delta = 4^{\circ}42'44''$  Rt  
 $D = 0^{\circ}49'07''$   
 $R = 7000.00'$   
 $L = 575.70'$   
 $T = 288.01'$   
 $Ext = 5.92'$

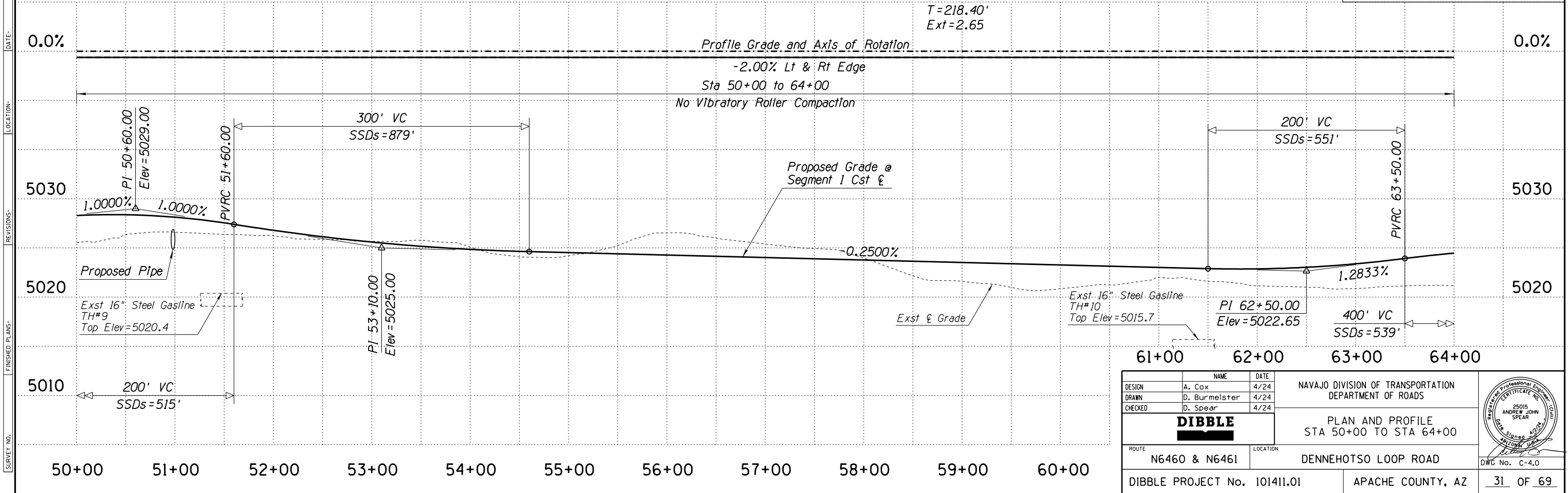
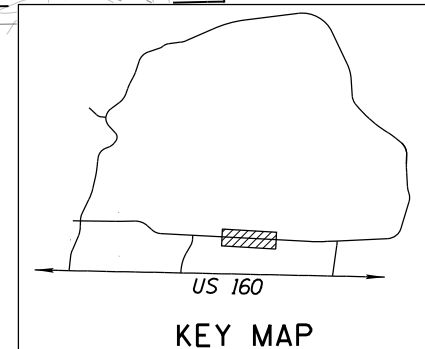
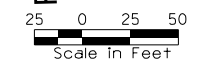
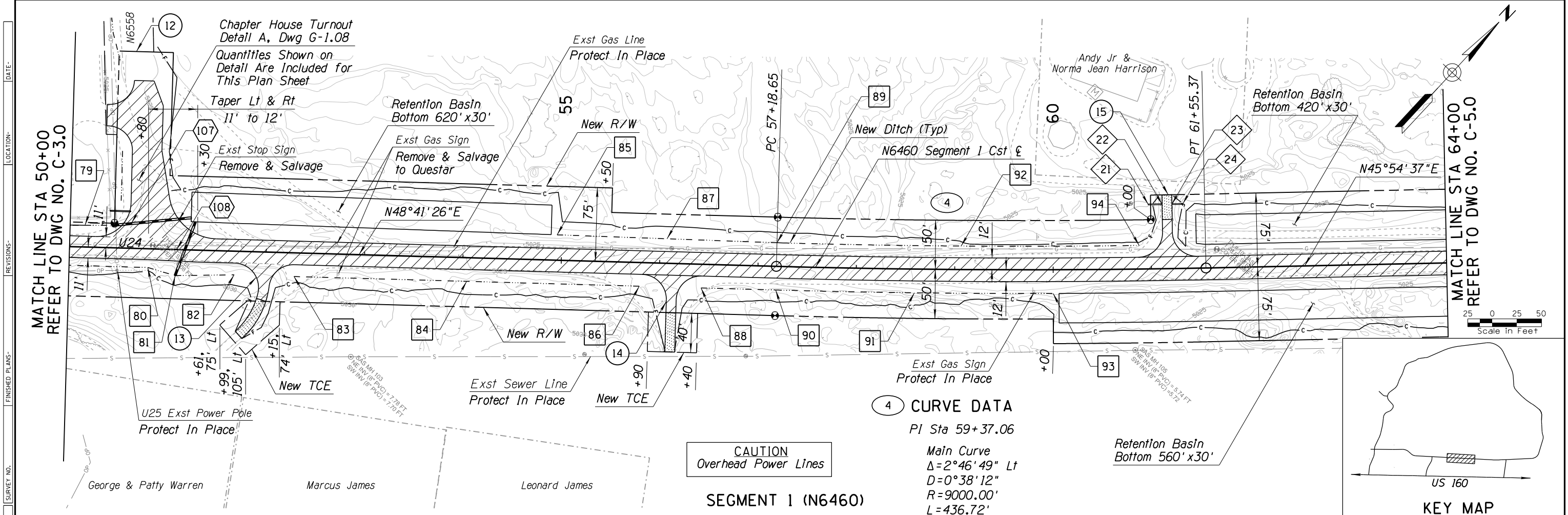
Scale in Feet



DESIGN	A. Cox	DATE	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS	
DRAWN	D. Burmeister	DATE	4/24		
CHECKED	D. Spear	DATE	4/24		
<b>DIBBLE</b>				PLAN AND PROFILE STA 36+00 TO STA 50+00	
ROUTE	N6460 & N6461		LOCATION	DENNEHOTSO LOOP ROAD	
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ		DWG No. C-3.0

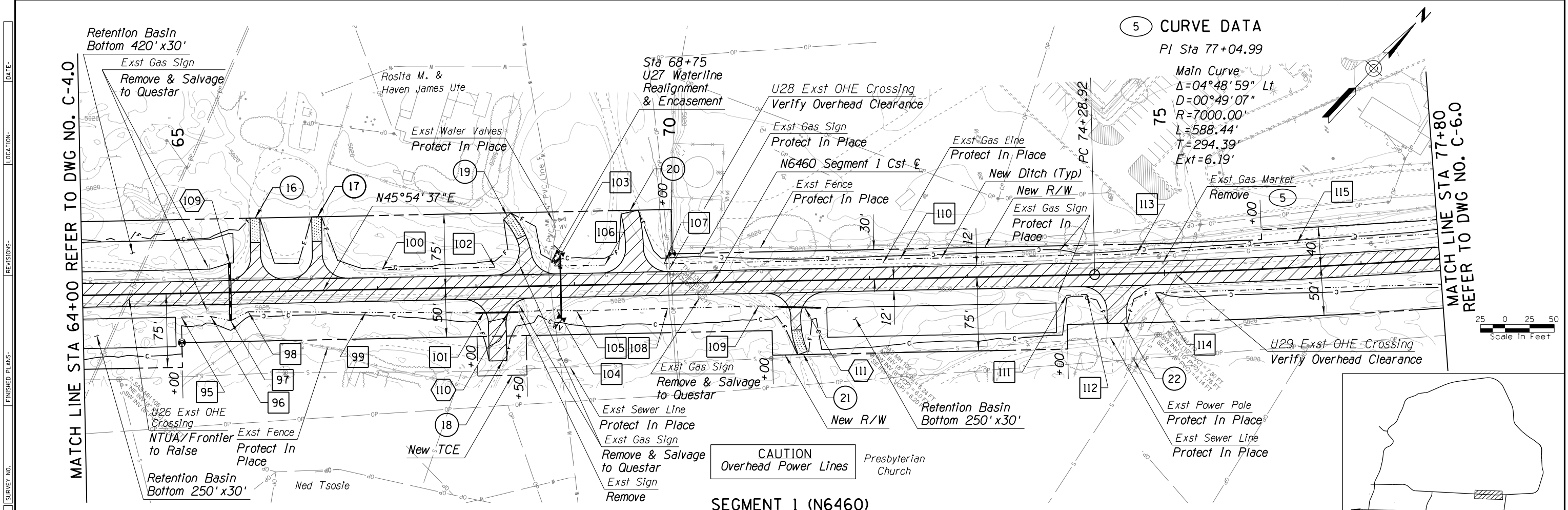
DATE: \_\_\_\_\_ LOCATION: \_\_\_\_\_ REVISIONS: \_\_\_\_\_ FINISHED PLANS: \_\_\_\_\_ SURVEY NO. \_\_\_\_\_





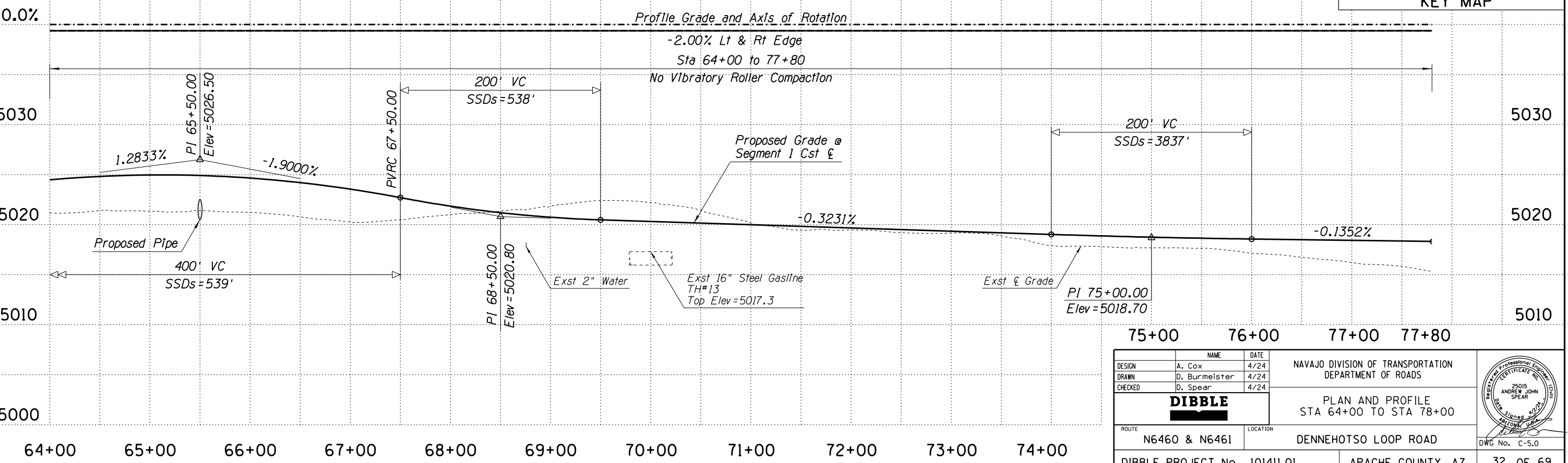
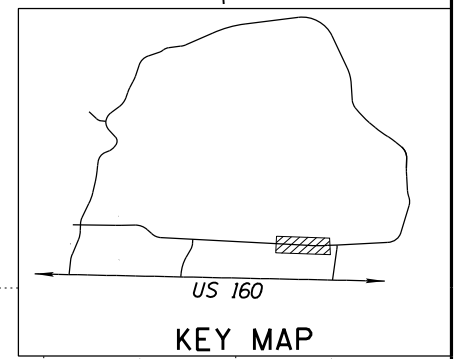
DESIGN	NAME	DATE	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS	
DRAWN	A. Cox	4/24		
CHECKED	D. Burmeister	4/24		
<b>DIBBLE</b>			PLAN AND PROFILE STA 50+00 TO STA 64+00	
ROUTE	N6460 & N6461	LOCATION		DENNEHOTSO LOOP ROAD
DIBBLE PROJECT No. 101411.01		APACHE COUNTY, AZ		DWG No. C-4.0 31 OF 69

SURVEY NO. FINISHED PLANS. LOCATION. DATE. REVISIONS. FINISHED PLANS. SURVEY NO. DATE. REVISIONS. FINISHED PLANS. SURVEY NO. DATE. REVISIONS.



**5 CURVE DATA**  
 PI Sta 77+04.99  
 Main Curve  
 $\Delta = 04^{\circ}48'59''$  Lt  
 $D = 7000.00'$   
 $R = 7000.00'$   
 $L = 588.44'$   
 $T = 294.39'$   
 $Ext = 6.19'$

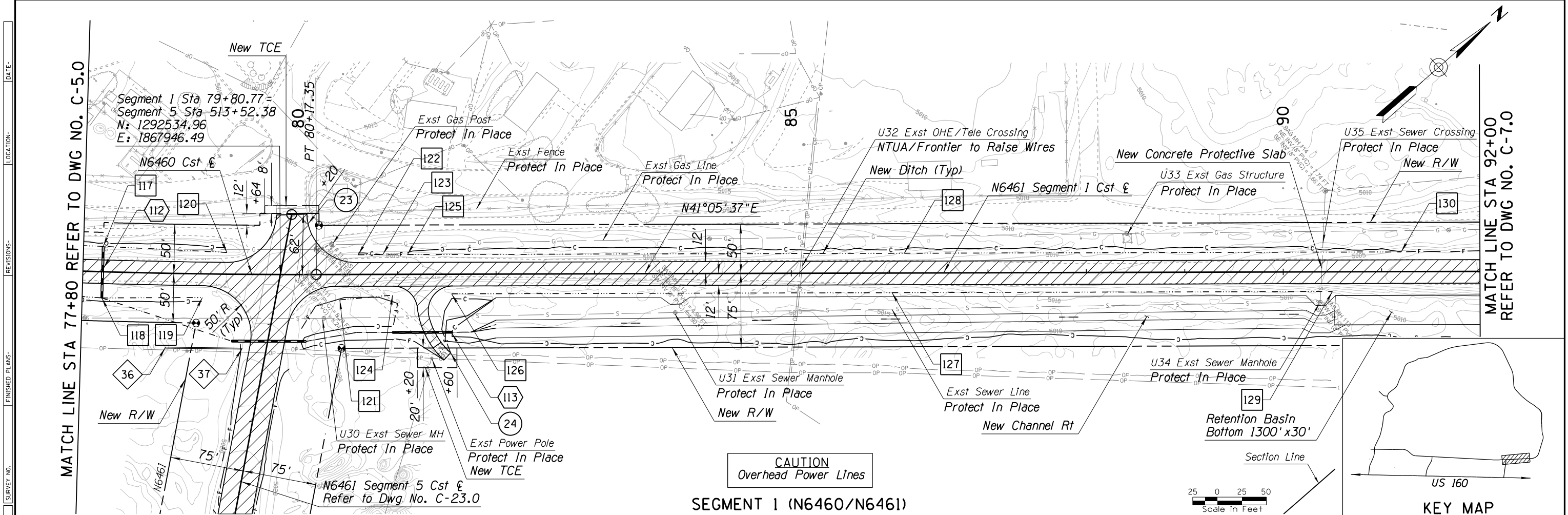
**CAUTION**  
 Overhead Power Lines



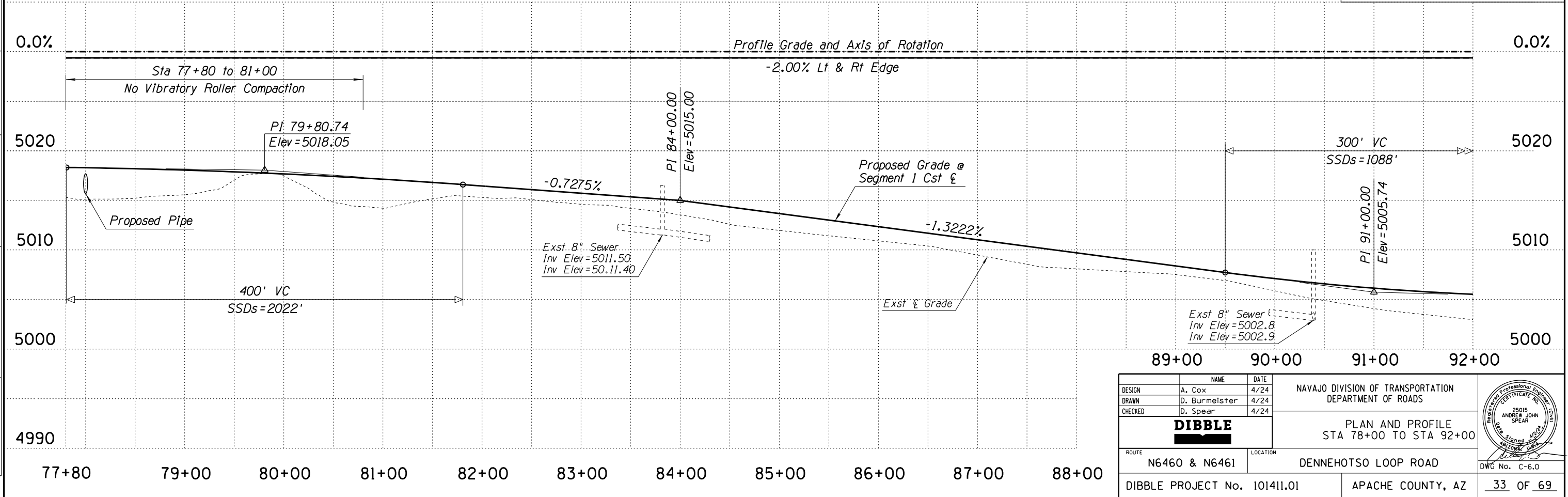
DESIGN	A. Cox	DATE	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS  <b>DIBBLE</b> PLAN AND PROFILE STA 64+00 TO STA 78+00	
DRAWN	D. Burmeister	DATE	4/24		
CHECKED	D. Spear	DATE	4/24		
ROUTE	N6460 & N6461		LOCATION	DENNEHOTSO LOOP ROAD	
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ		DWG No. C-5.0

SURVEY NO. FINISHED PLANS. DATE: LOCATION: REVISIONS: FINISHED PLANS. DATE: LOCATION: REVISIONS: FINISHED PLANS. DATE: LOCATION: REVISIONS:



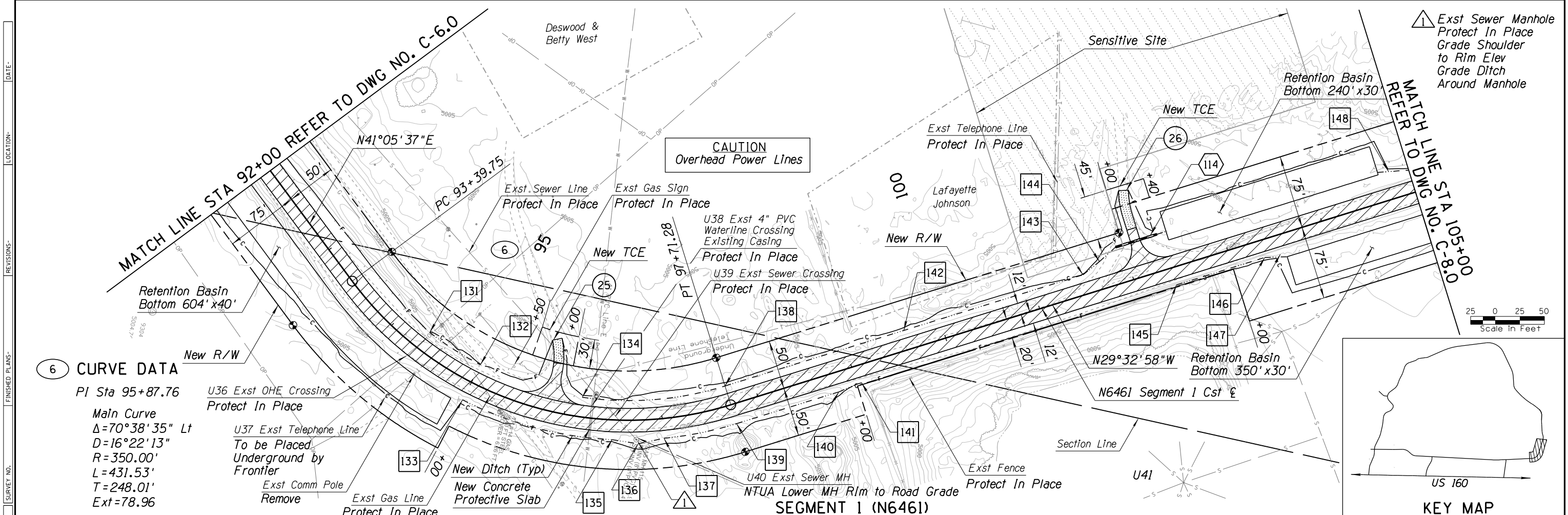


SEGMENT 1 (N6460/N6461)

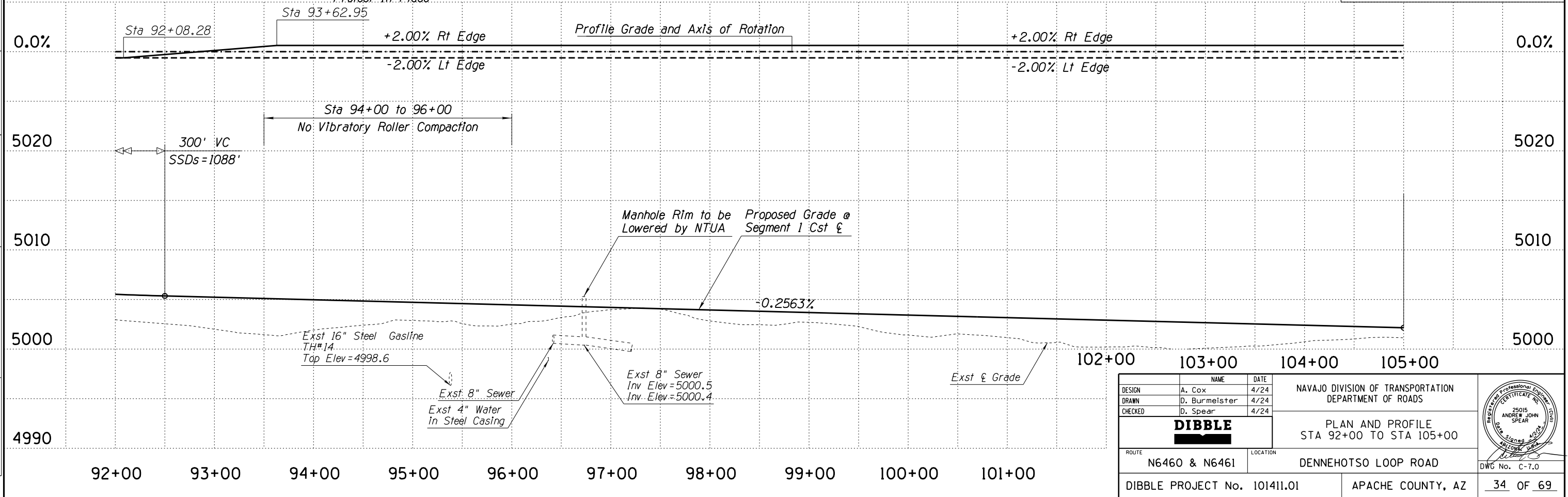
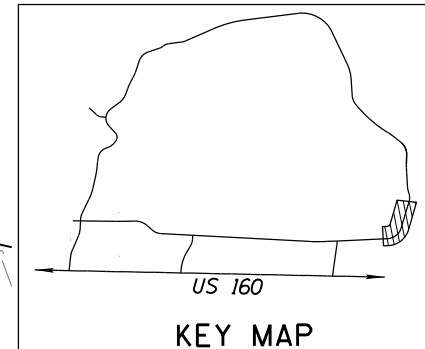


DESIGN	A. Cox	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS  PLAN AND PROFILE STA 78+00 TO STA 92+00	
DRAWN	D. Burmeister	4/24		
CHECKED	D. Spear	4/24		
<b>DIBBLE</b>			ROUTE: N6460 & N6461 LOCATION: DENNEHOTSO LOOP ROAD DWG No. C-6.0	33 OF 69
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ	

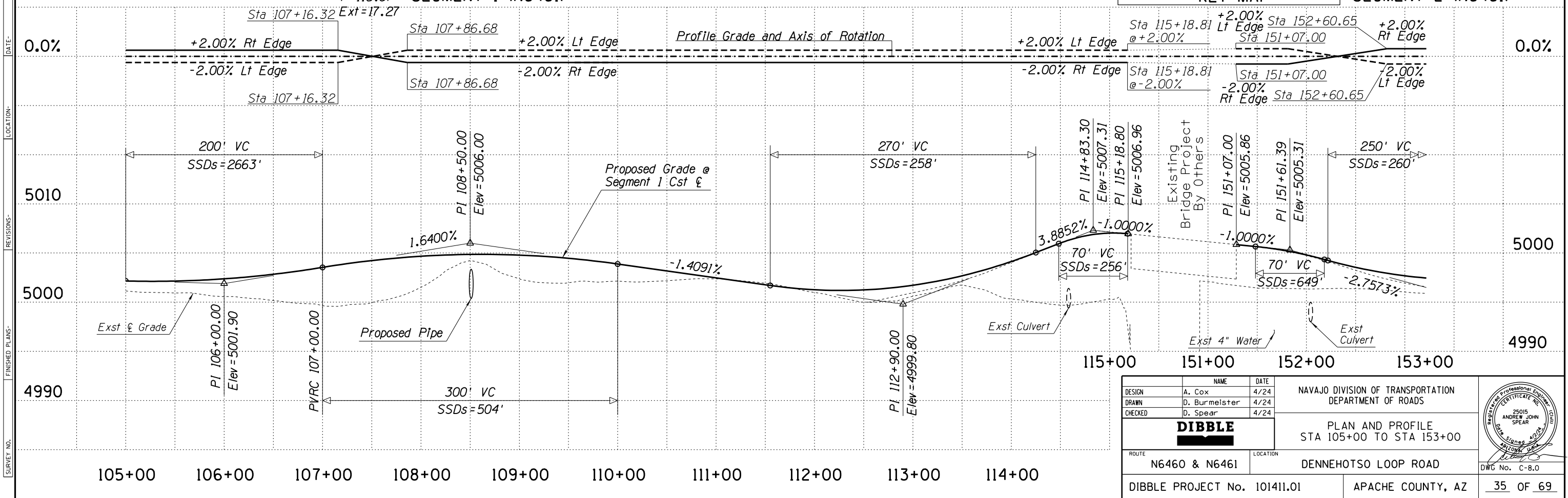
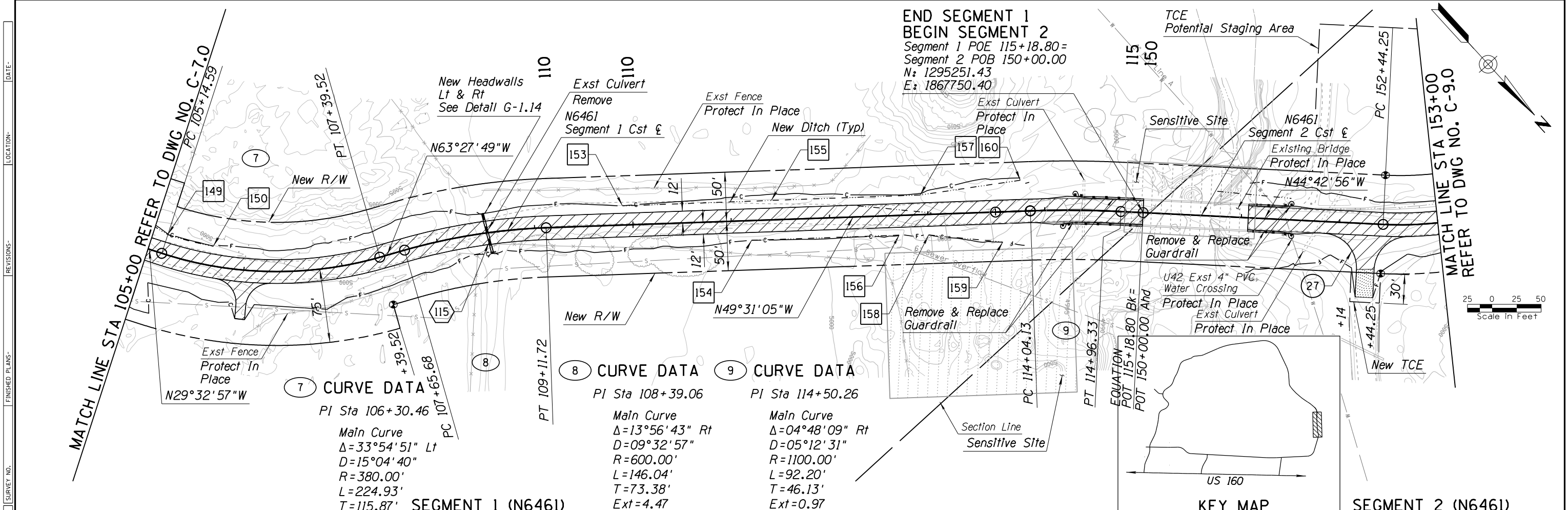
SURVEY NO. FINISHED PLANS. DATE: LOCATION: REVISIONS: FINISHED PLANS. DATE: SURVEY NO.



**6 CURVE DATA**  
 PI Sta 95+87.76  
 Main Curve  
 $\Delta = 70^\circ 38' 35''$  Lt  
 $D = 16^\circ 22' 13''$   
 $R = 350.00'$   
 $L = 431.53'$   
 $T = 248.01'$   
 $Ext = 78.96'$

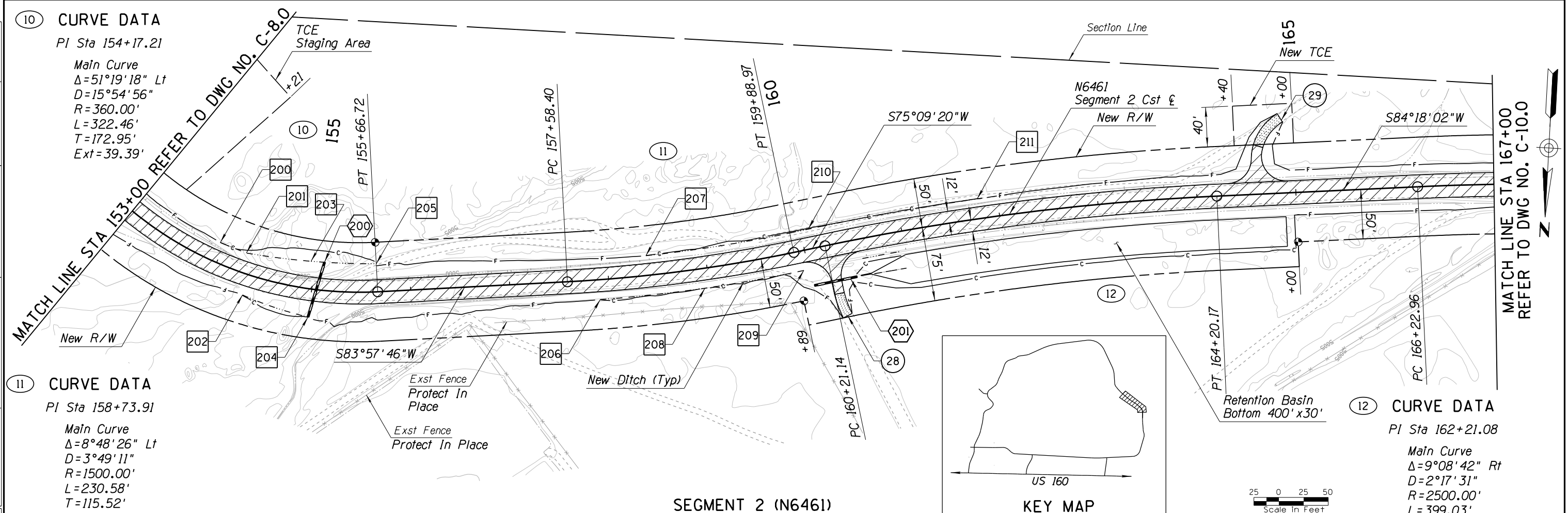


DESIGN	A. Cox	DATE	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS  PLAN AND PROFILE STA 92+00 TO STA 105+00
DRAWN	D. Burmeister	DATE	4/24	
CHECKED	D. Spear	DATE	4/24	
<b>DIBBLE</b>				
ROUTE	N6460 & N6461	LOCATION	DENNEHOTSO LOOP ROAD	
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ	DWG No. C-7.0 34 OF 69



DESIGN	A. Cox	DATE	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS  PLAN AND PROFILE STA 105+00 TO STA 153+00	
DRAWN	D. Burmeister	DATE	4/24		
CHECKED	D. Spear	DATE	4/24		
<b>DIBBLE</b>				ROUTE: N6460 & N6461      LOCATION: DENNEHOTSO LOOP ROAD	
DIBBLE PROJECT No. 101411.01		APACHE COUNTY, AZ		DWG No. C-8.0	

SURVEY NO. FINISHED PLANS. REVISIONS. LOCATION. DATE.

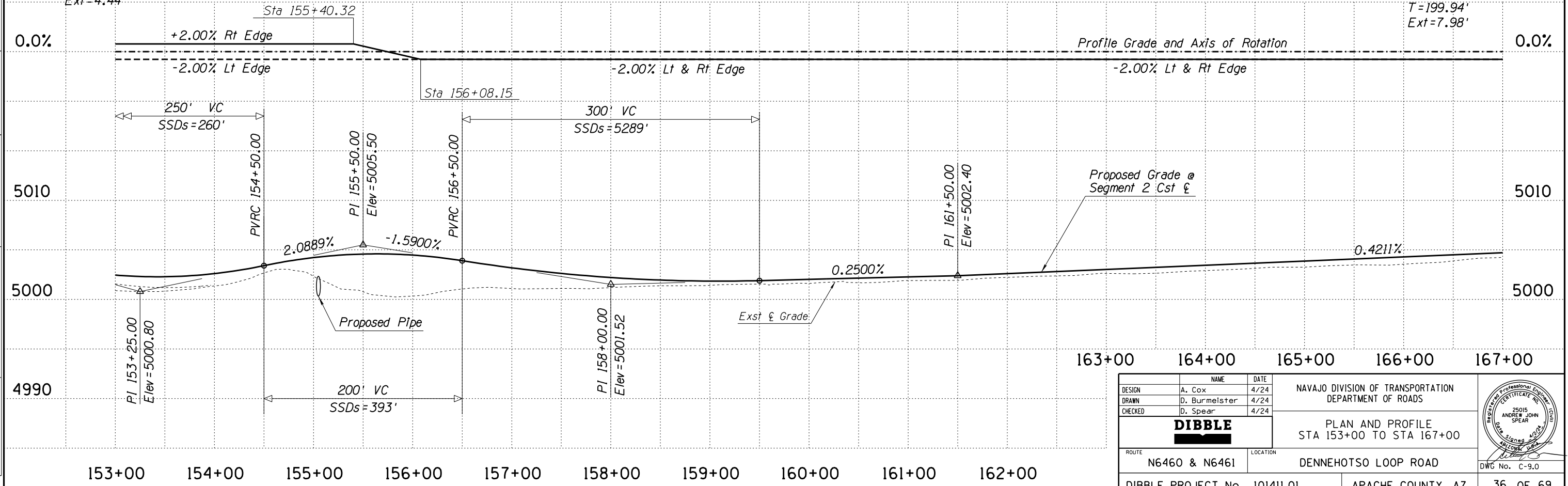
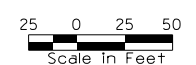
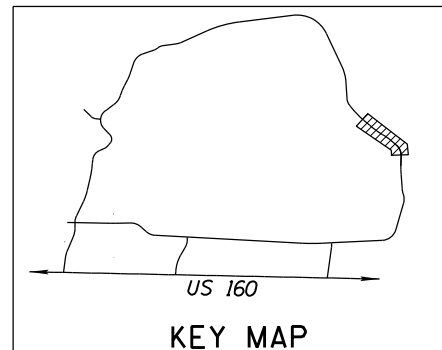


**10 CURVE DATA**  
 PI Sta 154+17.21  
 Main Curve  
 $\Delta = 51^\circ 19' 18''$  Lt  
 $D = 15^\circ 54' 56''$   
 $R = 360.00'$   
 $L = 322.46'$   
 $T = 172.95'$   
 $Ext = 39.39'$

**11 CURVE DATA**  
 PI Sta 158+73.91  
 Main Curve  
 $\Delta = 8^\circ 48' 26''$  Lt  
 $D = 3^\circ 49' 11''$   
 $R = 1500.00'$   
 $L = 230.58'$   
 $T = 115.52'$   
 $Ext = 4.44'$

**12 CURVE DATA**  
 PI Sta 162+21.08  
 Main Curve  
 $\Delta = 9^\circ 08' 42''$  Rt  
 $D = 2^\circ 17' 31''$   
 $R = 2500.00'$   
 $L = 399.03'$   
 $T = 199.94'$   
 $Ext = 7.98'$

**SEGMENT 2 (N6461)**



DESIGN	A. Cox	DATE	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS  <b>DIBBLE</b> PLAN AND PROFILE STA 153+00 TO STA 167+00	
DRAWN	D. Burmeister	DATE	4/24		
CHECKED	D. Spear	DATE	4/24		
ROUTE	N6460 & N6461		LOCATION	DENNEHOTSO LOOP ROAD	
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ		DWG No. C-9.0

13 CURVE DATA

PI Sta 168+69.91

Main Curve  
 $\Delta = 11^\circ 16' 58''$  Rt  
 $D = 2^\circ 17' 31''$   
 $R = 2500.00'$   
 $L = 492.31'$   
 $T = 246.95'$   
 $Ext = 12.17'$

MATCH LINE STA 167+00  
 REFER TO DWG NO. C-9.0

15 CURVE DATA

PI Sta 180+14.74

Main Curve  
 $\Delta = 22^\circ 30' 07''$  Lt  
 $D = 4^\circ 58' 56''$   
 $R = 1150.00'$   
 $L = 451.64'$   
 $T = 228.77'$   
 $Ext = 22.53'$

MATCH LINE STA 181+00  
 REFER TO DWG NO. C-11.0

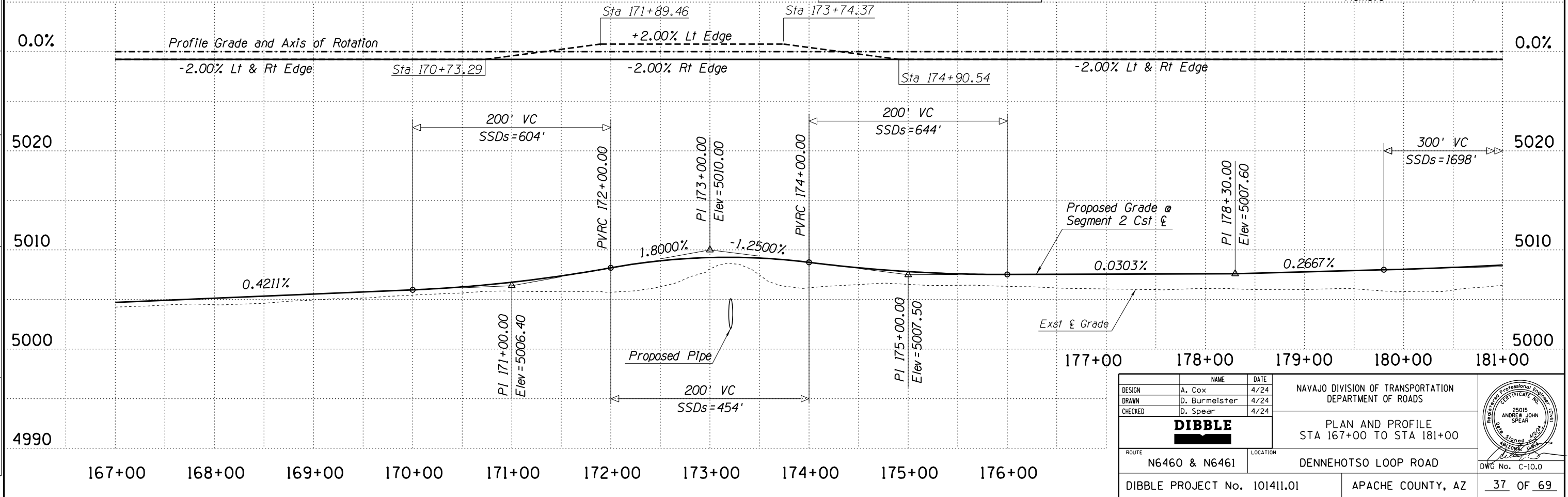
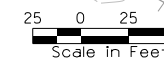
14 CURVE DATA

PI Sta 172+85.56

Main Curve  
 $\Delta = 35^\circ 38' 20''$  Rt  
 $D = 16^\circ 22' 13''$   
 $R = 350.00'$   
 $L = 217.71'$   
 $T = 112.50'$   
 $Ext = 17.64'$

SEGMENT 2 (N6461)

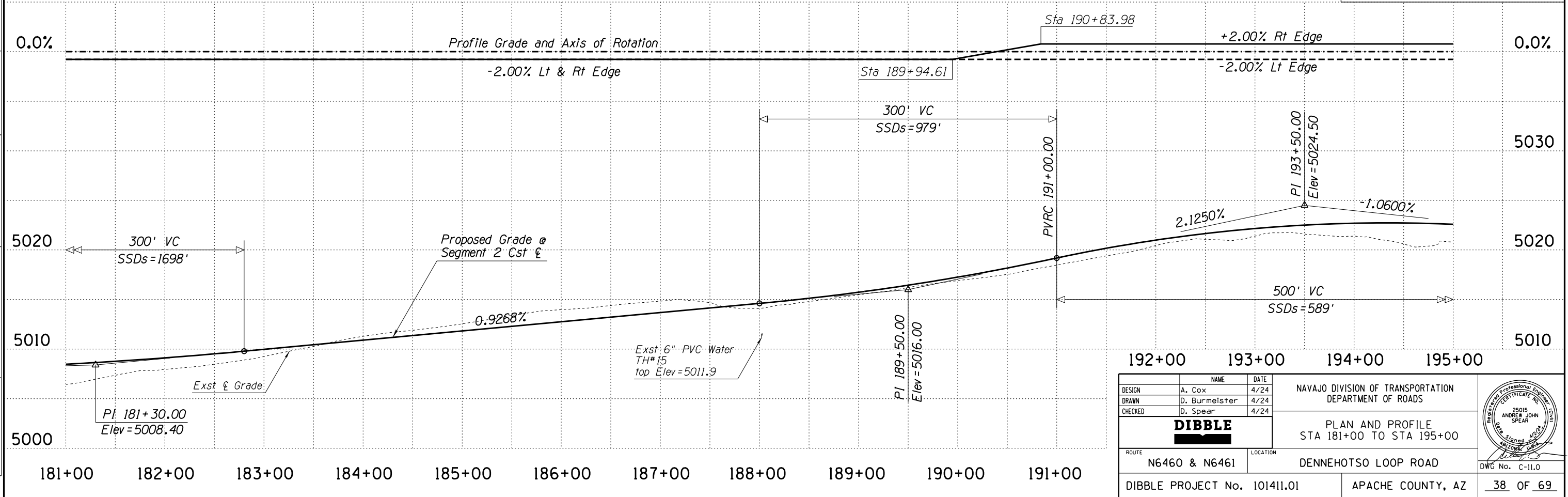
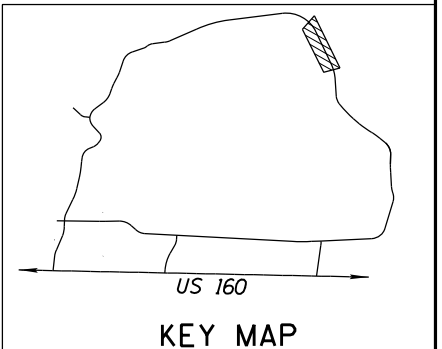
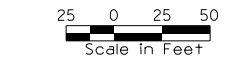
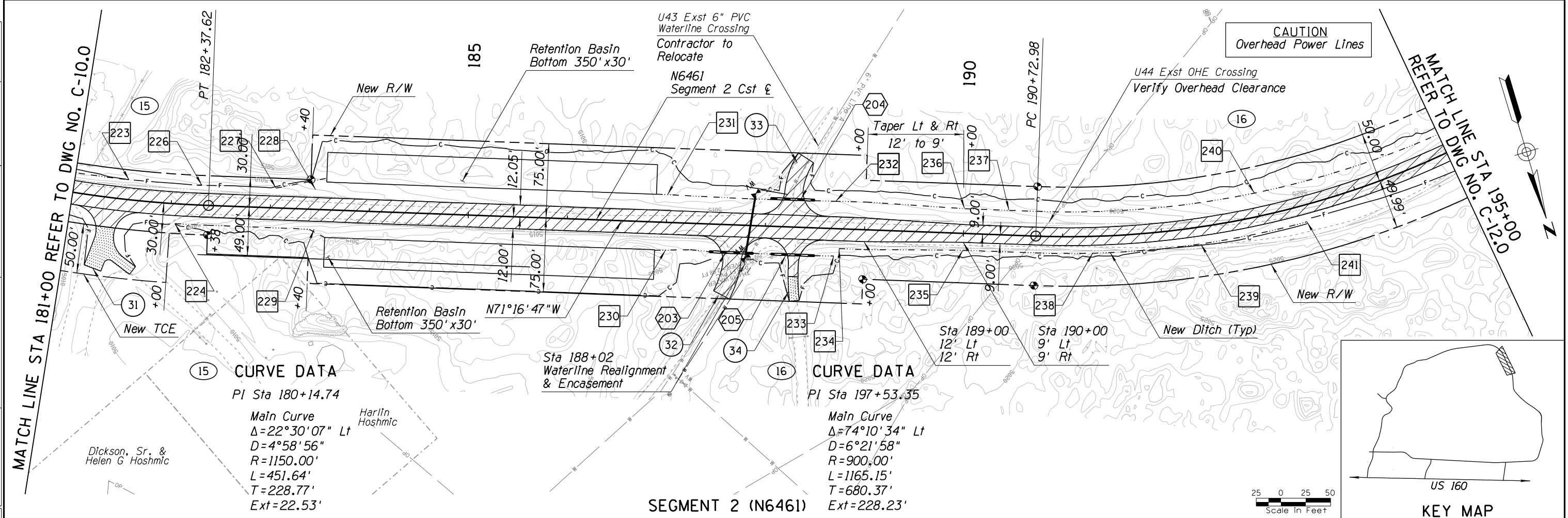
KEY MAP

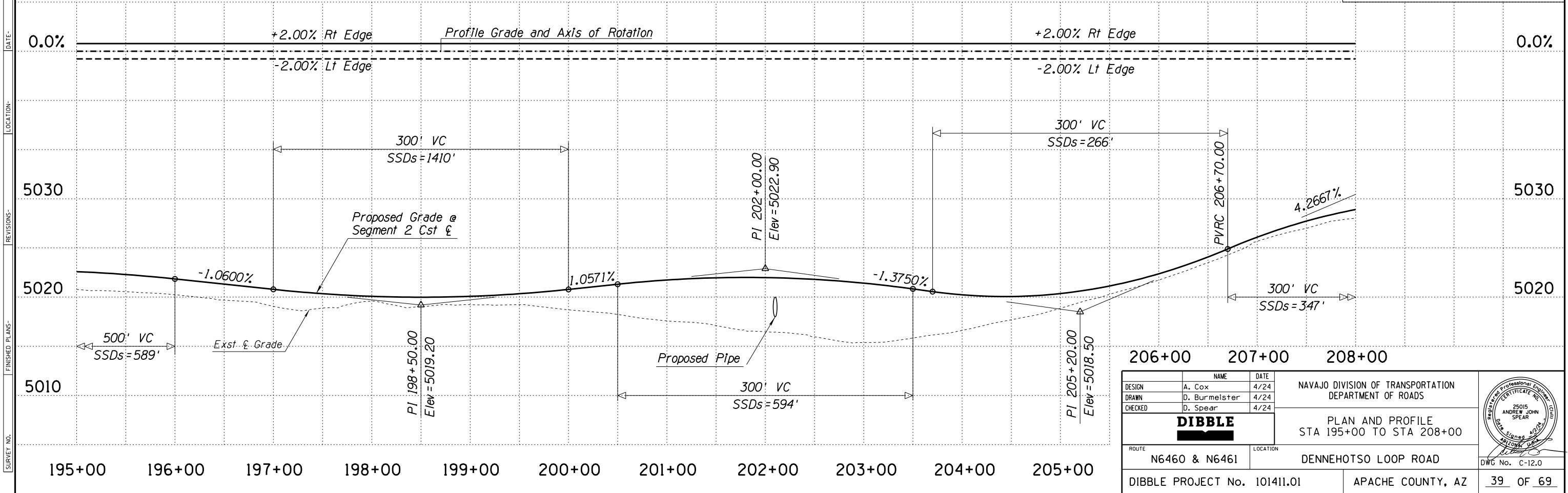
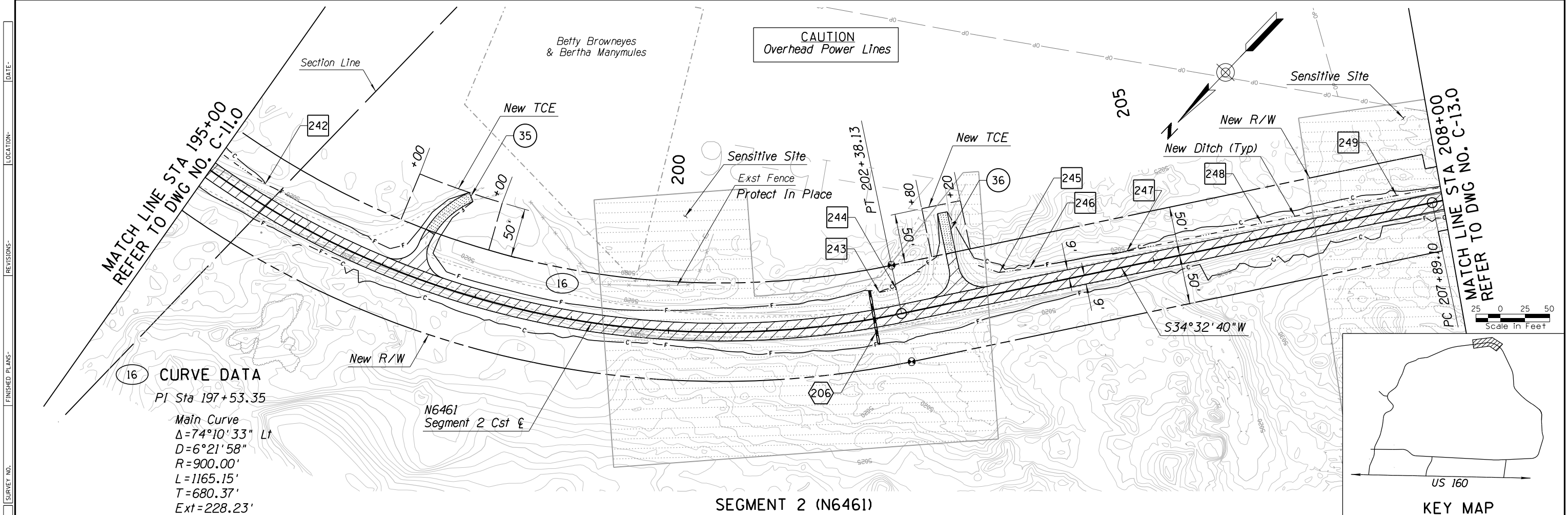


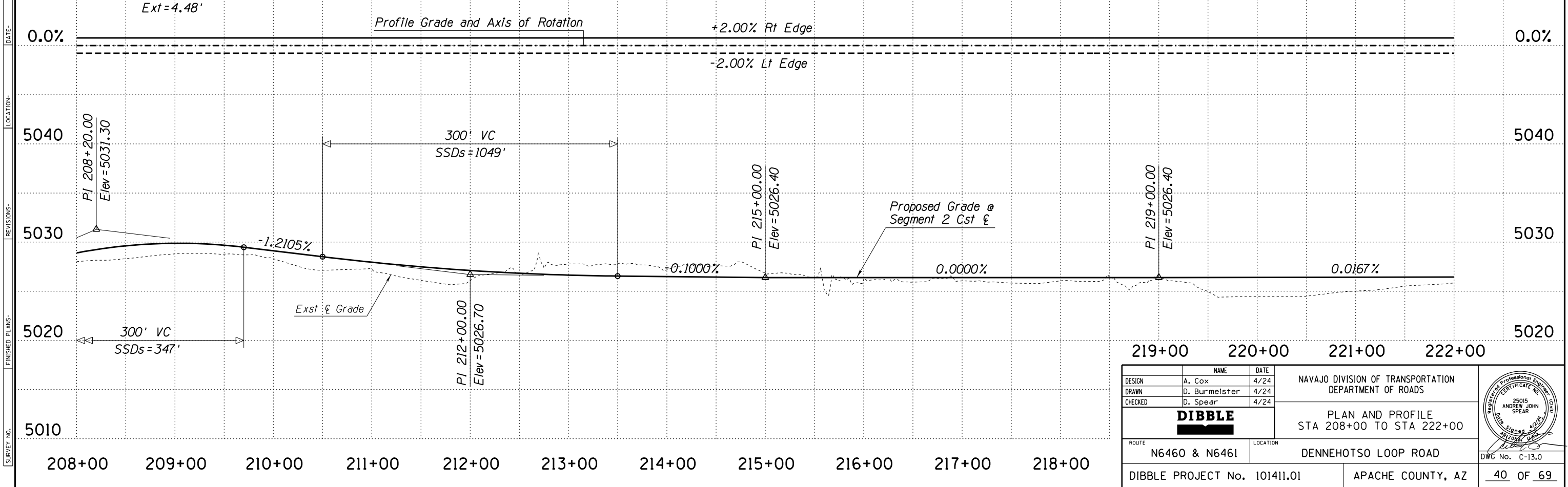
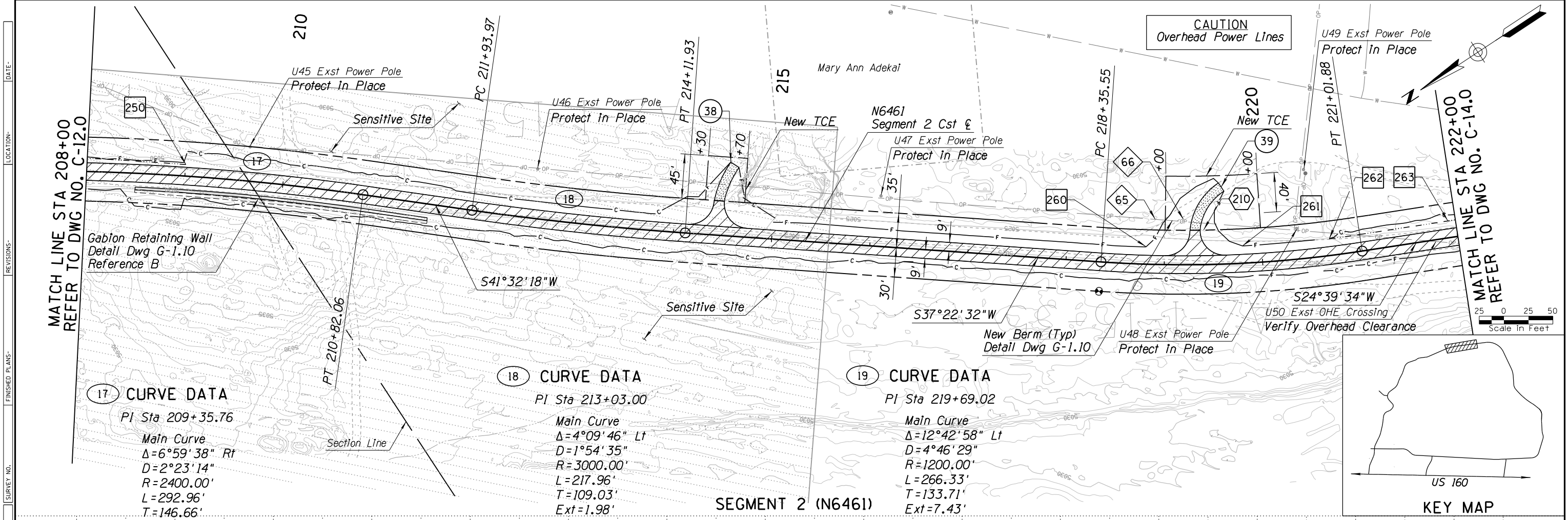
DESIGN	A. Cox	DATE	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS  PLAN AND PROFILE STA 167+00 TO STA 181+00	
DRAWN	D. Burmeister	DATE	4/24		
CHECKED	D. Spear	DATE	4/24		
<b>DIBBLE</b>					
ROUTE	N6460 & N6461		LOCATION	DENNEHOTSO LOOP ROAD	
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ		DWG No. C-10.0

DATE: \_\_\_\_\_ LOCATION: \_\_\_\_\_ REVISIONS: \_\_\_\_\_ FINISHED PLANS: \_\_\_\_\_ SURVEY NO. \_\_\_\_\_

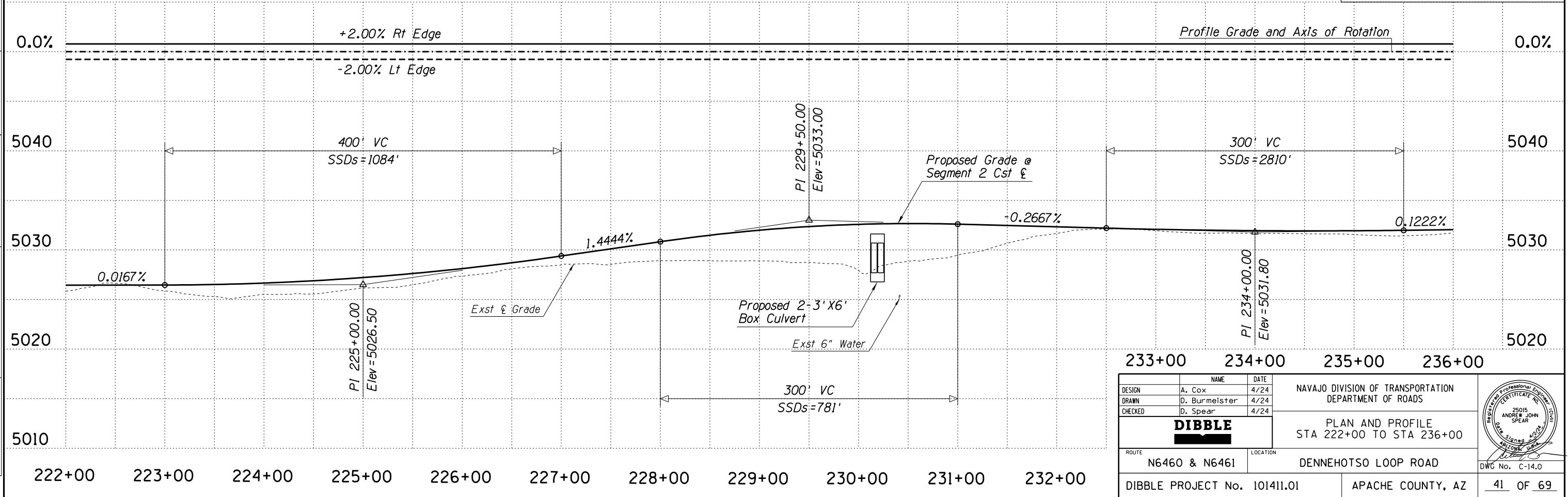
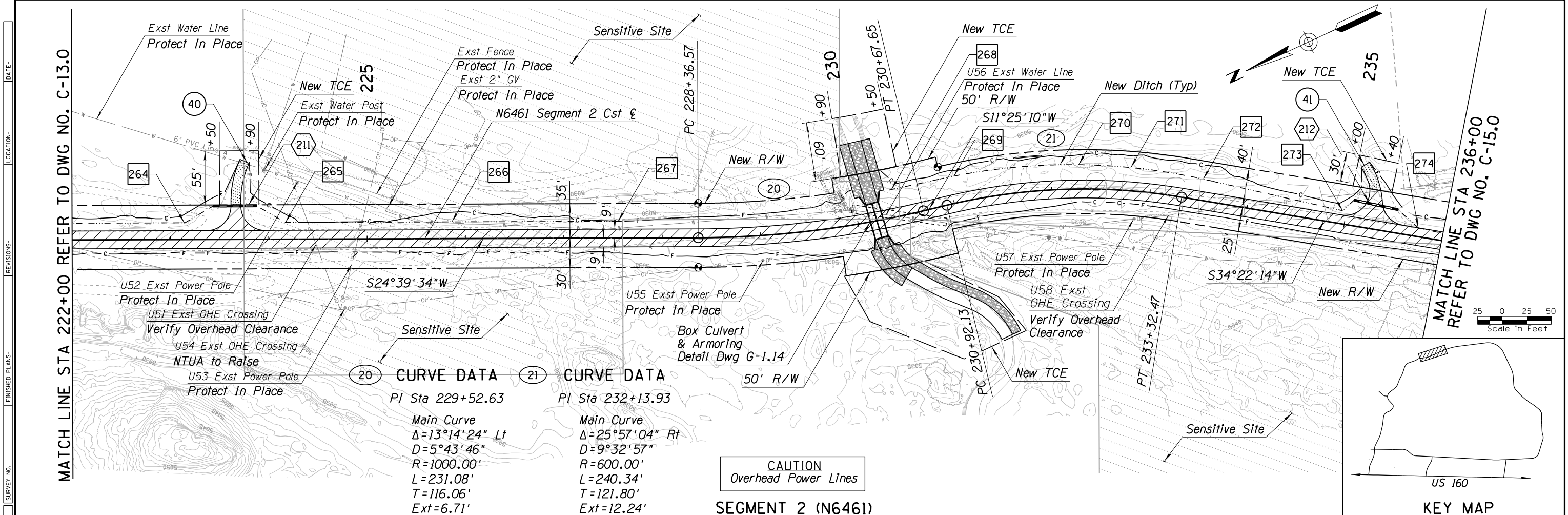






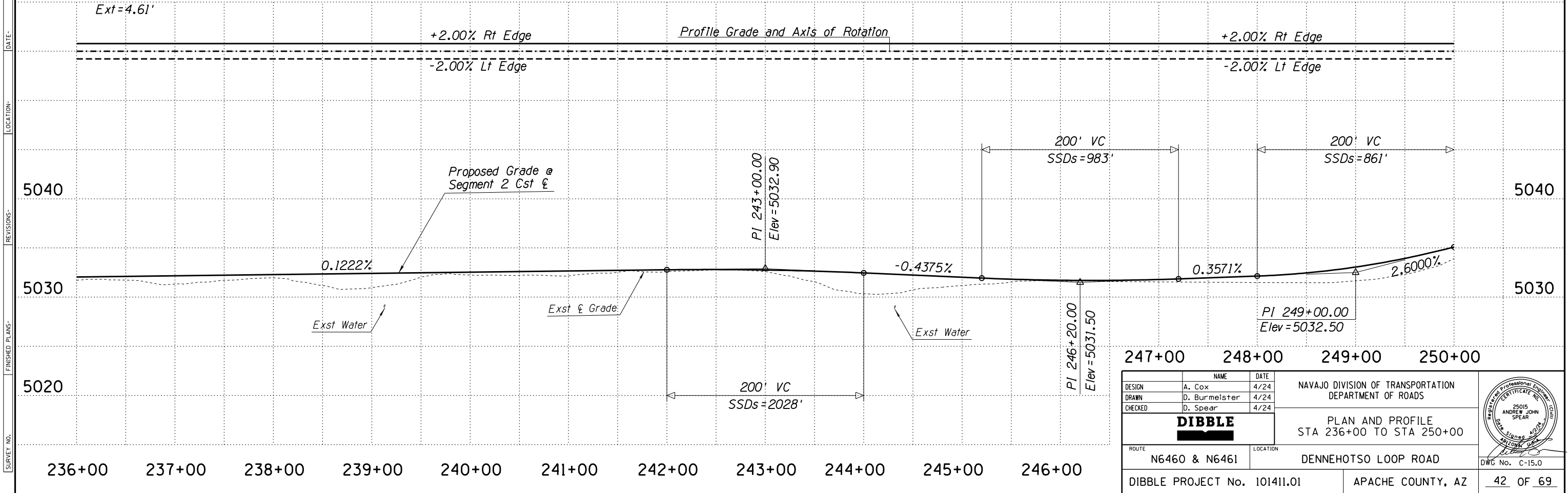
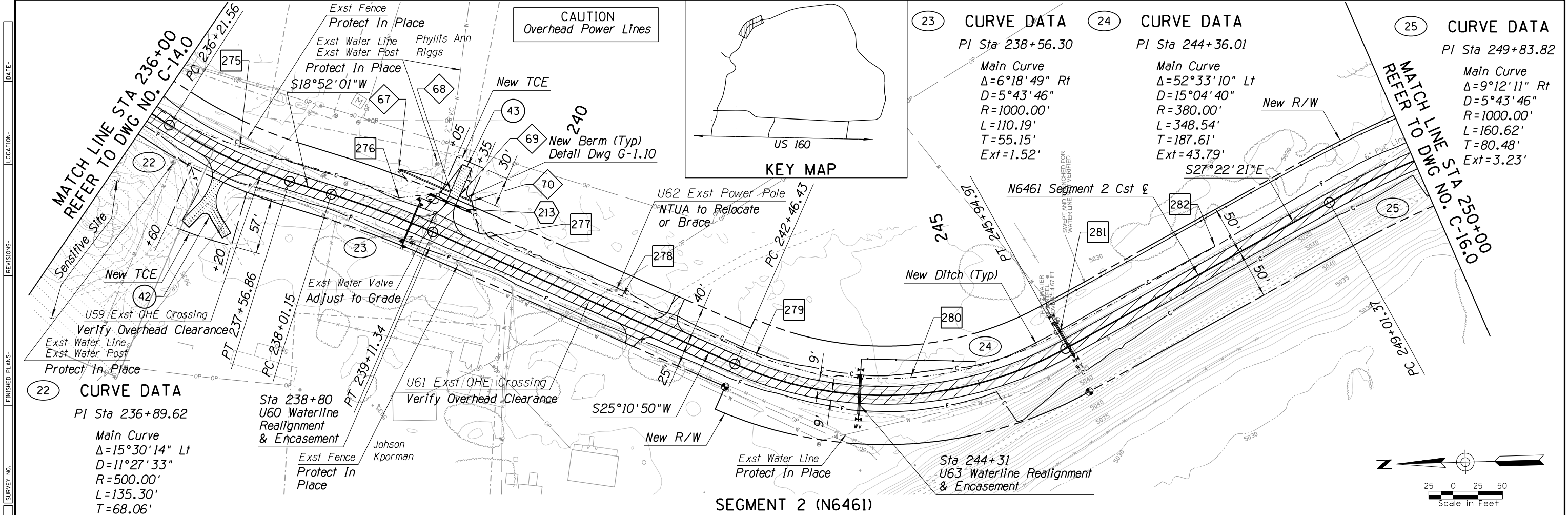




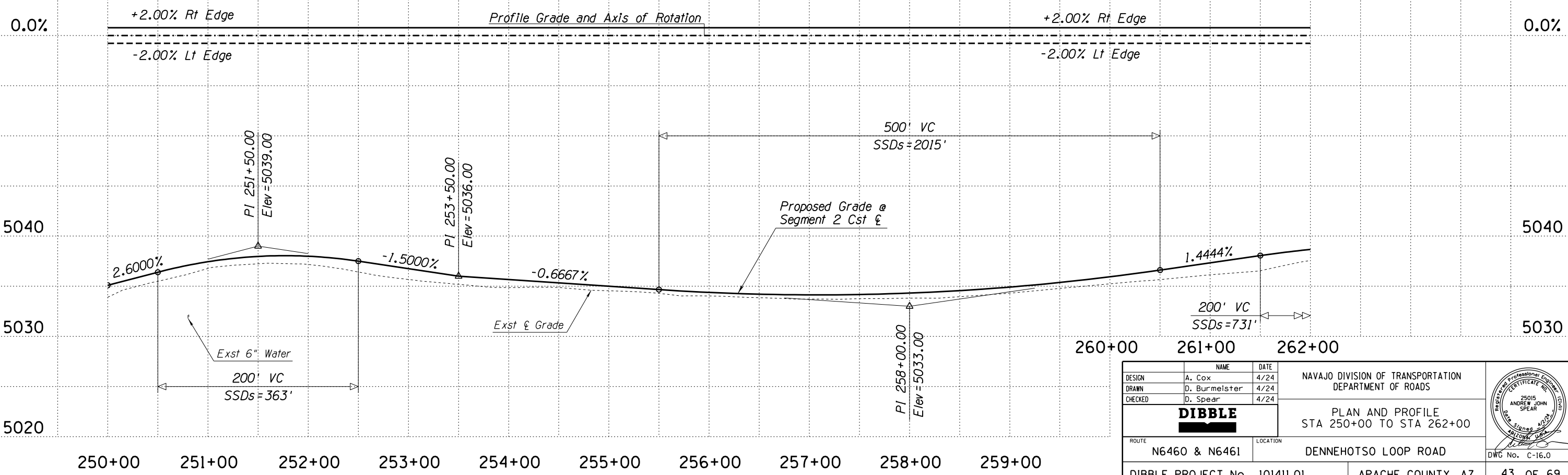
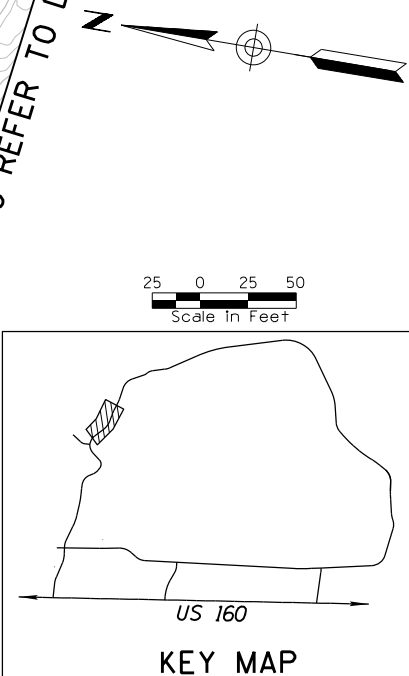
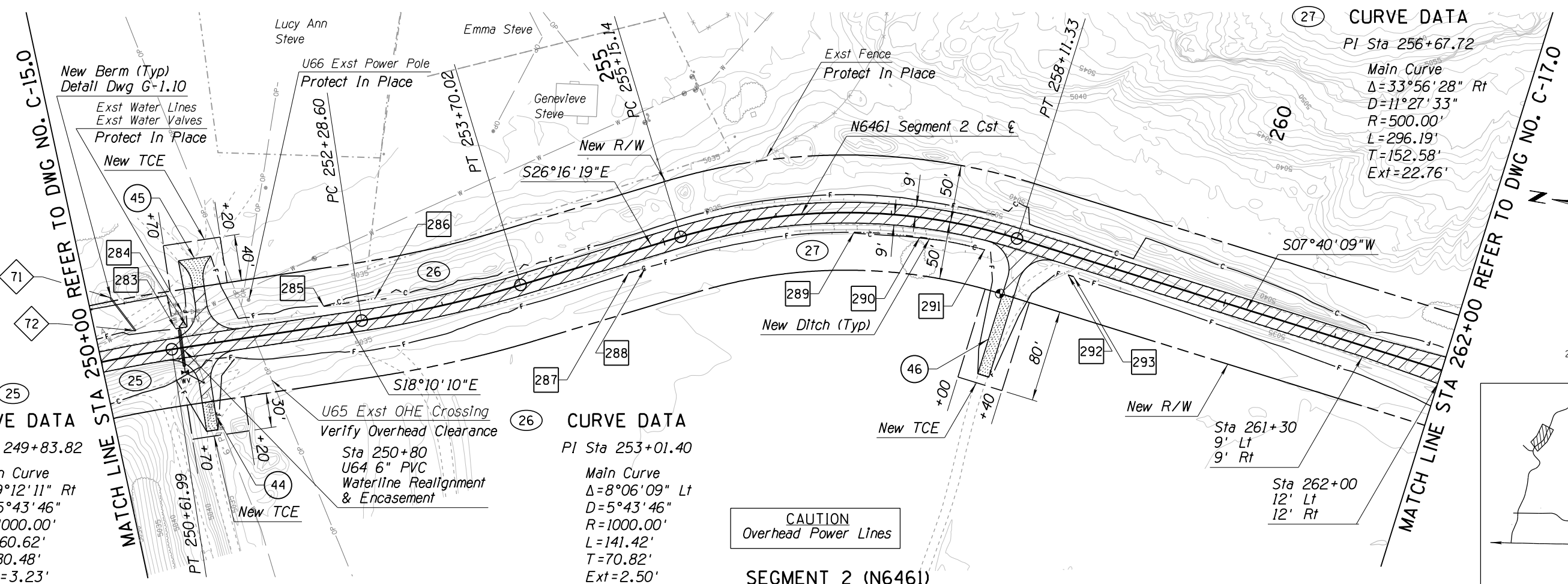


DESIGN	A. Cox	DATE	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS  PLAN AND PROFILE STA 222+00 TO STA 236+00	
DRAWN	D. Burmeister	DATE	4/24		
CHECKED	D. Spear	DATE	4/24		
<b>DIBBLE</b>					
ROUTE	N6460 & N6461		LOCATION	DENNEHOTSO LOOP ROAD	
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ		DWG No. C-14.0

DATE: \_\_\_\_\_ LOCATION: \_\_\_\_\_ REVISIONS: \_\_\_\_\_ FINISHED PLANS: \_\_\_\_\_ SURVEY NO.: \_\_\_\_\_



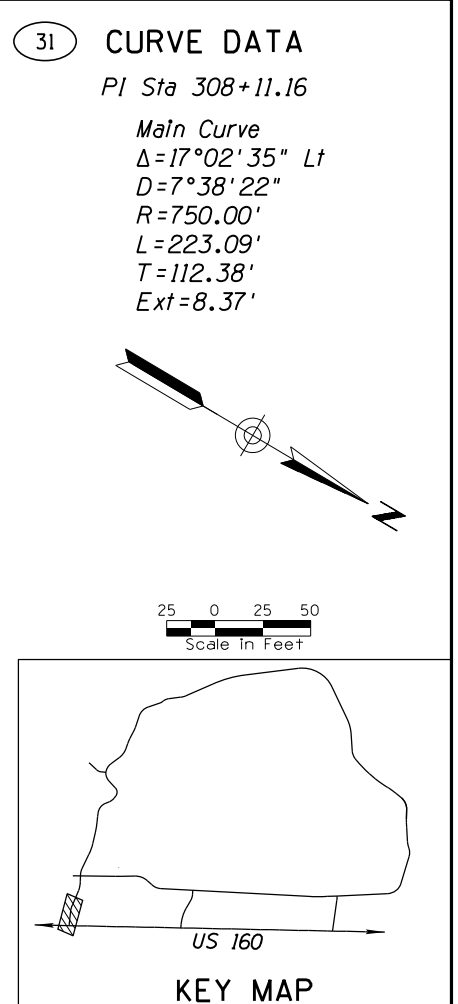
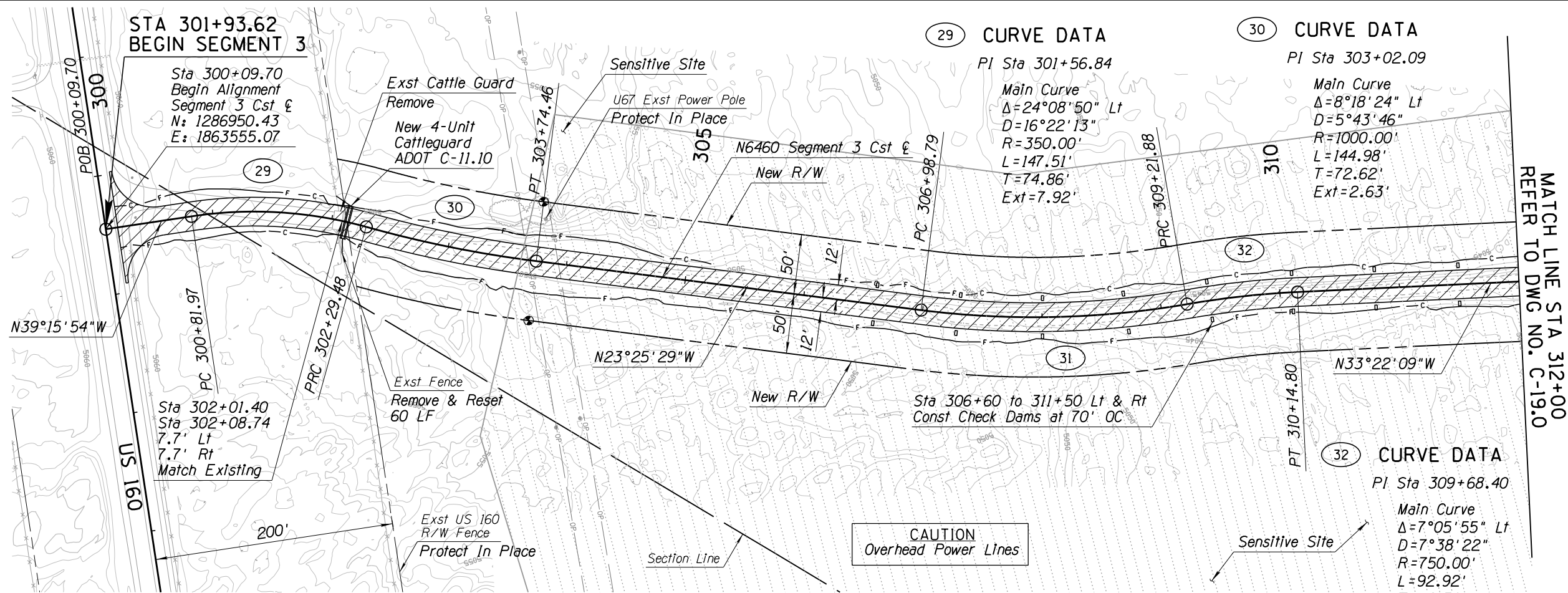
DATE: \_\_\_\_\_ LOCATION: \_\_\_\_\_ REVISIONS: \_\_\_\_\_ FINISHED PLANS: \_\_\_\_\_ SURVEY NO. \_\_\_\_\_



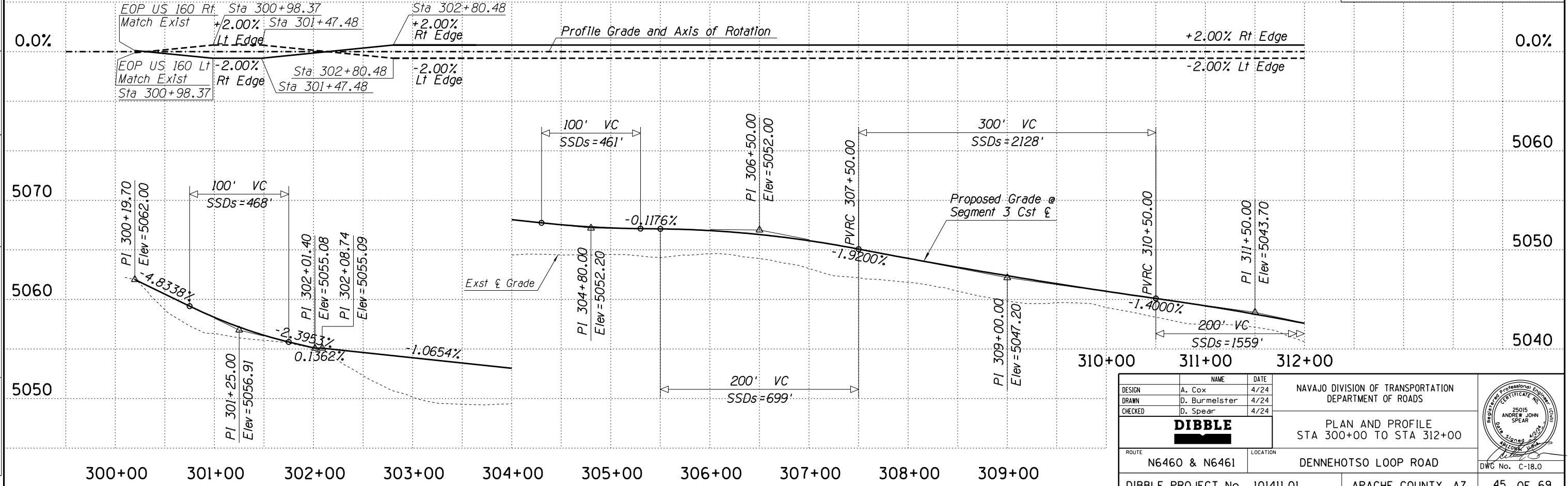
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DRAWN	D. Burmeister	DATE	4/24		
CHECKED	D. Spear	DATE	4/24		
<b>DIBBLE</b>					
ROUTE	N6460 & N6461		LOCATION	DENNEHOTSO LOOP ROAD	
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ		DWG No. C-16.0



DATE: \_\_\_\_\_ LOCATION: \_\_\_\_\_ REVISIONS: \_\_\_\_\_ FINISHED PLANS: \_\_\_\_\_ SURVEY NO. \_\_\_\_\_

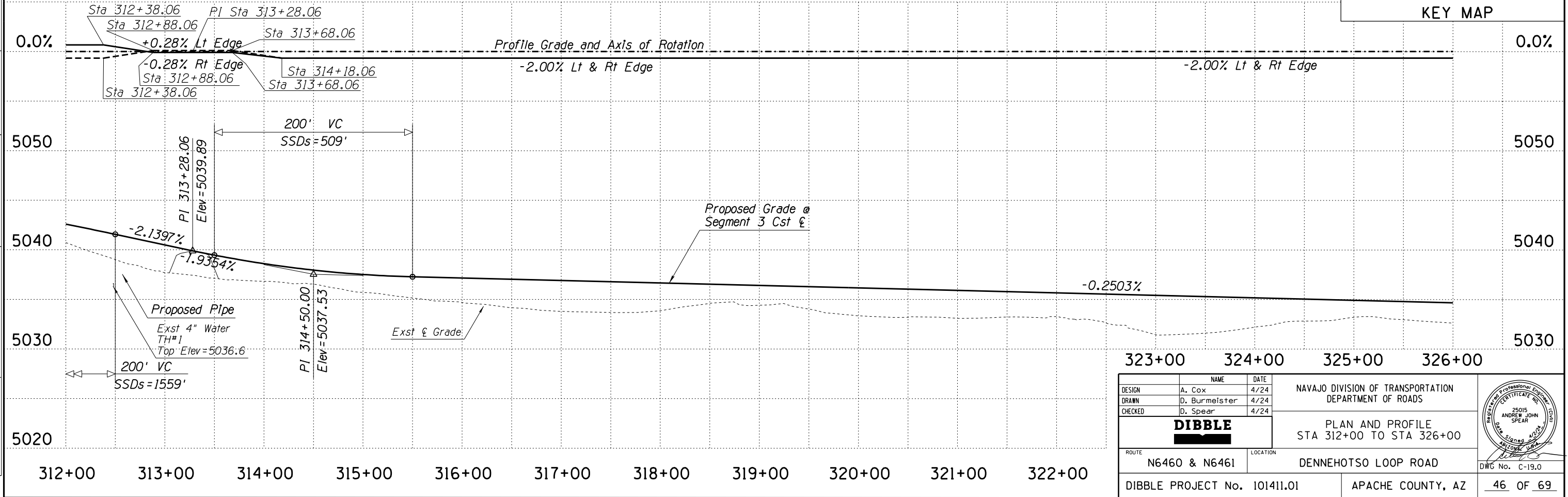
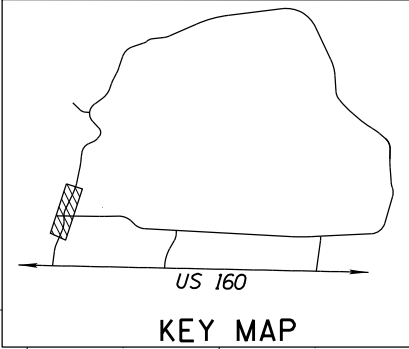
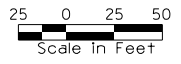
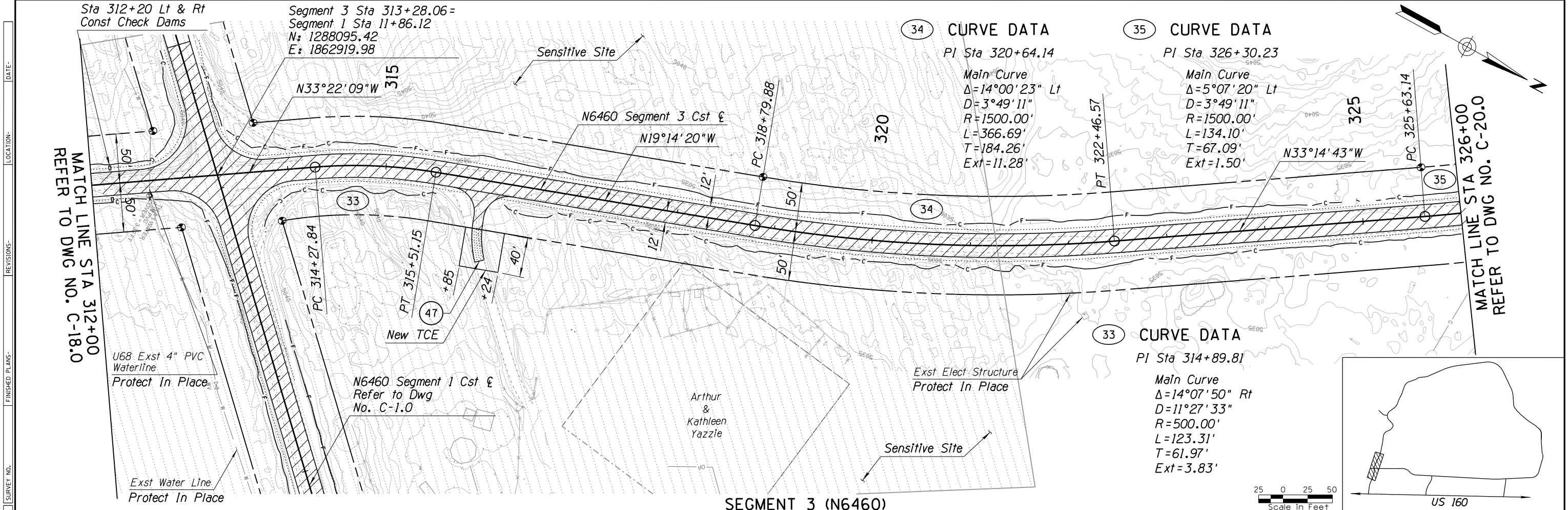


SEGMENT 3 (N6460)



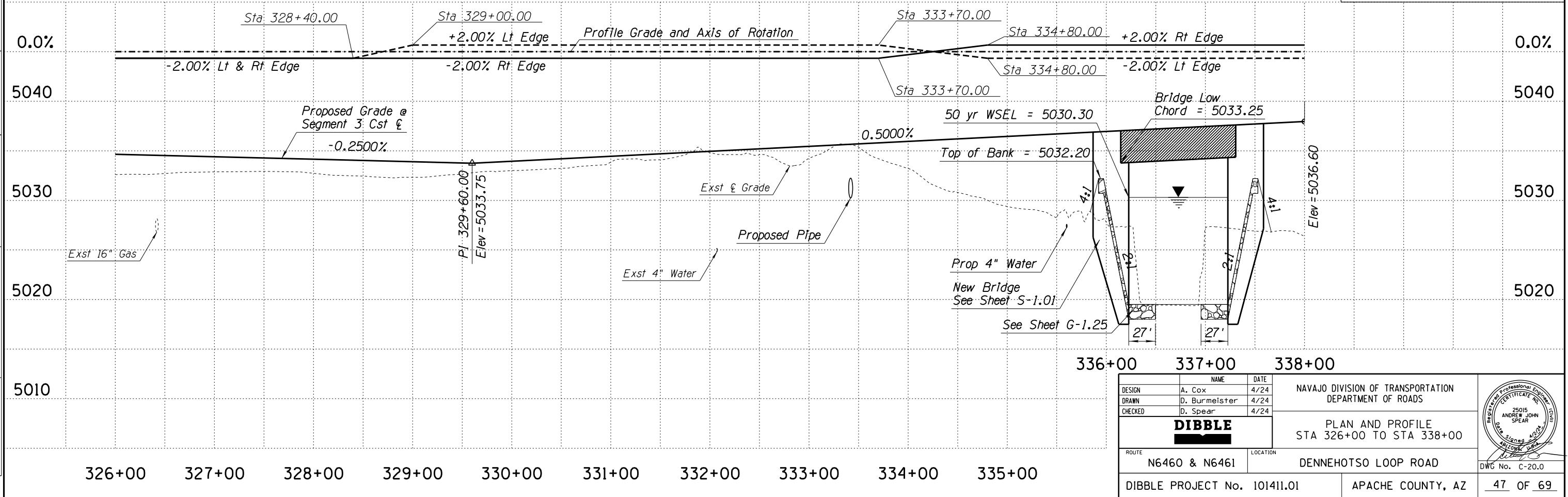
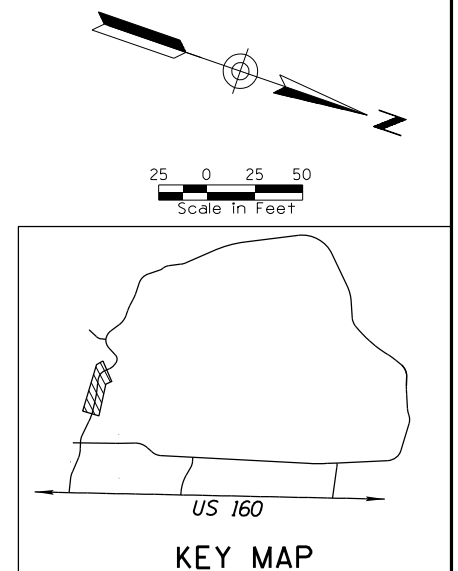
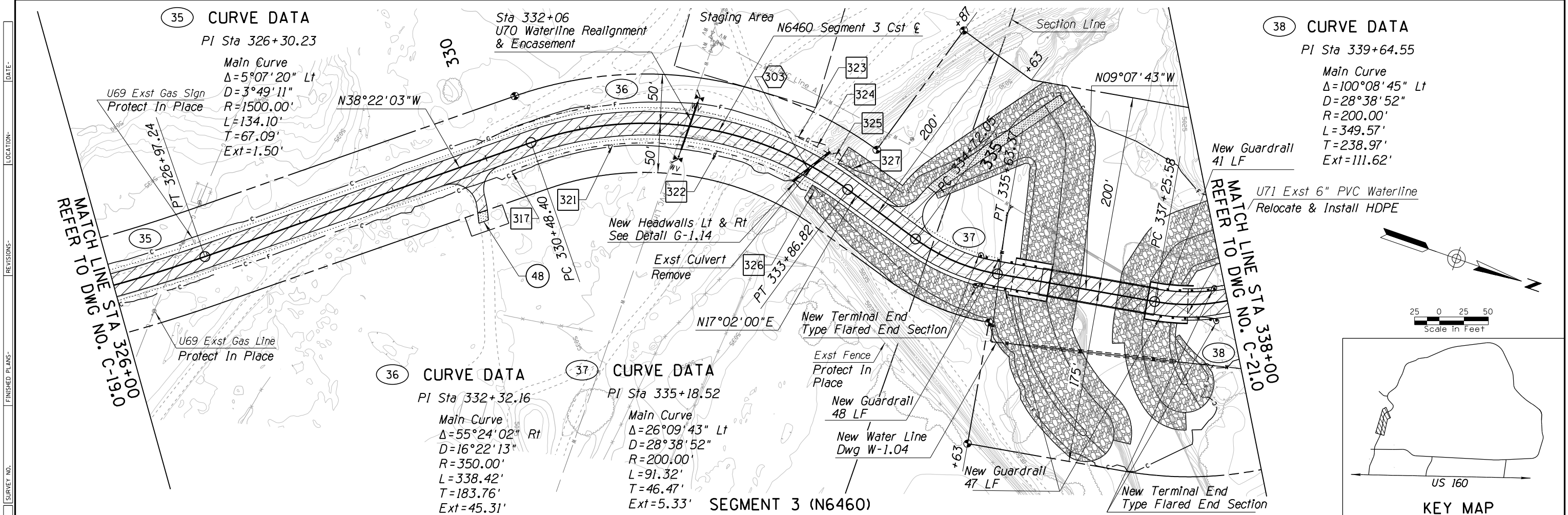
DESIGN	A. Cox	DATE	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS  PLAN AND PROFILE STA 300+00 TO STA 312+00	
DRAWN	D. Burmeister	DATE	4/24		
CHECKED	D. Spear	DATE	4/24		
<b>DIBBLE</b>				ROUTE: N6460 & N6461 LOCATION: DENNEHOTSO LOOP ROAD DWG No. C-18.0	
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ		45 OF 69





DESIGN	A. Cox	DATE	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS  PLAN AND PROFILE STA 312+00 TO STA 326+00	
DRAWN	D. Burmeister	DATE	4/24		
CHECKED	D. Spear	DATE	4/24		
<b>DIBBLE</b>				DENNEHOTSO LOOP ROAD DWG No. C-19.0	
ROUTE N6460 & N6461		LOCATION		APACHE COUNTY, AZ	
DIBBLE PROJECT No. 101411.01			46 OF 69		

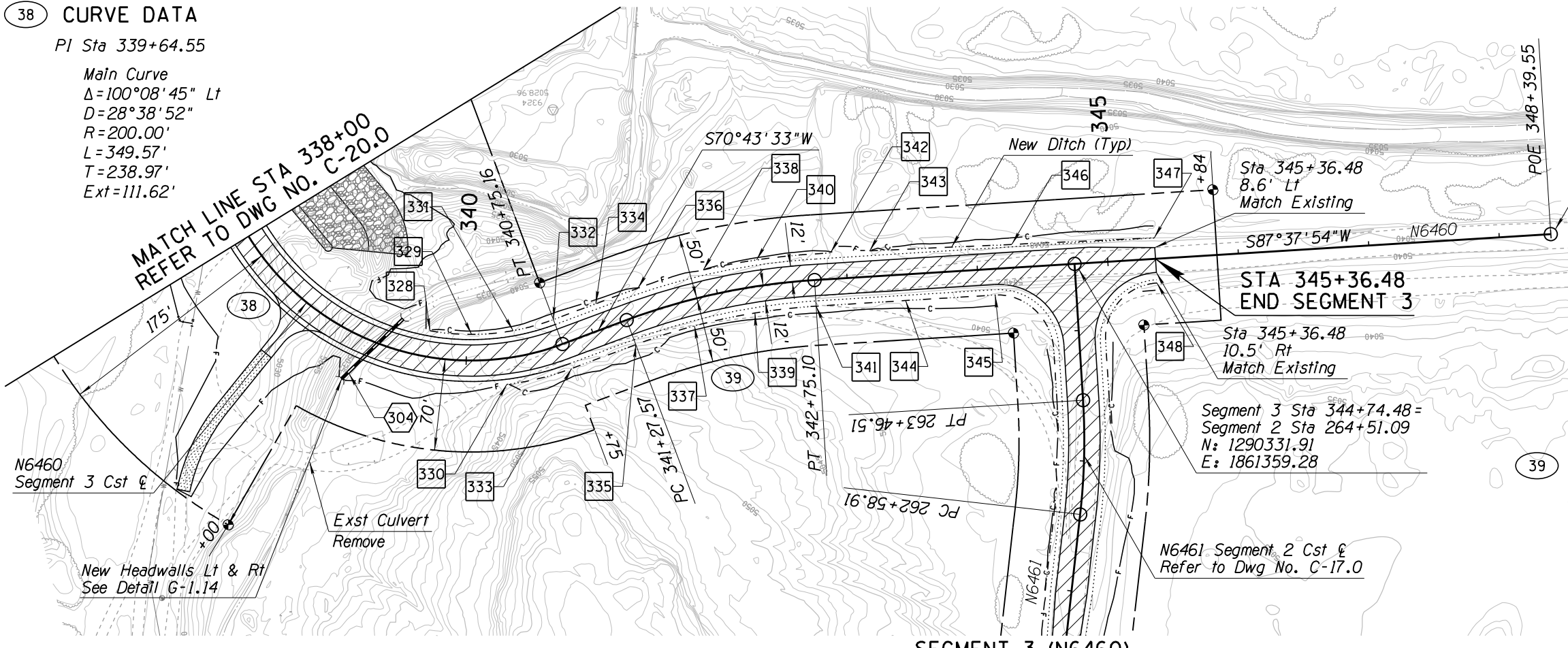
SURVEY NO. FINISHED PLANS. REVISIONS. LOCATION. DATE.



DESIGN	A. Cox	DATE	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS  PLAN AND PROFILE STA 326+00 TO STA 338+00	
DRAWN	D. Burmeister	DATE	4/24		
CHECKED	D. Spear	DATE	4/24		
<b>DIBBLE</b>					
ROUTE	N6460 & N6461		LOCATION	DENNEHOTSO LOOP ROAD	
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ		DWG No. C-20.0

**38 CURVE DATA**

PI Sta 339+64.55  
 Main Curve  
 $\Delta = 100^{\circ}08'45''$  Lt  
 $D = 28^{\circ}38'52''$   
 $R = 200.00'$   
 $L = 349.57'$   
 $T = 238.97'$   
 $Ext = 111.62'$



Sta 348+39.55  
 End Alignment  
 Segment 3 Cst &  
 $N = 1290316.82$   
 $E = 1860994.52$

**STA 345+36.48  
 END SEGMENT 3**

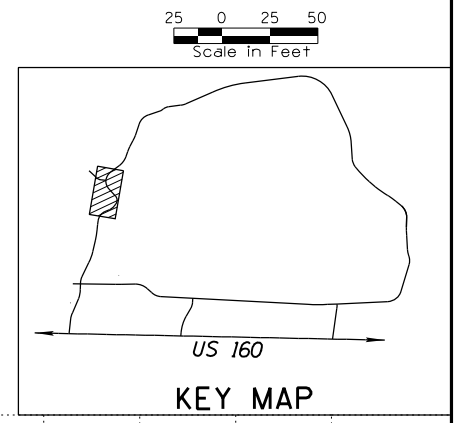
Sta 345+36.48  
 10.5' Rt  
 Match Existing

Segment 3 Sta 344+74.48 =  
 Segment 2 Sta 264+51.09  
 $N = 1290331.91$   
 $E = 1861359.28$

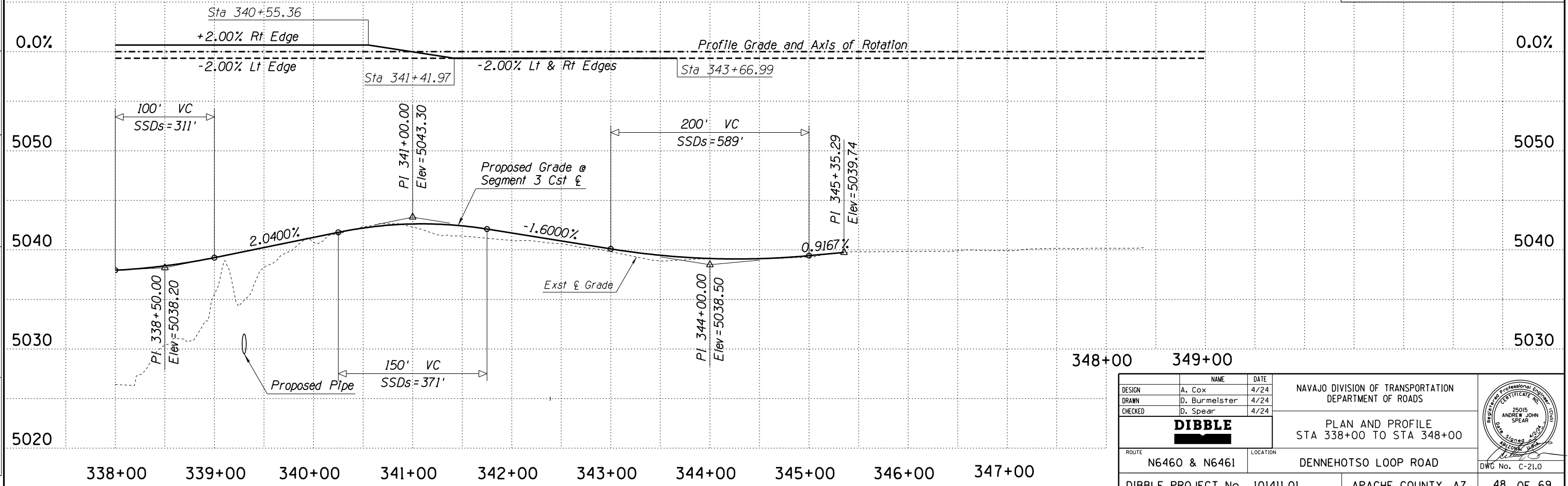
N6461 Segment 2 Cst &  
 Refer to Dwg No. C-17.0

**39 CURVE DATA**

PI Sta 342+01.88  
 Main Curve  
 $\Delta = 16^{\circ}54'21''$  Rt  
 $D = 11^{\circ}27'33''$   
 $R = 500.00'$   
 $L = 147.53'$   
 $T = 74.31'$   
 $Ext = 5.49'$

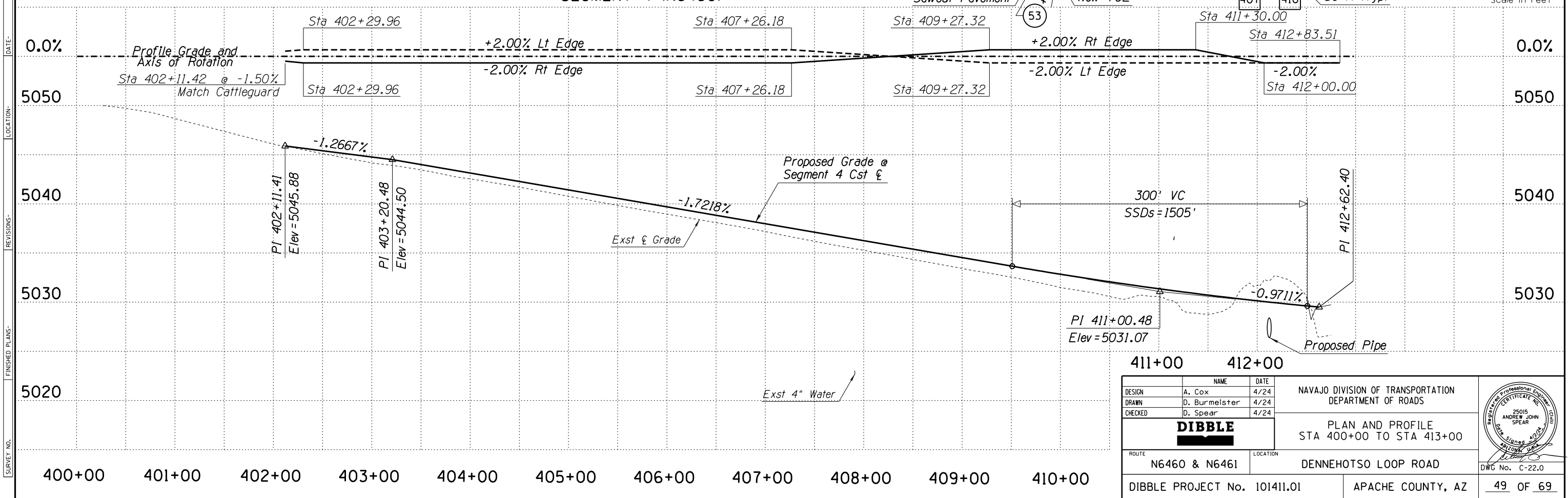
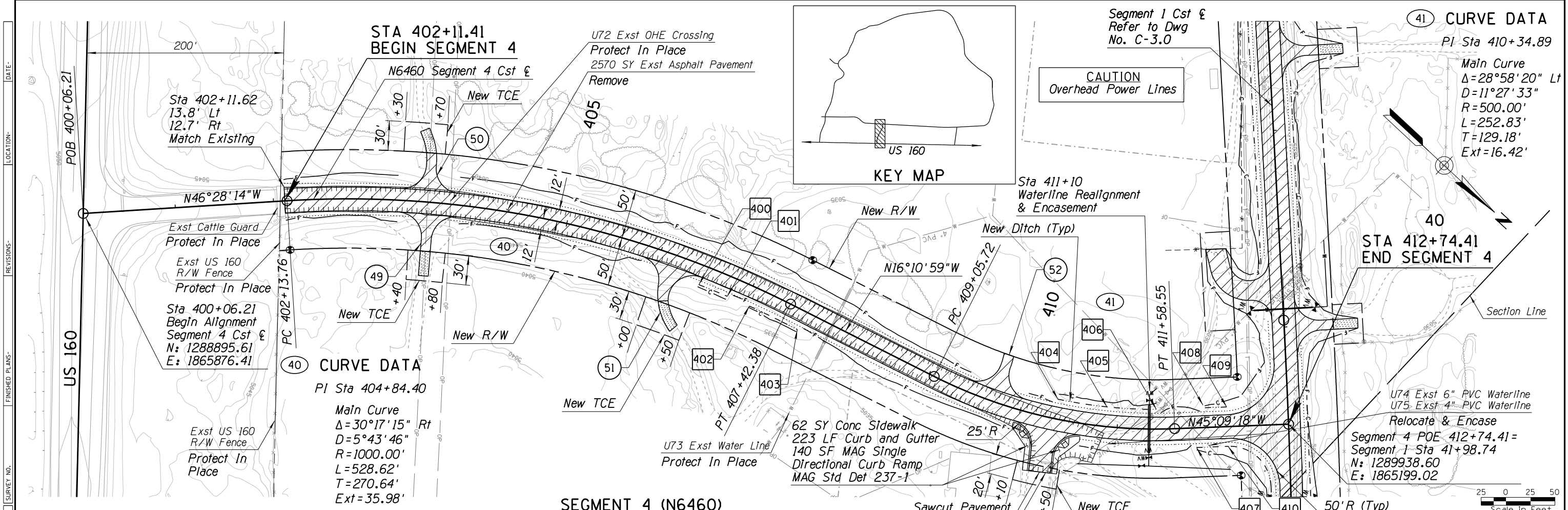


**SEGMENT 3 (N6460)**

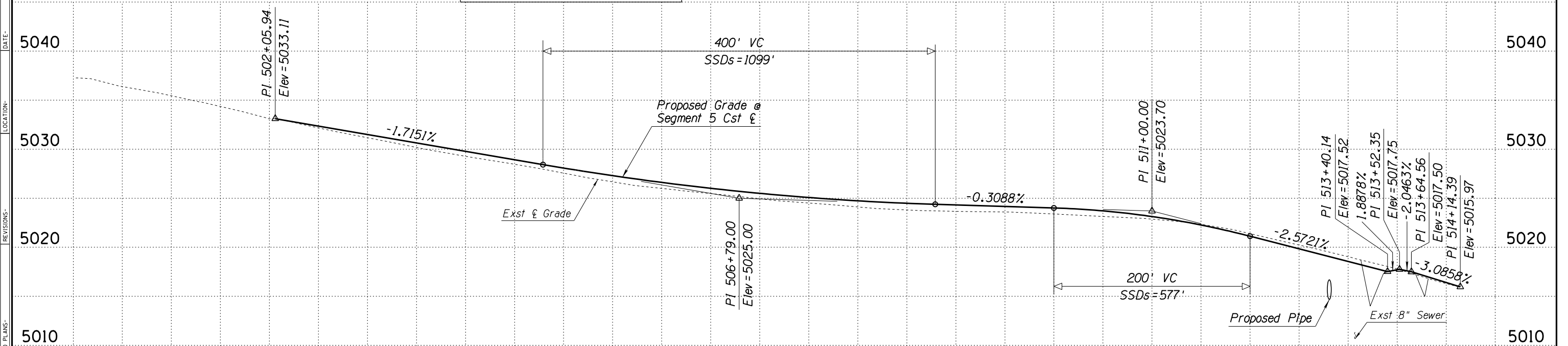
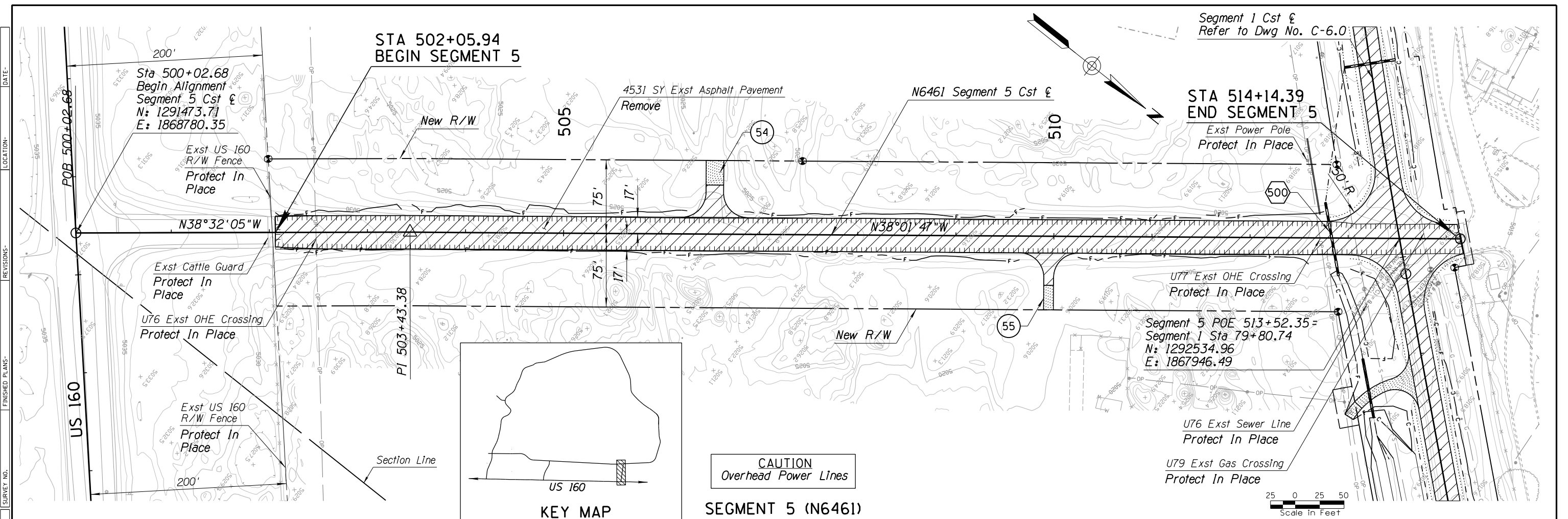


DESIGN	A. Cox	DATE	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS  PLAN AND PROFILE STA 338+00 TO STA 348+00	
DRAWN	D. Burmeister	DATE	4/24		
CHECKED	D. Spear	DATE	4/24		
<b>DIBBLE</b>				ROUTE	N6460 & N6461
				LOCATION	DENNEHOTSO LOOP ROAD
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ		DWG No. C-21.0
				48 OF 69	





DESIGN	A. Cox	DATE	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS  PLAN AND PROFILE STA 400+00 TO STA 413+00
DRAWN	D. Burmeister	DATE	4/24	
CHECKED	D. Spear	DATE	4/24	
<b>DIBBLE</b>				
ROUTE	N6460 & N6461	LOCATION	DENNEHOTSO LOOP ROAD	
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ	DWG No. C-22.0 49 OF 69



DESIGN	A. Cox	DATE	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS  <b>DIBBLE</b> PLAN AND PROFILE STA 500+00 TO STA 514+00	
DRAWN	D. Burmeister	DATE	4/24		
CHECKED	D. Spear	DATE	4/24		
ROUTE		LOCATION		DWG No.	
N6460 & N6461		DENNEHOTSO LOOP ROAD		C-23.0	
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ		50 OF 69

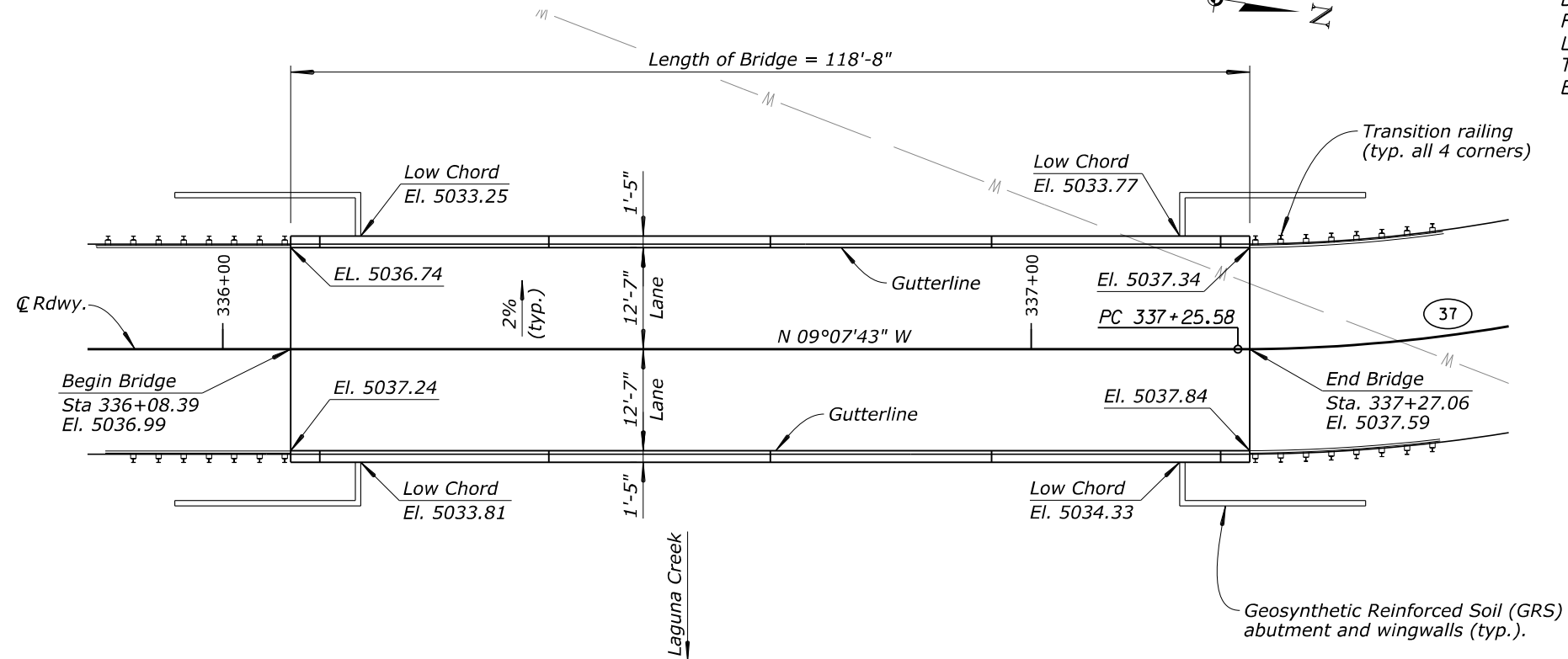


SURVEY NO. \_\_\_\_\_ FINISHED PLANS \_\_\_\_\_ DATE \_\_\_\_\_ REVISIONS \_\_\_\_\_ LOCATION \_\_\_\_\_

Note: All elevations shown are at top of concrete girders.

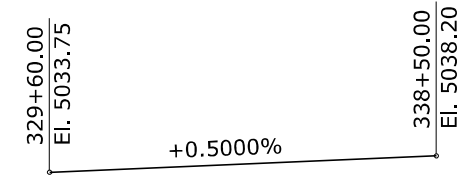
**37 CURVE DATA**

PI Sta 339+64.55  
 Main Curve  
 $\Delta = 100^{\circ}08'45''$  LT  
 $D = 28^{\circ}38'52''$   
 $R = 200.00'$   
 $L = 349.57'$   
 $T = 238.97'$   
 $Ext = 111.62'$



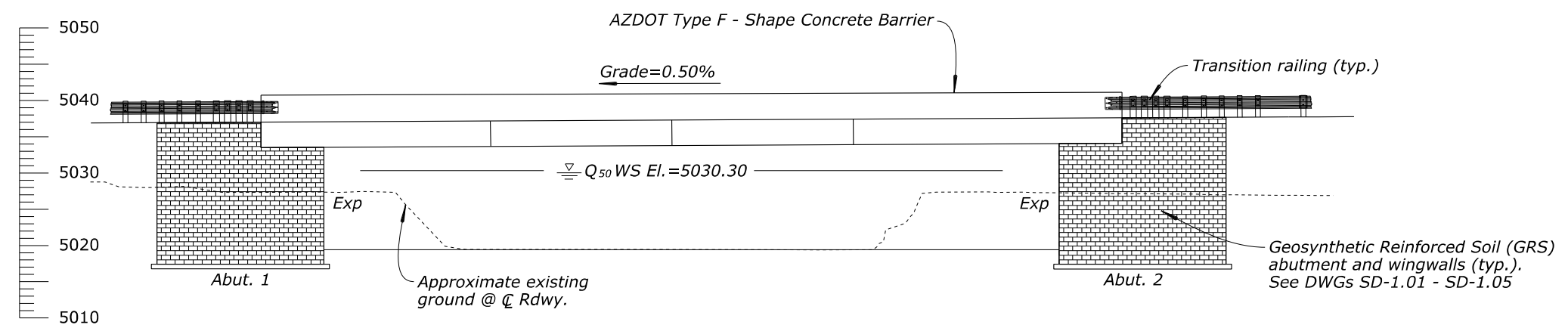
**PLAN**

BRIDGE DRAWING INDEX	
Drawing No.	Description
S-1.01	PLAN AND ELEVATION
S-1.02	GENERAL NOTES
S-1.03	FOUNDATION PLAN
S-1.04	INTERIOR GIRDER
S-1.05	EXTERIOR GIRDER
S-1.06	P/S GIRDER DIAPHRAGM
S-1.07	TYPICAL SECTION & DECK PLAN
S-1.08	BRIDGE RAILING
S-1.09	STRUCTURE TRANSITION RAILING



**GRADE DIAGRAM**

No Scale  
 Elevations are at profile grade @  $\text{\textcircled{C}}$  Rdwy.  
 at asphalt wearing surface



Note: Final channel profile and riprap slope protection not shown.

**ELEVATION**

**HYDRAULIC DATA**

	Q (CFS)	WSE (FT)
$Q_{50}$	7,958	5030.20
$Q_{100}$	10,241	5031.20

DESIGN	O. OLIDEN	03/23	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS	
DRAWN	D. CHAVEZ	03/23		
CHECKED	O. OLIDEN	03/23		
<b>OLIDEN Engineering</b> 216 W Desert Flower Ln Phoenix, Arizona 85045 Phone 602-421-2025			PLAN AND ELEVATION	
ROUTE	N6460 & N6461	LOCATION	DENNEHOTSO LOOP ROAD	DWG No. S-1.01
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ	52 OF 69

DATE: \_\_\_\_\_ LOCATION: \_\_\_\_\_ REVISIONS: \_\_\_\_\_ FINISHED PLANS: \_\_\_\_\_ SURVEY NO.: \_\_\_\_\_ DATE: \_\_\_\_\_ LOCATION: \_\_\_\_\_ REVISIONS: \_\_\_\_\_ FINISHED PLANS: \_\_\_\_\_ SURVEY NO.: \_\_\_\_\_

**GENERAL NOTES:**

**SPECIFICATIONS:**

DESIGN: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 2010.

CONSTRUCTION: Federal Highway Administration Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects, FP-14 (U.S. customary units).

**DEAD LOAD:**

Concrete: 150 lbs. per cubic foot.

Asphalt Wearing Surface: 140 lbs. per cubic foot

Future Paving Allowance: 25 lbs. per square foot of roadway surface.

**LIVE LOAD:**

HL-93. Maximun Dynamic Load Allowance (Impact), IM=33%.

**SEISMIC:**

Peak Ground Acceleration (PGA = 0.04 g), modified by the Site Coefficient ( $F_{PGA} = 1.0$ ) to give a spectrum acceleration,  $A_s = 0.04$  g. Short period acceleration at 0.2 seconds ( $S_s = 0.09$  g) modified by the Site Coefficient ( $F_s = 1.0$ ) to give the short period spectrum acceleration,  $S_{0.2} = 0.09$  g. Long period acceleration at 1.0 seconds ( $S_1 = 0.03$  g) modified by the Site Coefficient ( $F_v = 1.0$ ) to give the long period spectrum acceleration,  $S_{D1} = 0.03$  g. Site Class = B. Seismic Zone = 1.

**DESIGN CRITERIA:**

Serviceability stresses limited to current AASHTO Specification values for reinforced concrete elements.

Maximum final tension in the prestressed beams is limited to 480 psi.

**CONCRETE:**

All cast-in-place concrete shall be Structural Concrete, Class A(AE), with a minimum 28-day compressive strength  $f'_c = 4000$  psi. All cast-in-place concrete shall be made with Type V cement. All cement shall be low alkali cement. Chamfer exposed edges of all concrete  $\frac{3}{4}$ ", unless noted otherwise on the plans.

**REINFORCING STEEL:**

All reinforcing steel shall conform to AASHTO M31 or M322, Grade 60 deformed. The minimum concrete cover to the face of any bar shall be 2", unless noted otherwise on the plans. Minimum splice lengths for all bar sizes shall be as noted on the plans. Bar splices other than those shown on the plans will not be paid for. All reinforcing steel shall be epoxy coated.

**PRESTRESSING STEEL:**

Prestressing steel shall be Grade 270, 0.5"Ø, seven-wire, uncoated, low-relaxation, prestressing strand conforming to AASHTO M203. Each strand shall be pretensioned to a total load of 31,000 lbs. at which load  $f'si = 0.75(f's) = 202,500$  psi. The final estimated effective prestress force is 26,500 lbs. per strand.

**PRESTRESSED CONCRETE BEAMS:**

Concrete for prestressed concrete beams shall be Class P or Class P(AE), with a minimum 28-day design compressive strength,  $f'_c = 6500$  psi and an initial strength  $f'ci = 5500$  psi. Structural metal for bearing plates shall conform to ASTM A36. Tie rods shall conform to ASTM A722. All structural metal shall be galvanized after fabrication.

**BRIDGE LOAD RATINGS:**

Ratings per AASHTO Manual for Bridge Evaluation, Second Edition, 2014 with current interims.

Load Rating Vehicle - HL93

Inventory Rating Factor - 1.74

Operating Rating Factor - 2.26

ESTIMATE				
Item No.	Item	Quantity:	Unit:	Notes:
15214-1000	Survey and staking, bridge	All req'd	LPSM	
55303-0000	Prestressing System	All req'd	LPSM	(2)
55601-0500	Bridge railing, concrete (AZDOT F-shape concrete barrier)	237.33	LNFT	(1)(4)
55801-0000	Dampproofing	50	SQYD	
61707-0000	Structure transition railing	75	LNFT	(1)(3)


**ESTIMATE NOTES:**

(1) Contract Quantity

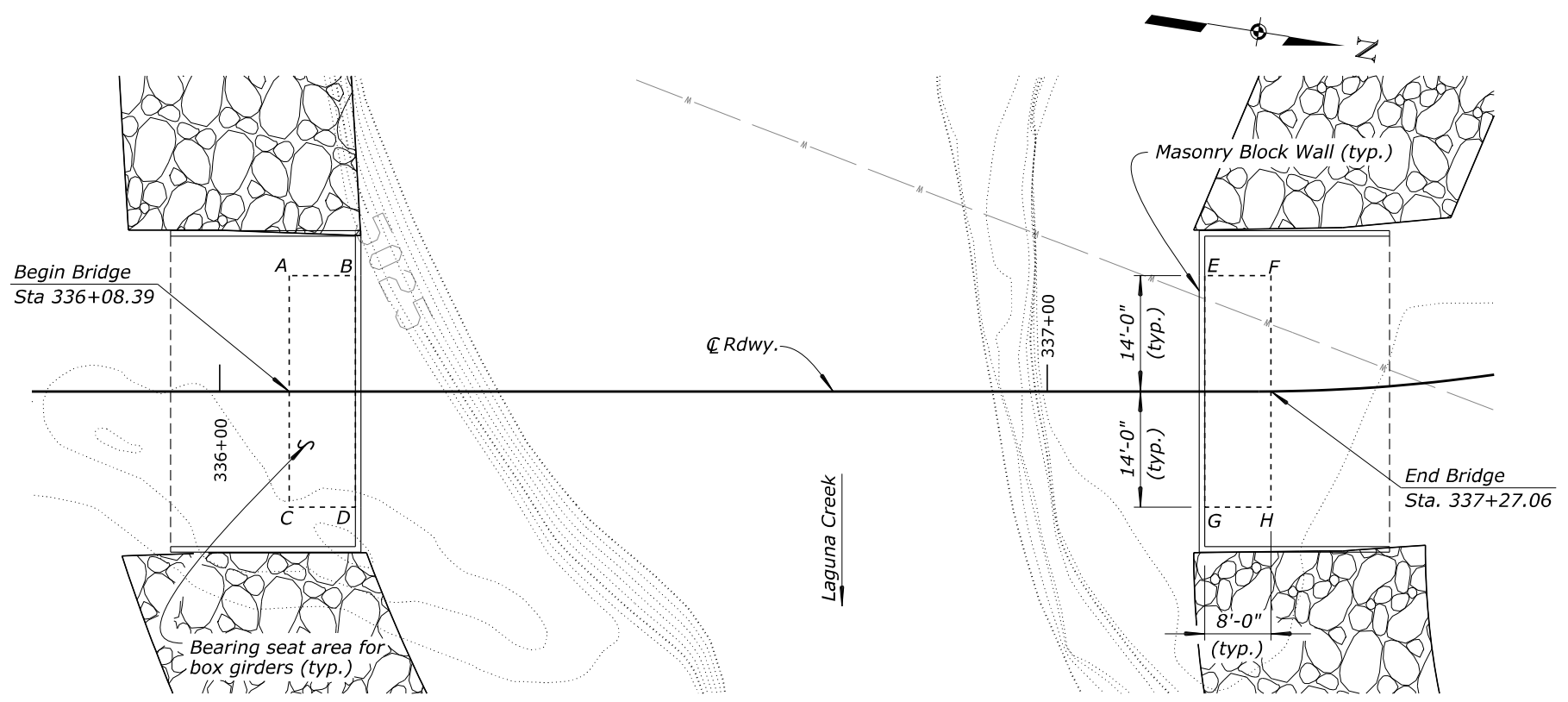
(2) Includes cost of erecting prestressed box beams and installing diaphragm tie rods. Cost of grout, backer roads, pipe sleeves, diaphragm tie rods, bearing plates, and associated hardware, shall be considered subsidiary to this pay item.

(3) Includes cost of furnishing and installing post, block, w-beam rail elements, and installation hardware.

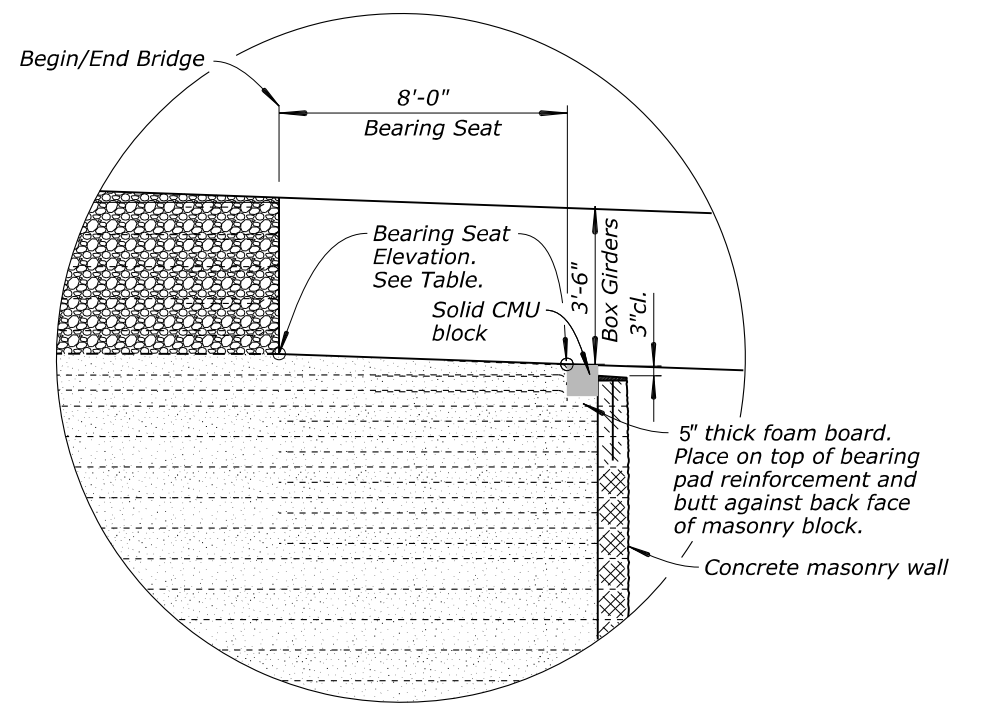
(4) Includes cost of epoxy coated reinforcing steel (est. qty. = 2,700 lbs.) and structural concrete, class A(AE), (est. qty. = 31.0 cubic yards).

DESIGN	O. OLIDEN	03-23	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS	
DRAWN	D. CHAVEZ	03-23		
CHECKED	O. OLIDEN	03-23		
<b>OLIDEN Engineering</b> <small>216 W Desert Flower Ln Phoenix, Arizona 85045 Phone 602-421-2025</small>			GENERAL NOTES	
ROUTE	N6460 & N6461		LOCATION	DENNEHOTSO LOOP ROAD
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ	DWG No. S-1.02
				<b>53 OF 69</b>

SURVEY NO. \_\_\_\_\_ FINISHED PLANS \_\_\_\_\_ DATE \_\_\_\_\_ LOCATION \_\_\_\_\_ REVISIONS \_\_\_\_\_ DATE \_\_\_\_\_



**FOUNDATION PLAN**



**BRIDGE END DETAIL  
ELEVATION OF GRS-IBS ABUTMENT**

No Scale  
For GRS-IBS Abutment Details,  
See DWGs SD-1.01 - SD-1.05

BEARING SEAT ELEVATIONS			
ABUT. 1		ABUT. 2	
POINT A	5033.21	POINT E	5033.77
POINT B	5033.25	POINT F	5033.81
POINT C	5033.77	POINT G	5034.33
POINT D	5033.81	POINT H	5034.37

MAX. APPLIED STRUCTURAL LOADS		
Location	Service I	Strength I
ABUT. 1	728 kips	1020 kips
ABUT. 2	728 kips	1020 kips

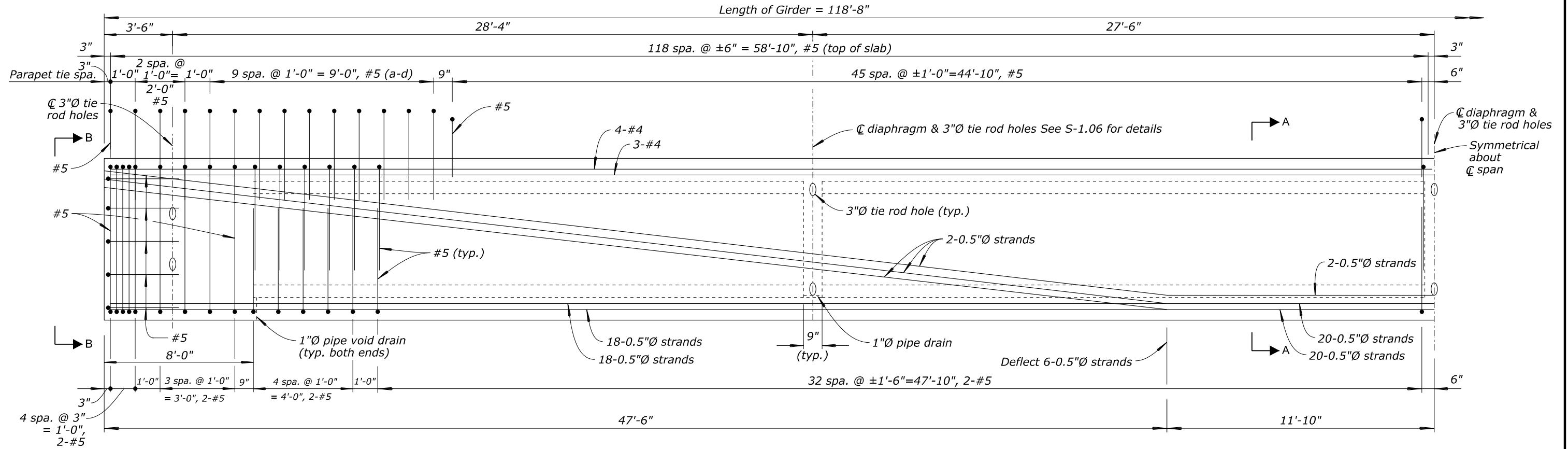
Note: Includes 3" asphalt wearing surface on bridge deck.

DESIGN	O. OLIDEN	03-23	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS	
DRAWN	D. CHAVEZ	03-23		
CHECKED	O. OLIDEN	03-23		
<b>OLIDEN Engineering</b> <small>216 W Desert Flower Ln Phoenix, Arizona 85045 Phone 602-421-2025</small>			FOUNDATION PLAN	
ROUTE	N6460 & N6461		LOCATION	DENNEHOTSO LOOP ROAD
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ	DWG No. S-1.03
				Expires 12/31/2024
				54 OF 69

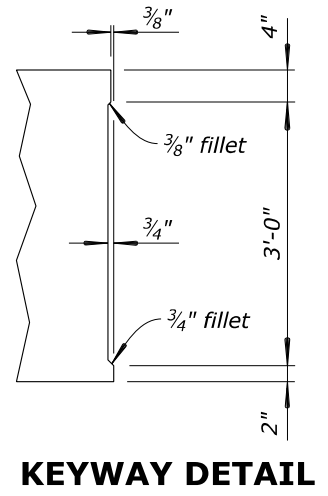
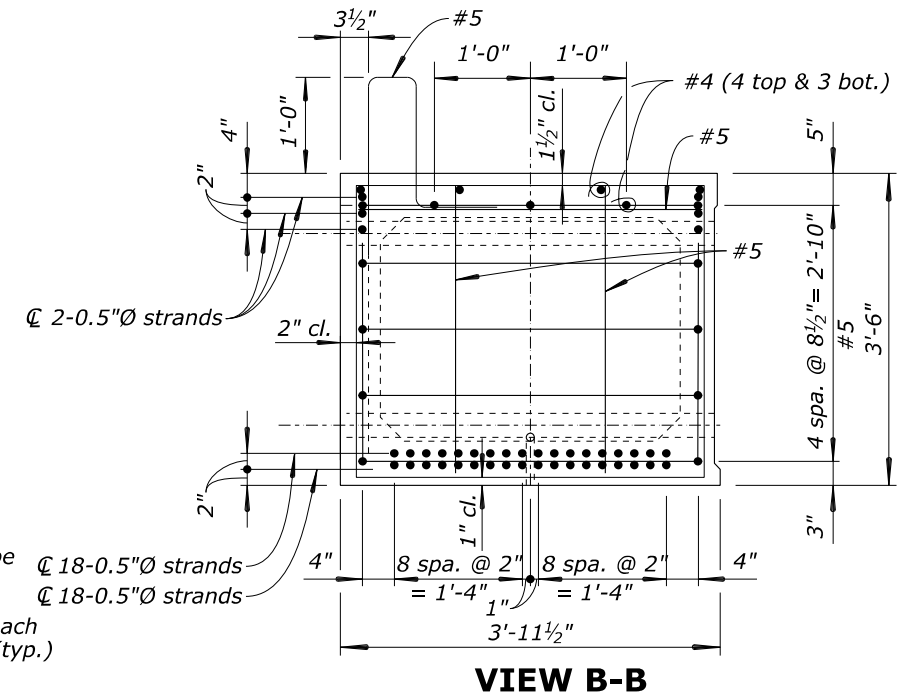
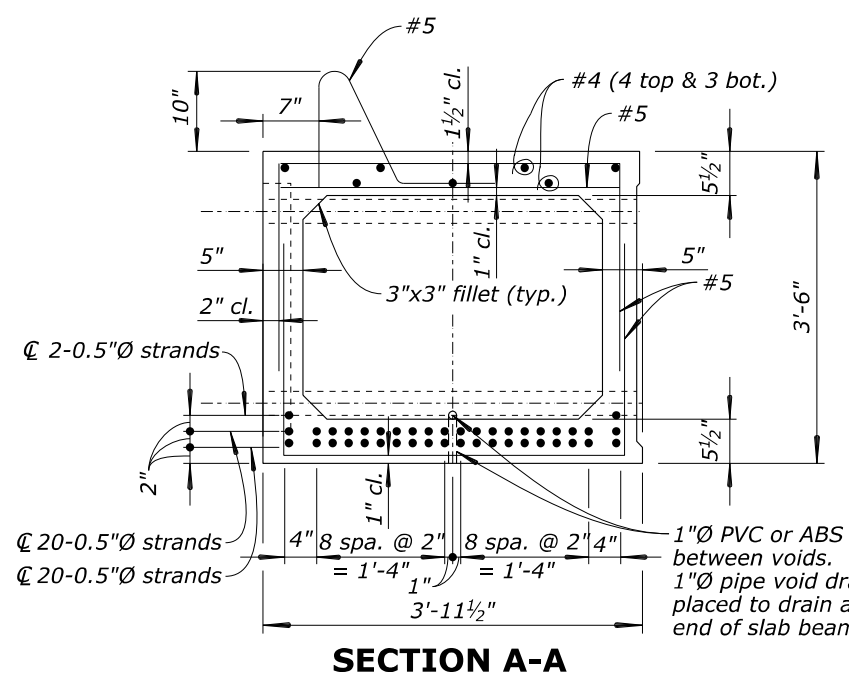




SURVEY NO. \_\_\_\_\_ DATE \_\_\_\_\_ LOCATION \_\_\_\_\_ REVISIONS \_\_\_\_\_ FINISHED PLANS \_\_\_\_\_



**BOX GIRDER ELEVATION**



**PRESTRESSED BOX GIRDER ESTIMATE**

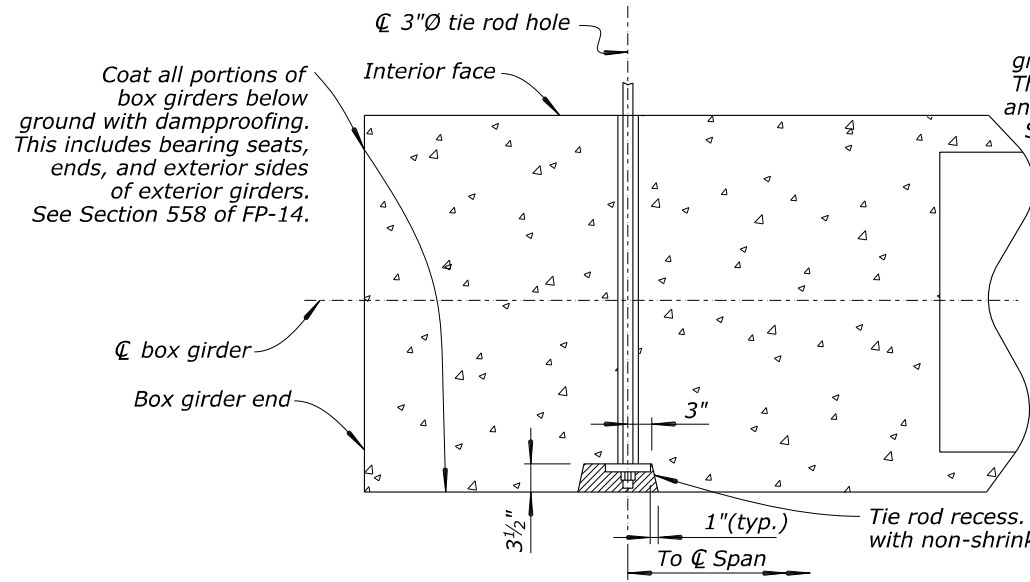
ITEM	UNIT	QUANTITY	
		INTERIOR	EXTERIOR
Concrete	CUYD	26.0	26.0
0.5"Ø Strands	LNFT	4985	4985

Note: Quantities shown are for one box girder only.

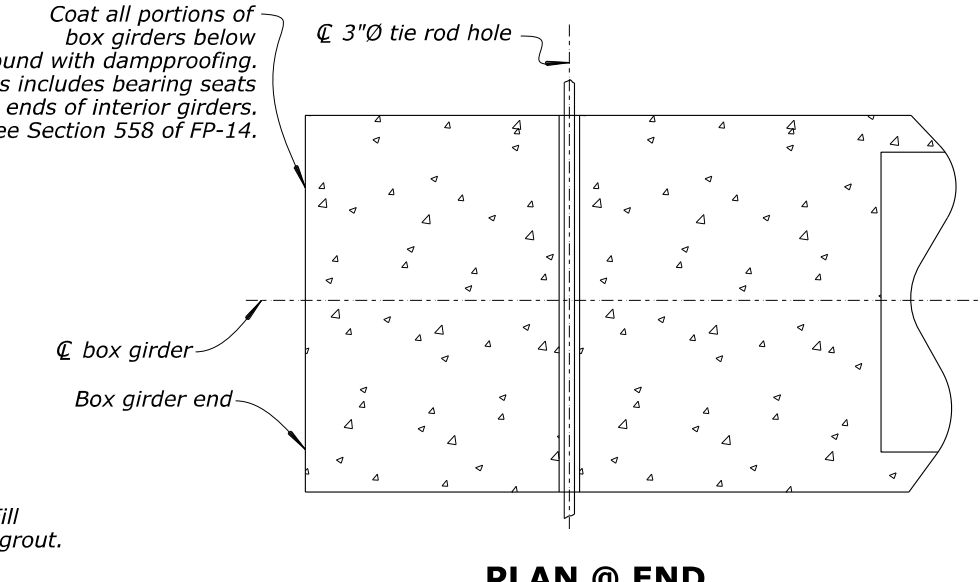
**NOTES:**  
 Cast girders 1½" longer than shown to allow for shortening due to prestressing.  
 After forms are removed from girders clean keyways by water jetting to remove residual form oil and other foreign materials.  
 See S-1.06 for diaphragm & tie rod details.  
 Estimated camber at erection prior to placement of railing = 2".  
 Estimated camber at erection after placement of railing = 1⅝".

DESIGN	O. OLIDEN	DATE	03-23	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS
DRAWN	D. CHAVEZ	DATE	03-23	
CHECKED	O. OLIDEN	DATE	03-23	
<b>OLIDEN Engineering</b>		216 W Desert Flower Ln Phoenix, Arizona 85045 Phone 602-421-2025		<b>EXTERIOR BOX GIRDER</b>
ROUTE	N6460 & N6461	LOCATION	DENNEHOTSO LOOP ROAD	Expires 12/31/2024
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ	DWG No. S-1.05 <b>56 OF 69</b>

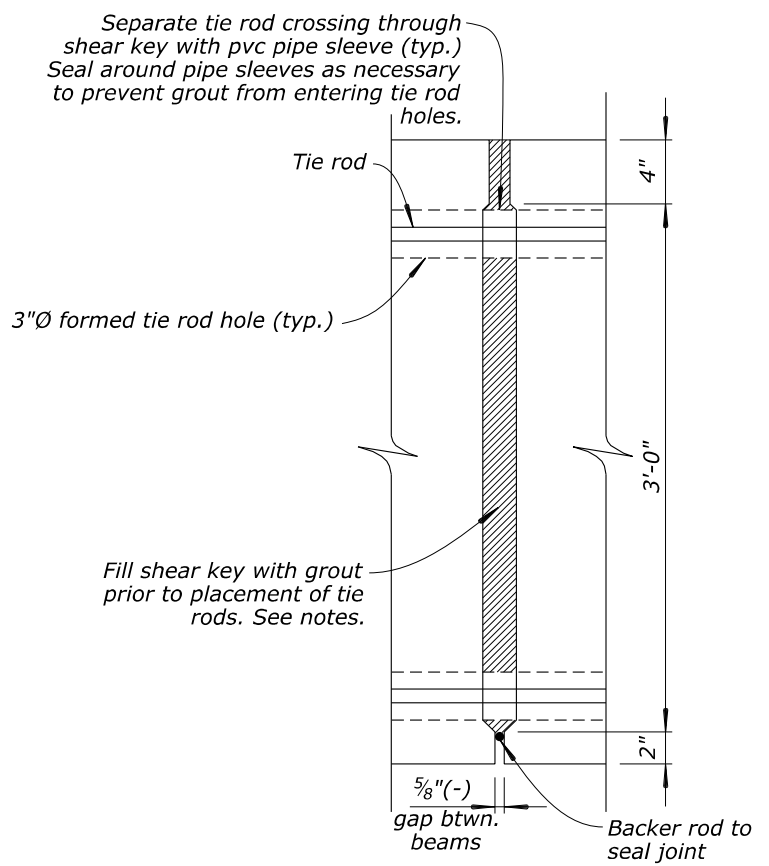
REVISIONS: \_\_\_\_\_ FINISHED PLANS: \_\_\_\_\_ SURVEY NO.: \_\_\_\_\_ DATE: \_\_\_\_\_ LOCATION: \_\_\_\_\_



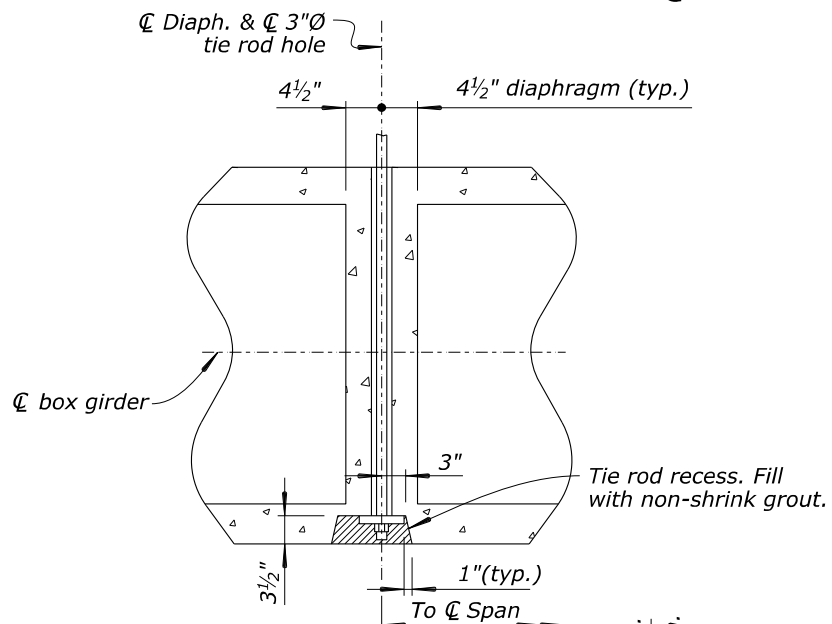
**PLAN @ END**



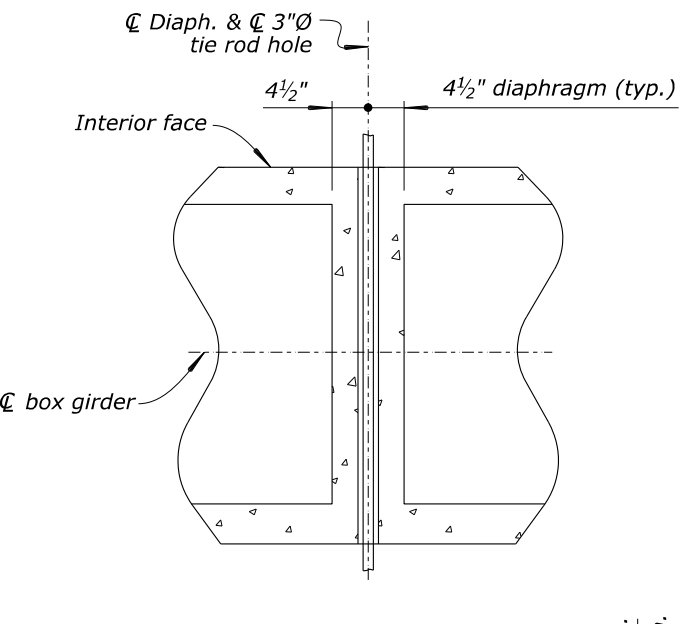
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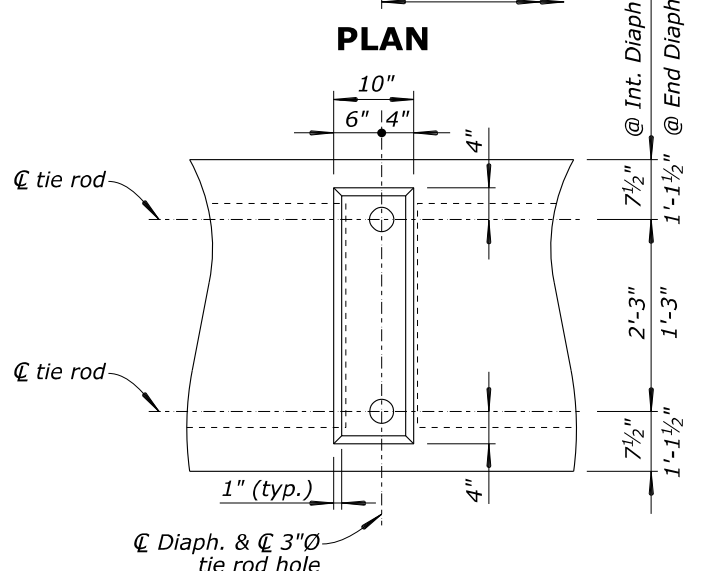
**SHEAR KEYWAY DETAIL**



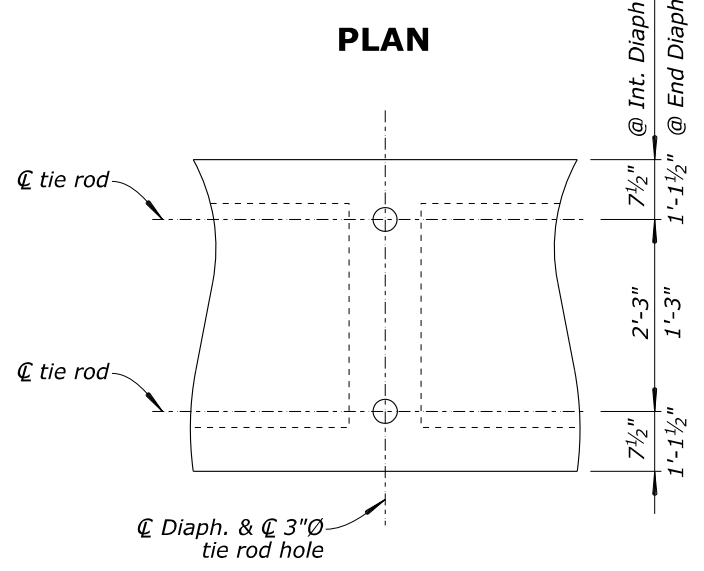
**PLAN**



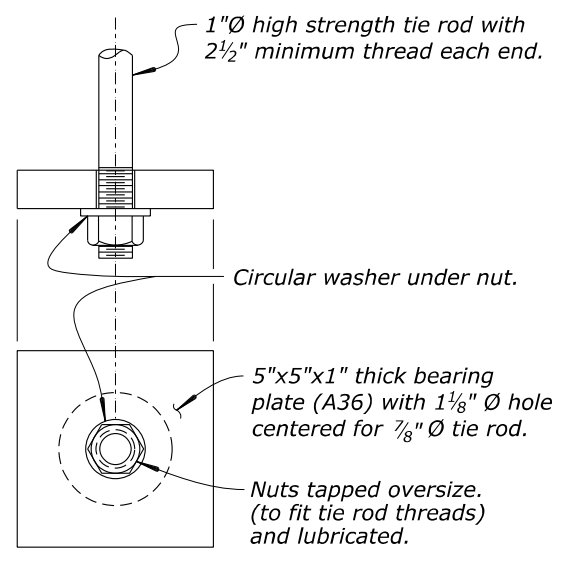
**PLAN**



**EXTERIOR BOX GIRDER ELEVATION**



**INTERIOR BOX GIRDER ELEVATION**



**TIE ROD AND PLATE DETAIL**  
No Scale

**NOTES:**

High strength rods shall conform to ASTM A722, Grade 150. Nuts shall be heavy hex conforming to ASTM A563, Grade DH. Tie rods, plates, nuts and washers shall be galvanized.

Keyway grout shall be prepackaged non-shrink type with minimum compressive strength of 5000 psi at 24 hours.

Contractor shall cover and protect the shear keys from weather and debris until they are filled.

After pouring grout keyway, water cure for 3 days minimum before placing tie rods.

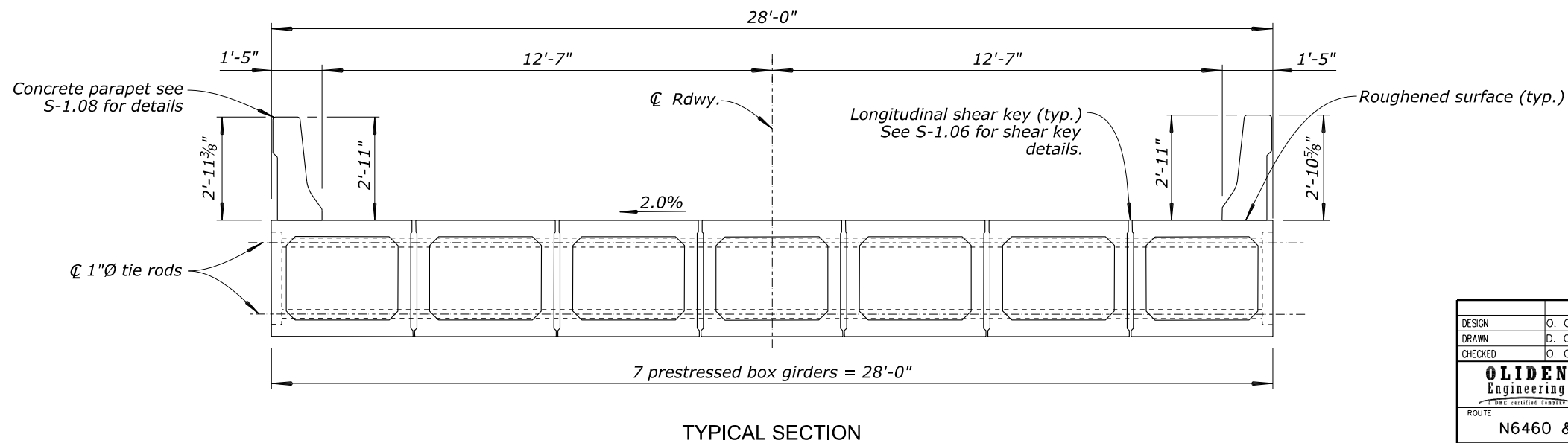
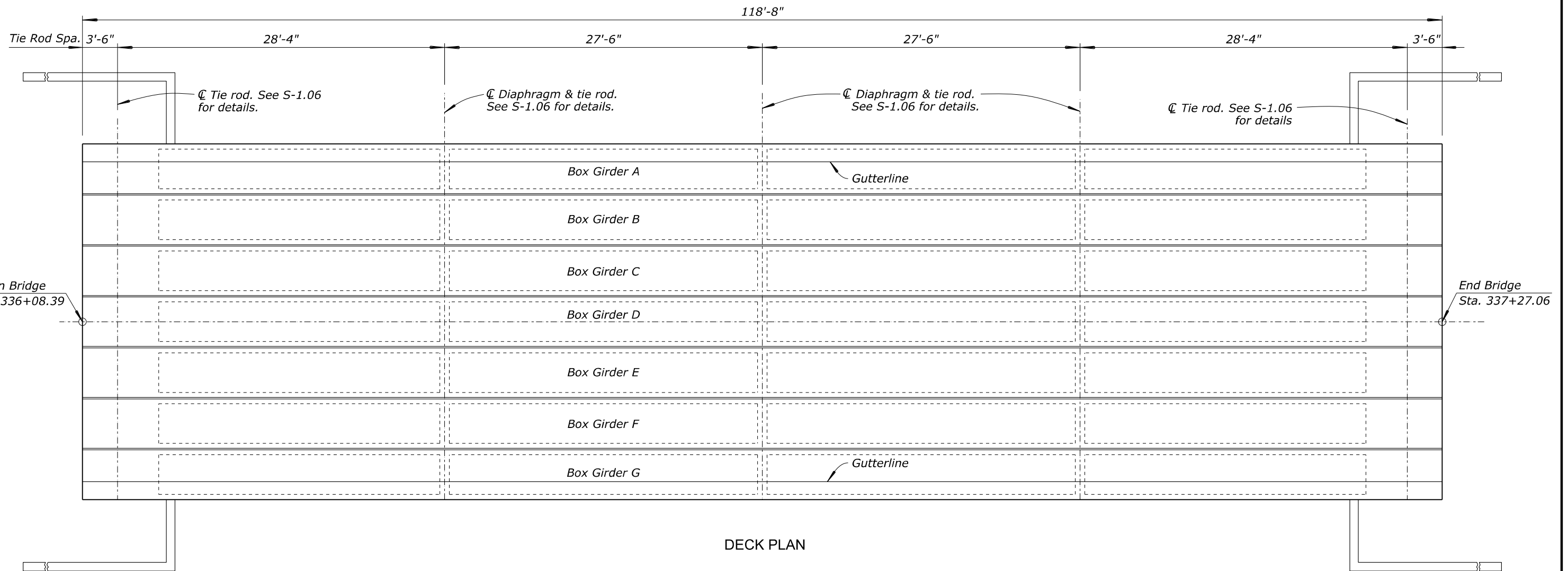
Tie rods shall be tightened to a minimum tension of 65 kips. The contractor shall submit for approval proposed method of tightening tie rods.

No traffic or heavy equipment will be permitted on the box girder bridge until the tie rods have been properly tensioned. Concrete for bridge railing shall not be placed until tie rods have been fully tensioned.

Diaphragm tie rods, bearing plates, and associated hardware will be furnished and delivered to site with prestressed beams.

DESIGN	O. OLIDEN	03-23	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS	
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CHECKED	O. OLIDEN	03-23		
<b>OLIDEN Engineering</b> 216 W Desert Flower Ln Phoenix, Arizona 85045 Phone 602-421-2025			<b>DIAPHRAGM DETAILS</b>	
ROUTE	N6460 & N6461	LOCATION	DENNEHOTSO LOOP ROAD	
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ	57 OF 69

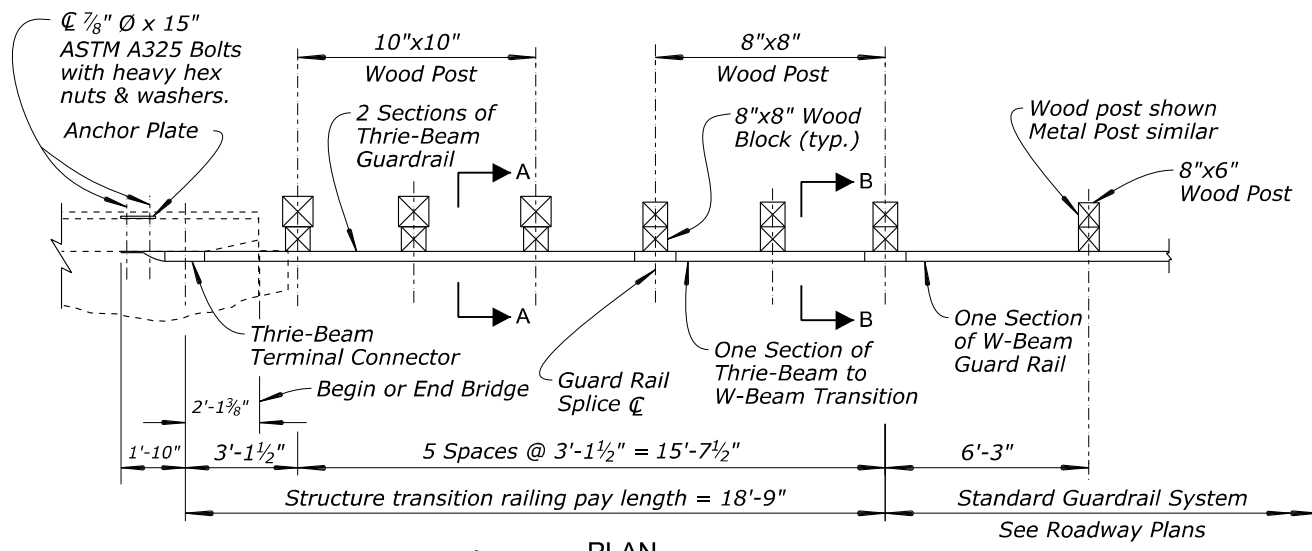
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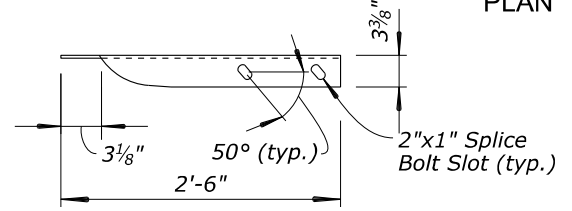
DESIGN	O. OLIDEN	03-23	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS	
DRAWN	D. CHAVEZ	03-23		
CHECKED	O. OLIDEN	03-23		
<b>OLIDEN Engineering</b> 216 W Desert Flower Ln Phoenix, Arizona 85045 Phone 602-421-2025			<b>TYPICAL SECTION &amp; DECK PLAN</b>	
ROUTE	N6460 & N6461		LOCATION	DENNEHOTSO LOOP ROAD
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ	DWG No. S-1.07 Expires 12/31/2024 58 OF 69



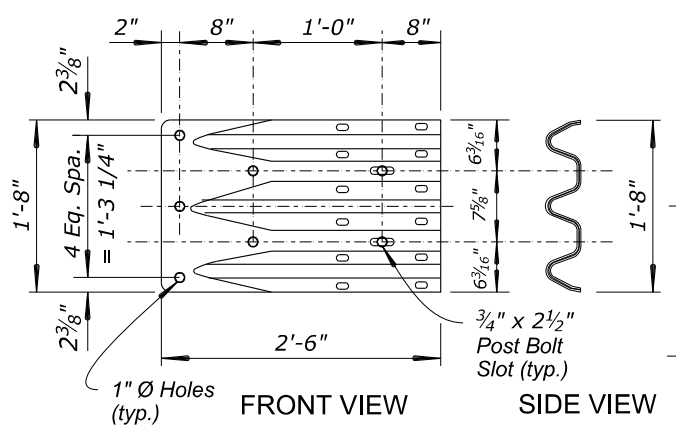
SURVEY NO. \_\_\_\_\_ FINISHED PLANS \_\_\_\_\_ REVISIONS \_\_\_\_\_ LOCATION \_\_\_\_\_ DATE \_\_\_\_\_



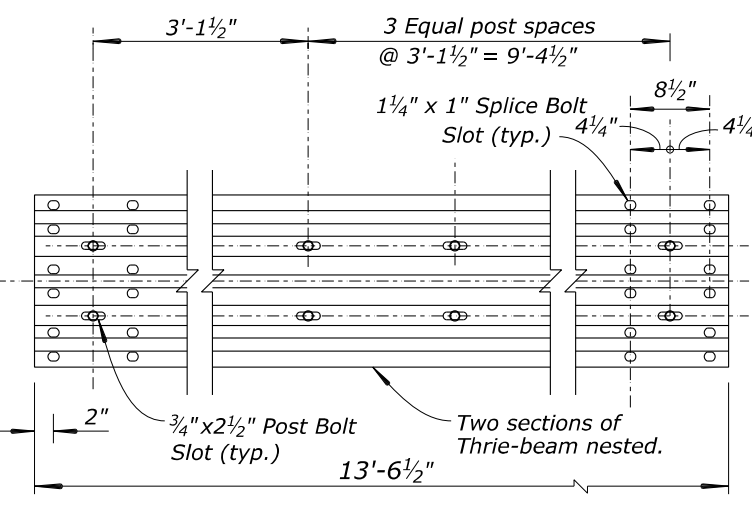
PLAN



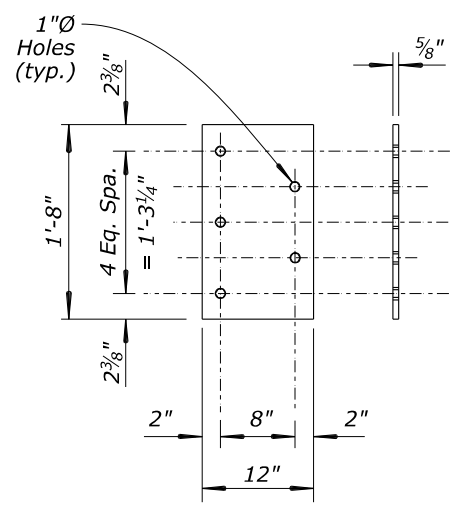
TOP VIEW



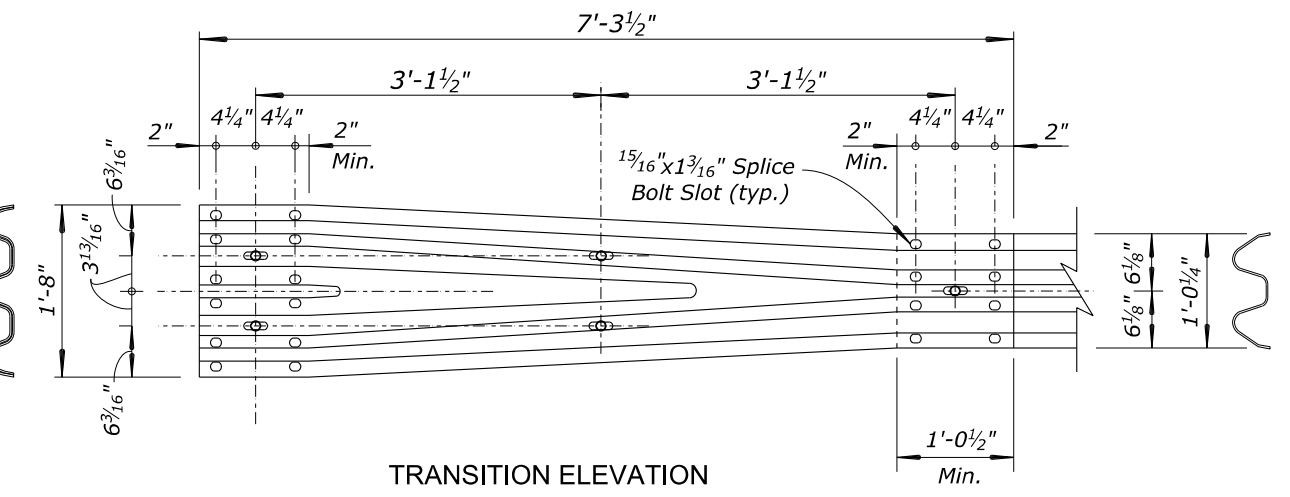
THRIE BEAM TERMINAL CONNECTOR



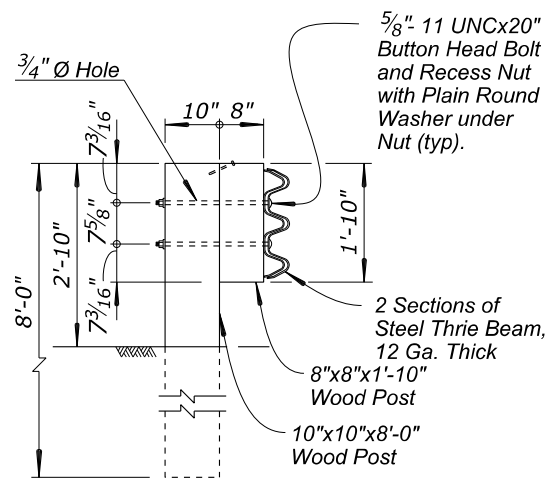
THRIE BEAM ELEVATION



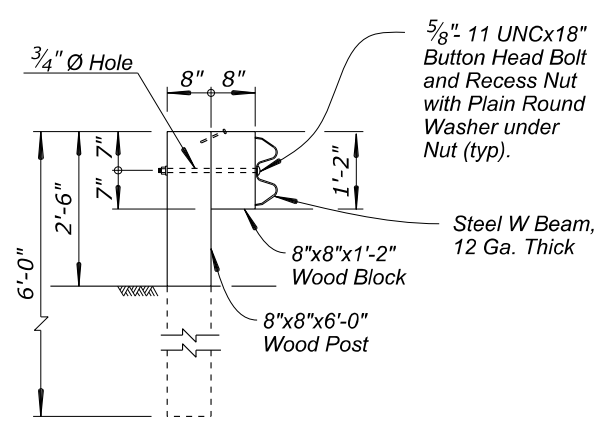
ANCHOR PLATE



TRANSITION ELEVATION



SECTION A-A



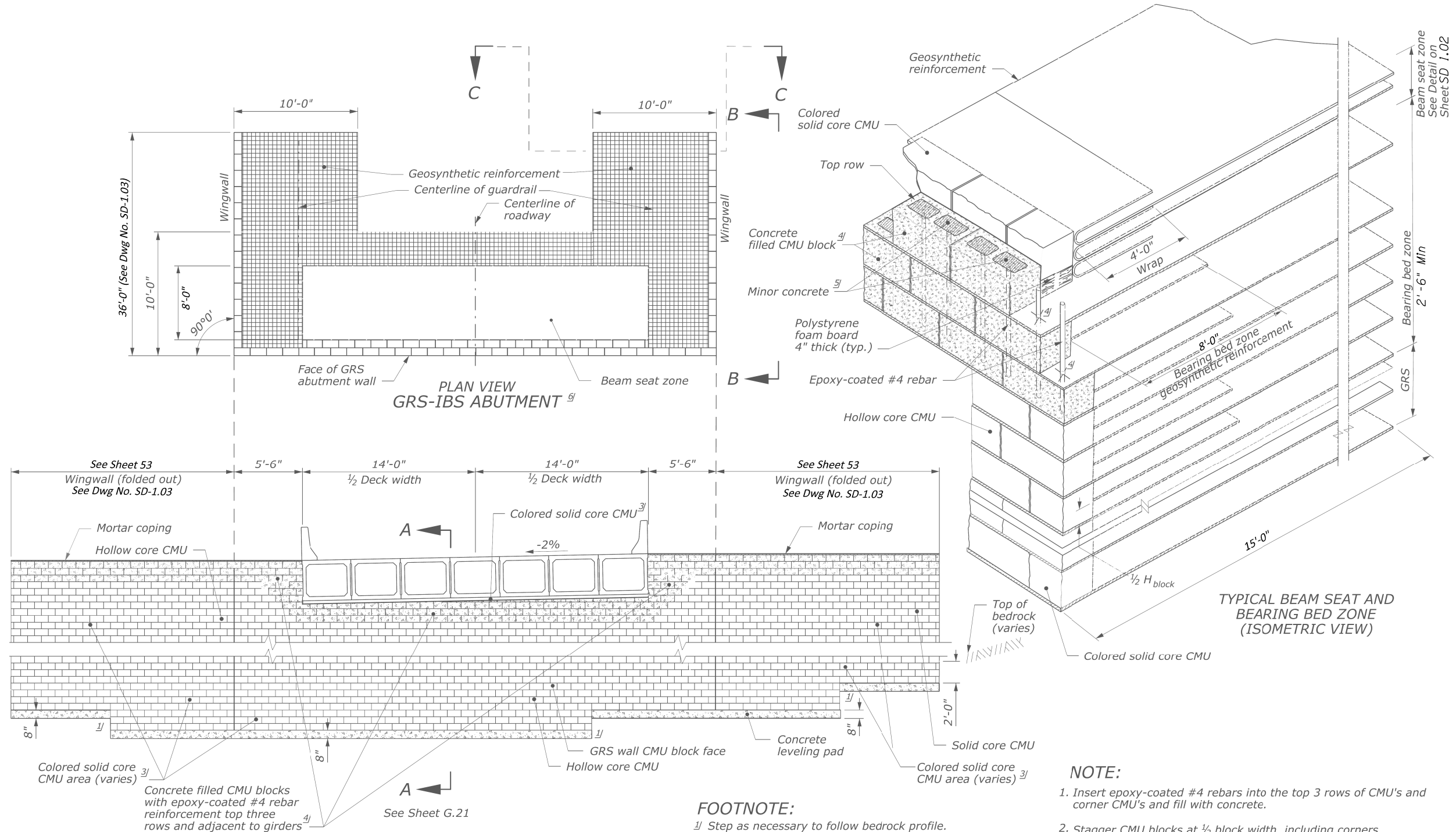
SECTION B-B

**GENERAL NOTES:**

- Structural steel shall conform to ASTM Specification A36 unless noted otherwise.
- Anchor plates, terminal connectors and thrie beams shall be galvanized after fabrication in accordance with ASTM A123.
- All bolts, nuts and washers shall be galvanized in accordance with the requirements of ASTM A153. At the contractors option, stainless steel bolts and washers may be used. They shall conform to or exceed the mechanical requirements of ASTM A325. Provide additional washers, as needed, for longer bolt length.
- Overlap of the terminal connector, thrie beam, transition and guardrails shall be in the direction of the adjacent traffic lane.
- Thrie beam, thrie beam transition and connecting hardware shall conform to AASHTO M180, Type II, Class A.
- Structure transition railing adopted from AZDOT Thrie Beam Guardrail Transition System, Standard SD 1.03.

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DRAWN	D. CHAVEZ	03-23		
CHECKED	O. OLIDEN	03-23		
<b>OLIDEN Engineering</b> 216 W Desert Flower Ln Phoenix, Arizona 85045 Phone 602-421-2025			<b>STRUCTURE TRANSITION RAILING</b>	
ROUTE	N6460 & N6461		LOCATION	DENNEHOTSO LOOP ROAD
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ	DWG No. S-1.09
				60 OF 69

SURVEY NO. FINISHED PLANS. DATE REVISIONS. LOCATION. DATE REVISIONS. LOCATION. DATE REVISIONS. LOCATION. DATE REVISIONS. LOCATION.



**ELEVATION VIEW**  
**GRS-IBS STD ABUTMENT**  
 Facing Block Schedule

- Minor concrete
- Hollow core concrete masonry unit (CMU)
- Colored solid core concrete masonry unit (CMU)
- Concrete filled hollow core concrete masonry unit (CMU)

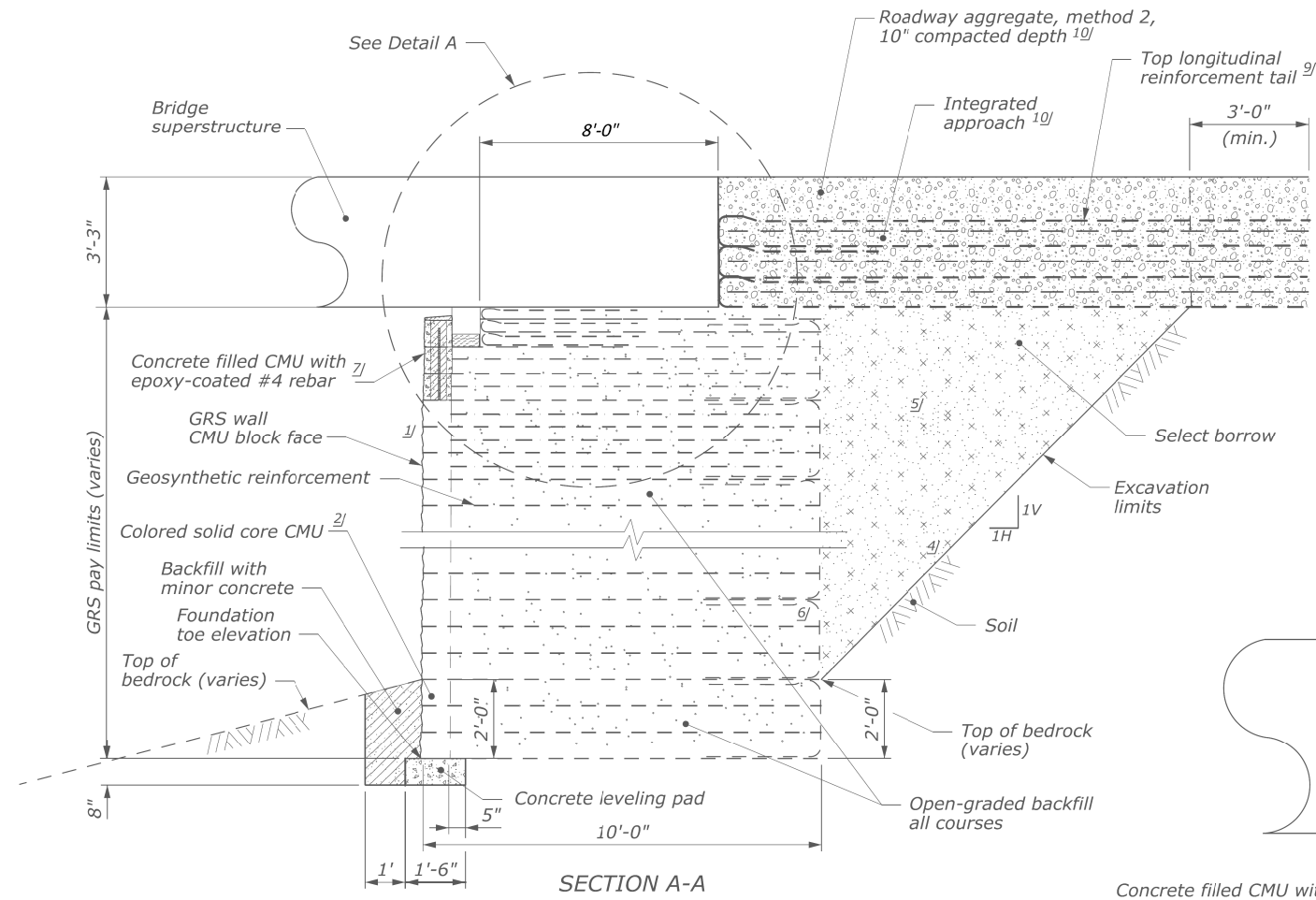
- FOOTNOTE:**
- <sup>1/</sup> Step as necessary to follow bedrock profile.
  - <sup>2/</sup> Wingwalls folded out for elevation view.
  - <sup>3/</sup> Colored solid core CMU's used behind riprap armor, to top of bedrock at wall face, and at the beam seat zone. (Riprap armor not shown.)
  - <sup>4/</sup> Cut "X" into bottom geosynthetic reinforcement of upper 2 courses of CMU blocks to accept rebar and concrete.
  - <sup>5/</sup> Wet cast mortar coping not shown.
  - <sup>6/</sup> GRS-IBS North Abutment Integrated Approach illustrated in Section A'-A' and C'-C' on Sheet G.16.

- NOTE:**
1. Insert epoxy-coated #4 rebars into the top 3 rows of CMU's and corner CMU's and fill with concrete.
  2. Stagger CMU blocks at 1/2 block width, including corners.
  3. On the top row of CMU's create a mortar coping 1-inch to 3/4-inch sloped to face to drain.
  4. No colorant allowed in the hollow core concrete masonry units.

Note: Non-Site Specific Detail

DESIGN	A. Cox	DATE	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS	
DRAWN	D. Burmeister	DATE	4/24		
CHECKED	D. Spear	DATE	4/24		
<b>DIBBLE</b>				GRS-IBS PLAN & ELEVATION	
ROUTE	N6460 & N6461	LOCATION	DENNEHOTSO LOOP ROAD		DWG No. SD-1.01
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ		61 OF 69

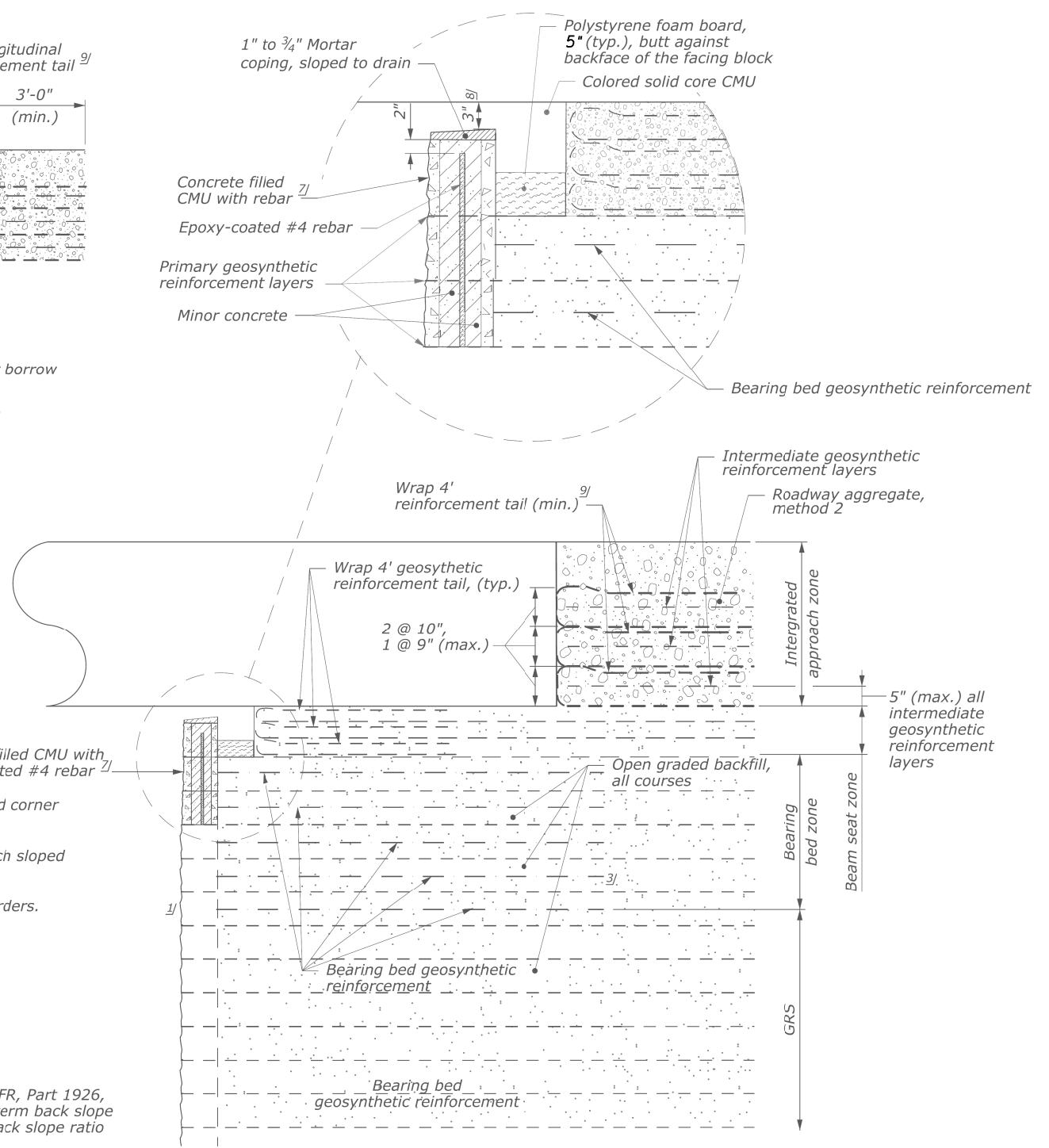
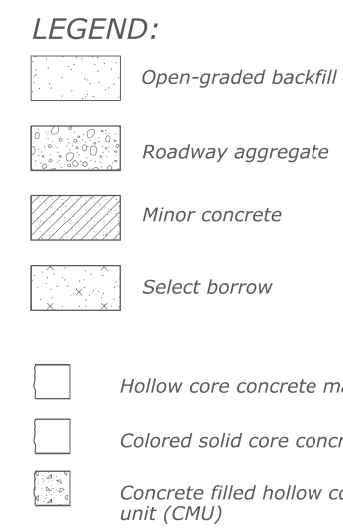
DATE LOCATION REVISIONS FINISHED PLANS SURVEY NO. DATE LOCATION REVISIONS FINISHED PLANS SURVEY NO.



SECTION A-A

- NOTE:**
1. Insert epoxy-coated #4 rebars into the top 3 rows of CMU's and corner CMU's and fill with concrete.
  2. On the top row of CMU's create a mortar coping 1-inch to 3/4-inch sloped toward face to drain.
  3. Strike CMU concrete fill flush with top of CMU's under bridge girders.
  4. No colorant allowed in the hollow core concrete masonry units.

- FOOTNOTE:**
- 1/ Vertical wall face batter = 0°.
  - 2/ Colored solid core CMU's to top of bedrock at wall face.
  - 3/ Minimum of 5 layers of bearing bed reinforcement.
  - 4/ Short term back slope ratio per OSHA Safety Regulations (29CFR, Part 1926, Subpart P, excavation). Shoring may be required if the short term back slope will be open more than 30 days or if the required short term back slope ratio specified cannot be obtained.
  - 5/ Backfill and compact simultaneous to GRS-IBS construction.
  - 6/ Wrap ends of geosynthetic reinforcement minimum of 3-feet every third layer (max.).
  - 7/ Cut "X" into bottom geosynthetic reinforcement of upper 2 courses of CMU blocks to accept rebar and concrete.
  - 8/ Clear space between bottom of bridge superstructure and top of mortar coping varies with superelevation, min. 3-inches.
  - 9/ Extend top layer wrapped tail longitudinally for the full length of the integrated approach.
  - 10/ GRS-IBS North Abutment Integrated Approach illustrated in Section A'-A' and C'-C' on Sheet G.16.



DETAIL A

(GRS, beam seat, bearing bed zone, and integrated approach detail)

NO SCALE

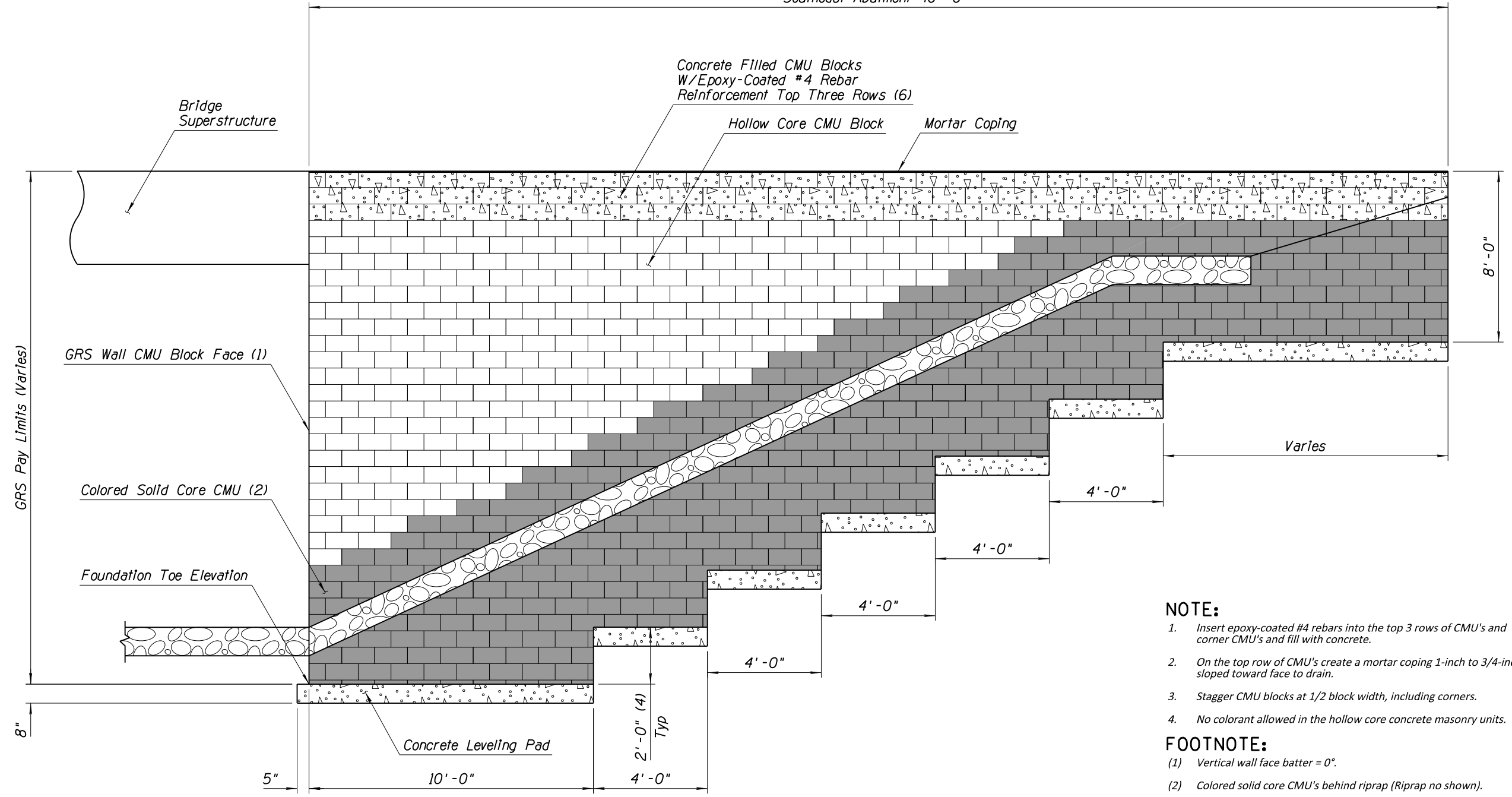
Notes: Non-Site Specific Detail

DESIGN	A. Cox	DATE	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS	
DRAWN	D. Burmeister	DATE	4/24		
CHECKED	D. Spear	DATE	4/24		
<b>DIBBLE</b>		GRS-IBS DETAILS, 1 OF 4			
ROUTE	N6460 & N6461	LOCATION	DENNEHOTSO LOOP ROAD	DWG No.	SD-1.02
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ	62 OF 69	



DATE: LOCATION: REVISIONS: FINISHED PLANS: SURVEY NO. DATE: LOCATION: REVISIONS: FINISHED PLANS: SURVEY NO. DATE: LOCATION: REVISIONS: FINISHED PLANS: SURVEY NO.

Northwest Abutment 44'-0"  
 Northeast Abutment 44'-8"  
 Southwest Abutment 38'-0"  
 Southeast Abutment 40'-0"



WINGWALL ELEVATION

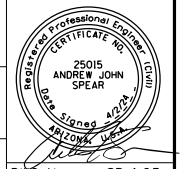
- LEGEND:**
- Open-graded backfill
  - Roadway aggregate
  - Minor concrete
  - Select borrow
  - Hollow core concrete masonry unit (CMU)
  - Colored solid core concrete masonry unit (CMU)
  - Concrete filled hollow core concrete masonry unit (CMU)

TOP OF FOUNDATION ELEVATIONS

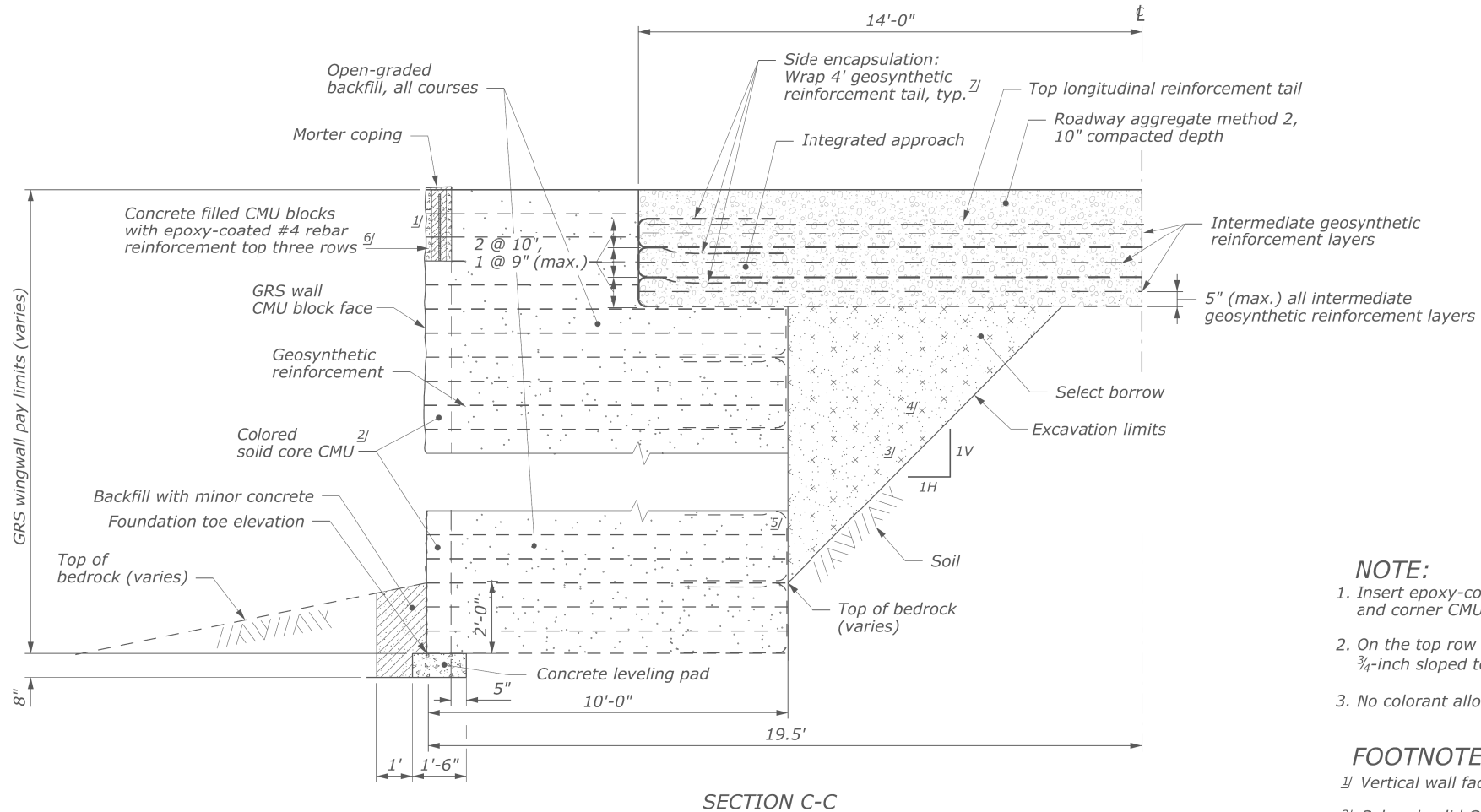
ABUTMENT	CORNER	ELEVATION
SOUTH	WEST	5017.40
	EAST	5017.40
NORTH	WEST	5018.00
	EAST	5018.00

- NOTE:**
1. Insert epoxy-coated #4 rebars into the top 3 rows of CMU's and corner CMU's and fill with concrete.
  2. On the top row of CMU's create a mortar coping 1-inch to 3/4-inch sloped toward face to drain.
  3. Stagger CMU blocks at 1/2 block width, including corners.
  4. No colorant allowed in the hollow core concrete masonry units.
- FOOTNOTE:**
- (1) Vertical wall face batter = 0°.
  - (2) Colored solid core CMU's behind riprap (Riprap no shown).
  - (3) Short term back slope ratio per OSHA Safety Regulations (29CFR, Part 1926, Subpart P, excavation). Shoring may be required if the short term back slope will be open more than 30 days or if the required short term back slope ratio specified cannot be obtained.
  - (4) Step GRS-IBS to follow bedrock profile when encountered.
  - (5) Backfill and compact simultaneous to GRS-IBS construction.
  - (6) Cut "X" into bottom geosynthetic reinforcement of upper 2 courses of CMU blocks to accept rebar and concrete.

DESIGN	A. Cox	DATE	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS	
DRAWN	D. Burmeister	DATE	4/24		
CHECKED	D. Spear	DATE	4/24		
<b>DIBBLE</b>				GRS-IBS DETAILS, 2 OF 4	
ROUTE	N6460 & N6461		LOCATION	DENNEHOTSO LOOP ROAD	
DIBBLE PROJECT No. 101411.01				APACHE COUNTY, AZ	DWG No. SD-1.03










Note: Site Specific Detail



SECTION C-C

**LEGEND:**

-  Select borrow
-  Open-graded backfill
-  Roadway aggregate
-  Minor concrete
-  Hollow core concrete masonry unit (CMU)
-  Colored solid core concrete masonry unit (CMU)
-  Concrete filled hollow core concrete masonry unit (CMU)

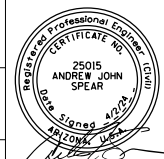
**NOTE:**

1. Insert epoxy-coated #4 rebars into the top 3 rows of CMU's and corner CMU's and fill with concrete.
2. On the top row of CMU's create a mortar coping 1-inch to 3/4-inch sloped toward face to drain.
3. No colorant allowed in the hollow core concrete masonry units.

**FOOTNOTE:**

- 1/ Vertical wall face batter = 0°.
- 2/ Colored solid CMU's behind riprap armor.
- 3/ Short term back slope ratio per OSHA Safety Regulations (29CFR, Part 1926, Subpart P, excavation). Shoring may be required if the short term back slope will be open more than 30 days or if the required short term back slope ratio specified cannot be obtained.
- 4/ Backfill and compact simultaneous to GRS-IBS construction.
- 5/ Wrap ends of reinforcement to embed min. of 3-feet every third layer (max.).
- 6/ Cut "X" into bottom geosynthetic reinforcement of upper 2 courses of CMU blocks to accept rebar and concrete.
- 7/ Wrap top layer tail of side encapsulation so that it is above top longitudinal reinforcement tail.

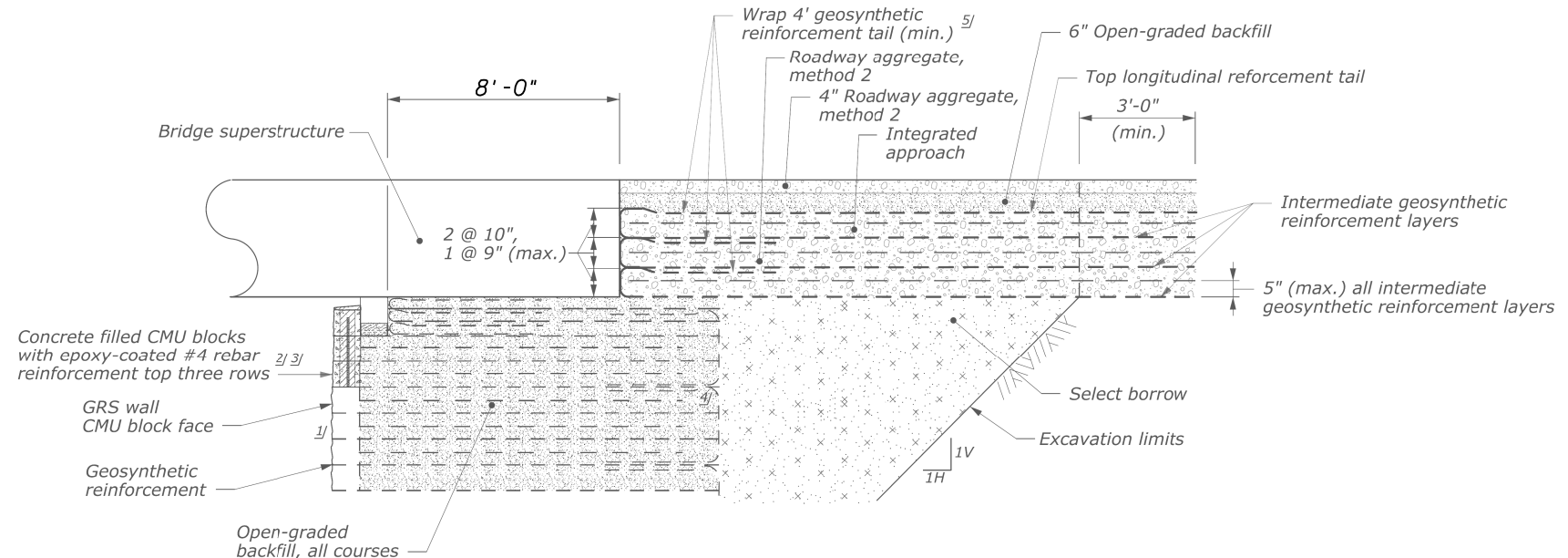
Note: Non-Site Specific Detail

DESIGN	A. Cox	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS	
DRAWN	D. Burmeister	4/24		
CHECKED	D. Spear	4/24		
<b>DIBBLE</b>			GRS-IBS DETAILS, 3 OF 4	
ROUTE	N6460 & N6461		LOCATION	DENNEHOTSO LOOP ROAD
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ	DWG No. SD-1.04

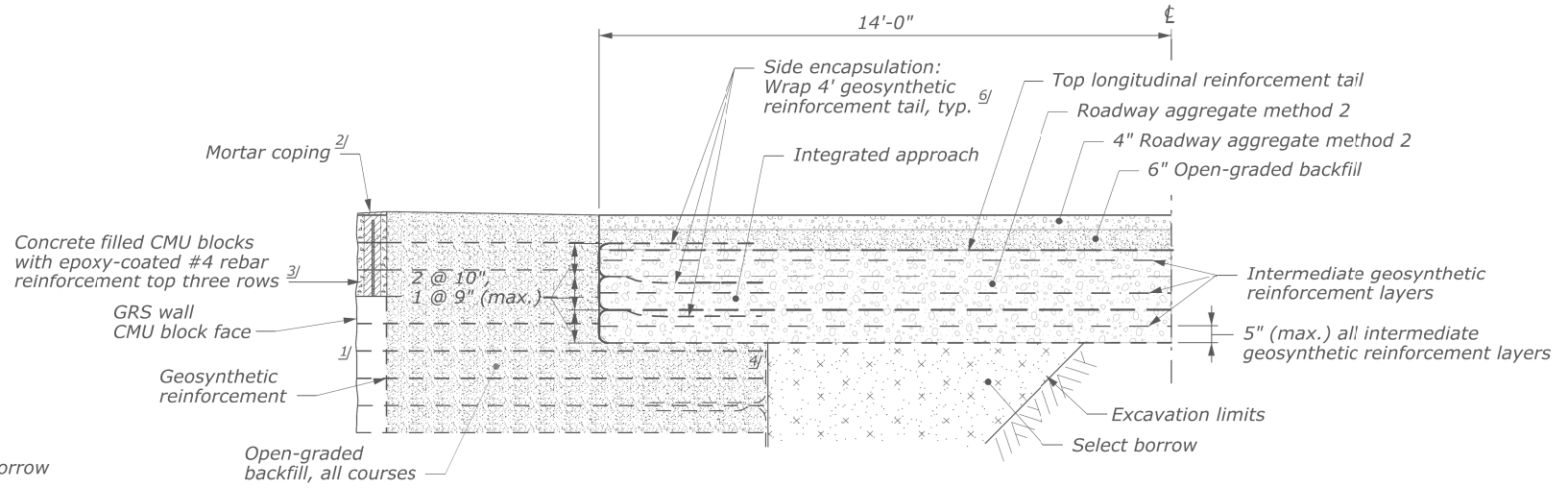
NO SCALE

SURVEY NO. FINISHED PLANS REVISIONS LOCATION DATE  
 SURVEY NO. FINISHED PLANS REVISIONS LOCATION DATE  
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DATE - LOCATION - REVISIONS - FINISHED PLANS - SURVEY NO. DATE - LOCATION - REVISIONS - FINISHED PLANS - SURVEY NO.










SECTION A'-A'  
GRS-IBS NORTH ABUTMENT  
INTEGRATED APPROACH



SECTION C'-C'  
GRS-IBS NORTH ABUTMENT  
INTEGRATED APPROACH

**LEGEND:**

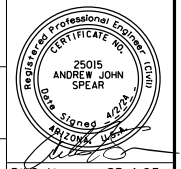
-  Select borrow
-  Open-graded backfill
-  Roadway aggregate
-  Minor concrete
-  Hollow core concrete masonry unit (CMU)
-  Colored solid core concrete masonry unit (CMU)
-  Concrete filled hollow core concrete masonry unit (CMU)

**FOOTNOTE:**

- 1/ Vertical wall face batter = 0°.
- 2/ On top row of CMU's create a mortar coping 1-inch to 3/4-inch sloped toward face to drain.
- 3/ Cut "X" into bottom geosynthetic reinforcement of upper 2 courses of CMU blocks to accept rebar and concrete.
- 4/ Wrap ends of geosynthetic reinforcement minimum of 3-feet every third layer (max.).
- 5/ Extend top layer wrapped tail longitudinally for the full length of the integrated approach.
- 6/ Wrap top layer tail of side encapsulation so that it is above top longitudinal reinforcement tail.

Note: Non-Site Specific Detail

		NAME	DATE		
DESIGN	A. Cox		4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS	
DRAWN	D. Burmeister		4/24	GRS-IBS DETAILS, 4 OF 4	
CHECKED	D. Spear		4/24		
<b>DIBBLE</b>					
ROUTE	N6460 & N6461	LOCATION	DENNEHOTSO LOOP ROAD		
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ		DWG No. SD-1.05
					65 OF 69



NO SCALE

N6460-N6461 Existing Utility Crossing

ID	STATION	DESCRIPTION	CLEAR	OWNER	REMARKS
U1	19+58	2" PVC Waterline Crossing C/L		NTUA	Contractor to Relocate and Encase
U2	19+10	Electrical Utility Pole, Lt.	33'	NTUA/Frontier	Protect in Place, NTUA to Support
U3	20+00	OHE Crossing	27'7", tel. 21'4"	NTUA	Verify Overhead Clearance
U4	20+92	4" PVC Waterline Crossing C/L		NTUA	Contractor to Relocate and Encase
U5	22+00	Electrical Utility Pole, Lt.		NTUA/Frontier	Protect in Place
U6	25+92	Electrical Utility Pole, Lt.		NTUA	Protect in Place
U7	27+60	Electrical Utility Pole, Lt.		NTUA	Protect in Place, NTUA to Support
U8	29+20	Gas, Sign Lt.		NTUA/Dominion	Remove and Salvage
U9	28+00 to 31+00 Lt.	Gas Pipeline	5.72	NTUA/Dominion	Protect in Place, No Vibratory Compaction
U10	36+80 to 81+00	Gas, Lt. and CL	Varies	NTUA/Dominion	Protect in Place, No Vibratory Compaction
U11	37+50	Electrical Utility Pole, Rt	27'	NTUA/Frontier	In Conflict
U12	37+50	OHE/Tele Crossing	27'7"	NTUA/Frontier	Verify Overhead Clearance
U13	40+00	Electrical Utility Pole, right	30'	NTUA	Protect in Place
U14	40+53	2" PVC Waterline Crossing C/L	5.03'	NTUA	Contractor to Relocate and Encase
U15	42+00	OHE/Tele Pole Rt.	20'2", Tel 15'5"	NTUA	NTUA/Frontier to Raise
U16	42+50 (2)	Gas Sign and Facility, Rt.		NTUA/Dominion	Need to removed relocated by Owner
U17	42+50	Electrical Utility Pole, Rt.	30'	NTUA	Protect in Place
U18	43+20	4" PVC Waterline Crossing C/L		NTUA	Contractor to Combine w/ 43+78, Relocate, and Encase
U19	43+50	OHE/Tele Crossing	30'5", Tel 26'11"	NTUA	Verify Clearance
U20	43+50	Electrical Utility Pole, Rt.	30'	NTUA	Protect in Place
U21	43+78	2" PVC Waterline Crossing C/L		NTUA	Contractor to Combine w/ 43+30, Relocate, and Encase
U22	46+50	OHE/Tele Crossing	24'4", Tel 22'5"	NTUA	Verify Clearance
U23	46+50	Electrical Utility Pole, Rt.	33'	NTUA	Protect in Place
U24	50+50	OHE	28'1"	NTUA	Verify Clearance
U25	50+50	Electrical Utility Pole and Guy Wires, Rt.	30'	NTUA	In Conflict with Ditch
U26	64+50	OHE/Tele Pole Rt.	22'6", Tel 16'9"	NTUA	NTUA/Frontier to Raise
U27	68+75	2" PVC Waterline Crossing C/L		NTUA	Contractor to Relocate and Encase
U28	70+00	OHE Crossing	27'6"	NTUA	Verify Clearance
U29	75+10	OHE Crossing	26'8"	NTUA	Verify Clearance
U30	80+00	Sewer Manhole, Rt.		NTUA	Protect in Place
U31	83+70	Sewer Manhole, Rt.		NTUA	Protect in Place
U32	85+10	OHE/Tele Pole Rt.	22'0", Tel 17'10"	NTUA	NTUA/Frontier to Raise Wires
U33	88+40	Gas Structure, Lt.		NTUA/Dominion	Protect in Place
U34	90+30	Sewer Manhole, Rt.		NTUA	Protect in Place
U35	90+30	Sewer Line Crossing		NTUA	Construct Protective Slab
U36	94+30	OHE Crossing	33'2"	NTUA	Protect in Place
U37	94+50	OHTelecom		Frontier	Relocate Underground by Frontier
U38	96+60	4" PVC Waterline Crossing C/L		NTUA	Existing Casing, Protect in Place, verify with NTUA
U39	96+75	Sewer Line Crossing		NTUA	Construct Protective Slab
U40	96+70	Sewer Manhole, Rt.		NTUA	NDOT Contractor to Lower Manhole Rim to match Roadway Grade
U41	99+00 to 103+00	Sewer Lagoon Berm Rt.		NTUA	Roadway Fill Slope to be Raised Backslope to Match Top
U42	151+30	4" PVC Waterline Crossing C/L		NTUA	Protect in Place
U43	188+02	6" PVC Waterline Crossing C/L		NTUA	Contractor to Relocate and Encase
U44	191+00	OHE Crossing	33'2"	NTUA	Verify Clearance
U45	209+70	Electrical Utility Pole and Guy Wires, Lt.	33'	NTUA	Verify, Owner to Relocate Guy Wire
U46	212+50	Electrical Utility Pole	33'	NTUA	Protect in Place
U47	216+00	Electrical Utility Pole	36'	NTUA	Protect in Place
U48	220+30	Electrical Utility Pole	24'	NTUA	Protect in Place
U49	220+40	Electrical Utility Pole		NTUA	Protect in Place
U50	221+50	OHE Crossing	29'4"	NTUA	Verify Clearance
U51	224+50	OHE Crossing	24'8"	NTUA	Verify Clearance
U52	224+50	Electrical Utility Pole	57'	NTUA	Protect in Place
U53	224+75	Electrical Utility Pole	72'	NTUA	Protect in Place
U54	225+00	OHE	20'9"	NTUA	Raise Line
U55	229+00	Electrical Utility Pole, Rt.	27'	NTUA	Protect in Place
U56	230+42	6" PVC Waterline Crossing C/L		NTUA	Protect in Place Need to Relocate
U57	233+00	Electrical Utility Pole	33'	NTUA	Need to removed relocated by Owner
U58	234+00	OHE Crossing	28'6"	NTUA	Verify Clearance
U59	237+25	OHE Crossing	24'2"	NTUA	Verify Clearance
U60	239+13	2" PVC Waterline Crossing C/L		NTUA	Contractor to Relocate and Encase
U61	241+00	OHE Crossing	21'5"	NTUA	Verify Clearance
U62	241+00	Electrical Utility Pole, left	21'	NTUA	In Conflict with Ditch
U63	244+31	6" PVC Waterline Crossing C/L	DIP	NTUA	Contractor to Relocate and Encase, Revise per NTUA
U64	250+80	6" PVC Waterline Crossing C/L		NTUA	Contractor to Relocate and Encase
U65	251+30	OHE Crossing	25'11"	NTUA	Verify Clearance
U66	251+30	Electrical Utility Pole, left	15'	NTUA	Protect in Place
U67	303+80	OHE-Transmission		NTUA	Protect in Place

N6460-N6461 Existing Utility Crossing

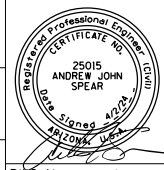
ID	STATION	DESCRIPTION	CLEAR	OWNER	REMARKS
U68	312+59	4" PVC Waterline Crossing C/L		NTUA	Protect in Place, NTUA to Verify
U69	326+60	Gas		NTUA/Dominion	Protect in Place
U70	332+06	4" PVC Waterline Crossing C/L	26'11"	NTUA	Contractor to Relocate and Encase
U71	337+50	6" PVC Waterline Crossing C/L	26'3"	NTUA	Contractor to Relocate and Install HDPE Line and fittings
U72	403+70	OHE-Transmission		NTUA	Protect in Place
U73	407+90	4" PVC Waterline Crossing C/L		NTUA	Existing Casing, Protect in Place
U74	411+10	6" PVC Waterline Crossing C/L		NTUA	Contractor to Relocate with 411+70
U75	411+70	4" PVC Waterline Crossing C/L		NTUA	Contractor to Relocate and Encase
U76	502+40	OHE-Transmission		NTUA	Protect in Place
U77	512+70	OHE Crossing		NTUA	Protect in Place
U78	513+10	Sewer		NTUA	Protect in Place
U79	514+00	Gas		NTUA	Protect in Place

Note

1. All measurements were taken with existing ground
2. Stations were estimated

10/2/2023

DATE- LOCATION- REVISIONS- FINISHED PLANS- SURVEY NO. DATE- LOCATION- REVISIONS- FINISHED PLANS- SURVEY NO.

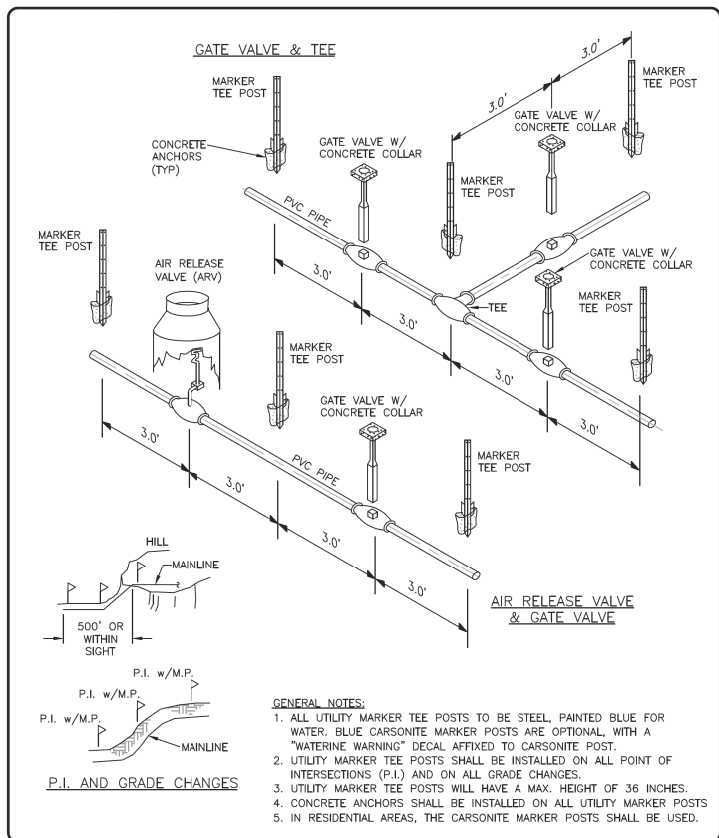
DESIGN	A. Cox	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS	
DRAWN	D. Burmeister	4/24		
CHECKED	D. Spear	4/24		
<b>DIBBLE</b>			EXISTING UTILITY CROSSINGS	
ROUTE	N6460 & N6461		LOCATION	DENNEHOTSO LOOP ROAD
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ	DWG No. U-1.01
				66 OF 69

SURVEY NO. FINISHED PLANS DATE REVISIONS LOCATION DATE

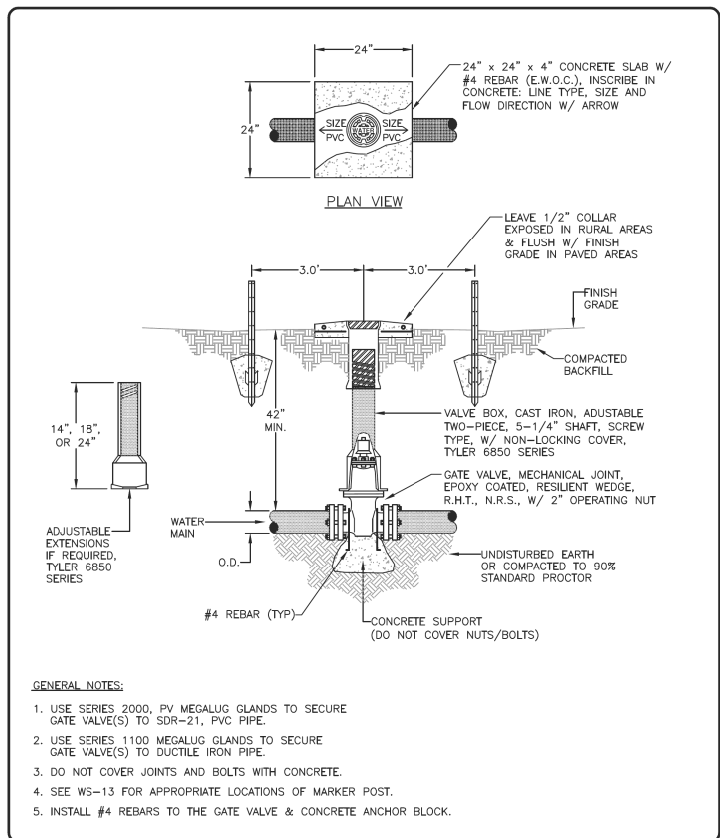
Waterline Station	ENCASEMENT	CONFIRMED ROW	CASING LENGTH (ft)	TOP OF CASING ELEVATION	WATERLINE DIAMETER	DUCTILE IRON WATERLINE LENGTH (ft)	PVC WATERLINE LENGTH (ft)	HDPE WATERLINE LENGTH (ft)	NEW SKEW (degrees)	FITTINGS
STA 19+58	12 in Steel, 0.25 in Thickness	No	56	5031.53	2 in PVC	66	36		90	4-2in x 45 deg Bend, 2-2in Gate Valve and Boxes
STA 20+92	12 in Steel, 0.25 in Thickness	Yes Parcel A	52	5031.35	4 in PVC	62	84		90	2-4in x 45 deg Bend, 2-4in x 90 deg Bend, 2-4in Gate Valves and Boxes
STA 40+53	12 in Steel, 0.25 in Thickness	No	48	5023.81	2 in PVC	58	87		90	2-2in x 45 deg Bend, 1-2in x 90 deg Bend, 2-2in Gate Valves and Boxes
STA 43+20	12 in Steel, 0.25 in Thickness	Yes Parcel A	46	5024.60	4 in PVC	56	96		89	1-4"x4"x2" Tee, 2-4in x 45 deg Bend, 1-4in x 90 deg Bend, 2-4in Gate Valves and Boxes
STA 43+78		Yes Parcel H	-		2 in PVC		160		0	2" Gate Valve and Box, 1-22.5 deg Bend, Connect to 43+20
STA 68+75	12 in Steel, 0.25 in Thickness	Yes Parcel F	50	5014.78	2 in PVC	60	33		90	4-2in x 45 deg Bend, 2-2in Gate Valves and Boxes
STA 96+36	Existing Casing	Yes Parcel E			4 in PVC					N/A
STA 151+45	Associated with Bridge Improvements	Yes Parcel A	-		4 in PVC	-				N/A
STA 188+02	14 in Steel, 0.25 in Thickness	Yes Parcel A	64	5007.93	6 in PVC	74	45		97	2-6in x 22.5 deg Bend, 1-6in x 45 deg Bend, 1-6in x 90 deg Bend, 2-6in Gate Valves and Boxes
STA 230+42	Existing Concrete Protection	Yes Parcel A	-		6 in PVC	-				N/A
STA 238+87	12 in Steel, 0.25 in Thickness	No	40	5026.97	2 in PVC	50	24		90	1-6"x6"x2" Tee, 2-2in x 90 deg Bend, 2-2in Gate Valves and Boxes
STA 244+31	14 in Steel, 0.25 in Thickness	Yes Parcel A	40	5026.95	6 in PVC	50	132		90	1-6in x 22.5 deg Bend, 1-6in x 45 deg Bend, 1-6in x 90 deg Bend, 2-6in Gate Valves and Boxes
STA 250+80	14 in Steel, 0.25 in Thickness	Yes Parcel C	34	5031.69	6 in PVC	46	20		90	4-6in x 45 deg Bends, 1-6in Gate Valve and Box
STA 312+59	No Casing	Yes Parcel I	46	5036.11	4 in PVC	67			90	No Casing, Cultural Site
STA 332+06	12 in Steel, 0.25 in Thickness	Yes Parcel A	48	5029.89	4 in PVC	58	36		79	4-4in x 45 deg Bend, 2-4in Gate Valves and Boxes
STA 337+50	Relocate Waterline around Bridge	Yes Parcel A			6 in PVC		392	150		See Design Plans
STA 407+90	Existing Casing	No			4 in PVC					N/A
STA 411+15	Relocate Waterline				6 in PVC		74		0	1-6 in x 45 deg Bend, 1-6in Gate Valve and Box
STA 411+77	12 in Steel, 0.25 in Thickness	No	48	5025.48	4 in PVC	58	108		90	2-4"x4"x4" Tee2, 1-4in to 6 in Reducer, 2 x 45 deg Bend, 2-4in Gate Valves and Boxes
61103-1100	12-inch Encasement Pipe, Galvanized Steel		434							
61103-1300	14-Inch Encasement Pipe, Galvanized Steel		138							
61102-1750	2-Inch Ductile Iron Waterline					234				
61102-1780	2-Inch PVC Waterline, Sch 80						340			
61102-2750	4-Inch Ductile Iron Waterline					301				
61102-2780	4-Inch PVC Waterline, Sch 80						324			
61102-2980	6-Inch PVC Waterline, Sch 80						663			
61102-3000	6-Inch Ductile Iron Waterline					170				
61102-3050	6-Inch HDPE Waterline, Sch 80							150		
61104-0600	Valve, Gate, 2-Inch				10					Including Boxes and Covers
61104-0700	Valve, Gate, 4-Inch				8					Including Boxes and Covers
61104-0800	Valve, Gate, 6-Inch				6					Including Boxes and Covers

DESIGN	A. Cox	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS  <b>WATERLINE CROSSINGS</b>  DENNEHOTSO LOOP ROAD DWG No. U-1.02	
DRAWN	D. Burmeister	4/24		
CHECKED	D. Spear	4/24		
<b>DIBBLE</b>				
ROUTE	N6460 & N6461		LOCATION	
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ	67 OF 69

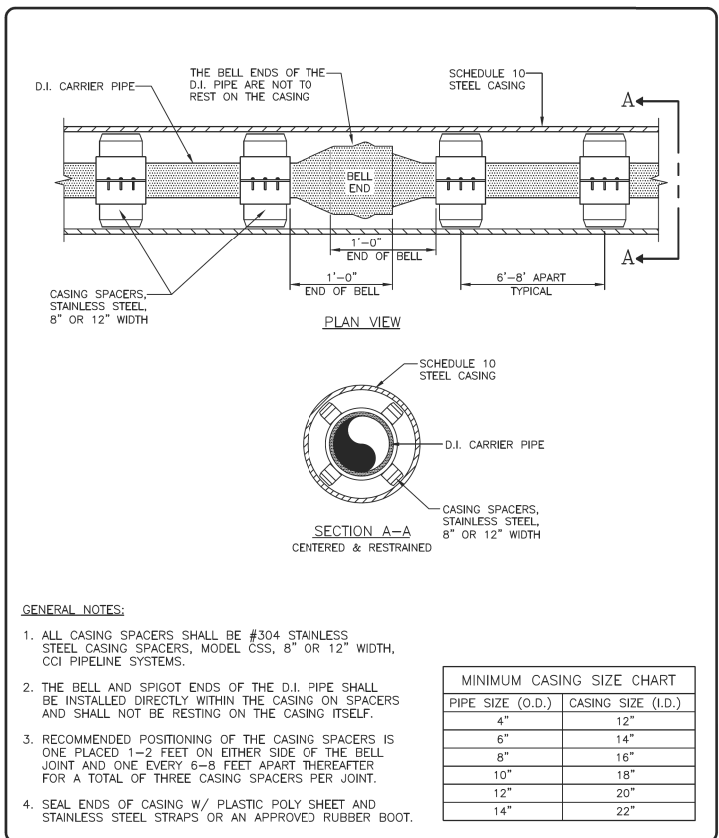
SURVEY NO. FINISHED PLANS. REVISIONS. LOCATION. DATE.



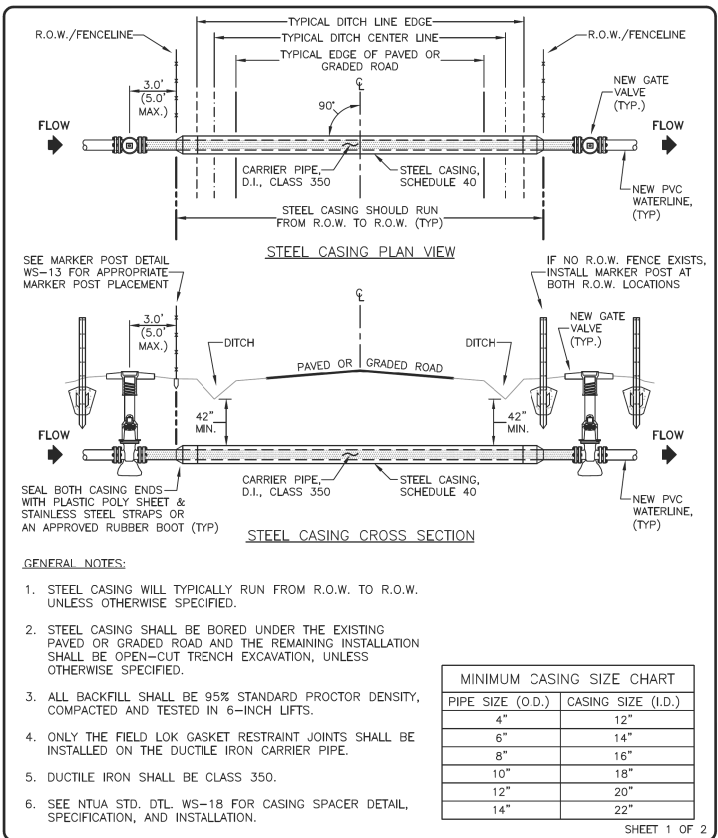
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No.	Date	By									
01	04/09	Revised LJA									
02	06/17	2017 Update ACS									
APPROVED BY: NHA	<b>UTILITY MARKER POST DETAIL</b>	SCALE: N/A	37								
PROJECT NO.: 101411.01	NTUA HEADQUARTERS	ACAD FILENAME: 2017_04_09_NHA									
SCALE: N/A		DETAIL NO.: WS-13									



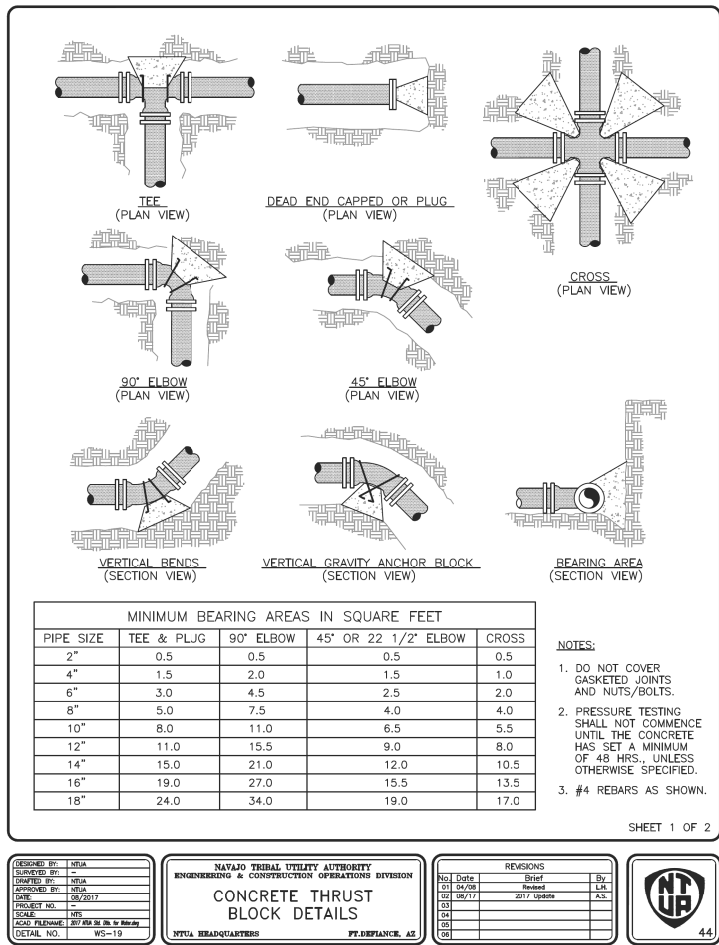
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No.	Date	By									
01	04/09	Revised LJA									
02	06/17	2017 Update ACS									
APPROVED BY: NHA	<b>WATER MAINLINE GATE VALVE INSTALLATION</b>	SCALE: N/A	38								
PROJECT NO.: 101411.01	NTUA HEADQUARTERS	ACAD FILENAME: 2017_04_09_NHA									
SCALE: N/A		DETAIL NO.: WS-14									



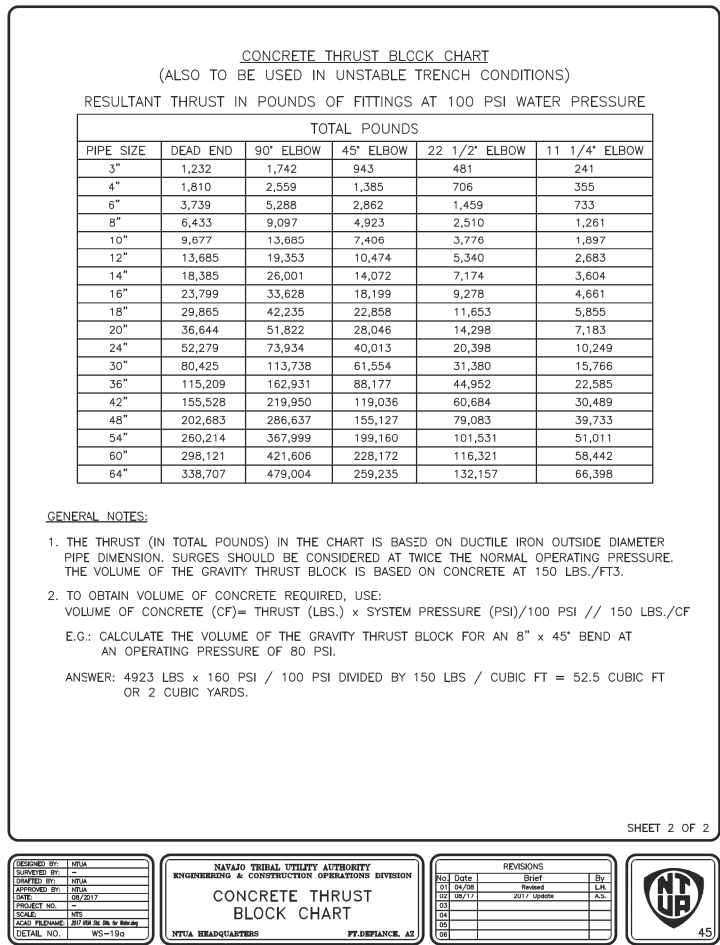
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No.	Date	By									
01	04/09	Revised LJA									
02	06/17	2017 Update ACS									
APPROVED BY: NHA	<b>INSTALLATION OF CASING SPACERS INSIDE STEEL CASING</b>	SCALE: N/A	43								
PROJECT NO.: 101411.01	NTUA HEADQUARTERS	ACAD FILENAME: 2017_04_09_NHA									
SCALE: N/A		DETAIL NO.: WS-15									



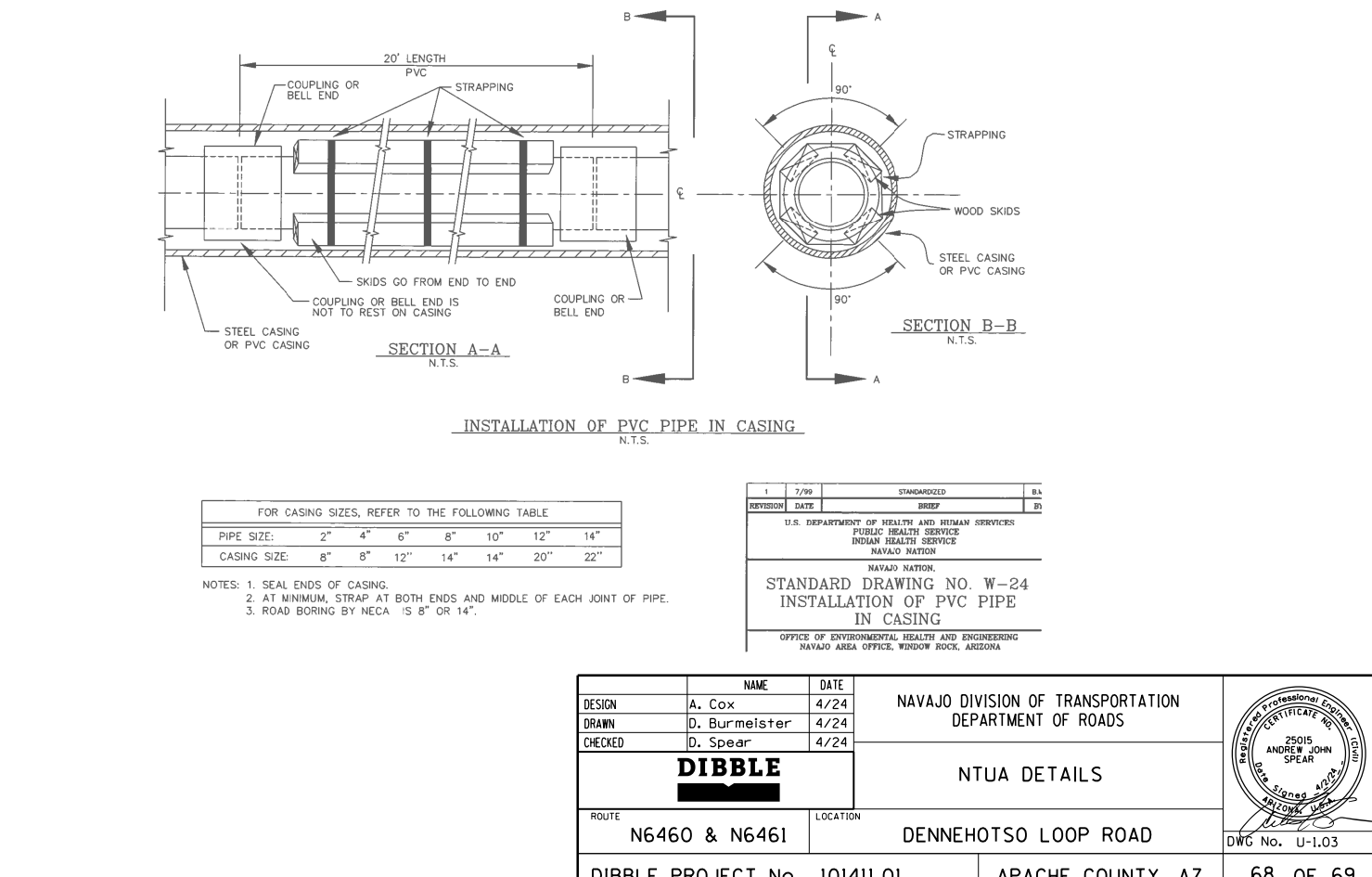
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No.	Date	By									
01	04/09	Revised LJA									
02	06/17	2017 Update ACS									
APPROVED BY: NHA	<b>TYPICAL ROAD CROSSING FOR NTUA WATERLINES (WITH STEEL CASING)</b>	SCALE: N/A	41								
PROJECT NO.: 101411.01	NTUA HEADQUARTERS	ACAD FILENAME: 2017_04_09_NHA									
SCALE: N/A		DETAIL NO.: WS-17a									



DESIGNED BY: NHA	NAVJO TRIBAL UTILITY AUTHORITY	REVISIONS									
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No.	Date	By									
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02	06/17	2017 Update ACS									
APPROVED BY: NHA	<b>CONCRETE THRUST BLOCK DETAILS</b>	SCALE: N/A	44								
PROJECT NO.: 101411.01	NTUA HEADQUARTERS	ACAD FILENAME: 2017_04_09_NHA									
SCALE: N/A		DETAIL NO.: WS-19									



DESIGNED BY: NHA	NAVJO TRIBAL UTILITY AUTHORITY	REVISIONS									
DRAWN BY: NHA	ENGINEERING & CONSTRUCTION OPERATIONS DIVISION	<table border="1"> <tr><th>No.</th><th>Date</th><th>By</th></tr> <tr><td>01</td><td>04/09</td><td>Revised LJA</td></tr> <tr><td>02</td><td>06/17</td><td>2017 Update ACS</td></tr> </table>		No.	Date	By	01	04/09	Revised LJA	02	06/17
No.	Date	By									
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02	06/17	2017 Update ACS									
APPROVED BY: NHA	<b>CONCRETE THRUST BLOCK CHART</b>	SCALE: N/A	45								
PROJECT NO.: 101411.01	NTUA HEADQUARTERS	ACAD FILENAME: 2017_04_09_NHA									
SCALE: N/A		DETAIL NO.: WS-19a									



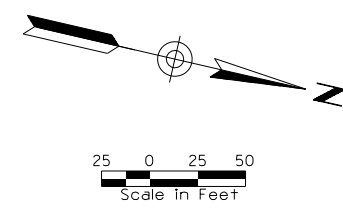
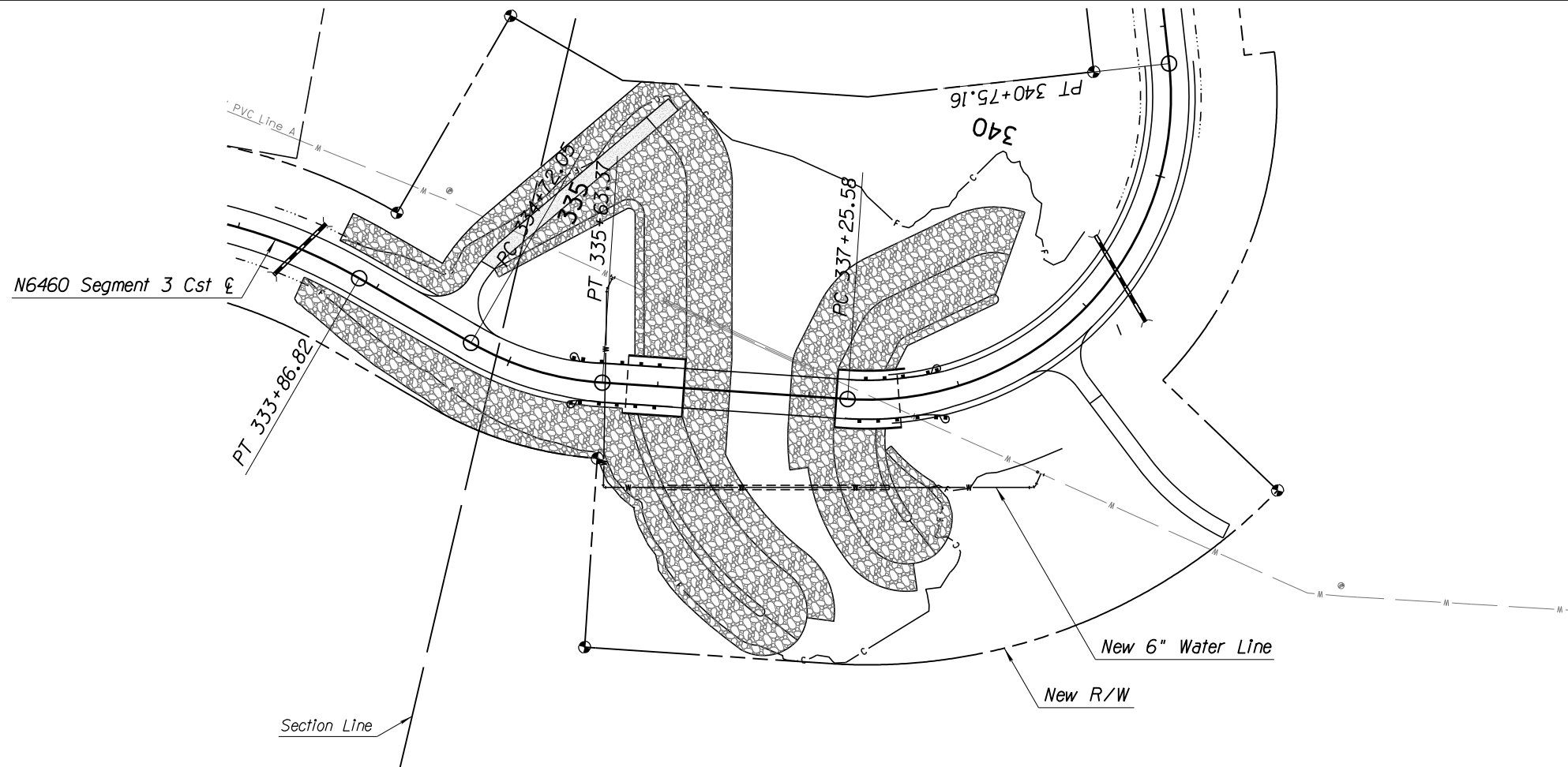
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01	04/09	Revised LJA									
02	06/17	2017 Update ACS									
APPROVED BY: NHA	<b>CONCRETE THRUST BLOCK CHART</b>	SCALE: N/A	45								
PROJECT NO.: 101411.01	NTUA HEADQUARTERS	ACAD FILENAME: 2017_04_09_NHA									
SCALE: N/A		DETAIL NO.: WS-19a									

DESIGN	A. Cox	DATE	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS
DRAWN	D. Burmeister	DATE	4/24	
CHECKED	D. Spear	DATE	4/24	
<b>DIBBLE</b>				NTUA DETAILS 
ROUTE	N6460 & N6461	LOCATION	DENNEHOTSO LOOP ROAD	
DIBBLE PROJECT No. 101411.01		APACHE COUNTY, AZ		DWG No. U-1.03

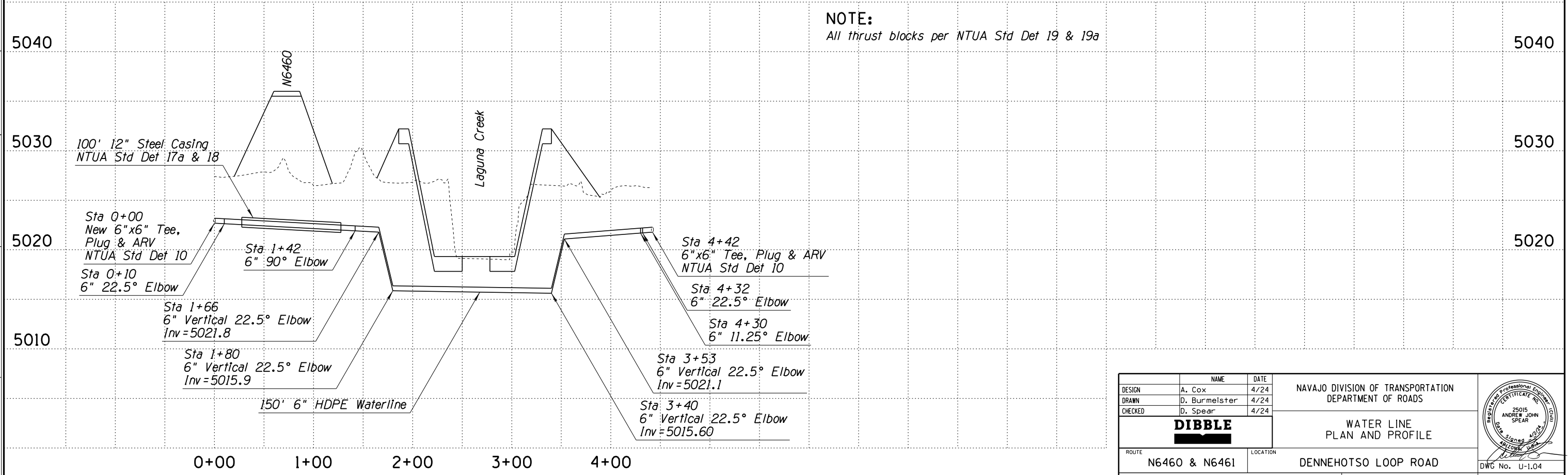
1	7/99	STANDARDIZED	BA
REVISION	DATE	BRIEF	BY
U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES PUBLIC HEALTH SERVICE INDIAN HEALTH SERVICE NAVAJO NATION NAVAJO NATION <b>STANDARD DRAWING NO. W-24</b> <b>INSTALLATION OF PVC PIPE</b> <b>IN CASING</b> OFFICE OF ENVIRONMENTAL HEALTH AND ENGINEERING NAVAJO AREA OFFICE, WINDOW ROCK, ARIZONA			



DATE: \_\_\_\_\_ LOCATION: \_\_\_\_\_ REVISIONS: \_\_\_\_\_ FINISHED PLANS: \_\_\_\_\_ SURVEY NO.: \_\_\_\_\_



**NOTE:**  
All thrust blocks per NTUA Std Det 19 & 19a



DESIGN	A. Cox	4/24	NAVAJO DIVISION OF TRANSPORTATION DEPARTMENT OF ROADS	
DRAWN	D. Burmeister	4/24		
CHECKED	D. Spear	4/24		
<b>DIBBLE</b>			WATER LINE PLAN AND PROFILE	
ROUTE	N6460 & N6461		LOCATION	DENNEHOTSO LOOP ROAD
DIBBLE PROJECT No. 101411.01			APACHE COUNTY, AZ	DWG No. U-1.04