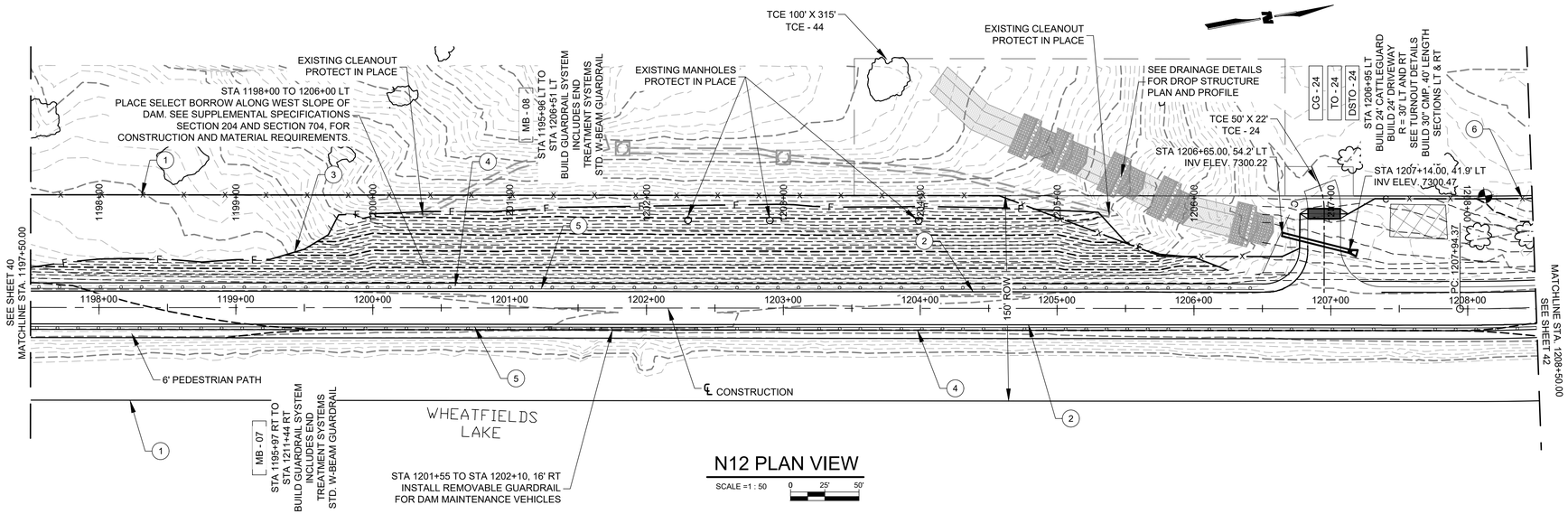
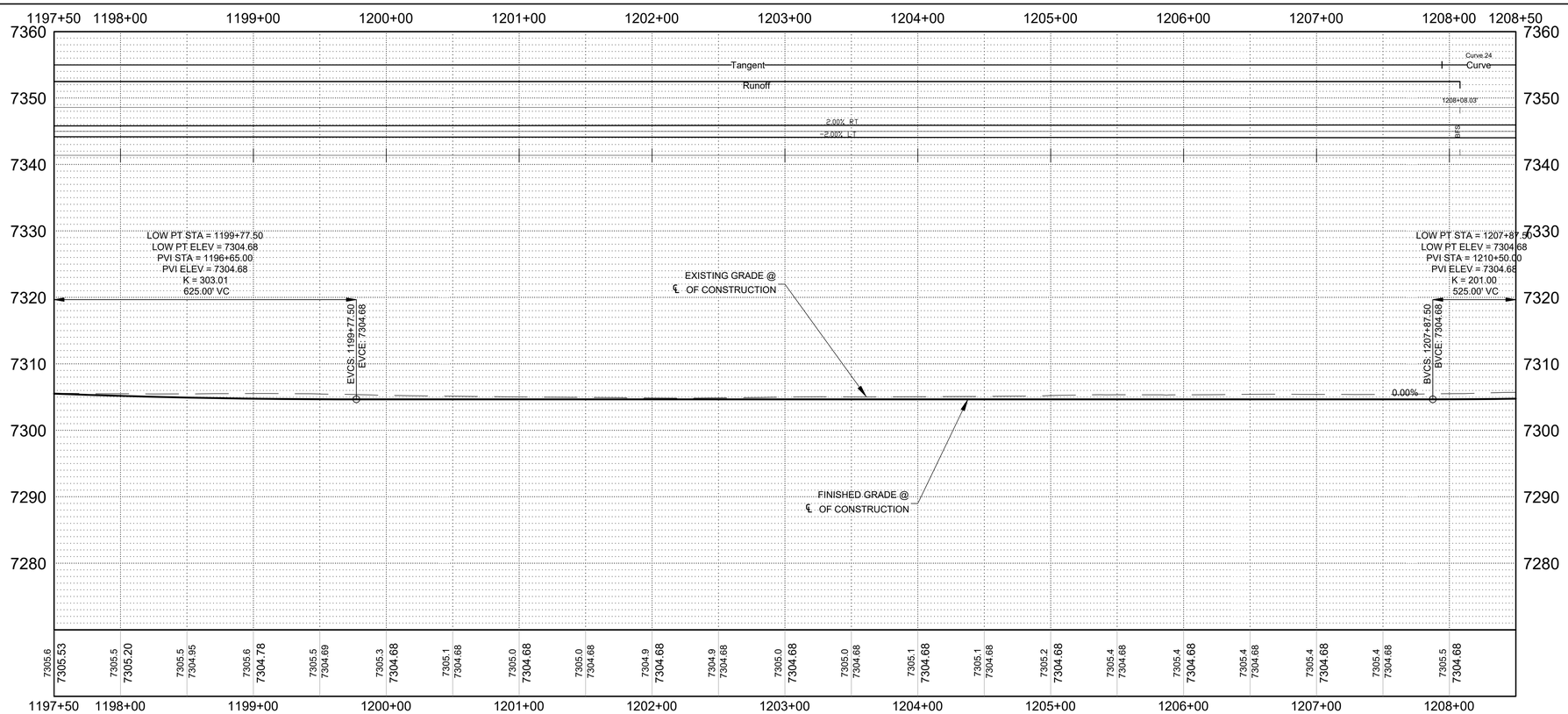
REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	1710009012	41	120



N12 PLAN VIEW

SCALE =1 : 50 (0, 25', 50')



N12 PROFILE VIEW

SCALE =1 : 50 (0, 25', 50')

VERT =1 : 10 (0, 5', 10')

GENERAL NOTES

1. CONTRACTOR SHALL REVIEW LOCATIONS OF DRAINAGE STRUCTURES SHOWN HEREIN AND BUILD NEW STRUCTURES OR CLEAN EXISTING STRUCTURES PER THE FULL BUILD NOTES SHOWN ON THE DRAINAGE STRUCTURE SHEETS OF THE PLAN SET.

2. CONTRACTOR SHALL REVIEW LOCATIONS OF DRIVEWAYS SHOWN HEREIN AND BUILD NEW OR REMOVE EXISTING DRIVEWAYS PER THE FULL BUILD NOTES ON THE TURNOUT PROFILES SHEETS ON THIS PLAN SET.

3. INSTALL DELINEATORS AS SHOWN ON BIA STD 3: OBJECT MARKERS.

KEYNOTES

1. EXISTING ROW
2. EDGE OF TRAVEL WAY
3. SLOPE LIMITS
4. EDGE OF PAVEMENT
5. INSTALL GUARDRAIL
6. NEW ROW FENCE
7. TEMPORARY CONSTRUCTION EASEMENT
8. TREE REMOVAL

LEGEND

CG - XX	CATTLE GUARD
TO - XX	TURNOUT/DRIVEWAY
DS - XX	DRAINAGE STRUCTURE
DSTO - XX	DRAINAGE STRUCTURE AT TURNOUT

POSSIBLE AREA FOR TIMBER CHIPPING. CONTRACTOR SHALL NOT PLACE CHIPPED MATERIAL WITHIN 3' OF PROPOSED PIPE INLETS OR OUTLETS AND THEIR CORRESPONDING FLOWLINES.

POSSIBLE AREA FOR STORAGE OF CHOPPED TREES, PROCESSED INTO MANAGEABLE SIZES FOR AREA RESIDENTS TO RECEIVE.

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET
SUITE 460
PHOENIX, AZ 85008
(602) 283-2701

ROUTE N12

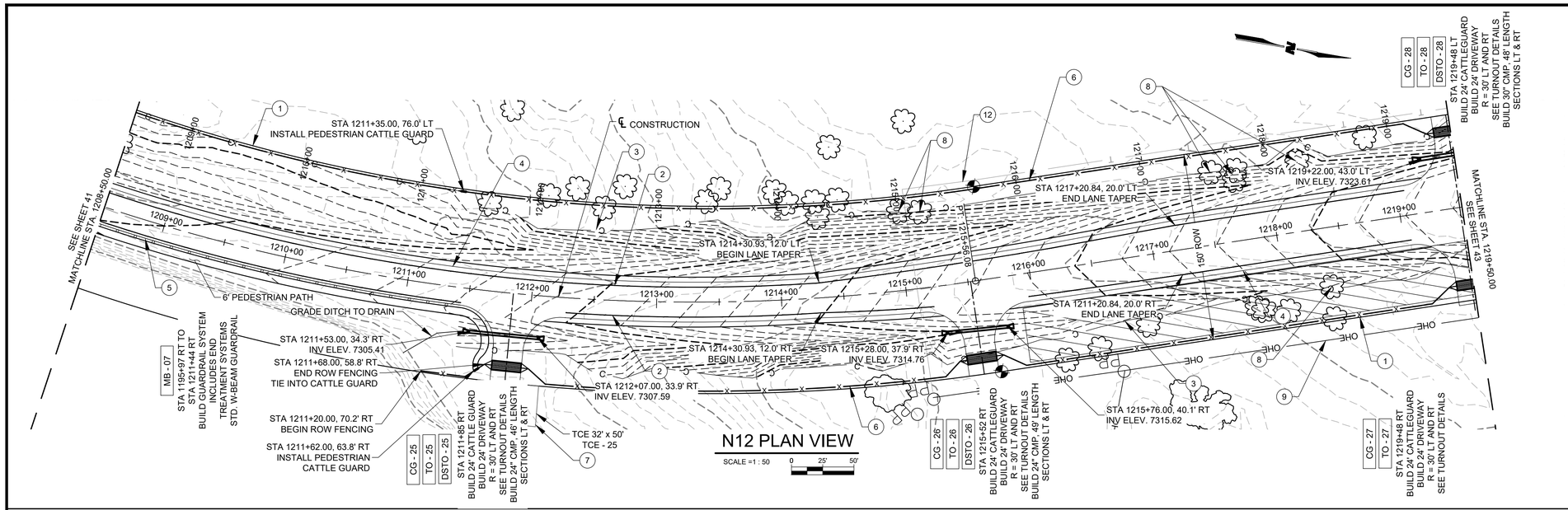
PLAN AND PROFILE

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 09/27/2024 ARIZONA, U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

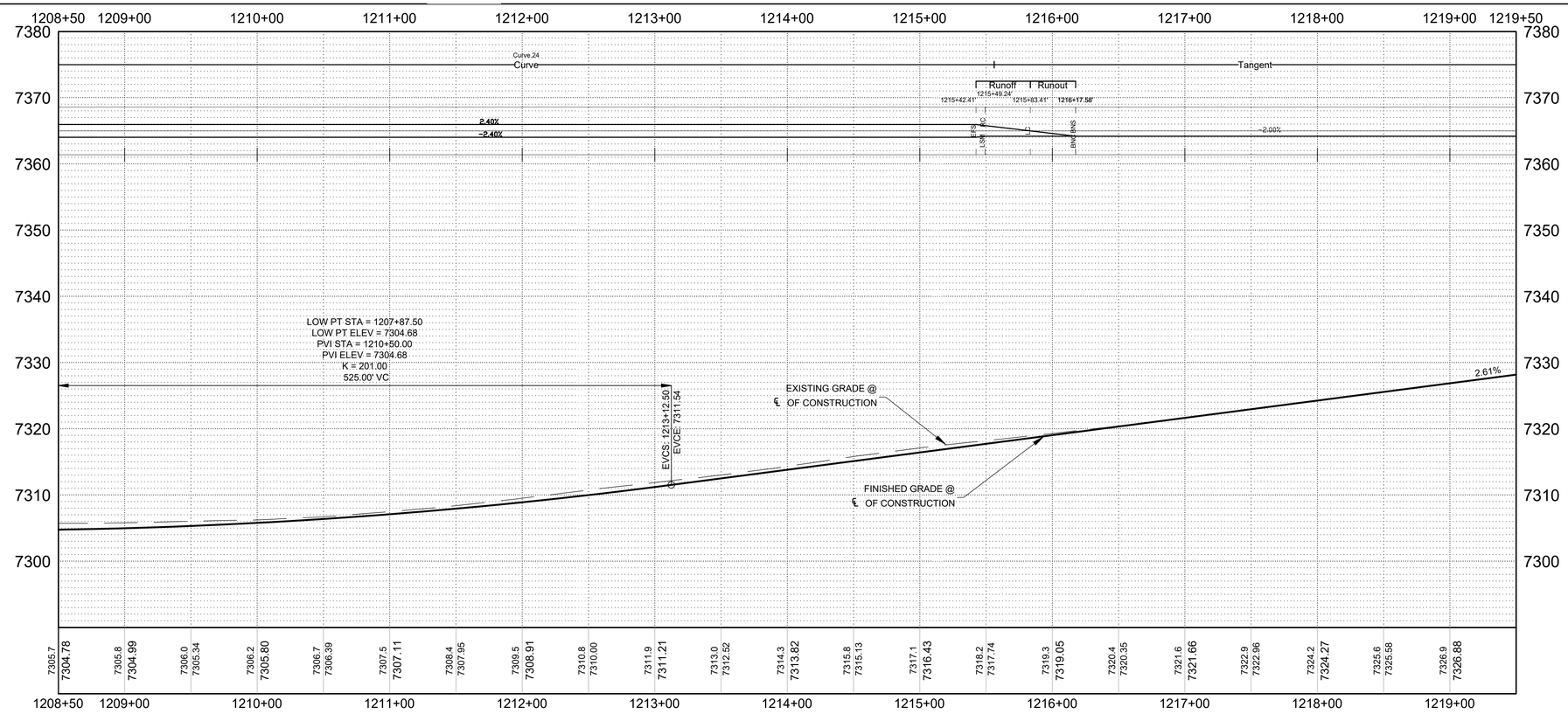
DESIGN	JEB	WCEA NO. 1710009012	DATE 2025
DRAWN	ERG	N12	SHEET NO. 41 - 120
CHECK	ASF		

REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	1710009012	42	120



N12 PLAN VIEW

SCALE =1 : 50 (0, 25', 50')



N12 PROFILE VIEW

SCALE =1 : 50 (0, 25', 50')

VERT =1 : 10 (0, 5', 10')

GENERAL NOTES

1. CONTRACTOR SHALL REVIEW LOCATIONS OF DRAINAGE STRUCTURES SHOWN HEREIN AND BUILD NEW STRUCTURES PER THE FULL BUILD NOTES SHOWN ON THE DRAINAGE STRUCTURE SHEETS OF THE PLAN SET.

2. CONTRACTOR SHALL REVIEW LOCATIONS OF DRIVEWAYS SHOWN HEREIN AND BUILD NEW DRIVEWAYS PER THE FULL BUILD NOTES ON THE TURNOUT PROFILES SHEETS ON THIS PLAN SET.

3. INSTALL DELINEATORS AS SHOWN ON BIA STD 3: OBJECT MARKERS.

KEYNOTES

1. EXISTING ROW
2. EDGE OF TRAVEL WAY
3. SLOPE LIMITS
4. EDGE OF PAVEMENT
5. INSTALL GUARDRAIL
6. NEW ROW FENCE
7. TEMPORARY CONSTRUCTION EASEMENT
8. TREE REMOVAL
9. EXISTING OVERHEAD ELECTRIC
12. EXISTING UNDERGROUND COMMUNICATION

LEGEND

CG - XX	CATTLE GUARD
TO - XX	TURNOUT/DRIVEWAY
DS - XX	DRAINAGE STRUCTURE
DSTO - XX	DRAINAGE STRUCTURE AT TURNOUT

POSSIBLE AREA FOR TIMBER CHIPPING. CONTRACTOR SHALL NOT PLACE CHIPPED MATERIAL WITHIN 3' OF PROPOSED PIPE INLETS OR OUTLETS AND THEIR CORRESPONDING FLOWLINES.

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET
SUITE 460
PHOENIX, AZ 85008
(602) 283-2701

ROUTE N12

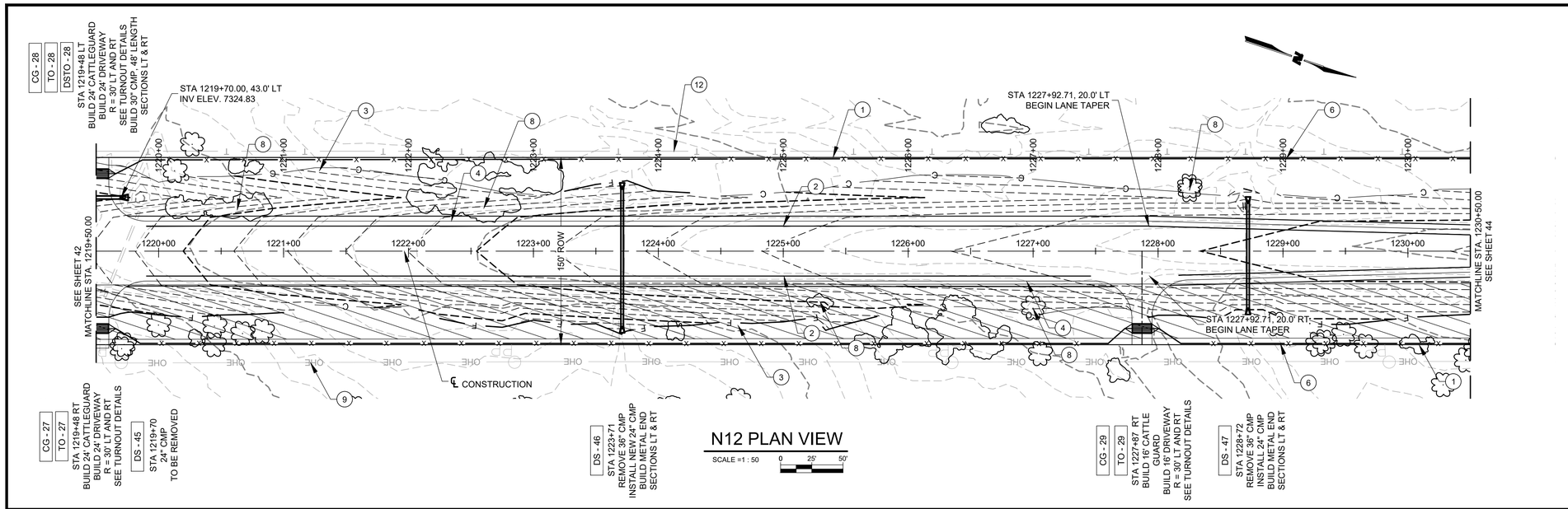
PLAN AND PLOTTING

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 10/29/2025 ARIZONA, U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

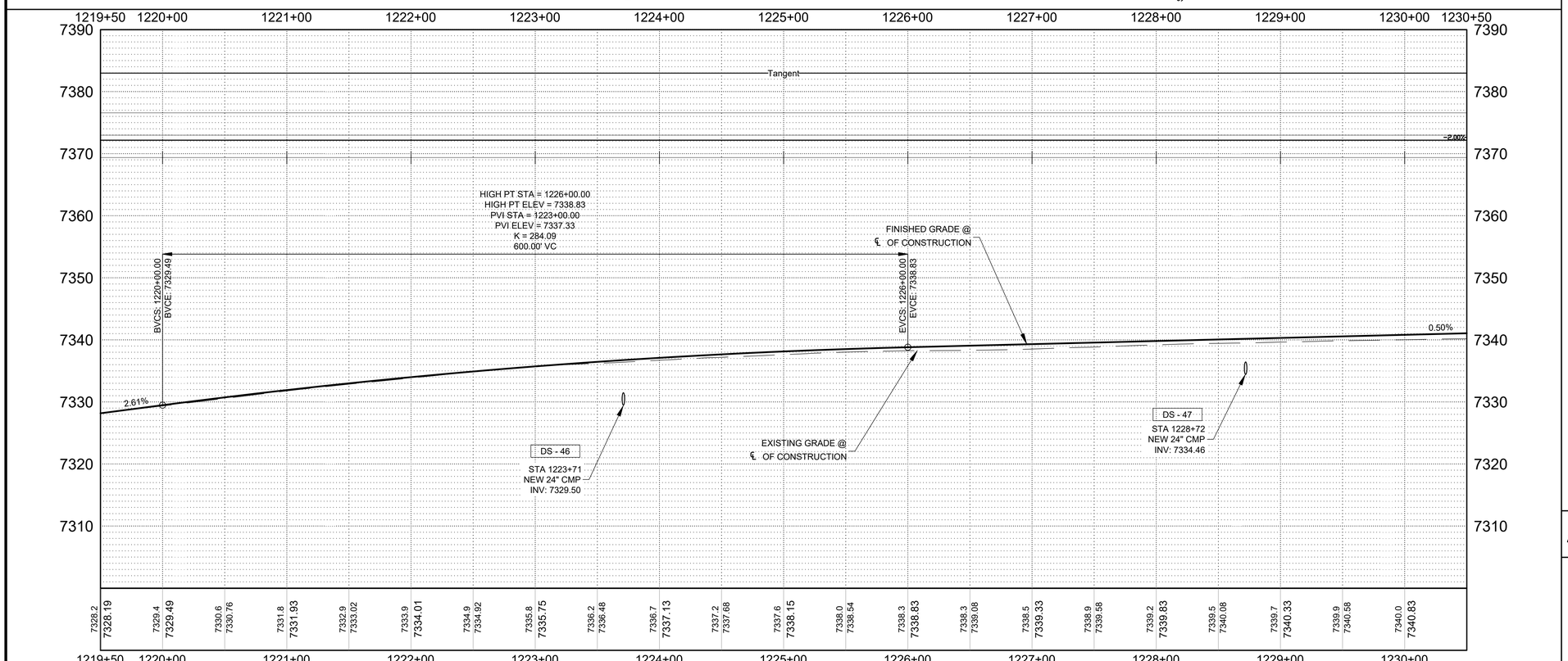
DESIGN	JEB	WCEA NO. 1710009012	DATE 2025
DRAWN	ERG	N12	SHEET NO. 42 - 120
CHECK	ASF		

REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	1710009012	43	120



N12 PLAN VIEW

SCALE =1 : 50 (0, 25', 50')



N12 PROFILE VIEW

SCALE =1 : 50 (0, 25', 50')

VERT =1 : 10 (0, 5', 10')

GENERAL NOTES

1. CONTRACTOR SHALL REVIEW LOCATIONS OF DRAINAGE STRUCTURES SHOWN HEREIN AND BUILD NEW STRUCTURES PER THE FULL BUILD NOTES SHOWN ON THE DRAINAGE STRUCTURE SHEETS OF THE PLAN SET.

2. CONTRACTOR SHALL REVIEW LOCATIONS OF DRIVEWAYS SHOWN HEREIN AND BUILD NEW DRIVEWAYS PER THE FULL BUILD NOTES ON THE TURNOUT PROFILES SHEETS ON THIS PLAN SET.

3. INSTALL DELINEATORS AS SHOWN ON BIA STD 3: OBJECT MARKERS.

KEYNOTES

1. EXISTING ROW
2. EDGE OF TRAVEL WAY
3. SLOPE LIMITS
4. EDGE OF PAVEMENT
5. INSTALL GUARDRAIL
6. NEW ROW FENCE
7. TEMPORARY CONSTRUCTION EASEMENT
8. TREE REMOVAL
9. EXISTING OVERHEAD ELECTRIC
12. EXISTING UNDERGROUND COMMUNICATION

LEGEND

- CG - XX — CATTLE GUARD
- TO - XX — TURNOUT/DRIVEWAY
- DS - XX — DRAINAGE STRUCTURE
- DSTO - XX — DRAINAGE STRUCTURE AT TURNOUT
- POSSIBLE AREA FOR TIMBER CHIPPING. CONTRACTOR SHALL NOT PLACE CHIPPED MATERIAL WITHIN 3' OF PROPOSED PIPE INLETS OR OUTLETS AND THEIR CORRESPONDING FLOWLINES.

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET
SUITE 460
PHOENIX, AZ 85008
(602) 283-2701

ROUTE N12

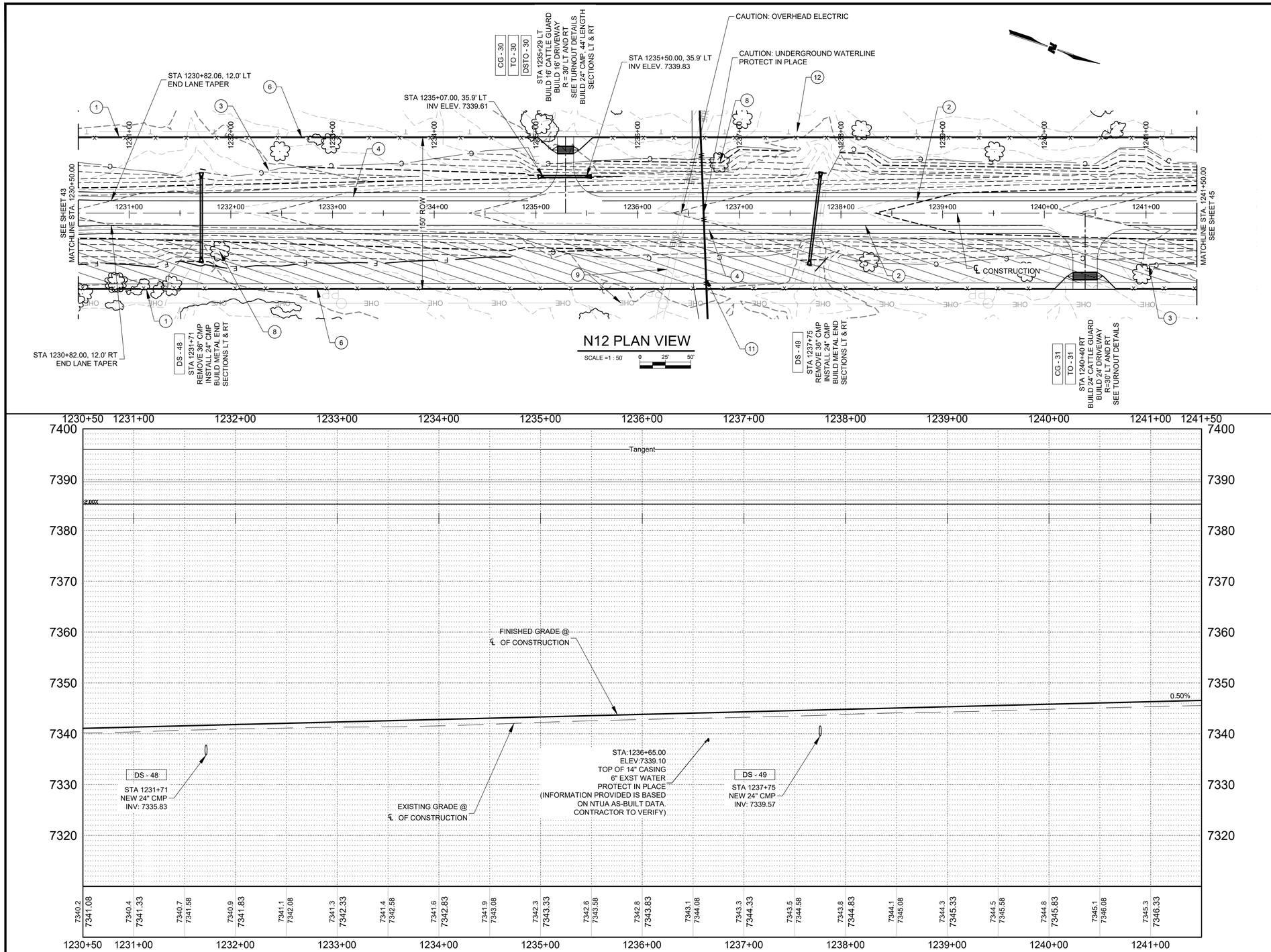
PLAN AND PROFILE

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 09/26/2025 ARIZONA, U.S.A.

REVISIONS NO.	DATE	REMARKS	BY

DESIGN JEB	WCEA NO. 1710009012	DATE 2025	
DRAWN ERG	N12	SHEET NO. 43 - 120	
CHECK ASF			

REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	1710009012	44	120



N12 PLAN VIEW

SCALE =1 : 50 (0, 25', 50')

N12 PROFILE VIEW

SCALE =1 : 50 (0, 25', 50')

VERT =1 : 10 (0, 5', 10')

GENERAL NOTES

1. CONTRACTOR SHALL REVIEW LOCATIONS OF DRAINAGE STRUCTURES SHOWN HEREIN AND BUILD NEW STRUCTURES PER THE FULL BUILD NOTES SHOWN ON THE DRAINAGE STRUCTURE SHEETS OF THE PLAN SET.

2. CONTRACTOR SHALL REVIEW LOCATIONS OF DRIVEWAYS SHOWN HEREIN AND BUILD NEW DRIVEWAYS PER THE FULL BUILD NOTES ON THE TURNOUT PROFILES SHEETS ON THIS PLAN SET.

3. INSTALL DELINEATORS AS SHOWN ON BIA STD 3: OBJECT MARKERS.

KEYNOTES

1. EXISTING ROW
2. EDGE OF TRAVEL WAY
3. SLOPE LIMITS
4. EDGE OF PAVEMENT
5. INSTALL GUARDRAIL
6. NEW ROW FENCE
7. TEMPORARY CONSTRUCTION EASEMENT
8. TREE REMOVAL
9. EXISTING OVERHEAD ELECTRIC
11. EXISTING WATER LINE
12. EXISTING UNDERGROUND COMMUNICATION

LEGEND

CG - XX	CATTLE GUARD
TO - XX	TURNOUT/DRIVEWAY
DS - XX	DRAINAGE STRUCTURE
DSTO - XX	DRAINAGE STRUCTURE AT TURNOUT
	POSSIBLE AREA FOR TIMBER CHIPPING. CONTRACTOR SHALL NOT PLACE CHIPPED MATERIAL WITHIN 3' OF PROPOSED PIPE INLETS OR OUTLETS AND THEIR CORRESPONDING FLOWLINES.

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET
SUITE 460
PHOENIX, AZ 85008
(602) 283-2701

ROUTE N12

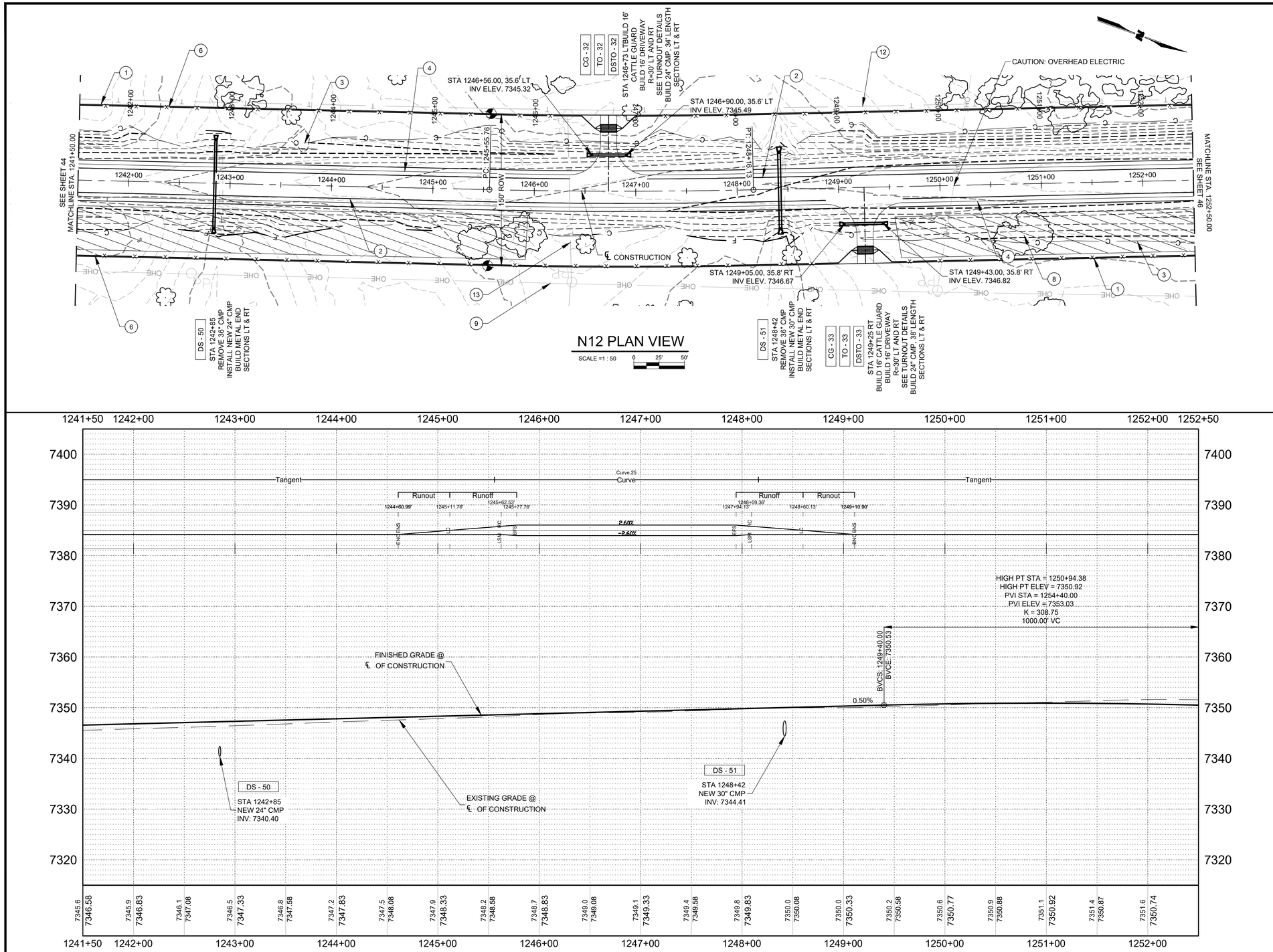
PLAN AND PROFILE

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 10/29/2025 ARIZONA, U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

DESIGN	JEB	WCEA NO. 1710009012	DATE 2025
DRAWN	ERG	N12	SHEET NO. 44 - 120
CHECK	ASF		

REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	1710009012	45	120



N12 PLAN VIEW

SCALE =1 : 50

N12 PROFILE VIEW

VERT =1 : 10

SCALE =1 : 50

GENERAL NOTES

1. CONTRACTOR SHALL REVIEW LOCATIONS OF DRAINAGE STRUCTURES SHOWN HEREIN AND BUILD NEW STRUCTURES PER THE FULL BUILD NOTES SHOWN ON THE DRAINAGE STRUCTURE SHEETS OF THE PLAN SET.

2. CONTRACTOR SHALL REVIEW LOCATIONS OF DRIVEWAYS SHOWN HEREIN AND BUILD NEW DRIVEWAYS PER THE FULL BUILD NOTES ON THE TURNOUT PROFILES SHEETS ON THIS PLAN SET.

3. INSTALL DELINEATORS AS SHOWN ON BIA STD 3: OBJECT MARKERS.

KEYNOTES

1. EXISTING ROW
2. EDGE OF TRAVEL WAY
3. SLOPE LIMITS
4. EDGE OF PAVEMENT
5. INSTALL GUARDRAIL
6. NEW ROW FENCE
7. TEMPORARY CONSTRUCTION EASEMENT
8. TREE REMOVAL
9. EXISTING OVERHEAD ELECTRIC
12. EXISTING UNDERGROUND COMMUNICATION
13. EXISTING OVERHEAD COMMUNICATION

LEGEND

- CG - XX — CATTLE GUARD
- TO - XX — TURNOUT/DRIVEWAY
- DS - XX — DRAINAGE STRUCTURE
- DSTO - XX — DRAINAGE STRUCTURE AT TURNOUT
- POSSIBLE AREA FOR TIMBER CHIPPING. CONTRACTOR SHALL NOT PLACE CHIPPED MATERIAL WITHIN 3' OF PROPOSED PIPE INLETS OR OUTLETS AND THEIR CORRESPONDING FLOWLINES.

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET
SUITE 460
PHOENIX, AZ 85008
(602) 283-2701

ROUTE N12

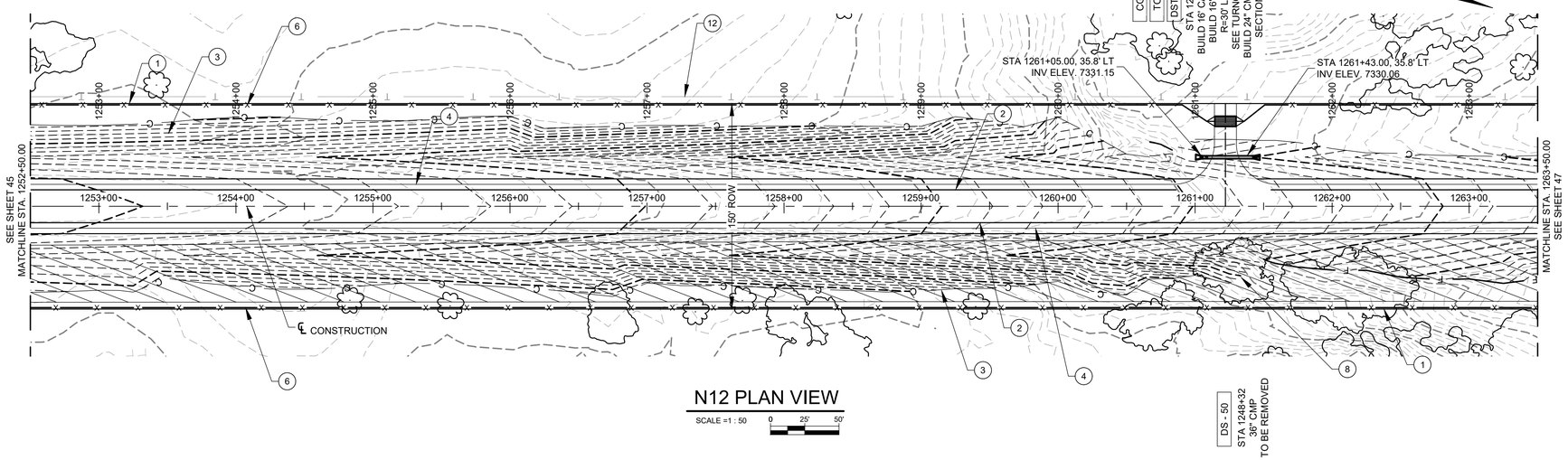
PLAN AND PROFILE

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 02/27/2025 ARIZONA, U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

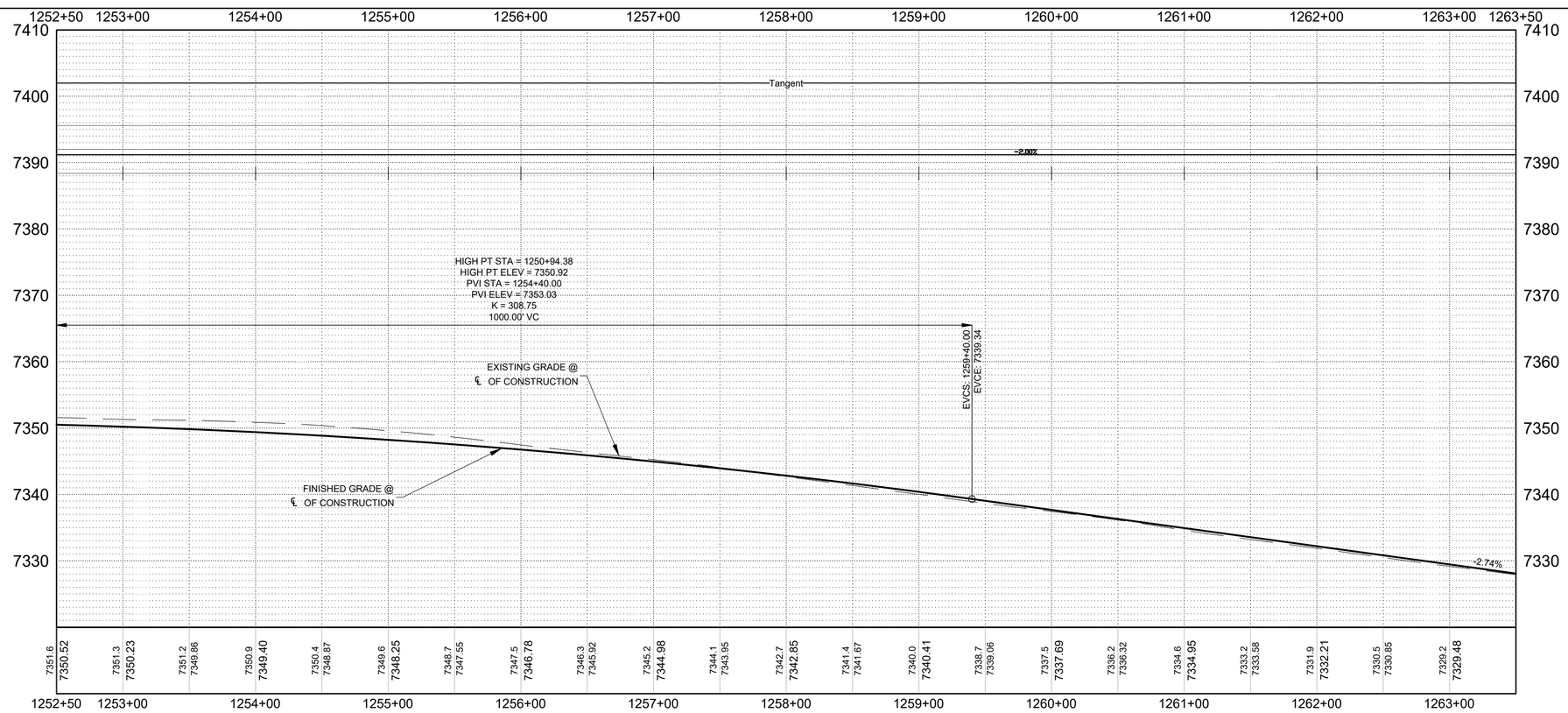
DESIGN	JEB	WCEA NO. 1710009012	DATE 2025
DRAWN	ERG	N12	SHEET NO. 45 - 120
CHECK	ASF		

REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	1710009012	46	120



N12 PLAN VIEW

SCALE =1 : 50 (0, 25', 50')



N12 PROFILE VIEW

SCALE =1 : 50 (0, 25', 50')

VERT =1 : 10 (0, 5', 10')

GENERAL NOTES

1. CONTRACTOR SHALL REVIEW LOCATIONS OF DRAINAGE STRUCTURES SHOWN HEREIN AND BUILD NEW STRUCTURES PER THE FULL BUILD NOTES SHOWN ON THE DRAINAGE STRUCTURE SHEETS OF THE PLAN SET.

2. CONTRACTOR SHALL REVIEW LOCATIONS OF DRIVEWAYS SHOWN HEREIN AND BUILD NEW DRIVEWAYS PER THE FULL BUILD NOTES ON THE TURNOUT PROFILES SHEETS ON THIS PLAN SET.

3. INSTALL DELINEATORS AS SHOWN ON BIA STD 3: OBJECT MARKERS.

KEYNOTES

1. EXISTING ROW
2. EDGE OF TRAVEL WAY
3. SLOPE LIMITS
4. EDGE OF PAVEMENT
5. INSTALL GUARDRAIL
6. NEW ROW FENCE
7. TEMPORARY CONSTRUCTION EASEMENT
8. TREE REMOVAL
9. EXISTING OVERHEAD ELECTRIC
12. EXISTING UNDERGROUND COMMUNICATION

LEGEND

CG - XX	CATTLE GUARD
TO - XX	TURNOUT/DRIVEWAY
DS - XX	DRAINAGE STRUCTURE
DSTO - XX	DRAINAGE STRUCTURE AT TURNOUT

POSSIBLE AREA FOR TIMBER CHIPPING. CONTRACTOR SHALL NOT PLACE CHIPPED MATERIAL WITHIN 3' OF PROPOSED PIPE INLETS OR OUTLETS AND THEIR CORRESPONDING FLOWLINES.

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET
SUITE 460
PHOENIX, AZ 85008
(602) 283-2701

ROUTE N12

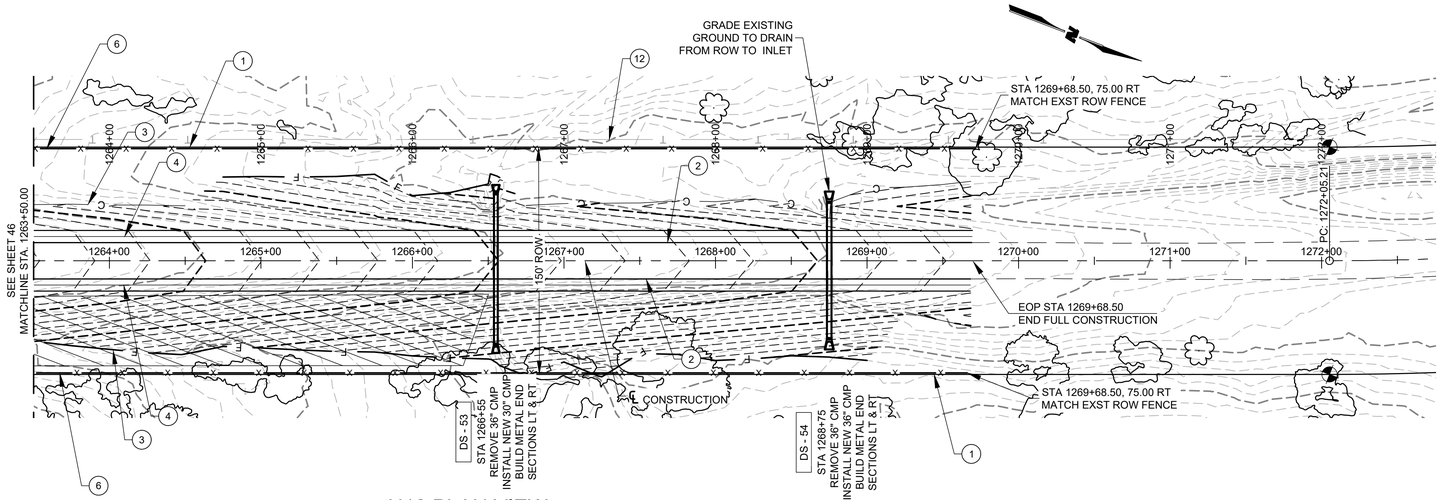
PLAN AND PROFILE

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 02/25/2025 ARIZONA, U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

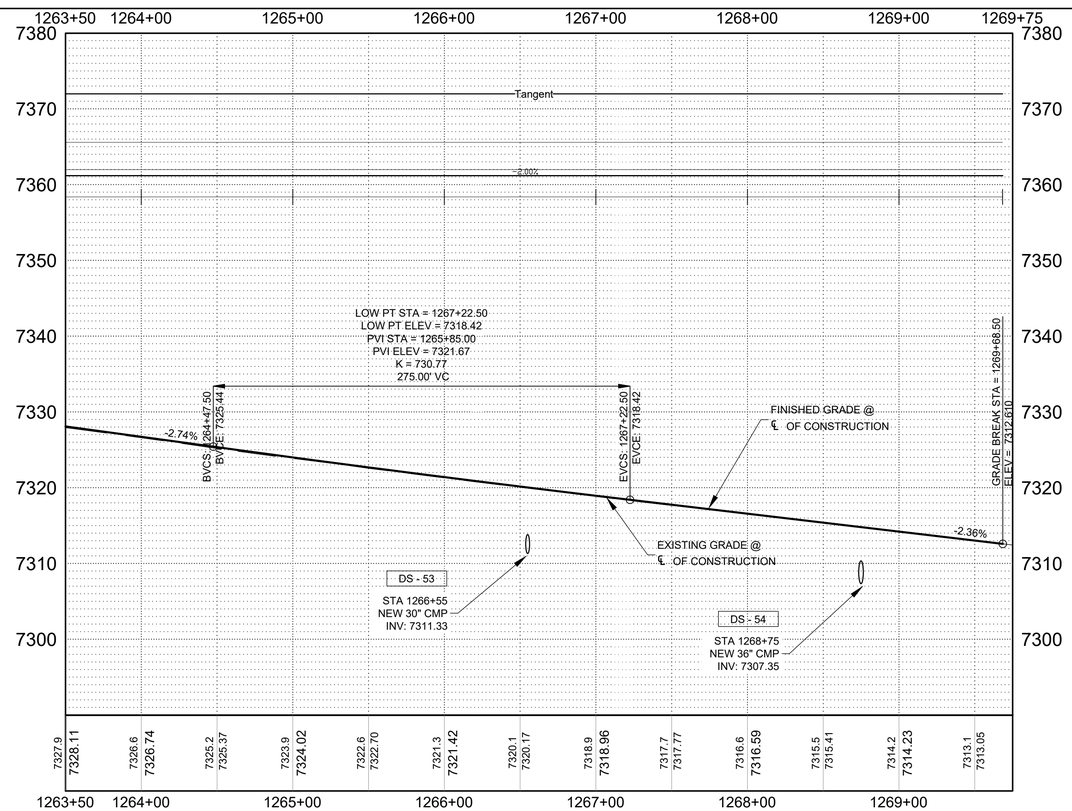
DESIGN	JEB	WCEA NO. 1710009012	DATE 2025
DRAWN	ERG	N12	SHEET NO. 46 - 120
CHECK	ASF		

REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	1710009012	47	120



N12 PLAN VIEW

SCALE =1 : 50 (0, 25', 50')



N12 PROFILE VIEW

SCALE =1 : 50 (0, 25', 50')

VERT =1 : 10 (0, 5', 10')

GENERAL NOTES

1. CONTRACTOR SHALL REVIEW LOCATIONS OF DRAINAGE STRUCTURES SHOWN HEREIN AND BUILD NEW STRUCTURES PER THE FULL BUILD NOTES SHOWN ON THE DRAINAGE STRUCTURE SHEETS OF THE PLAN SET.

2. CONTRACTOR SHALL REVIEW LOCATIONS OF DRIVEWAYS SHOWN HEREIN AND BUILD NEW DRIVEWAYS PER THE FULL BUILD NOTES ON THE TURNOUT PROFILES SHEETS ON THIS PLAN SET.

3. INSTALL DELINEATORS AS SHOWN ON BIA STD 3: OBJECT MARKERS.

KEYNOTES

1. EXISTING ROW
2. EDGE OF TRAVEL WAY
3. SLOPE LIMITS
4. EDGE OF PAVEMENT
5. INSTALL GUARDRAIL
6. NEW ROW FENCE
7. TEMPORARY CONSTRUCTION EASEMENT
8. TREE REMOVAL
9. EXISTING OVERHEAD ELECTRIC
12. EXISTING UNDERGROUND COMMUNICATION

LEGEND

CG - XX	CATTLE GUARD
TO - XX	TURNOUT/DRIVEWAY
DS - XX	DRAINAGE STRUCTURE
DSTO - XX	DRAINAGE STRUCTURE AT TURNOUT

POSSIBLE AREA FOR TIMBER CHIPPING. CONTRACTOR SHALL NOT PLACE CHIPPED MATERIAL WITHIN 3' OF PROPOSED PIPE INLETS OR OUTLETS AND THEIR CORRESPONDING FLOWLINES.

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET
SUITE 460
PHOENIX, AZ 85008
(602) 283-2701

ROUTE N12

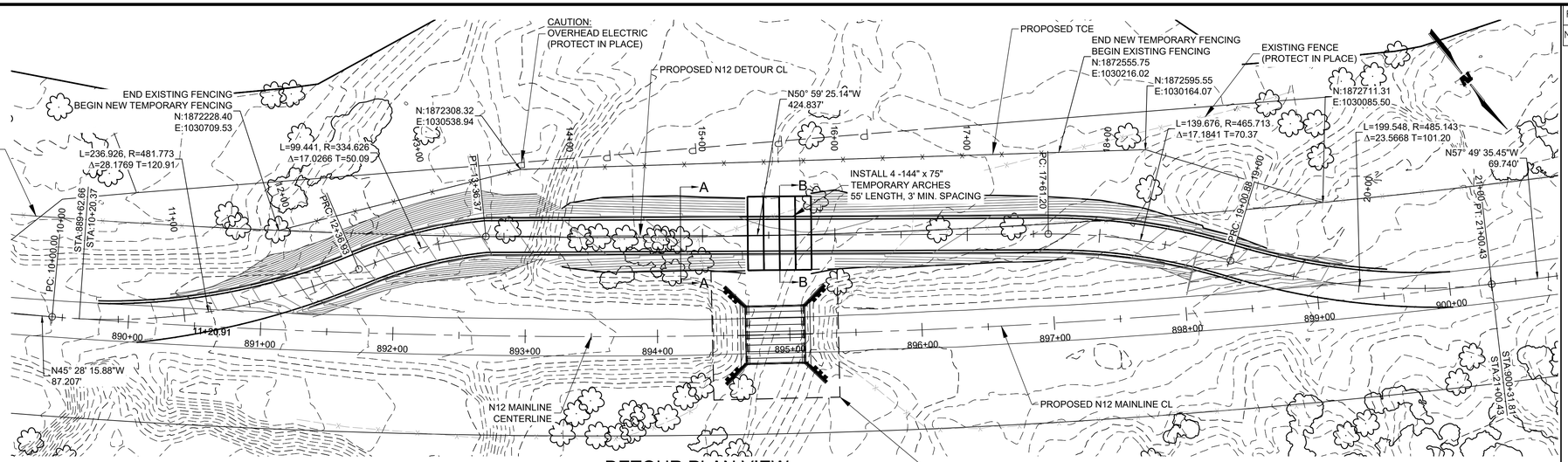
PLAN AND PROFILE

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 09/26/2025 ARIZONA, U.S.A.

REVISIONS NO.	DATE	REMARKS	BY

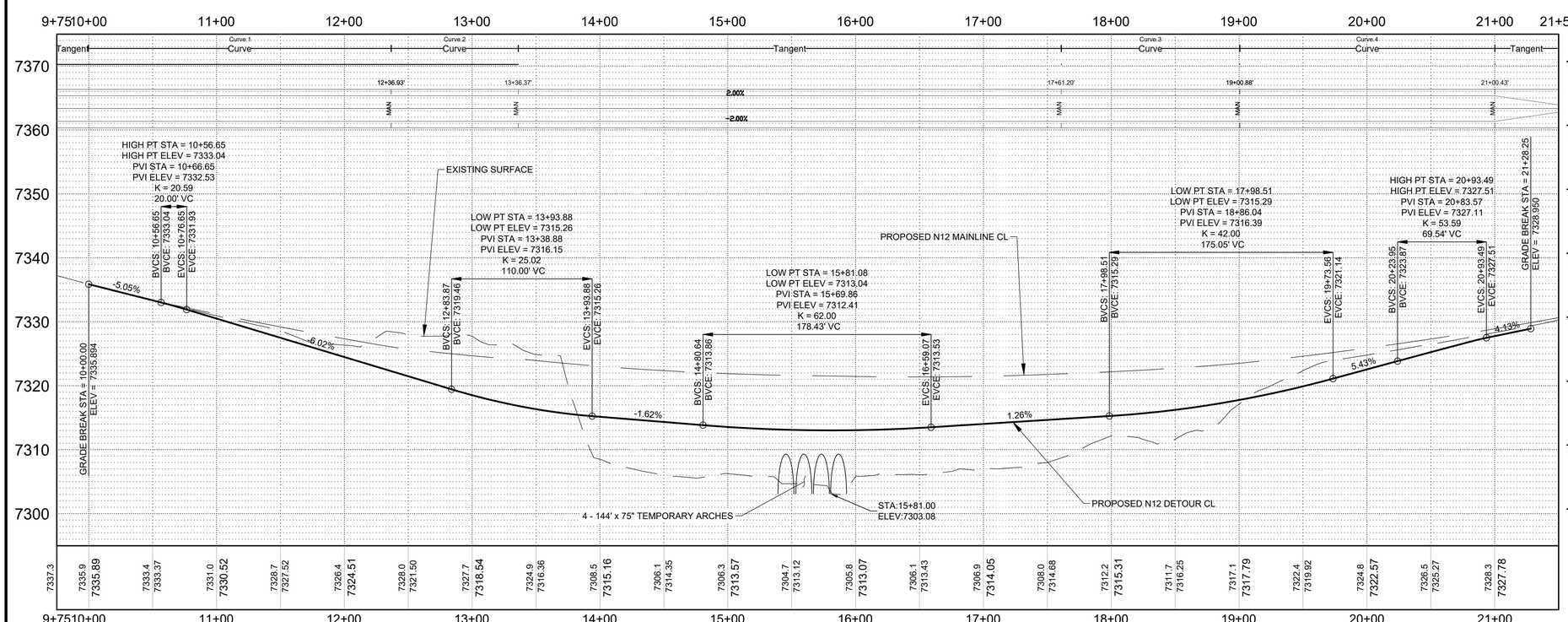
DESIGN JEB	WCEA NO. 1710009012	DATE 2025	
DRAWN ERG	N12	SHEET NO. 47 - 120	
CHECK ASF			

REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	1710009012	48	120



DETOUR PLAN VIEW

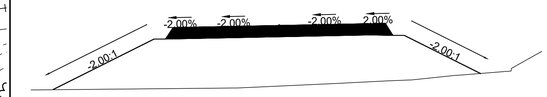
SCALE =1 : 50 (0, 25', 50')



DETOUR PROFILE VIEW

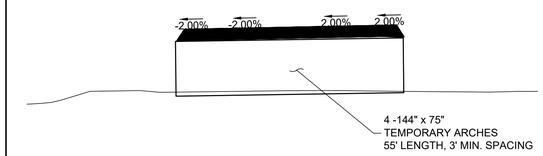
SCALE =1 : 50 (0, 25', 50')

VERT =1 : 10 (0, 5', 10')



A-A

TYPICAL FILL SECTION



B-B

TYPICAL SECTION OVER ARCHES

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET
SUITE 460
PHOENIX, AZ 85008
(602) 283-2701

ROUTE N12

DETOUR

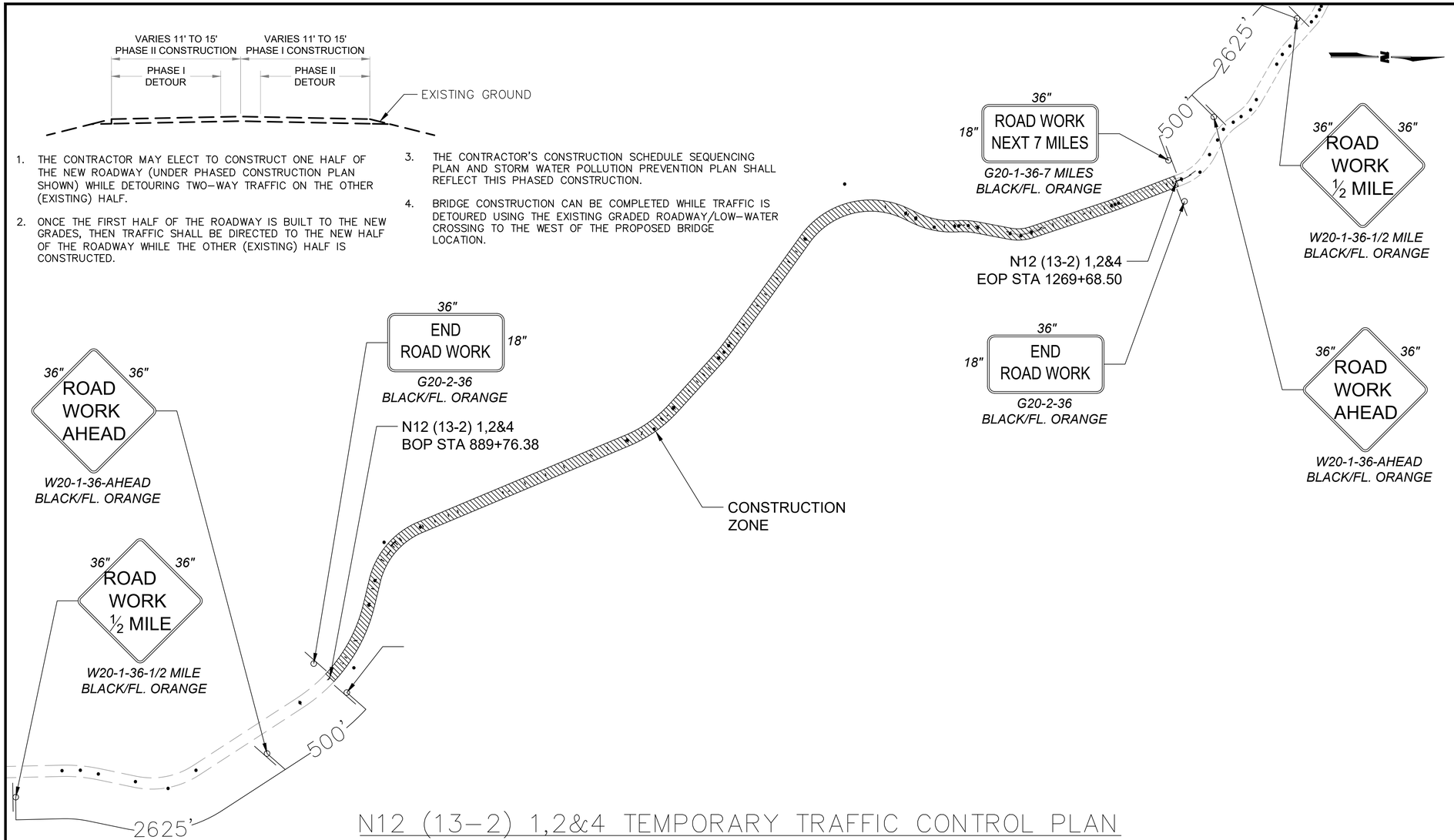
Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 02/25/2025 ARIZONA, U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

DESIGN	JEB	WCEA NO. 1710009012	DATE 2025
DRAWN	ERG	N12	SHEET NO. 48 - 120
CHECK	ASF		

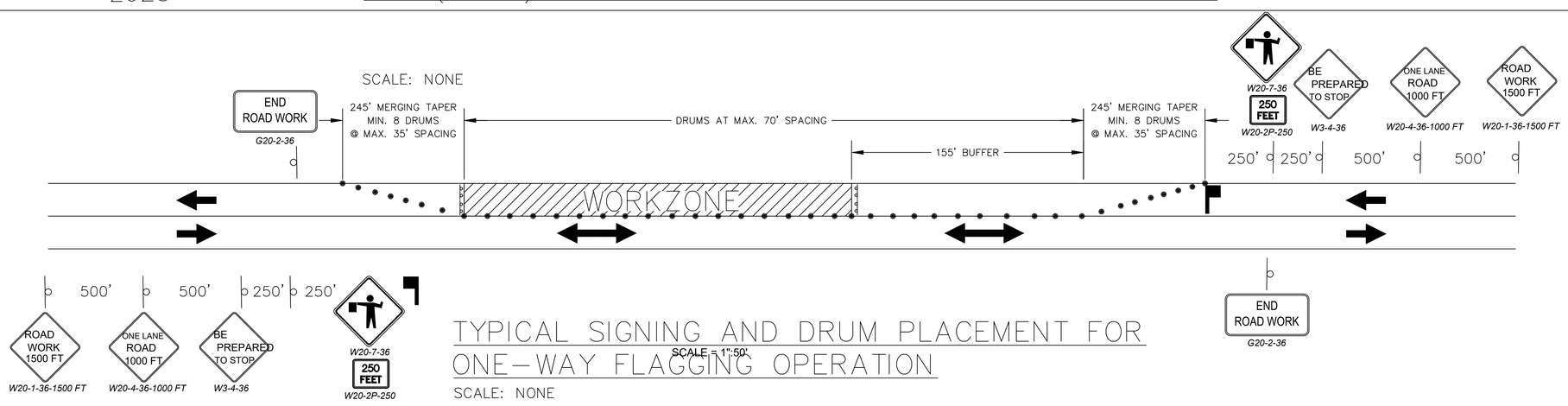
REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13–2) 1,2&4	49	120

1. THE CONTRACTOR MAY ELECT TO CONSTRUCT ONE HALF OF THE NEW ROADWAY (UNDER PHASED CONSTRUCTION PLAN SHOWN) WHILE DETOURING TWO–WAY TRAFFIC ON THE OTHER (EXISTING) HALF.
2. ONCE THE FIRST HALF OF THE ROADWAY IS BUILT TO THE NEW GRADES, THEN TRAFFIC SHALL BE DIRECTED TO THE NEW HALF OF THE ROADWAY WHILE THE OTHER (EXISTING) HALF IS CONSTRUCTED.
3. THE CONTRACTOR'S CONSTRUCTION SCHEDULE SEQUENCING PLAN AND STORM WATER POLLUTION PREVENTION PLAN SHALL REFLECT THIS PHASED CONSTRUCTION.
4. BRIDGE CONSTRUCTION CAN BE COMPLETED WHILE TRAFFIC IS DETOURED USING THE EXISTING GRADED ROADWAY/LOW–WATER CROSSING TO THE WEST OF THE PROPOSED BRIDGE LOCATION.



N12 (13–2) 1,2&4 TEMPORARY TRAFFIC CONTROL PLAN

SCALE: NONE



TYPICAL SIGNING AND DRUM PLACEMENT FOR ONE–WAY FLAGGING OPERATION

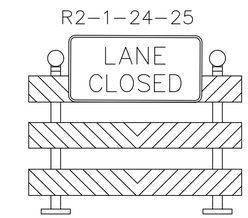
SCALE = 1":50'

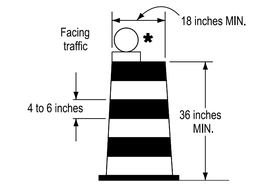
SCALE: NONE

GENERAL NOTES

1. ALL NEW SIGNING AND STRIPING SHALL COMPLY WITH THE FHWA AND MUTCD (LATEST EDITION) RETROREFLECTIVITY STANDARDS.

SIGN FACE DETAILS





DRUM

LEGEND

- TRAFFIC CONTROL SIGN
- DRUMS
- TYPE III BARRICADE
- WORK ZONE AREA

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET
SUITE 460
PHOENIX, AZ 85008
(602) 283–2701

ROUTE N12

TEMPORARY TRAFFIC CONTROL

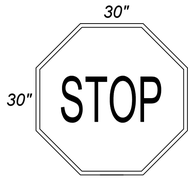
Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 07/07/25 ARIZONA, U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

DESIGN	JEB	WCEA NO. 1710009012	DATE 2025
DRAWN	ERG	N12	SHEET NO. 49 – 120
CHECK	ASF		

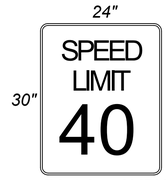
REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	50	120

SIGN FACE DETAILS

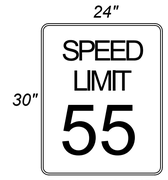


R1-1-30
WHITE/RED

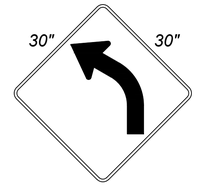
R2-1-24-25MPH
BLACK/WHITE



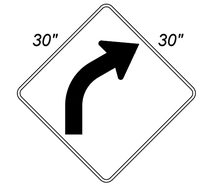
R2-1-24-40MPH
BLACK/WHITE



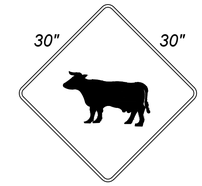
R2-1-24-25MPH
BLACK/WHITE



W1-2L-30
BLACK/FL. YELLOW

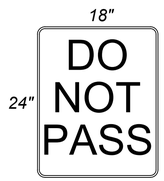


W1-2R-30
BLACK/FL. YELLOW



W11-4-30
BLACK/FL. YELLOW

W14-3-40
BLACK/FL. YELLOW



R4-1-18
BLACK/WHITE

D10-02-10-59
GREEN/WHITE

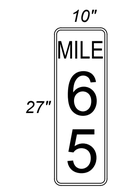
D10-02-10-60
GREEN/WHITE

D10-02-10-61
GREEN/WHITE

D10-02-10-62
GREEN/WHITE

D10-02-10-63
GREEN/WHITE

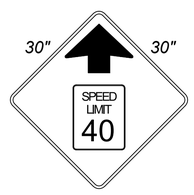
D10-02-10-64
GREEN/WHITE



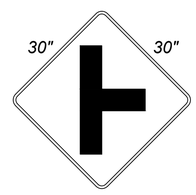
D10-02-10-65
GREEN/WHITE

W1-4L-30
BLACK/FL. YELLOW

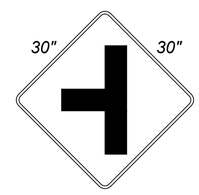
W3-5-30-25MPH
BLACK/FL. YELLOW



W3-5-30-40MPH
BLACK/FL. YELLOW

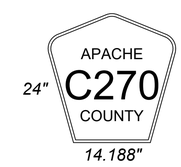


W2-2R-30
BLACK/FL. YELLOW

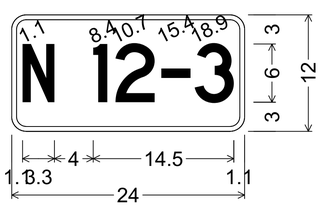


W2-2L-30
BLACK/FL. YELLOW

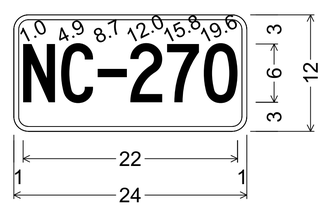
W1-5L-30
BLACK/FL. YELLOW



M1-6-24-APACHE
BLACK/FL. YELLOW



D3-1-1;
1.5" Radius, 0.5" Border, White on, Green;
"N", C 50% spacing;
"12-3", D 60% spacing;



D3-1-1;
1.5" Radius, 0.5" Border, White on, Green;
"NC-270", C 50% spacing;

GENERAL NOTES

1. ALL NEW SIGNING AND STRIPING SHALL COMPLY WITH THE FHWA AND MUTCD (LATEST EDITION) RETROREFLECTIVITY STANDARDS.
2. SEE STANDARD DRAWING FOR SIGNING AND OBJECT MARKER DETAILS.

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET
SUITE 460
PHOENIX, AZ 85008
(602) 283-2701

ROUTE N12

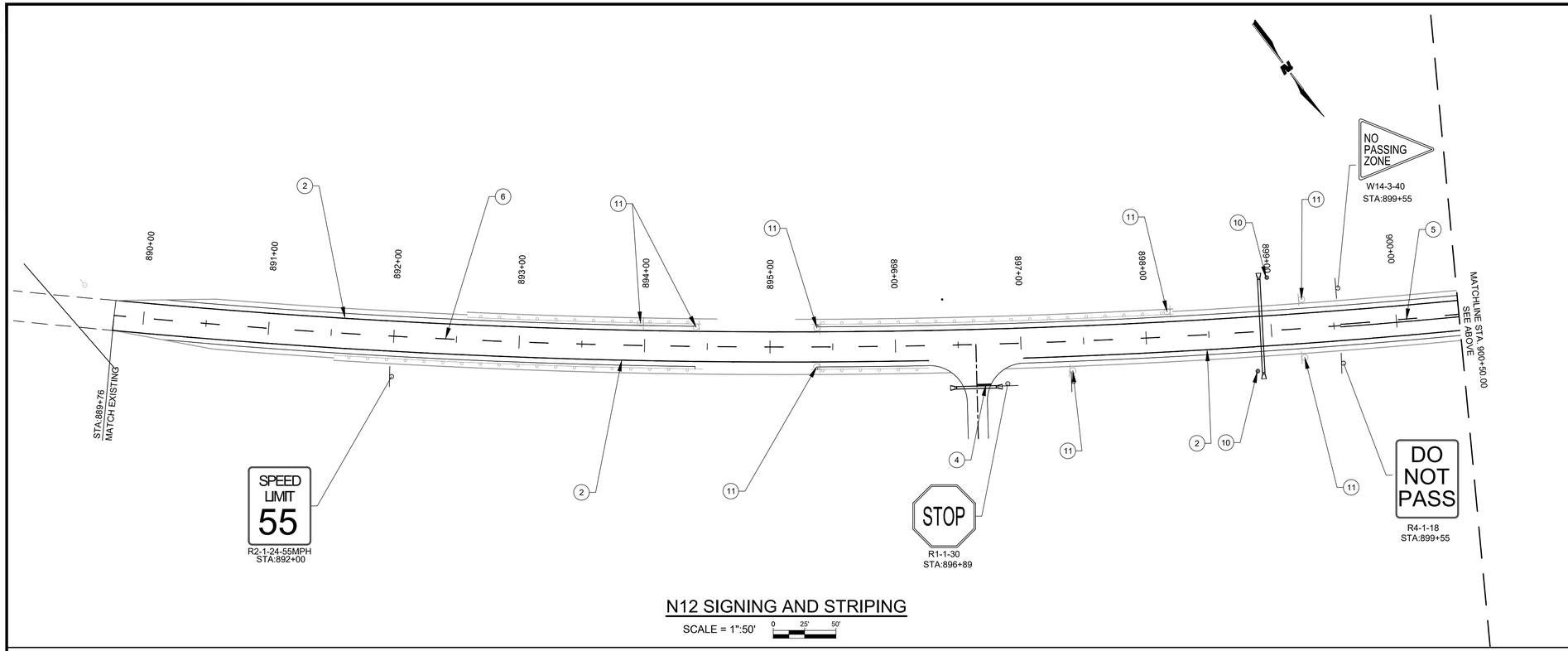
SIGN DETAILS

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 07/31/2025 ARIZONA, U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

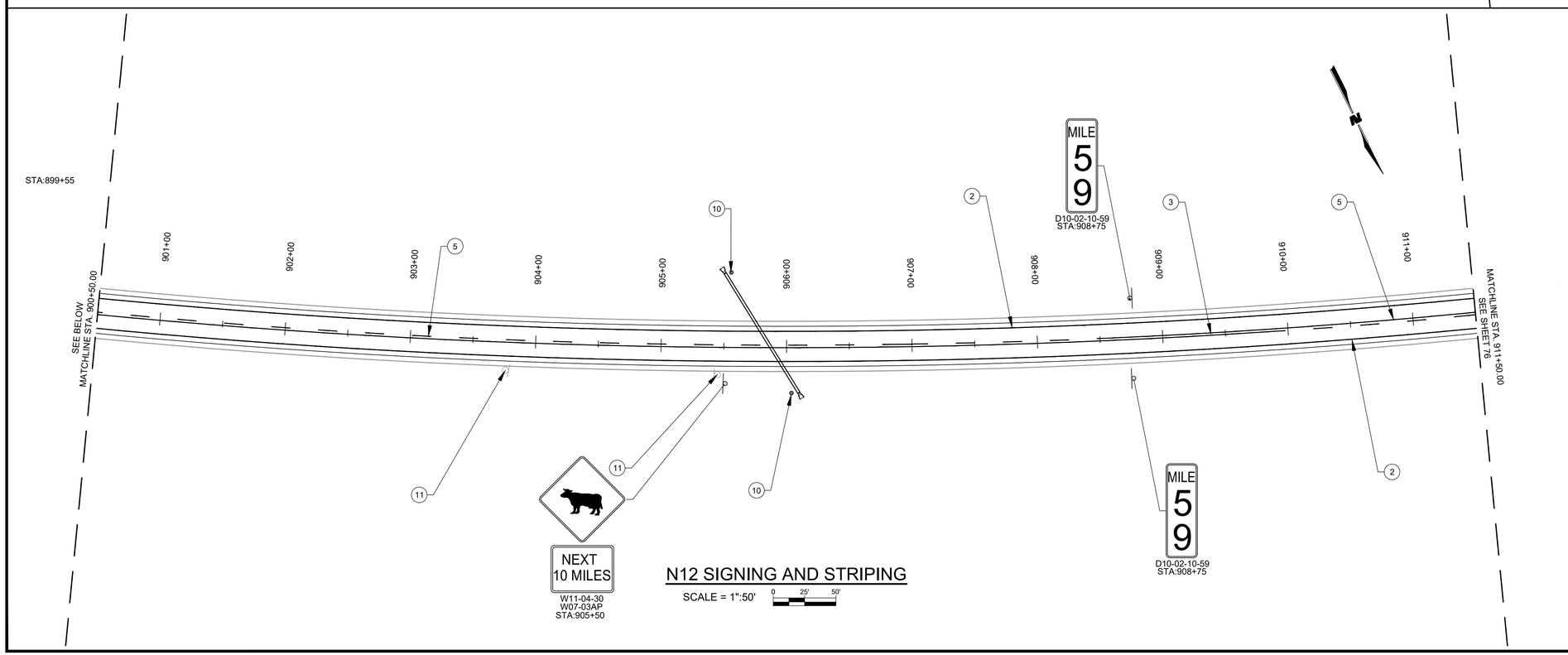
DESIGN	JEB	WCEA NO. 1710009012	DATE 2025
DRAWN	ERG	N12	SHEET NO. 50 - 120
CHECK	ASF		

REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	51	120



N12 SIGNING AND STRIPING

SCALE = 1":50' 0 25' 50'



N12 SIGNING AND STRIPING

SCALE = 1":50' 0 25' 50'

GENERAL NOTES

1. ALL NEW SIGNING AND STRIPING SHALL COMPLY WITH THE FHWA AND 2009 MUTCD RETROREFLECTIVITY STANDARDS.

KEYNOTES

1. EXISTING ROW
2. REFLECTORIZED PAINTED MARKING - 4" SOLID SINGLE WHITE
3. REFLECTORIZED PAINTED MARKING - 4" SOLID DOUBLE YELLOW
4. REFLECTORIZED PAINTED MARKING - 24" SOLID SINGLE WHITE
5. REFLECTORIZED PAINTED MARKING - 4" SOLID & SKIP YELLOW
6. REFLECTORIZED PAINTED MARKING - 4" SKIP YELLOW
10. TYPE II OBJECT MARKER
11. REMOVE EXISTING SIGN

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET
SUITE 460
PHOENIX, AZ 85008
(602) 283-2701

ROUTE N12

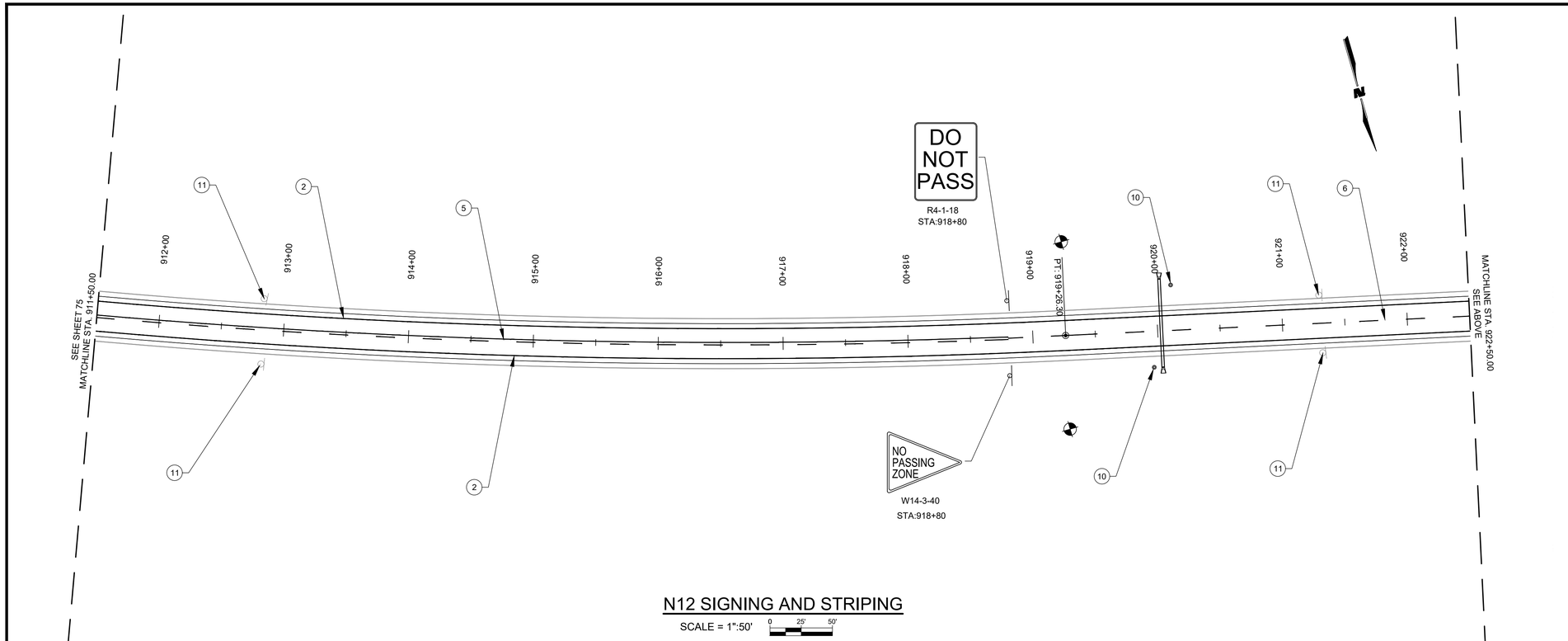
SIGNING AND STRIPING

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 02/04/2025 ARIZONA, U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

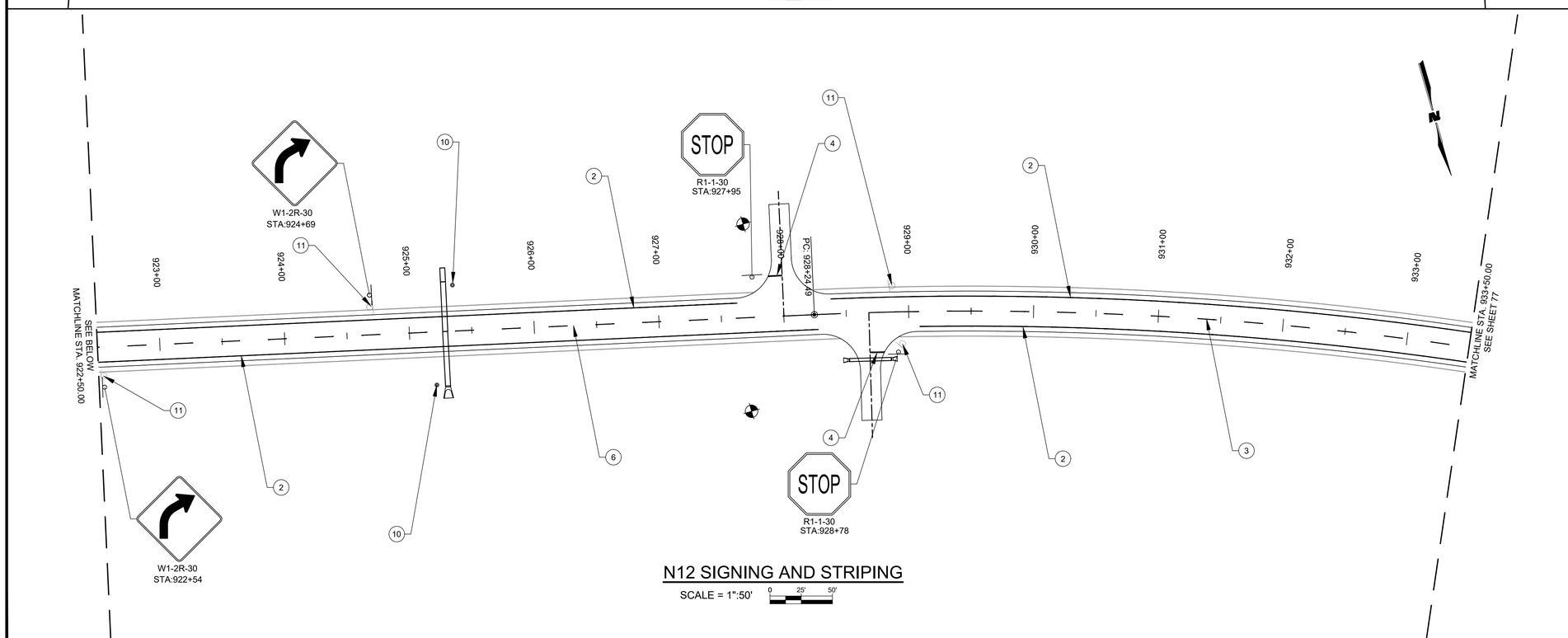
DESIGN	JEB	WCEA NO. 1710009012	DATE 2025
DRAWN	ERG	N12	SHEET NO.
CHECK	ASF		51 - 120

REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	52	120



N12 SIGNING AND STRIPING

SCALE = 1":50' 0 25' 50'



N12 SIGNING AND STRIPING

SCALE = 1":50' 0 25' 50'

GENERAL NOTES

1. ALL NEW SIGNING AND STRIPING SHALL COMPLY WITH THE FHWA AND 2009 MUTCD RETROREFLECTIVITY STANDARDS.

KEYNOTES

1. EXISTING ROW
2. REFLECTORIZED PAINTED MARKING - 4" SOLID SINGLE WHITE
3. REFLECTORIZED PAINTED MARKING - 4" SOLID DOUBLE YELLOW
4. REFLECTORIZED PAINTED MARKING - 24" SOLID SINGLE WHITE
5. REFLECTORIZED PAINTED MARKING - 4" SOLID & SKIP YELLOW
6. REFLECTORIZED PAINTED MARKING - 4" SKIP YELLOW
10. TYPE II OBJECT MARKER
11. REMOVE EXISTING SIGN

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET
SUITE 460
PHOENIX, AZ 85008
(602) 283-2701

ROUTE N12

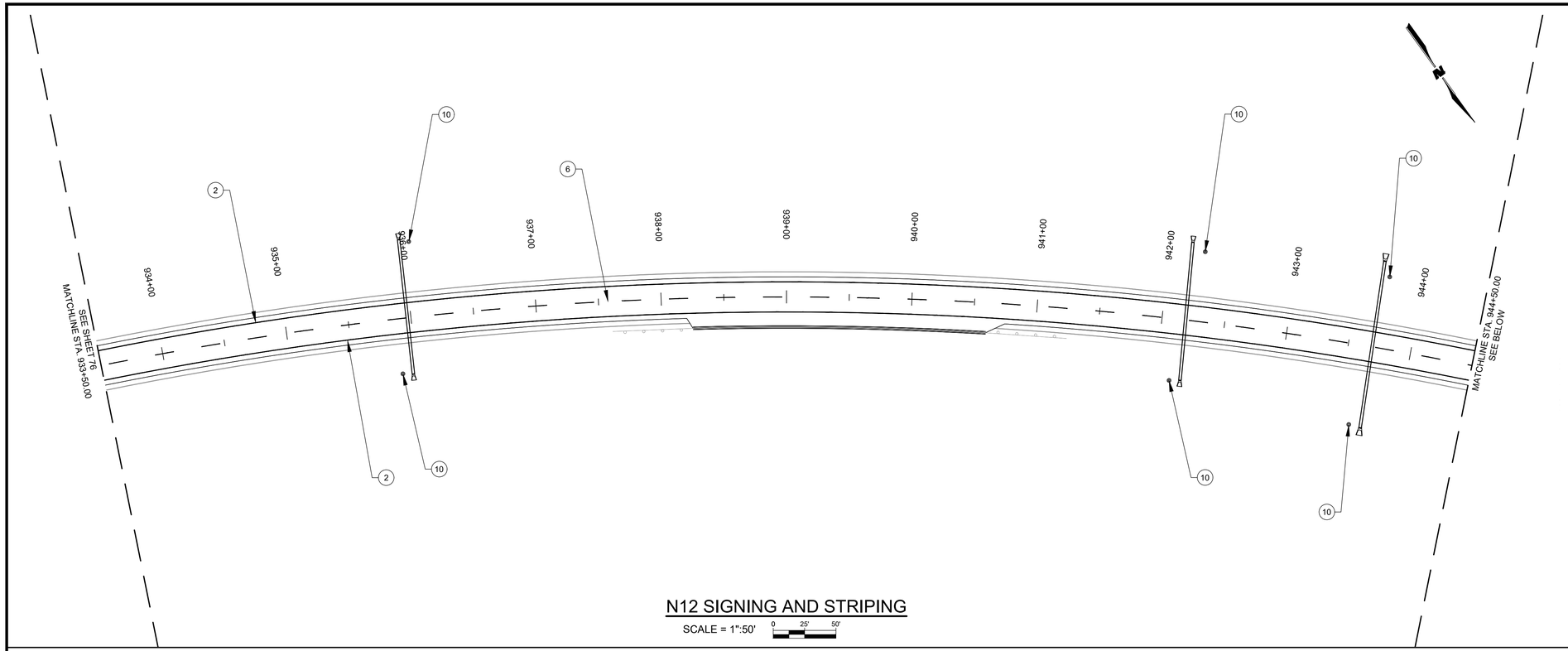
SIGNING AND STRIPING

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 02/18/25 ARIZONA, U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

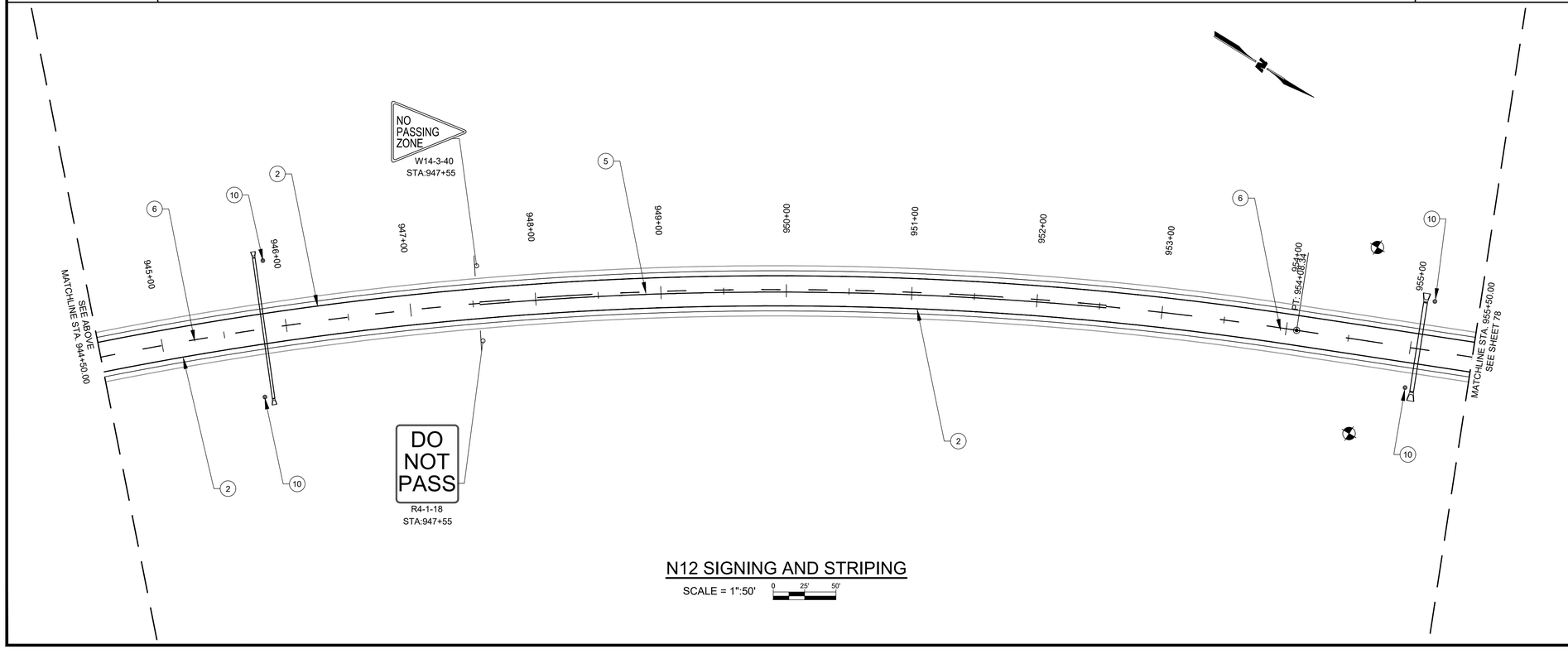
DESIGN	JEB	WCEA NO. 1710009012	DATE 2025
DRAWN	ERG	N12	SHEET NO.
CHECK	ASF		52 -120

REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	53	120



N12 SIGNING AND STRIPING

SCALE = 1":50' 0 25' 50'



N12 SIGNING AND STRIPING

SCALE = 1":50' 0 25' 50'

GENERAL NOTES

1. ALL NEW SIGNING AND STRIPING SHALL COMPLY WITH THE FHWA AND 2009 MUTCD RETROREFLECTIVITY STANDARDS.

KEYNOTES

1. EXISTING ROW
2. REFLECTORIZED PAINTED MARKING - 4" SOLID SINGLE WHITE
3. REFLECTORIZED PAINTED MARKING - 4" SOLID DOUBLE YELLOW
5. REFLECTORIZED PAINTED MARKING - 4" SOLID & SKIP YELLOW
6. REFLECTORIZED PAINTED MARKING - 4" SKIP YELLOW
10. TYPE II OBJECT MARKER

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET
SUITE 460
PHOENIX, AZ 85008
(602) 283-2701

ROUTE N12

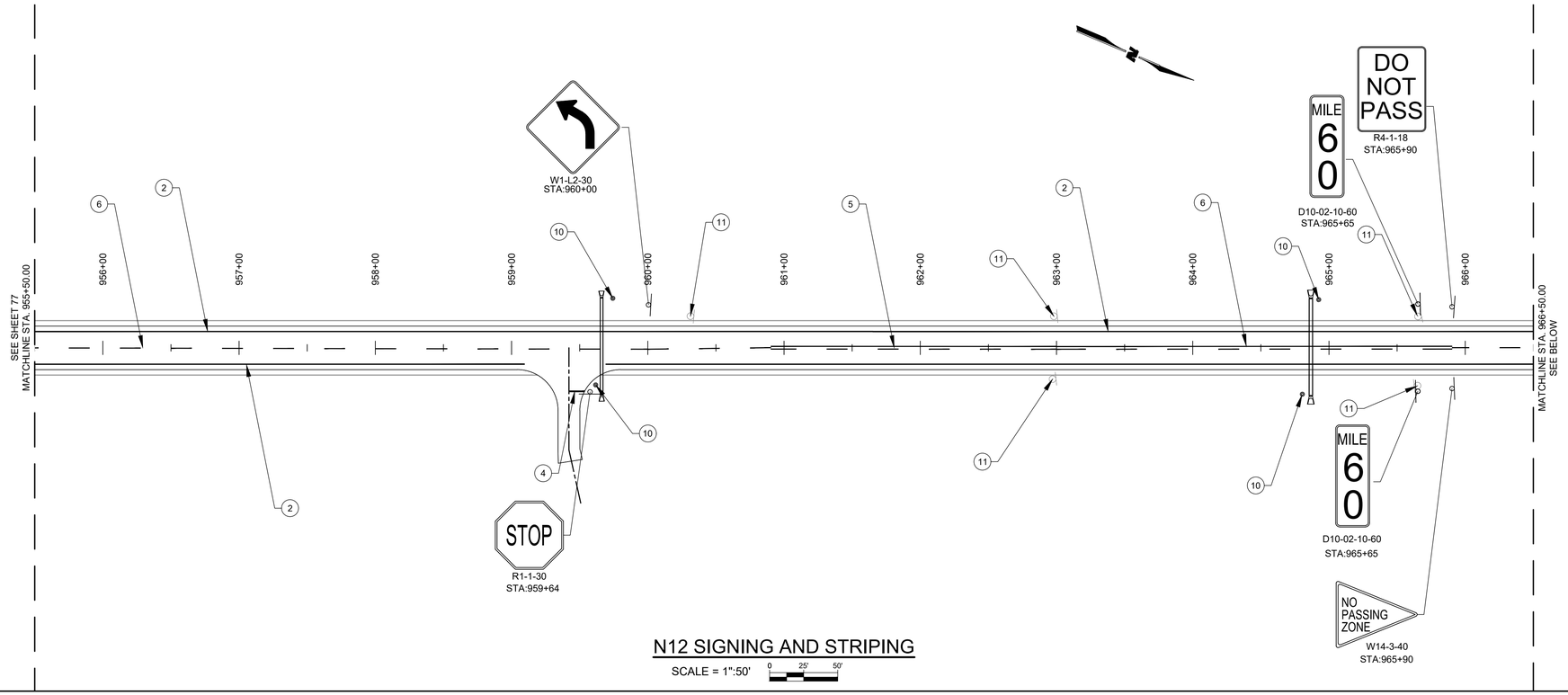
SIGNING AND STRIPING

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 12/18/2025 ARIZONA, U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

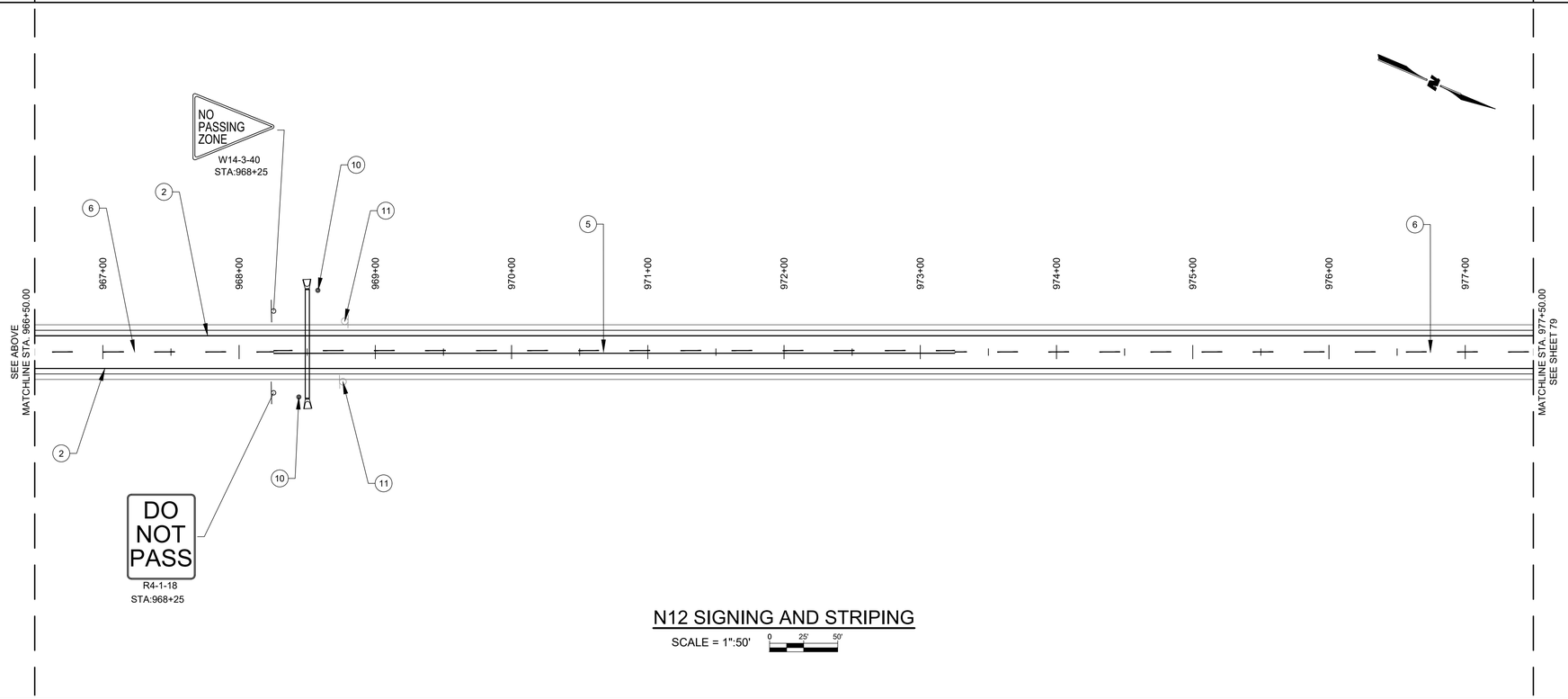
DESIGN	JEB	WCEA NO. 1710009012	DATE 2025
DRAWN	ERG	N12	SHEET NO. 53 - 120
CHECK	ASF		

REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	54	120



N12 SIGNING AND STRIPING

SCALE = 1":50' 0 25' 50'



N12 SIGNING AND STRIPING

SCALE = 1":50' 0 25' 50'

GENERAL NOTES

1. ALL NEW SIGNING AND STRIPING SHALL COMPLY WITH THE FHWA AND 2009 MUTCD RETROREFLECTIVITY STANDARDS.

KEYNOTES

1. EXISTING ROW
2. REFLECTORIZED PAINTED MARKING - 4" SOLID SINGLE WHITE
3. REFLECTORIZED PAINTED MARKING - 4" SOLID DOUBLE YELLOW
4. REFLECTORIZED PAINTED MARKING - 24" SOLID SINGLE WHITE
5. REFLECTORIZED PAINTED MARKING - 4" SOLID & SKIP YELLOW
6. REFLECTORIZED PAINTED MARKING - 4" SKIP YELLOW
10. TYPE II OBJECT MARKER
11. REMOVE EXISTING SIGN

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET
SUITE 460
PHOENIX, AZ 85008
(602) 283-2701

ROUTE N12

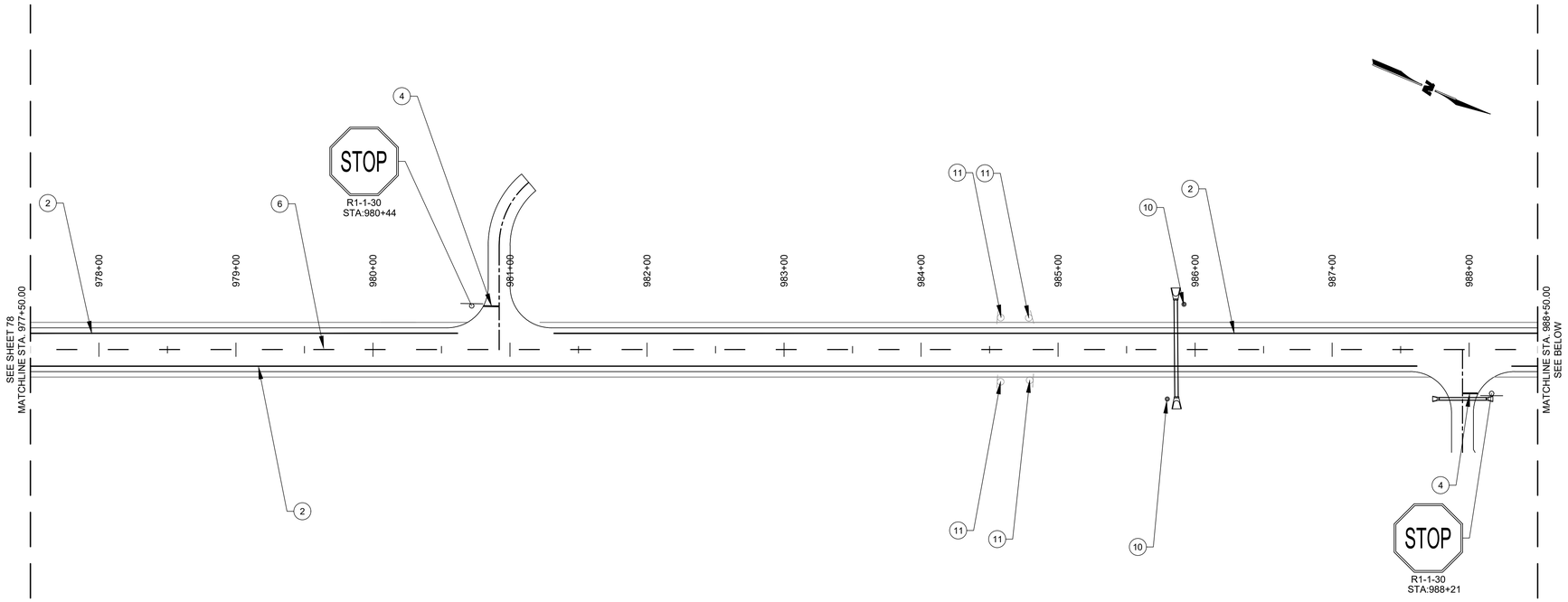
SIGNING AND STRIPING

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 02/14/2025 ARIZONA, U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

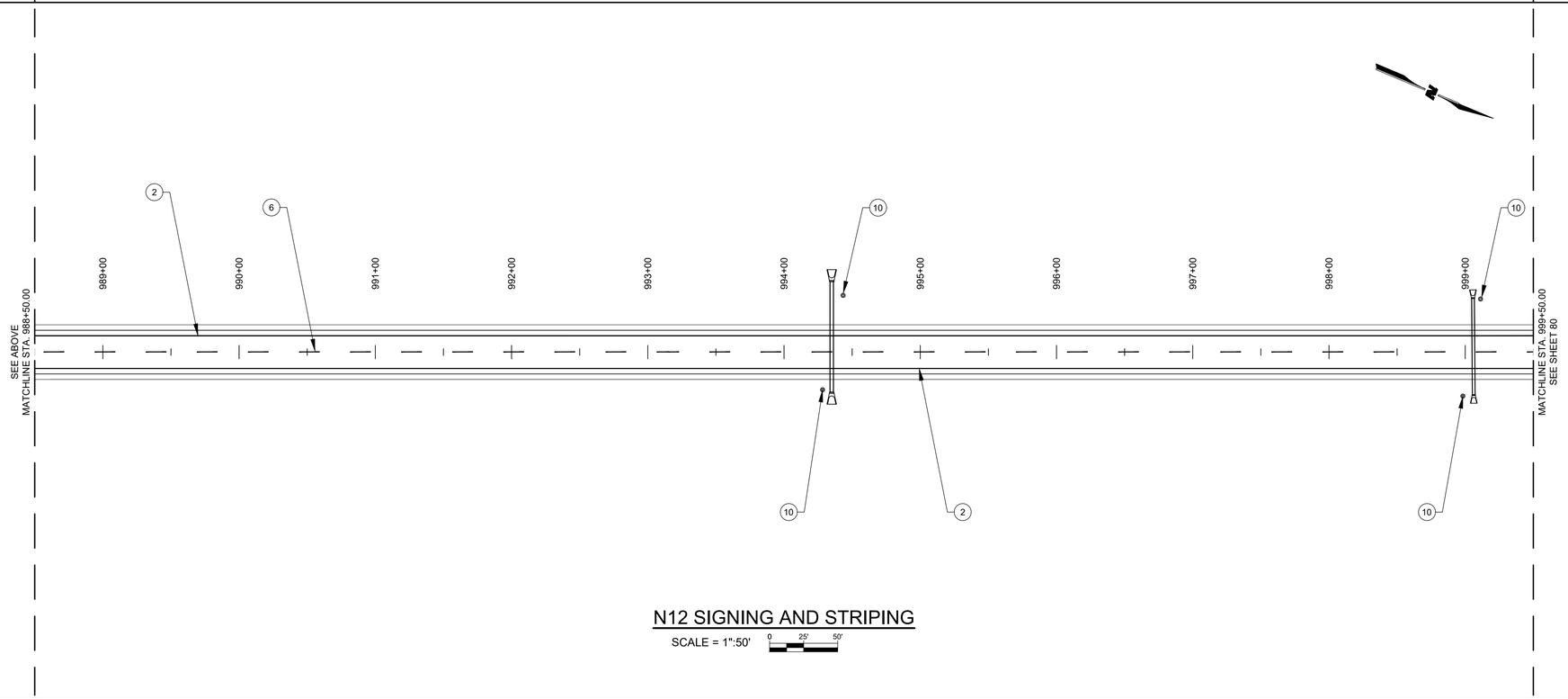
DESIGN	JEB	WCEA NO. 1710009012	DATE 2025
DRAWN	ERG	N12	SHEET NO. 54 -120
CHECK	ASF		

REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	55	120



N12 SIGNING AND STRIPING

SCALE = 1":50' 0 25' 50'



N12 SIGNING AND STRIPING

SCALE = 1":50' 0 25' 50'

GENERAL NOTES

1. ALL NEW SIGNING AND STRIPING SHALL COMPLY WITH THE FHWA AND 2009 MUTCD RETROREFLECTIVITY STANDARDS.

KEYNOTES

1. EXISTING ROW
2. REFLECTORIZED PAINTED MARKING - 4" SOLID SINGLE WHITE
3. REFLECTORIZED PAINTED MARKING - 4" SOLID DOUBLE YELLOW
4. REFLECTORIZED PAINTED MARKING - 24" SOLID SINGLE WHITE
5. REFLECTORIZED PAINTED MARKING - 4" SOLID & SKIP YELLOW
6. REFLECTORIZED PAINTED MARKING - 4" SKIP YELLOW
10. TYPE II OBJECT MARKER
11. REMOVE EXISTING SIGN

AGENCY LINE TO WHEATFIELDS LAKE

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SUITE 460
PHOENIX, AZ 85008
(602) 283-2701

ROUTE N12

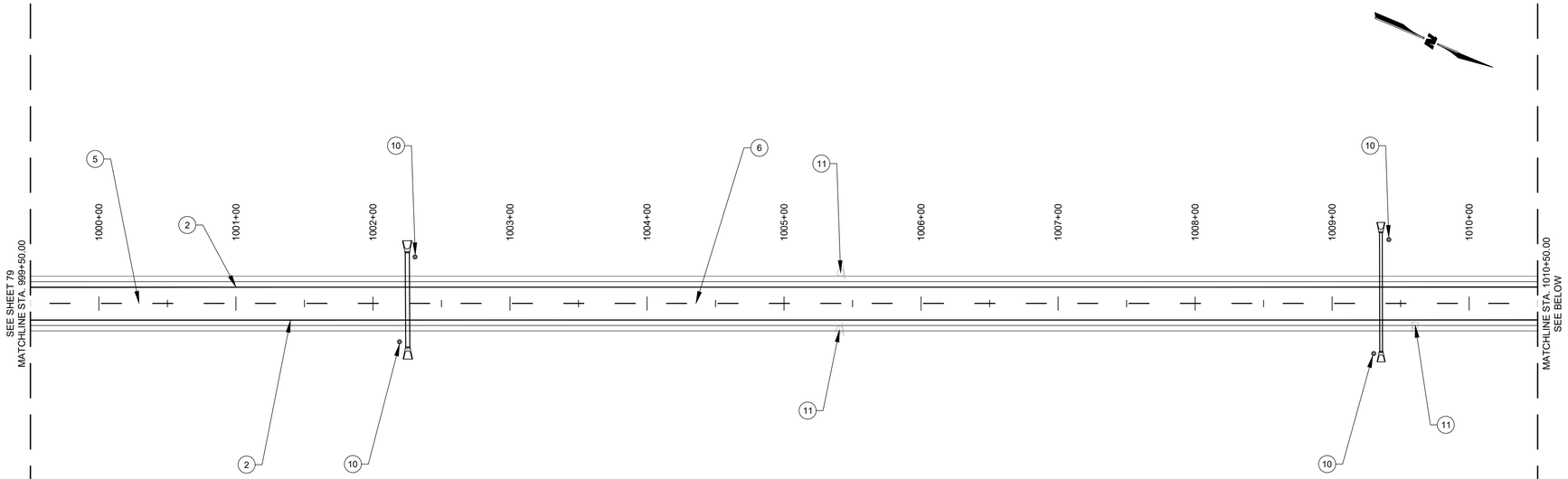
SIGNING AND STRIPING

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 02/14/25 ARIZONA, U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

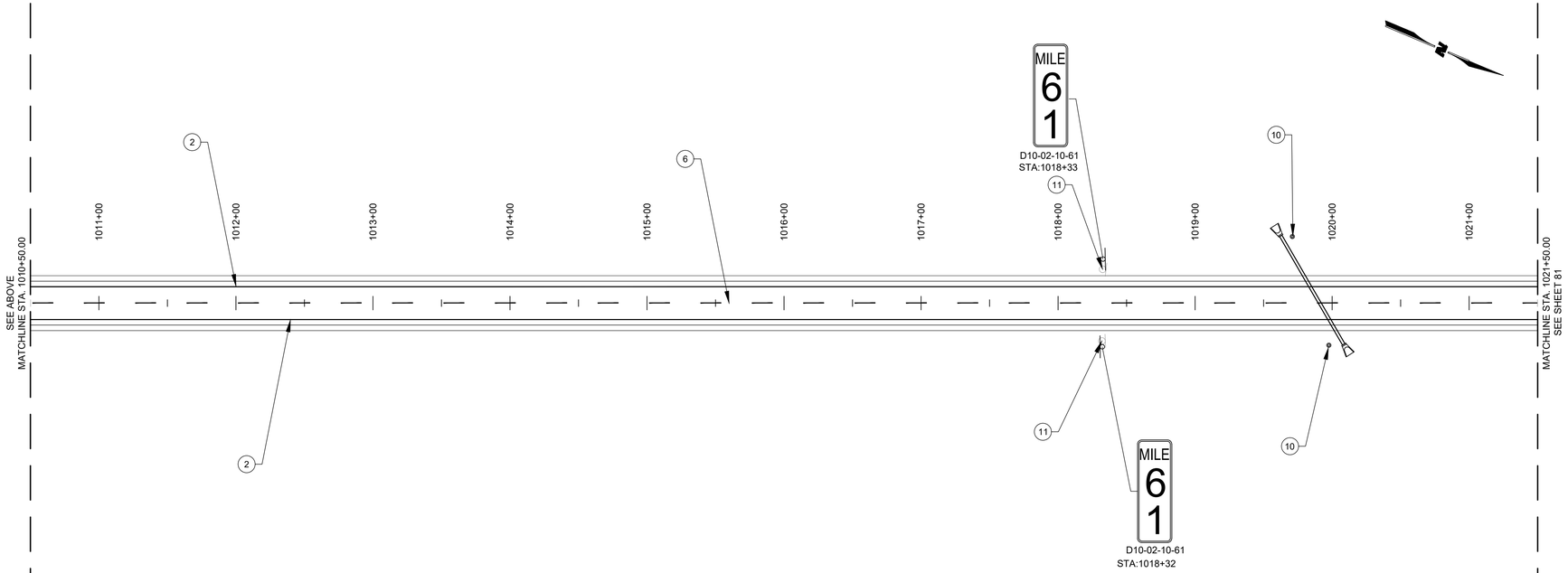
DESIGN	JEB	WCEA NO. 1710009012	DATE 2025
DRAWN	ERG	N12	SHEET NO. 55 - 120
CHECK	ASF		

REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	56	120



N12 SIGNING AND STRIPING

SCALE =1 : 50 0 25' 50'



N12 SIGNING AND STRIPING

SCALE =1 : 50 0 25' 50'

GENERAL NOTES

1. ALL NEW SIGNING AND STRIPING SHALL COMPLY WITH THE FHWA AND 2009 MUTCD RETROREFLECTIVITY STANDARDS.

KEYNOTES

1. EXISTING ROW
2. REFLECTORIZED PAINTED MARKING - 4" SOLID SINGLE WHITE
5. REFLECTORIZED PAINTED MARKING - 4" SOLID & SKIP YELLOW
6. REFLECTORIZED PAINTED MARKING - 4" SKIP YELLOW
10. TYPE II OBJECT MARKER
11. REMOVE EXISTING SIGN

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
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SUITE 460
PHOENIX, AZ 85008
(602) 283-2701

ROUTE N12

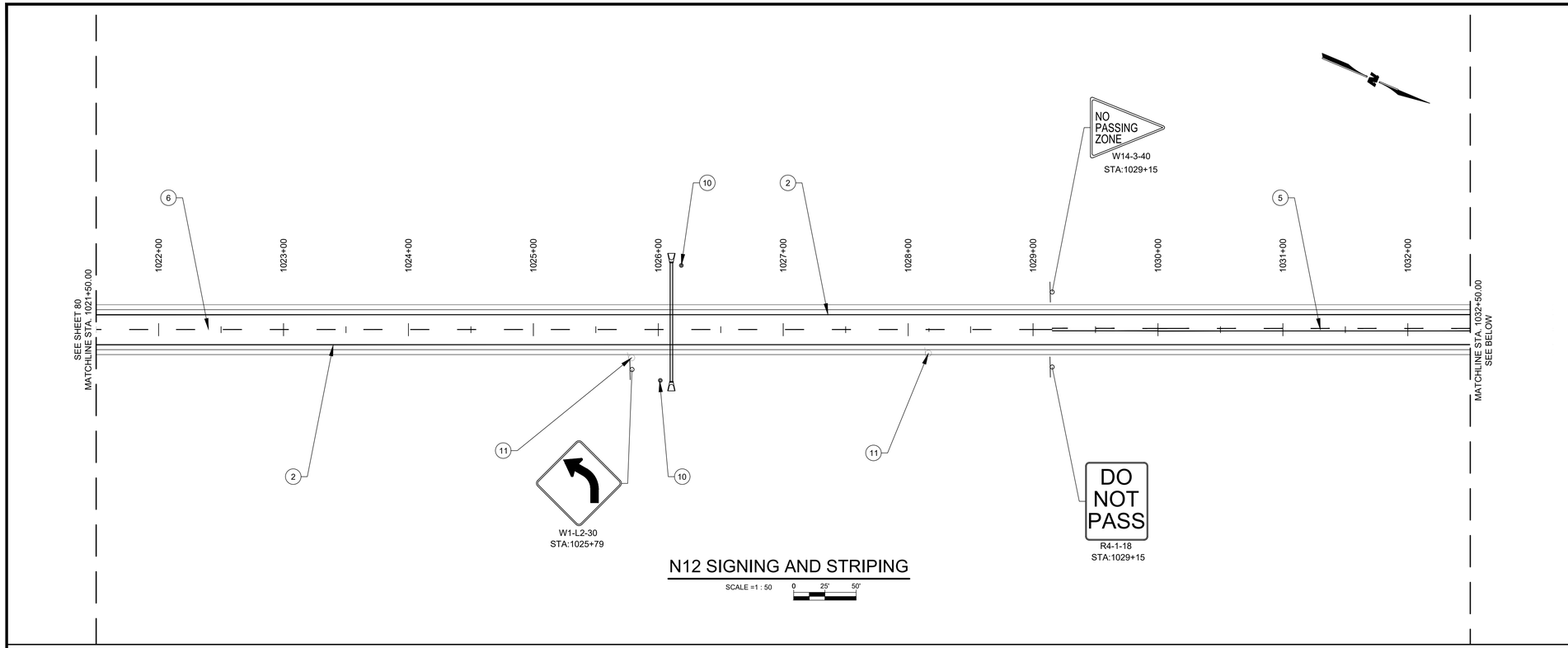
SIGNING AND STRIPING

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 02/18/25 ARIZONA, U.S.A.

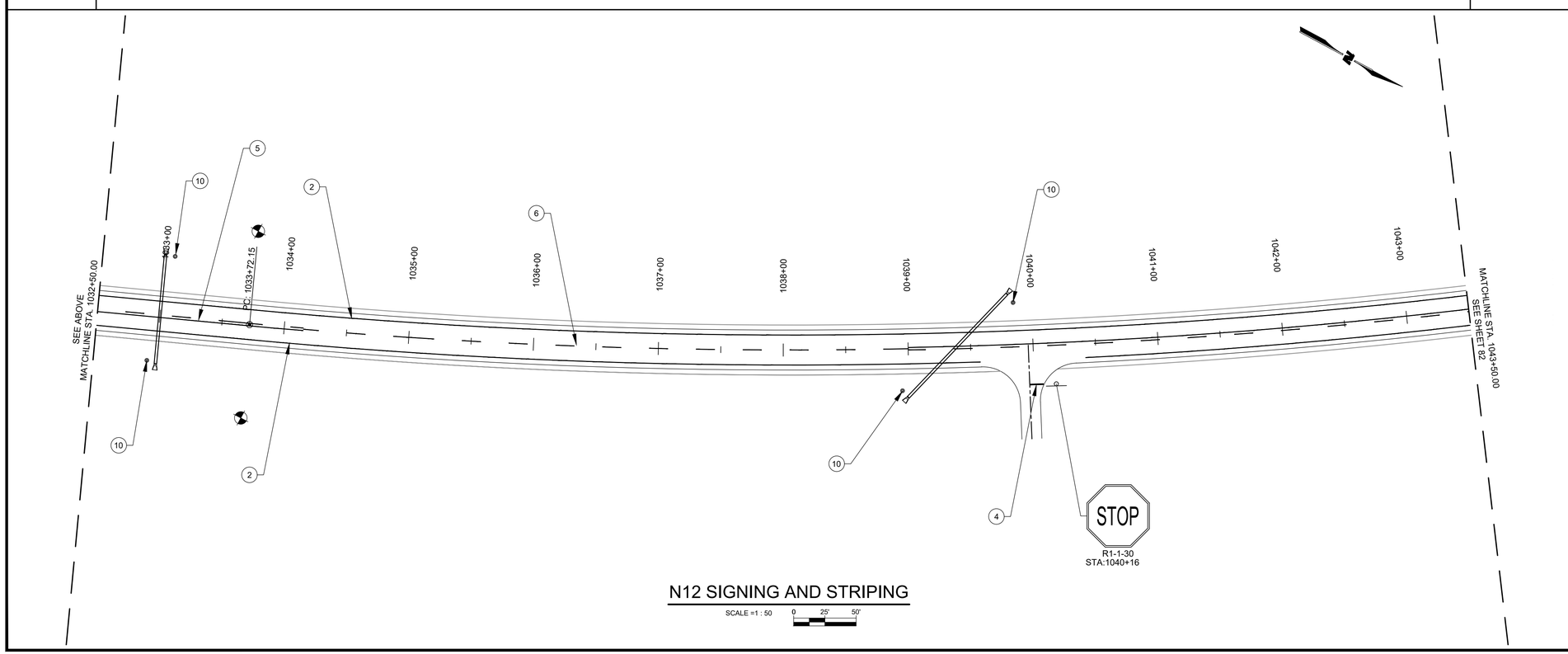
REVISIONS	NO.	DATE	REMARKS	BY

DESIGN	JEB	WCEA NO. 1710009012	DATE 2025
DRAWN	ERG	N12	SHEET NO.
CHECK	ASF		56 -120

REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	57	120



N12 SIGNING AND STRIPING



N12 SIGNING AND STRIPING

GENERAL NOTES

1. ALL NEW SIGNING AND STRIPING SHALL COMPLY WITH THE FHWA AND 2009 MUTCD RETROREFLECTIVITY STANDARDS.

KEYNOTES

1. EXISTING ROW
2. REFLECTORIZED PAINTED MARKING - 4" SOLID SINGLE WHITE
3. REFLECTORIZED PAINTED MARKING - 4" SOLID DOUBLE YELLOW
4. REFLECTORIZED PAINTED MARKING - 24" SOLID SINGLE WHITE
5. REFLECTORIZED PAINTED MARKING - 4" SOLID & SKIP YELLOW
6. REFLECTORIZED PAINTED MARKING - 4" SKIP YELLOW
10. TYPE II OBJECT MARKER
11. REMOVE EXISTING SIGN

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET
SUITE 460
PHOENIX, AZ 85008
(602) 283-2701

ROUTE N12

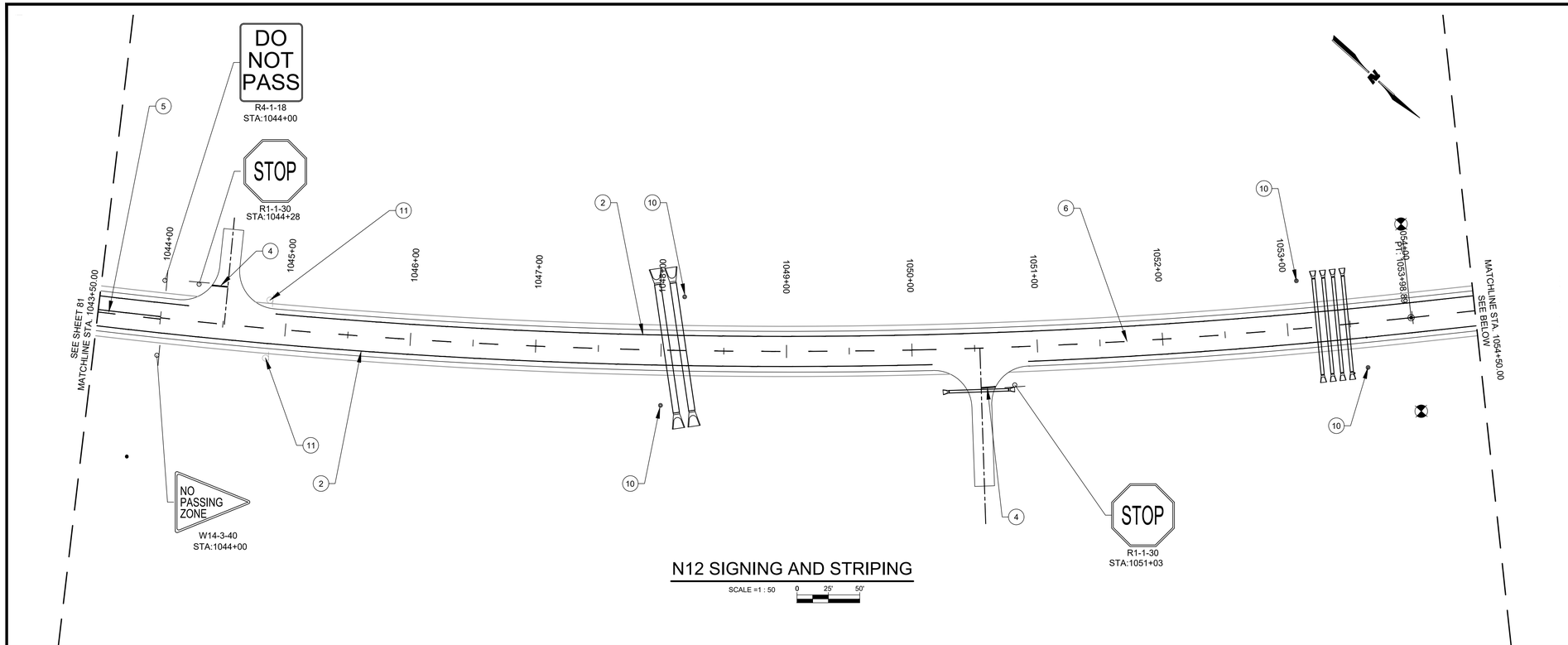
SIGNING AND STRIPING

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 02/04/25 ARIZONA, U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

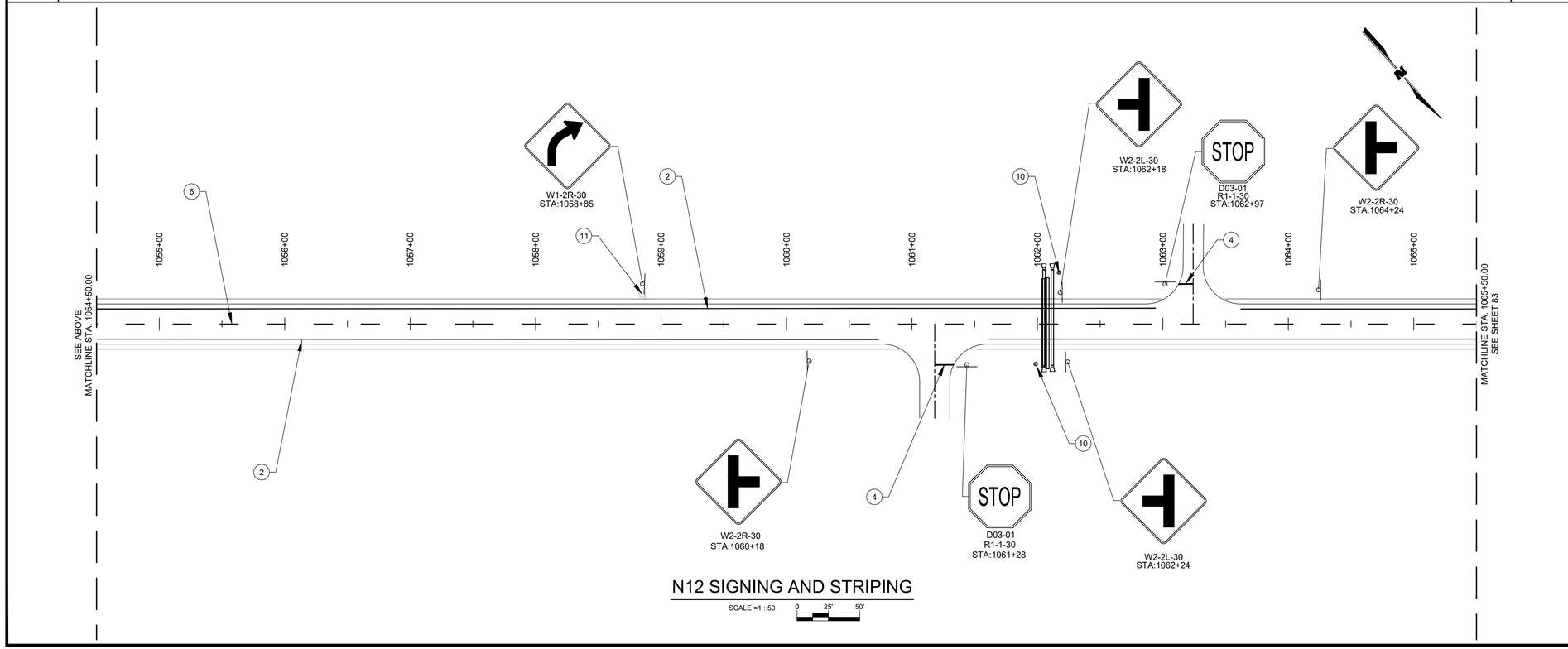
DESIGN	JEB	WCEA NO. 1710009012	DATE 2025
DRAWN	ERG	N12	SHEET NO. 57 -120
CHECK	ASF		

REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	58	120



N12 SIGNING AND STRIPING

SCALE =1 : 50 0 25' 50'



N12 SIGNING AND STRIPING

SCALE =1 : 50 0 25' 50'

GENERAL NOTES

1. ALL NEW SIGNING AND STRIPING SHALL COMPLY WITH THE FHWA AND 2009 MUTCD RETROREFLECTIVITY STANDARDS.

KEYNOTES

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6. REFLECTORIZED PAINTED MARKING - 4" SKIP YELLOW
10. TYPE II OBJECT MARKER
11. REMOVE EXISTING SIGN

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET
SUITE 460
PHOENIX, AZ 85008
(602) 283-2701

ROUTE N12

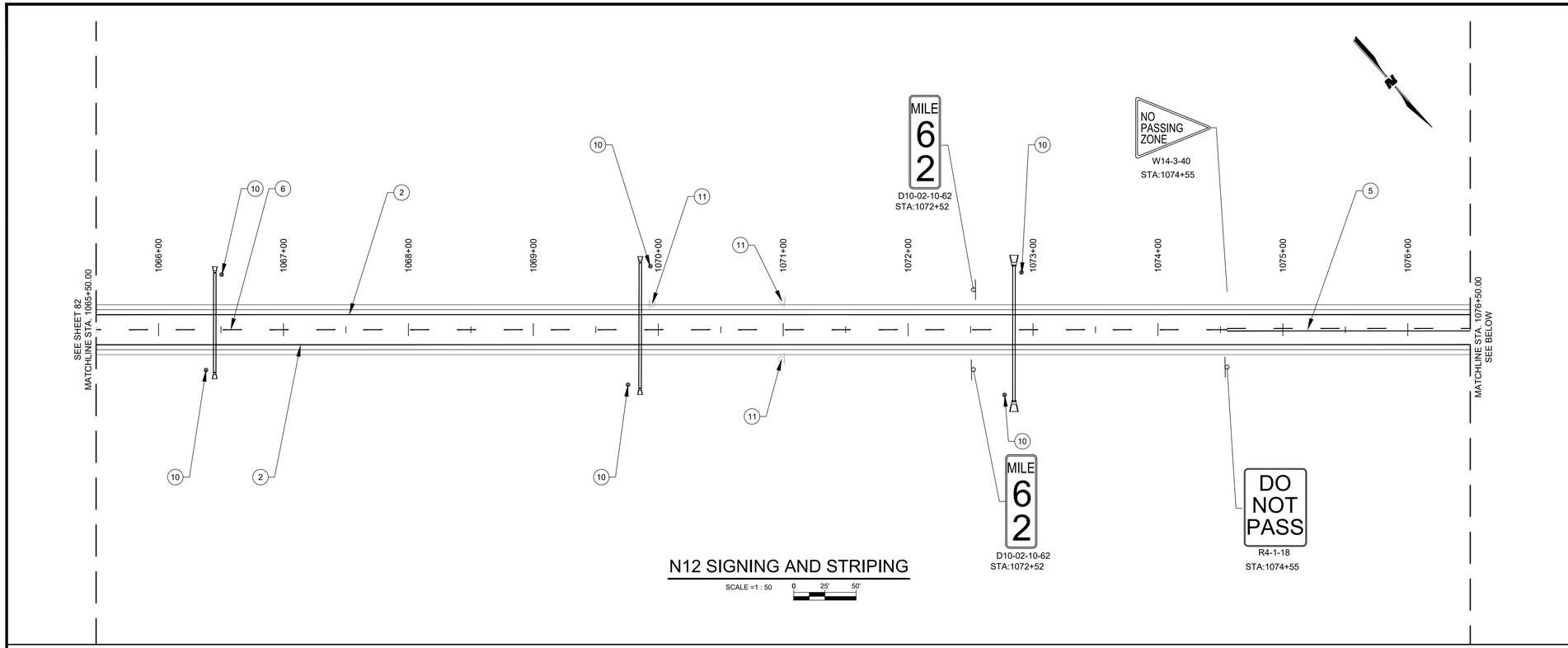
SIGNING AND STRIPING

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 02/18/25 ARIZONA, U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

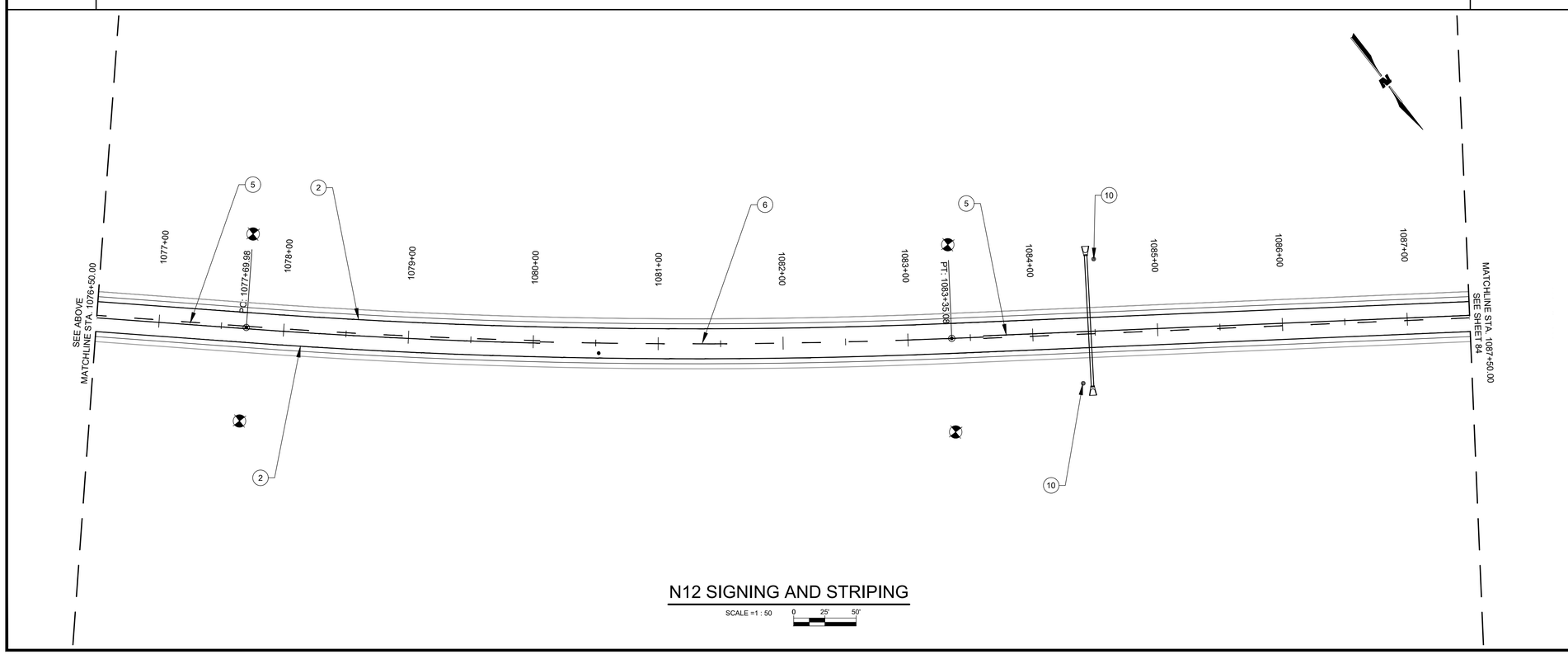
DESIGN	JEB	WCEA NO. 1710009012	DATE 2025
DRAWN	ERG	N12	SHEET NO.
CHECK	ASF		58 -120

REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	59	120



N12 SIGNING AND STRIPING

SCALE =1 : 50 0 25' 50'



N12 SIGNING AND STRIPING

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AGENCY LINE TO WHEATFIELDS LAKE

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ROUTE N12

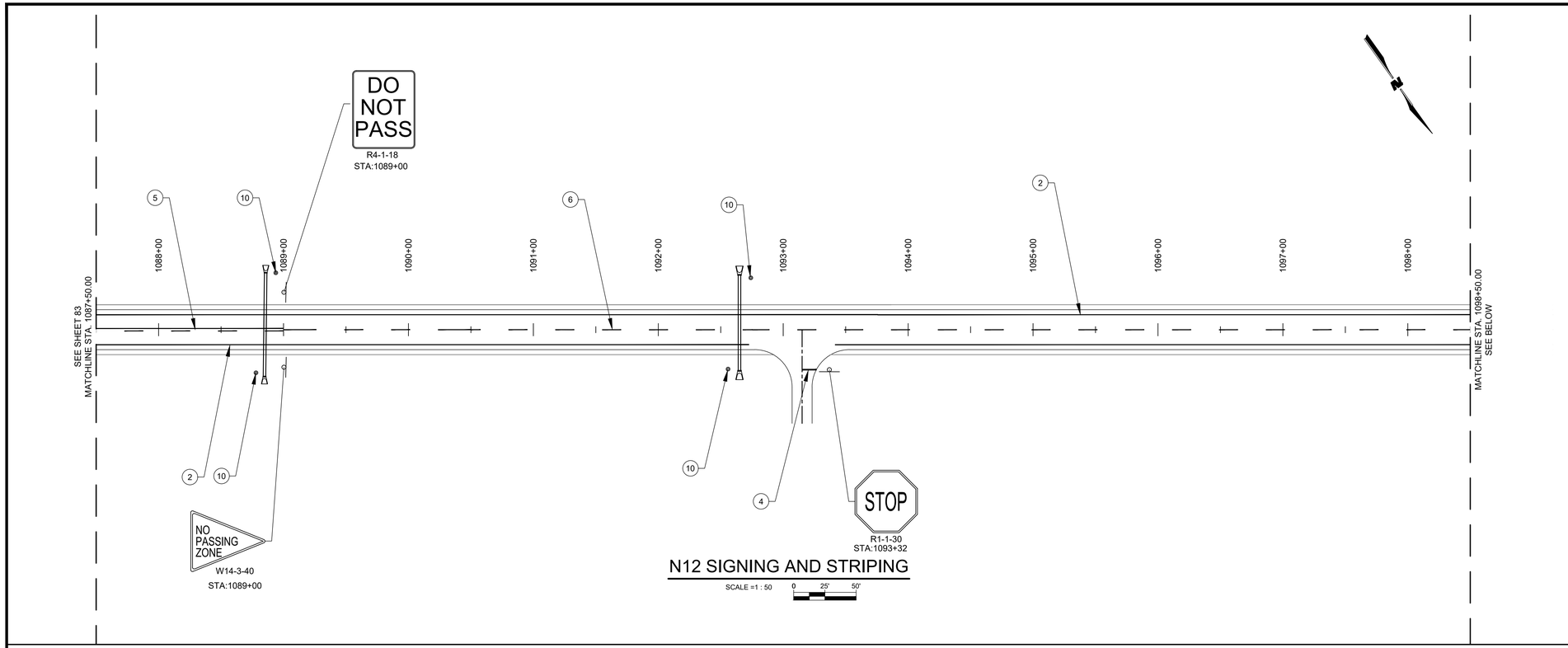
SIGNING AND STRIPING

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 02/04/2025 ARIZONA, U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

DESIGN	JEB	WCEA NO. 1710009012	DATE 2025
DRAWN	ERG	N12	SHEET NO. 59 -120
CHECK	ASF		

REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	60	120



N12 SIGNING AND STRIPING

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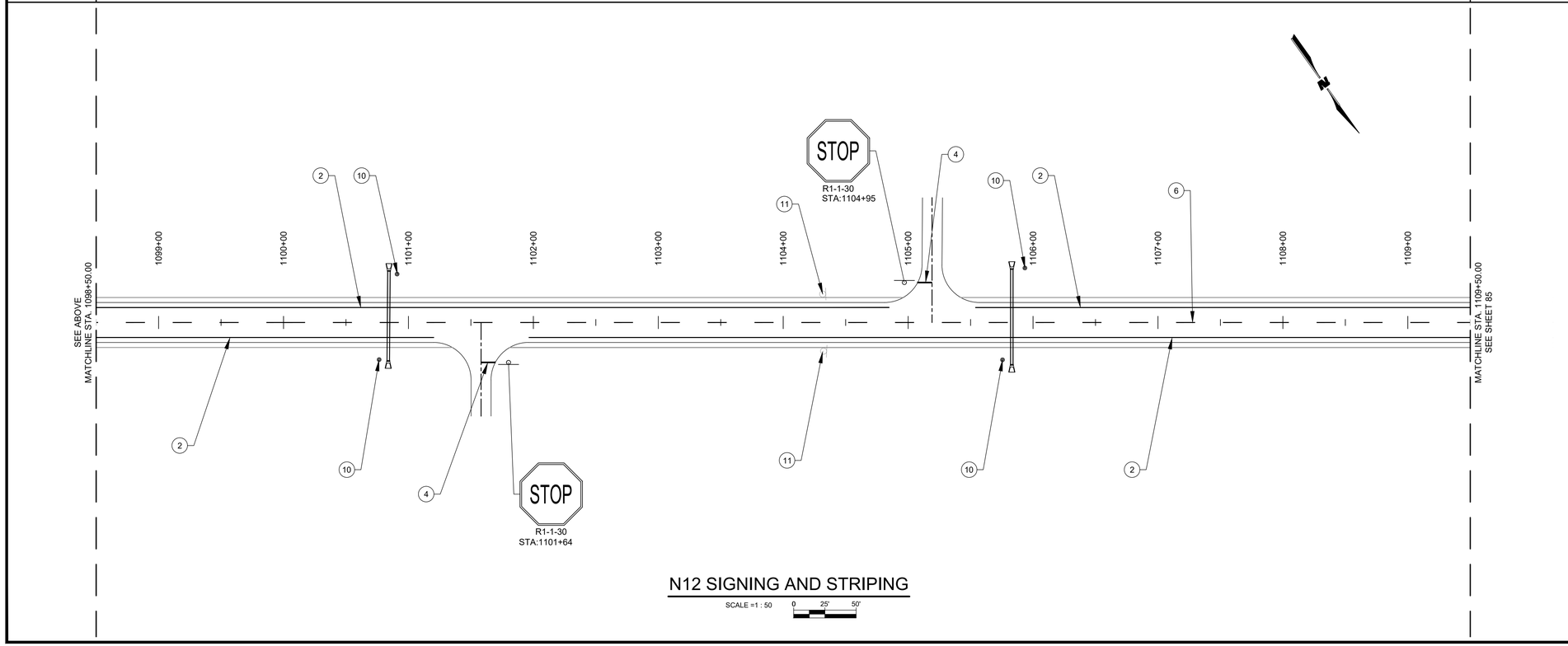

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AGENCY LINE TO WHEATFIELDS LAKE

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ROUTE N12

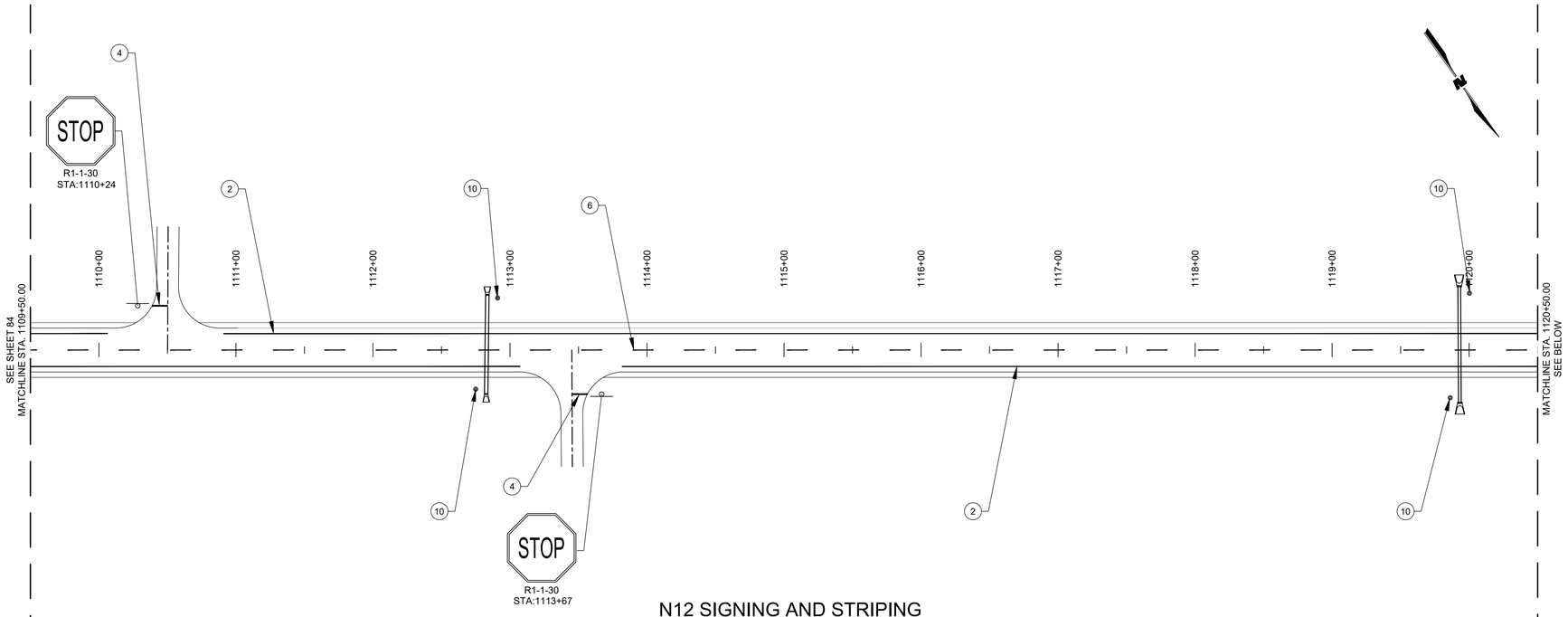
SIGNING AND STRIPING

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 02/04/2025 ARIZONA, U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

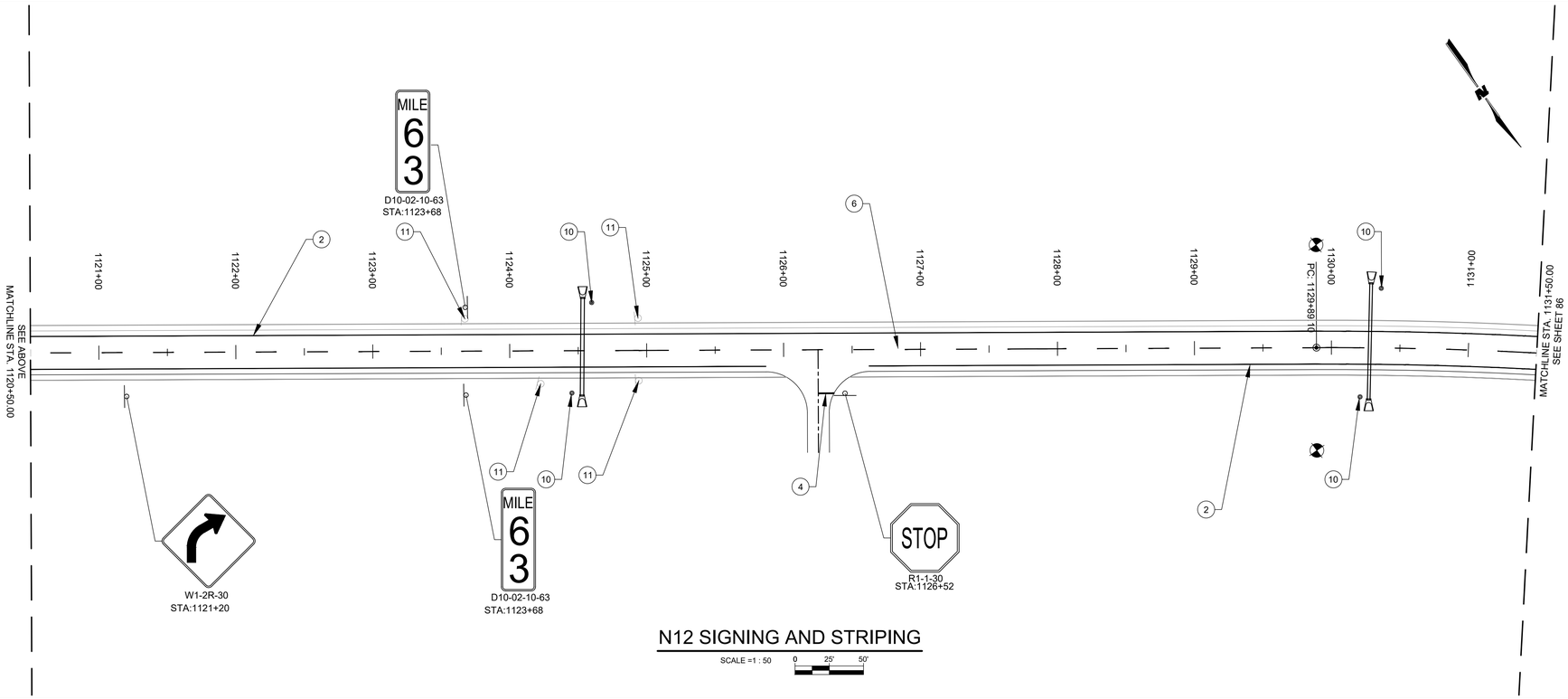
DESIGN	JEB	WCEA NO. 1710009012	DATE 2025
DRAWN	ERG	N12	SHEET NO. 60 -120
CHECK	ASF		

REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	61	120



N12 SIGNING AND STRIPING

SCALE =1 : 50 0 25' 50'



N12 SIGNING AND STRIPING

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AGENCY LINE TO WHEATFIELDS LAKE

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410 NORTH 44TH STREET
SUITE 460
PHOENIX, AZ 85008
(602) 283-2701

ROUTE N12

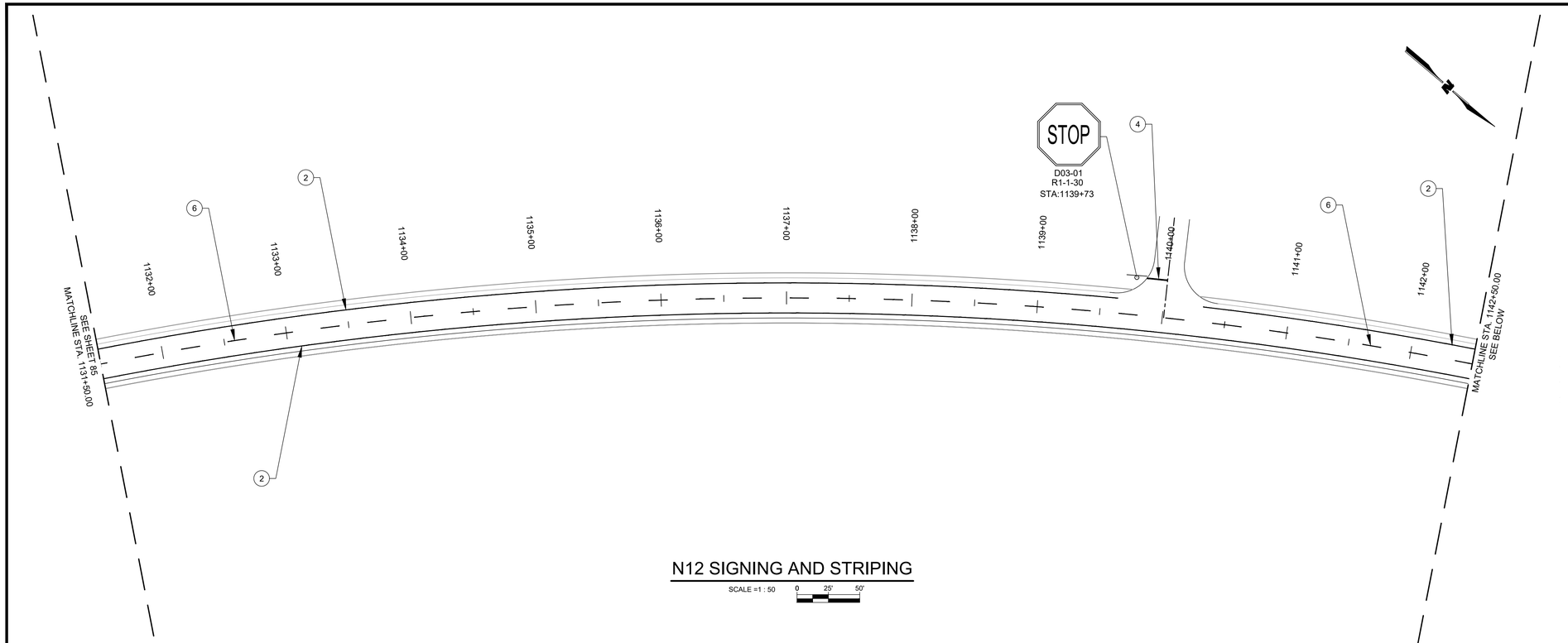
SIGNING AND STRIPING

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 02/08/2022 ARIZONA, U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

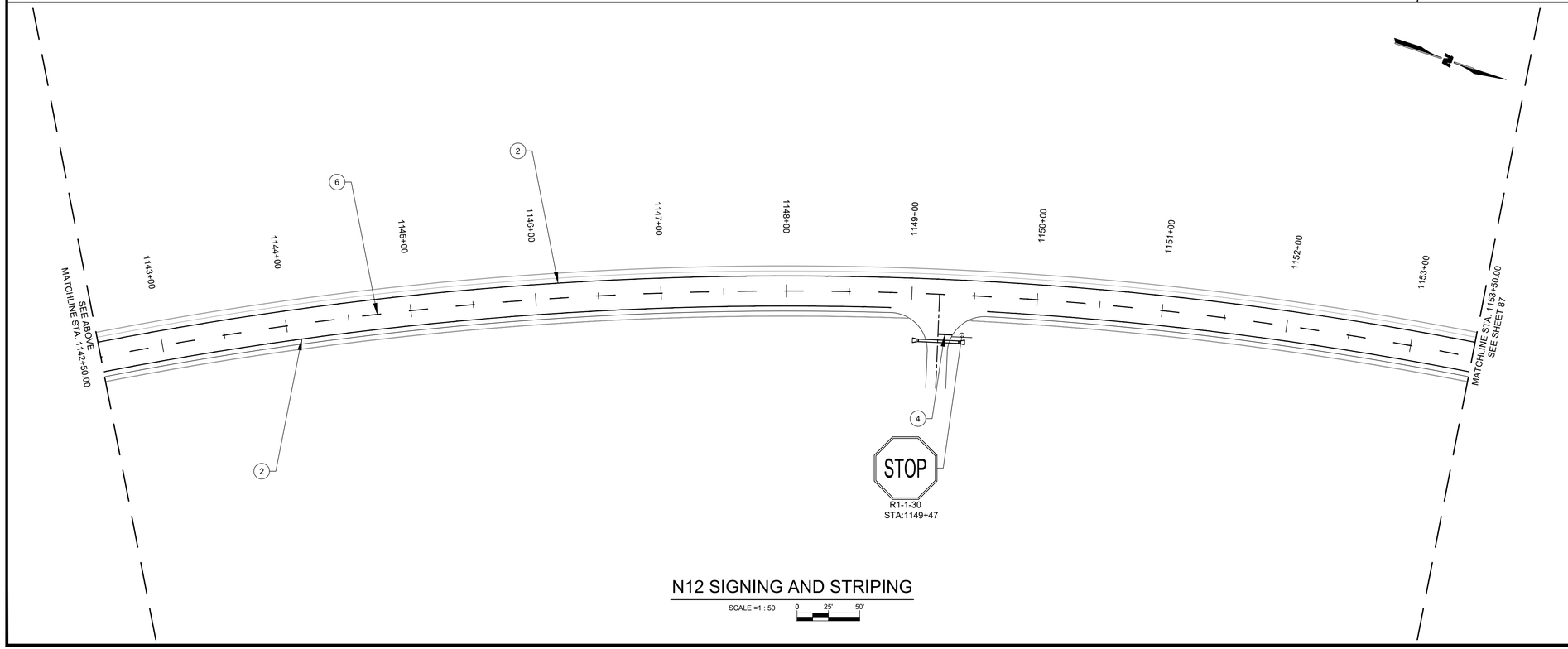
DESIGN	JEB	WCEA NO. 1710009012	DATE 2025
DRAWN	ERG	N12	SHEET NO.
CHECK	ASF		61 -120

REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	62	120



N12 SIGNING AND STRIPING

SCALE =1 : 50 0 25' 50'



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10. TYPE II OBJECT MARKER

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET
SUITE 460
PHOENIX, AZ 85008
(602) 283-2701

ROUTE N12

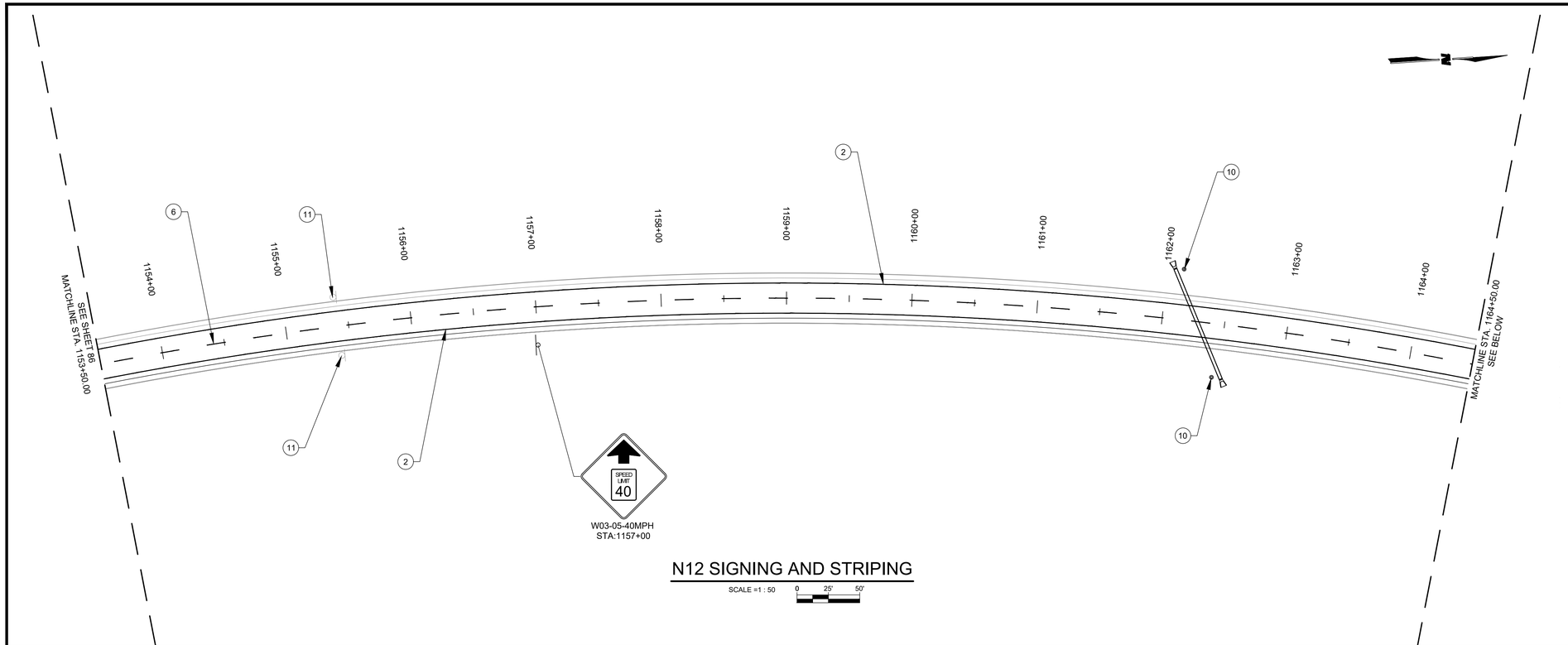
SIGNING AND STRIPING

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 02/04/2025 ARIZONA, U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

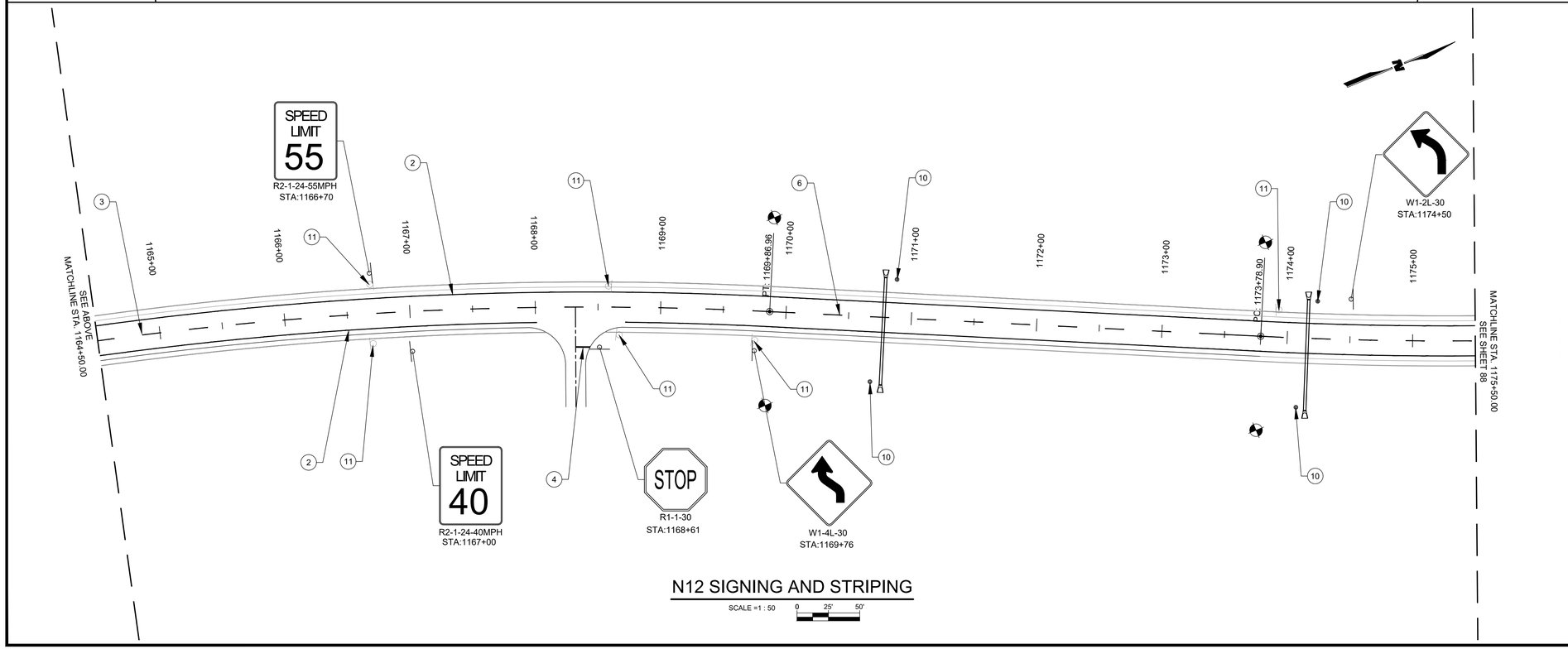
DESIGN	JEB	WCEA NO. 1710009012	DATE 2025
DRAWN	ERG	N12	SHEET NO.
CHECK	ASF		62 -120

REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	63	120



N12 SIGNING AND STRIPING

SCALE =1 : 50 0 25' 50'



N12 SIGNING AND STRIPING

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GENERAL NOTES

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6. REFLECTORIZED PAINTED MARKING - 4" SKIP YELLOW
10. TYPE II OBJECT MARKER

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET
SUITE 460
PHOENIX, AZ 85008
(602) 283-2701

ROUTE N12

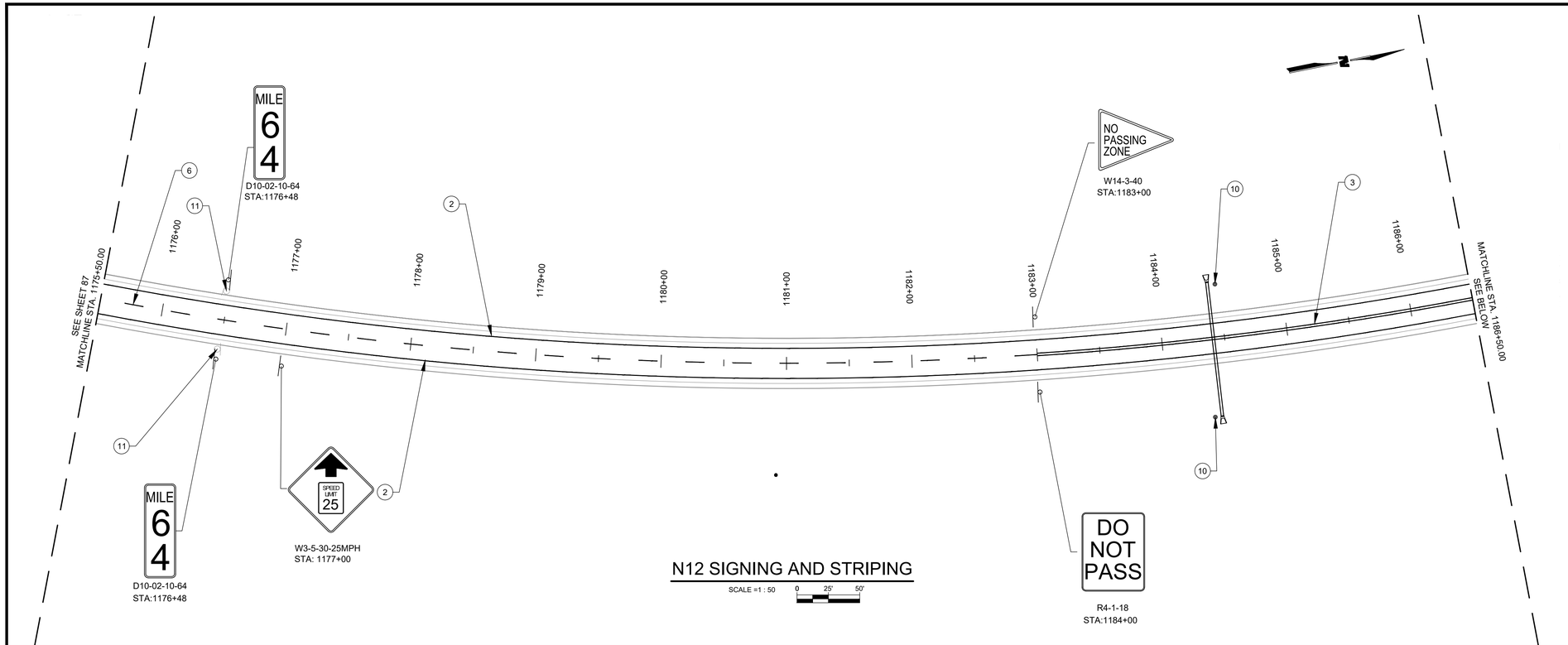
SIGNING AND STRIPING

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 02/04/25 ARIZONA, U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

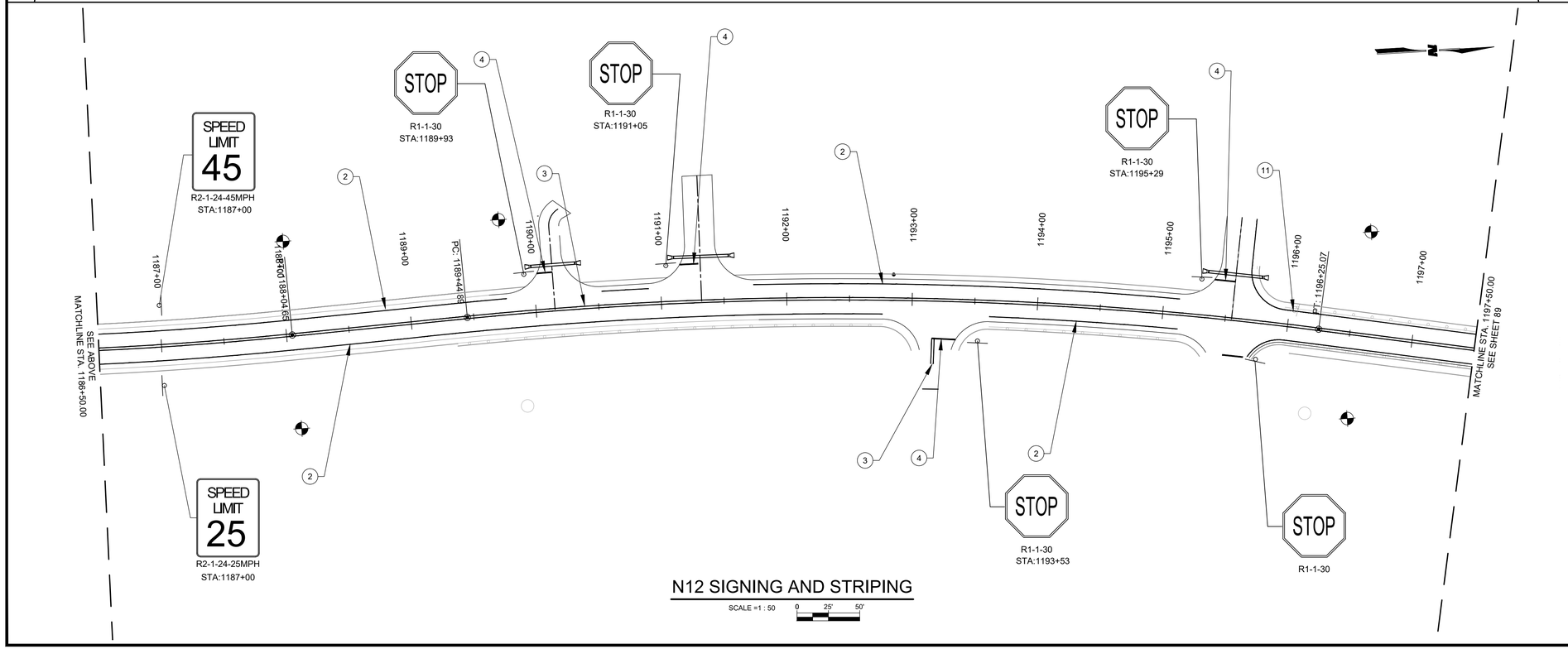
DESIGN	JEB	WCEA NO. 1710009012	DATE 2025
DRAWN	ERG	N12	SHEET NO. 63 -120
CHECK	ASF		

REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	64	120



N12 SIGNING AND STRIPING

SCALE =1 : 50 0 25' 50'



N12 SIGNING AND STRIPING

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GENERAL NOTES

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KEYNOTES

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3. REFLECTORIZED PAINTED MARKING - 4" SOLID DOUBLE YELLOW
4. REFLECTORIZED PAINTED MARKING - 24" SOLID SINGLE WHITE
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10. TYPE II OBJECT MARKER
11. REMOVE EXISTING SIGN

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
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SUITE 460
PHOENIX, AZ 85008
(602) 283-2701

ROUTE N12

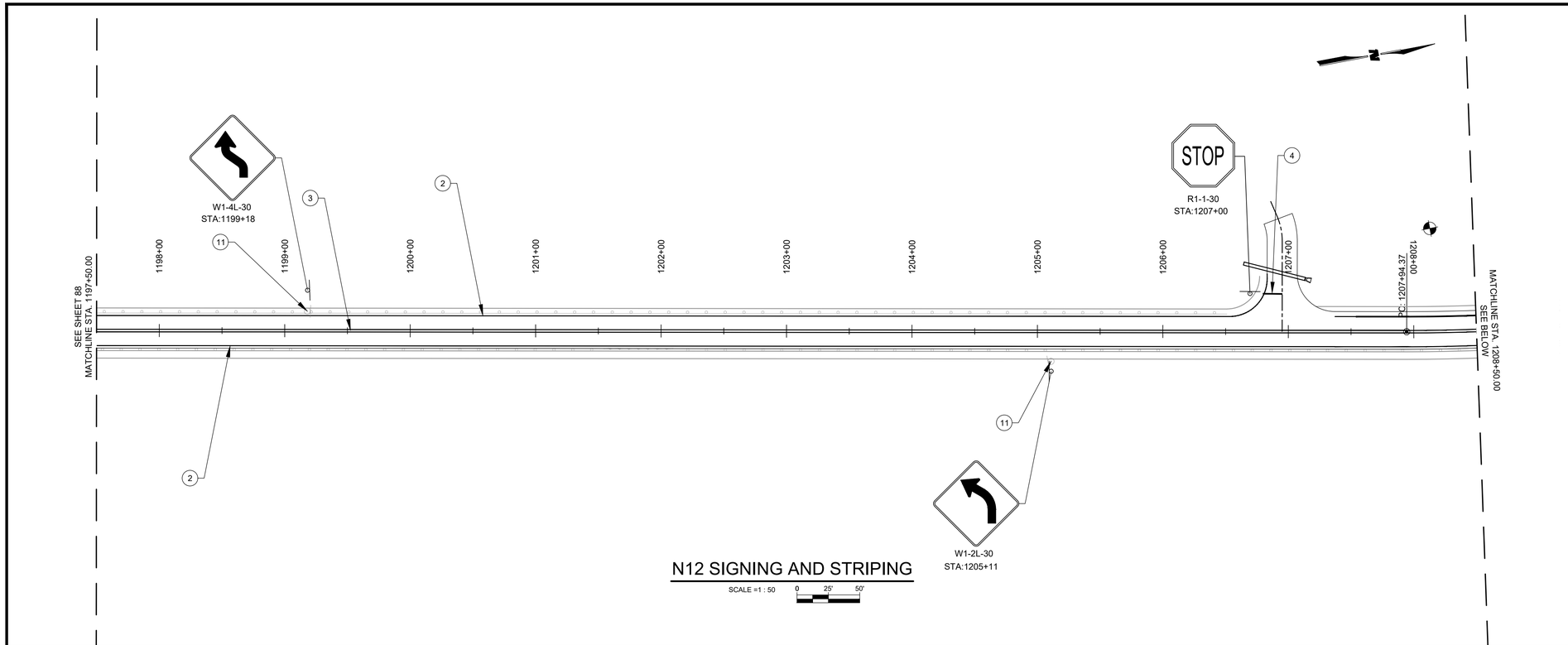
SIGNING AND STRIPING

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 02/04/2025 ARIZONA, U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

DESIGN	JEB	WCEA NO. 1710009012	DATE 2025
DRAWN	ERG	N12	SHEET NO. 64 -120
CHECK	ASF		

REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	65	120



N12 SIGNING AND STRIPING

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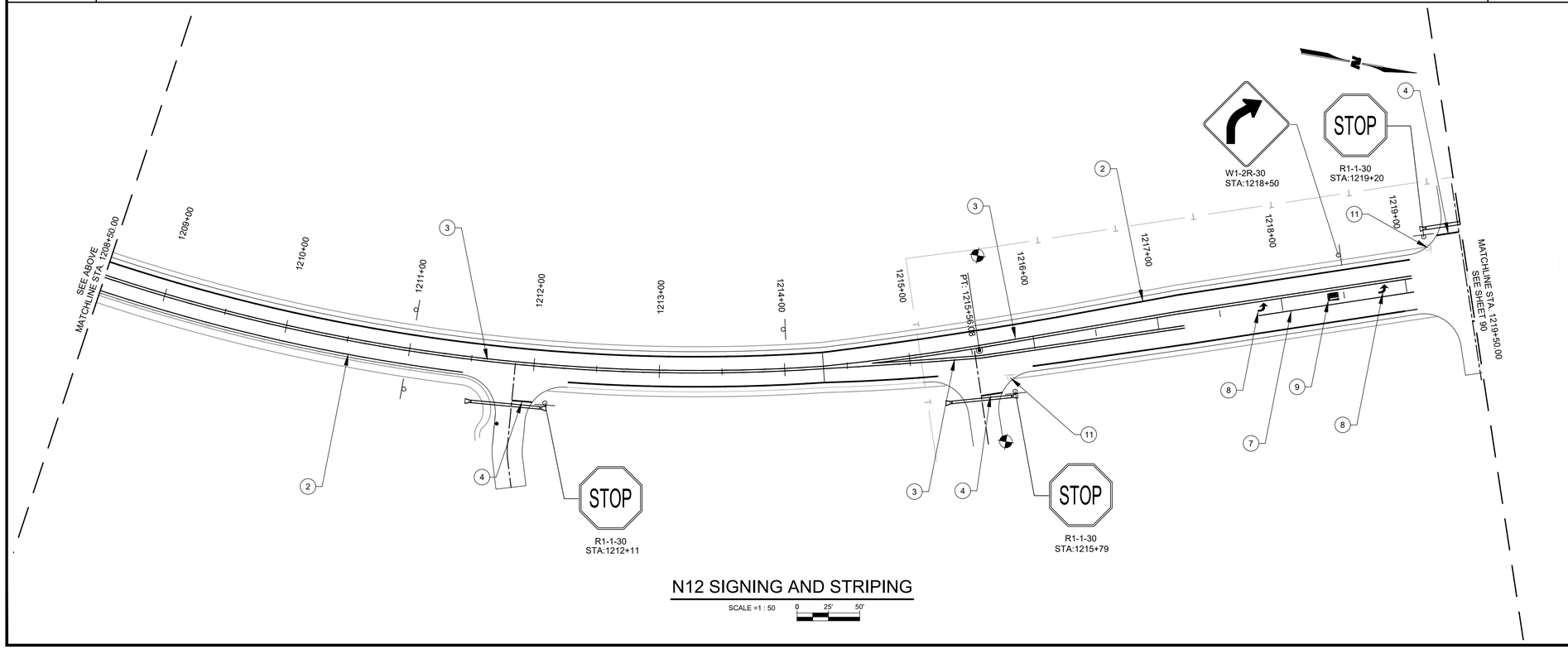

N12 SIGNING AND STRIPING

SCALE =1 : 50 0 25' 50'

GENERAL NOTES

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KEYNOTES

1. EXISTING ROW
2. REFLECTORIZED PAINTED MARKING - 4" SOLID SINGLE WHITE
3. REFLECTORIZED PAINTED MARKING - 4" SOLID DOUBLE YELLOW
7. REFLECTORIZED PAINTED MARKING - 12" SOLID WHITE
8. REFLECTORIZED PAINTED MARKING - "LEFT TURN ARROW" SYMBOL
9. REFLECTORIZED PAINTED MARKING - "ONLY" SYMBOL
11. REMOVE EXISTING SIGN

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET
SUITE 460
PHOENIX, AZ 85008
(602) 283-2701

ROUTE N12

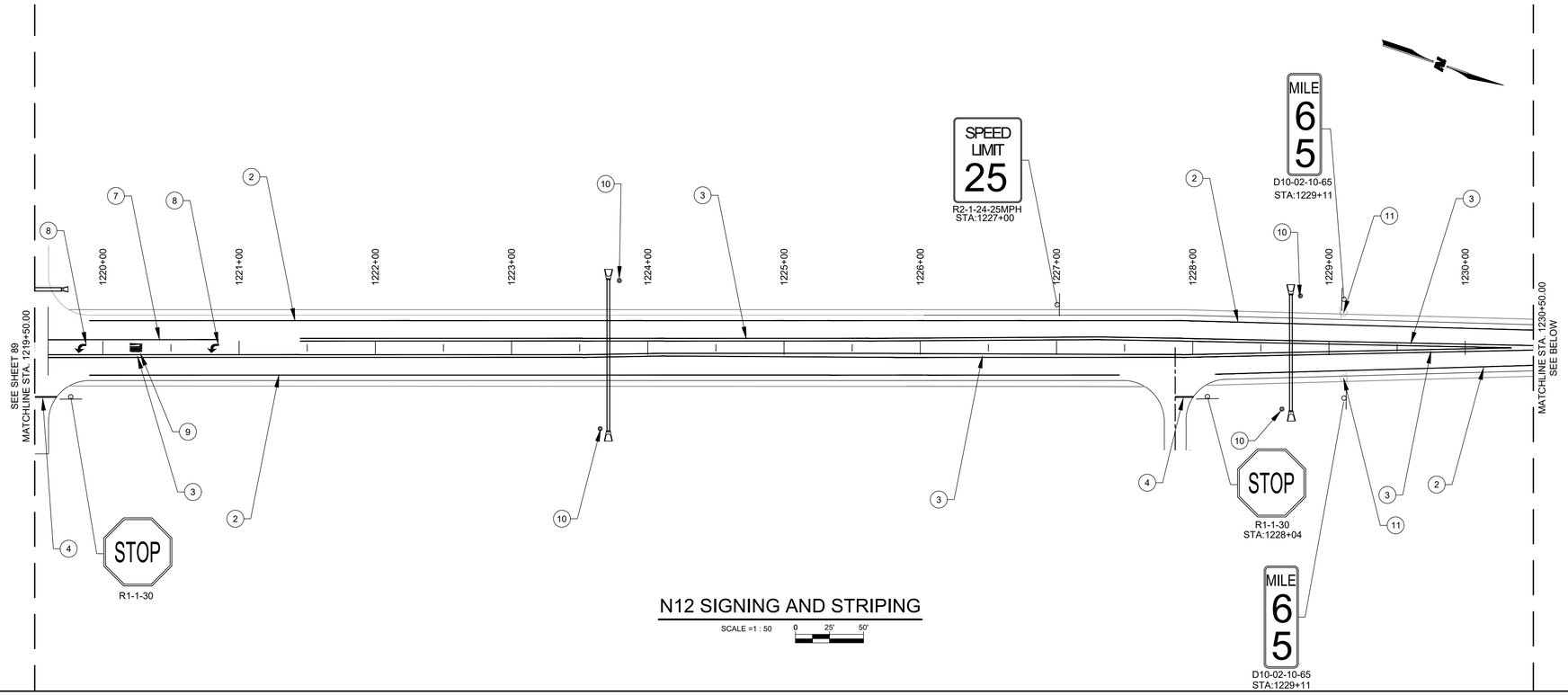
SIGNING AND STRIPING

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 10/16/2025 ARIZONA, U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

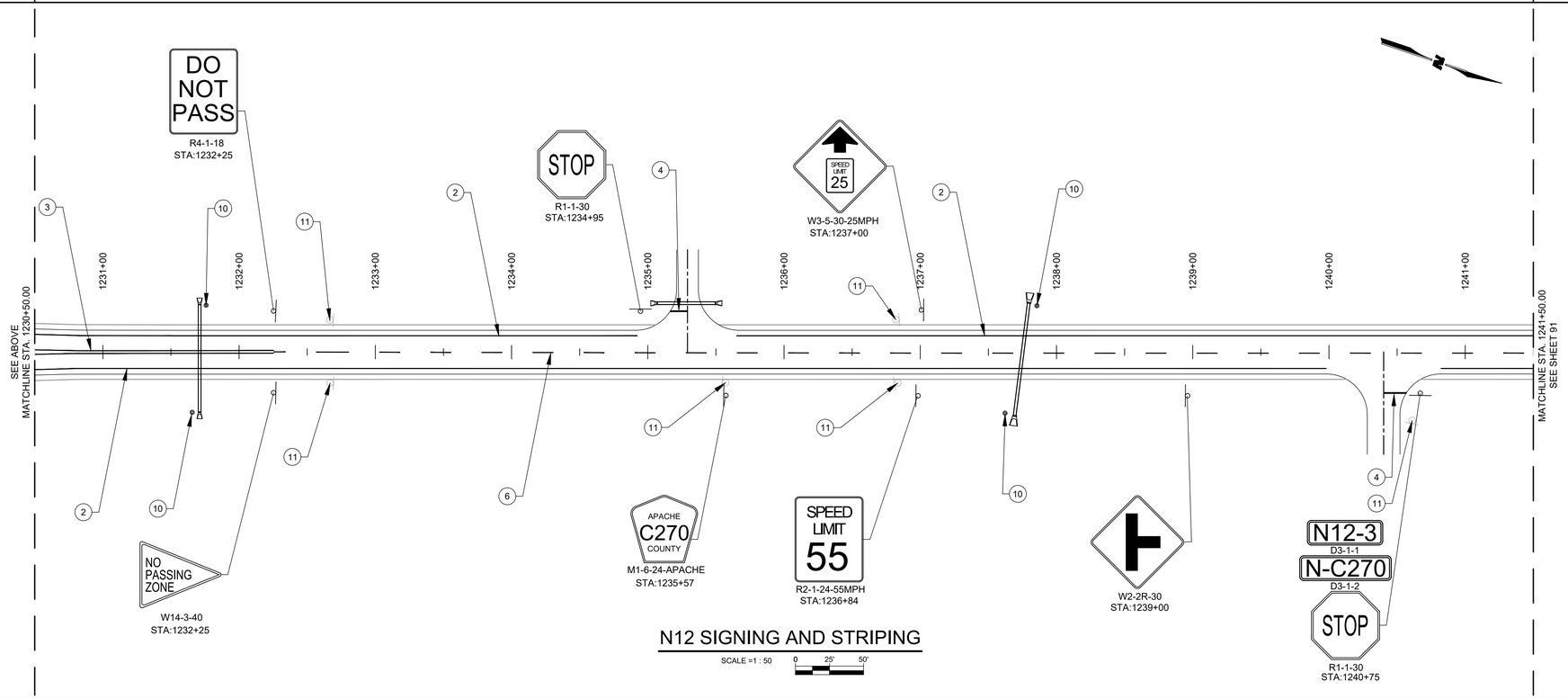
DESIGN	JEB	WCEA NO. 1710009012	DATE 2025
DRAWN	ERG	N12	SHEET NO. 65 -120
CHECK	ASF		

REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	66	120



N12 SIGNING AND STRIPING

SCALE =1 : 50 0 25' 50'



N12 SIGNING AND STRIPING

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7. REFLECTORIZED PAINTED MARKING - 12" SOLID WHITE
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10. TYPE II OBJECT MARKER
11. REMOVE EXISTING SIGN

AGENCY LINE TO WHEATFIELDS LAKE

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ROUTE N12

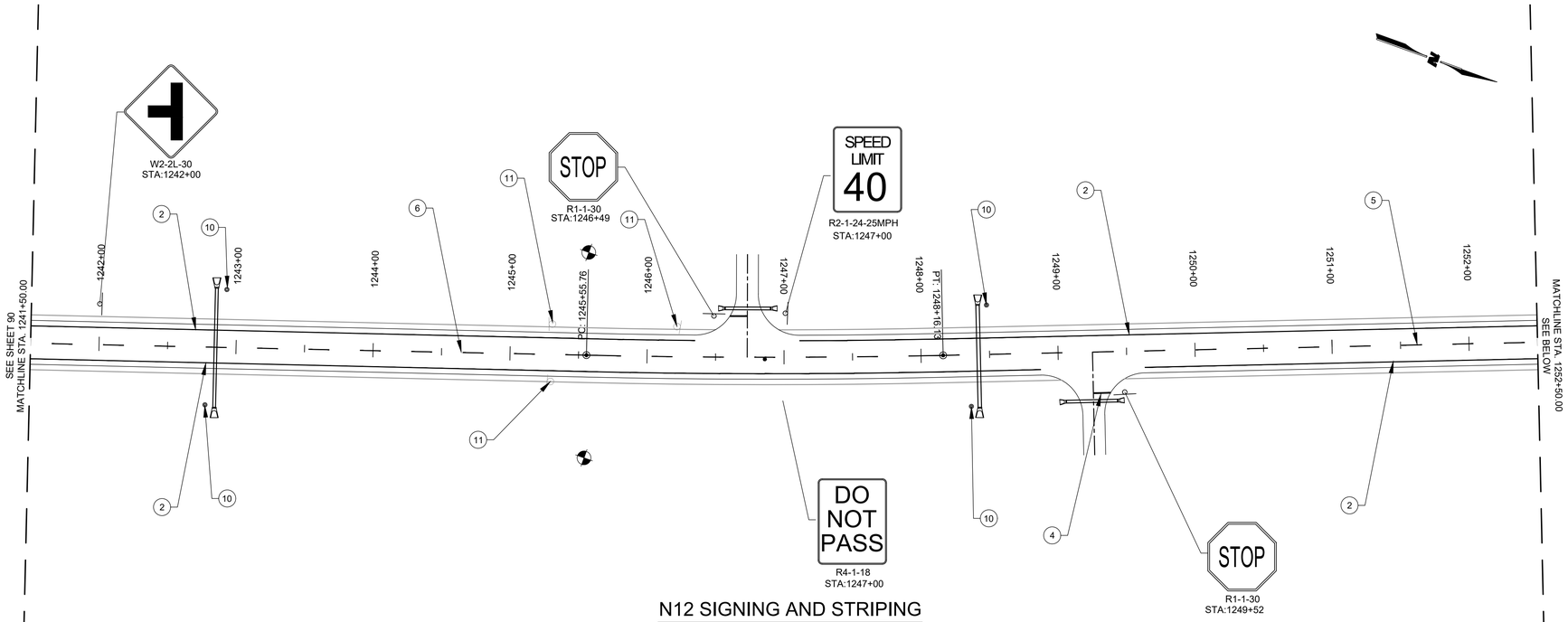
SIGNING AND STRIPING

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 02/04/2025 ARIZONA, U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

DESIGN	JEB	WCEA NO. 1710009012	DATE 2025
DRAWN	ERG	N12	SHEET NO.
CHECK	ASF		66 -120

REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	67	120



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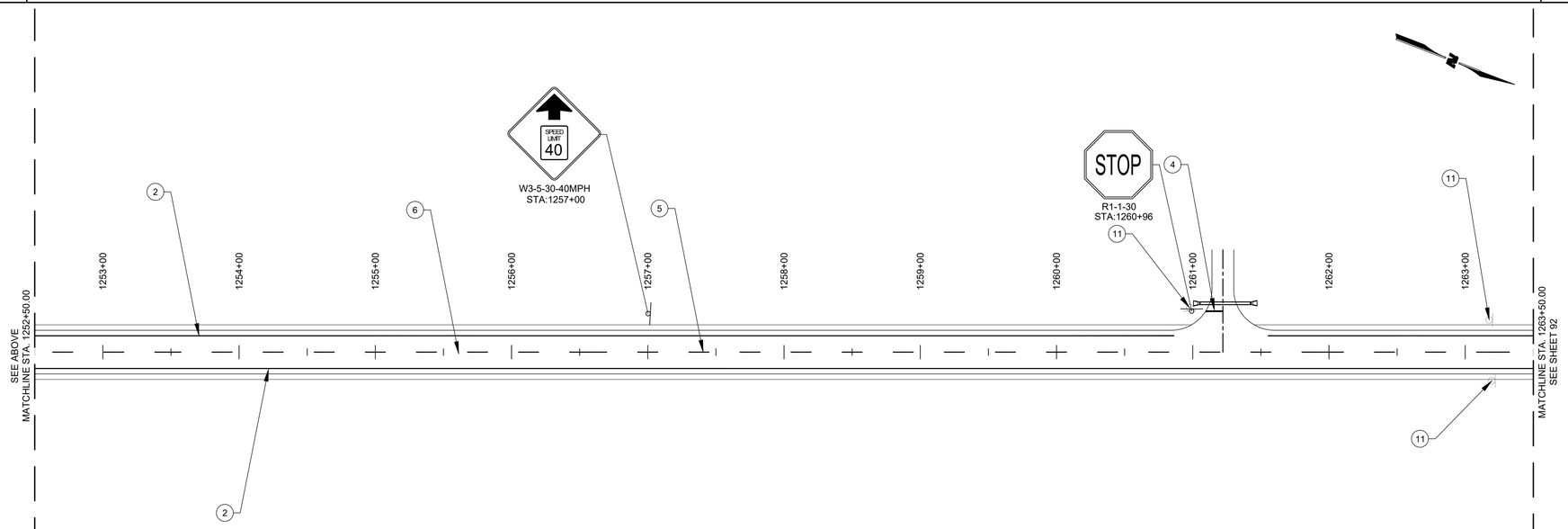

N12 SIGNING AND STRIPING

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SUITE 460
PHOENIX, AZ 85008
(602) 283-2701

ROUTE N12

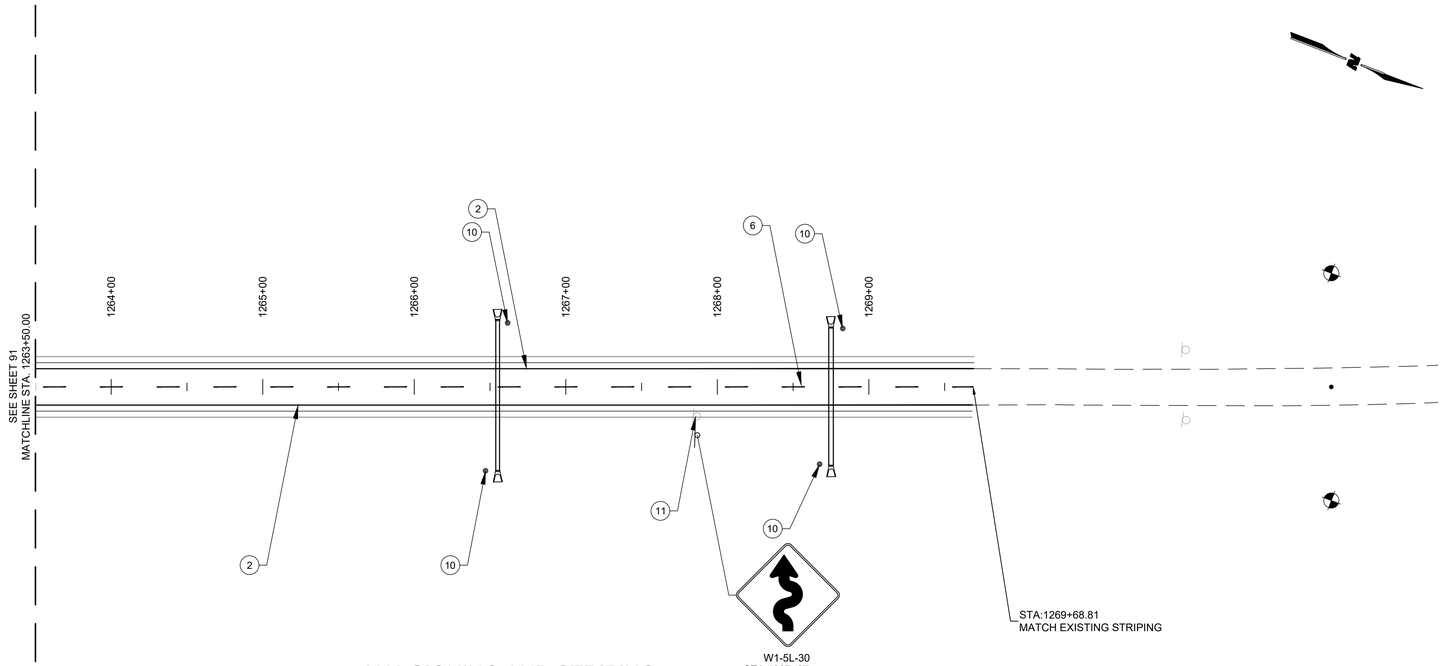
SIGNING AND STRIPING

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 02/04/2025 ARIZONA, U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

DESIGN	JEB	WCEA NO. 1710009012	DATE 2025
DRAWN	ERG	N12	SHEET NO. 67 -120
CHECK	ASF		

REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	68	120



N12 SIGNING AND STRIPING

SCALE =1 : 50 0 25' 50'

GENERAL NOTES

1. ALL NEW SIGNING AND STRIPING SHALL COMPLY WITH THE FHWA AND 2009 MUTCD RETROREFLECTIVITY STANDARDS.

KEYNOTES

1. EXISTING ROW
2. REFLECTORIZED PAINTED MARKING - 4" SOLID SINGLE WHITE
6. REFLECTORIZED PAINTED MARKING - 4" SKIP YELLOW
10. TYPE II OBJECT MARKER
11. REMOVE EXISTING SIGN

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET
SUITE 460
PHOENIX, AZ 85008
(602) 283-2701

ROUTE N12

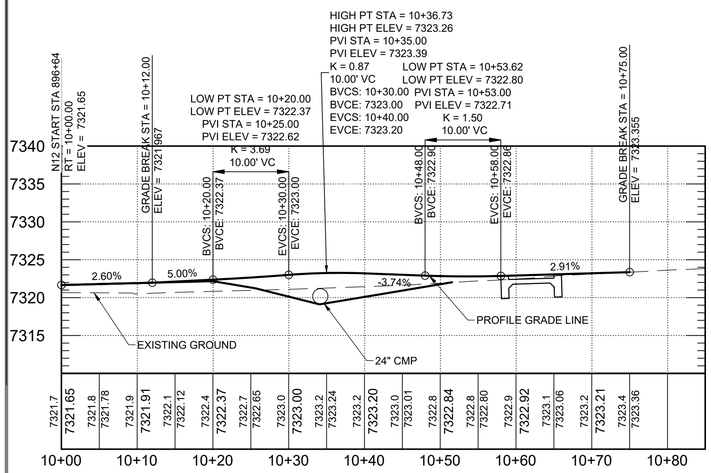
SIGNING AND STRIPING

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 02/04/25 ARIZONA, U.S.A.

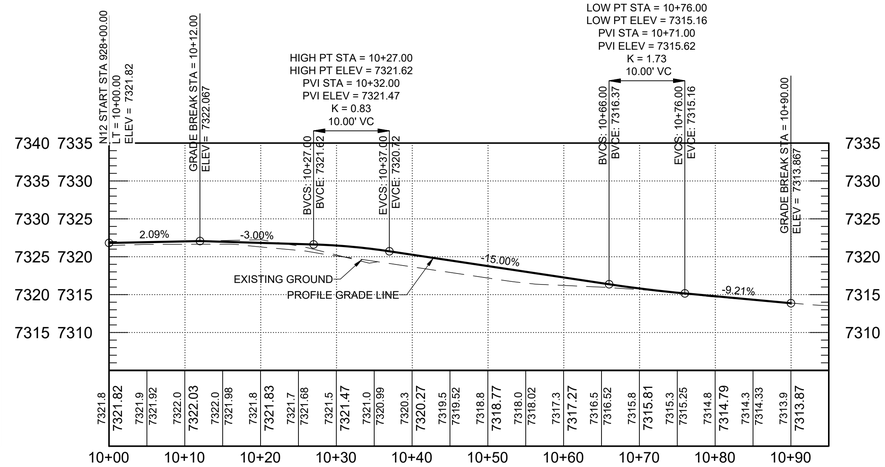
REVISIONS NO.	DATE	REMARKS	BY

DESIGN JEB	WCEA NO. 1710009012	DATE 2025	
DRAWN ERG	N12	SHEET NO. 68 -120	
CHECK ASF			

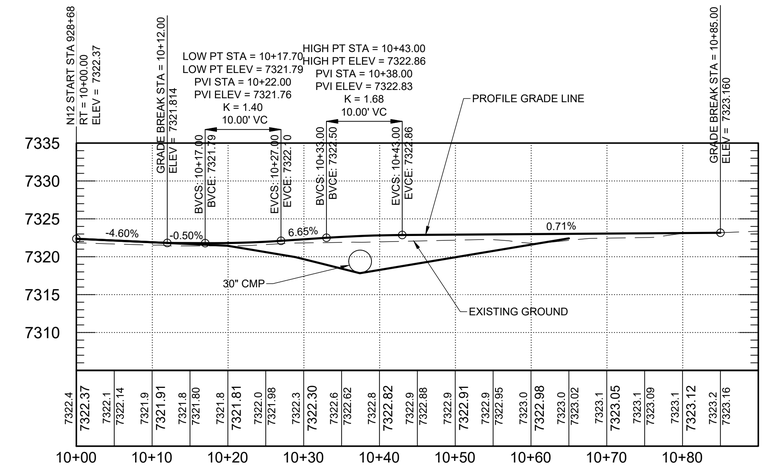
REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	69	120



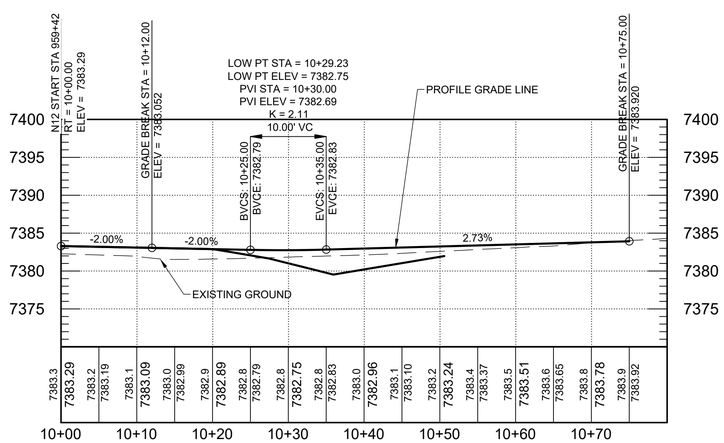
TO-1



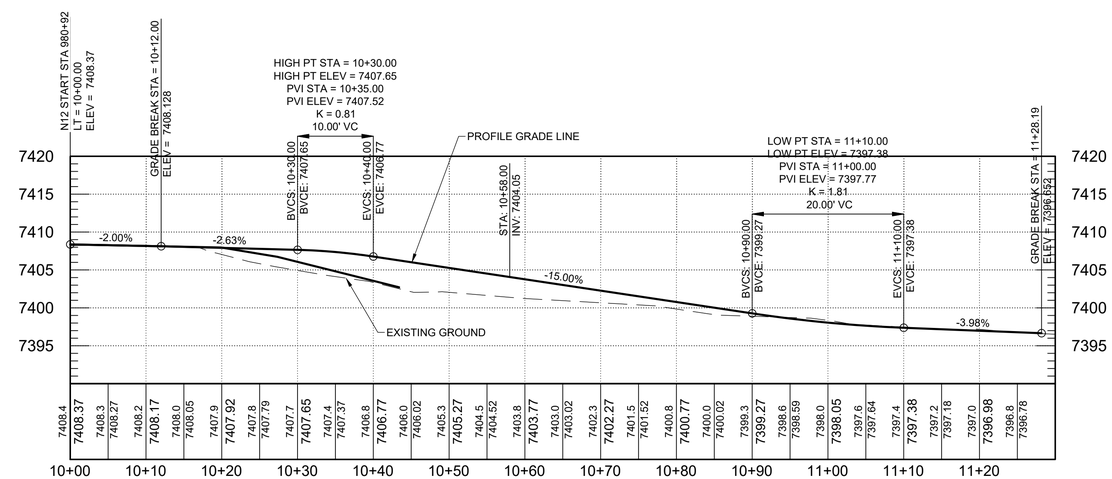
TO-2



TO-3



TO-4



TO-5

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET, SUITE 460
PHOENIX, ARIZONA 85008
(602) 283-2701

ROUTE N12

TURNOUT PROFILE

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 02/26/25 ARIZONA, U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

DESIGN	JEB	WCEA NO. 1710009012	DATE	2025
DRAWN	ERG	PROJECT NO. N12(13-2) 1,2,&4	SHEET NO.	69 OF 120
CHECK	ASF			

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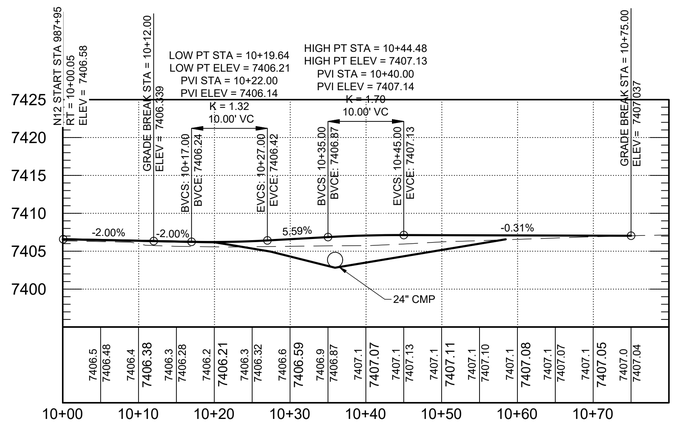
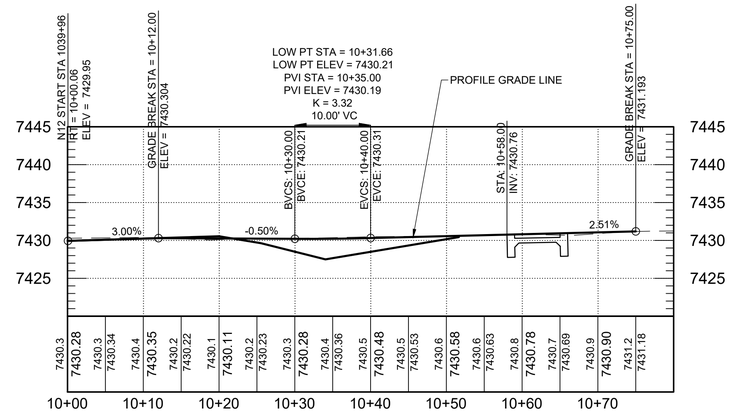
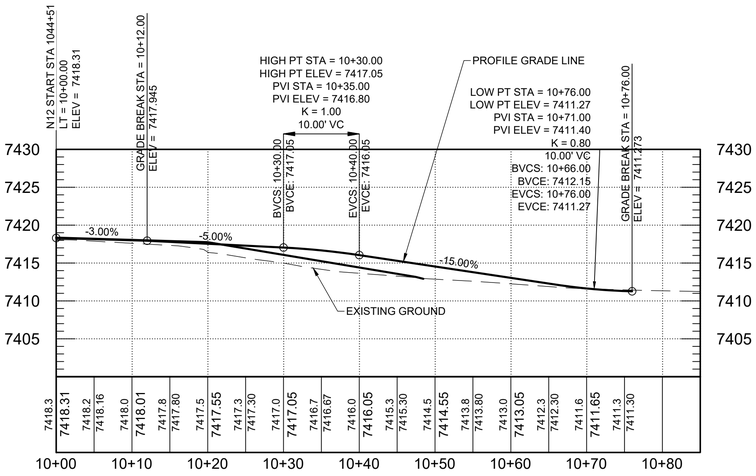
REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	70	120



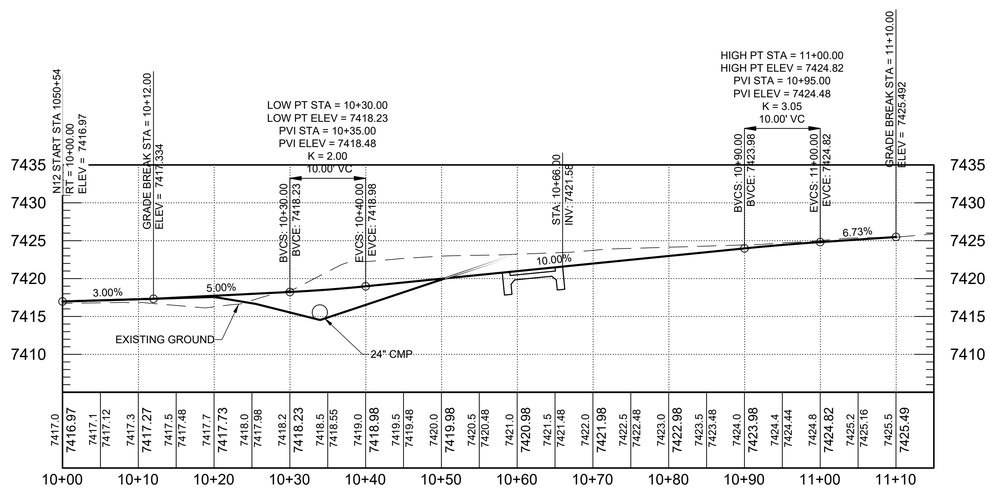
TO-6



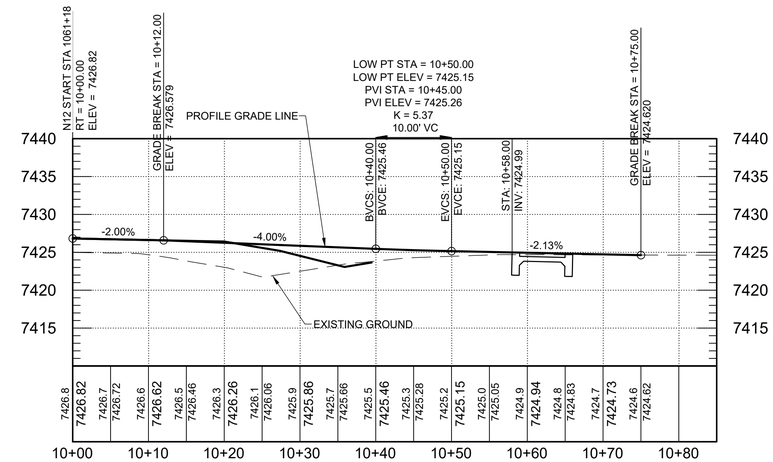
TO-7



TO-8



TO-9



TO-10

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET, SUITE 460
PHOENIX, ARIZONA 85008
(602) 283-2701

ROUTE N12

TURNOUT PROFILE

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 02/26/2025 ARIZONA, U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

DESIGN	JEB	WCEA NO. 1710009012	DATE 2025
DRAWN	ERG	PROJECT NO. N12(13-2) 1,2,&4	SHEET NO. 70 OF 120
CHECK	ASF		

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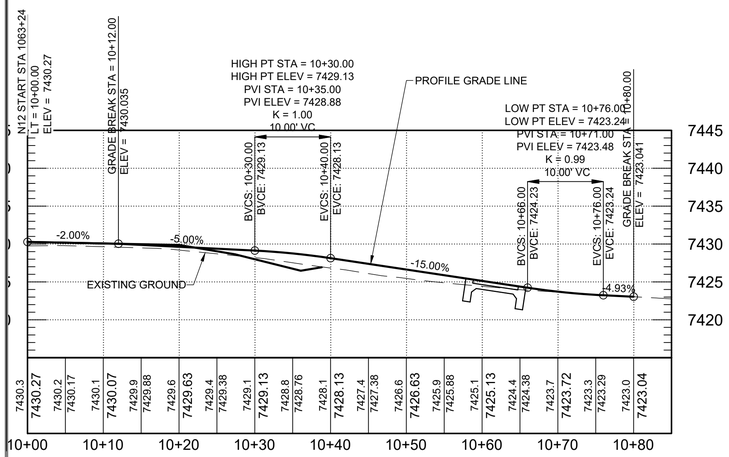
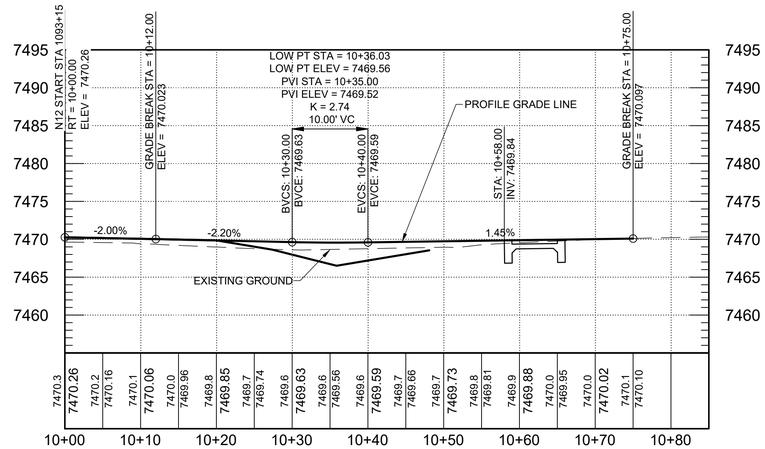
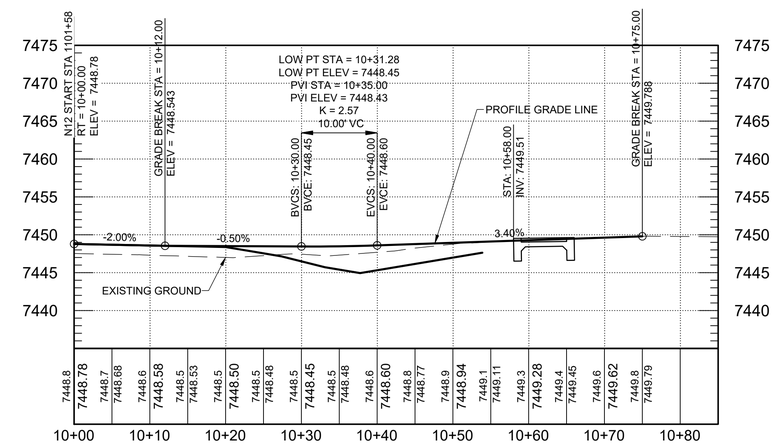
REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	71	120



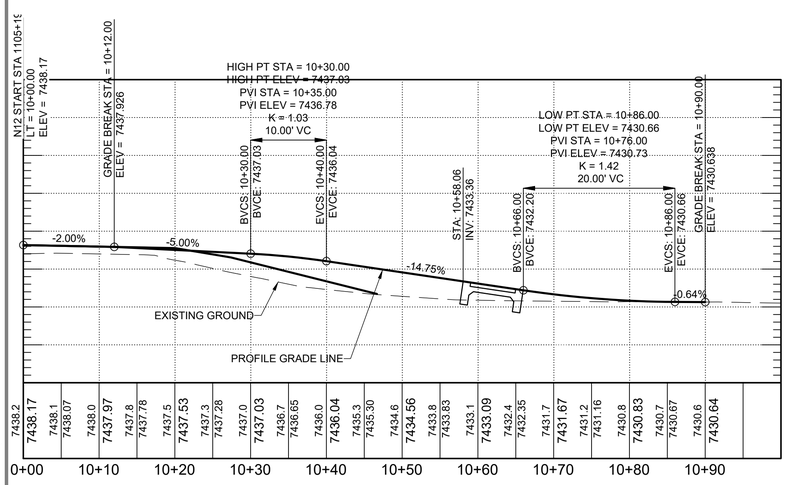
TO-11



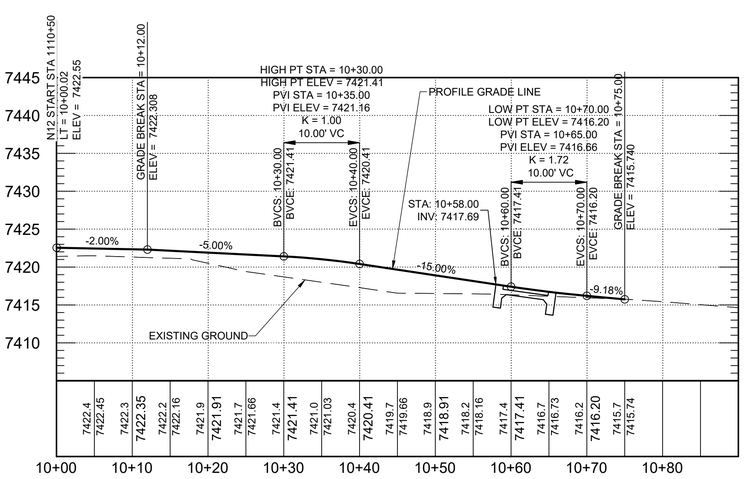
TO-12



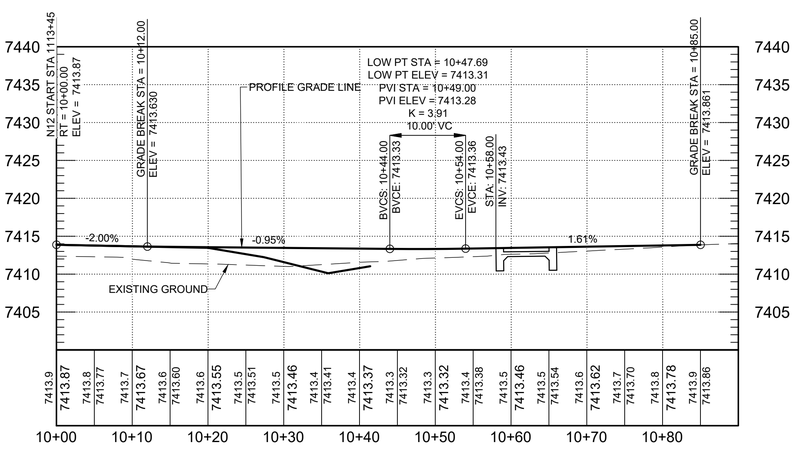
TO-13



TO-14



TO-15



TO-16

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET, SUITE 460
PHOENIX, ARIZONA 85008
(602) 283-2701

ROUTE N12

TURNOUT PROFILE

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 02/26/2025 ARIZONA, U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

DESIGN	JEB	WCEA NO. 1710009012	DATE 2025
DRAWN	ERG	PROJECT NO. N12(13-2) 1,2,&4	SHEET NO. 71 OF 120
CHECK	ASF		

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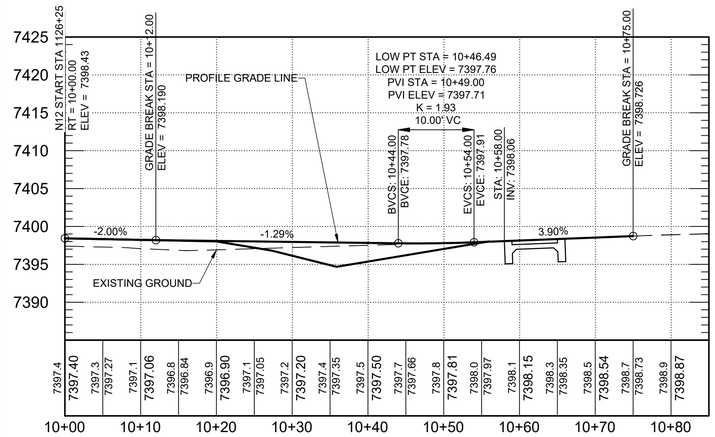
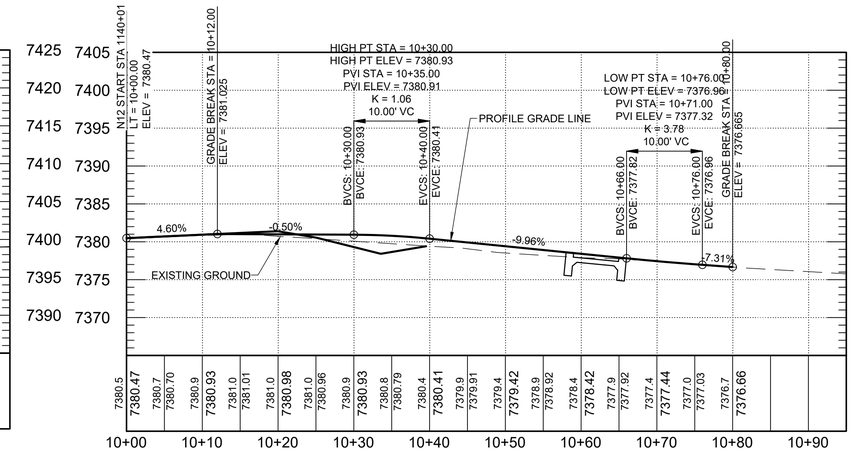
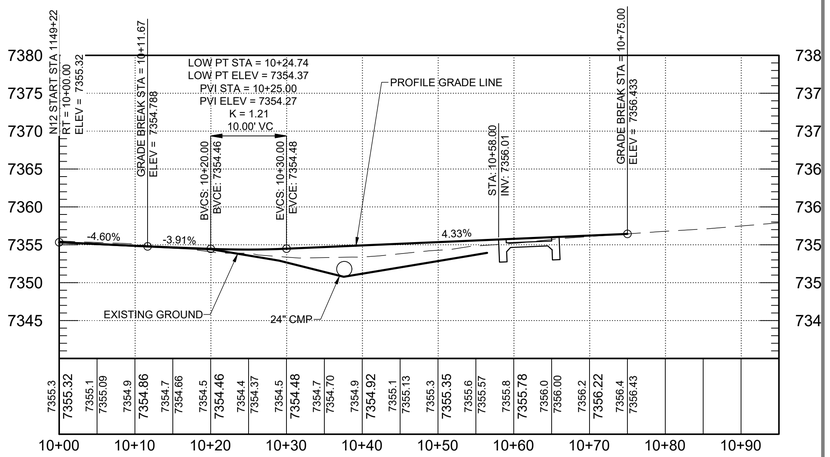
REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	72	120



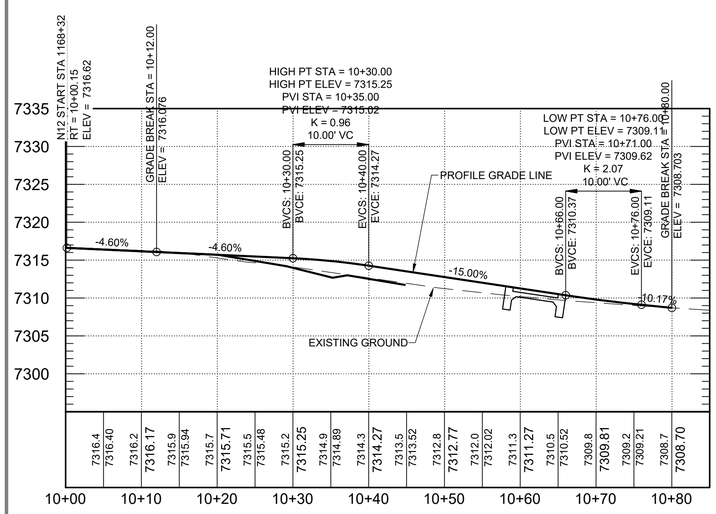
TO-17



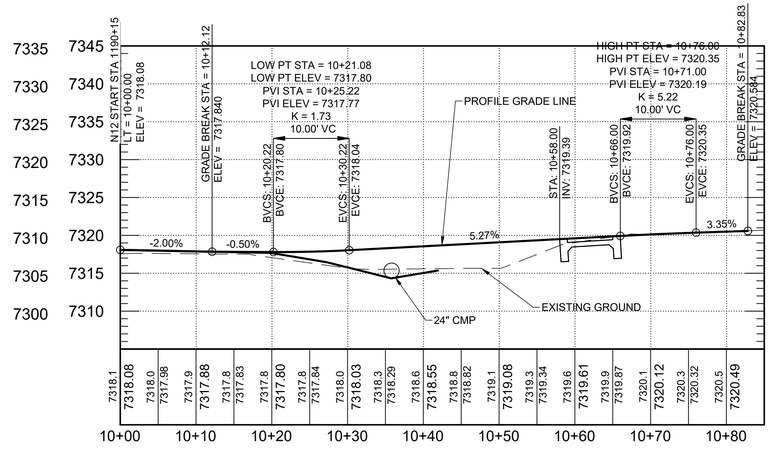
TO-18



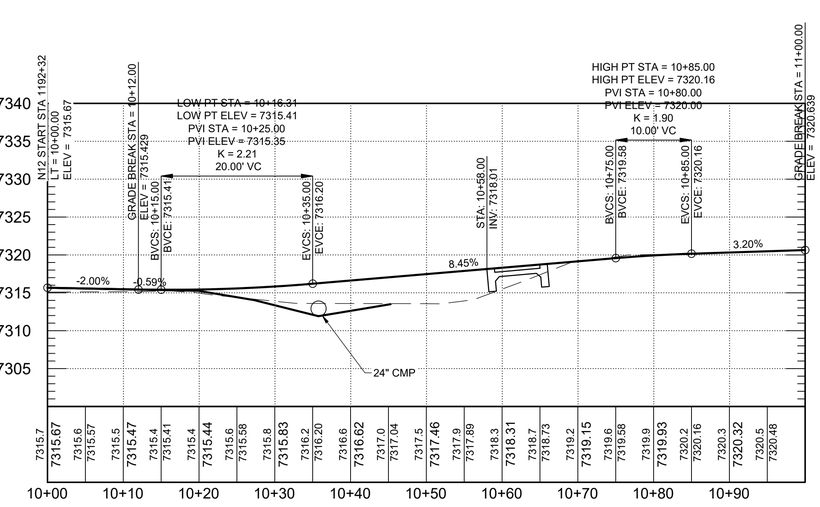
TO-19



TO-20



TO-21



TO-22

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET, SUITE 460
PHOENIX, ARIZONA 85008
(602) 283-2701

ROUTE N12

TURNOUT PROFILE

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 12/26/25 ARIZONA, U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

DESIGN	JEB	WCEA NO. 1710009012	DATE 2025
DRAWN	ERG	PROJECT NO. N12(13-2) 1,2,&4	SHEET NO. 72 OF 120
CHECK	ASF		

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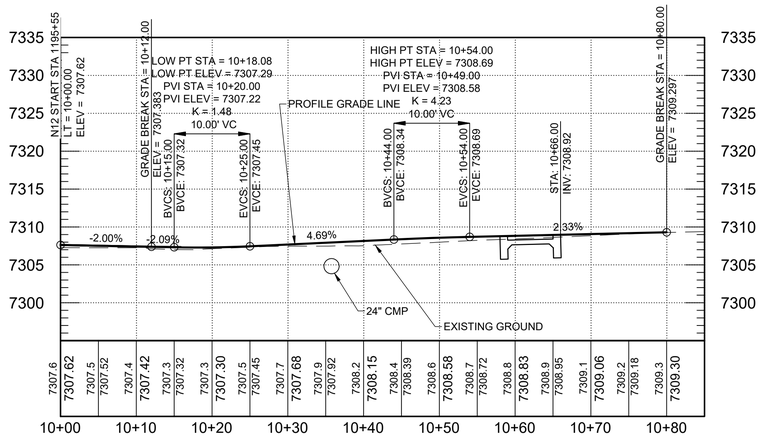
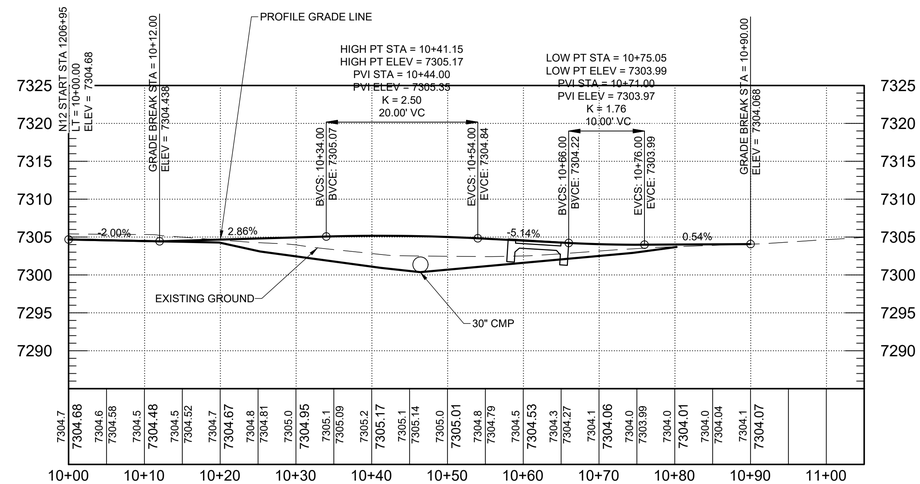
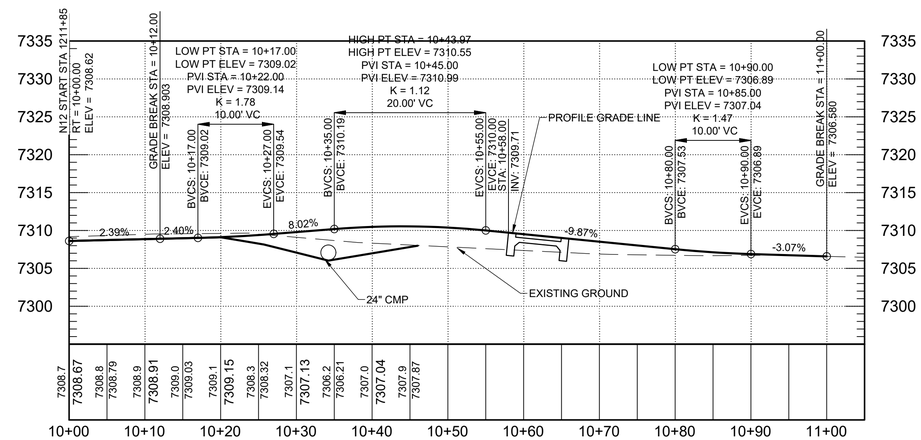
REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	73	120



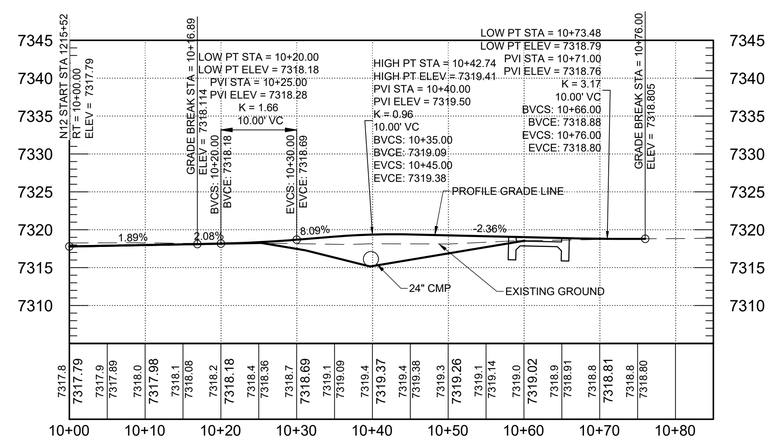
TO-23



TO-24



TO-25



TO-26

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET, SUITE 460
PHOENIX, ARIZONA 85008
(602) 283-2701

ROUTE N12

TURNOUT PROFILE

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 02/26/2025 ARIZONA, U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

DESIGN	JEB	WCEA NO. 1710009012	DATE 2025
DRAWN	ERG	PROJECT NO. N12(13-2) 1,2,&4	SHEET NO. 73 OF 120
CHECK	ASF		

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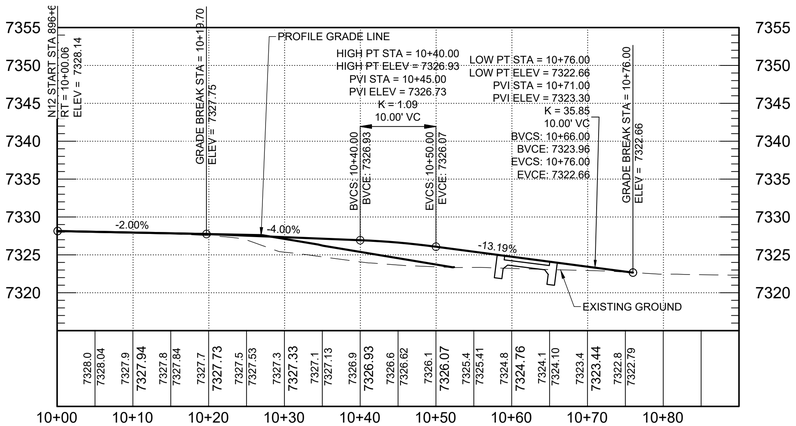
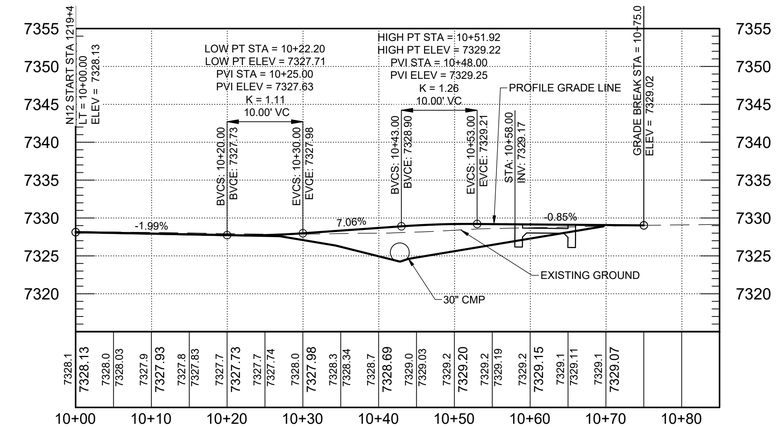
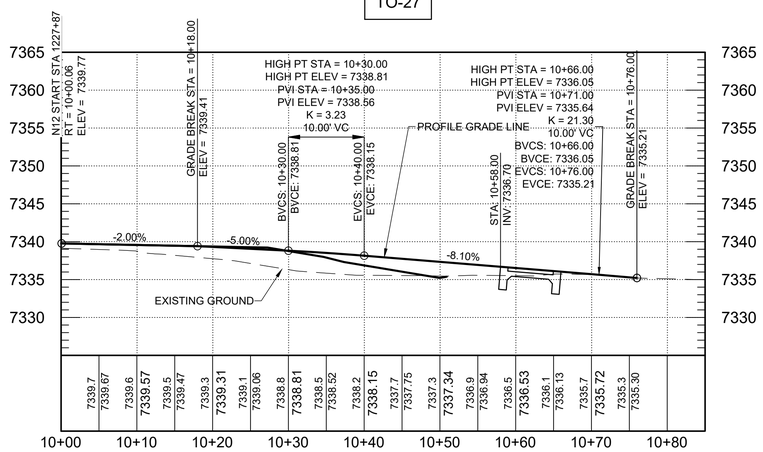
REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	74	120



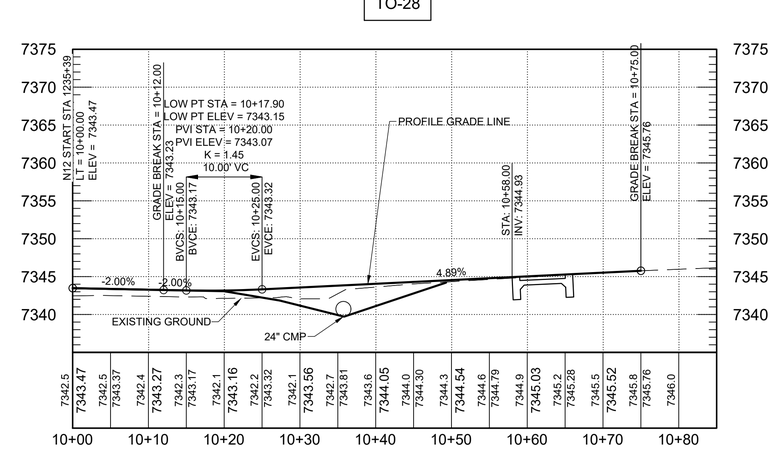
TO-27



TO-28



TO-29



TO-30

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET, SUITE 460
PHOENIX, ARIZONA 85008
(602) 283-2701

ROUTE N12

TURNOUT PROFILE

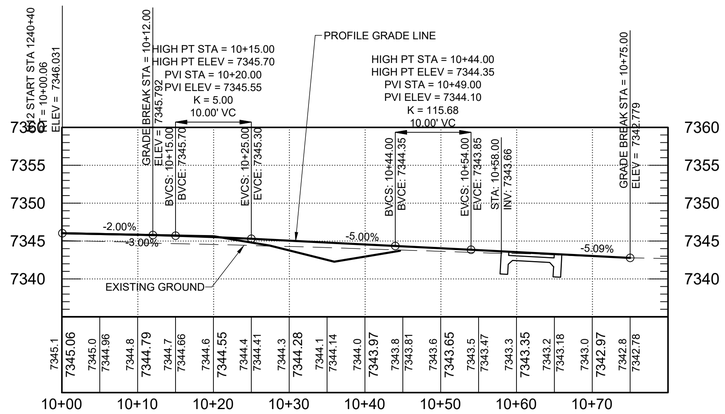
Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 02/26/2025 ARIZONA, U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

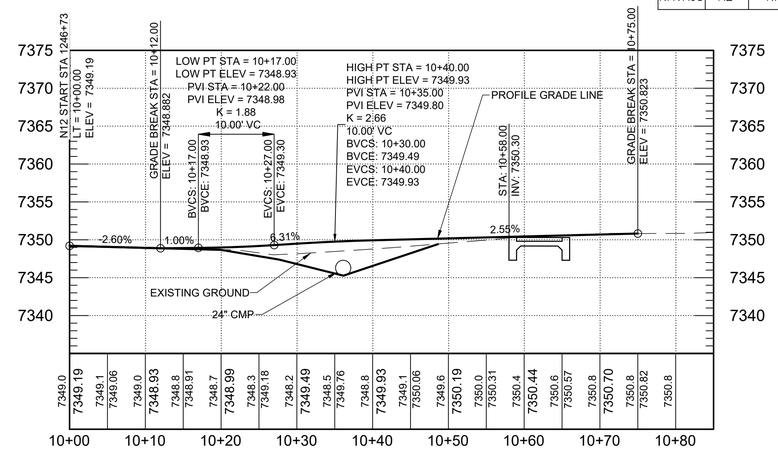
DESIGN	JEB	WCEA NO. 1710009012	DATE 2025
DRAWN	ERG	PROJECT NO. N12(13-2) 1,2,&4	SHEET NO. 74 OF 120
CHECK	ASF		

M:\TRN\17-100-090-12\2_DISCIPLINES\ROADWAY\DRAWING\TURNOUT PROFILE SHEET 01.DWG2/26/2025 9:53 AM

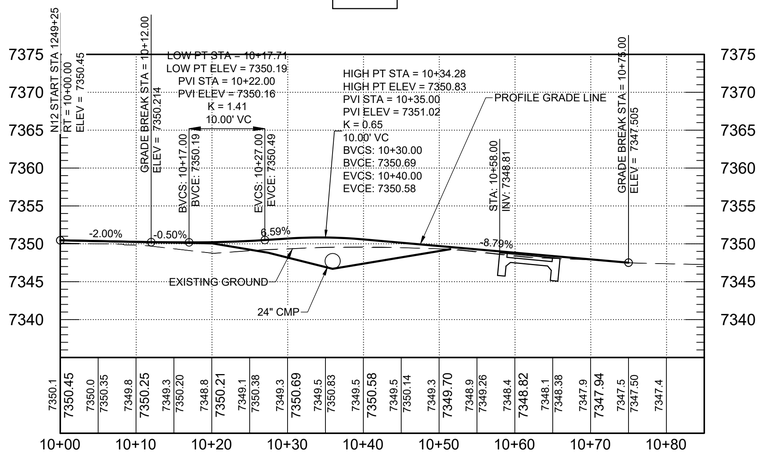
REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	75	120



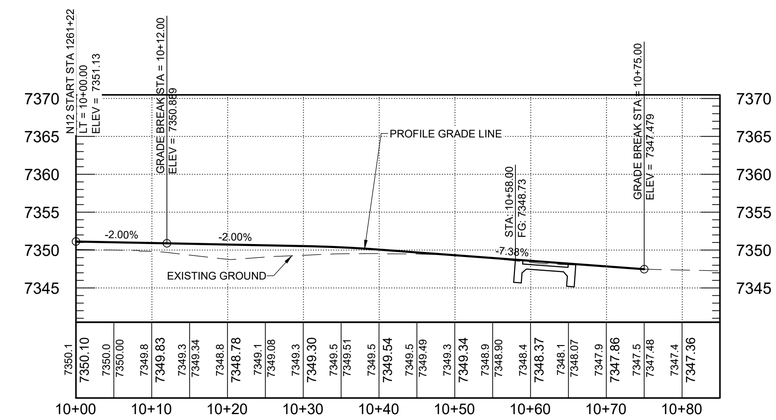
TO-31



TO-32



TO-33



TO-34

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET, SUITE 460
PHOENIX, ARIZONA 85008
(602) 283-2701

ROUTE N12

TURNOUT PROFILE

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 02/26/2025 ARIZONA, U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

DESIGN	JEB	WCEA NO. 1710009012	DATE	2025	
DRAWN	ERG	PROJECT NO. N12(13-2) 1,2,&4	SHEET NO. 75 OF 120		
CHECK	ASF				

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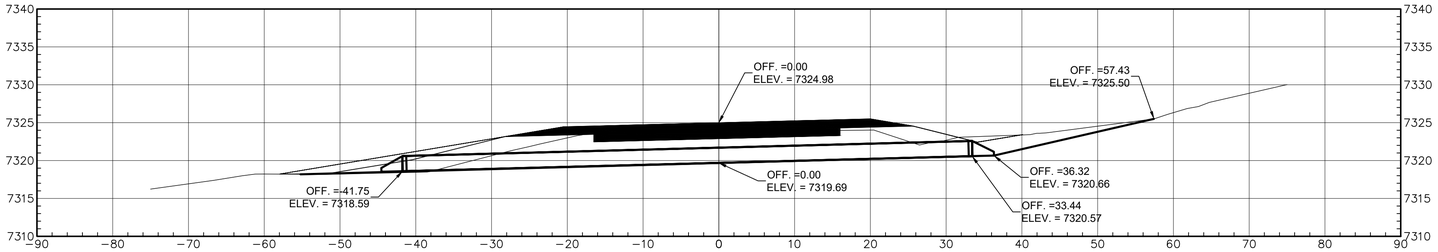
REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	76	48

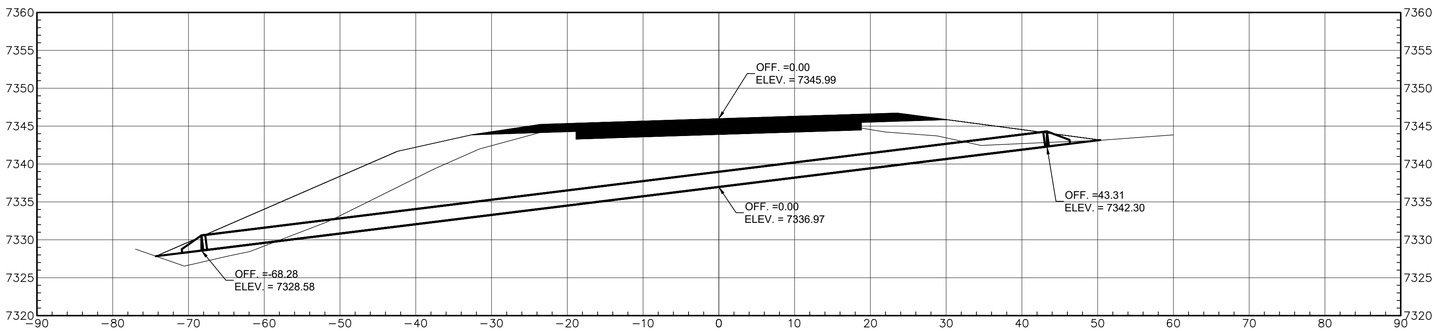
STA. 898+92.05



DS-1

STA. 898+92
REMOVE 24" CMP
INSTALL 24" CMP, 75' LENGTH
BUILD METAL END SECTIONS LT & RT

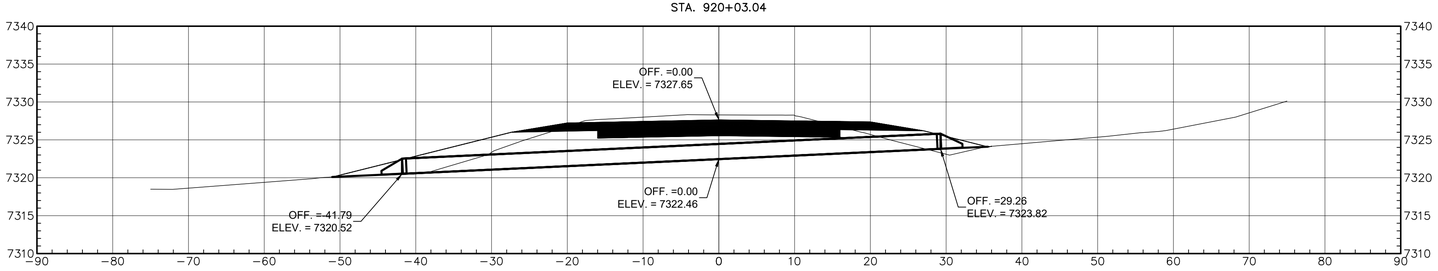
STA. 905+87.03



DS-2

STA. 905+87
REMOVE 36" CMP
INSTALL 24" CMP @ +35° SKEW, 112' LENGTH
BUILD METAL END SECTIONS LT & RT

STA. 920+03.04



DS-3

STA. 920+03
REMOVE 42" CMP
INSTALL 24" CMP, 71' LENGTH
BUILD METAL END SECTIONS LT & RT

0 5' 10'

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET, SUITE 460
PHOENIX, ARIZONA 85008
(602) 283-2701

ROUTE N12

PIPE PROFILES

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 02/26/25 ARIZONA, U.S.A.

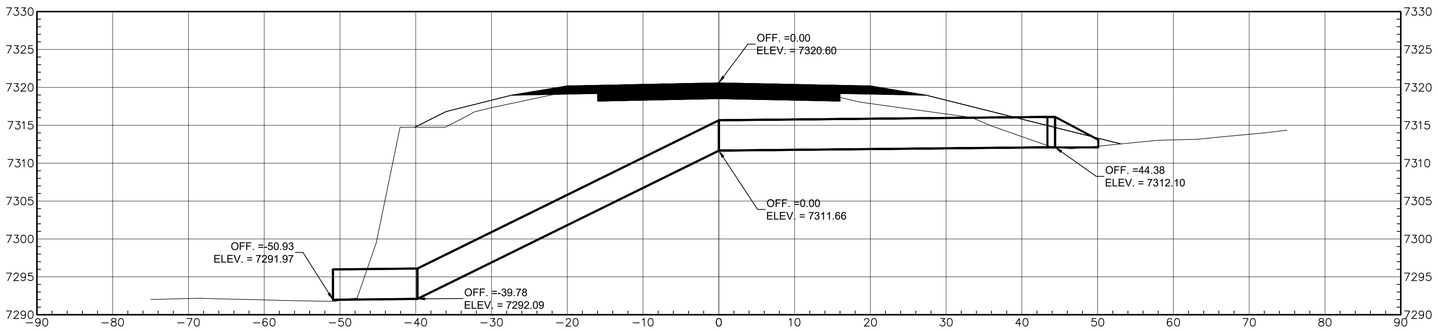
REVISIONS	NO.	DATE	REMARKS	BY

DESIGN	JEB	WCEA NO. 1710009012	DATE 2024
DRAWN	ERG	PROJECT NO. N12(13-2) 1,2,&4	SHEET NO. 76 OF 48
CHECK	ASF		

M:\TRN\17-100-090-12\2_DISCIPLINES_SHEETS\3_SHEETS - ROADWAY\X-SECTIONS\PIPE PROFILE - 1.DWG2/26/2025 6:50 AM

REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	77	48

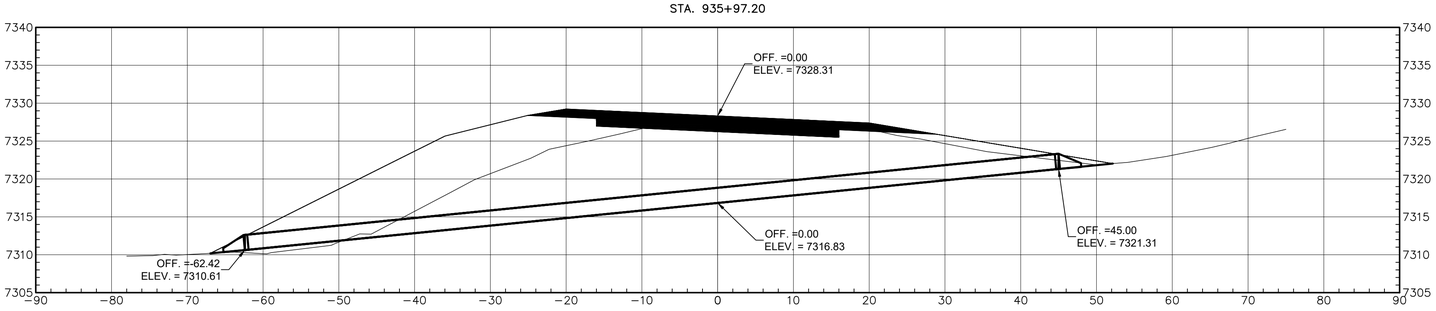
STA. 925+29.36



DS-4

STA. 925+29
REMOVE 78" CMP
INSTALL 48" CMP, 102' LENGTH
BUILD METAL END SECTIONS LT & RT

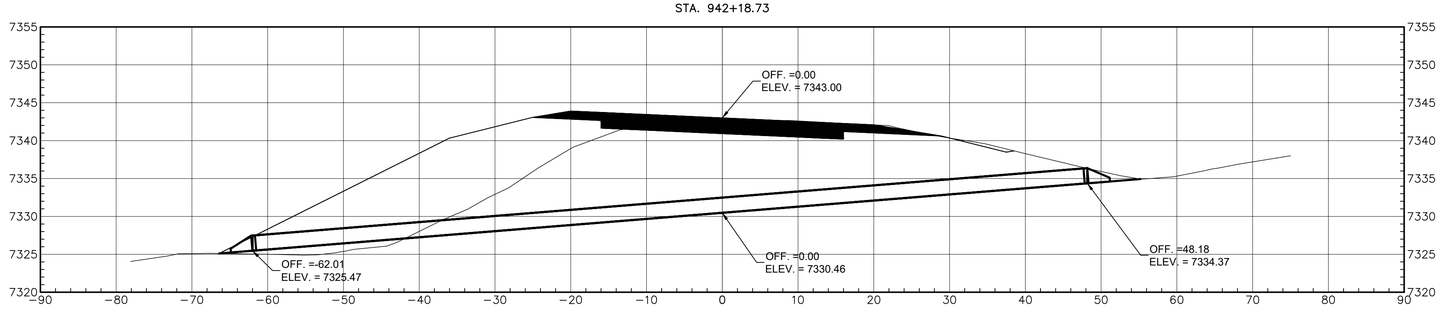
STA. 935+97.20



DS-5

STA. 935+97
REMOVE 24" CMP
INSTALL 24" CMP, 108' LENGTH
BUILD METAL END SECTIONS LT & RT

STA. 942+18.73



DS-6

STA. 942+19
REMOVE 24" CMP
INSTALL 24" CMP, 110' LENGTH
BUILD METAL END SECTIONS LT & RT

0 5' 10'

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET, SUITE 460
PHOENIX, ARIZONA 85008
(602) 283-2701

ROUTE N12

PIPE PROFILES

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 02/26/25 ARIZONA, U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

DESIGN	JEB	WCEA NO. 1710009012	DATE	2024
DRAWN	ERG	PROJECT NO. N12(13-2) 1,2,&4	SHEET NO.	77 OF 48
CHECK	ASF			

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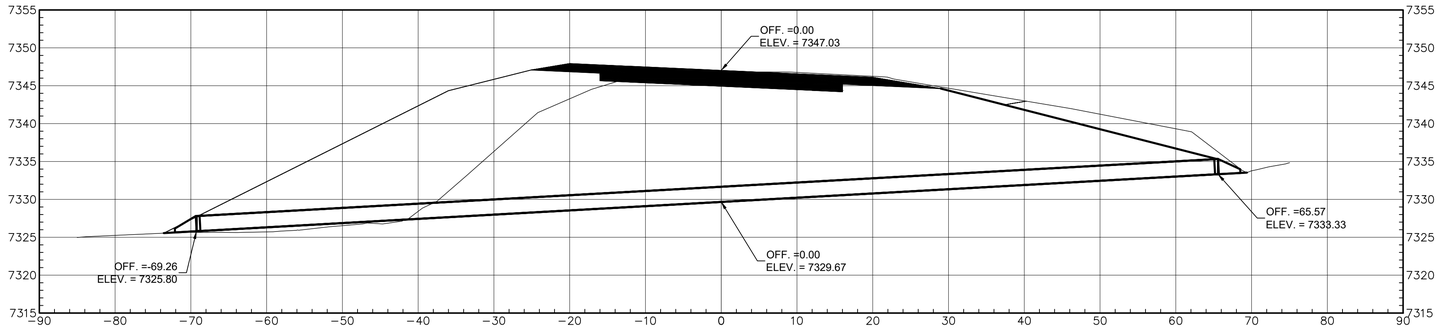
REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	78	48

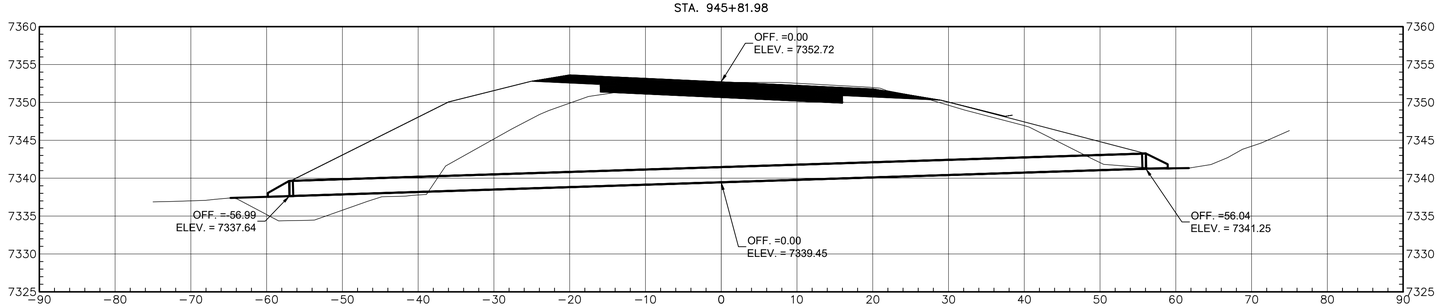
STA. 943+69.17



DS-7

STA. 943+69
REMOVE 30" CMP
INSTALL 24" CMP, 135' LENGTH
BUILD METAL END SECTIONS LT & RT

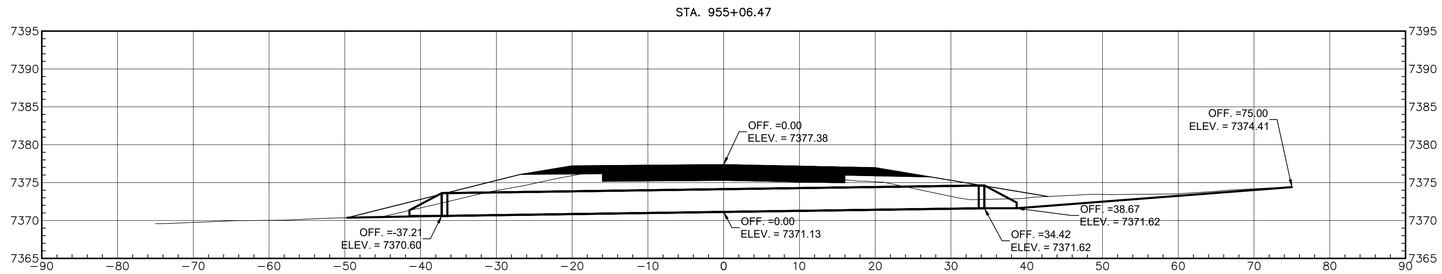
STA. 945+81.98



DS-8

STA. 945+82
REMOVE 36" CMP
INSTALL 24" CMP, 113' LENGTH
BUILD METAL END SECTIONS LT & RT

STA. 955+06.47



DS-9

STA. 955+06
REMOVE 42" CMP
INSTALL 36" CMP, 72' LENGTH
BUILD METAL END SECTIONS LT & RT

0 5' 10'

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET, SUITE 460
PHOENIX, ARIZONA 85008
(602) 283-2701

ROUTE N12

PIPE PROFILES

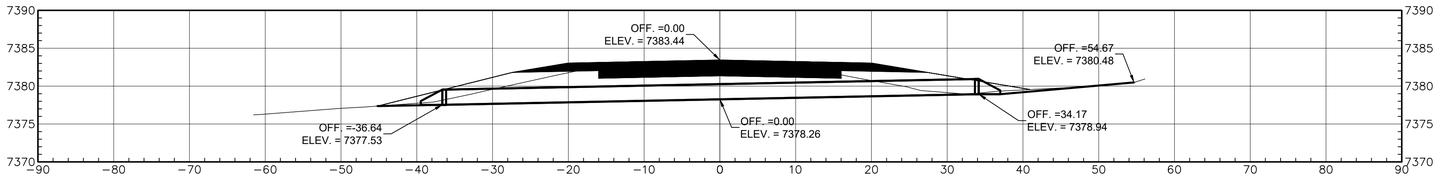
Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 01/26/25 ARIZONA, U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

DESIGN	JEB	WCEA NO. 1710009012	DATE	2024	
DRAWN	ERG	PROJECT NO. N12(13-2) 1,2,&4	SHEET NO.	78 OF 48	
CHECK	ASF				

M:\TRN\17-100-090-12\2_DISCIPLINES_SHEETS\3_SHEETS - ROADWAY\X-SECTIONS\PIPE PROFILE - 3.DWG2/26/2025 6:51 AM

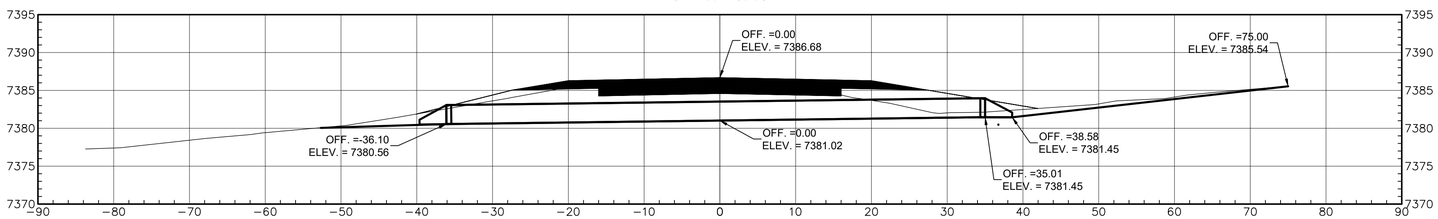
STA. 959+66.13



DS-10

STA. 959+66
REMOVE 36" CMP
INSTALL 24" CMP, 71' LENGTH
BUILD METAL END SECTIONS LT & RT

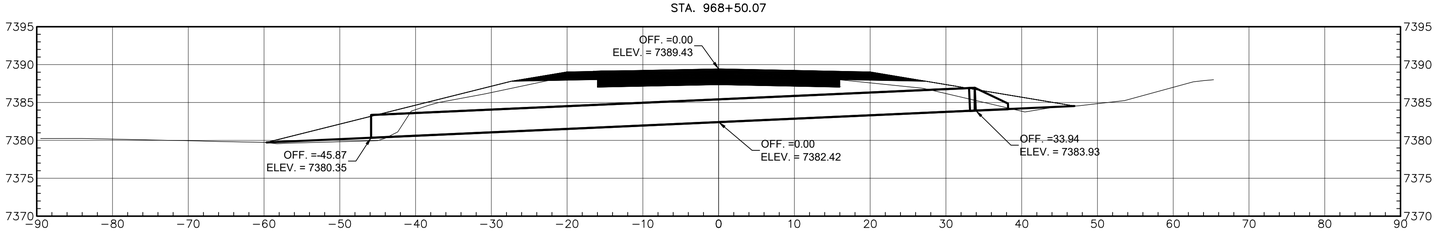
STA. 964+86.68



DS-11

STA. 964+87
REMOVE 36" CMP
INSTALL 30" CMP, 71' LENGTH
BUILD METAL END SECTIONS LT & RT

STA. 968+50.07



DS-12

STA. 968+50
REMOVE 54" CMP
INSTALL 36" CMP, 80' LENGTH
BUILD METAL END SECTIONS LT & RT

0 5' 10'

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET, SUITE 460
PHOENIX, ARIZONA 85008
(602) 283-2701

ROUTE N12

PIPE PROFILES

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 02/26/2025 ARIZONA, U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

DESIGN	JEB	WCEA NO. 1710009012	DATE	2024	
DRAWN	ERG	PROJECT NO. N12(13-2) 1,2,&4	SHEET NO. 79 OF 48		
CHECK	ASF				

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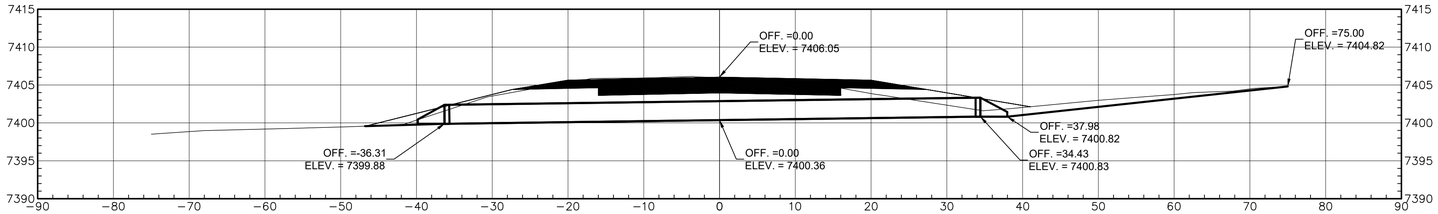
REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	80	48

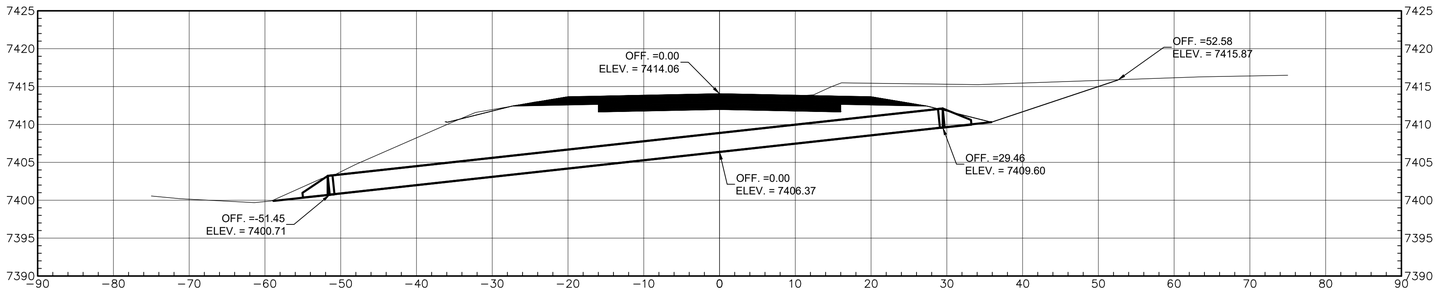
STA. 985+86.05



DS-13

STA. 985+86
REMOVE 42" CMP AND INSTALL 30" CMP, 71' LENGTH
BUILD METAL END SECTIONS LT & RT

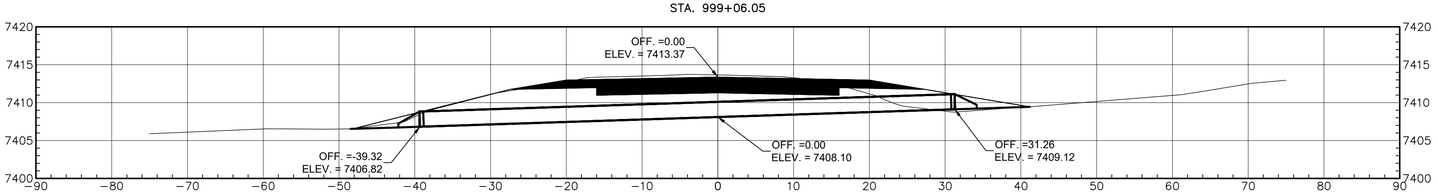
STA. 994+34.96



DS-14

STA. 994+35
REMOVE 42" CMP AND INSTALL 30" CMP, 82' LENGTH
BUILD METAL END SECTIONS LT & RT

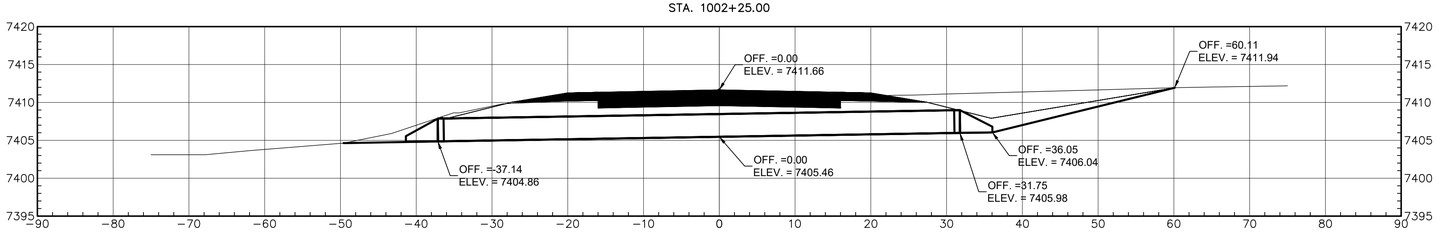
STA. 999+06.05



DS-15

STA. 999+06
REMOVE 30" CMP AND INSTALL 24" CMP, 71' LENGTH
BUILD METAL END SECTIONS LT & RT

STA. 1002+25.00



DS-16

STA. 1002+25
REMOVE 42" CMP AND INSTALL 36" CMP, 69' LENGTH
BUILD METAL END SECTIONS LT & RT

0 5' 10'

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET, SUITE 460
PHOENIX, ARIZONA 85008
(602) 283-2701

ROUTE N12

PIPE PROFILES

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 02/26/25 ARIZONA, U.S.A.

REVISIONS NO.	DATE	REMARKS	BY

DESIGN	JEB	WCEA NO. 1710009012	DATE 2024
DRAWN	ERG	PROJECT NO. N12(13-2) 1,2,&4	SHEET NO. 80 OF 48
CHECK	ASF		

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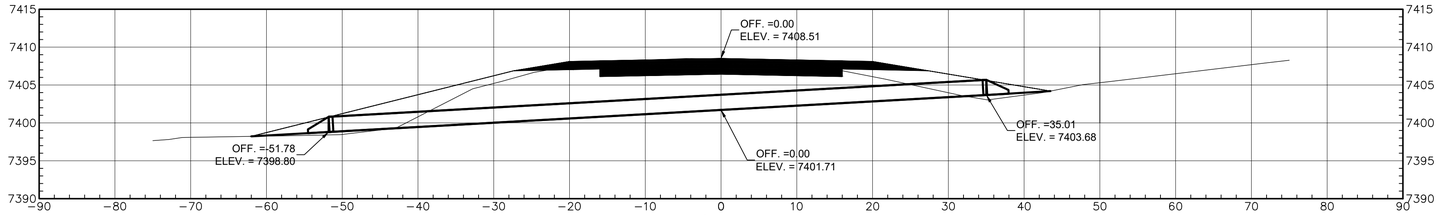
REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	81	48

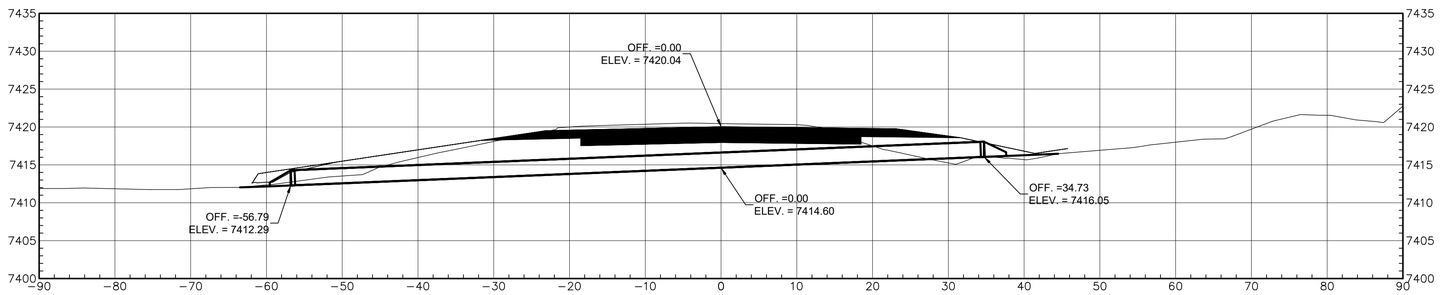
STA. 1009+35.88



DS-17

STA. 1009+36
REMOVE 36" CMP
INSTALL 24" CMP, LENGTH 87'
BUILD METAL END SECTIONS LT & RT

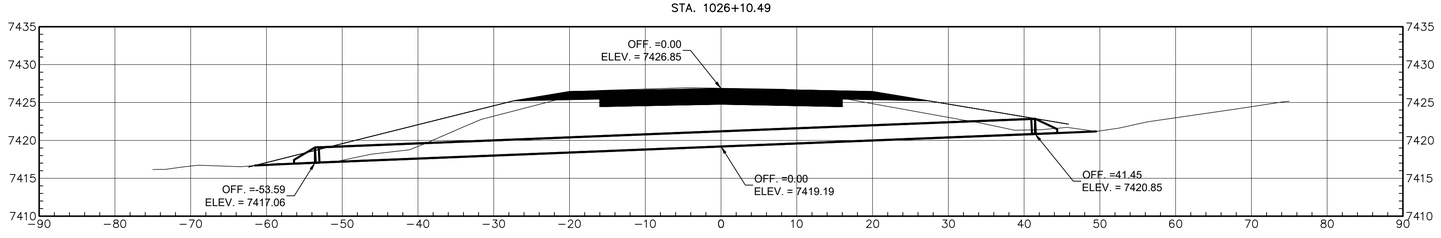
STA. 1019+91.06



DS-18

STA. 1019+91
REMOVE 42" CMP
INSTALL 24" CMP @ +33° SKEW, 92' LENGTH
BUILD METAL END SECTIONS LT & RT

STA. 1026+10.49



DS-19

STA. 1026+10
REMOVE 36" CMP
INSTALL 24" CMP, 95' LENGTH
BUILD METAL END SECTIONS LT & RT

0 5' 10'

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET,
SUITE 460
PHOENIX, ARIZONA 85008
(602) 283-2701

ROUTE N12

PIPE PROFILES

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 02/26/2025 ARIZONA, U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

DESIGN	JEB	WCEA NO. 1710009012	DATE 2024
DRAWN	ERG	PROJECT NO. N12(13-2) 1,2,&4	SHEET NO. 81 OF 48
CHECK	ASF		

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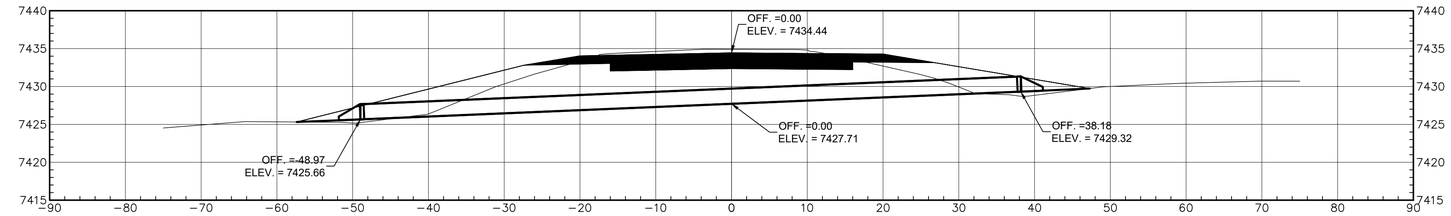
REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	82	48

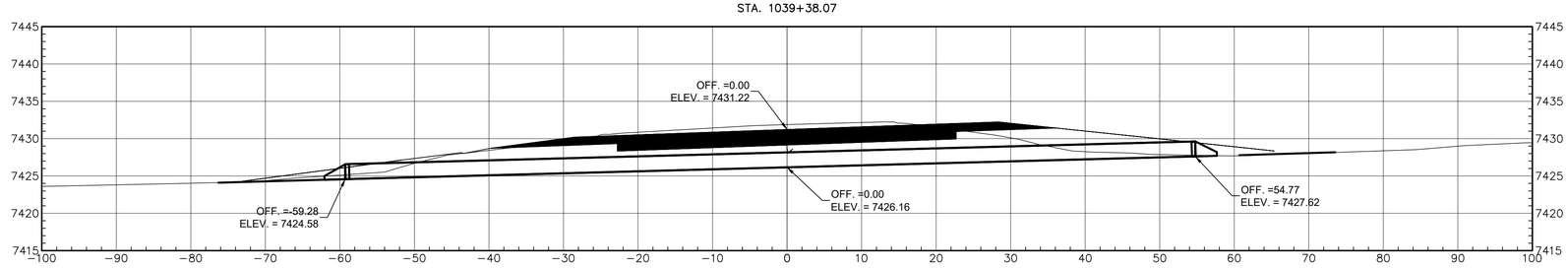
STA. 1033+00.00



DS-20

STA. 1033+00
REMOVE 24" CMP
INSTALL 24" CMP, LENGTH 87'
BUILD METAL END SECTIONS LT & RT

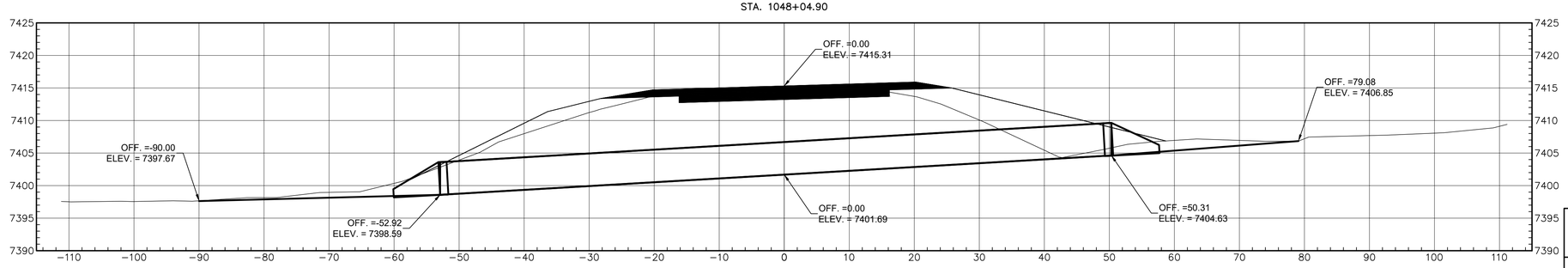
STA. 1039+38.07



DS-21

STA. 1039+38
REMOVE 60" CMP
INSTALL 24" CMP @ -46° SKEW, LENGTH 114'
BUILD METAL END SECTIONS LT & RT

STA. 1048+04.90



DS-22

STA. 1048+05 AND 1048+27
REMOVE 84" CMP
INSTALL 2-60" CMP @ +9° SKEW, LENGTH 2-104'
BUILD METAL END SECTIONS LT & RT

0 5' 10'

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET, SUITE 460
PHOENIX, ARIZONA 85008
(602) 283-2701

ROUTE N12

PIPE PROFILES

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 07/26/25 ARIZONA, U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

DESIGN	JEB	WCEA NO. 1710009012	DATE	2024
DRAWN	ERG	PROJECT NO. N12(13-2) 1,2,&4	SHEET NO.	82 OF 48
CHECK	ASF			

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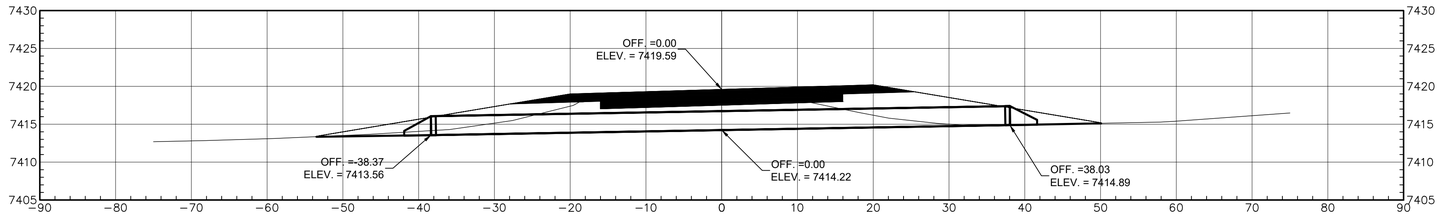
REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	83	48

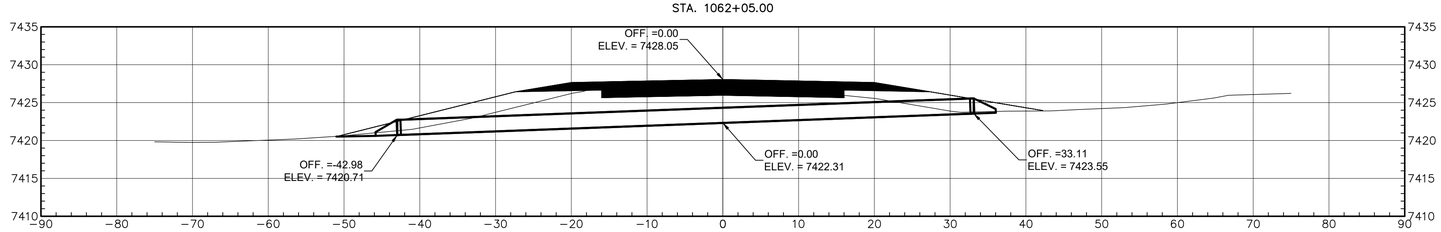
STA. 1053+32.14



DS-23

STA. 1053+32
REMOVE 24" CMP AND INSTALL 4-30" CMP, LENGTH 77'
BUILD METAL END SECTIONS LT & RT

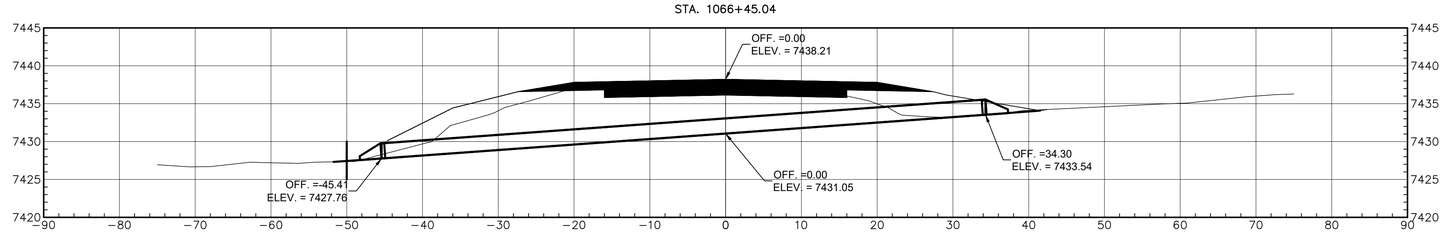
STA. 1062+05.00



DS-24

STA. 1062+05
REMOVE 24" CMP AND INSTALL 2-24" CMP, LENGTH 76'
BUILD METAL END SECTIONS LT & RT

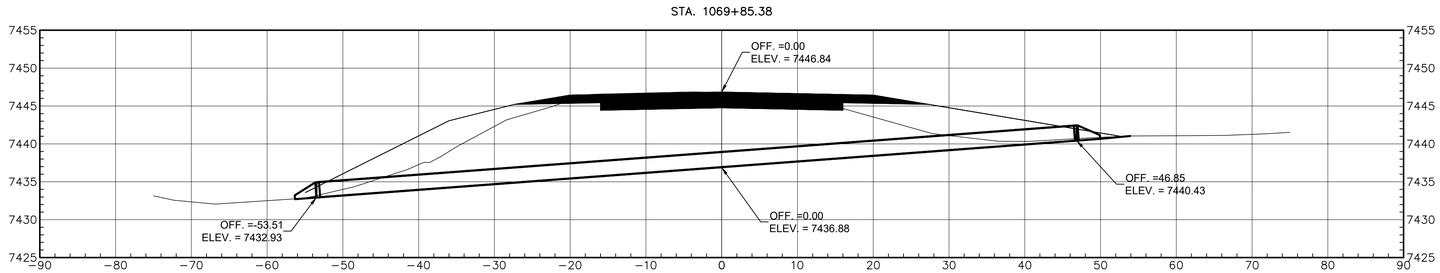
STA. 1066+45.04



DS-25

STA. 1066+45
REMOVE 24" CMP AND INSTALL 24" CMP, 80' LENGTH
BUILD METAL END SECTIONS LT & RT

STA. 1069+85.38



DS-26

STA. 1069+85
REMOVE 36" CMP AND INSTALL 24" CMP, 80' LENGTH
BUILD METAL END SECTIONS LT & RT

0 5' 10'

AGENCY LINE TO WHEATFIELDS LAKE

ROUTE N12

PIPE PROFILES

WILSON & COMPANY
410 NORTH 44TH STREET,
SUITE 460
PHOENIX, ARIZONA 85008
(602) 283-2701

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 02/26/25 ARIZONA, U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

DESIGN	JEB	WCEA NO. 1710009012	DATE 2024
DRAWN	ERG	PROJECT NO. N12(13-2) 1,2,&4	SHEET NO. 83 OF 48
CHECK	ASF		

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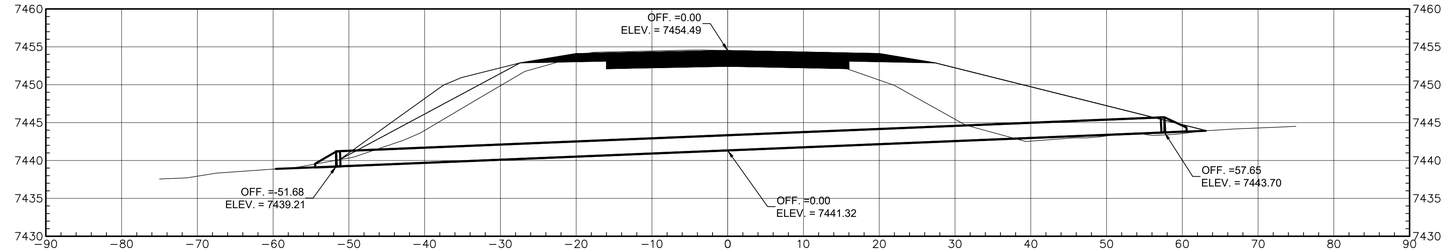
REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	84	48

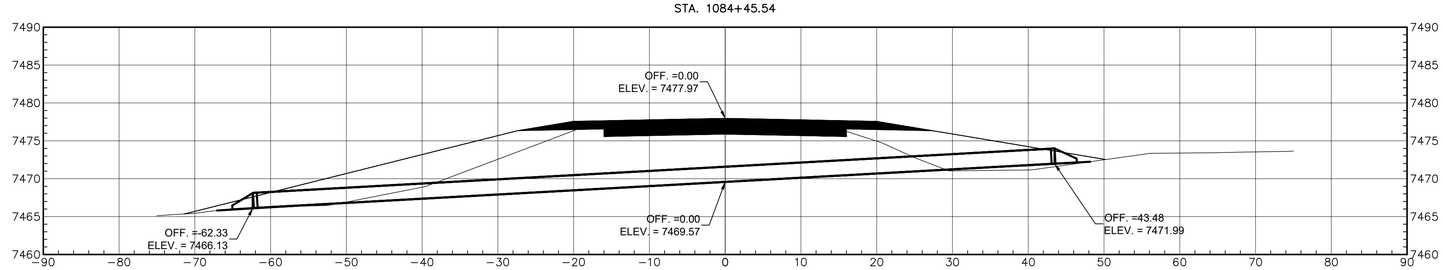
STA. 1072+84.85



DS-27

STA. 1072+85
REMOVE 42" CMP AND INSTALL 24" CMP, 110' LENGTH
BUILD METAL END SECTIONS LT & RT

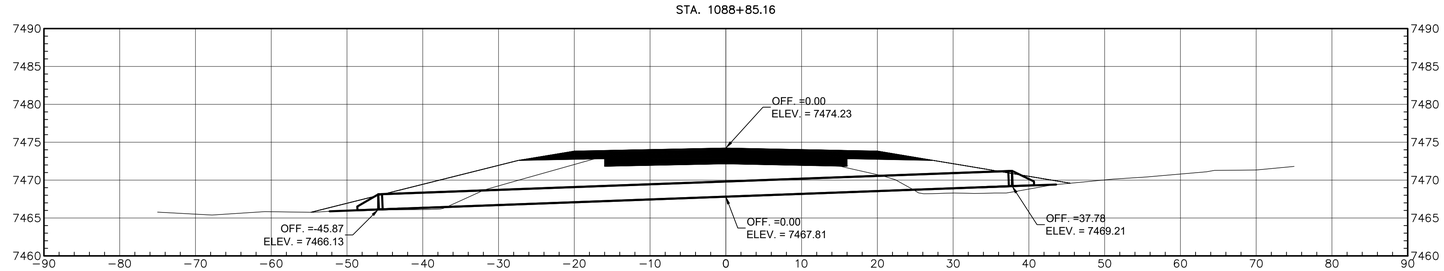
STA. 1084+45.54



DS-28

STA. 1084+46
REMOVE 36" CMP AND INSTALL 24" CMP, 106' LENGTH
BUILD METAL END SECTIONS LT & RT

STA. 1088+85.16



DS-29

STA. 1088+85
REMOVE 30" CMP AND INSTALL 24" CMP, 84' LENGTH
BUILD METAL END SECTIONS LT & RT

0 5' 10'

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET,
SUITE 460
PHOENIX, ARIZONA 85008
(602) 283-2701

ROUTE N12

PIPE PROFILES

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 07/26/2023 ARIZONA, U.S.A.

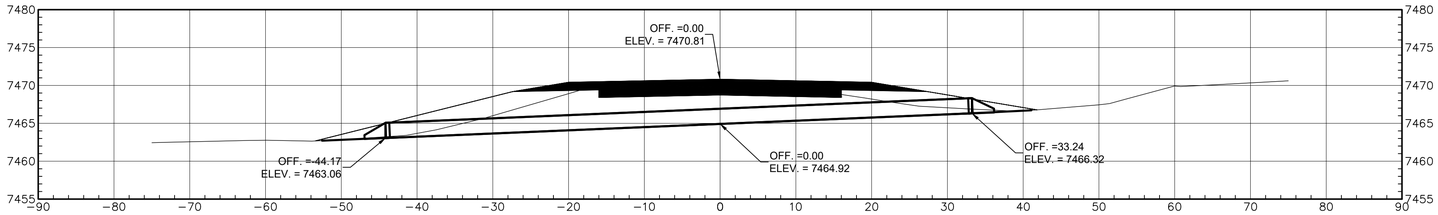
REVISIONS	NO.	DATE	REMARKS	BY

DESIGN	JEB	WCEA NO. 1710009012	DATE	2024
DRAWN	ERG	PROJECT NO. N12(13-2) 1,2,&4	SHEET NO.	84 OF 48
CHECK	ASF			

M:\TRN\17-100-090-12\2_DISCIPLINES_SHEETS\3_SHEETS - ROADWAY\X-SECTIONS\PIPE PROFILE - 9.DWG2/26/2025 6:52 AM

REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	85	48

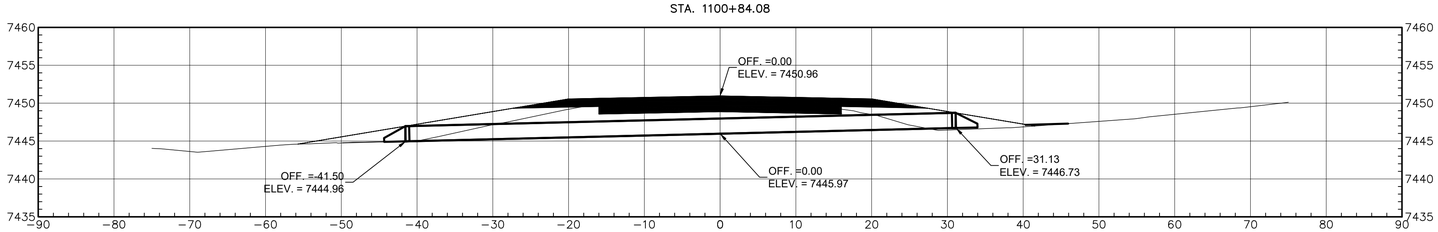
STA. 1092+65.00



DS-30

STA. 1092+65
REMOVE 36" CMP AND INSTALL 24" CMP, 78' LENGTH
BUILD METAL END SECTIONS LT & RT

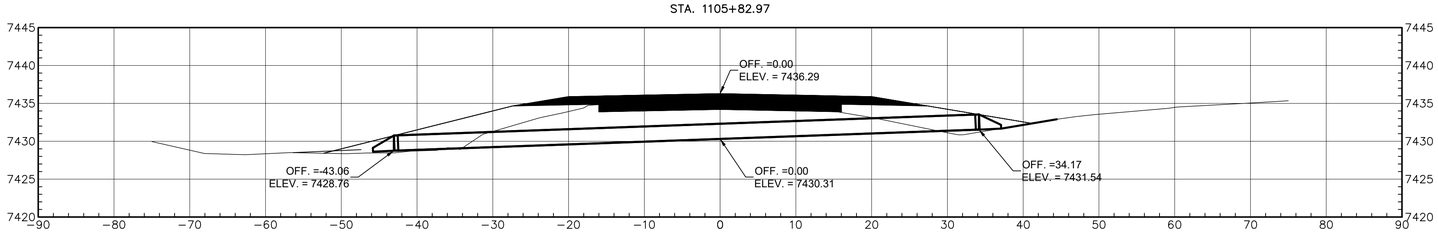
STA. 1100+84.08



DS-31

STA. 1100+84
REMOVE 30" CMP AND INSTALL 24" CMP, 73' LENGTH
BUILD METAL END SECTIONS LT & RT

STA. 1105+82.97



DS-32

STA. 1105+83
REMOVE 30" CMP AND INSTALL 24" CMP, 77' LENGTH
BUILD METAL END SECTIONS LT & RT

0 5' 10'

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET,
SUITE 460
PHOENIX, ARIZONA 85008
(602) 283-2701

ROUTE N12

PIPE PROFILES

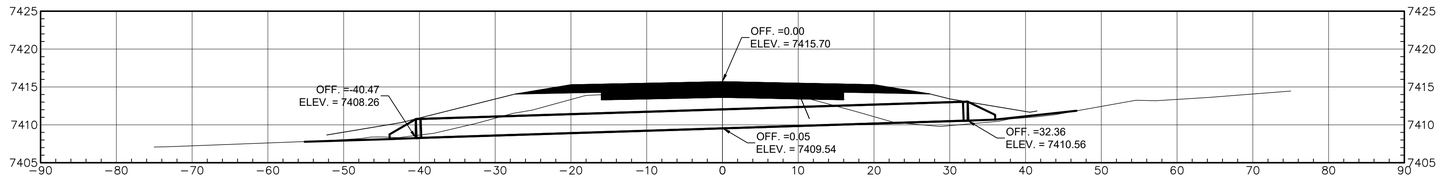
Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 02/26/25 ARIZONA, U.S.A.

REVISIONS NO.	DATE	REMARKS	BY

DESIGN	JEB	WCEA NO. 1710009012	DATE	2024
DRAWN	ERG	PROJECT NO. N12(13-2) 1,2,&4	SHEET NO.	85 OF 48
CHECK	ASF			

M:\TRN\17-100-090-12\2_DISCIPLINES_SHEETS\3_SHEETS - ROADWAY\X-SECTIONS\PIPE PROFILE - 10.DWG2/26/2025 6:52 AM

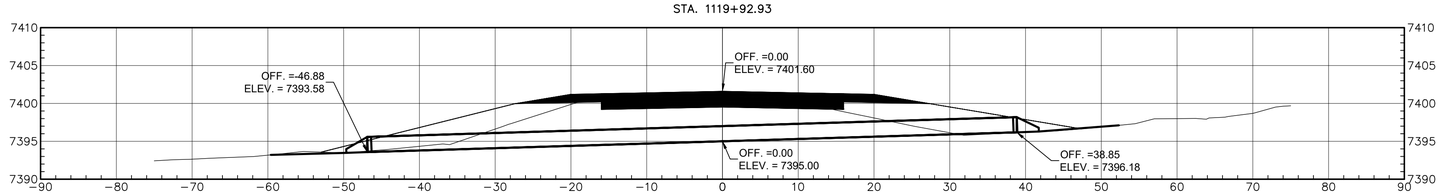
STA. 1112+83.00



DS-33

STA. 1112+83
REMOVE 30" CMP AND INSTALL 30" CMP, 73' LENGTH
BUILD METAL END SECTIONS LT & RT

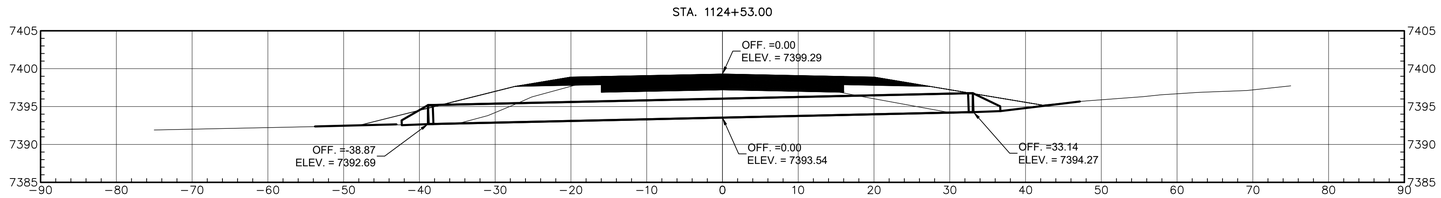
STA. 1119+92.93



DS-34

STA. 1119+93
REMOVE 42" CMP AND INSTALL 24" CMP, 86' LENGTH
BUILD METAL END SECTIONS LT & RT

STA. 1124+53.00



DS-35

STA. 1124+53
REMOVE 30" CMP AND INSTALL 30" CMP, 72' LENGTH
BUILD METAL END SECTIONS LT & RT

0 5' 10'

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET,
SUITE 460
PHOENIX, ARIZONA 85008
(602) 283-2701

ROUTE N12

PIPE PROFILES

Registered Professional Engineer (Civil)
CERTIFICATE NO. 76131
JOSHUA BROWN
Date Signed 02/26/25
ARIZONA, U.S.A.

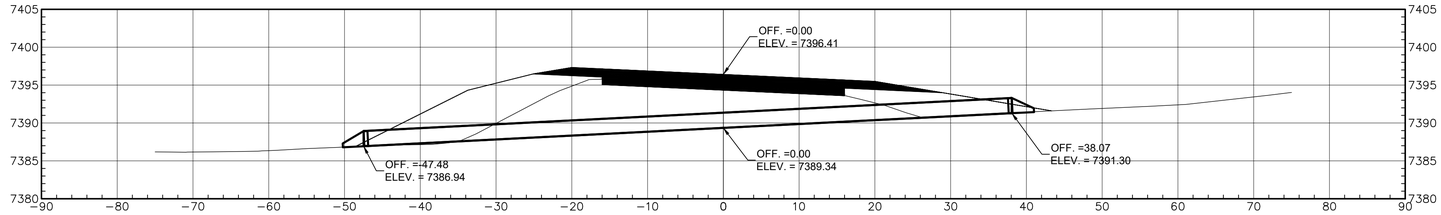
REVISIONS NO.	DATE	REMARKS	BY

DESIGN	JEB	WCEA NO. 1710009012	DATE 2024
DRAWN	ERG	PROJECT NO. N12(13-2) 1,2,&4	SHEET NO. 86 OF 48
CHECK	ASF		

M:\TRN\17-100-090-12\2_DISCIPLINES_SHEETS\3_SHEETS - ROADWAY\X-SECTIONS\PIPE PROFILE - 11.DWG2/26/2025 6:52 AM

REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	87	48

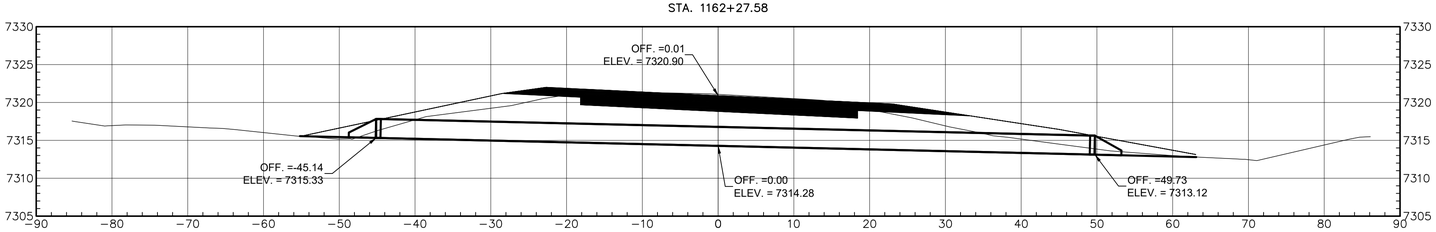
STA. 1130+28.00



DS-36

STA. 1130+28
REMOVE 36" CMP AND INSTALL 24" CMP, 86' LENGTH
BUILD METAL END SECTIONS LT & RT

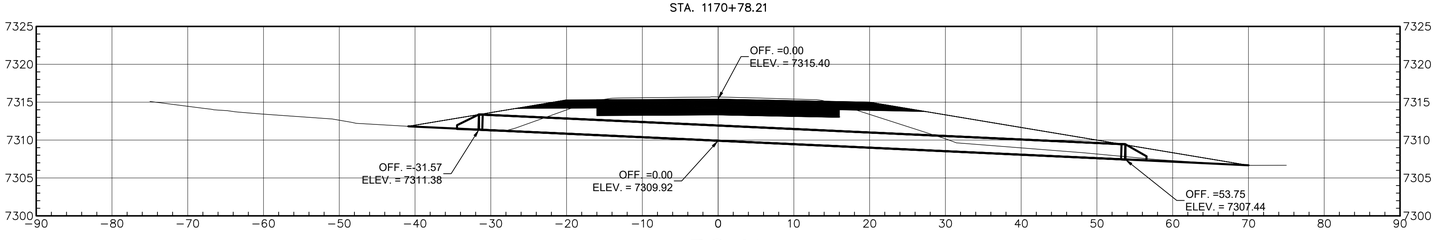
STA. 1162+27.58



DS-40

STA. 1162+28
INSTALL 30" CMP, 95' LENGTH
BUILD METAL END SECTIONS LT & RT

STA. 1170+78.21



DS-41

STA. 1170+78
REMOVE 30" CMP AND INSTALL 24" CMP, 86' LENGTH
BUILD METAL END SECTIONS LT & RT

0 5' 10'

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET,
SUITE 460
PHOENIX, ARIZONA 85008
(602) 283-2701

ROUTE N12

PIPE PROFILES

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 02/26/25 ARIZONA, U.S.A.

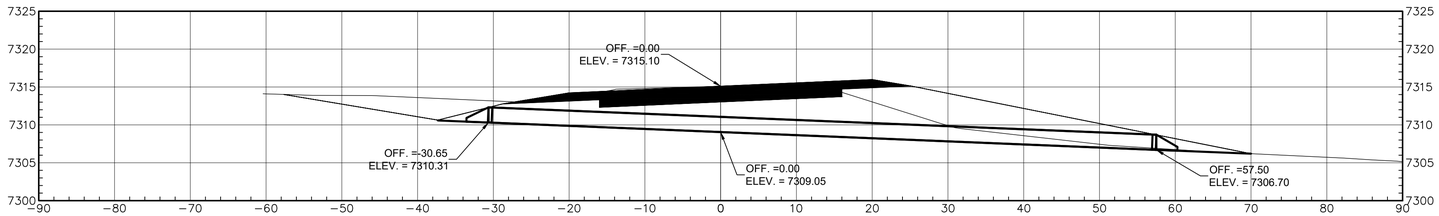
REVISIONS	NO.	DATE	REMARKS	BY

DESIGN	JEB	WCEA NO. 1710009012	DATE	2024
DRAWN	ERG	PROJECT NO. N12(13-2) 1,2,&4	SHEET NO.	87 OF 48
CHECK	ASF			

M:\TRN\17-100-090-12\2_DISCIPLINES_SHEETS\3_SHEETS - ROADWAY\X-SECTIONS\PIPE PROFILE - 13.DWG2/26/2025 6:52 AM

REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	88	48

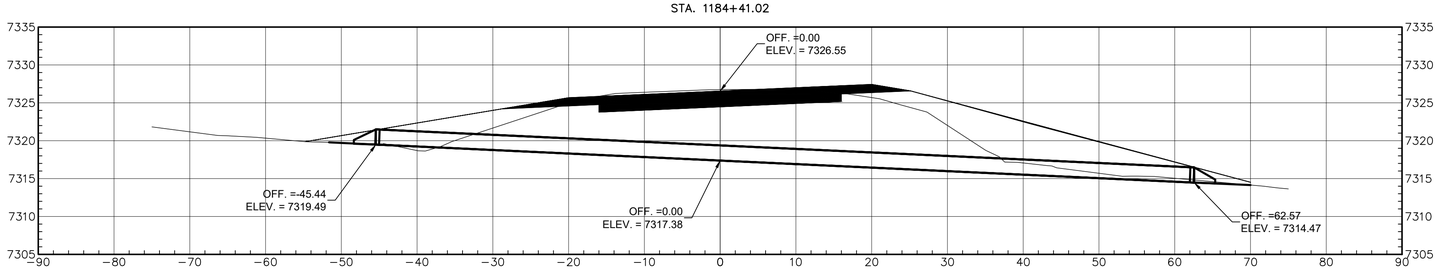
STA. 1174+15.98



DS-42

STA. 1174+16
REMOVE 30" CMP AND INSTALL 24" CMP, 88' LENGTH
BUILD METAL END SECTIONS LT & RT

STA. 1184+41.02



DS-43

STA. 1184+41
REMOVE 30" CMP AND INSTALL 24" CMP, 105' LENGTH
BUILD METAL END SECTIONS LT & RT

0 5' 10'

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET,
SUITE 460
PHOENIX, ARIZONA 85008
(602) 283-2701

ROUTE N12

PIPE PROFILES

Registered Professional Engineer (Civil)
CERTIFICATE NO. 76131
JOSHUA BROWN
Date Signed 02/26/25
ARIZONA, U.S.A.

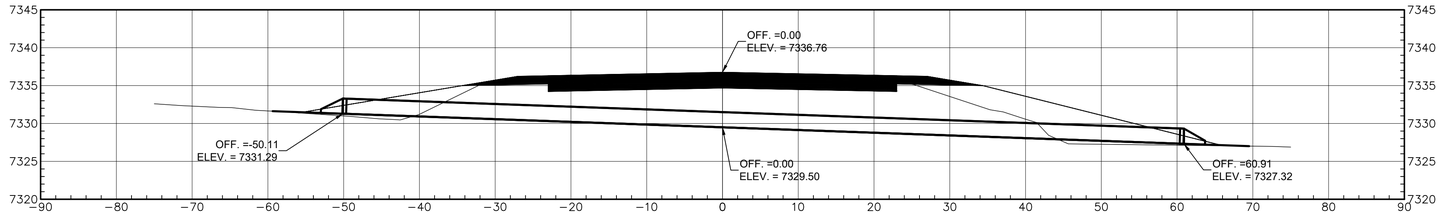
REVISIONS	NO.	DATE	REMARKS	BY

DESIGN	JEB	WCEA NO. 1710009012	DATE 2024
DRAWN	ERG	PROJECT NO. N12(13-2) 1,2,&4	SHEET NO. 88 OF 48
CHECK	ASF		

M:\TRN\17-100-090-12\2_DISCIPLINES_SHEETS\3_SHEETS - ROADWAY\X-SECTIONS\PIPE PROFILE - 14.DWG2/26/2025 6:52 AM

REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	89	48

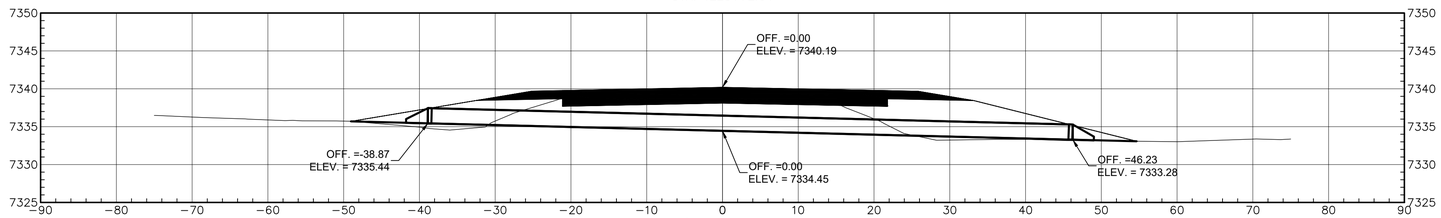
STA. 1223+71.05



DS-46

STA. 1223+71
REMOVE 36" CMP AND INSTALL 24" CMP, 111' LENGTH
BUILD METAL END SECTIONS LT & RT

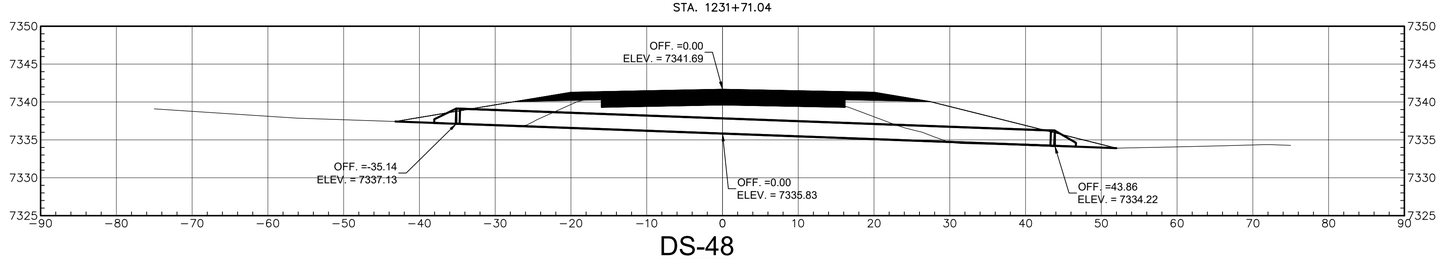
STA. 1228+72.04



DS-47

STA. 1228+72
REMOVE 36" CMP AND INSTALL 24" CMP, 85' LENGTH
BUILD METAL END SECTIONS LT & RT

STA. 1231+71.04



DS-48

STA. 1231+71
REMOVE 24" CMP AND INSTALL 24" CMP, 81' LENGTH
BUILD METAL END SECTIONS LT & RT

0 5' 10'

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET,
SUITE 460
PHOENIX, ARIZONA 85008
(602) 283-2701

ROUTE N12

PIPE PROFILES

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 02/26/25 ARIZONA, U.S.A.

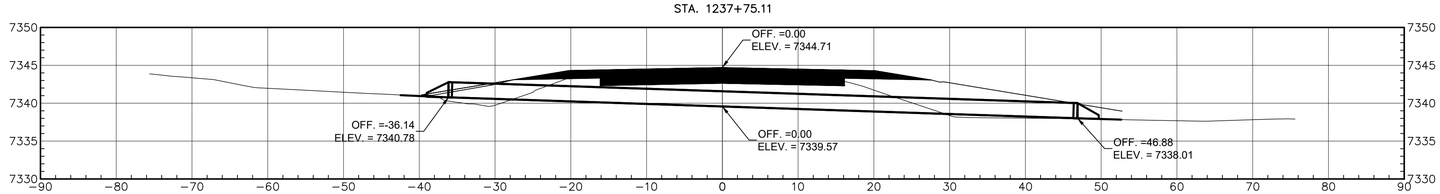
REVISIONS NO.	DATE	REMARKS	BY

DESIGN	JEB	WCEA NO. 1710009012	DATE	2024
DRAWN	ERG	PROJECT NO. N12(13-2) 1,2,&4	SHEET NO.	89 OF 48
CHECK	ASF			

M:\TRN\17-100-090-12\2_DISCIPLINES_SHEETS\3_SHEETS - ROADWAY\X-SECTIONS\PIPE PROFILE - 15.DWG2/26/2025 6:53 AM

REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	90	48

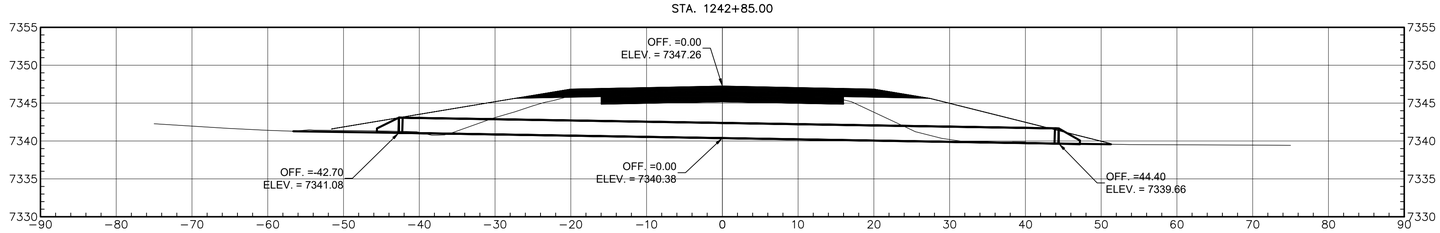
STA. 1237+75.11



DS-49

STA. 1237+75
REMOVE 36" CMP AND INSTALL 24" CMP @ -7° SKEW, 83' LENGTH
BUILD METAL END SECTIONS LT & RT

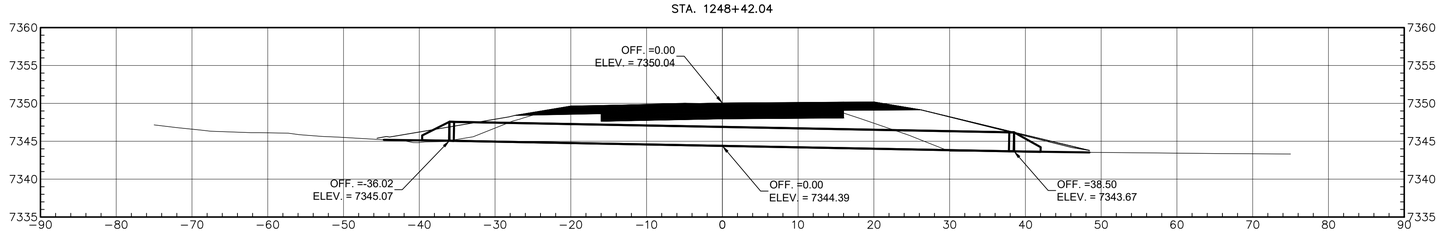
STA. 1242+85.00



DS-50

STA. 1242+85
REMOVE 36" CMP AND INSTALL 24" CMP, 87' LENGTH
BUILD METAL END SECTIONS LT & RT

STA. 1248+42.04



DS-51

STA. 1248+42
REMOVE 36" CMP AND INSTALL 30" CMP, 75' LENGTH
BUILD METAL END SECTIONS LT & RT

0 5' 10'

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET,
SUITE 460
PHOENIX, ARIZONA 85008
(602) 283-2701

ROUTE N12

PIPE PROFILES

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 02/26/25 ARIZONA, U.S.A.

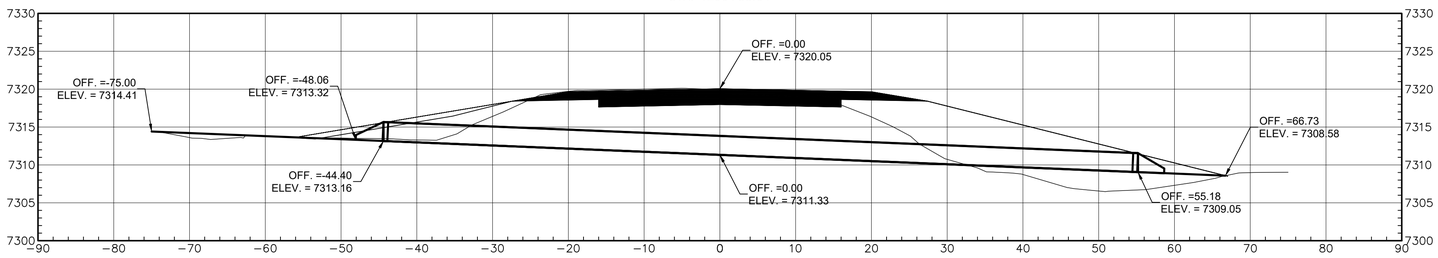
REVISIONS	NO.	DATE	REMARKS	BY

DESIGN	JEB	WCEA NO. 1710009012	DATE 2024
DRAWN	ERG	PROJECT NO. N12(13-2) 1,2,&4	SHEET NO. 90 OF 48
CHECK	ASF		

M:\TRN\17-100-090-12\2_DISCIPLINES_SHEETS\3_SHEETS - ROADWAY\X-SECTIONS\PIPE PROFILE - 16.DWG2/26/2025 6:53 AM

REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	91	48

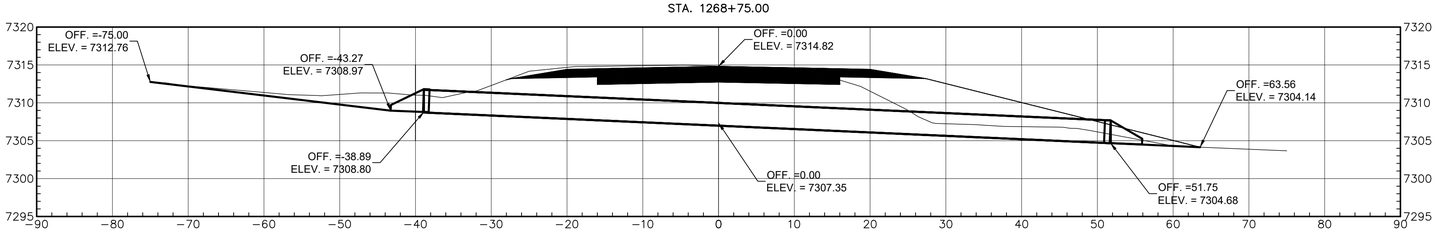
STA. 1266+55.04



DS-53

STA. 1266+55
REMOVE 36" CMP AND INSTALL 30" CMP, 100' LENGTH
BUILD METAL END SECTIONS LT & RT

STA. 1268+75.00



DS-54

STA. 1268+75
REMOVE 36" CMP AND INSTALL 36" CMP, 91' LENGTH
BUILD METAL END SECTIONS LT & RT

0 5' 10'

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET,
SUITE 460
PHOENIX, ARIZONA 85008
(602) 283-2701

ROUTE N12

PIPE PROFILES

Registered Professional Engineer (Civil)
CERTIFICATE NO.
76131
JOSHUA
BROWN
Date Signed 02/26/25
ARIZONA, U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

DESIGN	JEB	WCEA NO. 1710009012	DATE 2024
DRAWN	ERG	PROJECT NO. N12(13-2) 1,2,&4	SHEET NO. 91 OF 48
CHECK	ASF		

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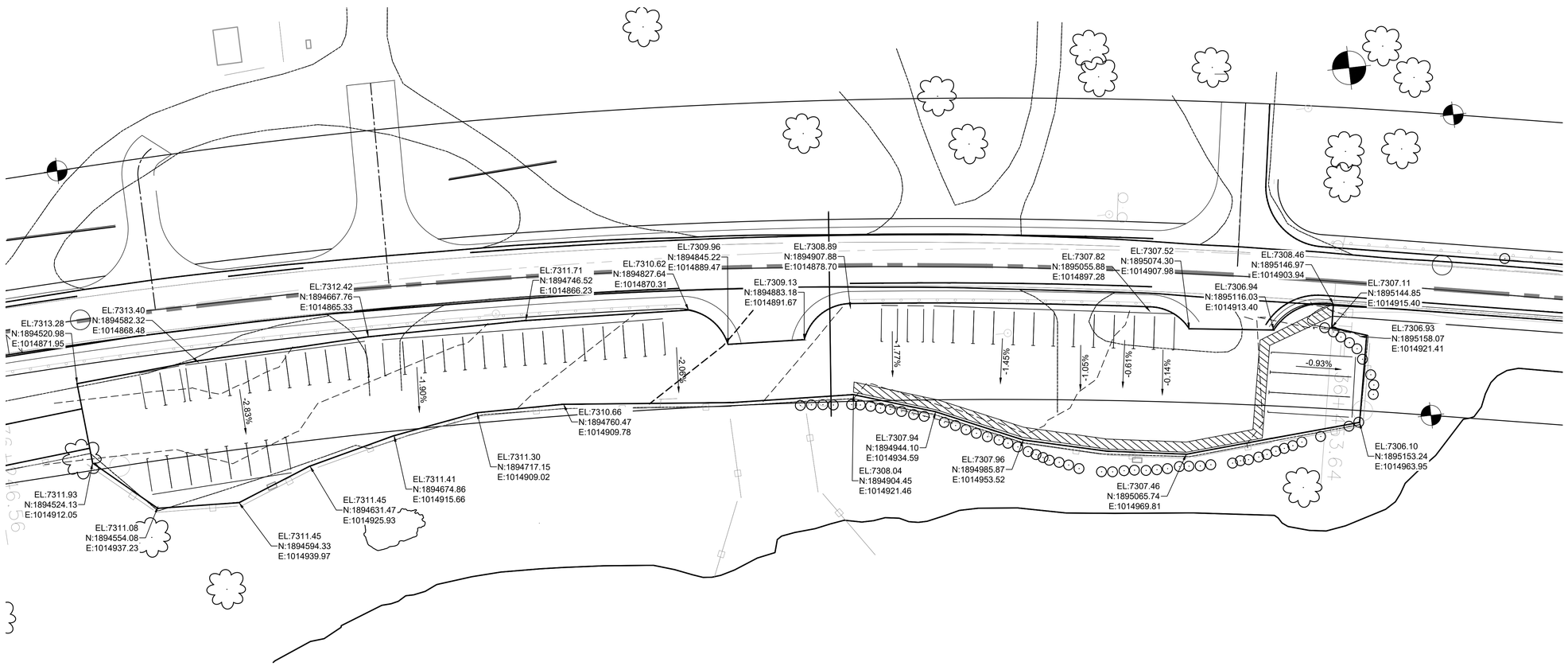
REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	92	120



AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET,
SUITE 460
PHOENIX, ARIZONA 85008
(602) 283-2701

ROUTE N12

REC AREA PARKING

Registered Professional Engineer (Civil)
CERTIFICATE NO.
76131
JOSHUA
BROWN
Date Signed 02/26/2025
ARIZONA, U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

DESIGN	JEB	WCEA NO. 1710009012	DATE	2025	
DRAWN	ERG	PROJECT NO.	SHEET NO.		
CHECK	ASF	N12(13-2) 1,2,&4	92	OF	120

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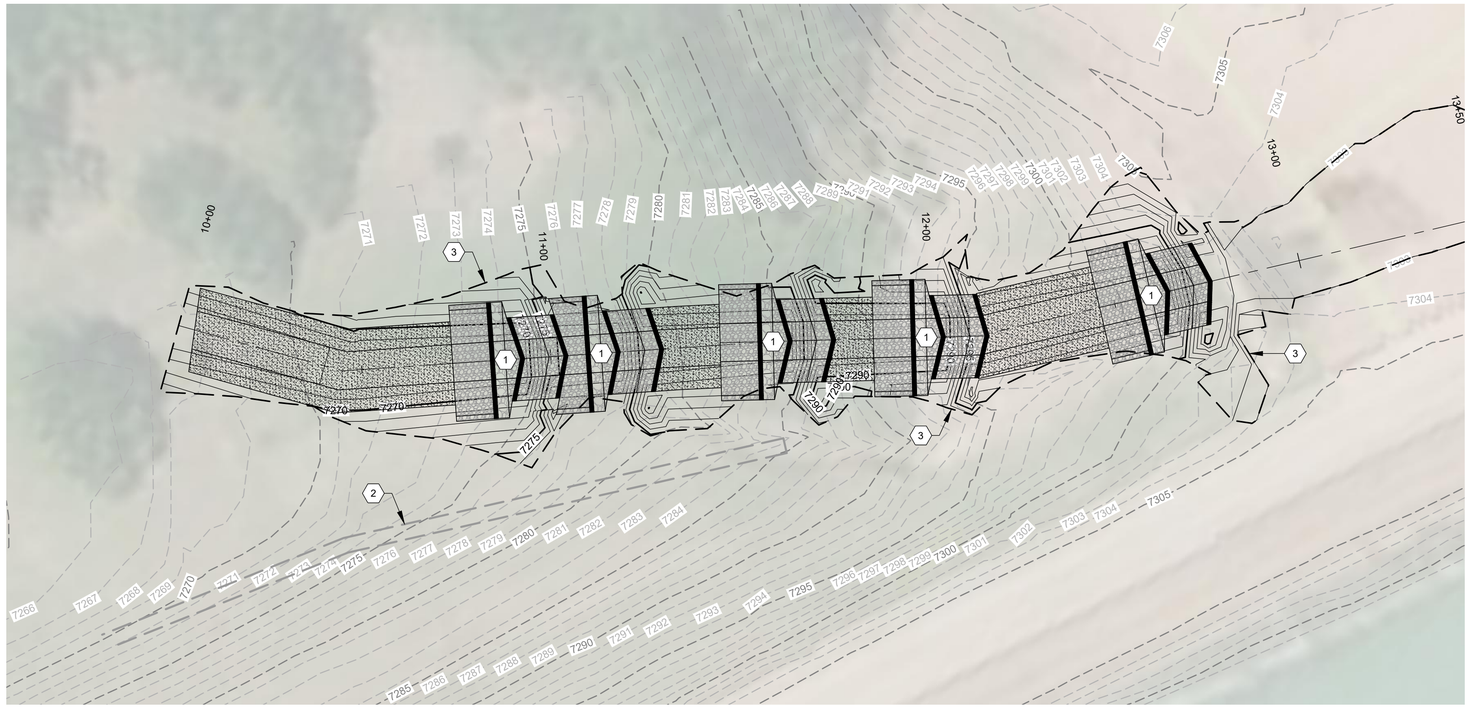
REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13–2) 1,2&4	93	120

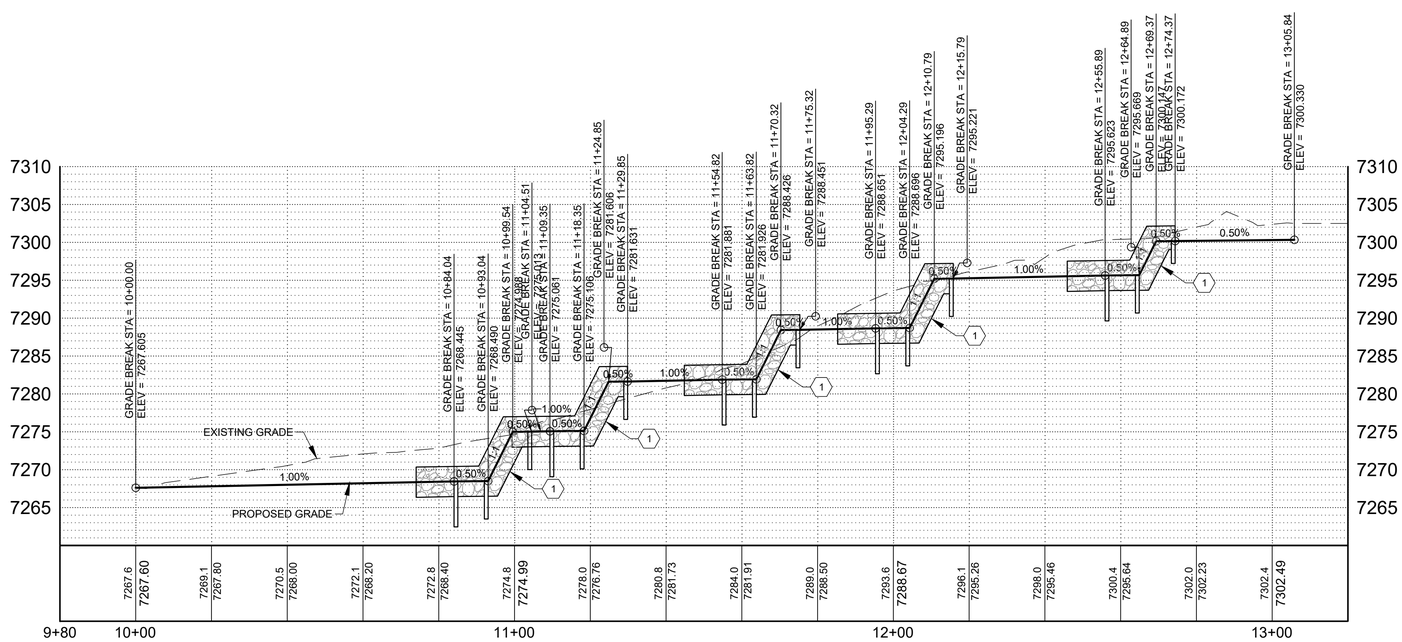


WHEATFIELDS LAKE PLAN

SCALE:
PLAN: 1" = 20'

PROFILE:
HORIZ: 1" = 20'
VERT: 1" = 10'

WHEATFIELDS LAKE PROFILE



KEYNOTES

1. DROP STRUCTURE PER DETAILS SHEET 94.
2. EXISTING DRAIN.
3. LIMITS OF GRADING.

LEGEND

- EXISTING ROW BOUNDARY
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET, SUITE 460
PHOENIX, ARIZONA 85008
(602) 283-2701

ROUTE N12

DRAINAGE PLAN & PROFILE

Registered Professional Engineer (Civil) CERTIFICATE NO. 39600 DANIEL S. AGUIRRE DATE SIGNED 02/27/2025 ARIZONA U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

DESIGN	JEB	WCEA NO. 1710009012	DATE 2025
DRAWN	ERG	PROJECT NO. N12(13–2) 1,2,&4	SHEET NO. 93 OF 120
CHECK	ASF		

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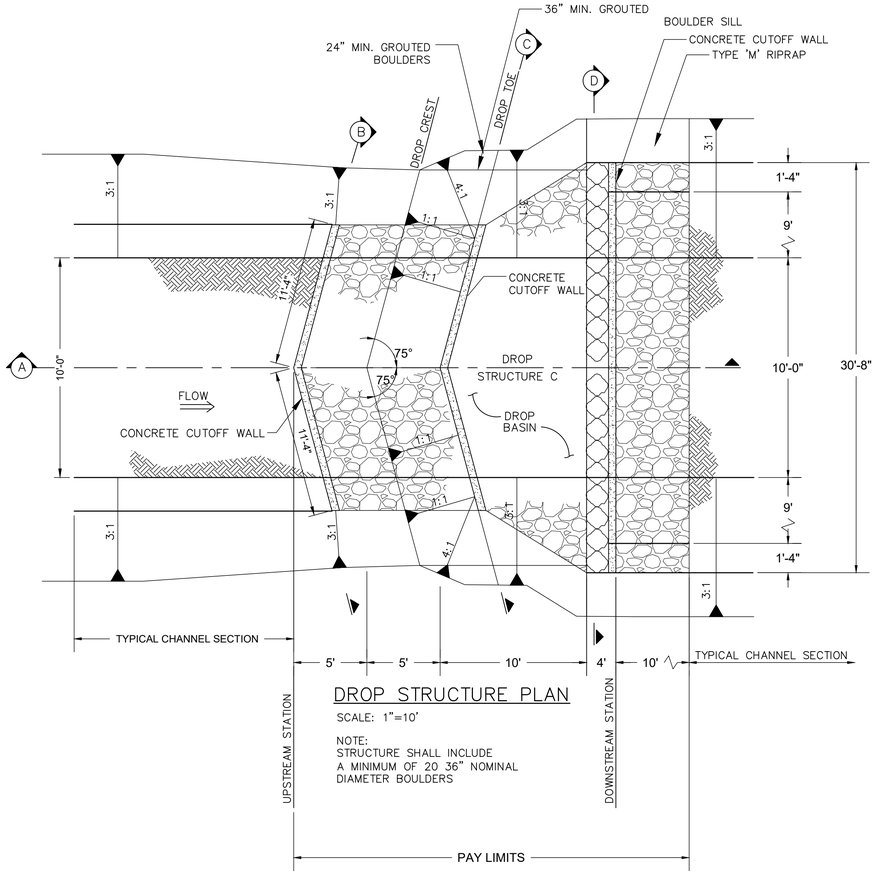
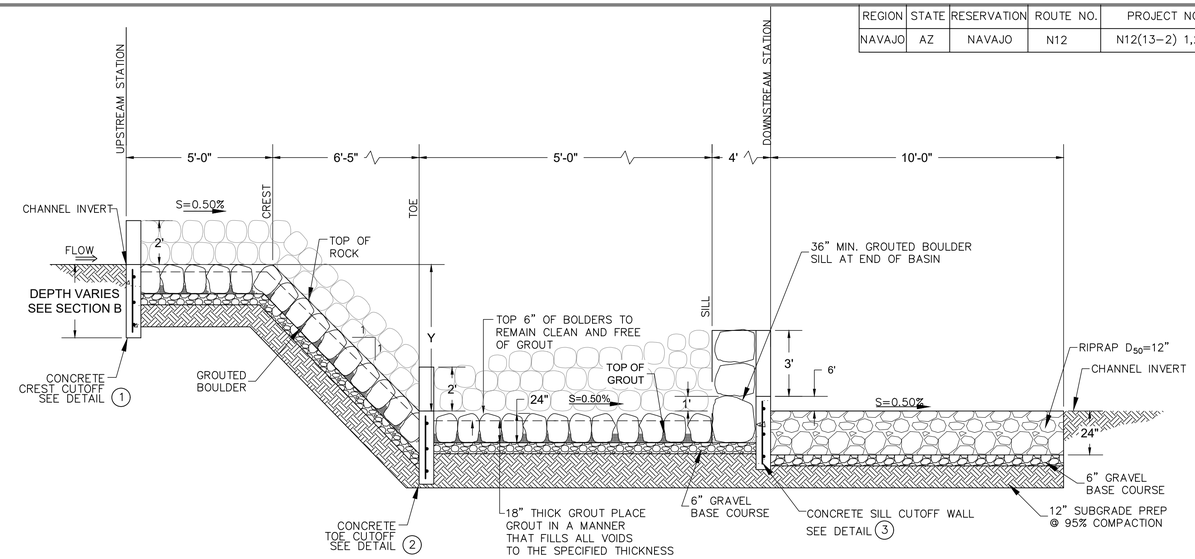
REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	94	120



DROP STRUCTURE PLAN

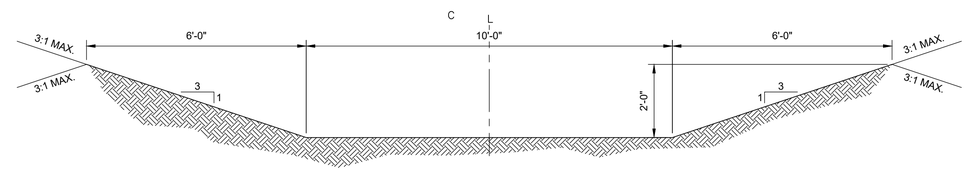
SCALE: 1"=10'

NOTE:
STRUCTURE SHALL INCLUDE A MINIMUM OF 20 36" NOMINAL DIAMETER BOULDERS



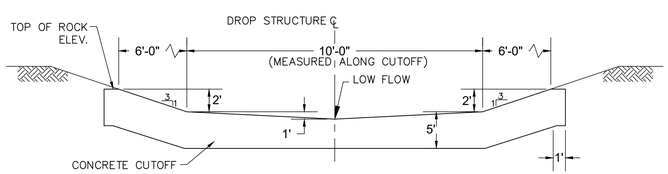
DROP STRUCTURE PROFILE (A)

SCALE: NTS



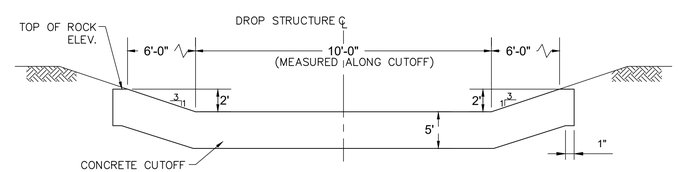
EARTHEN SWALE (C)

SCALE: NTS



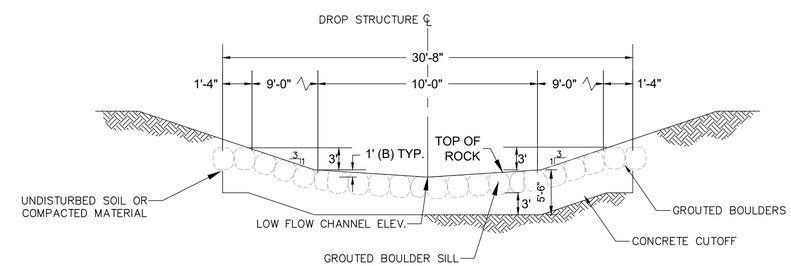
CREST CUTOFF SECTION (B)

SCALE: NTS



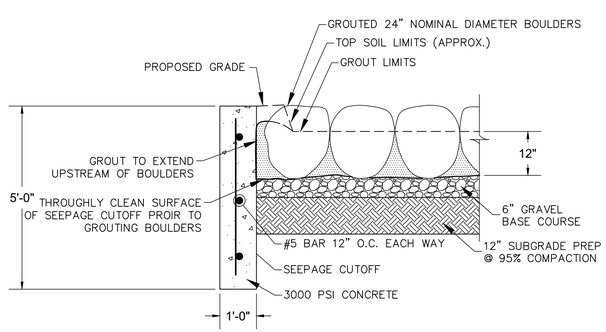
TOE CUTOFF SECTION (C)

SCALE: NTS



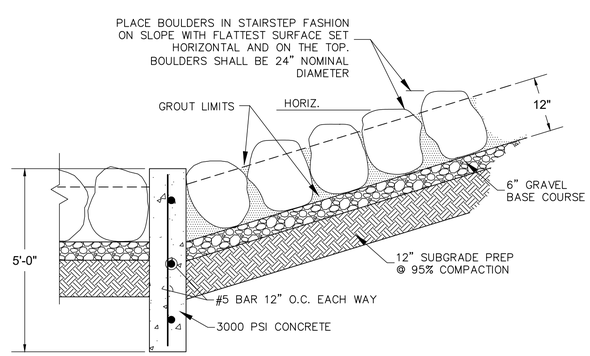
SILL CUTOFF SECTION (D)

SCALE: NTS



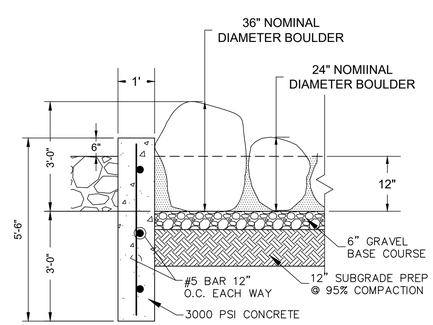
CREST CUTOFF DETAIL (1)

SCALE: NTS



GROUTED BOULDER PLACEMENT DETAIL (2)

SCALE: NTS



SILL CUTOFF DETAIL (3)

SCALE: NTS

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET, SUITE 460
PHOENIX, ARIZONA 85008
(602) 283-2701

ROUTE N12

DRAINAGE DETAILS

Registered Professional Engineer (Civil) CERTIFICATE NO. 39600 DANIEL S. AGUIRRE Date Signed 02/27/2025 ARIZONA U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

DESIGN JEB	WCEA NO. 1710009012	DATE	2025
DRAWN ERG	PROJECT NO. N12(13-2) 1,2,&4	SHEET NO.	94 OF 120
CHECK ASF			

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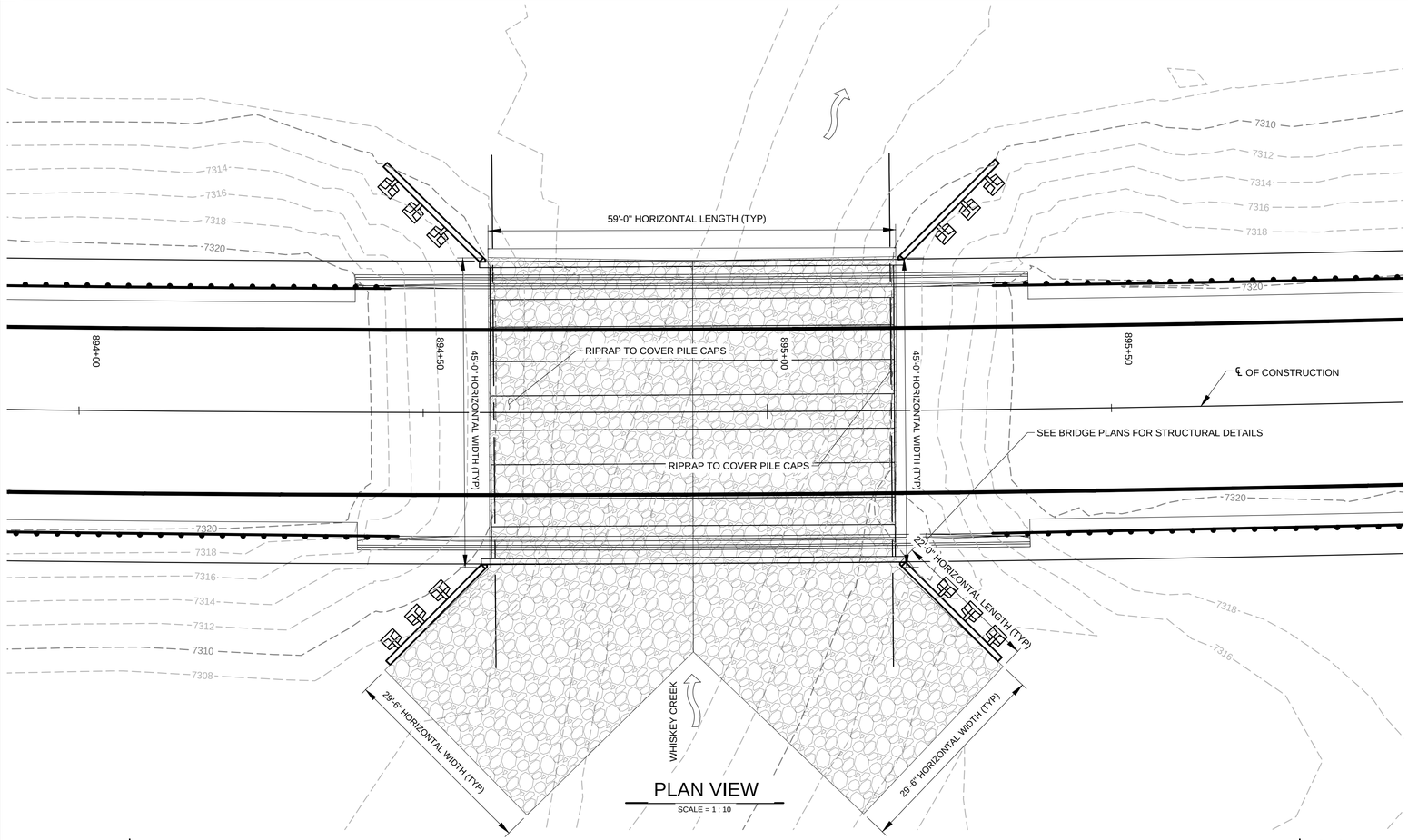
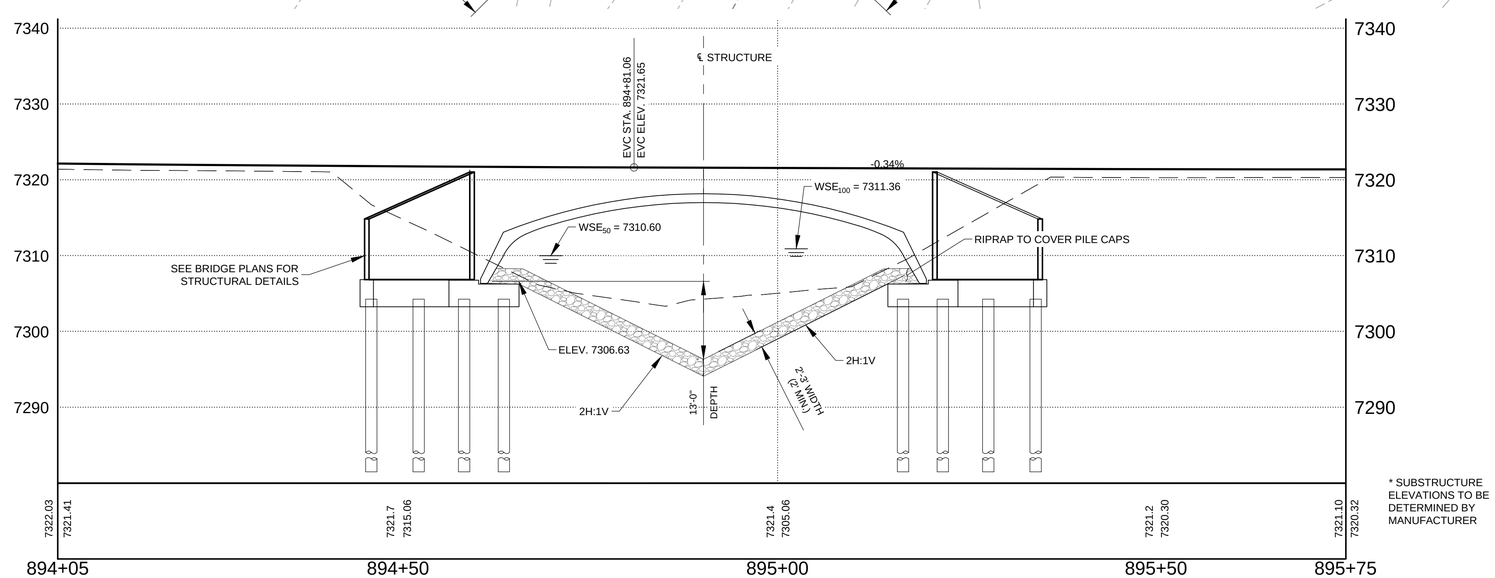
REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	95	120



PLAN VIEW

SCALE = 1 : 10



PROFILE VIEW

SCALE: 1" = 10'

* SUBSTRUCTURE ELEVATIONS TO BE DETERMINED BY MANUFACTURER

NOTES:

1. RIP RAP PADS WILL BE LAID AT 2H:1V SLOPES IN THE EXISTING CHANNEL. RIPRAP LAYER SHOULD BEGIN AT PILE CAPS AND REACH DOWN TO 13 FEET OF DEPTH TO PROTECT AGAINST SCOUR. RIPRAP IS REQUIRED TO COVER PILE CAPS AT TOP OF LAYER.
2. UPON COMPLETION OF WORK ACTIVITIES, THE WORK AREA SHALL BE RESTORED TO MAINTAIN THE STABILITY OF UPSTREAM AND DOWNSTREAM SEGMENTS OF THE SURFACE WATER BODIES WITH RESPECT TO EROSION AND SEDIMENTATION.
3. SEE STRUCTURAL PLANS FOR BRIDGE DETAILS AND DIMENSIONS.

WATERWAY DATA:

WATERWAY:	WHISKEY CREEK
DRAINAGE AREA:	32.26 SQ. MILE
Q_{100}:	3337.00 CFS
V_{100}:	12.07 FT/S
WSE_{100}:	7311.36 FT
WSE_{50}:	7310.60 FT
100 YEAR SCOUR:	12.50 FT
FREEBOARD:	2.00 FT

AGENCY LINE TO WHEATFIELDS LAKE

WILSON & COMPANY
410 NORTH 44TH STREET, SUITE 460
PHOENIX, ARIZONA 85008
(602) 283-2701

ROUTE N12

SCOUR MITIGATION AT BRIDGE

Registered Professional Engineer (Civil) CERTIFICATE NO. 76131 JOSHUA BROWN Date Signed 03/11/2025 ARIZONA, U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

DESIGN	JEB	WCEA NO. 1710009012	DATE 2025
DRAWN	ERG	PROJECT NO. N12(13-2) 1,2,&4	SHEET NO. 95 OF 120
CHECK	ASF		

M:\TRN\17-100-090-12\2_DISCIPLINES_SHEETS\3_SHEETS - ROADWAY\PDF\17109012-BRIDGE RIPRAP.DWG3/11/2025 10:39 AM

REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	116	120

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 SPECIFICATION FOR THIS PROJECT.

2. BRIDGE NUMBER PLATES: THE CONTRACTOR SHALL FURNISH AND INSTALL TWO BRIDGE NUMBER PLATES CONFORMING TO THE DETAILS SHOWN ON SHEET 120. THE COST OF THE PLATES SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION AND WILL NOT BE PAID FOR DIRECTLY.

3. THE CONTRACTOR SHALL VERIFY IN THE FIELD ALL DIMENSIONS, ELEVATIONS, AND DETAILS WHICH WILL BE INVOLVED IN THE NEW CONSTRUCTION BEFORE PROCEEDING WITH NEW WORK. ANY DISCREPANCIES FOUND SHALL BE REPORTED TO THE CONSTRUCTION MANAGER IMMEDIATELY.

4. TEMPORARY WORKS: THIS WORK CONSISTS OF THE DESIGN, CONSTRUCTION, INSPECTION AND REMOVAL OF TEMPORARY WORKS FOR THE CONSTRUCTION AND REPAIR OF PERMANENT STRUCTURES IN ACCORDANCE WITH SECTION 562 OF FP-14. TEMPORARY WORKS INCLUDES ALL TEMPORARY FACILITIES USED IN CONSTRUCTION THAT DO NOT BECOME PART OF THE PERMANENT STRUCTURE. SUCH TEMPORARY WORKS INCLUDE, BUT ARE NOT LIMITED TO, FALSEWORK, FORMWORK, COFFERDAMS, AND EXCAVATION SUPPORTS. TEMPORARY WORKS SHALL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED INCIDENTAL TO THE ITEMS OF WORK FOR WHICH PAYMENT IS MADE.

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, AND 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 FROM THE ENGINEER, SHALL NOT RELIEVE THE CONTRACTOR FROM ANY RISK OR FROM FULFILLING THE TERMS OF THE CONTRACT. THERE MAY BE AREAS WITH LIMITED WORKING ROOM WITHIN THE PROJECT RIGHT OF WAY (R.O.W), AND/OR EXISTING FEATURES WITHIN OR NEAR THE PROJECT R.O.W. THAT MAY REQUIRE SPECIAL CONSTRUCTION PROCEDURES; THE CONTRACTOR IS RESPONSIBLE FOR ADDRESSING THIS IN THE BID AMOUNT IF APPLICABLE.

7. NO WORK SHALL BE PERFORMED OR GROUND DISTURBED OUTSIDE OF THE DESIGNATED CONSTRUCTION LIMITS IN ACCORDANCE WITH SECTION 107 OF THE FP-14 WITHOUT WRITTEN APPROVAL BY THE NRO-DOT DIVISION MANAGER THROUGH THE COR/COTR UNLESS OTHERWISE SHOWN AND LABELED ON THESE PLANS AS "CONSTRUCTION ZONE".

8. 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 FAR 52.211-18, VARIATION IN ESTIMATED QUANTITY.

9. STRUCTURAL EXCAVATION AND BACKFILL SHALL BE CONSIDERED INCIDENTAL TO THE INSTALLATION OF STRUCTURES. BACKFILL MATERIAL SHALL MEET ALL REQUIREMENTS OF FP-14, SECTIONS 209 AND 704.

10. THE PREFABRICATED BRIDGE MANUFACTURER IS RESPONSIBLE FOR VERIFYING ALL BRIDGE DIMENSIONS AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES. THE PREFABRICATED BRIDGE INCLUDES PRECAST ARCH UNITS, PRECAST HEADWALLS, AND PRECAST WINGWALLS.

11. PREFABRICATED BRIDGE SHOWN ON PLANS IS CONCEPTUAL ONLY. THE PREFABRICATED BRIDGE MANUFACTURER IS RESPONSIBLE FOR PROVIDING STRUCTURAL DESIGN, DETAILING, AND CONSTRUCTION SPECIFICATIONS FOR THE SUPERSTRUCTURE IN COORDINATION WITH THE ENGINEER. SUBMITTALS FOR PREFABRICATED BRIDGE SHALL BE SUBMITTED, REVIEWED, AND APPROVED BY THE EOR PRIOR TO ANY WORK BEING PERFORMED ON THE BRIDGE.

12. DIMENSIONS SHALL NOT BE SCALED FROM DRAWINGS.

CONSTRUCTION SPECIFICATIONS:

- FHWA STANDARD SPECIFICATIONS FOR CONSTRUCTION OF ROADS AND BRIDGES ON FEDERAL HIGHWAY PROJECTS, FP-14 AND APPLICABLE SUPPLEMENTAL SPECIFICATIONS
- ADOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION 2021
- AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS (2017), 4TH EDITION, INCLUDES ERRATA (2019) AND 2020 INTERIM REVISIONS.

WHERE SPECIFICATIONS DIFFER, THE FHWA STANDARD SPECIFICATIONS FOR CONSTRUCTION OF ROADS AND BRIDGES ON FEDERAL HIGHWAY PROJECTS FP-14 AND SUPPLEMENTAL SPECIFICATIONS SHALL GOVERN.

CONSTRUCTION NOTES:

1. CONCRETE:
   - CHAMFER ALL EDGES OF CONCRETE 3/4" UNLESS OTHERWISE NOTED. CURING CONCRETE SHALL BE IN ACCORDANCE WITH SUBSECTION 552.15 OF FP-14.
   - FINISHING FORMED CONCRETE SURFACES SHALL BE IN ACCORDANCE WITH SUBSECTION 552.16 OF FP-14 U.S. CUSTOMARY UNITS.

2. REINFORCING BARS:
   - DIMENSIONS SHOWN REFER TO THE CENTERLINES OF BARS UNLESS NOTED OTHERWISE.
   - ALL REINFORCING SHALL BE STORED ABOVE GROUND ON PLATFORM SKIDS OR OTHER SUPPORTS.
   - REINFORCING SHALL BE KEPT FREE FROM DIRT, GREASE, AND OTHER FOREIGN MATTER. REINFORCING SHALL BE KEPT FREE OF CORROSION AS FAR AS PRACTICABLE. REFER TO SUBSECTIONS 554.06, 554.07 AND 709.01 OF FP-14 U.S. CUSTOMARY UNITS.

3. PERMANENT ANTI-GRAFFITI PROTECTIVE COATING: SHALL BE APPLIED TO THE FOLLOWING SURFACES:

   - THE EXPOSED EXTERIOR SURFACES OF THE ARCH BRIDGE AND WINGWALLS.

   PERMANENT ANTI-GRAFFITI PROTECTIVE COATING WILL BE PAID FOR UNDER BID ITEM 56302-1000 "PAINTING, CONCRETE STRUCTURE." NO ADDITIONAL PAYMENT WILL BE MADE.

4. PENETRATING WATER REPELLENT TREATMENT: SATURATE THE EXPOSED SURFACES OF THE ARCH BRIDGE AND WINGWALLS WITH A PENETRATING WATER REPELLENT TREATMENT IN ACCORDANCE WITH SECTION 559 "WATERPROOFING" OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF ROADS AND BRIDGES ON FEDERAL HIGHWAY PROJECTS, FP-14 U.S. CUSTOMARY UNITS. PENETRATING WATER REPELLENT SHALL BE COMPATIBLE WITH PERMANENT ANTI-GRAFFITI PROTECTIVE COATING. ALL LABOR AND MATERIALS WILL BE INCIDENTAL TO THE BID ITEMS "ALTERNATE BRIDGE".

5. PLACE STRUCTURAL BACKFILL IN HORIZONTAL LAYERS THAT DO NOT EXCEED 6 INCHES IN COMPACTED THICKNESS. PLACE STRUCTURAL BACKFILL LAYERS EVENLY ON ALL SIDES OF THE STRUCTURE AS APPROPRIATE. EXTEND EACH LAYER TO THE LIMITS OF THE EXCAVATION OR TO NATURAL GROUND. COMPACT EACH LAYER ACCORDING TO SUBSECTION 208.10 OF FP-14.

6. THE WIDTH OF STRUCTURE EXCAVATION PRISM USED IN THE COMPUTATION OF APPROXIMATED QUANTITIES IS THE FOOTING WIDTH PLUS 18 INCHES.

7. EXISTING BRIDGE REMOVAL: THE CONTRACTOR SHALL REMOVE, CLEAN (IF SO DIRECTED) AND STOCKPILE ALL EXISTING SALVAGEABLE MATERIAL, AS INDICATED BY THE COR AND AS CALLED FOR ON THESE PLANS UNDER ITEM 20304-1000 REMOVAL OF STRUCTURES AND OBSTRUCTIONS. SALVAGEABLE MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR TO TRANSPORT TO A SALVAGE YARD OFF THE PROJECT LOCATION. ANY EXISTING MATERIALS DETERMINED TO BE UNSALVAGEABLE BY THE COR & CONTRACTOR SHALL BE DISPOSED OF BY THE CONTRACTOR IN ACCORDANCE WITH SECTIONS 107 AND 203 OF THE FP-14 AND APPLICABLE SUPPLEMENTAL SPECIFICATIONS. ALL WORK INVOLVING SALVAGEABLE AND UNSALVAGEABLE MATERIAL SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 20304-1000 REMOVAL OF STRUCTURES AND OBSTRUCTIONS.

8. PRECAST UNITS SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH THE PREFABRICATED BRIDGE MANUFACTURER'S SPECIFICATIONS. CONCRETE FOR FOOTINGS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4500 PSI. REINFORCING STEEL FOR FOOTINGS SHALL BE EPOXY COATED AND CONFORM TO ASTM A615 OR A996-GRADE 60.

9. FOUNDATIONS:
   - DO NOT OVER EXCAVATE FOUNDATIONS UNLESS DIRECTED BY SITE SOIL ENGINEER TO REMOVE UNSUITABLE SOIL.
   - THE BRIDGE UNITS AND WINGWALLS SHALL BE INSTALLED ON EITHER PRECAST OR CAST-IN-PLACE CONCRETE FOOTINGS. FOOTING SURFACE SHALL BE CONSTRUCTED IN ACCORDANCE WITH GRADES SHOWN ON THE PLANS. WHEN TESTED WITH A 10'-0" STRAIGHT EDGE, THE SURFACE SHALL NOT VARY MORE THAN ¼" IN 10'-0".

INDEX OF SHEETS:

114 - BRIDGE GENERAL NOTES
115 - BRIDGE PLAN & ELEVATION
116 - FOUNDATION PLAN
117 - PILE CAP DETAILS
118 - BRIDGE ESTIMATED QUANTITIES

DESIGN DATA:

DESIGN SPECIFICATIONS:
- AASHTO LRFD BRIDGE DESIGN SPECIFICATION 8TH EDITION AND CURRENT INTERIMS.
- ACI 318-14, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE.

UNITS: ALL DIMENSIONS ARE IN UNITED STATES CUSTOMARY (USC) UNITS.

MATERIAL STRENGTH:
- CONCRETE SHALL BE CLASS A (AE) WITH A 28 DAY MINIMUM STRENGTH OF 4,500 PSI.
- REINFORCING STEEL SHALL BE GRADE 60 UNLESS A DIFFERENT GRADE IS SPECIFIED ELSEWHERE IN THE PLANS.

DESIGN LOADS:

DEAD LOAD:
VERTICAL LOAD PER LEG, PROVIDED BY CONTECH: 23.7 k/ft
HORIZONTAL LOAD PER LEG, PROVIDED BY CONTECH: 23.2 k/ft

LIVE LOAD: HL-93

WEARING SURFACE: 30 psf ALLOWANCE FOR FUTURE WEARING SURFACE

WIND GUST: 115 mph

FILL DEPTH: 3'-0" MAX. AT CROWN
2'-0" MIN. AT CROWN

HORIZONTAL EARTH PRESSURE (EQUIV. FLUID PRESSURE)
ACTIVE PRESSURE: 35 pcf
AT-REST PRESSURE: 55 pcf
PASSIVE PRESSURE: 425 pcf

SEISMIC DESIGN CRITERIA:
LATITUDE = 36°8'28.06"N
LONGITUDE = 109°2'51.12"W

SPECTRAL RESPONSE:
S_S = 0.13
S_{DS} = 0.12
S_1 = 0.038
S_{D1} = 0.065
S_{MS} = 0.17
S_{M1} = 0.098
T_L = 4
PGA_M = 0.074
V_{S30} = 260

SEISMIC DESIGN CATEGORY: A
SOIL CLASS: D
RISK CATEGORY: II

DESIGN STRESSES:
REINFORCED CONCRETE:
-SUBSTRUCTURE CONCRETE: f'c = 4,500 psi @ 28 DAYS
-REINFORCING STEEL: Fy = 60 ksi, GRADE 60

WHEAT FIELDS LAKES

WILSON & COMPANY
410 NORTH 44TH STREET, SUITE 460
PHOENIX, ARIZONA 85008
(602) 283-2701

ROUTE N12

BRIDGE GENERAL NOTES

Registered Professional Engineer (Civil) CERTIFICATE NO. 68900 TOM MELTON Date Signed 02/25/25 ARIZONA U.S.A.

REVISIONS NO.	DATE	REMARKS	BY

DESIGN CJC	WCEA NO. 1710009012	DATE 2021	
DRAWN CJC	PROJECT NO. N12(13-2) 1,2,&4	SHEET NO. 116 OF 120	
CHECK DJL			

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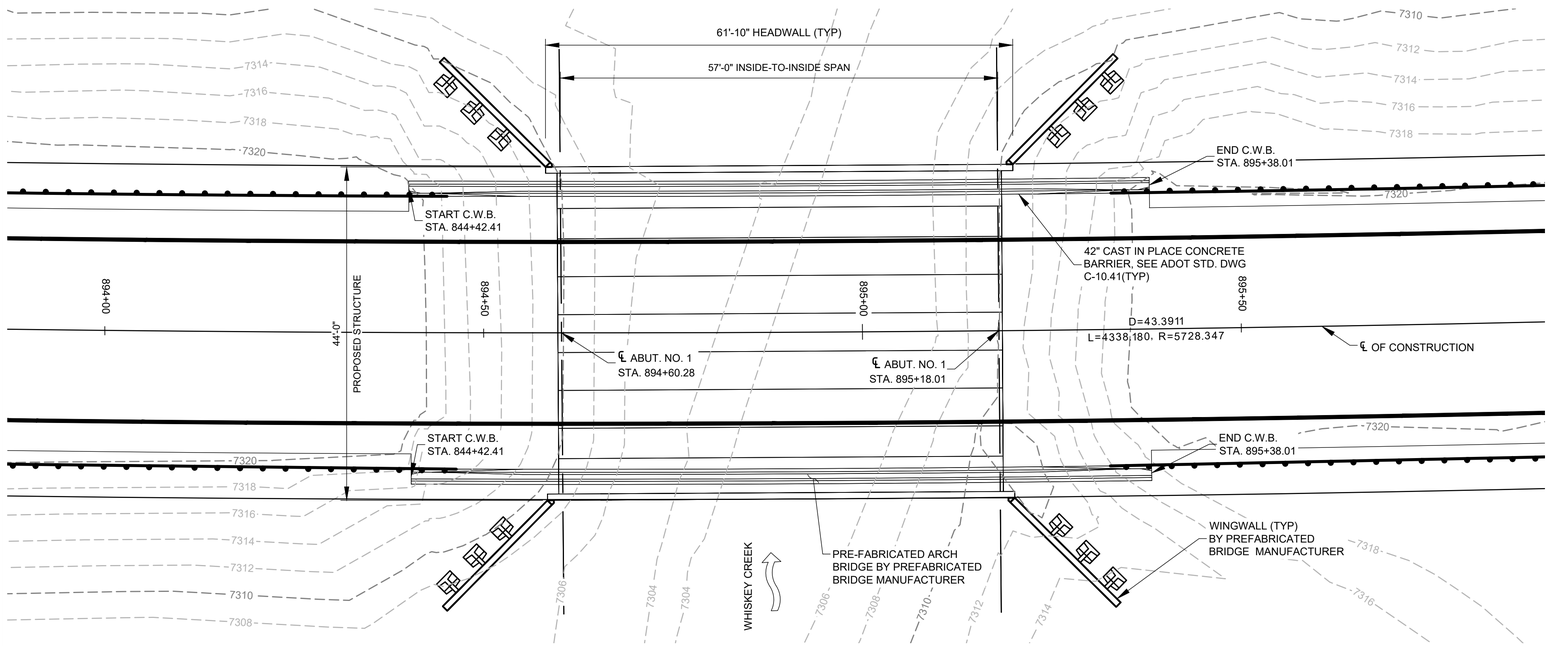
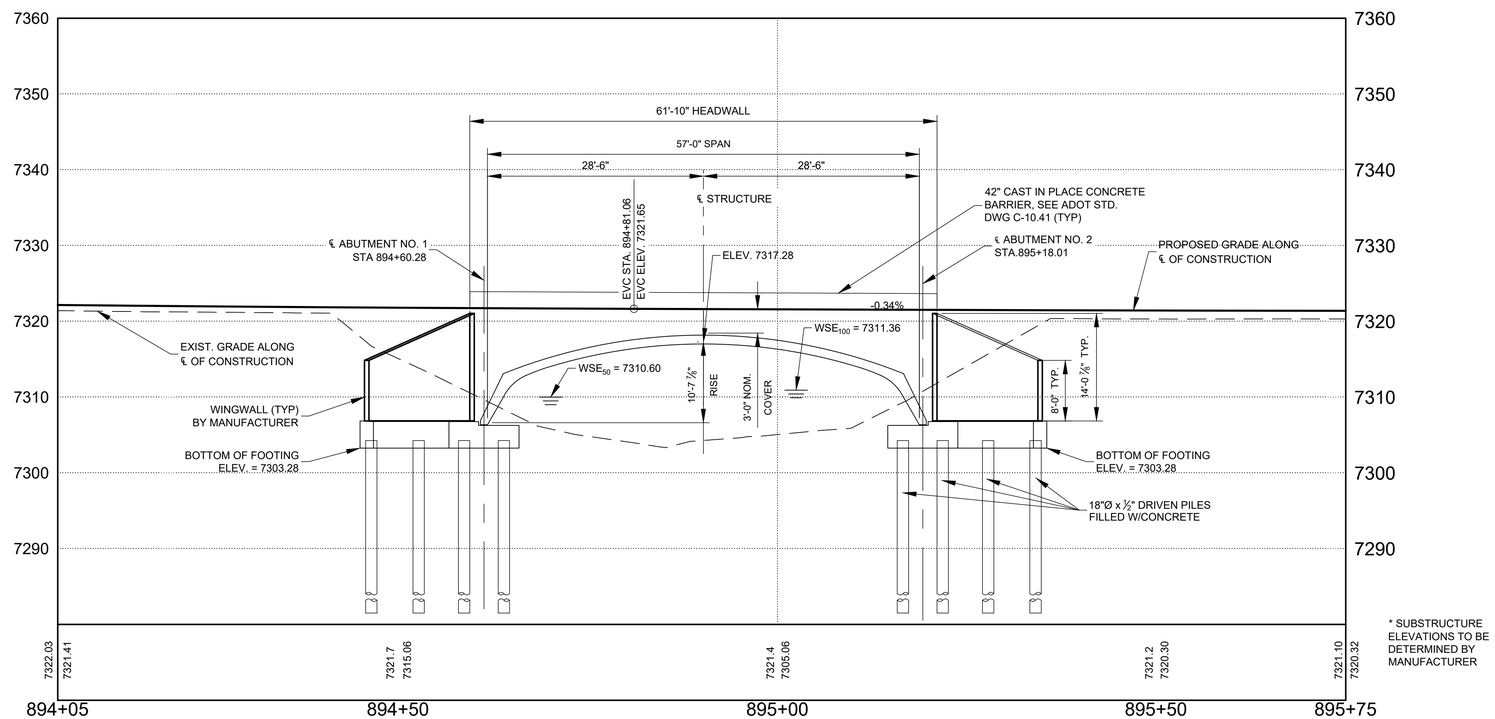
REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	117	120



N12 PLAN VIEW

SCALE = 1 : 10



* SUBSTRUCTURE ELEVATIONS TO BE DETERMINED BY MANUFACTURER

N12 PROFILE VIEW

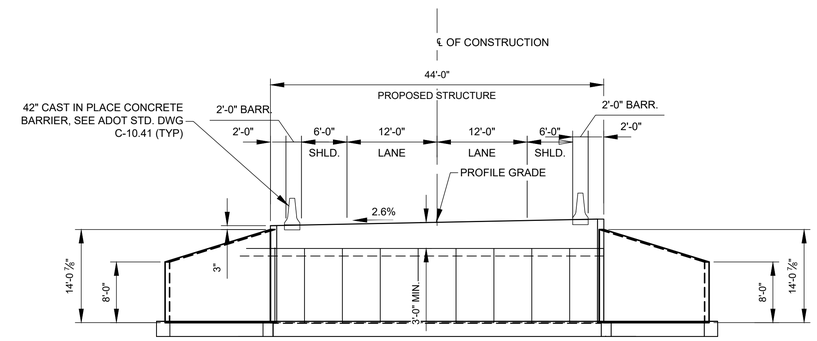
SCALE: 1" = 10'

NOTES:

1. DETAILS ARE SHOWN FOR INFORMATION PURPOSES ONLY. ACTUAL DIMENSIONS AND STRUCTURAL DETAILING SHALL BE PROVIDED BY PREFABRICATED BRIDGE MANUFACTURER.

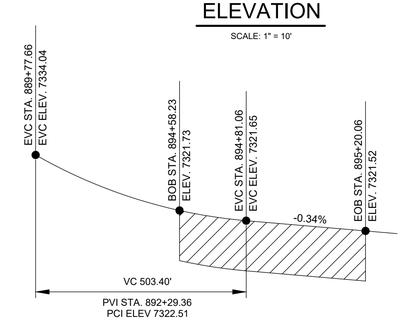
WATERWAY DATA:

WATERWAY:	WHISKEY CREEK
DRAINAGE AREA:	32.26 SQ. MILE
Q_{100}:	3337.00 CFS
V_{100}:	12.07 FT/S
WSE_{100}:	7311.36 FT
WSE_{50}:	7310.60 FT
100 YEAR SCOUR:	12.50 FT
FREEBOARD:	2.00 FT



ELEVATION

SCALE: 1" = 10'



PROFILE GRADE DATA

ALONG ℄ OF CONSTRUCTION

WHEAT FIELDS LAKES

WILSON & COMPANY
410 NORTH 44TH STREET, SUITE 460
PHOENIX, ARIZONA 85008
(602) 283-2701

ROUTE N12

BRIDGE PLAN & ELEVATION

Registered Professional Engineer (Civil) CERTIFICATE NO. 68900 TOM MELTON Date Signed 02/25/25 ARIZONA U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

DESIGN	CJC	WCEA NO. 1710009012	DATE 2021
DRAWN	CJC	PROJECT NO. N12(13-2) 1,2,&4	SHEET NO. 117 OF 120
CHECK	DJL		

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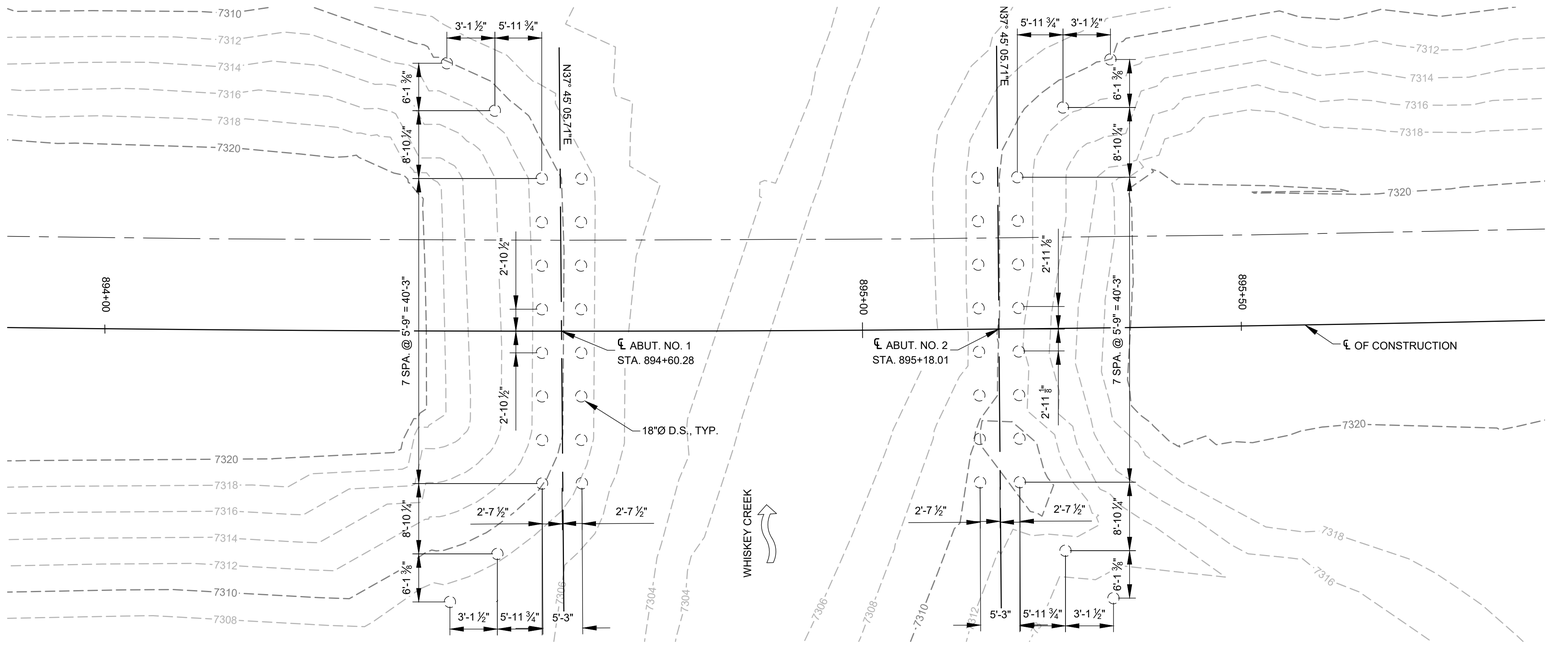
REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	118	120

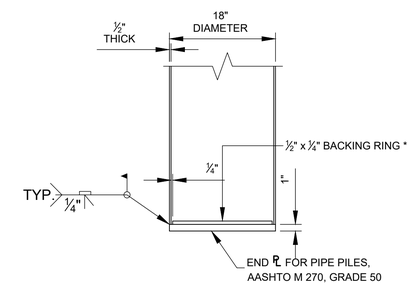


N12 FOUNDATION PLAN

SCALE = 1 : 10

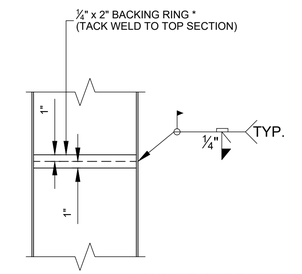
DRIVEN PILE NOTES:

1. SOCKET PILES A MINIMUM OF FIVE FEET INTO BEDROCK OR UNTIL REQUIRED BEARING LOAD IS ACHIEVED, WHICHEVER LENGTH IS GREATER.
2. THE CONTRACTOR SHALL DETERMINE THE BEARING VALUES OF THE INDIVIDUAL PILES ACCORDING TO ADOT STANDARD SPECIFICATIONS 603-3.08.
3. INFORMATION PERTAINING TO THE GEOTECHNICAL CONDITIONS CAN BE OBTAINED FROM THE GEOTECHNICAL REPORT BY AMEC ENVIRONMENT & INFRASTRUCTURE, INC. DATED 2014.
4. PER ADOT CONSTRUCTION MANUAL, SECTION 603-3.04, THE CONTRACTOR IS REQUIRED TO ASSIST IN INSPECTING COMPLETED DRIVEN PILE EXCAVATIONS FOR THE CORRECT DEPTH, PLUMBNESS, AND DIAMETER.



END ℙ DETAIL

(REQ'D. AT END OF ALL PILES)



* BACKING RING SHALL BE ASTM A-252 GR. 3

FIELD WELD

PERMISSIBLE FIELD SPLICES FOR PIPE PILES

PILE REQUIREMENTS

LOCATION	PILE TYPE	NO. OF TEST PILES	NO. OF PRODUCTION PILES	ESTIMATED LENGTH PER PILE (LNFT)*	TOTAL ESTIMATED LENGTH (LNFT)	ESTIMATED CONCRETE VOLUME INSIDE EACH PIPE (CY)**	TOTAL CONCRETE VOLUME INSIDE PIPES (CY)**	ESTIMATED PREBORE LENGTH PER PILE (LNFT)*	ESTIMATED PILE TIP ELEVATION	APPLIED STRUCT. LOAD (PILE DESIGN) (kip)	ULTIMATE CAPACITY (kip)
ABUTMENT NO. 1 CL PILES STA. 894+60.28	STEEL PIPE PILE 18"φ x 1/2" FILLED WITH CONCRETE	1	20	33.00	660	2.16	43.20	32.00	7271.28	132.8	400
ABUTMENT NO. 2 CL PILES STA. 895+18.01	STEEL PIPE PILE 18"φ x 1/2" FILLED WITH CONCRETE	1	20	33.00	660	2.16	43.20	32.00	7271.28	132.8	400

* ESTIMATED PILE LENGTH AND ESTIMATED PREBORE LENGTH BASED ON LONGEST PILE IN FOUNDATION. INFORMATION IS PROVIDED FOR ESTIMATING PURPOSES ONLY. ACTUAL PILE LENGTH AND BREBORE LENGTH SHALL BE DETERMINED IN THE FIELD BASED ON TEST PILE INSTALLATION AND ADJUSTMENTS FOR DRIVING TO GAIN REQUIRED PILE CAPACITY AS DETERMINED BY CONSTRUCTION INSPECTION OF DRIVING OPERATIONS.

** CONCRETE VOLUME TO BE INCLUDED IN BID ITEM 55101-0200 "CONCRETE FILLED STEEL PIPE PILE, IN PLACE." VOLUME IS FOR ESTIMATING PURPOSES ONLY. FINAL VOLUME SHALL BE DETERMINED IN THE FIELD BASED ON FINAL PILE LENGTH.

WHEAT FIELDS LAKES

WILSON & COMPANY
410 NORTH 44TH STREET, SUITE 460
PHOENIX, ARIZONA 85008
(602) 283-2701

ROUTE N12

FOUNDATION PLAN

Registered Professional Engineer (Civil) CERTIFICATE NO. 68900 TOM MELTON Date Signed 02/25/25 ARIZONA U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

DESIGN	CJC	WCEA NO. 1710009012	DATE 2021
DRAWN	CJC	PROJECT NO. N12(13-2) 1,2,&4	SHEET NO. 118 OF 120
CHECK	DJL		

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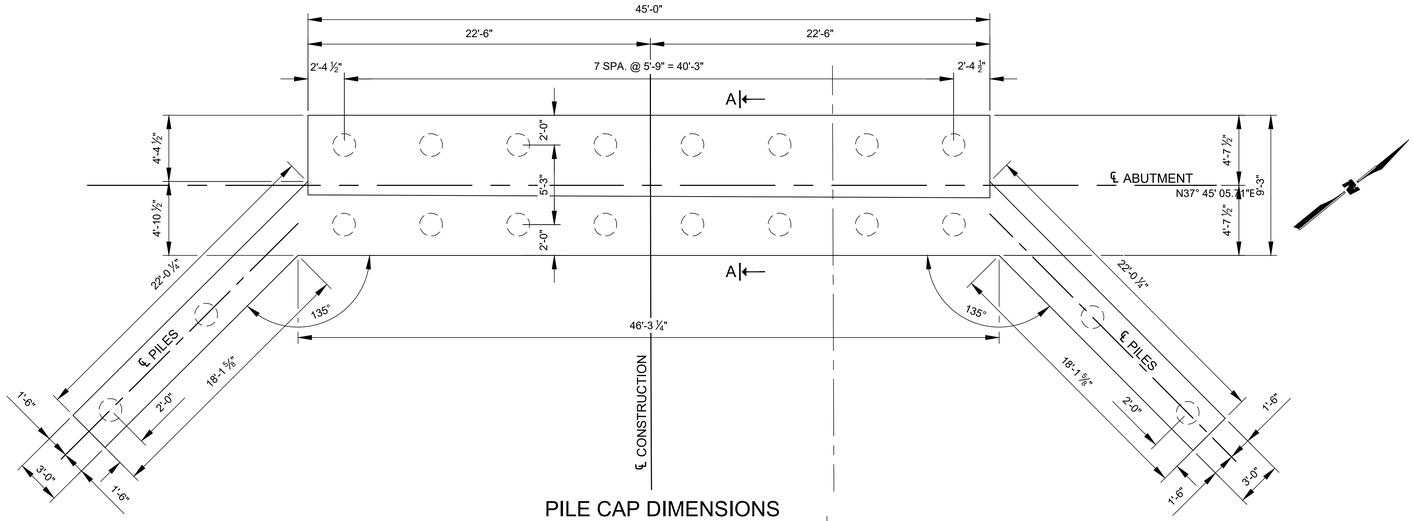
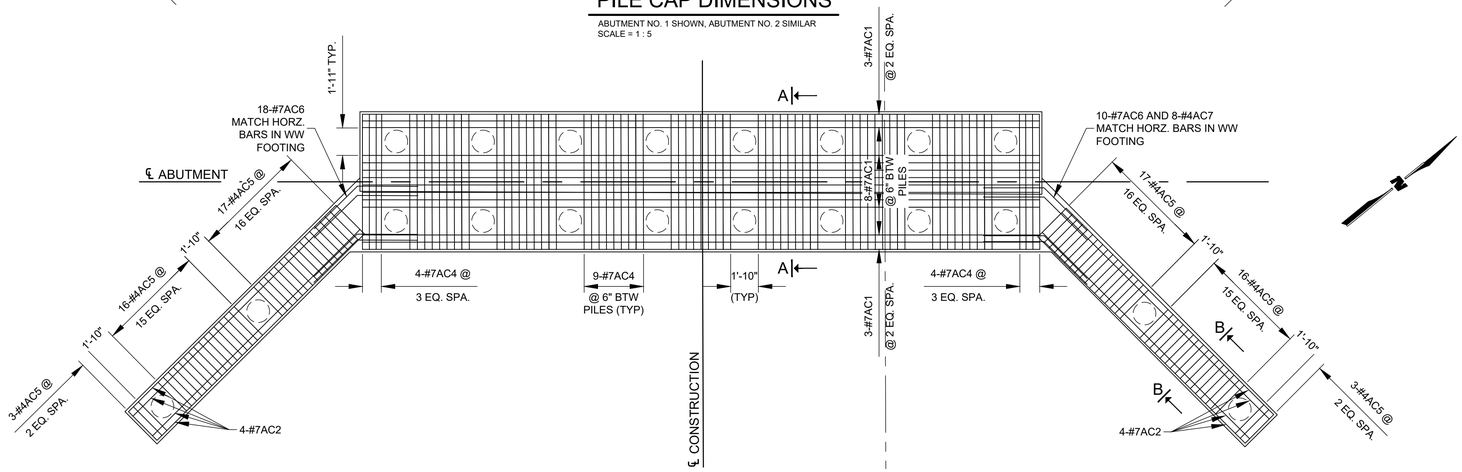
REGION	STATE	RESERVATION	ROUTE NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NAVAJO	AZ	NAVAJO	N12	N12(13-2) 1,2&4	118	120



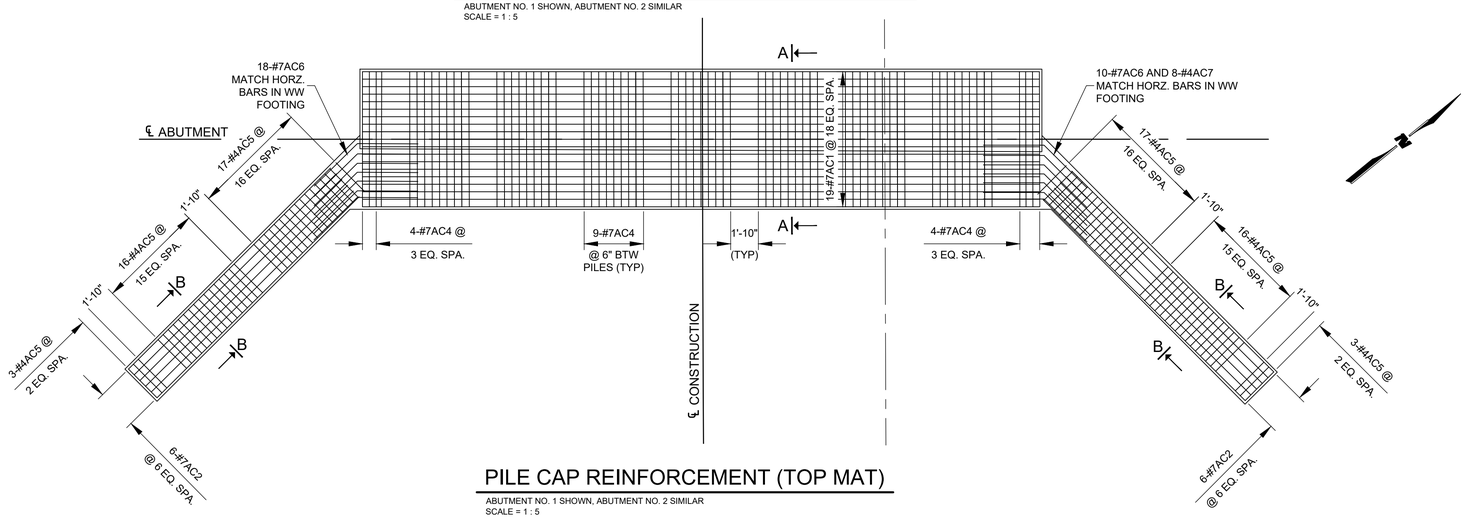
PILE CAP DIMENSIONS

ABUTMENT NO. 1 SHOWN, ABUTMENT NO. 2 SIMILAR
SCALE = 1 : 5



PILE CAP REINFORCEMENT (BOTTOM MAT)

ABUTMENT NO. 1 SHOWN, ABUTMENT NO. 2 SIMILAR
SCALE = 1 : 5

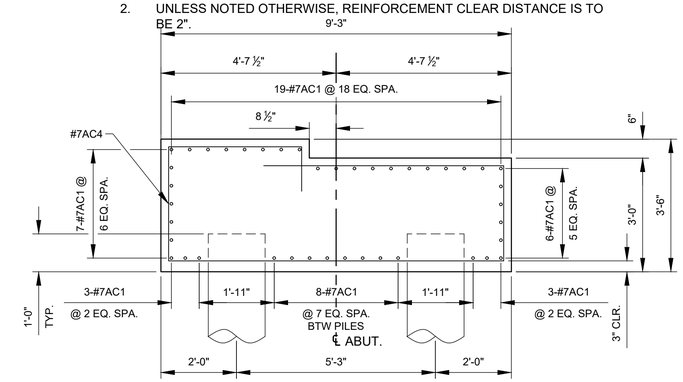


PILE CAP REINFORCEMENT (TOP MAT)

ABUTMENT NO. 1 SHOWN, ABUTMENT NO. 2 SIMILAR
SCALE = 1 : 5

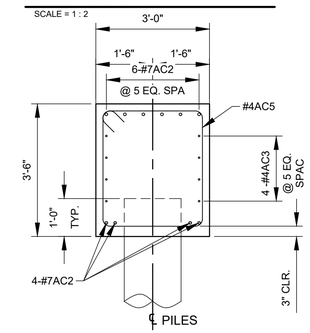
NOTES:

1. ALL REINFORCEMENT ON THIS SHEET IS TO BE GRADE 60 EPOXY COATED REBAR UNDER BID ITEM 55401-2000.
2. UNLESS NOTED OTHERWISE, REINFORCEMENT CLEAR DISTANCE IS TO BE 2".



SECTION A-A

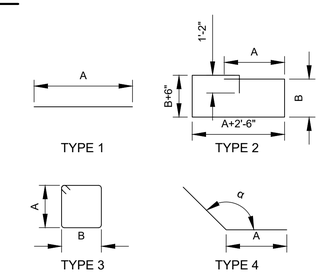
SCALE = 1 : 2



SECTION B-B

SCALE = 1 : 2

REBAR SCHEDULE							
BAR	TYPE	A	B	α	R	LENGTH	# REQ'D
#7AC1	1	44'-8"				44'-8"	84
#7AC2	1	18'-9"				18'-9"	40
#4AC3	1	18'-9"				18'-9"	32
#7AC4	2	6'-4"	2'-6"			25'-4"	142
#4AC5	3	3'-0"	2'-7"			12'-3"	144
#7AC6	4	6'-0"		135°		12'-0"	40
#4AC7	4	6'-0"		135°		12'-0"	32



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ROUTE N12

FOUNDATION PLAN

Registered Professional Engineer (Civil) CERTIFICATE NO. 68900 TOM MELTON Date Signed 02/25/25 ARIZONA U.S.A.

REVISIONS	NO.	DATE	REMARKS	BY

DESIGN	CJC	WCEA NO. 1710009012	DATE 2021
DRAWN	CJC	PROJECT NO. N12(13-2) 1,2,&4	SHEET NO. 118 OF 120
CHECK	DJL		

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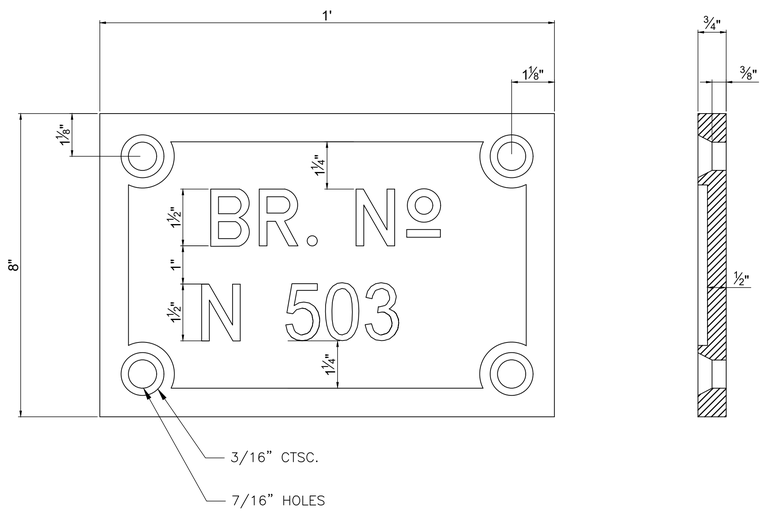
ITEM NUMBER	DESCRIPTION	UNIT	QTY
20301-0400	REMOVAL OF BRIDGE	EACH	1
20801-0000	STRUCTURE EXCAVATION	CUYD	1,387
20803-0000	STRUCTURE BACKFILL	CUYD	1,762
55101-0200	CONCRETE FILLED STEEL PIPE PILE, IN PLACE	LNFT	1,320
55104-1000	DYNAMIC PILE LOAD TEST	EACH	4
55115-1000	PREBORING	LNFT	1,280
55201-0200	STRUCTURAL CONCRETE CLASS A (AE)	CUYD	131
55401-2000	REINFORCING STEEL, EPOXY COATED	LB	19,395
56302-1000	PAINTING, CONCRETE STRUCTURE*	SQFT	4,622
58001-0000	ALTERNATE BRIDGE**	LPSM	1
61801-0000	CONCRETE BARRIER	LNFT	192

* BID ITEM IS FOR ANTI-GRAFFITI PROTECTIVE COATING PER CONSTRUCTION NOTE 5 ON SHEET 116.
** ALTERNATE BRIDGE INCLUDES PRECAST ARCH UNITS, PRECAST HEADWALLS, AND PRECAST WINGWALLS.

BRIDGE NUMBER PLATE DETAILS



NOTES:

1. TWO (2) PLATES WITH GALVANIZED FLAT HEAD BOLTS IN EXPANSION SHIELDS ARE REQUIRED. THE PLATES SHALL BE GALVANIZED CAST IRON WITH RAISED BLOCK LETTERS OF NEAT SQUARE CUT DESIGN. GRIND FACE OF LETTERS AND BORDERS SMOOTH. BRONZE PLATES AND BOLTS MAY BE SUBSTITUTED FOR GALVANIZED CAST IRON.
2. EACH PLATE IS TO BE PLACED AT EACH END OF THE BRIDGE ON THE ROADWAY FACE OF THE CONCRETE BARRIER RAILING AT THE END OF DECK AND LOCATED ON THE RIGHT-HAND SIDE AS ONE APPROACHES BRIDGE.

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BRIDGE ESTIMATED QUANTITIES

Registered Professional Engineer (Civil) CERTIFICATE NO. 68900 TOM MELTON Date Signed 02/25/25 ARIZONA, U.S.A.

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DESIGN CJC	WCEA NO. 1710009012	DATE 2021	
DRAWN CJC	PROJECT NO. N12(13-2) 1,2,&4	SHEET NO. 120 OF 120	
CHECK DJL			

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