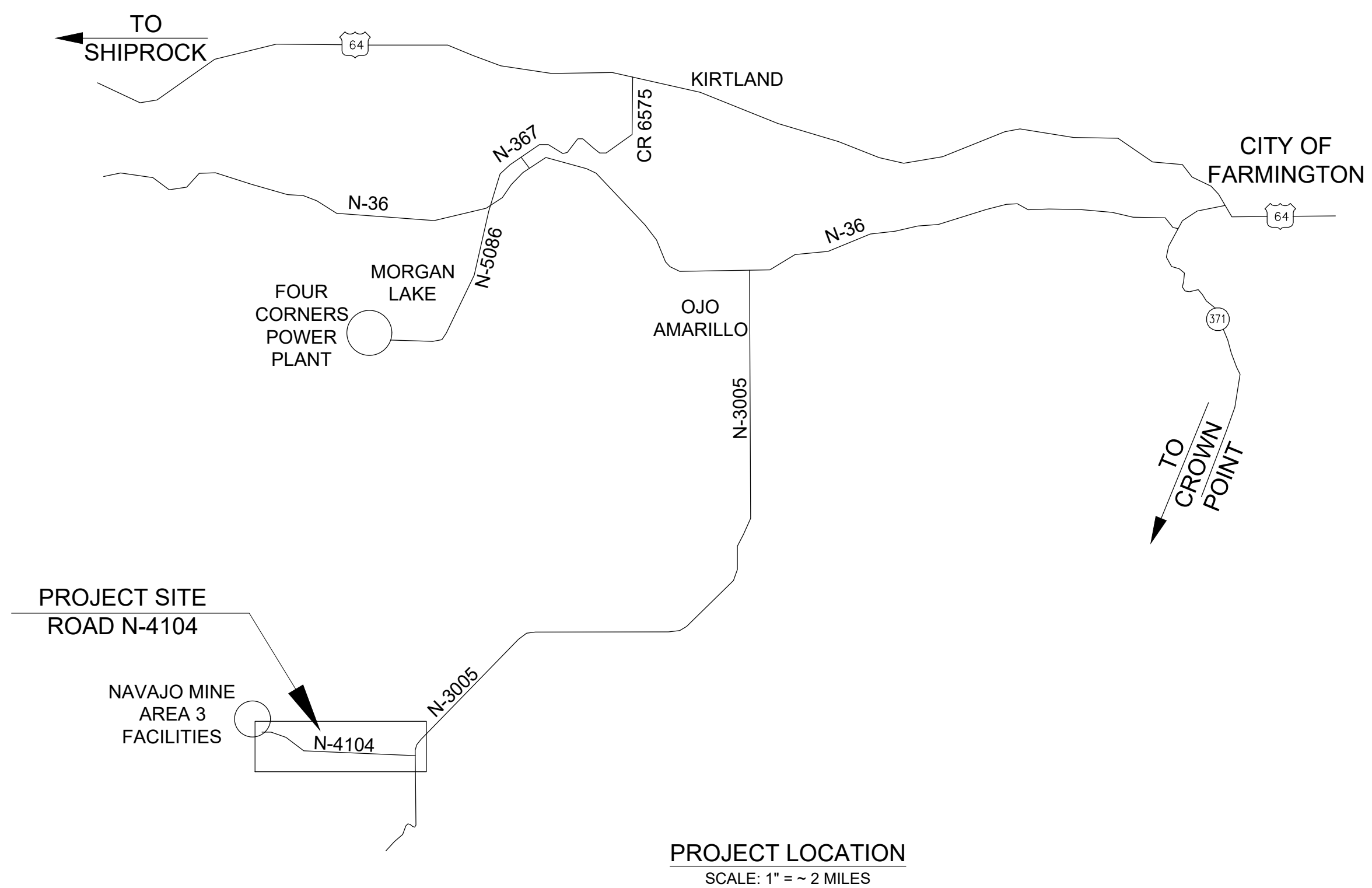


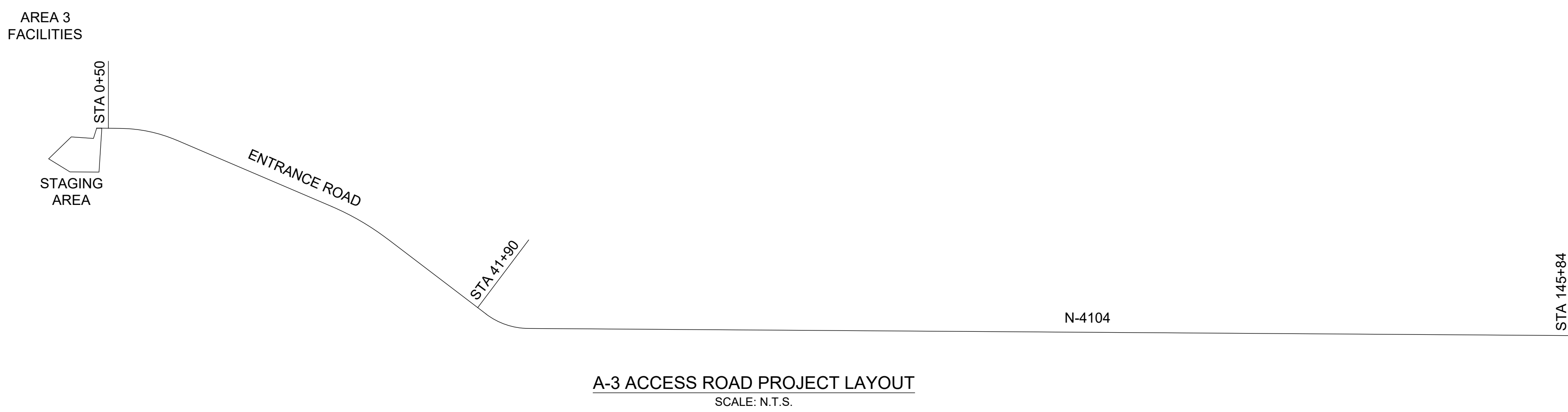
# NAVAJO TRANSITIONAL ENERGY COMPANY SAN JUAN COUNTY NEW MEXICO NAVAJO ROAD N-4104 ROADWAY RECONSTRUCTION



| DESIGN DATA                     |               |         |
|---------------------------------|---------------|---------|
|                                 | ENTRANCE ROAD | N-4104  |
| DESIGN SPEED                    | 35 MPH        | 55 MPH  |
| MAXIMUM GRADE                   | 5.00%         | 4.00%   |
| MINIMUM RADIUS                  | 930 ft.       | 930 ft. |
| MINIMUM STOPPING SIGHT DISTANCE | 275 ft.       | 535 ft. |
| ESTIMATED TRAFFIC               | 400 VPD       | 400 VPD |
| e <sub>max</sub>                | 6.00%         | 6.00%   |

| PROJECT LENGTH           |             |               |               |               |
|--------------------------|-------------|---------------|---------------|---------------|
| DESCRIPTION              | FROM STA.   | TO STA.       | LIN. FT.      | MILES         |
| ENTRANCE ROAD (ON LEASE) | 0+50        | 41+90         | 4,140         | 0.7841        |
| N-4105 (OFF LEASE)       | 41+90       | 145+84        | 10,394        | 1.9686        |
| <b>TOTAL</b>             | <b>0+50</b> | <b>145+84</b> | <b>14,534</b> | <b>2.7527</b> |

| INDEX OF SHEETS |   |
|-----------------|---|
| SHEET NO.       | DESCRIPTION                             |
| 1               | TITLE SHEET                             |
| 2               | TYPICAL SECTIONS                        |
| 3               | SCOPE, QUANTITIES AND TABLES            |
| 4               | PLAN AND PROFILE, STA. 0+50 TO 25+00    |
| 5               | PLAN AND PROFILE, STA. 25+00 TO 41+90   |
| 6               | PLAN AND PROFILE, STA. 41+90 TO 68+00   |
| 7               | PLAN AND PROFILE, STA. 68+00 TO 95+00   |
| 8               | PLAN AND PROFILE, STA. 95+00 TO 120+00  |
| 9               | PLAN AND PROFILE, STA. 120+00 TO 145+84 |
| 10              | CULVERT INSTALLATION                    |
| 11              | TEMPORARY TRAFFIC CONTROL               |
| 12              | PERMANENT SIGNS AND MARKERS             |
| 13              | PERMANENT STRIPING                      |
| 14              | GUARD RAIL                              |
| 15              | SOIL EROSION & SEDIMENT CONTROL         |



**A-3 ACCESS ROAD PROJECT LAYOUT**  
SCALE: N.T.S.

**PROJECT OVERVIEW:**

NAVAJO TRANSITIONAL ENERGY COMPANY (NTEC) IS PLANNING TO MAKE IMPROVEMENTS TO THE ACCESS ROAD THAT LEADS TO THE AREA 3 FACILITIES. THE EXISTING ROADWAY HAS BEEN DAMAGED BY SUBGRADE MOVEMENT AND THE RESULTING BUMPY SURFACE IS IMPEDING SAFE EFFICIENT TRAVEL.

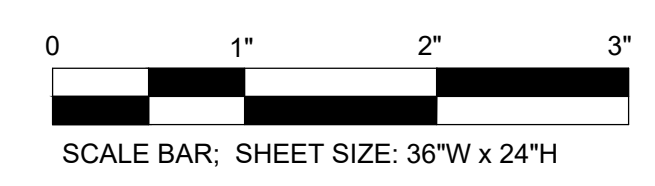
BASED ON INFORMATION COLLECTED AS PART OF A GEOTECHNICAL INVESTIGATION OF THE ROADWAY AND THE SUBSURFACE CONDITIONS, (GEOMAT PROJECT NUMBER 182-2995 DATED JANUARY 11, 2022) IT APPEARS THAT THE MOVEMENT OF THE EXISTING ROADWAY WAS LIKELY CAUSED AT LEAST IN PART BY MOISTURE INFILTRATING THE NATIVE SOILS. THE NATIVE SOILS INCLUDE BOTH LOOSE SANDY SOILS THAT CAN EXPERIENCE CONSOLIDATION WHEN EXPOSED TO MOISTURE, AND SHALE BEDROCK THAT CAN EXPERIENCE EXPANSION WHEN EXPOSED TO MOISTURE.

IN ORDER TO ADDRESS THESE SITE CONDITIONS, EXTENSIVE SUBSOIL STABILIZATION AND DRAINAGE IMPROVEMENTS WOULD BE REQUIRED. HOWEVER, DUE TO BUDGET CONSTRAINTS AND THE UNCERTAINTY SURROUNDING THE LONG-TERM OPERATION OF THE MINE, NTEC IS INVESTIGATING LESS EXTENSIVE REPAIRS THAT WOULD PROVIDE A SATISFACTORY DRIVING SURFACE WITHOUT ADDRESSING ALL OF THE LONG-TERM ISSUES.

TOWARD THAT END, THESE 75% PLANS ARE BEING CIRCULATED TO SOLICIT BUDGET PRICING ON OPTIONS FOR DIFFERENT LEVELS OF REPAIR. EACH OPTION IS ALSO DIVIDED BETWEEN THE PORTION THAT IS ON THE MINE LEASE (THE ENTRANCE ROAD) AND THE PORTION THAT IS OFF-LEASE (N-4104). CONSTRUCTION IS ANTICIPATED TO BEGIN IN MAY, 2022.

THE OPTIONS ARE IDENTIFIED AS FOLLOWS (SEE DETAILED DESCRIPTIONS ON SHT 3):

- **OPTION A** WOULD INCLUDE FULL DEPTH RECLAMATION OF THE EXISTING ROADWAY FOLLOWING THE EXISTING HORIZONTAL AND VERTICAL ALIGNMENT.
- **OPTION B** WOULD INCLUDE FULL DEPTH RECLAMATION FROM STA 0+50 TO STA 19+50. BUT THE REMAINDER OF THE PROJECT WOULD INCLUDE OVER-EXCAVATION OF THE SUBGRADE AND PLACING GEOGRID FABRIC AND ENGINEERED FILL BEFORE PLACING A NEW LAYER OF AGGREGATE BASE COURSE AND ASPHALT.
- **ADD-ALTERNATES:** SEVERAL ADD-ALTERNATES ARE ALSO BEING OFFERED FOR BUDGET PRICING. THE ADD-ALTERNATES MAY BE ADDED TO EITHER OPTION A OR OPTION B



3/21/2022  
75% DRAWINGS  
FOR BUDGET PRICING  
NOT FOR CONSTRUCTION

**GEOMAT** INC.  
1915 MALTA AVE. • FARMINGTON, NM 87401 • 505-327-7928

| NO. | DATE | DESCRIPTION |
|-----|------|-------------|
|     |      |             |
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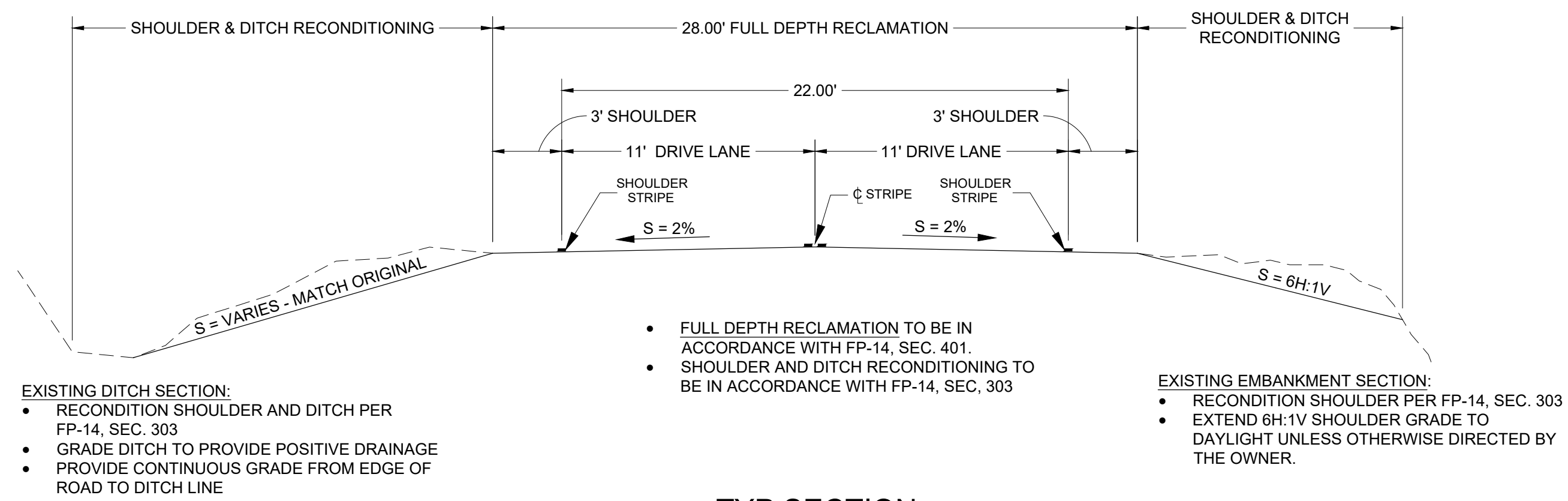
**EXHIBIT XX**

**Navajo Mine**

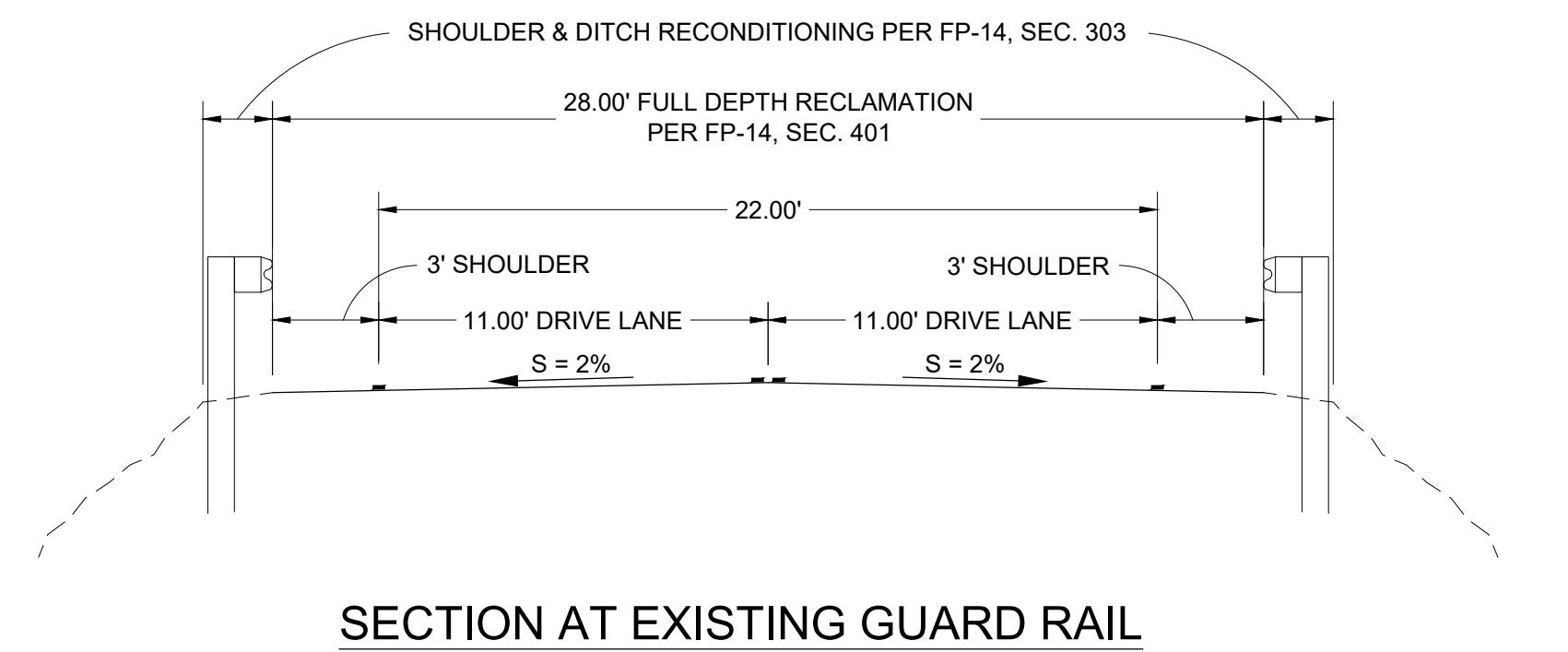
**AREA 3 ACCESS ROAD IMPROVEMENTS**

TITLE SHEET

|                                       |               |                 |
|---------------------------------------|---------------|-----------------|
| Prepared By: GEOMAT                   | Drawn By: PAR | Scale: AS NOTED |
| Approved By:                          | Date:         | Sheet: 1        |
| GEOMAT Project No. 222-3029-B         |               |                 |
| Drawing: A-3 ACCESS RD 2022-03-21.dwg |               |                 |

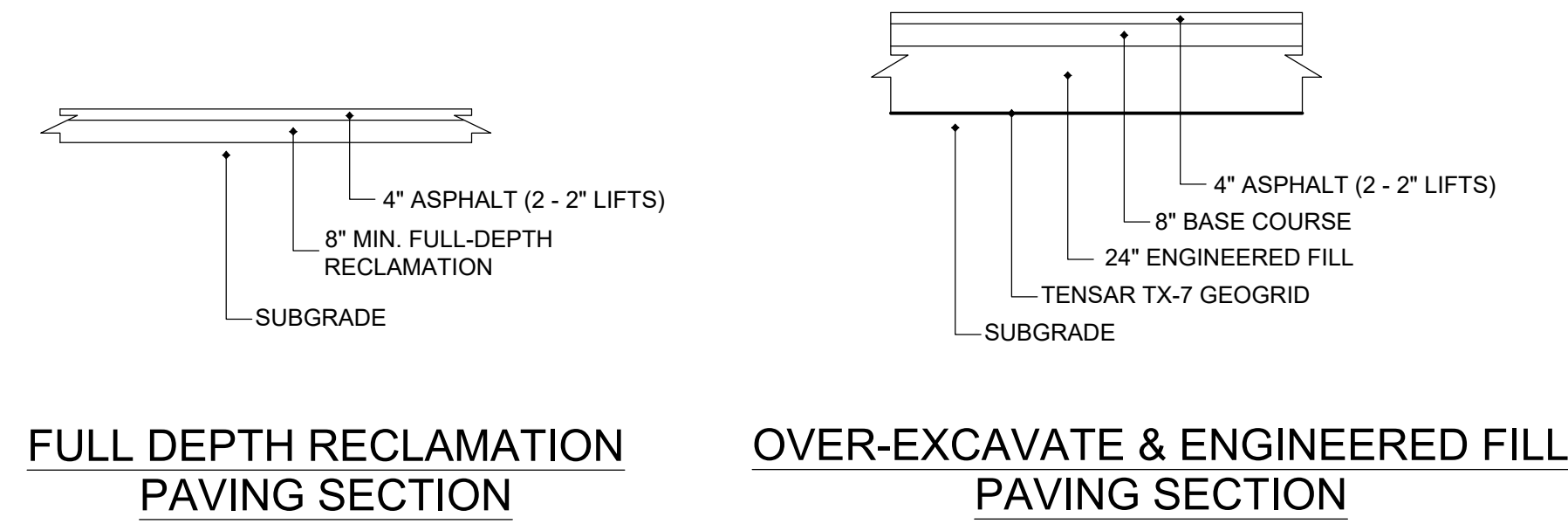


TYP SECTION

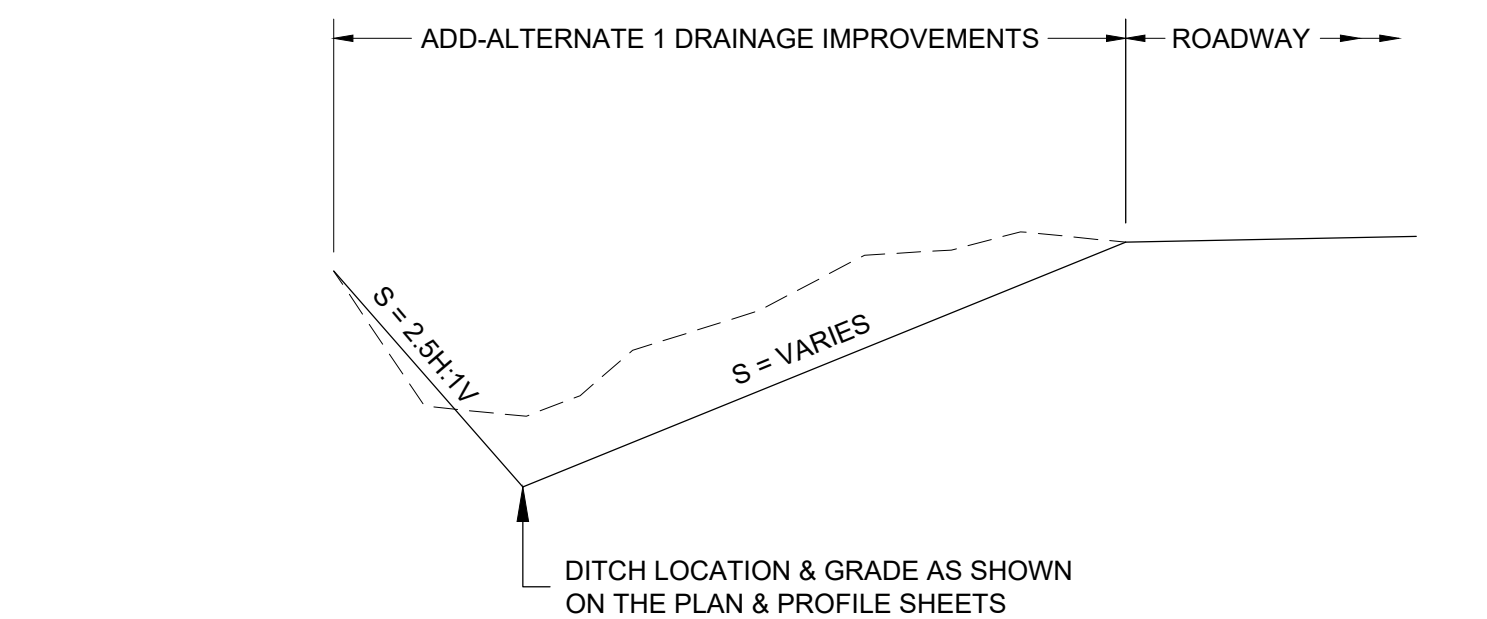


SECTION AT EXISTING GUARD RAIL

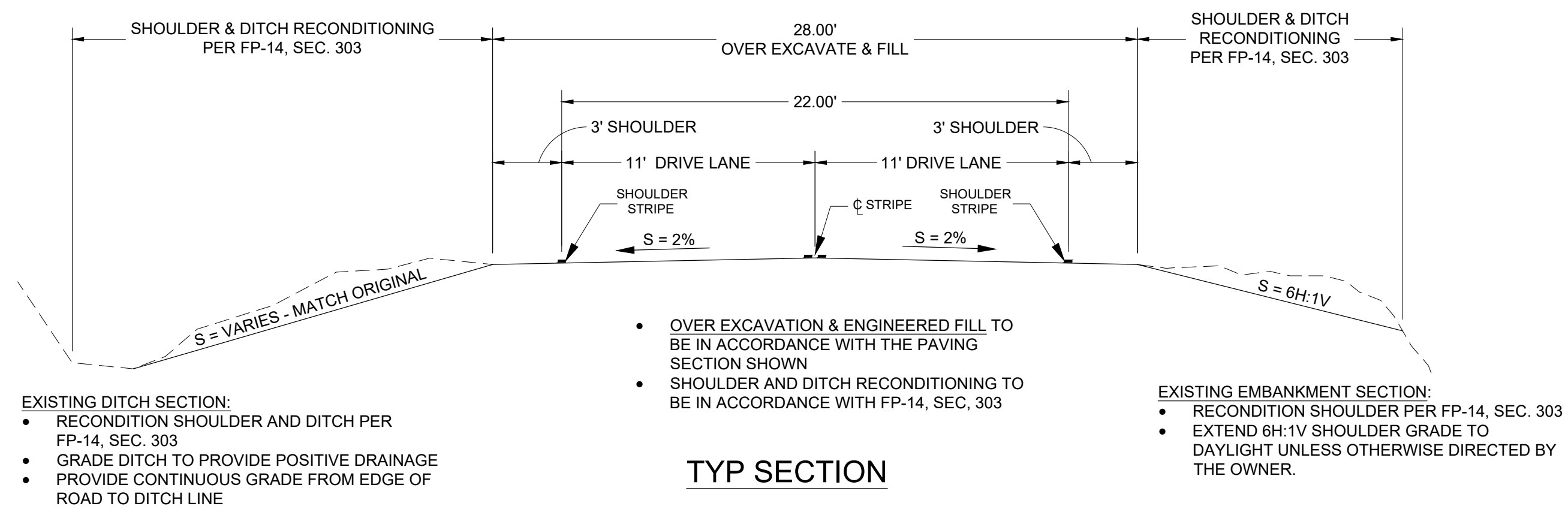
FULL DEPTH RECLAMATION TYP SECTIONS



TYPICAL PAVING SECTIONS

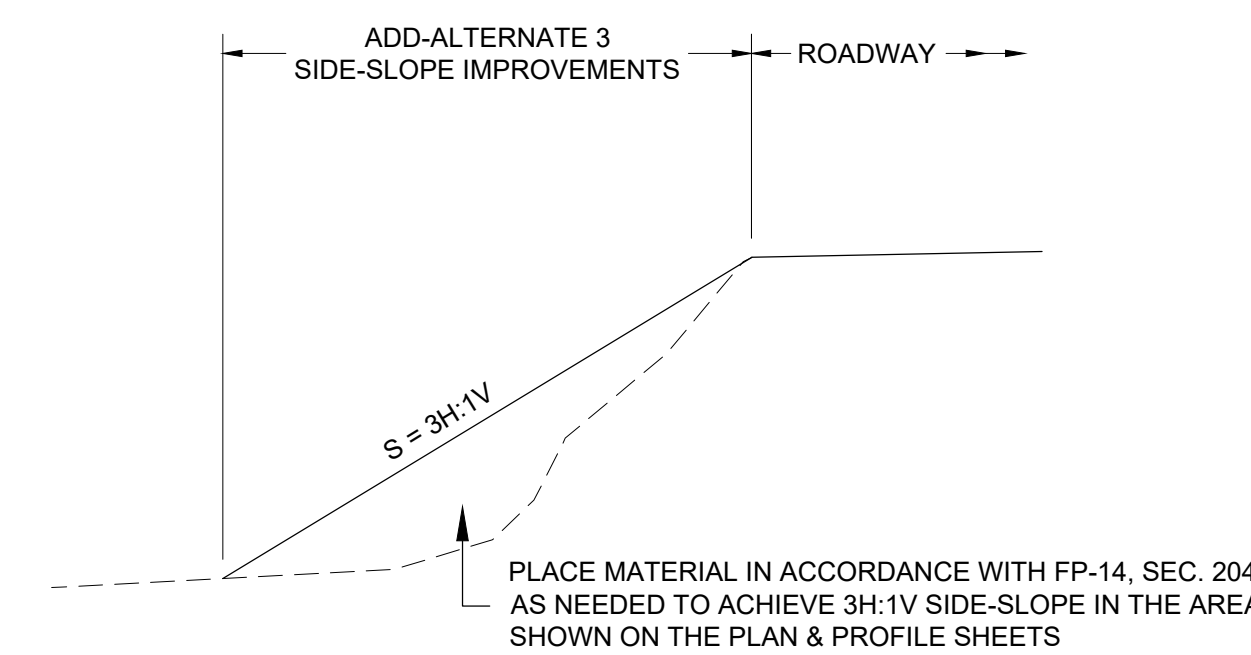


ADD-ALTERNATE 1 DRAINAGE IMPROVEMENTS SECTION

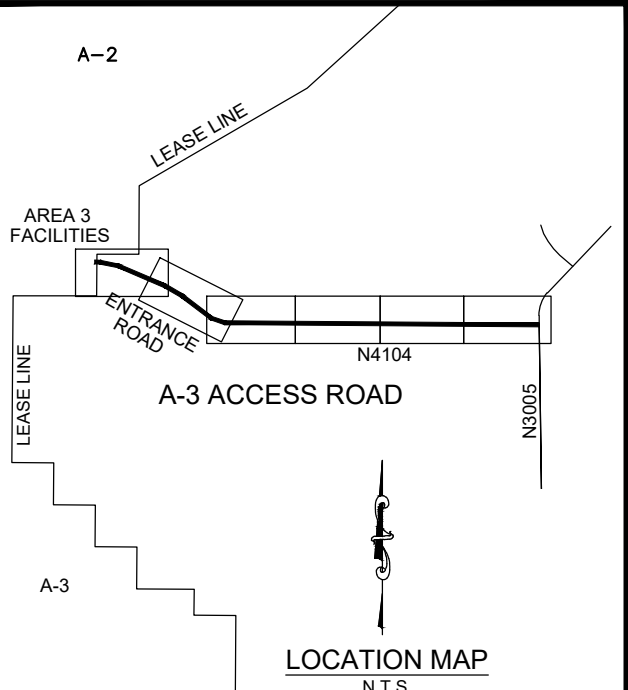
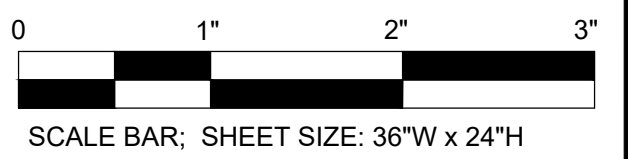


TYP SECTION

OVER EXCAVATE & ENGINEERED FILL TYP SECTIONS



ADD-ALTERNATE 2 SIDE-SLOPE IMPROVEMENTS SECTION



3/21/2022  
75% DRAWINGS  
FOR BUDGET PRICING  
NOT FOR CONSTRUCTION

GEOMAT INC.  
915 MALTA AVE. FARMINGTON, NM 87401 505-327-7928

NO. DATE DESCRIPTION

EXHIBIT XX



Navajo Mine

AREA 3 ACCESS ROAD IMPROVEMENTS

TYPICAL SECTIONS

Prepared By: GEOMAT Drawn By: PAR Scale: AS NOTED

Approved By: Date: Sheet: 2

GEOMAT Project No.: 222-3929-B  
Drawing: A-3 ACCESS RD 2022-03-21.dwg



OPTION A - SCOPE OF SERVICES:

OPTION A ADDRESSES THE CURRENT BUMPY ROAD CONDITIONS THROUGH FULL DEPTH RECLAMATION OF THE EXISTING ROADWAY.

NO WARRANTY OF DESIGN LIFE OF THE ROADWAY IS IMPLIED FOR THIS OPTION

HORIZONTAL AND VERTICAL ALIGNMENT SHALL FOLLOW THE EXISTING ROADWAY ALIGNMENT EXCEPT THAT THE EXISTING BUMPY ROAD SURFACE SHALL BE REPLACED WITH A SMOOTH SURFACE.

EXISTING CULVERTS SHALL BE LEFT IN PLACE AND PROTECTED DURING CONSTRUCTION.

OPTION A BID LIST CLARIFICATIONS:

1. MOBILIZATION (FP-14, SEC. 151)
  - 1.1. THE CONTRACTOR SHALL INCLUDE ANY AND ALL MISCELLANEOUS COSTS ASSOCIATED WITH COMPLETING THE OPTION A SCOPE OF SERVICES.
2. CONTRACTOR SAMPLING AND TESTING (FP-14, SEC. 154)
  - 2.1. IT IS ANTICIPATED THAT THE OWNER WILL RETAIN GEOMAT TO PERFORM QUALITY ASSURANCE TESTING.
  - 2.2. THE CONTRACTOR SHALL INCLUDE QUALITY CONTROL TESTING THAT MAY BE REQUIRED ABOVE AND BEYOND THE QUALITY ASSURANCE TESTING
3. TEMPORARY TRAFFIC CONTROL (FP-14, SEC. 156)
  - 3.1. THE CONTRACTOR SHALL DEVELOP, IMPLEMENT AND MAINTAIN A TEMPORARY TRAFFIC CONTROL PLAN THAT ALLOWS CONTINUOUS ACCESS TO THE AREA 3 FACILITIES AND POINTS BEYOND.
  - 3.2. ALL COSTS ASSOCIATED WITH DEVELOPING, IMPLEMENTING AND MAINTAINING THE TEMPORARY TRAFFIC CONTROL PLAN SHALL BE INCLUDED IN THE LUMP SUM BID AMOUNT.
4. SOIL EROSION AND SEDIMENT CONTROL (FP-14, SEC. 157)
  - 4.1. THE CONTRACTOR SHALL PREPARE A SOIL EROSION CONTROL PLAN (SECP) AND A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND SHALL SUBMIT THEM TO THE OWNER FOR APPROVAL.
  - 4.2. ALL COSTS ASSOCIATED WITH DEVELOPING, IMPLEMENTING AND MAINTAINING THE SOIL EROSION AND SEDIMENT CONTROL PLAN SHALL BE INCLUDED IN THE LUMP SUM BID AMOUNT.
5. CLEARING AND GRUBBING (FP-14, SEC. 201)
  - 5.1. INCLUDES THE DITCHES AND UNPAVED SHOULDERS ONLY. THE EXISTING ROADWAY IN NOT INCLUDED IN THE CLEARING AND GRUBBING AREA.
6. REMOVAL OF OBSTRUCTIONS (FP-14, SEC. 203)
  - 6.1. THE CONTRACTOR SHALL REMOVE THE EXISTING CATTLE GUARD AT STA 41+90. ALL DEBRIS SHALL BE REMOVED FROM THE SITE AND LEGALLY DISPOSED OF BY THE CONTRACTOR.
7. AGGREGATE BASE COURSE (FP-14, SEC. 301)
  - 7.1. BASE COURSE SHALL BE PROVIDED FOR USE AS FILL MATERIAL WHERE THE CATTLE GUARD WAS REMOVED.
  - 7.2. ADDITIONAL BASE COURSE MATERIAL MAY BE REQUESTED BY THE OWNER FOR USE IN STABILIZING TURN-OUTS OR FOR ROAD GRADE ADJUSTMENTS.
  - 7.3. ANY BASE COURSE PLACED WITHOUT THE APPROVAL OF THE OWNER WILL BE AT THE CONTRACTOR'S EXPENSE.
8. DITCH AND SHOULDER RECONDITIONING (FP-14, SEC. 303)
  - 8.1. THE CONTRACTOR SHALL PERFORM THIS WORK IN ACCORDANCE WITH FP-14, SEC. 303, INCLUDING, BUT NOT LIMITED TO:
    - 8.1.1. REMOVE SLIDE MATERIAL, SEDIMENT, VEGETATION AND OTHER DEBRIS FROM THE EXISTING DITCHES AND CULVERT INLETS & OUTLETS.
    - 8.1.2. RESHAPE DITCHES TO ACHIEVE POSITIVE DRAINAGE
  - 8.2. REMOVED SLIDE MATERIAL MAY BE PLACED ALONG THE BACK-SLOPE
9. FULL DEPTH RECLAMATION (FP-14, SEC. 304)
  - 9.1. THE CONTRACTOR SHALL PERFORM THIS WORK IN ACCORDANCE WITH FP-14, SEC. 304, INCLUDING BUT NOT LIMITED TO:
    - 9.1.1. PULVERIZE EXISTING PAVEMENT AND BASE IN PLACE.
    - 9.1.2. ADD AGGREGATE BASE COURSE IF DIRECTED BY THE OWNER.
    - 9.1.3. MOISTURE CONDITION, SHAPE AND COMPACT IN ACCORDANCE WITH METHOD 2 TO PRODUCE A ROAD BASE
10. ASPHALT CONCRETE PAVEMENT (FP-14, SEC. 401)
  - 10.1. THE CONTRACTOR SHALL PERFORM THIS WORK IN ACCORDANCE WITH FP-14, SEC. 401, INCLUDING BUT NOT LIMITED TO:
    - 10.1.1. DEVELOP AND SUBMIT A MIX DESIGN FOR REVIEW.
    - 10.1.2. CONSTRUCT (2) 2-INCH LIFTS ON A PREPARED BASE
11. ASPHALT PRIME COAT (FP-14, SEC. 411)
  - 11.1. THE CONTRACTOR SHALL PERFORM THIS WORK IN ACCORDANCE WITH FP-14, SEC. 411, INCLUDING BUT NOT LIMITED TO:
    - 11.1.1. APPLY EMULSIFIED ASPHALT PRIME COAT AT A RATE OF 0.10 TO 0.30 GAL/SY BETWEEN PREPARED BASE AND FIRST ASPHALT LIFT
12. CLEANING EXISTING DRAINAGE STRUCTURES IN PLACE (FP-14, SEC. 607)
  - 12.1. THE CONTRACTOR SHALL CLEAN THE EXISTING CULVERTS AS DESCRIBED IN FP-14, SEC 607.02.
  - 12.2. INCLUDE THE TWO EXISTING CULVERTS ON THE ALIGNMENT AS WELL AS THE TWO CULVERTS THAT CROSS N-3005, ONE NORTH OF, AND ONE SOUTH OF THE INTERSECTION WITH THE ALIGNMENT.
13. PERMANENT PAVEMENT MARKINGS (FP-14, SEC. 634) 4" PAINTED LINES.
  - 13.1. THE CONTRACTOR SHALL PROVIDE 4" PAINTED LINES AS SHOWN ON THE TYPICAL SECTIONS.
  - 13.2. THE CL STRIP SHALL BE DOUBLE 4" YELLOW LINES
  - 13.3. THE EDGE STRIPS SHALL A 4" WHITE LINE
  - 13.4. BREAK THE EDGE STRIPES AT DRIVEWAY ACCESS LOCATIONS.
  - 13.5. THE PAINTED LINES SHALL MEET CURRENT MUTCD SPECIFICATIONS.

OPTION B - SCOPE OF SERVICES:

OPTION B INCLUDES FULL DEPTH RECLAMATION AS DESCRIBED IN OPTION A FROM STA 1+00 TO STA 19+50.

THE REMAINDER OF THE PROJECT WOULD INCLUDE OVER-EXCAVATION WITH PLACEMENT OF GEOGRID FABRIC AND ENGINEERED FILL BELOW THE AGGREGATE BASE COURSE AND ASPHALT AS DESCRIBED IN THE GEOTECH REPORT (GEOMAT PROJECT NUMBER 182-2995 DATED JANUARY 11, 2022).

EXISTING CULVERTS SHALL BE LEFT IN PLACE AND PROTECTED DURING CONSTRUCTION.

OPTION B BID LIST CLARIFICATIONS:

1. MOBILIZATION (FP-14, SEC. 151)
  - 1.1. THE CONTRACTOR SHALL INCLUDE ANY AND ALL MISCELLANEOUS COSTS ASSOCIATED WITH COMPLETING THE OPTION B SCOPE OF SERVICES.
2. CONTRACTOR SAMPLING AND TESTING (FP-14, SEC. 154)
  - 2.1. IT IS ANTICIPATED THAT THE OWNER WILL RETAIN GEOMAT TO PERFORM QUALITY ASSURANCE TESTING.
  - 2.2. THE CONTRACTOR SHALL INCLUDE QUALITY CONTROL TESTING THAT MAY BE REQUIRED ABOVE AND BEYOND THE QUALITY ASSURANCE TESTING
3. TEMPORARY TRAFFIC CONTROL (FP-14, SEC. 156)
  - 3.1. THE CONTRACTOR SHALL DEVELOP, IMPLEMENT AND MAINTAIN A TEMPORARY TRAFFIC CONTROL PLAN THAT ALLOWS CONTINUOUS ACCESS TO THE AREA 3 FACILITIES AND POINTS BEYOND.
  - 3.2. ALL COSTS ASSOCIATED WITH DEVELOPING, IMPLEMENTING AND MAINTAINING THE TEMPORARY TRAFFIC CONTROL PLAN, EXCEPT THE COST FOR THE AGGREGATE BASE COURSE FOR THE TEMPORARY BY-PASS SHALL BE INCLUDED IN THE LUMP SUM BID AMOUNT.
  - 3.3. THE BASE COURSE USED TO CONSTRUCT THE TEMPORARY BY-PASS WILL BE PAID FOR UNDER SECTION 30103.
4. SOIL EROSION AND SEDIMENT CONTROL (FP-14, SEC. 157)
  - 4.1. THE CONTRACTOR SHALL PREPARE A SOIL EROSION CONTROL PLAN (SECP) AND A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND SHALL SUBMIT THEM TO THE OWNER FOR APPROVAL.
  - 4.2. ALL COSTS ASSOCIATED WITH DEVELOPING, IMPLEMENTING AND MAINTAINING THE SOIL EROSION AND SEDIMENT CONTROL PLAN SHALL BE INCLUDED IN THE LUMP SUM BID AMOUNT.
5. CLEARING AND GRUBBING (FP-14, SEC. 201)
  - 5.1. INCLUDES THE DITCHES AND UNPAVED SHOULDERS ONLY. THE EXISTING ROADWAY IN NOT INCLUDED IN THE CLEARING AND GRUBBING AREA.
6. REMOVAL OF OBSTRUCTIONS (FP-14, SEC. 203)
  - 6.1. THE CONTRACTOR SHALL REMOVE THE EXISTING CATTLE GUARD AT STA 41+90. ALL DEBRIS SHALL BE REMOVED FROM THE SITE AND LEGALLY DISPOSED OF BY THE CONTRACTOR.
  - 6.2. STA 19+50 TO 145+84: THE CONTRACTOR SHALL REMOVE AND PULVERIZE THE EXISTING ASPHALT AND MIX IT WITH THE EXISTING BASE. THE MIXTURE SHALL BE STOCKPILED FOR USE AS THE NEW BASE.
  - 6.3. STOCKPILE AREAS WILL BE PROVIDED AT SEVERAL LOCATIONS ALONG THE ALIGNMENT.
7. EXCAVATION AND EMBANKMENT (FP-14, SEC. 204)
  - 7.1. STA 19+50 TO 145+84: THE CONTRACTOR SHALL PERFORM THIS WORK IN ACCORDANCE WITH FP-14, SEC. 203 INCLUDING BUT NOT LIMITED TO:
    - 7.1.1. OVER-EXCAVATE TO THE DEPTH SHOWN ON THE OPTION B TYPICAL PAVING SECTIONS.
    - 7.1.2. PROCESS THE OVER-EXCAVATED MATERIAL AND PLACE OVER THE GEOGRID FABRIC AS ENGINEERED FILL AS SHOWN IN THE PAVING SECTION.
  - 7.2. IT IS ANTICIPATED THAT MOST OF THE OVER-EXCAVATED MATERIAL WILL BE SUITABLE FOR USE AS ENGINEERED FILL. IF AREAS OF UNSUITABLE MATERIAL ARE FOUND, THE UNSUITABLE MATERIAL SHALL BE REMOVED AND REPLACED AS DIRECTED BY THE OWNER.
8. EARTHWORK GEOSYNTHETICS (FP-14, SEC. 207)
  - 8.1. STA 19+50 TO 145+84: THE CONTRACTOR SHALL INSTALL A LAYER OF TENSAR TX-7 GEOGRID BENEATH THE ENGINEERED FILL IN ACCORDANCE WITH FP-14, SEC. 207
9. AGGREGATE BASE COURSE (FP-14, SEC. 301)
  - 9.1. STA 19+50 TO 145+84: MOST OF THE REQUIRED BASE COURSE WILL COME FROM THE STOCKPILE OF PULVERIZED EXISTING ASPHALT AND BASE AND WILL BE PAID FOR UNDER SEC. 203.02.
  - 9.2. PLACEMENT OF STOCKPILED BASE WILL BE PAID FOR UNDER 30101.
  - 9.3. ADDITIONAL IMPORT BASE COURSE MATERIAL MAY BE REQUESTED BY THE CO FOR USE IN STABILIZING TURN-OUTS OR FOR ROAD GRADE ADJUSTMENTS AND WILL BE PAID FOR UNDER 30102.
10. DITCH AND SHOULDER RECONDITIONING (FP-14, SEC. 303)
  - 10.1. THE CONTRACTOR SHALL PERFORM THIS WORK IN ACCORDANCE WITH FP-14, SEC. 303, INCLUDING, BUT NOT LIMITED TO:
    - 10.1.1. REMOVE SLIDE MATERIAL, SEDIMENT, VEGETATION AND OTHER DEBRIS FROM THE EXISTING DITCHES AND CULVERT INLETS & OUTLETS.
    - 10.1.2. RESHAPE DITCHES TO ACHIEVE POSITIVE DRAINAGE
  - 10.2. REMOVED SLIDE MATERIAL MAY BE PLACED ALONG THE BACK-SLOPE
11. FULL DEPTH RECLAMATION (FP-14, SEC. 304)
  - 11.1. STA 1+00 TO 19+50
  - 11.2. THE CONTRACTOR SHALL PERFORM THIS WORK IN ACCORDANCE WITH FP-14, SEC. 304, INCLUDING BUT NOT LIMITED TO:
    - 11.2.1. PULVERIZE EXISTING PAVEMENT AND BASE IN PLACE.
    - 11.2.2. ADD AGGREGATE BASE COURSE IF DIRECTED BY THE OWNER.
    - 11.2.3. MOISTURE CONDITION, SHAPE AND COMPACT IN ACCORDANCE WITH METHOD 2 TO PRODUCE A ROAD BASE
12. ASPHALT CONCRETE PAVEMENT (FP-14, SEC. 401)
  - 12.1. THE CONTRACTOR SHALL PERFORM THIS WORK IN ACCORDANCE WITH FP-14, SEC. 401, INCLUDING BUT NOT LIMITED TO:
    - 12.1.1. DEVELOP AND SUBMIT A MIX DESIGN FOR REVIEW.
    - 12.1.2. CONSTRUCT (2) 2-INCH LIFTS ON A PREPARED BASE
13. ASPHALT PRIME COAT (FP-14, SEC. 411)
  - 13.1. THE CONTRACTOR SHALL PERFORM THIS WORK IN ACCORDANCE WITH FP-14, SEC. 411, INCLUDING BUT NOT LIMITED TO:
    - 13.1.1. APPLY EMULSIFIED ASPHALT PRIME COAT AT A RATE OF 0.10 TO 0.30 GAL/SY BETWEEN PREPARED BASE AND FIRST ASPHALT LIFT
14. CLEANING EXISTING DRAINAGE STRUCTURES IN PLACE (FP-14, SEC. 607)
  - 14.1. THE CONTRACTOR SHALL CLEAN THE EXISTING CULVERTS AS DESCRIBED IN FP-14, SEC 607.02.
  - 14.2. INCLUDE THE TWO EXISTING CULVERTS ON THE ALIGNMENT AS WELL AS THE TWO CULVERTS THAT CROSS N-3005, ONE NORTH OF, AND ONE SOUTH OF THE INTERSECTION WITH THE ALIGNMENT.
15. PERMANENT PAVEMENT MARKINGS (FP-14, SEC. 634) 4" PAINTED LINES.
  - 15.1. THE CONTRACTOR SHALL PROVIDE 4" PAINTED LINES AS SHOWN ON THE TYPICAL SECTIONS.
  - 15.2. THE CL STRIP SHALL BE DOUBLE 4" YELLOW LINES
  - 15.3. THE EDGE STRIPS SHALL A 4" WHITE LINE
  - 15.4. BREAK THE EDGE STRIPES AT DRIVEWAY ACCESS LOCATIONS.
  - 15.5. THE PAINTED LINES SHALL MEET CURRENT MUTCD SPECIFICATIONS.

ADD-ALTERNATES:

ANY ONE OR ALL OF THESE ADD-ALTERNATES MAY BE ADDED TO EITHER BASE BID OPTION A OR B.

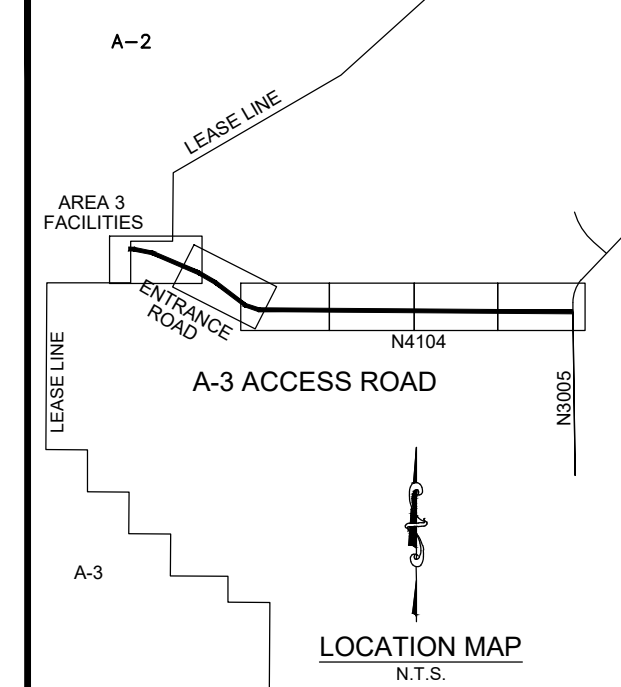
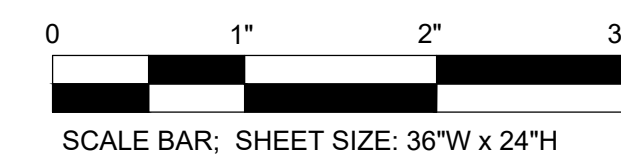
ADD-ALTERNATE PRICING SHALL INCLUDE ALL COSTS ASSOCIATED WITH PERFORMING THE DESCRIBED WORK.

1. DRAINAGE IMPROVEMENTS:
  - 1.1. EXCAVATE DITCHES TO THE GRADES AND SECTIONS SHOWN ON THE PLANS. DISPOSE OF THE EXCAVATED MATERIAL AT A LOCATION TO BE DESIGNATED BY THE OWNER. (FOR THIS BUDGET ESTIMATE ASSUME THAT THE LOCATION WILL BE IN THE STAGING AREA SHOWN ON SHEET 1.)
  - 1.2. PROVIDE CULVERTS AND END SECTIONS AS SHOWN ON THE PLANS. INCLUDE ALL COSTS ASSOCIATED WITH PROVIDING CULVERTS AS SHOWN, INCLUDING REMOVAL IF TWO EXISTING CULVERT, STAKING, EXCAVATION, PLACEMENT, BACKFILL, ETC.
  - 1.3. INSTALL A TYPE C OBJECT MARKER FACING TRAFFIC AT EACH END OF EACH CULVERT
2. SIDE-SLOPE IMPROVEMENTS:
  - 2.1. PLACE FILL MATERIAL ALONG THE EXISTING FILL AREAS AS SHOWN ON THE PLANS. IMPORT MATERIAL, IF NEEDED WILL BE PROVIDED BY NTEC. (FOR THIS BUDGET ESTIMATE ASSUME SOURCE OF THE MATERIAL WILL BE IN THE STAGING AREA SHOWN ON SHEET 1.)
3. GUARD RAIL IMPROVEMENTS:
  - 3.1. REPLACE DAMAGED GUARD RAIL POSTS AND BLOCKS AS NEEDED.
    - 3.1.1. THE OWNER WILL IDENTIFY THE BLOCKS AND POSTS TO BE REPLACED.
    - 3.1.2. INCLUDE NEW HARDWARE WITH EACH PIECE.
  - 3.2. MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH FP-14, SEC. 617
4. GUARD RAIL END-CAP REPLACEMENT
  - 4.1. REPLACE THE EXISTING END-CAPS WITH G4 W-BEAM GUARD RAIL TYPE TANGENT TERMINAL END SECTIONS.
  - 4.2. INCLUDE REMOVAL AND DISPOSAL IF THE EXISTING END CAPS.
5. SIGNAGE:
  - 5.1. PROVIDE NEW SIGNS AS SHOWN ON THE PLANS. INCLUDE REMOVAL AND DISPOSAL OF SIGNS THAT ARE NO LONGER RELEVANT AS DIRECTED BY THE CO.
6. ALTERNATE DEDUCT:
  - 6.1. DEDUCT IF BOTH ADD-ALTERNATES 1 AND 2 ARE SELECTED AND THE EXCAVATED MATERIAL FROM ADD-ALTERNATE 1 CAN BE DIRECTLY PLACED AS THE FILL MATERIAL FOR ADD-ALTERNATE 2 RESULTING IN NO NEED TO STOCKPILE THE MATERIAL.

| ADD-ALTERNATE 1: DRAINAGE IMPROVEMENTS |        |       |                            |                   |
|--|--------|-------|----------------------------|-------------------|
| DITCH CONSTRUCTION                     |        |       |                            | CUT VOLUME (C.Y.) |
| FROM STA                               | TO STA | SIDE  | DESCRIPTION                |                   |
| 1+00                                   | 10+50  | RIGHT | CONSTRUCT DITCH            | 246               |
| 20+00                                  | 35+00  | RIGHT | CONSTRUCT DITCH            | 354               |
| (41+00)                                | 106+50 | RIGHT | CONSTRUCT DITCH            | 3350              |
| 48+00                                  |        | LEFT  | EXTEND DITCH TO DAYLIGHT   | 20                |
| 52+00                                  |        | LEFT  | EXTEND DITCH TO DAYLIGHT   | 20                |
| 67+50                                  |        | LEFT  | EXTEND DITCH TO DAYLIGHT   | 30                |
| 73+43                                  |        | LEFT  | EXTEND DITCH TO DAYLIGHT   | 30                |
| 88+64                                  |        | LEFT  | EXTEND DITCH TO DAYLIGHT   | 50                |
| 125+50                                 | 131+50 | RIGHT | CONSTRUCT DITCH            | 132               |
| TOTAL                                  |        |       |                            | 4232              |
| CULVERT CONSTRUCTION                   |        |       |                            | LENGTH            |
| STA                                    | SIZE   | MAT'L | DESCRIPTION                |                   |
| 48+00                                  | 24"    | CMP   | CONSTRUCT CULVERT          | 50                |
| 52+00                                  | 24"    | CMP   | CONSTRUCT CULVERT          | 50                |
| 56+75                                  | 24"    | CMP   | CONSTRUCT DRIVEWAY CULVERT | 52                |
| 59+70                                  | 24"    | CMP   | CONSTRUCT CULVERT          | 86                |
| 67+50                                  | 24"    | CMP   | CONSTRUCT CULVERT          | 58                |
| 73+43                                  | 24"    | CMP   | CONSTRUCT CULVERT          | 58                |
| 88+64                                  | 24"    | CMP   | CONSTRUCT CULVERT          | 62                |
| 130+70                                 | 24"    | CMP   | CONSTRUCT CULVERT          | 54                |
| TOTAL                                  |        |       |                            | 470               |

| ADD-ALTERNATE 2: SIDE-SLOPE IMPROVEMENTS |        |       |                                    |                   |
|--|--------|-------|------------------------------------|-------------------|
| LOCATION                                 |        |       |                                    | CUT VOLUME (C.Y.) |
| FROM STA                                 | TO STA | SIDE  | DESCRIPTION                        |                   |
| 10+50                                    | 19+50  | RIGHT | ADD MAT'L TO OUTSIDE OF EMBANKMENT | 2126              |
| 10+50                                    | 19+50  | LEFT  | ADD MAT'L TO OUTSIDE OF EMBANKMENT | 1450              |
| 35+00                                    | 42+00  | RIGHT | ADD MAT'L TO OUTSIDE OF EMBANKMENT | 366               |
| 35+00                                    | 42+00  | LEFT  | ADD MAT'L TO OUTSIDE OF EMBANKMENT | 480               |
| TOTAL                                    |        |       |                                    | 4422              |

| ADD-ALTERNATE 5: SIGNAGE |       |        |                     |        |
|--------------------------|-------|--------|---------------------|--------|
| STA                      | SIDE  | FACING | DESCRIPTION         | SIZE   |
| 38+50                    | RIGHT |        | CURVE LEFT          | 30x30  |
| 48+00                    | RIGHT |        | SPEED LIMIT 55      | 24x30  |
| 48+00                    | LEFT  |        | SPEED LIMIT 35      | 24x30  |
| 50+00                    | LEFT  |        | CURVE RIGHT         | 30x30  |
| 52+00                    | LEFT  |        | REDUCED SPEED AHEAD | 30x30  |
| 142+00                   | LEFT  |        | SPEED LIMIT 55      | 24x30  |
| 145+50                   | RIGHT |        | STOP                | 30x30  |
| TOTAL                    |       |        |                     | 7 EACH |



3/21/2022  
75% DRAWINGS  
FOR BUDGET PRICING  
NOT FOR CONSTRUCTION

**GEOMAT** INC.  
1915 MALTA AVE. • FARMINGTON, NM 87401 • 505-327-7928

| NO. | DATE | DESCRIPTION |
|-----|------|-------------|
|     |      |             |

**EXHIBIT XX**

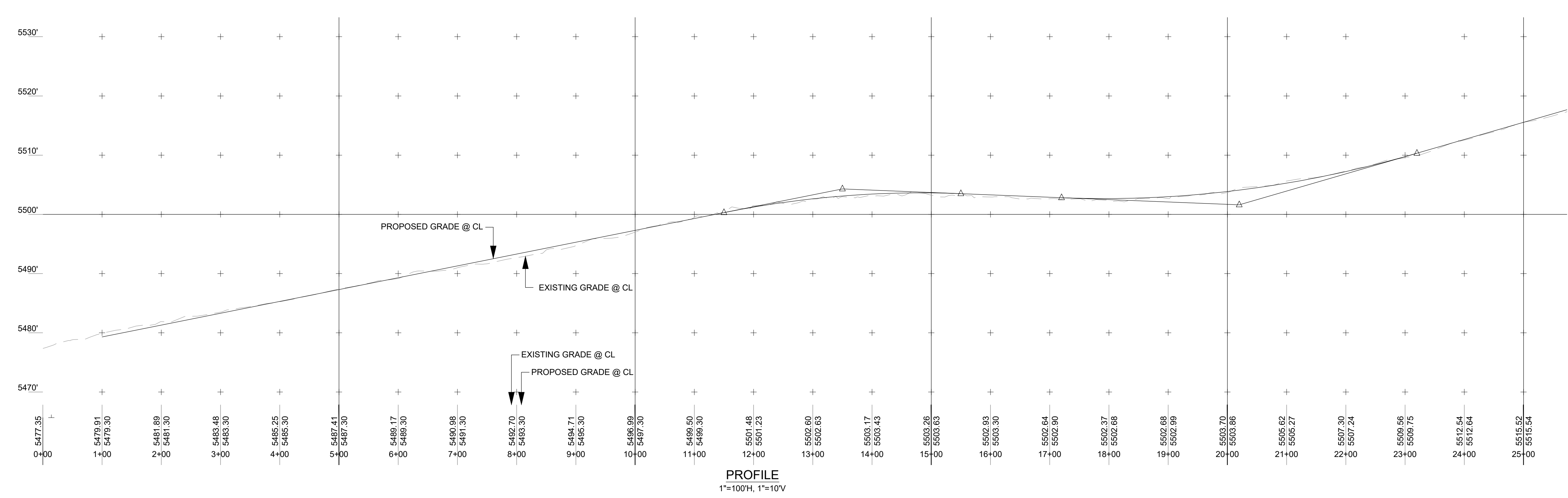
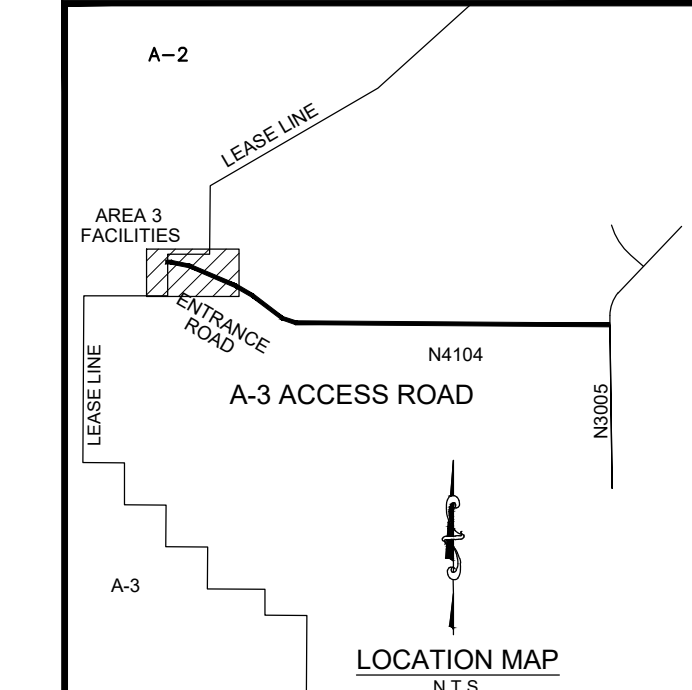
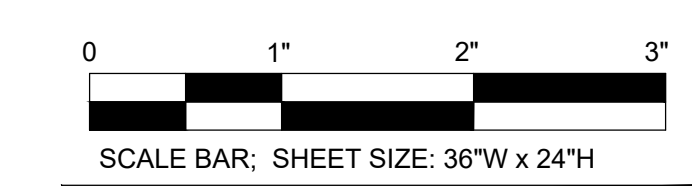
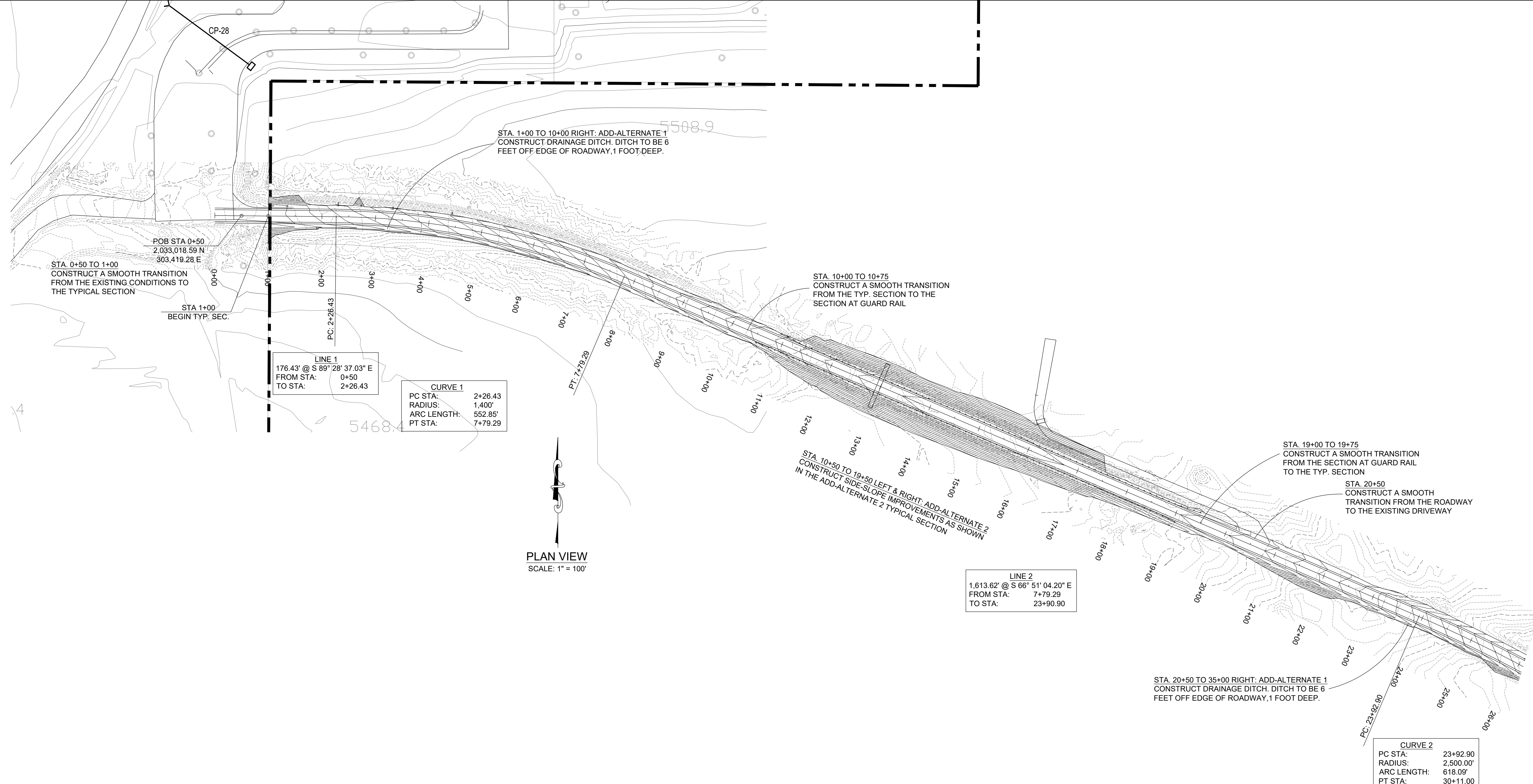
**Navajo Mine**

AREA 3 ACCESS ROAD IMPROVEMENTS

SCOPE, QUANTITIES AND TABLES

|                                      |               |                 |
|--------------------------------------|---------------|-----------------|
| Prepared By: GEOMAT                  | Drawn By: PAR | Scale: AS NOTED |
| Approved By:                         | Date:         | Sheet:          |
| GEOMAT Project No. 222-3029-B        |               | <b>3</b>        |
| Drawing: A3 ACCESS RD 2022-03-21.dwg |               |                 |



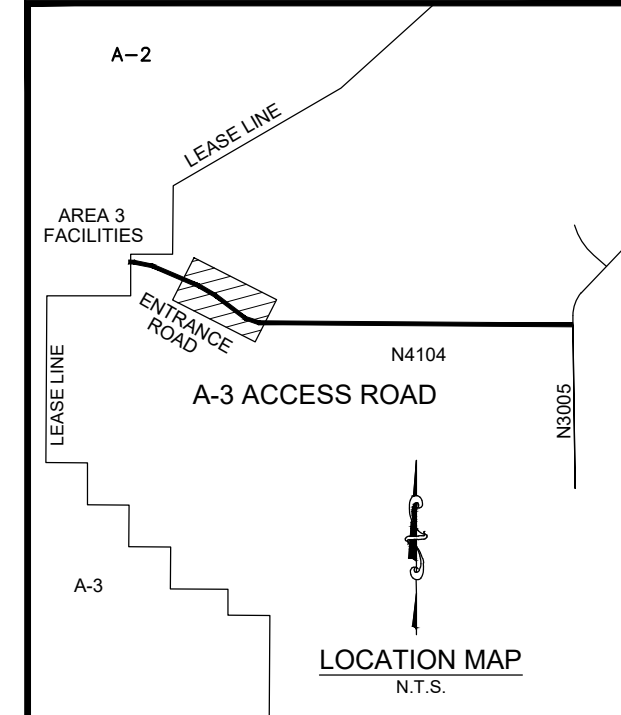
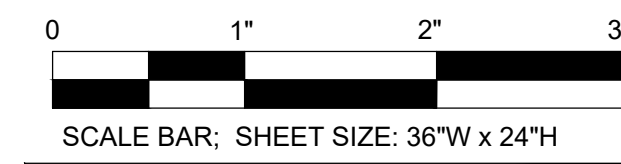
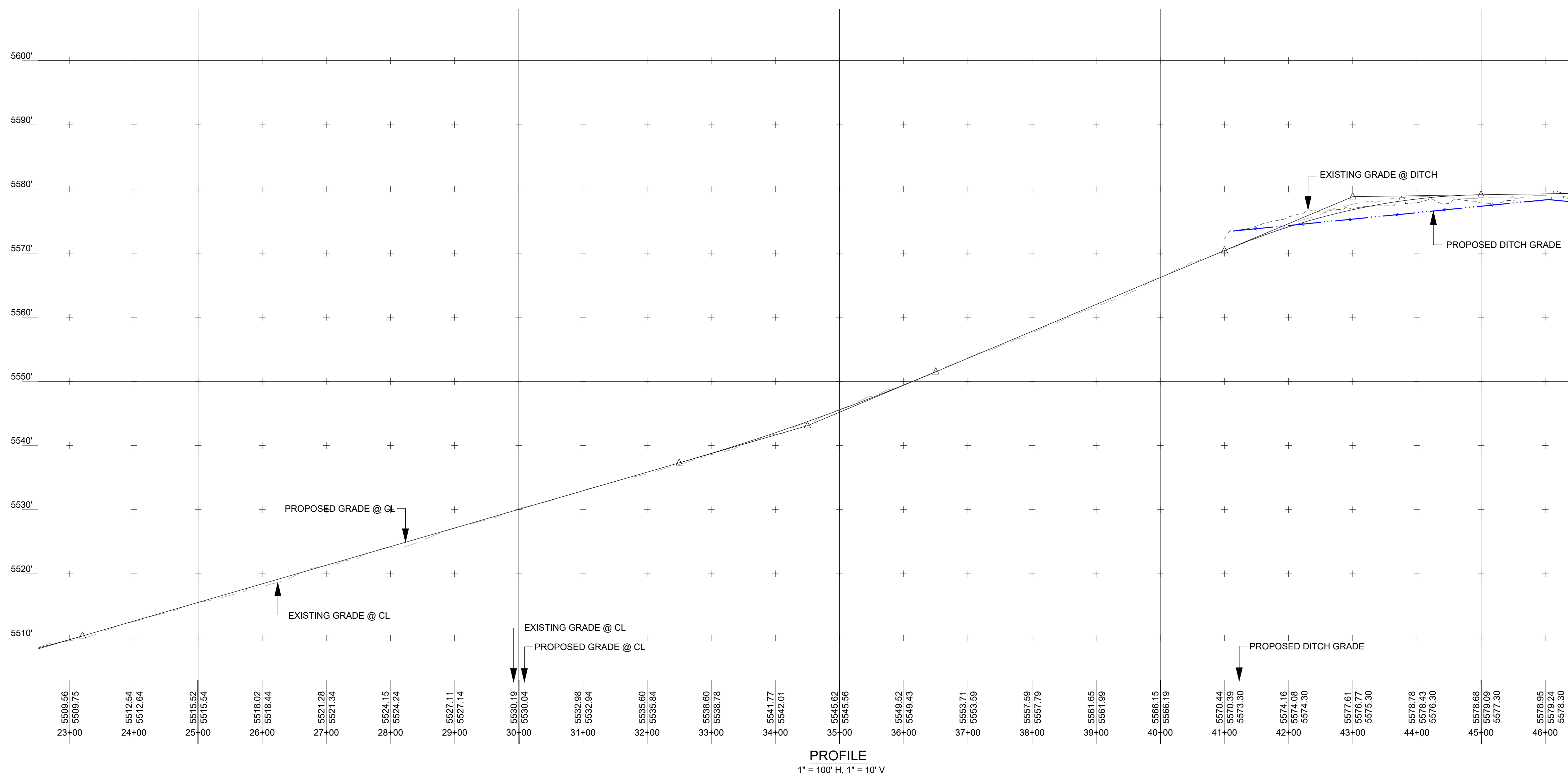
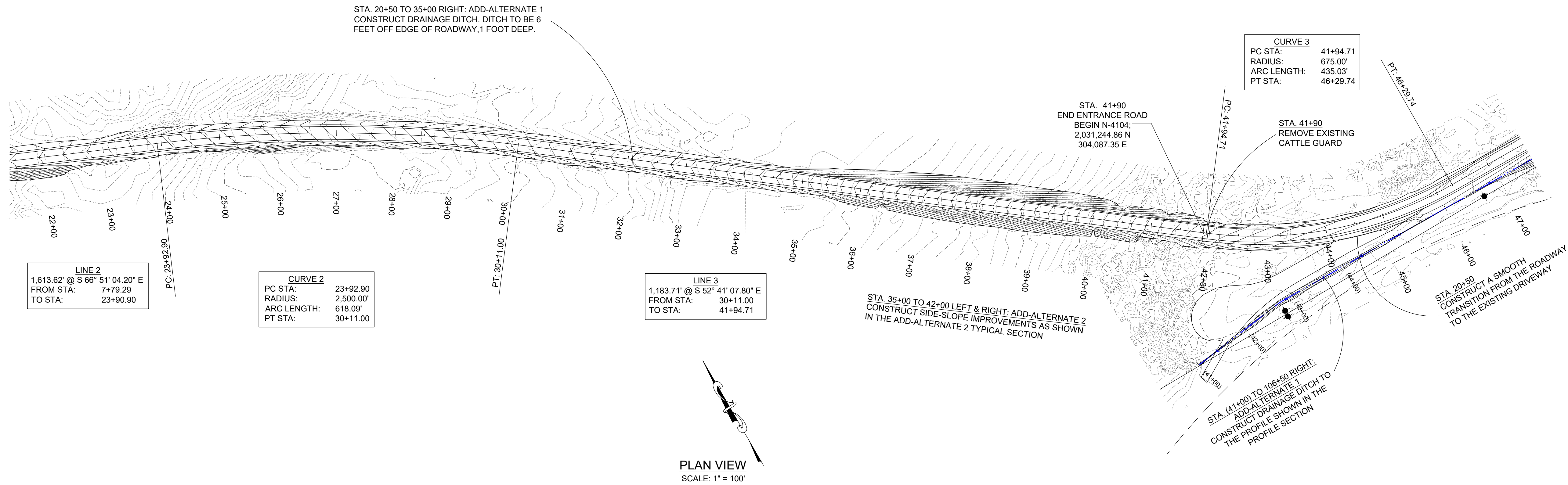


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1515 WALTA AVE. • FARMINGTON, NM 87401 • 505-327-7928

| NO.  | DATE          | DESCRIPTION     |
|--|---------------|-----------------|
| EXHIBIT XX   |               |                 |
|  |               |                 |
| <b>Navajo Mine</b><br>AREA 3 ACCESS ROAD IMPROVEMENTS<br>PLAN & PROFILE<br>STA 0+00 TO 25+00 |               |                 |
| Prepared By: GEOMAT  | Drawn By: PAR | Scale: AS NOTED |
| Approved By:   | Date:         | Sheet:          |
| GEOMAT Project No. 222-3029-B  |               | 4               |
| Drawing: A3 ACCESS RD 2022-03-21.dwg   |               |                 |





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| NO. | DATE | DESCRIPTION |
|-----|------|-------------|
|     |      |             |

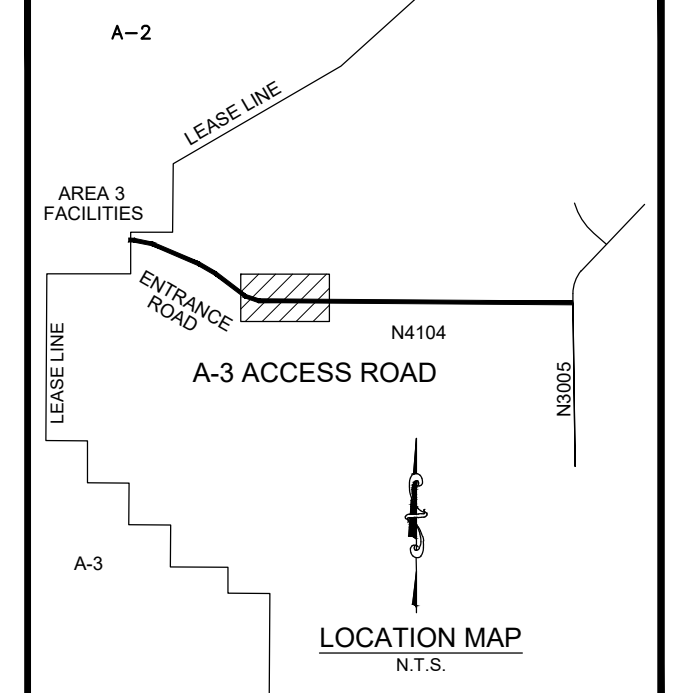
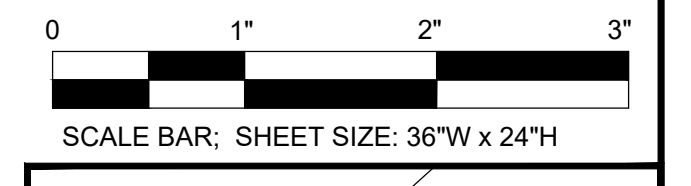
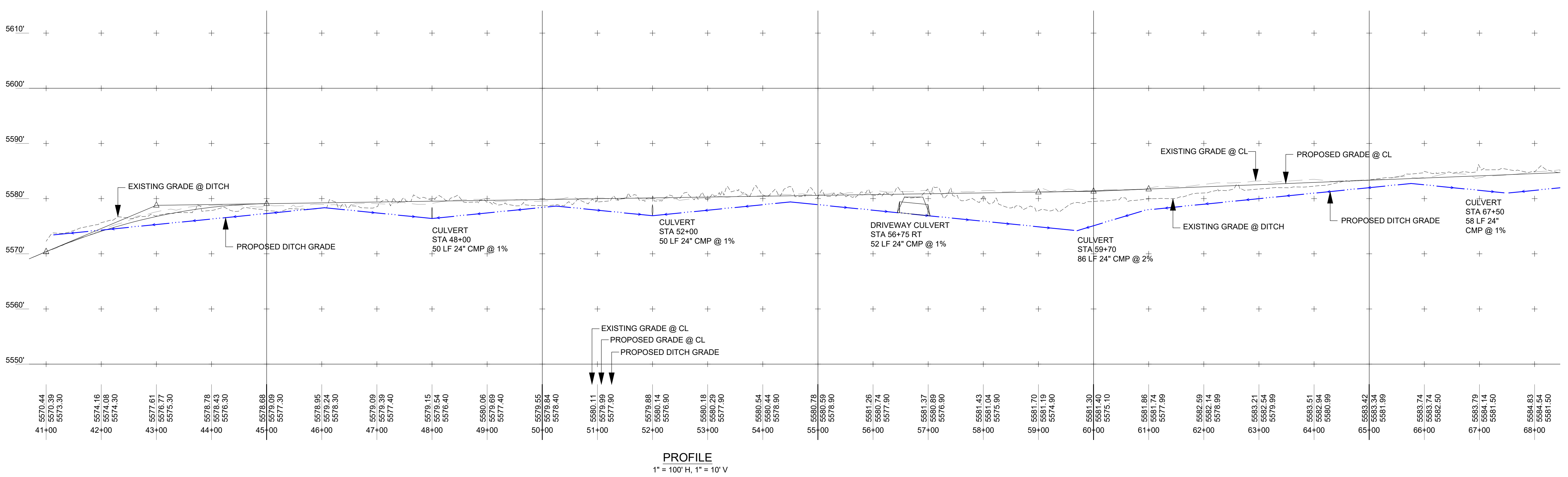
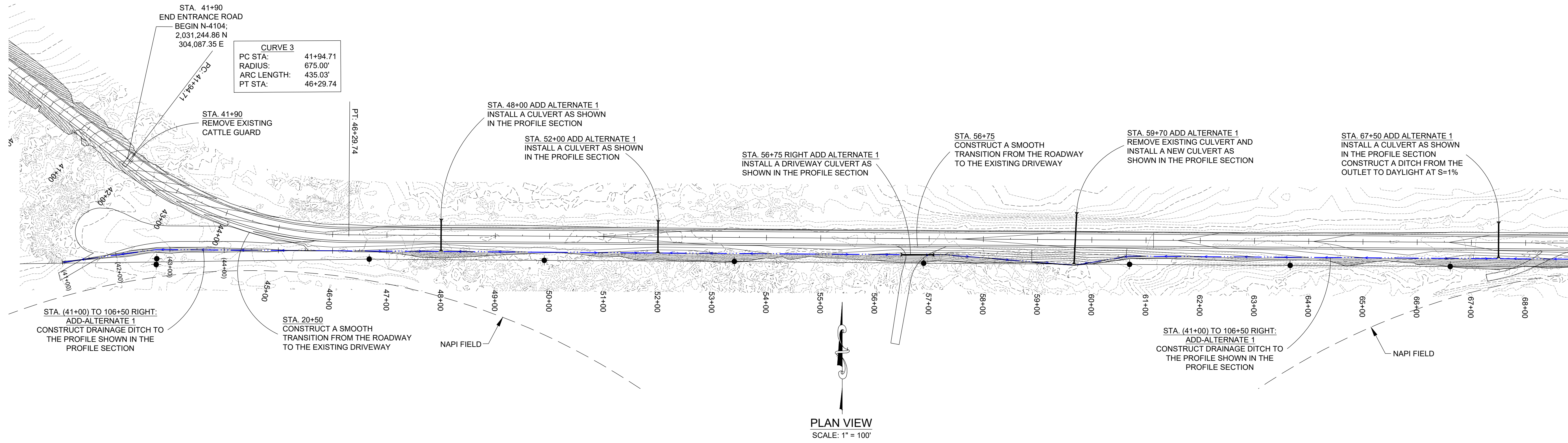


Navajo Mine  
AREA 3 ACCESS ROAD IMPROVEMENTS

PLAN & PROFILE  
STA 25+00 TO 41+90

|                                      |               |                 |
|--------------------------------------|---------------|-----------------|
| Prepared By: GEOMAT                  | Drawn By: PAR | Scale: AS NOTED |
| Approved By:                         | Date:         | Sheet: 5        |
| GEOMAT Project No. 222-3029-B        |               |                 |
| Drawing: A3 ACCESS RD 2022-03-21.dwg |               |                 |





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| NO. | DATE | DESCRIPTION |
|-----|------|-------------|
|     |      |             |

**EXHIBIT XX**

**Navajo Transitional Energy Company**

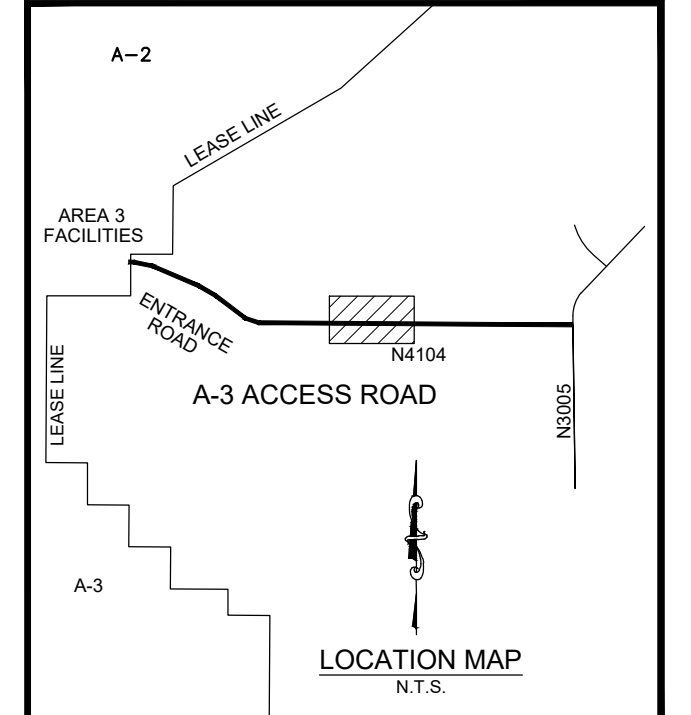
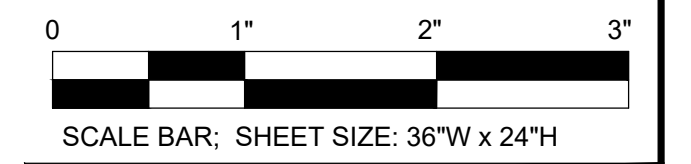
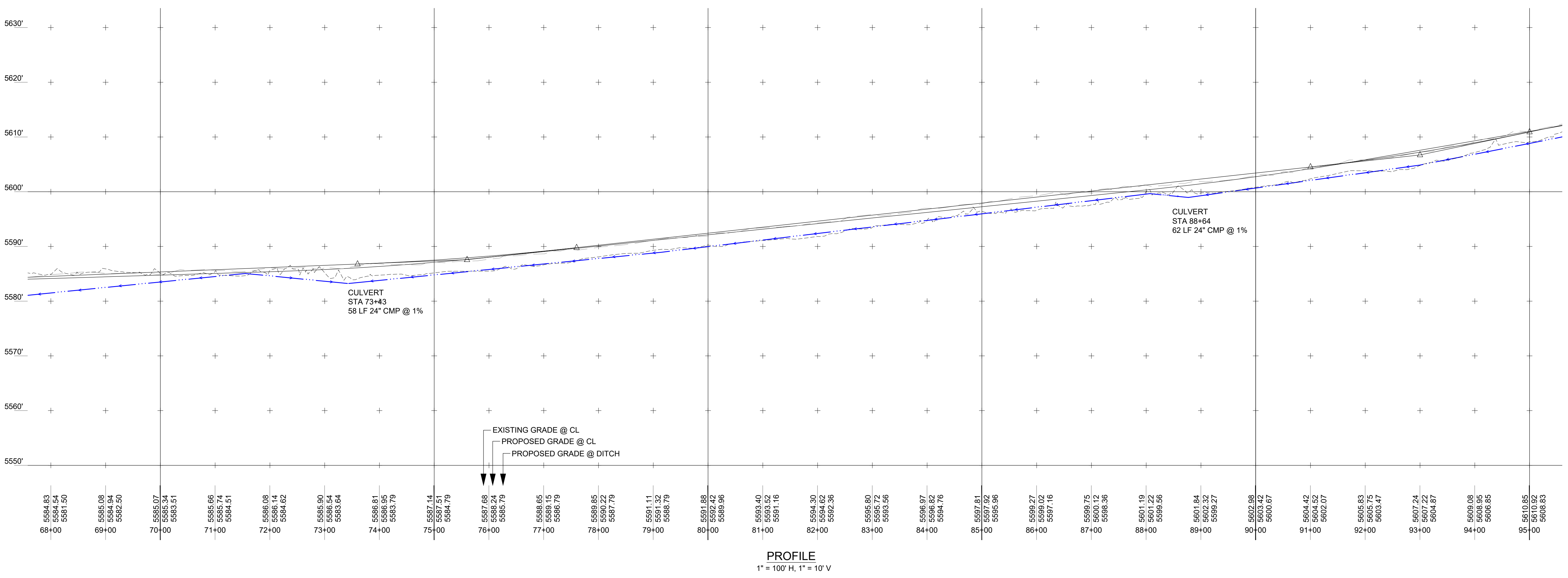
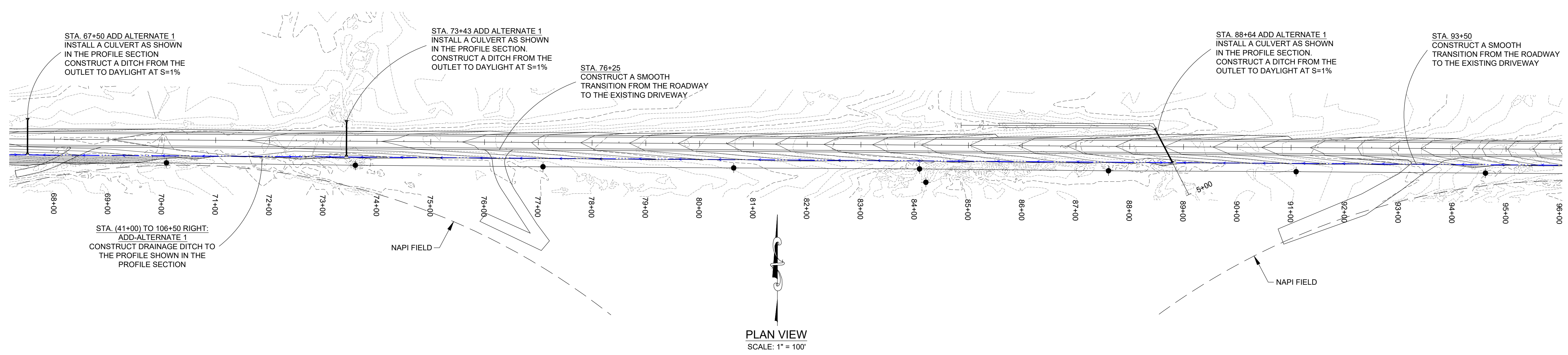
**Navajo Mine**

**AREA 3 ACCESS ROAD IMPROVEMENTS**

**PLAN & PROFILE**  
STA 41+90 TO 68+00

|                                      |               |                 |
|--------------------------------------|---------------|-----------------|
| Prepared By: GEOMAT                  | Drawn By: PAR | Scale: AS NOTED |
| Approved By:                         | Date:         | Sheet: <b>6</b> |
| GEOMAT Project No. 222-3029-B        |               |                 |
| Drawing: A3 ACCESS RD 2022-03-21.dwg |               |                 |





3/21/2022  
75% DRAWINGS  
FOR BUDGET PRICING  
NOT FOR CONSTRUCTION

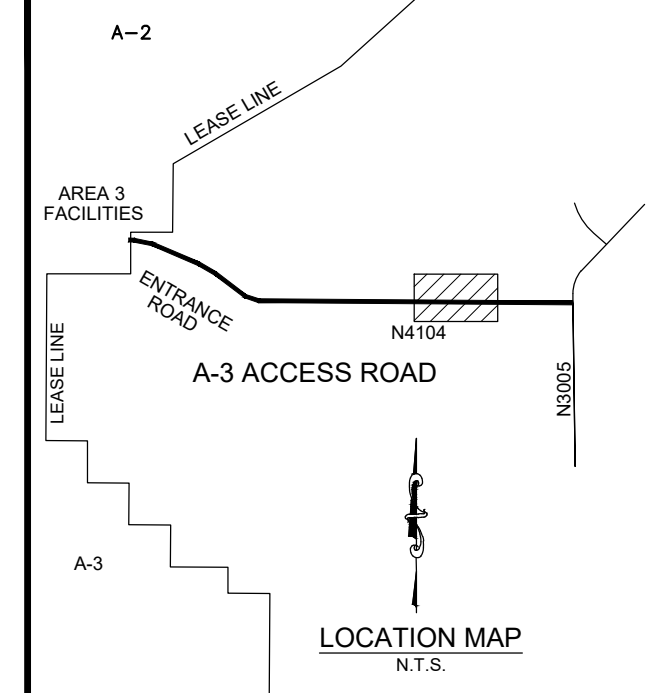
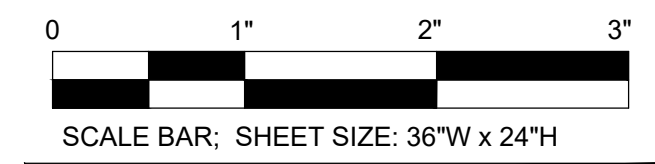
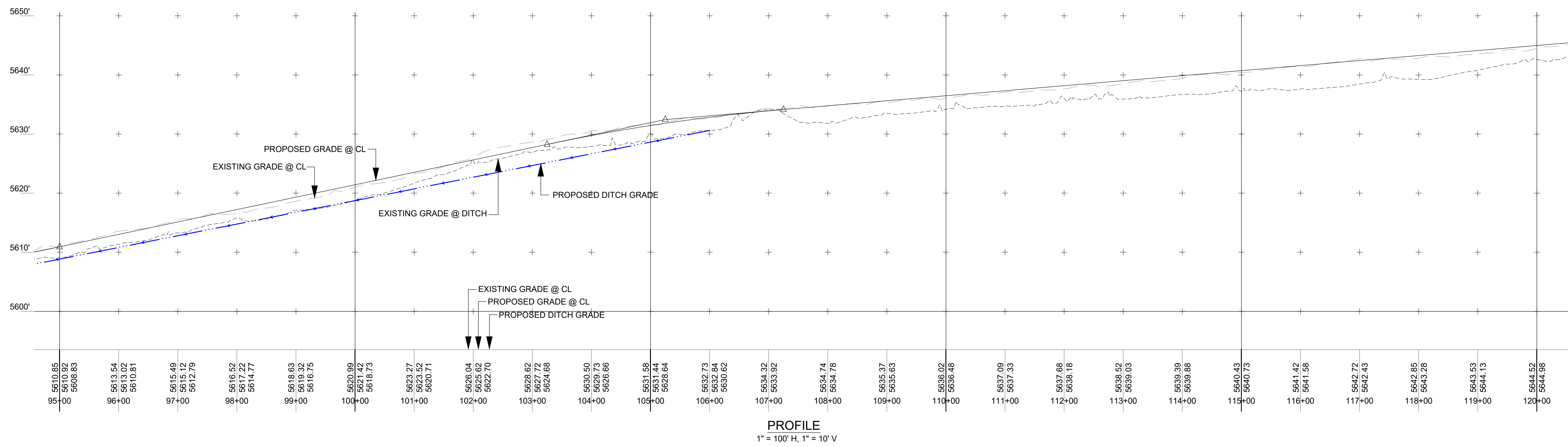
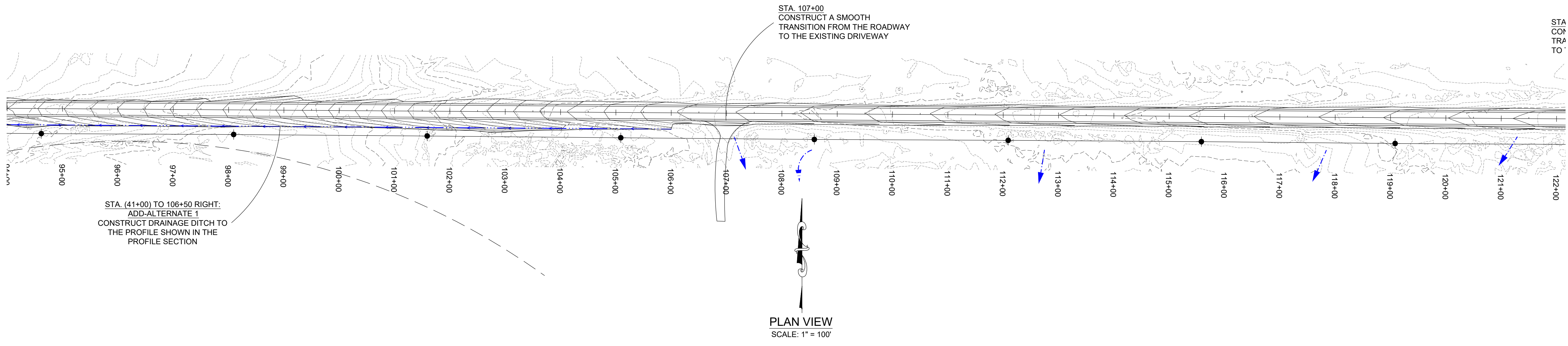
**GEOMAT** INC.  
1515 MALTA AVE. FARMINGTON, NM 87401 505-327-7928

| NO. | DATE | DESCRIPTION |
|-----|------|-------------|
|     |      |             |



**Navajo Mine**  
AREA 3 ACCESS ROAD IMPROVEMENTS  
PLAN & PROFILE  
STA 68+00 TO 95+00

|                                      |               |                 |
|--------------------------------------|---------------|-----------------|
| Prepared By: GEOMAT                  | Drawn By: PAR | Scale: AS NOTED |
| Approved By:                         | Date:         | Sheet: 7        |
| GEOMAT Project No. 222-3029-B        |               |                 |
| Drawing: A3 ACCESS RD 2022-03-21.dwg |               |                 |



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75% DRAWINGS  
FOR BUDGET PRICING  
NOT FOR CONSTRUCTION

**GEOMAT** INC.  
1515 MALTA AVE. • FARMINGTON, NM 87401 • 505-327-7928

| NO. | DATE | DESCRIPTION |
|-----|------|-------------|
|     |      |             |

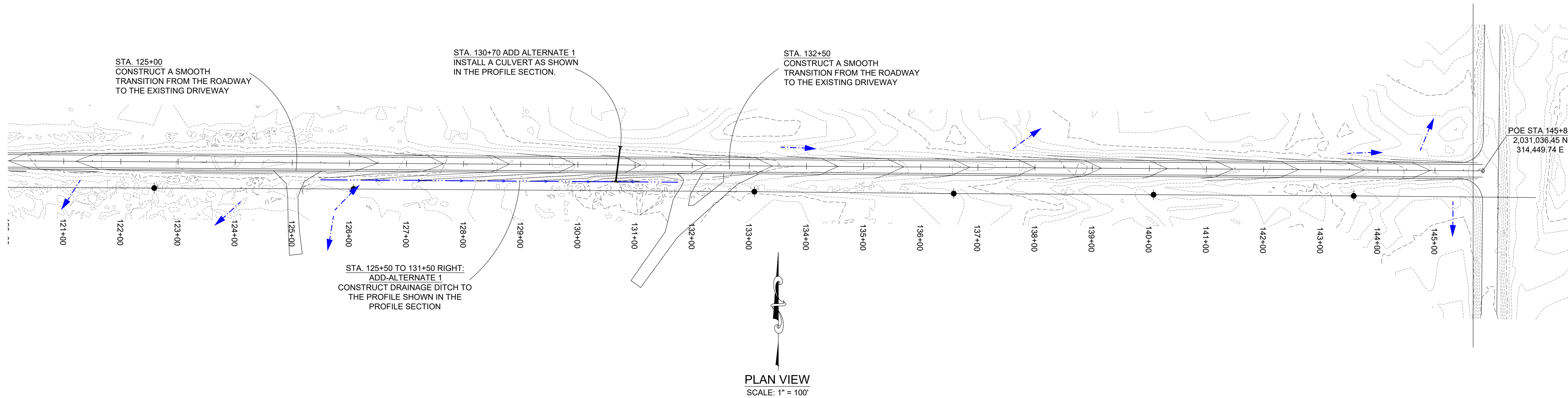


**Navajo Mine**  
AREA 3 ACCESS ROAD IMPROVEMENTS

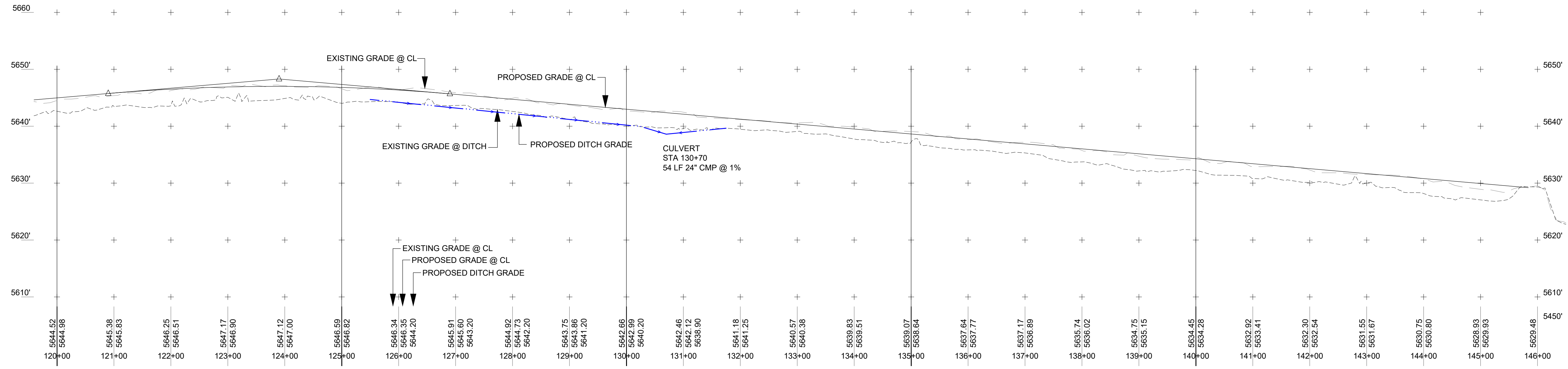
PLAN & PROFILE  
STA 95+00 TO 120+00

|                                      |               |                 |
|--------------------------------------|---------------|-----------------|
| Prepared By: GEOMAT                  | Drawn By: PAR | Scale: AS NOTED |
| Approved By:                         | Date:         | Sheet: 8        |
| GEOMAT Project No. 222-3029-B        |               |                 |
| Drawing: A3 ACCESS RD 2022-03-21.dwg |               |                 |

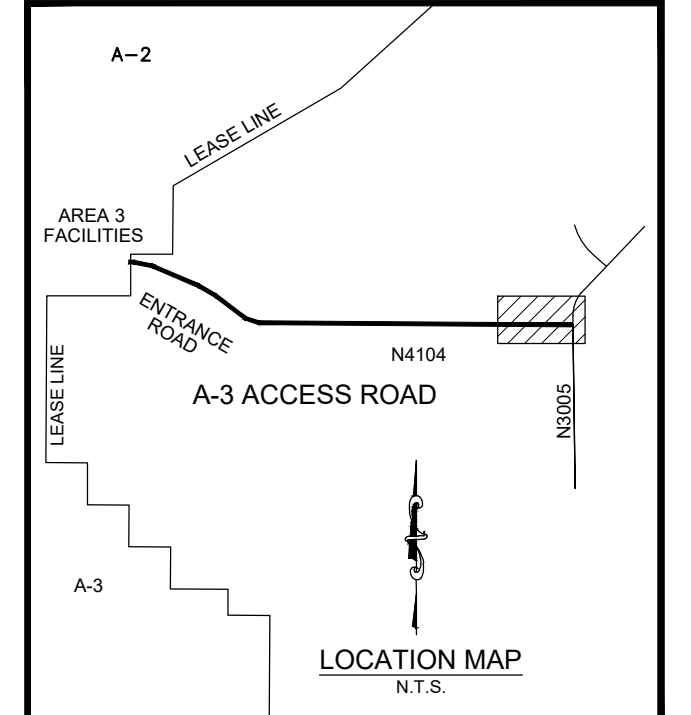
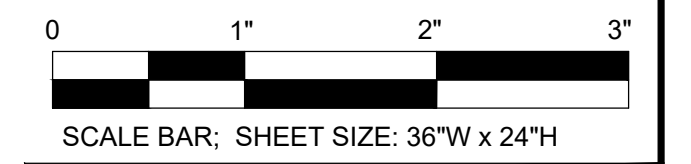




PLAN VIEW  
SCALE: 1" = 100'



PROFILE  
1" = 100' H, 1" = 10' V



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**GEOMAT** INC.  
915 MALTA AVE. • FARMINGTON, NM 87401 • 505-327-7928

| NO. | DATE | DESCRIPTION |
|-----|------|-------------|
|     |      |             |

EXHIBIT XX



Navajo Mine

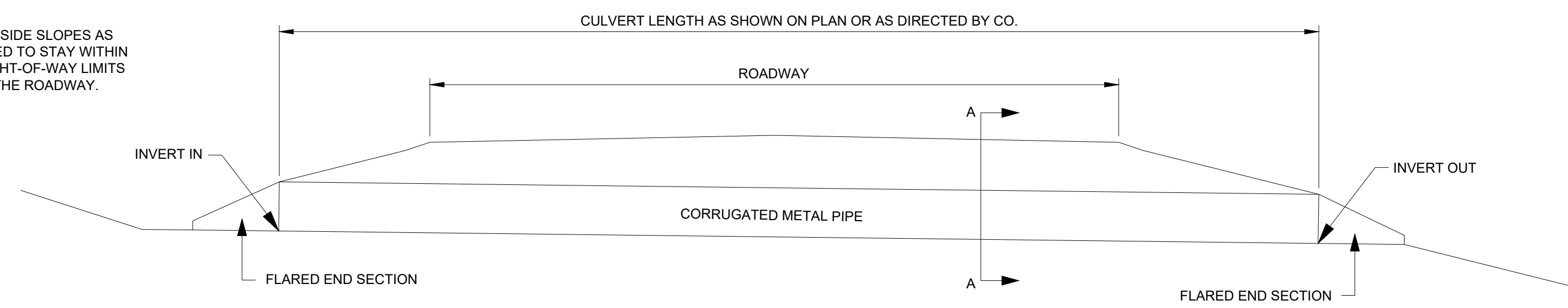
AREA 3 ACCESS ROAD IMPROVEMENTS

PLAN & PROFILE  
STA 120+00 TO 146+00

|                                       |               |                 |
|---------------------------------------|---------------|-----------------|
| Prepared By: GEOMAT                   | Drawn By: PAR | Scale: AS NOTED |
| Approved By:                          | Date:         | Sheet: 9        |
| GEOMAT Project No. 222-3029-B         |               |                 |
| Drawing: A-3 ACCESS RD 2022-03-21.dwg |               |                 |



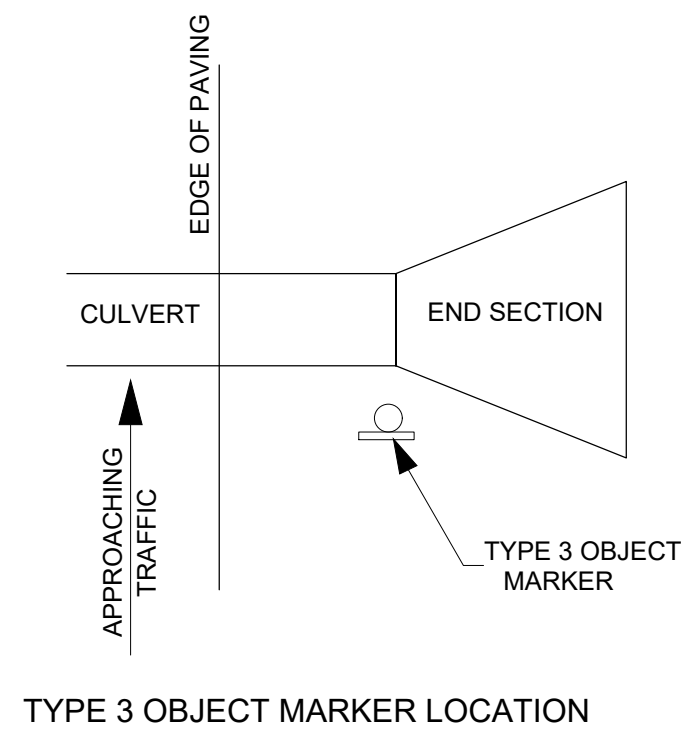
WARP SIDE SLOPES AS REQUIRED TO STAY WITHIN THE RIGHT-OF-WAY LIMITS OF THE ROADWAY.



**CULVERT NOTES:**

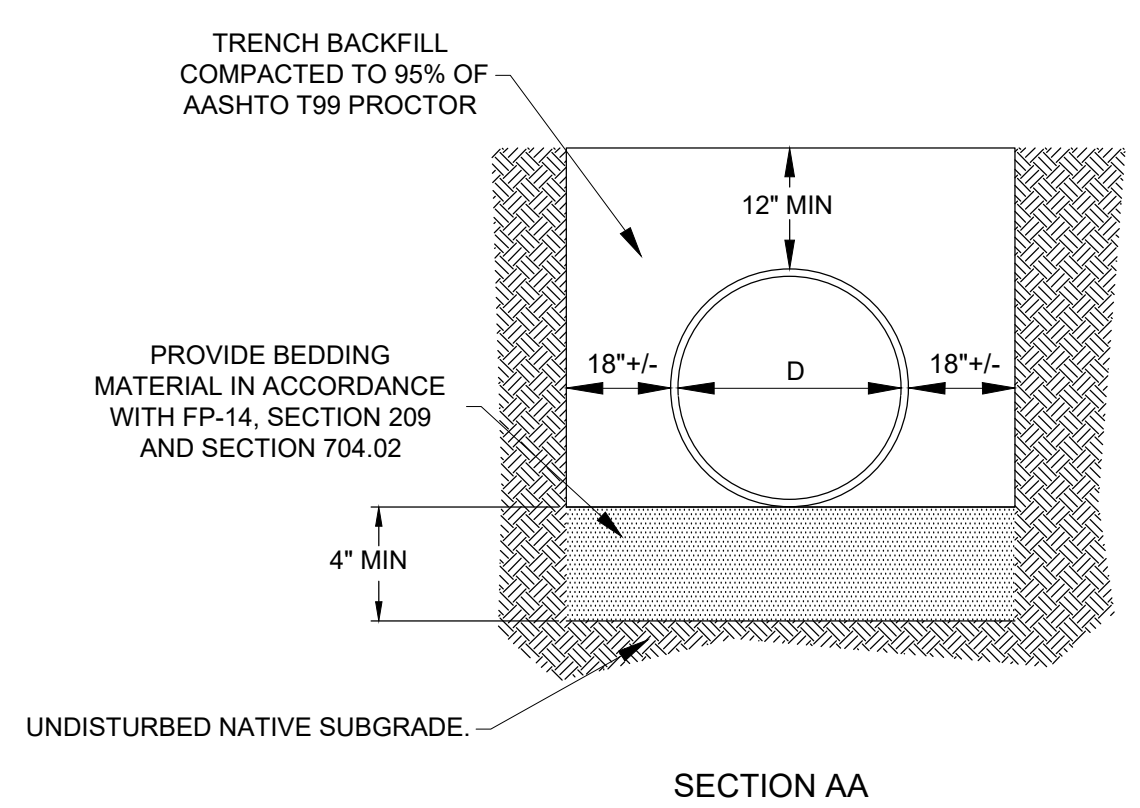
1. CULVERTS SHALL BE CORRUGATED METAL PIPE (CMP), INSTALLED IN ACCORDANCE WITH FP-14, SECTION 602.
2. CULVERTS SHALL BE INSTALLED AT THE LOCATIONS AND ELEVATIONS SHOWN ON THE PLAN AND IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. IF PLAN LOCATIONS OR ELEVATIONS DO NOT MATCH FIELD CONDITIONS, ADJUSTMENTS MAY BE MADE IN ACCORDANCE WITH FP-14, SECTION 152.
3. ALL DRAINAGE STRUCTURES SHALL BE STAKED AND GRADED TO DRAIN TO THE CONSTRUCTION LIMITS.
4. ALL CULVERTS ARE TO INCLUDE FLARED END SECTIONS AT BOTH ENDS.
5. ALL PIPES, BANDS AND END SECTIONS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND AS DIRECTED BY THE CO.
6. SHAPE AND GRADE DRAINAGE CHANNELS AS NECESSARY TO PROVIDE A SMOOTH CONNECTION BETWEEN CULVERT AND EXISTING FEATURES.
7. COST OF EXCAVATION, BEDDING, BACKFILL, ETC. SHALL BE CONSIDERED INCIDENTAL TO CULVERT INSTALLATION.
8. INSTALL A TYPE "C" OBJECT MARKER FACING TRAFFIC JUST BEFORE EACH END OF EACH CULVERT. OBJECT MARKERS WILL BE PAID UNDER ITEM 63304

TYP. PROFILE



**PIPE CULVERT INSTALLATION**  
N.T.S.

| CULVERT CONSTRUCTION |      |       |                            |        |
|----------------------|------|-------|----------------------------|--------|
| STA                  | SIZE | MAT'L |                            | LENGTH |
| 48+00                | 24"  | CMP   | CONSTRUCT CULVERT          | 50     |
| 52+00                | 24"  | CMP   | CONSTRUCT CULVERT          | 50     |
| 56+75                | 24"  | CMP   | CONSTRUCT DRIVEWAY CULVERT | 52     |
| 59+70                | 24"  | CMP   | CONSTRUCT CULVERT          | 86     |
| 67+50                | 24"  | CMP   | CONSTRUCT CULVERT          | 58     |
| 73+43                | 24"  | CMP   | CONSTRUCT CULVERT          | 58     |
| 88+64                | 24"  | CMP   | CONSTRUCT CULVERT          | 62     |
| 130+70               | 24"  | CMP   | CONSTRUCT CULVERT          | 54     |
| TOTAL                |      |       |                            | 470    |



3/21/2022  
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**GEOMAT** INC.  
1515 MALTA AVE. • FARMINGTON, NM 87401 • 505-327-7928

NO. DATE DESCRIPTION

EXHIBIT XX



Navajo Mine

AREA 3 ACCESS ROAD IMPROVEMENTS

CULVERT DETAILS

Prepared By: GEOMAT Drawn By: PAR Scale: 1" = 10'  
 Approved By: Date: Sheet: 10  
 GEOMAT Project No. 222-3029-B  
 Drawing: A3 ACCESS RD 2022-03-21.dwg



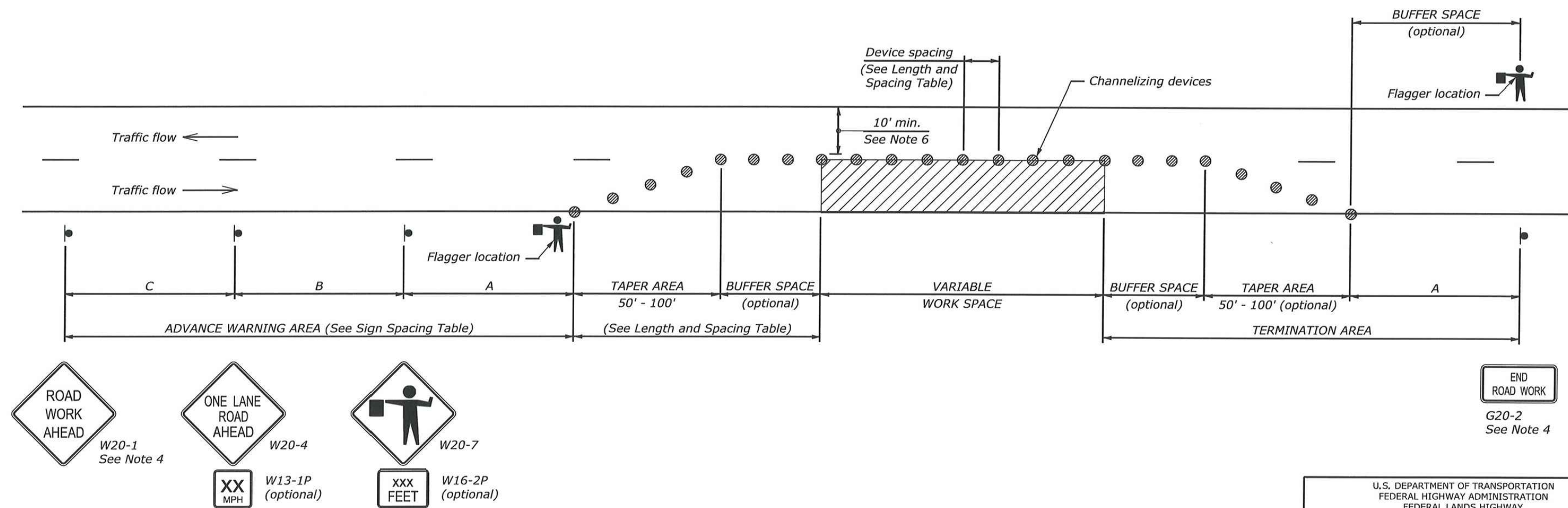
| APPROACH SPEED* | BUFFER SPACE LENGTH | CHANNELIZING DEVICE |              |            |
|-----------------|---------------------|---------------------|--------------|------------|
|                 |                     | TAPER AREA          | BUFFER SPACE | WORK SPACE |
| MPH             | FEET                | SPACING IN FEET     |              |            |
| 20              | 115                 | 20                  | 40           | 40         |
| 25              | 155                 | 20                  | 50           | 50         |
| 30              | 200                 | 20                  | 60           | 60         |
| 35              | 250                 | 20                  | 70           | 70         |
| 40              | 305                 | 20                  | 80           | 80         |
| 45              | 360                 | 20                  | 90           | 90         |
| 50              | 425                 | 20                  | 100          | 100        |
| 55              | 495                 | 20                  | 110          | 110        |
| 60              | 570                 | 20                  | 120          | 120        |
| 65              | 645                 | 20                  | 130          | 130        |
| 70              | 730                 | 20                  | 140          | 140        |

\* Approach speed based on the regulatory posted speed, not the advisory speed.

| ROAD TYPE                        | DISTANCE BETWEEN SIGNS IN FEET |      |      |
|----------------------------------|--------------------------------|------|------|
|                                  | A                              | B    | C    |
| Urban and Rural 30 MPH and less  | 100                            | 100  | 100  |
| Urban and Rural 35 MPH to 50 MPH | 350                            | 350  | 350  |
| Rural greater than 50 MPH        | 500                            | 500  | 500  |
| Expressway / Freeway             | 1000                           | 1500 | 2640 |

**NOTE:**

- Signs are shown for one direction of travel only. Place devices similar to those depicted for the opposite direction of travel.
- Final location and spacing of signs and devices may be changed to fit field conditions as approved by the CO.
- For pilot car operation, mount the PILOT CAR FOLLOW ME (G20-4) sign at a conspicuous location on the rear of the vehicle. Prominently display the name of the contractor on the pilot car.
- If closure is completely within the project limits, eliminate the "ROAD WORK AHEAD" (W20-1) and "END ROAD WORK" (G20-2) signs.
- For night time flagging operation, provide floodlighting at flagger stations.
- For project specific minimum width, refer to the Special Contract Requirements, Section 156.
- Do not allow equipment, materials, or vehicles to be parked or stored in the buffer space.



U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
FEDERAL LANDS HIGHWAY

U.S. CUSTOMARY STANDARD

**TEMPORARY TRAFFIC CONTROL  
SINGLE LANE CLOSURE LAYOUT  
(WITH FLAGGERS)**

STANDARD APPROVED FOR USE 6/2005

REVISIONS: 8/2013

STANDARD 635-6

NO SCALE

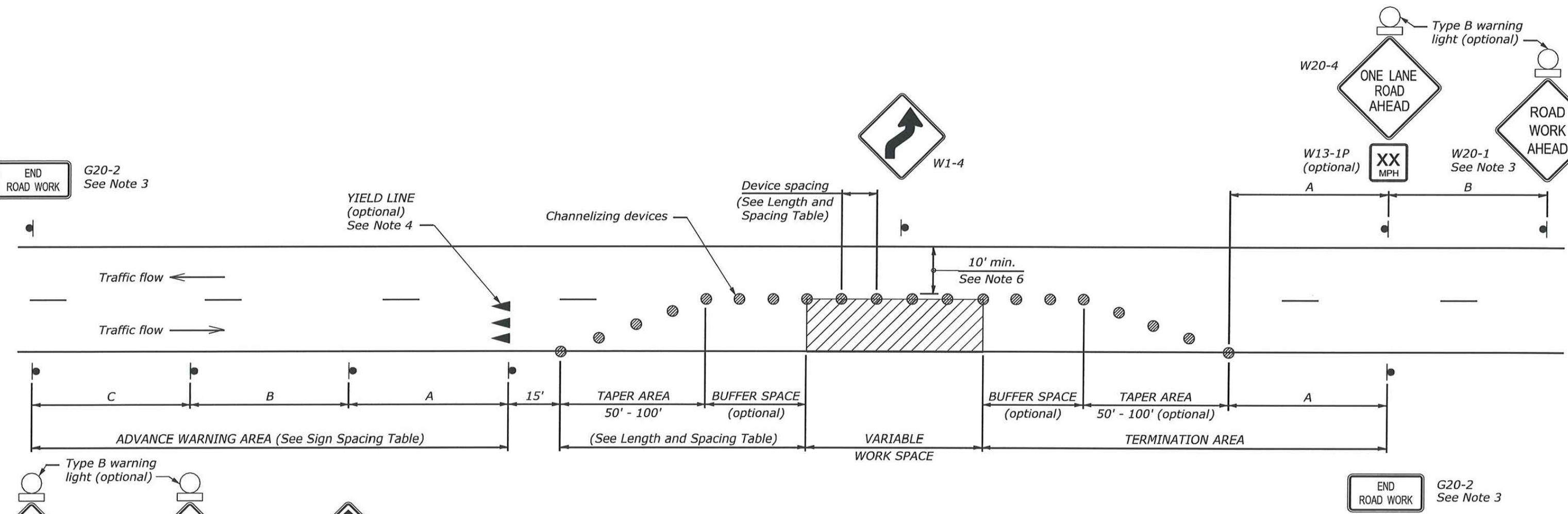
| APPROACH SPEED* | BUFFER SPACE LENGTH | CHANNELIZING DEVICE |              |            |
|-----------------|---------------------|---------------------|--------------|------------|
|                 |                     | TAPER AREA          | BUFFER SPACE | WORK SPACE |
| MPH             | FEET                | SPACING IN FEET     |              |            |
| 20              | 115                 | 20                  | 40           | 40         |
| 25              | 155                 | 20                  | 50           | 50         |
| 30              | 200                 | 20                  | 60           | 60         |
| 35              | 250                 | 20                  | 70           | 70         |
| 40              | 305                 | 20                  | 80           | 80         |
| 45              | 360                 | 20                  | 90           | 90         |
| 50              | 425                 | 20                  | 100          | 100        |
| 55              | 495                 | 20                  | 110          | 110        |
| 60              | 570                 | 20                  | 120          | 120        |
| 65              | 645                 | 20                  | 130          | 130        |
| 70              | 730                 | 20                  | 140          | 140        |

\* Approach speed based on the regulatory posted speed, not the advisory speed.

| ROAD TYPE                        | DISTANCE BETWEEN SIGNS IN FEET |      |      |
|----------------------------------|--------------------------------|------|------|
|                                  | A                              | B    | C    |
| Urban and Rural 30 MPH and less  | 100                            | 100  | 100  |
| Urban and Rural 35 MPH to 50 MPH | 350                            | 350  | 350  |
| Rural greater than 50 MPH        | 500                            | 500  | 500  |
| Expressway / Freeway             | 1000                           | 1500 | 2640 |

**NOTE:**

- Use this layout only if sufficient gaps in oncoming traffic exist for traffic that must yield, and if drivers from both directions are able to see approaching traffic through and beyond the work site.
- Final location and spacing of signs and devices may be changed to fit field conditions as approved by the CO.
- If closure is completely within the project limits, eliminate the "ROAD WORK AHEAD" (W20-1) and "END ROAD WORK" (G20-2) signs.
- If the surface is paved, install yield lines that comply with Section 3B.16 of the MUTCD.
- Use the "YIELD AHEAD" (W3-2) sign when approach speeds exceed 50 MPH.
- For project specific minimum width, refer to Special Contract Requirements, Section 156.
- Do not allow equipment, materials, or vehicles to be parked or stored in the buffer space.



U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
FEDERAL LANDS HIGHWAY

U.S. CUSTOMARY STANDARD

**TEMPORARY TRAFFIC CONTROL  
SINGLE LANE CLOSURE LAYOUT  
(WITH YIELD SIGN)**

STANDARD APPROVED FOR USE 6/2005

REVISIONS: 8/2014

STANDARD 635-7

NO SCALE

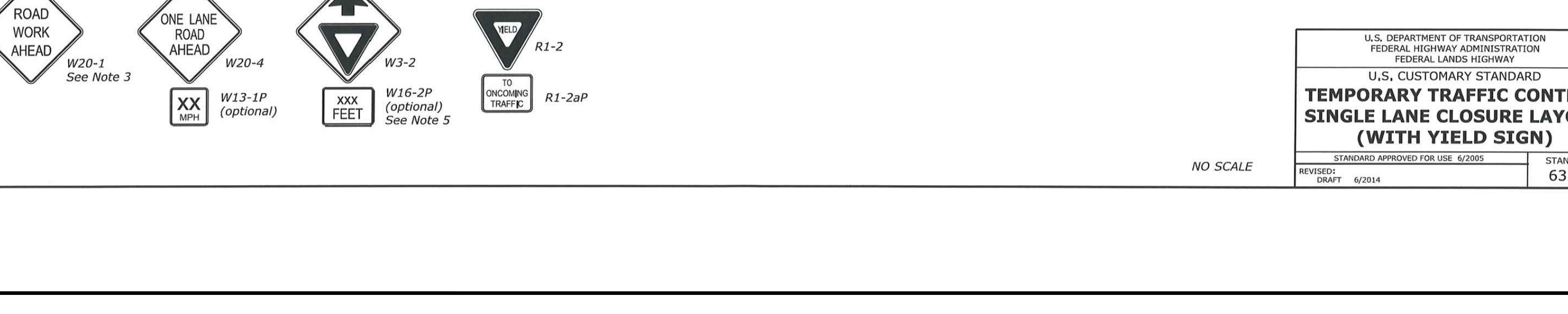
| APPROACH SPEED* | BUFFER SPACE LENGTH | CHANNELIZING DEVICE |              |            |
|-----------------|---------------------|---------------------|--------------|------------|
|                 |                     | TAPER AREA          | BUFFER SPACE | WORK SPACE |
| MPH             | FEET                | SPACING IN FEET     |              |            |
| 20              | 115                 | 20                  | 40           | 40         |
| 25              | 155                 | 20                  | 50           | 50         |
| 30              | 200                 | 20                  | 60           | 60         |
| 35              | 250                 | 20                  | 70           | 70         |
| 40              | 305                 | 20                  | 80           | 80         |
| 45              | 360                 | 20                  | 90           | 90         |
| 50              | 425                 | 20                  | 100          | 100        |
| 55              | 495                 | 20                  | 110          | 110        |
| 60              | 570                 | 20                  | 120          | 120        |
| 65              | 645                 | 20                  | 130          | 130        |
| 70              | 730                 | 20                  | 140          | 140        |

\* Approach speed based on the regulatory posted speed, not the advisory speed.

| ROAD TYPE                        | DISTANCE BETWEEN SIGNS IN FEET |      |      |
|----------------------------------|--------------------------------|------|------|
|                                  | A                              | B    | C    |
| Urban and Rural 30 MPH and less  | 100                            | 100  | 100  |
| Urban and Rural 35 MPH to 50 MPH | 350                            | 350  | 350  |
| Rural greater than 50 MPH        | 500                            | 500  | 500  |
| Expressway / Freeway             | 1000                           | 1500 | 2640 |

**NOTE:**

- Use this layout only if sufficient gaps in oncoming traffic exist for traffic that must yield, and if drivers from both directions are able to see approaching traffic through and beyond the work site.
- Final location and spacing of signs and devices may be changed to fit field conditions as approved by the CO.
- If closure is completely within the project limits, eliminate the "ROAD WORK AHEAD" (W20-1) and "END ROAD WORK" (G20-2) signs.
- If the surface is paved, install yield lines that comply with Section 3B.16 of the MUTCD.
- Use the "YIELD AHEAD" (W3-2) sign when approach speeds exceed 50 MPH.
- For project specific minimum width, refer to Special Contract Requirements, Section 156.
- Do not allow equipment, materials, or vehicles to be parked or stored in the buffer space.



U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
FEDERAL LANDS HIGHWAY

U.S. CUSTOMARY STANDARD

**TEMPORARY TRAFFIC CONTROL  
SINGLE LANE CLOSURE LAYOUT  
(WITH YIELD SIGN)**

STANDARD APPROVED FOR USE 6/2005

REVISIONS: 8/2014

STANDARD 635-7

NO SCALE

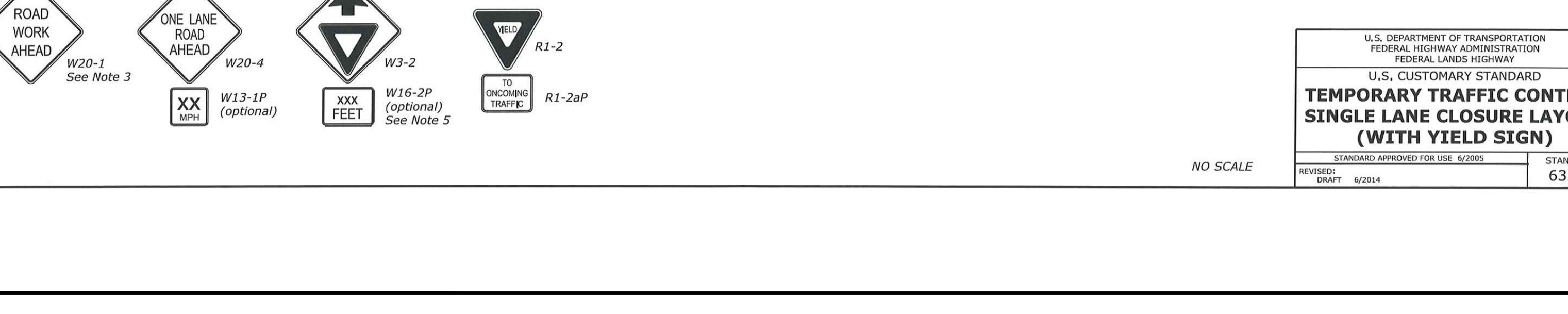
| APPROACH SPEED* | BUFFER SPACE LENGTH | CHANNELIZING DEVICE |              |            |
|-----------------|---------------------|---------------------|--------------|------------|
|                 |                     | TAPER AREA          | BUFFER SPACE | WORK SPACE |
| MPH             | FEET                | SPACING IN FEET     |              |            |
| 20              | 115                 | 20                  | 40           | 40         |
| 25              | 155                 | 20                  | 50           | 50         |
| 30              | 200                 | 20                  | 60           | 60         |
| 35              | 250                 | 20                  | 70           | 70         |
| 40              | 305                 | 20                  | 80           | 80         |
| 45              | 360                 | 20                  | 90           | 90         |
| 50              | 425                 | 20                  | 100          | 100        |
| 55              | 495                 | 20                  | 110          | 110        |
| 60              | 570                 | 20                  | 120          | 120        |
| 65              | 645                 | 20                  | 130          | 130        |
| 70              | 730                 | 20                  | 140          | 140        |

\* Approach speed based on the regulatory posted speed, not the advisory speed.

| ROAD TYPE                        | DISTANCE BETWEEN SIGNS IN FEET |      |      |
|----------------------------------|--------------------------------|------|------|
|                                  | A                              | B    | C    |
| Urban and Rural 30 MPH and less  | 100                            | 100  | 100  |
| Urban and Rural 35 MPH to 50 MPH | 350                            | 350  | 350  |
| Rural greater than 50 MPH        | 500                            | 500  | 500  |
| Expressway / Freeway             | 1000                           | 1500 | 2640 |

**NOTE:**

- Use this layout only if sufficient gaps in oncoming traffic exist for traffic that must yield, and if drivers from both directions are able to see approaching traffic through and beyond the work site.
- Final location and spacing of signs and devices may be changed to fit field conditions as approved by the CO.
- If closure is completely within the project limits, eliminate the "ROAD WORK AHEAD" (W20-1) and "END ROAD WORK" (G20-2) signs.
- If the surface is paved, install yield lines that comply with Section 3B.16 of the MUTCD.
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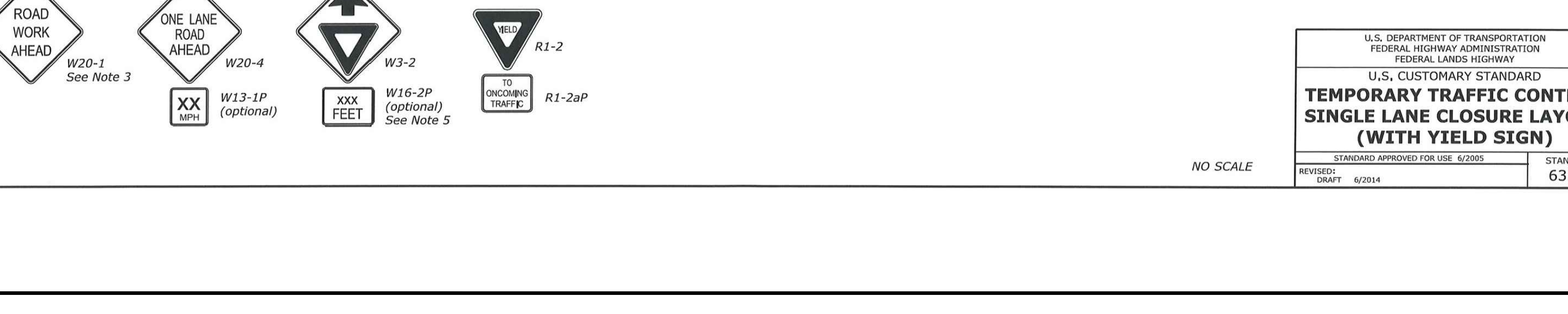
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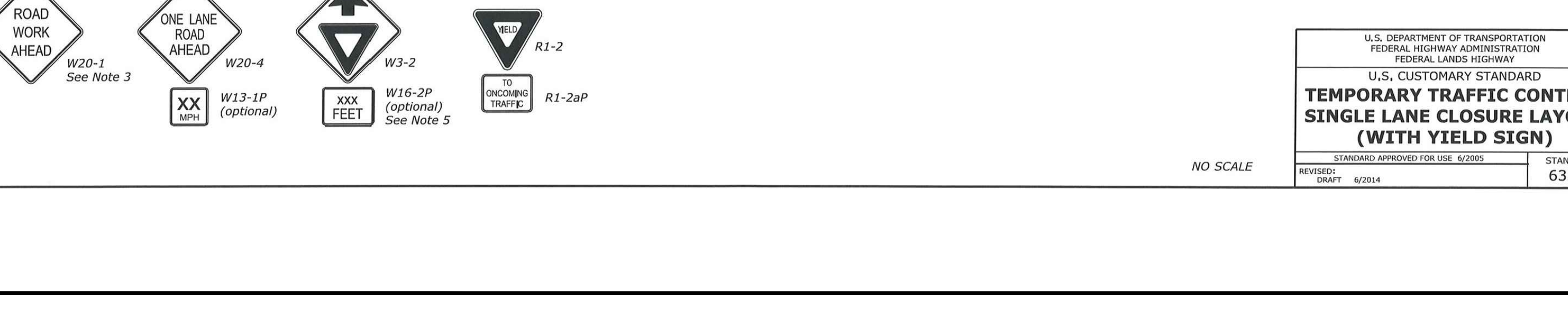
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