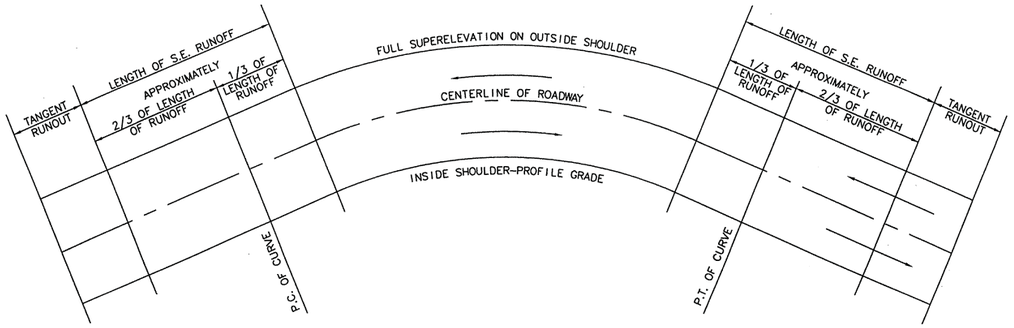
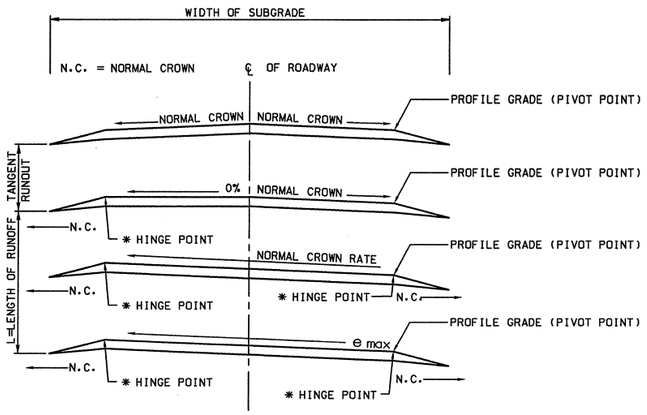
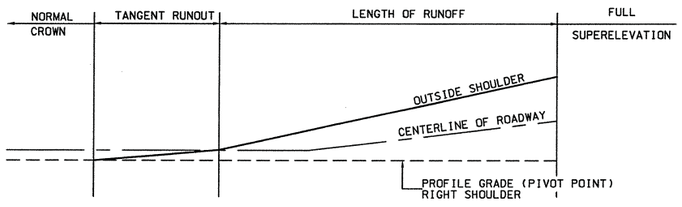




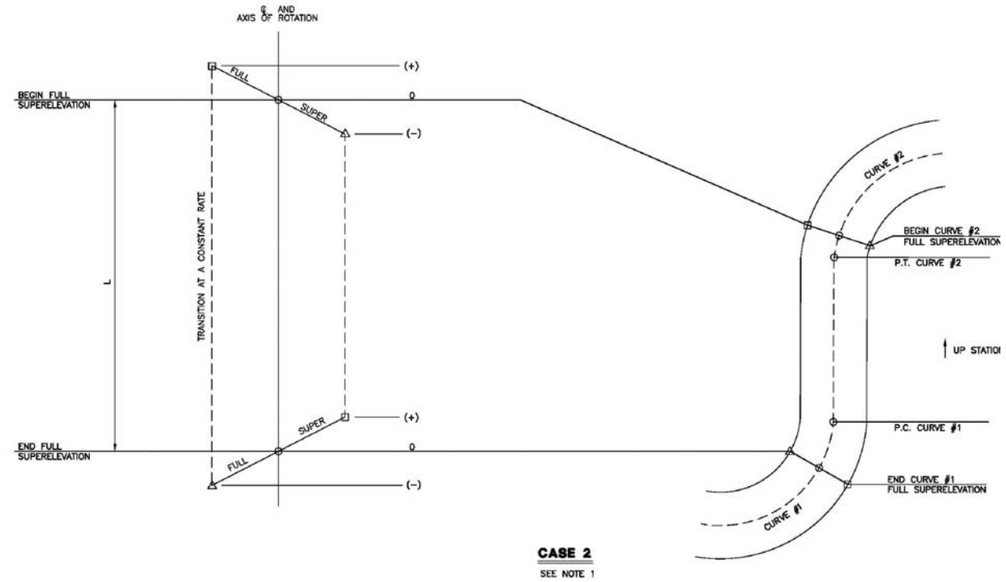
CASE I – TWO-LANE ROADWAY



CASE I – TWO-LANE ROADWAY

(CURVE TO RIGHT; CURVE TO LEFT OPPOSITE HAND)

NOTE: SEE PLANS FOR ACTUAL TYPICAL SECTION



CASE 2

SEE NOTE 1

NOTES

1. CASE 2 EXISTS WHEN THE TANGENT LENGTH BETWEEN TWO CURVES IS SHORTER THAN THE TANGENT RUNOUT DISTANCE REQUIRED FOR TRANSITIONING BETWEEN SUPERELEVATIONS FOR THOSE CURVES. WHEN THIS CASE EXISTS, TRANSITION AT A CONSTANT RATE FROM ONE SUPERELEVATION TO THE NEXT AS SHOWN.
2. BUILD SUPERELEVATION INTO SUBGRADE AND CARRY THROUGH SHOULDERS
3. L IS THE TRANSITION LENGTH BETWEEN FULL SUPERELEVATION AND FULL SUPERELEVATION.

LEGEND

○ CENTERLINE/POINT OF ROTATION
▷ INSIDE EDGE OF PAVEMENT
□ OUTSIDE EDGE OF PAVEMENT

GENERAL NOTES

1. TANGENT RUNOUT – LENGTH OF HIGHWAY NEEDED TO ACCOMPLISH THE CHANGE IN CROSS SLOPE FROM A NORMAL CROWN SECTION TO A SECTION WITH THE ADVERSE CROWN REMOVED OR VICE VERSA.
2. SUPERELEVATION RUNOFF – LENGTH OF HIGHWAY NEEDED TO ACCOMPLISH THE CHANGE IN CROSS SLOPE FROM A SECTION WITH ADVERSE CROWN REMOVED TO A FULLY SUPERELEVATED SECTION OR VICE VERSA.
3. THE MAXIMUM SUPERELEVATION RATE TO BE USED IS ESTABLISHED FOR EACH INDIVIDUAL CURVE AND IS SHOWN IN THE PLANS. ANY DEVIATION IN THE PLACEMENT OF S.E. RUNOFF AND TANGENT RUNOUT DUE TO REVERSE CURVES OR COMPOUND CURVES WILL BE SPECIFIED IN THE PLANS.
4. CASE I: ON FINISHED GRADE AND SUBGRADE. (TANGENT RUNOUT) PIVOT SUPERELEVATION ABOUT CENTERLINE UNTIL RATE OF SLOPE EQUALS CROWN SLOPE THEN PIVOT ABOUT THE INSIDE SHOULDER.
5. THE OUTSIDE DITCH ON SUPERELEVATION SECTIONS IS TO BE MODIFIED WHERE NECESSARY TO PROVIDE DRAINAGE. OTHERWISE THE DITCH SHALL CONFORM TO THE NORMAL DITCH SECTION SHOWN ON THE TYPICAL SECTION.
6. CURVES SHALL BE WIDENED ACCORDING TO THE PAVEMENT WIDENING CHART IN THE AASHTO GUIDELINES. THE SUPERELEVATION RATE SHALL BE CONTINUOUS THROUGHOUT THE TOP WIDTH OF SURFACING.
7. FOR MULTILANE DIVIDED HIGHWAYS WITH INDEPENDENT PROFILE CURVES AND/OR MEDIANS OVER 60 FT. THE SUPERELEVATION RATE FOR EACH ROADWAY SHALL BE DEVELOPED USING CASE I.
8. REFER TO CURRENT AASHTO GUIDELINES FOR APPROPRIATE RUNOFF LENGTH. ADJUSTMENTS NEED TO BE MADE FOR ADDITIONAL LANES AS REQUIRED BY CURRENT AASHTO GUIDELINES.
9. TANGENT RUNOUT = $L\left(\frac{NC}{2e - NC}\right)$ ROUND UP TO NEAREST 10 FT.

   WHERE NC = NORMAL CROWN
   e = MAX. SUPERELEVATION
   L = LENGTH OF SUPERELEVATION RUNOFF

BURNHAM SOUTH ROAD - SUPER ELEVATION TABLE

CURVE NO.	SUPER (e)	BEGIN TRANSITION STATION	ADVERSE CROWN STATION	REVERSE CROWN STATION	BEGIN FULL SUPER STATION	END FULL SUPER STATION	REVERSE CROWN STATION	ADVERSE CROWN STATION	END TRANSITION STATION
C1 (1)	4.00%	00+02.04	00+50.04	00+98.04	01+46.04	11+05.37	–	–	–
C2 (1,2)	4.00%	–	–	–	11+37.37	24+60.48	25+08.48	–	–
C3 (2)	4.00%	–	26+22.28	26+70.28	27+18.28	41+15.12	41+63.12	42+11.12	42+59.12
C4	4.00%	62+56.96	63+04.96	63+52.96	64+00.96	77+97.80	78+45.80	78+93.80	79+41.80
C5	4.00%	105+68.00	106+16.00	106+78.92	107+12.00	114+89.24	115+22.32	115+85.24	116+33.24
C6 (1)	4.00%	119+33.18	119+81.18	120+29.18	120+77.18	132+80.62	–	–	–
C7 (1)	4.00%	–	–	–	133+44.62	143+12.41	–	–	–
C8 (1)	4.00%	–	–	–	143+76.41	TIE INTO EXISTING BURNHAM ROAD REALIGNMENT			

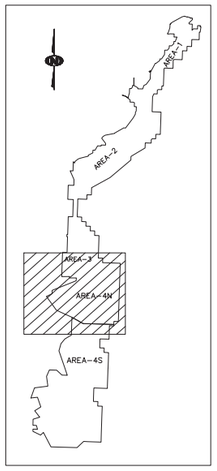
1. COMPOUND CURVE
2. REVERSE CURVE

THE DESIGN FEATURES SHOWN ON THESE DESIGN PLANS ARE REASONABLE REPRESENTATIONS OF THE PROPOSED WORK BASED ON THE INFORMATION AVAILABLE AT THE TIME OF SUBMITTAL OF THIS PERMIT PACKAGE. ACTUAL CONSTRUCTION DETAILS MAY VARY FROM THOSE SHOWN.

NOT ISSUED FOR CONSTRUCTION

LEGEND

- BURNHAM SOUTH ROAD
- EAST HAUL ROAD
- SERVICE ROAD & SERVICE ROAD LOOP
- PAVED ROAD
- DIRT ROAD
- TRAIL
- BUILDING
- FENCE
- IRRIGATION LINE
- CULVERT
- LOW SPOT ELEVATION
- DRAINAGE
- RAILROAD
- TREES
- POWERLINE
- × 5338.5 SPOT ELEVATION
- 5300 INDEX CONTOUR
- INTERMEDIATE CONTOUR
- 218 5422.45 HORIZ. & VERT. CONTROL
- L-30 LEASE CORNER
- LEASE BOUNDARY
- PERMIT BOUNDARY



CERTIFICATION STATEMENT
I, GEORGE A. MADRID, P.E., HEREBY CERTIFY THAT THIS DRAWING WAS REVIEWED BY ME AND THAT THE INFORMATION SHOWN IS COMPLETE AND ACCURATE TO THE BEST OF MY KNOWLEDGE.

GEORGE A. MADRID NEW MEXICO 9110 REGISTERED PROFESSIONAL ENGINEER

George A. Madrid

Digitally signed by George A. Madrid
DN: cn=George A. Madrid, o=GEOMAT Inc., ou=Engineering, email=george.madrid@geomatengineering.com, c=US
Date: 2014.05.27 08:15:07 -06'00'

GEOMAT INC.
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REV. NO.	DATE	COMMENT
2	05-23-14	REVISED TITLE BLOCK
1	03-15-12	REVISED TITLE & TITLE BLOCK
0	02-07-12	INITIAL PERMIT SUBMITTAL

EXHIBIT 40.6-1

NTEC
Navajo Transitional Energy Company, LLC

Navajo Mine
P.O. Box 1717
Fruitland,New Mexico,87416
Phone: 505-598-4200
Fax: 505-568-5361

PINABETE PERMIT

BURNHAM SOUTH ROAD DESIGN SUPER ELEVATION TABLE AND DETAILS

SHEET: 9 OF 11

PREPARED BY: BT&PR	DRAWN BY: BT&PR	SCALE: AS SHOWN
APPROVED BY: GM	DATE: 02-07-2012	

GEOMAT PROJECT NO. 112-1434