



# Iowa Department of Transportation

## Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

# PRIMARY ROAD SYSTEM MONONA COUNTY SLOPE IMPROVEMENT

From 2.2 Miles N. Of Harrison Co. Line N. 1 Mile

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

Value Engineering Saves. Refer to Article 1105.15 of the Specifications.



### MILEAGE SUMMARY

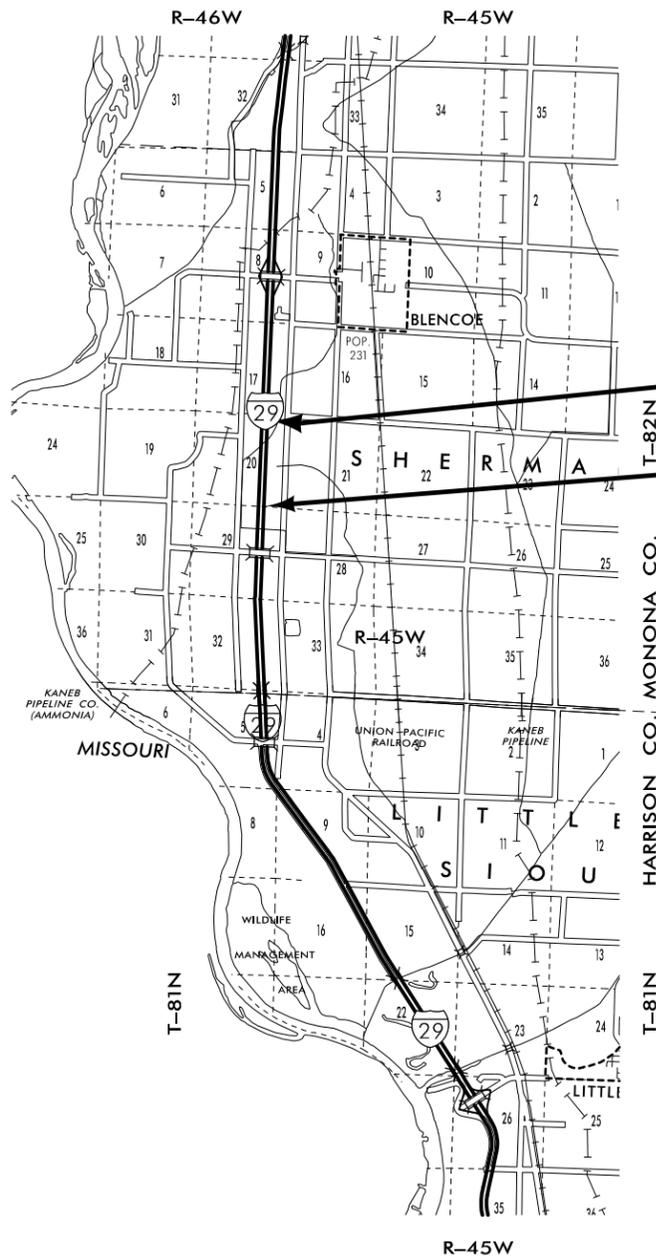
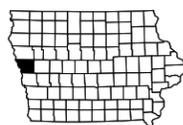
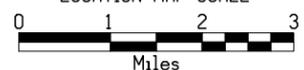
105-1  
09-27-94

Div.	Location	Lin. Ft.	Miles
	I-29 SB Sta. 2527+75.7 to 2577+69.3	4993.6	0.95
	TOTALS	4993.6	0.95

### DESIGN DATA RURAL

2009 AADT	14,400	V.P.D.
2012 AADT	25,800	V.P.D.
20 -- DHV	--	V.P.H.
TRUCKS	22	%
Total Design ESALs	30M	

LOCATION MAP SCALE



REVISIONS

TOTAL

54

PROJECT IDENTIFICATION NUMBER

12-67-029-010

PROJECT NUMBER

IMN-29-5(230)103--0E-67

R.O.W. PROJECT NUMBER

### INDEX OF SHEETS

No.	DESCRIPTION
<b>A Sheets</b>	<b>Title Sheets</b>
A.1	Title Sheet
<b>B Sheets</b>	<b>Typical Cross Sections and Details</b>
B.1 - 4	Typical Cross Sections and Details
<b>C Sheets</b>	<b>Quantities and General Information</b>
C.1	Project Description
C.1	Estimated Project Quantities
C.1 - 2	Estimate Reference Information
C.2	Standard Road Plans
C.2	Index of Tabulations
C.2	General Notes
C.3	Pollution Prevention Plan
C.4 - 6	Tabulations
<b>D Sheets</b>	<b>Mainline Plan and Profile Sheets</b>
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2 - 3	"SB Interstate 29"
<b>G Sheets</b>	<b>Survey Sheets</b>
G.1	Reference Ties and Bench Marks
G.2	Horizontal Control Tab. & Super for all Alignments
<b>J Sheets</b>	<b>Traffic Control and Staging Sheets</b>
* J.1	Traffic Control Plan
* J.1	Staging Notes Stage
* J.1	Tabulation of Special Events
<b>T Sheets</b>	<b>Earthwork Quantity Sheets</b>
T.1 - 2	Earthwork Quantity Sheets
<b>W Sheets</b>	<b>Mainline Cross Sections</b>
W.1	Cross Sections Legend & Symbols Information Sheet
W.2 - 35	Mainline Cross Sections
	* Color Plan Sheets

### ROADWAY DESIGN



I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signature Kelly C. Bell 09-01-2011  
Date

Printed or Typed Name  
My license renewal date is December 31, 2011

Pages or sheets covered by this seal: A.1, B.1 - B.4, C.1 - C.5, D.1 - D.3, G.1 - G.2, J.1, T.1 - T.2, W.1 - W.35

LETTING DATE  
09-14-2011

SLOPE IMPROVEMENT  
IMN-29-5(230)103--0E-67

MONONA CO.

ENGLISH

IOWA DOT

DESIGN TEAM Flattery\Bell

MONONA COUNTY

PROJECT NUMBER

IMN-29-5(230)103--0E-67

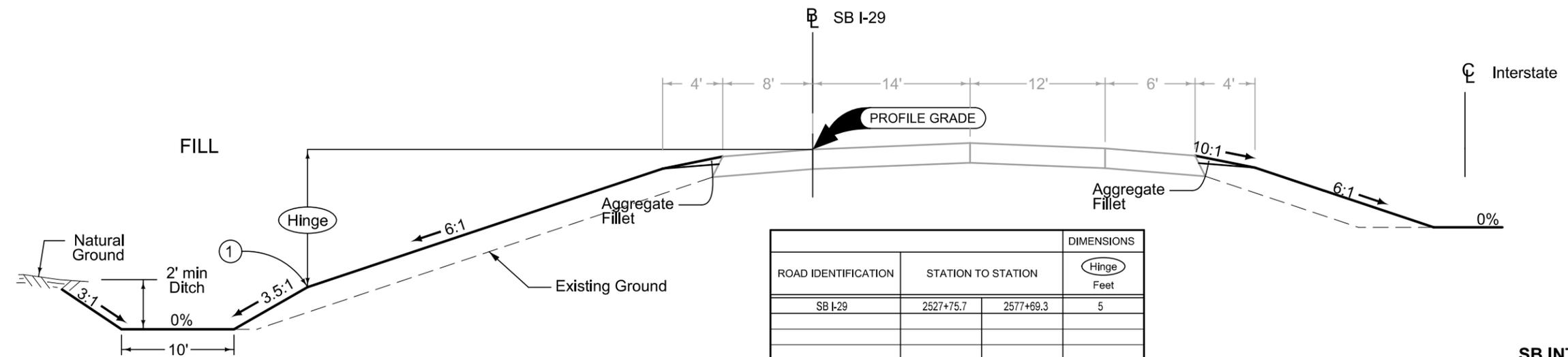
SHEET NUMBER

A.1

Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

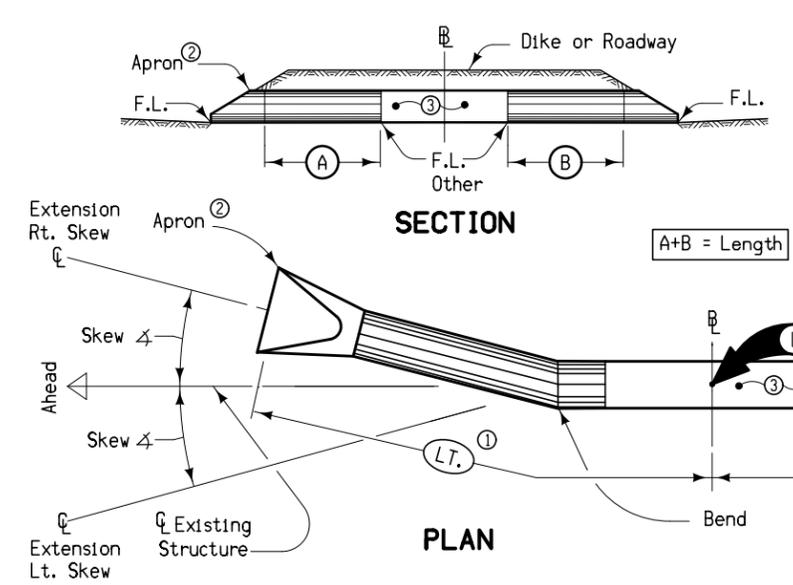
See Plan & Profile sheets and cross sections for additional details of ditches and backslopes.

① Refer to project plan and cross sections for specific location of foreslope change.



ROAD IDENTIFICATION	STATION TO STATION	DIMENSIONS
		Hinge Feet
SB I-29	2527+75.7 - 2577+69.3	5

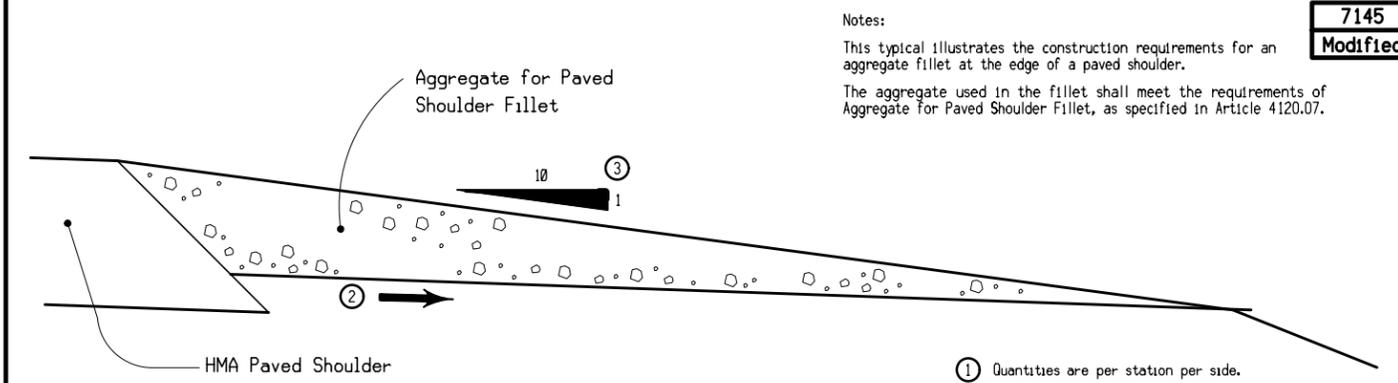
**SB INTERSTATE 29  
FORESLOPE GRADING**



**Notes:**  
 B shall be C of roadway, dike, survey, or other; as detailed on plans.  
 Bend may be accomplished by use of metal elbow, Adaptor (RF-2,) Type 'D' Section or Concrete Elbow (RF-13) as specified.  
 Extension shall be in the direction specified with skew measured from centerline of existing structure.  
 Refer to tabular listing and other plans for additional information.  
 ① Dimension Rt. or Lt. is measured at C of pipe along laying length  
 ② See Standard Road Plan RF-3 for concrete, or RF-5 for metal.  
 ③ Existing Structure

1302  
10-03-00

**PIPE EXTENSION  
HORIZONTAL BEND  
ONE OR BOTH ENDS**



**Notes:**  
 This typical illustrates the construction requirements for an aggregate fillet at the edge of a paved shoulder.  
 The aggregate used in the fillet shall meet the requirements of Aggregate for Paved Shoulder Fillet, as specified in Article 4120.07.

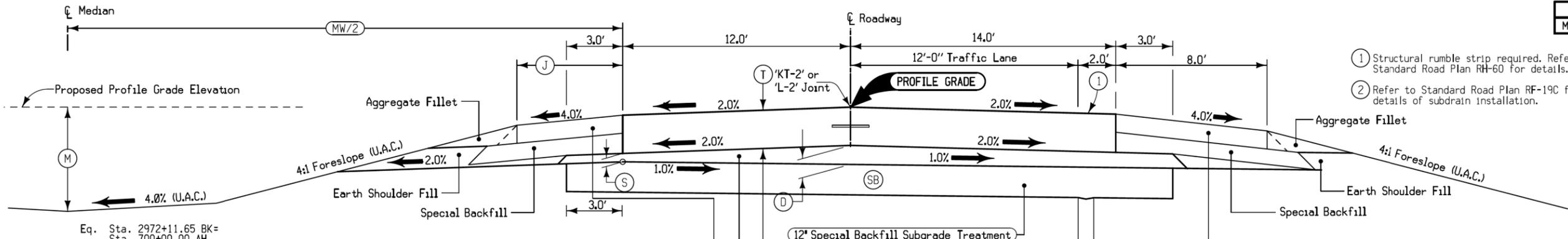
7145  
Modified

- ① Quantities are per station per side.
- ② Match slope of shoulder pavement.
- ③ 10:1 Slope minimum

**AGGREGATE  
FOR PAVED  
SHOULDER FILLET**

ROAD IDENTIFICATION	LOCATION		SIDE	QUANTITIES ①	
	STATION TO STATION			AGGREGATE FOR PAVED SHOULDER FILLET	
					HMA Tons
SB I-29	2527+75.7	2577+69.3	O	5.6	
SB I-29	2527+75.7	2577+69.3	M	5.6	





- ① Structural rumble strip required. Refer to Standard Road Plan RH-60 for details.
- ② Refer to Standard Road Plan RF-19C for details of subdrain installation.

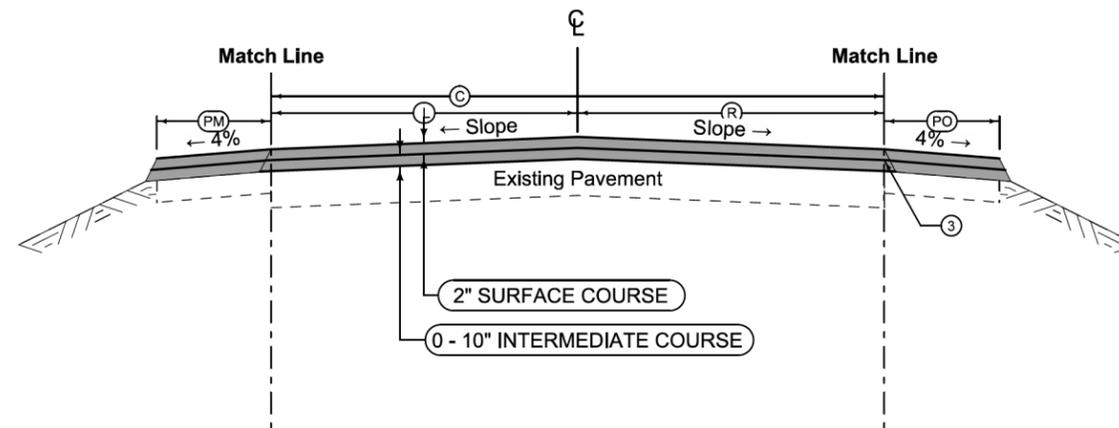
Eq. Sta. 2972+11.65 BK=  
Sta. 700+00.00 AH

Location		T	S	D	J	MW	M	SB
Road Identification	Station to Station	Inches	Inches	Inches	Feet	Feet	Feet	CY
NB I-29	2097+59.22 - 2156+92.19	11	6	10.32	6	50	4	33031.6
NB I-29	2164+12.19 - 2221+68.68	11	6	10.32	6	50	4	33420.7
NB I-29	2226+18.68 - 2295+00	11	6	10.32	6	50	4	33256.3
NB I-29	2427+50 - 2778+35.38	11	6	10.32	6	50	4	31796.3
NB I-29	2781+11.93 - 781+70.54	11	6	10.32	6	50	4	33376.3
SB I-29	2097+59.22 - 2156+92.19	11	6	10.32	6	50	4	33031.6
SB I-29	2164+12.19 - 2221+81.32	11	6	10.32	6	50	4	33449.4
SB I-29	2226+31.32 - 2295+00	11	6	10.32	6	50	4	33226.6
SB I-29	2427+50 - 2675+93.50	11	6	10.32	6	50	4	317918.9
Total =								336,508.7

For Information Only

EXCAVATION IS FOR SUBGRADE TREATMENT BELOW EXISTING PAVEMENT.

**TYPICAL CROSS SECTION  
4-LANE DIVIDED ROADWAY  
PCC PAVING  
WITH PAVED SHOULDER**



Design Quantities Per Location														
Dir.	STATION TO STATION		S Inches	C Feet	L Feet	R Feet	PM Feet	PC Feet	Tack Coat Gallons	Asphalt Binder (Surface) Tons	Asphalt Binder (Inter.) Tons	Hot Mix Asphalt Tons		Remarks
												Intermediate Course	Surface Course	
SB	2527+75.7	2577+69.3	2.0	26	12	14			2572	102	293	4876	1694	
SB	2527+75.7	2577+69.3	2.0	26			6		594	24	74	1229	394	
SB	2527+75.7	2577+69.3	2.0	26				8	848	34	104	1720	550	Includes additional quantity for paving in front of the guardrail at Sta. 2554+30
								TOTALS	4014	160	471	7825	2638	

For Information Only

DESIGN RATES	
ITEM	RATE
Surface Course	145 lbs./cu. ft.
Intermediate Course	145 lbs./cu. ft.
Tack Coat	0.05 gal./sq. yd.
Asphalt Binder	6% asphalt

Notes:  
 Finished slope shall match existing pavement except that the maximum allowable slope is 3.0 %, minimum allowable slope is 2.0 %. Section may be modified as directed by the Engineer through areas of special shaping.

Refer to Tab 112-9 for Shoulder Quantities.

① Tack Coat estimated for 5 applications.  
 Refer to staging notes for length of each application.

② Bid item.

③ Notched wedge joint. See Typical 7315 for details.

**SOUTHBOUND INTERSTATE 29**

**PROJECT DESCRIPTION**

This project is to flatten the slopes and replace guardrail along I-29 southbound following the HMA resurfacing of 0-12 inches previously constructed by others.

**ESTIMATED PROJECT QUANTITIES**

Item No.	Item Code	Item	Unit	Total	As Built Qty.
1	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW	CY	6757	
2	2102-2713090	EXCAVATION, CLASS 13, WASTE	CY	22	
3	2105-8425005	TOPSOIL, FURNISH AND SPREAD	CY	11056	
4	2115-0100000	MODIFIED SUBBASE	CY	28.9	
5	2121-7425021	GRANULAR SHOULDERS, TYPE B, AS PER PLAN	STA	96.7	
6	2122-5500080	PAVED SHOULDER, HOT MIX ASPHALT MIXTURE, 8 IN.	SY	167.7	
7	2123-7450000	SHOULDER CONSTRUCTION, EARTH	STA	3.1	
8	2401-6745650	REMOVAL OF EXISTING STRUCTURES	LS	1	
9	2416-0100024	APRONS, CONCRETE, 24 IN. DIA.	EACH	2	
10	2416-1180024	CULVERT, CONCRETE ROADWAY PIPE, 24 IN. DIA.	LF	10	
11	2502-8212034	SUBDRAIN, LONGITUDINAL, (SHOULDER) 4 IN. DIA.	LF	220	
12	2502-8220196	SUBDRAIN OUTLET, RF-19E	EACH	22	
13	2505-4008120	REMOVAL OF STEEL BEAM GUARDRAIL	LF	147.6	
14	2505-4008300	STEEL BEAM GUARDRAIL	LF	225	
15	2505-4021020	STEEL BEAM GUARDRAIL END ANCHOR, W-BEAM	EACH	1	
16	2505-4021700	STEEL BEAM GUARDRAIL END TERMINAL	EACH	1	
17	2526-8285000	CONSTRUCTION SURVEY	LS	1	
18	2528-8445110	TRAFFIC CONTROL	LS	1	
19	2533-4980005	MOBILIZATION	LS	1	
20	2601-2634100	MULCHING	ACRE	9.2	
21	2601-2636015	NATIVE GRASS SEEDING	ACRE	5.3	
22	2601-2636043	SEEDING AND FERTILIZING (RURAL)	ACRE	3.9	
23	2601-2642100	STABILIZING CROP - SEEDING AND FERTILIZING	ACRE	9.2	
24	2602-0000020	SILT FENCE	LF	6870	
25	2602-0000030	SILT FENCE FOR DITCH CHECKS	LF	1066.5	

**ESTIMATE REFERENCE INFORMATION**

Item No.	Item Code	Description
1	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW Refer to "T" sheets. Overhaul will not be measured or paid for, but shall be considered incidental to roadway excavation on this project.  Includes 3,633 cu. yds. of Contractor furnished borrow.
2	2102-2713090	EXCAVATION, CLASS 13, WASTE For removal of approximately 40 tons class A granular placed under existing crash cushion.
3	2105-8425005	TOPSOIL, FURNISH AND SPREAD Refer to Tab. 103-4. The Contractor shall provide all the required topsoil and follow provisions in Section 2105 of the current specifications.  Method of Measurement: The quantity of topsoil furnished and spread will be measured in cubic yards and will be computed on the depth of topsoil specified in the contract document over the area involved plus 40% to account for compaction shrinkage and hauling losses. Sufficient field measurements will be taken to assure reasonable conformity with the required final thickness of topsoil in place.  Basis of Payment: The Contractor will be paid the contract unit price for topsoil, furnish and spread per cubic yard of topsoil placed, measured as provided above.  Overhaul will not be paid for on this item.
4	2115-0100000	MODIFIED SUBBASE Refer to Typical 7156 in the B Sheets.

**ESTIMATE REFERENCE INFORMATION**

Item No.	Item Code	Description
5	2121-7425021	GRANULAR SHOULDERS, TYPE B, AS PER PLAN Includes 560 tons for mainline aggregate shoulder fillets. Refer to Modified Typical 7145. The Contractor shall provide all the required material and follow provisions in Section 2121 of the current specifications.
6	2122-5500080	PAVED SHOULDER, HOT MIX ASPHALT MIXTURE, 8 IN. Refer to Typical 7156 in the B Sheets.
7	2123-7450000	SHOULDER CONSTRUCTION, EARTH Requires 37 cu. yds. of Topsoil for Earth Shoulder Fill along new paved shoulder. No payment for overhaul allowed for this material. Material is Contractor Borrow.
8	2401-6745650	REMOVAL OF EXISTING STRUCTURES Refer to Tab 110-2
9	2416-0100024	APRONS, CONCRETE, 24 IN. DIA.
10	2416-1180024	CULVERT, CONCRETE ROADWAY PIPE, 24 IN. DIA. Refer to Tab. 104-3.
11	2502-8212034	SUBDRAIN, LONGITUDINAL, (SHOULDER) 4 IN. DIA.
12	2502-8220196	SUBDRAIN OUTLET, RF-19E Refer to Tab. 104-9
13	2505-4008120	REMOVAL OF STEEL BEAM GUARDRAIL Refer to Tab. 110-7A
14	2505-4008300	STEEL BEAM GUARDRAIL
15	2505-4021020	STEEL BEAM GUARDRAIL END ANCHOR, W-BEAM
16	2505-4021700	STEEL BEAM GUARDRAIL END TERMINAL Refer to Tab. 108-8C
17	2526-8285000	CONSTRUCTION SURVEY Mulch: Rate--1½ tons of dry cereal straw per acre. All mulch is to be consolidated into the soil with the mulch tiller. Mulch shall be Certified Noxious Weed Seed Free Mulch as certified by the Iowa Crop Improvement Association or adjacent states Crop Improvement Associations.
18	2528-8445110	TRAFFIC CONTROL
19	2533-4980005	MOBILIZATION
20	2601-2634100	MULCHING
21	2601-2636015	NATIVE GRASS SEEDING Included for all disturbed areas following final construction. Seed Mixture: (Area outside 8' Adj. to shoulder) *Canada Wildrye 10 lbs. PLS per acre *Grain Rye 40 lbs. per acre *Indiangrass 10 lbs. PLS per acre *Big Bluestem 10 lbs. PLS per acre *Switchgrass 5 lbs. PLS per acre *Sideoats Grama 5 lbs. PLS per acre *Little Bluestem 5 lbs. PLS per acre *Blackeyed Susan 4 ozs. PLS per acre *Purple Prairie Clover 4 ozs. PLS per acre *Prairie Blazing Star 4 ozs. PLS per acre *Grayhead Prairie Coneflower 4 ozs. PLS per acre *Purple Coneflower 4 ozs. PLS per acre *Seed shall be certified as Source Identified Class (Yellow Tag) Source/G0-Iowa.  Fertilizer: Rate--400 lbs. of 13-13-13 or equivalent commercial fertilizer per acre.
22	2601-2636043	SEEDING AND FERTILIZING (RURAL) Included for all disturbed areas following final construction. Seed Mixture: (Area 8' Adj. to shoulder and median.) Fescue, Tall (Fawn) 55 lbs. per acre Ryegrass, Perennial 45 lbs. per acre Fescue, Creeping Red 15 lbs. per acre  Fertilizer: Rate--750 lbs. of 13-13-13 or equivalent commercial fertilizer per acre.

**ESTIMATE REFERENCE INFORMATION**

Item No.	Item Code	Description
23	2601-2642100	<b>STABILIZING CROP - SEEDING AND FERTILIZING</b> Included for all disturbed areas as designated by the engineer. Seed Mixture: Spring--March 1 to May 20 Oats 2 bu. per acre Grain Rye 25 lbs. per acre Red Clover 5 lbs. per acre Timothy 5 lbs. per acre  Summer--May 21 to July 20 Oats 3 bu. per acre Grain Rye 35 lbs. per acre Red Clover 5 lbs. per acre Timothy 5 lbs. per acre  Fall--July 21 to September 30 Oats 2 bu. per acre Grain Rye 35 lbs. per acre Red Clover 5 lbs. per acre Timothy 5 lbs. per acre  Fertilizer: Rate--450 lbs. of 13-13-13 or equivalent commercial fertilizer per acre.
24	2602-0000020	<b>SILT FENCE</b> Refer to Tab. 100-17. The tabulation includes estimated locations for placement of "Silt Fence" to address erosion to be encountered during construction. Verify the specific locations with the Engineer prior to beginning placement. Bid item includes 25% additional quantity for other locations of erosion.
25	2602-0000030	<b>SILT FENCE FOR DITCH CHECKS</b> Refer to Tab 100-18. The tabulation includes estimated locations for placement of "Silt Fence for Ditch Checks" to address erosion to be encountered during construction. Verify the specific locations with the Engineer prior to beginning placement. Bid item includes 50% additional quantity for field adjustments and replacements.

**STANDARD ROAD PLANS**

The following Standard Road Plans apply to construction work on this project.

Number	Date	Title
BA-200	10-18-11	Steel Beam Guardrail Components
BA-203	10-18-11	Steel Beam Guardrail W-Beam End Anchor
BA-205	10-18-11	Steel Beam Guardrail End Terminal
BA-252	10-18-11	Steel Beam Guardrail Installation at Side Obstacle (One-Way Protection)
EC-201	04-20-10	Silt Fence
EW-301	04-19-11	Guardrail Grading
RF-2	10-18-11	Construction of Type "C" Concrete Adaptors for Pipe Culvert Connections
RF-3	10-18-11	Concrete Aprons
RF-19C	10-19-10	Subdrains (Longitudinal)
RF-19E	10-20-09	Outlets for Longitudinal, Transverse and Backslope Subdrains
RF-26	10-18-11	Pipe Apron Guard
RF-30A	10-19-10	Culvert (Bedding and Backfill)
RF-30B	10-19-10	Pipe Culvert (Cover and Camber)
RF-30C	04-30-02	Pipe Culvert (Installation Details)
RF-31	03-28-95	Depth of Cover Tables for Concrete Pipe
TC-1	10-18-11	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-402	04-20-10	Shoulder Closure (Multi-Lane)
TC-418	10-18-11	Lane Closure on Divided Highway

**INDEX OF TABULATIONS**

Tabulation	Tabulation Title	Sheet No.
100-17	TABULATION OF SILT FENCES	C.4
100-18	TABULATION OF SILT FENCES FOR DITCH CHECKS	C.4
102-15	TABULATION OF SPECIAL EVENTS	J.1
103-4	TABULATION OF SPREADING TOPSOIL	C.4
104-3	DRAINAGE STRUCTURE BY ROAD CONTRACTOR	C.5
105-4	STANDARD ROAD PLANS	C.2
107-23	GRADING FOR GUARDRAIL INSTALLATIONS	C.5
108-8C	STEEL BEAM GUARDRAIL FOR SIDE OBSTACLE (ONE-WAY PROTECTION)	C.5
108-23A	TRAFFIC CONTROL PLAN	J.1
108-26A	STAGING NOTES	J.1
110-2	REMOVAL OF EXISTING STRUCTURES	C.4
110-7A	REMOVAL OF STEEL BEAM GUARDRAIL	C.4
110-12A	POLLUTION PREVENTION PLAN	C.3

**WASTE  
(NON-DESIRABLE MATERIAL)**

It shall be the contractor's responsibility to provide waste areas or disposal sites for excess material (excavated material or broken concrete) which is not desirable to be incorporated into the work involved on this project.

It shall be the contractor's responsibility to ensure that areas (including haul roads) selected for waste or disposal not impact 1) culturally sensitive sites or graves or 2) wetlands or "Waters of the U.S.", including streams or stream banks below the "ordinary high water mark", without an approved U.S. Army Corps of Engineers Section 404 Permit.

No payment for overhaul will be allowed for material hauled to these sites. No material shall be placed within the right-of-way, unless specifically stated in the plans.

**UTILITIES  
(NOT A POINT 25 PROJECT)**

This is NOT a POINT 25 project and is not subject to the provisions of IAC 761-115.25.

**POLLUTION PREVENTION PLAN**

This Base Pollution Prevention Plan (PPP) includes information on Roles and Responsibilities, Project Site Description, Controls, Maintenance Procedures, Inspection Requirements, Non-Storm Water Controls, Potential Sources of Off Right-of-Way Pollution, and Definitions. This plan references other documents rather than repeating the information contained in the documents. A copy of this Base Pollution Prevention Plan, amended as needed per plan revisions or by contract modification, will be readily available for review.

All contractors shall conduct their operations in a manner that controls pollutants, minimizes erosion, and prevents sediments from entering waters of the state and leaving the highway right-of-way. The prime contractor shall be responsible for compliance and implementation of the PPP for their entire contract. This responsibility shall be further shared with subcontractors whose work is a source of potential pollution as defined in this PPP.

**I. ROLES AND RESPONSIBILITIES****A. Designer:**

1. Prepares Base PPP included in the project plan.
2. Prepares Notice of Intent (NOI) submitted to Iowa DNR.
3. Signature authority on the Base PPP and NOI.

**B. Contractor/Subcontractor:**

1. Affected contractors/subcontractors are co-permittees with the IDOT and will sign a certification statement adhering to the requirements of the NPDES permit and this PPP plan. All co-permittees are legally required under the Clean Water Act and the Iowa Administrative Code to ensure compliance with the terms and conditions of this PPP.
2. Submit a detailed schedule according to Article 2602 of the Specifications and any additional plan notes.
3. Install and maintain appropriate controls.
4. Supervise and implement good housekeeping practices.
5. Conduct joint required inspections of the site with inspection staff.
6. Signature authority on Co-Permittee Certification Statements and storm water inspection reports.

**C. RCE/Inspector:**

1. Update PPP whenever there is a change in design, construction, operation or maintenance, which has a significant effect on the discharge of pollutants from the project.
2. Maintain an up-to-date list that identifies contractors and subcontractors as co-permittees.
3. Make these plans available to the DNR upon their request.
4. Conduct joint required inspections of the site with the contractor/subcontractor.
5. Complete an inspection report after each inspection.
6. Signature authority on storm water inspection reports and Notice of Discontinuation (NOD).

**II. PROJECT SITE DESCRIPTION**

- A. This Pollution Prevention Plan (PPP) is for the construction of an improved side slope.
- B. This PPP covers approximately 12 acres with an estimated 9.2 acres being disturbed. The portion of the PPP covered by this contract has 9.2 acres disturbed.
- C. The PPP is located in an area of one soil association (Luton - Onawa - Salix). The estimated average SCS runoff curve number for this PPP after completion will be 82.
- D. Storm Water Site Map - Multiple sources of information comprise the base storm water site map including:
  1. Drainage patterns - Plan and Profile sheets and Situation plans.
  2. Proposed Slopes - Cross Sections.
  3. Areas of Soil Disturbance - construction limits shown on Plan and Profile sheets.
  4. Location of Structural Controls - Tabulations on C sheets.
  5. Locations of Non-structural Controls - Tabulations on C sheets.
  6. Locations of Stabilization Practices - generally within construction limits shown on Plan and Profile sheets.
  7. Surface Waters (including wetlands) - Plan and Profile sheets.
  8. Locations where storm water is discharged - Plan and Profile sheets.
- E. The base site map is amended by contract modifications and progress payments of completed erosion control work.
- F. Runoff from this work will flow into unnamed ditches into the Missouri River.

**III. CONTROLS**

- A. The contractor's work plan and sequence of operations specified in Article 2602.03 for accomplishment of storm water controls should clearly describe the intended sequence of major activities and for each activity define the control measure and the timing during the construction process that the measure will be implemented.
- B. Preserve vegetation in areas not needed for construction.
- C. Section 2601 and 2602 of the Standard Specifications define requirements to implement erosion and sediment control measures. Actual quantities used may vary from the Base PPP and amendment of the plan will be documented via fieldbook entries or by contract modification. Additional erosion and sediment control items may be required as determined by the inspector and/or contractor during storm water monitoring inspections. If the work involved is not applicable to any contract items, the work will be paid for according to Article 1109.03 paragraph B.
  1. EROSION AND SEDIMENT CONTROLS
    - a. Stabilization Practices
      - 1) Site plans will ensure that existing vegetation is preserved where attainable and disturbed portions of the site will be stabilized.
      - 2) Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased.
      - 3) Temporary stabilizing seeding shall be completed as the disturbed areas are constructed. If construction activity is not planned to occur in a disturbed area for at least 21 days, the area shall be stabilized by temporary seeding or mulching within 14 days. Other stabilizing methods shall be used outside the seeding time period.
      - 4) Stabilization measures to be used for this project are located in the Estimated Project Quantities (100-1A) and Estimate Reference Information (100-4A) located on the C sheets of the plan. Additional items may be found in the Inspector's Daily Reports (IDR) or Contract Modifications.
    - b. Structural Practices
      - 1) Structural practices will be implemented to divert flows from exposed soils and detain or otherwise limit runoff and the discharge of pollutants from exposed areas of the site.
      - 2) Structural items to be used for this project are located in the Estimated Project Quantities (100-1A) and Estimate Reference Information (100-4A) located on the C sheets of the plan, as well as all other item specific Tabulations. Typical drawings detailing construction of the devices to be used on this project can be found on the B sheets of the plan or are referenced in the Standard Road Plans Tabulation.
    - c. Storm Water Management
      - 1) Measures shall be installed during the construction process to control pollutants in storm water discharges that will occur after construction operations have been completed. The installation of these devices may be subject to Section 404 of the Clean Water Act.
  2. OTHER CONTROLS
    - a. Contractor disposal of unused construction materials and construction material wastes shall comply with applicable state

**POLLUTION PREVENTION PLAN**

and local waste disposal, sanitary sewer, or septic system regulations. In the event of a conflict with other governmental laws, rules and regulations, the more restrictive laws, rules or regulations shall apply.

- 1) Vehicle Entrances and Exits - Construct and maintain entrances and exits to prevent tracking of sediments onto roadways.
- 2) Material Delivery, Storage and Use - Implement practices to prevent discharge of construction materials during delivery, storage, and use.
- 3) Stockpile Management - Install controls to reduce or eliminate pollution of storm water from stockpiles of soil and paving.
- 4) Waste Disposal - Do not discharge any materials, including building materials, into waters of the state, except as authorized by a Section 404 permit.
- 5) Spill Prevention and Control - Implement procedures to contain and clean-up spills and prevent material discharges to the storm drain system and waters of the state.
- 6) Concrete Residuals and Washout Wastes - Designate temporary concrete washout facilities for rinsing out concrete trucks. Provide directions to truck drivers where designated washout facilities are located.
- 7) Vehicle and Equipment Cleaning - Employ washing practices that prevent contamination of surface and ground water from wash water.
- 8) Vehicle and Equipment Fueling and Maintenance - Perform on site fueling and maintenance in accordance with all environment laws such as proper storage of onsite fuels and proper disposal of used engine oil or other fluids on site.
- 9) Litter Management - Ensure employees properly dispose of litter.

**3. APPROVED STATE OR LOCAL PLANS**

During the course of this construction, it is possible that situations will arise where unknown materials will be encountered. When such situations are encountered, they will be handled according to all federal, state, and local regulations in effect at the time.

**IV. MAINTENANCE PROCEDURES**

The contractor is required to maintain all temporary erosion and sediment control measures in proper working order, including cleaning, repairing, or replacing them throughout the contract period. This shall begin when the features have lost 50% of their capacity.

**V. INSPECTION REQUIREMENTS**

- A. Inspections shall be made jointly by the contractor and the contracting authority at least once every seven calendar days and after each rain event that is  $\frac{1}{8}$ " or greater. Storm water monitoring inspections will include:
  1. Date of the inspection.
  2. Summary of the scope of the inspection.
  3. Name and qualifications of the personnel making the inspection.
  4. Rainfall amount.
  5. Review erosion and sediment control measures within disturbed areas for the effectiveness in preventing impacts to receiving waters.
  6. Major observations related to the implementation of the PPP.
  7. Identify corrective actions required to maintain or modify erosion and sediment control measures.
- B. Include storm water monitoring inspection reports in the Amended PPP. Incorporate any additional erosion and sediment control measures determined as a result of the inspection. Immediately begin corrective actions on all deficiencies found and complete all actions within 3 calendar days of the inspection.

**VI. NON-STORM WATER DISCHARGES**

This includes subsurface drains (i.e. longitudinal and standard subdrains) and slope drains. The velocity of the discharge from these features may be controlled by the use of patio blocks, Class A stone, erosion stone or other appropriate materials.

**VII. POTENTIAL SOURCES OF OFF RIGHT-OF-WAY (ROW) POLLUTION**

Silts, sediment, and other forms of pollution may be transported onto highway right-of-way (ROW) as a result of a storm event. Potential sources of pollution located outside highway ROW are beyond the control of this PPP. Pollution within highway ROW will be conveyed and controlled per this PPP.

**VIII. DEFINITIONS**

- A. Base PPP - Initial Pollution Prevention Plan.
- B. Amended PPP - May include Plan Revisions or Contract Modifications for new items and fieldbook entries made by the inspector.
- C. IDR - Inspector's Daily Report - this contains the inspector's daily diary and item postings.
- D. Controls - Methods, practices, or measures to minimize or prevent erosion, control sedimentation, control storm water, or minimize contaminants from other types of waste or materials.
- E. Signature Authority - Representative from Designer, Contractor/Subcontractor, or RCE/Inspector authorized to sign various storm water documents.

**TABULATION OF SILT FENCES**

100-17  
04-20-10

Location				Length LF	Remarks
Begin Station	End Station	Side			
SB I-29					
2527+75.7	2577+69.3	0		5493.0	
BID QUANTITY				6870.0	

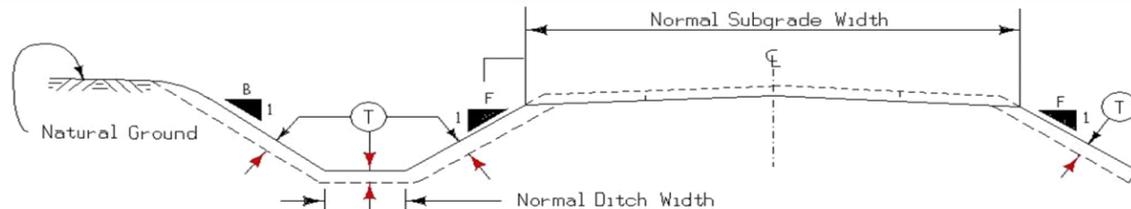
**TABULATION OF SILT FENCES FOR DITCH CHECKS**

100-18  
04-20-10

Location Station	Side	Length LF	Remarks
2529+75.0	0	26.0	
2531+75.0	0	26.0	
2533+75.0	0	26.0	
2535+75.0	0	26.0	
2537+75.0	0	26.0	
2539+75.0	0	26.0	
2541+75.0	0	26.0	
2543+75.0	0	26.0	
2545+75.0	0	26.0	
2547+75.0	0	26.0	
2549+75.0	0	26.0	
2551+75.0	0	26.0	
2553+75.0	0	26.0	
2555+75.0	0	26.0	
2557+75.0	0	26.0	
2559+75.0	0	26.0	
2561+75.0	0	26.0	
2563+75.0	0	26.0	
2565+75.0	0	26.0	
2567+75.0	0	26.0	
2569+75.0	0	26.0	
2571+75.0	0	26.0	
2573+75.0	0	26.0	
2575+75.0	0	26.0	
2537+88.0	M	29.0	
2554+00.0	M	29.0	
2554+59.0	M	29.0	
TOTAL		711.0	
BID QUANTITY		1066.5	

**TABULATION OF SPREADING TOPSOIL**

103-4  
04-19-11



Perform this work according to Section 2105. Prior to placing topsoil on any cohesive soil, scarify the area to be covered to a minimum depth of 3 inches.

Appropriate adjustments have been made in the template quantities to reflect the placement of topsoil on foreslope, backslope and ditch bottom as detailed hereon.

Placement Description						Topsoil Excavation Available From		Remarks
Area	Quantity	Location	Side	Slope	(T)	Amount Reserved	Station to Station	
No.	CY	Station to Station	L. or R.	B. or F.	IN	CY		
	11056.0	2527+75.7 2577+69.3	Both	Both	8.0			

**REMOVAL OF EXISTING STRUCTURES**

110-2  
08-01-08

Location	Description	Disposal
2554+30	275 LF Temporary Barrier Rail	213-1
2555+37	Temporary Crash Cushion	213-1

**REMOVAL OF STEEL BEAM GUARDRAIL**

110-7A  
10-19-10

\* Not a bid item  
① Lane(s) to which the installation is adjacent.

No.	Direction of Traffic	Location		Guardrail	End Terminals and Anchors*		Remarks
		Station to Station	Side	Remove	Remove	Type	
				LF	No.		
	SB	2552+50.0 2555+20.0	0	147.6	1	BA-203	Per 213-1
					1	BA-205	Per 213-1

**DRAINAGE STRUCTURE BY ROAD CONTRACTOR**

\* Not a bid item

Drainage Area	Location	Type	Size	Kind Of Pipe	Length New Const.	Bedding Class	Design Cover (H)	Camber* (RF-30B)	Apron No.	Apron Guard* (RF-26)	Elbow* (RF-13)	Diaphragm* (RF-7)	Tee Section* (RF-21)	"D" Section* (RF-13)	Reducer**	Adaptors* (RF-2)	Connected Pipe Joint* (RF-14)	4" Perforated Subdrain*	Flow Line Elevations				Dimensions Lin. Ft.		Skew Ahead Degrees		Dike			Class 20	Flowable Mortar	Floodable* Backfill	Porous* Backfill	Flooded Backfill	Remarks			
																			Lt.	Rt.	Other	Other	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	Lt.							Rt.	Location Station	Top Elevation
ACRE	2554+00.0	1302	24.0	2000D	6				1	1						C-1	1		1036.40																			
	2554+59	1302	24.0	2000D	4				1	1						C-1	1			1037.10	1036.30	1034.00																
					TOTAL	10																																

**STEEL BEAM GUARDRAIL FOR SIDE OBSTACLE (ONE-WAY PROTECTION)**

- ① Lane(s) to which the obstacle is adjacent.
- ② See Standards for list of materials.

Refer to BA-200, BA-201, BA-203, BA-205, BA-206, BA-252, SI-172, SI-173, and SI-211

No.	Direction of Traffic	Location		Layout Lengths						Culvert Spanning	Type	Delineators and Object Markers				Bid Items ②				Remarks																
		Side	Station	Offset	Approach Side (A)			Trailing Side				Type 1	Type 2	Object Marker		Steel Beam Guardrail	W-Beam End Anchor	End Terminal			Adapter															
					ET	VT2A	VF <sub>A</sub>	VT1A	VT1T					EA	Type 3			Standard	Flared for Cable Connection																	
					Terminal	LF	LF	LF	LF					LF								9'-4 1/2"	OM-3L	OM-3R	BA-200	BA-203	BA-205	BA-206	BA-210							
SB	0	2553+78.0		55.8	10.0	50.0		87.5	25.0	118.8	9.4	Twin 8x8	5				1	225.0	1	1																

**GRADING FOR GUARDRAIL INSTALLATIONS**

- ① Lane(s) to which the installation is adjacent.

Refer to EW-301

No.	Direction of Traffic	Location		Foreslope at Guardrail	Dimensions (Feet)								Earthwork		Remarks	
		Station	Side		X1	Y1	X2	Y2	X3	Y3	X4	Y4	Z	Excavation Class 10		Embankment In Place
					LF	LF	LF	LF	LF	LF	LF	LF	LF	LF		LF
SB		2553+78.0	0	3:1	25.0	5.0			108.9	9.0	162.2	15.7	79.0			Earthwork included in template quantities



**SURVEY SYMBOLS**

-  OUT Tile Outlet
-  TIL Tile Line
-  RET Retaining Walls
-  GDL Guard Rail Steel
-  FW Wire Fence
-  MM Mile Marker Post
-  SNP Unpaved Shoulder
-  DU Centerline Draw or Stream (Up)
-  D Centerline Draw or Stream (Down)

**UTILITY LEGEND**

**PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS**

LINEWORK		Design Color No.	
Green	(2)		Existing Topographic Features and Labels
Blue	(1)		Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Magenta	(5)		Existing Utilities
SHADING		Design Color No.	
Yellow	(4)		Highlight for Critical Notes or Features
Red	(3)		Delineates Restricted Areas
Lavender	(9)		Temporary Pavement Shading
Gray, Light	(48)		Proposed Pavement Shading
Gray, Med	(80)		Proposed Granular Shading
Gray, Dark	(112)		Proposed Grade and Pave Shading
Brown, Light	(236)		Grading Shading
Tan	(8)		Proposed Sidewalk Shading
Blue, Light	(230)		Proposed Sidewalk Landing Shading
Pink	(11)		Proposed Sidewalk Ramp Shading

**PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS**

LINEWORK		Design Color No.	
Green	(2)		Existing Ground Line Profile
Blue	(1)		Proposed Profile and Annotation
Magenta	(5)		Existing Utilities
Blue, Light	(230)		Proposed Ditch Grades, Left
Black	(0)		Proposed Ditch Grades, Median
Rust	(14)		Proposed Ditch Grades, Right

Reference Point  Survey Line

Station  Section Corner

 Ground Line Intercept

 Saw Cut

 Guardrail

 Clearing & Grubbing Area

 Pavement Removal

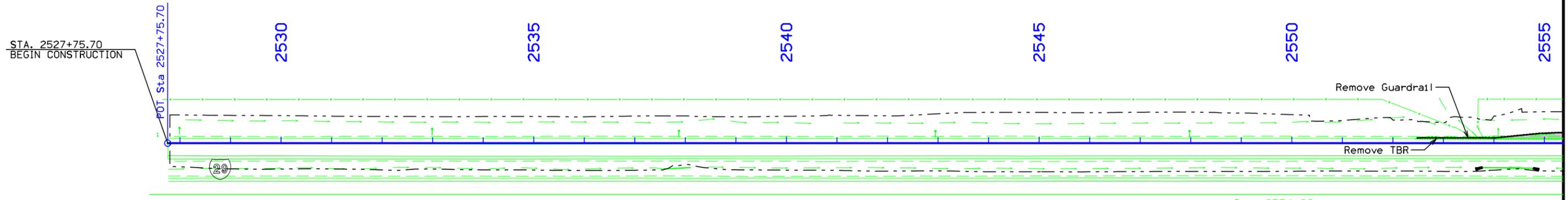
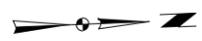
**RIGHT-OF-WAY LEGEND**

-  Proposed Right-of-Way
-  Existing and Proposed Right-of-Way
-  Easement and Existing Right-of-Way
-  Borrow
-  Easement (Temporary)
-  Easement
-  Excess
-  Access Control

**PLAN AND PROFILE  
LEGEND AND SYMBOL  
INFORMATION SHEET**

(COVERS SHEET SERIES D, E, F, & K)

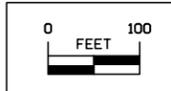
Sherman TWP.  
T-82N R-45W  
SEC. 20



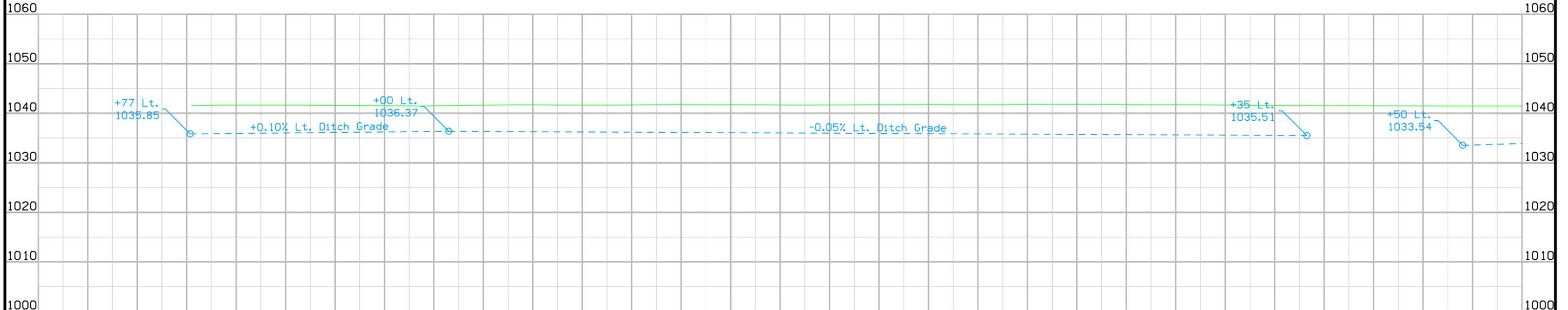
Sta. 2554+30  
Skew 45  
Twin 8' X 8' RCB  
(U.A.C.)

Sta. 2554+00  
24" Median Drain Conc Pipe  
Extend  
with 24" x 6' RCP  
Lt. 1036.40  
F.L. = Other 1035.80  
Other 1034.00

Sta. 2554+59  
24" Median Drain Conc Pipe  
Extend  
with 24" x 4' RCP  
Rt. 1037.10  
F.L. = Other 1036.30  
Other 1034.00



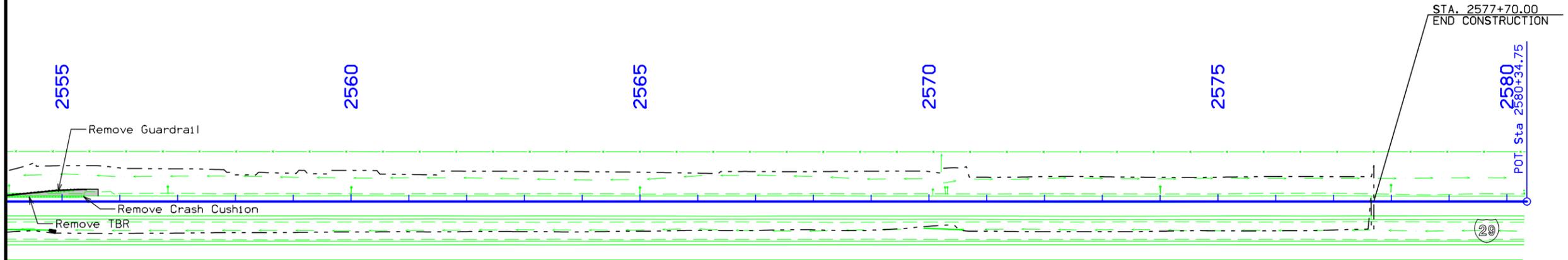
1070 ← Class 10 Suit Cut = 3124 CY Contractor Borrow = 3633 CY Class 10 Suit Fill + 30% = 6757 CY → 1070



Lt (Use As Constructed) Ditch Grade Vari. - See Cross Section Ditch Grade Lt  
Med (Use As Constructed) Use Existing Ditch Med  
Rt (Use As Constructed) Rt

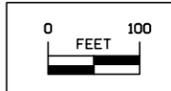
Sherman TWP.  
T-82N R-45W  
SEC. 20

Sherman TWP.  
T-82N R-45W  
SEC. 17

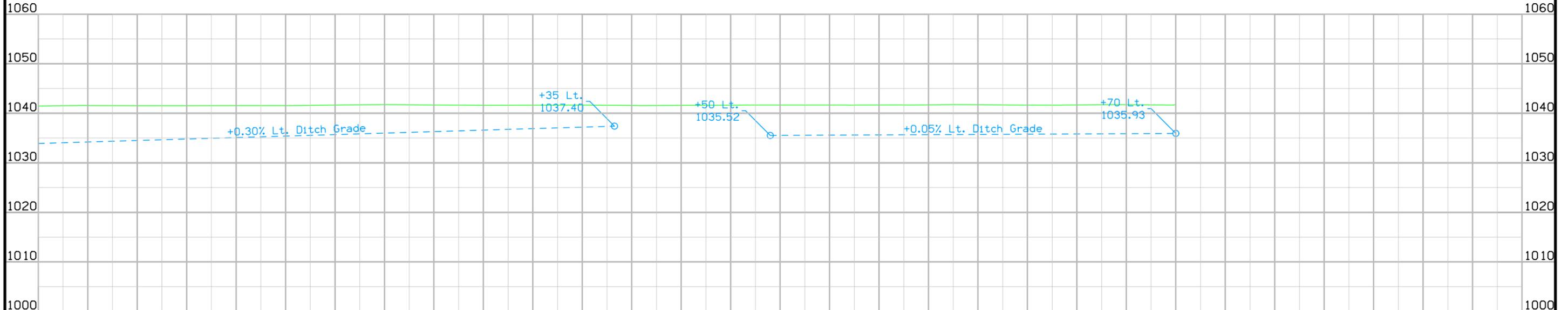


Sta. 2554+30  
Skew 45  
Twin 8' X 8' RCB  
(U.A.C.)

Sta. 2554+59  
24" Median Drain Conc Pipe  
Extend  
with 24" x 4' RCP  
Rt. 1037.10  
F.L. = Other 1036.30  
Other 1034.00



1070 ————— See Sheet D.2 For Balances —————>



Lt ————— Ditch Grade ————— Dike ————— Ditch Grade ————— (Use As Constructed) ————— Lt  
Med ————— Use Existing Ditch ————— Med  
Rt ————— (Use As Constructed) ————— Rt

2555 2560 2565 2570 2575 2580

## Survey Information

### General Information

Measurement units for this survey are US survey feet. This survey is for an asphalt overlay on I-29. Project datum and control information is provided by Design Survey Office. This project is a complete field survey for the digital terrain model. No photogrammetric survey is added.

### Vertical Control

Vertical datum for this survey is relative to NAVD88(Computed using Geoid 09).

laRTN ellipsoidal height relative to NAD83(96CORS)(Epoch2002.00) was established at project CP302 using averaged observations and applying Geoid 09 to determine survey orthometric height.

### Horizontal Control

Iowa State Plane North Zone coordinate system was used throughout this survey. A combined scale factor of 1 may be used for total station work. Unmodified Iowa state plane North Zone system may be used for GPS work. Horizontal coordinates were brought to the site by averaging five laRTN observations on CP302. Remaining project control coordinates were computed using 3 averaged observations from a base station at CP302. Horizontal datum is relative to NAD83(96CORS)(Epoch2002.00).

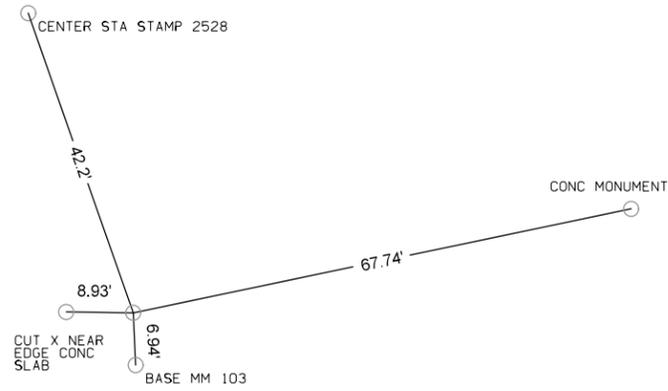
### Alignment Information

The horizontal alignment for this survey was created by the Road Design section.

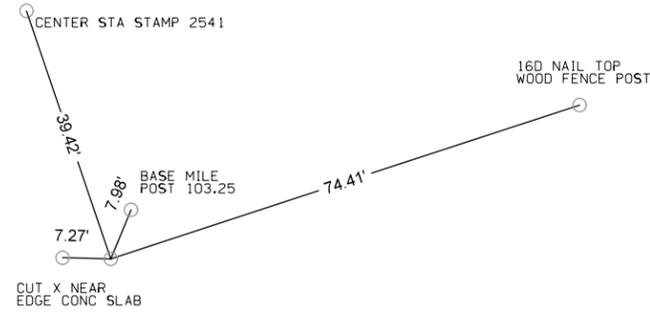
## VERTICAL CONTROL

Point	North	East	Elevation	Station	Offset	Feature	Description
500	3436820.7720	4212446.0670	1038.3770	2+46.34	84.0930	BM	500 RR SPK WOOD BRACE POST
501	3437673.0160	4212481.6680	1036.9330	10+99.32	84.1916	BM	501 RR SPK WOOD BRACE POST
502	3439325.8310	4212476.2790	1039.2480	27+50.48	10.0148	BM	502 CUT X INLET HDWL TWIN RCB
503	3440856.5070	4212544.2970	1039.9560	42+82.66	14.2650	BM	503 CUT X INLET 48" RCP
504	3442249.5790	4212625.2180	1037.8650	Off Chain	Off Chain	BM	504 CUT X ON 36" CONC SIGN BASE

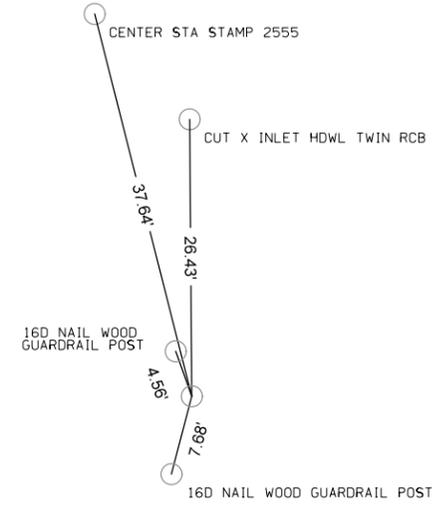
CP STA 0+21.04, RT 16.82'  
 CP No. 300, SET IRON PIN  
 N=3436598.4680, E=4212369.4710



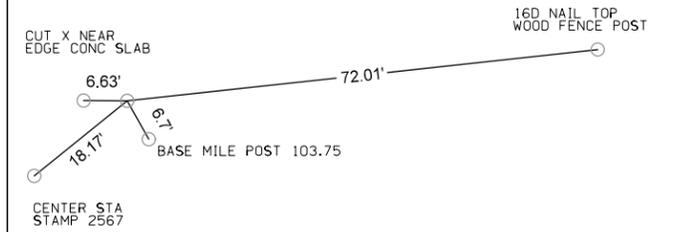
CP STA 13+23.28, RT 14.99'  
 CP No. 301, SET IRON PIN  
 N=3437899.6640, E=4212421.8520



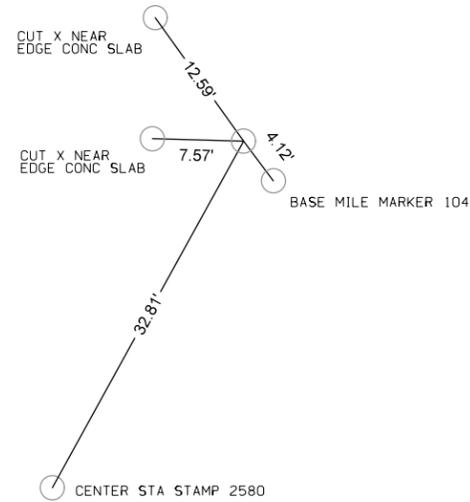
CP STA 27+24.09, RT 11.32'  
 CP No. 302, SET IRON PIN  
 N=3439299.4070, E=4212476.4820



CP STA 39+72.99, RT 14.03'  
 CP No. 303, SET IRON PIN  
 N=3440547.1110, E=4212531.1700



CP 304  
 CP No. 304, SET IRON PIN  
 N=3441862.8660, E=4212586.9960



ALIGNMENT COORDINATES

101-16  
 10-20-09

Name	Location	Point on Tangent		Begin Spiral		Begin Curve		Simple Curve PI or Master PI of SCS		End Curve		End Spiral	
		Station	Coordinates	Station	Coordinates	Station	Coordinates	Station	Coordinates	Station	Coordinates	Station	Coordinates
			Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)
SB_EOP													
4693		2527+75.70	3,436,618.26	4,212,252.14									
4642		2580+34.75	3,441,872.74	4,212,471.14									

102-15  
08-01-08

### TABULATION OF SPECIAL EVENTS

Event	Location	Date
NONE PROVIDED		

108-23A  
08-01-08

### TRAFFIC CONTROL PLAN

Traffic on Interstate 29 shall be maintained at all times with lane and shoulder closures.

Traffic control on this project shall be in accordance with the Standard Road Plans shown in Tab. 105-4, and appropriate detail sheets contained in the plans. For additional complementary information refer to Part 6 of the "Manual on Uniform Traffic Control Devices" and Current Standard Specifications.



