



**Roadway Design Report
Final Design Plans
December 18, 2013**

**for
City of Bridgeport
Igor I. Sikorsky Memorial Airport
Stratford, CT**

**Runway Safety Area Project - CT Route 113 Realignment
State Project No. 15-336
AIP No. 3-09-0002-28**



**Prepared by:
URS Corporation AES
Rocky Hill, CT
Project No. 38397085**

ROADWAY DESIGN REPORT
Final Design
December 18, 2013

Runway Safety Area Project including Realignment of CT Route 113 (Main Street)
State Project No. 15-336
AIP No. 3-09-0002-28
for
Igor I. Sikorsky Memorial Airport owned by City of Bridgeport
Stratford, CT
Prepared by
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1.0 Introduction

URS Corporation is providing engineering services to the City of Bridgeport for improvements to a safety area for Runway 24 at Igor I. Sikorsky Memorial Airport under Airport Improvement Project (AIP) 3-09-0002-28. The project includes the following improvements.

- Realignment of approximately 2,150 feet of Main Street (CT Route 113)
- Construction of a Runway Safety Area for Runway 24 with EMAS
- Installation of an Airport Security Fence (8 foot high)

This Design Report is one of the elements contained in the Final Plans for Review Submission#2 to the Connecticut Department of Transportation for the relocation of Main Street (CT Route 113).

Igor I. Sikorsky Memorial Airport is owned by the City of Bridgeport, CT and located in the Town of Stratford, CT. Connecticut Route 113 (Main Street) is located in a right of way owned by the Connecticut Department of Transportation (CDOT).

2.0 Airport Project Overview

The Igor I. Sikorsky Memorial Airport (BDR) serves the general aviation needs of Fairfield County, CT. The airport provides air charter, flight instruction, and aircraft maintenance services. Aircraft traffic continues to increase on the airfield, with current levels approaching 100,000 operations annually. BDR is located on a densely populated corridor along US Interstate Route 95, between New Haven and the New York State Line. This central location, coincident with the high level of aviation services available on the airfield, has contributed to the increasing activity at the Airport.

The need for the Runway Safety Area project is documented in a September 28, 2011 Record of Decision by the Federal Aviation Administration (FAA), and preceding documents, including a Written Re-evaluation dated June 27, 2011 and Final Environmental Impact Statement issued by the FAA on October 5, 1999.

The proposed construction of a Runway Safety Area (RSA) that is 500 feet in width (250 feet on either side of the runway centerline) by 300 feet in length, requires removal of an existing blast fence and realignment of CT Route 113. The proposed project also includes the installation of an Engineered Materials Arresting System (EMAS) for aircraft overruns, removal of the existing blast fence, installation of new airport security fence, and other runway related improvements.

The relocation of CT Route 113 needed to incorporate the 300' by 500' RSA, involves the full-depth reconstruction and realignment of Main Street, in the segment south of Sniffens Lane and north of Dorne Drive. The existing Main Street roadway is located within right of way is owned by the State of Connecticut. The roadway relocation extends from Station 8+50 to Station 30+00, a distance of approximately 2,150 feet, and impacts property owned by the City of Bridgeport Sikorsky Airport and the former Stratford Army Engine Plant owned by the United States of America.

The project includes:

- full depth pavement reconstruction
- airport security fencing
- multi-use path (pedestrian and bicycle)
- stormwater drainage system (including reconstructing an existing cross culvert)
- underground utility facilities

- removal of existing roadway pavement and underground utilities
- mitigation areas to compensate for impacts to coastal resources

3.0 Design Criteria

3.1 Existing Traffic Volumes

The year 2010 Average Daily Traffic (ADT) for CT Route 113 was obtained from the CDOT website.

<u>Main Street Location</u>	<u>Portable Station No.</u>	<u>2010 ADT</u>
Between Access Rd and Sniffens Lane	2061	10,400
North of Short Beach Rd & Dorne Dr.	96	8,900

3.2 Roadway Design Values

CT Route 113 is classified as an Urban Collector on the CDOT functional classification mapping dated December 31, 2011. Roadway design values are based on the CDOT Highway Design Manual using figure 5E for Major Construction on Urban Collector Roads

The CDOT Manual shows design values based on three types of roadside development; Suburban, Intermediate, and Built-Up. The Intermediate development type was chosen due to the industrial and residential nature of the area.

The existing posted signs show a 30 mph speed limit. A design speed of 40 mph was chosen based on past discussions and correspondence with CDOT. The speed limit will remain at 30 mph.

<u>Design Element</u>	<u>CDOT Design Value</u>	<u>Proposed</u>
Design Speed	30mph to 40 mph	40 mph
Travel Lane Width	11.0' – 12.0'	12.0'
Shoulder Width	4.0' – 8.0'	4.0'
Cross Slope(travel lane)	1.5 % – 3 %	2 %
Cross Slope (shoulder)	4% - 6%	4% min.
Sidewalk/Multi-use path	5' min.	9'
Minimum Radius (e=4%)	490'	490'
Minimum Grade	0.5 %	0.5%
Maximum Grade	10 %	2.67 %
Superelevation (max)	4 %	3 %
Clear Zone (Fig. 13-2A)	16'	16' ²
Stopping Sight Distance ¹	315'	360'
Intersection Sight Distance(Fig. 11-2C)	445'	450'

¹ Figure 7-1A using 3% downgrade requires 315'. Horizontal sight distance along inside of curve is limited to 360' by airport security fencing.

² Guiderail is proposed where clear zone values are not met.

3.3 Horizontal Alignment

Main Street is to be reconstructed along a new horizontal alignment that will allow for the construction of a 300 foot long runway safety area beyond the existing threshold of Runway 24. The roadway alignment design objectives including minimizing the length of relocation needed and minimizing impact to tidal wetland resources.

The proposed realignment of Main Street begins approximately 250' south of the intersection of Main Street and Sniffens Lane, and ends approximately 600' north of Dorne Drive, the entrance roadway to Town of Stratford, Short Beach. The proposed alignment was developed using a 40 mph design speed.

A horizontal alignment data sheet, from InRoads design software, is included in Appendix A.

3.4 Vertical Alignment

The proposed relocated Main Street centerline will serve as the point of application of grade.

The proposed grade ties into the existing grade at the northern end of the project, south of Sniffens Lane, using a proposed grade of -0.50% that meets CT DOT design values.

The roadway experiences flooding that overtops the entire roadway width, during storm events, in the vicinity of the existing culvert crossing at approximate Sta. 25+90. The proposed roadway profile low point elevation is 7.28'(NGVD 1929) compared to the existing approximate roadway low point elevation of 5.80'. This 1.5' increase in roadway elevation will help reduce the frequency of roadway flooding.

A vertical alignment data sheet, from InRoads design software, is included in Appendix A.

3.5 Typical Sections

The proposed typical section for Main Street consists of two 12-foot-wide travel lanes and two 4-foot-wide shoulders. Full depth bituminous pavement construction is proposed. The existing roadway pavement will be removed. Environmental borings taken within the existing roadway pavement, in November 2012, show existing pavement consisting of approximately 5" thick bituminous concrete on top of approximately 13" thick concrete.

A 9-foot-wide, bituminous surfaced, shared use path is proposed along the east side of Main Street, which will replace the existing bituminous shared use path approximately 9' wide. This is a Pathways Extension route within the Housatonic River Greenway –Stratford South End, as shown in the report "Stratford Pathways Study & Plan, Housatonic River Greenway Project, by Greater Bridgeport Regional Planning Agency, Adopted September 2008.

A maximum superelevation rate of 3% was selected for curve numbers 4 and 5, both having a 510' radius, based on CDOT's Highway Design Manual Figure 8-3C for Low Speed Urban Streets.

An 8-foot high airport security fence with barbed wire will be installed along the west side of the roadway along airport property. This fencing is required to comply with FAA security requirements and the Airport's Security Plan.

Concrete curbing will be installed along the east (Sta. 8+00 to 12+50) and west side (Sta. 8+00 to 12+00) of the proposed roadway near the intersection with Sniffens Lane. No curbing is proposed in any other location. The proposed roadway section, using slopes and ditches without curbing, is intended to improve stormwater quality by promoting overland flow where possible.

3.6 Intersection Sight Distance (ISD)

Sniffens Lane forms an intersection with Main Street approximately 250 feet north of the start of this project. This intersection was signalized previously when the Stratford Army Engine Plant was in operation. In the 1990's the signals operated on flashing red/yellow. Currently these signals are not operating. The required intersection sight distance for Sniffens Lane is 445' (based on a passenger vehicle and 40 mph design speed). The proposed design provides 450' of intersection sight distance for a vehicle on Sniffens Lane, looking left on Main Street. Existing fencing at the Stratford Army Engine Plant property limits the proposed intersection sight distance looking left to 450'. This project does not change the existing intersection sight distance looking to the right.

A driveway to airport hangar properties is located on the western side of Main Street approximately 400' south of Sniffens Lane. The available sight distance for vehicles at the driveway exceeds 500' looking left and exceeds 500' looking right. Therefore the 445' criteria is met for both left and right directions.

The Main Street intersection with Dorne Drive, which provides access to Town of Stratford Short Beach, is located beyond the project limits, approximately 600 feet south of the end construction, and therefore intersection sight distance was not evaluated.

3.7 Hydraulics & Drainage

The existing drainage system along Main Street consists primarily of a roadside swale on the west side of the roadway and a closed drainage system on the east side. The major outlet to the drainage system is a channel (approx. 16 feet wide) located south of Runway 24 which outlets to the Marine Basin and Long Island Sound. Record drawings from a 1977 forcemain installation project along Route 113 indicates that there is a 15 inch diameter RCP under the existing road at Station 26+00 that connects to this channel, which is designated as tidal wetlands on both sides of Main Street. This culvert is submerged, even under low tide conditions, and survey of the exact size and invert has not been obtained.

The overall drainage system is influenced by a berm and non-functioning gated drainage structure at the north end of Marine Basin. The gate mechanism, inside a concrete structure, has deteriorated over the years and has been completely removed. No information indicating the original configuration or intended operation of this gate mechanism has been located. Field observations suggest that it was a manually controlled vertical gate, controlling flow through a culvert under the earth berm. The Marine Basin overtops the east end of the berm during higher than normal tide events.

The Final Plans for Review Submission#2 drawings, show the proposed roadway profile low point (Elev. 7.28 at Sta. 25+63) to be raised approximately 1.5 feet above the existing low point of the roadway profile (Elev. 5.8) which will help to reduce the frequency of roadway flooding. This segment of roadway at the culvert is known to flood during major storm events.

The proposed drainage system shown in the Final Plans for Review Volume 2 – Highway drawings, and has been designed in accordance with the following reports prepared by URS Corporation:

1. Hydrologic Report -Proposed Culvert at Route 113 Station 27+50, January 2013
2. Hydraulic Analysis Report - Proposed Culvert and Channel at Route 113 Station 27+50, January 2013
3. Drainage Report, February 2013

3.8 Critical Controls

The need for a Runway Safety Area, 300' long by 500' wide, beyond the threshold of Runway 24 as approved by the FAA, is a critical control for the roadway alignment.

3.9 Construction Staging & Maintenance and Protection of Traffic

The existing Main Street corridor serves a residential area in the Lordship neighborhood to the south and commercial and residential areas in the town of Stratford to the north. Existing traffic will be affected along CT Route 113 (Main Street) during the construction of the proposed roadway as outlined in the construction stages below. In general, much of the affected traffic will have the option to access the Lordship neighborhood via Lordship Boulevard on the west end of the Airport to avoid the construction area.

Stage 1

Excavate and remove from the site all hazardous material identified as “Raymark Waste”. This operation will require the closure of Route 113 and the shared-use path between Sniffens Lane and Dorne Drive. The contractor shall install variable message signs (VMS) for a two-week period prior to the closure of the road, and shall contact the appropriate local authorities two weeks prior to the closure to coordinate the work. Following the removal of the Raymark Waste, CT Route 113 shall be re-opened to normal traffic.

Stage 2A

Maintain traffic on the existing Route 113 alignment. Construct twin 36” culverts (Sta. 27+50) from the headwall (57' LT) to the existing roadway embankment. Construct the tidal channel without removing at the berm at the marine basin. Construct utilities crossing the twin 36” culverts.

Stage 2B

Construct roadway embankment, drainage, and underground utilities along the realigned roadway from Sta. 12+50 to Sta. 25+50.

Stage 3

Using a CT Route 113 road closure and detour, install the remainder of the twin 36” corrugated aluminum culverts and headwalls (Sta. 27+50). Remove the berm at the tidal channel. Construct CT Route 113 roadway embankment and pavement tie-ins at the beginning and end of the project. Complete final paving and open Route 113 to traffic.

Stage 4

Remove the abandoned roadway pavement and remove all abandoned utilities. Construct Airport Security fence and remove existing fencing. Complete all remaining mitigation work, including

grading and planting in the roadway project area. Complete the rough grading for runway safety zone.

4.0 Design Exceptions to Geometric Design elements

The geometric design shown in the Final Design Plans does not require any design exceptions.

5.0 Rights-of-Way

The existing Main Street (CT Route 113) is located within right of way owned by the State of Connecticut. The proposed roadway construction will impact two properties, 1) the former Stratford Army Engine Plant, owned by the United States government, and 2) Sikorsky Airport, owned by the City of Bridgeport.

The parcel of the former Army Engine Plant property is in the process of being transferred to the City of Bridgeport from the FAA. The City of Bridgeport will then transfer a right of way, or defined easement, for the relocated CT Route 113 to CT DOT.

The existing CT Route 113 right of way, needed for the Runway Safety Area, will be released to the City of Bridgeport.

A proposed right of way or defined easement, for the relocated CT Route 113 will be acquired by CT DOT from the City of Bridgeport .

Permanent drainage easements or rights of way will be required for stormwater drainage facilities including stormwater quality basins, tidal channel outlets, and cross culverts. Some temporary construction easements may also be required. The Highway Plan –Volume 2 drawings, show the proposed right of way and easements needed for proposed improvements.

6.0 Utilities

Plans drawings related to the handling of controlled are included in Final Design Plans, Volume 6 – Soil Management.

The following underground utility facilities need to be relocated from within the existing Route 113 roadway to the new roadway alignment. All underground conduit and pipeline construction, except for the Southern CT Gas Company facilities, will be performed by the State's Construction contractor. The pulling and splicing of cables inside conduits, will be performed by AT&T, United Illuminating, Cablevision, and Fiber Technologies.

1. AT &T

An existing eight conduit duct bank, concrete encased (approximately 2' w x 1'h) and manholes will be constructed along the relocated roadway with similar sized facilities.

2. United Illuminating

An existing eight conduit duct bank, concrete encased (approximately 2' w x 1' h) and manholes will be constructed along the relocated roadway with similar sized facilities.

3. Cablevision

An existing two conduit duct bank, concrete encased (approximately 1' w x 1' h) and manholes will be constructed along the relocated roadway with similar sized facilities.

4. Southern Connecticut Gas

An existing 12" low pressure ductile iron gas main will be replaced with a 6" plastic high pressure gas main and 8" plastic low pressure gas main. An existing pressure regulator will be abandoned and a new pressure regulator will be constructed.

5. Aquarion Water Company

Two existing watermains (8" and 16" diameter) will be replaced with two like sized mains. A new meter vault will be constructed to replace the existing vault on the Stratford Army Engine Plant property

6. Town of Stratford Sanitary Force Main

The existing 14" diameter sanitary force main will be replaced with a like sized force main.

7. Fiber Technologies

Fiber Technologies will relocate cables in existing AT&T ducts, to the relocated AT&T duct bank.

7.0 Geotechnical

The geotechnical investigation results are included in the report "Geotechnical Investigation Proposed Re-Alignment of Main Street (CT ROUTE 113) for Safety Improvements to the Igor I. Sikorsky Memorial Airport, Bridgeport, CT, November 2009, by URS Corporation.

8.0 Environmental Permits

The following permit applications are required for this project.

- United States Army Corps of Engineers Section 10/404 Permit
- CT DEEP
 1. Office of Long Island Sound -Structures, and Dredging and Fill Permits
 2. IWRD – Flood Management Certification
 3. Water Quality Certification
 4. General Permit Registration for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities

Construction plans and special provisions incorporate design elements associated with stormwater drainage design, stormwater quality, sedimentation and erosion control, and mitigation of tidal resources impacts. These design elements, along with the above permit applications, are being coordinated with the Connecticut Department of Transportation – Office of Environmental Planning.

9.0 Environmental Compliance

Plans drawings related to the handling of controlled are included in Final Design Plans, Volume 6 – Soil Management and Volume 8-Raymark Waste Disposal Plans.

The Final Design Plans also includes the report “Task 310- Plans and Specifications for Controlled and Hazardous Materials Handling, FPF#2 Submittal, February 12, 2013 by URS Corporation. “ The Task 310 report includes specific management handling practices for controlled and hazardous materials that the Contractor must follow while excavating, screening, hauling, and loading or any general activity, including dewatering, encountered during site construction activities. Environmental management practices shall be intended to be protective of human health and the environment and are designed to assure that controlled and hazardous materials are properly handled to prevent the spread of polluted soils and/or groundwater to other areas during site construction activities.

Other related reference documents related to hazardous materials handling include:

- a. Remedial Investigation Raymark – Operating Unit 6 (OU6)-Additional Properties Stratford, Connecticut, Response Action Contract, Region 1. Prepared by Tetra Tech NUS, Inc., April 2004, revised June 2005.
- b. Task 120 Preliminary Site Assessment for Site 1 and Site 2. Prepared by URS Corporation (URS) for the City of Bridgeport, August 13, 2009.
- c. Draft Task 210 Subsurface Site Investigation Report, Prepared for Igor I. Sikorsky Memorial Airport, Stratford, Connecticut. Prepared by URS Corporation for the City of Bridgeport, November 2012.

10.0 Construction Cost Estimate

A detailed construction cost estimate for the Final Design Plans is included as a separate document in the submission package.

APPENDIX A

**InROADS GEOMETRY DATA SHEETS
FOR VERTICAL AND HORIZONTAL GEOMETRY**

Horizontal Alignment Review Report

Report Created: 1/28/2013
Time: 12:56pm

Project: 2012 12 07 015-336
Description: Route 113 Remove Compound Curve
File Name: P:\015-336\InRoads\2012 12 07 015-336.alg
Last Revised: pat_gilkey 1/28/2013 8:32:38 AM
Input Grid Factor: 1.00000000 **Note:** All units in this report are in feet unless specified otherwise.

Alignment Name: 2012 12 07 Route 113
Alignment Description: Remove compound curve
Alignment Style: centerline

	Station	Northing	Easting
Element: Linear			
POB ()	5+00.00	622364.570	897071.337
PC ()	8+62.42	622106.785	897326.084
Tangential Direction:	S 44°39'36.7" E		
Tangential Length:	362.42		
Element: Circular			
PC ()	8+62.42	622106.785	897326.084
PI ()	9+31.34	622057.761	897374.530
CC ()		622739.395	897966.243
PCC ()	10+00.00	622016.685	897429.876
Radius:	900.00		
Delta:	8°45'30.5" Left		
Degree of Curvature (Arc):	6°21'58.3"		
Length:	137.58		
Tangent:	68.92		
Chord:	137.44		
Middle Ordinate:	2.63		
External:	2.64		
Tangent Direction:	S 44°39'36.7" E		
Radial Direction:	S 45°20'23.3" W		
Chord Direction:	S 49°02'22.0" E		
Radial Direction:	S 36°34'52.8" W		
Tangent Direction:	S 53°25'07.2" E		
Element: Circular			
PCC ()	10+00.00	622016.685	897429.876
PI ()	12+00.89	621896.960	897591.196
CC ()		622578.793	897847.050
PT ()	13+91.27	621881.004	897791.455
Radius:	700.00		
Delta:	32°01'33.6" Left		

Degree of Curvature (Arc):	8°11'06.4"
Length:	391.27
Tangent:	200.89
Chord:	386.20
Middle Ordinate:	27.16
External:	28.26
Tangent Direction:	S 53°25'07.2" E
Radial Direction:	S 36°34'52.8" W
Chord Direction:	S 69°25'54.0" E
Radial Direction:	S 4°33'19.2" W
Tangent Direction:	S 85°26'40.8" E

Element: Linear

PT	()	13+91.27	621881.004	897791.455
PC	()	17+60.22	621851.701	898159.244
Tangential Direction:		S 85°26'40.8" E		
Tangential Length:		368.95		

Element: Circular

PC	()	17+60.22	621851.701	898159.244
PI	()	20+11.72	621831.727	898409.941
CC	()		621343.312	898118.739
PT	()	22+27.52	621620.682	898546.718
Radius:		510.00		
Delta:		52°29'51.8" Right		
Degree of Curvature (Arc):		11°14'04.1"		
Length:		467.29		
Tangent:		251.49		
Chord:		451.12		
Middle Ordinate:		52.59		
External:		58.64		
Tangent Direction:		S 85°26'40.8" E		
Radial Direction:		S 4°33'19.2" W		
Chord Direction:		S 59°11'44.9" E		
Radial Direction:		S 57°03'11.0" W		
Tangent Direction:		S 32°56'49.0" E		

Element: Linear

PT	()	22+27.52	621620.682	898546.718
PC	()	28+04.39	621136.582	898860.459
Tangential Direction:		S 32°56'49.0" E		
Tangential Length:		576.88		

Element: Circular

PC	()	28+04.39	621136.582	898860.459
PI	()	30+20.71	620955.055	898978.106
CC	()		620870.090	898449.264
PT	()	32+11.81	620745.812	898923.242
Radius:		490.00		

Delta: 47°38'21.5" Right
 Degree of Curvature (Arc): 11°41'34.9"
 Length: 407.42
 Tangent: 216.32
 Chord: 395.78
 Middle Ordinate: 41.74
 External: 45.62
 Tangent Direction: S 32°56'49.0" E
 Radial Direction: S 57°03'11.0" W
 Chord Direction: S 9°07'38.3" E
 Radial Direction: N 75°18'27.6" W
 Tangent Direction: S 14°41'32.4" W

Element: Linear

PT	()	32+11.81	620745.812	898923.242
POE	()	32+29.63	620728.572	898918.721
Tangential Direction:		S 14°41'32.4" W		
Tangential Length:		17.82		

Vertical Alignment Review Report

Report Created: 1/28/2013
Time: 12:59pm

Project: 2012 12 07 015-336
Description: Route 113 Remove Compound Curve
File Name: P:\015-336\InRoads\2012 12 07 015-336.alg
Last Revised: pat_gilkey 1/28/2013 12:56:21 PM
Input Grid Factor: 1.00000000 **Note:** All units in this report are in feet unless specified otherwise.

Horizontal Alignment: 2012 12 07 Route 113
Horizontal Description: Remove compound curve
Horizontal Style: centerline

Vertical Alignment: 2012 12 07 Rte 113
Vertical Description: Remove compound curve
Vertical Style: centerline

	Station	Elevation
Element: Linear		
POB	8+54.99	6.900
PVC	9+04.99	6.650
Tangent Grade:	-0.500%	
Tangent Length:	50.00	
Element: Symmetrical Parabola		
PVC	9+04.99	6.650
PVI	9+54.99	6.400
PVT	10+04.99	6.729
VLOW	9+48.13	6.542
Length:	100.00	
Entrance Grade:	-0.500%	
Exit Grade:	0.659%	
$r = (g2 - g1) / L:$	1.16	
$K = 1 / (g2 - g1):$	86.29	
Middle Ordinate:	0.14	
Element: Linear		
PVT	10+04.99	6.729
PVC	16+54.99	11.012
Tangent Grade:	0.659%	
Tangent Length:	650.00	
Element: Symmetrical Parabola		
PVC	16+54.99	11.012
PVI	18+04.99	12.000
PVT	19+54.99	11.029

	VHIGH	18+06.34	11.510
	Length:	300.00	
	Entrance Grade:	0.659%	
	Exit Grade:	-0.647%	
	$r = (g2 - g1) / L:$	-0.44	
	$K = l / (g2 - g1):$	229.73	
	Middle Ordinate:	-0.49	
Element: Linear			
	PVT	19+54.99	11.029
	PVC	25+04.99	7.471
	Tangent Grade:	-0.647%	
	Tangent Length:	550.00	
Element: Symmetrical Parabola			
	PVC	25+04.99	7.471
	PVI	26+54.99	6.500
	PVT	28+04.99	10.504
	VLOW	25+63.52	7.281
	Length:	300.00	
	Entrance Grade:	-0.647%	
	Exit Grade:	2.670%	
	$r = (g2 - g1) / L:$	1.11	
	$K = l / (g2 - g1):$	90.45	
	Middle Ordinate:	1.24	
Element: Linear			
	PVT	28+04.99	10.504
	POE	30+04.99	15.844
	Tangent Grade:	2.670%	
	Tangent Length:	200.00	

APPENDIX B

CONSTRUCTION COST ESTIMATE