

CONTRACT DOCUMENTS
AND
SPECIFICATIONS

FOR

AIP NO. TBD

TAXIWAY F RECONSTRUCTION

BATON ROUGE METROPOLITAN AIRPORT

ADDENDUM NO. 1

DATE ISSUED: JULY 28, 2026

SCOPE:

This Addendum shall be part of the Contract Documents as provided in the Instructions to Bidders.

The following items are issued to add, modify, and clarify the Contract Documents and Specifications. These items shall have full force and effect, as the contract Documents and the cost involved shall be included in the bid prices.

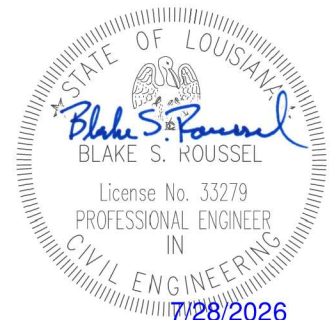
Acknowledge receipt of the addendum by its number and date on the Louisiana Uniform Public Work Bid Form. Failure to do so may subject the bidder to disqualification.

Individual document changes consist of the following:

REVISIONS TO PROJECT SPECIFICATIONS:

The following sections have been added, deleted, or amended in the Specifications and Contract Documents dated July 2026.

- Project Manual Cover Sheet
 - Added engineering seals for electrical and drainage specifications
- Table of Contents
 - Updated Table of Contents
- Louisiana Uniform Public Work Bid Form, Unit Price Form
 - Amended miscellaneous quantities
 - Added pay item P-401-8.1 Asphalt Mixture Surface Course
 - Added pay item P-403-8.1a Asphalt Mixture Binder Course (2" Thick)
 - Added pay item P-403-8.1b Asphalt Base Course (5" Thick)
 - Added pay item P-407-7.1 Asphalt Permeable Treated Base Course
 - Added pay item P-602-5.1 Emulsified Asphalt Prime Coat



- Added pay item P-603-5.1 Emulsified Asphalt Tack Coat
- Added pay item P-610-6.1 Concrete
- Added pay item D-705-5.4 6" Pipe (Perforated PVC) (Includes Porous Backfill and Filter Fabric)
- Added pay item L-110-5.8 Jack and bore 2" HDPE Conduit with couplings
- Added pay item L-110-5.8 Jack and bore L-867D Base Can and Cover
- Added pay item L-125-5.11 LED retrofit kit, S10(3 module)
- Added pay item L-125-5.11 LED retrofit kit, S11(3 module)
- Added pay item L-125-5.11 LED retrofit kit, S12(4 module)
- Added pay item L-125-5.11 LED retrofit kit, S13(3 module)
- Added pay item S-1000 Construction Safety and Phasing Plan
- DIVISION IV, Technical Specifications
 - Added Specification P-401 Asphalt Mixture Surface Course
 - Added Specification P-403 Asphalt Mixture Binder Course
 - Added Specification P-407 Asphalt Permeable Treated Base Course
 - Added Specification P-602 Emulsified Asphalt Prime Coat
 - Added Specification P-603 Emulsified Asphalt Tack Coat
 - Added Specification P-610 Concrete for Miscellaneous Structures
 - Added Specification D-705 Pipe Underdrains for Airports
 - Added Specification L-110 Installation of Airport Underground Electrical Conduit
 - Amended Specification S-1000 Construction Safety and Phasing Plan
- Appendix C
 - Added Taxiway F As-Built Plans

REVISIONS TO CONSTRUCTION PLANS:

The following plan sheets have been revised:

- Sheet G002, SHEET INDEX
 - Sheets EDPP1 and EDPP2 were added to the index.
 - Sheets EDPP1 AND EDPP2 were in the advertised plan set but not listed in the index.
- Sheet G006, SUMMARY OF ESTIMATED QUANTITIES
 - Modified pay item quantities
 - Added new pay items
 - P-401-8.1 Asphalt Mixture Surface Course
 - P-403-8.1a Asphalt Mixture Binder Course (2" Thick)
 - P-403-8.1b Asphalt Base Course (5" Thick)
 - P-407-7.1 Asphalt Permeable Treated Base Course
 - P-501-8.1 Concrete Pavement (9.0" Thick)
 - P-602-5.1 Emulsified Asphalt Prime Coat
 - P-603-5.1 Emulsified Asphalt Tack Coat
 - D-705-5.4 6" Pipe (Perforated PVC) (Includes Porous Backfill and Filter Fabric)
 - L-110-5.8 Jack and Bore 2" HDPE Conduit with Couplings
 - L-110-5.8 Jack and Bore L-867D Base Can and Cover
 - L-125-5.11 LED Retrofit Kit, S10(3 Module)
 - L-125-5.11 LED Retrofit Kit, S11(3 Module)
 - L-125-5.11 LED Retrofit Kit, S12(4 Module)
 - L-125-5.11 LED Retrofit Kit, S13(3 Module)
- Sheet GI002, CONTRACTOR ACCESS PLAN

- Access has been revised.
- Sheet GI101, CONSTRUCTION SAFETY PLAN AND AIRPORT SAFETY PLAN PHASE 1
 - Temp stockpile area added.
 - New notes regarding FOD control added.
- Sheet GI102, CONSTRUCTION SAFETY PLAN AND AIRPORT SAFETY PLAN PHASE 2
 - Temp stockpile area added.
- Sheet GI201, SCP AND ASP DETAILS
 - Removed Portable Lighted “X” Runway Closure Marker
- Sheet CS202
 - Removed Transition Between Rigid and Flexible Pavement Sections (added to JL201)
- Sheet JL201, ENLARGED JOINT LAYOUT PLAN
 - Alt 2 added to joint layout plan.
 - Revised Detail A3 and added legend.
 - Joint layout design completely revised.
- Sheet E-604, SIGNAGE SCHEDULE
 - Added note 3

ADDITIONAL ITEMS:

- Revised Cost Estimate reflecting addition pay items added via this addendum
- Pre-Bid Meeting Agenda, Meeting Notes and Sign-In Sheet
- Contractor Questions and Consultant Answers

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**APPENDIX A – FAA AC 150/5370-2G – Operational Safety on Airports
During Construction**

APPENDIX B – Geotechnical Report

APPENDIX C – Taxiway F As-Built

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LOUISIANA UNIFORM PUBLIC WORK BID FORM

UNIT PRICE FORM

TO: City of Baton Rouge
 Parish of East Baton Rouge
 Purchasing Division
 Room 826, City Hall
 222 St. Louis Street
 Baton Rouge, Louisiana 70802

BID FOR: Baton Rouge Metropolitan Airport
 Taxiway F Reconstruction

A.I.P. No. X-XX-XXXX-XXX-XXXX
 S.P. No. H.XXXXXXX

UNIT PRICES: This form shall be used for any and all work required by the Bidding Documents and described as unit prices. Amounts shall be stated in figures and only in figures.

DESCRIPTION:	X Base Bid or ☐ Alt.#	Contractor Quality Control Program (CQCP)		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
C-100	1	LS		

DESCRIPTION:	X Base Bid or ☐ Alt.#	Installation and Removal of Silt Fence		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
C-102-5.1e	1,310	LF		

DESCRIPTION:	X Base Bid or ☐ Alt.#	Mobilization		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
C-105	1	LS		

DESCRIPTION:	X Base Bid or ☐ Alt.#	Pavement Removal (Taxiway F)		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-101-5.1	4,407	SY		

DESCRIPTION:	X Base Bid or ☐ Alt.#	Removal of Existing Concrete Catch Basin		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-101-5.2	3	EA		

DESCRIPTION:	X Base Bid or ☐ Alt.#	Removal of Existing Pipe (Storm Drain)		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-101-5.3	744	LF		

DESCRIPTION:	X Base Bid or ☐ Alt.#	Clearing and Grubbing		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-151-4.2	1	AC		

DESCRIPTION:	X Base Bid or ☐	Alt.#	Unclassified Excavation	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-152-4.1	3,967	CY		
DESCRIPTION:	X Base Bid or ☐	Alt.#	Embankment in Place	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-152-4.2	112	CY		
DESCRIPTION:	X Base Bid or ☐	Alt.#	Subbase Course (18" Thick)	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-154-5.1	3,387	CY		
DESCRIPTION:	X Base Bid or ☐	Alt.#	Lime-Treated Subgrade (12")	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-155-8.1	6,603	SY		
DESCRIPTION:	X Base Bid or ☐	Alt.#	Lime	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-155-8.2	85	TON		
DESCRIPTION:	X Base Bid or ☐	Alt.#	Crushed Aggregate Base Course (6.0" Thick)	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-209-5.1	6,603	SY		
DESCRIPTION:	X Base Bid or ☐	Alt.#	Separation Geotextile	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-209-5.2	6,603	SY		
DESCRIPTION:	X Base Bid or ☐	Alt.#	Lean Concrete Base Course (11.0" Thick)	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-306-8.1	5,884	SY		
DESCRIPTION:	X Base Bid or ☐	Alt.#	Cement Treated Permeable Base Course (6.0" Thick)	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-307	5,884	SY		

DESCRIPTION:	X Base Bid or ☐	Alt.#	Asphalt Mixture Surface Course (2" Thick)	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-401-8.1	52	TON		
DESCRIPTION:	X Base Bid or ☐	Alt.#	Asphalt Mixture Binder Course (2" Thick)	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-403-8.1a	52	TON		
DESCRIPTION:	X Base Bid or ☐	Alt.#	Asphalt Base Course (5" Thick)	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-403-8.1b	129	TON		
DESCRIPTION:	X Base Bid or ☐	Alt.#	Asphalt Permeable Treated Base Course	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-407-7.1	468	SY		
DESCRIPTION:	X Base Bid or ☐	Alt.#	Concrete Pavement (9.0" Thick)	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-501-8.1	5,713	SY		
DESCRIPTION:	X Base Bid or ☐	Alt.#	Emulsified Asphalt Prime Coat	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-602-5.1	28	GAL		
DESCRIPTION:	X Base Bid or ☐	Alt.#	Emulsified Asphalt Track Coat	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-603-5.1	141	GAL		
DESCRIPTION:	X Base Bid or ☐	Alt.#	Joint Sealing Filler	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-605-5.1	8,300	LF		
DESCRIPTION:	X Base Bid or ☐	Alt.#	Concrete	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-610-6.1	275	CY		

DESCRIPTION:	X Base Bid or ☐	Alt.#	Surface Preparation	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-620-5.1a	5,437	SF		
DESCRIPTION:	X Base Bid or ☐	Alt.#	Taxiway Marking (Yellow)	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-620-5.2b-1	1,898	SF		
DESCRIPTION:	X Base Bid or ☐	Alt.#	Taxiway Marking (White)	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-620-5.2b-2	55	SF		
DESCRIPTION:	X Base Bid or ☐	Alt.#	Taxiway Marking (Red)	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-620-5.2b-3	263	SF		
DESCRIPTION:	X Base Bid or ☐	Alt.#	Taxiway Marking (Black)	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-620-5.2b-4	3,221	SF		
DESCRIPTION:	X Base Bid or ☐	Alt.#	Reflective Media	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-620-5.3c	193	LB		
DESCRIPTION:	X Base Bid or ☐	Alt.#	Sodding	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
T-904-5.2	435	SY		
DESCRIPTION:	X Base Bid or ☐	Alt.#	Topsoil (Obtained Onsite or Removed from Stockpile)	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
T-905-5.1	710	CY		
DESCRIPTION:	X Base Bid or ☐	Alt.#	18" RCP (Class IV)(Includes Bedding & Backfill)	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
D-701-5.1	78	LF		

DESCRIPTION:	X Base Bid or ☐	Alt.#	48" RCP (Class IV)(Includes Bedding & Backfill)	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
D-701-5.2	402	LF		
DESCRIPTION:	X Base Bid or ☐	Alt.#	54" RCP (Class IV)(Includes Bedding & Backfill)	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
D-701-5.3	342	LF		
DESCRIPTION:	X Base Bid or ☐	Alt.#	6" Pipe (Perforated PVC)(Includes Porous Backfill and Filter Fabric)	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
D-705-5.4	424	LF		
DESCRIPTION:	X Base Bid or ☐	Alt.#	Furnish, Install 36" x 24" Concrete Open Top Catch Basin	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
D-751-5.1	1	EA		
DESCRIPTION:	X Base Bid or ☐	Alt.#	Furnish, Install 72" x 48" Concrete Open Top Catch Basin	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
D-751-5.2	3	EA		
DESCRIPTION:	X Base Bid or ☐	Alt.#	Trenching, turf and pavement restoration, protection of existing circuits	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-108-5.2	1,300	LF		
DESCRIPTION:	X Base Bid or ☐	Alt.#	5KV cable, #6 AWG	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-108-5.4	2,860	LF		
DESCRIPTION:	X Base Bid or ☐	Alt.#	Bare Counterpoise Ground Cable, #6	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-108-5.5	2,860	LF		
DESCRIPTION:	X Base Bid or ☐	Alt.#	3/4" X 10' Copper Ground Rod	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-108-5.6	24	EA		

DESCRIPTION:	X Base Bid or ☐	Alt.#	Copper Ground Lug	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-108-5.7	24	EA		
DESCRIPTION:	X Base Bid or ☐	Alt.#	2" PVC conduit demo and re install	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-110-5.1	1,300	LF		
DESCRIPTION:	X Base Bid or ☐	Alt.#	2" PVC couplings demo and re install	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-110-5.2	130	EA		
DESCRIPTION:	X Base Bid or ☐	Alt.#	2" PVC connectors demo and re install	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-110-5.3	48	EA		
DESCRIPTION:	X Base Bid or ☐	Alt.#	L-867D Base can and cover	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-110-5.6	2	EA		
DESCRIPTION:	X Base Bid or ☐	Alt.#	Duct Marker	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-110-5.7	4	EA		
DESCRIPTION:	X Base Bid or ☐	Alt.#	Jack and Bore 2" HDPE Conduit with Couplings	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-110-5.8	210	LF		
DESCRIPTION:	X Base Bid or ☐	Alt.#	Jack and Bore L-867D Base Can and Cover	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-110-5.8	6	EA		
DESCRIPTION:	X Base Bid or ☐	Alt.#	Electrical Junction Structure, L-867D, 16" diameter, 24" deep	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-115-5.2	8	EA		

DESCRIPTION:	X Base Bid or ☐	Alt.# _____	Taxiway Light, Elevated LED type, 14" Pedestal plus excavator	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-125-5-1	22	EA		
DESCRIPTION:	X Base Bid or ☐	Alt.# _____	Runway Guard Light	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-125-5-3	2	EA		
DESCRIPTION:	X Base Bid or ☐	Alt.# _____	Base Plate	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-125-5.4	24	EA		
DESCRIPTION:	X Base Bid or ☐	Alt.# _____	L-830 Isolation Transformer	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-125-5.5	27	EA		
DESCRIPTION:	X Base Bid or ☐	Alt.# _____	L-867 Base Can 12" diameter X 24" deep with two 2" grommets	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-125-5.6	27	EA		
DESCRIPTION:	X Base Bid or ☐	Alt.# _____	Primary Connector Kit	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-125-5.7	3	EA		
DESCRIPTION:	X Base Bid or ☐	Alt.# _____	Frangible Couplings	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-125-5.8	12	EA		
DESCRIPTION:	X Base Bid or ☐	Alt.# _____	Mounting Flange GN-62B0107	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-125-5.9	12	EA		
DESCRIPTION:	X Base Bid or ☐	Alt.# _____	SIGN concrete foundation	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-125-5.10	3	EA		

DESCRIPTION:	X Base Bid or ☐	Alt.#	LED retrofit kit, S10 (3 module)	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-125-5.11	1	EA		
DESCRIPTION:	X Base Bid or ☐	Alt.#	LED retrofit kit, S11 (3 module)	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-125-5.11	1	EA		
DESCRIPTION:	X Base Bid or ☐	Alt.#	LED retrofit kit, S12 (3 module)	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-125-5.11	1	EA		
DESCRIPTION:	X Base Bid or ☐	Alt.#	LED retrofit kit, S13 (3 module)	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-125-5.11	1	EA		
DESCRIPTION:	X Base Bid or ☐	Alt.#	Construction Safety and Phasing Plan	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
S-1000	1	LS		
DESCRIPTION:	X Base Bid or ☐	Alt.#	Seeding (Hydroseeding)	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
S-1001	0.9	AC		
DESCRIPTION:	X Base Bid or ☐	Alt.#	Adjusting Catch Basins	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
S-1002	1	EA		

All quantities are estimated. The contractor will be paid based upon actual quantities as verified by the Owner

LOUISIANA UNIFORM PUBLIC WORK BID FORM

UNIT PRICE FORM

TO: City of Baton Rouge
 Parish of East Baton Rouge
 Purchasing Division
 Room 826, City Hall
 222 St. Louis Street
 Baton Rouge, Louisiana 70802

BID FOR: Baton Rouge Metropolitan Airport
 Taxiway F Reconstruction

A.I.P. No. X-XX-XXXX-XXX-XXXX
 S.P. No. H.XXXXXX

UNIT PRICES: This form shall be used for any and all work required by the Bidding Documents and described as unit prices. Amounts shall be stated in figures and only in figures.

DESCRIPTION:	☐ Base Bid or ☒ Alt.# 1	Installation and Removal of Silt Fence		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
C-102-5.1e	340	LF		
DESCRIPTION:	☐ Base Bid or ☒ Alt.# 1	Pavement Removal (Taxiway F)		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-101-5.1	577	SY		
DESCRIPTION:	☐ Base Bid or ☒ Alt.# 1	Clearing and Grubbing		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-151-4.2	0.3	AC		
DESCRIPTION:	☐ Base Bid or ☒ Alt.# 1	Unclassified Excavation		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-152-4.1	644	CY		
DESCRIPTION:	☐ Base Bid or ☒ Alt.# 1	Embankment in Place		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-152-4.2	36	CY		
DESCRIPTION:	☐ Base Bid or ☒ Alt.# 1	Subbase Course (18" Thick)		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-154-5.1	358	CY		
DESCRIPTION:	☐ Base Bid or ☒ Alt.# 1	Lime Treated Subgrade (12")		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-155-8.1	716	SY		
DESCRIPTION:	☐ Base Bid or ☒ Alt.# 1	Lime		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P 155 8.2	9	TON		

DESCRIPTION:	☐ Base Bid or ☒ Alt. # 1	Crushed Aggregate Base Course (6.0" Thick)		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-209-5.1	716	SY		
DESCRIPTION:	☐ Base Bid or ☒ Alt. # 1	Separation Geotextile		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-209-5.2	716	SY		
DESCRIPTION:	☐ Base Bid or ☒ Alt. # 1	Lean Concrete Base Course (11.0" Thick)		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-306-8.1	724	SY		
DESCRIPTION:	☐ Base Bid or ☒ Alt. # 1	Cement Treated Permeable Base Course (6.0" Thick)		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-307	724	SY		
DESCRIPTION:	☐ Base Bid or ☒ Alt. # 1	Concrete Pavement (9.0" Thick)		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-501-8.1	702	SY		
DESCRIPTION:	☐ Base Bid or ☒ Alt. # 1	Joint Sealing Filler		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-605-5.1	1,268	LF		
DESCRIPTION:	☐ Base Bid or ☒ Alt. # 1	Surface Preparation		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-620-5.1a	399	LF		
DESCRIPTION:	☐ Base Bid or ☒ Alt. # 1	Taxiway Marking (Yellow)		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-620-5.2b-1	133	SF		
DESCRIPTION:	☐ Base Bid or ☒ Alt. # 1	Taxiway Marking (Black)		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-620-5.2b-4	266	SF		
DESCRIPTION:	☐ Base Bid or ☒ Alt. # 1	Reflective Media		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-620-5.3c	12	LB		

DESCRIPTION:	☐ Base Bid or ☒ Alt # 1	Sodding		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
T-904-5.2	50	SY		
DESCRIPTION:	☐ Base Bid or ☒ Alt # 1	Topsoil (Obtained Onsite or Removed from Stockpile)		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
T-905-5.1	212	CY		
DESCRIPTION:	☐ Base Bid or ☒ Alt # 1	6" Pipe (Perforated PVC)(Includes Porous Backfill and Filter Fabric)		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
D-705-5.4	256	LF		
DESCRIPTION:	☐ Base Bid or ☒ Alt # 1	Trenching, turf and pavement restoration, protection of existing circuits		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-108-5.2	500	LF		
DESCRIPTION:	☐ Base Bid or ☒ Alt # 1	5KV cable, #6 AWG		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-108-5.4	550	LF		
DESCRIPTION:	☐ Base Bid or ☒ Alt # 1	Bare Counterpoise Ground Cable, #6		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-108-5.5	550	LF		
DESCRIPTION:	☐ Base Bid or ☒ Alt # 1	2" PVC conduit demo and re install		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-110-5.1	250	LF		
DESCRIPTION:	☐ Base Bid or ☒ Alt # 1	2" PVC couplings demo and re install		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-110-5.2	25	EA		
DESCRIPTION:	☐ Base Bid or ☒ Alt # 1	2" PVC connectors demo and re install		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-110-5.3	14	EA		
DESCRIPTION:	☐ Base Bid or ☒ Alt # 1	L-867D Base can		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-110-5.6	2	EA		

DESCRIPTION:	☐ Base Bid or ☒ Alt.# 1	Duct Marker		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-110-5.7	2	EA		
DESCRIPTION:	☐ Base Bid or ☒ Alt.# 1	Electrical Junction Structure, L-867D, 16" diameter, 24" deep		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-115-5.2	4	EA		
DESCRIPTION:	☐ Base Bid or ☒ Alt.# 1	Taxiway Light, Elevated LED type, 14" Pedestal plus excavator		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-125-5-1	5	EA		
DESCRIPTION:	☐ Base Bid or ☒ Alt.# 1	Base Plate		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-125-5.4	5	EA		
DESCRIPTION:	☐ Base Bid or ☒ Alt.# 1	L-830 Isolation Transformer		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-125-5.5	10	EA		
DESCRIPTION:	☐ Base Bid or ☒ Alt.# 1	L-867 Base Can 12" diameter X 24" deep with two 2" grommets		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-125-5.6	10	EA		
DESCRIPTION:	☐ Base Bid or ☒ Alt.# 1	Primary Connector Kit		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-125-5.7	5	EA		
DESCRIPTION:	☐ Base Bid or ☒ Alt.# 1	Frangible Couplings		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-125-5.8	20	EA		
DESCRIPTION:	☐ Base Bid or ☒ Alt.# 1	Mounting Flange GN-62B0107		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-125-5.9	20	EA		
DESCRIPTION:	☐ Base Bid or ☒ Alt.# 1	SIGN concrete foundation		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-125-5.10	1	EA		

DESCRIPTION:	☐ Base Bid or ☒ Alt # 1		Construction Safety and Phasing Plan	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
S-1000	1	LS		
DESCRIPTION:	☐ Base Bid or ☒ Alt # 1		Seeding (Hydroseeding)	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
S-1001	0.3	AC		

All quantities are estimated. The contractor will be paid based upon actual quantities as verified by the Owner.

LOUISIANA UNIFORM PUBLIC WORK BID FORM

UNIT PRICE FORM

TO: City of Baton Rouge
 Parish of East Baton Rouge
 Purchasing Division
 Room 826, City Hall
 222 St. Louis Street
 Baton Rouge, Louisiana 70802

BID FOR: Baton Rouge Metropolitan Airport
 Taxiway F Reconstruction

A.L.P. No. X-XX-XXXX-XXX-XXXX
 S.P. No. H.XXXXXXX

UNIT PRICES: This form shall be used for any and all work required by the Bidding Documents and described as unit prices. Amounts shall be stated in figures and only in figures.

DESCRIPTION:	☐ Base Bid or ☒ Alt. #2	Installation and Removal of Silt Fence		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
C-102-5.1e	440	LF		

DESCRIPTION:	☐ Base Bid or ☒ Alt. #2	Pavement Removal (Taxiway F)		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-101-5.1	544	SY		

DESCRIPTION:	☐ Base Bid or ☒ Alt. #2	Clearing and Grubbing		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-151-4.2	0.4	AC		

DESCRIPTION:	☐ Base Bid or ☒ Alt. #2	Unclassified Excavation		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-152-4.1	904	CY		

DESCRIPTION:	☐ Base Bid or ☒ Alt. #2	Embankment in Place		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-152-4.2	268	CY		

DESCRIPTION:	☐ Base Bid or ☒ Alt. #2	Subbase Course (18" Thick)		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-154-5.1	415	CY		

DESCRIPTION:	☐ Base Bid or ☒ Alt. #2	Lime Treated Subgrade (12")		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-155-8.1	863	SY		

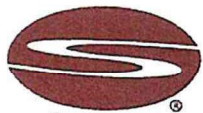
DESCRIPTION:	☐ Base Bid or ☒ Alt. #2		Lime	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-155-8.2	11	TON		
DESCRIPTION:	☐ Base Bid or ☒ Alt. #2		Crushed Aggregate Base Course (6.0" Thick)	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-209-5.1	863	SY		
DESCRIPTION:	☐ Base Bid or ☒ Alt. #2		Separation Geotextile	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-209-5.2	863	SY		
DESCRIPTION:	☐ Base Bid or ☒ Alt. #2		Lean Concrete Base Course (11.0" Thick)	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-306-8.1	1,138	SY		
DESCRIPTION:	☐ Base Bid or ☒ Alt. #2		Cement Treated Permeable Base Course (6.0" Thick)	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-307	1,138	SY		
DESCRIPTION:	☐ Base Bid or ☒ Alt. #2		Concrete Pavement (9.0" Thick)	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-501-8.1	1,105	SY		
DESCRIPTION:	☐ Base Bid or ☒ Alt. #2		Joint Sealing Filler	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-605-5.1	1,540	LF		
DESCRIPTION:	☐ Base Bid or ☒ Alt. #2		Surface Preparation	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-620-5.1a	768	LF		
DESCRIPTION:	☐ Base Bid or ☒ Alt. #2		Taxiway Marking (Yellow)	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-620-5.2b-1	234	SF		

DESCRIPTION:	☐ Base Bid or ☒ Alt. #2		Taxiway Marking (Black)	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-620-5.2b-4	535	SF		
DESCRIPTION:	☐ Base Bid or ☒ Alt. #2		Reflective Media	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
P-620-5.3c	20	LB		
DESCRIPTION:	☐ Base Bid or ☒ Alt. #2		Sodding	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
T-904-5.2	50	SY		
DESCRIPTION:	☐ Base Bid or ☒ Alt. #2		Topsoil (Obtained Onsite or Removed from Stockpile)	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
T-905-5.1	300	CY		
DESCRIPTION:	☐ Base Bid or ☒ Alt. #2		6" Pipe (Perforated PVC)(Includes Porous Backfill and Filter Fabric)	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
D-705-5.4	424	LF		
DESCRIPTION:	☐ Base Bid or ☒ Alt. #2		Trenching, turf and pavement restoration, protection of existing circuits	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-108-5.2	310	LF		
DESCRIPTION:	☐ Base Bid or ☒ Alt. #2		5KV cable, #6 AWG	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-108-5.4	341	LF		
DESCRIPTION:	☐ Base Bid or ☒ Alt. #2		Bare Counterpoise Ground Cable, #6	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-108-5.5	341	LF		
DESCRIPTION:	☐ Base Bid or ☒ Alt. #2		3/4" X 10' Copper Ground Rod	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-108-5.6	9	EA		

DESCRIPTION:	☐ Base Bid or ☒ Alt. #2		Copper Ground Lug	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-108-5.7	18	EA		
DESCRIPTION:	☐ Base Bid or ☒ Alt. #2		2" PVC conduit demo and re install	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-110-5.1	310	LF		
DESCRIPTION:	☐ Base Bid or ☒ Alt. #2		2" PVC couplings demo and re install	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-110-5.2	31	EA		
DESCRIPTION:	☐ Base Bid or ☒ Alt. #2		2" PVC connectors demo and re install	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-110-5.3	204	EA		
DESCRIPTION:	☐ Base Bid or ☒ Alt. #2		L-867D Base can	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-110-5.6	2	EA		
DESCRIPTION:	☐ Base Bid or ☒ Alt. #2		Duct Marker	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-110-5.7	4	EA		
DESCRIPTION:	☐ Base Bid or ☒ Alt. #2		Electrical Junction Structure, L-867D, 16" diameter, 24" deep	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-115-5.2	4	EA		
DESCRIPTION:	☐ Base Bid or ☒ Alt. #2		Taxiway Light, Elevated LED type, 14" Pedestal plus excavator	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-125-5.1	9	EA		
DESCRIPTION:	☐ Base Bid or ☒ Alt. #2		Base Plate	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-125-5.4	9	EA		

DESCRIPTION:	☐ Base Bid or ☒ Alt. #2	L-830 Isolation Transformer		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-125-5.5	10	EA		
DESCRIPTION:	☐ Base Bid or ☒ Alt. #2	L-867 Base Can 12" diameter X 24" deep with two 2" grommets		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-125-5.6	10	EA		
DESCRIPTION:	☐ Base Bid or ☒ Alt. #2	Primary Connector Kit		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-125-5.7	1	EA		
DESCRIPTION:	☐ Base Bid or ☒ Alt. #2	Frangible Couplings		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-125-5.8	4	EA		
DESCRIPTION:	☐ Base Bid or ☒ Alt. #2	Mounting Flange GN-62B0107		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-125-5.9	4	EA		
DESCRIPTION:	☐ Base Bid or ☒ Alt. #2	SIGN concrete foundation		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
L-125-5.10	1	EA		
DESCRIPTION:	☐ Base Bid or ☒ Alt. #2	Construction Safety and Phasing Plan		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
S-1000	1	LS		
DESCRIPTION:	☐ Base Bid or ☒ Alt. #2	Seeding (Hydroseeding)		
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
S-1001	0.4	AC		

All quantities are estimated. The contractor will be paid based upon actual quantities as verified by the Owner.



Stanley Consultants INC.

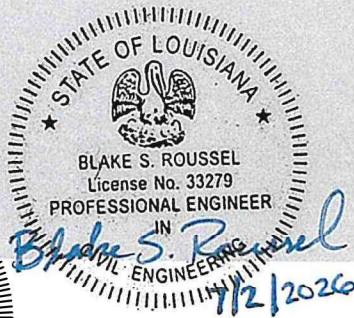
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Project Specifications

Taxiway F Reconstruction

Baton Rouge Metropolitan Airport

Issued For Bid
July 7, 2026



Item P-401 Asphalt Mix Pavement

DESCRIPTION

401-1.1 This item shall consist of pavement courses composed of mineral aggregate and asphalt binder mixed in a central mixing plant and placed on a prepared base or stabilized course in accordance with these specifications and shall conform to the lines, grades, thicknesses, and typical cross-sections shown on the plans. Each course shall be constructed to the depth, typical section, and elevation required by the plans and shall be rolled, finished, and approved before the placement of the next course.

MATERIALS

401-2.1 Aggregate. Aggregates shall consist of crushed stone, crushed gravel, crushed slag, screenings, natural sand, and mineral filler, as required. The aggregates should have no known history of detrimental pavement staining due to ferrous sulfides, such as pyrite. Coarse aggregate is the material retained on the No. 4 (4.75 mm) sieve. Fine aggregate is the material passing the No. 4 (4.75 mm) sieve.

a. Coarse aggregate. Coarse aggregate shall consist of sound, tough, durable particles, free from films of matter that would prevent thorough coating and bonding with the asphalt material and free from organic matter and other deleterious substances. Coarse aggregate material requirements are given in the table below.

Coarse Aggregate Material Requirements

Material Test	Requirement	Standard
Resistance to Degradation	Loss: 40% maximum	ASTM C131
Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate	Loss after 5 cycles: 12% maximum using Sodium sulfate - or - 18% maximum using magnesium sulfate	ASTM C88
Clay lumps and friable particles	1.0 % maximum	ASTM C142
Percentage of Fractured Particles	For pavements designed for aircraft gross weights of 60,000 pounds (27200 kg) or more: Minimum 75% by weight of particles with at least two fractured faces and 85% with at least one fractured face ¹	ASTM D5821
	For pavements designed for aircraft gross weights less than 60,000 pounds (27200 kg): Minimum 50% by weight of particles with at least two fractured faces and 65% with at least one fractured face ¹	
Flat, Elongated, or Flat and Elongated Particles	8% maximum, by weight, of flat, elongated, or flat and elongated particles at 5:1 ²	ASTM D4791
Bulk density of slag ³	Weigh not less than 70 pounds per cubic foot (1.12 Mg/cubic meter)	ASTM C29.

¹ The area of each face shall be equal to at least 75% of the smallest mid-sectional area of the piece. When two fractured faces are contiguous, the angle between the planes of fractures shall be at least 30 degrees to count as two fractured faces.

² A flat particle is one having a ratio of width to thickness greater than five (5); an elongated particle is one having a ratio of length to width greater than five (5).

³ Only required if slag is specified.

b. Fine aggregate. Fine aggregate shall consist of clean, sound, tough, durable, angular shaped particles produced by crushing stone, slag, or gravel and shall be free from coatings of clay, silt, or other objectionable matter. Natural (non-manufactured) sand may be used to obtain the gradation of the fine aggregate blend or to improve the workability of the mix. Fine aggregate material requirements are listed in the table below.

Fine Aggregate Material Requirements

Material Test	Requirement	Standard
Liquid limit	25 maximum	ASTM D4318
Plasticity Index	4 maximum	ASTM D4318
Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate	Loss after 5 cycles: 10% maximum using Sodium sulfate - or - 15% maximum using magnesium sulfate	ASTM C88
Clay lumps and friable particles	1.0% maximum	ASTM C142
Sand equivalent	45 minimum	ASTM D2419
Natural Sand	0% to 15% maximum by weight of total aggregate	ASTM D1073

c. Sampling. ASTM D75 shall be used in sampling coarse and fine aggregate.

401-2.2 Mineral filler. Mineral filler (baghouse fines) may be added in addition to material naturally present in the aggregate. Mineral filler shall meet the requirements of ASTM D242.

Mineral Filler Requirements

Material Test	Requirement	Standard
Plasticity Index	4 maximum	ASTM D4318

401-2.3 Asphalt binder. Asphalt binder shall conform to ASTM D6373 Performance Grade (PG) 76-22m.

Asphalt Binder PG Plus Test Requirements

Material Test	Requirement	Standard
Elastic Recovery	75% minimum	ASTM D60841

¹ Follow procedure B on RTFO aged binder.

401-2.4 Anti-stripping agent. Any anti-stripping agent or additive (anti-strip) shall be heat stable and shall not change the asphalt binder grade beyond specifications. Anti-strip shall be an approved material of the Department of Transportation of the State in which the project is located.

COMPOSITION

401-3.1 Composition of mixture(s). The asphalt mix shall be composed of a mixture of aggregates, filler and anti-strip agent if required, and asphalt binder. The aggregate fractions shall be sized, handled in separate size groups, and combined in such proportions that the resulting mixture meets the grading requirements of the job mix formula (JMF).

401-3.2 Job mix formula (JMF) laboratory. The laboratory used to develop the JMF shall possess a current certificate of accreditation, listing D3666 from a national accrediting authority and all test

methods required for developing the JMF; and be listed on the accrediting authority's website. A copy of the laboratory's current accreditation and accredited test methods shall be submitted to the Resident Project Representative (RPR) prior to start of construction.

401-3.3 Job mix formula (JMF). No asphalt mixture shall be placed until an acceptable mix design has been submitted to the RPR for review and accepted in writing. The RPR's review shall not relieve the Contractor of the responsibility to select and proportion the materials to comply with this section.

When the project requires asphalt mixtures of differing aggregate gradations and/or binders, a separate JMF shall be submitted for each mix. Add anti-stripping agent to meet tensile strength requirements.

The JMF shall be prepared by an accredited laboratory that meets the requirements of paragraph 401-3.2. The asphalt mixture shall be designed using procedures contained in Asphalt Institute MS-2 Mix Design Manual, 7th Edition. Samples shall be prepared and compacted using the gyratory compactor in accordance with ASTM D6925.

Should a change in sources of materials be made, a new JMF must be submitted to the RPR for review and accepted in writing before the new material is used. After the initial production JMF has been approved by the RPR and a new or modified JMF is required for whatever reason, the subsequent cost of the new or modified JMF, including a new control strip when required by the RPR, will be borne by the Contractor.

The RPR may request samples at any time for testing, prior to and during production, to verify the quality of the materials and to ensure conformance with the applicable specifications.

The JMF shall be submitted in writing by the Contractor at least 30 days prior to the start of paving operations. The JMF shall be developed within the same construction season using aggregates proposed for project use.

The JMF shall be dated, and stamped or sealed by the responsible professional Engineer of the laboratory and shall include the following items as a minimum:

- Manufacturer's Certificate of Analysis (COA) for the asphalt binder used in the JMF in accordance with paragraph 401-2.3. Certificate of asphalt performance grade is with modifier already added, if used and must indicate compliance with ASTM D6373. For plant modified asphalt binder, certified test report indicating grade certification of modified asphalt binder.
- Manufacturer's Certificate of Analysis (COA) for the anti-stripping agent if used in the JMF in accordance with paragraph 401-2.4.
- Certified material test reports for the course and fine aggregate and mineral filler in accordance with paragraphs 401-2.1.
- Percent passing each sieve size for individual gradation of each aggregate cold feed and/or hot bin; percent by weight of each cold feed and/or hot bin used; and the total combined gradation in the JMF.
- Specific Gravity and absorption of each coarse and fine aggregate.
- Percent natural sand.
- Percent fractured faces.
- Percent by weight of flat particles, elongated particles, and flat and elongated particles (and criteria).
- Percent of asphalt.

- Number of blows or gyrations
- Laboratory mixing and compaction temperatures.
- Supplier-recommended field mixing and compaction temperatures.
- Plot of the combined gradation on a 0.45 power gradation curve.
- Graphical plots of air voids, voids in the mineral aggregate (VMA), and unit weight versus asphalt content. To achieve minimum VMA during production, the mix design needs to account for material breakdown during production.
- Tensile Strength Ratio (TSR).
- Type and amount of Anti-strip agent when used.
- Asphalt Pavement Analyzer (APA) results.
- Date the JMF was developed. Mix designs that are not dated or which are from a prior construction season shall not be accepted.

Table 1. Asphalt Design Criteria

Test Property	Value	Test Method
Number of blows or gyrations	75	
Air voids (%)	3.5	ASTM D3203
Percent voids in mineral aggregate (VMA), minimum	See Table 2	ASTM D6995
Tensile Strength Ratio (TSR) ¹	not less than 80 at a saturation of 70-80%	ASTM D4867
Asphalt Pavement Analyzer (APA) ^{2,3]}	Less than 10 mm @ 4000 passes	AASHTO T340 at 250 psi hose pressure at 64°C test temperature

¹ Test specimens for TSR shall be compacted at 7 ± 1.0 % air voids. In areas subject to freeze-thaw, use freeze-thaw conditioning in lieu of moisture conditioning per ASTM D4867.

² AASHTO T340 at 100 psi hose pressure at 64°C test temperature may be used in the interim. If this method is used the required Value shall be less than 5 mm @ 8000 passes

³ Where APA not available, use Hamburg Wheel test (AASHTO T-324) 10mm @ 20,000 passes at 50°C.

The mineral aggregate shall be of such size that the percentage composition by weight, as determined by laboratory sieves, will conform to the gradation or gradations specified in Table 2 when tested in accordance with ASTM C136 and ASTM C117.

The gradations in Table 2 represent the limits that shall determine the suitability of aggregate for use from the sources of supply; be well graded from coarse to fine and shall not vary from the low limit on one sieve to the high limit on the adjacent sieve, or vice versa.

Table 2. Aggregate - Asphalt Pavements

Sieve Size	Percentage by Weight Passing Sieve (Gradation 2)
1 inch (25.0 mm)	--
3/4 inch (19.0 mm)	100
1/2 inch (12.5 mm)	90-100
3/8 inch (9.5 mm)	72-88
No. 4 (4.75 mm)	53-73
No. 8 (2.36 mm)	38-60
No. 16 (1.18 mm)	26-48
No. 30 (600 µm)	18-38
No. 50 (300 µm)	11-27
No. 100 (150 µm)	6-18
No. 200 (75 µm)	3-6
Minimum Voids in Mineral Aggregate (VMA)¹	15.0
Asphalt Percent:	
Stone or gravel	5.0-7.5
Slag	6.5-9.5
Recommended Minimum Construction Lift Thickness	2 inch

¹To achieve minimum VMA during production, the mix design needs to account for material breakdown during production.

The aggregate gradations shown are based on aggregates of uniform specific gravity. The percentages passing the various sieves shall be corrected when aggregates of varying specific gravities are used, as indicated in the Asphalt Institute MS-2 Mix Design Manual, 7th Edition.

401-3.4 Reclaimed asphalt pavement (RAP). RAP shall not be used.

401-3.5 Control Strip. Full production shall not begin until an acceptable control strip has been constructed and accepted in writing by the RPR. The Contractor shall prepare and place a quantity of asphalt according to the JMF. The underlying grade or pavement structure upon which the control strip is to be constructed shall be the same as the remainder of the course represented by the control strip.

The Contractor will not be allowed to place the control strip until the Contractor quality control program (CQCP), showing conformance with the requirements of paragraph 401-5.1, has been accepted, in writing, by the RPR.

The control strip will consist of at least 250 tons (227 metric tons) or 1/2 subplot, whichever is greater. The control strip shall be placed in two lanes of the same width and depth to be used in production with a longitudinal cold joint. The cold joint must be cut back in accordance with paragraph 401-4.14 using the same procedure that will be used during production. The cold joint for the control strip will be an exposed

construction joint at least four (4) hours old or when the mat has cooled to less than 160°F (71°C). The equipment used in construction of the control strip shall be the same type, configuration and weight to be used on the project.

The control strip will be considered acceptable by the RPR if the gradation, asphalt content, and VMA are within the action limits specified in paragraph 401-5.5a; and Mat density greater than or equal to 94.5%, air voids 3.5% +/- 1%, and joint density greater than or equal to 92.5%.

If the control strip is unacceptable, necessary adjustments to the JMF, plant operation, placing procedures, and/or rolling procedures shall be made and another control strip shall be placed. Unacceptable control strips shall be removed at the Contractor's expense.

The control strip will be considered one lot for payment based upon the average of a minimum of 3 samples (no sublots required for control strip). Payment will only be made for an acceptable control strip in accordance with paragraph 401-8.1 using a lot pay factor equal to 100.

CONSTRUCTION METHODS

401-4.1 Weather limitations. The asphalt shall not be placed upon a wet surface or when the surface temperature of the underlying course is less than specified in Table 4. The temperature requirements may be waived by the RPR, if requested; however, all other requirements including compaction shall be met.

Table 4. Surface Temperature Limitations of Underlying Course

Mat Thickness	Base Temperature (Minimum)	
	°F	°C
3 inches (7.5 cm) or greater	40 ¹	4
Greater than 2 inches (50 mm) but less than 3 inches (7.5 cm)	45	7

401-4.2 Asphalt plant. Plants used for the preparation of asphalt shall conform to the requirements of American Association of State Highway and Transportation Officials (AASHTO) M156 including the following items.

a. Inspection of plant. The RPR, or RPR's authorized representative, shall have access, at all times, to all areas of the plant for checking adequacy of equipment; inspecting operation of the plant: verifying weights, proportions, and material properties; and checking the temperatures maintained in the preparation of the mixtures.

b. Storage bins and surge bins. The asphalt mixture stored in storage and/or surge bins shall meet the same requirements as asphalt mixture loaded directly into trucks. Asphalt mixture shall not be stored in storage and/or surge bins for a period greater than twelve (12) hours. If the RPR determines there is an excessive heat loss, segregation, or oxidation of the asphalt mixture due to temporary storage, temporary storage shall not be allowed.

401-4.3 Aggregate stockpile management. Aggregate stockpiles shall be constructed in a manner that prevents segregation and intermixing of deleterious materials. Aggregates from different sources shall be stockpiled, weighed and batched separately at the asphalt batch plant. Aggregates that have become segregated or mixed with earth or foreign material shall not be used.

A continuous supply of materials shall be provided to the work to ensure continuous placement.

401-4.4 Hauling equipment. Trucks used for hauling asphalt shall have tight, clean, and smooth metal beds. To prevent the asphalt from sticking to the truck beds, the truck beds shall be lightly coated with a minimum amount of paraffin oil, lime solution, or other material approved by the RPR. Petroleum products shall not be used for coating truck beds. Each truck shall have a suitable cover to protect the mixture from adverse weather. When necessary, to ensure that the mixture will be delivered to the site at the specified temperature, truck beds shall be insulated or heated and covers shall be securely fastened.

401-4.4.1 Material transfer vehicle (MTV). Material transfer vehicles used to transfer the material from the hauling equipment to the paver, shall use a self-propelled, material transfer vehicle with a swing conveyor that can deliver material to the paver without making contact with the paver. The MTV shall be able to move back and forth between the hauling equipment and the paver providing material transfer to the paver, while allowing the paver to operate at a constant speed. The Material Transfer Vehicle will have remixing and storage capability to prevent physical and thermal segregation.

401-4.5 Asphalt pavers. Asphalt pavers shall be self-propelled with an activated heated screed, capable of spreading and finishing courses of asphalt that will meet the specified thickness, smoothness, and grade. The paver shall have sufficient power to propel itself and the hauling equipment without adversely affecting the finished surface. The asphalt paver shall be equipped with a control system capable of automatically maintaining the specified screed grade and elevation.

If the spreading and finishing equipment in use leaves tracks or indented areas, or produces other blemishes in the pavement that are not satisfactorily corrected by the scheduled operations, the use of such equipment shall be discontinued.

The paver shall be capable of paving to a minimum width specified in paragraph 401-4.12.

401-4.6 Rollers. The number, type, and weight of rollers shall be sufficient to compact the asphalt to the required density while it is still in a workable condition without crushing of the aggregate, depressions or other damage to the pavement surface. Rollers shall be in good condition, clean, and capable of operating at slow speeds to avoid displacement of the asphalt. All rollers shall be specifically designed and suitable for compacting asphalt concrete and shall be properly used. Rollers that impair the stability of any layer of a pavement structure or underlying soils shall not be used.

401-4.7 Density device. The Contractor shall have on site a density gauge during all paving operations in order to assist in the determination of the optimum rolling pattern, type of roller and frequencies, as well as to monitor the effect of the rolling operations during production paving. The Contractor shall supply a qualified technician during all paving operations to calibrate the gauge and obtain accurate density readings for all new asphalt. These densities shall be supplied to the RPR upon request at any time during construction. No separate payment will be made for supplying the density gauge and technician.

401-4.8 Preparation of asphalt binder. The asphalt binder shall be heated in a manner that will avoid local overheating and provide a continuous supply of the asphalt binder to the mixer at a uniform temperature. The temperature of unmodified asphalt binder delivered to the mixer shall be sufficient to provide a suitable viscosity for adequate coating of the aggregate particles, but shall not exceed 325°F (160°C) when added to the aggregate. The temperature of modified asphalt binder shall be no more than 350°F (175°C) when added to the aggregate.

401-4.9 Preparation of mineral aggregate. The aggregate for the asphalt shall be heated and dried. The maximum temperature and rate of heating shall be such that no damage occurs to the aggregates. The temperature of the aggregate and mineral filler shall not exceed 350°F (175°C) when the asphalt binder is added. Particular care shall be taken that aggregates high in calcium or magnesium content are not

damaged by overheating. The temperature shall not be lower than is required to obtain complete coating and uniform distribution on the aggregate particles and to provide a mixture of satisfactory workability.

401-4.10 Preparation of Asphalt mixture. The aggregates and the asphalt binder shall be weighed or metered and mixed in the amount specified by the JMF. The combined materials shall be mixed until the aggregate obtains a uniform coating of asphalt binder and is thoroughly distributed throughout the mixture. Wet mixing time shall be the shortest time that will produce a satisfactory mixture, but not less than 25 seconds for batch plants. The wet mixing time for all plants shall be established by the Contractor, based on the procedure for determining the percentage of coated particles described in ASTM D2489, for each individual plant and for each type of aggregate used. The wet mixing time will be set to achieve 95% of coated particles. For continuous mix plants, the minimum mixing time shall be determined by dividing the weight of its contents at operating level by the weight of the mixture delivered per second by the mixer. The moisture content of all asphalt upon discharge shall not exceed 0.5%.

401-4.11 Application of Prime and Tack Coat. Immediately before placing the asphalt mixture, the underlying course shall be cleaned of all dust and debris.

A prime coat in accordance with Item P-602 shall be applied to aggregate base prior to placing the asphalt mixture.

A tack coat shall be applied in accordance with Item P-603 to all vertical and horizontal asphalt and concrete surfaces prior to placement of the first and each subsequent lift of asphalt mixture.

401-4.12 Laydown plan, transporting, placing, and finishing. Prior to the placement of the asphalt, the Contractor shall prepare a laydown plan with the sequence of paving lanes and width to minimize the number of cold joints; the location of any temporary ramps; laydown temperature; and estimated time of completion for each portion of the work (milling, paving, rolling, cooling, etc.). The laydown plan and any modifications shall be approved by the RPR.

Deliveries shall be scheduled so that placing and compacting of asphalt is uniform with minimum stopping and starting of the paver. Hauling over freshly placed material shall not be permitted until the material has been compacted, as specified, and allowed to cool to approximately ambient temperature. The Contractor, at their expense, shall be responsible for repair of any damage to the pavement caused by hauling operations.

Contractor shall survey each lift of asphalt surface course and certify to RPR that every lot of each lift meets the grade tolerances of paragraph 401-6.2d before the next lift can be placed.

Edges of existing asphalt pavement abutting the new work shall be saw cut and the cut off material and laitance removed. Apply a tack coat in accordance with P-603 before new asphalt material is placed against it.

The speed of the paver shall be regulated to eliminate pulling and tearing of the asphalt mat. Placement of the asphalt mix shall begin along the centerline of a crowned section or on the high side of areas with a one way slope unless shown otherwise on the laydown plan as accepted by the RPR. The asphalt mix shall be placed in consecutive adjacent lanes having a minimum width of 12.5 feet (m) except where edge lanes require less width to complete the area. Additional screed sections attached to widen the paver to meet the minimum lane width requirements must include additional auger sections to move the asphalt mixture uniformly along the screed extension.

The longitudinal joint in one course shall offset the longitudinal joint in the course immediately below by at least one foot (30 cm); however, the joint in the surface top course shall be at the centerline of crowned pavements. Transverse joints in one course shall be offset by at least 10 feet (3 m) from transverse joints in the previous course. Transverse joints in adjacent lanes shall be offset a minimum of 10 feet (3 m). On

areas where irregularities or unavoidable obstacles make the use of mechanical spreading and finishing equipment impractical, the asphalt may be spread and luted by hand tools.

The RPR may at any time, reject any batch of asphalt, on the truck or placed in the mat, which is rendered unfit for use due to contamination, segregation, incomplete coating of aggregate, or overheated asphalt mixture. Such rejection may be based on only visual inspection or temperature measurements. In the event of such rejection, the Contractor may take a representative sample of the rejected material in the presence of the RPR, and if it can be demonstrated in the laboratory, in the presence of the RPR, that such material was erroneously rejected, payment will be made for the material at the contract unit price.

Areas of segregation in the surface course, as determined by the RPR, shall be removed and replaced at the Contractor's expense. The area shall be removed by saw cutting and milling a minimum of the construction lift thickness as specified in paragraph 401-3.3, Table 2 for the approved mix design. The area to be removed and replaced shall be a minimum width of the paver and a minimum of 10 feet (3 m) long.

401-4.13 Compaction of asphalt mixture. After placing, the asphalt mixture shall be thoroughly and uniformly compacted by self-propelled rollers. The surface shall be compacted as soon as possible when the asphalt has attained sufficient stability so that the rolling does not cause undue displacement, cracking or shoving. The sequence of rolling operations and the type of rollers used shall be at the discretion of the Contractor. The speed of the roller shall, at all times, be sufficiently slow to avoid displacement of the hot mixture and be effective in compaction. Any surface defects and/or displacement occurring as a result of the roller, or from any other cause, shall be corrected at the Contractor's expense.

Sufficient rollers shall be furnished to handle the output of the plant. Rolling shall continue until the surface is of uniform texture, true to grade and cross-section, and the required field density is obtained. To prevent adhesion of the asphalt to the roller, the wheels shall be equipped with a scraper and kept moistened with water as necessary.

In areas not accessible to the roller, the mixture shall be thoroughly compacted with approved power tampers.

Any asphalt that becomes loose and broken, mixed with dirt, contains check-cracking, or in any way defective shall be removed and replaced with fresh hot mixture and immediately compacted to conform to the surrounding area. This work shall be done at the Contractor's expense. Skin patching shall not be allowed.

401-4.14 Joints. The formation of all joints shall be made to ensure a continuous bond between the courses and obtain the required density. All joints shall have the same texture as other sections of the course and meet the requirements for smoothness and grade.

The roller shall not pass over the unprotected end of the freshly laid asphalt except when necessary to form a transverse joint. When necessary to form a transverse joint, it shall be made by means of placing a bulkhead or by tapering the course. The tapered edge shall be cut back to its full depth and width on a straight line to expose a vertical face prior to placing the adjacent lane. In both methods, all contact surfaces shall be coated with an asphalt tack coat before placing any fresh asphalt against the joint.

Longitudinal joints which have been left exposed for more than four (4) hours; the surface temperature has cooled to less than 175°F (80°C); or are irregular, damaged, uncompacted or otherwise defective shall be cut back with a cutting wheel or pavement saw a maximum of 3 inches (75 mm) to expose a clean, sound, uniform vertical surface for the full depth of the course. All cutback material and any laitance produced from cutting joints shall be removed from the project. Asphalt tack coat in accordance with P-603 shall be applied to the clean, dry joint prior to placing any additional fresh asphalt against the joint. The cost of this work shall be considered incidental to the cost of the asphalt.

401-4.15 Saw-cut grooving. Saw-cut grooving is not required.

401-4.16 Diamond grinding. Diamond grinding shall be completed prior to pavement grooving. Diamond grinding shall be accomplished by sawing with saw blades impregnated with industrial diamond abrasive.

Diamond grinding shall be performed with a machine designed specifically for diamond grinding capable of cutting a path at least 3 feet (0.9 m) wide. The saw blades shall be 1/8-inch (3-mm) wide with a sufficient number of blades to create grooves between 0.090 and 0.130 inches (2 and 3.5 mm) wide; and peaks and ridges approximately 1/32 inch (1 mm) higher than the bottom of the grinding cut. The actual number of blades will be determined by the Contractor and depend on the hardness of the aggregate. Equipment or grinding procedures that cause ravels, aggregate fractures, spalls or disturbance to the pavement will not be permitted. Contractor shall demonstrate to the RPR that the grinding equipment will produce satisfactory results prior to making corrections to surfaces. Grinding will be tapered in all directions to provide smooth transitions to areas not requiring grinding. The slurry resulting from the grinding operation shall be continuously removed and the pavement left in a clean condition. The Contractor shall apply a surface treatment per P-608 to all areas that have been subject to grinding.

401-4.17 Nighttime paving requirements. The Contractor shall provide adequate lighting during any nighttime construction. A lighting plan shall be submitted by the Contractor and approved by the RPR prior to the start of any nighttime work. All work shall be in accordance with the approved CSPP and lighting plan.

CONTRACTOR QUALITY CONTROL (CQC)

401-5.1 General. The Contractor shall develop a Contractor Quality Control Program (CQCP) in accordance with Item C-100. No partial payment will be made for materials without an approved CQCP.

401-5.2 Contractor quality control (QC) facilities. The Contractor shall provide or contract for testing facilities in accordance with Item C-100. The RPR shall be permitted unrestricted access to inspect the Contractor's QC facilities and witness QC activities. The RPR will advise the Contractor in writing of any noted deficiencies concerning the QC facility, equipment, supplies, or testing personnel and procedures. When the deficiencies are serious enough to be adversely affecting the test results, the incorporation of the materials into the work shall be suspended immediately and will not be permitted to resume until the deficiencies are satisfactorily corrected.

401-5.3 Contractor QC testing. The Contractor shall perform all QC tests necessary to control the production and construction processes applicable to these specifications and as set forth in the approved CQCP. The testing program shall include, but not necessarily be limited to, tests for the control of asphalt content, aggregate gradation, temperatures, aggregate moisture, field compaction, and surface smoothness. A QC Testing Plan shall be developed as part of the CQCP.

a. Asphalt content. A minimum of two tests shall be performed per day in accordance with ASTM D6307 or ASTM D2172 for determination of asphalt content. When using ASTM D6307, the correction factor shall be determined as part of the first test performed at the beginning of plant production; and as part of every tenth test performed thereafter. The asphalt content for the day will be determined by averaging the test results.

b. Gradation. Aggregate gradations shall be determined a minimum of twice per day from mechanical analysis of extracted aggregate in accordance with ASTM D5444, ASTM C136, and ASTM C117.

c. Moisture content of aggregate. The moisture content of aggregate used for production shall be determined a minimum of once per day in accordance with ASTM C566.

d. Moisture content of asphalt. The moisture content shall be determined once per day in accordance with AASHTO T329 or ASTM D1461.

e. Temperatures. Temperatures shall be checked, at least four times per day, at necessary locations to determine the temperatures of the dryer, the asphalt binder in the storage tank, the asphalt at the plant, and the asphalt at the job site.

f. In-place density monitoring. The Contractor shall conduct any necessary testing to ensure that the specified density is being achieved. A nuclear gauge may be used to monitor the pavement density in accordance with ASTM D2950.

g. Smoothness for Contractor Quality Control.

The Contractor shall perform smoothness testing in transverse and longitudinal directions daily to verify that the construction processes are producing pavement with variances less than ¼ inch in 12 feet, identifying areas that may pond water which could lead to hydroplaning of aircraft. If the smoothness criteria is not met, appropriate changes and corrections to the construction process shall be made by the Contractor before construction continues

The Contractor may use a 12-foot (3.7 m) “straightedge, a rolling inclinometer meeting the requirements of ASTM E2133 or rolling external reference device that can simulate a 12-foot (3.7m) straightedge approved by the RPR. Straight-edge testing shall start with one-half the length of the straightedge at the edge of pavement section being tested and then moved ahead one-half the length of the straightedge for each successive measurement. Testing shall be continuous across all joints. The surface irregularity shall be determined by placing the freestanding (unleveled) straightedge on the pavement surface and allowing it to rest upon the two highest spots covered by its length, and measuring the maximum gap between the straightedge and the pavement surface in the area between the two high points. If the rolling inclinometer or external reference device is used, the data may be evaluated using either the FAA profile program, ProFAA, or FHWA ProVal, using the 12-foot straightedge simulation function.

Smoothness readings shall not be made across grade changes or cross slope transitions. The transition between new and existing pavement shall be evaluated separately for conformance with the plans.

(1) Transverse measurements. Transverse measurements shall be taken for each day’s production placed. Transverse measurements shall be taken perpendicular to the pavement centerline each 50 feet (15 m) or more often as determined by the RPR. The joint between lanes shall be tested separately to facilitate smoothness between lanes.

(2) Longitudinal measurements. Longitudinal measurements shall be taken for each day’s production placed. Longitudinal tests shall be parallel to the centerline of paving; at the center of paving lanes when widths of paving lanes are less than 20 feet (6 m); and at the third points of paving lanes when widths of paving lanes are 20 ft (6 m) or greater. When placement abuts previously placed material the first measurement shall start with one half the length of the straight edge on the previously placed material.

Deviations on the final surface course in either the transverse or longitudinal direction that will trap water greater than 1/4 inch (6 mm) shall be corrected with diamond grinding per paragraph 401-4.16 or by removing and replacing the surface course to full depth. Grinding shall be tapered in all directions to provide smooth transitions to areas not requiring grinding. All areas in which diamond grinding has been performed shall be subject to the final pavement thickness tolerances specified in paragraph 401-

6.1d(3). Areas that have been ground shall be sealed with a surface treatment in accordance with Item P-608. To avoid the surface treatment creating any conflict with runway or taxiway markings, it may be necessary to seal a larger area.

Control charts shall be kept to show area of each day's placement and the percentage of corrective grinding required. Corrections to production and placement shall be initiated when corrective grinding is required. If the Contractor's machines and/or methods produce significant areas that need corrective actions in excess of 10 percent of a day's production, production shall be stopped until corrective measures are implemented by the Contractor.

h. Grade. Grade shall be evaluated daily to allow adjustments to paving operations when grade measurements do not meet specifications. As a minimum, grade shall be evaluated prior to and after the placement of the first lift and after placement of the surface lift.

Measurements will be taken at appropriate gradelines (as a minimum at center and edges of paving lane) and longitudinal spacing as shown on cross-sections and plans. The final surface of the pavement will not vary from the gradeline elevations and cross-sections shown on the plans by more than 1/2 inch (12 mm) vertically and 0.1 feet (30 mm) laterally. The documentation will be provided by the Contractor to the RPR within 24 hours.

Areas with humps or depressions that exceed grade or smoothness criteria and that retain water on the surface must be ground off provided the course thickness after grinding is not more than 1/2 inch (12 mm) less than the thickness specified on the plans. Grinding shall be in accordance with paragraph 401-4.16.

The Contractor shall repair low areas or areas that cannot be corrected by grinding by removal of deficient areas to the depth of the final course plus 1/2 inch and replacing with new material. Skin patching is not allowed.

401-5.4 Sampling. When directed by the RPR, the Contractor shall sample and test any material that appears inconsistent with similar material being sampled, unless such material is voluntarily removed and replaced or deficiencies corrected by the Contractor. All sampling shall be in accordance with standard procedures specified.

401-5.5 Control charts. The Contractor shall maintain linear control charts for both individual measurements and range (i.e. difference between highest and lowest measurements) for aggregate gradation, asphalt content, and VMA. The VMA for each day will be calculated and monitored by the QC laboratory.

Control charts shall be posted in a location satisfactory to the RPR and kept current. As a minimum, the control charts shall identify the project number, the contract item number, the test number, each test parameter, the Action and Suspension Limits applicable to each test parameter, and the Contractor's test results. The Contractor shall use the control charts as part of a process control system for identifying potential problems and assignable causes before they occur. If the Contractor's projected data during production indicates a problem and the Contractor is not taking satisfactory corrective action, the RPR may suspend production or acceptance of the material.

a. Individual measurements. Control charts for individual measurements shall be established to maintain process control within tolerance for aggregate gradation, asphalt content, and VMA. The control charts shall use the job mix formula target values as indicators of central tendency for the following test parameters with associated Action and Suspension Limits:

Control Chart Limits for Individual Measurements

Sieve	Action Limit	Suspension Limit
3/4 inch (19.0 mm)	±6%	±9%
1/2 inch (12.5 mm)	±6%	±9%
3/8 inch (9.5 mm)	±6%	±9%
No. 4 (4.75 mm)	±6%	±9%
No. 16 (1.18 mm)	±5%	±7.5%
No. 50 (300 µm)	±3%	±4.5%
No. 200 (75 µm)	±2%	±3%
Asphalt Content	±0.45%	±0.70%
Minimum VMA	-0.5%	-1.0%

b. Range. Control charts shall be established to control gradation process variability. The range shall be plotted as the difference between the two test results for each control parameter. The Suspension Limits specified below are based on a sample size of $n = 2$. Should the Contractor elect to perform more than two tests per lot, the Suspension Limits shall be adjusted by multiplying the Suspension Limit by 1.18 for $n = 3$ and by 1.27 for $n = 4$.

Control Chart Limits Based on Range

Sieve	Suspension Limit
1/2 inch (12.5 mm)	11%
3/8 inch (9.5 mm)	11%
No. 4 (4.75 mm)	11%
No. 16 (1.18 mm)	9%
No. 50 (300 µm)	6%
No. 200 (75 µm)	3.5%
Asphalt Content	0.8%

c. Corrective Action. The CQCP shall indicate that appropriate action shall be taken when the process is believed to be out of tolerance. The Plan shall contain rules to gauge when a process is out of control and detail what action will be taken to bring the process into control. As a minimum, a process shall be deemed out of control and production stopped and corrective action taken, if:

- (1) One point falls outside the Suspension Limit line for individual measurements or range; or
- (2) Two points in a row fall outside the Action Limit line for individual measurements.

401-5.6 QC reports. The Contractor shall maintain records and shall submit reports of QC activities daily, in accordance with Item C-100.

MATERIAL ACCEPTANCE

401-6.1 Acceptance sampling and testing. Unless otherwise specified, all acceptance sampling and testing necessary to determine conformance with the requirements specified in this section will be

performed by the RPR at no cost to the Contractor except that coring as required in this section shall be completed and paid for by the Contractor.

a. Quality assurance (QA) testing laboratory. The QA testing laboratory performing these acceptance tests will be accredited in accordance with ASTM D3666. The QA laboratory accreditation will be current and listed on the accrediting authority's website. All test methods required for acceptance sampling and testing will be listed on the lab accreditation.

b. Lot size. A standard lot will be equal to one day's production divided into approximately equal sublots of between 400 to 600 tons. When only one or two sublots are produced in a day's production, the sublots will be combined with the production lot from the previous or next day.

Where more than one plant is simultaneously producing asphalt for the job, the lot sizes will apply separately for each plant.

c. Asphalt air voids. Plant-produced asphalt will be tested for air voids on a subplot basis.

(1) Sampling. Material from each subplot shall be sampled in accordance with ASTM D3665. Samples shall be taken from material deposited into trucks at the plant or at the job site in accordance with ASTM D979. The sample of asphalt may be put in a covered metal tin and placed in an oven for not less than 30 minutes nor more than 60 minutes to maintain the material at or above the compaction temperature as specified in the JMF.

(2) Testing. Air voids will be determined for each subplot in accordance with ASTM D3203 for a set of three compacted specimens prepared in accordance with ASTM D6926.

d. In-place asphalt mat and joint density. Each subplot will be tested for in-place mat and joint density as a percentage of the theoretical maximum density (TMD).

(1) Sampling. The Contractor will cut minimum 5 inch (125 mm) diameter samples in accordance with ASTM D5361. The Contractor shall furnish all tools, labor, and materials for cleaning, and filling the cored pavement. Laitance produced by the coring operation shall be removed immediately after coring, and core holes shall be filled within one day after sampling in a manner acceptable to the RPR.

(2) Bond. Each lift of asphalt shall be bonded to the underlying layer. If cores reveal that the surface is not bonded, additional cores shall be taken as directed by the RPR to determine the extent of unbonded areas. Unbonded areas shall be removed by milling and replaced at no additional cost as directed by the RPR.

(3) Thickness. Thickness of each lift of surface course will be evaluated by the RPR for compliance to the requirements shown on the plans after any necessary corrections for grade. Measurements of thickness will be made using the cores extracted for each subplot for density measurement. The maximum allowable deficiency at any point will not be more than 1/4 inch (6 mm) less than the thickness indicated for the lift. Average thickness of lift, or combined lifts, will not be less than the indicated thickness. Where the thickness tolerances are not met, the lot or subplot shall be corrected by the Contractor at his expense by removing the deficient area and replacing with new pavement. The Contractor, at his expense, may take additional cores as approved by the RPR to circumscribe the deficient area.

(4) Mat density. One core shall be taken from each subplot. Core locations will be determined by the RPR in accordance with ASTM D3665. Cores for mat density shall not be taken closer than one foot (30 cm) from a transverse or longitudinal joint. The bulk specific gravity of each cored sample will be determined in accordance with ASTM D2726. The percent compaction (density) of each sample will be determined by dividing the bulk specific gravity of each subplot sample by the TMD for that subplot.

(5) Joint density. One core centered over the longitudinal joint shall be taken for each subplot that has a longitudinal joint. Core locations will be determined by the RPR in accordance with ASTM D3665. The bulk specific gravity of each core sample will be determined in accordance with ASTM D2726. The percent compaction (density) of each sample will be determined by dividing the bulk specific gravity of each joint density sample by the average TMD for the lot. The TMD used to determine the joint density at joints formed between lots will be the lower of the average TMD values from the adjacent lots.

401-6.2 Acceptance criteria.

a. General. Acceptance will be based on the implementation of the Contractor Quality Control Program (CQCP) and the following characteristics of the asphalt and completed pavements: air voids, mat density, joint density, grade and Profilograph roughness.

b. Air Voids and Mat density. Acceptance of each lot of plant produced material for mat density and air voids will be based on the percentage of material within specification limits (PWL). If the PWL of the lot equals or exceeds 90%, the lot will be acceptable. Acceptance and payment will be determined in accordance with paragraph 401-8.1.

c. Joint density. Acceptance of each lot of plant produced asphalt for joint density will be based on the PWL. If the PWL of the lot is equal to or exceeds 90%, the lot will be considered acceptable. If the PWL is less than 90%, the Contractor shall evaluate the reason and act accordingly. If the PWL is less than 80%, the Contractor shall cease operations and until the reason for poor compaction has been determined. If the PWL is less than 71%, the pay factor for the lot used to complete the joint will be reduced by five (5) percentage points. This lot pay factor reduction will be incorporated and evaluated in accordance with paragraph 401-8.1.

d. Grade. The final finished surface of the pavement shall be surveyed to verify that the grade elevations and cross-sections shown on the plans do not deviate more than 1/2 inch (12 mm) vertically or 0.1 feet (30 mm) laterally.

Cross-sections of the pavement shall be taken at a minimum 50-foot (15-m) longitudinal spacing, at all longitudinal grade breaks, and at start and end of each lane placed. Minimum cross-section grade points shall include grade at centerline, ± 10 feet of centerline, and edge of taxiway pavement.

The survey and documentation shall be stamped and signed by a licensed surveyor. Payment for sublots that do not meet grade for over 25% of the subplot shall not be more than 95%.

e. Profilograph roughness for QA Acceptance. The final profilograph shall be the full length of the project to facilitate testing of roughness between lots. The Contractor, in the presence of the RPR shall perform a profilograph roughness test on the completed project with a profilograph meeting the requirements of ASTM E1274 or a Class I inertial profiler meeting ASTM E950. Data and results shall be provided within 48 hrs of profilograph roughness tests.

The pavement shall have an average profile index less than 15 inches per mile per 1/10 mile. The equipment shall utilize electronic recording and automatic computerized reduction of data to indicate "must grind" bumps and the Profile Index for the pavement using a 0.2-inch (5 mm) blanking band. The bump template must span one inch (25 mm) with an offset of 0.4 inches (10 mm). The profilograph must be calibrated prior to use and operated by a factory or State DOT approved, trained operator. Profilograms shall be recorded on a longitudinal scale of one inch (25 mm) equals 25 feet (7.5 m) and a vertical scale of one inch (25 mm) equals one inch (25 mm). Profilograph shall be performed one foot right and left of project centerline and 15 feet (4.5 m) right and left of project centerline. Any areas that indicate "must grind" shall be corrected with diamond grinding per paragraph 401-4.16 or by removing and replacing full depth of surface course, as directed by the RPR. Where corrections are necessary, a

second profilograph run shall be performed to verify that the corrections produced an average profile index of 15 inches per mile per 1/10 mile or less.

401-6.3 Percentage of material within specification limits (PWL). The PWL will be determined in accordance with procedures specified in Item C-110. The specification tolerance limits (L) for lower and (U) for upper are contained in Table 5.

Table 5. Acceptance Limits for Air Voids and Density

Test Property	Pavements Specification Tolerance Limits	
	L	U
Air Voids Total Mix (%)	2.0	5.0
Surface Course Mat Density (%)	92.8	-
Base Course Mat Density (%)	92.0	-
Joint density (%)	90.5	--

a. Outliers. All individual tests for mat density and air voids will be checked for outliers (test criterion) in accordance with ASTM E178, at a significance level of 5%. Outliers will be discarded, and the PWL will be determined using the remaining test values. The criteria in Table 5 is based on production processes which have a variability with the following standard deviations: Surface Course Mat Density (%), 1.30; Base Course Mat Density (%), 1.55; Joint Density (%), 1.55.

The Contractor should note that (1) 90 PWL is achieved when consistently producing a surface course with an average mat density of at least 94.5% with 1.30% or less variability, (2) 90 PWL is achieved when consistently producing a base course with an average mat density of at least 94.0% with 1.55% or less variability, and (3) 90 PWL is achieved when consistently producing joints with an average joint density of at least 92.5% with 1.55% or less variability.

401-6.4 Resampling pavement for mat density.

a. General. Resampling of a lot of pavement will only be allowed for mat density, and then, only if the Contractor requests same, in writing, within 48 hours after receiving the written test results from the RPR. A retest will consist of all the sampling and testing procedures contained in paragraphs 401-6.1d and 401-6.2b. Only one resampling per lot will be permitted.

(1) A redefined PWL will be calculated for the resampled lot. The number of tests used to calculate the redefined PWL will include the initial tests made for that lot plus the retests.

(2) The cost for resampling and retesting shall be borne by the Contractor.

b. Payment for resampled lots. The redefined PWL for a resampled lot will be used to calculate the payment for that lot in accordance with Table 6.

c. Outliers. Check for outliers in accordance with ASTM E178, at a significance level of 5%.

METHOD OF MEASUREMENT

401-7.1 Measurement. Asphalt shall be measured by the number of tons kg of asphalt used in the accepted work. Batch weights or truck scale weights will be used to determine the basis for the tonnage.

BASIS OF PAYMENT

401-8.1 Payment. Payment for a lot of asphalt meeting all acceptance criteria as specified in paragraph 401-6.2 shall be made based on results of tests for mat density and air voids. Payment for acceptable lots shall be adjusted according to paragraph 401-8.1c format density and air voids; and paragraph 401-6.2c for joint density, subject to the limitation that:

a. The total project payment for plant mix asphalt pavement shall not exceed 100% of the product of the contract unit price and the total number of tons (kg) of asphalt used in the accepted work.

b. The price shall be compensation for furnishing all materials, for all preparation, mixing, and placing of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

c. Basis of adjusted payment. The pay factor for each individual lot shall be calculated in accordance with Table 6. A pay factor shall be calculated for both mat density and air voids. The lot pay factor shall be the higher of the two values when calculations for both mat density and air voids are 100% or higher. The lot pay factor shall be the product of the two values when only one of the calculations for either mat density or air voids is 100% or higher. The lot pay factor shall be the lower of the two values when calculations for both mat density and air voids are less than 100%. If PWL for joint density is less than 71% then the lot pay factor shall be reduced by 5% but be no higher than 95%.

For each lot accepted, the adjusted contract unit price shall be the product of the lot pay factor for the lot and the contract unit price. Payment shall be subject to the total project payment limitation specified in paragraph 401-8.1a. Payment in excess of 100% for accepted lots of asphalt shall be used to offset payment for accepted lots of asphalt pavement that achieve a lot pay factor less than 100%.

Payment for sublots which do not meet grade in accordance with paragraph 401-6.2d after correction for over 25% of the sublot shall be reduced by 5%.

Table 6. Price adjustment schedule¹

Percentage of material within specification limits (PWL)	Lot pay factor (percent of contract unit price)
96 – 100	106
90 – 95	PWL + 10
75 – 89	0.5 PWL + 55
55 – 74	1.4 PWL – 12
Below 55	Reject ²

¹ Although it is theoretically possible to achieve a pay factor of 106% for each lot, actual payment above 100% shall be subject to the total project payment limitation specified in paragraph 401-8.1a.

² The lot shall be removed and replaced. However, the RPR may decide to allow the rejected lot to remain. In that case, if the RPR and Contractor agree in writing that the lot shall not be removed, it shall be paid for at 50% of the contract unit price and the total project payment shall be reduced by the amount withheld for the rejected lot.

d. Profilograph Roughness. The Contractor will receive full payment when the profilograph average profile index is in accordance with paragraph 401-6.2e. When the final average profile index for the entire length of pavement does not exceed 15 inches per mile per 1/10 mile, payment will be made at the contract unit price for the completed pavement.

401-8.1 Payment.

Payment will be made under:

Item P-401-8.1	Asphalt Surface Course - per ton (kg)
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REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM C29	Standard Test Method for Bulk Density ("Unit Weight") and Voids in Aggregate
ASTM C88	Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
ASTM C117	Standard Test Method for Materials Finer than 75- μ m (No. 200) Sieve in Mineral Aggregates by Washing
ASTM C127	Standard Test Method for Density, Relative Density (Specific Gravity) and Absorption of Coarse Aggregate
ASTM C131	Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM C136	Standard Test Method for Sieve or Screen Analysis of Fine and Coarse Aggregates
ASTM C142	Standard Test Method for Clay Lumps and Friable Particles in Aggregates
ASTM C566	Standard Test Method for Total Evaporable Moisture Content of Aggregate by Drying
ASTM D75	Standard Practice for Sampling Aggregates
ASTM D242	Standard Specification for Mineral Filler for Bituminous Paving Mixtures
ASTM D946	Standard Specification for Penetration-Graded Asphalt Cement for Use in Pavement Construction
ASTM D979	Standard Practice for Sampling Asphalt Paving Mixtures
ASTM D1073	Standard Specification for Fine Aggregate for Asphalt Paving Mixtures
ASTM D1188	Standard Test Method for Bulk Specific Gravity and Density of Compacted Bituminous Mixtures Using Coated Samples
ASTM D2172	Standard Test Method for Quantitative Extraction of Bitumen from Asphalt Paving Mixtures
ASTM D1461	Standard Test Method for Moisture or Volatile Distillates in Asphalt Paving Mixtures
ASTM D2041	Standard Test Method for Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures

ASTM D2419	Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate
ASTM D2489	Standard Practice for Estimating Degree of Particle Coating of Bituminous-Aggregate Mixtures
ASTM D2726	Standard Test Method for Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixtures
ASTM D2950	Standard Test Method for Density of Bituminous Concrete in Place by Nuclear Methods
ASTM D3203	Standard Test Method for Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures
ASTM D3381	Standard Specification for Viscosity-Graded Asphalt Cement for Use in Pavement Construction
ASTM D3665	Standard Practice for Random Sampling of Construction Materials
ASTM D3666	Standard Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials
ASTM D4318	Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM D4552	Standard Practice for Classifying Hot-Mix Recycling Agents
ASTM D4791	Standard Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate
ASTM D4867	Standard Test Method for Effect of Moisture on Asphalt Concrete Paving Mixtures
ASTM D5361	Standard Practice for Sampling Compacted Asphalt Mixtures for Laboratory Testing
ASTM D5444	Standard Test Method for Mechanical Size Analysis of Extracted Aggregate
ASTM D5821	Standard Test Method for Determining the Percentage of Fractured Particles in Coarse Aggregate
ASTM D6084	Standard Test Method for Elastic Recovery of Bituminous Materials by Ductilometer
ASTM D6307	Standard Test Method for Asphalt Content of Hot Mix Asphalt by Ignition Method
ASTM D6373	Standard Specification for Performance Graded Asphalt Binder
ASTM D6752	Standard Test Method for Bulk Specific Gravity and Density of Compacted Bituminous Mixtures Using Automatic Vacuum Sealing Method
ASTM D6925	Standard Test Method for Preparation and Determination of the Relative Density of Hot Mix Asphalt (HMA) Specimens by Means of the SuperPave Gyratory Compactor.

ASTM D6926	Standard Practice for Preparation of Bituminous Specimens Using Marshall Apparatus
ASTM D6927	Standard Test Method for Marshall Stability and Flow of Bituminous Mixtures
ASTM D6995	Standard Test Method for Determining Field VMA based on the Maximum Specific Gravity of the Mix (Gmm)
ASTM E11	Standard Specification for Woven Wire Test Sieve Cloth and Test Sieves
ASTM E178	Standard Practice for Dealing with Outlying Observations
ASTM E1274	Standard Test Method for Measuring Pavement Roughness Using a Profilograph
ASTM E950	Standard Test Method for Measuring the Longitudinal Profile of Traveled Surfaces with an Accelerometer Established Inertial Profiling Reference
ASTM E2133	Standard Test Method for Using a Rolling Inclinator to Measure Longitudinal and Transverse Profiles of a Traveled Surface
American Association of State Highway and Transportation Officials (AASHTO)	
AASHTO M156	Standard Specification for Requirements for Mixing Plants for Hot-Mixed, Hot-Laid Bituminous Paving Mixtures.
AASHTO T329	Standard Method of Test for Moisture Content of Hot Mix Asphalt (HMA) by Oven Method
AASHTO T324	Standard Method of Test for Hamburg Wheel-Track Testing of Compacted Asphalt Mixtures
AASHTO T 340	Standard Method of Test for Determining the Rutting Susceptibility of Hot Mix Asphalt (APA) Using the Asphalt Pavement Analyzer (APA)
Asphalt Institute (AI)	
Asphalt Institute Handbook MS-26, Asphalt Binder	
Asphalt Institute MS-2 Mix Design Manual, 7th Edition	
AI State Binder Specification Database	
Federal Highway Administration (FHWA)	
Long Term Pavement Performance Binder Program	
Advisory Circulars (AC)	
AC 150/5320-6	Airport Pavement Design and Evaluation
FAA Orders	
5300.1	Modifications to Agency Airport Design, Construction, and Equipment Standards
Software	
FAARFIELD	

END OF ITEM P-401

Item P-403 Asphalt Mix Pavement Surface Course

DESCRIPTION

403-1.1 This item shall consist of pavement courses composed of mineral aggregate and asphalt binder mixed in a central mixing plant and placed on a prepared course in accordance with these specifications and shall conform to the lines, grades, thicknesses, and typical cross-sections shown on the plans. Each course shall be constructed to the depth, typical section, and elevation required by the plans and shall be rolled, finished, and approved before the placement of the next course.

MATERIALS

403-2.1 Aggregate. Aggregates shall consist of crushed stone, crushed gravel, crushed slag, screenings, natural sand and mineral filler, as required. The aggregates should have no known history of detrimental pavement staining due to ferrous sulfides, such as pyrite. Coarse aggregate is the material retained on the No. 4 (4.75 mm) sieve. Fine aggregate is the material passing the No. 4 (4.75 mm) sieve.

a. Coarse aggregate. Coarse aggregate shall consist of sound, tough, durable particles, free from films of matter that would prevent thorough coating and bonding with the asphalt material and free from organic matter and other deleterious substances. Coarse aggregate material requirements are given in the table below.

Coarse Aggregate Material Requirements

Material Test	Requirement	Standard
Resistance to Degradation	Loss: 40% maximum for surface, asphalt binder, and leveling course Loss: 50% maximum for base course	ASTM C131
Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate	Loss after 5 cycles: 12% maximum using Sodium sulfate - or - 18% maximum using magnesium sulfate	ASTM C88
Clay lumps and friable particles	1.0 % maximum	ASTM C142
Percentage of Fractured Particles	For pavements designed for aircraft gross weights of 60,000 pounds (27200 kg) or more: Minimum 75% by weight of particles with at least two fractured faces and 85% with at least one fractured face ¹	ASTM D5821
	For pavements designed for aircraft gross weights less than 60,000 pounds (27200 kg): Minimum 50% by weight of particles with at least two fractured faces and 65% with at least one fractured face ¹	
Flat, Elongated, or Flat and Elongated Particles	8% maximum, by weight, of flat, elongated, or flat and elongated particles with a value of 5:1 ²	ASTM D4791
Bulk density of slag ³	Weigh not less than 70 pounds per cubic foot (1.12 Mg/cubic meter)	ASTM C29.

¹ The area of each face shall be equal to at least 75% of the smallest mid-sectional area of the piece. When two fractured faces are contiguous, the angle between the planes of fractures shall be at least 30 degrees to count as two fractured faces.

² A flat particle is one having a ratio of width to thickness greater than five (5); an elongated particle is one having a ratio of length to width greater than five (5).

³ Only required if slag is specified.

b. Fine aggregate. Fine aggregate shall consist of clean, sound, tough, durable, angular shaped particles produced by crushing stone, slag, or gravel and shall be free from coatings of clay, silt, or other objectionable matter. Natural (non-manufactured) sand may be used to obtain the gradation of the aggregate blend or to improve the workability of the mix. Fine aggregate material requirements are listed in the table below.

Fine Aggregate Material Requirements

Material Test	Requirement	Standard
Liquid limit	25 maximum	ASTM D4318
Plasticity Index	4 maximum	ASTM D4318
Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate	Loss after 5 cycles: 10% maximum using Sodium sulfate - or - 15% maximum using magnesium sulfate	ASTM C88
Clay lumps and friable particles	1.0 % maximum	ASTM C142
Sand equivalent	45 minimum	ASTM D2419
Natural Sand	0 to 15% maximum by weight of total aggregate	ASTM D1073

c. Sampling. ASTM D75 shall be used in sampling coarse and fine aggregate, and ASTM C183 shall be used in sampling mineral filler.

403-2.2 Mineral filler. Mineral filler (baghouse fines) may be added in addition to material naturally present in the aggregate. Mineral filler shall meet the requirements of ASTM D242.

Mineral filler Requirements

Material Test	Requirement	Standard
Plasticity Index	4 maximum	ASTM D4318

403-2.3 Asphalt binder. Asphalt binder shall conform to ASTM D6373 Performance Grade (PG) 76-22m.

Asphalt Binder PG Plus Test Requirements

Material Test	Requirement	Standard
Elastic Recovery	75% minimum	ASTM D60841

¹ Follow procedure B on RTFO aged binder.

403-2.4 Anti-stripping agent. Any anti-stripping agent or additive (anti-strip) shall be heat stable and shall not change the asphalt binder grade beyond specifications. Anti-strip shall be an approved material of the Department of Transportation of the State in which the project is located.

COMPOSITION

403-3.1 Composition of mixture. The asphalt plant mix shall be composed of a mixture of well-graded aggregate, filler and anti-strip agent if required, and asphalt binder. The several aggregate fractions shall be sized, handled in separate size groups, and combined in such proportions that the resulting mixture meets the grading requirements of the job mix formula (JMF).

403-3.2 Job mix formula (JMF) laboratory. The laboratory used to develop the JMF shall possess a current certificate of accreditation, listing D3666 from a national accrediting authority and all test methods required for developing the JMF, and listed on the accrediting authority's website. A copy of the

laboratory's current accreditation and accredited test methods shall be submitted to the RPR prior to start of construction.

403-3.3 Job mix formula (JMF). No asphalt mixture shall be placed until an acceptable mix design has been submitted to the RPR for review and accepted in writing. The RPR's review shall not relieve the Contractor of the responsibility to select and proportion the materials to comply with this section.

When the project requires asphalt mixtures of differing aggregate gradations and/or binders, a separate JMF shall be submitted for each mix. Add anti-stripping agent to meet tensile strength requirements.

The JMF shall be prepared by an accredited laboratory that meets the requirements of paragraph 403-3.2. The asphalt mixture shall be designed using procedures contained in Asphalt Institute MS-2 Mix Design Manual, 7th Edition. Samples shall be prepared and compacted using the gyratory compactor in accordance with ASTM D6925.

Should a change in sources of materials be made, a new JMF must be submitted to the RPR for review and accepted in writing before the new material is used. After the initial production JMF has been approved by the RPR and a new or modified JMF is required for whatever reason, the subsequent cost of the new or modified JMF, including a new control strip when required by the RPR, will be borne by the Contractor.

The RPR may request samples at any time for testing, prior to and during production, to verify the quality of the materials and to ensure conformance with the applicable specifications.

The JMF shall be submitted in writing by the Contractor at least 30 days prior to the start of paving operations. The JMF shall be developed within the same construction season using aggregates proposed for project use.

The submitted JMF shall be dated, and stamped or sealed by the responsible professional Engineer of the laboratory and shall include the following items as a minimum:

- Manufacturer's Certificate of Analysis (COA) for the asphalt binder used in the JMF in accordance with paragraph 403-2.3. Certificate of asphalt performance grade is with modifier already added, if used and must indicate compliance with ASTM D6373. For plant modified asphalt binder, certified test report indicating grade certification of modified asphalt binder.
- Manufacturer's Certificate of Analysis (COA) for the anti-stripping agent if used in the JMF in accordance with paragraph 403-2.4.
- Certified material test reports for the course and fine aggregate and mineral filler in accordance with paragraphs 403-2.1 and 403-2.2.
- Percent passing each sieve size for individual gradation of each aggregate cold feed and/or hot bin; percent by weight of each cold feed and/or hot bin used; and the total combined gradation in the JMF.
- Specific Gravity and absorption of each course and fine aggregate.
- Percent natural sand.
- Percent fractured faces.
- Percent by weight of flat particles, elongated particles, and flat and elongated particles (and criteria).
- Percent of asphalt.
- Number of blows or gyrations.
- Laboratory mixing and compaction temperatures.

- Supplier recommended mixing and compaction temperatures.
- Plot of the combined gradation on the 0.45 power gradation curve.
- Graphical plots of air voids, voids in the mineral aggregate (VMA), and unit weight versus asphalt content. To achieve minimum VMA during production, the mix design needs to account for material breakdown during production.
- Tensile Strength Ratio (TSR).
- Type and amount of Anti-strip agent when used.
- Asphalt Pavement Analyzer (APA) results.
- Date the JMF was developed. Mix designs that are not dated or which are from a prior construction season shall not be accepted.

Table 1. Asphalt Design Criteria

Test Property	Value	Test Method
Number of blows/gyrations	75	
Air voids (%)	3.5	ASTM D3203
Percent voids in mineral aggregate (VMA), minimum	See Table 2	ASTM D6995
TSR ¹	not less than 80 at a saturation of 70-80%	ASTM D4867
Asphalt Pavement Analyzer (APA) ^{2,3}	Less than 10 mm @ 4000 passes	AASHTO T340 at 250 psi hose pressure at 64°C test temperature

¹ Test specimens for TSR shall be compacted at 7 ± 1.0 % air voids. In areas subject to freeze-thaw, use freeze-thaw conditioning in lieu of moisture conditioning per ASTM D4867.

² AASHTO T340 at 100 psi hose pressure at 64°C test temperature may be used in the interim. If this method is used the required Value shall be less than 5 mm @ 8000 passes

³ Where APA not available, use Hamburg wheel test (AASHTO T 324) 10 mm@ 20,000 passes at 50°C.

The mineral aggregate shall be of such size that the percentage composition by weight, as determined by laboratory sieves, will conform to the gradation or gradations specified in Table 2 when tested in accordance with ASTM C136 and ASTM C117.

The gradations in Table 2 represent the limits that shall determine the suitability of aggregate for use from the sources of supply, be well graded from coarse to fine and shall not vary from the low limit on one sieve to the high limit on the adjacent sieve, or vice versa.

Table 2. Aggregate - Asphalt Pavements

Sieve Size	Percentage by Weight Passing Sieve (Gradation 2)
1 inch (25.0 mm)	--
3/4 inch (19.0 mm)	100
1/2 inch (12.5 mm)	90-100
3/8 inch (9.5 mm)	72-88
No. 4 (4.75 mm)	53-73
No. 8 (2.36 mm)	38-60
No. 16 (1.18 mm)	26-48
No. 30 (600 µm)	18-38
No. 50 (300 µm)	11-27
No. 100 (150 µm)	6-18
No. 200 (75 µm)	3-6
Voids in Mineral Aggregate (VMA)¹	15
Asphalt Percent:	
Stone or gravel	5.0-7.5
Slag	6.5-9.5
Recommended Minimum Construction Lift Thickness	2 inch

¹To achieve minimum VMA during production, the mix design needs to account for material breakdown during production.

The aggregate gradations shown are based on aggregates of uniform specific gravity. The percentages passing the various sieves shall be corrected when aggregates of varying specific gravities are used, as indicated in the Asphalt Institute MS-2 Mix Design Manual, 7th Edition.

RAP shall not be used.

403-3.5 Control strip. Full production shall not begin until an acceptable control strip has been constructed and accepted in writing by the RPR. The Contractor shall prepare and place a quantity of asphalt according to the JMF. The underlying grade or pavement structure upon which the control strip is to be constructed shall be the same as the remainder of the course represented by the control strip.

The Contractor will not be allowed to place the control strip until the Contractor quality control program (CQCP), showing conformance with the requirements of paragraph 403-5.1, has been accepted, in writing, by the RPR.

The control strip will consist of at least 250 tons (227 metric tons) or 1/2 subplot, whichever is greater. The control strip shall be placed in two lanes of the same width and depth to be used in production with a longitudinal cold joint. The cold joint must be cut back in accordance with paragraph 403-4.13 using the same procedure that will be used during production. The cold joint for the control strip will be an exposed construction joint at least four (4) hours old or when the mat has cooled to less than 160°F (71°C). The equipment used in construction of the control strip shall be the same type, configuration and weight to be used on the project.

The control strip shall be evaluated for acceptance as a single lot in accordance with the acceptance criteria in paragraph 403-6.1 and 403-6.2.

The control strip will be considered acceptable by the RPR if the gradation, asphalt content, and VMA are within the action limits specified in paragraph 403-5.5a; and Mat density greater than or equal to 94%, air voids 3.5% +/- 1%, and joint density greater than or equal to 92%.

If the control strip is unacceptable, necessary adjustments to the JMF, plant operation, placing procedures, and/or rolling procedures shall be made and another control strip shall be placed. Unacceptable control strips shall be removed at the Contractor's expense.

The control strip will be considered one lot for payment based upon the average of a minimum of 3 samples (no sublots required for control strip). Payment will only be made for an acceptable control strip in accordance with paragraph 403-8.1.

CONSTRUCTION METHODS

403-4.1 Weather limitations. The asphalt shall not be placed upon a wet surface or when the surface temperature of the underlying course is less than specified in Table 4. The temperature requirements may be waived by the RPR, if requested; however, all other requirements including compaction shall be met.

Table 4. Surface Temperature Limitations of Underlying Course

Mat Thickness	Base Temperature (Minimum)	
	Degrees F	Degrees C
3 inches (7.5 cm) or greater	40	4
Greater than 2 inches (50 mm) but less than 3 inches (7.5 cm)	45	7

403-4.2 Asphalt plant. Plants used for the preparation of asphalt shall conform to the requirements of American Association of State Highway and Transportation Officials (AASHTO) M156 including the following items:

a. Inspection of plant. The RPR, or RPR's authorized representative, shall have access, at all times, to all areas of the plant for checking adequacy of equipment; inspecting operation of the plant: verifying weights, proportions, and material properties; and checking the temperatures maintained in the preparation of the mixtures.

b. Storage bins and surge bins. The asphalt mixture stored in storage and/or surge bins shall meet the same requirements as asphalt mixture loaded directly into trucks. Asphalt mixture shall not be stored in storage and/or surge bins for a period greater than twelve (12) hours. If the RPR determines there is an excessive heat loss, segregation or oxidation of the asphalt mixture due to temporary storage, temporary storage shall not be allowed.

403-4.3 Aggregate stockpile management. Aggregate stockpiles shall be constructed in such a manner that prevents segregation and intermixing of deleterious materials. Aggregates from different sources shall be stockpiled, weighed and batched separately at the concrete batch plant. Aggregates that have become segregated or mixed with earth or foreign material shall not be used.

A continuous supply of materials shall be provided to the work to ensure continuous placement.

403-4.4 Hauling equipment. Trucks used for hauling asphalt shall have tight, clean, and smooth metal beds. To prevent the asphalt from sticking to the truck beds, the truck beds shall be lightly coated with a

minimum amount of paraffin oil, lime solution, or other material approved by the RPR. Petroleum products shall not be used for coating truck beds. Each truck shall have a suitable cover to protect the mixture from adverse weather. When necessary, to ensure that the mixture will be delivered to the site at the specified temperature, truck beds shall be insulated or heated and covers shall be securely fastened.

403-4.4.1 Material transfer vehicle (MTV). Material transfer Vehicles shall be required due to the improvement in smoothness and decrease in both physical and thermal segregation. To transfer the material from the hauling equipment to the paver, use a self-propelled, material transfer vehicle with a swing conveyor that can deliver material to the paver without making contact with the paver. The MTV shall be able to move back and forth between the hauling equipment and the paver providing material transfer to the paver, while allowing the paver to operate at a constant speed. The Material Transfer Vehicle will have remixing and storage capability to prevent physical and thermal segregation.

403-4.5 Asphalt pavers. Asphalt pavers shall be self-propelled with an activated heated screed, capable of spreading and finishing courses of asphalt that will meet the specified thickness, smoothness, and grade. The paver shall have sufficient power to propel itself and the hauling equipment without adversely affecting the finished surface. The asphalt paver shall be equipped with a control system capable of automatically maintaining the specified screed grade and elevation.

If the spreading and finishing equipment in use leaves tracks or indented areas, or produces other blemishes in the pavement that are not satisfactorily corrected by the scheduled operations, the use of such equipment shall be discontinued.

The paver shall be capable of paving to a minimum width specified in paragraph 401-4.11.

403-4.6 Rollers. The number, type, and weight of rollers shall be sufficient to compact the asphalt to the required density while it is still in a workable condition without crushing of the aggregate, depressions or other damage to the pavement surface. Rollers shall be in good condition, capable of operating at slow speeds to avoid displacement of the asphalt. All rollers shall be specifically designed and suitable for compacting asphalt concrete and shall be properly used. Rollers that impair the stability of any layer of a pavement structure or underlying soils shall not be used.

403-4.6.1 Density device. The Contractor shall have on site a density gauge during all paving operations in order to assist in the determination of the optimum rolling pattern, type of roller and frequencies, as well as to monitor the effect of the rolling operations during production paving. The Contractor shall also supply a qualified technician during all paving operations to calibrate the density gauge and obtain accurate density readings for all new asphalt. These densities shall be supplied to the RPR upon request at any time during construction. No separate payment will be made for supplying the density gauge and technician.

403-4.7 Preparation of asphalt binder. The asphalt binder shall be heated in a manner that will avoid local overheating and provide a continuous supply of the asphalt material to the mixer at a uniform temperature. The temperature of the unmodified asphalt binder delivered to the mixer shall be sufficient to provide a suitable viscosity for adequate coating of the aggregate particles, but shall not exceed 325°F (160°C) when added to the aggregate. The temperature of modified asphalt binder shall be no more than 350°F (175°C) when added to the aggregate.

403-4.8 Preparation of mineral aggregate. The aggregate for the asphalt shall be heated and dried. The maximum temperature and rate of heating shall be such that no damage occurs to the aggregates. The temperature of the aggregate and mineral filler shall not exceed 350°F (175°C) when the asphalt binder is added. Particular care shall be taken that aggregates high in calcium or magnesium content are not damaged by overheating. The temperature shall not be lower than is required to obtain complete coating and uniform distribution on the aggregate particles and to provide a mixture of satisfactory workability.

403-4.9 Preparation of asphalt mixture. The aggregates and the asphalt binder shall be weighed or metered and introduced into the mixer in the amount specified by the JMF. The combined materials shall be mixed until the aggregate obtains a uniform coating of asphalt binder and is thoroughly distributed throughout the mixture. Wet mixing time shall be the shortest time that will produce a satisfactory mixture, but not less than 25 seconds for batch plants. The wet mixing time for all plants shall be established by the Contractor, based on the procedure for determining the percentage of coated particles described in ASTM D2489, for each individual plant and for each type of aggregate used. The wet mixing time will be set to achieve 95% of coated particles. For continuous mix plants, the minimum mixing time shall be determined by dividing the weight of its contents at operating level by the weight of the mixture delivered per second by the mixer. The moisture content of all asphalt upon discharge shall not exceed 0.5%.

403-4.10 Application of Prime and Tack Coat. Immediately before placing the asphalt mixture, the underlying course shall be cleaned of all dust and debris.

A prime coat in accordance with Item P-602 shall be applied to aggregate base prior to placing the asphalt mixture.

A tack coat shall be applied in accordance with Item P-603 to all vertical and horizontal asphalt and concrete surfaces prior to placement of the first and each subsequent lift of asphalt mixture.

403-4.11 Laydown plan, transporting, placing, and finishing. Prior to the placement of the asphalt, the Contractor shall prepare a laydown plan with the sequence of paving lanes and width to minimize the number of cold joints; the location of any temporary ramps; laydown temperature; and estimated time of completion for each portion of the work (milling, paving, rolling, cooling, etc.). The laydown plan and any modifications shall be approved by the RPR.

Deliveries shall be scheduled so that placing and compacting of asphalt is uniform with minimum stopping and starting of the paver. Hauling over freshly placed material shall not be permitted until the material has been compacted, as specified, and allowed to cool to approximately ambient temperature. The Contractor, at their expense, shall be responsible for repair of any damage to the pavement caused by hauling operations.

Contractor shall survey each lift of asphalt surface course and certify to RPR that every lot of each lift meets the grade tolerances of paragraph 401-6.2e before the next lift can be placed.

Edges of existing asphalt pavement abutting the new work shall be saw cut and the cut off material and laitance removed. Apply a tack coat in accordance with P-603 before new asphalt material is placed against it.

The speed of the paver shall be regulated to eliminate pulling and tearing of the asphalt mat. Placement of the asphalt mix shall begin along the centerline of a crowned section or on the high side of areas with a one way slope unless shown otherwise on the laydown plan as accepted by the RPR. The asphalt mix shall be placed in consecutive adjacent lanes having a minimum width of 12.5 feet (m) except where edge lanes require less width to complete the area. Additional screed sections attached to widen the paver to meet the minimum lane width requirements must include additional auger sections to move the asphalt mixture uniformly along the screed extension.

The longitudinal joint in one course shall offset the longitudinal joint in the course immediately below by at least 1 foot (30 cm); however, the joint in the surface top course shall be at the centerline of crowned pavements. Transverse joints in one course shall be offset by at least 10 feet (3 m) from transverse joints in the previous course. Transverse joints in adjacent lanes shall be offset a minimum of 10 feet (3 m). On areas where irregularities or unavoidable obstacles make the use of mechanical spreading and finishing equipment impractical, the asphalt may be spread and luted by hand tools.

The RPR may at any time, reject any batch of asphalt, on the truck or placed in the mat, which is rendered unfit for use due to contamination, segregation, incomplete coating of aggregate, or overheated asphalt mixture. Such rejection may be based on only visual inspection or temperature measurements. In the event of such rejection, the Contractor may take a representative sample of the rejected material in the presence of the RPR, and if it can be demonstrated in the laboratory, in the presence of the RPR, that such material was erroneously rejected, payment will be made for the material at the contract unit price.

Areas of segregation in the surface course, as determined by the RPR, shall be removed and replaced at the Contractor's expense. The area shall be removed by saw cutting and milling a minimum of the construction lift thickness as specified in paragraph 403-3.3, Table 2 for the approved mix design. The area to be removed and replaced shall be a minimum width of the paver and a minimum of 10 feet (3 m) long.

403-4.12 Compaction of asphalt mixture. After placing, the asphalt mixture shall be thoroughly and uniformly compacted by self-propelled rollers. The surface shall be compacted as soon as possible when the asphalt has attained sufficient stability so that the rolling does not cause undue displacement, cracking or shoving. The sequence of rolling operations and the type of rollers used shall be at the discretion of the Contractor. The speed of the roller shall, at all times, be sufficiently slow to avoid displacement of the hot mixture and be effective in compaction. Any surface defects and/or displacement occurring as a result of the roller, or from any other cause, shall be corrected at the Contractor's expense.

Sufficient rollers shall be furnished to handle the output of the plant. Rolling shall continue until the surface is of uniform texture, true to grade and cross-section, and the required field density is obtained. To prevent adhesion of the asphalt to the roller, the wheels shall be equipped with a scraper and kept moistened with water as necessary.

In areas not accessible to the roller, the mixture shall be thoroughly compacted with approved power tampers.

Any asphalt that becomes loose and broken, mixed with dirt, contains check-cracking, or in any way defective shall be removed and replaced with fresh hot mixture and immediately compacted to conform to the surrounding area. This work shall be done at the Contractor's expense. Skin patching shall not be allowed.

403-4.13 Joints. The formation of all joints shall be made in such a manner as to ensure a continuous bond between the courses and obtain the required density. All joints shall have the same texture as other sections of the course and meet the requirements for smoothness and grade.

The roller shall not pass over the unprotected end of the freshly laid asphalt except when necessary to form a transverse joint. When necessary to form a transverse joint, it shall be made by means of placing a bulkhead or by tapering the course. The tapered edge shall be cut back to its full depth and width on a straight line to expose a vertical face prior to placing the adjacent lane. In both methods, all contact surfaces shall be coated with an asphalt tack coat before placing any fresh asphalt against the joint.

Longitudinal joints which have been left exposed for more than four (4) hours; the surface temperature has cooled to less than 175°F (80°C); or are irregular, damaged, uncompacted or otherwise defective shall be cut back with a cutting wheel or pavement saw a maximum of 3 inches (75 mm) to expose a clean, sound, uniform vertical surface for the full depth of the course. All cutback material and any laitance produced from cutting joints shall be removed from the project. An asphalt tack coat or other product approved by the RPR shall be applied to the clean, dry joint prior to placing any additional fresh asphalt against the joint. The cost of this work shall be considered incidental to the cost of the asphalt.

403-4.14 Saw-cut grooving. Saw-cut grooving is not required.

403-4.15 Diamond grinding. Diamond grinding shall be completed prior to pavement grooving. Diamond grinding shall be accomplished by sawing with saw blades impregnated with industrial diamond abrasive.

Diamond grinding shall be performed with a machine designed specifically for diamond grinding capable of cutting a path at least 3 feet (0.9 m) wide. The saw blades shall be 1/8-inch (3-mm) wide with a minimum of 55 to 60 blades per 12 inches (300 mm) of cutting head width; grooves between 0.090 and 0.130 inches (2 and 3.5 mm) wide; and peaks and ridges approximately 1/32 inch (1 mm) higher than the bottom of the grinding cut. The actual number of blades will be determined by the Contractor and depend on the hardness of the aggregate. Equipment or grinding procedures that causes ravels, aggregate fractures, spalls or disturbance to the pavement will not be permitted.

Grinding will be tapered in all directions to provide smooth transitions to areas not requiring grinding. The slurry resulting from the grinding operation shall be continuously removed and the pavement left in a clean condition. The Contractor shall apply a surface treatment to all areas that have been subject to grinding.

403-4.16 Nighttime Paving Requirements. The Contractor shall provide adequate lighting during any nighttime construction. A lighting plan shall be submitted by the Contractor and approved by the RPR prior to the start of any nighttime work. All work shall be in accordance with the approved CSPP and lighting plan.

403-5.1 General. The Contractor shall develop a CQCP in accordance with Item C-100. No partial payment will be made for materials that are subject to specific QC requirements without an approved CQCP.

403-5.2 Contractor quality control (QC) facilities. The Contractor shall provide or contract for testing facilities in accordance with Item C-100. The RPR shall be permitted unrestricted access to inspect the Contractor's QC facilities and witness QC activities. The RPR will advise the Contractor in writing of any noted deficiencies concerning the QC facility, equipment, supplies, or testing personnel and procedures. When the deficiencies are serious enough to be adversely affecting the test results, the incorporation of the materials into the work shall be suspended immediately and will not be permitted to resume until the deficiencies are satisfactorily corrected.

403-5.3 Quality Control (QC) testing. The Contractor shall perform all QC tests necessary to control the production and construction processes applicable to these specifications and as set forth in the approved CQCP. The testing program shall include, but not necessarily be limited to, tests for the control of asphalt content, aggregate gradation, temperatures, aggregate moisture, field compaction, and surface smoothness. A QC Testing Plan shall be developed as part of the CQCP.

a. Asphalt content. A minimum of two tests shall be performed per day in accordance with ASTM D6307 or ASTM D2172 for determination of asphalt content. When using ASTM D6307, the correction factor shall be determined as part of the first test performed at the beginning of plant production; and as part of every tenth test performed thereafter. The asphalt content for the day will be determined by averaging the test results.

b. Gradation. Aggregate gradations shall be determined a minimum of twice per lot from mechanical analysis of extracted aggregate in accordance with ASTM D5444 and ASTM C136, and ASTM C117.

c. Moisture content of aggregate. The moisture content of aggregate used for production shall be determined a minimum of once per lot in accordance with ASTM C566.

d. Moisture content of asphalt. The moisture content of the asphalt shall be determined once per lot in accordance with AASHTO T329 or ASTM D1461.

e. Temperatures. Temperatures shall be checked, at least four times per lot, at necessary locations to determine the temperatures of the dryer, the asphalt binder in the storage tank, the asphalt at the plant, and the asphalt at the job site.

f. In-place density monitoring. The Contractor shall conduct any necessary testing to ensure that the specified density is being achieved. A nuclear gauge may be used to monitor the pavement density in accordance with ASTM D2950.

g. Smoothness for Contractor Quality Control.

The Contractor shall perform smoothness testing in transverse and longitudinal directions daily to verify that the construction processes are producing pavement with variances less than ¼ inch in 12 feet, identifying areas that may pond water which could lead to hydroplaning of aircraft. If the smoothness criteria is not met, appropriate changes and corrections to the construction process shall be made by the Contractor before construction continues

The Contractor may use a 12-foot (3.7 m) “straightedge, a rolling inclinometer meeting the requirements of ASTM E2133 or rolling external reference device that can simulate a 12-foot (3.7m) straightedge approved by the RPR. Straight-edge testing shall start with one-half the length of the straightedge at the edge of pavement section being tested and then moved ahead one-half the length of the straightedge for each successive measurement. Testing shall be continuous across all joints. The surface irregularity shall be determined by placing the freestanding (unleveled) straightedge on the pavement surface and allowing it to rest upon the two highest spots covered by its length, and measuring the maximum gap between the straightedge and the pavement surface in the area between the two high points. If the rolling inclinometer or external reference device is used, the data may be evaluated using the FAA profile program, ProFAA, using the 12-foot straightedge simulation function.

Smoothness readings shall not be made across grade changes or cross slope transitions. The transition between new and existing pavement and between the start and stop of lanes place shall be evaluated separately for conformance with the plans.

(1) Transverse measurements. Transverse measurements shall be taken for each day’s production placed. Transverse measurements will be taken perpendicular to the pavement centerline each 50 feet (15 m) or more often as determined by the RPR. The joint between lanes shall be tested separately to facilitate smoothness between lanes.

(2) Longitudinal measurements. Longitudinal measurements shall be taken for each day’s production placed. Longitudinal tests will be parallel to the centerline of paving; at the center of paving lanes when widths of paving lanes are less than 20 feet (6 m); and at the third points of paving lanes when widths of paving lanes are 20 ft (6 m) or greater. When placement abuts previously placed material the first measurement shall start with one half the length of the straight edge on the previously placed material.

Deviations on the final surface course in either the transverse or longitudinal direction that will trap water greater than 1/4 inch (6 mm) shall be corrected with diamond grinding per paragraph 403-4.15 or by removing and replacing the surface course to full depth. Grinding shall be tapered in all directions to provide smooth transitions to areas not requiring grinding. All areas in which diamond grinding has been performed shall be subject to the final pavement thickness tolerances specified in paragraph 401-6.1d(3) Areas that have been ground shall be sealed with a surface treatment in accordance with Item P-608. To avoid the surface treatment creating any conflict with runway or taxiway markings, it may be necessary to seal a larger area.

Control charts shall be kept to show area of each day’s placement and the percentage of corrective grinding required. Corrections to production and placement shall be initiated when corrective grinding is required. If the Contractor’s machines and/or methods produce significant areas that need

corrective actions in excess of 10 percent of a day's production, production shall be stopped until corrective measures are implemented by the Contractor.

h. Grade. Grade shall be evaluated daily to allow adjustments to paving operations when grade measurements do not meet specifications. As a minimum, grade shall be evaluated prior to the placement of the first lift and then prior to and after placement of the surface lift.

Measurements will be taken at appropriate gradelines (as a minimum at center and edges of paving lane) and longitudinal spacing as shown on cross-sections and plans. The final surface of the pavement will not vary from the gradeline elevations and cross-sections shown on the plans by more than 1/2 inch (12 mm) vertically and 0.1 feet (30 mm) laterally. The documentation will be provided by the Contractor to the RPR within 24 hours.

Areas with humps or depressions that exceed grade or smoothness criteria and that retain water on the surface must be ground off provided the course thickness after grinding is not more than 1/2 inch (12 mm) less than the thickness specified on the plans. Grinding shall be in accordance with paragraph 403-4.15.

The Contractor shall repair low areas or areas that cannot be corrected by grinding by removal of deficient areas to the depth of the final course plus 1/2 inch and replacing with new material. Skin patching is not allowed.

403-5.4 Sampling. When directed by the RPR, the Contractor shall sample and test any material that appears inconsistent with similar material being sampled, unless such material is voluntarily removed and replaced or deficiencies corrected by the Contractor. All sampling shall be in accordance with standard procedures specified.

403-5.5 Control charts. The Contractor shall maintain linear control charts both for individual measurements and range (i.e., difference between highest and lowest measurements) for aggregate gradation, asphalt content, and VMA. The VMA for each day shall be calculated and monitored by the QC laboratory.

Control charts shall be posted in a location satisfactory to the RPR and kept current. As a minimum, the control charts shall identify the project number, the contract item number, the test number, each test parameter, the Action and Suspension Limits applicable to each test parameter, and the Contractor's test results. The Contractor shall use the control charts as part of a process control system for identifying potential problems and assignable causes before they occur. If the Contractor's projected data during production indicates a problem and the Contractor is not taking satisfactory corrective action, the RPR may suspend production or acceptance of the material.

a. Individual measurements. Control charts for individual measurements shall be established to maintain process control within tolerance for aggregate gradation, asphalt content, and VMA. The control charts shall use the JMF target values as indicators of central tendency for the following test parameters with associated Action and Suspension Limits:

Control Chart Limits for Individual Measurements

Sieve	Action Limit	Suspension Limit
3/4 inch (19.0 mm)	±6%	±9%
1/2 inch (12.5 mm)	±6%	±9%
3/8 inch (9.5 mm)	±6%	±9%
No. 4 (4.75 mm)	±6%	±9%
No. 16 (1.18 mm)	±5%	±7.5%
No. 50 (300 µm)	±3%	±4.5%
No. 200 (75 µm)	±2%	±3%
Asphalt Content	±0.45%	±0.70%
Minimum VMA	-0.5%	-1.0%

b. Range. Control charts for range shall be established to control process variability for the test parameters and Suspension Limits listed below. The range shall be computed for each lot as the difference between the two test results for each control parameter. The Suspension Limits specified below are based on a sample size of $n = 2$. Should the Contractor elect to perform more than two tests per lot, the Suspension Limits shall be adjusted by multiplying the Suspension Limit by 1.18 for $n = 3$ and by 1.27 for $n = 4$.

Control Chart Limits Based on Range ($n = 2$)

Sieve	Suspension Limit
1/2 inch (12.5 mm)	11%
3/8 inch (9.5 mm)	11%
No. 4 (4.75 mm)	11%
No. 16 (1.18 mm)	9%
No. 50 (300 µm)	6%
No. 200 (75 µm)	3.5%
Asphalt Content	0.8%

c. Corrective action. The CQCP shall indicate that appropriate action shall be taken when the process is believed to be out of tolerance. The Plan shall contain sets of rules to gauge when a process is out of control and detail what action will be taken to bring the process into control. As a minimum, a process shall be deemed out of control and production stopped and corrective action taken, if:

- (1) One point falls outside the Suspension Limit line for individual measurements or range; or
- (2) Two points in a row fall outside the Action Limit line for individual measurements.

403-5.6 Quality control (QC) reports. The Contractor shall maintain records and shall submit reports of QC activities daily, in accordance with the CQCP described in Item C-100.

MATERIAL ACCEPTANCE

403-6.1. Quality Assurance Acceptance sampling and testing. Unless otherwise specified, all acceptance sampling and testing necessary to determine conformance with the requirements specified in

this section will be performed by the RPR at no cost to the Contractor except that coring as required in this section shall be completed and paid for by the Contractor.

a. Quality Assurance (QA) testing laboratory. The QA testing laboratory performing these acceptance tests will be accredited in accordance with ASTM D3666. The QA laboratory accreditation will be current and listed on the accrediting authority's website. All test methods required for acceptance sampling and testing will be listed on the lab accreditation.

b. Lot Size. A standard lot will be equal to one day's production divided into approximately equal sublots of between 400 to 600 tons. When only one or two sublots are produced in a day's production, the sublots will be combined with the production lot from the previous or next day.

Where more than one plant is simultaneously producing asphalt for the job, the lot sizes will apply separately for each plant.

c. Asphalt air voids. Plant-produced asphalt will be tested for air voids on a subplot basis.

(1) Sampling. Material from each subplot shall be sampled in accordance with ASTM D3665. Samples shall be taken from material deposited into trucks at the plant or at the job site in accordance with ASTM D979. The sample of asphalt may be put in a covered metal tin and placed in an oven for not less than 30 minutes nor more than 60 minutes to maintain the material at or above the compaction temperature as specified in the JMF.

(2) Testing. Air voids will be determined for each subplot in accordance with ASTM D3203 for a set of three compacted specimens prepared in accordance with ASTM D6925.

d. In-place asphalt mat and joint density. Each subplot will be tested for in-place mat and joint density as a percentage of the theoretical maximum density (TMD).

(1) Sampling. The Contractor will cut minimum 5 inches (125 mm) diameter samples in accordance with ASTM D5361. The Contractor shall furnish all tools, labor, and materials for cleaning, and filling the cored pavement. Laitance produced by the coring operation shall be removed immediately after coring, and core holes shall be filled within one day after sampling in a manner acceptable to the RPR.

(2) Bond. Each lift of asphalt shall be bonded to the underlying layer. If cores reveal that the surface is not bonded, additional cores shall be taken as directed by the RPR to determine the extent of unbonded areas. Unbonded areas shall be removed by milling and replaced at no additional cost as directed by the RPR.

(3) Thickness. Thickness of each lift of surface course will be evaluated by the RPR for compliance to the requirements shown on the plans after any necessary corrections for grade. Measurements of thickness will be made using the cores extracted for each subplot for density measurement. The maximum allowable deficiency at any point will not be more than 1/4 inch (6 mm) less than the thickness indicated for the lift. Average thickness of lift, or combined lifts, will not be less than the indicated thickness. Where the thickness tolerances are not met, the lot or subplot shall be corrected by the Contractor at his expense by removing the deficient area and replacing with new pavement. The Contractor, at his expense, may take additional cores as approved by the RPR to circumscribe the deficient area.

(4) Mat density. One core shall be taken from each subplot. Core locations will be determined by the RPR in accordance with ASTM D3665. Cores for mat density shall not be taken closer than one foot (30 cm) from a transverse or longitudinal joint. The bulk specific gravity of each cored sample will be determined in accordance with ASTM D2726. The percent compaction (density) of each sample will be determined by dividing the bulk specific gravity of each subplot sample by the TMD for that subplot.

(5) Joint density. One core centered over the longitudinal joint shall be taken for each subplot which contains a longitudinal joint. Core locations will be determined by the RPR in accordance with

ASTM D3665. The bulk specific gravity of each core sample will be determined in accordance with ASTM D2726. The percent compaction (density) of each sample will be determined by dividing the bulk specific gravity of each joint density sample by the average TMD for the lot. The TMD used to determine the joint density at joints formed between lots will be the lower of the average TMD values from the adjacent lots.

403-6.2 Acceptance criteria.

a. General. Acceptance will be based on the implementation of the Contractor Quality Control Program (CQCP) and the following characteristics of the asphalt and completed pavements: air voids, mat density, joint density, grade and Profilograph smoothness.

b. Air voids. Acceptance of each lot of plant produced material for air voids will be based upon the average air void from the sublots. If the average air voids of the lot are equal to or greater than 2% and equal to or less than 5%, then the lot will be acceptable. If the average is below 2% or greater than 5%, the lot shall be removed and replaced at the Contractor's expense.

c. Mat density. Acceptance of each lot of plant produced material for mat density will be based on the average of all of the densities taken from the sublots. If the average mat density of the lot so established equals or exceeds 94%, the lot will be acceptable. If the average mat density of the lot is below 94%, the lot shall be removed and replaced at the Contractor's expense.

d. Joint density. Acceptance of each lot of plant produced asphalt for joint density will be based on the average of all of the joint densities taken from the sublots. If the average joint density of the lot so established equals or exceeds 92%, the lot will be acceptable. If the average joint density of the lot is less than 92%, the Contractor shall stop production and evaluate the method of compacting joints. Production may resume once the reason for poor compaction has been determined and appropriate measures have been taken to ensure proper compaction.

e. Grade. The final finished surface of the pavement of the completed project shall be surveyed to verify that the grade elevations and cross-sections shown on the plans do not deviate more than 1/2 inch (12 mm) vertically or 0.1 feet (30 mm) laterally.

Cross-sections of the pavement shall be taken at a minimum 50-foot (15-m) longitudinal spacing and at all longitudinal grade breaks. Minimum cross-section grade points shall include grade at centerline, $\pm$ 10 feet of centerline, and edge of taxiway pavement.

The survey and documentation shall be stamped and signed by a licensed surveyor. Payment for sublots that do not meet grade for over 25% of the subplot shall not be more than 95%.

f. Profilograph roughness for QA Acceptance. The final profilograph shall be the full length of the project to facilitate testing of roughness between lots. The Contractor, in the presence of the RPR shall perform a profilograph roughness test on the completed project with a profilograph meeting the requirements of ASTM E1274 or a Class I inertial profiler meeting ASTM E950. Data and results shall be provided within 48 hrs of profilograph roughness tests.

The pavement shall have an average profile index less than 15 inches per mile per 1/10 mile. The equipment shall utilize electronic recording and automatic computerized reduction of data to indicate "must grind" bumps and the Profile Index for the pavement using a 0.2-inch (5 mm) blanking band. The bump template must span one inch (25 mm) with an offset of 0.4 inches (10 mm). The profilograph must be calibrated prior to use and operated by a factory or State DOT approved, trained operator. Profilograms shall be recorded on a longitudinal scale of one inch (25 mm) equals 25 feet (7.5 m) and a vertical scale of one inch (25 mm) equals one inch (25 mm). Profilograph shall be performed one foot right and left of project centerline and 15 feet (4.5 m) right and left of project centerline. Any areas that indicate "must grind" shall be corrected with diamond grinding per paragraph 401-4.15 or by removing and replacing full depth of surface course, as directed by the RPR. Where corrections are necessary, a

second profilograph run shall be performed to verify that the corrections produced an average profile index of 15 inches per mile per 1/10 mile or less.

403-6.3 Resampling Pavement for Mat Density.

a. General. Resampling of a lot of pavement will only be allowed for mat density and then, only if the Contractor requests same in writing, within 48 hours after receiving the written test results from the RPR. A retest will consist of all the sampling and testing procedures contained in paragraphs 403-6.1. Only one resampling per lot will be permitted.

(1) A redefined mat density will be calculated for the resampled lot. The number of tests used to calculate the redefined mat density will include the initial tests made for that lot plus the retests.

(2) The cost for resampling and retesting shall be borne by the Contractor.

b. Payment for resampled lots. The redefined mat density for a resampled lot will be used to evaluate the acceptance of that lot in accordance with paragraph 403-6.2.

c. Outliers. Check for outliers in accordance with ASTM E178, at a significance level of 5%. Outliers will be discarded and density determined using the remaining test values.

METHOD OF MEASUREMENT

403-7.1 Measurement. Plant mix asphalt mix pavement shall be measured by the number of tons (kg) of asphalt pavement used in the accepted work. Recorded batch weights or truck scale weights will be used to determine the basis for the tonnage.

BASIS OF PAYMENT

403-8.1 Payment. Payment for a lot of asphalt mixture meeting all acceptance criteria as specified in paragraph 403-6.2 shall be made at the contract unit price per ton (kg) for asphalt. The price shall be compensation for furnishing all materials, for all preparation, mixing, and placing of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item P-403-8.1 Asphalt Mixture Binder Base Course - per ton (kg)

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM C29	Standard Test Method for Bulk Density ("Unit Weight") and Voids in Aggregate
ASTM C88	Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
ASTM C117	Standard Test Method for Materials Finer than 75- μ m (No. 200) Sieve in Mineral Aggregates by Washing
ASTM C127	Standard Test Method for Density, Relative Density (Specific Gravity), and Absorption of Coarse Aggregate

ASTM C131	Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM C136	Standard Test Method for Sieve or Screen Analysis of Fine and Coarse Aggregates
ASTM C142	Standard Test Method for Clay Lumps and Friable Particles in Aggregates
ASTM C183	Standard Practice for Sampling and the Amount of Testing of Hydraulic Cement
ASTM C566	Standard Test Method for Total Evaporable Moisture Content of Aggregate by Drying
ASTM D75	Standard Practice for Sampling Aggregates
ASTM D242	Standard Specification for Mineral Filler for Bituminous Paving Mixtures
ASTM D946	Standard Specification for Penetration-Graded Asphalt Cement for Use in Pavement Construction
ASTM D979	Standard Practice for Sampling Bituminous Paving Mixtures
ASTM D1073	Standard Specification for Fine Aggregate for Bituminous Paving Mixtures
ASTM D1074	Standard Test Method for Compressive Strength of Bituminous Mixtures
ASTM D1461	Standard Test Method for Moisture or Volatile Distillates in Bituminous Paving Mixtures
ASTM D2041	Standard Test Method for Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
ASTM D2172	Standard Test Method for Quantitative Extraction of Bitumen from Bituminous Paving Mixtures
ASTM D2419	Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate
ASTM D2489	Standard Practice for Estimating Degree of Particle Coating of Bituminous-Aggregate Mixtures
ASTM D2726	Standard Test Method for Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixtures
ASTM D2950	Standard Test Method for Density of Bituminous Concrete in Place by Nuclear Methods
ASTM D3203	Standard Test Method for Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures
ASTM D3381	Standard Specification for Viscosity-Graded Asphalt Cement for Use in Pavement Construction
ASTM D3665	Standard Practice for Random Sampling of Construction Materials
ASTM D3666	Standard Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials

ASTM D4125	Standard Test Methods for Asphalt Content of Bituminous mixtures by the Nuclear Method
ASTM D4318	Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM D4552	Standard Practice for Classifying Hot-Mix Recycling Agents
ASTM D4791	Standard Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate
ASTM D4867	Standard Test Method for Effect of Moisture on Asphalt Concrete Paving Mixtures
ASTM D5444	Standard Test Method for Mechanical Size Analysis of Extracted Aggregate
ASTM D5581	Standard Test Method for Resistance to Plastic Flow of Bituminous Mixtures Using Marshall Apparatus (6 inch-Diameter Specimen)
ASTM D5821	Standard Test Method for Determining the Percentage of Fractured Particles in Coarse Aggregate
ASTM D6307	Standard Test Method for Asphalt Content of Hot-Mix Asphalt by Ignition Method
ASTM D6373	Standard Specification for Performance Graded Asphalt Binder
ASTM D6752	Standard Test Method for Bulk Specific Gravity and Density of Compacted Bituminous Mixtures Using Automatic Vacuum Sealing Method
ASTM D6925	Standard Test Method for Preparation and Determination of the Relative Density of Hot Mix Asphalt (HMA) Specimens by Means of the SuperPave Gyratory Compactor
ASTM D6926	Standard Practice for Preparation of Bituminous Specimens Using Marshall Apparatus
ASTM D6927	Standard Test Method for Marshall Stability and Flow of Bituminous Mixtures
ASTM D6995	Standard Test Method for Determining Field VMA based on the Maximum Specific Gravity of the Mix (Gmm)
ASTM E11	Standard Specification for Woven Wire Test Sieve Cloth and Test Sieves
ASTM E178	Standard Practice for Dealing with Outlying Observations
ASTM E2133	Standard Test Method for Using a Rolling Inclinator to Measure Longitudinal and Transverse Profiles of a Traveled Surface
American Association of State Highway and Transportation Officials (AASHTO)	
AASHTO M156	Standard Specification for Requirements for Mixing Plants for Hot-Mixed, Hot-Laid Bituminous Paving Mixtures
AASHTO T329	Standard Method of Test for Moisture Content of Hot Mix Asphalt (HMA) by Oven Method
AASHTO T 340	Standard Method of Test for Determining the Rutting Susceptibility of Hot Mix Asphalt (APA) Using the Asphalt Pavement Analyzer (APA)

Asphalt Institute (AI)

MS-2	Mix Design Manual, 7th Edition
MS-26	Asphalt Binder Handbook AI State Binder Specification Database

FAA Orders

5300.1	Modifications to Agency Airport Design, Construction, and Equipment Standards
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Federal Highway Administration (FHWA)

Long Term Pavement Performance Binder program

Software

FAARFIELD

END OF ITEM P-403

Item P-407 Asphalt Treated Permeable Base Course (ATPB)

DESCRIPTION

407-1.1 This item shall consist of an asphalt treated permeable base composed of mineral aggregate, and asphalt cement mixed in a central mixing plant and placed on a prepare subgrade or subbase course in accordance with these specifications and shall conform to the lines, grades, thickness, and typical cross sections shown in the plans.

MATERIALS

407-2.1 Aggregate. The aggregate shall consist of clean, sound, hard, durable, angular particles of crushed gravel or crushed stone and shall meet the gradation requirements of ASTM D448 Size 78, ASTM C33 Size 67 or ASTM C33 Size 57. Fine aggregate shall consist of natural sand or manufactured sand meeting the requirements of ASTM C33. The aggregate shall meet the material requirements in the table below.

Aggregate Material Requirements

Material Test	Requirement	Standard
Coarse Aggregate		
Resistance to Degradation	Loss: 40% maximum	ASTM C131
Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate	Loss after 5 cycles: 10% maximum using Sodium sulfate - or - 15% maximum using magnesium sulfate	ASTM C88
Fractured Faces	90% by weight of particles with at least 2 fractured faces	ASTM D5821
Flat Particles, Elongated Particles, or Flat and Elongated Particles ¹	10% maximum, by weight, for fraction retained on the 3/8 inch (9.5mm) sieve and 10% maximum, by weight, for the fraction passing the 3/8-inch (9.5 mm) sieve	ASTM D4791
Clay lumps and friable particles	Less than or equal to 3 percent	ASTM C142
Fine Aggregate		
Clay lumps and friable particles	Less than or equal to 3 percent	ASTM C142
Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate	Loss after 5 cycles: 10% maximum using Sodium sulfate - or - 15% maximum using magnesium sulfate	ASTM C88

¹ A flat particle is one having a ratio of width to thickness greater than five (5); an elongated particle is one having a ratio of length to width greater than five (5).

407-2.2 Sampling and testing.

a. Aggregate base materials. The Contractor shall take samples of the aggregate base stockpile in accordance with ASTM D75 to verify initial aggregate base requirements and gradation. Material shall meet the requirements in paragraph 407-2.1. This sampling and testing will be the basis for approval of the aggregate base quality requirements.

407-2.3 Asphalt binder. Asphalt binder shall conform to ASTM D6373 Performance Grade (PG) 76-22m.

407-2.4 Anti-stripping agent. Any anti-stripping agent or additive (anti-strip) shall be heat stable and shall not change the asphalt binder grade beyond specifications. Anti-strip shall be an approved material of the Department of Transportation of the State in which the project is located.

407-2.5 Bond Breaker. Not Used.

407-2.6 Separation Geotextile. Separation geotextile shall be Class 2, 0.05 sec⁻¹ permittivity per ASTM D4491, Apparent opening size per ASTM D4751 with 0.60 mm maximum average roll value.

COMPOSITION OF MIXTURE

407-3.1 Mix design. The Mix Design shall be composed of a mixture of open graded aggregate, a minimum of 0.5% antistrip agent and asphalt binder. An acceptable mix will have between 2 – 3.5% asphalt, sufficient to cover 95% of mixture with a shiny black appearance with minimal draindown at 200°F, and will bind the compacted mix. When the aggregates are blended and mixed with the asphalt cement at 250°F (121°C) and compacted at 150°F (65°C) with 35 blows of a standard Marshall hammer, the JMF shall have a permeability of not less than 500 ft/day (150 m/day) nor more than 1,500 ft/day (455 m/day) when tested with constant head permeability test ASTM D 2434/AASHTO T 215.

407-3.2 Submittals. At least 30 days prior to the placement of the ATPB, the Contractor shall submit certified test reports to the RPR for those materials proposed for use during construction, as well as the mix design information for the material. The submittal package shall include the following:

- a.** Sources of materials, including aggregate, asphalt binder, additives, and bond-breaking materials (if used).
- b.** Physical properties of the aggregates, asphalt binder, antistrip agent and bond-breaking materials.
- c.** Percent of asphalt
- d.** Amount of antistrip agent
- e.** Permeability of JMF

No drainable ATPB material shall be placed until the submittal is accepted in writing by the RPR. During production, the Contractor shall submit batch tickets for each delivered load.

CONSTRUCTION METHODS

407-4.1 Control strip. The contractor shall produce, place and compact a control strip of at least 250 ft (75-m). The Contractor shall demonstrate, in the presence of the RPR, that the materials, equipment, and

construction processes meet the requirements of the specification. Control strips that do not meet specification requirements shall be removed and replaced at the Contractor's expense. Full operations shall not continue until the control strip has been accepted by the RPR. Upon acceptance of the control strip by the RPR, the Contractor shall use the same equipment, materials, and construction methods for the remainder of construction, unless adjustments made by the Contractor are approved in advance by the RPR.

When additional effort beyond that provided by the paver is required to seat the aggregate, additional compaction shall not be initiated until mixture has cooled to below 175°F (or lower as determined during construction of the test strip). One to two passes of a self-propelled, steel-wheel static roller with weight between 5 and 12 tons (4.5 to 10.9 metric tons) is usually sufficient. The roller shall be in good condition and shall be capable of reversing without backlash and of compacting the ATPB without undue displacement or excessive crushing of the aggregate. The actual rolling pattern and sequence shall be established during placement of the control strip and approved by the RPR. In areas inaccessible to the paver and roller, hand operated vibrator-plate compactors may be used to seat the aggregate.

The control strip ATPB layer shall be considered acceptable when aggregate is completely coated with asphalt cement with minimal evidence of crushing; the surface is firm, unyielding and stable under construction traffic; and the layer meets the field permeability per paragraph 407-3.1.

407-4.2 Weather limitations. The ATPB material shall not be mixed or placed while the air temperature is below 40°F (4°C). The ATPB shall not be placed on frozen underlying courses or mixed when aggregate is frozen. The ATPB may not be placed when rainfall is occurring or where rain is imminent.

407-4.3 Equipment. All equipment necessary to mix, transport, place, compact, and finish the ATPB material shall be furnished by the Contractor and approved by the RPR. The equipment will be inspected by the RPR prior to the start of construction operations.

407-4.4 Preparation of the underlying course. The underlying course shall be checked and accepted by the RPR before placing operations begin. Prior to placing the material, the final grade should be firm, moist and free of frost. Use of chemicals to eliminate frost will not be permitted.

407-4.5 Mixing. The batch plant site, layout, equipment, and provisions for transporting material shall assure a continuous supply of material to the work. Stockpiles shall be constructed in a manner that prevents segregation and intermixing of deleterious materials. Free access to the plant must be provided to the RPR at all times for inspection of the plant's equipment and operation and for sampling the ATPB mixture and its components.

407-4.6 Hauling. The ATPB mixture shall be transported from the plant to the job site in trucks or other hauling equipment having beds that are smooth and clean. Truck bed covers shall be provided to protect the ATPB during transport from rain.

407-4.7 Placing. The ATPB material shall be placed using an asphalt paver. The ATPB shall be installed in a single 6 inch (150 mm) lift.

407-4.8 Compaction. The ATPB material shall be compacted using the approved compaction equipment and roller pattern/sequence, as determined in the approved control strip. Sufficient rollers shall be furnished to handle the output of the plant. If the rolling pattern/sequence results in undue displacement of the surface, or causes crushing of the aggregate, work shall be stopped until the cause(s) can be determined and corrections are made. The roller shall not pass over the unprotected end of the freshly laid mixture except when necessary to form a transverse joint.

407-4. 9 Joints. The formation of all joints shall be made in such a manner as to ensure a continuous bond between old and new sections of the course. All joints shall present the same texture and

smoothness as other sections of the course. Transverse joints shall be formed by placement of a bulkhead or by tapering the mixture. Tapered joints shall be cut back full depth and width creating a vertical joint before placing additional mixture against the joint. Joints which are irregular, damaged shall be cut back to expose a clean, sound surface for full depth of course.

407-4.10 Quality Control. The Contractor shall perform tests for smoothness, grade, gradation and asphalt content daily. Asphalt content and gradation must be within job tolerances or appropriate steps taken to maintain production control within tolerances. Any area not meeting smoothness and grade shall be corrected by the Contractor at the Contractor's expense. The Contractor shall provide gradation, asphalt content, smoothness and grade data to the RPR on a daily basis.

a. Asphalt Content. Determine asphalt content a minimum of two times per day in accordance with ASTM D6307 or ASTM D2172.

b. Gradation. Determine aggregate gradation a minimum of two times per day from mechanical analysis of extracted aggregate in accordance with ASTM D5444, ASTM C136 and ASTM C117.

c. Smoothness. The finished surface shall not vary more than $\pm 3/8$ -inch (9 mm) when tested with a 12-foot (3.7-m) straightedge applied parallel with and at right angles to the centerline, and, moved continuously forward at half the length of the 12-foot (3.7-m) straightedge for the full length of each line on a 50-foot (15-m) grid. The Contractor shall correct any high spots more than $3/8$ inch (9 mm) in 12-foot (3.7-m) with a grinding machine or remove and replace the material at the Contractor's expense. Any areas that have been ground shall have curing compound reapplied.

0.05 Grade. The grade shall be measured on a 50-foot (15-m) grid and shall be within $\pm$ feet (15 mm) of the specified grade. When the surface is more than $1/2$ inch (12 mm) above the grade shown in the plans, the surface shall be corrected at the Contractor's expense to an elevation that falls within a tolerance of $1/4$ inch (6 mm).

407-4.11 Field Permeability. One test shall be performed by the Contractor in the presence of the RPR for 1200 square yards (1000 square meters). Test locations will be determined on a random basis in accordance with ASTM D3665. The permeability of the base will be determined in accordance with ASTM C1701. If it can be demonstrated that a 1 gallon container of water will flow through the layer within approximately 1 minute the RPR can waive additional permeability testing.

407-4.12 Bond breaker. Not used.

407-4.13 Maintenance. The completed drainable base shall be maintained by the Contractor in a condition to meet all specification requirements until the pavement has been placed. Placement of the next higher pavement layer shall be made as soon as practicable but no more than thirty (30) calendar days after placement of the drainage layer. The ATPB shall not be opened to traffic until the mixture has cooled to ambient temperature. Traffic on ATPB should be kept to a minimum to avoid rutting or displacement of the ATPB. Limit traffic on ATPB to equipment needed to construct next higher pavement layer.

MATERIAL ACCEPTANCE

407-5.1 Sampling and testing. All acceptance sampling and testing necessary to determine conformance with the requirements specified in this section will be performed by the RPR for each 1200 square yards (1000 square meters). Sampling locations will be determined by the RPR on a random basis per ASTM D3665. The Contractor shall bear the cost of providing curing facilities for the strength specimens.

a. Thickness. One core shall be drilled by the Contractor for thickness determination for each

1200 square yards (1000 square meters). Thickness will be determined by measuring the depth of core hole or thickness will be determined by survey on a 25-foot by 25-foot grid by discretion of the RPR.

METHOD OF MEASUREMENT

407-6.1 Measurement. The quantity of ATPB to be paid for shall be the number of square yards (m²) of material placed, and accepted in the completed base course.

BASIS OF PAYMENT

407-7.1 Payment. Payment will be made at the contract unit price per square yard (m²) for ATPB as measured by RPR. This price shall be full compensation for furnishing all materials, for all preparation, mixing, placing, compacting curing and placement of overlaying bond breaker; and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item P-407	Asphalt treated permeable base course (ATPB) - per square yard (m ²).
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REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM C33	Standard Specification for Concrete Aggregates
ASTM D75	Standard Practice for Sampling Aggregates
ASTM C88	Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
ASTM C131	Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM C142	Standard Test Method for Clay Lumps and Friable Particles in Aggregates
ASTM D448	Standard Classification for Sizes of Aggregate for Road and Bridge Construction
ASTM D2434	Standard Test Method for Permeability of Granular Soils (Constant Head)
ASTM D3665	Standard Practice for Random Sampling of Construction Materials
ASTM C1701	Standard Test Method for Infiltration Rate of In Place Pervious Concrete American Association of State Highway and Transportation Officials (AASHTO)
M288	Standard Specification for Geosynthetic Specification for Highway

Applications

T215

Standard Method of Test for Permeability of Granular Soils (Constant Head),

END ITEM P-407

Item P-602 Emulsified Asphalt Prime Coat

DESCRIPTION

602-1.1 This item shall consist of an application of emulsified asphalt material on the prepared base course in accordance with these specifications and in reasonably close conformity to the lines shown on the plans.

MATERIALS

602-2.1 Emulsified Asphalt material. The emulsified asphalt material shall be as specified in ASTM D3628 for use as a prime coat appropriate to local conditions. The Contractor shall provide a copy of the manufacturer's Certificate of Analysis (COA) for the emulsified asphalt material. The COA shall be provided to and approved by the Resident Project Representative (RPR) before the emulsified asphalt material is applied. The furnishing of the COA for the emulsified asphalt material shall not be interpreted as a basis for final acceptance. The manufacturer's COA may be subject to verification by testing the material delivered for use on the project.

CONSTRUCTION METHODS

602-3.1 Weather limitations. The emulsified asphalt prime coat shall be applied only when the existing surface is dry; the atmospheric temperature is 50°F (10°C) or above, and the temperature has not been below 35°F (2°C) for the 12 hours prior to application; and when the weather is not foggy or rainy. The temperature requirements may be waived when directed by the RPR.

602-3.2 Equipment. The equipment shall include a self-powered pressure asphalt material distributor and equipment for heating asphalt material.

Provide a distributor with pneumatic tires of such size and number that the load produced on the base surface does not exceed 65.0 psi (4.5 kg/sq cm) of tire width to prevent rutting, shoving or otherwise damaging the base, surface or other layers in the pavement structure. Design and equip the distributor to spray the asphalt material in a uniform coverage at the specified temperature, at readily determined and controlled rates from 0.05 to 1.0 gallons per square yard (0.23 to 4.5 L/square meter), with a pressure range of 25 to 75 psi (172.4 to 517.1 kPa) and with an allowable variation from the specified rate of not more than $\pm 5\%$, and at variable widths. Include with the distributor equipment a separate power unit for the bitumen pump, full-circulation spray bars, tachometer, pressure gauges, volume-measuring devices, adequate heaters for heating of materials to the proper application temperature, a thermometer for reading the temperature of tank contents, and a hand hose attachment suitable for applying asphalt material manually to areas inaccessible to the distributor. Equip the distributor to circulate and agitate the asphalt material during the heating process. If the distributor is not equipped with an operable quick shutoff valve, the prime operations shall be started and stopped on building paper.

A power broom and power blower suitable for cleaning the surfaces to which the asphalt coat is to be applied shall be provided.

Asphalt distributors must be calibrated annually in accordance with ASTM D2995. The Contractor must furnish a current calibration certification for the asphalt distributor truck from any State or other agency as approved by the RPR.

602-3.3 Application of emulsified asphalt material. Immediately before applying the prime coat, the full width of the surface to be primed shall be swept with a power broom to remove all loose dirt and other objectionable material.

The asphalt emulsion material shall be uniformly applied with an asphalt distributor at the rate of 0.15 to 0.30 gallons per square yard (0.68 to 1.36 liters per square meter) depending on the base course surface texture. The type of asphalt material and application rate shall be approved by the RPR prior to application.

Following application of the emulsified asphalt material and prior to application of the succeeding layer of pavement, allow the asphalt coat to cure and to obtain evaporation of any volatiles or moisture. Maintain the coated surface until the succeeding layer of pavement is placed, by protecting the surface against damage and by repairing and recoating deficient areas. Allow the prime coat to cure without being disturbed for a period of at least 48 hours or longer, as may be necessary to attain penetration into the treated course. Furnish and spread sand to effectively blot up and cure excess asphalt material. The Contractor shall remove blotting sand prior to asphalt concrete lay down operations at no additional expense to the Owner. Keep traffic off surfaces freshly treated with asphalt material. Provide sufficient warning signs and barricades so that traffic will not travel over freshly treated surfaces.

602-3.4 Trial application rates. The Contractor shall apply a minimum of three lengths of at least 100 feet (30 m) for the full width of the distributor bar to evaluate the amount of emulsified asphalt material that can be satisfactorily applied with the equipment. Apply three different application rates of emulsified asphalt materials within the application range specified in paragraph 602-3.3. Other trial applications can be made using various amounts of material as directed by the RPR. The trial application is to demonstrate the equipment can uniformly apply the emulsified asphalt material within the rates specified and determine the application rate for the project.

602-3.5 Freight and waybills. The Contractor shall submit waybills and delivery tickets during the progress of the work. Before the final estimate is allowed, file with the RPR certified waybills and certified delivery tickets for all emulsified asphalt materials used in the construction of the pavement covered by the contract. Do not remove emulsified asphalt material from storage until the initial outage and temperature measurements have been taken. The delivery or storage units will not be released until the final outage has been taken.

METHOD OF MEASUREMENT

602-4.1 The emulsified asphalt material for prime coat shall be measured by the gallon (liter). Volume shall be corrected to the volume at 60°F (16°C) in accordance with ASTM D4311. The emulsified asphalt material paid for will be the measured quantities used in the accepted work, provided that the measured quantities are not 10% over the specified application rate. Any amount of emulsified asphalt material more than 10% over the specified application rate for each application will be deducted from the measured quantities, except for irregular areas where hand spraying of the emulsified asphalt material is necessary. Water added to emulsified asphalt will not be measured for payment.

BASIS OF PAYMENT

602-5.1 Payment shall be made at the contract unit price per gallon (liter) for emulsified asphalt prime coat. This price shall be full compensation for furnishing all materials and for all preparation, delivering, and applying the materials, and for all labor, equipment, tools, and incidentals necessary to complete this item.

Payment will be made under:

Item P-602-5.1 Emulsified Asphalt Prime Coat - per gallon (liter)

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM D2995 Standard Practice for Estimating Application Rate and Residual
Application Rate of Bituminous Distributors

ASTM D3628 Standard Practice for Selection and Use of Emulsified Asphalts

END OF ITEM P-602

Item P-603 Emulsified Asphalt Tack Coat

DESCRIPTION

603-1.1 This item shall consist of preparing and treating an asphalt or concrete surface with asphalt material in accordance with these specifications and in reasonably close conformity to the lines shown on the plans.

MATERIALS

603-2.1 Asphalt materials. The asphalt material shall be an emulsified asphalt as specified in ASTM D3628 as an asphalt application for tack coat appropriate to local conditions. The emulsified asphalt shall not be diluted. The Contractor shall provide a copy of the manufacturer's Certificate of Analysis (COA) for the asphalt material to the Resident Project Representative (RPR) before the asphalt material is applied for review and acceptance. The furnishing of COA for the asphalt material shall not be interpreted as a basis for final acceptance. The manufacturer's COA may be subject to verification by testing the material delivered for use on the project.

CONSTRUCTION METHODS

603-3.1 Weather limitations. The tack coat shall be applied only when the existing surface is dry and the atmospheric temperature is 50°F (10°C) or above; the temperature has not been below 35°F (2°C) for the 12 hours prior to application; and when the weather is not foggy or rainy. The temperature requirements may be waived when directed by the RPR.

603-3.2 Equipment. The Contractor shall provide equipment for heating and applying the emulsified asphalt material. The emulsion shall be applied with a manufacturer-approved computer rate-controlled asphalt distributor. The equipment shall be in good working order and contain no contaminants or diluents in the tank. Spray bar tips must be clean, free of burrs, and of a size to maintain an even distribution of the emulsion. Any type of tip or pressure source is suitable that will maintain predetermined flow rates and constant pressure during the application process with application speeds under eight (8) miles per hour (13 km per hour) or seven (700) feet per minute (213 m per minute).

The equipment will be tested under pressure for leaks and to ensure proper set-up before use to verify truck set-up (via a test-shot area), including but not limited to, nozzle tip size appropriate for application, spray-bar height and pressure and pump speed, evidence of triple-overlap spray pattern, lack of leaks, and any other factors relevant to ensure the truck is in good working order before use.

The distributor truck shall be equipped with a minimum 12-foot (3.7-m) spreader spray bar with individual nozzle control with computer-controlled application rates. The distributor truck shall have an easily accessible thermometer that constantly monitors the temperature of the emulsion, and have an operable mechanical tank gauge that can be used to cross-check the computer accuracy. If the distributor is not equipped with an operable quick shutoff valve, the prime operations shall be started and stopped on building paper.

The distributor truck shall be equipped to effectively heat and mix the material to the required temperature prior to application as required. Heating and mixing shall be done in accordance with the manufacturer's recommendations. Do not overheat or over mix the material.

The distributor shall be equipped with a hand sprayer.

Asphalt distributors must be calibrated annually in accordance with ASTM D2995. The Contractor must furnish a current calibration certification for the asphalt distributor truck from any State or other agency as approved by the RPR.

A power broom and/or power blower suitable for cleaning the surfaces to which the asphalt tack coat is to be applied shall be provided.

603-3.3 Application of emulsified asphalt material. The emulsified asphalt shall not be diluted. Immediately before applying the emulsified asphalt tack coat, the full width of surface to be treated shall be swept with a power broom and/or power blower to remove all loose dirt and other objectionable material.

The emulsified asphalt material shall be uniformly applied with an asphalt distributor at the rates appropriate for the conditions and surface specified in the table below. The type of asphalt material and application rate shall be approved by the RPR prior to application.

Emulsified Asphalt

Surface Type	Residual Rate, gal/SY (L/square meter)	Emulsion Application Bar Rate, gal/SY (L/square meter)
New asphalt	0.02-0.05 (0.09-0.23)	0.03-0.07 (0.13-0.32)
Existing asphalt	0.04-0.07 (0.18-0.32)	0.06-0.11 (0.27-0.50)
Milled Surface	0.04-0.08 (0.18-0.36)	.06-0.12 (0.27-0.54)
Concrete	0.03-0.05 (0.13-0.23)	0.05-0.08 (0.23-0.36)

After application of the tack coat, the surface shall be allowed to cure without being disturbed for the period of time necessary to permit drying and setting of the tack coat. This period shall be determined by the RPR. The Contractor shall protect the tack coat and maintain the surface until the next course has been placed. When the tack coat has been disturbed by the Contractor, tack coat shall be reapplied at the Contractor's expense.

603-3.4 Freight and waybills The Contractor shall submit waybills and delivery tickets, during progress of the work. Before the final statement is allowed, file with the RPR certified waybills and certified delivery tickets for all emulsified asphalt materials used in the construction of the pavement covered by the contract. Do not remove emulsified asphalt material from storage until the initial outage and temperature measurements have been taken. The delivery or storage units will not be released until the final outage has been taken.

METHOD OF MEASUREMENT

603-4.1 The emulsified asphalt material for tack coat shall be measured by the gallon (liter). Volume shall be corrected to the volume at 60°F (16°C) in accordance with ASTM D1250. The emulsified asphalt material paid for will be the measured quantities used in the accepted work, provided that the measured quantities are not 10% over the specified application rate. Any amount of emulsified asphalt material more than 10% over the specified application rate for each application will be deducted from the measured quantities, except for irregular areas where hand spraying of the emulsified asphalt material is necessary. Water added to emulsified asphalt will not be measured for payment.

BASIS OF PAYMENT

603.5-1 Payment shall be made at the contract unit price per gallon (liter) of emulsified asphalt material. This price shall be full compensation for furnishing all materials, for all preparation, delivery, and application of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item P-603-5.1	Emulsified Asphalt Tack Coat - per gallon (liter)
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REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM D1250	Standard Guide for Use of the Petroleum Measurement Tables
ASTM D2995	Standard Practice for Estimating Application Rate and Residual Application Rate of Bituminous Distributors
ASTM D3628	Standard Practice for Selection and Use of Emulsified Asphalts

END ITEM P-603

Item P-610 Concrete for Miscellaneous Structures

DESCRIPTION

610-1.1 This item shall consist of concrete and reinforcement, as shown on the plans, prepared and constructed in accordance with these specifications. This specification shall be used for all concrete other than airfield pavement which are cast-in-place.

MATERIALS

610-2.1 General. Only approved materials, conforming to the requirements of these specifications, shall be used in the work. Materials may be subject to inspection and tests at any time during their preparation or use. The source of all materials shall be approved by the Resident Project Representative (RPR) before delivery or use in the work. Representative preliminary samples of the materials shall be submitted by the Contractor, when required, for examination and test. Materials shall be stored and handled to ensure preservation of their quality and fitness for use and shall be located to facilitate prompt inspection. All equipment for handling and transporting materials and concrete must be clean before any material or concrete is placed in them.

The use of pit-run aggregates shall not be permitted unless the pit-run aggregate has been screened and washed, and all fine and coarse aggregates stored separately and kept clean. The mixing of different aggregates from different sources in one storage stockpile or alternating batches of different aggregates shall not be permitted.

a. Reactivity. Fine aggregate and coarse aggregates to be used in all concrete shall have been tested separately within six months of the project in accordance with ASTM C1260. Test results shall be submitted to the RPR. The aggregate shall be considered innocuous if the expansion of test specimens, tested in accordance with ASTM C1260, does not exceed 0.08% at 14 days (16 days from casting). If the expansion either or both test specimen is greater than 0.08% at 14 days, but less than 0.20%, a minimum of 25% of Type F fly ash, or between 40% and 55% of slag cement shall be used in the concrete mix.

If expansion of either the coarse or fine aggregate exceeds 0.08% at 14 days, limit the alkali of the concrete to be less than or equal to 3.0 lb per cubic yard, calculated in accordance with EB 106.

If the expansion is greater than 0.20%, the aggregates shall not be used, and test results for other aggregates must be submitted for evaluation; or aggregates that meet P-501 reactivity test requirements may be utilized.

610-2.2 Coarse aggregate. The coarse aggregate for concrete shall meet the requirements of ASTM C33 and the requirements of Table 4, Class Designation 5S; and the grading requirements shown below, as required for the project.

Coarse Aggregate Grading Requirements

Maximum Aggregate Size	ASTM C33, Table 3 Grading Requirements (Size No.)
1 1/2 inch (37.5 mm)	467 or 4 and 67
1 inch (25 mm)	57
3/4 inch (19 mm)	67
1/2 inch (12.5 mm)	7

610-2.2.1 Coarse Aggregate susceptibility to durability (D) cracking. Not used.

610-2.3 Fine aggregate. The fine aggregate for concrete shall meet all fine aggregate requirements of ASTM C33.

610-2.4 Cement. Cement shall conform to the requirements of ASTM C150 Type II.

610-2.5 Cementitious materials.

a. Fly ash. Fly ash shall meet the requirements of ASTM C618, with the exception of loss of ignition, where the maximum shall be less than 6%. Fly ash shall have a Calcium Oxide (CaO) content of less than 15% and a total available alkali content less than 3% per ASTM C311. Fly ash produced in furnace operations using liming materials or soda ash (sodium carbonate) as an additive shall not be acceptable. The Contractor shall furnish the previous three most recent, consecutive ASTM C618 reports for each source of fly ash proposed in the concrete mix, and shall furnish each additional report as they become available during the project. The reports can be used for acceptance or the material may be tested independently by the RPR.

b. Slag cement (ground granulated blast furnace (GGBF)). Slag cement shall conform to ASTM C989, Grade 100 or Grade 120. Slag cement shall be used only at a rate between 25% and 55% of the total cementitious material by mass.

610-2.6 Water. Water used in mixing or curing shall be from potable water sources. Other sources shall be tested in accordance with ASTM C1602 prior to use.

610-2.7 Admixtures. The Contractor shall submit certificates indicating that the material to be furnished meets all of the requirements indicated below. In addition, the RPR may require the Contractor to submit complete test data from an approved laboratory showing that the material to be furnished meets all of the requirements of the cited specifications. Subsequent tests may be made of samples taken by the RPR from the supply of the material being furnished or proposed for use on the work to determine whether the admixture is uniform in quality with that approved.

a. Air-entraining admixtures. Air-entraining admixtures shall meet the requirements of ASTM C260 and shall consistently entrain the air content in the specified ranges under field conditions. The air-entrainment agent and any water reducer admixture shall be compatible.

b. Water-reducing admixtures. Water-reducing admixture shall meet the requirements of ASTM C494, Type A, B, or D. ASTM C494, Type F and G high range water reducing admixtures and ASTM C1017 flowable admixtures shall not be used.

c. **Other chemical admixtures.** The use of set retarding, and set-accelerating admixtures shall be approved by the RPR. Retarding shall meet the requirements of ASTM C494, Type A, B, or D and set-accelerating shall meet the requirements of ASTM C494, Type C. Calcium chloride and admixtures containing calcium chloride shall not be used.

610-2.8 Premolded joint material. Premolded joint material for expansion joints shall meet the requirements of ASTM D1751.

610-2.9 Joint filler. The filler for joints shall meet the requirements of Item P-605, unless otherwise specified.

610-2.10 Steel reinforcement. Reinforcing shall consist of reinforced steel conforming to the requirements of ASTM A615 and welded steel fabric conforming to the requirements of ASTM A1064.

610-2.11 Materials for curing concrete. Curing materials shall conform to:

Materials for Curing

Waterproof paper	ASTM C171
Clear or white Polyethylene Sheeting	ASTM C171
White-pigmented Liquid Membrane-Forming Compound, Type 2, Class B	ASTM C309

CONSTRUCTION METHODS

610-3.1 General. The Contractor shall furnish all labor, materials, and services necessary for, and incidental to, the completion of all work as shown on the drawings and specified here. All machinery and equipment used by the Contractor on the work, shall be of sufficient size to meet the requirements of the work. All work shall be subject to the inspection and approval of the RPR.

610-3.2 Concrete Mixture. The concrete shall develop a compressive strength of 4000 psi in 28 days as determined by test cylinders made in accordance with ASTM C31 and tested in accordance with ASTM C39. The concrete shall contain not less than 470 pounds of cementitious material per cubic yard (280 kg per cubic meter). The water cementitious ratio shall not exceed 0.45 by weight. The air content of the concrete shall be 5% +/- 1.2% as determined by ASTM C231 and shall have a slump of not more than 4 inches (100 mm) as determined by ASTM C143.

610-3.3 Mixing. Concrete may be mixed at the construction site, at a central point, or wholly or in part in truck mixers. The concrete shall be mixed and delivered in accordance with the requirements of ASTM C94 or ASTM C685.

The concrete shall be mixed only in quantities required for immediate use. Concrete shall not be mixed while the air temperature is below 40°F (4°C) without the RPRs approval. If approval is granted for mixing under such conditions, aggregates or water, or both, shall be heated and the concrete shall be placed at a temperature not less than 50°F (10°C) nor more than 100°F (38°C). The Contractor shall be held responsible for any defective work, resulting from freezing or injury in any manner during placing and curing, and shall replace such work at his expense.

Retempering of concrete by adding water or any other material is not permitted.

The rate of delivery of concrete to the job shall be sufficient to allow uninterrupted placement of the concrete.

610-3.4 Forms. Concrete shall not be placed until all the forms and reinforcements have been inspected and approved by the RPR. Forms shall be of suitable material and shall be of the type, size, shape,

quality, and strength to build the structure as shown on the plans. The forms shall be true to line and grade and shall be mortar-tight and sufficiently rigid to prevent displacement and sagging between supports. The surfaces of forms shall be smooth and free from irregularities, dents, sags, and holes. The Contractor shall be responsible for their adequacy.

The internal form ties shall be arranged so no metal will show in the concrete surface or discolor the surface when exposed to weathering when the forms are removed. All forms shall be wetted with water or with a non-staining mineral oil, which shall be applied immediately before the concrete is placed. Forms shall be constructed so they can be removed without injuring the concrete or concrete surface.

610-3.5 Placing reinforcement. All reinforcement shall be accurately placed, as shown on the plans, and shall be firmly held in position during concrete placement. Bars shall be fastened together at intersections. The reinforcement shall be supported by approved metal chairs. Shop drawings, lists, and bending details shall be supplied by the Contractor when required.

610-3.6 Embedded items. Before placing concrete, all embedded items shall be firmly and securely fastened in place as indicated. All embedded items shall be clean and free from coating, rust, scale, oil, or any foreign matter. The concrete shall be spaded and consolidated around and against embedded items. The embedding of wood shall not be allowed.

610-3.7 Concrete Consistency. The Contractor shall monitor the consistency of the concrete delivered to the project site; collect each batch ticket; check temperature; and perform slump tests on each truck at the project site in accordance with ASTM C143.

610-3.8 Placing concrete. All concrete shall be placed during daylight hours, unless otherwise approved. The concrete shall not be placed until the depth and condition of foundations, the adequacy of forms and falsework, and the placing of the steel reinforcing have been approved by the RPR. Concrete shall be placed as soon as practical after mixing, but in no case later than one (1) hour after water has been added to the mix. The method and manner of placing shall avoid segregation and displacement of the reinforcement. Troughs, pipes, and chutes shall be used as an aid in placing concrete when necessary. The concrete shall not be dropped from a height of more than 5 feet (1.5 m). Concrete shall be deposited as nearly as practical in its final position to avoid segregation due to rehandling or flowing. Do not subject concrete to procedures which cause segregation. Concrete shall be placed on clean, damp surfaces, free from running water, or on a properly consolidated soil foundation.

610-3.9 Vibration. Vibration shall follow the guidelines in American Concrete Institute (ACI) Committee 309R, Guide for Consolidation of Concrete.

610-3.10 Joints. Joints shall be constructed as indicated on the plans.

610-3.11 Finishing. All exposed concrete surfaces shall be true, smooth, and free from open or rough areas, depressions, or projections. All concrete horizontal plane surfaces shall be brought flush to the proper elevation with the finished top surface struck-off with a straightedge and floated.

610-3.12 Curing and protection. All concrete shall be properly cured in accordance with the recommendations in American Concrete Institute (ACI) 308R, Guide to External Curing of Concrete. The concrete shall be protected from damage until project acceptance.

610-3.13 Cold weather placing. When concrete is placed at temperatures below 40°F (4°C), follow the cold weather concreting recommendations found in ACI 306R, Cold Weather Concreting.

610-3.14 Hot weather placing. When concrete is placed in hot weather greater than 85°F (30 °C), follow the hot weather concreting recommendations found in ACI 305R, Hot Weather Concreting.

QUALITY ASSURANCE (QA)

610-4.1 Quality Assurance sampling and testing. Concrete for each day's placement will be accepted on the basis of the compressive strength specified in paragraph 610-3.2. The contractor will sample the concrete in accordance with ASTM C172; test the slump in accordance with ASTM C143; test air content in accordance with ASTM C231; make and cure compressive strength specimens in accordance with ASTM C31; and test in accordance with ASTM C39. The QA testing agency will meet the requirements of ASTM C1077.

The Contractor shall provide adequate facilities for the initial curing of cylinders.

610-4.2 Defective work. Any defective work that cannot be satisfactorily repaired as determined by the RPR, shall be removed and replaced at the Contractor's expense. Defective work includes, but is not limited to, uneven dimensions, honeycombing and other voids on the surface or edges of the concrete.

METHOD OF MEASUREMENT

610-5.1 Concrete shall be measured by the number of cubic yards (cubic meters) based on batch tickets of material of concrete complete in place and accepted.

BASIS OF PAYMENT

610-6.1 Payment shall be made at the contract price by the number of cubic yards (cubic meters) based on batch tickets of material. This price shall be full compensation for furnishing all materials including reinforcement and embedded items and for all preparation, delivery, installation, and curing of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item P-610-6.1	Concrete, per cubic yards (cubic meters)
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REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM A184	Standard Specification for Welded Deformed Steel Bar Mats for Concrete Reinforcement
ASTM A615	Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
ASTM A704	Standard Specification for Welded Steel Plain Bar or Rod Mats for Concrete Reinforcement
ASTM A706	Standard Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement
ASTM A775	Standard Specification for Epoxy-Coated Steel Reinforcing Bars
ASTM A884	Standard Specification for Epoxy-Coated Steel Wire and Welded Wire Reinforcement

ASTM A934	Standard Specification for Epoxy-Coated Prefabricated Steel Reinforcing Bars
ASTM A1064	Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete
ASTM C31	Standard Practice for Making and Curing Concrete Test Specimens in the Field
ASTM C33	Standard Specification for Concrete Aggregates
ASTM C39	Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
ASTM C94	Standard Specification for Ready-Mixed Concrete
ASTM C136	Standard Test Method for Sieve or Screen Analysis of Fine and Coarse Aggregates
ASTM C114	Standard Test Methods for Chemical Analysis of Hydraulic Cement
ASTM C136	Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
ASTM C143	Standard Test Method for Slump of Hydraulic-Cement Concrete
ASTM C150	Standard Specification for Portland Cement
ASTM C171	Standard Specification for Sheet Materials for Curing Concrete
ASTM C172	Standard Practice for Sampling Freshly Mixed Concrete
ASTM C231	Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method
ASTM C260	Standard Specification for Air-Entraining Admixtures for Concrete
ASTM C309	Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete
ASTM C311	Standard Test Methods for Sampling and Testing Fly Ash or Natural Pozzolans for Use in Portland-Cement Concrete
ASTM C494	Standard Specification for Chemical Admixtures for Concrete
ASTM C618	Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete
ASTM C666	Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing
ASTM C685	Standard Specification for Concrete Made by Volumetric Batching and Continuous Mixing
ASTM C989	Standard Specification for Slag Cement for Use in Concrete and Mortars
ASTM C1017	Standard Specification for Chemical Admixtures for Use in Producing Flowing Concrete
ASTM C1077	Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation
ASTM C1157	Standard Performance Specification for Hydraulic Cement

ASTM C1260	Standard Test Method for Potential Alkali Reactivity of Aggregates (Mortar-Bar Method)
ASTM C1365	Standard Test Method for Determination of the Proportion of Phases in Portland Cement and Portland-Cement Clinker Using X-Ray Powder Diffraction Analysis
ASTM C1602	Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete
ASTM D1751	Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Asphalt Types)
ASTM D1752	Standard Specification for Preformed Sponge Rubber Cork and Recycled PVC Expansion Joint Fillers for Concrete Paving and Structural Construction
American Concrete Institute (ACI)	
ACI 305R	Hot Weather Concreting
ACI 306R	Cold Weather Concreting
ACI 308R	Guide to External Curing of Concrete
ACI 309R	Guide for Consolidation of Concrete

END OF ITEM P-610

Item D-705 Pipe Underdrains for Airports

DESCRIPTION

705-1.1 This item shall consist of the construction of pipe drains in accordance with these specifications and in reasonably close conformity with the lines and grades shown on the plans.

MATERIALS

705-2.1 General. Materials shall meet the requirements shown on the plans and specified below.

705-2.2 Pipe. The pipe shall be of the type called for on the plans or in the proposal and shall be in accordance with the following appropriate requirements.

AASHTO M304	Standard Specification for Poly (Vinyl Chloride) (PVC) Profile Wall Drain Pipe and Fittings Based on Controlled Inside Diameter
ASTM F758	Standard Specification for Smooth-Wall Poly (Vinyl Chloride) (PVC) Plastic Underdrain Systems for Highway, Airport, and Similar Drainage

705-2.3 Joint mortar. Pipe joint mortar shall consist of one part by volume of Portland cement and two parts sand. The Portland cement shall conform to the requirements of ASTM C150, Type I. The sand shall conform to the requirements of ASTM C144.

705-2.4 Elastomeric seals. Elastomeric seals shall conform to the requirements of ASTM F477.

705-2.5 Porous backfill. Porous backfill shall be free of clay, humus, or other objectionable matter, and shall conform to the gradation in Table 1 when tested in accordance with ASTM C136.

Table 1. Gradation of Porous Backfill

Sieve Designation (square openings)	Percentage by Weight Passing Sieves	
	Porous Material No. 1	Porous Material No. 2
1-1/2 inch (37.5 mm)		100
1 inch (25.0 mm)		90 - 100
3/8 inch (9.5 mm)	100	25 - 60
No. 4 (4.75 mm)	95 - 100	5 - 40
No. 8 (2.36 mm)		0 - 20
No. 16 (1.18 mm)	45 - 80	
No. 50 (300 µm)	10 - 30	
No. 100 (150 µm)	0 - 10	

When two courses of porous backfill are specified in the plans, the finer of the materials shall conform to particle size tabulated herein for porous material No. 1. The coarser granular material shall meet the gradation given in the tabulation for porous material No. 2.

705-2.6 Granular material. Granular material used for backfilling shall conform to the requirements of ASTM D2321 for Class IA, IB, or II materials.

705-2.7 Filter fabric. The filter fabric shall conform to the requirements of AASHTO M288 Class 2 or equivalent.

Table 2. Fabric Properties

Fabric Property	Test Method	Test Requirement
Grab Tensile Strength, lbs	ASTM D4632	125 min
Grab Tensile Elongation %	ASTM D4632	50 min
Burst Strength, psi	ASTM D3785	125 min
Trapezoid Tear Strength, lbs	ASTM D4533	55 min
Puncture Strength, lbs	ASTM D4833	40 min
Abrasion, lbs	ASTM D4886	15 max loss
Equivalent Opening Size	ASTM D4751	70-100
Permittivity sec⁻¹	ASTM D4491	0.80
Accelerated Weathering (UV Stability) (Strength Retained - %)	ASTM D4355 *(500 hrs exposure)	70

705-2.8 Controlled low-strength material (CLSM). CLSM is not used.

CONSTRUCTION METHODS

705-3.1 Equipment. All equipment required for the construction of pipe underdrains shall be on the project, in good working condition, and approved by the RPR before construction is permitted to start.

705-3.2 Excavation. The width of the pipe trench shall be sufficient to permit satisfactory jointing of the pipe and thorough tamping of the bedding material under and around the pipe, but shall not be less than the external diameter of the pipe plus 6 inches (150 mm) on each side of the pipe. The trench walls shall be approximately vertical.

Where rock, hardpan, or other unyielding material is encountered, it shall be removed below the foundation grade for a depth of at least 4 inches (100 mm). The excavation below grade shall be backfilled with selected fine compressible material, such as silty clay or loam, and lightly compacted in layers not over 6 inches (150 mm) in uncompacted depth to form a uniform but yielding foundation.

Where a firm foundation is not encountered at the grade established, due to soft, spongy, or other unstable soil, the unstable soil shall be removed and replaced with approved granular material for the full trench width. The RPR shall determine the depth of removal necessary. The granular material shall be compacted to provide adequate support for the pipe.

Excavated material not required or acceptable for backfill shall be disposed of by the Contractor as directed by the RPR. The excavation shall not be carried below the required depth; if this occurs, the trench shall be backfilled at the Contractor's expense with material approved by the RPR and compacted to the density of the surrounding material.

The pipe bedding shall be constructed uniformly over the full length of the pipe barrel, as required on the plans. The maximum aggregate size shall be 1 inch when the bedding thickness is less than 6 inches, and 1-1/2 inch when the bedding thickness is greater than 6 inches. Bedding shall be loosely placed, uncompacted material under the middle third of the pipe prior to placement of the pipe.

The Contractor shall do trench bracing, sheathing, or shoring necessary to perform and protect the excavation as required for safety and conformance to federal, state and local laws. Unless otherwise provided, the bracing, sheathing, or shoring shall be removed by the Contractor after the backfill has reached at least 12 inches (300 mm) over the top of the pipe. The sheathing or shoring shall be pulled as the granular backfill is placed and compacted to avoid any unfilled spaces between the trench wall and the backfill material. The cost of bracing, sheathing, or shoring, and the removal of same, shall be included in the unit price bid per foot (meter) for the pipe.

705-3.3 Laying and installing pipe.

a. Concrete pipe. The laying of the pipe in the finished trench shall be started at the lowest point and proceed upgrade. When bell and spigot pipe is used, the bells shall be laid upgrade. If tongue and groove pipe is used, the groove end shall be laid upgrade. Holes in perforated pipe shall be placed down, unless otherwise shown on the plans. The pipe shall be firmly and accurately set to line and grade so that the invert will be smooth and uniform. Pipe shall not be laid on frozen ground.

Pipe which is not true in alignment, or which shows any settlement after laying, shall be taken up and re-laid by the Contractor at no additional expense. Making adjustments in grade by exerting force on the barrel of the pipe with excavating equipment, by lifting and dropping the pipe, or by lifting the pipe and packing bedding material under it shall be prohibited. If the installed pipe section is not to grade, the pipe section shall be completely removed, the grade corrected, and the pipe rejoined."

b. Metal pipe. The metal pipe shall be laid with the separate sections joined firmly together with bands, with outside laps of circumferential joints pointing upgrade, and with longitudinal laps on the sides. Any metal in the pipe or bands that is not protected thoroughly by galvanizing shall be coated with a suitable asphaltum paint.

During installation, the asphalt-protected pipe shall be handled without damaging the asphalt coating. Any breaks in the bitumen or treatment of the pipe shall be refilled with the type and kind of bitumen used in coating the pipe originally.

c. PVC, fiberglass, or polyethylene pipe. PVC or polyethylene pipe shall be installed in accordance with the requirements of ASTM D2321. Perforations shall meet the requirements of AASHTO M252 or AASHTO M294 Class 2, unless otherwise indicated on the plans. The pipe shall be laid accurately to line and grade. Fiberglass per ASTM D3839 Standard Guide for Underground Installation of "Fiberglass" (Glass-Fiber Reinforced Thermosetting-Resin) Pipe.

d. All types of pipe. The upgrade end of pipelines, not terminating in a structure, shall be plugged or capped as approved by the RPR.

Unless otherwise shown on the plans, a 4-inch (100 mm) bed of granular backfill material shall be spread in the bottom of the trench throughout the entire length under all perforated pipe underdrains.

Pipe outlets for the underdrains shall be constructed when required or shown on the plans. The pipe shall be laid with tight-fitting joints. Porous backfill is not required around or over pipe outlets for underdrains. All connections to other drainage pipes or structures shall be made as required and in a satisfactory manner. If connections are not made to other pipes or structures, the outlets shall be protected and constructed as shown on the plans.

e. Filter fabric. The filter fabric shall be installed in accordance with the manufacturer's recommendations, or in accordance with the AASHTO M288 Appendix, unless otherwise shown on the plans.

705-3.4 Mortar. The mortar shall be of the desired consistency for caulking and filling the joints of the pipe and for making connections to other pipes or to structures. Mortar that is not used within 45 minutes after water has been added shall be discarded. Retempering of mortar shall not be permitted.

705-3.5 Joints in concrete pipe. When open or partly open joints are required or specified, they shall be constructed as indicated on the plans. The pipe shall be laid with the ends fitted together as designed. If bell and spigot pipe is used, mortar shall be placed along the inside bottom quarter of the bell to center the following section of pipe.

The open or partly open joints shall be surrounded with granular material meeting requirements of porous backfill No. 2 in Table 1 or as indicated on the plans. This backfill shall be placed so its thickness will be not less than 3 inches (75 mm) nor more than 6 inches (150 mm), unless otherwise shown on the plans.

When the original material excavated from the trench is impervious, commercial concrete sand or granular material meeting requirements of porous backfill No. 1 shall surround porous backfill No. 2 (Table 1), as shown on the plans or as directed by the RPR.

When the original material excavated from the trench is pervious and suitable, it may be used as backfill in lieu of porous backfill No. 1, when indicated on the plans or as directed by the RPR.

705-3.6 Embedment and Backfill

a. Earth. All trenches and excavations shall be backfilled soon after the pipes are installed, unless additional protection of the pipe is directed. The embedment material shall be select material from excavation or borrow and shall be approved by the RPR. The select material shall be placed on each side of the pipe out to a distance of the nominal pipe diameter and one foot (30 cm) over the top of the pipe and shall be readily compacted. It shall not contain stones 3 inches (75 mm) or larger in size, frozen lumps, chunks of highly plastic clay, or any other material that is objectionable to the RPR. The material shall be moistened or dried, as required to aid compaction. Placement of the embedment material shall not cause displacement of the pipe. Thorough compaction under the haunches and along the sides to the top of the pipe shall be obtained.

The embedment material shall be placed in loose layers not exceeding 6 inches (150 mm) in depth under and around the pipe. Backfill material over the pipe shall be placed in lifts not exceeding 8 inches (200 mm). Successive layers shall be added and thoroughly compacted by hand and pneumatic tampers, approved by the RPR, until the trench is completely filled and brought to the planned elevation. Embedment and backfilling shall be done to avoid damaging top or side of the pipe.

In embankments and other unpaved areas, the backfill shall be compacted per Item P-152 to the density required for embankments in unpaved areas. Under paved areas, the subgrade and any backfill shall be compacted per Item P-152 to the density required for embankments for paved areas.

b. Granular backfill. When granular backfill is required, placement in the trench and about the pipe shall be as shown on the plans. The granular backfill shall not contain an excessive amount of foreign matter, nor shall soil from the sides of the trench or from the soil excavated from the trench be allowed to filter into the granular backfill. When required by the RPR, a template shall be used to properly place and separate the two sizes of backfill. The backfill shall be placed in loose layers not exceeding 6 inches (150 mm) in depth. The granular backfill shall be compacted by hand and pneumatic tampers to the requirements as given for embankment. Backfilling shall be done to avoid damaging top or side pressure on the pipe. The granular backfill shall extend to the elevation of the trench or as shown on the plans.

When perforated pipe is specified, granular backfill material shall be placed along the full length of the pipe. The position of the granular material shall be as shown on the plans. If the original material excavated from the trench is pervious and suitable, it shall be used in lieu of porous backfill No. 1.

If porous backfill is placed in paved or adjacent to paved areas before grading or subgrade operations is completed, the backfill material shall be placed immediately after laying the pipe. The depth of the

granular backfill shall be not less than 12 inches (300 mm), measured from the top of the underdrain. During subsequent construction operations, a minimum depth of 12 inches (300 mm) of backfill shall be maintained over the underdrains. When the underdrains are to be completed, any unsuitable material shall be removed exposing the porous backfill. Porous backfill containing objectionable material shall be removed and replaced with suitable material. The cost of removing and replacing any unsuitable material shall be at the Contractor's expense.

If a granular subbase blanket course is used which extends several feet beyond the edge of paving to the outside edge of the underdrain trench, the granular backfill material over the underdrains shall be placed in the trench up to an elevation of 2 inches (50 mm) above the bottom surface of the granular subbase blanket course. Immediately prior to the placing of the granular subbase blanket course, the Contractor shall blade this excess trench backfill from the top of the trench onto the adjacent subgrade where it can be incorporated into the granular subbase blanket course. Any unsuitable material that remains over the underdrain trench shall be removed and replaced. The subbase material shall be placed to provide clean contact between the subbase material and the underdrain granular backfill material for the full width of the underdrain trench.

c. Controlled low-strength material (CLSM). CLSM is not used.

705-3.7 Flexible Pipe Ring Deflection. The flexible pipe shall be inspected by the Contractor during and after installation to ensure that the internal diameter of the pipe barrel has not been reduced by more than 5 percent. For guidance on properly sizing mandrels, refer to ASTM D3034 and ASTM F679 appendices.

705-3.8 Connections. When the plans call for connections to existing or proposed pipe or structures, these connections shall be watertight and made to obtain a smooth uniform flow line throughout the drainage system.

705-3.9 Cleaning and restoration of site. After the backfill is completed, the Contractor shall dispose of all surplus material, soil, and rubbish from the site. Surplus soil may be deposited in embankments, shoulders, or as directed by the RPR. Except for paved areas of the airport, the Contractor shall restore all disturbed areas to their original condition.

METHOD OF MEASUREMENT

705-4.1 The length of pipe shall be the number of linear feet (meters) of pipe underdrains in place, completed, and approved; measured along the centerline of the pipe from end or inside face of structure to the end or inside face of structure, whichever is applicable. The several classes, types, and sizes shall be measured separately. All fittings shall be included in the footage as typical pipe sections in the pipeline being measured.

705-4.2 The quantity of porous backfill shall be the number of cubic yards (cubic meters) of porous backfill No. 1 and No. 2, complete in place and accepted, and shall be determined from the dimensions given on the plans by typical trench sections indicating the placement of porous backfill or dimensions directed by the RPR.

705-4.3 The quantity of filter fabric shall be the number of square yards (square meters) of filter fabric in place, completed, and approved; and shall be determined from the dimensions given on the plans by typical trench sections indicating the placement of filter fabric or dimensions directed by the RPR.

705-4.4. The quantity of pipe underdrains shall be made at the contract unit price per linear foot (meter) complete, including porous backfill and filter fabric.

BASIS OF PAYMENT

705-5.1 Payment will be made at the contract unit price per linear foot (meter) for pipe underdrains of the type, class, and size designated.

705-5.2 Porous backfill. Porous backfill shall be included in the unit price of the item below.

705-5.3. Filter fabric. Filter fabric shall be included in the unit price of the item below.

705-5.4 Pipe underdrains, Complete. Pipe underdrains, complete (including porous backfill and filter fabric) shall be made at the contract unit price per linear foot (meter) complete (including porous backfill and filter fabric).

These prices shall be full compensation for furnishing all materials and for all preparation, excavation, and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item D-705-5.4	6 Inch Pipe (Perforated PVC), Including Porous Backfill and Filter Fabric – per linear foot, complete.
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REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM A760	Standard Specification for Corrugated Steel Pipe, Metallic Coated for Sewers and Drains
ASTM A762	Standard Specification for Corrugated Steel Pipe, Polymer Precoated for Sewers and Drains
ASTM C136	Standard Test Method for Sieve or Screen Analysis of Fine and Coarse Aggregates
ASTM C144	Standard Specification for Aggregate for Masonry Mortar
ASTM C150	Standard Specification for Portland Cement
ASTM C444	Standard Specification for Perforated Concrete Pipe
ASTM C654	Standard Specification for Porous Concrete Pipe
ASTM D2321	Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications
ASTM D3262	Standard Specification for "Fiberglass" (Glass-Fiber Reinforced Thermosetting Resin) Sewer Pipe
ASTM D4161	Standard Specification for "Fiberglass" (Glass-Fiber Reinforced Thermosetting Resin) Pipe Joints Using Flexible Elastomeric Seals
ASTM F477	Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe
ASTM F758	Standard Specification for Smooth Wall Poly (Vinyl Chloride) (PVC) Plastic Underdrain Systems for Highway, Airport, and Similar Drainage

ASTM F794	Standard Specification for Poly (Vinyl Chloride) (PVC) Profile Gravity Sewer Pipe & Fittings Based on Controlled Inside Diameter
ASTM F949	Standard Specification for Poly (Vinyl Chloride) (PVC) Corrugated Sewer Pipe with a Smooth Interior and Fittings
ASTM F2562	Specification for Steel Reinforced Thermoplastic Ribbed Pipe and Fittings for Non-Pressure Drainage and Sewerage
American Association of State Highway and Transportation Officials (AASHTO)	
AASHTO M190	Standard Specification for Bituminous - Coated Corrugated Metal Culvert Pipe and Pipe Arches
AASHTO M196	Standard Specification for Corrugated Aluminum Pipe for Sewers and Drains
AASHTO M252	Standard Specification for Corrugated Polyethylene Drainage Pipe
AASHTO M288	Standard Specification for Geotextile Specification for Highway Applications
AASHTO M294	Standard Specification for Corrugated Polyethylene Pipe, 300- to 1500-mm (12- to 60-in.) Diameter
AASHTO M304	Standard Specification for Poly (Vinyl Chloride) (PVC) Profile Wall Drain Pipe and Fittings Based on Controlled Inside Diameter
AASHTO MP20	Standard Specification for Steel-Reinforced Polyethylene (PE) Ribbed Pipe, 300- to 900-mm (12- to 36-in.) diameter
AASHTO	Standard Specifications for Highway Bridges

END OF ITEM D-705

S-1000 Construction Safety and Phasing Plan

S-1000-1.1 DESCRIPTION. This item provides additional notes regarding construction safety and phasing and should be used in addition to the Airport Safety Plan sheets included in the drawings.

Materials

S-1000-2.1 COORDINATION

- a. Contractor Progress Meetings - The airport manager, project engineer, and contractor will hold regularly scheduled progress meetings throughout construction. Operational safety will be addressed at each meeting in addition to other agenda items.
- b. Construction, Emergency, and Utility Contacts

Construction, Emergency, and Utility Contacts			
Role	Organization	Name	Contact Information
Airport Operations Manager	Baton Rouge Metropolitan Airport Operations Manager	Craig Alford	225-355-0333
Project Engineer	AMG	Alan Krouse	225-358-4240
Hospital	Baton Rouge General Mid-City	N/A	225-387-7000
Airport Rescue and Fire Fighting	BTR ARFF	Chief Anthony Williams	225-358-4221
Police	BTR Airport Police	Chief Anthony Williams	225-355-2068
FAA Facilities	Federal Aviation Administration	Jason Maroon	337-262-2721 (Office) 225-978-5037 (cell)
Utilities	Louisiana One (1) Call	N/A	1-800-272-3020
Contractor - Project Manager	TBD	TBD	TBD
Contractor - Superintendent	TBD	TBD	TBD
Contractor - Safety Manager	TBD	TBD	TBD

S-1000-2.2 PHASING

- a. This project consists of four phases. Phase 1 includes work in the RSA and will require a runway closure on 13-31. Phases 2, 3, and 4 are all outside the RSA but do include work in the ROFA and will include apron entrance and taxiway closures. See Construction Safety Plan and Airport Safety Plan sheets for details.

S-1000-2.3 Areas of Operations Affected by Construction Activity

- a. Sequence of Construction plan sheets depict maintenance of airport traffic, safety requirements and the areas located on the airfield that will be affected by construction activities for each phase of the overall project.

RUNWAY END	RSA WIDTH (DISTANCE	THRESHOLD SITING SURFACE
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	FROM CENTERLINE)	
4L	400	20:1
22R	400	34:1
13	400	34:1
31	400	20:1

LOCATION	TAXIWAY WIDTH	TAXIWAY DESIGN GROUP	TSA WIDTH (DISTANCE FROM CENTERLINE)
TXWY A	75'	V	171
TXWY B	75	V	171
TXWY C	75	V	171
TXWY D	75	V	171
TXWY E	40	II	79
TXWY F	40	II	79
TXWY G	75	V	171
TXWY H	75	V	171
TXWY J	75	V	171
TXWY K	75	V	171
TXWY L	40	II	79
TXWY P	75	V	171
TXWY Q	75	V	171

S-1000-2.4 Protection of Navigation Aids

- The contractor is to be aware of the presence and location of FAA Subsurface cables servicing the BRMA RTR and the Runway 4L-22R Touchdown RVR and Glideslope, MALS Power, and RTR. See plans for additional details and warnings.

S-1000-2.5 Contractor Access

- Construction Staging – Construction access routes are identified in the plans.
- AOA Access - Access to the air operations area (AOA) will be granted using the access gates shown in the plans. Any modification of access points, staging areas, or haul routes shown on the plans shall have written approval of the Program Manager.
- Personal Vehicles and Construction Equipment - All contractor employees shall park personal vehicles at the designated staging area as shown in the plans. Personal vehicles will not be allowed inside the AOA. It is the responsibility of the contractor to provide vehicles that are authorized to operate on the site. These vehicles will be identified in accordance with AC-5210-5D. At a minimum, a yellow flashing beacon shall be mounted to the uppermost part of the vehicle. In addition, the contractor shall identify employees and subcontractor employees which require unescorted access. If a vehicle or piece of equipment is not furnished with a beacon and company information, it must be escorted within the AOA by a vehicle with the proper identification.
- Two-way radio communications – The contractor shall have at a minimum two radios and a backup radio for this project. Communication with the air traffic control tower must be

maintained at all times. The contractor shall assign responsible personnel to continuously monitor the ground control frequency. Provide a radio at each separate work location.

S-1000-2.6 Wildlife Management

- a. Trash – All trash generated by the contractor personnel shall be properly disposed of as food scraps can attract wildlife hazards. It is the responsibility of the contractor to make arrangements for trash removal from the site and the staging area as needed or on a weekly basis at a minimum. The Program Manager has the ability to direct the contractor to increase the frequency of trash removal if necessary.
- b. Ponding - Standing water is a potential wildlife hazard that can be created from construction activity or rainfall events. Standing water shall not be allowed to stand after a rain event for longer than 48 hours. The contractor will have a pump ready at no direct cost to the project to remove standing water as necessary by pumping to the nearest subsurface drainage inlet.
- c. Grass - The contractor shall maintain the staging area free from tall grass.

S-1000-2.7 Foreign Object Debris (FOD) Management

- a. Clean Staging Area – The contractor shall maintain a clean project site free from FOD generated from the contractor's activities and from other airfield areas. During construction operations requiring temporary closure of airfield pavement, airport personnel will have the ability to approve the pavement as free from FOD prior to re-opening. A vacuum truck equipped with magnetic bars for FOD prevention will be required to clean airfield pavement prior to re-opening closed areas to air traffic.
- b. All crossings of active airport facilities by vehicles carrying construction material shall be followed by a vacuum sweeper truck equipped with magnetic bars for FOD prevention.
- c. Sweeper equipment shall be available for use at the discretion of BTR Ops and the Owner's Program Manager.
- d. Documented FOD inspections must be made by the contractor, inspector, and BTR Ops twice daily at all intersections of work areas and active airport pavements.



S-1000-2.8 Hazardous Materials Management

- a. The contractor shall notify the program manager immediately after any hazardous material spills. Any fuel spills or hydraulic fluid leaks shall be properly contained and cleaned. The contractor shall follow FAA AC 150/5320-15A Management of Airport Industrial Waste for additional details.

S-1000-2.9 Notification of Construction Activities

- a. Contact List - A preliminary list of construction and emergency contacts is provided within this document. Upon award of the project, the contractor shall provide all appropriate contact information for its personnel and subcontractors in its SPCD. This is a living document that should be updated upon change in personnel
- b. NOTAMS – NOTAMS provide timely information regarding temporary or unanticipated changes or closures to airport pavements, facilities, navigational aids, and hazards within the National Airspace System. The construction of this project will require NOTAMS to be issued. NOTAMS require a minimum of 72 hours advanced notice directed to the Program Manager. The Program Manager will coordinate with airport operations to schedule a requested closure.
- c. Police and Fire Coordination – The contractor is to contact local law enforcement and the fire department in an emergency during construction activities on the airfield. The contractor shall also notify the airport manager and project engineer regarding any required deactivation/reactivation of water lines or hydrants and the use of hazardous materials on the airfield.

S-1000-2.10 Inspection Requirements

- a. Daily Inspections – The contractor shall perform daily safety inspections of vehicles and equipment for compliance to requirements stated herein.
- b. As-needed inspections – Airport operations personnel, the airport manager, and the project engineer will make periodic inspections during construction to provide construction oversight and ensure the safety plan is being implemented. Airport personnel in conjunction with the program manager will approve cleaned construction areas prior to opening to air traffic.
- c. The airport manager and project engineer will be providing construction oversight for the purposes of ensuring the project is being constructed in conformance with all contract documents, plans and specifications. Final acceptance of the project will be the responsibility of the airport manager and project engineer.

S-1000-2.11 Subsurface and Overhead Utilities

- a. Utility warning - The contractor is advised that existing overhead and subsurface utilities exist along access routes and possible excavation areas. It shall be the contractor's responsibility to protect these existing utilities during demolition and construction. Any damage to the existing utilities caused by negligent acts of the contractor shall be repaired by the contractor at their expense.
- b. Louisiana One (1) Call - The contractor shall contact Louisiana One (1) Call at 1800-272-3020 a minimum of 48 hours prior to the beginning of construction in the work area.
- c. Contacts – A preliminary contact list has been provided herein this document for utility coordination purposes.
- d. FAA Subsurface Cables – The contractor shall coordinate with the airport manager and project engineer to have all FAA cables marked prior to beginning subsurface work in an area. Provide 72 hours notice prior to beginning work. Excavation may conflict with existing subsurface utilities and/or FAA NAVAID cables. The contractor is to exercise extreme caution when excavating. Should NAVAID service be interrupted due to construction activities the contractor shall immediately notify Airport Operations and the SSC Coordinator. The contractor is responsible for any repairs to damaged lines at no additional cost to the owner.

Hydrovac excavation methods shall be used to expose FAA cables.



S-1000-2.12 Penalties

- a. Contractor violation of this safety plan will be penalized as follows.
 - a. 1st Occurrence: Verbal warning
 - b. 2nd Occurrence: Written warning and \$500 fine
 - c. 3rd Occurrence: Written warning and \$1,000 fine
 - d. 4th Occurrence: Individual will be removed from project

S-1000-2.13 Special Conditions

- a. Full compensation for all costs and time delays involved in rescheduling or temporary delays cause by airport operations shall be considered as included in the contract unit prices for each item of work and included in the contract duration.

S-1000-2.14 Runway and Taxiway Visual Aids

- a. Taxiway Temporary Closures - The contractor shall provide low-profile barricades for temporary taxiway closures at all taxiway and runway entrances.
- b. Lighted "X" - For runway closures of extended durations, the contractor will be responsible for providing a lighted "X" for placement on the runway indicating closure. This requirement will be coordinated with the program manager and airport operations.
- c. Contractor Equipment – The contractor shall provide and maintain low-profile barricades where required at no direct pay. The placement of barricades shall be such that restricts vehicle access and makes closures and hazards visible to aircraft.

- d. FAA Equipment – All construction involving NAVAIDS and other FAA owned equipment shall be in accordance with the plans and specifications.

S-1000-2.15 Marking and Signs for Access Routes

- a. No pavement marking or sign installation on airport property for purposes of access routes is anticipated as part of this project.

S-1000-2.16 Hazard Marking and Lighting

- a. Low profile barricades shall be used to prevent aircraft from entering closed airfield pavement. Proposed locations are shown on Sequence of Construction sheets contained in the plan set. The contractor shall describe additional methods of required traffic control, if required in the SPCD.

S-1000-2.17 Protection of RSA/TSA, OFA, and Approach/Departure Surfaces

- a. Runway Safety Area (RSA) - All work within the Runway Safety Area (RSA) or Taxiway Safety Area (TSA) will require a temporary runway or taxiway closure. No work shall be permitted within an active RSA or TSA. The RSA and TSA shall be re-graded after construction activities are complete in the work area to eliminate ruts, humps, and depressions.
- b. Trenches - Trenches within the RSA shall be backfilled or appropriately covered prior to the runway being open to traffic.
- c. Runway Object Free Area (ROFA) – No material shall be stockpiled within the ROFA.
- d. Taxiway Object Free Area (TOFA) – All work within the TOFA will require a temporary taxiway closure unless the taxiway has been restricted through a NOTAM to taxiway design group aircraft requiring a TOFA equal to the TOFA available during the construction activities.
- e. Approach/Departure Surfaces – The contractor shall be required to keep all equipment, stockpiles and personnel clear of the threshold siting surfaces listed in **Section S-1000-2.3**. Any penetrations required by contractor vehicles, personnel or equipment will require a runway closure to be coordinated with the airport manager and project engineer. The use of tall equipment including cranes and concrete pumps is prohibited.

MEASUREMENT AND PAYMENT

S-1000 MEASUREMENT AND PAYMENT.

- a. Adherence to the Construction Safety and Phasing Plan and all associated personnel, materials, and documentation required to implement the Construction Safety and Phasing Plan will be paid as a lump sum.
- b. Payment will be made under:
 - a. Item S-1000 Construction Safety and Phasing Plan per lump sum

END OF ITEM S-1000

L-110 INSTALLATION OF AIRPORT UNDERGROUND ELECTRICAL DUCT

DESCRIPTION

110-1.1 GENERAL

a. This Work consists of underground electrical ducts and underground conduits installed in accordance with this Specification at the locations and in accordance with the dimensions, designs, and details shown in the Contract Documents. Also include all excavation, trenching, backfilling, removal, and restoration of paved areas, manholes, concrete encasement, mandrelling, installation of steel drag wires and duct markers, capping, and the inspection of the installation as a completed duct system ready for installation of cables, unless otherwise shown in the Contract Documents.

110-1.2 THIS SPECIFICATION INCLUDES:

a. Regulatory Requirements.

110-1.3 OTHER RELATED SPECIFICATIONS.

a. L100-1.1 through L-100-2.17 General Requirements.

b. L-100-3.2 Raceways.

110-1.4 CLASSIFICATIONS.

a. Type I - Duct encased in concrete.

b. Type II - Duct without concrete encasement.

EQUIPMENT AND MATERIALS

110-2.1 REGULATORY REQUIREMENTS. All equipment and materials shall be subject to acceptance through manufacturer's certification of compliance with applicable specifications and as required in Specification L-100.

CONSTRUCTION METHODS

110-3.1 GENERAL. Install underground ducts at the approximate locations shown in the Contract Documents. The Engineer will indicate specific locations as the work progresses. Ducts shall be of the size, material, and type indicated in the Contract Documents. Where no size is indicated in the plans or specifications the ducts shall be not less than 3 inches (75 mm) inside diameter. Lay all duct lines to drain toward handholes, manholes and duct ends. Grades shall be at least 3 inches (75 mm) per 100 feet (30 m). On runs where it is not practicable to maintain the grade all one way, grade the duct lines from the center in both directions toward manholes, handholes, or duct ends. Avoid pockets or traps where moisture may accumulate.

Mandrel each duct. Push An iron-shod mandrel, not more than 1/4-inch (6 mm) smaller than the bore of the duct through each duct by means of jointed conduit rods. The mandrel shall have a leather or rubber gasket slightly larger than the duct hole.

All ducts installed shall be provided with a No. 10 gauge galvanized iron or steel drag wire for pulling the permanent wiring. Where steel spare ducts are installed, as indicated on the plans, plug the open ends with removable tapered plugs, designed by the duct manufacturers, or with hardwood plugs conforming accurately to the shape of the duct and having the larger end of the plug at least 1/4-inch (6 mm) greater in diameter than the duct. Use plugs recommended by the manufacturer for plastic and fiber duct. Securely fasten and plug all ducts in place during construction and progress of the work to prevent seepage of grout, water, or dirt. Do not install duct sections having a defective joint.

Install ducts under runways, taxiways, aprons, and other paved areas in accordance with details shown on the Drawings. When required, provide concrete encasement as shown on Drawings. Under pavement, top of duct shall not be less than 25" below finished grade.

Excavate the trenches for ducts manually or with mechanical trenching equipment. Walls of trenches shall be vertical so that a minimum of shoulder surface is disturbed. Do not use blades of road graders to excavate the trench. Ascertain the type of soil or rock to be excavated before bidding. All excavation shall be unclassified and incidental to this Item.

110-3.2 DUCTS ENCASED IN CONCRETE (TYPE I). When shown in the Plans, install concrete-encased ducts so that the top of the concrete envelope is not less than 18 inches (450 mm) below the finished subgrade where installed under runways, taxiways, aprons, or other paved areas, and not less than 18 inches (450 mm) below finished grade where installed in unpaved areas. Extend ducts under paved areas at least 5 feet (1.5 m) beyond the edges of the pavement or 5 feet (1.5 m) beyond underdrains that may be installed alongside the paved area. Open trenches for concrete-encased ducts the complete length before concrete is laid so that if any obstructions are encountered, proper provisions can be made to avoid them. Place all ducts for concrete encasements on a layer of concrete not less than 3 inches (75 mm) thick prior to its initial set. Where two or more ducts are encased in concrete, space them not less than 1-1/2 inches (37 mm) apart (measured from outside wall to outside wall) using spacers applicable to the type of duct. As the duct laying progresses, place concrete not less than 3 inches (75 mm) thick around the sides and top of the duct bank. Install end bells or couplings flush with the concrete encasement where required.

When specified, reinforce the bottom side and top of encasements with steel reinforcing mesh or fabric or other approved metal reinforcement. When directed, supply additional supports where the ground is soft and boggy, where ducts cross under roadways, or where otherwise shown on the Plans. Under such conditions, support the complete duct structure on reinforced concrete footings, piers, or piles located at approximately 5 foot (1.5 m) intervals.

Do not backfill the excavation until concrete has reached 2,000 psi compressive strength. Clay or soapstone duct is prohibited.

110-3.3 DUCTS WITHOUT CONCRETE ENCASEMENT (TYPE II). Trenches for single-duct lines shall be not less than 6 inches (150 mm) nor more than 12 inches (300 mm) wide, and the trench for 2 or more ducts installed at the same level shall be proportionately wider. Make trench bottoms for ducts without concrete encasement to conform accurately to grade so as to provide uniform support for the duct along its entire length. Open trenches the complete length before duct is installed.

Place a layer of sand, at least 4 inches (100 mm) thick (loose measurement) or as shown on the Plans, in the bottom of the trench as bedding for the duct. The bedding material shall consist of, sand and shall contain no particles that would be retained on a 1/4-inch (6 mm) sieve. Tamp the bedding material until firm.

Unless otherwise shown in Plans, install ducts in accordance with NFPA 70, but never less than 18 inches below the finished grade. When two or more ducts are installed in the same trench without concrete encasement, install them as shown on the Drawings.

110-3.4 DUCT MARKERS. Mark The location of the ends of all ducts by a concrete slab marker as shown in the Contract Documents. Locate the markers above the ends of all ducts or duct banks, except where ducts terminate in a handhold, manhole, or building.

Impress the word "duct" and the number and size of ducts beneath the marker on each marker. Show the letters on the Contract Documents.

110-3.5 BACKFILLING. After ducts have been properly installed, backfill the trench in at least two layers with excavated material less than 4 inches (100 mm) in diameter and thoroughly tamped and compacted to at least the density of the surrounding undisturbed soil. If necessary to obtain the desired compaction, the backfill material shall be moistened or aerated.

Trenches shall not be excessively wet and shall not contain pools of water during backfilling operations.

Completely backfill and tamp the trench level with the adjacent surface, except that, when sod is to be placed over the trench, stop the backfilling at a depth equal to the thickness of the sod to be used, with proper allowance for settlement.

Remove and dispose of excess excavated material in accordance with instructions issued by the Engineer.

110-3.6 RESTORATION. Restore turf areas disturbed by the trenching, storing of dirt, cable laying, pad construction and other work. The restoration shall include topsoiling, fertilizing, liming, seeding, and mulching. Perform all Work in accordance with Specifications T-901, T-902, T-904, T-905, and T-908. The Contractor shall be held responsible for maintaining all disturbed surfaces and replacements until final acceptance.

Restore paved areas disturbed by Contractor operations in accordance with the detail shown on the Contract Documents. Material specification and installation shall be in accordance with Standard Specifications.

METHOD OF MEASUREMENT

110-4.1 ELECTRICAL DUCT. Electrical Duct of the various sizes and number of duct indicated, with or without concrete encasement, will be measured on a unit price basis per linear foot. Measurement for payment will be made in a straight horizontal line along the centerline duct installed and accepted.

110-4.2 PAVEMENT RESTORATION Pavement Restoration for Duct Installation will be measured on a unit price basis per linear foot. Measurement for payment shall be made in a straight horizontal line along the centerline of the duct that is located beneath pavement.

110-4.3 DUCT MARKERS. Duct Markers will be measured on a unit price basis per each for markers constructed and accepted.

BASIS OF PAYMENT

110-5.1 Payment will be made at the Contract unit price per linear foot for each type and size of single-way or multi-way duct, completed and accepted. This price will be full compensation for furnishing all materials and for all preparation, assembly, and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete this Item.

a. The Pay Items for Electrical Duct will include excavation, installation, materials, bedding and backfill, compaction, concrete encasement when specified, mandrelling, and restoration, except when separate Pay Items are included for pavement restoration.

b. The Pay Item for Duct Markers will include materials and installation.

c. The Pay Item for Pavement Restoration will include the cost of saw cutting, removing and disposing of existing pavement, and placement of subbase, base course, and surface course in accordance with the details included in the Contract Documents.

The cost of restoration of turf, pavement and other features disturbed by installation of duct will be included in prices for Electrical Duct, except when a Pay Item is included for Pavement Restoration in the Schedule of Prices.

Standard Pay Items for Work covered by this Specification are as follows:

Item L110-5.1	2" PVC Conduit demo and re install
Item L110-5.2	2" PVC couplings demo and re install
Item L110-5.3	2" PVC connectors demo and re install
Item L110-5.4	Backhoe Rental
Item L110-5.5	Jack and Bore Machine
Item L110-5.6	L-867D Base Can and Cover
Item L110-5.7	Duct marker, per each
Item L110-5.8	Jack and Bore under Taxiway, includes 2" HDPE Conduit and L-867D base can and cover

Measurement and Payment will only be made for Pay Items included in the Schedule of Prices. The cost of all Work required by the Contract Documents will be included in the Pay Items contained in the Schedule of Prices.

A.I.P. No.	STATE PROJECT	PARISH	SHEET No.
3-22-0006-49	917-01-0058	EAST BATON ROUGE	1

INDEX TO SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
1a	AIRPORT LAYOUT PLAN
2	PROJECT LAYOUT PLAN
2a	PROJECT LAYOUT PLAN (TAXIWAY E AND G)
3	SUMMARY OF QUANTITIES AND TABLES
4-6	EXISTING TOPOGRAPHY
7	PLAN AND PROFILE TAXIWAY "F"
7a	SECTIONS AND DETAILS
7b	PLAN AND PROFILE TAXIWAY "F"
7c	PLAN AND PROFILE TAXIWAY "F"
7d	PLAN AND PROFILE TAXIWAY "G"
8	PLAN AND SECTION APRON "A"
9	PLAN APRON "B"
10-11	MARKING PLAN
12-13	JOINT LAYOUT / ELEVATION
14	SAFETY PLAN
15	SEQUENCE OF CONSTRUCTION
16	DRAINAGE PLAN-EXISTING
17	DRAINAGE PLAN-PROPOSED
18	DRAINAGE PLAN-DETAILS
19	EROSION CONTROL
20-22	LIGHTING LAYOUT AND DETAILS
23	TAXIWAY SIGNING PLAN
401-409	CROSS SECTIONS

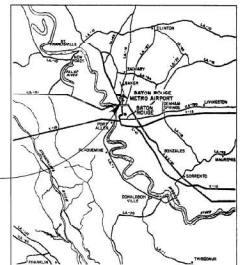
STATE OF LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

PLANS OF PROPOSED AIRPORT IMPROVEMENTS

A. I. P. No. 3-22-0006-49
S.P. No. 917-01-0058

BATON ROUGE METROPOLITAN AIRPORT REHABILITATION OF TAXIWAYS FOXTROT, ECHO, GOLF AND EXPAND EAST SIDE G.A. APRONS "A" AND "B"

PROJECT SITE



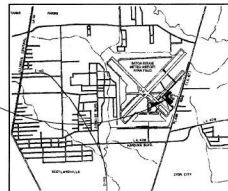
VICINITY MAP

STANDARD PLANS

SHEET NO.	DESCRIPTION
201-202	EO-01 TEMPORARY EROSION CONTROL DETAILS
203	FN-01 CHAIN LINK FENCE OF HOI INDUSTRIAL
204	CB-01 CATCH BASINS
205	PC-01 MOD CATCH BASINS
206-207	MC-01 DETAIL OF UNIFORM PRIVATE PAVEMENTS

TOTAL SHEETS WITH CROSS SECTIONS = 45
TOTAL SHEETS WITHOUT CROSS SECTIONS = 36

PROJECT SITE



AS BUILT PLAN

12-31-2002

TYPE OF CONSTRUCTION: PORTLAND CEMENT CONCRETE
ASPHALTIC CONCRETE
CRUSHED STONE BASE & SUB-BASE
DRAINAGE STRUCTURES
PI LOTRIAL
EARTHWORK

LAYOUT MAP
SCALE 1 INCH = 2000 FEET
0 2000 4000 6000



RECOMMENDED FOR APPROVAL
DATE 1-14-01
James W. Justice
Justice & Justice Engineers, Inc.

APPROVED
DATE 1-24-01
Director of Aviation
Greater Baton Rouge Airport District

A.P. No.	STATE PROJECT	PARISH	SHEET No.
3-22-0006-49	917-01-0058	EAST BATON ROUGE	1

INDEX TO SHEETS	
SHEET NO.	DESCRIPTION
1	TITLE SHEET
1a	AIRPORT LAYOUT PLAN
2	PROJECT LAYOUT PLAN
2a	PROJECT LAYOUT PLAN (TAXIWAY E AND Q)
3	SUMMARY OF QUANTITIES AND TABLES
4-4	EXISTING TOPOGRAPHY
7	PLAN AND PROFILE TAXIWAY "P"
7a	SECTIONS AND DETAILS
7b	PLAN AND PROFILE TAXIWAY "E"
7c	PLAN AND PROFILE TAXIWAY "P"
7d	PLAN AND PROFILE TAXIWAY "Q"
8	PLAN AND SECTION APRON "A"
9	PLAN APRON "B"
10-11	MARKING PLAN
12-13	JOINT LAYOUT / ELEVATION
14	SAFETY PLAN
15	SEQUENCE OF CONSTRUCTION
16	DRAINAGE PLAN-EXISTING
17	DRAINAGE PLAN-PROPOSED
18	DRAINAGE PLAN-DETAILS
19	EROSION CONTROL
20-22	LIGHTING LAYOUT AND DETAILS
23	TAXIWAY BOARDING PLAN
401-409	CROSS SECTIONS

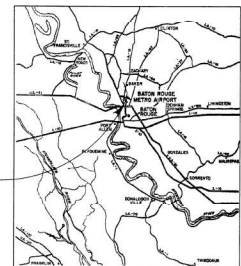
STATE OF LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

PLANS OF PROPOSED
AIRPORT IMPROVEMENTS

A. I. P. No. 3-22-0006-49
S.P. No. 917-01-0058

BATON ROUGE METROPOLITAN AIRPORT
REHABILITATION OF TAXIWAYS FOXTROT, ECHO, GOLF
AND
EXPAND EAST SIDE G.A. APRONS "A" AND "B"

PROJECT SITE

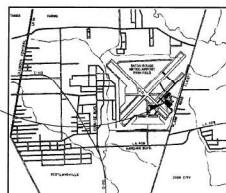


VICINITY MAP

STANDARD PLANS	
SHEET NO.	DESCRIPTION
201-202	EG-01 TEMPORARY EROSION CONTROL-DETAILS
203	FN-01 CHAIN LINK FENCE OF HOFT INDUSTRIAL
204	CB-01 CATCH BASINS
205	PC-01 MOD CATCH BASINS
206-207	MC-01 DETAIL OF GRATING FRAME & COVERS

TOTAL SHEETS WITH CROSS SECTIONS = 45
TOTAL SHEETS WITHOUT CROSS SECTIONS = 36

PROJECT SITE



AS BUILT PLAN

12-31-2002



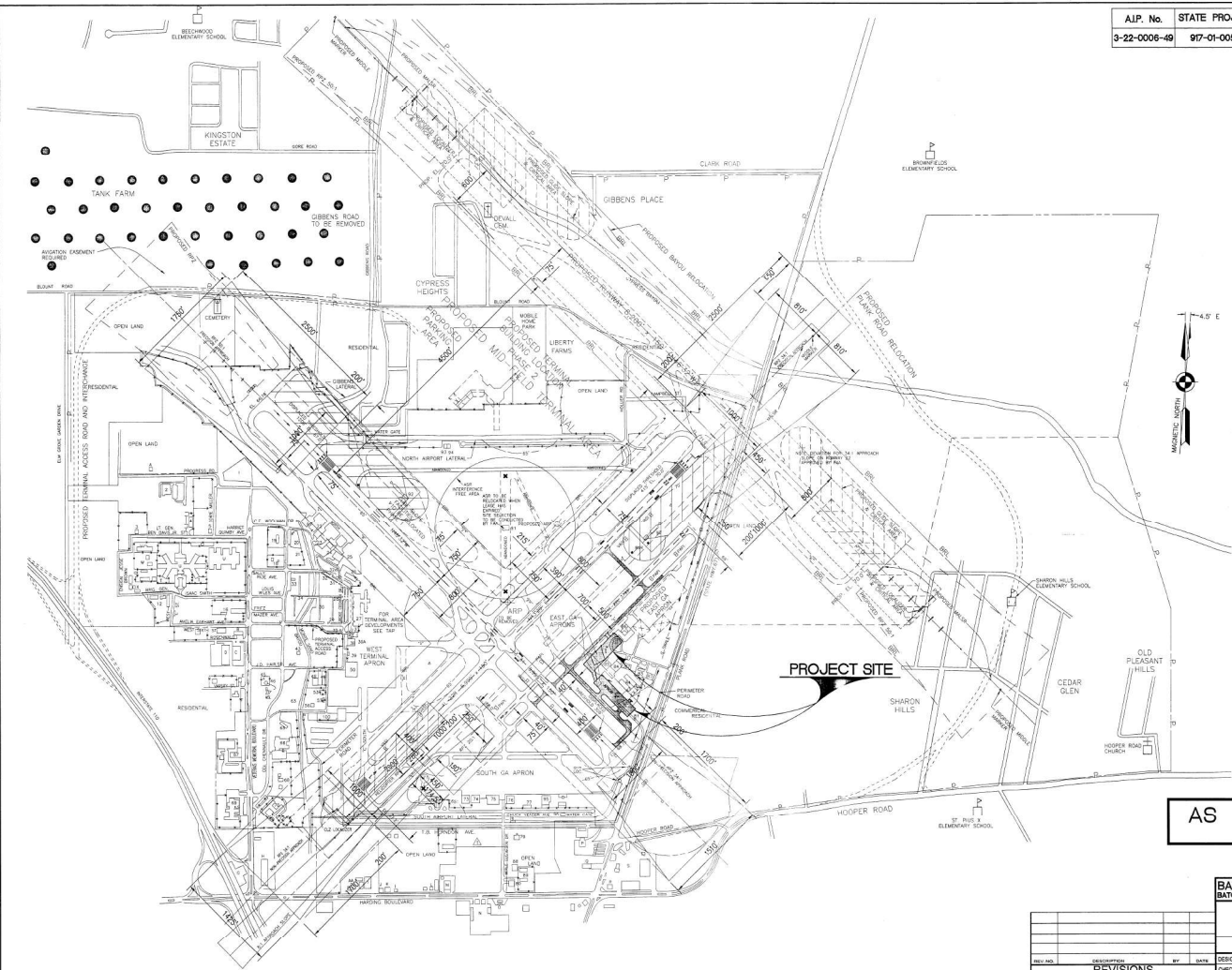
RECOMMENDED
FOR APPROVAL
DATE 1-24-01
James H. Justice
Justice & Justice Engineers, Inc.

APPROVED
DATE 1-24-01
Director of Aviation
Greater Baton Rouge Airport District

TYPE OF CONSTRUCTION: PORTLAND CEMENT CONCRETE
ASPHALTIC CONCRETE
CRUSHED STONE BASE & SUB-BASE
DRAINAGE STRUCTURES
ELECTRICAL
EARTHWORK

LAYOUT MAP
SCALE 1 INCH = 2000 FEET
0 2000 4000 8000

AJP. No.	STATE PROJECT	PARISH	SHEET No.
9-22-0008-49	97-01-0058	EAST BATON ROUGE	1a



JAMES W. JUSTICE
 No. 4070
 REGISTERED PROFESSIONAL ENGINEER
 IN
 THE STATE OF LOUISIANA

AS BUILT PLAN
 12-31-2002

REV. NO.	DESCRIPTION	BY	DATE

BATON ROUGE METRO AIRPORT				LOUISIANA	
BATON ROUGE					
AIRPORT LAYOUT PLAN					
		JUSTICE AND HUANG ENGINEERS, INC.			
DESIGNED	LDJ	DETAILED	LDJ	SCALE:	NOTED
CHECKED	ATH	CHECKED	ATH	DATE:	8/1/00
					SHEET NO. 1a

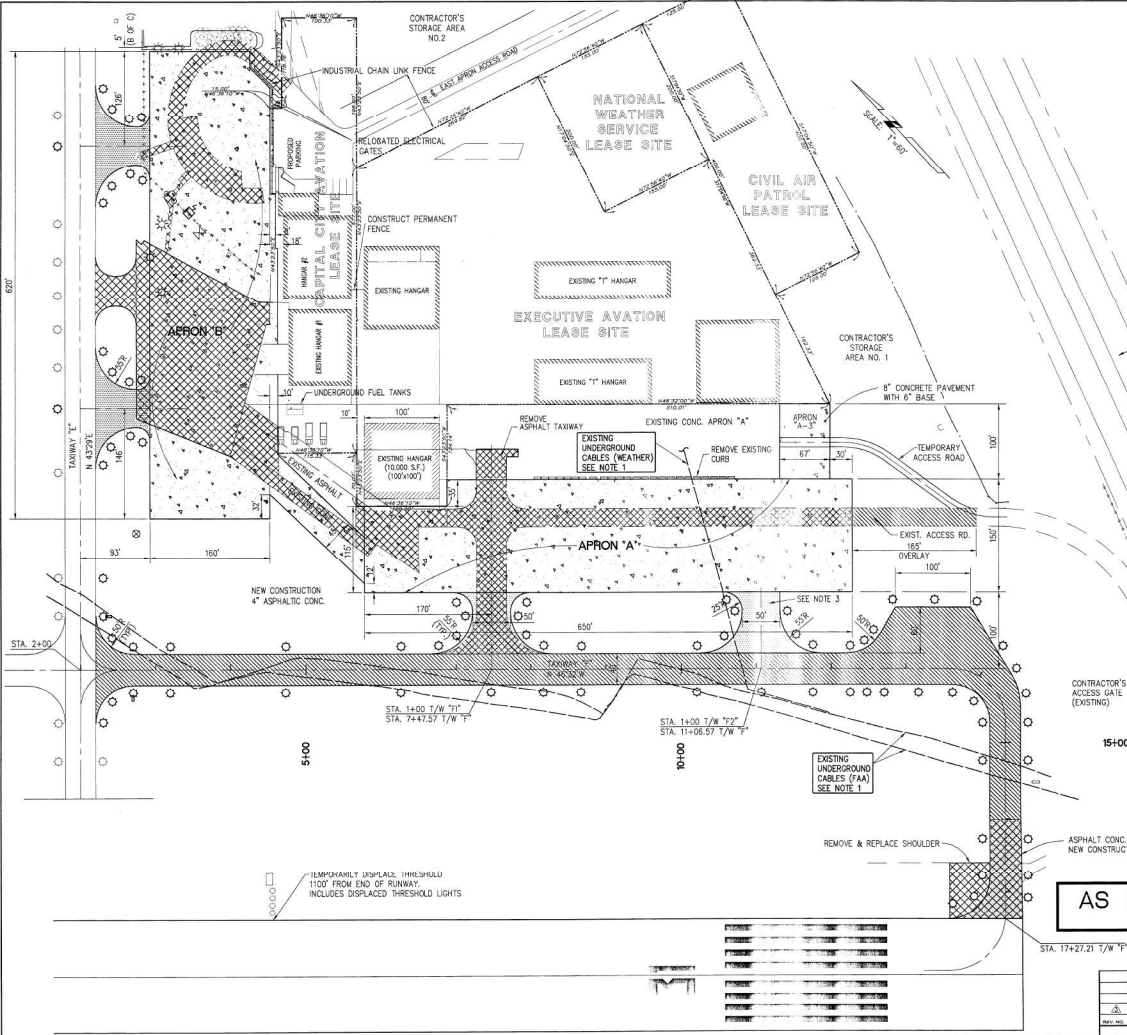
1/2" = 1' HORIZ. SCALE
 1/8" = 1' VERT. SCALE
 1/4" = 1' CURVE RADIUS SCALE
 1/8" = 1' ELEVATION SCALE
 1/4" = 1' DISTANCE SCALE
 1/8" = 1' AREA SCALE
 1/4" = 1' VOLUME SCALE
 1/8" = 1' WEIGHT SCALE
 1/4" = 1' LENGTH SCALE
 1/8" = 1' WIDTH SCALE
 1/4" = 1' DEPTH SCALE
 1/8" = 1' TEMPERATURE SCALE
 1/4" = 1' PRESSURE SCALE
 1/8" = 1' FORCE SCALE
 1/4" = 1' ENERGY SCALE
 1/8" = 1' POWER SCALE
 1/4" = 1' FLOW SCALE
 1/8" = 1' RATE SCALE
 1/4" = 1' DENSITY SCALE
 1/8" = 1' VISCOSITY SCALE
 1/4" = 1' SURFACE TENSION SCALE
 1/8" = 1' CAPILLARITY SCALE
 1/4" = 1' REFRACTIVE INDEX SCALE
 1/8" = 1' ABSORPTIVITY SCALE
 1/4" = 1' TRANSMITTIVITY SCALE
 1/8" = 1' TRANSMISSION COEFFICIENT SCALE
 1/4" = 1' REFLECTIVITY SCALE
 1/8" = 1' REFLECTANCE SCALE
 1/4" = 1' REFLECTIVITY COEFFICIENT SCALE
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A.P. No.	STATE PROJECT	PARISH	SHEET No.
3-22-0006-40	917-01-0058	EAST BATON ROUGE	2

NOTE 1:
THE CONTRACTOR SHALL TAKE SPECIAL CAUTION NOT TO DAMAGE ANY EXISTING UNDERGROUND FAA AND WEATHER BUREAU CABLES AS MARKED ON THE PLANS. THE UNDERGROUND CABLES WERE ESTIMATED TO BE 2.5' TO 3.5' DEEP. THE CONTRACTOR SHALL CONTACT THE FOLLOWING PERSON TO LOCATE THE UNDERGROUND CABLES BEFORE ANY EXCAVATION IN THESE AREAS.
CONTACT: MICHAEL MODERNOTT
PHONE: 354-2190

NOTE 2:
APRON A&B BASE BID TO BE 11" CONCRETE PAVEMENT. ALTERNATE "A" TO BE 4" ASPHALTIC CONCRETE PAVEMENT.

NOTE 3:
NEW CONSTRUCTION 4" ASPHALTIC CONCRETE (P-401) & 20" BASE (P-209)



- LEGEND
- TO BE REMOVED
 - ASPHALTIC CONC. (NEW CONSTRUCTION)
 - ASPHALTIC CONC. OVERLAY (8" THICK)
 - PC CONCRETE (BASIC DESIGN)
 - REQ'D TAXIWAY LIGHTS
 - EXIST. TAXIWAY LIGHTS TO REMAIN
 - LEASE LINE

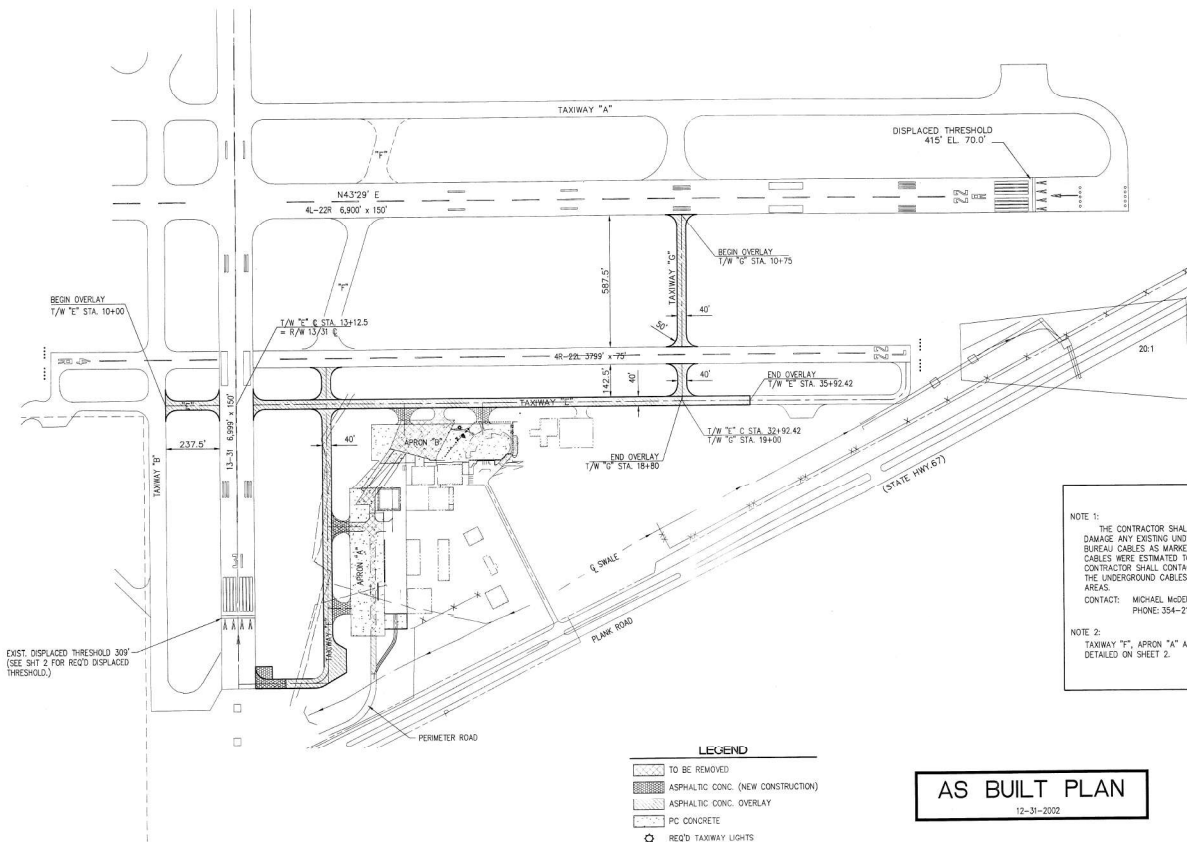
AS BUILT PLAN
12-31-2002

NOTE: SEE SHEET NO. 2A FOR TAXIWAYS "L" & "T"

BATON ROUGE METRO AIRPORT	
BATON ROUGE	
PROJECT LAYOUT PLAN	
LOUISIANA	
DESIGNED	1/22/03
CHECKED	1/22/03
DATE	1/22/03
SHEET	2

NO.	DESCRIPTION	DATE
1	REMOVED NEW RUNWAY MARKINGS	1/22/03
2	REMOVED NEW RUNWAY MARKINGS	1/22/03
3	REMOVED NEW RUNWAY MARKINGS	1/22/03
4	REMOVED NEW RUNWAY MARKINGS	1/22/03
5	REMOVED NEW RUNWAY MARKINGS	1/22/03
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96	REMOVED NEW RUNWAY MARKINGS	1/22/03
97	REMOVED NEW RUNWAY MARKINGS	1/22/03
98	REMOVED NEW RUNWAY MARKINGS	1/22/03
99	REMOVED NEW RUNWAY MARKINGS	1/22/03
100	REMOVED NEW RUNWAY MARKINGS	1/22/03

A.I.P.	STATE PROJECT	PARISH	SHEET No.
3-22-0006-49	917-01-0058	EAST BATON ROUGE	2a



NOTE 1:
THE CONTRACTOR SHALL TAKE SPECIAL CAUTION NOT TO
DAMAGE ANY EXISTING UNDERGROUND FAA AND WEATHER
BUREAU CABLES AS MARKED ON THE PLANS. THE UNDERGROUND
CABLES WERE ESTIMATED TO BE 2.5' TO 3.5' DEEP. THE
CONTRACTOR SHALL CONTACT THE FOLLOWING PERSON TO LOCATE
THE UNDERGROUND CABLES BEFORE ANY EXCAVATION IN THESE
AREAS.
CONTACT: MICHAEL MODERMOTT
PHONE: 354-2190

NOTE 2:
TAXIWAY "F", APRON "A" AND APRON "B" ARE MORE
DETAILED ON SHEET 2.

- LEGEND**
- TO BE REMOVED
 - ASPHALTIC CONC. (NEW CONSTRUCTION)
 - ASPHALTIC CONC. OVERLAY
 - PC CONCRETE
 - REQ'D TAXIWAY LIGHTS
 - EXIST. TAXIWAY LIGHTS TO REMAIN

AS BUILT PLAN
12-31-2002



BATON ROUGE METRO AIRPORT	
BATON ROUGE	LOUISIANA
PROJECT LAYOUT PLAN	
DESIGNED BY	DATE
CHECKED BY	DATE
APPROVED BY	DATE

REV.	DESCRIPTION	DATE
1	ADDED SHT. FOR T/W'S E & G	1/22/03

DATE: 12-31-2002
 DRAWN BY: JWS
 CHECKED BY: JWS
 APPROVED BY: JWS
 SCALE: 1" = 200'
 SHEET: 2a

SUMMARY OF ESTIMATED QUANTITIES

A.P. No.	STATE PROJECT	PARISH	SHEET No.
3-22-0006-49	917-01-0058	EAST BATON ROUGE	3

ITEM NO.	ITEM	UNIT	BASE BID QUANTITY	AS-BUILT QUANTITY
P-152-4.1	UNCLASSIFIED EXCAVATION	C.Y.	12870	13,275
P-154-5.1	SUBBASE COURSE (6" THICK)	S.Y.	2,888	2,145
P-155-6.1	LINE TREATED SUBGRADE (6" THICK)	S.Y.	4,878	0
P-155-8.2	LINE	LB	39,202	0
P-156-5.1	TEMPORARY SEEDING AND MULCHING	S.Y.	10,967	0
P-156-5.5	TEMPORARY SILT FENCE	L.F.	6,800	700
P-156-5.6	BALED HAY OR STRAW	TON	2.5	0.25
P-209-5.1a	CRUSHED AGGREGATE STONE COURSE (6" THICK)	S.Y.	22,750	23,735.3
P-209-5.1b	CRUSHED AGGREGATE STONE COURSE (1" THICK)	S.Y.	2,888	2,145
P-209-5.1c	CRUSHED AGGREGATE BASE COURSE (20" THICK)	S.Y.	1,260	1,990
P-401-8.1a	BITUMINOUS SURFACE COURSE	TON	7705	7,905.15
P-501-8.1a	PORTLAND CEMENT CONCRETE PAVEMENT (6" THICK)	S.Y.	1,022	755.55
P-501-8.1b	PORTLAND CEMENT CONCRETE PAVEMENT (11" THICK)	S.Y.	21,427	22,307.56
P-602-5.1	BITUMINOUS PRIME COAT	GAL	1,742	4,000
P-602-5.1	BITUMINOUS TACK COAT	GAL	3440	6,857.5
P-620-5.1.1	RUNWAY & TAXIWAY PAINTING	S.F.	26,500	0
P-620-5.1.2	TEMPORARY RUNWAY & TAXIWAY PAINTING	S.F.	22,450	0
P-620-5.1.3	REMOVAL OF TEMPORARY RUNWAY & TAXIWAY PAINTING	S.F.	22,450	0
F-162-5.1	INDUSTRIAL CHAIN LINK FENCE (6")	L.F.	410	410
D-701-5.1a	REINFORCED CONCRETE PIPE 18"	L.F.	709	663
D-701-5.1b	REINFORCED CONCRETE PIPE 24"	L.F.	425	338
D-701-5.1c	REINFORCED CONCRETE PIPE 30"	L.F.	359	344
D-701-5.1d	REINFORCED CONCRETE PIPE 48"	L.F.	1,100	1,103
D-751-5.2a	CATCH BASIN (CB-01)	EACH	21	20
D-751-5.2b	CATCH BASIN (R-CB-11-MOD)	EACH	4	4
T-901-5.1	SEEDING	ADRE	9.0	2.0
T-905-5.1	TOP SOILING (OBTAIN ON-SITE)	C.Y.	218	218
T-905-5.2	TOP SOILING (OBTAIN OFF-SITE)	C.Y.	4,345	4,188
T-908-5.1	MULCHING	S.Y.	26,400	26,040
L-108-5.1a	CABLE TRENCH (6" WIDTH) TAXIWAY/RUNWAY LIGHT/SIGNS CIRCUITS & SECURITY	L.F.	1,300	1,100
L-108-5.1b	CABLE TRENCH (12" WIDTH) TAXIWAY/RUNWAY LIGHT/SIGNS CIRCUITS & SECURITY	L.F.	5,600	5,000
L-108-5.1c	CABLE TRENCH (18" WIDTH) TAXIWAY CROSSING	L.F.	400	400
L-108-5.2a	#8-SKY L-824 CABLE DIRECT BURIAL IN TRENCH	L.F.	2,000	1,450
L-108-5.2b	#8-SKY L-824 CABLE IN CONDUIT	L.F.	7,000	7,000
L-108-5.4	BARE COUNTERPOISE WIRE IN TRENCH (#6 COPPER)	L.F.	8,500	8,500
L-108-5.5	BARE COUNTERPOISE WIRE IN DUCT OR CONDUIT (#6 COPPER)	L.F.	500	500
L-110-5.1a	2" (PVC) DUCT TAXIWAY & RUNWAY LIGHT/SIGNS CIRCUITS & SECURITY IN TRENCH	L.F.	5,000	5,437
L-110-5.1b	4" (PVC) DUCT (IN CONCRETE) (TAXIWAY CROSSINGS)	L.F.	300	300
L-110-5.1c	2" PVC DUCT DIRECTIONAL DRILLED (SECURITY)	L.F.	60	60
L-110-5.1d	4" PVC DUCT DIRECTIONAL DRILLED (TAXIWAY CROSSINGS & SECURITY)	L.F.	500	500
L-110-5.1e	2" PVC DUCT EXPOSED (SECURITY)	L.F.	20	0
S-1	JUNCTION BOX ELECTRICAL (PULL BOXES) TAXIWAY CROSSING	EACH	18	20
S-2	#6 COPPER COUNTERPOISE SPLICE	EACH	20	22
S-3	#8-SKY L-826 CABLE SPLICE	EACH	6	6
S-4	REMOVE & REINSTALL RUNWAY OR TAXIWAY LIGHTED SIGNS (L-850) WITH NEW LAMPS	EACH	5	5
S-5	INSTALL L-823 CONNECTORS (NOT PART OF LIGHT ASSEMBLY OR SPLICE)	EACH	20	20
S-6	MISC. REMOVAL SERVICE, STRUCTURE, PANELS, CAMERA/GATE CONTROLS, CAMERA, AND STREET LIGHTS	L.S.	1	1
S-7	INSTALL 4"x4" SECURITY SYSTEMS BACKBOARD SBI	EACH	1	0
S-8	REMOVAL OF EXISTING TAXIWAY & TEMPORARY DISPLACED THRESHOLD LIGHTS	EACH	78	76
S-9	TAXIWAY EDGE LIGHTS (STAKE MOUNTED)	EACH	6	0
S-10	TAXIWAY EDGE LIGHTS (BASE MOUNTED)	EACH	79	79
S-11	APPROPRIATE TIE DOWN	EACH	48	48
S-12	SAW CUT	L.F.	23,225	1,124
S-13	GEOTEXTILE FABRIC	S.Y.	23,274	23,896.22
S-14	TEMPORARY ACCESS PERIMETER ROAD	L.S.	1.5	1.5
S-15	TAXIWAY LIGHTED DIRECTIONAL SIGNS	EA	12	12
S-16	MAINTENANCE OF DISPLACED THRESHOLD	DAYS	150	0
S-17	REMOVE DISPLACED THRESHOLD	L.S.	1.5	0
S-18	DISPLACED THRESHOLD LIGHTS (STAKE MOUNTED)	EACH	0	0
S-19	DISPLACED THRESHOLD LIGHTS (BASE MOUNTED)	EACH	0	0
202(01)	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	L.S.	L.S.	L.S.
202(02)(E)	REMOVAL OF ASPHALTIC OR CONCRETE PAVEMENT	S.Y.	10,815	11,634.22
508(01)	COLD PLANING ASPHALTIC PAVEMENT	S.Y.	2,457	2,301.54
707(01)	CONCRETE CURB (6" BARRIER)	L.F.	0	0
712(01)	SACK CONCRETE REINFORCEMENT	S.Y.	10	10
727(01)	MOBILIZATION	L.S.	L.S.	L.S.
731(02)	REFLECTORIZED RAISED PAVEMENT MARKERS	EACH	116	72

SUMMARY OF ESTIMATED QUANTITIES

ITEM NO.	ITEM	UNIT	AS-BUILT QUANTITY
PC-2	MOBILIZATION FOR ADDITIONAL PAYT	L.S.	L.S.
PC-6	TIE RAMP BETWEEN APRONS A & B	L.S.	L.S.
PC-7	16" DOUBLE DRIVE GATE	L.S.	L.S.
PC-8	3/4" WIRE GATE, 6" W/BARB WIRE	L.S.	L.S.
EPC-1	ELECTRICAL SCOPE CHANGES	L.S.	L.S.
EPC-2	QUARTZ JUNCTION BOXES	L.S.	L.S.
EPC-3	NEW ELECT. SERVICE FOR SECURITY GATE APRON B AND RELOCATE LIGHT POLE	L.S.	L.S.
EPC-5	SECURITY SYSTEM WIRING	L.S.	L.S.
EPC-6	SCWIRE CASTING DIRECT	L.S.	L.S.
EPC-7	TAXIWAY 12" JUMPER	L.S.	L.S.
EPC-8	RELOCATE TEMP. SECURITY POWER	L.S.	L.S.
EPC-9	LIGHTED WIND CONE	L.S.	L.S.
EPC-10	TELEPHONE LINE / SECURITY SYS.	L.S.	L.S.
R-13-31	REMOVAL OF EXISTING MARKINGS RUNWAY 13-31	S.F.	45,121.00
P-13-31	RUNWAY PAINT YELLOW / WHITE RUNWAY 13-31	S.F.	106,728.00
SP-01	STOCKPILED MATERIALS FOR GRADE D AGGREGATE	L.S.	L.S.
SP-02	STOCKPILED MATERIALS DE 2" PVC DUCT TW/RW LIGHTS	L.S.	L.S.
SP-03	STOCKPILED MATERIALS DE DISPLACED THRESHOLD LIGHTS	L.S.	L.S.
SP-04	STOCKPILED MATERIALS RCS CATCH BASIN CB-01	L.S.	L.S.
SP-05	STOCKPILED MATERIALS RCS CATCH BASIN RCB-11-MOD	L.S.	L.S.

EARTHWORK SUMMARY SHEET

LOCATION	EXCAVATION	EMBANKMENT
TAXIWAY "T"	601	1,575
APRON "A"	2,122	2,184
APRON "B"	7,632	23
STUB TAXIWAY	2,310	318
* 9" EXCAVATION	5,688	
TOTAL	14,322	4,043

* IF MATERIAL DOES NOT MEET 80 & 95% COMPACTION WILL REQUIRE 6" TO 12" MAX DEPTH MUST BE REMOVED BY CONTRACTORS AS DIRECTED BY PROJECT ENGINEER.

NOTE:
BASE BID:

INCLUDES APRON A & B TO BE 11" P.C. CONCRETE PAVEMENT (P-501-8.1b), 6" CRUSHED AGGREGATE BASE COURSE (P-209-5.1a) & GEOTEXTILE FABRIC

AS BUILT PLAN

12-31-2002

BATON ROUGE METRO AIRPORT
BATON ROUGE

SUMMARY OF QUANTITIES

NO.	DESCRIPTION	QUANTITY	UNIT	DATE
1	ADDED 1/8" "X" & "Y"			1/12/02
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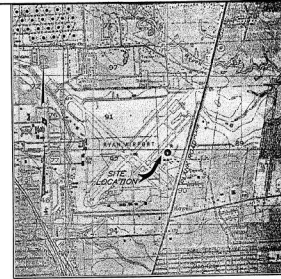
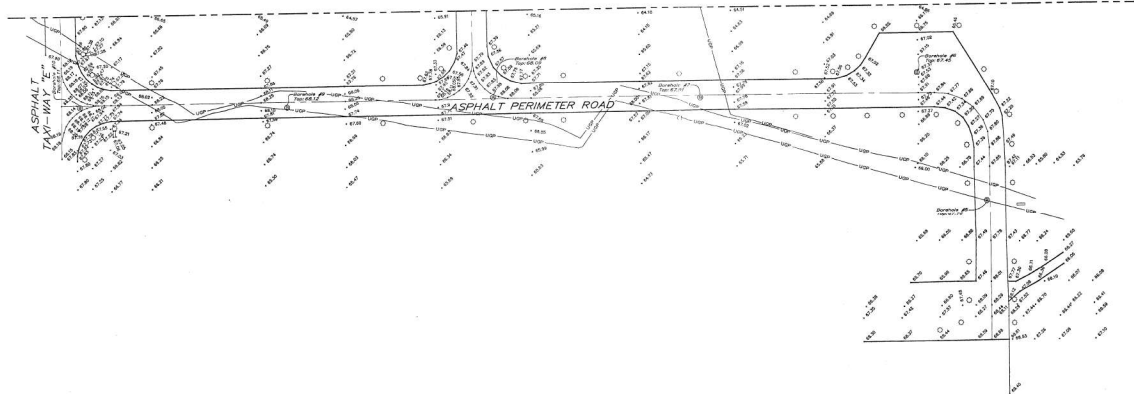
DESIGNED BY: JUSTICE AND HUANG
ENGINEERING, INC.
CHECKED BY: JAH
DATE: 6/1/04

3

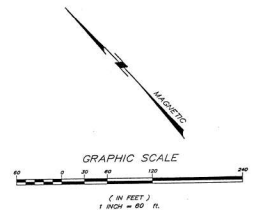
LEGEND

- 8" HIGH CHAIN LINK FENCE
- TREE / TREE CLUSTER
- EDGE OF PAVEMENT
- CENTER OF PAVED ROAD
- EDGE OF GRAVEL
- UNDERGROUND ELECTRIC
- TOP BANK (OPEN DITCH)
- TIDE BANK (OPEN DITCH)
- CENTER (OPEN DITCH)
- POWER POLE (VOLTAGE WIRE)
- POWER VAULT
- UTILITY POLE
- POWER JUNCTION BOX
- TELEPHONE PEDESTAL
- GUY POLE
- TELEPHONE POLE
- ELECTRIC AND TELEPHONE POLE
- BLUE LIGHT
- LIGHT POLE
- ELEVATION
- GAS SERVICE (NO METER)
- BORERHOLE

SEE SHEET 5 (APRON A)



VICINITY MAP
SCALE: 1"=2000'



PLAT SHOWING THE TOPOGRAPHIC SURVEY OF TAXI-WAY "F" BATON ROUGE METROPOLITAN AIRPORT LOCATED IN SECTION 90, T6S-R1E GREENSBURG LAND DISTRICT PARISH OF EAST BATON ROUGE STATE OF LOUISIANA

FOR

JUSTICE & HUANG



THIS PLAT REPRESENTS AN ACTUAL GROUND SURVEY MADE BY ME OR UNDER MY DIRECT SUPERVISION. BUT DOES NOT REPRESENT A PROPERTY BOUNDARY SURVEY AND DOES NOT COMPLY WITH THE LOUISIANA SURVEYING STANDARDS FOR PROPERTY BOUNDARY SURVEYS.

J. Mark Williams 2 AUG 00
J. MARK WILLIAMS, P.L.S. LA 4283

FIELD SURVEY COMPLETED: 9/27/99

TOPOGRAPHIC SURVEY
FOR
JUSTICE & HUANG ENGINEERS

SJB GROUP
INCORPORATED

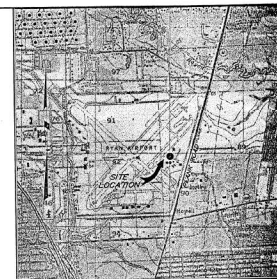
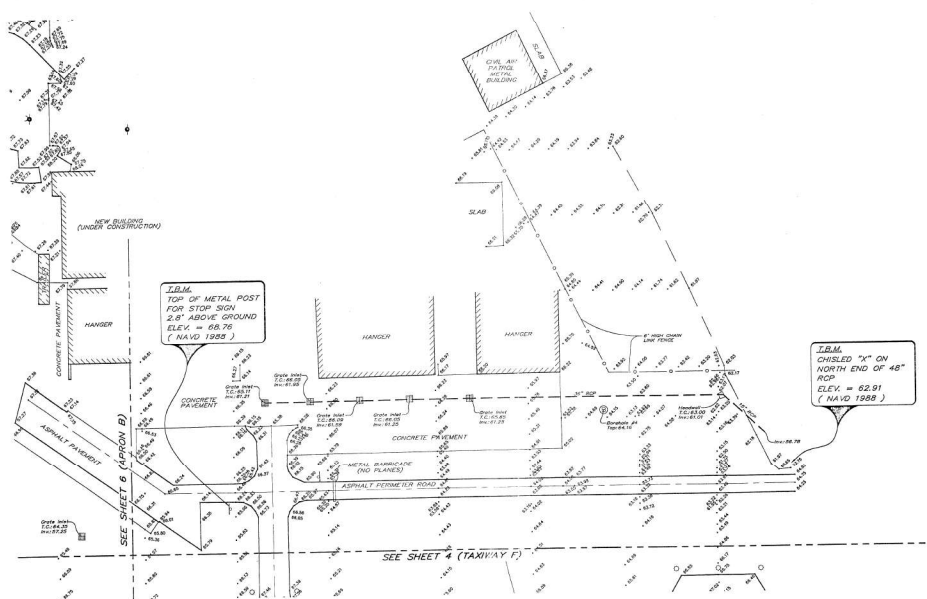
CAD ORIGINAL
10/19/99
KJG
1" = 80'
4

NO.	DATE	REVISIONS	BY
1	08/02/00	REVISED ELEVATION TEXT HEIGHT	JMG

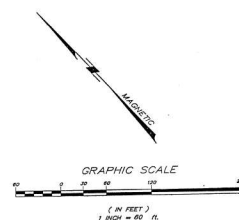
GENERAL NOTES:

- 1.) THE ELEVATIONS SHOWN HEREON ARE BASED ON NGS PUBLISHED BENCHMARK DESIGNATED "C 102 WEST" (FOR BAKED) DESCRIBED AS A BENCHMARK DISK SET IN TOP OF ROUND CONCRETE MONUMENT. IT IS LOCATED 1.4 MILES SOUTH FROM THE INTERSECTION OF BLOUNT ROAD AND SOUTH ON HIGHWAY 67 FOR 0.8 MILES TO THE BENCHMARK ON THE RIGHT, 86.8' WEST OF THE CENTERLINE OF THE SOUTH BOUND LANE OF THE HIGHWAY, 17' WEST OF THE NORTH END OF CURB AND ONE BRIDGE TO LEAD SOUTH ALONG THE WEST SIDE OF THE HIGHWAY AND ON THE EAST SIDE OF THE IRON AIRPORT. ELEVATION: 85.43 FEET (NAVD 83).
- 2.) NO LOCATION OF EXISTING UNDERGROUND UTILITIES WAS PERFORMED FOR THIS MAP. ANY REQUEST FOR UTILITY LOCATIONS SHOULD BE MADE THROUGH LOUISIANA ONE-CALL, CONTACT LOUISIANA ONE-CALL AT 1-800-375-3000.
- 3.) NO ATTEMPT HAS BEEN MADE BY SJB GROUP, INC. TO VERIFY TITLE, ALIEN EASES, EASEMENTS, EASEMENTS, EASEMENTS, EASEMENTS AND OTHER BURDENS ON THE PROPERTY OTHER THAN THAT FURNISHED BY THE BUYER OR THE BUYER'S REPRESENTATIVE.

	8" HIGH CHAIN LINK FENCE
	THREE (3) TRAIL CLUSTER
	EDGE OF PAVEMENT
	CENTER OF PAVED ROAD
	EDGE OF GRAVEL
	UNDERGROUND ELECTRIC
	TOP BANK (OPEN DITCH)
	TOP BANK (OPEN DITCH)
	CENTER (OPEN DITCH)
	POWER POLE (W/4/11 WIRE)
	POWER VAULT
	UTILITY POLE
	POWER JUNCTION BOX
	TELEPHONE PEDestal
	GUY POLE
	TELEPHONE POLE
	ELECTRIC AND TELEPHONE POLE
	ORNAMENTAL LIGHT
	LIGHT POLE
	SIGN
	ELEVATION
	GAS SERVICE (100 FEET)
	BORERHOLE



VICINITY MAP
SCALE: 1"=2000'



GENERAL NOTES:

1.) THE ELEVATIONS SHOWN HEREON ARE BASED ON NGDS PUBLISHED BENCHMARK DESIGNATED "0 892 RESET" (PINK PLAKES) DESCRIBED AS A BENCH MARK SET BY THE MISSISSIPPI HIGHWAY DEPARTMENT. IT IS LOCATED 1.3 MILES SOUTH FROM THE INTERSECTION OF BLOUNT ROAD AND STATE HIGHWAY 87 (PINK ROAD). ABOUT 0.5 MILES FROM THE RYAN AIRPORT, GO SOUTH ON HIGHWAY 87 FOR 0.5 MILES TO THE BENCHMARK ON THE RIGHT, 66.5' WEST OF THE CENTERLINE OF THE SOUTH BOUND LANE. THE BENCHMARK LEANS ALONG THE NORTH SIDE OF THE HIGHWAY WHERE CURB BEGINS TO LEAN UP ALONG THE WEST SIDE OF THE HIGHWAY AND ON THE EAST SIDE OF THE RYAN AIRPORT. ELEVATION: 65.43 FEET (NAVD 82)

2.) NO LOCATION OF EXISTING UNDERGROUND UTILITIES WAS PERFORMED FOR THIS MAP. ANY REQUEST FOR UTILITY LOCATIONS SHOULD BE MADE THROUGH LOUISIANA ONE-CALL. CONTACT LOUISIANA ONE-CALL AT 1-800-368-5888.

2.) NO LOCATION OF EXISTING UNDERGROUND UTILITIES WAS PERFORMED FOR THIS MAP. ANY REQUEST FOR UTILITY LOCATIONS SHOULD BE MADE THROUGH LOUISIANA ONE-CALL. CONTACT LOUISIANA ONE-CALL AT 1-800-272-3020.

3.) NO ATTEMPT HAS BEEN MADE BY SJR GROUP, INC. TO VERIFY TITLE, ACTUAL LEGAL OWNERSHIP, SERVITUDES, EASEMENTS, RIGHTS-OF-WAY, OR OTHER BURDENS ON THE PROPERTY OTHER THAN THAT FURNISHED BY THE OWNER OR THE BUYER'S REPRESENTATIVE.

PLAT SHOWING THE TOPOGRAPHIC SURVEY
OF APRON "A"
BATON ROUGE METROPOLITAN AIRPORT
LOCATED IN SECTION 90, T6S-R1E
GREENSBURG LAND DISTRICT
PARISH OF EAST BATON ROUGE
STATE OF LOUISIANA

FOR
JUSTICE & HUANG



THIS PLAT REPRESENTS AN ACTUAL GROUND SURVEY MADE BY ME OR UNDER MY DIRECT SUPERVISION BUT DOES NOT REPRESENT A PROPERTY BOUNDARY SURVEY AND DOES NOT COMPLY WITH THE LOUISIANA "MINIMUM STANDARDS FOR PROPERTY BOUNDARY SURVEYS".

A. Shad Gilman 246.00

FIELD SURVEY COMPLETED: 9/27/90

TOPOGRAPHIC SURVEY
FOR
JUSTICE & HUANG ENGINEERS

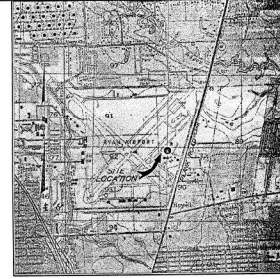
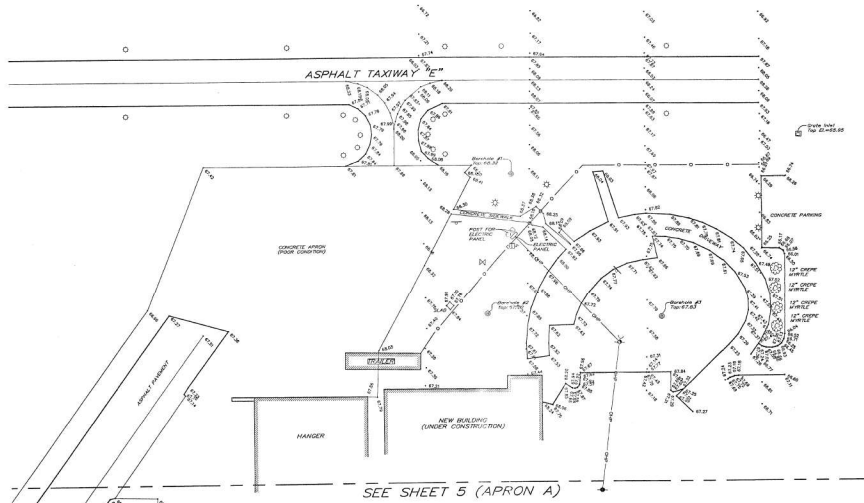
SJB GROUP

P.O. BOX 1751 • BAYON ROUGE, LA 70021 • (504) 769-2400 • FAX (504) 769-2096	
CAD ORIGINAL DO NOT MESSY 11/20/99 ALL DIMENSIONS MUST BE MADE TO THE GAS FILE ONLY (A) (B) (C) (D) (E) (F) (G) (H) (I) (J) (K) (L) (M) (N) (O) (P) (Q) (R) (S) (T) (U) (V) (W) (X) (Y) (Z)	DRAWING DATE 10/22/99 FIELD BOOK 99-11
DRAWN BY KJG CHECKED BY DKC	SCALE 1" SHEET 1

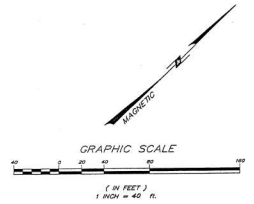
[illegible]

LEGEND

- 8" HIGH CHAIN LINK FENCE
- TREE / TREE CLUSTER
- EDGE OF PAVEMENT
- CENTER OF PAVED ROAD
- EDGE OF GRAVEL
- OVERHEAD ELECTRIC
- TOP BANK (OPEN DITCH)
- TOE BANK (OPEN DITCH)
- CENTER (OPEN DITCH)
- POWER POLE (OUTSIDE WIRE)
- POWER VAULT
- UTILITY POLE
- POWER JUNCTION BOX
- TELEPHONE PEDESTAL
- QUIET POLE
- TELEPHONE POLE
- ELECTRIC AND TELEPHONE POLE
- BLUE LIGHT
- LIGHT POLE
- SHED
- ELEVATION
- GAS SERVICE (NO METER)
- BORERHOLE



VICINITY MAP



PLAT SHOWING THE TOPOGRAPHIC SURVEY OF APRON "B" BATON ROUGE METROPOLITAN AIRPORT LOCATED IN SECTION 90, T6S-R1E GREENSBURG LAND DISTRICT PARISH OF EAST BATON ROUGE STATE OF LOUISIANA

FOR
JUSTICE & HUANG



THIS PLAT REPRESENTS AN ACTUAL GROUND SURVEY MADE BY ME OR UNDER MY DIRECT SUPERVISION BUT DOES NOT REPRESENT A PROPERTY BOUNDARY SURVEY AND DOES NOT COMPLY WITH THE LOUISIANA MINIMUM STANDARDS FOR PROPERTY BOUNDARY SURVEYS.

FIELD SURVEY COMPLETED: 9/27/99
TOPOGRAPHIC SURVEY
FOR
JUSTICE & HUANG ENGINEERS

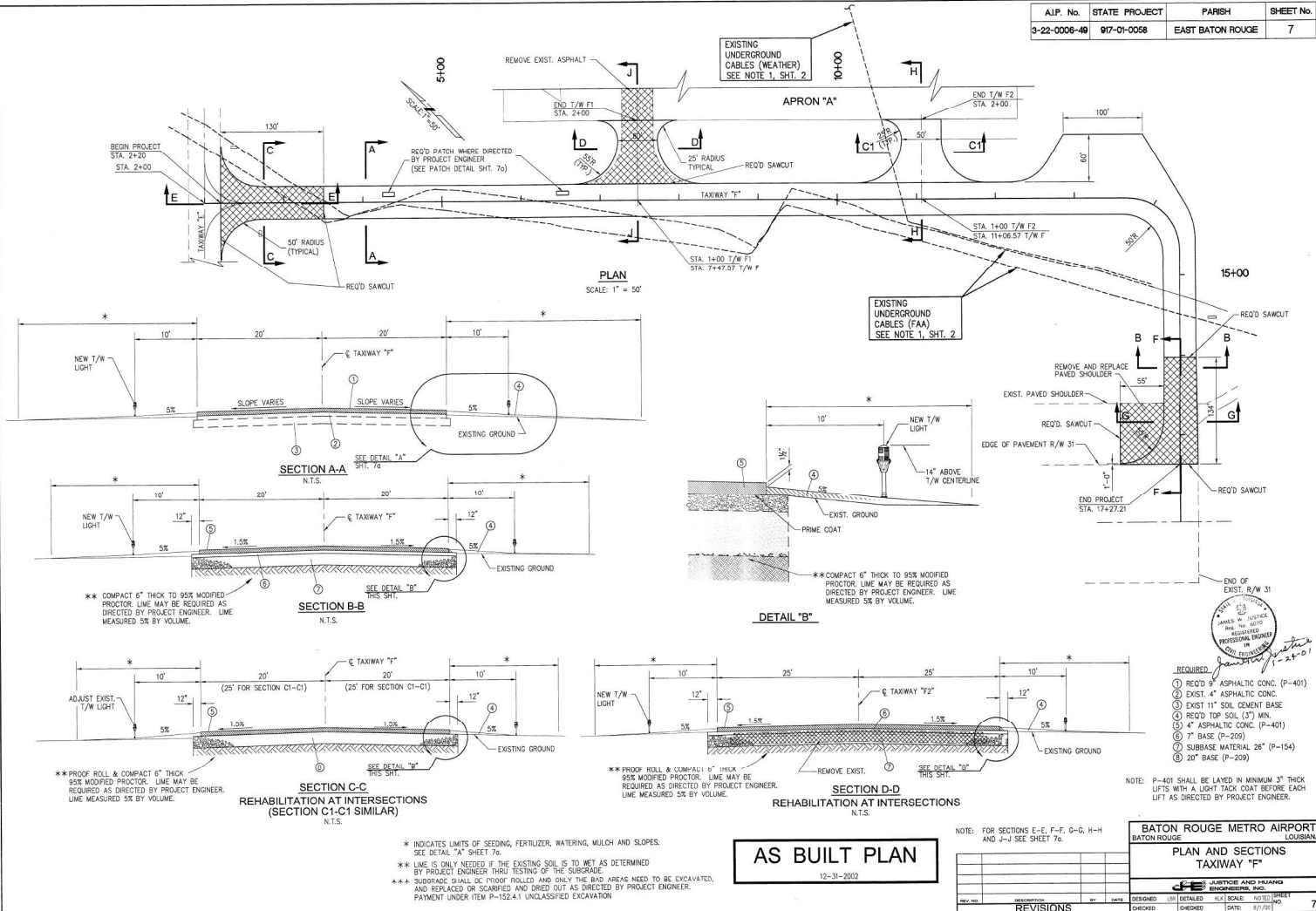
SJB GROUP INCORPORATED	
CAD ORIGINAL	10/18/99 KUG
NO NOT REPLY	10/18/99
FILED 10/18/99	10/18/99
10/18/99	10/18/99
10/18/99	10/18/99

NO.	DATE	REVISIONS	BY
1	08/02/00	REVISED ELEVATION TEXT HEIGHT	JMB

GENERAL NOTES

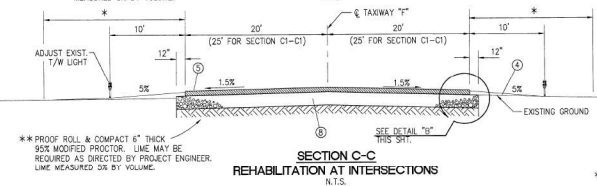
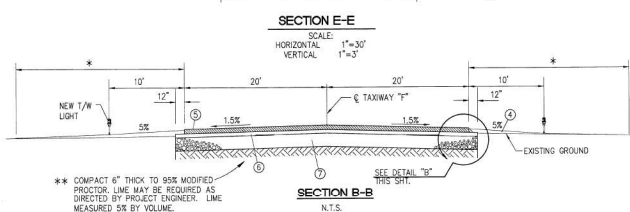
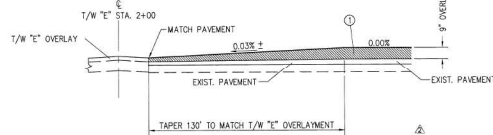
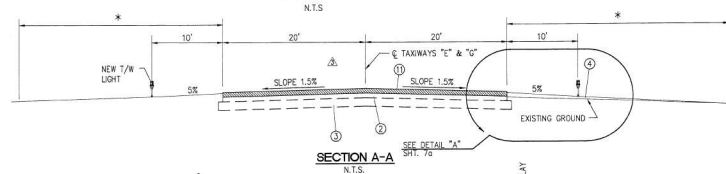
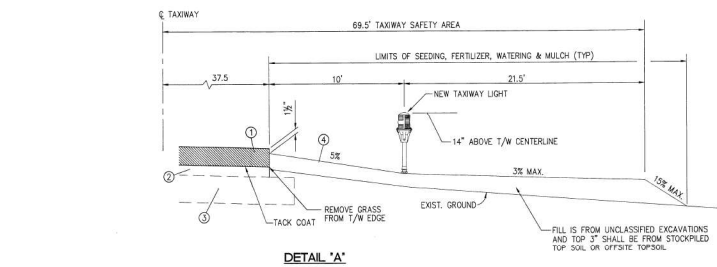
- 1) THE ELEVATIONS SHOWN HEREIN ARE BASED ON THE PUBLISHED BENCHMARK DESIGNATED TO BE 202.00 FEET (202.00) DESIGNATED AS A BENCHMARK DOES NOT SET IN TOP OF ROUND CONCRETE SUPPORT. IT IS LOCATED 1.1 MILES SOUTH FROM THE INTERSECTION OF BLOUNT ROAD AND SOUTH ON HIGHWAY 47 FOR 0.3 MILES TO THE BENCHMARK OF THE RIGHT, 66.5' WEST OF THE CENTERLINE OF THE SOUTH BOUND LANE OF THE HIGHWAY, 1.1' WEST OF THE NORTH END OF CURB WIRE, CURB BEING TO LEAD SOUTH ALONG THE WEST SIDE OF THE HIGHWAY AND ON THE EAST SIDE OF THE RYAN AIRPORT. ELEVATION: 85.43 FEET (NAVD 83)
- 2) NO LOCATION OF EXISTING UNDERGROUND UTILITIES WAS PERFORMED FOR THIS MAP. ANY REQUEST FOR UTILITY LOCATIONS SHOULD BE MADE THROUGH LOUISIANA ONE-CALL. CONTACT LOUISIANA ONE-CALL AT 1-800-375-3300.
- 3) NO ATTEMPT HAS BEEN MADE BY SJB GROUP, INC. TO VERIFY TITLE, ACTUAL LEGAL BOUNDARIES, EASEMENTS, RIGHTS-OF-WAY OR OTHER BURDENS ON THE PROPERTY OTHER THAN THAT FURNISHED BY THE BUYER OR THE BUYER'S REPRESENTATIVE.

A.P. No.	STATE PROJECT	PARISH	SHEET No.
3-22-0006-49	9/7-01-0058	EAST BATON ROUGE	7

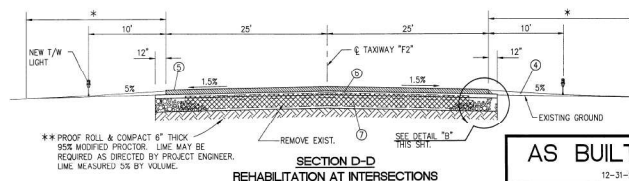
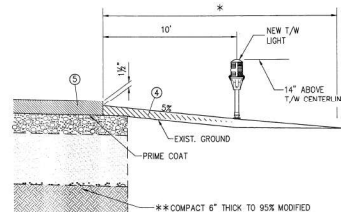
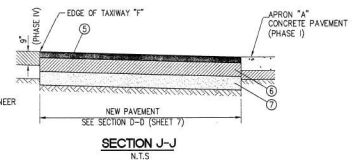
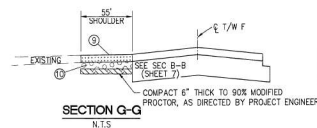
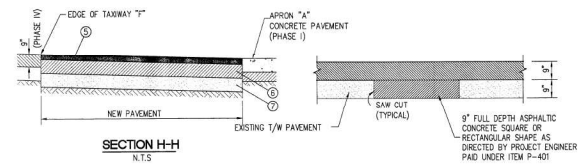


DATE: 12-31-2002
BY: J. L. BROWN
CHECKED: J. L. BROWN
SCALE: 1"=50'

AJP. No.	STATE PROJECT	PARISH	SHEET No.
3-22-0008-49	917-01-0058	EAST BATON ROUGE	7a



* INDICATES LIMITS OF SEEDING, FERTILIZER, WATERING, MULCH AND SLOPES.
SEE DETAIL "A" SHEET 76.
** LIME IS ONLY NEEDED IF THE EXISTING SOIL IS TO BE DETERMINED
BY PROJECT ENGINEER (P-401) "P-401" SUBGRADE.
*** SUBGRADE SHALL BE PROOF ROLLED AND ONLY THE BAD AREAS NEED TO BE EXCAVATED,
AND REPLACED OR SCARIFIED AND DRIED OUT AS DIRECTED BY PROJECT ENGINEER.
PAYMENT UNDER ITEM P-152 & 1 UNCLASSIFIED EXCAVATION.



NOTE: 1. MULCH SHALL BE REQUIRED ON ALL SLOPES 5% OR GREATER.
2. WATERING IS NOT A PAY ITEM BUT IS INCLUDED IN SEEDING COSTS.
DURING DRY CONDITIONS WATER MUST BE USED EVERY DAY TO
OBTAIN A GOOD STAND OF GRASS.

REQUIRED

- (1) RETO 9" ASPHALTIC CONC. (P-401)
- (2) EXIST. 4" ASPHALTIC CONC.
- (3) EXIST. 11" SOIL CEMENT BASE
- (4) RETO TOP SOIL
- (5) 4" ASPHALTIC CONC. (P-401)
- (6) 7" BASE (P-209)
- (7) SUBBASE MATERIAL 26" P-154
- (8) 20" BASE (P-209)
- (9) 2" ASPHALTIC CONCRETE (P-401)
- (10) 8" BASE (P-209)
- (11) 3" ASPHALTIC CONCRETE (P-401)
- 2" WEARING COURSE WITH LEVELING
COURSE (TAXIWAYS "E" & "F")

NOTE: P-401 SHALL BE LAYED IN MAXIMUM 3" THICK
LIFTS WITH A LIGHT TACK COAT BEFORE EACH
NOTE: FOR LOCATION OF SECTIONS SEE SHEET 7.

AS BUILT PLAN

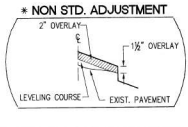
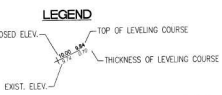
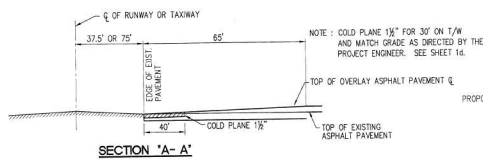
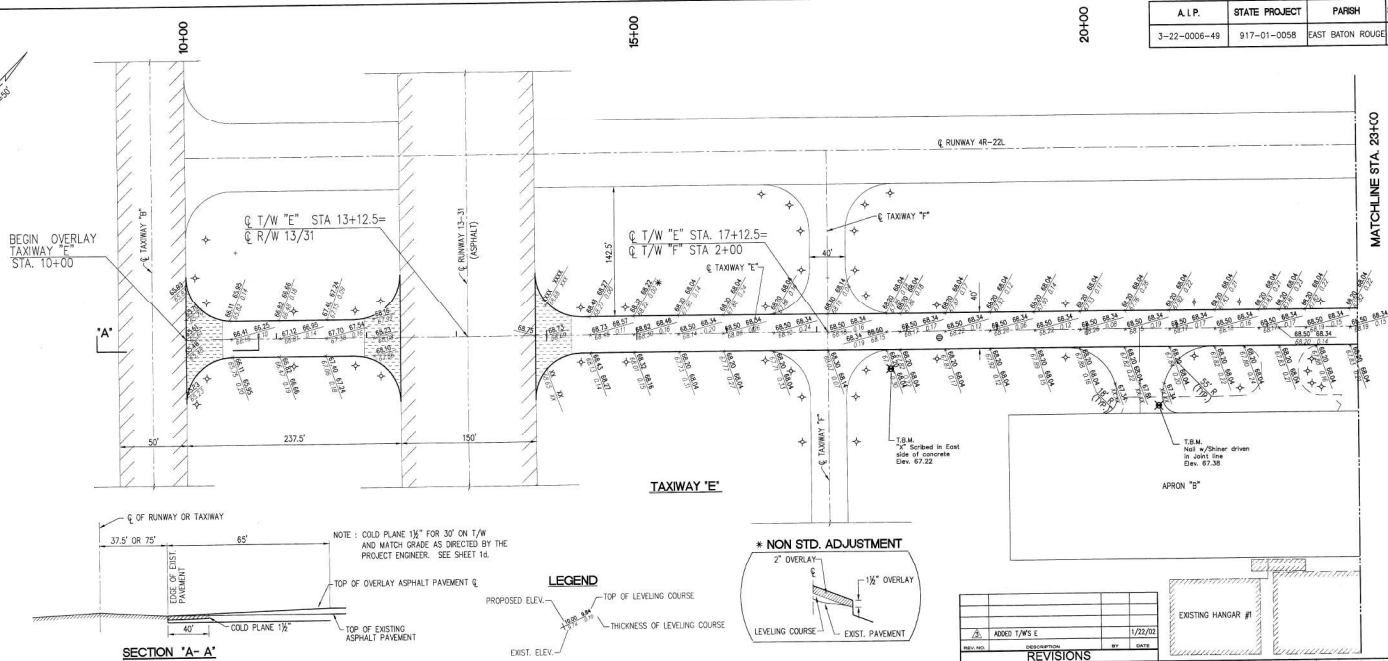
12-31-2002

BATON ROUGE METRO AIRPORT
BATON ROUGE, LOUISIANA

SECTIONS AND DETAILS

NO.	DESCRIPTION	BY	DATE	DESIGNED	CHECKED	DATE	SCALE	NOTES	SHEET
1	SEE REVISED SHT. TO INCLUDE: LBR 1/22/02								7a
2	REFERENCE TO SECTION C-C								
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97	DELETED								
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99	DELETED								
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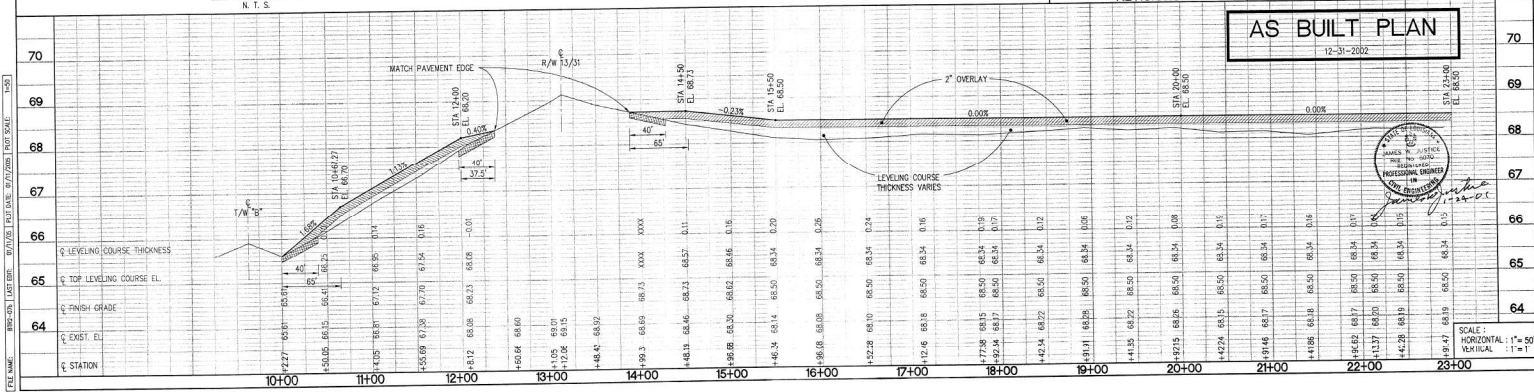
A.I.P.	STATE PROJECT	PARISH	SHEET No.
3-22-0006-49	917-01-0058	EAST BATON ROUGE	7b



NO.	DESCRIPTION	DATE
1	ADDED TAWS E	1/22/02



AS BUILT PLAN
12-31-2002



DATE: 12/22/02
BY: J. L. BRYAN
CHECKED: J. L. BRYAN
SCALE: 1" = 50'

SCALE: 1" = 50'
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 1'

23+00 25+00 30+00 35+00

23+00 MATCHLINE STA 23+00

APRON "B"

Brick Building

142.5'

€ TAXIWAY "E"

€ TAXIWAY "F"

€ TAXIWAY "G"

€ T/W "E" STA. 32+92.42

€ T/W "G" STA 19+00

*** NON STD. ADJUSTMENT**

2" OVERLAY

1 1/2" OVERLAY

LEVELING COURSE

EXIST. PAVEMENT

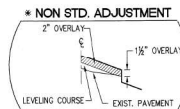
LEGEND

PROPOSED ELEV. ———

TOP OF LEVELING COURSE

THICKNESS OF LEVELING COURSE

EXIST. ELEV. ———



Profile view of the proposed 12' wide concrete curb and gutter on the north side of the existing 24' wide concrete curb and gutter. The profile shows the existing ground line, the existing curb and gutter, and the proposed curb and gutter. The proposed curb and gutter is 12' wide and 12' high. The profile includes stationing from 23+00 to 36+00, elevations from 64 to 70, and various labels for existing and proposed features.

STATION	EXIST. ELEV.	FINISH GRADE ELEV.	TOP OF LEVELING COURSE	LEVELING COURSE THICKNESS
23+00	64.23	68.50	68.50	0.18
24+00	64.24	68.50	68.50	0.18
25+00	64.23	68.50	68.50	0.18
26+00	64.23	68.50	68.50	0.18
27+00	64.23	68.50	68.50	0.18
28+00	64.23	68.50	68.50	0.18
29+00	64.23	68.50	68.50	0.18
30+00	64.23	68.50	68.50	0.18
31+00	64.23	68.50	68.50	0.18
32+00	64.23	68.50	68.50	0.18
33+00	64.23	68.50	68.50	0.18
34+00	64.23	68.50	68.50	0.18
35+00	64.23	68.50	68.50	0.18
36+00	64.23	68.50	68.50	0.18

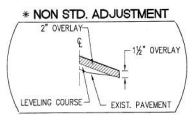
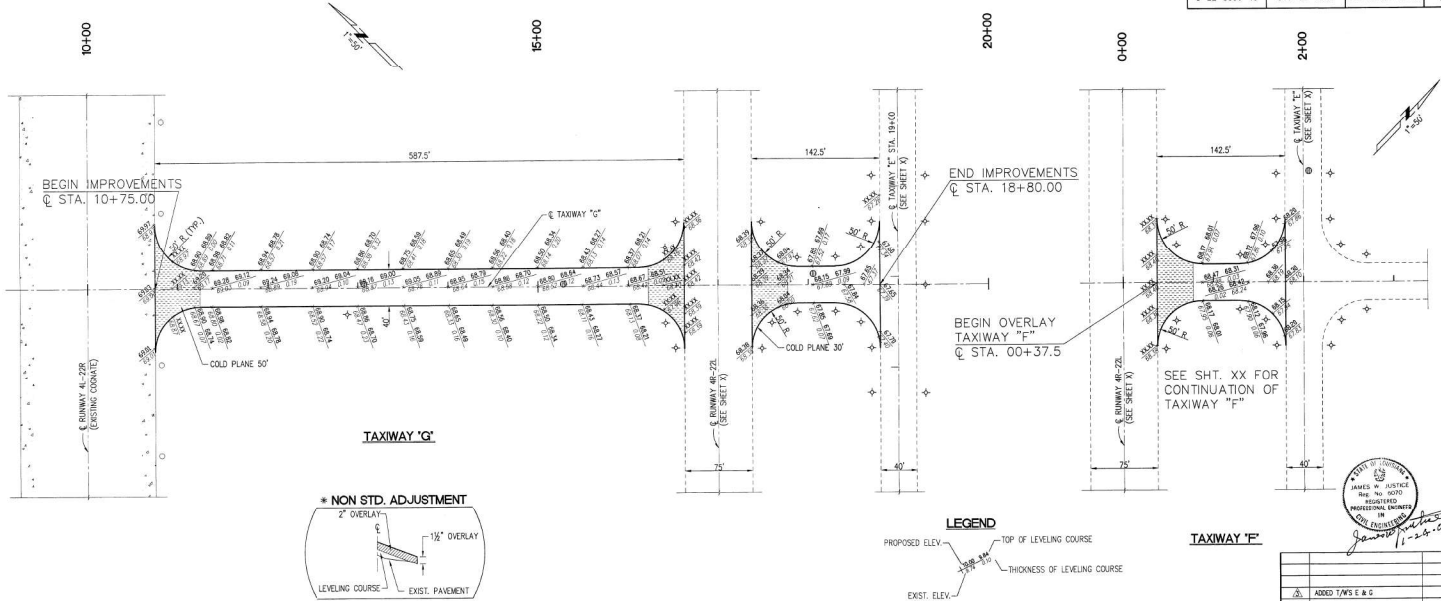
12-31-2002



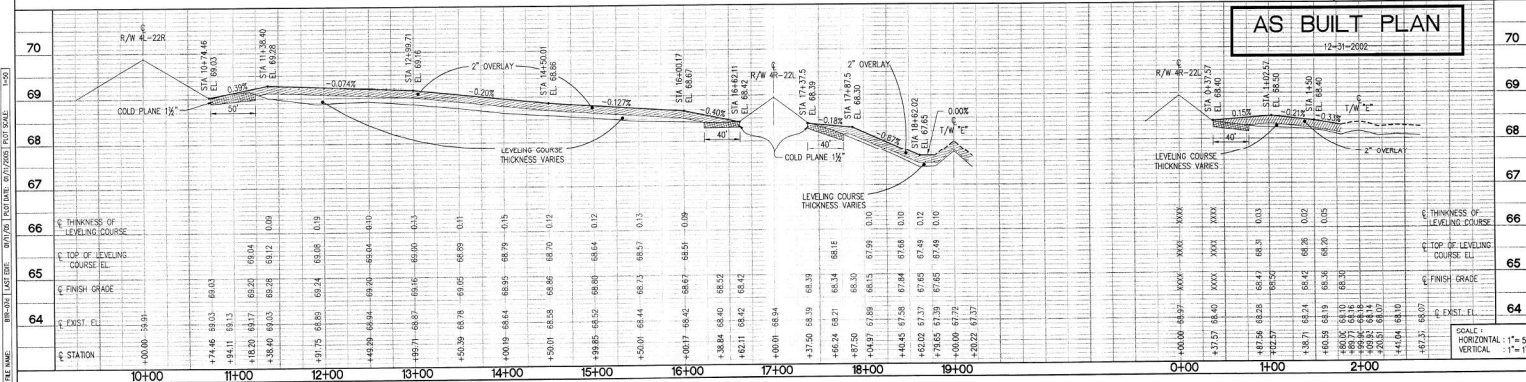
LEVELING COURSE THICKNESS	
TOP OF LEVELING COURSE EL.	
FINISH GRADE EL.	
EXIST. EL.	
STATION	SCALE HORIZ. VERT.

SCALE :
HORIZONTAL : 1" = 5'
VERTICAL : 1" = 1'

A.I.P.	STATE PROJECT	PARISH	SHEET No.
3-22-0006-49	917-01-0058	EAST BATON ROUGE	7d

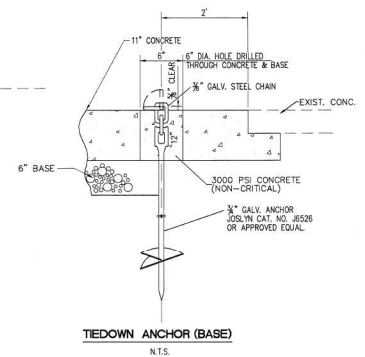
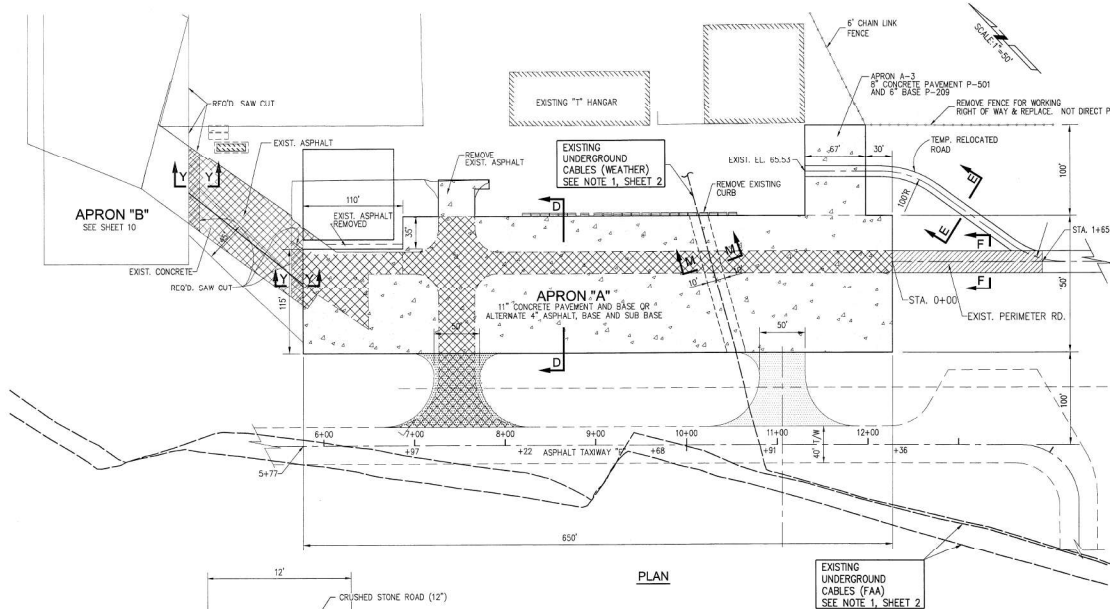


REV.	DESCRIPTION	DATE
1	ADDED T/W'S E & F	1/22/03

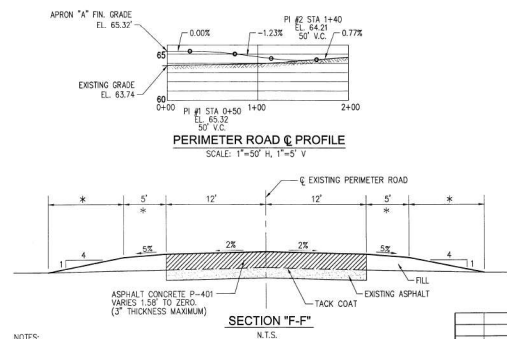
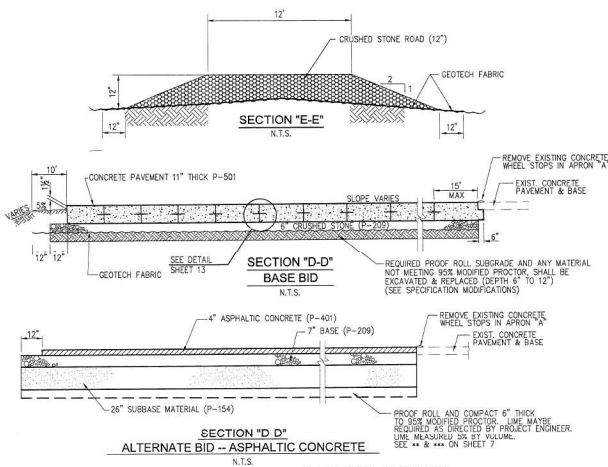


STATION	EXIST. ELEV.	TOP OF LEVELING COURSE	FINISH GRADE
10+00	68.00	68.00	68.00
11+00	68.11	68.11	68.11
12+00	68.22	68.22	68.22
13+00	68.33	68.33	68.33
14+00	68.44	68.44	68.44
15+00	68.55	68.55	68.55
16+00	68.66	68.66	68.66
17+00	68.77	68.77	68.77
18+00	68.88	68.88	68.88
19+00	68.99	68.99	68.99
20+00	69.10	69.10	69.10
21+00	69.21	69.21	69.21
22+00	69.32	69.32	69.32
23+00	69.43	69.43	69.43
24+00	69.54	69.54	69.54

A.I.P. No.	STATE PROJECT	PARISH	SHEET No.
3-22-0006-40	917-01-0058	EAST BATON ROUGE	8



AS BUILT PLAN



- NOTES:
1. SEE MARKING PLAN FOR TIE DOWN LOCATIONS
 2. SEE SHT. 12 FOR JOINT LAYOUT
 3. * INDICATES LIMITS OF SEEDING FERTILIZER AND MULCH

REVISIONS	DESIGNED	DATE	CHECKED	DATE

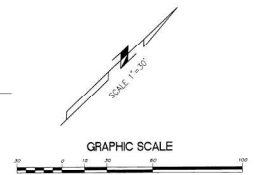
BATON ROUGE METRO AIRPORT
BATON ROUGE, LOUISIANA

PLAN AND SECTIONS
APRON 'A'

J. E. JUSTICE AND ASSOCIATES, INC.
REGISTERED PROFESSIONAL ENGINEER
NO. 10070
DATE: 05/21/2008

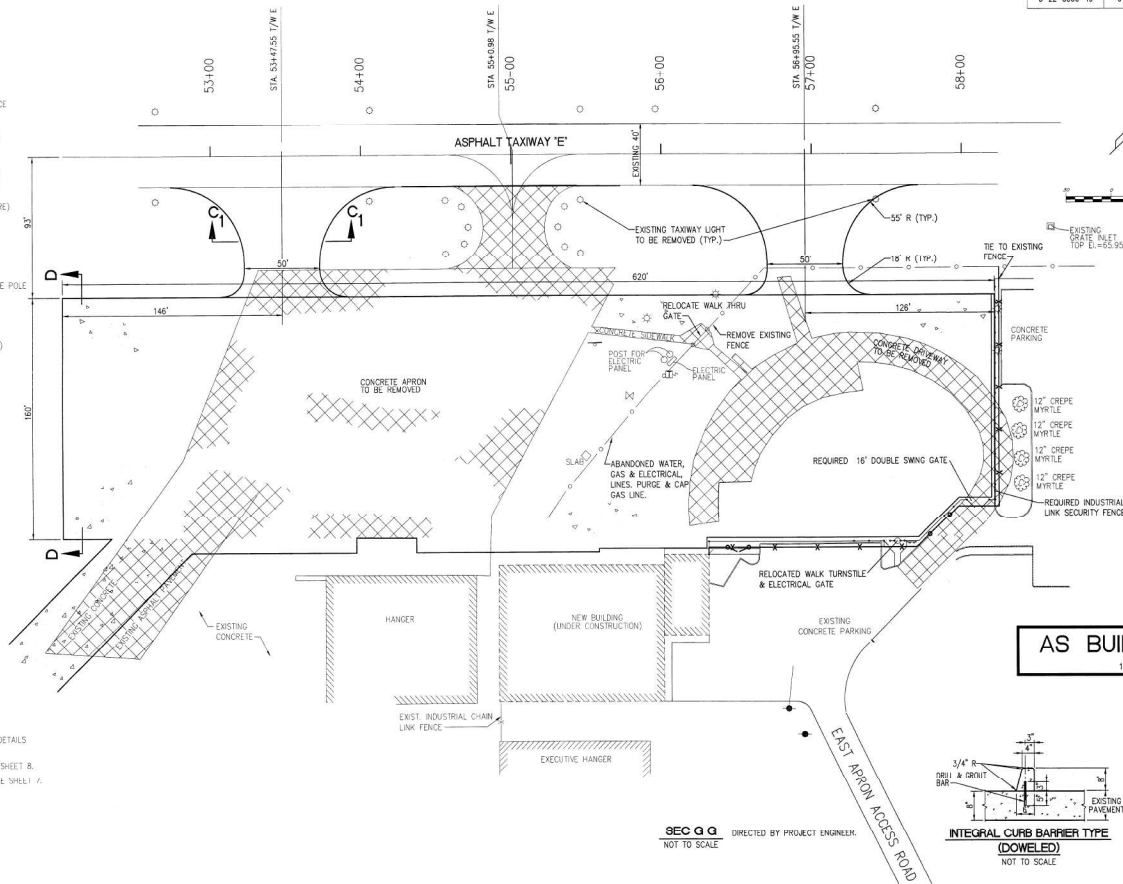
8

A.I.P. NO.	STATE PROJECT	PARISH	SHEET NO.
3-22-0008-49	917-01-0058	EAST BATON ROUGE	9



LEGEND

- 8" HIGH CHAIN LINK FENCE
- TREE / TREE CLUSTER
- EDGE OF PAVEMENT
- CENTER OF PAVED ROAD
- EDGE OF GRAVEL
- OVERHEAD ELECTRIC
- TOP BANK (OPEN DITCH)
- TOE BANK (OPEN DITCH)
- CENTER (OPEN DITCH)
- POWER POLE (W/GUY WIRE)
- POWER VAULT
- UTILITY POLE
- POWER JUNCTION BOX
- TELEPHONE PEDestal
- GUY POLE
- TELEPHONE POLE
- ELECTRIC AND TELEPHONE POLE
- BLUE LIGHT
- LIGHT POLE
- SIGN
- ELEVATION
- GAS SERVICE (NO METER)
- BORHOLE
- EXISTING SURFACE AND BASE TO BE REMOVED



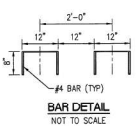
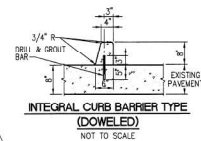
NOTES

1. FOR GRADES AND JOINT DETAILS SEE SHEET 13.
2. FOR SECTION "D-D" SEE SHEET 8.
3. FOR SECTION "C-C" SEE SHEET 11.

SEC G G DIRECTED BY PROJECT ENGINEER
NOT TO SCALE

AS BUILT PLAN

12-31-2002



BATON ROUGE METRO AIRPORT

PLAN APRON 'B'

Hartman Engineering, Inc.

REVISIONS	DESIGNED	SCALE	NOTES	CHECKED
1				
2				
3				
4				
5				
6				
7				
8				
9				

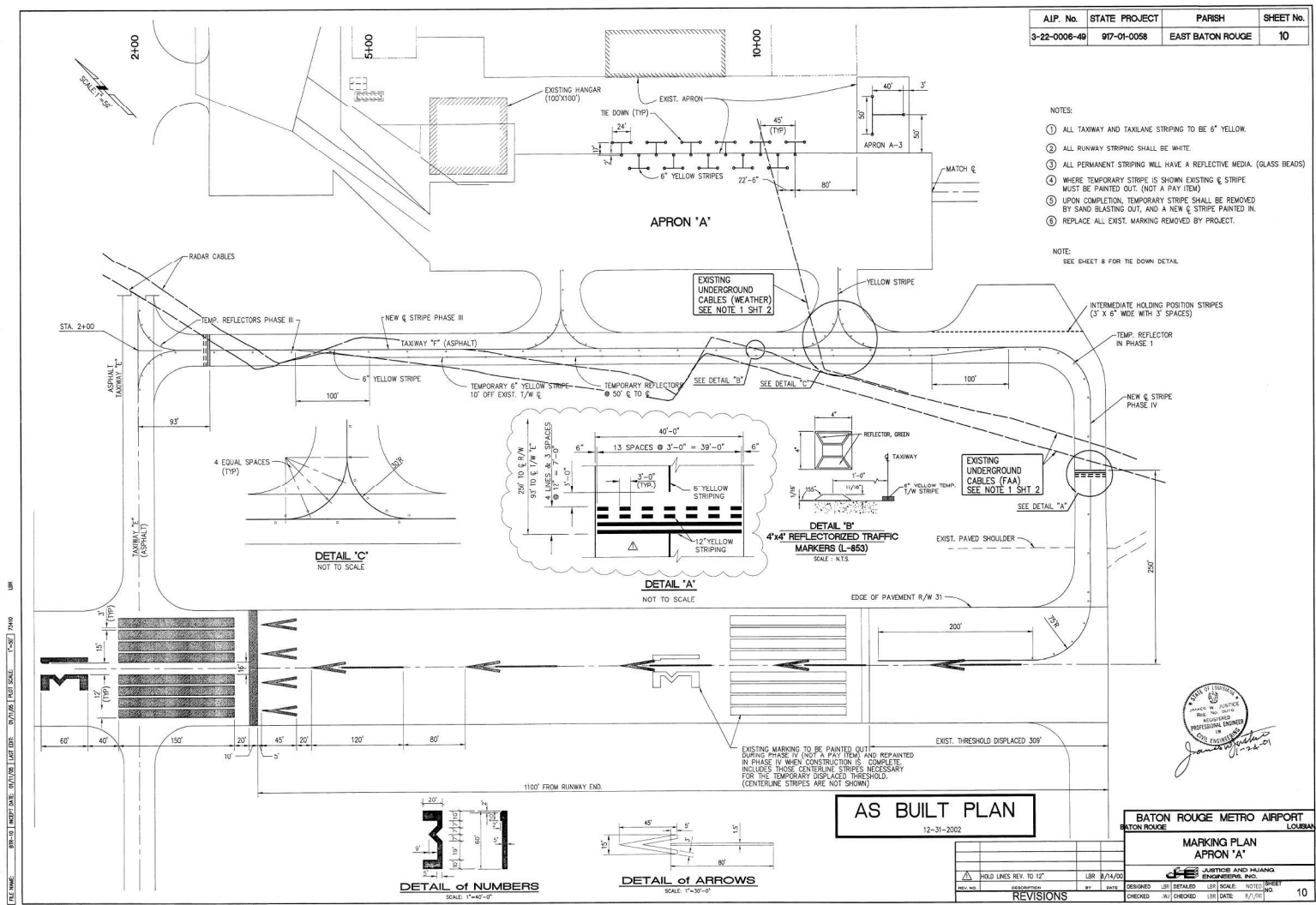
AIP No.	STATE PROJECT	PARISH	SHEET No.
3-22-0006-49	907-01-0058	EAST BATON ROUGE	10

NOTES:

- 1 ALL TAXIWAY AND TAXILANE STRIPING TO BE 6" YELLOW.
- 2 ALL RUNWAY STRIPING SHALL BE WHITE.
- 3 ALL PERMANENT STRIPING WILL HAVE A REFLECTIVE MEDIA (GLASS BEADS).
- 4 WHERE TEMPORARY STRIPING IS SHOWN EXISTING & STRIPES MUST BE PAINTED OUT. (NOT A PAY ITEM).
- 5 UPON COMPLETION, TEMPORARY STRIPING SHALL BE REMOVED BY SAND BLASTING OUT, AND A NEW & STRIPE PAINTED IN.
- 6 REPLACE ALL EXIST. MARKING REMOVED BY PROJECT.

NOTE:

SEE SHEET # FOR THE DOWN DETAIL.

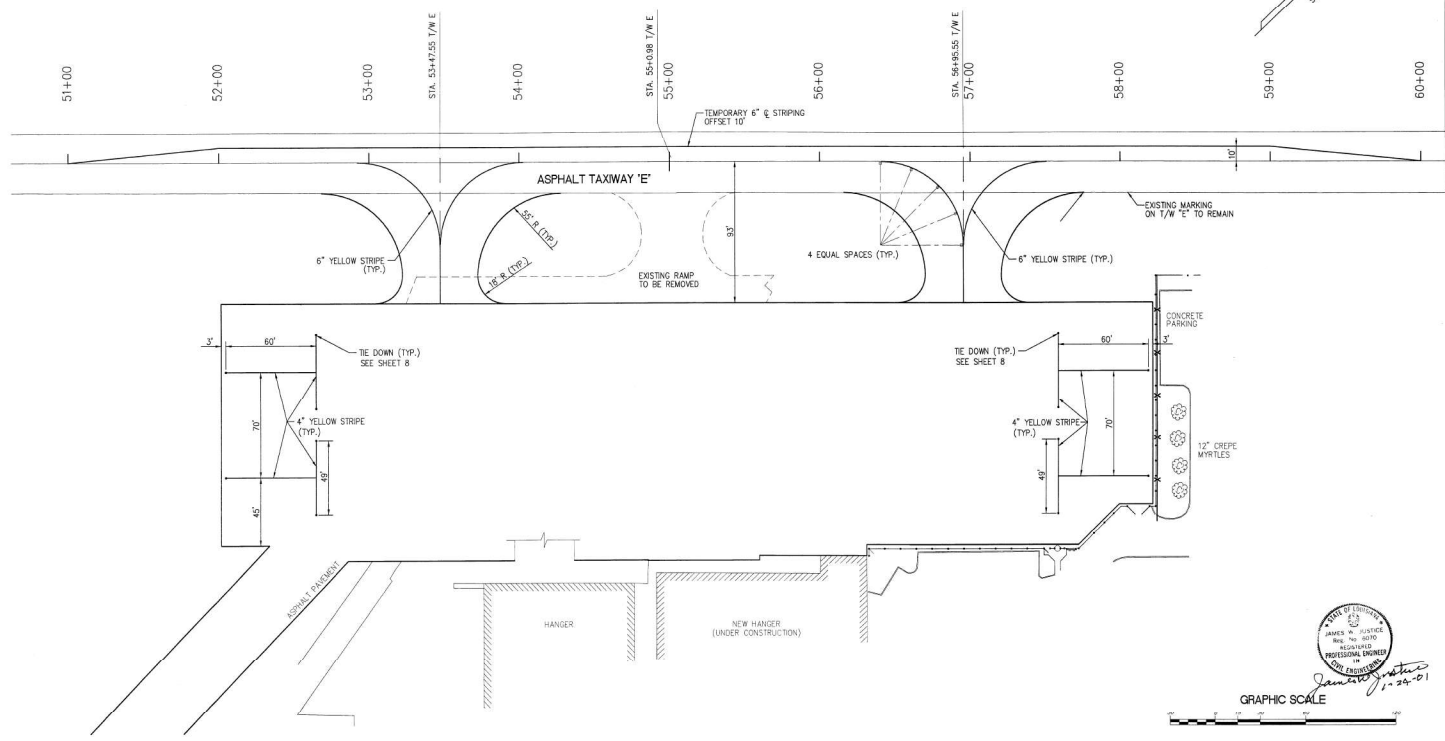
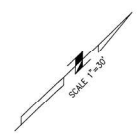


AS BUILT PLAN
12-31-2002

BATON ROUGE METRO AIRPORT	
MARKING PLAN APRON 'A'	
DESIGNED BY	JUSTICE AND HARRIS ENGINEERING, INC.
CHECKED BY	DATE
NOTED BY	DATE
10	

DATE: 08-23-02
BY: JAH
CHECKED: JAH
DATE: 07/10/02
SCALE: 1\"/>

A.I.P. NO.	STATE PROJECT	PARISH	SHEET NO.
3-22-0008-49	917-01-0058	EAST BATON ROUGE	11



AS BUILT PLAN
12-31-2002

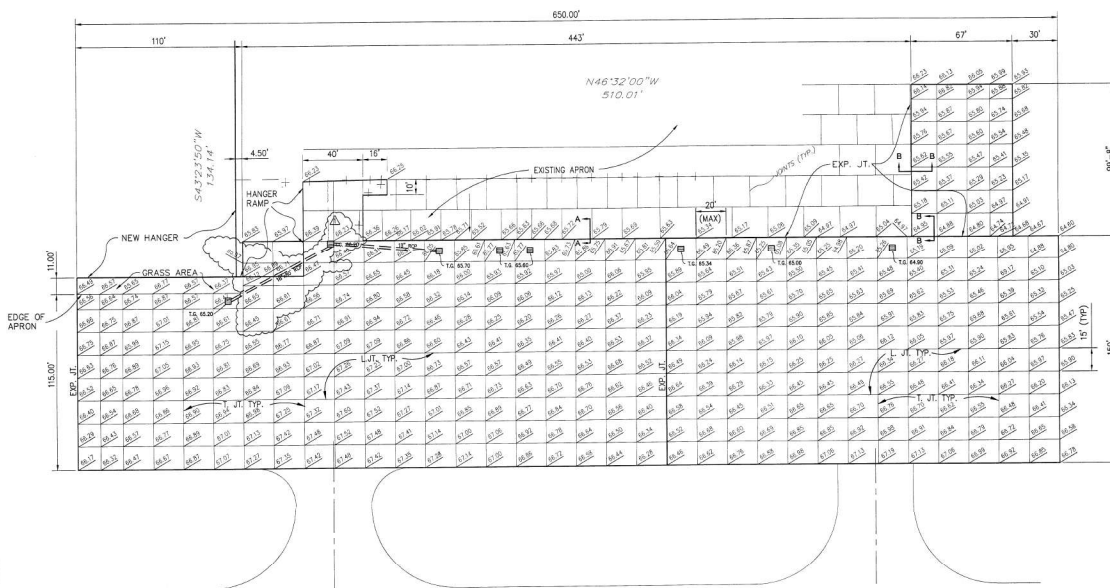
GRAPHIC SCALE

APRON 'B'			
BATON ROUGE METRO AIRPORT			
MARKING PLAN			
Hartman Engineering, Inc.			
DESIGNED	DATE	SCALE	SHEET NO.
CHECKED	CHECKED	DATE	11

REV. NO.	DESCRIPTION	DATE

TITLE NAME: BR-11-0002 LAST EDITED: 01-11-05 PLOT SCALE: 1"=50'

A.I.P. No.	STATE PROJECT	PARISH	SHEET No.
3-22-0006-49	917-01-0058	EAST BATON ROUGE	12



NOTE:
1. SEE SHT. 13 FOR TRANSVERSE JOINT, LONGITUDINAL CONSTRUCTION JOINT, EXPANSION JOINT AND CONTRACTION JOINT. ADD SECTIONS A-A AND B-B.

AS BUILT PLAN
12-31-2012

APRON "A"
BATON ROUGE METRO AIRPORT
BATON ROUGE, LOUISIANA

JOINT LAYOUT/ELEVATION

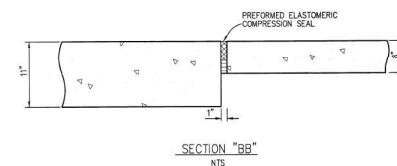
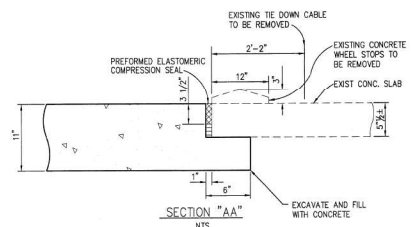
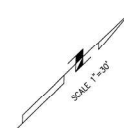
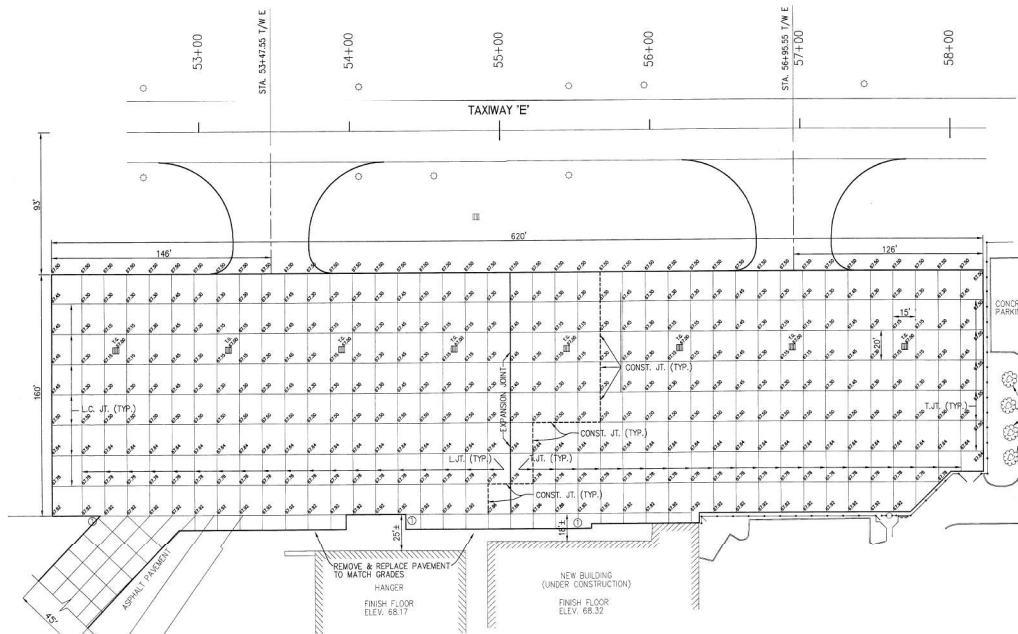
REVISIONS				DESIGNED				CHECKED			
NO.	DESCRIPTION	DATE	BY	DATE	BY	DATE	BY	DATE	BY	DATE	BY
1	Rev. Joint Cuts & Moved C.B.s	12/31/12	J.S.	12/27/12							



JOSEPHINE JAMES W. JONES
JAMES W. JONES
10707
MECHANICAL ENGINEERING
LOUISIANA
12-31-2012

12-31-2012 11:58:11 AM 12/31/12 11:58:11 AM 12/31/12 11:58:11 AM 12/31/12 11:58:11 AM

	A.I.P. NO.	STATE PROJECT	PARISH	SHEET NO.
	3-22-0006-49	917-01-0058	EAST BATON ROUGE	13



NOTE: P.C. CONCRETE PAVEMENT
TO BE P-501

AS BUILT PLAN

12-31-2002



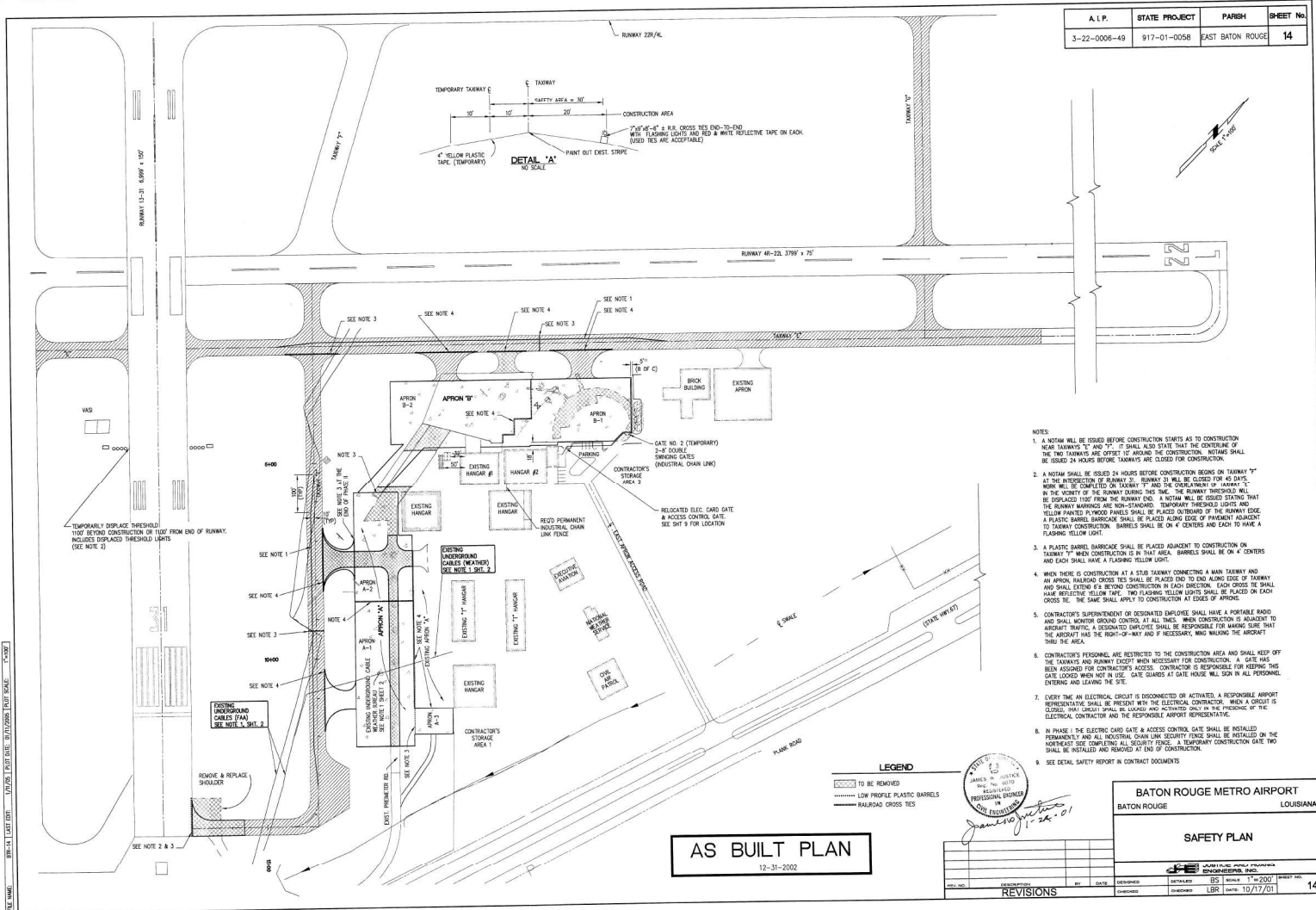
Baton Rouge Metro Airport



				JOINT LAYOUT/ ELEVATION			
①	REV. GRADES, R & R CONC.		DOB	9/20/01			
	AT HANGERS, SHOW SECTION						
	"Y=Y"						
				Hartman Engineering, Inc.			
REV. NO.	DESCRIPTION	BY	DATE	DESIGNED	DETAILED	SCALE: NOTED	SHEET NO.
				CHECKED	CHECKED	DATE: 09/01/01	13

FILE NAME : BTR-13.DWG	LAST EDITED : 01-11-05	PLOT SCALE : 1"=30'
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A. I. P.	STATE PROJECT	PARISH	SHEET No.
3-22-0006-49	917-01-0058	EAST BATON ROUGE	14

[illegible]

LEGEND

TO BE REMOVED
LOW PROFILE PLASTIC BARRELS
RAILROAD CROSS TIES

AS BUILT PLAN

12-31-2002

Baton Rouge Metro Airport
Baton Rouge Louisiana

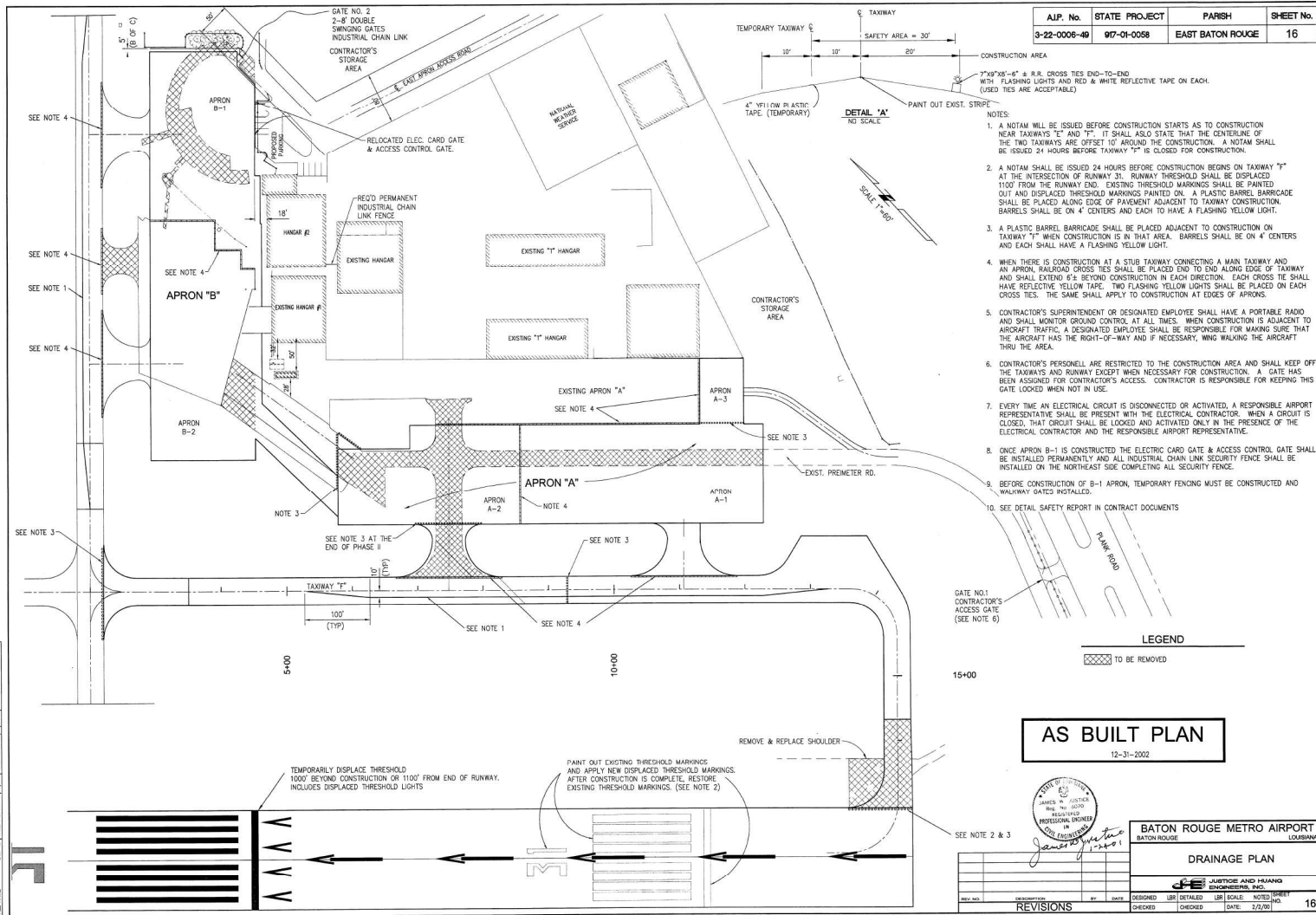
SAFETY PLAN

 JUSTICE AND PEACE
OFFICE OF THE ATTORNEY GENERAL
STATE OF NEW YORK
100 NASSAU ST., 10TH FLOOR
NEW YORK, NY 10038
TEL: (212) 312-1300
FAX: (212) 312-1301
WWW.JUSTICEANDPEACE.NY.GOV

				 JUSTIFIED RISK ENGINEERS, INC.			
REVISIONS				DESIGNED BS SCALE 1" = 200'			
DESCRIPTION				DATE 10/17/01			
BY				CHECKED LBR			
DATE				DATE			

DESCRIPTION	REVISIONS
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FILE NAME: 00-211001.DWG DATE: 07/07/00 LATE DATE: 07/07/00 DATE SCALE: 1"=40'



A.P. No.	STATE PROJECT	PARISH	SHEET No.
3-22-0006-40	917-01-0058	EAST BATON ROUGE	16

- NOTES:
1. A NOTAM WILL BE ISSUED BEFORE CONSTRUCTION STARTS AS TO CONSTRUCTION NEAR TAXIWAYS "E" AND "F". IT SHALL ALSO STATE THAT THE CENTERLINE OF THE TWO TAXIWAYS ARE OFFSET 10' AROUND THE CONSTRUCTION. A NOTAM SHALL BE ISSUED 24 HOURS BEFORE TAXIWAY "F" IS CLOSED FOR CONSTRUCTION.
 2. A NOTAM SHALL BE ISSUED 24 HOURS BEFORE CONSTRUCTION BEGINS ON TAXIWAY "F" AT THE INTERSECTION OF RUNWAY 31. RUNWAY THRESHOLD SHALL BE DISPLACED 1100' FROM THE RUNWAY END. EXISTING THRESHOLD MARKINGS SHALL BE PAINTED OUT AND DISPLACED THRESHOLD MARKINGS PAINTED ON. A PLASTIC BARREL BARRICADE SHALL BE PLACED ALONG EDGE OF PAVEMENT ADJACENT TO TAXIWAY CONSTRUCTION. BARRELS SHALL BE ON 4' CENTERS AND EACH TO HAVE A FLASHING YELLOW LIGHT.
 3. A PLASTIC BARREL BARRICADE SHALL BE PLACED ADJACENT TO CONSTRUCTION ON TAXIWAY "F" WHEN CONSTRUCTION IS IN THAT AREA. BARRELS SHALL BE ON 4' CENTERS AND EACH SHALL HAVE A FLASHING YELLOW LIGHT.
 4. WHEN THERE IS CONSTRUCTION AT A STUB TAXIWAY CONNECTING A MAIN TAXIWAY AND AN APRON, RAILROAD CROSS TIES SHALL BE PLACED END TO END ALONG EDGE OF TAXIWAY AND SHALL EXTEND 15' BEYOND CONSTRUCTION IN EACH DIRECTION. EACH CROSS TIE SHALL HAVE REFLECTIVE YELLOW TAPE. TWO FLASHING YELLOW LIGHTS SHALL BE PLACED ON EACH CROSS TIE. THE SAME SHALL APPLY TO CONSTRUCTION AT EDGES OF APRONS.
 5. CONTRACTOR'S SUPERINTENDENT OR DESIGNATED EMPLOYEE SHALL HAVE A PORTABLE RADIO AND SHALL MONITOR GROUND CONTROL AT ALL TIMES. WHEN CONSTRUCTION IS ADJACENT TO AIRCRAFT TRAFFIC, A DESIGNATED EMPLOYEE SHALL BE RESPONSIBLE FOR MAKING SURE THAT THE AIRCRAFT HAS THE RIGHT-OF-WAY AND IF NECESSARY, WING WALKING THE AIRCRAFT THRU THE AREA.
 6. CONTRACTOR'S PERSONNEL ARE RESTRICTED TO THE CONSTRUCTION AREA AND SHALL KEEP OFF THE TAXIWAYS AND RUNWAY EXCEPT WHEN NECESSARY FOR CONSTRUCTION. A GATE HAS BEEN ASSIGNED FOR CONTRACTOR'S ACCESS. CONTRACTOR IS RESPONSIBLE FOR KEEPING THIS GATE LOCKED WHEN NOT IN USE.
 7. EVERY TIME AN ELECTRICAL CIRCUIT IS DISCONNECTED OR ACTIVATED, A RESPONSIBLE AIRPORT REPRESENTATIVE SHALL BE PRESENT WITH THE ELECTRICAL CONTRACTOR. WHEN A CIRCUIT IS CLOSED, THAT CIRCUIT SHALL BE LOOKED AND ACTIVATED ONLY IN THE PRESENCE OF THE ELECTRICAL CONTRACTOR AND THE RESPONSIBLE AIRPORT REPRESENTATIVE.
 8. ONCE APRON B-1 IS CONSTRUCTED THE ELECTRIC CARO GATE & ACCESS CONTROL GATE SHALL BE INSTALLED PERMANENTLY AND ALL INDUSTRIAL CHAIN LINK SECURITY FENCE SHALL BE INSTALLED ON THE NORTHEAST SIDE COMPLETING ALL SECURITY FENCE.
 9. BEFORE CONSTRUCTION OF B-1 APRON, TEMPORARY FENCING MUST BE CONSTRUCTED AND WALKWAY GATES INSTALLED.
 10. SEE DETAIL SAFETY REPORT IN CONTRACT DOCUMENTS

LEGEND

TO BE REMOVED



15+00

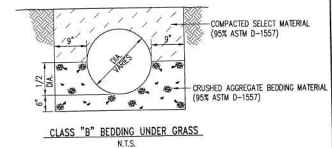
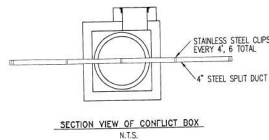


BATON ROUGE METRO AIRPORT

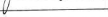
DRAINAGE PLAN


**JUSTICE AND HUANG
ENGINEERS, INC.**

				DRAINAGE PLAN  JUSTICE AND HUANG ENGINEERS, INC.								
REV. NO.	DESCRIPTION			BY	DATE	DESIGNED	LRR	DETAILED	WOB	SCALE:	NOTED	SHEET NO.
REVISIONS						CHECKED		CHECKED		DATE: 05/31/2000		17



AS BUILT PLAN

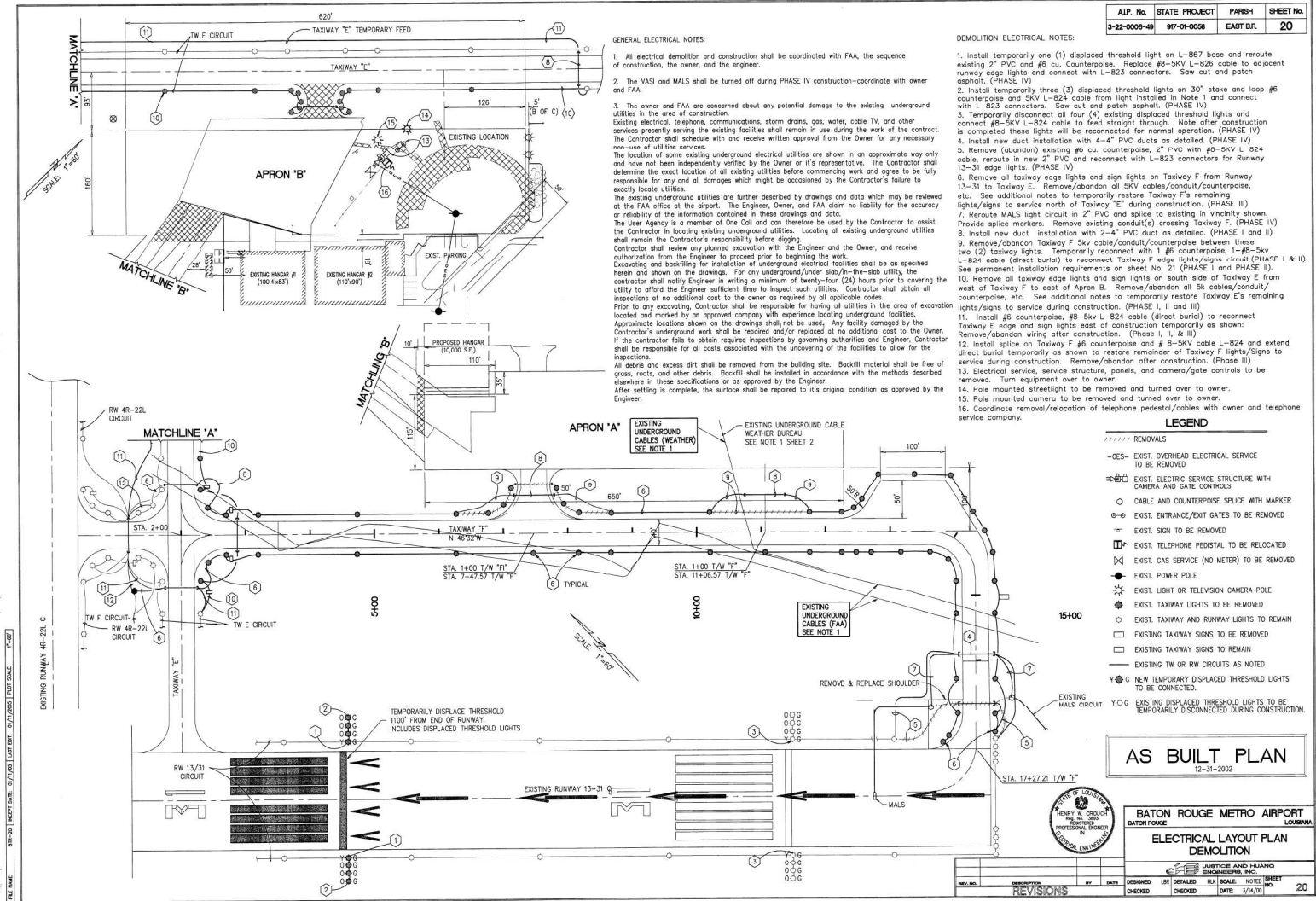
			WATER WASTE	
			DRAINAGE PLAN - DETAILS	
Revisions			Hartman Engineering, Inc.	
REV. NO.	DESCRIPTION	BY	DATE	DESIGNED _____ CHECKED _____ SCALE: 1/8" = 1'-0" DATE: 06/22/99
REVISIONS				SHEET NO. 18

FILE NAME:	07R-19	LAST EDIT:	01/11/05	PLOT DATE:	01/11/2005	PLOT SCALE:	1" = 100'
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BATON ROUGE METRO AIRPORT
BATON ROUGE LOUISIANA

				EROSION CONTROL				
				JUSTICE AND HUANG ENGINEERS, INC.				
ADDED 1/16/12 "C" & "G"		LBR 1/22/02						
REV. NO.	DESCRIPTION	BY	DATE	DESIGNED	Detailed	BS	SCALE	NOTED
REVISIONS				CHECKED	LBR	DATE:	10/17/01	
								19



A.P. No.	STATE PROJECT	PARISH	SHEET No.
22-0006-40	97-01-0008	EAST BR.	20

GENERAL ELECTRICAL NOTES:

1. All electrical demolition and construction shall be coordinated with FAA, the sequence of construction, the owner, and the engineer.
2. The VASI and MALS shall be turned off during PHASE IV construction-coordinates with owner and FAA.
3. The owner and FAA are concerned about any potential damage to the existing underground utilities in the area of construction. Existing electrical, telephone, communications, storm drain, gas, water, cable TV, and other services presently serving the existing facilities shall remain in use during the work of the contract. The Contractor shall schedule with and receive written approval from the Owner for any necessary re-use of utilities services. The location of some existing underground electrical utilities are shown in an approximate way only and have not been independently verified by the Owner or its representative. The Contractor shall determine the exact location of all existing utilities before commencing work and agree to be fully responsible for any and all damages which might be occasioned by the Contractor's failure to exactly locate utilities. The existing underground utilities are further described by drawings and data which may be reviewed at the FAA office at the airport. The Engineer, Owner, and FAA claim no liability for the accuracy or reliability of the information contained in these drawings and data. The User Agency is a member of One Call and can therefore be used by the Contractor to assist the Contractor in locating existing underground utilities. Locating all existing underground utilities shall remain the Contractor's responsibility before digging. Contractor shall review any planned excavation with the Engineer and the Owner, and receive authorization from the Engineer to proceed prior to beginning the work. Excavating and backfilling for installation of underground electrical facilities shall be as specified herein and shown on the drawings. For any underground/under slab/in-the-slab utility, the contractor shall notify Engineer in writing a minimum of twenty-four (24) hours prior to covering the utility to afford the Engineer sufficient time to inspect such utilities. Contractor shall obtain all expectations of no additional cost to the owner as required by all applicable codes. Prior to any excavating, Contractor shall be responsible for having all utilities in the area of excavation located and marked by an approved company with experience locating underground facilities. Approximate locations shown on the drawings shall not be used. Any facility damaged by the Contractor's underground work shall be repaired and/or replaced at no additional cost to the Owner. If the contractor fails to obtain required inspections by governing authorities and Engineer, Contractor shall be responsible for all costs associated with the uncovering of the facilities to allow for the inspections. All debris and excess dirt shall be removed from the building site. Backfill material shall be free of grass, roots, and other debris. Backfill shall be installed in accordance with the methods described elsewhere in these specifications or as approved by the Engineer. After setting is complete, the surface shall be repaired to its original condition as approved by the Engineer.

DEMOLITION ELECTRICAL NOTES:

1. Install temporarily one (1) displaced threshold light on L-867 base and reroute existing 2" PVC and #6 cu. Counterpoise. Replace #8-5KV L-826 cable to adjacent runway edge lights and connect with L-823 connectors. Saw cut and patch asphalt. (PHASE IV)
2. Install temporarily three (3) displaced threshold lights on 30' stake and loop #6 counterpoise and 5KV L-824 cable from light installed in Note 1 and connect with L-823 connectors. Saw cut and patch asphalt. (PHASE IV)
3. Temporarily disconnect all four (4) existing displaced threshold lights and connect #8-5KV L-824 cable to feed straight through. Note after construction is completed these lights will be reconnected for normal operation. (PHASE IV)
4. Install new duct installation with 4-4" PVC ducts as detailed. (PHASE IV)
5. Remove (abandon) existing #6 cu. counterpoise, 2" PVC with #8-5KV L-824 cable, reroute in new 2" PVC and reconnect with L-823 connectors for Runway 13-31 edge lights. (PHASE IV)
6. Remove all taxiway edge lights and sign lights on Taxiway F from Runway 13-31 to Taxiway E. Remove/abandon all 5KV cables/counterpoise, etc. See additional notes to temporarily restore Taxiway F's remaining lights/signs to service north of Taxiway T during construction. (PHASE III)
7. Reroute MALS light circuit in 2" PVC and splice to existing in vicinity shown. Provide splice markers. Remove existing conduit(s) crossing Taxiway F. (PHASE IV)
8. Install new duct installation with 2-4" PVC duct as detailed. (PHASE I and II)
9. Remove/abandon Taxiway F 5kv cable/counterpoise between these two (2) taxiway lights. Temporarily reconnect with 1 #6 counterpoise, 1 #8-5KV L-824 cable (direct burial) to reconnect Taxiway F edge lights/signs (PHASE I & II). See permanent installation requirements on sheet No. 21 (PHASE I and II).
10. Remove all taxiway edge lights and sign lights on south side of Taxiway E from west of Taxiway F to east of Apron B. Remove/abandon all 5k cables/counterpoise, etc. See additional notes to temporarily restore Taxiway E's remaining lights/signs to service during construction. (PHASE I, II and III)
11. Install #6 counterpoise, #8-5KV L-824 cable (direct burial) to reconnect Taxiway E edge and sign lights east of construction temporarily as shown. Remove/abandon wiring after construction. (PHASE I, II, & III)
12. Install splice on Taxiway F #6 counterpoise and #8-5KV cable L-824 and extend direct burial temporarily as shown to restore remainder of Taxiway F lights/signs to service during construction. Remove/abandon after construction. (PHASE III)
13. Electrical service, service structure, panels, and camera/gate controls to be removed. Turn equipment over to owner.
14. Pole mounted streetlight to be removed and turned over to owner.
15. Pole mounted camera to be removed and turned over to owner.
16. Coordinate removal/relocation of telephone pedestals/cables with owner and telephone service company.

LEGEND

- REMOVALS
- DES- EXIST. OVERHEAD ELECTRICAL SERVICE TO BE REMOVED
 - E- EXIST. ELECTRIC SERVICE STRUCTURE WITH CAMERA AND GATE CONTROLS
 - C- CABLE AND COUNTERPOISE SPLICE WITH MARKER
 - O- EXIST. ENTRANCE/EXIT LIGHTS TO BE REMOVED
 - T- EXIST. SIGN TO BE REMOVED
 - P- EXIST. TELEPHONE PEDISTAL TO BE RELOCATED
 - G- EXIST. GAS SERVICE (NO METER) TO BE REMOVED
 - L- EXIST. POWER POLE
 - S- EXIST. LIGHT OR TELEVISION CAMERA POLE
 - X- EXIST. TAXIWAY LIGHTS TO BE REMOVED
 - O- EXIST. TAXIWAY AND RUNWAY LIGHTS TO REMAIN
 - O- EXISTING TAXIWAY SIGNS TO BE REMOVED
 - O- EXISTING TAXIWAY SIGNS TO REMAIN
 - O- EXISTING TW OR RW CIRCUITS AS NOTED
 - Y- EXIST. NEW TEMPORARY DISPLACED THRESHOLD LIGHTS TO BE CONNECTED
 - Y- EXIST. EXISTING DISPLACED THRESHOLD LIGHTS TO BE TEMPORARILY DISCONNECTED DURING CONSTRUCTION.

AS BUILT PLAN

12-31-2002

BATON ROUGE METRO AIRPORT
LOUISIANA

ELECTRICAL LAYOUT PLAN
DEMOLITION

DESIGNED	BY	DATE	NOTED	SHEET
1/1/00	1/1/00	1/1/00	1/1/00	20

AIP No.	STATE PROJECT	PARISH	SHEET No.
3-22-0006-46	97-0-0098	EAST BR	21

INSTALLATION ELECTRICAL NOTES

1. Remove temporary displaced threshold light on L-867 base and splice Runway 13-31 circuit with L-823 connectors in base after construction is complete. See demo sheet Note 1. Base in to become splice box. (PHASE IV)
2. Remove three (3) stake mounted displaced threshold lights and associated direct burial cables to 24" below grade after construction is complete. See demo sheet Note 2. Patch asphalt as required. (PHASE IV)
3. Reconnect existing four (4) displaced threshold lights to function properly after construction is complete. See demo sheet Note 3. (PHASE IV)
4. New duct installation. See demo sheet Note 4. (PHASE IV)
5. Relocated Runway 13-31 edge light circuit. See demo sheet Note 5. (PHASE IV)
6. Relocated MALS circuit. See demo sheet Note 7. (PHASE IV)
7. Install new duct installation with 2-4" PVC ducts. (PHASE III)
8. New 2-4" PVC ducts installed by note 8 on sheet 20. Remove temporary Sky cable/counterpoise and install new Taxiway F circuit as shown and noted. (PHASE III and IV)
9. Install new taxiway edge lights and sign lights on Taxiway F from Taxiway E to near end of Taxiway F (PHASE II). Connect with #6 counterpoise, 2" PVC, #8-SKV L-824 cable, L-823 connectors. (PHASE III). Delete temporary connections covered by demo sheet 20 note 12.
10. Install new 4" PVC duct installation as detailed under existing Taxiway F and temporarily connect Taxiway F circuit with #6 counterpoise, #8-SKV L-824 cable, L-823 connectors. (PHASE III). Disconnect and remove cables after completion of PHASE IV.
11. Install new taxiway edge lights and sign lights on Taxiway F from end of Taxiway F PHASE II to runway 13-31. Connect with #6 counterpoise, 2" PVC, #8-SKV L-824 cable, L-823 connectors. (PHASE III). Delete temporary connections covered by demo. Sheet 20, note 11 North of Taxiway E and east of Taxiway F and feed temporarily as shown (PHASE I & II).
12. Install new duct installation with 2-4" PVC ducts as detailed (PHASE I and II).
13. Install new taxiway edge lights on Taxiway E from east of Taxiway F to east of PHASE I. Connect with #6 counterpoise, 2" PVC, #8-SKV L-824 cable, L-823 connectors. Delete temporary connections covered by demo. Sheet 20, note 11 North of Taxiway E and east of Taxiway F and feed temporarily as shown (PHASE I & II).
14. Install new taxiway edge lights and signs from west of Taxiway F to east of Taxiway F. Connect with #6 counterpoise, 2" PVC, #8-SKV L-824 cable, L-823 connectors. (PHASE III). Delete temporary connections covered by demo. Sheet 20, note 11 and note 13 hereinafter.
15. Install new taxiway edge lights in existing Taxiway E circuit as detailed. Splice #6 counterpoise as required. Reconnect 2" PVC and pull new #8-SKV cable L-824 to existing adjacent fixtures and connect with L-823 connectors.
16. Install 1-4"x4"x1" thick fire rated plywood on unitair support rack with centerline 5'-0" above finished floor for use by others to install security systems. (PHASE I).
17. Install 1-2" PVC conduit with pull wire from existing security junction box to security backboard No. 1 (SB) for use by others (PHASE I).
18. Install 2-2" PVC conduit with pull wire from SB to the new gate location. Directional drill under existing concrete parking/drive area. (PHASE I).

LEGEND

- RECD TAXIWAY LIGHTS
- EXIST. TAXIWAY OR RUNWAY LIGHTS TO REMAIN
- EXISTING TAXIWAY SIGNS TO BE REINSTALLED
- EXISTING TAXIWAY SIGNS TO REMAIN
- RECD. NEW LIGHTED TAXIWAY SIGNS
- ○ EXISTING THRESHOLD LIGHTS TO BE RECONNECTED
- ○ ○ TEMPORARY THRESHOLD LIGHT TO BE REMOVED
- CABLE AND COUNTERPOISE SPICE WITH MARKER

AS BUILT PLAN

12-31-2002



BATON ROUGE METRO AIRPORT

LOUISIANA

ELECTRICAL LAYOUT PLAN

INSTALLATION

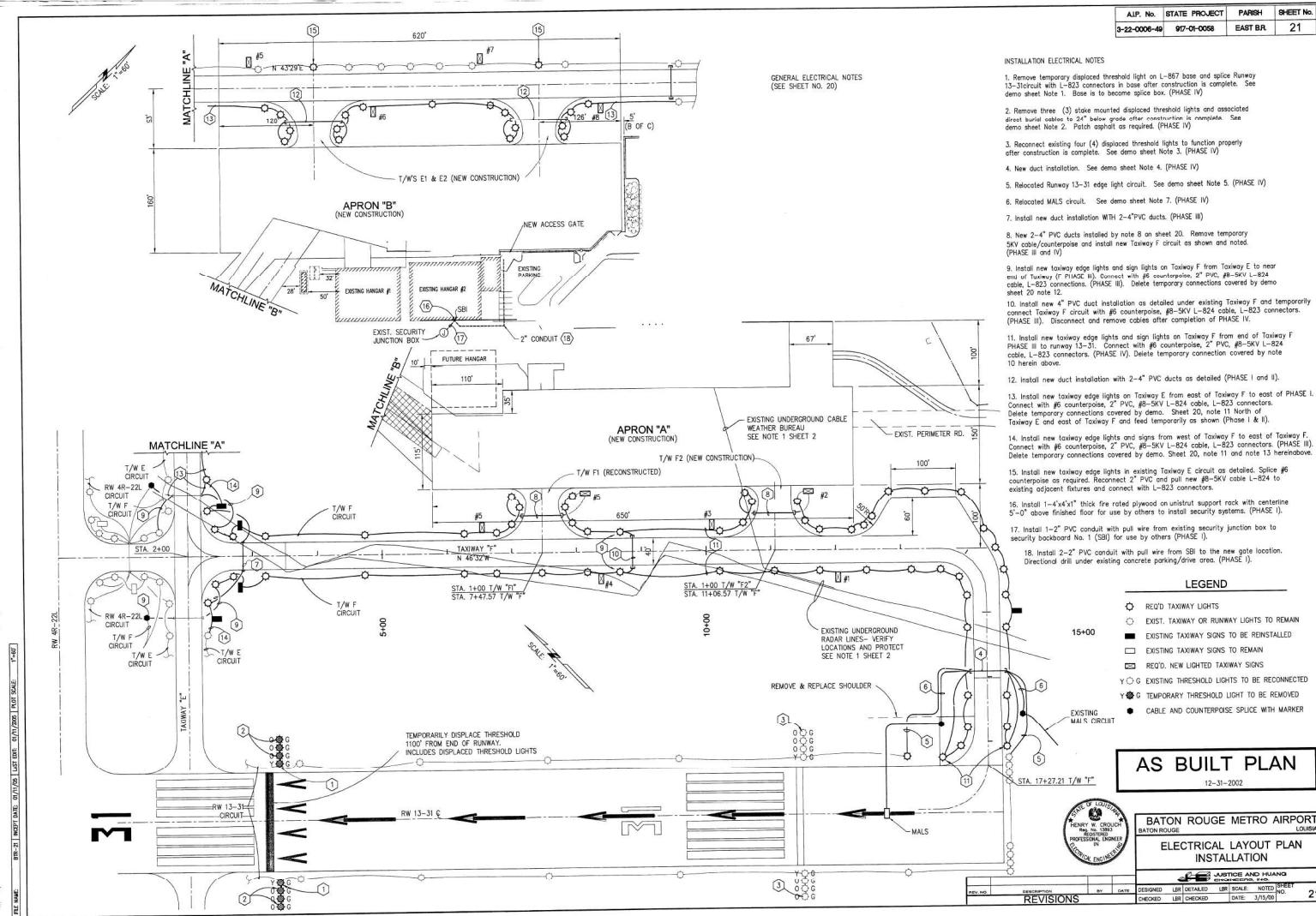
DESIGNED BY: J. J. JARVIS AND H. H. HARRIS

CHECKED BY: J. J. JARVIS AND H. H. HARRIS

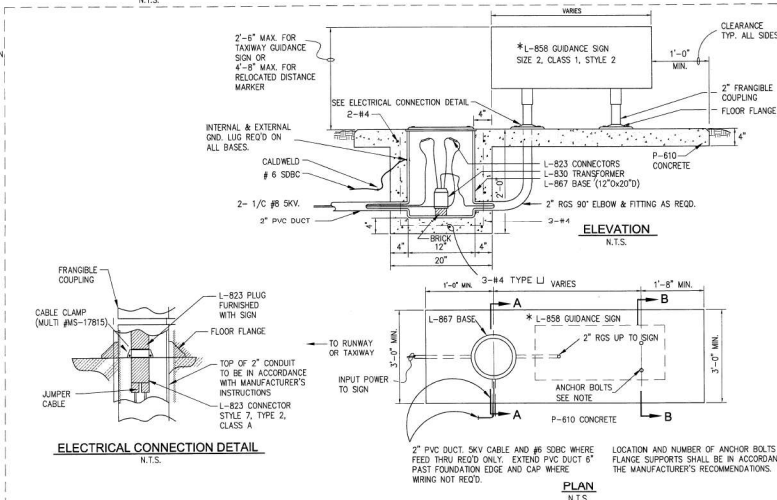
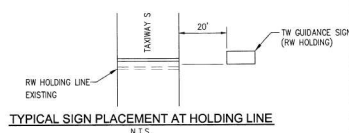
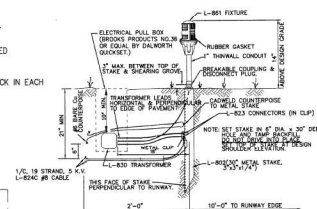
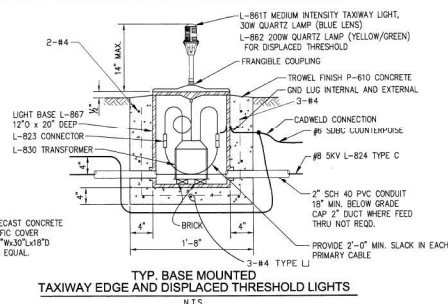
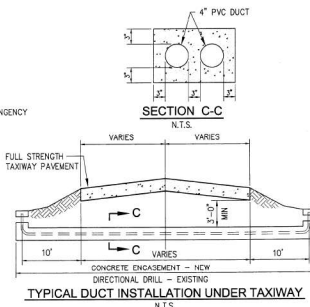
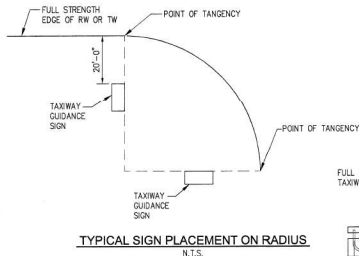
DATE: 3/15/02

21

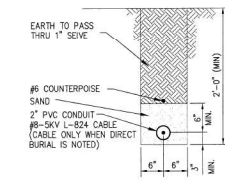
GENERAL ELECTRICAL NOTES
(SEE SHEET NO. 20)



DATE: 12/31/02
BY: J. J. JARVIS AND H. H. HARRIS
CHECKED BY: J. J. JARVIS AND H. H. HARRIS
DATE: 3/15/02



SERIES TYPE FIXTURES L-861; L-861E; L-861T
RUNWAY - CLEAR LENS (L-861)-30W
THRESHOLD-RED 180' (L-861E)-45W
TAXIWAY-BLUE LENS (L-861T)-30W
DISPLACED THRESHOLD-ORANGE 180' GREEN 180'-45W
TEMPORARY STAKE MOUNTED FIXTURE
(NOT TO SCALE)



AS BUILT PLAN
12-31-2002



BATON ROUGE METRO AIRPORT
BATON ROUGE, LOUISIANA

ELECTRICAL DETAILS

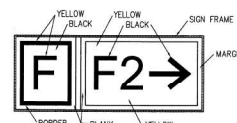
REVISIONS

DESIGNED BY: DATE: 12/31/02
CHECKED BY: DATE: 12/31/02
APPROVED BY: DATE: 12/31/02

A.P. No.	STATE PROJECT	PARISH	SHEET No.
3-22-0006-48	97-01-0058	EAST BR.	23

GENERAL ELECTRICAL NOTES
(SEE SHEET NO. 20)

TYPICAL SIGN LOCATIONS



TYPICAL COLOR PATTERN

AS BUILT PLAN

12-31-2002

AIRPLANE DESIGN GROUP II
SYMBOL SIZE 2 LEGEND "15"
PAGE 24
INSTALLED 36"
ALL SIGNS SHALL BE ACCORDING AL 150/5340-18C

LEGEND

- REG'D TAXIWAY LIGHTS
- EXIST. TAXIWAY OR RUNWAY LIGHTS TO REMAIN
- EXISTING TAXIWAY SIGNS TO BE REINSTALLED
- EXISTING TAXIWAY SIGNS TO REMAIN
- ▣ REG'D. NEW LIGHTED TAXIWAY SIGNS
- Y ○ G EXISTING THRESHOLD LIGHTS TO BE RECONNECTED
- Y ○ G TEMPORARY THRESHOLD LIGHT TO BE REMOVED
- CABLE AND COUNTERPOISE SPLICE WITH MARKER



BATON ROUGE METRO AIRPORT
BATON ROUGE LOUISIANA

TAXIWAY SIGNING PLAN

DESIGNED BY JUSTICE AND HUANG ENGINEERS, INC.

REV.	DESCRIPTION	BY	DATE
1	DESIGNED	UN	DETAILED
2	CHECKED	LR	CHECKED
3	NOTED	DATE	5/15/02

23

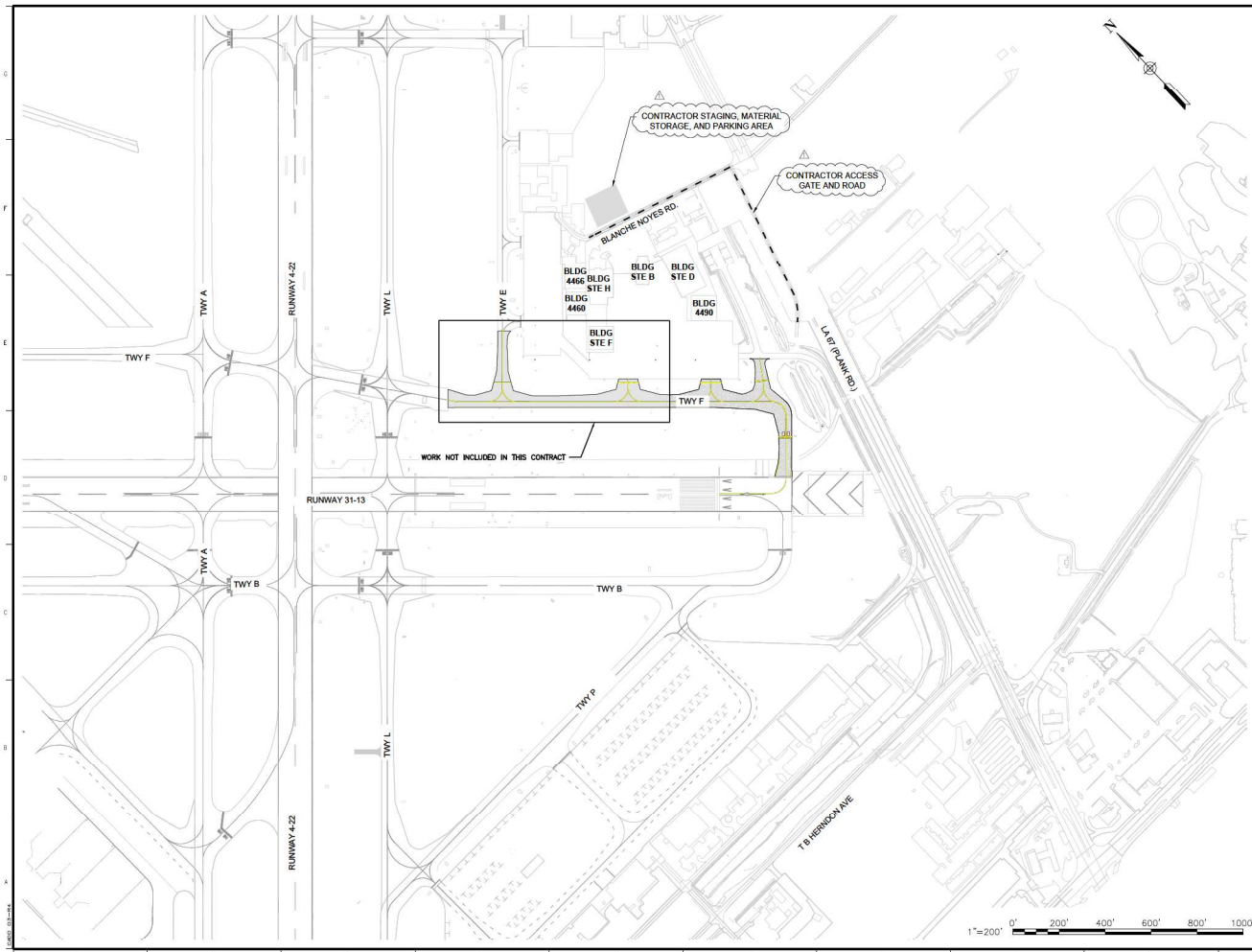
FILE NAME: BR-231.DWG PLOT DATE: 5/15/02 PLOT SCALE: 1"=40'

BASE BID SUMMARY OF QUANTITIES			
Ref. No.	Item Description	Qty	Unit
G-100	Contributor Quality Control Program (CQCP)	1	LS
G-102.6.1a	Installation and Removal of SR Fence	1,310	LF
G-105	Mobilization	1.0	LS
P-101-5.1	Pavement Removal (Taxiway F)	4,407	SY
P-101-5.2	Removal of Existing Concrete Catch Basin	3	EA
P-101-5.3	Removal of Existing Pipe (Storm Drain)	744	LF
P-101-4.2	Clearing and Grubbing	1	AC
P-152-4.1	Undescribed Excavation	3,007	CY
P-152-4.2	Embankment in Place	112	CY
P-154-5.1	Subbase Course (10" Thick)	3,287	CY
P-155-5.1	Line-Treated Subgrade (12")	6,603	SY
P-155-5.2	Lime	85	TON
P-209-5.1	Crushed Aggregate Base Course (8.0" Thick)	6,603	SY
P-209-5.2	Separation Geotextile	6,603	SY
P-309-5.1	Lean Concrete Base Course (11.0" Thick)	5,884	SY
P-307	Cement Treated Permeable Base Course (8.0" Thick)	5,884	SY
P-401-5.1	Asphalt Mixture Surface Course (2" Thick)	52	TON
P-403-5.1a	Asphalt Mixture Binder Course (2" Thick)	52	TON
P-403-5.1b	Asphalt Base Course (2" Thick)	129	TON
P-407-3.1	Asphalt Permeable Treated Base Course	468	SY
P-501-5.1	Concrete Pavement (8.0" Thick)	5,713	SY
P-602-5.1	Emulsified Asphalt Tack Coat	24	QAL
P-603-5.1	Emulsified Asphalt Tack Coat	141	QAL
P-605-5.1	Joint Sealing Filter	9,300	LF
P-610-5.1	Concrete	275	CY
P-620-5.1a	Surface Preparation	5,437	SF
P-620-5.2b-1	Taxiway Marking (Yellow)	1,098	SF
P-620-5.2b-2	Taxiway Marking (White)	55	SF
P-620-5.2b-3	Taxiway Marking (Red)	263	SF
P-620-5.2b-4	Taxiway Marking (Black)	3,221	SF
P-620-5.3c	Reflective Media	103	LB
T-04-5.2	Sodding	435	SY
T-05-5.1	Topsoil (Obtained Onsite or Removed from Stockpile)	710	CY
D-705-5.4	6" Pipe (Perforated PVC)(Includes Porous Backfill and Filter Fabric)	424	LF
D-701-5.1	18" RCP (Class IV)(Includes Bedding & Backfill)	73	LF
D-701-5.2	48" RCP (Class IV)(Includes Bedding & Backfill)	402	LF
D-701-5.3	54" RCP (Class IV)(Includes Bedding & Backfill)	342	LF
D-751-5.1	Furnish, Install 36" x 24" Concrete Open Top Catch Basin	1	EA
D-751-5.2	Furnish, Install 72" x 48" Concrete Open Top Catch Basin	3	EA
L-108-5.2	Trenching, turf and pavement restoration, protection of existing circuits	1,300	LF
L-108-5.4	50V cable, #6 AWG	2,800	LF
L-108-5.5	Base Counterpoise Ground Cable, #6	2,400	LF
L-108-5.6	3/4" X 10' Copper Ground Rod	24	EA
L-108-5.7	Copper Ground Lug	24	EA
L-110-5.1	2" PVC conduit demo and re install	1,300	LF
L-110-5.2	2" PVC couplings demo and re install	100	EA
L-110-5.3	2" PVC connectors demo and re install	48	EA
L-110-5.5	L-807D Base can and cover	2	EA
L-110-5.7	Dust Marker	4	EA
L-110-5.8	Jack and Bore L-807D Base Can and Cover	210	LF
L-110-5.9	Jack and Bore L-807D Base Can and Cover	5	EA
L-115-5.2	Electrical Junction Structure, L-807D, 10" diameter, 24" deep	6	EA
L-125-5.1	Taxiway Light, Elevated LED type, 14" Pedestal plus excavator	22	EA
L-125-5.3	Runway Queue Light	2	EA
L-125-5.4	Base Plate	24	EA
L-125-5.5	L-830 Isolation Transformer	27	EA
L-125-5.6	L-807 Base Can 12" diameter X 24" deep with two 2" grinnells	27	EA
L-125-5.7	Primary Connector RS	3	EA
L-125-5.8	Frangible Couplings	12	EA
L-125-5.9	Mounting Flange GH-4280107	12	EA
L-125-5.10	SGN concrete foundation	3	EA
L-125-5.11	LED Retrofit Kit, S103 Module	1	EA
L-125-5.11	LED Retrofit Kit, S124 Module	1	EA
L-125-5.11	LED Retrofit Kit, S130 Module	1	EA
S-1000	Construction Safety and Phasing Plan	1	LS
S-1001	Seeding (Hydroseeding)	0.9	AC
S-1002	Adjusting Catch Basins	1	EA

ALT 1 SUMMARY OF QUANTITIES			
Ref. No.	Item Description	Qty	Unit
G-102.6.1a	Installation and Removal of SR Fence	340	LF
P-101-4.2	Pavement Removal (Taxiway F)	977	SY
P-152-4.2	Clearing and Grubbing	0.3	AC
P-152-4.1	Undescribed Excavation	844	CY
P-152-4.2	Embankment in Place	36	CY
P-154-5.1	Subbase Course (10" Thick)	358	CY
P-155-5.1	Line-Treated Subgrade (12")	716	SY
P-155-5.2	Lime	0	TON
P-209-5.1	Crushed Aggregate Base Course (8.0" Thick)	716	SY
P-209-5.2	Separation Geotextile	724	SY
P-309-5.1	Lean Concrete Base Course (11.0" Thick)	724	SY
P-307	Cement Treated Permeable Base Course (8.0" Thick)	724	SY
P-601-5.1	Concrete Pavement (8.0" Thick)	702	SY
P-605-5.1	Joint Sealing Filter	1,288	LF
P-620-5.1a	Surface Preparation	369	LF
P-620-5.2b-1	Taxiway Marking (Yellow)	133	SF
P-620-5.2b-4	Taxiway Marking (Black)	206	SF
P-620-5.3c	Reflective Media	12	LB
T-04-5.2	Sodding	60	SY
T-05-5.1	Topsoil (Obtained Onsite or Removed from Stockpile)	212	CY
D-705-5.4	6" Pipe (Perforated PVC)(Includes Porous Backfill and Filter Fabric)	256	LF
L-108-5.2	Trenching, turf and pavement restoration, protection of existing circuits	500	LF
L-108-5.4	50V cable, #6 AWG	550	LF
L-108-5.5	Base Counterpoise Ground Cable, #6	500	LF
L-110-5.1	2" PVC conduit demo and re install	250	LF
L-110-5.2	2" PVC couplings demo and re install	26	EA
L-110-5.3	2" PVC connectors demo and re install	14	EA
L-110-5.5	L-807D Base can	2	EA
L-110-5.7	Dust Marker	2	EA
L-115-5.2	Electrical Junction Structure, L-807D, 10" diameter, 24" deep	4	EA
L-125-5.1	Taxiway Light, Elevated LED type, 14" Pedestal plus excavator	5	EA
L-125-5.4	Base Plate	6	EA
L-125-5.5	L-830 Isolation Transformer	10	EA
L-125-5.6	L-807 Base Can 12" diameter X 24" deep with two 2" grinnells	10	EA
L-125-5.7	Primary Connector RS	5	EA
L-125-5.8	Frangible Couplings	20	EA
L-125-5.9	Mounting Flange GH-4280107	20	EA
L-125-5.10	SGN concrete foundation	1	EA
S-1000	Construction Safety and Phasing Plan	1	LS
S-1001	Seeding (Hydroseeding)	0.3	AC

ALT 2 SUMMARY OF QUANTITIES			
Ref. No.	Item Description	Qty	Unit
G-102.6.1a	Installation and Removal of SR Fence	440	LF
P-101-4.2	Pavement Removal (Taxiway F)	544	SY
P-152-4.2	Clearing and Grubbing	0.4	AC
P-152-4.1	Undescribed Excavation	904	CY
P-152-4.2	Embankment in Place	288	CY
P-154-5.1	Subbase Course (10" Thick)	416	CY
P-155-5.1	Line-Treated Subgrade (12")	890	SY
P-155-5.2	Lime	11	TON
P-209-5.1	Crushed Aggregate Base Course (8.0" Thick)	863	SY
P-209-5.2	Separation Geotextile	863	SY
P-309-5.1	Lean Concrete Base Course (11.0" Thick)	1,130	SY
P-307	Cement Treated Permeable Base Course (8.0" Thick)	1,130	SY
P-601-5.1	Concrete Pavement (8.0" Thick)	1,100	SY
P-605-5.1	Joint Sealing Filter	1,540	LF
P-620-5.1a	Surface Preparation	769	LF
P-620-5.2b-1	Taxiway Marking (Yellow)	234	SF
P-620-5.2b-4	Taxiway Marking (Black)	535	SF
P-620-5.3c	Reflective Media	20	LB
T-04-5.2	Sodding	56	SY
T-05-5.1	Topsoil (Obtained Onsite or Removed from Stockpile)	300	CY
D-705-5.4	6" Pipe (Perforated PVC)(Includes Porous Backfill and Filter Fabric)	424	LF
L-108-5.2	Trenching, turf and pavement restoration, protection of existing circuits	310	LF
L-108-5.4	50V cable, #6 AWG	341	LF
L-108-5.5	Base Counterpoise Ground Cable, #6	341	LF
L-108-5.6	3/4" X 10' Copper Ground Rod	9	EA
L-108-5.7	Copper Ground Lug	18	EA
L-110-5.1	2" PVC conduit demo and re install	310	LF
L-110-5.2	2" PVC couplings demo and re install	31	EA
L-110-5.3	2" PVC connectors demo and re install	204	EA
L-110-5.5	L-807D Base can and cover	2	EA
L-110-5.7	Dust Marker	4	EA
L-115-5.2	Electrical Junction Structure, L-807D, 10" diameter, 24" deep	4	EA
L-125-5.1	Taxiway Light, Elevated LED type, 14" Pedestal plus excavator	9	EA
L-125-5.4	Base Plate	9	EA
L-125-5.5	L-830 Isolation Transformer	10	EA
L-125-5.6	L-807 Base Can 12" diameter X 24" deep with two 2" grinnells	10	EA
L-125-5.7	Primary Connector RS	1	EA
L-125-5.8	Frangible Couplings	4	EA
L-125-5.9	Mounting Flange GH-4280107	4	EA
L-125-5.10	SGN concrete foundation	1	EA
S-1000	Construction Safety and Phasing Plan	1	LS
S-1001	Seeding (Hydroseeding)	0.4	AC

1	2	3	4	5	6	7	8	9	10	11	12
NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
 Stanley Consultants Inc. 201 Government Street, Suite 300, Santa Monica, California 90401 www.stanleyconsultants.com											
TAXIWAY F RECONSTRUCTION											
SUMMARY OF ESTIMATED QUANTITIES											
SHEET 8											
DESIGNED: JEA	CHECKED: JEA	APPROVED: JEA	DATE: 07/25/2020	SCALE: NTS				REV: 1			
3006											



- NOTES:**
1. ALL TRAFFIC SHALL ENTER AND EXIT THROUGH THE CONTRACTOR'S ACCESS GATES. CONTRACTOR MUST PROVIDE A BADGED GATE GUARD WHO WILL MAINTAIN A LOG OF ALL PERSONS ENTERING AND LEAVING THROUGH THE GATE. THE GATE MUST BE LOCKED AT ALL TIMES UNLESS THE GATE GUARD IS PRESENT.
 2. AREAS OUTSIDE THE PROJECT AREA ARE DESIGNATED AS RESTRICTED. THE CONTRACTOR'S PERSONNEL ARE PROHIBITED FROM ENTERING RESTRICTED AREAS AT ANY TIME, UNLESS SPECIFICALLY AUTHORIZED BY THE PROGRAM MANAGER.
 3. THE CONSTRUCTION AREA IS ADJACENT TO ACTIVE RUNWAYS, TAXIWAYS, AND PARKING APRONS. A COORDINATED EFFORT IN RESPECT TO AIRCRAFT MOVEMENT, SECURITY, SAFETY AND CONSTRUCTION IS ESSENTIAL. THE MOVEMENT OF AIRCRAFT AND AIRPORT USERS MUST BE ADDRESSED IN THE CONTRACTORS WORK AND SCHEDULE. THE CONTRACTOR MUST PROVIDE FLAGMEN WHEN CONSTRUCTION TRAFFIC WILL BE CROSSING ACTIVE TAXIWAYS AND TAXILANES. CONTRACTOR MUST PROVIDE A SWEEPER ON SITE AT ALL TIMES TO KEEP DEBRIS OFF OF ACTIVE PAVEMENTS.
 4. ALL VEHICLES USED ON THE AIRFIELD MUST MEET AIRPORT REQUIREMENTS FOR MARKING AND LIGHTING.
 5. SEE SEQUENCE OF CONSTRUCTION SHEETS FOR BARRICADE LOCATIONS.
 6. EVERY TIME AN ELECTRICAL CIRCUIT IS DISCONNECTED OR ACTIVATED, A RESPONSIBLE AIRPORT REPRESENTATIVE MUST BE PRESENT WITH THE ELECTRICAL CONTRACTOR. WHEN A CIRCUIT IS CLOSED, THAT CIRCUIT MUST BE LOCKED OR ACTIVATED IN THE PRESENCE OF THE ELECTRICAL CONTRACTOR AND THE RESPONSIBLE AIRPORT REPRESENTATIVE.
 7. CONTRACTOR MUST COORDINATE WITH THE LOCAL FAA REPRESENTATIVE AND AIRPORT FIELD MAINTENANCE TO ENSURE ALL UNDERGROUND ELECTRICAL LINES ARE LOCATED PRIOR TO CONSTRUCTION.



1. REV. ACCESS PLAN		REV.	DATE
NO.	REVISIONS	ISSN	CHG

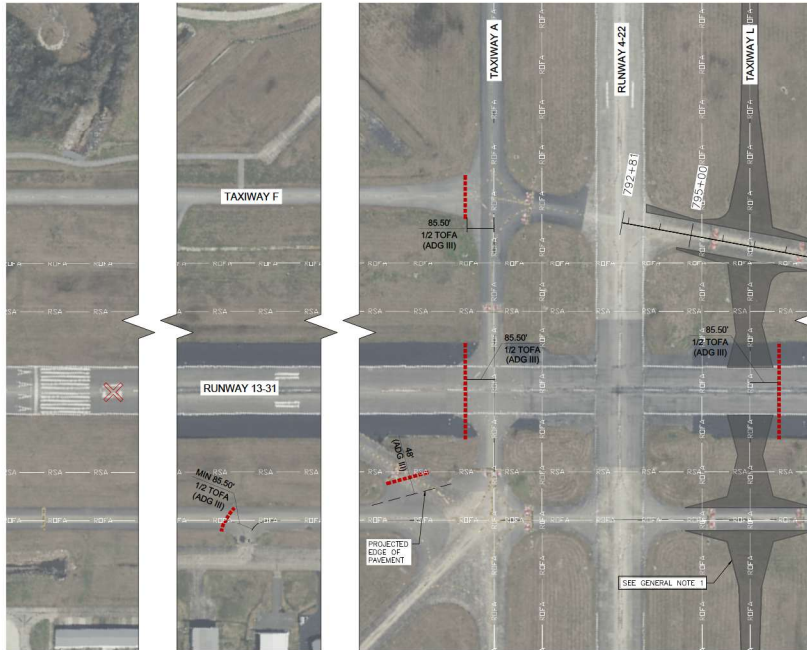
200 Government Center, Suite 300, Santa Rosa, California 95402
www.stanleyconsultants.com

TAXIWAY F RECONSTRUCTION

CONTRACTOR ACCESS PLAN

DESIGNED: JES	SCALE: 1"=200'
DRAWN: JMA	NO. 3105531
CHECKED: SLL	DATE: 07/25/2008
APPROVED: SLL	PROJECT: G1002
DATE: 07/25/2008	SHEET: 1

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GENERAL NOTES

- EXISTING CONDITIONS SHOWN HEREIN ON THE AIRFIELD SUBJECT TO CHANGE. AERIAL IMAGE SIMULATES COMPLETION OF WORK BY OTHER AS PART OF A.I.P. 3-22-0006-128-2023 (S.P.N. H015713)
- TEMPORARY STOCKPILE AREA TO BE REMOVED DAILY.
- A VACUUM TRUCK EQUIPPED WITH MAGNETIC BARS FOR FOD PREVENTION WILL BE REQUIRED TO CLEAN AIRFIELD PAVEMENT PRIOR TO RE-OPENING CLOSED AREAS TO AIR TRAFFIC.
- ALL CROSSINGS OF ACTIVE AIRPORT FACILITIES BY VEHICLES CARRYING CONSTRUCTION MATERIAL SHALL BE FOLLOWED BY A VACUUM SWEEPER TRUCK EQUIPPED WITH MAGNETIC BARS FOR FOD PREVENTION.
- CONTRACTOR TO ESTIMATE USE OF A VACUUM SWEEPER TRUCK FOR THE ENTIRE DURATION OF PHASE 2 WHICH IS ESTIMATED AT 125 CALENDAR DAYS FOR BASE BID, 163 CALENDAR DAYS FOR BASE BID PLUS ALT. 1, 211 CALENDAR DAYS FOR BASE BID PLUS ALT. 1 PLUS ALT. 2.
- SWEEPER EQUIPMENT SHALL BE AVAILABLE FOR USE AT THE DISCRETION OF BTR OPS AND THE OWNER'S PROGRAM MANAGER FOR THE DURATION OF THE PROJECT.

PHASE NOTES

INDEPENDENT PHASE 1 - TAXIWAY F FROM RUNWAY 31 TO RSA

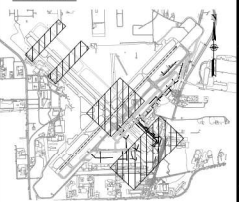
- ISSUE NOTAM STATING:
 - "RUNWAY 13-31 CLOSED FOR ARRIVALS AND DEPARTURES."
 - "TAXIWAY F CLOSED FROM RUNWAY 31 TO R0FA."
 - "MEN AND EQUIPMENT AT WORK NEAR RUNWAY 31 AND TAXIWAY F."
- INSTALL CONSTRUCTION SIGNAGE.
- INSTALL LIGHTED BARRICADES, TAXIWAY AND RUNWAY CLOSURE MARKERS AND TAXIWAY LIGHT COVERS.
- UNDER DIRECTION AND OVERSIGHT FROM BTR OPERATIONS, PERFORM PHASE A PAVEMENT MARKING REMOVAL WORK:
 - REMOVE SURFACE PAINTED TAXIWAY F CENTERLINE FROM RUNWAY 31 THRESHOLD MARKING REMOVAL WORK.
- PERFORM CLEANUP.
- REMOVE OR RELOCATE CONSTRUCTION SIGNAGE, LIGHTED BARRICADES, TAXIWAY CLOSURE MARKERS, AND RUNWAY AND TAXIWAY LIGHT COVERS AS APPROPRIATE IN PREPARATION OF NEXT PHASE.
- REMOVE NOTAM.
- PHASE 1 SCHEDULED FOR 45 CALENDAR DAYS.
- ANY ROUTES NOT TO BE EFFECTED DURING THIS PHASE.



LEGEND:

- PAVEMENT REMOVAL THIS PHASE
- WORK PERFORMED THIS PHASE
- LOW PROFILE BARRICADE (DET 1, DWG G101)
- CONTRACTOR ACCESS ROAD
- AIRCRAFT DETOUR
- PAVEMENT MARKING TO BE REMOVED
- PORTABLE LIGHTED 'X' RUNWAY CLOSURE MARKER (DET 2, DWG G101)

KEY MAP:



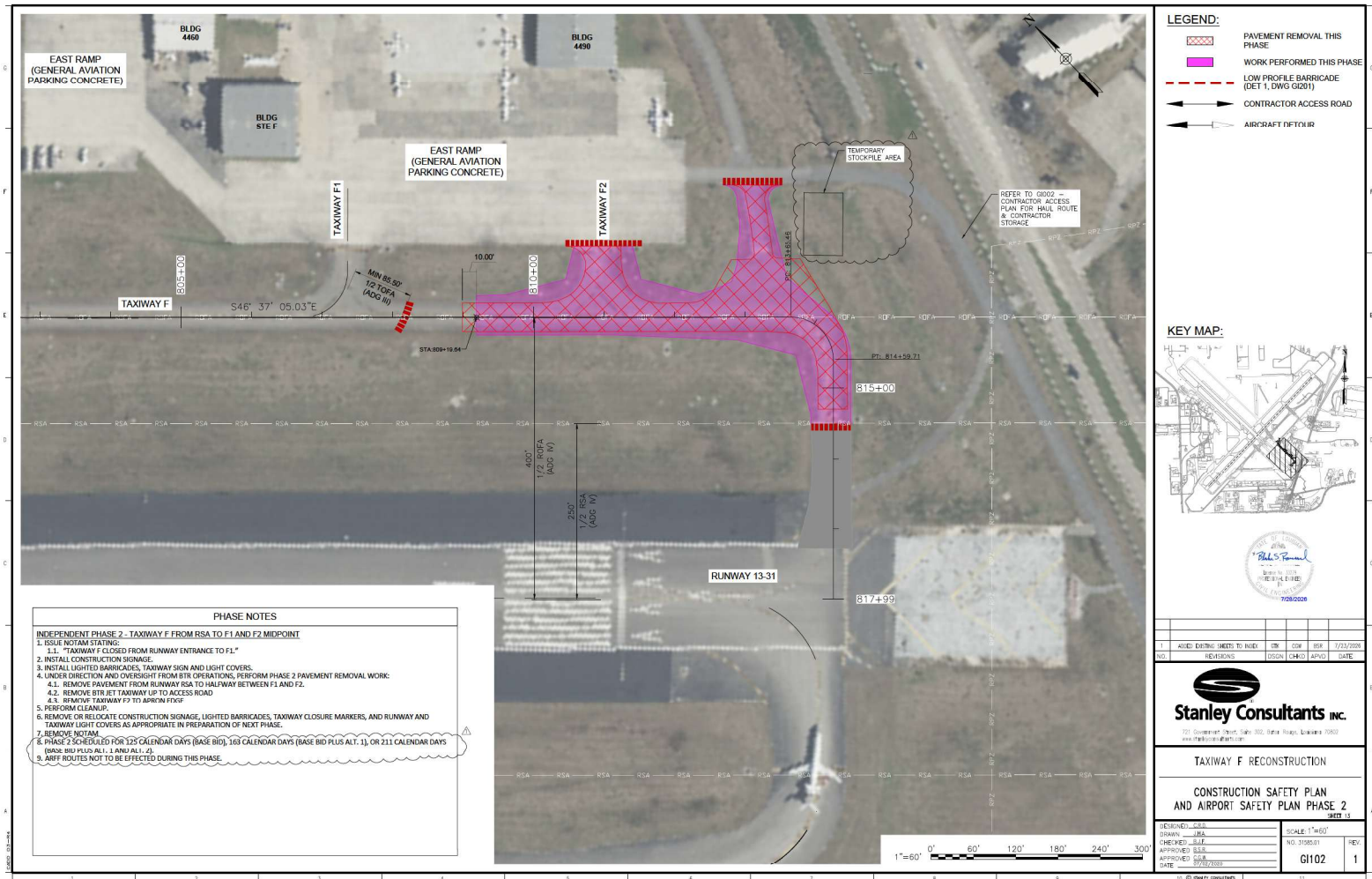
NO.	REVISIONS	DATE	BY	CHKD	APPD	DATE
1	UPDATED NOTES					

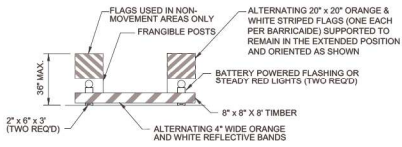


TAXIWAY F RECONSTRUCTION

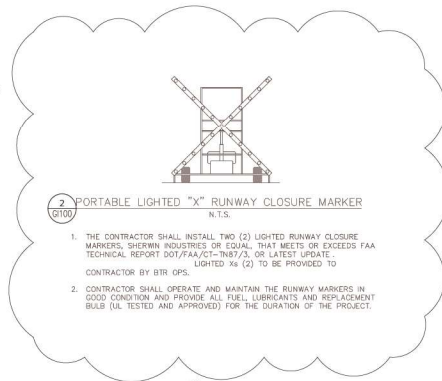
CONSTRUCTION SAFETY PLAN AND AIRPORT SAFETY PLAN PHASE 1

DESIGNED: JEA	SCALE: 1"=150'	REV: 1
DRAWN: JEA	NO: 3105531	
CHECKED: SUE		
APPROVED: SUE		
DATE: 07/25/2024		

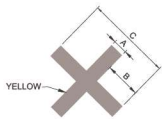




1 LOW PROFILE BARRICADE
N.T.S.
(TO BE PLACED AS REQUIRED BY PROJECT ENGINEER)



1. THE CONTRACTOR SHALL INSTALL TWO (2) LIGHTED RUNWAY CLOSURE MARKERS, SHERWIN INDUSTRIES OR EQUAL, THAT MEETS OR EXCEEDS FAA TECHNICAL REPORT DOT/FAA/CT-TN87/3, OR LATEST UPDATE. LIGHTED Xs (2) TO BE PROVIDED TO CONTRACTOR BY BTR OPS.
2. CONTRACTOR SHALL OPERATE AND MAINTAIN THE RUNWAY MARKERS IN GOOD CONDITION AND PROVIDE ALL FUEL, LUBRICANTS AND REPLACEMENT BULB (UL TESTED AND APPROVED) FOR THE DURATION OF THE PROJECT.



PATTERN	A	B	C
CLOSED RUNWAY	10'	25'	60'
CLOSED TAXIWAY	15'	12.5'	30'

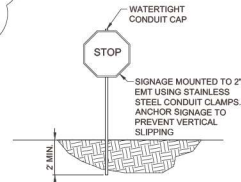
1. CROSS TO BE DESIGNED TO BE SUBMITTED FOR APPROVAL.
2. CONTRACTOR TO PROVIDE ONE (1) MARKER FOR EACH END OF THE RUNWAY FOR A TOTAL OF TWO(2). FOR DURATION OF THE PROJECT.
3. FOR TEMPORARY SYMBOL, THIS DIMENSION MAY BE CHANGED TO 8'.
4. FOR TEMPORARY SYMBOL, THIS DIMENSION MAY BE CHANGED TO 4'.

3 CLOSED RUNWAY/TAXIWAY MARKING DETAIL
N.T.S.



4 TEMPORARY CONSTRUCTION SIGNAGE
N.T.S.

1. SIGNAGE DIMENSIONS MUST COMPLY WITH THE MOST CURRENT EDITION OF THE MUTCD.
2. ALL COSTS ASSOCIATED WITH SIGN INSTALLATION AND MAINTENANCE WILL NOT BE MEASURED FOR SEPARATE PAVEMENT BUT MUST BE SUBSIDIARY TO ITEM SS-100 CONSTRUCTION SAFETY AND SECURITY.
3. SIGNS MUST BE INSTALLED AT THE BEGINNING OF EACH WORK SHIFT AND REMOVED AT THE END OF EACH WORK SHIFT.



5 CONSTRUCTION TRAFFIC STOP SIGN
N.T.S.

1. STOP SIGN MUST BE RETROREFLECTIVE.
2. CONTRACTOR MUST SUBMIT SIGN DIMENSIONS FOR APPROVAL PRIOR TO CONSTRUCTION.
3. CONSTRUCTION TRAFFIC STOP SIGN WILL BE CONSIDERED SUBSIDIARY TO ITEM SS-100 CONSTRUCTION SAFETY AND SECURITY.
4. CONSTRUCTION VEHICULAR TRAFFIC AT THE STOP SIGN MUST YIELD TO AIRCRAFT TRAFFIC AT ALL TIMES.
5. SIGN MUST CONFIRM TO THE MOST RECENT EDITION OF FHWA'S MUTCD



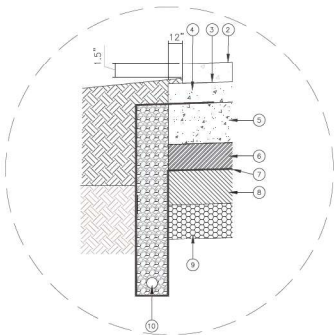
NO.	REVISIONS	DATE	BY	CHKD	APP'D	DATE
1	REVISED LIGHTED X NOTES					7/26/2020



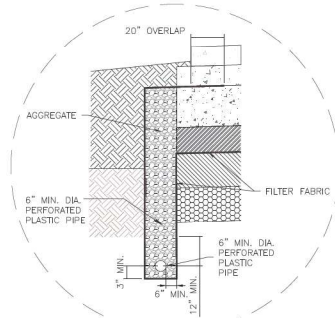
TAXIWAY F RECONSTRUCTION

CSP AND ASP DETAILS

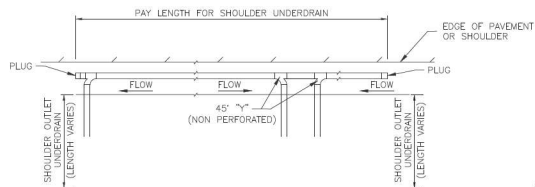
DESIGNED	CHKD	DATE	BY	CHKD	DATE
DRAWN	ILL				
CHECKED	SJT				
APPROVED	SJT				
DATE	07/26/2020				



1 PAVEMENT LIP DETAIL
SCALE: NOT TO SCALE
NOTE: RIGHT SIDE SIMILAR, BUT MIRRORED



2 EDGE DRAIN DETAIL
SCALE: NOT TO SCALE
NOTE: RIGHT SIDE SIMILAR, BUT MIRRORED



4 DUAL OUTLET LAYOUT DETAIL
SCALE: NOT TO SCALE

LEGEND:

- 1 EXISTING ASPHALT SURFACING AND BASE
- 2 P-501 CEMENT CONCRETE PAVEMENT (9" THICK)
- 3 CHOKO STONE COURSE (1/2" THICK)
- 4 P-307 CEMENT TREATED PERMEABLE BASE COURSE (DRAINAGE LAYER) (6" THICK)
- 5 P-306 ECONOCRETE LEAN CONCRETE BASE COURSE (11" THICK)
- 6 P-209 CRUSHED AGGREGATE (6" THICK)
- 7 GEOSYNTHETIC FABRIC
- 8 P-154 SUBBASE COURSE (18" THICK)
- 9 P-152 EXCAVATION, LIME TREATED SUBGRADE, AND EMBANKMENT
- 10 D-705 SHOULDER UNDERDRAIN
- * NOT USED THIS SHEET

NOTES:

1. CONTRACTOR SHALL REMOVE STANDING WATER FROM THE SUBGRADE DURING CONSTRUCTION BY GRADING, DITCHING, PUMPING, OR WHATEVER MEANS ARE NECESSARY TO KEEP THE SUBGRADE DRY.
2. SEE PLAN AND PROFILE AND GEOMETRIC LAYOUT SHEETS FOR FILLET DESIGN EDGES OF PAVEMENT AND TSA AND TOFA OFFSETS AT VARIOUS LOCATIONS.
3. SEE PROPOSED GRADING SHEETS AND CROSS SECTIONS FOR GRADING DETAILS.
4. LONGITUDINAL EDGE DRAINS SHOULD OUTLET INTO CATCH BASINS AT 400' MAX INTERVALS USING 6" NON-PERFORATED PLASTIC PIPE.
5. THE PAVEMENT UNDERDRAIN SYSTEMS PAY ITEMS SHALL INCLUDE ALL REQUIRED TRENCHING, PLASTIC UNDERDRAIN PIPE (PERFORATED AND NON-PERFORATED), Y'S, FITTINGS, PLUGS, GEOTEXTILE FABRIC, AGGREGATE, AND BACKFILL.



NO.	DETAIL REMOVED	CHD	BSR	USR	12/24/2020
1	REVISIONS	ISSN	CHD	APVD	DATE



TAXIWAY F RECONSTRUCTION

PAVEMENT DETAILS

DESIGNED BY	SCALE	NO.	REV.
DRAWN BY	1/8"	31083.01	
CHECKED BY			
APPROVED BY			
DATE	07/05/2020		
		CS202	1

										SIGN SCHEDULE										
NUMBER	STATION	ALONG	OFFSET FROM CENTER LINE	SIZE	STYLE	CLASS	MODE	# OF MODULES	DIMENSIONS	SIGN CONFIGURATION		BACKGROUND COLOR		CHARACTER COLORS		ELEVATION	PICTURE DETAIL	PROPOSED SIGN MODIFICATION		
										SIDE A	SIDE B	SIDE A	SIDE B	SIDE A	SIDE B					
S10	1802+49.29	TAXIWAY FOXTROT	41.66	1	2	1	2	3	108"L x 27"H x 9-1/2"W	[E]	[E 31]	BLK-RED	BLK-RED	YEL-WHT	YEL-WHT	1	E304	RELOCATE AS INDICATED		
S11	1805+97.30	TAXIWAY FOXTROT	-44.62	1	2	1	2	3	72"L x 27"H x 9-1/2"W	[F] F2 →	[F]	YEL-BLK	YELLOW	YEL-BLK	YELLOW	2	E304	RELOCATE AS INDICATED		
S12	1806+32.76	TAXIWAY FOXTROT	96.75	1	2	1	2	3	108"L x 27"H x 9-1/2"W	[F2]	[F2] ← F →	BLACK	BLK-YEL	YELLOW	YEL-BLK	3	E304	RELOCATE AS INDICATED		
S13	1808+01.37	TAXIWAY FOXTROT	56.21	1	2	1	2	2	72"L x 27"H x 9-1/2"W	[F]	← F2 [F]	BLACK	YEL-BLK	YELLOW	YEL-BLK	4	E304	RELOCATE AS INDICATED		
S14	1809+57.49	TAXIWAY FOXTROT	-41.72	1	2	1	2	2	72"L x 27"H x 9-1/2"W	[F] F1 →	[F]	BLK-YEL	BLACK	BLK-YEL	BLACK	5	E304	RELOCATE AS INDICATED		
S15	1809+95.12	TAXIWAY FOXTROT	96.79	1	2	1	2	3	108"L x 27"H x 9-1/2"W	[F1]	[F1] ← F →	BLACK	BLK-YEL	BLACK	YEL-BLK	6	E304	RELOCATE AS INDICATED		
S16	1811+57.18	TAXIWAY FOXTROT	56.74	1	2	1	2	2	72"L x 27"H x 9-1/2"W	[F]	← F1 [F]	BLACK	BLK-YEL	BLACK	YEL-BLK	7	E304	RELOCATE AS INDICATED		
S18	1815+27.11	TAXIWAY FOXTROT	-40.97	1	2	1	2	2	59"L x 27"H x 9-1/2"W	← E →	[F]	YELLOW	BLACK	BLACK	YELLOW	9	E304	RELOCATE AS INDICATED		
S19	1816+99.45	TAXIWAY FOXTROT	48.50	1	2	1	2	2	59"L x 27"H x 9-1/2"W	[E]	← F →	BLACK	YELLOW	BLACK	YELLOW	10	E304	RELOCATE AS INDICATED		
S21	1816+76.11	TAXIWAY FOXTROT	-40.96	1	2	1	2	3	117-1/2"L x 27"H x 9-1/2"W	[F] ← R → [L]	[F]	RED	BLACK	WHITE	YELLOW	12	E304	RELOCATE AS INDICATED		
S22	1816+95.57	TAXIWAY FOXTROT	51.29	1	2	1	2	2	59"L x 27"H x 9-1/2"W	[F]	← E →	BLACK	YELLOW	BLACK	YELLOW	13	E305	RELOCATE AS INDICATED		
S25	1819+31.95	RUNWAY 48/220	72.12	1	2	1	2	3	118"L x 31"H x 9-1/2"W	[F]	[F] 220L → 48	BLACK	BLK-RED	YELLOW	YEL-RED	16	E305	REMOVE		
S26	1804+37.51	TAXIWAY FOXTROT	104.18	1	2	1	2	3	108"L x 27"H x 9-1/2"W	[F1]	[F1] ← F →	BLACK	BLK-YEL	BLACK	YEL-BLK	N/A	N/A	NEW SIGN		
S27	1815+46.14	TAXIWAY FOXTROT	80.62	1	2	1	2	3	108"L x 27"H x 9-1/2"W	[F1]	[F1] ← F →	BLACK	BLK-YEL	BLACK	YEL-BLK	N/A	N/A	NEW SIGN		

NOTES: 1. ALL DIMENSIONS SHALL BE FIELD VERIFIED BY CONTRACTOR AND VERIFIED WITH PAYING/CIVIL PACKAGE.
2. FOR SIGNS TO BE REMOVED, REMOVED WIRING TO NEAREST JUNCTION BOX, ABANDONING UNDERGROUND CONDUIT IN PLACE OR REMOVE IF IN THE WAY OF NEW PAYING.
3. ALL SIGNS INDICATED TO BE RELOCATED SHALL BE RETROFITTED WITH LED LIGHTING, NO USE OF OLD TRANSFORMERS.



1 LED RETROFIT KITS		QEM	CSS	07/08/2024
NO.	REVISIONS	ISSUED	DATE	DATE
		2844 S. Sherwood Forest, Ste. 200 Baton Rouge, LA 70818 225-438-8249 3027 Heuser Ave., Ste. 304 Metairie, LA 70002 504-884-3445		
		TAXIWAY F RECONSTRUCTION SIGNAGE SCHEDULE		
DESIGNED: CSS	SCALE: NONE	NO. 30750-02-00 E-604		
DRAWN: CSS				
CHECKED: CSS				
APPROVED: N/A				
DATE: 7/15/2024				

Ref. No.	Item Description	Unit	Qty	Unit Price	Total Price
C-100	Contractor Quality Control Program (CQCP)	LS	1	\$200,000.00	\$200,000.00
C-102-5.1e	Installation and Removal of Silt Fence	LF	1,310	\$5.00	\$6,550.00
C-105	Mobilization	LS	1	\$500,000.00	\$500,000.00
P-101-5.1	Pavement Removal (Taxiway F)	SY	4,407	\$17.00	\$74,926.73
P-101-5.2	Removal of Existing Concrete Catch Basin	EA	3	\$1,000.00	\$3,000.00
P-101-5.3	Removal of Existing Pipe (Storm Drain)	LF	744	\$75.00	\$55,800.00
P-151-4.2	Clearing and Grubbing	AC	1	\$12,000.00	\$14,697.91
P-152-4.1	Unclassified Excavation	CY	3,967	\$25.00	\$99,175.00
P-152-4.2	Embankment in Place	CY	112	\$40.00	\$4,480.00
P-154-5.1	Subbase Course (18" Thick)	CY	3,387	\$75.00	\$254,025.00
P-155-8.1	Lime-Treated Subgrade (12")	SY	6,603	\$5.25	\$34,665.75
P-155-8.2	Lime	TON	85	\$450.00	\$38,250.00
P-209-5.1	Crushed Aggregate Base Course (6.0" Thick)	SY	6,603	\$40.00	\$264,120.00
P-209-5.2	Separation Geotextile	SY	6,603	\$4.00	\$26,412.00
P-306-8.1	Lean Concrete Base Course (11.0" Thick)	SY	5,884	\$75.00	\$441,300.00
P-307	Cement Treated Permeable Base Course (6.0" Thick)	SY	5,884	\$85.00	\$500,140.00
P-401-8.1	Asphalt Mixture Surface Course (2" Thick)	TON	52	\$250.00	\$13,000.00
P-403-8.1a	Asphalt Mixture Binder Course (2" Thick)	TON	52	\$250.00	\$13,000.00
P-403-8.1b	Asphalt Base Course (5" Thick)	TON	129	\$250.00	\$32,250.00
P-407-7.1	Asphalt Permeable Treated Base Course	SY	468	\$100.00	\$46,800.00
P-501-8.1	Concrete Pavement (9.0" Thick)	SY	5,713	\$116.00	\$662,708.00
P-602-5.1	Emulsified Asphalt Prime Coat	GAL	28	\$10.00	\$280.00
P-603-5.1	Emulsified Asphalt Track Coat	GAL	141	\$2.00	\$282.00
P-605-5.1	Joint Sealing Filler	LF	8,300	\$2.00	\$16,600.00
P-610-6.1	Concrete	CY	275	\$125.00	\$34,375.00
P-620-5.1a	Surface Preparation	SF	5,437	\$1.00	\$5,437.05
P-620-5.2b-1	Taxiway Marking (Yellow)	SF	1,898	\$1.00	\$1,898.48
P-620-5.2b-2	Taxiway Marking (White)	SF	55	\$1.00	\$54.74
P-620-5.2b-3	Taxiway Marking (Red)	SF	263	\$1.00	\$262.59
P-620-5.2b-4	Taxiway Marking (Black)	SF	3,221	\$1.00	\$3,221.24
P-620-5.3c	Reflective Media	LB	193	\$6.00	\$1,158.00
T-904-5.2	Sodding	SY	435	\$20.00	\$8,700.00
T-905-5.1	Topsoil (Obtained Onsite or Removed from	CY	710	\$15.00	\$10,650.00
D-701-5.1	18" RCP (Class IV)(Includes Bedding & Backfill)	LF	78	\$350.00	\$27,300.00
D-701-5.2	48" RCP (Class IV)(Includes Bedding & Backfill)	LF	402	\$450.00	\$180,900.00
D-701-5.3	54" RCP (Class IV)(Includes Bedding & Backfill)	LF	342	\$650.00	\$222,300.00
D-705-5.4	6" Pipe (Perforated PVC)(Includes Porous Backfill	LF	424	\$50.00	\$21,200.00
D-751-5.1	Furnish, Install 36" x 24" Concrete Open Top	EA	1	\$5,500.00	\$5,500.00
D-751-5.2	Furnish, Install 72" x 48" Concrete Open Top	EA	3	\$12,000.00	\$36,000.00
L-108-5.2	Trenching, turf and pavement restoration,	LF	1,300	\$115.40	\$150,020.00
L-108-5.4	5KV cable, #6 AWG	LF	2,860	\$7.53	\$21,540.98
L-108-5.5	Bare Counterpoise Ground Cable, #6	LF	2,860	\$4.29	\$12,258.13
L-108-5.6	3/4" X 10' Copper Ground Rod	EA	24	\$206.37	\$4,952.84

Ref. No.	Item Description	Unit	Qty	Unit Price	Total Price
L-108-5.7	Copper Ground Lug	EA	24	\$105.22	\$2,525.16
L-110-5.1	2" PVC conduit demo and re install	LF	1,300	\$29.63	\$38,524.06
L-110-5.2	2" PVC couplings demo and re install	EA	130	\$65.75	\$8,547.12
L-110-5.3	2" PVC connectors demo and re install	EA	48	\$50.09	\$2,404.39
L-110-5.6	L-867D Base can and cover	EA	2	\$1,874.73	\$3,749.46
L-110-5.7	Duct Marker	EA	4	\$1,348.49	\$5,393.96
L-110-5.8	Jack and Bore 2" HDPE Conduit with Couplings	LF	210	\$18.02	\$3,784.20
L-110-5.8	Jack and Bore L-867D Base Can and Cover	EA	6	\$1,640.00	\$9,840.00
L-115-5.2	Electrical Junction Structure, L-867D, 16" diameter, 24" deep	EA	8	\$2,696.98	\$21,575.84
L-125-5-1	Taxiway Light, Elevated LED type, 14" Pedestal plus excavator	EA	22	\$2,871.82	\$63,179.96
L-125-5-3	Runway Guard Light	EA	2	\$6,900.85	\$13,801.70
L-125-5.4	Base Plate	EA	24	\$419.35	\$10,064.34
L-125-5.5	L-830 Isolation Transformer	EA	27	\$542.69	\$14,652.50
L-125-5.6	L-867 Base Can 12" diameter X 24" deep with two 2" grommets	EA	27	\$1,841.84	\$49,729.68
L-125-5.7	Primary Connector Kit	EA	3	\$315.74	\$947.23
L-125-5.8	Frangible Couplings	EA	12	\$310.81	\$3,729.73
L-125-5.9	Mounting Flange GN-62B0107	EA	12	\$310.81	\$3,729.73
L-125-5.10	SIGN concrete foundation	EA	3	\$9,899.89	\$29,699.67
L-125-5.11	LED retrofit kit, S10 (3 module)	EA	1	\$1,000.00	\$1,000.00
L-125-5.11	LED retrofit kit, S11 (3 module)	EA	1	\$100.00	\$100.00
L-125-5.11	LED retrofit kit, S12 (3 module)	EA	1	\$1,200.00	\$1,200.00
L-125-5.11	LED retrofit kit, S13 (3 module)	EA	1	\$1,200.00	\$1,200.00
S-1000	Construction Safety and Phasing Plan	LS	1	\$325,000.00	\$325,000.00
S-1001	Seeding (Hydroseeding)	AC	0.9	\$3,200.00	\$2,880.00
S-1002	Adjusting Catch Basins	EA	1	\$6,500.00	\$6,500.00
Base Bid Total					\$4,673,950.15

Ref. No.	Item Description	Unit	Qty	Unit Price	Total Price
C-102-5.1e	Installation and Removal of Silt Fence	LF	340	\$5.00	\$1,700.00
P-101-5.1	Pavement Removal (Taxiway F)	SY	577	\$17.00	\$9,809.04
P-151-4.2	Clearing and Grubbing	AC	0.3	\$12,000.00	\$3,600.00
P-152-4.1	Unclassified Excavation	CY	644	\$25.00	\$16,100.00
P-152-4.2	Embankment in Place	CY	36	\$40.00	\$1,440.00
P-154-5.1	Subbase Course (18" Thick)	CY	358	\$75.00	\$26,828.71
P-155-8.1	Lime Treated Subgrade (12")	SY	716	\$5.25	\$3,759.00
P-155-8.2	Lime	TON	9	\$450.00	\$4,050.00
P-209-5.1	Crushed Aggregate Base Course (6.0" Thick)	SY	716	\$40.00	\$28,657.29
P-209-5.2	Separation Geotextile	SY	716	\$4.00	\$2,865.73
P-306-8.1	Lean Concrete Base Course (11.0" Thick)	SY	724	\$45.00	\$32,599.45
P-307	Cement Treated Permeable Base Course (6.0" Thick)	SY	724	\$85.00	\$61,576.74
P-501-8.1	Concrete Pavement (9.0" Thick)	SY	702	\$116.00	\$81,440.64
P-605-5.1	Joint Sealing Filler	LF	1,268	\$2.00	\$2,536.00
P-620-5.1a	Surface Preparation	LF	399	\$1.00	\$399.33
P-620-5.2b-1	Taxiway Marking (Yellow)	SF	133	\$1.00	\$133.11
P-620-5.2b-4	Taxiway Marking (Black)	SF	266	\$1.00	\$266.22
P-620-5.3c	Reflective Media	LB	12	\$6.00	\$72.00
T-904-5.2	Sodding	SY	50	\$20.00	\$1,000.00
T-905-5.1	Topsoil (Obtained Onsite or Removed from Stockpile)	CY	212	\$15.00	\$3,180.00
D-705-5.4	6" Pipe (Perforated PVC)(Includes Porous Backfill and Filter Fabric)	LF	256	\$50.00	\$12,800.00
L-108-5.2	Trenching, turf and pavement restoration, protection of existing circuits	LF	500	\$64.00	\$32,000.00
L-108-5.4	5KV cable, #6 AWG	LF	550	\$7.53	\$4,142.50
L-108-5.5	Bare Counterpoise Ground Cable, #6	LF	550	\$4.29	\$2,357.33
L-110-5.1	2" PVC conduit demo and re install	LF	250	\$29.63	\$7,408.47
L-110-5.2	2" PVC couplings demo and re install	EA	25	\$65.75	\$1,643.68
L-110-5.3	2" PVC connectors demo and re install	EA	14	\$50.09	\$701.28
L-110-5.6	L-867D Base can	EA	2	\$1,874.73	\$3,749.46
L-110-5.7	Duct Marker	EA	2	\$1,348.49	\$2,696.98
L-115-5.2	Electrical Junction Structure, L-867D, 16"	EA	4	\$2,706.00	\$10,824.00
L-125-5.1	Taxiway Light, Elevated LED type, 14" Pedestal	EA	5	\$2,871.82	\$14,359.08
L-125-5.4	Base Plate	EA	5	\$419.35	\$2,096.74
L-125-5.5	L-830 Isolation Transformer	EA	10	\$542.69	\$5,426.85
L-125-5.6	L-867 Base Can 12" diameter X 24" deep with two	EA	10	\$1,710.28	\$17,102.80
L-125-5.7	Primary Connector Kit	EA	5	\$578.86	\$2,894.32
L-125-5.8	Frangible Couplings	EA	20	\$573.93	\$11,478.61
L-125-5.9	Mounting Flange GN-62B0107	EA	20	\$573.93	\$11,478.61
L-125-5.10	SIGN concrete foundation	EA	1	\$18,319.73	\$18,319.73
S-1000	Construction Safety and Phasing Plan	LS	1	\$116,000.00	\$116,000.00
S-1001	Seeding (Hydroseeding)	AC	0.3	\$3,200.00	\$960.00
Alternate No. 1 Total					\$560,453.69

Ref. No.	Item Description	Unit	Qty	Unit Price	Total Price
C-102-5.1e	Installation and Removal of Silt Fence	LF	440	\$5.00	\$2,200.00
P-101-5.1	Pavement Removal (Taxiway F)	SY	544	\$17.00	\$9,248.00
P-151-4.2	Clearing and Grubbing	AC	0.4	\$12,000.00	\$4,800.00
P-152-4.1	Unclassified Excavation	CY	904	\$25.00	\$22,600.00
P-152-4.2	Embankment in Place	CY	268	\$40.00	\$10,720.00
P-154-5.1	Subbase Course (18" Thick)	CY	415	\$75.00	\$31,125.00
P-155-8.1	Lime Treated Subgrade (12")	SY	863	\$5.25	\$4,530.75
P-155-8.2	Lime	TON	11	\$450.00	\$4,950.00
P-209-5.1	Crushed Aggregate Base Course (6.0" Thick)	SY	863	\$40.00	\$34,520.00
P-209-5.2	Separation Geotextile	SY	863	\$4.00	\$3,452.00
P-306-8.1	Lean Concrete Base Course (11.0" Thick)	SY	1,138	\$45.00	\$51,210.00
P-307	Cement Treated Permeable Base Course (6.0" Thick)	SY	1,138	\$85.00	\$96,730.00
P-501-8.1	Concrete Pavement (9.0" Thick)	SY	1,105	\$116.00	\$128,180.00
P-605-5.1	Joint Sealing Filler	LF	1,540	\$2.00	\$3,080.00
P-620-5.1a	Surface Preparation	LF	768	\$1.00	\$768.00
P-620-5.2b-1	Taxiway Marking (Yellow)	SF	234	\$1.00	\$234.00
P-620-5.2b-4	Taxiway Marking (Black)	SF	535	\$1.00	\$535.00
P-620-5.3c	Reflective Media	LB	20	\$6.00	\$120.00
T-904-5.2	Sodding	SY	50	\$20.00	\$1,000.00
T-905-5.1	Topsoil (Obtained Onsite or Removed from Stockpile)	CY	300	\$15.00	\$4,500.00
D-705-5.4	6" Pipe (Perforated PVC)(Includes Porous Backfill and Filter Fabric)	LF	424	\$50.00	\$21,200.00
L-108-5.2	Trenching, turf and pavement restoration, protection of existing circuits	LF	310	\$64.00	\$19,840.00
L-108-5.4	5KV cable, #6 AWG	LF	341	\$7.53	\$2,568.35
L-108-5.5	Bare Counterpoise Ground Cable, #6	LF	341	\$4.29	\$1,461.55
L-108-5.6	3/4" X 10' Copper Ground Rod	EA	9	\$206.37	\$1,857.33
L-108-5.7	Copper Ground Lug	EA	18	\$105.22	\$1,893.96
L-110-5.1	2" PVC conduit demo and re install	LF	310	\$29.63	\$9,186.51
L-110-5.2	2" PVC couplings demo and re install	EA	31	\$65.75	\$2,038.16
L-110-5.3	2" PVC connectors demo and re install	EA	204	\$50.09	\$10,218.66
L-110-5.6	L-867D Base can	EA	2	\$1,874.73	\$3,749.46
L-110-5.7	Duct Marker	EA	4	\$1,348.49	\$5,393.96
L-115-5.2	Electrical Junction Structure, L-867D, 16"	EA	4	\$2,706.00	\$10,824.00
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L-125-5.9	Mounting Flange GN-62B0107	EA	4	\$573.93	\$2,295.72
L-125-5.10	SIGN concrete foundation	EA	1	\$18,319.73	\$18,319.73
S-1000	Construction Safety and Phasing Plan	LS	1	\$116,000.00	\$116,000.00
S-1001	Seeding (Hydroseeding)	AC	0.4	\$3,200.00	\$1,280.00
Alternate No. 2 Total					\$697,654.84

PRE-BID CONFERENCE AGENDA

Taxiway F Reconstruction

10:00 AM Wednesday, July 22, 2026

Meeting Location: Airport Terminal Conference Room – First Floor

Project Location: Baton Rouge Metropolitan Airport

AIP No.: TBD

SPONSOR: Greater Baton Rouge Airport District

SPONSOR REPRESENTATIVE: Alan Krouse, Program Manager, AMG
Phone: 225-358-4240

PROJECT ENGINEER: Blake Roussel, Stanley Consultants, Inc.
Phone: (225) 936-1604

Brady Richard, Stanley Consultants, Inc.
Phone: (225) 388-4232

Graham Wilfong, Stanley Consultants, Inc.
Phone: (225) 388-4229

INTRODUCTIONS:

1. **Baton Rouge Metropolitan Airport (Owner)**
 - a. Mike Edwards, Director of Aviation
 - b. Louis Hubbard, Assistant Director of Aviation
 - c. Chief Robert Stikes, Airport Police/ARFF
 - d. Jerry Webber, Construction Superintendent
 - e. Craig Alford, Airport Operations
2. **Program Managers (Owner's Representatives): AMG**
 - a. Alan Krouse, Program Manager
 - b. Tim Murray, Construction Project Manager
3. **Project Engineers: Stanley Consultants, Inc.**
 - a. Brady Richard, Project Engineer
 - b. Blake Roussel, Project Engineer
4. **Inspection/Testing Services: TBD**
 - a. Project Inspector TBD
 - b. Quality Assurance Laboratory, TBD
5. **DBE Instructions – No DBE Goal**

6. **Security Badging and Access – AMG – Tim Murray**

7. **Contractors**

8. **Others**

GENERAL CONTRACT REQUIREMENTS:

1. **General Type of Work** – This contract includes the demolition of asphalt pavement section along a segment of Taxiway F and construction of a new, widened concrete pavement section in its place. Work types include earthwork, concrete pavement with alternate bids for additional pavement areas, subsurface drainage, airport signage updates, pavement markings, and taxiway edge lighting.

2. **Contract Provisions**

- a. Plans and Specifications are available online at www.centralbidding.com:
- b. Links to the plans and specs can also be provided for download via an email request to both Project Engineers from Stanley Consultants.

Brady Richard, Stanley Consultants, Inc.

RichardBrady@stanleygroup.com

Phone: (225) 388-4232

Blake Roussel, Stanley Consultants, Inc.

RousselBlake@stanleygroup.com

Phone: (225) 936-1604

- c. Bid Opening
Time & Date: 2:00 pm, Tuesday, August 4, 2026
Location: City/Parish Purchasing Office, Room 826, City Hall
- d. Addendums - Addendum 1 will be issued in the days following the Pre-Bid Meeting.
1. Items covered
- Pre-bid meeting minutes and sign-in sheet
 - Pay items for CSPP, structural concrete and joint sealant for Alt. 2
 - Revisions to CSPP based on FAA comments
 - Joint Layout Revisions
 - New Project Manual Cover Sheet
 - As-Builts
 - Corrections to Sheet Index
 - Contractor Q&A

3. **Project Detail:**

- Overall Project Scope includes the demolition of asphalt pavement along Taxiway Foxtrot from Runway 13-31 to mid-point between Taxiways F1 and F2 (including alternates) and replacing with a widened concrete pavement section. Pavement markings, subsurface drainage, taxiway edge lights and airfield signage improvements are also included.
- Contract Time
- 170 calendar days (Base Bid)

- 38 additional calendar days, 208 total (Alternate No. 1)
- 48 additional calendar days, 256 total (Alternate No. 2)

- Construction Safety and Phasing Plan
 - No workers can enter any safety areas of active runways or taxiways.
 - Access locations, haul routes and laydown areas are as shown in the plans.
 - a. Harding Blvd -> Merle Gustafson Dr -> T B Herndon Ave -> Access Gate
 - Runway 13-31 to be Closed during Phase 1.
 - The timing of the project NTP date and resulting runway closure will need to be closely coordinated with BTR with consideration given to other projects and closures ongoing in the area.

Questions

- a. Please submit all questions in written email format to the Project Engineers as listed above by tomorrow, Thursday, July 23, 2026 at 5:00pm. They will be reviewed and responded to in an addendum, if applicable.

Pre-Bid Conference Adjourned

PRE-BID CONFERENCE NOTES

Taxiway F Reconstruction

10:00 AM Wednesday, July 22, 2026

Meeting Location: Airport Terminal Conference Room – First Floor

Project Location: Baton Rouge Metropolitan Airport

AIP No.: TBD

SPONSOR: Greater Baton Rouge Airport District

SPONSOR REPRESENTATIVE: Alan Krouse, Program Manager, AMG
Phone: 225-358-4240

PROJECT ENGINEER: Blake Roussel, Stanley Consultants, Inc.
Phone: (225) 936-1604

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 - d. Jerry Webber, Construction Superintendent
 - e. Craig Alford, Airport Operations
2. **Program Managers (Owner's Representatives): AMG**
 - a. Alan Krouse, Program Manager
 - b. Tim Murray, Construction Project Manager
3. **Project Engineers: Stanley Consultants, Inc.**
 - a. Brady Richard, Project Engineer
 - b. Blake Roussel, Project Engineer
4. **Inspection/Testing Services: TBD**
 - a. Project Inspector TBD
 - b. Quality Assurance Laboratory, TBD **Southern Earth Sciences**
5. **DBE Instructions – No DBE Goal**

6. **Security Badging and Access – AMG – Tim Murray**
 - Gate guard required at entrance must og every behicle coming in and out
 - Due to multiple work locations, as many employees should be badged as possible
 - Lindsie Byers, Baton Rouge Metropolitan Airport Police and Aircraft Rescue & Firefighting (ARFF), is the contact person for badging
7. **Contractors**
8. **Others**

GENERAL CONTRACT REQUIREMENTS:

1. **General Type of Work** – This contract includes the demolition of asphalt pavement section along a segment of Taxiway F and construction of a new, widened concrete pavement section in its place. Work types include earthwork, concrete pavement with alternate bids for additional pavement areas, subsurface drainage, airport signage updates, pavement markings, and taxiway edge lighting.
2. **Contract Provisions**
 - a. Plans and Specifications are available online at www.centralbidding.com:
 - b. Links to the plans and specs can also be provided for download via an email request to both Project Engineers from Stanley Consultants.

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 - Pre-bid meeting minutes and sign-in sheet
 - Pay items for CSPP, structural concrete and joint sealant for Alt. 2
 - Revisions to CSPP based on FAA comments
 - Joint Layout Revisions
 - New Project Manual Cover Sheet
 - As-Builts
 - Corrections to Sheet Index
 - Contractor Q&A
3. **Project Detail:**
 - Overall Project Scope includes the demolition of asphalt pavement along Taxiway Foxtrot from Runway 13-31 to mid-point between Taxiways F1 and F2 (including alternates) and

replacing with a widened concrete pavement section. Pavement markings, subsurface drainage, taxiway edge lights and airfield signage improvements are also included.

- Contract Time
- 170 calendar days (Base Bid)
- 38 additional calendar days, 208 total (Alternate No. 1)
- 48 additional calendar days, 256 total (Alternate No. 2)

- Construction Safety and Phasing Plan
 - No workers can enter any safety areas of active runways or taxiways.
 - a. See revised haul routes shown in addendums.
 - Runway 13-31 to be Closed during Phase 1.
 - The timing of the project NTP date and resulting runway closure will need to be closely coordinated with BTR with consideration given to other projects and closures ongoing in the area.

Questions

- a. Please submit all questions in written email format to the Project Engineers as listed above by tomorrow, Thursday, July 23, 2026 at 5:00pm. They will be reviewed and responded to in an addendum, if applicable.
- b. **Segment 2 of Taxiway F Reconstruction is tentatively scheduled to advertise next year pending funding availability**
- c. **FAA Cables are underground within the project area; an FAA resident engineer will be needed on site for locating lines**
- d. **Where is the Topsoil supply location?**
 - i. **Answer to be provided via addendum**
- e. **Pay item for asphalt for pavement transition from flexible to concrete pavement?**
 - i. **Clarification to be provided via addendum**

Pre-Bid Conference Adjourned



Stanley Consultants INC.

[illegible]

Taxiway F Reconstruction
Sign In

[illegible]

For Addendum Issuance	
Baton Rouge Metro Airport Taxiway F Reconstruction	
Question(s)	Response
Sheet JB201 – Enlarged Joint Layout Plan does not include the pavement area included in Alternate 2. Could the area included with Alternate 2 be added to the joint layout plan?	A completely revised joint layout will be issued via Addendum. It will also include the Alt. 2 area.
"Project includes 4,407 SY of Pavement Removal (Taxiway F). Typical sections show removal of 39" thick asphalt surfacing and base. Could more information be provided as to the asphalt thickness, base thickness, and type? Also, if there are multiple base layers, could these be identified?"	Please refer to the Project Manual Appendix B Geotechnical Report, specifically Boring B-05/C-01 and B-12/C-02 containing pavement core data. Please also see the Twy F Rehab as-built plans added as Appendix C to the Project Manual to be provided via Addendum 1 in the coming days.
"Sheet CS201, Note 4 details utility protection slab. How will slab to be paid? Will a separate bid item need to be created?"	Yes. P-610 will be added for billing this item.
"Please provided bid item for D-705 Shoulder Drain as shown on typical section sheet CS201,CS202"	Rid Item for D-705 Shoulder Drain will be added in unit price bid form via Addendum. Specification will also be provided
Jack and bore pay item — REQUEST. No pay item exists for the bored conduit crossings shown at the phase match lines (ED101/ED102 General Note E) and under taxiways (ES101 keynotes, with duct markers paid under L-110-5.7). We estimate approximately four crossings totaling 300-400 LF. We respectfully request a pay item be added by addendum (per LF of bored HDPE SDR 11 conduit.)	Jack and Bore Pay Item # L-110-5.8 added to specification
Phase cutover windows. ED101/ED102 Note E requires continuity of the Taxiway Foxtrot circuit through all phases of construction. For the final cable cutover at each phase tie-in, please confirm when the affected taxiway segment or its lighting circuit may be taken out of service under the ATC lock-and-tag procedure (Note A), and whether that work window is daytime or restricted to a particular period.	Contractor shall coordinate cable cutovers with Air Traffic Control in the time allowed. After normal operating hours should be included in the bid.
Counterpoise conductor type. E-502 Note 6 and ES101 call for bare SOLID #6 copper counterpoise; Spec L-108-2.3 requires STRANDED. Please confirm which governs.	Stranded or solid is acceptable. Contractor's discretion.
Size D cover plates. Spec L-115-2.4 requires 3/8-inch stainless steel covers; E-501 Detail 1 shows a 0.75-inch solid steel cover. This applies to the L-867 Size D junction structure and handhole covers. Please confirm which governs.	0.75" solid steel cover.
Isolation transformer ratings — guidance signs. For the guidance signs, E-503 states transformers are sized as required by the sign manufacturer; however, the signs are existing units being relocated (E-604), and their lamp technology is not indicated. Please confirm: (a) whether the existing signs are LED or incandescent, or provide the sign power ratings; and (b) the required transformer rating for the sign circuits, or whether the existing sign transformers are to be reused.	Existing signs are a mix of incandescent and LED. All signs will need to be updated to LED as a part of the project.
Ground rods and lugs in the alternates. Items L-108-5.6 and L-108-5.7 appear only in the base bid, yet each alternate includes 550 LF of counterpoise and 10 base cans, and E-502 Note 6 requires a ground lug on all base cans and rods at 500-foot maximum spacing. Please confirm whether rods and lugs within the alternate limits are incidental to L-108-5.5, or whether pay items will be added.	Ground Rods and lugs are incidental to L-108-5.5.
Where is the topsoil supply location?	Topsoil to be obtained on site from cut sections.
How will the asphalt transition detail be paid?	Addendum is adding items for asphalt pavement. Existing base course items will be used as well.
I see on sheet JL201 it shows a detail for preformed compression seal. However, all the plan notes and specs point to sealing per the detail that shows field poured sealant using hot pour sealant. Please confirm that preformed compression sealant is not being used on this project, as it is much more expensive than hot pour sealant.	Preformed compression seal detail removed from Sheet JL201.