

**Department of Aviation  
Bureau of Planning and Development**

# **Design and Construction Guidelines Manual for Tenant New Construction and Modification**

**Architecture  
Civil  
Structural  
Mechanical  
Electrical  
Signage  
Construction**

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**Hartsfield-Jackson Atlanta International Airport**  
City of Atlanta  
Department of Aviation  
Bureau of Planning & Development

# Tenant Project Submittal & Review Guidelines

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09/12/14	New Revised Guidelines for Tenant Work Only			
Last Revised Date	Description			
Revisions				

# Tenant Project Submittal & Review Guidelines

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## 1.0 PURPOSE

The purpose of these guidelines is to provide airport tenants with procedures for submitting a project to the Department of Aviation's Planning & Development (P&D) for technical review and acceptance. All new construction and modifications to any airport's tenant space at Hartsfield-Jackson Atlanta International Airport (ATL) shall follow these guidelines.

## 2.0 SCOPE

These guidelines apply to all airport tenants, DOA stakeholders, contractors and sub-contractors.

## 3.0 RESPONSIBILITIES

### 3.1 Tenants

- 3.1.1 Tenants shall be responsible for submitting all project submittals to P&D's Document Control for technical review and acceptance.
- 3.1.2 Tenants shall be responsible for complying with all P&D's Tenant New Construction & Modification Guidelines. Access at <http://apps.atlanta-airport.com/engineeringguidelines/index.asp>
- 3.1.3 Tenants shall be responsible for ensuring that all project submittals are complete, per Section 4.0 of these guidelines, before submitting to P&D for technical review.
- 3.1.4 Tenants shall be responsible for submitting to P&D, all revisions or modifications to the P&D stamped/accepted documents for P&D's review and acceptance.
- 3.1.5 Tenants shall be responsible for obtaining all required building permits from appropriate agencies before start of any new construction work and/or modifications.

### 3.2 DOA Planning & Development (P&D)

- 3.2.1 P&D shall be responsible for the Architectural/Engineering technical review of all project submittals submitted by Tenants. Fire Code and Grease Interceptor Requirement reviews shall be the responsibility of the City of Atlanta's Fire Department (AFD) and Department of Watershed Management (DWM) respectively.
- 3.2.2 P&D shall be responsible for ensuring that all project submittals comply with P&D Tenant New Construction & Modification Guidelines.
- 3.2.3 P&D shall be responsible for issuing the technical review comments to Tenant.
- 3.2.4 P&D shall be responsible for issuing the final P&D stamped accepted project submittals to Tenant.

## 4.0 PROCEDURE

### 4.1 Project Submittals

#### 4.1.1 Delivery of Submittals

4.1.1.1 Tenant shall be responsible for submitting all project submittals to P&D's Document Control Office located at 1255 South Loop Road, College Park, GA 30337 during normal business hours of 8:00 am – 4:00 pm. All submittals received after 2:00 pm shall be processed on the next business day.

#### 4.1.2 Tenant Submittals to P&D

Tenant shall be responsible for submitting/delivering to P&D's Document Control the following documentation with each project submittal:

4.1.2.1 One (1) hard copy of the Tenant Project Submittal Form (Appendix A)

#### 4.1.2.2 100% Design Submittal (**Initial Review Submittal**)

Drawings for this submittal are not required to be sealed by the Professional Engineer or Registered Architect

4.1.2.2.1 Four (4) hard copies of full-sized set of plans and one (1) hard copy set of specifications.

4.1.2.2.2 Two (2) compact discs (CD) containing the PDF version of the plans and specifications.

#### 4.1.2.3 100% Design Re-Submittal (Revised Drawings incorporating all comments for Review and Final Acceptance)

4.1.2.3.1 Four (4) hard copies of full sized sheets of the **revised drawing sheets only** (showing the incorporation of P&D's comments as required)

4.1.2.3.2 One (1) hard copy of the **revised Specifications sheets only**

4.1.2.3.3 One (1) CD containing the following:

4.1.2.3.3.1 The DOA Review Spreadsheets (Highlighted Tabs) with **the Tenant responses to all DOA Comments**

4.1.2.3.3.2 PDF of the **revised drawings and Specification sheets only**

4.1.2.5.4 Once P&D receive the above information from the Tenant, P&D shall review/confirm that all comments/revisions have been answered, are closed and have been incorporated. Tenant will then be notified via E-Mail that the submittal is ready for approval and can submit the Final Conformed set of Issue for Construction documents for P&D's final stamp acceptance.

4.1.2.4 Issue for Construction Documents Submittal (IFC) (Final Conformed set of Documents)

Drawings shall be signed and sealed by a Professional Engineer or Registered Architect with a State of Georgia Seal.

4.1.2.4.1 Six (6) hard copies of full-sized set of plans and six (6) hard copy sets of specifications

4.1.2.4.2 Two (2) CDs containing the PDF version of the plans and specifications.

4.1.2.4.3 One (1) CD containing the Auto CADD version of plans and Word document of specifications. This CADD version is of the FINAL & CONFORMED DOA Accepted set of documents only (Documents with all comments addressed, closed and incorporated).

## 5.0 REVIEW PROCESS & TIMING

5.1 Tenant submits to P&D's Document Control the 100% Design submittal for P&D, AFD and DWM (If required) technical review.

5.1.1 P&D's Document Control date stamps and distributes documents

5.1.2 P&D's Facility Construction Management (FCM) receives submittal package and logs in

5.1.3 P&D's FCM determines Engineering discipline and DOA Stakeholder review, establishes review due date and notifies reviewers

5.1.4 100% Design Submittal (Initial Review Submittal). P&D begins technical review

**AFD & DWM (If required) review times and their resolution of issues are not controlled by P&D. These conditions may be subject to additional review time and full acceptance of the documents.**

5.1.5 P&D's FCM transmits review comments via e-mail to Tenant

5.1.5.1 If there are no comments, Tenant shall then be notified via E-Mail that the submittal is ready for acceptance and can submit the Final Conformed set of Issue for Construction Documents (with Architect/Engineer seals) for P&D, AFD and DWM (If Required) stamp acceptance.

5.1.5.1.1 Once P&D receives the IFC Documents from Tenant, P&D and AFD/DWM (if required) shall stamp the documents and FCM shall prepare the Release Notification Letter.

5.1.5.1.2 Tenant shall then be notified via e-mail that the stamped-accepted documents are ready for pick up from P&D's Document Control.

5.1.5.2 If Comments are provided, FCM shall transmit to Tenant the review comments via E-Mail and Tenant shall be responsible for addressing/incorporating all comments and submitting the 100% Design

Re-Submittal (Revised Drawings incorporating all comments for Review and Final Acceptance).

5.1.5.3 Once P&D reviews and confirms that all comments are incorporated, Tenant shall then be notified via E-Mail that the submittal is ready for final acceptance and can submit the Final Conformed IFC Documents for P&D, AFD/DWM (if required) stamp acceptance.

5.1.5.3.1 Once P&D receives the IFC Documents from the Tenant, P&D and AFD/DWM (if required) shall stamp the documents and FCM shall prepare the P&D's Technical Review Release Letter which documents the acceptance of the Tenant documents.

5.1.5.3.2 Tenant shall then be notified via e-mail that the stamped-accepted documents are ready for pick up from P&D's Document Control.

5.1.6 Summary of Review Process shall be per the Tenant Review Process Flow Chart (Appendix B).

5.1.7 The Review Process timing shall be as follows:

5.1.7.1 Initial submittal review shall be a maximum of ten (10) business days.

5.1.7.2 Re-Submittal review shall be a maximum of five (5) business days.

5.1.7.3 Stamp acceptance of documents and development of Technical Review Release Notification Letter shall be a maximum of two (2) days.

**5.2 Tenant shall be responsible for providing the Office of Building (Per their request) with a copy of P&D's Technical Review Release Notification Letter which shall be part of the overall Tenant submittal to the Office of Buildings for permitting.**

5.3 Overall review/approval time depends on the Tenant's turn-around time of their Re-Submittals incorporating all of the agreed upon comments.

5.4 P&D's technical review and stamped acceptance of documents is solely for compliance with P&D's Tenant New Construction & Modifications Guidelines.

5.5 Compliance with City, State and Federal Codes, Regulations, and Ordinances is the responsibility of the Tenant and are reviewed and approved by the City of Atlanta Office of Building, Atlanta Fire Department and Department of Watershed Management (If required). Tenant shall also be responsible for any liability resulting from the design and installation of the improvements and for any errors, omissions or conditions from the submitted construction documents.

## 6.0 DOA PROJECT REQUIREMENTS

6.1 Aircraft Ramp Work

6.1.1 Refer to P&D's Tenant New Construction & Modifications Design Guidelines – Civil when Tenant project construction requires work on the aircraft ramps.

6.1.2 Construction of any project on the aircraft ramps shall also require an FAA 7460 application form to be submitted to the DOA for review and approval, regardless of whether cranes are required or not.



## 6.2 Building Permit

- 6.2.1 **P&D and AFD/DWM (if required) stamped accepted documents with a copy of P&D's Technical Review Release Letter shall be submitted to the Office of Buildings for permitting.**
- 6.2.2 The Office of Buildings will not review any submittal or issue a permit without the P&D and AFD/ DWM (If required) stamped documents and a copy of P&D's Technical Review Release Letter.
- 6.2.3 The Office of Buildings permit does not authorize the Tenant's Contractor to proceed with construction. A DOA Pre-Construction meeting is required and shall be conducted with the Tenant's Contractor in order to receive a "Notice to Proceed" to begin construction.

## 6.3 Construction

- 6.3.1 Refer to P&D's Tenant Construction Guidelines for all interior/exterior Tenant construction work. All construction work shall comply with these guidelines.
- 6.3.2 All Tenant projects shall be constructed in accordance with the P&D's stamped/accepted documents.
- 6.3.3 Any revisions or modifications to the P&D stamped accepted documents during construction shall be submitted to P&D for review and acceptance. The Office of Buildings' inspectors will not approve any work without P&D's and AFD/DWM (If required) stamped acceptance of the changed/revised documents.

## 6.4 As-Builts

- 6.4.1 At project completion, Tenant shall be responsible for submitting to P&D the following:
  - 6.4.1.1 Two (2) hard copies of full sized as-built drawings and specifications
  - 6.4.1.2 Three (3) CDs containing the Auto CAD version of plans and Word document of the specifications
  - 6.4.1.3 Three (3) CDs of the electronic version of PDF's of the plans and specifications.

## 7.0 REFERENCES

- 7.0.1 Tenant New Construction/Modifications Design Guidelines – Architectural
- 7.0.2 Tenant New Construction/Modifications Design Guidelines – Structural
- 7.0.3 Tenant New Construction/Modifications Design Guidelines – Electrical
- 7.0.4 Tenant New Construction/Modifications Design Guidelines – Mechanical
- 7.0.5 Tenant New Construction/Modifications Design Guidelines – Civil
- 7.0.6 Tenant Construction Guidelines

## 8.0 APPENDICES

- Appendix A Tenant Project Submittal Form
- Appendix B Tenant Review Process Flow Chart

# **APPENDIX A**

## **Tenant Project Submittal Form**



## TENANT PROJECT SUBMITTAL FORM

**Date/Time of Submittal:**

**Project Name:**

**Project Location:**

**Tenant/Entity Name:**

**Contact Name:**

E-Mail address:

Telephone No.:

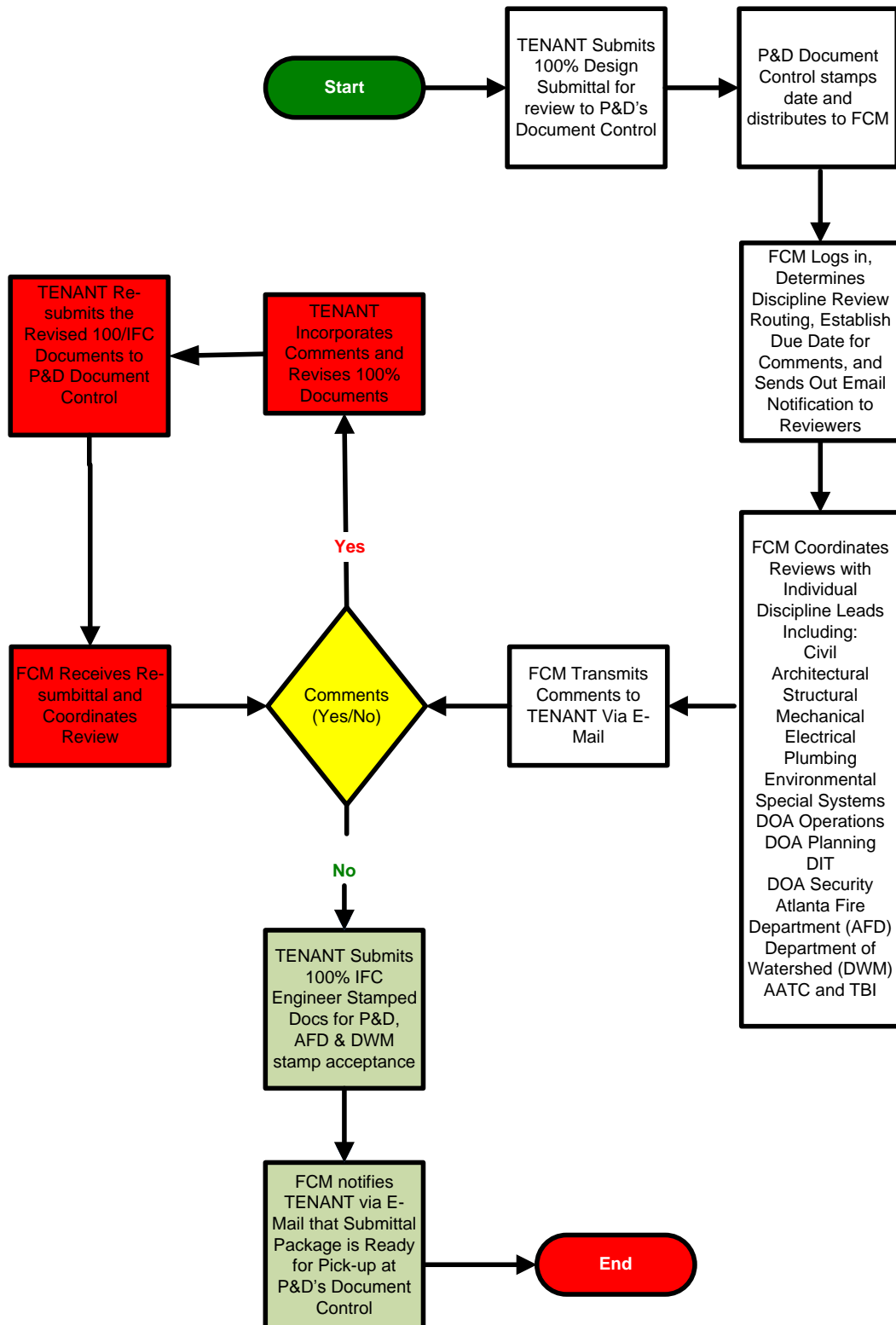
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**Scope of Work Description:**

## **APPENDIX B**

### **Tenant Review Process Flow Chart**

### Tenant Review Process Flow Chart



**Hartsfield-Jackson Atlanta International Airport**  
**City of Atlanta**  
**Department of Aviation**  
**Bureau of Planning & Development**

# **Tenant New Construction/ Modifications Design Guidelines – Architectural**

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09/12/14	Revised for Tenant Work Only
Last Revised Date	Description of Changes
<b>Revisions</b>	

## Design Guidelines Architectural

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## Design Guidelines Architectural

### 1.0 Purpose

The purpose of this document is to outline the minimum Architectural requirements for New Construction and/or Modifications related to Tenant submitted projects at the City of Atlanta's Hartsfield-Jackson Atlanta International Airport (H-JAIA).

### 2.0 General

All design work shall be performed in accordance with generally accepted professional principles and practices for Architectural Design and in compliance with all applicable Department of Aviation (DOA) Design Guidelines, Federal, State and City of Atlanta Design Codes, Standards and Regulations.

#### 2.0.1 Applicable Codes

The requirements of the following codes shall form the minimum criteria for Architectural design projects at Hartsfield-Jackson Atlanta International Airport. Where there may be conflicting requirements in the cited coded, the most stringent provision, as determined by the airport's Planning and Development Division shall be applied.

- International Building Code, 2012 Edition, with Georgia Amendments (**2013**)
- International Fire Code, 2012 Edition, with Georgia Amendments (**2013**)
- International Plumbing Code, 2012 Edition, with Georgia Amendments (**2013**)
- International Mechanical Code, 2012 Edition, with Georgia Amendments (**2013**)
- International Fuel Gas Code, 2012 Edition, with Georgia Amendments (**2013**)
- National Electrical Code, 2011 Edition, with no Georgia Amendements (**2013**)
- 2012 NFPA 101 – Life Safety Code with state Amendments (**2013**)
- International Energy Conservation Code, 2009 Edition, with Georgia Supplements and Amendments (2011) (2012)

#### 2.0.2 Existing Space Requirements

##### 2.0.2.1 Modifying Existing Structures

2.0.2.1.1 Proposed space modifications shall comply with the DOA. Architectural, Structural, Electrical and Mechanical Design Guidelines

##### 2.0.2.2 New Floor, Wall and Roof Penetrations

2.0.2.2.1 Proposed penetrations and/or openings for existing floors, walls and roofs shall comply with the DOA Structural Design Guidelines, Section 1.1.3.



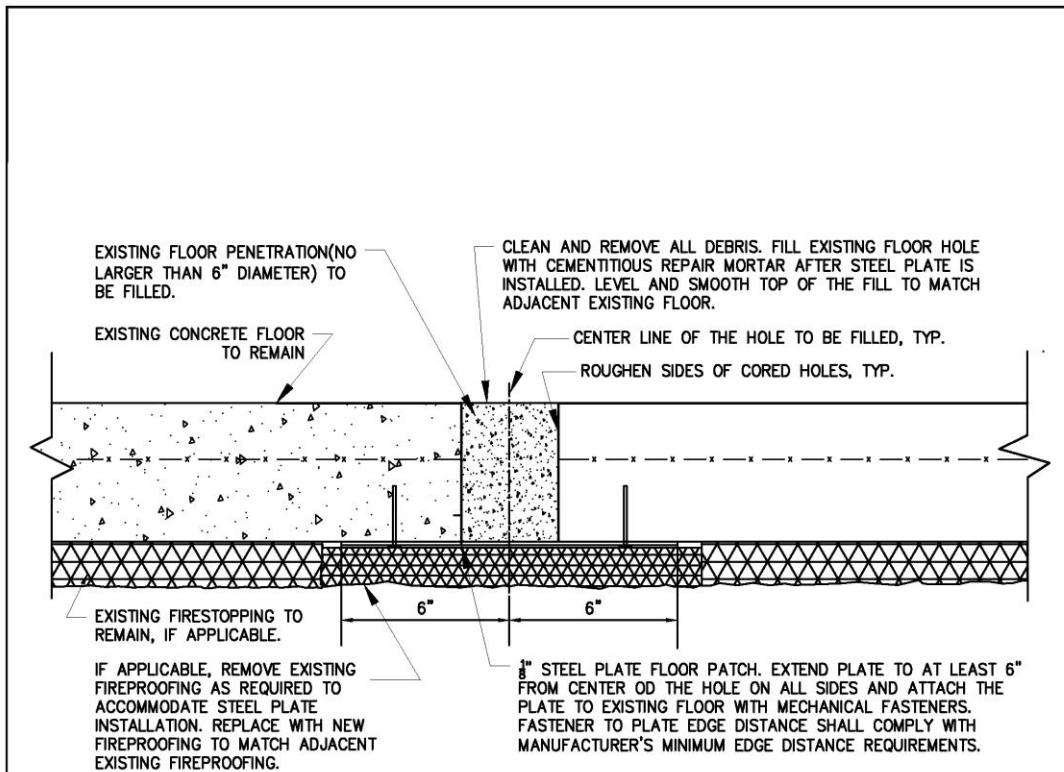
- 2.0.2.3 Repair of Existing Floor and Roof Penetrations
  - 2.0.3.1 Repair/filling of existing cores and/or openings for Concrete Floors, Concrete Floors on Steel Deck, Steel Deck Roof, and Concrete on Steel Deck Roof and Concrete Deck Roof shall comply with Details No.1 through No. 5 (Attached as part of these guidelines)
- 2.0.2.4 Temporary Construction Walls
  - 2.0.2.4.1 Temporary construction walls shall be full height (to underside of finished ceiling)
  - 2.0.2.4.2 Walls shall be constructed of metal studs with gypsum wall board,
    - on the public side, and be attached to the existing floor. The gypsum board shall be painted and shall include finished baseboard (colors to be selected by Owner)
  - 2.0.2.4.3 Any damage to existing base building finishes shall be repaired by
    - Concessionaire at no cost to the Owner

### 3.0 Design

- 3.0.1 General
  - 3.0.1.1 Design shall incorporate good design practices that match and/or enhance existing conditions.
  - 3.0.1.2 Existing base building finishes outside a Tenant's lease line (Horizontal and Vertical) shall be maintained.
  - 3.0.1.3 Tenant is responsible for correcting any damage to existing base building finishes caused by the construction work.
  - 3.0.1.4 Tenant is responsible for ensuring that all building service tie-ins to existing base building infrastructure meet DOA Design and Construction Guidelines.
  - 3.0.1.5 All materials and finishes used shall be of equal or higher quality to existing base building finishes
  - 3.0.1.6 Additions or modifications that impact or interface with existing CPTC roof systems shall be compatible with in-place roof systems and conditions. The H-JAIA standard roofing system is a single-ply membrane fully adhered (Per Manufacture's Specification) 135 mil Fleeceback TPO roofing system (80 mil w/55 mil Fleeceback) over new insulation with heat welded TPO sheet seams.

## **4.0 Attachments**

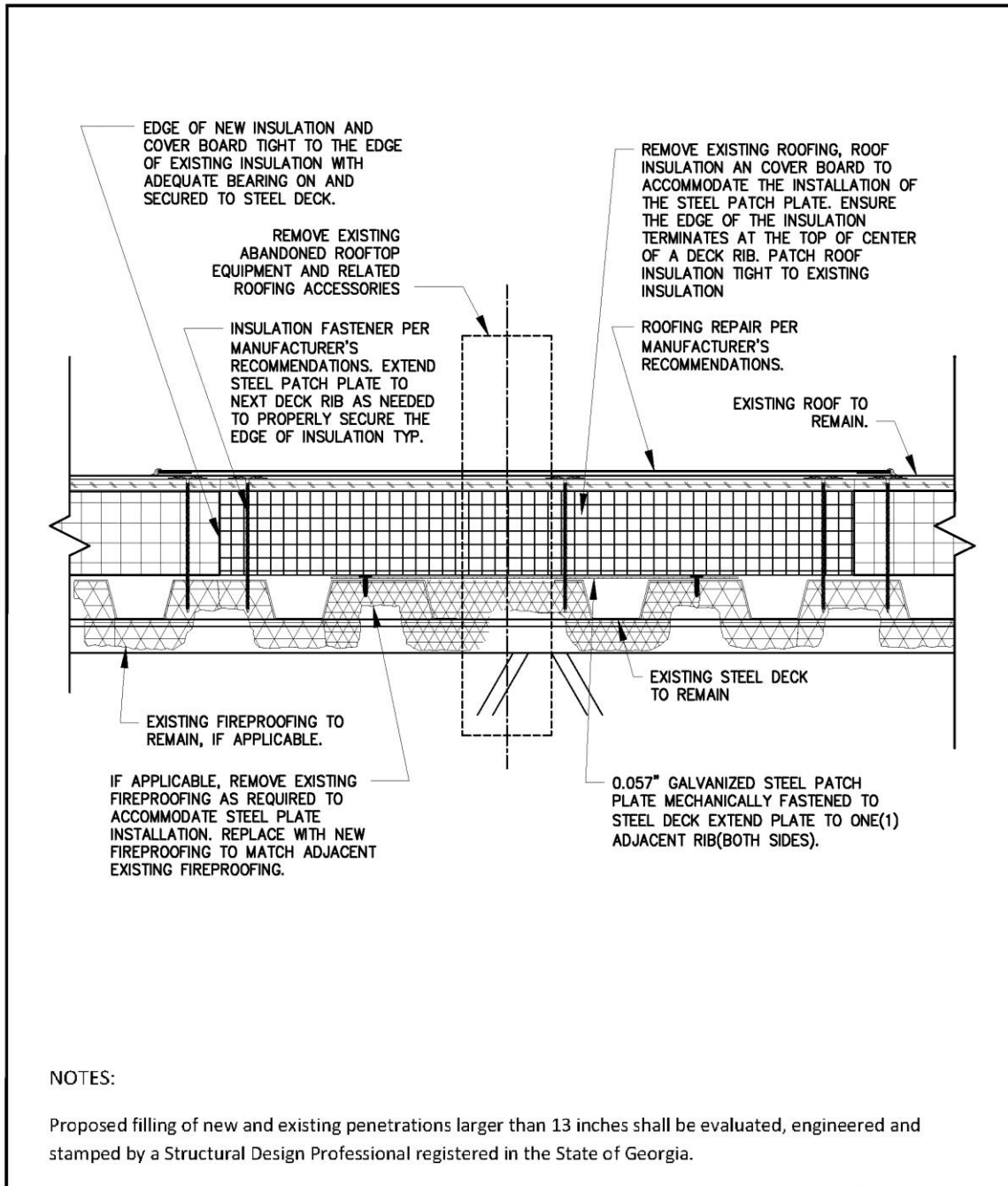
- 4.0.1 Detail No. 1 Concrete on Steel Deck Floor Repair
- 4.0.2 Detail No. 2 Concrete Floor Repair
- 4.0.3 Detail No. 3 Steel Deck Roof Repair
- 4.0.4 Detail No. 4 Concrete on Steel Deck Roof Repair
- 4.0.5 Detail No. 5 Concrete Deck Roof Repair



**NOTES:**

1. Proposed filling of new and existing cores and/or openings that fall under the following conditions shall be evaluated, engineered and stamped by a Structural Design Professional registered in the State of Georgia. :
  - 1.1 Penetrations larger than 6 inches; or
  - 1.2 The clear spacing of adjacent penetrations is less than 3 inches; or
  - 1.3 The concrete floor if reinforced with pre-stressed reinforcement.

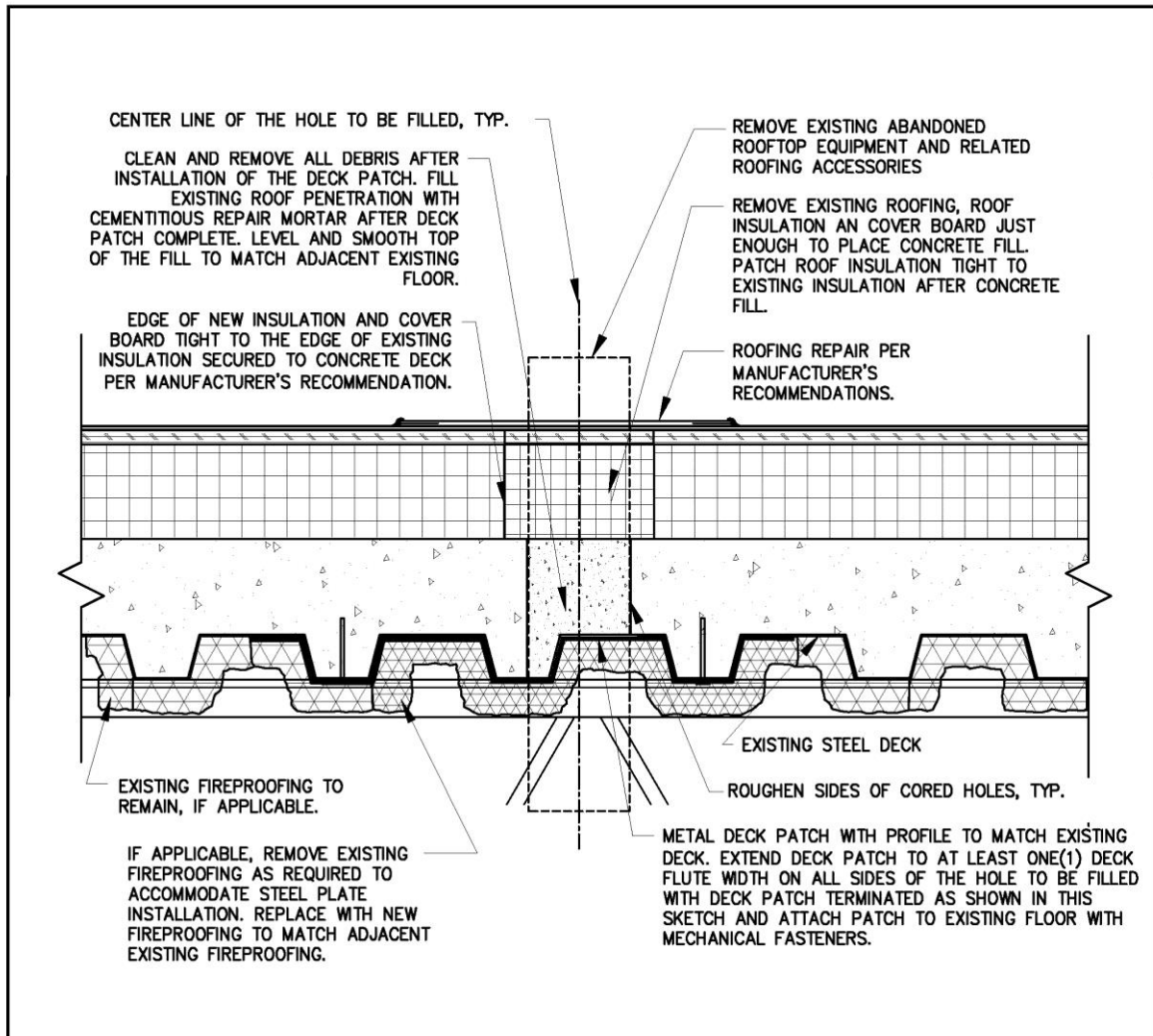
<b>PROJECT: ELEVATED FLOOR PENETRATION REPAIR DETAIL</b>			DETAIL NO.
<b>DRAWING NAME: CONCRETE FLOOR REPAIR</b>			<b>2</b>
<b>REVISIONS</b>	<b>DESCRIPTION OF REVISION</b>	<b>DRAWN BY:</b> CM <b>DESIGNED BY:</b> CM <b>CHECKED BY:</b> CHECK <b>CONTRACT:</b> NONE <b>WBS:</b> NONE <b>SCALE:</b> NTS <b>DATE:</b> 03/26/2014	REFERENCE DWG. NO.
No.			<b>NONE</b>
No.			
No.			
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No.			



NOTES:

Proposed filling of new and existing penetrations larger than 13 inches shall be evaluated, engineered and stamped by a Structural Design Professional registered in the State of Georgia.

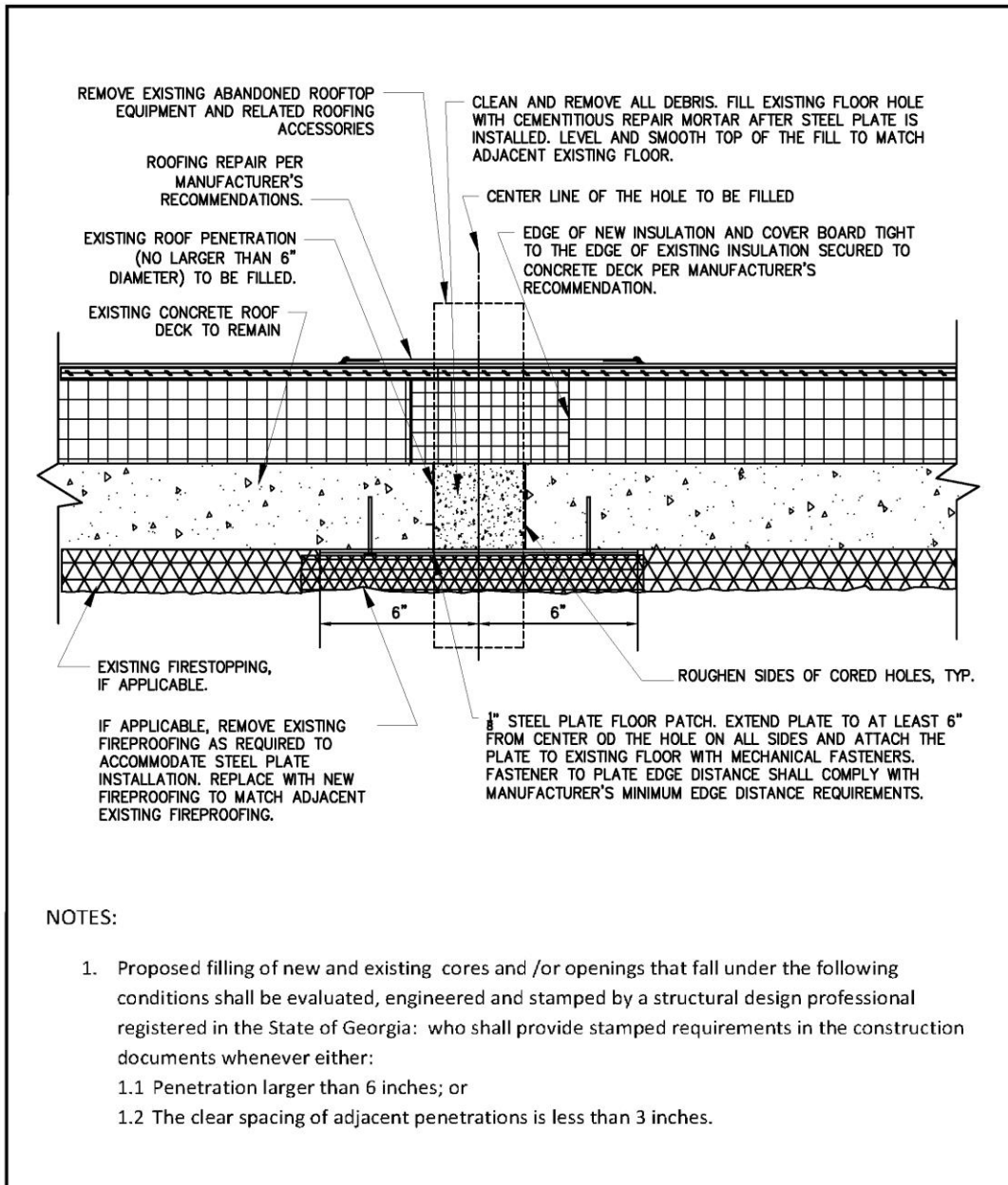
<b>PROJECT: ROOF PENETRATION REPAIR DETAIL</b>			DETAIL NO.
<b>DRAWING NAME: STEEL DECK ROOF REPAIR</b>			<b>3</b>
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No.			<b>NONE</b>
No.			
No.			
No.			
No.			



**NOTES:**

1. Proposed filling of new and existing cores and /or openings that fall under the following conditions shall be evaluated, engineered and stamped by a structural design professional registered in the State of Georgia: who shall provide stamped requirements in the construction documents whenever either:
  - 1.1 Penetration larger than 6 inches; or
  - 1.2 The clear spacing of adjacent penetrations is less than 3 inches.

<b>PROJECT: ROOF PENETRATION REPAIR DETAIL</b>			DETAIL NO.
<b>DRAWING NAME: CONCRETE ON STEEL DECK ROOF REPAIR</b>			<b>4</b>
<b>REVISIONS</b>	<b>DESCRIPTION OF REVISION</b>	DRAWN BY: CM DESIGNED BY: CM CHECKED BY: CHECK CONTRACT: NONE WBS: NONE SCALE: NTS DATE: 03/26/2014	REFERENCE DWG. NO.
No.			<b>NONE</b>
No.			
No.			
No.			
No.			



**NOTES:**

1. Proposed filling of new and existing cores and /or openings that fall under the following conditions shall be evaluated, engineered and stamped by a structural design professional registered in the State of Georgia: who shall provide stamped requirements in the construction documents whenever either:
  - 1.1 Penetration larger than 6 inches; or
  - 1.2 The clear spacing of adjacent penetrations is less than 3 inches.

<b>PROJECT: ROOF PENETRATION REPAIR DETAIL</b>		Hartsfield-Jackson Atlanta International Airport	DETAIL NO.
<b>DRAWING NAME: CONCRETE DECK ROOF REPAIR</b>			<b>5</b>
<b>REVISIONS</b>	<b>DESCRIPTION OF REVISION</b>	DRAWN BY: CM DESIGNED BY: CM CHECKED BY: CHECK CONTRACT: NONE WBS: NONE SCALE: NTS DATE: 03/26/2014	REFERENCE DWG. NO.
No.			<b>NONE</b>
No.			
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**Hartsfield-Jackson Atlanta International Airport**  
City of Atlanta  
Department of Aviation  
Bureau of Planning & Development

# **Tenant New Construction/Modifications Design Guidelines – Civil**

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## Design Guidelines Civil

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## Design Guidelines Civil

### 1.0 Purpose

The purpose of this document is to provide the Tenant & Designer of Record with the DOA Civil Standards Details that shall be used for any new construction and/or modification project at Hartsfield-Jackson Atlanta International Airport.

### 1.1 General

All design work shall be performed in accordance with generally accepted professional principles and practices for Civil Engineering and in compliance with all applicable Federal, State and City of Atlanta Design Codes, Standards and Regulations and the DOA Civil Standard Details attached in Section 1.2 of these guidelines:

### 1.2 DOA Civil Standard Details (Attached)

#### 1.2.1 Airside – Runways, Taxiways & Aprons

STD-01-100	Airfield Typical Pavement Sections
STD-01-200	Typical Pavement Sections NLVR
STD-01-300	Apron Underdrain Details – New Pavement
STD-01-301	Underdrain Details – Replacement Projects
STD-01-400	In-Pavement Manholes
STD-01-500	In-Pavement Inlets Type “A”
STD-01-501	In-Pavement Inlets Type “B” and Type “B” Mod. Detail
STD-01-502	In-Pavement Inlets Type “D”
STD-01-503	Slope Drain Detail
STD-01-504	Paved Drainage Path Detail
STD-01-505	Miscellaneous Drainage Details
STD-01-700	Pavement Joint Details – New Projects
STD-01-701	Pavement Joint Details – 1 Replacement Projects
STD-01-702	Joint Details – 2 Replacement Projects
STD-01-703	Existing Pavement Removal and Replacement for Hydrants
STD-01-704	Spall and Joint Repair Details
STD-01-705	Typical Spall Repair Rebar Placement Detail
STD-01706	Retrofit Conduit Trench Repair Details
STD-01-800	Apron Striping and Marking – 1
STD-01-801	Apron NLVR Striping and Signage
STD-01-802	Runway Striping and Marking – 1
STD-01-803	Runway Striping and Marking – 2
STD-01-804	Taxiway Striping and Marking – 1
STD-01-805	Taxiway Striping and Marking – 2
STD-01-900	Miscellaneous Airfield Details

#### 1.2.2 Landside – Roads & Parking

STD-02-100	Typical Pavement Sections landside
STD-02-200	Joints – NLVR or Landside Roads
STD-02-300	Landside Striping and Marking Details
STD-02-502	Double and single Wing Catch Basin
STD-02-502	Curb Inlet Cast Iron Hood Details

### 1.2.3 General Details

STD-03-100	Settlement Platforms
STD-03-200	Chain Link Fences – 1
STD-03-201	Chain Link Fences – 2
STD-03-202	Chain Link Fences – 3
STD-03-203	Chain Link Fences – 4
STD-03-204	Chain Link Fences – Signage
STD-03-300	Guardrail Details
STD-03-400	Pipe Bedding Type “B” and “C”, Paved Ditch Detail
STD-03-401	Precast Junction Chamber
STD-03-402	Concrete Pipe Collar, Cleanout, Cap for Exist. Inlet
STD-03-403	Riser Tee Manhole for Existing or Proposed Pipe
STD-03-500	Standard Manhole and Type “E” Inlet
STD-03-600	Bollard Details
STD-03-601	Miscellaneous Paving and Bumper Block Details
STD-03-700	General Notes and Construction Control Plan Airside
STD-03-701	General Notes and Construction Control Plan Landside



CITY OF ATLANTA, GEORGIA

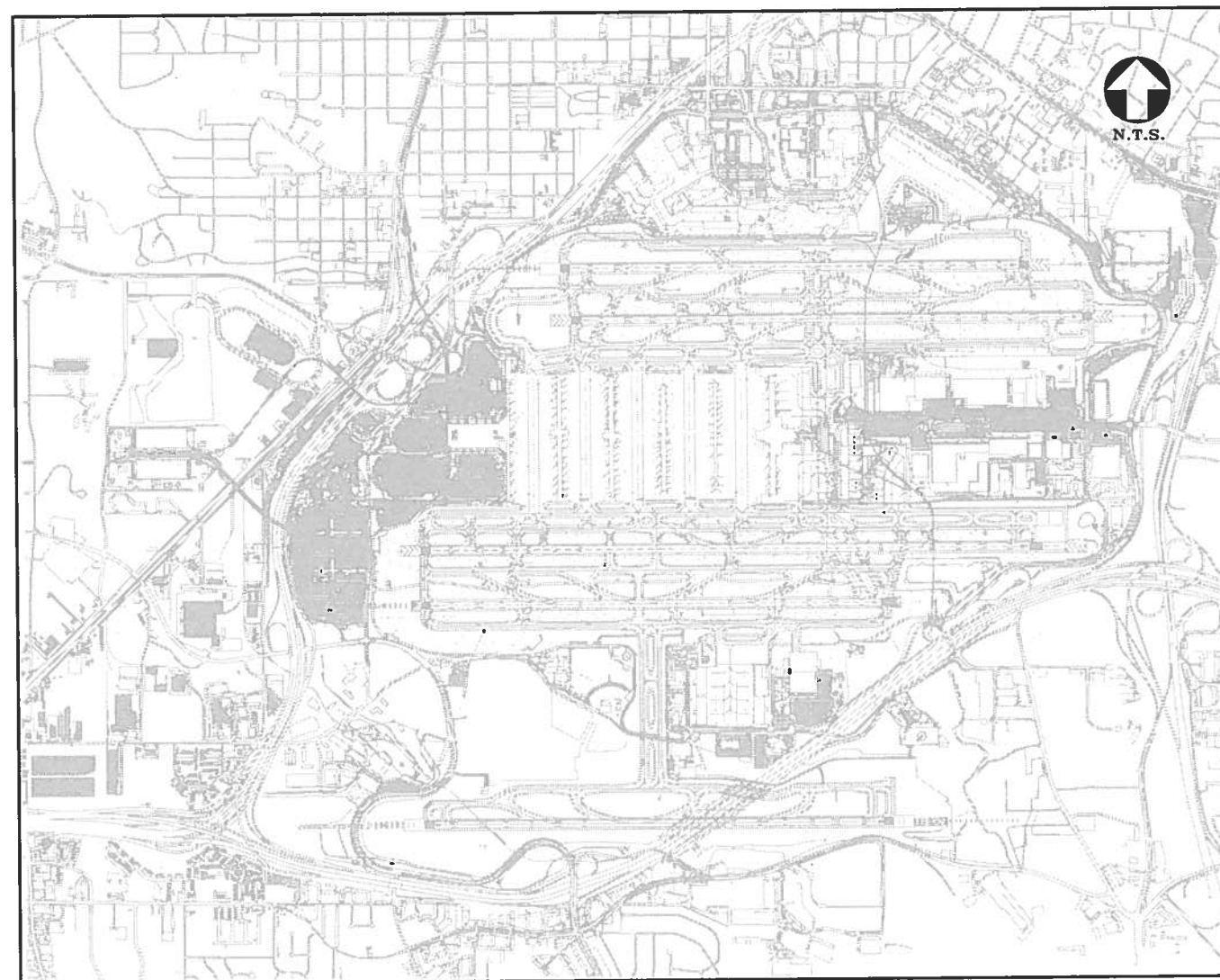


DEPARTMENT OF AVIATION  
PLANNING & DEVELOPMENT

# CITY OF ATLANTA HARTSFIELD-JACKSON ATLANTA INTERNATIONAL AIRPORT

## DOA CIVIL STANDARD DETAILS

JUNE - 2014



CHANGES TO THESE STANDARDS SHALL  
BE APPROVED BY DOA IN ADVANCE OF  
SUBMITTAL.

THESE DRAWINGS SHOULD NOT BE USED FOR CONSTRUCTION UNLESS NOTED  
BELOW AS "RELEASED FOR CONSTRUCTION" AND SIMILARLY NOTED ON EACH  
INDIVIDUAL DRAWING.

RELEASED FOR CONSTRUCTION BY: \_\_\_\_\_

DATE: \_\_\_\_\_

SHEET NO:

STD-00-100

STANDARD DETAILS

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DWG NO	SHEET NO.	SHEET TITLE	RELEASE STATUS SUMMARY							COMMENTS
			DATE OF LATEST RELEASE							
			ISSUED	REV1	REV2	REV3	REV4	REV5	REV6	
1	STD-00-100	Cover Sheet	06/20/2014							
2	STD-00-200	DOA Civil Standard Details Index	06/20/2014							
<u>AIRSIDE - RUNWAYS TAXIWAYS AND APRONS</u>										
1	STD-01-100	Airfield Typical Pavement Sections	06/20/2014							
2	STD-01-200	Typical Pavement Sections NLVR	06/20/2014							
3	STD-01-300	Apron Underdrain Details - New Pavement	06/20/2014							
4	STD-01-301	Underdrain Details - Replacement Projects	06/20/2014							
5	STD-01-400	In-Pavement Manholes	06/20/2014							
6	STD-01-500	In-Pavement Inlets Inlet Type 'A'	06/20/2014							
7	STD-01-501	In-Pavement Inlets Type 'B' and Type B Mod. Detail	06/20/2014							
8	STD-01-502	In-Pavement Inlets Inlet Type 'D'	06/20/2014							
9	STD-01-503	Slope Drain Detail	06/20/2014							
10	STD-01-504	Paved Drainage Path Detail	06/20/2014							
11	STD-01-505	Miscellaneous Drainage Details	06/20/2014							
12	STD-01-700	Pavement Joint Details - New Projects	06/20/2014							
13	STD-01-701	Pavement Joint Details - 1 Replacement Projects	06/20/2014							
14	STD-01-702	Joint Details - 2 Replacement Projects	06/20/2014							
15	STD-01-703	Exist. Pavement Removal and Replacement for Hydrants	06/20/2014							
16	STD-01-704	Spall And Joint Repair Details	06/20/2014							
17	STD-01-705	Typical Spall Repair Rebar Placement Detail	06/20/2014							
18	STD-01-706	Retrofit Conduit Trench Repair Details	06/20/2014							
19	STD-01-800	Apron Striping and Marking -1	06/20/2014							
20	STD-01-801	Apron NLVR Striping and Signage	06/20/2014							
21	STD-01-802	Runway Striping and Marking - 1	06/20/2014							
22	STD-01-803	Runway Striping and Marking - 2	06/20/2014							
23	STD-01-804	Taxiway Striping and Marking - 1	06/20/2014							
24	STD-01-805	Taxiway Striping and Marking - 2	06/20/2014							
25	STD-01-900	Miscellaneous Airfield Details	06/20/2014							
<u>LANDSIDE - ROADS AND PARKING</u>										
1	STD-02-100	Typical Pavement Sections Landside	06/20/2014							
2	STD-02-200	Joints - NLVR or Landside Roads	06/20/2014							
3	STD-02-300	Landside Striping and Marking Details	06/20/2014							
4	STD-02-502	Double and Single Wing Catch Basin	06/20/2014							
5	STD-02-503	Curb Inlet Cast Iron Hood Detail	06/20/2014							
<u>GENERAL DETAILS</u>										
1	STD-03-100	Settlement Platforms	06/20/2014							
2	STD-03-200	Chain Link Fences - 1	06/20/2014							
3	STD-03-201	Chain Link Fences - 2	06/20/2014							
4	STD-03-202	Chain Link Fences - 3	06/20/2014							
5	STD-03-203	Chain Link Fences - 4	06/20/2014							
6	STD-03-204	Chain Link Fence - Signage	06/20/2014							
7	STD-03-300	Guardrail Details	06/20/2014							
8	STD-03-400	Pipe Bedding Type 'B' and 'C', Paved Ditch Detail	06/20/2014							
9	STD-03-401	Precast Junction Chamber	06/20/2014							
10	STD-03-402	Concrete Pipe Collar, Cleanout, Cap for Exist. Inlet	06/20/2014							
11	STD-03-403	Riser Tee Manhole for Existing or Proposed Pipe	06/20/2014							
12	STD-03-500	Standard Manhole and Type E Inlet	06/20/2014							
13	STD-03-600	Bollard Details	06/20/2014							
14	STD-03-601	Miscellaneous Paving and Bumper Block Details	06/20/2014							
15	STD-03-700	General Notes and Construction Control Plan Airside	06/20/2014							
16	STD-03-701	General Notes and Construction Control Plan Landside	06/20/2014							
17										
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CITY OF ATLANTA, GEORGIA



DEPARTMENT OF AVIATION  
PLANNING & DEVELOPMENT

NO.	DATE	BY	REVISION

STANDARD DETAILS

DOA Civil Standard Details  
Index

WBS NUMBER:	DRAWN BY: STAFF
FC NUMBER:	DESIGNED BY: STAFF
CONSULTANT PROJECT NUMBER:	CHECKED BY: STAFF
STANDARD SHEET NUMBER STD-00-200	APPROVED BY: STAFF

DATE:

SCALE:

SHEET NO:

DATE PLOTTED FOR CONSULTATION



# AIRSIDE - RUNWAYS TAXIWAYS AND APRONS

Hartsfield-Jackson

Atlanta International Airport











CITY OF ATLANTA, GEORGIA



DEPARTMENT OF AVIATION  
PLANNING & DEVELOPMENT

DETAILS ON THIS SHEET  
ARE INTENDED FOR USE IN  
PAVEMENT REPLACEMENT  
AND RETROFIT PROJECTS.

NO.	DATE	BY	REVISION

STANDARD DETAILS

Underdrain Details -  
Replacement Projects

WBS NUMBER:  
FC NUMBER:  
CONSULTANT PROJECT NUMBER:  
STANDARD SHEET NUMBER  
STD-01-301

DRAWN BY:  
STAFF

DESIGNED BY:  
STAFF

CHECKED BY:  
STAFF

APPROVED BY:  
STAFF

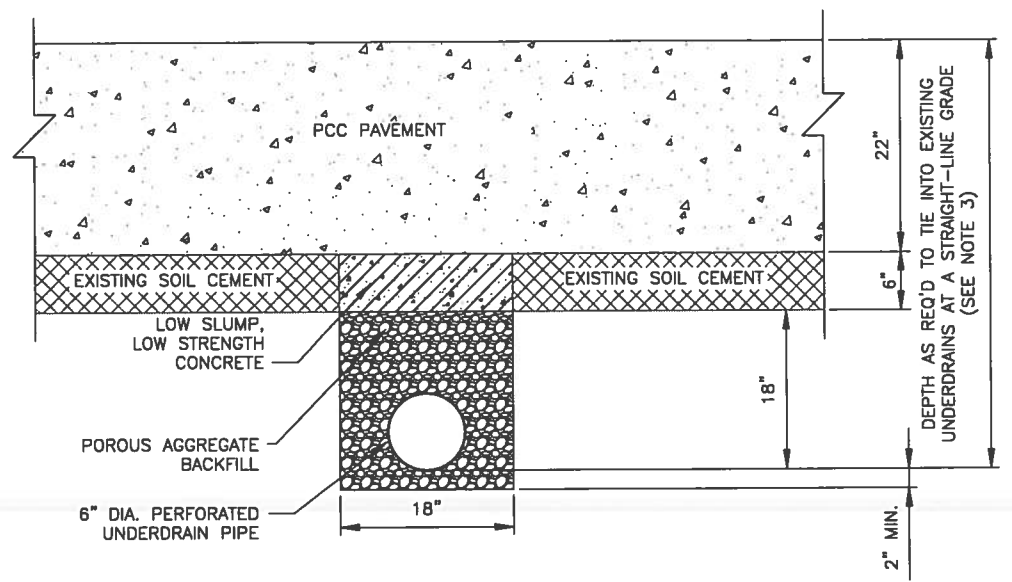
DATE:

SCALE:

SHEET NO:

NOTES

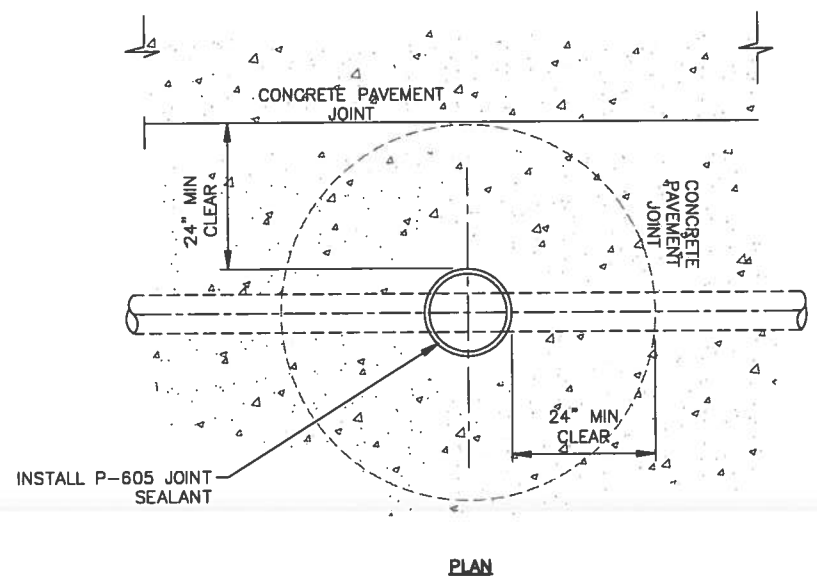
- THE CONTRACTOR SHOULD BE AWARE THAT DUE TO THE DEPTH OF THE UNDERDRAINS, CERTAIN PREPARATIONS WILL BE NECESSARY BEFORE PCC IS PLACED, AS FOLLOWS
  - THE CONNECTION SHOULD BE IN PLACE AND THE LOCATION SURVEYED.
  - THE CLEANOUT RISER SHOULD EXTEND TO 6"(MAX) BELOW THE SURFACE LEVEL OF SOIL CEMENT AND TEMPORARILY CAPPED TO PREVENT DIRT AND DEBRIS FROM ENTERING THE UNDERDRAIN SYSTEM.
- ALL PAVEMENT AND GROUND AREA DISTURBED DURING CONSTRUCTION SHALL BE RETURNED TO ORIGINAL CONDITION BY THE CONTRACTOR.
- SEE JOINT FILLER SPECIFICATION SECTION FOR SEALANT.
- THE WORDS "UNDERDRAIN C.O." SHALL BE WELDED IN 1" LETTERS ONTO THE PLATE BY THE CONTRACTOR. AFTER WELDING, PLATE SHALL BE HOT-DIPPED AND GALVANIZED.
- CUT 9" DIAMETER HOLE IN THE BOTTOM OF CAN TO PROVIDE FOR CLEAN OUT RISER CONNECTION.
- FOR INSTALLATION OF UNDERDRAIN CLEANOUT IN CONCRETE PAVEMENT, REFER TO DETAILS OF TYPICAL INSTALLATION FOR TYPE L-868 BASE IN ELECTRICAL DETAILS.
  - INSTALL L-868 BASE WITH 1/8" STEEL MUD PLATE TEMPORARILY BOLTED ON IN PLACE OF THE ADAPTER PLATE.
  - IMMEDIATELY AFTER PAVING MACHINE PAVES OVER BASE, CONTRACTOR SHALL REMOVE AND CLEAR OUT ALL LOOSE MATERIAL LEAVING STEEL COVER IN PLACE.
  - DO NOT REUSE SHIPPING BOLTS FOR COVER INSTALLATION.
  - CONTRACTOR IS CAUTIONED TO OBSERVE THAT ALL SUBGRADE MATERIAL IS CEMENT STABILIZED. PROVISIONS MUST BE MADE FOR INSTALLING BASES IN CEMENT STABILIZED SUBBASE MATERIAL.
  - CONTRACTOR SHALL INSTALL AND FURNISH JOINT SEALER COMPOUND IN SPACE AROUND TOP OF L-868 BASE AFTER COVER INSTALLATION.
  - THE FOLLOWING TYPES OF BOLTS SHALL BE FURNISHED AND INSTALLED WITH EACH BASE:
    - SHIPPING BOLTS, 1/2" LONG DISPOSABLE.
    - SETTING BOLTS, 1/8" MUD PLATE, THICKNESS OF JIG (DETERMINED BY CONTRACTOR).
    - STAINLESS STEEL FINISHING BOLTS, LENGTH AS REQUIRED TO HOLD IN COVER AND FINISHING RING, AS REQUIRED.
- ALL ITEMS SHOWN FOR THE BASES SHALL BE PART OF THE INSTALLATION ASSEMBLY, FINISHING RING SHALL BE FURNISHED AND INSTALLED TO BRING THE COVER FIXTURE UP TO THE SPECIFIED ELEVATION.
- CLEANOUTS SHALL BE AT LEAST 24" CLEAR OF THE NEAREST PCC JOINT LINE.



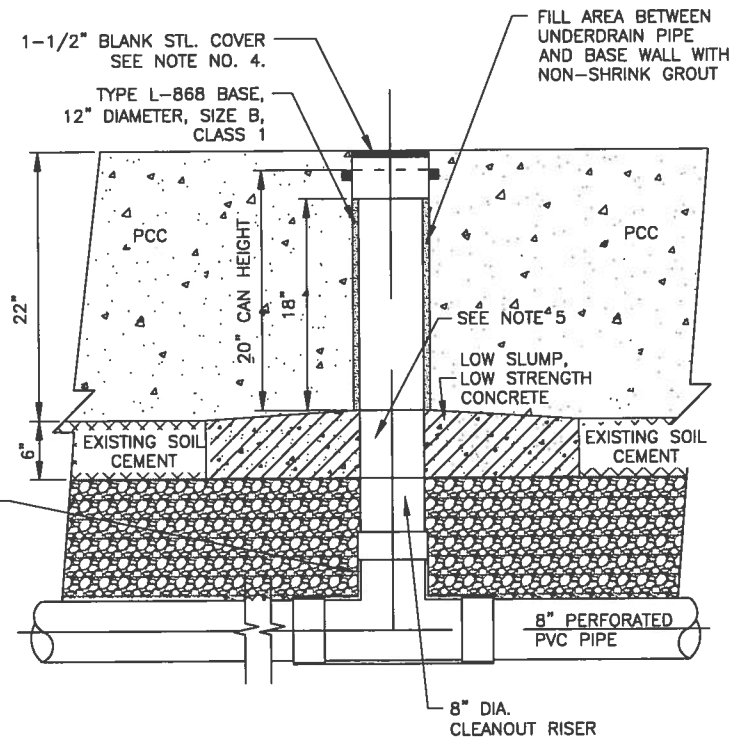
TRANSVERSE UNDERDRAIN UNDER TAXIWAY  
N.T.S.

NOTES

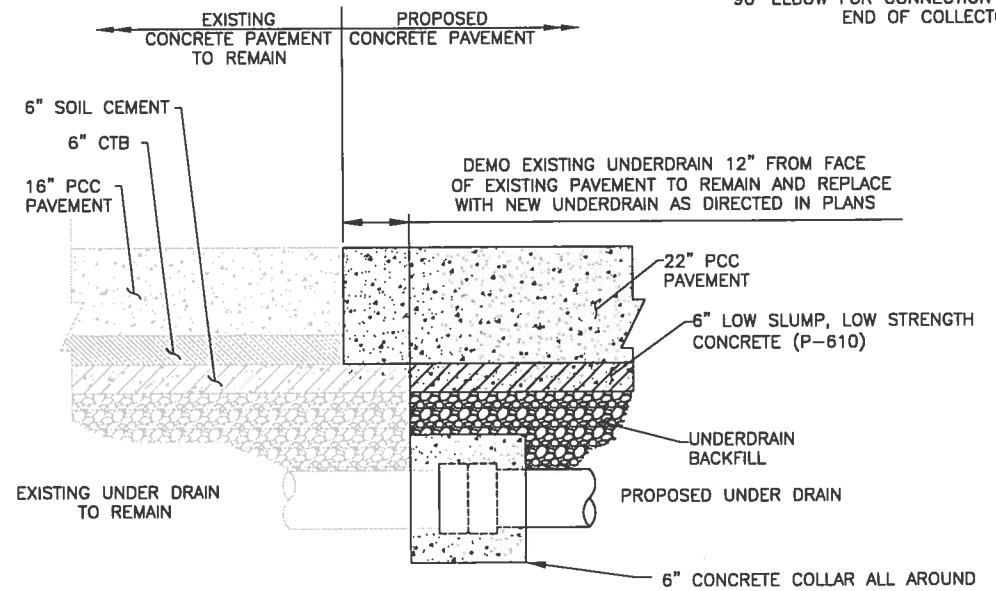
- THE CONTRACTOR SHALL USE #89 STONE FOR THE POROUS UNDERDRAIN BACKFILL.
- UNDERDRAIN INVERT ELEVATIONS SHALL MATCH EXISTING. EXISTING INVERTS ARE TYPICALLY 3'-10" BELOW TOP OF PCC PAVEMENT.



PLAN



ELEVATION  
(UNDERDRAIN CLEANOUT DETAIL SHOWN FOR  
INSTALLATION IN CONCRETE)  
N.T.S.



UNDERDRAIN TIE-IN COUPLING  
N.T.S.

TEE CONNECTION FOR INLINE UNDERDRAINS. USE SCH. 40 PVC 90° ELBOW FOR CONNECTION AT END OF COLLECTOR.

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UNDERDRAIN DETAILS



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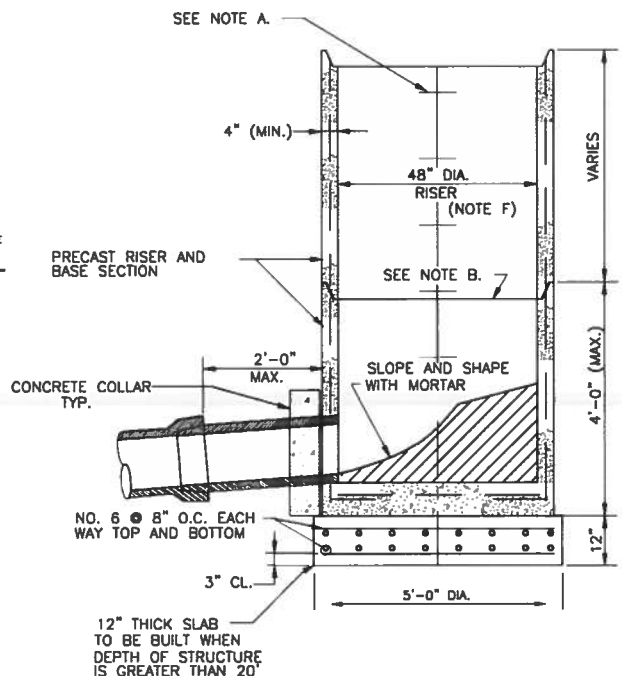
DEPARTMENT OF AVIATION  
PLANNING & DEVELOPMENT


NO.	DATE	BY	REVISION

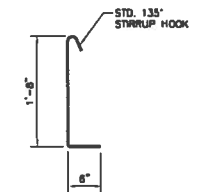
STANDARD DETAILS

## In-Pavement Manholes

WBS NUMBER:	DRAWN BY: STAFF
FC NUMBER:	DESIGNED BY: STAFF
CONSULTANT PROJECT NUMBER:	CHECKED BY: STAFF
STANDARD SHEET NUMBER <b>STD-01-400</b>	APPROVED BY: STAFF
DATE:	
SCALE:	
SHEET NO:	



DETAIL 1  
N.T.S.

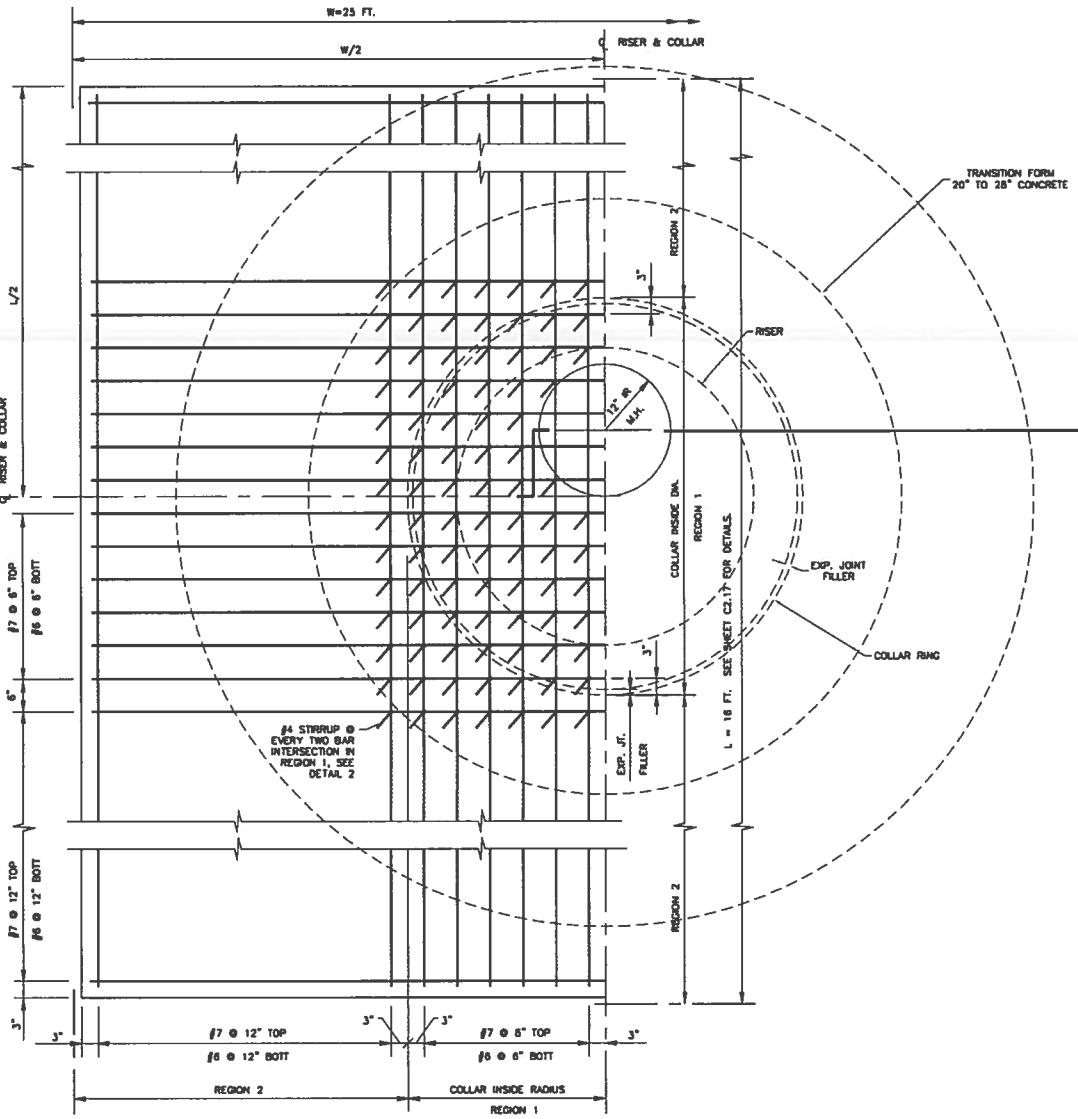


DETAIL 2  
N.T.S.

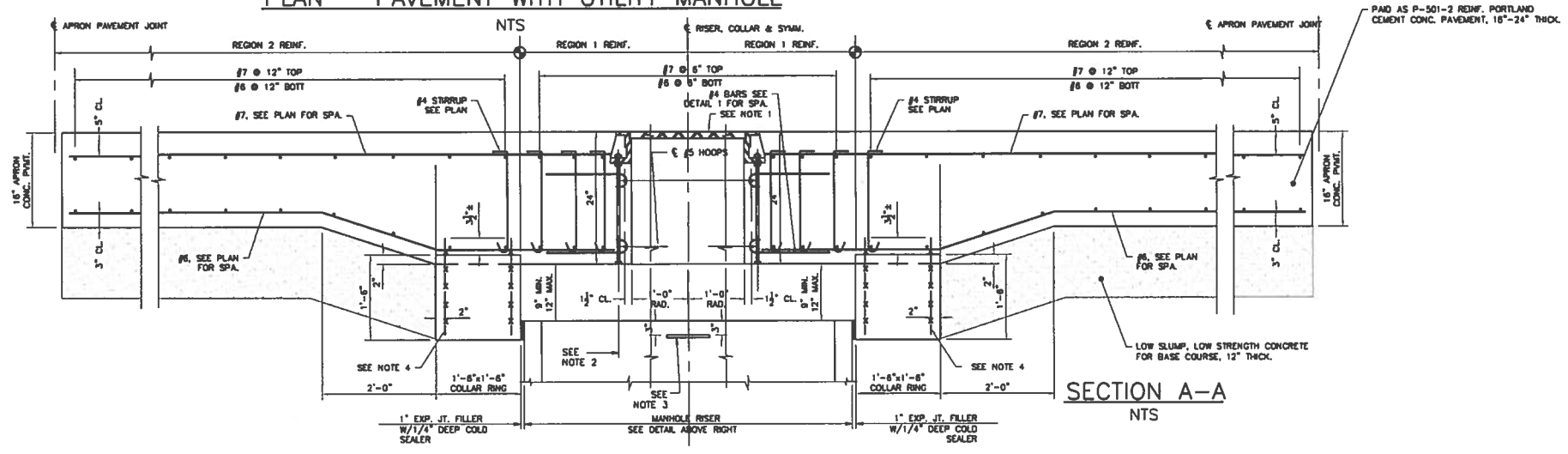
### 4' DIAMETER MANHOLE FOR STORM AND SANITARY SEWER

NTS

- NOTES:**
- STANDARD STEPS SPACED AT 16" O.C. SHALL BE CAST IRON.
  - JOINTS BETWEEN ALL PRECAST MANHOLE COMPONENTS SHALL BE O-RING, OR PROFILE TYPE.
  - HEAVY DUTY MANHOLE FRAME AND COVER WITH NO. 4 STEEL DOWELS BEDDED IN STIFF MORTAR.
  - ALL PRECAST BASE SECTIONS MUST BE FOUNDED ON A COMPACTED LAYER OF NO. 89 COARSE AGGREGATE AT LEAST 18" THICK.
  - PRECAST MANHOLE RISERS AND BASE SHALL CONFORM TO THE PROVISIONS OF ASTM C-478.
  - MANHOLE INSIDE DIAMETER MAY BE UP TO 5', AS SPECIFIED.



PLAN - PAVEMENT WITH UTILITY MANHOLE



SECTION A-A  
NTS

### NOTES FOR APRON PAVEMENT WITH M.H.

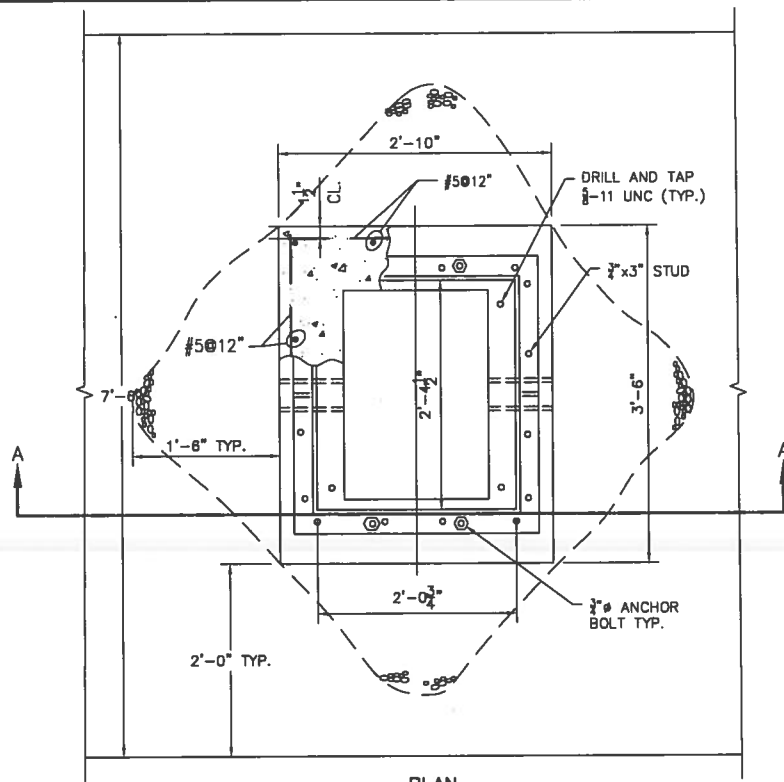
- MANHOLE FRAME AND LID SHALL BE CAPABLE OF WITHSTANDING REPEATED LOADING OF 240 PSI OVER ENTIRE AREA, BOLTED AND GASKET SEALED, VENT HOLES, AND WITH 2 PICK HOLES.
- OPTIONAL LEVELING BOLTS (3/4" #) TO BE PLACED ON FORMS FOR BOTTOM OF PAVEMENT (8 PER FRAME.)
- STANDARD STEPS SPACED 16" O.C. SHALL BE CAST IRON NEENAH PATTERN NO. R-1980-C, OR EQUAL.
- COLLAR RING WELDED WIRE REINFORCING SHALL BE W6#6 x W2.9 IN EACH FACE.
- REINFORCING STEEL SHOWN IN PLAN IS SYMMETRICAL IN BOTH DIRECTIONS ABOUT CENTERLINE RISER AND COLLAR FIELD CUT REINFORCING AT MANHOLE SUCH THAT TOP REINFORCING CLEARS FRAME BY 1" AND BOTTOM REINFORCING CLEARS THE 2'-0" OPENING BY 2" INSTALL ADDITIONAL REINFORCING AT MANHOLE IN ACCORDANCE WITH DETAIL 1.



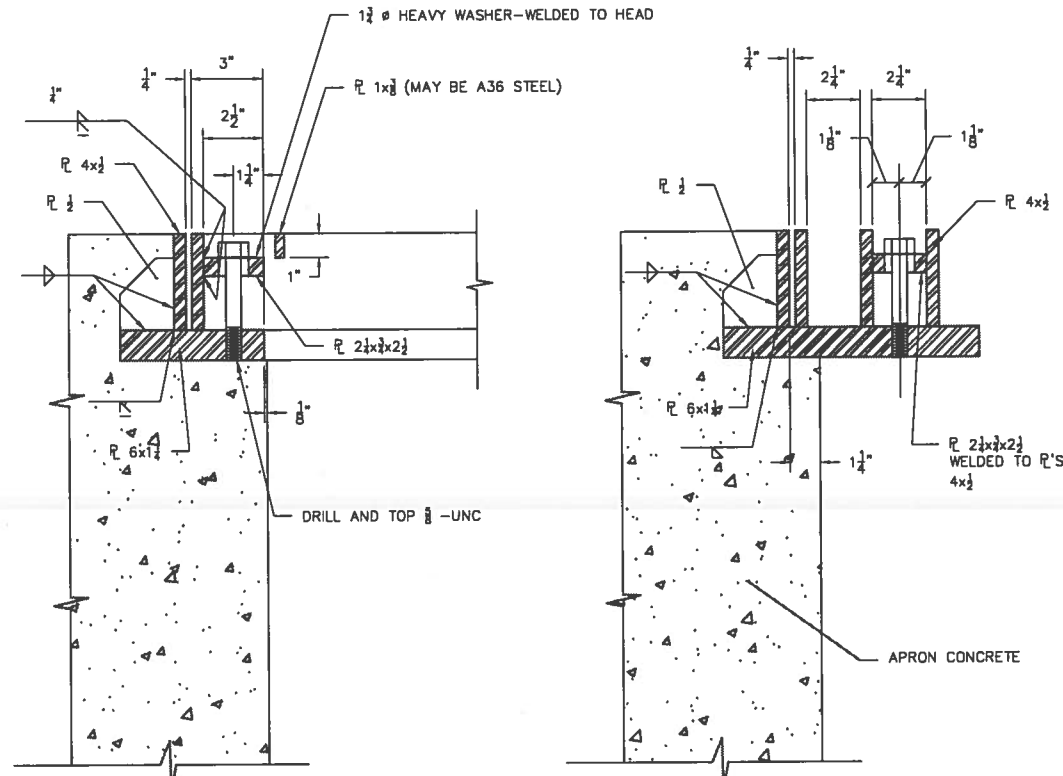
CITY OF ATLANTA, GEORGIA



DEPARTMENT OF AVIATION  
PLANNING & DEVELOPMENT

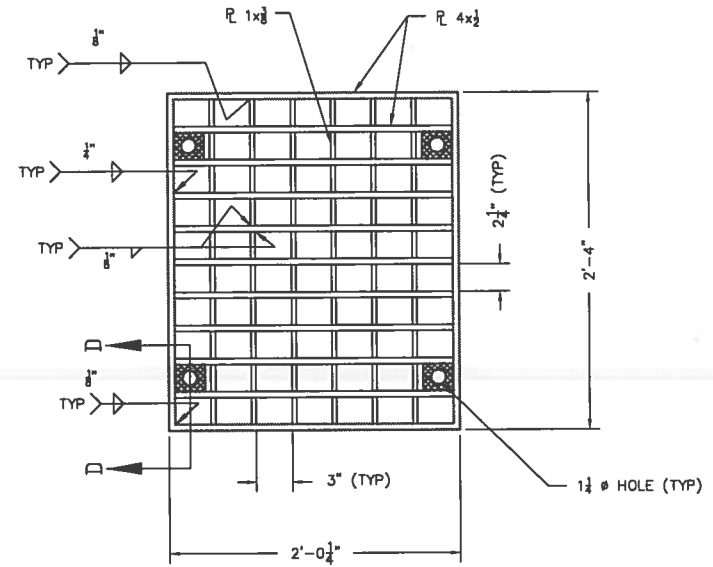


PLAN  
GRATE AND PAVEMENT REMOVED



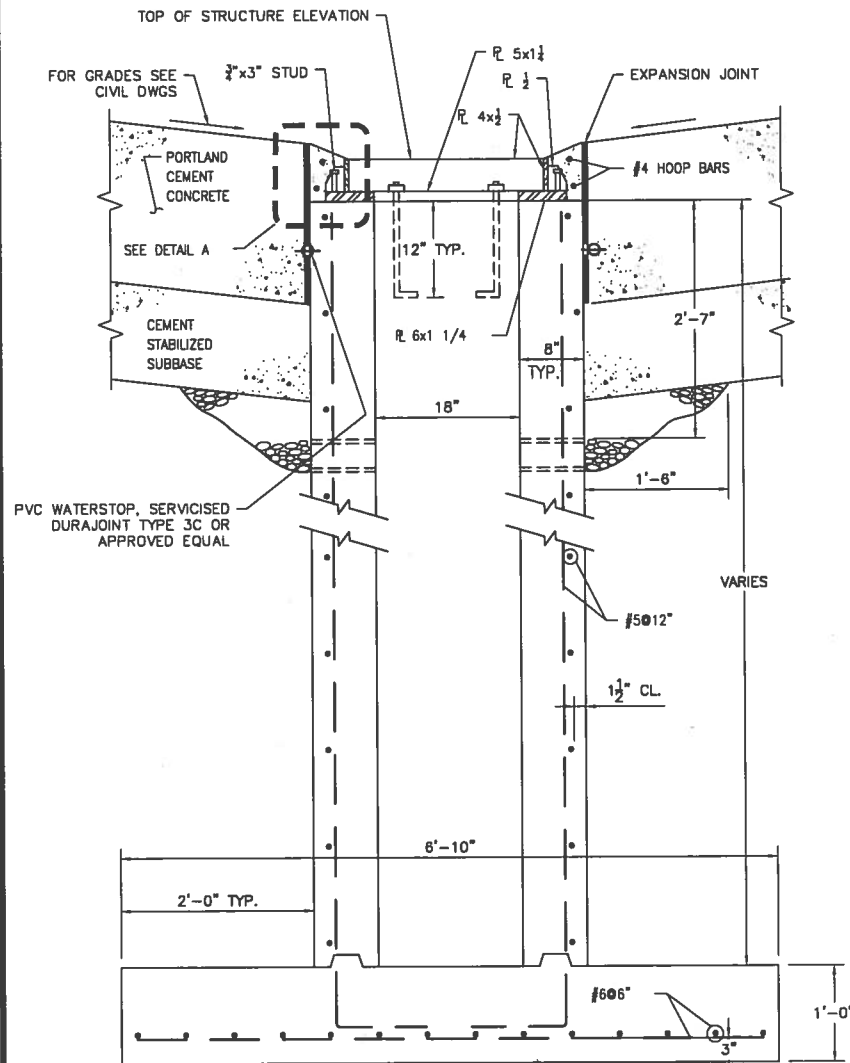
DETAIL A  
GRATE SHOWN

SECTION D-D



GRATE DETAIL  
N.T.S.

STEEL FRAME AND GRATING  
N.T.S.



SECTION A-A  
INLET TYPE A (IN PAVEMENT)

NO.	DATE	BY	REVISION

STANDARD DETAILS

In-Pavement Inlets  
Inlet Type 'A'

WBS NUMBER:	DRAWN BY: STAFF
FC NUMBER:	DESIGNED BY: STAFF
CONSULTANT PROJECT NUMBER:	CHECKED BY: STAFF
STANDARD SHEET NUMBER STD-01-500	APPROVED BY: STAFF
DATE:	
SCALE:	
SHEET NO:	



CITY OF ATLANTA, GEORGIA



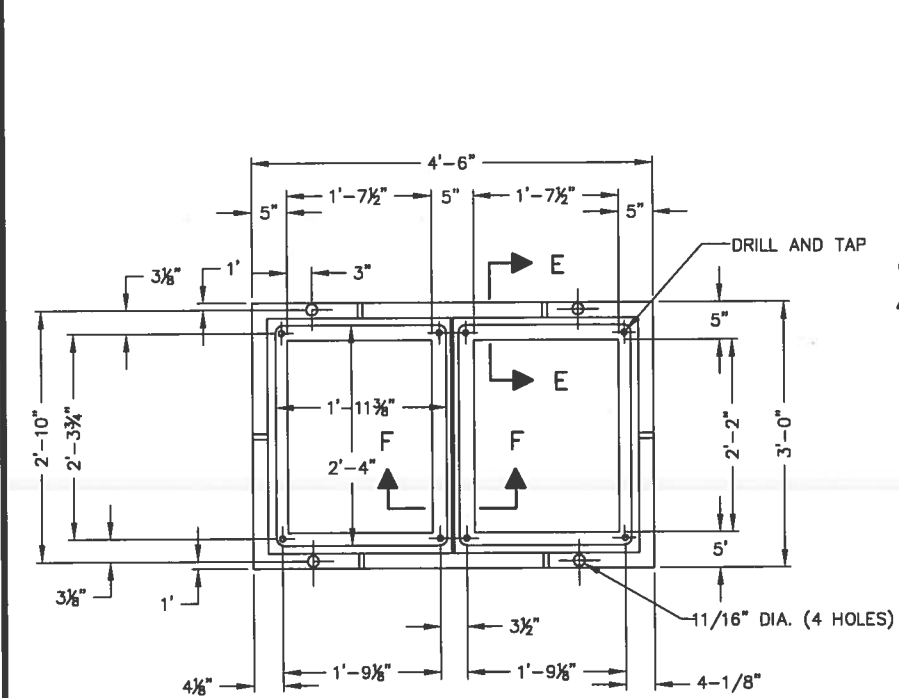
DEPARTMENT OF AVIATION  
PLANNING & DEVELOPMENT

NO. DATE BY REVISION  
STANDARD DETAILS

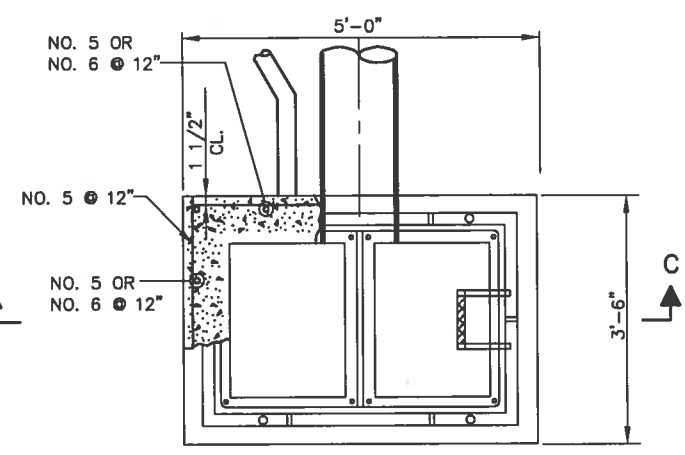
In-Pavement Inlets  
Type 'B' and Type B  
Mod. Detail

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FC NUMBER:	DESIGNED BY: STAFF
CONSULTANT PROJECT NUMBER:	CHECKED BY: STAFF
STANDARD SHEET NUMBER <b>STD-01-501</b>	APPROVED BY: STAFF

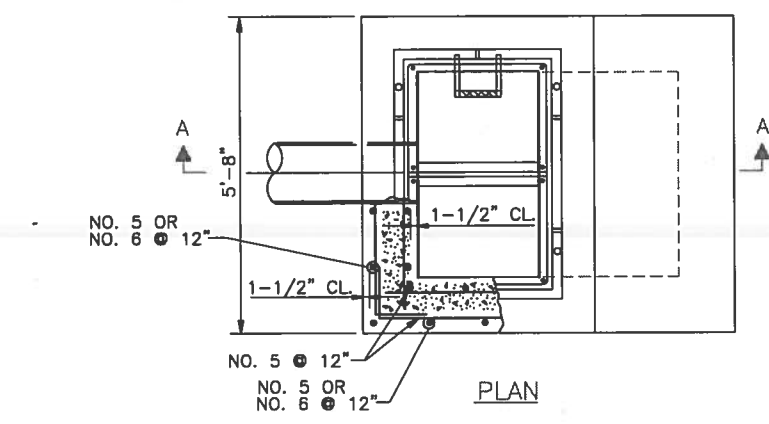
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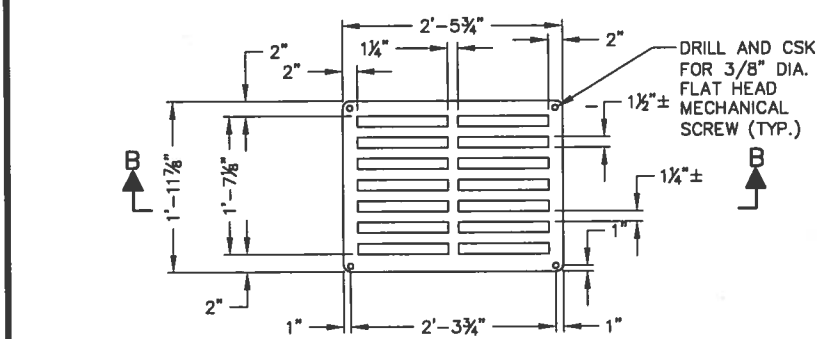
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GRATES AND CONCRETE APRON REMOVED  
PLAN

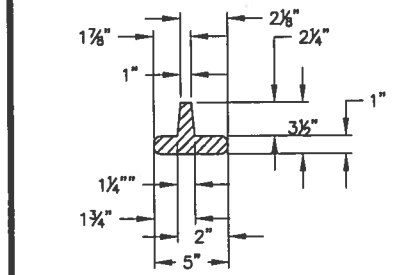


PLAN



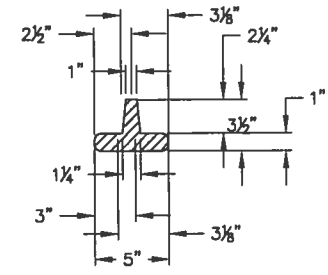
SECTION B-B

GRATE

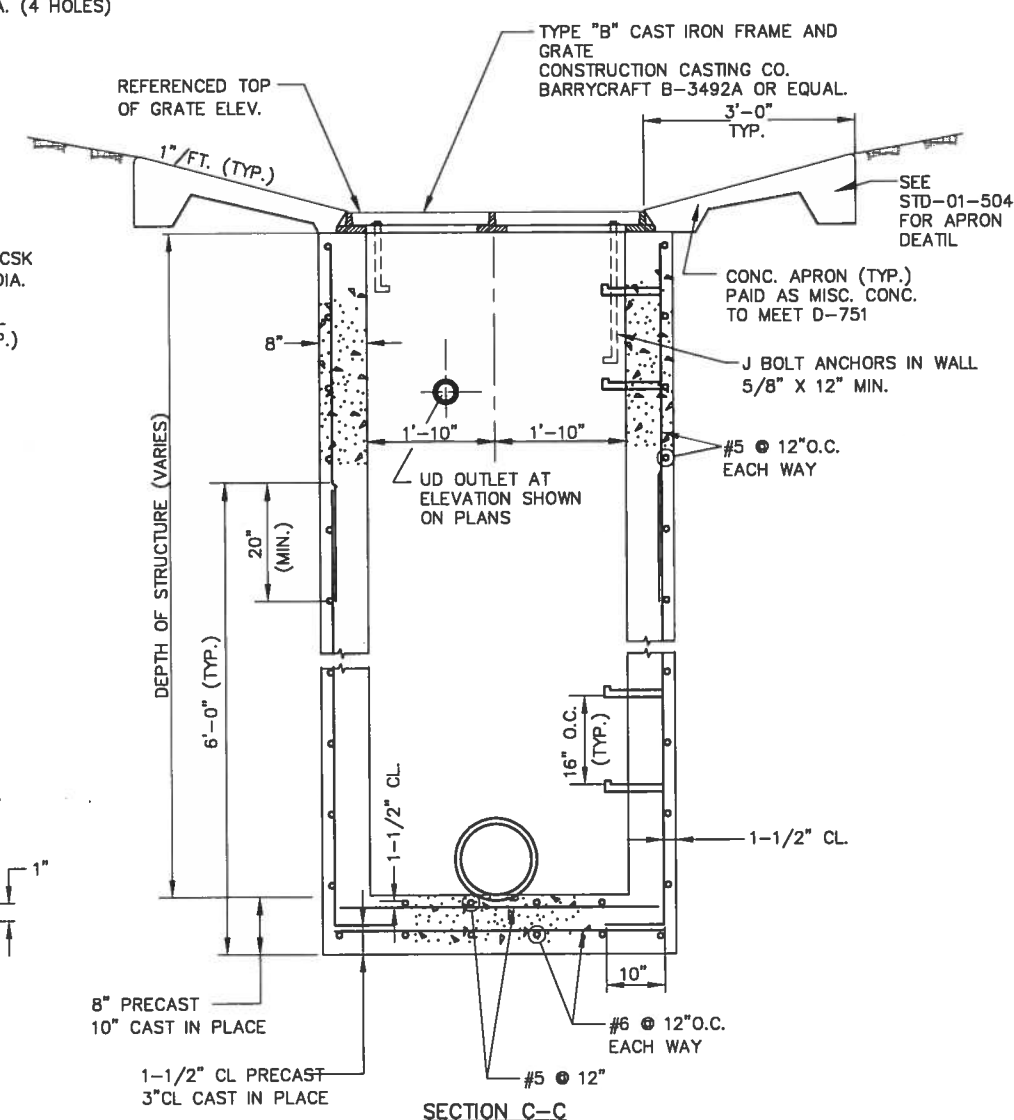


SECTION E-E

TYPE "B" GRATE DETAIL  
N.T.S.

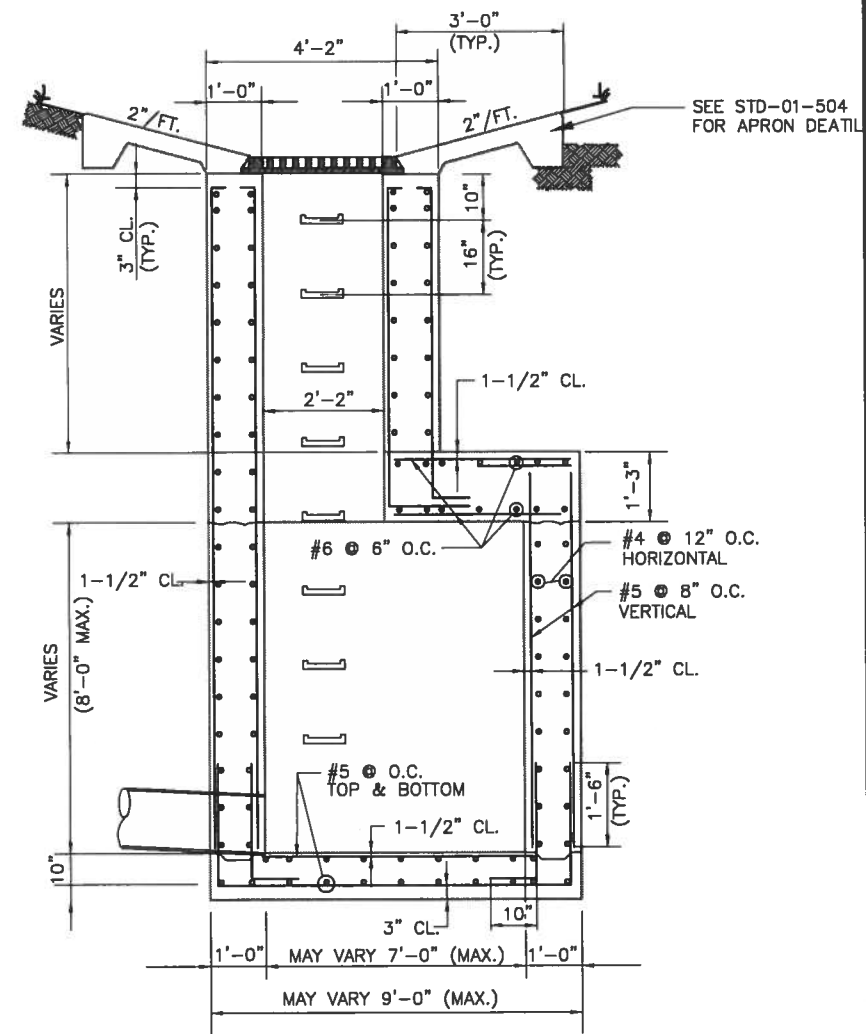


SECTION F-F



SECTION C-C

INLET TYPE "B"  
N.T.S.



SECTION A-A

MODIFIED INLET TYPE "B"  
N.T.S.

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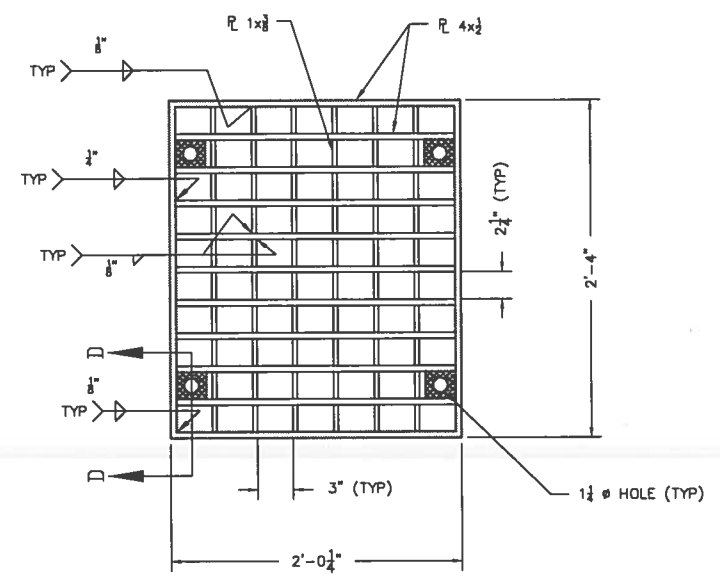
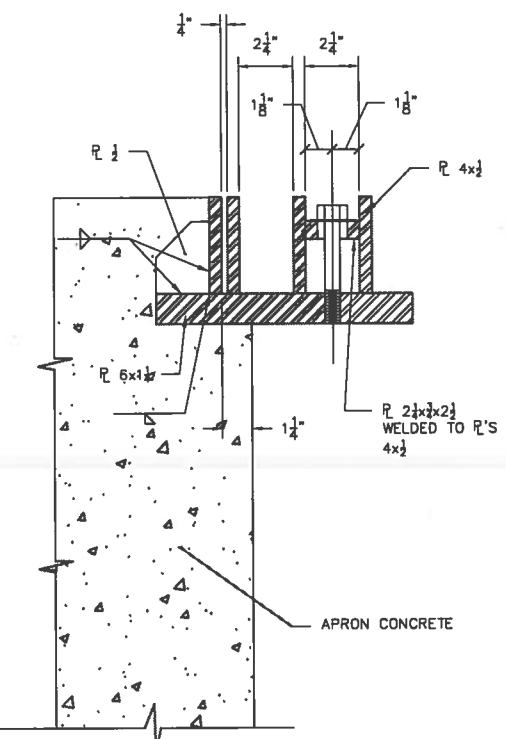
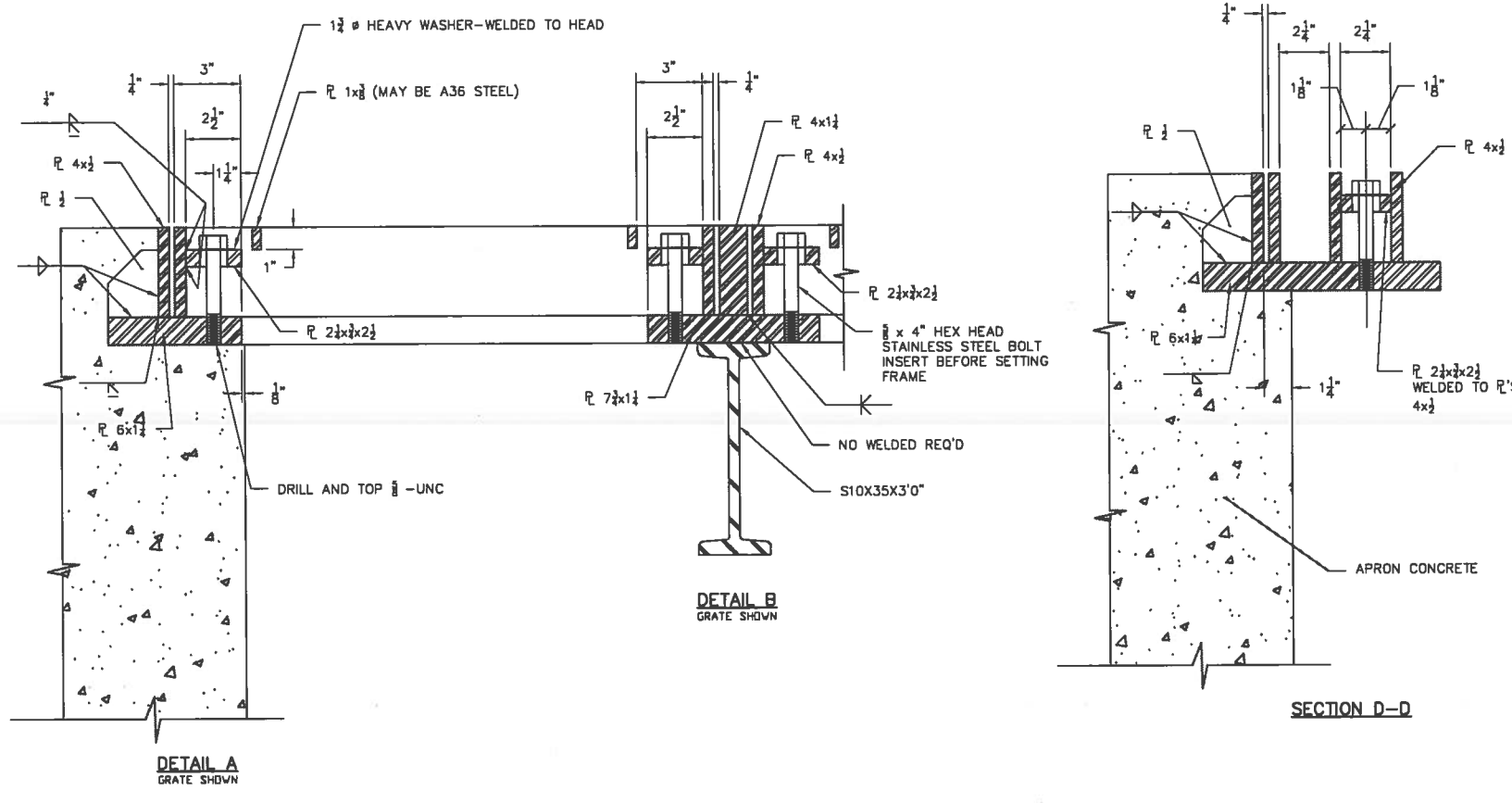
STANDARD DETAIL C



CITY OF ATLANTA, GEORGIA

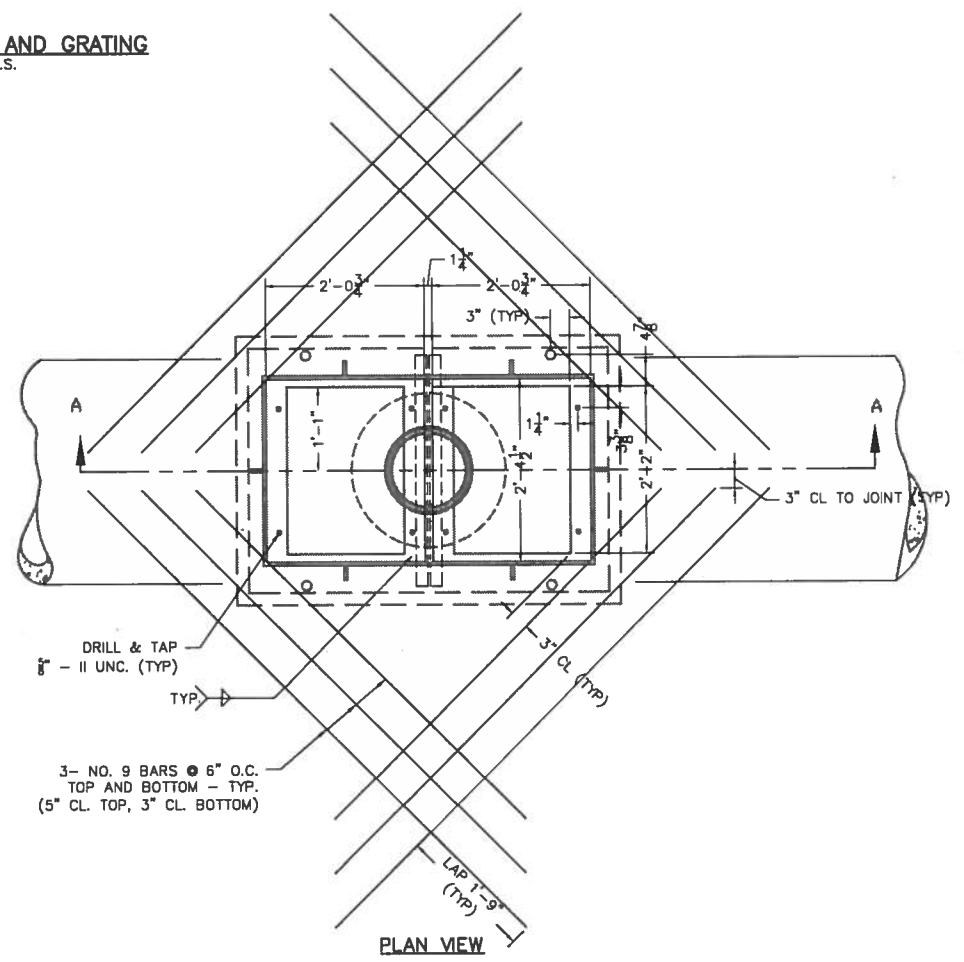


DEPARTMENT OF AVIATION  
PLANNING & DEVELOPMENT

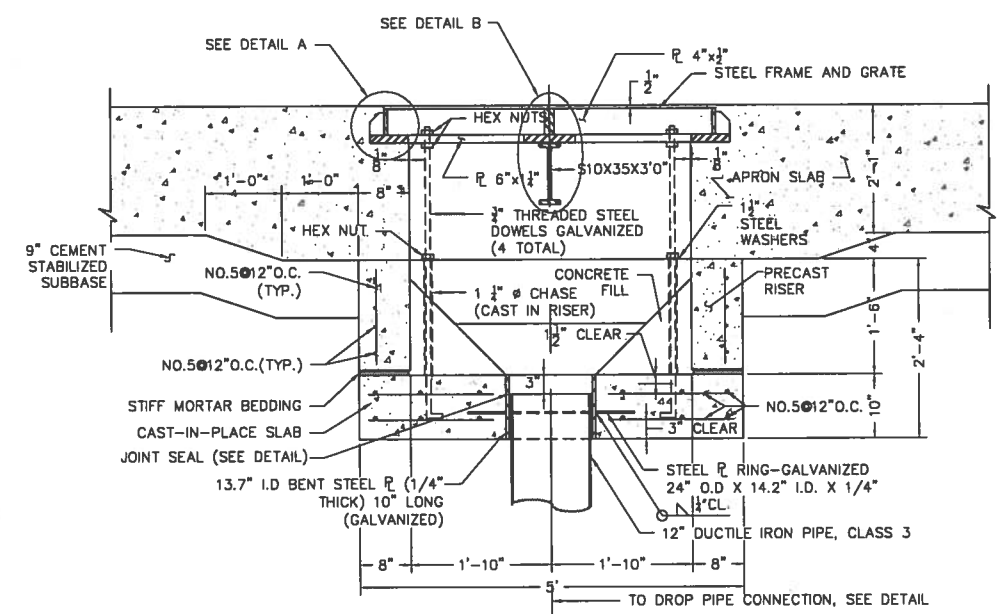


GRATE DETAIL  
N.T.S.

STEEL FRAME AND GRATING  
N.T.S.



PLAN VIEW



SECTION A-A  
INLET TYPE "D" DETAIL  
N.T.S.

NO.	DATE	BY	REVISION

STANDARD DETAILS

In-Pavement Inlets  
Inlet Type 'D'

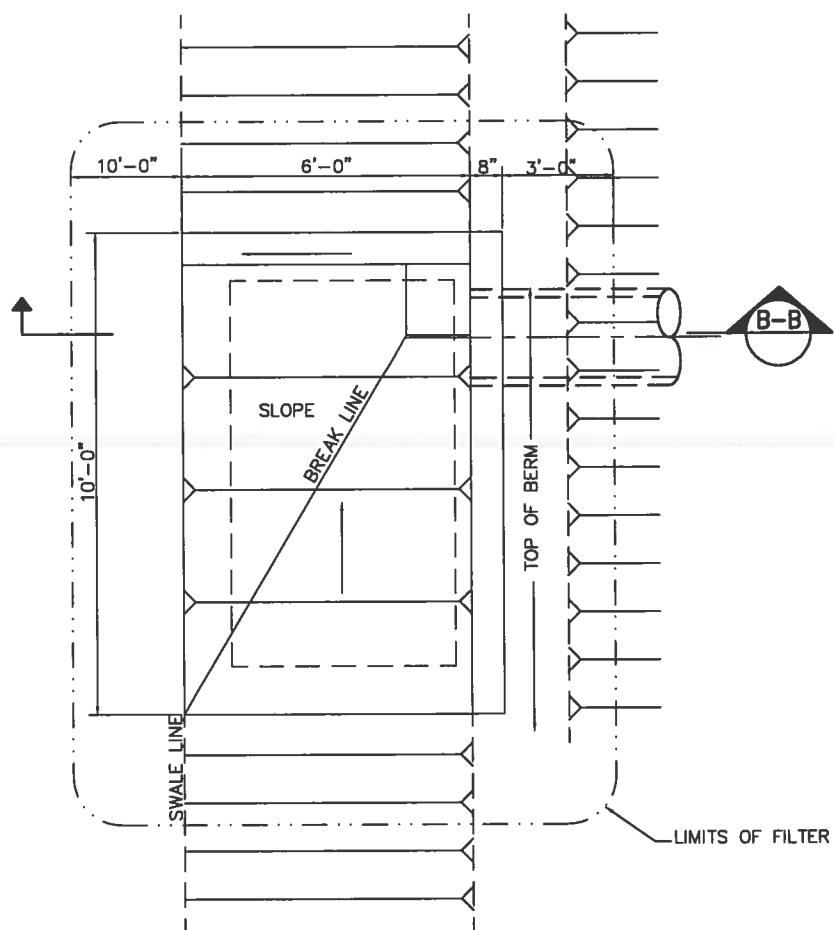
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FC NUMBER:	DESIGNED BY: STAFF
CONSULTANT PROJECT NUMBER:	CHECKED BY: STAFF
STANDARD SHEET NUMBER STD-01-502	APPROVED BY: STAFF
DATE:	SCALE:
SHEET NO:	



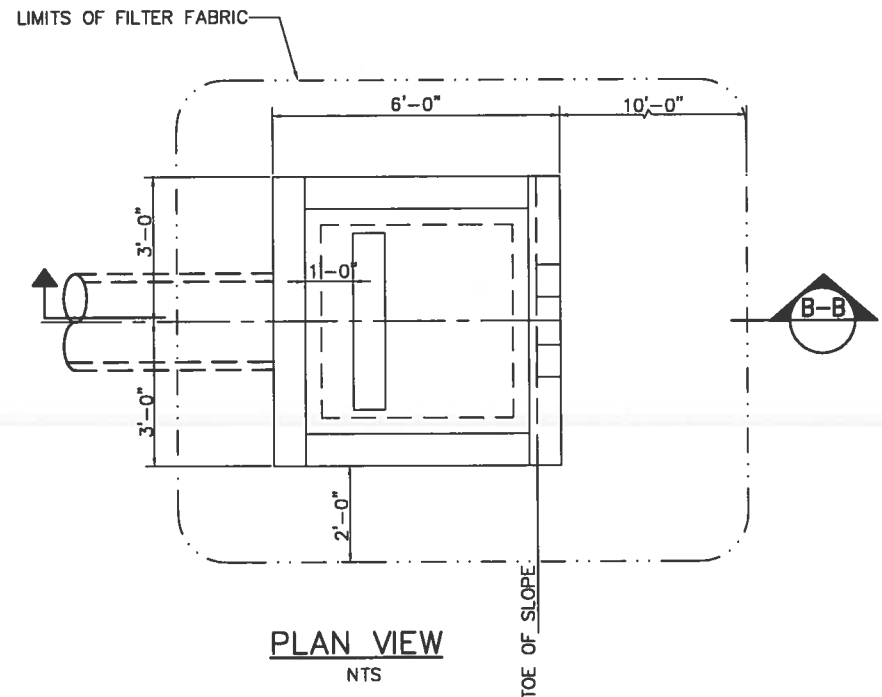
CITY OF ATLANTA, GEORGIA



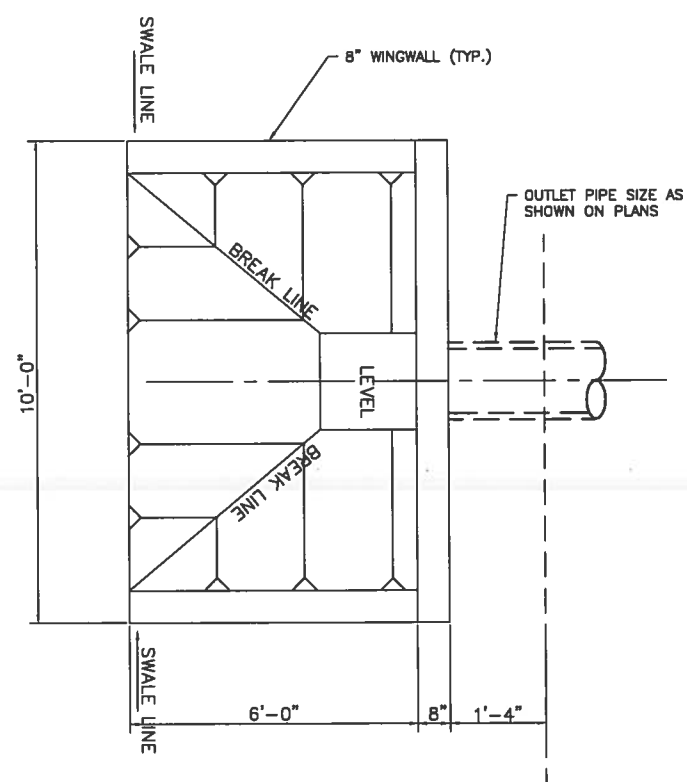
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PLANNING & DEVELOPMENT



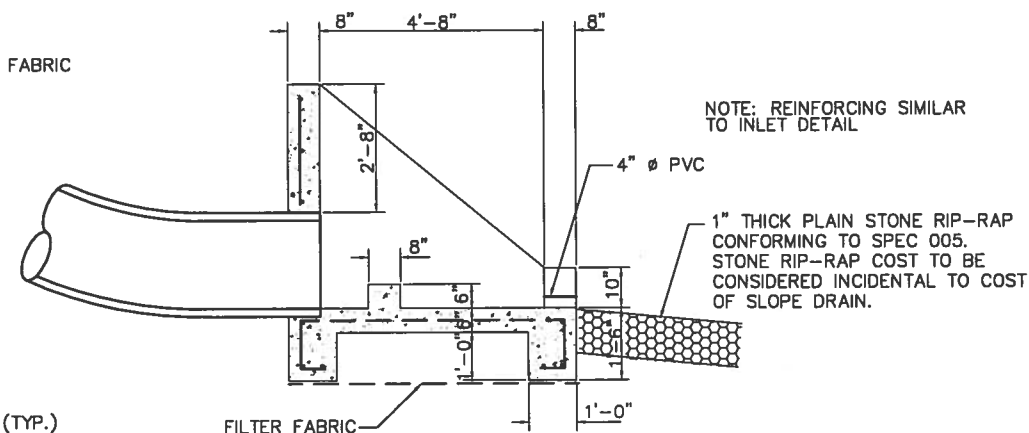
PLAN VIEW  
FOR ONE WAY DITCH FLOW  
NTS



PLAN VIEW  
NTS

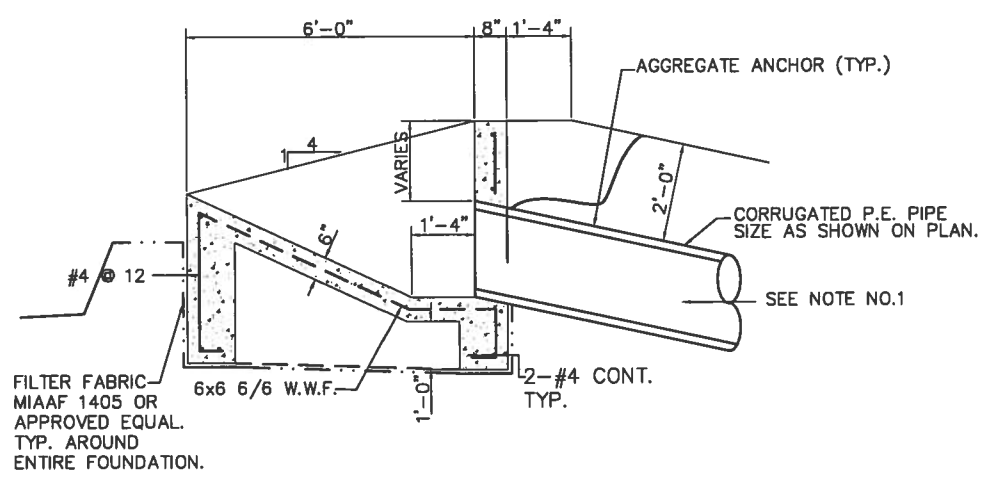


PLAN - SLOPE DRAIN INLET  
FOR USE IN LOW-POINT LOCATION  
NTS



SECTION B-B  
SLOPE DRAIN OUTLET  
NTS  
FOR INFORMATION ONLY

- NOTES:
- PIPE SHALL BE ONE CONTINUOUS PIECE IF POSSIBLE. IF JOINTS ARE REQUIRED THEY SHALL BE MADE WITH COLLARS CONSISTENT WITH THE PIPE MATERIAL. THE ENDS OF THE PIPE SHALL BE COATED WITH A THICK LAYER OF MASTIC PRIOR TO INSTALLING THE COLLAR. AFTER THE COLLAR IS MADE SNUG THE ENTIRE JOINT SHALL BE ENCASED IN NOT LESS THAN 6" THICK CONCRETE ALL AROUND.
  - CUT-OFF WALLS, REINFORCING AND FILTER FABRIC PLACEMENT ARE SIMILAR FOR BOTH TYPES OF SLOPE DRAIN INLET PIPE STRUCTURES.



SECTION B-B  
SLOPE DRAIN INLET  
NTS  
FOR INFORMATION ONLY

NO.	DATE	BY	REVISION

STANDARD DETAILS

Slope Drain Detail

WBS NUMBER:	DRAWN BY: STAFF
FC NUMBER:	DESIGNED BY: STAFF
CONSULTANT PROJECT NUMBER:	CHECKED BY: STAFF
STANDARD SHEET NUMBER STD-01-503	APPROVED BY: STAFF

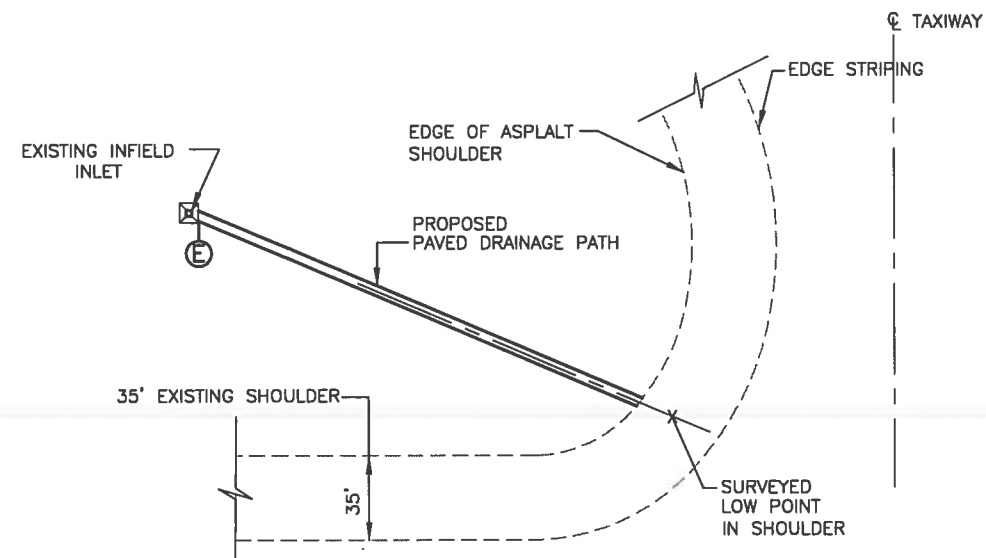
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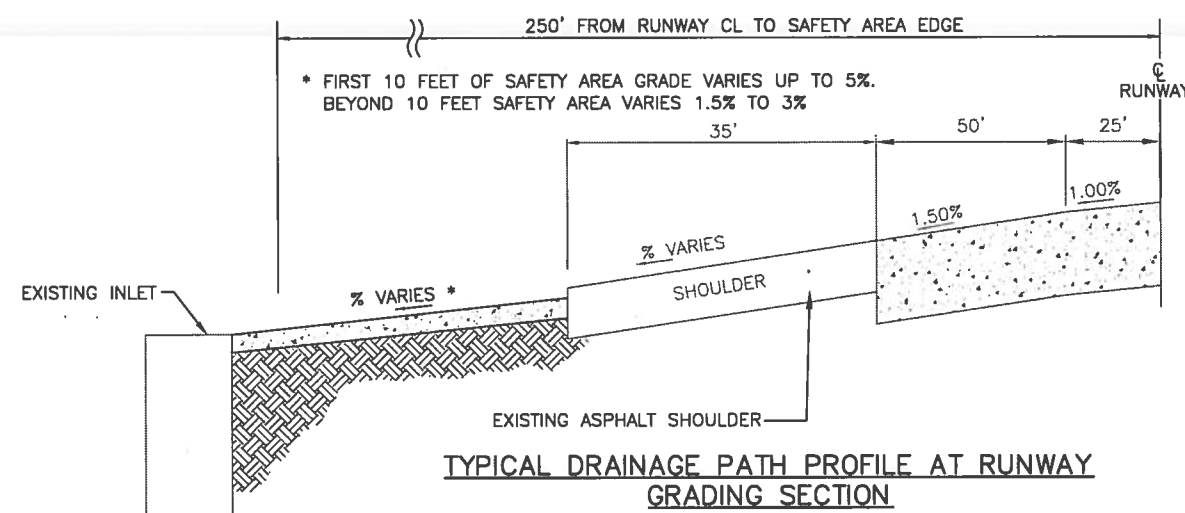
CITY OF ATLANTA, GEORGIA



DEPARTMENT OF AVIATION  
PLANNING & DEVELOPMENT

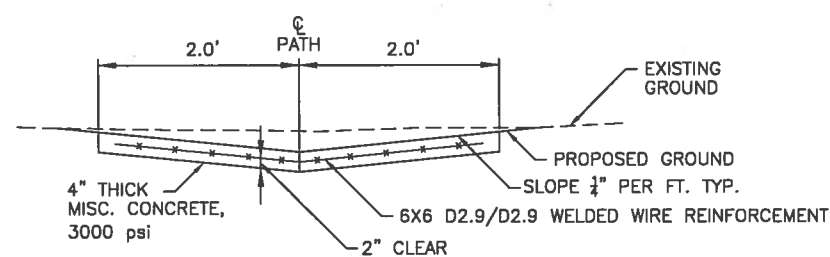


**PAVED DRAINAGE PATH PLAN VIEW**  
N.T.S.



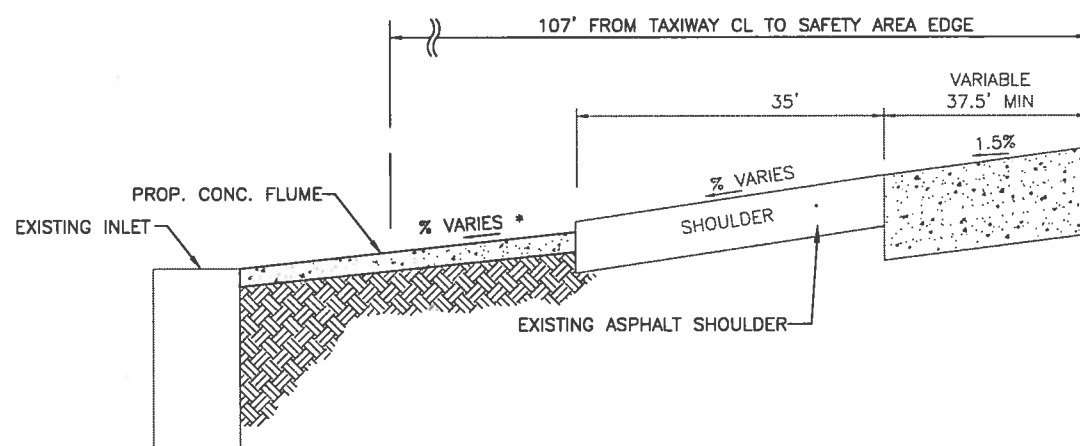
**TYPICAL DRAINAGE PATH PROFILE AT RUNWAY GRADING SECTION**  
N.T.S.

FOR USE IN RELIEVING PONDING DUE TO TURF BUILD UP ON SHOULDER LOW POINTS



**PAVED DRAINAGE PATH DETAIL**  
N.T.S.

- NOTE: 1. DRAINAGE PATH MUST BE LOCATED AT SURVEYED LOW POINT IN ASPHALT SHOULDER.  
2. JOINTING PATTERN: SCORE JOINT ALONG THE 2 DRAINAGE PATH CENTERLINE AND SCORE TRANSVERSE JOINTS EVERY 4 FEET.



**TYPICAL DRAINAGE PATH PROFILE AT TAXIWAY GRADING SECTION**  
N.T.S.

\* FIRST 10 FEET OF SAFETY AREA GRADE VARIES UP TO 5%.  
BEYOND 10 FEET SAFETY AREA VARIES 1.5% TO 3%

NO.	DATE	BY	REVISION

STANDARD DETAILS

Paved Drainage Path Detail

WBS NUMBER:	DRAWN BY: STAFF
FC NUMBER:	DESIGNED BY: STAFF
CONSULTANT PROJECT NUMBER:	CHECKED BY: STAFF
STANDARD SHEET NUMBER STD-01-504	APPROVED BY: STAFF

DATE:  
SCALE:  
SHEET NO:



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DEPARTMENT OF AVIATION  
PLANNING & DEVELOPMENT

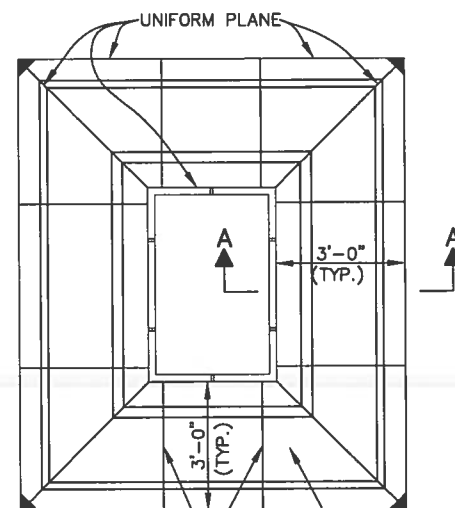
NO.	DATE	BY	REVISION

STANDARD DETAILS

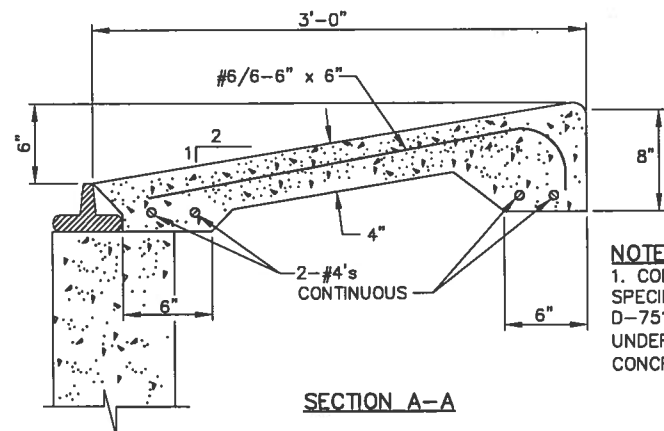
Miscellaneous  
Drainage Details

WBS NUMBER: .	DRAWN BY: STAFF
FC NUMBER: .	DESIGNED BY: STAFF
CONSULTANT PROJECT NUMBER: .	CHECKED BY: STAFF
STANDARD SHEET NUMBER STD-01-505	APPROVED BY: STAFF

DATE:  
SCALE:  
SHEET NO:



DUMMY GROOVED JOINTS  
CONC. APRON 4" THICK W/  
#6 x 6-6" x 6" WELDED WIRE FABRIC  
**PLAN**



**NOTES:**  
1. CONCRETE TO MEET SPECIFICATIONS OF SECTION D-751. PAYMENT WILL BE UNDER "MISCELLANEOUS CONCRETE".

**SECTION A-A**  
TYPICAL CONCRETE APRON DETAIL FOR INLETS  
N.T.S.



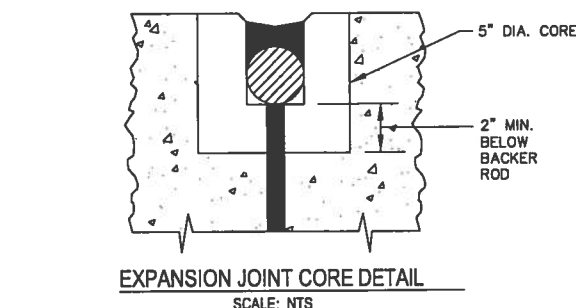
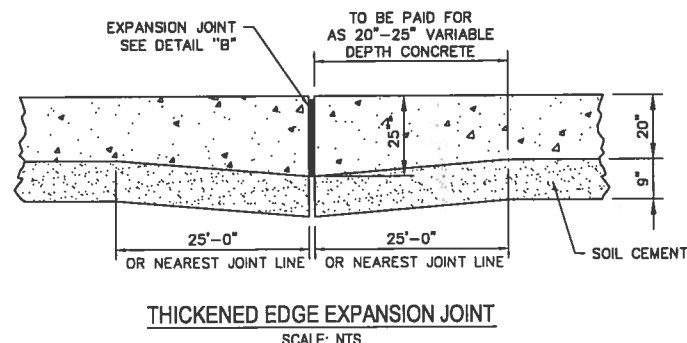
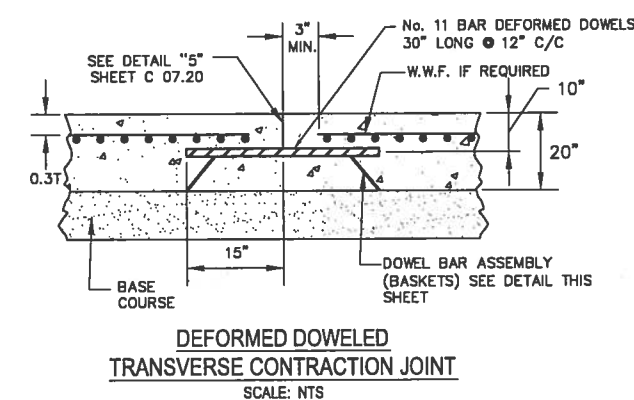
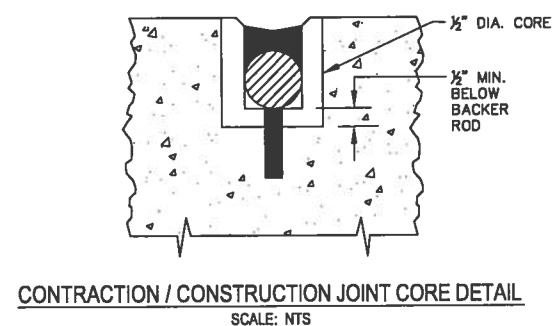
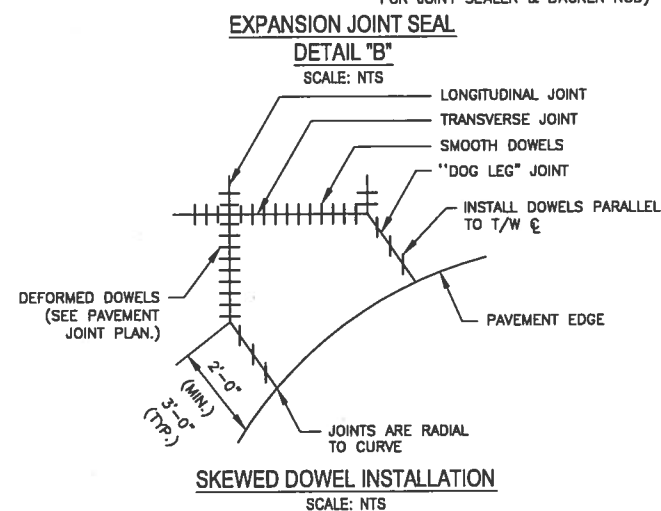
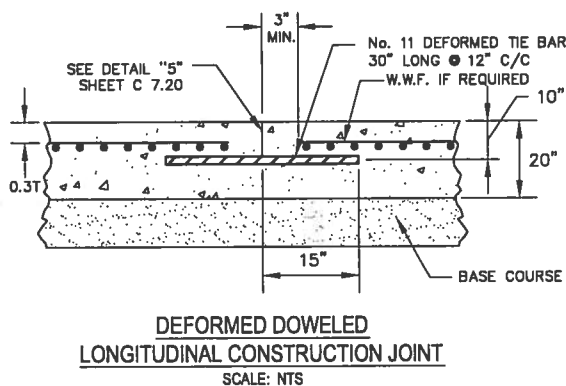
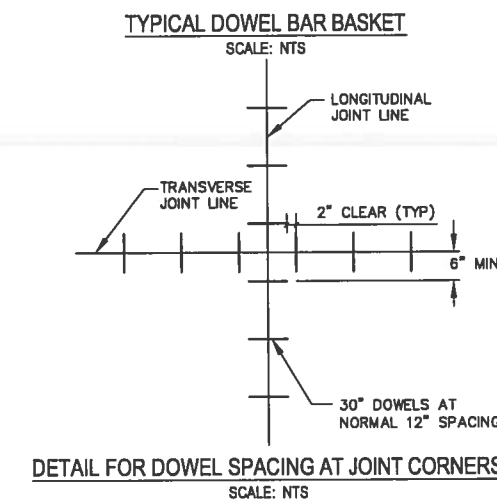
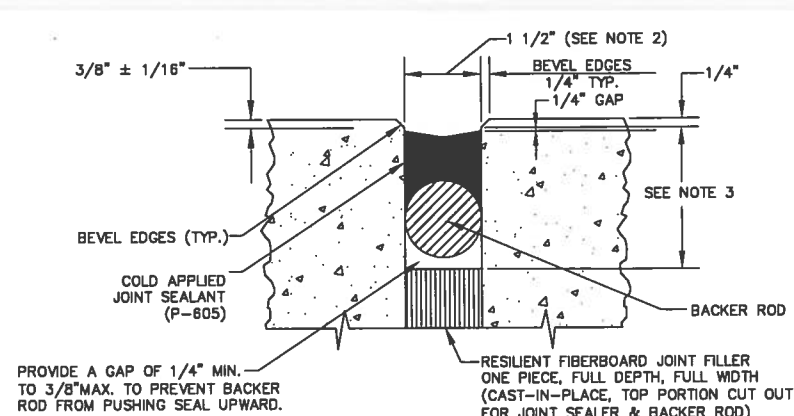
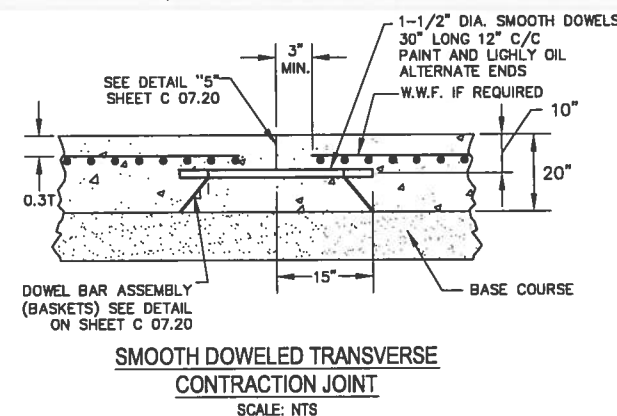
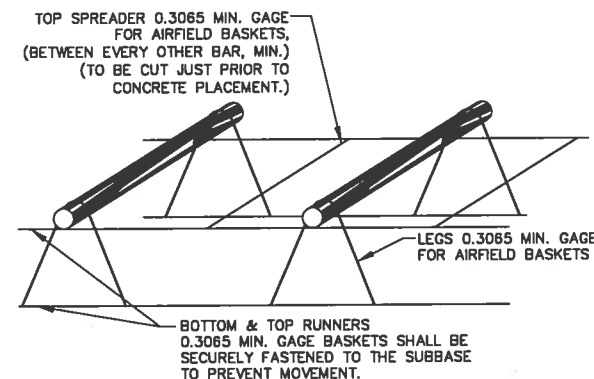
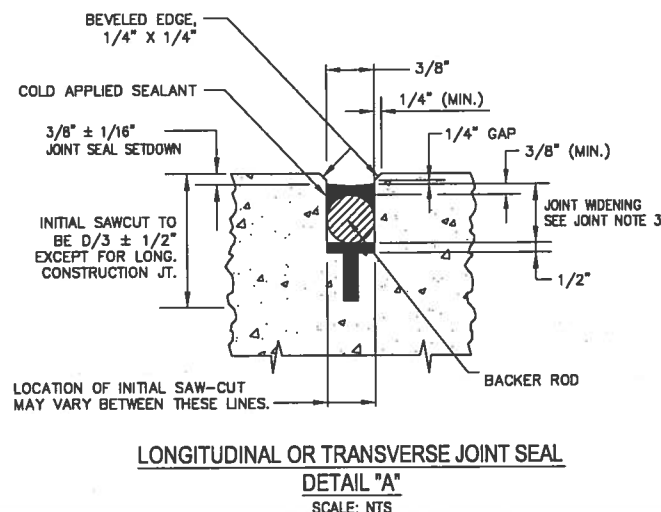
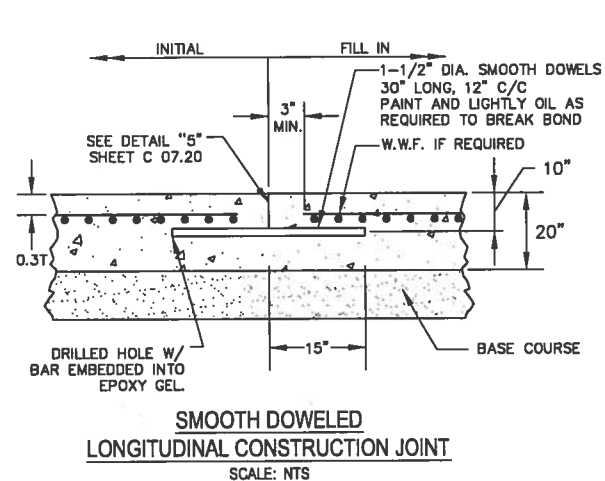


CITY OF ATLANTA, GEORGIA



DEPARTMENT OF AVIATION  
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**GENERAL NOTES**

- FOR ALL JOINTS, BACKER ROD MATERIAL SHALL BE COMPATIBLE WITH THE SEALANT AND SLIGHTLY OVERSIZED TO PREVENT MOVEMENT DURING THE JOINT SEALANT OPERATION.
- THE WIDTH OF THE JOINTS SHALL BE CORRECTED FOR 68F.
- JOINT CONFIGURATION SHALL MEET JOINT SEAL MANUFACTURER'S SPECIFICATIONS (EXCEPT AS NOTED ON PLANS OR SPECIFICATIONS).
- ALL DOWEL BARS ARE TO BE INSTALLED WITH BASKETS FOR TRANSVERSE JOINTS.

**DOWEL AND TIE BAR HOLE DRILLING AND INSTALLATION NOTES**

- DRILLING AND INSTALLATION METHOD SHALL BE CAPABLE OF MAINTAINING DRILL HOLES AND EMBEDDED BARS:
  - PARALLEL TO THE CONCRETE SURFACE, AND
  - NORMAL TO THE JOINT LINE, WITHIN 1/4" AT THE END OF THE DOWEL OR TIE BAR EXCEPT WHERE SPECIFIED OTHERWISE.

DRILL HOLES SHALL BE ACCURATELY LAID OUT SO THAT THE MAXIMUM DEVIATION DOES NOT EXCEED 1". DRILL HOLE DIAMETER TO BE APPROXIMATELY 1/8" CLEAR OF BAR ALL AROUND.
- AFTER THE DRILLING IS COMPLETE AND PRIOR TO INSTALLATION OF THE DOWEL OR TIE BARS, THE HOLES SHALL BE THOROUGHLY CLEANED TO REMOVE DRILLING DUST, CONCRETE CHIPS, AND ANY MATERIAL ETRIMENTAL TO BONDING.
- EPOXY GEL SHALL BE APPLIED TO THE DOWEL AND SUFFICIENT GEL INJECTED IN THE BACK OF THE TIE BAR HOLE BY A MECHANICAL MIXING/PUMP DEVICE, SO THAT A SLIGHT AMOUNT OF GEL WILL BE FORCED OUT WHEN THE DOWEL OR TIE BAR IS INSERTED AND TAPPED TO THE CORRECT POSITION. IT WILL BE NECESSARY TO TWIST THE BAR BACK AND FORTH SEVERAL TIMES TO ELIMINATE THE AIR ENTRAPPED IN THE HOLE. SMALL WEDGES MAY BE USED TO SUPPORT THE DOWEL OR TIE BAR IN CORRECT ALIGNMENT UNTIL THE GEL HARDENS.
- EPOXY SHALL MEET THE GEORGIA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, SECTION 886 FOR TYPE VIII EPOXY GEL.
 

AS NOTED ON PLANS  
LONGITUDINAL D6, 6" C. TO C.  
TRANSVERSE D4, 12" C. TO C.

ALL STEEL TO BE DELIVERED IN FLAT SHEETS.

THIS REINFORCING DOES NOT APPLY TO 25' X 75' SLABS.

**DOWEL BAR BASKET NOTES**

- WIRE USED IN BASKETS SHALL CONFORM TO ASTM-A82 COLD DRAWN WIRE.
- DOWEL BAR ATTACHMENT MAY BE FABRICATED BY ARC OR RESISTANCE TYPE WELDING.
- WIRE FRAME MEMBERS SHALL BE RESISTANCE WELDED EXCEPT FOR SPREADER WIRES WHICH MAY BE ARC WELDED.
- DOWEL BASKETS SHALL BE TAPERED TO ACCOMMODATE THICKENED EDGE PAVEMENT.

NO.	DATE	BY	REVISION

**STANDARD DETAILS**  
Pavement Joint Details -  
New Projects

WBS NUMBER:	DRAWN BY:
FC NUMBER:	STAFF
CONSULTANT PROJECT NUMBER:	DESIGNED BY:
STANDARD SHEET NUMBER	STAFF
STD-01-700	CHECKED BY:
	STAFF
	APPROVED BY:
	STAFF
	DATE:
	SCALE:
	SHEET NO:

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STANDARD DETAILS



CITY OF ATLANTA, GEORGIA



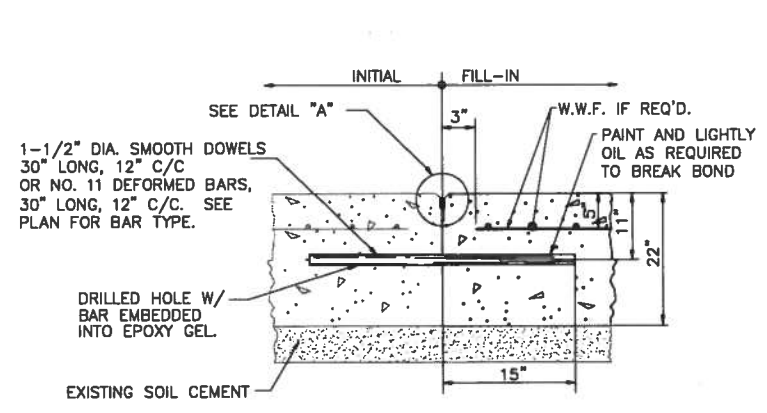
DEPARTMENT OF AVIATION  
PLANNING & DEVELOPMENT

NOTES FOR DOWEL AND TIE BAR HOLE DRILLING  
AND INSTALLATION:

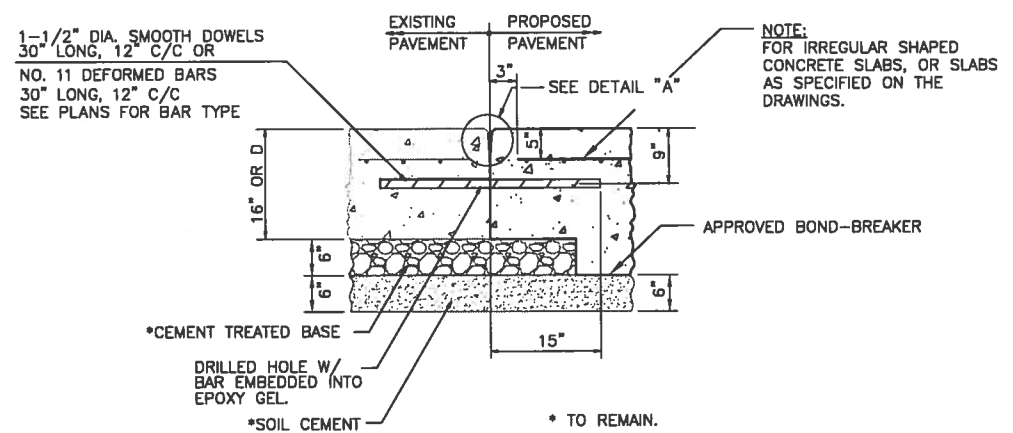
- A. DRILLING AND INSTALLATION METHOD SHALL BE CAPABLE OF MAINTAINING DRILL HOLES AND EMBEDDED BARS: (A) PARALLEL TO THE CONCRETE SURFACE, AND (B) NORMAL TO THE JOINT LINE, WITHIN 1/4" AT THE END OF THE DOWEL OR TIE BAR EXCEPT WHERE SPECIFIED OTHERWISE. DRILL HOLES SHALL BE ACCURATELY LAID OUT SO THAT THE MAXIMUM DEVIATION DOES NOT EXCEED 1". DRILL HOLE DIAMETER TO BE APPROXIMATELY 1/8" CLEAR OF BAR ALL AROUND.
- B. AFTER THE DRILLING IS COMPLETE AND PRIOR TO INSTALLATION OF THE DOWEL OR TIE BARS, THE HOLES SHALL BE THOROUGHLY CLEANED TO REMOVE DRILLING DUST, CONCRETE CHIPS, AND ANY MATERIAL DETRIMENTAL TO BONDING.
- C. EPOXY GEL SHALL BE APPLIED TO THE DOWEL AND SUFFICIENT GEL INJECTED IN THE BACK OF THE TIE BAR HOLE BY A MECHANICAL MIXING/PUMP DEVICE, SO THAT A SLIGHT AMOUNT OF GEL WILL BE FORCED OUT WHEN THE DOWEL OR TIE BAR IS INSERTED AND TAPPED TO THE CORRECT POSITION. IT WILL BE NECESSARY TO TWIST THE DOWEL OR TIE BAR SEVERAL TIMES TO ELIMINATE THE AIR ENTRAPPED IN THE HOLE. SMALL WEDGES MAY BE USED TO SUPPORT THE DOWEL OR TIE BAR IN CORRECT ALIGNMENT UNTIL THE GEL HARDENS.
- D. EPOXY SHALL MEET THE GEORGIA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATION, SECTION 886 FOR TYPE VIII EPOXY GEL.

NOTES:

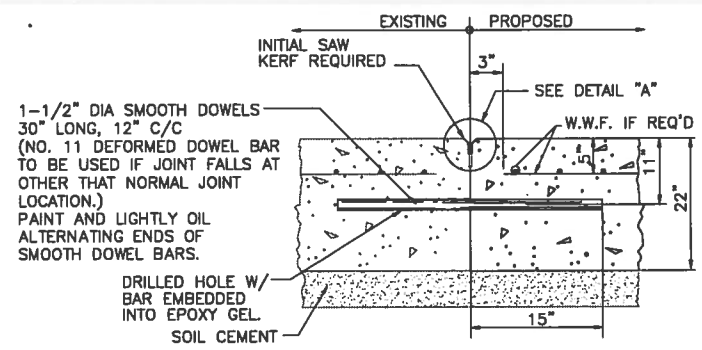
- 1. LONGITUDINAL AND TRANSVERSE JOINTS SHALL BE SAWED AS INDICATED.
- 2. TRANSVERSE CONSTRUCTION JOINTS SHALL BE USED ONLY WHEN APPROVED BY THE ENGINEER.
- 3. FOR ALL JOINTS THE BACKER ROD MATERIAL SHALL BE COMPATIBLE WITH THE COLD POURED SEALANT AND SLIGHTLY OVERSIZED TO PREVENT MOVEMENT DURING THE JOINT SEALANT OPERATION.
- 4. THE WIDTH OF THE JOINTS SHALL BE CORRECTED FOR 68° F.
- 5. JOINT CONFIGURATION SHALL MEET JOINT SEAL MANUFACTURER'S SPECIFICATIONS, EXCEPT AS NOTED ON PLANS AND IN SPECIFICATIONS.
- 6. WELDED WIRE REINFORCING SHALL BE 6X6 D6/D6. ALL REINFORCING STEEL SHALL BE DELIVERED IN FLAT SHEETS. NO ROLL STOCK WILL BE ACCEPTABLE.



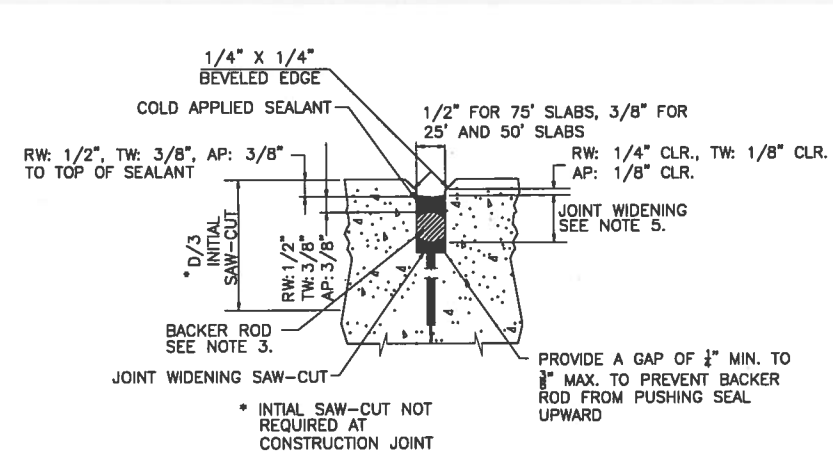
LONGITUDINAL CONSTRUCTION JOINT  
N.T.S.



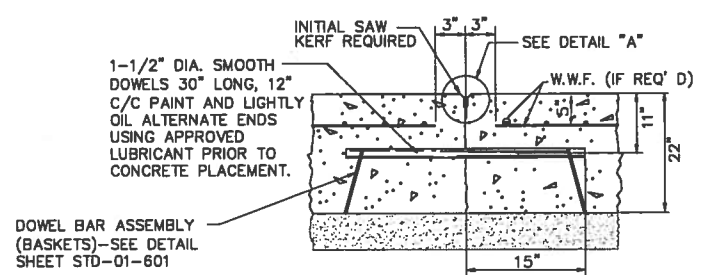
LONGITUDINAL OR TRANSVERSE JOINT AT EXISTING  
16-INCH PAVEMENT  
N.T.S.



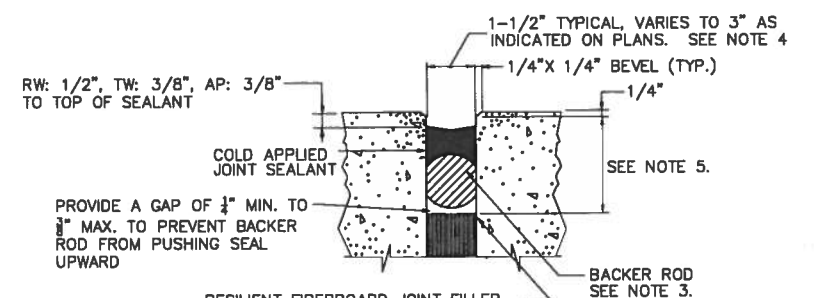
TRANSVERSE CONSTRUCTION JOINT  
N.T.S.



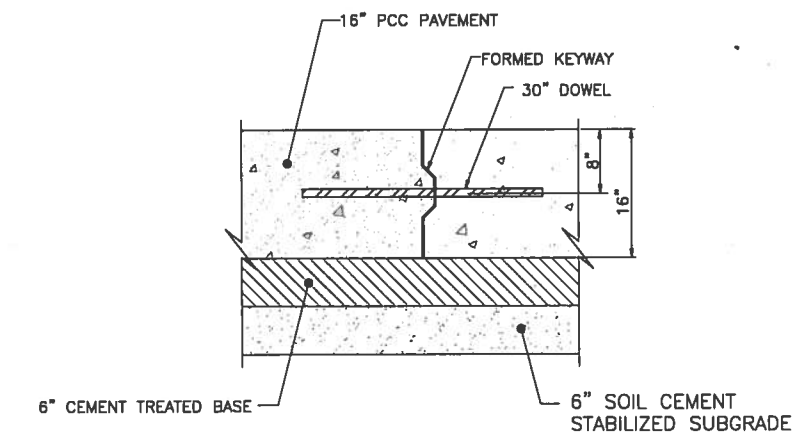
DETAIL "A" LONGITUDINAL AND  
TRANSVERSE JOINT SEAL DETAIL  
N.T.S.



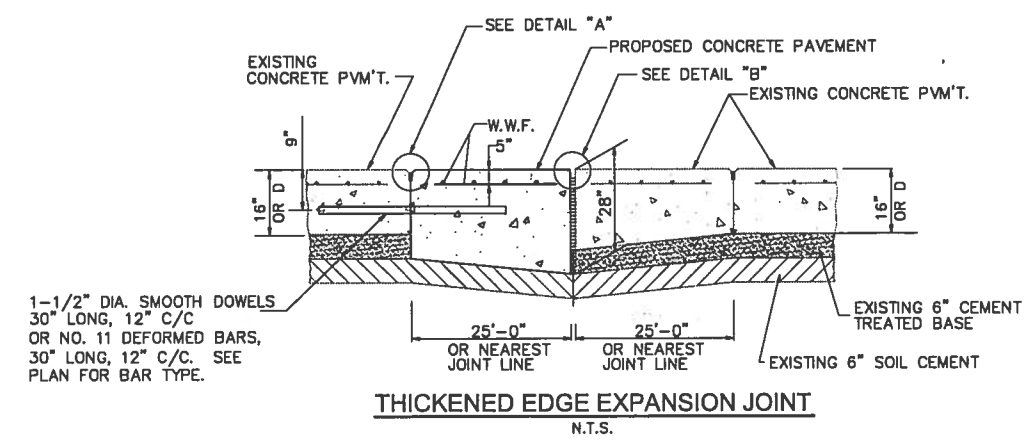
TRANSVERSE CONTRACTION JOINT  
N.T.S.



EXPANSION JOINT SEAL DETAIL  
DETAIL "B"  
N.T.S.



EXISTING APRON SECTION  
CPTC, NORTH AND SOUTH CARGO  
N.T.S.



THICKENED EDGE EXPANSION JOINT  
N.T.S.

NO.	DATE	BY	REVISION

STANDARD DETAILS

Pavement Joint Details - 1  
Replacement Projects

WBS NUMBER:	DRAWN BY: STAFF
FC NUMBER:	DESIGNED BY: STAFF
CONSULTANT PROJECT NUMBER:	CHECKED BY: STAFF
STANDARD SHEET NUMBER STD-01-701	APPROVED BY: STAFF
	DATE:
	SCALE:
	SHEET NO:

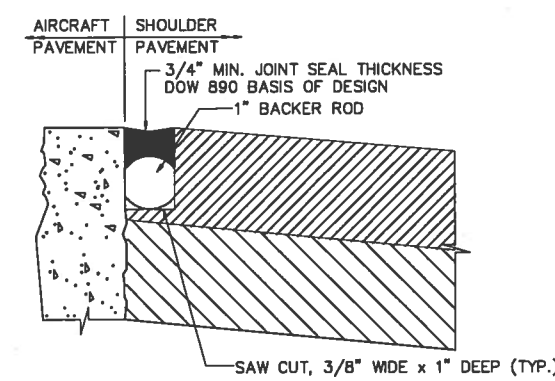
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STANDARD DETAILS FOR CONSTRUCTION

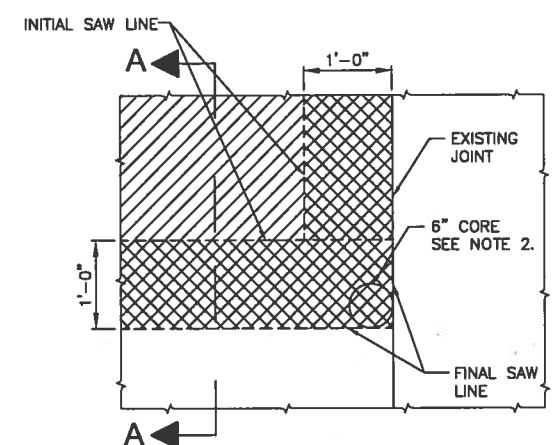


CITY OF ATLANTA, GEORGIA  
**Hartsfield-Jackson**  
 Atlanta International Airport

**DEPARTMENT OF AVIATION  
 PLANNING & DEVELOPMENT**



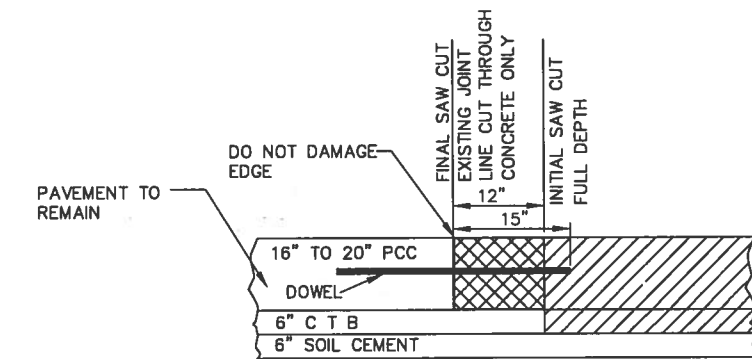
**ASPHALT/PCC PAVEMENT JOINT DETAIL**  
 N.T.S.



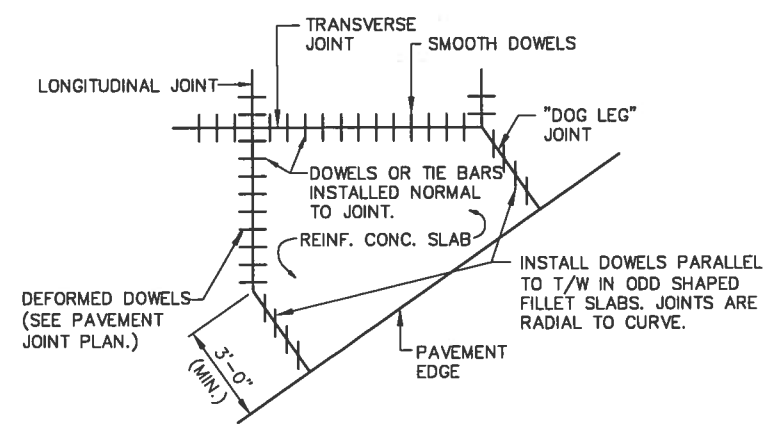
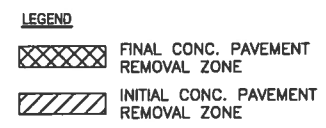
**PAVEMENT REMOVAL TYPICAL PLAN**  
 N.T.S.

**DEMOLITION NOTES:**

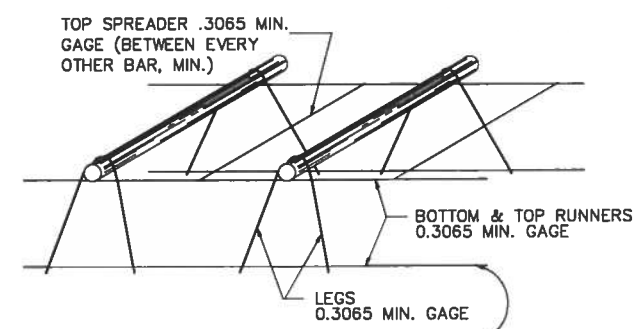
1. ALL PAVEMENT REMOVAL EXCEPT FOR 1'-0" PERIMETER AREA SHALL BE COMPLETED PRIOR TO FINAL CUT.
2. NO SAW CUTS WILL BE PERMITTED TO EXTEND BEYOND THE FINAL SAWCUT LINE. PRIOR TO THE FINAL SAW CUT, THE CONTRACTOR SHALL CORE THE CORNERS OF THE PAVEMENT AREA TO BE DEMOLISHED. THE DIAMETER OF THE CORES SHALL BE 6 INCHES.
3. ADDITIONAL SAW CUTS WILL BE PERMITTED WITHIN THE FINAL SAW CUT PERIMETER AT THE CONTRACTOR'S DISCRETION.
4. WHEN SAW CUTTING CONCRETE, CONTRACTOR SHALL MAKE TWO SAW CUTS AS PER DETAIL THIS SHEET. THE INITIAL SAW CUT SHALL BE CUT THROUGH CONCRETE AND ALL STABILIZED BASE COURSES. THE SECOND CUT SHALL BE THROUGH CONCRETE ONLY. FOLLOWING FINAL SAW CUT, CONCRETE SHALL CAREFULLY BE REMOVED TO AVOID DAMAGING THE REMAINING EDGE.
5. CONTRACTOR SHALL REPLACE ALL EXISTING CEMENT STABILIZED BASE THAT IS DAMAGED DURING PAVEMENT REMOVAL OR AS DEEMED BY THE ENGINEER OR OUTLINED IN THE SPECIFICATIONS AT NO ADDITIONAL COST TO THE CITY.



**SECTION A-A: TYPICAL SAWCUT ADJACENT TO EXISTING PAVEMENT TO REMAIN**  
 N.T.S.

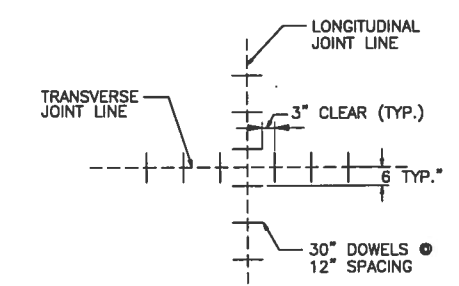


**SKEWED DOWEL INSTALLATION**  
 N.T.S.



**TYPICAL DOWEL BAR BASKET**  
 N.T.S.

- NOTES:**
1. WIRE USED IN BASKETS SHALL CONFORM TO ASTM-A82 COLD DRAWN WIRE.
  2. DOWEL BAR ATTACHMENT MAY BE FABRICATED BY ARC OR RESISTANCE TYPE WELDING.
  3. WIRE FRAME MEMBERS SHALL BE RESISTANCE WELDED EXCEPT FOR SPREADER WIRES WHICH MAY BE ARC WELDED.



**DOWEL SPACING DETAIL AT JOINT CORNERS**  
 N.T.S.

NO.	DATE	BY	REVISION

**STANDARD DETAILS**

**Joint Details - 2  
 Replacement Projects**

WBS NUMBER:	DRAWN BY: STAFF
FC NUMBER:	DESIGNED BY: STAFF
CONSULTANT PROJECT NUMBER:	CHECKED BY: STAFF
STANDARD SHEET NUMBER <b>STD-01-702</b>	APPROVED BY: STAFF

DATE:
SCALE:
SHEET NO:



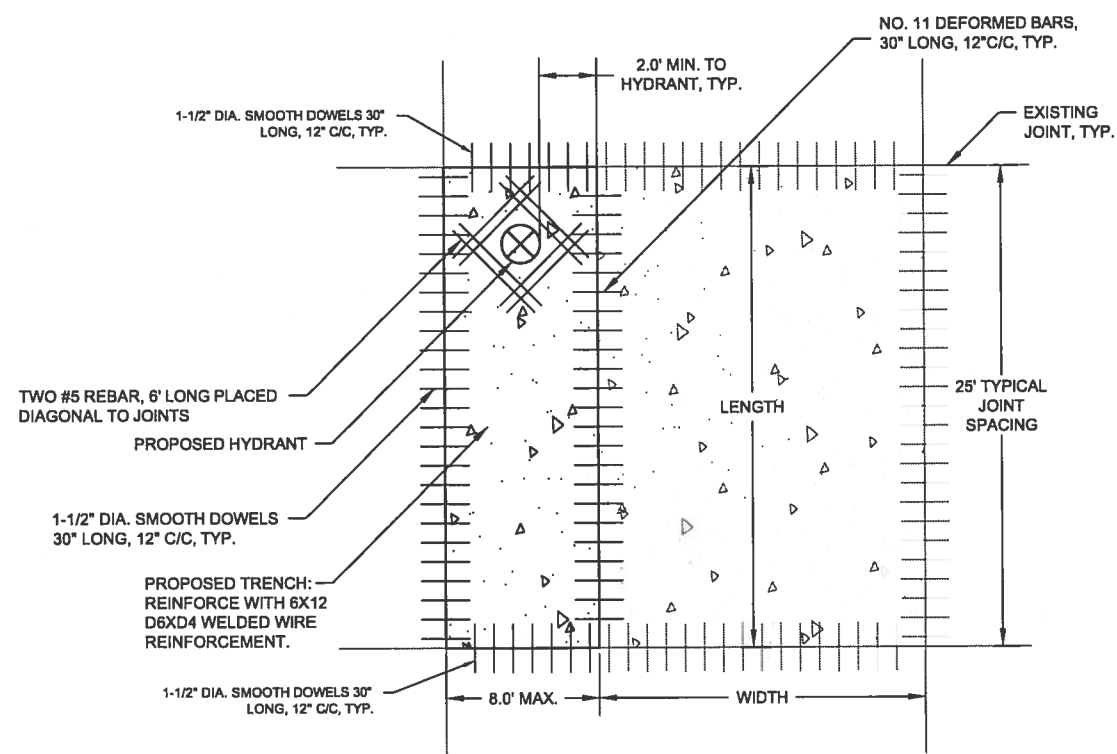
CITY OF ATLANTA, GEORGIA



DEPARTMENT OF AVIATION  
PLANNING & DEVELOPMENT

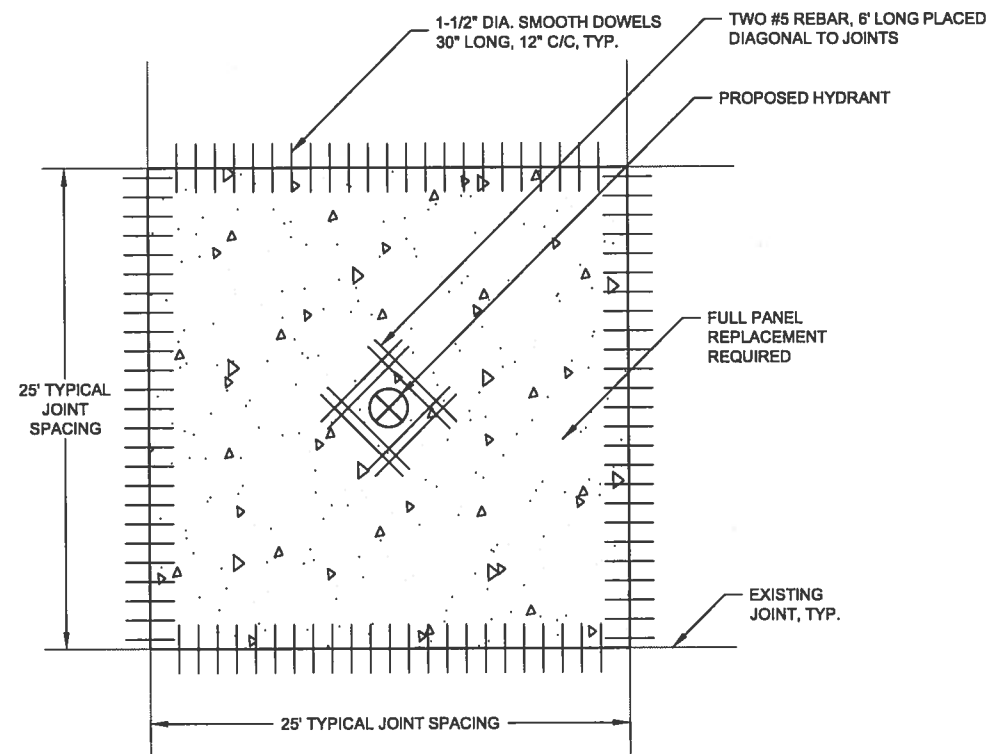
GENERAL NOTES:

1. NO "U"- OR "L"-SHAPED REMAINING SLABS WILL BE PERMITTED.
2. THE LENGTH/WIDTH RATIO OF REMAINING SLABS MUST BE LESS THAN OR EQUAL TO 1.5. THE LENGTH IS DEFINED AS THE LONGER DIMENSION.
3. THE MAXIMUM PERMISSIBLE TRENCH WIDTH IS 8 FEET. ANY DEMOLITION IN EXCESS OF 8 FEET WILL REQUIRE RECONSTRUCTION OF THE FULL LENGTH AND WIDTH OF THE ORIGINAL PANEL.
4. IF TRENCHING CREATES REMAINING CONCRETE AREAS THAT VIOLATE THE 1.5 TO 1 LENGTH TO WIDTH RATIO, SLAB REPLACEMENT IS REQUIRED.
5. TRENCHING THROUGH ADJACENT SLABS IS SUBJECT TO THE SAME LENGTH TO WIDTH RATIO REQUIREMENTS.



CASE 1:

HYDRANT, PENETRATION, OR  
TRENCH NEAR SLAB CORNER  
OR EDGE



CASE 2:

HYDRANT OR PENETRATION AT  
OR NEAR CENTER OF SLAB

NO.	DATE	BY	REVISION

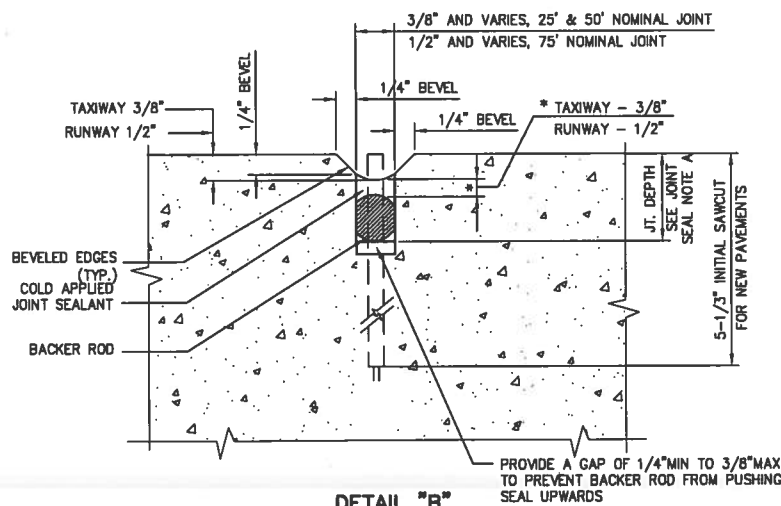
STANDARD DETAILS	
Exist. Pavement Removal and Replacement for Hydrants	

WBS NUMBER:	DRAWN BY: STAFF
FC NUMBER:	DESIGNED BY: STAFF
CONSULTANT PROJECT NUMBER:	CHECKED BY: STAFF
STANDARD SHEET NUMBER STD-01-703	APPROVED BY: STAFF

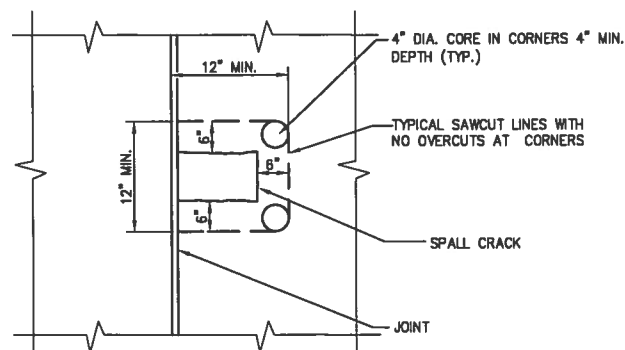
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SCALE:
SHEET NO:

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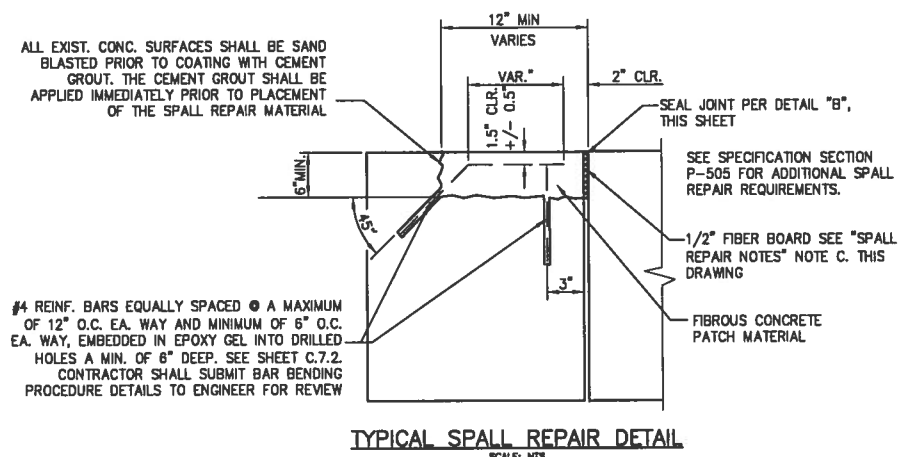
LAYOUT FOR PAVING FOR COLLECTOR LAYOUT



LONGITUDINAL AND TRANSVERSE JOINT SEAL  
SCALE: NTS



TYPICAL REMOVAL PLAN FOR SPALL REPAIR  
SCALE: NTS



TYPICAL SPALL REPAIR DETAIL  
SCALE: NTS

**JOINT SEAL PROCEDURE NOTES**

IN GENERAL, THE PROCEDURE FOR RESEALING THE JOINT SHALL BE AS FOLLOWS: (ADDITIONAL REQUIREMENTS AND STEPS FOR RESEALING THE EXPANSION JOINTS ARE GIVEN IN SUBSEQUENT SECTIONS OF THE PLANS AND SPECIFICATIONS.)

A. THE CONTRACTOR SHALL REMOVE THE EXISTING SEALS, THE EXISTING JOINT SEAL AND SEALANT MUST BE REMOVED ENTIRELY TO ULTIMATELY PROVIDE A THOROUGHLY CLEANED SURFACE ON WHICH TO RESEAL. THE EXISTING SEAL IS TO BE REMOVED BY SAWCUTTING BOTH SIDES OF THE PAVEMENT EDGE TO WHICH THE SEAL IS ATTACHED TO THE FULL DEPTH OF THE SEAL AND APPROXIMATELY 1/16" INTO EACH PAVEMENT EDGE.

B. ALL SPALLED AND CRACKED SURFACES ADJACENT TO A JOINT WHICH ARE DEEMED UNSATISFACTORY FOR RESEALING BY THE ENGINEER SHALL BE REPAIRED BY THE CONTRACTOR PRIOR TO RESEALING. THE PATCH MATERIAL USED FOR SPALLING REPAIR SHALL BE AS SPECIFIED IN SPECIFICATIONS SECTION P-505, CONCRETE PAVEMENT SPALL REPAIR.

C. PAVEMENT JOINT EDGES ARE TO BE SAWCUT BEVELED ON A 1/4" X 1/4" SLOPE, AS SHOWN IN DETAIL B. NOTE, THE CONTRACTOR SHALL BE REQUIRED TO DEVELOP A MEANS TO CONTAIN THE SLURRY PRODUCED DURING THE BEVELING OPERATIONS. IMMEDIATELY FOLLOWING THE BEVELING THE JOINT OPENING IS TO BE CLEANED BY THE USE OF HIGH PRESSURE WATER BLASTING. THE AREA SHALL THEN BE SWEEP CLEAN BY USE OF A VACUUM SWEEPER. THE BEVELING AND SLURRY CLEANUP OPERATIONS IN CONJUNCTION WITH THE SEAL REMOVAL SHALL CONSTITUTE THE INITIAL CLEANING.

D. IMMEDIATELY PRECEDING APPLICATION OF THE JOINT SEAL, THE PAVEMENT EDGE WHICH WILL RECEIVE THE NEW JOINT MATERIAL SHALL BE THOROUGHLY CLEANED AND SAND BLASTED. THE CONTRACTOR SHALL BE REQUIRED TO ESTABLISH A MEANS TO CONTAIN THE SAND DURING THE SAND BLASTING OPERATION SINCE SAND OR ANY FOREIGN OBJECT ON AIRCRAFT PAVEMENT IS DETRIMENTAL TO AIRCRAFT SAFETY. THE METHODS ESTABLISHED TO CONTAIN THE SAND MUST BE APPROVED BY THE ENGINEER PRIOR TO ITS USE UPON COMPLETION OF THE SAND BLASTING OPERATION OR AT INTERVALS DIRECTED BY THE ENGINEER, PRIOR TO ITS USE. THE CONTRACTOR SHALL BE REQUIRED TO SWEEP THE SAND WITH A VACUUM SWEEPER.

E. BACKER ROD AS SPECIFIED IN THE SPECIFICATIONS SHALL BE INSTALLED AS CALLED FOR IN DETAIL B. THE INSTALLATION OF THE BACKER ROD IN CONJUNCTION WITH THE SANDBLASTING OPERATION SHALL CONSTITUTE THE FINAL JOINT PREPARATION.

F. THE JOINT SEAL AS CALLED FOR IN THE SPECIFICATIONS SHALL THEN BE APPLIED; SEE DETAIL B. AS A PRECAUTION TO ENSURE THAT PAVEMENT IS MOISTURE FREE, THE CONTRACTOR SHALL HAVE AT HIS DISPOSAL ON SITE, PRIOR TO THE ACTUAL SEALING OPERATION, A NONRESIDUAL HEATER/BLOWER UNIT PER SEALING CREW, TO DRY THE PAVEMENT EDGES.

**JOINT SEAL NOTES:**

A. THE JOINT SEAL MANUFACTURER'S SPECIFICATIONS SHALL BE COMPATIBLE WITH JOINT CONFIGURATION.

B. FOR ALL JOINTS THE BACKER ROD MATERIAL SHALL BE COMPATIBLE WITH THE COLD POURED SEALANT AND SLIGHTLY OVERSIZED TO PREVENT MOVEMENT DURING THE JOINT SEALANT OPERATION.

C. SEE DRAWING C.7.3 FOR EXPANSION JOINT SEAL DETAIL. REPLACE EXISTING SEAL AND BACKER ROD. EXISTING EXPANSION BOARD TO REMAIN.

**SPALL REPAIR NOTES:**

A. SPALL REPAIR LIMITS SHALL BE APPROVED BY ENGINEER PRIOR TO ANY CUTTING OR REMOVAL. MINIMUM SPALL AREA IS ONE SQUARE FOOT. REPAIR DEPTH MAY VARY BEYOND 6 INCHES. EXISTING SPALLED CONCRETE SHALL BE REMOVED TO SOUND CONCRETE. WITH ENGINEER'S APPROVAL, PRE-SAWING MAY BE PERMITTED AS FOLLOWS:

- 1. TAXIWAYS MAY BE PRESAWED 48 HOURS IN ADVANCE OF SPALL REPAIR CONSTRUCTION.
- 2. RUNWAYS MAY BE PRESAWED 24 HOURS IN ADVANCE OF SPALL REPAIR CONSTRUCTION.

B. JOINT SEAL INSTALLATION AROUND SPALL REPAIRS SHALL BE ACCOMPLISHED IMMEDIATELY AFTER SPALL REPAIRS ARE COMPLETED AND CURED.

C. FIBER BOARD USED FOR SPALL PATCH IS FOR FORMING PURPOSES. THE TOP PORTION SHALL BE REMOVED PRIOR TO JOINT REPAIR SEAL INSTALLATION.

D. SPALL REPAIRS ALONG UTILITY CUTS CAN BE LESS THAN 12" WIDE.

E. SPALL REPAIR WORK WILL BE SCHEDULED NOT ONLY TO OBTAIN THE 450 PSI STRENGTH REQUIRED FOR OPENING TO AIRCRAFT TRAFFIC BUT ALSO TO PROVIDE SUFFICIENT TIME TO WATER CURE THE FIBROUS CONCRETE MIX AS REQUIRED BY THE TECHNICAL SPECIFICATIONS.

F. ELECTRICAL CONTRACTOR SHALL BE ON SITE DURING SAW CUTTING, REMOVAL, AND REPLACEMENT OF CONCRETE SPALLS WITHIN 3 FEET OF IN-PAVEMENT ELECTRICAL ITEMS.

G. CONTRACTOR SHALL BE REQUIRED TO COORDINATE WITH DOA MAINTENANCE TO LOCK OUT AFFECTED ELECTRICAL CIRCUITS AND RE-ENERGIZE CIRCUITS.

H. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

**CRACK ROUTING AND SEALING**

A. PREPARATION FOR CONCRETE PAVEMENT CRACK ROUTING AND SEALING SHALL BE BY PROPERLY ROUTING THE CRACK TO BE SLIGHTLY LOWER THAN THE EXISTING CRACK TO ENSURE PROPER ADHESION TO THE SIDEWALLS. THE CRACKS SHOULD BE ROUTED OUT TO PROVIDE A MINIMUM SEALANT RESERVOIR 3/8" WIDE WITH A MINIMUM DEPTH OF 3/8". THICKNESS AND DEPTH BELOW THE PAVEMENT SURFACE SHALL BE AS SPECIFIED FOR JOINT SEALANT.

B. CRACKS SHOULD BE FREE OF DIRT, DUST, AND MOISTURE, AND SHOULD BE FROST-FREE. WIRE BRUSHING OR COMPRESSED AIR SHOULD CLEAN THEM AND A HEAT LANCE MAY BE USED TO DRY THE SURFACES.



CITY OF ATLANTA, GEORGIA



**DEPARTMENT OF AVIATION  
PLANNING & DEVELOPMENT**

NO.	DATE	BY	REVISION

**STANDARD DETAILS**

**Spall And Joint Repair Details**

WBS NUMBER:	DRAWN BY: STAFF
FC NUMBER:	DESIGNED BY: STAFF
CONSULTANT PROJECT NUMBER:	CHECKED BY: STAFF
STANDARD SHEET NUMBER <b>STD-01-704</b>	APPROVED BY: STAFF

DATE:
SCALE:
SHEET NO:

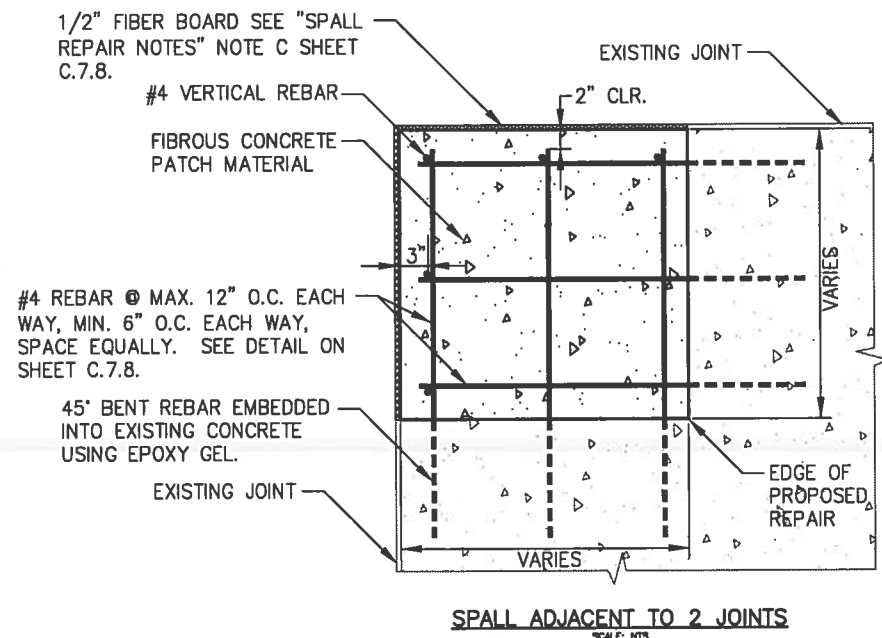
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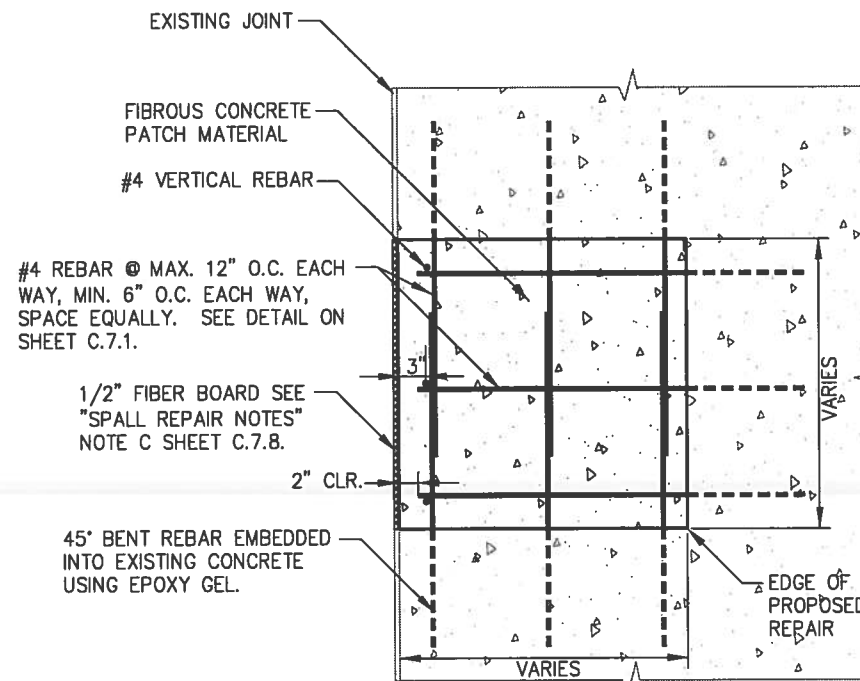
CITY OF ATLANTA, GEORGIA



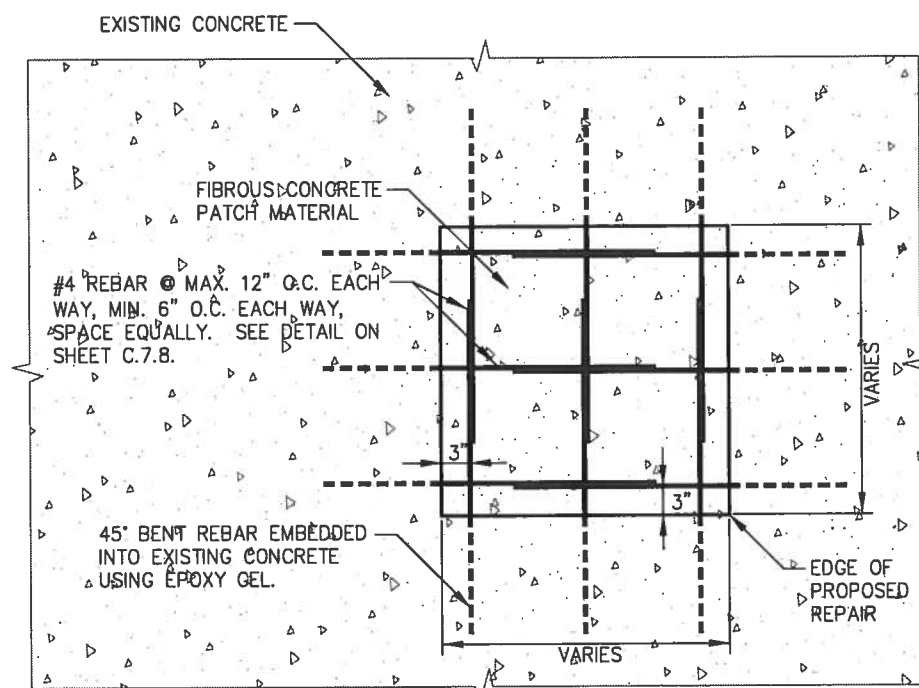
DEPARTMENT OF AVIATION  
PLANNING & DEVELOPMENT



SPALL ADJACENT TO 2 JOINTS  
SCALE: NTS



SPALL ADJACENT TO SINGLE JOINT  
SCALE: NTS



SPALL NOT ADJACENT TO JOINT  
SCALE: NTS

TYPICAL SPALL REPAIR REBAR PLACEMENT DETAILS  
SCALE: NTS

**NOTES:**

**VERTICAL #4 REINFORCING BARS**

- PLACE BARS 3 INCHES FROM JOINTS
- SPACE EQUALLY, MAX. SPACING IS 12 INCHES, MIN. SPACING IS 6 INCHES.
- USE VERTICAL BARS ONLY ALONG JOINTS.

**45° BENT #4 REINFORCING BARS**

- ON PERIPHERY, PLACE BARS 3 INCHES FROM EDGES OF REPAIR. IF VERTICAL BARS ARE PRESENT, PLACE IMMEDIATELY INSIDE VERTICAL BARS,
- SPACE EQUALLY, MAX. SPACING IS 12 INCHES, MIN. SPACING IS 6 INCHES.

**GENERAL**

- SPLICES ARE 30 BAR DIAMETERS.
- IF SPALL IS NOT IMMEDIATELY ADJACENT TO A JOINT, BUT IS WITHIN 6 INCHES OF A JOINT, EXTEND REPAIR TO JOINT AND USE VERTICAL BARS.
- SEE SHEET C.7.9 FOR ADDITIONAL DETAILS.

NO.	DATE	BY	REVISION

STANDARD DETAILS

Typical Spall Repair Rebar Placement Detail

WBS NUMBER:	DRAWN BY: STAFF
FC NUMBER:	DESIGNED BY: STAFF
CONSULTANT PROJECT NUMBER:	CHECKED BY: STAFF
STANDARD SHEET NUMBER STD-01-705	APPROVED BY: STAFF

DATE:  
SCALE:  
SHEET NO:

STANDARD DETAILS

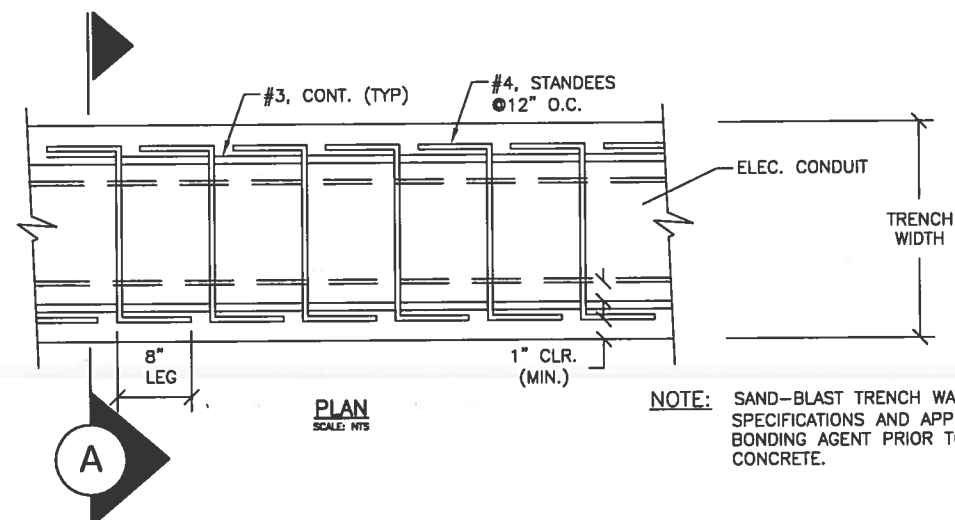
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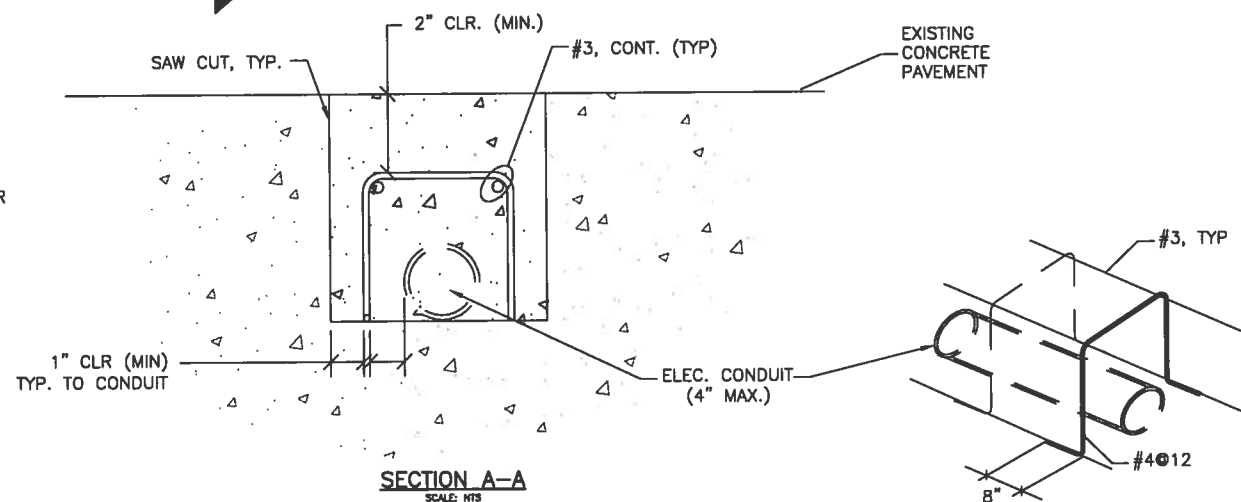
CITY OF ATLANTA, GEORGIA



DEPARTMENT OF AVIATION  
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**NOTE:** SAND-BLAST TRENCH WALLS PER SPECIFICATIONS AND APPLY APPROVED BONDING AGENT PRIOR TO PLACING NEW CONCRETE.



**NOTE:** TRENCH DEPTH IS 8+/-". CONTRACTOR SHALL FIELD VERIFY ACTUAL TRENCH DEPTH.

**GENERAL NOTES**

1. ALL REINFORCEMENT TO CONFORM TO ASTM A-615, GRADE 60
2. ALL BAR BENDING DETAILS SHALL CONFORM TO REQ'TS OF ACI 318-05
3. ALL CONCRETE SHALL MEET THE REQUIREMENTS OF SPECIFICATION SECTION P-505.
4. ALL REINFORCEMENT SPLICES SHALL BE CLASS A, PER ACI 318-05
5. ALLOW FOR 5% OF THE TOTAL WEIGHT OF REINFORCING STEEL AS BARS TO BE PLACED AS DIRECTED BY THE ENGINEER.
6. SEE SPALL REPAIR NOTES ON SHEET C.7.8. FOR ADDITIONAL REQUIREMENTS.
7. STANDEES AND LONGITUDINAL BARS SHALL NOT BE CONTINUOUS THROUGH EXISTING JOINTS. CLIP BARS AS REQUIRED. MAINTAIN 1-INCH CLEARANCE.
8. INSTALL EXPANSION/DEFLECTION FITTINGS ON CONDUITS AT PAVEMENT JOINTS.
9. WHERE TRENCH ENDS AT EXISTING CONCRETE, TIE-IN NEW #3 BARS BY EPOXY GROUTING INTO EXISTING CONCRETE 6". HILTI HIT RE 500 IS THE BASIS OF DESIGN.

**TYPICAL REPAIR FOR RETROFIT CONDUIT TRENCH**

SCALE: NTS

NO.	DATE	BY	REVISION

STANDARD DETAILS

Retrofit Conduit Trench Repair  
Details

WBS NUMBER:	DRAWN BY:
FC NUMBER:	DESIGNED BY:
CONSULTANT PROJECT NUMBER:	CHECKED BY:
STANDARD SHEET NUMBER	APPROVED BY:
<b>STD-01-706</b>	STAFF

DATE:  
SCALE:  
SHEET NO:

STANDARD DETAIL 6

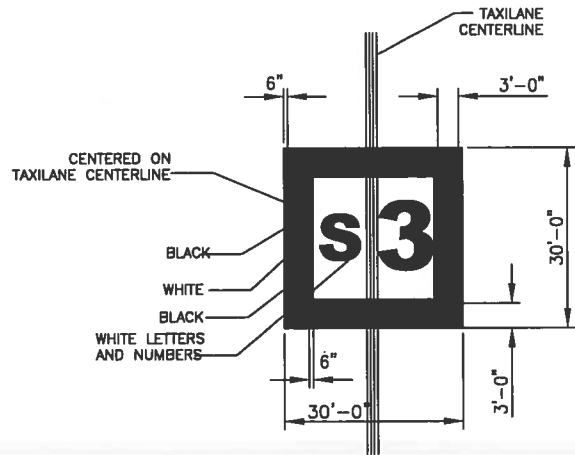
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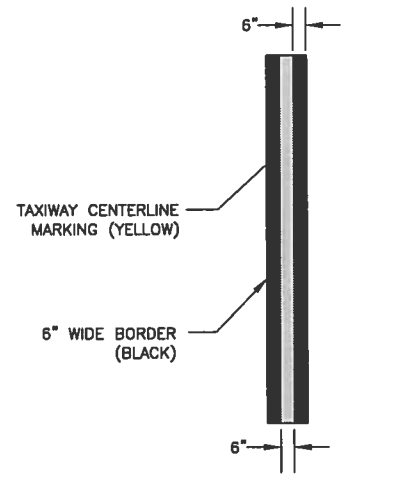
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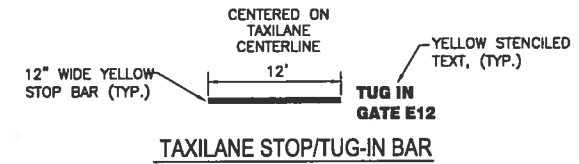
DEPARTMENT OF AVIATION  
PLANNING & DEVELOPMENT



**TAXILANE / RAMP DESCRIPTION**  
N.T.S



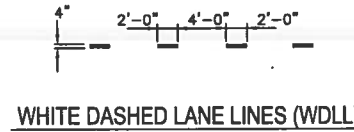
**TAXILANE CENTER MARKING**  
N.T.S



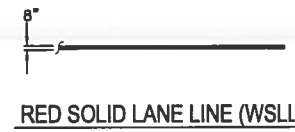
**TAXILANE STOP/TUG-IN BAR**



**WHITE SOLID LANE LINE (WSLL)**



**WHITE DASHED LANE LINES (WDLL)**



**RED SOLID LANE LINE (WSLL)**



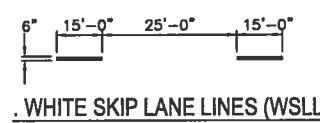
**SINGLE YELLOW CENTER LINE (SYCL)**



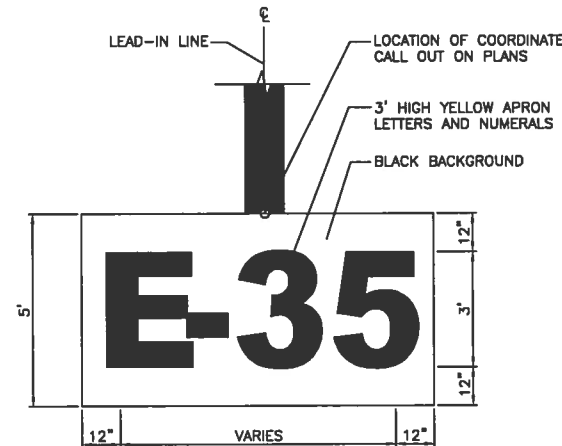
**DOUBLE YELLOW CENTER LINE (DYCL)**



**WHITE STOP BAR (WSB)**

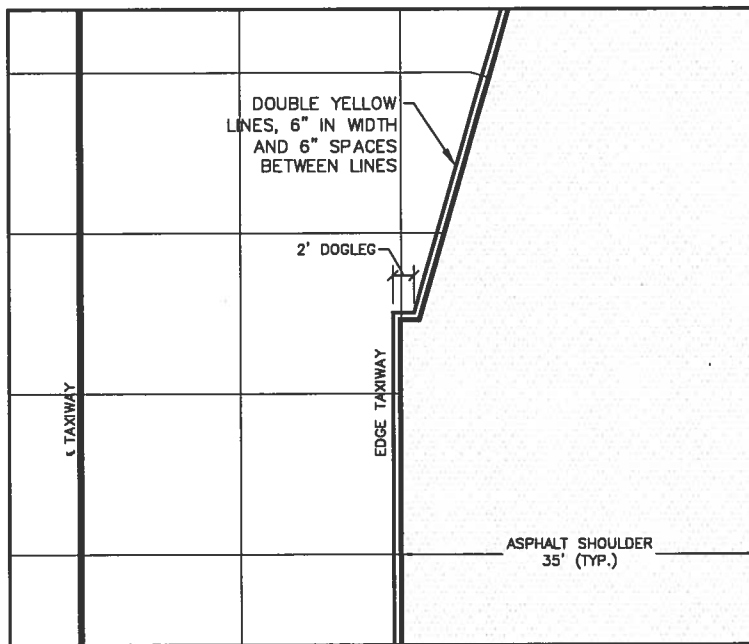


**WHITE SKIP LANE LINES (WSLL)**

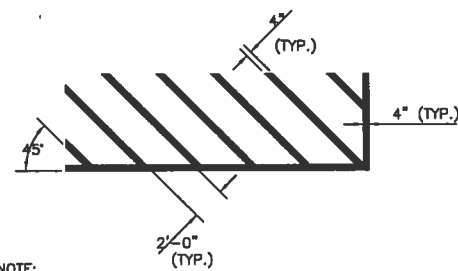


NOTE:  
FOR ADDITIONAL DETAILS  
REFER TO FAA ADVISORY  
AC 150/5340-1H.

**TAXILANE / RAMP DESCRIPTION**  
N.T.S

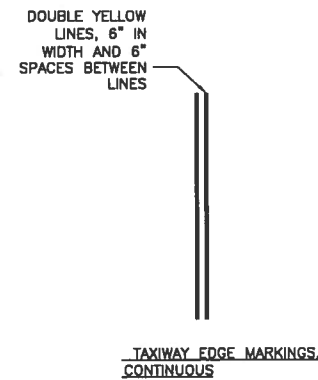


**DOGLEG STRIPING**  
N.T.S

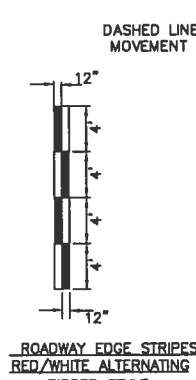


NOTE:  
ALL STRIPES SHALL BE PAINTED WITH YELLOW PAINT THAT COMPLIES  
WITH FS TT-P-115, TYPE 1, OR AASHTO M-248, TYPE N.

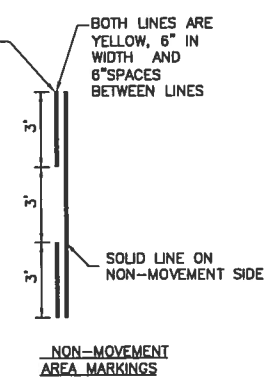
**CHEVRON STRIPING**  
N.T.S



**TAXIWAY EDGE MARKINGS,  
CONTINUOUS**



**ROADWAY EDGE STRIPES,  
RED/WHITE ALTERNATING  
ZIPPER STYLE**



**NON-MOVEMENT  
AREA MARKINGS**

**APRON PAVING STRIPING**  
N.T.S

NO. DATE BY REVISION

STANDARD DETAILS

**Apron Striping and  
Marking -1**

WBS NUMBER:	DRAWN BY: STAFF
FC NUMBER:	DESIGNED BY: STAFF
CONSULTANT PROJECT NUMBER:	CHECKED BY: STAFF
STANDARD SHEET NUMBER <b>STD-01-800</b>	APPROVED BY: STAFF

DATE:  
SCALE:  
SHEET NO:

DATE PLOTTED FOR CONSULTATION

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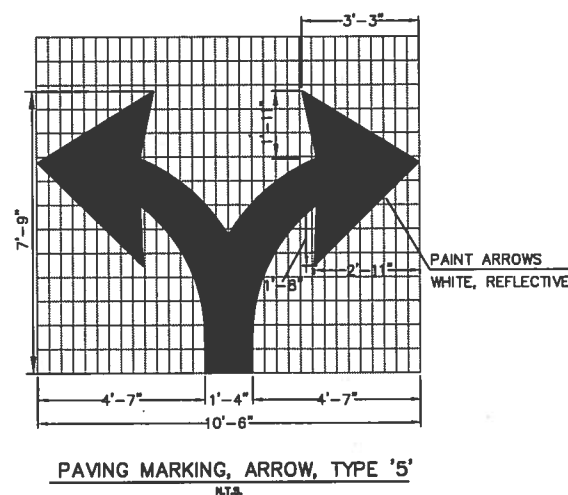
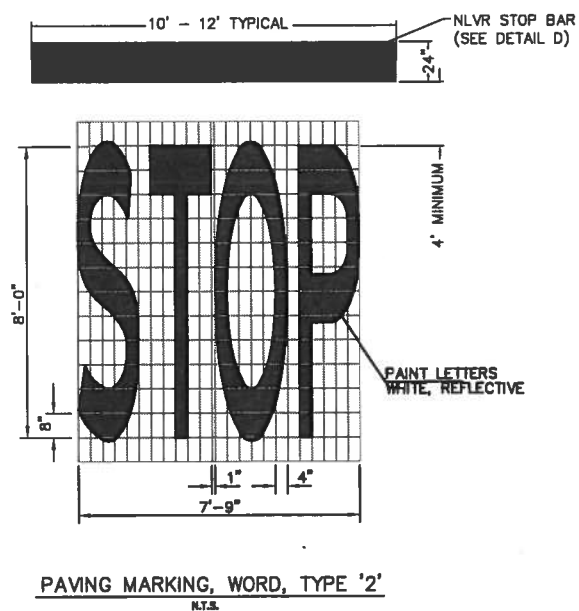
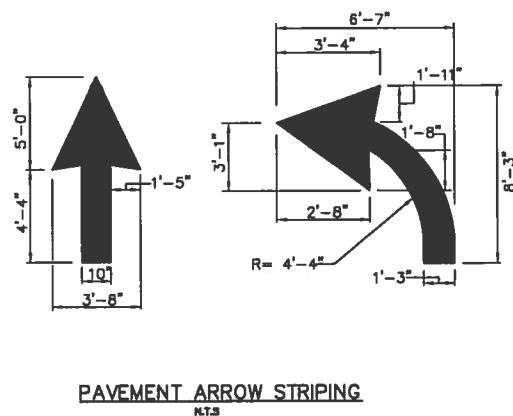
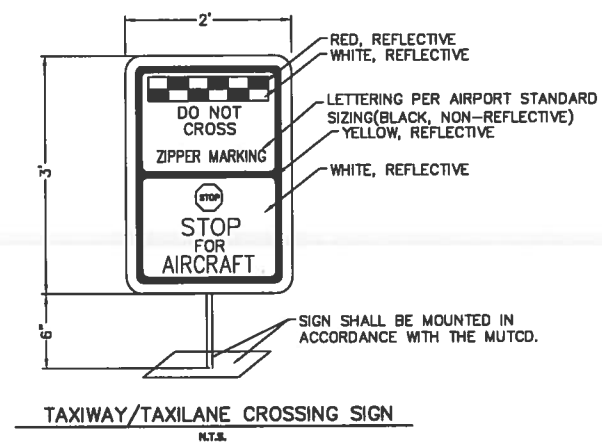
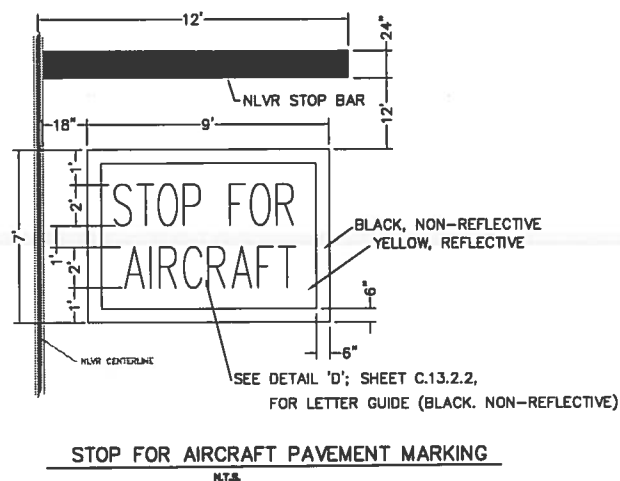
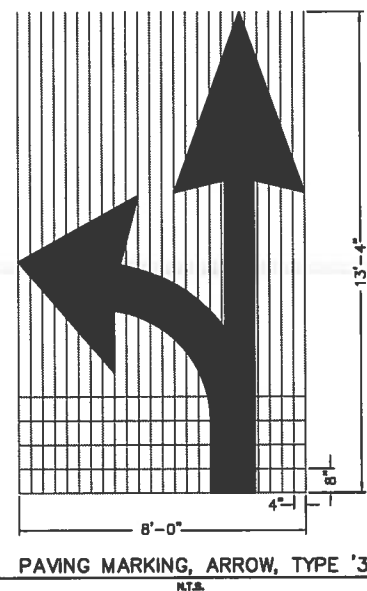
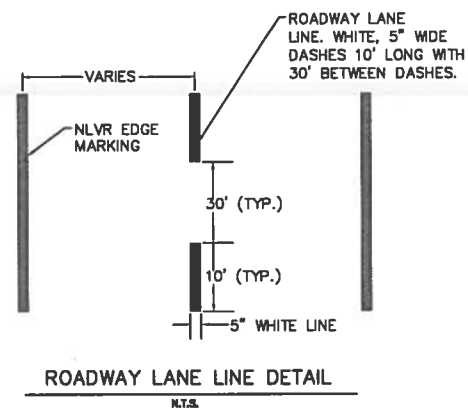




CITY OF ATLANTA, GEORGIA

Hartsfield-Jackson  
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DEPARTMENT OF AVIATION  
PLANNING & DEVELOPMENT



NO.	DATE	BY	REVISION

STANDARD DETAILS

Apron NLVR Striping and Signage

WBS NUMBER: .	DRAWN BY: STAFF
FC NUMBER: .	DESIGNED BY: STAFF
CONSULTANT PROJECT NUMBER: .	CHECKED BY: STAFF
STANDARD SHEET NUMBER STD-01-801	APPROVED BY: STAFF

DATE:  
.

SCALE:  
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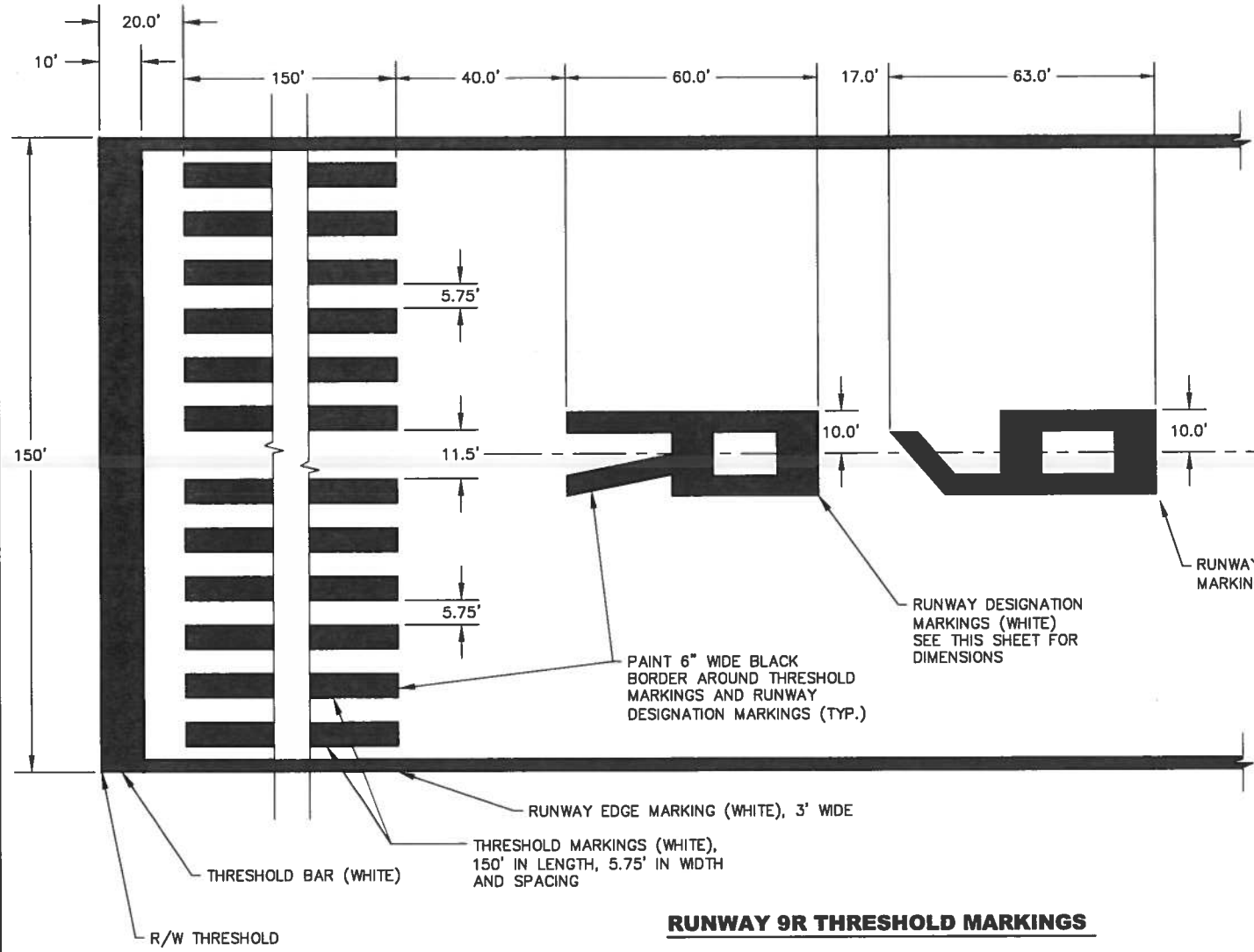
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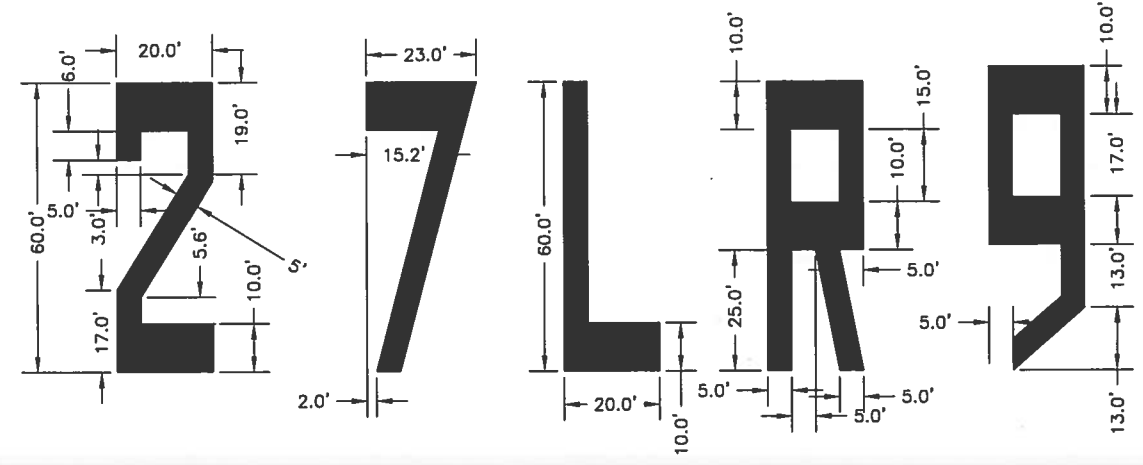
CITY OF ATLANTA, GEORGIA



**DEPARTMENT OF AVIATION  
PLANNING & DEVELOPMENT**

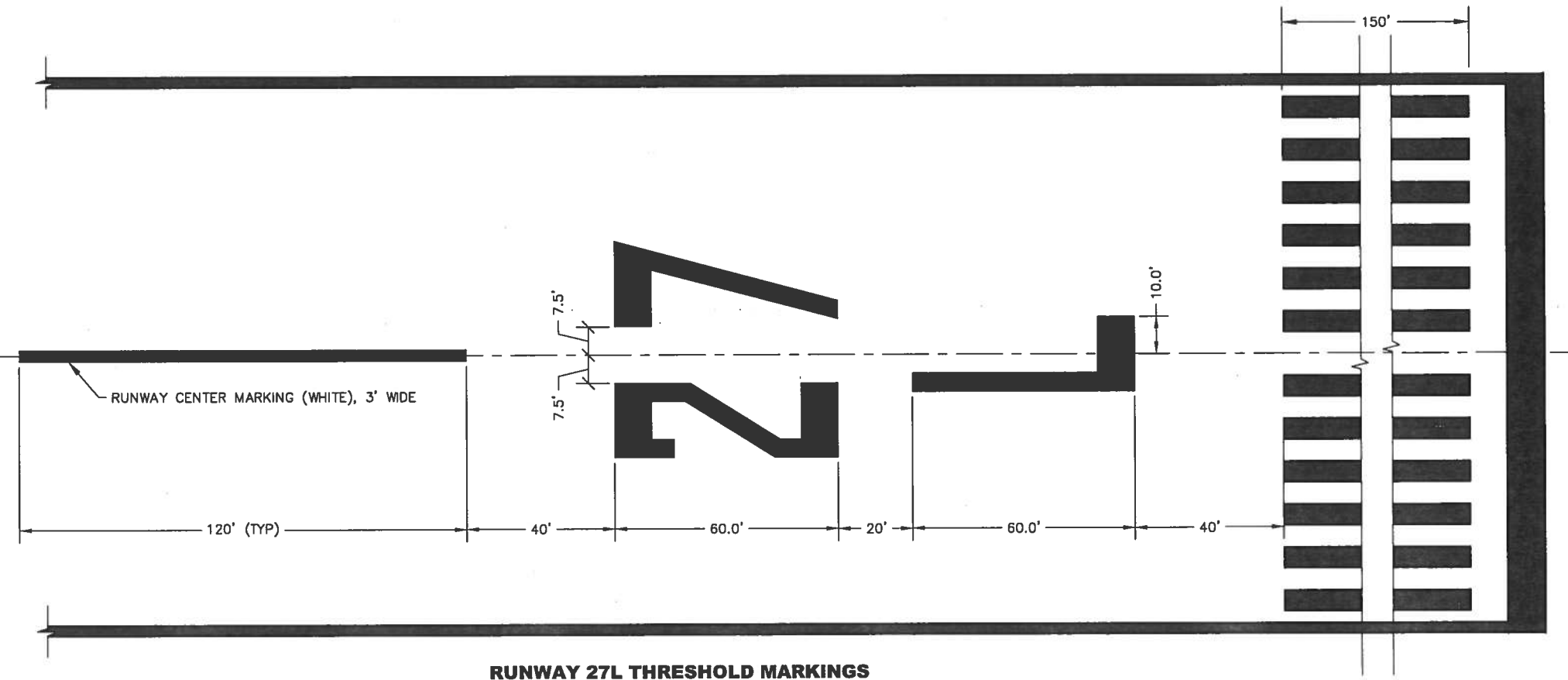


**RUNWAY 9R THRESHOLD MARKINGS**



**RUNWAY DESIGNATION MARKINGS**

- NOTES
1. PAINT 6" WIDE BLACK BORDER AROUND RUNWAY DESIGNATION MARKINGS.
  2. ALL CHARACTERS SHALL HAVE THESE DIMENSIONS (UNLESS OTHERWISE SPECIFIED)  
60 HIGH  
20 WIDE
  3. ALL NUMERALS AS SHOWN ARE HORIZONTALLY SPACED 15 APART.
  4. SINGLE DESIGNATIONS ARE CENTERED ON THE RUNWAY PAVEMENT CENTERLINE. FOR DOUBLE DESIGNATIONS, THE CENTER OF THE OUTER EDGES OF THE TWO NUMERALS IS CENTERED ON THE RUNWAY PAVEMENT CENTERLINE.



**RUNWAY 27L THRESHOLD MARKINGS**

NO.	DATE	BY	REVISION

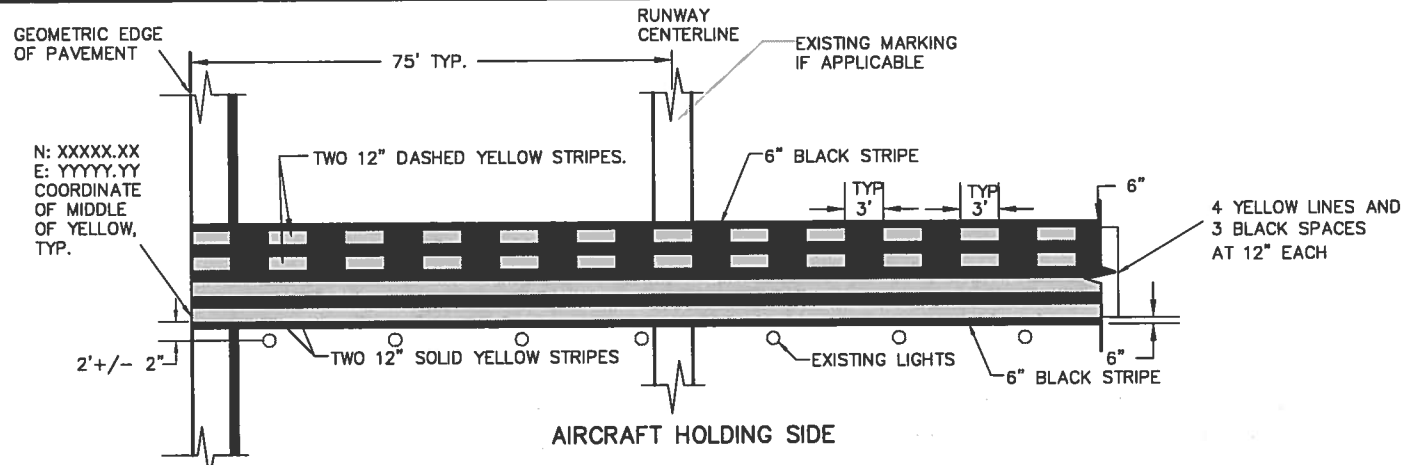
STANDARD DETAILS

Runway Striping and Marking - 1

WBS NUMBER: .	DRAWN BY: STAFF
FC NUMBER: .	DESIGNED BY: STAFF
CONSULTANT PROJECT NUMBER: .	CHECKED BY: STAFF
STANDARD SHEET NUMBER <b>STD-01-802</b>	APPROVED BY: STAFF
DATE: .	
SCALE: .	
SHEET NO: .	

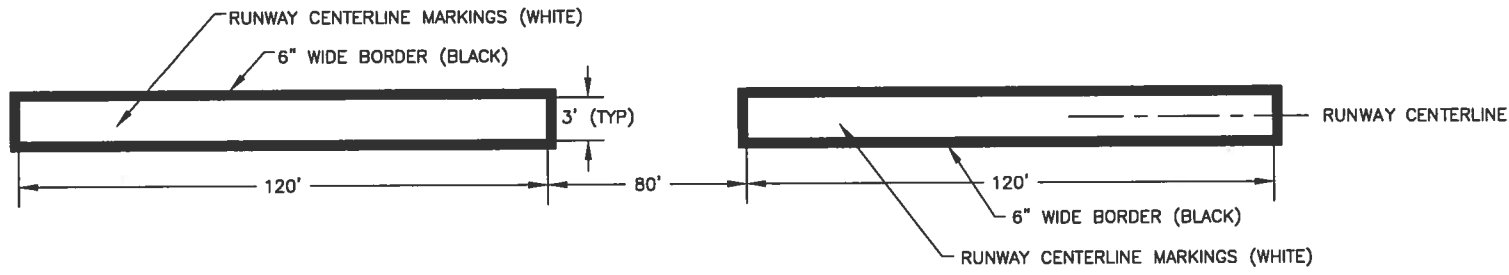
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STANDARD PAPER FOR CONSULTATION

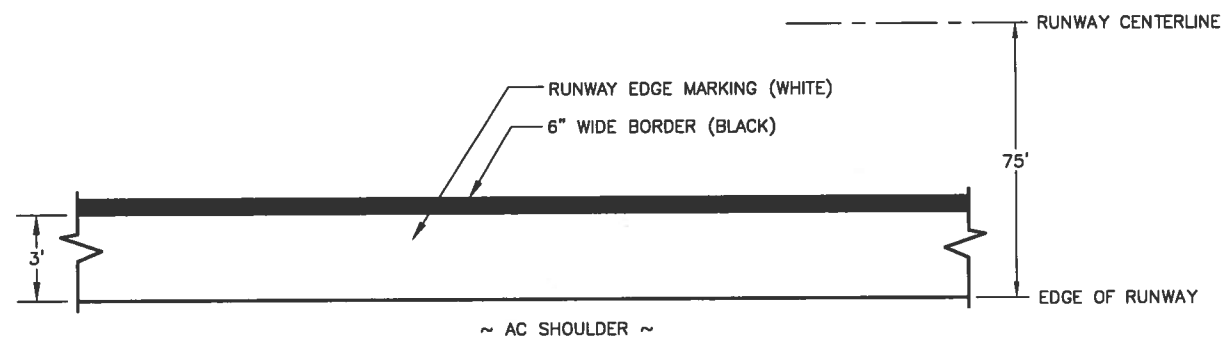


NOTES:  
1. LAHSO MARKING SUPERCEDES EXISTING CENTERLINES AND EDGE LINES.  
2. MARKING IS NOT PAINTED ON THE ASPHALT SHOULDER.  
3. SEE PLANS FOR LOCATIONS.

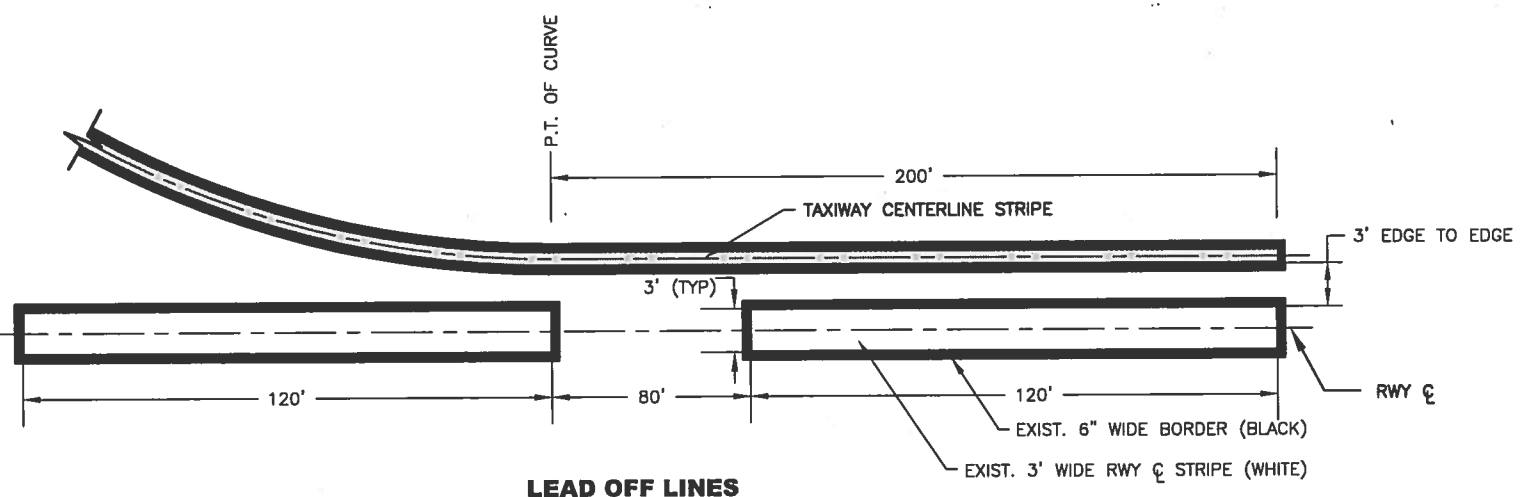
**LAHSO MARKING**  
NOT TO SCALE



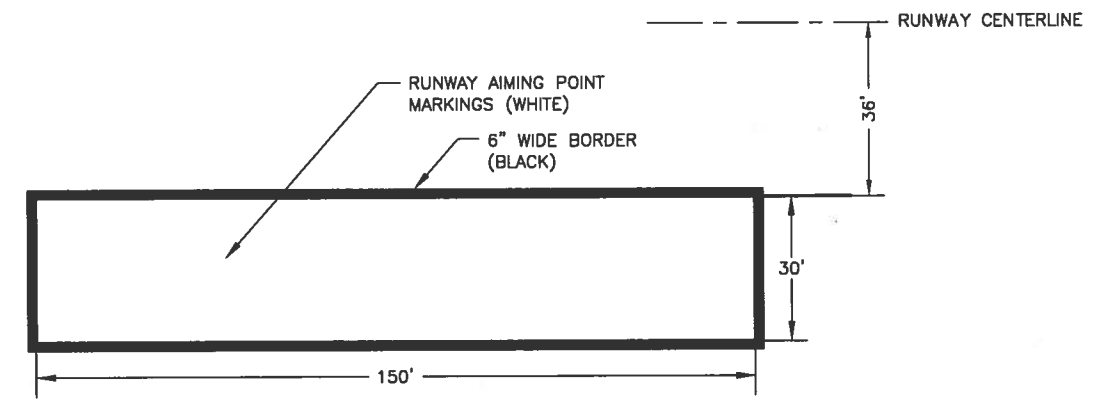
**RUNWAY CENTERLINE MARKINGS**  
NOT TO SCALE



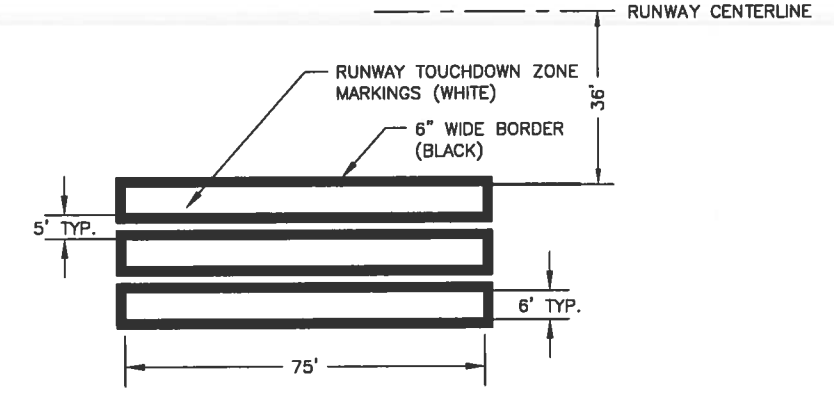
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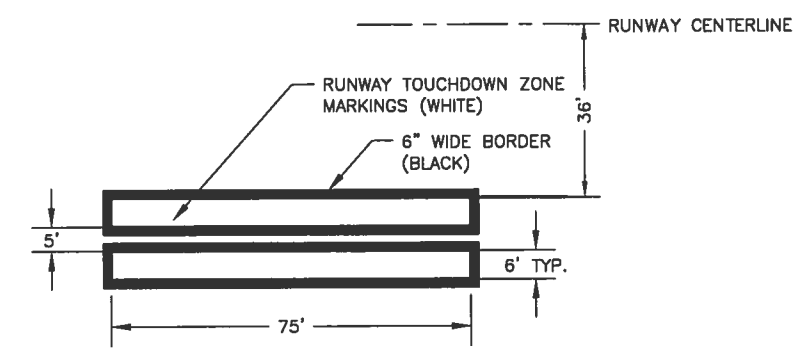
**LEAD OFF LINES**  
NOT TO SCALE



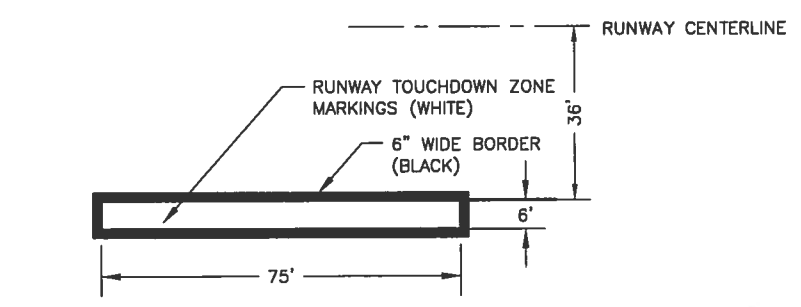
**AIMING POINT MARKING**  
NOT TO SCALE



**TOUCHDOWN ZONE MARKINGS (3 BARS)**  
NOT TO SCALE



**TOUCHDOWN ZONE MARKINGS (2 BARS)**  
NOT TO SCALE



**TOUCHDOWN ZONE MARKINGS (1 BAR)**  
NOT TO SCALE



CITY OF ATLANTA, GEORGIA  
Hartsfield-Jackson  
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DEPARTMENT OF AVIATION  
PLANNING & DEVELOPMENT

NO.	DATE	BY	REVISION

STANDARD DETAILS  
Runway Striping and Marking - 2

WBS NUMBER:	DRAWN BY: STAFF
FC NUMBER:	DESIGNED BY: STAFF
CONSULTANT PROJECT NUMBER:	CHECKED BY: STAFF
STANDARD SHEET NUMBER STD-01-803	APPROVED BY: STAFF

DATE:
SCALE:
SHEET NO:

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NOT FOR CONSTRUCTION



CITY OF ATLANTA, GEORGIA



DEPARTMENT OF AVIATION  
PLANNING & DEVELOPMENT

NOTES:

1. DURING LAYOUT OF PROPOSED MARKINGS, THE CONTRACTOR SHALL IMMEDIATELY ADVISE THE ENGINEER IF ANY PROPOSED MARKINGS FALL OUTSIDE OF REQUIRED TOLERANCES. LAYOUT SHALL CEASE UNTIL REVISIONS ARE PROVIDED BY THE ENGINEER.
2. ALL MARKINGS SHALL MEET THE REQUIREMENTS OF FAA ADVISORY CIRCULAR 150/5340-1K

NO.	DATE	BY	REVISION

STANDARD DETAILS

Taxiway Striping and Marking - 1

WBS NUMBER: \_\_\_\_\_

DRAWN BY:  
STAFF

FC NUMBER: \_\_\_\_\_

DESIGNED BY:  
STAFF

CONSULTANT PROJECT NUMBER: \_\_\_\_\_

CHECKED BY:  
STAFF

STANDARD SHEET NUMBER

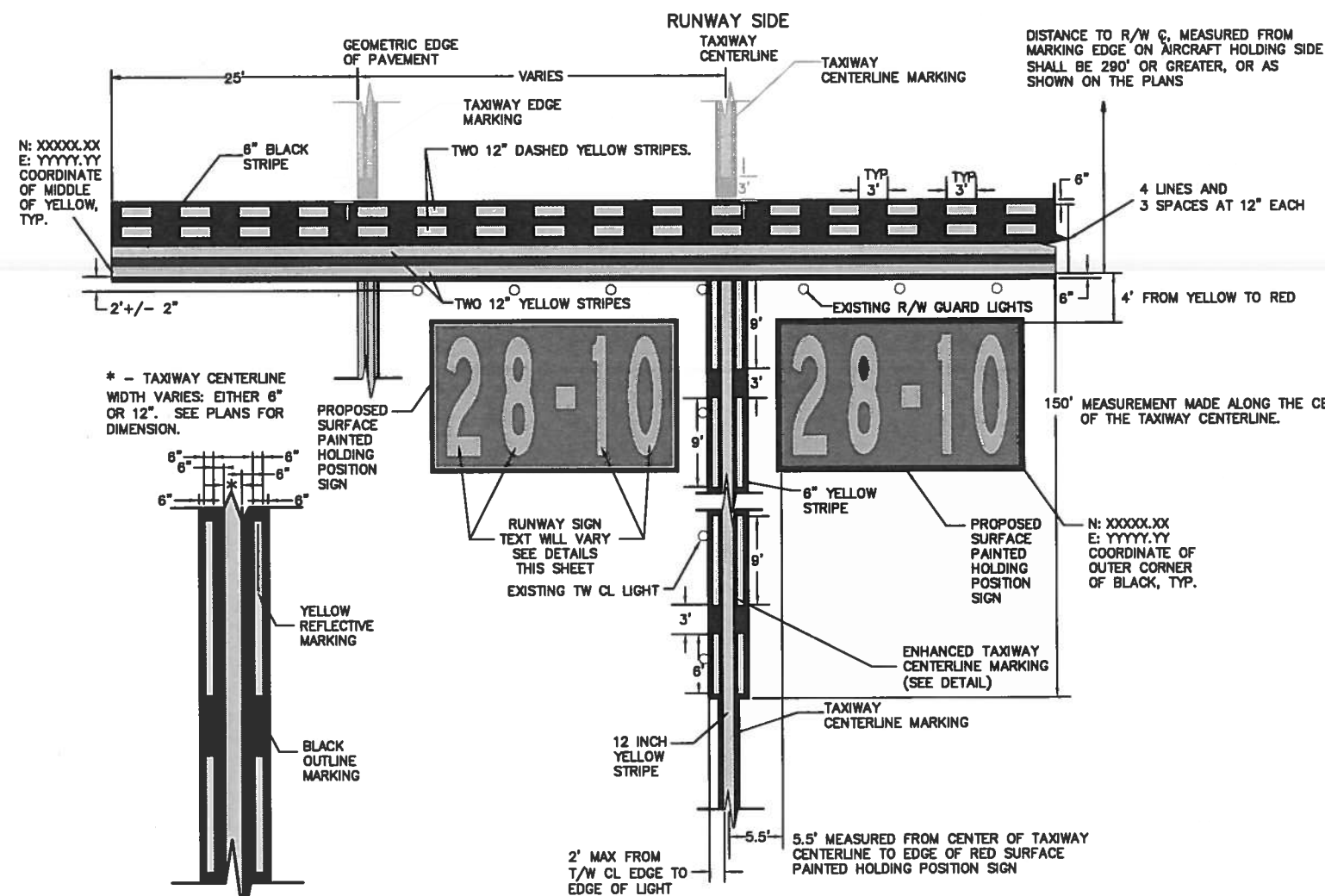
STD-01-804

APPROVED BY:  
STAFF

DATE: \_\_\_\_\_

SCALE: \_\_\_\_\_

SHEET NO: \_\_\_\_\_

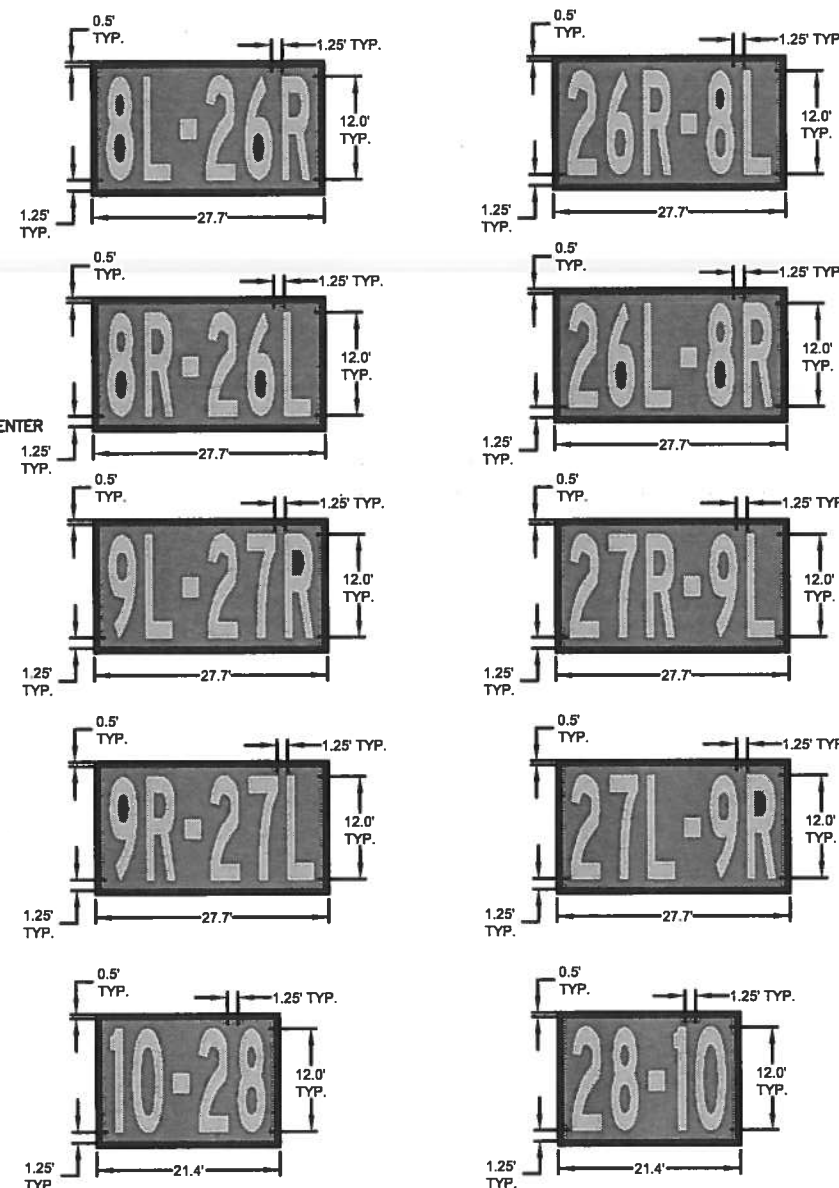


ENHANCED TAXIWAY CENTERLINE MARKING DETAIL  
N.T.S.

1. ENHANCED MARKINGS TO BEGIN AT RUNWAY HOLDING POSITION MARKING AND EXTEND 150' IN THE HOLDING DIRECTION
2. ALL MARKINGS TO BE OUTLINED WITH 8" WIDE BORDERS (BLACK, NON-REFLECTIVE)

RUNWAY HOLDING POSITION MARKINGS  
N.T.S.

- NOTES:
1. ALL HOLDING POSITION MARKINGS SHALL BE OUTLINED IN BLACK PAINT 6" BEYOND OUTSIDE EDGE OF WHITE, RED, OR YELLOW MARKINGS.
  2. EXISTING HOLDBARS AND ENHANCED CENTERLINE MARKINGS TO BE REMOVED PRIOR TO PLACING THERMOPLASTICS.
  3. RUNWAY HOLDING POSITION MARKINGS SHALL OVERLAP TAXIWAY EDGE MARKINGS.



WHITE TEXT ON RED BACKGROUND  
PROPOSED HOLDING POSITION SIGNS

NOTES:

1. ALL MARKINGS SHALL MEET REQUIREMENTS OF FAA ADVISORY CIRCULAR 150/5340-1K.
2. SIGNS HAVE WHITE TEXT ON RED BACKGROUNDS.



CITY OF ATLANTA, GEORGIA



DEPARTMENT OF AVIATION  
PLANNING & DEVELOPMENT

NOTES:

1. DURING LAYOUT OF PROPOSED MARKINGS, THE CONTRACTOR SHALL IMMEDIATELY ADVISE THE ENGINEER IF ANY PROPOSED MARKINGS FALL OUTSIDE OF REQUIRED TOLERANCES. LAYOUT SHALL CEASE UNTIL REVISIONS ARE PROVIDED BY THE ENGINEER.

2. ALL MARKINGS SHALL MEET THE REQUIREMENTS OF FAA ADVISORY CIRCULAR 150/5340-1K

NO.	DATE	BY	REVISION

STANDARD DETAILS

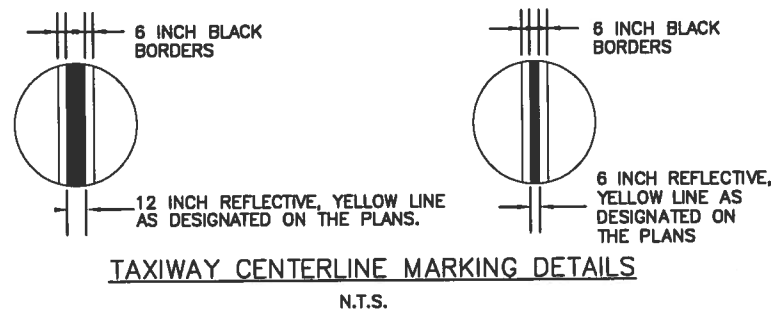
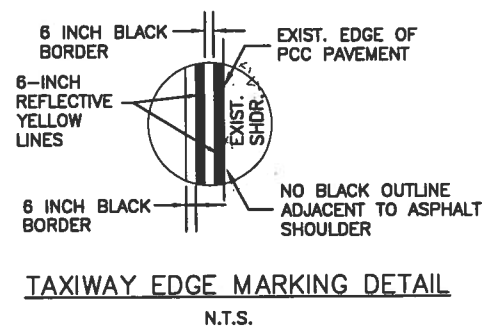
Taxiway Striping and Marking - 2

WBS NUMBER:	DRAWN BY:
FC NUMBER:	DESIGNED BY:
CONSULTANT PROJECT NUMBER:	CHECKED BY:
STANDARD SHEET NUMBER	APPROVED BY:
STD-01-805	STAFF

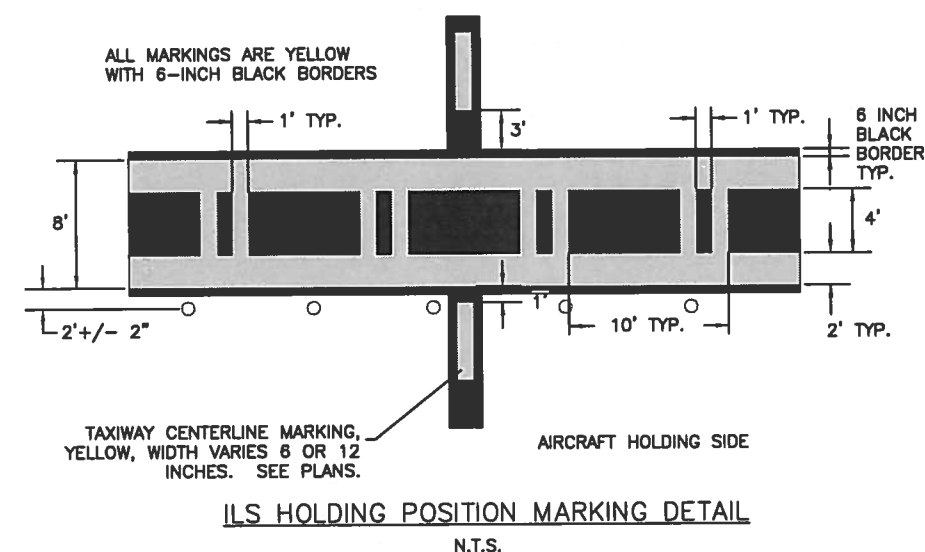
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SCALE:

SHEET NO:



1. ALL TAXIWAY CENTERLINE MARKINGS SHALL BE OUTLINED WITH 6" WIDE BORDERS (BLACK, NON-REFLECTIVE).



STANDARD DETAILS

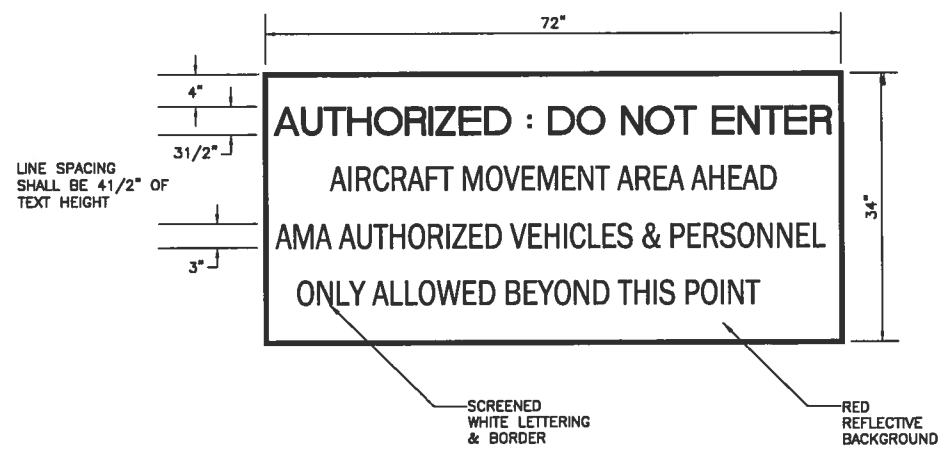
q:\a\civil\engineering\std\library\std\details\std-01-805 Taxiway Striping and Marking - 2.dwg, 6/24/2014 10:01:39 AM



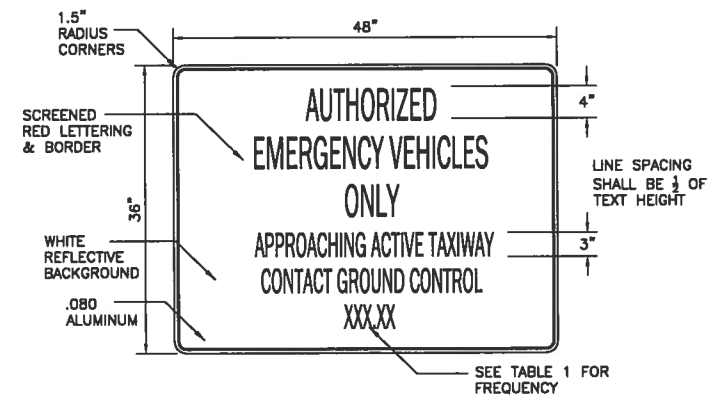
CITY OF ATLANTA, GEORGIA



DEPARTMENT OF AVIATION  
PLANNING & DEVELOPMENT



RUNWAY/TAXIWAY WARNING SIGN DETAIL



SEE TABLE 1 FOR FREQUENCY

RUNWAY COMPLEX	FREQUENCY
NORTH (8L-26R, 8R-26L):	121.9
CENTER (9L-27R, 9R-27L):	121.75
SOUTH (10-28):	121.65

TAXIWAY WARNING SIGN DETAIL

NO.	DATE	BY	REVISION

STANDARD DETAILS

Miscellaneous Airfield Details

WBS NUMBER: .	DRAWN BY: STAFF
FC NUMBER: .	DESIGNED BY: STAFF
CONSULTANT PROJECT NUMBER: .	CHECKED BY: STAFF
STANDARD SHEET NUMBER STD-01-900	APPROVED BY: STAFF
DATE: .	SCALE: .
SHEET NO: .	



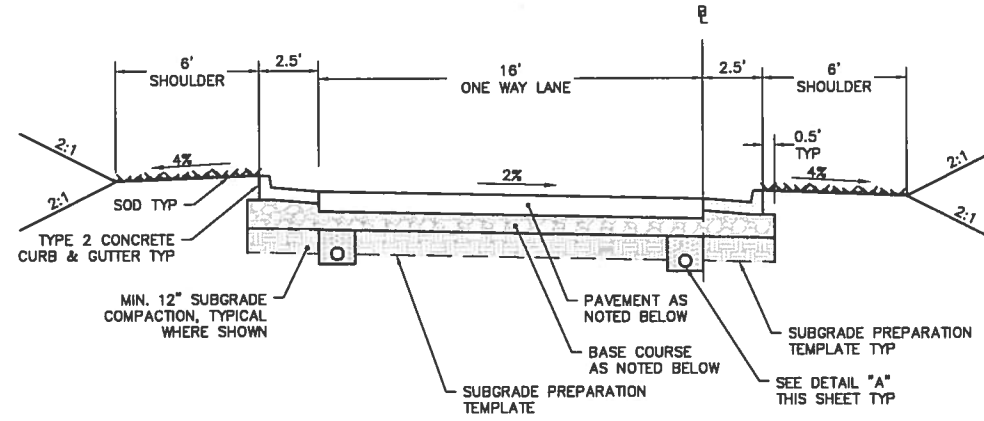
# LANDSIDE - ROADS AND PARKING

Hartsfield-Jackson

Atlanta International Airport

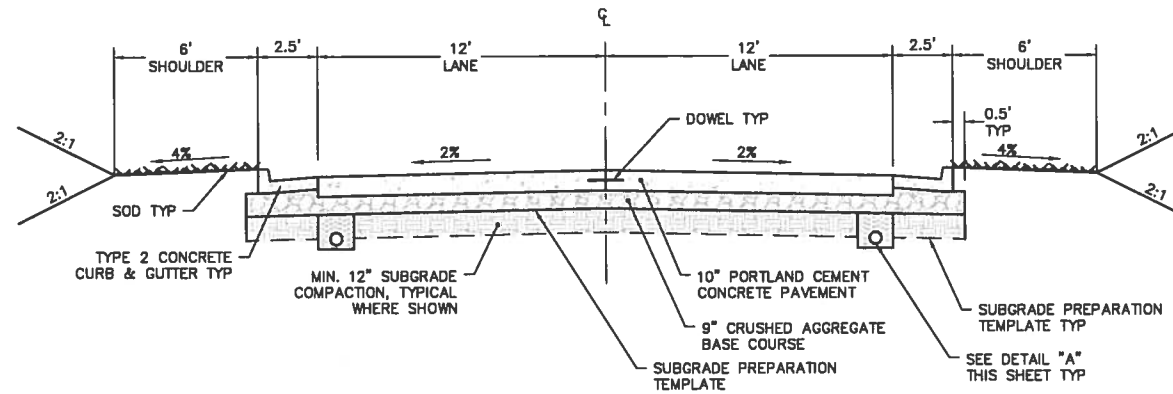
**NOTES FOR THE DESIGNER:**

1. IDENTIFY BASELINE LOCATIONS ON TYPICAL SECTIONS.
2. GUARDRAIL, FENCE, AND ALL OTHER ROADSIDE ELEMENTS SHALL BE SHOWN WHERE APPROPRIATE.
3. TYPICAL SECTIONS SHALL SHOW STATION RANGES FOR THE ENTIRE BASELINE WITH NO GAPS.
4. TYPICAL SECTIONS SHALL BE SHOWN LOOKING IN THE DIRECTION OF THE STATIONING.
5. CONCRETE PAVEMENT LANE JOINTS SHALL FOLLOW A LENGTH TO WIDTH RATIO LESS THAN OR EQUAL TO 1.5 L TO 1 W. WHERE THAT RATIO IS NOT ACHIEVED SLABS SHALL BE REINFORCED WITH 6X12 D4/D4 WELDED WIRE FABRIC.
6. SHOULDERS SHALL MATCH CONCRETE PAVEMENT LANE JOINT SPACING.
7. TYPE TWO CURB AND GUTTER JOINTS SHALL MATCH CONCRETE PAVEMENT LANE JOINT SPACING.
8. SEE STD-02-200 FOR JOINT DETAILS.
9. SEE STD-01-200 FOR AIRSIDE ROADWAY TYPICAL SECTIONS.
10. SEE STD-03-601 FOR TYPE 2 CURB AND GUTTER DETAILS.



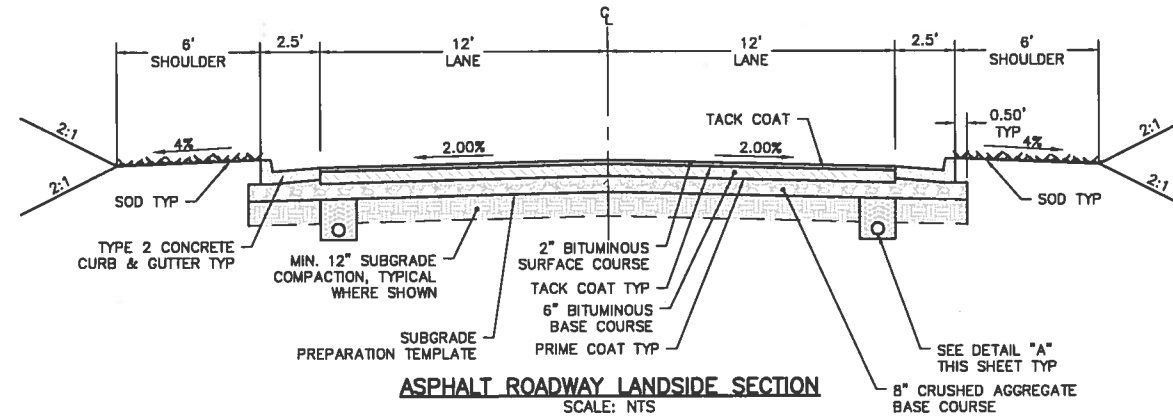
**ONE WAY ROADWAY LANDSIDE SECTION**

SCALE: NTS



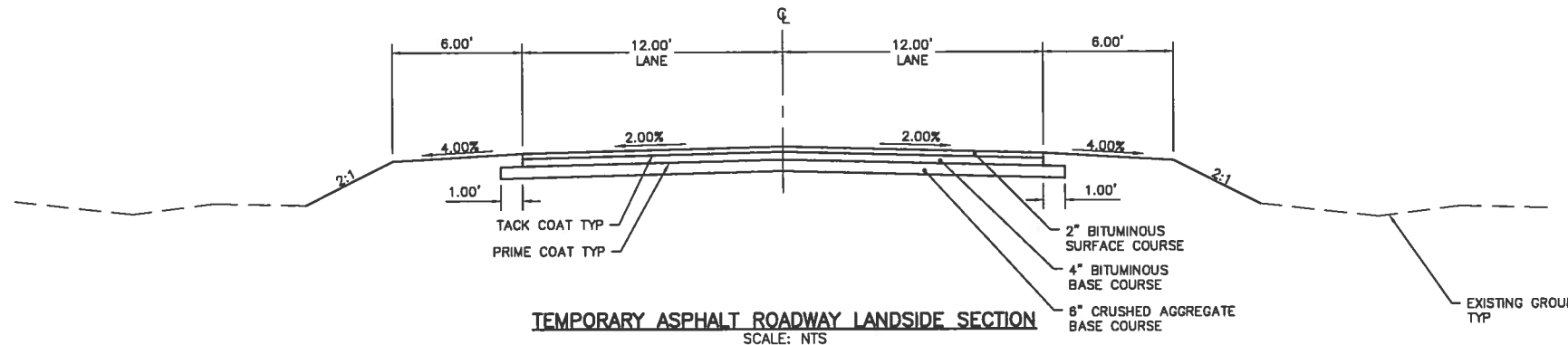
**CONCRETE ROADWAY LANDSIDE SECTION**

SCALE: NTS



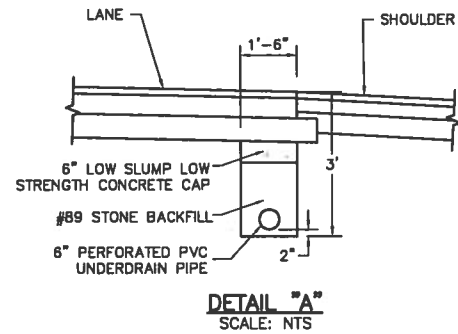
**ASPHALT ROADWAY LANDSIDE SECTION**

SCALE: NTS



**TEMPORARY ASPHALT ROADWAY LANDSIDE SECTION**

SCALE: NTS



**DETAIL "A"**

SCALE: NTS



CITY OF ATLANTA, GEORGIA



**DEPARTMENT OF AVIATION  
PLANNING & DEVELOPMENT**

NO.	DATE	BY	REVISION

STANDARD DETAILS

Typical Pavement  
Sections Landside

WBS NUMBER:	DRAWN BY: STAFF
FC NUMBER:	DESIGNED BY: STAFF
CONSULTANT PROJECT NUMBER:	CHECKED BY: STAFF
STANDARD SHEET NUMBER <b>STD-02-100</b>	APPROVED BY: STAFF

DATE:
SCALE:
SHEET NO:

NOT FOR CONSTRUCTION

c:\facilities\engineering\stds\library\stds\standard\_details\stds\std-02-100 Typical Pavement Sections Landside.dwg, 6/24/2014 10:01:28 AM





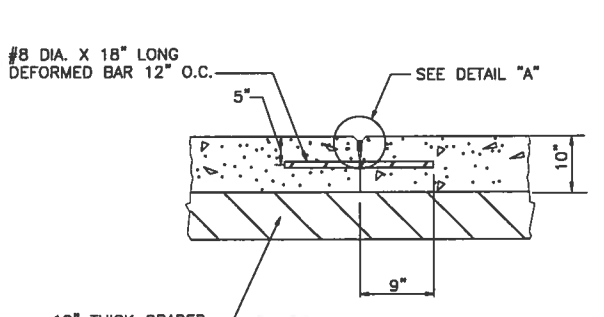
CITY OF ATLANTA, GEORGIA



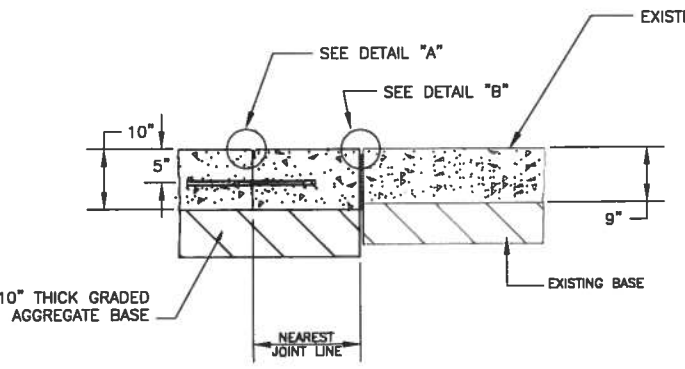
DEPARTMENT OF AVIATION  
PLANNING & DEVELOPMENT

**NOTES:**

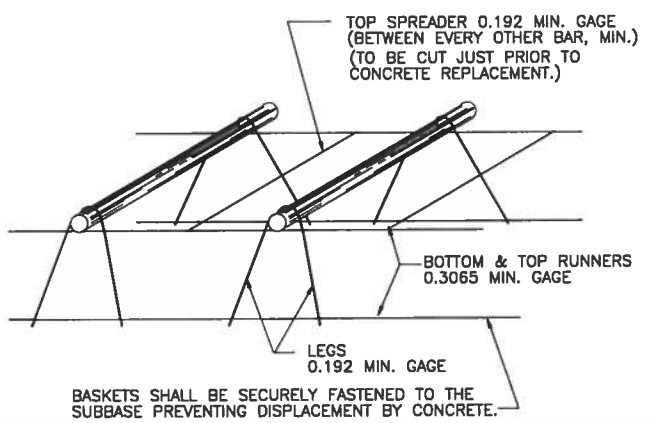
- LONGITUDINAL AND TRANSVERSE JOINTS SHALL BE SAWED AS INDICATED.
- ALL TRANSVERSE JOINTS SHALL BE NORMAL TO PAVEMENT EDGE.
- FOR ALL JOINTS THE BACKER ROD MATERIAL SHALL BE COMPATIBLE WITH THE COLD POURED SEALANT AND SLIGHTLY OVERTSIZED TO PREVENT MOVEMENT DURING THE JOINT SEALANT OPERATION.
- THE WIDTH OF THE JOINTS SHALL BE CORRECTED FOR 68" F.
- JOINT CONFIGURATION SHALL MEET JOINT SEAL MANUFACTURER'S SPECIFICATIONS. (EXCEPT AS NOTED ON PLANS AND IN SPECIFICATIONS.) SEE C7.01, #3012
- REINFORCING WELDED WIRE FABRIC DEFORMED WELDED WIRE FABRIC (FOR ALL NEW CONCRETE PAVEMENT SLABS)
  - AS NOTED ON PLANS: LONGITUDINAL D4, 6" ON CENTERS. TRANSVERSE D4, 12" ON CENTERS.
  - ALL STEEL TO BE DELIVERED IN FLAT SHEETS, ROLL STOCK IS NOT ACCEPTABLE.
  - PLACE 4" BELOW THE TOP OF THE CONCRETE SURFACE.



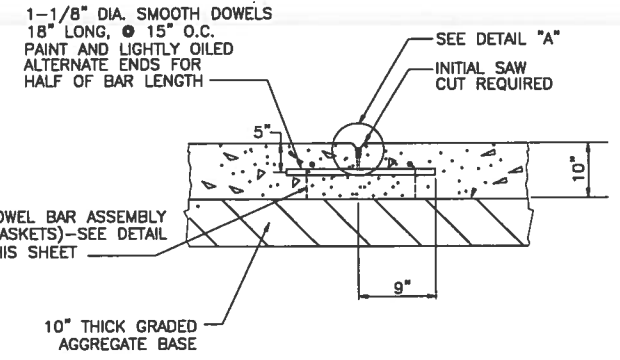
**LONGITUDINAL CONSTRUCTION JOINT**  
N.T.S.



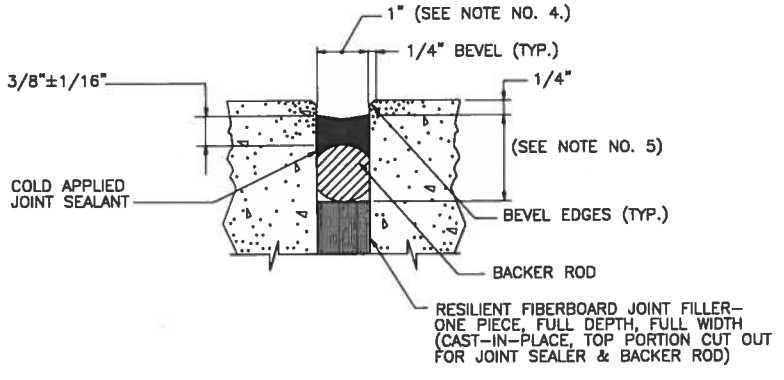
**EXPANSION JOINT AT EXISTING 9" PAVEMENT**  
N.T.S.



**TYPICAL DOWEL BAR BASKET**  
N.T.S.



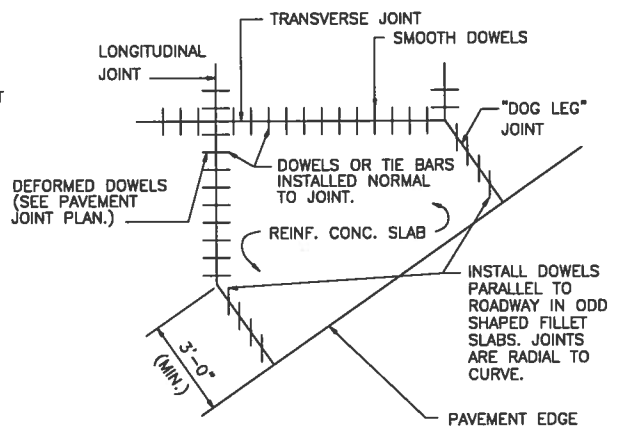
**TRANSVERSE CONTRACTION JOINT**  
N.T.S.



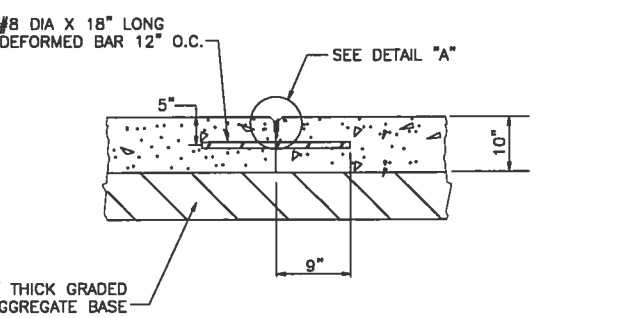
**EXPANSION JOINT SEAL DETAIL  
DETAIL "B"**  
N.T.S.

**NOTES:**

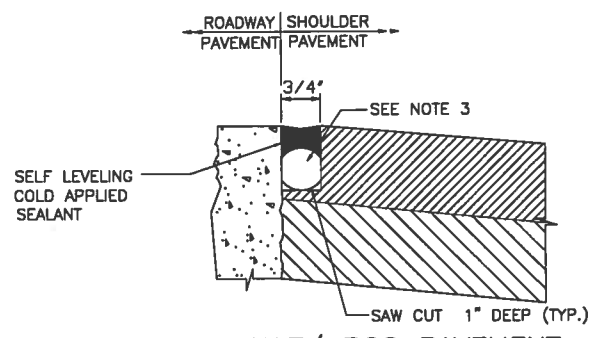
- WIRE USED IN BASKETS SHALL CONFORM TO ASTM-A82 COLD DRAWN WIRE.
- DOWEL BAR ATTACHMENT MAY BE FABRICATED BY ARC OR RESISTANCE TYPE WELDING.
- WIRE FRAME MEMBERS SHALL BE RESISTANCE WELDED EXCEPT FOR SPREADER WIRES WHICH MAY BE ARC WELDED.



**SKewed DOWEL INSTALLATION**  
N.T.S.



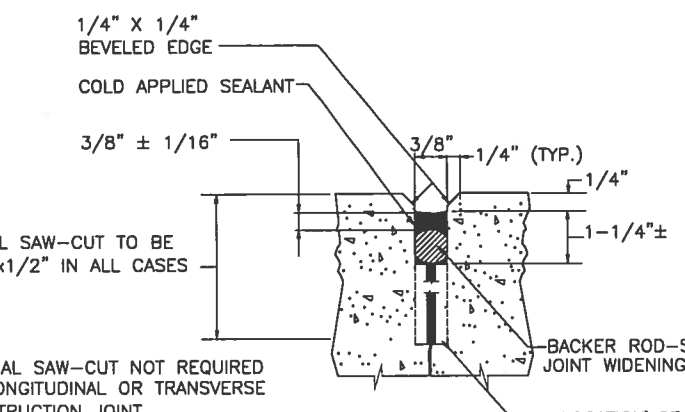
**TRANSVERSE CONSTRUCTION JOINT**  
N.T.S.



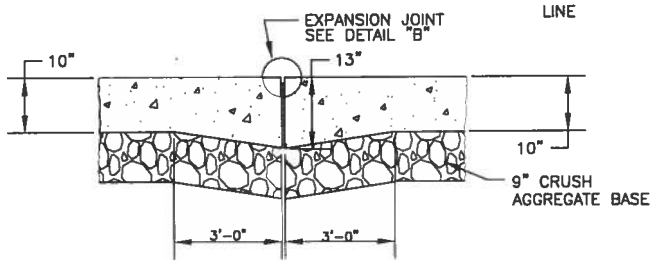
**ASPHALT/ PCC PAVEMENT JOINT DETAIL**  
N.T.S.

**NOTES FOR DOWEL AND TIE BAR HOLE DRILLING AND INSTALLATION**

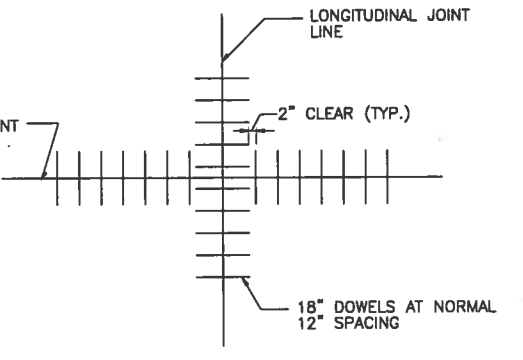
- DRILLING AND INSTALLATION METHOD SHALL BE CAPABLE OF MAINTAINING DRILL HOLES AND EMBEDDED BARS: (A) PARALLEL TO THE CONCRETE SURFACE, AND (B) NORMAL TO THE JOINT LINE, WITHIN 1/4" AT THE END OF THE DOWEL OR TIE BAR EXCEPT WHERE SPECIFIED OTHERWISE. DRILL HOLES SHALL BE ACCURATELY LAID OUT SO THAT THE MAXIMUM DEVIATION DOES NOT EXCEED 1". DRILL HOLE DIAMETER TO BE APPROXIMATELY 1/8" CLEAR OF BAR ALL AROUND.
- AFTER THE DRILLING IS COMPLETE AND PRIOR TO INSTALLATION OF THE DOWEL OR TIE BARS, THE HOLES SHALL BE THOROUGHLY CLEANED TO REMOVE DRILLING DUST, CONCRETE CHIPS, AND ANY MATERIAL DETRIMENTAL TO BONDING.
- EPOXY GEL SHALL BE APPLIED TO THE DOWEL AND SUFFICIENT GEL INJECTED IN THE BACK OF THE TIE BAR HOLE BY A MECHANICAL MIXING/PUMP DEVICE, SO THAT A SLIGHT AMOUNT OF GEL WILL BE FORCED OUT WHEN THE DOWEL OR TIE BAR IS INSERTED AND TAPPED TO THE CORRECT POSITION. IT WILL BE NECESSARY TO TWIST THE BAR BACK AND FORTH SEVERAL TIMES TO ELIMINATE THE AIR ENTRAPPED IN THE HOLE. SMALL WEDGES MAY BE USED TO SUPPORT THE DOWEL OR TIE BAR IN CORRECT ALIGNMENT UNTIL THE GEL HARDENS.
- EPOXY SHALL MEET THE GEORGIA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATION, SECTION 886 FOR TYPE VIII EPOXY GEL.



**DETAIL "A"  
LONGITUDINAL AND TRANSVERSE JOINT SEAL DETAIL**  
N.T.S.



**THICKENED EDGE EXPANSION JOINT**  
N.T.S.



**DETAIL FOR DOWEL SPACING AT JOINT CORNERS**  
N.T.S.

NO.	DATE	BY	REVISION

STANDARD DETAILS

Joints - NLVR or Landside Roads

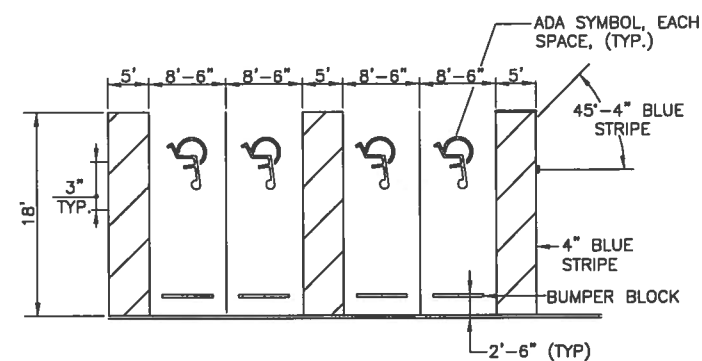
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FC NUMBER:	DESIGNED BY: STAFF
CONSULTANT PROJECT NUMBER:	CHECKED BY: STAFF
STANDARD SHEET NUMBER STD-02-200	APPROVED BY: STAFF
	DATE:
	SCALE:
	SHEET NO:



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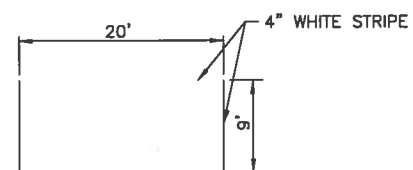


DEPARTMENT OF AVIATION  
PLANNING & DEVELOPMENT



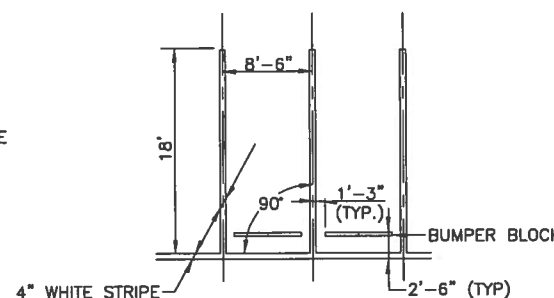
**ADA PARKING SPACES**

SCALE: N.T.S.



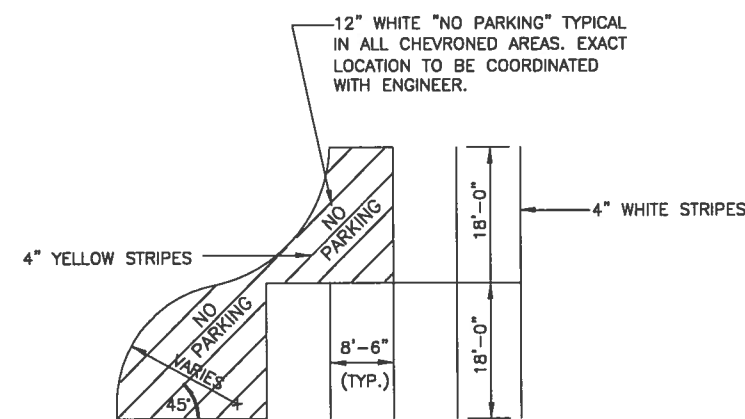
**PARALLEL PARKING SPACES**

SCALE: N.T.S.



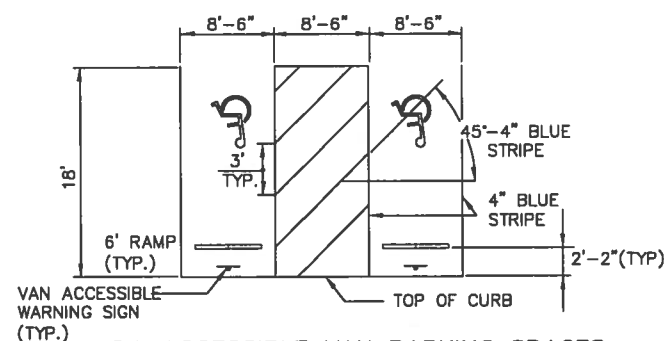
**90° PARKING SPACES**

SCALE: N.T.S.



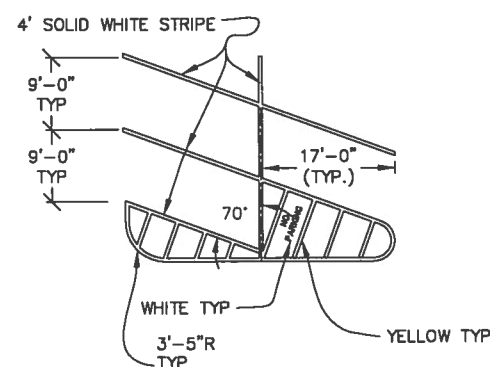
**NO PARKING AREA DETAIL**

SCALE: N.T.S.



**ADA ACCESSIBLE VAN PARKING SPACES**

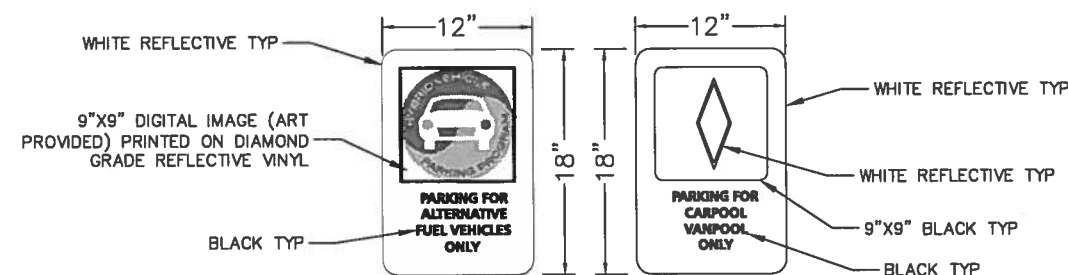
SCALE: N.T.S.



**TYPICAL 70 DEG. PARKING STALLS**

SCALE: N.T.S.

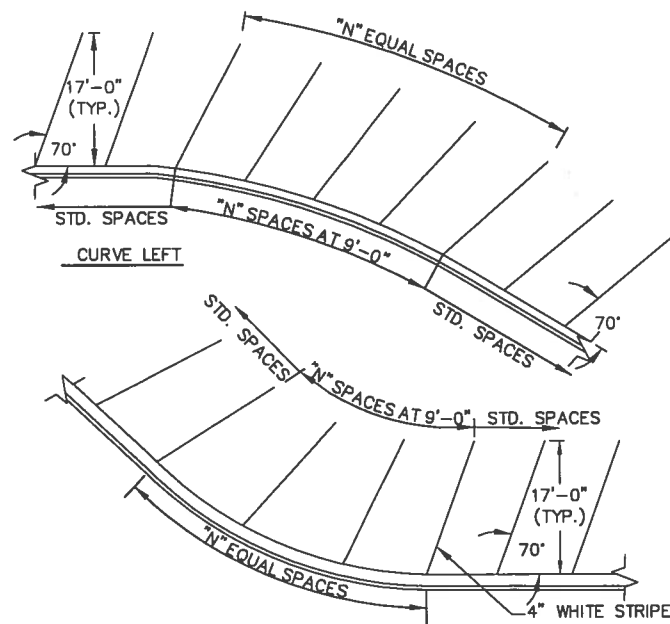
NOTE: 12" MESSAGE "NO PARKING" TYPICAL ALL CHEVRONED AREAS. EXACT LOCATION TO BE COORDINATED WITH THE ENGR.



**CARPOOL AND ALTERNATIVE FUEL VEHICLE SIGNS**

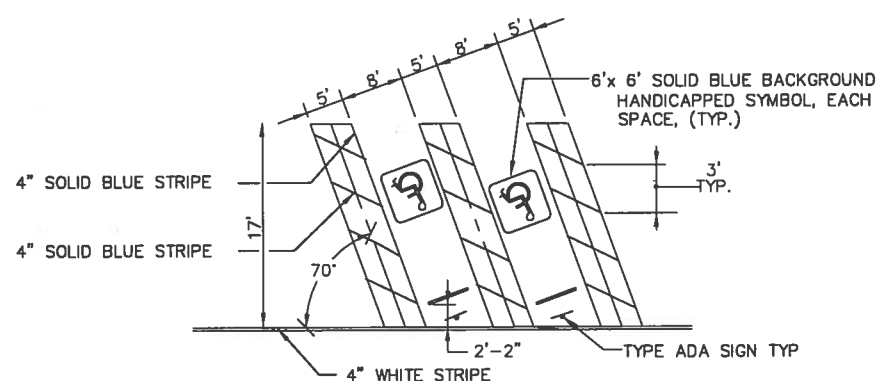
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NOTE: TEXT BELOW EACH SYMBOL IS FRUTIGER 65 BOLD.



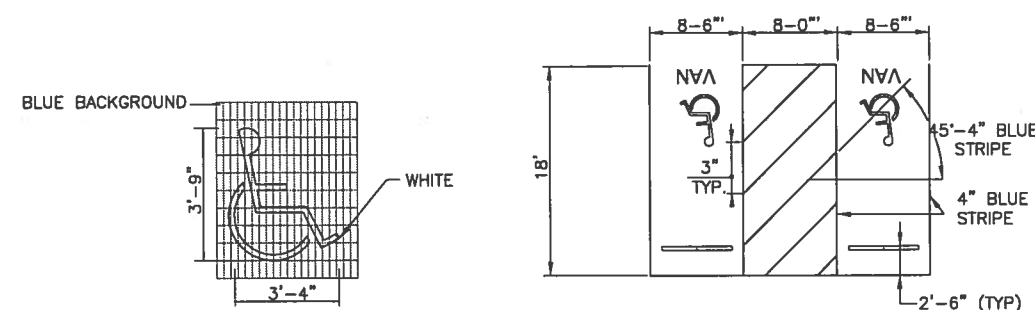
**PARKING SPACES ALONG CURVES**

NOTE: "N" DENOTES NUMBER OF SPACES IN CURVE. SEE STRIPING AND MARKING PLANS FOR LOCATIONS.  
SCALE: N.T.S.



**70° ADA ACCESSIBLE PARKING SPACES**

SCALE: N.T.S.

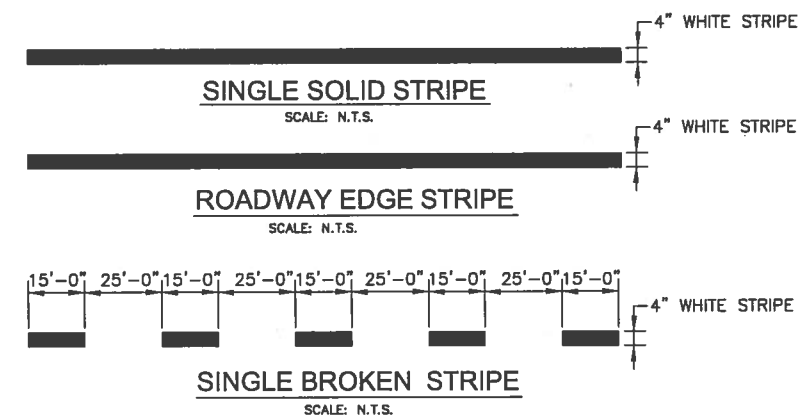


**ADA PARKING SYMBOL**

SCALE: N.T.S.

**ADA VAN PARKING SPACES**

SCALE: N.T.S.



**SINGLE SOLID STRIPE**

SCALE: N.T.S.

**ROADWAY EDGE STRIPE**

SCALE: N.T.S.

**SINGLE BROKEN STRIPE**

SCALE: N.T.S.

NO.	DATE	BY	REVISION

STANDARD DETAILS

Landside Striping and Marking Details

Landside Striping and Marking Details

WBS NUMBER:	DRAWN BY:
FC NUMBER:	STAFF

DESIGNED BY:	CHECKED BY:
STAFF	STAFF

CONSULTANT PROJECT NUMBER:	APPROVED BY:
STAFF	STAFF

STANDARD SHEET NUMBER	DATE:
STD-02-300	

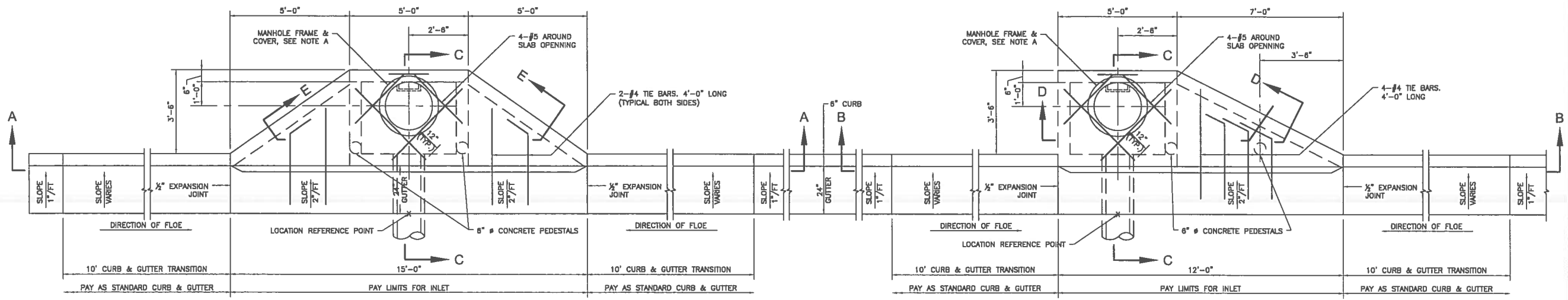
SCALE:

SHEET NO:



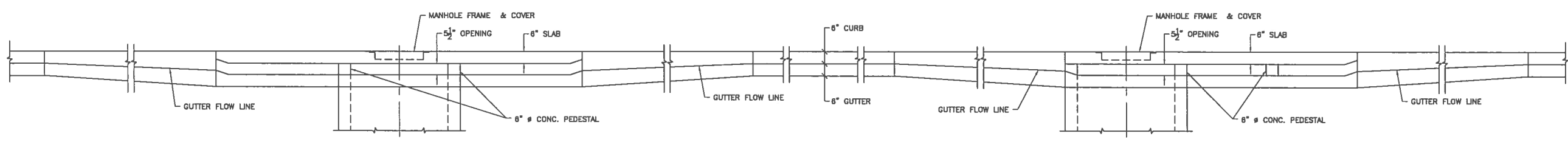
CITY OF ATLANTA, GEORGIA  
Hartsfield-Jackson  
Atlanta International Airport

DEPARTMENT OF AVIATION  
PLANNING & DEVELOPMENT



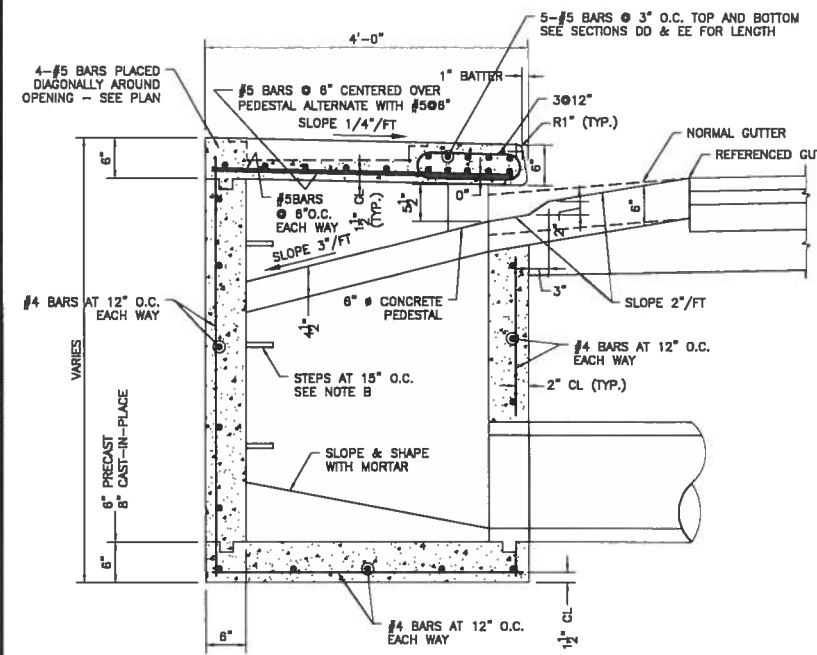
PLAN  
INLET TYPE A2  
SCALE N.T.S.

PLAN  
INLET TYPE A1  
SCALE N.T.S.

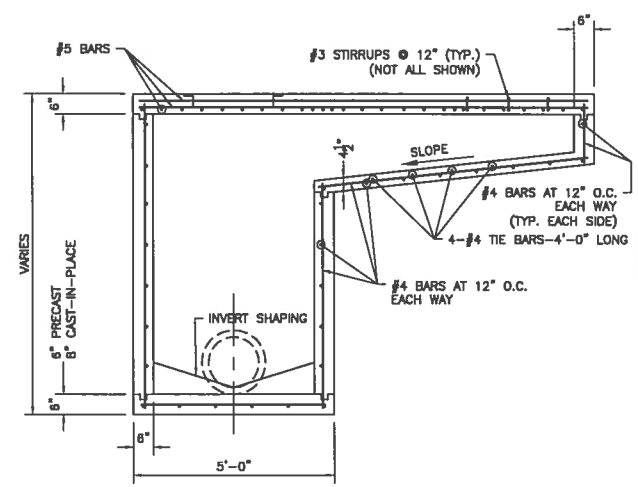


SECTION A-A  
SCALE N.T.S.

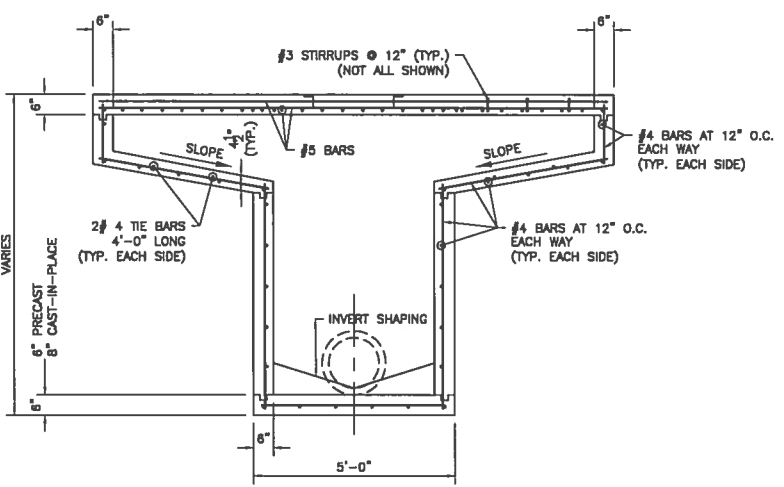
SECTION B-B  
SCALE N.T.S.



SECTION C-C  
SCALE N.T.S.



SECTION D-D  
SCALE N.T.S.



SECTION E-E  
SCALE N.T.S.

- NOTES:  
A. MANHOLE FRAME AND COVER TO BE BARRY PATTERN B-1650-F OR APPROVED EQUAL.  
B. STEPS SHALL BE NEENAH PATTERN R-1980-C OR APPROVED EQUAL.

NO.	DATE	BY	REVISION
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STANDARD DETAILS  
Double and Single Wing  
Catch Basin

WBS NUMBER:	DRAWN BY: STAFF
FC NUMBER:	DESIGNED BY: STAFF
CONSULTANT PROJECT NUMBER:	CHECKED BY: STAFF
STANDARD SHEET NUMBER STD-02-502	APPROVED BY: STAFF
DATE:	
SCALE:	
SHEET NO:	

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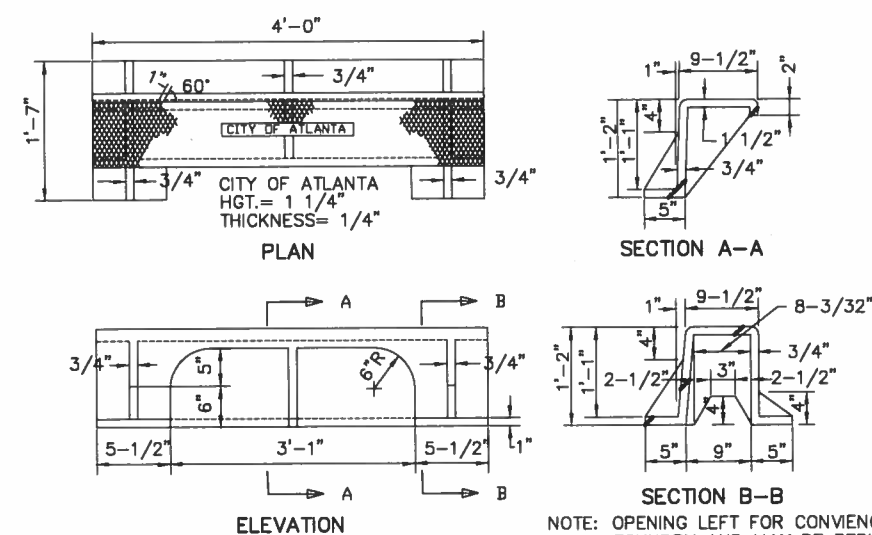
NOT BE REPRODUCED WITHOUT PERMISSION



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PLANNING & DEVELOPMENT



NOTE:  
HOOD, GRATE AND GRATE FRAME TO BE GRAY CAST IRON CASTING AS PER ASTM SPEC. No. A48-30 INCLUDING TRANSVERSE TEST BARS. GRATE AND FRAME MUST BE FITTED BEFORE LEAVING SHOP. TOP OF HOOD WITH GROVES 3/16" WIDE, 1/16" DEEP 1" C.C., TOL. 1/16" PER 24". ALL GRATES IN THE STREET SHALL BE BIKE SAFETY GRATES UNLESS OTHERWISE. ESTIMATED WEIGHT IS 497 LBS. AND THE GRATE OPENING SHALL BE PERPENDICULAR TO THE CURB.

CURB INLET CAST IRON HOOD  
N.T.S.

NO.	DATE	BY	REVISION

STANDARD DETAILS  
Curb Inlet Cast Iron Hood Detail

WBS NUMBER:	DRAWN BY: STAFF
FC NUMBER:	DESIGNED BY: STAFF
CONSULTANT PROJECT NUMBER:	CHECKED BY: STAFF
STANDARD SHEET NUMBER <b>STD-02-503</b>	APPROVED BY: STAFF
	DATE:
	SCALE:
	SHEET NO:

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NOT RELEASABLE FOR CONSTRUCTION



# GENERAL DETAILS

Hartsfield-Jackson

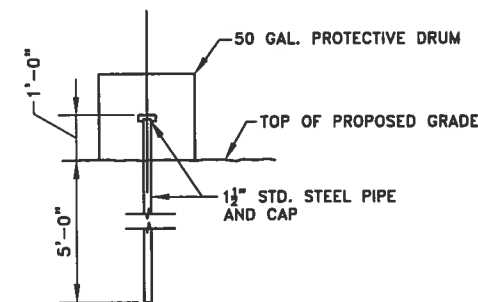
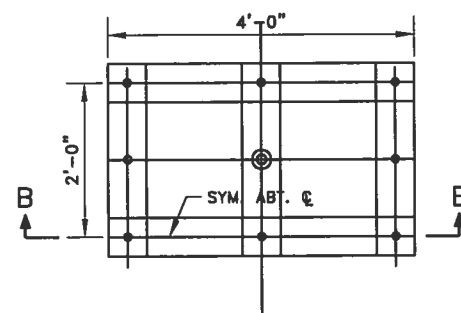
Atlanta International Airport



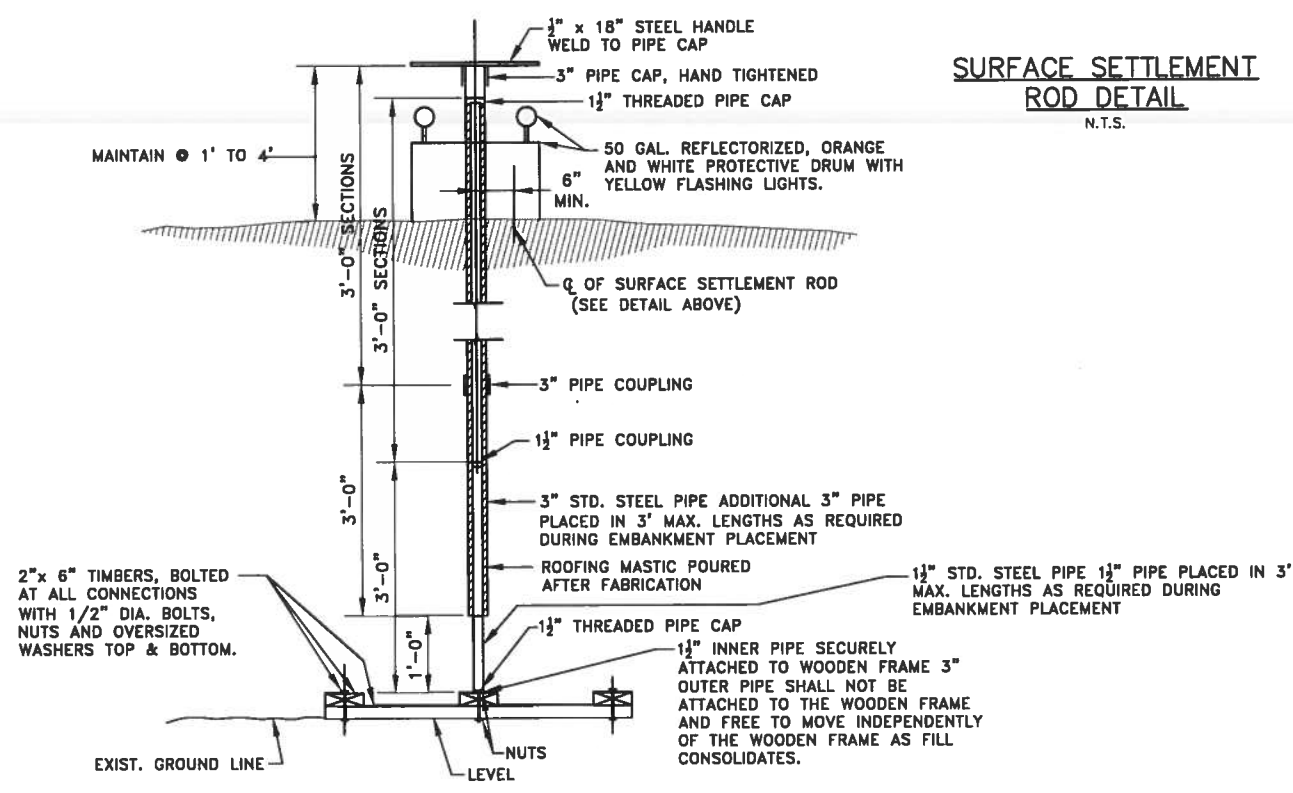
CITY OF ATLANTA, GEORGIA



DEPARTMENT OF AVIATION  
PLANNING & DEVELOPMENT



**SURFACE SETTLEMENT  
ROD DETAIL**  
N.T.S.



**SECTION B-B  
SURFACE SETTLEMENT PLATFORM DETAIL**  
N.T.S.

**SETTLEMENT PLATFORM AND ROD NOTES:**

1. THIS CONSTRUCTION CONTROL DEVICE WILL BE USED AT LOCATIONS DIRECTED BY ENGINEER, INSTALLATION SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS AND AS APPROVED BY THE ENGINEER.
2. CONTRACTOR SHALL TAKE APPROPRIATE PRECAUTIONS TO PROTECT SETTLEMENT PLATE INSTALLATION FROM DAMAGE.
3. ADDITIONAL CONTROL DEVICES (PLATFORMS AND SURFACE RODS) MAY BE INSTALLED AT LOCATIONS DETERMINED BY THE ENGINEER.
4. COORDINATE LOCATION OF CONTROL DEVICES WITH EXISTING AND PROPOSED UTILITIES AND DRAINAGE.
5. AT SUCH TIME AS SETTLEMENT PLATFORM PIPES ARE REQUIRED TO BE EXTENDED, THE INNER PIPE SHALL BE ACCURATELY SURVEYED IMMEDIATELY PRIOR TO REMOVING THE CAP AND AGAIN IMMEDIATELY AFTER EXTENDING THE 3" AND 1 1/2" PIPES AND REPLACING THE CAP ON THE 1 1/2" PIPE.
6. SETTLEMENT PLATFORMS AND RODS SHALL BE SURVEYED WEEKLY
7. CONTRACTOR IS TO COMPACT SOIL ADJACENT TO SETTLEMENT PLATFORMS WITH HAND TAMPS AS REQUIRED.


NO.	DATE	BY	REVISION
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STANDARD DETAILS

Settlement Platforms

WBS NUMBER: .	DRAWN BY: STAFF
FC NUMBER: .	DESIGNED BY: STAFF
CONSULTANT PROJECT NUMBER: .	CHECKED BY: STAFF
STANDARD SHEET NUMBER <b>STD-03-100</b>	APPROVED BY: STAFF

DATE: .
SCALE: .
SHEET NO: .

STANDARD DETAILS

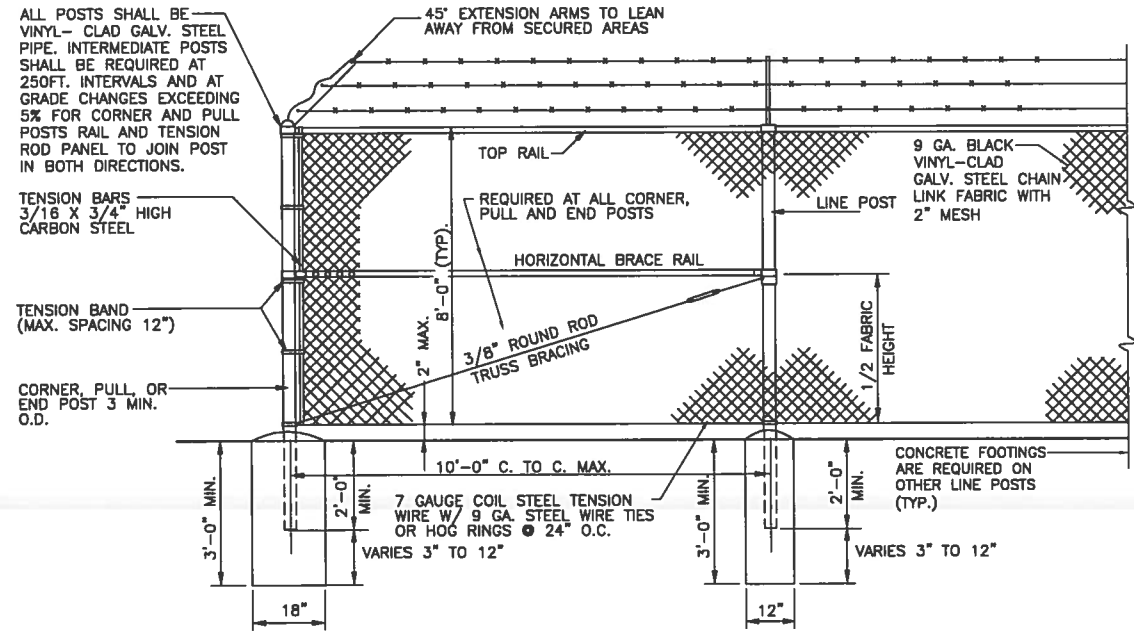
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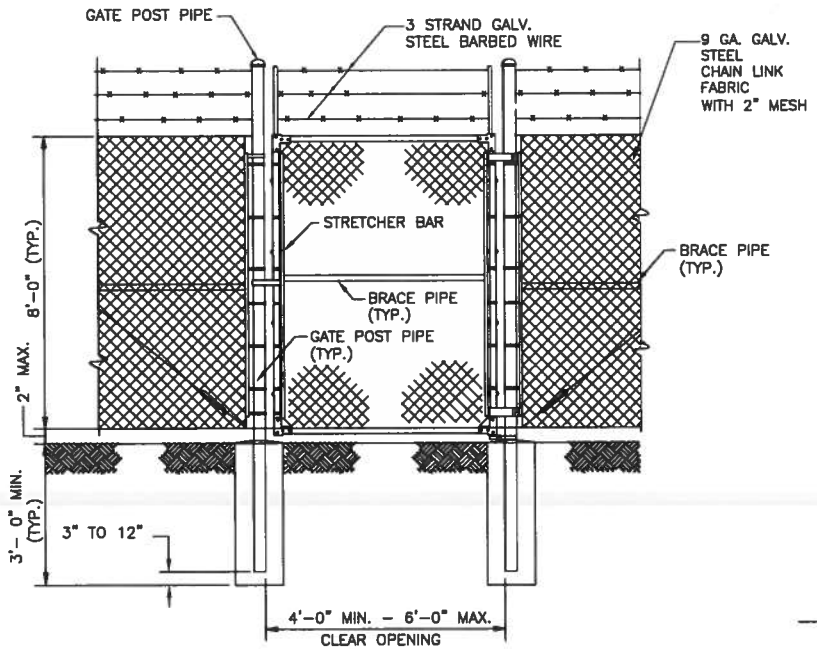
CITY OF ATLANTA, GEORGIA



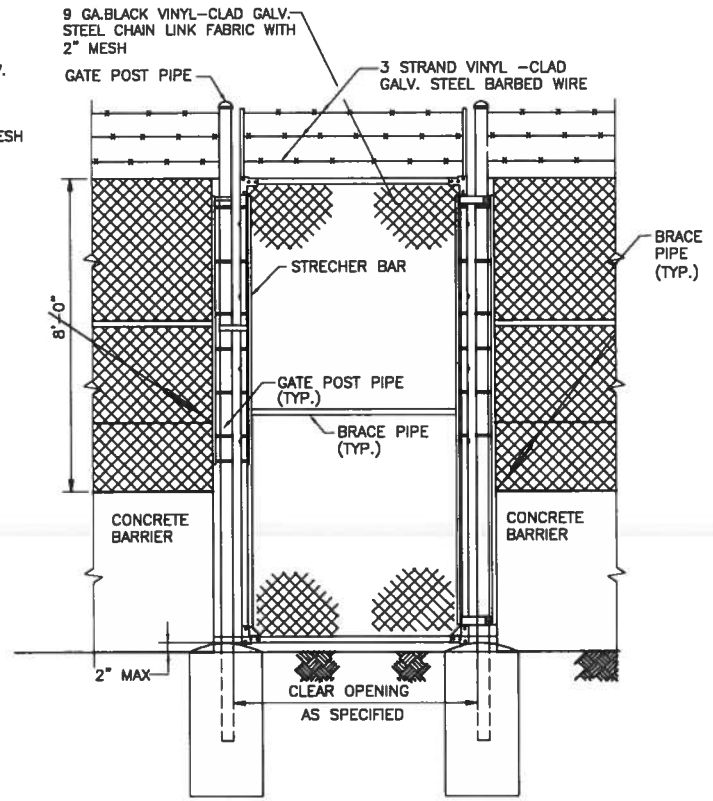
DEPARTMENT OF AVIATION  
PLANNING & DEVELOPMENT



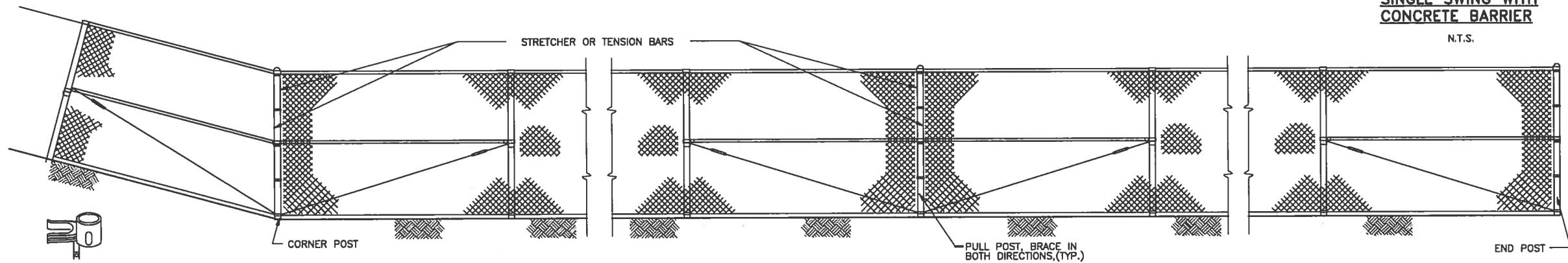
**BLACK PVC COATED 8' CHAIN-LINK WIRE FENCE WITH EXTENSION ARMS AND BARBED WIRE**  
N.T.S.



**SINGLE SWING GATE**  
N.T.S.



**SINGLE SWING WITH CONCRETE BARRIER**  
N.T.S.

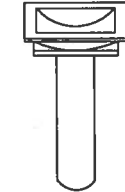
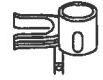


**METHOD OF BRACING END, CORNER, AND PULL POST**  
N.T.S.

NOTES:

- HORIZONTAL BRACE RAILS, TRUSS BRACING AND STRETCHER OR TENSION BARS ATTACHED TO POST BY MEANS OF BANDS, SHALL BE USED FOR END, CORNER, ANGLE, AND INTERMEDIATE BRACE POSTS AND WHERE REQUIRED BY THE ENGINEER.
- FITTINGS SHOWN ARE SUGGESTED ONLY. SIMILAR DESIGNS MEETING THE APPROVAL OF THE ENGINEER MAY BE USED. ALL FITTINGS TO BE MALLEABLE IRON, CAST IRON, OR PRESSED STEEL. CONTRACTOR SHALL SUBMIT AND RECEIVE APPROVAL FOR APPROPRIATE SHOP DRAWINGS.
- EXTENSION ARMS AND BARBED WIRE ARE NOT REQUIRED ON TEMPORARY FENCES, BUT TOP AND BOTTOM TENSION WIRES WILL BE REQUIRED IN ALL CASES.
- POSTS PLACED IN TIRES WILL REQUIRE SUPPLEMENTARY SUPPORT BRACING WHEN USED IN AREAS ADJACENT TO AIRCRAFT OPERATIONS, TO RESIST JET BLAST. SUCH BRACING IS CONSIDERED INCIDENTAL TO THE FENCE CONSTRUCTION.
- SWING GATE CONSTRUCTION VARIES WITH WIDTH. GATE FRAMES SHALL MEET CHAIN LINK FENCE MANUFACTURER'S INSTITUTE PRODUCT MANUAL INDUSTRIAL STEEL SPECIFICATIONS WITH RESPECT TO HORIZONTAL AND VERTICAL MEMBERS.
- FENCING ON CONCRETE BARRIER BE SIMILAR. CONTRACTOR SHALL PROVIDE APPROPRIATE TRANSITION SECTIONS.
- ALL CHAIN LINK FENCE MATERIALS AND FITTINGS SHALL BE OF HIGH GRADE DOMESTIC QUALITY STEEL AND SHALL BEAR MARKINGS AS BEING SUCH.
- THE CHAIN LINK FABRIC SHALL BE PLACED ON THE OUTWARD FACE OF THE POSTS, TAUT AND SECURELY FASTENED.
- MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH F.A.A. STANDARD SPECIFICATIONS AND THE SPECIAL PROVISIONS OF THIS CONTRACT.
- ALL EXPOSED METALS SUCH AS NUTS AND BOLTS AND WELDED AREAS SHALL BE PAINTED WITH COLOR TO MATCH FENCE SYSTEM.

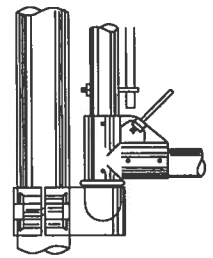
LATCH FORK



CATCH FOR PLUNGER BAR



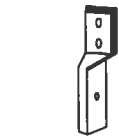
LOCK KEEPER GUIDE



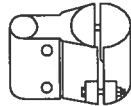
BOTTOM CORNER AND HINGE



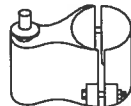
LOCK KEEPER GUIDE



LOCK KEEPER



UPPER HINGE



BOTTOM HINGE



LATCH FORK



FORK CATCH

NO. DATE BY REVISION

STANDARD DETAILS

Chain Link Fences - 1

WBS NUMBER:	DRAWN BY: STAFF
FC NUMBER:	DESIGNED BY: STAFF
CONSULTANT PROJECT NUMBER:	CHECKED BY: STAFF
STANDARD SHEET NUMBER <b>STD-03-200</b>	APPROVED BY: STAFF
DATE:	
SCALE:	
SHEET NO:	

STANDARD DETAIL 6

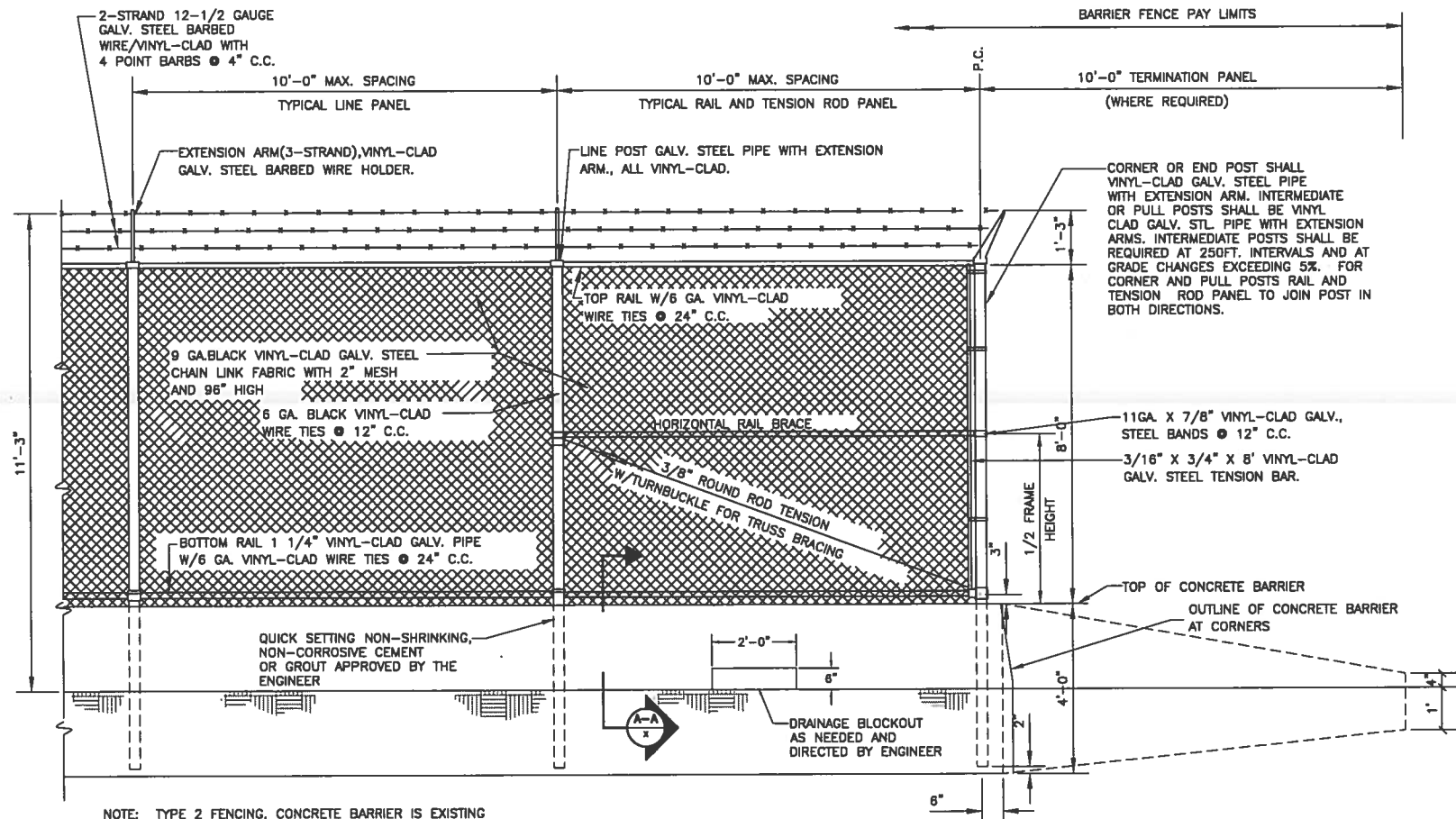
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CITY OF ATLANTA, GEORGIA

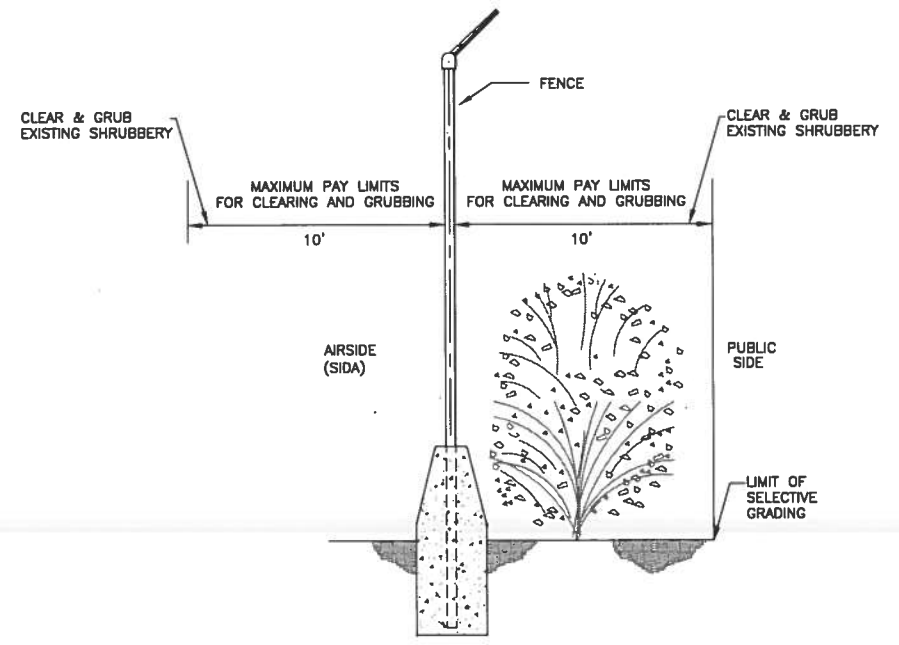


DEPARTMENT OF AVIATION  
PLANNING & DEVELOPMENT

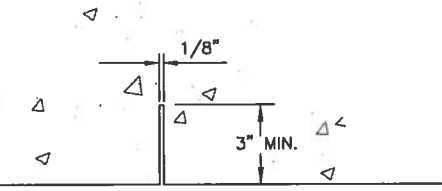


NOTE: TYPE 2 FENCING, CONCRETE BARRIER IS EXISTING

**BLACK PVC COATED 8' CHAIN-LINK WIRE FENCE WITH EXTENSION ARMS AND BARBED WIRE ON BARRIER**  
N.T.S.



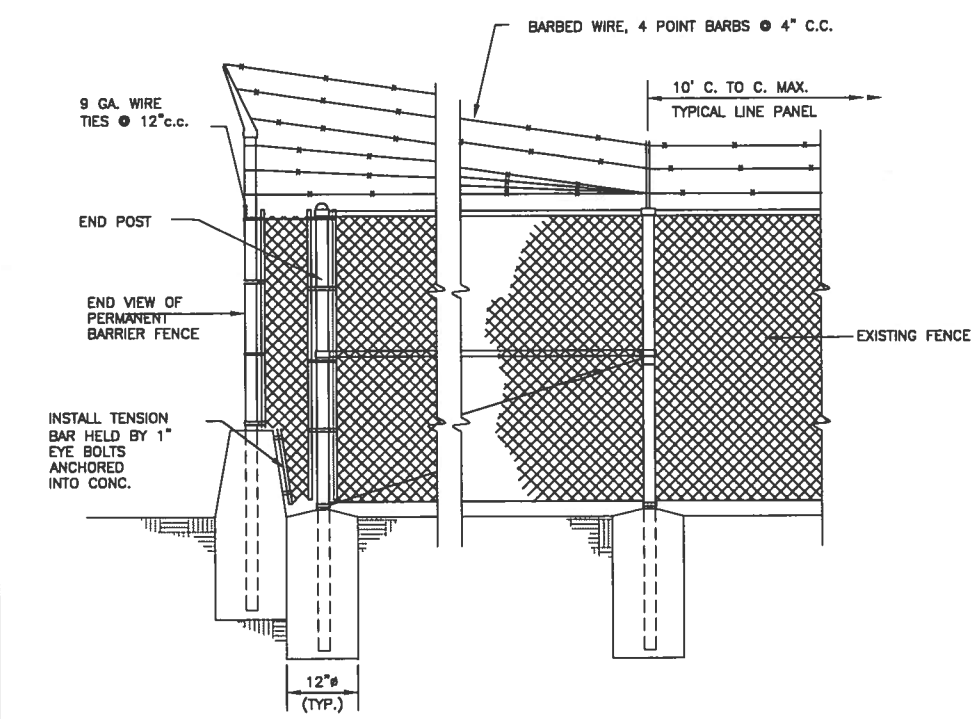
**CLEAR LIMITS**  
N.T.S.



JOINT MAY BE FORMED WITH 1/8" HARDBOARD RETAINED IN JOINT AND CUT BACK TO FACE OF CONCRETE.

**BARRIER CONTRACTION JOINT**  
N.T.S.

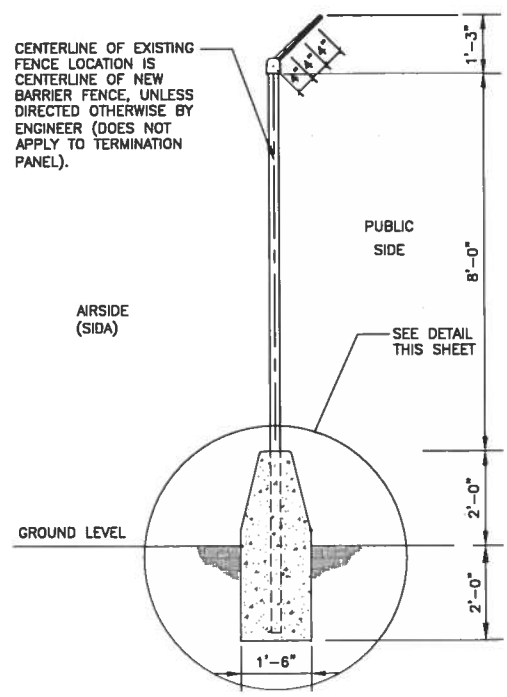
- CONTRACTION JOINTS SHALL BE PROVIDED AT 20 FOOT INTERVALS. THEY MAY BE FORMED WITH WASTEABLE OR REMOVABLE MATERIAL
- CONTRACTOR MAY SUBMIT ALTERNATIVE JOINT DETAILS FOR ENGINEER'S APPROVAL.



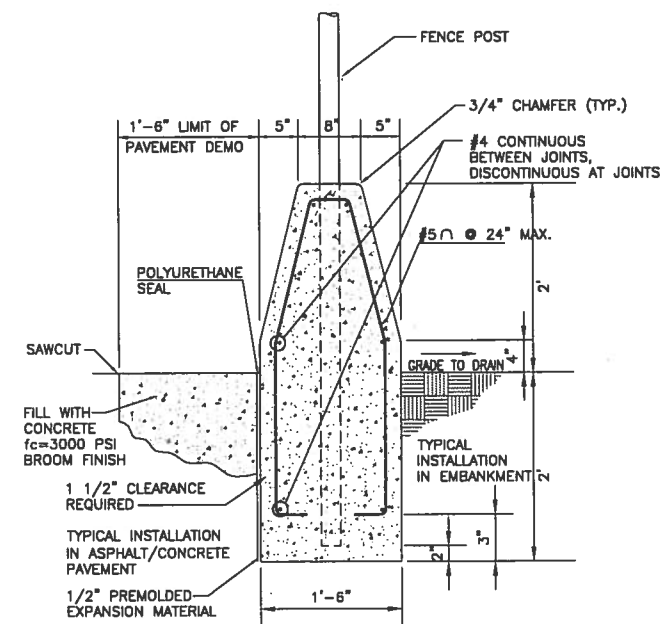
**CHAIN LINK FENCE/BARRIER FENCE INTERSECTION**  
N.T.S.

**NOTES:**

- ALL SIZES AND GAUGES FOR PIPE POSTS, ROD AND WIRES ARE OUTSIDE DIAMETERS WHICH INCLUDES THE VINYL COATING THICKNESS.
- ALL BARRIER CHAIN LINK FENCE MATERIAL AND FITTINGS SHALL BE COLORBOND II BY COLORGUARD CORP., OR APPROVED EQUAL.
- ALL CHAIN LINK FENCE MATERIALS AND FITTINGS SHALL BE OF HIGH GRADE DOMESTIC QUALITY STEEL AND SHALL BEAR MARKINGS AS BEING SUCH.
- THE CHAIN LINK FABRIC SHALL BE PLACED ON THE OUTWARD FACE OF THE POSTS, TAUT AND SECURELY FASTENED.
- ALL EXPOSED METALS SUCH AS NUTS AND BOLTS AND WELDED AREAS SHALL BE PAINTED WITH COLOR TO MATCH FENCE SYSTEM.
- FOR NON VINYL-CLAD CHAIN LINK, FENCE MATERIALS AND FITTINGS, SEE SPECIFICATIONS AND DETAIL SHEET.
- MATERIAL AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH FAA STANDARD SPECIFICATIONS AND THE SPECIAL PROVISIONS OF THIS CONTRACT.
- GATE FRAMES SHALL MEET CHAIN LINK MANUFACTURER'S INSTITUTE PRODUCT MANUAL INDUSTRIAL STEEL SPECIFICATIONS WITH RESPECT TO HORIZONTAL AND VERTICAL MEMBERS.



**TYPICAL SECTION A-A**  
N.T.S.



**DETAIL**  
N.T.S.

NO.	DATE	BY	REVISION

STANDARD DETAILS

Chain Link Fences - 2

WBS NUMBER:	DRAWN BY:
FC NUMBER:	DESIGNED BY:
CONSULTANT PROJECT NUMBER:	CHECKED BY:
STANDARD SHEET NUMBER	APPROVED BY:
STD-03-201	STAFF
DATE:	STAFF
SCALE:	STAFF
SHEET NO.:	

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NOT TO BE REPRODUCED WITHOUT THE WRITTEN PERMISSION OF HARTSFIELD-JACKSON ATLANTA INTERNATIONAL AIRPORT

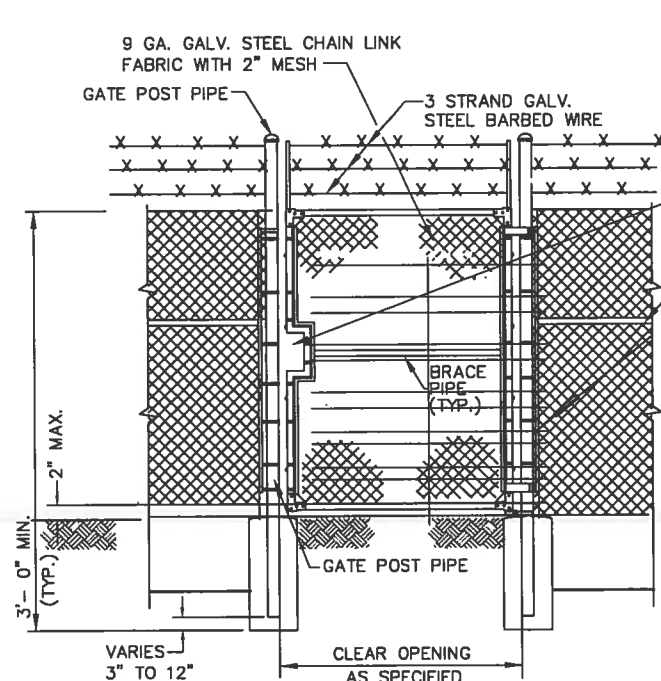




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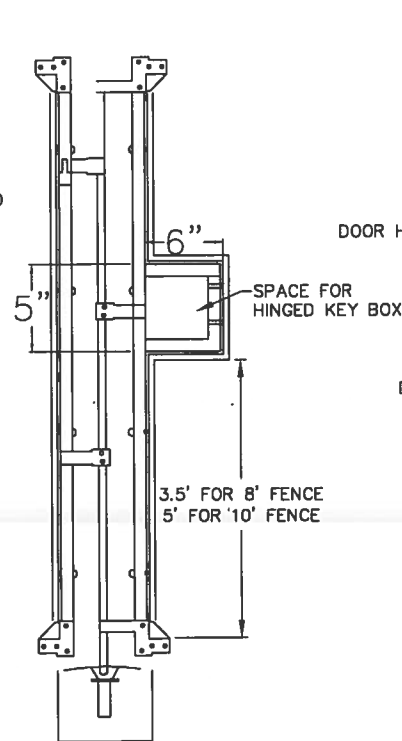


DEPARTMENT OF AVIATION  
PLANNING & DEVELOPMENT

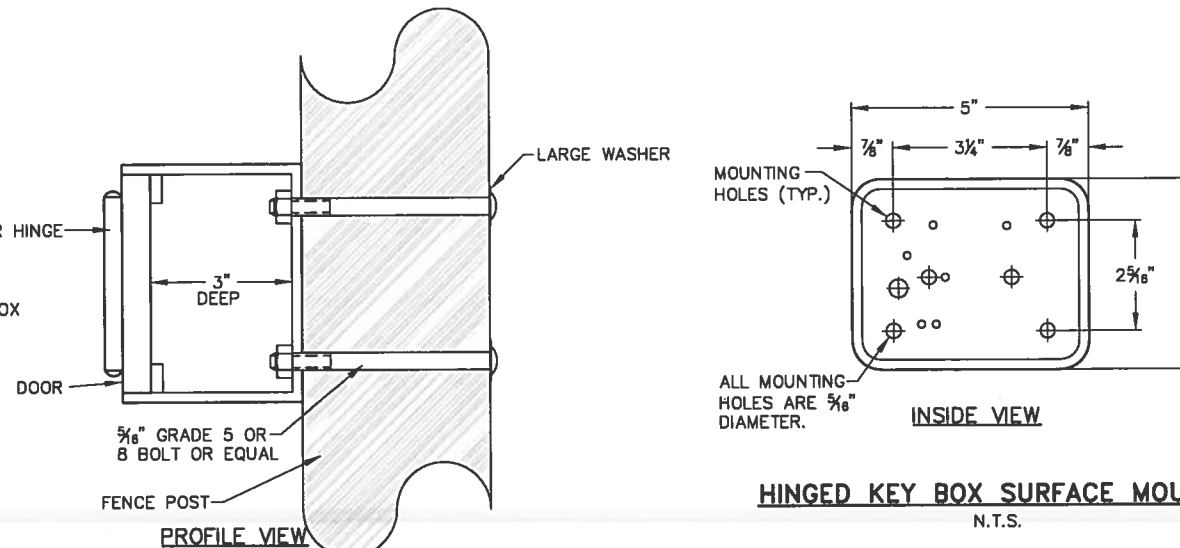


CONTRACTOR TO FABRICATE GATE FRAME TO ACCOMMODATE HINGED KEY BOX.

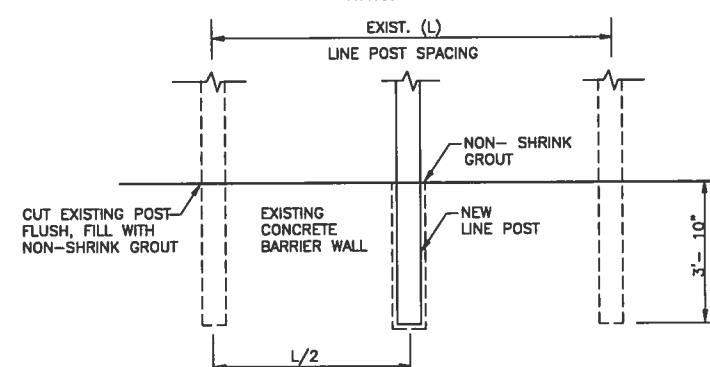
**SINGLE SWING GATE W/ HINGED KEY BOX**  
N.T.S.



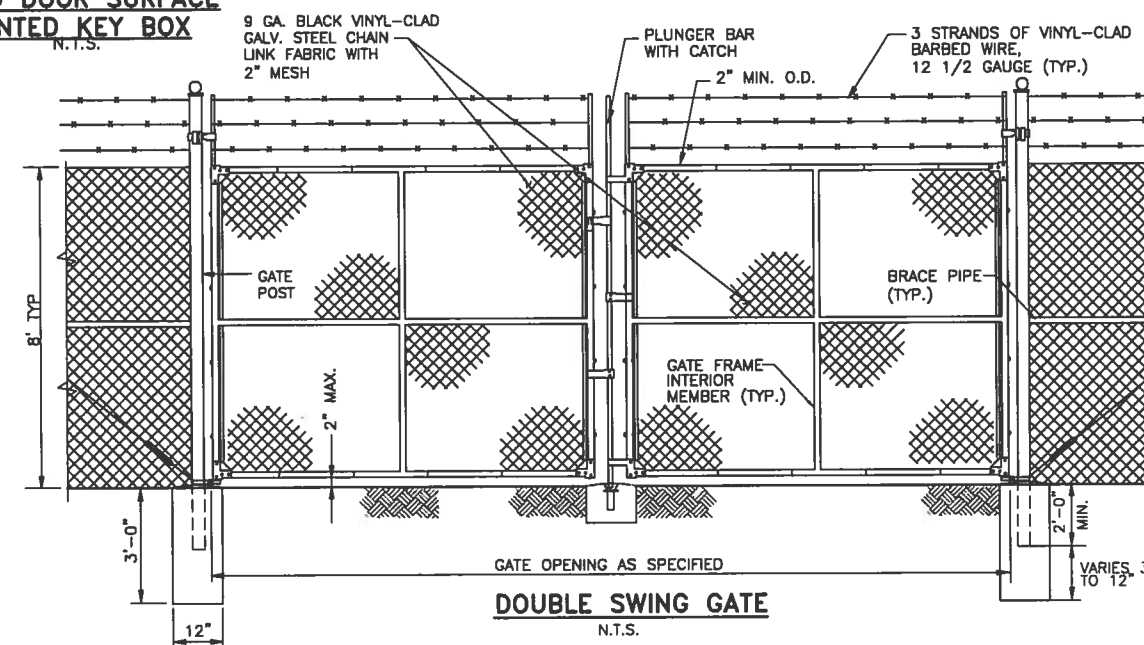
**HINGED DOOR SURFACE MOUNTED KEY BOX**  
N.T.S.



**HINGED KEY BOX SURFACE MOUNT**  
N.T.S.

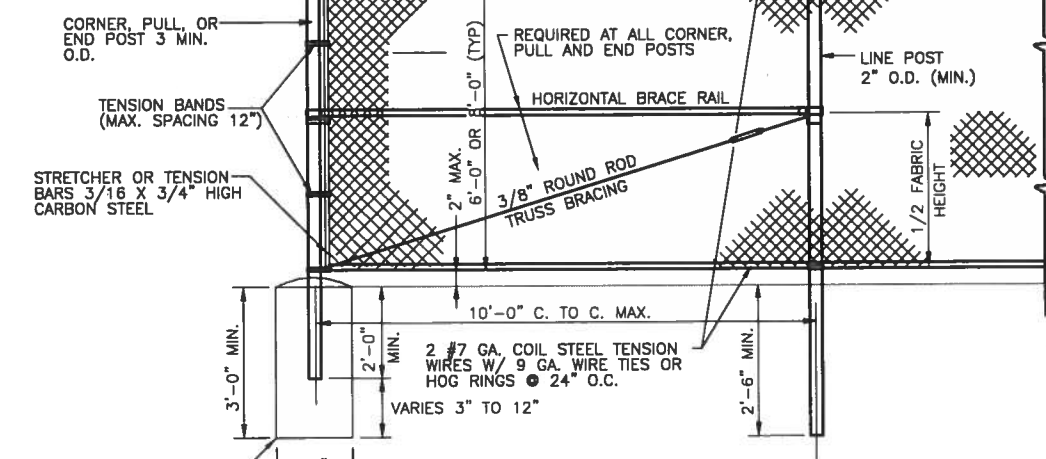


**FENCE INSTALLATION ON EXISTING CONCRETE BARRIER WALL**  
N.T.S.

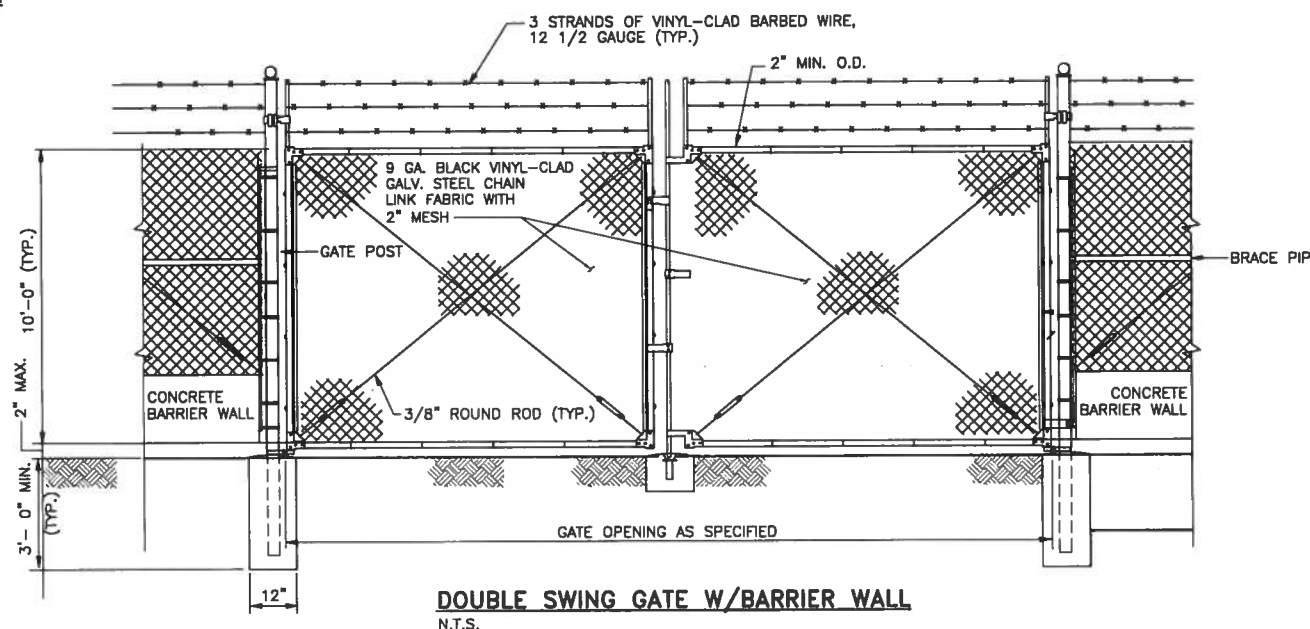


**DOUBLE SWING GATE**  
N.T.S.

PULL POSTS SHALL BE REQUIRED AT 250 FT. INTERVALS AND AT GRADE CHANGES EXCEEDING 5%. FOR CORNER AND PULL POSTS, RAIL AND TENSION ROD PANEL TO JOIN POST IN BOTH DIRECTIONS.



**TEMPORARY CHAIN-LINK WIRE FENCE**  
N.T.S.



**DOUBLE SWING GATE W/BARRIER WALL**  
N.T.S.

NO. DATE BY REVISION

STANDARD DETAILS

Chain Link Fences - 3

WBS NUMBER: DRAWN BY: STAFF

FC NUMBER: DESIGNED BY: STAFF

CONSULTANT PROJECT NUMBER: CHECKED BY: STAFF

STANDARD SHEET NUMBER: APPROVED BY: STAFF

STD-03-202



DATE:

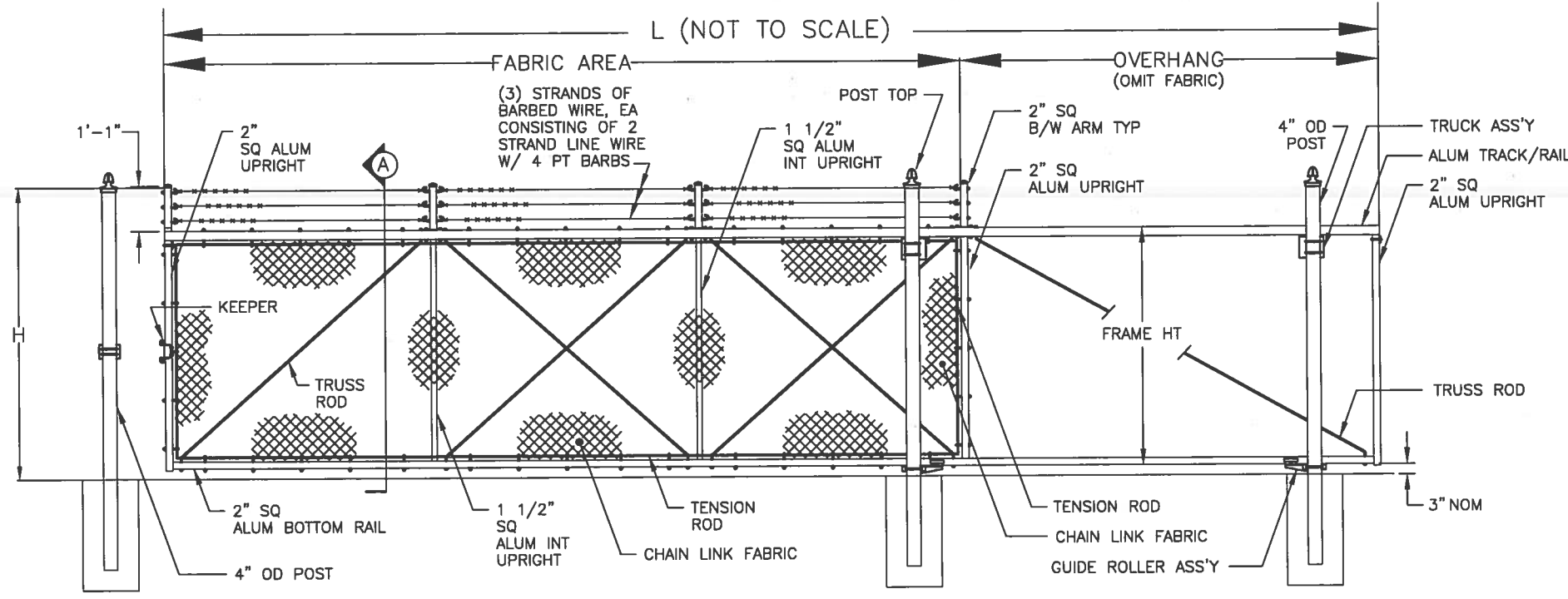
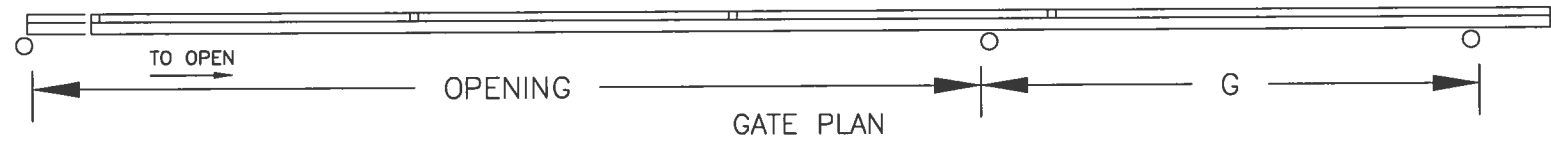
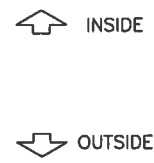
SCALE:

SHEET NO:

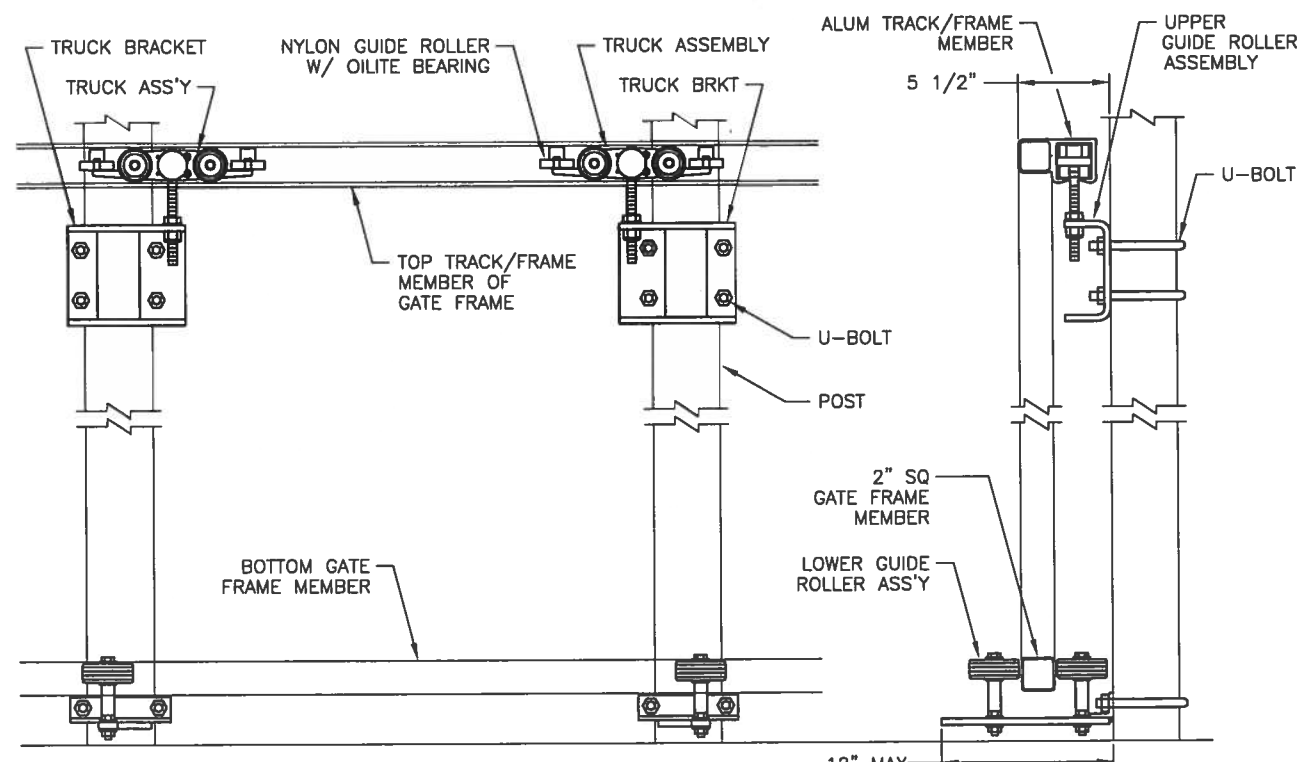
STANDARD DETAILS

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POST TOP OPTIONS	
STANDARD	DOMED
	



NOM HEIGHT (H)
7'-0" (6'+1')
8'-0" (7'+1')
9'-0" (8'+1')
OPENING
6'-0" THROUGH 22'-0"



NOTES:

1. FOOTING WIDTH TO BE (4)X POST WIDTH. MIN DEPTH TO BE 36".
2. GATES MAY BE MANUALLY OR ELECTRICALLY OPERATED. HARDWARE WILL VARY FOR ELECTRICALLY OPERATED GATES.
3. SOME DIMENSIONS MAY VARY. THE CONTRACTOR SHALL BE REQUIRED TO SUBMIT SHOP DRAWINGS AND RECEIVE APPROVAL PRIOR TO INSTALLATION.

SINGLE CANTILEVERED SLIDING GATE  
ROUND POSTS, W/ BARBED WIRE  
N.T.S

CANTILEVERED SLIDING GATE  
DETAILS



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NO.	DATE	BY	REVISION

STANDARD DETAILS  
Chain Link Fences - 4

WBS NUMBER:	DRAWN BY:
FC NUMBER:	DESIGNED BY:
CONSULTANT PROJECT NUMBER:	CHECKED BY:
STANDARD SHEET NUMBER	APPROVED BY:
STD-03-203	STAFF

DATE:  
SCALE:  
SHEET NO:

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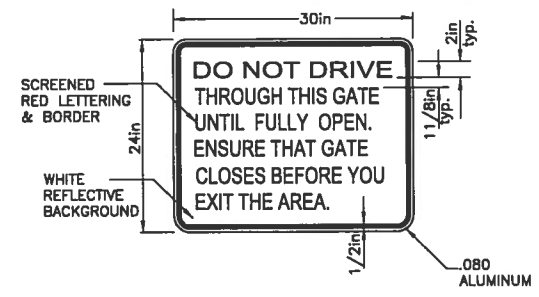
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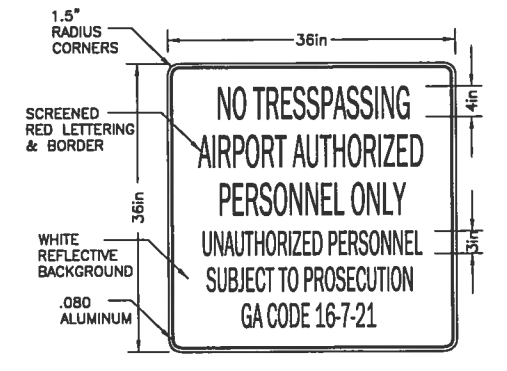
CITY OF ATLANTA, GEORGIA



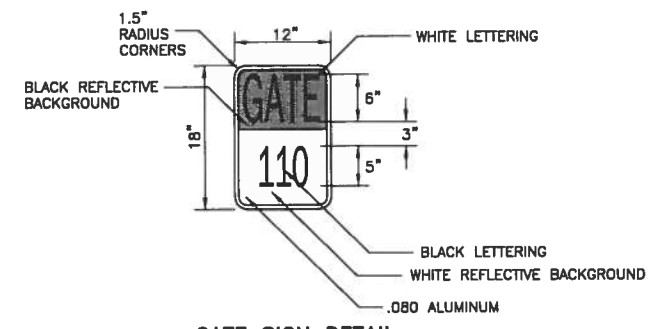
DEPARTMENT OF AVIATION  
PLANNING & DEVELOPMENT



**AUTOMATIC SIDA GATE WARNING SIGN DETAIL**



**SIDA FENCE WARNING SIGN DETAIL**



**GATE SIGN DETAIL**

NO.	DATE	BY	REVISION

STANDARD DETAILS

Chain Link Fence - Signage

WBS NUMBER:	DRAWN BY: STAFF
FC NUMBER:	DESIGNED BY: STAFF
CONSULTANT PROJECT NUMBER:	CHECKED BY: STAFF
STANDARD SHEET NUMBER STD-03-204	APPROVED BY: STAFF
DATE:	
SCALE:	
SHEET NO:	

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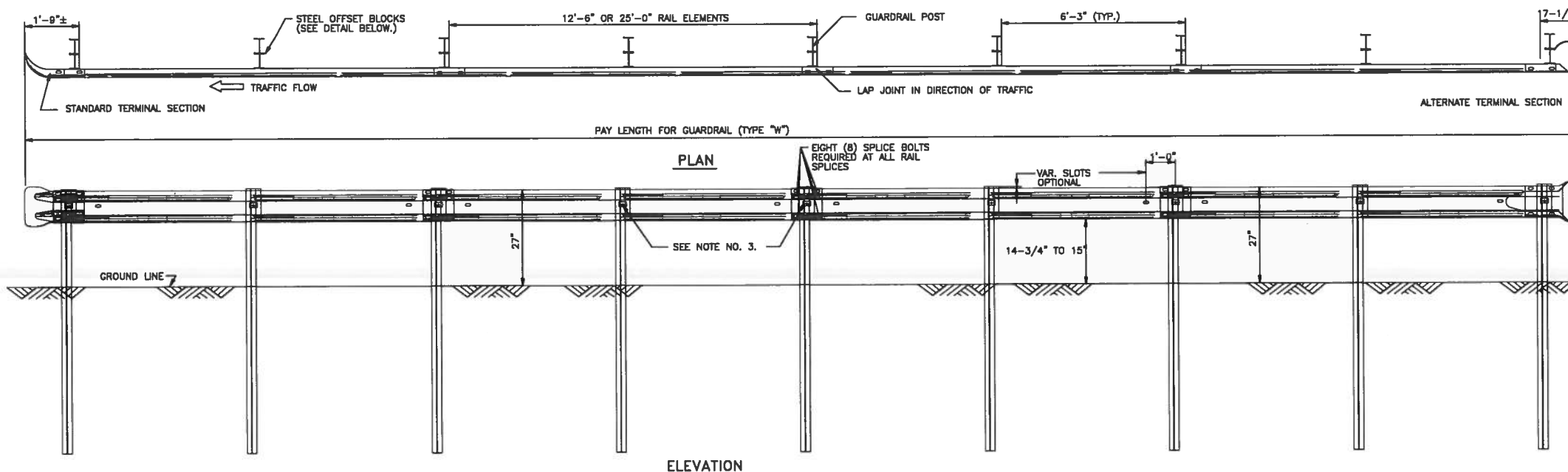
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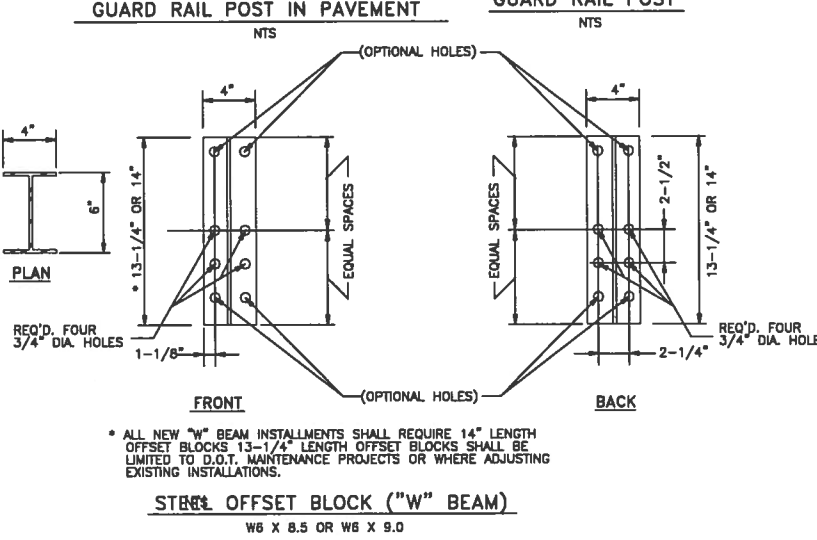
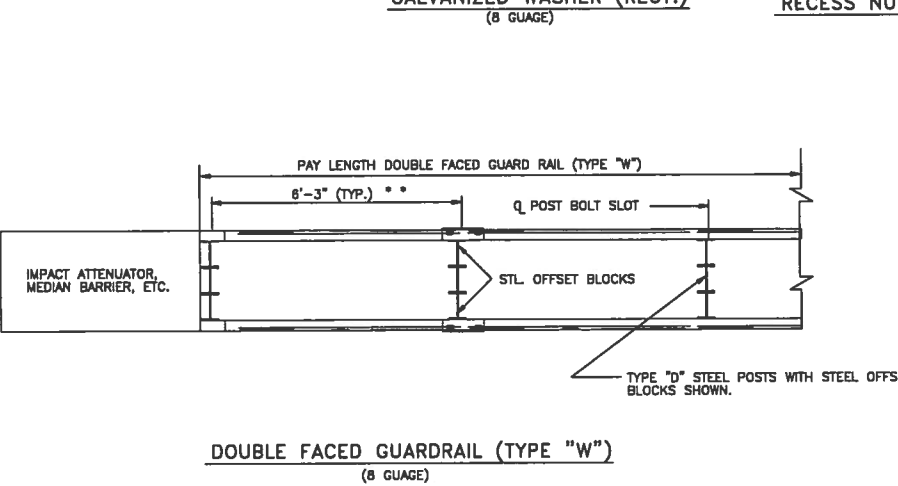
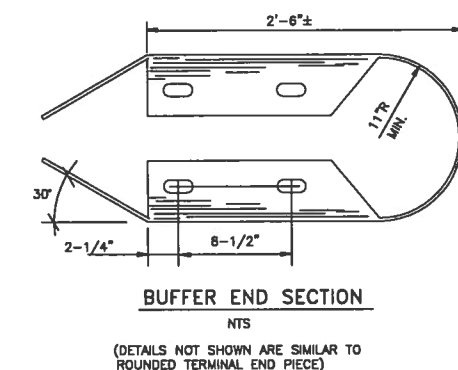
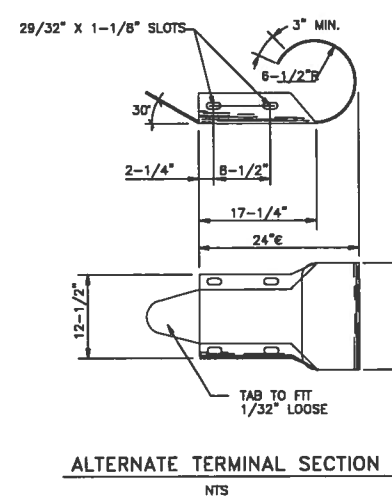
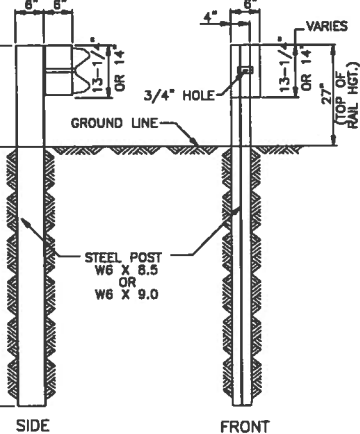
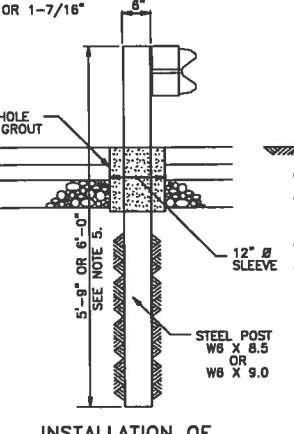
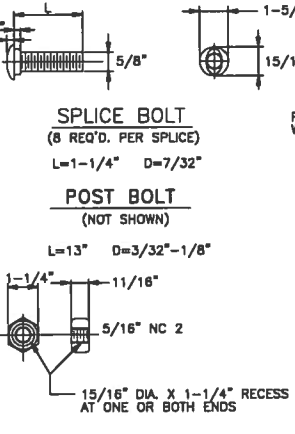
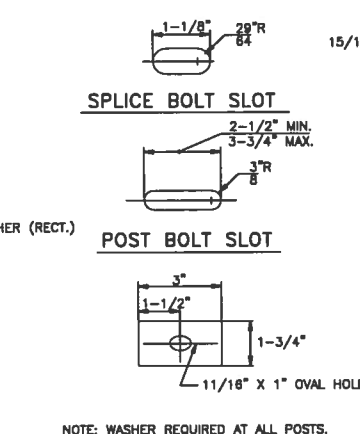
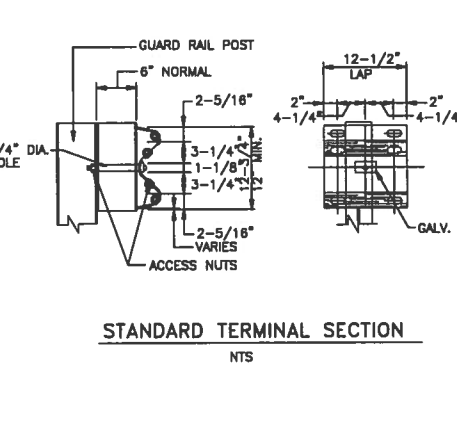
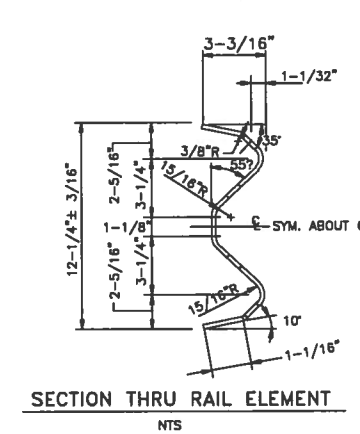
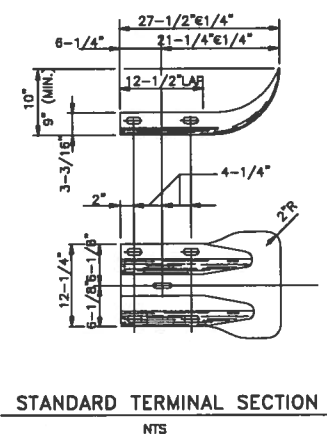
CITY OF ATLANTA, GEORGIA



DEPARTMENT OF AVIATION  
PLANNING & DEVELOPMENT



- NOTES**
- SPECIFICATIONS: GEORGIA STANDARD AND/OR SPECIAL PROVISIONS.
  - NUTS, BOLTS, WASHERS, RAIL, TERMINAL SECTIONS, END SHOES, BACKUP PLATES, END SECTIONS AND OTHER GUARDRAIL HARDWARE ARE IN ACCORDANCE WITH THE CURRENT ARTBA TECHNICAL BULLETIN NO. 288 UNLESS SPECIFIED OTHERWISE. DIMENSIONS FOR POSTS AND OFFSET BLOCKS WILL BE ACCORDING TO GA. STANDARD 4011.
  - FOR DETAILS OF GUARDRAIL ANCHORAGES SEE GA. STD. 4012B OR 4050.
  - ALL DIMENSIONS ARE SUBJECT TO MANUFACTURING TOLERANCES.
  - STANDARD NET LENGTH OF RAIL ELEMENT MAY BE EITHER 12'-6" OR 25'-0", THESE LENGTHS SHALL BE ARRANGED TO PROVIDE AS NEARLY AS POSSIBLE THE OVERALL LENGTH ORDERED BY THE ENGINEER FOR ANY LOCATION.
  - RECTANGULAR WASHER IS REQUIRED AT ALL POSTS UNLESS SPECIFIED OTHERWISE.
  - ALL GUARDRAIL SPLICES WILL BE PROPERLY SECURED WITH EIGHT SPLICE BOLT CONNECTIONS. ALL NUTS WILL BE TIGHTENED, LOOSE NUTS, OMITTED BOLTS OR OMITTED NUTS WILL BE CAUSE FOR REJECTION.
  - STEEL POST MAY BE 6'-0" LONG INSTEAD OF 5'-9" AT CONTRACTOR'S OPTION. TOP OF RAIL HEIGHT WILL BE 27" REGARDLESS OF POST LENGTH. NO ADDITIONAL PAYMENT WILL BE MADE FOR 6'-0" LONG POSTS.
  - WHERE POSTS ARE PLACED BACK OF THE SLOPE BREAKPOINT IN SLOPES STEEPER THAN 4:1, 6'-8" POSTS SHALL BE USED IN LIEU OF 5'-9" POSTS, UNLESS OTHERWISE NOTED.
  - OFFSET FROM TOP OF POST TO CENTER OF 3/4" - HOLE(S) WILL BE DETERMINED BY LENGTH OF OFFSET BLOCK, I.E., 7" FOR 14" LENGTH BLOCKS AND 6 5/8" FOR 13 1/4" - LENGTH BLOCKS.
  - ALL STEEL HARDWARE COMPONENTS WILL BE GALVANIZED AFTER FABRICATION. GALVANIZING REPAIR COMPOUND (SEC-645) WILL BE FIELD APPLIED TO ANY COATING DAMAGED.
  - WHEN GUARDRAIL IS REQUIRED ON CURVES WITH RADII LESS THAN 150' PRECURVED RAIL WILL BE REQUIRED.
  - PAYMENT FOR GUARDRAIL (TYPE "W") TO INCLUDE OFFSET BLOCKS, POST, BACKUP PLATE WHERE REQUIRED, BOLTS, NUTS, WASHERS, TERMINAL SECTIONS, ADDITIONAL POST WHERE REQUIRED.



NO.	DATE	BY	REVISION
STANDARD DETAILS			
Guardrail Details			
WBS NUMBER:	DRAWN BY: STAFF		
FC NUMBER:	DESIGNED BY: STAFF		
CONSULTANT PROJECT NUMBER:	CHECKED BY: STAFF		
STANDARD SHEET NUMBER STD-03-300	APPROVED BY: STAFF		
	DATE:		
	SCALE:		
	SHEET NO:		

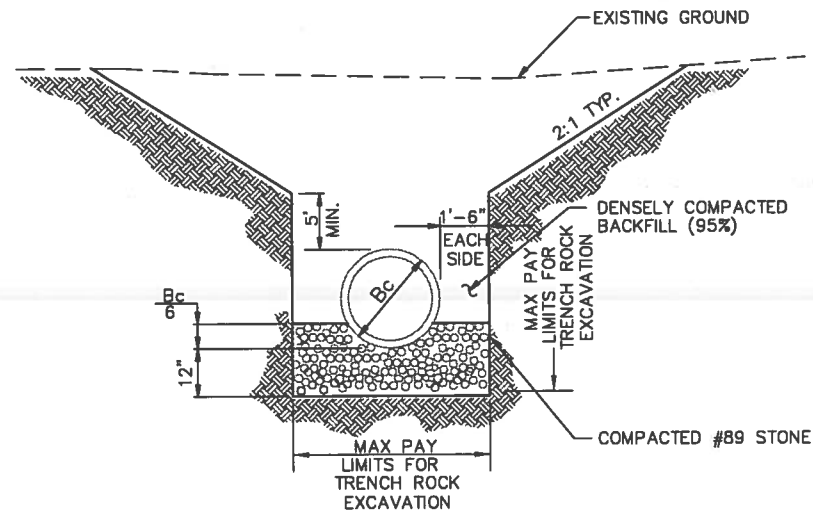
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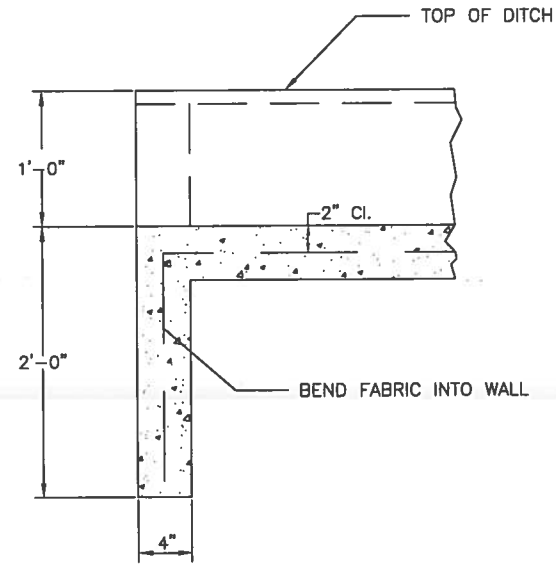
CITY OF ATLANTA, GEORGIA



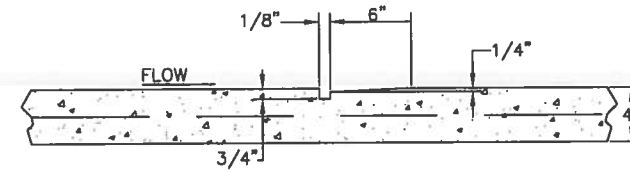
DEPARTMENT OF AVIATION  
PLANNING & DEVELOPMENT



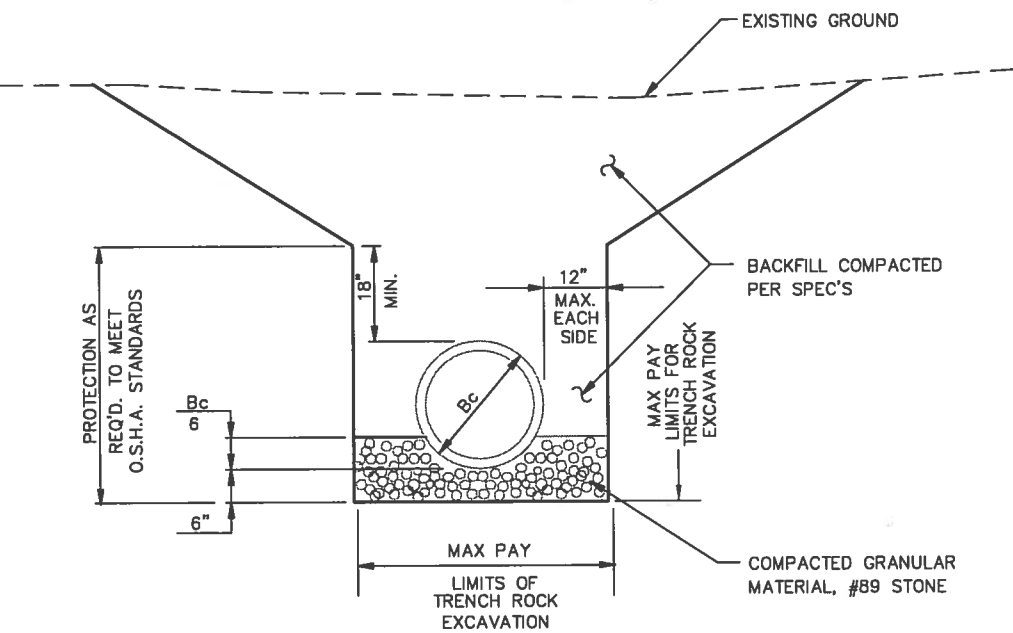
TYPE "B" PIPE BEDDING AND EXCAVATION SECTION  
N.T.S.



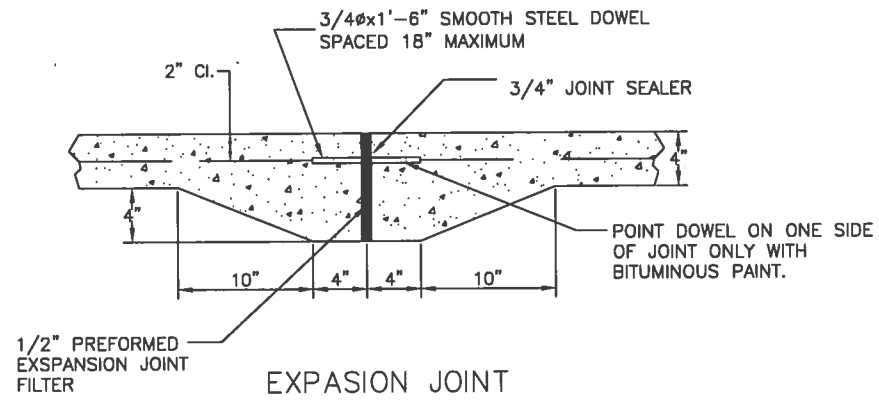
SECTION A-A



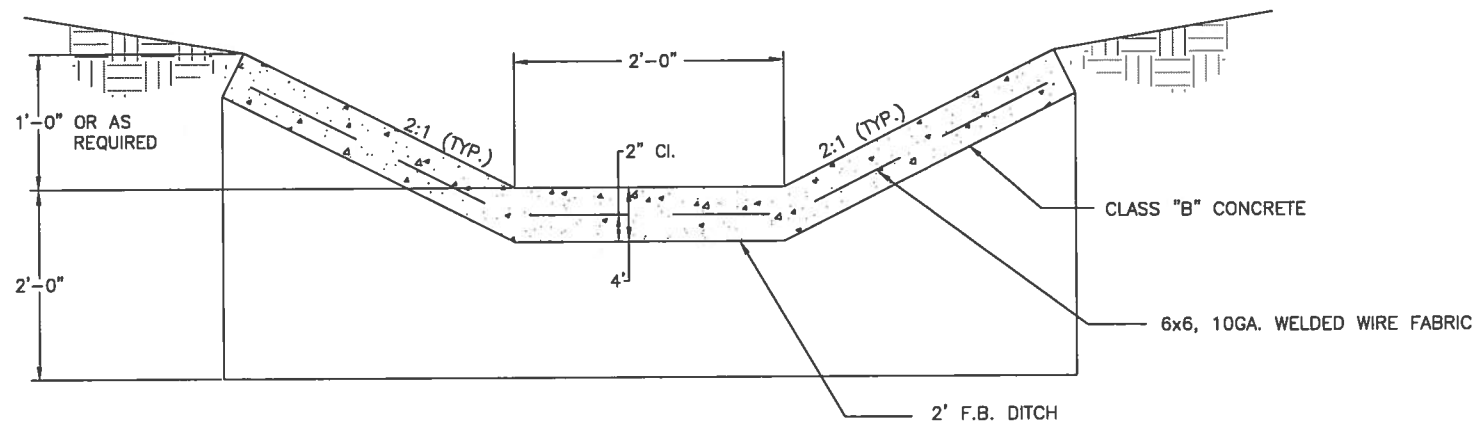
CONTRACTION JOINT



TYPE "C" PIPE BEDDING AND EXCAVATION SECTION  
(GRANULAR FOUNDATION)  
N.T.S.



EXPANSION JOINT



PAVED DITCH DETAIL  
N.T.S.

NO.	DATE	BY	REVISION
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STANDARD DETAILS

Pipe Bedding Type 'B' and 'C',  
Paved Ditch Detail

WBS NUMBER:	DRAWN BY:
FC NUMBER:	STAFF
CONSULTANT PROJECT NUMBER:	DESIGNED BY:
STANDARD SHEET NUMBER	STAFF
STD-03-400	CHECKED BY:
	STAFF
	APPROVED BY:
	STAFF

DATE:  
SCALE:  
SHEET NO:

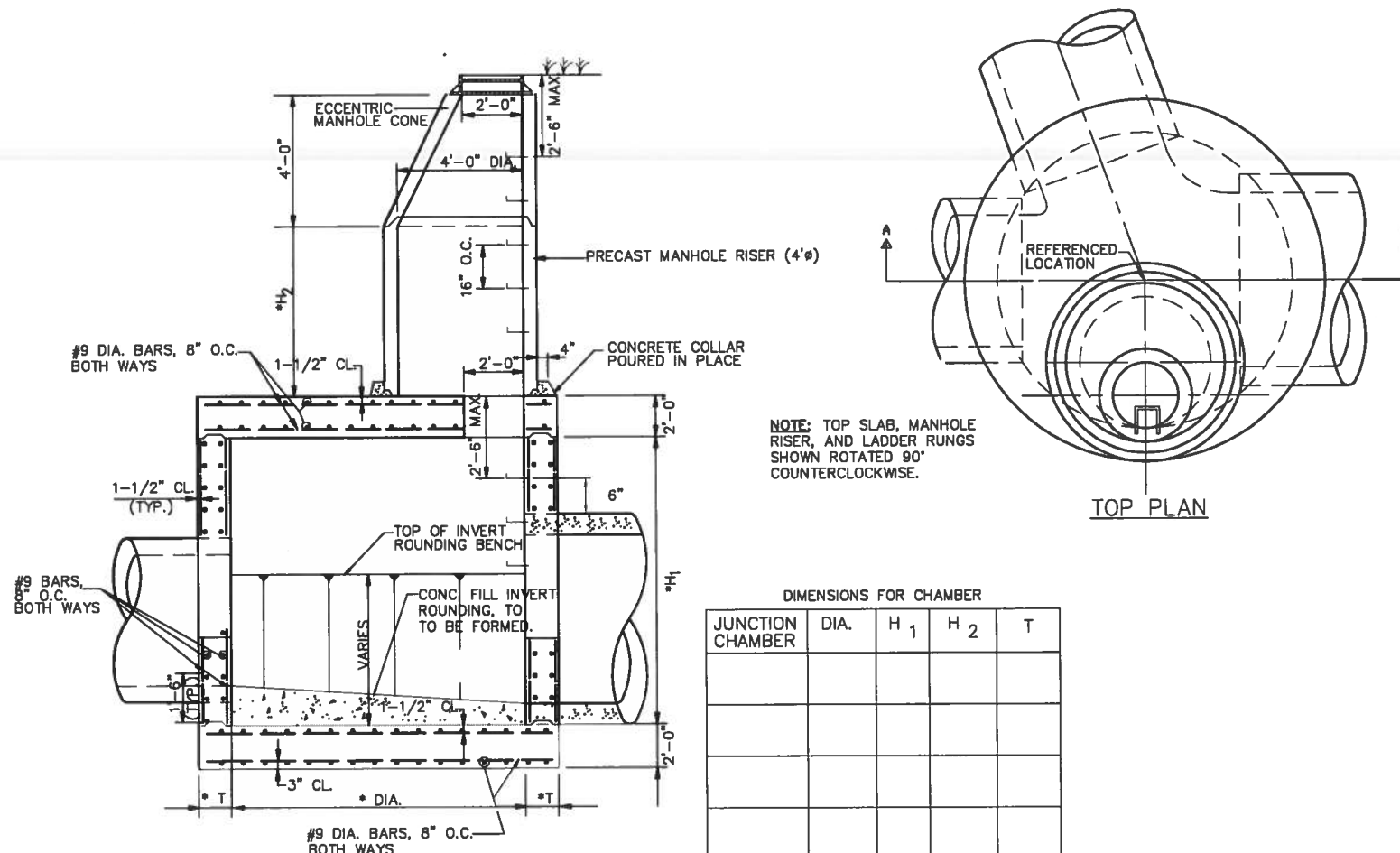
STANDARD DETAILS



CITY OF ATLANTA, GEORGIA



DEPARTMENT OF AVIATION  
PLANNING & DEVELOPMENT



NOTE: TOP SLAB, MANHOLE RISER, AND LADDER RUNGS SHOWN ROTATED 90° COUNTERCLOCKWISE.

DIMENSIONS FOR CHAMBER

JUNCTION CHAMBER	DIA.	H <sub>1</sub>	H <sub>2</sub>	T

SECTION A-A  
PRECAST JUNCTION CHAMBER  
N.T.S.

\* REFER TO DIMENSIONS FOR CHAMBER CHART ON THIS SHEET

NO.	DATE	BY	REVISION

STANDARD DETAILS

Precast Junction Chamber

WBS NUMBER:	DRAWN BY:
FC NUMBER:	DESIGNED BY:
CONSULTANT PROJECT NUMBER:	CHECKED BY:
STANDARD SHEET NUMBER	APPROVED BY:
STD-03-401	STAFF
DATE:	STAFF
SCALE:	STAFF
SHEET NO:	STAFF

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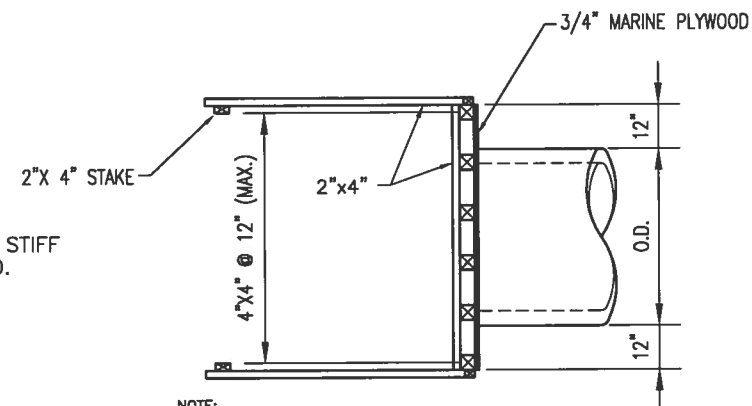
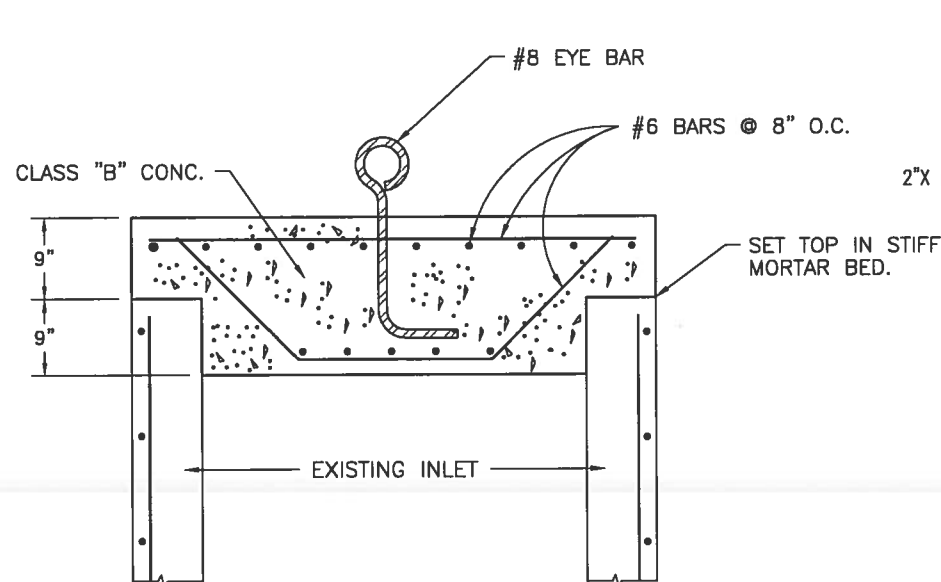
MODEL PLOTTED FOR CONSTRUCTION



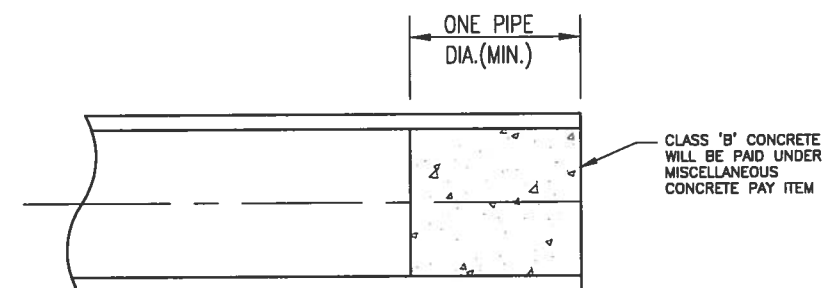
CITY OF ATLANTA, GEORGIA



DEPARTMENT OF AVIATION  
PLANNING & DEVELOPMENT



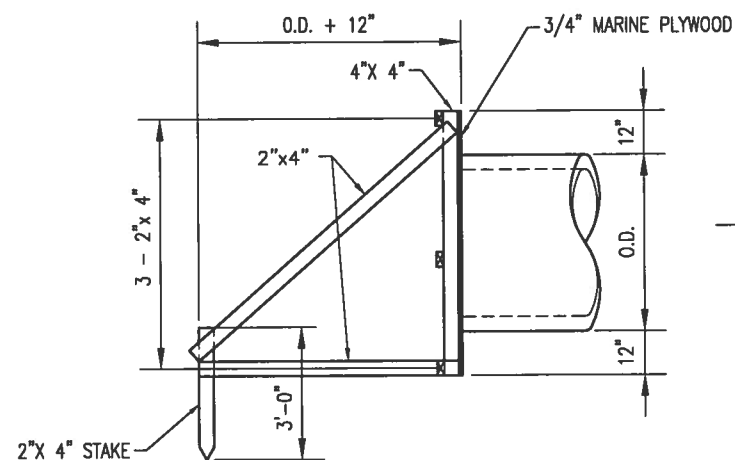
- NOTE:
1. ALL TIMBER FRAMING FOR TEMPORARY BULKHEAD SHALL BE PRESSURE TREATED TIMBER.
  2. ALL TIMBER CONNECTIONS SHALL BE MADE WITH GALVANIZED STEEL NAILS
  3. TEMPORARY BULKHEADS SHALL BE INCIDENTAL TO UNIT PRICE BID FOR PIPE.



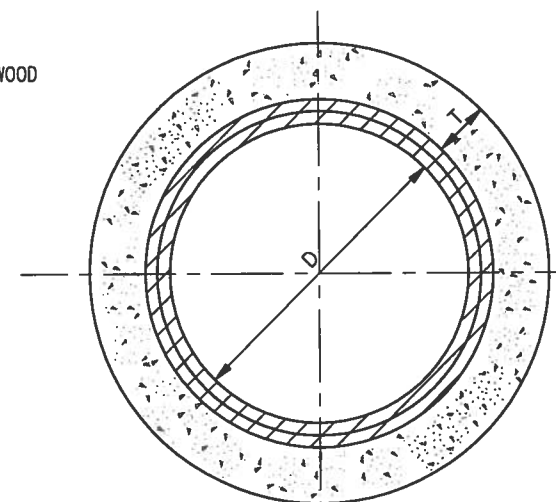
SECTION OF CONCRETE  
PIPE PLUG  
SCALE: NTS

NOTE:  
REMOVE FRAME & GRATE AND INLET WALLS DOWN TO 2'-6" FROM CROWN OF OUTLET PIPE.

CAP FOR EXISTING INLET  
N.T.S.  
PAID FOR AS MISC. CONCRETE.



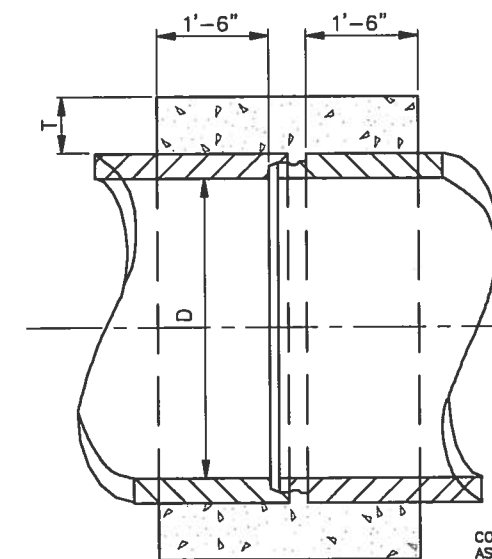
ELEVATION  
TEMPORARY TIMBER BULKHEAD



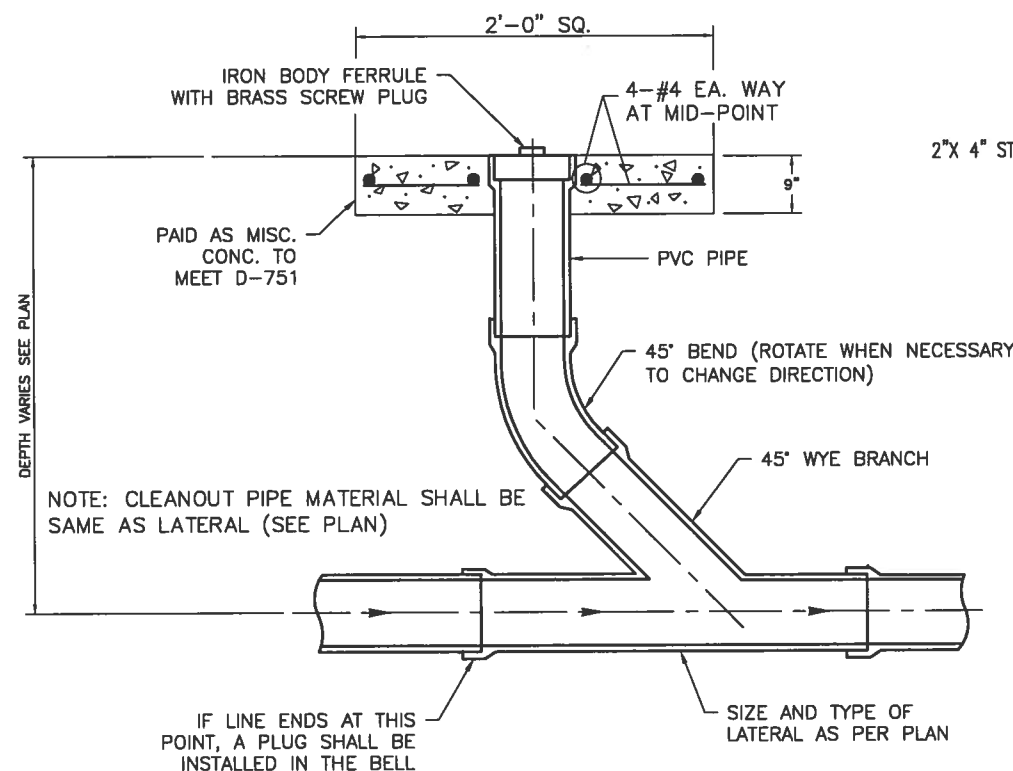
N.T.S.

D IN	T IN	As *
15	6	21"
18	6	24"
24	6	30"
30	6	42"
36	6	48"
42	6	54"
48	9	60"
54	9	66"
60	9	72"
66	9	78"
72	12	84"
78	12	90"
84	12	96"
96	12	108"

\* STEEL CAGE REQUIRED FOR COLLAR IS EQUIVALENT TO CAGE USED IN PIPE SIZE AS SHOWN IN COLUMN As AND FOR SAME CLASS OF PIPE USED.



CONCRETE PIPE COLLAR DETAIL  
(FOR CONNECTING EXISTING PIPE TO PROPOSED PIPE)  
N.T.S.



CLEANOUT DETAIL  
N.T.S.

NO. DATE BY REVISION

STANDARD DETAILS

Concrete Pipe Collar, Cleanout,  
Cap for Exist. Inlet

WBS NUMBER: \_\_\_\_\_ DRAWN BY: STAFF

FC NUMBER: \_\_\_\_\_ DESIGNED BY: STAFF

CONSULTANT PROJECT NUMBER: \_\_\_\_\_ CHECKED BY: STAFF

STANDARD SHEET NUMBER: \_\_\_\_\_ APPROVED BY: STAFF

STD-03-402

DATE: \_\_\_\_\_

SCALE: \_\_\_\_\_

SHEET NO: \_\_\_\_\_

STANDARD DETAILS

NOT FOR CONSTRUCTION

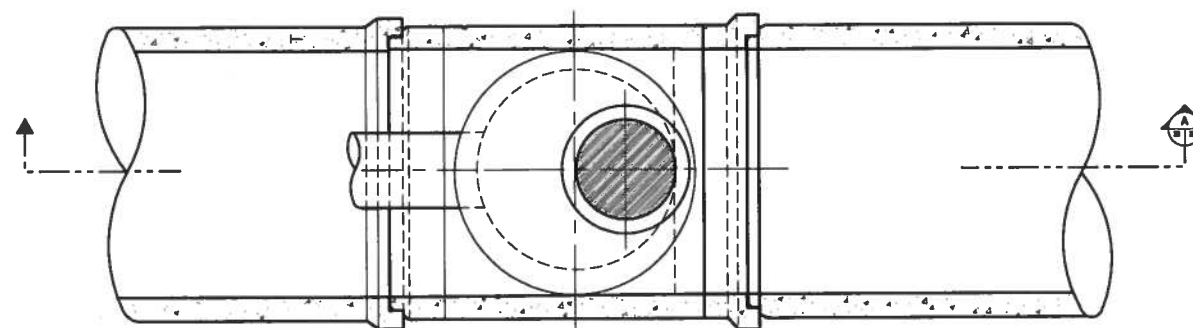
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CITY OF ATLANTA, GEORGIA



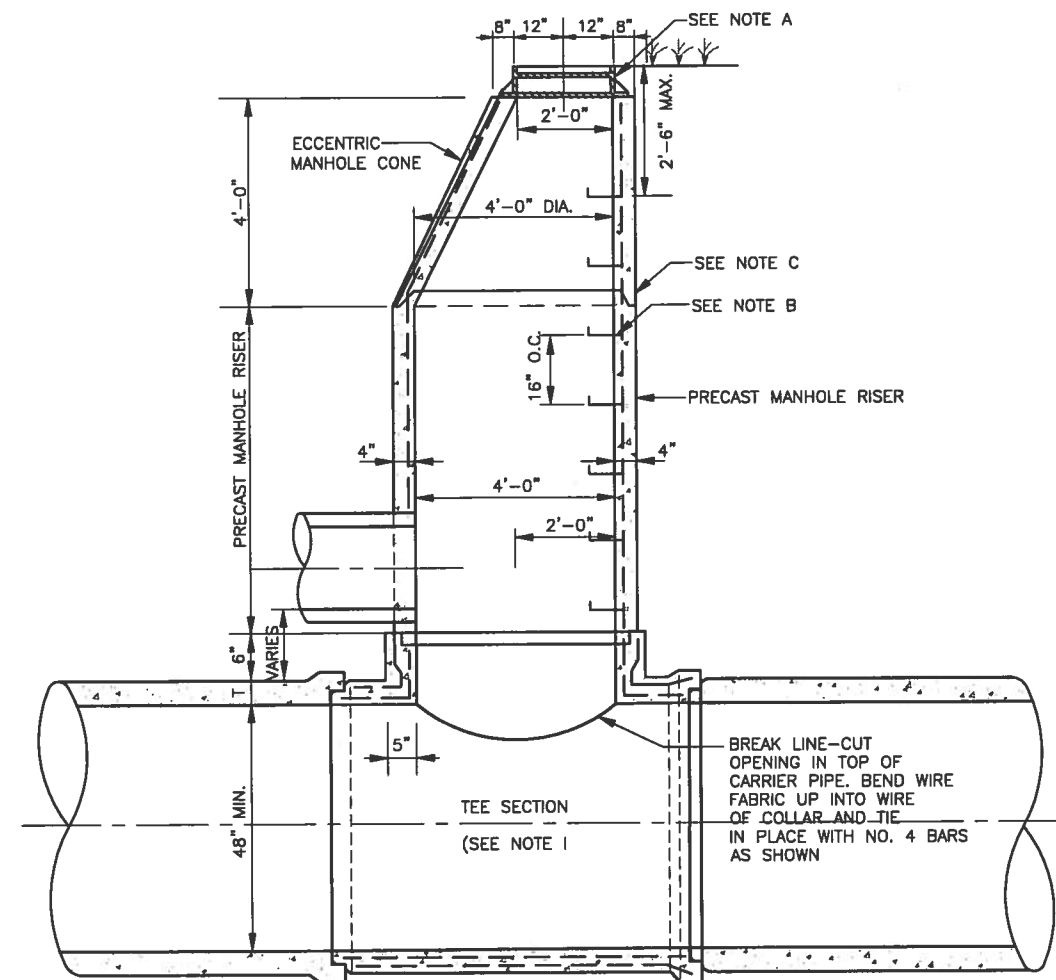
DEPARTMENT OF AVIATION  
PLANNING & DEVELOPMENT



**PLAN SECTION**  
NOT TO SCALE

**NOTES:**

- A. 4" PRECAST CONCRETE ADJUSTMENT RINGS AS REQUIRED, WITH A MAXIMUM OF TWO RINGS PER MANHOLE. RINGS TO BE FURNISHED WITH 1" DIAMETER HOLES AT 180° FOR FRAME DOWELS
- B. STANDARD STEPS SPACED AT 16" O.C. SHALL BE CAST IRON, NEENAH PATTERN NO. R-1980-C OR EQUAL.
- C. JOINTS BETWEEN ALL PRECAST MANHOLE COMPONENTS SHALL BE FUEL RESISTANT O-RING.
- D. MANHOLE FRAME AND COVER TO BE BARRY PATTERN B-1600-D OR APPROVED EQUAL WITH NO. 4 STEEL DOWELS BEDDED IN STIFF MORTAR.
- E. PRECAST MANHOLE RISERS AND BASE SHALL CONFORM TO THE PROVISIONS OF ASTM C-478.



**RISER TEE MANHOLE FOR  
EXISTING OR PROPOSED PIPE**  
NOT TO SCALE

NO.	DATE	BY	REVISION

STANDARD DETAILS

Riser Tee Manhole for  
Existing or Proposed Pipe

WBS NUMBER:	DRAWN BY: STAFF
FC NUMBER:	DESIGNED BY: STAFF
CONSULTANT PROJECT NUMBER:	CHECKED BY: STAFF
STANDARD SHEET NUMBER STD-03-403	APPROVED BY: STAFF

DATE:
SCALE:
SHEET NO:

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MANUFACTURED BY: CONCRETE SYSTEMS





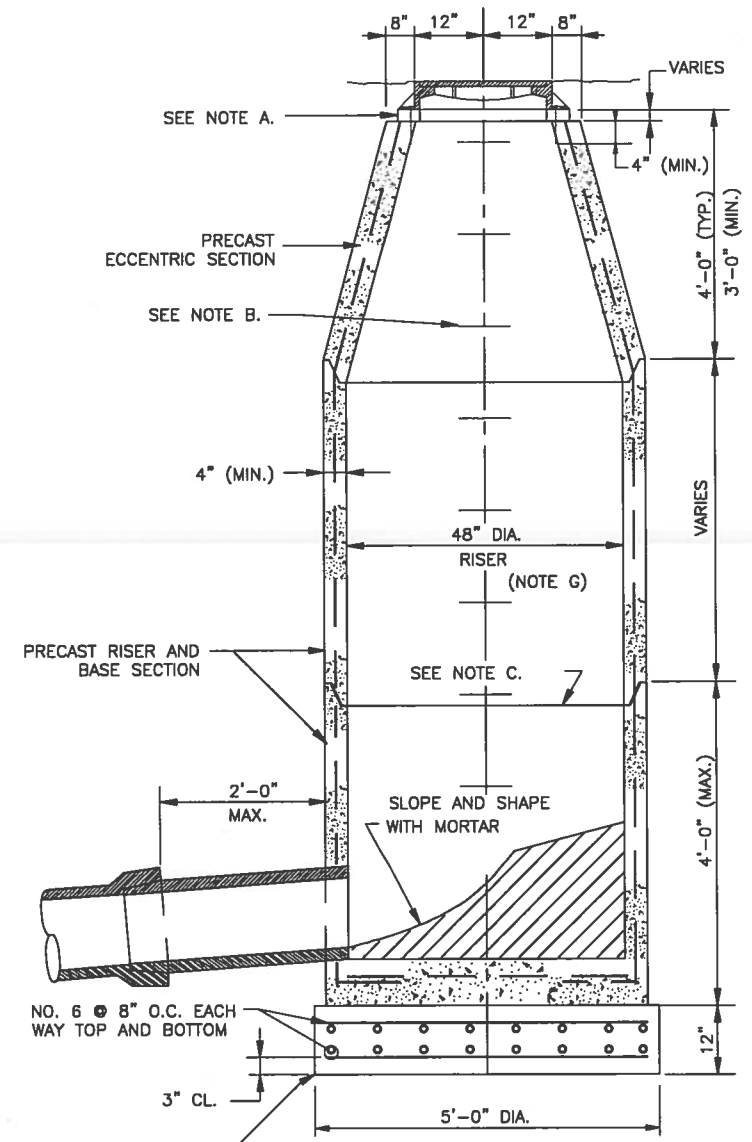
CITY OF ATLANTA, GEORGIA



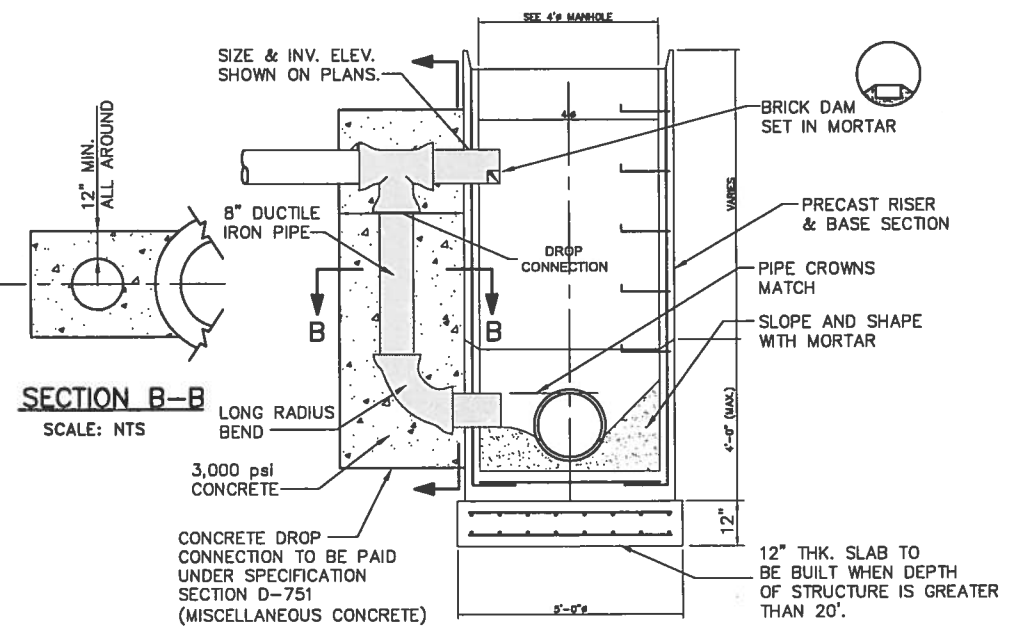
DEPARTMENT OF AVIATION  
PLANNING & DEVELOPMENT

**NOTES**

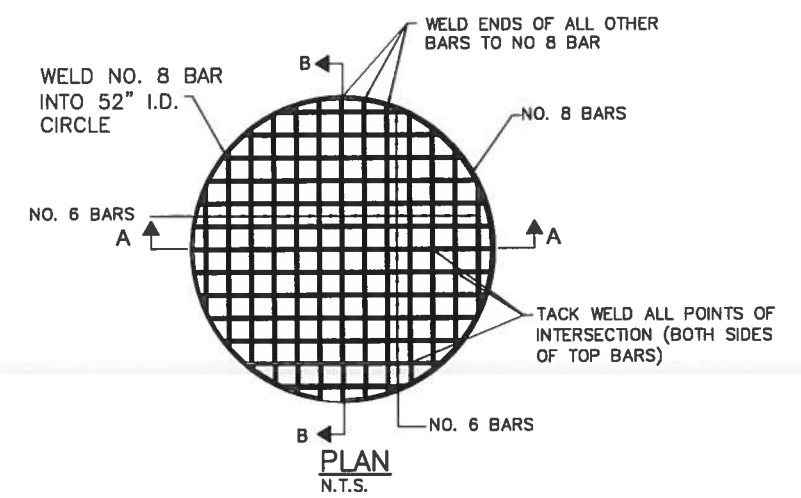
- A. 4" PRECAST CONCRETE ADJUSTMENT RINGS AS REQUIRED, WITH A MAXIMUM OF TWO RINGS PER MANHOLE. RINGS TO BE FURNISHED WITH 1" DIAMETER HOLES AT 180° FOR FRAME DOWELS.
- B. STANDARD STEPS SPACED AT 16" O.C. SHALL BE CAST IRON.
- C. JOINTS BETWEEN ALL PRECAST MANHOLE COMPONENTS SHALL BE O-RING, OR PROFILE TYPE.
- D. HEAVY DUTY MANHOLE FRAME AND COVER WITH NO. 4 STEEL DOWELS BEDDED IN STIFF MORTAR.
- E. ALL PRECAST BASE SECTIONS MUST BE FOUNDED ON A COMPACTED LAYER OF NO. 89 COARSE AGGREGATE AT LEAST 18" THICK.
- F. PRECAST MANHOLE RISERS AND BASE SHALL CONFORM TO THE PROVISIONS OF ASTM C-478.
- G. MANHOLE INSIDE DIAMETER MAY BE UP TO 5', AS SPECIFIED.



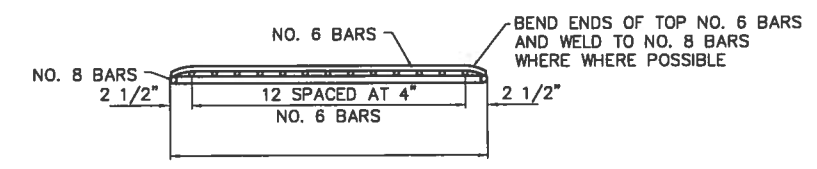
**4' DIAMETER MANHOLE  
FOR STORM AND SANITARY SEWER**  
NTS



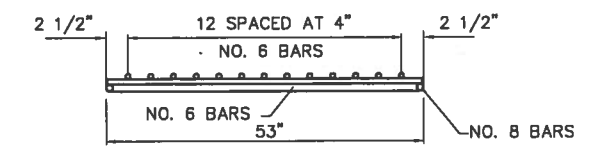
**4' DIAMETER DROP CONNECTION MANHOLE  
FOR SANITARY SEWER**  
NTS



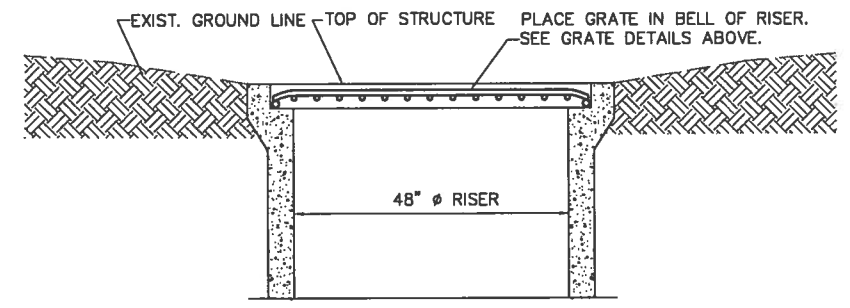
**PLAN**  
N.T.S.



**SECTION A-A**  
N.T.S.



**SECTION B-B**  
N.T.S.



**TYPE E INLET**  
NTS

**NOTE:**

- A. GRATE SHALL BE FABRICATED FROM STEEL REINFORCING BARS HAVING A YIELD STRENGTH OF 40,000 P.S.I.
- B. AFTER FABRICATION, APPLY 2 COATS OF SHOP PAINT.
- C. FOR CONTINUATION, SEE PRECAST STORM MANHOLE DETAILS.

NO.	DATE	BY	REVISION

STANDARD DETAILS

Standard Manhole  
and Type E Inlet

WBS NUMBER:	DRAWN BY: STAFF
FC NUMBER:	DESIGNED BY: STAFF
CONSULTANT PROJECT NUMBER:	CHECKED BY: STAFF
STANDARD SHEET NUMBER <b>STD-03-500</b>	APPROVED BY: STAFF
DATE:	
SCALE:	
SHEET NO.:	

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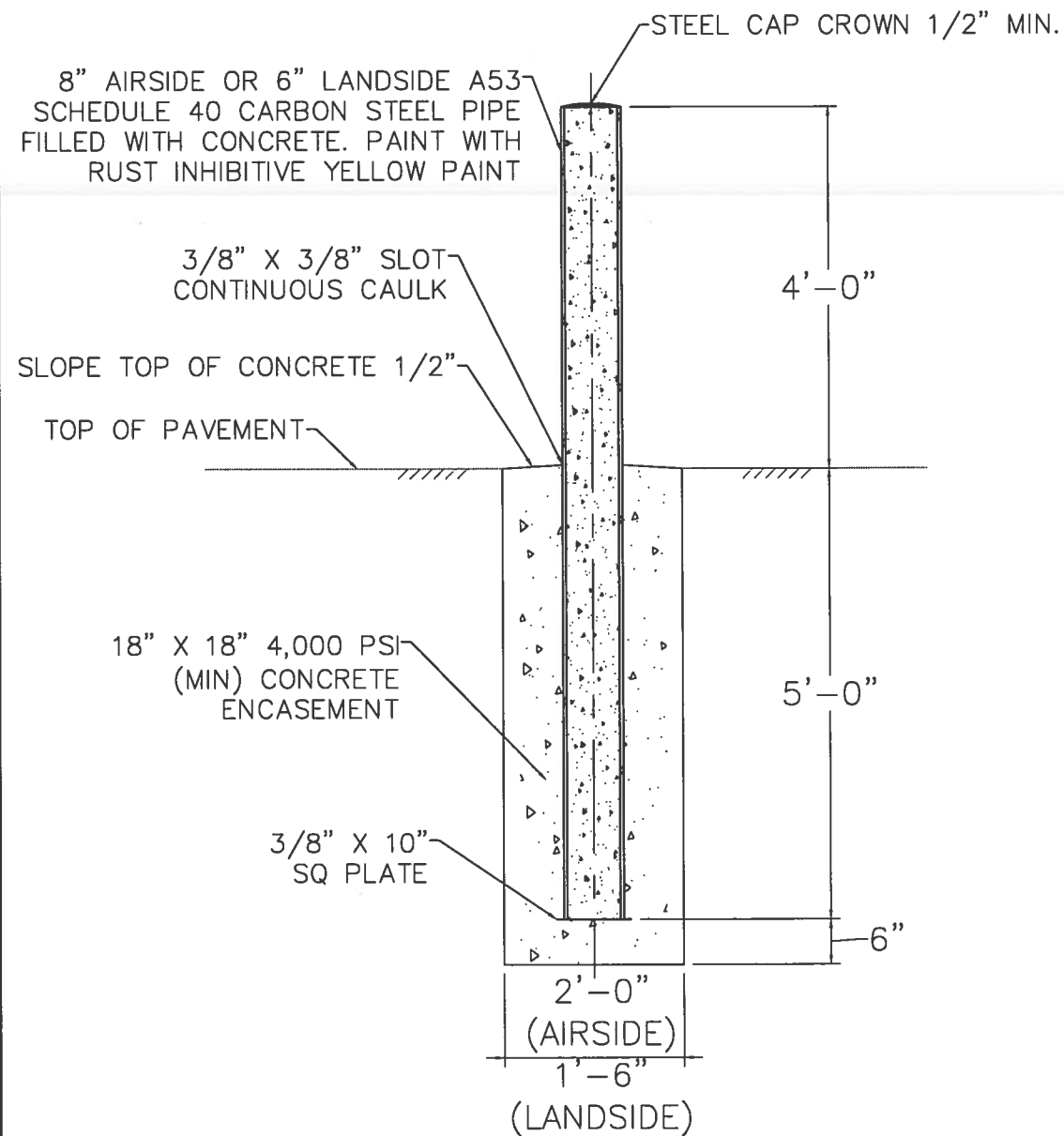
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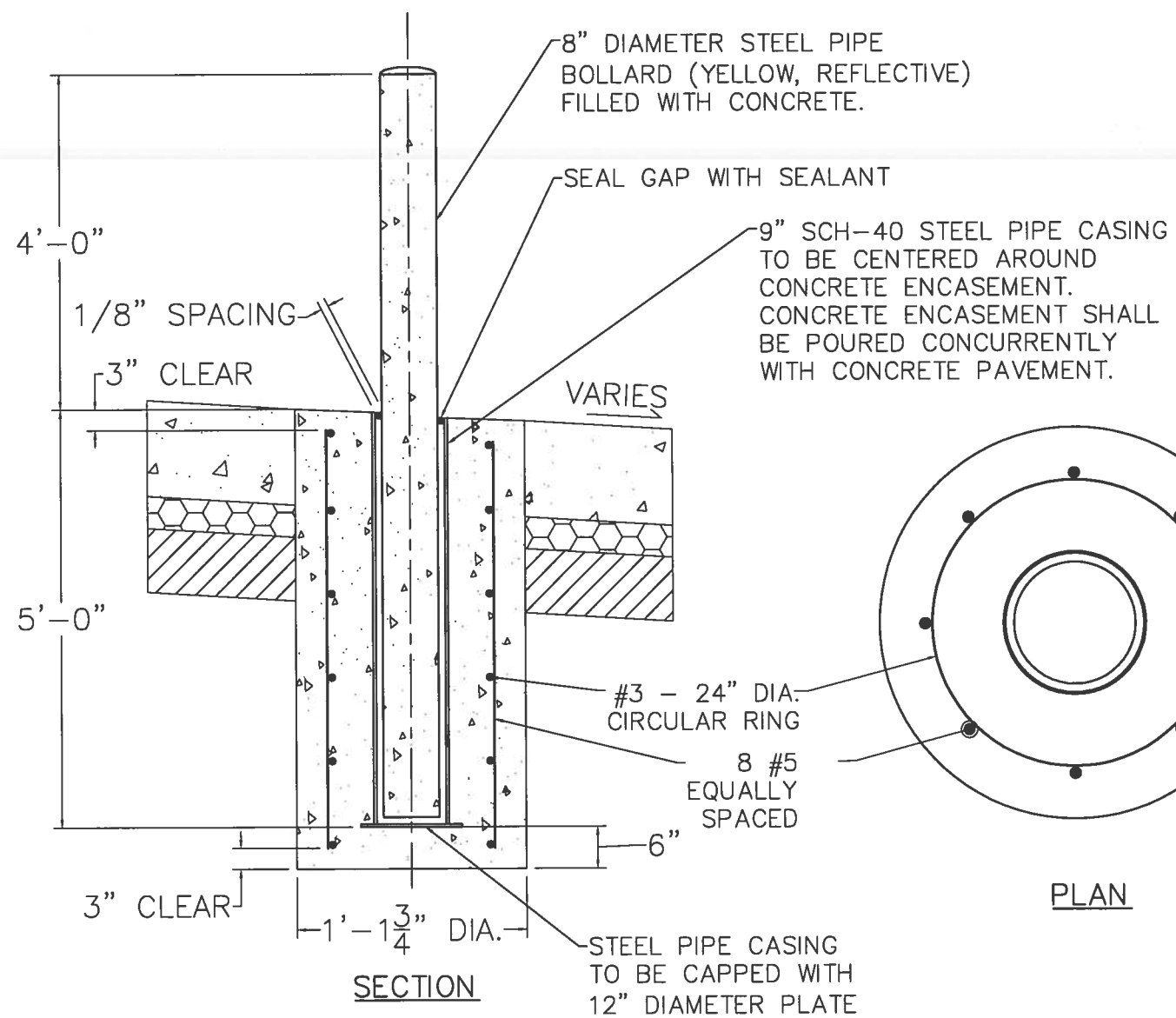
CITY OF ATLANTA, GEORGIA



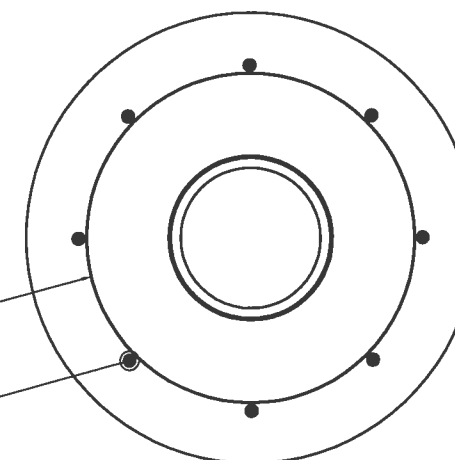
DEPARTMENT OF AVIATION  
PLANNING & DEVELOPMENT



CONCRETE FILLED STEEL BOLLARD  
NTS



REMOVABLE CONCRETE FILLED STEEL BOLLARD  
NTS



NO. DATE BY REVISION

STANDARD DETAILS

Bollard Details

WBS NUMBER:

DRAWN BY:

FC NUMBER:

DESIGNED BY:

CONSULTANT PROJECT NUMBER:

CHECKED BY:

STANDARD SHEET NUMBER

STD-03-600

APPROVED BY:

STAFF

DATE:

SCALE:

SHEET NO:

STANDARD DETAILS

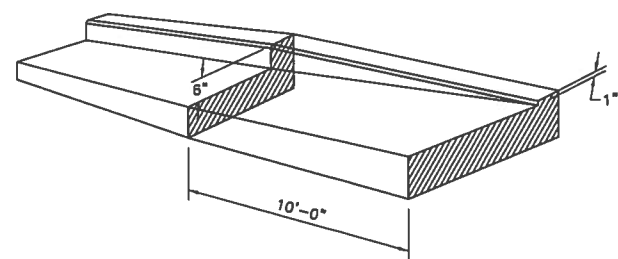
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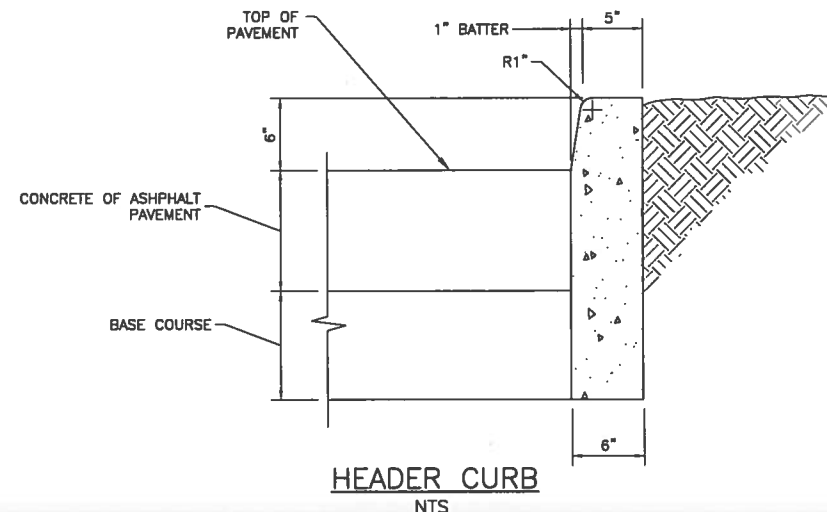
CITY OF ATLANTA, GEORGIA



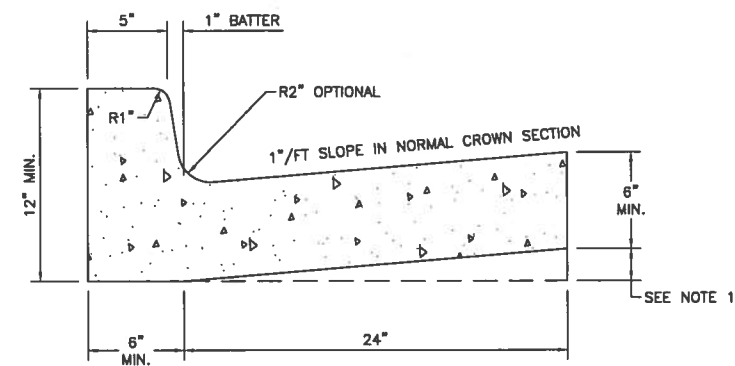
DEPARTMENT OF AVIATION  
PLANNING & DEVELOPMENT



**CURB & GUTTER  
HEIGHT TRANSITION**  
NTS

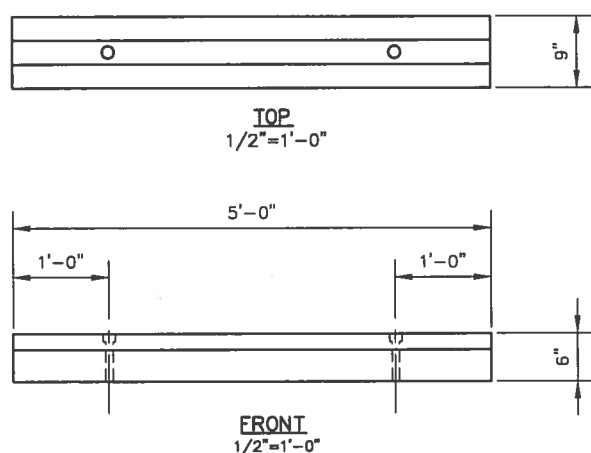


**HEADER CURB**  
NTS



**CURB & GUTTER**  
NTS

- GUTTER THICKNESS MAY BE INCREASED AT EDGE OF PAVEMENT TO MAKE BOTTOM OF GUTTER PARALLEL WITH PAVING BASE COURSE.
- CRUSHED AGGREGATE BASE COURSE SHALL EXTEND 6" BEYOND BACK OF CURB.



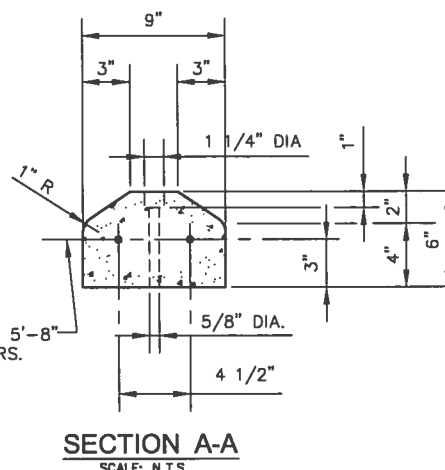
**CONCRETE BUMPER BLOCK**  
N.T.S.

**BUMPER BLOCK NOTES:**

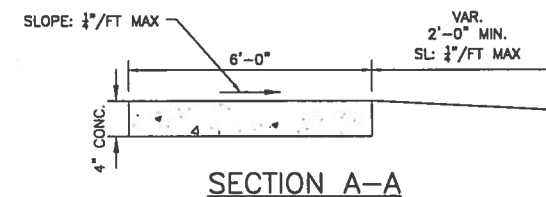
- BUMPER BLOCKS SHALL BE PLACED AS SHOWN IN ALL NEW HANDICAP STALLS, SEE DRAWING C-1.
- BUMPER BLOCKS SHALL BE ATTACHED TO THE PARKING SURFACE. DRIVE 2 #4 REINFORCEMENT BARS 3 FT. LONG THROUGH PERFORMED HOLES IN THE BUMPER BLOCKS. TOP OF REINFORCEMENT BARS SHALL BE FLUSH WITH THE TOP OF THE BUMPER BLOCKS.
- EXISTING BUMPER BLOCKS TO REMAIN IN PLACE ANY BUMPER BLOCKS THAT HAVE BECOME DETACHED DUE TO CONTRACTOR'S OPERATION SHALL BE REATTACHED IN THEIR FORMER POSITION AT NO ADDITIONAL COST TO THE CITY.
- BUMPER BLOCKS INSTALLED IN SPACES MARKED AS ADA ACCESSIBLE (HANDICAP SPACES) SHALL BE PAINTED BLUE.

**SIDEWALK NOTES:**

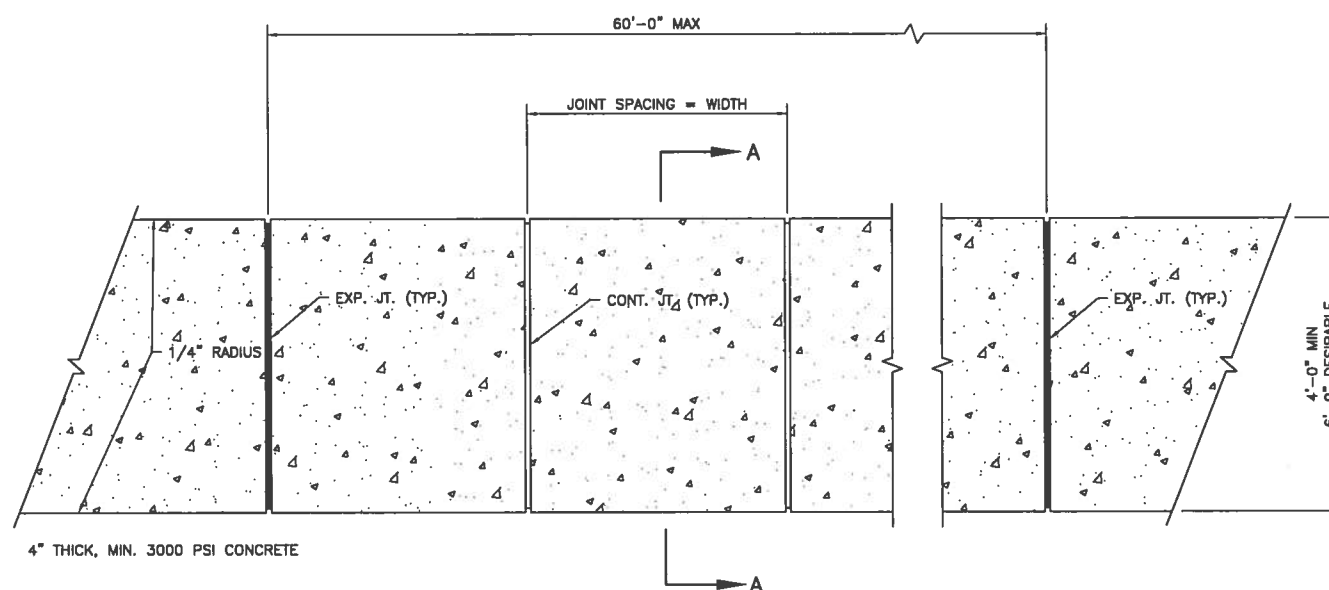
- CONCRETE TO BE PLACED 4" THICK AND FINISHED WITH TAMPS, WOOD FLOATS AND STIFF BRISTLE BROOM.
- TRANSVERSE CONTRACTION JOINTS SHALL BE PLACED AT 6' INTERVALS. ALL EDGES TO BE ROUNDED TO 1/4" RADIUS.
- 1/2" EXPANSION JOINTS SHALL BE PLACED, WITH RESILIENT FIBERBOARD JOINT FILLER, COLD APPLIED JOINT SEALER & BACKER ROD, WHERE SIDEWALKS TIE INTO A STRUCTURE OR TERMINATE AT CURB, RAMPS OR DRIVEWAY AND AT 60' INTERVALS.



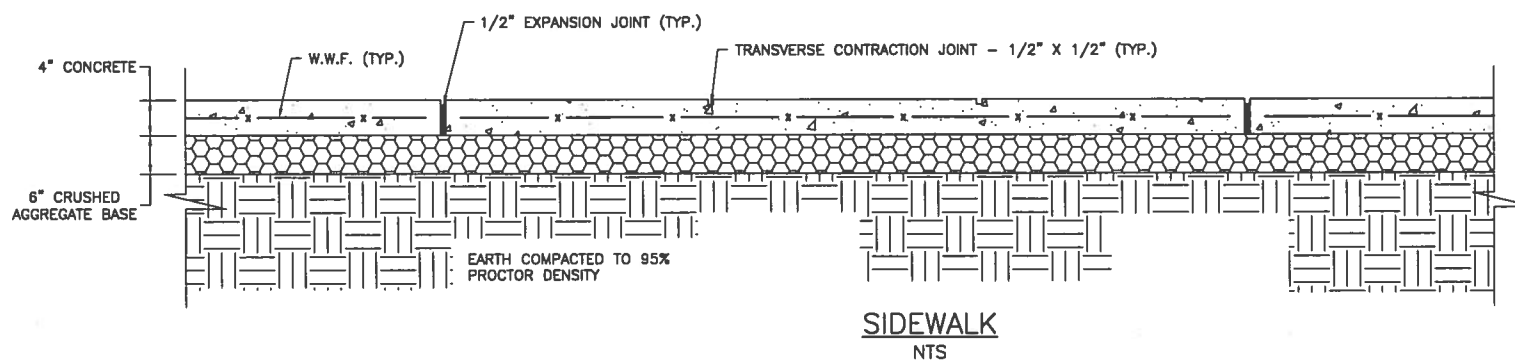
**SECTION A-A**  
SCALE: N.T.S.



**SECTION A-A**



4" THICK, MIN. 3000 PSI CONCRETE



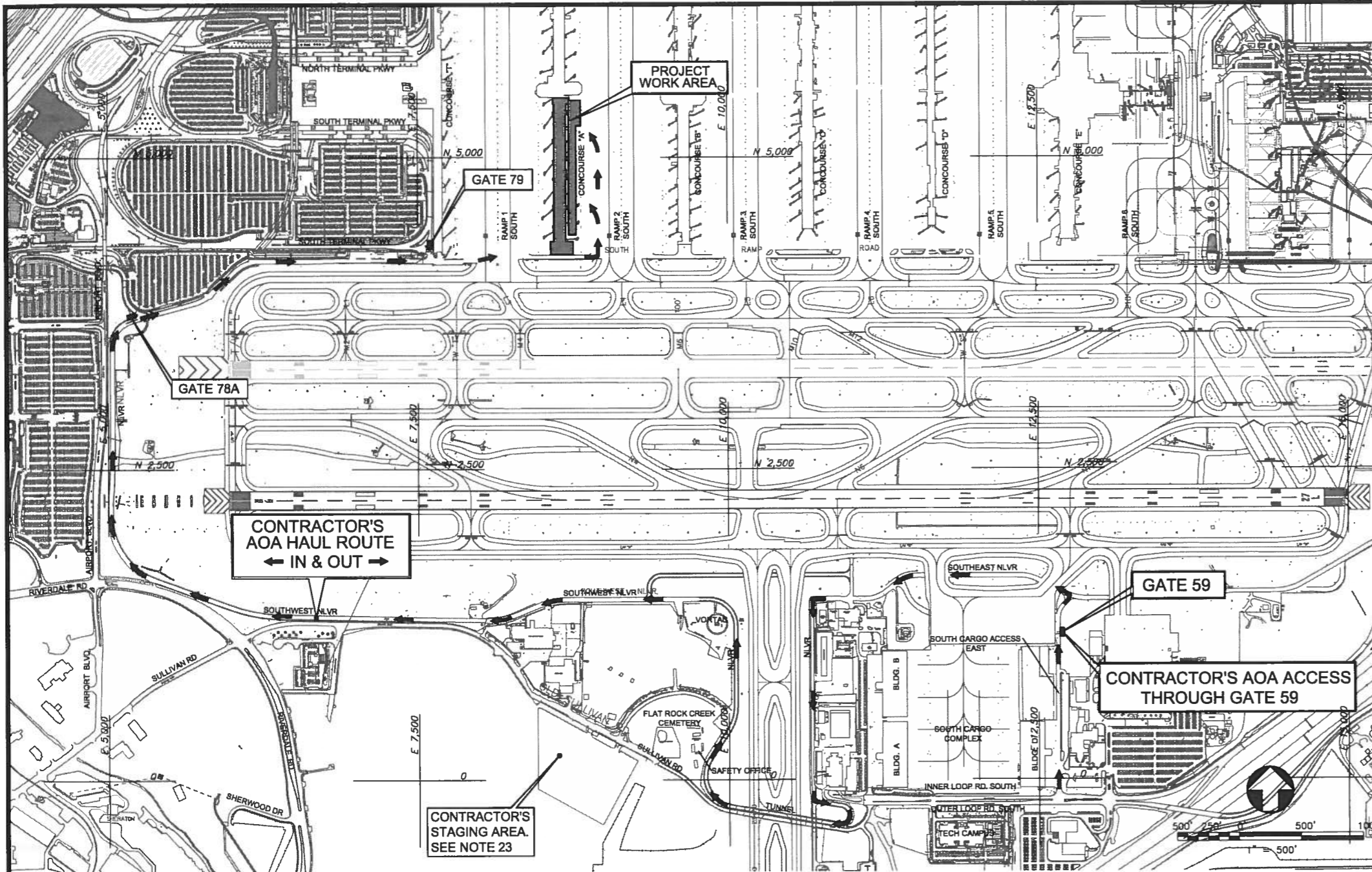
**SIDEWALK**  
NTS

NO.	DATE	BY	REVISION

STANDARD DETAILS

Miscellaneous Paving and  
Bumper Block Details

WBS NUMBER:	DRAWN BY: STAFF
FC NUMBER:	DESIGNED BY: STAFF
CONSULTANT PROJECT NUMBER:	CHECKED BY: STAFF
STANDARD SHEET NUMBER <b>STD-03-601</b>	APPROVED BY: STAFF
	DATE:
	SCALE:
	SHEET NO:



**SCOPE OF WORK**

1. CONSTRUCT NEW SEWER COLLECTOR LINE AND LATERALS IN THE AIRCRAFT RAMP.
2. RELOCATE PLUMBING WASTE LINES IN CONCOURSE A SOUTH TO CONNECT TO NEW APRON COLLECTOR.
3. ARCHITECTURAL FINISHES AS REQUIRED TO RESTORE FLOORS, WALLS AND ALL OTHERS DISTURBED AREAS IN THE BUILDING.

**GENERAL NOTES:**

1. ALL CONSTRUCTION WILL OCCUR WITHIN THE SECURITY IDENTIFICATION DISPLAY AREA (SIDA) AND AIRCRAFT OPERATIONS AREA (AOA). THIS IS A SECURE AREA WITH RESTRICTED ACCESS. THE CONTRACTOR WILL BE REQUIRED TO MEET ALL REQUIREMENTS FOR ENTERING AND OPERATING IN THIS AREA AT ALL TIMES. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE THEMSELVES WITH ALL REQUIREMENTS FOR ENTERING AND OPERATING IN THE SIDA AND AOA. FURTHER, IT WILL REMAIN THE CONTRACTOR'S RESPONSIBILITY FOR KEEPING ADVISED OF ANY CHANGES IN REQUIREMENTS AND TO ADHERE TO THE CURRENT REGULATIONS INCLUDING CURRENT AND FUTURE REGULATIONS FOR SECURITY BADGING AND FINGERPRINTING OF CONTRACTOR PERSONNEL.
2. ALL CONTRACTOR PERSONNEL AND SUBCONTRACTORS WORKING WITHIN THE SIDA/AOA SHALL HAVE AIRPORT SECURITY BADGES OR BE ESCORTED BY APPROVED CONTRACTOR BADGED ESCORT PERSONNEL. SIDA INCLUDES ALL AREAS WITHIN THE AIRPORT SECURITY FENCE. THE AOA INCLUDES AREAS IN OR WITHIN CLOSE PROXIMITY TO AIRCRAFT MOVEMENT AREAS. ESCORT PERSONNEL SHALL BE

APPROVED BY THE AIRPORT SECURITY OFFICE FOR WORKING WITHIN SIDA AND BY THE AIRPORT OPERATIONS OFFICE FOR WORKING WITHIN THE AOA. EACH ESCORT VEHICLE IS ALLOWED TO ESCORT A MAXIMUM OF TWO VEHICLES. ALL ESCORT PERSONNEL SHALL HAVE AIRPORT BADGES. DUE TO THE TIME NECESSARY TO COMPLETE THE BADGING AND FINGERPRINTING PROCESS, THE CONTRACTOR MAY START THE PROCESS AFTER CONTRACT AWARD AND BEFORE CONSTRUCTION NOTICE-TO-PROCEED.

3. ALL PERSONNEL DRIVING ON THE AOA ARE REQUIRED TO TAKE THE DOA DRIVER CLASS.

4. ALL CONTRACTOR PERSONNEL INCLUDING SUBCONTRACTORS ON THE PROJECT SHALL HAVE AND DISPLAY PROPERLY AN OWNER CONTROLLED INSURANCE PROGRAM (OCIP) SAFETY BADGE ISSUED BY THE DEPARTMENT OF AVIATION (DOA). THIS BADGE DISPLAYING A PHOTO OF THE EMPLOYEE SHALL BE WORN AT ALL TIMES WHILE ON THE AIRPORT. TO OBTAIN THIS BADGE EACH EMPLOYEE SHALL ATTEND A 2 HOUR SAFETY CLASS GIVEN A 7:00 AM EACH MORNING AT THE AIRPORT. THERE IS NOT A FEE FOR THE BADGE UNLESS A REPLACEMENT IS REQUIRED. FOR MORE INFORMATION ON SAFETY BADGES CONTACT EARL KELLER AT 404-569-0794.

5. THIS PROJECT IS WITHIN AN AREA OF CONTINUOUS LARGE JET AIRCRAFT OPERATIONS. ALL CONSTRUCTION ACTIVITIES WILL BE CONDUCTED IN A MANNER ACCEPTABLE TO THE CITY OF ATLANTA (CITY) AND THE FEDERAL AVIATION ADMINISTRATION (FAA) TO PROVIDE ACCEPTABLE LEVELS OF SAFETY FOR ALL AIRPORT OPERATIONS. PERIODIC MEETINGS WILL BE HELD TO COORDINATE THE ACTIVITIES OF THIS CONTRACT WITH OTHER AIRPORT OPERATIONS. ALSO THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PROTECT HIS EMPLOYEES, EQUIPMENT, AND WORK IN

PROGRESS FROM AIRCRAFT NOISE AND JET ENGINE BLAST.

6. THE CONTRACTOR SHALL BE REQUIRED TO OBTAIN AND MAINTAIN 2-WAY RADIOS EQUIPPED TO OPERATE ON THE CITY'S OPERATIONAL FREQUENCY. THIS FREQUENCY SHALL BE MONITORED AT ALL TIMES WHILE WORKING IN THE SIDA TO ASSURE PROPER COORDINATION AND SAFETY. THE CONTRACTOR SHALL SUPPLY ONE CITY OPERATIONAL RADIO PER CONSTRUCTION CREW AND ONE PER ESCORT VEHICLE. THESE RADIOS SHALL BECOME THE PROPERTY OF THE CITY UPON COMPLETION OF THE PROJECT.

7. CONTRACTOR SHALL CONFINE WORK AREA TO THE MINIMUM AMOUNT OF SPACE REQUIRED TO ACCOMPLISH THE ACTIVITY.

8. THE CONTRACTOR WILL BE REQUIRED TO PROVIDE AND MAINTAIN A MINIMUM OF TWO (2) NEW CELL PHONES OR HAND HELD 2-WAY RADIOS, COMPLETE WITH CARRYING CASE AND CHARGERS TO THE CITY. THIS EQUIPMENT SHALL BE MONITORED AT ALL TIMES TO ASSURE CONSTANT COMMUNICATION BETWEEN THE CITY AND THE CONTRACTOR. THE EQUIPMENT WILL BE RETURNED TO THE CONTRACTOR AT CONTRACT COMPLETION.

9. THE CONTRACTOR'S ACCESS ROUTES TO THE PROJECT SITES SHALL BE VIA GATE 59 AND THE NLVR AS SHOWN. VISITORS OR ANY INDIVIDUALS WHO ARE NOT BADGED SHALL BE ESCORTED AT ALL TIMES WHILE IN THE SIDA IN ACCORDANCE WITH AIRPORT SECURITY REQUIREMENTS.

10. ALL EXCESS MATERIAL PRODUCED BY THE CONTRACTOR'S OPERATIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND DISPOSED OF OFF AIRPORT PROPERTY AT NO COST TO THE OWNER.

11. THE CONTRACTOR SHALL CONTROL DUST AND DEBRIS FROM HIS OPERATION TO A LEVEL ACCEPTABLE TO THE CITY AT ALL TIMES. THE CONTRACTOR SHALL MAINTAIN ACCESS TO VACUUM SWEEPERS, WATERING TRUCKS AND OTHER EQUIPMENT NECESSARY TO CONTROL DUST AT ALL TIMES AT THE PROJECT SITE. ALL METHODS FOR CONTROLLING DUST SHALL BE SUBJECT TO THE CITY'S APPROVAL. DUST CONTROL SHALL BE STRICTLY MONITORED DUE TO ITS IMPACT ON AIRCRAFT SAFETY. FAILURE TO PROPERLY CONTROL DUST OR TO RESPOND TO ANY REQUESTED TO DO SO WILL RESULT IN CONSTRUCTION ACTIVITIES BEING STOPPED.

12. CONTRACTOR SHALL COOPERATE WITH EXISTING AND FUTURE CONTRACTORS WORKING IN THE AREA AND AT ALL TIMES WILL COORDINATE THEIR EFFORTS.

13. A DETAILED PLAN OF PROCEDURES OF INSTALLATION AND MAINTENANCE OF SECURITY THE CONTRACTOR PROPOSES TO USE WILL BE SUBMITTED TO THE CITY FOR APPROVAL PRIOR TO THE START OF ANY WORK UNDER THIS CONTRACT. COMPLIANCE WITH THE APPROVED PLAN WILL BE STRICTLY ENFORCED. THE CITY MAY REQUIRE CHANGES TO THE ESTABLISHED PLAN WHENEVER IT IS NECESSARY FOR THE PROTECTION OF AIRPORT SECURITY AND OPERATIONS.

14. THE CONTRACTOR SHALL COMPLY WITH ALL LOCAL STATE AND FEDERAL LAWS AND REGULATIONS THAT ARE PERTINENT TO THIS WORK. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN AND PAY ALL COSTS ASSOCIATED WITH THE PERMITS AND LICENSES REQUIRED TO ACCOMPLISH THIS WORK.

15. DURING ALL PHASES OF OPERATION THE CONTRACTOR'S FIRST RESPONSIBILITY SHALL BE SAFETY. THUS, HAUL TRUCKS MUST BE COVERED AND ANY SPILLAGE OR DEBRIS BUILDUP PROMPTLY REMOVED FROM ALL HAUL ROUTES ON AIRPORT OR ON PUBLIC ROADS. THE CONTRACTOR SHALL ALSO BE REQUIRED TO KEEP THE ROADWAYS FREE OF ALL EQUIPMENT, EXCEPT FOR THOSE EXCLUSIVELY REQUIRED IN THE CONTRACTOR'S WORK AREA.
16. FAA REGULATION FOR USE OF CRANES AND OTHER ELEVATED EQUIPMENT WILL BE STRICTLY ENFORCED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING ALL NECESSARY FORMS TO THE CITY AND OBTAINING FAA APPROVAL PRIOR TO CONTRACTOR'S USE OF ANY ELEVATED EQUIPMENT.
17. ALL COORDINATES SHOWN ON THE PLANS ARE IN THE H-JAIA GRID COORDINATE SYSTEM.
18. WORK AROUND THE EXISTING UNDERGROUND UTILITIES SHALL BE PERFORMED IN A MANNER THAT WILL AVOID DAMAGE TO THE UTILITIES. PRIOR TO COMMENCING WORK, CONTRACTOR SHALL ACCURATELY LOCATE ABOVE AND BELOW GROUND UTILITIES WHICH MAY BE AFFECTED BY THE WORK AND PROTECT ALL UTILITIES NOT DESIGNATED FOR REMOVAL, RELOCATION, OR REPLACEMENT IN THE COURSE OF CONSTRUCTION. PROVIDE 72 HOURS OF ADVANCE NOTICE TO THE UTILITY OWNERS INCLUDING DOA OPERATIONS (404-530-6620), DOA ENGINEERING (404-530-5500), AND FAA (404-669-1260) PRIOR TO BEGINNING CONSTRUCTION IN THE VICINITY TO THE EXISTING UTILITY LINE. FOR EXISTING PUBLIC UTILITY LOCATION ASSISTANCE CALL THE UNDERGROUND UTILITIES PROTECTION CENTER (UPC) AT 1-800-282-7411 AND FAA AT 404-689-1280.
19. IF NIGHT WORK IS PLANNED, THE CONTRACTOR SHALL COOPERATE WITH THE FAA, DOA, AND RAMP CONTROL WHEN ALIGNING HIS CONSTRUCTION FLOOD LIGHTS SO AS NOT TO INTERFERE WITH AIRCRAFT PILOTS OR AIR TRAFFIC CONTROLLERS VISION.
20. AT NO TIME SHALL EQUIPMENT BE LEFT UNATTENDED ON THE CONSTRUCTION SITE UNLESS APPROVED BY THE ENGINEER. EQUIPMENT SHALL BE KEPT IN DESIGNATED STAGING AREAS.
21. THE CONTRACTOR SHALL START AND COMPLETE ALL WORK INCLUDING CLEANUP OF FOREIGN OBJECT DEBRIS IN EACH AREA PRIOR TO MOVING TO THE NEXT AREA. CLEANUP DURING THE PROGRESS OF THE WORK IN AREAS CRITICAL TO AIRLINE OPERATIONS SHALL BE IMPLEMENTED AS DIRECTED BY THE ENGINEER.
22. UNINTENDED DAMAGE TO ANY EXISTING STRUCTURE SHALL BE REPAIRED IMMEDIATELY BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CITY.
23. THE CONTRACTOR WITH THE APPROVAL OF THE CITY SHALL ESTABLISH THE EXACT LIMITS OF THE STAGING AREAS FOR MATERIAL STOCKPILING AND OFFICE TRAILERS IN THE AREA SHOWN. THIS IS A COMMON USE STAGING AREA, AND IS PUBLICLY ACCESSIBLE. ALL REQUIRED UTILITIES FOR THE CONTRACTOR'S STAGING AREA SHALL BE ARRANGED AND PROMPTLY PAID FOR BY THE CONTRACTOR DIRECTLY WITH THE APPROPRIATE UTILITY AGENCY. UTILITY ARRANGEMENTS SHALL BE SUBJECT TO THE APPROVAL OF THE CITY. NO SEPARATE PAYMENT SHALL BE MADE FOR ANY ITEM REQUIRED FOR THE CONTRACTOR TO ENCLOSE AND SET UP HIS OPERATIONAL AREAS. THE CONTRACTOR SHALL RESTORE THE SITE TO ITS ORIGINAL CONDITION, TO THE SATISFACTION OF THE CITY, UPON COMPLETION OF THE CONTRACT WORK. GRASSING AND/OR REPLACEMENT OF GRAVEL IS PART OF THE SITE RESTORATION.

**GENERAL WORK PERIODS**

- ALL CONSTRUCTION ON THIS PROJECT WILL OCCUR IN AREAS THAT MUST REMAIN IN FULL TIME AIRLINE OPERATION. FOLLOWING IS A LISTING OF CONSTRUCTION PHASING REQUIREMENTS THAT WILL ALLOW THE VARIOUS PARTS OF THE JOB TO PROCEED, WHILE MINIMIZING OPERATIONAL IMPACTS TO THE AIRLINES.
- A. WORK ON THE RAMP**
1. CONSTRUCTION WILL GENERALLY BE AT NIGHT, BETWEEN THE HOURS OF 11:30 P.M. TO 5:30A.M.
  2. AT THE END OF THE WORK SHIFT, THE CONSTRUCTION SITE AT EACH GATE SHALL BE SURROUNDED WITH CONCRETE JERSEY BARRIERS, TO ENSURE SAFETY FOR AIRLINE/AIRPORT PERSONNEL AND EQUIPMENT.
  3. WORK AT GATE A-17 WILL REQUIRE COMPLETE CLOSURE OF THIS GATE. THE WORK SHALL PROCEED, 24 HOURS PER DAY, UNTIL PAVEMENT IS RESTORED AND THE AREA TURNED BACK OVER TO THE AIRLINES.
- B. WORK INSIDE THE BUILDING FOOTPRINT**
1. CONSTRUCTION WILL GENERALLY BE AT NIGHT, BETWEEN THE HOURS OF 11:30 P.M. TO 5:30 A.M.
  2. OPEN TRENCHES THROUGH THE FLOOR MUST BE SAFELY PLATED OVER AT THE END OF A NIGHTLY WORK SHIFT.
  3. SEE ARCHITECTURAL PLANS AND ADDITIONAL RESTRICTIONS ON WORK INSIDE THE BUILDING FOOTPRINT.



CITY OF ATLANTA, GEORGIA



**DEPARTMENT OF AVIATION  
PLANNING & DEVELOPMENT**

NO.	DATE	BY	REVISION

**STANDARD DETAILS**

**General Notes and Construction Control Plan Airside**

**(EXAMPLE)**

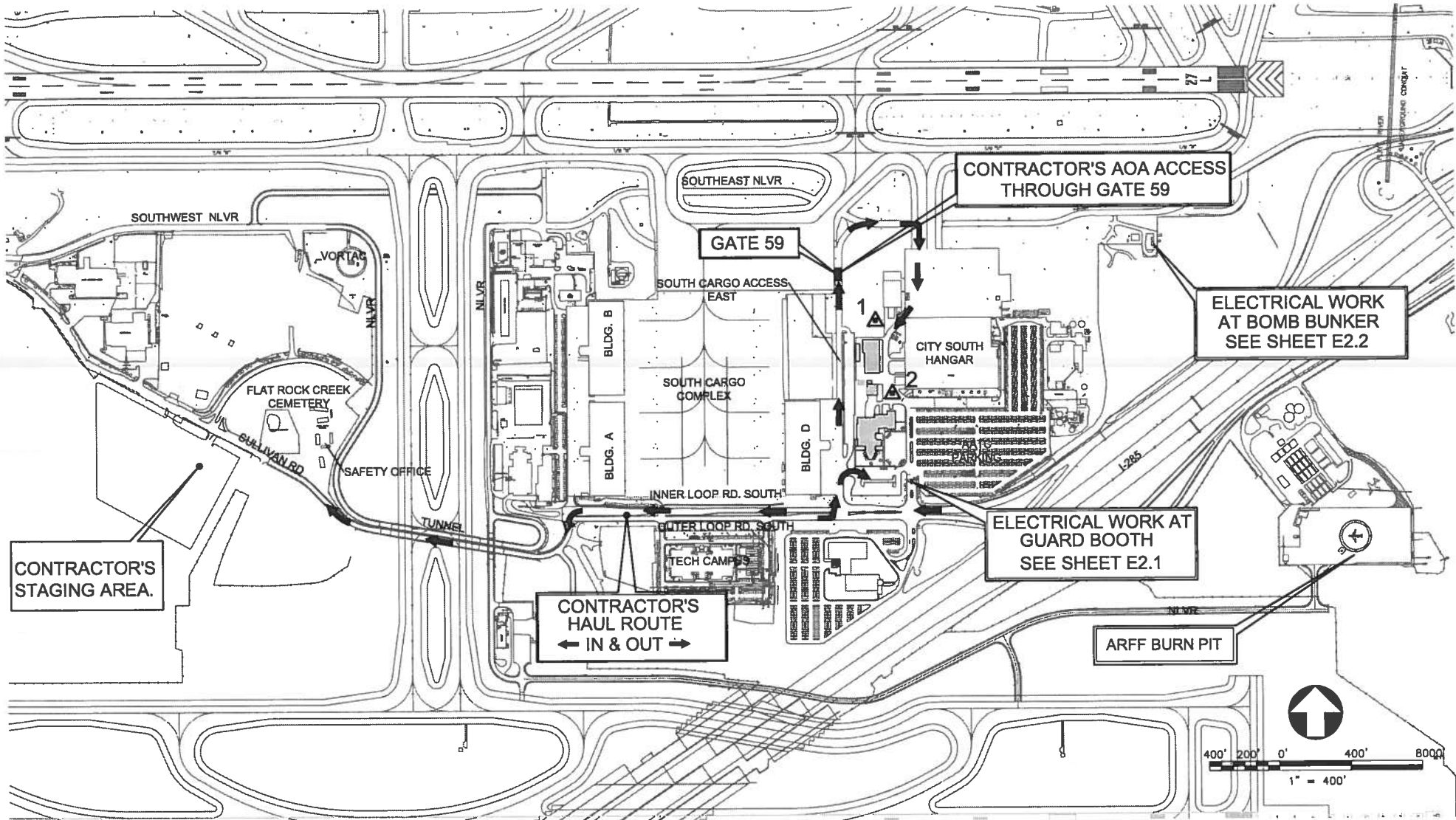
WBS NUMBER:	DRAWN BY:
FC NUMBER:	DESIGNED BY:
CONSULTANT PROJECT NUMBER:	CHECKED BY:
STANDARD SHEET NUMBER:	APPROVED BY:
STD-03-700	STAFF
DATE:	STAFF
SCALE:	STAFF
SHEET NO:	



CITY OF ATLANTA, GEORGIA



DEPARTMENT OF AVIATION  
PLANNING & DEVELOPMENT



**GENERAL NOTES**

1. ALL CONTRACTOR PERSONNEL INCLUDING SUBCONTRACTORS ON THE PROJECT SHALL HAVE AND DISPLAY PROPERLY AN OWNER CONTROLLED INSURANCE PROGRAM (OCIP) SAFETY BADGE ISSUED BY THE DEPARTMENT OF AVIATION (DOA). THIS BADGE DISPLAYING A PHOTO OF THE EMPLOYEE SHALL BE WORN AT ALL TIMES WHILE ON THE AIRPORT. TO OBTAIN THIS BADGE EACH EMPLOYEE SHALL ATTEND A 2 HOUR SAFETY CLASS GIVEN A 7:00 AM EACH MORNING AT THE AIRPORT. THERE IS NOT FEE FOR THE BADGE UNLESS A REPLACEMENT IS REQUIRED. FOR MORE INFORMATION ON SAFETY BADGES CONTACT EARL KELLER AT 404-569-0794.

2. CONTRACTOR SHALL CONFINE WORK AREA TO THE MINIMUM AMOUNT OF SPACE REQUIRED TO ACCOMPLISH THE ACTIVITY.

3. THE CONTRACTOR WILL BE REQUIRED TO PROVIDE AND MAINTAIN A MINIMUM OF TWO (2) NEW CELL PHONES OR HAND HELD 2-WAY RADIOS, COMPLETE WITH CARRYING CASE AND CHARGERS TO THE CITY, EQUIPPED TO OPERATE ON THE CONTRACTOR'S FREQUENCY. THIS FREQUENCY SHALL ALSO BE MONITORED AT ALL TIMES TO ASSURE CONSTANT COMMUNICATION BETWEEN THE CITY AND THE CONTRACTOR. THESE RADIOS WILL BE RETURNED TO THE CONTRACTOR AT CONTRACT COMPLETION.

4. ALL EXCESS MATERIAL PRODUCED BY THE CONTRACTOR'S OPERATIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND DISPOSED OF OFF AIRPORT PROPERTY AT NO COST TO THE OWNER.

5. THE CONTRACTOR SHALL CONTROL DUST AND DEBRIS FROM HIS OPERATION TO A LEVEL ACCEPTABLE TO THE CITY AT ALL TIMES. THE CONTRACTOR SHALL MAINTAIN ACCESS TO VACUUM SWEEPERS, WATERING TRUCKS AND OTHER EQUIPMENT NECESSARY TO CONTROL DUST AT ALL TIMES AT THE PROJECT SITE. ALL METHODS FOR CONTROLLING DUST SHALL BE SUBJECT TO THE CITY'S APPROVAL. DUST CONTROL SHALL BE STRICTLY MONITORED DUE TO ITS IMPACT ON AIRCRAFT SAFETY. FAILURE TO PROPERLY CONTROL DUST OR TO RESPOND TO ANY REQUESTED TO DO SO WILL RESULT IN CONSTRUCTION ACTIVITIES BEING STOPPED.

6. ALL COORDINATES SHOWN ON THE PLANS ARE IN THE H-JAIA GRID COORDINATE SYSTEM.

7. CONTRACTOR SHALL COOPERATE WITH EXISTING AND FUTURE CONTRACTORS WORKING IN THE AREA AND AT ALL TIMES WILL COORDINATE THEIR EFFORTS. POTENTIAL PROJECTS FOR COORDINATION ARE: SEE RELATED PROJECT ABOVE.

8. A DETAILED PLAN OF PROCEDURES OF INSTALLATION AND MAINTENANCE OF SECURITY THE CONTRACTOR PROPOSES TO USE WILL BE SUBMITTED TO THE CITY FOR APPROVAL PRIOR TO THE START OF ANY WORK UNDER THIS CONTRACT. COMPLIANCE WITH THE APPROVED PLAN WILL BE STRICTLY ENFORCED. THE CITY MAY REQUIRE CHANGES TO THE ESTABLISHED PLAN WHENEVER IT IS NECESSARY FOR THE PROTECTION OF AIRPORT SECURITY AND OPERATIONS.

9. THE CONTRACTOR SHALL COMPLY WITH ALL LOCAL STATE AND FEDERAL LAWS AND REGULATIONS THAT ARE PERTINENT TO THIS WORK. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN AND PAY ALL COSTS ASSOCIATED WITH THE PERMITS AND LICENSES REQUIRED TO ACCOMPLISH THIS WORK.

10. DURING ALL PHASES OF OPERATION THE CONTRACTOR'S FIRST RESPONSIBILITY SHALL BE SAFETY. THUS, HAUL TRUCKS MUST BE COVERED AND ANY SPILLAGE OR DEBRIS BUILDUP PROMPTLY REMOVED FROM ALL HAUL ROUTES ON AIRPORT OR ON PUBLIC ROADS. THE CONTRACTOR SHALL ALSO BE REQUIRED TO KEEP THE ROADWAYS FREE OF ALL EQUIPMENT, EXCEPT FOR THOSE EXCLUSIVELY REQUIRED IN THE CONTRACTOR'S WORK AREA.

11. FAA REGULATION FOR USE OF CRANES AND OTHER ELEVATED EQUIPMENT WILL BE STRICTLY ENFORCED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING ALL NECESSARY FORMS TO THE CITY AND OBTAINING FAA APPROVAL PRIOR TO CONTRACTOR'S USE OF ANY ELEVATED EQUIPMENT.

12. WORK AROUND THE EXISTING UNDERGROUND UTILITIES SHALL BE PERFORMED IN A MANNER THAT WILL AVOID DAMAGE TO THE UTILITIES. PRIOR TO COMMENCING WORK, CONTRACTOR SHALL ACCURATELY LOCATE ABOVE AND BELOW GROUND UTILITIES WHICH MAY BE AFFECTED BY THE WORK AND PROTECT ALL UTILITIES NOT DESIGNATED FOR REMOVAL, RELOCATION, OR REPLACEMENT IN THE COURSE OF CONSTRUCTION. PROVIDE 72 HOURS OF ADVANCE NOTICE TO THE UTILITY OWNERS INCLUDING DOA OPERATIONS (404-530-6620), DOA ENGINEERING (404-530-5500), AND FAA (404-669-1260) PRIOR TO BEGINNING CONSTRUCTION IN THE VICINITY TO THE EXISTING UTILITY LINE. FOR EXISTING PUBLIC UTILITY LOCATION ASSISTANCE CALL THE UNDERGROUND UTILITIES PROTECTION CENTER (UPC) AT 1-800-282-7411 AND FAA AT 404-689-1260.

13. IF NIGHT WORK IS PLANNED, THE CONTRACTOR SHALL COOPERATE WITH THE FAA AND THE DOA WHEN ALIGNING HIS CONSTRUCTION FLOOD LIGHTS SO AS NOT TO INTERFERE WITH AIRCRAFT PILOTS OR AIR TRAFFIC CONTROLLERS VISION.

14. AT NO TIME SHALL EQUIPMENT BE LEFT UNATTENDED ON THE CONSTRUCTION SITE UNLESS APPROVED BY THE ENGINEER. EQUIPMENT SHALL BE KEPT IN DESIGNATED STAGING AREAS.

15. TRAFFIC ON PROJECT AREA ROADS SHALL BE MAINTAINED WITHOUT INTERRUPTION THROUGHOUT THE CONSTRUCTION PERIOD. AS REQUIRED, THE CONTRACTOR SHALL PROVIDE SIGNS TO DIRECT TRAFFIC AND ENSURE SAFETY OF ALL USERS. THE CONTRACTOR SHALL MEET THE REQUIREMENTS OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND SUBMIT TRAFFIC CONTROL SHOP DRAWINGS TO ILLUSTRATE THE PROPOSED PLAN.

16. UNINTENDED DAMAGE TO ANY EXISTING STRUCTURE SHALL BE REPAIRED IMMEDIATELY BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CITY.

17. CONTRACTOR SHALL PREPARE AND SUBMIT AN EROSION CONTROL PLAN, SUFFICIENT TO STABILIZE THIS SITE UNTIL THE NEXT PHASE OF CONSTRUCTION WHICH WILL BE CARGO BUILDING C AND TRUCK STAGING. SEE SECTION P-156 OF THE SPECIFICATIONS.

18. THE EXACT LIMITS OF THE CONTRACTORS STAGING AREA FOR MATERIAL STOCKPILING AND OFFICE TRAILERS SHALL BE ESTABLISHED BY THE CONTRACTOR WITH APPROVAL OF THE CITY IN THE AREA SHOWN. THE PUBLIC ACCESS AREA SHALL BE ENCLOSED BY TEMPORARY SECURITY FENCING ACCEPTABLE TO THE CITY. ALL REQUIRED UTILITIES FOR THE CONTRACTOR'S STAGING AREA SHALL BE ARRANGED AND PROMPTLY PAID FOR BY THE CONTRACTOR DIRECTLY WITH THE APPROPRIATE AGENCY. UTILITY ARRANGEMENTS SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER. NO SEPARATE PAYMENTS SHALL BE MADE FOR ANY ITEM REQUIRED FOR THE CONTRACTOR TO ENCLOSE AND SETUP HIS OPERATIONAL AREA. ADDITIONALLY, THE CONTRACTOR SHALL RESTORE THE SITE TO ITS ORIGINAL CONDITION UPON COMPLETION OF THE PROJECT.

NO.	DATE	BY	REVISION

STANDARD DETAILS

General Notes and  
Construction Control Plan  
Landside

(EXAMPLE)

WBS NUMBER: .	DRAWN BY: STAFF
FC NUMBER: .	DESIGNED BY: STAFF
CONSULTANT PROJECT NUMBER: .	CHECKED BY: STAFF
STANDARD SHEET NUMBER STD-03-701	APPROVED BY: STAFF
DATE:	
SCALE:	
SHEET NO:	

**Hartsfield-Jackson Atlanta International Airport**  
City of Atlanta  
Department of Aviation  
Bureau of Planning & Development

# **Tenant New Construction/Modifications Design Guidelines – Structural**

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09/12/2014	Revised for Tenant Work only
Last Revised Date	Description of Changes
<b>Revisions</b>	

## Design Guidelines Structural

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## Design Guidelines Structural

### 1.0 Purpose

The purpose of this document is to outline the minimum structural engineering requirements for new construction and/or modifications related to Tenant submitted projects at the City of Atlanta's Hartsfield-Jackson Atlanta International Airport (H-JAIA).

### 1.1 General

All design work shall be performed in accordance with generally accepted professional principles and practices for structural engineering and in compliance with all applicable Department of Aviation Design Standards, Federal, State and City of Atlanta Design Codes, Standards and Regulations.

#### 1.1.1 Applicable Codes

The requirements of the following codes shall form the minimum criteria for structural design projects at Hartsfield-Jackson Atlanta International Airport. Where there may be conflicting requirements in the cited coded, the most stringent provision, as determined by the airport's Planning and Development Division shall be applied.

- 1.1.1.1 International Building Code, 2012 with all Georgia Amendments shall govern the design of all structures except bridges.
- 1.1.1.2 Federal Aviation Administration Advisory Circular 150/5300-13, Airport Design requirements.
- 1.1.1.3 American Association of State Highway & Transportation Officials LRFD Bridge Design Specifications, 4<sup>th</sup> Edition with 2007 through 2009 Interim Revisions shall apply for all bridge design unless expressly agreed otherwise by the Department prior to initiating design activities.
- 1.1.1.4 The American Concrete Institute's ACI 318-11, "Building Code Requirements for Structural Concrete."
- 1.1.1.5 The American Institute of Steel Construction's ANSI/AISC 360-10 (current printing), "Specification for Structural Steel Buildings."
- 1.1.1.6 The Masonry Society, American Concrete Institute and American Society of Civil Engineers joint standards "TMS 402-11/ACI 530-11/ASCE 5-11, Building Code Requirements for Masonry Structures" and "TMS 602-11/ACI 530.1-11/ASCE 6-11, Specification for Masonry Structures."
- 1.1.1.7 The American Iron & Steel Institute's "NAS-01, North American Standard for the Design of Cold-formed Steel Structural Members, including 2004 Supplement."
- 1.1.1.8 Other materials used in construction shall be governed by the applicable standard identified in the IBC 2012.

#### 1.1.2 Modifying Existing Structures

- 1.1.2.1 The installation or relocation of heavy equipment shall be evaluated and endorsed by a Structural Engineer.
- 1.1.2.2 Proposed improvements that require partial or complete, severing, altering or removal of structural members shall require evaluation and design by a Structural Engineer.



- 1.1.2.3 Walls proposed for partial or full demolition shall be evaluated by a Structural Engineer to determine whether they are load-bearing. If they are, drawings shall indicate the sequence of operations required to avoid collapse.
- 1.1.2.4 Modifications to existing structures shall not be made without prior approval by the Department of Aviation.
- 1.1.3 Floor, Wall and Roof Penetrations
  - 1.1.3.1 Proposed penetrations and openings for existing floors, walls and roofs shall be located where there are no impacts to existing concrete reinforcements. Contractor shall be required to locate existing reinforcements prior to commencing coring operations.
  - 1.1.3.2 If reinforcements must be severed due to the size of the opening or its required location, evaluation and design shall be made by a Structural Engineer.
  - 1.1.3.3 Proposed rectangular openings in existing walls, floor slabs and roof shall be detailed with required core holes of sufficient diameter at each corner to prevent over cut upon installation.
  - 1.1.3.4 Tenant shall be responsible for reinstating any existing wall, floor and roof penetrations and/or openings in the space, which are to be abandoned (See Architectural Guidelines for penetration repair details)
- 1.1.4 Design Calculations
  - 1.1.4.1 Basis-of-design calculations shall be prepared for any project that propose modification to an existing joist, beam, column or foundation, and shall demonstrate (the airport's satisfaction) that designed alterations do not degrade overall structural capacity to resist code prescribed loads.
  - 1.1.4.2 Calculations shall be neatly presented and include sketches proportioned to reflect relative scale, illustrating design intent. Provide linkage in the calculations for all primary structural members proposed. All commercial computer software utilized in the production of the design shall be identified by name and version. All input files and corresponding output files (in native format), shall be recorded to DVD/CD optical media, suitably labeled and included with the submittal.
  - 1.1.4.3 Any in-house proprietary computer software utilized in the design shall have the solution of verification problems documented in the appendix.
  - 1.1.4.4 All final calculations shall be sealed, signed and dated by the Structural Engineer of Record.
- 1.1.5 Loads and Loading Combinations
  - 1.1.5.1 Load combinations used for the design/modification of airport structures shall be in strict compliance with the requirements of the applicable provisions of ASCE/SEI 7-10, Minimum Design Loads for Buildings and Other Structures (current printing) and the structural codes identified in the general requirement section above.
- 1.1.6 Foundation Systems
  - 1.1.6.1 Where applicable, foundation designs shall be based on the recommendations of a Georgia registered geotechnical engineer unless the structural support demand

is deemed to be of minor significance and with the concurrence of the Department of Aviation.

#### 1.1.7 Drawings

1.1.7.1 All structural drawing packages shall include at a minimum, the following sheets in addition to other sheets that are necessary to depict the work of the project.

1.1.7.1.1 General Notes – General notes applicable to the overall design and structural materials proposed, abbreviations used within the structural drawings, symbol legend(s) as appropriate. The general notes shall include all the information required by section 1603 of the IBC.

1.1.7.1.2 Demolition plans shall be prepared for all projects that propose new slab or other structural member penetrations. Proposed and existing slab penetrations shall be identified on the demolition plan indicating sizes and spatial relationships to known points on the floor plan.

1.1.7.1.3 Penetrations for roof-mounted equipment shall be supported by supplementary members designed by a Georgia structural engineer, unless it is demonstrated by calculation, to the airport's satisfaction, that supplemental members are not required.

#### 1.1.8 Specifications

1.1.8.1 Specifications defining the quality of workmanship and materials to be incorporated into the work shall be prepared as a separate document or placed on the structural drawings.

**Hartsfield-Jackson Atlanta International Airport**  
City of Atlanta  
Department of Aviation  
Bureau of Planning & Development

# **Tenant New Construction/ Modifications Design Guidelines – Electrical**

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09/12/14	Revised for Tenant work only
Last Revised Date	Description of Changes
<b>Revisions</b>	

## Design Guidelines Electrical

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## Design Guidelines Electrical

### 1.1 Introduction

The primary objective of these guidelines is to achieve consistency throughout electrical designs for all facilities.

### 1.2 Construction Drawings

Table 1 presents suggested plans and/or drawings required for a typical electrical job.

**Table 1 - Electrical Construction Drawings**

Drawing	Scale	Remarks
Electrical Site Plan	1 inch = 20 feet	
Lightning Protection and Counterpoise Composite Plan	1 inch = 20.0 feet	
Grounding Plan	1 inch = 20.0 feet	
Power: One-Line Diagram	--	
Grounding: One-Line Diagram	--	
Power Plans	¼ inch = 1.0 feet	1/8 inch may be used for large spaces
Lighting Plans	¼ inch = 1.0 feet	1/8 inch may be used for large spaces
Special Systems Plans as Required	¼ inch = 1.0 feet	1/8 inch may be used for large spaces
Grounding Details	--	
Low Voltage Switchgear Elevation and Details	--	
Motor Control Center Elevation and Details	--	
Miscellaneous Elementary and Wiring Diagrams	--	
Miscellaneous Details: Lightning Protection	--	
Equipment List	--	
Power Duct Bank Plan and Profile (Civil Work Drawing)	1 inch = 50 feet horizontal	
High Voltage Switchgear, Transformer, Metering Pad Details	--	
Primary Electrical System One-Line Diagram	¾ inch = 1 foot	
Electric Manhole Plan, Details and Section	--	

Panel schedules  
 Electrical riser  
 Legend and lighting fixture schedule

for multi-story buildings

Locate all electrical symbols and equipment locations to scale on plan drawings.

## 1.3 General Design Requirements

### 1.3.1 General

Resolve code conflicts by using the more stringent applicable portion of conflicting codes unless DOA grants a written waiver.

- Keep abbreviations to a minimum.
- Use only standard technical abbreviations from the ANSI and the IEEE on all drawings.
- Single line drawings are required for any project. Riser diagram is not a substitution for single line drawing however; riser diagram AND single line diagram are required for multiple story projects. All electrical data such as sizing, of cables, conduits, breaker sizes, AIC ratings, metering, interconnection to utilities and downstream devices and other information shall be listed on the single line diagram.

### 1.3.2 Wiring

- All wiring shall be in electrical metallic tubing, wire ways, approved raceways or cable trays. EMT may be used for concealed installations but GRS should be used for exposed conduit. Only cast metal boxes should be used for exposed installation. EMT with compression fittings can be used in lieu of GRS with prior DOA approval and where the circuit is not subject to any mechanical damage. EMT with set screws is not allowed.
- Surface nonmetallic raceways shall not be permitted.
- Branch circuit conductors shall be minimum 12 AWG and shall be copper, type THHN/THWN unless otherwise noted. Minimum conduit size shall be 3/4".
- Control wiring shall be minimum 14 AWG.
- No reduced sized neutrals will be allowed. Each single pole over current device shall have its own separate neutral conductor.
- Neutral conductor sizes shall not be less than the respective feeder or phase conductor sizes. Coordinate with the 6<sup>th</sup> bullet in section 1.3.3.
- Power conductors shall be routed separately from all other conductor types. Also normal and emergency power conductors shall be routed separately.
- Include equipment grounding conductors sized per NEC with all power and control circuits over 50 volts.  
Install computer-related circuits and receptacles separate from motor load circuits. If required by the manufacturer to minimize noise, provide a separate grounding conductor back to the branch circuit breaker for each circuit, consistent with NEC grounding criteria.
- All buried cables shall be protected by a conduit or concrete encased duct bank. Do not exceed 5 percent combined voltage drop on feeders and branch circuits if the transformer providing service is located within the facility. If the Transformer is located exterior to the facility, limit the combined voltage drop for service conductors, feeders, and branch circuits to 5 percent. Individual voltage drop on branch circuits should not exceed 3 percent. The NEC is generally concerned with amperage more than voltage drop and only addresses the above limits in NEC Articles 210.19(A)(1) (Fine Print Note [FPN] No. 4) and 215.2(A)(4) (FPN No. 2) (2002 Edition) . Branch circuits supplying sensitive circuits should be limited a voltage drop, not exceeding 1 percent to 2 percent. IEEE 1100, Powering and Grounding Sensitive Electronic Equipment, recommends a maximum voltage drop of 1 percent for electronic installations.
- Ensure feeders have amperage adequate for the loads to be served. Demand Factors are allowed in accordance with NEC.
- Wiring for airfield lighting shall be in polyvinyl chloride conduit.

- Circuit conductors for lighting shall be L-824 Type C Underground Electrical Cable for Airport Lighting Circuits.  
Lighting circuits for taxiway lighting shall be 8 AWG and 6 AWG for runway lighting. Cable size is not dependant on whether it is a runway or taxiway circuit but is based on the size Constant Current Regulator that is energizing the circuit. #6 AWG FAA spec L-824C cables are used for 50KW CCRs.

### 1.3.3 Circuiting

- Home runs for receptacle, power, and lighting shall be indicated with an arrowhead, panel/terminal cabinet number, and circuit/terminal block number.
- Identify the conduit size and then number and type of conductors it contains.
- For typical circuits, this information may be listed by general note. For example, "All conductors are 12 AWG THHN/THWN in ¾ -inch conduit unless otherwise noted".
- Switching schemes for local lighting control may be indicated with lower case letters at the switches with matching lower case letters at the corresponding controlled lighting fixture.
- Show exterior conduits running to or from a building on electrical and civil works (exterior utilities) site plans.
- Avoid shared neutral circuiting. Coordinate with the 6<sup>th</sup> bullet in section 1.3.2.
- Group circuit homeruns where feasible and derate as required per NEC Table 310.15(B)(2)(a).
- Branch circuit design for general use power outlets shall be limited to no more than six receptacles per circuit. This is intended to accomplish the following:
  1. Minimize the number and variety of sensitive equipment sharing a common circuit.
  2. Minimize voltage drop.
  3. Minimize the likelihood of interaction between circuits.
  4. Allow flexibility for future load growth or equipment changes.General use power outlets shall be NEMA 5-20R.
- Except for life safety requirements, circuits shall not be connected to the emergency power system without DOA approval.
- Dedicated circuits shall be marked accordingly in the panel directory distinguishing them from the other circuits.
- Maintain a minimum of four spare circuit breakers and/or spaces in existing panel boards. Provide new panel boards to accommodate the circuit excess. I
- If any circuits from an existing panel are demolished first use these spare circuits for any new work before using existing spaces or spare circuit breakers.
- Include notes on the drawings to instruct the contractor to efficiently use wall space or electrical room space when installing new electrical equipment in order to maintain space for future work.
- For very small loads explore the possibility of using existing circuits instead of proposing a new circuit. Verify the loads on existing circuits if possible and practical.
- Provide list of demolished circuits and update circuit directories.
- Airfield lighting circuits shall be spliced only in manholes, hand holes, pull cans or light bases for light fixtures and signs with an FAA approved L-823 cable connector kit.
- All airfield lighting circuits shall be designed to be installed in duct bank or single duct. All ducts shall be concrete encased unless otherwise permitted by DOA.
- The design for airfield lighting circuits shall be high voltage series circuits and the routing of the conductors shall be designed in a manner to keep the two conductors for the circuit together in the same conduit at all times.
- Provide circuit designations with the size and number of conductors contained within the conduit for airfield lighting circuits on the circuit routing drawing.

- Show the lighting fixture circuit and sequential number adjacent to the lighting fixture on the lighting layout plan.

#### **1.3.4 Exclusions**

No welding or cutting of structural steel for electrical systems is allowed unless specifically approved by DOA.

#### **1.3.5 Other Requirements**

- Size of all junction and pull boxes shall be shown on drawings.
- Prepare elevations and details to show the mounting method for all other equipment such as large transformers, large junction boxes and large control cabinets. Mounting details are not necessary for small wall mounted devices. Indicate mounting height above finished floor or above finished grade.
- Specify 3" concrete housekeeping pads for all floor mounted electrical equipment with the exception of electrical equipment installed in the Airfield Lighting Vaults.
- Indicate all fire barrier penetrations on electrical plan drawings.
- Specify fire stopping rated sealant for penetrations in fire-resistance rated walls, partitions, floors and ceilings in order to maintain the fire-resistance rating. Coordinate with the project architect or consult with an architect for method of sealing and sealant type.
- Locations, such as offices, data centers, and communications complexes, that use electrically sensitive equipment such as computers, data processing equipment and other similar equipment should be provided with dedicated circuits fed from local dedicated panels as necessary. Dedicated panel boards should be fed from separate feeders to the service entrance if possible.
- In general, equipment specified must meet the energy efficiency requirements.

### **1.4 Lighting Systems Design**

#### **1.4.1 Interior Lighting Systems Design**

System Drawings:

- Locate lighting fixtures on reflected ceiling plans in coordination with the project architect.

Design Philosophy:

Provide adequate, comfortable, and reliable indoor illumination levels appropriate for the tasks to be performed. Lighting levels shall conform to DOA standards (see Required Performance and Features). Levels not covered in this document shall be referenced to the latest Illuminating Engineering Society of North America (IESNA) Lighting Handbook published standards.

### **1.5 Receptacle System Design**

System Drawings:

- Locate on power plans.



Design the receptacle system per the following minimum requirements:

- Outlets are to be wired vertically in and on walls; do not run circuits horizontally within walls; avoid running circuits horizontally on the outside of walls.
- Flush mount outlets in areas such as lobbies, conference rooms, user hallways and office spaces.
- Surface mounted outlets in areas including warehouses, equipment chases and electrical/mechanical rooms.
- Provide dedicated outlets for janitorial equipment in hallways and aisles maximum 50 feet apart; mount at 36 inches above the finished floor, and segregate from other receptacles.
- Provide general-purpose outlets in electrical and mechanical rooms; outlets shall be Ground Fault Circuit Interrupter (GFCI) protected.
- Do not wire GFCI's and non GFCI's in the same circuit.
- Avoid back to back installation.
- Provide general-purpose outlets adjacent to each exterior door; outlets shall be weatherproof and GFCI protected.
- Provide rooftop maintenance outlets per NEC; outlets shall be weatherproof and GFCI protected.

## **1.6 Low Voltage Power Systems Design (<600 volts)**

### **1.6.1 General**

This section covers the general power requirements for low voltage systems consisting of systems less than 600 volts.

System Drawings:

- Show Current Transformer (CT), Potential Transformer (PT), and meter connections, also indicate CT and PT ratios on one-line diagrams.
- For indoor installation locate meter, communication circuit connections points and termination points on power plans.
- For outdoor installations, locate meter, communication circuit connections and termination points on Civil Works (exterior utilities) plans.

### **1.6.2 Electric Metering**

Electric metering will be provided at all building service entrances, and at disconnecting means downstream of the service entrances, as necessary to separately meter building and process loads.

When metering at switchboards/switchgear and panel boards, the meter(s) shall, where feasible, be supplied with the original equipment manufacturer and installed in the equipment.

### **1.6.3 Panel boards**

System Drawings:

- Locate on power plan drawings.
- Provide completed panel schedules on drawings. Each circuit on the panel schedule shall be described to reflect function and location of each load (for example, lighting room xx apron level). Each circuit shall show a connected, demand or estimated load in KVA whether the circuit is new or existing.

Panel boards shall be as follows:

- Locate indoors where possible. Avoid outdoor or rooftop locations.
- Locate in hallways and dedicated electrical rooms or closets where possible; avoid user or passengers spaces.
- Flush-mount only in areas such as user hallways and office spaces. When flush-mounted, provide spare conduits, skirting or other provisions to facilitate future modifications.
- Surface-mount in all other areas including user storages, warehouses, equipment chases and electrical or mechanical rooms.
- Panel boards located in areas accessible to users shall be designed to be less than 10,000A available fault duty current.
- Panel boards with greater than 10,000A available fault duty current shall be located in electrical rooms/closets or mechanical/electrical spaces accessible only to qualified personnel.
- Multiple section panels are not permitted. Where it is necessary to have more than 42 circuits in a lighting or appliance panel board in the same location, use additional separate panel boards.
- Avoid sub feed or dual-feed lugs.
- Avoid individually-mounted sub feed circuit breakers.
- Main circuit breakers are to be sized according to the appropriate NEC section for any location. If a larger breaker is installed, then the appropriate trip plug must be installed as well. It is not permitted for the trip settings to be dialed-down to meet the intent of this Section.
- Where a panel board is supplied through a transformer, provide the over current protection on the secondary side of the transformer in addition to primary over current protection.
- Provide Transient Voltage Surge Suppression (TVSS) for all panel boards serving electronic loads.
- Oversize neutrals when required per harmonic analysis and for all electronic loads.
- Provide Main Lug only when the panel board is located in the same room with their feeder breaker otherwise, provide Main Circuit Breaker.

#### **1.6.4 Low Voltage Switchgear/Switchboards**

System Drawings:

- Locate on power plan drawings.
- Detail feeder and branch circuit wiring sizes on one-line diagram.
- Provide load information, voltage, phase, circuit numbering, AIC ratings, mains ratings, load summary, demand load summary, circuit breaker sizes, spare sizes and space information in panel schedules..
- Provide elevation showing all circuit breaker locations and circuit numbering.
- Provide additional details on drawings as necessary for construction.

Low Voltage Switchgears/Switchboards shall be as follows:

- Locate indoors where possible. Avoid outdoor locations.
- Locate in dedicated electrical rooms accessible only to qualified personnel.
- Front accessible where possible, except service entrance equipment.
- For service entrance equipment, provide rear access when possible.
- Copper main bus; 100 percent capacity full length.
- Copper neutral bus, if required; 100 percent capacity full length.
- Copper ground bus; full length.

- Main and feeder circuit breakers arranged for compression connectors.
- Provide branch circuit monitoring/embedded metering for all new concession switchboards. Branch circuit monitoring/embedded metering shall be factory pre-wired.
- Coordinate with DOA Electrical Engineering for the requirements of current transformers (CT's) when adding branch circuit breakers to an existing concession switchboard.
- All circuit breakers shall be constructed according to NEMA standards.
- All circuit breakers shall have provisions for lockout/tag out (LOTO).
- All circuit breakers shall include electronic interchangeable trip with adjustable LTPU, LTD, STPU, STD and INST functions. When required, provide integral GFPU and GFD functions.
- When ground fault is required, provide two level protections (main and feeders).
- Provide service entrance label when required.
- Provide minimum 20 percent spare capacity.
- Provide minimum 1-spare circuit breaker of each frame size (excluding main) used.
- Circuit breakers less than 100 amps shall not be permitted on switchgears or switchboards, unless approved in writing from the DOA Engineering.
- Provide future bus extension and dedicated space for at least one future section.
- Provide integral TVSS to meet requirements of NFPA 780, when required.
- Where draw out circuit breakers are specified, provide manufacturer's overhead lifting device suitable for all circuit breaker sizes and locations.
- Provide manufacturer's test kit for all circuit breaker types and functions used.
- All circuit breakers larger than 200 amps shall be tested.
- Main circuit breakers are to be sized according to the appropriate NEC section for any location. If a larger breaker is installed, then the appropriate trip plug must be installed. It is not permitted for the trip settings to be dialed-down to meet the intent of this article.
- Provide Main Lug only when the switchboard is located in the same room with their feeder breaker otherwise, provide Main Circuit Breaker.

### 1.6.5 One-Line Power Diagram

System Drawings:

- Develop or add to one-line diagram drawing as noted below.

Starting at the top of the drawing with the building transformers(s), show all pertinent electrical equipment down to the panel board level. This includes switchboard/switchgear, panel boards, MCCs, generators, transfer switches, uninterruptible power supplies, Inverter systems, motors, starters, disconnect switches, etc.

For transformers, note the kVA size, primary and secondary voltages, phasing (building service entrance only), and impedance. Show the distribution switchboard/switchgear in "expanded" form. The drawing should detail main breaker, tie breaker, feeder breakers, spare breakers, CT's, PT's, and meter. Note switchboard rated amperage, voltage, and short circuit capability. Include frame and trip size of all breakers in the gear.

Note the service entrance, feeder wire and conduit sizes.

For larger buildings, additional one-line diagram drawings may be required. If the building utilizes Motor Control Centers (MCCs), separate one-lines may be required. When MCCs are necessary, provide them in "expanded" form. Drawings should be

called MCC One-Line Diagram and be numbered sequentially with the Main One-Line. Indicate starter/breaker sizes, bus tap sizes, wire, and conduit size ending with each motor or other load. If the building has a large Standby Power System or Blue System, provide in "expanded" One-Line of this system also.

In general, use the following guidelines:

- If a Building transformer is not associated directly with the building, start the One-Line with the largest distribution panel board.
- If all details can be shown on one sheet, it is allowable to use "expanded" details on all necessary equipment.
- Place highest voltage lines at the top of the drawing with successively lower voltages placed downward.
- Use standard symbols listed in ANSI standards.
- All "expanded" gear shall be shown with a dashed outline. All singular items shall be shown with solid outlines
- Draw circuits in the most direct and logical sequence. Draw lines between symbols either vertically or horizontally with a minimum of line crossing.
- Note panel boards and major equipment locations (Column D4, NE Equipment Room, etc.) Try to group equipment on drawings by physical locations.
- To avoid clutter, do not put specialty symbols and construction notes on the One-Line. Grounding, controls, metering and miscellaneous details should be on separate drawings.

#### **1.6.6 Low Voltage Dry Type Transformers**

System Drawings:

- Locate on power plan drawings.
- Provide additional elevation or mounting details as required for construction.

Low Voltage Dry Type Transformers shall be as follows:

- Locate indoors where possible; avoid outdoor locations.
  - Energy efficient type; meet NEMA TP-1.
  - Specify transformer to include +2/-4 at 2.5 percent taps.
  - Transformers located in areas accessible to users shall be designed to produce less than 10,000A available short circuit current.
  - Transformers allowing more than 10,000A available short circuit current shall be located in electrical rooms/closets or mechanical/electrical spaces accessible only to qualified personnel.
  - Transformers shall be provided with separate primary and separate secondary windings for each phase.
  - Transformers shall be provided with copper windings, aluminum is not acceptable.
  - Insulation provided in transformers having ratings not exceeding 25 KVA shall have 185 degree centigrade rise rating. Insulation provided in transformers exceeding 25 KVA shall have 220 degree centigrade rise rating.
- The sizing of step down or step up dry type transformers shall take into consideration the current or expected normal and harmonic loading. The decision to use "K" transformers will be based on harmonic analyses of the connected and forecast load.

### 1.6.7 Motors

System Drawings:

- Locate on power plan drawings.

Motors that are controlled by across the line motor starters and are 25 HP or larger shall include power factor correction capacitors at the motor starter in order to achieve 95 percent power factor. VFC controlled motors are excluded from the power factor correction requirement.

To ensure a minimum standard of quality, identify devices, fittings, fixtures, and equipment on equipment list drawings with their electrical sizes, ratings, manufacturer, and catalog number. This is not necessary for items such as panel boards where complete specifications are written.

- Identify motor starters on the motor control schedule. Identify all equipment by using standard symbols and equipment schedules. In addition to the items already mentioned, the schedule should include information to help the contractor obtain the equipment and materials intended by the design.
- Specify nameplates on all control items used on the job. Specify each nameplate either on the motor schedule or on the equipment list. Each nameplate identifies the system and the function of that device to the system.

### 1.6.8 Busway Systems

- Busway shall be copper with 100% neutral bus minimum.
- Busway shall be totally enclosed in non-ventilated aluminum housing.
- Use IP54 or greater for indoor installations and NEMA 3R for outdoor installations.
- Busway shall be protected against overcurrent in accordance with the allowable current rating of the busway.
- Where busway is used as a feeder, the voltage drop should not exceed 3 percent.
- All busway shall be grounded.
- Provide expansion fittings for all busways at building expansion joints.
- Show the entire busway run on power plan drawings.
- Where busway penetrates walls and floors, seal all penetrations with the appropriate fire stopping material to maintain fire rating of walls and floors.

## 1.7 Lightning Protection Systems Design

System Drawings:

- Show components on Lightning Protection and Counterpoise Composite Plan.
- Details as required.
- Show lightning protection system connection to the building counterpoise system.
- Show lightning protection and ground systems and details on electrical drawings.

Lightning protection systems shall conform to UL Standard UL 96A requirements and NFPA 780, Installation of Lightning Protection Systems. All structures with lightning protection systems will require a UL Letter of Findings. Note on the drawings which certification is required (UL Letter of Findings, or No Certification required).

Consultant shall provide direction to contractors to provide UL Master Label for any structure, even in case of building addition or renovation.

## 1.8 Building Grounding System Design

System Drawings:

- Grounding plans
- Grounding one-line
- Grounding details
- Grounding plans and grounding details to be placed on electrical drawings
- Reference Article 250 as a requirement for all grounding work.

The drawings shall show interconnection of the following:

1. All metal systems of the building such as:
  - a. Interior and exterior water system
  - b. Metal ductwork
  - c. Building steel and HVAC roof top units (if applicable).
  - d. Lightning protection system
  - e. Made electrodes, etc.
  - f. Building foundation rebar
  - g. Metal roof drains.
  - h. Antennas and Apron light poles.
2. Where in the electrical system bonding will be required (that is, neutral or ground bushing on transformer).
3. Where the electrode system connects into the rest of the grounding system.
4. Any other special requirements for the building grounding system (that is, static or signal grounds).
5. The size of all required grounding conductors (grounding electrode conductor, equipment grounding conductors, main bounding jumpers, etc.).

The design shall take into account that the NEC as a minimum requirement and other factors need to be considered when designing the system, signal grounds, and lengths of grounding conductors to ground.

## 1.9 Design Calculations

### 1.9.1 General

All electrical calculations shall be stamped by a Georgia Professional Electrical Engineer. The original stamped signed copy of the calculations shall be provided to DOA as part of the design submittal.

Present all electrical calculations using the guidelines provided in this section. Provide two 8-1/2- by 11-inch, 3-hole-bound reports that contain all electrical calculations, time coordination curves, and protective device settings. Provide one-line diagrams and electronic files with all calculations. At the end of the project, update both reports and electronic files in the same manner as other as-built drawings.

### 1.9.2 Voltage-Drop Calculations

Prepare a complete set of voltage-drop calculations. When both normal and standby primary feeders serve a facility, provide calculations for both feeders. The calculation shall be performed utilizing the latest EDSA Systems Analysis or SKM software.

The maximum allowable steady state voltage drop shall not exceed 5 percent total for building wiring.

Design the standard voltage profile for regulated power distribution systems to comply with ANSI/IEEE Standard 141-1993 (Red Book) or the latest edition.

Calculate voltage drop for the longest branch circuit to include the drop in feeders, sub-feeders, and transformers back to the first bus with automatic regulation (usually the primary master unit substation). Do not use a building transformer to correct the secondary voltage drop. Set transformer voltage taps to nominal voltage values under no-load conditions.

Unless loading can actually be predicted, assume the full load for all branch circuits as that limited by the maximum load on the conductors by these standards and/or applicable codes. The power factor for future loading is considered to be the same as when designed. Voltage drop calculations are not required for circuits powering airfield lighting visual aids. The design for all other feeders and branch circuits associated with the airfield lighting visual aids facilities shall comply with this section.

### **1.9.3 Short Circuit, Circuit Breaker Coordination Study and Arc Flash calculations.**

Prepare a complete set of short-circuit calculations. When both normal and standby primary feeders serve a facility, provide calculations for both. The calculation shall be performed utilizing the latest EDSA Systems Analysis or SKM software.

Calculations shall consider both three-phase and single-phase to ground fault current on secondary systems. State the base MVA/kVA on the calculations. Prepare protective device coordination graphs that demonstrating coordination of devices for interrupting faults. Prepare these graphs for all new or modified primary and secondary systems. Coordination curves shall be prepared along with the single line diagram indicating the devices in question. Provide a flag on all coordination curves indicating the available short circuit current at each device. Curve plots from the software EDSA shall be used.

Arc Flash calculations shall be in accordance with NFPA 70E and IEE STD-1584

Provide complete electronic calculation in its original format (i.e. EDSA or SKM files). Coordination study shall be from the utility transformer to the largest breaker in the smallest panel. Similar panels can be omitted from the study however; the final report shall indicate the panel names and indicate the word typical to panel's xxxxxx Electrical System shall be fully coordinated.

Indicate in the coordination sheet, short circuits (with flags), breaker type, settings and scales.

For arc flash, provide calculations for each piece of electrical equipment and provide 3 samples of the arc flash label to DOA for approval.

Final report shall be provided in a 3" binder and CD's for electronic files.

Present the manufacturer's catalog data for each protective device to show they have adequate fault current interrupting capacity for the available short circuit current.

### **1.10 Branch Circuit Panel board Directories**

Provide schedule under plastic jacket or protective cover for protection from damage or dirt. Hand written schedules are not allowed. As a minimum provide the following:

- Number each single pole space. Odd-numbered circuits on left side starting at the top, even on right side starting from the top.
- Securely mount directories on inside face of panel board door.
- Where there is no cover or door, provide individual nameplates for each over current and other device.
- Define briefly, but accurately, nature of connected load (i.e. lighting office number, receptacles, electrical room, etc..)
- Provide CPTC official room number locations for all loads and indicate panel name on schedule.
- Multi-pole circuits shall utilize all pole space numbers as its circuit identifier, i.e, a three pole circuit will have three space numbers.
- Spare circuit number shall be annotated in pencil
- Panel board schedules and as-built circuit numbers shall be reconciled and match



**Hartsfield-Jackson Atlanta International Airport**  
City of Atlanta  
Department of Aviation  
Bureau of Planning & Development

# **Tenant New Construction/ Modifications Design Guidelines – Mechanical**

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09/12/14	Revised for Tenant Work Only
Last Revised Date	Description of Changes
<b>Revisions</b>	

## Design Guidelines Mechanical

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Table 1 – Passenger Facilities – HVAC Operating Parameters

## Design Guidelines Mechanical

### 1.0 Purpose

- 1.01 The purpose of this document is to outline the minimum design standards and installation requirements for new construction and/or modifications of mechanical systems (mechanical, plumbing and fire protection), which are installed to serve various tenant spaces throughout the Central Passenger Terminal Complex (CPTC) at Hartsfield-Jackson Atlanta International Airport (H-JAIA or “Airport”).
- 1.02 Each lease space is designated as available for a particular type of tenant. Tenants fall into one of two major categories: Concessions and Non-concessions. Non concessions tenants are typically airline support service spaces or DOA/CPTC support spaces. Concessionaire spaces are typically categorized in three groups: Food & Beverage, Retail & Specialty Retail. The scope of this guideline is to set the minimum mechanical design requirements for non –concession type tenant.

### 1.1 Codes and Standards

- 1.1.1 A&E shall design to the most current codes adopted by the city and state. Code conflicts shall be resolved by using the more stringent applicable code, unless granted a waiver by DOA.
- 1.1.2 All Tenant designs shall be by professional engineers registered in the discipline specific to the trade work indicated on the contract drawings.
- 1.1.3 All governing codes and standards indicated in the trade sections of this guideline will be adhered to by the designers of the tenant construction documents.  
Applicable Codes (Building Codes and regulations as adopted by the State of Georgia)
- International Plumbing Code with Georgia Amendments
  - International Building Code
  - International Fuel Gas Code
  - International Mechanical Code
  - International Energy Conservation Code
  - National Fire Protection Association (NFPA) Codes
  - NFPA 70 National Electrical Code
  - NFPA 90A Standard For the Installation of Air Conditioning and Ventilation Systems
  - NFPA 90B Standard for the Installation of Warm Air Heating and Air Conditioning Systems
  - NFPA 96 Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations
  - NFPA 101 Life Safety Code
  - NFPA 13 Standard for the installation of Sprinkler Systems
  - Standard Building Code
- 1.1.4 Standards
- ANSI American National Standards Institute
  - ASHRAE 62.1 Ventilation for Acceptable Indoor Air Quality

- ASHRAE 90.1 Energy Standard for Buildings
- ASME American Society of Mechanical Engineers
- National Green Building Standards

## 1.2 General Drawing Requirements

- 1.2.1 Drawings shall be neat, orderly and complete, showing all information required to convey the scope of work to general contractors or reviewing entities. Drawings will be prepared under the supervision of a state licensed professional engineer and shall bear his/her seal.
- 1.2.2 Mechanical plans shall be consistent with the Architectural plans (e.g., same scale, match lines, common graphic standards) as the base set of documents. Part plans for mechanical equipment rooms, restrooms, kitchens and all rooms shall be provided where the density of support equipment prohibits clear documentation of the systems serving the space at the architectural base scale.

## 1.3 Trade Specific Drawing Requirements:

### 1.3.1 HVAC

- Show all primary and secondary ductwork using double line graphic standards. HVAC plan drawings shall be 1/8" or larger.
- Provide sections as required to show inter-trade coordination in space restricted areas (i.e. ceiling plenums, mechanical chases, baggage handling areas, etc.)
- Provide HVAC installation details as required.
- Provide schedules for all HVAC equipment
- Provide air flow balance summations for space (or building) as required to indicate/validate positive pressure relationship between critical building components.
- Provide Control schematic diagrams for all equipment tied to DDC system or under standalone control. Provide I/O summary and written sequence of operation on drawings.
- Provide HVAC calculations (load, pump, fan, etc.) for review.
- See Table 1 for Operating Parameters.

### 1.3.2 Plumbing

- Use 1/4" scale plans for all restrooms and food service areas
- Provide riser diagrams for all sanitary natural gas and domestic water systems.
- Provide plumbing fixture schedules with connection sizes for all sanitary and domestic water systems.
- Indicate clearly locations and line sizes of all connections to existing systems.
- Provide schedules for all major plumbing devices including but not limited to, water heaters, pumps, air compressors, etc. Example: Water Heater Schedules should include, location, storage size, number of elements, KW, etc.
  - Pump Schedule should include, location, service, capacity (GPM), RPM, etc.

### 1.3.3 Fire Protection

- Provide fire protection plan drawings, 1/8" scale or larger.
- Provide Hazard classification, including density and remote square footage and location of same for all spaces within a design.
- Provide specifications including but not limited to, and piping sprinkler heads (type and temperature).

- Provide piping layout plans for major renovation projects and new construction.
- Provide hydraulic calculations with shop drawings done by a certified fire protection system designer.

## 1.4 General System Infrastructure Descriptions

### 1.4.1 Large CPTC Public Spaces

- Spaces which fall under this heading are free of interior partitions, relatively large volumes which can either be interior zones or combination interior/exterior zones with the provision that both thermal and air diffusion through the space is relatively uniform and unencumbered. Spaces which generally fall under this category include (but are not limited to) Terminal ticketing and baggage claim areas, Large Terminal Atria, Public seating & Circulation areas, TSA and Concession Cue areas.
- Large CPTC Public spaces are to be served by medium and low pressure VAV Rooftop AHUs wherever possible. VAV indoor AHUs can be used as an alternate, when practical, provided a clean source for OA can be routed to the interior mechanical room. Sufficient space for economizer and relief air must also be provided. Separated ductwork and motorized damper for minimum and economized outside air shall be provided. Outside air and return air in mechanical rooms shall be ducted to AHUs.
- Provide Single Zone VAV AHUs for these large-open volume public spaces which have relatively uniform heating and cooling load distributions. These AHUs will utilize chilled and hot water from the central water loops.

### 1.4.2 Zoned CPTC Public Spaces

- Spaces which fall under this heading are located adjacent to each other, but have varying load profiles due to external heat gains, or differences in internal space utilization. Spaces which generally fall under this category include (but are not limited to) Concourse main circulation corridors, Hold Rooms, smaller Concourse Atria, Food Courts, and Concession, Tenant Cue areas, General Office and Back of House spaces.-
- Zoned CPTC Public spaces are to be served by medium and low pressure VAV Rooftop AHUs wherever possible. VAV indoor AHUs can be used as an alternate, when practical, provided a clean source for OA can be routed to the interior mechanical room. Sufficient space for economizer and relief air must also be provided. AHUs in locations subject to intake of jet exhaust shall be provided with carbon filtration as described later in the document. If OA route pressure drop is more than 0.75" W.C. consider providing OA injection for to induce minimum required OA when supply fan VFD is in low speed.
- Provide VAV AHUs for these spaces. These AHUs will utilize chilled and hot water from the central water loops. Provide VAV terminal units with hydronic heating.
- Note: Use of Fan powered terminal units/powering induction units (PIUs) are discouraged in the CPTC base systems. Coordinate with DOA/AATC to receive prior approval before using PIUs in any special applications.
- Plumbing infrastructure consist of Domestic water supplied from the city water system at a pressure of 60 to 70 pounds. There is a sanitary sewer system at each concourse. There is natural gas supplied on the roof of concourse T, A, B, C, D and inside E and F.
- Fire protection is supplied by a fire pump and jockey pump on each concourse.

## 1.5 Tenant Space Design Guidelines

### 1.5.1 Engineer/A&E Site Visit Requirements

1.5.1.1 The following requirements shall be adhered to by designers of tenant spaces:

- Designers shall provide due diligence to investigate existing conditions including requesting as-built drawings from AATC and/or DOA as required. The designers shall visit the site and check as-built conditions against previous design drawings.
- When existing conditions are concealed behind inaccessible spaces, Designers shall modify drawings during the demolition phase of work as previously concealed utilities are exposed. It is the designers, tenant, contractor and owners responsibility to confirm that the latest revisions of design documents are maintained on site.
- Designers shall visit the site to inspect the existing conditions after demolition has occurred, periodically during the new construction to ensure that the design intent is being maintained, prior to the drywall and ceiling installation to confirm that on site as-built drawings are correct (prior to concealing) and at the end of construction to provide final punch of the installation, confirming that all systems operate in accordance with the design intent.

### 1.5.2 Existing System Coordination/Remediation Requirements

- The Tenant and Designer are responsible for bringing all systems which exist in their space(s) as well as those which are directly dedicated to serving their space(s) up to both current code and DOA standards as herein indicated.
- The Designer is responsible for analyzing the impact the tenant modifications will have on the existing systems. The designer is responsible for ensuring that the existing common systems (AHUs, concourse pumps, primary ductwork, CHW/HW piping mains, natural gas, sanitary mains, domestic water mains, fire protection mains & zones) are not over taxed by the addition of systems required to serve tenant spaces.
- Determine if AHUs and Pump systems can handle the additional loads.
- TAB the entire AHU system which has been modified to ensure that other tenants have not been adversely affected by the Tenant modifications. TAB to specified summer and winter design conditions if design drawings are available, or current existing maximum air/water flows as determined by pre testing.
- Determine that maximum velocities have not been exceeded in pipe and duct systems.
- Determine that AHUs have the spare capacity for any additional loads added.
- The Tenant is responsible for making all reasonable modifications to existing systems to meet code minimum requirements, good design practice and DOA requirements. A sample of typical modifications includes but is not limited to:
  - Upgrade controls
  - Replace fiber board duct with sheet metal
  - Replace flexduct systems over 10 years old.
  - Replace/repair duct and piping insulation systems
  - Replace M/P/FP piping and ductwork mains as required to meet new loads.
  - Replace AHUs and pumping systems when the additional loads exceed the capacities of existing equipment.

- Replace PVC drainage piping with C. I. or stainless steel.
- The Tenant is also responsible for the demolition of all systems not required to serve the space in its final configuration with the exception of active systems serving other spaces passing thru the lease area.
- Removal shall include, but not be limited to: all existing piping, conduit, controls, hangers and equipment, etc. used to serve the space regardless of location within or outside the boundary of the lease space. Remove all abandoned rooftop equipment and appurtenances (capping roof openings) and all utilities (CHW/HW Primary/secondary Air DW/ sanitary/FP/Storm/Water, etc.) located in the ceiling plenum or chases of adjacent floors. Piping abandoned will be removed back to active main and capped. Cap seal and insulate as required any active utilities. Demo electrical service back to the power panel. Coordinate the removal requirements for any buried piping and conduit with DOA engineering.
- DOA is the final arbiter of what constitutes reasonable modifications to base building systems.

### 1.5.3 Technical System Description

#### 1.5.3.1 HVAC

- VAV AHUs with VAV terminal units using hydronic heating coils serve the majority of all concession spaces within the CPTC. Existing concession spaces have terminal units providing conditioned air to the space. New spaces typically have primary air trunk ducts with tap points indicated for future use. Existing HWS/HWR piping runs past every space. Existing terminal units have individual run outs to their respective coils.
- Where it is determined that base building systems cannot accommodate the new loads, dedicated equipment will be the alternate source of HVAC. CHW/HW AHUs connected to the base building hydronic systems are the preferred systems to install as a primary alternate. DX cooling and electric heating RTUs are the secondary option. Coordinate with DOA once the determination that supplemental systems will be required to determine which system alternative will be used.

#### 1.5.3.2 BMS Controls

- DDC interface: The base building control infrastructure is based on a Metasys control system. All new controls shall be DDC and shall be BACNET compatible. All new controls shall be compatible with the standard protocols (device naming, addressing, graphic standards) for HJAIA. The tenant is responsible for retrofitting the controls to existing equipment serving their spaces to the new standard. (Upgrading the systems will be required any time a renovation project is enacted, regardless of the extent of HVAC work being done.)
- The Tenant DDC system shall be able to operate in stand alone mode if the building DDC system is disabled. The tenant DDC system shall be compatible with the latest communication protocols.
- The tenant is responsible for the update of all BMS Graphics associated with the build out of their space as well as providing all final documentation and systems commissioning required to ensuring proper HVAC systems operation and to meet DOA/AATC close out and turn over requirements.

### 1.5.3.3 Rooftop Equipment

- All rooftop equipment will be installed on curbs or rails. Provide details to insure that roofing system integrity is maintained. All roofing work will be performed by certified contractors as to not void any roofing warranties.
- Rooftop equipment will have laminated nameplates which will identify the system type (exhaust fan- EF-1, Make-up air unit MAU-1 etc.) as well as the concession space it is serving (Joe's Coffee house, Burger Barn, etc). Major equipment capacity information will also be indicated on the equipment.
- Rooftop equipment will be feed from electrical panels dedicated to the concession space the equipment serves.
- Rooftop equipment will have lighting protection grounding.
- Rooftop AHU outside air intake shall be 10 feet or more away from an exhaust fan.
- Cooling coil condensate will be routed to sanitary system (floor sinks, hub drains or mop sinks).

### 1.5.3.4 Plumbing

#### 1.5.3.4.1 General: Spaces have the utility services listed below.

- Domestic Water: Domestic water service typically runs down the public access corridors in the concourses. It is stubbed into existing tenant spaces. Newly designated spaces must provide new taps into the existing domestic water system. The designer is responsible for making all field surveys of the existing systems to determine where the appropriate place.
- Sanitary Connections: Sanitary waste and vent systems typically run in the ceiling plenum of the apron level (sanitary) or down the public access corridors in the concourses. They are stubbed into existing tenant spaces. Newly designated spaces must provide new taps into the existing sanitary waste and vent systems. The designer is responsible for making all field surveys of the existing systems to determine where the appropriate place. Sanitary waste must be kept separate from grease waste until after the grease trap.
- Natural Gas Connection: Natural gas is supplied to concourses T, A, B, C and D on the roof. Tenant is to provide their own meter and regulator to serve their space. Terminal, Concourse E and F have natural gas supplied in back of house.
- If a tenant space has a kitchen or food preparation area refer to Design Guidelines Concessions Facility, Mechanical Engineering Technical Standards.
- Fire Protection: The existing spaces will have an existing sprinkler system that will be modified to meet the new space layout.



## 1.6 HVAC Materials and Equipment

### 1.6.1 Variable Air Volume Boxes (VAV)

- VAV Boxes shall be single-duct terminal unit complete with modulating damper, airflow measuring sensor, and internally insulated casing. Reheat boxes shall be provided with hot water reheat coils. DDC controls and damper actuator will be provided by Controls contractor.
- Power wiring for damper actuators shall be provided for in design.

### 1.6.2 Ductwork

- Ductwork shall be galvanized steel sheet metal designed and constructed per SMACNA duct construction standards. Fiberboard duct is not permitted. Main duct trunks shall be located over common areas or corridors whenever possible. Balancing dampers shall be provided at proper locations to allow balancing of systems.
- Flex duct run-outs to diffusers shall not be longer than 6 feet. Flex duct shall not be used in exhaust systems.

### 1.6.3 Duct Insulation

- Duct insulation for supply outside and return ducts above ceilings shall be fiberglass blanket wrap, 2" thick, 1.5 lb./cu.ft. density with a factory-applied FSK vapor barrier. Insulation thermal conductivity at 75°F shall be 0.27 BTU-in./hr./sq.ft./ °F. On rectangular ducts 24 inches wide and larger, apply stick pins and washers on 18 inch centers on bottom side of duct.
- Duct insulation for supply outside and return ducts in exposed unconditioned spaces shall be rigid fiberglass board insulation, 2" thick, 3 lb./cu.ft. density with factory-applied FSK vapor barrier.

### 1.6.4 Air Distribution Devices

- Air distribution devices selected shall match the style of devices in existing areas. Devices shall be provided with dampers and shall be selected based on throw and noise criteria. Linear slot diffusers shall be used at large glass areas on exterior walls.

### 1.6.5 Controls Commissioning

- All new systems and controls shall be commissioned by a certified commissioning agent. Commissioning shall include all requirements to meet AATC project turn over criteria.

### 1.6.6 Test and Balance

- All HVAC systems shall be tested and balanced upon completion of installation. The TAB services shall be performed by an AABC-certified contractor.

### 1.6.7 Utility Piping

- Chilled Water and Heating Hot Water pipe shall be ASTM A-53 Grade B pipe carbon steel. Piping 2 ½" and smaller shall be threaded and coupled with 150 lb. threaded fittings. Type L hard-drawn copper with solder joint fitting may be used on for piping

2 ½” and smaller with DOA approval. Piping 3” and larger shall be plain end pipe with 150 lb. butt-welded fittings.

- Piping headers shall be routed over corridors or common areas for access.
- Cooling coil condensate will be routed to sanitary system (floor sinks, hub drains or mop sinks).
- Pipe insulation shall be rigid fiberglass pipe insulation with all-service jacket vapor barrier. Piping located outside shall be covered with aluminum jacketing.
- New piping shall be thoroughly cleaned and flushed before placing into service.
- Avoid routing CH/HW piping in electrical rooms.

## 1.7 Plumbing Materials and Equipment

### 1.7.1 Sanitary waste and Vent Piping

- Sanitary waste and vent and storm piping shall be service weight cast iron pipe and fittings with factory asphalted coating.
  - Underground piping shall be hub and spigot with push-on compression joints with neoprene gaskets.
  - Above ground piping shall be no-hub joints with stainless steel bands and neoprene sealing sleeve.

### 1.7.2 Domestic Water Piping

- Potable water piping shall be type “L” copper.
  - Fittings 2-1/2” and smaller shall be solder using 95/5 lead free solder.
  - Fittings larger than 2-1/2” shall be rolled groove.
  - Fittings 2” and less shall be press fit with neoprene “O” ring.

### 1.7.3 Natural Gas Piping

- Above ground gas piping shall be schedule 40 black steel.
  - Gas piping in return air plenum and larger than 2” shall be welded.
  - Gas piping 2” and smaller shall be threaded.
- Above ground piping exposed outdoors shall be coated and wrapped or painted with a minimum two coats of epoxy paint.

### 1.7.4 Insulation

- Domestic cold water, ½” thick fiberglass pipe insulation
- Domestic hot and hot water return, 1” thick fiberglass pipe insulation.
- Domestic water piping exposed outdoors or in heavy traffic areas will be the same as in kitchen except with aluminum jacket
- Sanitary drainage, p-trap and horizontal piping, serving HVAC condensate shall be insulated the same as roof drains and horizontal piping.

- P-traps and sanitary piping exposed to freezing shall be heat traces and insulated with aluminum jacket.

#### 1.7.5 Water Heaters

- Water heaters shall be electric where possible or approved by DOA.

### 1.8 Fire Protection Materials and Equipment

#### 1.8.1 Fire Protection Piping

- All components of the fire protection systems and installation shall meet NFPA 13 requirements.
- Above ground sprinkler piping shall be schedule 40 carbon steel with welded or threaded joints and schedule 10 rolled grooved. Fittings shall be UL-listed and FM-approved for fire protection service. Mechanical grooved fittings and couplings which are UL-listed and FM-approved are permitted.

#### 1.8.2 Fire Protection Equipment

- Wet sprinkler systems shall be designed through an alarm check valve in lieu of a straight way check valve with flow switch.

#### 1.8.3 Sprinkler heads

- Concealed type sprinkler heads shall be located in sheet rock ceilings and 2X4 lay-in ceiling (at ¼ points).
- Semi-recessed heads shall be used in 2X4 lay-in ceiling (at ¼ points)
- Upright heads shall be used for areas without ceiling or for dry systems.
- Tenant can use any UL, FM approved head in their space.

Table 1 – Passenger Facilities – HVAC Operating Parameters

<b>Passenger Facilities HVAC Operating Parameters</b>									
Space/Function	Indoor Design Condition				HVAC Load Data				
	Summer- °F	% RH	Winter- °F	% RH	People FT <sup>2</sup> /PPL	Outside Air CFM/PPL	Lights Watts/FT <sup>2</sup>	Equipment Watts/FT <sup>2</sup>	
Hold Rooms	74	50	70	-	200 PPL/Gate	10	1.5	2.0	
Interior Corridors	74	50	70	-	100 FT <sup>2</sup> /PPL	10	1.5	1.5	
Concessions (Restaurant)	74	50	70	-	30 FT <sup>2</sup> /PPL or Count	10	3.0	10.0	
Concessions (Retail Store)	74	50	70	-	45 FT <sup>2</sup> /PPL or Count	10	6.0	3.0	
Crown Room	74	50	70	-	45 FT <sup>2</sup> /PPL or Count	20	3.0	3.0	
Break Room/ Group Room	74	50	70	-	100 FT <sup>2</sup> /PPL or Count	10	1.5	1.5	
Office/ Administration	74	50	70	-	100 FT <sup>2</sup> /PPL or Count	20	1.5	1.5	
Third Level Tenant Space	74	50	70	-	100 FT <sup>2</sup> /PPL	20	2.5	2.5	
Smoking Room	74	50	70	-	15 FT <sup>2</sup> /PPL	60	1.5	1.5	
Apron Level (Air Conditioned Spaces)	74	50	70	-	100 FT <sup>2</sup> /PPL or Count	20	2.5	1.5	
Classroom/Training/Conference	74	50	70	-	30 FT <sup>2</sup> /PPL or Count	20	2.5	1.5	
Toilet Room/Locker Room	74	50	70	-	0	0	1.5	0.0	
Storage Area	74	50	70	-	0	0	1.5	1.0	
<b>OUTDOOR DESIGN CONDITIONS</b>					<b>Chilled &amp; Hot Water Design: Supply- Return Delta T</b>				
Summer	94 °F DB/ 74 °F WB				Secondary CHW: 16 °F				
Winter	17 °F DB				Air Handling Unit CHW: 18 °F				
<b>Cooling Supply Air Design</b>					Secondary HW: 40 °F				
Supply air Delta T (Space Temp- Leaving Coil Temp): 23 ° F									

# Hartsfield-Jackson Atlanta International Airport

City of Atlanta

Department of Aviation

Bureau of Planning & Development

# Tenant Construction Guidelines

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09/12/2014	Revised Guidelines for Tenant work only			
Last Revised Date	Description	Approved By		
Revisions				

## Tenant Construction Guidelines

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## 1.0 PURPOSE

The purpose of these guidelines is to provide airport Tenants with specific Department of Aviation (DOA) requirements for performing any construction work at Hartsfield-Jackson Atlanta International Airport (H-JAIA). These guidelines shall be incorporated into the projects by the Architect/Engineer of Record and Tenants shall furnish their contractors with these guidelines during the pricing phase.

## 2.0 SCOPE

These guidelines apply to all Airport Tenants (Leaseholders, Concessions, Airlines, Vendors, Contractors, Sub-Contractors and DOA Stakeholders). Access this document at <tt://apps.atlanta-airport.com/engineeringguidelines//index.asp>

## 3.0 RESPONSIBILITIES

### 3.1 General Conditions

- 3.1.1 **Tenant Projects:** After following/complying with the Concessions/Tenant Project Submittal and Review Guidelines, Tenant projects shall be constructed in accordance with the DOA stamped and approved documents.
- 3.1.2 **Construction Oversight:** Construction oversight shall be conducted by a DOA Facilities Construction Manager (FCM). Contact: Reggie Houston (404-867-0399/[reggie.houston@atlanta-airport.com](mailto:reggie.houston@atlanta-airport.com)).
- 3.1.3 **Construction Coordination:** All planned and active construction activities shall be reported by the Tenant's Contractor on a weekly, bi-weekly or monthly basis coordination meeting to be established by the FCM.
- 3.1.4 **Tenant Construction Guidelines:** All Tenant construction projects shall comply with all the requirements of these guidelines. Failure to comply shall result in suspension of work by the FCM, Airport Security or Airport Police.
- 3.1.5 **Security Requirements:** Tenant's Contractors and Sub-Contractors shall conform to all DOA Airport Operation Requirements, including Security, Badging, OCIP Badge and Custom Seals (If required). Contact DOA Security Office at (404) 530-6667 for all Security information and requirements.
- 3.1.6 **Logistics Plan:** Tenant's Contractor shall develop and submit to FCM a Logistics Plan to include as required: dumpster locations (dumpster cover required), staging area, ramp vehicle and equipment parking locations, limits of construction, location of temporary barriers and delivery access routes prior to commencement of any construction work. Such plan shall conform to DOA's master Logistic Plan and Airport Standards "Grease Interceptors Design & Construction Guidelines.
- 3.1.7 **Safety Plan:** Tenant's contractor shall submit a project specific Safety Plan to the FCM. The plan shall be approved before any demolition/construction work begins. As part of the Safety Plan, the contractor shall include an emergency Contact List. The Emergency Contact List shall be updated with current information throughout the duration of the project. The FCM shall enforce all

OSHA, State and Local Codes as well as Airport Standards (Access Airport Standards at <http://apps.atlantaairport.com/engineeringguidelines/index.asp>)

- 3.1.8 **Pre-Construction Conference:** A pre-construction conference scheduled by the FCM shall be held at least seven (7) days prior to commencement of any construction work. No Construction work shall commence without a pre-construction conference. Tenant shall provide copy of the construction permit issued by the City of Atlanta, Bureau of Buildings (BOB) at the pre-construction conference.
- 3.1.9 **Notifications:** Tenant's Contractors shall provide notification to the following entities at least Seventy-Two (72) hours prior to the start of any construction work and moving of personnel or material onto H-JAIA property:
- 3.1.9.1 FCM (contact: Reggie Houston @ (404) 867-0399) for all Tenant projects.
  - 3.1.9.2 TBI @ (404) 530-2021 for projects in Concourse D South, Concourse E and Concourse F.
  - 3.1.9.3 DOA Landside Operations @ (404) 530- 2021 for projects in the Domestic Terminal and Concourses T, A, B, C, and D North.
  - 3.1.9.4 Airside Operations @ (404) 530-6620 for all airside ramp projects.
- 3.1.10 **Work Hours:** Standard DOA approved hours for all Tenant Construction work shall be performed between 11:00 PM and 5:00 AM Sunday thru Thursday. Ramp construction work shall be performed between 11:00 PM and 5:00 AM daily. In case(s) of Irregular Operations (IROPS), the hours available to a Contractor or Sub-Contractor shall be subject to change without prior notice. Daytime work shall only be authorized by the FCM if work is contained inside the approved wall in construction area/space and it does not cause excessive noise, dust, use of volatile organic compounds or welding.
- 3.1.11 **Permits and Code Compliance:** Tenant's Contractor shall obtain all necessary federal, state, county and city permits and shall comply with all applicable laws, codes and regulations.
- 3.1.12 **Insurance:** Tenant's Contractor working on the Airport controlled facilities or property shall be duly licensed and shall provide proof of adequate insurances when requested.
- 3.1.13 **Existing Conditions:** Tenant's Contractor shall be responsible for site verification of all existing conditions and requesting as-built data from DOA. If any utility shall be disturbed or damaged during the construction work, the Contractor shall notify FCM and Atlanta Airlines Terminal Corporation (AATC) immediately. Tenant shall be responsible for all costs associated with the repair or replacement of any damaged utility and affected property.
- 3.1.14 **Digging:** Before any digging is performed, the Tenant's Contractor shall be responsible for the following:



- 3.1.14.1 Contacting the Georgia Utilities Protection Center @ 1-800-282-7411 for notification to Owners of all buried utilities before digging.
- 3.1.14.2 Tenant's Contractor and Sub-Contractors shall adhere to the rules, regulations and laws dictated by the Georgia Utilities Protection Center.
- 3.1.14.3 Tenant's Contractor and Sub-Contractors shall protect all utilities not designated for removal, relocation or replacement in the course of the construction work.
- 3.1.14.4 In case (s) of accidental disturbance of utilities, the Tenant's Contractor/Sub-Contractor shall immediately notify the utility Owner and the FCM.
- 3.1.14.5 Responsible for coordinating the repair of the interrupted utility per the time-line and requirements indicated by the FCM and any other matters where the proposed construction may present operational problems to H-JAIA or its Tenants.

3.1.15 **Deliveries:** Standard DOA approved delivery and debris removal shall only be between 11:30 PM and 5:00 AM

### 3.2 Special Conditions

3.2.1 **Construction Notice:** Tenant's Contractor shall furnish and install a Document Display device outside the construction barrier wall or door providing the following information:

- Tenant's Name & Contract Information
- Contractor's name & Contact Information
- DOA Approved Project Start Date
- DOA Approved Project Completion Date
- DOA Approved Hours of Operation

3.2.2 **Support Equipment:** Tenant's Contractor shall request permission and register all support vehicles (cars and trucks) and construction equipment (lifts, forklifts, work boxes, trash dumpsters, etc.) operating on the H-JAIA premises during the construction of a project. The approved vehicles shall display the operating certificates inside front window at all times. Identification tags shall be attached to the construction equipment at all times. The operating certificates and identification tags shall be obtained from DOA Landside Operations at (404) 209-4142. Unapproved vehicles and equipment shall be subject to removal by the DOA at the expense of the Tenant/Contractor. Any vehicle or piece of equipment parked in a no parking zone, outside the limits of construction, outside previously approved parking locations, or considered a hazard shall be subject to removal by the DOA at the expense of the Tenant/Contractor and/or could result in the suspension of all construction work.

3.2.3 **Height Restrictions:** FAA Regulations regarding the use of cranes and other equipment operating airside or extending above the roof of the building shall be strictly enforced. Tenant's Contractor shall be responsible for submitting FAA Form 7460 to the DOA for review and approval (contact: Chaim Vanprooyen, 404- 382-1372).

- 3.2.4 **Temporary Barriers:** Temporary Interior and Exterior construction wall and/or barrier shall be constructed per DOA/H-JAIA requirements as follows:
- No plastic “fillable” barriers shall be permitted on the Aircraft Operations Area (AOA).
  - All interior construction requires a temporary barrier.
  - Temporary barriers shall create a dust barrier and meet one of three conditions: 1) Extend to ceiling/structure above, 2) Extend to a height that shall not allow visibility of work site, 3) Provide a top enclosure to isolate the work site.
  - All barriers shall be constructed of a standard stud wall with finished drywall, painted, painted and/or graphics, cove base and trim.
  - All barriers shall be maintained in good condition throughout the entire project.
  - Barriers shall not expose non-construction personnel to pinch points, slips, trips, falls, or cut hazards.
  - Barriers shall be installed on a plywood/hardboard base per DOA/H-JAIA requirements to prevent floor damage.
  - Access doors to the construction areas shall be self-closing, metal type and secured using a Best or equivalent seven-pin type cored locking device operator using green, orange, sand or other construction core as required by the DOA.
  - Following the project completion, all finishes (project related or adjacent to the project) shall be restored to a DOA acceptable condition.
- 3.2.5 **Construction Area Access:** Doors or openings through security barriers or partitions shall be maintained secured 24 hours a day. If the doors or openings are unlocked, properly badge or authorized Contractor provided personnel shall maintain doors under continuous control observation.
- 3.2.6 **Tools:** Tenant’s Contractor shall maintain a tool inventory list and be responsible for ensuring that all tools and construction materials are fully secured at all times to prevent passengers or unauthorized persons from gaining access to them beyond Security Check Points and Security Screening Areas or in the Terminal Buildings.
- 3.2.7 **Debris:** All debris resulting from the construction work or incidental thereto shall be contained and promptly removed by the Tenant’s Contractor per H-JAIA standards. Immediately upon completion of the construction work, Tenant’s Contractor shall dispose of all debris off H-JAIA property.
- 3.2.8 **Waste Collection and Removal:** Tenant’s Contractor and Sub-Contractors shall be responsible for the collection and removal of construction waste attributable to all Tenants’ construction projects per H-JAIA Concessions Construction Waste Collection & Removal Guidelines. Dumpsters shall be labeled in large lettering with a 24 hour contact name and phone number to call in the event there is an issue with debris.

- 3.2.9 **Clean Site:** Tenant's Contractor shall be responsible for maintaining the work site safe, clean and orderly at all times. Failure to comply, DOA may accomplish same at Tenant's Contractor expense and/or suspend all construction until the situation is corrected.
- 3.2.10 **Restoration:** Tenant's Contractor shall be responsible for restoring contiguous areas affected by the construction work to its original condition.
- 3.2.11 **Temporary Construction Facility Privileges:** Any temporary construction facility or trailer shall be approved by FCM before installation. The contractor shall be responsible for maintaining the grounds associated with this privilege. Noncompliance in maintaining the grounds shall result in loss of this privilege. Approved facilities shall be removed at the completion of the construction project and the premises shall be restored to its original condition.
- 3.2.12 **Protection of Airport Operation Systems:** If any portion of any Airport operations system is damaged by the Tenants' Contractor or Sub-Contractors, or anyone operating under their control or direction, Tenant's Contractor or Sub-Contractors shall immediately notify FCM and propose both temporary and permanent repairs to restore system functions and return the system to its original condition at no additional cost to the DOA.
- 3.2.13 **Aircraft Ramp Work:** Airport Operations shall govern all ramp activities. Construction activities shall not supersede Airport Operations for any reason. When Tenant project construction requires work on the aircraft ramps, Tenant's Contractor & Sub-Contractors shall comply with all DOA Specifications, Standards and Criteria which are found at <http://apps.atlanta-airport.com/engineeringguidelines//index.asp>
- 3.2.14 **Operating within Critical Areas:** When construction work requires the Tenant's Contractor and Sub-Contractors to conduct its operations within areas adjacent to active aircraft gates, taxi lanes, and/or the apron. The work shall be coordinated with FCM. Tenant's Contractor shall request authorization from the FCM forty-eight (48) hours prior to any gate closure or interference with the Aircraft Operations.
- 3.2.15 **Technical Requirements:** Tenant's Contractor and Sub-Contractors shall be responsible for complying with the following H-JAIA requirements:
- 3.2.15.1 **Electrical Power:** Any unauthorized connection to an airport power source shall be disconnected/de-energized by the Tenant's Contractor or Sub-Contractor per the FCM direction. Failure to comply, DOA shall disconnect or de-energize at Tenant's Contractor/Sub-Contractor expense.
- 3.2.15.2 **Conduit:** All conduits shall be concealed from public view.
- 3.2.15.3 **Floor Slab Penetrations:** Tenant's Contractor/Sub-Contractor shall be responsible for scanning (GPR or X-Ray) and providing DOA with the scan results which shall include a detailed drawing of the area to be core drilled. All floor slabs that require drilling, core drilling,

embedding or demolition of any conduit and other utility lines, shall be constructed per DOA Design/Construction Standards.

- 3.2.15.4 **Abandon Penetrations:** Tenant's Contractor/Sub-Contractor shall be responsible for covering any new, existing or abandon floor slab penetrations (Floor/Ceiling) at all times during construction. All abandon penetrations shall be filled per DOA Design/Construction Standards.
- 3.2.16 **Access Control and Alarm Monitoring System (SACS/ACAMS):** When these systems are impacted or tie-ins are required by the Tenant's construction project, the Tenant's Contractor/Sub-Contractor shall be responsible for restoring, maintaining the integrity and be compatible with the existing H-JAIA SACS/ACAMS system. Tenant's Contractor shall coordinate with and use the existing DOA Operations & Maintenance provider to accomplish this work. . All work associated with these systems shall be coordinated through the FCM and shall be review and approved by DOA Security prior to start of any work. Notice shall be provided to the FCM at least 48 hours prior to disturbing the existing SACS/ACAMS system.
- 3.2.17 **Building Management System (BMS)/Fire Suppression and Life Safety Systems:** When these systems are impacted or tie-ins are required by the Tenant's construction project, the Tenant's Contractor/Sub-Contractor shall be responsible for restoring, maintaining the integrity and be compatible with the existing H-JAIA BMS/Fire Suppression and Life Safety Systems. Tenant's Contractor shall coordinate with and use the existing AATC Operations & Maintenance provider to accomplish this work. All work associated with these systems shall be coordinated through the FCM and AATC prior to start of any work.
- 3.2.18 **Environmental Requirements:** When construction mitigation work is required, Tenant's Contractor shall be responsible for complying with H-JAIA Tenant Environmental Compliance Guide (contact DOA Environmental at 404-530-5500 for information). All required project specific mitigation, spill/emergency response and hazardous management plans shall be coordinated through the FCM and shall be review and approved by DOA Environmental prior to start of any mitigation work.

**Hartsfield-Jackson Atlanta International Airport**  
**City of Atlanta**  
**Department of Aviation**  
**Bureau of Planning & Development**

# **Tenant New Construction/ Modifications Design Guidelines – Signage**

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09/12/14	Revised for Tenant Work Only
Last Revised Date	Description of Changes
<b>Revisions</b>	

## Design Guidelines Signage

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## **Design Guidelines Signage**

### **1.0 Purpose**

- 1.0.1 The purpose of this document is to outline the minimum Signage requirements for New Construction and/or Modifications related to Tenant submitted projects at the City of Atlanta's Hartsfield-Jackson Atlanta International Airport (H-JAIA).

### **2.0 General**

- 2.0.1 All design work shall be performed in accordance with generally accepted professional principles and practices for Signage & Graphics Design and in compliance with all applicable Department of Aviation/Planning & Development (DOA/P&D) Design Guidelines, Federal, State and City of Atlanta Design Codes, Standards and Regulations.
- 2.0.2 All Tenant signage including Electrical and Structural design as required shall be submitted to DOA/P&D for review and acceptance.
- 2.0.3 The following sign types shall not be permitted:
  - 2.0.3.1 Animated component signs and signs employing moving or flashing lights.
  - 2.0.3.2 Surface mounted box or cabinet type signs.
  - 2.0.3.3 Formed plastic or injection molded signs or vacuum formed letter signs.
  - 2.0.3.4 Signs fabricated from simulated materials such as wall coverings, artificial stone or wood grained plastic laminates.
  - 2.0.3.5 Hand lettered signs of any type.

### **3.0 Signage**

- 3.0.1 Tenant Interior Spaces
  - 3.0.1.1 Signage in any leased interior Tenant space (not to public view), can be design/implemented per the Tenant's signage standards and branding requirements.
- 3.0.2 Interior/Exterior Public Spaces
  - 3.0.2.1 All design elements that project beyond the Tenant's lease line shall conform to DOA/P&D Signage Design Guidelines. (DOA/P&D) Signage Group shall provide specific sign type design standards upon the Tenant's request.
  - 3.0.2.2 Tenant signs shall not interfere with the airports' wayfinding signs, security cameras and life safety systems.
  - 3.0.2.3 Tenant signs shall not be affixed to any columns in the Terminals and Concourses.

3.0.2.4 Tenant signs shall not have exposed raceways, ballast, transformers, or readily visible sign company names or labels.

3.0.2.5 Tenant shall not erect or affix any sign to the exterior of the leased area including windows and doors, without DOA/P&D review and acceptance.

### 3.0.3 Temporary Signs

3.0.3.1 Temporary signs within the Tenant's lease line shall follow the same graphic design guidelines as permanent signage.

3.0.3.2 Signs may be fabricated of PVC foam board or other rigid materials suitable to the surrounding environment.

3.0.3.3 Mounting of signs shall be by mechanical fasteners or hidden double-sided tape.