THE URBAN DEVELOPMENT CORPORATION OF
TRINIDAD AND TOBAGO LIMITED (UDeCOTT)

REQUEST FOR PROPOSALS
DESIGN BUILD SERVICES FOR THE NATIONAL CARNIVAL COMMISSION (NCC) GRAND STAND, QPS UPGRADE – PHASE I

The Urban Development Corporation of Trinidad and Tobago Limited (UDeCOTT) invites suitably qualified and experienced entities to submit proposals for the **Design Build Services for the National Carnival Commission (NCC) Grand Stand, QPS Upgrade – Phase I.**

In accordance with the Public Procurement and Disposal of Public Property Act, 2015 (as amended), suppliers of goods, works and services, interested in conducting business with UDeCOTT must be registered on the OPR Procurement Depository. The relevant guidelines for registration can be found on the OPR website via https://oprtt.org/procurement-depository/. Therefore, UDeCOTT is inviting suitably qualified suppliers to register and apply for pre-qualification in the OPR's Procurement Depository for the following:

Line of Business Code: 72121103 – Commercial and Office Building Renovation and Repair Service

The tender process for this project will be conducted via UDeCOTT's E-Tender System. The RFP package will be available on the E-Tender System from **Monday November 27, 2023.** To access the Tender, Proponents must register on the E-Tender System via https://udecott.etenderworld.tt/login.php.

Should you encounter any technical difficulties in accessing or using the system, you are to immediately contact our IT Helpdesk at 225-4004 ext. 206 or etenderhelpdesk@udecott.com, carbon copying the Office of the Chief Procurement Officer at tenders@udecott.com.

The successful contractor shall be chosen using competitive selection process as set out in the Request for Proposals (RFP). Proponents are informed that submissions must include ALL the documents as set forth in the RFP. Failure to do so may result in disqualification.

INFORMATION SESSION

An Online Information Session will be held **via Microsoft Teams** on **Friday December 1, 2023 at 10:00 a.m.** This will be followed by a **Site Visit** on **Friday December 1, 2023 at 1:30 p.m.** Interested parties are kindly asked to confirm their availability, together with the **names and preferred email addresses** of their representatives who will be in attendance, via email to tenders@udecott.com.

SUBMISSION

Proponents are advised that submissions must include ALL the documents as set forth in the RFP and must be in accordance with the terms therein.

Failure to do so may result in disqualification.

The deadline date for submissions is **December 27, 2023 (AST)**.

Additional information may be requested through email forwarded to the attention of **The Office of the Chief Procurement Officer** at tenders@udecott.com.

UDeCOTT reserves the right to reject any or all proposals for failure to comply with any mandatory requirements stated in the RFP.

THE OFFICE OF THE CHIEF PROCUREMENT OFFICER

FREQUENTLY ASKED QUESTIONS (FAQs)

DESIGN BUILD SERVICES FOR THE NATIONAL CARNIVAL COMMISSION (NCC) GRAND STAND, QPS UPGRADE – PHASE I

What is the purpose of this Request for Proposal?

The purpose of this Request for Proposal is to identify and contract a suitably qualified and experienced Contractor to undertake the Project.

When will the RFP be available?

The RFP package will be available on UDeCOTT's E-Tender System from Monday November 27, 2023.

What is the Location of the site?

The Project Site is the Queen's Park Savannah, Port of Spain.

Are interested parties required to register with the Office of the Procurement Regulator?

Proponents are advised that in light of the proclamation of the Public Procurement and Disposal of Public Property Act, 2015, all proponent interested in conducting business with UDeCOTT must be registered on the OPR Procurement Depository. The relevant guidelines for registration can be found on the OPR website via https://oprtt.org/procurement-depository/. Proponents are required to apply for pre-qualification in the OPR's Procurement Depository for the following:

Line of Business Code: 72121103 – Commercial and Office Building Renovation and Repair Service

Is it mandatory to attend the site visit and online information session?

Attendance to the site visit and online information session is **not** mandatory. It does however, provide a greater understanding of the requirements of the RFP.

Are there any eligibility requirements for this Procurement Process?

In order to be eligible for evaluation and/or consideration to provide the Works, Proponents must be able to demonstrate the following:

- Incorporation or otherwise registered to do business in Trinidad and Tobago as evidenced by the Certificate of Incorporation or Registration (as applicable);
- Submission of Statutory Clearance/Compliance Certificates, (for companies incorporated/registered in Trinidad and Tobago) valid as at the tender submission deadline, namely;
    - VAT Clearance Certificate
    - BIR Clearance Certificate
    - NIS Certificate of Compliance

Are interested parties required to register with the Office of the Procurement Regulator?

Proponents are advised that in light of the proclamation of the Public Procurement and Disposal of Public Property Act, 2015, all proponent interested in conducting business with UDeCOTT must be registered on the OPR Procurement Depository. The relevant guidelines for registration can be found on the OPR website via https://oprtt.org/procurement-depository/.

Are Proponents required to purchase the RFP package?

There will be no cost for the RFP package.

Are Proponents required to submit a Bid Bond with their Proposals?

No, a Bid Bond is not required for this RFP.

Proponents are to note that the responses provided as guidance to these Frequently Asked Questions does not relieve the Proponent of its obligation and responsibility to fulfil and comply with all requirements of the Request for Proposals.

NCC CAPITAL WORKS AT THE GRANDSTAND PROJECT

(PHASE 1)

APPENDIX 3

TERMS OF REFERENCE / SCOPE OF WORK

FOR

STRUCTURAL

ASSESSMENT, DESIGN & CONSTRUCTION WORKS

OF DESIGN-BUILD CONTRACTOR

OCTOBER 2023

Contents

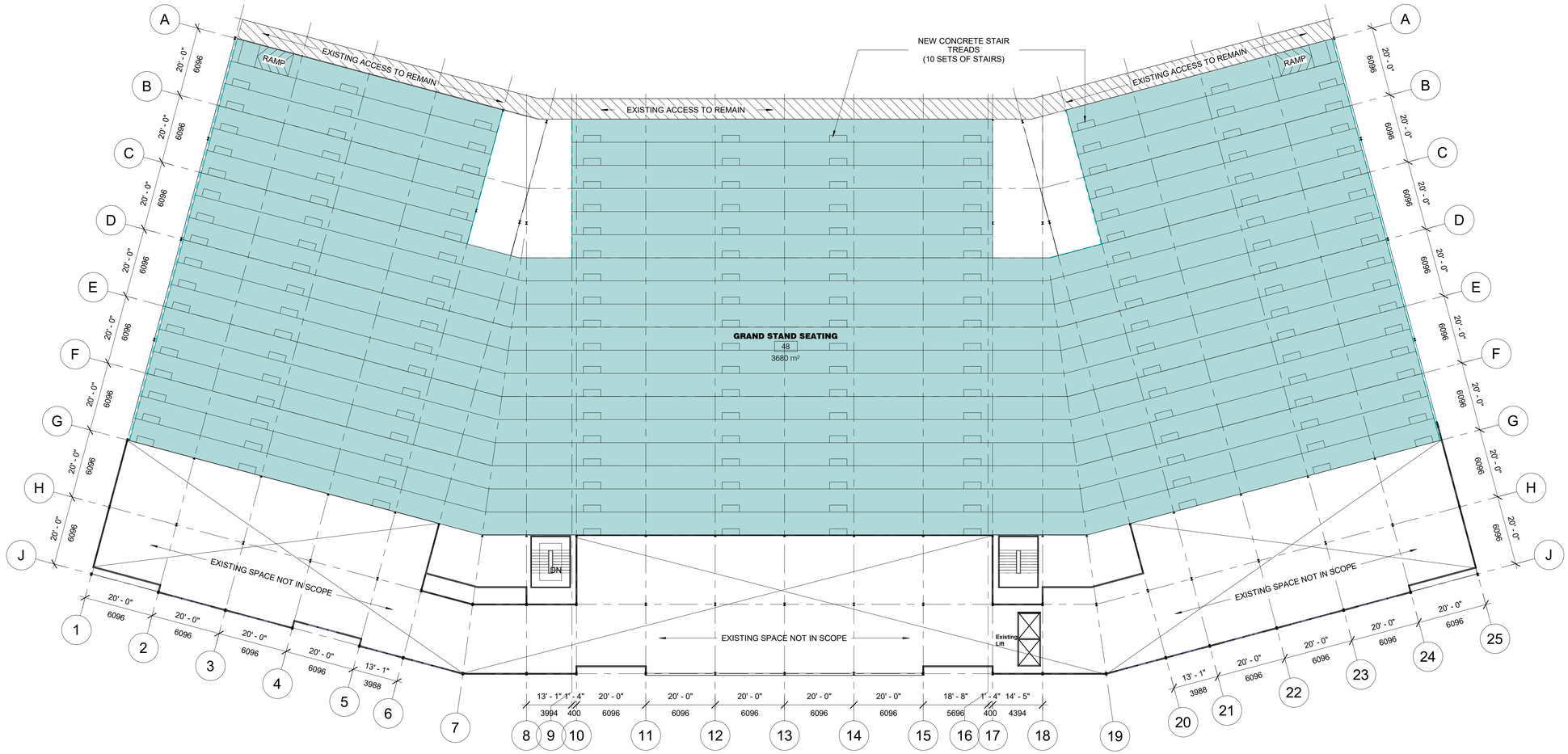
BRIEF SCOPE OF STRUCTURAL ASSESSMENT / DESIGN / CONSTRUCTION WORKS	
1.0	**GENERAL**
1.1	The Design-Build Contractor / Consultant shall be required to perform generally all detailed structural assessment of existing condition, design, construction and repair works as specified in the RFP/Tender Documents. Bidders are required to visit the site and do its independent assessment to familiarize themselves and understand the full nature and extent of work and its constraints to consider in their tender.
2.0	**CODES AND STANDARDS**
2.1	The structural design and works should be in accordance with the relevant latest codes and standards required by MOWT Design Branch such as ASCE 7-05, IBC 2009, ACI 318-14, AISC 360-10 and ASTM Standards.
3.0	**AVAILABLE STRUCTURAL AS-BUILT DRAWINGS & RELEVANT DOCUMENTS**
3.1	Review and confirm accuracy of available structural drawings from Careng Group Ltd & Steel Structures Ltd for reference only and to update the as-built drawing on portion of works related to the tendered scope. There is no geotechnical report or construction records available on the project.
3.2	Access, Platforms and Dismantling required to facilitate production of as-built drawings relevant to the scope of works should be considered in the tender.
4.0	**STRUCTURAL CONDITION ASSESSMENT FOR INTENDED PURPOSE**
4.1	Conduct detailed structural condition assessment and testing where deemed required. Access, Platforms and Dismantling required to facilitate structural assessment should be considered in the tender.
4.2	Verify existing foundation at critical locations where deemed required.
4.3	Submit detailed design and structural condition report stamped by BOETT registered engineer with conclusion/confirmation that the proposed replacement from timber flooring/seating to minimum 6” concrete deck slab is acceptable.

BRIEF SCOPE OF STRUCTURAL ASSESSMENT / DESIGN / CONSTRUCTION WORKS	
5.0	**MINIMUM AREAS REQUIRED STRUCTURAL REPAIR OR RESTORATION WORKS**
5.1	**GRANDSTAND AREA**
a)	**Deteriorating Timber Plywood Flooring at Grand Stand Seating Area** Some of the timber plywood flooring/seating is now in deteriorating state over the years and/or not aesthetically pleasing and require some repair or replacement. The timber seating used ¾"thk plywood on 2"x4" timber joists ~16" O.C supported by ~W10x26 steel beams (6"x10"x26lbs/ft beam). Due to the inherent disadvantages of using wood especially for locations exposed to weather, the concrete slab solution is cheaper and less maintenance cost in long term. **Remove the timber flooring and 2x4" timber joists and replace it with 6" thk composite floor deck slab (CFD3) using 3" Metal Deck Slab (Ga.20) on 3" concrete topping (4000psi) w/ #65 B.R.C fabric.** **Provide T10 rebar in each deck trough and fuse weld ¾"dia x 5" long nelson shear studs @300mm O.C on steel beams every flute. Include all necessary costs for pour stop / closure plates from deck supplier. (Refer to attached conceptual drawing as minimum design). Use lightweight concrete only if deemed required and need to consider in the tender to reduce the seismic dead weight and minimize the additional loads to beams, columns and foundation.** **All timber joists and plywood to be removed are property of client and the transfer and disposal for those unusable to be within 100Km radius from the site to be confirmed by client / UDeCOTT.**
	Successful bidder is required to submit method statement for approval by UDeCOTT prior to proceed. Please refer to site visit photos and Structural Performance Specs for additional references in tender and execution of the works.

BRIEF SCOPE OF STRUCTURAL ASSESSMENT / DESIGN / CONSTRUCTION WORKS	
6.0	**APPENDICES**
	Appendix 3A – Assumed as-built drawings available Appendix 3B – Deck slab conceptual drawing as minimum design for reference Appendix 3C – Site visit photos Appendix 3D – Structural Performance Specs

LOCATION

The GRAND STAND, is located within the Queens Park Savannah, Port of Spain.



1 Grand Stands
1 : 200

New Concrete Flooring to Grand Stands

NOTES

Dimensions are not to be scaled from drawings. Contractor to verify all dimensions and levels on site prior to shop drawings, fabrication or construction. All discrepancies, omissions or errors are to be reported to the architect immediately.

This drawings is to be read in conjunction with, engineering drawings, service drawings, specifications and schedule of works.

REV.	BY	DATE	DESCRIPTION

ARCHITECT:

udecott
Urban Development Corporation of Trinidad and Tobago Limited

Urban Development Corporation of Trinidad and Tobago.
38-40 Sackville Street,
Port of Spain, Trinidad and Tobago
Email: info@udecott.com
Tel: +1 868 225-5874

PROJECT:

NCC GRAND STAND

Queen's Park Savannah

CLIENT:

National Carnival Commision

DRAWING TITLE:

Grand Stands Floor Plan

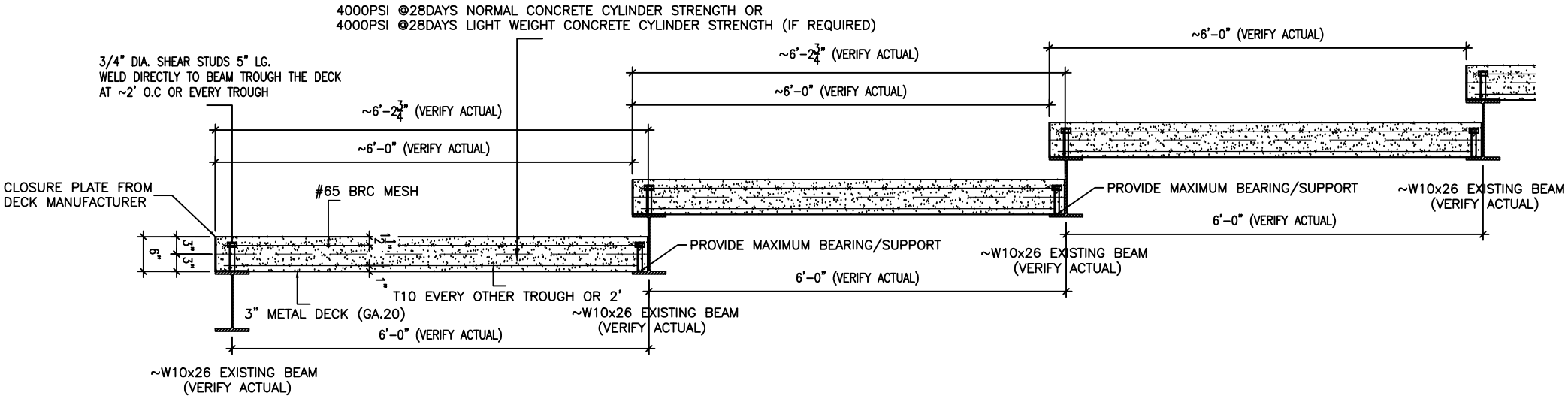
PROJECT ISSUE STATUS:

SCHEMATIC DESIGN

DRAWNED BY	APPROVED BY	SCALE
DW/ SA	SA	1 : 200
CREATED:	ISSUED:	FORMAT
04/10/2023 8:34:57 AM	03/10/23	24" x 36"

PROJ. REF.	DRAWING NO.	REV.
N/A	A203	

NCC GRANDSTAND PROJECT (PHASE 1)
APPENDIX 1A OF TENDER DOCUMENTS
CONCEPTUAL DESIGN ONLY
(TO BE REVIEWED/FINALIZED BY DESIGN–BUILD CONTRACTOR)

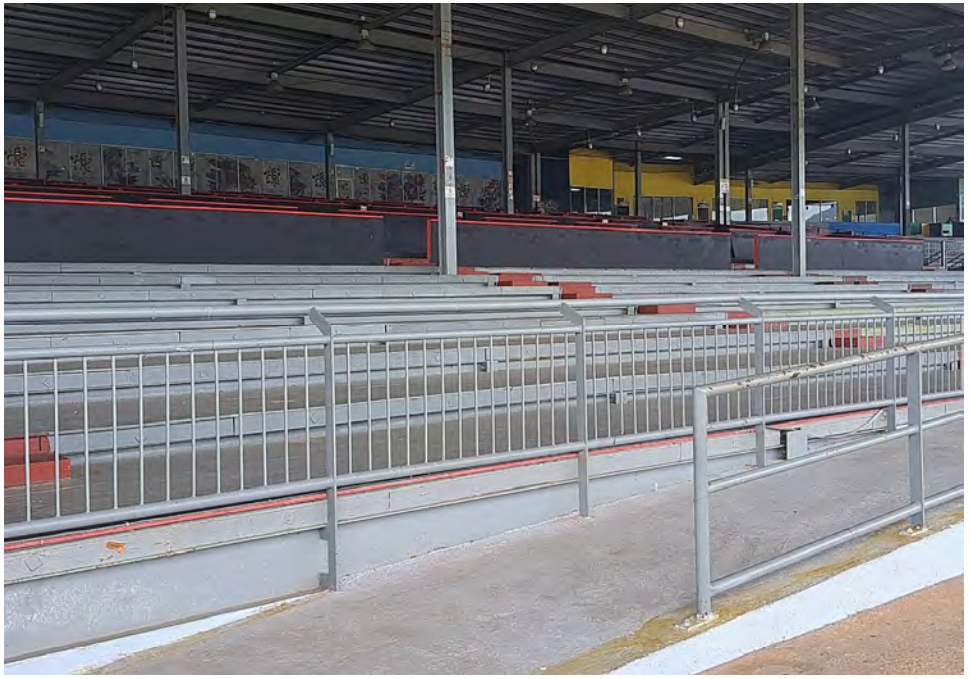


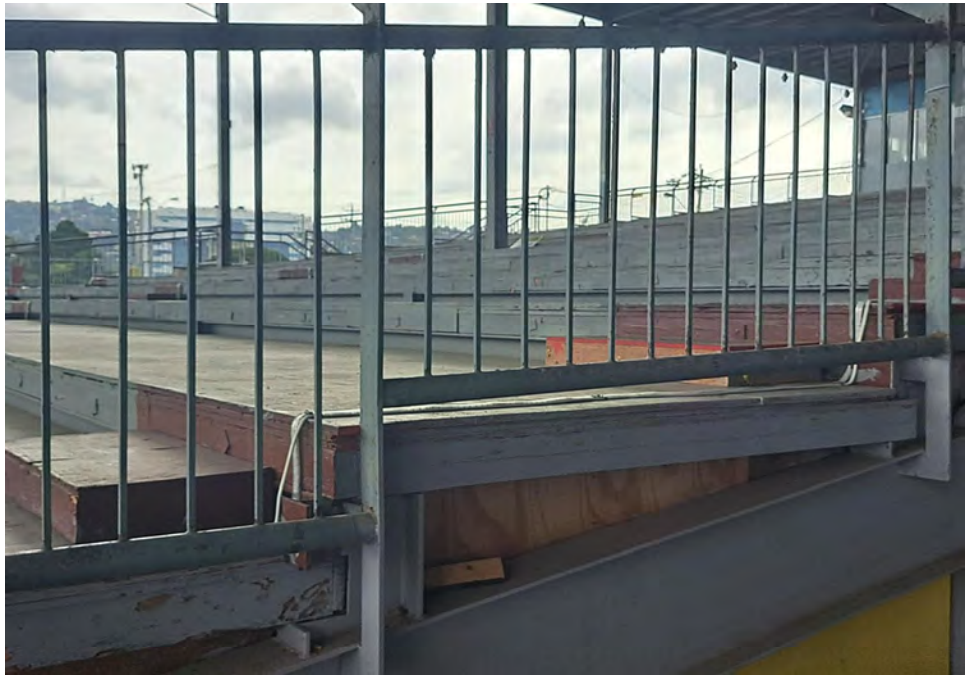
1

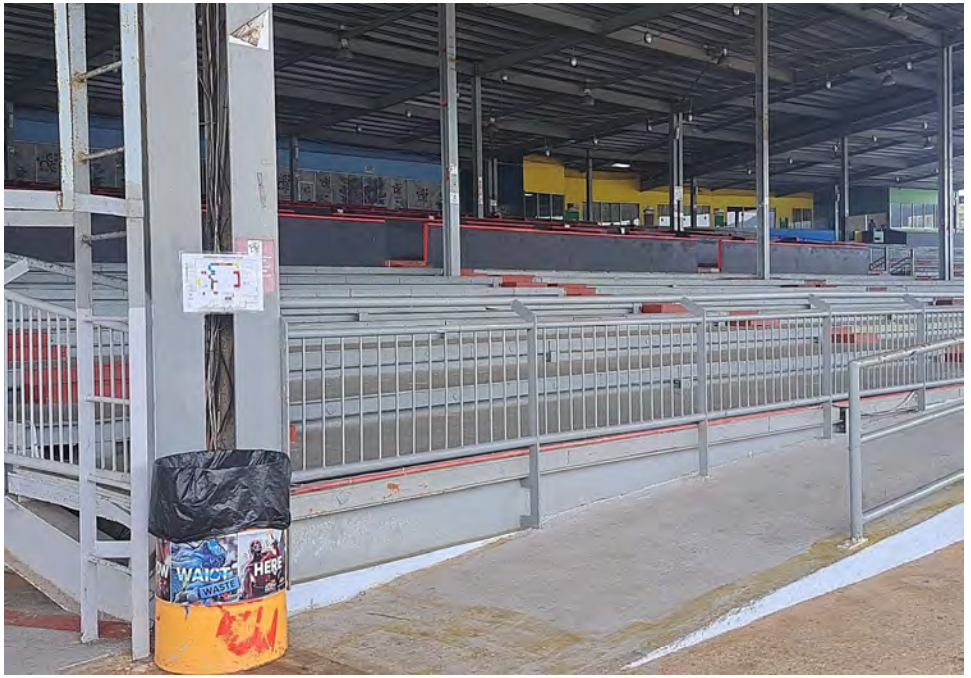
MINIMUM DESIGN TO CONSIDER IN THE TENDER
TYPICAL COMPOSITE DECK SLAB TO EXISTING BEAM DETAIL

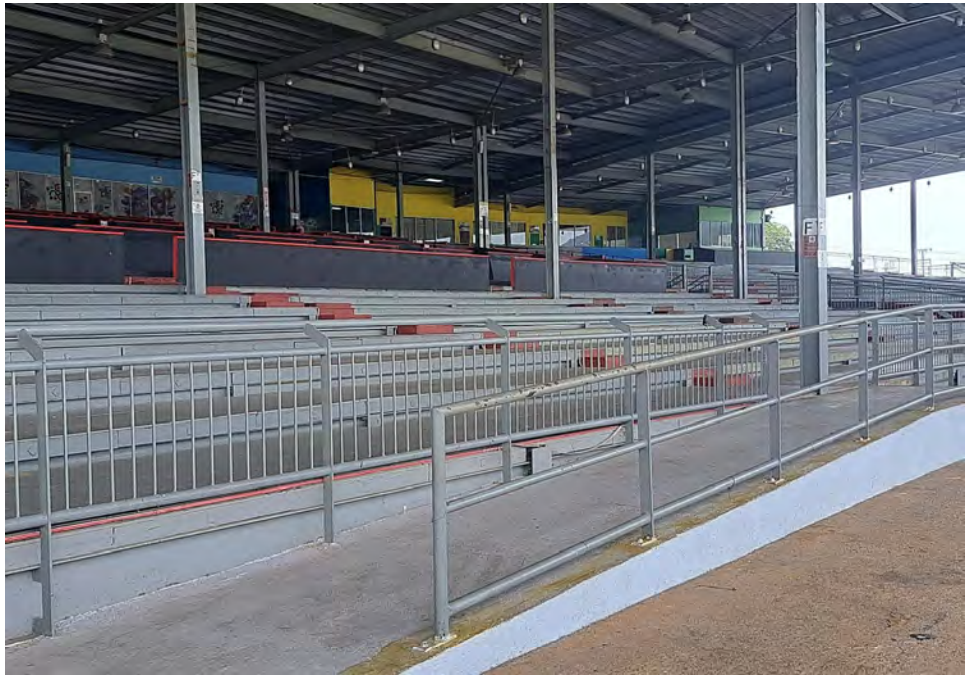
SCALE: NTS

NCC GRANDSTAND PHOTOS (PHASE 1)






WASTE

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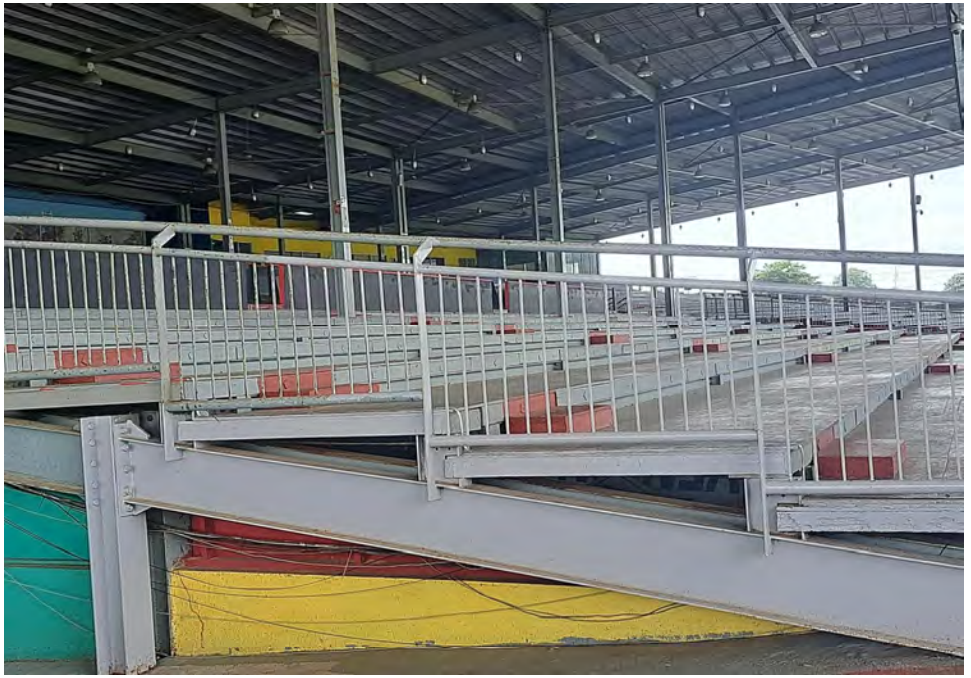
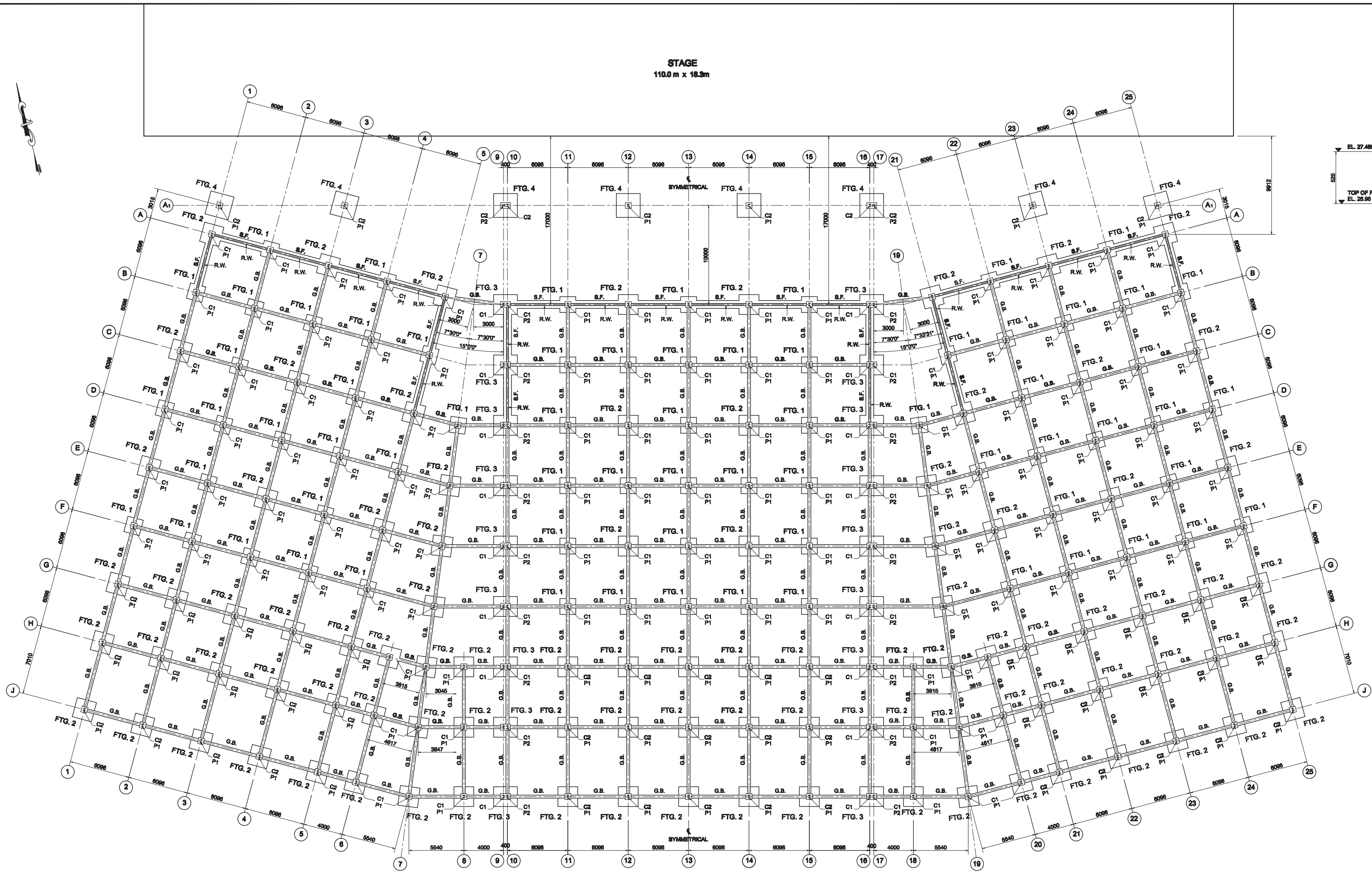
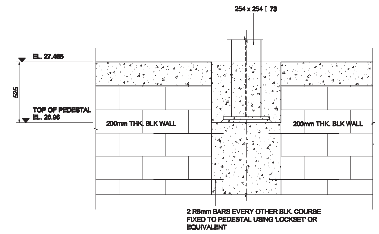




FOUNDATION PLAN

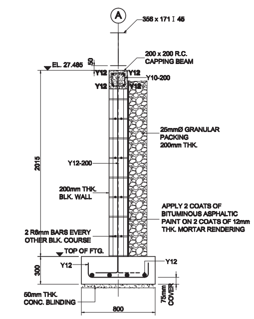
SCALE 1:250



ELEVATION

200mm THK. R.C. BLK. RET. WALL FIXING DETAIL

SCALE 1:25



200mm THK. R.C. BLK. RETAINING WALL

SCALE 1:25

AS BUILT

03-29-2011

NOTES:

1. UNDERSIDE OF FOUNDATION TO BE A MINIMUM OF 1200 mm BELOW ORIGINAL GRADE.
2. CONCRETE- GRADE 30 THROUGHOUT, CUBE STRENGTH TO BE A MINIMUM 30 N/mm2 AT 28 DAYS.
3. CEMENT- O.P.C. UNLESS NOTED OTHERWISE.
4. REINFORCEMENT- B.S. 4449 HIGH YIELD STEEL Fy=460 N/mm2 UNLESS NOTED OTHERWISE.
5. FTG.- 75mm CONC. COVER.
6. STRUCTURAL STEEL TO BE GRADE 50

FOOTING SCHEDULE

FTG. NO.	SIZE	THICKNESS	Q'TY
1	1600 x 1600	450	68
2	2000 x 2000	450	91
3	2000 x 2400	450	18
4	2400 x 2400	1000	8

LEGEND

ABBREVIATION	DESCRIPTION	SIZE
G.B.	GROUND BEAM	300 x 300
S.F.	R.C. STRIP FTG.	800 x 300
R.W.	RETAINING BLK. WALL	200mm THK.
C1	COLUMN	254 x 254 I 73
C2	COLUMN	254 x 254 I 107
P1	PEDESTAL	600 x 600
P2	PEDESTAL	1000 x 600

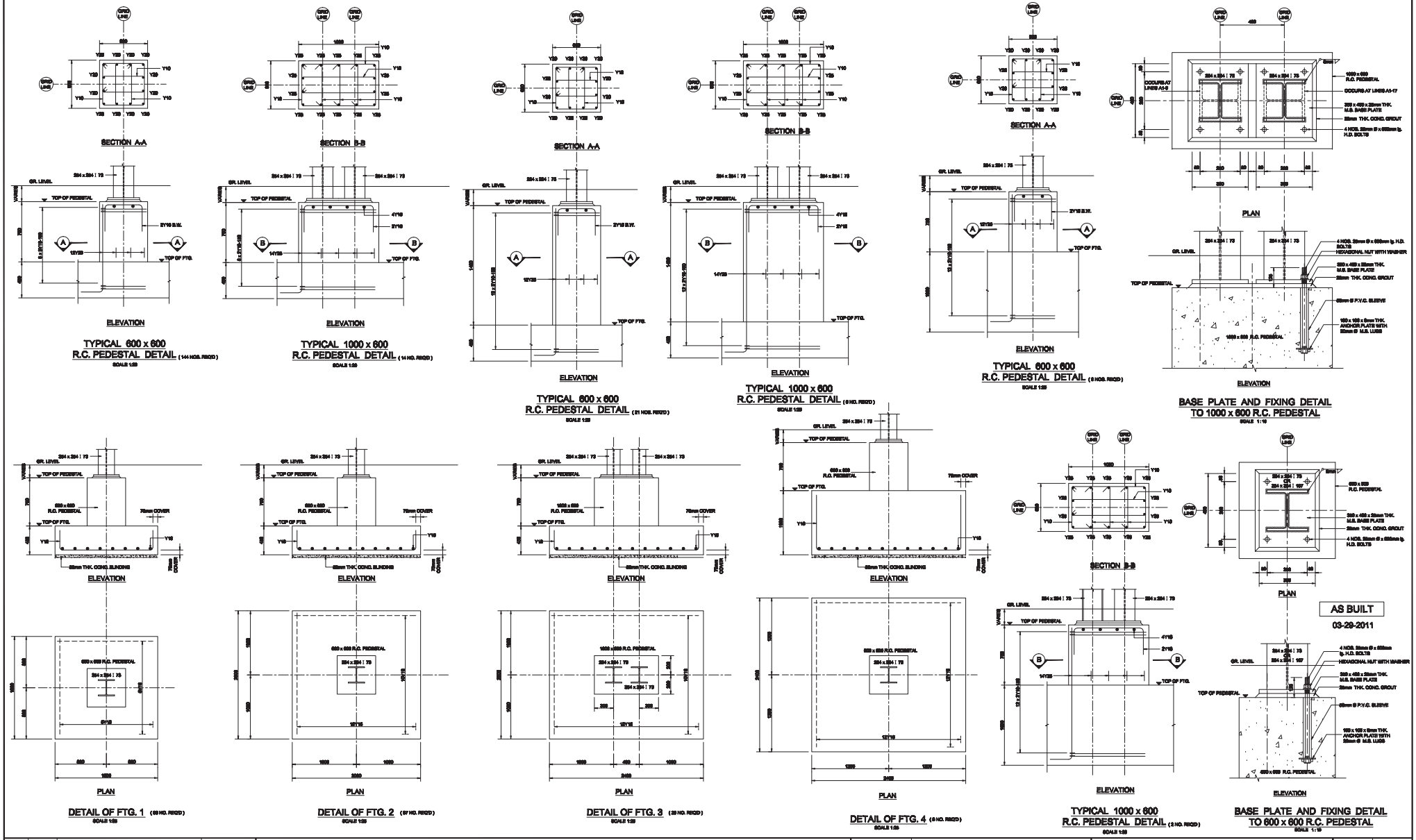
REV.	DATE	DESCRIPTION	INITIALS
A	12-08-10	BUILDING SIZE REDUCED	A.D.B.
B	12-17-10	Line 6, 8,18 & 20 Relocated, Ret. Walls Added, Forecourt Beams Omitted	A.D.B.

Proposed Grand Stand for Carnival 2011, Queens Park Savannah, Port-of-Spain

CLIENT:	THE NATIONAL CARNIVAL COMMISSION
ARCHITECT:	
DWG. TITLE:	GRAND STAND FOUNDATION PLAN

CARENG GROUP LIMITED
CONSULTING CIVIL & STRUCTURAL ENGINEERS
5 SYDNEY ST. P.O.S. TRINIDAD W.I.
TEL. 625-8729, 1859 fax 625-1776
email careng@carenggroup.com

DESIGNED	A. SAMUEL
DRAWN	A.D.B.
CHECKED	
DATE	DEC. 2010
SCALE	AS SHOWN
DWG. NO.	1044-GS-01
REV.	B



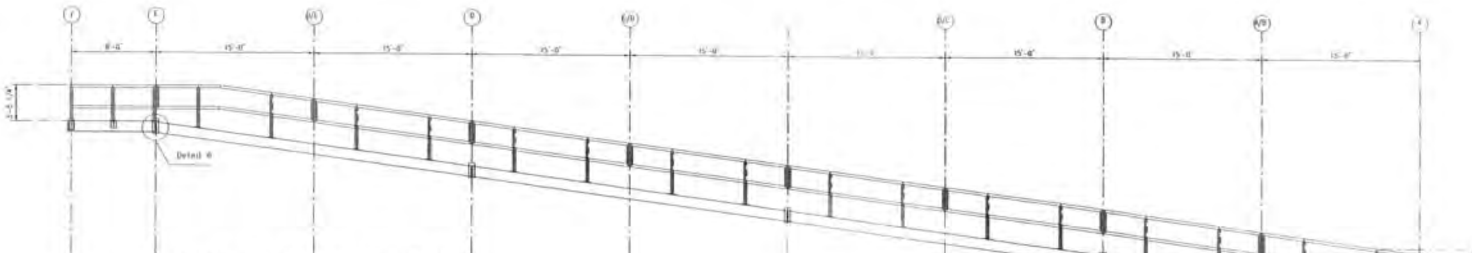
NO.	DATE	REVISION	INITIALS
A	10-08-10	PEDESTAL HEIGHT ADDED	A.D.B.
B	10-10-10	FOOTINGS AND PEDESTALS QTY. AMENDED	J. Mc-SWEEN
C	10-17-10	FTG. 4 & FOUNDATION DETAILS ADDED	J. Mc-SWEEN

Proposed Grand Stand for Carnival 2011, Queens Park Savannah, Port-of-Spain

CLIENT:	THE NATIONAL CARNIVAL COMMISSION
ARCHITECT:	
DWG. TITLE:	GRAND STAND FOUNDATION DETAILS

CARENG GROUP LIMITED
CONSULTING CIVIL & STRUCTURAL ENGINEERS
5 SYDNEY ST. P.O.B. TRINIDAD W.I.
TEL. 625-5729, 1869 fax 625-1776
email careng@careng.com

DESIGNED	C.D.MORLAND
DRAWN	A.D.B.
CHECKED	
DATE	DEC. 2010
SCALE	AS SHOWN
DWG. NO.	REV.
1044- GS-02	C



FRAME OFF GRID LINES 1 & 11

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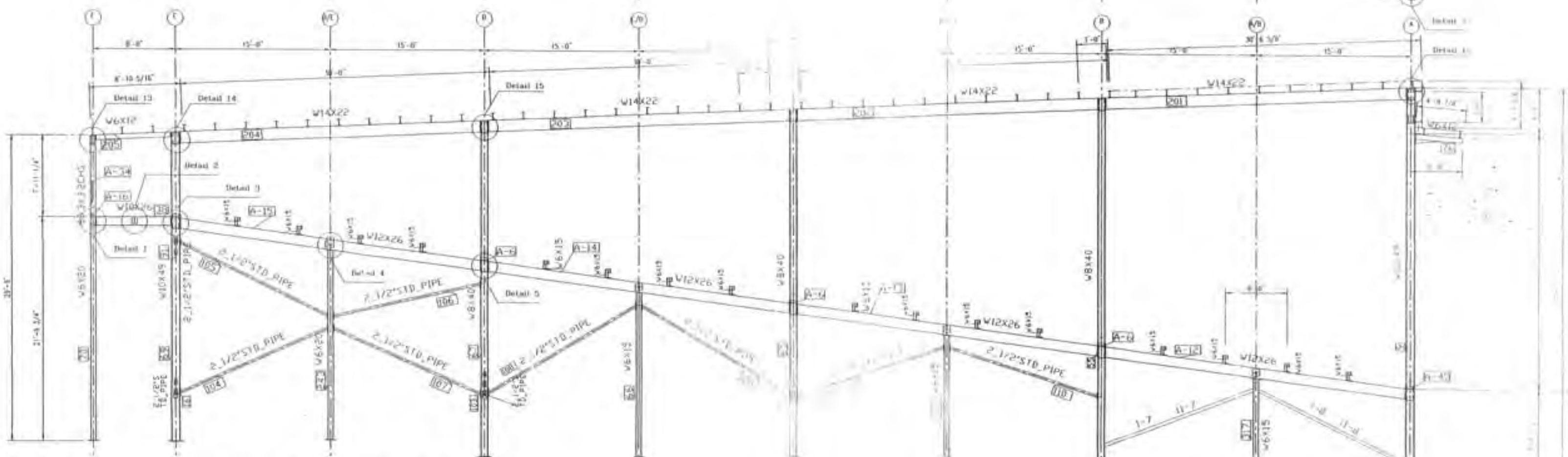

FRAME ON GRID LINES 1 & 11

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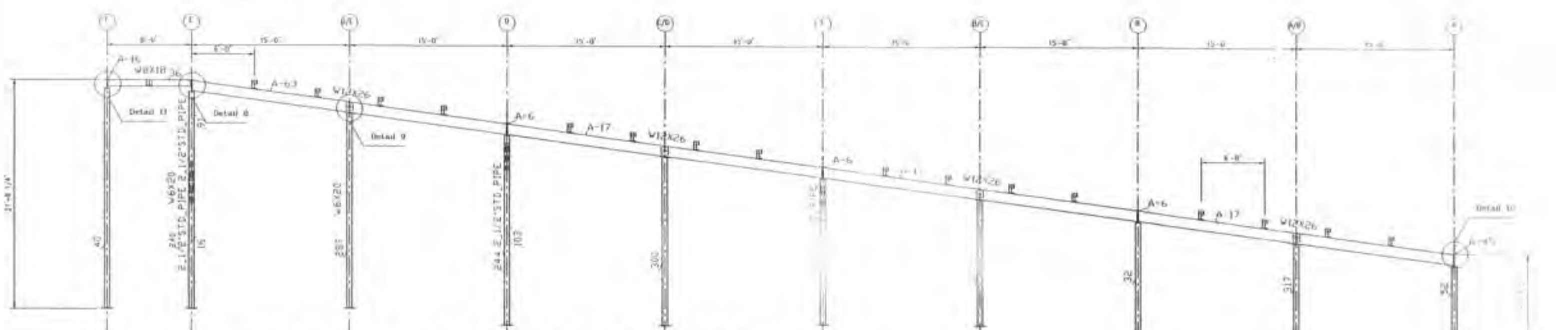


FRAME ON GRID LINES 1/2, 2/3, 3/4, 4/5, 5/6, 6/7, 7/8, 8/9, 10/11

SCALE 3/16"=1'-0"

NOTES

REVISIONS

No.	Date	Description

MINISTRY OF WORKS AND INFRASTRUCTURE

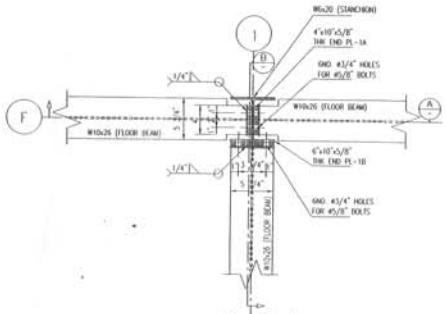
Project Title: NORTH STAND QUEEN'S PARK SAVANNAH

Drawing Title: FRAMES OFF GRID LINES 1&11, FRAMES ON GRID LINES 1&2, 10&11

Drawn	Designed	Traced	Checked

Scale | Date

DRAWING NUMBER	SHEET NO	REV.NO
	GA20	



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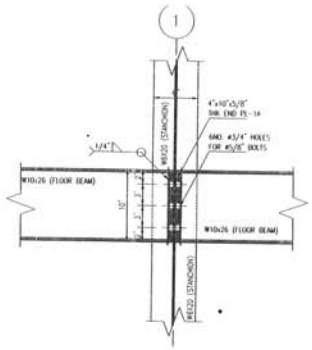

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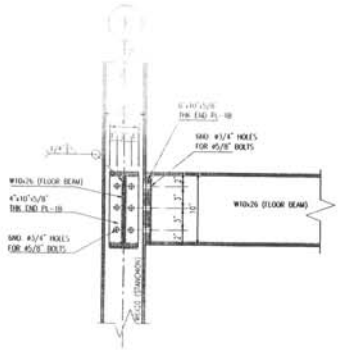

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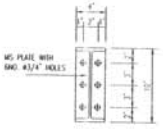

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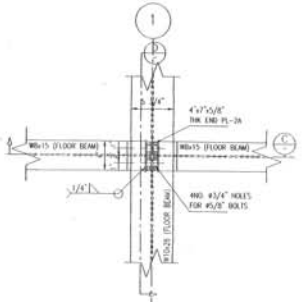

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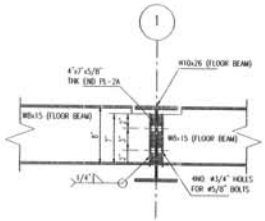

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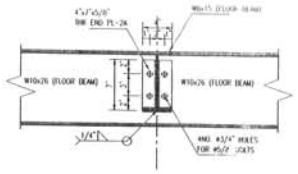

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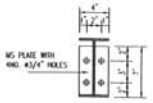

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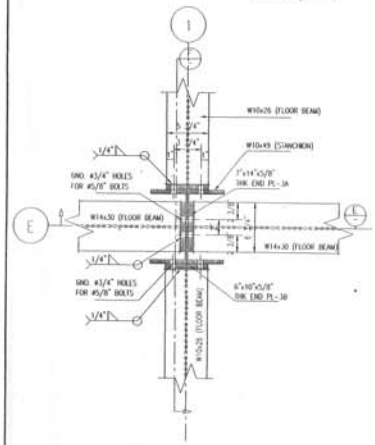

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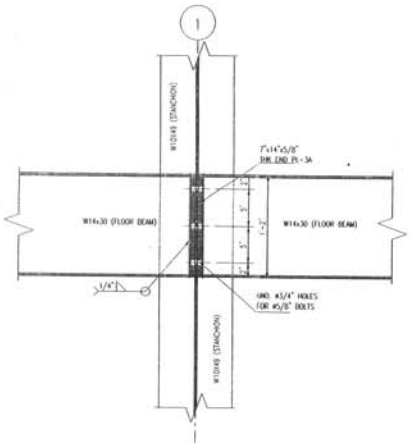

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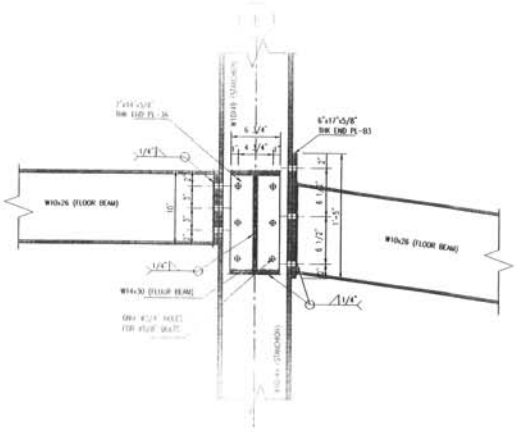

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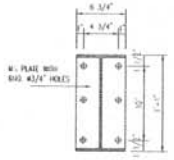

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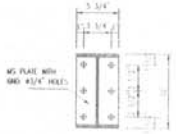

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NOTES

REVISIONS

No	Date	Description

GOVERNMENT OF THE REPUBLIC OF TRINIDAD AND TOBAGO
MINISTRY OF WORKS AND INFRASTRUCTURE
DESIGNS ENGINEERING BRANCH

Project Title
NORTH STAND QUEEN'S PARK SAVANNAH

Drawing Title
FLOOR FRAMING CONNECTION DETAILS 1-3

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Chief Designs Engineer			
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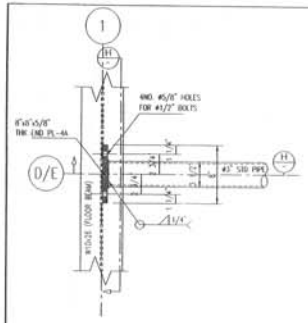
		GA23	



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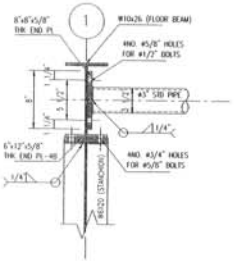
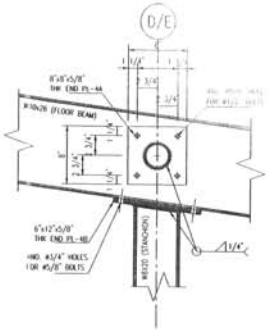
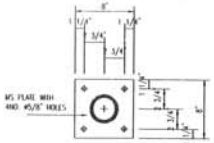


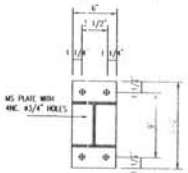
SECTION G
SCALE:1-1/2"=1'-0"



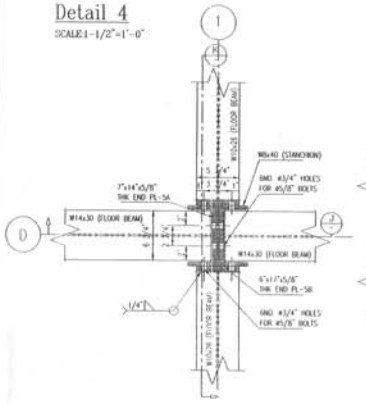
SECTION H
SCALE:1-1/2"=1'-0"



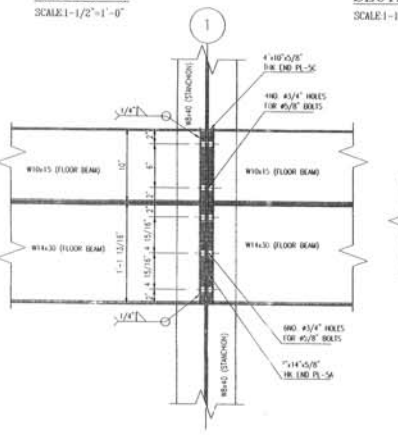
END PL-4A
SCALE:1-1/2"=1'-0"



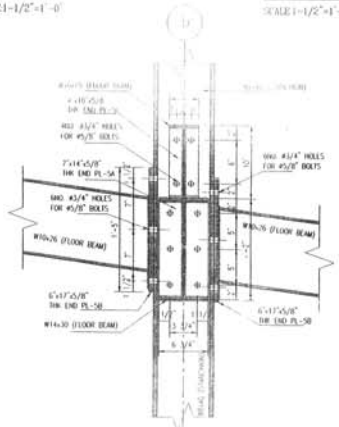
END PL-4B
SCALE:1-1/2"=1'-0"



Detail 5
SCALE:1-1/2"=1'-0"



SECTION J
SCALE:1-1/2"=1'-0"



SECTION K
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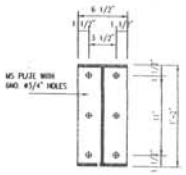

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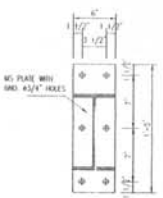
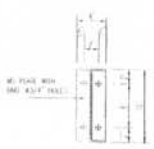
SCALE:1-1/2"=1'-0"



END PL-5B
SCALE:1-1/2"=1'-0"



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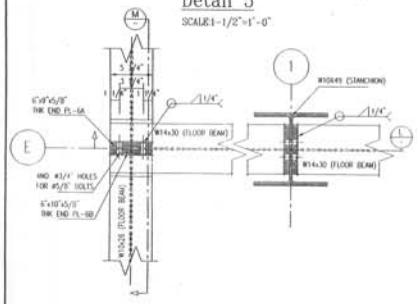
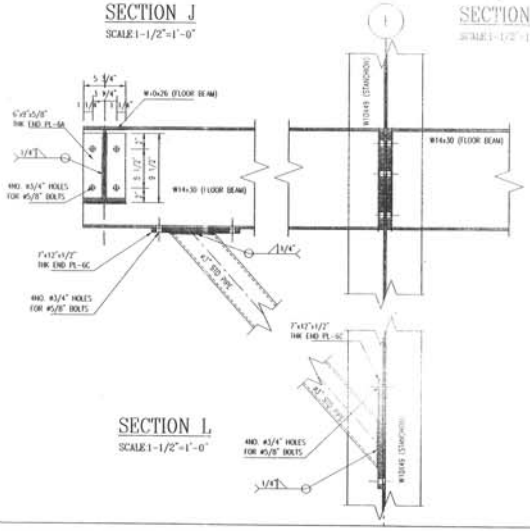
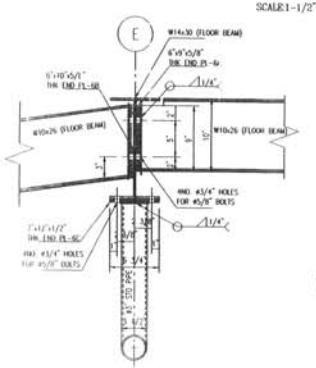
SCALE:1-1/2"=1'-0"



Detail 6
SCALE:1-1/2"=1'-0"



SECTION L
SCALE:1-1/2"=1'-0"



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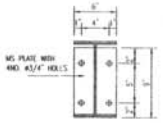
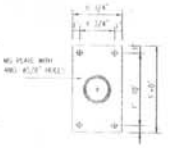
SCALE:1-1/2"=1'-0"



END PL-6A
SCALE:1-1/2"=1'-0"

END PL-6B
SCALE:1-1/2"=1'-0"



END PL-6C
SCALE:1-1/2"=1'-0"

NOTES

REVISIONS

No.	Date	Description

GOVERNMENT OF THE REPUBLIC OF TRINIDAD AND TOBAGO
MINISTRY OF WORKS AND INFRASTRUCTURE
DESIGNS ENGINEERING BRANCH

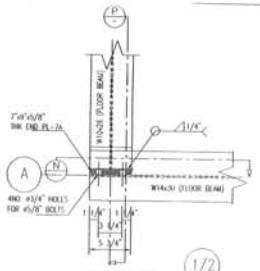
Project Title
NORTH STAND QUEEN'S PARK SAVANNAH

Drawing Title
FLOOR FRAMING CONNECTION DETAILS 4-6

Drawn	Designed	Traced	Checked

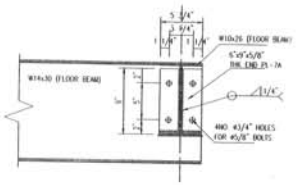
Scale:
Date:
Chief Designs Engineer:

DRAWING NUMBER	SHEET NO.	REV.NO.
	GA22	



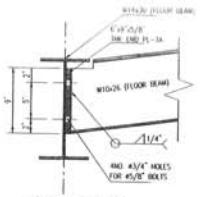
Detail 7

SCALE:1-1/2"=1'-0"



SECTION N

SCALE:1-1/2"=1'-0"



SECTION P

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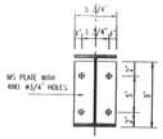
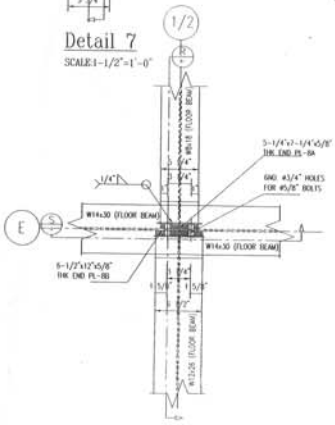


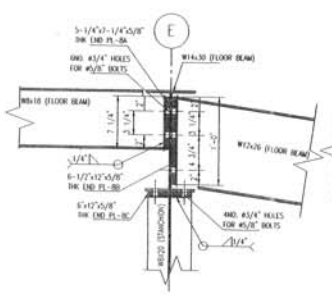
END PL-7A

SCALE:1-1/2"=1'-0"



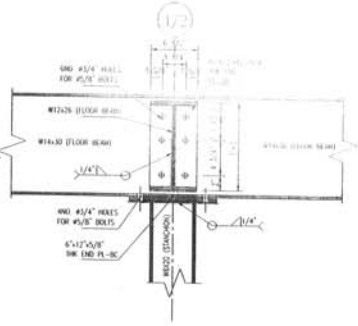
Detail 8

SCALE:1-1/2"=1'-0"



SECTION R

SCALE:1-1/2"=1'-0"

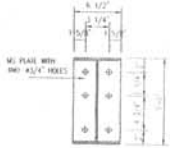


SECTION S

SCALE:1-1/2"=1'-0"

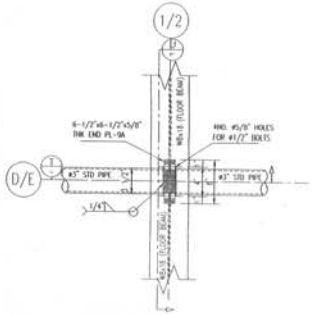
END PL-8A

SCALE:1-1/2"=1'-0"



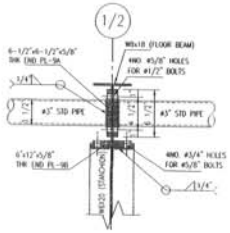
END PL-8B

SCALE:1-1/2"=1'-0"



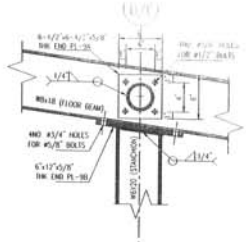
Detail 9

SCALE:1-1/2"=1'-0"



SECTION T

SCALE:1-1/2"=1'-0"



SECTION U

SCALE:1-1/2"=1'-0"

END PL-9A

SCALE:1-1/2"=1'-0"

END PL-9B

SCALE:1-1/2"=1'-0"

NOTES

REVISIONS

No.	Date	Description

GOVERNMENT OF THE REPUBLIC OF TRINIDAD AND TOBAGO

MINISTRY OF WORKS AND INFRASTRUCTURE

DESIGNED ENGINEERING DRAWN

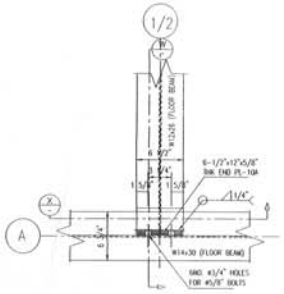
Project Title

NORTH STAND QUEEN'S PARK SAVANNAH

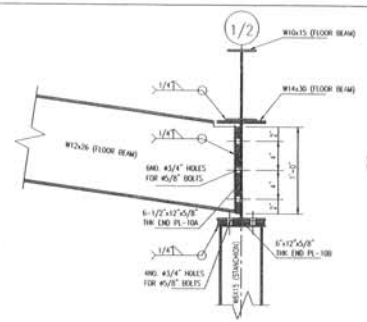
Drawing Title

FLOOR FRAMING CONNECTION DETAILS 7-9

Drawn	Designed	Traced	Checked
Scale		Date	
Chief Designs Engineer			
DRAWING NUMBER		SHEET NO.	REV.NO.
		GA23	



Detail 10
SCALE:1-1/2"=1'-0"



SECTION W
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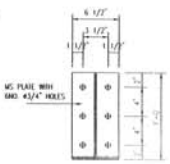
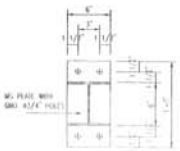


END PL-10A
SCALE:1-1/2"=1'-0"



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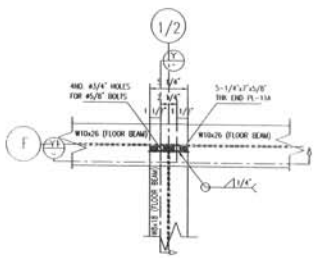

Detail 11
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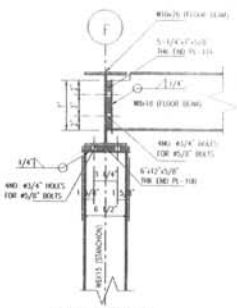
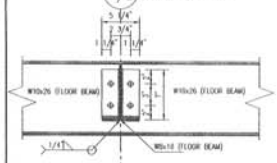


SECTION Y
SCALE:1-1/2"=1'-0"



SECTION Y1
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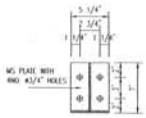

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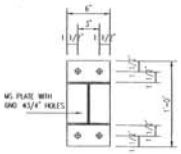

END PL-11B
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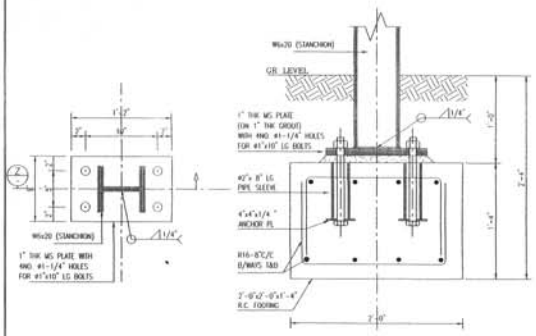
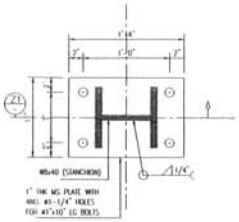
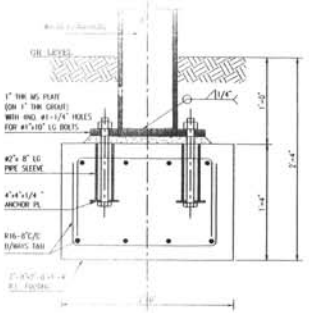
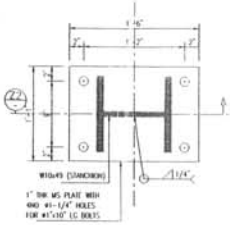


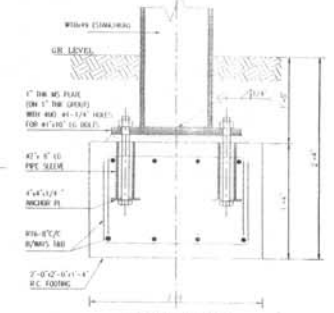
SECTION Z
SCALE:1-1/2"=1'-0"





SECTION Z1
SCALE:1-1/2"=1'-0"





SECTION Z2
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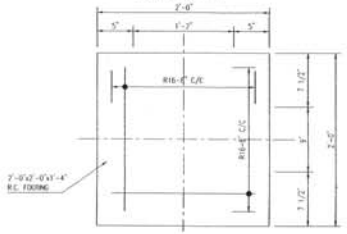
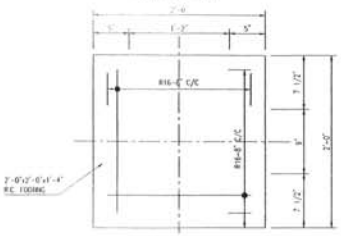
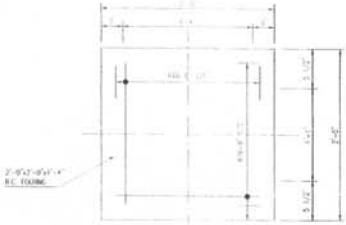


W6x20 (STANCHION) BASE PL CONN. DET'L



W8x40 (STANCHION) BASE PL CONN. DET'L



W10x49 (STANCHION) BASE PL CONN. DET'L

REVISIONS

Date	Description

GOVERNMENT OF THE REPUBLIC OF TRINIDAD AND TOBAGO

MINISTRY OF WORKS AND INFRASTRUCTURE

DESIGNED ENGINEERING BRANCH

Project Title:
NORTH STAND QUEEN'S PARK SAVANNAH

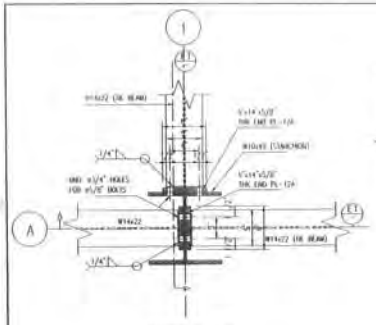
Drawing Title:
FLOOR FRAMING CONNECTION DETAILS
10 & 11
STANCHION CONNECTION DETAILS

Drawn	Designed	Traced	Checked

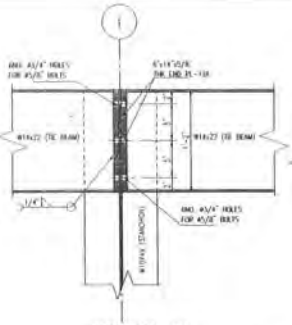
Scale: Date:

Chief Designs Engineer

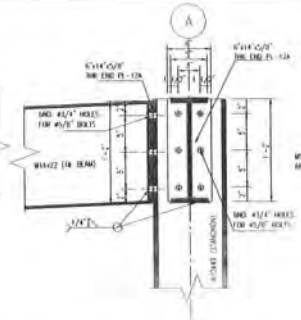
DRAWING NUMBER	SHEET NO.	REV.NO
	GA24	



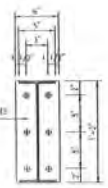
DETAIL 12
SCALE:1-1/2"=1'-0"



SECTION E1
SCALE:1-1/2"=1'-0"



SECTION F1
SCALE:1-1/2"=1'-0"



END PL-12A
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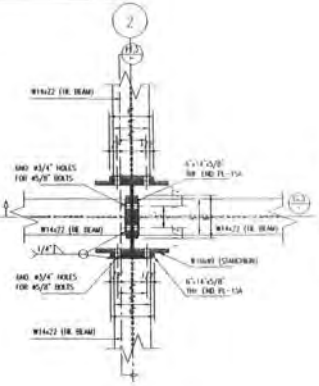
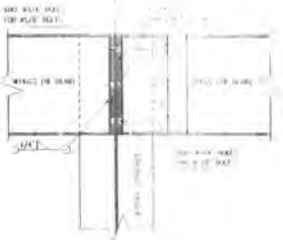


DETAIL 15
SCALE:1-1/2"=1'-0"



SECTION G3
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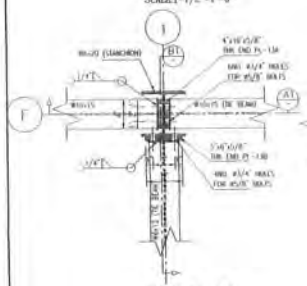

DETAIL 13
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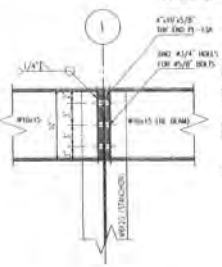

SECTION A1
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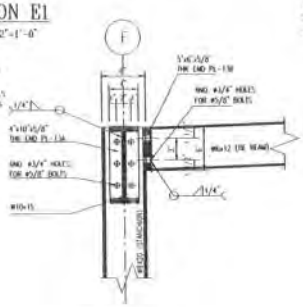
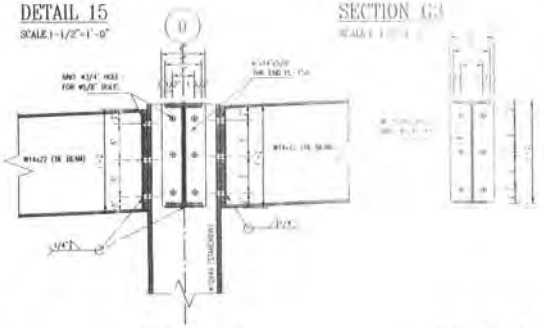


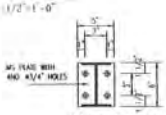
SECTION B1
SCALE:1-1/2"=1'-0"

END PL-13A
SCALE:1-1/2"=1'-0"

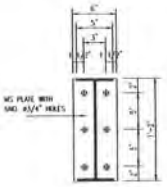
END PL-13B
SCALE:1-1/2"=1'-0"



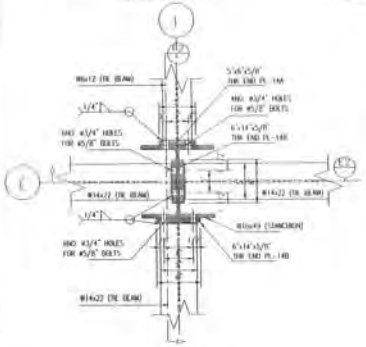
SECTION H3
SCALE:1-1/2"=1'-0"



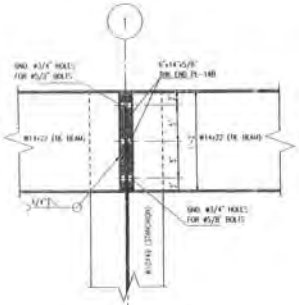
END PL-14A
SCALE:1-1/2"=1'-0"



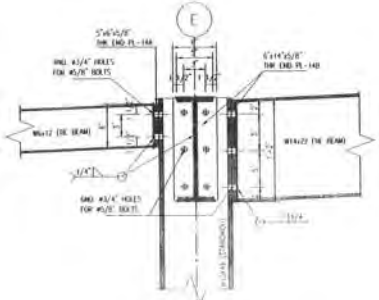
END PL-14B
SCALE:1-1/2"=1'-0"



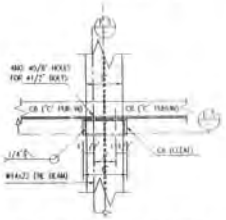
DETAIL 14
SCALE:1-1/2"=1'-0"



SECTION E2
SCALE:1-1/2"=1'-0"



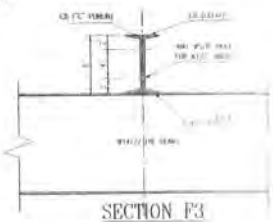
SECTION F2
SCALE:1-1/2"=1'-0"



TYP 'C' PURLIN CONN. DETAIL
SCALE:1-1/2"=1'-0"

SECTION E3
SCALE:1-1/2"=1'-0"

END PL-15A
SCALE:1-1/2"=1'-0"



SECTION F3
SCALE:1-1/2"=1'-0"

REVISIONS

Date	Description

GOVERNMENT OF THE REPUBLIC OF TRINIDAD AND TOBAGO

MINISTRY OF WORKS AND INFRASTRUCTURE

Project Title
NORTH STAND QUEEN'S PARK SAVANNAH

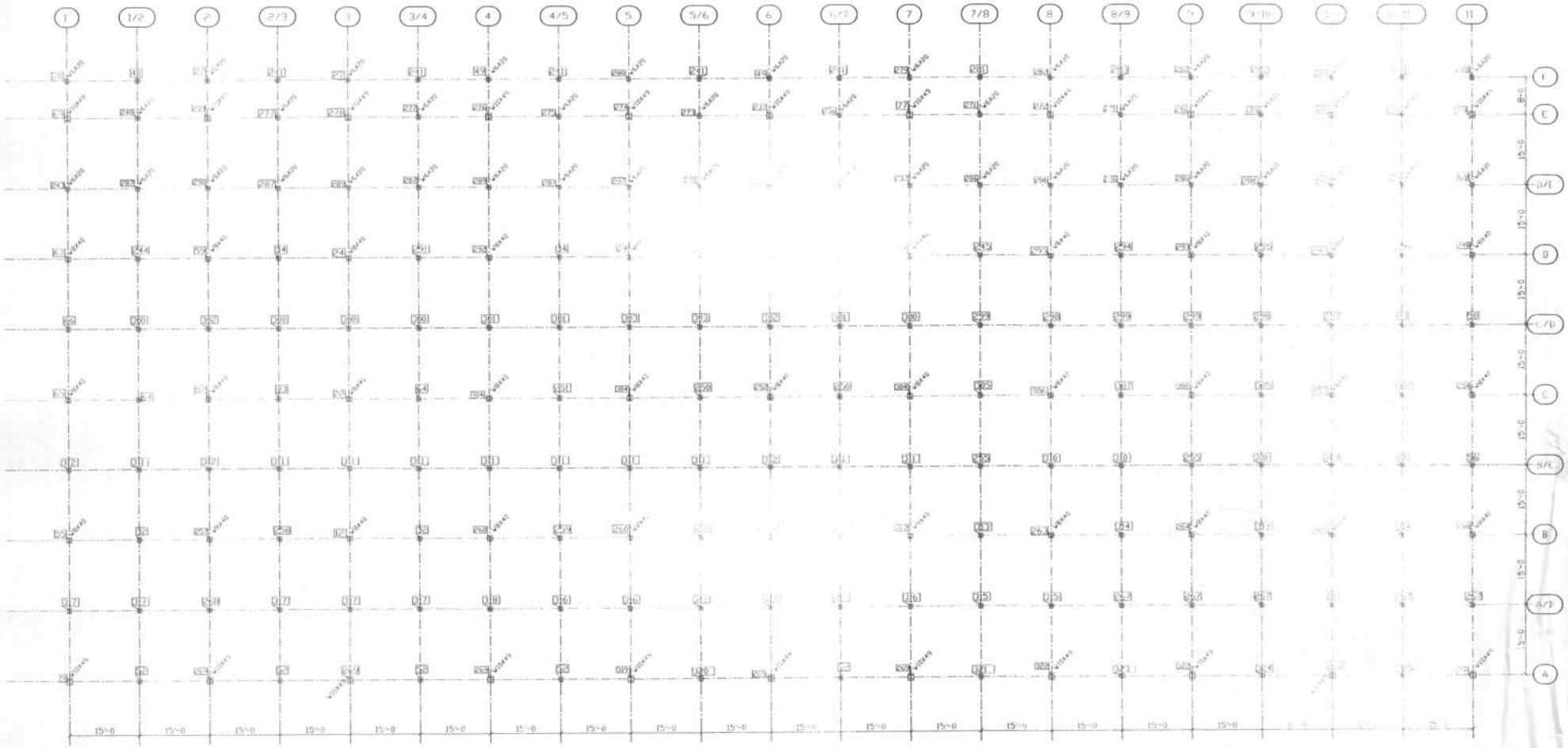
Drawing Title
ROOF CONNECTION DETAILS 12-15
TYP 'C' PURLIN CONNECTION DETAIL

Drawn	Designed	Traced	Checked

Date:

Chief Draughts Engineer

DRAWING NUMBER	SHEET NO	REV.NO.
	GA25	



GENERAL NOTES

ALL STEEL = ASTM A572 GR 50

REV	BY	DATE	DETAILS
A	LB	24/10/08	ERECTION MARK ADDED

CLIENT: MINISTRY OF WORKS

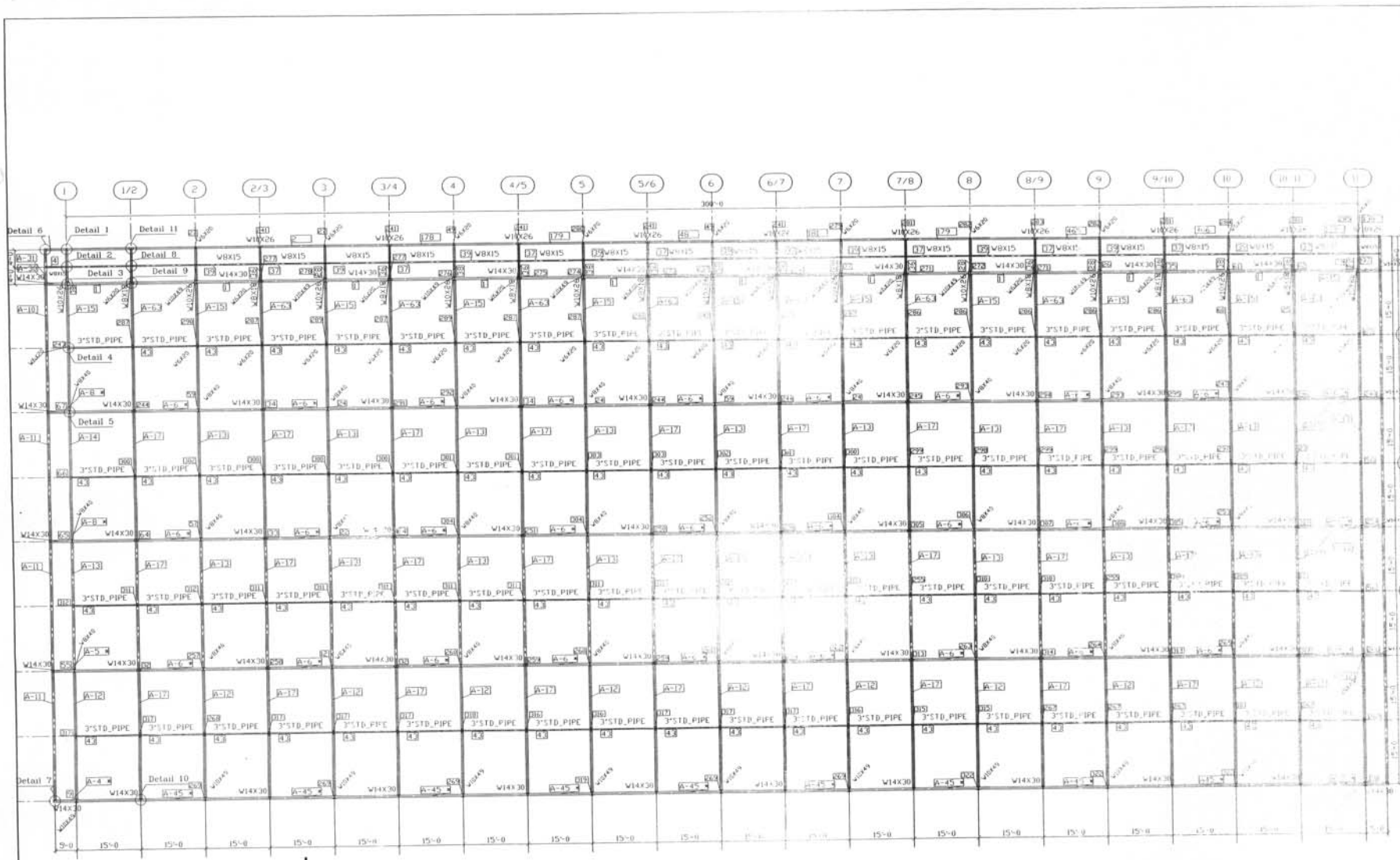
PROJECT: NORTH STAND
QUEEN'S PARK SAVANNAH

TITLE: STANCHION LAYOUT

DRAWN	LB
CHECKED	
11/24	

SIZE: A1

DWG No:



NOTES:

REVISIONS

Date	Descriptions

GOVERNMENT OF THE REPUBLIC OF TRINIDAD AND TOBAGO

MINISTRY OF WORKS AND INFRASTRUCTURE

DESIGN ENGINEERING BRANCH

Project Title

NORTH STAND QUEEN'S PARK SAVANNAH

Drawing Title

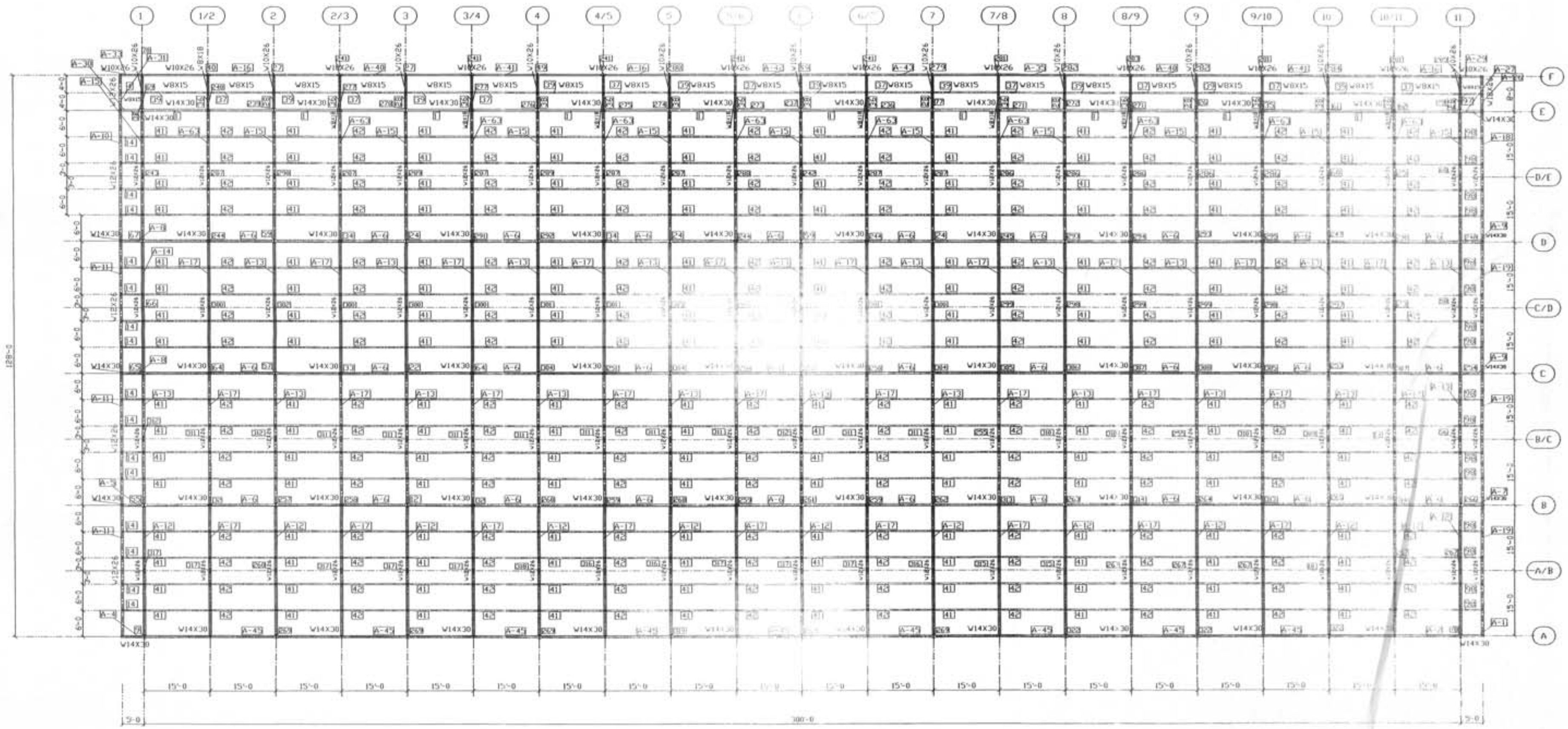
FLOOR FRAMING PLAN

Drawn	Designed	Traced	Checked

Scale: Date:

Chief Designs Engineer:

DRAWING NUMBER	SHEET NO.	REV NO.
	GA2	



ALL FLOOR JOIST = W10X15

FLOOR JOIST LAYOUT

REV	BY	DATE	DETAILS	REV	BY	DATE	DETAILS
A	I.B.	24/11/10	ERECTION MARKS ADDED				

GENERAL NOTES

ALL STEEL = ASTM A572 GR 50

CLIENT: MINISTRY OF WORKS

PROJECT: NORTH STAND, QUEEN'S PARK SAVANNAH

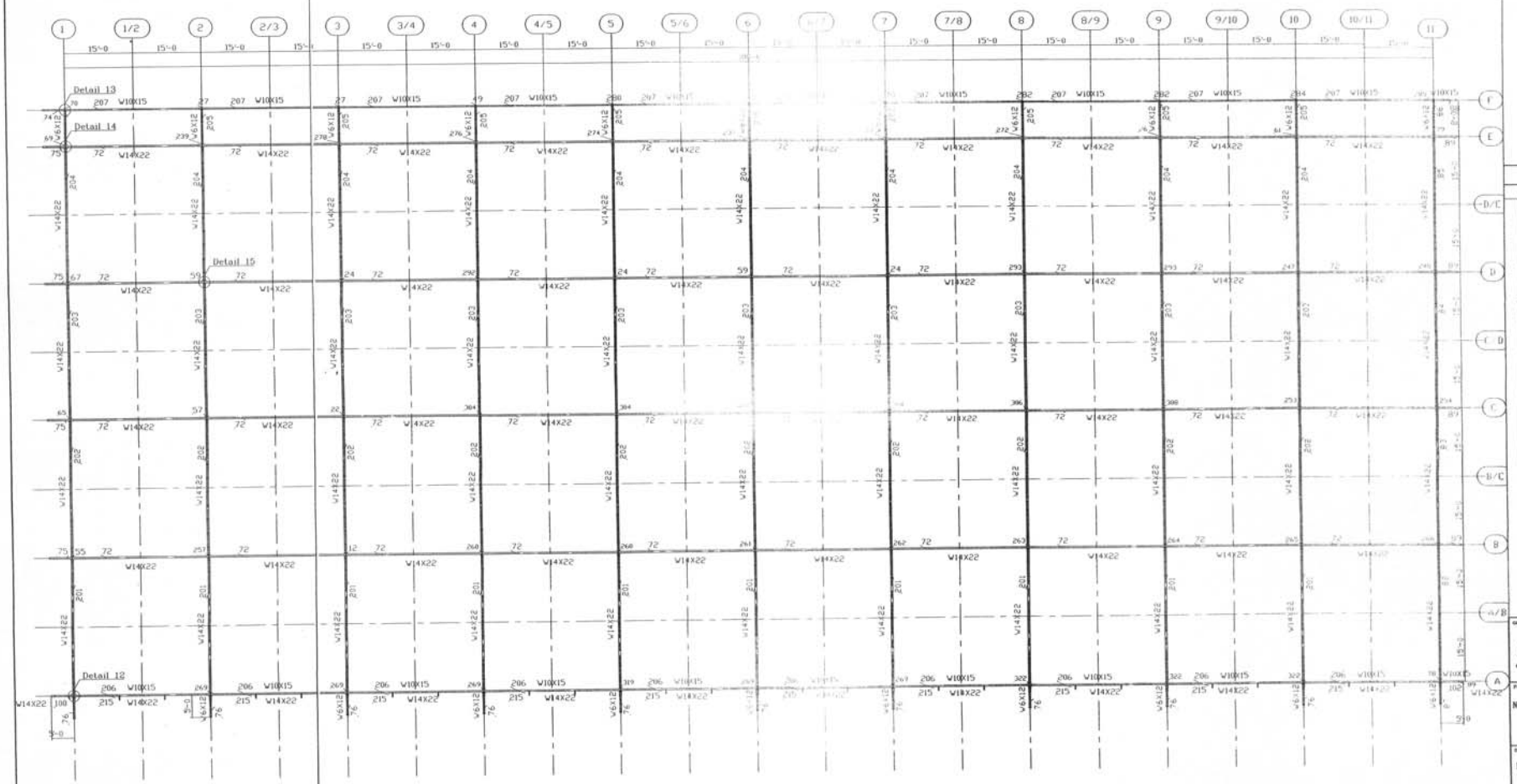
TITLE: FLOOR JOIST LAYOUT

DRAWN: I.B. 11/24/10

CHECKED:

STEEL STRUCTURES T&T LTD — DEMERARA INDUSTRIAL ESTATE, ARIMA, TRINIDAD, WEST INDIES.

SCALE	JOB No.	DWG No.	REV
NTS	309	SS-GA3	A



ROOF FRAMING PLAN

NOTES

REVISIONS

Date	Description

GOVERNMENT OF THE REPUBLIC OF TRINIDAD AND TOBAGO

MINISTRY OF WORKS AND INFRASTRUCTURE

ARCHITECTURE ENGINEERING DESIGN

Project Title

NORTH STAND QUEEN'S PARK SAVANNAH

Drawing Title

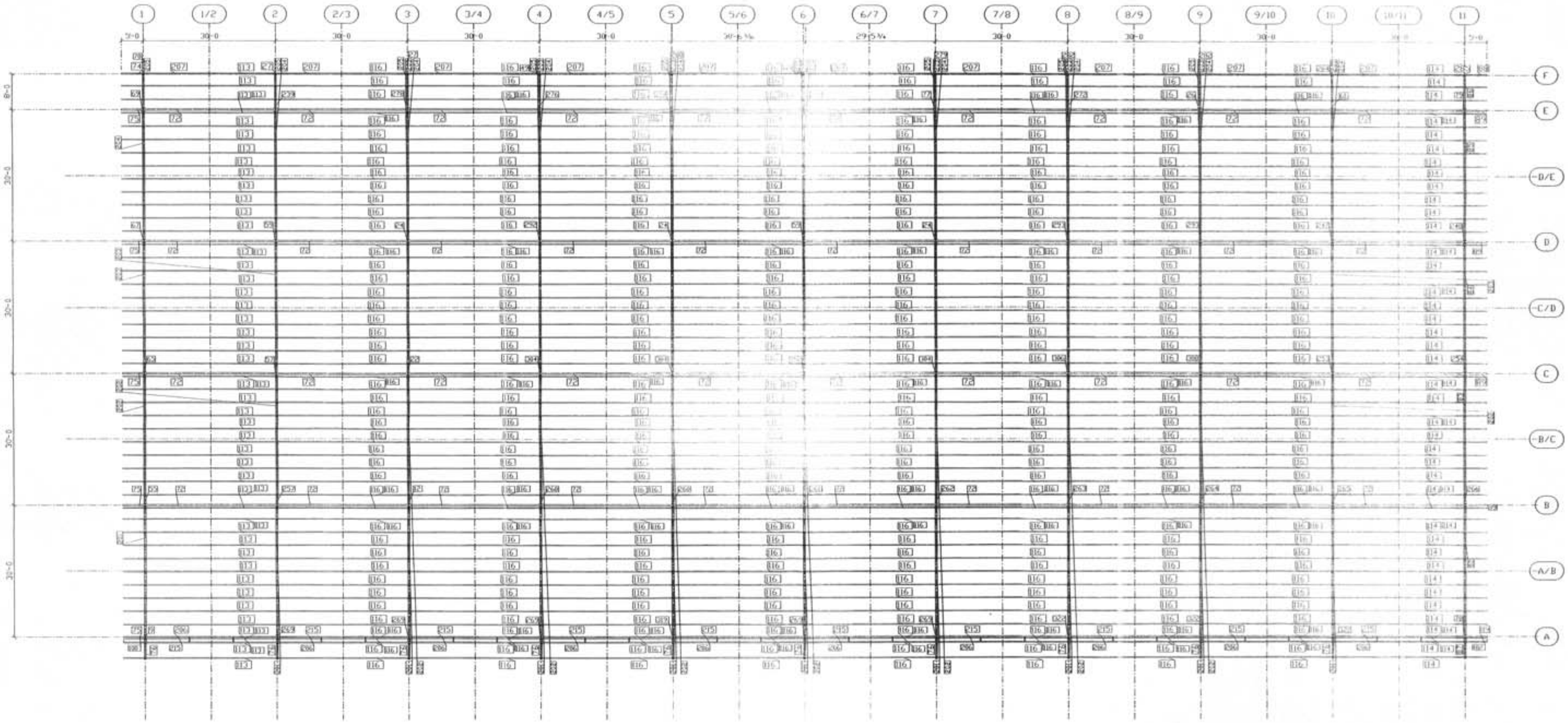
ROOF FRAMING PLAN

Drawn	Designed	Traced	Checked

Scale: Date:

Chief Designer Engineer:

DRAWING NUMBER	SHEET NO.	REV NO.
	GA4	



A	I.B.	25/11/10	ERECTION MARKS ADDED				
REV	BY	DATE	DETAILS	REV	BY	DATE	DETAILS

GENERAL NOTES

ALL ROOF SHEETS

26G CIRCULAR CORRUGATED SHEETS FASTENED TO C8X11.5 PURLINS WITH TOPEDO SCREWS @ 1'-6" C/C

CLIENT: MINISTRY OF WORKS

PROJECT: NORTH STAND, QUEEN'S PARK SAVANNAH

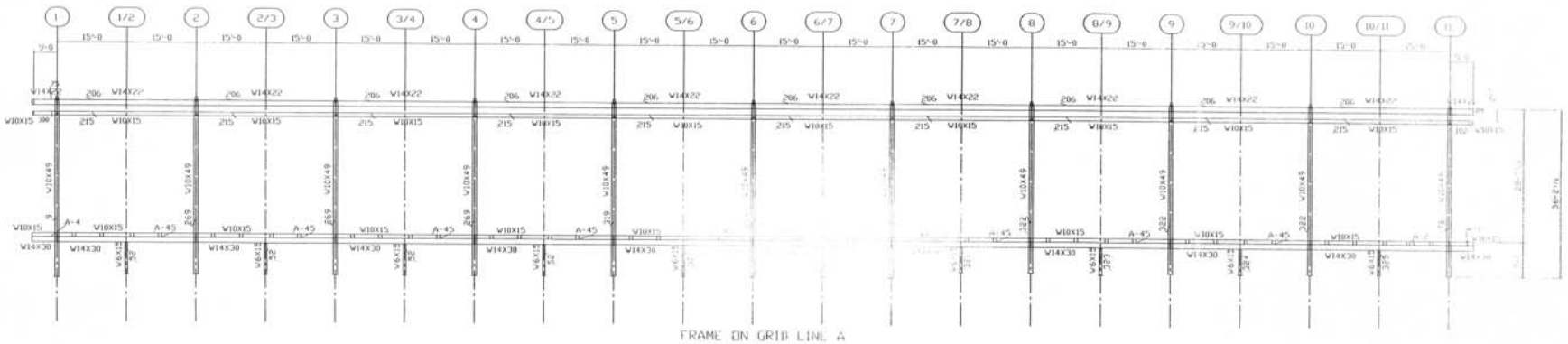
TITLE: PURLIN LAYOUT

DRAWN: I.B. 11/25/10

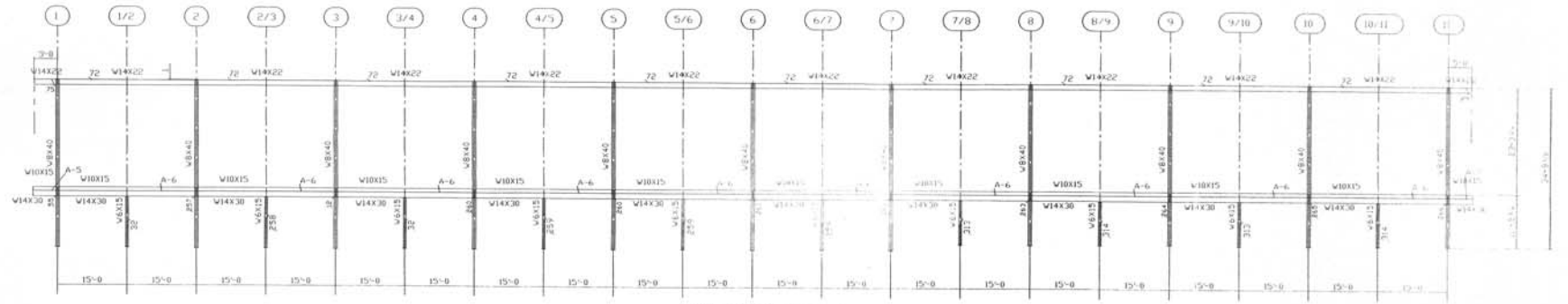
CHECKED:

STEEL STRUCTURES T&T LTD
CHEAPA INDUSTRIAL ESTATE
ARIMA
TRINIDAD, WEST INDIES

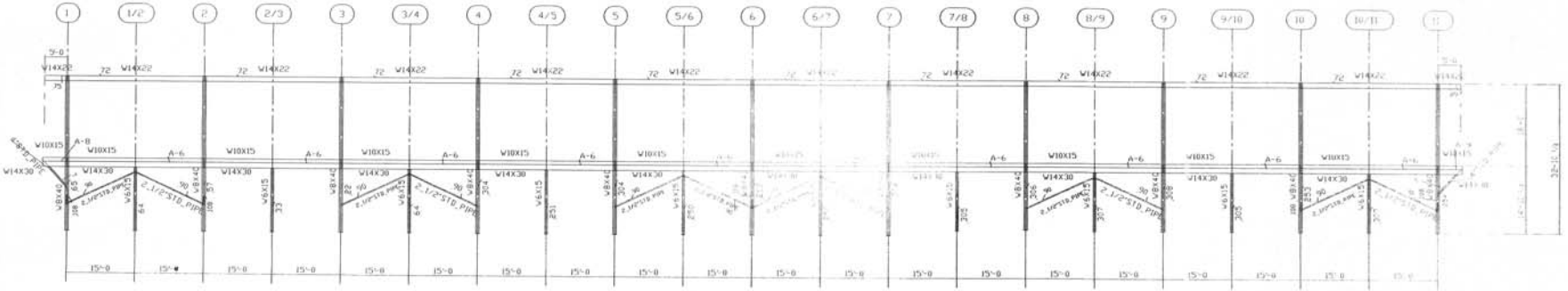
SCALE: NTS
JOB No: 309
DWG No: SS-GA5
REV: A



FRAME ON GRID LINE A



FRAME ON GRID LINE B



FRAME ON GRID LINE C

NOTES

REVISIONS

No	Date	Description

GOVERNMENT OF THE REPUBLIC OF TRINIDAD AND TOBAGO

MINISTRY OF WORKS AND INFRASTRUCTURE

DESIGN ENGINEERING BRANCH

Client

NATIONAL CARNIVAL COMMISION

Project Title

NORTH STAND
QUEEN'S PARK SAVANNAH
P.O.S.

Drawing Title

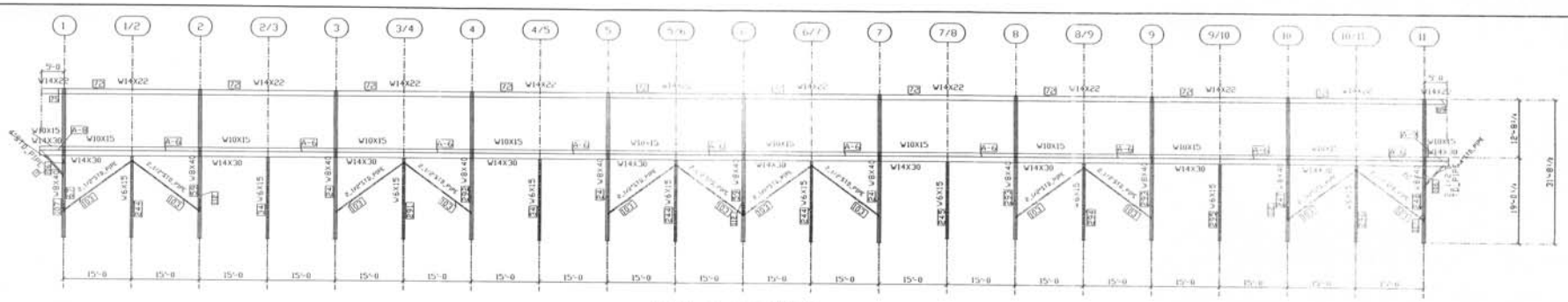
FRAMES ON GRID LINES A,B & C

Drawn	Designed	Traced	Checked

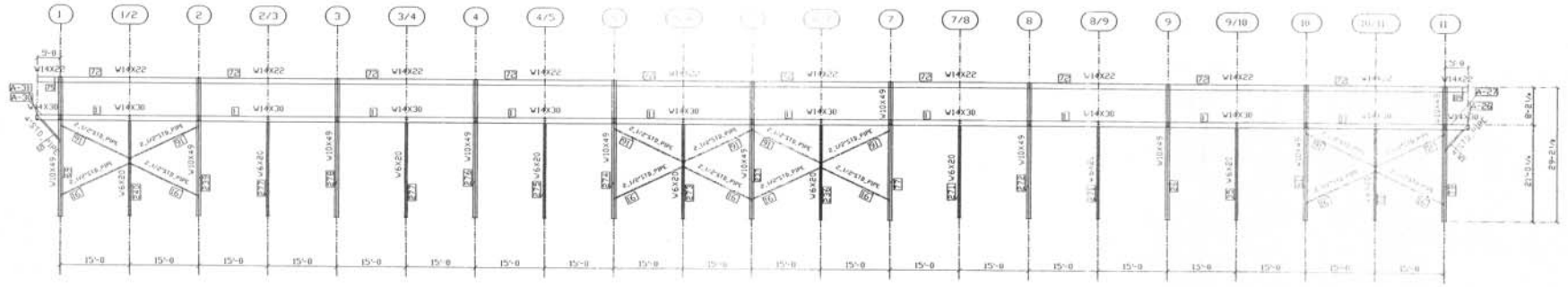
Scale: NTS | Date: NOV 2011

Chief Designs Engineer

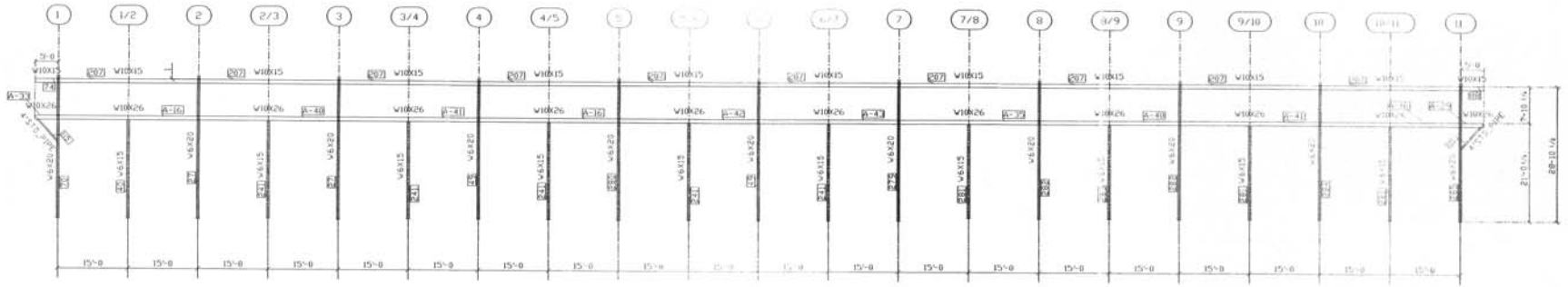
DRAWING NUMBER	SHEET NO.	REV.NO.
	GA6	



FRAME ON GRID LINE D



FRAME ON GRID LINE E



FRAME ON GRID LINE F

STRUCAD

REV	BY	DATE	DETAILS	REV	BY	DATE	DETAILS
A	LB.	29/11/10	ERECTION MARKS ADDED				

GENERAL NOTES

ALL STEEL ASTM A992 Gr 50

DRAWN	L.B.	11/29/10
CHECKED		

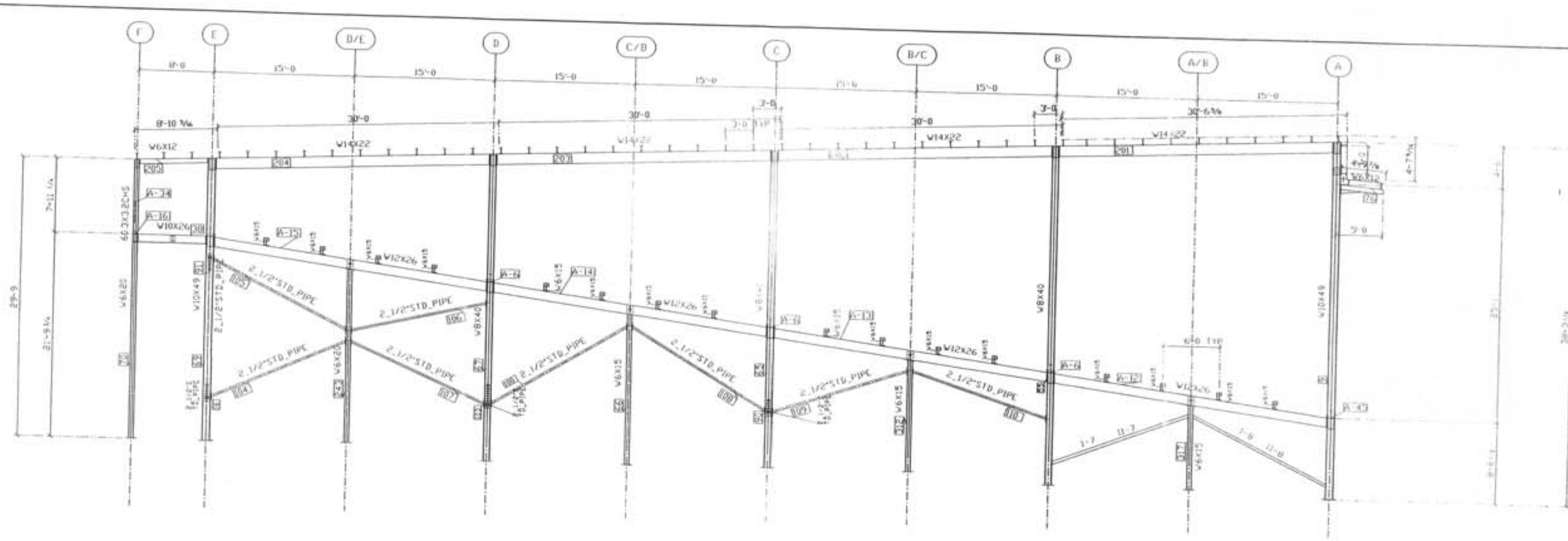
OWNER: MINISTRY OF WORKS

PROJECT: NORTH STAND
QUEEN'S PARK SAVANNAH

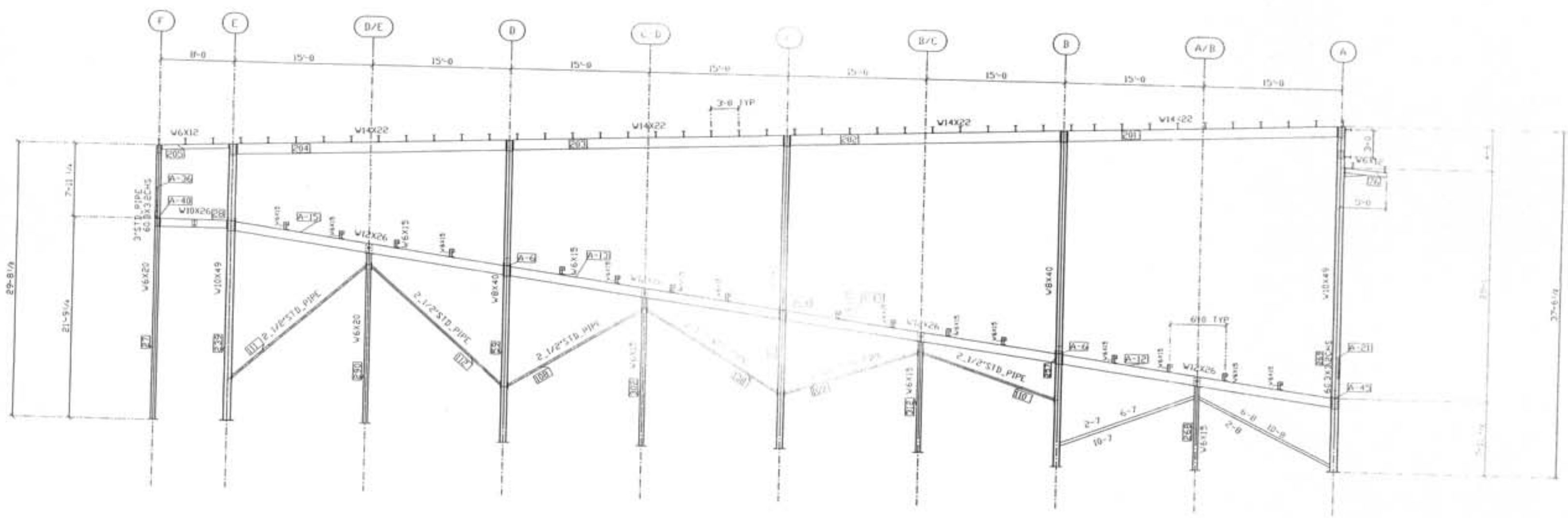
TITLE: FRAME ON GRID LINES D,E & F

STEEL STRUCTURES (T&T) LTD.
BENEARA INDUSTRIAL ESTATE,
ARIMA,
TRINIDAD, WEST INDIES.
Fax : 868-646-0120
Tel : 868-642-3443
Tel : 868-642-3687
Tel : 868-642-9556
Email: ssltd@tstt.net.tt

SCALE	JOB No.	DWG No.	REV
NTS	309	SS-GA7	A



FRAME ON GRID LINES 1 & 11



FRAME ON GRID LINES 2,6 & 10

REV	BY	DATE	DETAILS
A	I.B.	30/11/10	ERECTION MARKS ADDED

GENERAL NOTES

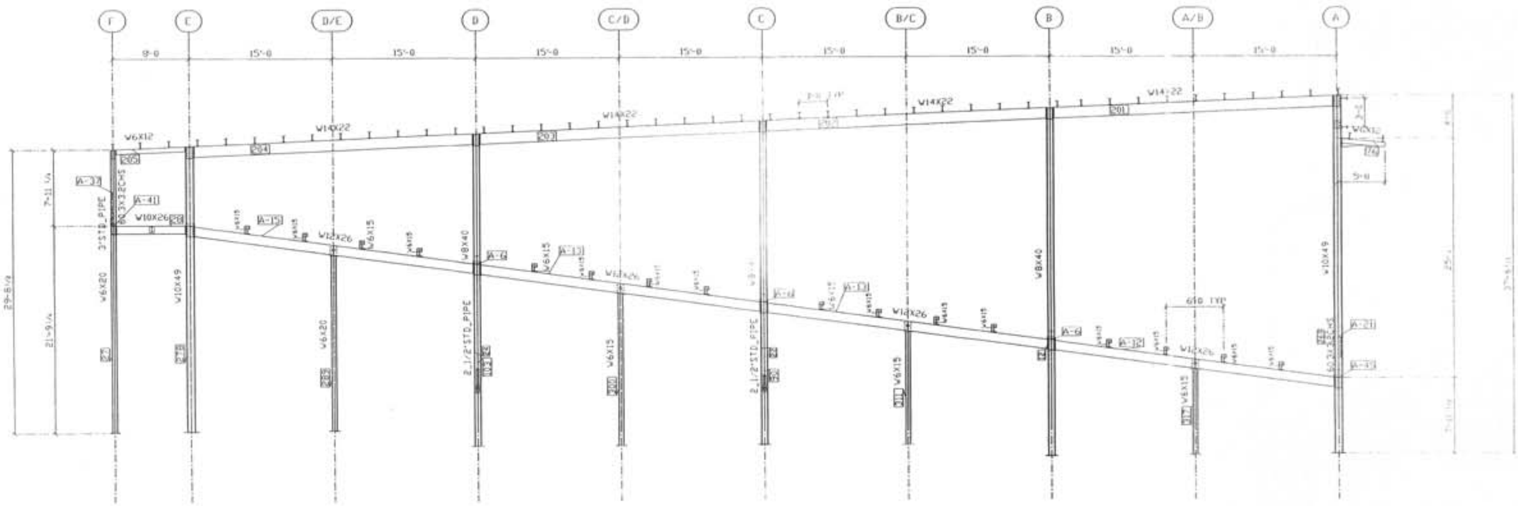
ALL STEEL [illegible]

FRAMES TO BE [illegible]

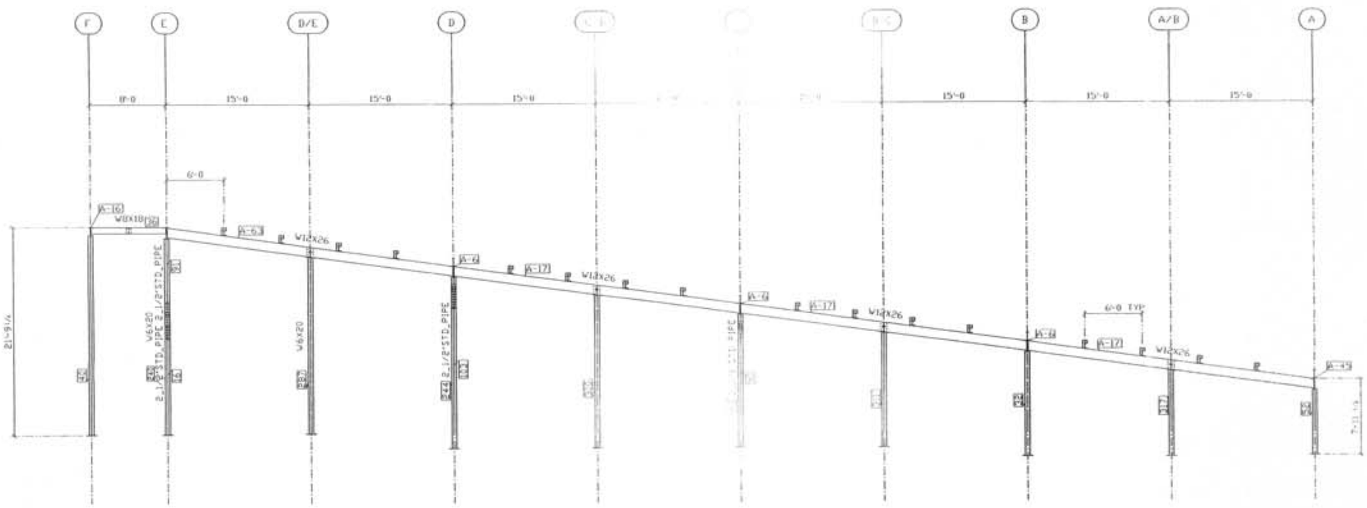
CLIENT	MINISTRY OF WORKS
PROJECT	NORTH STAND QUEEN'S PARK SAVANNAH
TITLE	FRAME ON GRID LINES 1,2,6,10 & 11
DRAWN	I.B. 11/30/10
CHECKED	
SCALE	NTS
JOB No	10?
DWG No	SS-GA8
REV	A

STEEL STRUCTURES T&T LTD
ARIMA INDUSTRIAL ESTATE, ARIMA, TRINIDAD, WEST INDIES.
Fax: 868-646-8138
Tel: 868-642-3442
Tel: 868-642-3687
Tel: 868-642-9558
Email: sstt@tstt.net.tt

STRUCAD



FRAME ON GRID LINES 2, 4, 5, 7, 8 & 9



FRAME ON GRID LINES 1/2, 2/3, 3/4, 4/5, 5/6, 6/7, 7/8, 8/9, 9/10, 10/11

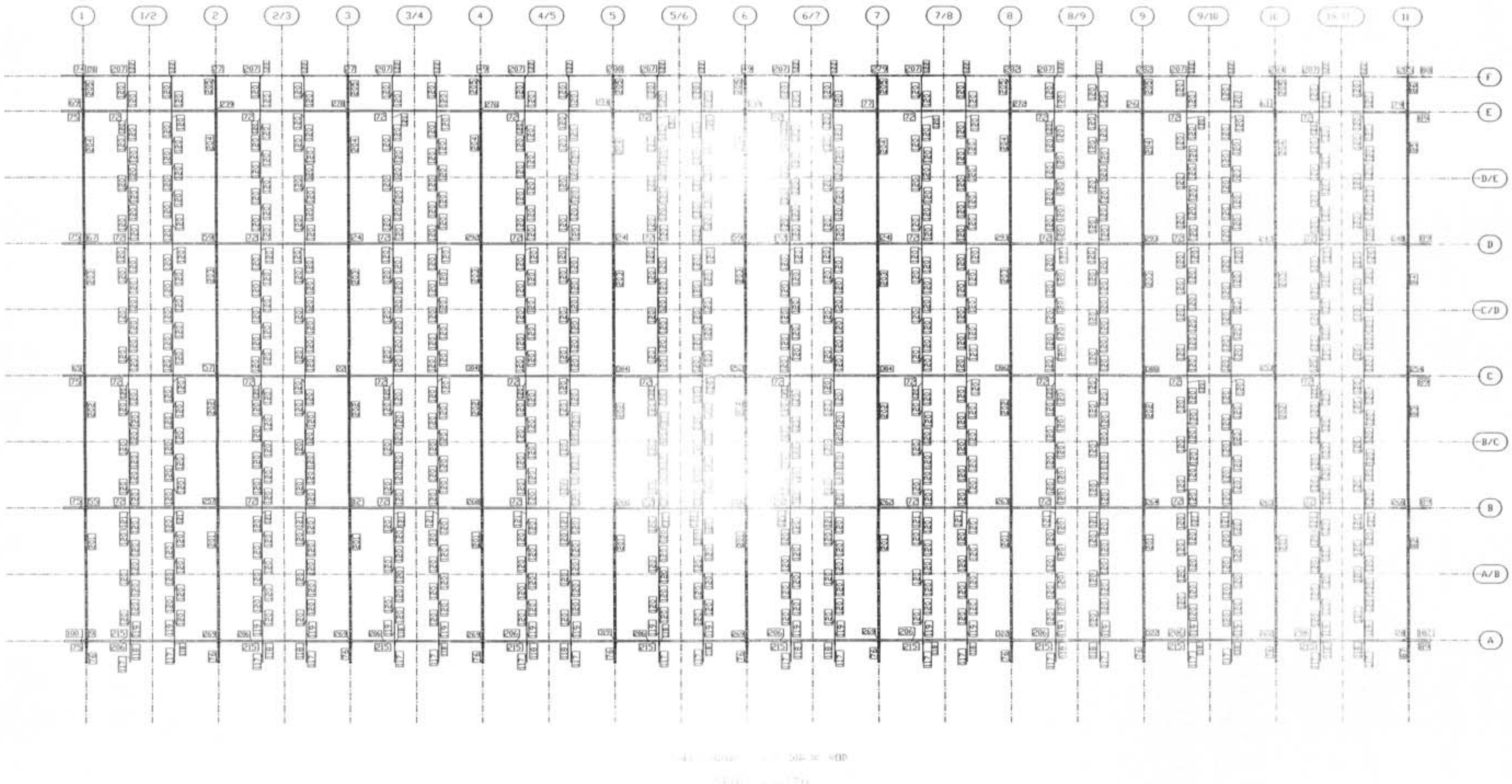
A	LB	30/11/10	ERECTION MARKS ADDED				
REV	BY	DATE	DETAILS	REV	BY	DATE	DETAILS

GENERAL NOTES

CLIENT: MINISTRY OF WORKS	DRAWN	LB	11/30/10
PROJECT: NORTH STAND QUEEN'S PARK SAVANNAH	CHECKED		
TITLE: SECTIONAL FRAMES			

STEEL STRUCTURES T&T LTD
MEAGA INDUSTRIAL ESTATE, ARIMA, TRINIDAD, WEST INDIES
Fax : 868-646-0830
Tel : 868-642-3442
Tel : 868-642-3687
Tel : 868-642-9550
Email: ssltd@tstt.net.tt

SCALE	JOB No	DWG No	REV
NTS	309	SS-GA9	A

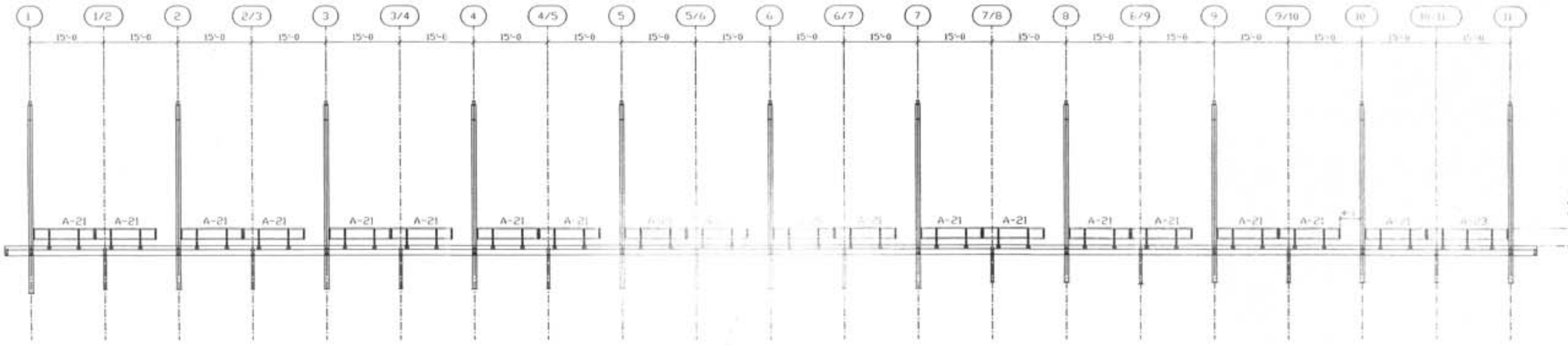


REV	BY	DATE	DETAILS	REV	BY	DATE	DETAILS

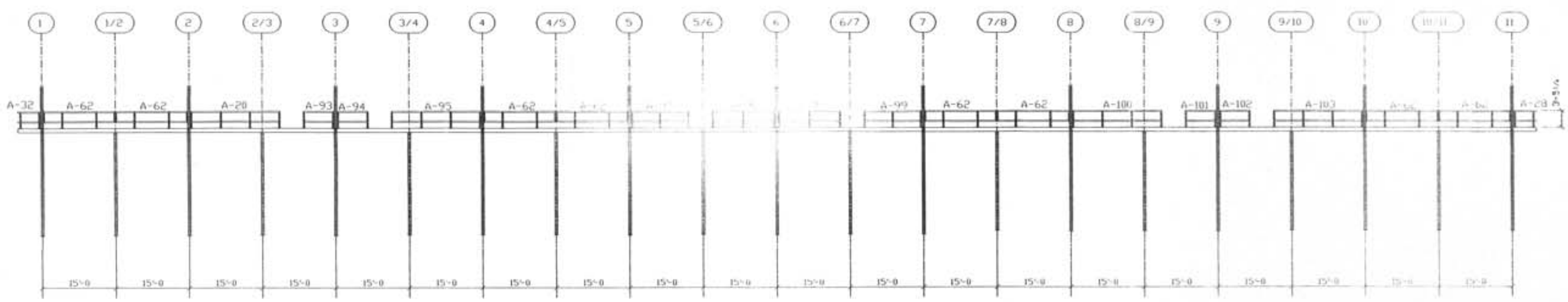
GENERAL NOTES

CLIENT: MINISTRY OF WORKS	DRAWN	I.B.	11/30/10	STEEL STRUCTURES T&T LTD
PROJECT: NORTH STAND QUEEN'S PARK SAVANNAH	CHECKED			
TITLE: SAGRODS LAYOUT	SCALE: NTS	JOB No: 309	DWG No: SS-GA10	REV

STRUCAD



HANDRAIL ON GRID LINE A



HANDRAIL ON GRID LINE E

REV	BY	DATE	DETAILS	REV	BY	DATE	DETAILS

GENERAL NOTES

ALL HANDRAILS = 2 1/2" DIA GALV'D PIPE

CLIENT: MINISTRY OF WORKS

PROJECT: NORTH STAND
QUEEN'S PARK SAVANNAH

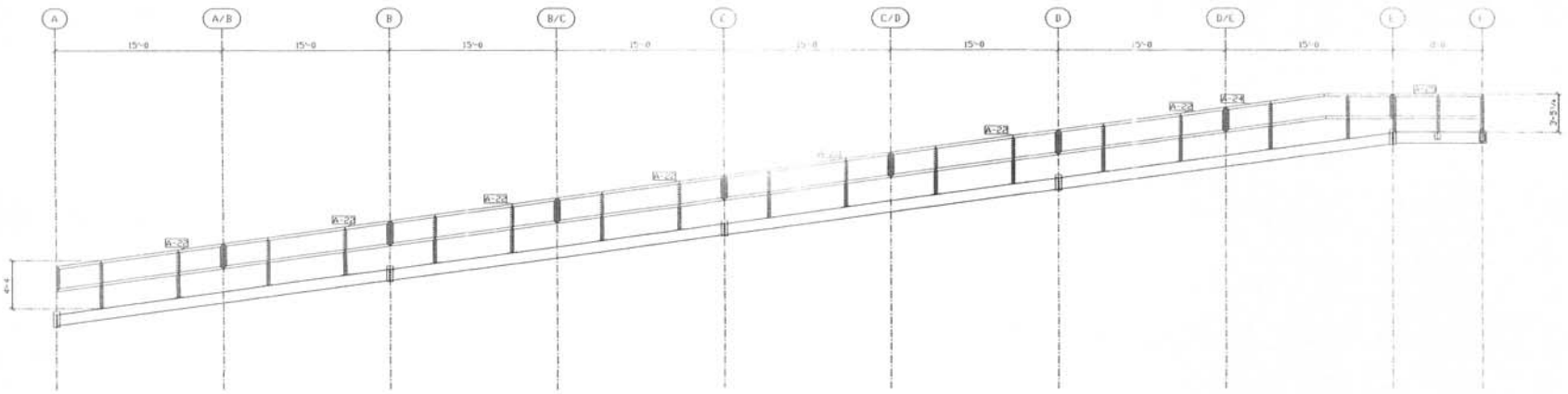
TITLE: HANDRAIL ON GRID LINES A & F

DRAWN: LB 12/02/10
CHECKED:

STEEL STRUCTURES T&T LTD
MACOYA INDUSTRIAL ESTATE
AROUCA
TRINIDAD, WEST INDIES
Fax: 868-646-8138
Tel: 868-642-3442
Tel: 868-642-3687
Tel: 868-642-9550
Email: sstltd@tstt.net.tt

SCALE: NTS
JOB No: 309
DWG No: SS-GA11
REV:

STRUCAD



HANDRAIL OFF GRID LINES I & II

STRUCAD

REV	BY	DATE	DETAILS	REV	BY	DATE	DETAILS

GENERAL NOTES

ALL HANDRAILS [illegible]

CLIENT: MINISTRY OF WORKS

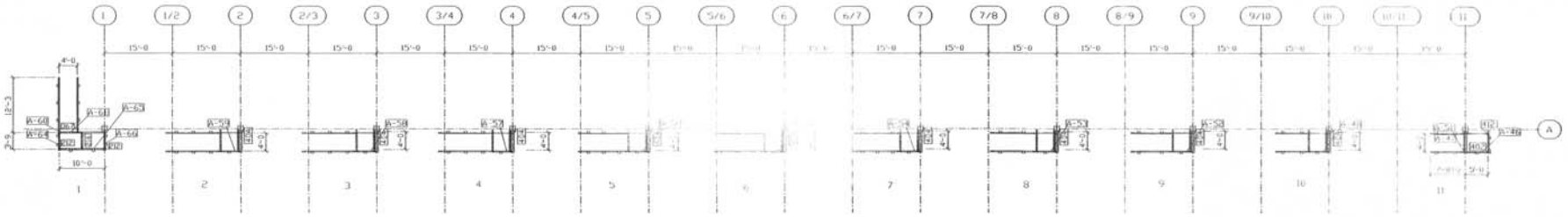
PROJECT: NORTH STAND
QUEENS PARK SAVANNAH

TITLE: HANDRAILS OFF GRID LINES I & II

DRAWN	I.B.	12/02/10
CHECKED		

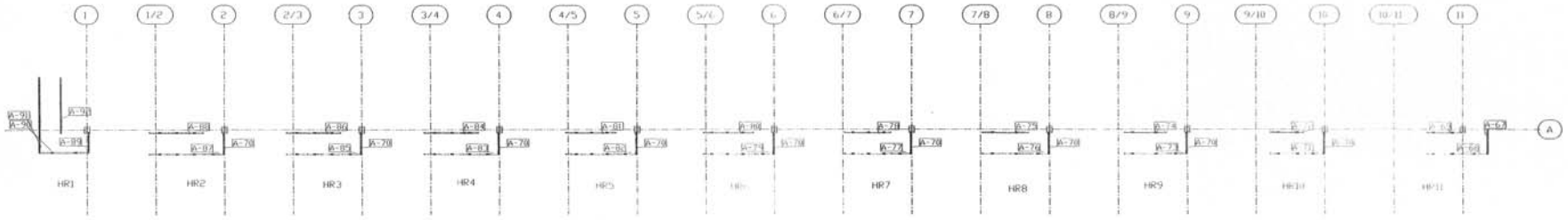
STEEL STRUCTURES I&T LTD
TUNAPUNA INDUSTRIAL ESTATE,
TUNAPUNA,
TRINIDAD, WEST INDIES
Fax 868-645-8128
Tel 868-642-3443
Tel 868-642-3687
Tel 868-642-9508
Email: ssltd@tstt.net.tt

SCALE	JOB No.	DWG No.	REV
NTS	309	SS-GA12	



ALL STRINGERS = C8X11.5

STAIRCASES ON GRID LINE A



ALL HANDRAILS = 2" Ø GALVANIZE PIPE

STAIRCASE HANDRAILS ON GRID LINE A

REV	BY	DATE	DETAILS	REV	BY	DATE	DETAILS

GENERAL NOTES

CLIENT: MINISTRY OF WORKS

PROJECT: NORTH STAND, QUEEN'S PARK SAVANNAH

TITLE: STAIRCASES AND HANDRAILS ON GRID LINE A

DRAWN: LB 12/16/10

CHECKED:

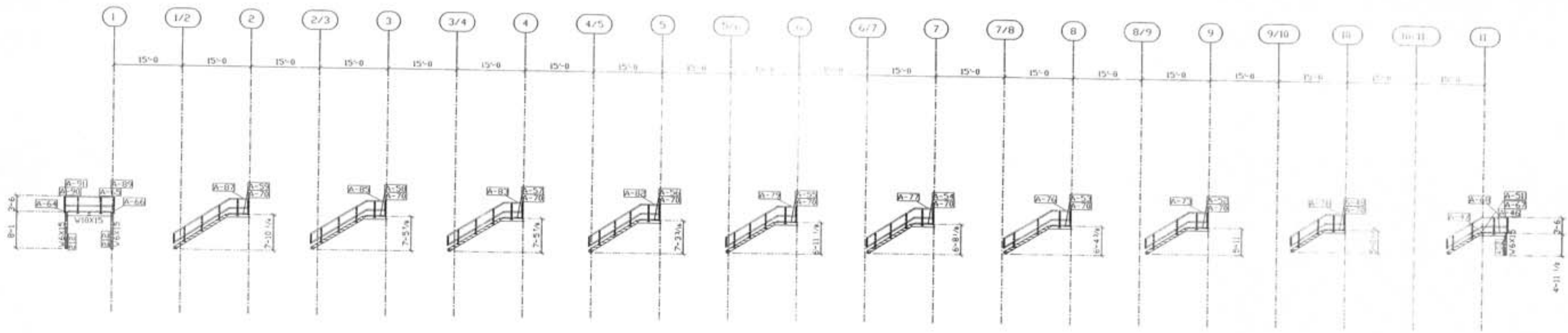
STEEL STRUCTURES T&T LTD

SCALE: NTS

JOB No.: 309

DWG No.: SS-GA13

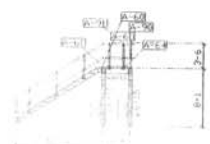
REV:



ALL RISERS [illegible] HIGH
ALL TREADERS [illegible] LG

[illegible] PLATE
[illegible] PIPE

[illegible] ON GRID LINE A



ALL RISERS = 7" HIGH
ALL TREADERS = 11" LG

ALL STRINGERS = C8X11.5
ALL TREADERS = 1/4" THK CHECKED PLATE
ALL HANDRAILS = 2 1/2" DIA GALVANIZE PIPE

STAIRCASE OFF LINE 1

REV	BY	DATE	DETAILS	REV	BY	DATE	DETAILS

GENERAL NOTES

CLIENT
MINISTRY OF WORKS

PROJECT
NORTH STAND
QUEEN'S PARK SAVANNAH

TITLE
ELEVATION ON STAIRCASES ON GRID LINE A & 1

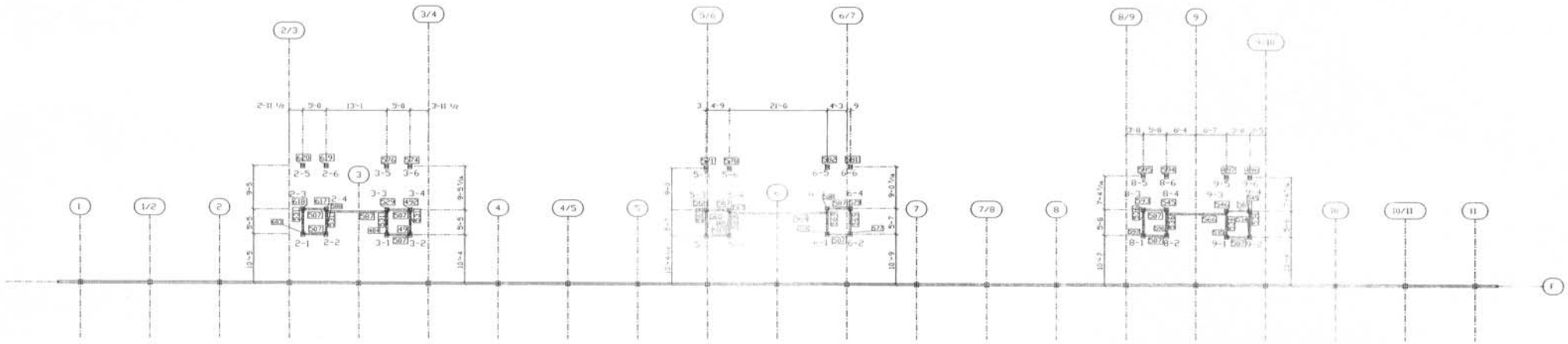
DRAWN	I.B.	12/16/10
CHECKED		

STEEL STRUCTURES T&T LTD

O'MEARA INDUSTRIAL ESTATE,
ARIMA,
TRINIDAD, WEST INDIES
Fax : 868-646-8138
Tel : 868-642-3442
Tel : 868-642-3607
Tel : 868-642-9558
Email: sstl@tstt.net.tt

STRUCAD

SCALE	JOB No.	DWG No.	REV
NTS	109	SS-GA14	



ALL STANCHIONS = W6X6X15
ALL BEAMS = W10X4X15

REAR STAIR SUPPORTS

REV	BY	DATE	DETAILS	REV	BY	DATE	DETAILS

GENERAL NOTES

CLIENT: MINISTRY OF WORKS

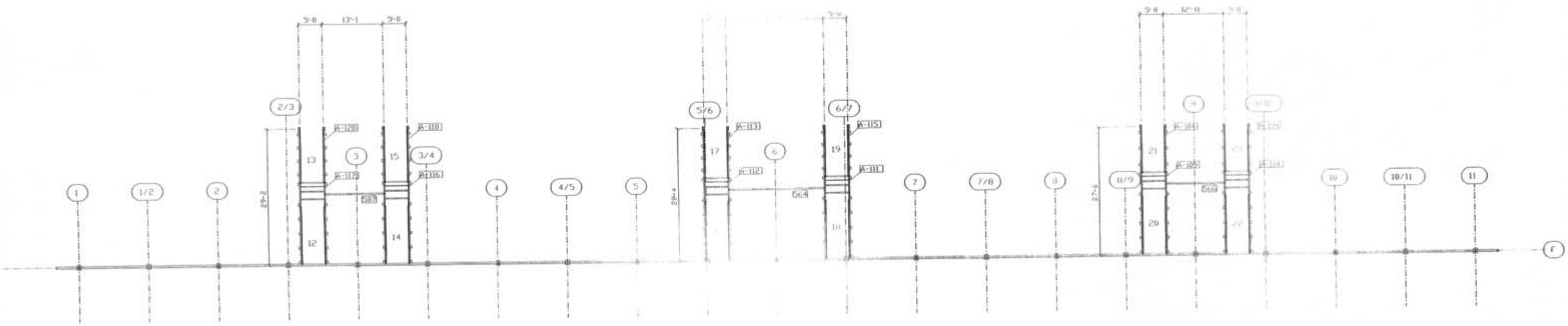
PROJECT: NORTH STAND
QUEEN'S PARK SAVANNAH

TITLE: REAR STAIR SUPPORTS

DRAWN	LB	01/20/11	
CHECKED			

STEEL STRUCTURES T&T LTD.
TEMEARA INDUSTRIAL ESTATE
ARIMA,
TRINIDAD, WEST INDIES.
Fax : (868)-646-0138
Tel : (868)-642-3442
Tel : (868)-642-3687
Tel : (868)-642-9558
Email : ssltd@tstt.net.tt

SCALE	JOB No.	DWG No.	REV
NTS	1073	SS-GA15	



ALL STRINGERS = C10X20

REAR STAIRCASES

REV	BY	DATE	DETAILS	REV	BY	DATE	DETAILS

GENERAL NOTES

CLIENT MINISTRY OF WORKS

PROJECT NORTH STAND
QUEEN'S PARK SAVANNAH

TITLE REAR STAIRCASES

DRAWN LB 01/28/11

CHECKED

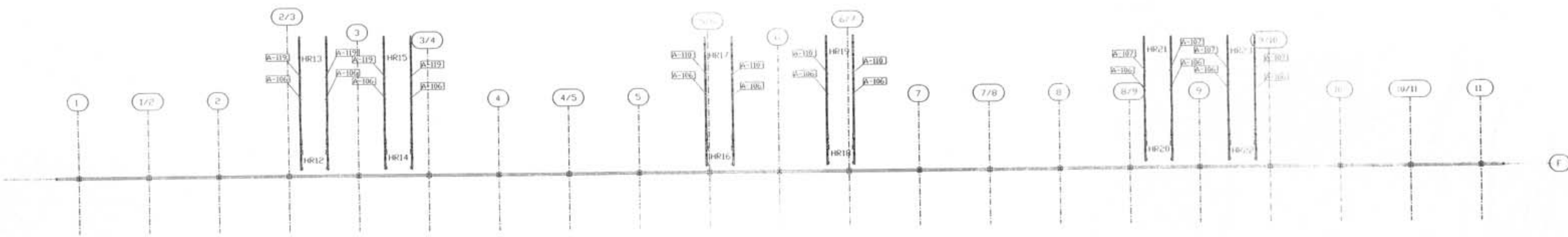
STEEL STRUCTURES T&T LTD

TRINIDAD, WEST INDIES

JOB No 309

DWG No SS-GA16

REV



GALV'D PIPE

REAR STAIR HAND RAILS

REV	BY	DATE	DETAILS	REV	BY	DATE	DETAILS

GENERAL NOTES

STRUCAD

CLIENT: MINISTRY OF WORKS

PROJECT: NORTH STAND
QUEEN'S PARK SAVANNAH

TITLE: REAR STAIR HAND RAILS

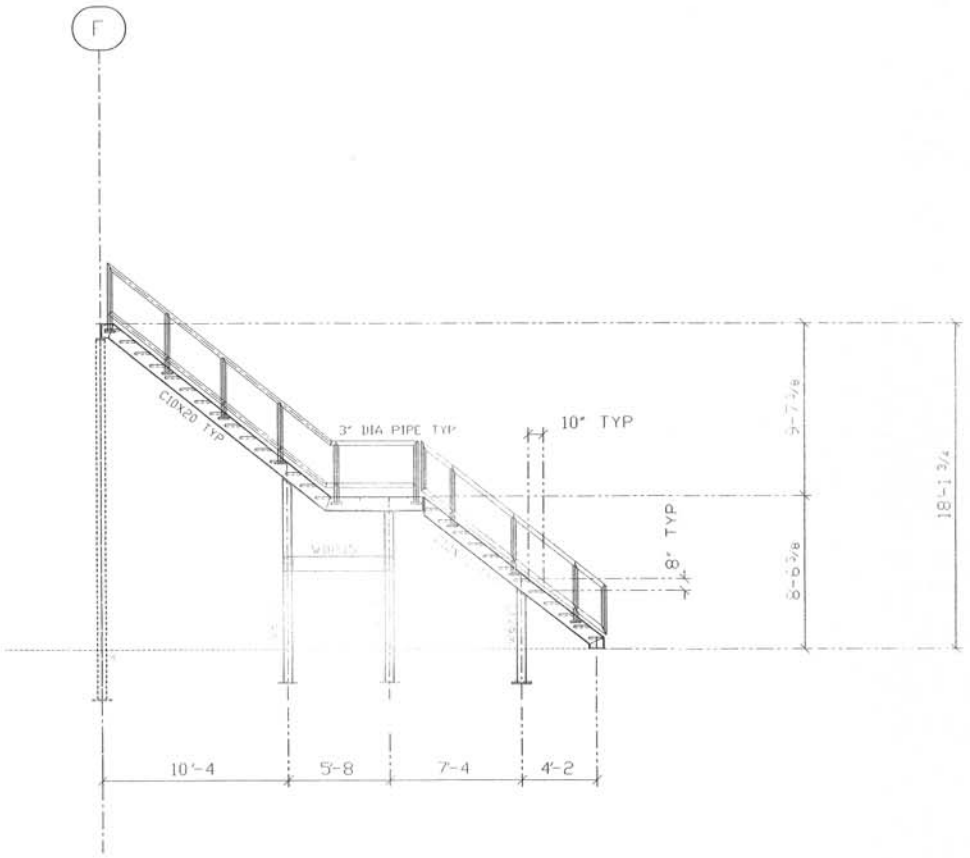
DRAWN: I.B. 01/28/11

CHECKED:

STEEL STRUCTURES T&T LTD

DWG. No.: SS-GA17

REV:



REAR STAIRCASES

STRUCAD

REV	BY	DATE	DETAILS

CLIENT
MINISTRY OF WORKS

PROJECT
NORTH STAND
QUEEN'S PARK SAVANNAH

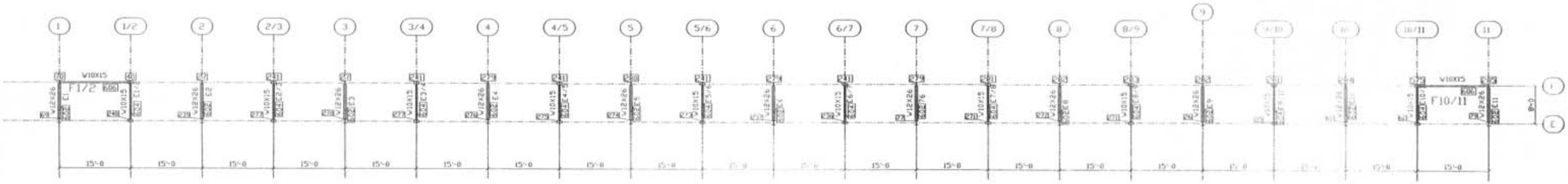
TITLE
REAR STAIRCASES

DRAWN | CHECKED | 01/28/11

GENERAL NOTES

STEEL STRUCTURES T&T LTD
10 NEAR INDUSTRIAL ESTATE,
TARENA
TRINIDAD, WEST INDES.
Fax : 868-646-0138
Tel : 868-642-3442
Tel : 868-642-3687
Tel : 868-642-9550
Email : ssltd@ttstt.net.tt

SCALE	JOB No	DWG No	REV
NTS	309	SS-GA18	



BRACING DET... E & F

PART FRAME ON GRID LINES 1,2,3,4,5,6,7,8,9,10,11

PART FRAME ON GRID LINES 1/2,2/3,3/4,4/5,5/6,6/7,7/8,8/9,9/10,10/11

REV	BY	DATE	DETAILS	REV	BY	DATE	DETAILS

GENERAL NOTES

CLIENT: MINISTRY OF WORKS

PROJECT: NORTH STAND, QUEEN'S PARK SAVANNAH

TITLE:

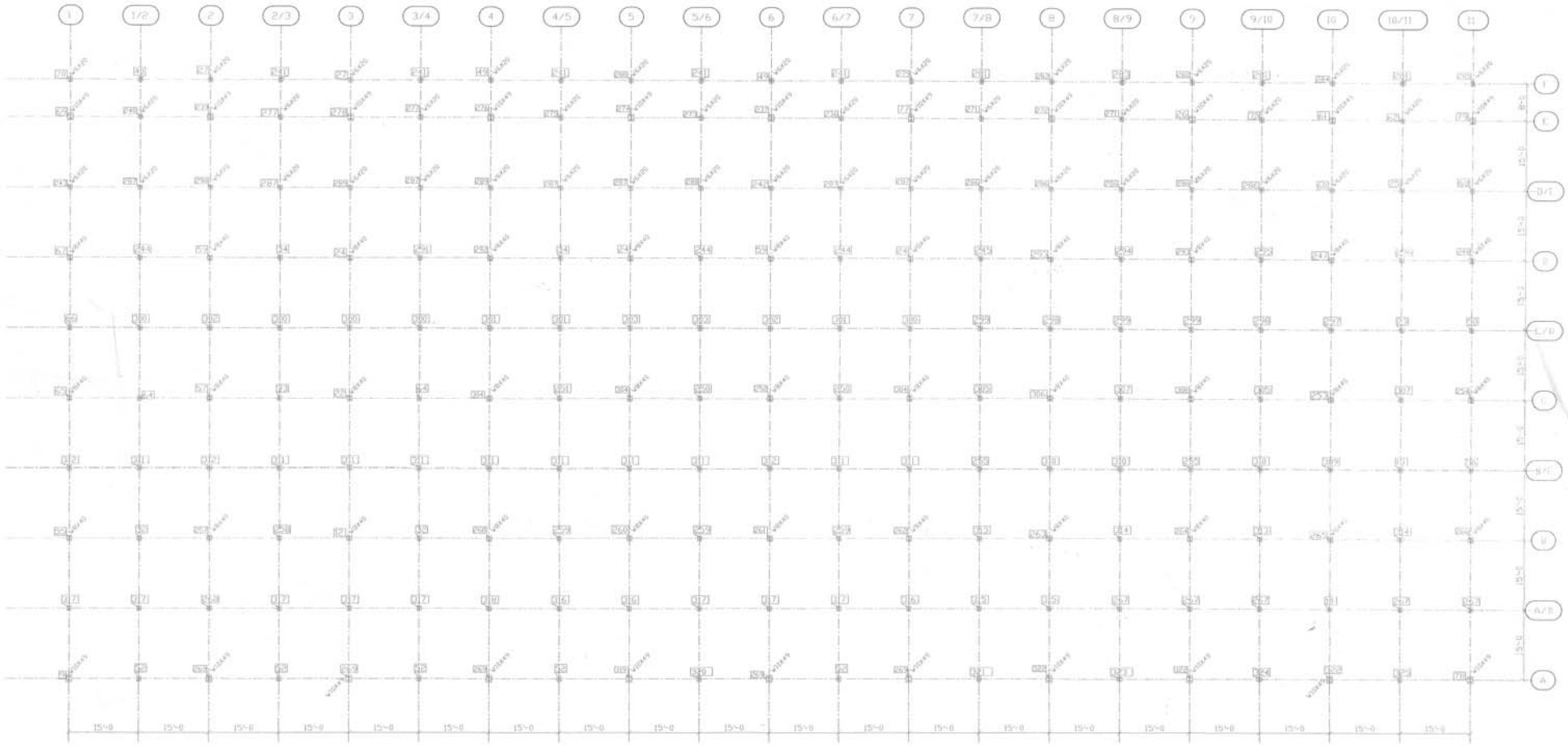
DRAWN: T.B. 02/01/11

CHECKED:

STEEL STRUCTURES T&T LTD — ARIMA INDUSTRIAL ESTATE, ARIMA, TRINIDAD, WEST INDIES

SCALE: NTS | DWG No: SS-GA19

STRUCAD



ALL STANCHION = W6X15 U/NOTED

STANCHION LAYOUT

2	J.B.	24/11/10	ERECTION MARKS ADDED				
REV.	BY	DATE	DETAILS	REV.	BY	DATE	DETAILS

GENERAL NOTES

ALL STEEL = ASTM A572 GR 50

CLIENT: MINISTRY OF WORKS

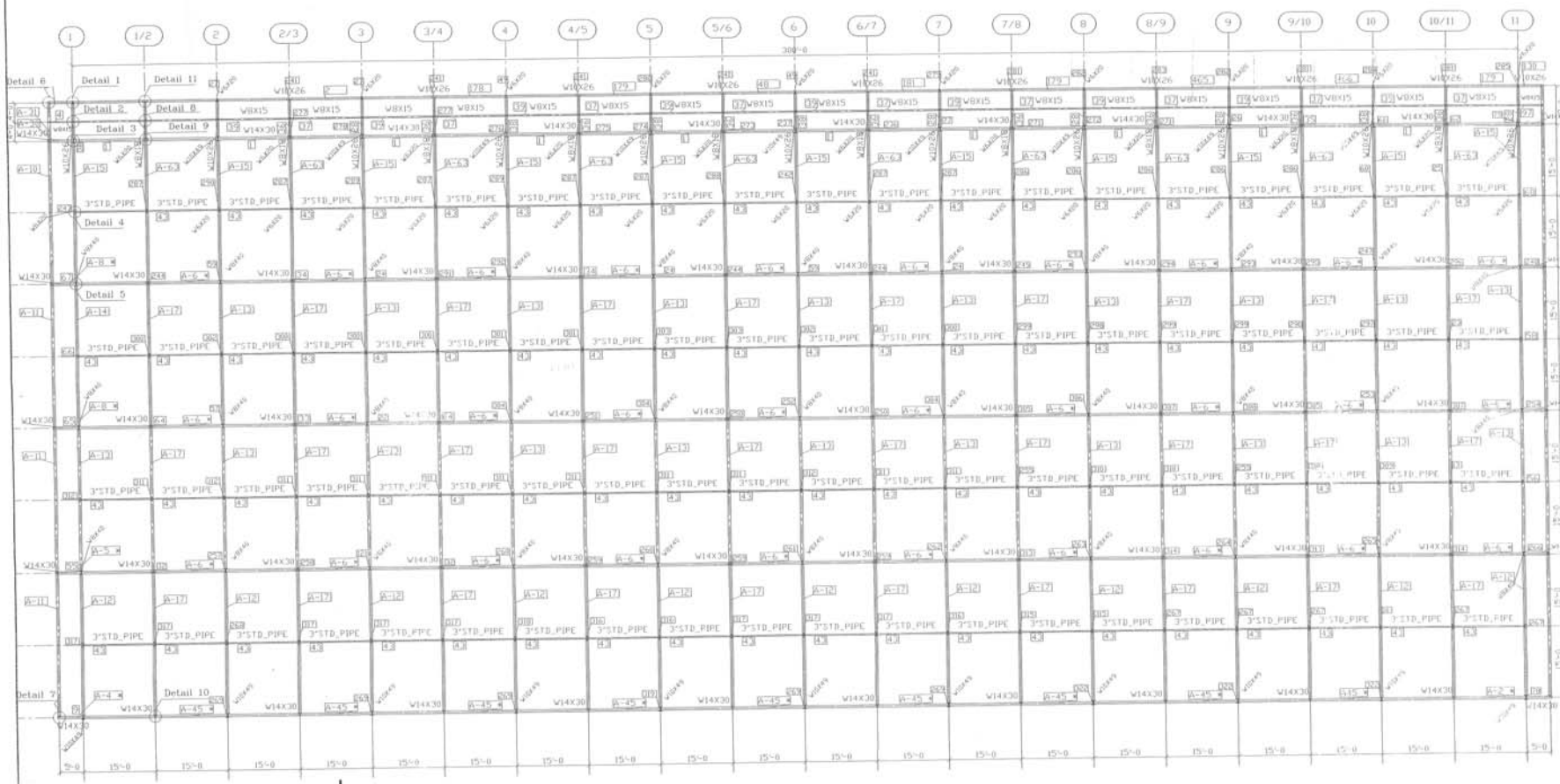
PROJECT: NORTH STAND
QUEEN'S PARK SAVANNAH

TITLE: STANCHION LAYOUT

DRAWN	J.B.	11/24/10
CHECKED		

STEEL STRUCTURES T&T LTD.
TRINIDAD, WEST INDIES.

SCALE	JOB No.	DWG No.	REV.
NTS	309	SS-(A)	2



ALL RAKERS = W12X26
ALL COLUMNS = W6X15.7 U/NOTED
FLOOR FRAMING PLAN

NOTES

REVISIONS

Date	Description

GOVERNMENT OF THE REPUBLIC OF TRINIDAD AND TOBAGO
MINISTRY OF WORKS AND INFRASTRUCTURE
DESIGN ENGINEERING BRANCH

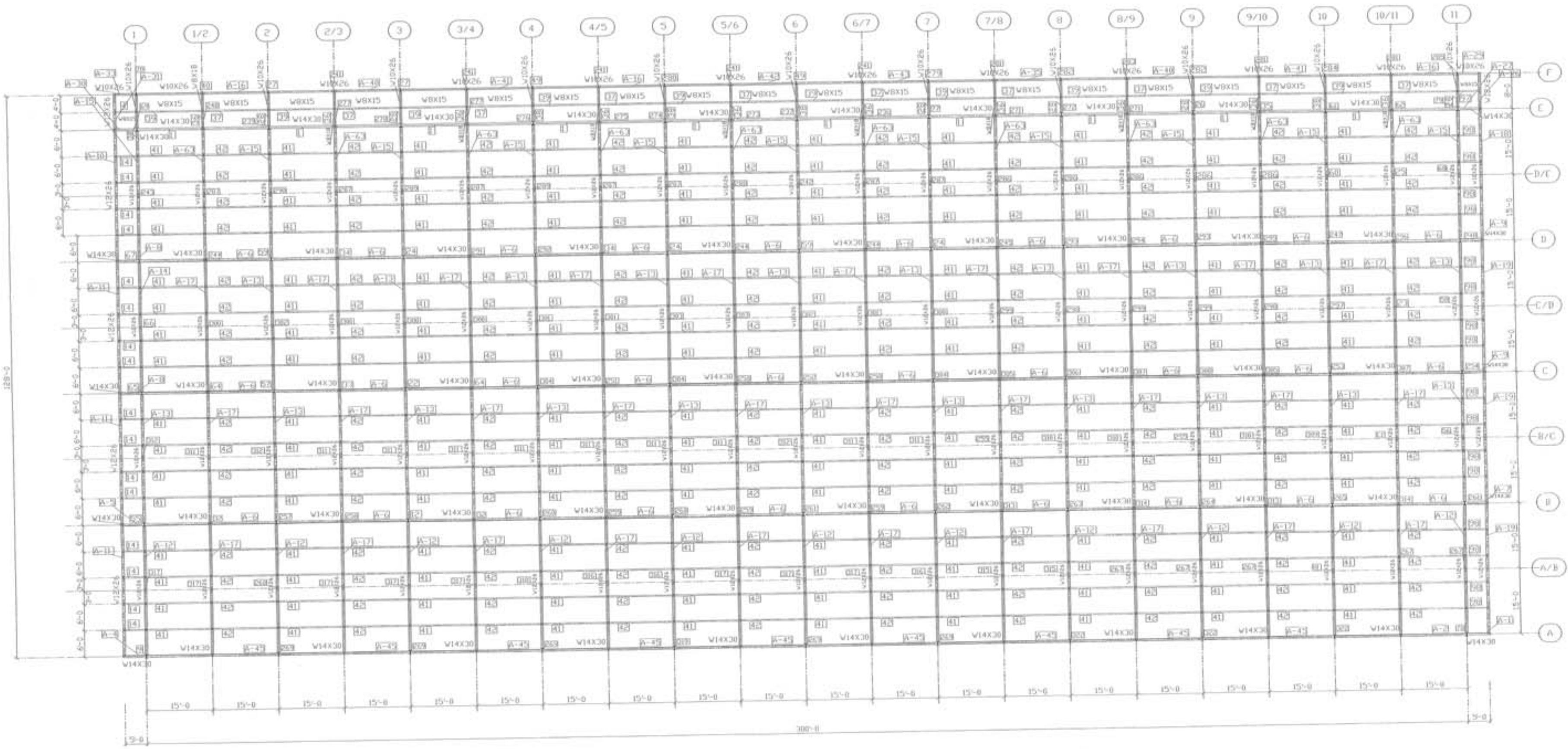
Project Title:
NORTH STAND QUEEN'S PARK SAVANNAH

Drawing Title:
FLOOR FRAMING PLAN

Drawn	Designed	Traced	Checked

Scale: Date:
Chief Designs Engineer:

DRAWING NUMBER	SHEET NO.	REV.NO.
	GA2	



ALL FLOOR JOIST = W10X15

FLOOR JOIST LAYOUT

REV	BY	DATE	DETAILS	REV	BY	DATE	DETAILS
A	LB	24/11/10	ERECTION MARKS ADDED				

GENERAL NOTES

ALL STEEL = ASTM A572 GR 50

CLIENT: MINISTRY OF WORKS

PROJECT: NORTH STAND, QUEEN'S PARK SAVANNAH

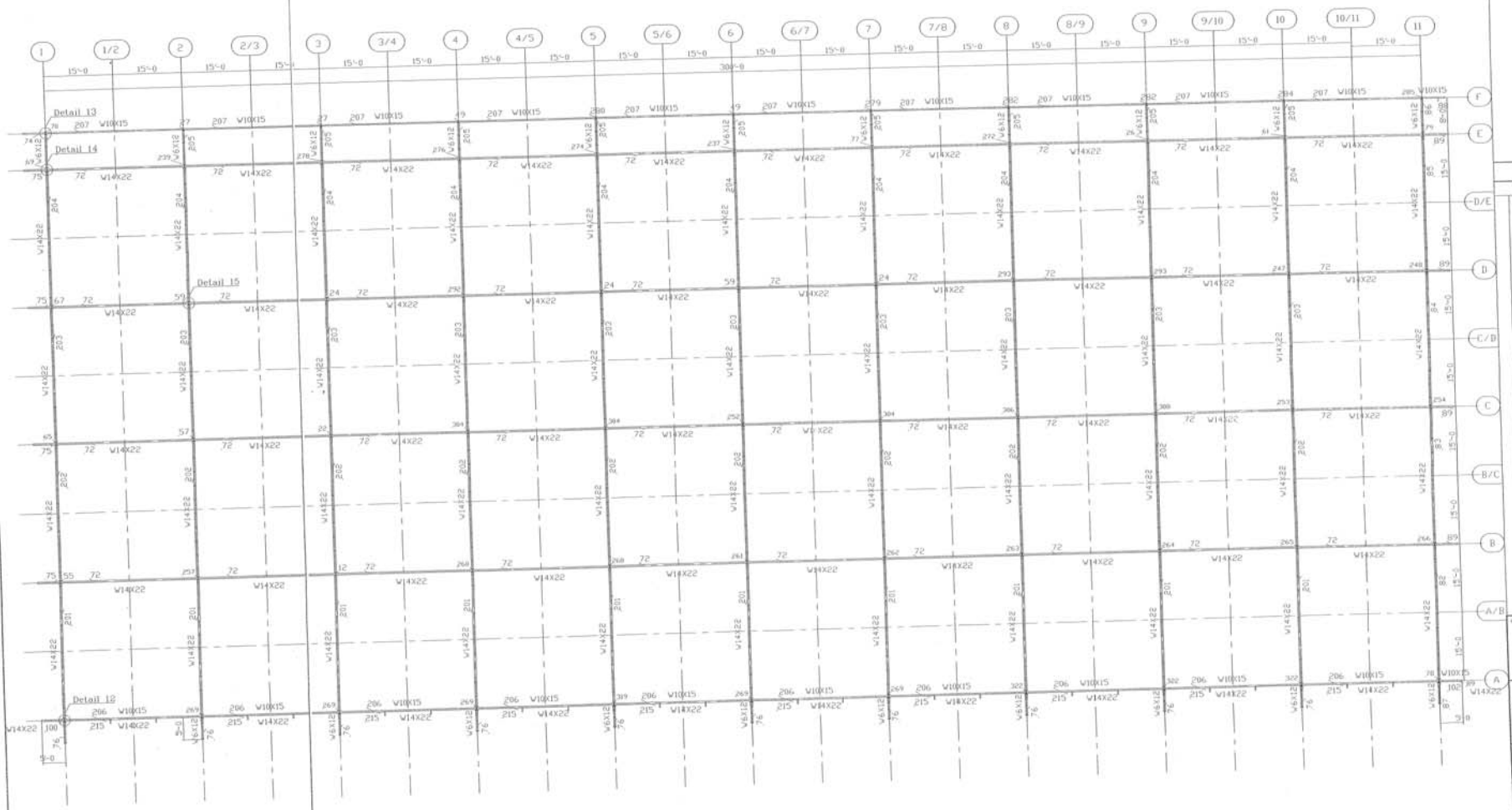
TITLE: FLOOR JOIST LAYOUT

DRAWN: LB 11/24/10

CHECKED:

STEEL STRUCTURES T&T LTD

SCALE	JOB No	DWG No	REV
NTS	309	SS-GA3	A



ROOF FRAMING PLAN

NOTES

REVISIONS

Date	Description

GOVERNMENT OF THE REPUBLIC OF TRINIDAD AND TOBAGO

MINISTRY OF WORKS AND INFRASTRUCTURE

ARCHITECT ENGINEER(S) OWNER

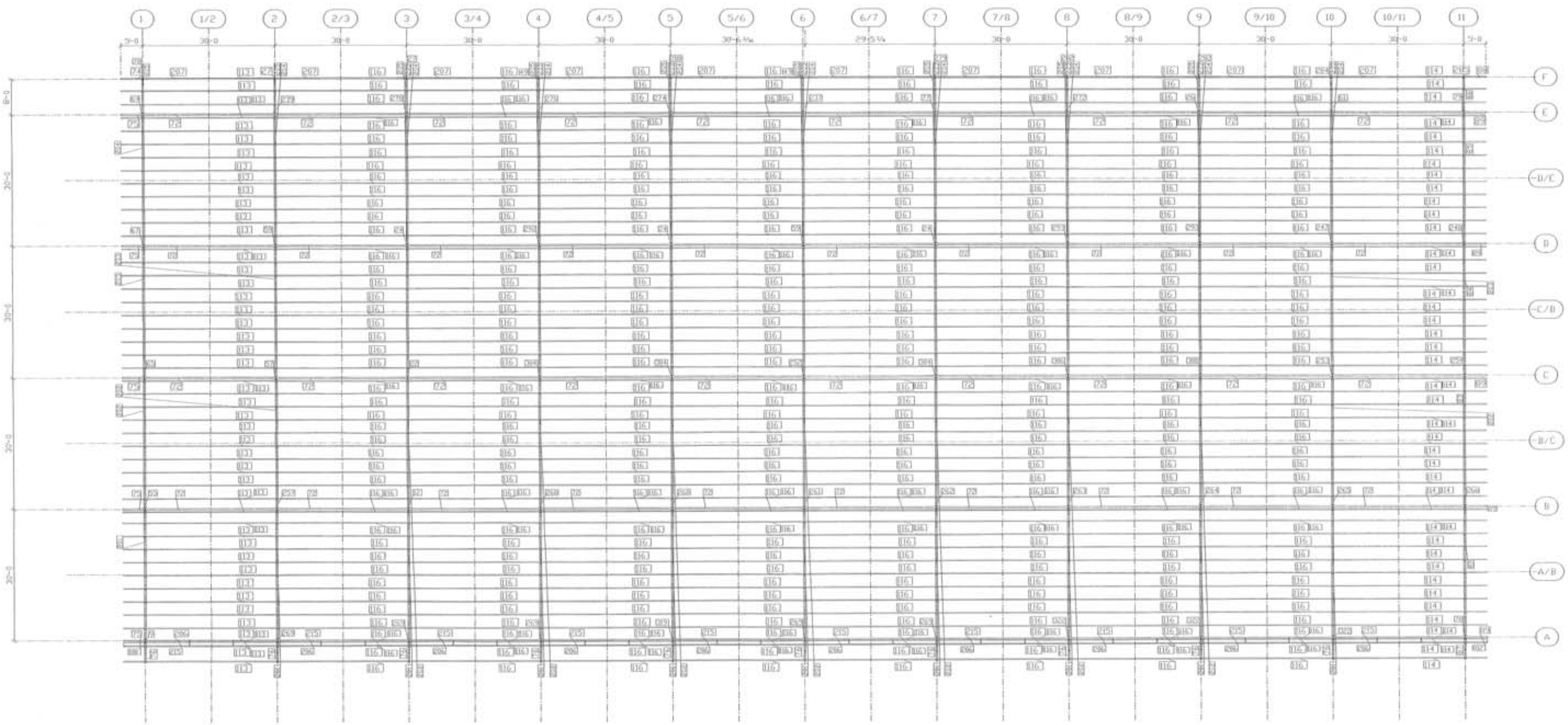
Project Title

NORTH STAND QUEEN'S PARK SAVANNAH

Drawing Title

ROOF FRAMING PLAN

Drawn	Designed	Traced	Checked
Scale:		Date:	
Chief Surveyor Engineer			
DRAWING NUMBER		SHEET NO.	REV NO.
		GA4	



ALL PURLINS = C8X11.5 @ 3'-0" C/C

PURLIN LAYOUT

REV	BY	DATE	DETAILS	REV	BY	DATE	DETAILS
A	I.B.	25/11/10	ERECTION MARKS ADDED				

GENERAL NOTES

ALL ROOF SHEETS

26G CIRCULAR CORRUGATED SHEETS FASTENED TO C8X11.5 PURLINS WITH TOPEDO SCREWS @ 1'-6" C/C

CLIENT: MINISTRY OF WORKS

PROJECT: NORTH STAND, QUEEN'S PARK SAVANNAH

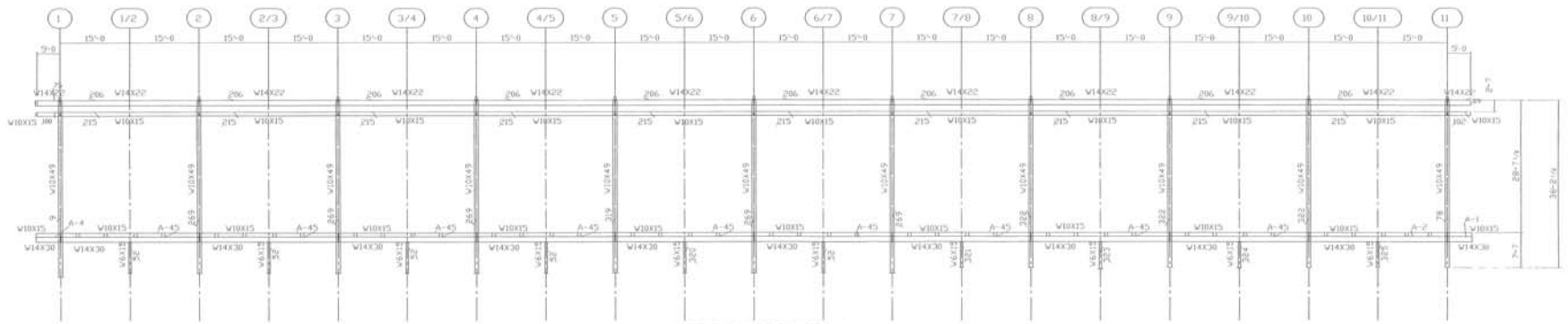
TITLE: PURLIN LAYOUT

DRAWN: I.B. 11/25/10

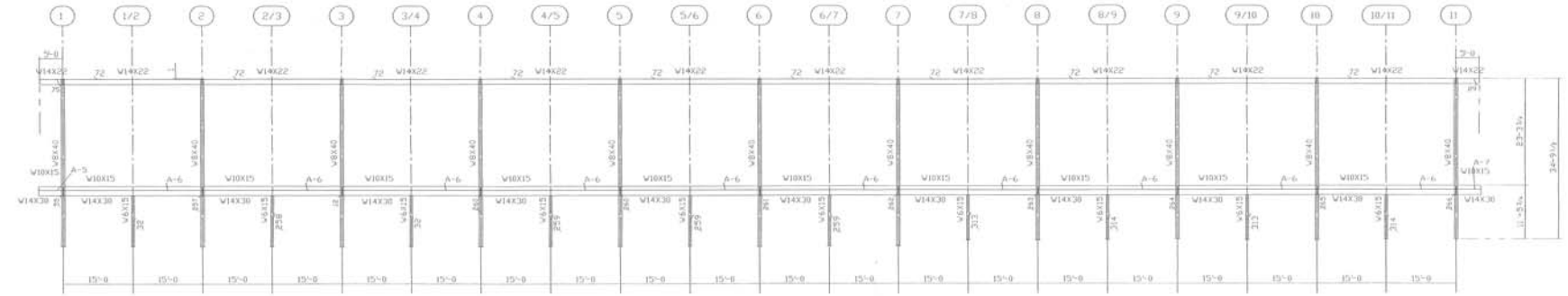
CHECKED:

STEEL STRUCTURES T&T LTD

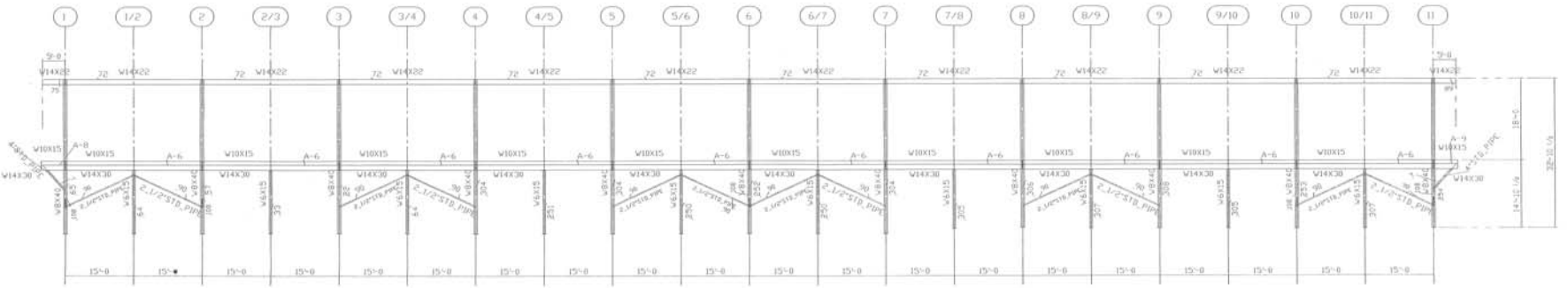
SCALE	JOB No	DWG No	REV
NTS	309	SS-GA5	A



FRAME ON GRID LINE A



FRAME ON GRID LINE B



FRAME ON GRID LINE C

NOTES

REVISIONS

No	Date	Description

GOVERNMENT OF THE REPUBLIC OF TRINIDAD AND TOBAGO

MINISTRY OF WORKS AND INFRASTRUCTURE

Client
NATIONAL CARNIVAL COMMISION

Project Title
NORTH STAND
QUEEN'S PARK SAVANNAH
P.O.S.

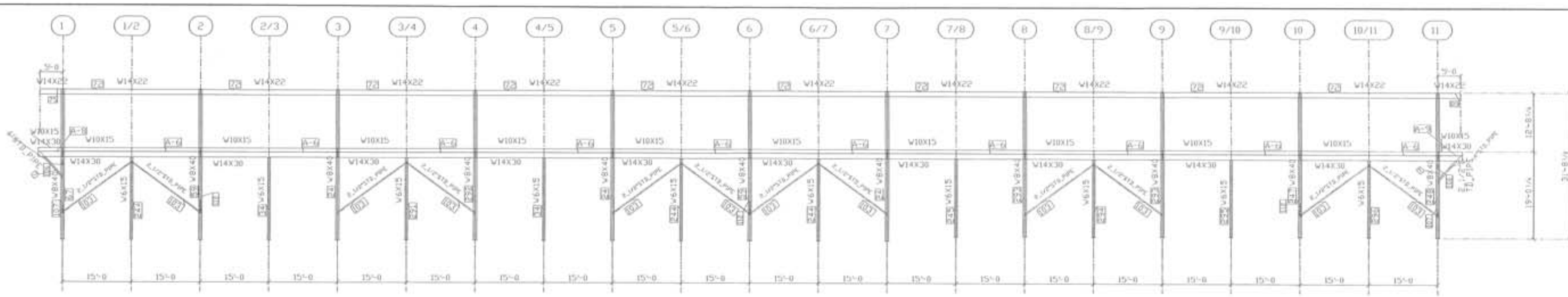
Drawing Title
FRAMES ON GRID LINES A,B & C

Drawn	Designed	Traced	Checked

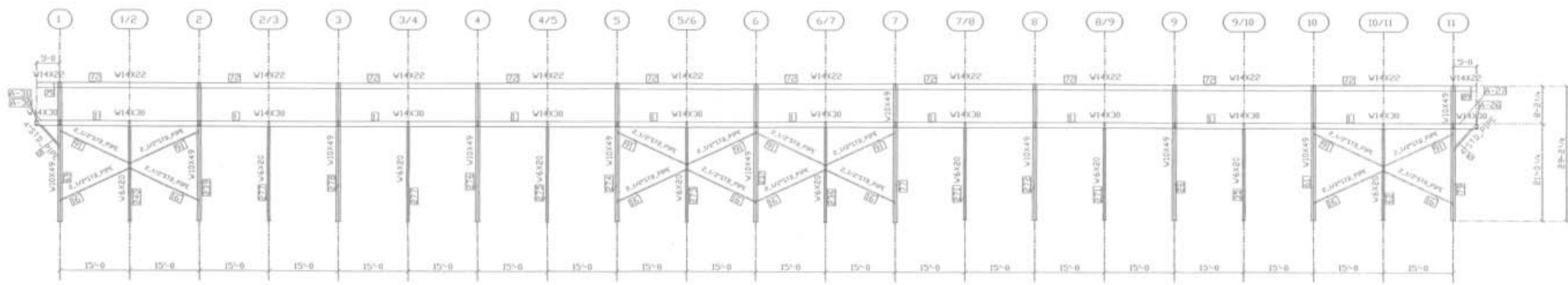
Scale: NTS | Date: NOV. 2011

Chief Designs Engineer

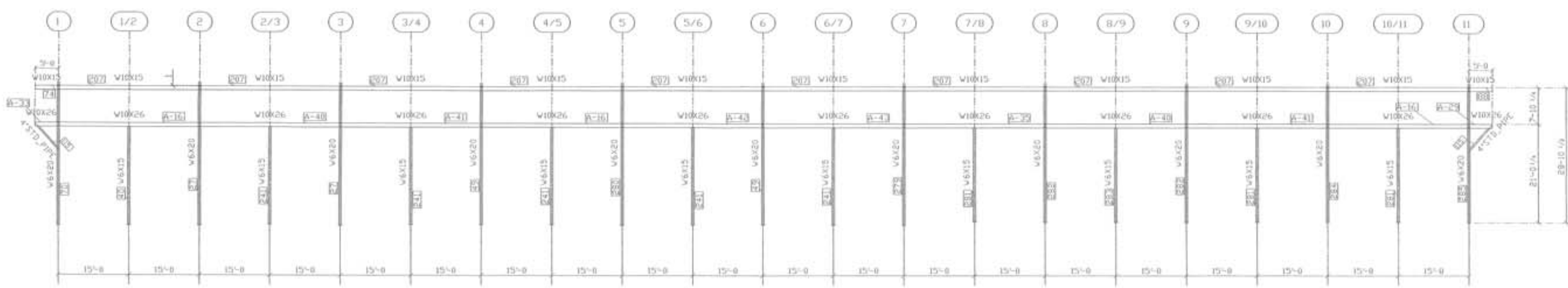
DRAWING NUMBER	SHEET NO.	REV.NO.
	GA6	



FRAME ON GRID LINE D



FRAME ON GRID LINE E



FRAME ON GRID LINE F

REV	BY	DATE	DETAILS	REV	BY	DATE	DETAILS
A	I.B.	29/11/10	ERECTION MARKS ADDED				

GENERAL NOTES

ALL STEEL = ASTM A572 GR 50

CLIENT MINISTRY OF WORKS

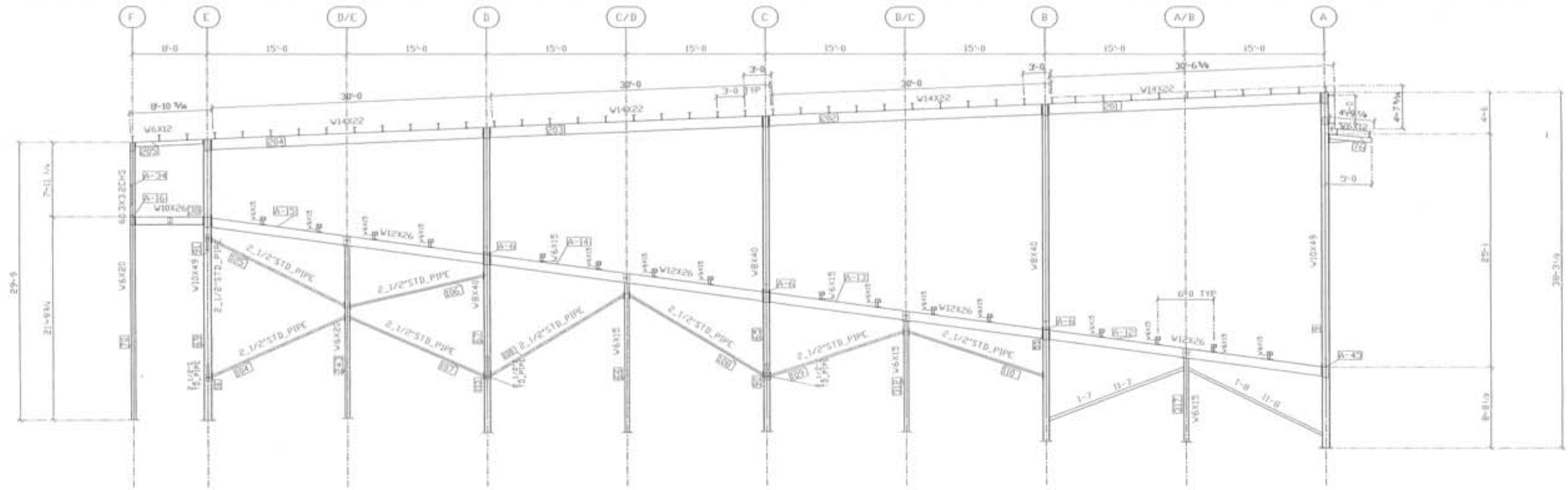
PROJECT NORTH STAND QUEEN'S PARK SAVANNAH

TITLE FRAME ON GRID LINES D,E & F

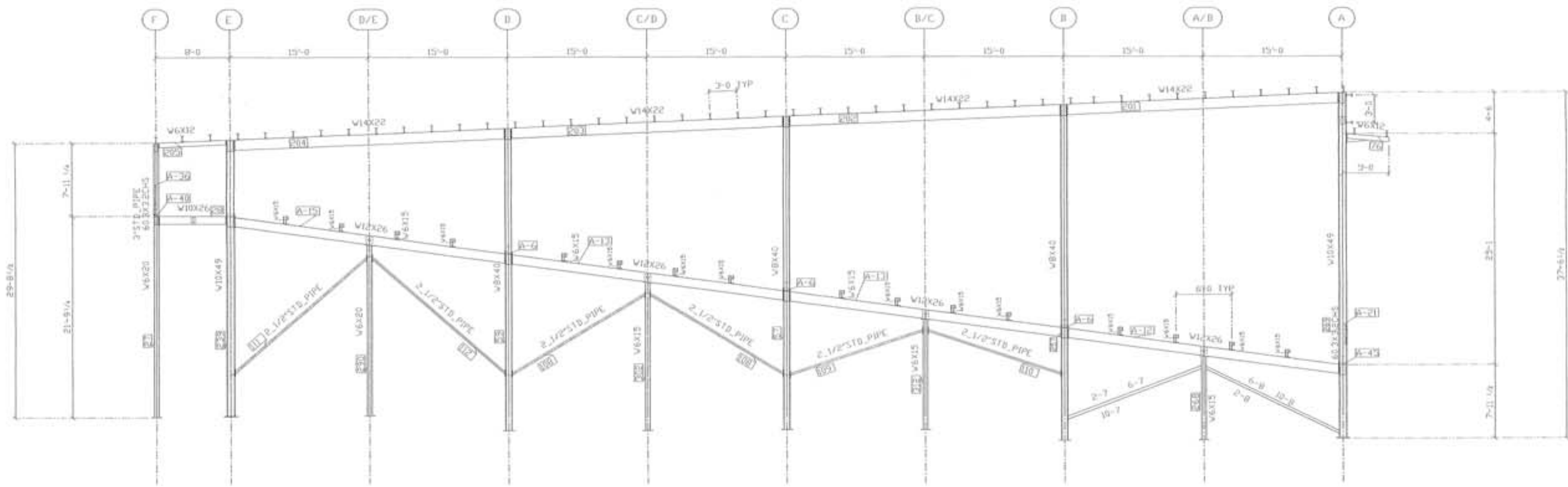
DRAWN	I.B.	11/29/10
CHECKED		

STEEL STRUCTURES T&T LTD

SCALE	JOB No	DWG No	REV
NTS	309	SS-GA7	A



FRAME ON GRID LINES 1 & 11



FRAME ON GRID LINES 2,6 & 10

A	LB	30/11/10	ERECTION MARKS ADDED				
REV	BY	DATE	DETAILS	REV	BY	DATE	DETAILS

GENERAL NOTES

ALL STEEL = ASTM A572 GR 50

FRAMES TO BE USED FOR BRACING MARKS ONLY

CLIENT: MINISTRY OF WORKS

PROJECT: NORTH STAND QUEEN'S PARK SAVANNAH

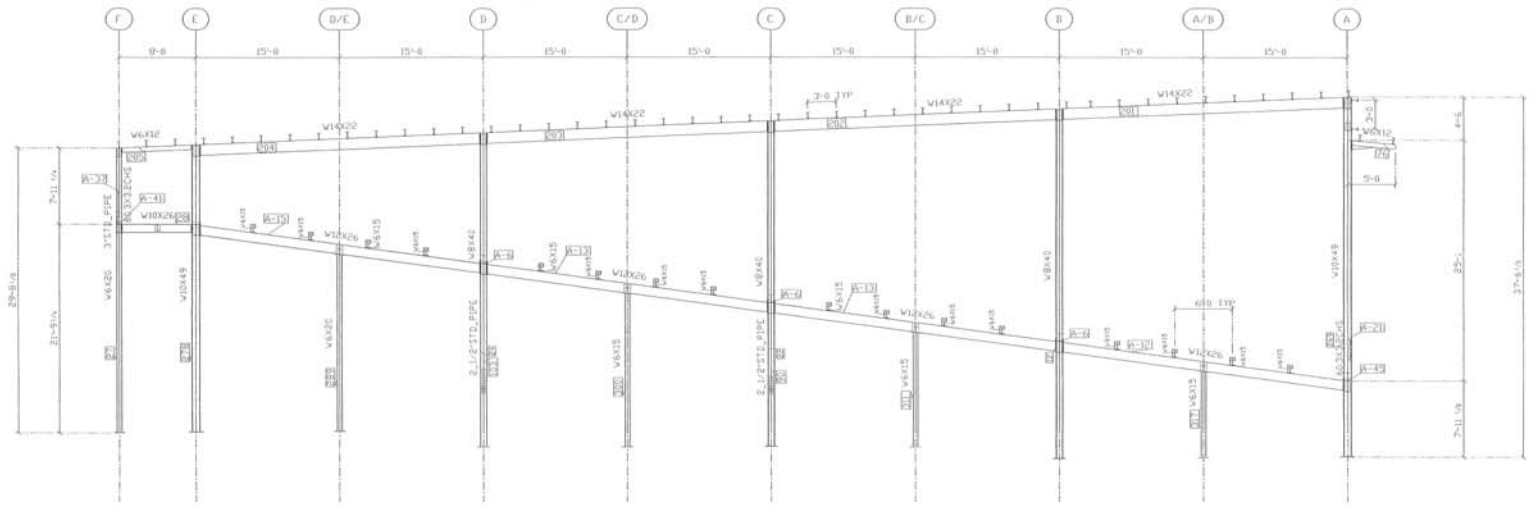
TITLE: FRAME ON GRID LINES 1,2,6,10 & 11

DRAWN: LB 11/30/10

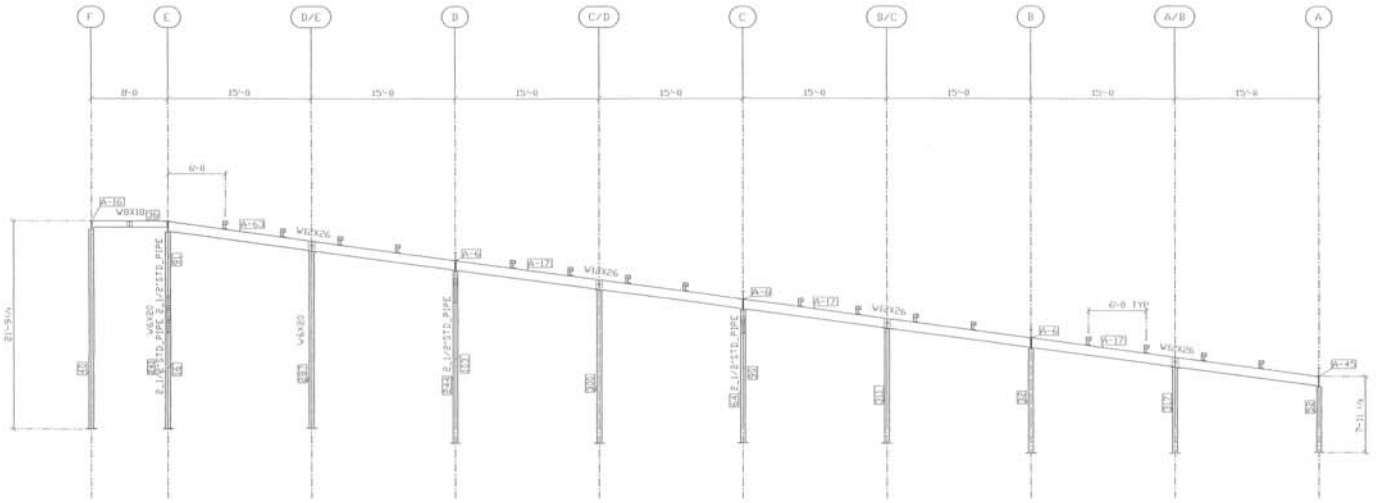
CHECKED:

STEEL STRUCTURES T&T LTD

SCALE	JOB No	DWG No	REV
NTS	309	SS-GA8	A



FRAME ON GRID LINES 3,4,5,7,8,& 9



FRAME ON GRID LINES 1/2, 2/3, 3/4, 4/5, 5/6, 6/7, 7/8, 8/9, 9/10, 10/11

A	LB	30/11/10	ERECTION MARKS ADDED				
REV	BY	DATE	DETAILS	REV	BY	DATE	DETAILS

GENERAL NOTES

CLIENT: MINISTRY OF WORKS

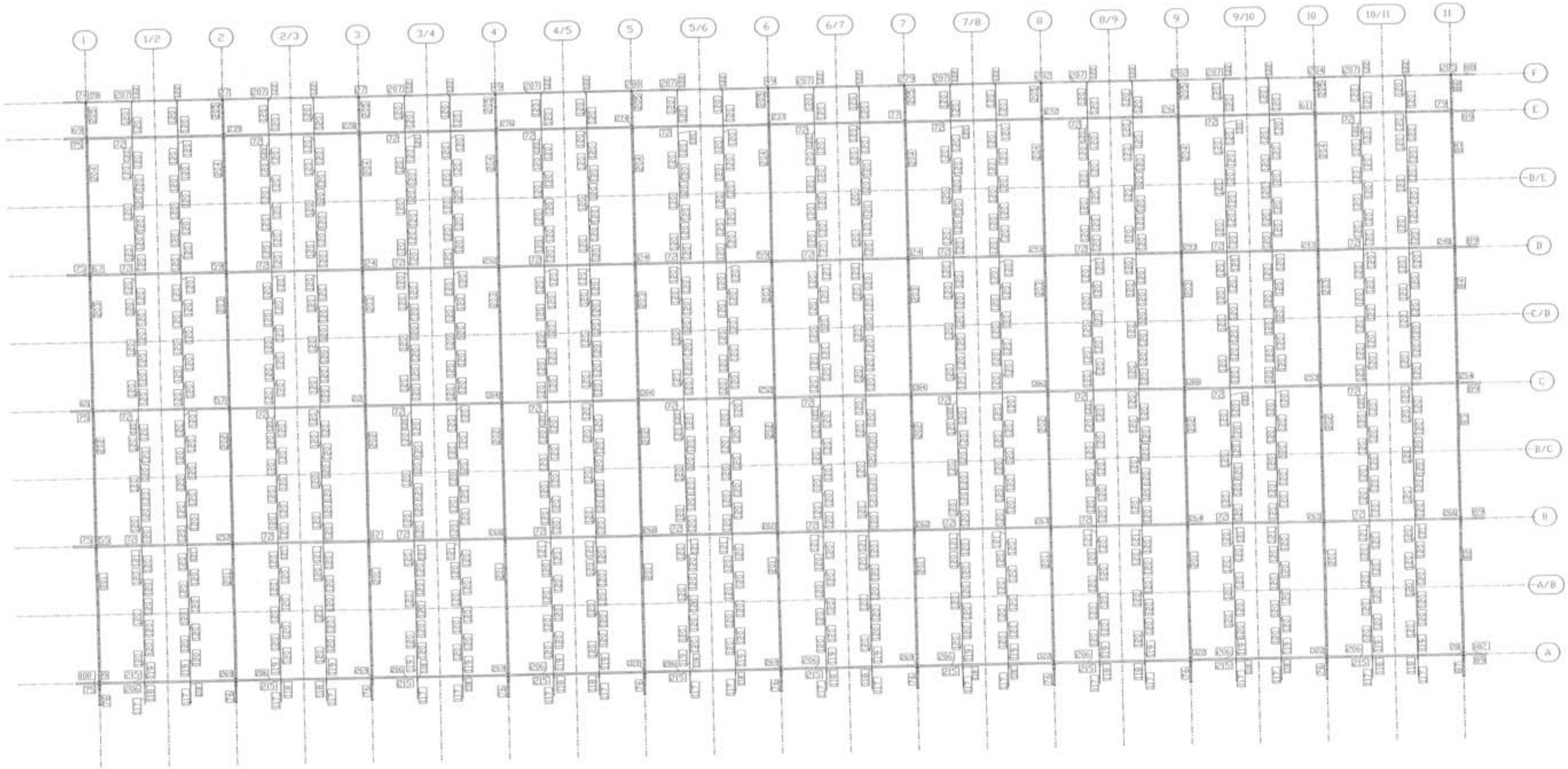
PROJECT: NORTH STAND, QUEEN'S PARK SAVANNAH

TITLE: SECTIONAL FRAMES

DRAWN	LB	11/30/10
CHECKED		

STEEL STRUCTURES T&T LTD
PENEARA INDUSTRIAL ESTATE, ARIMA, TRINIDAD, WEST INDIES.
Fax : 868-646-0128
tel : 868-642-3442
tel : 868-642-3687
tel : 868-642-7058
Email: sstt@tstt.net.tt

SCALE	JOB No	DWG No	REV
NTS	309	SS-GA9	A



ALL SAGRODS = 1/2" DIA MS ROD

SAGRODS LAYOUT

REV	BY	DATE	DETAILS	REV	BY	DATE	DETAILS

GENERAL NOTES

CLIENT: MINISTRY OF WORKS

PROJECT: NORTH STAND, QUEEN'S PARK SAVANNAH

TITLE: SAGRODS LAYOUT

DRAWN: I.B. 11/30/10

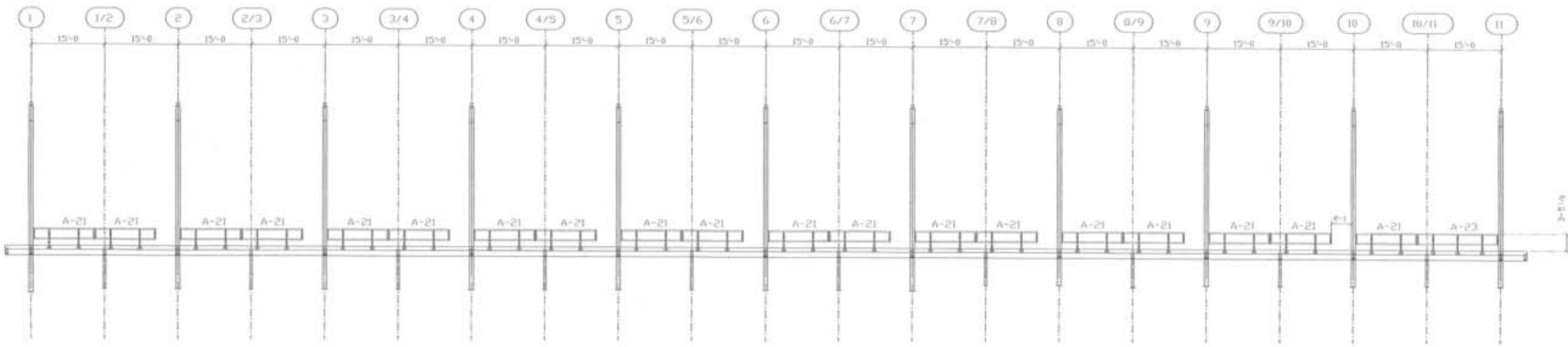
CHECKED:

STEEL STRUCTURES T&T LTD

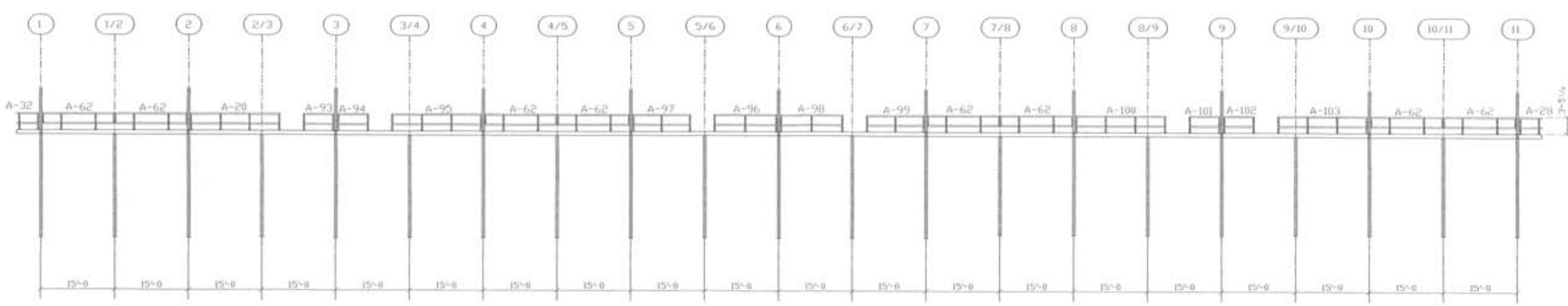
TRINIDAD, WEST INDIES

SCALE	JOB No	DWG No	REV
NTS	309	SS-GA10	

STRUCAD



HANDRAIL ON GRID LINE A



HANDRAIL ON GRID LINE E

REV	BY	DATE	DETAILS	REV	BY	DATE	DETAILS

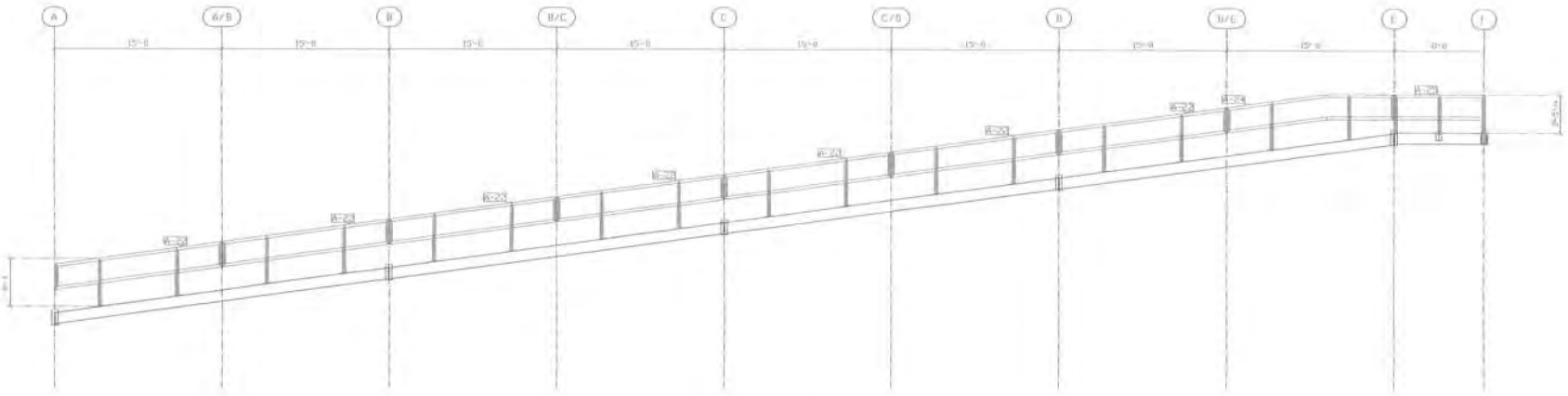
GENERAL NOTES

ALL HANDRAILS = 2 1/2" DIA GALV'D PIPE

CLIENT: MINISTRY OF WORKS	DRAWN	I.B.	12/02/10
PROJECT: NORTH STAND QUEEN'S PARK SAVANNAH	CHECKED		
TITLE: HANDRAIL ON GRID LINES A & F			

STEEL STRUCTURES T&T LTD

SCALE	JOB No	DWG No	REV
NTS	309	SS-GA11	



HANDRAILS OFF GRID LINES I & 11

GENERAL NOTES:

ALL HANDRAILS = 2 1/2" DIA GALV'D PIPE

REV.	BY	DATE	DETAILS	REV.	BY	DATE	DETAILS

CLIENT: MINISTRY OF WORKS

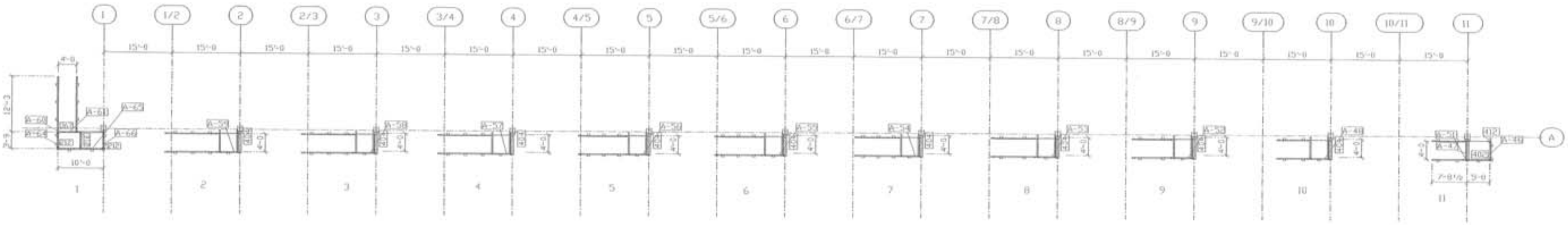
PROJECT: NORTH STAND QUEEN'S PARK SAVANNAH

TITLE: HANDRAILS OFF GRID LINES I & 11

DRAWN	I.B.	12/02/10
CHECKED		

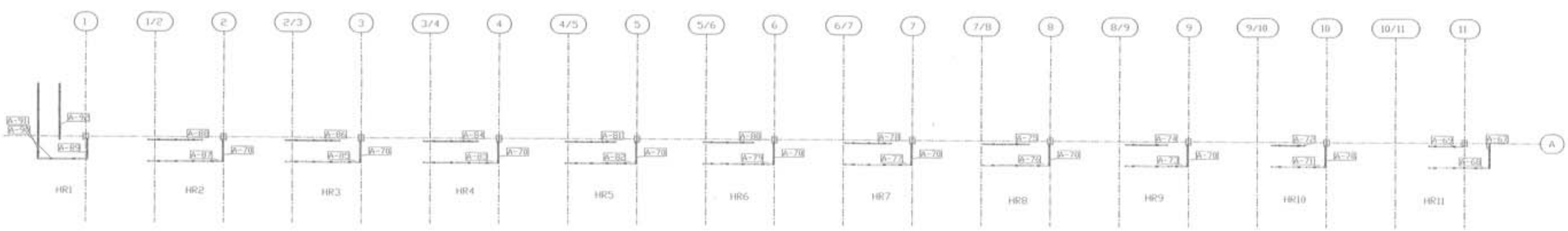
STEEL STRUCTURES T&T LTD

SCALE	JOB No.	DWG No.	REV.
NTS	309	SS-1A12	



ALL STRINGERS = C8X11.5

STAIRCASES ON GRID LINE A



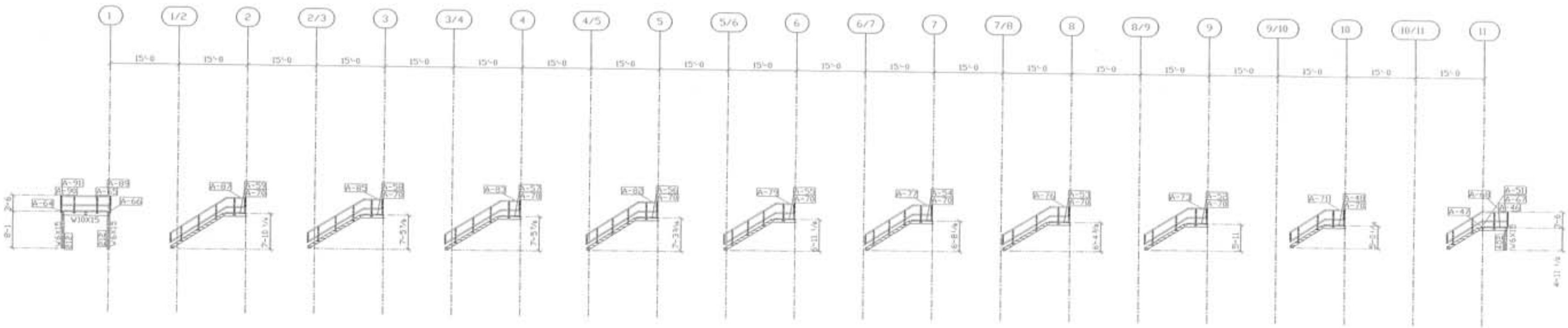
ALL HANDRAILS = 2 1/2" DIA GALVANIZE PIPE

STAIRCASE HANDRAILS ON GRID LINE A

REV	BY	DATE	DETAILS	REV	BY	DATE	DETAILS

GENERAL NOTES

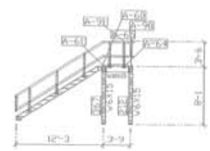
CLIENT: MINISTRY OF WORKS	DRAWN	I.B.	12/16/10	STEEL STRUCTURES T&T LTD	
PROJECT: NORTH STAND, QUEEN'S PARK SAVANNAH	CHECKED				
			SCALE	JOB No	DWG No / REV
TITLE: STAIRCASES AND HANDRAILS ON GRID LINE A			NTS	309	SS-GA13



ALL RISERS = 7" HIGH
ALL TREADERS = 11" LG

ALL STRINGERS = C8X11.5
ALL TREADERS = 1/4" THK CHECKED PLATE
ALL HANDRAILS = 2 1/2" DIA GALVANIZE PIPE

ELEVATION ON STAIRCASES ON GRID LINE A



ALL RISERS = 7" HIGH
ALL TREADERS = 11" LG

ALL STRINGERS = C8X11.5
ALL TREADERS = 1/4" THK CHECKED PLATE
ALL HANDRAILS = 2 1/2" DIA GALVANIZE PIPE

STAIRCASE OFF LINE 1

REV	BY	DATE	DETAILS	REV	BY	DATE	DETAILS

GENERAL NOTES

CLIENT: MINISTRY OF WORKS

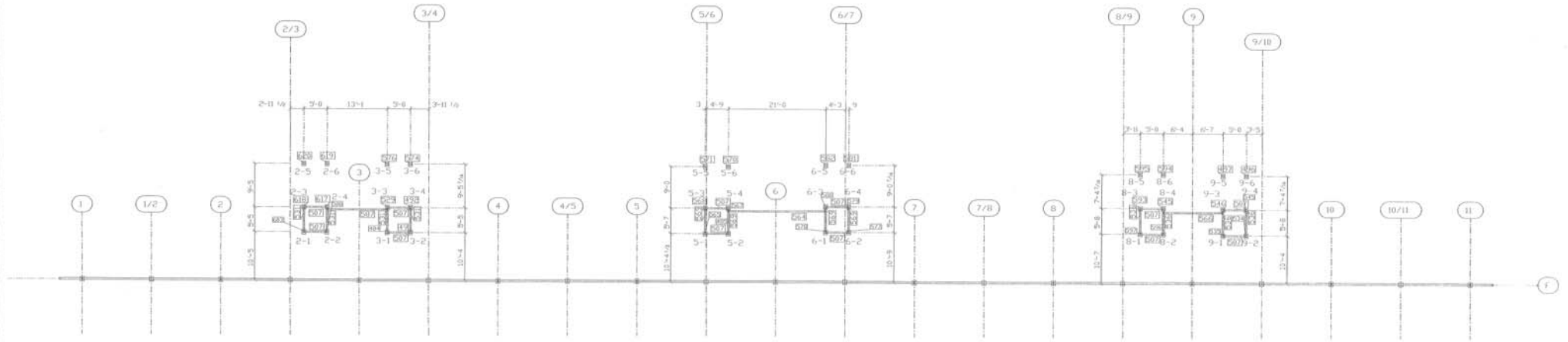
PROJECT: NORTH STAND
QUEEN'S PARK SAVANNAH

TITLE: ELEVATION ON STAIRCASES ON GRID LINE A & 1

DRAWN	I.B.	12/16/10
CHECKED		

STEEL STRUCTURES T&T LTD

SCALE	JOB No	DWG No	REV
NTS	309	SS-GA14	



ALL STANCHIONS = W6X6X15
ALL BEAMS = W10X4X15

REAR STAIR SUPPORTS

REV	BY	DATE	DETAILS	REV	BY	DATE	DETAILS

GENERAL NOTES

CLIENT: MINISTRY OF WORKS

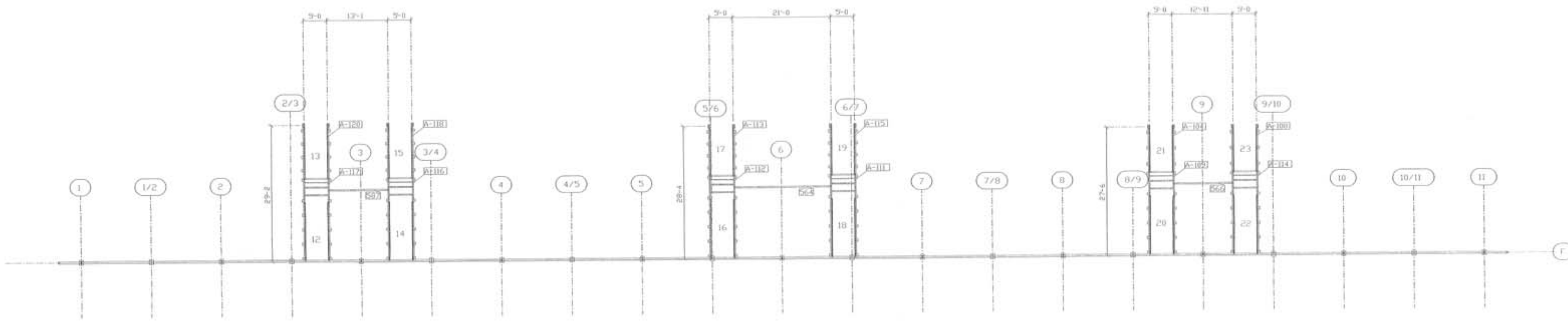
PROJECT: NORTH STAND
QUEEN'S PARK SAVANNAH

TITLE: REAR STAIR SUPPORTS

DRAWN	I.B.	01/28/11
CHECKED		

STEEL STRUCTURES T&T LTD
DEMERARA INDUSTRIAL ESTATE, ARIMA, TRINIDAD, WEST INDIES
Fax : 868-646-3838
Tel : 868-642-3442
Tel : 868-642-3687
Tel : 868-642-9550
Email : ssttt@tstt.net.tt

SCALE	JOB No.	DWG No.	REV.
NTS	309	SS-GA15	



ALL STRINGERS = C10X20

REAR STAIRCASES

REV	BY	DATE	DETAILS	REV	BY	DATE	DETAILS

GENERAL NOTES

CLIENT: MINISTRY OF WORKS

PROJECT: NORTH STAND, QUEEN'S PARK SAVANNAH

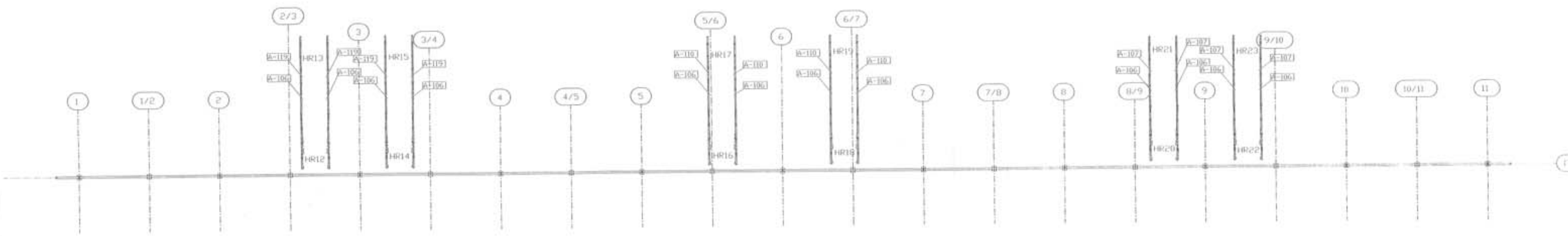
TITLE: REAR STAIRCASES

DRAWN	I.B.	01/20/11
CHECKED		

STEEL STRUCTURES T&T LTD

TRINIDAD, WEST INDIES.

SCALE	JOB No	DWG No	REV
NTS	309	SS-GA16	



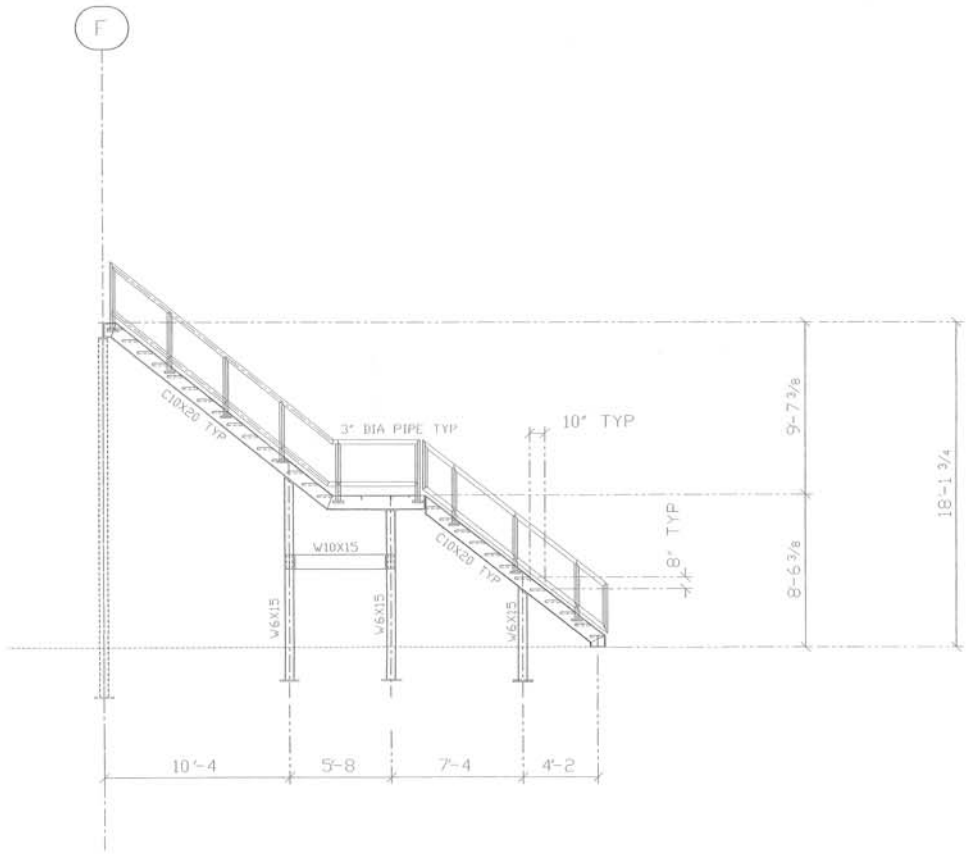
ALL HANDRAILS = 3" DIA GALV'D PIPE

REAR STAIR HAND RAILS

REV	BY	DATE	DETAILS	REV	BY	DATE	DETAILS

GENERAL NOTES

CLIENT: MINISTRY OF WORKS	DRAWN	L.B.	01/28/11	STEEL STRUCTURES T&T LTD
PROJECT: NORTH STAND, QUEEN'S PARK SAVANNAH	CHECKED			
TITLE: REAR STAIR HAND RAILS	SCALE: NTS	JOB No: 309	DWG No: SS-GA17	REV



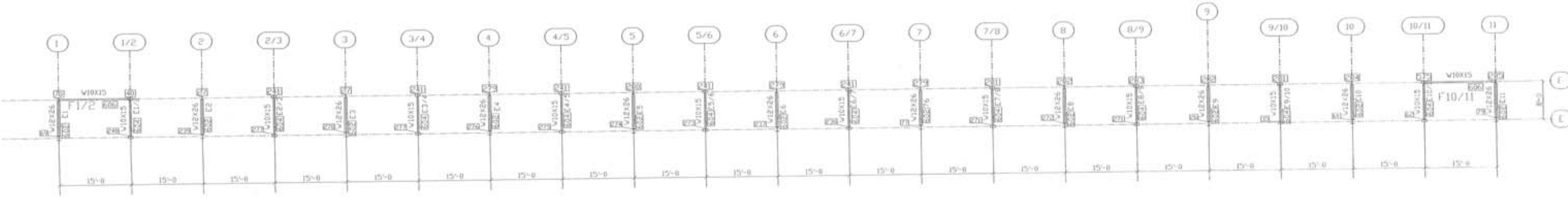
REAR STAIRCASES

STRUCAD

				CLIENT	DRAWN	I.B.	01/28/11
				MINISTRY OF WORKS	CHECKED		
				PROJECT	GENERAL NOTES		
				NORTH STAND			
				QUEEN'S PARK SAVANNAH			
REV	BY	DATE	DETAILS	TITLE			
				REAR STAIRCASES			

STEEL STRUCTURES T&T LTD
N'MEARA INDUSTRIAL ESTATE,
ARIMA
TRINIDAD, WEST INDIES.
Fax : 868-646-0138
Tel : 868-642-3442
Tel : 868-642-3687
Tel : 868-642-9550
Email: ssltd@tstt.net.tt

SCALE	JOB No.	DWG No.	REV.
NTS	309	SS-GA18	



BRACING BET GRID LINES E & F

PART FRAME ON GRID LINES 1,2,3,4,5,6,7,8,9,10,11

PART FRAME ON GRID LINES 1/2,2/3,3/4,4/5,5/6,6/7,7/8,8/9,9/10,10/11

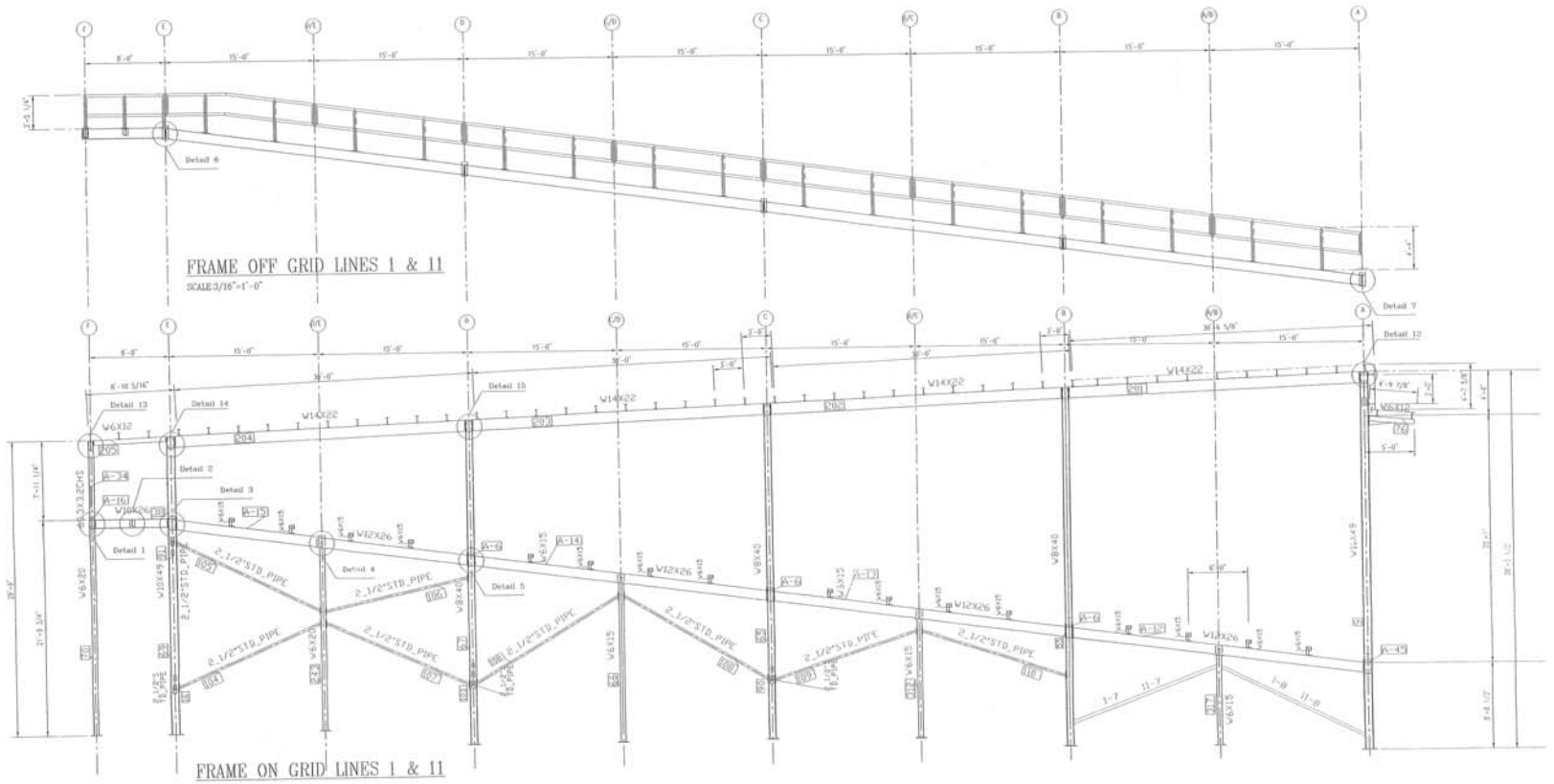
REV	BY	DATE	DETAILS	REV	BY	DATE	DETAILS

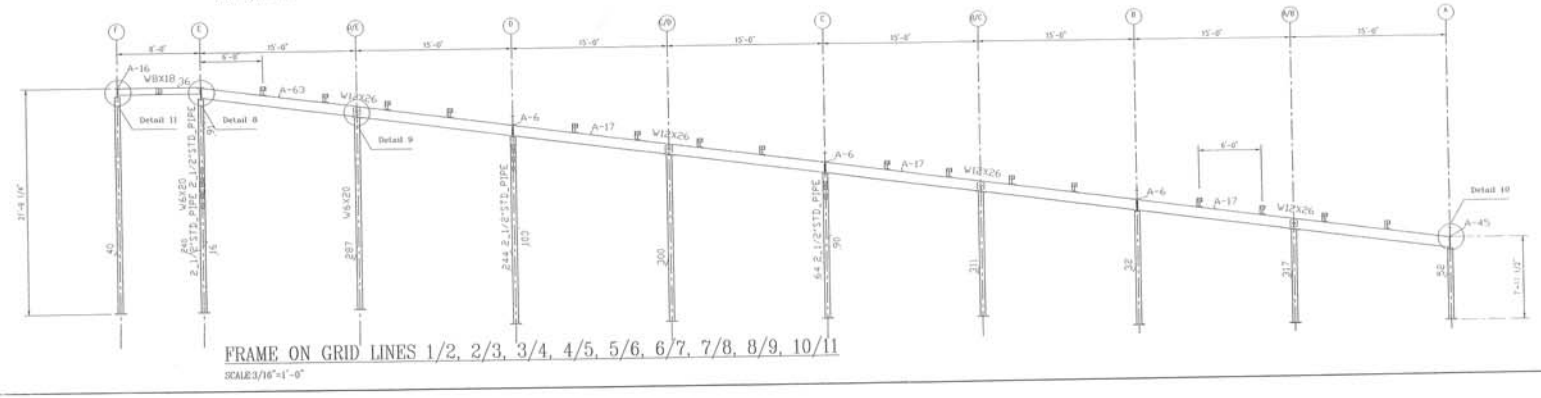
GENERAL NOTES

CLIENT: MINISTRY OF WORKS	DRAWN	I.B.	02/01/11
PROJECT: NORTH STAND QUEEN'S PARK SAVANNAH	CHECKED		
TITLE			

STEEL STRUCTURES T&T LTD
TRINIDAD, WEST INDIES

SCALE	JOB No	DWG No	REV
NTS	309	SS-GA19	





NOTES

REVISIONS

No	Date	Description

GOVERNMENT OF THE REPUBLIC OF TRINIDAD AND TOBAGO

MINISTRY OF WORKS AND INFRASTRUCTURE

DESIGNED ENGINEERING BRANCH

Project Title

NORTH STAND QUEEN'S PARK SAVANNAH

Drawing Title

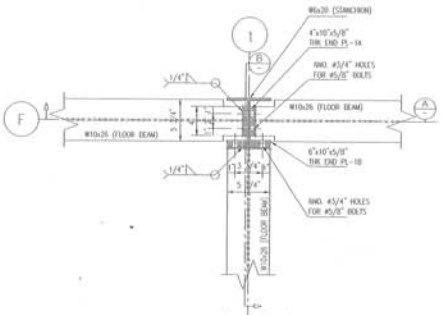
FRAMES OFF GRID LINES 1&11, FRAMES ON GRID LINES 1&2, 10&11

Drawn	Designed	Traced	Checked

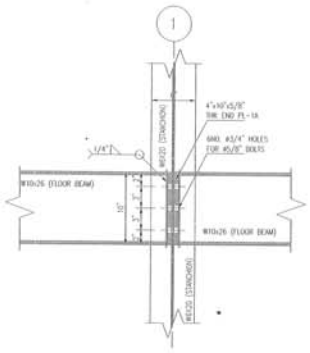
Scale: Date:

Chief Bridge Engineer

DRAWING NUMBER	SHEET NO	REV.NO.
	GA20	



Detail 1
SCALE:1-1/2"=1'-0"



SECTION A
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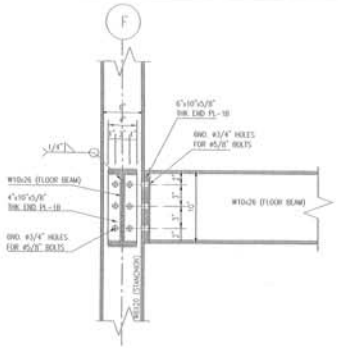

SECTION B
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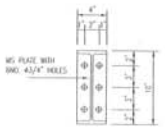

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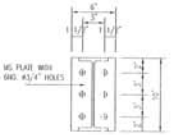
SCALE:1-1/2"=1'-0"



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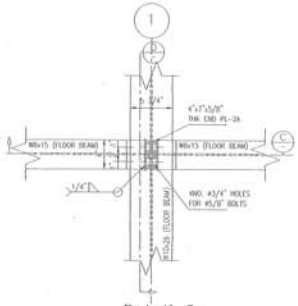

Detail 2
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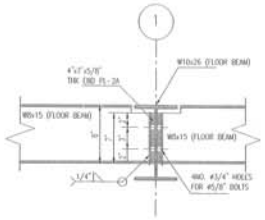

SECTION C
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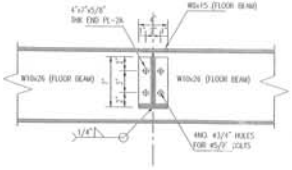

SECTION D
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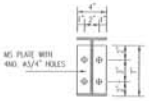

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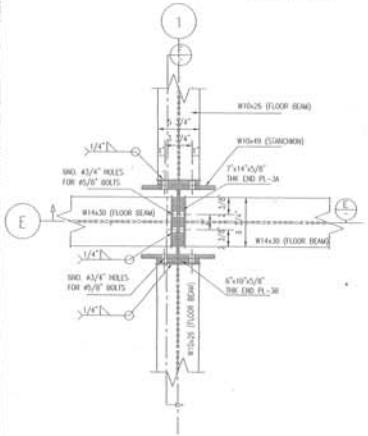

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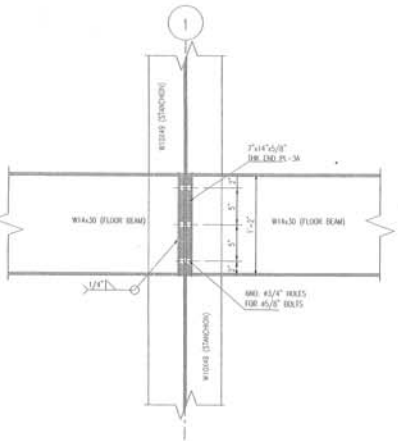
SCALE:1-1/2"=1'-0"



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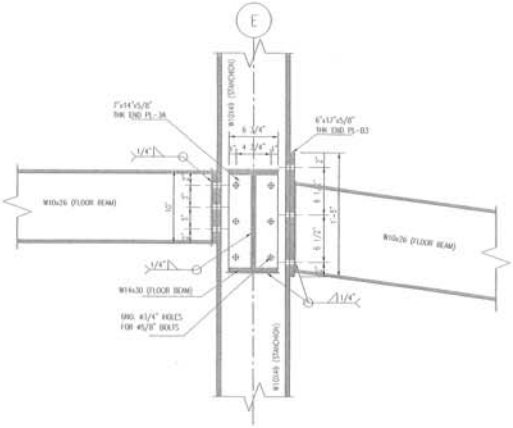

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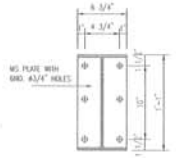

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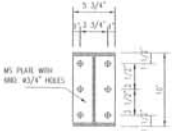


END PL-3B
SCALE:1-1/2"=1'-0"

NOTES

REVISIONS

No	Date	Description

GOVERNMENT OF THE REPUBLIC OF TRINIDAD AND TOBAGO

MINISTRY OF WORKS AND INFRASTRUCTURE

DESIGNS ENGINEERING DRAWING

Project Title:
NORTH STAND QUEEN'S PARK SAVANNAH

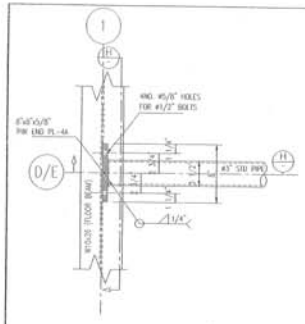
Drawing Title:
FLOOR FRAMING CONNECTION DETAILS 1-3

Drawn	Designed	Traced	Checked

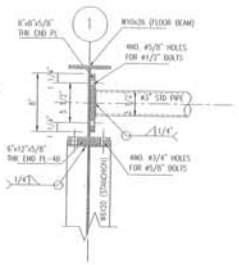
Scale: Date:

Chief Design Engineer:

DRAWING NUMBER	SHEET NO	REV.NO.
	GA21	



Detail 4
SCALE:1-1/2"=1'-0"



SECTION G
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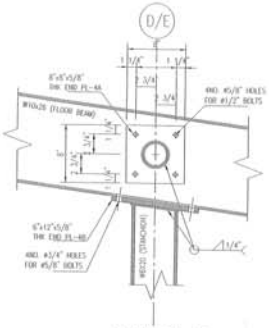

SECTION H
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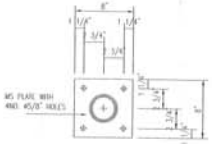

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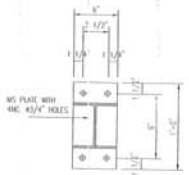

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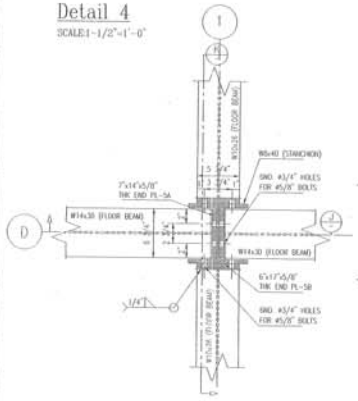

Detail 5
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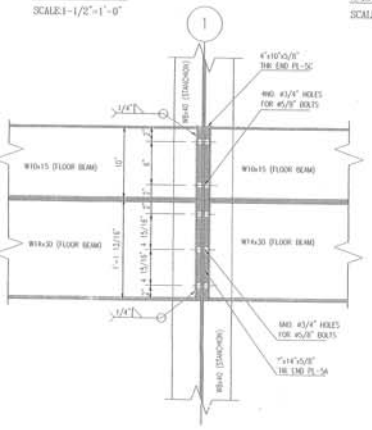

SECTION J
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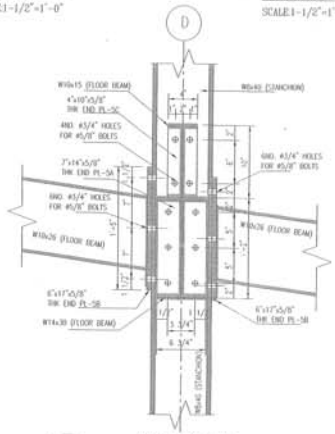

SECTION K
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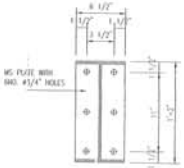

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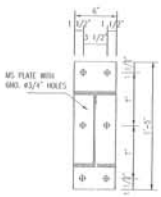

END PL-5B
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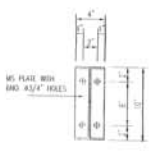

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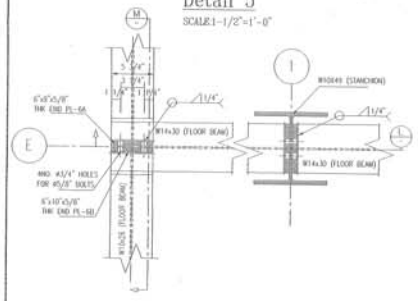
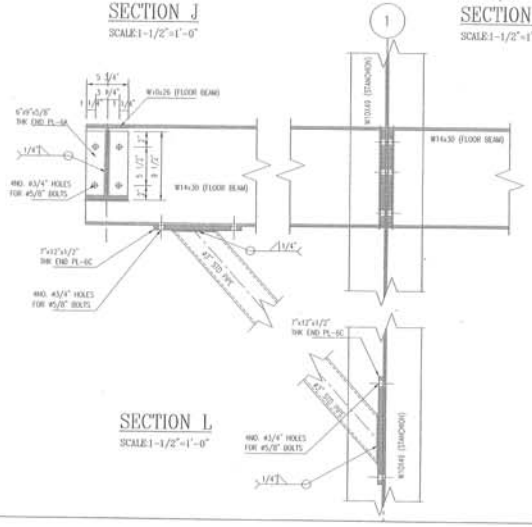


Detail 6
SCALE:1-1/2"=1'-0"



SECTION L
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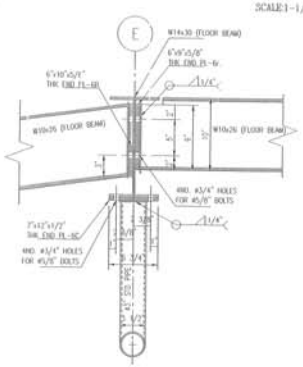
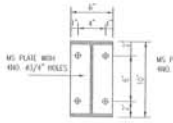


SECTION M
SCALE:1-1/2"=1'-0"

END PL-6A
SCALE:1-1/2"=1'-0"



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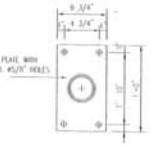


END PL-6C
SCALE:1-1/2"=1'-0"

NOTES

REVISIONS

No.	Date	Description

GOVERNMENT OF THE REPUBLIC OF TRINIDAD AND TOBAGO
MINISTRY OF WORKS AND INFRASTRUCTURE
DESIGN | ENGINEERING | DRAWN

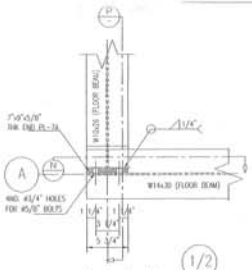
Project Title
NORTH STAND QUEEN'S PARK SAVANNAH

Drawing Title
FLOOR FRAMING CONNECTION DETAILS 4-6

Drawn	Designed	Traced	Checked

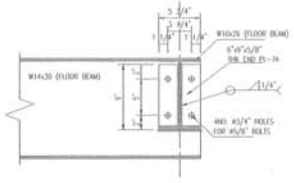
Scale: Date:
Chief Designs Engineer

DRAWING NUMBER	SHEET NO.	REV.NO.
	GA22	



Detail 7

SCALE:1-1/2"=1'-0"



SECTION N

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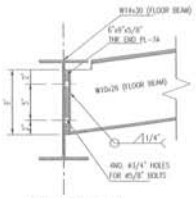

SECTION P

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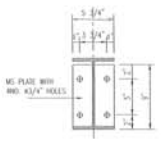

END PL-7A

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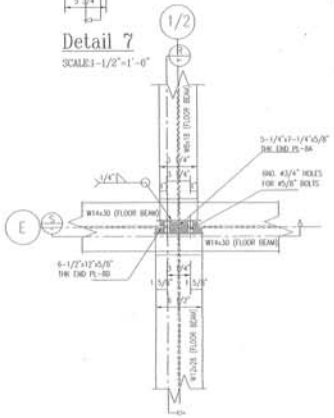
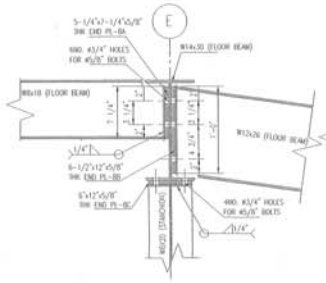


Detail 8

SCALE:1-1/2"=1'-0"



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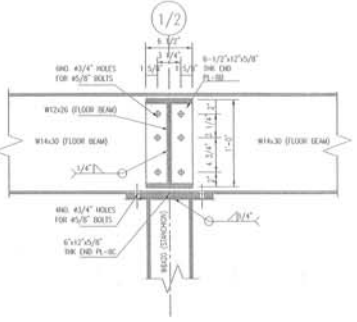

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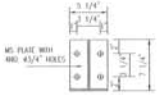

END PL-8A

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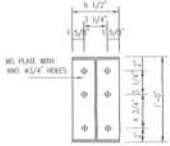

END PL-8B

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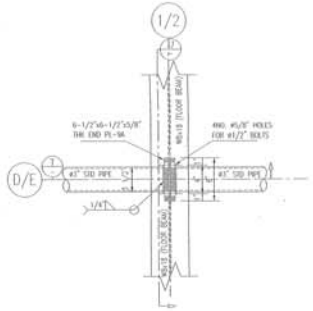
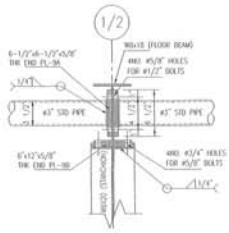


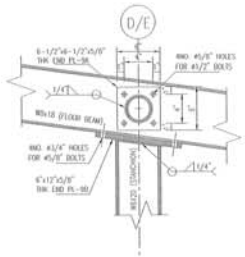
Detail 9

SCALE:1-1/2"=1'-0"



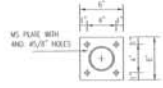
SECTION T

SCALE:1-1/2"=1'-0"



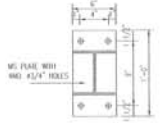
SECTION U

SCALE:1-1/2"=1'-0"



END PL-9A

SCALE:1-1/2"=1'-0"



END PL-9B

SCALE:1-1/2"=1'-0"

NOTES

REVISIONS

No.	Date	Description

GOVERNMENT OF THE REPUBLIC OF TRINIDAD AND TOBAGO

MINISTRY OF WORKS AND INFRASTRUCTURE

DESIGN ENGINEERING BRANCH

Project Title:

NORTH STAND QUEEN'S PARK SAVANNAH

Drawing Title:

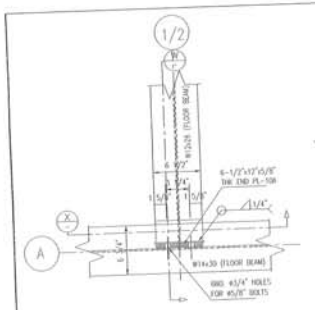
FLOOR FRAMING CONNECTION DETAILS 7-9

Drawn	Designed	Traced	Checked

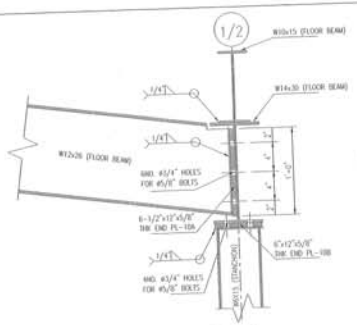
Scale: Date:

Chief Designs Engineer

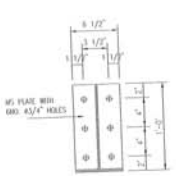
DRAWING NUMBER	SHEET NO.	REV.NO.
	GA23	



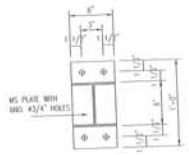
Detail 10
SCALE:1-1/2"=1'-0"



SECTION W
SCALE:1-1/2"=1'-0"



END PL-10A
SCALE:1-1/2"=1'-0"



END PL-10B
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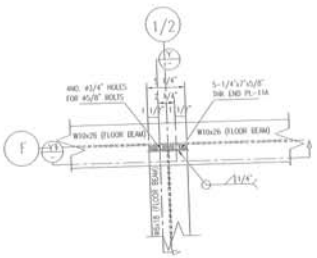

Detail 11
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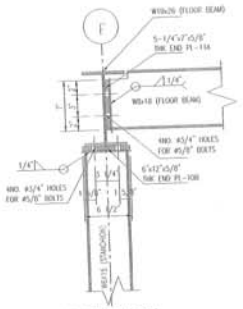
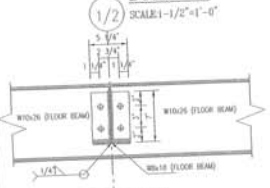


SECTION Y
SCALE:1-1/2"=1'-0"



SECTION Y1
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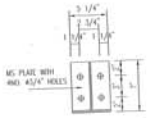

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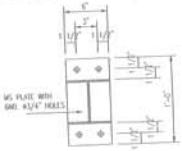

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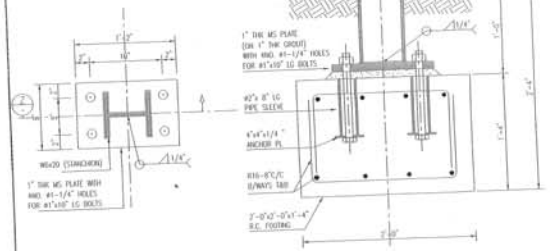

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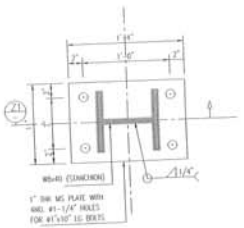

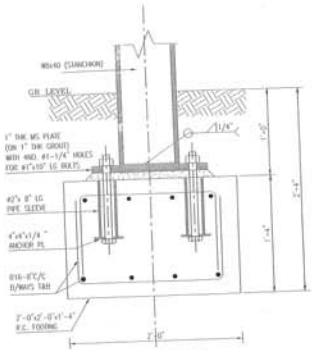

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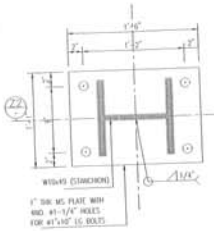

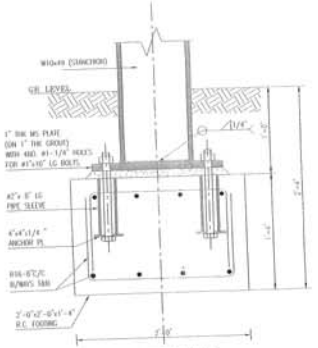

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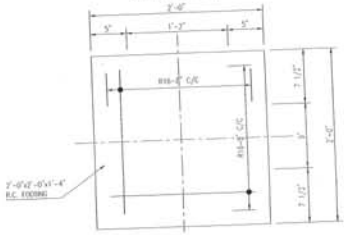
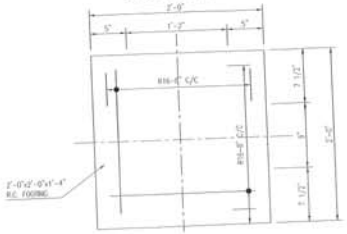


W6x20 (STANCHION) BASE PL CONN. DET'L



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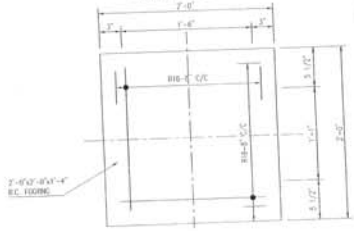

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REVISIONS

Date	Description

GOVERNMENT OF THE REPUBLIC OF TRINIDAD AND TOBAGO

MINISTRY OF WORKS AND INFRASTRUCTURE

DESIGN ENGINEERING BRANCH

Project Title:
NORTH STAND QUEEN'S PARK SAVANNAH

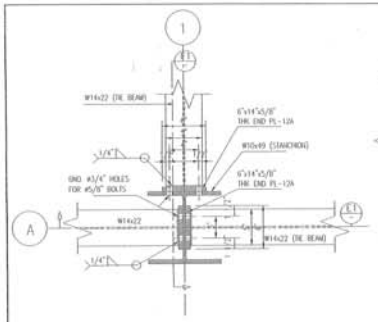
Drawing Title:
FLOOR FRAMING CONNECTION DETAILS 10 & 11
STANCHION CONNECTION DETAILS

Drawn	Designed	Traced	Checked

Scale: Date:

Chief Designs Engineer:

DRAWING NUMBER	SHEET NO.	REV.NO
	GA/24	



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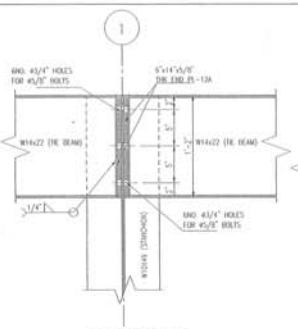

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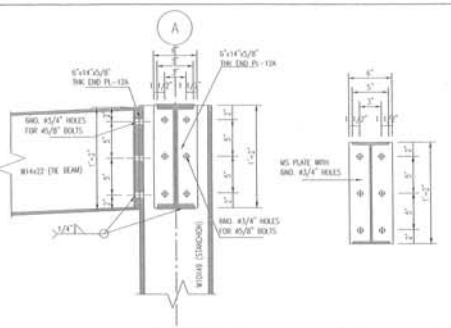

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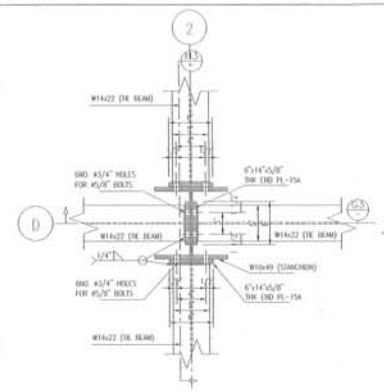

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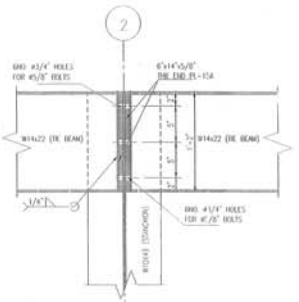

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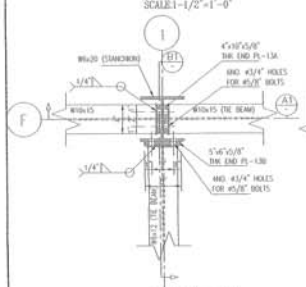

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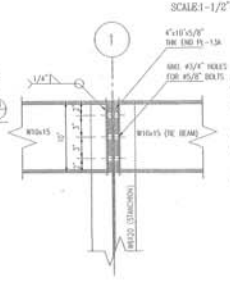

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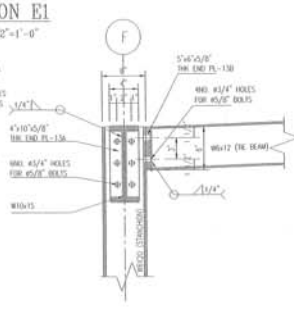

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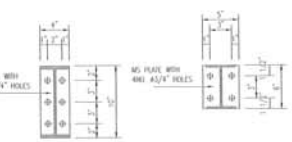

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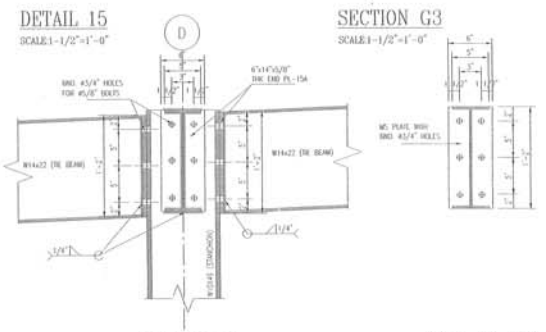

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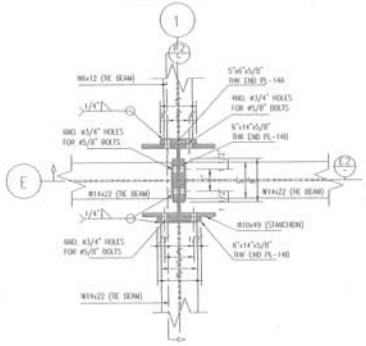

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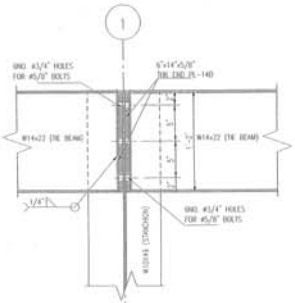

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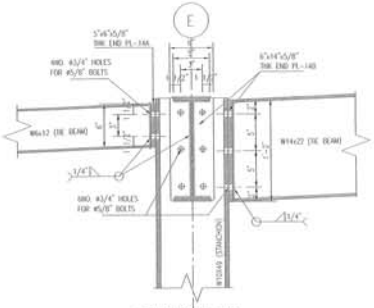

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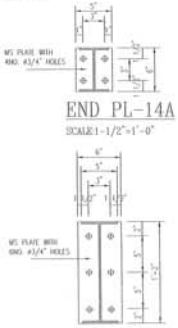

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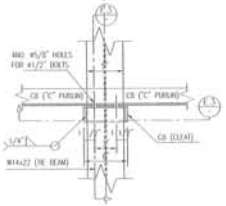

TYP 'C' PURLIN CONN. DETAIL
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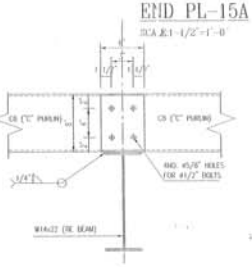

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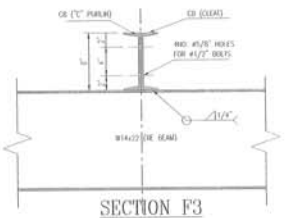

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NOTES:

REVISIONS

Date	Description

GOVERNMENT OF THE REPUBLIC OF TRINIDAD AND TOBAGO

MINISTRY OF WORKS AND INFRASTRUCTURE

DESIGNED ENGINEERING APPROVED

Project Title:
NORTH STAND QUEEN'S PARK SAVANNAH

Drawing Title:
ROOF CONNECTION DETAILS 12-15
TYP. 'C' PURLIN CONNECTION DETAIL

Drawn	Designed	Traced	Checked

Scale:
Date:
Chief Bridges Engineer

DRAWING NUMBER	SHEET NO.	REV NO.
	GA05	

PERFORMANCE SPECIFICATIONS FOR NCC CAPITAL WORKS AT THE GRANDSTAND PROJECT (Phase 1)

THE ARCHITECTURE UNIT,
THE URBAN DEVELOPMENT CORPORATION OF TRINIDAD & TOBAGO

udecott
Urban Development Corporation
Of Trinidad And Tobago Limited

Table of Contents

SECTION 000 – ABBREVIATIONS

ACI	American Concrete Institute
AHJ	Authority Having Jurisdiction
ANSI	American National Standards Institute
ASTM	American Society for Testing and Materials
BS	British Standard
BS EN	British Standard European Norm
IBC	International Building Code
IFC	International Fire Code
ISO	International Organization for Standardization
NFPA	National Fire Protection Association
TCPD	Town and Country Planning Division
UL	Underwriters Laboratory
VOC	Volatile Organic Compound

SECTION 101 - INTRODUCTION

1.0 PARTICULARS

1.01 NAMES OF PARTIES

The Employer is:	The Urban Development Corporation of Trinidad and Tobago 38 – 40 Sackville Street Port of Spain Phone 225-4004
The Project manager is:	The Urban Development Corporation of Trinidad and Tobago 38 – 40 Sackville Street Port of Spain Phone 225-4004
The User Client is:	The National Carnival Commission of Trinidad and Tobago 11 St. Clair Avenue, St. Clair Port of Spain Phone 622-1670

1.02 DESCRIPTION OF THE WORKS

PROJECT CONTEXT

- Development Overview:
  - ❑ The NCC is desirous of completing the urgent repairs to the Grandstand premises of the Queen's Park Savannah commencing with Phase 1.
  - ❑ Mindful that a substantial number of carnival and other major events are hosted at the said location and specific areas are in urgent need of repair prioritizing the areas of high risk to avoid possible harm to patrons of events/pre-events of Carnival 2024.

The phase 1 of the project will include but is not limited to the following works:

- The removal of existing timber flooring, joists etc and installation of composite metal deck concrete slab flooring with scope as detailed in the BOQ, Conceptual Design, Performance Specifications.
- All timber joists and plywood to be removed are property of client. The transfer and disposal for those usable and unusable materials are to be within 80Km radius from the site to be confirmed by client / UDeCOTT.

1.03 LOCATION OF SITE

The NCC Capital Works at the Grandstand project is located at the Queen's Park Savannah.

1.04 CONTRACT PARTICULARS

Form of Contract

The Articles of Agreement and Conditions of Contract will be those of:

Contract for Plant and Design-Build First Edition 1999 published by the *Fédération Internationale des Ingénieurs-Conseils* (FIDIC)

1.0 DESIGN REQUIREMENTS

1.01 Roles and Responsibilities of the Designer / Design-Build Contractor

- The Design-Build Contractor / Designer shall be required to perform generally all detailed structural assessment of existing condition, design, construction and repair works as specified in the RFP/Tender Documents.
- The Contractor shall assume full responsibility for the professional quality, completeness, accuracy and co-ordination of all design documents and its conformance with all applicable laws, rules, regulations and orders governing said work.

1.02 Design Review Process

The Contractor shall provide for all quality control design reviews required by sound professional architectural and engineering practices.

The Employer's final review and approval of design documents will be carried out at the following sequential stages of design development:

Stage 1 – (25%) Completion of Preliminary Architectural and Engineering designs and drawings including outline Technical Specifications (Materials and Workmanship)

Stage 2 – (35%) Completion of Final Architectural and Engineering designs and drawings

Stage 3 – (75%) Completion of Architectural and Engineering designs, drawings, details and schedules

Stage 4 – (95%) Completion of "For Construction" Drawings and Detailed Technical Specifications

Stage 5 – (100%) Completion of "As-built drawings"

The documents for the above stages shall be submitted to the Employer for approval only after completion of design reviews by the Contractor and completion of the design quality checks and certifications by the Contractor's Quality Team. Any review or approval by the Employer shall not relieve the Contractor of or otherwise diminish its obligations under the Contract.

1.03 Design Review Notices

The Contractor shall give written notice of scheduled Design Reviews to the Employer in accordance with the terms and conditions of the Contract.

The purpose of Design Reviews is to examine different aspects of the design, but not limited to:

- Ensure technical integrity by verifying that the design complies with all contract requirements; design standards, codes of practice and governmental regulations
- Ensure maintainability of the designs
- Ensure the constructability of the designs
- Ensure that the designs are consistent with the Contractors Price Proposal with respect to the cost of construction works
- Ensure that there is compatibility amongst all designs

- In the case of reviews of "For Construction Drawings", to enable construction to commence and/or continue
- The Employer's Approval will be required prior to proceeding to each succeeding Stage.
- The design notes and computation sheets shall be fully titled, numbered, dated, indexed, and signed by the lead designer and the checker.
- All drawings shall be dated and initialled by the lead designer and checker
- All Engineering drawings shall be stamped and signed by a Board of Engineering of Trinidad and Tobago (BOETT) registered Engineer of Record.
- All Architectural drawings shall be stamped and signed by a Board of Architecture of Trinidad and Tobago (BOATT) registered Architect of Record.

2.0 Proposed Code and Standards

The proposed codes and standards to be used in the designs include the following:

2.01 Architectural Designs

PLANNING	• Town and Country Planning Regulations
	• Regional Corporation Regulations
BUILDINGS/ STRUCTURES	• International Building Code (IBC) 2019.
	• American Society of Civil Engineers code ASCE-7-05
	• American National Standards Institute (ANSI)
	• American Concrete Institute ACI 318
	• American Institute of Steel Construction (AISC manuals)
	• AWS D1.1 – Structural Welding Code.
	• Steel Deck Institute (SDI) – Design Manual for Composite Decks, Form Decks, Roof Deck
	• Underwriter's Laboratories (UL) – Fire Resistance Directory
UNIVERSAL ACCESSIBILITY	• Accessible and Usable Buildings and Facilities ANSI A177.1:2014
LOCAL REGULATIONS	• The Occupational Safety and Health Act 1, 2004 as amended 2006

2.02 Structural Designs

VERTICAL LOADS	• American Society of Civil Engineers (ASCE): ASCE 7-05 Minimum Design Loads for Buildings and Other Structure
EARTHQUAKE LOADS	• ASCE 7-05 and International Building Code (IBC) 2009 - (Refer to Seismic Research Unit website http://www.uwiseismic.com/Maps.aspx for Hazard Maps of Trinidad and Tobago -2475 year Return Period)
WIND LOADS	• ASCE 7-05 (Trinidad 117mph, Tobago 130mph – 3 sec. Gust for Trinidad and Tobago)
REINFORCED CONCRETE	• American Concrete Institute (ACI): ACI 318-08 or latest Building Code Requirements for Structural Concrete
STRUCTURAL STEEL	• American Institute of Steel Construction (AISC): Manual of Steel Construction (Load & Resistance Factor Design), Specification for Structural Steel Buildings (AISC 360-10)
STEEL FLOOR DECK	• Steel Deck Institute (SDI) – Design Manual for Composite Decks, Form Decks, Roof Decks
STEEL REINFORCEMENT	• ASTM A615 GR 60 – Fy = 60 ksi, Fu = 75 ksi
STRUCTURAL STEEL MATERIAL:	• ASTM A992 – Fy = 50 ksi (Wide Flange and Hot Rolled Sections) • ASTM A36 – Fy = 36 ksi (Plates)
OTHER STANDARDS	• ASTM – American Society for Testing and Materials
NOTE:	• All structural drawings should be stamped and signed by a registered Civil Structural Engineers of T&T. • All designs must be accompanied by structural design calculations and relevant data sheets.

2.03 Statutory Requirements

The designs shall be prepared in accordance with and in compliance with the guidelines, regulations and statutory and legal requirements of relevant Governmental Statutory and Regulatory Agencies and other service providers which include:

1. Regional Corporations
2. Trinidad and Tobago Fire Services

SECTION 102 – DESIGN PROCEDURES & VALIDATION REQUIREMENTS

PART 1 GENERAL (where applicable in the project scope)

1.01 SECTION INCLUDES

A. Procedures for design of the facility, based on the design criteria specified.

B. Validation requirements.

1.02 DEFINITIONS

A. Validation: All forms of evidence that are used to predict whether the design will comply with the requirements or to verify that the construction based on the design actually does comply. During Preliminary Design, Design Development, and Construction Documents, requirements to submit Validation are primarily intended to forestall use of designs or constructions that will not comply. At any time before completion of construction, Validation is presumed to be only a prediction and may subsequently be invalidated by actual results. The term Validation is used to distinguish these forms of evidence from traditional submittals commonly required during the construction phase.

B. Proven-In-Use: Proven to comply by having actually been built to the same or very similar design with the same materials as proposed and functioning as specified.

C. Proven-by-Mock-Up: Compliance reasonably predictable by having been tested in full-scale mock-up using the same materials and design as proposed and functioning as specified. Testing need not have been accomplished specifically for this project; when published listings of independent agencies include details of testing and results, citation of test by listing number is sufficient (submittal of all test details is not required).

1.03 REFERENCE STANDARDS

A. ASTM E329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection; 2013c.

1.04 SUBMITTALS

A. Validation Submittal Procedures:

1. Time Frames: As specified. If there is a conflict between the degree of detail or completion specified and the progress of the design or construction, obtain a clarification before submitting.

2. Recipient: Employer's Engineer.

3. Number of Copies: 2 copies for Employer's use and records; Employer will return not more than one additional copy.

4. For time periods that constitute Milestones, all Validation submittals required during that period must be complete and accepted before the Milestone can be considered achieved.

5. Resubmissions: Clearly identified as such, with all changes made since the original submittal clearly marked.

1.05 QUALITY ASSURANCE

A. Qualifications of Testing/Inspection Agencies Performing Validation:

1. Qualified and equipped to perform applicable tests/inspection.
2. Regularly engaged in testing and inspection activities on a commercial basis.
3. Authorized to operate in the State in which the project is located.
4. Validation: Submittal of qualifications, based on ASTM E329.

PART 2 PRODUCTS (where applicable in the project scope)

2.01 DESIGN-BUILDER FURNISHED PRODUCTS

A. In addition to requirements specified in other sections, provide products and elements that comply with the following.

B. Elements Made Up of More Than One Product:

1. Where an element is specified by performance criteria, use construction either proven in use or proven-by-mock-up, unless otherwise indicated.
   a. The Design-Builder may choose whether to use elements proven-in-use or proven- by-mock-up, unless either option is indicated as specifically required.
   b. Where test methods accompany performance requirements, use those test methods to test the mock-up.
2. Where a type of product is specified, without performance criteria specifically applicable to the element, use the type of product specified.
1. Where more than one type of product is specified, without performance criteria specifically applicable to the element, use one of the types of products specified.
2. Where a type of product is specified, with applicable performance criteria, use either the type of product specified or another type of product that meets the performance criteria as proven-in-use or proven-by-mock-up.
3. Where more than one type of product is specified, with applicable performance criteria, use either one of the types of products specified or another type of product that meets the performance criteria as proven-in-use or proven-by-mock-up.
4. Where neither types of products nor performance criteria are specified, use products that will perform well within the specified life span of the building.

C. Products:

1. Where a product is specified only by a manufacturer name and model number/brand name, use only that model/brand product.

2. Where the properties of a product are specified by description and/or with performance criteria, use products that comply with the description and/or performance criteria.

3. Where manufacturers are listed for a particular product, use a product made by one of those manufacturers that also complies with other requirements.

D. Reference Standards: Where products or workmanship is specified by reference to a document not included in the Contract Documents, comply with the requirements of the document, except where more stringent requirements are specified.

1. Date of Issue: As indicated in each instance except where a specific date is established by code.

PART 3 EXECUTION (where applicable in the project scope)

3.01 DESIGN

A. During Preliminary Design, the design criteria and the design itself must be refined, finalized, and documented.

B. Employer will appoint representatives of the following departments to provide details of functional needs:

1. User groups.

2. Operations staff.

3. Maintenance staff.

C. Design Documentation: Record all design and performance criteria that will be of use during occupancy and operation of the project, including all items specified for maintenance manuals, below.

1. Design Criteria Documentation Included in Construction Documents: Organized logically (from the point of view of operations staff) and placed in a prominent location in drawing sets.

2. If desired, documentation may consist of annotated modifications to and amplification of the Conceptual Documents, with changes that affect Contract Times or Contract Price documented as required for modifications.

3. If required, shop drawings may be used to accomplish design documentation.

4. Employer will maintain the project program document, modified to reflect changes made during refinement of the design.

5. Drawings: Prepared using AutoCAD 2018 or latest, using Employer's specified drawing and layering conventions.

6. Shop Drawings: Prepared using same CAD software.

7. Mock-Ups: Where necessary to clarify design intent and obtain approvals, construct full scale mock-ups.

3.02 PROGRESS DOCUMENTATION

A. Progress Schedule: As specified in the Conditions of the Contract.

3.03 PERFORMANCE OF VALIDATION

A. In addition to the requirements stated in other sections, provide the following Validation of compliance at each stage of the project:

1. If a Validation requirement is specified without an indication of when it is to be submitted, submit or execute it before the end of Construction Documents.

B. Proven-In-Use: Where elements proven-in-use are used to comply with performance requirements:

1. In the Proposal, identify which elements will be accomplished using proven-in-use elements.

2. During Design Development, identify proven-in-use elements proposed for use, including building name, location, date of construction, owner contact, and description of design and materials in sufficient detail to enable reproduction in this project.

C. Proven-By-Mock-Up: Where elements proven-by-mock-up are used to comply with performance requirements:

1. In the Proposal, identify which elements will be accomplished using proven-by-mock-up elements.

2. During Design Development, identify proven-by-mock-up elements proposed for use, with test report including date and location of test, name of testing agency, and description of test and mock-up.

3. Mock-up testing need not have been performed specifically for this project, provided the mock-up is substantially similar in design and construction to the element proposed.

D. Design Analyses (including Engineering Calculations):

1. Where a design analysis or calculation is specified without identifying a particular method, perform analysis in accordance with accepted engineering or scientific principles to show compliance with specified requirements, and submit report that includes analysis methods used and the name and qualifications of the designer.

2. Where engineering design is allowed to be completed after commencement of construction, Validation may be in the form of shop drawings or other data.

3. Submit design analyses at the end of Design Development unless otherwise indicated.

4. Where design analysis is specified to be performed by licensed design professional, use a design professional licensed in Trinidad and Tobago.

E. Validation for Products:

1. Where actual brand name products are not identified by either the Employer or the Design-Builder, identify the products to be used.

2. In the Proposal:

    a. Identify one or more product types for each system, assembly, or element.

    b. For each product type, provide brief descriptive or performance specifications.

    c. For major manufactured products that are commonly purchased by brand name, and any other products so indicated, identify at least one manufacturer that will be used.

3. During Preliminary Design or Design Development:

    a. Where more than one product type is identified for a particular system, assembly, or element, identify exactly which type will be used.

    b. For each product type, provide descriptive or performance specifications; early submittals may be brief specifications, but complete specifications are required prior to completion of construction documents.

    c. For each product type, identify at least one manufacturer that will be used.

    d. For major manufactured products that are commonly purchased by brand name, and any other products so indicated, provide manufacturer's product literature on at least one actual brand name product that meets the specifications, including performance data and sample warranty.

4. During Construction:

    a. Identify actual brand name products used for every product, except commodity products specified by performance or description.

    b. Where a product is specified by performance requirements with test methods, and if so specified, provide test reports showing compliance.

    c. Provide manufacturer's product literature for each brand name product.

    d. Provide the manufacturer's certification that the product used on the project complies with the contract documents.

5. Before End of Closeout:

    a. Provide copies of all manufacturer warranties that extend for more than one year after completion.

F. Regardless of whether Validation is specified or not, the actual construction must comply with the specified requirements and may, at the Employer's discretion, be examined, inspected, or tested to determine compliance.

    1. Validation submittals will not be approved or accepted, except to the extent that they are part of documents required to be approved or accepted in order to proceed to the next stage of design or construction. However, approval or acceptance of Validation will not constitute approval or acceptance of deviations from the specified requirements unless those deviations are specifically identified as such on the submittal.

2. The Employer accepts the responsibility to review Validation submittals in a timely manner and to respond if they are unacceptable.

3.04 FIELD TESTING AND INSPECTION AS VALIDATION

A. Perform all testing, observation, and inspection required by code and as specified.

B. Reports: Written report of each test/inspection; including complete details of conditions, methods, and results, signed by responsible individual.

SECTION 104 – HANDOVER DOCUMENTATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Project Record Documents.

B. Operation and Maintenance Data.

C. Warranties and bonds.

1.02 RELATED REQUIREMENTS

A. RFP Documentation and FIDIC Contract - General Conditions: Performance bond and labor and material payment bonds, warranty, and correction of work.

B. Individual Product Sections: Specific requirements for operation and maintenance data.

C. Individual Product Sections: Warranties required for specific products or Work.

1.03 SUBMITTALS

A. Project Record Documents: Submit documents to FIDIC Engineer and/or UDeCOTT Representative.

B. Operation and Maintenance Data:

1. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. FIDIC Engineer will review draft and return one copy with comments.

2. For equipment, or component parts of equipment put into service during construction and operated by Employer, submit completed documents within ten days after acceptance.

3. Submit one copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with FIDIC Engineer comments. Revise content of all document sets as required prior to final submission.

4. Submit two sets of revised final documents in final form within 10 days after final inspection.

C. Warranties and Bonds:

1. For equipment or component parts of equipment put into service during construction with Employer's permission, submit documents within 10 days after acceptance.

2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.

3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PROJECT RECORD DOCUMENTS

A. Maintain on site one set of the following record documents; record actual revisions to the Work:

1. Drawings.
2. Addenda.
3. Change Orders and other modifications to the Contract.

B. Ensure entries are complete and accurate, enabling future reference by Employer.

C. Store record documents separate from documents used for construction.

D. Record information concurrent with construction progress.

E. Record Drawings: Legibly mark each item to record actual construction including:

1. Field changes of dimension and detail.
2. Details not on original Contract drawings.

3.02 OPERATION AND MAINTENANCE DATA

A. Source Data: For each product or system, list names, addresses and telephone numbers of SubDesign Build Contractors and suppliers, including local source of supplies and replacement parts.

B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.

C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.

D. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

3.03 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES

A. For Each Product, Applied Material, and Finish:

B. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.

C. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

3.06 WARRANTIES AND BONDS

A. Obtain warranties and bonds, executed in duplicate by responsible SubDesign Build Contractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Employer's permission, leave date of beginning of time of warranty until the Date of Substantial completion is determined.

B. Verify that documents are in proper form, contain full information, and are notarized.

C. Co-execute submittals when required.

D. Retain warranties and bonds until time specified for submittal.

E. Include originals of each in operation and maintenance manuals, indexed separately on Table of Contents.

SECTION 303 – DEMOLITION AND/OR DISMANTLING

PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN SOCIETY OF SAFETY ENGINEERS (ASSE/SAFE)

ASSE/SAFE A10.6 (2006) Safety Requirements for Demolition Operations

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

40 CFR 61 National Emission Standards for Hazardous Air Pollutants

1.2 GENERAL REQUIREMENTS

Do not begin demolition or deconstruction until authorization is received from the Contracting Officer. The work of this section is to be performed in a manner that maximizes salvage and recycling of materials. Remove rubbish and debris from the project site; do not allow accumulations of resulting rubbish and debris. Store materials that cannot be removed daily in areas specified by the Contracting Officer. All demolition debris shall be removed from the island before Governments accept the building.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Existing Conditions; G

SD-07 Certificates

Demolition Plan; G
Deconstruction Plan; G
Notifications; G

Proposed demolition, and removal procedures for approval before work is started.

1.4 REGULATORY AND SAFETY REQUIREMENTS

Comply with local hauling and disposal regulations. In addition to the requirements of the "Contract Clauses," conform to the safety requirements contained in ASSE/SAFE A10.6.

1.4.1 Notifications

1.4.1.1 General Requirements

Furnish timely notification of demolition projects to regional, and local authorities in accordance with 40

CFR 61, Subpart M.

1.5 DUST AND DEBRIS CONTROL

Prevent the spread of dust and debris and avoid the creation of a nuisance or hazard in the surrounding area. Do not use water if it results in hazardous or objectionable conditions such as, but not limited to, ice, flooding, or pollution.

1.6 PROTECTION

1.6.1 Existing Conditions Documentation

Before beginning any demolition or deconstruction work, survey the site and examine the drawings and specifications to determine the extent of the work.
Record existing conditions in the presence of the Contracting Officer showing the condition of structures and other facilities adjacent to areas of alteration or removal. Photographs sized 100 mm will be acceptable as a record of existing conditions.

1.6.2 Existing Construction Limits and Protection

Do not disturb existing construction beyond the extent indicated or necessary for installation of new construction. Provide temporary shoring and bracing for support of building components to prevent settlement or other movement. Provide protective measures to control accumulation and migration of dust and dirt in all work areas.

1.6.3 Utility Service

Maintain existing utilities indicated to stay in service and protect against damage during demolition and deconstruction operations. Prior to start of work, the Government will disconnect and seal utilities serving each area of alteration or removal upon written request from the Contractor.

1.7 REQUIRED DATA

Prepare a Demolition Plan. Include in the plan procedures for careful removal and disposition of materials, coordination with other work in progress, a detailed description of methods and equipment to be used for each operation and of the sequence of operations.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.1 EXISTING FACILITIES TO BE REMOVED

3.1.1 Structures

a. Remove existing structures and pier indicated to be removed to grade.

b. Demolish structures in a systematic manner from the top of the structure to the ground. Complete demolition work above each tier before the supporting members on the lower level are disturbed. Demolish concrete piles in small sections. Remove structural framing members and lower to ground by suitable methods as approved by the Contracting Officer.

3.1.2 Utilities and Related Equipment

3.1.2.1 General Requirements

Do not begin demolition or deconstruction work until all utility disconnections have been made. Shut off and cap utilities for future use, as indicated.

3.1.3 Concrete

Saw concrete along straight lines to a depth of a minimum 50 mm. Make each cut in walls perpendicular to the face and in alignment with the cut in the opposite face. Break out the remainder of the concrete. At locations where the broken face cannot be concealed, grind smooth or saw cut entirely through the concrete. Remove concrete.

3.2 DISPOSITION OF MATERIAL

3.2.1 Title to Materials

Except for salvaged items specified in related Sections, and for materials or equipment scheduled for salvage, all materials and equipment removed and not reused or salvaged, shall become the property of the Contractor and shall be removed from Government property and the Island. Title to materials resulting from demolition and deconstruction, and materials and equipment to be removed, is vested in the Contractor upon approval by the Contracting Officer of the Contractor's demolition, deconstruction, and removal procedures, and authorization by the Contracting Officer to begin demolition and deconstruction. The Government will not be responsible for the condition or loss of, or damage to, such property after contract award. Showing for sale or selling materials and equipment on site is prohibited.

3.3 CLEANUP

Remove debris and rubbish from excavations. Remove and transport in a manner that prevents spillage on streets or adjacent areas. Apply local regulations regarding hauling and disposal.

3.4 DISPOSAL OF REMOVED MATERIALS

3.4.1 Regulation of Removed Materials

Dispose of debris, rubbish, scrap, and other non-salvageable materials resulting from removal operations with all applicable federal, state and local regulations as contractually specified in the Demolition Plan.

3.4.2 Removal from Government / Client Property

Transport waste materials removed from demolished and deconstructed structures, except waste soil, from Government / Client property for legal disposal. Dispose of waste soil as directed.

-- End of Section --

SECTION 501 – IN SITU CONCRETE (GENERAL)

1.0 GENERAL

1.01 DESCRIPTION

In- situ Concrete refers to concrete work which is carried out on the construction site itself, often in the finished position, as opposed to in an off- site location (as with pre- fabrication or pre-assembly techniques). Concrete shall be composed of the following: Portland cement, coarse aggregates such as crushed stone, fine aggregates such as sand, and water.

1.02 SCOPE

Work to be completed under this section shall include all labour, equipment, plant and materials necessary to furnish and install. All poured-in-place concrete, together with all miscellaneous and appurtenant items, as shown on the architectural and structural plans specific to the project. The work shall include, but not be limited to supplying and placing reinforcing steel; and supplying, placing, vibrating, heating and curing concrete.

1.03 PRODUCTS

In situ concrete shall include a combination of the following products / elements:

1. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:
    a. Portland Cement shall be fresh stock of an approved standard brand meeting the requirements of ASTM C 150, Standard Specification for Portland Cement.
    b. Fly Ash shall have a high fineness and low carbon content and shall exceed the requirements of ASTM C 618, Class 7 Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete.
2. Concrete Aggregates:
    a. Unless otherwise specified all aggregate shall be normal weight aggregate in accordance with ASTM C 33, Standard Specification for Concrete Aggregates.
    b. Aggregate for concrete shall consist of clean crushed stone or gravel having hard, strong, uncoated particles free from injurious amounts of soft, thin, elongated or laminated pieces, alkali, organic or other deleterious matter.
    c. Maximum aggregate size shall be ¾-inch. The maximum permissible percentage of elongated particles shall not exceed 5 percent by weight.
    d. Provide aggregates from a single source.
    a. Concrete batched away from the job and delivered in mixer or agitator trucks shall conform to requirements of ASTM C94, Standard Specification for ready-mixed concrete.
3. Fine Aggregate:
    a. Shall consist of sand, stone screening, or other inert materials with similar characteristics

having clean, strong, durable, uncoated grains and free from lumps, soft or flaky particles, clay, shale, alkali, organic matter or other deleterious substances with reactivity to alkali in cement.

4. Water:
    a. Shall be potable water in accordance with ASTM C94, Standard Specification for ready-mixed concrete.
5. Flexible PVC water stops:
    a. Provide PVC water stops in all construction joints in concrete walls and in concrete beams and slabs. PVC water stops shall also be provided between concrete beams and slabs at all expansion joints to form a continuous diaphragm. Install in longest lengths practicable.
    b. Support and protect exposed water stops during progress of the Work.
    c. Field fabricate joints in water stops according to manufacturer's written instructions.
6. Vapour Retarders:
    a. Sheet Vapour Barrier shall be minimum 10 mil polyethylene film that complies with ASTM C171, Standard Specification for Sheet Materials for Curing Concrete, and meets or exceeds test for water retention, ASTM C 156(20), Standard Test Method for Water Loss [from a Mortar Specimen] Through Liquid Membrane-Forming Curing Compounds for Concrete.
    b. Place, protect, and repair sheet vapour retarder according to ASTM E1643, Standard Practice For Selection, Design, Installation, And Inspection Of Water Vapour Retarders Used In Contact With Earth Or Granular Fill Under Concrete Slabs, and manufacturer's written instructions.
7. Crushed Stone Fill:
    a. Crushed Stone Fill shall be uniform 1-inch stone, no fines, in conformance to ASTM C33, Standard Specification for Concrete Aggregates.
8. Formwork:
    a. Shall be designed in accordance with ACI 347, Recommended Practice for Concrete Formwork, (latest edition) unless otherwise noted.

2.00 APPLICATION

Cast- in- Place concrete construction may apply to the following building elements:

1. Exterior Concrete.
2. Footing and Piers.
3. Slabs on Grade.
4. Columns.
5. Slabs above ground floor.
6. Concrete Beams.

3.00 PREFERENCES

3.01 DESIGN

1. Class and Finish of supported slabs on grade shall be Class 2 as per ACI 302.1R.
2. Recommended strength and maximum slump at point of placement for concrete floors shall be as

according to Table 6.1 as per ACI 302.1R.

3.02 SUBMITTALS

Contractors shall submit for approval:

1. Materials listing and certification indicating that products adhere to standard specifications.
2. Installation methodology.
3. Drawings detailing the work to be done. Such drawings shall be furnished by a licensed Engineer. Examples of such include.
    a. Foundation Plan – fully dimensioned, foundation schedule and details, wall sections, mechanical pad details, and related miscellaneous details. All details, plans and sections shall show reinforcing. 2. Pier Details and Pier Schedule.
    b. Necessary Floor Plans – fully dimensioned plans with all depressions, rises, reinforcing steel, to include placement and accessories.
    c. Miscellaneous Items – All other reinforced concrete items shall be drawn at such scale as to give full dimensions, details and reinforcing with accessories as required.

3.03 QUALITY ASSURANCE

1. Contractors shall comply with local governing codes and regulations and contact all relevant statutory bodies before commencing construction.
2. All aspects of work covered in this specification shall be subject to inspection by the Engineer, or his representative.
3. The Contractor shall submit a schedule of his activities to the Engineer so that the Engineer will be able to work out his inspection program selectively.

3.04 SAFETY, SECURITY, OPERATIONS

1. Contractor shall provide Health and Safety documentation including a Health and Safety risk assessment and a Method Statement.

4.00 REFERENCED STANDARDS

1. ACI 318 – Building Code Requirement for Reinforced Concrete.
2. ACI 301 – Specifications for Structural Concrete for Buildings.
3. ACI 305 – Recommended Practice for Hot Weather Concreting.
4. ACI 347 – Recommended Practice for Concrete Formwork.
5. ACI 302 – Guide to Concrete Floor and Slab Construction.
6. ASTM C150 – Standard Specification for Portland Cement.
7. ASTM C618, Class 7 – Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete.
8. ASTM C33 – Standard Specification for Concrete Aggregates.
9. ASTM C171 – Standard Specification for Sheet Materials for Curing Concrete.
10. ASTM C156-20 – Standard Test Method for Water Loss [from a Mortar Specimen] Through Liquid Membrane-Forming Curing Compounds for Concrete.
11. ASTM E1643-18a – Standard Practice For Selection, Design, Installation, And Inspection Of Water

Vapour Retarders Used In Contact With Earth Or Granular Fill Under Concrete Slabs.

12. ASTM A1064 – Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete.

5.00 DURABILITY

1. Expected service life span: Same as facility as a whole. Minimum 50 years functional and aesthetic, excluding joint sealers.
2. Temperature endurance: Allow for daily expansion and contraction within and between elements caused by temperature range from most extreme low temperature to 39 degrees C greater than the most extreme high temperature, in any year, without causing detrimental effect to components and anchorage.

6.00 WARRANTIES, GUARANTEES AND MAINTENANCE

1. Cast in Place concrete works shall have a warranty for a period of one year against faulty workmanship including: installation defects, cracking and settling. The warranty excludes discoloration or efflorescence of concrete based materials, stains caused by foreign substances, Acts of God (flood, wind, etc.), and modifications/ repairs done by anyone other than the contractor or his/her designated representative.

SECTION 502 - CONCRETE FORMWORKS

PART 1.0 - GENERAL:

1.1 Description

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1.1.1 SCOPE

a. Furnish materials and equipment and perform labor required to complete the work.
b. All work shall be done in accordance with the minimum requirements of the American Concrete Institute Building Code for reinforced concrete ACI 318-08 or latest except as modified herein.
c. Forms - shall be built with sufficient strength and rigidity to resist and carry the mass and pressure of concrete during placement and consolidation. Forms shall be free of bulge and warp.
d. All formed surfaces for Concrete shall be true to finish and must be smooth. Mortar patching shall not be allowed. Provide Phenolic resin form plywood or equivalent for exposed concrete to assure smooth finish.

1.2. PROTECTION

a. Provide adequately braced forms that will produce correctly aligned concrete, able to meet the specific weights and size pressure of newly placed concrete.
b. Choose form fittings that are adequate for the purpose.
c. Exercise care in the choice of surface forms and form fittings that will be in contact with concrete.

1.1.2 Work includes but is not limited to:

1. Construction of footing, grade beam, wall footing, pedestal column, slab-on-grade; super structure column, beams, girder, slab (if concrete frame/superstructure) etc.
2. Construction of ramp, walkway, roadway and parking pavement (if applicable) etc.

1.1.3 Standards

Except as modified by governing codes and by contract documents, comply with the provisions and recommendations of the following:

1. American Concrete Institute (ACI)
2. American Society for Testing and Materials (ASTM)

PART 2.0 - PRODUCTS:

2.1 Materials

2.1.1 Use minimum 5/8" plywood, or surfaced lumber forms where it will be given the most advantageous in the specific concrete work involved. It should be free from warp and grass deformities sufficiently braced with solid lumber and applied with form released agent at its casting surface before each casting.

PART 3.0 - CONSTRUCTION REQUIREMENTS:

3.1 FORMS

a. Check all forms to the shape, lines, and dimensions of the member as called for in the plans.
b. Check all formwork for plumbness , correct alignment and twist.
c. Cast all forms with form oil before reinforcement is placed. Remove all surplus oil on form surfaces.

3.2 FORMS & SHORING (REMOVAL)

Remove forms only upon approval of the Engineer in such manner and at such time as to ensure the complete safety of the structure in no case shall the supporting forms and shoring be removed until the members have attained sufficient strength to safely support weight and load thereon. The result of suitable control has attained sufficient strength to permit removal of shoring and supporting forms. Cylinders required for control test shall be made in addition to those required by this specifications.

3.3 TOLERANCE LIMITS

Set and maintain concrete form so as to insure completed works within the following tolerance limits.

1) Variations

a. In the line and surface of columns, walls, and rise

In 10 feet ..... 1/4 inch

In any storey or 20' max..... 3/8 inch

b. For exposed corner columns, control joints, grooves and other conspicuous lines

In anyway 20' or more.....1/4 inch

In 40' or more .....1/2 inch

2) In variation of the level from the grade indicated on the drawings.

a. In floors (before removal of forms, ceiling, soffits and rises)

In 10 feet .....1/4 inch

In anyway or 20 max .....3/8 inch

For 40' or more .....3/8 inch

b. For exposed girts, fascia, horizontal grooves and other conspicuous lines

In anyway or 20' max ....1/4 inch

In 40 or more .....1/2 inch

3.) Footings

a. Variations of dimension in plan

Minus .....1/2 inch

Plus .....2 inches ;

(applies to concrete only and not to reinforcing bars and dowels)

4) Variation in steps if there is stair

a. In a flight of steps

Rise..... 1/8 inch

Tread ..... 1/4 inch

b. In consecutive steps

Rise ..... 1/16 inch

Tread ..... 1/8 inch

SECTION 503 - CONCRETE REINFORCEMENT

PART 1.0 - GENERAL:

1.1 Description:

1.1.1 General: Provide all labor, materials, equipment, transportation and services required to complete all work as specified herein, indicated, and/or shown on the drawings.

1.1.2 Work includes but is not limited to:

1.1.2.1 Provision of all concrete reinforcement.

1.1.3 Standards: Except as modified by governing Codes and Contract Documents comply with the applicable provisions and recommendations of the following:

1. American Concrete Institute (ACI)
2. American Society for Testing and Materials (ASTM)

PART 2.0 - PRODUCTS:

2.1 Materials:

2.1.1 Reinforcing Bars

a. Deformed Bars, Grade 60 conforming to ASTM A-615
b. Welded Wire Fabric shall conform to ASTM A185. Shall be lapped two full mesh panels and tied securely.

2.1.2 Accessories

1. Accessories for proper installation of reinforcement shall conform to ACI 318-77 "Building Code Requirements for Reinforced Concrete" and/or manual of Standard Practice for Reinforced Concrete Construction.

PART 3.0 - CONSTRUCTION REQUIREMENTS:

3.1 Installation:

3.1.1 General: All reinforcement bars, stirrups, wire fabrics and other reinforcing materials shall be provided as indicated or required by this specification, together with the necessary accessories to install and secure the reinforcement properly. All reinforcement, when placed, shall be free from rust, oil, grease, clay and other deleterious matters that would reduce or destroy the bond.

3.1.2 Reinforcing steel shall be placed accurately and securely.

3.1.3 Splicing of reinforcement shall be in accordance with ACI 318, except as indicated otherwise or modified herein. Staggered where possible.

3.1.4 Coordinate with other trades and properly place and locate in position all necessary reinforcement, dowels, anchors, inserts, metal ties and other fastening devices required.

3.2 Quality Control:

All reinforcement shall be tagged and temporarily stored in proper manner upon arrival at site and shall not be used before deformation have been measured and until tensile and bend test have been performed and reviewed by an approved Independent Testing Laboratory.

1. One (1) tensile test and one (1) bend test of each size per 5,000 kilograms or portion thereof but not less than 1 test for any batch delivery.

2. Test field placement by physical measurement of sizes and spacing after placement.

3. Provide additional testing as directed for reinforcing steel. Allow 20 percent additional tensile and bend tests.

4. Contractor shall submit Mill Certificates to verify and check if the proposed materials conform to specification.

SECTION 701 – STRUCTURAL STEEL FRAMING

1.0 GENERAL

1.01 DESCRIPTION

Structural steel framing incorporates internal and external vertical and horizontal elements that are formed by a system of structural beams and columns.

1.02 SCOPE

Structural steel framing incorporates work to be completed under this section shall include all labour, equipment, plant and materials necessary to furnish and install. The work shall include, but not be limited to instillation of steel members; beams, columns and necessary connections.

1.03 PRODUCTS

Structural steel framing shall include a combination of the following products / elements:

1. Steel columns and beams:
    a. Steel pipes to comply with: ASTM A53 Standard Specification for pipe, steel, black and hot-dipped, zinc – coated, welded and seamless.
    b. Steel hollow structural section to comply with: ASTM A500 Standard Specification for cold – formed welded and seamless carbon steel structural tubing in rounds and shapes.
2. Steel connections:
    a. Steel structural wide flange shapes to comply with: ASTM A992 Standard Specification for structural steel shapes.
    b. Steel bolts to comply with: ASTM A307 Standard Specification for carbon steel bolts, studs and threaded rod 60 000 PSI tensile strength.
    c. Steel nuts to comply with: ASTM A563 Standard Specification for carbon and alloy steel nuts.
    d. Steel plates to comply with: ASTM A36 Standard Specifications for carbon structural steel.

2.00 APPLICATION

Structural steel framing may apply to the following building elements:

1. Exterior structural framing:
    a. Metal roof framing.
2. Internal structural framing:
    a. Internal load bearing walls.
    b. Elevator systems.
    c. Staircases.

3.00 PREFERENCES

3.01 SUBMITTALS

Contractors shall submit for approval:

1. Materials listing and certification indicating that products adhere to standard specifications.
2. Installation methodology.
3. Drawings detailing the work to be done. Such drawings shall be furnished by a licensed Engineer.

3.02 QUALITY ASSURANCE

1. Contractors shall comply with local governing codes and regulations and contact all relevant statutory bodies before commencing construction.
2. All aspects of work covered in this specification shall be subject to inspection by the Engineer, or his/her representative.
3. The Contractor shall submit a schedule of his/her activities to the Engineer so that the Engineer will be able to work out his inspection program selectively.

3.03 SAFETY, SECURITY, OPERATIONS

1. Contractor shall provide Health and Safety documentation including a Health and Safety risk assessment and a Method Statement.

4.00 REFERENCED STANDARDS

1. ASTM A53 – Standard Specification for pipe, steel, black and hot-dipped, zinc – coated, welded and seamless.
2. ASTM A500 – Standard Specification for cold – formed welded and seamless carbon steel structural tubing in rounds and shapes.
3. ASTM A992 – Standard Specification for structural steel shapes.
4. ASTM A307 – Standard Specification for carbon steel bolts, studs and threaded rod 60 000 PSI tensile strength.
5. ASTM A563 – Standard Specification for carbon and alloy steel nuts.
6. ASTM A36 – Standard Specifications for carbon structural steel.

5.00 DURABILITY

1. Expected service life span: Same as facility as a whole. Minimum 50 years functional and aesthetic, excluding joint sealers.
2. Temperature endurance: Allow for daily expansion and contraction within and between elements caused by temperature range from most extreme low temperature to 39 degrees C greater than the most extreme high temperature, in any year, without causing detrimental effect to components and anchorage.

6.00 WARRANTIES, GUARANTEES AND MAINTENANCE

1. Structural steel framing shall have a warranty for a period of one year against faulty workmanship including: installation defects. The warranty excludes discoloration, stains caused by foreign substances, Acts of God (flood, wind, etc.), and modifications/ repairs done by anyone other than the contractor or his/her designated representative.

SECTION 702 – STEEL FLOOR DECKING

1.0 GENERAL

1.01 DESCRIPTION

The steel floor decking is comprised of steel floor deck and accessories, cold formed steel edge strips and closure strips, steel angle reinforcement for small openings, wire mesh and deformed bar reinforcement and shear connector studs for composite beam construction.

1.02 SCOPE

Steel floor decking incorporates work to be completed under this section shall include all labor, equipment, plant and materials necessary to furnish and install the steel floor deck and accessories including relevant works as detailed in the drawings or specified in the RFP documents.

Review these documents for coordination with additional requirements and information that apply to work under this Section and relevant sections such as Section 700 Structural Steel Framing.

1.03 PRODUCTS

In general, deliver products to site and store on wood sleepers with slope for positive drainage cut plastic wrapping to encourage ventilation.

Steel floor decking shall include a combination of the following products / elements:

1. Steel deck shall conform to ASTM 653, SS Grade 33, minimum 38ksi yield, and galvanized with a G60.
2. Angles: ASTM A36
3. Welding materials shall conform to AWS D1.1
4. Accessories: Same material and finish as deck and not lighter than 20 gauge.
5. Provide edge closures of minimum to suit thickness of concrete and closure configuration.
6. Z-closures at beams parallel to flutes shall be 16 gauge minimum.
7. Shear Connector Studs: AWS D1.1, Type B headed studs; ¾” diameter unless otherwise noted, as welded length as noted on the drawings.
8. Galvanizing repair paint: SSPC Paint 20 with dry film containing a minimum of 94% zinc dust by weight.

2.00 APPLICATION

Steel floor decking may apply to the following building elements but not limited to:

3. Floor Decking Slab
4. Roof Decking Slab
5. Stair / Seating Decking Slab

3.00 PREFERENCES

3.01 SUBMITTALS

Contractors shall submit for approval:

4. Certificates are required which indicates the decking meets or exceeds specified requirements.
5. Shop Drawing shall indicate decking plan, deck profile dimensions, supports, projections, openings, and reinforcement, finishes, pertinent details, and accessories.
6. Submit documentation that welders employed on the Work meet AWS specifications.
7. Installation methodology.

3.03 QUALITY ASSURANCE

4. Contractors shall comply with local governing codes and regulations and contact all relevant statutory bodies before commencing construction.
5. All aspects of work covered in this specification shall be subject to inspection by the Engineer, or his/her representative.
6. Verify existing conditions prior to starting any work.
7. Erect metal decking in accordance with SDI Manual for Composite Decks and welding in accordance with AWS D1.3.
8. Inspect and test deck welding as required by CBC Section 1701.5, item 5, in accordance with AWS D.1.3. Review materials and qualifications of welders and procedures prior to start of work, periodically inspect welding in progress, and perform final visual inspection of welds.
9. Inspect and test welding of shear connector studs as required by the Engineer in accordance with AWS D1.1.
10. The Contractor shall submit a schedule of his/her activities to the Engineer so that the Engineer will be able to work out his inspection program selectively.

3.03 SAFETY, SECURITY, OPERATIONS

2. Contractor shall provide Health and Safety documentation including a Health and Safety risk assessment and a Method Statement.

4.00 REFERENCED STANDARDS

Where differences exist between codes and standards, the one affording the greatest protection shall apply. Unless otherwise noted, the referenced standard edition is the current one at the time of commencement of the Work.

7. AISI – Specification for the Design of Cold Formed Steel Structural Members
8. ASTM A36 – Standard Specifications for carbon structural steel.
9. ASTM A992 – Standard Specification for structural steel shapes.
10. ASTM A653 / A653M – Standard Specification for Steel Sheet, Zinc Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot Dip Process.
11. AWS D1.1 – Structural Welding Code.
12. Steel Deck Institute (SDI) – Design Manual for Composite Decks, Form Decks, Roof Decks
13. Underwriter's Laboratories (UL) – Fire Resistance Directory
14. Steel Structures Painting Council (SSPC) – Systems and Specifications

5.00 DURABILITY

3. Expected service life span: Same as facility as a whole. Minimum 50 years functional and aesthetics.

6.00 WARRANTIES, GUARANTEES AND MAINTENANCE

2. Steel floor decking shall have a warranty for a period of one year or as indicated in the contract defects liability period whichever is greater against faulty workmanship including: installation defects. The warranty excludes discoloration, stains caused by foreign substances, Acts of God (flood, wind, etc.), and modifications/ repairs done by anyone other than the contractor or his/her designated representative.