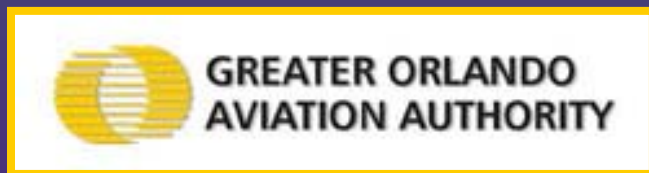


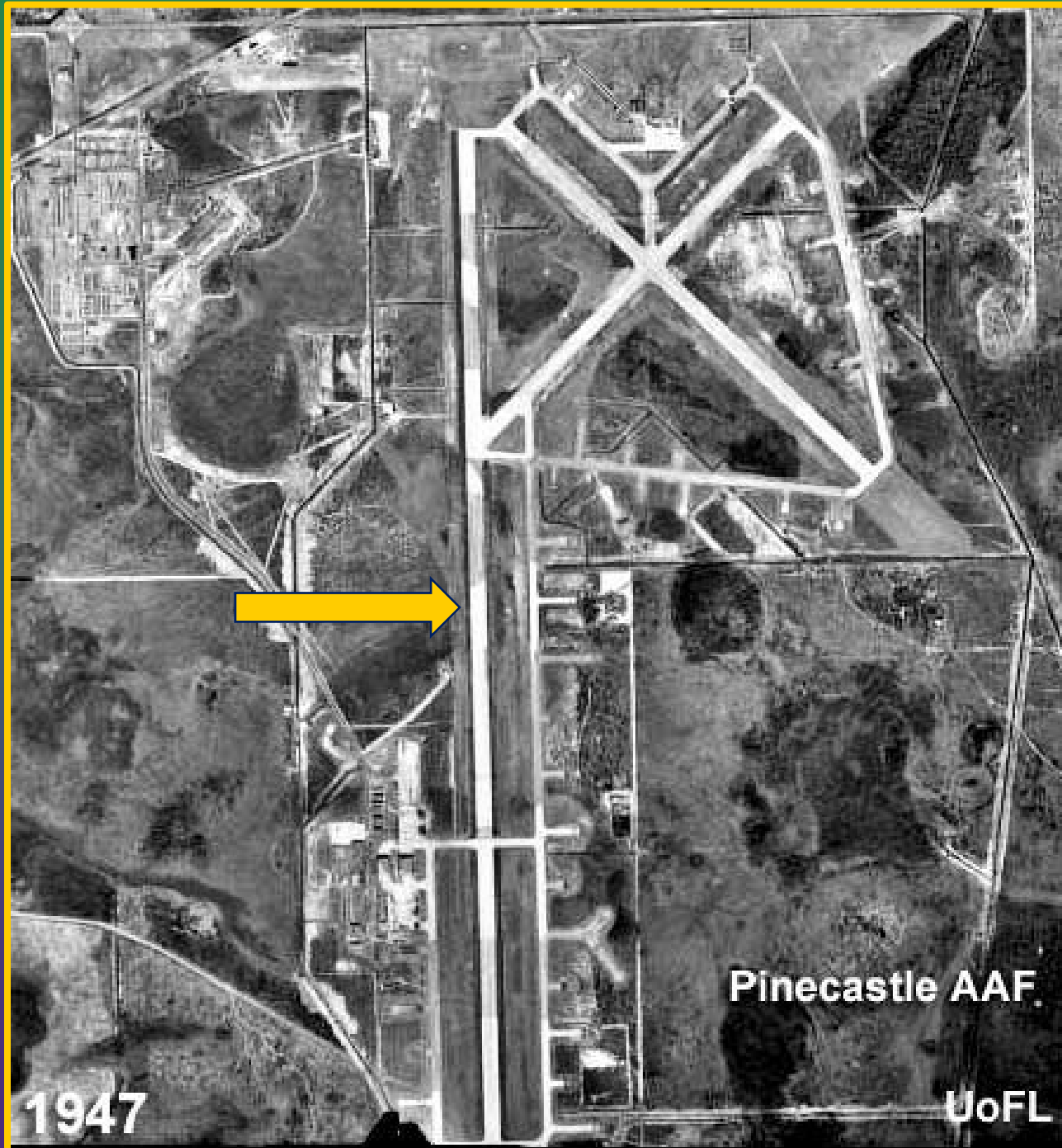


PRESENTED TO: 85<sup>TH</sup> ANNUAL IES  
AVIATION LIGHTING  
COMMITTEE - 2014 FALL  
CONFERENCE

# WE WILL NOT GO QUIETLY INTO THE NIGHT!



PRESENTED BY: JEFF PACE, FRANK PRUITT, MARK GOODACRE & CARL JOHNSON ©  
2014









1947

Pinecastle AAF

UoFL





Dryden Flight Research Center E49-009 Photographed 1949  
XS-1/B-29



3-17-521225 MF-24 2-137 1:23,600 GS-SR



3-17-521225 MF-24 2-138 1:23,600 GS-SR

REJECTED







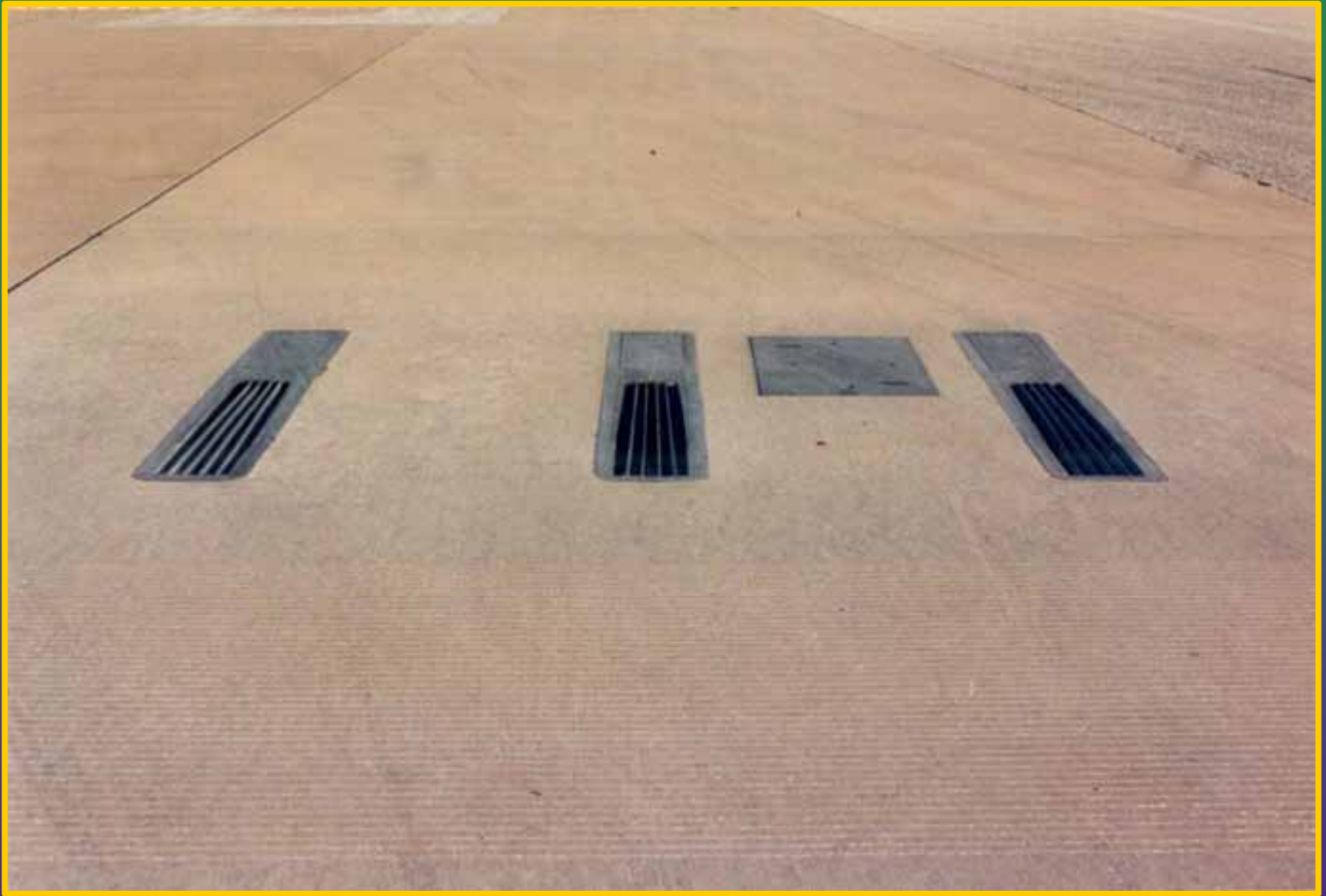


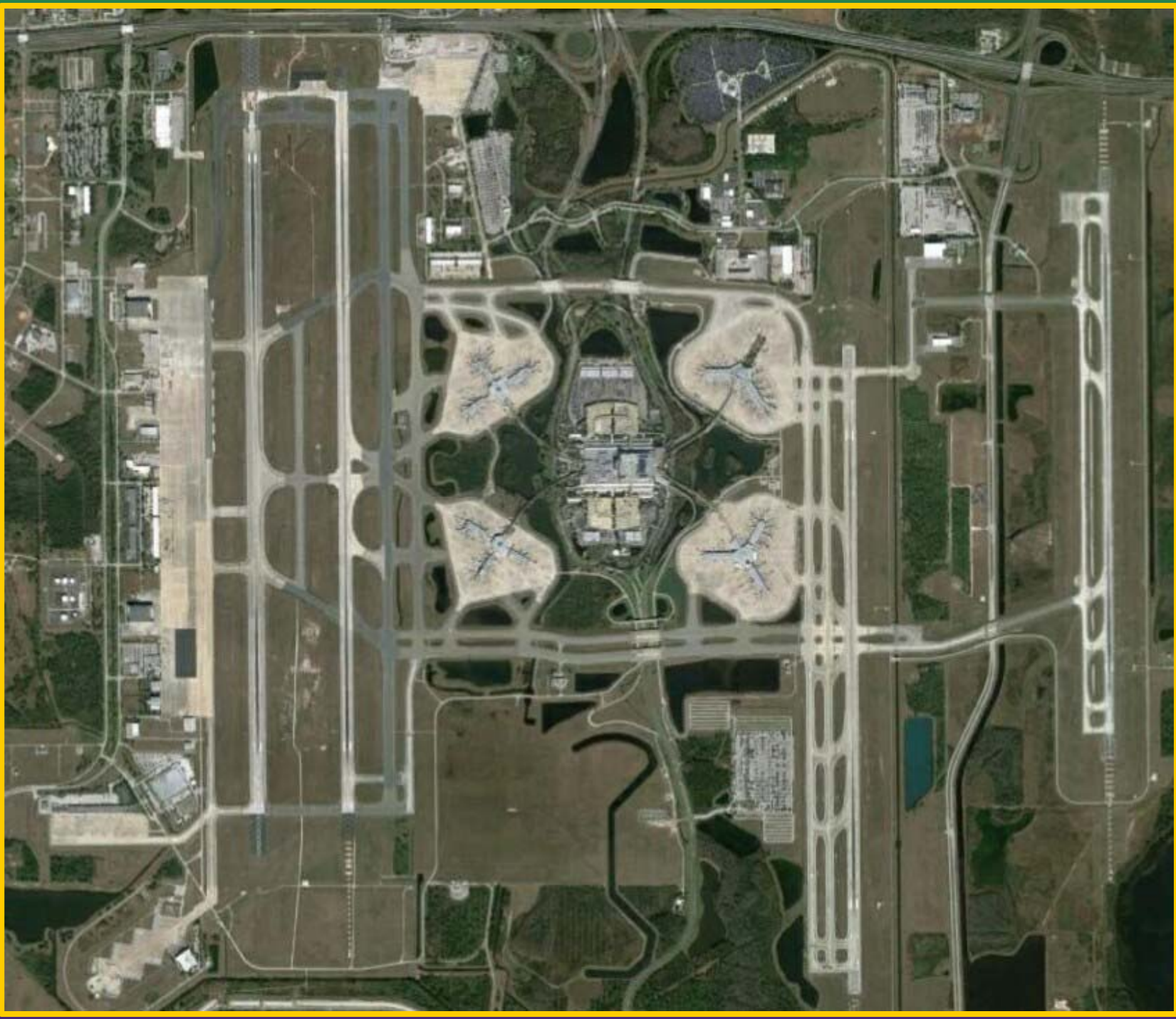












**B2**

**MARK**



# Mc COY RUNWAY 18R-36L



**Served to Defend Americas Past**

# OIA (MCO) RUNWAY 18R-36L



**Serves as a Gateway to Florida's Future**



- **Diverter Runway for the Airbus A-380 Aircraft.**
- **5 Month Closure.**
- **Runway Closed January 6<sup>th</sup> 2014.**
- **Runway Reopened June 3<sup>rd</sup> 2014.**
- **Runway 18R-36L  
12,004' long x 200' wide.**

# WORK AREA

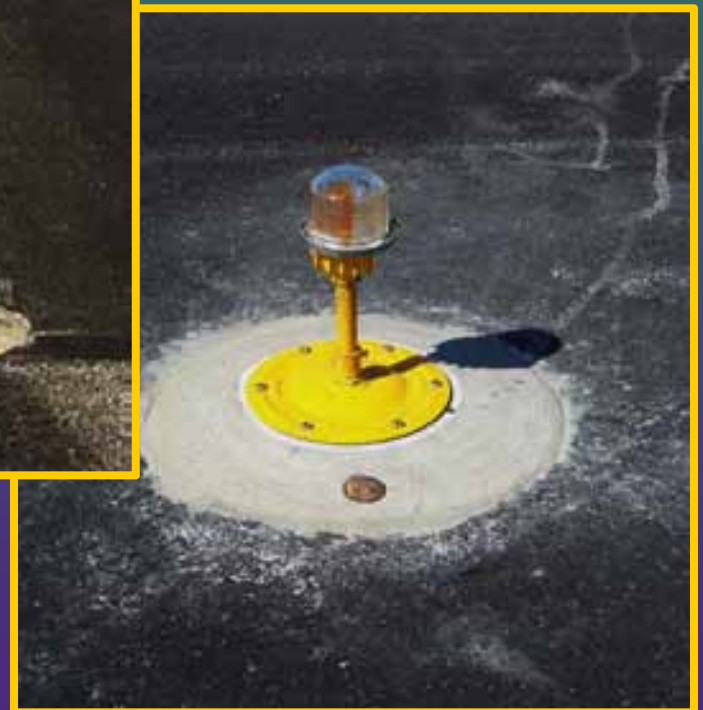


# ELECTRICAL WORK SCOPE

- LED Centerline Lights
- LED Touchdown Zone Lights
- LED Taxiway Lead-On / Lead Off Lights
- LED Runway Edge Lights
- LED Runway Threshold Lights
- LED Signs and Dedicated Sign Circuits
- Replace 42 Manholes with Junction Can Plazas
- Replace L-824 Cable for the 41 Circuits Associated with the Runway Rehabilitation and Home Run Duct Banks
- Rebuild Threshold Area Runway 18R



# EXISTING RUNWAY FIXTURES AND RUNWAY GUARD LIGHTS







**EXISTING AIRFIELD  
SIGNAGE**



## Rebuilding Runway 18R Threshold





# LED SIGNS ON DEDICATED SIGN CIRCUITS



Federal Aviation  
Administration

## Runway Safety Bulletin No. 32

June 4, 2010

TO: All Towered Airports  
All State Aviation Directors

FROM: Regional Runway Safety Program Manager  
Southern Region

### Air Traffic Change in Runway Crossing Procedures

The FAA Air Traffic Organization has issued a Notice concerning a change in Taxi and Ground Movement Operations. This change establishes the requirement that an explicit runway crossing clearance be issued for each runway crossing, even if the runway is closed or inactive. This new requirement does not apply to a closed taxiway entering a closed portion of a runway that is barricaded and marked as closed. For example, construction personnel would not be required to request Air Traffic Control (ATC) clearance when entering the construction portion of a runway from a closed taxiway or construction road.

Taxi instructions to cross multiple runways must not be issued. An aircraft/vehicle must have crossed the previous runway before another runway crossing may be issued. An exception to this rule may be approved by the Terminal Services Director of Operations under certain conditions, which are:

- At those airports where taxi routes between runway centerlines are less than 1000 feet, the Air Traffic Manager may request approval to authorize multiple runway crossings.
- If approved, this authorization only applies to the particular locations identified, where the taxi route between the runway centerlines is less than 1000 feet.
- Facility directive must include a diagram that depicts all of the intersections where multiple runway crossings are authorized.

The FAA issued this new policy as a runway incursion prevention measure to prevent runway incursions that occurred when pilots and vehicle operators were confused about a runway being open or closed. ASO Runway Safety Program Office recommends that airports coordinate this new policy with the local ATCT and the appropriate FAA Offices, as necessary.



- 74 SIGNS INSTALLED
- DEDICATED RUNWAY MANDATORY CIRCUITS AND DEDICATED TAXIWAY SIGN CIRCUITS

# LED RUNWAY LIGHTING

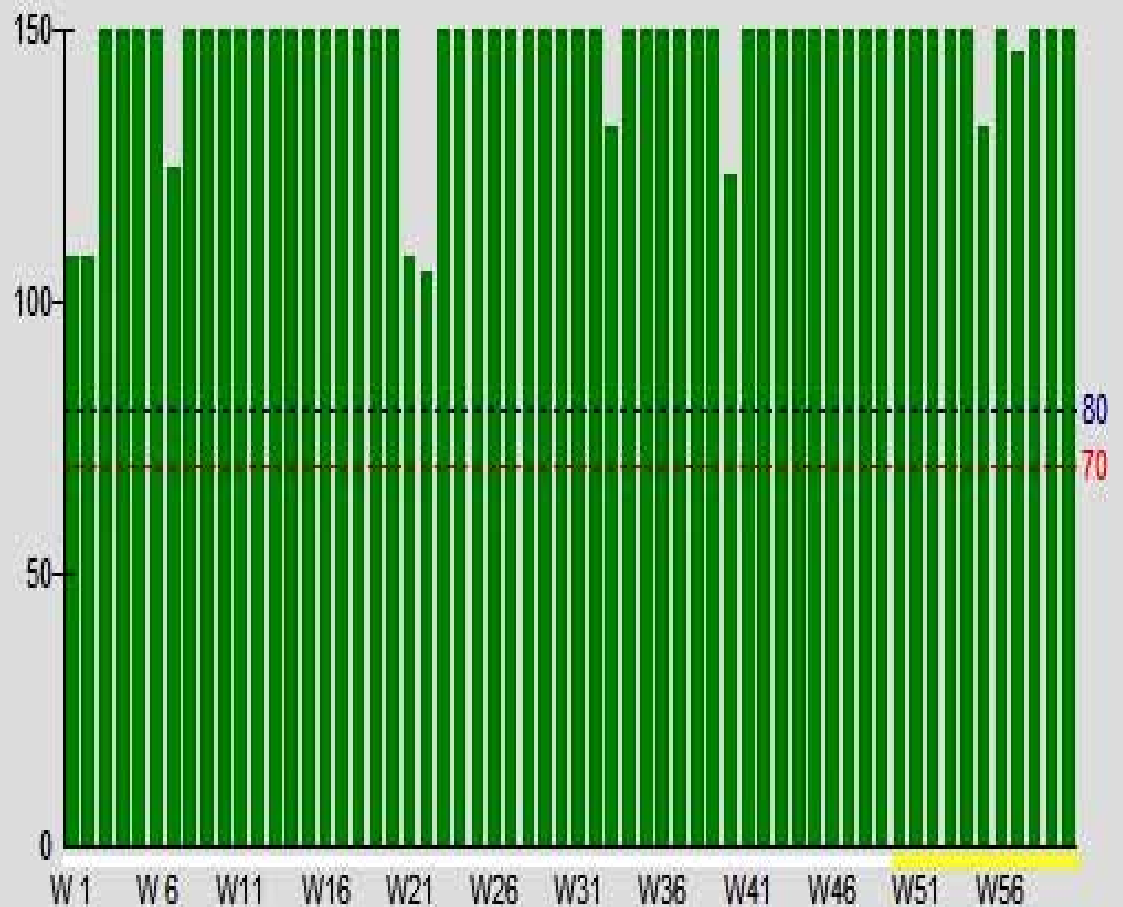


- CENTERLINE
- TOUCHDOWN ZONE
- HIRL THRESHOLD
- HIRL EDGE LIGHTS

# RUNWAY EDGE LIGHT ALIGNMENT AND PHOTOMETRIC TESTING



MCO18RES 6/6/2014 12:04 AM



# ELECTRONIC TORQUE WRENCH AND FIXTURE DATA RECORDING WITH GPS AND RFID





# DATABASE

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Asset Area	Asset Zone	Asset Circuit	Asset Type	Asset ID	Position X	Position Y	LENS1	LENS2	TX	RFID	TORQUE	FIXTURE SIZE
173	18R-36L Vault	RWCL	18RC2	L-850A(L)	18RC2-063	551116.72276032	1492936.91920099	WHITE	WHITE	30/45w	TRUE	185 in-lbs	12 in.
174	18R-36L Vault	RWCL	18RC2	L-850A(L)	18RC2-065	551116.37696049	1493037.27693992	WHITE	WHITE	30/45w	TRUE	185 in-lbs	12 in.
175	18R-36L Vault	RWCL	18RC2	L-850A(L)	18RC2-067	551115.23883940	1493136.90403724	WHITE	WHITE	30/45w	TRUE	185 in-lbs	12 in.
176	18R-36L Vault	RWCL	18RC2	L-850A(L)	18RC2-069	551114.74999523	1493237.22732741	WHITE	WHITE	30/45w	TRUE	185 in-lbs	12 in.
177	18R-36L Vault	RWCL	18RC2	L-850A(L)	18RC2-071	551114.08136140	1493337.46925292	WHITE	WHITE	30/45w	TRUE	185 in-lbs	12 in.
178	18R-36L Vault	RWCL	18RC2	L-850A(L)	18RC2-073	551113.24146807	1493436.92640308	WHITE	WHITE	30/45w	TRUE	185 in-lbs	12 in.
179	18R-36L Vault	RWCL	18RC2	L-850A(L)	18RC2-075	551112.60137749	1493537.27003440	WHITE	WHITE	30/45w	TRUE	185 in-lbs	12 in.
180	18R-36L Vault	RWCL	18RC2	L-850A(L)	18RC2-077	551111.75754716	1493636.69076733	WHITE	WHITE	30/45w	TRUE	185 in-lbs	12 in.
181	18R-36L Vault	RWCL	18RC2	L-850A(L)	18RC2-079	551111.17651157	1493745.60787232	WHITE	WHITE	30/45w	TRUE	185 in-lbs	12 in.
182	18R-36L Vault	RWCL	18RC2	L-850A(L)	18RC2-081	551110.46161799	1493836.37475117	WHITE	WHITE	30/45w	TRUE	185 in-lbs	12 in.
183	18R-36L Vault	RWCL	18RC2	L-850A(L)	18RC2-083	551110.07251115	1493936.26201858	WHITE	WHITE	30/45w	TRUE	185 in-lbs	12 in.
184	18R-36L Vault	RWCL	18RC2	L-850A(L)	18RC2-085	551109.20768349	1494036.30184475	WHITE	WHITE	30/45w	TRUE	185 in-lbs	12 in.
185	18R-36L Vault	RWCL	18RC2	L-850A(L)	18RC2-087	551108.66011241	1494136.73077774	WHITE	WHITE	30/45w	TRUE	185 in-lbs	12 in.
186	18R-36L Vault	RWCL	18RC2	L-850A(L)	18RC2-089	551107.82120332	1494236.54586683	WHITE	WHITE	30/45w	TRUE	185 in-lbs	12 in.
187	18R-36L Vault	RWCL	18RC2	L-850A(L)	18RC2-091	551107.34941949	1494336.61456433	WHITE	WHITE	30/45w	TRUE	185 in-lbs	12 in.
188	18R-36L Vault	RWCL	18RC2	L-850A(L)	18RC2-093	551106.60335799	1494436.51528315	WHITE	WHITE	30/45w	TRUE	185 in-lbs	12 in.
189	18R-36L Vault	RWCL	18RC2	L-850A(L)	18RC2-095	551106.25854240	1494536.81659174	WHITE	WHITE	30/45w	TRUE	185 in-lbs	12 in.
190	18R-36L Vault	RWCL	18RC2	L-850A(L)	18RC2-097	551105.80283466	1494636.50077558	WHITE	WHITE	30/45w	TRUE	185 in-lbs	12 in.
191	18R-36L Vault	RWCL	18RC2	L-850A(L)	18RC2-099	551104.63879499	1494736.33358117	WHITE	WHITE	30/45w	TRUE	185 in-lbs	12 in.
192	18R-36L Vault	RWCL	18RC1	L-850A(L) RC	18RC1-001	551177.95721790	1483887.62758833	RED	WHITE	30/45w	TRUE	185 in-lbs	12 in.
193	18R-36L Vault	RWCL	18RC1	L-850A(L) RC	18RC1-002	551177.84271683	1483937.30596666	RED	WHITE	30/45w	TRUE	185 in-lbs	12 in.
194	18R-36L Vault	RWCL	18RC1	L-850A(L) RC	18RC1-003	551177.14061849	1483987.48664057	RED	WHITE	30/45w	TRUE	185 in-lbs	12 in.
195	18R-36L Vault	RWCL	18RC1	L-850A(L) RC	18RC1-004	551176.99691799	1484037.27853574	RED	WHITE	30/45w	TRUE	185 in-lbs	12 in.
196	18R-36L Vault	RWCL	18RC1	L-850A(L) RC	18RC1-005	551176.70656423	1484086.86734733	RED	WHITE	30/45w	TRUE	185 in-lbs	12 in.
197	18R-36L Vault	RWCL	18RC1	L-850A(L) RC	18RC1-006	551176.27415040	1484137.23896575	RED	WHITE	30/45w	TRUE	185 in-lbs	12 in.
198	18R-36L Vault	RWCL	18RC1	L-850A(L) RC	18RC1-007	551176.14783832	1484187.45146375	RED	WHITE	30/45w	TRUE	185 in-lbs	12 in.
199	18R-36L Vault	RWCL	18RC1	L-850A(L) RC	18RC1-008	551175.38537265	1484237.26993366	RED	WHITE	30/45w	TRUE	185 in-lbs	12 in.
200	18R-36L Vault	RWCL	18RC1	L-850A(L) RC	18RC1-009	551175.30827308	1484287.36858675	RED	WHITE	30/45w	TRUE	185 in-lbs	12 in.
201	18R-36L Vault	RWCL	18RC1	L-850A(L) RC	18RC1-010	551174.88504557	1484337.64768566	RED	WHITE	30/45w	TRUE	185 in-lbs	12 in.
202	18R-36L Vault	RWCL	18RC1	L-850A(L) RC	18RC1-011	551174.26037490	1484387.35854425	RED	WHITE	30/45w	TRUE	185 in-lbs	12 in.
203	18R-36L Vault	RWCL	18RC1	L-850A(L) RC	18RC1-012	551174.19344591	1484436.98114841	RED	WHITE	30/45w	TRUE	185 in-lbs	12 in.
204	18R-36L Vault	RWCL	18RC1	L-850A(L) RC	18RC1-013	551173.94705533	1484487.43183491	RED	WHITE	30/45w	TRUE	185 in-lbs	12 in.
205	18R-36L Vault	RWCL	18RC1	L-850A(L) RC	18RC1-014	551173.63279073	1484537.35890041	RED	WHITE	30/45w	TRUE	185 in-lbs	12 in.
206	18R-36L Vault	RWCL	18RC1	L-850A(L) RC	18RC1-015	551172.96903890	1484587.29712075	RED	WHITE	30/45w	TRUE	185 in-lbs	12 in.
207	18R-36L Vault	RWCL	18RC1	L-850A(L) RC	18RC1-016	551173.01201782	1484637.39019641	RED	WHITE	30/45w	TRUE	185 in-lbs	12 in.
208	18R-36L Vault	RWCL	18RC1	L-850A(L) RC	18RC1-017	551172.58879033	1484687.66896725	RED	WHITE	30/45w	TRUE	185 in-lbs	12 in.
209	18R-36L Vault	RWCL	18RC1	L-850A(L) RC	18RC1-018	551172.15998541	1484737.59898549	RED	WHITE	30/45w	TRUE	185 in-lbs	12 in.
210	18R-36L Vault	RWCL	18RC1	L-850A(L) RC	18RC1-019	551171.82960549	1484787.07952959	RED	WHITE	30/45w	TRUE	185 in-lbs	12 in.
211	18R-36L Vault	RWCL	18RC1	L-850A(L) RC	18RC1-020	551171.30467215	1484837.63323425	RED	WHITE	30/45w	TRUE	185 in-lbs	12 in.
212	18R-36L Vault	RWCL	18RC1	L-850A(L) RC	18RC1-022	551170.76661550	1484937.47785083	RED	WHITE	30/45w	TRUE	185 in-lbs	12 in.
213	18R-36L Vault	RWCL	18RC1	L-850A(L) RC	18RC1-024	551169.98872991	1485038.12692775	RED	WHITE	30/45w	TRUE	185 in-lbs	12 in.
Summary +													

Fixture Type, Circuit, Location, Number, Lens Color, Transformer Size, Torque



# CHALLENGES

# INFRASTRUCTURE AND CIRCUITING

**Reuse the Existing Duct Bank System Installed in 1991;**

- **4W4", 8W4" and 12W4" Duct Bank System;**
- **21,000 Linear Feet from the Vault Throughout Airfield;**

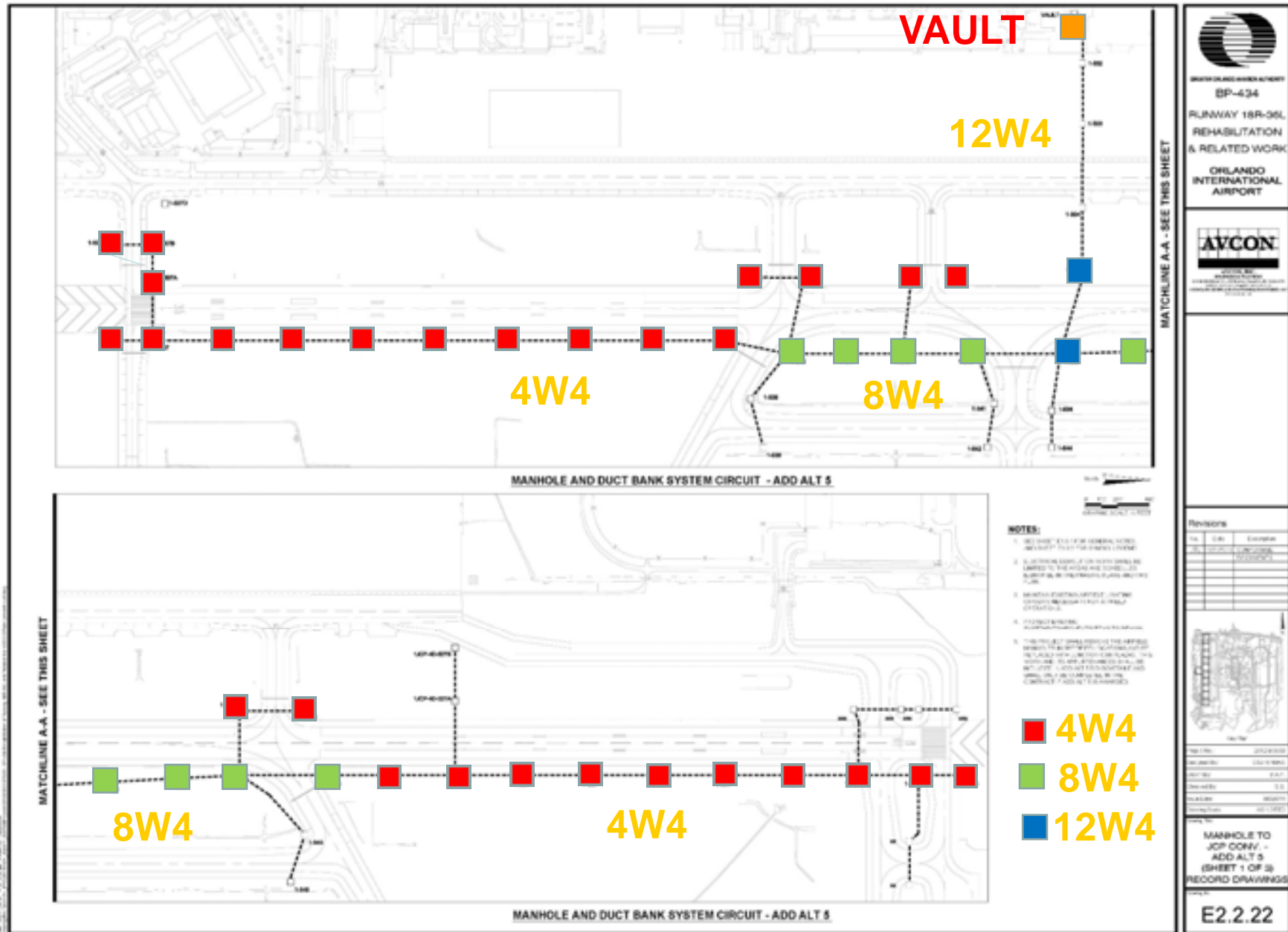
**Replace L-824 Cable Associated with RWY 18R-36L;**

- **Install 760,000 Linear Feet of Cable;**
- **Connect 1200+ Light Fixtures, 74 Signs, 41 Circuits;**

**Replace Manholes in 42 Locations within the Runway Environment with Junction Can Plazas:**

- **Versatility to have a JCP Function as a Manhole;**
- **Multiple Field Circuits from a Common Manhole;**
- **Design a Unit that can be Replicated Multiple Times;**

# EXISTING INFRASTRUCTURE



# Circuit Pathways

**Replace L-824 Cable Associated with RWY 18R-36L;**

- **Inventory of All 41 Circuits in Each Duct and Manhole;**
- **Identify each Circuit Leaving a Manhole to a Field Circuit;**
- **Path each Circuit to Segregate Cables in an Defined Conduit, Throughout the Entire Conduit Run;**
- **Design Conduit Runs to Prevent “Conduit Rolling”;**



# Cable Route and Conduit Planning

	A	B	C	D	E	P	Q	R	S	V	W	AJ	AK	AL	AM	AP	AQ	AR	AS	AT	AU	AV	AW	BL	BM
2	18R Vault Complex					6	7		9		16		17		19		20		21		22		30		
3						18RS2	18RRGL1	18RRGL3	TB2E1		TB2C1		TJE1		TJC1		TJC2		TJS1		TZE1				
4		Manhole or Duct Run		1w L.F.	L-824 2 Cond. - L.F.		DUCT		DUCT		DUCT		DUCT		DUCT	BP-424 DUCT	DUCT	BP-424 DUCT	DUCT	BP-424 DUCT	DUCT	BP-424 DUCT	DUCT		
85	NHR	JCP slack	524	6	12	12	E	12	L	12	L	12	K	12	J	12	H	12	H	12	H	12	H	12	G
86	NHR	DUCT	2-524	400	800			800	L	800	L					800	H	800	H	800	H	800	H		
87	NHR	JCP slack	547	6	12	12	E	12	L	12	L					12	H	12	H	12	H	12	H		
88	NHR	DUCT	1-548	363	726	726	E									726	H					726	H		
89	NHR	JCP slack	548	6	12	12	E									12	H					12	H		
90	NHR	DUCT	2-545	600	1200											1200	H					1200	H	1200	G
91	NHR	MH slack	545	30	60											60	H					60	H	60	G
92	NHR	DUCT	2-546	325	650																	650	H	650	G
93	NHR	MH slack	546	30	60																	60	H	60	G
94	NHR	DUCT	1-525	500	1000	1000	E	1000	L	1000	L	1000	K	1000	J	1000	H	1000	H	1000	H	1000	H		
95	NHR	JCP slack	525	6	12	12	E	12	L	12	L	12	K	12	J	12	H	12	H	12	H	12	H		
96	NHR	DUCT	1-526	430	860	860	I	860	L	860	L	860	K	860	J										
97	NHR	JCP slack	526	6	12	12	I	12	L	12	L	12	K	12	J										
98	NHR	DUCT	1-527	420	840	840	I	840	L	840	L	840	K	840	J										
99	NHR	JCP slack	527	6	12	12	I	12	L	12	L	12	K	12	J										
100	NHR	JCP slack	527A	6	12																				
101	NHR	DUCT	1-528	420	840	840	I	840	L	840	L	840	K	840	J										
102	NHR	JCP slack	528	6	12	12	I	12	L	12	L	12	K	12	J										
103	NHR	DUCT	1-529	420	840	840	I	840	L	840	L	840	K	840	J										
104	NHR	JCP slack	529	6	12	12	I	12	L	12	L	12	K	12	J										
105	NHR	DUCT	1-530	420	840	840	I	840	L	840	L	840	K	840	J										
106	NHR	JCP slack	530	6	12	12	I	12	L	12	L	12	K	12	J										
107	NHR	DUCT	1-531	370	740	740	I	740	L	740	L	740	K	740	J										
108	NHR	JCP slack	531	6	12	12	I	12	L	12	L	12	K	12	J										
109	NHR	DUCT	1-532	420	840	840	I	840	L	840	L	840	K	840	J										
110	NHR	JCP slack	532	6	12	12	I	12	L	12	L	12	K	12	J										
111	NHR	DUCT	1-533	470	940	940	I	940	L	940	L	940	K	940	J										
112	NHR	JCP slack	533	6	12	12	I	12	L	12	L	12	K	12	J										
113	NHR	DUCT	1-534	410	820	820	I	820	L	820	L	820	K	820	J										
114	NHR	JCP slack	534	6	12	12	I	12	L	12	L	12	K	12	J										
115	NHR	DUCT	1-535	230	460																				
116	NHR	JCP slack	535	6	12																				
117																									
118																									
119			Total Cable	539284		17712		32048		17774		16962		16962		12104		10106		10106		12814		16406	
122																									

18R Duct Bank System

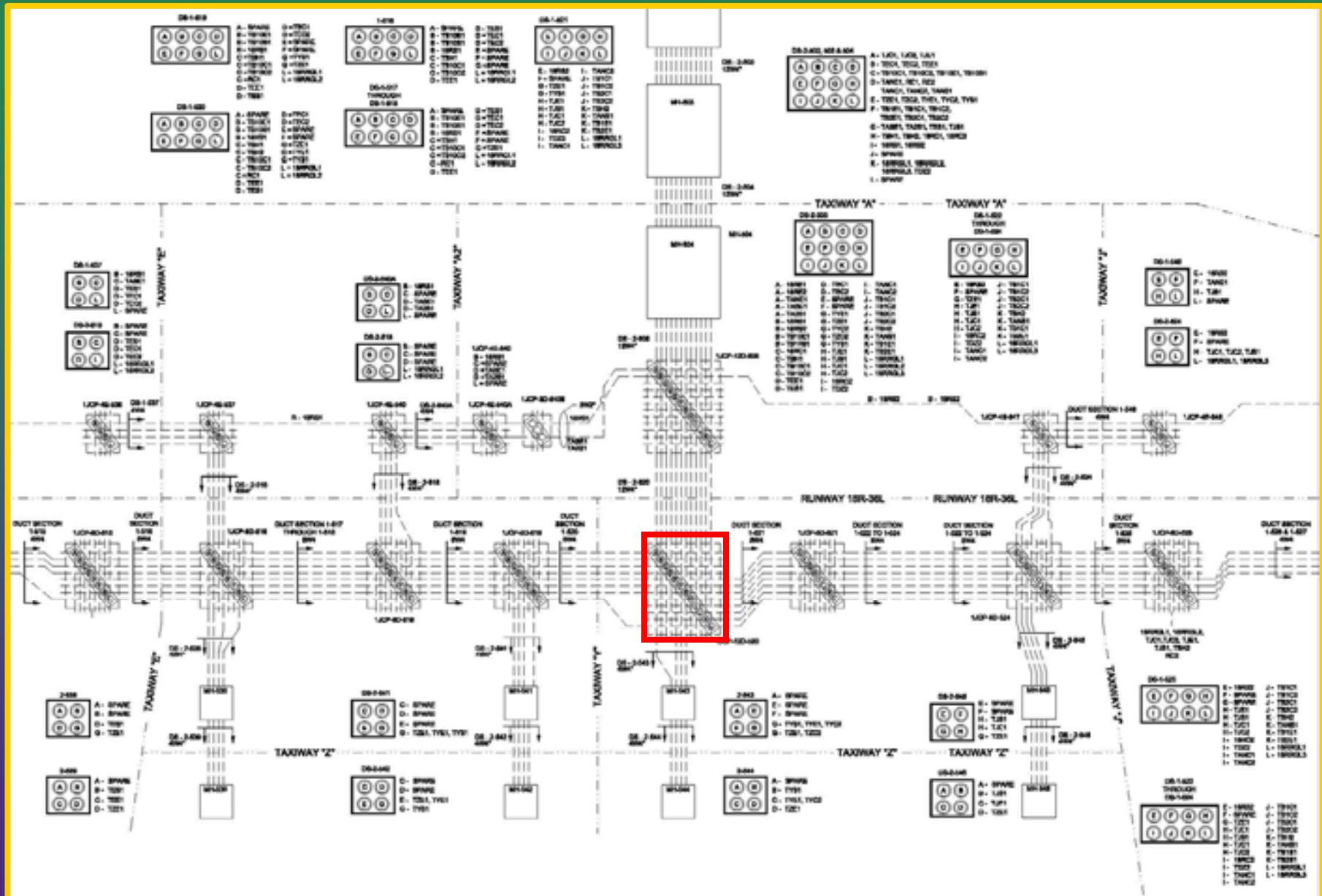
41 CIRCUITS, 21,000 LF DUCT BANK, 42 JUNCTION CAN PLAZAS,

# Which Conduit Goes Where?

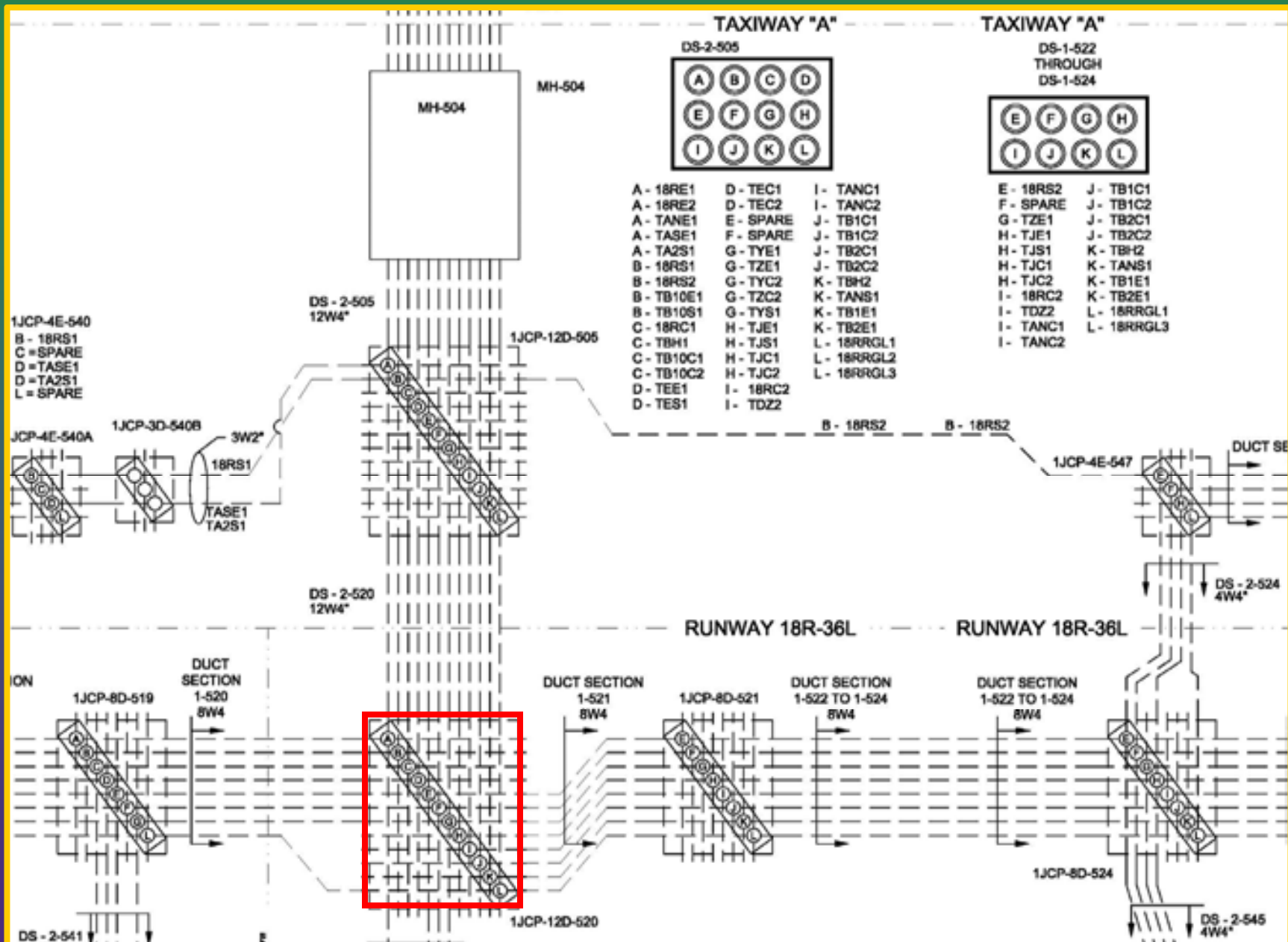




# JCP, DUCT BANK AND CABLE ROUTING



# JCP, DUCT BANK AND CABLE ROUTING





# EXISTING RUNWAY AIRFIELD MANHOLES



# REPLACING MANHOLES WITH JUNCTION CAN PLAZAS



## WHY JUNCTION CAN PLAZAS?



# EXISTING RUNWAY MANHOLE INTERIORS



# WHY JUNCTION CAN PLAZAS?

[illegible][illegible]



# WHY JUNCTION CAN PLAZAS?



- Even in a Clean Manhole with Racked Cables the One Circuit Needed May not be Easily Identified.



# WHY JUNCTION CAN PLAZAS?

- Circuit can be Identified Before Opening Junction Can.
- Fewer Circuits to Work With.
- No Pumping of Water.
- No Confined Entry Issues.
- Quick Access to Circuits.
- Isolate Circuits, Runway Guard Lights Separate from all Other Circuits.



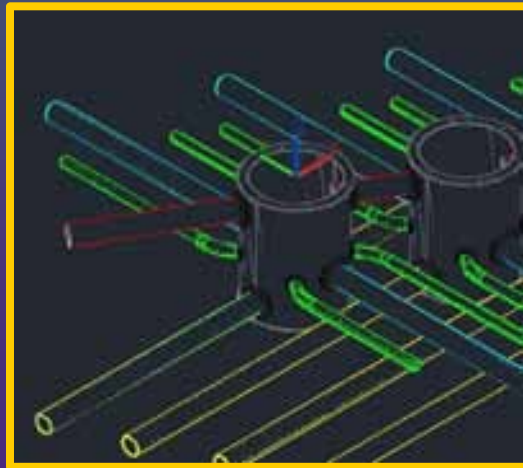
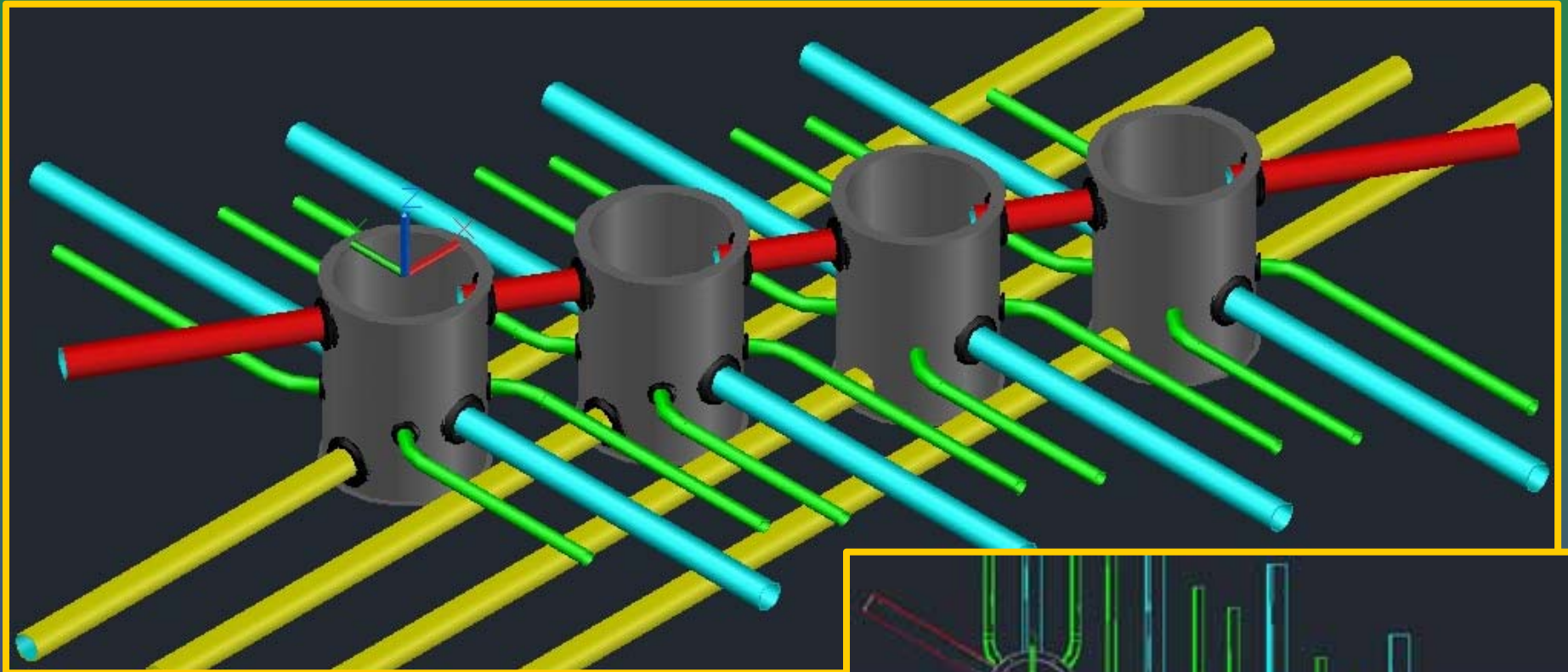
# **JUNCTION CAN PLAZA DESIGN CRITERIA**

**Develop a Standard Design to Replace the 42 Existing Manholes with Junction Can Plazas:**

- **The Same JCP can be used at each Location. All Conduits the Same Configuration.**
- **Construction Crew can Easily Replicate the Installation.**
- **Construction Crew can Use the Same Concrete Forms at Multiple Locations.**
- **Reduce Size of JCP from Large Slab to a Sidewalk Design. Less Concrete than Traditional JCP.**

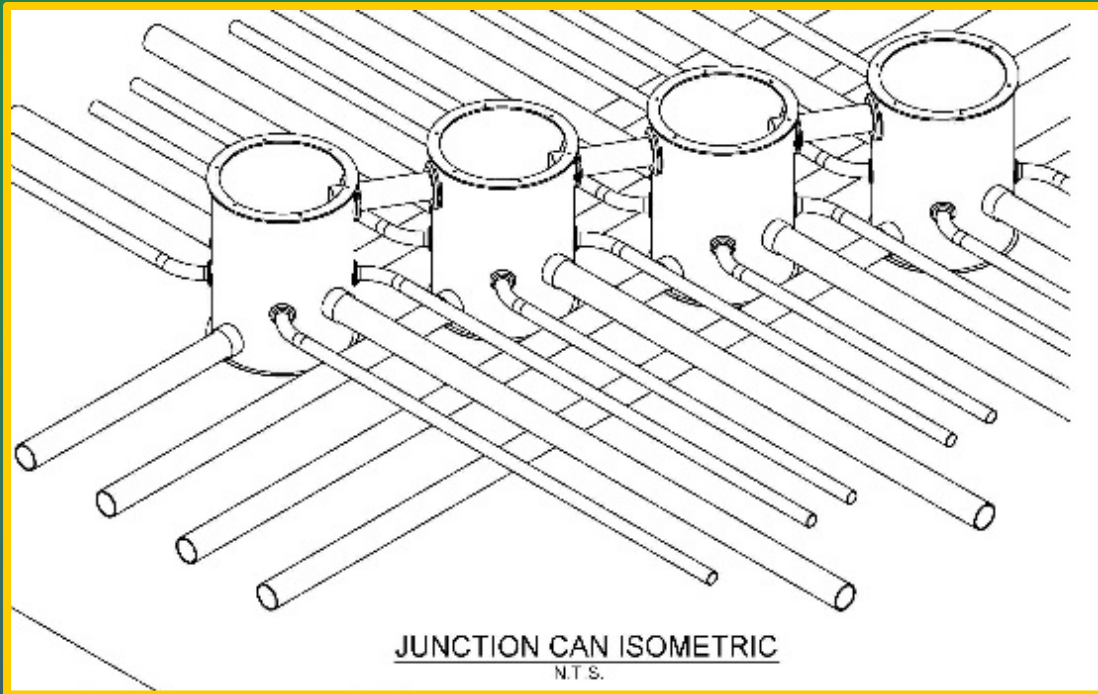


# JCP Design Completed Using 3D Solid Model





## JCP Design with L-867E 24" Diameter Base Can

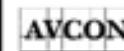


- Each Base Can had 4 – 4" Conduits to Connect to Existing Duct Bank and 4 – 2" conduits to Provide for Individual Field Circuits;
- One Common Design for all Units; 4 Can, 8 Can, 12 Can,





ORLANDO INTERNATIONAL AIRPORT  
BP-434  
RUNWAY 18R-36L  
REHABILITATION  
& RELATED WORK  
ORLANDO  
INTERNATIONAL  
AIRPORT



AVCON  
AERIAL CONSTRUCTION  
CORPORATION  
10000 W. BOULEVARD  
SUITE 100  
FORT MYERS, FL 33907  
(813) 938-1000  
WWW.AVCONCORP.COM

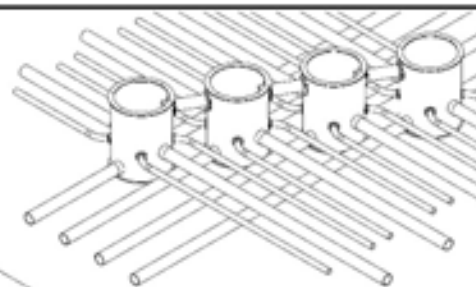
#### Revisions

No.	Date	Description
1	01/15/2010	ISSUED FOR CONSTRUCTION
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		

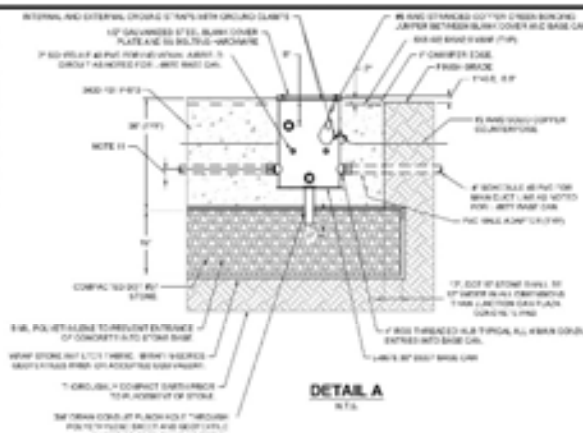
Project No.	2010-070-00
Contract No.	CU 117040
Drawn By	S.A.P.
Checked By	S.L.
Issue Date	11/01/2010
Drawing Name	AS NOTED

JUNCTION CAN  
PLAZA DETAILS  
(SHEET 1 OF 2)  
CONFORMED DOCUMENTS

E7.0.26



JUNCTION CAN ISOMETRIC  
N.T.S.



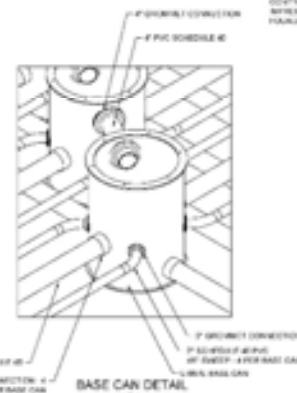
DETAIL A  
N.T.S.



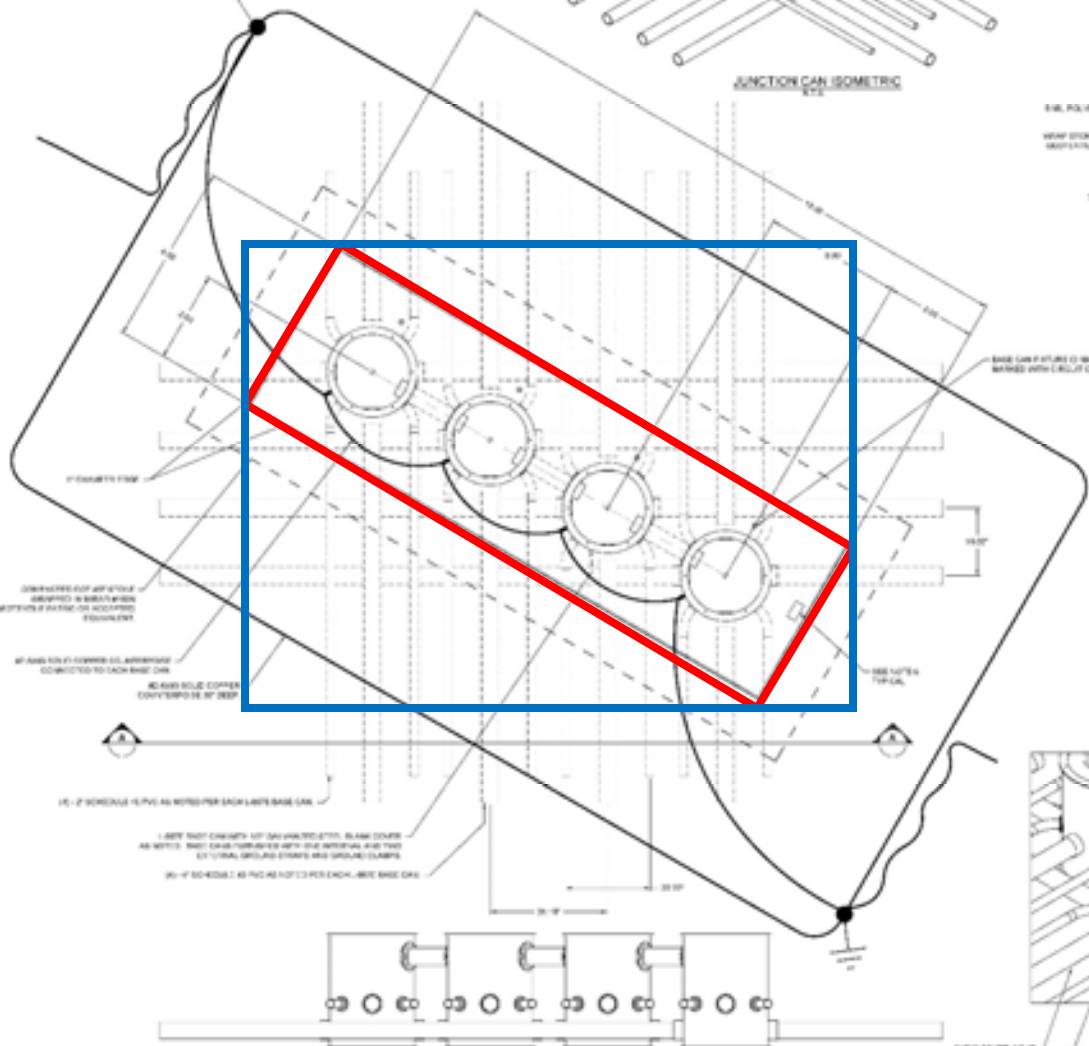
JUNCTION CAN PLAZA  
NUMBERING SYSTEM  
N.T.S.

#### SHEET NOTES:

1. A CAN WITH AN JUNCTION CAN PLAZA IS SHOWN NUMBER THE SIZE OF JUNCTION CAN AND THE CONCRETE CONSTRUCTION WHEN THE JUNCTION CAN IS USED FOR CONSTRUCTION. SEE THE JUNCTION CAN PLAZA NUMBERING SYSTEM FOR THE JUNCTION CAN PLAZA NUMBERING SYSTEM.
2. CONCRETE CONSTRUCTION SHALL BE IN THE PROJECT SHALL BE SHOWN BY THE JUNCTION CAN PLAZA NUMBERING SYSTEM. THE JUNCTION CAN PLAZA NUMBERING SYSTEM SHALL BE SHOWN BY THE JUNCTION CAN PLAZA NUMBERING SYSTEM.
3. CONCRETE CONSTRUCTION SHALL BE SHOWN BY THE JUNCTION CAN PLAZA NUMBERING SYSTEM.
4. CONSTRUCTION SHALL PROVIDE A 2" DIA. BRASS RODS AT EACH JUNCTION CAN. THE BRASS RODS SHALL BE SHOWN BY THE JUNCTION CAN PLAZA NUMBERING SYSTEM. THE BRASS RODS SHALL BE SHOWN BY THE JUNCTION CAN PLAZA NUMBERING SYSTEM.
5. THE JUNCTION CAN PLAZA NUMBERING SYSTEM SHALL BE SHOWN BY THE JUNCTION CAN PLAZA NUMBERING SYSTEM. THE JUNCTION CAN PLAZA NUMBERING SYSTEM SHALL BE SHOWN BY THE JUNCTION CAN PLAZA NUMBERING SYSTEM.
6. THE JUNCTION CAN PLAZA NUMBERING SYSTEM SHALL BE SHOWN BY THE JUNCTION CAN PLAZA NUMBERING SYSTEM. THE JUNCTION CAN PLAZA NUMBERING SYSTEM SHALL BE SHOWN BY THE JUNCTION CAN PLAZA NUMBERING SYSTEM.



BASE CAN DETAIL  
N.T.S.



SECTION A-A  
N.T.S.





# Side by Side Comparison





# What to do with all these Spare Parts??



**EBAY ??**



**B2**

**FRANK**

# EXISTING MANHOLE CIRCUITING





# EXISTING MANHOLE DEMOLITION



# EXISTING MANHOLE REMOVAL



## GRADING THE SITE





## CONDUIT PLACEMENT IN PLAZA FORM



# ASSEMBLING THE PLAZA FORM



# PRECAST CAN PLAZA ASSEMBLY





# PLACING THE PRE-CAST UNITS



# PLACING MULTIPLE PRE-CAST UNITS



# TYING IN FIRST LAYER OF CONDUITS





# TYING IN SECOND LAYER OF CONDUITS



# TYING IN CONDUITS FOR A 12 CAN PLAZA



# COMPLETED CAN PLAZA





**B2**

**JEFF**

# 18R-36L REHABILITATION

- JCP / manhole, L-867D and L-867E base cans.
- Weight of L-867E blank covers, handle to remove and replace cover and gasket.
- RFID tag and bolt torque tracking system.
- LED's improvement to safety, color quality, light output.
- Maintenance savings with LED's.
- Energy Savings with LED's.



Image Landsat

Google earth

1996

28°25'23.43" N 81°16'51.28" W elev: 99 ft eye alt: 392 ft



**L-867D**

**L-867E**



**L-867E**



# RFID FIXTURE ID TAG, BOLT TORQUE TRACKING

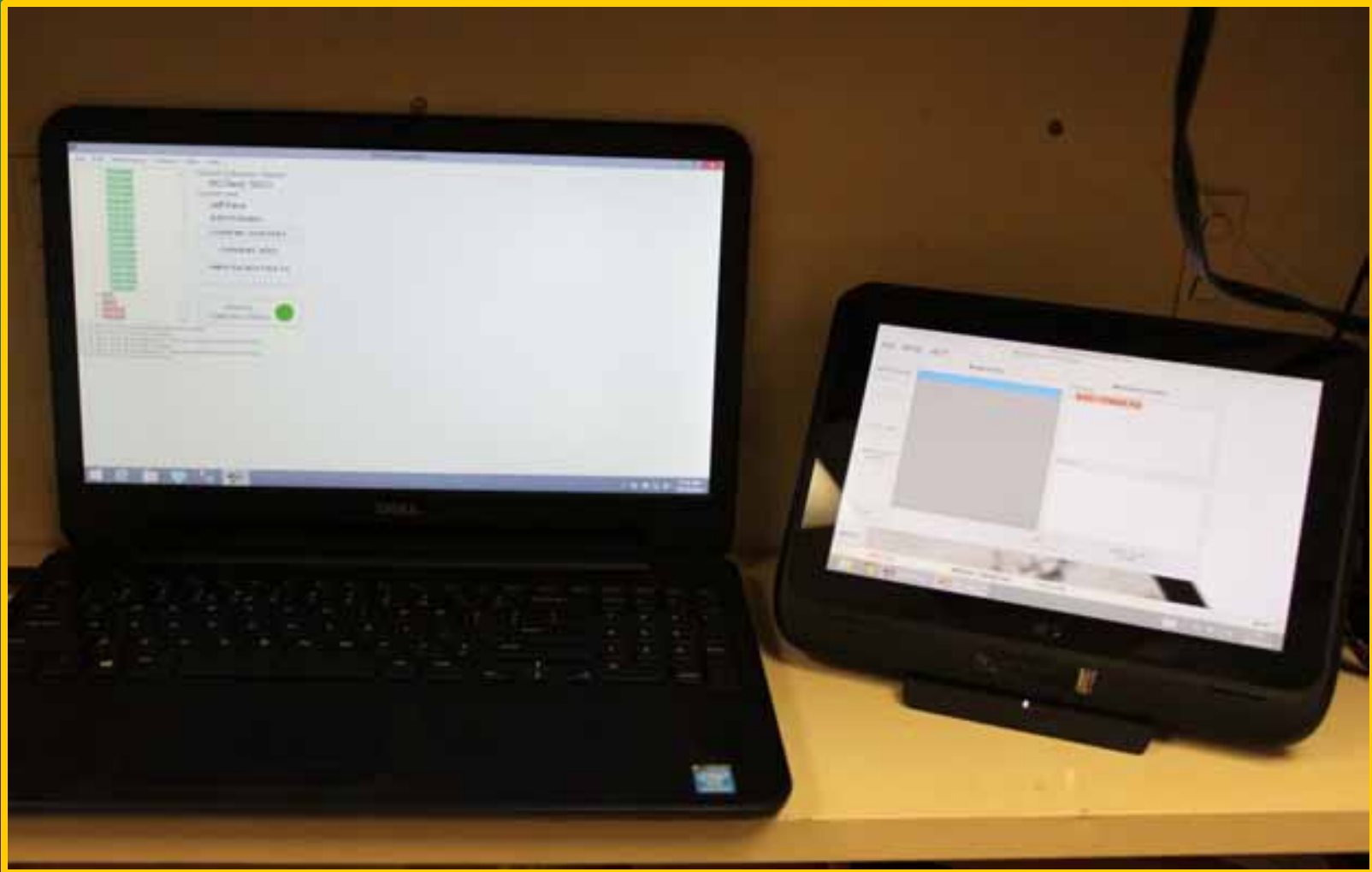




# RFID FIXTURE ID TAG, BOLT TORQUE TRACKING



# RFID FIXTURE ID TAG, BOLT TORQUE TRACKING



# FIXTURE TORQUE REPORT

Date	Location	Max Torque	Break Torque	Angle Moved	Bolt Type	Status
27-May-2014 08:44:58	TDZ2-059C	193.9	188.6	1.5	Light	OK
		189.9	121.5	2.0	Light	OK
		195.0	183.5	1.5	Light	OK
		184.3	141.6	3.0	Light	OK
		186.9	0.0	1.0	Light	OK
		183.5	0.0	1.0	Light	OK
07-Oct-2014 03:33:06	TDZ2-059C	182.7	76.2	33.0	Light	Operator Error
		185.1	77.2	31.0	Light	Operator Error
		193.6	110.2	4.5	Light	Operator Error
		182.7	152.6	1.5	Light	Operator Error
		86.4	77.0	10.0	Light	Operator Error
		181.3	100.3	24.0	Light	Operator Error
07-Oct-2014 03:35:51	TDZ2-059C	183.2	144.8	4.5	Light	OK
		182.1	151.5	4.0	Light	OK
		193.6	165.0	2.5	Light	OK
		195.8	0.0	1.0	Light	OK
		184.0	105.7	11.0	Light	OK
		180.2	0.0	1.0	Light	OK

















# DO LED'S SAVE ON MAINTENANCE

- WORK ORDERS (W/O) FROM MARCH 1, 2014 THROUGH OCTOBER 4, 2014.
- TOTAL NUMBER OF AIRFIELD FIXTURES AND SIGNS 13,700.
- NUMBER OF LED FIXTURES 6,760 OR 50%.
- # OF W/O FOR LED FIXTURES 225
- # OF W/O FOR INCANDESCENT FIXTURES 665



# ENERGY SAVINGS WITH LED'S

18R VAULT FULL LOAD INCANDESCENT LIGHTING

228 KVA

18R VAULT FULL LOAD LED'S

89.4 KVA



**B2**

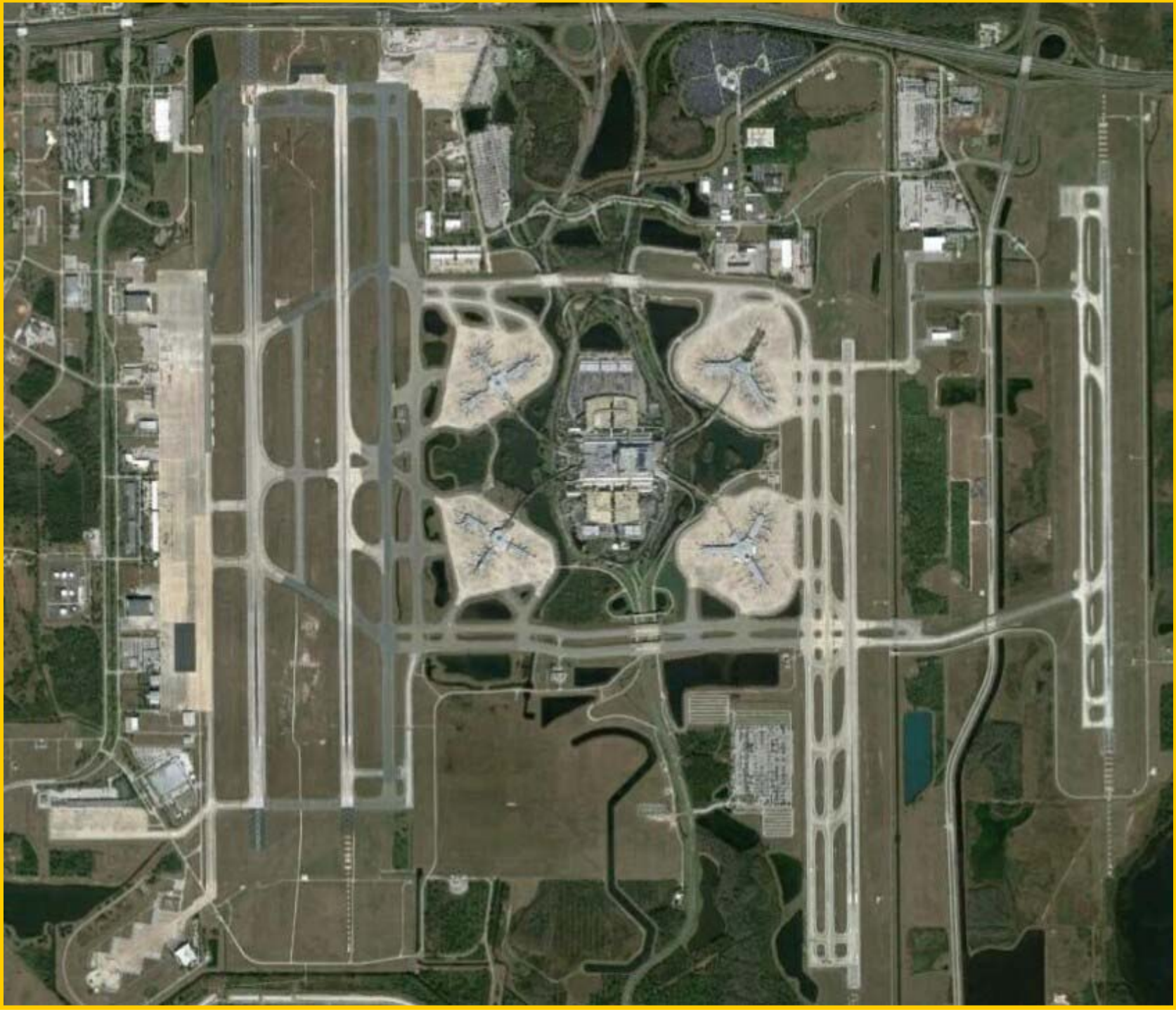
**CARL**



1947

Pinecastle AAF

UoFL







**THIS PRESENTATION WAS MADE  
POSSIBLE BY CONTRIBUTIONS  
FROM VIEWERS LIKE YOU AND  
BY:**

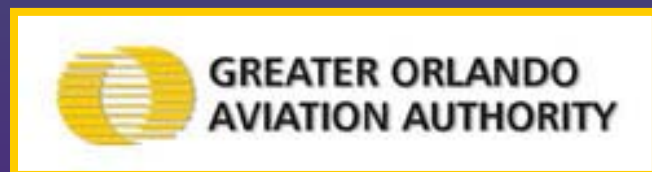
**HONEST RON'S USED  
AIRFIELD PARTS**





**PRESENTED TO: IES AVIATION LIGHTING COMMITTEE - 2014 FALL  
CONFERENCE**

**THANK  
YOU!**



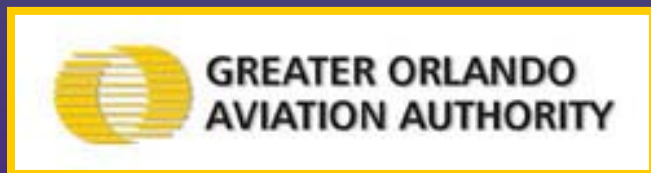
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# **WE WILL NOT GO QUIETLY INTO THE NIGHT!**



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