Addendum Date: May 13, 2024

CITY OF PENSACOLA, FLORIDA
ADDENDUM #1

PENSACOLA INTERNATIONAL AIRPORT TIPPIN AVENUE PARKING LOT PROJECT
Bid No. 24-028

The following items take precedence over the documents for the above named items. All other terms and conditions shall remain the same.

A SIGNED COPY OF THIS ADDENDUM MUST BE RETURNED WITH YOUR SUBMITTAL

Company:_____ Date: _____

Authorized Representative:_____ Title: _____

Printed Name_____ Signature:_____

PLEASE RETURN A COPY OF THIS ADDENDUM AS ACKNOWLEDGEMENT

NEW BID ALTERNATE ITEMS: CELL PHONE LOT MODIFICATIONS = ADDITIVE ALT #2

A revised scope of work has been attached to this addendum to describe this bid alternate. In addition, the plans for this bid alternate work have been attached to this addendum. Finally, the bid tab has been modified to incorporate the line items associated with the Cell Phone Lot Modifications Bid Alternate

INFORMATIONAL ITEM:

Please make note that the pre-bid meeting has been changed from optional attendance to mandatory attendance.

INFORMATIONAL ITEM:

The Proposal Sheet failed to include line items for bid alternate #1 and bid alternate #2. The proposal sheet has been updated accordingly. A new proposal has been attached to this addendum and shall replace the original version in its entirety.

INFORMATIONAL ITEM:

The orientation of the ticketing system, cameras, swing arm, islands, the tooth booth, etc. have been provided by Gorrie Regan and included with this addendum. In addition, the specifications for the system have been attached to this addendum.

INFORMATIONAL ITEM:

The monument signage details have been attached to this addendum.

QUESTION: In the scope of work you list 7 security call boxes under Electric Vehicle Charging Stations, and you list 5 security call boxes under Security Call Boxes. Yet on your Quantity sheet you list 7 Electric Vehicle Charging Stations.

RESPONSE: The Scope of Work is erroneous. More specifically, there are to be a total of 5 security call boxes and 7 Electric Vehicle Charging Stations, each capable of charging two cars at once. A new scope of work and bid tab have been attached to this addendum and shall replace the original versions in their entirety.

QUESTION: Can you provide some clarification on this item, and is the airport requesting Electric Vehicle Charging Stations as a part of the solicitation?

RESPONSE: The Scope of Work is erroneous. More specifically, there are to be a total of 5 security call boxes and 7 Electric Vehicle Charging Stations, each capable of charging two cars at once. A new scope of work and bid tab have been attached to this addendum and shall replace the original versions in their entirety.

QUESTION: Please confirm contract time is only 60 days.

RESPONSE: The Commencement & Completion language has been revised to incorporate an early completion incentive. The new Commencement & Completion language in the contract will read as follows:

> **5. COMMENCEMENT & COMPLETION**
>
> The bidder further proposes and agrees hereby to commence the work with an adequate force and equipment within **(10)** consecutive calendar days after being notified by the City of Pensacola to do so; and to complete the work and testing within **200** Calendar days after the commencement date set by the City of Pensacola and to pay as delay day penalty the sum of **$500** for each and every calendar day used for the completion of the work in excess of that heretofore stated. In contrast, the City of Pensacola will agree to pay an early completion incentive pay in the sum of **$2,000** for completion of the work for each and every calendar day less than the allowable **200** Calendar days.

QUESTION: Reference Sheet C-10, Note E which requires “Coordinate with Doug Strobel of Security Engineering”. Clarify / provide scope of work from SEI – Owner purchase? GC Purchase?

RESPONSE: GC shall purchase all pieces and parts and work with Mr. Strobel to do so.

QUESTION: Reference C-11, Notes A requiring contractor to obtain any and all permits. Advise if the documents have been submitted to the AHJ for review and permit cost determination. Provide list of any and all permits / impact fees anticipated by the DOR.

RESPONSE: With the exception of the ERP permit issued by the Northwest Florida Water Management District, all other permits will be the contractor’s responsibility. Nothing has been submitted to AHJ. All permits shall be applied for and paid for by the contractor.

QUESTION: Reference C-12 Electrical General Notes 18 & 19. There is no way to determine any FPL cost prior to bid without complete electrical plans submitted months prior to bid. Provide anticipated FPL transformer location and type – pole or pad mounted.

RESPONSE: The City recognizes that the FPL cost is an unknown. The entirety of the electrical portion of this project is a design/build item and the bidders shall bid accordingly.

QUESTION: Reference Sheet D1 which details an ornamental fence. Provide fencing detail.

RESPONSE: The bottom left corner of Sheet D-1 provides the fence detail. If additional information is needed, the fence make & model is the Montage Plus fence manufactured by AmeriStar.

QUESTION: Reference Sheet D-1 Emergency Station Specification, Item 3 which indicates towers to be provided by security system contractor. Confirm the towers and installation are NIC.

RESPONSE: Contractor shall take whatever measures are necessary to install five blue light emergency stations, provide power and connectivity to the stations, and coordinate with Mr. Doug Strobel to accomplish this task.

QUESTION: Reference Sheet 15. Advise who will be providing all items this sheet.

RESPONSE: As they are a design/build item, all portions of the ticketing operations for this parking lot are to be acquired by the contractor. With this addendum, an informational item has been included for the configuration of the ticketing lanes, swing arm, cameras, etc. For further information, contractors should coordinate with Mr. Kevin Dunn at the following:

Kevin Dunn
Gulf Branch Manager – Gorrie Regan
3357 Copter Road, Suite 6
Pensacola, FL 32514
Cell: 205-506-1532
kevin.dunn@gorrieregan.com

QUESTION: Reference Sheet D-7 Monument Sign which indicates “Additional details provided in specification package”. Advise contract requirements for sign / display.

RESPONSE: As it is a design/build item, all portions of the sign/display are to be coordinated with the sign manufacturer. There is an informational item attached to this addendum that provides further signage information.

PROPOSAL

ADDENDUM #1

BID NO. 24-028

PENSACOLA INTERNATIONAL AIRPORT
TIPPIN AVENUE PARKING LOT PROJECT

for a total Base Bid of ($_____)

for a total Bid Alternate #1 ($_____)

for a total Bid Alternate #2 ($_____)

**A signed quantity sheet must be included for the submittal to be considered.*

Bid Security in the proper form and in the amount of $_____is submitted.

Dunns#/UEID: _____(Federal Transparency Act Reporting Requirement)

Florida Department of Professional Regulation
Contractor's Certification or Registration

No. _____Expiration Date _____

Signature_____Date:_____

Printed Name: _____ Title: _____

Company:_____ Address:_____

Telephone:_____ City:_____

Fax:_____ State:_____Zip:_____

E-mail:_____

THIS FORM MUST BE INCLUDED IN SUBMITTAL.

REV ADDENDUM 1

CITY OF PENSACOLA - ENGINEERING AND CONSTRUCTION SERVICES

QUANTITY SHEET

Pensacola International Airport - Tippin Avenue Remote Parking Lot Project

4/29/2024

No	Category	Quantity	Units	Unit Price	Total Cost
1	Mobilization and Demobilization	1	LS		
2	Erosion Control* (incl. silt fence, outlet protection, and haybales)	1	LS		
3	Demolition/Layout (To include all demolition and clearing/grubbing)	1	LS		
4	Maintenance of Traffic (FDOT Standards)	1	LS		
5	Site, Grading, and Earthwork	1	LS		
6	Pond Excavation (Compacted in Place) Haul Off - Quantiied Verified Via Before & After Topo Survey	1786	CY		
7	Sand Chimney Per Plans	1	LS		
8	12" SDR 26 PVC	16	LF		
9	18" Class III RCP	345	LF		
10	14"X23" Class III ERCP	197	LF		
11	19"X30" Class III ERCP	247	LF		
12	City Type A-1 Curb Inlet	1	EA		
13	FDOT TYPE V Inlet	1	EA		
14	6'x4' Ditch Bottom Inlet	1	EA		
15	FDOT TYPE C Ditch Bottom Inlet	1	EA		
16	Skimmer Around FDOT TYPE C Ditch Bottom Inlet	1	LS		
16	FDOT TYPE 6 Curb Inlet	2	EA		
17	24" MES w/ Rip Rap Per Detail	1	EA		
18	4' Dia. Manhole Per Detail	1	EA		
19	Type C Curb and Gutter	3,473	LF		
20	Concrete Ribbon Curb	570	LF		
21	Concrete Valley Gutter	117	LF		
22	Concrete Bollards per Detail	3	EA		
23	9' (O.D.) Wide x 6" Thick Concrete Flume with Rip Rap Per Detail	1	LS		
24	5' (O.D.) Wide x 6" Thick Concrete Flume with Rip Rap Per Detail	1	LS		
25	Raise Monitoring Wells To Be Flush with Proposed Grade	7	EA		
26	Restore Tippin Ave. Curb and Gutter (Match Existing)	90	LS		
27	Restore Tippin Ave. 4" Thick Concrete Sidewalk	140	SY		
28	Mill 1.5" Asphalt	705	SY		
29	1.5" SP 12.5 Asphalt	17,236	SY		
30	6" Graded Aggregate Base	16,531	SY		
31	18" Compacted Subgrade	16,531	SY		
32	Signage/Striping (Thermoplastic) (Including All Wheel Stops, ADA Spaces, and Restoration of Striping on Entrance Road)	1	LS		
33	Landscaping Per Plans	1	LS		

CITY OF PENSACOLA - ENGINEERING AND CONSTRUCTION SERVICES

REV ADDENDUM 1

QUANTITY SHEET

Pensacola International Airport - Tippin Avenue Remote Parking Lot Project

4/29/2024

No	Category	Quantity	Units	Unit Price	Total Cost
34	Irrigation for Both New Lot as well as Supply and Connection to Rental Car Facility's Existing Irrigation System (Design Build)	1	LS		
35	365 Landscaping Establishment Period Maintenance	1	LS		
36	Decorative Ameristar Montage Plus Fence - Swing Gate	3	LS		
37	Decorative Ameristar Montage Plus Fence	2,035	LF		
38	Two Side by Side 5'x10' PreFab Bus Shelter by Panel Built, Inc. Set on 4" Thick Concrete Slab (Design Build)	1	LS		
39	Electrical and Lighting (Design Build)	1	LS		
40	Security Call Box (Design Build)	5	EA		
41	Install all Ticket Dispensers, Exit Stations, Electrical, Detection Loops, Cameras, Swing Arm, etc. as Depicted on Sheet D-3 - Coordinate with Gorrie Regan Parking System	1	LS		
42	Dual EV Charging Pedestals Stations nad Power Supply (Design Build)	7	EA		
43	EV Charging Stations (Signage, Stall Green Thermo Color, Stall Thermo Striping and Messaging, etc.)	14	EA		
				BASE BID TOTAL	
BID ALTERNATE ITEMS #1 - FIBER INSTALLATION					
1	Installation of Conduit and 12-Strand Fiber from the New Gate Arm/Ticket Machine at the New Tippin Ave Lot, Along the Tippin Ave Right of Way, and Then Pull New 12-Strand Fiber Through Existing Conduit Back to the 2nd Floor of the Parking Garage.	1	LS		
				BID ALT #1 TOTAL	
BID ALTERNATE ITEMS #2 - PENSACOLA INTERNATIONAL AIRPORT CELL PHONE LOT MODIFICATIONS					
1	Mobilization and Demobilization	1	LS		
2	Demolition/Layout (To include all demolition)	1	LS		
3	Maintenance of Traffic (FDOT Standards)	1	LS		
4	Curb and Gutter (Match Existing)	71	LF		
5	1.5" SP 12.5 Asphalt	48	SY		
6	6" Graded Aggregate Base	48	SY		
7	Striping (Thermoplastic)	1	LS		
8	Signage (R1-1 Stop Sign and Two DO NOT ENTER Signs)	1	LS		
9	Chain Link Fence	191	LF		
				BID ALT #2 TOTAL	
				BASE BID PLUS BOTH BID ALTS TOTAL	

CITY OF PENSACOLA - ENGINEERING AND CONSTRUCTION SERVICES

REV ADDENDUM 1

QUANTITY SHEET

Pensacola International Airport - Tippin Avenue Remote Parking Lot Project

4/29/2024

No	Category	Quantity	Units	Unit Price	Total Cost
***NOTES**					
1. Bid shall include all associated earthwork and necessary back-sloping as determined by the City of Pensacola					
2. This bid proposal contains line items which may not be called out on the plans. Such items have been included to address potential unforeseen conditions.					
3. The City of Pensacola reserves the right to move forward with or opt out of bid alternates in any order.					

Bidder: _____ Date: _____

Name of Company (Please Print)

By: _____ _____

Authorized Representative (Please Print) Address

Title: _____

Signature: _____ _____

City/State/Zip Code

Email: _____ Telephone: _____

PENSACOLA INTERNATIONAL AIRPORT
TIPPIN AVENUE PARKING LOT PROJECT

REVISED SCOPE OF WORK
ADDENDUM #1 – 5/10/2024

This project is located on Tippin Avenue just north of Francis Taylor Blvd. within the vacant parcel on Pensacola International Airport. This project is designed help meet the increased parking demands experienced by the Pensacola International Airport. The proposed improvements include installing new stormwater pipes and inlets, new curb and gutter, a new Stormwater pond fitted with a sand chimney, and paving an approximately square 18,000 square yard area. Other associated improvements include striping the new parking lot, sidewalk installation, installation of irrigation, landscaping, lighting, electric vehicle charging stations, bus shelter, and security call boxes. The irrigation system, lighting, bus shelter, electric vehicle charging stations, and security call boxes shall be designed and installed as a design-build portion of the work performed by the contractor.

DESIGN BUILD LUMP SUM ITEMS:

- **Irrigation**
  - Permanent irrigation shall be installed for all landscape area (including turf) shown on plans. As long as irrigation coverage is complete, the contractor/irrigation installer shall be allowed to determine the most effective method of providing irrigation coverage utilizing spray heads, risers, drip, and bubblers. The contractor shall install a new irrigation well as the irrigation source. New irrigation well, pump, piping, and all connected appurtenances shall be designed, sized, and installed in such a manner as to “connect-in” and feed the irrigation needs of both the new Tippin Ave Lot as well as the Rental Car Facility. Refer to Sheet C-12 for further instruction.
- **Electrical and Lighting**
  - Lighting shall be LED and provide full coverage off the new parking lot and adjacent walkways. New LED lighting fixtures and poles shall be per the detail provided on Sheet D-1
  - Refer to Sheet C-10-C-12 for further instruction.
- **Electric Vehicle Charging Stations**
  - Contractor shall install 7 dual EV charging stations pedestals along with signage, light green stall color (in thermo), striping, thermo messaging, power supply to support 14 EV Parking Stalls. See details and specifications.

- **Security Call Boxes**
  - Contractor shall install 5 security call boxes in the new parking lot. This effort shall include coordination with Security Engineering, Inc. to ensure new call boxes properly function and are tied-in/communicate with the Airport's security call box system. See details and specifications.
- **Bus Shelter**
  - Contractor shall install a bus shelter per the details, install the concrete slab, and provide necessary power to this shelter.
- **Bid Alternate #1**
  - Bid alternate #1 shall be for the installation of conduit and 12-strand fiber from the new gate arm/ticket machine at the new Tippin Ave lot, along the Tippin Ave right of way, and then pull new 12-strand fiber through existing conduit back to the 2nd floor of the parking garage.
- **Bid Alternate #2 = CELL PHONE LOT MODIFICATIONS**
  - The plans for this project have been attached to this addendum.
  - The bid tab has been modified to incorporate the line items associated with
  - The scope of the cell phone lot modifications project is to provide open access to parking stalls which are being modified for the purpose of accommodating temporary and free parking for Airport patrons needing to use their cellular phone. The efforts associated with this project include, but are not limited to, removal of existing chainlink fencing, removal of existing landscaping, and removal of existing striping. Then, new striping, new chainlink fencing, and new asphalt driveway are to be installed. All disturbed areas shall then be restored with landscaping/groundcover to match the pre-existing conditions. All work shall be in accordance with the general notes, specifications, and construction plans included as part of this project manual. The contractor shall bid this project according to the constraints of the general notes, specifications, and construction plans. A site visit to determine any unforeseen issues is strongly recommended.
    The lump sum maintenance of traffic item shall include all signs, devices and other costs associated with maintaining traffic during the construction including weekend work. No night work shall be permitted on this project.
    Contractor's work shall include the necessary coordination of all existing utilities with respective owners and to timely address any potential conflicts with required work. The contractor shall be responsible for ensuring the irrigation system provides complete coverage for all landscaping to remain.
    Care shall be exercised to not cause any damage to adjacent infrastructure being left in-place during reconstruction. Any such damage shall be the responsibility of the contractor. All work shall be in accordance with the standards and specifications of the City of Pensacola.

CITY OF PENSACOLA

D.C. REEVES

MAYOR

COUNCIL MEMBERS

DISTRICT 1.	JENNIFER BRAHIER	TENIADE BROUGHTON	DISTRICT 5.
DISTRICT 2.	CHARLES BARE	ALLISON PATTON	DISTRICT 6.
DISTRICT 3.	CASEY JONES	DELARIAN WIGGINS	DISTRICT 7.
DISTRICT 4.	JARED MOORE		

PENSACOLA INTERNATIONAL AIRPORT
CELL PHONE LOT MODIFICATION

MAY 2024

BID NO: 24-028
ADDITIVE ALTERNATE #1

Sheet List Table	
Sheet Number	Sheet Title
--	COVER SHEET
C-1	GENERAL NOTES
C-2	Site-Plan

BID SET (NOT FOR CONSTRUCTION)
DEPARTMENT OF PUBLIC WORKS AND FACILITIES
ENGINEERING AND CONSTRUCTION SERVICES DIVISION

222 W. MAIN STREET
CITY HALL
PENSACOLA, FL. 32521-0052
(850)435-1645

REVISION(S): --
--

MATTHEW B. HINOTE LICENSE NO. 74549 STATE OF FLORIDA PROFESSIONAL ENGINEER

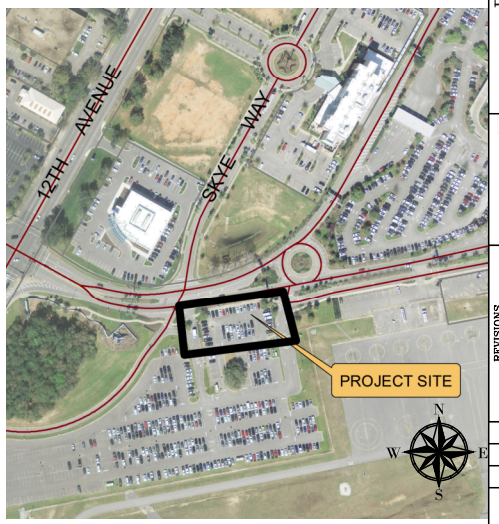
THIS DOCUMENT HAS BEEN DIGITALLY SIGNED BY MATTHEW B. HINOTE ON THE DATE INDICATED ON THE SEAL. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

GENERAL NOTES: (AS APPLICABLE TO PROJECT)

1. CONTRACTOR TO COORDINATE WITH LOCAL UTILITY COMPANIES FOR REMOVAL AND RELOCATION OF EXISTING UTILITY POLES, AERIAL LINES, WATER LINES, GAS LINES, AND OTHER UTILITIES AS NECESSARY.
2. ALL SITE WORK MATERIALS AND CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE CITY OF PENSACOLA STANDARD SPECIFICATIONS, UNLESS NOTED OTHERWISE IN THE CONSTRUCTION DOCUMENTS.
4. THE CONTRACTOR SHALL PLACE AND MAINTAIN ADEQUATE BARRICADES CONSTRUCTION SIGNS, FLASHING LIGHTS, TORCHES, RED LANTERNS AND GUARDS DURING PROGRESS OF CONSTRUCTION WORK AND UNTIL IT IS SAFE FOR BOTH PEDESTRIAN AND VEHICULAR TRAFFIC.
5. THE CONTRACTOR IS REQUIRED TO VISIT THE SITE AND FAMILIARIZE HIMSELF WITH THE PROJECT PRIOR TO BIDDING.
6. BURNING SHALL NOT BE PERMITTED ONSITE OR WITHIN CITY LIMITS.
7. THE CONTRACTOR SHALL COMPLY WITH ANY TESTING REQUIRED BY THE LOCAL GOVERNING AGENCY IN ADDITION TO THE TESTING REQUIREMENTS OUTLINED IN THE CONSTRUCTION DOCUMENTS. TESTING SHALL BE PAID FOR BY THE OWNER. CONTRACTOR SHALL COORDINATE AND ASSIST TESTING LABORATORIES WITH TESTING. ANY NECESSARY RE-TESTING SHALL BE PAID FOR BY THE CONTRACTOR.
8. EROSION AND SEDIMENTATION CONTROLS WILL BE PROVIDED AND MAINTAINED BY THE CONTRACTOR AT ALL TIMES AS PER CITY REQUIREMENTS.
9. THE CONTRACTOR SHALL TAKE WHATEVER STEPS NECESSARY TO PREVENT AND CONTROL EROSION AND SEDIMENTATION. AREAS OF CONTROL AND TYPICAL SECTION OF BARRIERS ARE SUGGESTIONS ONLY AND DO NOT RELIEVE THE CONTRACTOR OF ANY RESPONSIBILITY TO PREVENT AND CONTROL EROSION AND SEDIMENTATION.
10. ALL SUITABLE EXCESS MATERIAL EXCAVATED AND NOT USED AS FILL SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR AND STOCKPILED AS DIRECTED BY THE OWNER.
11. CLEAR AND GRUB ONLY AS NECESSARY TO COMPLETE NEW CONSTRUCTION.
12. CONTRACTOR SHALL COMPLETE ALL WORK INDICATED IN CONSTRUCTION DOCUMENTS USING HAND LABOR IF NECESSARY OR APPROPRIATE.
13. THESE DRAWINGS REPRESENT KNOWN STRUCTURES AND UTILITIES LOCATED IN THE PROJECT AREA. THE CONTRACTOR IS CAUTIONED THAT OTHER STRUCTURES AND UTILITIES, ABOVE OR BELOW GROUND, MAYBE ENCOUNTERED DURING THE COURSE OF THE PROJECT. THE CONTRACTOR SHOULD NOTIFY THE PROJECT ENGINEER IMMEDIATELY UPON ENCOUNTERING ANY UNEXPECTED STRUCTURE, UTILITY LINE, OR OTHER UNUSUAL CONDITION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT LOCATION AND DEPTH OF EXISTING UTILITIES AND TO DETERMINE IF OTHER UTILITIES WILL BE ENCOUNTERED DURING THE COURSE OF THE WORK AND TAKE WHATEVER STEPS NECESSARY TO PROVIDE FOR THEIR PROTECTION.
14. FAILURE OF THE PLANS TO SHOW THE EXISTENCE OF ANY UNDERGROUND UTILITY, STRUCTURES, ETC., SHALL NOT RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY OF LOCATING, PRESERVING AND PROTECTING SAID UTILITY OR STRUCTURE.
18. CONTRACTOR IS TO NOTIFY CITY OF PENSACOLA 48 HOURS PRIOR TO BEGINNING CONSTRUCTION.
21. THE CONTRACTOR SHALL NOTIFY THE OWNER OF ANY CONFLICTS BETWEEN VENDOR DRAWINGS, EXISTING CONDITIONS, AND THE CONSTRUCTION DOCUMENTS.
22. STAGING AREA AND EQUIPMENT STORAGE SHALL BE AS SHOWN ON PLANS AND AS DESIGNATED BY THE GENERAL CONTRACTOR AND THE OWNER. SEE STAGING PLAN FOR ADDITIONAL NOTES.
23. WHERE SOD IS BEING INSTALLED, TOPSOIL SHALL BE USED AS A BASE AT LEAST SIX INCHES DEEP.
25. THE pH OF THE TOPSOIL ONSITE AND ANY IMPORTED TOPSOIL SHALL BE DETERMINED. IF THE pH IS BELOW 5.0, SUFFICIENT LIME SHALL BE ADDED TO PROVIDE A pH BETWEEN 5.5 AND 6.5 THE LIME SHALL BE THOROUGHLY INCORPORATED INTO THE TOP THREE OR FOUR INCHES OF THE SOIL. LIME AND FERTILIZER MAY BE APPLIED IN ONE OPERATION.
26. SUBMIT pH TEST RESULTS AND ANY OTHER TEST RESULTS TO THE ENGINEER AND CITY OF PENSACOLA FOR APPROVAL.
32. CONTRACTOR TO PROVIDE TEMPORARY PROTECTION TO TREES TO REMAIN (SEE DETAIL). FOR ANY TREE SHOWN TO REMAIN THAT IS DAMAGED BY THE CONTRACTOR'S FORCES, THE CONTRACTOR SHALL PAY THE CITY OF PENSACOLA THE SUM OF $150.00 DOLLARS PER INCH DIAMETER OF TREE THAT IS DAMAGED.
33. CONTRACTOR SHALL HAUL AWAY ALL DEBRIS AND DISPOSE OF OFF-SITE IN A LEGAL AND RESPONSIBLE MANNER.
39. EROSION SHALL BE CONTROLLED BY THE USE OF A HAY BALE BARRIER/SILT FENCE AS SHOWN ON PLANS OR WHATEVER MEANS NECESSARY AND SHALL BE SETUP PRIOR TO COMMENCING CONSTRUCTION. THE EROSION CONTROL BARRIER SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION BY THE CONTRACTOR. UPON COMPLETION OF THE PROJECT, THE RETENTION AREA SHALL BE CLEANED OF SILT, STABILIZATION OF ALL DISTURBED AREAS SHALL BE ACCOMPLISHED, AND THE RETENTION AREA IS TO BE RECONFIGURED TO DESIGN CROSS-SECTION, AND SODDED.
40. CONTRACTOR SHALL NOTIFY SUNSHINE ONE UTILITIES 48 HOURS IN ADVANCE PRIOR TO DIGGING WITHIN R/W; 1-800-432-4770.
41. NO DEVIATIONS OR REVISIONS FROM THESE PLANS BY THE CONTRACTOR SHALL BE ALLOWED WITHOUT WRITTEN PERMISSION FROM THE CITY OF PENSACOLA.
42. ALL WORK SHALL BE CONFINED TO WITHIN THE CITY R/W OR PROPERTY LIMITS.
46. CONTRACTOR SHALL COORDINATE HIS WORK AND COOPERATE WITH OTHER CONTRACTORS WORKING AROUND THE PROJECT AREA.
47. THE CONTRACTOR SHALL DELIVER THE STAGING AREAS TO THE OWNER ON OR BEFORE THE DATE OF COMPLETION OF CONSTRUCTION AND SAME SHALL BE IN AS GOOD AS OR BETTER CONDITION AS EXISTED PRIOR TO CONSTRUCTION.
48. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING MATERIAL DOES NOT SPILL, LEAK, OR FALL FROM TRUCKS HAULING MATERIAL TO OR AWAY FROM SITE, INCLUDING MATERIAL FALLING FROM TIRES. SHOULD THE STATE OR COUNTY REQUIRE SWEEPING AND CLEANING OF ROADWAYS DUE TO THE ABOVE, THE SAME SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR ANY FINES DUE TO THE ABOVE.
49. ALL DIMENSIONS ARE TO THE EDGE OF PAVEMENT, UNLESS OTHERWISE NOTED.
55. ALL VALVE BOXES SHALL BE SET FLUSH WITH GRADE.
58. WHERE NEW PAVEMENT MEETS EXISTING PAVEMENT, EXISTING PAVEMENT SHALL BE SAWCUT FOR A STRAIGHT EDGE AND CLEAN JOINT. SEE DETAIL.
59. WHERE NEW CURB JOINS EXISTING CURB, STYLE SHALL MATCH UNLESS OTHERWISE NOTED.
62. THE CONTRACTOR SHALL NOT BLOCK OR OBSTRUCT ANY ROADS OR DRIVES WITHOUT FIRST RECEIVING PERMISSION FROM THE CITY OF PENSACOLA TO DO SO.
64. CONTRACTOR SHALL ADHERE TO THE CITY OF PENSACOLA'S AND OTHER AUTHORITIES HAVING JURISDICTION RULES CONCERNING SAFETY.
67. CONTRACTOR SHALL CLEANUP ENTIRE SITE INCLUDING STAGING AREAS AT LEAST TWO TIMES PER WEEK. THIS SHALL INCLUDE LOCATING TRASH/SCRAP RECEPTACLES AT APPROPRIATE LOCATIONS AROUND THE SITE. CONTRACTOR SHALL PICK UP ALL ROCKS, METAL, PIPE, NAILS, NUTS, BOLTS, BOARDS, PAPER, TRASH, ETC AT LEAST TWICE A WEEK. CONTRACTOR SHALL INCLUDE COST OF SAME IN BID.
68. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL THE IRRIGATION SYSTEM IN THE STAGING AREA AND PROVIDE FOR IT'S PROTECTION, INCLUDING VALVES AND SPRINKLER HEADS. REPLACE ALL PARTS OF IRRIGATION SYSTEM DAMAGED OR REMOVED. COORDINATE WITH OWNER FOR LOCATION AND REPLACEMENT. INCLUDE COST OF SAME IN BID.
69. CONTRACTOR SHALL RESTORE ALL STAGING AREAS TO AS GOOD AS OR BETTER CONDITION THAN EXISTED PRIOR TO CONSTRUCTION. THIS INCLUDES IRRIGATION AND SOD REPLACEMENT IF NECESSARY. ANY DISTURBED AREAS THAT WILL BE LEFT EXPOSED MORE THAN 20 DAYS, AND NOT SUBJECT TO CONSTRUCTION TRAFFIC, WILL IMMEDIATELY RECEIVE A TEMPORARY SEEDING. IF THE SEASON PREVENTS THE ESTABLISHMENT OF A TEMPORARY COVER, THE DISTURBED AREAS WILL BE MULCHED WITH STRAW, OR EQUIVALENT MATERIAL, AT A RATE OF TWO (2) TONS PER ACRE.
71. IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING, ALL CRITICAL AREAS SUBJECT TO EROSION (I.E. STEEP SLOPES AND ROADWAY EMBANKMENTS) WILL RECEIVE A TEMPORARY SEEDING IN COMBINATION WITH STRAW MULCH OR A SUITABLE EQUIVALENT, AT A THICKNESS OF TWO (2) TO FOUR (4) INCHES MIXED WITH THE TOP TWO (2) INCHES OF SOIL.
76. ALL SOIL WASHED, DROPPED, SPILLED OR TRACKED OUTSIDE THE LIMITS OF DISTURBANCE OR ONTO PUBLIC RIGHT-OF-WAY WILL BE REMOVED IMMEDIATELY.
77. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY EROSION OR SEDIMENTATION THAT MAY OCCUR BELOW STORMWATER OUTFALLS OR OFF SITE AS A RESULT OF CONSTRUCTION OF THE PROJECT.
78. ALL SOIL STOCKPILES ARE TO BE TEMPORARILY STABILIZED IN ACCORDANCE WITH SOIL EROSION AND SEDIMENT CONTROL NOTE NUMBER 2 (ABOVE).
82. ANY AREAS USED FOR FOR THE CONTRACTOR'S STAGING, INCLUDING BUT NOT LIMITED TO, TEMPORARY STORAGE OF STOCKPILED MATERIALS (E.G. CRUSHED STONE, QUARRY PROCESS STONE, SELECT FILL, EXCAVATED MATERIALS, ETC.) SHALL BE ENTIRELY PROTECTED BY A SLIT FENCE ALONG THE LOW ELEVATION SIDE TO CONTROL SEDIMENT RUNOFF.
84. ALL TREES, SHRUBS, PLANTS AND ASSOCIATED LANDSCAPE INFRASTRUCTURE IN PUBLIC R/W SHALL BE REMOVED ONLY AS NECESSARY AND REPLACED TO THE SATISFACTION OF THE CITY.
86. THE LOCATION OF THE CONTRACTOR'S MATERIAL AND EQUIPMENT LAY-DOWN AREA SHALL BE APPROVED BY THE CITY PRIOR TO SECURING SUCH ARRANGEMENTS, AS DIRECTLY RELATED TO THE PROJECT. THE LAY-DOWN AREA SHALL BE COMPLETELY SECURED UTILIZING TEMPORARY 6' CHAIN-LINK CONSTRUCTION FENCING WITH LOCKED GATES AND PROPER EROSION CONTROL BARRIER, AS NECESSARY, AND SHALL BE KEPT IN A NEAT AND UNIFORM MANNER AT ALL TIMES, AS DETERMINED BY THE CITY. ONLY MATERIALS AND EQUIPMENT DIRECTLY REQUIRED TO FACILITATE THE CURRENT PROGRESS OF THE PROJECT CONSTRUCTION SHALL BE STORED IN THE LAY-DOWN AREA AT ANY GIVEN TIME AND ALL OTHER MATERIALS AND EQUIPMENT SHALL BE IMMEDIATELY AND/OR AT THE REQUEST OF THE CITY.
88. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING NEW DRIVEWAYS AND REPLACING EXISTING DRIVEWAYS AS SHOWN ON THE PLANS OR AS OTHERWISE DIRECTED BY THE CITY. SLOPES ON DRIVEWAYS SHALL NOT EXCEED 4:1 (H/V) AND THE CONTRACTOR SHALL SECURE PERMISSION FROM PRIVATE PROPERTY OWNERS TO SLOPE DRIVEWAY BACK ONTO PRIVATE PROPERTY AS NECESSARY TO ACHIEVE THE SLOPE REQUIREMENT AND SHALL BE APPROVED BY THE CITY. ALL EARTHWORK ASSOCIATED WITH CONSTRUCTION OF DRIVEWAYS SHALL BE INCLUDED IN THE CONTRACT PAY ITEM FOR SUBJECT WORK.
89. THE CONTRACTOR'S PROPOSED SCHEDULE OF WORK FOR BOTH STANDARD (M-F, 7AM-4PM) AND NON-STANDARD HOURS SHALL BE REVIEWED AND APPROVED BY THE CITY AND SUBMITTED FOR REVIEW IN WRITING A MINIMUM OF SEVEN (7) CALENDAR DAYS PRIOR TO COMMENCEMENT OF THE PROPOSED WORK SCHEDULE. THE CITY RESERVES THE RIGHT TO DENY WORK ON ANY PROPOSED DAY IF CERTAIN PUBLIC EVENTS, ENVIRONMENTAL CONDITIONS, NEIGHBORHOOD CIRCUMSTANCES, ETC., REQUIRE SUCH ACTION. THE CONTRACTOR SHALL ACKNOWLEDGE ULTIMATE RESPONSIBILITY OF THE JOB SITE DURING CONSTRUCTION (24 HRS/DAY) FOR THE ENTIRE DURATION OF THE PROJECT, REGARDLESS OF APPROVED WORK SCHEDULES AND HOURS OF OPERATION.
90. THE CONTRACTOR SHALL PROVIDE CONTINUED (TEMPORARY) VEHICULAR/PEDESTRIAN ACCESS TO PUBLIC/PRIVATE PROPERTY IN A SAFE AND FEASIBLE MANNER IN AREAS IMPACTED BY THE PROJECT CONSTRUCTION UNTIL ALL SUCH ACCESS CAN BE RESTORED PERMANENTLY. ALL TEMPORARY ACCESS PLANS SHALL BE SUBMITTED TO THE CITY FOR REVIEW AND APPROVAL A MINIMUM OF FIVE (5) CALENDAR DAYS PRIOR TO IMPLEMENTING ANY PROPOSED MEASURES AND COORDINATION WITH IMPACTED RESIDENTS AND/OR PROPERTY OWNERS (OR OWNER REPRESENTATIVES) MAY BE REQUIRED OF THE CONTRACTOR AS PART OF THE TEMPORARY ACCESS PLAN(S). ALL COST FOR SUCH TEMPORARY PLANS AND MEASURES SHALL BE COVERED/ INCLUDED IN THE CONTRACTORS BID.

UTILITY CONTACTS

UTILITY COMPANY:	CONTACT / PHONE / FAX / E-MAIL:
SUNSHINE ONE	1-800-432-4770
ECUA ENGINEERING DEPARTMENT 3363 WEST PARK PLACE PENSACOLA, FLORIDA 32505	BRANDON KNIGHT (TEL) 969-6650 (FAX) 494-7335 BRANDON.KNIGHT@ECUA.ORG
AT& T 605 GARDEN STREET PENSACOLA, FLORIDA 32501	ROB ST. PIERRE (TEL)436-1701 (C)-850-501-9161 (FAX)-459-1498 RS634Y@ATT.COM
COX COMMUNICATIONS 2255 LaVISTA DRIVE PENSACOLA, FLORIDA 32504	TROY YOUNG (FIELD INSPECTOR) (OFFICE): 850-857-4510 (C): 850-232-5044 GARY HARRELL (CONSTRUCTION SUPERVISOR) (OFFICE): 352-337-2025 (C): 352-339-2118
PENSACOLA ENERGY 1625 ATWOOD DRIVE PENSACOLA, FLORIDA 32514	DIANE MOORE (TEL) 474-5319 (FAX): 474-5330 DMOORE@CITYOFPENSACOLA.COM WWW.ESPNATURALGAS.COM
GULF POWER - ECUA LIASONS 2501 WEST WRIGHT STREET PENSACOLA, FL 32505	TERRY RUSSELL (TEL): 505-5348 (CELL): 324-3126 TLRUSSEL@SOUTHERNCO.COM
GULF POWER ONE ENERGY PLACE PENSACOLA, FLORIDA 32520-0047	CHAD SWAILS (TEL): 429-2446 CESWAILS@SOUTHERNCO.COM
GULF SOUTH PIPELINE 480 VAN PELT LANE PENSACOLA, FL 32505	(TEL): 484-0554 (FAX): 484-0557
EARTHLINK NET. 1791 O.G. SKINNER DRIVE WEST POINT, GA. 31833	NETWORK OPERATIONS 800-374-2350 FRANKWILCOX@CORP.EARTHLINK.COM
LEVEL 3 COMMUNICATIONS 1025 ELDORADO BOULEVARD BROOMFIELD, CO. 80021	KEN WHITING, NETWORK RELOCATIONS TEL:(720) 888-5686 FAX:(720) 888-3193
CENTURY LINK 2425 NORTH McKENZIE STREET FOLEY, AL. 36535	TEL:(251) 952-5100 FAX:(251) 971-1856
SPRINT 10 EAST DRURY KISSIMMEE, FL. 34744	TEL:(407) 932-1560 FAX:(407) 932-0489
MCI 812 OHIO AVENUE LYNN HAVEN, FL. 32444	OSP MAINTENANCE SERVICES TEL:(850) 265-3652 PAGER:(877) 914-3845 CHUCK.VRUNICK@VERISIONBUSINESS.COM



VICINITY MAP
N.T.S.

CITY OF PENSACOLA, FLORIDA
DEPARTMENT OF PUBLIC WORKS AND FACILITIES
ENGINEERING AND CONSTRUCTION SERVICES DIVISION
222 W. MAIN STREET PENSACOLA, FL 32502-5836
(850) 435-1670

PENSACOLA
FLORIDA'S FIRST & FUTURE

PENSACOLA INTERNATIONAL AIRPORT
CELL PHONE LOT MODIFICATION
GENERAL NOTES

NOT VALID FOR CONSTRUCTION WITHOUT SEAL

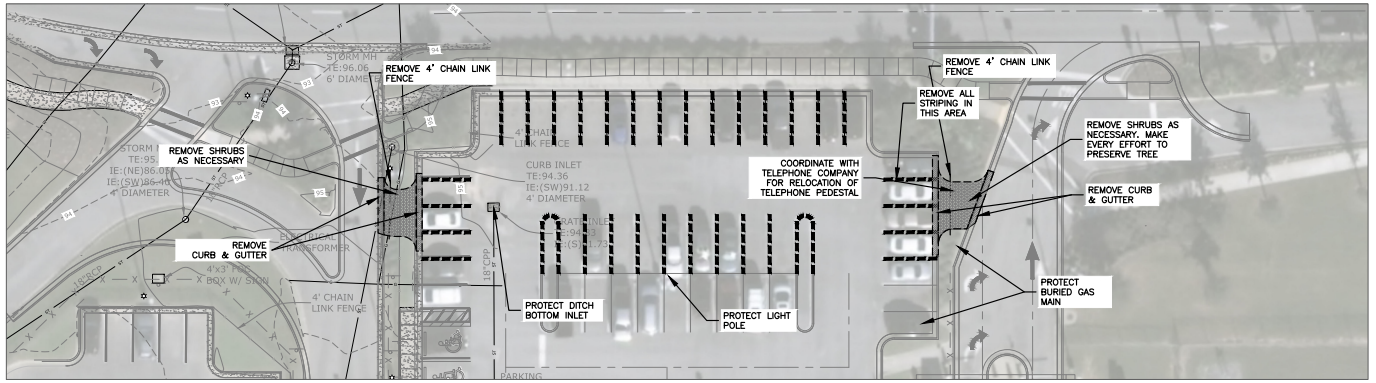
REVISIONS			
MARK	DESCRIPTION	BY	DATE

BID NUMBER
23-###

DRAWN BY	DATE
CBJ	6-23
CHECKED	DATE
BH	6-23

SHEET NO.
C-1

L:\Projects\Airport\Cell Phone Lot Modification Project\DRAWINGS\C-1 GENERAL NOTES.dwg, 6/5/2023 4:02:25 PM



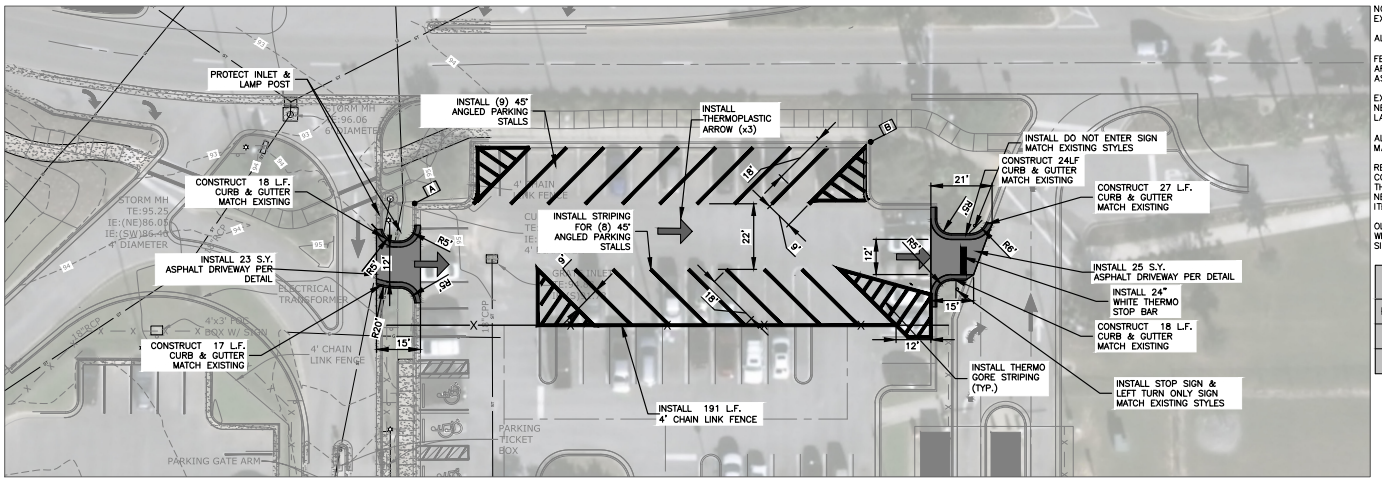
EXISTING PARKING PLAN

PROPOSED LEGEND

- LANDSCAPING REMOVAL
- CURB REMOVAL
- EXISTING STRIPING TO BE REMOVED
- PROPOSED PAVEMENT MARKINGS
- NEW CURB
- NEW 1.5" SP-12.5

PLAN SCALE

(IN FEET)
1 inch = 20 ft.



PROPOSED PARKING PLAN

NOTE: EXISTING STRIPING REMOVAL SHALL BE DEFINED AS COMPLETE REMOVAL OF EXISTING STRIPING TO EXPOSE EXISTING ASPHALT BENEATH STRIPE.

ALL PROPOSED STRIPING SHALL BE THERMOPLASTIC

FENCING AND POSTS SHALL BE INSTALLED ON/IN EXISTING ASPHALT IN SOME AREAS. EVEN SO, POSTS SHALL BE SET IN ACCORDANCE WITH THE DETAIL AND ASPHALT RESTORED AROUND NEW FENCE POSTS.

EXISTING IRRIGATION SHALL BE REMOVED IN SUCH AS WAY AS TO ACCOMODATE NEW DRIVEWAYS WHILE STILL PROVIDING COMPLETE IRRIGATION COVERAGE FOR LANDSCAPING TO REMAIN.

ALL DISTURBED AREAS SHALL BE RESTORED WITH LANDSCAPING/GROUND COVER TO MATCH THE PRE-EXISTING CONDITIONS.

REMOVE AND STOCKPILE ALL EXISTING WHEEL STOPS WITHIN LIMITS OF CONSTRUCTION. REINSTALL WITHIN ANGLED STALLS PER DETAIL BELOW. SHOULD THERE NOT BE ENOUGH REUSEABLE WHEEL STOPS, CONTRACTOR SHALL SUPPLY NEW WHEEL STOPS AND BID ACCORDINGLY WITHIN THE STRIPING AND SIGNAGE LINE ITEM.

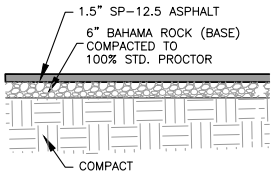
OLD DOWEL HOLES LEFT BEHIND BY REMOVAL OF WHEEL STOPS SHALL BE FILLED WITH EPOXY. CONTRACTOR SHALL BID ACCORDINGLY WITHIN THE STRIPING AND SIGNAGE LINE ITEM.

COORDINATE TABLE

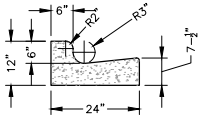
Point #	X	Y	DESCRIPTION
A	-332793.5586	1199654.7158	BENCHMARK #1
B	-332814.5586	1199810.2158	BENCHMARK #2

PLAN SCALE

(IN FEET)
1 inch = 20 ft.

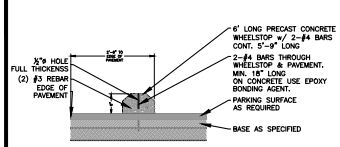


PAVING SECTION DETAIL FOR DRIVEWAYS
SCALE: N.T.S.

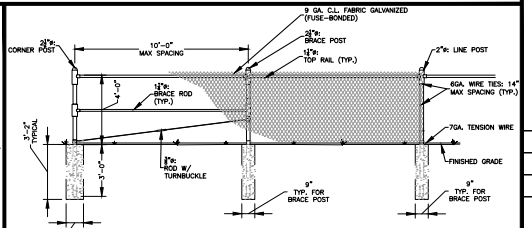


NOTE:
1. ALL CURB TO HAVE DUMMY JOINT AT 10' ON CENTER. MIN. DEPTH OF JOINT TO BE 2".
2. EXPANSION JOINTS ARE TO BE 60' ON CENTER. TYPICAL FOR ALL CURB.
3. CONCRETE TO BE 3,000 PSI @28 DAYS W/FIBER MESH

TYPE "C" CURB & GUTTER SECTION
SCALE: N.T.S.



WHEELSTOP
SCALE: N.T.S.



4' CHAIN LINK FENCE DETAIL
SCALE: N.T.S.

CITY OF PENSACOLA, FLORIDA
DEPARTMENT OF PUBLIC WORKS AND FACILITIES
ENGINEERING AND CONSTRUCTION MANAGEMENT DIVISION
221 E. GARD STREET, PENSACOLA, FL 32502-6032
CITY HALL
(850) 435-1645

PENSACOLA
FLORIDA'S FIRST & FUTURE

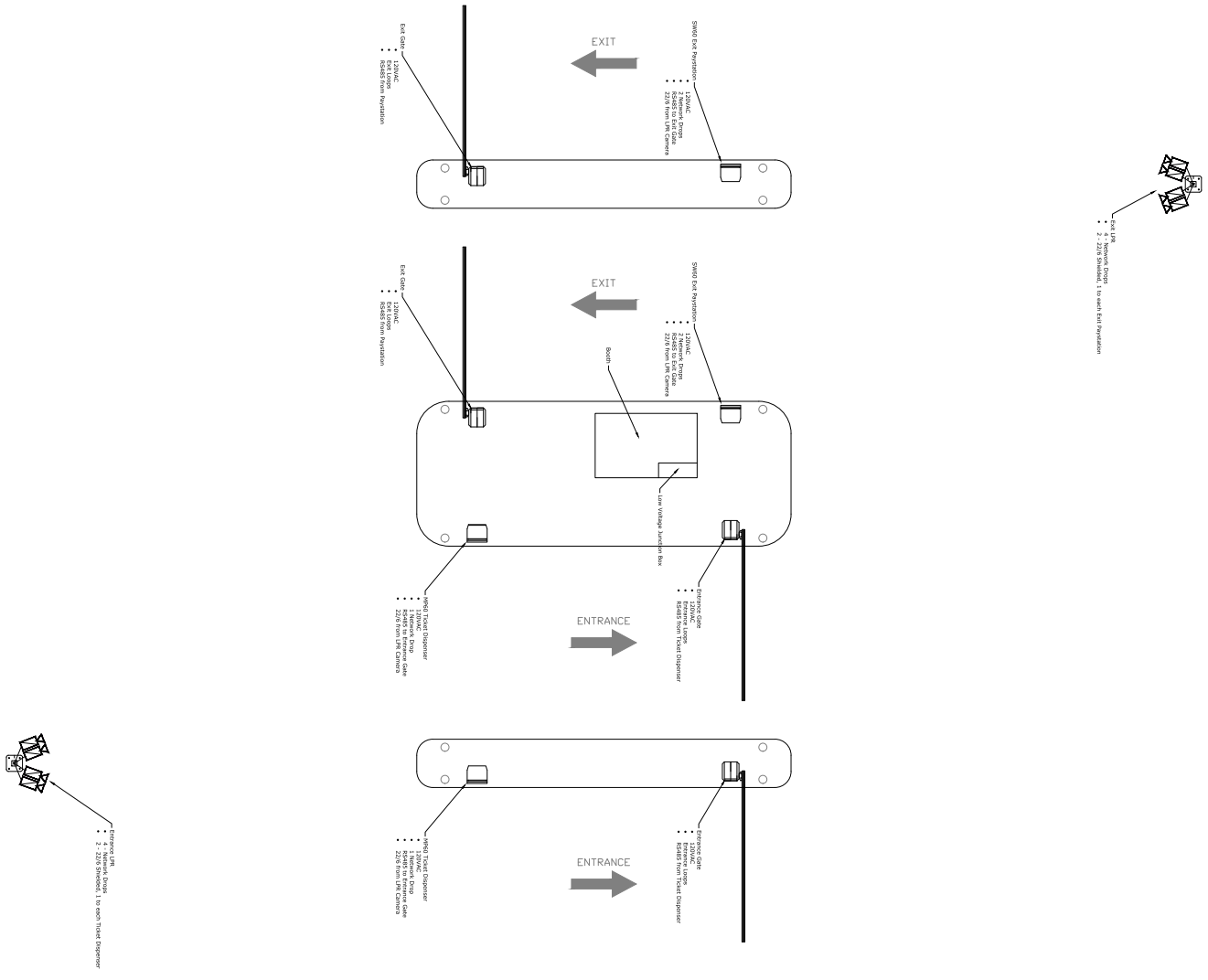
PENSACOLA INTERNATIONAL AIRPORT
CELL PHONE LOT MODIFICATION -

MATTHEW B. HINDLE
LICENSE NO. 74549
STATE OF FLORIDA
PROFESSIONAL ENGINEER

THIS DOCUMENT HAS BEEN DIGITALLY SIGNED BY MATTHEW B. HINDLE ON THE DATE ADJACENT TO THE SEAL. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

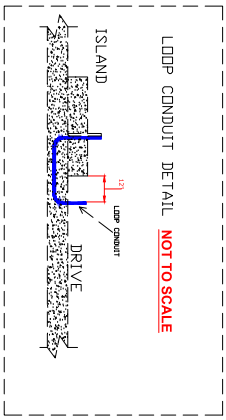
BID NUMBER	
23-####	
DRAWN BY	DATE
CBJ	4-23
CHECKED	DATE
BH	4-23

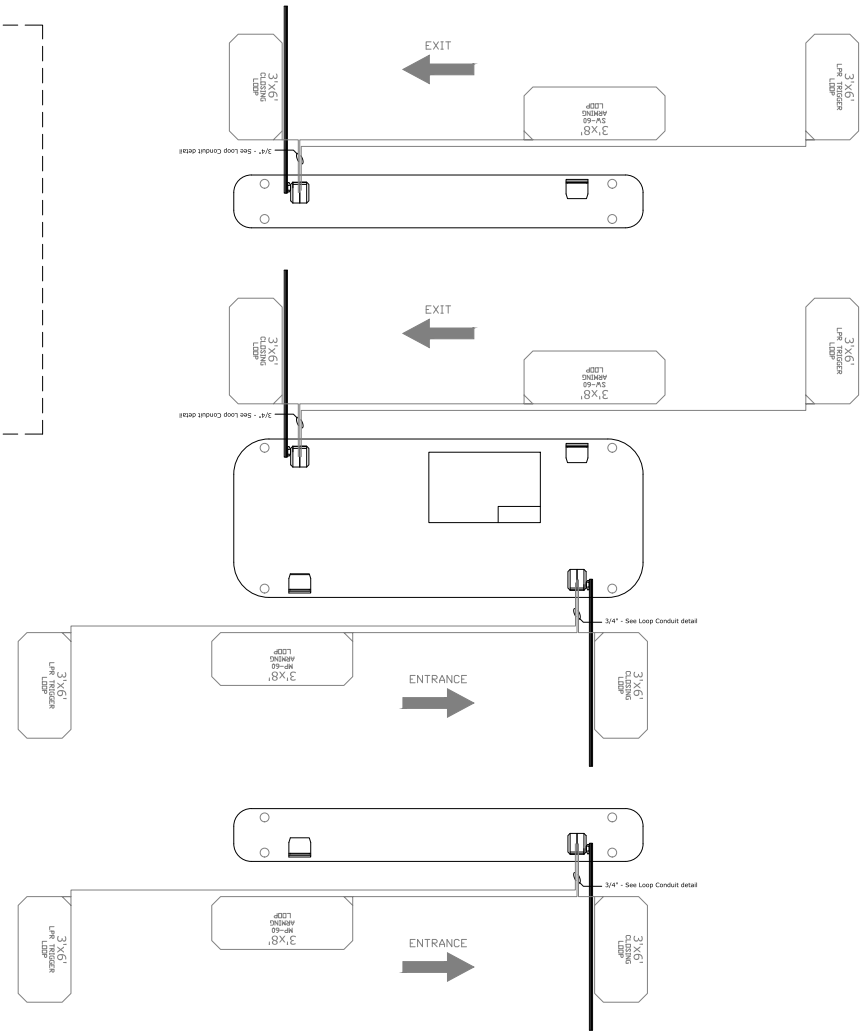
SHEET NO.
C-1



P1	Overall Layout	PROJECT:	PENSACOLA AIRPORT TIBA AND LPR		
		LOCATION:	PENSACOLA AIRPORT		
		PURPOSE:	SHOP DRAWINGS		
		DRAWN BY:	FRANK GRIGGS	SCALE: 1:40	DATE: 5/2/2024

GORRIE REGAN
279 SNOW DRIVE
BIRMINGHAM, AL 35209
1-800-223-3277
(205) 871-7395
WWW.GORRIEREGAN.COM





P2	Loops	PROJECT:	PENSACOLA AIRPORT TIBA AND LPR		
		LOCATION:	PENSACOLA AIRPORT		
		PURPOSE:	SHOP DRAWINGS		
		DRAWN BY:	FRANK GRIGGS	SCALE: 1:40	DATE: 5/2/2024

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BIRMINGHAM, AL 35209
1-800-223-3277
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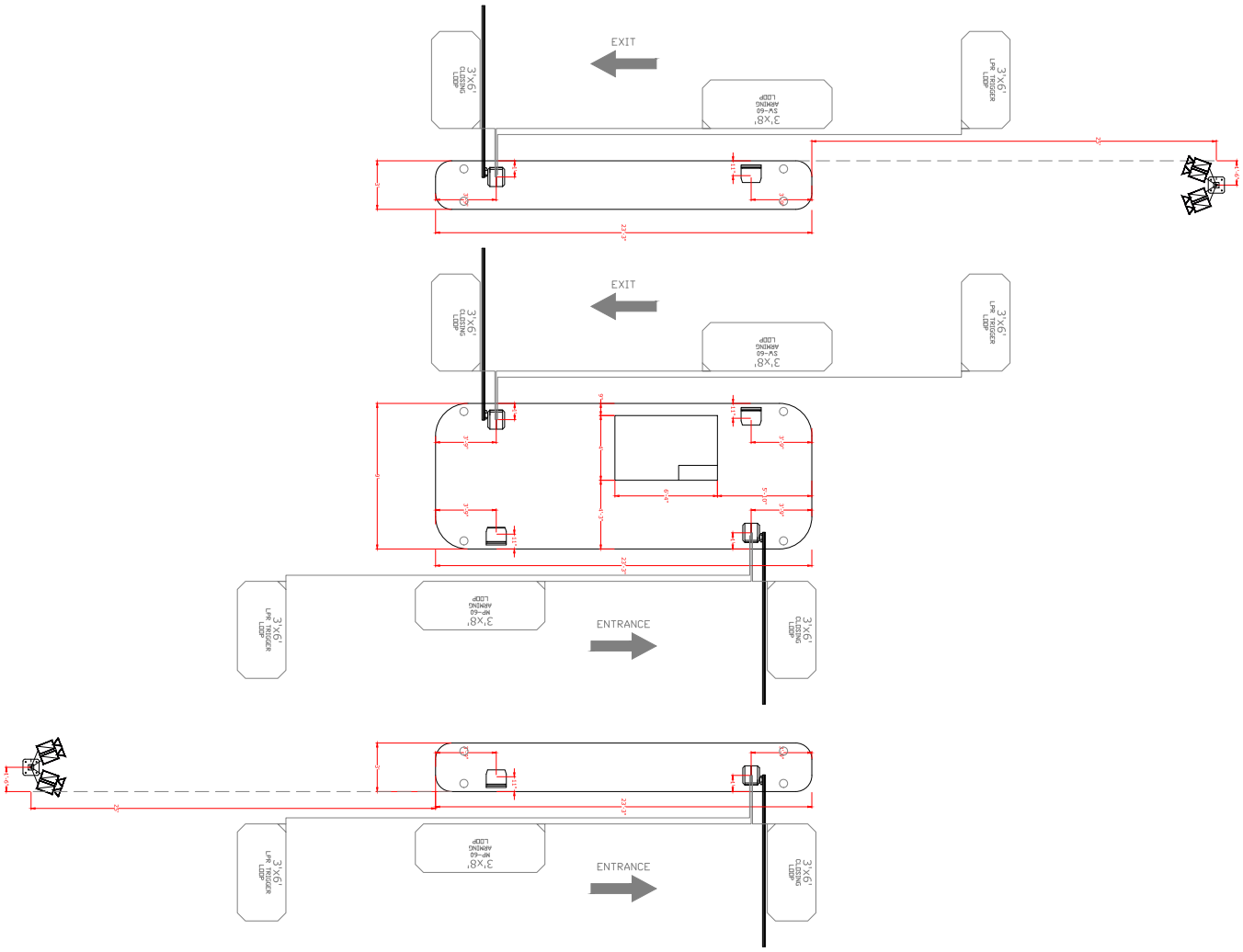

P3	Dimensions	PROJECT: PENSACOLA AIRPORT TIBA AND LPR			
		LOCATION: PENSACOLA AIRPORT			
		PURPOSE: SHOP DRAWINGS			
		DRAWN BY: FRANK GRIGGS	SCALE: 1:40	DATE: 5/2/2024	

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BIRMINGHAM, AL 35209
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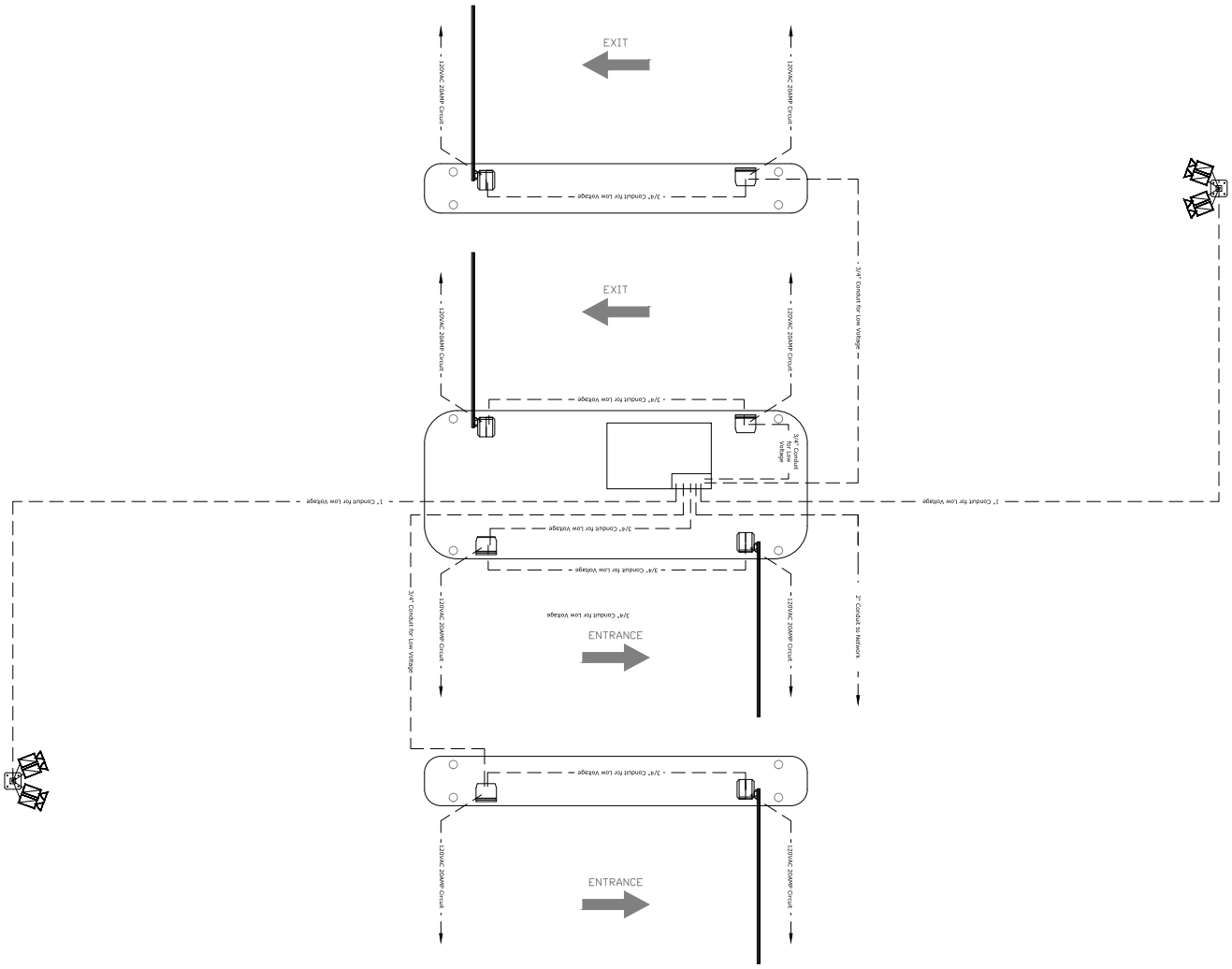


P4	Conduit Requirements	PROJECT:	PENSACOLA AIRPORT TIBA AND LPR		
		LOCATION:	PENSACOLA AIRPORT		
		PURPOSE:	SHOP DRAWINGS		
		DRAWN BY:	FRANK GRIGGS	SCALE: 1:40	DATE: 5/2/2024

GORRIE REGAN
279 SNOW DRIVE
BIRMINGHAM, AL 35209
1-800-223-3277
(205) 871-7395
WWW.GORRIEREGAN.COM

Project Colors

C1	Paint to match PMS 322C Teal Green
C2	Paint to match PMS 2995C Light Blue
C3	Paint to match PMS 294C Dark Blue
C4	Paint to match Matthews Brushed Silver MP30136
C5	Opaque vinyl to match 3M Scotchcal 7125-12 Black / or Painted to match Matthews Black
C6	Opaque vinyl to match 3M Scotchcal 7125-10 White / or Painted to match Matthews White
C7	Opaque vinyl to match 3M Scotchcal 7125-13 Tomato Red / or Painted to match Matthews Bright Red

SPECIFICATIONS:

MATERIALS:
All Aluminum Construction with all Seams Welded, Bonded and Sanded Smooth and with No Visible Fasteners

SIGN FACES:
.125" Aluminum on All Sign Faces and Straight Returns and .063" Aluminum on All Curved Returns

PROJECT LOGOMARK:
All Aluminum 1" Deep Reverse Channel Construction with .125" Faces and .063" Returns Stud Mounted

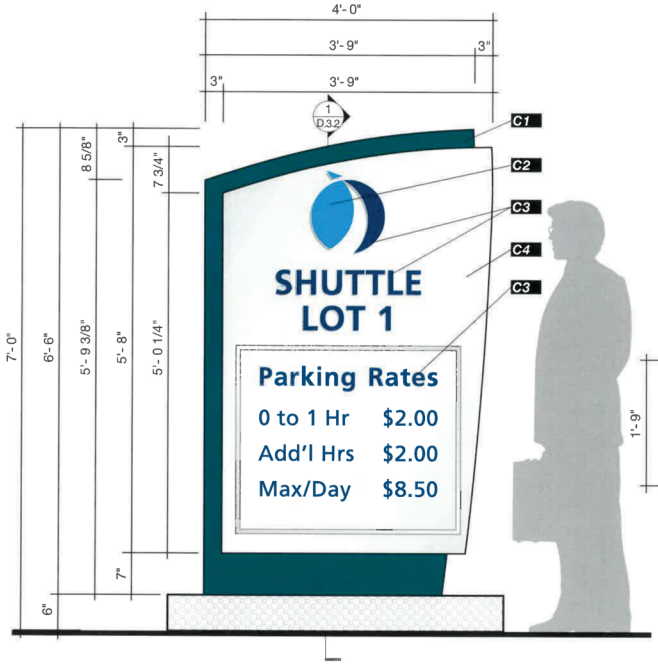
LIGHTING:
Externally Illuminated with Ground Mounted Halogen Fixtures

PRIMARY IDENTIFICATION COPY:
Painted 1/2" Thick Cut Plate Acrylic Letters Stud Mounted

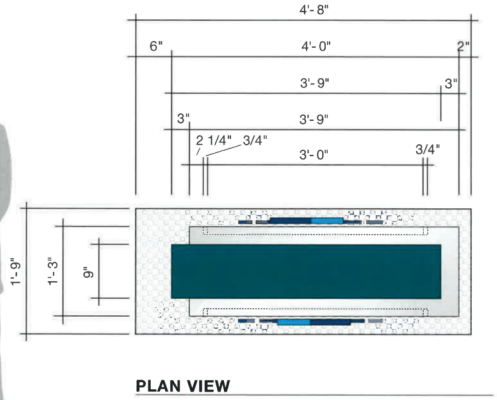
CHANGEABLE MESSAGE PANEL TEXT:
Computer Cut Vinyl Copy

FINISHES:
Painted with Polyurethane Cross Referencing the Numbers in the Black Rectangles with the Color Code on Sheet A.2 of this Package

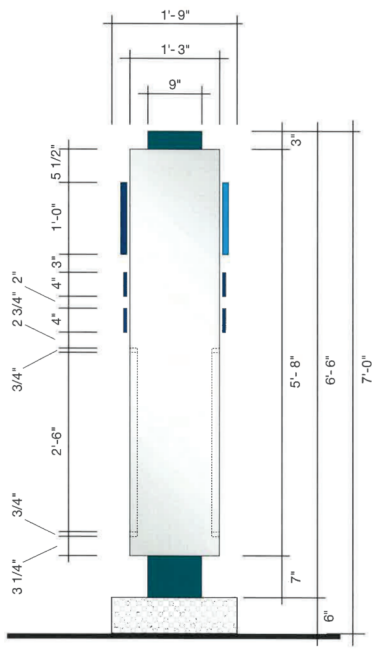
MOUNTING:
Ground Mount Sign into Textured Reinforced Concrete Footing with Steel Support Columns per FL Code



UNIT ELEVATION



PLAN VIEW



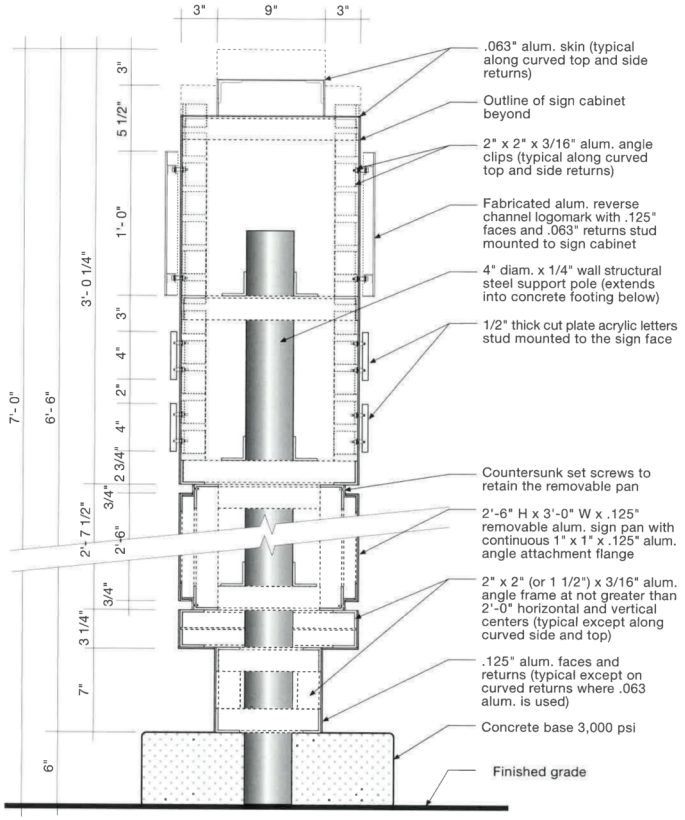
END VIEW

SHEET G.3.2

Ground Mounted Area ID - Type C2
TDA Project No.: 10-04-1317 / Scale: 3/8"=1'-0"
24 MAY 2010

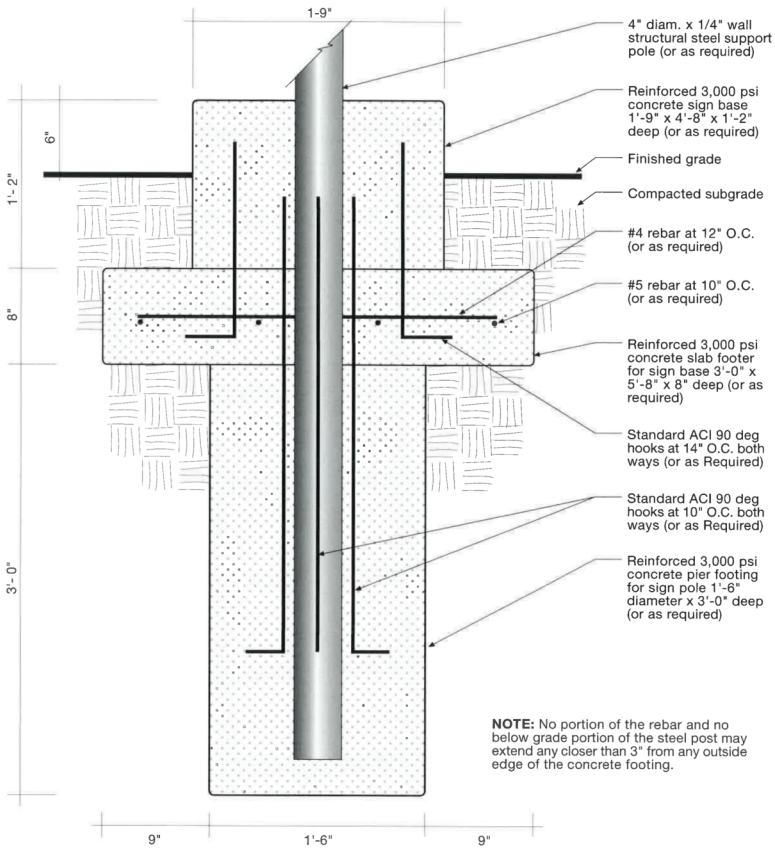
Pensacola Gulf Coast Regional Airport

Turpin Design Assoc



1 D.3.2 **Section Detail - Type C2**

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



NOTE: No portion of the rebar and no below grade portion of the steel post may extend any closer than 3" from any outside edge of the concrete footing.

2 D.3.2 **Footing Detail - Type C2**

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

Architectural & Engineering Specifications

TIBA PARKING SYSTEMS
TEL: +1 614 864 2222

WWW.TIBAPARKING.COM

VERSION 4.8
JUNE 07, 2022

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Limits of Liability/Disclaimer of warranty

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Feedback

We welcome comments about our technical documentation. Your input will help us to improve our printed and online customer support.

Email your comments to: Documentation@tibaparking.com

Revision History

Date	Doc Ver	Authors	Release Description
Nov 2010	1.0	Levi Rinkoff	Initial Document
Nov 2012	2.0	Levi Rinkoff	Revisions
Dec 2015	3.0	Levi Rinkoff	Specifications updated, Template update
Dec 2015	4.5	Levi Rinkoff	Doc & template refresh
June 2021	4.6	Simon Wrigley / Levi Rinkoff	Complete review of the document and updates.
May 2022	4.7	Simon Wrigley / Kirk Hillquist, Guy Glick	Additional review

Table of Contents

1 General

1.1 Document Purpose

This document is intended for parking system architects and engineers who wish to gain an understanding of the TIBA parking system, which offers the most complete range of hardware, software and cloud-based products for parking operators and owners in the parking industry today.

1.2 PARCS - Objectives

The Parking Access and Revenue Control System (PARCS) shall meet the following objectives:

1. Furnish and install a complete Parking Access and Revenue Control System (PARCS) for off-street mixed usage, hotels, university parking facilities.
2. The PARCS shall be a combination of equipment, subsystems, and supporting infrastructure that allows a parking facility operator to accurately calculate, collect, track, and report revenues for parking within one or more facilities.
3. The PARCS shall also monitor and control entry and exit to and from those facilities.
4. The PARCS shall manage facilities that operate 24/7 for contract and transient parkers but may not be attended at all times.
5. The PARCS shall be sufficiently robust to simultaneously handle multi-lot facilities.

1.3 General Functionality

The PARCS shall:

1. Account for all revenue, by facility, lane, employee, customer, event, program, payment method, and time-period, with complete audit trails (any transaction shall be completely auditable from start to finish).
2. Minimize theft and loss of revenue, with accounting for lost or stolen tickets.
3. Maintain a PCI/DSS-compliant environment, consistent with evolving standards and requirements.
4. Provide flexible rate structures capable of handling parking customers of all types, and with the added ability to generate additional new parking programs at any time.
5. Accurately calculate appropriate fees for all manners of transactions.
6. Increase efficiency of operations and maintenance.
7. Provide full reporting (revenue and statistics), with flexibility in content, formatting, and timing of the pertinent operational and management reports.
8. Ensure flexibility for any future need to update, upgrade, and/or expand the system

readily (either additional lanes or additional facilities).

9. Provide an intuitive and user-friendly interface for customers and operating personnel.
10. Be fully protected against and not affected by weather/environmental conditions, including temperature extremes, humidity, rain, dust, RFI/EMI, and static electricity.
11. Not emit excessive heat, RFI/EMI, static electricity, or fumes.
12. Meet all ADA requirements (federal, state, local) as of the date of acceptance, along with any requirements that are published but due to be implemented later.
13. All equipment shall be UL or equivalent listed.

1.4 Standards & Requirements

1. The design and installation of the proposed PARCS shall conform to the following referenced codes, regulations, and standards as applicable:
2. All equipment shall be new, in current production, and the standard products of a manufacturer of PARCS equipment. Manufacturer shall be certified as complying with the standards of ISO-9001 for quality control.
3. All PARCS equipment installed shall comply with: UL 60950-1 (for indoor usage) and UL60950-22 (for outdoor usage), as required and are identified with the UL Mark or equivalent. For Installations in Canada, all equipment shall comply with the requirements of safety Standard(s) for Information Technology Equipment: CAN/CSA-C22.2 No. 60950-1 (for indoor usage) and CAN/CSA-C22.2 No. 60950- 22 (for outdoor usage) are identified with the CSA Mark or equivalent.
4. ALL PARCS equipment shall be certified with a FCC label as conforming to rigid EMC requirements for electromagnetic emissions, immunity and harmonics.
5. Federal, State, and Local laws, regulations and codes.
6. ISO 9001 quality assurance standards.
7. Compliant with all ADA requirements.
8. National Electrical Code (NEC).
9. The PARCS shall comply with Payment Application Data Security Standard (PA DSS), V2.0 or later.
10. The PARCS shall comply with EMV standards effective at the time of implementation, including fully compliant EMV “chip and PIN” readers and back-office processing.
11. All PARCS outdoor equipment shall be rated at or above IP54.
12. All PARCS equipment shall be operated with a self-conditioning power supply

1.5 Warranty

1. The PARCS shall include a factory warranty that equipment is free from defects in design, material, manufacturing and operation.
2. Factory warranty period shall be for 24 months from date of shipment.
3. The Installing PARCS vendor shall guarantee the equipment, wire, cable, and installation for a minimum of 12 months from date of acceptance.
4. The PARCS' Manufacturer shall guarantee availability of parts, for minimum of (7) years from date of shipment.

1.6 Acceptable Manufacturer

1. The PARCS as described herein is based on the TIBA's Parking Access Revenue Control System and shall be considered as the acceptable Base Bid.
2. Substitutions shall meet requirements of Prior Approval, as outlined in the contract documents.
3. Substitutions that meet prior approval requirements shall be listed as alternates by addendum and shall be shown separately on the bid forms. Consideration will be based on ability to comply with all aspects of the specifications, the desired functional operation, quality, reliability, design, size, and appearance of the equipment and the support capabilities of the manufacturer.

2 System Operation

2.1 Main Features

1. The PARCS shall use barcode technology.
2. All PARCS equipment shall be based on multi-slot technology. Credit card reader shall be non- motorized card-reader and separated from the ticket issuing / reading device.
3. The management software of the PARCS shall be installed on a standard desktop PC running minimum of Windows 10 operating system or installed on a server running Windows Server 2016 or later.
4. The PARCS shall utilize SQL Server 2016 or later.
5. The PARCS equipment shall be a based-on microprocessor-controlled system, running embedded real time firmware and shall be PC programmable. Programming to all equipment will be done remotely from the PARCS management software.
6. Client Workstation options for the PARCS management shall include:
    a. Standard PC for all functionally, including remote customer service interventions.
    b. Browser-based UI for the control and management of the facility.
7. The PARCS shall be able to work in off-line mode with no server.
8. The PARCS management software shall have the following built-in, fully integrated modules:
    c. System Monitoring & Control
    d. Revenue Management
    e. Access Control
    f. Validations
    g. Reporting & Statistics
9. The PARCS management software shall also have the following optional modules:
    h. Hotel Guest Parking
    i. Valet Parking

j. External System Integration including, but not limited to:

- Pre-paid Reservation System
- Pay-by-Mobile Systems
- Event Management Systems

10. The PARCS shall also be comprised of the following optional sub-systems:

- Bankcard Processing
- License Plate Recognition
- Space Counting & Signage
- Parking Guidance

2.2 Networking

1. All PARCS equipment can be located locally at the parking lot property or remotely connected via a LAN (Local area network) or WAN (Wide area network / internet).
2. The communication protocol between PARCS equipment to other field devices shall be via TCP/IP or RS485.

2.3 Systems Scalability

1. The PARCS shall be easily expandable by adding cashier terminals, entry lane terminals, exit lane terminals, pay-on-foot stations, validation devices and management software workstations.
2. The PARCS shall be capable of adding optional features, equipment and interfaces listed in the specifications, even if not initially included or shown on the plans.

2.4 System Redundancy

1. The PARCS shall support 2 level-redundancy to provide ongoing operations in case of network or equipment failure.
2. The PARCS shall perform its redundancy workflow as follows:
   a. **Normal mode**: PARCS field equipment are up and running and managed by the FMS. All transactions and calculations are performed normally, including credit cards acceptance. Credit card acceptance shall depend on an online connection with a credit card server and credit card clearing house.
   b. **Redundancy Level 1**: In case of FMS failure, PARCS field equipment will stay are up and running and managed by the local parking system main controller. Normal transactions and calculations are performed normally, including credit cards acceptance. Credit card acceptance shall depend on an online connection with a credit card server and credit card clearing house.

      Once connection between the FMS and the parking system main controller is re-established,

all transaction data shall pass to the FMS.

c. **Redundancy Level 2**: In case of a total network failure, all lane equipment shall be able operate off-line with limited functionality. Should a total network failure occur, the management of the lane devices will be done independently by the device's onboard local controller. Ticket dispensing, fee calculations, cash transactions and monthlies entry & exit shall perform normally.

   Once connection to the parking system main controller is re-established, all transaction data shall pass to the main controller and to the FMS.

2.5 General Operations

2.5.1 Customer Management

1. The PARCS shall support an extensive number of customer groups and customers per group.
2. User groups and individuals within the user groups shall each be assigned access privileges based upon facilities, date, days of week, time of day, or any combination.

2.5.2 Transient Customers

1. Transient entry shall be granted by either:
   a. Pressing and pulling a time/date stamped ticked from an entry lane terminal.
   b. Inserting a credit card to gaining access by a ticket-less transaction – "Credit in – Credit Out "
   c. Presenting a 1 or 2-dimensional barcode issued from an external reservation system that has been associated with a pre-payment transaction.
   d. Pay at an automated Pay-In-Lane entry lane terminal. Payments shall be made with cash, credit card or pin-less debit card.
   e. Re-Entry shall be granted by presenting a valid registered pass.
   f. Ticketless entry via keypad (phone number), Bluetooth, or license plate recognition.
2. Transient exit shall be granted by either:
   a. Pay to a cashier on an exit lane. Payments shall be made with credit card, cash, or validation.
   b. Pay to a cashier at a centralized location and then insert the paid ticked at an exit lane terminal. Payments shall be made with credit card, pin-less debit card, cash, or validation.
   c. Pay at an automated Pay-On-Foot station and then insert the paid ticked at an exit lane terminal. Payments shall be made with credit card, pin-less debit card, cash, or validation.
   d. Pay at an automated Pay-In-Lane exit lane terminal. Payments shall be made with credit card, pin-less debit card, cash, or validation.
   e. Re-Exit shall be granted by presenting a valid registered pass.
   f. Ticketless exit via keypad, Bluetooth, or license plate recognition

2.5.3 Monthly Customers

1. Entries or exits shall be granted by:
    a. Presenting a valid registered credential utilizing, but not limited to the following technologies:
        - Proximity card
        - AVI card/tag/sticker
        - Bluetooth
        - Barcode
        - License Plate
        - Typing a phone number on the terminal's touch screen

2.5.4 Customer Credentials

Ticketless

For License Plate Recognition (LPR) Customers who are assigned LPR as the primary access credential, the PARCS shall have the abilityto also assign a backup or matching credential such as:

1. AVI transponder.
2. Bar Code or QR code (printed)
3. Proximity cards:
    a. The PARCS shall use commercially available RFID cards available through any source.
    b. All proximity cards shall have a mill thickness equal to that of a standard credit card.
    c. Cards may be issued by other parties (such as employee IDs) or specific customer groups
    d. Each proximity card shall have a unique ID that allows the card to be administered remotely, e.g., with the card number, a customer service rep should be able to access and change the account profile.
    e. Each proximity card shall be associated with an account, whereby the account's profile controlsthe allowable use of the card.
    f. The PARCS shall provide the appropriate tools to program and administer proximity cards from any workstation that can access PARCS, assuming the user has the correct privileges.

Ticketed

1. The PARCS shall be able to track an open or closed parking ticket. The tracked ticket shall provide the payment information that is associated to that ticket.
2. The PARCS shall allow customer service personnel to submit single payment requests to Pay-on Foot or Pay-In-Lane Stations.
3. The PARCS shall use on-the-fly printed tickets, with QR codes, bar codes, or other mechanism for encoding information that can be photographed or otherwise viewed.

4. When a ticket is issued, it shall contain:
    a. A unique serial number for the transaction.
    b. Complete date and entry time.
    c. LP #, Garage name, rate number and additional customized fields
    d. Lane number or equipment ID (not printed on ticket).
    e. The PARCS shall be able to generate multi-use (limited duration or quantity) bar-coded ticket stickers or vouchers.

2.5.5 Operations Monitoring

The PARCS shall have real-time monitoring & control capabilities to manage the parking equipment connected to the parking system network such as.

1. **Real time monitoring**: All transactions shall be displayed in real-time on the operator live screen. This shall include credit card transaction status monitoring and provide an explanation in case a credit card was denied. Other features shall be reprinting a copy of an entry ticket or receipt and changing settings for a monthly parker from the real-time screen.
2. **Barrier control**: Open or close remotely a barrier gate connected to a lane device either temporarily (gate will close if vehicle leaves the safety/closing loop at the gate) or until a new command is sent to the barrier. The barrier shall change its state according to the user programmed schedule of the management software.
3. **Equipment status**: Display the equipment status in real-time and generate a pop-up window for select messages.
4. **Income monitoring**: Display in real-time detailed cash or credit card transactions of filed devices.
5. **Fee change**: Send on real-time, a fee change command for a single parking transaction, from the management software to either a vehicle pay station or a pay on foot terminal.
6. **Lane activity**: Activate/deactivate a terminal either entirely or for select user groups. The barrier shall change states according to the user programmed schedule of the management software.
7. **Live Counters**: SmartPark Counters screen shows information related to occupancy per zone as well as category

2.5.6 Payment Receipts

1. Shall be optional at time of transaction, with configurable default per payment device/station.
2. System shall offer ability to generate a receipt after the fact.
3. Only print last four numbers of all bankcards.
4. Information to be printed on receipt shall include:
    a. Facility name and address
    b. Receipt #/Transaction #
    c. Entry ticket no. associated with the receipt
    d. Time, date, and lane in
    e. Time, date, and lane out
    f. Type of credential
    g. LPN
    h. Length of stay
    i. Parking fee
    j. Total amount
    k. Method of payment
    l. Amount paid
    m. Change Due
    n. Discounts applied
    o. Tax
    p. Signature line
    q. Cashier ID#
    r. Receipt printed on off-the-shelf roll paper (2.25” paper width)

2.5.7 Grace Periods

1. The PARCS shall allow configurable grace periods for the following:
    a) Between entry with a transient ticket and arrival at the exit gates; for example, if a customer enters the facility and does not park. This shall be customizable per facility, and shall have overrides for time of day, facility occupancy, event in progress, etc.
    b) Between fee payment, at a POF station and exit from the facility, to allow a customer time to get to the vehicle and then proceed to the exit. This shall be customizable per facility, and shall have overrides for time of day, facility occupancy, event in progress, etc.

c) Between the conclusion of an event and the exit from a facility, to give customers time to return to their vehicles, but not to allow for additional parking, such as to go to dinner after an event. This shall be customizable per facility, and shall have overrides for time of day, facility occupancy, and event in progress.

2.5.8 Non-Resettable Counters

1. All PARCS devices shall have non-resettable counters that increments each time the following events occurs:
   a. AVI transponder is read.
   b. Proximity card is read.
   c. Credential is read.
   d. A payment is received
   e. Validated or grace period ticket is processed.
   f. A gate vend is generated.
   g. Loop-based counts for the Space Count Sub-System increments in the PARCS when loops areactivated including directional logic for reverse [i.e., illegal parking facility entry and exit lanes).
   h. Loop counts shall continue when the FMS is offline or when a gate remains up.
   i. When a ticket is dispensed

2.5.9 Nested Areas

The PARCS shall have the following nested parking area capabilities:

1. Accommodate the use of nested areas in the parking facility with separate entry/exit gates, requiring a pre-authorized credential to gain access.
2. Accommodate the use of nested areas in the parking facility with separate entry/exit gates, requiring a pre-authorized credential in connection with a scan of an entry ticket to gain access.
3. Accommodate the use of nested areas in the parking facility with separate entry/exit gates, requiring an entry ticket to be scanned to gain access.
4. Track customers or vehicles into and out of any nested parking area via the following authorization credentials:
   a. Parking or valet tickets.
   b. Proximity, Mag-Stripe, AVI, Smartcard cards.
   c. Encoded QR/Bar Codes.
   d. Hotel Mag-stripe or Mifare Room Keys.
   e. LPR matching recognition.
   f. PIN number access.

g. Phone number

5. If used with a space guidance system, the PARCS shall be able to navigate specific customers to the nested area based on LPR at entry.
6. Support dedicated price rates for nested parking areas.
7. Prevent unauthorized access in or out of the nested areas.
8. Employ anti-passback functionality to control nested areas
9. The system shall support handling violations with the following options:

   a. Request payment at a payment enabled exit station.

      Request for payment shall be made to a registered card holder (Monthly) that exceeded their permitted time in a non-authorized parking area. Upon payment the vehicle will be grated to leavethe lot.

   b. Request payment via report populated by the FMS.

      Request for payment shall be made to a registered card holder (Monthly) that exceeded their permitted time in a non-authorized parking area. The vehicle will always be granted to leave the lot – any exceeding time will be calculated by the FMS after the card holder exited the lot.

2.5.10 System Auditing

The PARCS shall provide the following financial, transactional, and operational auditing abilities:

1. Trace any individual ticket from entry to exit.
2. See all transactions that occurred on any credential (such as a permit or license plate), even if the transactions were submitted by an external system (such as an online prepayment).
3. Trace validations by individual merchant.
4. Find a bankcard transaction via its last 4 digits of the card number.
5. Locate all transactions performed at any individual device.
6. Discover all transactions performed by any individual cardholder.
7. Isolate and examine all exception transactions.
8. Find by user all changes to configuration, rates, discount programs, customers, etc.

2.5.11 User Access

1. Access to system functions shall be based upon the user's operational role.
2. The PARCS shall incorporate password policy that shall include the following programmable parameters in conjunction with Microsoft Active Directory:
   a. Password Aging.

b. Minimum Password Length.

c. Enforce Password History.

d. Password Shall Meet Complexity Requirement.

3. The PARCS shall support maintenance of access level tables through a security administration function. These tables shall be used to establish employee and employee group access to PARCS devices, Network, database, and data.

4. Based on password/user ID security, any authorized user shall be able to download to the PARCS equipment:

   a. Security access codes.

   b. Rate changes.

   c. Configuration files.

   d. Operational parameters.

   e. New and updated ticket layout and text.

   f. New and updated customer display screen text.

   g. View, create, modify or delete card holders or validation data.

   h. Any other information necessary for the operation and maintenance of the PARCS equipment.

   i. Authorized users shall be able to select the date and time when configuration data download is to occur and to review and cancel any previously scheduled download.

2.6 System Performance

2.6.1 General Operations

1. The PARCS shall operate twenty-four (24) hours per day and seven (7) days per week.
2. The PARCS shall achieve availability of 99% during operations.
3. The PARCS shall be designed and implemented to facilitate prompt repair for all failed or degraded PARCS components by providing subsystems and devices with field-replaceable components.
4. Bankcard processing time shall be no longer than 5 seconds for non-EMV transactions for most common major credit cards, regardless the amount of equipment that resides on the parking system network.

2.6.2 Device Accuracies

1. Ticket processing devices shall have a ticket read accuracy rate of 99.5%, assuming all unreadable (mutilated, blank or foreign) tickets and/or damaged cards are excluded.
2. Fee calculation accuracy for all devices that perform fee calculations shall be 100%
3. Data transfer (data received, validated and accepted by the PARCS management software from devices or Subsystems) accuracy shall be 100%.
4. Transaction count accuracy for each lane device (transactions processed compared to transactions posted to the FMS} shall be 99.998% for all lane devices.
5. Exception count accuracy shall be 99.998% {exceptions noted at the device compared to exceptions reported to the PARCS management software
6. Revenue amount accuracy shall be 99.998% (amounts calculated at the device, and where appropriate posted to a local audit trail, compared to amounts posted to the PARCS management software).
7. Revenue reconciliation and data transfer for bankcards shall also be 99.5% accurate {assuming all source data is complete, and communications devices operate nominally).
8. Parking space counts for any individual parking lot/garage shall be no less than 98% accurate (FMS count compared to manual count.

3 Facility Management Software

The PARCS shall include a real-time Facility Management Software system that shall be designated as the FMS.

1. The FMS shall have the capability to work in Server / Client architecture.
2. The FMS shall support web access at least, but not limited to the following modules:
    a. Remote control of open/close gates, hold gate up, validate tickets or send a new rate to a station with a transient customer requiring assistance.
    b. Card holder management. Grant's individuals with permitted login credentials to manage their own card holders or any card holders associated with their privileges.
    c. Visitor management. Grant's individuals with permitted login credentials to manage their own visitors or any visitors associated with their privileges. The system will support invitations to visitor either by license plate or pin code. (If supported by site hardware)
    d. eValidations. Grant's individuals with permitted login credentials to validate their own visitors parking ticket or any visitors associated with their privileges.
3. FMS Clients can be added to the PARCS to support real- time monitoring & control from multiple locations.
4. The PARCS shall be able to support an appropriate number of FMS clients regardless of their location on the network.
5. The FMS shall have the capability to control multiple parking lots from the same workstation.

3.1 System Monitoring

3.1.1 Device Status

The FMS shall be capable of monitoring in real-time the status of the various lane devices and the corresponding subcomponents and shall have the following capabilities:

1. Monitor and control the operational status of all entry lanes:
    a. Lane status: Open or closed
2. Device status: Active or out of service.
3. Door status: Open or closed - On cash enabled stations.
4. Gate up, or broken gate (arm)
5. Low ticket/ Out of ticket condition.
6. Jammed ticket.
7. Illegal exit - reverse direction through lane.
8. Stolen ticket.
9. Printer status

10. Back-out.
11. Monitor the operational status of all exit lanes:
    a. Lane status: open or closed.
    b. Device status: active or out of service.
    c. Door status: open or closed.
    d. Gate failure.
    e. Gate up, or broken gate arm
    f. Low receipt/ Out of receipt condition.
    g. Jammed receipt.
    h. Illegal exit - reverse direction through lane.
    i. Stolen ticket.
    j. Back-out.
    k. Printer status
12. Monitor and control the operational status of all pay-on-foot stations:
    a. Low receipt/ Out of receipt.
    b. Jammed receipt.
    c. Door status: open or closed
    d. Cash devices status (bill acceptor, bill dispenser, coins recycler), including bill/coin quantity status

3.1.2 Transaction Counts

1. Each time a vehicle pass event occurs, the FMS shall increment or decrement a count, in order for the FMS to provide the following data (In relevance to the hardware installed):
    a. For Entry Stations:
        I. Total counts as well as subtotals of tickets dispensed.
        II. Credit cards used for entry.
        III. Access credentials read in the entry lanes.
        IV. Valid LP read in the entry lanes.
    b. For Exit Stations:
        I. Total transactions processed and subtotals.
        II. Access credentials read in the entry lanes.
        III. Valid LP read in the entry lanes.
    c. Cashier Stations:
        I. Total counts as well as subtotals of tickets dispensed.
        II. Total transactions processed and subtotals.
        III. Access credentials transactions.

2. Exit Station transactions, and access credentials read in the exit lanes.
3. All entry and exit station transaction counts shall appear in lane activity reports and ticket inventory/status reports.
4. The system shall provide a tool to assist the operator with Remote vending of gates. The purpose of the tool is to ensure that all remote gate vends are tied properly to the counting system. For example
    a. if the exit station is not able to process a transient ticket and the operator needs to vend the gate, it will be done in such a manner that the gate vend transaction will be tied to that specific transient that will insure to update the counting system accordingly, that will differentiate between the type of customers such as transients, and Monthlies.
    b. The same method should apply for registered card holders, guest and reservations.
    c. The tool will provide a snapshot to the operator of all data related to the credential / ticket / reservation used by a customer requiring assistance at the remote station.
    d. All gate vends shall prompt the operator to input the reason for the gate vend, which can thereafter be tracked in an audit report

3.1.3 System Alerts

The FMS shall have the following system alert capabilities:

1. An alarm's function shall allow the user to select which events to alarm.
    a. Alerts can be displayed on a workstation or sent to an authorized user via email notification.
    b. Abnormal status conditions shall be flashed on monitor(s) and accompanied with an audible alarm.
    c. Display shall continue to flash until abnormal condition is corrected. Audible alarm shall continue until it is turned off by a command issued from a PARCS monitoring workstation(s).
    d. Acknowledgement of alarm condition shall be able to be performed at any workstation with access to FMS.
    e. It shall not be necessary to acknowledge alarm condition at every workstation.
    f. The FMS shall record abnormal status condition of alarm condition by time.
    g. Authorized users shall see and be able to manage alarms.
    h. Alarms shall be selectable as visual, or else email or both.

3.1.4 Event Logs

The FMS shall have the following event log capabilities:

1. Record system events, which can be viewed or printed.
    a. Record the specific information and details for changes to system configurations including type of change, date/time, and user ID.
    b. Can sort events by activity type and/or device ID.

3.1.5 User Access

1. The FMS shall provide individual access rights to users:
   a. Each user shall be able to access the FMS with an individual password.
   b. Users shall be able to access only the modules and options that have been set by software administrator

3.2 Revenue Management

3.2.1 General Functionality

1. The FMS shall be able to set up different price lists that each of them can be utilized with conditions as – Early birds, Evening Special and weekend specials.
2. The rate structures shall be available to be utilized by either:
   a. **Transient customers**: Rate structure is assigned to regular transient parking tickets.
   b. **Discount Validations**: Validated parking ticket that is assigned to a different rate structure then the default rate.
   c. **Equipment selection:** Transient parkers entering the lot through specific entry lanes, shall be associated to a different the assigned rate structure for that specific lane.
   d. **Registered passes**: A temporarily guest that has an access media to the lot. Upon exit the guest will be charged according to the associated weekly rate structure.

3.2.2 Payment Methods

The PARCS shall be able to handle the following payment methods:

1. Banknotes and coins.
2. Credit/debit bankcards (including contactless, mag stripe, chip and pin).
3. Value payment cards.
4. Pay by Mobile.

3.2.3 Rate Structures

1. The FMS shall allow the following rate structures:
   a. Pay per use.
   b. Flat rates.
   c. Rate increments.
   d. Flexible Rates which can be:
      I. Set by credential.
      II. Set by parking product.

III. Set by parking facility.

IV. Set by area of a parking facility.

V. Set by time of day, day of week.

VI. Daily rates.

VII. Weekly rates.

VIII. Monthly rates

e. The rate structures shall be configurable by the garage operator without need for a programmer to modify code and accommodate the following:

f. Adequate number of rates.

I. Automatic adjustment for daylight savings time and leap year in fee calculations.

g. Grace periods.

I. Provide a configurable unpaid grace period that has a zero (0) amount charge for customers exiting within the grace period. These transactions shall be coded in PARCS as grace period transactions and shall be included in the transaction reports.

II. Provide a configurable paid grace Time-period that allow no additional charge for customers exitingwithin the paid grace time-period. This time is defined as the time a ticket is paid at a POF station until the vehicle exits the parking facility.

3.2.4 Manual Fee Management

The PARCS shall provide the following remote fee management functionality:

1. Allows the following exception transactions occurring at Exit Stations to be processed at a PARCS workstation and records each exception type uniquely.

a. Unreadable entry media.

b. Unreadable proximity cards.

c. Swapped tickets

d. Stolen tickets.

e. Unreadable validations.

f. Lost prepaid tickets.

g. Be capable to find by an LPR system a customer's entry date at all exit lanes, when license plate is not matched to the parking ticket.

h. Allows customer service personnel to find an entry date based on the LPR data and/or by entry media number.

i. Once the entry date is found the FMS automatically computes the parking fee, operator can send the payment to the exit station display.

j. If an entry date is not found, customer service personnel shall be able to manually input an entry date to compute the parking fee or to select a lost ticket fee. The fee is automatically displayed at the exit lane device.

k. After successful completion of the transaction, the entry media is automatically marked as 'closed' in the system.

l. If a paper ticket paid at a POF unit is unreadable at exit, customer service personnel shall allow the ticket sequence number to be input. The FMS shall locate the POF payment data to complete the transaction and shall automatically compute and display any additional fees due at exit or print a copy of the entry ticket to the customer.

m. Allows customer service personnel to apply a discount to a parking transaction and input the reason for the discount in an input field with drop down menu.

n. Records the different exception transaction types in the transaction database so that the type of exception transaction is displayed in the FMS reports.

o. Provides reports and accountability features per cashier ID on a shift basis

3.2.5 Exception Transactions

1. The FMS shall support the following exception transactions:
   a. Lost tickets.
   b. Stolen tickets.
   c. Back out tickets.
   d. Unreadable entry media.
   e. Unreadable POF prepaid ticket.
   f. Swapped ticket.
   g. Insufficient funds transactions.
   h. Towed and impounded vehicles
   i. Each exception transaction type shall be recorded as a unique type in the FMS so that data by each exception transaction type is available.
   j. The FMS shall provide the capability to report on all exception transaction data by transaction type and device ID for a selectable time.

3.3 Validations

The FMS shall include a fully integrated Validation Module to support the implementation and tracking of discount programs and other special purpose parking fee reduction transactions.

The propose of validation system is to allow transients customers to change the default rate calculation of their parking ticket by presenting the ticket to a validation device or by placing a physical stamp that is electronically readable in the PARCS equipment

3.3.1 Discount Generator Software

1. The FMS shall allow approved users to create barcoded Promotional Discounts that can be printed or sent by email and used for various applications.
   a. Promotional discounts can be printed by the operator and distributed.
   b. Both the validation and ticket shall be voided after exit is complete

2. If a transaction is cancelled in the exit lane, the ticket or a copy of the entry ticket shall be issued to the user and shall not be voided.
    a. After a successful exit, the validation amount and type are recorded in the PARCS database for reporting purposes.
    b. The FMS shall allow each type of promotional discount to be assigned a unique validation account number so that the number of discounts generated and used at exit are recorded by the unique account number and reported in the same manner as other PARCS validations.
    c. The FMS shall have the ability to offer and track multiple promotions simultaneously.

3.3.2 General Functionality

The Validation Module shall have the following capabilities:

1. All transient parking transactions shall allow for use of a validation and shall be able to be associated to many different merchants or user groups.
    a. Validations can be generated by different users or by the permitted user only.
    b. Restrict the validations to certain dates & times or to particular days of the week.
    c. All parking devices in the lot shall recognize the validation, calculate the new parking fee and update the balance accordingly
2. Validations shall include the following:
    a. Validations Encoded on Issued Paper Ticket – shall be processed at Exit Stations, Cashier Station or Pay-on-Foot Stations.
    b. Separate Validation Chaser Coupon – shall be processed at Exit Stations, Cashier Stations or Pay-on-Foot Stations.
    c. QR code validations processed at Exit Station:
        i. Printed on paper.
        ii. Presented on a smart phone.

3.3.3 Discounts & Promotions

The PARCS shall be capable of supporting the following discounts:

1. Full discount with no maximum.
2. Full discount with selectable maximums.
3. Fee discounts allowing a specified monetary amount to be subtracted from:
    a. The total calculated parking fee.
    b. Monetary value discount per time increment (i.e., discount per minute, per day, per week, etc.).
    c. Percentage discount allowing a percentage to be deducted from the total fee amount
    a. Discounts that use a different rate structure to compute the parking fee.
    d. Entry time discounts allowing an amount of time to be subtracted from the sequence of time intervals defined in the fee table, beginning with the entry time.
    e. Exit time discounts allowing an amount of time to be subtracted from the sequence of time intervals defined in the fee table, beginning with the exit time.

f. Discounts can be issued with start and/or expiration dates.

g. Discounts can be valid based on time and location restrictions.

2. PARCS shall accept, at a minimum, the following discount types at all PARCS point of sale devices:

    a. Encoded on dispensed paper tickets.

    b. Validation label applied on ticket.

    c. Each discount shall have a unique identification number to track activity and discount values processed.

    d. Chaser tickets

        i. Each discount shall have a unique identification number to track activity and discount values processed.

        ii. Both the chaser coupon and ticket shall be voided after exit is complete.

        iii. If a transaction is cancelled in the exit lane, the copy of the entry ticket shall be issued to the user and shall not be voided.

    e. Barcode and QR code printed on paper or presented on a smart phone.

    f. Manually processed discounts using a key or code on the Cashier Stations.

    g. eValidations where a discount is applied via a workstation or phone by entering the entry media number and discount code that is sent to the FMS and applied to the entry media at exit.

3.3.4 Validation Types

The Validation Module shall be capable of supporting the following different types of validations:

1. Flat Rates.

    a. Discounted rates.

    b. Percentage discounts.

    c. Hourly discounts.

    d. Change price lists.

    e. Change ticket to allow multiple entries and exits

3.3.5 Validation Methods

The Validation Module shall support the following types of validation methods:

1. Discount Stickers

    a. Validation stickers shall be a bar-coded serialized label and shall be printed on standard label sheets

    b. The validation label shall be able to be placed on the parking ticket.

    c. Special equipment shall not be required to create validation labels.

    d. Validation labels design shall be able to be modified by the operator for each event.

    e. Chaser Tickets (Coupons). Chaser tickets shall be pre-printed from the management software. The chaser ticket shall be used at a Pay-On-Foot or exit station.

f. Pre-Paid.
g. Off-Line Validations.
h. On-Line Validations.
i. EValidations.
j. Prepaid eVouchers.

3.4 Access Control

The FMS shall include a fully integrated Access Module to manage monthly parking services.

3.4.1 General Functionality

The FMS shall provide the following tag management functionality:

1. Securely activate and personalize an Access Credential.
2. Handles an extensive number of tag holders per local parking facility.
3. Allow authorized users to create accounts (companies & sub-companies) and activate/deactivate credentials.
4. Allow account settings to be changed for a credential.
5. Retain credential account and activity history after the credential is deactivated and re-issued to a different user.
6. Shall be capable to distinguish between different parking zones and apply restrictions accordingly.
7. Provide ability to have master account (companies), subaccounts (sub-companies).
8. Set access restrictions by facility, master account, sub account, and individual credential for time of day and day of week parameters.
9. Assign pass back setting by master account (companies), subaccounts (sub-companies), individual credential, and by facility.
10. Provide the ability to reset the access credential status for individual access credentials, by group and by facility.
11. Be able to check credential validity at the time of entry.
12. Record all card usage including the lane ID, entry/exit date/time, credential number, and passback status.
13. Generate a record of all activity related to a master account or an individual credential in the FMS database for a selectable time.
14. Troubleshoot faulty credentials. Allow quick look-up the credential status, credential lane activity and payment history to determine if the gate is not vending due to passback violation, inactive status, or payment issues.
15. The FMS shall have, the following data input fields available for each credential account:
    a. Unique credential number.

b. Customer ID number.
c. Account number.
d. Credential holder name.
e. Credential validity period.
f. Credential holder organization.
g. Credential holder department.
h. Credential holder telephone number.
i. Credential holder email address.
j. Parking privilege code access profiles.
k. Credential fee/rate.
l. License plate number.
m. Vehicle make/model.

16. Capable of setting different access privileges for an entire group or for an individual tag holder.
17. Able to distinguish between different parking zones and apply restrictions accordingly.
18. Allow multiple credeential formats and system codes to be accepted, and programmed at the local level through the software, with no custom firmwares or manufacturer programming.

3.4.2 Daily Tag Management

The FMS shall provide the following tag management functionality:

1. New Tag holder: Record Tag holder details such as identification details, tag number, monthly fee, expiration date and group or sub-group association.
2. Renew Tag: The expiration date can be changed for an existing monthly tag holder or for a temporarily blocked tag to allow access to the facility again.
3. Block a Tag: Change the status of a tag to “blocked” without altering its associated tag details.
4. Unblock a Tag: Change the status of a blocked tag to “normal” without altering its associated tag details
5. Cancel a Tag: Cancelation of a tag in the system shall cancel the tag but not the tag history.
6. Be able to assign each tag a certain number of units. Once these units are used the tag shall not be accepted at the entry/exit terminals.
7. Be able to assign each tag with a monetary amount. Once the amount has been exhausted, the tag shall not be accepted at the entry/exit terminals

3.4.3 Tag Restrictions

The FMS shall have the ability to add the following restrictions to individual tag holders:

1. Anti-Pass back: In the event a tag is “passed back” to allow an additional vehicle entry into the facility the tag shall be denied access.
2. Loop Presence: Prevents a pedestrian to present a tag without a vehicle.
3. Access restriction: Prevents the tag holder to pass through certain lanes

4. Company Full: Prevents the tag holder to access a nested area or the garage when the total available parking slots assigned to the particular tag holder group has been occupied.
5. Granting facility access by particular tag holder group who have been assigned special pricelist or when certain rules apply.

3.4.4 Monitoring & Control

The Validation Module shall have the following monitoring & control abilities:

1. The ability to modify or terminate existing validations at any time.
2. Support the production of validation tickets directly from the FMS
3. Allow the encoding of various values of coupons.
4. Shall support validation accounts with vast number of validations associated with each account.
5. The ability to generate and able print validation reports from remote FMS workstations
6. Shall support for a web interface for merchants that can validate parking tickets without the need for chaser tickets, stamps, or punches.
7. Support a variety of online and off-line PARCS devices for the real-time validation of parking tickets.

3.5 Hotel Guest Parking

FMS supports two methods of hotel parking; either by a standalone MCE device to read the UID of the hotel or a fully integrated Hotel PMS system using FMS HotelConnect.
Both modes in this section that utilize guest room key for access, must support utilization of MIFARE room keys, used by the following (but not limited to) hotel locking system manufactures – ASSA ABLOY (VingCard), Onity, Kaba, ILCO, Saflok, Tesa, Sargent, Cisa, TimeLox, Miwa, Inhova; essentially any manufactured certified and supporting by the Hotel PMS/LMS system for passing the parking credential unencrypted to sector 2 (DB 8) of the MIFARE key.

MCE Hotel Operations

1. The FMS shall receive hotel key information from the MCE device. This information will include the unique key information from the UID of the RIFD key along with number of nights, and room number for reporting
2. The parker will be billed to the hotel folio, not in the FMS system
3. After using this key in a facility with LPR, the key will pair with the LPR system for the length of stay for automated ingress and egress
4. The FMS shall be able to generate reports detailing garage occupancy statistics broken down by guest room, entry/exit traffic data as well as duration of stay statistics

HotelConnect Hotel Operations

1. The FMS shall have an optional integrated Hotel Parking Module for hotels that offer garage usage privileges via HotelConnect

2. HotelConnect can be connected to one (1) or more hotel Property Management Systems (PMS) or Lodging Management Systems (LMS)
3. The FMS shall receive data from PMS via HotelConnect which includes at a minimum the check in date, the checkout date, and the parking credential on the RFID key. This is generally the folio ID but not always. Other data may include the room number, last name, and first name
4. After using this key in a facility with LPR, the key will pair with the LPR system for the length of stay for automated ingress and egress
5. THE FMS shall be able to extend beyond the time of checkout, the customer's exit time from the parking facility
6. The FMS shall be able to generate reports detailing garage occupancy statistics broken down by guest room, entry/exit traffic data as well as duration of stay statistics
7. The FMS shall support the following types of hotel parking operations:
   a. **Hotel Integrated**: - Adding a parking charge to the guest folio and transmit the relevant data to the parking system by an interface between the parking system and the hotel's PMS
   b. **Non-integrated**: - Adding a parking charge to the guest folio, then swipe the room key in an MCE encoding device to add parking access
   c. **Ticket based**: - Adding a parking charge to the guest folio, then scan the entry ticket in an encoding device to change the ticket privileges to allow multiple in & out (IO) passes, which expires on the checkout date. The exact time will be configurable withing the FMS
   d. The transaction and ticket information shall then be logged in the parking management system.
   e. Upon exit or re-entry into the garage, the guest shall insert or present their room-key to a card reader in the lane terminal to grant access
   f. The transaction and room key information shall then be logged in the parking system.

3.6 External System Integration

1. The FMS shall provide tools to interface to external platforms and systems.
2. System APIs shall provide real-time XML/JSON interfaces. Fields and data structures shall comply with a specified schema.
3. APIs shall support security authentication of all clients invoking APIs so that each individual client is identified for each API call.
4. The FMS shall allow for logging requests and responses to and from the APIs.
5. All interfaces where possible shall be upon RESTful Compliant Web Services technology.

3.6.1 Prepaid eReservation

The FMS shall support interfacing to common online reservations platforms.

3.6.2 Pay by Mobile

The FMS shall support interfacing to pay-by-cell platforms.

3.6.3 Account & Revenue Control

The FMS shall support interfacing to parking focused account receivable platforms such as PARIS

3.6.4 Universities

The FMS shall support interfacing to campus card payment solutions such as BlackBoard.

3.6.5 Hotels

The FMS shall be able to interface to hotel property management solutions.

3.6.6 Building Systems

The FMS shall be able to interface with physical security access control solutions.

3.7 Valet Parking

The FMS shall include a fully integrated Valet Module to manage valet parking customers.

3.7.1 Features

The Valet Module shall have the following features and capabilities:

1. Three- part Valet Tickets generated by Valet enabled stations, which include sequential serial numbers:
    a. Valet podium station
    b. Cashier station
    c. Ticket dispenser
2. The Valet Cashier Station shall be able to process the valet customers' cash, bankcards and validation payments.
3. The Valet Cashier Station shall have all other functionality as the exit or central cashier stations.
4. All data from the valet devices are reported to the database of the FMS in real time and shall be included in all relevant PARCS reports.

3.7.2 General Functionality

1. Enable Valet parking to be granted by either a:
    a. Bar-coded valet ticket that is -
        i. Issued at a Valet podium station.
        ii. Scan ticket at parking lot entrance along with presenting the runner badge.
    b. Bar-coded valet ticket that is -
        i. Issued by a ticket dispenser as a 3-part ticket
    c. Bar-coded valet ticket that is
        i. Issued by a ticket dispenser.
        ii. Converted to a Valet ticket issued by a cashier station inside the lot.
2. LPR recognition plus the issuance of a 3-part Valet ticket:
    a. Issue a 3-part ticket at a Valet podium station before entry to the lot. Ticket shall include a sequential serial number.
    b. Scan ticket at parking lot entrance along with presenting the runner badge. License plate snapshot shall be created by LPR camera and translated to characters' data. All credentials type shall be tied to a single transaction record.
3. Enable Valet parking tickets to be paid at either:
    a. A cashier at the valet podium or at centralized cashier location. Payments shall be made with credit card, cash or validated ticket.
    b. Payment at a Pay-On-Foot station. Payment will print a call ticket at the valet podium to bring up the vehicle.
    c. Enable Valet parking tickets to be allowed exit from the nest parking area or the facility by either:
    d. Bar-coded valet ticket- Scan the 3rd part of a pre-printed bar-coded ticket at the exit terminal along with scanning runners' badge. If ticket was paid access shall be granted.
    e. LPR recognition and a Valet ticket printed out from a Valet enabled station. Scan the 3rd part of Valet ticket at the exit terminal along with scanning runners' badge. If ticket was paid access shall be granted.

3.8 Reports

The FMS shall include a fully integrated Reports Module with the following capabilities:

3.8.1 General Functionality

1. The FMS shall maintain data without limitation from system start-day for use by the Report Module.
2. Reports can be scheduled to run and emailed to specified users.
3. Reports can be scheduled to run automatically. For example, on the first day of each quarter, weekly, etc.
4. Reports can be customized and then saved for later use
5. The Reports Module provides real-time reporting.

6. Reports (manual and automated) can be run at any time without significant impact to the system performance.
7. Reports can be exported to text, Excel, PDF etc.
8. The database of the FMS shall be available to the data owner for external analysis.
9. Queries can minimally be run for transactions by day/date/time (or time range), station, cashier/user ID, payment type, amount or amount range, access card number or by exception type.
10. Query results are sortable.

3.8.2 Revenue Reports

The Reports Module shall be able to generate the following Revenue Reports. These reports shall provide financial information and detailed statistical data pertaining to the various revenue streams generated by a parking facility.

1. **The Z Report:** Is a daily income statement that shows payment totals, credit outlay totals, payment summaries and till totals broken down by cashier station.
2. **The X Report:** Provides a snapshot view of revenue, grouped by payment method that has been received since the start of the current Z reporting period.
3. **The Periodic Z Report:** Is a summarized daily revenue statement that shows payment totals, credit outlay totals, payment summaries and financial totals for a specified calendar period.
4. **The Detailed Receipts Report:** Is a detailed list of receipts, broken down by payment station that were issued over a specific time-period.
5. **The Receipt by Rate Report:** Is a payment reconciliation statement, sorted by payment types that were received during a specified time-period.
6. **The Detailed Payments Report:** Is a detailed listing of payments received during a specified time-period. The report is broken down by payment station and provides payment/validation transaction data by ticket ID number.
7. **The Overstay Receipts Report:** Is a listing of overstay payment receipts including transaction statistics and revenue data that were issued per specific daily revenue cycle.
8. **The Receipts by Amount Report:** Lists the **payment** receipts, sorted by amounts that were issued during a specified time-period. The report provides transaction counts plus revenue totals by payment type.
9. **The Total Revenue Report:** Provides the sub-total and aggregate totals of transactions and revenue amounts, sorted by payment type during a selected time-period
10. **The Receipt by Rate Report:** Lists the payment receipts issued, broken down by rate type during a selected time-period. The report provides revenue totals by column plus sub-revenue totals by payment rate.
11. **The Daily Receipt by Rate Report:** Lists the daily payment receipts, broken down by rate type that were issued during a selected time-period. The report also provides gross revenue totals plus sub-revenue totals by payment date.

12. **The Daily Revenue Summary Report:** Lists a consolidated daily income and activity statement for a selected time-period.
13. **The Daily Payments Report:** Chronologically lists the daily payments received during a selected time-period. The report also provides gross revenue totals plus sub-revenue totals by payment type.
14. **The Detailed Change Shortage Transactions Report:** Lists the tickets that received a shortage slip due to malfunctioning coin or bill dispensers in the automated payment machines during a particular time-period. The report identifies the faulty Exit/Pay station, the service agent that triggered the payout transaction and the other pertinent details of each transaction.
15. **The Credit Report:** Is a detailed list of credit card transactions, sorted by garage location and credit card type that occurred during a particular time-period.
16. **The Detailed Credit Report**: Provides complete information regarding every credit card transaction that transpired during a specific time-period.
17. **The Receipts by Date Report:** Is a detailed chronological list of payment receipts that were issued during a **particular** time-period. The reports identify the ticket, traffic/occupancy statics and revenue details of each transaction.
18. **The Manual Charge Log Report:** Lists the manual parking fees sent to the payment stations and then subsequently paid by customers. The reports identify the ticket, time, location, value and description of each transaction.
19. **The Monthly Renewal Receipts Report:** Lists, by Payment/Exit Station the renewal payment receipts issued to monthly card holders during a selected time-period. The report identifies the customer, service type and revenue details of each renewal.
20. **The ePurse Credit & Debit Report:** Lists by customer the ePurse Credit & Debit transactions that transpired during a selectable time-period. The report provides relevant customer data and key financial details per transaction.
21. **The ePurse Token Debit Report:** Is a detailed list of ePurse payment transactions, broken down by customer that occurred during a selectable time-period. The report provides relevant customer data and detailed financial information per transaction.

3.8.3 System Reports

The Reports Module shall be able to generate the following System Events Reports, which provide event log data about gate openings, garage station counters and device alerts.

1. **The Open Gates Report**: Is a list of gate openings, sorted by lane station, during a specific time-period.
2. **The Gate Activity Report:** Lists gate opening counts broken down by transaction type during a specific time-period.
3. **The System Alerts Report:** Lists the operation and maintenance alerts, broken down by garage station that were received during a specified time-period.
4. **The Non-Resettable Counts Report:** Maintains loop and gate activity counts for each entry and exit lane during a specified time-period.

3.8.4 Ticket Reports

The Reports Module shall be able to generate the following Ticket Reports. These reports shall help to protect against the misappropriation or the misreporting of parking service revenue through matching tickets against receipts and by comparing ticket status to specific garage and customer transactions.

1. **The Open Tickets Report:** Lists the parking tickets, sorted by entry station that have not exited the parking facility during a particular time-period.
2. **The Short Exits Report:** Lists the tickets that have exited the garage without payment since their presence time did not exceed the defined grace period over the course of a particular time interval.
3. **The First/Last Ticket Report**: Summarizes the total daily quantity of issued tickets, sorted by entry station, during a specific time-period.
4. **The Open Valet Tickets Report**: Lists the open tickets for a specific time-period.
5. **The Pay by Cell Tickets Report:** Lists the tickets that were paid post exit through a mobile phone payment service during a specific time-period.
6. **The Lost Tickets Report:** Is a list of lost tickets, sorted by status category for a specific time-period.
7. **The Manually Closed Tickets Report:** Lists the tickets that were manually closed by customer service personnel during a specific time-period.
8. **The Tickets by Rate Report:** Lists tickets, sorted by rate category, for a specific time line.
9. **The I/O Tickets Traffic Detailed Report:** Is a detailed list of all entries and exits, per registered vehicle with in and out privileges that occurred during a specific time-period.

3.8.5 Occupancy & Traffic Reports

The Reports Module shall be able to generate the following Occupancy &Traffic Reports that provide statistical traffic and occupancy data including parking time counts, overflow area analysis in addition to demand level assessments by customer type:

1. **The Transients Occupancy Report**: Displays chronologically, transient customer occupancy statistics during a specific hour during the day.
2. **The Transients Parking Time Report**: Displays chronologically, parking time statistics of monthly customers, based on the number of hours of parking time.
3. **The Monthlies Occupancy Report**: Displays chronologically, monthly customer occupancy statistics during a specific hour during the day.
4. **The Monthlies Parking Time Report**: Displays chronologically, parking time statistics of monthly customers, based on the number of hours of parking time.
5. **The Daily Traffic Report**: Lists card holder entry/exit traffic transactions, grouped by calendar date during a specific time-period.
6. **The Detailed Overflow Report**: Is a detailed listing of monthly card holder overflow transactions, grouped by company that occurred during a specific time-period.
7. **The Monthlies & Transient Overflow Detailed Report**: Is a detailed listing of transient and monthly card holder overflow transactions, grouped by company that occurred during a specific time-period.
8. **The Monthlies Occupancy Report**: Lists chronologically, employee hourly occupancy statistics over a specific time-period.
9. **The Company Parking Time Report**: Lists hourly employee counts, broken down by company during a selected time-period.

3.8.6 Vehicle Identification Reports

The Reports Module shall be able to generate the following Vehicle Identification Reports that help protect against car theft or ticket swapping. These reports should also provide customer access transaction data and usage statistics when the vehicle's license plate number is used as a hands-free access credential.

1. **The Detailed LPR Trans Report:** Provides in depth information about the LPR Transactions that transpired on a selected day or during a specific time-period.
2. **The Car Black List Report**: Is a list of vehicles identified by their license plate number that are currently denied access into the garage.

3.8.7 Validation Reports

The Reports Module shall be able to generate the following Validation Reports that provide financial and qualitative data about the Discount, Validation and Employee programs that are in use.

1. **The Company Summary Debit Report:** Is a summarized list of company validation debits, sorted by validation type, which were incurred during a selected time-period.
2. **The Company Detailed Debit Report:** Is a chronological list of company validation debits, sorted by internal company issuer, which were incurred during a selected time-period. The report details the ticket, time, location, value and description of each validation debit transaction.
3. **The Company Validation Daily Report**: Is company validation reconciliation statement, broken down daily, for a selected time-period. The report also details tabulated debit totals by validation type.
4. **The Detailed Sticker Use Report**: Is a detailed list of validation sticker usage, sorted by company and event that occurred during a selected time-period.
5. **The Detailed eValidation Use Report**: Is a list of eValidation debit transactions, broken down by validation issuer that have occurred over a selected time-period.
6. **The Company Permitted Detailed Validations Report**: Is a detailed list of completed company validation transactions, sorted by company agent (monthly to transient user) that were incurred during a selected time-period.
7. **The Detailed eValidation Report**: Lists in detail of eValidation usage, sorted by company issuer event that occurred during a selected time-period.

3.8.8 Company Reports

The Reports Module shall be able to generate Company Reports that provide data about enterprise customers and the way in which these organizations and/or their individual employees use the facility.

1. **The Company Permitted Detailed Transaction Report:** Chronologically lists all the traffic transactions, broken down by company agent (monthly to transient user) that occurred over a selected time-period. The report provides daily and aggregated usage data statistics plus monetary tabulations of the incurred parking fees.
2. **The Entries/Exits Daily Quantity Report:** Chronologically lists daily garage entries and exits sorted by company over a selectable time-period. Additionally, the report also shows aggregate exits and entries counts
3. **The Companies List Report:** Is a detailed listing of the companies having accounts in the garage.
4. **The Detailed Company List Report:** Provides personal profile information about each registered company with garage usage privileges.

3.8.9 Monthly Reports

The Reports Module shall be able to generate the following Monthly Reports that provide data about monthly customers and the way in which they use the parking facility.

1. **The Access Control - Monthly Traffic Report**: Provides access card usage statistics of the garage's pedestrian doors, broken down by monthly customer during a specific time-period.
2. **The Monthlies Detailed Calculated Report:** Provides access card usage, occupancy and fee statistics, broken down by company during a specific time-period. The report also includes aggregate tallies for all relevant statistical categories.
3. **The Monthlies Detailed Calculated Report**: Is a summarized list of monthly customer traffic statistics, broken down by company during a specific time-period.
4. **The Monthlies Month Price Report**: Lists the monthly assigned service fees including aggregate fee tallies broken down by company.
5. **The Monthlies Monthly Price Report:** Lists the monthly customers with assigned service contracts. The report includes the length and monthly price of each customer's contract.
6. **The Monthlies Units Report:** Is a list of monthly customer usage statistics based on their entry units and broke down by company for a specific month.
7. **The Monthlies List Report:** Is a list of current monthly customers, sorted by access profile. The report also includes the cardholder's assigned usage privileges and price rate details.
8. T**he Detailed Month Price Report:** Is detailed list of monthly customers with service contracts. The report also details the customer's personal profile information, monthly pricing data plus aggregate customer counts and revenue tallies.
9. **The Detailed Monthly Traffic Report:** Is a chronological listing of monthly customer traffic transactions, sorted by company over a specific time-period.
10. **The Monthly Exceeding Report:** Is a list of monthly customers who have exceed their allotted garage usage allowance during a specified time-period. The report includes overstay statistics, plus the imposed overstay charges.
11. **The Detailed Monthly's Traffic Location Report:** Lists monthly customer entry and exit traffic transactions, sorted by calendar date over a specific time-period.
12. **The Monthlies Traffic Track Report:** Is a chronological list of monthly customer entry and exit transactions over a selected time-period.
13. **The Monthlies List with No Activity Report:** Lists monthly customers with no garage usage activity during a defined time-period. The report is grouped by company and includes each customer's usage and pricing profile.

3.8.10 Guest Reports

The Reports Module shall be able to generate the following Guest Reports that provide information pertaining to transient guests and the way in which they use the facility.

1. **The Detailed Guests Traffic Report**: A time-stamped listing of the entry/exit transactions grouped by guest number that transpired over a specific time-period.
2. **The Detailed Congress Payment Report:** A detailed listing of the guest payments collected during a selected work shift or throughout a specific time-period.
3. **The eVoucher – Guest List Report:** A chronological listing of guest parkers that used prepaid eVouchers as payment during a specified time-period. The report is grouped by voucher type; also includes parking lane and time use statistics for each guest parker.
4. **The eVoucher – Closed Tickets Report:** A chronicle listing of guest tickets that were paid with eVouchers during a specific time-period. The report is grouped by voucher type and includes parking lane time statistics for each guest parker.

3.8.11 Hotel Reports

The Reports Module shall be able to generate the following types of Hotel Reports:

1. **The Hotel Guests- Detailed Traffic by Room:** Lists entry and exit transaction statistics, sorted by guest room that have occurred over a specific time-period
2. **Hotel Room Usage Report**: Shows daily guest room usage statistics for hotel guests that used the garage at least once during their hotel stay plus aggregated monthly usage tallies during a selected month.
3. **The Hotel Room Occupancy Report**: Shows occupied garage occupancy statistics for checked-in guest rooms plus aggregated monthly tallies during a selected month.
4. **The Detailed Guest Trans by Room Report:** Provides parking facility traffic statistics (grouped by guest room) during a selected time-period.
5. **The Detailed Guest List Report:** Provides summarized garage usage statistics sorted by guest room during a specific time-period.

3.8.12 Analytical Charts

The Reports Module shall provide the following statistical charts:

1. **Entries & Exits:** Shows the number of vehicles accessing or leaving the parking lot during the day. This statistic chart shall provide information between two dates chosen by the operator.
2. **Occupancy Distribution:** Displays vehicle occupancy by hours during the day. This statistic chart shall provide information between two dates chosen by the operator.
3. **Transients Parking Time Distribution:** Displays the number of hours transients occupied the parking facility. The information shall be by vehicle quantity and between two dates chosen by the operator.
4. **Transient's Income Distribution:** Presents the income distribution of cash, credit cards and validations. This statistic chart shall provide information between two dates chosen by the operator.

4 Bank Card Processing

The PARCS shall include a real-time Bankcard Card Processing System and shall be designated as the CCS.

4.1 General Functionality

1. The CCS shall provide online real-time authorization for bankcard payments made at all of the garage's point of sale devices.
2. The PARCS and/or the CCS shall not retain any bank card sensitive CHD (Card Holder Data) in accordance with PCI Security Standards guidelines for PCI certified applications.
3. The CCS shall comply with processing requirements for bankcard processing, including, but not limited to, applicable requirements and operating regulations of card brand associations, card issuers and clearinghouses.
4. The PARCS equipment shall be integrated with the CCS and shall comply with the PCI security standard council regulations for payment applications PA-DSS 2.0 or later to process and handle credit card data in effect at the time of the installation.
5. The CCS shall support acceptance (based on customer determination) of all bankcard types (i.e., credit, debit and prepaid) and the following card brands - American Express, Discover, MasterCard, Visa and Diners Club for payment.
6. For all approved bankcard authorization requests, the PARCS shall provide a bankcard transaction receipt.
7. The CSS shall provide online real-time authorization for bankcard payments made at all of the garage`s point of sale devices.
8. For payments, bankcard data shall be read and transmitted to the CCS /acquirer ("clearinghouse"). The clearinghouse shall provide authorization for all bankcard purchase transaction request.

4.2 Traditional Credit Card Processing System

1. The CCS shall be installed on a standard desktop PC running windows 7 operating system, which is separated from the PARCS server and shall be located locally at the parking lot property. Credit card processing between gateway and service provider / clearing house shall be through a WAN (Wide AreaNetwork) connection, utilizing secured TCP/IP protocol.
2. Bankcard processing time shall be no longer than 5 seconds for non-EMV transactions for most common major credit cards, regardless the amount of equipment that resides on the parking system network.
3. The following types of bankcards/devices shall be supported as an accepted method of payment media at all point-of-sale devices for parking access and payment (If supporting hardware is installed), as follow:
    - Magnetic-stripe bankcards.

4.3 EMV Credit Card Processing System

1. The PARCS shall be integrated with a EMV credit card processing system provider. Current supported providers are: Windcave, 3C, ADVAM, Moneris
2. The following types of bankcards/devices shall be supported as an accepted method of payment media at all point-of-sale devices for parking access and payment (If supporting hardware is installed), as follows:
    - Magnetic-stripe bankcards.
    - EMV Chip bankcards.
    - Contactless bankcards.
    - NFC-based payment from smart phones.
3. The EMV terminals shall provide end-to-end encryption (E2EE); however point-to-point encryption (P2PE) shall also be accepted.

4.4 Communications

1. The CCS (Credit Card System) shall provide communication with credit card processing service provider / clearinghouse for the purposes of obtaining authorization to complete a transaction with a bankcard.
2. The CCS shall be able to simultaneously process bankcard transactions from all PARCS devices to the clearinghouse.
3. The CCS shall support the logging, storage, backup, and retrieval of information regarding all data transmissions, including timing of the transmission, data transmitted, and status of the transmission, for both individual transactions and entire files, such as settlement files.
4. The future ability for the garage operator to change clearinghouses, shall be supported.
5. The PARCS shall include a notification method of communication failures at any point in the data transmission from device to bankcard server to clearinghouse.

4.5 Funds Settlement

1. The CCS shall generate on a daily basis an electronic settlement data file and transmission with the appropriate financial institution or have the service provider / processor settle the transactions for the merchant account.
2. The PARCS shall provide report data that displays:
    a. Bankcard revenue by card type, amount, individual parking device and parking facility and in total for a selectable time.
    b. The data shall be able to be displayed by total for each card brand and grand total of all brand subtotals.

5 License Plate Recognition

The PARCS shall include a License Plate Recognition (LPR) subsystem to read and record the license plates of each vehicle passing the facility's entry and exit lanes.

5.1 General Specifications

The LPR subsystem shall have the following general specifications:

1. Each public parking entry and exit lane in the garage facility shall have LPR functionality.
2. The LPR subsystem shall consist of all hardware and software necessary to provide a complete licenseplate reading subsystem that does not adversely affect any function of the PARCS.
3. All entry and exit transactions shall utilize LPR. The PARCS shall allow the garage operator to deactivate LPR functionality for any select entry media type.
4. All LPR processing shall occur in parallel with other functions occurring within the PARCS and shall notsignificantly increase the processing time for vehicle entry.
5. In the unlikely event of total LPR subsystem failure, it shall be possible for the garage operator to "turn off" the LPR subsystem so that continued normal operation of the base PARCS is maintained.
6. Once the LPR subsystem comes back online, the garage operator shall have the ability to "turn on" LPR functionality.
7. The LPR subsystem shall support pre and post capture configuration, meaning the license plate images are taken after the vehicle has cleared the entry lane closing loop.

5.2 LPR Database

The LPR shall contain a License Plate Database (LPD) with the following features:

1. The capacity to automatically store all LPR data for at least one (1) year.
2. Provide up to eight (8) alpha-numeric digits to be stored in database for each license plate no.
3. The LPR database shall be the primary database to process exits and exception transactions.
4. The databases shall purge orphaned LPs after a programmable number of days.
5. LPR workstations shall provide the ability to do the following:
    a. Review images
    b. Search the LPR database for entry data associated with an exit LP.
6. Exit transactions shall be given higher priority than entry transactions for review. A vehicle may not exit until the entry review alarm has been processed or the alarm timeout period has been reached.
7. Provide images of the license plate and a broader image that includes the full back view of the vehicle.
8. Send notifications to the LPR workstation when the following events occur:
    a. Entry plate not successfully read.
    b. Exit plate not successfully read.
    c. The entry record data does not agree with the exit record data.

5.3 Exception Transactions

1. Record each type of LPR exception transaction so that they are uniquely identified and sortable by type for reporting purposes.
2. **No Plate Found on Entry** - During an entry LP review, if the entry LP image is not available to input into the LPR, the PARCS shall record the image as a 'No Plate on Entry' and shall link it to the entry media to create an entry record that shall be stored in the PARCS database.
3. **No Plate Found on Exit** - During an exit LP review, if the exit LP image is not available to transfer into the LPR system, the PARCS shall record the exit LP image as a 'No Plate on Exit'. The PARCS shall use the entry media date/time presented in the exit lane to compute the parking fees. The transaction is processed and recorded in the PARCS database as a 'No Plate Found' on Exit transaction. The LP entryimage and associated entry media used at exit are closed in the PARCS database.
4. **Swapped Ticket** – A Swapped ticket transaction occurs when the entry media presented at the exit does not match the entry media recorded for the LP that is in the exit lane.
5. **No Plate Match on Exit** – During an exit LP review, if a matching entry image is not found, the PARCS shall search the License Plate Inventory database for a match. The station will hold the ticket preventing the driver to cancel the transaction and retrieve the ticket - the FMS will alert and prompt the operator with the LP OCR data and pictures found which are associated with the ticket held at exit station and the actual LP presented at the exit lane. Based on the displayed information, the operator can select one of the following options:
    a. Mismatch due to incorrect LP OCR data in the system, in comparison to the actual LP presentedat the exit. The operator can then select the correct LP to match the exit transaction. This willallow the patron to complete exit process.
    b. Mismatch due to swapped ticket – the operator will have the option to calculate the fee due based on the LP data from time of entry that is associated with the LP presented at the exit.
    c. The operator shall have the option log this violation and tag this vehicle in blocked listed LP numbers.

5.4 Blocked List

The LPR subsystem shall maintain a Blocked List of the following:

1. License Plate Numbers (LPNs) which identify vehicles whose owners have a history of problems at thefacility.
2. LPNs of vehicles movements that is necessary to track as decided by the facility operator.
3. The Blocked list shall reside on the FMS.
4. Entry of LPNs onto the Blocked List shall be controlled by user ID and password.
5. LPNs shall reside on the Blocked List until removal by the facility operator.
6. Entry of an LPN onto the Blocked List shall include date of entry, reason for entry onto the Blocked List, authorizing supervisor and comment section.

6 PARCS Facility Hardware

6.1 Entry Lane Stations

The Entry Lane Station shall be a fully automated ticket dispenser and access reader and authorization verifier that controls entries into the parking facility. Engineered for unmanned parking entry lanes, the TIBA Entry Terminal issues bar-coded paper roll entry tickets, encoded with a unique ticket number, entry timestamp and device number.

6.1.1 General Functionality

The Entry Lane Station shall have the following capabilities:

1. Push-button Issues a bar-coded parking ticket to each transient customer.
    a. 2D Barcode scanner (dual barcode reading for both parking tickets and coupons)
    b. Thermal barcode ticket dispenser
    c. No pre-printed bar-coded tickets shall be used.
    d. Encoded on the bar-code shall be the entry date and time and a unique identification number foreach ticket.
    e. Print license plate number on ticket when entry lane includes LPR.
    f. Issues bar-coded paper roll entry tickets (up to 5,000 in one paper roll), encoded with a unique ticket number, entry timestamp and device number
    g. The ticket's barcoded data shall be sent to and saved by the FMS.
    h. In rush-hour mode, automatically issues a ticket upon vehicle arrival without the customer having to push the ticket issuing button.
    i. Supports fan-folded or roll paper tickets.
    j. Ability to issue virtual tickets in Ticketless environments, which include the same data as printed tickets
2. Grants entry into the facility to monthlies, hotel & event guests and prepaid transients that present valid transaction authorizations from:
    a. RFID Proximity and mag-stripe readers.
    b. QR/Bar-coded validations and State Driver Licenses (dual barcode reading for both parking tickets and coupons).
    c. Support for ticket-less entry by LPR, phone number, credit card (pre or post capture), Proximity card, proximity mag-stripe or Mifare hotel key cards plus Smartcards, monthlies, special events, and eValidations.
3. Supports ticketless entry via phone number, credit card, proximity card, barcode credential and Bluetooth.

4. Allows the use of the customer's bankcard as an alternative to barcoded parking ticket.
5. Two or three denomination bill dispensers
6. Control's barrier gates, electronic signage, lane counts and more.
7. Automatically sends all transaction data to the central controller and to the FMS for generating reports.
8. Supports barrier gates, vehicle presence loops, lane status signs and other I/O devices
9. Provides analog, digital or VOIP intercom stations options
10. Numerous credit card solution including Mag-Stripe, P2PE EMV with or without pin pad, and NFC
11. Switches to stand-alone mode when network communication is lost:
    a. Have sufficient local memory storage to cache at least 2,000 transactions.
    b. Bankcard processing shall be disabled.
    c. Automatically uploads all transaction data to the FMS and the central controller oncecommunication is restored.
12. Voice annunciator and analog, digital or VOIP intercom options.
13. Full offline functionality supported
14. Built in clock; Backed up by CR2450 Lithium-Ion Battery | Up to 10 Years
15. Alerts for all operational exception conditions, including "Ticket Stock Low" and "Ticket Stock Out"conditions.
16. Network communication via RS-485 or TCP/IP Ethernet

6.1.2 Customer Interface

The Entry Lane Station shall have a customer interface with the following features:

1. Illuminated front panel by a concealed LED strip, which is recessed into the top of the cabinet.
2. High-grade epoxy based TIBA standard or custom design
3. Illuminated ticket request push button.
4. "Wave" functionality touchless sensor
5. Ability to enter a parking lot with Bluetooth functionality
6. Standard colors: White cabinet and silver door, custom colors and front panels available.
7. Programmable for button or automatic ticket issue
8. Push for Ticket backup button (optional)
9. Designated location on front panel to a physical "Push Ticket" button.
10. Hi-res 10" color touch screen with TFT display for customer guidance that is visible in all lighting conditions. Supports ticketless rate display, prepay option and help services.
11. IP Pin hole Camera for indoor and outdoor use (day and night) for extra security surveillance, in real-time and recorded footage (optional)

12. Integrated Intercom with button located on the 10” touch screen
13. Visual customer instructions.
14. Integrated Voice annunciator with played messages in accordance with the different events occurring atthe station. The customer shall have the ability to customize the voice messages.

6.1.3 Main Components

The Entry Lane Station shall be equipped with the following components:

1. Supports various access credentials including LPR, HID Proximity, Mifare, QR and Bluetooth.
2. Thermostat controlled heater
3. Mechanical keyed lock to prevent access to the interior housing and pedestal by unqualified personnel.
4. Microprocessor based industrial controller, running embedded real time firmware that shall be PC field programmable.
5. TIBA-Parking Pro-M-T Barrier integration
6. Supports EMV chip & Pin terminals.
7. Unique machine identification number.
8. Direct motor ticket dispenser with retractable ticket mechanism (roll paper or fan fold stock).
9. Two-way audio intercom station with call button (analog, digital or VOIP options).
10. Self-conditioning power supply.
11. Non-motorized Push/Pull Bankcard Reader.
    a. Proximity, Mag-Stripe, AVI and Mifare readers.
12. QR/Bar-code scanner to read paper, plastic cards, or smartphone displays.
13. A real-time clock (with battery backup) that is updated from the FMS.

6.1.4 Optional Components

The Entry Lane station, is available with the following optional components:

1. LSR QR Barcode Scanner: Reads all popular linear, PDF417 and 2D barcode symbologies, including QR and Aztec codes from smartphones, valid driver’s licenses (NDLs) and printed eValidations as well as support for MiFare.
2. LPR imaging.
3. Hotel or congress ticket support

4. RFID Proxy card reader, contactless smart card reader
5. Magnetic Stripe Card (supported only in RS-485 configurations) optional replacing the QR reader
6. Supported EMV Credit Card Terminals
7. Push for Ticket button
8. 3RD Party intercom options
9. Pinhole cameras (add on)

6.1.5 Credibility

The Entry Lane Station is compliant with the following:

1. Compliance: O/S less embedded technology, FCC, CE, UL CSA certified. PCI 3.2, ADA compliant.
2. Integrated PCI Compliant PA-DSS Credit card processing software connection.
3. Offline database support (offline monthlies)
4. Outdoor compliant

6.1.6 Remote Management

The Entry Lane Station shall have the following remote management capabilities:

1. Remote gate opening (DTMF)
2. Real-time transaction and events monitoring via Facility Management System.
3. Sends equipment status, events & transactions data to the central controller and to the FMS.
4. Customer service personnel from an FMS workstation shall be able to open or close the barrier gate connected to the Entry Lane Station.
5. Customer service personnel from an FMS workstation shall be able to manually override the entry lane
6. Terminal for monthly and transient customers.
7. Reporting capability
8. Remote configuration shall be performed from the FMS.

6.1.7 Housing

The housing of the Entry Lane Station shall have the following features:

1. Rugged, tamper-resistant stainless-steel housing with locking cabinet.
2. Stainless steel construction with keyed locking cabinet
3. Custom panels and housing colors.
4. Thermostat controlled heater.
5. Features a quick-pull slide-out front panel for easy ticket refills and maintenance
6. White RAL 9010, custom colors shall be optional.
7. IP-53 water rated.
8. Key components mounted on slide rails for easy access.
9. Front access panel & door with tamper-resistant locks.

6.2 Exit Lane Stations

The Exit Lane Station shall be a fully automated access reader, fee computation and verifier; payment device that controls exits out of the parking facility. Designed especially for hi-traffic, un-attended exit lanes, the TIBA Exit Terminal accepts unpaid tickets, expired tickets, paid tickets, chasers, stickers and vouchers.

6.2.1 General Functionality

The Exit Lane Station shall have the following capabilities:

1. Supports ticketless exit via phone number, credit card, proximity card, barcode credential and Bluetooth
2. Supports validation barcode stickers, coupons, vouchers, and driver's license
3. Various access credentials include: LPR, HID Proximity, Mifare, Mag-StripeRoom Key, QR barcodes, BLE, and AVI
4. Grants exit from the facility to monthlies, hotel & event guests and prepaid transients that present valid validated authorizations from Proximity, mag-stripe or AVI cards.
5. Supports EMV Chip and Pin credit cards for payment.
6. Supports the use of the customer's bankcard as an alternative to barcoded parking ticket, if the card was presented upon entry.
7. Accepts, validated roll or fanfold paper parking tickets and grant exit from the facility, if ticket presentation is within the programmed 'grace time' for exit after payment.
8. Performs parking fee calculations based upon rate structure.

9. Embedded voice over IP intercom and embedded IP camera
10. Control land barrier and LPR cameras
11. Offline functionality supported
12. Prints customer receipts upon receipt of cash or bankcard payments.
13. Sends all transaction data to the central controller and to the FMS for generating multiple reports.
14. TIBA-Parking Pro-M-T Barrier Integration
15. QR/Bar-coded validations.
16. Hotel Mifare Room Keys.
17. LPR matching recognition.
18. Supports barrier gates, vehicle presence loops, lane status signs and other I/O devices.
19. Provides analog, digital or VOIP intercom station options.
20. Switches to stand-alone mode when network communication is lost:
    a. Have sufficient local memory storage to cache at least 2,000 transactions.
    b. Bankcard processing shall be disabled.
    c. Automatically uploads all transaction data to the FMS and the central controller once communication is restored.
21. Alerts all operational exceptions including “Receipt Stock Low” & “Receipt Stock Out” conditions,
22. Supports network communication via RS-485 or TCP/IP Ethernet.

6.2.2 Customer Interface

The Exit Lane Station shall have a customer interface with the following features:

1. Illuminated front panel ticket push-button.
2. Hi-res 10”” color TFT display for customer guidance that is visible in all lighting conditions. Supports the usage of pictographs, custom logos and text.

   Note: Device screen sizes differ between devices and models.
3. Traditional Credit Card Reader or EMV Pin & Chip Terminals
4. Receipt request push button.
5. Wave touchless sensor button
6. Thermal Receipt Printer including the following capability:
   - The customer will not see the printing process until the ticket is dispensed from the device.
   - If the customer does not withdraw the ticket the ticket will then be retracted and swallowed by the device according to a set time.
7. Embedded Intercom with call button.

8. Optional IP Pin hole Camera for indoor and outdoor use (day and night) for extra security surveillance, in real-time and recorded footage
9. Integrated Voice annunciator with played messages in accordance with different events occurring atthe station. The customer shall have the ability to customizing the voice messages.

6.2.3 Main Components

The Exit Lane Station shall be equipped with the following components:

1. Microprocessor based industrial controller, running embedded real time firmware that shall be PC field programmable.
2. 2D Barcode Scanner (dual barcode reading for both parking tickets and coupons)
3. Unique machine identification number.
4. Motorized ticket reader/encoder (roll paper or fan fold stock).
5. Heavy duty thermal receipt printer, including the following capability:
    - The customer will not see the printing process until the ticket is dispensed from the device.
    - If the customer does not withdraw the ticket the ticket will then be retracted and swallowed by the device according to a set time.
6. Multi-denominational paper money dispenser
7. Controls gates and lane devices
8. Data line surge protector.
9. LPR support
10. Thermostat controlled heater
11. Two-way audio intercom station with call button (analog, digital or VOIP options).
12. Self-conditioning power supply.
13. Non-motorized Push/Pull Bankcard Reader.
14. Cash unit which can contain a bill recycler or a combination of bill acceptor and bill dispenser
15. Proximity, Mag-Stripe, AVI, Mifare,
16. Supports EMV Chip and Pin credit cards for payment.
17. QR/Bar-code scanner to read paper, plastic cards, or smartphone displays.
18. A real-time clock (with battery backup) that is updated from the FMS.

6.2.4 Optional Components

1. Voice annunciator
2. Motorized Ticket Reader /Swallower
3. Hotel or Congress ticket
4. RFID proximity Reader /Mifare hotel key card reader
5. QR Barcode Scanner
6. 3rd Party Intercoms
7. Pinhole cameras (add on)

6.2.5 Credibility

The Exit Lane Station is compliant with the following:

1. Accepts all major credit/debit bankcards for payment (PCI -3.2 or EMV credit card payments).
2. Integrated PCI Compliant PA-DSS Credit card processing software connection
3. FCC, CE, UL, CSA, ADA complaint
4. PCI 3.2 compliant
5. O/S less embedded technology

6.2.6 Remote Management

The Exit Lane Station shall have the following remote management capabilities:

1. Remote gate opening (DTMF)
2. Real-time transaction and events monitoring via Facility Management System.
3. Sends equipment status, events & real-time transactions data to the central controller and to the FMS.
4. Customer service personnel from an FMS workstation shall be able to open or close the barrier gateconnected to Exit Lane Station by manually overriding the entry terminal for monthly and transient customers.
5. Devices maybe upgraded with firmware updates, which is performed remotely via FW upgrade files
6. Remote configuration shall be performed from the FMS.

6.2.7 Housing

The housing of the Exit Lane Station shall have the following features:

1. Rugged, tamper-resistant stainless-steel housing.
2. Stainless steel construction with keyed locking cabinet.
3. Custom panels and housing colors.
4. Thermostat controlled heater.
5. Features a quick-pull slide-out front panel for easy ticket refills and maintenance
6. White RAL 9010, custom colors shall be optional.
7. IP-53 water rated.
8. Key components mounted on slide rails for easy access.
9. Front access panel & door with tamper-resistant locks.
10. Built in thermostat-controlled heater.
11. Custom front panel graphics

6.3 Pay in Lane (PIL) Stations

The Pay-In-Lane Entry Station shall be a fully automated access reader, fee computation and authorization verifier; cash/cashless payment device that controls entries into and exits out of the parking facility, designed for high-throughput, unattended parking operation.

6.3.1 General Functionality

The PIL Station shall have the following capabilities:

1. Shall accept validated transient tickets and grant exit from the facility, if ticket presentation is within the programmed ‘grace time’ for exit after payment.
2. Reads multiple barcode formats - 1D&2D, QR, PDF417, and more. Supports various barcode credentials via mobile device or paper
3. Supports ticketless operation
4. Supports SmartPark Bluetooth mobile access devices.
5. LPR support for easy access
6. Shall accept bankcards for in-lane fee payment.
7. Ground mounting options
8. Calculates and displays parking fees
9. Shall process discount validations for fee reduction purposes.

10. Allows the use of the customer's bankcard as an alternative to barcoded parking ticket, if the card was presented at entry.
11. Supports various access credentials including, MAG-Stripe, P2PE EMV with or without pin pad and NFC.
12. Accepts banknote cash payment and includes:
    - A bill acceptor unit, which shall read, verify and store bills. Bills shall be read in any direction of insertion.
    - A 600-bill storage cassette.
    - A bill dispenser unit to dispense bills for change. The Pay-In-Lane shall be capable to dispense 2 different denomination bills, with an option for a 3rd bill type.
    - Cash payment related alerts and transaction shall be monitored by the FMS.
13. Supports EMV Chip and Pin credit cards for payment.
14. Grants exit from the facility to monthlies, hotel & event guests and prepaid transients that present validated authorizations from Proximity, mag-stripe or AVI cards.
15. QR/Bar-coded validations.
16. Hotel Mifare Room keys.
17. Optional LPR matching recognition.
18. Supports barrier gates, vehicle presence loops, lane status signs and other I/O devices.
19. Provides analog, digital or VOIP intercom station options.
20. Automatically sends all transaction data to the central controller and to the FMS.
21. Switches to stand-alone mode when network communication is lost:
    - Have sufficient local memory storage to cache at least 2,000 transactions.
    - Bankcard processing shall be disabled in standalone mode.
    - Automatically uploads all transaction data to the FMS once communication is restored.
22. Alerts on all operational exception conditions, including "Receipt Stock Low" and "Receipt Stock Out" conditions.
23. Network communication via RS-485 or TCP/IP Ethernet.
24. Integrated PCI Compliant PA-DSS Credit card processing software connection.

6.3.2 Customer Interface

The PIL Station shall have a customer interface with the following features:

1. Illuminated front panel ticket push-button.
2. Receipt request push button.
3. Hi-res 10.1” color TFT display for customer guidance that is visible in all lighting conditions. Supports the usage of pictographs, custom logos and text.

   Note: Device screen sizes vary between device types and model.
4. RFID Proximity Reader/MIFARE Hotel Key Card Reader (Optional)
5. MAG-Stripe card reader (optional replacing the QR reader)
6. Intercom sub-station with call button.
7. Pin hole IP Camera
8. Visual customer instructions.
9. Thermal receipt printer, including the following capability:
   - The customer will not see the printing process until the ticket is dispensed from the device.
   - If the customer does not withdraw the ticket the ticket will then be retracted and swallowed by the device according to a set time.
10. Keyed mechanical housing lock
11. Integrated Voice annunciator with played messages in accordance with the different events occurring atthe station. The customer shall have the ability to customizing the voice messages.

6.3.3 Main Components

The PIL Station shall be equipped with the following components:

1. High-resolution 10” color touchscreen with support for ticketless, rate display, prepay options and help services.

   Note: Device screen sizes may vary according to device type and model
2. RFID proximity and mag-stripe readers
3. 2D Barcode Scanner (dual barcode reading for both parking tickets and coupons)
4. LPR support
5. TIBA-Parking Pro-M-T Barrier integration
6. Bankcard or paper currency acceptance

7. Multi-denominational paper money dispenser
8. Thermal receipt printer, including the following capability:
    - The customer will not see the printing process until the ticket is dispensed from the device.
    - If the customer does not withdraw the ticket the ticket will then be retracted and swallowed by the device according to a set time.
9. Paired stainless steel locking cabinets
10. Dual access and mechanical locks
11. Thermostat control heater
12. Calculate and display parking fees.
13. Handle PCI-3.2 or EMV credit card payments
14. Accept and dispense paper money
15. Print receipts on demand
16. Controls gates & lane devices
17. Embedded Voice over IP intercom
18. Two-way audio intercom station with call button (analog, digital or VOIP options).
19. Self-conditioning power supply.
20. Non-motorized Push/Pull Bankcard Reader.
21. Proximity, Mag-Stripe, AVI and Mifare readers.
22. Four-way read bill acceptor.
23. Bill dispenser (two or three banknote configurations).
24. QR/Bar-code scanner to read paper, plastic cards, or smartphone displays.
25. Real-time clock (with battery backup) that is updated from the FMS.

Note: Some features and functionality may not be available or standard in all regions.

6.3.4 Credibility

The Pay-in-Lane Station is compliant with the following:

1. Outdoor compliant
2. FCC, CSA, CE, UL certified
3. ADA compliant
4. O/S less embedded technology

6.3.5 Remote Management

The PIL Station shall have the following remote management capabilities:

1. Sends equipment stats, events & transaction data to the central controller and the FMS.
2. Real-time transaction/event monitoring – SmartPark FMS or Spark CMO
3. Customer service personnel from an FMS workstation shall be able to open or close the barrier gate connected to the PIL station.
4. Customer service personnel from an FMS workstation shall be able to manually override the entry laneterminal for monthly and transient customers.
5. Remote configuration shall be performed from the FMS.

6.3.6 Housing

The housing of the PIL Station shall have the following features:

1. Rugged, tamper-resistant stainless-steel housing.
2. Stainless steel construction with keyed locking cabinet.
3. Standard: White RAL 9010 | Optional: Custom colors available.
4. Features a quick-pull slide-out front panel for easy ticket refills and maintenance
5. IPX3 water rated
6. Separate keyed locks – Ticket Processing Cabin, Cash Processing Cabinet
7. Key components mounted on slide rails for easy access.
8. Height between the highest and lowest interaction area on the station panel, should be designed in such a manner that will support a convenient in-lane payment from the driver's window.
9. Separate cash dispenser integrated housing.
10. Front access panels & door with tamper-resistant locks
11. Door open/tamper sensor
12. Built in thermostat-controlled heater.
13. Custom front panel graphics.

6.4 Bank Card Payment Systems

The Bank Card Payment Station shall be a centralized, unattended device that provides automated bankcard payment services to parking customers. The payment application is designed to enable credit card payments in a parking facility at an unattended point-of-sale (Kiosk POS) or attended Point-of-sale (POS) and a payment processor. Credit card data is entered into the POS kiosk, which transmits the card data to the TIB@Pay application, which then forwards the payment transaction to a payment processor for authorization. The POS kiosk communicates with the application via a MC-60 controller, commonly used in parking systems hardware, with an RS485 analogue line. All communication with the processor is with Transport Layer Security (TLS) v1.2.

6.4.1 General Functionality

The Bank Card Payment Station shall have the following capabilities:

1. Shall accept, read, and validate barcode encoded roll or fanfold paper parking tickets for use at an exitstation.
2. Performs parking fee calculations based upon rate structure.
3. Shall process discount validations for fee reduction purposes.
4. Accepts all major credit/debit bankcards for payment.
5. Supports traditional or chip & pin bankcard processing, proximity access cards plus mag-stripe or Mifare hotel room keys. Handles all types of printed or electronic credentials
6. Supports EMV Chip and Pin credit cards for payment.
7. Accepts value card and monthly card holder payments
8. Supports access payments via proximity card
9. Provides analog, digital or VOIP intercom station options.
10. Alerts for all operational exception conditions, including “Receipt Stock Low” and “Receipt Stock Out”conditions.
11. Network communication via RS-485 or TCP/IP Ethernet.
12. Integrated PCI 3.2 Compliant PA-DSS Credit card processing software connection or EMV credit card payments.

6.4.2 Customer Interface

The Bank Payment Station shall have a customer interface with the following features:

1. Illuminated front panel.
2. Receipt request push button.
3. High-resolution 10.1" color touch screen supports: ticketless, rate display, pre pay options, and help services
4. Visual customer instructions.
5. Integrated PCI 3.2 Compliant PA-DSS Credit card processing software connection or EMV credit card payments.

6.4.3 Main Components

The Bank Payment Station shall be equipped with the following components:

1. Microprocessor based industrial controller, running embedded real time firmware that shall be PC field programmable.
2. Unique machine identification number.
3. Motorized ticket reader/swallower (roll paper or fan fold stock).
4. Heavy duty thermal receipt printer (2.25” paper width).
5. Data line surge protector.
6. Two-way audio intercom station with call button (analog, digital or VOIP options).
7. Self-conditioning power supply.
8. Non-motorized Push/Pull Bankcard Reader.
9. Proximity, Mag-Stripe, AVI and Mifare readers.
10. A real-time clock (with battery backup) that is updated from the FMS.

6.4.4 Remote Management

The Bank card Payment Station shall have the following remote management capabilities:

1. Sends equipment status, events & transactions data to the central controller and to the FMS for generating reports.
2. Customer service personnel from an FMS workstation shall be able to manually override the BankcardPayment Station for monthly and transient customers.
3. Remote configuration shall be performed from the FMS.

6.4.5 Credibility

The Bank Card Payment Station is compliant with the following:

1. FCC, CE, UL, CSA certified
2. PCI 3.2 compliant
3. ADA compliant

6.4.6 Housing

The housing of the Bank Card Payment Station shall have the following features:

1. Stainless steel construction.
2. White RAL 9010, custom colors shall be optional.
3. IP-54 water rated.
4. Key components mounted on slide rails for easy access.
5. Front access panel with tamper-resistant lock.
6. Built in thermostat-controlled heater.
7. Custom front panel graphics.

6.5 Pay On Foot (POF) Stations

The Pay-On-Foot Station shall be a centralized, unattended device that provides automated cash and bankcard payment services to parking customers.

6.5.1 General Functionality

The POF Station shall have the following capabilities:

1. Shall accept, read and validate barcode encoded roll or fanfold paper parking tickets for use at an exit station.
2. Performs parking fee calculations based upon rate structure.
3. Shall process discount validations for fee reduction purposes including chaser tickets.
4. Handles transient and monthlies parking payments
5. Prints customer receipts upon request
6. Includes Bluetooth low energy board
7. Supports ticketless operation
8. Embedded SIP Voice over IP intercom

9. Accepts all major credit/debit bankcards for payment.
10. Supports EMV Chip and Pin credit cards for payment.
11. Accepts value card and monthly card holder payments,
12. Supports access card payments via proximity card.
13. Numerous Credit card solutions including Mag-Stripe, P2PE EMV with or without Pin pad, and NFC
14. Accepts banknote cash payments and includes:
    a. A bill acceptor unit, which shall read, verify and store bills. Bills shall be read in any direction ofinsertion.
    b. A 600 (1,000 optional) bill storage cassette.
    c. A bill dispenser unit to dispense bills for change in 2 different denominations, with an option to add a 3rd bill type.
    d. Bill recycler unit as an option in-lieu to a bill acceptor and dispenser.
    e. Cash payment related alerts and transaction shall be monitored by the FMS.
15. The Pay-on Foot comes with a coin recycler (optional) which enables customers to use coins as a payment method as well as receive change from the bill dispenser. Change can be given in a combination of bills and coins.:
    a. Coin recycler unit functionality:
        I. Can dispense 6 coins at once
        II. 6 consolidated coin tubes
        III. Up to 4 denominations
        IV. Operates with US and Canadian coins (all denominations)
        V. Easy access to maintenance and troubleshooting
        VI. Connected and configurable with SmartPark

    b. Coin processing shall utilize recycling coins method by the following:
        I. A coin validation & processing unit.
        II. Two recycling coin hoppers with up to 800-coin capacity each to store and dispense change.
        III. One safe to store non-recycling coins that shall be utilized for overflow control.
16. Provides analog, digital or VOIP intercom station options.
17. Switches to stand-alone mode when network communication is lost:
    b. Have sufficient local memory storage to cache at least 2,000 transactions.
    c. Bankcard processing shall be disabled.
    d. Automatically uploads all transaction data to the FMS once communication is restored.

18. Alerts for all operational exception conditions, including “Receipt Stock Low” and “Receipt Stock Out”conditions.
19. Network communication via RS-485 or TCP/IP Ethernet.
20. Returns validated tickets for use at exit
21. Integrated PCI Compliant PA-DSS Credit card processing software connection.
22. Provide customer usage guidance in multiple languages.

6.5.2 Customer Interface

The POF Station shall have a customer interface with the following features:

1. Illuminated front panel.
2. 15” hi-res color TFT touch display screen for customer guidance that is visible in all lighting conditions. Supports the usage of pictographs, custom logos and text.
3. Intercom sub-station with call button.
4. Visual customer instructions.
5. Pinhole IP camera
6. Illuminated user selection buttons.
    a. Lost ticket.
    b. Language selects.
    c. Receipt request.
    d. Cancel.
7. Integrated Voice annunciator with played messages in accordance with the different events occurring at the station. The customer shall have the ability to customize the voice messages.

6.5.3 Main Components

The POF Station shall be equipped with the following components:

1. Highspeed embedded Microprocessor based industrial controller, running embedded real time firmwarethat shall be PC field programmable.
2. Operating system: OS/Less
3. Thermal receipt printer
4. High resolution 15” Color Touch Screen
5. Motorized barcode ticket reader/swallower (Optional)
6. Bill acceptor, reads paper currency in all four directions
7. 2 denomination paper currency dispensing
8. Motorized barcode ticket/reader/swallower (optional)
9. Unique machine identification number.

10. Direct motor ticket reader/encoder (handles roll paper or fan fold tickets).
11. Native TCP/IP Ethernet, or RS-485 Communication
12. High-speed thermal receipt printer (2.25” paper width).
13. Data line surge protector.
14. Two-way audio intercom station with call button (analog, digital or VOIP options).
15. Self-conditioning power supply.
16. Non-motorized Push/Pull Bankcard Reader.
17. Supports Proximity, Mag-Stripe, AVI, RFID proximity reader (hotel room key, guests and employees) and Mifare readers.
18. QR/2D Bar-code scanner to read paper, plastic cards, or smartphone displays.
19. Built in real-time clock (with lithium-ion and backup) that is updated from the FMS.
20. Single pocket for receipt & change.

6.5.4 Remote Management

The POF Station shall have the following remote management capabilities:

1. Real-time transaction/event monitoring - SmartPark FMS or Spark CMO.
2. Remote configuration shall be performed from the FMS or SPARK.

6.5.5 Credibility

The POF station is compatible with the following:

1. FCC, CE, UL, CSA certified
2. O/S less embedded technology
3. PCI 3.2 compliant
4. ADA Compliant

6.5.6 Housing

The housing of the Pay-on-Foot Station shall have the following features:

1. Stainless steel construction.
2. White RAL 9010, custom colors optional.
3. IP-54 water rated.
4. Faceplate: High-grade epoxy based TIBA standard, or custom design
5. Key components mounted on slide rails for easy access.
6. Electronic and mechanical locking mechanism preventing un-authorized personal to open mechanical locks.
7. Front access door with tamper-resistant locks.
8. Door open/tamper sensor.
9. Built in thermostat-controlled heater.
10. Custom front panel graphics

6.6 Cashier Terminals

The Cashier Terminal shall be a computerized revenue control stations for parking attendant cashier applications in mid and large-sized parking facilities and is designed for simplicity and ease of use in exit pay, central pay and valet cashier applications.

6.6.1 Description

1. Multi-user cashier station with dual cash drawer support
2. The Cashier Station shall support an integrated credit card reader (For non-EMV credit card processing), barcode scanner cash drawer and remote fee display.
3. Small facilities shall be able to deploy the Cashier Station in a stand-alone configuration.
4. Large facilities shall be able to deploy additional Cashier Stations in a master slave configuration, remotely managed through the FMS.
5. Each Cashier Station shall also support a direct connection to up to 4 proximity card readers, access keyboards, magnetic card readers or barcode scanners in support of up to 4 entry/exit lanes.

6.6.2 General Functionality

The Cashier Station shall be capable of:

1. Processing a parking ticket.
2. Accepts renewal payments from monthly customers.
3. Reads bar-coded tickets and vouchers that contain transient payment information.
4. Provides automatic fee calculations based upon pre-programmed rate structures.
5. Automatically prints credit card and cash payment receipts.
6. Entry, Exit, Central payment, Valet Operation, or combined operating modes.
7. Integrated PCI Compliant PA-DSS Credit card processing software connection.
8. Accepts cash, credit card, check and store discount coupon payments.
9. Supports optional fee display and barcode reader
10. Raises or lowers the lane barrier
11. Operates in standalone mode or as a component of a complete PARCS system.
12. Programs up to 18 dedicated validations keys garage price tables and tariff structures.
13. Supporting up to 99 additional validations.
14. Supporting In-lane or centralized location deployments.
15. Supporting Proximity and AVI readers.
16. Cashier management with security access levels.
17. Runs end-of-shift report summarizing all cashier activity plus open tickets, X & Z reports and grand total reports.
18. Management for up to 32 cashiers - Login by password or magnetic stripe card
19. Sends transaction and event data to the PARCS Central Controller and to the FMS.
20. RS-485, 232 industrial communication or TCP/IP Ethernet communication.
21. In case of a temporary loss of power, the Cashier Station shall not lose any data and will restart automatically when power is restored. Booting or re-booting of the Cashier Station shall not exceed 4 seconds.

6.6.3 Main Components

The Cashier Station shall be equipped with the following components:

1. Microprocessor based industrial controller running embedded firmware that shall be in-field PCprogrammable plus support remote management from the FMS.
2. Unique machine identification number.
3. Multiple remote fees display options
4. Up to 2 secure all-metal cashdrawers
5. Built-in mag-stripe reader & thermal receipt printer
6. Direct motor ticket reader/encoder (handles roll paper or fan fold tickets).
7. Hi-res 10” color TFT display for customer guidance that is visible in all lighting conditions Supports the usage of pictographs, custom logos and text.
8. Non-motorized Push/Pull Bankcard Reader.
9. QR barcode scanner and cradle
10. Supports Proximity, Mag-Stripe, AVI, Mifare, EMV readers.
11. Build-in non-motorized Magnetic Stripe bankcard reader, or external EMV Chip & Pin terminal.
12. QR/Barcode scanner to read paper, plastic cards, or smartphone displays.
13. Programmable Keyboard:
    a. At least 18 predefined programmable buttons for validations.
    b. At least 1 predefined programmable button that supports up to 99 validation accounts.
    c. At least 4 quick change pricelist buttons.
    d. Cashier switch button.
    e. Entry ticket issue button.
    f. Gate opening buttons.

14. Button for manual entry of ticket number.
15. Thermal receipt printer (2.25” paper width).
16. Data line surge protector.
17. Self-conditioning power supply.
18. Cash drawer for bill and coin storage.
19. Built-in clock (backed up by lithium-ion battery).
20. Inputs & outputs:
    a. 4 output relays for controlling barrier gates.
21. 4 inputs for monitoring lane loops.
22. 2 inputs for monitoring arm-up inputs.
23. 4 data inputs for 4 card readers.
24. Fully programmable Rates (password protected)
25. LPR integration
26. Remote configuration & management via SmartPark FMS

6.6.4 Credibility

The Cashier terminal is compliant with the following:

1. PCI 3.2 Compliant
2. FCC, CE, UL, CSA certified

6.6.5 Housing

1. The Cashier Station shall not exceed 16 ½” width; 16 ½” depth; 10” height.
2. Locking door-hinged front panel for receipt paper and currency refills, easy-to-follow printed, electronic, and audible customer prompts plus embedded intercom capabilities
3. Keyed device lock

6.7 Access Card Readers

The Card Reader Station shall be a fully automated, in-lane access reader that controls entries and exits into and out of the parking facility. When an LPR camera is connected to the access card reader, the vehicle tag no. shall be sent to the management software along with the transaction data.

6.7.1 General Functionality

The Card Reader Station shall have the following capabilities:

1. Grants entries and exits into and out of the parking facility to customers those present valid authorizations from:
   a. Proximity, Mag-Stripe and AVI credential.
   b. Encoded QR/Bar Codes
   c. Hotel Mifare Room Keys
   d. LPR matching recognition.
   e. PIN number access.
   f. Bluetooth
2. Supports barrier gates, vehicle presence loops, lane status signs and other I/O devices.
3. Supports SmartPark Bluetooth mobile access devices for quick entry
4. Provides analog, digital or VOIP intercom station options.
5. Automatically sends all transaction data to the central controller and to the FMS. When an LPR camera is connected to the station the vehicle tag number shall also be sent.
6. Switches to stand-alone mode when network communication is lost:
   a. Stores in memory buffer at minimum 2,000 transactions.
   b. Automatically uploads all transaction data to the FMS and the central controller oncecommunication is restored.
   c. Network communication via RS-485 or TCP/IP Ethernet.

6.7.2 Customer Interface

The Card Reader Station shall have a customer interface with the following features:

1. Front panel for easy maintenance, easy to follow customer prompts.
2. Hi-res 4.3" color TFT display for customer guidance that is visible in all lighting conditions. Supports the usage of pictographs, custom logos and text.
3. Intercom sub-station with call button.
4. Visual customer instructions.

6.7.3 Main Components

The Card Reader Station shall be equipped with the following components:

1. Microprocessor based industrial controller, running embedded real time firmware that shall be PC field programmable
2. Embedded voice annunciator and speaker
3. Unique machine identification number.
4. Data line surge protector.
5. Thermostat controlled heater (optional)
6. Two-way audio intercom station with call button (analog, digital or VOIP options).
7. Self-conditioning power supply.
8. Proximity, Mag-Stripe, AVI, Mifare, Smartcard reader.
9. Anti-vandal keypad for PIN number access.
10. QR/Bar-code scanner to read paper, plastic cards, or smartphone displays.
11. A real-time clock (with battery backup) that is updated from the FMS.

6.7.4 Credibility

The Card Reader Station is compliant with the following:

1. O/S less embedded technology
2. Offline database support (offline monthlies)
3. Outdoor compliant
4. FCC, EMC, ADA compliant

6.7.5 Remote Management

The Card Reader Station shall have the following remote management capabilities:

1. Sends equipment status, events & transactions data to the central controller and to the FMS.
2. Customer service personnel from an FMS workstation shall be able to open or close the barrier gate connected to the Card Reader Station.
3. Customer service personnel from an FMS workstation shall be able to manually override the Card Reader Station for monthly and transient customers.
4. Remote configuration shall be performed from the FMS.

6.7.6 Housing

The housing of the Card Reader Station shall have the following features:

1. Rugged, tamper resistant stainless-steel housing
2. Both ground and wall mounting options
3. White RAL 9010, custom colors shall be optional.
4. IP-54 water rated.
5. Key components mounted on slide rails for easy access.
6. Front access panel with tamper-resistant lock.
7. Panel open/tamper sensor.
8. Thermostat controlled heater shall be optional.
9. Custom front panel graphics.

6.8 Validation Units

6.8.1 Self-Scan Validation Units

The Self-Scan Validation Unit shall enable parking customers to self-validate their own parking tickets withreal-time verification.

6.8.2 General Functionality

The Self-Scan Validation Unit shall have the following capabilities:

1. Reads and validates parking tickets.
2. Supports validation barcode stickers and coupons and reservations and vouchers.
3. Supports ticketless exit via phone number, credit card, proximity card, barcode credential, and Bluetooth
4. An after-hours access reader for transients and cardholders.
5. Supports the following configurable discount types:
    a. Flat or discounted rates.
    b. Time based discounts.
    c. Percentage based discounts.
6. Special pricelist assignments.
7. Operator configurable time and day activation/deactivation schedule.
8. Pedestal or wall mountable.
9. Provides analog, digital or VOIP intercom station options.
10. Sends equipment status, events & transactions data to the central controller and to the FMS.
11. Network communication via RS-485 or TCP/IP Ethernet.

6.8.3 Customer Interface

The Card Reader Station shall have a customer interface with the following features:

1. Hi-res 10.1” color TFT display for customer guidance that is visible in all lighting conditions. Supports the usage of pictographs, custom logos and text.
2. QR Barcode scanner for e-validations and State Driver Licenses
3. Intercom sub-station with call button.
4. Visual customer instructions.

6.8.4 Main Components

The Self-Scan Validation Unit shall be comprised of the following components:

1. Microprocessor based industrial controller running embedded firmware that shall be in-field PC programmable plus support remote management from the FMS.
2. Barcode scanner for reading parking tickets, validation stickers and validation coupons.
3. Hi-res 4.3” color TFT display for customer guidance that is visible in all lighting conditions. Supports the usage of pictographs, custom logos and text.
4. Integrated intercom station with call button. Analog, digital or VOIP options available.
5. Communications line surge protector.

6.8.5 Credibility

The self-scan validation unit is compliant with the following:

1. FCC, CE, UL, CSA compliant
2. PCI 3.2 compliant
3. ADA compliant

6.8.6 Housing

The housing of the Card Reader Station shall have the following features:

1. Aluminum construction.
2. White RAL 9010, custom colors shall be optional.
3. IP-54 water rated.
4. Key components mounted on din rails for easy access.
5. Thermostat controlled heater shall be optional.
6. Custom front panel graphics.

6.8.7 Desktop Validation Units

The Desktop Validation Unit shall enable merchants to validate parking tickets with real-time verification by the FMS.

With this unit's versatile settings merchants can use various validation types such as flat rate, discounted, hours discount and more. Validations are monitored in real-time in the SmartPark FMS management software. Validations can also be associated with a specific user group for future billing. All parking devices in the system will recognize the validation, calculate the new parking fee and update the balance accordingly.

6.8.8 General Functionality

1. Desktop Validation Units shall be available in either Online or Offline configurations
2. Handles thousands of monthlies
3. Monthly account payments
4. Handles and processes revenue, count, cardholder transactions as well as validations and reservations.
5. Advanced pricelist and multiple tariffs
6. Reads and validates parking tickets, validation stickers and validation coupons.
7. Can operate as a stand-alone unit for hotel applications.
8. Supports numerous credit card solutions, including Mag-Stripe, P2PE EMV with or without pin pad and NFC.
9. Supports up to 4 merchant configurable discount types:
    a. Flat or discounted rates.
    b. Time based discounts.
    c. Percentage based discounts.
    d. Special pricelist assignments.

For On- Line Versions Only:

10. Sends equipment status, events & transactions data to the central controller and to the FMS.
11. Network communication via RS-485 or TCP/IP Ethernet.
12. PCI 3.2 Compliant
13. FCC, CE, UL, CSA compliant

6.9 Barrier Gates

6.9.1 Description

The barrier gate shall be a high speed and High- performance barrier gate operator.

6.9.2 Main Components & Features

The barrier gate shall have the following components & capabilities: -

1. TIBA Parking Prom-M-T (Magnetic) barrier integration
2. Barrier open/close time 1.4-1.9 second, based on boom length of 8 to 12 feet.
3. Arm options shall by the following: -
    a. 8-12-foot octagonal aluminum arm.
    b. 8–12-foot articulating octagonal aluminum arm (for low ceiling heights).
    c. 8-12-foot swing-away round aluminum arm (with swing-away flange).
4. Direct drive operation resulting in condensation/corrosion resistance.
5. Operation in cold climatic conditions and overall extended service life – no belts, pulleys orchains.
6. Built-in position sensors (no limit switches) providing precise arm position status and a self- learning control unit to guarantee optimum braking and no boom arm bouncing, sagging orrotating out of position.
7. Automatic reversing mechanism that stops gate arm movement if arm hits an object, andimmediately reverses arm to the up position.
8. Power outage shall allow raising manually the gate arm.
9. Low power consumption and high MCBF (> 2,000,000 cycles).
10. 100% duty cycle spring-balanced AC torque providing 2 million cycles.
11. Build in PLC Controller with LCD display and built-in dual channel vehicle loop detectors.
12. Build in adjustable timer for arm gate closing.
13. (5) – Potential free inputs.
14. (2) - 24V DC outputs.

6.9.3 Sub Components

The barrier gate shall have the following optional components & capabilities: -

1. Additional foam protection inserted on the bottom of octagonal aluminum boom for extra safety.
2. Swing away flange.
3. Supports at least 4 loop detectors.
4. Contact for release of barrier arm.
5. Additional I/O extension modules.
6. Boom arm lights with controller.
7. Optional network or serial connection module.
8. Optional heater for extremely cold environments.
9. Custom RAL color.

6.9.4 Remote Control & Monitoring

The barrier gate shall have the following control & monitor capabilities: -

1. Open arm command – momentary dry contact input.
2. Close arm command – momentary dry contact input.
3. Arm up output – continuously dry contact output or 24VDC output.
4. Arm lost output – continuously dry contact output or 24VDC output.

6.9.5 Housing

1. Modular construction with drive unit mounted to a heavy-duty casting allowing easy access door to be mounted on any side of barrier.
2. Left- or right-hand operation.

6.10 FMS Software Server

1. The FMS shall be installed on a standard desktop PC running either Windows 10 Operating System or installed on a server running windows server 2016 Operating System or newer.
2. Operating System should be installed on system that has 16GB RAM (If multiple high traffic garages on one server, recommend 32GB)
3. Operating System should be installed on system that has Dual Core 2.5GHZ or above (If multiple high traffic garages on one server, recommend Quad Core)
4. Operating System should be installed on system that has 500GB of Hard Drive Space of database backup storage available.
5. The FMS shall utilize SQL Server 2012 / SQL server express 2012 or newer for database management.
6. The FMS shall support the capability to work in Server / Client mode. Management software clients can be added to the network to support real- time monitoring & control from multiple locations on the network regardless the number of clients that are connected at the same time to the system database.
7. The FMS shall have the capability to control multiple parking lots from one management interface.

6.11 Bankcard Processing Server

1. The CCS shall be installed on a standard desktop PC running windows 7 operating system and shall be located locally at the parking lot property. Bankcard processing gateway shall be through a WAN (Wide Area Network) connection, utilizing secured TCP/IP protocol.
2. The CCS shall be a background application that runs on different server from the FMS server. All bankcard information shall be transmitted to this server directly from the PARCS equipment. The payment request shall be submitted directly to the clearing house without this information passing through the any other machine except that of the machine where the CCS processing is residing on.
3. The PARCS equipment shall be integrated with the CCS and shall comply at least with the PCI security standard council regulations for payment applications PA-DSS 2.0 to process and handle credit card data.
4. CCS processing time shall be no longer than 5 seconds (For non-EMV transactions) for most common major bankcards, regardless the amount of equipment that resides on the parking network.
5. The CCS shall be capable to provide centralized credit card processing for multiple parking facilities as defined in the FMS.
6. The FMS shall provide information about a transaction by entering the last 4-digit of a credit card

7 Execution

1. The PARCS shall be installed by a manufacturer certified dealer only, who shall coordinate all work with other contractors and trades.
2. All necessary conduit, raceways, pull boxes, standard boxes, (and any special boxes provided by the PARCS manufacturer), shall be installed or approved by the manufacturer certified dealer only.
3. Installation of the PARCS equipment shall be coordinated with the installation of other related systems such as: Networking, Hotel PMS and CCTV video, switching and Intercoms.

7.1 System Initializing & Programming

1. The PARCS shall include all software necessary for system configuration.
2. The PARCS shall be turned on and adjusted to meet specification requirements and on-site conditions.
3. The PARCS shall be programmed to function as specified.
4. Any special programming required shall be documented, printed, and made available to the garage operator.

7.2 System Test Procedures

1. The PARCS shall be completely tested to assure that the PARCS equipment, servers, gates and all components are hooked-up and in working order.
2. The PARCS shall be pre-tested by contractor and certified to function in accordance with plans and specifications.
3. The PARCS shall be tested in presence of owner's representative.

7.3 Documentation

1. The Contractor shall provide the customer with a digital copy of the manufacturer's operation, installation and maintenance manuals include typical wiring diagrams for each of the installed products.
2. The Contractor shall provide the customer with a digital copy of As Built Drawings including all plans, elevations, sections, details, and attachments that include detail equipment assemblies and dimensions, required clearances, and method of field assembly, components, and location and size of each field connection.
3. The Contractor shall provide the customer with a digital copy of any risers, layouts, and special wiring diagrams showing any changes to standard drawings, as required by the project

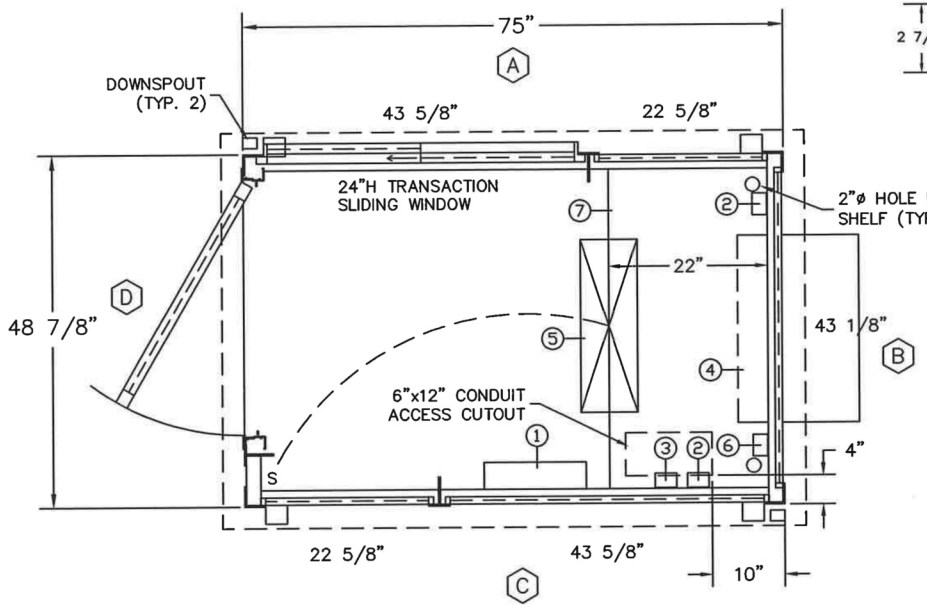
7.4 On-Site Training

1. The Contractor shall conduct a seminar (to be delivered by factory trained personnel) for up to 10 persons employed by the facility owner. The class duration shall be at least 4 hours in length and shall include practical operation and testing of installed equipment.
2. The contractor shall conduct at least (4) hours of instruction in use and operation of the system to designated owner representatives, within (10) days of system startup.
3. The Contractor shall conduct periodic technical training sessions and make them available to those responsible for on-going system operations.

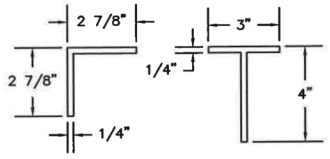
8 Definitions/Terms/Abbreviations

Term/Abbreviation	Description
Barrie Gate	An automated gate utilized by the PARCS to control entry into and exit from a parking facility.
Card Reader	A device that can decode the information contained in a credit or debit card's magnetic strip or microchip. In finance, the term “card reader” refers to the technologies used to detect the account number, cardholder information, and authorization code contained on a credit card.
Cashier Station	A computerized PARCS device located in a staffed cashier booth at an exit lane or at a centralized location that facilitates multiple methods of exit from a parking facility; commonly referred to as: cashier terminal
CCS	Credit Card System
Contractor	The individual, partnership, firm, or corporation in contract with the garage operator and primarily liable for the acceptable performance of the Work contracted and for the payment of all legal debts pertaining to the work who acts directly or through lawful agents or employees to complete the Work.
Crash	A system failure in which the PARCS cannot properly process transactions.
Dynamic Signage	Signage capable of displaying varying text and/or graphics to relay specific messages to customers via a matrix of LED lights. Dynamic signage can be used for various applications including displaying the method of payments accepted at a specific lane, the number of available spaces in a facility/level or providing guidance to customers
EMV	A chip embedded credit card associated with a personal PIN used for payment of parking fee due. Sometimes called “Chip and PIN.” EMV Standards are currently scheduled to be required as of October 1, 2015.
Entry Station	A computerized PARCS device located in an entry lane that facilitates multiple methods of entry including issuing a parking ticket, reading an access card or credit card, reading an AVI transponder, reading a proximity access card, reading a bar code or QR code from a cell phone or hard copy document
Exit Station	A computerized PARCS device located in an express exit lane that facilitates multiple methods of exit from a parking facility including reading a parking ticket, reading an access card or credit card, reading an EMV (chip embedded) card, reading a bar code from a cell phone or hard copy document, or reading a proximity access card or credit card fob via RFID and work in conjunction with LPR system for transients and card holder transactions. The exit station uses the data from the inserted or detected media to validate exit privileges or calculate and process the associated parking fee; fees can be paid via credit card, debit card, or cell phone, or exit is granted via access card or validated/pre-paid ticket
FMS	SmartPark Facility Management System
GUI – Graphical User Interface	A program interface that takes advantage of a computer's graphics capabilities in an attempt to make the program user-friendly and intuitive to use.
IP – Internet Protocol	IP is a network layer protocol in the Internet protocol suite and is encapsulated in a data link layer protocol (e.g., Ethernet). As a lower layer protocol, IP provides the service of communicable unique global addressing amongst computers

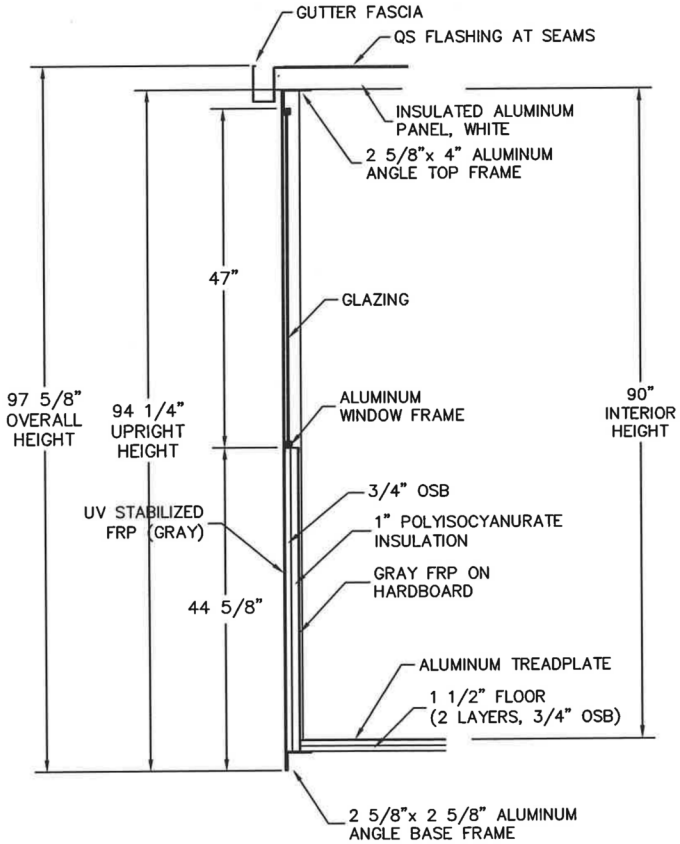
Term/Abbreviation	Description
ISO – short for International Organization for Standardization	An international organization comprised of national standards bodies from around the world. ISO is the world's largest developer and publisher of standards
PARCS	Parking Access and Revenue Control System



PLAN VIEW



HEAVY DUTY EXTRUSION USED
ON THIS BUILDING



WALL SECTION DETAIL

DURALUMINUM MODEL 7648SW BUILDING NOTES :

① 100 AMP SINGLE PHASE 12 CIRCUIT LOAD CENTER W/MAIN BKR.
② 115V DUPLEX OUTLET
③ 230V OUTLET
④ 230V 12000 C/10600 H BTU THRU WALL HVAC
⑤ 20 WATT SURFACE MTD. LED LIGHT W/SWITCH
⑥ PHONE/DATA JACK W/CONDUIT TO FLOOR
⑦ 22" DEEP 14GA STEEL, PAINTED SHELF, 32"A.F.F.

* 3" OVERHANG EXTERIOR ROOF W/(2) DOWNSPOUTS
* 90" INTERIOR HEIGHT
* 1– HEAVY DUTY ALUMINUM DOOR 3068 w/HALF GLASS, ADA CLOSER, AND LEVER LOCK
* GLAZING– 3/16" GRAY TEMPERED GLASS
* INSULATION– WALLS R–10 AND CEILING R–12
* INTERIOR PANEL FINISH– GRAY FRP ON HARDBOARD
* ALUMINUM TREAD PLATE FLOOR

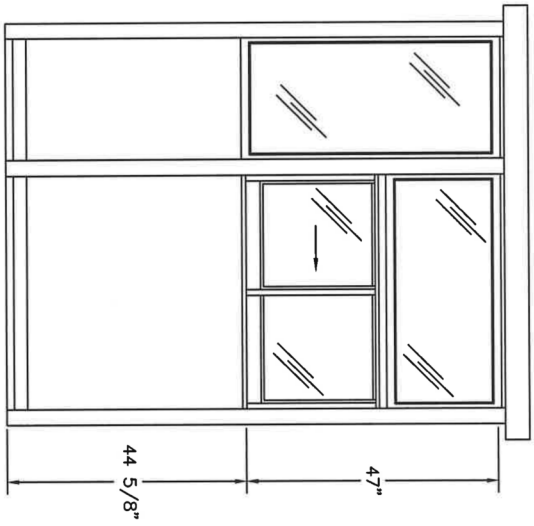
PROJECT: PENSACOLA AIRPORT
PENSACOLA, FL

CUSTOMER: REEF PARKING
SYSTEM: DURALUMINUM
MODEL: 7648SL

PORTA-KING BUILDING SYSTEMS
4133 SHORELINE DRIVE
EARTH CITY, MO 63045
1–800–456–5464
www.portaking.com

ESTIMATE:	LA0947
ORDER:	PK36899
JOB:	49827
DATE:	4–13–22
REVISED:	
DRAWN BY:	KCD
SHEET	1 OF 2

ELEVATION A



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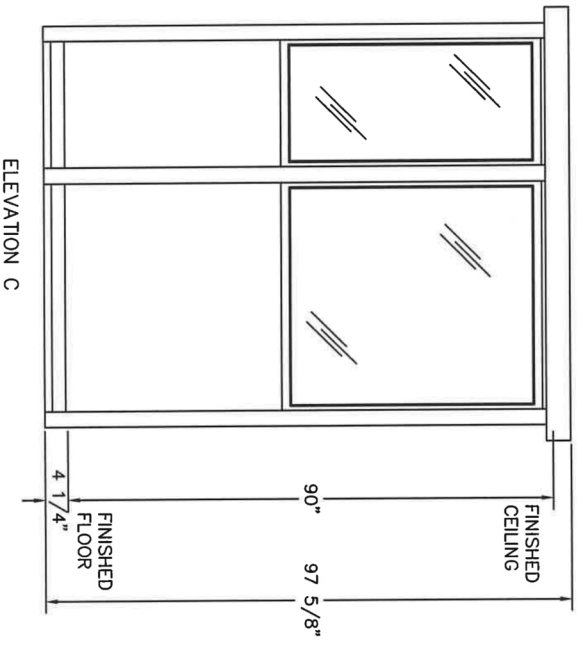

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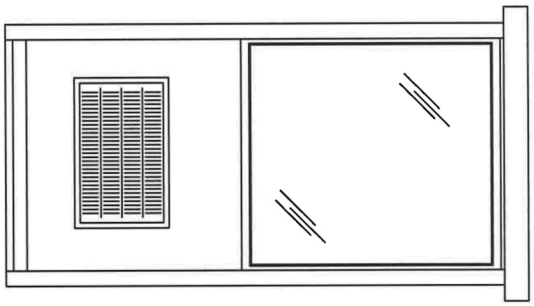

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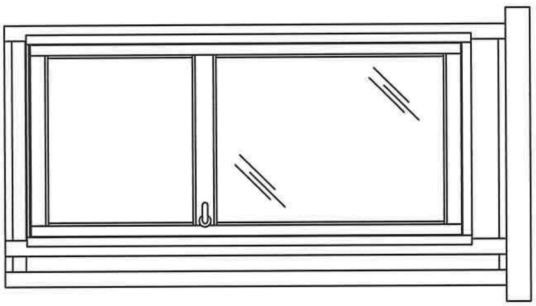
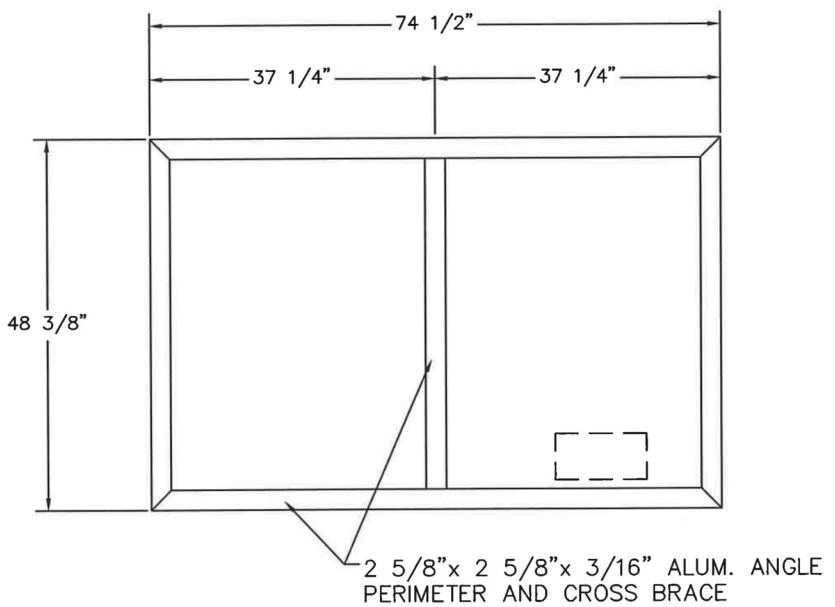
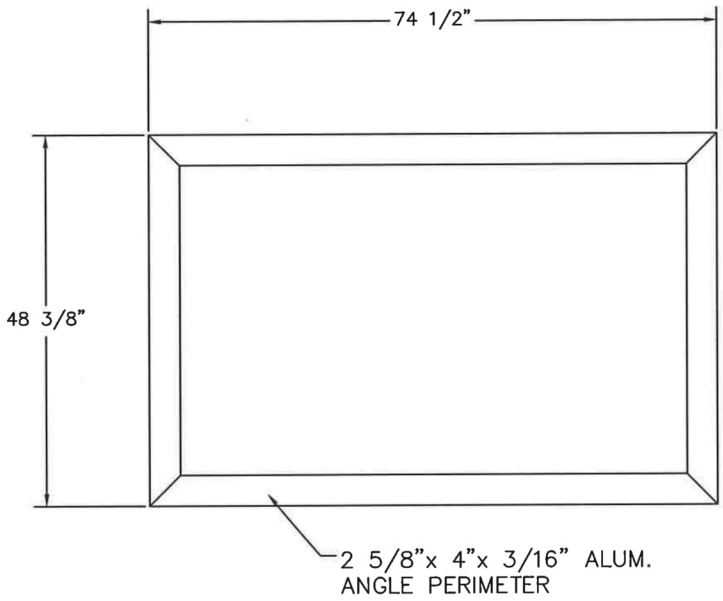


ESTIMATE: LA0947 ORDER: PK36899 JOB: 49827 DATE: 4-13-22 REVISED:	PORTA-KING BUILDING SYSTEMS 4133 SHORELINE DRIVE EARTH CITY, MO 63045 1-800-456-5464 www.portaking.com	CUSTOMER: REEF PARKING SYSTEM: DURALUMINUM MODEL: 7648SL	PROJECT: PENSACOLA AIRPORT PENSACOLA, FL
DRAWN BY: KCD SHEET 2 OF 2			



BASE FRAME LAYOUT



ROOF FRAME LAYOUT

PORTA-KING
BUILDING SYSTEMS
4133 SHORELINE DRIVE
EARTH CITY, MO 63045
1-800-456-5464
www.portaking.com

TITLE: JOB 49827

PORTA-KING BUILDING SYSTEMS
A Division of Jay Henges Enterprises, Inc.

4133 Shoreline Drive
Earth City, MO 63045
Phone: (800) 456-5464
www.portaking.com

Date: 4/4/2022
Customer: REEF PARKING
Jacksonville, FL
Attention: Jennifer Carrol
Phone: 803-338-4286
Email: jennifer.carroll@reefparking.com

PO 21601

Project: Pensacola airport
Pensacola FL
Estimate: LA00000947 - Revision 1

Thank you for your interest in Porta-King prefabricated products. Porta-King has been fabricating custom prefabricated buildings since 1969. As the leading manufacturer of prefabricated buildings, Porta-Kings' customers enjoy the highest level of quality and service available to the industry. Porta-King buildings ship fully assembled and completely pre-wired (unless otherwise noted). Simply off-load the building at the job-site, set and anchor the building onto a concrete pad, supply power to the pre-wired breaker-box, and you're ready for operation.

The following is a summary list of the materials and corresponding quantities included in this proposal. Please take a moment to review this information.

Description	Quantity	Unit Price	Price
DURALUMINUM BUILDING **Model 7648 (6'-4'' x 4' Nominal)**			
Model 7648 (6'-4'' x 4' Nominal)	1 EA		
Ceiling Height: 90''	1 EA		
Exterior Finishes			
Ext Finish Style: Standard	1 EA		
UV Stabilized Gray FRP	21 LF		
Interior Finishes			
Fiberglass Reinforced Plastic (FRP) Interior	21 LF		
Interior Color: Gray	1 EA		
Insulation			
Walls R-10, Ceiling R-12	21 LF		
Roof			
Standard Duraluminum Roof w/ 3" Overhang, 4'' Fascia Height	1 EA		
Full Length White Downspouts	2 EA		
Floor Structure			
Aluminum Tread Plate Floor	26 SF		
Standard 6'' x 12'' Floor Access Cutout	1 EA		
Window(s)			
Aluminum Frame	1 EA		
3/16" Gray Tempered Safety Glass	21 LF		
Horizontal Sliding Transaction Window	1 EA		
Door(s)			
3068 Swing Door Half Glass, Clear Anod Alum Finish	1 EA		
Entry Lever Lockset, ADA	1 EA		

ADA Hydraulic Closer	1 EA
Climate Control	
230V, 12,000C / 10,600H BTU Thru Wall HVAC w/ White Exterior Shell	1 EA
Electric	
100A, Single Phase, 12 Circuit Load Center with Main Breaker	1 EA
115V Duplex Outlet	2 EA
230V 20A Single Outlet	1 EA
Wall Switch	1 EA
2' LED Wraparound Light Fixture	1 EA
Phone/Data Combo Jack with Surface Mounted Conduit & Pull Wire	1 EA
Misc. Accessories	
22" Deep Painted Steel Shelf	1 EA

Subtotal for Qty(1):	$13,068.64
Final Subtotal:	$13,068.64
Tax:	$980.15
Estimated Freight:	$2,000.00
Final Total Net Price:	$16,048.79

NOTE:

61539 - $16048.79

* This estimate is valid for 15 calendar days.

* Unit is not hurricane rated

* The building proposed above is to be installed in a state that has a prefabricated/modular building approval program. As proposed, this building may not comply with the state insignia program. Adherence to applicable state and local codes is the responsibility of the purchaser of the building. Please contact the local authority having jurisdiction to determine if this prefabricated building approval is required for permitting of the building. If so, please contact Porta-King for revised pricing.

* Permits, off-loading, anchoring and final electrical hook-up, by others.

This Porta-King product will be custom-manufactured to your specification and cannot be returned for refund or credit.

Estimated Prepay and Add (PPA) freight for all buildings as described above to Pensacola, FL

The structure priced above will be manufactured per Porta-King standard specifications as outlined in our general brochure, or, on our web site at www.portaking.com. Unless otherwise noted, the prices quoted do not include shipping costs, off loading, building installation, electrical hook-up, climate control installation, permits, engineering calculations, or architectural-type drawings. Our standard shop drawings can be provided upon request after receipt of a purchase order. The securing of building permits and compliance with appropriate building codes is not the responsibility of Porta-King, but is the responsibility of the purchaser of the building.

Structural calculations (if included) to be generated, signed and sealed by registered professional engineer in the state in which the project is located. These documents shall be provided in PDF electronic format digitally signed and sealed by the qualified professional engineer responsible for their preparation. Structural calculations will be generated in accordance with the appropriate design loads per the project location. Concrete foundation/slab adequacy to be checked by others. Porta-King is not responsible for checking existing conditions and/or foundation design. Any changes to the calculations or additional information that is requested by other parties; above and beyond what is provided, will be subject to additional charges.

Materials delivered to the states of CA, FL, GA, IL, KS, KY, MD, MI, MN, MO, OK, NJ, OH, SC, SD, or VA will be charged the appropriate state sales tax. If sales tax has been included with this estimate, it will not be charged provided a current sales tax exemption certificate is provided at the time you place your order. Please note the tax exemption certificate must be for the state to which materials will be shipped.

If your project requires a site-visit, or if you wish to speak with one of Porta-King's local Regional Sales Managers, please do not hesitate to contact us. We look forward to the opportunity of working with you.

If this quotation is accepted, your standard payment terms are Net 30 Days.

Visa, Mastercard and Discover Card payments are accepted but are subject to a 3% processing fee.

Installation Suggestions:

1. Pour a concrete island minimum 4" deep. The island should be a minimum of 12" wider than the roofline dimensions to allow a 6" concrete border on each side of the building roofline. Level the pad and install a bollard at each corner of the building to further protect the building from damage caused by traffic.
2. Provide three-wire 240v/110v single-phase service to the concrete island. Refer to PKBS detail drawings, which illustrate the proper "stub-up" location.
3. Buildings arrive via flatbed truck. The trucker must contact you 24-hours prior to deliver to arrange for off-loading. Use either a forklift truck (with fork-extensions when required) or overhead crane to off-load the building from the flatbed. If an overhead crane is used, be sure to use "spreader bars" to prevent the building fascia/roof from being damaged by the sling/straps. Square the building on the pad and anchor.
4. Recommended concrete anchor is ½" x 4" galvanized or stainless steel, or comply with local codes – whichever is most stringent.
5. Make final electrical connections and clean the work area.
6. If downspouts are included with your building, they must be installed by others on site.

NOTE: Unless otherwise noted, all preparatory and installation work shall be performed by others. It is NOT the responsibility of Porta-King to verify that these "suggestions" comply with local or state codes, rather, it is the responsibility of the purchaser of the building.

Best regards,

Porta-King Building Systems
Lauren Allen
Inside Sales
800-456-5464 ext. 224
lkahney@portaking.com

Your Local Regional Sales Manager
ROBERT MAXWELL
rmaxwell@portaking.com

Accepted By (Print Name)

Accepted By (Signature)

Date of Acceptance