

# GEORGE BUSH IAH AIRPORT



HOUSTON AIRPORT SYSTEM

## GUARD BOOTH REPLACEMENT PROJECT GUARD BOOTH WV-51

HAS PROJECT No. 727  
HAS-ON-CALL No. 715C-021

100% CONSTRUCTION DOCUMENTS  
AUGUST 11, 2014

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#### TELECOMMUNICATIONS



# PGAL

**SCOPE OF WORK**

- REMOVE EXISTING GUARD BOOTH FROM LOCATION IDENTIFIED IN THE DRAWINGS
- INSTALL NEW UNDERGROUND UTILITIES
- INSTALL NEW GUARD BOOTH AT THE LOCATION IDENTIFIED
- RECONNECT ELECTRICAL AND TELECOMMUNICATION LINES
- PRE MANUFACTURED GUARD BOOTH TO BE SUBMITTED AS A SIGNED AND SEALED SET OF DRAWINGS IN A DEFERRED SUBMITTAL

**SCOPE OF WORK** | 2

**FIRE ALARM AND DETECTION SYSTEMS: (IBC SECTION 907.2.2)**

A MANUAL FIRE ALARM SYSTEM SHALL BE INSTALLED IN GROUP B OCCUPANCIES HAVING AN OCCUPANT LOAD OF 500 OR MORE PERSONS OR MORE THAN 100 PERSONS ABOVE OR BELOW THE LOWEST LEVEL OF EXIT DISCHARGE

**OCCUPANCY CALCULATIONS (IBC TABLE 1004.1.1)**

OCCUPANCY TYPE	SPACE TYPE	FLOOR LEVEL	FLOOR AREA	LOAD FACTOR	TOTAL LOAD
B	BUSINESS	LEVEL 1	160	100 GROSS	2

**TOTAL OCCUPANCY = 2**

**EGRESS WIDTH PER OCCUPANT SERVED (IBC TABLE 1005.1)**

OCCUPANCY	WITH SPRINKLER SYSTEM <sup>a</sup>	
	STAIRWAYS (INCHES PER OCCUPANT)	OTHER EGRESS COMPONENTS (INCHES PER OCCUPANT)
OCCUPANCY OTHER THAN THOSE LISTED BELOW	0.3	0.2

**EGRESS WIDTH CALCULATIONS (IBC TABLE 1005.1)**

0.2" X OCC.	MIN. REQUIRED	PROVIDED
LEVEL 1: 0.2" X 1 OCC = .2 INCHES/OCC	.2"	36" PROVIDED

**BUILDINGS WITH ONE EXIT (IBC TABLE 1019.2)**

OCCUPANCY	MAXIMUM HEIGHT OF BUILDING ABOVE GRADE PLANE	MAXIMUM OCCUPANTS (OR DWELLING UNITS) PER FLOOR AND TRAVEL DISTANCE
A,B <sup>1</sup> ,E*,F,M,U	1 STORY	49 OCCUPANTS AND 75 FEET TRAVEL DISTANCE

**FIRE CLASSIFICATION FOR ROOF COVERINGS (IBC TABLE 1505.1):**

CONSTRUCTION TYPE	CLASS	ASSEMBLY EFFECTIVENESS
V-B	C <sup>c</sup>	LIGHT FIRE-TEST EXPOSURE

c. BUILDINGS THAT ARE NOT MORE THAN TWO STORIES IN HEIGHT AND HAVING NOT MORE THAN 6,000 SQUARE FEET OF PROJECTED ROOF AREA AND WHERE THERE IS A MINIMUM 10-FOOT FIRE-SEPARATION DISTANCE FROM THE LEADING EDGE OF THE ROOF TO A LOT LINE ON ALL SIDES OF THE BUILDING, EXCEPT FOR STREET FRONTS OR PUBLIC WAYS, SHALL BE PERMITTED TO HAVE ROOFS OF NO. 1 CEDAR OR REDWOOD SHAKES AND NO. 1 SHINGLES.

**PLUMBING FIXTURE COUNT (IBC TABLE 2902.1)**

CLASSIFICATION	USE GROUP	REQUIRED PLUMBING FACILITIES (REFER TO OCCUPANCY CALCULATIONS ABOVE)									
		WATER CLOSETS MALE	WATER CLOSETS FEMALE	LAVATORIES MALE	LAVATORIES FEMALE	KITCHEN SINK	BATHTUBS OR SHOWERS	DRINKING FOUNTAINS	OTHER		
BUSINESS	B	1 PER 25 FOR THE FIRST 50 AND 1 PER 50 FOR THE REMAINDER EXCEEDING 50		1 PER 40 FOR THE FIRST 80 AND 1 PER 80 FOR THE REMAINDER EXCEEDING 80		--	--	1 PER 100	1 SERVICE SINK		
MINIMUM REQUIRED		1		1		0	0	NA	NA		

**ALLOWABLE HEIGHT AND BUILDING AREA (IBC TABLE 503):**

GROUP B, TYPE V-B CONSTRUCTION	TABLE 503	ALLOWED WITH MODIFICATIONS	ACTUAL
ALLOWABLE BUILDING HEIGHT	2 STORY	NA	1 STORY
ALLOWABLE BUILDING AREA, PER FLOOR	9,000 GSF	NA	160 GSF

**REQUIRED SEPARATION OF OCCUPANCIES (HOURS): (IBC TABLE 508.3.3):**

OCCUPANCY	A <sup>a</sup> ,E	I	R <sup>d</sup>	F-2,S-2 <sup>d</sup> ,U <sup>g</sup>	B <sup>b</sup> ,F-1,M <sup>a</sup> ,S-1	H-1	H-2	H-3,H-4,H-5
B <sup>b</sup>	S NS	S NS	S NS	S NS	S NS	S NS	S NS	S NS

**FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (IBC SECTION 601)**

BUILDING ELEMENT	FIRE RESISTANCE RATING (IN HOURS)
PRIMARY STRUCTURAL FRAME <sup>a</sup> , INCLUDING COLUMNS AND BEAMS	0 HOURS
BEARING WALLS	
EXTERIOR <sup>a</sup>	0 HOURS
INTERIOR	0 HOURS
NON-BEARING WALLS AND PARTITIONS	
INTERIOR <sup>d</sup>	0 HOURS
FLOOR CONSTRUCTION	
INCLUDING SUPPORT BEAMS AND JOISTS	0 HOURS
ROOF CONSTRUCTION	
INCLUDING SUPPORT BEAMS AND JOISTS	0 HOURS

**FIRE-RESISTANCE RATING FOR EXTERIOR WALLS (IBC TABLE 602):**

FIRE SEPARATION DISTANCE	CONSTRUCTION TYPE	OCCUPANCY GROUP	RATING
10FT ≤ X < 30FT	V-B	B	0 HOURS

**FIRE-RESISTIVE RATING FOR CORRIDORS**

WALL CLASSIFICATION	RATING	IBC SECTIONS
FIRE PARTITION	1 HOUR	708 & TABLE 1017.1

**FIRE & SMOKE DAMPER LOCATIONS (IBC SECTION 716.5):**

	LOCATION	IBC SECTIONS
FIRE DAMPERS:	RATED CORRIDORS FIRE PARTITIONS	N/A N/A
SMOKE DAMPERS:	RATED CORRIDORS FIRE PARTITIONS	N/A N/A

**INTERIOR WALL AND CEILING FINISH REQUIREMENTS BY OCCUPANCY (IBC TABLE 803.5):**

GROUP	NON-SPRINKLER <sup>d</sup>		
	EXIT ENCLOSURES AND EXIT PASSAGEWAYS <sup>a,b</sup>	CORRIDORS	ROOMS AND ENCLOSED SPACES <sup>c</sup>
B, E, M, R-1, R-4	A	B	C

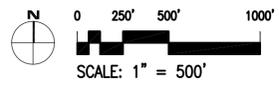
**FIRE PROTECTION SYSTEMS: (IBC SECTION 903)**

FIRE EXTINGUISHERS PROVIDED AT 75 FEET MAX TRAVEL DISTANCE AND/OR AT EVERY 3,000 SF OF AREA.  
 IFC TABLE 906.3(1)

FIRE HYDRANT & ACCESS FROM BUILDING PERIMETER:

- WITHIN 600 FEET OF FIRE HYDRANT. IFC507.5.1 EXCEPTION 2
- WITHIN 150 FEET OF FIRE APPARATUS ACCESS ROAD, IFC 503.1.1
  - 20 FEET MINIMUM WIDTH FIRE LANE PROVIDED. IFC 503.2.1
  - 20 FEET MINIMUM TURNING RADIUS PROVIDED.

**CODE ANALYSIS** | 1



OVERALL SITE PLAN | 1" = 500' | 2

**GENERAL NOTES**

1. NEW GUARD BOOTH WILL BE PLACED ADJACENT TO EXISTING TERMINAL BUILDING, AND WITHIN THE EXISTING AIRPORT PROPERTY LINES. REFER TO THE PLANS ON SHEET A1.01 FOR THE EXACT LOCATION OF NEW GUARD BOOTH TO BE INSTALLED.
2. ALL WORK SHALL OCCUR INSIDE THE EXISTING AIRPORT PROPERTY LIMITS.

GENERAL NOTES | 1

**HOUSTON AIRPORT SYSTEM**  
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PROJECT TITLE  
 HOUSTON AIRPORT SYSTEM  
 GUARD BOOTH  
 REPLACEMENT PROJECT  
 HAS PN 727  
 PROJECT NUMBER  
 R1002447  
 PROJECT LOCATION  
 18401 SKYTRAIN RD.  
 GUARD BOOTH WV-51  
 HOUSTON, TX 77032  
 DATE OF ISSUE  
 AUGUST 11, 2014

REVISIONS

HOUSTON AIRPORT SYSTEM PDC DESIGN DIVISION	DATE

REGISTRATION  
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SHEET TITLE  
 OVERALL SITE PLAN

SHEET NUMBER  
**G0.02**

DATE PLOTTED: 08/11/14 10:00 AM  
 PLOT BY: JAC  
 FILE NAME: A0101.rvt  
 PLOT METHOD: HPGL  
 PLOT DEVICE: HPGL  
 PLOT SCALE: 1" = 500'  
 PLOT SHEET: 2 OF 2

Alexandria | Atlanta | Austin | Boca Raton | Boston | Dallas | Houston | Las Vegas | Los Angeles | Mexico City | New Orleans | New York | Phoenix | San Diego | San Francisco | Seattle | Tampa | Washington DC

**GENERAL CONSTRUCTION NOTES:**

- THE CONTRACTOR SHALL COORDINATE HIS CONSTRUCTION SCHEDULE WITH ARCHITECT PRIOR TO COMMENCING WORK.
- CONTRACTOR SHALL CONTACT ALL GOVERNING AGENCIES A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION AND COORDINATE ALL WORK WITH THE SAME.
- VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD BEFORE COMMENCING ANY WORK. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPORT ANY DISCREPANCIES TO THE ENGINEER IN A TIMELY MANNER.
- ALL DIMENSIONS SHOWN ARE APPROXIMATE AND ARE TO BE VERIFIED BY THE CONTRACTOR. CHANGES IN HORIZONTAL OR VERTICAL ALIGNMENT ARE TO BE APPROVED BY THE ENGINEER.
- THE DRAWINGS SHOW AS MUCH INFORMATION AS CAN BE REASONABLY OBTAINED FROM AN ON THE GROUND OBSERVATION, SURVEY AND EXISTING CONSTRUCTION DRAWINGS REGARDING THE TOPOGRAPHIC FEATURES, ELEVATION AS WELL AS THE LOCATION AND NATURE OF THE PIPELINES, NATURAL GAS LINES, UNDERGROUND CABLES, UTILITIES ETC. HOWEVER, THE ACCURACY OF OR COMPLETENESS OF SUCH INFORMATION IS NOT GUARANTEED. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES NOT SHOWN ON THE DRAWINGS AND ENCOUNTERED DURING CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY IF CONFLICTS EXIST.
- THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES IN THE AREA A MINIMUM OF 48 HOURS PRIOR TO COMMENCING WORK AT ANY RIGHT-OF-WAY OR EXISTING EASEMENT. THE CONTRACTOR SHALL CONTACT THE UTILITY COORDINATING COMMITTEE AT (713) 223-4567, 1-800-245-4545 48 HOURS PRIOR TO COMMENCING CONSTRUCTION.
- SOME OF THE UNDERGROUND UTILITIES SHOWN HEREON HAVE NOT BEEN FIELD VERIFIED.
- CONTRACTOR SHALL UNCOVER EXISTING UTILITIES AT ALL "POINTS OF CROSSINGS" TO DETERMINE IF A CONFLICT EXISTS BEFORE COMMENCING ANY CONSTRUCTION. NOTIFY THE ENGINEER AT ONCE OF ANY CONFLICTS.
- IN THE EVENT OF DAMAGE TO UNDERGROUND UTILITIES OR FACILITIES, WHETHER SHOWN OR NOT ON THE DRAWINGS, THE CONTRACTOR SHALL MAKE THE NECESSARY REPAIRS TO REPLACE OR RETURN THE UTILITY OR THE FACILITY BACK IN SERVICE AT NO INCREASE IN THE CONTRACT PRICE. ALL SUCH REPAIRS SHALL CONFORM TO THE REQUIREMENTS OF THE COMPANY OR AGENCY SERVICING THE FACILITY.
- ALL EXISTING POWER POLES, LIGHT STANDARDS, SIGN, ETC. WHICH AFFECT THE PROPOSED CONSTRUCTION, SHALL BE REMOVED AND/OR RELOCATED AS REQUIRED WHETHER SHOWN ON THE DRAWINGS OR NOT AT NO ADDITIONAL COST TO THE OWNER.
- ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY SHALL ADHERE TO THE STANDARDS OF THE GOVERNING AGENCY.
- INGRESS AND EGRESS SHALL BE PROVIDED AT ALL TIMES FOR THE PROPERTY OWNERS AND THE BUSINESS OF THE ABUTTING PROPERTY AND THE CROSS STREETS WHICH ARE AFFECTED BY THE CONSTRUCTION OF THIS PROJECT.
- THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR MAINTAINING A SAFE PROJECT SITE 24 HOURS A DAY.
- DURING THE ENTIRE CONSTRUCTION PERIOD, THE CONTRACTOR SHALL MAINTAIN CONSTRUCTION WARNING SIGNS AT EACH END OF THE PROJECT TO WARN MOTORING AND PEDESTRIAN TRAFFIC THAT CONSTRUCTION IS IN PROGRESS AND OF POSSIBLE HAZARDOUS CONDITIONS GENERATED BY THE CONSTRUCTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR DELINEATING THE PERIMETER OF CONSTRUCTION WITH SAFETY FENCING AT NO ADDITIONAL COST. SAFETY FENCING SHALL BE ERECTED PRIOR TO CONSTRUCTION AND BE REMOVED UPON COMPLETION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTROLLING TRAFFIC IN THE IMMEDIATE VICINITY OF CONSTRUCTION. ALL WORK SHALL BE IN SUCH A MANNER AND SEQUENCE AS TO PROVIDE MAXIMUM PROTECTION TO TRAFFIC AND PEDESTRIANS. CONTROL SHALL BE CONSISTENT WITH THE TYPE OF WORK BEING PERFORMED.
- THE WORK AREA SHALL BE BARRICADED AND ILLUMINATED DURING DARKNESS AND PERIODS OF INACTIVITY, WHEN IN AN AREA OF DIRECT PUBLIC ACCESS.
- NOCCUPIED TRENCHES SHALL BE SECURED WITH SAFETY FENCING OR OTHER APPROPRIATE MEANS AT ALL TIMES. TRENCHES WHICH ARE NOT IMMEDIATELY BACKFILLED SHALL BE SECURELY COVERED OVERNIGHT AND BE SURROUNDED BY SAFETY FENCING.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING REQUIRED SECURITY TO PROTECT HIS OWN PROPERTY, EQUIPMENT, AND WORK IN PROGRESS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ADEQUATE DRAINAGE IS MAINTAINED AT ALL TIMES DURING CONSTRUCTION AND ANY DRAINAGE DITCH OR STRUCTURE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO THE SATISFACTION OF THE GOVERNING AUTHORITY.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONSTRUCTION OF ANY TEMPORARY DITCH OR DRAINAGE FACILITIES REQUIRED TO MAINTAIN ADEQUATE SITE DRAINAGE DURING CONSTRUCTION AT NO ADDITIONAL COST TO OWNER.
- THE CONTRACTOR IS TO INSTALL GROUND WATER CONTROL FACILITIES IF NEEDED, AT NO ADDITIONAL COST TO OWNER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL APPLICABLE PERMITS REQUIRED BY ALL GOVERNING AGENCIES.
- THE CONTRACTOR IS RESPONSIBLE FOR THE COMPLETION AND SUBMISSION OF ALL APPLICABLE STATE AND FEDERAL FORMS REQUIRED FOR STORM WATER POLLUTION PREVENTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTION, IMPLEMENTATION, MAINTENANCE, AND INSPECTION OF STORM WATER POLLUTION PREVENTION CONTROL MEASURES INCLUDING, BUT NOT LIMITED TO, EROSION AND SEDIMENT CONTROLS, STORM WATER MANAGEMENT PLANS, WASTE COLLECTION AND DISPOSAL, OFF-SITE VEHICLE TRACKING, AND OTHER PRACTICES.
- THE CONTRACTOR SHALL COMPLY WITH OSHA REGULATIONS AND STATE OF TEXAS LAW CONCERNING EXCAVATION, TRENCHING AND SHORING.
- THE CONTRACTOR SHALL DESIGN AND PROVIDE A TRENCH SAFETY SYSTEM TO MEET THE APPROPRIATE REQUIREMENTS ESTABLISHED IN OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) SAFETY & HEALTH REGULATIONS, 29 CFR 1926, SUBPART P- EXCAVATIONS, TRENCHING AND SHORING, AND OSHA'S PROPOSED STANDARDS ON TRENCHING, EXCAVATION PUBLISHED IN VOLUME 52, NO. 72 OF THE FEDERAL REGISTER, APRIL 15, 1987, PAGES 12288-12339. SHOULD THE REFERENCED OSHA STANDARDS BE MODIFIED OR AMENDED, THE MORE STRINGENT REQUIREMENTS SHALL APPLY.
- CONTRACTOR SHALL PROVIDE SHEETING, SHORING AND BRACING AS NECESSARY TO PROTECT WORKMEN AND EXISTING UTILITIES DURING ALL PHASES OF CONSTRUCTION.
- IN ORDER TO COMPLY WITH HANDICAP REGULATIONS, THE CONTRACTOR SHALL ENSURE THAT THE SLOPE OF THE SIDEWALK AND AND/OR PAVING IN THE FIRST FIVE FEET OUTSIDE ANY DOOR DOES NOT EXCEED 2% IN ANY DIRECTION.
- NO CONSTRUCTION WHICH BLOCKS THE TRAFFIC ON ANY STREET, ALLEY, OR DRIVEWAY WILL BE ALLOWED DURING THE HOURS OF 6:30 A.M.- 8:30 A.M. AND 2:30 P.M.-6:30 P.M.
- THE CONTRACTOR MUST CLEAN MUD, DIRT OR DEBRIS TRACKED ONTO EXISTING STREETS BY HIMSELF OR SUBCONTRACTOR'S VEHICLES AND EQUIPMENT IN A TIMELY MANNER.
- CONDITION OF THE ROAD AND/OR RIGHT-OF-WAY, UPON COMPLETION OF JOB SHALL BE AS GOOD OR BETTER THAN PRIOR TO STARTING WORK.
- ALL AREAS DISTURBED BY CONSTRUCTION WHICH ARE NOT TO BE REPAVED OR OTHERWISE COVERED SHALL BE HYDROMULCHED.
- CONTRACTOR SHALL STRIP AND STOCKPILE TOPSOIL. TOPSOIL SHALL BE SPREAD OVER ALL AREAS RECEIVING SOD AND OR HYDROMULCH. CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING A STAND OF GRASS WITH NO AREAS OF EROSION BEFORE FINAL ACCEPTANCE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF ALL WASTE MATERIAL GENERATED DURING CONSTRUCTION. WASTE MATERIAL MUST BE REMOVED FROM THE WORK SITE AND DISPOSED OF IN SUCH A MANNER AS TO NOT CAUSE ANY DAMAGE OR ADDITIONAL COST TO THE OWNER OR OTHER PERSONS.
- ALL FILL PLACED ON SITE SHALL BE ENGINEERED FILL PER THE RECOMMENDATION OF THE SPECIFICATIONS.
- FINISH GRADE ELEVATIONS INDICATE FINAL GRADE OF PROPOSED MATERIAL (I.E. SOD, DIRT, MULCH ETC.) LANDSCAPE AREAS ADJACENT TO BUILDING, INCLUDING, DIRT, MULCH AND/OR BEDDING MATERIALS SHALL NOT COVER WEEPHOLES, AREAS ADJACENT TO BUILDING, LANDSCAPED, OR OTHERWISE SHALL SHEET FLOW AWAY FROM BUILDING WITH NO AREAS OF STANDING WATER ADJACENT TO BUILDING.
- GRADING AROUND BUILDINGS INCLUDING WALKWAYS SHALL BE COORDINATED WITH THE ENGINEER AND FINAL APPROVAL OF GRADES IN GRASS AREAS AND SWALES SHALL BE APPROVED BY ENGINEER PRIOR TO INSTALLATION OF LANDSCAPING MATERIAL.
- AFTER INSTALLATION OF DRAINAGE SYSTEM, CONTRACTOR SHALL PERFORM FINAL GRADING AS SHOWN ON THE PLANS AND/OR AS DIRECTED BY ENGINEER OR OWNER TO INSURE POSITIVE DRAINAGE OF ENTIRE SITE. FINAL GRADING SHALL BE APPROVED BY ENGINEER PRIOR TO INSTALLATION OF GRASS.
- CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING FINAL GRADES TO ENSURE POSITIVE DRAINAGE.
- ALL STRUCTURES AND SEWER PIPE UNDER OR WITHIN TWO (2) FEET OF PROPOSED OR FUTURE PAVEMENT SHALL BE BEDDED AND BACKFILLED WITH CEMENT STABILIZED SAND UP TO THE BOTTOM OF THE PAVEMENT SUBGRADE.
- CEMENT-SAND BACKFILL SHALL CONSIST OF NOT LESS THAN 1-1/2 SACKS OF CEMENT PER TON OF SAND WITH SUFFICIENT WATER TO HYDRATE THE CEMENT. THE MATERIAL SHALL BE PLACED IN LAYERS EIGHT(8) INCHES THICK MAXIMUM AND COMPACTED TO 95% STANDARD PROCTOR DENSITY.
- A FIBERBOARD EXPANSION JOINT SHALL BE PLACED BETWEEN THE BUILDING FOUNDATION AND THE CONCRETE PAVEMENT.
- THE CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL PROPOSED UTILITIES TO EXISTING BUILDING PRIOR TO COMMENCING WORK ON SITE UTILITIES. UPON ANY DISCREPANCIES, ENGINEER IS TO BE NOTIFIED.

- ALL EXISTING STORM SEWER MANHOLES OR STRUCTURES ON SITE SHALL BE ADJUSTED TO FINISH GRADE.
- CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PROTECT ROOT SYSTEMS OF SHRUBS, PLANTS AND TREES ALONG THE AREA OF EXCAVATION.

**STORM SEWER CONSTRUCTION NOTES**

- ON SITE STORM SEWERS 10-INCH DIAMETER AND LESS SHALL BE HDPE (HIGH DENSITY POLYETHYLENE) PIPE MEETING AASHTO M252 & 12-INCH TO 24-INCH DIAMETER SHALL BE HDPE PIPE MEETING AASHTO M294 SPECIFICATIONS.
- ANY CONCRETE PIPE USED ON THIS PROJECT SHALL BE REINFORCED CONCRETE MEETING ASTM C-76 CLASS III, AND HAVE BELL AND SPIGOT JOINTS WITH RUBBER GASKETS. CONCRETE PIPE IS ONLY TO BE USED WHERE REQUIRED IN PUBLIC RIGHT-OF-WAY AND/OR AT TIES TO PUBLIC STORM SEWER SYSTEMS. BEDDING BACKFILLING AND INSTALLATION OF PIPE AND CONSTRUCTION OF APPURTENANCES SHALL BE IN ACCORDANCE WITH THE CIVIL SHEET DETAILS.
- THE CONTRACTOR SHALL USE PRECAST STORM SEWER MANHOLES AND INLETS. INLET BOTTOM SHALL BE FILLED WITH CONCRETE AND SLOPED TO INSURE POSITIVE DRAINAGE FROM INLET TO STORM SEWER LINE WITH NO STANDING WATER IN INLET. BRICK MANHOLES AND/OR INLETS MAY BE USED AS APPROVED BY THE ENGINEER WHEN SETTING STRUCTURES ON EXISTING UTILITY LINE. BRICK STRUCTURES MUST BE MORTARED INSIDE AND OUT. COORDINATE EACH INCIDENT WITH ENGINEER.
- ALL INLETS, MANHOLES, CLEANOUTS, AND HEADWALLS SHALL BE BACKFILLED WITH CEMENT STABILIZED SAND. CEMENT STABILIZED SAND FILL SHALL BE AT LEAST 12" ON BOTTOM OF STRUCTURE AND 12" AROUND OUTSIDE OF STRUCTURE.
- NO CORNER CONNECTIONS WILL BE ALLOWED TO ANY INLETS, JUNCTION BOXES OR BOX MANHOLES.
- CONTRACTOR SHALL CUT OFF PIPE FLUSH WITH INSIDE FACE OF INLETS AND MANHOLES.
- CONCRETE FOR DRAINAGE STRUCTURE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4500 PSI AT 28 DAYS.
- CULVERTS LARGER THAN SINGLE 30-INCH DIAMETER (OR LARGER THAN MULTIPLE 24-INCH DIAMETER CULVERTS) SHALL REQUIRE SAFETY END TREATMENTS (SETS).
- CONTRACTOR SHALL FLUSH AND CLEAN ALL STORM SEWER LINES AND STRUCTURES PRIOR TO ACCEPTANCE. ALL STORM LINES SHALL ALSO BE INSPECTED VIA CAMERA.
- TIE-INS TO EXISTING MANHOLES SHALL BE MADE SUCH THAT THE FINAL CONDITIONS UPON COMPLETION OF THE JOB SHALL BE AS GOOD OR BETTER THAN PRIOR TO STARTING WORK.

**SANITARY SEWER CONSTRUCTION NOTES**

- SANITARY SEWER SHALL BE PVC (POLY-VINYL CHLORIDE) PIPE MEETING A.S.T.M. SPECIFICATION, C-3034-73 AND HAVING A S.D.R. OF 26 OR LOWER IN NONE PAVED AREAS IN PAVED AREAS SDR SHOULD BE 18 OR LOWER UNLESS OTHERWISE SHOWN ON PLANS. BEDDING BACKFILLING AND INSTALLATION OF PIPE AND CONSTRUCTION OF APPURTENCES SHALL BE IN ACCORDANCE WITH THE CIVIL DETAIL SHEETS.
- THE CONTRACTOR SHALL USE PRECAST SANITARY SEWER MANHOLES.
- ALL MANHOLES AND CLEANOUTS SHALL BE BACKFILLED WITH CEMENT STABILIZED SAND. CEMENT STABILIZED SAND FILL SHALL BE AT LEAST 12" ON BOTTOM OF STRUCTURE AND 12" AROUND OUTSIDE OF STRUCTURE.
- CONTRACTOR SHALL CUT OFF PIPE FLUSH WITH INSIDE FACE OF MANHOLES.
- CONTRACTOR SHALL SEAL INTERIOR SURFACE OF PROPOSED SANITARY SEWER MANHOLES WITH RAVEN LINER 405, OR APPROVED EQUAL AS PER MANUFACTURER'S SPECIFICATIONS.
- ALL SANITARY SEWER SHALL BE VACUUM TESTED.
- ALL SANITARY SEWER LINES SHALL BE MANDREL AND AIR TESTED. ALL SANITARY SEWER LINES SHALL ALSO BE INSPECTED VIA CAMERA.
- UTILITIES ARE TO BE TAKEN TO WITHIN FIVE (5) FEET OF BUILDING. SEE PLUMBING SHEETS FOR CONTINUATION OF SERVICE CONNECTIONS INTO BUILDINGS.
- TIE-INS TO EXISTING MANHOLES SHALL BE MADE SUCH THAT THE FINAL CONDITIONS UPON COMPLETION OF THE JOB SHALL BE AS GOOD OR BETTER THAN PRIOR TO STARTING WORK.

- THE CONTRACTOR IS TO INSTALL WATER-TIGHT ADAPTORS OF A TYPE COMPATIBLE WITH THE MATERIALS BEING JOINED AT THE POINT OF CONNECTION OF THE SERVICE LINE TO THE BUILDING PLUMBING. NO CEMENT GROUT MATERIAL ARE PERMITTED.
- THE CONTRACTOR IS TO INSTALL EACH CLEANOUT SO THAT IT OPENS IN A DIRECTION OPPOSITE TO THE FLOW OF THE WASTE AND, EXCEPT IN CASE OF "WYE" BRANCH AND END-OF-THE-LINE CLEANOUTS, CLEANOUTS WILL BE INSTALLED VERTICALLY ABOVE THE FLOW LINE OF THE PIPE. CLEANOUT WILL BE MADE WITH AIR-TIGHT MECHANICAL PLUG.

**WATER LINE CONSTRUCTION NOTES**

- DOMESTIC OR FIRE WATER LINES 4" AND LARGER SHALL BE POLY-VINYL CHLORIDE(PVC), DR-18, CLASS 150, CONFORMING TO AWWA C900 OR C905, AS CURRENTLY AMENDED UNLESS OTHERWISE NOTED ON THE PLANS.
- WATER LINES 3" AND SMALLER SHALL BE SCHEDULE 40 PVC.
- ALL VALVES SHALL BE LEFT HAND (COUNTERCLOCKWISE) OPEN.
- SEE DETAIL SHEET FOR THRUST BLOCK DETAILS.
- CONTRACTOR SHALL INSTALL METALLIC TRACER WIRE ON ALL UNDERGROUND PVC PIPING AND SECURE WIRE ENDS AT ALL VALVE BOXES.
- CONTRACTOR SHALL ADJUST ELEVATION OF WATER LINES REQUIRED TO CLEAR OTHER UTILITIES. ADJUSTMENT MUST MEET TCEQ REQUIREMENTS FOR MINIMUM CLEARANCES, TYPE OF PIPE, ETC.
- MINIMUM VERTICAL CLEARANCE BETWEEN WATER LINES AND OTHER UTILITIES SHALL BE TWELVE INCHES, UNLESS OTHERWISE NOTED ON THE PLANS.
- EXISTING WATER SERVICES SHALL NOT BE INTERRUPTED DURING CONSTRUCTION.
- NO CONNECTIONS SHALL BE MADE TO EXISTING WATERLINES UNTIL ALL PROPOSED WATER LINES HAVE BEEN THOROUGHLY CLEANED, TESTED, DISINFECTED AND APPROVED. ALL TESTING PROCEDURES SHALL CONFORM TO THE GOVERNING AGENCY.
- UTILITIES ARE TO BE TAKEN WITHIN FIVE (5) FEET OF BUILDING. SEE PLUMBING SHEETS FOR CONTINUATION OF SERVICE CONNECTIONS INTO BUILDING.

CONTROL  
 DATE: 8/11/14  
 BY: [Signature]  
 PROJECT: HOUSTON AIRPORT SYSTEM  
 SHEET: PDC DESIGN DIVISION  
 18401 SKYTRAIN RD.  
 HOUSTON, TX 77032



**HOUSTON AIRPORT SYSTEM**  
 GEORGE BUSH  
 INTERCONTINENTAL AIRPORT  
 HOUSTON TEXAS

---

**OWNER**  
 HOUSTON AVIATION DEPT.  
 16930 JOHN F. KENNEDY BLVD.  
 HOUSTON TX, 77032  
 (713) 622-1444  
 (713) 968-9333

---

**ARCHITECT**  

 3131 BRIARPARK  
 SUITE 200  
 HOUSTON, TX 77042  
 (713) 622-1444  
 (713) 968-9333

---

**PGAL TBPE REG. NO. F-2742**  
**CONSULTANT**



3143 YELLOWSTONE BLVD  
 HOUSTON, TX 77054  
 TEL: (713) 747-2399 FAX: (713) 748-3748  
 TBPE FIRM REGISTRATION # 4575

---

**PROJECT TITLE**  
 HOUSTON AIRPORT SYSTEM  
 GUARD BOOTH  
 REPLACEMENT PROJECT  
 HAS PN 727

---

**PROJECT NUMBER**  
 R1002447

---

**PROJECT LOCATION**  
 18401 SKYTRAIN RD.  
 GUARD BOOTH WV-51  
 HOUSTON, TX 77032

---

**DATE OF ISSUE**  
 AUGUST 11, 2014  
 100% CONSTRUCTION DOCUMENTS

---

**REVISIONS**

REVISIONS	DATE

---

HOUSTON AIRPORT SYSTEM  
 PDC DESIGN DIVISION

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VINCENT N. JACOB  
 98325  
 LICENSED PROFESSIONAL ENGINEER  
 State of Texas  
 8/11/14

---

**SHEET TITLE**

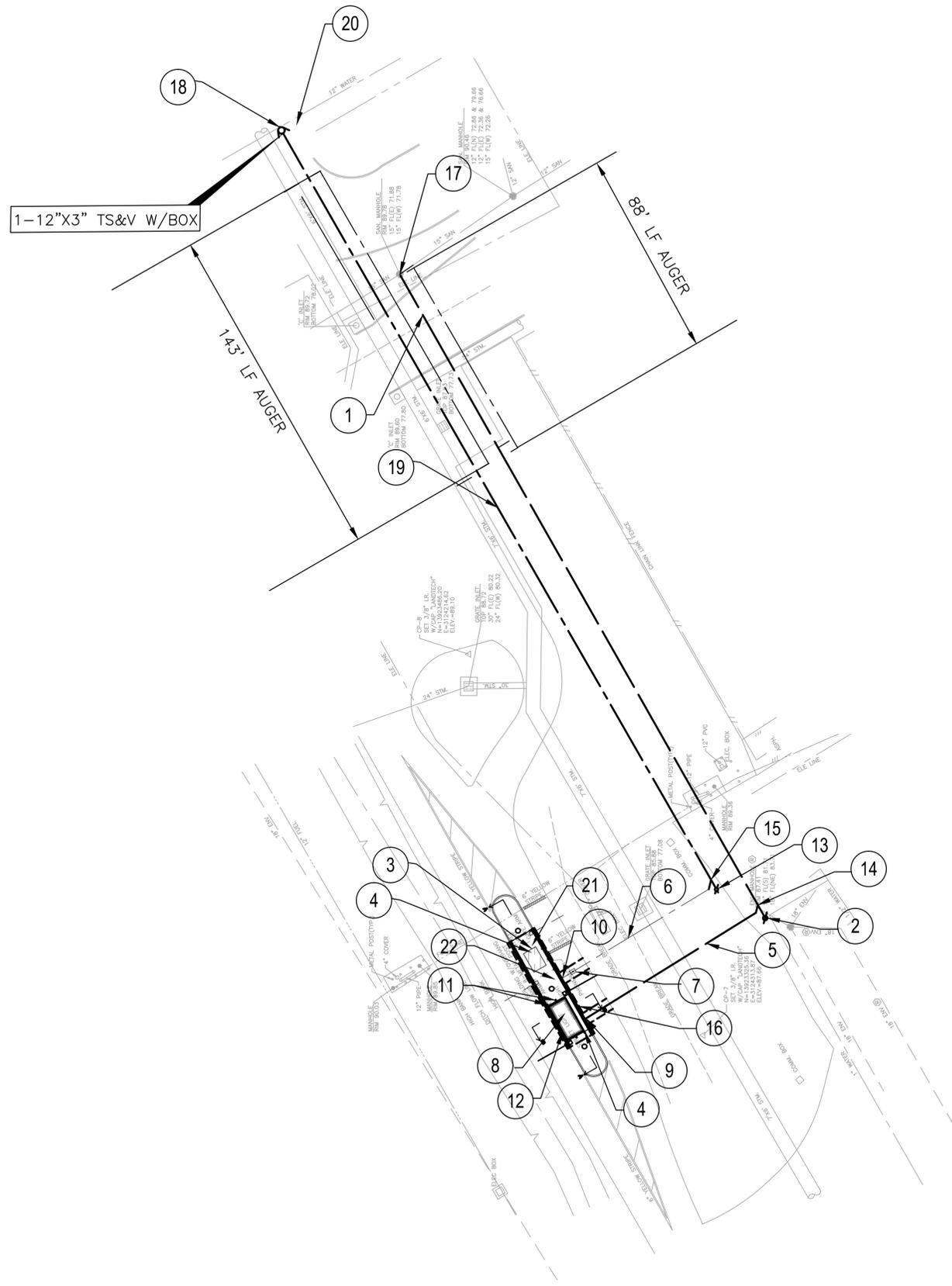
**GENERAL NOTES**

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**SHEET NUMBER**

C0.01

Alexandria | Atlanta | Austin | Boca Raton | Boston | Dallas | Houston | Las Vegas | Los Angeles | Mexico City | New Orleans | Pierce Goodwin Alexander & Linville



**CONSTRUCTION NOTES:**

- ① INSTALL 8" SANITARY SEWER @ 0.44% (SEE P&P SHEET C5.01)
- ② INSTALL SANITARY SEWER CLEANOUT (SEE DETAIL SHEET C7.01)
- ③ REMOVE EXISTING GUARD BOOTH
- ④ REMOVE EXISTING CONCRETE SLAB
- ⑤ INSTALL 4" PVC SANITARY SERVICE LINE
- ⑥ INSTALL 3/4" WATER SERVICE LINE
- ⑦ INSTALL WATER METER (SEE DETAIL SHEET C7.03)
- ⑧ INSTALL 8'x16' GUARD BOOTH (SEE ARCHITECTURAL)
- ⑨ SEE MEP FOR CONTINUATION OF SAN SERVICE LINE
- ⑩ SEE MEP FOR CONTINUATION OF WATER SERVICE LINE
- ⑪ INSTALL BOLLARDS (SEE DETAIL SHEET C7.02)
- ⑫ CONCRETE SLAB (SEE STRUCTURAL)
- ⑬ GATE VALVE WITH 2" BLOW-OFF
- ⑭ SANITARY SERVICE CONNECTION (SEE DETAIL SHEET 7.01)
- ⑮ WATER SERVICE CONNECTION (SEE DETAIL SHEET C7.02)
- ⑯ SAWCUT
- ⑰ CONNECT TO SANITARY SEWER MANHOLE (SEE P&P SHEET C5.01)
- ⑱ CONNECT TO WATER LINE (SEE P&P SHEET C5.01)
- ⑲ INSTALL 3" WATERLINE (SEE P&P SHEET C5.01)
- ⑳ REMOVE & REPLACE CONCRETE PAVEMENT AS NEEDED TO CONNECT NEW 3" WATER LINE TO EXIST 12" WATER LINE
- ㉑ INSTALL 4 1/2" CONCRETE SIDEWALK (SEE DETAIL SHT. C7.04)
- ㉒ INSTALL CONCRETE CURB (SEE DETAIL SHT C7.02)

**NOTES:**

1. ALL COORDINATES ARE REFERENCED TO THE TEXAS COORDINATE SYSTEM OF 1983, SOUTH CENTRAL ZONE, NAD 83 (2011), EPOCH 2010.00. NGS MONUMENT "ZHU B", PRIMARY AIRPORT CONTROL STATION WAS HELD FOR PROJECT CONTROL. HORIZONTAL CONTROL SURVEY WAS PERFORMED USING GPS AND THE GEOID 12A MODEL. NGS GRID COORDINATES: N=13,912,033.65; E=3,129,527.22. UNIT OF MEASURE = U. S. SURVEY FOOT.
2. ALL COORDINATES SHOWN HEREON HAVE BEEN SCALED UP TO SURFACE VALUES USING A SURFACE ADJUSTMENT FACTOR OF 0.999923616683. TO CONVERT TO GRID COORDINATES USE THE FOLLOWING FORMULA: SURFACE X 0.999923616683 = GRID.
3. ALL ELEVATIONS ARE REFERENCED TO NAVD 88. NGS MONUMENT "ZHU B", PRIMARY AIRPORT CONTROL STATION WAS HELD FOR PROJECT CONTROL. VERTICAL CONTROL SURVEY WAS PERFORMED USING GPS AND CLOSED LEVEL LOOP PROCEDURES. ELEVATION = 81.03, NAVD88 (AS ADJUSTED IN JULY 2002 PER NGS PUBLISHED DATASHEET)
4. UNDERGROUND UTILITIES SHOWN PER HAS GIS RECORDS AND HAVE NOT BEEN FIELD VERIFIED.

**BENCHMARK:**

ALL ELEVATIONS ARE REFERENCED TO NAVD 88. NGS MONUMENT "ZHU B", PRIMARY AIRPORT CONTROL STATION WAS HELD FOR PROJECT CONTROL. VERTICAL CONTROL SURVEY WAS PERFORMED USING GPS AND CLOSED LEVEL LOOP PROCEDURES. ELEVATION = 81.03, NAVD88 (AS ADJUSTED IN JULY 2002 PER NGS PUBLISHED DATASHEET)

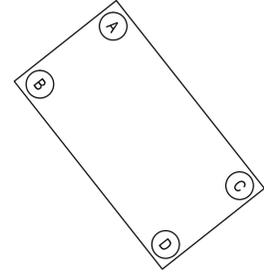
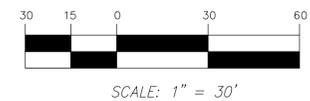
**TBM'S:**

- CP-7  
SET 3/8" I.R.  
W/CAP "LANDTECH"  
ALONG THE EAST SIDE OF TUG ROAD, WEST OF GUARD BOOTH  
WV-51  
N=13923325.36 E=3124313.87  
ELEV.=87.66
- CP-8  
SET 3/8" I.R.  
W/CAP "LANDTECH"  
ALONG THE WEST SIDE OF TUG ROAD, EAST OF GUARD BOOTH  
WV-51  
N=13923486.20 E=3124214.62  
ELEV.=89.10

**BUILDING COORDINATES:**

- Ⓐ X=3,124,255.4132 Y=13,923,341.2577
- Ⓑ X=3,124,248.4414 Y=1,392,3337.3342
- Ⓒ X=3,124,263.2602 Y=13,923,327.3141
- Ⓓ X=3,124,256.2884 Y=13,923,323.3906

COORDINATES ARE BASED ON SURVEY INFORMATION PROVIDED.



CADD: JACOB N. JACOB  
 DATE: 8/11/14  
 SHEET: C2.01

**OWNER**  
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 [F] 713 968 9333

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PGAL TBPE REG. NO. F-2742  
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**iSani**  
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 TBPE FIRM REGISTRATION # 4575

**PROJECT TITLE**  
 HOUSTON AIRPORT SYSTEM  
 GUARD BOOTH  
 REPLACEMENT PROJECT  
 HAS PN 727

**PROJECT NUMBER**  
 R1002447

**PROJECT LOCATION**  
 18401 SKYTRAIN RD.  
 GUARD BOOTH WV-51  
 HOUSTON, TX 77032

**DATE OF ISSUE**  
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 8/11/14

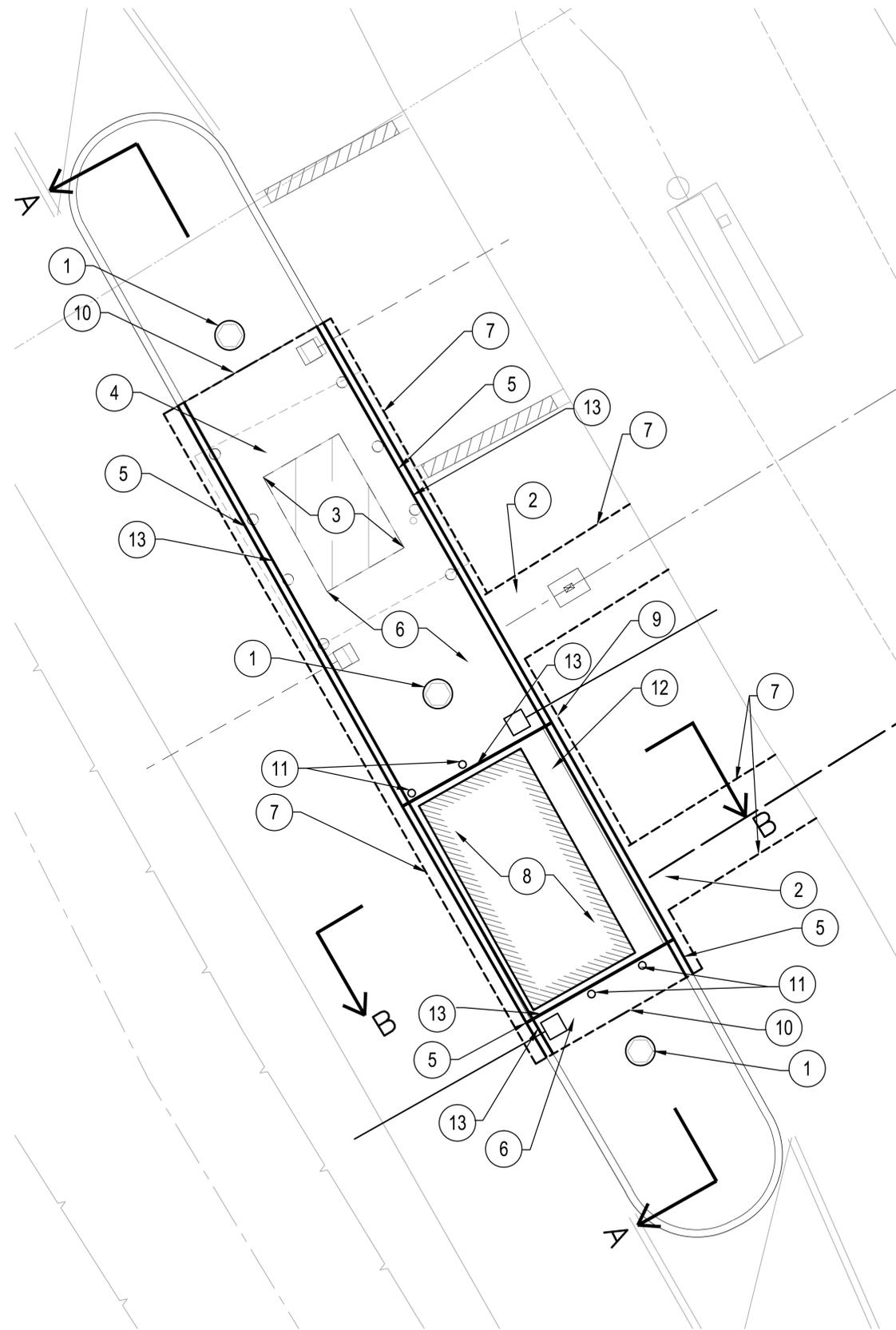
SHEET TITLE

CIVIL SITE PLAN

SHEET NUMBER

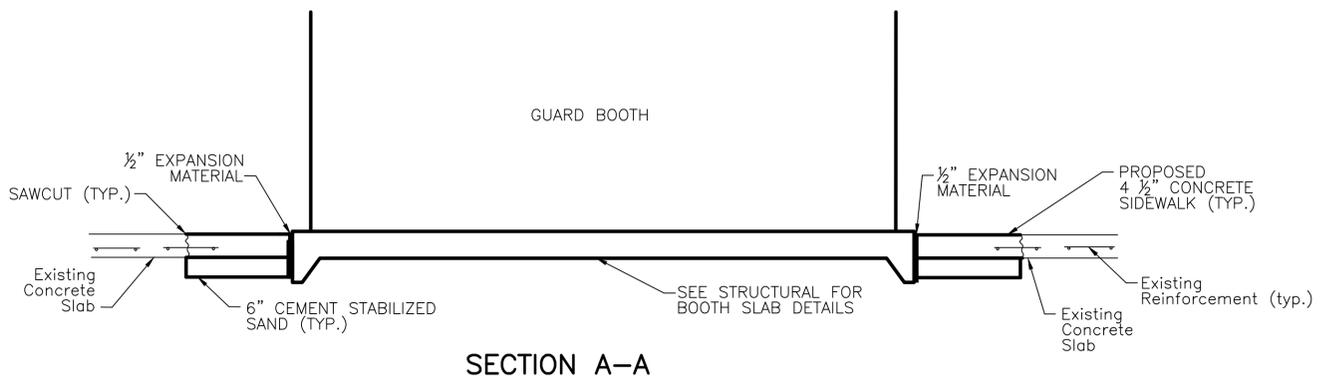
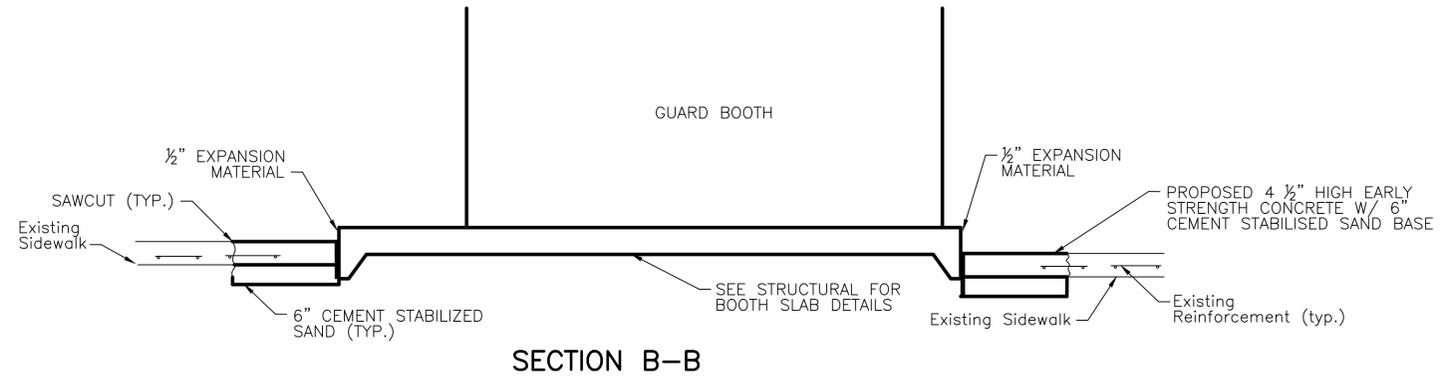
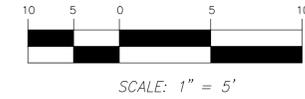
**C2.01**

Alexandria | Atlanta | Austin | Boca Raton | Boston | Dallas | Houston | Las Vegas | Los Angeles | New Orleans | Mexico City | Pierce Goodwin Alexander & Linville



**CONSTRUCTION NOTES:**

- ① LIGHT POLE TO REMAIN
- ② REMOVE AND REPLACE EXISTING CONCRETE PAVEMENT AS NEEDED TO INSTALL PROPOSED UTILITIES (SEE DETAIL C7.04)
- ③ REMOVE EXISTING GUARD BOOTH
- ④ REMOVE EXISTING CONCRETE SLAB
- ⑤ INSTALL CONCRETE CURB (SEE DETAIL SHT C7.02)
- ⑥ INSTALL 4½" CONCRETE SIDEWALK (SEE DETAIL SHT. C7.04)
- ⑦ SAWCUT EXISTING PAVEMENT
- ⑧ INSTALL 8'x16' GUARD BOOTH (SEE ARCHITECTURAL)
- ⑨ EXPOSE 15" OF REINFORCED STEEL AT PROPOSED SAWED JOINT. IF NO REINFORCING STEEL EXISTS, USE HORIZONTAL DOWELS. HORIZONTAL DOWEL SHALL BE #6 BARS, 24" LONG, 24" C-C, DRILLED AND EMBEDDED 8" INTO THE CENTER OF THE EXISTING SLAB WITH "PO ROC" OR EQUAL
- ⑩ INSTALL #4 DOWELL BAR GRADE 60,18" LONG, 24"C-C, 9" EMBEDDED AND EPOXIED
- ⑪ INSTALL BOLLARDS (SEE DETAIL SHEET C7.02)
- ⑫ CONCRETE BOOTH SLAB (SSE STRUCTURAL)
- ⑬ ½" EXPANSION MATERIAL



**HOUSTON AIRPORT SYSTEM**  
 GEORGE BUSH  
 INTERCONTINENTAL AIRPORT  
 HOUSTON TEXAS

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 TBPE FIRM REGISTRATION # 4575

**PROJECT TITLE**  
 HOUSTON AIRPORT SYSTEM  
 GUARD BOOTH  
 REPLACEMENT PROJECT  
 HAS PN 727

**PROJECT NUMBER**  
 R1002447

**PROJECT LOCATION**  
 18401 SKYTRAIN RD.  
 GUARD BOOTH WV-51  
 HOUSTON, TX 77032

**DATE OF ISSUE**  
 AUGUST 11, 2014  
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 98325  
 LICENSED PROFESSIONAL ENGINEER

*Vincent N. Jacob*  
 8/11/14

**SHEET TITLE**

**GUARD BOOTH**  
**SITE PLAN**

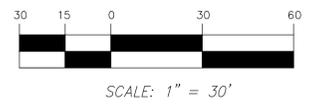
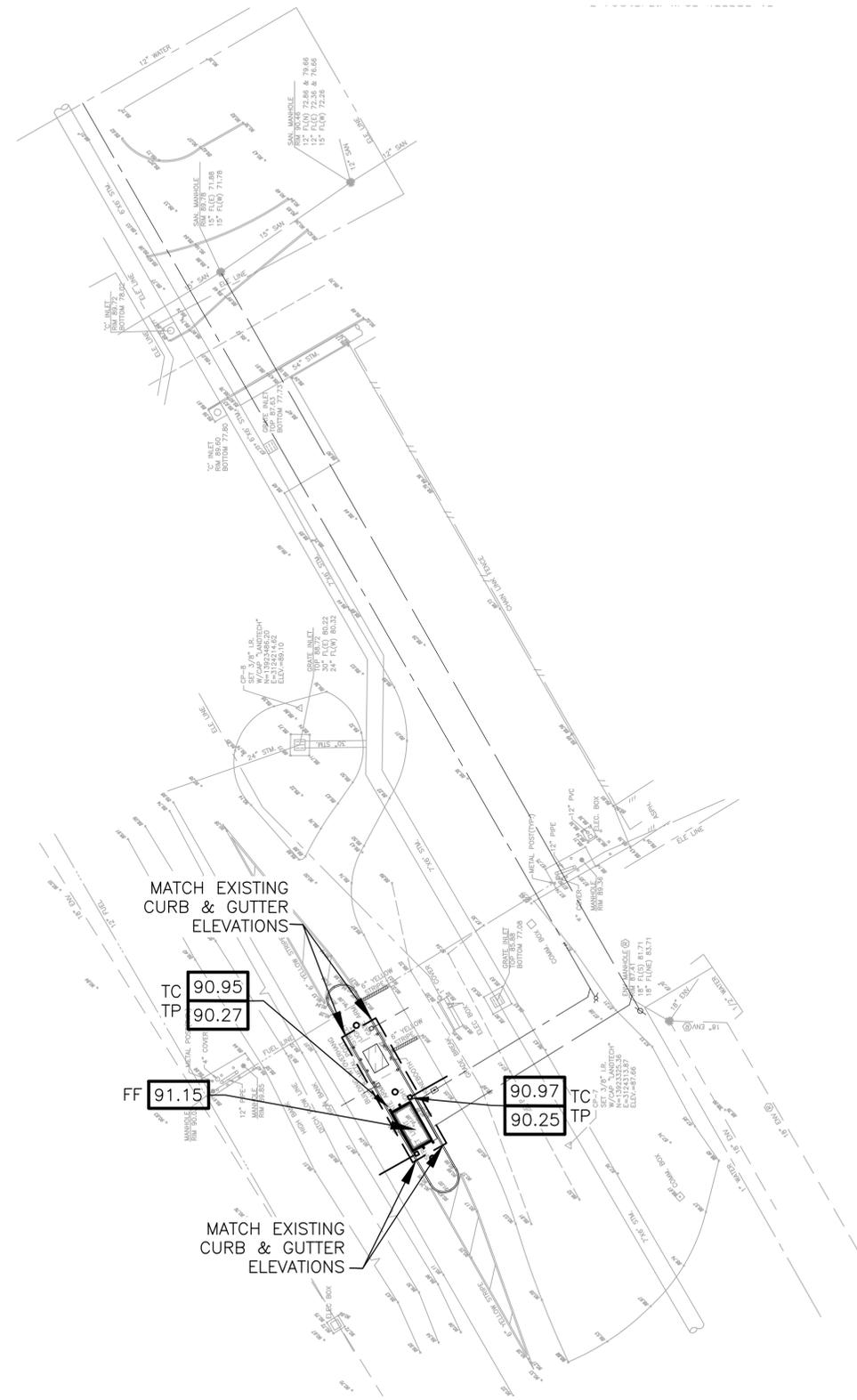
**SHEET NUMBER**

**C2.02**

PROJECT NAME: SITE PLAN - BUMP  
 FILE NAME: C2.02 SITE PLANING  
 FILE LOCATION: P:\ARCH\14053\WV51\WP - 51

DATE: 8/11/14 10:54 AM

Pierce Goodwin Alexander & Linville | Houston | Dallas | Las Vegas | Los Angeles | New Orleans | Mexico City | Atlanta | Austin | Boca Raton | Boston | Chicago | Dallas | Denver | Fort Worth | Houston | Jacksonville | Las Vegas | Los Angeles | Miami | Minneapolis | New Orleans | Phoenix | San Antonio | San Diego | Seattle | Tampa | Washington, DC



**PROPOSED LEGEND:**

	WATER LINE
	SANITARY SEWER LINE

**GRADING - LEGEND**

PROPOSED	EXISTING
NG [XX.XX]	NATURAL GROUND XX.XXNG
TG [XX.XX]	TOP OF GRATE XX.XX TG
	CONTOUR LINE 50
TC [XX.XX]	TOP OF CURB [XX.XX]TC
TP [XX.XX]	TOP OF PAVEMENT [XX.XX]TP
FF [XX.XX]	FINISH FLOOR [XX.XX]FF

**NOTE:**  
INSTALL CONCRETE TO PROVIDE POSITIVE DRAINAGE AWAY FROM NEW GUARD BOOTH TO ELIMINATE ANY STANDING WATER.

**NOTES:**

- ALL COORDINATES ARE REFERENCED TO THE TEXAS COORDINATE SYSTEM OF 1983, SOUTH CENTRAL ZONE, NAD 83 (2011), EPOCH 2010.00. NGS MONUMENT "ZHU B", PRIMARY AIRPORT CONTROL STATION WAS HELD FOR PROJECT CONTROL. HORIZONTAL CONTROL SURVEY WAS PERFORMED USING GPS AND THE GEOID 12A MODEL. NGS GRID COORDINATES: N=13,912,033.65; E=3,129,527.22. UNIT OF MEASURE = U. S. SURVEY FOOT.
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**BENCHMARK:**

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**TBM'S:**

CP-7  
SET 3/8" I.R.  
W/CAP "LANDTECH"  
ALONG THE EAST SIDE OF TUG  
ROAD, WEST  
OF GUARD BOOTH WV-51  
N=13923325.36 E=3124313.87  
ELEV.=87.66

CP-8  
SET 3/8" I.R.  
W/CAP "LANDTECH"  
ALONG THE WEST SIDE OF TUG  
ROAD, EAST  
OF GUARD BOOTH WV-51.  
N=13923486.20 E=3124214.62  
ELEV.=89.10

PROJECT NAME: LAYOUT: CITY GRADING AND DRAINAGE PLANING  
FILE NAME: NONE  
FILE LOCATION: P:\PROJECTS\HOU\HOU\HW-51

DATE: 8/11/14 16:54:14  
DRAWN BY: [Signature]

**HOUSTON AIRPORT SYSTEM**  
GEORGE BUSH  
INTERCONTINENTAL AIRPORT  
HOUSTON TEXAS

**OWNER**  
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**PGAL TBPE REG. NO. F-2742**  
**CONSULTANT**

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TEL: (713) 747-2399 FAX: (713) 748-3748  
TBPE FIRM REGISTRATION # 4575

**PROJECT TITLE**  
HOUSTON AIRPORT SYSTEM  
GUARD BOOTH  
REPLACEMENT PROJECT  
HAS PN 727

**PROJECT NUMBER**  
R1002447

**PROJECT LOCATION**  
18401 SKYTRAIN RD.  
GUARD BOOTH WV-51  
HOUSTON, TX 77032

**DATE OF ISSUE**  
AUGUST 11, 2014  
100% CONSTRUCTION DOCUMENTS

**REVISIONS**

NO.	DESCRIPTION	DATE

**HOUSTON AIRPORT SYSTEM**  
PDC DESIGN DIVISION

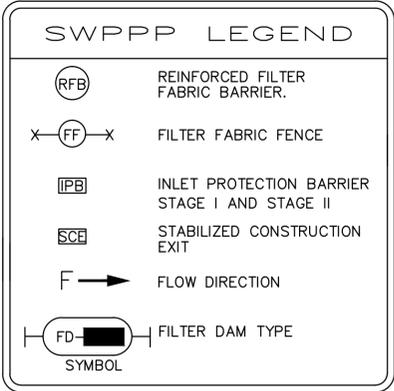
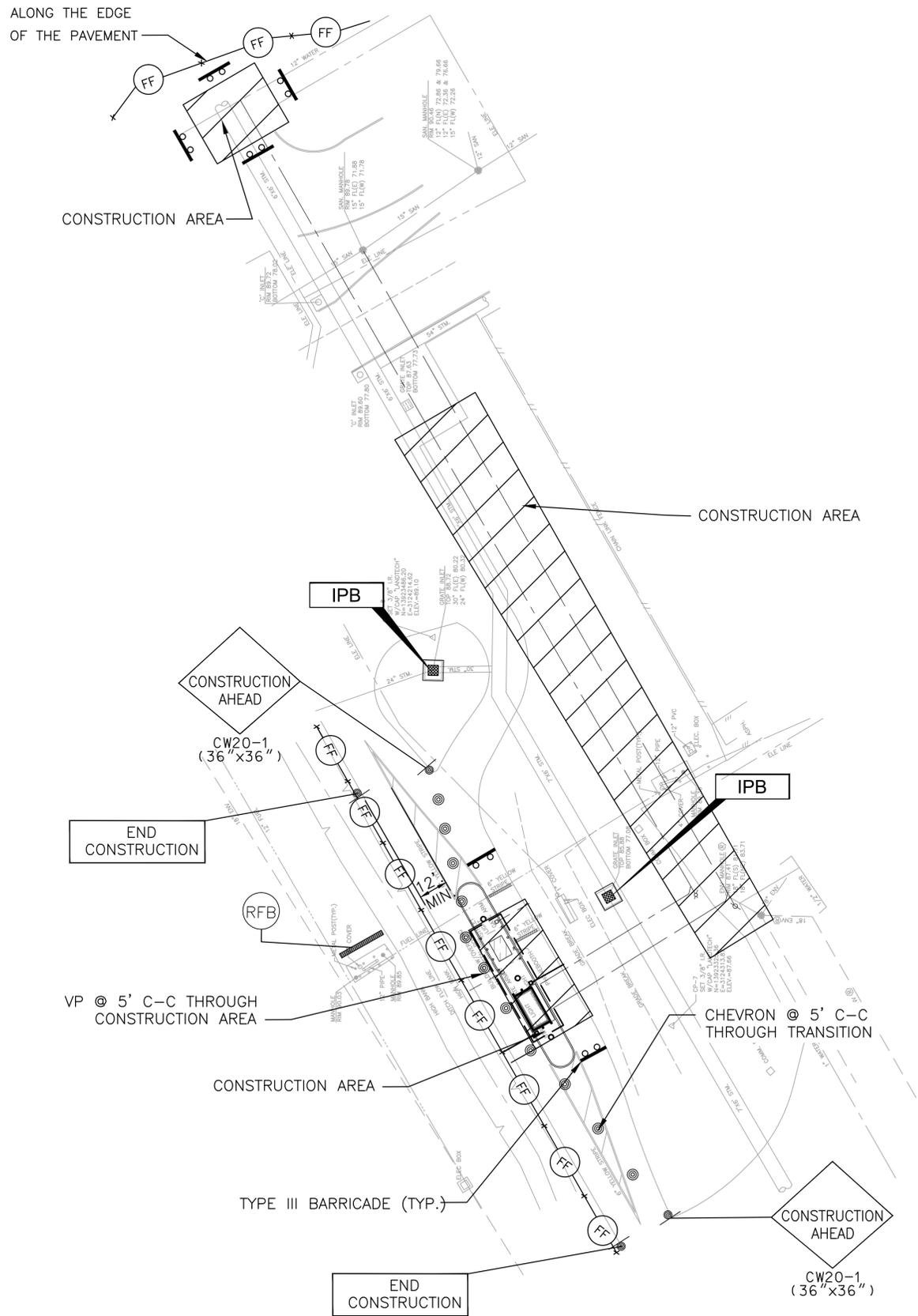
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98325  
PROFESSIONAL ENGINEER  
August 11, 2014

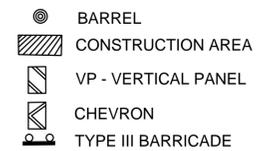
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GRADING AND DRAINAGE PLAN

**SHEET NUMBER**  
**C3.01**

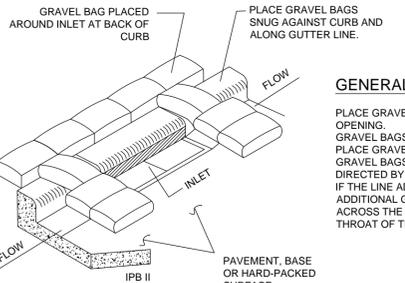
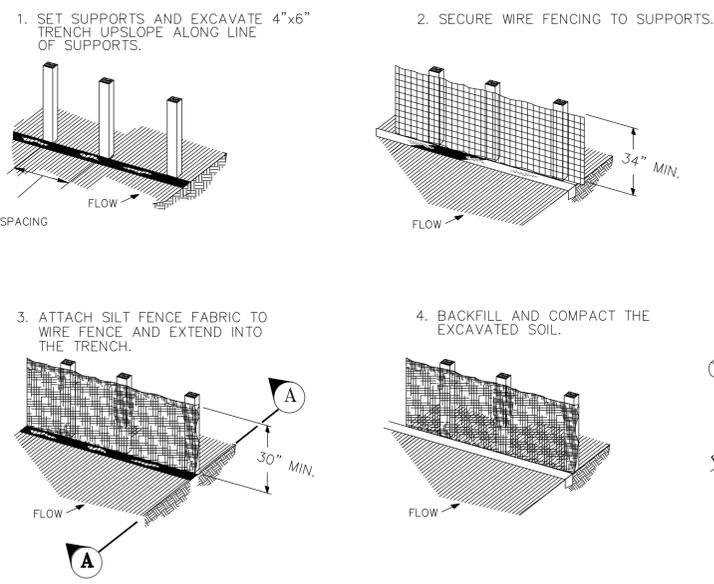
Alexandria | Atlanta | Austin | Boca Raton | Boston | Dallas | Houston | Las Vegas | Los Angeles | New Orleans | Mexico City | Pierce Goodwin Alexander & Linville



### TRAFFIC LEGEND :



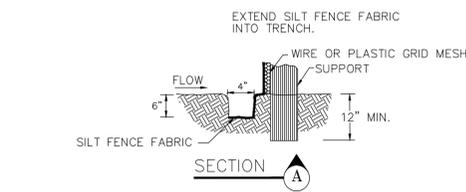
- NOTE:**
- 1 MAINTAIN POSITIVE DRAINAGE DURING CONSTRUCTION
  - 2 REMOVE DEBRIS FROM SITE ON A DAILY BASIS
  - 3 NO CONSTRUCTION WORKERS CAN ENTER RESTRICTED AREAS WITHOUT AN ESCORT



**GENERAL NOTES:**

PLACE GRAVEL BAGS IN THE GUTTER ON EACH SIDE OF THE INLET OPENING. GRAVEL BAGS SHALL BE PLACED TIGHTLY AGAINST THE CURB. PLACE GRAVEL BAGS AT BACK OF CURB ALONG INLET. GRAVEL BAGS SHALL NOT BLOCK THROAT INLET, UNLESS DIRECTED BY ENGINEER. IF THE LINE ADJACENT TO THE INLET IS CLOSED TO TRAFFIC THEN ADDITIONAL GRAVEL BAGS SHALL BE PLACED CONTINUOUSLY ACROSS THE FRONT OF THE INLET, BUT SHALL NOT BLOCK THE THROAT OF THE INLET.

GRAVEL BAG INLET PROTECTION BARRIER (FOR STAGE II INLETS)

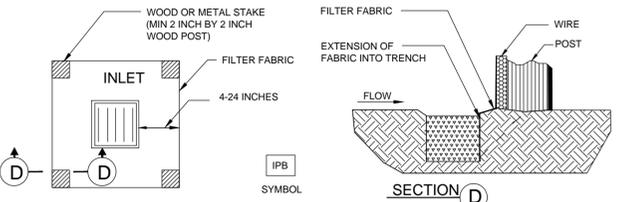


**CONSTRUCTION NOTES:**

1. SEE SPECIFICATION SECTION NO. 02361-SILT FENCES.

	REINFORCED SILT FENCE SYMBOL
	SILT FENCE SYMBOL

SILT FENCE



**CONSTRUCTION NOTES:**

1. SEE CONSTRUCTION NOTES FOR RFB

SILT FENCE INLET PROTECTION BARRIER

DATE PLOTTED: 8/11/14 10:51 AM  
 PLOT BY: NONE  
 PLOT DEVICE: NONE  
 PLOT FILE: C:\Users\jacob\Documents\Projects\Houston Airport System\Traffic Control and SWPPP Plan\C6.01.dwg

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ARCHITECT  
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 TBPE FIRM REGISTRATION # 4575

PROJECT TITLE  
**HOUSTON AIRPORT SYSTEM  
 GUARD BOOTH  
 REPLACEMENT PROJECT  
 HAS PN 727**

PROJECT NUMBER  
 R1002447

PROJECT LOCATION  
 18401 SKYTRAIN RD.  
 GUARD BOOTH WV-51  
 HOUSTON, TX 77032

DATE OF ISSUE  
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100% CONSTRUCTION DOCUMENTS  
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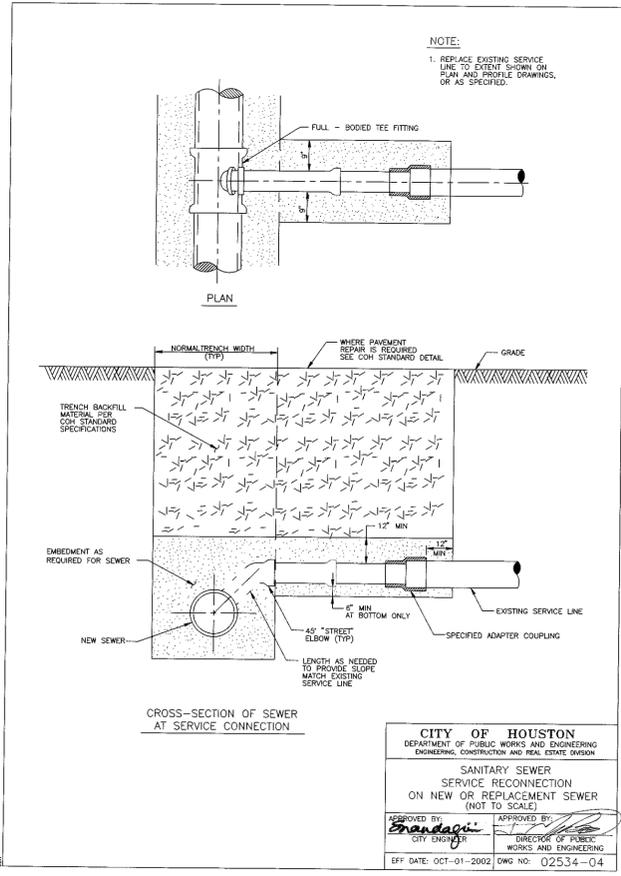
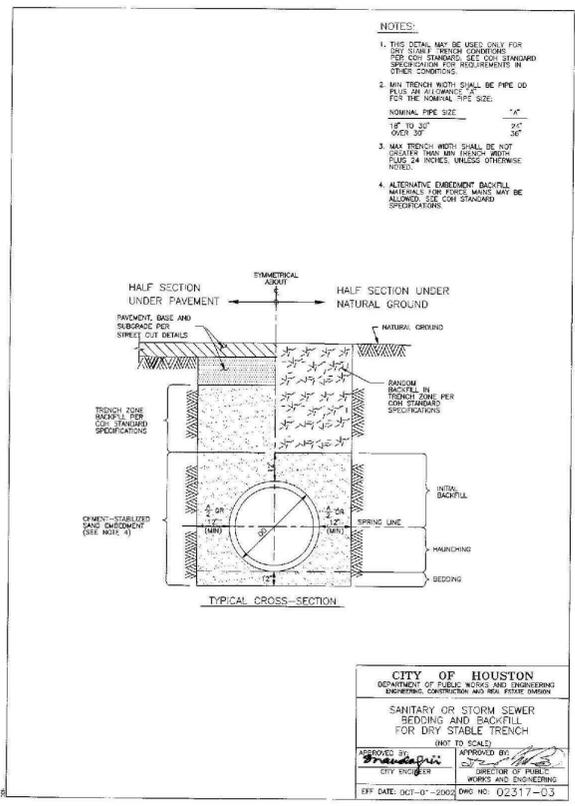
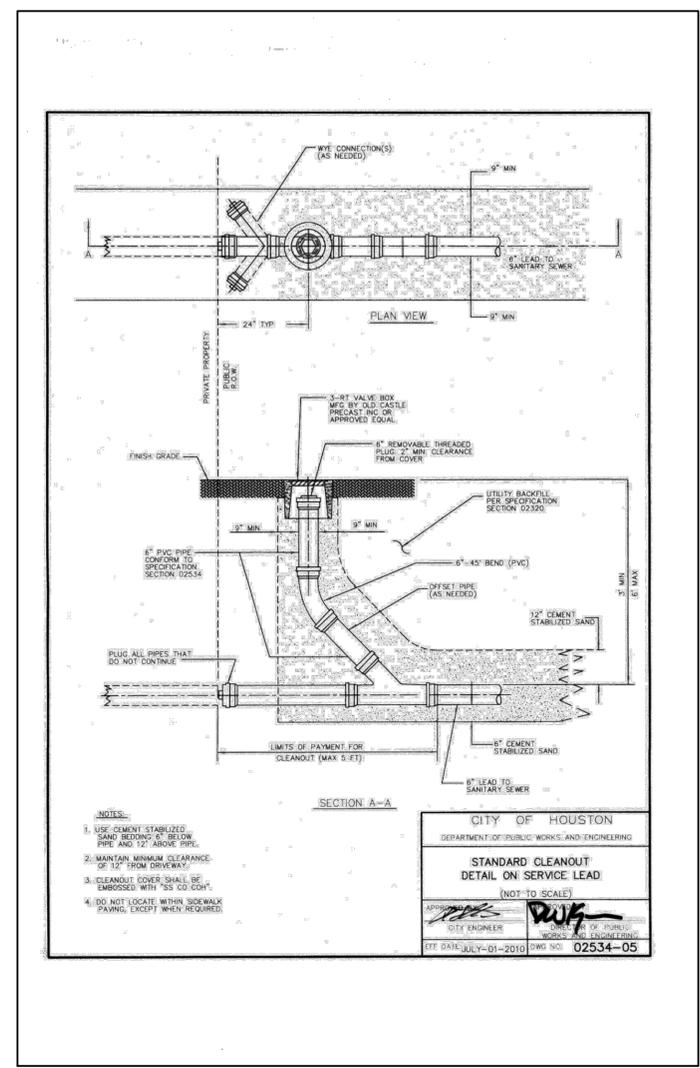
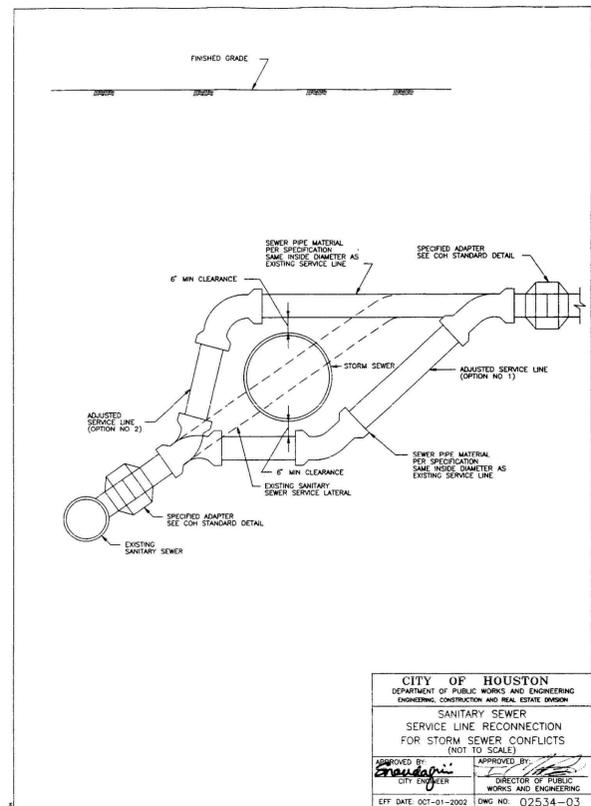
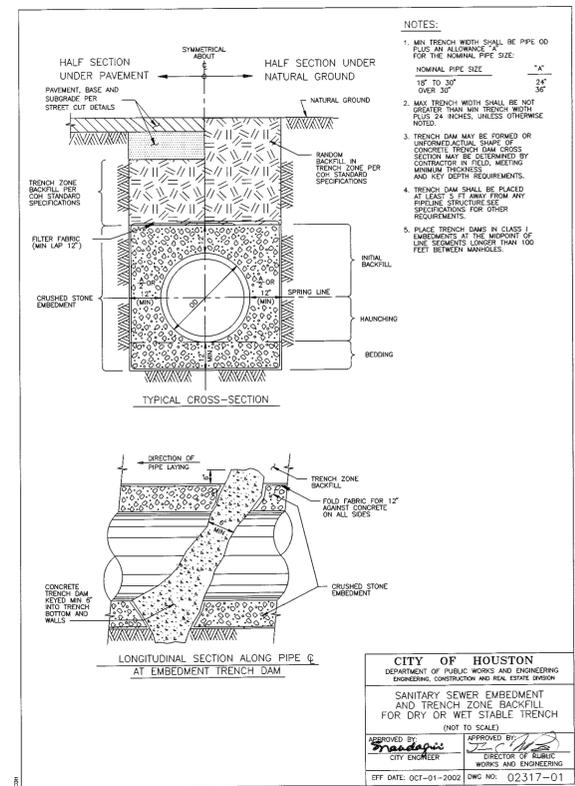
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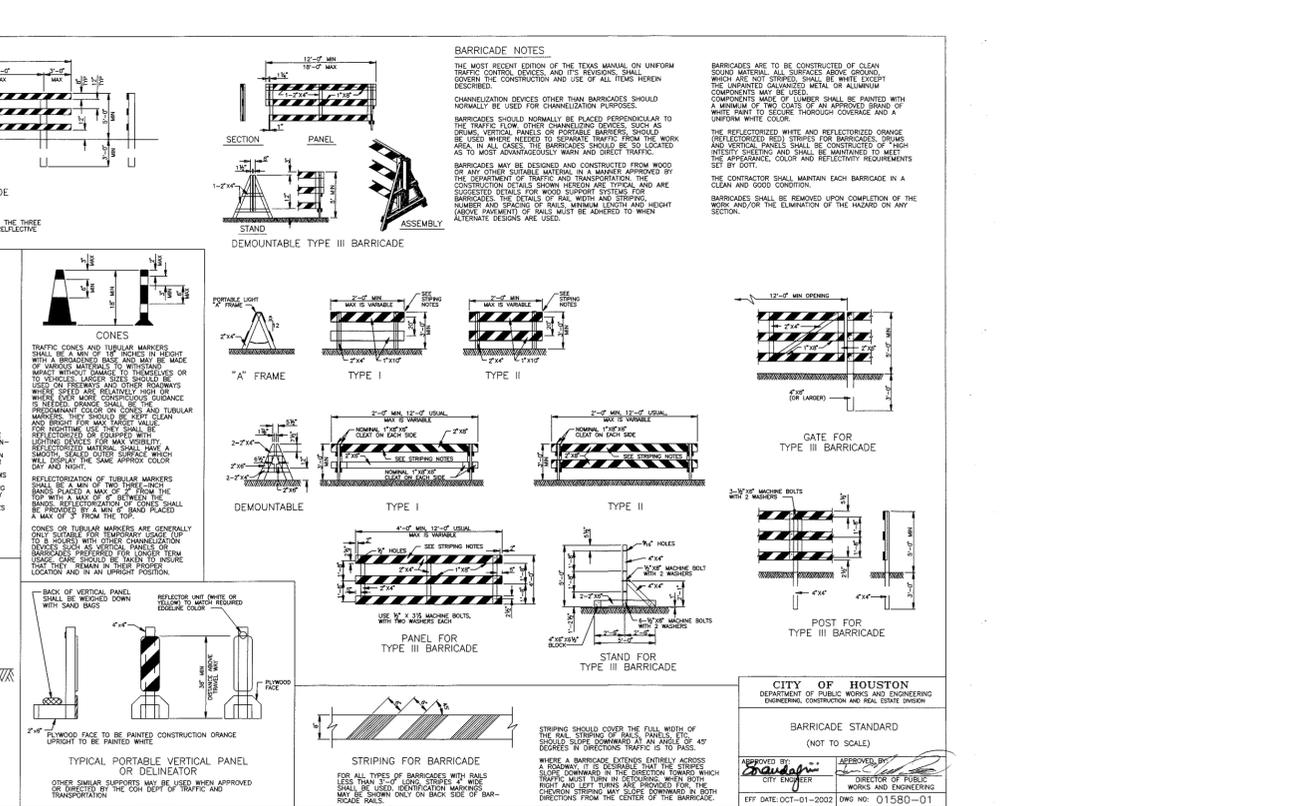
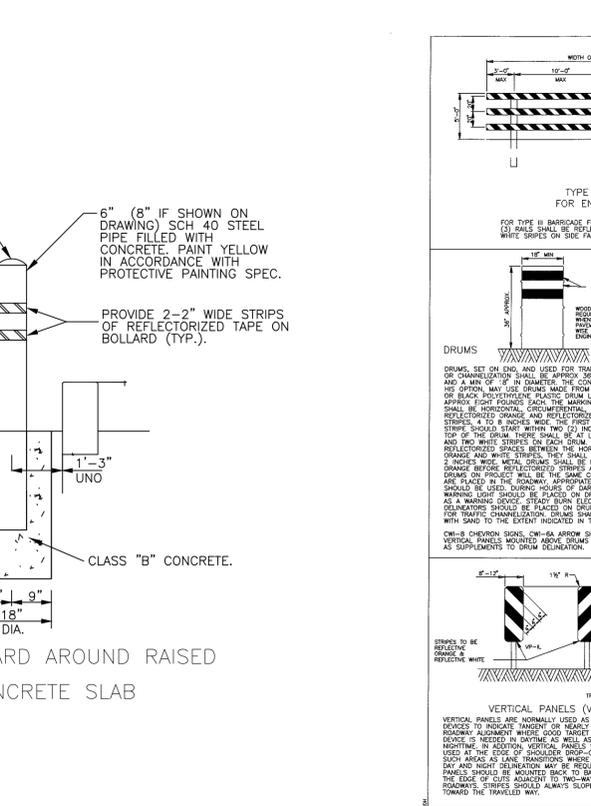
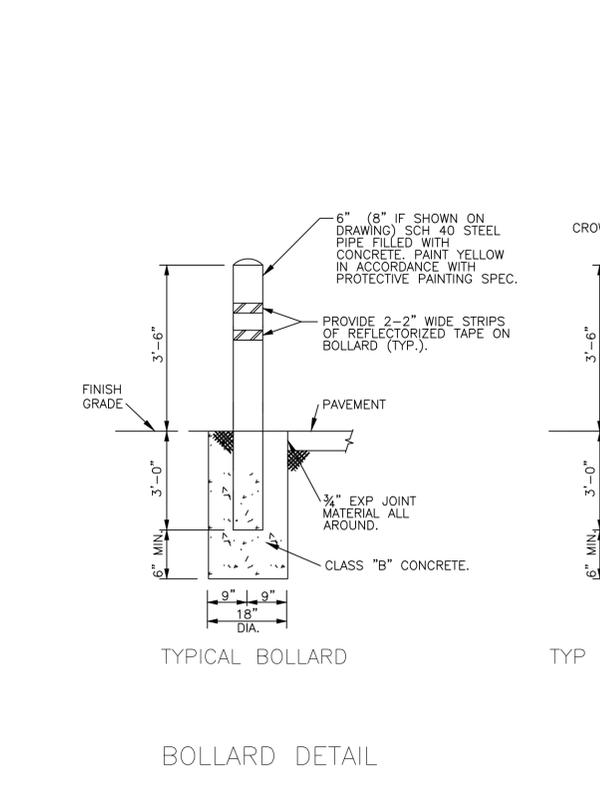
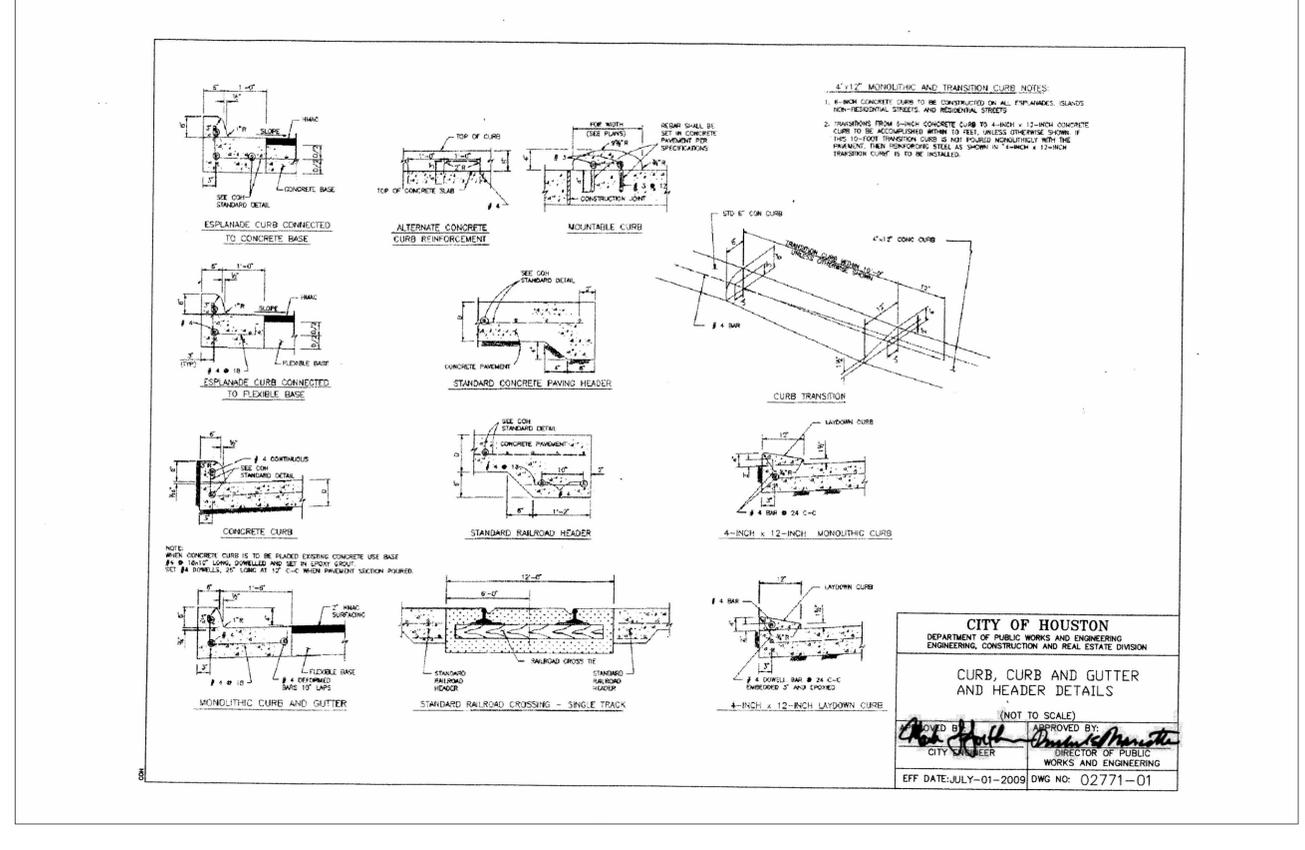
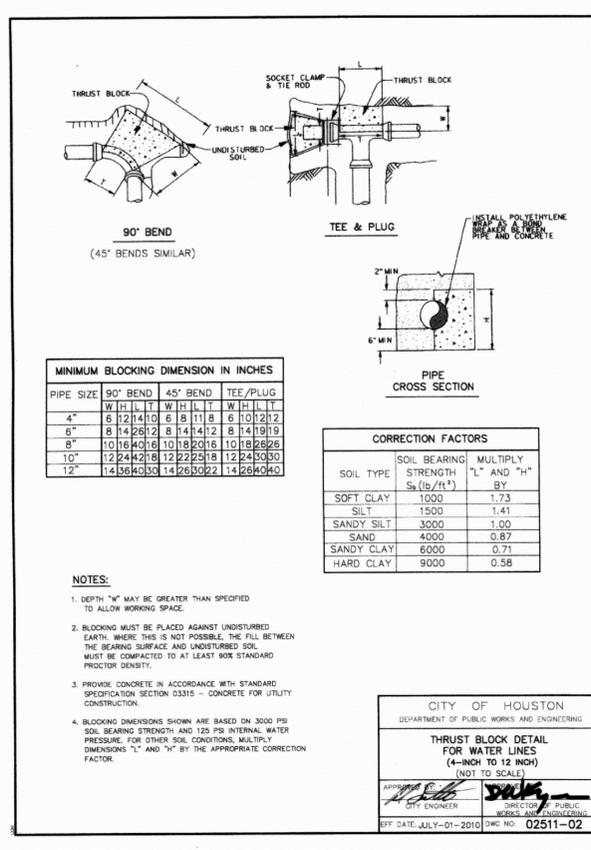
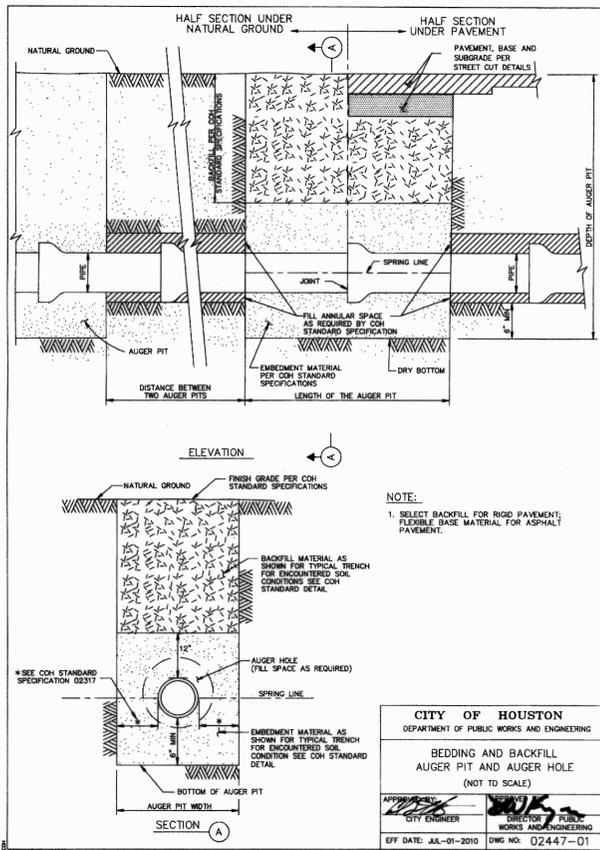
  
 VINCENT N. JACOB  
 98325  
 PROFESSIONAL ENGINEER

SHEET TITLE  
**WASTEWATER  
 DETAILS**

SHEET NUMBER  
**C7.01**

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DEPARTMENT OF PUBLIC WORKS AND ENGINEERING  
CONSTRUCTION AND REAL ESTATE DIVISION  
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(NOT TO SCALE)  
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CITY ENGINEER  
APPROVED BY: [Signature]  
DIRECTOR OF PUBLIC WORKS AND ENGINEERING  
EFF DATE: JULY-01-2009 DWG NO: 02771-01

**PROJECT TITLE**  
HOUSTON AIRPORT SYSTEM  
GUARD BOOTH REPLACEMENT PROJECT  
HAS PN 727  
**PROJECT NUMBER**  
R1002447  
**PROJECT LOCATION**  
18401 SKYTRAIN RD.  
GUARD BOOTH WV-51  
HOUSTON, TX 77032

**DATE OF ISSUE**  
AUGUST 11, 2014  
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**HOUSTON AIRPORT SYSTEM**  
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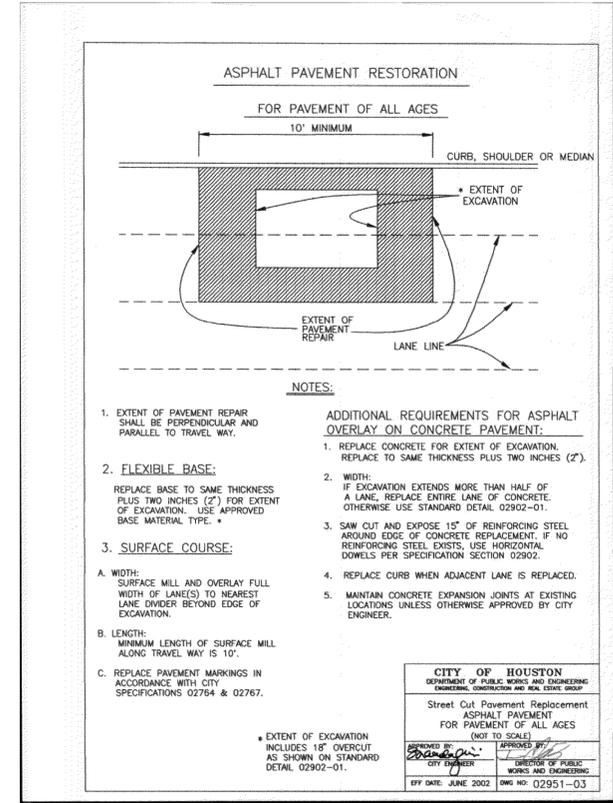
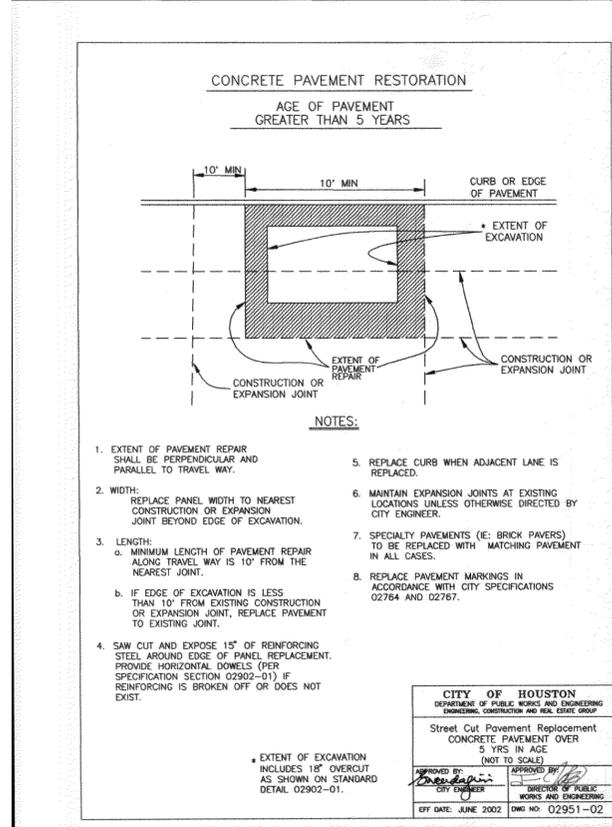
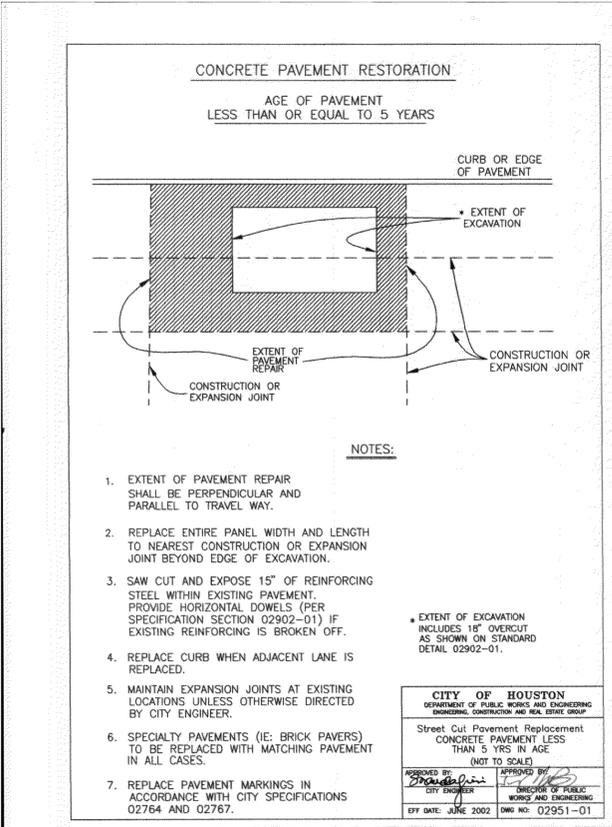
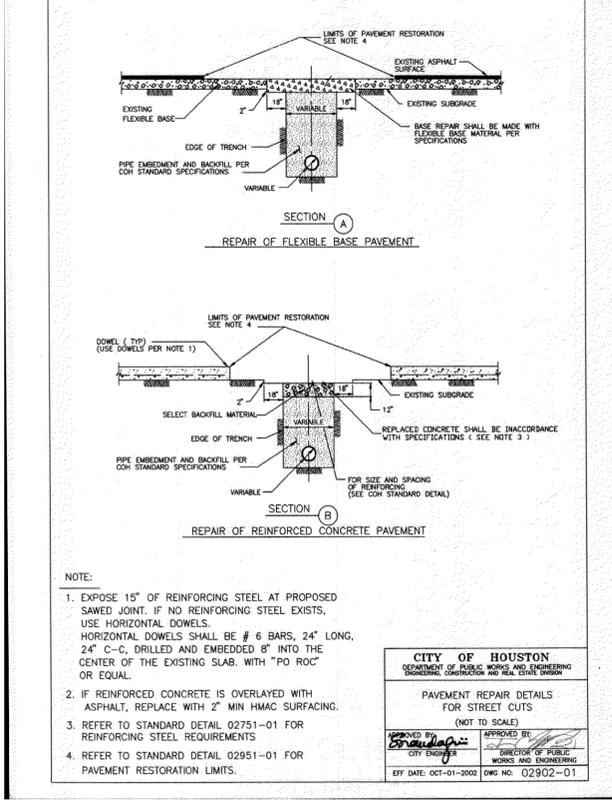
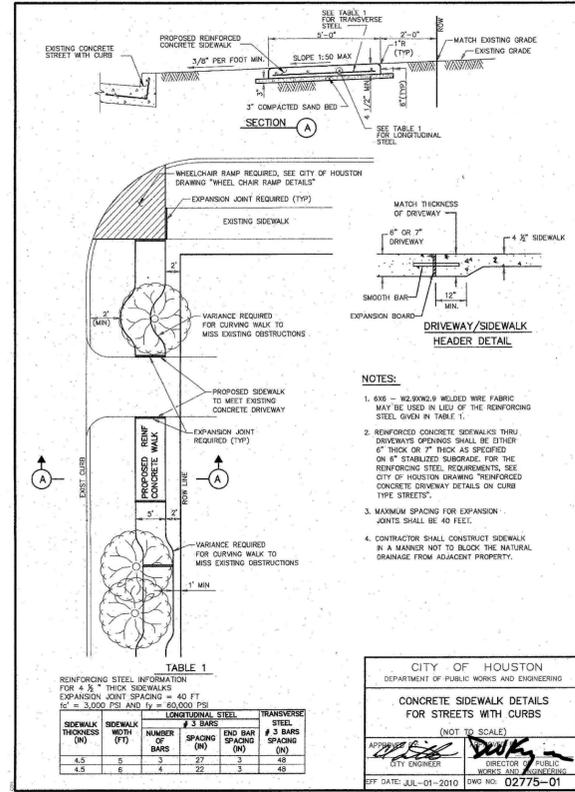
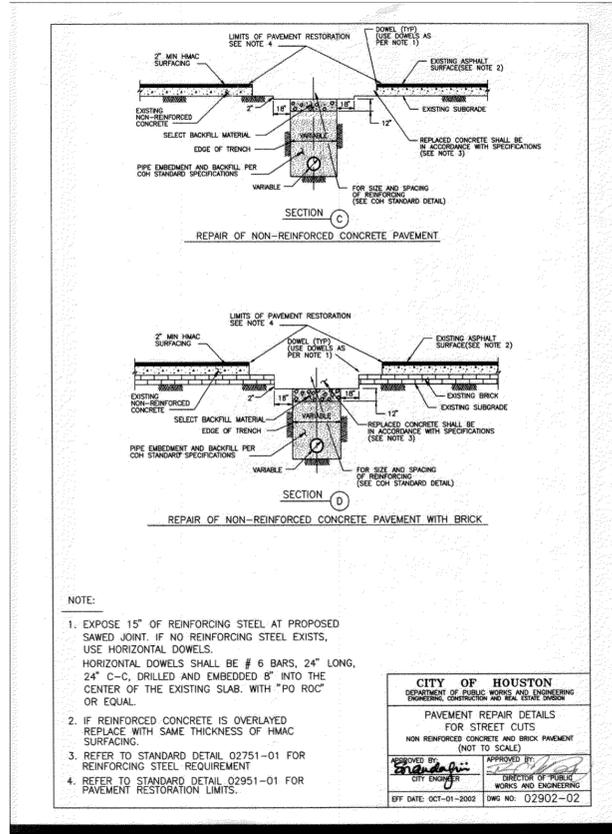
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REPLACEMENT PROJECT  
HAS PN 727

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**PAVEMENT DETAILS**

SHEET NUMBER

**C7.04**

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FILED: C-702 - PAVEMENT RESTORATION  
DATE: 8/11/14 10:17 AM  
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DATE: 8/11/14 10:17 AM

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# STRUCTURAL GENERAL NOTES

## I. COORDINATION

- It is the responsibility of the General Contractor to obtain all Contract Documents and Addenda and to submit such documents to all subcontractors and material suppliers prior to the submittal of shop drawings, fabrication of any structural members, and construction.
- The General Contractor shall compare the Architectural, Structural Mechanical, Electrical, Plumbing, and other series drawings and report any discrepancies between each set of drawings and within each set of drawings prior to fabrication and installation of any structural members.
- Only larger sleeve openings and framed openings in structural framing component members are indicated on the Structural Drawings. However, all sleeves, inserts and openings, including frames and/or sleeves shall be provided for passage, provision and/or incorporation of the work of the contract, including but not limited to Mechanical, Electrical and Plumbing work. This work shall include the coordination of sizes, alignment, dimensions, position, locations, elevations and grades as required to serve the intended purpose. Openings not indicated on the Structural Drawings, but required as noted above, shall be submitted to the Engineer for review.
- Refer to Architectural, Mechanical, Electrical and Plumbing drawings for floor elevations, slopes, drains and location of depressed and elevated floor areas.
- Compatibility of the structure and provisions for building equipment supported on or from structural components shall be verified as to size, dimensions, clearances, accessibility, weights and reaction with the equipment for which the structure has been designed prior to submission of shop drawings and data for each piece of equipment and for structural components. Differences shall be noted on the submittals.
- The details designated as "Typical Details" apply generally to the Drawings in all areas where conditions are similar to those described in the details.
- All structural elements of the project have been designed by the Structural Engineer to resist the required code vertical and lateral forces that could occur in the final completed structure only. It is the responsibility of the Contractor to provide all required bracing during construction to maintain the stability and safety of all structural elements during the construction process until the lateral-load resisting or stability-providing system is completely installed and the structure is completely tied together.
- Lateral-force resisting system:  
The lateral load stability of the guard booth is designed by the booth manufacturer and may consist of moment frames. The connection to the foundation must be designed as a pin.
- The Contract Structural Drawings and Specifications represent the finished structure, and except where specifically shown, do not indicate the means or methods of construction. The Contractor and their Sub-Contractors shall supervise and direct the Work and shall be solely responsible for all construction means, methods, procedures, techniques, sequences and safety measures including, but not limited to, adherence to all OSHA guidelines. The Engineer shall not have control of, and shall not be responsible for, construction means, methods, techniques, sequences or procedures, for safety precautions and programs in connection with the Work, for the acts or omissions of the Contractor, Subcontractors, or any other person performing any of the Work, or for the failure of any of these persons to carry out the Work in accordance with the Contract Documents.
- Where conflict exists among the various parts of the structural contract documents, structural drawings, structural general notes, and specifications, the strictest requirements, as indicated by the Engineer, shall govern.
- Periodic site observation by field representatives of Garza + McLain Structural Engineers, Inc. is solely for the purpose of determining if the Work is proceeding in accordance with the Structural Contract Documents. This limited site observation is not intended to be a check of the quality or quantity of the Work, but rather a periodic check in an effort to inform the Owner against defects and deficiencies in the work of the Contractor.

## II. SUBSTITUTIONS

All requests for substitutions of materials or details shown in the contract documents shall be submitted for approval during the bidding period. Once bids are accepted, proposed substitutions will be considered only when they are officially submitted with an identified savings to be deducted from the contract and/or schedule impact and the material or product has been approved by the International Code Council Evaluation Service (ICCES) and the ICCES reports are included in the request. Submittals not satisfying the above criteria will not be considered.

## III. MAINTENANCE STATEMENT

- All structures require periodic maintenance to extend lifespan and to insure structural integrity from exposure to the environment. A planned program of maintenance shall be established by the building owner. This program shall include such items as but not limited to painting of structural steel, protective coating for concrete, sealants, caulked joints, expansion joints, control joints, spalls and cracks in concrete, pressure washing of exposed structural elements exposed to a salt environment or other harsh chemicals and maintaining positive drainage away from the edge of the building.
- Site Drainage: it is recommended that the site drainage be well developed surface water should be directed away from the foundation soils. (Use a minimum slope of 5% within 10 feet of the foundation). no ponding of surface water shall be allowed near the structure during or after completion of the construction & the landscaping. The Contractor shall advise the owner of the site drainage requirements. The Engineer is not liable for foundation issues if the site is not maintained.

## IV. CODES

- The General Building Code used as the basis for the structural design is as follows:
  - International Building Code, 2006 Edition with the City of Houston Adopted Amendments.
- Structural Concrete: Building Code Requirements for Reinforced Concrete, American Concrete Institute, ACI 318.

## V. DESIGN LOADS

- Dead Loads include the self weight of the structural elements and the following superimposed loads:
    - Roof structure 10 psf
    - Walls 8 psf
  - Live Loads
- | OCCUPANCY OR USE    | UNIFORM (.psf) | CONCENTRATED (lbs.) |
|---------------------|----------------|---------------------|
| 1. Roof (unreduced) | 20             | N/A                 |
- Wind loads  
Wind lateral load shall be based on ASCE 7 using the following:
    - Basic Wind Speed (3 sec) 110 mph
    - Exposure C
    - Importance Factor 1.0
    - Refer to ASCE 7 for the definition of "a".
  - Texas Architectural Barrier Act Standard. The structural strength of grab bars, tub and shower seats, fasteners, and mounting devices shall meet the following specification:
    - Bending stress in a grab bar or seat induced by the maximum bending moment from the application of 250 lbf shall be less than the allowable stress for the material of the grab bar or seat.

- Shear stress induced in a grab bar or seat by the application of 250 lbf shall be less than the allowable shear stress for the material of the grab bar or seat. If the connection between the grab bar or seat and its mounting bracket or other support is considered to be fully restrained, then direct and torsional shear stresses shall be totaled for the combined shear stress, which shall not exceed the allowable shear stress.
- Shear force induced in a fastener or mounting device from the application of 250 lbf shall be less than the allowable lateral load of either the fastener or the mounting device or the supporting structure, whichever is the smaller allowable load.
- Tensile force induced by a fastener by a direct tension force of 250 lbf plus the maximum moment from the application of 250 lbf shall be less than the allowable withdrawal load between the fastener and the supporting structure.
- Grab bars shall not rotate within their fittings.
- Premanufactured guard booth shall be designed for the wind speed specified, self weight of all members, 20 psf Live load and 10 psf down ward wind per the ASCE7-05 load combinations. Guard booth must be designed to resist over turning along with wind uplift. Drawings shall be signed and sealed with reactions shown at supports. Booth will transfer vertical and horizontal loads to the foundation only.

## VII. SUBMITTALS

- Shop drawings shall be prepared for all structural items and submitted for review by the Engineer. Contract Drawings shall not be reproduced and used as shop drawings. All items deviating from the Contract Drawings or from previously submitted shop drawings shall be clouded.
- The contractor shall review shop drawings for compliance with the contract documents and shall certify that he has done so by a stamp noting that the drawings have been "Approved" and which bears the signature (or initials) of an authorized representative of the contractor and the date. Submittals which do not reflect the contractor's approval, signature and date will be returned without review.
- The contractor shall be responsible for delays caused by rejection of inadequate shop drawings.
- Where review and return of shop drawings is required or requested, the engineer will review each submittal and, where possible, return within two weeks of receipt.
- Corrections or comments on shop drawings or manufacturer's data sheets do not relieve the contractor from compliance with requirements of the plans and specifications. The engineer's review is for general conformance with the requirements of the contract documents. The contractor is responsible for confirming and correcting all quantities and dimensions, selecting fabrication processes and techniques of construction, and coordinating his work with that of all other contractors.
- Submittal shall be submitted as a PDF to Engineer. Engineer will review, markup and send an electronic copy to architect.
- Submittal List and Schedule - The General Contractor shall prepare a detailed list and schedule of all submittal items to be sent to the Structural Engineer prior to the start of construction. This list shall be updated and revised and kept current as the job progresses. The submittal list shall be organized as shown below:
  - Shop Drawings
  - Manufacturers literature for products, assemblies and hardware
  - Products, assemblies and hardware
  - Product certifications, mill certificates and affidavits
- Shop Drawings
  - The General Contractor shall submit for Engineer review shop drawings for the following items:
    - Reinforcing Steel
    - Penetrations in Grade Beams
    - Miscellaneous Steel
    - Embedded Items (Plates, Angles, Bolts, etc) or Items attached to the structural frame for building cladding attachment or for attachment of other items. (#)
    - Concrete Mix Designs (30 tests) (\*,#)
    - Pre-manufactured guard booths (\*,#)
    - Guard Booth Engineering Calculations (\*,#)
 Items marked (\*) shall be designed by an engineer and drawings shall be sealed by a registered engineer in the state where the project is located. Items marked (#) shall be submitted to Engineer for Owner's record only and will not have the Engineer's shop drawing stamp affixed.
  - The omission from the shop drawings of any material required by the Contract Documents to be furnished shall not relieve the Contractor of the responsibility of furnishing and installing such materials, regardless of whether the shop drawings have been reviewed and approved.
- Manufacturers Literature - Submit two copies of manufacturer's literature for all materials and products used in the construction of the project.
- Reproduction - The use of reproductions of these contract documents by an contractor, subcontractor, erector, fabricator, or material supplier in lieu of preparation of shop drawings signifies his acceptance of all information shown hereon as correct, and obligates himself to any job expense, real or implied, arising due to any errors that may occur hereon.
- Letters-
  - Concrete Reinforcement contractor shall provide a notarized letter that all concrete reinforcement was installed for contract documents.
  - G.C. to provide a notarized letter to the Engineer stating all structural elements have been installed per the structural contract documents, shop drawings and supplemental sketches without deviation.

## VIII. BUILDING PAD PREPARATION

- Remove all organic material, debris, and concrete from foundation area.
- Remove 2'-0" of existing subgrade and replace with select fill with a PI between 7 and 20 compacted to 95%.
- All grade foundation changes to be made with select fill.
- Grade beam design for a bearing pressure of 1500 psf.
- Provide a vapor retarder that conforms to ASTM E1745, Class A. Moisture retarder shall be no less than 10 mils thick. Provide vapor retarder's standard tape to tape all joints as well as around all vertical penetrations in slab.

## IX. CAST IN PLACE CONCRETE

### A. CLASSES OF CONCRETE

All concrete shall conform to the requirements as specified in the table below unless noted otherwise on the drawings:

Concrete Mix Schedule:						
Conc. Class	Strength psi	Agg. Type	Agg. Size	Slump Inches	Max w/c	Notes
A	3000	NWT	1 1/2"	4	0.55	

- "NWT" refers to normal concrete having air dry unit weight of approximately 145 PCF (ASTM 33 aggregate).

- Where w/c ratio is not indicated in the Concrete Mix Schedule, it shall be as necessary to meet strength requirements.
- Where the w/c ratio is shown, it shall be adhered to regardless of strength requirements.
- "Strength" is required compressive cylinder strength at an age of 28 days

### Mix Usage Schedule:

Description of Use	Concrete Class	Air Content
Slab-on-fill / Beams	A	

- Maximum shrinkage of the concrete shall be 0.03% at 28 days as determined by ASTM C157.
- Horizontal construction joints in concrete pours shall be permitted only where indicated on the drawings. All vertical construction joints shall be made in the center of spans in accordance with the typical details. Contractor shall submit proposed locations for construction joints not shown on drawings for review by the Architect and Structural Engineer. Additional construction joints may require additional reinforcing as specified by the Engineer which shall be provided by the contractor at no additional cost to the owner.
- Embedded conduits, pipes, and sleeves shall meet the requirements of ACI 318-95, Section 6.3, including the following:
  - Conduits and pipes embedded within a wall, or beam (other than those passing through) shall not be larger in outside dimension than 1/3 the overall thickness of the slab, wall or beam in which they are embedded.
  - Conduits, pipes and sleeves shall not be spaced closer than three diameters or widths on center.

## X. CONCRETE REINFORCING

- Concrete reinforcement for the project shall conform to the following:
  - All Reinforcing Steel shall be ASTM A615, Grade 60 unless noted otherwise in the drawings or these notes.
  - Welded Reinforcing Steel. Provide reinforcing steel conforming to ASTM A706.
  - Deformed Bar Anchors. ASTM A496 minimum yield strength 70,000 PSI as noted on the drawings. Reinforcing bars shall not be substituted for deformed bar anchors.
- Detailing of reinforcing steel shall conform to the American Concrete Institute 315 Detailing Manual and all hooks and bends in reinforcing bars shall conform to ACI detailing standards unless shown otherwise.
- In unscheduled grade beams, walls, and slabs, detail reinforcing as follows:
  - Class B Lap beam top reinforcing bars at mid span.
  - Class B Lap beam bottom reinforcing bars at the supports.
  - Provide Class B lap at other location pending Engineer's approval.
  - Provide standard hooks in top and bottom bars at cantilever and discontinuous ends of beams, walls and slabs.
  - Provide 2-#4 diagonal bars at all slab re-entrant corners placed under the top mat of steel.
- Welding of reinforcing steel will not be permitted unless specifically shown on drawings.
- Heat shall not be used in the fabrication or installation of reinforcement.
- Reinforcing steel clear cover shall be as follows:
  - Earth-formed Grade Bms 2 1/2" top, 3" sides, 3" bottom
  - Formed Grade Beams 2 1/2" top, 2" sides, 3" bottom
  - Slab-on-fill Centered

## XV. TESTING LABORATORY SERVICES

- Work specified herein shall be performed by a qualified Independent Testing Laboratory, selected and paid by the Owner. The Contractor shall be responsible for notifying the Independent Testing Laboratory at least 24 hours of advance of materials that require testing. The contractor shall pay for all retests of materials not meeting the requirements in the Contract Documents. Reports of each Test shall be prepared by the Independent Testing Laboratory and submitted promptly to the Owner, Contractor, Architect, and Engineer. Items found not to comply with the Construction Documents shall be brought to the immediate attention of the Contractor and Architect/ Engineer for resolution.
- Filling and Backfilling operation:
  - Analyze backfill samples delivered by the contractor to determine compliance with gradation and quality requirements of the geotechnical report.
  - Make in place compaction tests for moisture content, moisture density relationship, and density of materials in place. Perform one test for each 5000 square feet of area per lift.
  - Verify Compaction of utility trenches.
- Concrete inspection and testing:
  - Secure composite samples of concrete at the jobsite in accordance with ASTM C172.
  - Mold and cure four specimens from each sample in accordance with ASTM C31. Test specimens in accordance with ASTM C39 for each pour of concrete.
  - Test one cylinder @ 7 days, 2 @ 28 days, and hold one for 56 days (test only if 28 day strength is low.)
  - Perform one strength test (four cylinders) for each 50 cubic yards of fraction thereof, of each mix design placed in one day. Test one cylinder @ 7 days, 2 @ 28 days, and hold one for 56 days (test only if 28 day strength is low.)
  - Make one slump test for each set of cylinders following the procedural requirements of ASTM C143 and C172.
  - Determine total air content of air entrained concrete in accordance with ASTM C231. Perform one test for each strength test.
- Concrete Reinforcement: Inspect all concrete reinforcing steel and embedded metal assemblies prior to placement of concrete for compliance with Contract Documents and shop drawings. All instances of non-compliance shall be immediately brought to the attention of the contractor for correction, and if uncorrected, reported to the engineer.
- Post installed hold down bolts.
- Special Inspections: Special Inspections shall be performed in accordance with Chapter 17 of the 2006 IBC with the City of Houston Amendments by a Special Inspector hired by the Owner to perform the Special Inspections listed. The Special Inspector shall be qualified by an approved agency according to the City to perform the special inspections for which they will be undertaking. The Contractor shall coordinate with and notify the Special Inspector of all tests. The Special Inspector shall be responsible to verify that the items detailed in the Construction Documents were built accordingly and shall prepare, sign, and submit reports to the Registered Design Professional (RDP/RC) in Responsible Charge for all time spent at the site and shall notify the General Contractor responsible for the quality of the Project of the non-complying items. These Special Inspections are in addition to other listed in these Structural Notes or Project Specifications refer to the building permit for required special inspections. The Special Inspector shall provide a Special Inspection Report, upon completion of the erection of the structure; submit a final report to the owner and engineer that includes all the daily inspection reports, testing reports and special inspector qualifications.



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 STRUCTURAL ENGINEERS INC.  
 13113 Southwest Freeway, Suite 163  
 Sugar Land, Texas 77478  
 (281) 484-1230 (voice)  
 (281) 484-1234 (fax)

PROJECT TITLE  
 HOUSTON AIRPORT SYSTEM  
 GUARD BOOTH  
 REPLACEMENT PROJECT  
 HAS PN 727

PROJECT NUMBER  
 R1002447

PROJECT LOCATION  
 18401 SKYTRAIN RD.  
 GUARD BOOTH WV-51  
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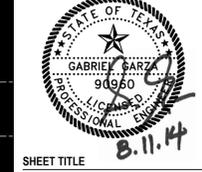
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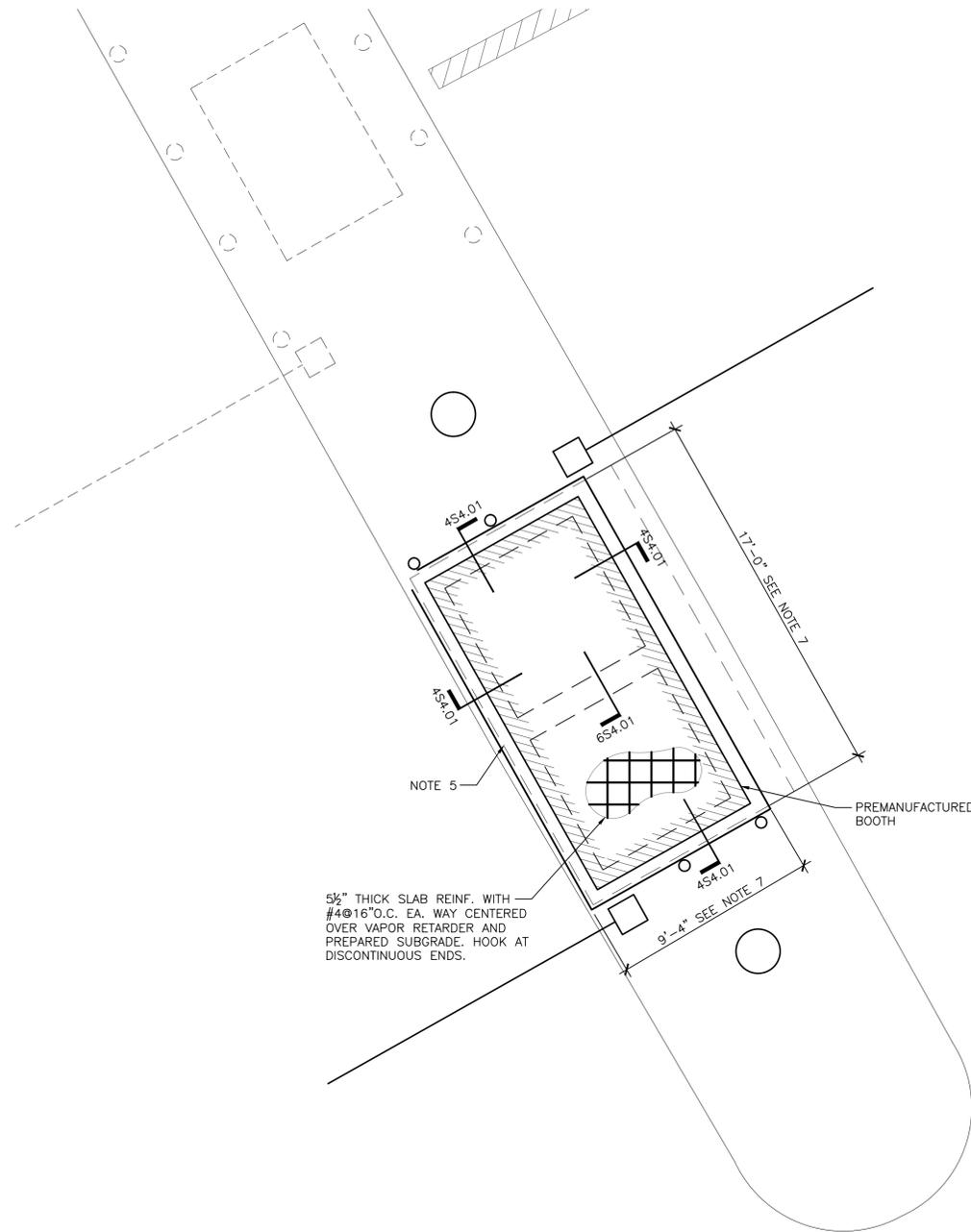
GABRIEL GARZA  
 90960  
 PROFESSIONAL ENGINEER  
 CIVIL  
 STATE OF TEXAS

SHEET TITLE  
 STRUCTURAL  
 GENERAL NOTES

SHEET NUMBER  
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 PLOT TIME: 10:28:39 AM  
 PLOT BY: R1002447

Pierce Goodwin Alexander & Linville



5/8" THICK SLAB REINF. WITH #4@16" O.C. EA. WAY CENTERED OVER VAPOR RETARDER AND PREPARED SUBGRADE. HOOK AT DISCONTINUOUS ENDS.

NOTE 5

PREMANUFACTURED BOOTH

**PLAN NOTES:**

1. THE CONTRACTOR SHALL FIELD VERIFY AND/OR DETERMINE ALL EXISTING DIMENSIONS AND CONDITIONS SHOWN ON THE PLANS AND DETAILS PRIOR TO BEGINNING CONSTRUCTION AND SUBMITTING SHOP DRAWINGS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR SPECIAL CONDITIONS FOR WHICH DETAILS FOR NEW CONSTRUCTION HAVE NOT BEEN PROVIDED PRIOR TO PROCEEDING WITH THE WORK NO EXCEPTION.
2. BASED UPON ACTUAL FIELD CONDITIONS ENCOUNTERED AT THE JOB SITE, ADDITIONAL NEW FRAMING OR MODIFICATIONS TO EITHER THE NEW OR EXISTING FRAMING SHOWN MAY BE REQUIRED AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE ALL INFORMATION REQUIRED BY THE SUB CONTRACTORS AND MATERIAL SUPPLIERS BASED UPON FIELD MEASUREMENTS AND DETERMINATION OF EXISTING CONDITIONS AT THE JOB SITE. THIS INFORMATION SHALL BE INDICATED ON THE SHOP DRAWINGS SUBMITTED FOR REVIEW TO THE ARCHITECT AND ENGINEER NO EXCEPTION.
3. REFER TO STRUCTURAL GENERAL NOTES, PROJECT SPECIFICATIONS, AND TYPICAL DETAILS FOR ADDITIONAL INFORMATION.
4. REFER TO ARCH'L, CIVIL, AND MEP DRAWINGS FOR ADDITIONAL INFORMATION.
5. SAW CUT AND REMOVE EXISTING PAVING TO INSTALL NEW BOOTH FOUNDATION, DO NOT OVER CUT PAVEMENT USE ZERO TOLERANCE SLAB.
6. G.C. TO LOCATE ALL EXISTING UTILITIES THAT GROSS GUARD BOOTH PRIOR TO DIGGING FOR FOUNDATION, NOTIFY ENGINEER OF CONFLICTS.
7. CONCRETE DIMENSIONS TO BE A MINIMUM OF GUARD BOOTH WIDTH +1'-0" x GUARD BOOTH LENGTH +1'

**1 GUARD BOOTH WV-51 FOUNDATION PLAN**

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

DATE: 8/11/14  
 DRAWN BY: J. GARZA  
 CHECKED BY: J. GARZA  
 PROJECT: HOUSTON AIRPORT SYSTEM  
 SHEET: S1.06

Pierce Goodwin Alexander & Linville

<b>PROJECT TITLE</b>	HOUSTON AIRPORT SYSTEM GUARD BOOTH REPLACEMENT PROJECT HAS PN 727
<b>PROJECT NUMBER</b>	R1002447
<b>PROJECT LOCATION</b>	18401 SKYTRAIN RD. GUARD BOOTH WV-51 HOUSTON, TX 77032
<b>DATE OF ISSUE</b>	AUGUST 11, 2014
<b>REVISIONS</b>	100% CONSTRUCTION DOCUMENTS

HOUSTON AIRPORT SYSTEM  
PDC DESIGN DIVISION

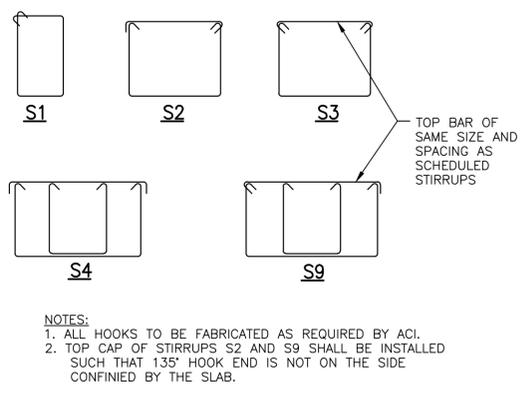
DATE

REGISTRATION  
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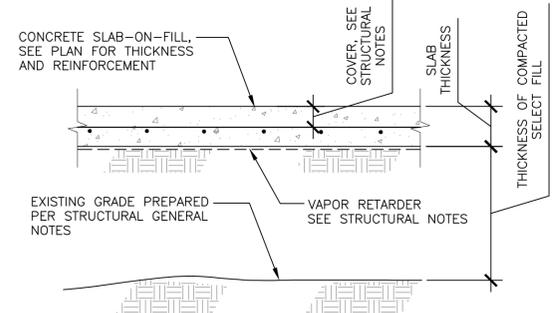
**SHEET TITLE**  
 FOUNDATION PLAN

**SHEET NUMBER**  
**S1.06**

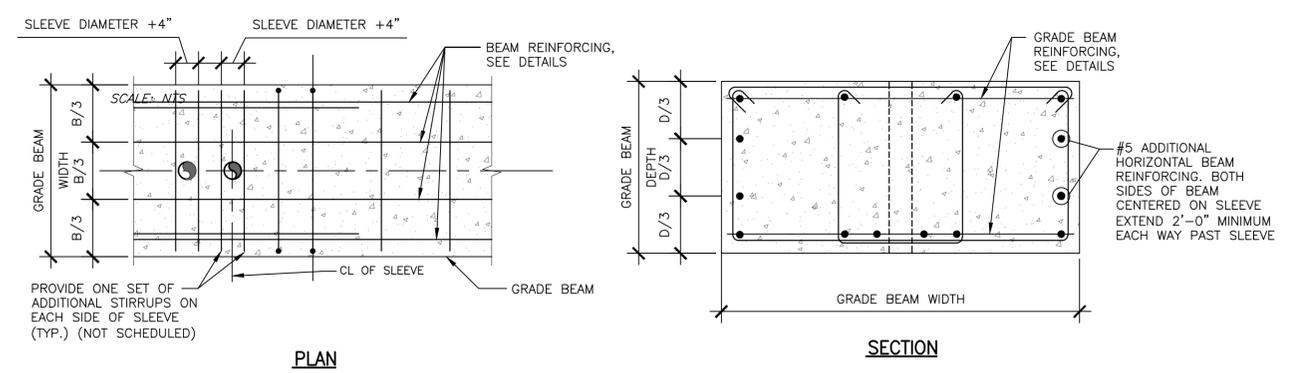


NOTES:  
 1. ALL HOOKS TO BE FABRICATED AS REQUIRED BY ACI.  
 2. TOP CAP OF STIRRUPS S2 AND S9 SHALL BE INSTALLED SUCH THAT 135° HOOK END IS NOT ON THE SIDE CONFINED BY THE SLAB.

**1** **TYPICAL STIRRUP TYPES**  
 SCALE: NTS



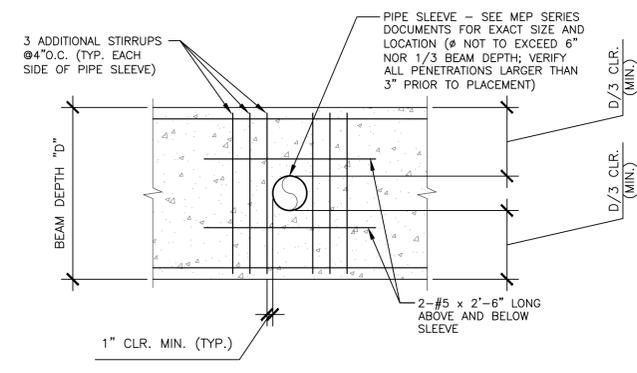
**2** **TYPICAL DETAIL SUBGRADE PREPARATION SLAB-ON-FILL CONSTRUCTION**  
 SCALE: NTS



**PLAN** **SECTION**

NOTES:  
 1. REQUIRED BEAM SLEEVES ARE TO BE COORDINATED WITH MEP CONTRACTORS. REQUIRED SLEEVES MAY OR MAY NOT BE SHOWN ON THE STRUCTURAL DRAWINGS. GENERAL CONTRACTOR SHALL SUBMIT PLAN SHOWING LAYOUT OF ALL SLEEVES.  
 2. SLEEVES SHALL BE LOCATED ON THE BEAM CENTER LINE OR AT LEAST WITHIN THE MIDDLE THIRD OF THE GRADE BEAM WIDTH.  
 3. CONTINUOUS BEAM REINFORCING MAY BE SLIGHTLY DISPLACED (3" MAXIMUM) OR ADJACENT BARS BUNDLED (2 BAR BUNDLE MAXIMUM) TO FACILITATE SLEEVE INSTALLATION. DO NOT CUT, OFFSET, OR BEND REINFORCING.  
 4. THE OUTSIDE DIAMETER OF A SLEEVE MAY NOT EXCEED 15% OF THE WIDTH OF THE GRADE BEAM THROUGH WHICH IT MUST PASS. SEE 8S4.00 IF SLEEVES ARE LARGER THAN 15% OF GRADE BEAM WIDTH.

**3** **TYPICAL DETAIL VERTICAL PENETRATION, CONCRETE GRADE BEAM**  
 SCALE: NTS



NOTES:  
 1. NOTIFY ENGINEER IMMEDIATELY IF HORIZONTAL SLEEVE CAN NOT BE INSTALLED AS SHOWN. ADDITIONAL REINFORCING MAY BE REQUIRED.

**4** **TYPICAL HORIZONTAL GRADE BEAM PENETRATION DETAIL**  
 SCALE: NTS

**"ld" TENSION DEVELOPMENT LENGTH FOR BEAM, SLAB & WALL REBARS (GRADE 60 UNCOATED BARS-NORMAL WEIGHT CONCRETE)**

BAR SIZE	F'c=3000 psi		F'c=4000 psi		F'c=5000 psi	
	ld TOP	ld BOT	ld TOP	ld BOT	ld TOP	ld BOT
#3	1'-9"	1'-4"	1'-6"	1'-2"	1'-5"	1'-1"
#4	2'-4"	1'-10"	2'-1"	1'-7"	1'-10"	1'-5"
#5	3'-0"	2'-3"	2'-7"	2'-0"	2'-4"	1'-9"
#6	3'-7"	2'-9"	3'-1"	2'-4"	2'-9"	2'-1"
#7	5'-2"	4'-0"	4'-6"	3'-6"	4'-0"	3'-1"
#8	5'-11"	4'-7"	5'-2"	3'-11"	4'-7"	3'-6"
#9	6'-8"	5'-2"	5'-9"	4'-5"	5'-2"	4'-0"
#10	7'-6"	5'-10"	6'-6"	5'-0"	5'-10"	4'-6"
#11	8'-4"	6'-5"	7'-3"	5'-7"	6'-6"	5'-0"

NOTES:  
 1. "TOP" BARS ARE HORIZONTAL REBARS WITH MORE THAN 12 IN. OF FRESH CONCRETE CAST BELOW THE BARS AT THE DEVELOPMENT LENGTH.  
 2. "ld" FOR #3 & #4 BARS IN SLAB OR WALL ARE CONSERVATIVE & MAY BE REDUCED TO 0.75 TIMES (FOR #3 BARS) AND 0.94 TIMES (FOR #4 BARS) FROM THE TABULATED VALUES.  
 3. FOR LIGHT-WEIGHT CONCRETE MULTIPLY THE TABULATED VALUES BY 1.3.

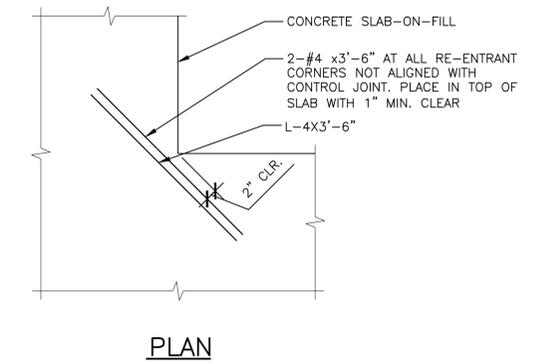
**5** **TENSION DEVELOPMENT LENGTH FOR BEAM, SLAB AND WALL REBARS**  
 SCALE: NTS

**TENSION LAP SPLICES - CLASS B FOR TOP & BOTTOM BARS (GRADE 60 UNCOATED BARS-NORMAL WEIGHT CONCRETE)**

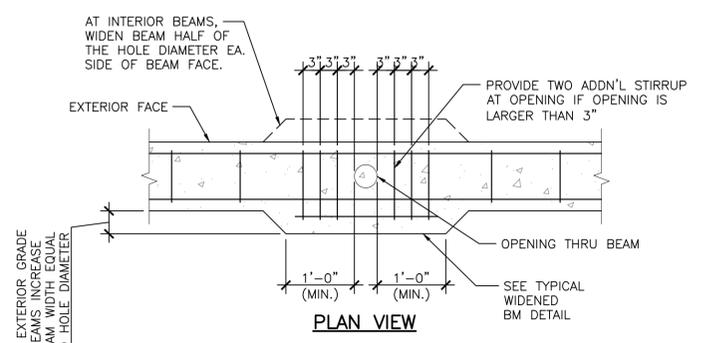
BAR SIZE	F'c=3000 psi		F'c=4000 psi		F'c=5000 psi	
	ld TOP	ld BOT	ld TOP	ld BOT	ld TOP	ld BOT
#3	2'-4"	1'-9"	2'-0"	1'-6"	1'-10"	1'-5"
#4	3'-1"	2'-4"	2'-8"	2'-1"	2'-5"	1'-10"
#5	3'-10"	3'-0"	3'-4"	2'-7"	3'-0"	2'-4"
#6	4'-8"	3'-7"	4'-0"	3'-1"	3'-7"	2'-9"
#7	6'-9"	5'-2"	5'-10"	4'-6"	5'-3"	4'-0"
#8	7'-9"	5'-11"	6'-8"	5'-2"	6'-0"	4'-7"
#9	8'-8"	6'-8"	7'-6"	5'-9"	6'-9"	5'-2"
#10	9'-10"	7'-6"	8'-6"	6'-6"	7'-7"	5'-10"
#11	10'-11"	8'-4"	9'-5"	7'-3"	8'-5"	6'-6"

NOTE:  
 FOR CLASS "A" SPLICE (PERMITTED ONLY WHEN NOT MORE THAN HALF THE BARS SPLICED & SPICES STAGGERED BY THE DISTANCE OF SPLICE LENGTH), USE SAME AS "ld" = TENSION DEVELOPMENT LENGTH TABLE.

**6** **TENSION LAP SPLICES - CLASS B FOR TOP AND BOTTOM BARS**  
 SCALE: NTS



**7** **TYPICAL SLAB-ON-FILL RE-ENTRANT CORNER REINFORCING DETAIL**  
 SCALE: NTS



NOTE: PIPE/PENETRATION MUST COMPLETELY PASS THROUGH BEAM PRIOR TO TURNING

**8** **TYPICAL DETAIL VERTICAL PENETRATION THRU GRADE BEAM LARGER THAN 15% OF THE GRADE BEAM WIDTH**  
 SCALE: NTS

DATE: 8/11/14  
 DRAWN BY: GABRIEL GARZA  
 CHECKED BY: GABRIEL GARZA  
 PROJECT: HOUSTON AIRPORT SYSTEM - GUARD BOOTH REPLACEMENT PROJECT  
 SHEET: S4.00  
 SCALE: AS SHOWN  
 DATE: 8/11/14

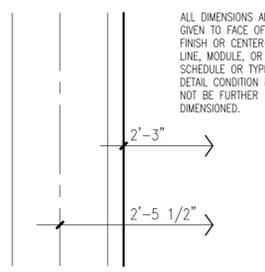


&	AND	F.A.	FIRE ALARM	O.A.	OVER ALL
L	ANGLE	F.D.	FLOOR DRAIN	O/A	OUTSIDE AIR
[	CHANNEL	F.D.C.	FIRE DEPARTMENT CONNECTION	O.C.	ON CENTER
@	AT	F.D.C.C.	FIRE DEPARTMENT CONNECTION CABINET	O.D.	OUTSIDE DIAMETER
⊕	CENTER LINE	FDN.	FOUNDATION	OPF.	OFFICE
⊥	DIAMETER OR ROUND PERPENDICULAR	F.E.	FIRE EXTINGUISHER	OPNG	OPENING
#	POUND OR NUMBER EXISTING	F.E.C.	FIRE EXTINGUISHER CABINET	OPP.	OPPOSITE
(E)		FEM.	FEMALE	OPH.	OPPOSITE HAND
A.B.S.	ACRYLONITRILE BUTADIENE STYRENE	F.H.C.	FIRE HOSE CABINET	OZ.	OUNCE
ABV.	ABOVE	F.H.M.S.	FLAT HEAD MACHINE SCREW	PL.	PLATE
A/C	AIR CONDITIONING	F.H.R.	FIRE HOSE RACK	P.LAM.	PLASTIC LAMINATE
ACOUS.	ACOUSTICAL	F.H.W.S.	FLAT HEAD WOOD SCREW	PLAS.	PLASTER
A.D.	AREA DRAIN	FIN.	FIRE HYDRANT FINISH	PLYWD.	PLYWOOD
ADD.	ADDENDUM	FLASH.	FLASHING	PNL.	PANEL(ING)
A.F.F.	ABOVE FINISH FLOOR	FLEX.	FLEXIBLE	POL.	POLISH
AGG.	AGGREGATE	FLR.	FLOOR	PR.	PAIR
A.H.U.	AIR HANDLING UNIT	FLUOR.	FLUORESCENT	P.S.F.	POUNDS PER SQUARE FOOT
ALLOW.	ALLOWANCE	F.MIR.	FRAMED MIRROR	P.SH.	PURSE SHELF
ALT.	ALTERNATE	F.MIR.SH.	FRAMED MIRROR AND SHELF	P.S.I.	POUNDS PER SQUARE INCH
ALUM.	ALUMINUM	F.O.F.	FACE OF FINISH	PT.	POINT
ANOD.	ANODIZED	F.O.S.	FACE OF STUDS	PTN.	PARTITION
APX.	APPROXIMATE	F.S.	FULL SIZE	Q.T.	QUARRY TILE
ARCH.	ARCHITECT(URAL)	FT.	FOOT (FEET)	QTR.	QUARTER
AUTO.	AUTOMATIC	FURR.	FURRED	R.	RISER
AUX.	AUXILIARY	FUT.	FUTURE	R/A	RETURN AIR
AVG.	AVERAGE	F.W.C.	FABRIC WALL COVERING	RAD.	RADIUS
				REF.	REFERENCE
				REFR.	REFRIGERATOR
				REIN.F.	REINFORCED
				REQ.	REQUIRE(D)
				RESIL.	RESILIENT
				REV.	REVISE
				RM.	ROOM
				R.O.	ROUGH OPENING
				S.	SOUTH
				S/A	SUPPLY AIR
				SAM.	SANITARY
				S.C.	SOLID CORE
				SCHED.	SCHEDULE
				S.D.	SOAP DISPENSER
				SECT.	SECTION
				SH.	SHELF
				SHR.	SHOWER
				SHT.	SHEET
				SIM.	SIMILAR
				S.N.D.	SANITARY NAPKIN DISPENSER
				S.N.R.	SANITARY NAPKIN RECEPTACLE
				S.M.R.	SANITARY NAPKIN-TAMPON DISPENSER
				SO.	SQUARE
				S.SK.	SERVICE SINK
				S.S.T.	STAINLESS STEEL
				ST.	STEEL
				STA.	STATION
				STD.	STANDARD
				STOR.	STORAGE
				STR.	STRUCTURE
				SUR.	SURFACE
				SUSP.	SUSPENDED
				SYM.	SYMMETRICAL
				SYS.	SYSTEM
				T.	TREAD
				T.B.	TOWEL BAR
				T.D.	TOWEL DISPENSER
				T.D.R.	TOWEL DISPENSER-RECEPTACLE
				TEL.	TELEPHONE
				TEMP.	TEMPERED
				TERR.	TERRAZZO
				T&G	TONGUE AND GROOVE
				THER.	THERMAL
				THK.	THICK(NESS)
				THRES.	THRESHOLD
				T.T.D.	TOILET TISSUE DISPENSER
				TV.	TELEVISION
				T.W.	TOP OF WALL
				TYP.	TYPICAL
				URINAL	URINAL
				UNLESS NOTED OTHERWISE	UNLESS NOTED OTHERWISE
				U.N.O.	U.N.O.
				V.C.T.	VINYL COMPOSITION TILE
				VERT.	VERTICAL
				VEST.	VESTIBULE
				V.I.F.	VERIFY IN FIELD
				VNR.	VENEER
				V.M.C.	VINYL WALL COVERING
				W.	WEST
				W/W.	WITH
				W.A.U.	WALL ASH URN
				W.C.	WATER CLOSET
				WD.	WOOD
				WIN.	WINDOW
				W/O	WITHOUT
				WP.	WATERPROOF
				W.R.	WASTE RECEPTACLE
				W/R	WATER RESISTANT
				WSCT.	WAINSCOT
				WT.	WEIGHT

	GRANULAR FILL		WOOD		EARTH
	CONCRETE		PLYWOOD LARGE SCALE		PLYWOOD SMALL SCALE
	BRICK		FINISH WOOD		MASONRY
	STONE		CONTINUOUS		CERAMIC TILE
	METAL LARGE SCALE		BLOCKING		GYP. BD./PLASTER
	METAL SMALL SCALE		GLASS ELEVATION		RIGID INSULATION
	METAL LATH		GLASS		ACOUSTICAL TILE OR BOARD
	PLASTER, SAND, MORTAR, GROUT		INSULATION OR SOUND ATTENUATION		LOUVER IN WALL
	PARTIAL BUILDING OR WALL SECTION REFERENCE		SLOT DIFFUSER		DIMMING LIGHT SWITCH
	DETAIL REFERENCE		RECESSED DOWN LIGHT		3 WAY LIGHT SWITCH
	DETAIL NUMBER		RECESSED WALL WASHER		LIGHT SWITCH
	DIRECTION OF VIEW		SMOKE DETECTOR		EXIT LIGHT W/ DIRECTION ARROWS
	SHEET NUMBER		NEW OR RELOCATED 2 X 2 RECESSED FLUORESCENT FIXTURE		SPRINKLER HEAD
	EXISTING CONTOUR LINE		NEW OR RELOCATED 1 X 4 RECESSED FLUORESCENT FIXTURE		FIRE HORN
	NEW OR FINISH CONTOUR LINE		NEW OR RELOCATED 2 X 4 RECESSED FLUORESCENT FIXTURE		DETAIL NUMBER LARGE SCALE REFERENCE
	TEST BORING		FLUORESCENT COVE/ UNDERCOUNTER LIGHT		DETAIL NUMBER SMALL SCALE REFERENCE
	PLAN NORTH NORTH ARROW		AMBIENT FLUORESCENT FIXTURE		PROPERTY LINE
	TRUE NORTH NORTH ARROW		COLUMN LINE REFERENCE		CENTER LINE
	EXISTING POINT ELEVATION		WINDOW NUMBER		ABOVE OR BEYOND LINE
	NEW OR FINISH POINT ELEVATION		REVISION NUMBER		BREAK LINE
	LEVEL POINT DATUM POINT		KEY NOTE REFERENCE		WALL FINISH
	PARTITION TYPE (RE: PARTITION SCHEDULE)		ELEVATION NUMBER		BASE FINISH
	DOOR NUMBER LEVEL (RE: DOOR SCHEDULE)		SHEET NUMBER		FLOOR FINISH
	DOOR NUMBER "XX" INDICATES MULTIPLE TYPICAL LEVELS, LEVELS 5 THRU 15 (RE: DOOR SCHEDULE)		BUILDING SECTION REFERENCE		FLOOR FINISH TRANSITION
	ROOM NUMBER LEVEL				
	ROOM NUMBER "XX" INDICATES MULTIPLE TYPICAL LEVELS, LEVELS 5 THRU 15 (RE: DOOR SCHEDULE)				

24	20	16	12	8	4
23	19	15	11	7	3
22	18	14	10	6	2
21	17	13	9	5	1

THE NO'S 1 THRU 24 ARE AVAILABLE FOR EACH SHEET AND IF USED ALWAYS APPEAR IN THE LOCATIONS SHOWN. DETAILS MAY BE DRAWN ON ONE OR MULTIPLE MODULES.

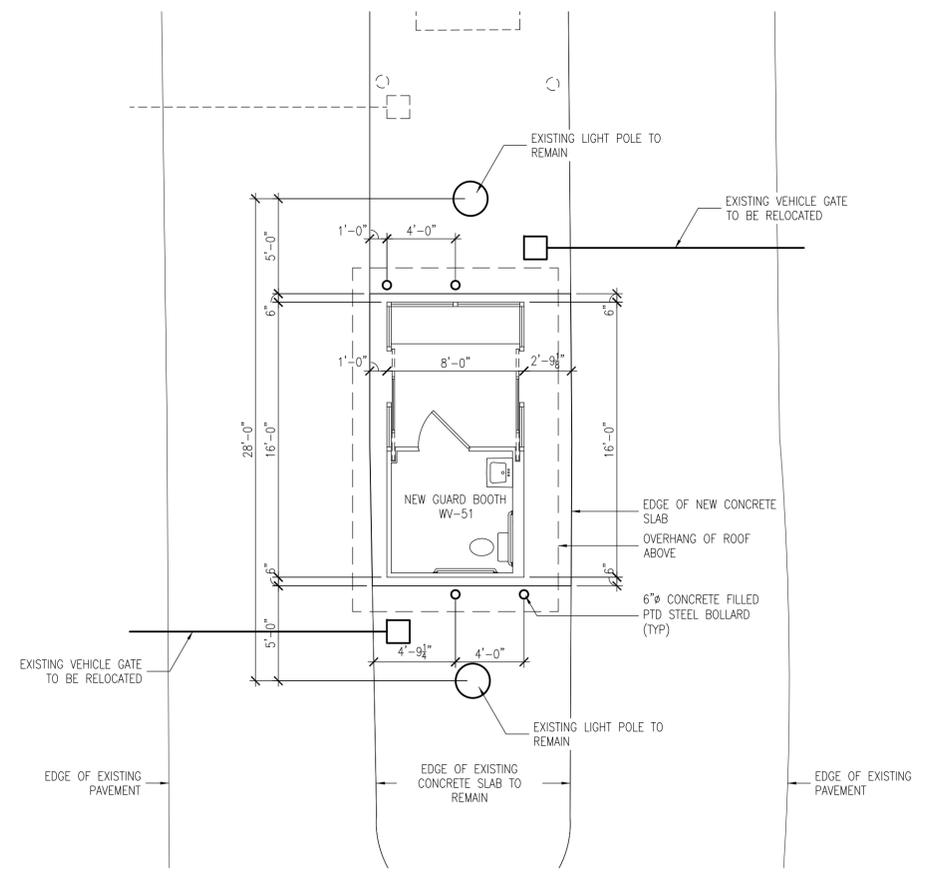


HOUSTON AIRPORT SYSTEM PDC DESIGN DIVISION	DATE
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DATE: 08/11/14  
 TIME: 10:00 AM  
 USER: mll  
 PROJECT: HOUSTON AIRPORT SYSTEM - GUARD BOOTH REPLACEMENT PROJECT - HAS PN 727  
 SHEET: A0.01 - ARCHITECTURAL SYMBOLS & ABBREVIATIONS

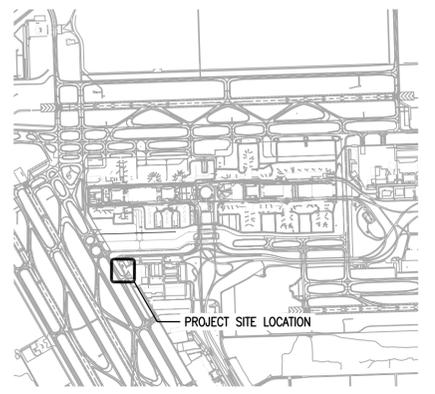
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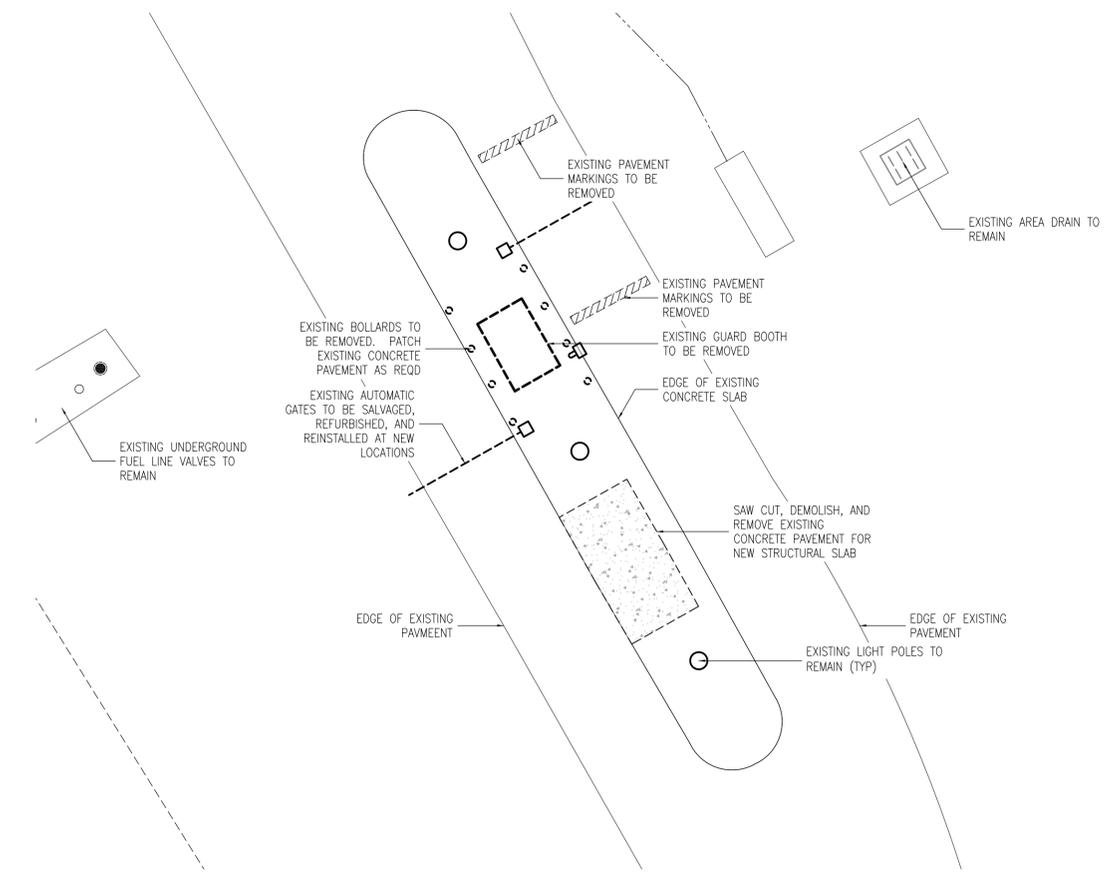
**GUARD BOOTH WV-51 ENLARGED SITE PLAN** 1/8"=1'-0" 4

1. GUARD BOOTH PLAN SHOWN FOR REFERENCE ONLY. CONTRACTOR TO COORDINATE ACTUAL BOOTH LAYOUT, UTILITY CONNECTION POINTS, AND ANCHOR POINTS WITH MANUFACTURER AND EXISTING SITE CONDITIONS PRIOR TO ALL CONSTRUCTION.
2. CONTRACTOR SHALL ACCOMMODATE FOR ALL ANCHOR POINTS AND UTILITY CONNECTIONS REQUIRED BY THE NEW GUARD BOOTH.
3. CONTRACTOR TO REMOVE EXISTING GUARD BOOTH, ASSOCIATED UTILITIES, CONDUITS, ETC. THAT WILL NOT BE REUSED FROM THE SITE AS REQUIRED.
4. CONTRACTOR SHALL MAINTAIN A SECURE SITE AT ALL TIMES. CONTRACTOR SHALL COORDINATE WITH THE OWNER AND/OR THE OWNER'S DESIGNATED REPRESENTATIVE 48 HOURS IN ADVANCE ANY PERIODS OF TIME WHERE ACCESS THROUGH THE SITE WILL BE IMPAIRED DUE TO THE CONSTRUCTION OF THIS PROJECT.
5. CONTRACTOR SHALL MAKE ALL REQUIRED PROVISIONS ADMINISTERED BY THE OWNER OR THE OWNER'S DESIGNATED REPRESENTATIVE TO KEEP THE SITE SECURE AT ALL TIMES.
6. CONTRACTOR SHALL MAINTAIN A MINIMUM OF ONE CARD READER ACCESS POINT THROUGH THE SECURITY GATE AT ALL TIMES.
7. CONTRACTOR SHALL NOTIFY THE OWNER OR THE OWNER'S DESIGNATED REPRESENTATIVE A MINIMUM OF 48 HOURS IN ADVANCE FOR THE SHUT-OFF OF ANY UTILITIES AT THE SITE, WHICH MAY IMPACT ANY OTHER OPERATIONS AT THE AIRPORT.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING, PROTECTING, AND REPAIRING ANY UNDERGROUND UTILITIES THAT ARE AFFECTED BY THE CONSTRUCTION OF THIS PROJECT.
9. CONTRACTOR SHALL DOCUMENT ANY EXISTING DAMAGE AT THE SITE AND REPAIR ANY NEW DAMAGE TO THE SITE TO A LIKE NEW CONDITION CAUSED BY THE CONSTRUCTION OF THIS PROJECT.
10. CONTRACTOR SHALL THOROUGHLY CLEAN AND CONTAIN OR REMOVE DEBRIS FROM THE SITE ON A DAILY BASIS. ANY MATERIAL, DEBRIS, OR EQUIPMENT THAT CAN BE EASILY MOVED BY WIND SHOULD IMMEDIATELY BE CONTAINED AND REMOVED FROM THE SITE.
11. CONTRACTOR SHALL RETURN TO THE OWNER ANY SALVAGEABLE MATERIAL THAT IS NOT SCHEDULED TO BE REUSED.
12. ANY MATERIAL OR EQUIPMENT THAT IS SCHEDULED TO BE REUSED SHALL BE THOROUGHLY CLEANED AND REFURBISHED PRIOR TO REINSTALLATION.
13. CONTRACTOR SHALL REPAIR OR REPLACE ANY DAMAGE TO EXISTING PAVED OR LANDSCAPED AREAS AND CURBS CAUSED BY THE CONSTRUCTION OF THIS PROJECT WITH MATCHING PAVEMENT AND OR MATERIAL AS REQUIRED.
14. ALL ITEMS SCHEDULED TO BE REMOVED SHALL BE REMOVED IN THEIR ENTIRETY INCLUDING ANY FOOTINGS, UTILITIES, OR OTHERWISE HIDDEN COMPONENTS OF THE ITEM.
15. VEHICLE GATES SCHEDULED TO BE RELOCATED SHALL HAVE ALL HARDWARE REFURBISHED OR REPLACED AS REQD.

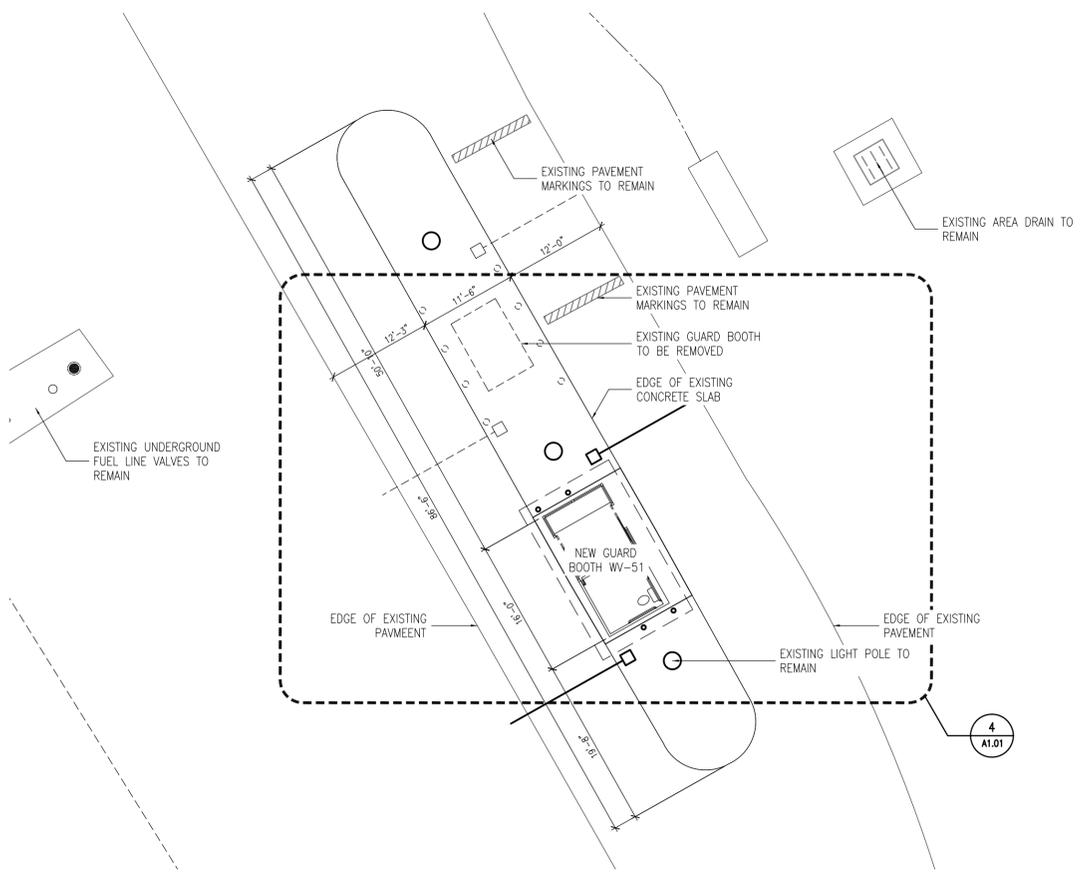
**GENERAL NOTES** n.t.s. 2



**AIRPORT SITE PLAN** 1"=250' 1

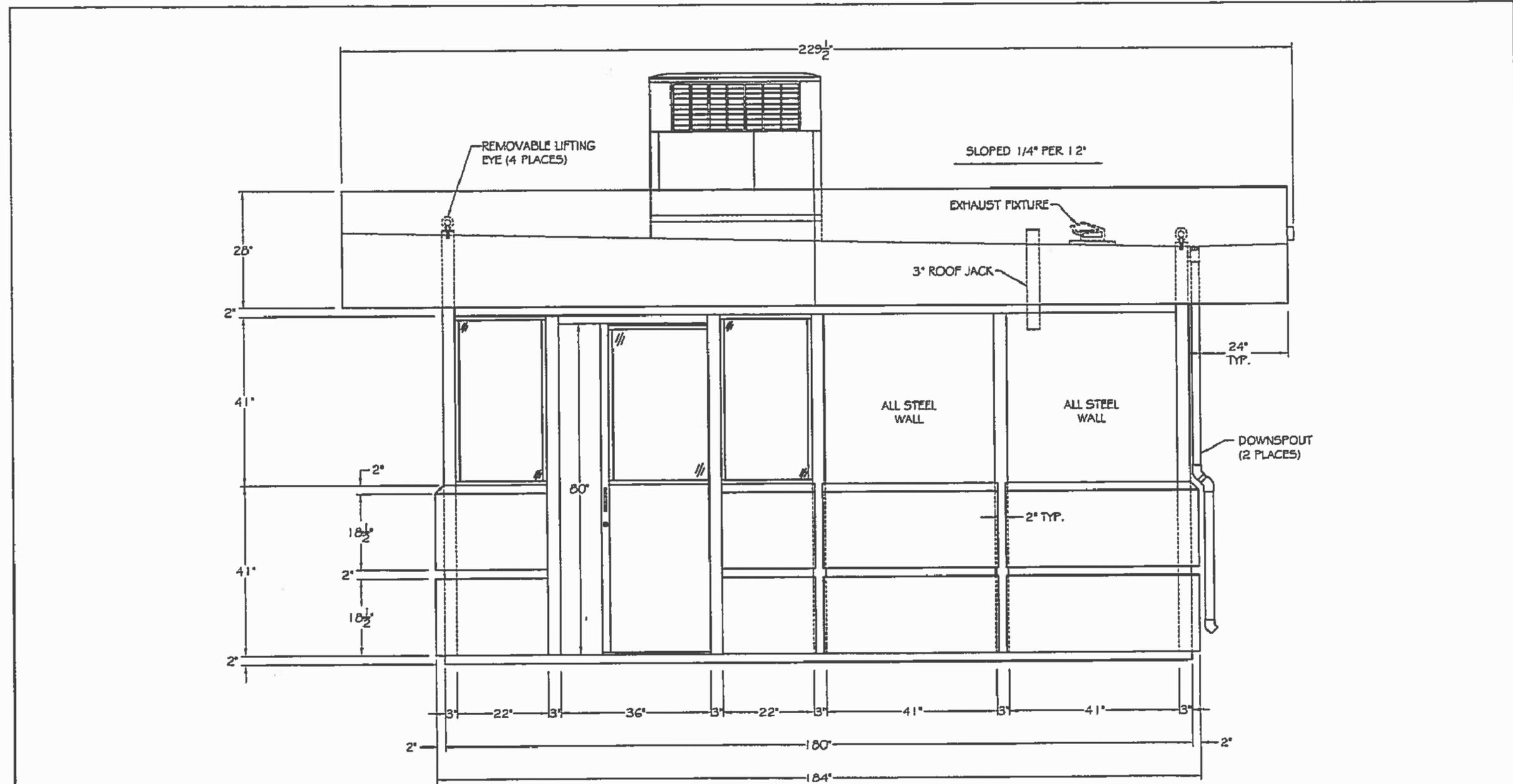


**SITE DEMOLITION PLAN** 1/8"=1'-0" 5



**GUARD BOOTH WV-51 SITE PLAN** 1/8"=1'-0" 3

DATE PLOT: 08/11/14  
 PLOT BY: JLM  
 DATE: 08/11/14  
 FILE: 140825.RVT  
 USER: jlm  
 PLOT: 140825.RVT  
 PLOT DATE: 08/11/14 10:28:26 AM



**E1** LEFT ELEVATION  
 SCALE 1/2" = 1' - 0"  
 RIGHT ELEVATION OPPOSITE

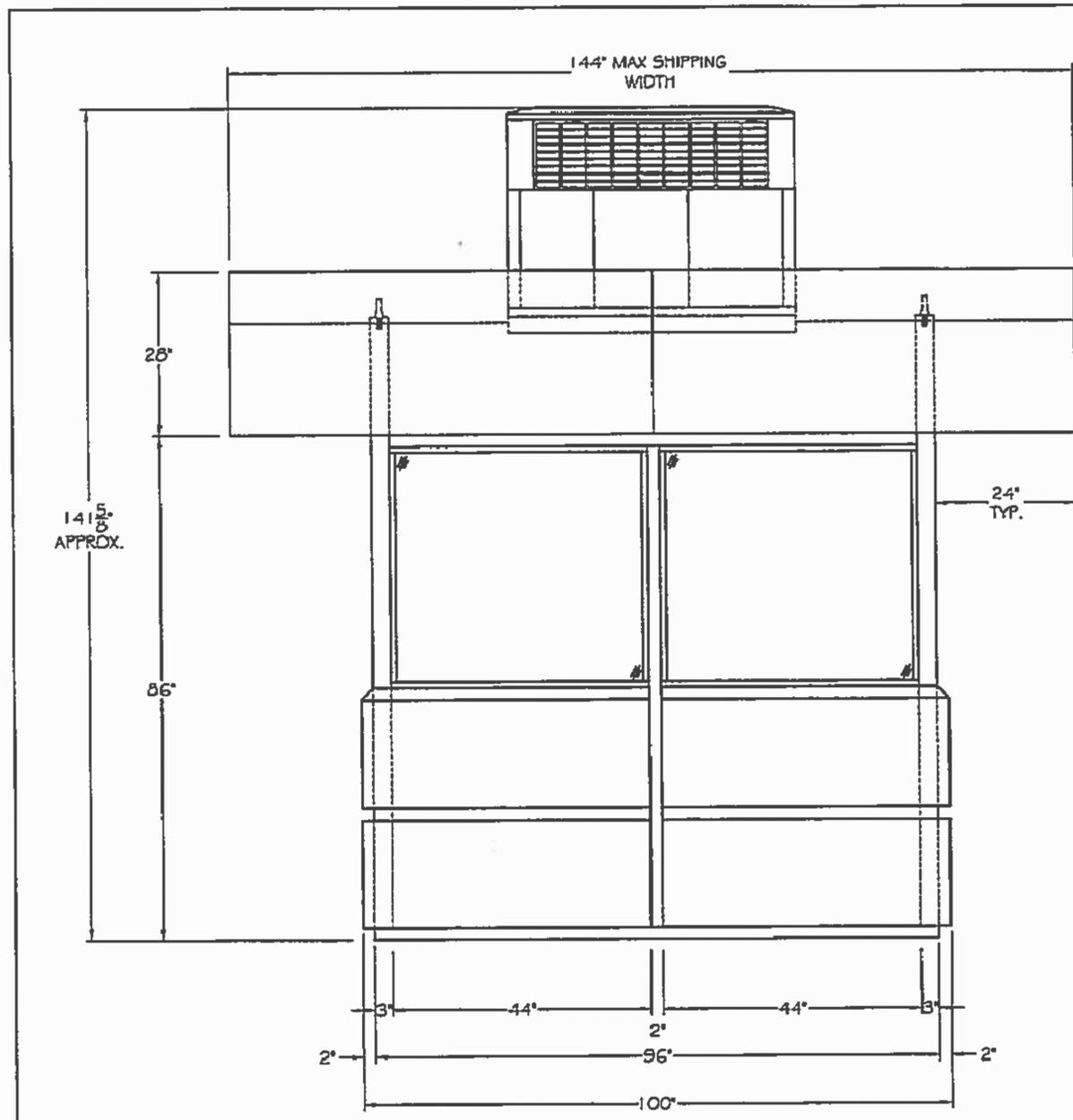
FOR INFORMATION ONLY AT  
 THIS TIME. SIGNED AND  
 SEALED DOCUMENTS WILL  
 BE SUBMITTED AS A  
 DIFFERED SUBMITTAL

**BIG**  
 B.I.G. ENTERPRISES, INC.  
 9702 E. RUSH STREET  
 SOUTH EL MONTE, CA 91733-1730  
 (626) 448-1449

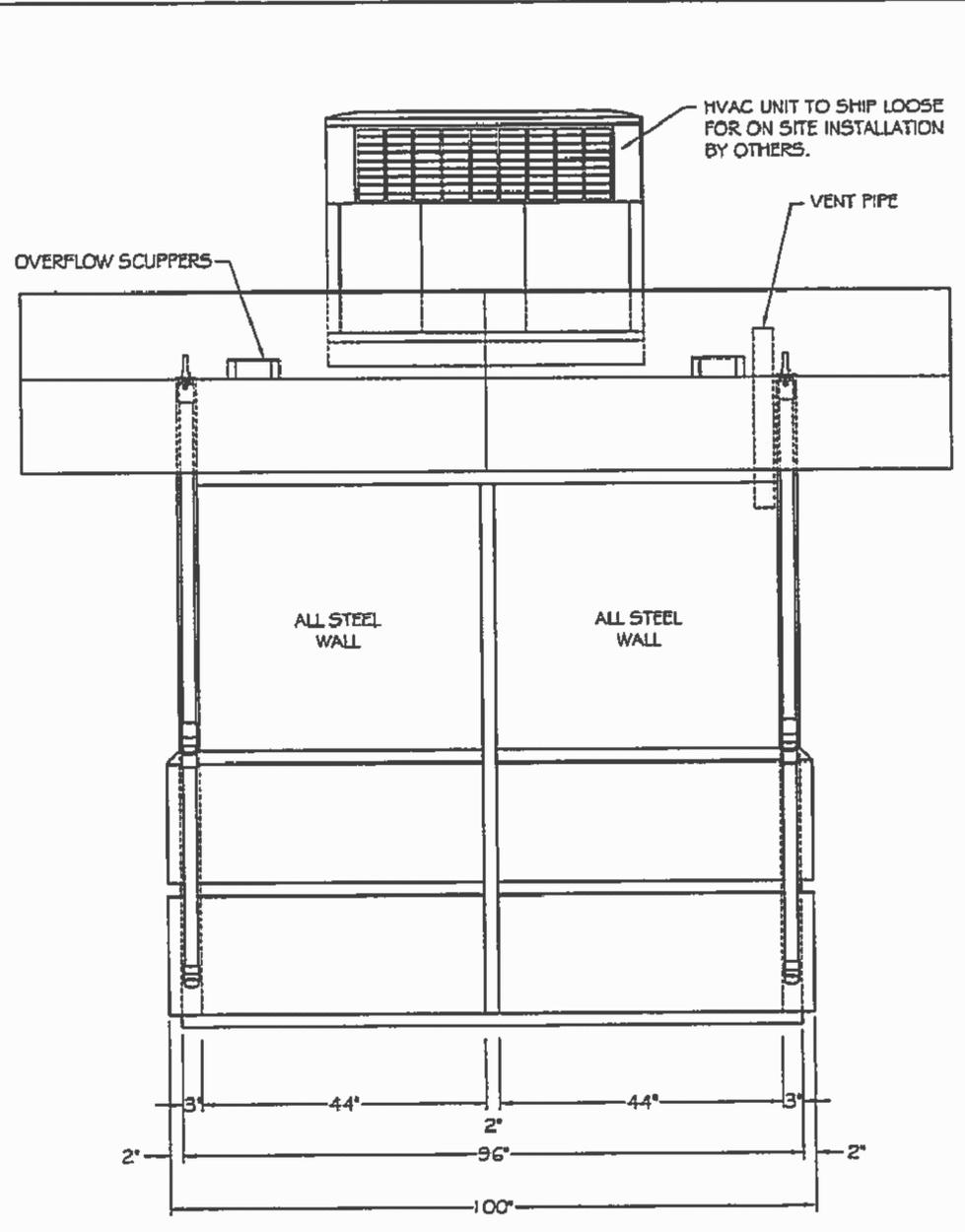
DS8150B-RR JOB 9201 SHEET 2 OF 8  
 BY: LG  
 DATE: 12-05-12  
 SCALE: AS NOTED

CENTERPOINT ENERGY  
 GUARD BOOTH

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**E2** FRONT ELEVATION  
 SCALE 1/2" = 1' - 0"



**E3** REAR ELEVATION  
 SCALE 1/2" = 1' - 0"

FOR INFORMATION ONLY AT  
 THIS TIME. SIGNED AND  
 SEALED DOCUMENTS WILL  
 BE SUBMITTED AS A  
 DIFFERED SUBMITTAL

DS8150B-RR JOB 9201 SHEET 3 OF 8  
 BY: LG DATE: 12-05-12 SCALE: AS NOTED

CENTERPOINT ENERGY  
 GUARD BOOTH

B.I.G. ENTERPRISES, INC.  
 9702 E. RUSH STREET  
 SOUTH EL MONTE, CA 91733-1730  
 (626) 448-1449

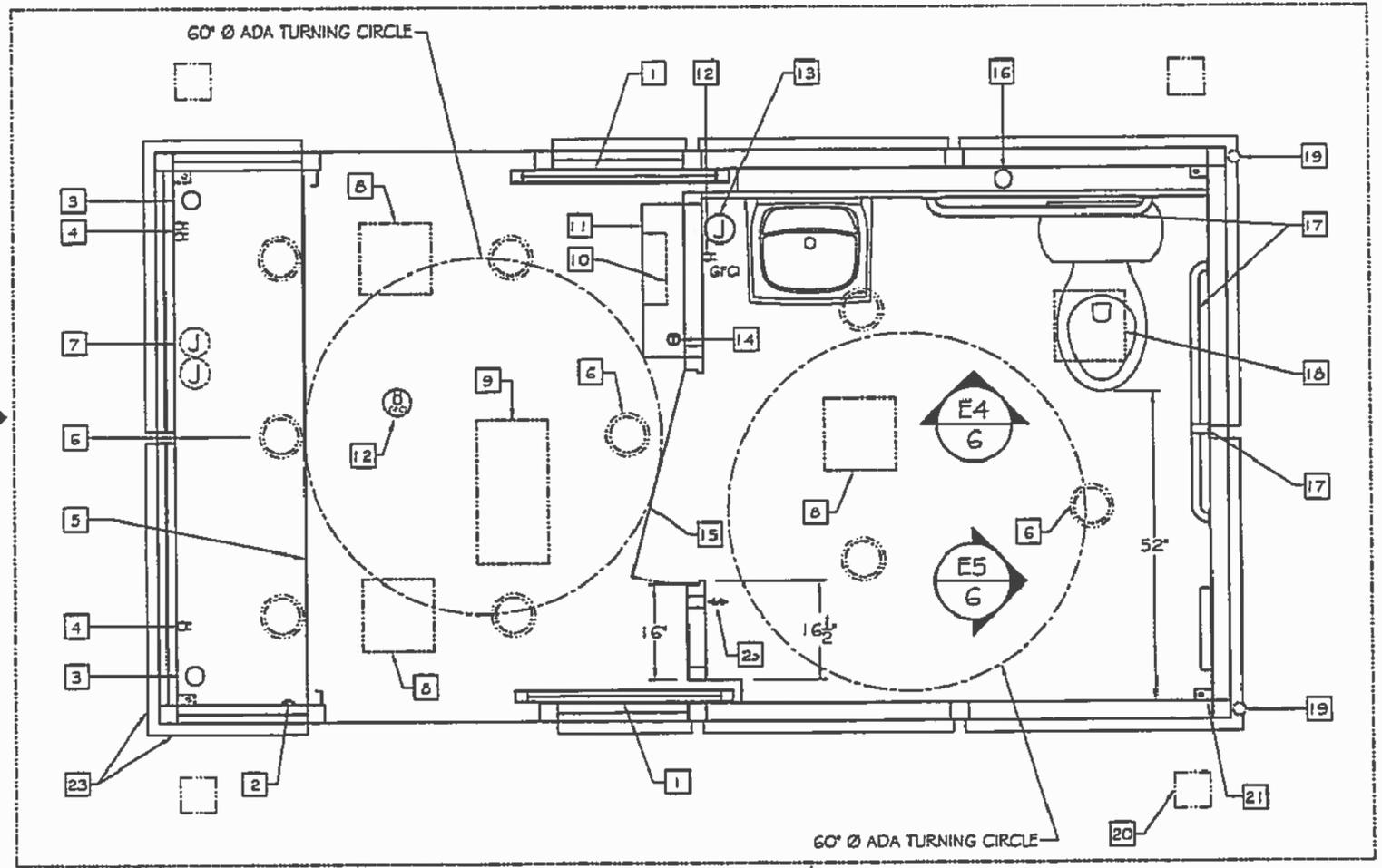


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**LEGEND:**

- 1 36" x 80" SLIDING DOOR - GENERAL NOTE #5
- 2 OCCUPANCY SENSOR
- 2a INTERIOR LIGHT SWITCH
- 3 3" CORD ACCESS HOLE
- 4 RECEPTACLES (3 PLACES)- GENERAL NOTE #9
- 5 22" SHELF - GENERAL NOTE #11
- 6 FLUORESCENT FIXTURES - GENERAL NOTE #8
- 7 DATACOMM. JUNCTION BOX - GENERAL NOTE #9a
- 8 A/C SUPPLY - GENERAL NOTE #10
- 9 A/C RETURN - GENERAL NOTE #10
- 10 LOAD CENTER - GENERAL NOTE #7
- 11 ELECTRICAL CABINET - GENERAL NOTE #7
- 12 GFCI RECEPTACLE - GENERAL NOTE #9c
- 13 WATER HEATER JUNCTION BOX - GENERAL NOTE #9b
- 14 THERMOSTAT
- 15 36" x 80" SWING DOOR - GENERAL NOTE #5a
- 16 3" ROOF JACK - GENERAL NOTE #12
- 17 GRAB BAR (3 PLACES) - GENERAL NOTE #12
- 18 EXHAUST FAN - GENERAL NOTE #12
- 19 DOWNSPOUT
- 20 SOFFIT VENT (4 PLACES)
- 21 ANCHOR CLIP (4 PLACES) - GENERAL NOTE #13
- 22 2-4" OVERHANG - GENERAL NOTE #3
- 23 ARCHITECTURAL PANEL - GENERAL NOTE #2

**NOTE:**  
 ALL RESTROOM EQUIPMENT TO BE SHIPPED LOOSE FOR INSTALLATION ON SITE BY OTHERS. B.I. G. TO PROVIDE BRACING HARD POINTS FOR SINK AND ANY REQUESTED GRAB BARS. ANY OTHER BRACING POINTS OR CUTOUTS REQUIRED MUST BE SPECIFIED PRIOR TO B.I. G. PRODUCTION RELEASE.



**FLOOR PLAN**  
 SCALE 1/2" = 1' - 0"

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DS8150B-RR JOB 9201  
 BY: LG  
 DATE: 12-05-12  
 SCALE: AS NOTED

CENTERPOINT ENERGY  
 GUARD BOOTH

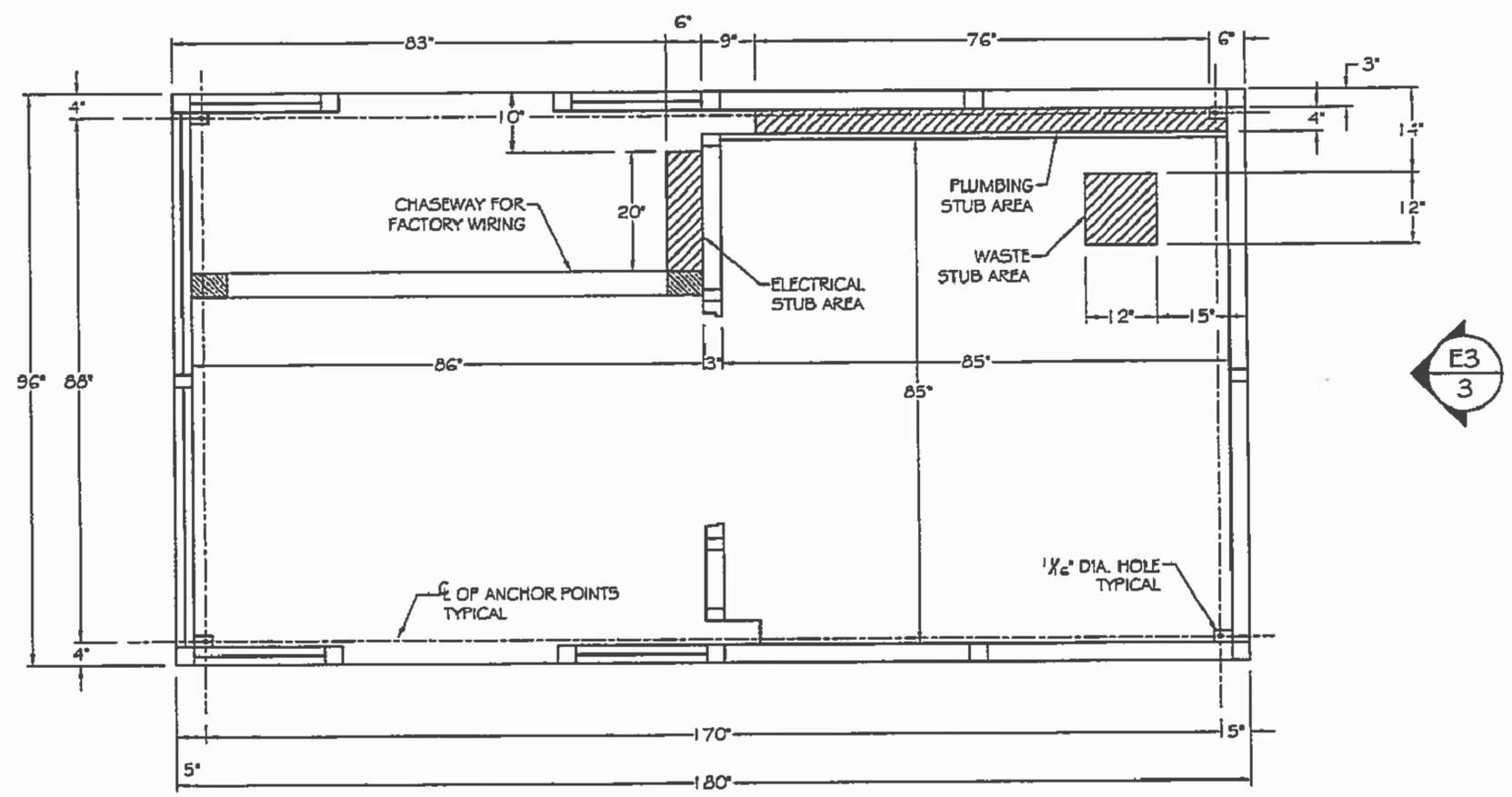
B.I.G. ENTERPRISES, INC.  
 9702 E. RUSH STREET  
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INDICATES OPENING THROUGH FLOOR  
 INDICATES CHASEWAY OPENING



E2  
3

E3  
3

E1  
2

STUB UP AREAS &  
 ANCHOR LOCATIONS  
 SCALE 1/2" = 1' - 0"

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CENTERPOINT ENERGY  
 GUARD BOOTH

SHEET  
 5  
 OF  
 8

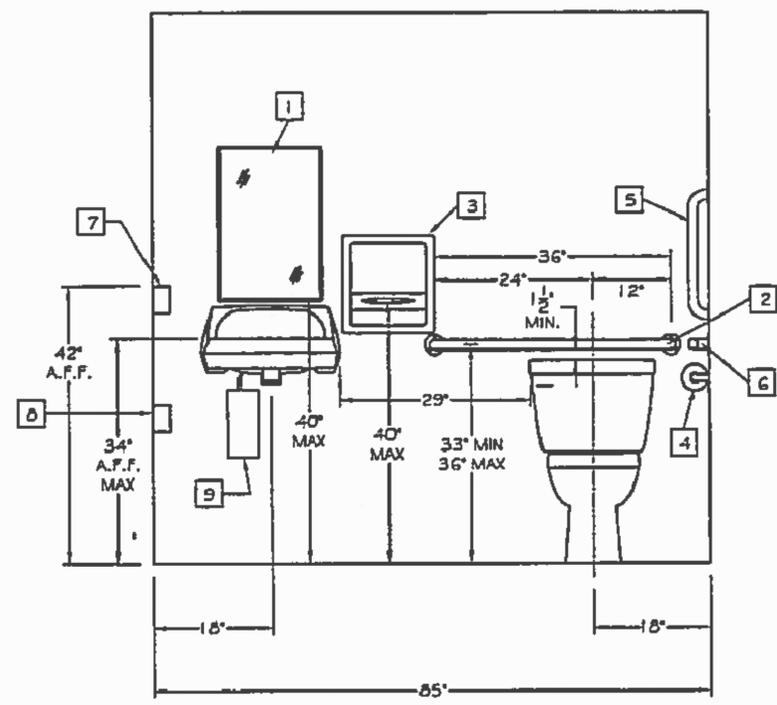
DATE PLOTTED: 08/11/14 10:54 AM  
 PLOT BY: JLM  
 PLOT FILE: C:\Users\jlm\Documents\Projects\2014\08\081114\081114.dwg  
 PLOT METHOD: HPGL  
 PLOT SCALE: 1/2" = 1' - 0"

**B.I.G. ENTERPRISES**

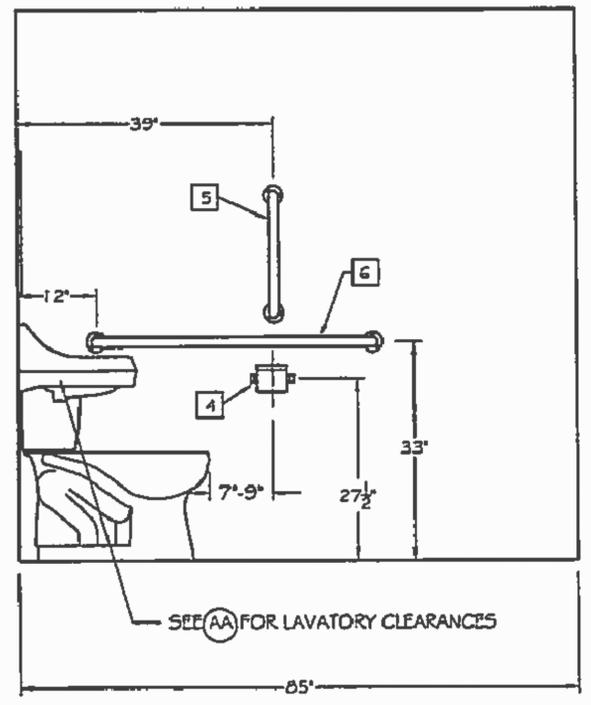
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- 1 16" x 22" MIRROR
- 4 TOILET PAPER HOLDER
- 7 GFCI RECEPTACLE
- 2 36" GRAB BAR
- 5 18" GRAB BAR
- 8 WATER HEATER JUNCTION BOX
- 3 PAPER TOWEL DISPENSER
- 6 42" GRAB BAR
- 9 WATER HEATER

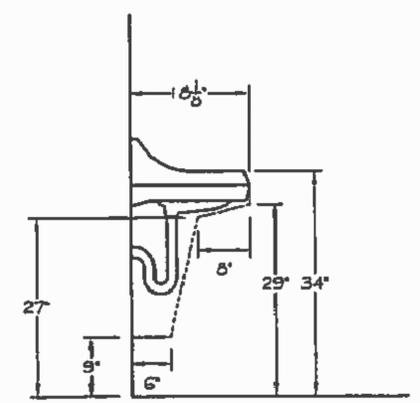
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**E4 RESTROOM ELEVATION**  
 SCALE 1/2" = 1' - 0"



**E5 RESTROOM ELEVATION**  
 SCALE 1/2" = 1' - 0"



**AA LAVATORY CLEARANCES**  
 SCALE 1/2" = 1' - 0"

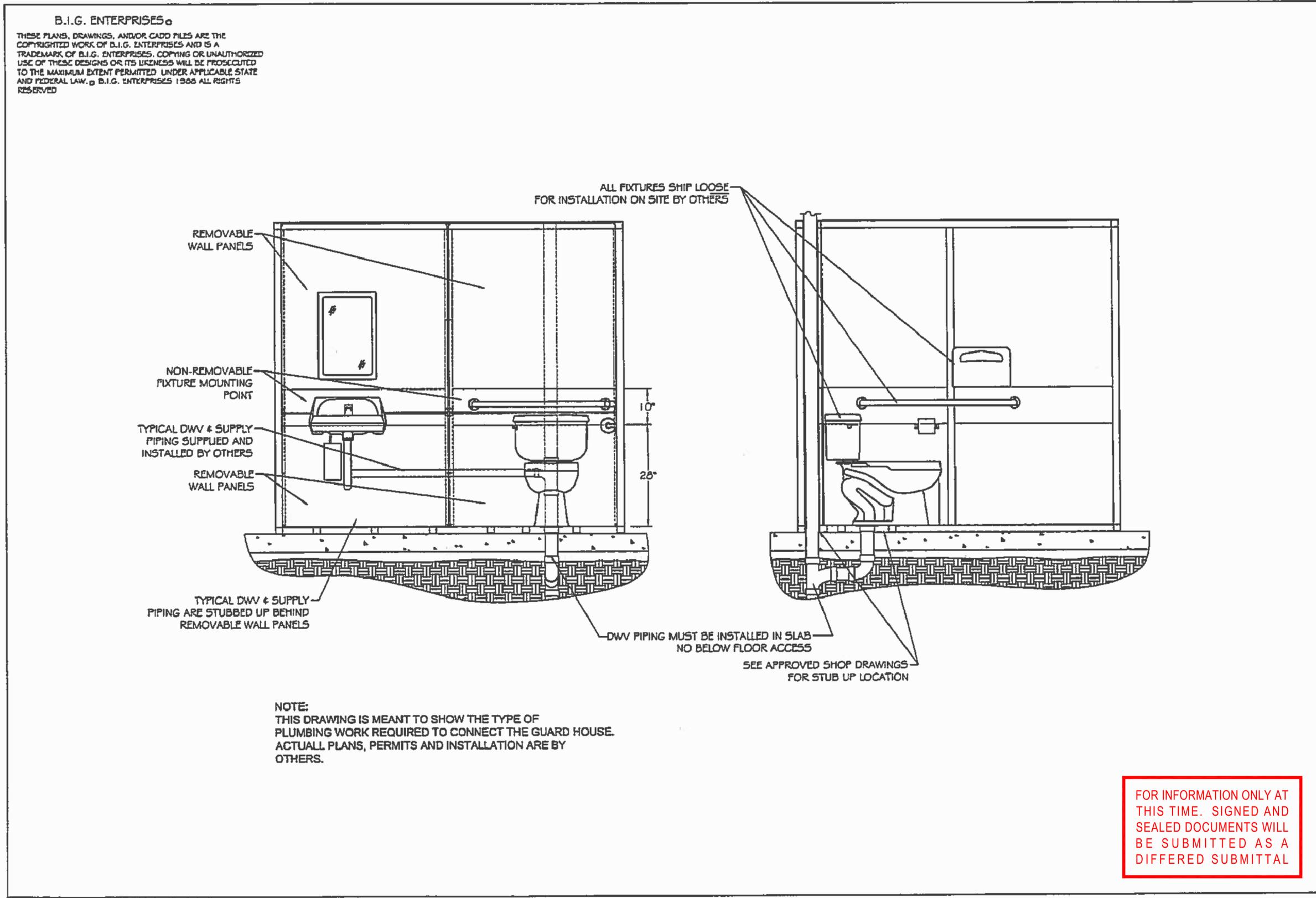
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DS8150B-RR JOB 9201  
 BY: LG  
 DATE: 12-05-12  
 SCALE: AS NOTED

CENTERPOINT ENERGY  
 GUARD BOOTH

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DS8150B-RR JOB 9201 SHEET 7 OF 8  
 BY: LG DATE: 12-05-12 SCALE: AS NOTED  
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 B.I.G. ENTERPRISES, INC.  
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 (626) 448-1449  
**BIG**

DATE PLOT: 08/11/14 10:28:00 AM  
 PLOT BY: JLM  
 PLOT FILE: A:\Projects\2014\081114\081114\_081114.dwg  
 PLOT METHOD: HPGL

## GENERAL NOTES:

1. Frame members to consist of 3" x 3" .083" and 2" x 3" .083" A500 tube.
2. Unit to have half glazed 16 ga galvanized steel walls with 16 ga galvanized interior liners. Exteror wall panels below the window line to have architectural build out panels 2" deep to create 2" x 2" horizontal and vertical reveals.
- 2a. Walls to have R-Max TSXB500 insulation with a R-17 value.
3. Unit to have a 28" Parapet fascia with 24" overhang on all sides with a sloped 16 ga galvanized steel roof drained through two 1-1/2" PVC downspouts with overflow scuppers.
- 3a. Roof to have fiberglass batt insulation with a R-19 value.
- 3b. Unit to have four 3/4" shank lifting eyes mounted on the roof. Lifting eyes are designed for a STRAIGHT VERTICAL LIFT ONLY. Spreader bars must be used when lifting booth to ensure this vertical lift. All warranties will be void if not lifted in this manner.
4. Unit to have an 11 ga A569 steel floor covered with 1/8" thick x 19" square, black rubber tiles with 4" high black perimeter cove molding. Floor to be mounted on a 2" steel tube frame. Underside of floor to be fully coated with bituminous undercoating sealant.
- 4a. Floor will require a ramp the full width of one door opening with a slope of 1" to 1'-0" to meet ADA handicap access requirements. Ramp to be installed on site. All materials and labor by others.
5. Unit to have two commercial grade steel framed slide doors, 36" x 80" constructed of 16 ga steel panels with steel tube frames. Doors to be top hung, in a steel track, on a minimum of eight 2 1/4" steel ball bearing rollers with stainless steel lower guide, welded stainless steel pull handles, mortise hook type lock and complete weather stripping. Doors to be keyed alike.
- 5a. Unit to have one 16 ga custom commercial all steel swing door, 36" x 80", with a Corbin Russwin ADA compliant privacy lock set. Door to be mounted in the restroom partition wall.
6. Unit to have dual pane insulated tempered, safety glass with a make up of 1/4" tinted, 1/4" air space, 1/4" clear.
- 6a. Customer to specify the color of tint prior to B.I.G. production release. Standard tint colors are Bronze or Gray. If customer does not provide a tint selection, B.I.G. will choose a standard tint color that best complements the paint color selected.
7. Unit to have one 3 wire single phase, 12 pole, 125 amp 120/240 volt, load center flush mounted in a 5K-60 cabinet on the restroom partition wall. All electrical equipment to be U.L. listed and all wiring to be per current published NEC standards. All conductors to be copper, with a minimum size of #12. Exposed wiring to be in surface mounted EMT conduit. Concealed wiring to be in flexible aluminum conduit. Final power connection and grounding to be done on site by others. All work to be done by a qualified electrician in accordance with all applicable local codes.
8. Unit to have six 6" dia., 13 watt compact fluorescent light fixtures recessed in the steel ceiling of the guard area and controlled by an occupancy sensor.
- 8a. Unit to have three 6" dia., 13 watt compact fluorescent light fixtures recessed in the steel ceiling of the restroom and controlled by a single pole wall switch.
9. Unit to have three 115 volt duplex outlets mounted under the shelf.
- 9a. Unit to have two single gang junction boxes mounted under the shelf. Junction boxes to have an empty 1/2" conduit, with pull string, run to the electrical stub up area in a chaseway under the floor for data and communication lines by others.
- 9b. Unit to have a junction box mounted in the restroom. Junction box is to be wired for 240V, and is provided for the electrical connection of the water heater. The water heater is shipped loose, and is to be installed as part of the overall plumbing installation, by others.

- 9c. Unit to have a GFCI duplex outlet mounted in the restroom at 42" A.F.F and one watertight GFCI duplex outlet mounted on th roof for HVAC servicing.
  10. Unit to have one roof mounted packaged heat pump providing 23,000 BTU cooling and 22,400 BTU reverse cycle heating, and 17,100 BTU (5 KW) supplemental electric heating during cold weather operation. Indicated BTU capacities are at 240V, 208V capacities are lower. All framing, supply registers, filtered returns, ducts, low voltage T-stat wire, and roof mount junction box installed. HVAC unit to be American Standard model no. 4WCC3024A1000A.
  - 10a. Main A/C unit, wall mount thermostat, condensation P-trap and one non-fused disconnect are shipped loose for site installation by others.
  - 10b. HVAC must be installed and maintained by a technician certified by the HVAC manufacturer to maintain warranty coverage.
  11. Unit to have one 22" straight shelf with two 3" electric access grommet inserts. Shelf to be stainless steel with a #4 finish and mounted at 34" above finish floor.
  - 11a. Shelf to be rated for a 250 lb. load.
  12. Unit to have restroom area with partition wall, exhaust fixture (min 75 cfm, Broan #671 or equal) and one installed 3" roof jack with 3" PVC tube vent stubbed 6" below ceiling. Verification of vent sizing, and vent installation to be by others in coordination with the local applicable codes.
  - 12a. All piping is to be supplied and installed on site by others.
- The following equipment (or equals) will be shipped loose for on site installation by others:
- |  |   |
|--|---|
| Standard lavatory: Kohler #K2005-0                                     | Faucet set: Zum Z86500-XL-3M            |
| Toilet: Kohler #K3609  | Toilet seat: Olsen #10                  |
| 42" Grab Bar: Bobnck S.S. 6106-42                                      | 36" Grab Bar: Bobnck S.S. 6106-36       |
| 18" Grab Bar: Bobnck S.S. 6106-18                                      | Toilet paper holder: Bobnck S.S. B-6857 |
| Paper towel holder: Bobnck S.S., B-262                                 |   |
| Coat hook, double: Bobnck S.S., B-6727                                 |   |
| Soap dispenser: Bobnck S.S., B-2111                                    |   |
| Mirror: surface mount, S.S. channel frame 16" x 24", Bobnck #B-1651624 |   |
| Water Heater: 240v 3.5 KW EEMAX SP35                                   |   |
13. Unit to have four interior anchor clips. Four 5/8" Hitc KB-TZ bolts (LARR 25701, ICC-ESR-1917) with 3 1/8" minimum embedment in 2500 psi concrete (or equal) are required for placement of booth. Concrete to be level. If sloped, slope towards drain opening(s) on booth. Concrete, bolts and mounting shall be by others. For a 3-1/8" embedment the foundation/slab design must be a minimum of 5" thick and be sized to allow for a minimum distance of 6-1/2" from the edge of the slab to the center line of the anchors for maximum strength.
  14. All exposed steel surfaces except roof deck to be coated with two component high solids polyurethane rust inhibitive primer, and two component high solids polyurethane finish coat.
  - 14a. Unit to be painted one color inside and out. Customer to provide paint color selection prior to the start of manufacturing.
  - 14b. Roof to be fully weather sealed with a three step elastomeric membrane as follows:
    - A. All seams are sealed with a gun applied one part polyurethane sealant.
    - B. The entire roof deck is then coated with a liquid applied one-part polyurethane coating forming a tough waterproof, weather-resistant elastomeric coating.
    - C. The entire deck surface finished with a white heat reflective polyurethane coating. The coating meets Energy Star reflectance and emissivity performance requirements and is approved by the Cool Roof Rating Council (CRRC).

Job No: 9201 Job Name: Centerpoint Energy  
 Booth Width in Inches: 96  
 Booth Length in Inches: 180

### A. Lighting Loads

Continuous Lighting Load	
120.0 ft <sup>2</sup> x 3.5 VA / ft <sup>2</sup> x 125% =	525.00
Actual Interior Lighting Load	
Total VA of all interior light fixtures =	117.00
Exterior Lighting Load	
0 VA x 0 Fixtures x 125% =	0.00
Larger of Continuous or Actual load + Exterior Load =	
	525.00

### B. Receptacle Loads

Non-continuous Duty	
5 (No. of recept) x 180 VA =	900.00
Continuous Duty	
0 (No. of recept) x 180 VA x 125% =	0.00

### C. Heating, A/C & Motor Loads

Larger of heating or A/C Load	
8884 VA x 125% =	11080.00
Motor Loads (Use VA rating on motor if provided)	
Continuous Motor Loads	
1 A x 120 V x 125% =	150.00
Non-Continuous Motor Loads	
0 A x 0 V =	0.00

### D. Largest Motor Load

Largest motor load from C	
150 VA x 25% =	37.50

### E. Additional Loads

Nameplate Loads for additional continuous loads provided with building x 125%	
0 VA x 125% =	0.00
Nameplate Loads for additional non-continuous loads provided with building	
3500 VA =	3500.00

### F. Total Loads

Total VA	18193	1240 V =	67.47	Total Amps
----------	-------	----------	-------	------------

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SHEET 8 OF 8

DSB150B-RR JOB 9201  
 BY: LG  
 DATE: 12-05-12  
 SCALE: AS NOTED

CENTERPOINT ENERGY  
 GUARD BOOTH

B.I.G. ENTERPRISES, INC.  
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 SOUTH EL MONTE, CA 91733-1730  
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**BIG**

OWNER  
 HOUSTON AVIATION DEPT.  
 16930 JOHN F. KENNEDY BLVD.  
 HOUSTON, TX 77032  
 (T) 713-622-1444  
 (F) 713-968-9333

ARCHITECT  
**PGAL**  
 3131 BRIARPARK  
 SUITE 200  
 HOUSTON, TX 77042  
 (T) 713-622-1444  
 (F) 713-968-9333  
 PGAL TBPE REG. NO. F-2742  
 CONSULTANT

PROJECT TITLE  
 HOUSTON AIRPORT SYSTEM  
 GUARD BOOTH  
 REPLACEMENT PROJECT  
 HAS PN 727  
 PROJECT NUMBER  
 R1002447  
 PROJECT LOCATION  
 18401 SKYTRAIN RD.  
 GUARD BOOTH WV-51  
 HOUSTON, TX 77032  
 DATE OF ISSUE  
 AUGUST 11, 2014

REVISIONS

HOUSTON AIRPORT SYSTEM  
 PDC DESIGN DIVISION

REGISTRATION  
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REGISTERED ARCHITECT  
 MICHAEL H. LLOYD  
 STATE OF TEXAS

SHEET TITLE  
 PROPOSED GUARD  
 BOOTH SHEET 7 OF 7

SHEET NUMBER

**HD FLOOR DRAIN WITH FUNNEL**

EPOXY COATED CAST IRON BODY WITH BOTTOM OUTLET, COMBINATION AND ADJUSTABLE NICKEL BRONZE STRAINER, 5" ROUND TOP, 4" NICKEL BRONZE FUNNEL, TAPPED FOR TRAP PRIMER CONNECTION.

**BASIS OF DESIGN**

WATTS - FD-100-EF



PLUMBING SYMBOL LEGEND		PLUMBING ABBREVIATIONS		GENERAL NOTES		
	DOMESTIC COLD WATER	AAV	AIR ADMITTANCE VALVE	1. REFERENCE THE SPECIFICATIONS FOR MATERIAL AND EQUIPMENT INSTALLATION STANDARDS. 2. THE PLUMBING INSTALLATION SHALL COMPLY WITH ALL STATE AND LOCAL CODES. 3. PLANS ARE NOT COMPLETELY TO SCALE. PIPE ROUTING SHOWN IS SCHEMATIC AND IS NOT INTENDED TO INDICATE EXACT ROUTING. CONTRACTOR SHALL PROVIDE ANY ADDITIONAL OFFSETS AND FITTINGS REQUIRED FOR PROPER INSTALLATION AND TO MAINTAIN CLEARANCES. VERIFY STRUCTURAL, MECHANICAL AND ELECTRICAL INSTALLATIONS AND OTHER POTENTIAL OBSTRUCTIONS AND ROUTE PIPING TO AVOID INTERFERENCES. 4. PROVIDE ALL OFFSETS AND FITTINGS AND MAKE CONNECTION TO SITE UTILITIES. 5. CONCEAL PIPING ABOVE CEILINGS, WITHIN WALLS OR CHASES EXCEPT IN MECHANICAL ROOMS OR AS SPECIFICALLY NOTED. 6. PROVIDE AN AIR GAP, WHEN REQUIRED BY CODE, SERVING INDIVIDUAL FIXTURES, DEVICES, APPLIANCES AND APPARATUS. 7. PROVIDE CLEANOUTS IN ACCORDANCE WITH ALL STATE AND LOCAL CODES. INSTALL CLEANOUT WITH COVER FLUSH TO FINISH SURFACE. 8. COORDINATE EXACT HUB DRAIN LOCATIONS WITH ARCHITECTURAL DRAWINGS. HUB DRAIN LOCATIONS TO BE COORDINATED WITH THE LOCATION OF THE GUARDBOOTH IN THE FIELD PRIOR TO ANY DEMOLITION. 9. COORDINATE PIPING WITH ALL ELECTRICAL EQUIPMENT (PANELS, TRANSFORMERS, ETC.) PRIOR TO ANY INSTALLATION.		
	DOMESTIC HOT WATER	AFF	ABOVE FINISH FLOOR			
	DOMESTIC HOT WATER RECIRCULATING	AW	ACID WASTE			
	GAS	AV	ACID VENT			
	KITCHEN WASTE (GREASE)	CA	COMPRESSED AIR			
	SANITARY PIPING	CD	CONDENSATE DRAIN			
	SANITARY VENT	CFH	CUBIC FEET PER HOUR			
	ABOVE GROUND STORM	CO	CLEANOUT			
	OVERFLOW STORM DRAIN	CONT	CONTINUATION			
	CONDENSATE DRAIN	CW	DOMESTIC COLD WATER			
	COMPRESSED AIR	DN	DOWN			
	WATER METER	DS	DOWNSPOUT			
	HOSE BIBB OR WALL HYDRANT WITH VALVE IN RISER	DWG	DRAWING			
	HOSE BIBB OR WALL HYDRANT WITH VALVE	EXIST	EXISTING			
	CLEAN OUT PLUG	ESH	EMERGENCY SHOWER/EYEWASH			
	WALL CLEANOUT	EWH	ELECTRIC WATER HEATER			
	FLOOR CLEAN OUT	EWC	ELECTRIC WATER COOLER			
	FLOOR DRAIN	F	DEGREE FAHRENHEIT			
	ROOF DRAIN (ABOVE)	FOO	FLOOR CLEANOUT			
	FLOOR SINK	FD	FLOOR DRAIN			
	SHUT-OFF VALVE IN VALVE BOX	FS	FLOOR SINK			
	SHUTOFF VALVE	G	GAS			
	BALL VALVE	GPH	GALLONS PER HOUR			
	CALIBRATED BALANCING VALVE	GPM	GALLONS PER MINUTE			
	CHECK VALVE (SWING)	GR	KITCHEN WASTE (GREASE)			
	PRESSURE REDUCING VALVE	HB	HOSE BIBB			
	SOLENOID OPERATED VALVE	HD	HUB DRAIN			
	REDUCED PRESSURE BACKFLOW PREVENTER	HW	DOMESTIC HOT WATER			
	RELIEF OR SAFETY VALVE	HWR	DOMESTIC HOT WATER RECIRCULATING			
	GAS COCK	IE	INVERT ELEVATION			
	GAS PRESSURE REGULATOR	IW	INDIRECT WASTE			
	SHUTOFF VALVE ON RISER	KW	KILOWATT			
	GAS COCK ON RISER	LBS	POUNDS			
	CONNECTION, TOP	MH	MANHOLE			
	CONNECTION, BOTTOM	NC	NORMALLY CLOSED			
	ELBOW, TURNED DOWN	NIC	NOT IN CONTRACT			
	ELBOW, TURNED UP	NO	NORMALLY OPEN			
	TEE, TURNED UP	NTS	NOT TO SCALE			
	TEE, TURNED DOWN	OD	OUTSIDE DIAMETER			
	CAP	PEMB	PRE-ENGINEERED METAL BUILDING			
	DIRECTION OF FLOW	PRV	PRESSURE REDUCING VALVE			
	COMPRESSED AIR PRESSURE REGULATOR	PSI	POUNDS PER SQUARE INCH			
	1/2" LINE TO PRIMER	PVC	POLYVINYL CHLORIDE PIPE			
	REVISION REFERENCE	RD	ROOF DRAIN			
	DETAIL REFERENCE: TOP-DETAIL#, BOTTOM-DRAWING# SHOWN ON	RPBP	REDUCED PRESSURE BACKFLOW PREVENTOR			
		SAN	SANITARY			
		SD	STORM DRAIN			
		SF	SQUARE FEET			
		SH	SHEET			
		SS	SERVICE SINK			
		STO	OVERFLOW STORM DRAIN			
		V	VENT			
		VAC	VACUUM			
		VTR	VENT THRU ROOF			
		WCO	WALL CLEANOUT			
		WM	WASHING MACHINE SUPPLY AND DRAIN BOX			
		WTR	WATER			

PLUMBING PIPING SCHEDULE					
TYPE/LOCATION	DOM. COLD WATER DISTRIBUTION	DOM. HOT WATER DISTRIBUTION	DRAIN, WASTE & VENT	STORM WATER	CONDENSATE WASTE
ABOVE GROUND	TYPE "L" COPPER	N/A	CAST IRON	N/A	PVC
BELOW GROUND	CPVC	N/A	CAST IRON	N/A	PVC
RETURN AIR PLENUM	N/A	N/A	N/A	N/A	TYPE "L" COPPER
AREA UNDERGROUND SUBJECT TO STRESS (THRU FOOTING)	STEEL	N/A	DUCTILE IRON	N/A	STEEL

NOTES:  
 1. INSULATE THE FOLLOWING PIPING SYSTEMS WITH 1" THICK INSULATION:  
 A. CONDENSATE WASTE PIPING.

DATE: 08/11/2014  
 TIME: 10:00 AM  
 USER: PDC  
 PROJECT: HOUSTON AIRPORT SYSTEM  
 SHEET: P0.06  
 DRAWN BY: PDC  
 CHECKED BY: PDC  
 APPROVED BY: PDC

OWNER  
 16930 JOHN F. KENNEDY BLVD.  
 HOUSTON TX, 77032  
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 [F] 713 968 9333

ARCHITECT  
  
 3131 BRIARPARK  
 SUITE 200  
 HOUSTON, TX 77042  
 [T] 713 622 1444  
 [F] 713 968 9333

PGAL TBPE REG. NO. F-2742  
 CONSULTANT  
  
 CONSULTING ENGINEERS  
 Project No. 14006  
 TEL 832.371.6181  
 TX FIRM # F-14583

PROJECT TITLE  
 HOUSTON AIRPORT SYSTEM  
 GUARD BOOTH  
 REPLACEMENT PROJECT  
 HAS PN 727

PROJECT NUMBER  
 R1002447  
 PROJECT LOCATION  
 18401 SKYTRAIN  
 HOUSTON, TX. 77032  
 WV-51

DATE OF ISSUE  
 AUGUST 11, 2014  
 CONSTRUCTION DOCUMENTS  
 REVISIONS

HOUSTON AIRPORT SYSTEM  
 PDC DESIGN DIVISION

DATE

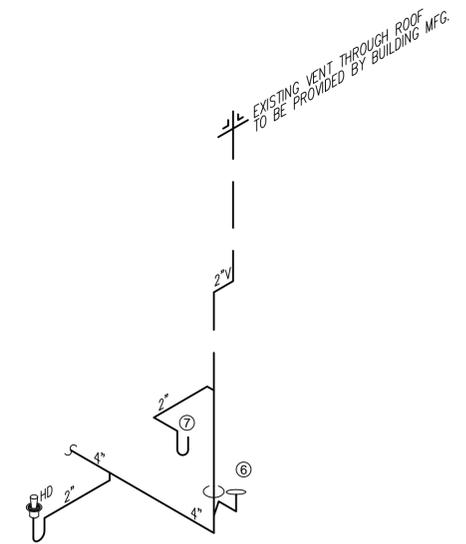
REGISTRATION  
  
 LEON ROLAND YOUNG  
 LICENSED PROFESSIONAL ENGINEER  
 115129  
 08/11/2014

SHEET TITLE  
 GUARD BOOTH WV-51  
 PLUMBING LEGENDS  
 AND SYMBOLS

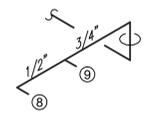
SHEET NUMBER  
**P0.06**

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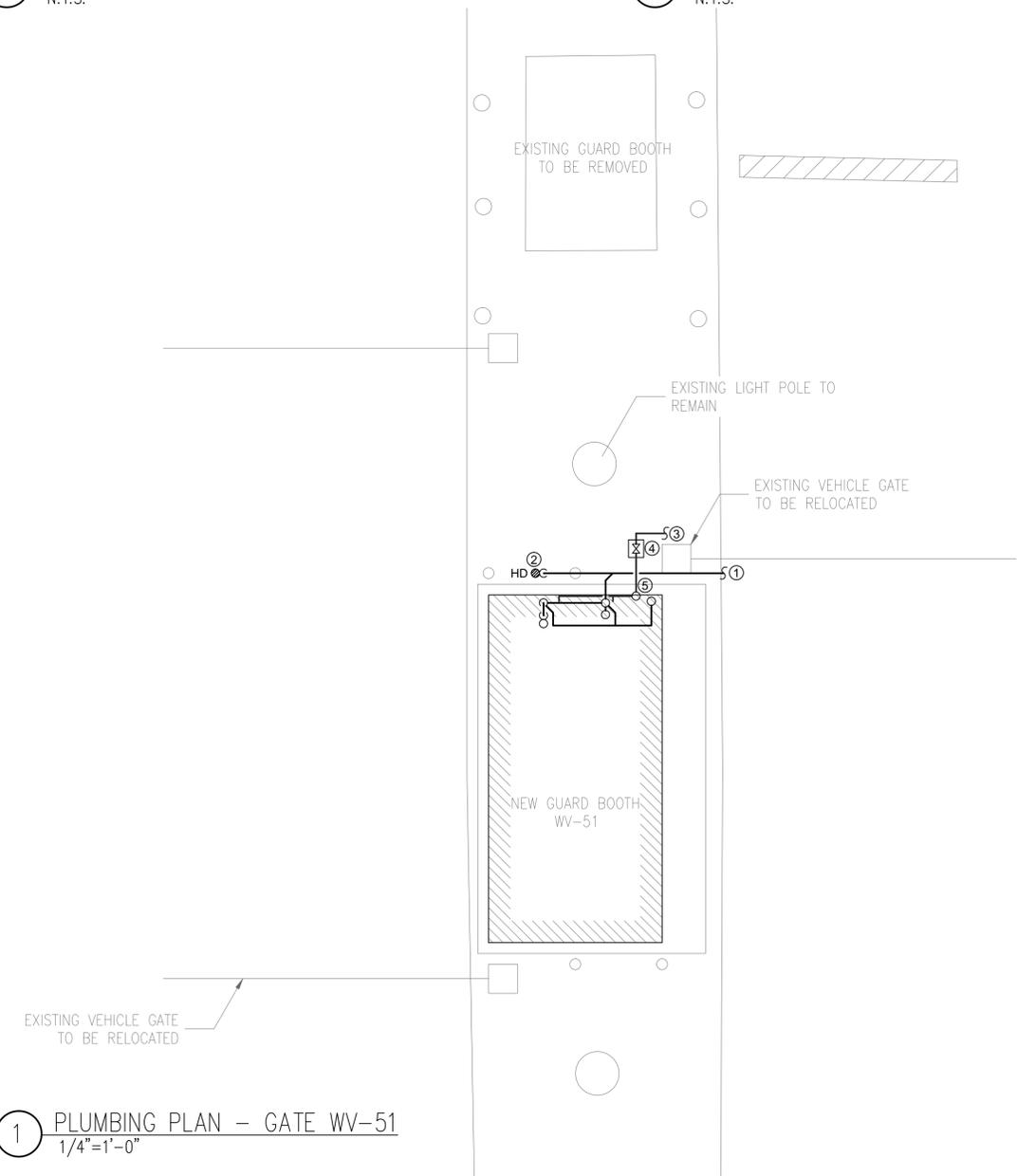
- # PLAN KEYED NOTES:
- 4" SANITARY LINE REFER TO CIVIL PLANS FOR CONTINUATION.
  - NEW FUNNEL DRAIN AT THE SLAB AT THIS LOCATION. ROUTE NEW CONDENSATE DRAIN LINE FROM THE ROOF MOUNTED AIR CONDITIONING UNIT TO THE DRAIN AT THIS LOCATION. CONDENSATE LINE TO BE SIZED PER MANUFACTURER RECOMMENDATION. ALL EXPOSED CONDENSATE PIPING SHALL BE INSULATED WITH MINIMUM 3/4" ARMAFLEX INSULATION.
  - NEW 3/4" DOMESTIC WATER LINE TO THE PRE-MANUFACTURED BUILDING. REFER TO CIVIL DRAWINGS FOR CONTINUATION OF THE LINES.
  - PROVIDE A SHUT-OFF VALVE IN A VALVE BOX AT THIS LOCATION FOR ISOLATION OF THE WATER TO THE PRE-MANUFACTURED BUILDING AT THIS LOCATION.
  - COORDINATE EXACT LOCATION OF THE DOMESTIC WATER SERVICE ENTRANCE WITH THE APPROVED PRE-MANUFACTURED BUILDING SUPPLIER. ROUTE NEW WATER LINE UP INSIDE THE PLUMBING CHASE WALL THAT IS PROVIDED BY THE BOOTH MANUFACTURER. NEW WATER LINE SHALL CONNECT TO THE FLOOR MOUNTED TANK TYPE WATER CLOSET AND THE LAVATORY LOCATED WITHIN THE PRE-MANUFACTURED BUILDING. FIXTURES TO BE PROVIDED BY GUARD BOOTH MANUFACTURER. REFER TO ISOMETRIC PRESSURE RISER DIAGRAM FOR PIPE SIZING.
  - FLOOR MOUNTED TANK TYPE WATER CLOSET TO BE PROVIDED BY BOOTH MANUFACTURER ROUTE 4" SANITARY PIPING FROM THIS LOCATION.
  - WALL MOUNTED LAVATORY AT THIS LOCATION TO BE PROVIDED BY PRE-MANUFACTURED BUILDING SUPPLIER. ROUTE 2" SANITARY LINE IN WALL TO TIE INTO THE VENT RISER FROM THE WATER CLOSET. TIE VENT PIPING INTO EXISTING GUARD BOOTH MANUFACTURER VENT THROUGH ROOF.
  - PROVIDE 3/8" WATER LINE CONNECTION TO THE LAVATORY. REFER TO APPROVED PRE-MANUFACTURED BUILDING DRAWINGS FOR EXACT LOCATION OF THE FIXTURE.
  - PROVIDE 3/8" WATER LINE CONNECTION TO THE WATER CLOSET. REFER TO APPROVED PRE-MANUFACTURED BUILDING DRAWINGS FOR EXACT LOCATION OF THE FIXTURE.



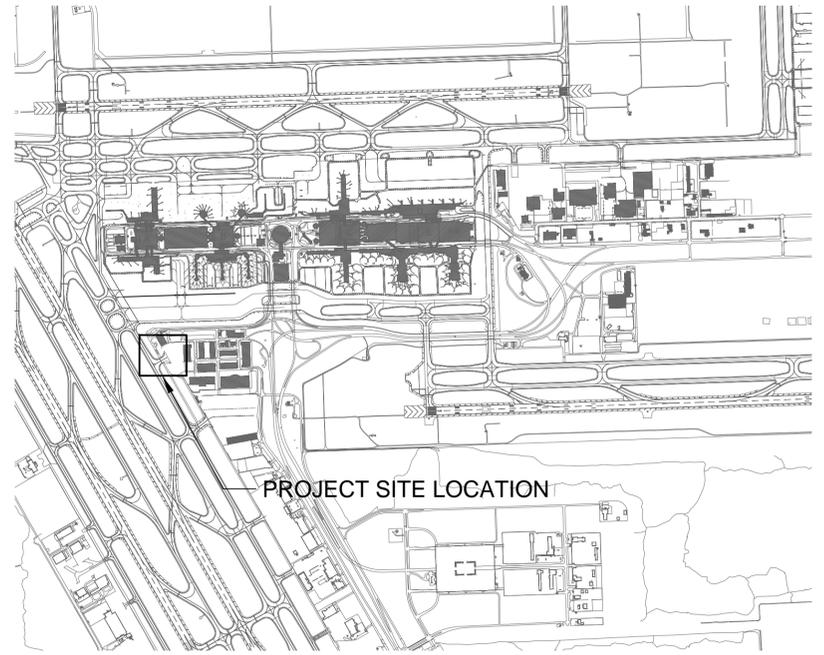
3 SANITARY RISER PLAN  
 N.T.S.



4 PRESSURE RISER PLAN  
 N.T.S.



1 PLUMBING PLAN - GATE WV-51  
 1/4" = 1'-0"



2 AIRPORT KEY PLAN  
 NOT TO SCALE

DATE: 08/11/2014  
 TIME: 10:00 AM  
 PROJECT: GUARD BOOTH REPLACEMENT PROJECT  
 SHEET: P1.06  
 DRAWN BY: [Name]  
 CHECKED BY: [Name]  
 APPROVED BY: [Name]  
 DATE: 08/11/2014

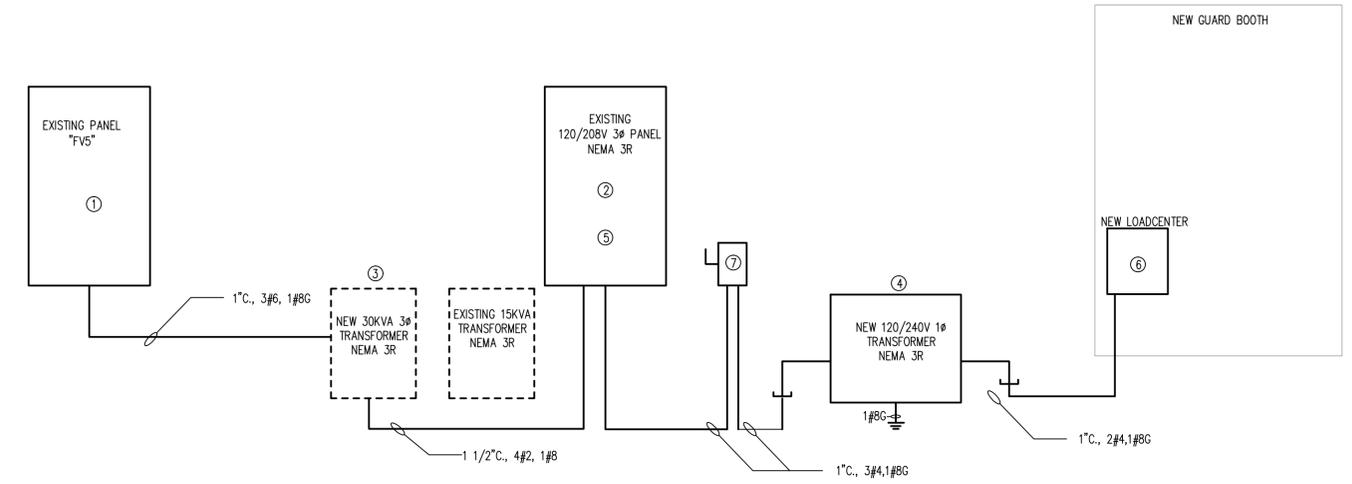
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ELECTRICAL SYMBOLS LEGEND	GENERAL NOTES
	GFCI-TYPE DUPLEX RECEPTACLE
	DISCONNECT SWITCH, SHOWN SIZE - 2-POLE, 60 AMP, FUSED AT 50 AMP. NF = NON-FUSED 3R = NEMA 3R ENCLOSURE
	UNDERGROUND ELECTRICAL CONDUIT
	TRANSFORMER
	1. #12 AWG NEUTRAL CONDUCTOR ALTHOUGH NOT INDICATED SHALL BE INCLUDED FOR EACH BRANCH CIRCUIT UNLESS OTHERWISE NOTED. 2. #12 AWG GREEN GROUND CONDUCTOR, ALTHOUGH NOT INDICATED SHALL BE INCLUDED IN EACH RACEWAY UNLESS OTHERWISE NOTED. 3. HOME RUNS TO PANEL BOARDS SHALL HAVE A MAXIMUM OF THREE (3) PHASE CONDUCTORS (ONE PER PHASE) PLUS DEDICATED NEUTRAL FOR EACH PHASE CONDUCTOR AND GROUND CONDUCTOR IN EACH CONDUIT.

④ PLAN KEYED NOTES:

- REUSE EXISTING 60A/3P BREAKER IN EXISTING PANEL "FV3". ROUTE 3#6,1#0G IN EXISTING CONDUIT FROM FROM PANEL "FV3" TO SERVE PANEL AT SERVICE RACK NEAR GUARD BOOTH.
- AT SERVICE RACK NEAR GATE IN EXISTING 120/208V PANEL, REMOVE AND REPLACE EXISTING MAIN 50A/3P BREAKER WITH NEW 100A/3P BREAKER. CONNECT WITH NEW CONDUCTORS FROM PANEL "FV3".
- REMOVE EXISTING 15KVA TRANSFORMER AND PROVIDE NEW 30KVA WEATHERPROOF(480V PRIMARY TO 120/208V SECONDARY) TRANSFORMER TO SERVE EXISTING PANEL AT SERVICE RACK SERVING GATE WV-51.
- PROVIDE NEW 15KVA WEATHERPROOF TRANSFORMER (208V PRIMARY TO 120/240V 1Ø WIRE SECONDARY), MOUNT OUTSIDE GUARD BOOTH. PROVIDE UNISTRUT WHERE NECESSARY FOR PROPER MOUNTING.
- IN EXISTING PANEL AT SERVICE RACK, REMOVE EXISTING 50A/2P BREAKER SERVING GUARD BOOTH AND REPLACE WITH NEW 80A/2P BREAKER TO SERVE NEW TRANSFORMER. CONNECT CONDUCTORS AS SHOWN ON RISER DIAGRAM.
- LOAD CENTER, PROVIDED BY BOOTH MANUFACTURER. CONNECT WIRING AND CONDUIT TO PANEL. LOAD CENTER SHALL BE PROVIDED WITH 70AMP MAIN BREAKER.
- PROVIDE NEW 100A/1P DISCONNECT TO SERVE GUARD BOOTH TRANSFORMER

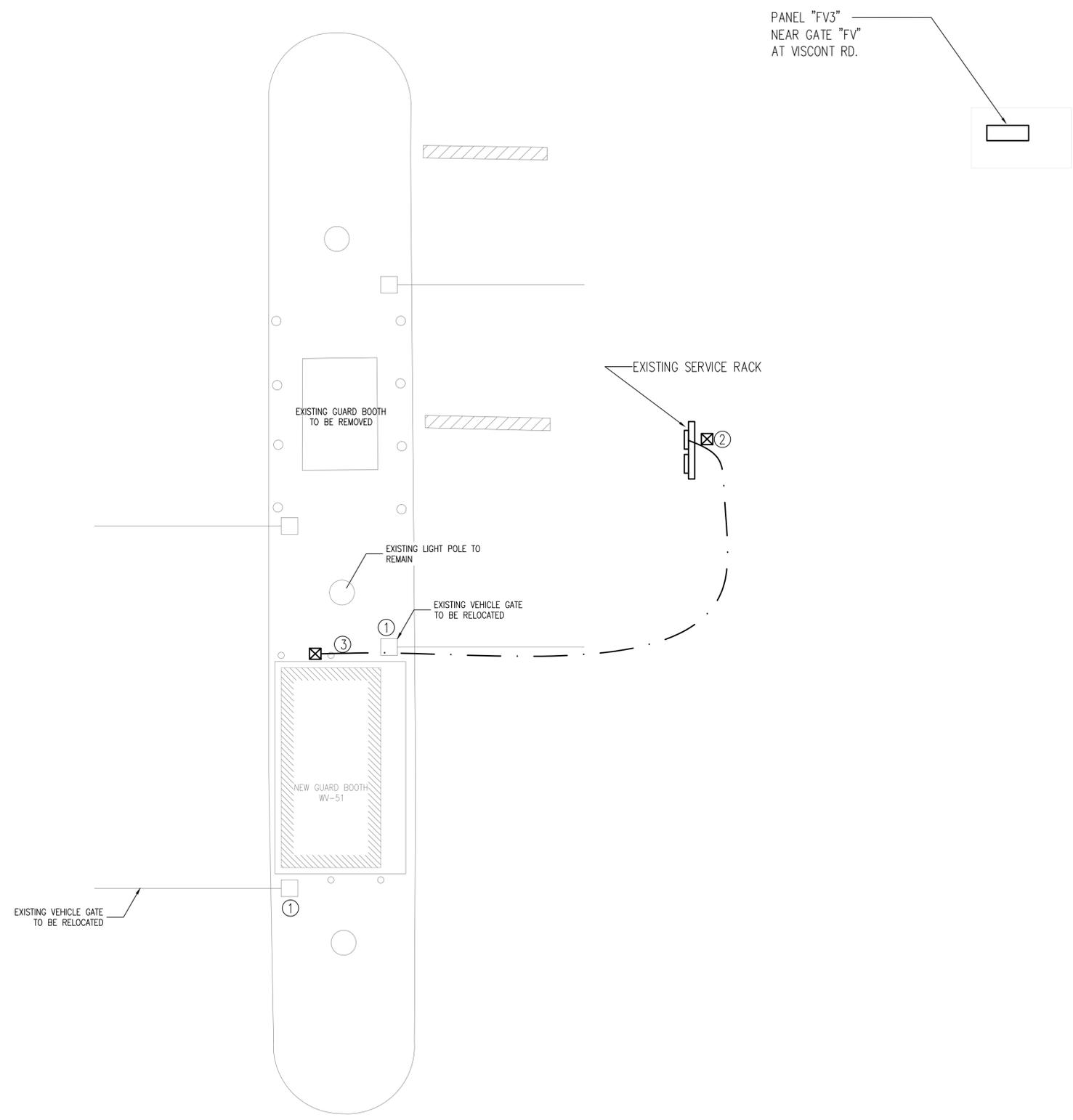
ELECTRICAL LOAD ANALYSIS:	
EXISTING SERVICE TO GUARD BOOTH TO BE REMOVED:	= 7.0 KW @ 120/240V., 1Ø
PROPOSED NEW SERVICE TO NEW GUARD BOOTH:	= 15.6 KW @ 120/240V., 1Ø
LIGHTING LOADS =	117W x 1.25 = 146.25
RECEPTACLE LOADS =	5x180 = 900
HEATING, A/C LOADS =	8000 x 1.25 = 1000
MOTOR LOADS =	150 x 25% = 37.50
MISC. LOADS =	3500
TOTAL:	= 14583 WATTS
TOTAL DIFFERENCE:	= 7.6 KW @ 120/240V., 1Ø



① ONE LINE RISER DIAGRAM - GATE WV-51  
 NOT TO SCALE

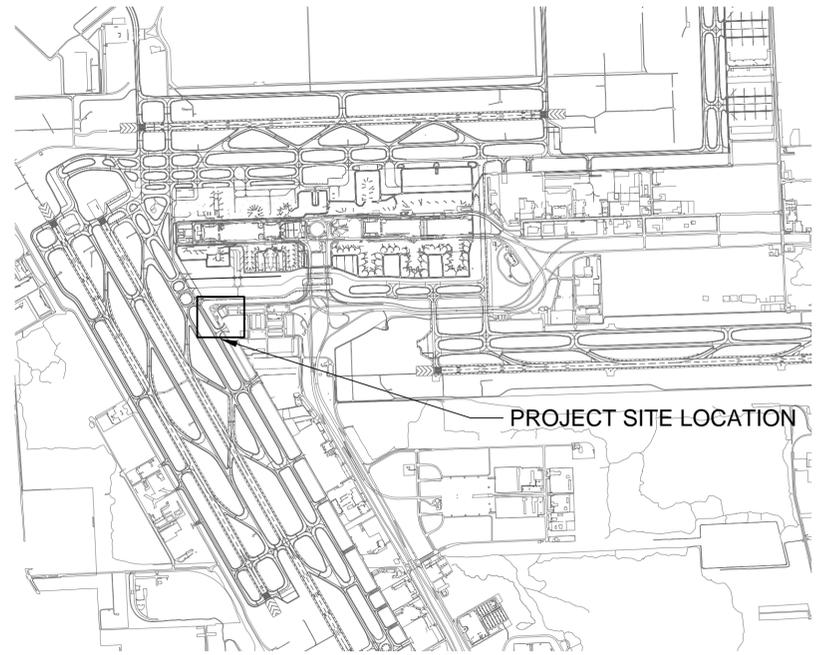
DATE: 8/11/14  
 DRAWN BY: JLD  
 CHECKED BY: JLD  
 PROJECT: HOUSTON AIRPORT SYSTEM  
 SHEET: E 0.06

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# PLAN KEYED NOTES:

1. RELOCATE EXISTING VEHICLE GATE TO LOCATIONS SHOWN. EXTEND WIRING AND CONTROLS AS REQUIRED.
2. NEW 30KVA TRANSFORMER TO SERVE EXISTING 120/208 PANEL AT SERVICE RACK.
3. NEW 15KVA 1Ø TRANSFORMER TO SERVE NEW GUARD BOOTH. PROVIDE NEW UNDERGROUND CONDUIT FROM PANEL TO NEW TRANSFORMER LOCATION. SAW CUT GRADE TO INSTALL NEW CONDUIT. REPAIR AND REPLACE PAVEMENT AND OR CEMENT, ONCE CONDUIT HAS BEEN INSTALLED.



1 POWER PLAN - GATE WV-51  
 3/16"=1'-0"

2 AIRPORT KEY PLAN  
 NOT TO SCALE

DATE OF ISSUE: 8/11/14  
 DATE OF REVISION: 8/11/14  
 DATE OF APPROVAL: 8/11/14  
 DATE OF DESIGN: 8/11/14  
 DATE OF CHECK: 8/11/14  
 DATE OF DRAWING: 8/11/14

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**GENERAL NOTES**

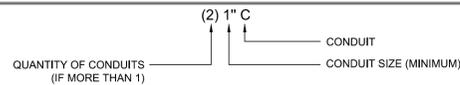
- THE FOLLOWING GENERAL NOTES ARE APPLICABLE AS STATED BELOW, EXCEPT WHERE SPECIFICALLY INDICATED OTHERWISE, ON THE DRAWINGS OR IN THE BID SPECIFICATION.
- SINGLE LINE DIAGRAMS, SCHEMATICS, DETAILS AND CONDUIT PATHS SHOWN HEREIN ARE CONCEPTUAL AND ILLUSTRATE ONLY THE FUNCTIONAL RELATIONSHIPS BETWEEN COMPONENTS OF THE SYSTEM. ACCORDINGLY, FULL SHOP DRAWING DEVELOPMENT IS REQUIRED TO REALIZE THE SPECIFIED FUNCTIONS.
- DEVICE LOCATIONS ON PLANS ARE CONCEPTUAL. LOCATE AS SITE CONDITIONS REQUIRE AND AS APPROVED BY THE OWNER.
- REFER TO THE BID SPECIFICATION AND DIV 28 FOR ADDITIONAL REQUIREMENTS REGARDING THIS WORK.
- INSTALL WALL MOUNTED CARD READERS, PUSH BUTTON SWITCHES, KEYPADS, KEY SWITCHES AND OTHER WALL MOUNTED FIELD DEVICES, AT 48 INCHES MAXIMUM ABOVE FINISHED FLOOR, UNLESS OTHERWISE NOTED. MOUNTING HEIGHT SHALL COMPLY WITH TEXAS ACCESSIBILITY STANDARD (TAS).
- PROVIDE PAINTING, PATCHING AND FINISHES, OF MATERIALS AND DEVICES, AS APPROVED BY THE OWNER.
- DOOR DETAILS ILLUSTRATE FUNCTIONAL RELATIONSHIPS. ACTUAL ARCHITECTURAL CONDITIONS (SUCH AS DIRECTION OF SWING AND HAND OF DOOR) MAY VARY.
- WORK AND MATERIALS TO CONFORM TO THE MOST CURRENT UNIFORM STANDARD SPECIFICATIONS, ASSOCIATED CODES REFERENCED BY THE (AHJ) AUTHORITY HAVING JURISDICTION, AND DETAILS FOR CONSTRUCTION, AS FURNISHED BY THE OWNER. WORK AND MATERIALS, NOT IN CONFORMANCE WITH PROJECT SPECIFICATIONS AND DETAILS, ARE SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
- FOR INFORMATION REGARDING FIRE RATINGS AND OCCUPANCY SEPARATIONS, REFER TO ARCHITECTURAL PLANS AND SPECIFICATIONS.
- NEW CONDUIT CONNECTIONS TO INCLUDE INTEGRAL PROTECTIVE BUSHINGS OR CHASE NIPPLES.
- NEW CONDUIT FOR FUTURE USE TO BE FILLED WITH 200 POUND STRENGTH PULL LINE. PROVIDE LABELING ON EACH END OF THE PULL LINE TO INDICATE LOCATION OF OTHER END.
- NEW CONDUITS SHALL BE CONCEALED WHENEVER POSSIBLE. SURFACE MOUNTED CONDUITS ARE PERMISSIBLE ONLY WHERE APPROVED. USE ONLY CONCEALED CONDUITS WITHIN FINISHED SPACES. THE ABOVE STANDARDS ALSO APPLY TO EXTERIOR SPACES. SEEK APPROVAL FROM THE OWNER FOR EACH AREA WHERE SURFACE CONDUIT IS NECESSARY.
- JUNCTION BOXES SHALL BE MINIMUM 4 INCH SQUARE DEEP STYLE, SIZED AS REQUIRED TO ACCOMMODATE CONDUITS UNLESS OTHERWISE NOTED. PROVIDE MOUNTING RING AS REQUIRED. PROVIDE A BLANK COVER PLATE FOR JUNCTION BOXES AND PULL BOXES WITH NO DEVICE.
- EXPOSED BOXES AND PANELS, MOUNTED IN OR ON EXTERIOR WALLS, TO BE NEMA 4.
- NEW CONDUIT TO BE 1" EMT MINIMUM, UNLESS OTHERWISE NOTED. EXTERIOR CONDUIT TO BE RIGID.
- USE 120VAC CIRCUITS UNLESS OTHERWISE NOTED. VERIFY CURRENT LOAD ON EXISTING CIRCUITS BEFORE CONNECTING NEW LOADS. COORDINATE WITH OWNER IF ADDITIONAL CIRCUITS ARE REQUIRED.
- CONTRACTOR TO VERIFY CONDUIT AND PLENUM CABLE PATHS INDICATED ON THE DRAWINGS. CONTRACTOR MAY PROPOSE ALTERNATE ROUTING WHERE CONFLICTS ARE FOUND.
- CONTRACTOR IS RESPONSIBLE FOR CEILING INTEGRITY, THIS INCLUDES ROUTING ABOVE CONCEALED SPLINE INTERLOCKING TILES.
- CONTRACTOR TO OBTAIN RECERTIFICATION FOR FIRE RATED DOOR FRAME AND DOOR MODIFIED BY THIS PROJECT.
- ACCESS CONTROL LOW VOLTAGE WIRING TO BE PLENUM RATED.
- DO NOT EXCEED 180° IN AGGREGATE CONDUIT BENDS WITHOUT PULLBOX.
- PROVIDE GROUND BUSHING ON ALL CONDUIT END IN EQUIPMENT ROOM. BOND TO APPROVED BUILDING GROUND.
- LABEL CONDUIT EVERY 50' WITH DEVICE ID & EQUIPMENT ROOM ID WITH PERMANENT INK CABLE MADE WITH LASER CABLE MAKER. SECURE TO CONDUIT WITH CLEAR TAPE.
- ALL WALL AND FLOOR PENETRATIONS SHALL BE SEALED WITH APPROVED FIRE STOP.
- ALL CABLES SHALL BE IN CONDUIT ABOVE DROP CEILING SHALL BE INSTALLED IN MIN. 1" J-HOOK EVERY 5'-8". DO NOT EXCEED 40% FILL.
- LABEL CABLE NOT IN CONDUIT EVERY 50' WITH DEVICE ID & EQUIPMENT ROOM ID. USE PERMANENT INK LABEL MAKER. SECURE TO CABLE WITH CLEAR TAPE.
- LOCATE DEVICES AS SITE CONDITIONS REQUIRE.
- FIELD VERIFY ALL DIMENSIONS.
- REFER TO THE SPECIFICATION FOR ADDITIONAL REQUIREMENTS REGARDING THIS WORK. CONTRACTOR TO PREPARE PROPOSAL FOR EACH DISCIPLINE. PROVIDE COORDINATION BETWEEN DISCIPLINES FOR CONSTRUCTION.
- NOTIFY DESIGN CONSULTANT AND OWNER WHERE EXISTING CONDITIONS REQUIRE REPAIR PRIOR TO INSTALLATION.
- COORDINATE ALL WORK WITH GENERAL CONTRACTOR.
- ALL CABLE PULLS WITHIN EXISTING AND NEW CONDUITS TO BE MADE AT SAME TIME.
- DEFINITION: BY DIVISION 8 - EQUIPMENT PROVIDED AND INSTALLED BY DIVISION 8 CONTRACTOR.
- DEFINITION: BY DIVISION 26 - EQUIPMENT PROVIDED AND INSTALLED BY DIVISION 26 CONTRACTOR.
- DEFINITION: BY DIVISION 27 - EQUIPMENT PROVIDED AND INSTALLED BY DIVISION 27 CONTRACTOR.

**SECURITY CABLE DESIGNATION/TYPE \***

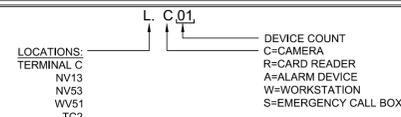
DESIGNATION	DESCRIPTION	USAGE	PART #
A	1 PAIR 22AWG SHIELDED	ALARM MONITORING	BELDEN 5500FE
B	2 PAIR 20AWG SHIELDED	MOTION DETECTOR, BEAM DETECTORS	BELDEN 5441FE
C	3 PAIR 22AWG SHIELDED	CARD READER	BELDEN 5542FE
D	2/C 18AWG	CAMERA PWR, PUSH BUTTON, LOCK PWR	BELDEN 5300UE
E	2 PAIR 22AWG SHIELDED	DATA, CCVS PTZ CONTROL	BELDEN 5541FE
F	2/C 18AWG SHIELDED	HORN	BELDEN 5300FE
G	COAXIAL W/2C POWER	VIDEO	
H	1 PAIR 20AWG TWISTED	INTERCOM	BELDEN 5400FE
J	1 PAIR TWISTED SH 18AWG PLUS 2/C 18AWG	EMERGENCY PHONE	BELDEN 5302GE
K	ENHANCED CAT-5E BONDED-PAIR UTP	NETWORK AND CAMERA	BELDEN 7851A
L	ACCESS CONTROL COMPOSITE CABLE, 4C 18AWG, 3PR 22 AWG, 4C 22 AWG	LOCK PWR, CR, DOOR CONTACT, REX, 1 SPARE YELLOW JACKET	WSECOMP2835
M	CCTV COMPOSITE CABLE 2C 18AWG, UNSHIELDED, CABLE ETHERNET (PLENUM), R659 (PLENUM)	CAM PWR, UTP/VIDEO ANALOG VIDEO CONNECT K112	WSECOMP-2817

\* THIS TABLE IS REFERENCED AND IS SHOWN AS AN EXAMPLE OF ACCEPTABLE CABLE DESIGNATIONS. CONTRACTOR SHALL UTILIZE CABLE DESIGNATION TABLE FOR SHOP DRAWING AND RECORD DRAWING SUBMITTALS.

**CONDUIT DESIGNATION KEY**



**DEVICE DESIGNATION KEY**



**ABBREVIATION**

A	AMPERE	NTS	NOT TO SCALE
AC	ALTERNATING CURRENT POWER CONNECTION	NVR	NETWORK VIDEO RECORDER
A.F.C.	ABOVE FINISHED CEILING	NWS	NETWORK SWITCH
A.F.F.	ABOVE FINISHED FLOOR	OPP	OPPOSITE
A.F.G.	ABOVE FINISHED GRADE	OTDR	OPTICAL TIME DOMAIN REFLECTOMETER
AMP	AMPERE	P	POLE
AP	ACCESS POINT	PH	PHASE
B.F.C.	BELOW FINISHED CEILING	PB	PULL BOX
B.F.G.	BELOW FINISHED GRADE	PBX	PRIVATE BRANCH EXCHANGE (IN-HOUSE TELEPHONE SWITCH)
C.	CONDUIT	PED	PEDESTAL
CCVS	CLOSED CIRCUIT VIDEO SURVEILLANCE	PoE	POWER OVER ETHERNET
C.U.	CENTRAL OFFICE TELEPHONE LINE	Q	QUANTITY
CPS	CAMERA POWER SUPPLY	R	READER
CPU	CENTRAL PROCESSING UNIT	REQ'D	REQUIRED
CR	CARD READER	REX	REQUEST-TO-EXIT
DA	DURESS (PERSONAL ASSIST) SWITCH	RF	REFER TO
DPS	DOOR POSITION SWITCH	RX	RECEIVE / RECEIVER
(E)	EXISTING	SAN	STORAGE AREA NETWORK
EC	ELECTRICAL CONTRACTOR	SIM	SIMILAR
ELVC	ELEVATOR CONTRACTOR	SM	SINGLE MODE
EXT	EXTERNAL	SPB	SECURITY PULLBOX
EW	EACH WAY	STC	SECURITY TERMINAL CABINET
F	FUTURE	TGB	TERMINAL GROUND BUSBAR
FOPP	FIBER OPTIC PATCH PANEL	TS	TURNSTILE
GA	GATE ARM	TYP	TYPICAL
GC	GENERAL CONTRACTOR	TX	TRANSMIT / TRANSMITTER
GND	GROUND	UON	UNLESS OTHERWISE NOTED
GPS	GLOBAL POSITIONING SYSTEM	V	VOLT
GRC	GALVANIZED RIGID CONDUIT	VA	VOLT-AMPERE
HAS	HOUSTON AIRPORT SYSTEMS	VAC	VOLTS ALTERNATING CURRENT
HD	HIGH DEFINITION	VDC	VOLTS DIRECT CURRENT
HOU	WILLIAM P. HOBBY AIRPORT	VLAN	SECURITY LOCAL AREA NETWORK
IC	INTERCOM FIELD STATION	VMS	VIDEO MANAGEMENT SYSTEM
IDS	INTERCOM SYSTEM	VS	VIDEO SYSTEM
ID	IDENTIFICATION	WAN	WIDE AREA NETWORK
J	JUNCTION	W	WITH
KVA	KILO VOLT - AMPERE	W/O	WITHOUT
LAN	LOCAL AREA NETWORK	WP	WEATHER PROOF
LPS	LOW VOLTAGE POWER SUPPLY	WS	WORKSTATION
LRDN	LONG RANGE DAY/NIGHT	XFMR	TRANSFORMER
MC	MOBILITY CONTROLLER	(N)	NEW
MD	MOTION DETECTOR	(R)	EXISTING, TO BE REMOVED AND REPLACED, AS SPECIFIED
MFG	MANUFACTURER	(U)	UPGRADE
MM	MULTIMODE	(X)	EXISTING, TO BE REMOVED
N/A	NOT APPLICABLE	(SL)	SLIDING GATE
NC	NORMALLY CLOSED	360	360 CAMERA
NO	NORMALLY OPEN	-C	CEILING MOUNTED
N.I.C.	NOT IN CONTRACT	-P	POLE MOUNTED

**CCVS SYSTEM NOTES**

- ALL OUTDOOR CAMERAS, TERMINATION BOXES, AND PULLBOXES SHALL BE INSTALLED WITH WEATHER RESISTANT HARDWARE.
- PROVIDE ALL INTEGRATION WITH ALARM ACCESS CONTROL SYSTEM COMPONENTS.
- PROVIDE ALL COORDINATION WITH OTHER DISCIPLINES FOR INSTALLATION OF EQUIPMENT.
- COORDINATE ALL SITE WORK WITH OWNER'S REP.
- DRAWINGS INDICATE CAMERA 'HOME POSITIONS'. VERIFY FIELD OF VIEW WITH HOUSTON AIRPORT SYSTEM (HAS) REPRESENTATIVE AND DESIGN CONSULTANT DURING INSTALLATION. SUBSTITUTION OF LENS TYPE & SIZE TO ACCOMPLISH INTENDED FIELD OF VIEW SHALL BE AT NO ADDITIONAL COST.
- CAMERAS MAY INCLUDE MULTIPLE TRANSMISSION METHODS. VERIFY EACH CAMERA PRIOR TO INSTALLATION.
- FIELD VERIFY ALL CAMERA LOCATIONS PRIOR TO INSTALLATION. CAMERA MAY BE RELOCATED WITHIN 25' OF LOCATION SHOWN ON FLOOR PLANS WITHOUT ADDITIONAL COST.

**CAMERA SERVER AND DIGITAL STORAGE NOTES**

- CAMERA SERVERS AND DIGITAL STORAGE FOR THIS PROJECT ARE EXISTING AND NOT REQUIRED.
- THE EXISTING CAMERA SERVERS AND DIGITAL STORAGE ARE LOCATED AT THE HAS ADMIN MDF & TERMINAL C MDF. THEY ARE REDUNDANT.
- PROVIDE HONEYWELL MAXPRO CAMERA LICENSING AS REQUIRED AT THE HAS ADMIN MDF & TERMINAL C MDF TO SUPPORT ALL HAS CAMERAS INSTALLED AS PART OF THIS PROJECT.

**ACS SYSTEM NOTES**

- ALL OUTDOOR MOUNTED CARD READERS SHALL BE INSTALLED WITH WEATHER RESISTANT AND TAMPER PROOF HARDWARE.
- CARD READER PEDESTALS SHALL BE SIZED FOR VOICE COMMUNICATIONS.
- PROVIDE ALL INTEGRATION WITH CLOSED CIRCUIT VIDEO SURVEILLANCE COMPONENTS.
- PROVIDE ALL COORDINATION WITH OTHER DISCIPLINES FOR INSTALLATION OF EQUIPMENT.
- COORDINATE ALL SITE WORK WITH OWNERS REP.
- PROVIDE ACCESS CONTROL LICENSES AS REQUIRED PART OF THIS PROJECT.

**SECURITY EQUIPMENT SYMBOLS LIST**

SYMBOL	DESCRIPTION
	EMERGENCY CALL BOX (VOIP) W/ IP CAMERA
	360 IP CAMERA
	FIXED HD IP CAMERA
	PTZ HD IP CAMERA
	CAMERA POWER SUPPLY
	DOOR POSITION SWITCH (FLUSH MOUNT)
	DOOR POSITION SWITCH (SURFACE MOUNT)
	DOOR POSITION SWITCH (ROLL UP DOOR)
	ELECTRIC MORTISE LOCK W/ REX SWITCH (FAIL SECURE)
	ELECTRIC PANIC BAR W/ REX SWITCH
	PANIC BAR W/ ELECTRIC LATCH RETRACTION & REX SWITCH
	FIBER OPTIC PATCH PANEL
	FIBER OPTIC RECEIVER
	FIBER OPTIC TRANSMITTER
	INTELLIGENT FIELD PANEL
	JUNCTION BOX ("#" DENOTES NUMBER)
	LOCK POWER SUPPLY
	REQUEST -TO- EXIT MOTION SENSOR
	NETWORK SWITCH
	POWER OVER ETHERNET
	POWER OVER ETHERNET (PoE EXTENDER)
	CARD READER
	REMOTE INTELLIGENT FIELD PANEL
	TAMPER SWITCH
	TELECOMMUNICATION DISTRIBUTION NODE
	REFER TO NOTE SCHEDULE ON SHEET AS INDICATED
	120 VAC POWER CIRCUIT
	REFER TO DETAIL AND SHEET AS INDICATED
	REFER TO ELEVATION DETAIL AND SHEET AS INDICATED
	HORIZONTAL CAMERA FIELD OF VIEW - 90°
	HORIZONTAL CAMERA FIELD OF VIEW - 60°



OWNER  
HOUSTON AVIATION DEPT.  
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ARCHITECT



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PGAL TBPE REG. NO. F-2742  
CONSULTANT



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TBPE FIRM #12493

PROJECT TITLE  
HOUSTON AIRPORT SYSTEM  
GUARD BOOTH  
REPLACEMENT PROJECT  
HAS PN 727

PROJECT NUMBER  
R1002447

PROJECT LOCATION  
18401 SKYTRAIN RD.  
GUARD BOOTH WV-51  
HOUSTON, TX 77032

DATE OF ISSUE  
AUGUST 11, 2014  
CONSTRUCTION DOCUMENTS  
REVISIONS

HOUSTON AIRPORT SYSTEM  
PDC DESIGN DIVISION

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SHEET TITLE

SECURITY LEGEND  
AND NOTES

SHEET NUMBER

DATE

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SHEET TITLE

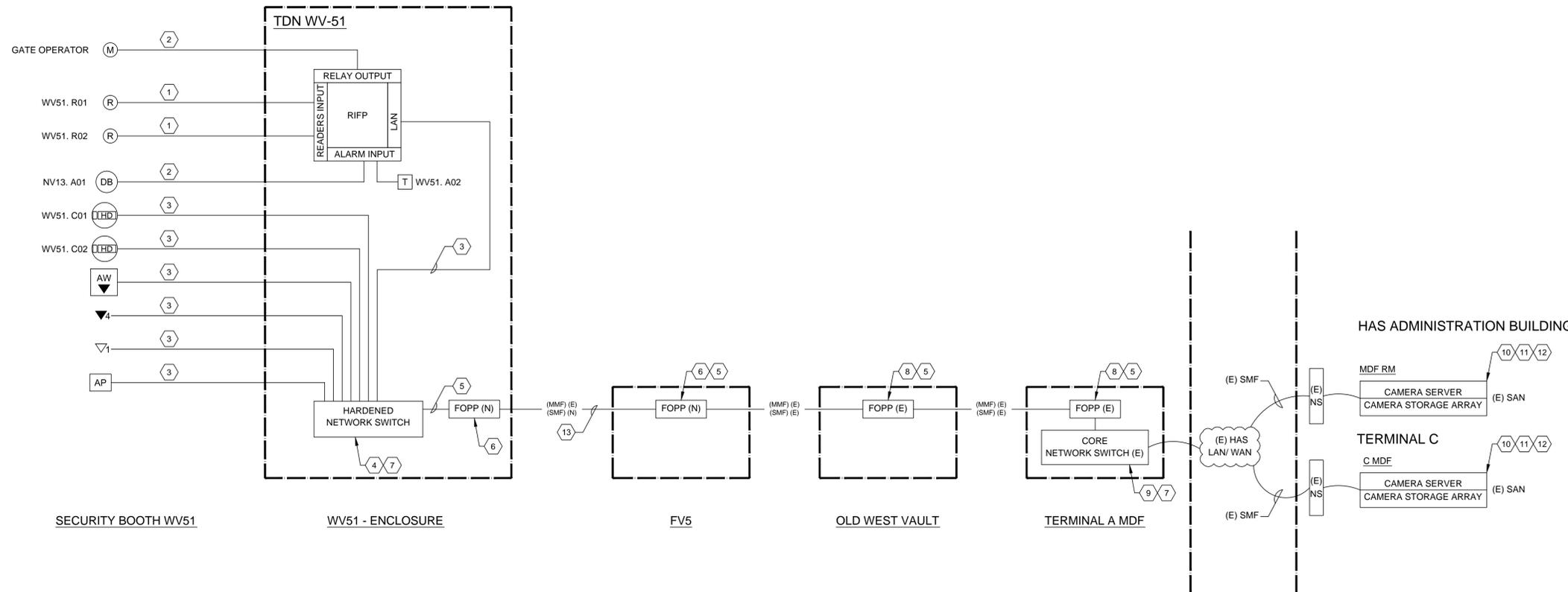
SECURITY LEGEND  
AND NOTES

SHEET NUMBER

**T0.00B**

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 CHECKED: TMM  
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 PLOT: 8/11/14 10:54 AM  
 PLOTTER: HP DesignJet T1100e

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ONE LINE DIAGRAM - WV51 NTS 1

KEY NOTES:

- 1 PROVIDE ACCESS CONTROL COMPOSITE CABLE(S) (REFERENCE SPECIFICATION SECTION 281300 FOR COMPOSITE CABLE). EXTEND COMPOSITE CABLE(S) TO RIFP.
- 2 PROVIDE ALARM CABLE(S) (REFERENCE SPECIFICATION SECTION 281300 FOR ALARM CABLE). EXTEND CABLE(S) FROM FIELD DEVICE(S) TO RIFP.
- 3 PROVIDE CAT 6 CABLE(S) FROM FIELD DEVICE(S) TO NEAREST TDN/IDF/MDF.
- 4 HARDENED NETWORK SWITCH.
- 5 FIBER OPTIC PATCH CORD. QUANTITY AS REQUIRED TO ESTABLISH CONTINUOUS CIRCUITS.
- 6 FIBER OPTIC PATCH PANEL.
- 7 PROVIDE GBIC AS REQUIRED FOR LINK COMMUNICATION IN ACCORDANCE WITH SPECIFICATIONS.
- 8 (E) FIBER OPTIC PATCH PANEL.
- 9 (E) CORE NETWORK SWITCH.
- 10 CAMERA SERVERS AND DIGITAL STORAGE FOR THIS PROJECT ARE EXISTING AND NOT REQUIRED.
- 11 THE EXISTING CAMERA SERVERS AND DIGITAL STORAGE ARE LOCATED AT THE HAS ADMINISTRATION BUILDING MDF & TERMINAL C MDF.
- 12 PROVIDE HONEYWELL MAX PRO CAMERA LICENSING AS REQUIRED AT THE HAS ADMINISTRATION BUILDING MDF & TERMINAL C MDF TO SUPPORT ALL HAS CAMERAS INSTALLED AS PART OF THIS PROJECT.
- 13 PROVIDE 12 CT SMF IN EXISTING CONDUIT/ INNERDUCT.

Reader Number	Sheet	Level	Door No	To/From	Reader Type	Mount	Associated Camera	Terminating IDF
WV51.R01	T2.01	SITE	GATE WV51	NON SECURE/ SECURE SIDE OF WV51	PROX w/ KEYPAD	WALL	WV51.C01	TDN WV51
WV51.R02	T2.01	SITE	GATE WV51	NON SECURE/ SECURE SIDE OF WV51	PROX w/ KEYPAD	PEDESTAL	WV51.C02	TDN WV51

CARD READER SCHEDULE - WV51 NTS 2

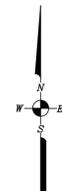
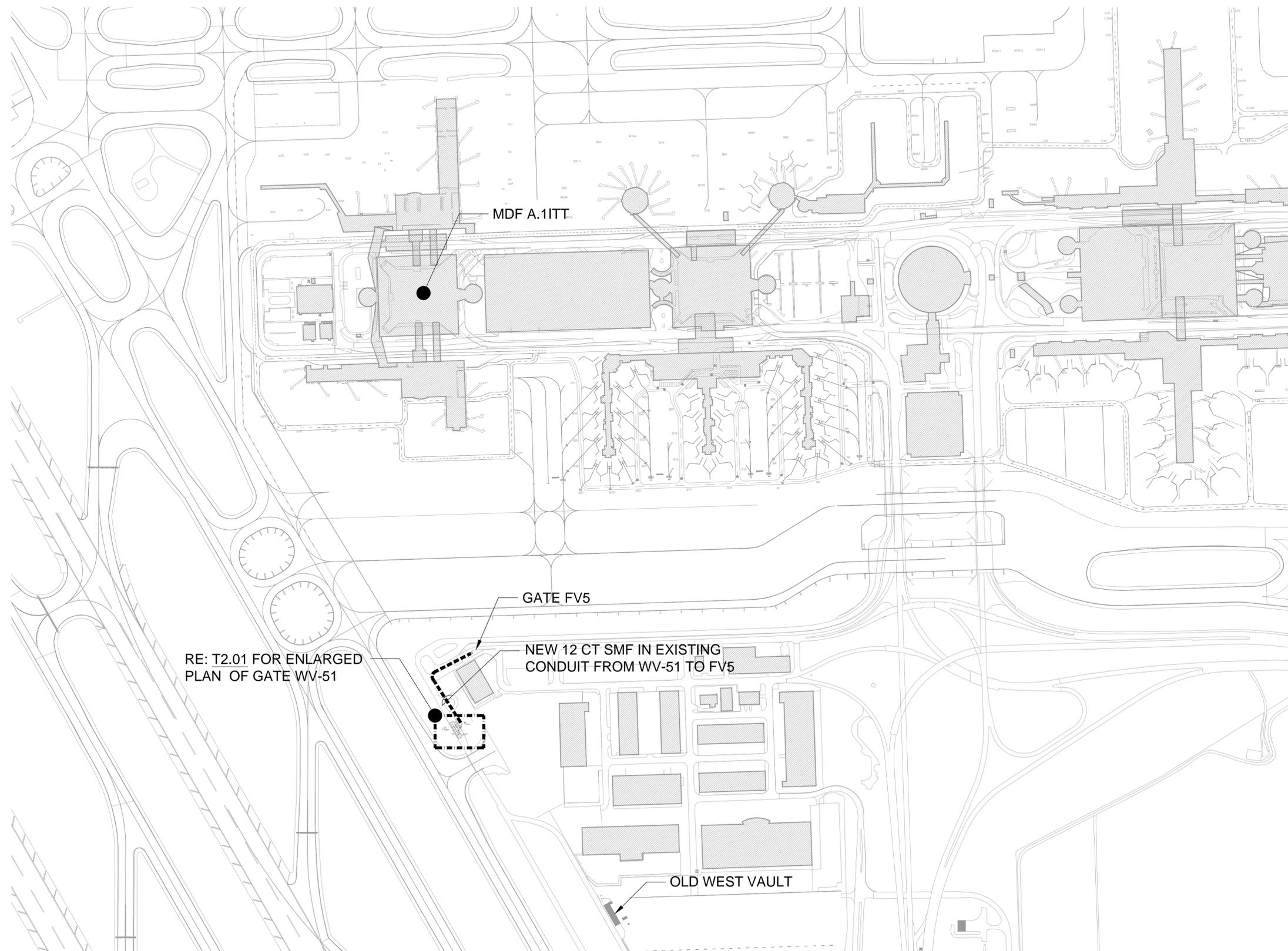
Alarm No.	Sheet No.	Level	Alarm Type	Associated Camera Number	Terminating IDF
WV51.A01	T2.01	SITE	Duress Button	WV51.C01, WV51.C02	TDN WV51
WV51.A02	T3.01	SITE	Tamper Switch	WV51.C02	TDN WV51

ALARM POINT SCHEDULE - WV51 NTS 3

Camera Number	Sheet No.	Level	Camera View	Camera Type	Camera Mounting Type	Terminating Network Switch	Reference Mounting Detail
WV51.C01	T2.01	SITE	Card reader WV51.R01	3	Ceiling	TDN WV51	2A/T3.02
WV51.C02	T2.01	SITE	Card reader WV51.R02	3	Ceiling	TDN WV51	2A/T3.02

CAMERA SCHEDULE - WV51 NTS 4

DRAWN BY: T001, T002, T003, T004, T005, T006, T007, T008, T009, T010, T011, T012, T013, T014, T015, T016, T017, T018, T019, T020, T021, T022, T023, T024, T025, T026, T027, T028, T029, T030, T031, T032, T033, T034, T035, T036, T037, T038, T039, T040, T041, T042, T043, T044, T045, T046, T047, T048, T049, T050, T051, T052, T053, T054, T055, T056, T057, T058, T059, T060, T061, T062, T063, T064, T065, T066, T067, T068, T069, T070, T071, T072, T073, T074, T075, T076, T077, T078, T079, T080, T081, T082, T083, T084, T085, T086, T087, T088, T089, T090, T091, T092, T093, T094, T095, T096, T097, T098, T099, T100, T101, T102, T103, T104, T105, T106, T107, T108, T109, T110, T111, T112, T113, T114, T115, T116, T117, T118, T119, T120, T121, T122, T123, T124, T125, T126, T127, T128, T129, T130, T131, T132, T133, T134, T135, T136, T137, T138, T139, T140, T141, T142, T143, T144, T145, T146, T147, T148, T149, T150, T151, T152, T153, T154, T155, T156, T157, T158, T159, T160, T161, T162, T163, T164, T165, 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T996, T997, T998, T999, T1000.



DATE: 8/11/2014  
 TIME: 10:58 AM  
 USER: jg  
 PROJECT: HOUSTON AIRPORT SYSTEM  
 SHEET: T1.00

SITE PLAN - WV51 | 1/256"=1'-0" | 1

  
**HOUSTON AIRPORT SYSTEM**  
 GEORGE BUSH  
 INTERCONTINENTAL AIRPORT  
 HOUSTON TEXAS

**OWNER**  
 HOUSTON AVIATION DEPT.  
 16930 JOHN F. KENNEDY BLVD.  
 HOUSTON TX, 77032  
 [T] 713 622 1444  
 [F] 713 968 9333

**ARCHITECT**  
  
 3131 BRIARPARK  
 SUITE 200  
 HOUSTON, TX 77042  
 [T] 713 622 1444  
 [F] 713 968 9333

PGAL TBPE REG. NO. F-2742  
 CONSULTANT

  
**PGA**  
 ENGINEERS, INC  
 13201 Northwest Freeway, Ste. 800  
 Houston, TX 77040  
 713.586.5544  
 pgaengineers.com  
 TBPE FIRM #12493

**PROJECT TITLE**  
 HOUSTON AIRPORT SYSTEM  
 GUARD BOOTH  
 REPLACEMENT PROJECT  
 HAS PN 727

**PROJECT NUMBER**  
 R1002447

**PROJECT LOCATION**  
 18401 SKYTRAIN RD.  
 GUARD BOOTH WV-51  
 HOUSTON, TX 77032

**DATE OF ISSUE**  
 AUGUST 11, 2014  
**CONSTRUCTION DOCUMENTS**  
 REVISIONS

HOUSTON AIRPORT SYSTEM PDC DESIGN DIVISION	DATE
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REGISTRATION  
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**SHEET TITLE**  
 SITE PLAN - WV51

**SHEET NUMBER**  
 T1.00

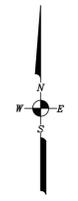
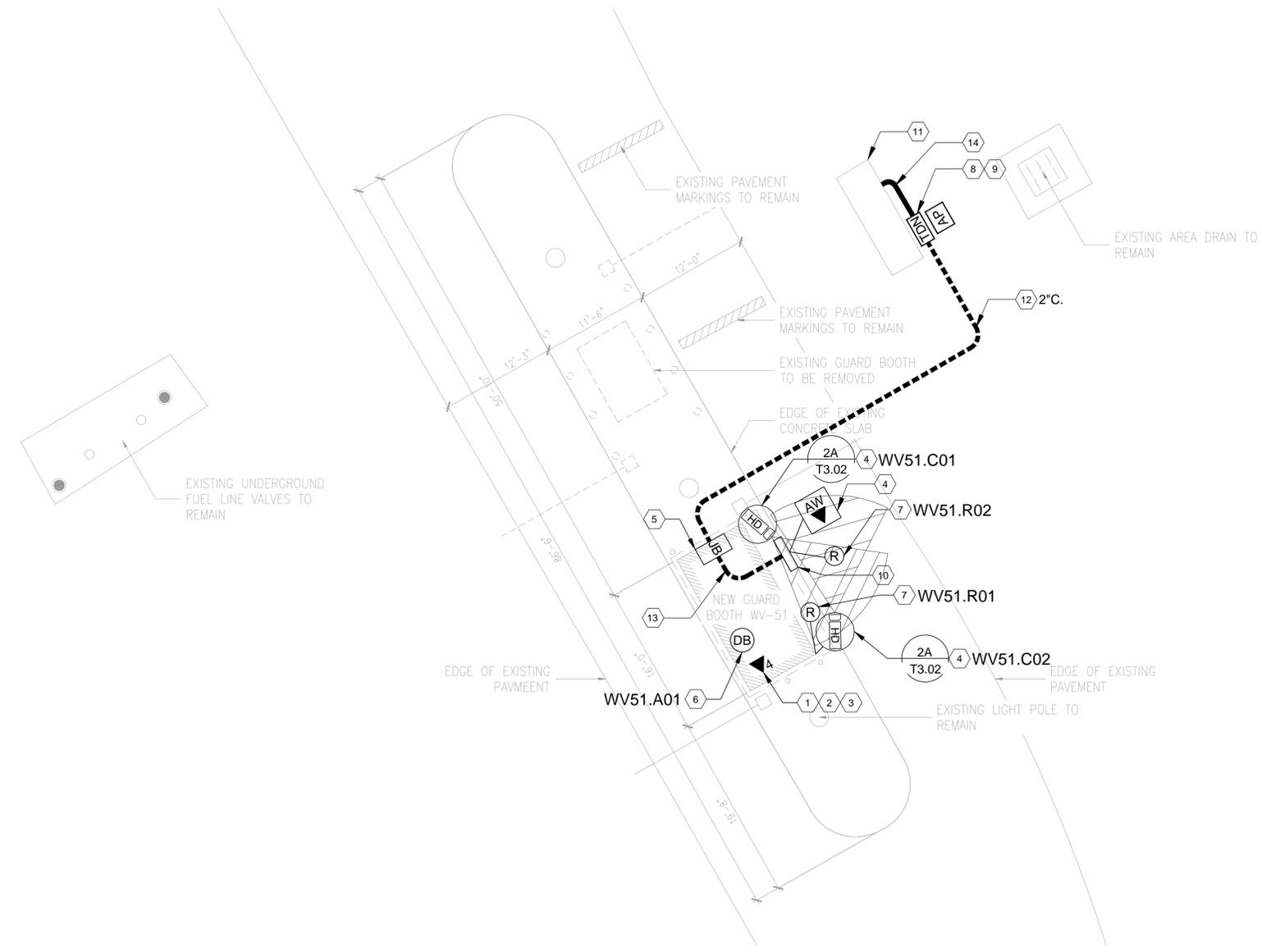
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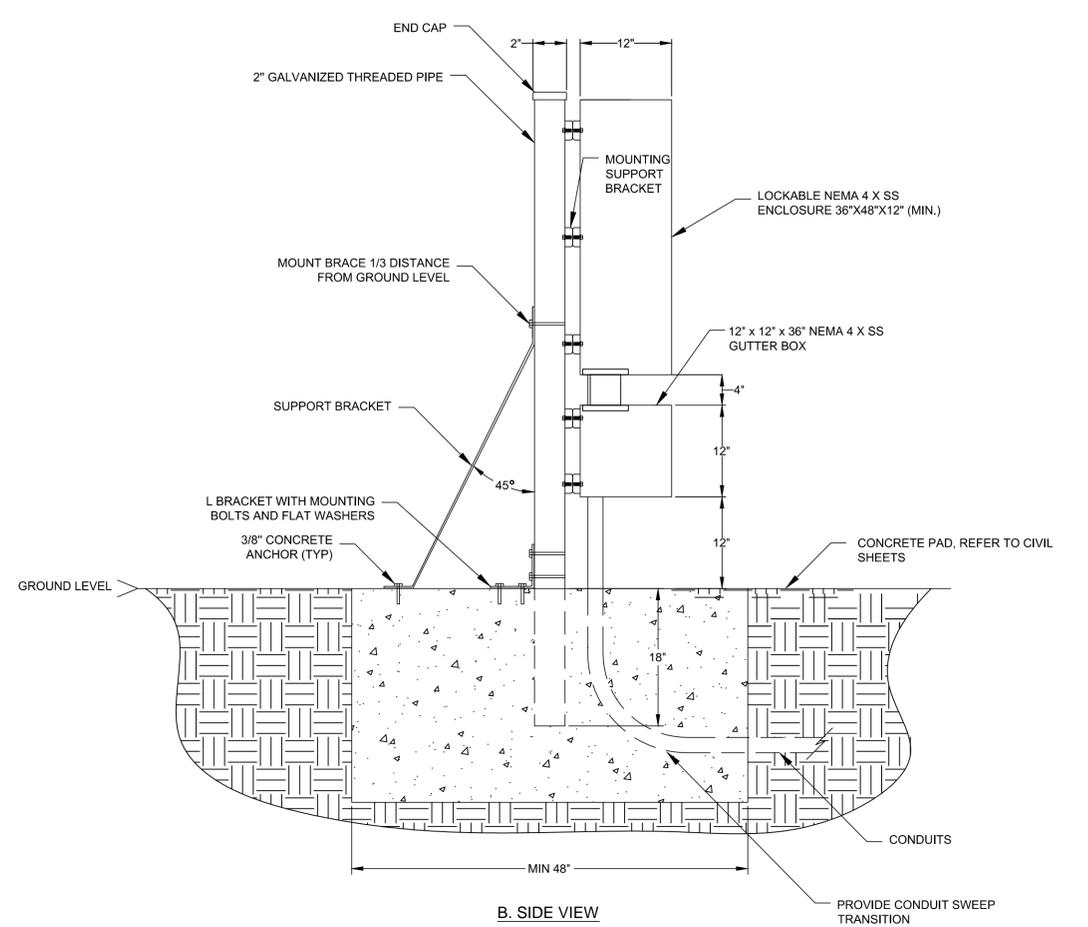
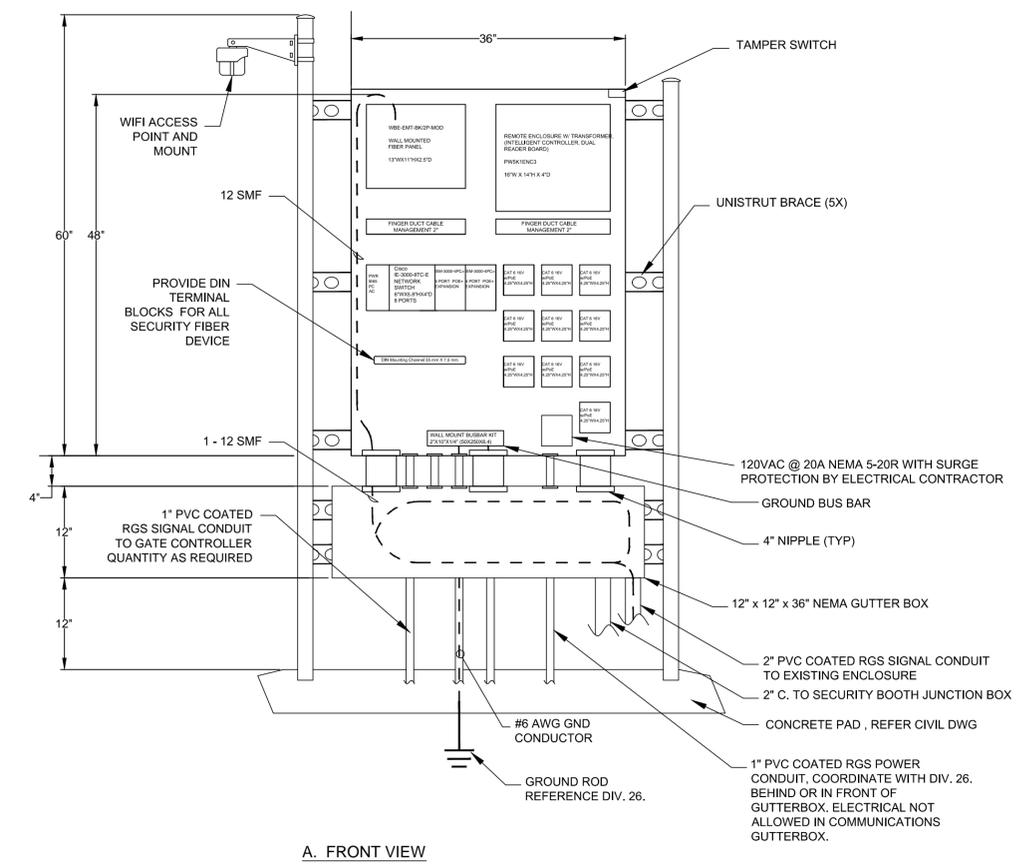
**GENERAL NOTES:**

1. COORDINATE EXACT LOCATION OF SECURITY AND TELECOMMUNICATIONS EQUIPMENT WITH HAS IT.
2. ALL DEVICE CABLE IN 1" CONDUIT TO JUNCTION BOX.

**KEY NOTES:**

- 1 PROVIDE IP TELEPHONE (DESKTOP)
- 2 WALL MOUNT DATA OUTLET (QUAD) AT 15" AFF.
- 3 PROVIDE 4 - CAT6 CABLES IN 1" CONDUIT, EXTEND CABLES AND CONDUITS TO TDN VIA JUNCTION BOX.
- 4 1-CAT6 TO TDN VIA JUNCTION BOX.
- 5 12"x12"x6" JUNCTION BOX INSIDE BOOTH.
- 6 ALARM CABLE TO TDN VIA JUNCTION BOX.
- 7 CARD READER CABLE TO TDN VIA JUNCTION BOX. MOUNT CARD READER AT 42" AFG MIN.
- 8 RE: 1/T3.01 FOR TELECOMMUNICATIONS DISTRIBUTION NODE (TDN) DETAIL.
- 9 NEW TDN FASTEN TO EXISTING RACK. PROVIDE UNISTRUT FRAMING AS REQUIRED.
- 10 NEW CARD READER AND TELEPHONE PEDESTAL. RE: 4/T3.02.
- 11 EXISTING ENCLOSURES.
- 12 2" SCH 80 PVC DIRECT BURIED IN TRENCH 18" BELOW GRADE. BACK FILL, REPAIR AND PATCH TO EXISTING CONDITION.
- 13 1" SCH 80 PVC.
- 14 2" C. RGS.

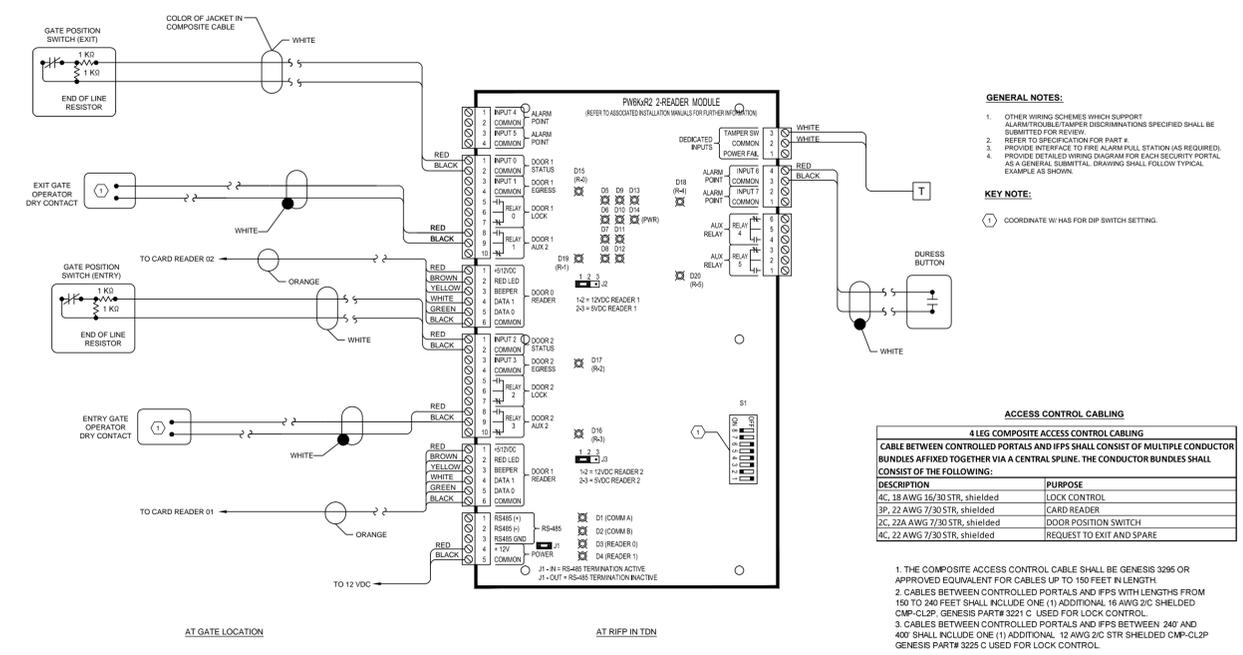




TELECOMMUNICATIONS DISTRIBUTION NODE (TDN) DETAIL AT WV-51 NTS 1

ITEM	TDN AT WV51	SPECIFICATION	MANUFACTURER	PART NUMBER	QTY.	UNIT
1	NEMA 4X STAINLESS STEEL SINGLE-DOOR WALL MOUNT	271100	HUBBELL	SSN4483612A	1	EA
2	OSP D12 SM FIBER	271300	COMMSCOPE	D-012-LN-8W-F12NS	1	EA
3	SYSTEMAX BUILDING ENTRANCE WALL MOUNTED FIBER PANEL	271300	COMMSCOPE	WBE-EMT-BK/2P-MOD	1	EA
4	ROLOSPICE KIT WITH 4 FUSION SPLICE TRAYS	271300	COMMSCOPE	RS-4AF-16SF	1	EA
5	TERASPEED® LC, 12 FIBER, BLUE GANGED ADAPTER, BLACK PANEL	271300	COMMSCOPE	PNL-BK-012-SFA-LC12-BL	1	EA
6	TERASPEED® LC TO LC, FIBER PATCH CORD, 1.6 MM DUPLEX, RISER RATED	271300	COMMSCOPE	FEWLCLC42-F005	2	EA
7	GIGASPEED XL® GS8E SINGLE END SOLID CABLE MODULAR PATCH CORD, SPRING GREEN	271500	COMMSCOPE	GS8E117-S-GN-SFT	AS REQUIRED	EA
8	GIGASPEED XL® GS8E STRANDED CORDAGE MODULAR PATCH CORD, SPRING GREEN	271500	COMMSCOPE	GS8E-GN-SFT	AS REQUIRED	EA
9	INDUSTRIAL ETHERNET 8 PORT SWITCH - HAS	272100	CISCO	Cisco IE-3000-8TC-E	1	EA
10	INDUSTRIAL ETHERNET SWITCH 4 PORT POE - EXPANSION - HAS	272100	CISCO	IEM-3000-4PC	2	EA
11	WALL-MOUNT BUSBAR KIT, 2"W X 0.25"H X 10"L, COPPER	271100	CHATS WORTH	13622-010	1	EA
12	CAT 6 CABLE - OSP ENVIRONMENT	271500	COMMSCOPE	1572A BK 4/24	AS REQUIRED	FT
13	CATEGORY 6 16V W/POE (LAN E/POE PROTECTORS) FOR ECB PHONES AND CAMERAS	271500	COMMSCOPE	CAT 6 16V w/POE	10	PR
14	DIN MOUNTING CHANNEL 35 MM X 7.5 MM SLOTTED					EA
15	22AWG FEED THROUGH TERMINAL BLOCKS FURNISHED AND INSTALLED BY SECURITY CONTRACTOR				AS REQUIRED	EA
16	TAMPER SWITCH FURNISHED AND INSTALLED BY SECURITY CONTRACTOR	271100	HONEYWELL	959PST	1	EA
17	INTELLIGENT CONTROLLER	281300	HONEYWELL	PW5K11C	1	EA
18	DUAL READER MODULE	281300	HONEYWELL	PW6K1R2	1	EA
19	REMOTE ENCLOSURE W/ TRANSFORMER	281300	HONEYWELL	PW5K1ENC3	1	EA
20	DAISY CHAIN CABLE	281300	HONEYWELL	PW5K1DCC	1	EA
21	FINGER DUCT CABLE MANAGEMENT 2"				AS REQUIRED	EA
22	RUGGED WIFI ACCESS POINT AND MOUNT, 802.11AC	272100	ARUBA	AP-275	1	EA

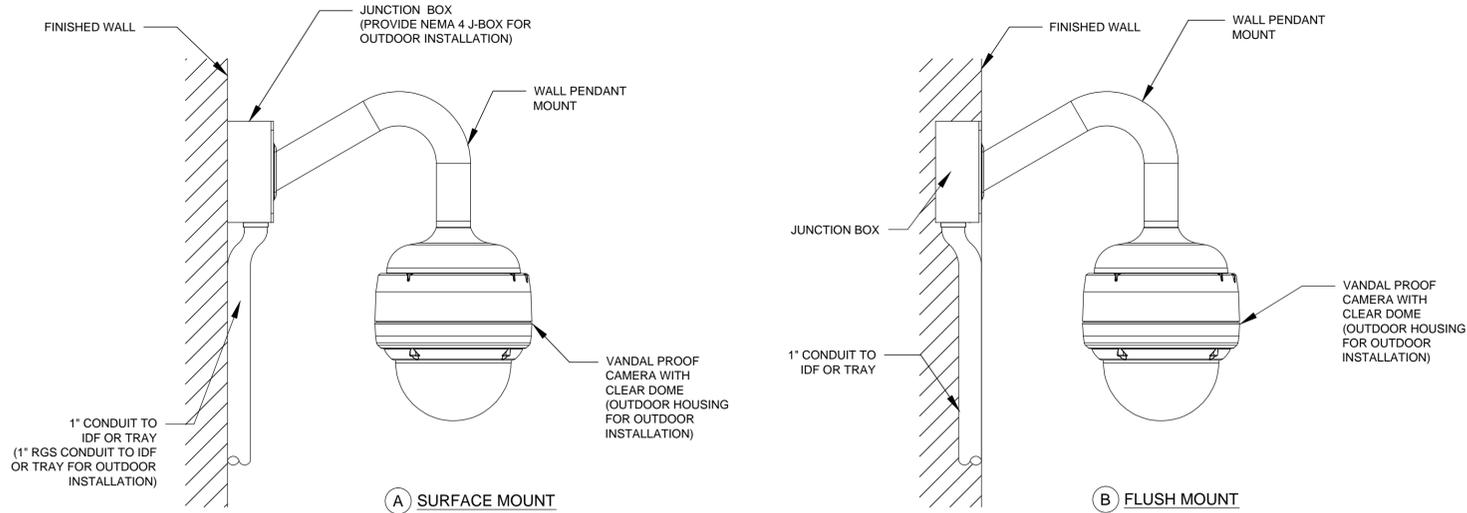
SCHEDULE - TDN AT WV-51 NTS 2



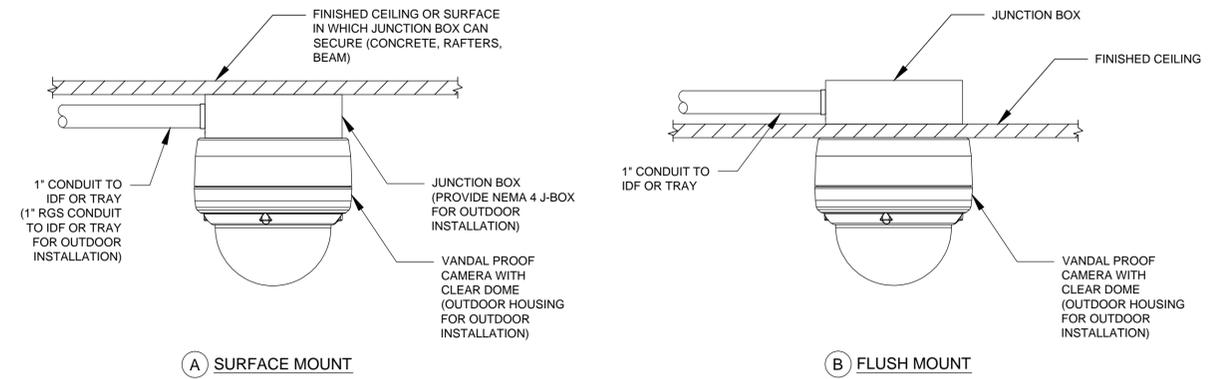
TYPICAL ACCESS CONTROL WIRING DIAGRAM NTS 3

DATE: 8/11/14  
 DRAWN: JLG  
 CHECKED: JLG  
 APPROVED: JLG  
 DATE: 8/11/14

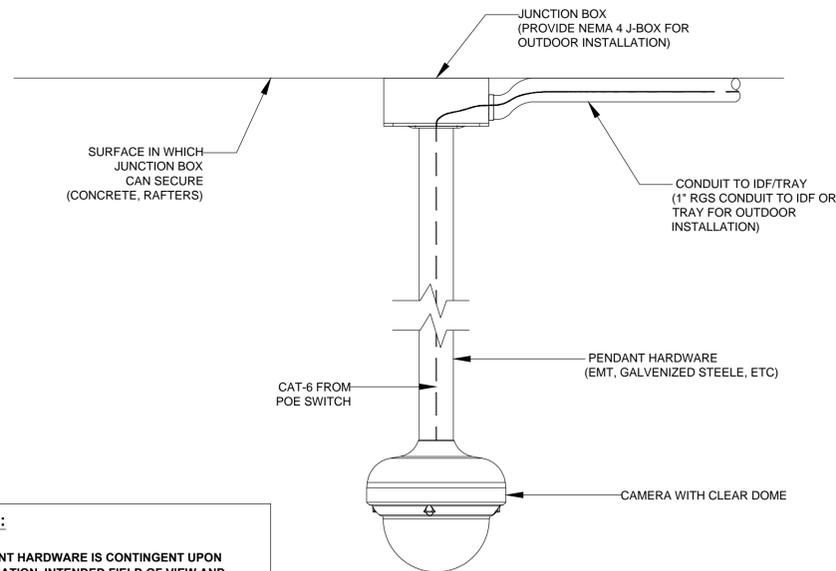
Pierce Goodwin Alexander & Limville  
 |  
 Mexico City  
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 Los Angeles  
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 Dallas  
 |  
 Houston  
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 Las Vegas  
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 New Orleans  
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 New York



TYPICAL CAMERA MOUNTING OPTION 1 - WALL MOUNT FOR HD OR PTZ CAMERA NTS 1

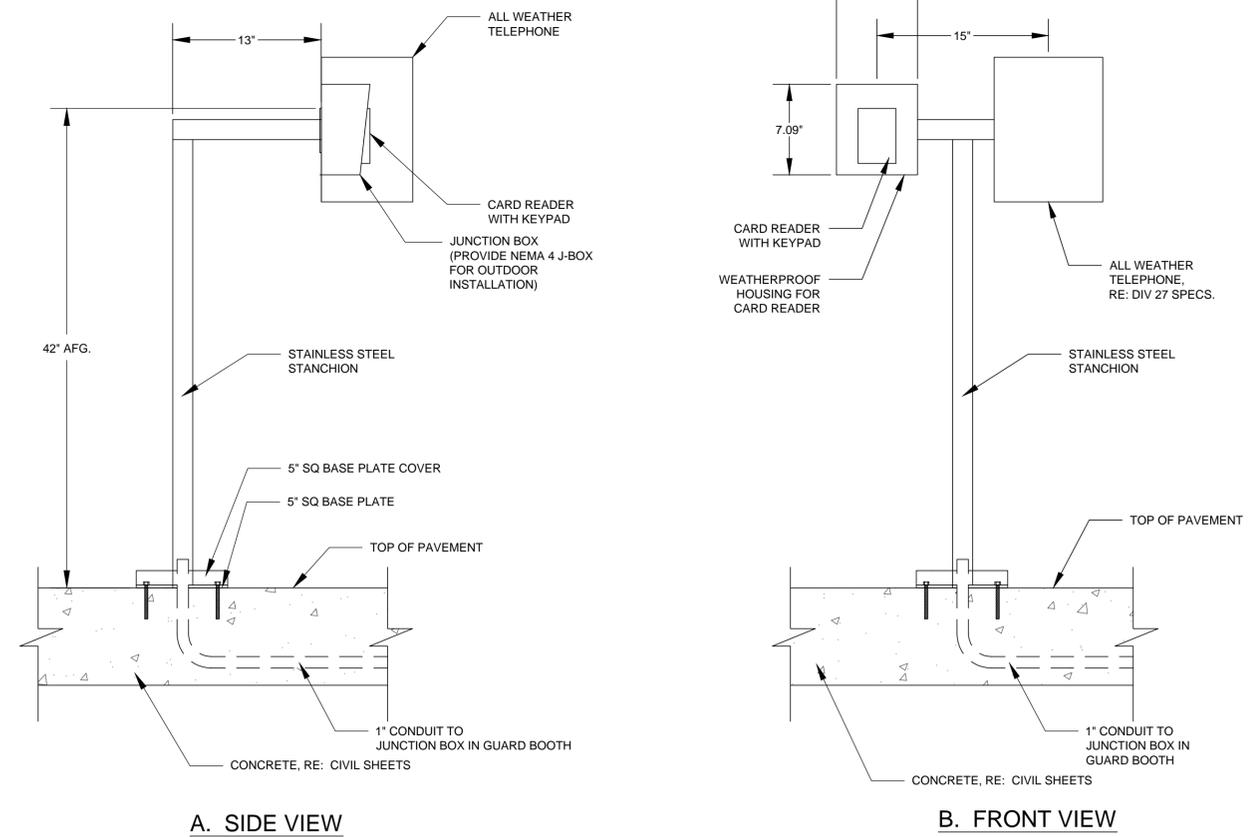


TYPICAL CAMERA MOUNTING OPTION 2 - CEILING MOUNT FOR HD OR PTZ CAMERA NTS 2



**NOTE:**  
PENDANT HARDWARE IS CONTINGENT UPON APPLICATION, INTENDED FIELD OF VIEW AND MECHANICAL SPECIFICATIONS OF THE CAMERA DEVICE.

TYPICAL CAMERA MOUNTING OPTION 3 - PENDANT MOUNT NTS 3

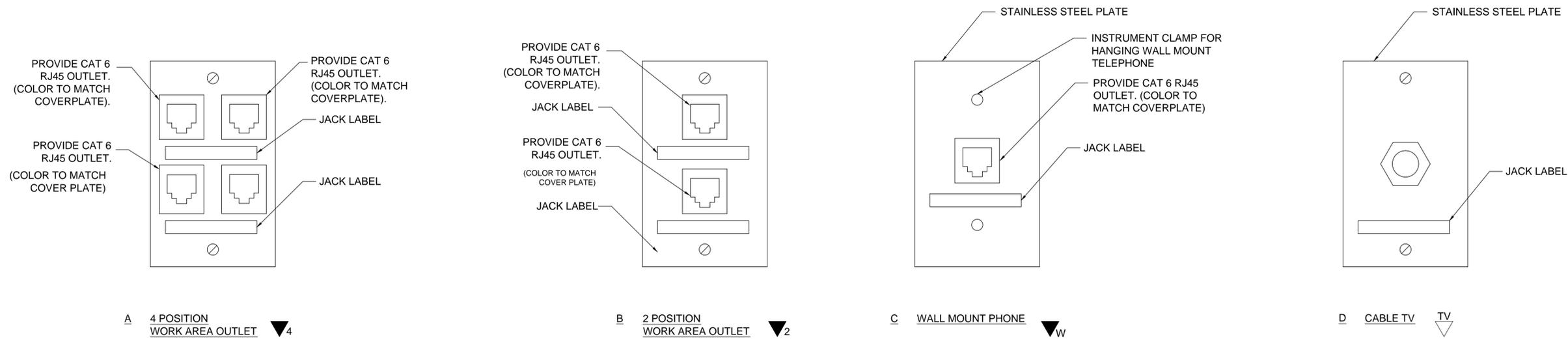


A. SIDE VIEW

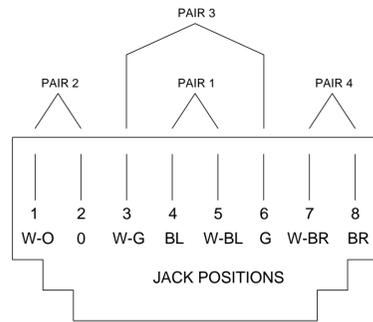
B. FRONT VIEW

CARD READER AND TELEPHONE PEDESTAL NTS 4

DATE: 8/11/14  
 DRAWN BY: JG  
 CHECKED BY: JG  
 DATE: 8/11/14  
 PROJECT: HOUSTON AIRPORT SYSTEM GUARD BOOTH REPLACEMENT PROJECT

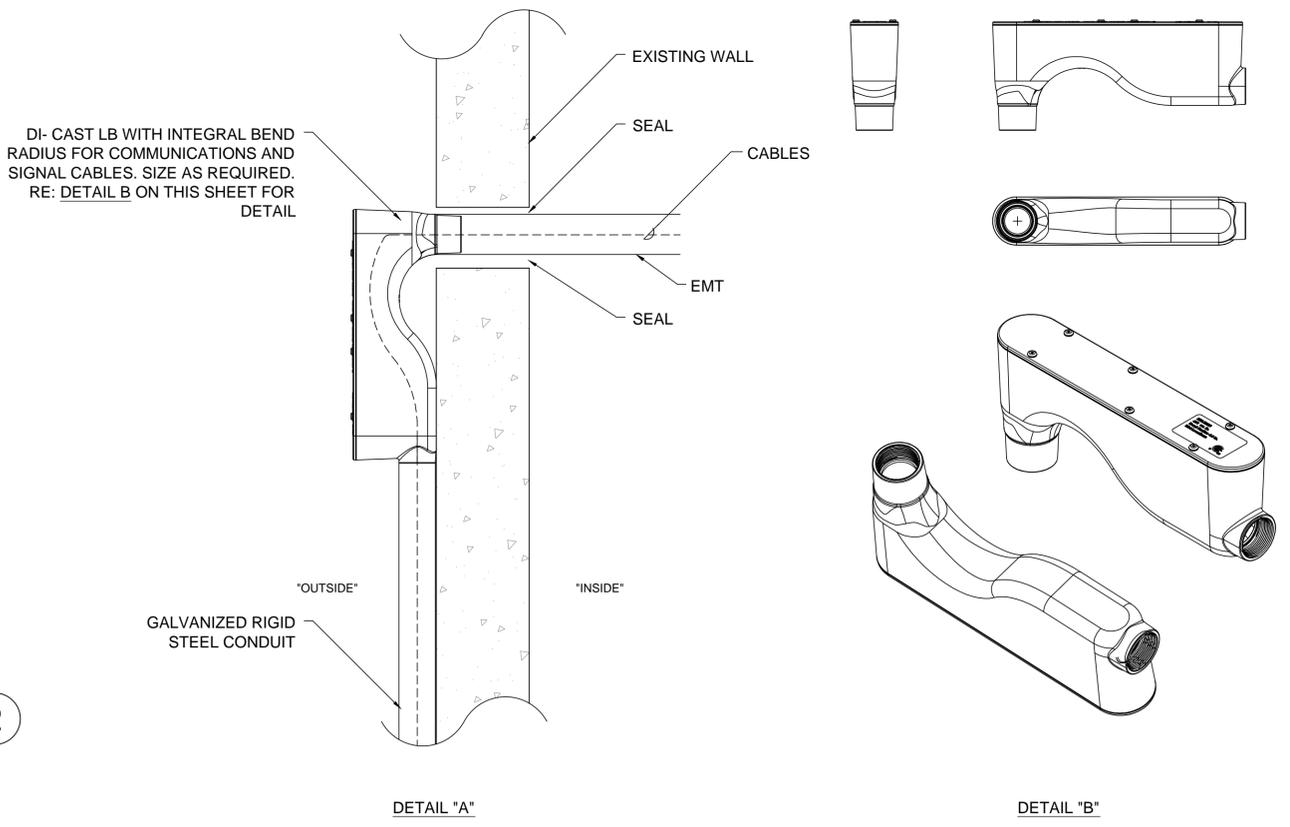


COVERPLATE DETAIL NTS 1



NOTE:  
ALL DEVICES WIRED T568B AS SHOWN.

T568B WIRING DIAGRAM NTS 2



WALL PENETRATIONS NTS 3

DATE: 8/11/14  
 BY: RASH  
 CHECK: RASH  
 PROJECT: HOUSTON AIRPORT SYSTEM  
 SHEET: T3.03