TITLE: CONSTRUCTION BUILDING DRAWINGS FOR INSTITUTO PRE VOCACIONAL e INDUSTRIAL DE PUERTO RICO

OWNER: INST. PRE-VOCACIONAL E INDUSTRIAL DE PR, INC

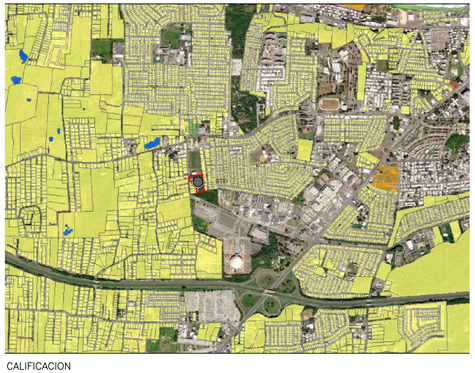
LOCATION: STATE ROAD 492 INT, BO HATO ABAJO SEC BARRANCA ARECIBO PR



AEREAL



TOPO



CALIFICACION



CALIFICACION

Project review

INSTITUTO PREVOCACIONAL e INDUSTRIAL DE PR

TITLE SHEET

CARR PR 492 INT.
BO HATO ABAJO SEC BARRANCA
ARECIBO, PR

CERTIFICATION RULE 2.1.9.2 k

Yo, Ing. Rubén Ortiz Galarza, Licencia #8431, certifico que soy el profesional que diseñó estos planos y las especificaciones complementarias. También certifico que entiendo que dichos planos y especificaciones cumplen con las disposiciones aplicables del Reglamento Conjunto y las disposiciones aplicables de los Reglamentos y Códigos de las Agencias, Juntas Reglamentadoras o Corporaciones Públicas con jurisdicción. Certifico, además, que en la preparación de estos planos y especificaciones se ha cumplido cabalmente con lo dispuesto en la Ley Núm. 14 de 8 de enero de 2004, según enmendada, conocida como la "Ley para la Inversión por la Industria Puertorriqueña" y con la [Ley Núm. 319 de 15 de mayo de 1938, según enmendada; Ley Núm. 96 de 6 de julio de 1978, según enmendada; según aplique. Reconozco que cualquier declaración falsa o falsificación de los hechos que se haya producido sin conocimiento o por negligencia ya sea por mí, mis agentes o empleados, o por otras personas con mi conocimiento, me hacen responsable de cualquier acción judicial y disciplinaria por la OCPe y otras autoridades competentes, incluyendo, pero sin limitarse, la terminación de la participación en los procedimientos de certificación profesional en la OCPe.

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RUBEN ORTIZ GALARZA
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LIC. 8431
PUERTO RICO

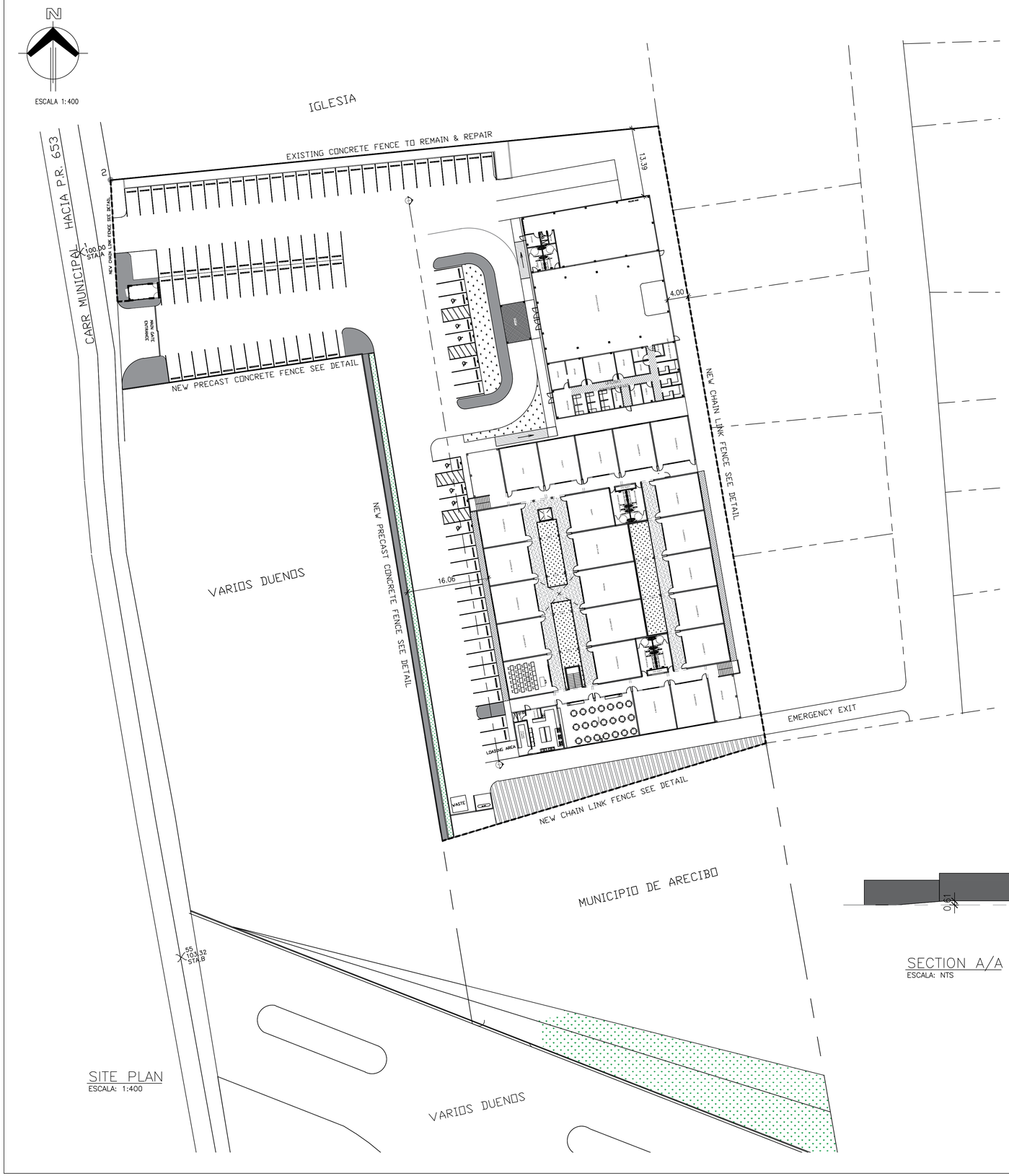
ruben ortiz galarza & assoc.
Consulting, Engineers & Architects
License: 8431
Address: PO Box 1351
Hatillo, P.R. 00659
Tel: 787-898-8188

Project number	780
Date	9/12/2022
Drawn by	JOP
Checked by	ENG. RUBEN ORTIZ GALARZA
	G000
Scale	AS-SHOWN

1 OF ####

FILE: E:\TROPICAL READY MIX\HC - PROJECTS\2021\(21T1)SHELL\SITE PLAN.DWG

SHEET REV. JUNE 1, 2012



SITE PLAN
ESCALA: 1:400



SECTION A/A
ESCALA: NTS

Project review

INSTITUTO PREVOCACIONAL e INDUSTRIAL DE PR

SITE PLAN

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Address: PO Box 1351 Hatillo, P.R. 00659
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Project number	780
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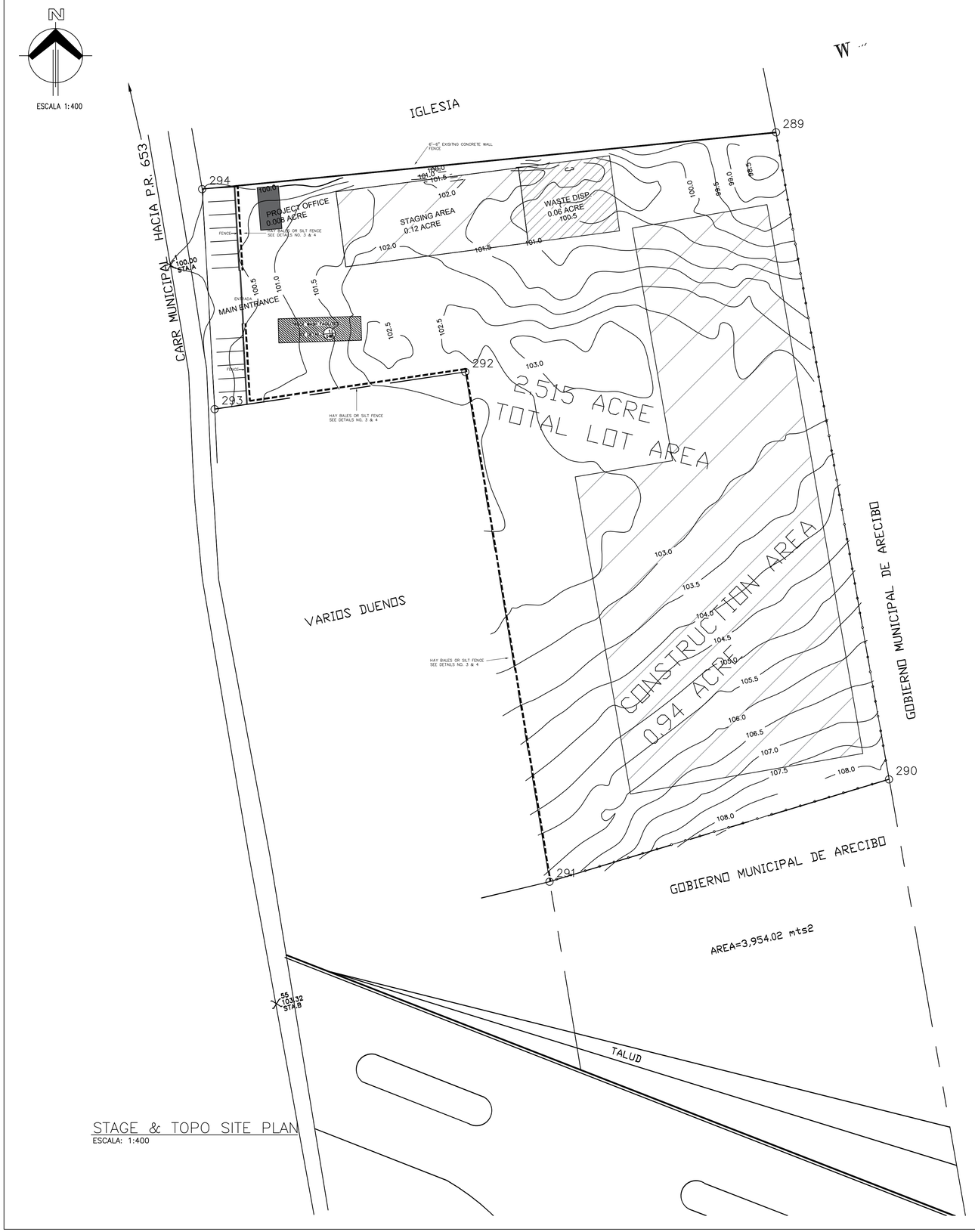
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Scale	AS-SHOWN

2 OF ####

FILE: E:\[TROPICAL READY MIX]\RC - PROJECTS\2021\[C21] [SHELL]\SITE PLAN.DWG

SHEET REV. JUNE 1, 2012



STAGE & TOPO SITE PLAN
ESCALA: 1:400

SURVEY DATA
SOLAR

POINT	LINE	(Y) NORTH	(X) EAST	DISTANCE	BEARINGS	DESCRIPTION
289	---	269540.0020	166401.7444	---	---	METAL ROD
290	289-290	269418.7855	166422.9167	123.05	S 9°54'27" E	METAL ROD
291	290-291	269399.6002	166359.3160	66.43	S 73°12'50" W	METAL ROD
292	291-292	269495.1143	166343.5448	96.81	N 9°22'34" W	METAL ROD
293	292-293	269488.1622	166296.5768	47.48	S 81°34'49" W	METAL ROD
294	293-294	269529.3787	166294.2447	41.28	N 3°14'19" W	METAL ROD
289	294-289	269540.0020	166401.7444	108.02	N 84°21'23" E	METAL ROD

AREA = 10,178.2255 sq mt. =0= 2.5896cdas.

Project review

INSTITUTO PREVOCACIONAL e INDUSTRIAL DE PR
SITE PLAN
CARR PR 492 INT.
BO HATO ABAJO SEC BARRANCA
ARECIBO, PR

CERTIFICATION RULE 2.1.9.2 k

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Date 9/12/2022
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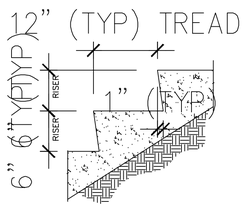
C101

Scale AS-SHOWN

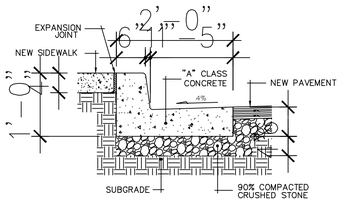
3 OF ####

SHEET REV: JUNE 1, 2012

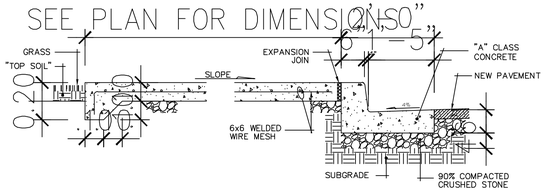
FILE: E:\TROPICAL READY MIX\HC - PROJECTS\2021\C171\SHELL\SITE PLANNING



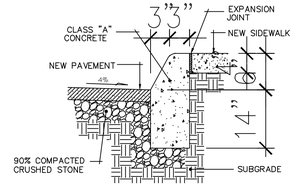
CONCRETE STAIR DET. (1 C5.0)
SCALE: N.T.S.



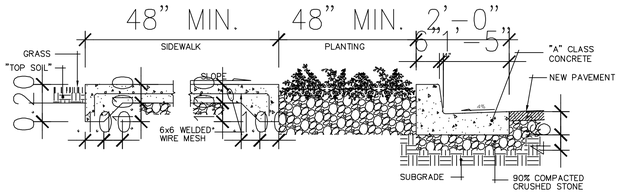
CONCRETE CURB & GUTTER TYPE 2 (2 C5.0)
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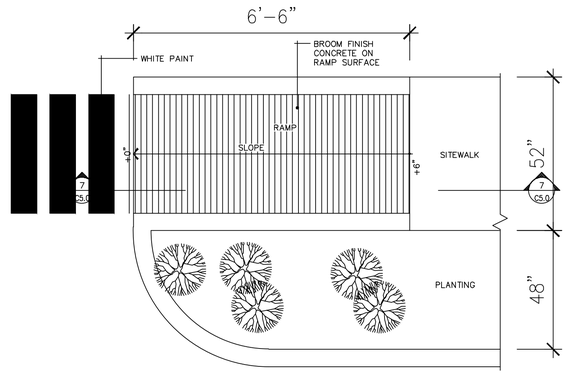
CONCRETE SIDEWALK & CURB DETAIL (3 C5.0)
SCALE: N.T.S.



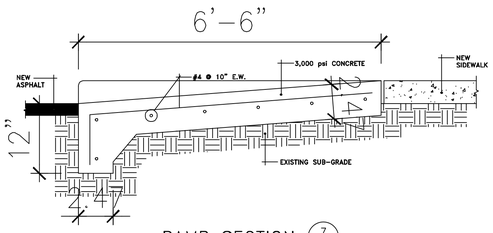
CONCRETE CURB TYPE 9 (4 C5.0)
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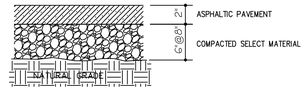
CONCRETE SIDEWALK & CURB DETAIL (5 C5.0)
SCALE: N.T.S.



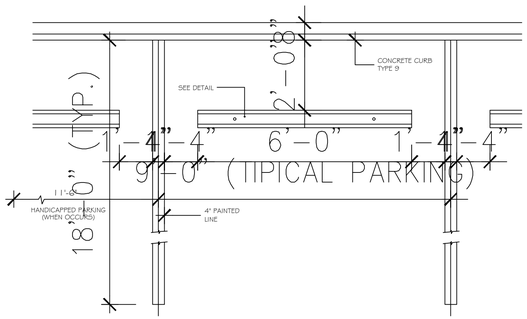
CONCRETE SIDEWALK RAMP DETAIL (6 C5.0)
SCALE: N.T.S.



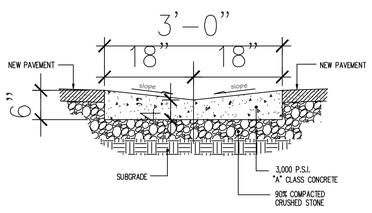
RAMP SECTION (7 C5.0)
SCALE: 1"=1'-0"



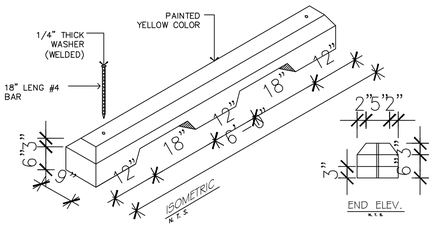
PARKING & ROAD TYP. PAVEMENT SECTION DETAIL
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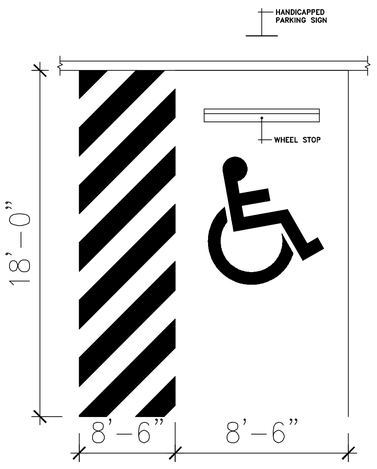
PARKING TYPICAL DETAIL
SCALE: N.T.S.



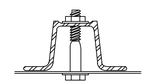
CONCRETE CROSS GUTTER TYPE 12 MK'D (8 C5.0)
SCALE: N.T.S.



PRECAST CONCRETE WHEEL STOP DETAIL
SCALE: 1:200

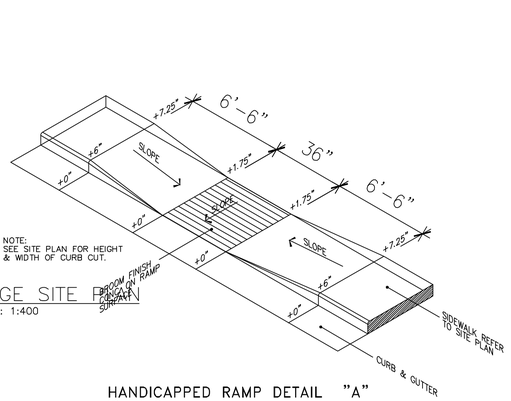


H.C. PARKING ENLARGED PLAN
SCALE: 1/4"=1'-0"



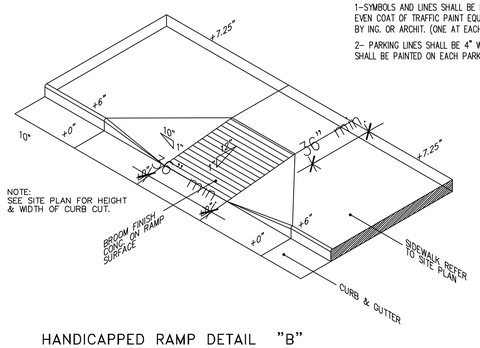
SIGN POST-4.00 WT/FT=3.80 #-4.20#
MIN. SEC. MOD. X-X 0.60 IN^3

HOT-ROLLED RAIL CARBON STEEL ASTM DESIGNATION A-499 HOT DIPRED GALV. ASTM A-123 DESIGNATION.



STAGE SITE PLAN
ESCALA: 1:400

HANDICAPPED RAMP DETAIL "A"
SCALE: N.T.S.

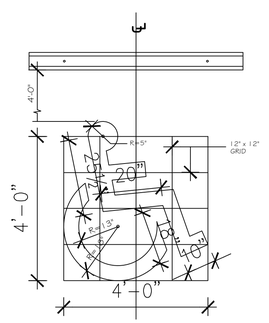


HANDICAPPED RAMP DETAIL "B"
SCALE: N.T.S.

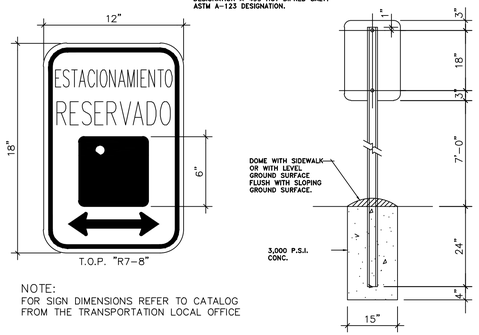
NOTES:

1-SYMBOLS AND LINES SHALL BE PAINTED BLUE WITH FULL EVEN COAT OF TRAFFIC PAINT EQUAL OR SIMILAR AS APPROVED BY ING. OR ARCHIT. (ONE AT EACH OF PARKING)

2- PARKING LINES SHALL BE 4" WIDE, SYMBOL SHOWN ABOVE SHALL BE PAINTED ON EACH PARKING FOR THE HANDICAPPED.



HANDICAPPED SING TYP. DETAIL
SCALE: N.T.S.



NOTE:
FOR SIGN DIMENSIONS REFER TO CATALOG FROM THE TRANSPORTATION LOCAL OFFICE

HANDICAPPED PARKING SIGN DETAIL
N.T.S.

Project review

INSTITUTO PREVOCACIONAL e INDUSTRIAL DE PR

SITE DETAILS

CARR PR 492 INT. i
BO HATO ABAJO SEC BARRANCA
ARECIBO, PR

CERTIFICATION RULE 2.1.9.2 k

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Tel: 787-898-8188

Project number	780
Date	9/12/2022
Drawn by	JOP
Checked by	ENG. RUBEN ORTIZ GALARZA

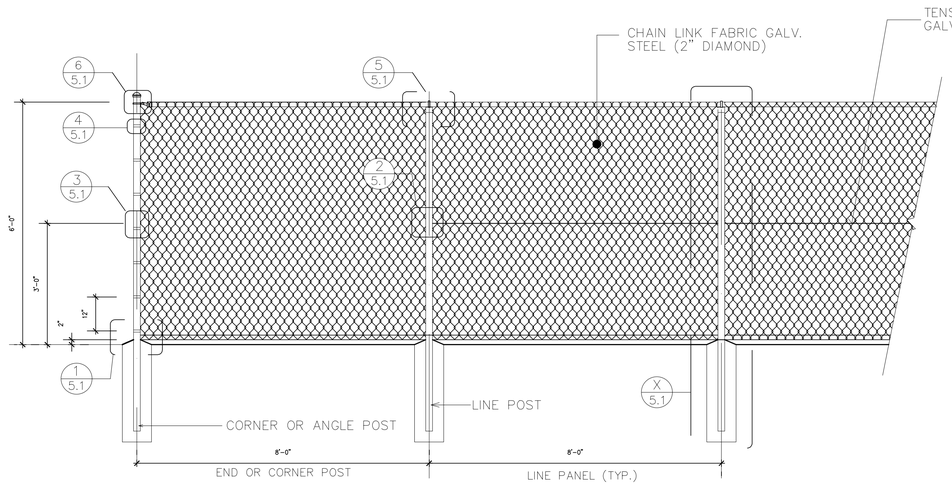
C102

Scale	AS-SHOWN

4 OF ####

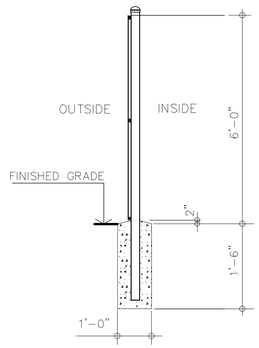
SHEET REV: JUNE 1, 2012

FILE: E:\[TROPICAL READY MIX]VC - PROJECTS\2021\CITI\SHELL\SITE PLANS.DWG



TYPICAL CHAIN LINK FENCE PANEL DETAIL

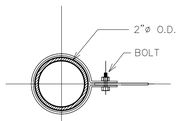
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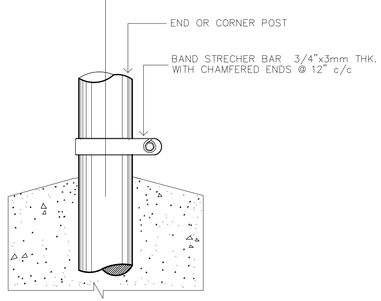
DETAIL X 5.1
SCALE: N.T.S.

GENERAL NOTES:

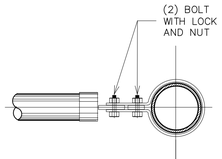
1. ALL DIMENSION HAS STATED AND PIPES DIAMETER ARE CONFORMING TO AMERICAN STANDARD.
2. IF REQUIRED BEFORE THE INSTALATION OF FENCES, ROUGH GRADING OF THE SURFACE ALONG THE FENCE LINE SHALL DONE UP TO 2.5 METERS ON BOTH SIDES OF THE FENCE IN ORDER TO HAVE 5CM. CLEARANCE BETWEEN THE NATURAL GRADE AND THE BOTTOM OF FENCING.
3. DEPTH OF FOUNDATION SHOWN ON DRAWING IS FROM THE FINISHED GRADED SURFACE.
4. CONCRETE FOR THE FOUNDATIONS SHALL HAVE MINIMUM 28-DAYS CYLINDER COMPRESSIVE STRENGTH OF NOT LESS THAN 2,500 PSI
5. SULPHATE RESISTING CEMENT SHAL BE FOR ALL CONCRETE WORKS.
6. LINE POSTS SHALL NOT BE SPACED MORE THAN 10 FT.
7. ALL POSTS SHALL BE GALVANIZED.
8. CHAIN LINK FABRIC SHALL BE MADE FROM STEEL GALVANIZED COATING.
9. FABRIC SHALL HAVE TOP AND BOTTOM SELVAGE TWISTED AND BARBED AND SHALL BE FASTENED TO THE LINE POST AND TENSION WIRE WITH 3.5mm O GALVANIZED STEEL WIRE AT 40 CM. INTERVAL.
10. TENSION WIRE SHALL BE GALVANIZED CARBON STEEL WIRE.
11. BARBED WIRE SHALL BE TWO STRANDS OF GALVANIZED AND TWISTED CARBON STEEL WIRE.
12. ALL OTHER ACCESSORIES SHALL BE GALVANIZED STEEL AS PER ASTM A153.
13. FOR FENCE LOCATION, SEE DWG.



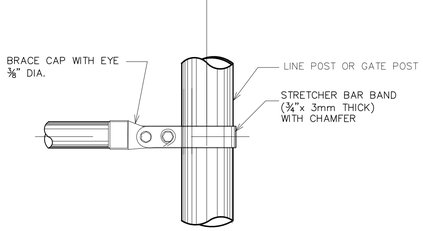
PLAN



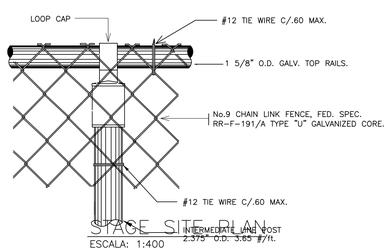
DETAIL 1 / 5.1
SCALE: N.T.S.



PLAN

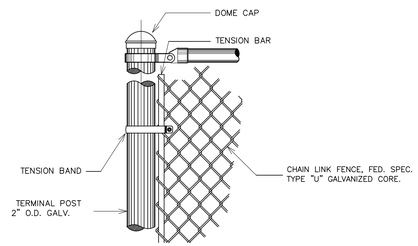


DETAIL 2 / 5.1
SCALE: N.T.S.

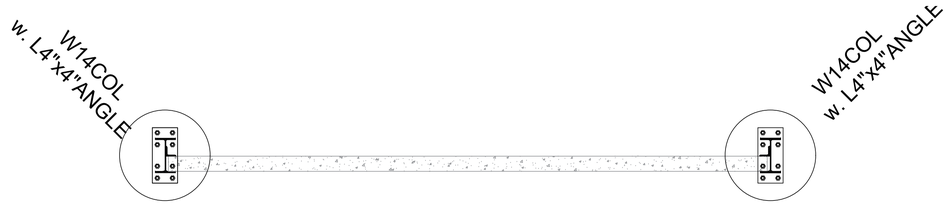


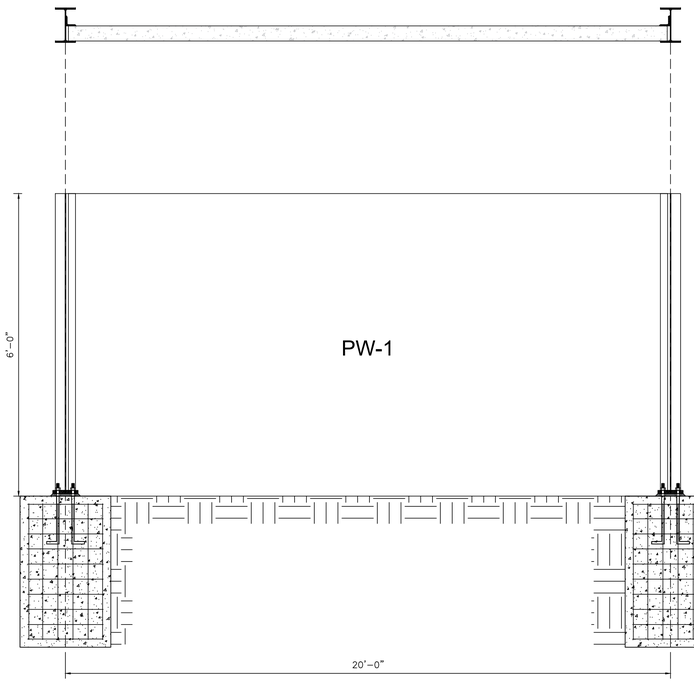
SPACE SITE PLAN
ESCALA: 1:400

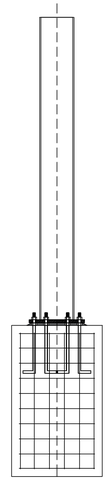
DETAIL 5 / 5.1
SCALE: N.T.S.



DETAIL 6 / 5.1
SCALE: N.T.S.







TYPICAL PRECAST WALL CONCRETE FENCE PANEL DETAIL

N.T.S.

Project review

INSTITUTO PREVOCACIONAL e INDUSTRIAL DE PR

SITE DETAILS ii

CARR PR 492 INT.
BO HATO ABAJO SEC BARRANCA
ARECIBO, PR

CERTIFICATION RULE 2.1.9.2 k

Yo, Ing. Rubén Ortiz Galarza, Licencia #8431, certifico que soy el profesional que diseñó estos planos y las especificaciones complementarias. También certifico que entiendo que dichos planos y especificaciones cumplen con las disposiciones aplicables del Reglamento Conjunto y las disposiciones aplicables de los Reglamentos y Códigos de las Agencias, Juntas Reglamentadoras o Corporaciones Públicas con jurisdicción. Certifico, además, que en la preparación de estos planos y especificaciones se ha cumplido cabalmente con lo dispuesto en la Ley Núm. 14 de 8 de enero de 2004, según enmendada, conocida como la "Ley para la Inversión por la Industria Puertorriqueña" y con la [Ley Núm. 319 de 15 de mayo de 1938, según enmendada; Ley Núm. 96 de 6 de julio de 1978, según enmendada; según aplique. Reconozco que cualquier declaración falsa o falsificación de los hechos que se haya producido sin conocimiento o por negligencia ya sea por mí, mis agentes o empleados, o por otras personas con mi conocimiento, me hacen responsable de cualquier acción judicial y disciplinaria por la OGPe y otras autoridades competentes, incluyendo, pero sin limitarse, la terminación de la participación en los procedimientos de certificación profesional en la OGPe.

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Project number	780
Date	9/12/2022
Drawn by	JOP
Checked by	ENG. RUBEN ORTIZ GALARZA

C103

Scale AS-SHOWN

5 OF ####

SHEET REV. JUNE 1, 2012

FILE: E:\TROPICAL READY MIX\HC - PROJECTS\2021\(21T)\SHELL\SITE PLANDWG

ABBREVIATIONS

∠	ANGLE	F.O	FACE OF	O.A	OVERALL
⊏	CHANNEL	F.O.C	FACE OF CONCRETE	O.S.A	OUTSIDE SUPPLY AIR
℄	CENTER LINE	F.O.F	FACE OF FINISH	PROJ	PROJECTION
ø	DIAMETER	F.O.M	FACE OF MASONRY	PVC	POLY VINYL CHLORIDE
ℙ	PLATE	F.O.S	FACE OF STUDS	PAR	PARALLEL
⊥	PERPENDICULAR	F.H	FLAT HEAD/FIRE HYDRANT	PART	PARTIAL
ABV	ABOVE	FIN	FINISH, FINISHED	PERF	PERFORATE, PERFORATED
A.F.F	ABOVE FINISHED FLOOR	F.F.E	FINISH FLOOR ELEVATION	P LAM	PLASTIC LAMINATE
A.S.C	ABOVE SUSPENDED CEILING	F.F.L	FINISH FLOOR LINE	PL	PLATE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	F.A	FIRE ALARM	PLUM	PLUMBING
		F.R	FIRE–RATED	PT	POINT
		F.E.C	FIRE EXTINGUISHER CABINET	PROP	PROPERTY
ACC	ACCESS	F.H.C	FIRE HOSE CABINET	P.S	POINT OF SWITCH
A.P	ACCESS PANEL	F.H.V	FIRE HOSE VALVE	P.L	PROPERTY LINE
AC	ACOUSTIC, ACOUSTICAL	FLG	FLASHING	PC	PRECAST
ADD'L	ADDITIONAL	F.C	FLEXIBLE CONNECTION	PLATF	PLATFORM
ADH	ADHESIVE	FLR, FL	FLOOR, FLOORING	Q.T	QUARRY TILE
ADJ	ADJUSTABLE	FL CO	FLOOR CLEANOUT		
AGG	AGGREGATE	F.D	FLOOR DRAIN	RT	RIGHT
ALT	ALTERNATE	FLUOR	FLUORESCENT	RAD, R	RADIUS
AL, ALUM	ALUMINUM	F.A.I	FRESH AIR INTAKE	REF	REFERENCE
A.B	ANCHOR BOLT	F.S	FLOOR SINK	REFL	REFLECT, REFLECTED, REFLECTIVE, REFLECTOR
ANCH	ANCHOR	F.B.O	FURNISHED BY OTHERS		
ANOD	ANODIZED			RES	RESILIENT
ARCH	ARCHITECT, ARCHITECTURAL	GALV	GALVANIZED	REINF	REINFORCING
A/E	ARCHITECT/ENGINEER	G.S.M	GALVANIZED SHEET METAL	REV	REVISION, REVISIONS, REVISED, REVERSE
AD	AREA DRAIN	GL	GLASS, GLAZING		
AUTO	AUTOMATIC	G.B	GRAB BAR	R.O.W	RIGHT–OF–WAY
AUX	AUXILIARY	GRN	GRANITE	R	RISER, RADIUS
APPROX	APPROXIMATE	GYP	GYPSUM	R.D	ROOF DRAIN
		GEN	GENERAL	RFG	ROOFING
B.P	BACK PLASTER/PLASTERED	GRD	GROUND	RM	ROOM
BM	BEAM	G.F.R.C	GLASS FIBER REINFORCED CONCRETE	R.O	ROUGH OPENING
BEL	BELOW			R.B	RUBBER BASE
BTW	BETWEEN			REQ'D	REQUIRED
BVL	BEVELED	HH	HANDHOLE	RD	ROAD
BLKG	BLOCKING	HDW	HARDWARE		
BD	BOARD	HDR	HEADER		
B.R.S	BLAST RELIEF SHAFT	H.D	HEAVY DUTY		
B.S	BOTH SIDES	HT	HEIGHT		
BOT, BTM	BOTTOM	HX	HEXAGONAL	SECT	SECTION
BRZ	BRONZE	H.M	HOLLOW METAL	SHT	SHEET
BLDG	BUILDING	HORIZ	HORIZONTAL	SIM	SIMILAR
B.M	BENCHMARK	H.B	HOSE BIBB	S	SOUTH
BLVD, BL	BOULEVARD	H.W.P	HIGH WORKING POINT	SPEC	SPECIFICATION, SPECIFICATIONS
		H.P	HIGH POINT	SQ	SQUARE
		H.D.P.M	HIGH DENSITY POLYETHELENE MEMBRANE	STD	STANDARD
				STA	STATION (ALIGNMENT)
CAB	CABINET			STL	STEEL
C.I	CAST IRON			STRUCT	STRUCTURAL
C.I.P	CAST–IN–PLACE (CONCRETE)	I.D	INSIDE DIAMETER	SYM	SYMMETRY, SYMMETRICAL
C.B	CATCH BASIN	INSUL	INSULATE, INSULATED, INSULATION	S.S	STAINLESS STEEL
CLG	CEILING			SCHED	SCHEDULE
CHAM	CHAMFER	INT	INTERIOR	SPKR	SPEAKER
CLR	CLEAR, CLEARANCE	INV	INVERT		
C.C.T.V	CLOSED CIRCUIT T.V. CAMERA	INCL	INCLUDING		
COL	COLUMN				
COMPO	COMPOSITION	J.C	JANITOR'S CLOSET	T.D.D	TELECOMMUNICATION DEVICE FOR THE DEAF
CONC	CONCRETE	JT	JOINT		
C.M.U	CONCRETE MASONRY UNIT	J.F	JOINT FILLER	TEL	TELEPHONE
C.O	CONVENIENCE OUTLET, CLEAN OUT	kg	KILOGRAM	TV	TELEVISION
		kPa	KILO PASCAL	T.V.M	TICKET VENDING MACHINE
CONST	CONSTRUCTION	K.O.P	KNOCKOUT PANEL	THK	THICK, THICKNESS
CONT	CONTINUE, CONTINUOUS			T.O.S	TOP OF STEEL
C.J	CONTROL JOINT	LVL	LEVEL	T.O.C	TOP OF CONCRETE CURB
CPR	COPPER	LTG	LIGHTING	T.O.W	TOP OF WALL
C.G	CORNER GUARD	LAM	LAMINATE, LAMINATED	T	TREAD
C.L	CHAIN LINK	LAV	LAVATORY	TYP	TYPICAL
C.R	CARD READER	LT	LIGHT	T.O.P	TOP OF PARAPET
CEM	CEMENT	LW	LIGHTWEIGHT	T.O.A.	TOP OF ARCADE
CER	CERAMIC	L.P	LOW POINT		& COMMUNICATIONS
		L.W.P	LOWER WORKING POINT	T.D	TRENCH DRAIN
		L	LENGTH		
		LIN	LINEAR		
		LONGIT	LONGITUDINAL	UR	URINAL
				U.N.O	UNLESS NOTED OTHERWISE
DEG OR °	DEGREE			U.W.P	UPPER WORKING POINT
DET	DETAIL	m	METERS		
DIAG	DIAGONAL	m²	SQUARE METERS		
DIA	DIAMETER	mm	MILLIMETERS	V.C.T	VINYL COMPOSITION TILE
DIM	DIMENSION	MH	MANHOLE	VENT	VENTILATION
DIV	DIVISION	MFR	MANUFACTURER	VERT	VERTICAL
DR	DOOR	M.O	MASONRY OPENING	VEST	VESTIBULE
DTA	DOVETAIL ANCHOR	MACH	MACHINE	V.M.S	VARIABLE MESSAGE SIGN
DTS	DOVETAIL ANCHOR SLOT	MAX	MAXIMUM		
DWG	DRAWING	MECH	MECHANIC, MECHANICAL	W.S.P	WET STAND PIPE
D.F	DRINKING FOUNTAIN	MED	MEDIUM	W.T	WATER TABLE
DN	DOWN	MTL, MET	METAL	WP	WATERPROOFING
D.I	DRAIN INLET	MIN	MINIMUM	W.W.M	WELDED WIRE MESH
		MIR	MIRROR	W.W.F	WELDED WIRE FABRIC
EA	EACH	MISC	MISCELLANEOUS	W	WEST, WIDTH
E	EAST	MTD	MOUNT, MOUNTED	W/O	WITHOUT
EJECT	EJECTOR	MTG	MOUNTING	WD	WOOD
ELECT	ELECTRIC, ELECTRICAL	MEZZ	MEZZANINE	W.P	WORKING POINT
EL	ELEVATION			W/	WITH
ELEV	ELEVATOR	N.R.C	NOISE REDUCTION COEFFICIENT		
EMERG	EMERGENCY	NOM	NOMINAL		
E.M.P	EMERGENCY MANAGEMENT PANEL	N/R	NON–RATED		
		N/A	NOT APPLICABLE		
		NO., #	NUMBER		
EQ	EQUAL	N	NORTH		
EQUIP	EQUIPMENT	N.I.C	NOT IN CONTRACT		
ESC	ESCALATOR	N.T.S	NOT TO SCALE		
E TEL	EMERGENCY TELEPHONE				
E.T.S	EMERGENCY TRIP SWITCH/STATION	O/	OVER		
		O.A.I	OUTSIDE AIR INTAKE		
EXH	EXHAUST	OBS	OBSCURE		
EXIST (E)	EXISTING	O.C	ON CENTER, CENTERS		
		OP	OPAQUE		
E.B	EXPANSION BOLT	OPNG	OPENING		
EXP	EXPOSED, EXPANSION	OPP	OPPOSITE		
EXT	EXTERIOR	O.D	OUTSIDE DIAMETER		

GENERAL SYMBOLS AND LEGEND

TILE

PLYWOOD

METAL

GLAZING

STAINLESS STEEL OR ALUMINUM

STEEL

EARTH

CONCRETE

PRECAST CONCRETE

CONCRETE MASONRY UNIT

GRANITE

INSULATION PANEL

MARBLE

COMPACTED FILL

EXISTING STRUCTURE

GYPSUM WALL

0 1 2 3 4ft. GRAPHIC SCALE

FHC FIRE HOSE CABINET

101 ROOM IDENTIFICATION

AXIS AXIS OR STRUCTURAL GRID

DOOR IDENTIFICATION

A WINDOW IDENTIFICATION

SECTION DESIGNATION –A
DRAWING WHERE BLDG. SECTION APPEARS A0.00
BUILDING SECTION MARK

WALL SECTION DESIGNATION W1
DRAWING WHERE WALL SECTION APPEARS A0.00
WALL SECTION

WALL SECTION DESIGNATION
WALL SECTION W1
SCALE: 1"=1'–0" A5.01N A5.00
DWG. NUMBER ON WHICH SECTION ARE IDENTIFIED
WALL SECTION

ELEVATION DESIGNATION 1
DRAWING WHERE BLDG. ELEV APPEARS A0.00
EXTERIOR BLDG. ELEVATION MARK

DETAIL NUMBER 1
DRAWING WHERE DETAIL APPEARS A0.00
DETAIL MARK

DETAIL 1
SCALE: 1"=1'–0" A5.01 A0.00
DWG. NUMBER ON WHICH DETAIL ARE IDENTIFIED
DETAIL TITLE

INTERIOR ELEV. NUMBER 4
DRAWING WHERE INT. ELEV. ARE SHOWN 3
1 ZONE GROUP 2
INTERIOR ELEVATION MARKS

F.F.E. 0'–0" FIN. FLOOR ELEVATION

LEVEL MARK

EL. 0'–4" OR +4" NEW SPOT ELEVATION (FEET OR METERS)

EL. 10'–0" EXISTING SPOT ELEVATION (FEET OR METERS)

NORTH SYMBOL

PROJECT LIMIT

FINISH LIMIT

1 REVISION MARK

C= 10'–0" CEILING HEIGHT ABOVE FIN. FLOOR

P–1
A–10.06
WALL TYPE IDENTIFICATION

– KEY NOTES

-- WALL TYPE

WALL

GENERAL NOTES

1. REFER TO PROJECT SPECIFICATIONS FOR GENERAL CONTRACT REQUIREMENTS, MATERIALS, WORKMANSHIP AND SHOP DRAWINGS.
2. ALL DIMENSIONS OTHER THAN PURELY ARCHITECTURAL DIMENSIONS SHOWN ON ARCHITECTURAL DRAWINGS SHALL BE FIELD COORDINATED BY THE CONTRACTOR WITH ALL OTHER DISCIPLINE DRAWINGS, AND ANY INCONSISTENCIES REPORTED TO THE ARCHITECT BEFORE PROCEEDING WITH THE WORK.
3. CONTRACTOR SHALL VERIFY ALL PROPOSED AND EXISTING DIMENSIONS AND ELEVATIONS IN THE FIELD. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS IN THE FIELD. NOTIFY THE ARCHITECT IMMEDIATELY AND BEFORE PROCEEDING WITH RELEVANT ASPECT OF THE WORK OF ANY LAYOUT CONDITION THAT IS NOT CONSISTENT WITH THE DRAWINGS OR THAT WILL IMPAIR LAYOUTS OR ATTACHMENTS OF FINISHES.
4. DO NOT SCALE DRAWINGS. USE INDICATED OR CALCULATED DIMENSIONS AND ELEVATIONS IN THE FIELD. NOTIFY THE ARCHITECT IMMEDIATELY AND BEFORE PROCEEDING WITH RELEVANT ASPECT OF THE WORK OF ANY LAYOUT CONDITIONS THAT ARE NOT CONSISTENT WITH, OR MISSING FROM, THE DRAWINGS OR THAT WILL IMPAIR LAYOUT.
5. DIMENSIONING FORMAT FOR THE ARCHITECTURAL DRAWINGS IS:
   A. DIMENSIONS FOR PRECAST OR PREFABRICATED ELEMENTS ARE TO THE FACE OF THE ELEMENT UNLESS OTHERWISE NOTED.
   B. DIMENSIONS FOR MASONRY ARE NOMINAL UNLESS OTHERWISE INDICATED.
   C. CRITICAL CLEAR DIMENSIONS, FINISH OPENING DIMENSIONS REQUIRED ARE INDICATED AND ARE TO FINISH FACE OF ELEMENT.
6. REFER TO STRUCTURAL DRAWINGS FOR DIMENSIONS AND LAYOUT OF STRUCTURAL CONCRETE.
7. SEE STRUCTURAL DRAWINGS FOR STRUCTURAL STEEL SIZES, ALL CONCRETE REINFORCEMENT, UNIT MASONRY REINFORCEMENT, STEEL LINTEL SIZES, RELIEVING ANGLE SIZES, CONCRETE FILLED LINTEL BLOCK AND ALL OTHER REQUIREMENTS FOR LOAD CARRYING MEMBERS. STRUCTURAL DRAWINGS SHALL GOVERN FOR LOAD CARRYING MEMBERS.
8. REFER ALSO TO LANDSCAPING, STRUCTURAL, PLUMBING, FIRE PROTECTION, MECHANICAL AND ELECTRICAL DRAWINGS AND APPROVED SHOP DRAWINGS FOR LOCATION AND DIMENSIONS OF CHASES, INSERTS, OPENING, SLEEVES, DEPRESSIONS AND ATTACHMENT REQUIREMENTS.
9. REFER TO STRUCTURAL DRAWINGS FOR PENETRATIONS OF STRUCTURAL ELEMENTS. REFER ALSO TO MECHANICAL, PLUMBING, ELECTRICAL, AND FIRE PROTECTION DRAWINGS FOR SLEEVE, PENETRATIONS, AND EMBEDMENTS REQUIRED FOR THESE SYSTEMS. THE CONTRACTOR IS TO COORDINATE ALL EMBEDMENTS AND PENETRATIONS.
10. PROVIDE ALL ACCESS PANELS AS REQUIRED BY APPLICABLE CODES AND AS REQUIRED FOR MECHANICAL EQUIPMENT. WHETHER OR NOT SHOWN ON DRAWINGS, ALL ACCESS PANELS SHALL BE FLUSH WITH ADJACENT FINISH SURFACES.
11. COORDINATE PLACEMENT OF ALL CEILING ELEMENTS WITH MECHANICAL, ELECTRICAL, AND INSTALLER.
12. CONTRACTOR SHALL COORDINATE SIZE AND LOCATION OF ALL SLAB AND WALL OPENINGS INCLUDING BUT NOT LIMITED TO OPENINGS IN ELECTRICAL CLOSETS, CONTROL ROOMS, MACHINE ROOMS, ETC., PER EQUIPMENT MANUFACTURER RECOMMENDATIONS.
13. BACK–KEYING REFERENCES ARE NOT INTENDED TO GIVE QUANTITY OF LOCATIONS IN WHICH A PARTICULAR DETAIL OCCURS, BUT ARE TO AID CONTRACTOR IN FINDING SAMPLE LOCATION(S) IN WHICH A PARTICULAR DETAIL OCCURS.
14. WHERE SPECIFIC DIMENSIONS, DETAILS OR DESIGN INTENT CANNOT BE DETERMINED, CONSULT THE ARCHITECT BEFORE PROCEEDING WITH WORK.
15. DETAILED DRAWINGS AND LARGER SCALE DRAWINGS TAKE PRECEDENCE OVER SMALL SCALE DRAWINGS.
16. ALL EXPOSED CORNERS AT CAST IN PLACE CONCRETE ARE TO RECEIVE CONTINUOUS 20MM CHAMFER. CHAMFER TO BE OMITTED WHERE CMU OR OTHER ADJACENT MATERIAL ABUTS CORNER.
17. ALL PENETRATIONS THRU RATED WALLS OR FLOORS SHALL BE PROTECTED AND/OR SEALED WITH MATERIAL OF THE SAME FIRE RATING AS THE PENETRATED WALLS OR FLOORS.
18. HANDRAILS AND GRAPHIC BANDS, HORIZONTAL CONCRETE JOINTS, CEILINGS AND DUCT ENCLOSURES SHALL RUN PARALLEL TO THE FLOOR. ALL VERTICAL JOINTS AND RUSTICATION IN THE TILE CLADDING, CONCRETE AND C.M.U. SHALL BE TRUE VERTICAL.
19. PROVIDE ISOLATION BETWEEN DISSIMILAR METALS (TYPICAL).
20. ALL STEEL ITEMS SHALL BE GALV. DOUBLE DIP (U.N.O.).
21. ALL WOOD ITEMS SHALL BE FIRE RETARDANT TREATED (FLAME SPREAD: 25 OR LESS PER A.S.T.M. E–84).
22. ANCHORS INDICATED BY MFR IDENTIFICATION ARE TO ESTABLISH ANCHOR TYPE, MATERIAL AND LOAD CAPACITY.
23. SHIM MEMBERS AT CONCRETE SURFACES AS REQUIRED.
24. PROVIDE SLOTTED HOLES IN METAL MEMBERS FOR ADJUSTMENT.
25. ALL EXPOSED AREAS SUBJECT TO FOOT TRAFFIC SHALL BE SLIP RESISTANT, COEFFICIENT OF FRICTION 0.6 MIN. WET & DRY. (ASTM C–1028) OR AS PER DESIGN CRITERIA.
26. C.M.U. OPENINGS AND WALLS MUST BE LAID PLUMB AND TRUE.
27. ALL CONDUITS SHALL BE EMBEDDED.

Project review

INSTITUTO PREVOCACIONAL e INDUSTRIAL DE PR

ABBREVIATIONS & GENERAL SYMBOLS

CARR PR 492 INT.
BO HATO ABAJO SEC BARRANCA
ARECIBO, PR

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Project number	780
Date	9/12/2022
Drawn by	JOP
Checked by	ENG. RUBEN ORTIZ GALARZA
	Si100
Scale	AS–SHOWN
	6 OF ###

FILE: E:\TROPICAL READY MIX\HC – PROJECTS\2021\CET\SHELL\PW.DWG

SHEET REV: JUNE 1, 2012

GENERAL STRUCTURAL NOTES

1 THESE GENERAL NOTES ARE NOT INTENDED TO REPLACE SPECIFICATIONS. SEE SPECIFICATIONS FOR REQUIREMENTS IN ADDITION TO GENERAL NOTES.
2 THE STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE, AND, EXCEPT WHERE SPECIFICALLY SHOWN, DO NOT INDICATE THE METHOD OR MEANS OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, PROCEDURES, TECHNIQUES, AND SEQUENCE. ALL APPLICABLE SAFETY REGULATIONS TO BE FOLLOWED STRICTLY.
3 THE STRUCTURE HAS BEEN DESIGNED TO RESIST DESIGN LOADS ONLY AS A COMPLETED STRUCTURE. APPLICATIONS OF CONSTRUCTION LOADS TO THE PARTIALLY COMPLETED STRUCTURE SHALL BE CONSIDERED BY THE CONTRACTOR AND SO INCLUDED IN THE DESIGN OF SHORING, BRACING, FORMWORK, AND ANY OTHER SUPPORTING ELEMENTS PROVIDED FOR CONSTRUCTION OF THE STRUCTURE. DURING ERECTION AND UNTIL ALL PERMANENT CONNECTIONS ARE MADE, THE CONTRACTOR MUST PROVIDE TEMPORARY BRACING FOR THE STRUCTURE IN ALL DIRECTIONS.

DESIGN CRITERIA

1 APPLICABLE CODES:
A. 2011 PUERTO RICO STATE BUILDING CODE (2009 IBC BUILDING CODE WITH 2018 LOCAL REVISIONS)
B. BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318-08)
C. BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES (ACI 530-99)
D. AISC MANUAL OF STEEL CONSTRUCTION, ASD, THIRTHEEN EDITION (2005)
E. AMERICAN WELDING SOCIETY D1. 01-98
F. MIN DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES (ASCE 7-10)
G. NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION (NDS 1997)
H. COLD FORMED STEEL DESIGN MANUAL (AISI 1996)
2 DESIGN LIVE LOADS:
ROOF . . . . . 30 PSF
FLOOR . . . . . 50 PSF
STAIR . . . . . 100 PSF

3 WIND LOAD: (20181 PUERTO RICO STATE BUILDING CODE/ASCE)
BASIC DESIGN WIND VELOCITY . . . . 170 MPH
OCCUPANCY CLASSIFICATION . . . . . CATEGORY II
EXPOSURE CATEGORY. . . . . B
IMPORTANCE FACTOR (IW) 1.0
INTERNAL PRESSURE COEFF (GCPI) . . +-0.18
WIND BASE SHEARS . . . . . VX=75K
VY=125K

4 SEISMIC LOAD: (2011 PUERTO RICO STATE BUILDING CODE/IBC)
DESIGN METHOD: EQUIVALENT LATERAL FORCE PROCEDURE
SDS. 0.678
SD1. . . . . 0.229
IMPORTANCE FACTOR (IE) 1.5
SEISMIC USE GROUP. IV
SITE CLASS . . . . . E
SEISMIC DESIGN CATEGORY. . . . . E
BASIC SEISMIC-FORCE RESISTING SYSTEM: R.C. SHEAR WALLS

DETAILED FOR SEISMIC RESISTANCE
RX=6 RY=6
CDX=5 CDY=5
SEISMIC BASE SHEARS. . . . . VX=345K
VY=345K
5 FUTURE LOADS: UNLESS SPECIFICALLY NOTED, THERE ARE NO PROVISIONS MADE FOR FUTURE FLOORS, ROOFS, OR OTHER LOADS.

FOUNDATIONS

1 FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL INVESTIGATION REPORT THE DESIGN SHOULD USE DEEP FOUNDATION SYSTEM

CONCRETE/REINFORCING STEEL

1 CONCRETE COMPRESSIVE STRENGTH IN 28 DAYS:
ELEVATED SLABS ON METAL DECK. . . . . 3000 PSI, LIGHTWEIGHT
COLUMNS, BASEMENT WALLS, SITE WALLS . . . 3000 PSI, NORMAL WEIGHT
SLAB ON GRADE, FOOTINGS, GRADE BEAMS. . . 3000 PSI, NORMAL WEIGHT
2 REINFORCING:
ASTM A615 - GRADE 60.
ALL REINFORCING TO BE WELDED - ASTM A706.
WELDED WIRE FABRIC - ASTM A185 (FLAT SHEETS ONLY)
3 GROUT UNDER BASE PLATES TO BE HIGH STRENGTH, NON-SHRINK.
4 REFER TO THE DRAWINGS FOR REINFORCING LAP REQUIREMENTS, WHERE LAP SPLICES ARE NOT SHOWN, LAP PER ACI 318 OR CRSI STANDARDS.
5 LAP WELDED WIRE FABRIC SHEETS 8" MINIMUM.
6 CLEAR COVER FROM FACE OF CONCRETE:
CAST IN PLACE CONCRETE(MEASURE TO OUTERMOST REINFORCING):
WALLS, PEDESTALS . . . . . 2"
COLUMNS (EDGE OF TIES) . . . . . 1-1/2"
FOOTINGS, ... 3"
SLABS EXPOSED TO EARTH AND WEATHER . . . . . 1-1/2"
ELEVATED SLABS . . . . . 3/4"
GRADE BEAMS (EDGE OF STIRRUPS) . . 1-1/2" TOP, 3" BOT, 3" SIDES
7 PROVIDE REINFORCING IN SLABS ON GRADE, 1-1/2" FROM TOP OF SLAB:
4" SLABS 6X6-W2.1XW2.1
8 WHERE SCHEDULED BARS ARE NOT PRESENT, PROVIDE CONTINUOUS #5 TOP AND BOTTOM BARS TO SUPPORT STIRRUPS AS REQUIRED FOR THE LENGTH OF THE STIRRUP SPACING IN ALL BEAMS.

9 HEADED CONCRETE ANCHORS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A108, GRADES 1010, 1015, 1017, OR 1020. STUDS SHALL BE AUTOMATICALLY END WELDED IN THE SHOP OR FIELD IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
10 EMBED PLATES MUST BE SET IN THE FORM BEFORE POURING CONCRETE, NOT PLACED INTO TOP OF WET CONCRETE. THE CONTRACTOR SHALL CONTACT THE ARCHITECT FOR CORRECTIVE DETAILS FOR ANY EMBED PLATES LEFT OUT OF CONCRETE POURS.
11 FOR SLABS ON GRADE, SLAB AND GRADE BEAM REINFORCING SHALL BE HELD IN PLACE BY BAR SUPPORTS WITH SAND PLATES, OR PRECAST CONCRETE BAR SUPPORTS AS DESCRIBED IN CHAPTER 3 OF THE CRSI MANUAL OF STANDARD PRACTICE. BAR SUPPORTS SHALL BE SPACED AT A MAXIMUM OF 4'-0" OC BOTH WAYS. ROCKS, CMU, OR CLAY BRICK WILL NOT BE USED AS SUPPORTS.
12 REBAR SHALL NOT BE HEATED WITH A TORCH IN THE FIELD.
13 THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER FAR ENOUGH IN ADVANCE (48 HOURS) OF EACH CONCRETE POUR TO ALLOW AMPLE TIME TO CHECK THE LAYOUT OF THE STEEL BEFORE THE BEGINNING OF THE ACTUAL POUR, BUT NOT PRIOR TO 90% OF THE STEEL HAVING BEEN PLACED.

CONCRETE CONSTRUCTION JOINTS

1 CONTRACTOR SHALL PROVIDE NECESSARY CONSTRUCTION JOINTS IN MONOLITHIC CONCRETE POURS SO THAT THE QUALITY OF PLACEMENT AND FINISH MEETS THE REQUIREMENTS OF PLANS AND SPECIFICATIONS. THE CONTRACTOR SHALL SUBMIT A PLAN SHOWING THE LOCATION OF ALL CONSTRUCTION JOINTS TO THE STRUCTURAL ENGINEER FOR APPROVAL.
2 THERE SHALL BE NO HORIZONTAL CONSTRUCTION JOINTS IN CONCRETE POURS. ALL VERTICAL CONSTRUCTION JOINTS IN SLABS AND BEAMS SHALL BE MADE WITH BULKHEADS. ADDITIONAL REINFORCING AT CONSTRUCTION JOINTS SHALL BE AS SPECIFIED BY THE STRUCTURAL ENGINEER. SEE TYPICAL CONSTRUCTION JOINT DETAILS.

REPRODUCTION NOTE

1 THE USE OF REPRODUCTIONS OF THESE CONTRACT DRAWINGS BY ANY 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.

STRUCTURAL STEEL

1 STRUCTURAL STEEL:
WIDE FLANGE SHAPES (W SECTIONS) - ASTM A992, GRADE 50, FY= 50 KSI
CHANNELS, ANGLES, PLATES, RODS, AND BARS - A36, FY = 36 KSI
SQUARE AND RECTANGULAR TUBES ASTM A500 - GRADE B, FY= 46 KSI
PIPES ASTM A53- GRADE B, FY= 36 KSI
2 ANCHOR BOLTS AND THREADED RODS SHALL CONFORM TO ASTM A36 OR A307.
3 DESIGN, FABRICATION AND ERECTION: AISC MANUAL OF STEEL CONSTRUCTION, ASD. NINTH EDITION (1989).
4 BEAM SIMPLE, SHEAR CONNECTIONS NOT DETAILED ON STRUCTURAL DRAWINGS SHALL BE DESIGNED BY STEEL SUPPLIER FOR LOADS SHOWN ON DRAWINGS OR FOR REACTIONS DETERMINED BY USING THE ALLOWABLE UNIFORM LOAD AS TABULATED IN PART 2 OF THE AISC MANUAL OF STEEL CONSTRUCTION FOR THE SECTION, SPAN AND STRENGTH OF STEEL SPECIFIED.
CONNECTIONS: 3/4" DIAMETER BOLTS, ASTM A325 TIGHTENED TO A SNUGTIGHT CONDITION PER AISC REQUIREMENTS.
5 WHERE STEEL MEMBERS ARE WELDED AND NO SIZE IS SPECIFIED, PROVIDE FULL LENGTH FILLET WELDS BOTH SIDES OF MEMBER. WELD SIZES SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:
MEMBER THICKNESS (INCHES). . . . . WELD SIZE (INCHES)
3/16 . . . . . 3/16
1/4. . . . . 3/16
5/16 . . . . . 3/16
3/8. . . . . 1/4
7/16 . . . . . 1/4
1/2. . . . . 5/16
9/16 . . . . . 3/8
5/8. . . . . 7/16
6 SPLICING OF STRUCTURAL STEEL MEMBERS IS PROHIBITED WITHOUT PRIOR APPROVAL OF THE ENGINEER AS TO LOCATION AND TYPE OF SPLICE TO BE MADE. ANY MEMBER HAVING A SPLICE NOT SHOWN AND DETAILED ON SHOP DRAWINGS WILL BE REJECTED.
7 ALL WELDING SHALL CONFORM TO THE AMERICAN WELDING SOCIETY CODE. USE E70 SERIES ELECTRODES FOR ALL STRUCTURAL STEEL WELDS.
8 SEE THE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR ALL ITEMS REQUIRED TO BE HOT-DIP GALVANIZED AFTER FABRICATION.
9 STRUCTURAL STEEL SHALL BE PUNCHED FOR WOOD BLOCKING, NAILERS, CLIPS AND TIES IN ACCORDANCE WITH ARCHITECTURAL/STRUCTURAL DETAILS.
10 ULTRASONIC INSPECTION BY THE TESTING LABORATORY SHALL BE PROVIDED FOR ALL WELDS CALLED FOR ON THE STRUCTURAL DRAWINGS OR SHOP DRAWINGS AS PARTIAL OR FULL PENETRATION WELDS.
11 ALL STEEL EXPOSED TO VIEW SHALL BE CLASSIFIED AS ARCHITECTURALLY EXPOSED STRUCTURAL STEEL (AESS) AS DEFINED BY THE AISC CODE OF STANDARD PRACTICE AND SHALL BE TREATED AS SUCH.

AB	ANCHOR BOLT	LLH	LONG LEG HORIZONTAL
ACI	AMERICAN CONCRETE INSTITUTE	LT	LIGHT
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	LLV	LONG LEG VERTICAL
ALT	ALTERNATE	LOC	LOCATION
ARCH	ARCHITECTURAL, ARCHITECT	LP	LOW POINT
BM	BEAM	MATL	MATERIAL
BOF	BOTTOM OF FOOTING	MAX	MAXIMUM
BOI	BID OPTIONAL ITEM	MB	MACHINE BOLT (A307 BOLT)
BOTT	BOTTOM OF FOOTING	MFR	MANUFACTURER
BP	BASE PLATE	MIN	MINIMUM
BRDG	BRACING	MEZZ	MEZZANINE
BRDG	BRIDGING	MSL	MEAN SEA LEVEL
BRG	BEARING	MTL	METAL
BLDG	BUILDING	(N)	NEW
CJ	CONTROL JOINT	NS	NEAR SIDE
CL	CENTER LINE	OC	ON CENTER
CLR	CLEAR	OH	OPPOSITE HAND
CMU	CONCRETE MASONRY UNIT	OPN'G	OPENING
COL	COLUMN	PCF	POUNDS PER CUBIC FOOT
CONC	CONCRETE MASONRY UNIT	PC	PRECAST
CONN	CONNECTION	PL	PLATE (STEEL)
CONT	CONTINUOUS	PP	PARTIAL PENETRATION
C.O.R.R.	CONTRACTING OFFICER REPRESENTATIVE	PROJ	PROJECTION
CP	COMPLETE PENETRATION WELD	PSF	POUNDS PER SQUARE FOOT
CSJ	CONSTRUCTION JOINT	PSI	POUNDS PER SQUARE INCH
CSK	COUNTERSINK		
CTRD	CENTERED	REF	REFERENCE
DBL	DOUBLE	REINF	REINFORCEMENT
DET	DETAIL	REQ'D	REQUIRED
DIA	DIAMETER	RO	ROUGH OPENING
DIAG	DIAGONAL	RHB	ROWS OF HORIZ BRIDGING
DIM	DIMENSION		
DN	DOWN	SC	SLIP CRITICAL
DO	DITTO	SCHED	SCHEDULE
DWG	DRAWING	SDI	STEEL DECK INSTITUTE
DWL	DOWEL	SHT	SHEET
(E)	EXISTING	SEP	SEPARATION
EA	EACH	SIM	SIMILAR
EF	EACH FACE	SJ	STEEL JOIST
EJ	EXPANSION JOINT	SLV	SLEEVE
EL	ELEVATION	SOG	SLAB ON GRADE
ELEV	ELEVATION	SPCS	SPACE
EN	EDGE NAILING	SPEC	SPECIFICATION
EQ	EQUAL	SQ	SQUARE
EQUIP	EQUIPMENT	STD	STANDARD
EW	EACH WAY	STIFF	STIFFENER
EXP	EXPANSION	STIR	STIRRUP
EXT	EXTERIOR	STL	STEEL
FIN	FINISH	T&B	TOP AND BOTTOM
FDN	FOUNDATION	T/	TOP OF
FF	FINISH FLOOR	T/P	TOP OF PARAPET
FLR	FLOOR	T/S	TOP OF SLAB
FN	FIELD NAILING	T/W	TOP OF WALL
FOS	FACE OF STUD	THD	THREAD
FRMG	FRAMING	THK	THICK (EN)
FS	FAR SIDE	TOC	TOP OF CONCRETE
FTG	FOOTING	TOS	TOP OF STEEL
		TYP	TYPICAL
GALV	GALVANIZED		
GB	GRADE BEAM	UBC	UNIFORM BUILDING CODE
GRTG	GRATING	UNO	UNLESS NOTED OTHERWISE
		UTR	UNIVERSITY TECHNICAL REPRESENTATIVE
HDR	HEADER		
HGR	HANGER	V OR VERT	VERTICAL
HORIZ	HORIZONTAL	VIF	VERIFY IN FIELD
HP	HIGH POINT		
HR	HANDRAIL	W/	WITH
HS	HIGH STRENGTH	W/O	WITHOUT
JNT	JOINT	WHS	WELDED HEADED STUD
JST	JOIST	WS	WATER STOP
		WP	WORK POINT
L	LENGTH	WT	WEIGHT

Project review

INSTITUTO PREVOCACIONAL e INDUSTRIAL DE PR

STRUCTURAL NOTES i

CARR PR 492 INT.
BO HATO ABAJO SEC BARRANCA
ARECIBO, PR

CERTIFICATION RULE 2.1.9.2 k

Yo, Ing. Ruben Ortiz Galarza, Licencia #8431, certifico que soy el profesional que diseñó estos planos y las especificaciones complementarias. También certifico que entiendo que dichos planos y especificaciones cumplen con las disposiciones aplicables del Reglamento Conjunto y las disposiciones aplicables de los Reglamentos y Códigos de las Agencias, Juntas Reglamentarias o Corporaciones Públicas con jurisdicción. Certifico, además, que en la preparación de estos planos y especificaciones se ha cumplido cabalmente con lo dispuesto en la Ley Núm. 14 de 8 de enero de 2004, según enmendada, conocida como la "Ley para la Inversión por la Industria Puertorriqueña" y con la [Ley Núm. 319 de 15 de mayo de 1938, según enmendada; Ley Núm. 96 de 6 de julio de 1978, según enmendada; según aplique. Reconozco que cualquier declaración falsa o falsificación de los hechos que se haya producido sin conocimiento o por negligencia ya sea por mí, mis agentes o empleados, o por otras personas con mi conocimiento, me hacen responsable de cualquier acción judicial y disciplinaria por la OGPe y otras autoridades competentes, incluyendo, pero sin limitarse, la terminación de la participación en los procedimientos de certificación profesional en la OGPe.

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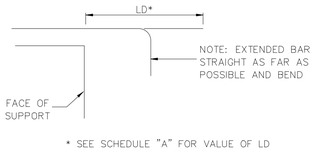
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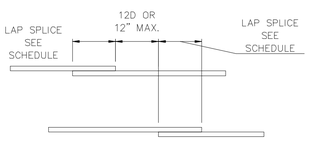
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SHEET REV: JUNE 1, 2012

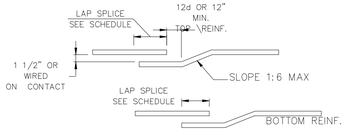


* SEE SCHEDULE "A" FOR VALUE OF LD

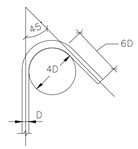
TYPICAL BEAM AND COLUMNS REINFORMENT ENDS



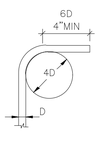
WALL OR SLAB SPLICE DETAIL



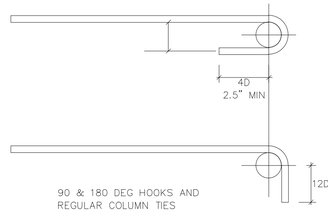
BEAM SPLICE DETAIL



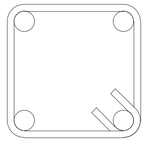
TYPE B & C BEAM HOOKS, COL. CONFINEMENT TIES AND BEAM-COLUMN JOINT TIES.



TYPE B & C BEAM HOOKS AND REGULAR COLUMN TIES



90 & 180 DEG HOOKS AND REGULAR COLUMN TIES



STANDARD HOOK

GENERAL NOTES:
1. 'LCE' = COMPRESSION EMBEDMENT LENGTH 'LCS' = COMPRESSION LAP SPLICE LENGTH 'LTE' = TENSION EMBEDMENT LENGTH 'LTS' = TENSION LAP SPLICE LENGTH 'LDH' = HOOK DEVELOPMENT LENGTH. SCHEDULED LENGTHS ARE IN INCHES.
2. 'TOP' BARS ARE ALL HORIZONTAL BARS SO PLACED THAT MORE THAN 12 IN. OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE DEVELOPMENT LENGTH OR SPLICE.
3. ALL BARS THAT ARE NOT 'TOP' BARS ARE 'OTHER' BARS.
4. UNLESS NOTED OTHERWISE, ALL HOOK BARS SHALL EXTEND TO THE FAR FACE (LESS COVER) AND HOOK.

LAP SPLICE NOTES:
1. ALL SPLICES SHALL BE WIRED IN CONTACT, STACKED VERTICAL.
2. ALL SPLICES ARE 'LTS' UNLESS NOTED OTHERWISE.
3. SMALLER BAR LAP LENGTH SHALL BE USED WHEN SPLICING DIFFERENT SIZED BARS.
4. LAP LENGTHS SPECIFICALLY DETAILED ON DRAWINGS SHALL GOVERN IN LIEU OF LAP LENGTHS SCHEDULED.
5. BUNDLED BAR SPLICES:
A. INDIVIDUAL BAR SPLICES WITHIN THE BUNDLE SHALL BE STAGGERED.
B. INCREASE LAP LENGTH 20% FOR A 3 BAR BUNDLE.
C. INCREASE LAP LENGTH 33% FOR A 4 BAR BUNDLE.
6. IF A NOTE OR DETAIL CALLS FOR A BAR TO BE EMBEDDED LD (DEVELOPMENT LENGTH) INTO CONCRETE, THIS LENGTH SHALL CORRESPOND TO A 'LTE' LAP.

ADJUSTMENT(S) TO GIVEN LAP LENGTHS
1. IF REINFORCING IS SPECIFIED AS EPOXY COATED, INCREASE SCHEDULED LAP LENGTHS BY 50%.
2. SCHEDULED LAP LENGTHS ASSUME:
A. CLEAR COVER IS GREATER THAN BAR DIAMETER, BUT NOT LESS THAN 3/4".
B. CLEAR SPACING BETWEEN BARS IS GREATER THAN 2 BAR DIAMETERS.
C. THE TRANSVERSE REINFORCEMENT INDEX, K , IS ASSUMED TO BE ZERO.
D. IF EITHER CONDITION A OR B IS NOT MET FOR A GIVEN BAR, INCREASE LENGTHS BY 50%.
3. SPLICE LENGTHS NOTED BASED ON FY = 60,000 PSI. FOR OTHER YIELD STRENGTHS, MULTIPLY SPLICE LENGTHS NOTED BY FY/60,000.

HOOK EMBEDMENT NOTES:
1. SCHEDULED HOOK EMBEDMENT LENGTHS ASSUME:
A. SIDE COVER IS 2 1/2 INCHES OR GREATER.
B. COVER BEYOND IS 2 INCHES OR GREATER.
2. IF REINFORCING IS SPECIFIED AS EPOXY COATED, INCREASE SCHEDULED LAP LENGTHS BY 20%.
3. IF SIDE COVER IS LESS THAN 2 1/2 INCHES, INCREASE LENGTHS BY 40%.

FOUNDATION WALL REINFORCEMENT – HORIZONTAL BARS
LAP SPLICE LENGTH SCHEDULE (INCHES)

BAR SIZE	MIN BAR SPACING (INCHES)	TENSION (LTS) FC = 4 KSI	FC = 5 KSI	FC = 6 KSI	FC = 7 KSI	FC = 8 KSI	COMPRESSION (LCS)
#4	005.1	33	03	72	52	32	
#5	1.875	40	36	34	31	29	19
#6	2.250	48	44	40	36	35	23
#7	2.625	105	95	87	87	75	27
#8	3.000	121	108	99	91	86	30
#9	3.500	137	122	112	103	92	34
#10	3.875	153	138	125	116	109	39
#11	4.250	170	152	139	129	121	43

SHEARWALL REINFORCEMENT – VERTICAL BARS
LAP SPLICE LENGTH SCHEDULE (INCHES)

BAR SIZE	MIN BAR SPACING (INCHES)	TENSION (LTS) FC = 4 KSI	FC = 5 KSI	FC = 6 KSI	FC = 7 KSI	FC = 8 KSI	COMPRESSION (LCS)
#4	2.000	25	23	21	19	18	15
#5	2.125	31	28	26	24	22	19
#6	2.250	37	34	31	28	27	23
#7	2.375	81	73	67	62	58	27
#8	2.500	93	83	76	70	66	30
#9	2.875	105	94	86	79	74	34
#10	3.250	118	106	96	89	84	39
#11	3.625	131	117	107	99	93	43

SHEARWALL REINFORCEMENT – HORIZONTAL BARS
LAP SPLICE LENGTH SCHEDULE (INCHES)

BAR SIZE	MIN BAR SPACING (INCHES)	TENSION (LTS) FC = 4 KSI	FC = 5 KSI	FC = 6 KSI	FC = 7 KSI	FC = 8 KSI	COMPRESSION (LCS)
#4	1.500	33	30	27	25	23	
#5	1.875	40	36	34	31	29	19
#6	2.250	48	44	40	36	35	23
#7	2.625	105	95	87	87	75	27
#8	3.000	121	108	99	91	86	30
#9	3.500	137	122	112	103	92	34
#10	3.875	153	138	125	116	109	39
#11	4.250	170	152	139	129	121	43

FOUNDATION WALL REINFORCEMENT – VERTICAL BARS
LAP SPLICE LENGTH SCHEDULE (INCHES)

BAR SIZE	MIN BAR SPACING (INCHES)	TENSION (LTS) FC = 4 KSI	FC = 5 KSI	FC = 6 KSI	FC = 7 KSI	FC = 8 KSI	COMPRESSION (LCS)
#4	2.000	25	23	21	19	18	15
#5	2.125	31	28	26	24	22	19
#6	2.250	37	34	31	28	27	23
#7	2.625	54	49	45	41	39	27
#8	3.000	62	56	51	47	44	30
#9	3.500	70	63	57	53	50	34
#10	3.875	79	71	64	60	56	39
#11	4.250	87	78	71	66	62	43

COLUMN REINFORCEMENT
LAP SPLICE LENGTH SCHEDULE (INCHES)

BAR SIZE	MIN BAR SPACING (INCHES)	TENSION (LTS) FC = 3KSI	FC = 4KSI	FC = 5KSI	FC = 6KSI	COMPRESSION (LCS)
#5	2.125	28	26	24	22	19
#6	2.250	34	31	28	27	23
#7	2.375	49	45	41	39	27
#8	2.500	56	51	47	44	30
#9	2.875	63	57	53	50	34
#10	3.250	71	64	60	56	39
#11	3.625	78	71	66	62	43

SLAB/SLAB-ON-GRADE REINFORCEMENT
LAP SPLICE LENGTH SCHEDULE (INCHES)

BAR SIZE	MIN BAR SPACING (INCHES)	TENSION (LTS) FC = 3KSI	FC = 4KSI	FC = 5KSI	FC = 6KSI	FC = 7KSI	FC = 8KSI
#4	1.500	29	25	23	21	19	18
#5	578.1	63	13	82	62	42	22
#6	2.250	43	37	34	31	28	27
#7	2.625	94	81	73	67	62	58
#8	3.000	107	93	83	76	70	66

DEVELOPMENT LENGTH SCHEDULE (INCHES)

BAR SIZE	MINI BAR SPACING (INCHES) (MAX OF DB+1" OR 2DB)	TENSION NOTED AS LD ON DRAWINGS (PSI) 3000	4000	5000	6000	7000	8000	NOTED AS LDH ON DRAWINGS (PSI) 3000	4000	5000	6000	7000	8000	COMPRESSION NOTED AS LDC ON DRAWINGS (PSI) 3000	4000	5000	6000	7000	8000
#3	1.375	17	15	13	12	12	12	9	8	7	6	6	6	9	8	8	8	8	8
#4	1.500	22	19	17	16	15	14	11	10	9	8	8	7	11	10	9	9	9	9
#5	1.625	28	24	22	20	18	17	14	12	11	10	9	9	14	12	12	12	12	12
#6	1.750	33	29	26	24	22	21	17	15	13	12	11	11	17	15	14	14	14	14
#7	1.875	48	42	38	34	32	30	20	17	15	14	13	12	20	17	16	16	16	16
#8	2.000	55	48	43	39	36	34	22	19	17	16	15	14	22	19	18	18	18	18
#9	2.375	62	54	48	44	41	38	25	22	20	18	17	16	25	22	21	21	21	21
#10	2.625	70	61	54	50	46	43	28	25	22	20	19	18	28	25	23	23	23	23
#11	2.875	78	67	60	55	51	48	31	27	24	22	21	19	31	27	26	26	26	26

GRADE BEAM/BEAM REINFORCEMENT
LAP SPLICE LENGTH SCHEDULE (INCHES)

BAR SIZE	MIN BAR SPACING (INCHES)	TENSION (LTS) FC = 4KSI TOP BARS	FC = 4KSI OTHER	FC = 5KSI TOP BARS	FC = 5KSI OTHER	FC = 6KSI TOP BARS	FC = 6KSI OTHER	FC = 7KSI TOP BARS	FC = 7KSI OTHER	FC = 8KSI TOP BARS	FC = 8KSI OTHER
#4	1.500	33	25	29	23	27	21	25	19	23	18
#5	1.625	41	31	36	28	33	26	31	24	29	22
#6	1.750	49	37	44	34	40	31	37	28	35	27
#7	1.875	71	54	63	49	58	45	54	41	50	39
#8	2.000	81	62	72	56	66	51	61	47	57	44
#9	2.375	91	70	81	63	74	57	69	53	64	50
#10	2.625	102	79	92	71	84	64	77	60	72	56
#11	2.875	114	87	102	78	93	71	86	66	80	62

FOOTING/MAT REINFORCEMENT
LAP SPLICE LENGTH SCHEDULE (INCHES)

BAR SIZE	MIN BAR SPACING (INCHES)	TENSION (LTS) FC = 4KSI TOP BARS	FC = 4KSI OTHER	FC = 5KSI TOP BARS	FC = 5KSI OTHER	FC = 6KSI TOP BARS	FC = 6KSI OTHER	FC = 7KSI TOP BARS	FC = 7KSI OTHER	FC = 8KSI TOP BARS	FC = 8KSI OTHER
#4	1.500	33	25	29	23	27	21	25	19	23	18
#5	1.875	41	31	36	28	33	26	31	24	29	22
#6	2.250	49	37	44	34	40	31	37	28	35	27
#7	2.625	71	54	63	49	58	45	54	41	50	39
#8	3.000	81	62	72	56	66	51	61	47	57	44
#9	3.500	91	70	81	63	74	57	69	53	64	50
#10	3.875	102	79	92	71	84	64	77	60	72	56
#11	4.250	114	87	102	78	93	71	86	66	80	62

SCHEDULE "B"
TYPE "B" TENSION LAP SPLICE LENGTH (IN)

BAR SIZE	F'C= 3,000 TOP BARS	F'C= 3,000 OTHER BARS	F'C= 4,000 TOP BARS	F'C= 4,000 OTHER BARS	F'C= 5,000 TOP BARS	F'C= 5,000 OTHER BARS
# 3	29	22	23	18	22	17
# 4	38	29	33	25	29	22
# 5	47	36	40	31	35	27
# 6	56	43	49	38	44	34
# 7	81	62	69	53	62	48
# 8	94	72	79	61	72	55
# 9	105	81	90	69	79	61
# 10	118	91	101	78	90	69
# 11	131	101	112	86	100	77

SCHEDULE "A"
TENSION DEVELOPMENT LENGTH (IN) LD

BAR SIZE	F'C= 3,000 TOP BARS	F'C= 3,000 OTHER BARS	F'C= 4,000 TOP BARS	F'C= 4,000 OTHER BARS	F'C= 5,000 TOP BARS	F'C= 5,000 OTHER BARS
# 3	22	17	18	14	17	13
# 4	29	22	25	19	22	17
# 5	36	28	31	24	27	21
# 6	43	33	38	29	34	26
# 7	62	48	53	41	48	37
# 8	72	55	61	47	55	42
# 9	81	62	69	53	61	47
# 10	91	70	78	60	69	53
# 11	101	78	86	66	77	59

Project review

INSTITUTO PREVOCACIONAL e INDUSTRIAL DE PR

STRUCTURAL NOTES ii

CARR PR 492 INT.
BO HATO ABAJO SEC BARRANCA
ARECIBO, PR

CERTIFICATION RULE 2.1.9.2 k

Yo, Ing. Ruben Ortiz Galarza, Licencia #8431, certifico que soy el profesional que diseñó estos planos y las especificaciones complementarias. También certifico que entiendo que dichos planos y especificaciones cumplen con las disposiciones aplicables del Reglamento Conjunto y las disposiciones aplicables de los Reglamentos y Códigos de las Agencias, Juntas Reglamentadoras o Corporaciones Públicas con jurisdicción. Certifico, además, que en la preparación de estos planos y especificaciones se ha cumplido cabalmente con lo dispuesto en la Ley Núm. 14 de 8 de enero de 2004, según enmendada, conocida como la "Ley para la Inversión por la Industria Puertorriqueña" y con la (Ley Núm. 319 de 15 de mayo de 1938, según enmendada; Ley Núm. 96 de 6 de julio de 1978, según enmendada; según aplique. Reconozco que cualquier declaración falsa o falsificación de los hechos que se haya producido sin conocimiento o por negligencias ya sea por mi, mis agentes o empleados, o por otras personas con mi conocimiento, me hacen responsable de cualquier acción judicial y disciplinaria por la OGPe y otras autoridades competentes, incluyendo, pero sin limitarse, la terminación de la participación en los procedimientos de certificación profesional en la OGPe.

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Project number 780
Date 9/12/2022
Drawn by JOP
Checked by ENG. RUBEN ORTIZ GALARZA

Si101

Scale AS-SHOWN

8 OF ####

FILE: E:\TROPICAL READY MIX\VC - PROJECTS\2021\021\SHELL\PW.DWG

SHEET REV - JUNE 1, 2012

GENERAL STRUCTURAL NOTES (UNLESS OTHERWISE SHOWN ON PLANS)

1. CLEAR PROTECTION FOR REINFORCEMENT OF STRUCTURAL MEMBERS SHALL BE AS FOLLOWS:
   a. CONCRETE AGAINST EARTH OR BOTTOM OF FOOTINGS, 3 INCHES.
   b. CONCRETE EXPOSED TO WEATHER OR GROUND AFTER REMOVAL OF FORMWORK: 1 1/2 INCHES FOR NO. 5 BARS OR SMALLER.

2. THE CONTRACTOR SHALL PROVIDE DOWELS IN WALL AND COLUMN FROM FOOTING EQUAL IN SIZE NUMBER TO VERTICAL REINFORCEMENT, EXTENDING A SPLICE LENGTH INTO WALL OR COLUMN AT LEAST 30 BAR DIAMETER INTO FOOTING, AND SHALL BE EXTENDED AS NECESSARY TO PROVIDE A 6-INCH MINIMUM HORIZONTAL LEG RESTING ON THE FOOTING REINFORCEMENT.

3. ALL BLOCK WALLS SHALL BE ANCHORED TO THE STRUCTURE BY MEANS OF NO. 3 DOWELS EXTENDING 18 INCHES INTO THE BLOCK WALL AND STRUCTURE, AND SPACED AT LEAST 16 INCHES IN THE HORIZONTAL DIRECTION. THE CELLS WITH CONTAIN DOWELS SHALL BE FILLED WITH AN APPROVED MORTAR. METAL DOVETAILS SHOULD BE USED TO ANCHOR THE STRUCTURE TO CONCRETE WALLS OR COLUMNS.

4. ALL BLOCK WALLS SHALL BE REINFORCED WITH STANDARD DUR-O-WALL OR EQUIVALENT, PLACED HORIZONTALLY EVERY SECOND COURSE AND SPLICED 12 INCHES WITH CORRESPONDING DOWELS INTO THE STRUCTURE.

5. ALL REINFORCING BARS AND STIRRUPS SHALL BE ACCURATELY PLACED AND SECURELY WIRED TO PREVENT DISLOCATION FROM PROPER POSITION.

6. TO SECURE THE PROPER LOCATION FOR A SLIGHTLY MISPLACED DOWEL, THE BAR MAY BE BENT AT A SLOPE, WHICH IS NOT TO EXCEED A RATIO OF 1 (HORIZONTAL) AND 6 (VERTICAL). THE BAR SHALL NOT BE BENT AGAINST THE CAST CONCRETE NOR HEATED TO EASE BENDING.

7. ALL DIMENSIONS AND ELEVATIONS SHOULD COORDINATE WITH THE ARCHITECTURAL, MECHANICAL, ELECTRICAL AND SITE IMPROVEMENT DRAWINGS. ANY DISCREPANCIES WITH THE STRUCTURAL PLANS SHALL BE BROUGHT TO THE INMEDIATE ATTENTION OF THE CONSULTING ENGINEER.

8. ALL DETAILS, SECTIONS AND NOTES SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHOULD APPLY TO SIMILAR SITUATIONS UNLESS OTHERWISE NOTED.

9. ALL DETAILING AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" (ACI-315), "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI-318-95), AND ALL OTHER AMERICAN CONCRETE INSTITUTE STANDARDS AND RECOMMENDATIONS FOR ACCEPTABLE PRACTICE.

10. PROVISIONS FOR DETAILS NOT SPECIFICALLY DRAWN SHALL BE MADE BY THE CONTRACTOR ACCORDING TO THE ACI-318-95 BUILDING CODES AFTER PREVIOUS VERIFICATION WITH THE ENGINEER. PRIOR TO THE CONSTRUCTION PHASE.

11. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS. ANY DOUBT CONCERNING THE CONDITIONS SHOWN ON THE PLANS SHOULD BE BROUGHT TO THE ATTENTION OF THE CONSULTING ENGINEER AND CLARIFIED IMMEDIATELY.

12. IF THERE IS ANY DOUBT CONCERNING STRUCTURAL DRAWINGS AND/OR SPECIFICATIONS, THE CONTRACTOR AND THE CONSULTING ENGINEER SHALL BE CONSULTED IMMEDIATELY FOR CLARIFICATION.

13. ALL FORMWORK FOR FLEXURAL MEMBERS SHALL BE BUILT WITH A CAMBER CORRESPONDING TO ITS OWN DEFORMATION PLUS THE DEFORMATIONS CAUSED BY ANY SUPERIMPOSED DEAD WEIGHT. TO SELECT THE REQUIRED CAMBER, THE CONTRACTOR SHALL BE HELPED BY THE ENGINEER WHENEVER DEEMED NECESSARY.

14. BLOCKS SHALL BE PLACED IN RUNNING BOND, WITH MORTAR PLACED IN BOTH HORIZONTAL AND VERTICAL JOINTS.

15. ALL BEAM REINFORCEMENTS SHALL END WITH STANDARD HOOKS WHICH COMPLY WITH ACI-318-95 UNLESS OTHERWISE SHOWN ON DRAWINGS.

16. BACK-FILL AGAINST ANY WALL SHALL NOT OCCUR UNTIL TWO WEEKS AFTER WALL SLABS (ABOVE AND BELOW) HAVE BEEN CAST

17. DEFECTIVE CONCRETE SHALL NOT BE COVERED OR CORRECTED (WITH MORTAR, PLASTER, ETC.) WITHOUT THE INSPECTOR'S APPROVAL.

18. THE CONSTRUCTION METHODS USED (FORMWORK REMOVAL, LOCATION OF CONSTRUCTION JOINTS, ETC.) SHALL NOT IMPAIR THE DESIGN STRENGTH OF THE MATERIAL.

19. HORIZONTAL MOVEMENT OF ANY EQUIPMENT OVER STRUCTURAL FLOORS OR ROOFS, TO TEMPORARY OR DEFINITE LOCATIONS MUST BE APPROVED BY THE ENGINEER AND IS NOT TO OVERLOAD NOR IMPAIR THE STRENGTH OF THE STRUCTURE. THE SAME PROCEDURE SHALL BE FOLLOWED FOR THE PILING OR STORAGE OF MATERIALS USED DURING THE CONSTRUCTION PHASE.

20. IN ALL WALL OR COLUMN HORIZONTAL CONSTRUCTION JOINTS, THE LOWER SURFACE SHALL BE THOROUGHLY CLEANED THEN ALL WEAK OR LOOSE CONCRETE SHALL BE REMOVED BEFORE POURING THE UPPER CONCRETE.

21. THE SIZE OF NAILS AND/OR SIMILAR FASTENERS DRIVEN INTO THE CONCRETE SHALL NOT CRACK NOR IMPAIR ITS STRENGTH. NEVERTHELESS, IF THE CONCRETE IS DAMAGED, SUITABLE JOINT SURFACES SHALL BE PROVIDED BY REPAIRING THEM AFTER REMOVING THE DAMAGED PORTION. THE CONTRACTOR SHALL SUBMIT APPROVAL FROM THE ENGINEER FOR THE PROPOSED REPAIR TECHNIQUE.

22. ALL SLABS SHALL HAVE A MINIMUM TEMPERATURE REINFORCEMENT AREA NORMAL TO THE MAIN REINFORCEMENT EQUIVALENT TO 0.002 OF THE GROSS SECTION AREA OF THE CONCRETE.

23. OPENINGS WHICH INTERRUPT REINFORCEMENT AND THAT ARE NOT SHOWN IN THE STRUCTURAL PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE CONSULTING ENGINEER FOR PERTINENT CONSIDERATION.

24. THE CONTRACTOR SHALL PROVIDE, SET AND VERIFY DIMENSIONS AND LOCATIONS OF ALL ANCHORS, INSERTS, BOLTS, SLEEVES, CONDUITS, AND ALL OTHER MECHANICAL OR ELECTRICAL DEVICES SHOWN ON NOTES AND SPECIFICATIONS, BEFORE ANY CONCRETE IS ANY DISCREPANCIES WITH ANY OF THESE ITEMS OR THE STRUCTURAL PLANS SHALL POURED. BE BROUGHT TO THE INMEDIATE ATTENTION OF THE CONSULTING ENGINEER.

25. MAIN OPENINGS ARE SHOWN IN THE STRUCTURAL PLANS. HOWEVER, FOR EXACT SIZE AND LOCATIONS OF ALL REQUIRED DRAWINGS, REFER TO RESPECTIVE PLANS, DRAWINGS, OR SPECIFICATIONS. OPENINGS, SLOTS, OR GROOVES SHALL NOT BE MADE IN ANY STRUCTURAL MEMBER WITHOUT PREVIOUS APPROVAL FROM THE CONSULTING ENGINEER.

26. CONCRETE SHALL NOT BE DROPPED THROUGH REINFORCED STEEL (AS IN WALLS) SO AS TO CAUSE SEGREGATION OF AGGREGATES. IN SUCH CASES, HOPPERS OF VERTICAL CHUTES OR TRUNKS SHALL BE USED. THE FREE UNCONFINED FALL OF CONCRETE SHALL NOT EXCEED 6 FEET.

27. CONTINUOUS INSPECTION OF ALL CONCRETE AND WELDING SHALL BE MADE BY A LICENSED ENGINEER. CONCRETE TEST CYLINDERS SHALL BE MADE FOR ALL CONCRETE AS SPECIFIED IN THE ACI-318-95 STANDARD.

28. ALL TEST MATERIALS SHALL BE MADE BY AN APPROVED LABORATORY AND THE RESULTS SHALL BE SUBMITTED TO THE OWNER, ARCHITECT, AND ENGINEER.

29. LATERAL LOADS USED IN THE ANALYSIS AND DESIGN ARE AS ESTABLISHED BY THE UNIFORM BUILDING CODE (1997 EDITION).

30. WHERE BEAMS OR WALLS OCCUR, PROVIDE NO. 4 REINFORCING BARS SPACED AT 18 INCHES ON THE TOP OF THE SLAB AND NORMAL TO THE BEAM OR WALL. THE BAR IS TO EXTEND 24 INCHES BEYOND THE FACE OF THE BEAM OR WALL. WHEN THE SLAB IS CONTINUOUS ON ONE SIDE ONLY, THE BAR SHALL END WITH A STANDARD HOOK ANCHORED INTO THE BEAM OR SLAB.

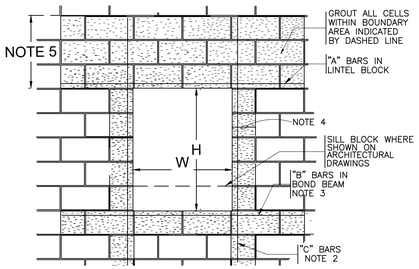
31. PROVIDE HORIZONTAL SUPPORTS IN INTERIOR AND EXTERIOR MASONRY WALLS AT A MAXIMUM OF 8 FEET, AND VERTICAL SUPPORTS AT 12 FEET. THE SUPPORTS SHALL HAVE THE SAME THICKNESS AS THE BLOCK-WALL WITH A MAXIMUM THICKNESS OF 16 INCHES AND SHALL BE REINFORCED WITH 6 NO. 5 CONTINUOUS BARS AND NO. 3 TIES SPACED AT 12 INCHES.

32. IN LAPPED SPLICES, THE LENGTH OF EACH LAP SHALL NOT BE LESS THAN 36 BAR DIAMETERS. DO NOT LAP SPLICES AT POINTS OF MAXIMUM STRESS. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS APPROVED BY THE ENGINEER, WHICH ILLUSTRATE THE LOCATION AND STRESS OF SPLICES TO BE PERFORMED IN COLUMNS, BEAMS, SLABS, WALLS, FOOTINGS, AND ANY OTHER STRUCTURAL MEMBERS.

33. SPLICES AT TOP OF BEAMS SHOULD OCCUR AT A DISTANCE GREATER THAN OR EQUAL TO 1/3 OF ITS SPAN TO THE ADJACENT JOINT OR SUPPORT.

34. SPLICES AT BOTTOM OF BEAMS SHOULD OCCUR AT A DISTANCE LESS THAN 1/3 OF ITS SPAN TO THE ADJACENT JOINT OR SUPPORT.

35. EFFECTIVE CURING METHOD SUCH AS THE USE OF CURING COMPOUND IS REQUIRED TO AVOID TYPICAL SHRINKAGE CRACKS ALONG SLABS.



CMU OPENING REINFORCING SCHEDULE								
W	"A" BARS		"B" BARS		"C" BARS		# CELLS TO GROUT NOTE 3	
	8" CMU	12" CMU	8" CMU	12" CMU	8" CMU	12" CMU	8" CMU	12" CMU
≤2'-0"	1-#5	2-#5	1-#5	2-#5	1-#5	2-#4	ONE	ONE
>2'-0" ≤6'-0"	2-#5	2-#5	1-#5	2-#5	1-#5	2-#4	ONE	ONE
>6'-0" ≤8'-0"	2-#6	2-#6	2-#5	2-#6	2-#5	2-#5	TWO	TWO
>8'-0" ≤10'-0"	2-#7	2-#8	2-#6	2-#6	2-#5	2-#6	THREE	THREE
>10'-0"	2-#7		2-#6		2-#6		THREE	THREE

NOTES:
1. USE BAR QUANTITIES AND SIZES GIVEN IN SCHEDULE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
2. EXTEND "C" BARS 2'-0" MINIMUM BEYOND TOP AND BOTTOM OF OPENING EXCEPT THAT WHEN "H" OR "W" EXCEEDS 2'-0", "C" BARS SHALL EXTEND FULL HEIGHT.
3. "A" AND "B" BARS SHALL EXTEND 2'-0" EACH SIDE OF THE OPENING. GROUT TO END OF BARS.
4. SEE SCHEDULE FOR NUMBER OF CELLS TO GROUT ON EACH SIDE OF THE OPENING.
5. GROUT ALL CELLS OVER OPENING TO 2'-0" OR W/2, WHICHEVER IS GREATER, UNLESS TOP OF WALL IS REACHED FIRST.

CMU OPENING REINFORCING

NOT TO SCALE

CONFORM TO THE REQUIREMENTS OF SPECIFICATION SECTION 03215, DOWELING FOR CONCRETE

DOWEL SIZE	MINIMUM EDGE DISTANCE	MINIMUM EMBEDMENT DEPTH *	HOLE DIAMETER **
#4	3"	4"	1"
#5	3"	5"	1 1/8"
#6	4"	6"	1 1/4"
#7	5"	7"	1 3/8"
#8	6"	8"	1 1/2"

* – USE ADHESIVE MANUFACTURER'S MINIMUM RECOMMENDED DEPTH OR DEPTH SPECIFIED, OR AS SHOWN ON PLANS, WHICHEVER IS GREATER

** – SUGGESTED HOLE DIAMETER, USE ADHESIVE MANUFACTURER'S RECOMMENDED DIAMETER WHERE APPLICABLE

DRILL AND BOND DOWEL

NOT TO SCALE

DESIGN DATA:

CONCRETE STRENGTH:
f'c =3,000 PSI (FOOTINGS, COLUMNS, BEAMS & SLABS)

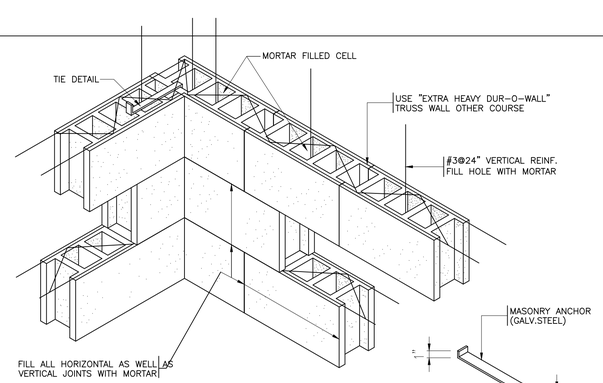
STEEL REINFORCEMENT:
fy = 60,000 PSI, (A.S.T.M. A-615 GRADE 60)

ALLOWABLE SOIL BEARING PRESSURE:
qa = 2500 PSF (ASSUMED FOR FOOTING DESIGN)

LIVE LOADS: 20 PSF ROOF; 60 PSF STAIRS; 50 PSF 2ND LEVEL (OFFICE)

WIND LOADS: AS PER ANSI/ASCE 7-95

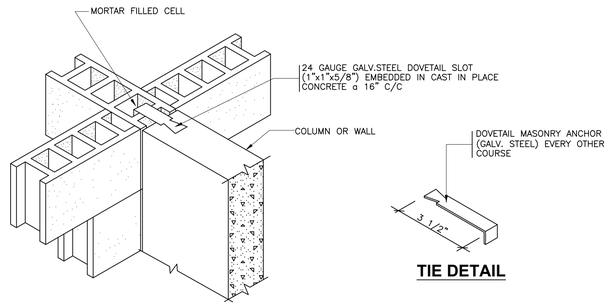
SEISMIC LOADS: AS PER UBC-97



TYPICAL DETAIL FOR ALL CONCRETE BLOCK WALL

NOT TO SCALE

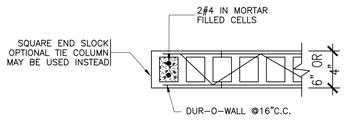
TIE DETAIL



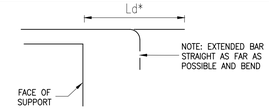
TYPICAL DETAIL FOR ALL CONCRETE BLOCK AND CONCRETE WALL OR COLUMN INTERSECTION

NOT TO SCALE

TIE DETAIL



AT END WALL

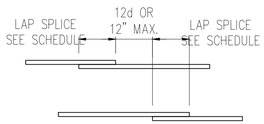


* SEE SCHEDULE "A" FOR VALUE OF Ld

TYPICAL BEAM AND COLUMNS REINFORMENT ENDS

NOT TO SCALE

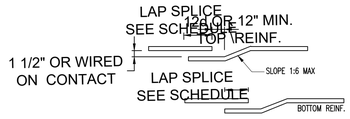
SCHEDULE "A" TENSION DEVELOPMENT LENGTH (in) Ld						
BAR SIZE	f'c= 3,000 P.S.I.		f'c= 4,000 P.S.I.		f'c= 5,000 P.S.I.	
	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS
# 3	22	17	18	14	17	13
# 4	29	22	25	19	22	17
# 5	36	28	31	24	27	21
# 6	43	33	38	29	34	26
# 7	62	48	53	41	48	37
# 8	72	55	61	47	55	42
# 9	81	62	69	53	61	47
# 10	91	70	78	60	69	53
# 11	101	78	86	66	77	59



WALL OR SLAB SPLICE DETAIL

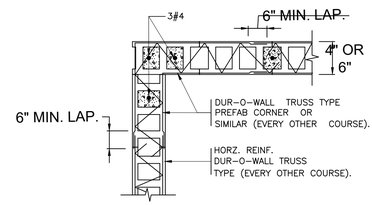
NOT TO SCALE

SCHEDULE "B" TYPE "B" TENSION LAP SPLICE LENGTH (in)						
BAR SIZE	f'c= 3,000 P.S.I.		f'c= 4,000 P.S.I.		f'c= 5,000 P.S.I.	
	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS
# 3	29	22	23	18	22	17
# 4	38	29	33	25	29	22
# 5	47	36	40	31	35	27
# 6	56	43	49	38	44	34
# 7	81	62	69	53	62	48
# 8	94	72	79	61	72	55
# 9	105	81	90	69	79	61
# 10	118	91	101	78	90	69
# 11	131	101	112	86	100	77



BEAM SPLICE DETAIL

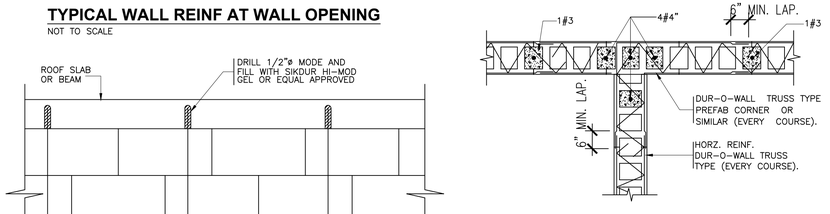
NOT TO SCALE



TYPICAL WALL REINF AT WALL OPENING

NOT TO SCALE

AT CORNER



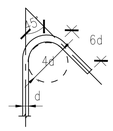
TYPICAL BLOCK WALL END ANCHORING DETAIL

NOT TO SCALE

AT INTERSECTION

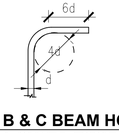
TYPICAL CONCRETE BLOCK WALL REINFORCEMENT DETAILS

NOT TO SCALE



TYPE B & C BEAM HOOKS, COL. CONFINEMENT TIES AND BEAM-COLUMN JOINT TIES.

NOT TO SCALE



TYPE B & C BEAM HOOKS AND REGULAR COLUMN TIES

NOT TO SCALE

Project review

INSTITUTO PREVOCACIONAL e INDUSTRIAL DE PR

STRUCTURAL NOTES ii

CARR PR 492 INT.
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ARECIBO, PR

CERTIFICATION RULE 2.1.9.2 k

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Project number 780
Date 9/12/2022
Drawn by JOP
Checked by ENG. RUBEN ORTIZ GALARZA

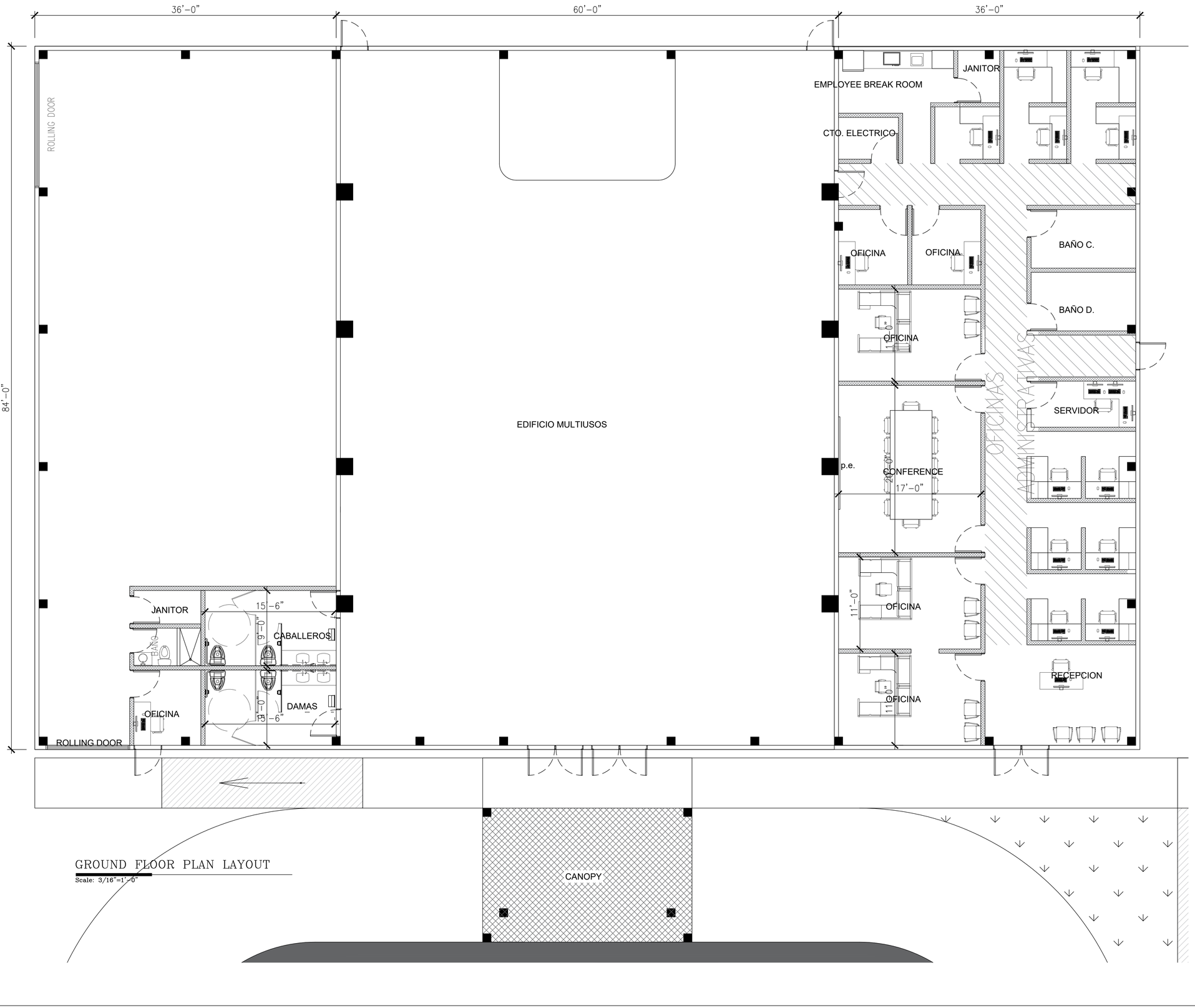
Si101

Scale AS-SHOWN

8 OF ####

SHEET REV. JUNE 1, 2012

FILE: E:\TROPICAL READY MIX\VC - PROJECTS\2021\CET\SHELL\PULDING



GROUND FLOOR PLAN LAYOUT

Scale: 3/16"=1'-0"

Project review

INSTITUTO PREVOCACIONAL e INDUSTRIAL DE PR

GROUND FLOOR PLAN LAYOUT

CARR PR 492 INT.
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ARECIBO, PR

CERTIFICATION RULE 2.1.9.2 k

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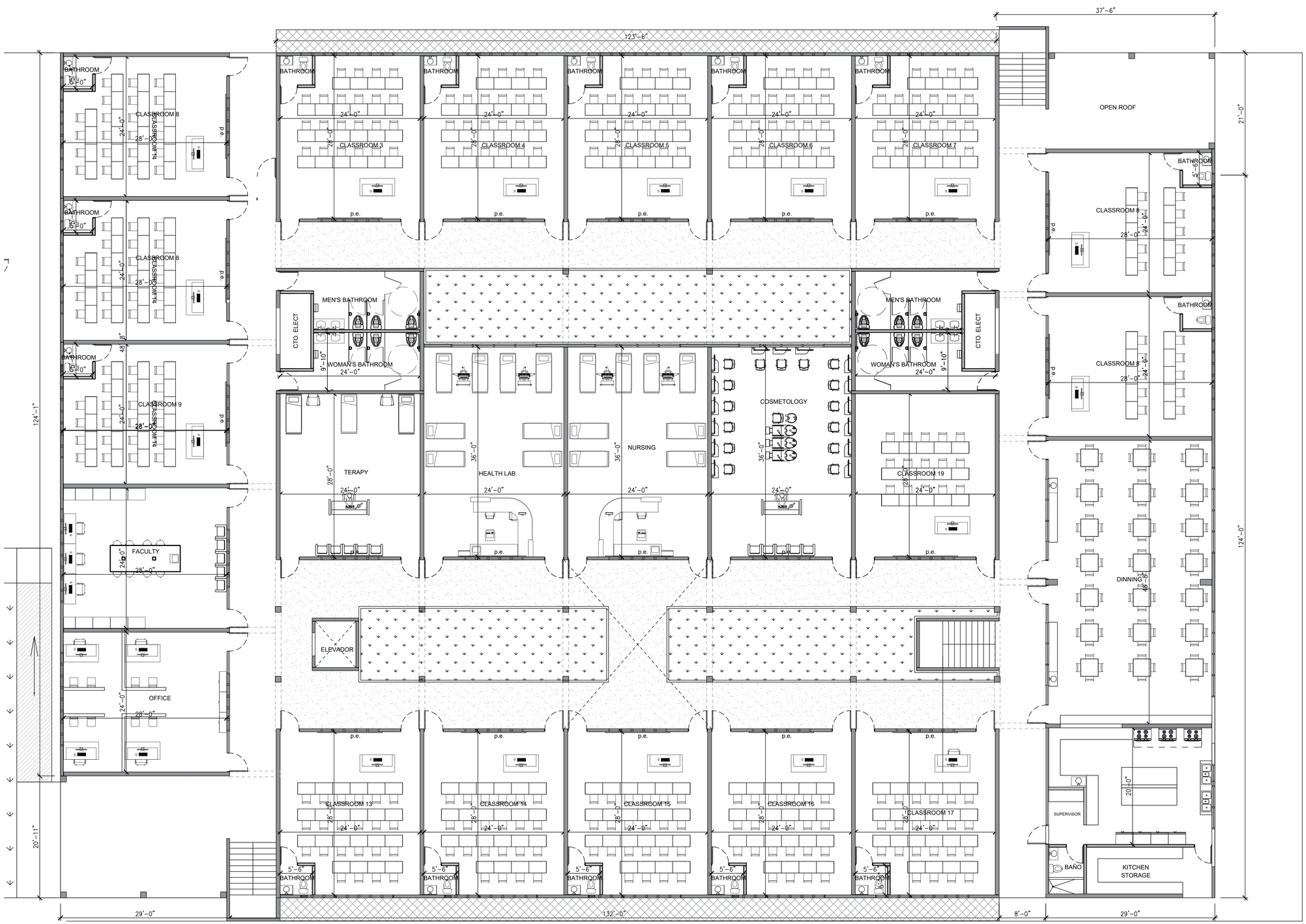
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Checked by	ENG. RUBEN ORTIZ GALARZA
	A100
Scale	AS-SHOWN
	11 OF ####

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SHEET REV. JUNE 1, 2012



GROUND FLOOR PLAN LAYOUT

Scale: 1/8=1'-0"

Project review

INSTITUTO PREVOCACIONAL e INDUSTRIAL DE PR

GROUND FLOOR PLAN LAYOUT

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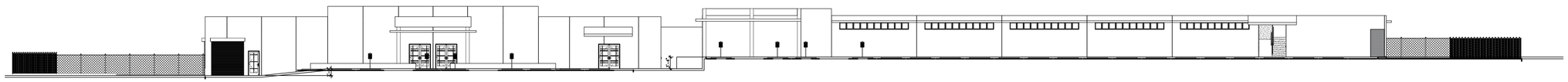
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Project number	780
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Checked by	ENG. RUBEN ORTIZ GALARZA
	A101
Scale	AS-SHOWN
12	OF ####

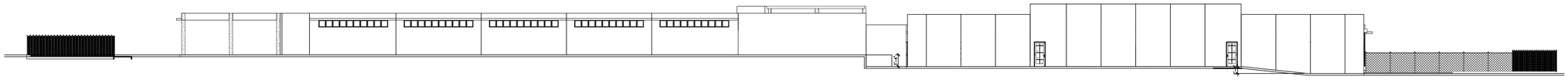
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SHEET REV. JUNE 1, 2012



FRONT ELEVATION

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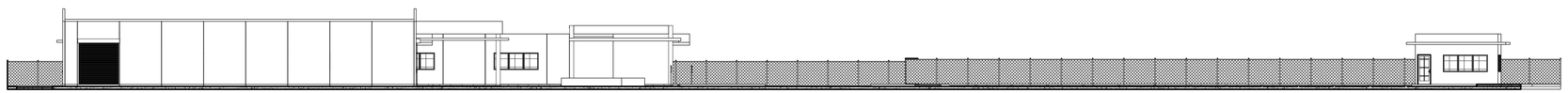


REAR ELEVATION

Scale: 1/16"=1'-0"

RIGHT ELEVATION

Scale: 1/16"=1'-0"



LEFT ELEVATION

Scale: 1/16"=1'-0"

Project review

INSTITUTO PREVOCACIONAL e INDUSTRIAL DE PR

ELEVATIONS

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Project number	780
Date	9/12/2022
Drawn by	JOP
Checked by	ENG. RUBEN ORTIZ GALARZA

A200

Scale	AS-SHOWN

13 OF ####

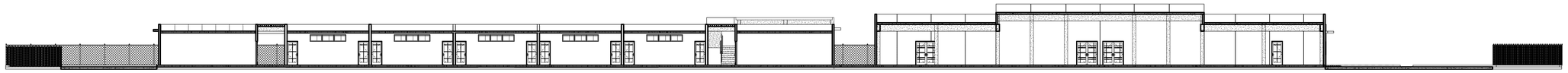
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SHEET REV - JUNE 1, 2012



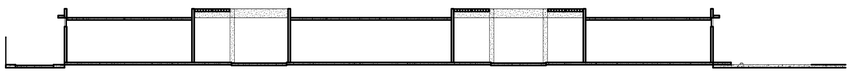
SECTION A/A

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SECTION B/B

Scale: 1/16"=1'-0"



SECTION C/C

Scale: 1/16"=1'-0"



SECTION D/D

Scale: 1/16"=1'-0"

Project review

INSTITUTO PREVOCACIONAL e INDUSTRIAL DE PR

SECTIONS

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Project number	780
Date	9/12/2022
Drawn by	JOP
Checked by	ENG. RUBEN ORTIZ GALARZA

A300

Scale	AS-SHOWN

14 OF ####

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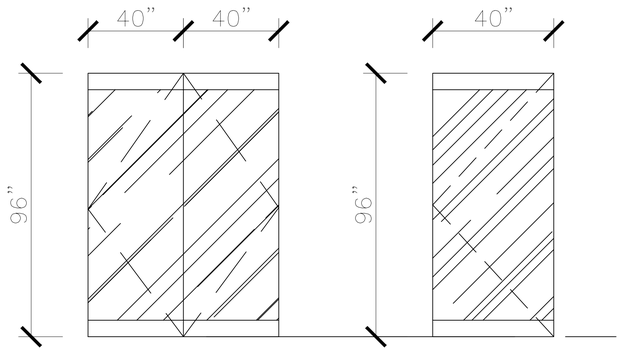
SHEET REV - JUNE 1, 2012

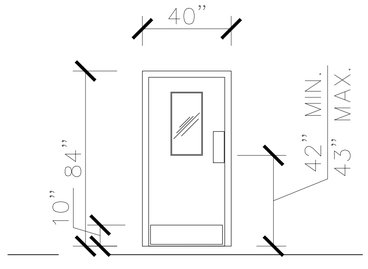
DOORS SCHEDULE

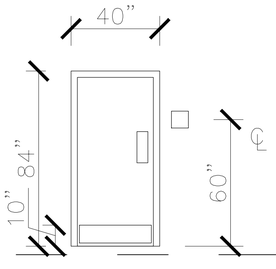
MKD	OPENING WITH	OPENING HIGH	DOOR SIZE WITH	DOOR SIZE HIGH	MATERIAL	FRAME	MODEL	TYPE	REMARKS
1	3'-4"	7'-4"	3'-0"	7'-0"	HOLLOW METAL	METAL	TO BE SELECT BY OWNER	V	DOOR W/ PANIC DEVICE FIRE RATED / 2 HOUR MIN
2	3'-4"	7'-4"	3'-0"	7'-0"	HOLLOW METAL	METAL	TO BE SELECT BY OWNER	IV	FIRE RATED / 2 HOUR MIN
3	3'-4"	7'-4"	3'-0"	7'-0"	HOLLOW METAL	METAL	TO BE SELECT BY OWNER	III	FIRE RATED / 2 HOUR MIN
4	6'-0"	8'-0"	5'-9"	7'-9"	ALUM. AND GLASS	ALUM.	TO BE SELECT BY OWNER	I	
5	3'-4"	7'-4"	3'-0"	7'-0"	ALUM. AND GLASS	ALUM.	TO BE SELECT BY OWNER	VI	

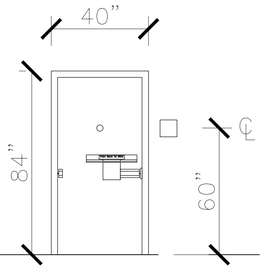
WINDOWS SCHEDULE

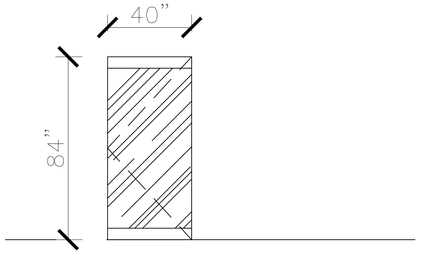
MKD	OPENING WITH	OPENING HIGH	TYPE	MODEL	MATERIAL	REMARKS
1A	2'-0"	2'-0"	I	TO BE SELECT BY OWNER	ALUM. / TEMPERED GLASS	BATHROOMS
1B	3'-0"	5'-0"	I	TO BE SELECT BY OWNER	ALUM. / TEMPERED GLASS	–
1C	2'-0"	2'-0"	I	TO BE SELECT BY OWNER	ALUM. / LOUVER	ELEVATOR
1D	VARIES	VARIES	I	TO BE SELECT BY OWNER	FIXED GLASSS	

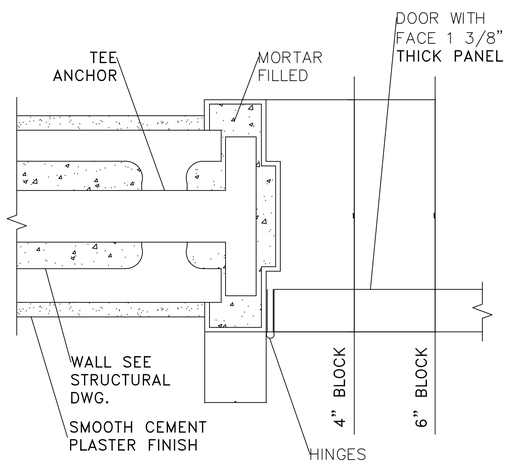






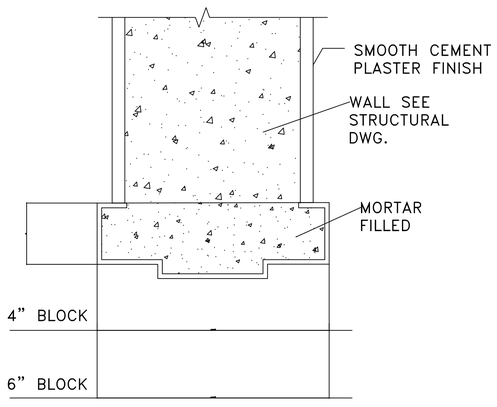






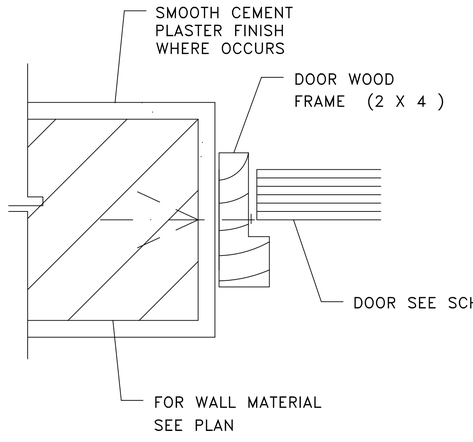
METAL FRAME JAMB DETAIL

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



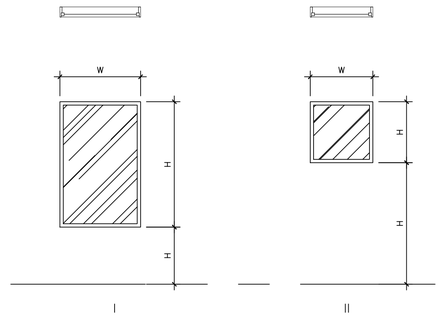
METAL FRAME HEAD DETAIL

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



WOOD FRAME DETAIL

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



WINDOWS TYPE

NOTES:

1 -THE CONTRACTOR TO BE VERIFY OPENING DIMENSION .

2 -THE CONTRACTOR TO BE INSTALLED DOOR & WINDOW TO BE ACCORDED BY OWNER.

GENERAL NOTES:

1. ALL METAL DOORS AND FRAMES SHALL BE CONSTRUCTED OF ELECTROGALVANIZED BONDERIZED STEEL SHEETS OF GAGES AS SHOWN.
2. ALL DOORS SHALL HAVE THE FOLLOWING FEATURES:
   - A. HONEYCOMB CORE
   - B. INTEGRAL ASTRAGAL AT DOUBLE DOORS
   - C. FLUSH TOP AND BOTTOM CLOSURE CHANNELS
   - D. SEAMLESS CONSTRUCTION ON ALL EDGES
   - E. SANITARY MOULDINGS FOR GLASS LIGHTS
   - F. ELECTROGALVANIZED REINFORCEMENTS
   - G. FACTORY PRIMED
3. ALL METAL FRAMES SHALL HAVE THE FOLLOWING FEATURES:
   - A. ELECTROGALVANIZED STEEL
   - B. MITERED FACTORY WELDED CORNERS
   - C. SEAMLESS CONSTRUCTION
   - D. FACTORY PRIMED
   - E. HOSPITAL STOPS WHERE REQUIRED
   - F. RUBBER SOUND SILENCERS
4. SHOP DRAWINGS TO BE SUBMITTED TO ARCHITECT FOR APPROVAL
5. ALL HARDWARE SHALL BE PROVIDED WITH CONSTRUCTION KEY AND MASTER KEYED
6. REGULATORY REQUIREMENTS FOR HARDWARE:
   - A. CONFORM TO ALL APPLICABLE CODES FOR FIRE RATED DOORS AND FRAMES.
   - B. CONFORM TO THE APPLICABLE SECTIONS OF CHAPTER 5 OF NFPA 101.
   - C. CONFORM TO ANSI A117.1 FOR HARDWARE LOCATIONS AND REQUIREMENTS TO MEET ALL HANDICAPPED CODES AND MEET TITLE III PROVISIONS OF THE AMERICAN WITH DISABILITIES ACT.
   - D. QUANTITIES SHOWN ON THE SCHEDULE ARE FOR REFERENCE ONLY, FINAL COUNT IS CONTRACTOR'S RESPONSABILITY. CONTRACTOR SHOULD VERIFY FLOOR PLANS AND DOORS SCHEDULE TO DETERMINE FINAL QUANTITIES.
7. DOOR TYPE (-)

INSULATED ROLL-UP DOORS:

INSULATED ROLL-UP DOORS SHALL BE EQUAL OR SIMILAR TO CORNELL IRON WORKS THERMISER MODEL GEA FACE MOUNTED WITH FULL WEATHERSTRIPPING CONSTRUCTION INSIDE AND OUTSIDE. COMPLETE DOOR ASSEMBLY TO BE DESIGNED FOR A WINLOAD RESISTANCE OF 95 P.S.F. (IN) AND 125 P.S.F. (OUT) IN GALVANIZED STEEL CONSTRUCTION, FACTORY PRIMED AND COLOR POWDER COATED, INCLUDING HOOD BAFFLE. ANCHORING REQUIREMENTS FOR THE STATED WINLOADS TO BE CONFIRMED BY MANUFACTURER. INSTALLATION SHALL BE DONE TO FINISHED CONCRETE OPENINGS. SUBMIT SHOP DRAWINGS FOR ARCHITECTS APPROVAL.

Project review

INSTITUTO PREVOCACIONAL e INDUSTRIAL DE PR

DOORS & WINDOWS SCHEDULES

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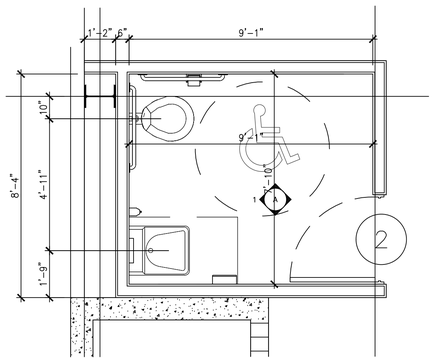
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	A400
Scale	AS-SHOWN
	15 OF ####

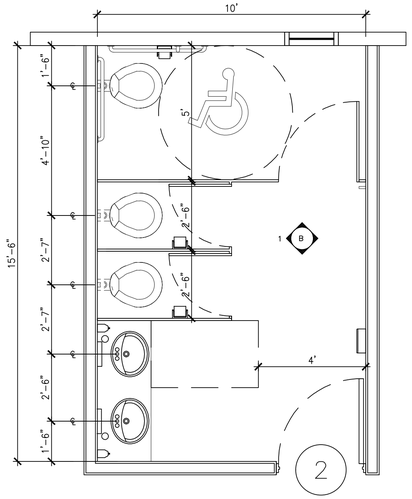
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SHEET REV: JUNE 1, 2012



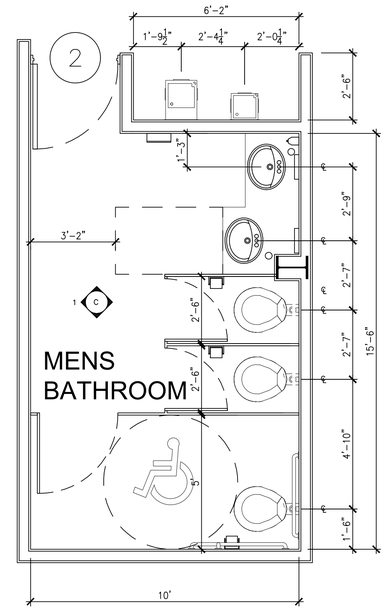
BATHROOM #1

Scale: 3/8"=1'-0"



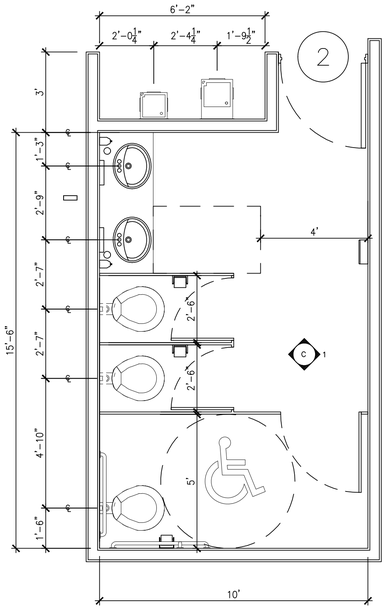
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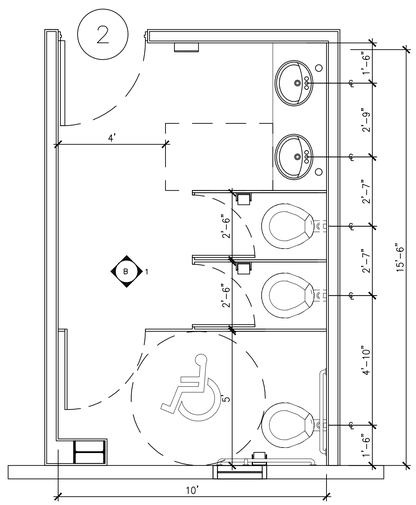
BATHROOM #3

Scale: 3/8"=1'-0"



BATHROOM #4

Scale: 3/8"=1'-0"



BATHROOM #5

Scale: 3/8"=1'-0"

TOILET FIXTURES AND ACCESSORIES SCHEDULE

NO.	ITEM	MOUNTING	MANUFACTURER	MOUNTING HEIGHT	MODEL NO.	PRODUCT INFORMATION	REMARKS
①	TOILET	FLOOR	AMERICAN STANDARD	–	2234.001	ELONGATED TOILET	INCLUDE OPEN FRONT SEAT (BLACK)
②	HANDICAPPED TOILET	FLOOR		–	3043.001	ELONGATED TOILET	
③	TOILET TANK	FLOOR		–	2835.128	ELONGATED TOILET	
④	BABY TOILET	FLOOR		–	2282.010	ROUND FRONT TOILET	
⑤	URINAL	WALL		–	6590.001		
⑥	HANDICAPPED LAVATORY	WALL		–	0356.421		
⑦	SOAP DISPENSER	WALL		–	B-2111		
⑧	MIRROR	WALL		–	B-165-1824		
⑨	HANDICAPPED MIRROR	WALL		–	B-293-1830		
⑩	GRAB BAR	WALL		–	B-6047		
⑪	TOILET TISSUE DISPENSER	WALL		–	B-2888	SURFACE MOUNTED MULTI-ROLL	
⑫	TOWEL DISPENSER	WALL		–	B-2860	SURFACE MOUNTED ROLL	
⑬	WASTE RECEPTACLE	WALL		–	B-279	SURFACE MOUNTED	
⑭	TOILET PARTITIONS	FLOOR		–	–		
⑮	SHOWER/DRESSING SEAT	FLOOR	BOBRICK	–	B-5191	ELONGATED TOILET	
⑯	SHOWER CURTAINS	–		–	204	VINYL	
⑰	SOAP DISH WITH BAR	WALL		–	B-4390	–	
⑱	SHOWER SYSTEM	WALL	AMERICAN STANDARD	–	1662.604	–	
⑲	KITCHEN SINK	COUNTER	KINDRED	–	QSL1515/6	SINGLE BOWL STAINLESS STEEL	
⑳	WATER COOLERS	WALL	ELKAY	–	EZS-85	STAINLESS STEEL LOWER SHROUD	

Project review

INSTITUTO PREVOCACIONAL e INDUSTRIAL DE PR

BATHROOMS

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CERTIFICATION RULE 2.1.9.2 k

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Project number 780
Date 9/12/2022
Drawn by JOP
Checked by ENG. RUBEN ORTIZ GALARZA

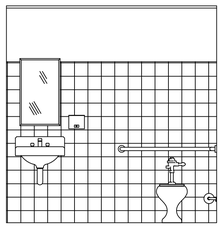
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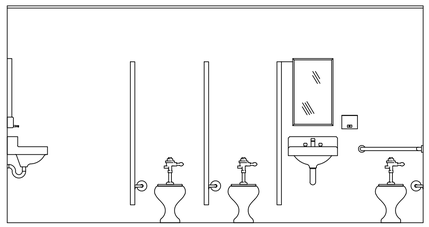
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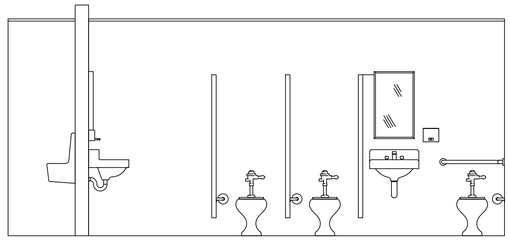
SECTION A

Scale: 3/8"=1'-0"



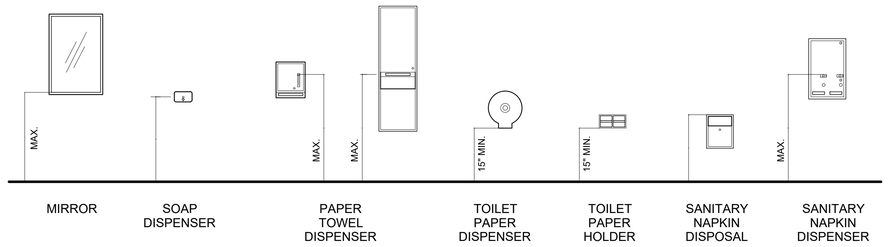
SECTION B

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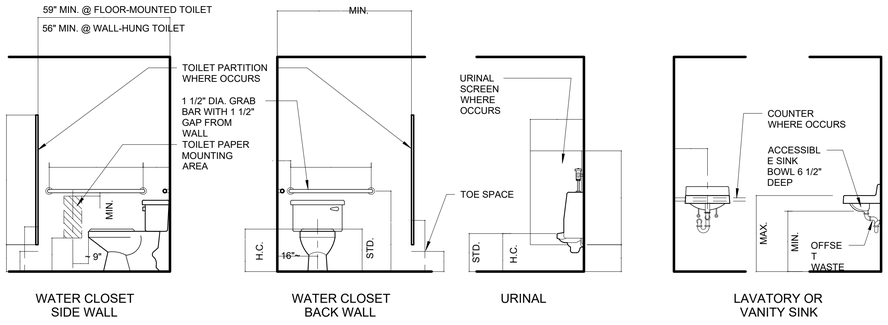


SECTION C

Scale: 3/8"=1'-0"



TYPICAL TOILET ACCESSORIES MOUNTING HEIGHTS



TYPICAL PLUMBING FIXTURES AND ACCESSORIES MOUNTING HEIGHTS

Scale: 3/8"=1'-0"

Project review

INSTITUTO PREVOCACIONAL e INDUSTRIAL DE PR

BATHROOMS SECTIONS

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CERTIFICATION RULE 2.1.9.2 k

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Project number 780
Date 9/12/2022
Drawn by JOP
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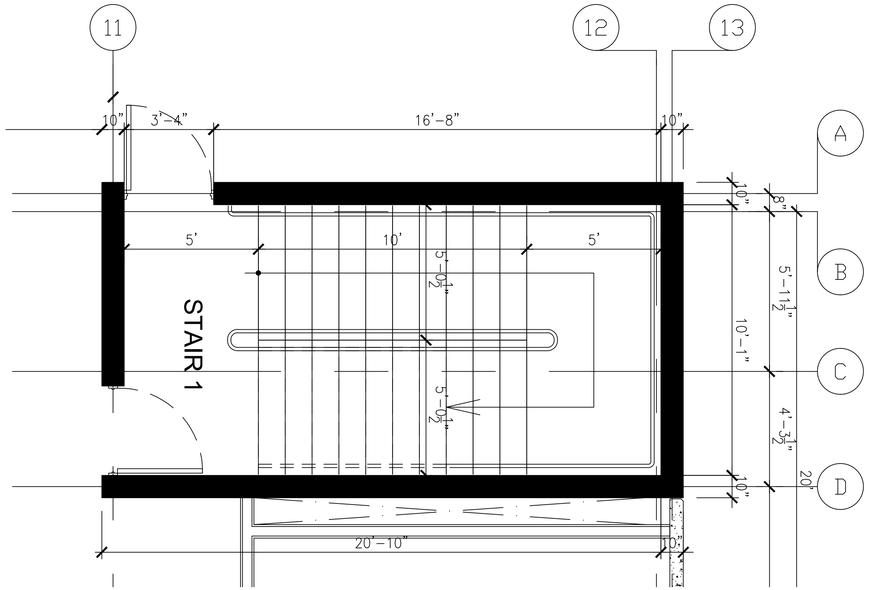
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Scale AS-SHOWN

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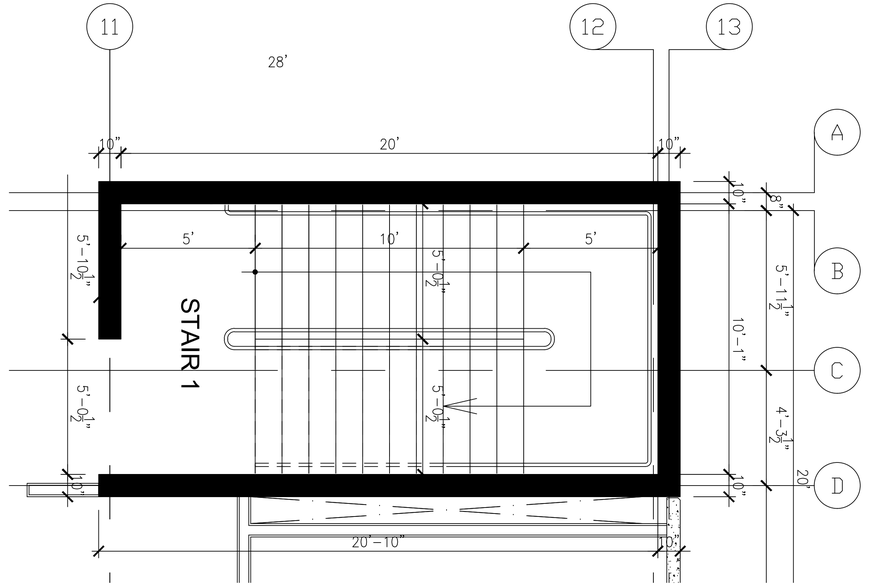
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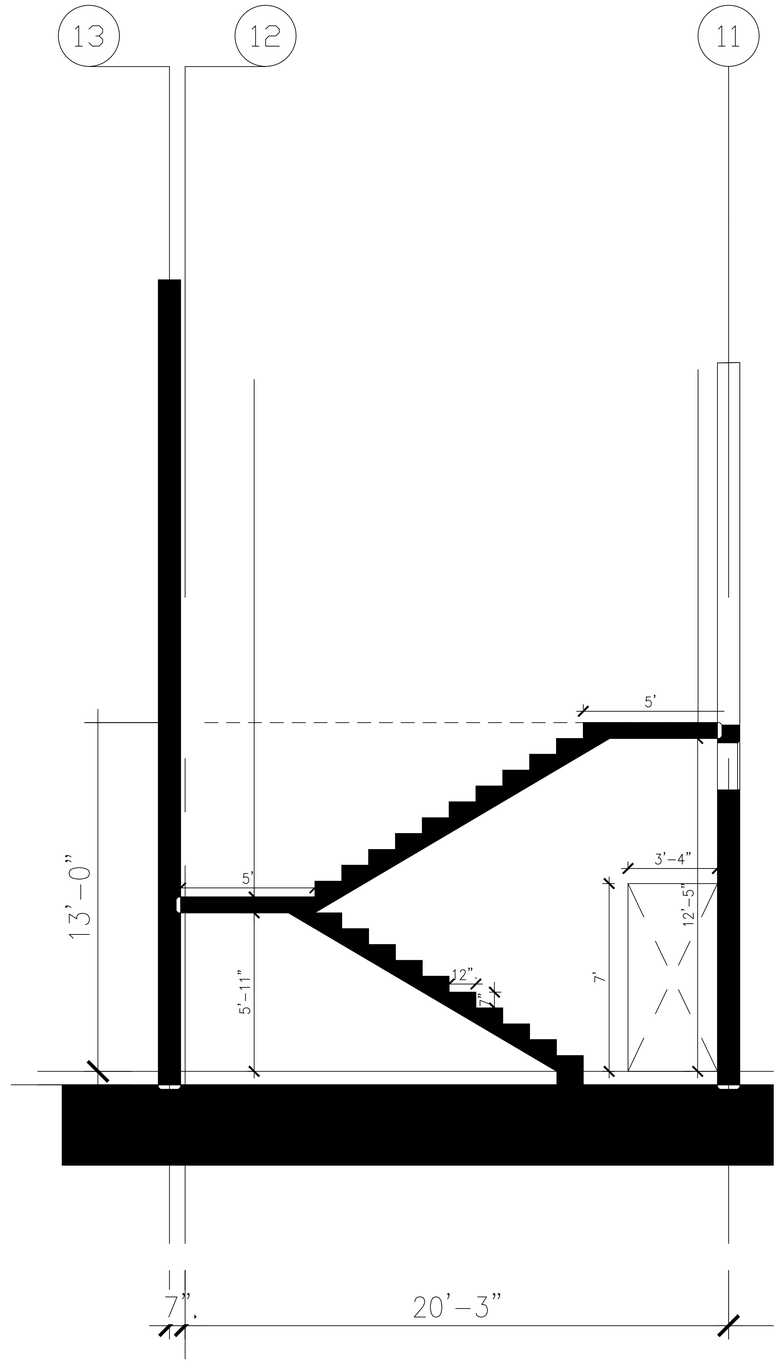
STAIR 1 @ GROUND FLOOR PLAN LAYOUT

Scale: 3/8"=1'-0"



STAIR 1 @ 1ST FLOOR PLAN LAYOUT

Scale: 3/8"=1'-0"



STAIR 1 ELEVATION AXIS A

Scale: 3/8"=1'-0"

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STAIR 1

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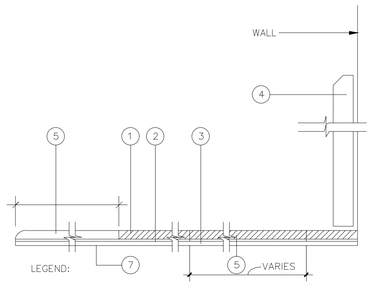
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Date	9/12/2022
Drawn by	JOP
Checked by	ENG. RUBEN ORTIZ GALARZA

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Scale	AS-SHOWN

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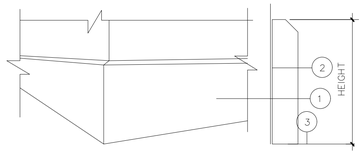
SHEET REV: JUNE 1, 2012



LEGEND:

1. ARMS'TIRONG – STANDARD EXCELON – VINYL COMPOSI'TION TILE 12"X12"X1/8" GAUGE . COLORS AND PATTERNS TO BE SELECTED BY ARCHITECT . TILES WILL BE INSTALLED USING A FULL – SPREAD ADHESIVE SYSTEM FOLLOWING.
2. ARMS'TIRONG RESILIENT FLOORING INSTALLATION RECOMMENDATION BOOKLET.
3. ARMSTRONG ADHESIVE S–89, S–90, S–700 OR S–750.
4. LATEX & CEMENTITIOUS LEVELING AND UNDERLA YEM ENT COMPOUND HAVING A MINIMUM OF 4,000 LBS.PER SQ. FT. AFTER 28 DAYS.
5. TYPICAL B–2 RUBBER BASE. REFER TO DETAIL IN THIS DRAWING
6. MERCER TILE REDUCER STOCK NO. 63–1/8" GAUGE IN COLOR TO BE SELECTED BY THE ARCHITECT. PROVIDE REDUCER AT VINYL TILES AREA LIMITS WHERE WALLS NOT OCCURS.
7. FEATURE STRIPS WHEN CALLED ON DRAWINGS IN ARMSTRONG STONE PREMIUM EXCELON VINYL COMPOSITION TILE.
8. POLISHED CONCRETE TOPPING SYSTEM.

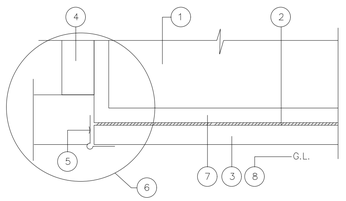
TYPICAL VINYL FLOORING DETAILS



LEGEND:

1. MANDALAY MW–XX–H25 MILLWORK WALL BASE BY JOHNSONITE, IN SILVER GRAY #55 WG PROVIDE ALL REQUIRED CORNER.
2. 946 PREMIUM CONTACT ADHESIVE (NONO–POROUS SURFACE) AS PER MANUFAC'TIURER INSTRUCTIONS.
3. FINISH FLOOR.

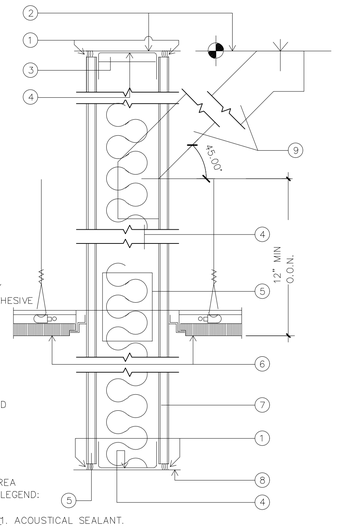
TYPICAL WALL BASE



LEGEND:

1. MASORY OR CONCRETE WALL.
2. SHEET LAMINATION WITH USG. READY–MIXED JOINT COMPOUND HAND APPLIED SPREADER SPREAD COMPOUND OVER ENTIRE BACK SURFACE OF FACE LAYER BOARD. PRESS BOARD INTO PLACE WITH FIRM PRESURE TO INSURE BOND AND AVOID CAVITIES; REIMPACT WITHIN 24 HR. IF NECESSARY.
3. JOINTS WITH TAPING AND USE READY MIXED JOINT COMPOUND– PURPOSE.
4. 5/8" USG. SHEET ROCK GYPSUM PANEL.
5. DOOR OR GLAZING FRAME WHEN OCCURS.
6. DRYWALL CORNER BEAD.
7. ALL OPENINGS PERIMETER EDGES AT 90° WITH LAMINA TED WALL WILL BE PROVIDED WITH CORNER BEAD AND FINISHED WITH USG READY MIXED JOINT COMPOUND–AUL PURPOSE.
8. CEMENT PLASTER OR EXISTING SURF ACE.
9. SYMBOL ON DRAWINGS INDICATES WHEN GYPSUM LAMINATE OCCURS.

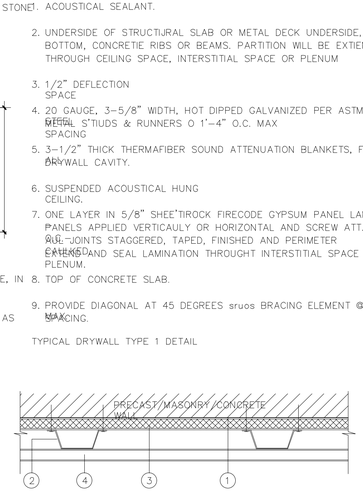
TYPICAL DRYWALL LAMINATE DETAIL



LEGEND:

1. ACOUSTICAL SEALANT.
2. UNDERSIDE OF STRUCTIJRAL SLAB OR METAL DECK UNDERSIDE, NOT JOIST BOTTOM, CONCRETIE RIBS OR BEAMS. PARTITION WILL BE EXTIENDED THROUGH CEILING SPACE, INTERSTITIAL SPACE OR PLENUM
3. 1/2" DEFLECTION SPACE
4. 20 GAUGE, 3–5/8" WIDTH, HOT DIPPED GALVANIZED PER ASTM A 525, METAL S'TIUDS & RUNNERS O 1'–4" O.C. MAX SPACING
5. 3–1/2" THICK THERMAFIBER SOUND ATTENUATION BLANKETS, FILL DRYWALL CAVITY.
6. SUSPENDED ACOUSTICAL HUNG CEILING.
7. ONE LAYER IN 5/8" SHEE'TIROCK FIRECODE GYPSUM PANEL LAMINATION PANELS APPLIED VERTICAULY OR HORIZONTAL AND SCREW ATT. @ 12" O.C. –JOINTS STAGGERED, TAPED, FINISHED AND PERIMETER CAULKED.
8. EXTEND AND SEAL LAMINATION THROUGHT INTERSTITIAL SPACE OR PLENUM.
8. TOP OF CONCRETE SLAB.
9. PROVIDE DIAGONAL AT 45 DEGREES sruos BRACING ELEMENT @ 4'–0" MAX SPACING.

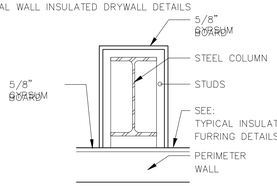
TYPICAL DRYWALL TYPE 1 DETAIL



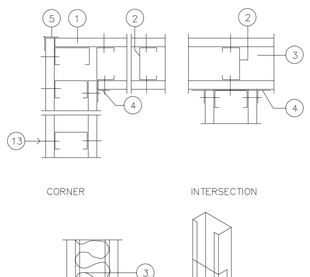
LEGEND:

1. FACE OF INTERIOR OR EXTERIOR WAUL TO BE ENTIRELY COATED WITH NOVA PLUS MOISTURE BARRIER SYSTEM BY SOPREMA.
2. 20 GAUGE, 7 /8", HOT DIPPED GALVANIZED PER ASTM A 525, STEEL FURRING @ 1'–4" MAX SPACING.
3. ONE LAYER IN 5/8" AP FOLI–FACED POLYISOCYANURATE FOAM BOARDING BY JOHNS MANVILLE, APPLIED VERTICALY OR HORIZONTAL AND SCREW @24" O.C. FASTENERS SHOULD PENETRATE 1" MIN. INTO CONCRETE FASTENERS SO THAT 1" WASHER IS FLUSH WITH THE SURFACE. EXTEND AND SEAL LAMINATION FIROM FLOOR SLAB UP TO UNDER SUSPENDED ACOUSTICAL
4. HUNG CEILING. PLACE THE REFILECTIVE SIDE FACING TO THE INTERIOR, AND THE NONREFLECTIVE SIDE FACING THE WALL.
5. ONE LAYER IN 1/2" SHEET ROCK GYPSUM LAMINATION PANELS VERTICALLY OR HORIZONTAL AND SCREW @ 12" O.C. – ALL JOINTS STAGGERED, TAPED, FINISHED AND PERIMETER CAULKED. EXTEND AND SEAL LAMINATION UP TO 12" OVER SUSPENDED ACOUSTICAL HUNG CEILING.

TYPICAL WALL INSULATED DRYWALL DETAILS



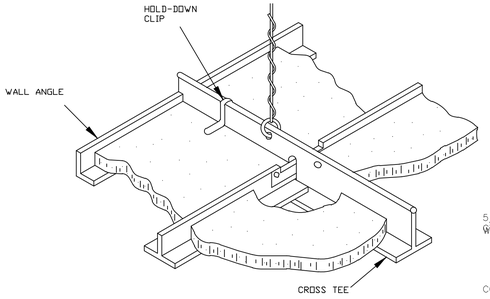
TYPICAL STEEL COLUMN DRYWALL DETAIL

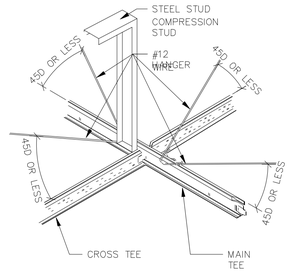


LEGEND:

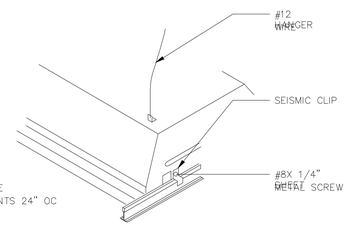
1. FOR LAMINATION DETAILS (MATERIAL, NO. OF LAYER,S ETC.) SEE DRYWALL DETAILS.STAGGER ALL VERTICAL AND HORIZONTAL JOINTS 24" OC
2. TYPICAL GALVANIZED STEEL STUDS.
3. TYPICAL ON ALL DRYWALL CAVITIES 3–1/2" THICK THERMAFIBER SOUND ATTENUATION BLANKETS.
4. TAPE AND JOINT COMPOUND.
5. DRYWALL CORNER BEAD.
6. RESILIENT COVE BASE WHEN OCCURS.
7. WOOD BASE WHEN OCCURS.
8. GALV. STEEL FILOOR TRACK.
9. CASING TRIM.
10. SEALANT OR CAULKING.
11. NOMINAL 2"X4" PREASSURE TREATED AGAINST TERMITES WOOD FRAME ATT. GALV. STIUDS WHEN DOOR OPENINGS OCCURS.
12. FOUR PAN HEAD SCREWS EACH SIDE.
13. INTERMEDIATE OR HEAD GALV. STEEL STUD.

TYPICAL DRYWALL DETAILS

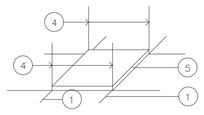


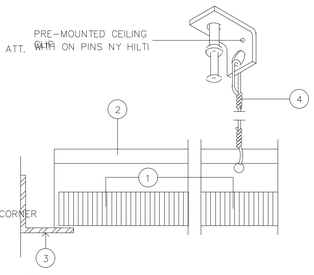


COMPRESSION POST



LIGHTING FIXTURE ATTACHED GRID

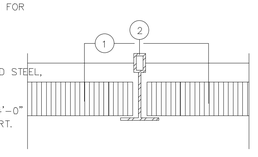


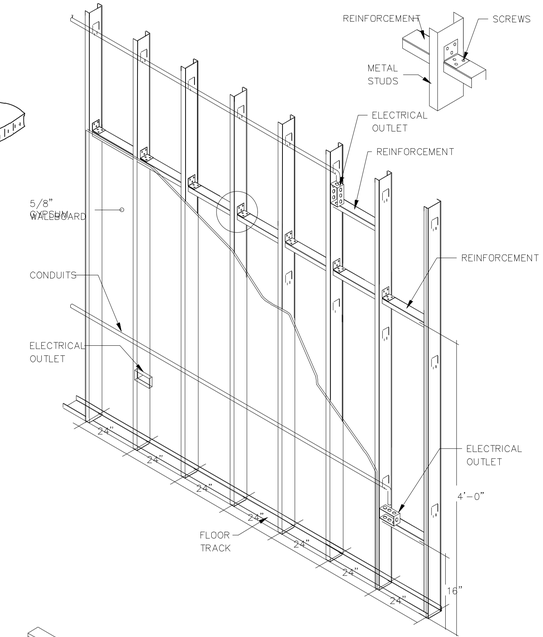


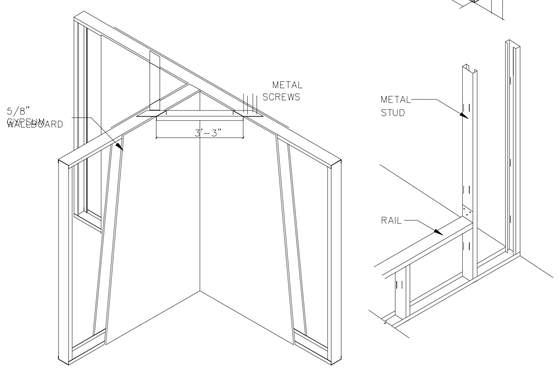
TYPICAL LUMINARIES SUPPORT DETAIL
NOTE :
WHEN LUMINAIRES OCCURS PROVIDE HANGER SUPPORT AT EACH CORNER SHOWN ON TYPICAL LUMINAIRE SUPPORT DETAIL.

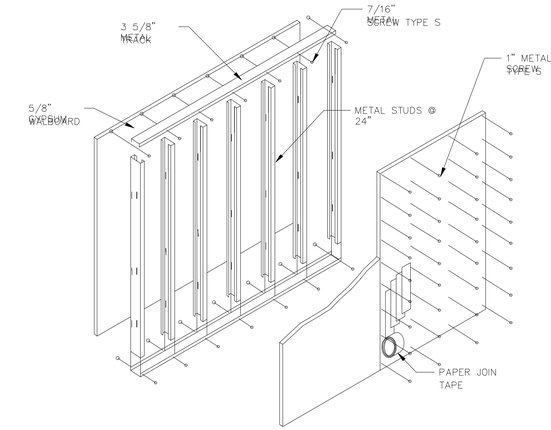
LEGEND:

1. ARMSTRONG, ULTIMA . ITEM 1910 –24"X24"X3/4" SQUARE LAY–IN FOR PRELUDE EXPOSED TEE GRID SYSTEM.
2. 15/16" PRELUDE XL EXPOSED TEE GRID SYSTEM BY ARMSTRONG.
3. WALL MOULDING FORMED FROM COMMERCIAL QUALITY COLD ROLLED STEEL, AND FINISHED IN HIGH BAKED WHITE ENAMEL
4. GAUGE #12, PRE–STRESSED GALVANIZED STEEL HANGER WIRE @ 4'–0" MAXIMUM SPACING EXCEPT FOR LUMINAIRE TYPICAL FOUR CORNERS SUPPORT.
5. TYPICAL FLUORESCENT LUMINARY WHEN OCCURS.









TYPICAL DRYWALL INSTALATION

Project review

INSTITUTO PREVOCACIONAL e INDUSTRIAL DE PR

WALL & CEILING DETAILS

CARR PR 492 INT.
BO HATO ABAJO SEC BARRANCA
ARECIBO, PR

CERTIFICATION RULE 2.1.9.2 k

Yo, Ing. Rubén Ortiz Galarza, Licencia #8431, certifico que soy el profesional que diseñó estos planos y las especificaciones complementarias. También certifico que entiendo que dichos planos y especificaciones cumplen con las disposiciones aplicables del Reglamento Conjunto y las disposiciones aplicables de los Reglamentos y Codigos de las Agencias, Juntas Reglamentadoras o Corporaciones Publicas con jurisdicción. Certifico, además, que en la preparación de estos planos y especificaciones se ha cumplido cabalmente con lo dispuesto en la Ley Núm. 14 de 8 de enero de 2004, según enmendada, conocida como la "Ley para la Inversión por la Industria Puertorriqueña" y con la [Ley Núm. 319 de 15 de mayo de 1938, según enmendada; Ley Núm. 96 de 6 de julio de 1978, según enmendada; según aplique. Reconozco que cualquier declaración falsa o falsificación de los hechos que se haya producido sin conocimiento o por negligencia ya sea por mí, mis agentes o empleados, o por otras personas con mi conocimiento, me hacen responsable de cualquier acción judicial y disciplinario por la OGPe y otras autoridades competentes, incluyendo, pero sin limitarse, la terminación de la participación en los procedimientos de certificación profesional en la OGPe.

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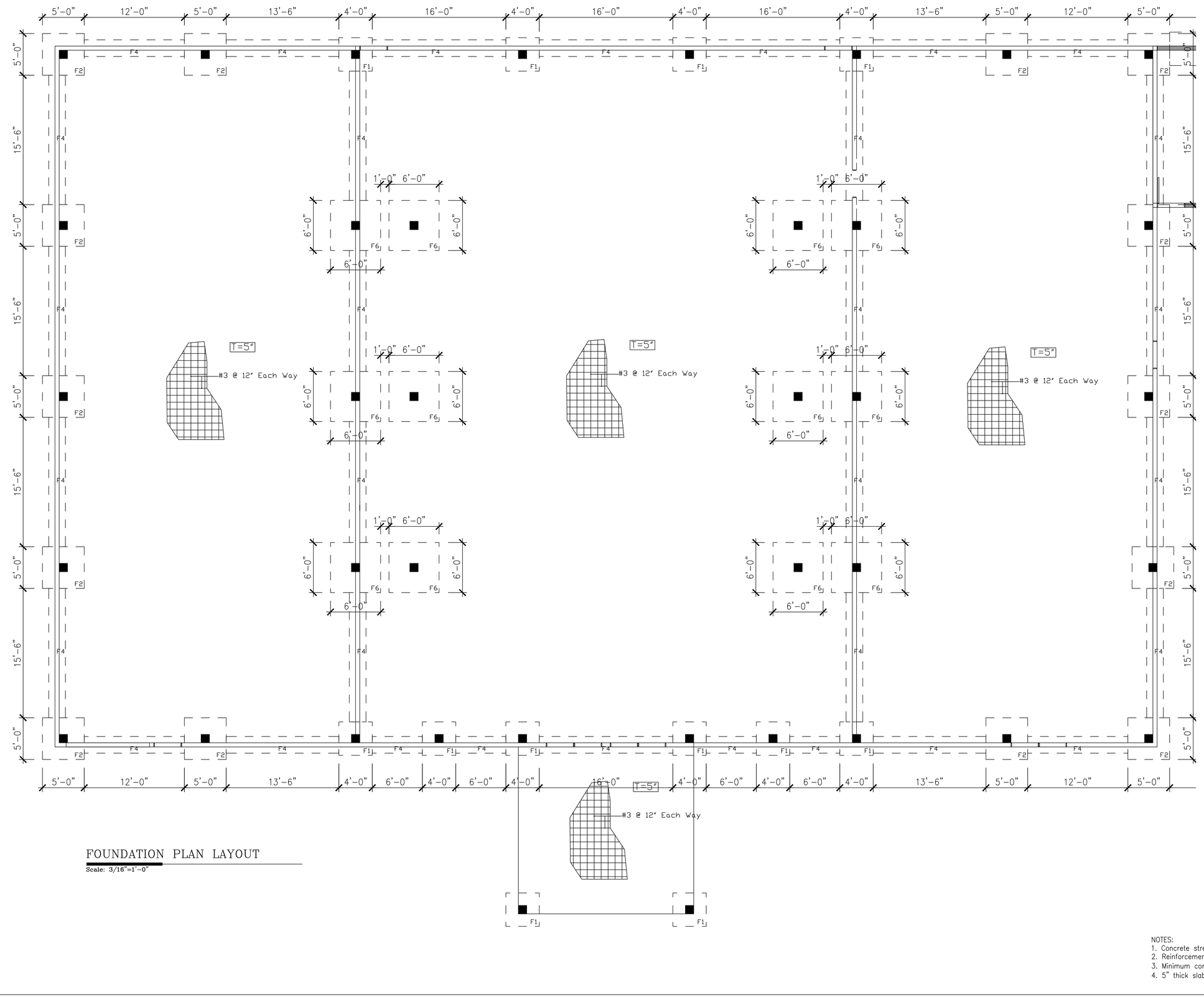
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Project number	780
Date	9/12/2022
Drawn by	JOP
Checked by	ENG. RUBEN ORTIZ GALARZA
	A700
Scale	AS–SHOWN
	19 OF ####

SHEET REV: JUNE 1, 2012

FILE: E:\TROPICAL READY MIX\VC – PROJECTS\2021\CETI\SHELL\PW.DWG



FOUNDATION PLAN LAYOUT

Scale: 3/16"=1'-0"

NOTES:
1. Concrete strength for footing shall be 3,000psi
2. Reinforcement strength shall be 60,000psi
3. Minimum concrete clear cover 3".
4. 5" thick slab on ground No3@12" each way.

Project review

INSTITUTO PREVOCACIONAL e INDUSTRIAL DE PR

FOUNDATION PLAN LAYOUT

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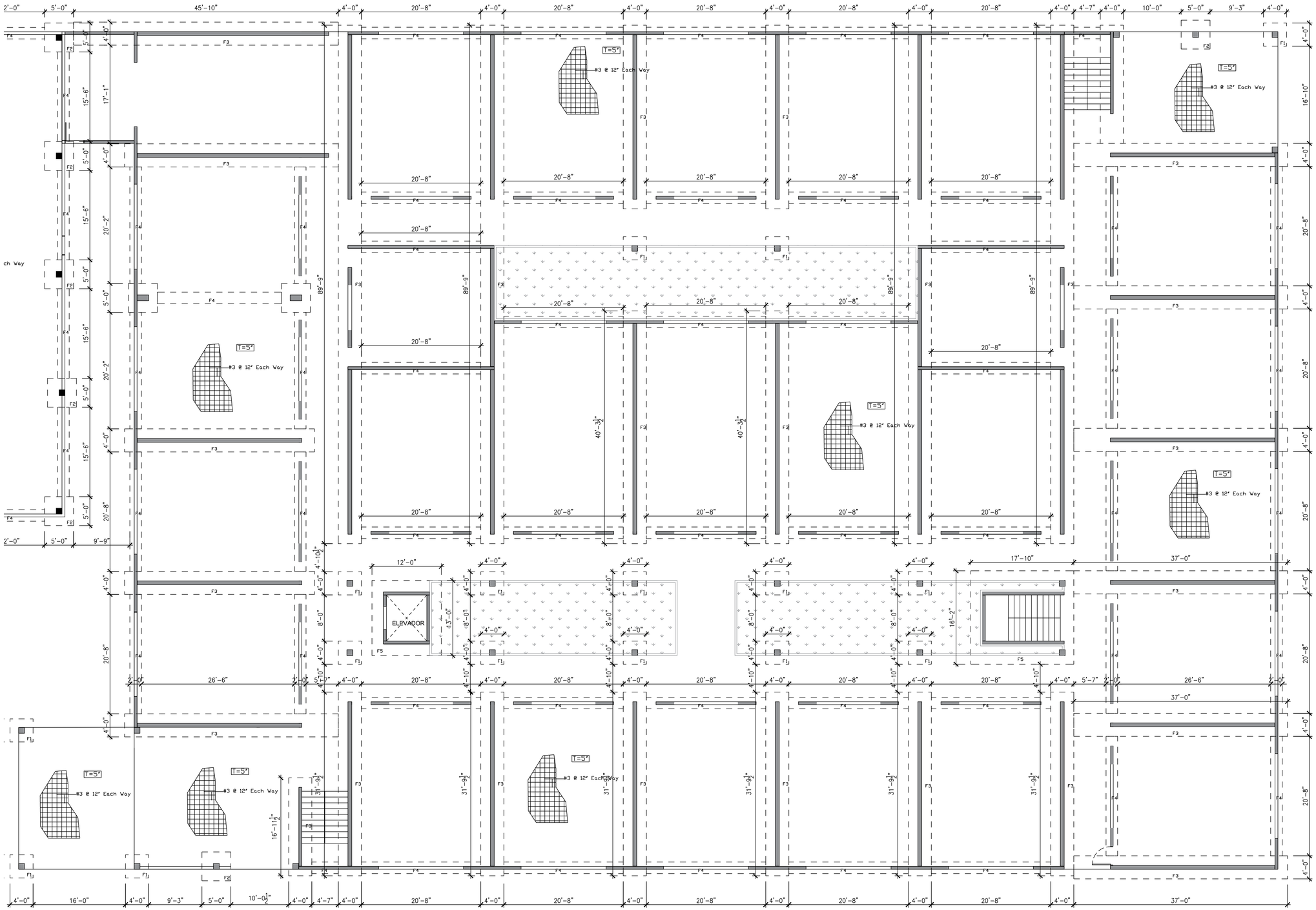
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Project number	780
Date	9/12/2022
Drawn by	JOP
Checked by	ENG. RUBEN ORTIZ GALARZA
	S800
Scale	AS-SHOWN
	20 OF ####

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SHEET REV. JUNE 1, 2012



FOUNDATION PLAN LAYOUT

Scale: 3/16"=1'-0"

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4. 5" thick slab on ground No3@12" each way.

Project review

INSTITUTO PREVOCACIONAL e INDUSTRIAL DE PR

FOUNDATION PLAN LAYOUT

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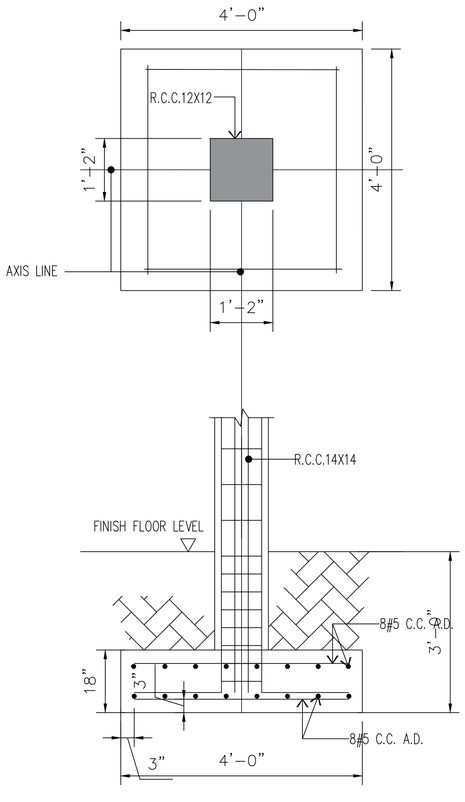
S801

Scale	AS-SHOWN

21 OF ####

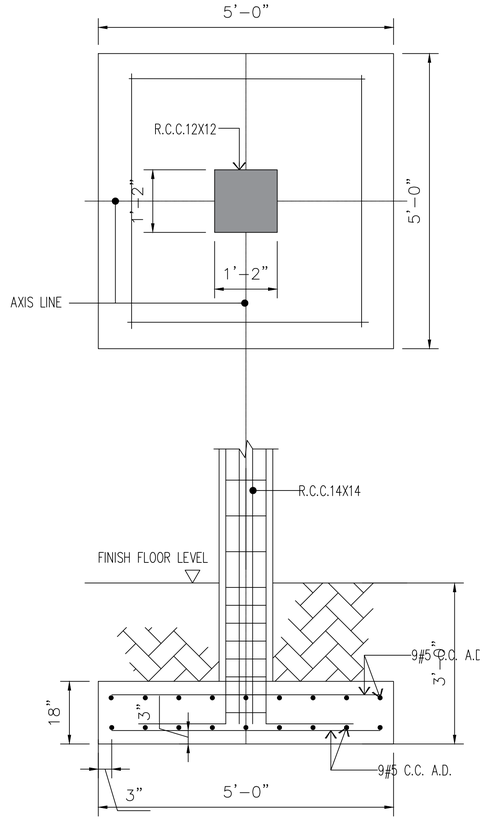
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SHEET REV - JUNE 1, 2012



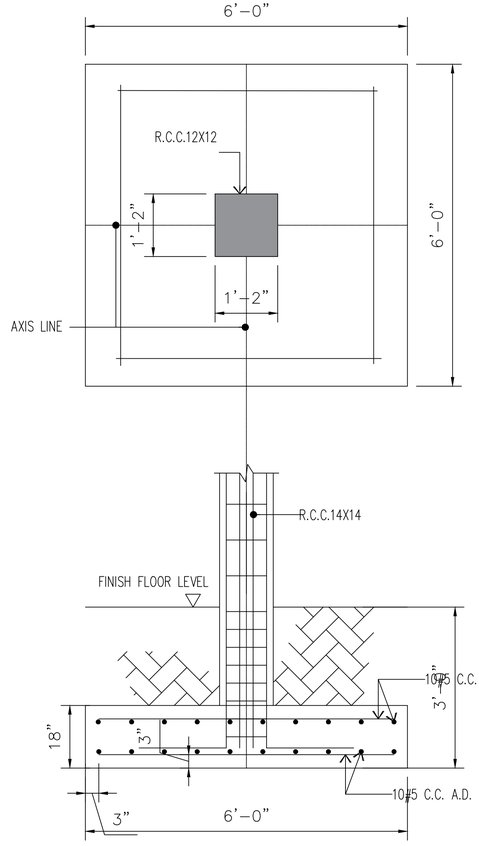
F1

Scale: 3/4"=1'-0"



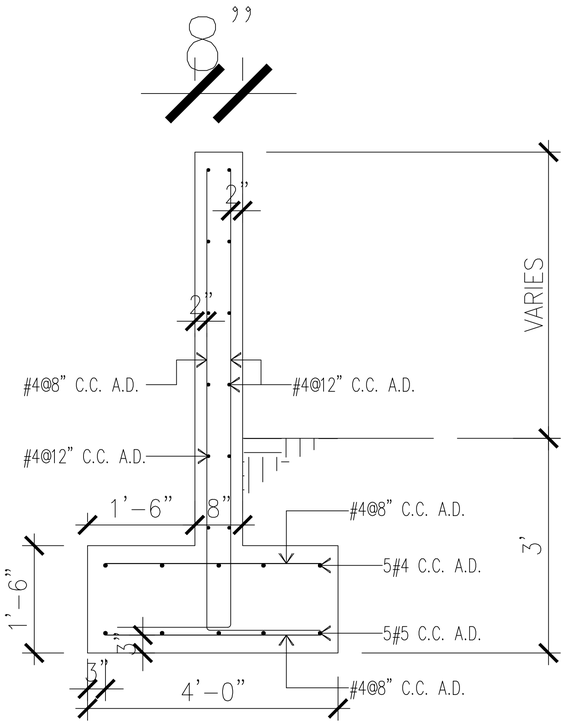
F2

Scale: 3/4"=1'-0"



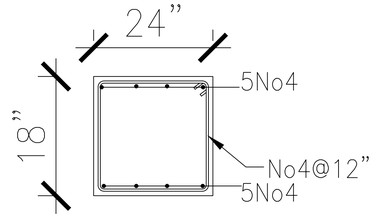
F6

Scale: 3/4"=1'-0"



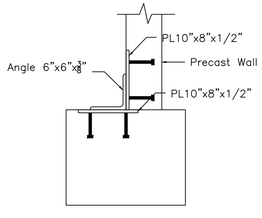
F3

Scale: 1"=1'-0"



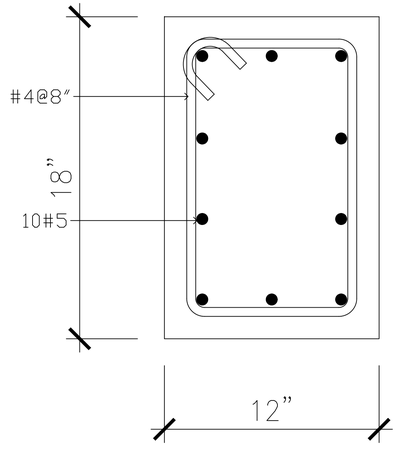
F4

Scale: 1"=1'-0"



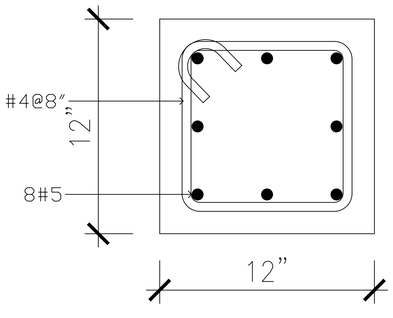
Precast Wall Foundation

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



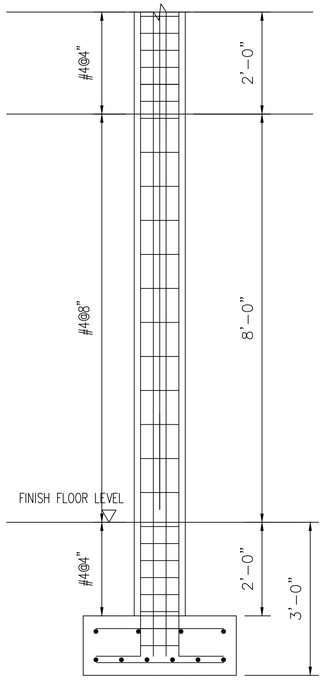
C1

Scale: 3"=1'-0"



C2

Scale: 3"=1'-0"



NOTES:
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2. Reinforcement strength shall be 60,000psi
3. Minimum concrete clear cover 3".
4. 5" thick slab on ground No3@12" each way.

Project review

INSTITUTO PREVOCACIONAL e INDUSTRIAL DE PR

FOUNDATION PLAN LAYOUT

CARR PR 492 INT.
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Project number	780
Date	9/12/2022
Drawn by	JOP
Checked by	ENG. RUBEN ORTIZ GALARZA

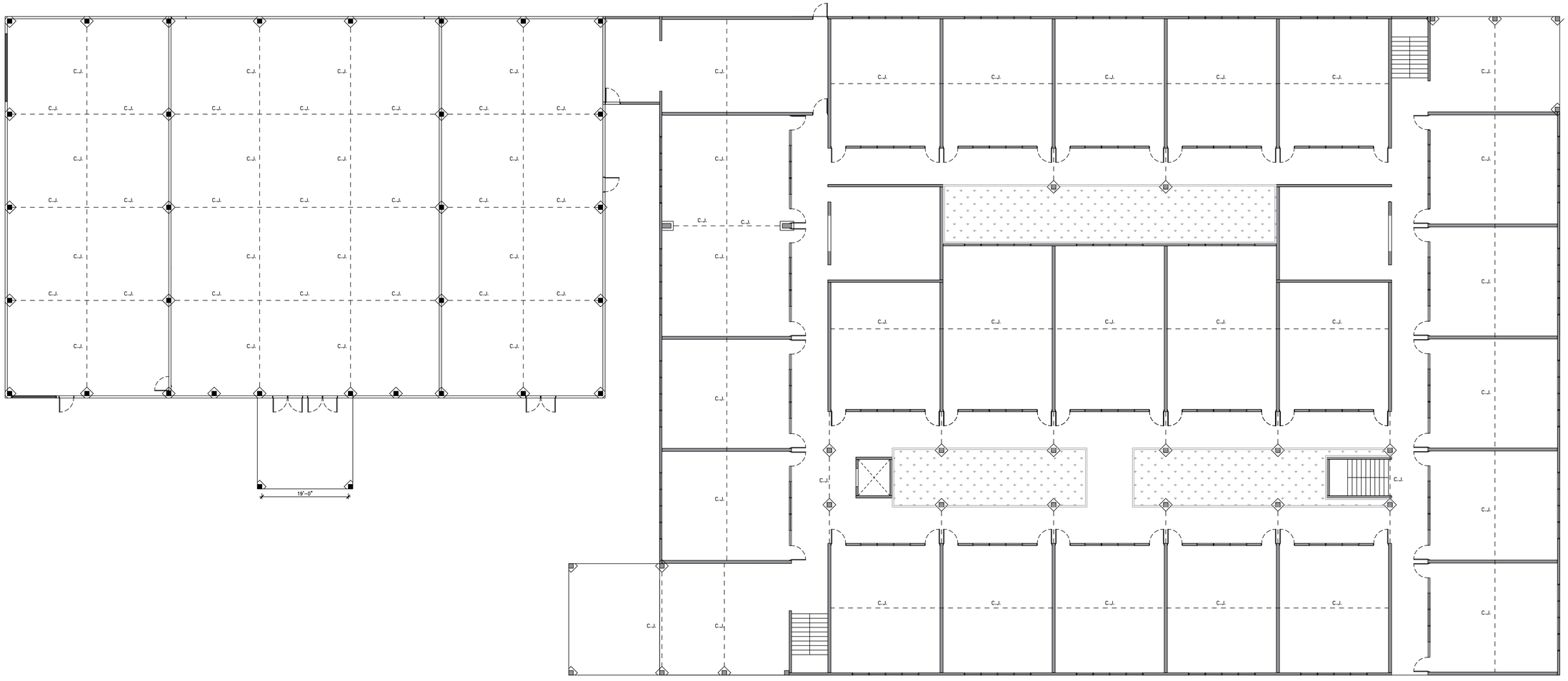
S802

Scale	AS-SHOWN

22 OF ####

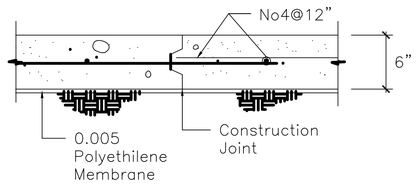
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SHEET REV: JUNE 1, 2012



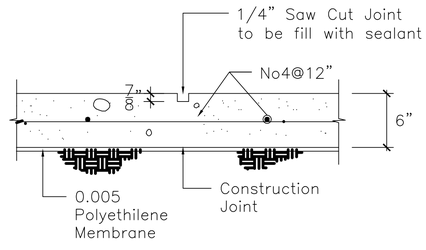
CONTROL JOINT PLAN LAYOUT

Scale: NTS



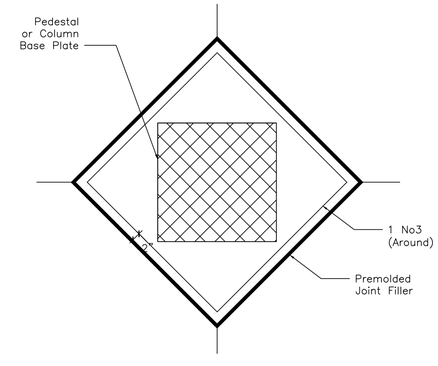
Construction Joint (CJ)

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



Saw Cut Joint (SCJ)

Scale: 1" = 1'-0"



Typical Isolation Joint Detail

Scale: 1" = 1'-0"

Project review

INSTITUTO PREVOCACIONAL e INDUSTRIAL DE PR

CONTROL JOINT PLAN LAYOUT

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Project number	780
Date	9/12/2022
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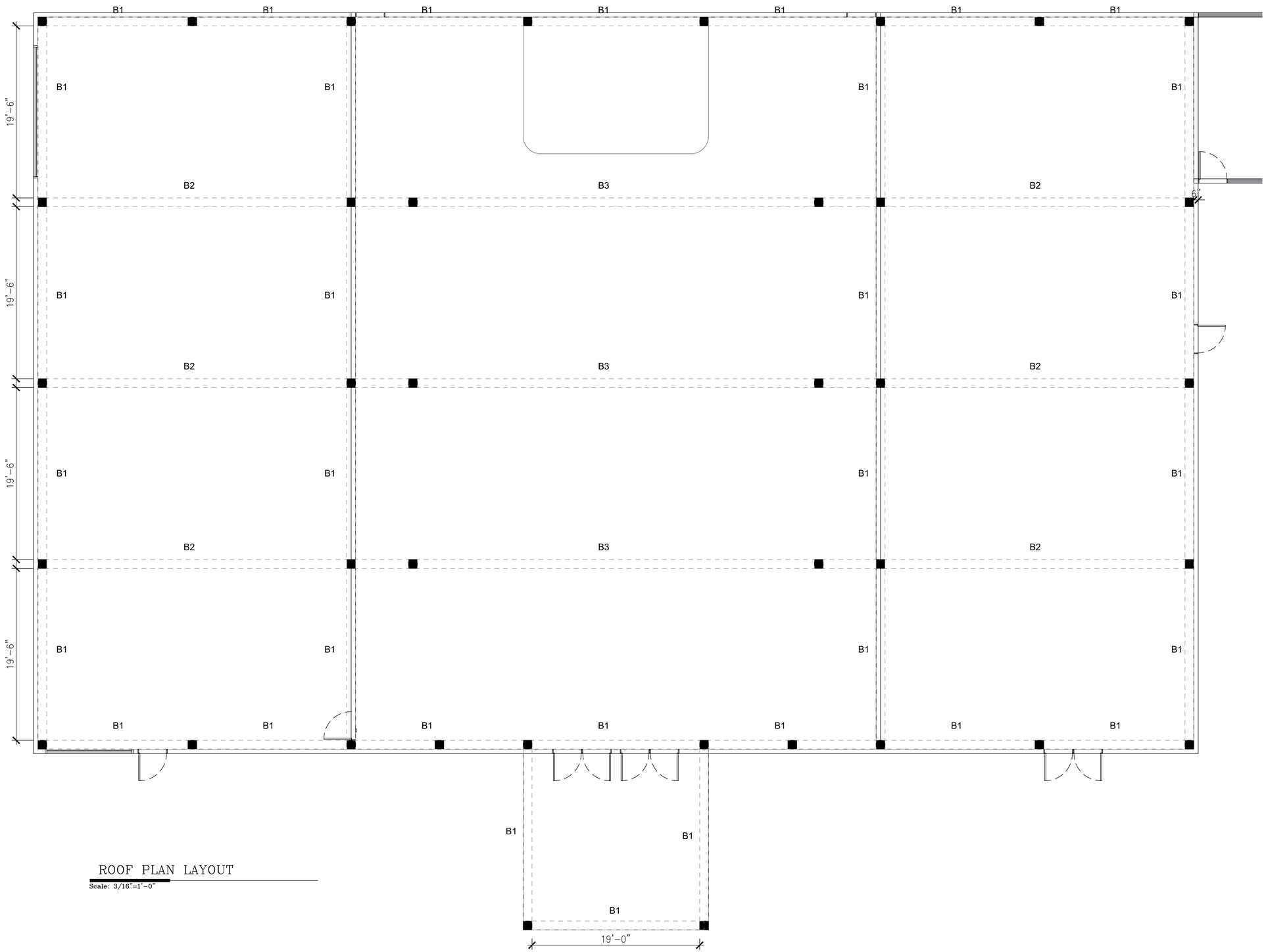
S803

Scale	AS-SHOWN

23 OF ####

FILE: E:\TROPICAL READY MIX\VC - PROJECTS\2021\CET\SHELL\PVALDNG

SHEET REV: JUNE 1, 2012



ROOF PLAN LAYOUT

Scale: 3/16"=1'-0"

Project review

INSTITUTO PREVOCACIONAL e INDUSTRIAL DE PR

ROOF PLAN LAYOUT

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Drawn by	JOP
Checked by	ENG. RUBEN ORTIZ GALARZA

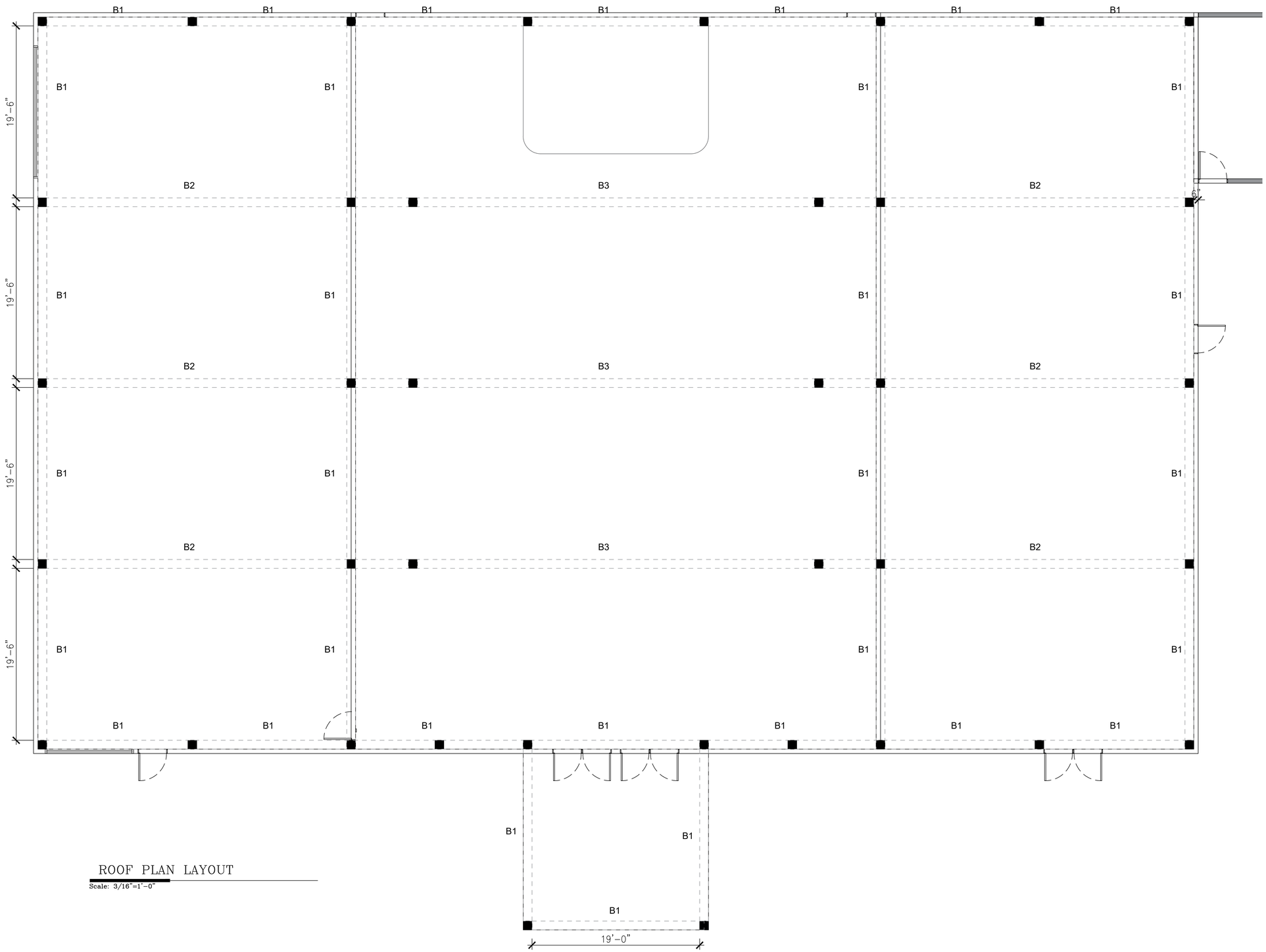
S804

Scale	AS-SHOWN

24 OF ####

FILE: E:\TROPICAL READY MIX\HC - PROJECTS\2021\CET\SHELL\PW.DWG

SHEET REV. JUNE 1, 2012



ROOF PLAN LAYOUT

Scale: 3/16"=1'-0"

Project review

INSTITUTO PREVOCACIONAL e INDUSTRIAL DE PR

ROOF PLAN LAYOUT

CARR PR 492 INT.
BO HATO ABAJO SEC BARRANCA
ARECIBO, PR

CERTIFICATION RULE 2.1.9.2 k

Yo, Ing. Rubén Ortiz Galarza, Licencia #8431, certifico que soy el profesional que diseñó estos planos y las especificaciones complementarias. También certifico que entiendo que dichos planos y especificaciones cumplen con las disposiciones aplicables del Reglamento Conjunto y las disposiciones aplicables de los Reglamentos y Códigos de las Agencias, Juntas Reglamentadoras o Corporaciones Públicas con jurisdicción. Certifico, además, que en la preparación de estos planos y especificaciones se ha cumplido cabalmente con lo dispuesto en la Ley Núm. 14 de 8 de enero de 2004, según enmendada, conocida como la "Ley para la Inversión por la Industria Puertorriqueña" y con la [Ley Núm. 319 de 15 de mayo de 1938, según enmendada; Ley Núm. 96 de 6 de julio de 1978, según enmendada; según aplique. Reconozco que cualquier declaración falsa o falsificación de los hechos que se haya producido sin conocimiento o por negligencia ya sea por mí, mis agentes o empleados, o por otras personas con mi conocimiento, me hacen responsable de cualquier acción judicial y disciplinaria por la OGPe y otras autoridades competentes, incluyendo, pero sin limitarse, la terminación de la participación en los procedimientos de certificación profesional en la OGPe.

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Project number	780
Date	9/12/2022
Drawn by	JOP
Checked by	ENG. RUBEN ORTIZ GALARZA

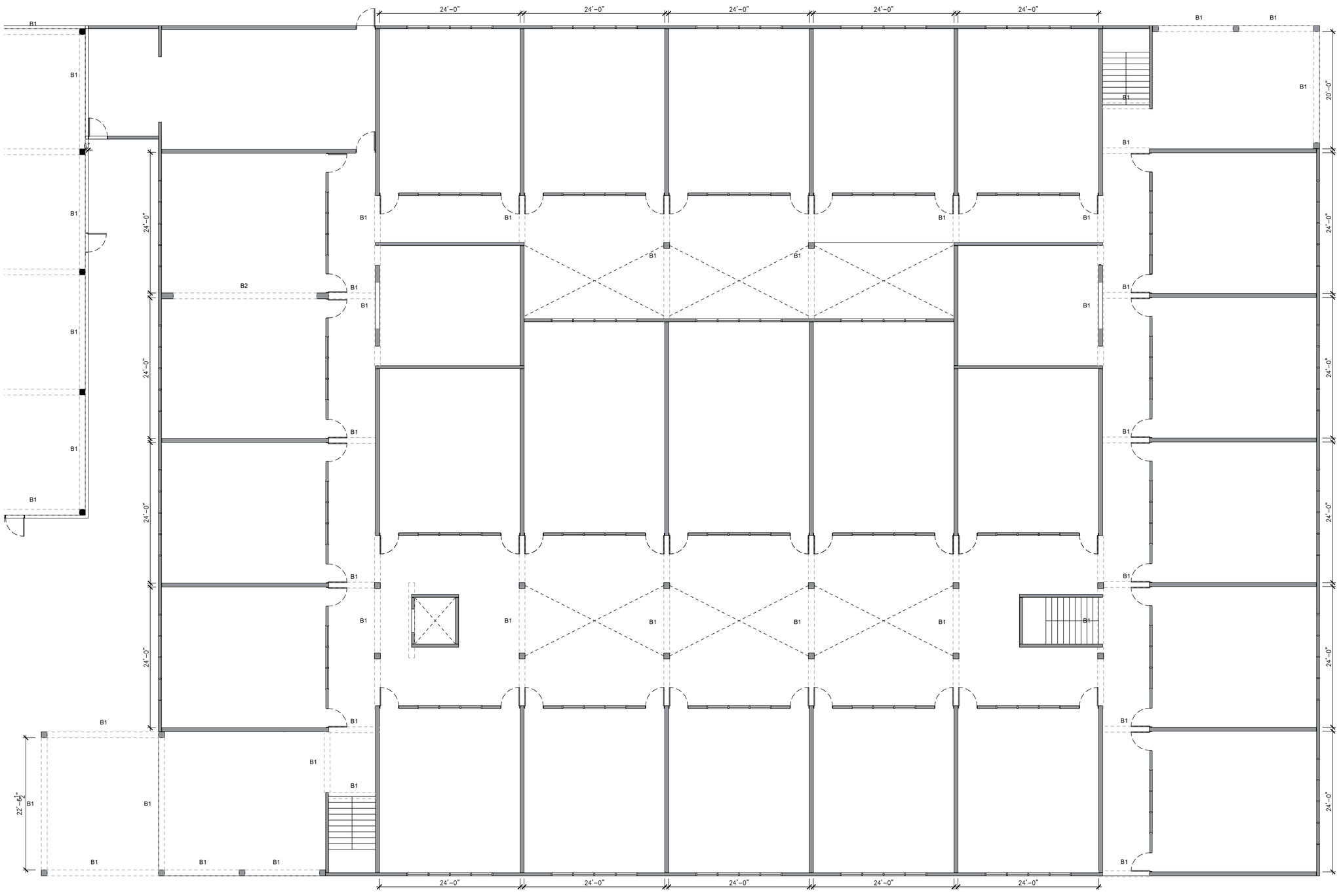
S805

Scale	AS-SHOWN

25 OF ####

FILE: E:\TROPICAL READY MIX\HC - PROJECTS\2021\CET\SHELL\PW.DWG

SHEET REV. JUNE 1, 2012



ROOF PLAN LAYOUT

Scale: 1/8"=1'-0"

Project review

INSTITUTO PREVOCACIONAL e INDUSTRIAL DE PR

HOLLOW-CORE SLAB ROOF PLAN LAYOUT

CARR PR 492 INT.
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ARECIBO, PR

CERTIFICATION RULE 2.1.9.2 k

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Tel: 787-898-8188

Project number	780
Date	9/12/2022
Drawn by	JOP
Checked by	ENG. RUBEN ORTIZ GALARZA

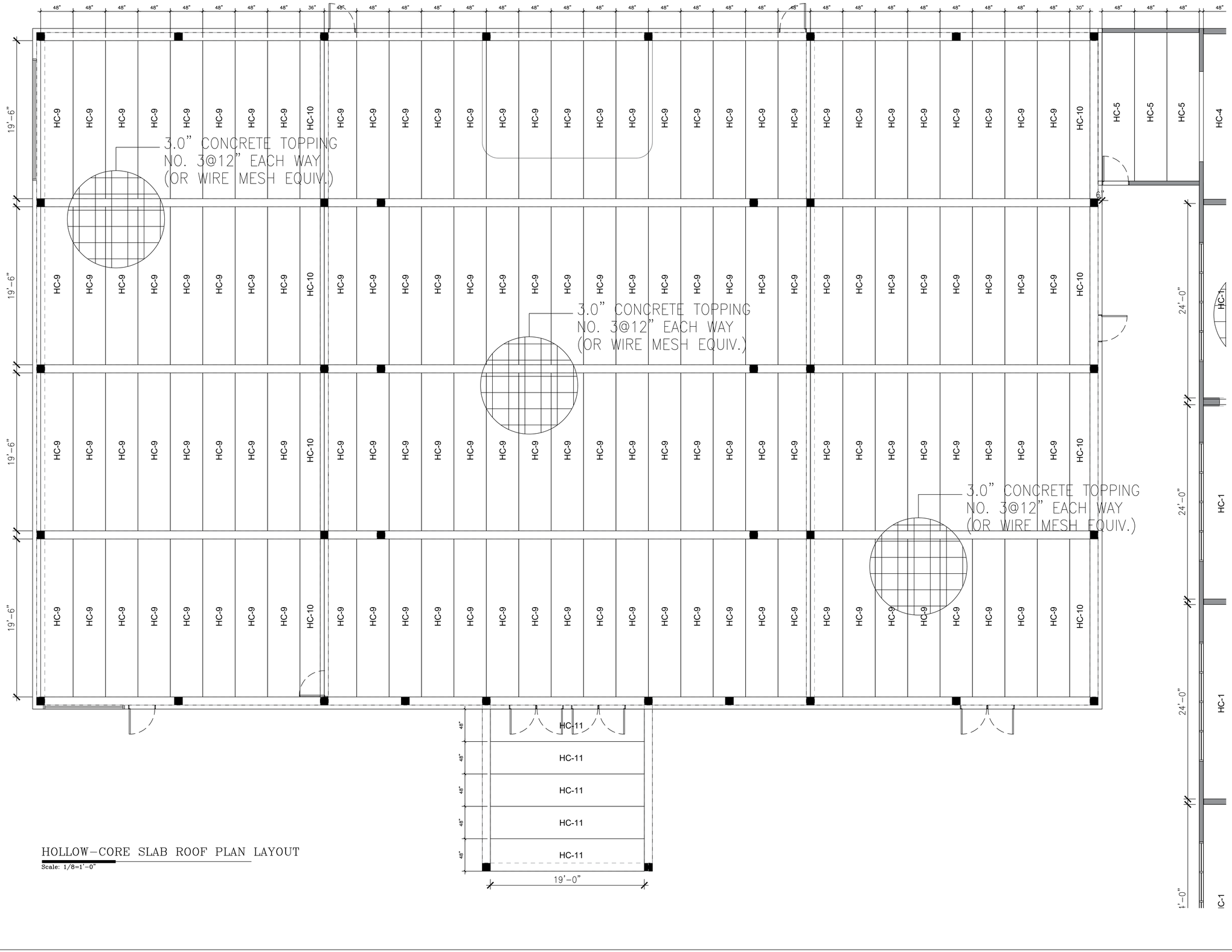
S806

Scale	AS-SHOWN

26 OF ####

FILE: E:\TROPICAL READY MIX\VC - PROJECTS\2021\CETI\SHELL\PVI.DWG

SHEET REV - JUNE 1, 2012



HOLLOW-CORE SLAB ROOF PLAN LAYOUT

Scale: 1/8=1'-0"

Project review

INSTITUTO PREVOCACIONAL e INDUSTRIAL DE PR

HOLLOW-CORE SLAB FLOOR PLAN LAYOUT

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Project number	780
Date	9/12/2022
Drawn by	JOP
Checked by	ENG. RUBEN ORTIZ GALARZA
	S807
Scale	AS-SHOWN

FILE: E:\TROPICAL READY MIX\HC - PROJECTS\2021\CETI\SHELL\BUILDING

SHEET REV. JUNE 1, 2012



HOLLOW-CORE SLAB ROOF PLAN LAYOUT

Scale: 1/8=1'-0"

Project review

INSTITUTO PREVOCACIONAL e INDUSTRIAL DE PR

HOLLOW-CORE SLAB FLOOR PLAN LAYOUT

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ARECIBO, PR

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Project number	780
Date	9/12/2022
Drawn by	JOP
Checked by	ENG. RUBEN ORTIZ GALARZA

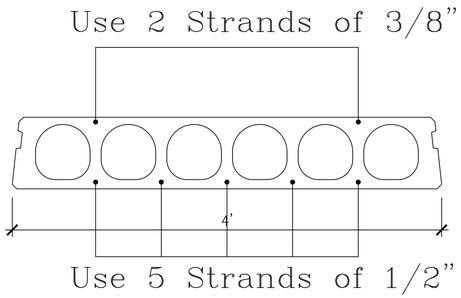
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Scale AS-SHOWN

28 OF ####

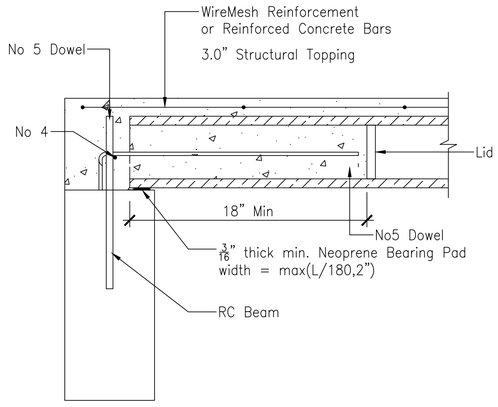
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SHEET REV: JUNE 1, 2012



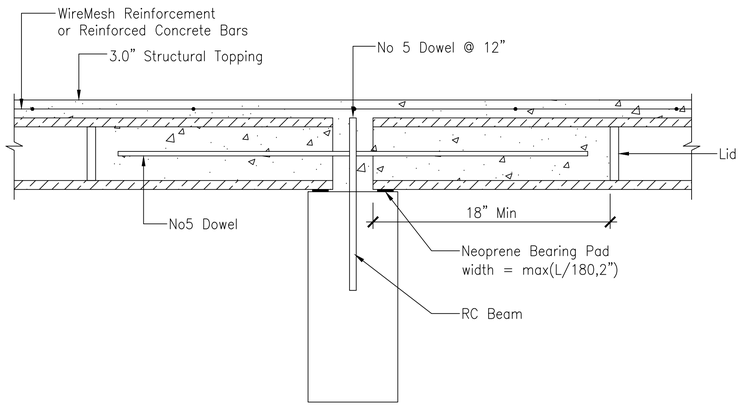
8” Hollow–Core Slab

Scale: 1” = 1’–0”



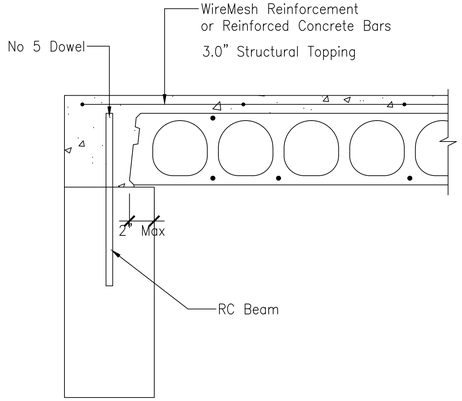
Hollow–Core Slab To Edge RC Beam Conn.

Scale: 1” = 1’–0”



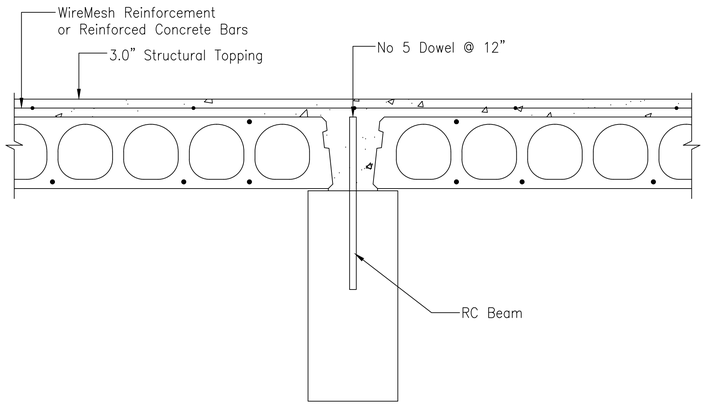
Hollow–Core Slab To RC Beam Conn.

Scale: 1” = 1’–0”



Perpendicular To Edge RC Beam Connection

Scale: 1” = 1’–0”



Perpendicular To Intermidate RC Beam Conn.

Scale: 1” = 1’–0”

NOTES:
1. (2)Top strands $\frac{3}{8}$”, 15k/strand.
3. (4)Bottom strands $\frac{1}{2}$”, 28k/strand.
4. Using the maximum quantity of strands that could be arrange in our casting beds, the max superimposed loads are the following;
   SDL = 15 psf
   LL = 50 psf
5. Hollow–Core Slab self weight is 52 psf and a 3.0 in concrete topping.
6. A clear span of 20’–10” & 27’–10”was used for the design.

Project review

INSTITUTO PREVOCACIONAL e INDUSTRIAL DE PR

HOLLOW–CORE SLAB DETAILS

CARR PR 492 INT.
BO HATO ABAJO SEC BARRANCA
ARECIBO, PR

CERTIFICATION RULE 2.1.9.2 k

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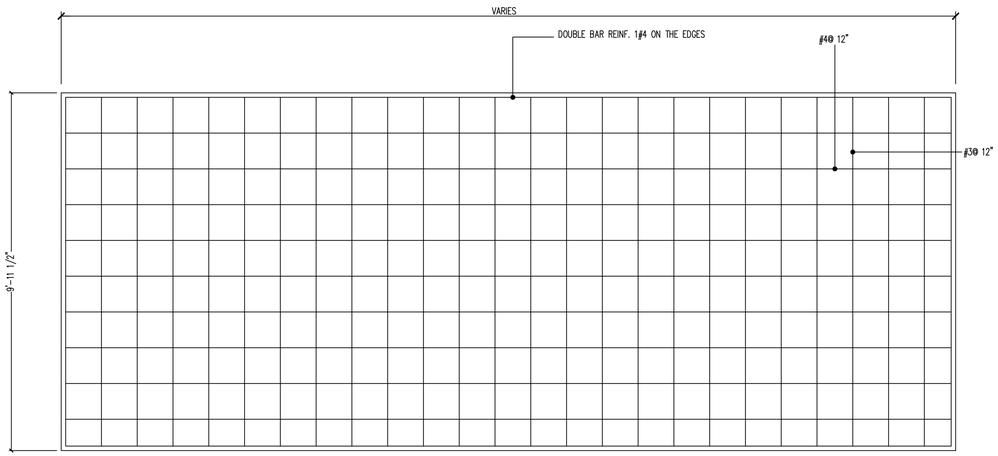
RUBEN ORTIZ GALARZA
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PUERTO RICO

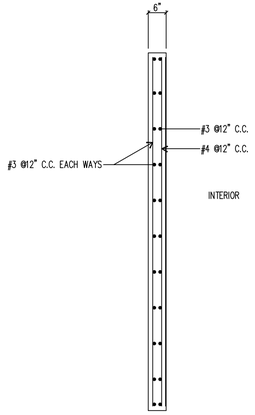
ruben ortiz galarza & assoc.
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Tel: 787–898–8188

Project number	780
Date	9/12/2022
Drawn by	JOP
Checked by	ENG. RUBEN ORTIZ GALARZA
	S809
Scale	AS–SHOWN
29	OF ####

FILE: E:\TROPICAL READY MIX\HC - PROJECTS\2021\CIT\SHELL\P#.DWG

SHEET REV. JUNE 1, 2012





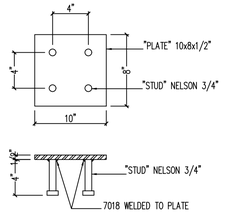
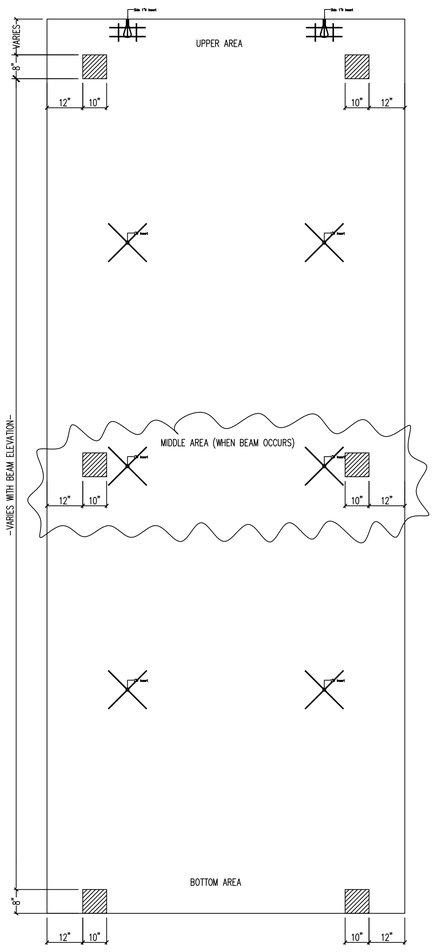


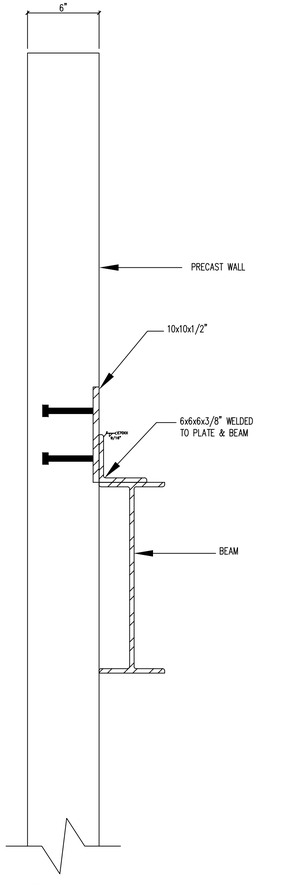
PLATE DETAIL

SCALE: 3/8"=1'-0"



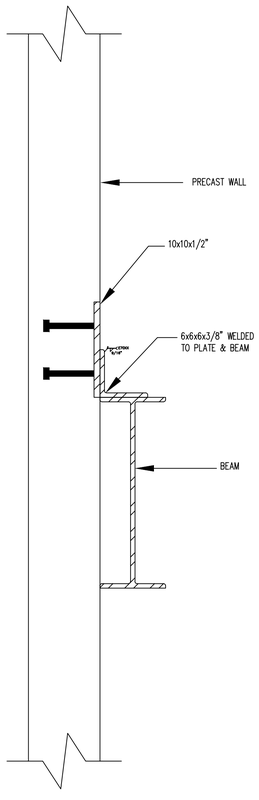
Typical Precast Wall Detail

Scale: 3/4" = 1'-0"



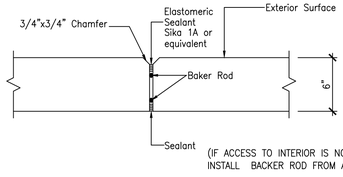
Typical Precast Wall Connection Detail

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



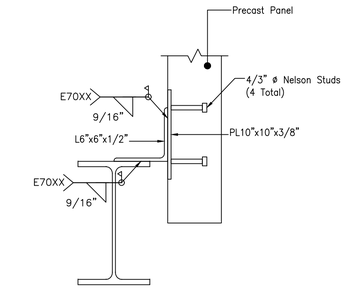
Typical Precast Wall Connection Detail

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



Connection Between Precast Walls

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



Bottom Precast Connection to Beam Flange

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

Notes:

1. Precast panels concrete compressive strength shall be f'c = 5,000psi.
2. Precast panels reinforcement strength shall be fy = 60,000psi.
3. All required accessories for transportation, lifting and erection most be design to wistand at least twice the applied loads.
4. Shopdrawings most be submitted for approval prior to fabrication.

Project review

INSTITUTO PREVOCACIONAL e INDUSTRIAL DE PR

PRECAST WALLS DETAILS

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ARECIBO, PR

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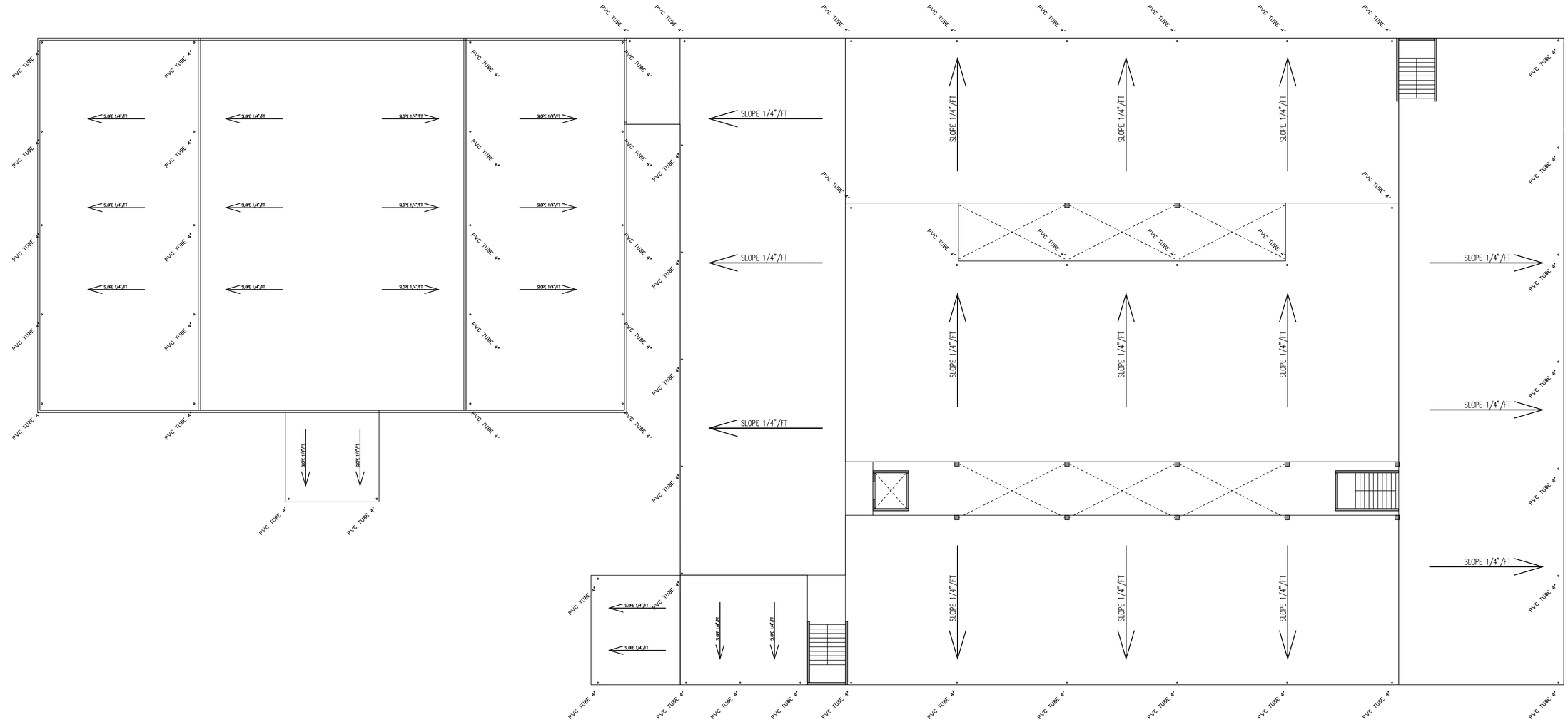
RUBEN ORTIZ GALARZA
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PUERTO RICO

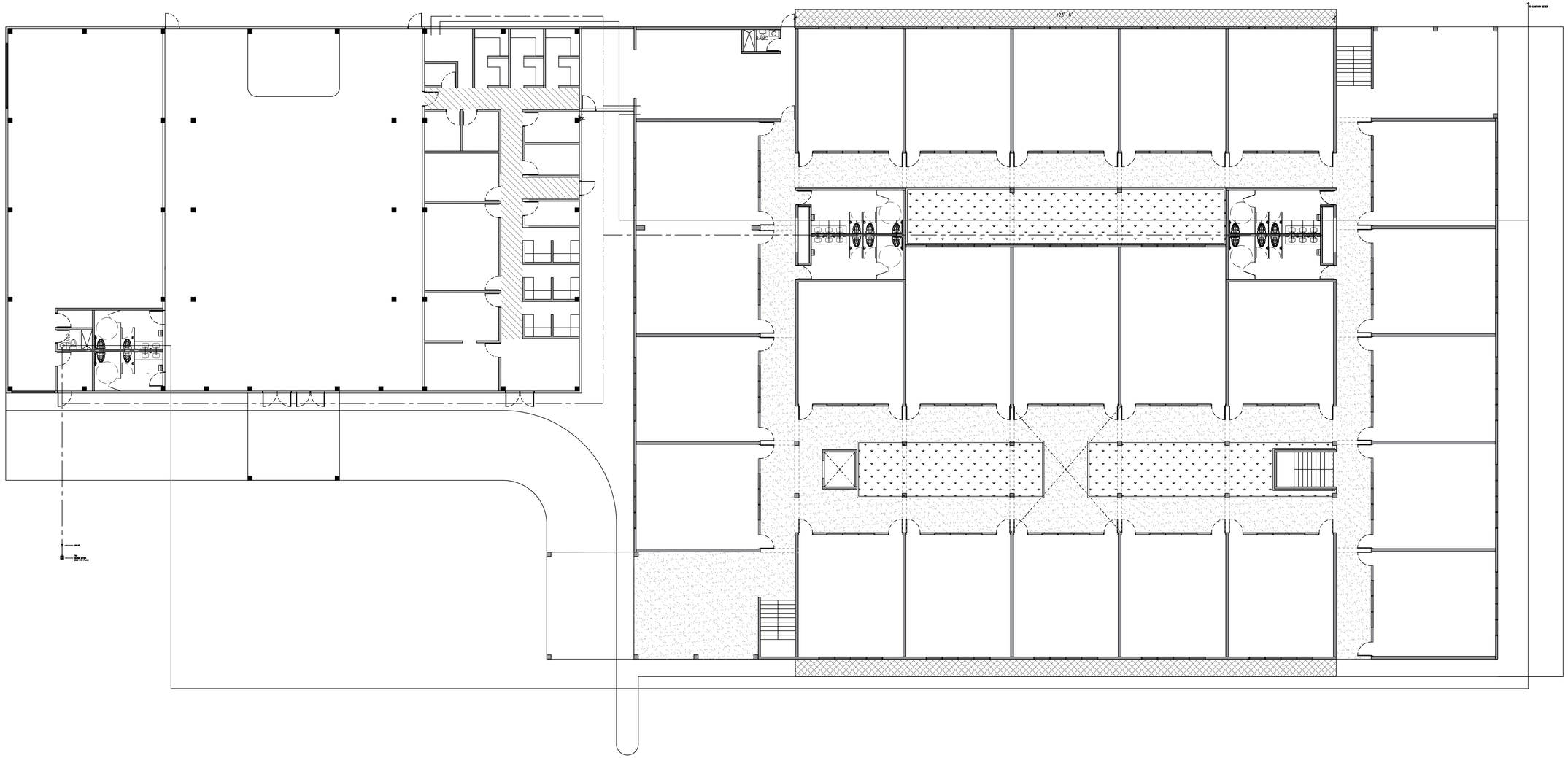
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Consulting, Engineers & Architects
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Address: PO Box 1351 Hatillo, P.R. 00659
Tel: 787-898-8188

Project number	780
Date	9/12/2022
Drawn by	JOP
Checked by	ENG. RUBEN ORTIZ GALARZA
	S810
Scale	AS-SHOWN
	30 OF ####

FILE: E:\TROPICAL READY MIX\VC - PROJECTS\2021\CET\SHELL\PW.DWG

SHEET REV: JUNE 1, 2012


PVC TUBE 4"
SLOPE 1/4"/FT
SLOPE 1/4"/FT
SLOPE 1/4"/FT



PLUMBING LAYOUT

Scale: NTS

Project review

INSTITUTO PREVOCACIONAL e INDUSTRIAL DE PR

PUMBLING LAYOUT

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Tel: 787-898-8188

Project number 780
Date 9/12/2022
Drawn by JOP
Checked by ENG. RUBEN ORTIZ GALARZA

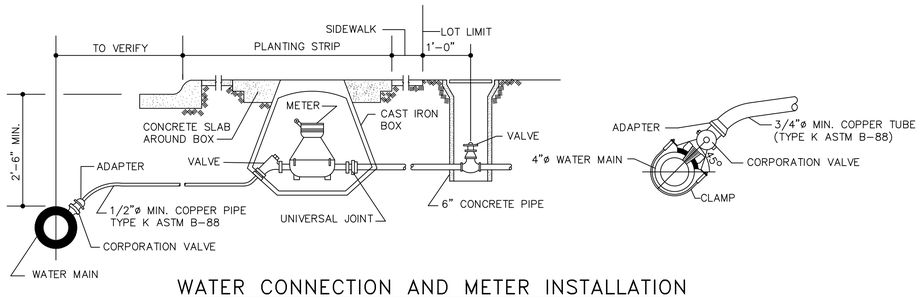
P101

Scale AS-SHOWN

32 OF ####

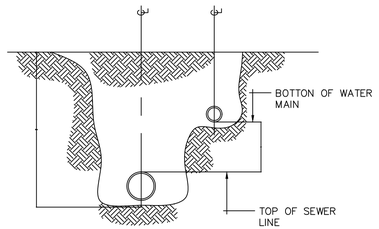
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SHEET REV - JUNE 1, 2012



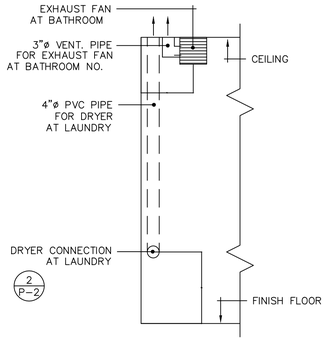
WATER CONNECTION AND METER INSTALLATION

N.T.S.



TRENCH TYPICAL DETAIL

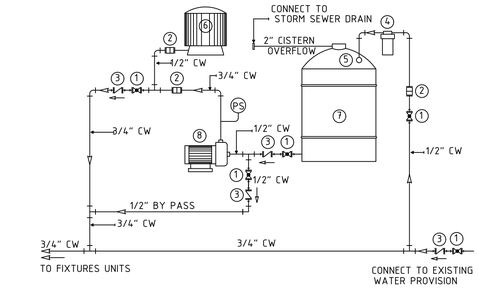
ESCALA: N.T.S.



DETAIL

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

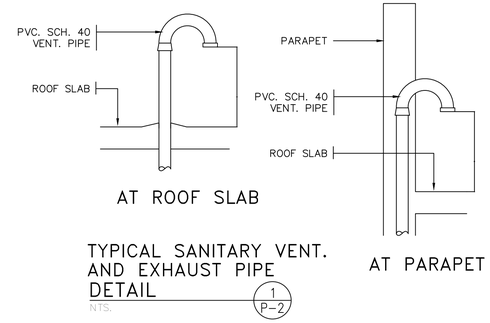
1
P-2



LEGEND:	
1	1/2" GATE VALVE
2	1/2" UNIVERSAL UNION
3	1/2" CHECK VALVE
4	WATER FILTER
5	FLOAT VALVE
6	20 GALLONS EXPANSION TANK.
7	400 GALLONS WATER CISTERN TANK S.S. MODEL TVB, 4'-3" DIAMETER, 4'-1" HEIGHT
8	WATER PRSSURE PUMP, 1/2 HP - 120V.
PS	PRESSURE SWITCH

SCHEMATIC CISTERN LAYOUT & SPECIFICATIONS

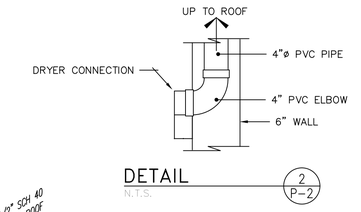
NOT TO SCALE



TYPICAL SANITARY VENT. AND EXHAUST PIPE DETAIL

N.T.S.

1
P-2



DETAIL

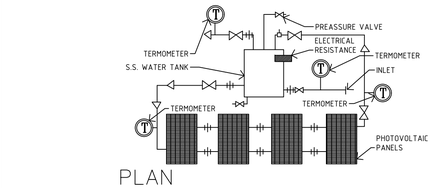
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2
P-2

EXHAUST FAN NOTES:

EXHAUST FAN SHALL BE EQUAL OR APPROVED EQUAL AS MANUFACTURED BY BROAN MODEL 671.
EXHAUST MECHANICAL SPECS.:
- POLYMERIC BLOWER WHEEL
- PLUG-IN, LIFETIME-LUBICATED MOTOR
- MATTE WHITE POLYMERIC GRILLE WITH TORSION SPRING MOUNTING
- POLYMERIC DUCT FITTING WITH 1" LONG TAPERED SLEEVE
- WITH DAMPER
- REMOVABLE WIRING COVER
- 3" ROUND DUCT

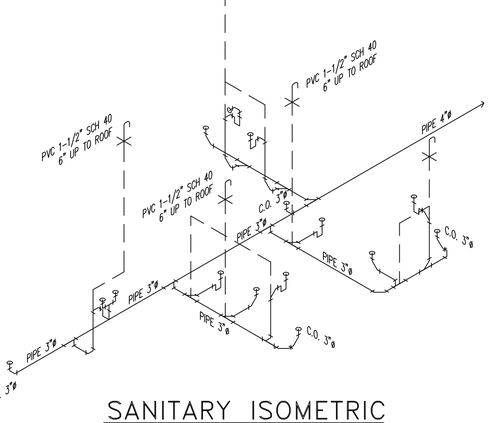
ELECTRIC SPECS.:
120V, 1.15AMP., 70CFM, 3.0 SONES



PLAN

SOLAR WATER HEATER SYSTEM DIAGRAM

NOT TO SCALE

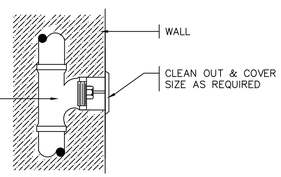


SANITARY ISOMETRIC

NO TO SCALE

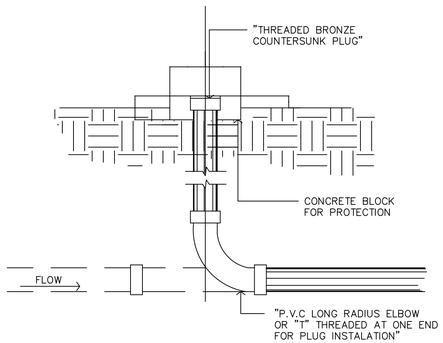
LEGEND:

SYMBOL	DESCRIPTION
	SANITARY PIPE PVC SDR-35 4" DIA.
	1-1/2" VENT PIPE
	1/2" COLD WATER COPPER PIPE
	1/2" HOT WATER COPPER PIPE
	FLOW DIRECTION
	CLEAN OUT
	WATER PIPE CONNECTIONS
	SANITARY PIPE CONNECTIONS
	3/4" HOSE BIBB
	VALVE
	WATER METER
	TAPPING SLEEVE AND GATE VALVE
	GATE VALVE



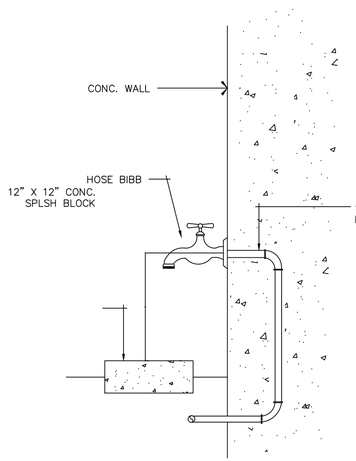
WALL CLEAN OUT

N.T.S.



GROUND CLEANOUT

N.T.S.



HOSE BIBB DETAILS

N.T.S.

PLUMBING FIXTURE SCHEDULE

SYMBOL	FIXTURE	MODEL	DRAIN	FEEDER	VENT	REMARKS
P-1	BATHTUB	CONSULT OWNER FOR FIXTURE FITTINGS	2"	1/2"	1-1/2"	CONSULT OWNER FOR FIXTURE FITTINGS
P-2	LAVATORY	CONSULT OWNER FOR FIXTURE FITTINGS	2"	1/2"	1-1/2"	CONSULT OWNER FOR FIXTURE FITTINGS
P-3	TOILET	CONSULT OWNER FOR FIXTURE FITTINGS	3"	1/2"		CONSULT OWNER FOR FIXTURE FITTINGS
P-4	BIDDET	CONSULT OWNER FOR FIXTURE FITTINGS	2"	1/2"	1-1/2"	CONSULT OWNER FOR FIXTURE FITTINGS
P-5	KITCHEN SINK	CONSULT OWNER FOR FIXTURE FITTINGS	2"	1/2"	1-1/2"	CONSULT OWNER FOR FIXTURE FITTINGS
P-6	LAUNDRY TRAY	CONSULT OWNER FOR FIXTURE FITTINGS	2"	1/2"	1-1/2"	CONSULT OWNER FOR FIXTURE FITTINGS
P-7	WASHER MACHINE	CONSULT OWNER FOR FIXTURE FITTINGS	2"	1/2"	1-1/2"	CONSULT OWNER FOR FIXTURE FITTINGS
P-8	REFRIGERATOR	CONSULT OWNER FOR FIXTURE FITTINGS	---	1/2"	---	CONSULT OWNER FOR FIXTURE FITTINGS
P-9	WATER HEATER	CONSULT OWNER FOR FIXTURE FITTINGS	---	1/2"	---	CONSULT OWNER FOR FIXTURE FITTINGS
P-10	SHOWER	CONSULT OWNER FOR FIXTURE FITTINGS	2"	1/2"	1-1/2"	CONSULT OWNER FOR FIXTURE FITTINGS
P-11	WHILPOOL	CONSULT OWNER FOR FIXTURE FITTINGS	2"	1/2"	1-1/2"	CONSULT OWNER FOR FIXTURE FITTINGS
P-12	URINAL	CONSULT OWNER FOR FIXTURE FITTINGS	2"	1/2"	1-1/2"	CONSULT OWNER FOR FIXTURE FITTINGS

PLUMBING GENERAL NOTES:

1- ALL PLUMBING WORKS SHALL BE STRICT ACCORDANCE WITH THE LOCAL BUILDING CODES, THE LASTED EDITION NATIONAL STANDARD PLUMBING CODES AND THE SPECIFICATIONS ISSUED FOR THIS PROJECT. -A.S.A.. A-40.8-1955.

2- THIS CONSTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL PIPING TO AVOID ANY INTERFERENCE WITH PIPING OR EQUIPMENT BEING INSTALLED BY OTHER TRADES.

3- LONG SWEEP FITTINGS SHALL BE PROVIDED AT THE BASE OF OF STACKS. BUILDING CODES, THE LASTED EDITION NATIONAL STANDARD PLUMBING CODES

4- ALL PORTIONS AND BRANCHES OF THE SOIL, WASTE AND STORM DRAINAGE 3" AND SMALLER SHALL SLOPE 1/4" PER FT. 4" AND LARGER 1/8" PER FT. EXCEPT OTHERWISE NOTE.

5- CLEANOUT SHALL BE PROVIDED AT THE BASE OF ALL STACKS AND LEADERS.

6- THE PLUMBING CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ROUGHING-IN AND INSTALL ALL PLUMBING FIXTURES AND/ OR EQUIPMENT WHICH IS SUPPLIED BY OWNER.

7- THE PLUMBING CONTRACTOR SHALL GET APPROVAL AND ADVICE FROM DESIGNER FOR THE FINAL LOCATION OF PIPES INSIDE WALLS AND SLABS.

8- FINAL LOCATION OF R. DRAINS & SOIL STACKS TO BE COORDINATE AT FIELD WITH OWNER INSPECTOR.

9- PIPES INSIDE STRUCTURAL CONCRETE SHALL COMPLY WITH ACI BUILDING CODE, ARTICLE 705, LATEST EDITION.

10- SANITARY DRAINAGE, VENTILATION AND STORM DRAINAGE PIPING SHALL BE P.V.C. SCHEDULE 40 GRADE 1, TYPE 1, WITH SOLVENT WELDED FITTINGS.

11- WATER PIPING SHALL BE COPPER TYPE " K " FLEXIBLE MIN. SOLDERED FITTINGS FOR 3/4 INCHES AND SMALLER, COMPLY WITH ASTM B-83.

Project review

INSTITUTO PREVOCACIONAL e INDUSTRIAL DE PR

PUMBLING DETAILS

CARR PR 492 INT.
BO HATO ABAJO SEC BARRANCA
ARECIBO, PR

CERTIFICATION RULE 2.1.9.2 k

Yo, Ing. Rubén Ortiz Galarza, Licencia #8431, certifico que soy el profesional que diseñó estos planos y las especificaciones complementarias. También certifico que entiendo que dichos planos y especificaciones cumplen con las disposiciones aplicables del Reglamento Conjunto y las disposiciones aplicables de los Reglamentos y Códigos de las Agencias, Juntas Reglamentadoras o Corporaciones Públicas con jurisdicción. Certifico, además, que en la preparación de estos planos y especificaciones se ha cumplido cabalmente con lo dispuesto en la Ley Núm. 14 de 8 de enero de 2004, según enmendada, conocida como la "Ley para la Inversión por la Industria Puertorriqueña" y con la [Ley Núm. 319 de 15 de mayo de 1938, según enmendada; Ley Núm. 96 de 6 de julio de 1978, según enmendada; según aplique. Reconozco que cualquier declaración falsa o falsificación de los hechos que se haya producido sin conocimiento o por negligencia ya sea por mí, mis agentes o empleados, o por otras personas con mi conocimiento, me hacen responsable de cualquier acción judicial y disciplinaria por la OGPe y otras autoridades competentes, incluyendo, pero sin limitarse, la terminación de la participación en los procedimientos de certificación profesional en la OGPe.

NOTE:
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Tel: 787-898-8188

Project number	780
Date	9/12/2022
Drawn by	JOP
Checked by	ENG. RUBEN ORTIZ GALARZA

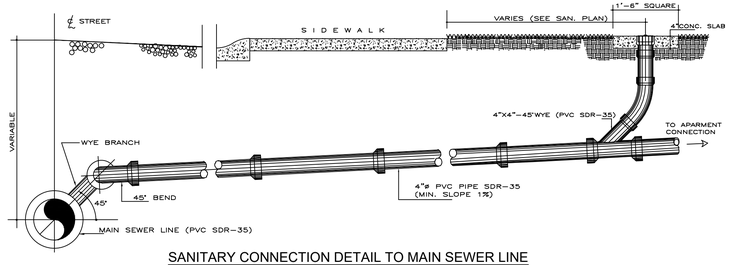
P102

Scale	AS-SHOWN

33 OF ####

SHEET REV: JUNE 1, 2012

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SANITARY CONNECTION DETAIL TO MAIN SEWER LINE LESS THAN 2.00m

NTS

GENERAL NOTES

1.MINIMUM CONCRETE COMPRESSIVE STRENGTH IN ALL SECTIONS SHALL BE 4,000 PSI.

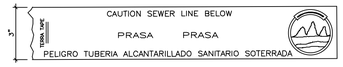
2.LIFTING HOLES PROVIDED IN ALL UNITS TO FACILITATE INSTALLATION.

3.MANHOLES BASE TO BE INSTALLED ON A FIRM STABILIZED FOUNDATION.

4.ON ASPHALTS ROADS THE MANHOLE TOP SHALL BE FLUSH WITH THE ROADWAY SURFACE.

5.CAUTION SHALL BE TAKEN TO KEEP THE CAST IRON FRAME AND COVER AT THE SURFACE LEVEL.

6.THE BOTTOM CHANNEL OF THE MANHOLE MUST HAVE THE SAME GRADIENT OF THE SEWER PIPE.



COLOR GREEN

CUSTUMER: PRASA SAN JUAN, P.R.

MATERIAL: ALUMINIUM FOIL LAMINATED BETWEEN TWO LAYERS OF INERT PLASTIC FILM

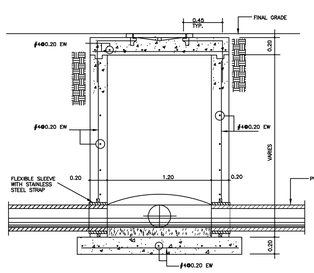
PRODUCT CODE 0621556, 0531556

IMPRINT COLOR: BLACK

SO:

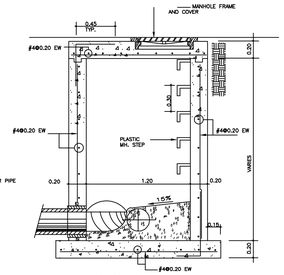
DETECTABLE MARKING TAPE DETAIL FOR SANITARY SEWER PIPE

NTS



SECTION A-A

NTS



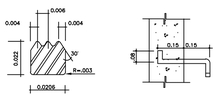
SECTION B-B

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TYPICAL CAST IN PLACE MANHOLE DETAIL

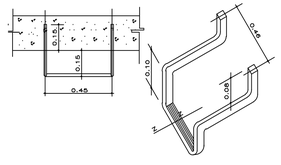
IMPORTANT NOTE:

THE CONTRACTOR SHALL CONSIDER THE USE OF PRECAST MANHOLE AS AN ALTERNATIVE, IF THIS IS THE OPTION, SHOP DRAWING SHALL BE SUBMITTED TO THE DESIGNER FOR ITS APPROVAL.
$f'y$ = 60,000 p.s.i
$f'c$ = 4,000 p.s.i.



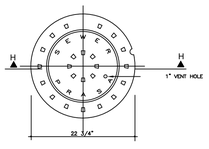
SECTION Z-Z

SECTION



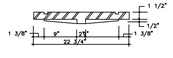
PLASTIC MANHOLE STEP DET.

NTS



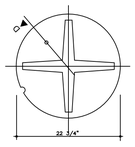
TOP VIEW OF COVER

NTS



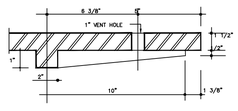
SECTION H-H

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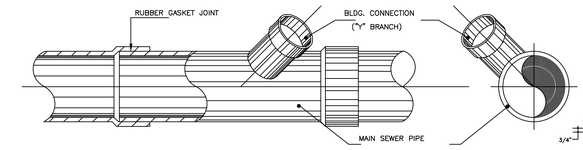
BOTTOM VIEW OF COVER

NTS



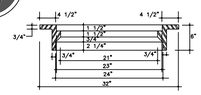
SECTION D-D

NTS



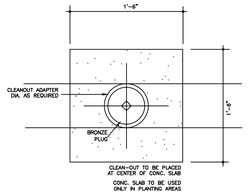
LOT CONNECTION DETAIL

NTS

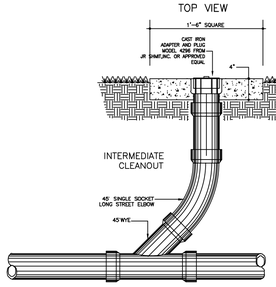


FRAME SECTION

NTS

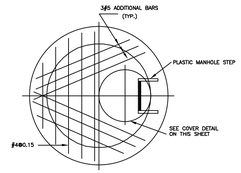


TOP VIEW



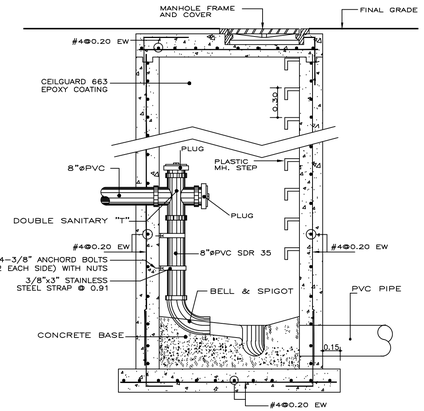
CLEAN OUT DETAIL

NTS



TOP SLAB REINFORCEMENT

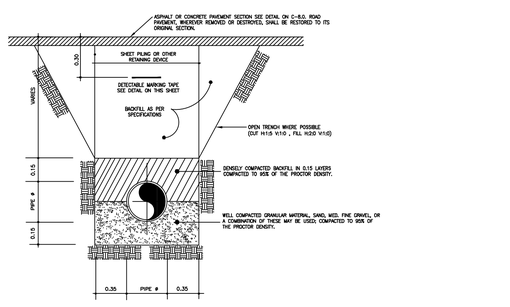
NTS



TYP. DROP MANHOLE DETAILFOR DEPTH 0.61 AND DEEPER

NTS

DOG HOUSE



SANITARY PIPE TRENCH DETAIL

NTS

CONSTRUCTION NOTES:

1.) OPEN TRENCH: SLOPE TO BE DETERMINED BY THE RESIDENT ENGINEER.

2.) TRENCH PROTECTION: TO BE DETERMINED BY CONTRACTOR TO ENSURE PROTECTION OF ADJACENT STRUCTURES, TRENCH WALLS AND WORKING CREWS INSIDE AND OUT OF TRENCH.

3.) GROUND OR PAVED SURFACES TO BE REPLACED OR RESTORED IN ACCORDANCE TO DETAILS AND SPECIFICATIONS.

4.) DETECTABLE MARKING TAPE SEE THE SPECIFICATIONS FOR INSCRIPTIONS.

5.) CONTRACTOR SHALL BE AWARE FOR THE PRESENCE OF ROCK FRAGMENTS DURINGS TRENCH EXCAVATIONS.

6.) THESE PLANS HAVE BEEN PREPARED AS PER P.R.A.S.A. SPECIFICATIONS, IN THE EVENT OF AN OVERSIGHT OR OMISSION, CONTRACTOR SHALL FOLLOW THE DIRECTIVE ISSUED BY P.R.A.S.A. INSPECTOR AND/OR RESIDENT ENGINEER

7.) WHEN UTILITY PIPING AND FORCE MAIN CROSS EACH OTHER OR WHEN LAID AT HORIZONTAL DISTANCE OF LESS THAN 1.52m (5ft.) FROM EACH OTHER, FORCE MAIN SHOULD BE INSTALLED AT A HIGHER LEVEL THAN THE UTILITY PIPING AND NO LESS THAN 0.38m (1ft.) BETWEEN THE OUTSIDE OF THE FORCE MAIN AND THE SEWER.

8.) UTILITY CROSSINGS TO BE APPROVED BY RESIDENT ENGINEER AND THE CORRESPONDING AGENCY OR OWNER OF THE UTILITY TO BE CROSSED.

9.) COMPRESSIVE STRENGTH OF CONCRETE TO BE 3,500 PSI @ 28 DAYS.

10.) CONTRACTOR SHALL PROTECT FRESH CONCRETE FROM VEHICLES UNTIL SET AND ABLE TO RECEIVE TRAFFIC LOAD. IN CASE OF DAMAGES, THE CONTRACTOR IF FULLY RESPONSIBLE TO IMPLEMENT THE REQUIRED CORRECTIVE MEASURES. CORRECTIVE MEASURES TO BE APPROVED BY THE RESIDENT ENGINEER.

SISTEMA SANITARIO

1:El contratista o urbanizador suministrará evidencia del pago de conexión al sistema previo al endoso final del proyecto.

2:Todas las piezas de conexión como "TEE", válvulas, tapón, etc. serán de hierro fundido.

3:La tubería se instalará a una profundidad de 0.75 metros desde el nivel del terreno hasta la parte superior del tubo y 1.50 metros del sardinel.

4:El proponente o dueño deberá notificar por escrito a esta oficina cuando comience la construcción de las obras hidráulicas.

5:La A.A.A. se reserva el derecho de requerir cualquier cambio pertinente que por omisión o error involuntario no se haya incluido en el proyecto y a su juicio, sea necesario para el buen funcionamiento del sistema de acueducto.

6:El dueño del proyecto aportará $ 500.00 dólares por cada solar o unidad, como cargo por derecho de conexión al sistema de acueducto.

7:La tubería de servicio de agua deberá instalarse al lado contrario de la tubería eléctrica, teléfono o cable TV.

8:El proyectista o urbanizador del proyecto realizará prueba de presión hidráulica a la tubería del sistema de distribución de agua a una presión mínima de 150 psi o
vez y media la presión registrada en el sistema de distribución de agua adyacente al proyecto. La prueba será por un tiempo mínimo de 15 minutos y no se deberá registrar perdida de presión mientras dure la misma.
Personal de la Oficina de Proyectos Públicos y Privados de la Autoridad de Acueductos y Alcantarillados deberá estar presente para validar la prueba.

9:Los equipos para realizar las pruebas de presión deberán ser provistos por el contratista o plomero del proyecto. Para presiones de 150 psi la escala del manómetro no debe exceder de 200 psi.

10:Cualquier cambio que sea necesario a lo indicado en este plano o en su carta de aprobación, relacionado al sistema de agua potable, deberá ser consultado y evaluado con esta oficina para aprobación, previo a su construcción y/o desarrollo.

11: Los registros sanitarios serán pintados en su interior con pintura epóxica igual o similar al denominado CEILGUARD 663 o duralkote.

12:La distancia entre la acometida de alcantarillado sanitario y la acometida de servicio de agua será mayor o igual a 5 pies, no se permitirá la instalación de ambas acometidas en la misma excavación.

13:Los registros de limpieza serán instalados fuera del área de rodaje o rampas de acceso vehicular.

14:En caso de que los registros de inspección sean instalados en áreas inundables el marco y tapa de acceso deberá ser de tipo hermético "Waterthight".

15:La estación de bombeo sanitario deberá ser construida fuera de área inundable.

16:No se permitirá el uso de registros sanitarios fundidos en sitio. Se deberá utilizar registros prefabricados por un Manufacturero autorizado. Se deberá someter evidencia de la orden de compra o la certificación del fabricante de los mismos.

17:Para aceptar finalmente el proyecto el mismo deberá estar pavimentado cuando se realice la validación final.

18:Las acometidas sanitarias serán instaladas a una distancia razonable y segura de todo equipo eléctrico.

19:La infiltración o exfiltración de agua en las tuberías no será mayor de 50 galones por pulgada de diámetro por milla de longitud en 24 horas. El contratista proveerá los medios según lo requiera el inspector de A.A.A.. Para llevar a cabo las pruebas de tuberías sanitarias.

20:Toda tubería que no llene los requisitos de las pruebas, será reparada por el contratista y sometida y sometida a prueba hasta que sea aprobada definitivamente por el inspector de la A.A.A..

21:La A.A.A. se reserva el derecho de requerir cualquier cambio pertinente que por omisión o error involuntario no se haya incluido en el proyecto y a su juicio, sea necesario para el buen funcionamiento del sistema de alcantarillado sanitario.

22:Todas las distancias están expresadas en metros, a menos que se especifique otra unidad.

23:El dueño del proyecto aportará $ 500.00 dólares por cada solar o unidad, como cargo por derecho de conexión al sistema de alcantarillado sanitario.

24:Cualquier cambio que sea necesario a lo indicado en este plano o en su carta de aprobación, relacionado al sistema de alcantarillado sanitario, deberá ser consultado y evaluado con esta oficina para aprobación, previo a su construcción y/o desarrollo.

SANITARY SEWER NOTES:

1. SEE SANITARY SEWER SYSTEM DETAILS ON SHEET C-10.0
2. LOCATION COORDINATES FOR MANHOLES ARE GIVEN IN THE CENTER OF THE STRUCTURE.
3. ALL INTERIOR OF MANHOLES SHALL BE COVERED WITH EPOXY "CEILGARD 663".
4. ROAD PAVEMENT, WHEREVER REMOVED, OR DESTROYED, SHALL BE RESTORED TO ITS ORIGINAL SECTION OF WEARING COURSE & BASE FOR BITUMINOUS PAVEMENT. FOR CONCRETE SLABS, REPLACED WITH EXISTING SECTION.

Project review

INSTITUTO PREVOCACIONAL e INDUSTRIAL DE PR

PUMBLING DETAILS

CARR PR 492 INT.
BO HATO ABAJO SEC BARRANCA
ARECIBO, PR

CERTIFICATION RULE 2.1.9.2 k

Yo, Ing. Rubén Ortiz Galarza, Licencia #8431, certifico que soy el profesional que diseñó estos planos y las especificaciones complementarias. También certifico que entiendo que dichos planos y especificaciones cumplen con las disposiciones aplicables del Reglamento Conjunto y las disposiciones aplicables de los Reglamentos y Códigos de las Agencias, Juntas Reglamentadoras o Corporaciones Públicas con jurisdicción. Certifico, además, que en la preparación de estos planos y especificaciones se ha cumplido cabalmente con lo dispuesto en la Ley Núm. 14 de 8 de enero de 2004, según enmendada, conocida como la "Ley para la Inversión por la Industria Puertorriqueña" y con la [Ley Núm. 319 de 15 de mayo de 1938, según enmendada; Ley Núm. 96 de 6 de julio de 1978, según enmendada; según aplique. Reconozco que cualquier declaración falsa o falsificación de los hechos que se haya producido sin conocimiento o por negligencias ya sea por mí, mis agentes o empleados, o por otras personas con mi conocimiento, me hacen responsable de cualquier acción judicial y disciplinaria por la OGPe y otras autoridades competentes, indiyendo, pero sin limitarse, la formivación de la participación en los procedimientos de certificación profesional en la OGPe.

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RUBEN ORTIZ GALARZA
INGENIERO
LICENCIADO
LIC. 8431
PUERTO RICO

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Address: PO Box 1351 Hatillo, P.R. 00659
Tel: 787-898-8188

Project number 780
Date 9/12/2022
Drawn by JOP
Checked by ENG. RUBEN ORTIZ GALARZA

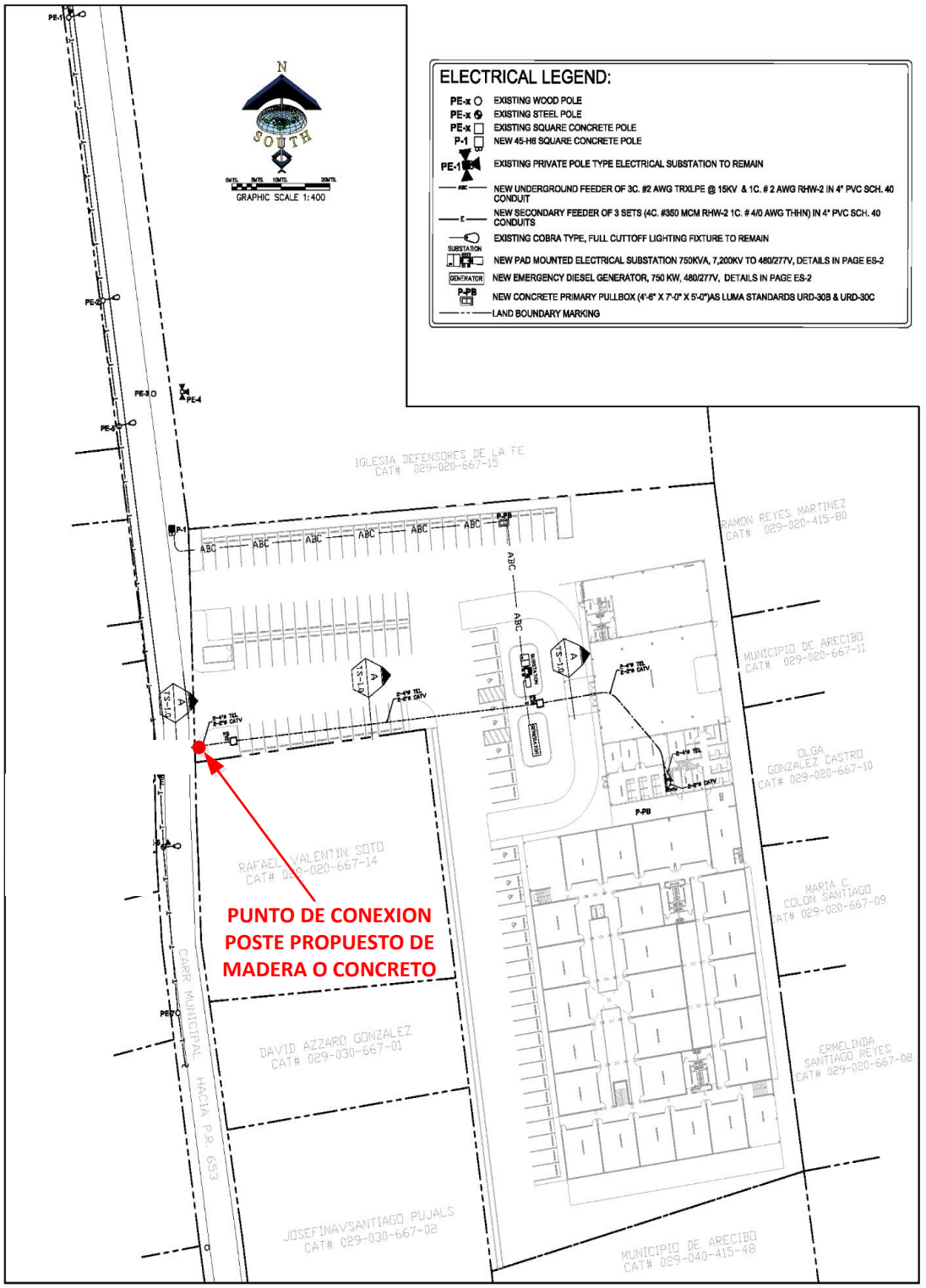
P103

Scale AS-SHOWN

34 OF ####

FILE: E:\TROPICAL READY MIX\HC - PROJECTS\2021\CET\SHELL\PM.DWG

SHEET REV: JUNE 1, 2012



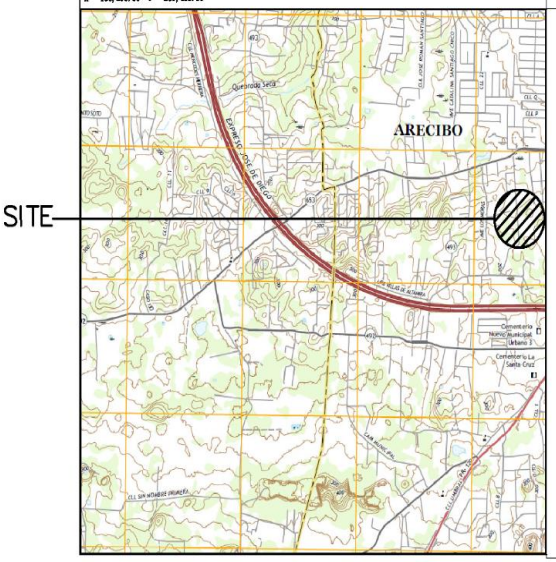
ELECTRICAL LEGEND:

- PE-x ○ EXISTING WOOD POLE
- PE-x ⊕ EXISTING STEEL POLE
- PE-x □ EXISTING SQUARE CONCRETE POLE
- P-1 □ NEW 45-H6 SQUARE CONCRETE POLE
- PE-1 EXISTING PRIVATE POLE TYPE ELECTRICAL SUBSTATION TO REMAIN
- ABC NEW UNDERGROUND FEEDER OF 3C. #2 AWG TRXLPE @ 15KV & 1C. # 2 AWG RHW-2 IN 4" PVC SCH. 40 CONDUIT
- E NEW SECONDARY FEEDER OF 3 SETS (4C. #350 MCM RHW-2 1C. # 4/0 AWG THHN) IN 4" PVC SCH. 40 CONDUITS
- EXISTING COBRA TYPE, FULL CUTTOFF LIGHTING FIXTURE TO REMAIN
- SUBSTATION NEW PAD MOUNTED ELECTRICAL SUBSTATION 750KVA, 7,200KV TO 480/277V, DETAILS IN PAGE ES-2
- GENERATOR NEW EMERGENCY DIESEL GENERATOR, 750 KW, 480/277V, DETAILS IN PAGE ES-2
- P-PB NEW CONCRETE PRIMARY PULLBOX (4'-6" X 7'-0" X 5'-0")AS LUMA STANDARDS URD-30B & URD-30C
- LAND BOUNDARY MARKING

LOCATION MAP

NORTH AMERICAN DATUM 83
X = 166, 390. 00 Y = 299, 489. 50

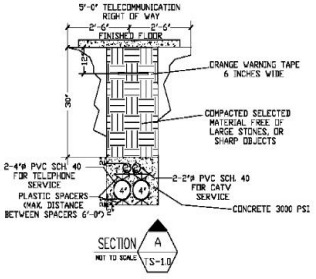
NORTH
SCALE: 1:20,000



Project review

INSTITUTO PRE-VOCACIONAL E INDUSTRIAL DE P.R. INC.
TELECOMMUNICATION SITE PLAN

CALE JOSE A. NORA "PIRULO"
BO. BARRANCA
ARECIBO, PR 00612



TELECOMMUNICATIONS LEGEND

	TELECOMMUNICATIONS RIGHT OF WAY - 5 FT WIDE
	1" ø, 2" ø, AND/OR 4" ø SCH 26 (MIN) CONDUITS FORMATION (AS INDICATED ON PRINTS)
E	PVC FORMATION ONE END CAPPED
T	EXISTING AERIAL TELECOMMUNICATION LINES TO REMAIN
PB 0X	TELECOMMUNICATIONS SPLICING BOX 4' X 4' X 4' INSIDE MEASUREMENTS
45FL	NEW PREPA CONCRETE POLE 45 FT.
30/6	NEW TELECOMMUNICATIONS WOOD POLE 30 FT.
E	EXISTING 40 FT. CONCRETE PREPA POLE WITH TELECOMMUNICATION AEREAL LINES TO REMAIN.
E	EXISTING TELECOMMUNICATIONS WOOD POLE 30 FT.
	NEW TELECOMMUNICATIONS RISER
	8' X 4' X 3/4" TREATED PLYWOOD PANEL FOR TELEPHONE SYSTEM
	36"X 30" X 8" METAL CABINET WITH 3/4" TREATED PLYWOOD PANEL FOR CATV SYSTEM
TEL	5" X 5" X 2-1/8" FLUSH MUNTED WALL TELEPHONE OUTLET WITH COVE PLATE
CATV	5" X 5" X 2-1/8" FLUSH MUNTED WALL TELEPHONE OUTLET WITH COVE PLATE
	4" X 4" X 2-1/8" FLUSH MUNTED WALL TELEPHONE OUTLET WITH COVE PLATE
	4" X 4" X 2-1/8" FLUSH MOUNTED WALL CATV OUTLET WITH COVER PLATE

CERTIFICATION RULE 2.1.9.2 k

CERTIFICATION:

I, JOSE HUGO ORTIZ PAGAN, LICENSED ENGINEER LICENSE NUMBER 18,136, CERTIFY THAT I AM THE PROFESSIONAL WHO DESIGNED THESE PLANS AND THE DOCUMENTARY SPECIFICATIONS. I ALSO CERTIFY THAT I DESIGNED THESE PLANS AND SPECIFICATIONS IN ACCORDANCE WITH THE LAWS AND REGULATIONS IN FORCE IN PUERTO RICO AND THAT THEY COMPLY WITH THE REGULATIONS AND BUILDING CODES IN FORCE OF THE AGENCIES, REGULATORY BOARDS OR PUBLIC CORPORATIONS WITH JURISDICTION. I FURTHER CERTIFY THAT THE PREPARATION OF THESE PLANS AND SPECIFICATIONS DOES NOT CONSTITUTE ANY VIOLATION OF LAW 84 OF JULY 5, 1994, AS AMENDED, KNOWN AS LAW 84 OF 1994, AS AMENDED, KNOWN AS THE LAW FOR THE EXERCISE OF THE PUERTO RICAN INDUSTRY AND WITH LAW NO. 46 OF JULY 5, 1978, AS AMENDED. I ACKNOWLEDGE THAT ANY FALSE STATEMENT OR FALSIFICATION OF THE FACTS THAT HAS BEEN PRODUCED BY IGNORANCE OR NEGLIGENCE ATTRIBUTABLE TO MY ACTS OR OMISSIONS IN THE PREPARATION OF THESE PLANS IN CONFORMITY WITH MY KNOWLEDGE AND PROFESSIONAL CAPACITY, SHALL BE GROUNDS FOR LEGAL AND DISCIPLINARY ACTION BY THE OGPe.

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e-tec engineering & consulting, p.s.c.
JOSE HUGO ORTIZ PAGAN, P.E.
ELECTRICAL CONSULTANT
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Tel: 787-898-8188

NETPR-2022-RI-0411
OGPe 2022-462970-SRI-061710

NET NEGOCIADO DE TELECOMUNICACIONES DE PUERTO RICO
Negociado de Telecomunicaciones de Puerto Rico

ENDOSO DE PLANOS DE FACILIDADES Y/O SERVIDUMBRE DE TELECOMUNICACIONES Y TELEVISIÓN POR CABLE

Revisado por:
recomendado por:
Aprobado por:

ESTE ENDOSO NO EXIME AL CONSTRUCTOR Y AL DESARROLLADOR DE CUMPLIR CON LOS REQUERIMIENTOS DE CONSTRUCCIÓN CONFORME A TODAS LAS DISPOSICIONES DE LOS REGLAMENTOS APLICABLES.

CERTIFIED BY:

Project number XXXX
Date 24/OCT/2022
Drawn by ENG. JOSE HUGO ORTIZ PAGAN
Checked by ENG. RUBEN ORTIZ GALARZA

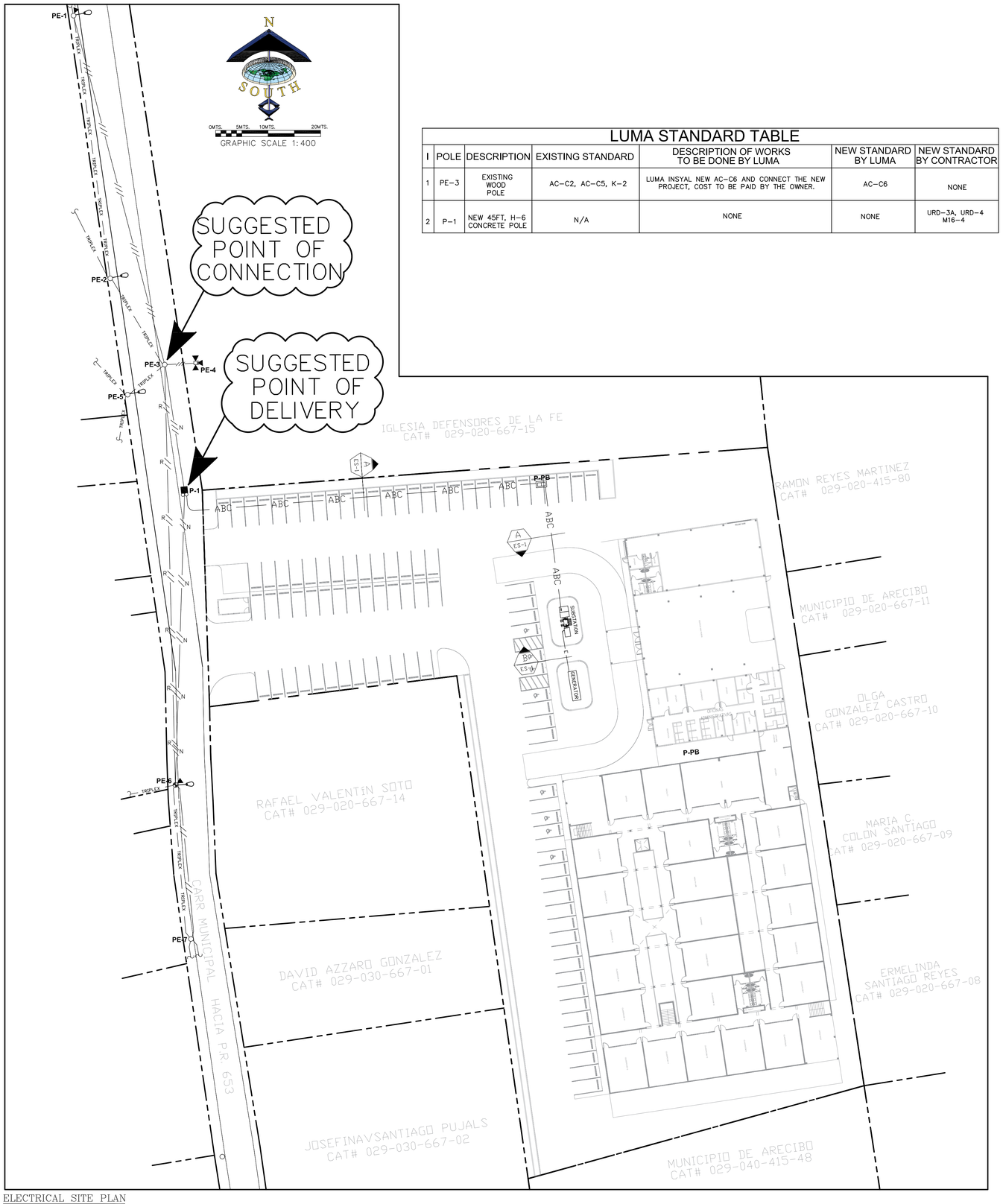
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Scale 1 : 400

15 OF 20

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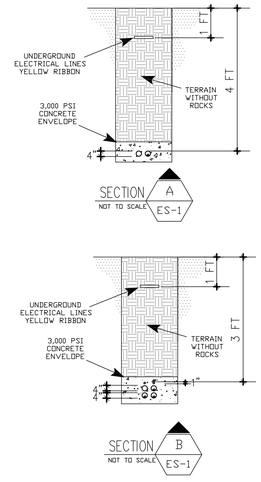
TELECOMMUNICATION SITE PLAN
Scale: 1 : 400



ELECTRICAL SITE PLAN
Scale: 1 : 400

LUMA STANDARD TABLE

I	POLE	DESCRIPTION	EXISTING STANDARD	DESCRIPTION OF WORKS TO BE DONE BY LUMA	NEW STANDARD BY LUMA	NEW STANDARD BY CONTRACTOR
1	PE-3	EXISTING WOOD POLE	AC-C2, AC-C5, K-2	LUMA INSYAL NEW AC-C6 AND CONNECT THE NEW PROJECT, COST TO BE PAID BY THE OWNER.	AC-C6	NONE
2	P-1	NEW 45FT, H-6 CONCRETE POLE	N/A	NONE	NONE	URD-3A, URD-4 M16-4

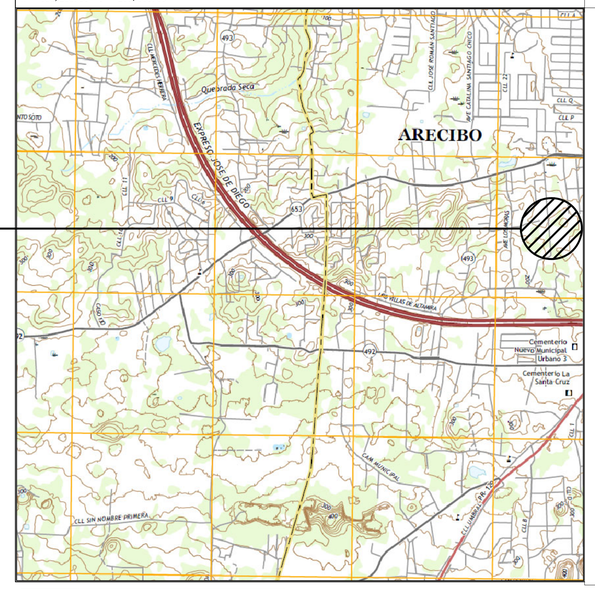


LOCATION MAP

NORTH AMERICAN DATUM 83
X = 166,285.30 Y = 269,555.09

NORTH
SCALE: 1: 20,000

SITE

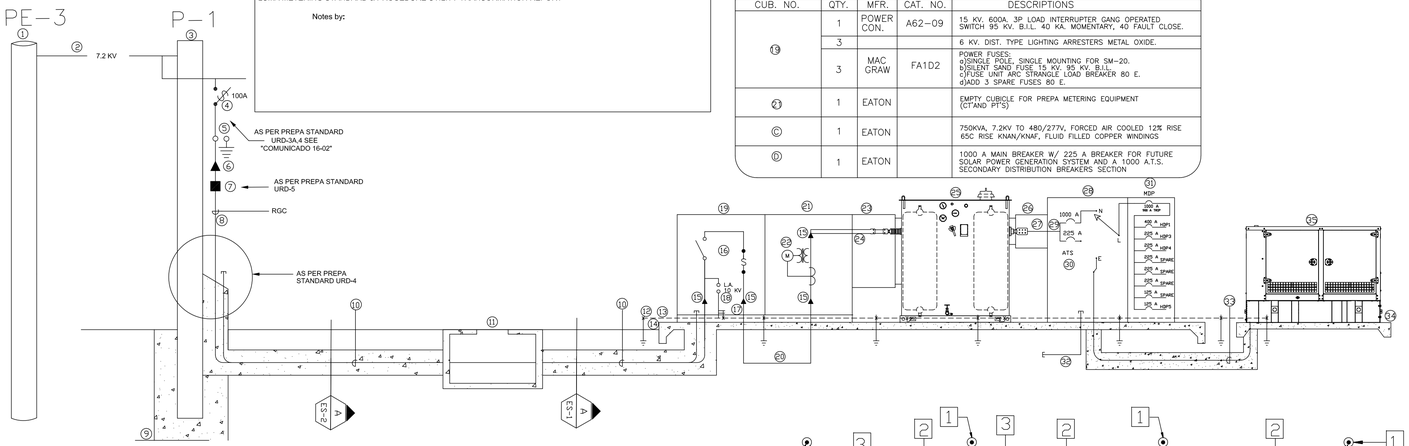

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Quebrada Seca
EXPRESO JOSE DE DIEGO
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CLL ANGEL M. SANTIAGO ANCES
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CLL P
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ONE LINE DIAGRAM

NOT TO SCALE

LUMA METERING STANDARD & PROCEDURE UTILITY TRANSORMATION REPORT

Notes by:

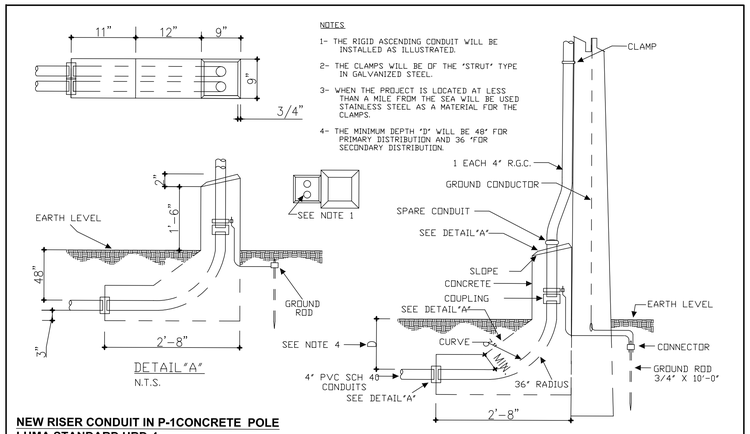


BILL OF MATERIALS

CUB. NO.	QTY.	MFR.	CAT. NO.	DESCRIPTIONS
⑲	1	POWER CON.	A62-09	15 KV, 600A, 3P LOAD INTERRUPTER GANG OPERATED SWITCH 95 KV, B.I.L. 40 KA MOMENTARY, 40 FAULT CLOSE.
	3			6 KV. DIST. TYPE LIGHTING ARRESTERS METAL OXIDE.
	3	MAC GRAW	FA1D2	POWER FUSES: a)SINGLE POLE, SINGLE MOUNTING FOR SM-20. b)SILENT SAND FUSE 15 KV, 95 KV, B.I.L. c)FUSE UNIT ARC STRANGLE LOAD BREAKER 80 E. d)ADD 3 SPARE FUSES 80 E.
㉑	1	EATON		EMPTY CUBICLE FOR PREPA METERING EQUIPMENT (CT'AND PT'S)
ⓒ	1	EATON		750KVA, 7.2KV TO 480/277V, FORCED AIR COOLED 12% RISE 65C RISE KNAN/KNAF, FLUID FILLED COPPER WINDINGS
ⓓ	1	EATON		1000 A MAIN BREAKER W/ 225 A BREAKER FOR FUTURE SOLAR POWER GENERATION SYSTEM AND A 1000 A.T.S. SECONDARY DISTRIBUTION BREAKERS SECTION

LEGEND:

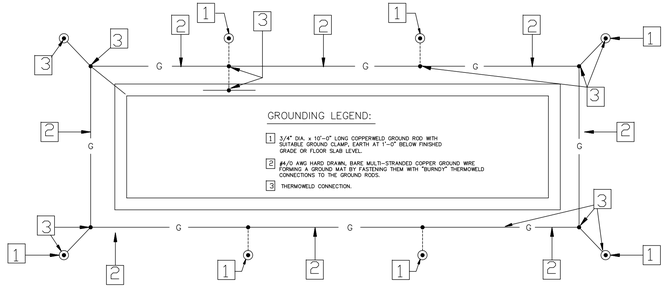
1. POINT OF CONNECTION OF LUMA SYSTEM, EXISTING WOOD POLE
2. NEW AEREAL 7.2KV ELECTRICAL LINE, 3 POLES, 3 WIRES # 3/0 AWG ACSR INSTALLED BY LUMA, PAID BY THE OWNER
3. NEW 45 FT - H6 CONCRETE POLE, INSTALLATION BY CONTRACTOR
4. NEW OPEN TYPE FUSE OF 100A, 125 KVBILL HOUSING, USE 100A FUSES
5. NEW 3 EACH 6 KV SURGE ARRESTERS FOR 7,3 KV PRIMARY VOLTAGE
6. NEW (3) OUTDOOR STRESS CONES, SHALL BE OUTDOOR 15 KV LUMA APPROVED
7. NEW OZ CONDUIT TERMINATOR, LIMA APPROVED.
8. NEW 4" R.G.C. FOR PRIMARY FEEDER.
9. NEW H6 CONCRETE BASE FOR SELF SUPPORT POLE OF 45 FT
10. NEW UNDERGROUND 3 PHASE FEEDER, 3 # 2 15KV TRXLPE & 1 C # 2 RHW-2 IN 4" PVC CONDUIT PLUS SPARE WITH 3,000 PSI CONCRETE ENVELOPE AS DETAIL A V1-1
11. NEW CONCRETE PULLBOX AS LUMA STANDARD URD 30B AND URD 30C (7'-0" X 4'-6" X 5'-0")
12. NEW GROUND CONNECTION, USE #4/0 AWG BARE COPPER CONDUCTOR, BURNDY THERMOWELD CONNECTION REQUIRED AND 3/4" X 10' COPPERCLAD GROUND ROD
13. NEW # 4/0 AWG HARD DRAWN BARE MULTI-STRANDED COPPER GROUND WIRE FORMING A GROUND MAT BY FASTENING THEM WITH BURNDY CONNECTIONS TO GROUND RODS
14. NEW CONCRETE BASE WITH 3000 PSI CONCRETE AS DETAIL ON THIS PAGE
15. NEW (3) INDOOR STRESS CONES, SHALL BE INDOOR 15 KV LUMA APPROVED
16. NEW GANG OPERATED LOAD BREAK FUSIBLE SWITCH 15KV, 600 A, 95KVBIL, 40 KA CLOSING W / FUSES, AS PER URD-42, USE 80 AMPS FUSES.
17. NEW GROUND BAR ACROSS CABINETS
18. NEW 3 EACH METAL OXIDE 6 KV LIGHTNING ARRESTERS FOR 7,2 KV PRIMARY VOLTAGE.
19. NEW CUBICLE 15 KV PRIMARY SWITCH GANG OPERATED AND FUSES
20. NEW UNDERGROUND 3 PH, FEEDER, 3 # 2-15KV TRXLPE & 1 C # 2 RHW-2 IN 4" PVC CONDUIT
21. NEW EMPTY CUBICLE FOR LUMA METERING EQUIPMENT, PT'S AND CT'S.
22. LUMA'S METERING EQUIPMENT (PT'S AND CT'S) INSTALLED BY CONTRACTOR CORDINATED WITH "MEDICIONES LUMA ARECIBO"
23. NEW GALVANIZED STEEL ISOLATING HOUSING TO ACCOMPLISH 750KVA TRANSFORMER WITH METERING CUBICLE.
24. NEW 3 COPPER BARS TO ACCOMPLISH METERING SYSTEM TO 750KVA TRANSFORMER USE FLEXIBLE TERMINALS BETWEEN BARS AND TRANSFORMER.
25. NEW 750KVA TRANSFORMER OF 7,2KV TO 480/277V
26. NEW GALVANIZED STEEL ISOLATING HOUSING TO ACCOMPLISH 750KVA TRANSFORMER TO LOW VOLTAGE SWITCHBOARD CUBICLE.
27. NEW CABLES FEEDER CONSISTS ON 3 SETS (4C, # 350 MCM RHW-2 WITH HY SEAL LUGS PER PHASE & 1C, # 4/0 AWG FOR GROUND CONNECTION)
28. NEW LOW VOLTAGE SWITCHBOARD CUBICLE WITH INTEGRATED 100 AMPS AUTOMATIC TRANSFER SWITCH
29. NEW 480/277V,1000 AMPS , 3 PHASE BREAKER FOR LOADS AND A SPARE 225 AMPS, 3 PHASE BREAKER FOR FUTURE SOLAR SYSTEM POWER GENERATION
30. NEW 480/277V,1000 AMPS , 3 PHASE AUTOMATIC TRANSFER SWITCH FOR GENERATOR
31. NEW LOW VOLTAGE SWITCHBOARD CUBICLE (MDP), 480/277V, 1000 AMPS, 3 PH., 4 WIRES
32. NEW 2 EACH 3" PVC CONDUITS FOR FUTURE SOLAR SYSTEM POWER GENERATION, LEAVE 10 FT, AWAY FROM DE CONCRETE PAD EAST DIRECTION AT 3 FEET UNDERGROUND SEE PAGE ES-4 (NOT LUMA ENDORSEMENT REQUIRED)
33. NEW SECONDARY FEEDER 480/277V, 3 SETS (4C, # 350 MCM RHW-2 & 1 # 4/0 AWG THHN) IN 4 PVC SCH 40 CONDUITS OF 4" AS TRENCH DETAIL 3 SEC-1
34. NEW CONCRETE BASE WITH 3000 PSI CONCRETE AS MANUFACTURER RECOMMENDATIONS
35. NEW DIESEL EMERGENCY GENERATOR, 750 KW, 480/277V, WITH A 5,525 GAL. SUB-BASE DOUBLE WALL DIESEL TANK EQUAL TO KOHLER MOD. 750/800REOZMD



DETAIL"A"
N.T.S.

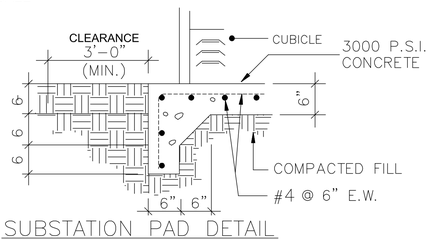
NEW RISER CONDUIT IN P-1CONCRETE POLE
LUMA STANDARD URD-4

N.T.S.



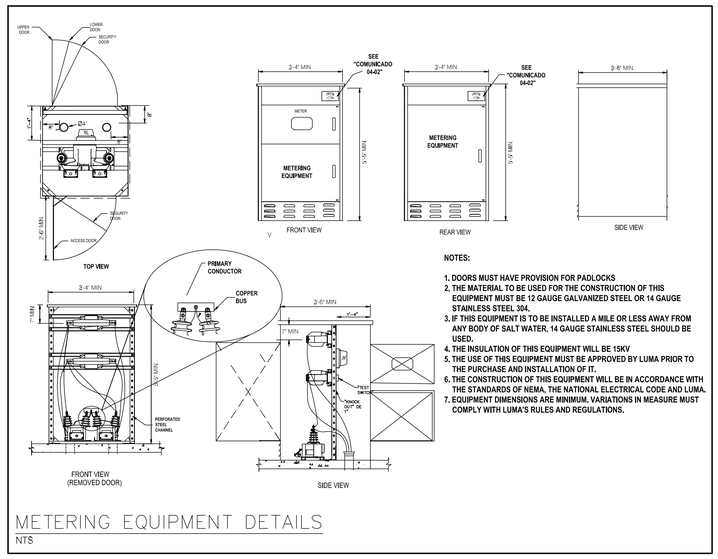
SUBSTATION PLAN VIEW

NOT TO SCALE



SUBSTATION PAD DETAIL

NOT TO SCALE

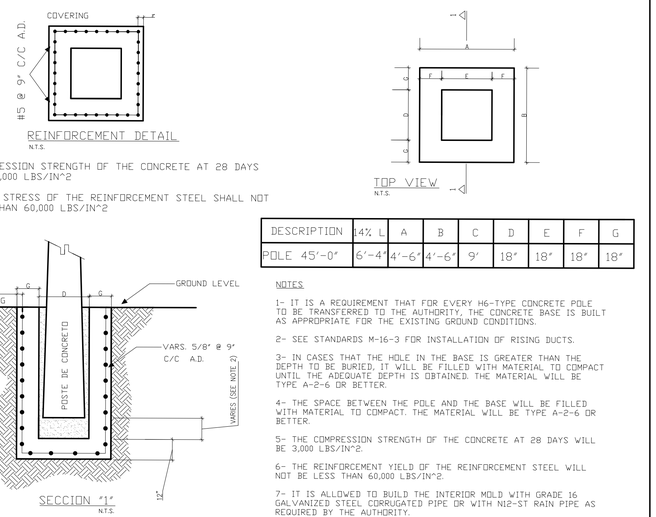


NOTES:

1. DOORS MUST HAVE PROVISION FOR PADLOCKS
2. THE MATERIAL TO BE USED FOR THE CONSTRUCTION OF THIS EQUIPMENT MUST BE 12 GAUGE GALVANIZED STEEL OR 14 GAUGE STAINLESS STEEL 304.
3. IF THIS EQUIPMENT IS TO BE INSTALLED A MILE OR LESS AWAY FROM ANY BODY OF SALT WATER, 14 GAUGE STAINLESS STEEL SHOULD BE USED.
4. THE INSULATION OF THIS EQUIPMENT WILL BE 15KV
5. THE USE OF THIS EQUIPMENT MUST BE APPROVED BY LUMA PRIOR TO THE PURCHASE AND INSTALLATION OF IT.
6. THE CONSTRUCTION OF THIS EQUIPMENT WILL BE IN ACCORDANCE WITH THE STANDARDS OF NEMA, THE NATIONAL ELECTRICAL CODE AND LUMA.
7. EQUIPMENT DIMENSIONS ARE MINIMUM. VARIATIONS IN MEASURE MUST COMPLY WITH LUMA'S RULES AND REGULATIONS.

METERING EQUIPMENT DETAILS

NTS



THE COMPRESSION STRENGTH OF THE CONCRETE AT 28 DAYS WILL BE 3,000 LBS/IN^2

THE YIELD STRESS OF THE REINFORCEMENT STEEL SHALL NOT BE LESS THAN 60,000 LBS/IN^2

DESCRIPTION	14½ L	A	B	C	D	E	F	G
POLE 45'-0"	6'-4"	4'-6"	4'-6"	9"	18"	18"	18"	18"

NOTES

1- IT IS A REQUIREMENT THAT FOR EVERY H6-TYPE CONCRETE POLE TO BE TRANSFERRED TO THE AUTHORITY, THE CONCRETE BASE IS BUILT AS APPROPRIATE FOR THE EXISTING GROUND CONDITIONS.

2- SEE STANDARDS M-16-3 FOR INSTALLATION OF RISING DUCTS.

3- IN CASES THAT THE HOLE IN THE BASE IS GREATER THAN THE DEPTH TO BE BURIED, IT WILL BE FILLED WITH MATERIAL TO COMPACT UNTIL THE ADEQUATE DEPTH IS OBTAINED. THE MATERIAL WILL BE TYPE A-2-6 OR BETTER.

4- THE SPACE BETWEEN THE POLE AND THE BASE WILL BE FILLED WITH MATERIAL TO COMPACT. THE MATERIAL WILL BE TYPE A-2-6 OR BETTER.

5- THE COMPRESSION STRENGTH OF THE CONCRETE AT 28 DAYS WILL BE 3,000 LBS/IN^2.

6- THE REINFORCEMENT YIELD OF THE REINFORCEMENT STEEL WILL NOT BE LESS THAN 60,000 LBS/IN^2.

7- IT IS ALLOWED TO BUILD THE INTERIOR MOLD WITH GRADE 16 GALVANIZED STEEL CORRUGATED PIPE OR WITH N12-ST RAIN PIPE AS REQUIRED BY THE AUTHORITY.

H-6 CONCRETE BASE FOR P-1, 45FT CONCRETE POLE
LUMA STANDARD M-16-4

N.T.S.

750KW EMERGENCY DIESEL GENERATOR AND 1000 AMPS TRANSFER SWITCH GENERAL SPECIFICATIONS

1. THE EMERGENCY GENERATOR SHALL BE COMPLETED WITH A FUEL (DISEL) TANK, AUTOMATIC TRANSFER SWITCH (ES), BATTERY, AUTOMATIC BATTERY CHARGE AND ALL REQUIRED ACCESSORIES FOR NORMAL OPERATION.
2. THE EMERGENCY GENERATOR SHALL BE RATED AS FALLOWS: KW = 750 KVA = 800 PHASES = 3 WIRES = 4 HERTZ = 60 R.P.M. = 1800 VOLTS = 277/480 N3R GALVANIZED STEEL WITH SOUND ATTENUATING HOUSING WITH QUIET OPERATION OF75 DB(A) LDG AVERAGE @ 7 M (23 FT.) EQUAL TO KOHLER KOHLER MOD. 750/800REOZMD, 5,525 GAL. SUB-BASE DIESEL TANK
3. THE UNIT IS TO INCLUDE THE FOLLOWING EQUIPMENT AND ACCESSORIES:
   A. WATER COOLED RADIATOR
   B. ONE (1) SUB-BASE (DIESEL) TANK OF 5,525 GAL. CAPACITY WITH FUEL SUPPLY, RETURN AND VENTILATION LINES AND EQUIPMENTS. ONE (1) DIESEL FUEL RESERVOIR DAY TANK.
   C. TWO (2) 24 VOLTS, HEAVY DUTY BATTERY WITH RACK.
   D. EXHAUST CRITICAL TYPE MUFFLER WITH STEEL CONNECTIONS AND FITTINGS INCLUDING FLEXIBLE SECTION AND RAIN CAP FOR EXHAUST.
   E. VIBRATION ISOLATORS OF THE SIZE, NUMBER AND TYPE REQUIRED BY THE PLANT MANUFACTURER.
   F. SCREEN, BAFFLED, LOUVERED AIR INTAKE.
   G. DUCTED, BAFFLED, LOUVERED AND SCREENED HOT AIR DISCHARGE.
   H. PUMPS AND FILTERS REQUIRED.
   I. RELAYS AND CONTACTORS AS REQUIRED FOR REMOTE CONTROL FROM TRANSFER SWITCH
   J. INSTRUMENTS AND CONTROL PANEL INCLUDING THE FOLLOWING:
      a. VOLTMETER AND SELECTOR SWITCH.
      b. AMMETER AND SELECTOR SWITCH.
      c. WATTMETER AND SELECTOR SWITCH.
      d. FREQUENCY METER AND SELECTOR SWITCH.
      e. RUNNING TIME METER
      g. VOLTAGE REGULATOR WITH TWO (2) POSITION (OFF AND AUTOMATIC) SWITCH.
      h. WATER TEMPERATURE GAUGE.
      i OIL PRESSURE GAUGE.
      j. AUTOMATIC SHUTDOWN DEVICE WITH INDICATOR LIGHTS FOR:
         (1) OVER CRANKING PROTECTION.
         (2) HIGH WATER TEMPERATURE.
      k. START/ STOP SWITCH
      l. REMOTE START. STOP TERMINALS
   K. AUTOMATIC TRANSFER SWITCHES (EQUAL OR SIMILAR TO KOHLER ATS : 1000 AMPS (3 PHASE), 277/480V NEMA TYPE: 3R SHALL BE FOR OPERATION AT 60 HERTZAND SHALL BE PROVIDED WITH REQUIRED PILOT LIGHTS ON THE DOOR AND WITH THE FOLLOWING ACCESSORIES:
      a. SELECTOR SWITCH WITH OFF-AUTOMATIC CHECK POSITIONS.
      b. TIME DELAY IN TRANSFER TO EMERGENCY ENGINE START, ADJUSTABLE FROM 1/16 TO 160 SECONDS.
      c. TIME DELAY ON RESTORATION TO NORMAL POWER ADJUSTABLE FROM 30 SECONDS TO 10 MINUTES.
      d. CLOCK EXERCISER TO GENERATOR SET AUTOMATICALLY. IT SHALL OPERATE EVERY WEEK AND RUN THE GENERATOR SET FOR ONE (1) HOUR AND THE, STOP THE GENERATOR AUTOMATICALLY.
      e. ALL OTHER ACCESSORIES REQUIRED FOR NORMAL OPERATION.
      f. TIME DELAY RELAYS AND CONTACTORS (IF SO REQUIRED) TO ACHIEVE THE FOLLOWING STARTING SEQUENCE TO OPERATE.
4. REMARKS:
   A. ALL ELBOWS SHALL BE OF THE LONG RADIUS TYPE
   B. THE DIAMETER OF THE EXHAUST PIPE MUST BE INCREASED 1" FOR EACH 10 FEET OF VERTICAL RUN AFTER THE FIRST 10 FEET.
   C. THE CONTRACTOR SHALL LEAVE TANK FULL OF DIESEL OF THE TYPE REQUIRED FOR THE OPERATION OF THE EMERGENCY GENERATOR.
   D. THE CONTRACTOR SHALL MAKE SURE THAT THE CONNECTIONS AT THE DIESEL FUEL TANK ARE TIGHT BEFORE PROCEEDING WITH THE FINAL CONNECTION OF THE TANK.
   E. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE COMPLETE INSTALLATION OF THE EMERGENCY GENERATOR WITH ALL NECESSARY FITTINGS AND APPURTENANCES. THIS SHALL BE DONE ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS AND INSTRUCTIONS. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR LEAVING THE EMERGENCY POWER GENERATING SYSTEM IN PERFECT OPERATING CONDITIONS.
   F. THE STRUCTURAL DETAILS SHOWN IN THE ELECTRICAL DRAWINGS FOR THE SUPPORT OF THE DIESEL FUEL TANK ARE OF A GENERAL NATURE. IT CORRESPONDS TO THE CONTRACTOR TO PROVIDE THE CORRECT TYPE AND SIZE OF THE STRUCTURAL SUPPORTS ACCORDING TO THE ACTUAL DIMENSIONS AND CHARACTERISTICS OF THE TANK PURCHASED.

DESIGNER'S CERTIFICATION

1. I CERTIFY THAT I A LICENSED AND REGISTERED ENGINEER, SURVEYOR OR ARCHITECT (IN COMPLIANCE WITH LAW 173 OF 1988, AS AMENDED) AND AUTHORIZED BY THE PROJECT OR LANDOWNER TO SUBMIT THESE CONSTRUCTION PLANS TO LUMA ENERGY AS THE OPERATOR AND ADMINISTRATOR OF THE TRANSMISSION AND DISTRIBUTION SYSTEM OF THE PUERTO RICO ELECTRIC POWER AUTHORITY.
2. IN COMPLIANCE WITH ACT. NO. 135 OF JULY 15, 1967, AS AMENDED KNOWN AS THE "CONSTRUCTION PLANS OR PROJECTS CERTIFICATION ACT", I CERTIFY THAT I PREPARED THE ELECTRIC DESIGN FOR THIS PROJECT IN ACCORDANCE WITH THE CODES, STANDARDS, RULES, AND REGULATIONS APPROVED BY LUMA, PUERTO RICO PLANNING BOARD AND PERMITS MANAGEMENTS OFFICE AND THE CIAPR PROFESSIONAL PRACTICE MANUAL.

DESIGNER'S SIGNATURE

ENDORSEMENT

LUMA

PROJECT NAME: INSTITUTO PRE-VOCACIONAL E INDUSTRIAL DE P.R. INC.

PROJECT NUMBER: XX-XX-XXX

LOAD: (KVA): 750 REVISION:

ENDORSEMENT BY

1. LUMA ENDORSES THE ELECTRICAL DESIGN SHOWN IN THESE CONSTRUCTION PLANS BASED ON THE CERTIFICATION SUBMITTED BY THE DESIGNER IN COMPLIANCE WITH ACT 125 OF JULY 15, 1987, AS AMENDED.
2. LUMA DOES NOT ASSUME RESPONSIBILITY OVER THE CERTIFIED DESIGN. LUMA'S ENDORSEMENT DOES NOT RELIEVE THE DESIGNER OF THE PROFESSIONAL RESPONSIBILITY ASSUMED WITH THE CERTIFICATION OF THESE PROJECT'S PLANS. THIS ENDORSEMENT DOES NOT RELIEVE THE BUILDER NOR THE PRIVATE INSPECTOR FROM COMPLIANCE WITH STANDING DISPOSITIONS FROM NATIONAL ELECTRIC CODE, NATIONAL ELECTRIC SAFETY CODE, CONSTUCTION STANDARDS NORMS, AND REGULATIONS FROM LUMA AND OTHER GOVERNMENT AGENCIES AS WELL AS FEDERAL AND STATE LAWS RULING BY THE TIME CONSTRUCTION BEGINS.
3. THIS ENDORSEMENT IS VALID FOR ONE YEAR. IF ELECTRICAL WORKS HAVE BEGUN DURING THIS YEAR, WITH PRIOR NOTIFICATION TO LUMA, THE ENDORSEMENT WILL STILL BE VALID UNTIL WORKS COMPLETION. IN CASE THERE IS NO CERTIFIED ELECTRICAL WORK DURING THIS PERIOD, THIS ENDORSEMENT WILL LOSE ITS VALIDITY. THIS ENDORSEMENT IS NOT TO CONSTITUTE AN EASEMENT OR TO COMPLETE THE ASSIGNMENT, TRANSFER AND GUARANTEE PROCESS OF THE EQUIPMENT. FOR THIS, IT IS NECESSARY TO COMPLY WITH ALL THE PROVISIONS OFTHE EASEMENTS REGULATION FOR THE ELECTRIC POER AUTHORITY (7282 OF 2007)

Project review

INSTITUTO PRE-VOCACIONAL E INDUSTRIAL DE P.R. INC.

ELECTRICAL DETALS PLAN

CALE JOSE A. NORA "PIRULO"
BO. BARRANCA
ARECIBO, PR 00612

CERTIFICATION RULE 2.1.9.2 k

CERTIFICATION:

I, JOSE HUGO ORTIZ PAGAN, LICENSED ENGINEER 18138, CERTIFY THAT I AM THE PROFESSIONAL WHO DESIGNED THESE PLANS AND THE COMPLEMENTARY SPECIFICATIONS, I ALSO CERTIFY THAT I UNDERSTAND THAT SAID PLANS AND SPECIFICATIONS COMPLY WITH THE APPLICABLE PROVISIONS OF THE JOINT REGULATIONS AND THE APPLICABLE PROVISIONS OF THE REGULATIONS AND BUILDING CODES IN FORCE OF THE AGENCIES, REGULATORY BOARDS OR PUBLIC CORPORATIONS WITH JURISDICTION. FURTHER, I CERTIFY THAT THE ENGINEERING DESIGN IN THESE PLANS AND SPECIFICATIONS HAS FULLY COMPLIED WITH THE PROVISIONS OF ACT NO. 14 OF JANUARY 9, 2004, AS AMENDED, KNOWN AS THE "LAW FOR INVESTMENT BY THE PUERTO RICAN INDUSTRY" AND WITH ACT NO. 96 OF JULY 6, 1978, AS AMENDED. I ACKNOWLEDGE THAT ANY FALSE STATEMENT OR FALSIFICATION OF THE FACTS THAT HAS BEEN PRODUCED BY IGNORANCE OR NEGLIGENCE EITHER BY ME, MY AGENTS OR EMPLOYEES, OR BY OTHERS WITH MY KNOWLEDGE, AND I AM RESPONSIBLE FOR ANY JUDICIAL AND DISCIPLINARY ACTION BY THE OGPe.

NOTE:
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Project number	XXXX
Date	24/OCT/2022
Drawn by	ENG. JOSE HUGO ORTIZ PAGAN
Checked by	ENG. RUBEN ORTIZ GALARZA

ES-2.0

Scale NOT TO SCALE

2 OF 20

FILE:FILELOCATION

SHEET REV: JUNE 1, 2012

UTILITY TRANSFORMATION - DISTRIBUTION ENGINEERING REPORT

XXXXXXX XXTH, 2022

1. EL DUEÑO DEL PROYECTO APORTARÁ LA CANTIDAD DE $ 8,250.00; EL PAGO SERÁ MEDIANTE EFECTIVO, CHEQUE CERTIFICADO O GIRO EN LA OFICINA COMERCIAL DE LA LUMA MÁS CERCANA, PARA REALIZAR MEJORAS AL SISTEMA ELÉCTRICO. DEBERÁ SOLICITAR UN REFERIDO DE PAGO, Y UNA VEZ REALIZADO EL PAGO, DEBERÁ SOMETER COPIA DE LA EVIDENCIA DEL MISMO A LA OFICINA DE INGENIERÍA - REGIÓN ARECIBO CON TRES MESES DE ANTICIPACIÓN AL COMIENZO DE LOS TRABAJOS. CUENTA NÚMERO CIG 419.06

2. PARA SERVIR EL PROYECTO, EL DUEÑO REALIZARÁ LOS SIGUIENTES TRABAJOS:

A. SERÁ RESPONSABLE DE EXTENDER EL ALIMENTADOR REQUERIDO DESDE EL PUNTO DE CONEXIÓN A UN POSTE PRIVADO DONDE SE CONSTRUIRÁ LA SUBESTACIÓN DEL PROYECTO O EN SU LUGAR DONDE SE CONSTRUIRÁ EL "RISER" DE LA TOMA SOTERRADA PARA LA MISMA Y DE CONSEGUIR LOS PERMISOS Y SERVIDUMBRES CORRESPONDIENTES A TALES EFECTOS.

3. SE REQUIERE INCLUIR COMO PARTE DEL DISEÑO LA INSTALACIÓN DE DISYUNTORES CON PROTECCIÓN DE FUSIBLES A LA ENTRADA DEL PROYECTO EN EL PUNTO DE CONEXIÓN O EN EL PRIMER POSTE DEL PROYECTO.

4. A MENOS DE UNA MILLA DE DISTANCIA DE LA COSTA TANTO LOS EQUIPOS COMO LOS MATERIALES DEBERÁN SER EN ACERO INOXIDABLE, Y EL CONDUCTOR A UTILIZAR SERÁ ACAR (ALUMINUM CONDUCTOR ALLOY REINFORCED), AAAC (ALL ALUMINUM ALLOY CONDUCTOR), ACSR/AW (ALUMINUM CONDUCTOR STEEL REINFORCED WITH ALUMOWELD CORE WIRE) SEGÚN COMUNICADO TÉCNICO 07-04.

5. TODO PROYECTO QUE REQUIERAN EQUIPO DE MEDICIÓN PARA SERVICIO CON TARIFA AL POR MAYOR DEBERÁ CUMPLIR CON EL COMUNICADO 13-05 (EQUIPO DE MEDICIÓN PARA SERVICIOS CON TARIFA AL POR MAYOR). DEBE COORDINAR CON LA OFICINA DE PARA TODO LO RELACIONADO CON ESTOS EQUIPOS, PREVIO A SOMETER PLANO PARA ENDOSO. TIENEN QUE COORDINAR EL TIPO DE MEDICIÓN, EQUIPOS A UTILIZARSE Y LA UBICACIÓN DE ÉSTOS. ESTOS DETALLES DEBEN SER INCLUIDOS EN EL PLANO A SER SOMETIDO PARA EL ENDOSO. ADEMÁS, TIENEN QUE INCLUIR UNA NOTA EN LOS PLANOS DE DISEÑO QUE INDIQUE LO SIGUIENTE:

"ESTE PROYECTO REQUIERE CONTRATO DE CUENTAS AL POR MAYOR, EL CUAL ES REQUISITO QUE SE FIRME PREVIO A LA ENERGIZACIÓN DEL PROYECTO. EL TIPO DE MEDICIÓN, LOS EQUIPOS A UTILIZARSE Y LA UBICACIÓN DEL EQUIPO DE MEDICIÓN FUE COORDINADA METERING STANDARD & PROCEDURE UTILITY TRANSFORMATION."

6. ESTA EVALUACIÓN DEL PUNTO DE CONEXIÓN NO CONSTITUYE UNA REVISIÓN DEL PLANO DE DISEÑO. EL DISEÑADOR ES RESPONSABLE DE CUMPLIR CON LOS CÓDIGOS, REGLAMENTOS, MANUALES, ESTÁNDARES Y NORMAS APLICABLES VIGENTES PARA LOS SISTEMAS ELÉCTRICOS EN PUERTO RICO. ADEMÁS, DEBERÁ CUMPLIR CON LOS REGLAMENTOS DE ORDENACIÓN DE LA INFRAESTRUCTURA EN EL ESPACIO PÚBLICO (REGLAMENTO DE PLANIFICACIÓN NÚMERO 22), SEGÚN EXIGE LA OFICINA DE GERENCIA DE PERMISOS (OGPE). LOS SISTEMAS DE DISTRIBUCIÓN Y TRANSMISIÓN A DESARROLLARSE EN ESTAS ZONAS DEBERÁN SEGUIR LAS GUÍAS ESTABLECIDAS POR ESTE REGLAMENTO.

8. EL DUEÑO DEL PROYECTO O SU REPRESENTANTE DEBERÁ NOTIFICARLE A LA OFICINA DE INGENIERÍA DE LA REGIÓN DE ARECIBO EL COMIENZO DE LA OBRA POSTERIOR AL ENDOSO DE LOS PLANOS Y PREVIO A LOS TRABAJOS ELÉCTRICOS DEL PROYECTO PARA LA REQUERIDA INSPECCIÓN, APROBACIÓN Y COORDINACIÓN NECESARIA.

GENERAL NOTES

1. THESE PLANS COINCIDE WITH THE REGISTRATION PLANS STATED IN THE ADMINISTRATION OF REGULATIONS AND PERMIT (ARPE) AND / OR OGPe.
2. THE PROJECT OWNER IS RESPONSIBLE FOR MANAGING AND OBTAINING, BEFORE THE START DATE OF THE WORK, ALL ENDORSEMENTS, AND PERMITS REQUIRED BY GOVERNMENT ENTITIES, STATE, MUNICIPAL, FEDERAL AND PRIVATE CONCERNING THE DEVELOPMENT OF THE TYPE OF PROJECT PROPOSED.
3. THE OWNER OF THIS WORK HAS TO CONTRACT THE SERVICES OF A LICENSED AND COLLEGE ENGINEER THAT INSPECTS THE CONSTRUCTION OF THE ELECTRICAL WORKS IN ACCORDANCE WITH LAW NO. 7 OF 19 OFJULY 1985, AS AMENDED, AND WITH THE PROJECT DRAWING CERTIFICATION REGULATION OF ELECTRICAL CONSTRUCTION OF THE CURRENT LUMA. THE OWNER WILL HAVE TO NOTIFY LUMA THE DESIGNATION OF THIS PRIVATE INSPECTOR BEFORE THE BEGINNING OF THE PROJECT.
4. THE EXECUTION OF THE ELECTRICAL WORKS, AS DESIGNED IN THESE PLANS, SHOULD OBSERVE THE BEST PRACTICE OF THE ELECTRICAL INDUSTRY AND CONSTRUCTION IN ACCORDANCE WITH STANDARDS AND REGULATIONS ADOPTED BY LUMA AND RELATED AGENCIES, AS WITH THE CODES, NEC AND NESC, AND OTHER IEEE, NFPA, NEMA AND ANSI STANDARDS ADOPTED.
5. THE CONTRACTOR IS NOT AUTHORIZED TO MAKE VARIATIONS TO THIS DESIGN. IT IS THE RESPONSIBILITY OF CONTRACTOR, CONSULT THE DESIGNER OR INSPECTOR DESIGNATED FOR THIS WORK ANY DOUBTS THAT ARISING FROM THE INTERPRETATION OF THE PLANS, FROM THE EXECUTION OF THE PROPOSED WORKS, SPECIFICATIONS TECHNIQUES OR DISCREPANCIES BETWEEN THE EXISTING CONDITIONS IN THE FIELD AND THOSE USED TO DESIGN PURPOSES.
6. THE OWNER OR ELECTRICAL CONTRACTOR WILL NOTIFY LUMA THE BEGINNING OF THESE WORKS, THROUGH THE DELIVERY OF THE PROJECT START NOTIFICATION DOCUMENT IN THE ENGINEERING DEPARTMENT OF DISTRIBUTION OF THE CORRESPONDING REGION **(ARECIBO)**, WITH AT LEAST FIFTEEN (15) DAYS IN ADVANCE TO THE PROPOSED DATE.
7. THE PRIVATE INSPECTOR AND THE ELECTRICAL CONTRACTOR ARE RESPONSIBLE FOR ATTENDING A MEETING OF PRE-CONSTRUCTION TO BE COORDINATED WITH THE DEPARTMENT OF DISTRIBUTION ENGINEERING OF THE CORRESPONDING REGION **(ARECIBO)**.
8. ALL WORK TO BE DONE WITH ENERGIZED LINES, INCLUDING THE CONNECTION OF THIS WORK, MUST BE CARRIED OUT BY LUMA. THE BIDDER HAS TO ASSUME ALL THE COSTS OF EQUIPMENT, MATERIALS AND WORK, THE BIDDER MUST REQUEST LUMA AN ESTIMATE FOR THESE WORKS, WHICH IT WILL BE EFFECTIVE OF THREE (3) MONTHS FROM ITS ISSUE.
9. THE PERFORMANCE OF ANY KIND OF WORK IS PROHIBITED IN THE ELECTRICAL SERVICE STRIPS WITHOUT THE WRITTEN AUTHORIZATION OF LUMA.
10. LUMA WILL NOT APPROVE THE CONNECTION OF PROJECTS WITH CONDITIONS OF INVASION OF SERVICE OR THAT IT DOES NOT MEET THE REQUIRED SAFETY CLEARANCES.

SYSTEM

1. THE PROJECT OWNER IS RESPONSIBLE FOR TESTING THE PRIMARY CABLES AND SECONDARY WITH THEIR ENDINGS. THE RESULTS OF THESE TESTS MUST BE IN AGREEMENT WITH THE PARAMETERS ESTABLISHED BY LUMA FOR THEM. THESE TESTS MUST BE CARRIED OUT IN COORDINATION WITH A REPRESENTATIVE OF THE INSPECTIONS OFFICE OF THE **(ARECIBO)** DEPARTMENT OF DISTRIBUTION ENGINEERING
2. DURING CABLE INSTALLATION, IT MUST BE PROTECTED FROM MOISTURE AND ABRASIONS. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING THE CABLE USING PULLING RECOMMENDED PRACTICES NOT TO EXCEED THE SPECIFIED TENSION FOR THE CABLE.
3. THE MANHOLES TO BE INSTALLED IN THE PLANTING AREA MUST BE PROTECTED BY A REINFORCED CONCRETE TILE, AS SPECIFIED IN THE URD-52 PATTERN.
4. IN THOSE CASES WHERE THE PROJECT IS LOCATED LESS THAN A MILE FROM BODIES OF WATER SALTED, THE RISING DUCTS MUST BE MADE OF PVC SCHEDULE 80 OR FIBERGLASS, ACCORDING TO APPROVED BY LUMA.
5. THE BENCHES OF THE UNDERGROUND SYSTEM WILL BE INSPECTED BY LUMA BEFORE BEING COVERED AND COMPACTED.
6. EVERY BENCH EXPOSED TO VEHICULAR TRAFFIC MUST BE PROTECTED WITH CONCRETE. THOSE THAT THEY ARE CLOSE TO FACILITIES OF OTHER UTILITIES. THEY WILL HAVE A MINIMUM CLEARANCE OF13 INCHES OF THESE.
7 THE QUANTITY OF REPLACEMENT FUSES PROVIDED BY THE CONTRACTOR WILL BE THE SAME AMOUNT OF THE INSTALLED IN EACH SUBSTATION.
8. THE CONNECTORS TO BE USED FOR THE EARTH CONNECTION OF ANTENNAS AND SUBSTATIONS WILL BE OF EXOTHERMAL WELDING (THERMO-WELD) OR COMPRESSION.
9. THE CONTRACTOR WILL PROVIDE FISHWIRE CABLE IN EACH GUARDING DUCT.
10. EVERY DISTRIBUTION SYSTEM WILL HAVE A MAXIMUM RESISTANCE TO EARTH OF 10 OHMS. IT WILL BE INSTALLED ONE ROD TO GROUND THE NEUTRAL AT EVERY FOUR POSTS OR EVERY 1,000 FEET AND ALL THE TRANSFORMERS.
11. EACH CONCRETE POST BASE MUST INCLUDE TWO GUARDING DUCTS FOR USE FUTURE, AS REQUIRED BY LUMA.
12. THE BASES FOR POSTS MUST BE INSPECTED BY LUMA IN THEIR CONSTRUCTION STAGE.

SPECIAL NOTES

1. THE PROJECT OWNER WILL CONTRIBUTE TO LUMA:
   ☑ THE AMOUNT OF $ 8,250.00 FOR IMPROVEMENTS TO THE EXISTING ELECTRICAL SYSTEM
   ☐ THE WORKS REQUIRED IN THE EVALUATION FOR THIS PROJECT ON _____.
   THIS CONTRIBUTION IS MADE ACCORDING TO THE PROPOSED LOAD IN ACCORDANCE WITH THE REGULATION TO DETERMINE AND COLLECT THE CONTRIBUTIONS OF PEOPLE OR INSTITUTIONS IN CURRENT DEVELOPMENT PROJECTS.
2. LUMA WILL NOT CONNECT THE PROJECT TO ITS ELECTRICAL SYSTEM UNTIL THE OWNER CONSTITUTES THE RIGHT OF WAY REQUIRED ACCORDING TO LUMA RIGHT OF WAY REGULATION. THIS NOTE APPLIES TO ALL REQUIRED RIGHT OF WAY, WHETHER INSIDE OR OUTSIDE THE LIMITS OF THE PROJECT.
3. THE INSTALLATION OF SUBSTATIONS, TRANSFORMERS OR OTHER ELECTRICAL EQUIPMENT ON SUPPLY SYSTEMS SEWAGE, WATER LINES, OR OTHER UTILITIES ARE PROHIBITED.
4. ALL TRANSFORMERS TO BE ACQUIRED MUST COMPLY WITH COMMUNICATION 15-03, THESE ARE BEING DESIGNED AND BUILT WITH IMPROVED LOSS CHARACTERISTICS. THEY SHOULD BE OF STAINLESS STEEL IF THE PROJECT IS LOCATED A MILE OR LESS THAN A BODY OF SALT WATER.
5. THE PROJECT OWNER MUST COORDINATE WITH THE **(ARECIBO)** DISTRICT ENGINEER THE PRIMARY VOLTAGE TO BE USED PRIOR TO THE PURCHASE OF THE TRANSFORMERS.
6. COMPLY WITH COMMUNICATION 95-07 WHICH DEFINES THE BUILDING TERM AND ESTABLISHES THE REQUIRED CONDITIONS FOR THE TAKING OF INDIVIDUAL SERVICES THROUGH THE USE OF METER BANKS.
7. THE OWNER OF THE PROJECT MUST FULLY COMPLY WITH LUMA "COMUNICADO 19-01" REALATED TO THE USE OF EMERGENCY GENERATORS AND THEIR CONNECTIONS.
8. LUMA WILL PLACE A PADLOCK LINKED TO THE OWNER'S PADLOCK TO THE MAIN GATE OF THE ENTRANCE FOR EASY ACCESS TO LUMA PERSONNEL SO THAT THEY CAN INSPECT AND PERFORM ANY WORK THAT THEY DEEM NECESSARY TO BE DONE. .

MATERIALS

1. ALL EQUIPMENT TO BE USED IN THE CONSTRUCTION MUST COMPLY WITH IEEE STANDARDS, ANSI, NEMA AND ASTM.
2. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING WITH LUMA THAT ALL MATERIALS OR EQUIPMENT TO BE USED THIS APPROVED BY LUMA PRIOR TO INSTALLATION. LUMA RESERVES THE RIGHT TO ACCEPT ANY EQUIPMENT THAT IS GOING TO BE TRANSFERRED.
3. ALL EQUIPMENT AND MATERIAL (INCLUDING TRANSFORMERS AND SUBSTATION CABINETS) TO BE INSTALLED A MILE OR LESS AWAY FROM SALT WATER BODIES MUST BE BUILT IN STAINLESS STEEL, WITH THE EXCEPTION OF THE METER BASES.
4. IN UNDERGROUND SYSTEMS, PRIMARY CABLES WITH 15KV TERMINATIONS MUST BE USED FOR DISTRIBUTION VOLTAGES AND 46KV FOR 38KV LINES.
5. IN AERIAL SYSTEMS, 15KV POLYMER INSULATORS MUST BE USED FOR VOLTAGES OFDISTRIBUTION AND 46KV FOR 38KV LINES.
6. THE CONTRACTOR WILL BE RESPONSIBLE FOR LABELING EVERY TRANSFORMER TO BE TRANSFERRED TO LUMA WITH A PROPERTY NUMBER PROVIDED BY THE DEPARTMENT OF DISTRIBUTION ENGINEERING OF **(ARECIBO)**.
7. PRIOR TO THE PURCHASE OF ANY EQUIPMENT OR MATERIAL RELATED TO THE MEASUREMENT, THE CONTRACTOR MUST COORDINATE WITH THE **(ARECIBO)** MEASUREMENT OFFICE ON THE AVAILABILITY OF THE EQUIPMENT AND / OR METERS TO BE SUPPLIED BY LUMA.

DESIGNER'S CERTIFICATION

1. I CERTIFY THAT I A LICENSED AND REGISTERED ENGINEER, SURVEYOR OR ARCHITECT (IN COMPLIANCE WITH LAW 173 OF 1988, AS AMENDED) AND AUTHORIZED BY THE PROJECT OR LANDOWNER TO SUBMIT THESE CONSTRUCTION PLANS TO LUMA ENERGY AS THE OPERATOR AND ADMINISTRATOR OF THE TRANSMISSION AND DISTRIBUTION SYSTEM OF THE PUERTO RICO ELECTRIC POWER AUTHORITY.
2. IN COMPLIANCE WITH ACT. NO. 135 OF JULY 15, 1967, AS AMENDED KNOWN AS THE "CONSTRUCTION PLANS OR PROJECTS CERTIFICATION ACT", I CERTIFY THAT I PREPARED THE ELECTRIC DESIGN FOR THIS PROJECT IN ACCORDANCE WITH THE CODES, STANDARDS, RULES, AND REGULATIONS APPROVED BY LUMA, PUERTO RICO PLANNING BOARD AND PERMITS MANAGEMENTS OFFICE AND THE CIAPR PROFESSIONAL PRACTICE MANUAL.

DESIGNER'S SIGNATURE

ENDORSEMENT

LUMA

PROJECT NAME: INSTITUTO PRE-VOCACIONAL E INDUSTRIAL DE P.R. INC.

PROJECT NUMBER: XX-XX-XXX

LOAD: (KVA): 750 REVISION: _____

ENDORSEMENT BY

1. LUMA ENDORSES THE ELECTRICAL DESIGN SHOWN IN THESE CONSTRUCTION PLANS BASED ON THE CERTIFICATION SUBMITTED BY THE DESIGNER IN COMPLIANCE WITH ACT 135 OF JULY 15, 1967, AS AMENDED.
2. LUMA DOES NOT ASSUME RESPONSIBILITY OVER THE CERTIFIED DESIGN. LUMA'S ENDORSEMENT DOES NOT RELIEVE THE DESIGNER OF THE PROFESSIONAL RESPONSIBILITY ASSUMED WITH THE CERTIFICATION OF THESE PROJECT'S PLANS. THIS ENDORSEMENT DOES NOT RELIEVE THE BUILDER NOR THE PRIVATE INSPECTOR FROM COMPLIANCE WITH STANDING DISPOSITIONS FROM: NATIONAL ELECTRIC CODE, NATIONAL ELECTRIC SAFETY CODE, CONSTUCTION STANDARDS NORMS, AND REGULATIONS FROM LUMA AND OTHER GOVERNMENT AGENCIES AS WELL AS FEDERAL AND STATE LAWS RULING BY THE TIME CONSTRUCTION BEGINS.
3. THIS ENDORSEMENT IS VALID FOR ONE YEAR IF ELECTRICAL WORKS HAVE BEGUN DURING THIS YEAR, WITH PRIOR NOTIFICATION TO LUMA, THE ENDORSEMENT WILL STILL BE VALID UNTIL WORKS COMPLETION. IN CASE THERE IS NO CERTIFIED ELECTRICAL WORK DURING THIS PERIOD, THIS ENDORSEMENT WILL LOSE ITS VALIDITY. THIS ENDORSEMENT IS NOT TO CONSTITUTE AN EASEMENT OR TO COMPLETE THE ASSIGNMENT, TRANSFER AND GUARANTEE PROCESS OF THE EQUIPMENT FOR THIS, IT IS NECESSARY TO COMPLY WITH ALL THE PROVISIONS OFTHE EASEMENTS REGULATION FOR THE ELECTRIC POER AUTHORITY (7282 OF 2007)

Project review

INSTITUTO PRE-VOCACIONAL E INDUSTRIAL DE P.R. INC.
LUMA NOTES
CALE JOSE A. NORA "PIRULO"
BO. BARRANCA
ARECIBO, PR 00612

CERTIFICATION RULE 2.1.9.2 k

CERTIFICATION:

I, JOSE HUGO ORTIZ PAGAN, LICENSED ENGINEER 18138, CERTIFY THAT I AM THE PROFESSIONAL WHO DESIGNED THESE PLANS AND THE COMPLEMENTARY SPECIFICATIONS, I ALSO CERTIFY THAT I UNDERSTAND THAT SAID PLANS AND SPECIFICATIONS COMPLY WITH THE APPLICABLE PROVISIONS OF THE JOINT REGULATIONS AND THE APPLICABLE PROVISIONS OF THE REGULATIONS AND BUILDING CODES IN FORCE OF THE AGENCIES, REGULATORY BOARDS OR PUBLIC CORPORATIONS WITH JURISDICTION. FURTHERMORE, THE PROJECT AND THE COMPLEMENTARY SPECIFICATIONS HAS FULLY COMPLIED WITH THE PROVISIONS OF ACT NO. 14 OF JANUARY 8, 2004, AS AMENDED, KNOWN AS THE "LAW FOR INVESTMENT BY THE PUERTO RICAN INDUSTRY" AND WITH ACT NO. 95 OF JULY 6, 1978, AS AMENDED. I ACKNOWLEDGE THAT ANY FALSE STATEMENT OR FALSIFICATION OF THE FACTS THAT HAS BEEN PRODUCED BY IGNORANCE OR NEGLIGENCE EITHER BY ME, MY AGENTS OR EMPLOYEES, OR BY OTHERS WITH MY KNOWLEDGE, AND I AM RESPONSIBLE FOR ANY JUDICIAL AND DISCIPLINARY ACTION BY THE OGPe.

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CONSULTANT:
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Tel: 787-898-8188

Project number XXXX
Date 24/OCT/2022
Drawn by ENG. JOSE HUGO ORTIZ PAGAN
Checked by ENG. RUBEN ORTIZ GALARZA

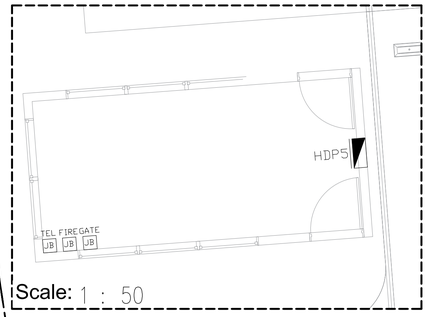
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SHEET REV: JUNE 1, 2012





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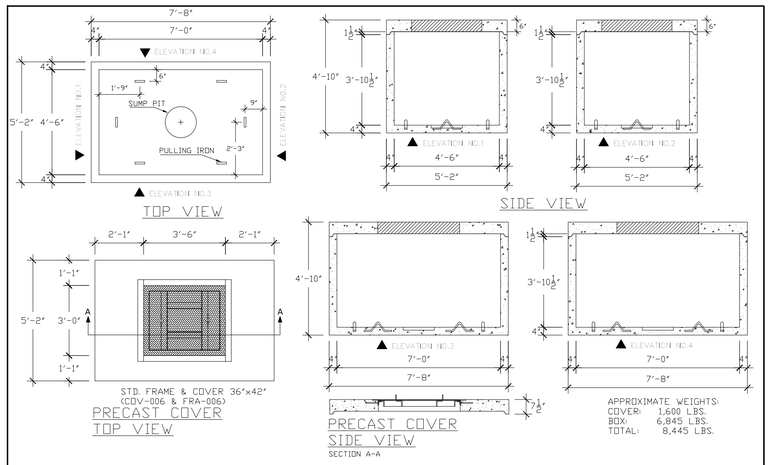
GUARD HOUSE DETAIL

ELECTRICAL SECONDARY DISTRIBUTION PLAN

Scale: 1 : 250

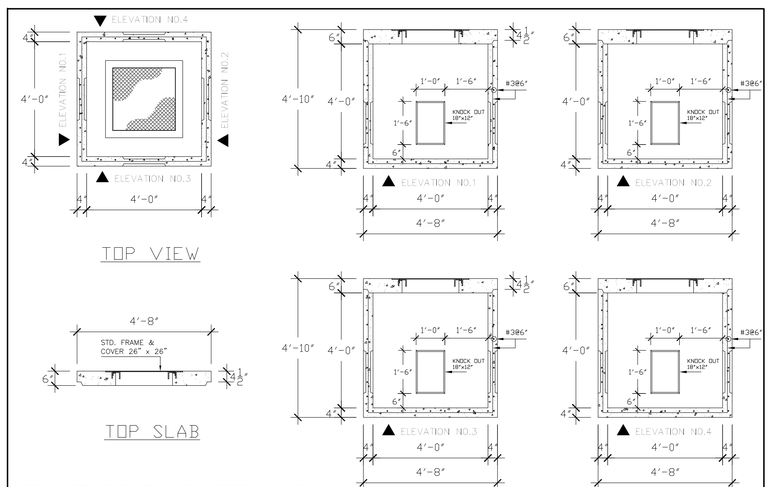
LEGEND:

- NEW OCTAGONAL PRESTRESSED CONCRETE POLE, 33FT WITH 65W LED COBRA TYPE LIGHTING FIXTURE EQUALTO AEL MOD. AUTOBHAN ATNMlc-P156MVOLT-R5-5K-PW4-WH-PCLL4-MP. INSTALL WITH 4' HOT DIP GALVANIZED OR ALUMINUM ARM. (LETTER X IN SYMBOL MEANS THE GROUP OF SAME ELECTRICAL CKT.) CONNECT EACH POLE WITH #2 AWG COPPER WIRE AND A 5/8" X 8' COPPERCLAD GROUND ROD. MAKE ALL CIRCUITS CONNECTION WITH ELASTIMOD 5 AMPS FUSE ON POLE BASE @ 12" BELOW FINISHED GRADE.
- **S-PB-1** NEW CONCRETE SECONDARY PULLBOX (4'-6" X 7'-0" X 4'-0") AS LUMA STANDARDS URD-30 & URD-30C, SEE DETAILS IN PAGE ES-4.0.
- **S-PB-2** NEW CONCRETE SECONDARY PULLBOX (4'-0" X 4'-0" X 4'-0"), SEE DETAILS IN PAGE ES-4.0.
- SUBSTATION NEW PAD MOUNTED ELECTRICAL SUBSTATION 750KVA, 7,200KV TO 480/277V, DETAILS IN PAGE ES-2.0.
- GENERATOR NEW EMERGENCY DIESEL GENERATOR, 750 KW, 480/277V, DETAILS IN PAGE ES-2.0.
- HDPX NEW 480/277V PANELBOARD, SEE DESCRIPTION ON PAGES E-5.0 & E-7.0.
- S NEW SECONDARY FEEDER, 120V, 2C, # 10 AWG RHW-2 & 1 # 10 THHN IN 1" PVC CONDUIT. SEE TRENCH DETAIL FOR QUANTITY OF CONDUITS, ALSO DESCRIBED IN PANELBOARD CIRCUITS ON PAGE E-7.0.
- E NEW SECONDARY FEEDER 460V, SEE TRENCH DETAIL FOR QUANTITY OF CONDUITS, ALSO DESCRIBED IN PANELBOARD CIRCUITS ON PAGE E-7.0.
- NEW TELECOMMUNICATION, CONTROL AND FIRE 1" PVC CONDUITS AS TRENCH DETAILS.



S-PB-1: SECONDARY CONCRETE PULLBOX - LUMA STD. URD 30 & URD 30A

NOT TO SCALE



S-PB-2: SECONDARY CONCRETE PULLBOX

NOT TO SCALE

Project review

INSTITUTO PRE-VOCACIONAL E INDUSTRIAL DE P.R. INC.
ELECTRICAL SECONDARY DISTRIBUTION PLAN
CALE JOSE A. NORA "PIRULO"
BO. BARRANCA
ARECIBO, PR 00612

CERTIFICATION RULE 2.1.9.2 k

CERTIFICATION:

I, JOSE HUGO ORTIZ PAGAN, LICENSED ENGINEER 18138, CERTIFY THAT I AM THE PROFESSIONAL WHO DESIGNED THESE PLANS AND THE COMPLEMENTARY SPECIFICATIONS. I ALSO CERTIFY THAT I UNDERSTAND THAT SAID PLANS AND SPECIFICATIONS COMPLY WITH THE APPLICABLE PROVISIONS OF THE JOINT REGULATIONS AND THE APPLICABLE PROVISIONS OF THE REGULATIONS AND BUILDING CODES IN FORCE OF THE AGENCIES, REGULATORY BOARDS OR PUBLIC CORPORATIONS WITH JURISDICTION. FURTHER CERTIFY THAT THE PREPARATION OF THESE PLANS AND SPECIFICATIONS HAS FULLY COMPLIED WITH THE PROVISIONS OF ACT NO. 14 OF JANUARY 8, 2004, AS AMENDED, KNOWN AS THE "LAW FOR INVESTMENT BY THE PUERTO RICAN INDUSTRY" AND WITH ACT NO. 96 OF JULY 6, 1976, AS AMENDED. I ACKNOWLEDGE THAT ANY FALSE STATEMENT OR FALSIFICATION OF THE FACTS THAT HAS BEEN PRODUCED BY IGNORANCE OR NEGLIGENCE BY ME OR BY OTHERS WITH MY KNOWLEDGE, AND I AM RESPONSIBLE FOR ANY JUDICIAL AND DISCIPLINARY ACTION BY THE OGPe.

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Address: PO Box 1351 Hatillo, P.R. 00659
Tel: 787-898-8188

Project number	XXXX
Date	24/OCT/2022
Drawn by	ENG. JOSE HUGO ORTIZ PAGAN
Checked by	ENG. RUBEN ORTIZ GALARZA

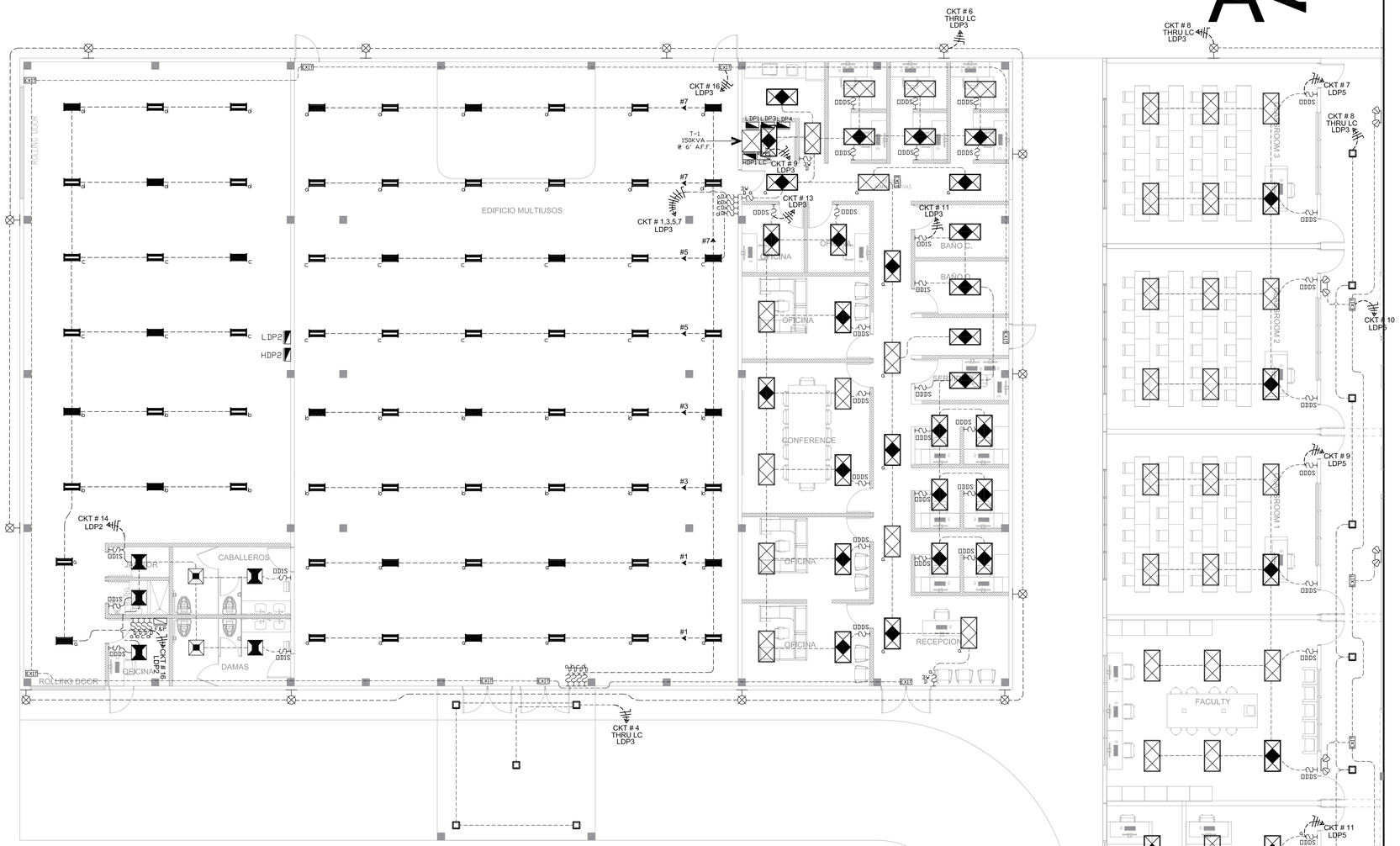
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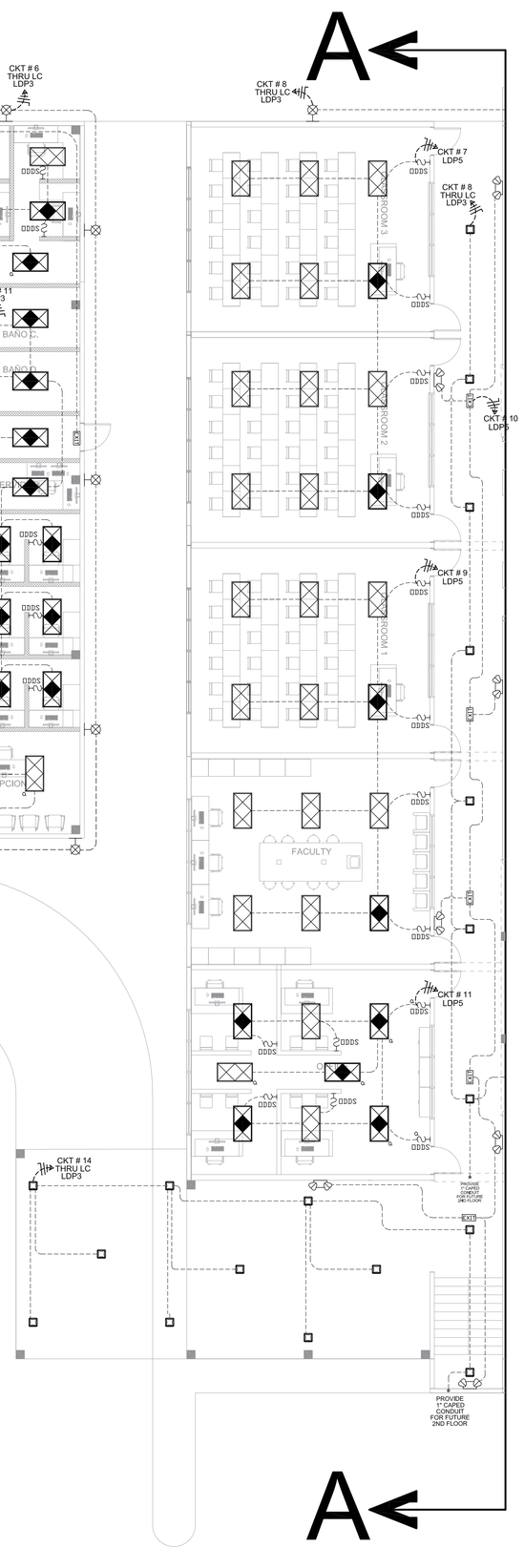
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4 OF 20

FILE: FILELOCATION

SHEET REV. JUNE 1, 2012





LIGHTING LEGEND:

- HDP-x — NEW PANELBOARD, 277/480V AS PANEL SCHEDULLE
- LDP-x — NEW PANELBOARD, 120/208V AS PANEL SCHEDULLE
- FUSED SAFETY SWITCH AS INDICATED ON PLANS
- FEEDER AS INDICATED ON PANEL SCHEDULE
- CIRCUIT HOME RUN AS SPECIFIED ON PANEL SCHEDULE.
- EXTRA HEAVY DUTY INDUSTRIAL GRADE, TOGGLE SWITCHES, GENERAL PURPOSE AC, SINGLE POLE, 20A 120/277V AC, BACK AND SIDE WIRED TOGGLE EQUAL TO HUBBELL # HBL1221W
- 3W — EXTRA HEAVY DUTY INDUSTRIAL GRADE, TOGGLE SWITCHES, GENERAL PURPOSE AC, THREE WAY, 20A 120/277V AC, BACK AND SIDE WIRED TOGGLE EQUAL TO HUBBELL # HBL1223W
- 4W — EXTRA HEAVY DUTY INDUSTRIAL GRADE, TOGGLE SWITCHES, GENERAL PURPOSE AC, FOUR WAY, 20A 120/277V AC, BACK AND SIDE WIRED TOGGLE EQUAL TO HUBBELL # HBL1224W
- D — DIMMER, ROCKE, ILLUMINATED, SINGLEPOLE, 1000W 120V AC, WHITE EQUAL TO BRYANT RDV10PW
- 3W D — EQUAL WIRING DEVICE OF ABOVE WITH THREE WAY CONNECTION
- 4W D — EQUAL WIRING DEVICE OF ABOVE WITH FOUR WAY CONNECTION
- DDDS — WHITE, OCCUPANCY DUAL TECHNOLOGY, DIMMING & SWITCH COMPATIBLE AND SIMILAR TO HUBBELL MOD.# LHDMMTS2-N-WH
- DD1S — WHITE, OCCUPANCY DUAL TECHNOLOGY, 1 SWITCH COMPATIBLE AND EQUAL TO HUBBELL MOD.# LHMTS1-G-WH
- DD2S — WHITE, OCCUPANCY DUAL TECHNOLOGY, 2 SWITCH EQUAL TO HUBBELL MOD.# LHMTD2-G-WH
- JB — OCTAGONAL STEEL BOX 4" X 2-1/8" FOR JUNCTION BOX ON CEILING
- JB — JUNCTION SQUARE BOX 4" X 4" X 2-1/8" FOR JUNCTION BOX ON WALL
- JB — SQUARE STEEL BOX 4" X 4" X 2-1/8" FOR JUNCTION BOX ON WALL.
- JB-P — PVC JUNCTION BOX, 12" X 12" X 6"

LUMINAIRES TABLE

SYMBOL	LABEL	BRAND	MODEL	DESCRIPTION	WATTS
	L-1	LITHONIA	IBG-12000LM-SEF-PCL-GNF-MVOLT-GZ10-50K-80CRI	SURFACE MOUNT 25.6" X 12.6" X 2.68" INSTALL @ 16FT-18FT AFF	77
	L-2	LITHONIA	IBG-12000LM-SEF-PCL-GNF-MVOLT-GZ10-50K-80CRI-HE30WCPHE	SURFACE MOUNT 25.6" X 12.6" X 2.68" WITH WITH BATT. BACKUP, INSTALL @ 16FT-18FT AFF	77
	L-3	LITHONIA	EPANL-2X4-7200LMHE-80CRI-40K 40K-MIN1-ZT-MVOLT-SMKSH	SURFACE MOUNT 2' X 4' LED FLAT PANEL LIGHTING, INSTALL @ 14FT-15FT	66
	L-4	LITHONIA	EPANL-2X4-7200LMHE-80CRI-40K MIN1-ZT-MVOLT-E10WCP-SMKSH	SURFACE MOUNT 2' X 4' LED FLAT PANEL LIGHTING WITH 10W BATT. BACKUP, INSTALL @ 14FT-15FT	66
	L-5	LITHONIA	CNY LED-P2-40K-MVOLT-WH	SURFACE MOUNT 10" X 10" LED CANOPY INSTALL @ 10FT-15FT	52
	L-6	LITHONIA	TWPX3 LEDD-P1-40K-MVOLT-PE DWHXD	LED WALL LIGHTING INSTALL @ 10FT-15FT	65
	L-7	LITHONIA	EPANL-2X2-4800LMHE-80CRI-40K 40K-MIN1-ZT-MVOLT-SMKSH	SURFACE MOUNT 2' X 2' LED FLAT PANEL LIGHTING, INSTALL @ 14FT-15FT	45
	L-8	LITHONIA	EPANL-2X2-4800LMHE-80CRI-40K MIN1-ZT-MVOLT-E10WCP-SMKSH	SURFACE MOUNT 2' X 2' LED FLAT PANEL LIGHTING WITH 10W BATT. BACKUP, INSTALL @ 14FT-15FT	45
	L-9	LITHONIA	VAP-SMB-8000-FST-WD-MVOLT-GZ10-40K-80CRI-E15WCP	SURFACE MOUNT 55" X 8" VAPOR TIGHT LIGHTING, WITH 15W BATT. BACKUP LIGHTING, INSTALL @ 10FT-12FT	67
EXIT	L-10	LITHONIA	EDGRNY-1-R-EL	EMERGENCY EXIT LIGHT-120V-BRUSHED ALUMINUM - SINGLE FACE	3
EXIT 2	L-11	LITHONIA	EDGRNY-2-R-EL	EMERGENCY EXIT LIGHT-120V-BRUSHED ALUMINUM - DOUBLE FACE	3
	L-12	LITHONIA	ELM4L	EMERGENCY LIGHT-120V-WHITE	3.15

KEY PLAN

SECTION - A | SECTION - B



SECTION A – LIGHTING DISTRIBUTION PLAN

Scale: 1/8"=1'-0"

Project review

INSTITUTO PRE-VOCACIONAL E INDUSTRIAL DE P.R. INC.
SECTION A – LIGHTING DISTRIBUTION PLAN

CALE JOSE A. NORA "PIRULO"
BO. BARRANCA
ARECIBO, PR 00612

CERTIFICATION RULE 2.1.9.2 k

CERTIFICATION:

I, JOSE HUGO ORTIZ PAGÁN, LICENSED ENGINEER 18138, CERTIFY THAT I AM THE PROFESSIONAL WHO DESIGNED THESE PLANS AND THE COMPLEMENTARY SPECIFICATIONS. I ALSO CERTIFY THAT I UNDERSTAND THAT SAID PLANS AND SPECIFICATIONS COMPLY WITH THE APPLICABLE PROVISIONS OF THE JOINT REGULATIONS AND THE APPLICABLE PROVISIONS OF THE REGULATIONS AND BUILDING CODES IN FORCE OF THE AGENCIES, REGULATORY BOARDS OR PUBLIC CORPORATIONS HAVING JURISDICTION OVER THE WORK THAT THE PREPARATION OF THESE PLANS AND SPECIFICATIONS HAS FULLY COMPLIED WITH THE PROVISIONS OF ACT NO. 14 OF JANUARY 9, 2004, AS AMENDED, KNOWN AS THE "LAW FOR INVESTMENT BY THE PUERTO RICAN INDUSTRY" AND WITH ACT NO. 96 OF JULY 6, 1978, AS AMENDED. I ACKNOWLEDGE THAT ANY FALSE STATEMENT OR FALSIFICATION OF THE FACTS THAT HAS BEEN PRODUCED BY IGNORANCE OR NEGLIGENCE EITHER BY ME, MY AGENTS OR EMPLOYEES, OR BY OTHERS WITH MY KNOWLEDGE, AND I AM RESPONSIBLE FOR ANY JUDICIAL AND DISCIPLINARY ACTION BY THE OGPe.

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Project number XXXX
Date 24/OCT/2022
Drawn by ENG. JOSE HUGO ORTIZ PAGAN
Checked by ENG. RUBEN ORTIZ GALARZA

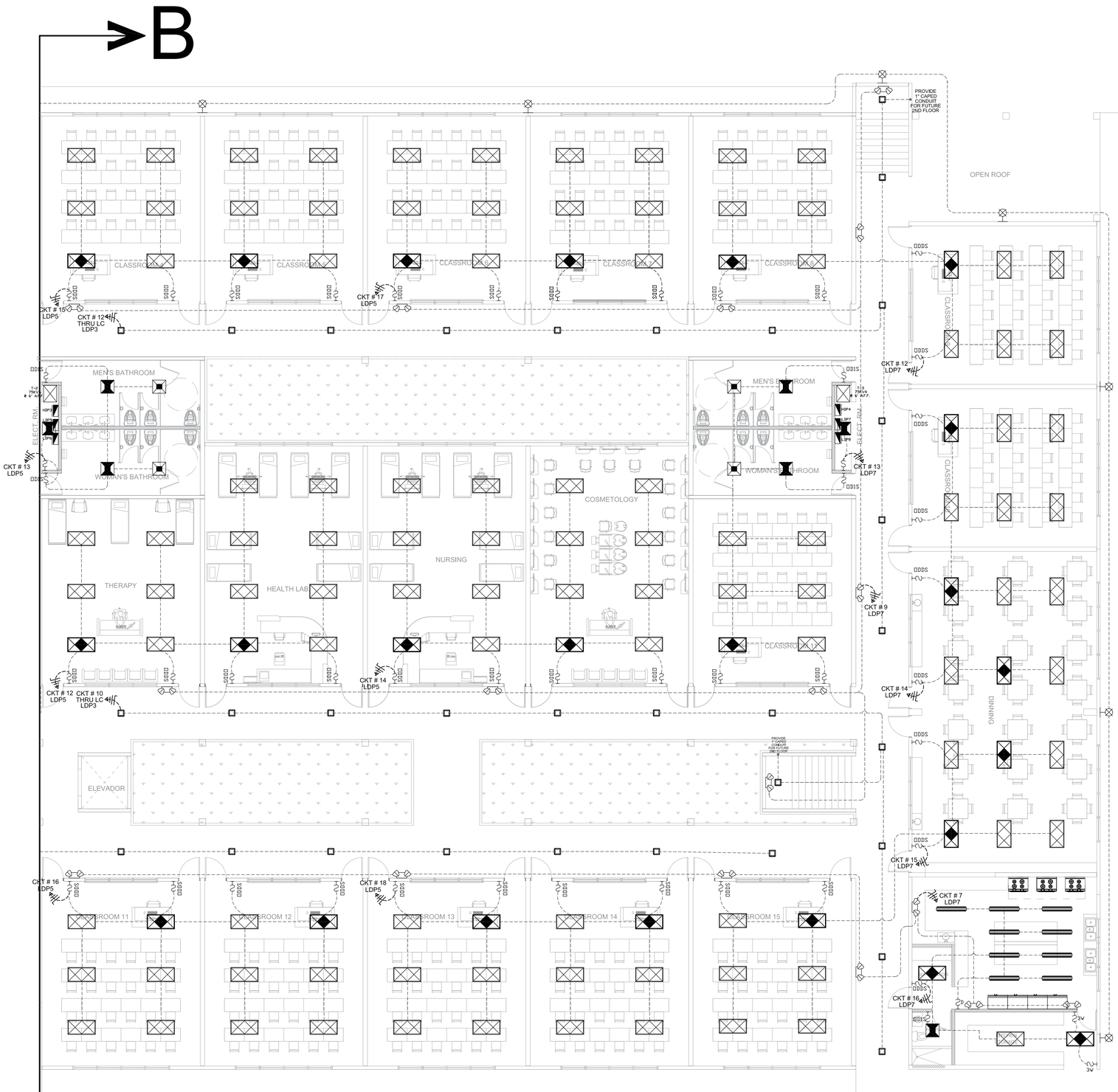
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5 OF 20

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SHEET REV. JUNE 1, 2012



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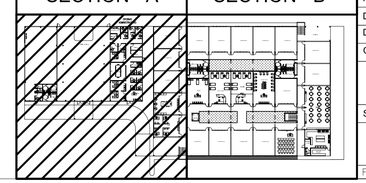
- HDP-x — NEW PANELBOARD, 277/480V AS PANEL SCHEDULLE
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- S — EXTRA HEAVY DUTY INDUSTRIAL GRADE, TOGGLE SWITCHES, GENERAL PURPOSE AC, SINGLE POLE, 20A 120/277V AC, BACK AND SIDE WIRED TOGGLE EQUAL TO HUBBELL # HBL1221W
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- S D — DIMMER, ROCKE, ILLUMINATED, SINGLEPOLE, 1000W 120V AC, WHITE EQUAL TO BRYANT RDV10PW
- S 3W D — EQUAL WIRING DEVICE OF ABOVE WITH THREE WAY CONNECTION
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- S ODDS — WHITE, OCCUPANCY DUAL TECHNOLOGY, DIMMING & SWITCH COMPATIBLE AND SIMILAR TO HUBBELL MOD.# LHDMMTS2-N-WH
- S ODDS — WHITE, OCCUPANCY DUAL TECHNOLOGY, 1 SWITCH COMPATIBLE AND EQUAL TO HUBBELL MOD.# LHMTS1-G-WH
- S ODDS — WHITE, OCCUPANCY DUAL TECHNOLOGY, 2 SWITCH EQUAL TO HUBBELL MOD.# LHMTD2-G-WH
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LUMINAIRES TABLE

SYMBOL	LABEL	BRAND	MODEL	DESCRIPTION	WATTS
	L-1	LITHONIA	IBG-12000LM-SEF-PCL-GNF-MVOLT-GZ10-50K-80CRI	SURFACE MOUNT 25,6" X 12,6" X 2,68" INSTALL @ 16FT-18FT AFF	77
	L-2	LITHONIA	IBG-12000LM-SEF-PCL-GNF-MVOLT-GZ10-50K-80CRI-HE30WCPHE	SURFACE MOUNT 25,6" X 12,6" X 2,68" WITH WITH BATT, BACKUP, INSTALL @ 16FT-18FT AFF	77
	L-3	LITHONIA	EPANL-2X4-7200LMHE-80CRI-40K 40K-MIN1-ZT-MVOLT-SMKSH	SURFACE MOUNT 2' X 4' LED FLAT PANEL LIGHTING, INSTALL @ 14FT-15FT	66
	L-4	LITHONIA	EPANL-2X4-7200LMHE-80CRI-40K MIN1-ZT-MVOLT-E10WCP-SMKSH	SURFACE MOUNT 2' X 4' LED FLAT PANEL LIGHTING WITH 10W BATT, BACKUP, INSTALL @ 14FT-15FT	66
	L-5	LITHONIA	CNY LED-P2-40K-MVOLT-WH	SURFACE MOUNT 10" X 10" LED CANOPY INSTALL @ 10FT-15FT	52
	L-6	LITHONIA	TWPX3 LEDD-P1-40K-MVOLT-PE DWHXD	LED WALL LIGHTING INSTALL @ 10FT-15FT	65
	L-7	LITHONIA	EPANL-2X2-4800LMHE-80CRI-40K 40K-MIN1-ZT-MVOLT-SMKSH	SURFACE MOUNT 2' X 2' LED FLAT PANEL LIGHTING, INSTALL @ 14FT-15FT	45
	L-8	LITHONIA	EPANL-2X2-4800LMHE-80CRI-40K MIN1-ZT-MVOLT-E10WCP-SMKSH	SURFACE MOUNT 2' X 2' LED FLAT PANEL LIGHTING WITH 10W BATT, BACKUP, INSTALL @ 14FT-15FT	45
	L-9	LITHONIA	VAP-SMB-8000-FST-WD-MVOLT-GZ10-40K-80CRI-E15WCP	SURFACE MOUNT 55" X 8" VAPOR TIGHT LIGHTING, WITH 15W BATT, BACKUP LIGHTING, INSTALL @ 10FT-12FT	67
EXIT	L-10	LITHONIA	EDGRNY-1-R-EL	EMERGENCY EXIT LIGHT-120V-BRUSHED ALUMINUM - SINGLE FACE	3
EXIT 2	L-11	LITHONIA	EDGRNY-2-R-EL	EMERGENCY EXIT LIGHT-120V-BRUSHED ALUMINUM - DOUBLE FACE	3
	L-12	LITHONIA	ELM4L	EMERGENCY LIGHT-120V-WHITE	3,15

KEY PLAN

SECTION - A | SECTION - B



SECTION B – LIGHTING DISTRIBUTION PLAN

Scale: 1/8"=1'-0"

Project review

INSTITUTO PRE-VOCACIONAL E INDUSTRIAL DE P.R. INC.
SECTION B – LIGHTING DISTRIBUTION PLAN

CALE JOSE A. NORA "PIRULO"
BO. BARRANCA
ARECIBO, PR 00612

CERTIFICATION RULE 2.1.9.2 k

CERTIFICATION:

I, JOSE HUGO ORTIZ PAGÁN, LICENSED ENGINEER 18138, CERTIFY THAT I AM THE PROFESSIONAL WHO DESIGNED THESE PLANS AND THE COMPLEMENTARY SPECIFICATIONS. I ALSO CERTIFY THAT I UNDERSTAND THAT SAID PLANS AND SPECIFICATIONS COMPLY WITH THE APPLICABLE PROVISIONS OF THE JOINT REGULATIONS AND THE APPLICABLE PROVISIONS OF THE REGULATIONS AND BUILDING CODES IN FORCE OF THE AGENCIES, REGULATORY BOARDS OR PUBLIC CORPORATIONS WITH JURISDICTION OVER THE PROJECT. THAT THE PREPARATION OF THESE PLANS AND SPECIFICATIONS HAS FULLY COMPLIED WITH THE PROVISIONS OF ACT NO. 14 OF JANUARY 9, 2004, AS AMENDED, KNOWN AS THE "LAW FOR INVESTMENT BY THE PUERTO RICAN INDUSTRY" AND WITH ACT NO. 96 OF JULY 6, 1978, AS AMENDED. I ACKNOWLEDGE THAT ANY FALSE STATEMENT OR FALSIFICATION OF THE FACTS THAT HAS BEEN PRODUCED BY IGNORANCE OR NEGLIGENCE EITHER BY ME, MY AGENTS OR EMPLOYEES, OR BY OTHERS WITH MY KNOWLEDGE, AND I AM RESPONSIBLE FOR ANY JUDICIAL AND DISCIPLINARY ACTION BY THE OGPe.

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Project number XXXX
Date 24/OCT/2022
Drawn by ENG. JOSE HUGO ORTIZ PAGAN
Checked by ENG. RUBEN ORTIZ GALARZA

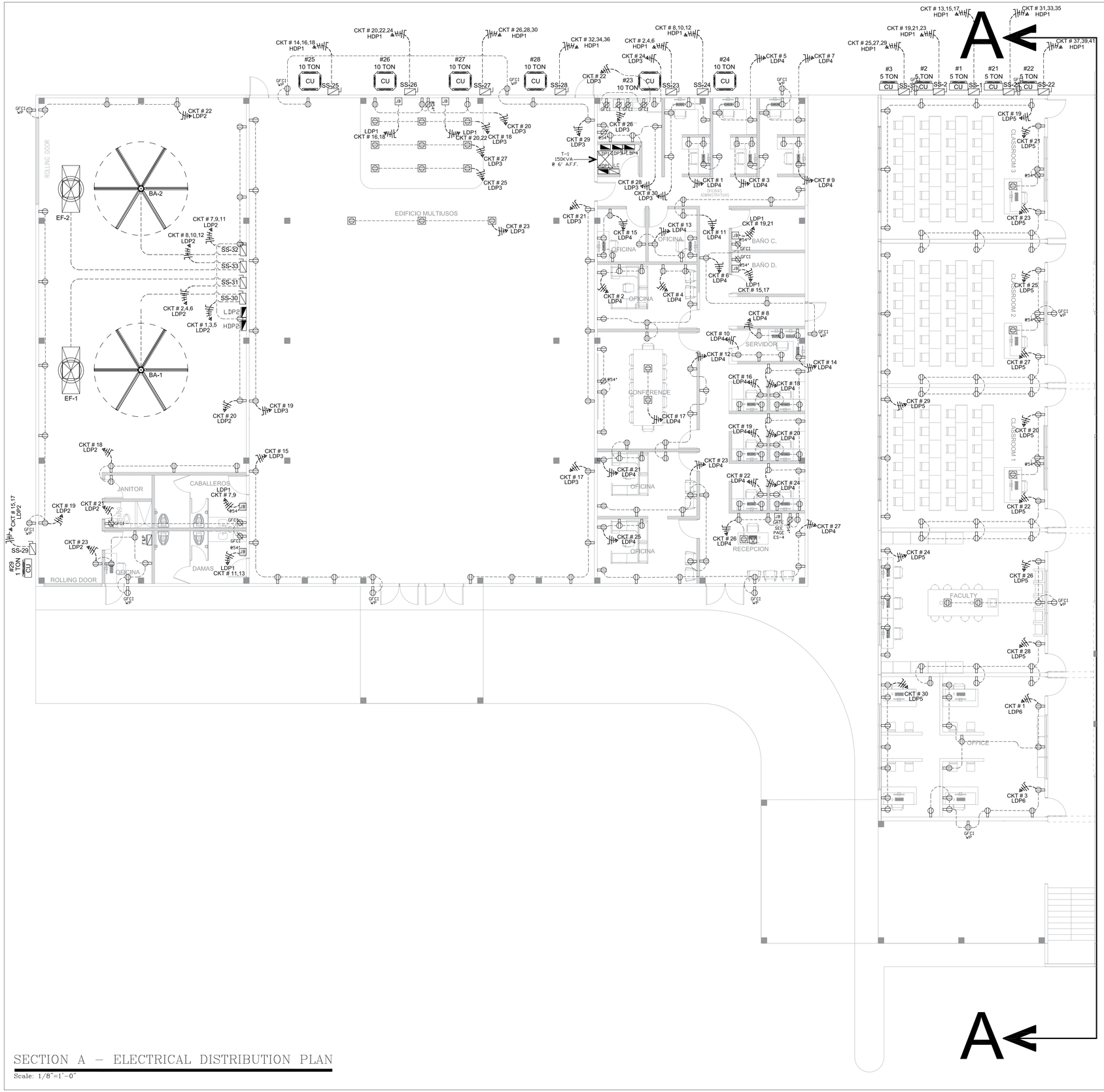
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Scale 1/8" = 1'-0"

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FILE:FILELOCATION

SHEET REV: JUNE 1, 2012



SECTION A – ELECTRICAL DISTRIBUTION PLAN

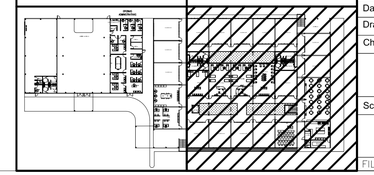
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ELECTRICAL LEGEND:

- HDP-x — NEW PANELBOARD, 277/480V AS PANEL SCHEDULLE
- LDP-x — NEW PANELBOARD, 120/208V AS PANEL SCHEDULLE
- NEW CONTROL PANEL AS PAGE E-10
- FUSED SAFETY SWITCH AS INDICATED ON PLANS
- 480 V CLASS K-FACTOR TYPE KT-4, RATED DOE 2016 EFFICIENT DRY-TYPE TRANSFORMERS, COPPER WOUND
- FEEDER AS INDICATED ON PANEL SCHEDULE
- NEUTRAL GROUND — CIRCUIT HOME RUN AS SPECIFIED ON PANEL SCHEDULE.
- STRAIGHT BLADE DEVICES, RECEPTACLES, DUPLEX, WEATHER RESISTANT, COMMERCIAL/INDUSTRIAL GRADE, 20A 125V, 2-POLE 3-WIRE GROUNDING, 5-20R, UL LISTED, WHITE EQUAL TO BRYANT-HUBBELL # BRY5362WWR
- SAME AS ABOVE BUT AT THE SPECIFIED HEIGHT BY THE ARCHITECT
- GFCI WP — GROUND FAULT CURRENT INTERRUPTER RECEPTACLE (GFCI), INDUSTRIAL GRADE, TAMPER PROOF, WEATHER -RESISTANT, WHITE, 20A, 125V, TAMPER PROOF, @ 18" AFF, EQUAL TO HUBBELL # GF5362SGW. " WP" INDICATES WEATHER RESISTANT PLATE.
- STRAIGHT BLADE DEVICES, RECEPTACLES, RTP, INDUSTRIAL GRADE, 3-POLE 4-WIRE GROUNDING, 50A 125/250V, 14-50R, BLACK EQUAL TO HUBELL # HBL9450A
- STRAIGHT BLADE DEVICES, RECEPTACLES, FLUSH MOUNT, SINGLE, COMMERCIAL/INDUSTRIAL GRADE, REINFORCED THERMOPLASTIC POLYESTER, 30A 125/250V, EQUAL TU BRYANT-HUBBELL # 9303
- FLOOR RECPETACLE, USE GFCI RECEPTACLE EQUAL HUBBELL # GF5362SGW, FLOOR PVC BOX BRYANT # RF400, SOLID BRASS COVER BRYANT # RF406BR, AND HINGED NYLON REPLACEMENT DOOR COVER BRYANT RF407BR.
- JB — OCTAGONAL STEEL BOX 4" X 2-1/8" FOR JUNCTION BOX ON CEILING
- JB — JUNCTION SQUARE BOX 4" X 4" X 2-1/8" FOR JUNCTION BOX ON WALL
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KEY PLAN

SECTION - A	SECTION - B



Project review

INSTITUTO PRE-VOCACIONAL E INDUSTRIAL DE P.R. INC.
SECTION A – ELECTRICAL DISTRIBUTION PLAN

CALE JOSE A. NORA "PIRULO"
BO. BARRANCA
ARECIBO, PR 00612

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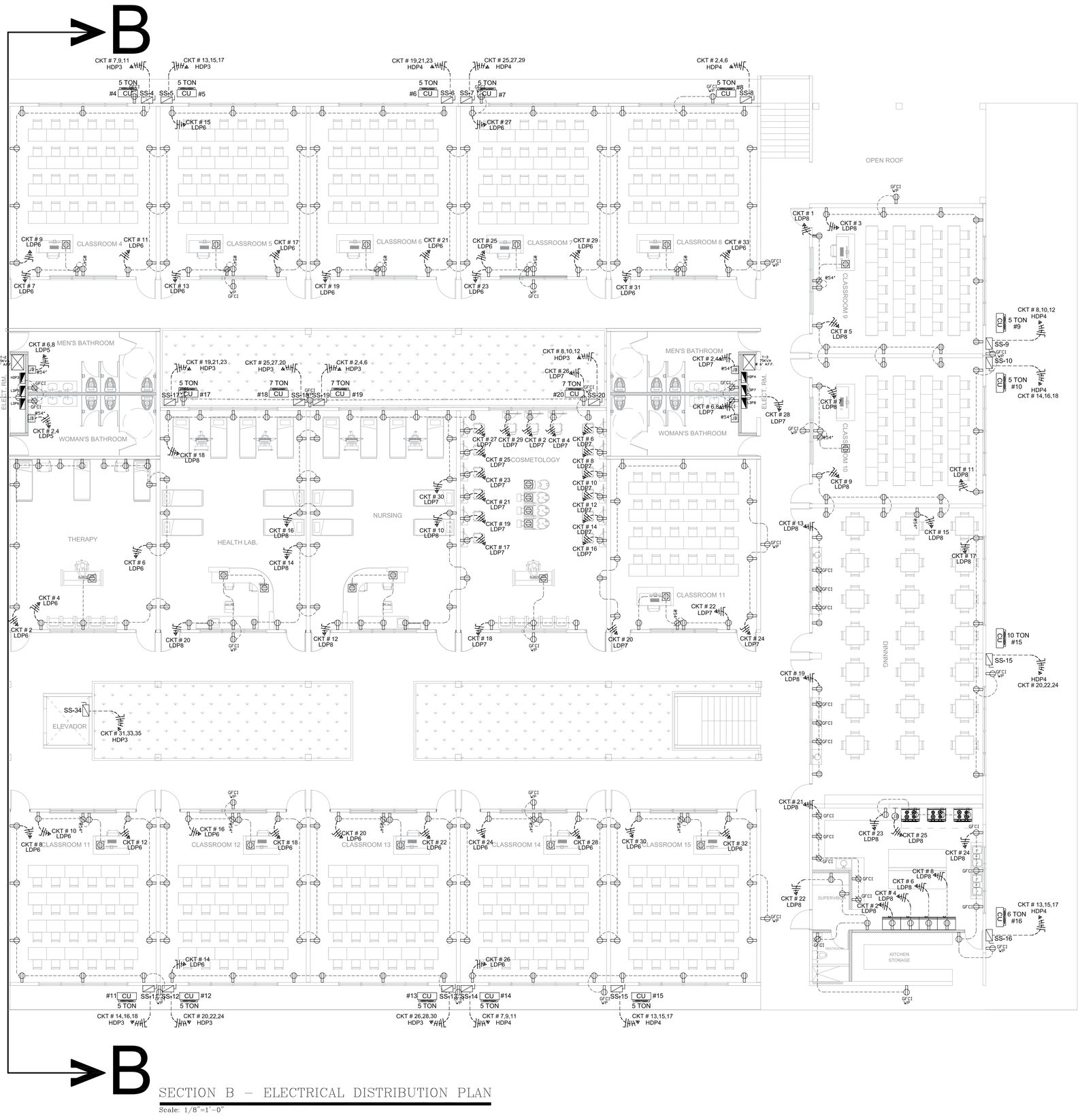
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Project number	XXXX
Date	24/OCT/2022
Drawn by	ENG. JOSE HUGO ORTIZ PAGAN
Checked by	ENG. RUBEN ORTIZ GALARZA
	E-3.0
Scale	1/8" - 1'-0"

7 OF 20

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SHEET REV. JUNE 1, 2012

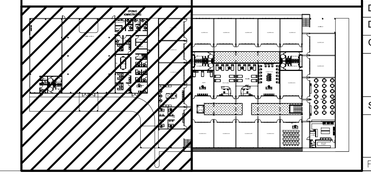


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KEY PLAN

SECTION - A | SECTION - B



Project review

INSTITUTO PRE-VOCACIONAL E INDUSTRIAL DE P.R. INC.
SECTION B – ELECTRICAL DISTRIBUTION PLAN
CALE JOSE A. NORA "PIRULO"
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Drawn by	ENG. JOSE HUGO ORTIZ PAGAN
Checked by	ENG. RUBEN ORTIZ GALARZA
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Scale	1/8" – 1'-0"
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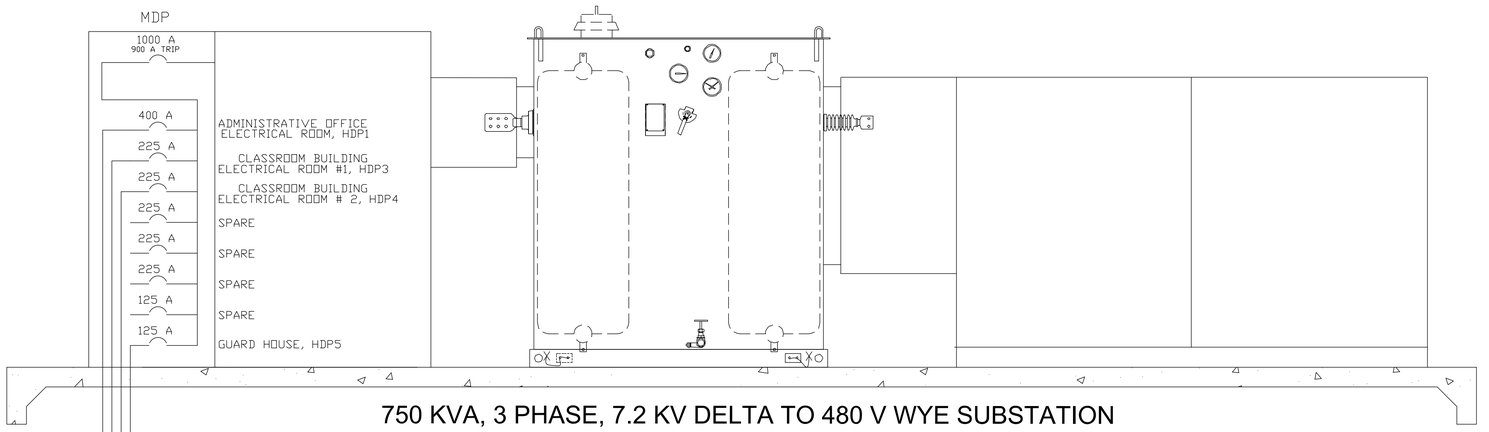
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CONSTRUCTION GENERAL NOTES:

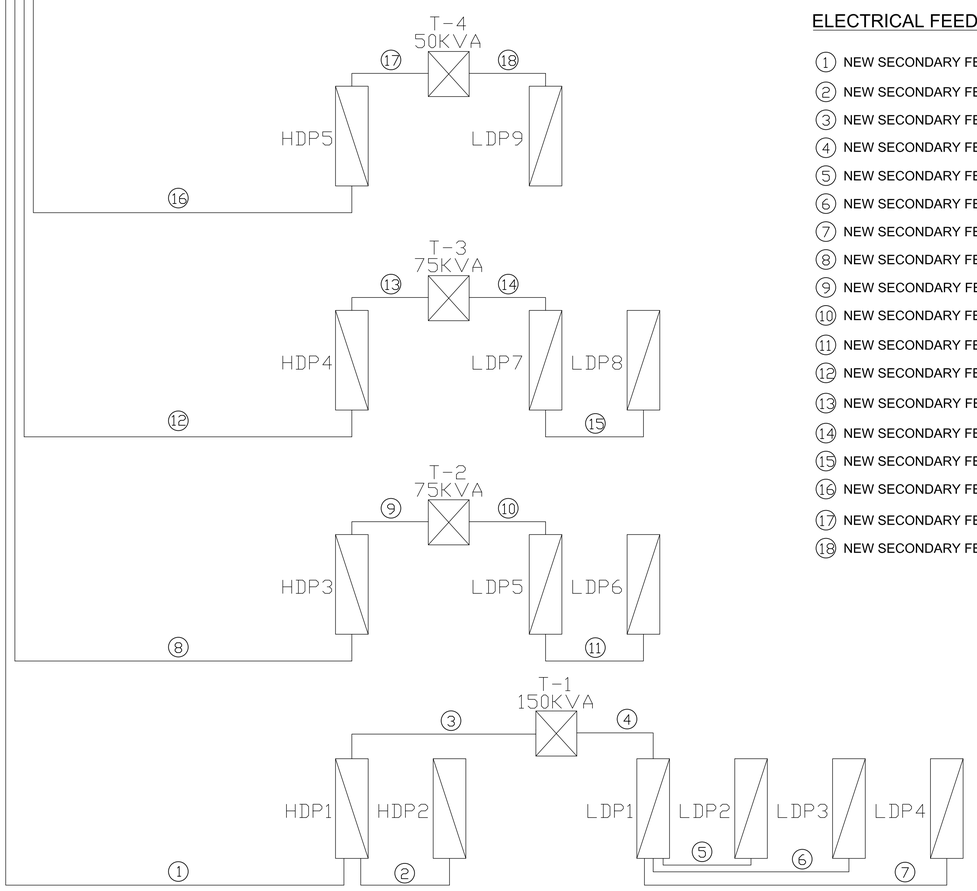
1. CONDUITS TO BE 3/4" UNLESS OTHERWISE NOTED. TYPE AS FOLLOWS:
   1) UNDERGROUND - PVC SCH 40
   2) OUTDOOR CONCRETE ENCASED - PVC SCH 40
   3) OUTDOOR EXPOSED OVER THE ROOF - PVC SCH 40
   4) OUTDOOR EXPOSED OVER 8'-0" A.F.F. - PVC SCH 40
   5) OUTDOOR EXPOSED BELOW 8'-0" A.F.F. - RIGID GALVANIZED CONDUIT (R.G.C.)
   6) INDOOR EXPOSED BELOW 8'-0" A.F.F. - ELECTRICAL METAL CONDUIT (E.M.T.)
   7) INDOOR ABOVE HUNG CEILING - ELECTRICAL METAL CONDUIT (E.M.T.)
   8) INDOOR CONCRETE OR BLOCKS ENCASED - PVC SCH 40
2. ALL ELECTRICAL INSTALLATION MUST BE DONE IN A NEAT WORKMAN MANNER, ACCORDING TO THE LAST EDITION OF THE NATIONAL ELECTRICAL CODE (NEC).
3. ALL EQUIPMENT SHALL BE NEW AND MUST COMPLY WITH ANSI NEMA, UL, AND P.R.E.P.A. STANDARDS.
4. ALL INDOOR WIRE SHALL BE COPPER TYPE THHN INSULATION AND NOT SMALLER #12 AWG. THHN UNLESS OTHERWISE NOTED.
5. ALL OUTDOOR UNDERGROUND WIRE SHALL BE COPPER TYPE RHW-2 INSULATION AND NOT SMALLER #12 AWG. RHW-2 UNLESS OTHERWISE NOTED.
6. ALL EQUIPMENT SHALL BE GROUNDED ACCORDING TO THE LATEST EDITION OF THE NEC.
7. PROVIDE A #12 AWG. THHN GREEN JUMPER CABLE BETWEEN THE RECEPTACLE GROUNDING SCREW AND THE OUTLET BOX GROUNDING SCREW.
8. USE INDICATED HEIGHT FROM COUNTER TO BOX, OR EQUIPMENT TO THE FINISH FLOOR.
9. LIGHTING FIXTURES SHALL BE INSTALLED AS PER ARCHITECTURAL DRAWINGS.
10. THE ELECTRICAL CONTRACTOR SHALL PROVIDE PROPER SUPPORT AND MOUNTING ACCESSORIES TO ALL LIGHTING FIXTURES. A #12 GAUGE GALVANIZED THE WIRE PERMANENTLY ATTACHED TO THE STRUCTURE SHALL BE PROVIDED AT TWO DIAGONAL CORNERS OF EACH FIXTURE MOUNTED IN A GRIP OR GYPSUM BOARD TYPE CEILING.
11. THE BOX SIZE SHALL BE 4"x4"x2-1/8" UNLESS OTHERWISE NOTED.
12. ROUTE OF CONDUITS SHOWN IN THE LAYOUT ARE SCHEMATIC AND INTEND ONLY TO INDICATE INTERCONNECTIONS BETWEEN OUTLETS OR EQUIPMENT. EXACT CONDUIT ROUTING SHALL BE DETERMINED AT JOB SITE TO CONFORM WITH THE STRUCTURAL CONDITIONS AND SHALL BE SUBJECT OF THE FINAL APPROVAL OF THE ARCHITECT / ENGINEER.
13. CONTRACTOR MUST SUBMIT FOR APPROVAL ALL EQUIPMENT AND ELECTRICAL MATERIALS REQUIRED FOR THE WORK TO BE PERFORMED.
14. THE CONTRACTOR SHALL VISIT THE JOB SITE AND BECAME ACQUAINTED WITH THE EXISTING FIELD CONDITIONS. IT SHALL BE DIRECT RESPONSIBILITY OF THE CONTRACTOR TO BRING PROMPTLY TO THE ATTENTION OF THE ENGINEER, ANY DISCREPANCIES BETWEEN THE EXISTING FIELD CONDITIONS AND THOSE THAT WERE USED FOR DESIGN PURPOSES. THIS SHALL BE DONE BEFORE THE CONTRACTOR SUBMITS HIS BID SO THAT THE ENGINEER CAN RENDER A DECISION OF THE MATER BEFORE THE BIDS ARE RECEIVED. THE SUBMITTAL OF THE BID BY THE CONTRACTOR SHALL BE HELD AS PROOF THAT THE CONTRACTOR UNDERSTAND THOROUGHLY AND COMPLETELY THE SCOPE OF THE WORK INVOLVED, HAS FAMILIARIZED HIMSELF WITH THE EXISTING FIELD CONDITIONS, AND HAS INCLUDED IN HIS BID ALL THE ITEM NECESSARY TO PERFORM THE ELECTRICAL WORK. NO ALLOWANCE WILL BE PERMITTED ON THIS MATTER AFTER THE BIDS ARE RECEIVED.
15. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL THE POWER AND CONTROL INTERCONNECTIONS AMONG ALL THE DIFFERENT PART OF THE AIR CONDITIONING WATER HEATER, ETC.). THE CONTRACTOR SHALL ALSO PROVIDE ALL THE STARTING AND DISCONNECT EQUIPMENT FOR SAID SYSTEM.
16. THE ELECTRICAL CONTRACTOR SHALL TO COORDINATE EXACT EQUIPMENT ELECTRICAL ENTRANCE WITH APPROVED SHOP DRAWINGS.
17. BASED BID EQUIPMENT: ALL ELECTRICAL EQUIPMENT AND DEVICES SPECIFIED IN THESE DRAWINGS SHALL BE INCLUDED AS BASE BID; AFTER THE PROJECT IS AWARDED ANY ALTERNATIVE ITEM WHICH WILL RESULT IN COST SAVINGS TO THE OWNER CAN BE SUBMITTED WITH THE PROPOSED CREDIT FOR OWNERS EVALUATION. ALL EQUIPMENT SHALL BE SUBMITTED FOR OWNERS AND ENGINEER ENDORSEMENT.
18. ALL CONDUIT PENETRATIONS THROUGH FIRE RATED FLOORS OR WALLS SHALL BE SEALED WITH FIRE RETARDANT SEALANT TO MAINTAIN THE INTEGRITY OF THE FIRE RATING.
19. PANELBOARD LOADS SHALL BE BALANCED AND WITHIN TEN PERCENT (10%) ACROSS ALL PHASES.
20. CONTRACTOR SHALL REVIEW AND VERIFY ALL APPLICABLE EXISTING CONDITIONS ON SITE, INCLUDING TIGHTNESS OF ALL EXISTING ELECTRICAL CONNECTIONS AND ADEQUACY OF GROUND SYSTEM.
21. PROVIDE TYPE WRITTEN CIRCUIT DIRECTORY CARD IN PANELBOARD DOOR.
22. ARMORED CABLE TYPE AC-THH (BX), GROUNDING TYPE 1/2" MINIMUM DIAMETER WILL ONLY BE ALLOWED FOR DROPS TO INDOOR LIGHTING FIXTURES AND EQUIPMENT. MAXIMUM LENGTH SHALL BE THREE FEET FOR A MOTOR AND SIX FEET FOR LIGHTING FIXTURES.
23. PULL BOXES OR JUNCTION BOXES SHALL BE MINIMUM 12 GAUGE GALVANIZED STEEL OUTLETS. BOXES IN WALLS SHALL BE GALVANIZED STAMPED STEEL OR CAST METAL. NO WELDED BOXES ARE PERMITTED. CAULK AROUND BOXES TO ELIMINATE NOISE TRANSMISSION.
24. CONDUITS, HANGERS, CLAMPS, LIGHTING FIXTURES, JUNCTION BOXES, SUPPORTS, ETC., SHALL BE FASTENED TO JOIST AND ON BEAMS. DO NOT ATTACH ANYTHING DIRECTLY TO THE METAL SLABS SUPPORTED CONCRETE DECKS, ROOF DECKS, DUCTWORK, PIPING OR OTHER CONDUITS.
25. USE THE FOLLOWING COLOR CODE FOR WIRING
   a. AT 277/480V (ORANGE, BROWN, YELLOW, GRAY FOR NEUTRAL)
   b. AT 120/240V (RED, BLACK, WHITE FOR NEUTRAL)
   c. AT SWITCH RETURNS (PINK, BLUE, PURPLE OR VIOLET)
   d. FOR ALL GROUNDING (GREEN)
26. SPECIAL PURPOSE RECEPTACLES - CONTRACTOR SHALL PROVIDE MATCHING MALE PLUG FOR EQUIPMENT AS REQUIRED. COORDINATE OUTLET DEVICE AND PLUG REQUIRED FOR EQUIPMENT TO DE SUPPLIED OWNER AND/OR BY OTHERS UNDER GENERAL CONTRACT.
27. ABBREVIATIONS:
   AFF - ABOVE FINISHED FLOOR
   TTC - TELEPHONE TERMINAL CABINET
   CATV - CABLE TV TERMINAL CABINET
   RGC - RIGID GALVANIZED STEEL CONDUIT
   EMT - ELECTRICAL METALLIC CONDUIT
   CKT - CIRCUIT
   RWA - REDUCED WALL ALUMINUM FLEXIBLE METAL CONDUIT

IMPORTANT NOTES:

1. ALL RECEPTACLES (POWER, PHONE, DATA, TV) SHALL BE S/S # 302 COVER PLATE.
2. ARRANGEMENT OF RECEPTACLES ON KITCHEN WALLS AND ISLAND WILL BE COORDINATED ON SITE.
4. LOCATION OF ALL RECEPTACLES AS INDICATED IN DRAWINGS IS APPROXIMATE AND WILL BE CONFIRMED BY OWNER AND INSPECTOR ON SITE.
5. ALL INSTALLATIONS TO BE CERTIFIED BY LICENSED ELECTRICIAN ("PERITO") OR A LICENSED ELECTRICAL ENGINEER (PE).
6. ALL INSTALLATIONS TO FOLLOW CODE STRICTLY. ALL EQUIPMENT AND MATERIAL TO BE UL LISTED AND CERTIFIED. ALL DOCUMENTATION FOR EQUIPMENT AND MATERIAL SHALL TO BE SUBMITTED FOR APPROVAL PRIOR TO INSTALLATION. NO EXCEPTIONS ALLOWED.



750 KVA, 3 PHASE, 7.2 KV DELTA TO 480 V WYE SUBSTATION



ELECTRICAL FEEDERS LEGEND:

1. NEW SECONDARY FEEDER 2 SETS (4 C. # 4/0 AWG RHW-2 & 1 C. # 2 THHN) IN 4" PVC CONDUITS
2. NEW SECONDARY FEEDER 4 C. # 2 AWG RHW-2 & 1 C. # 6 THHN IN 2" PVC CONDUIT
3. NEW SECONDARY FEEDER 3 C. # 3/0 AWG THHN & 1 C. # 2 THHN IN 3" RWA CONDUIT
4. NEW SECONDARY FEEDER 2 SETS (4 C. # 3/0 AWG THHN & 1 C. # 2 THHN) IN 3" RWA CONDUITS
5. NEW SECONDARY FEEDER 4 C. # 3/0 AWG RHW-2 & 1 C. # 2 THHN IN 3" PVC CONDUIT
6. NEW SECONDARY FEEDER 4 C. # 2 AWG THHN & 1 C. # 6 THHN IN 2" EMT CONDUIT
7. NEW SECONDARY FEEDER 4 C. # 2 AWG THHN & 1 C. # 6 THHN IN 2" EMT CONDUIT
8. NEW SECONDARY FEEDER 4 C. # 4/0 AWG RHW-2 & 1 C. # 2 THHN IN 4" PVC CONDUIT
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15. NEW SECONDARY FEEDER 4 C. # 2 AWG THHN & 1 C. # 6 THHN IN 2" EMT CONDUIT
16. NEW SECONDARY FEEDER 4 C. # 2 AWG RHW-2 & 1 C. # 6 THHN IN 2" EMT CONDUIT
17. NEW SECONDARY FEEDER 3 C. # 4 AWG THHN & 1 C. # 4 THHN IN 1-1/2" RWA CONDUIT
18. NEW SECONDARY FEEDER 4 C. # 2 AWG RHW-2 & 1 C. # 6 THHN IN 2" RWA CONDUIT

ELECTRICAL ONE LINE DIAGRAM

NOT TO SCALE

Project review

INSTITUTO PRE-VOCACIONAL E INDUSTRIAL DE P.R. INC.
SPECIFICATION AND ONE LINE DIAGRAM

CALE JOSE A. NORA "PIRULO"
BO. BARRANCA
ARECIBO, PR 00612

CERTIFICATION RULE 2.1.9.2 k

CERTIFICATION:

I, JOSE HUGO ORTIZ PAGÁN, LICENSED ENGINEER 18138, CERTIFY THAT I AM THE PROFESSIONAL WHO DESIGNED THESE PLANS AND THE COMPLEMENTARY SPECIFICATIONS, I ALSO CERTIFY THAT I UNDERSTAND THAT SAID PLANS AND SPECIFICATIONS COMPLY WITH THE APPLICABLE PROVISIONS OF THE JOINT REGULATIONS AND THE APPLICABLE PROVISIONS OF THE REGULATIONS AND BUILDING CODES IN FORCE OF THE AGENCIES, REGULATORY BOARDS OR PUBLIC CORPORATIONS HAVING JURISDICTION OVER THE AREA AND THAT THE PREPARATION OF THESE PLANS AND SPECIFICATIONS HAS FULLY COMPLIED WITH THE PROVISIONS OF ACT NO. 14 OF JANUARY 8, 2004, AS AMENDED, KNOWN AS THE "LAW FOR INVESTMENT BY THE PUERTO RICAN INDUSTRY" AND WITH ACT NO. 96 OF JULY 6, 1978, AS AMENDED. I ACKNOWLEDGE THAT ANY FALSE STATEMENT OR FALSIFICATION OF THE FACTS THAT HAS BEEN PRODUCED BY IGNORANCE OR NEGLIGENCE EITHER BY ME, MY AGENTS OR EMPLOYEES, OR BY OTHERS WITH MY KNOWLEDGE, AND I AM RESPONSIBLE FOR ANY JUDICIAL AND DISCIPLINARY ACTION BY THE OGPe.

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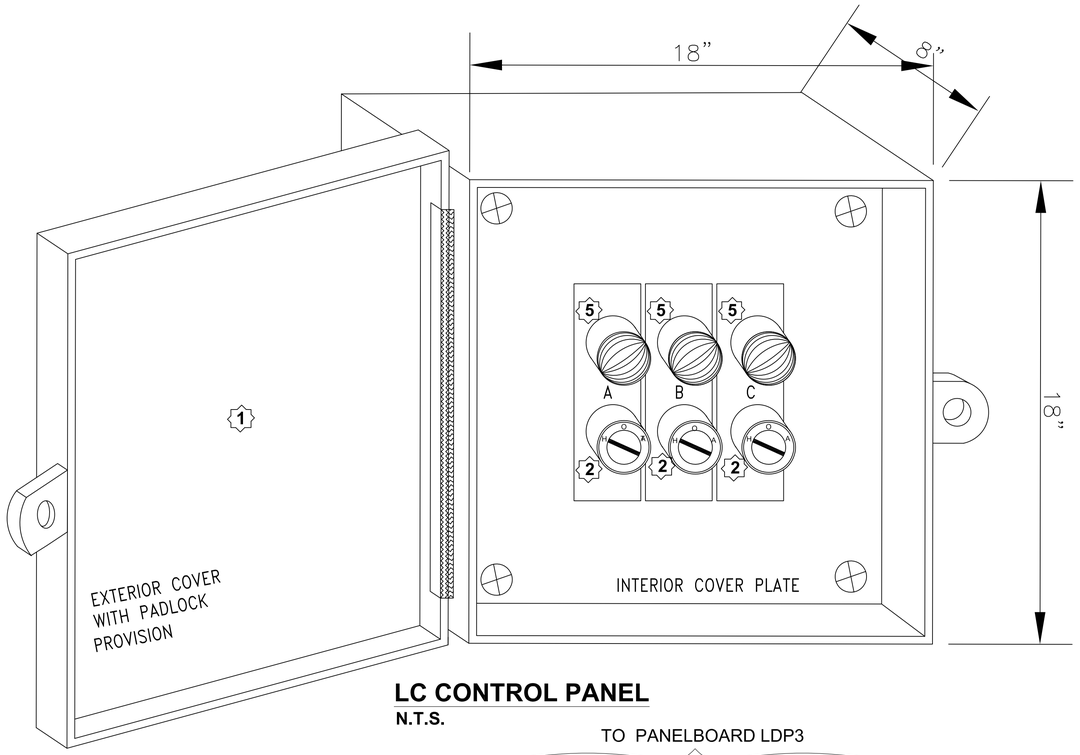
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Project number	XXXX
Date	24/OCT/2022
Drawn by	ENG. JOSE HUGO ORTIZ PAGAN
Checked by	ENG. RUBEN ORTIZ GALARZA
	E-5.0
Scale	N.T.S

FILE:FILELOCATION

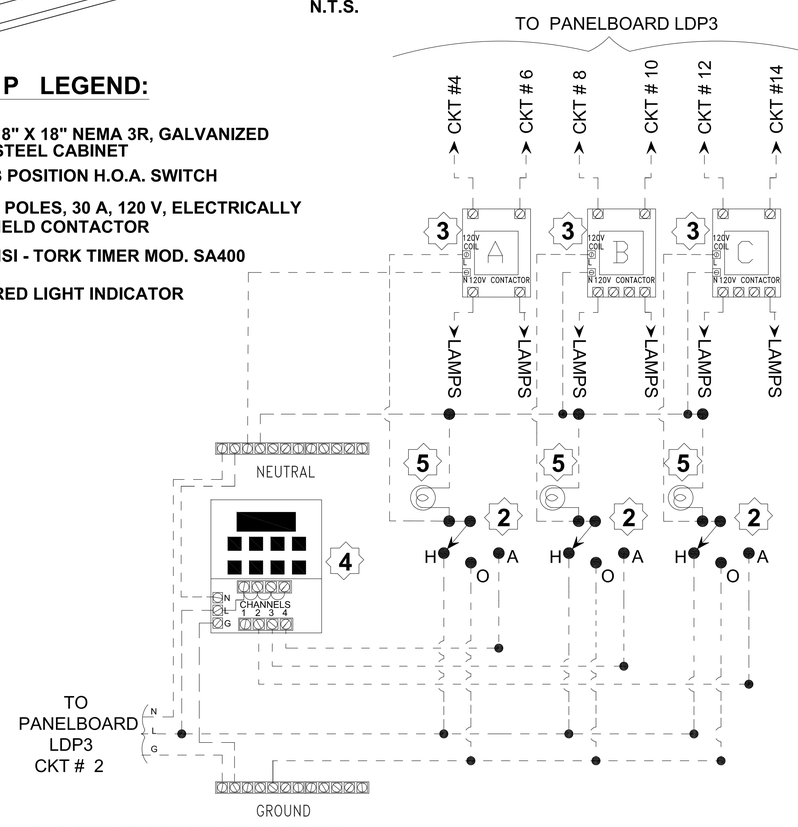
SHEET REV_JUNE 1, 2012



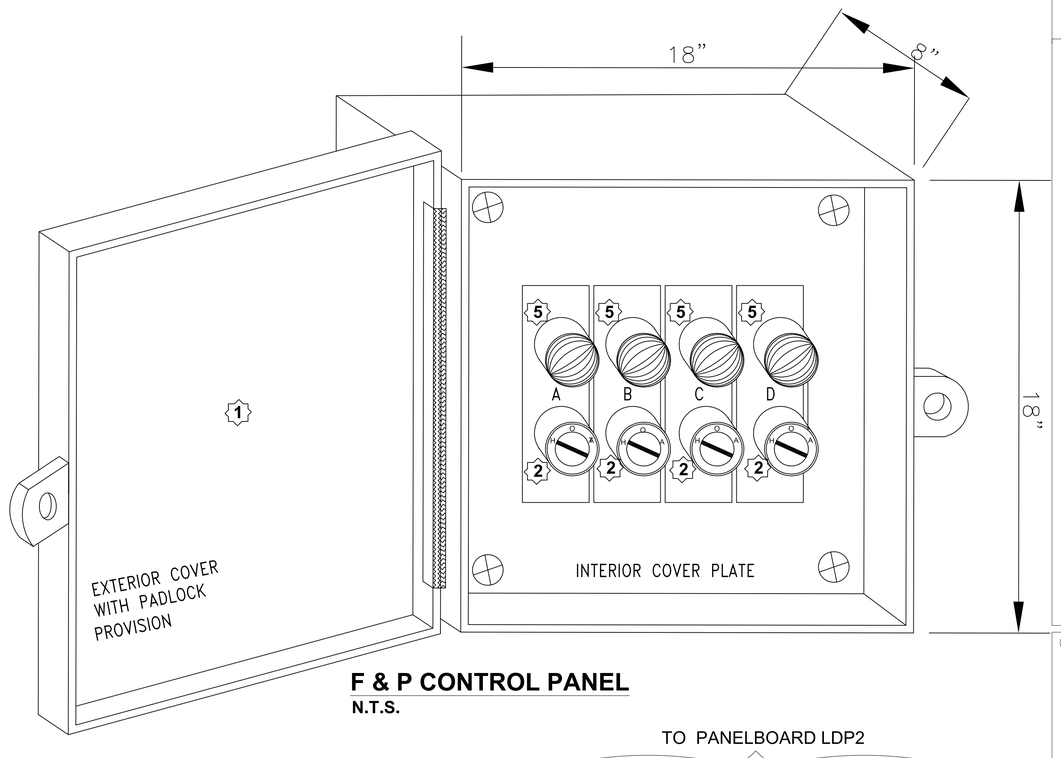
LC CONTROL PANEL
N.T.S.

F & P LEGEND:

1. **18" X 18" NEMA 3R, GALVANIZED STEEL CABINET**
2. **3 POSITION H.O.A. SWITCH**
3. **2 POLES, 30 A, 120 V, ELECTRICALLY HELD CONTACTOR**
4. **NSI - TORK TIMER MOD. SA400**
5. **RED LIGHT INDICATOR**



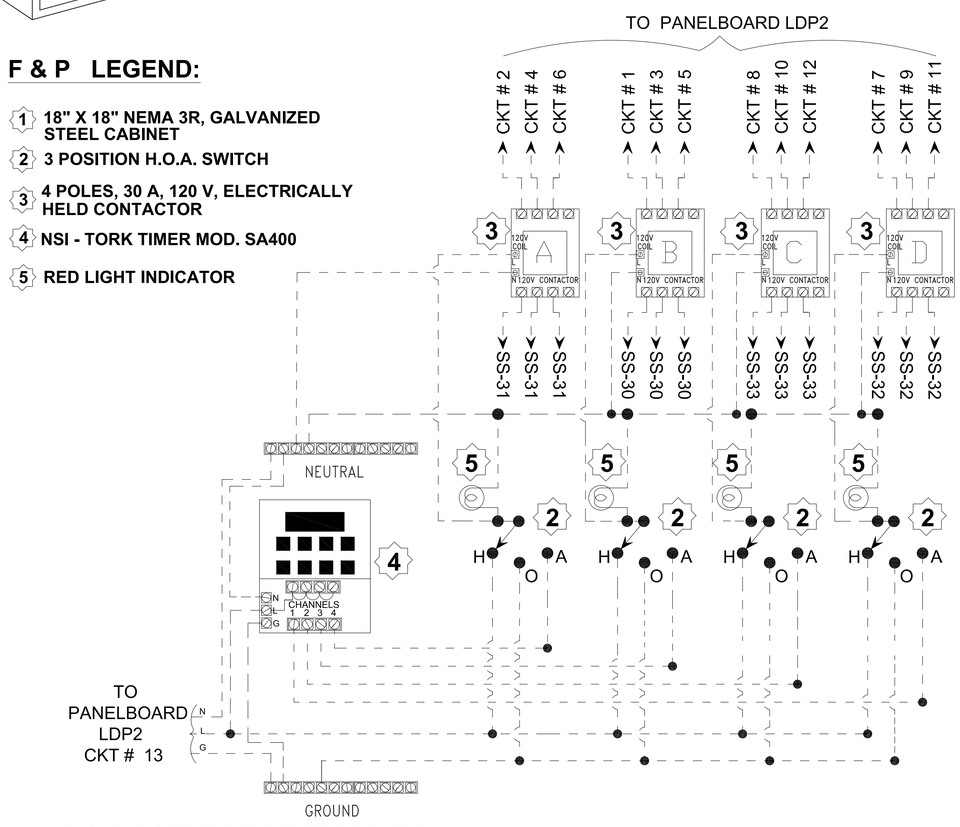
LC CONNECTION DIAGRAM
N.T.S.



F & P CONTROL PANEL
N.T.S.

F & P LEGEND:

1. **18" X 18" NEMA 3R, GALVANIZED STEEL CABINET**
2. **3 POSITION H.O.A. SWITCH**
3. **4 POLES, 30 A, 120 V, ELECTRICALLY HELD CONTACTOR**
4. **NSI - TORK TIMER MOD. SA400**
5. **RED LIGHT INDICATOR**



F & P CONNECTION DIAGRAM
N.T.S.

Project review

INSTITUTO PRE-VOCACIONAL E INDUSTRIAL DE P.R. INC.
CONTROL EQUIPMENT DIAGRAM

CALE JOSE A. NORA "PIRULO"
BO. BARRANCA
ARECIBO, PR 00612

CERTIFICATION RULE 2.1.9.2 k

CERTIFICATION:

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Project number	XXXX
Date	24/OCT/2022
Drawn by	ENG. JOSE HUGO ORTIZ PAGAN
Checked by	ENG. RUBEN ORTIZ GALARZA

E-6.0

Scale N.T.S

FILE:FILELOCATION

SHEET REV- JUNE 1, 2012

PANELBOARDS

MDP (SUBSTATION)

DESCRIPTION: 277/480 VOLTS, MAIN DISTRIBUTION PANELBOARD & NEMA 3R ENCLOSURE, 1,200 AMPS WITH 1000 AMPS MAIN BREAKER (900 RATING PLUG), 60 HERTZ, 3 PH, 4 WIRES, RATED 42 KAIC, COPPER BUS BARS, 8 SPACES, BOLT ON TYPE BREAKERS, 100% RATED BREAKERS, GALVANIZED STEEL, WITH PADLOCK PROVISION, UL LISTED, FROM ATS IN SUBSTATION, 3 SETS (4C. # 350 MCM RHW-2 & 1C. #4/0 THHN FOR GROUND)

CIRCUIT	BREAKER	CABLE SIZE	CABLE INSULATION	CABLE GROUND	CONDUIT INSULATION	CONDUIT SIZE IN "	CONDUIT TYPE	SERVICE	SERVICE	CONDUIT TYPE	CONDUIT SIZE IN "	CABLE INSULATION	CABLE GROUND	CABLE INSULATION	CABLE SIZE	BREAKER	CIRCUIT
								MAIN BREAKER	1000A (900A RP)								
1																	2
3	400	2 SETS 4 # 4/0	RHW-2	1 - #2	THHN	4"	PVC	HDP1	HDP4	PVC	4"	THHN	1 - #2	RHW-2	4 # 4/0	225	4
5																	6
7																	8
9	225	4 # 4/0	RHW-2	1 - #2	THHN	4"	PVC	HDP3	GUARD HOUSE	PVC	1-1/2"	THHN	1 - #4	RHW-2	4 # 4	125	10
11																	12
13																	14
15	225							SPARE	SPARE							225	16
17																	18
19																	20
21	225							SPARE	SPARE							125	22
23																	24

HDP1

DESCRIPTION: 277/480 VOLTS PANELBOARD & NEMA 1 ENCLOSURE, 400 AMPS WITH 400 AMPS MAIN BREAKER, 60 HERTZ, 3 PH, 4 WIRES, RATED 22 KAIC. 42 SPACES, COPPER BUS BARS, BOLT ON TYPE BREAKERS, 100% RATED BREAKERS, GALVANIZED STEEL, SURFACE MOUNTED PANELBOARD TYPE WITH LOCK & KEY, UL LISTED. FROM SUBSTATION MDP, 2 SETS (4C. # 3/0 AWG THHN & 1C. #2 THHN FOR GROUND) IN 4" PVC SCH 40 CONDUITS

CIRCUIT	BREAKER	CABLE SIZE	CABLE INSULATION	CABLE GROUND	CONDUIT INSULATION	CONDUIT SIZE IN "	CONDUIT TYPE	SERVICE	SERVICE	CONDUIT TYPE	CONDUIT SIZE IN "	CABLE INSULATION	CABLE GROUND	CABLE INSULATION	CABLE SIZE	BREAKER	CIRCUIT
								MAIN BREAKER	400								
1																	2
3	225	3 # 3/0	THHN	1 - #2	THHN	3"	RWA	T-1 (150KVA)	CU#23	PVC	1"	THHN	1 - #10	THHN	4 # 10	30	4
5																	6
7																	8
9	125	4 # 2	THHN	1 - #6	THHN	2-1/2"	PVC	HDP2	CU#24	PVC	1"	THHN	1 - #10	THHN	4 # 10	30	10
11																	12
13																	14
15	20	4 # 12	THHN	1 - #12	THHN	3/4"	PVC	CU#1	CU#25	PVC	1"	THHN	1 - #10	THHN	4 # 10	30	16
17																	18
19																	20
21	20	4 # 12	THHN	1 - #12	THHN	3/4"	PVC	CU#2	CU#26	PVC	1"	THHN	1 - #10	THHN	4 # 10	30	22
23																	24
25																	26
27	20	4 # 12	THHN	1 - #12	THHN	3/4"	PVC	CU#3	CU#27	PVC	1"	THHN	1 - #10	THHN	4 # 10	30	28
29																	30
31																	32
33	20	4 # 12	THHN	1 - #12	THHN	3/4"	PVC	CU#21	CU#28	PVC	1"	THHN	1 - #10	THHN	4 # 10	30	34
35																	36
37									SPACE								38
39	20	4 # 12	THHN	1 - #12	THHN	3/4"	PVC	CU#22	SPACE								40
41									SPACE								42

HDP2

DESCRIPTION: 277/480 VOLTS PANELBOARD & NEMA 1 ENCLOSURE, 125 AMPS WITH 125 AMPS MAIN BREAKER, 60 HERTZ, 3 PH, 4 WIRES, RATED 22 KAIC. 42 SPACES, COPPER BUS BARS, BOLT ON TYPE BREAKERS, 100% RATED BREAKERS, GALVANIZED STEEL, SURFACE MOUNTED PANELBOARD TYPE WITH LOCK & KEY UL LISTED. FROM HDP1, 4C. # 2 AWG RHW-2 & 1C. #6 THHN FOR GROUND IN 2-1/2" PVC SCH 40 CONDUIT

CIRCUIT	BREAKER	CABLE SIZE	CABLE INSULATION	CABLE GROUND	CONDUIT INSULATION	CONDUIT SIZE IN "	CONDUIT TYPE	SERVICE	SERVICE	CONDUIT TYPE	CONDUIT SIZE IN "	CABLE INSULATION	CABLE GROUND	CABLE INSULATION	CABLE SIZE	BREAKER	CIRCUIT
								MAIN BREAKER	125								
1																	2
3	50							SPARE	SPARE							50	4
5																	6
7																	8
9	30							SPARE	SPARE							20	10
11																	12
13																	14
15	20							SPARE	SPARE							20	16
17																	18
19																	20
21	20							SPARE	SPARE							20	22
23																	24
25								SPARE	SPARE							20	26
27	20							SPARE	SPARE							20	28
29	20							SPARE	SPARE							20	30
31	20							SPARE	SPARE							20	32
33								SPACE	SPACE								34
35								SPACE	SPACE								36
37								SPACE	SPACE								38
39								SPACE	SPACE								40
41								SPACE	SPACE								42

LDP1

DESCRIPTION: 120/208 VOLTS PANELBOARD & NEMA 1 ENCLOSURE, 400 AMPS WITH 400 AMPS MAIN BREAKER, 60 HERTZ, 3 PH, 4 WIRES, RATED 10 KAIC. 42 SPACES, COPPER BUS BARS, BOLT ON TYPE BREAKERS, 100% RATED BREAKERS, GALVANIZED STEEL, SURFACE MOUNTED PANELBOARD TYPE WITH LOCK & KEY UL LISTED. FROM TRANSFORMER T1, 2 SETS (4C. # 3/0 AWG THHN & 1C. #2 THHN FOR GROUND) IN 3" RWA CONDUITS

CIRCUIT	BREAKER	CABLE SIZE	CABLE INSULATION	CABLE GROUND	CONDUIT INSULATION	CONDUIT SIZE IN "	CONDUIT TYPE	SERVICE	SERVICE	CONDUIT TYPE	CONDUIT SIZE IN "	CABLE INSULATION	CABLE GROUND	CABLE INSULATION	CABLE SIZE	BREAKER	CIRCUIT
								MAIN BREAKER	400								
1																	2
3	225	4 # 3/0	RHW-2	1 - #2	THHN	3"	PVC	LDP2	LDP3	EMT	2"	THHN	1 - #6	THHN	4 # 2	125	4
5																	6
7	30	3 # 10	THHN	1 - #10	THHN	3/4"	PVC	HAND DRYER	LDP4	EMT	2"	THHN	1 - #6	THHN	4 # 2	125	8
9																	10
11	30	3 # 10	THHN	1 - #10	THHN	3/4"	PVC	HAND DRYER									12
13																	14
15	30	3 # 10	THHN	1 - #10	THHN	3/4"	PVC	HAND DRYER	SHOW PLATFORM	PVC	3/4"	THHN	1 - #10	THHN	3 # 10	30	16
17																	18
19	30	3 # 10	THHN	1 - #10	THHN	3/4"	PVC	HAND DRYER	SHOW PLATFORM	PVC	3/4"	THHN	1 - #10	THHN	3 # 10	30	20
21																	22
23	20	2 # 12	THHN	1 - #12	THHN	3/4"	PVC	FIRE ALARM PANEL	SPARE							20	24
25	20							SPARE	SPARE							20	26
27	20							SPARE	SPARE							20	28
29	20							SPARE	SPARE							20	30
31	20							SPARE	SPARE							20	32
33	20							SPARE	SPARE							20	34
35	20							SPARE	SPARE							20	36
37	20							SPARE	SPARE							20	38
39	20							SPARE	SPARE							20	40
41	20							SPARE	SPARE							20	42

LDP2

DESCRIPTION: 120/208 VOLTS PANELBOARD & NEMA 1 ENCLOSURE, 225 AMPS WITH 225 AMPS MAIN BREAKER, 60 HERTZ, 3 PH, 4 WIRES, RATED 10 KAIC. 42 SPACES, COPPER BUS BARS, BOLT ON TYPE BREAKERS, 100% RATED BREAKERS, GALVANIZED STEEL, SURFACE MOUNTED PANELBOARD TYPE WITH LOCK & KEY UL LISTED. FROM LDP1, 4C. # 3/0 AWG THHN & 1C. #2 THHN FOR GROUND IN 3" PVC CONDUIT

CIRCUIT	BREAKER	CABLE SIZE	CABLE INSULATION	CABLE GROUND	CONDUIT INSULATION	CONDUIT SIZE IN "	CONDUIT TYPE	SERVICE	SERVICE	CONDUIT TYPE	CONDUIT SIZE IN "	CABLE INSULATION	CABLE GROUND	CABLE INSULATION	CABLE SIZE	BREAKER	CIRCUIT
								MAIN BREAKER	225								
1																	2
3	20	4 # 10	THHN	1 - #10	THHN	3/4"	PVC	BIGASS FAN # 1 THRU P&F CONTROL PANEL AND SS-30	EXHAUST FAN # 1 THRU P&F CONTROL PANEL AND SS-31	PVC	3/4"	THHN	1 - #10	THHN	4 # 10	20	4
5																	6
7																	8
9	20	4 # 10	THHN	1 - #10	THHN	3/4"	PVC	BIGASS FAN # 2 THRU P&F CONTROL PANEL AND SS-32	EXHAUST FAN # 2 THRU P&F CONTROL PANEL AND SS-33	PVC	3/4"	THHN	1 - #10	THHN	4 # 10	20	10
11																	12
13	20	2 # 12	THHN	1 - #12	THHN	3/4"	PVC	F & P CONTROL	LIGHTING	PVC	3/4"	THHN	1 - #10	THHN	2 # 10	20	14
15	20	3 # 12	THHN	1 - #12	THHN	3/4"	PVC	CU#29	LIGHTING	PVC	3/4"	THHN	1 - #10	THHN	2 # 10	20	16
17									RECEPTACLES	PVC	3/4"	THHN	1 - #12	THHN	2 # 12	20	18
19	20	2 # 12	THHN	1 - #12	THHN	3/4"	PVC	RECEPTACLES	RECEPTACLES	PVC	3/4"	THHN	1 - #12	THHN	2 # 12	20	20
21	20	2 # 12	THHN	1 - #12	THHN	3/4"	PVC	RECEPTACLES	RECEPTACLES	PVC	3/4"	THHN	1 - #12	THHN	2 # 12	20	22
23	20	2 # 12	THHN	1 - #12	THHN	3/4"	PVC	RECEPTACLES	SPARE							20	24
25	20								SPARE							20	26
27	20								SPARE							20	28
29	20								SPARE							20	30
31	20								SPARE							20	32
33	20								SPARE							20	34
35	20								SPARE							20	36
37	20								SPARE							20	38
39	20								SPARE							20	40
41	20								SPARE							20	42

LDP3

DESCRIPTION: 120/208 VOLTS PANELBOARD & NEMA 1 ENCLOSURE, 125 AMPS WITH 125 AMPS MAIN BREAKER, 60 HERTZ, 3 PH, 4 WIRES, RATED 10 KAIC. 42 SPACES, COPPER BUS BARS, BOLT ON TYPE BREAKERS, 100% RATED BREAKERS, GALVANIZED STEEL, SURFACE MOUNTED PANELBOARD TYPE WITH LOCK & KEY UL LISTED. FROM TRANSFORMER T2, 4C. # 3/0 AWG THHN & 1C. #2 THHN FOR GROUND IN 3" RWA CONDUIT

CIRCUIT	BREAKER	CABLE SIZE	CABLE INSULATION	CABLE GROUND	CONDUIT INSULATION	CONDUIT SIZE IN "	CONDUIT TYPE	SERVICE	SERVICE	CONDUIT TYPE	CONDUIT SIZE IN "	CABLE INSULATION	CABLE GROUND	CABLE INSULATION	CABLE SIZE	BREAKER	CIRCUIT
								MAIN BREAKER	225								
1																	2
3	100	3 # 2	THHN	1 - #6	THHN	2"	RWA	T-2 (75KVA)	CU#19	PVC	1"	THHN	1 - #10	THHN	4 # 10	30	4
5																	6
7																	8
9	20	4 # 12	THHN	1 - #12	THHN	3/4"	PVC	CU#4	CU#20	PVC	1"	THHN	1 - #10	THHN	4 # 10	30	10
11																	12
13																	14
15	20	4 # 12	THHN	1 - #12	THHN	3/4"	PVC	CU#5	CU#11	PVC	3/4"	THHN	1 - #12	THHN	4 # 12	20	16
17																	18
19																	20
21	30	4 # 12	THHN	1 - #12	THHN	1"	PVC	CU#17	CU#12	PVC	3/4"	THHN	1 - #12	THHN	4 # 12	20	22
23																	24
25																	26
27	30	4 # 12	THHN	1 - #12	THHN	1"	PVC	CU#18	CU#13	PVC	3/4"	THHN	1 - #12	THHN	4 # 12	20	28
29																	30
31									SPACE								32
33	60	4 # 4	RHW-2	1 - #4	THHN	1-1/2"	PVC	ELEVATOR	SPACE								34
35									SPACE								36
37								SPACE	SPACE								38
39								SPACE	SPACE								40
41								SPACE	SPACE								42

HDP4

DESCRIPTION: 277/480 VOLTS PANELBOARD & NEMA 1 ENCLOSURE, 225 AMPS WITH 225 AMPS MAIN BREAKER, 60 HERTZ, 3 PH, 4 WIRES, RATED 22 KAIC. 42 SPACES, COPPER BUS BARS, BOLT ON TYPE BREAKERS, 100% RATED BREAKERS, GALVANIZED STEEL, SURFACE MOUNTED PANELBOARD TYPE WITH LOCK & KEY UL LISTED. FROM SUBSTATION MDP, 4C. # 4/0 AWG THHN & 1C. #2 THHN FOR GROUND IN 4" PVC SCH 40 CONDUIT

CIRCUIT	BREAKER	CABLE SIZE	CABLE INSULATION	CABLE GROUND	CONDUIT INSULATION	CONDUIT SIZE IN "	CONDUIT TYPE	SERVICE	SERVICE	CONDUIT TYPE	CONDUIT SIZE IN "	CABLE INSULATION	CABLE GROUND	CABLE INSULATION	CABLE SIZE	BREAKER	CIRCUIT
								MAIN BREAKER	225								
1																	2
3	100	3 # 2	THHN	1 - #6	THHN	2"	RWA	T-3 (75KVA)	CU#8	PVC	3/4"	THHN	1 - #12	THHN	4 # 12	20	4
5																	6
7																	8
9	20	4 # 12	THHN	1 - #12	THHN	3/4"	PVC	CU#14	CU#9	PVC	3/4"	THHN	1 - #12	THHN	4 # 12	20	10
11																	12
13																	14
15	20	4 # 12	THHN	1 - #12	THHN	3/4"	PVC	CU#15	CU#10	PVC	3/4"	THHN	1 - #12	THHN	4 # 12	20	16
17																	18
19																	20
21	30	4 # 12	THHN	1 - #12	THHN	1"	PVC	CU#6	CU#15	PVC	1"	THHN	1 - #10	THHN	4 # 10	30	22
23																	24
25																	26
27	30	4 # 12	THHN	1 - #12	THHN	1"	PVC	CU#7	CU#16	PVC	1"	THHN	1 - #10	THHN	4 # 10	30	28
29																	30
31									SPACE								32
33									SPACE								34
35									SPACE								36
37									SPACE								38
39									SPACE								40
41									SPACE								42

LDP5

DESCRIPTION: 120/208 VOLTS PANELBOARD & NEMA 1 ENCLOSURE, 225 AMPS WITH 225 AMPS MAIN BREAKER, 60 HERTZ, 3 PH, 4 WIRES, RATED 10 KAIC. 42 SPACES, COPPER BUS BARS, BOLT ON TYPE BREAKERS, 100% RATED BREAKERS, GALVANIZED STEEL, SURFACE MOUNTED PANELBOARD TYPE WITH LOCK & KEY UL LISTED. FROM TRANSFORMER T2, 4C. # 3/0 AWG THHN & 1C. #2 THHN FOR GROUND IN 3" RWA CONDUIT

CIRCUIT	BREAKER	CABLE SIZE	CABLE INSULATION	CABLE GROUND	CONDUIT INSULATION	CONDUIT SIZE IN "	CONDUIT TYPE	SERVICE	SERVICE	CONDUIT TYPE	CONDUIT SIZE IN "	CABLE INSULATION	CABLE GROUND	CABLE INSULATION	CABLE SIZE	BREAKER	CIRCUIT
								MAIN BREAKER	225								
1																	2
3	100	3 # 2	THHN	1 - #6	THHN	2"	PVC	LDP8	HAND DRYER	PVC	3/4"	THHN	1 - #10	THHN	3 # 10	30	4
5																	6
7	20	2 # 12	THHN	1 - #12	THHN	3/4"	PVC	LIGHTING	HAND DRYER	PVC	3/4"	THHN	1 - #10	THHN	3 # 10	30	8
9	20	2 # 12	THHN	1 - #12	THHN	3/4"	PVC	LIGHTING	EXIT LIGHT	PVC	3/4"	THHN	1 - #12	THHN	2 # 12	20	10
11	20	2 # 12	THHN	1 - #12	THHN	3/4"	PVC	LIGHTING	LIGHTING	PVC	3/4"	THHN	1 - #12	THHN	2 # 12	20	12
13	20	2 # 12	THHN	1 - #12	THHN	3/4"	PVC	LIGHTING	LIGHTING	PVC	3/4"	THHN	1 - #12	THHN	2 # 12	20	14
15	20	2 # 12	THHN	1 - #12	THHN	3/4"	PVC	LIGHTING	LIGHTING	PVC	3/4"	THHN	1 - #12	THHN	2 # 12	20	16
17	20	2 # 12	THHN	1 - #12	THHN	3/4"	PVC	LIGHTING	LIGHTING	PVC	3/4"	THHN	1 - #12	THHN	2 # 12	20	18
19	20	2 # 12	THHN	1 - #12	THHN	3/4"	PVC	RECEPTACLES	RECEPTACLES	PVC	3/4"	THHN	1 - #12	THHN	2 # 12	20	20
21	20	2 # 12	THHN	1 - #12	THHN	3/4"	PVC	RECEPTACLES	RECEPTACLES	PVC	3/4"	THHN	1 - #12	THHN	2 # 12	20	22
23	20	2 # 12	THHN	1 - #12	THHN	3/4"	PVC	RECEPTACLES	RECEPTACLES	PVC	3/4"	THHN	1 - #12	THHN	2 # 12	20	24
25	20	2 # 12	THHN	1 - #12	THHN	3/4"	PVC	RECEPTACLES	RECEPTACLES	PVC	3/4"	THHN	1 - #12	THHN	2 # 12	20	26
27	20	2 # 12	THHN	1 - #12	THHN	3/4"	PVC	RECEPTACLES	RECEPTACLES	PVC	3/4"	THHN	1 - #12	THHN	2 # 12	20	28
29	20	2 # 12	THHN	1 - #12	THHN	3/4"	PVC	RECEPTACLES	RECEPTACLES	PVC	3/4"	THHN	1 - #12	THHN	2 # 12	20	30
31	20							SPARE	SPARE							20	32
33	20							SPARE	SPARE							20	34
35	20							SPARE	SPARE							20	36
37	20							SPARE	SPARE							20	38
39	20							SPARE	SPARE							20	40
41	20							SPARE	SPARE							20	42

LDP6

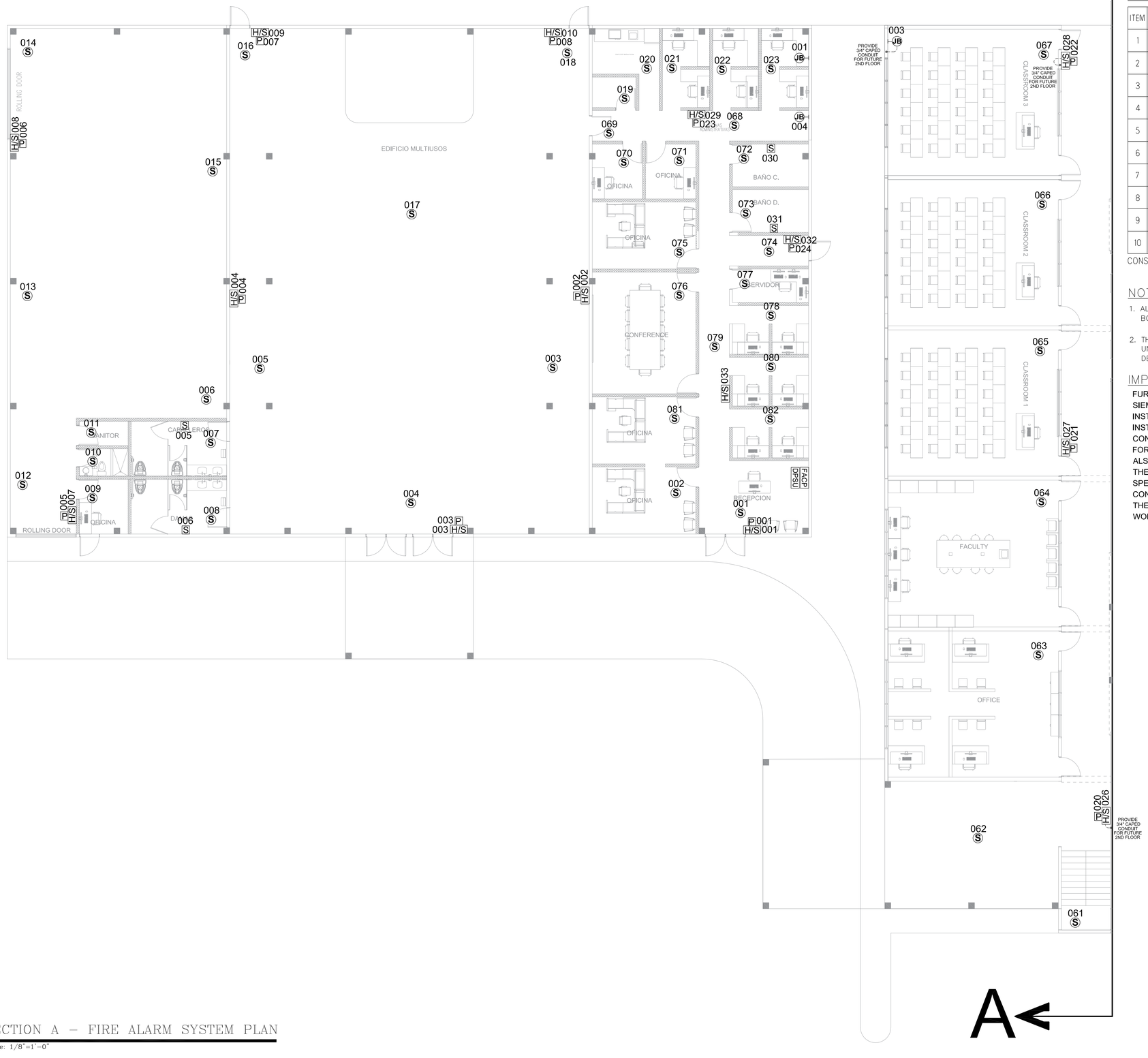
DESCRIPTION: 120/208 VOLTS PANELBOARD & NEMA 1 ENCLOSURE, 125 AMPS WITH 125 AMPS MAIN BREAKER, 60 HERTZ, 3 PH, 4 WIRES, RATED 10 KAIC. 42 SPACES, COPPER BUS BARS, BOLT ON TYPE BREAKERS, 100% RATED BREAKERS, GALVANIZED STEEL, SURFACE MOUNTED PANELBOARD TYPE WITH LOCK & KEY UL LISTED. FROM LDP5, 4C. # 2 AWG THHN & 1C. #6 THHN FOR GROUND IN 2" PVC CONDUIT

CIRCUIT	BREAKER	CABLE SIZE	CABLE INSULATION	CABLE GROUND	CONDUIT INSULATION	CONDUIT SIZE IN "	CONDUIT TYPE	SERVICE	SERVICE	CONDUIT TYPE	CONDUIT SIZE IN "	CABLE INSULATION	CABLE GROUND	CABLE INSULATION	CABLE SIZE	BREAKER	CIRCUIT
								MAIN BREAKER	100								
1	20	2 # 12	THHN	1 - #12	THHN	3/4"	PVC	RECEPTACLES	RECEPTACLES	PVC	3/4"	THHN	1 - #12	THHN	2 # 12	20	2
3	20	2 # 12	THHN	1 - #12	THHN	3/4"	PVC	RECEPTACLES	RECEPTACLES	PVC	3/4"	THHN	1 - #12	THHN	2 # 12	20	4
5	20	2 # 12	THHN	1 - #12	THHN	3/4"	PVC	RECEPTACLES	RECEPTACLES	PVC	3/4"	THHN	1 - #12	THHN	2 # 12	20	6
7	20	2 # 12	THHN	1 - #12	THHN	3/4"	PVC	RECEPTACLES	RECEPTACLES	PVC	3/4"	THHN	1 - #12	THHN	2 # 12	20	8
9	20	2 # 12	THHN	1 - #12	THHN	3/4"	PVC	RECEPTACLES	RECEPTACLES	PVC	3/4"	THHN	1 - #12	THHN	2 # 12	20	10
11	20	2 # 12	THHN	1 - #12	THHN	3/4"	PVC	RECEPTACLES	RECEPTACLES	PVC	3/4"	THHN	1 - #12	THHN	2 # 12	20	12
13	20	2 # 12	THHN	1 - #12	THHN	3/4"	PVC	RECEPTACLES	RECEPTACLES	PVC	3/4"	THHN	1 - #12	THHN	2 # 12	20	14
15	20	2 # 12	THHN	1 - #12	THHN	3/4"	PVC	RECEPTACLES	RECEPTACLES	PVC	3/4"	THHN	1 - #12	THHN	2 # 12	20	16
17	20	2 # 12	THHN	1 - #12	THHN	3/4"	PVC	RECEPTACLES	RECEPTACLES	PVC	3/4"	THHN	1 - #12	THHN	2 # 12	20	18
19	20	2 # 12	THHN	1 - #12	THHN	3/4"	PVC	RECEPTACLES	RECEPTACLES	PVC	3/4"	THHN	1 - #12	THHN	2 # 12	20	20
21	20	2 # 12	THHN	1 - #12	THHN	3/4"	PVC	RECEPTACLES	RECEPTACLES	PVC	3/4"	THHN	1 - #12	THHN	2 # 12	20	22
23	20	2 # 12	THHN	1 - #12	THHN	3/4"	PVC	RECEPTACLES	RECEPTACLES	PVC	3/4"	THHN	1 - #12	THHN	2 # 12	20	24
25	20	2 # 12	THHN	1 - #12	THHN	3/4"	PVC	RECEPTACLES	RECEPTACLES	PVC	3/4"	THHN	1 - #12	THHN	2 # 12	20	26
27	20	2 # 12	THHN	1 - #12	THHN	3/4"	PVC	RECEPTACLES	RECEPTACLES	PVC	3/4"	THHN	1 - #12	THHN	2 # 12	20	28
29	20	2 # 12	THHN	1 - #12	THHN	3/4"	PVC	RECEPTACLES	RECEPTACLES	PVC	3/4"	THHN	1 - #12	THHN	2 # 12	20	30
31	20							SPARE	SPARE							20	32
33	20							SPARE	SPARE							20	34
35	20							SPARE	SPARE							20	36
37	20							SPARE	SPARE							20	38
39	20							SPARE	SPARE							20	40
41	20							SPARE	SPARE							20	42

LDP7

DESCRIPTION: 120/208 VOLTS PANELBOARD & NEMA 1 ENCLOSURE, 225 AMPS WITH 225 AMPS MAIN BREAKER, 60 HERTZ, 3 PH, 4 WIRES, RATED 10 KAIC. 42 SPACES, COPPER BUS BARS, BOLT ON TYPE BREAKERS, 100% RATED BREAKERS, GALVANIZED STEEL, SURFACE MOUNTED PANELBOARD TYPE WITH LOCK & KEY UL LISTED. FROM TRANSFORMER T2, 4C. # 3/0 AWG THHN & 1C. #2 THHN FOR GROUND IN 3" EMT CONDUIT

CIRCUIT	BREAKER	CABLE SIZE	CABLE INSULATION	CABLE GROUND	CONDUIT INSULATION	CONDUIT SIZE IN "	CONDUIT TYPE	SERVICE	SERVICE	CONDUIT TYPE	CONDUIT SIZE IN "	CABLE INSULATION	CABLE GROUND	CABLE INSULATION	CABLE SIZE	BREAKER	CIRCUIT
								MAIN BREAKER	225								
1																	2
3	100	3 # 2	THHN	1 - #6	THHN	2"	PVC	LDP8	HAND DRYER	PVC	3/4"	THHN	1 - #10	THHN	3 # 10	30	4
5																	6
7		2 # 12	THHN	1 - #12	THHN	3/4"	PVC	EXIT LIGHT	HAND DRYER	PVC	3/4"	THHN	1 - #10	THHN	3 # 10	30	8
9	20	2 # 12	THHN	1 - #12	THHN	3/4"	PVC	EXIT LIGHT	LIGHTING	PVC	3/4"	THHN	1 - #12	THHN	2 # 12	20	10
11	20	2 # 12	THHN	1 - #12	THHN	3/4"	PVC	LIGHTING	LIGHTING	PVC	3/4"	THHN	1 - #12	THHN	2 # 12	20	12
13	20	2 # 12	THHN	1 - #12	THHN	3/4"	PVC	LIGHTING	LIGHTING	PVC	3/4"	THHN	1 - #12	THHN	2 # 12	20	14
15	20	2 # 12	THHN	1 - #12	THHN	3/4"	PVC	LIGHTING	LIGHTING	PVC	3/4"	THHN	1 - #12	THHN	2 # 12	20	16
17	20	2 # 12	THHN	1 - #12	THHN	3/4"	PVC	RECEPTACLES	RECEPTACLES	PVC	3/4"	THHN	1 - #12	THHN	2 # 12	20	18
19	20	2 # 12	THHN	1 - #12	THHN	3/4"	PVC	RECEPTACLES	RECEPTACLES	PVC	3/4"	THHN	1 - #12	THHN	2 # 12	20	20
21	20	2 # 12	THHN	1 - #12	TH



FIRE ALARM SYSTEM LEGEND:

ITEM	SYMBOL	DESCRIPTION	HEIGHT	MANUFACTURER	MODEL
1	FACP	FIRE ALARM CONTROL PANEL	52" CENTER	SIEMENS	FC2025
2	S	PHOTOELECTRIC SMOKE SENSOR	ROOF	SIEMENS	FDO421
3	H	THERMAL (HEAT) DETECTOR	ROOF	SIEMENS	FDT421
4	P	PULL STATION DUAL ACTION	48" AFF	SIEMENS	HMS-D
5	H/S	HORN/STROBES WALL	84" AFF	SIEMENS	SLHSWR-F
6	S	STROBE WALL	84" AFF	SIEMENS	SLSWR-F
7	DPSU	DISTRIBUTED POWER SUPPLY UNIT	52" CENTER	SIEMENS	PAD-3
8	M	CONTROL MODULE	AS SPECIFIED	SIEMENS	8706
9	JB	SEE NOTE 1	ON WALL, 12" UNDER ROOF		
10	LCD	REMOTE DISPLAY	52" CENTER	SIEMENS	FT2014-U2

CONSTRUCTION NOTE: USE ADDRESSABLE FA CABLE (NO SHIELDED/FIRE RETARDANT) 2/16

NOTES:

1. ALL JUNCTION BOXES (JB) SHALL BE 4"X 4" X 2 1/8" BOXES WITH 3/4 KO'S
2. THE FIRE ALARM SYSTEM SHALL ACCOMPLISH TO NFPA 72, UNDERWRITERS LABORATORIES, DEPARTAMENTO DE BOMBEROS DE PUERTO RICO, FEDERAL AND LOCAL BUILDING CODES.

IMPORTANT NOTE:

FURNISH AND INSTALL AN ADDRESABLE ALARM SYSTEM AS MANUFACTURED BY SIEMENS AND DESCRIBED IN THIS DRAWING. THE SYSTEM SHALL BE WIRED AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND INSTRUCTIONS AND IT SHALL BE LEFT IN A COMPLETE AND FIRST CLASS OPERATING CONDITION. THE FIRE ALARM SYSTEM SHALL BE A COMPLETE AUTOMATIC SYSTEM FOR THE DETECTION AND ALARM OF FIRE, SMOKE AND COMBUSTION GASES AND ALSO SHALL BE CONNECTED TO THE EXISTING FIRE ALARM PANEL IN THE BUILDING. THE SYSTEM AND ITS COMPONENTS SHALL BE U.L. LISTED. THE DRAWINGS AND THE SPECIFICATION OF THE SYSTEM SHALL BE SUBMITTED TO THE ARCHITEC DESIGNER CONSULTANT FOR APPROVAL PRIOR TO THE INSTALLATION OF THE SYSTEM. ALL THE INSTALLATION AND WIRING OF THE SYSTEM SHALL BE OF HIGH QUALITY WORKMANSHIP.

SECTION A – FIRE ALARM SYSTEM PLAN

Scale: 1/8"=1'-0"

KEY PLAN

SECTION - A | SECTION - B



Project review

INSTITUTO PRE-VOCACIONAL E INDUSTRIAL DE P.R. INC.
SECTION A – FIRE ALARM SYSTEM PLAN
CALE JOSE A. NORA "PIRULO"
BO. BARRANCA
ARCIBO, PR 00612

CERTIFICATION RULE 2.1.9.2 k

CERTIFICATION:

I, JOSE HUGO ORTIZ PAGÁN, LICENSED ENGINEER 18138, CERTIFY THAT I AM THE PROFESSIONAL WHO DESIGNED THESE PLANS AND THE COMPLEMENTARY SPECIFICATIONS. I ALSO CERTIFY THAT I UNDERSTAND THAT SAID PLANS AND SPECIFICATIONS COMPLY WITH THE APPLICABLE PROVISIONS OF THE JOINT REGULATIONS AND THE APPLICABLE PROVISIONS OF THE REGULATIONS AND BUILDING CODES IN FORCE OF THE AGENCIES, REGULATORY BOARDS OR PUBLIC CORPORATIONS WITH JURISDICTION OVER THE WORK AND THAT THE PREPARATION OF THESE PLANS AND SPECIFICATIONS HAS FULLY COMPLIED WITH THE PROVISIONS OF ACT NO. 14 OF JANUARY 9, 2004, AS AMENDED, KNOWN AS THE "LAW FOR INVESTMENT BY THE PUERTO RICAN INDUSTRY" AND WITH ACT NO. 96 OF JULY 6, 1978, AS AMENDED. I ACKNOWLEDGE THAT ANY FALSE STATEMENT OR FALSIFICATION OF THE FACTS THAT HAS BEEN PRODUCED BY IGNORANCE OR NEGLIGENCE EITHER BY ME, MY AGENTS OR EMPLOYEES, OR BY OTHERS WITH MY KNOWLEDGE, AND I AM RESPONSIBLE FOR ANY JUDICIAL AND DISCIPLINARY ACTION BY THE OGPe.

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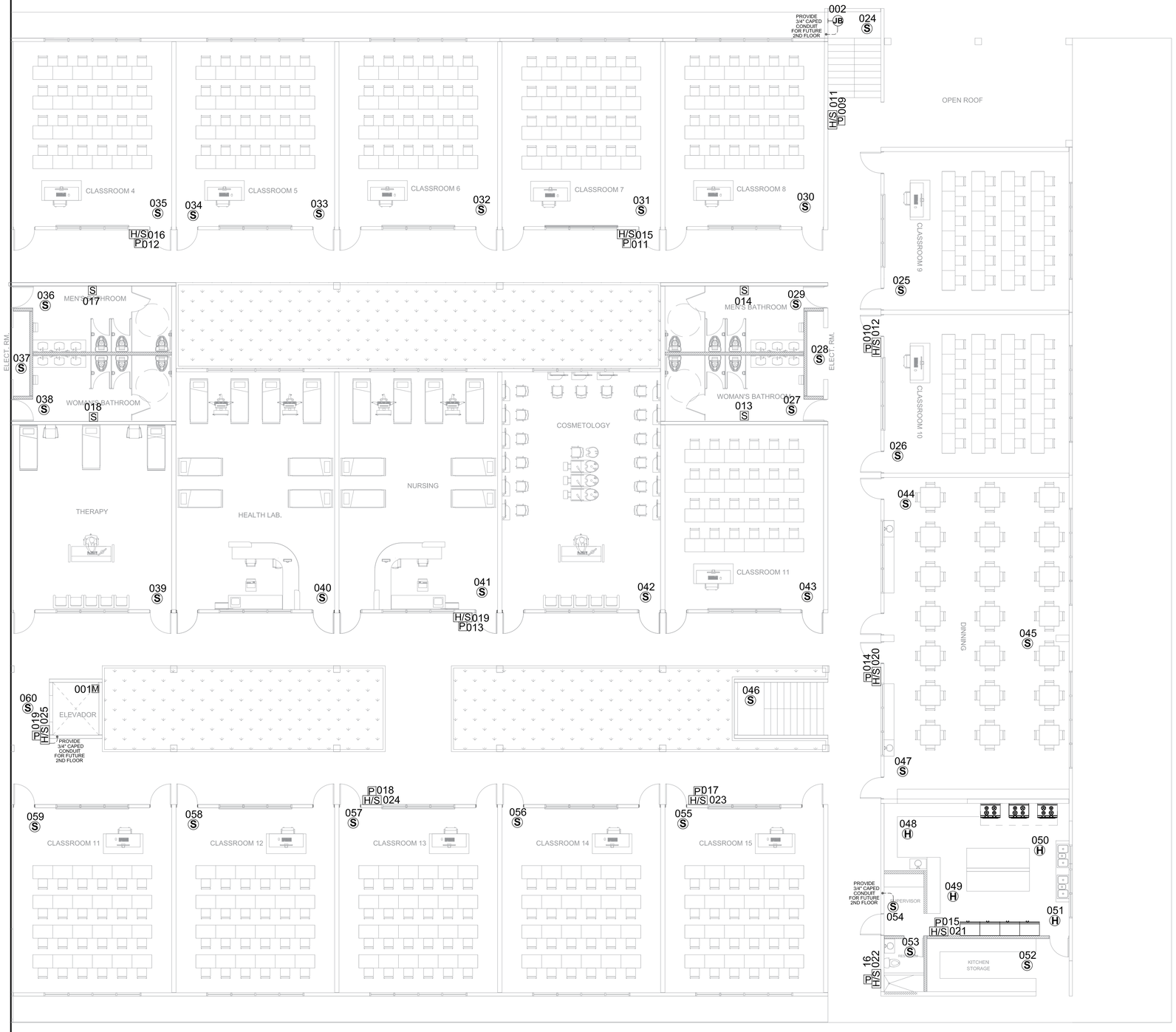
E-TEC ENGINEERING & CONSULTING, P.S.C.
CONSULTANT:
JOSE HUGO ORTIZ PAGÁN P.E.
ELECTRICAL CONSULTANT
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Consulting, Engineers & Architects
License: 8431
Address: PO Box 1351 Hatillo, P.R. 00659
Tel: 787-898-8188

Project number	XXXX
Date	24/OCT/2022
Drawn by	ENG. JOSE HUGO ORTIZ PAGAN
Checked by	ENG. RUBEN ORTIZ GALARZA
	F-1.0
Scale	1/8" - 1'-0"

FILE:FILELOCATION

SHEET REV. JUNE 1, 2012



SECTION B – FIRE ALARM SYSTEM PLAN

Scale: 1/8"=1'-0"

FIRE ALARM SYSTEM LEGEND:

ITEM	SYMBOL	DESCRIPTION	HEIGHT	MANUFACTURER	MODEL
1	FACP	FIRE ALARM CONTROL PANEL	52" CENTER	SIEMENS	FC2025
2	S	PHOTOELECTRIC SMOKE SENSOR	ROOF	SIEMENS	FDO421
3	H	THERMAL (HEAT) DETECTOR	ROOF	SIEMENS	FDT421
4	P	PULL STATION DUAL ACTION	48" AFF	SIEMENS	HMS–D
5	H/S	HORN/STROBES WALL	84" AFF	SIEMENS	SLHSWR–F
6	S	STROBE WALL	84" AFF	SIEMENS	SLSWR–F
7	DPSU	DISTRIBUTED POWER SUPPLY UNIT	52" CENTER	SIEMENS	PAD–3
8	M	CONTROL MODULE	AS SPECIFIED	SIEMENS	8706
9	JB	SEE NOTE 1	ON WALL, 12" UNDER ROOF		
10	LCD	REMOTE DISPLAY	52" CENTER	SIEMENS	FT2014–U2

CONSTRUCTION NOTE: USE ADDRESSABLE FA CABLE (NO SHIELDED/FIRE RETARDANT) 2/16

NOTES:

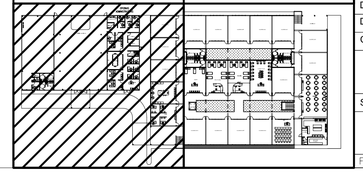
1. ALL JUNCTION BOXES (JB) SHALL BE 4"X 4" X 2 1/8" BOXES WITH 3/4 KO'S
2. THE FIRE ALARM SYSTEM SHALL ACCOMPLISH TO NFPA 72, UNDERWRITERS LABORATORIES, DEPARTAMENTO DE BOMBEROS DE PUERTO RICO, FEDERAL AND LOCAL BUILDING CODES.

IMPORTANT NOTE:

FURNISH AND INSTALL AN ADDRESABLE ALARM SYSTEM AS MANUFACTURED BY SIEMENS AND DESCRIBED IN THIS DRAWING. THE SYSTEM SHALL BE WIRED AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND INSTRUCTIONS AND IT SHALL BE LEFT IN A COMPLETE AND FIRST CLASS OPERATING CONDITION. THE FIRE ALARM SYSTEM SHALL BE A COMPLETE AUTOMATIC SYSTEM FOR THE DETECTION AND ALARM OF FIRE, SMOKE AND COMBUSTION GASES AND ALSO SHALL BE CONNECTED TO THE EXISTING FIRE ALARM PANEL IN THE BUILDING. THE SYSTEM AND ITS COMPONENTS SHALL BE U.L. LISTED. THE DRAWINGS AND THE SPECIFICATION OF THE SYSTEM SHALL BE SUBMITTED TO THE ARCHITEC DESIGNER CONSULTANT FOR APPROVAL PRIOR TO THE INSTALLATION OF THE SYSTEM. ALL THE INSTALLATION AND WIRING OF THE SYSTEM SHALL BE OF HIGH QUALITY WORKMANSHIP.

KEY PLAN

SECTION - A | SECTION - B



Project review

INSTITUTO PRE-VOCACIONAL E INDUSTRIAL DE P.R. INC.
SECTION B – FIRE ALARM SYSTEM PLAN
CALE JOSE A. NORA "PIRULO"
BO. BARRANCA
ARCIBO, PR 00612

CERTIFICATION RULE 2.1.9.2 k

CERTIFICATION:

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e-tec engineering & consulting, p.s.c.
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Consulting, Engineers & Architects
License: 8431
Address: PO Box 1351 Hatillo, P.R. 00659
Tel: 787-898-8188

Project number XXXX
Date 24/OCT/2022
Drawn by ENG. JOSE HUGO ORTIZ PAGAN
Checked by ENG. RUBEN ORTIZ GALARZA

F-2.0

Scale 1/8" – 1'-0"

13 OF 20

FILE:FILELOCATION

SHEET REV. JUNE 1, 2012

FIRE ALARM SYSTEM LEGEND:

ITEM	SYMBOL	DESCRIPTION	HEIGHT	MANUFACTURER	MODEL
1	FACP	FIRE ALARM CONTROL PANEL	52" CENTER	SIEMENS	FC2025
2	S	PHOTOELECTRIC SMOKE SENSOR	ROOF	SIEMENS	FDO421
3	H	THERMAL (HEAT) DETECTOR	ROOF	SIEMENS	FDT421
4	P	PULL STATION DUAL ACTION	48" AFF	SIEMENS	HMS-D
5	H/S	HORN/STROBES WALL	84" AFF	SIEMENS	SLHSWR-F
6	S	STROBE WALL	84" AFF	SIEMENS	SLSWR-F
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8	M	CONTROL MODULE	AS SPECIFIED	SIEMENS	8706
9	JB	SEE NOTE 1	ON WALL, 12" UNDER ROOF		
10	LCD	REMOTE DISPLAY	52" CENTER	SIEMENS	FT2014-U2

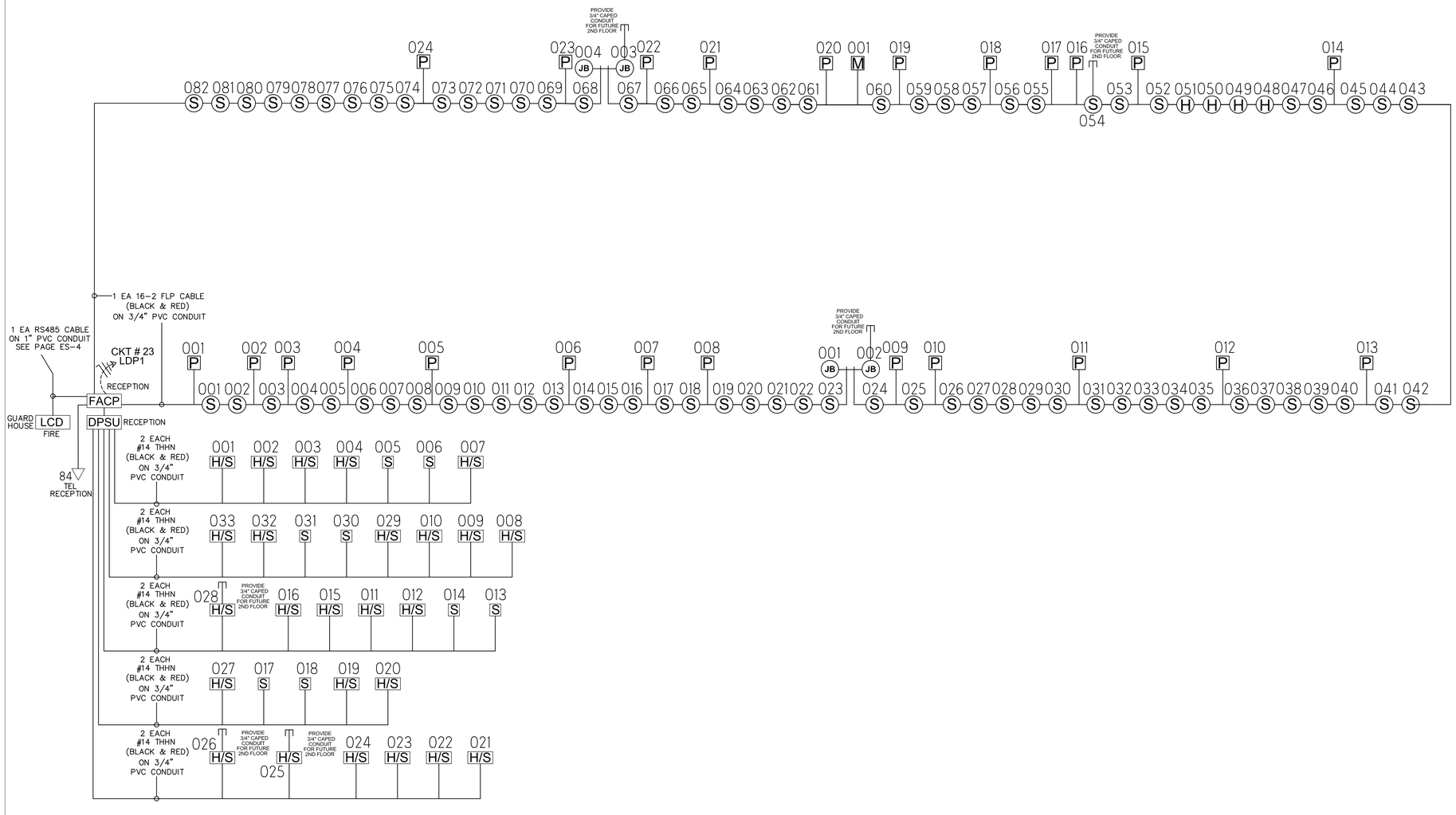
CONSTRUCTION NOTE: USE ADDRESSABLE FA CABLE (NO SHIELDED/FIRE RETARDANT) 2/16

NOTES:

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FIRE ALARM SYSTEM ONE LINE DIAGRAM

NOT TO SCALE

Project review

INSTITUTO PRE-VOCACIONAL E INDUSTRIAL DE P.R. INC.
FIRE ALARM SYSTEM ONE LINE DIAGRAM

CALE JOSE A. NORA "PIRULO"
BO. BARRANCA
ARECIBO, PR 00612

CERTIFICATION RULE 2.1.9.2 k

CERTIFICATION:

I, JOSE HUGO ORTIZ PAGÁN, LICENSED ENGINEER 18138, CERTIFY THAT I AM THE PROFESSIONAL WHO DESIGNED THESE PLANS AND THE COMPLEMENTARY SPECIFICATIONS. I ALSO CERTIFY THAT I UNDERSTAND THAT SAID PLANS AND SPECIFICATIONS COMPLY WITH THE APPLICABLE PROVISIONS OF THE JOINT REGULATIONS AND THE APPLICABLE PROVISIONS OF THE REGULATIONS AND BUILDING CODES IN FORCE OF THE AGENCIES, REGULATORY BOARDS OR PUBLIC CORPORATIONS WITH JURISDICTION OVER THE PROJECT. THAT THE PREPARATION OF THESE PLANS AND SPECIFICATIONS HAS FULLY COMPLIED WITH THE PROVISIONS OF ACT NO. 14 OF JANUARY 9, 2004, AS AMENDED, KNOWN AS THE "LAW FOR INVESTMENT BY THE PUERTO RICAN INDUSTRY" AND WITH ACT NO. 96 OF JULY 6, 1978, AS AMENDED. I ACKNOWLEDGE THAT ANY FALSE STATEMENT OR FALSIFICATION OF THE FACTS THAT HAS BEEN PRODUCED BY IGNORANCE OR NEGLIGENCE EITHER BY ME, MY AGENTS OR EMPLOYEES, OR BY OTHERS WITH MY KNOWLEDGE, AND I AM RESPONSIBLE FOR ANY JUDICIAL AND DISCIPLINARY ACTION BY THE OGPe.

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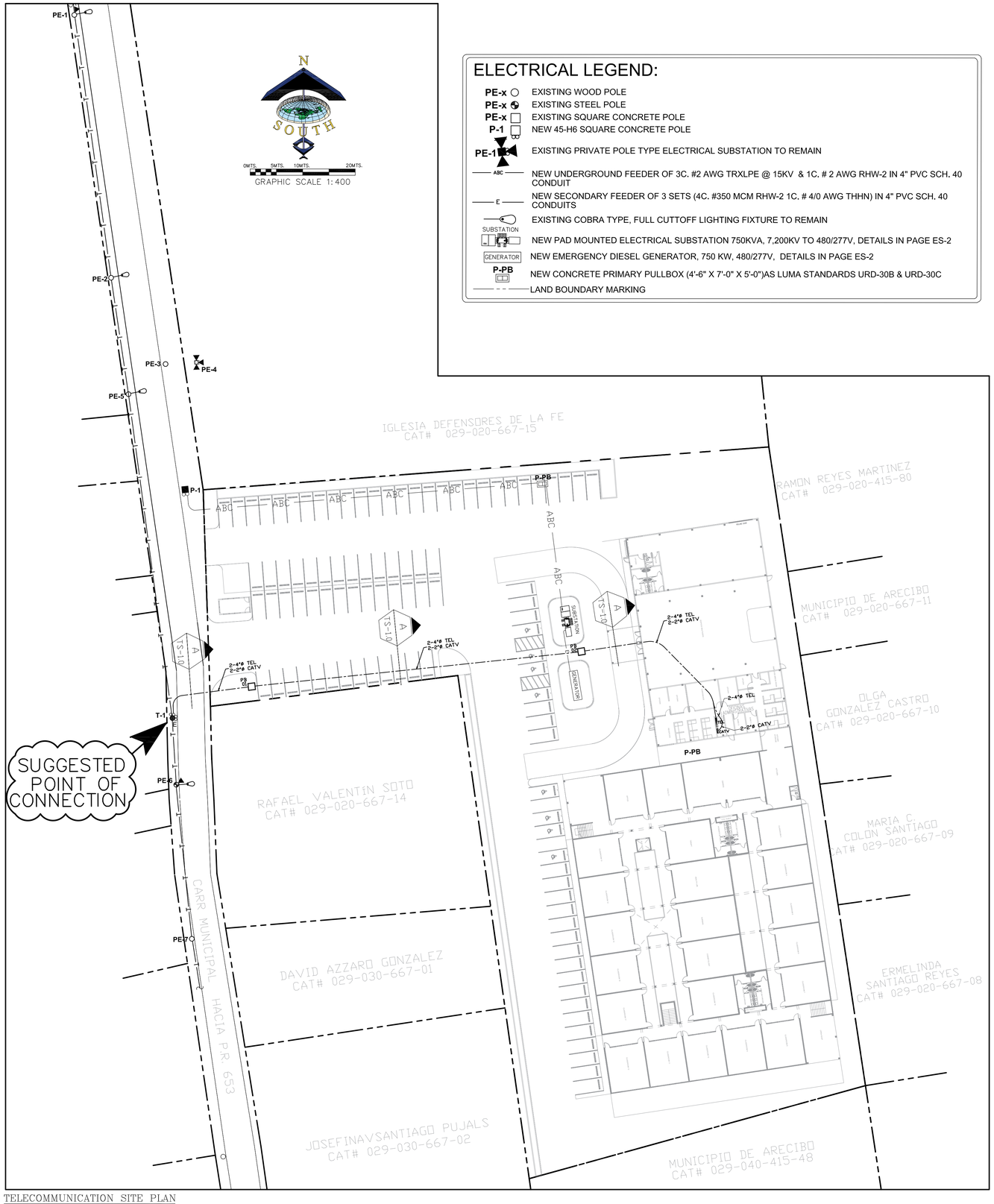
E-TEC ENGINEERING & CONSULTING, P.S.C.
CONSULTANT:
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Project number	XXXX
Date	24/OCT/2022
Drawn by	ENG. JOSE HUGO ORTIZ PAGAN
Checked by	ENG. RUBEN ORTIZ GALARZA
	F-3.0
Scale	N.T.S
	14 OF 20

FILE: FILELOCATION

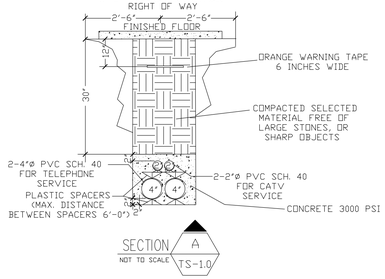
SHEET REV. JUNE 1, 2012



TELECOMMUNICATION SITE PLAN
Scale: 1 : 400

ELECTRICAL LEGEND:

PE-x ○	EXISTING WOOD POLE
PE-x	EXISTING STEEL POLE
PE-x □	EXISTING SQUARE CONCRETE POLE
P-1	NEW 45-H6 SQUARE CONCRETE POLE
PE-1	EXISTING PRIVATE POLE TYPE ELECTRICAL SUBSTATION TO REMAIN
ABC	NEW UNDERGROUND FEEDER OF 3C. #2 AWG TRXLPE @ 15KV & 1C. # 2 AWG RHW-2 IN 4" PVC SCH. 40 CONDUIT
E	NEW SECONDARY FEEDER OF 3 SETS (4C. #350 MCM RHW-2 1C. # 4/0 AWG THHN) IN 4" PVC SCH. 40 CONDUITS
	EXISTING COBRA TYPE, FULL CUTTOFF LIGHTING FIXTURE TO REMAIN
SUBSTATION	NEW PAD MOUNTED ELECTRICAL SUBSTATION 750KVA, 7,200KV TO 480/277V, DETAILS IN PAGE ES-2
GENERATOR	NEW EMERGENCY DIESEL GENERATOR, 750 KW, 480/277V, DETAILS IN PAGE ES-2
P-PB	NEW CONCRETE PRIMARY PULLBOX (4'-6" X 7'-0" X 5'-0")AS LUMA STANDARDS URD-30B & URD-30C
	LAND BOUNDARY MARKING

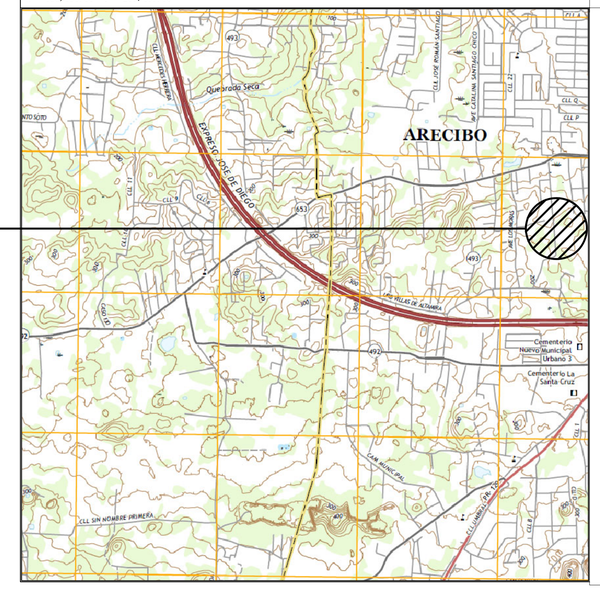


LOCATION MAP

NORTH AMERICAN DATUM 83
X = 166,390.00 Y = 269,489.50

NORTH
SCALE: 1:20,000

SITE



TELECOMMUNICATIONS LEGEND

	TELECOMMUNICATIONS RIGHT OF WAY - 5 FT WIDE
	1" Ø, 2" Ø, AND/OR 4" Ø SCH 26 (MIN) CONDUITS FORMATION (AS INDICATED ON PRINTS)
	PVC FORMATION ONE END CAPPED
T	EXISTING AEREALTELECOMMUNICATION LINES TO REMAIN
PB 0X	TELECOMMUNICATIONS SPLICING BOX 4' X 4' X 4' INSIDE MEASUREMENTS
45Ft.	NEW PREPA CONCRETE POLE 45 FT.
30/5	NEW TELECOMMUNICATIONS WOOD POLE 30 FT.
E	EXISTING 40 FT.CONCRETE PREPA POLE WITH TELECOMMUNICATION AEREAL LINES TO REMAIN.
E	EXISTING TELECOMMUNICATIONS WOOD POLE 30 FT.
	NEW TELECOMMUNICATIONS RISER
	8' X 4" X 3/4" TREATED PLYWOOD PANEL FOR TELEPHONE SYSTEM
	36"X 30" X 6" METAL CABINET WITH 3/4" TREATED PLYWOOD PANEL FOR CATV SYSTEM
TEL	5" X 5" X 2-1/8" FLUSH MUNTED WALL TELEPHONE OUTLET WITH COVE PLATE
CATV	5" X 5" X 2-1/8" FLUSH MUNTED WALL TELEPHONE OUTLET WITH COVE PLATE
	4" X 4" X 2-1/8" FLUSH MUNTED WALL TELEPHONE OUTLET WITH COVE PLATE
	4" X 4" X 2-1/8" FLUSH MDUNTED WALL CATV OUTLET WITH COVER PLATE

NETPR - 2022 - XX - XXXX
OGPe - 2022-462970-SRI-061710

NET NEGOCIADO de TELECOMUNICACIONES DE PUERTO RICO

Negociado de Telecomunicaciones de Puerto Rico

ENDOSO DE PLANOS DE FACILIDADES Y/O SERVIDUMBRE DE TELECOMUNICACIONES Y TELEVISIÓN POR CABLE

Revisado por: _____

recomendado por: _____

Aprobado por: _____

ESTE ENDOSO NO EXIME AL CONSTRUCTOR Y AL DESARROLADOR DE CUMPLIR CON LOS REQUERIMIENTOS DE CONSTRUCCIÓN CONFORME A TODAS LAS DISPOSICIONES DE LOS REGLAMENTOS APLICABLES.

CERTIFIED BY:

Project review

INSTITUTO PRE-VOCACIONAL E INDUSTRIAL DE P.R. INC.
TELECOMMUNICATION SITE PLAN
CALE JOSE A. NORA "PIRULO"
BO. BARRANCA
ARECIBO, PR 00612

CERTIFICATION RULE 2.1.9.2 k

CERTIFICATION:

I, JOSE HUGO ORTIZ PAGAN, LICENSED ENGINEER 18138, CERTIFY THAT I AM THE PROFESSIONAL WHO DESIGNED THESE PLANS AND THE COMPLEMENTARY SPECIFICATIONS, I ALSO CERTIFY THAT I UNDERSTAND THAT SAID PLANS AND SPECIFICATIONS COMPLY WITH THE APPLICABLE PROVISIONS OF THE JOINT REGULATIONS AND THE APPLICABLE PROVISIONS OF THE REGULATIONS AND BUILDING CODES IN FORCE OF THE AGENCIES, REGULATORY BOARDS OR PUBLIC CORPORATIONS WITH JURISDICTION. FURTHER, I CERTIFY THAT THE PROJECT DESIGNED IN THESE PLANS AND SPECIFICATIONS HAS FULLY COMPLIED WITH THE PROVISIONS OF ACT NO. 14 OF JANUARY 9, 2004, AS AMENDED, KNOWN AS THE "LAW FOR INVESTMENT BY THE PUERTO RICAN INDUSTRY" AND WITH ACT NO. 96 OF JULY 6, 1978, AS AMENDED. I ACKNOWLEDGE THAT ANY FALSE STATEMENT OR FALSIFICATION OF THE FACTS THAT HAS BEEN PRODUCED BY IGNORANCE OR NEGLIGENCE EITHER BY ME, MY AGENTS OR EMPLOYEES, OR BY OTHERS WITH MY KNOWLEDGE, AND I AM RESPONSIBLE FOR ANY JUDICIAL AND DISCIPLINARY ACTION BY THE OGPe.

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E-TEC ENGINEERING & CONSULTING, P.S.C.
engineering & consulting, p.s.c.
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Tel: 787-898-8188

Project number XXXX
Date 24/OCT/2022
Drawn by ENG. JOSE HUGO ORTIZ PAGAN
Checked by ENG. RUBEN ORTIZ GALARZA

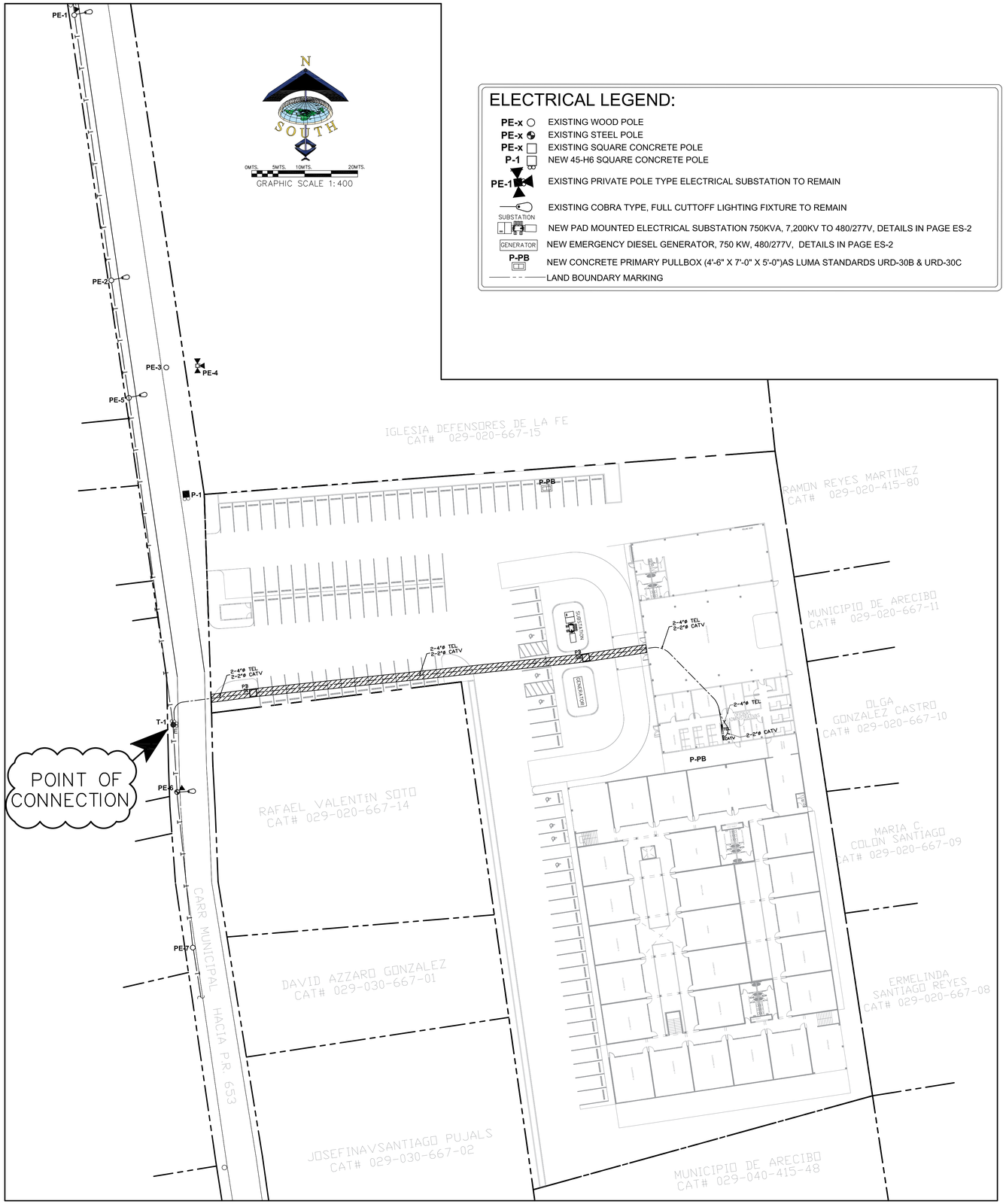
TS-1.0

Scale 1 : 400

15 OF 20

FILE: FILELOCATION

SHEET REV: JUNE 1, 2012



TELECOMMUNICATION TELECOMMUNICATION RIGHT OF WAY PLAN
Scale: 1 : 400

ELECTRICAL LEGEND:

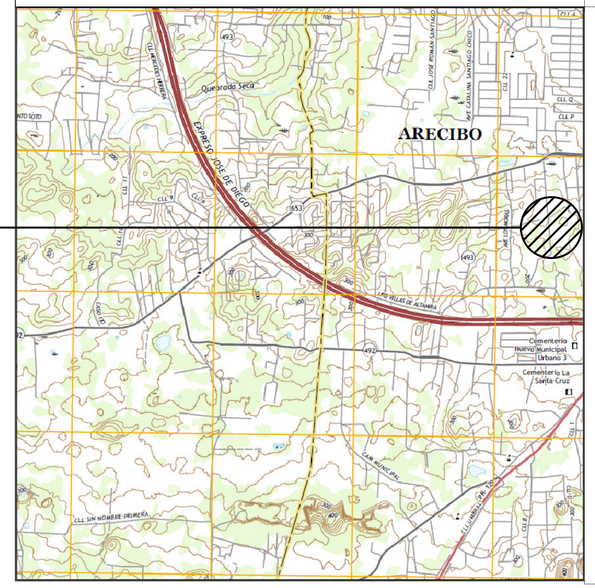
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LOCATION MAP

NORTH AMERICAN DATUM 83
X = 166,285.30 Y = 269,555.09

NORTH
SCALE: 1:20,000

SITE

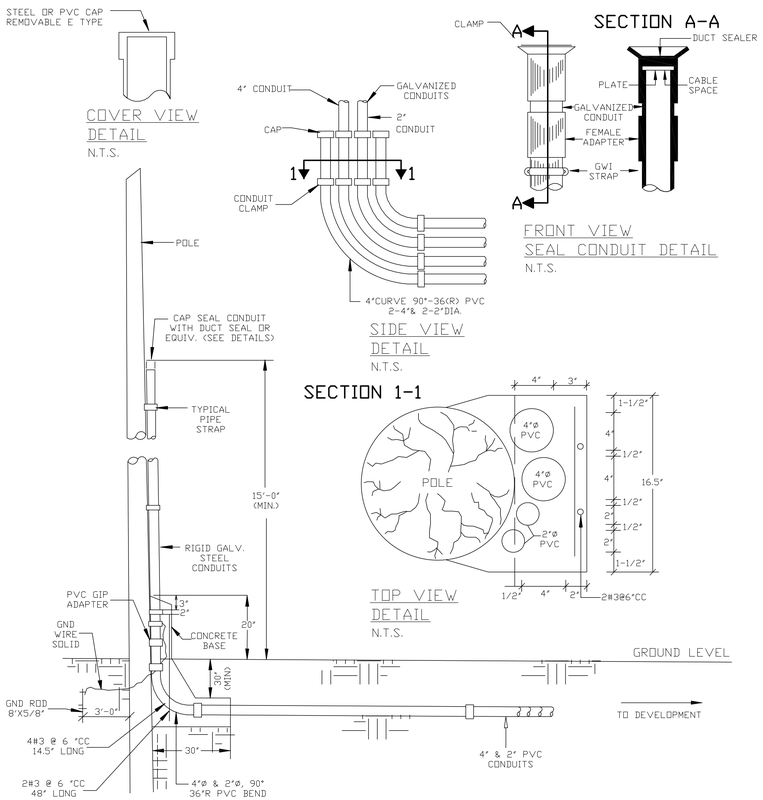


GENERAL NOTES:

1. THE DEVELOPER OR ITS REPRESENTATIVES SHALL SUPPLY AND INSTALL ALL MATERIALS REQUIRED FOR THE TELECOMMUNICATIONS INFRASTRUCTURE, INCLUDING BUT NOT LIMITED TO 1", 2" AND 4" DIAMETER CONDUITS SHOWN ON THE PRINTS.
2. THE 1" Ø CONDUITS SHALL BE PVC SCH 40 RODDED WITH ½" Ø NYLON ROPE WITH A MINIMUM PULLING STRENGTH OF 300 LB.
3. THE 2" Ø PVC CONDUIT (FOR CATV DISTRIBUTION FACILITIES) AND THE 4" Ø (FOR TELEPHONE DISTRIBUTION FACILITIES) SHALL BE INSTALLED IN THE TELECOMMUNICATIONS EASEMENT. THE 2" Ø CONDUITS SHALL BE INSTALLED ON THE SIDEWALK SIDE OF THE TRENCH AND THE 4" Ø ON THE FARTHERMOST SIDE OF THE TRENCH FROM THE SIDEWALK (SEE EASEMENT CONDUIT INSTALLATION DETAIL).
4. THE 2" Ø AND 4" Ø CONDUITS SHALL BE SCH 40 (MINIMUM) RODDED WITH ½" Ø NYLON ROPE WITH A MINIMUM BREAKING STRENGTH OF 500 LBS. AND SHALL BE TESTED WITH 1-5/8" AND 3-5/8" MANDRELS RESPECTIVELY.
5. ALL CONDUIT ENDS SHALL BE CAPPED WITH PVC END CAPS.
6. THE MINIMUM DEPTH OF THE CONDUITS PLACED ALONG THE EASEMENT AND SERVICE CONDUITS TO EACH RESIDENCE SHALL BE:
   1" Ø CONDUITS 14" BELOW GROUND LEVEL 2" Ø CONDUITS 24" BELOW GROUND
   LEVEL 4" Ø CONDUITS 24" BELOW GROUND LEVEL
7. WHEN CONDUITS ARE INSTALLED ON CONCRETE ENCASE PLASTIC SPACERS SHALL BE INSTALLED EVERY SIX FEET OR AS SPECIFIED BY THE MANUFACTURER IN ORDER TO MAINTAIN THE PROPER CONDUIT RUN FORMATION AND SEPARATION.
8. WHEN EXPOSED TO VEHICULAR TRAFFIC (HIGHWAY, STREET, CARPORT CROSSINGS AND PARKING AREAS) CONDUITS SHALL BE INSTALLED AT A DEPTH BETWEEN 30" AND 36" MEASURED FROM THE SURFACE OF THE PAVEMENT AND SHALL BE ENCASED IN CONCRETE WITH A MINIMUM RESISTANCE OF 3000 LBS PER SQUARE INCH (3000 PSI).
9. TRENCH BACKFILLING SHALL BE PERFORMED WITH SELECTED MATERIALS FREE OF LARGE STONES AND OTHER CONTAMINANTS SUCH AS SCRAPS OF WOOD, ASPHALT, CONCRETE PAVEMENT, ETC. BACKFILL SHALL BE COMPACTED TO 95% IN 6 INCH LAYERS BY MEANS OF A TAMPER, WITH THE FIRST 12 INCHES TAMPED USING LIGHTWEIGHT EQUIPMENT.
10. A SIX INCH WIDE ORANGE WARNING RIBBON (EQUAL OR SIMILAR TO TERRA TAPE ® 42-0007) SHALL BE INSTALLED AT A DEPTH OF 12" BELOW GROUND LEVEL ABOVE THE CONDUITS AND ALONG THE WHOLE CONDUIT RUN.
11. THE DEVELOPER OR ITS REPRESENTATIVES SHALL CLEARLY IDENTIFY ALL CONDUIT ENDS (INCLUDING BUT NOT LIMITED TO DISTRIBUTION POINTS, SERVICE CONDUITS) WHEN SPLICING OR DISTRIBUTION BOXES HAS NOT BE SPECIFIED OR RECOMMENDED. SEE "WOOD STAKE DETAIL".
12. THE 2" Ø AND 4" Ø CONDUIT BENDS SHALL NOT BE LESS THAN 90° AND SHALL HAVE A MINIMUM RADIUS OF 36". ALL CONDUITS SHALL BE LIMITED TO TWO 90° SWEEPING BENDS IN A CONDUIT SECTION.
13. GENERALLY DISTRIBUTION BOXES WILL BE 3' X 3' X 3', 4' X 4' X 4' AS WELL AS 6' X 4' X 4' AND /OR 7' X 4'-6" X 4' SPLICE BOXES WILL BE INSTALLED FOR TELECOMMUNICATIONS SERVICES AS INDICATED ON PRINTS. THESE BOXES WILL NOT BE LOCATED IN AREAS NOT EXPOSED TO VEHICULAR TRAFFIC AND SHOULD BE DESIGNED TO RESIST INCIDENTAL TRAFFIC.
    IF BOXES WILL BE EXPOSED TO VEHICULAR TRAFFIC A MANHOLE OR SPECIAL BOX DESIGNED FOR THAT APPLICATION SHOULD BE INSTALLED WITH THE CAPACITY TO AVOID ANY DEFORMATION OR COLLAPSE OF ITS ENTRANCE COVER, SIMILAR OR EQUAL TO POWER POLES MH 6'X6'X7'
14. THE DISTRIBUTION POINTS OR BOXES SHALL BE PLACED IN EASEMENT LOCATED TWO FEET FROM THE PROPERTY LINE BETWEEN LOTS WITHOUT INTERFERING WITH ANY ENTRANCE (CARPORT OR SIDEWALK).
15. DISTRIBUTION BOXES AND SPLICE BOXES SHALL BE
    a. PREFABRICATED WITH STEEL REINFORCED CONCRETE (EQUAL OR SIMILAR TO POWER POLES INC.)
    b. CAST IN PLACE WITH STEEL REINFORCED CONCRETE.
    c. PREFABRICATED POLYMER CONCRETE BOX EQUAL OR SIMILAR TO QUAZITE® 17"X30"X18" (MAXIMUM SIZE ALLOWED) ONLY WILL BE ACCEPTED FOR CABLE TV APPLICATION IN AREAS WITH SPACE PROBLEM.
    NOTE:
    ANY CHANGE IN THE TYPE OF BOXES TO BE USED WILL REQUIRE THE APPROVAL OF JRTPR BEFORE THEIR INSTALLATION
16. ALL CONDUITS, WHETHER OR NOT IN USE, SHALL BE SEALED IN DISTRIBUTION BOXES, SPLICE BOXES, AND BUILDINGS TELECOMMUNICATION CABINET USING A DUCT SEALER (EQUAL OR SIMILAR TO 3M® 4414 DUCT SEALING KIT).
17. 2" Ø CONDUITS FOR CABLE TELEVISION (CATV) DISTRIBUTION FACILITIES IN RESIDENTIAL PROJECTS, OF SINGLE FAMILY UNIT HOMES, ROW HOUSES, PATIO HOUSES, ETC., SHALL NOT BE TERMINATED AT TELECOMMUNICATIONS DISTRIBUTION BOXES. THESE CONDUITS, AS WELL AS THE 1" Ø CONDUITS FOR CATV SERVICE DROPS, SHALL BE END CAPPED AND LEFT AT CATV DISTRIBUTION POINTS LOCATED IN THE PLANTING STRIP (GENERALLY NEXT TO LIGHT POSTS) AS INDICATED ON PRINTS.
18. THE EXTERIOR METALLIC BOXES 4" X 4" X 2½" (MINIMUM), FOR TELECOMMUNICATIONS SERVICE DROPS (TELEPHONE AND CATV), SHALL BE INSTALLED ON ONE OF THE LIVING UNITS WALLS CONVENIENTLY LOCATED SO AS TO PROVIDE EASY UNOBSTRUCTED ACCESS.
19. THE CONDUIT, THROUGH WHICH THE GROUND WIRE FOR THE EXTERIOR SERVICE DROP METALLIC BOXES SHALL BE INSTALLED, SHALL COME OUT FROM THE LIVING UNIT WALL AT A DEPTH OF SIX INCHES BELOW GROUND LEVEL.
20. THE TELECOMMUNICATIONS SERVICE DROPS ELECTRICAL GROUNDING WILL BE ACHIEVED WITH THE NECESSARY 8' X ½" COPPER WELDED GROUND RODS INSTALLED BY THE TELECOMMUNICATIONS SERVICE PROVIDER AND MUST COMPLY WITH THE CURRENT NATIONAL ELECTRIC CODE.
21. ALL TELECOMMUNICATIONS SYSTEMS (TELEPHONE AND CATV) SHALL BE BONDED AND GROUNDED AT ALL POINTS AND MUST COMPLY WITH THE CURRENT NATIONAL ELECTRIC CODE.
22. NO MORE THAN TWO 90° BENDS SHALL BE ALLOWED IN THE CONDUITS CONNECTING THE EXTERIOR METALLIC BOXES FOR SERVICE DROP AND THE INTERIOR SERVICE BOXES.
23. THE INTERIOR RESIDENTIAL TELECOMMUNICATIONS SERVICE DISTRIBUTION CONDUITS SHALL HAVE A MINIMUM ¾" INSIDE DIAMETER AND EACH LIVING UNIT SHALL BE PROVIDED WITH TELECOMMUNICATIONS SERVICES (TELEPHONE AND CATV) OUTLETS IN THE KITCHEN, LIVING ROOM AND EACH OF THE BEDROOMS.
24. AT WALK-UPS AND MULTI-STORY RESIDENTIAL BUILDINGS THE MINIMUM SIZE FOR TELECOMMUNICATIONS CABINETS SHALL BE 36" X 24" X 6" FOR (TELEPHONE) AND 36"X36"X8" FOR (CATV) AND SHALL SERVE NO MORE THAN 16 UNITS. THE CABINETS SHALL BE EQUIPPED WITH A ¾" THICK TREATED PLYWOOD BACKBOARD, A HINGED DOOR WITH LATCH AND KEY, AND SHALL HAVE COMPLETE FRONTAL ACCESS. THE CABINETS SHALL ALSO PROVIDE FOR THE PROPER BONDING AND GROUNDING OF THE TELECOMMUNICATIONS FACILITIES AND MUST COMPLY WITH THE CURRENT NATIONAL ELECTRIC CODE.
25. WALK-UP PROJECTS SHALL HAVE INDEPENDENT TELECOMMUNICATIONS CABINETS FOR TELEPHONE AND CATV SERVICES. THE TELEPHONE CABINET WILL BE CONNECTED TO THE NEAREST SPLICING BOX BY MEANS OF 2-2"Ø PVC CONDUITS. THE CATV CABINET WILL BE CONNECTED TO THE NEAREST SPLICING BOX OR THE NEAREST CATV CABINET (IN THE NEXT BUILDING) DEPENDING ON THE LOOP DESIGN SPECIFIED ON THE DRAWINGS BY MEANS OF 2-2"Ø PVC CONDUITS. THE MINIMUM SIZE OF THE SPLICE BOX SHALL BE 7' X 4'-6" X 4' AND MAY BE JOINTLY USED FOR TELEPHONE AND CATV SERVICES.
26. RESIDENTIAL BUILDINGS (MULTI-STORY APARTMENT BUILDINGS OTHER THAN WALK UPS, HIGH-RISE CONDOMINIUMS, ETC.) SHALL HAVE INDEPENDENT MAIN DISTRIBUTION CABINETS FOR TELEPHONE AND CATV SERVICES. THE MAIN DISTRIBUTION CABINETS, GENERALLY CONSISTING OF AN 8'X 4' X ¾" FIRE-RETARDANT PLYWOOD PANEL OR AN 8' X 4' F
    X ¾" TREATED PLYWOOD PANEL PAINTED WITH TWO COATS OF FIRE RETARDANT PAINT, WILL BE PLACED IN A TELECOMMUNICATIONS' CLOSET OR ROOM. THE MAIN DISTRIBUTION PANELS FOR TELEPHONE AND CATV SERVICES SHALL BE CONNECTED VERTICALLY TO OTHERS DISTRIBUTION CABINETS (EACH SERVING A MAXIMUM OF 16 UNITS) BY MEANS OF 2-4" Ø AND 2-2" Ø PVC CONDUITS RESPECTIVELY.
27. EACH CABINET OR PANEL SHALL ALSO PROVIDE FOR THE PROPER BONDING AND GROUNDING OF THE TELECOMMUNICATIONS FACILITIES WITH A GROUND BAR, GROUND WIRE AND CONNECTED TO A 8' X ½" COPPER WELD GROUND ROD SYSTEM AND MUST COMPLY WITH THE CURRENT NATIONAL ELECTRIC CODE. THIS WILL BE A DEVELOPER RESPONSIBILITY.
28. ALL APARTMENTS SHALL BE CONNECTED TO EACH OF THEIR CORRESPONDING DISTRIBUTION CABINETS (TELEPHONE AND CATV) BY MEANS OF 1-1"Ø CONDUIT.
29. ENTRANCE FACILITIES FOR RESIDENTIAL BUILDINGS SHALL CONSIST OF A MINIMUM OF 2-4"Ø FOR TELEPHONE SERVICE AND 2-2"Ø PVC CONDUITS FOR CATV SERVICE. THE CONDUITS SHALL CONNECT THE MAIN DISTRIBUTION CABINETS AND THE DESIGNATED BUILDING TELECOMMUNICATIONS POINT OF CONNECTION. WHEN A BUILDING'S TELECOMMUNICATIONS POINT OF CONNECTION IS A SPLICE BOX IT SHALL HAVE A MINIMUM SIZE OF 7'X 4'-6"X 4' AND MAY BE JOINTLY USED FOR TELEPHONE AND CATV SERVICES.

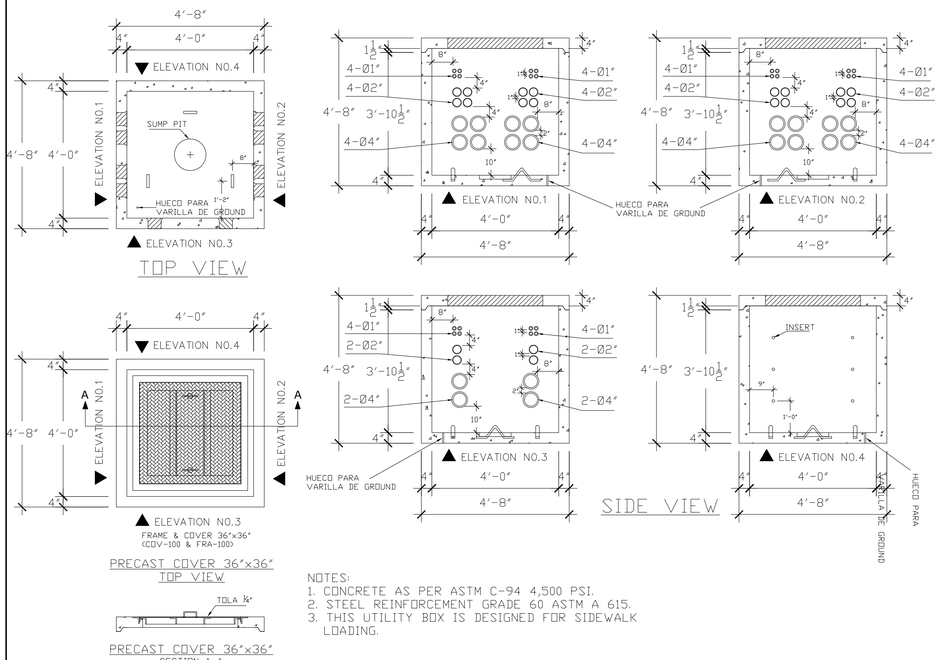
SPECIAL NOTES:

1. THE DEVELOPER IN COMPLIANCE WITH SECTION 19.04 OF THE PUERTO RICO PLANNING BOARD'S "REGLAMENTO DE LOTIFICACIÓN Y URBANIZACIÓN (REGLAMENTO DE PLANIFICACIÓN 3) REVISADO" SHALL TRANSFER TO THE PUERTO RICO TELECOMMUNICATIONS REGULATORY BOARD (JRTPR) THE RIGHT OF WAY DEPICTED ON THESE DRAWINGS REQUIRED TO PROVIDE TELECOMMUNICATIONS SERVICES (TELEPHONE AND CATV) TO THIS PROJECT BY MEANS OF A PUBLIC DEED.
2. THE PUERTO RICO TELECOMMUNICATIONS REGULATORY BOARD (JRTPR) MAY ISSUE PARTIAL ENDORSEMENTS FOR SINGLE FAMILY RESIDENTIAL PROJECTS (SINGLE FAMILY HOMES, ROW HOUSES, TOWNHOUSES, PATIO HOUSES, ETC.) SO THAT THE DEVELOPER CAN DELIVER PORTIONS OF THE PROJECT AS THEY ARE COMPLETED. ONCE THE PROJECT IS COMPLETED, THE DEVELOPER SHALL COMPLY WITH THE PROCEDURE SPECIFIED IN SECTION 5.02.6 OF THE JRTPR'S "REGLAMENTO PARA ENDOSOS DE SERVIDUMBRES E INFRAESTRUCTURA" RELATED TO OBTAIN THE FINAL ENDORSEMENTS.
3. THE DEVELOPER SHALL ALLOW TELECOMMUNICATIONS SERVICE PROVIDERS (TELEPHONE AND CATV) AUTHORIZED BY THE JRTPR TO PROVIDE SAID SERVICES, TO INSTALL THEIR DISTRIBUTION FACILITIES IN A COORDINATED AND ORDERLY MANNER IN THOSE PORTIONS OF THE PROJECT FOR WHICH A PARTIAL ENDORSEMENT HAS BEEN ISSUED.
4. THE DEVELOPER SHALL COORDINATE WITH TELECOMMUNICATIONS SERVICE PROVIDERS (TELEPHONE AND CATV) AND THE PUERTO RICO ELECTRICAL POWER AUTHORITY (PREPA) THE INSTALLATION OR CONNECTION OF RISERS, CONDUITS OR ANY ACTION TO ACCESS TO THEIR FACILITIES.
5. THE DEVELOPER SHALL COORDINATE WITH THE TELECOMMUNICATIONS SERVICE PROVIDERS (TELEPHONE AND CATV) AND WITH ANY OTHER PUBLIC OR PRIVATE ORGANIZATION WHOSE FACILITIES ARE AFFECT BY THE CONSTRUCTION OF THE PROJECT, THE REMOVALS, RELOCATION AND/OR MODIFICATIONS OF ANY EXISTING INFRASTRUCTURE.
6. THE DEVELOPER SHALL ASSIGN AN ENGINEER OR ARCHITECT TO INSPECT AND CERTIFY THAT THE CONSTRUCTION JOBS WERE PERFORMED AND COMPLETED AS THE ENDORSED DRAWINGS BY THE PUERTO RICO TELECOMMUNICATIONS REGULATORY BOARD (JRTPR). FOR THAT PROCESS WILL USED FORM JRTPR F-102 AND SUMMIT TO JRTPR AND OBTAIN THEIR APPROVAL BEFORE APPLY FOR THE PERMIT OF USE AT ADMINISTRACIÓN DE REGLAMENTOS & PERMISOS (ARPE).
7. COMMERCIAL BUILDINGS WILL REQUIRE TWO (2) MAIN DISTRIBUTION CABINETS OR PANELS FOR TELEPHONE AND CATV SERVICES RESPECTIVELY. A TELECOMMUNICATION ROOM OR AREA WILL BE DESIGNATED TO PLACE THEM AND THEY MUST COMPLY WITH ONE OF THE SPECIFICATION DESCRIBED BELOW:
   a. TREATED WOOD PANEL 4' X 8' X ¾" (DOUBLE COATED WITH WHITE FIRE RETARDANT PAINT)
   b. TELEPHONE METAL CABINET 36"X24"X6"(MIN) AND CATV 36"X 30"X6". BOTH CABINET SHALL BE EQUIPPED WITH A ¾" THICK TREATED PLYWOOD BACKBOARD, A HINGED DOOR WITH LATCH AND KEY, AND SHALL HAVE COMPLETE FRONTAL ACCESS.



TELECOMMUNICATION RISER DETAIL WOOD POLE 3C-5 OR SIMILAR

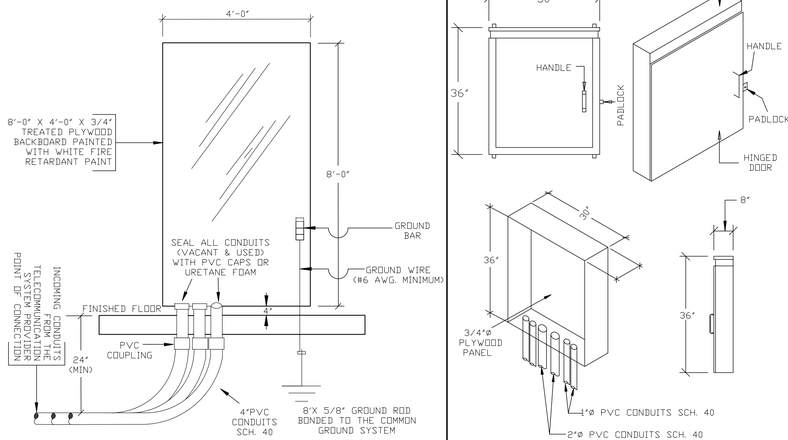
NOT TO SCALE



NOTES:
1. CONCRETE AS PER ASTM C-94 4,500 PSI.
2. STEEL REINFORCEMENT GRADE 60 ASTM A 615.
3. THIS UTILITY BOX IS DESIGNED FOR SIDEWALK LOADING.

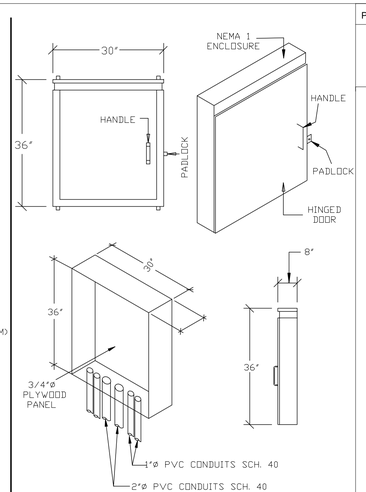
TELECOMUNICATION PULL BOX (PB-01) 4'-0" x 4'-0" x 4'-0"

NOT TO SCALE



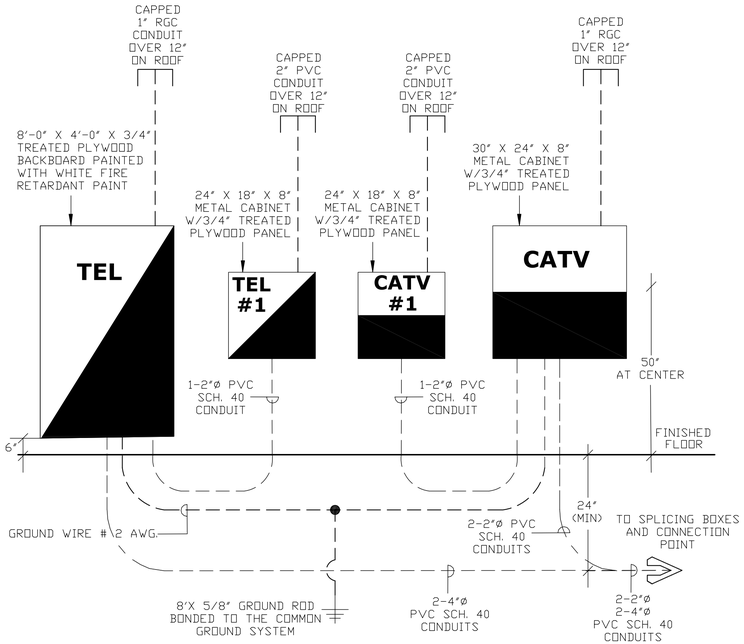
TELEPHONE BACKBORAD INSTALLATION DETAIL

NOT TO SCALE



CATV CABINET WALL MOUNTED SPECIFICATION DETAIL

NOT TO SCALE



TELECOMMUNICATION ONE LINE DIAGRAM

NOT TO SCALE

CERTIFIED BY:

Project review

INSTITUTO PRE-VOCACIONAL E INDUSTRIAL DE P.R. INC.
TELECOMMUNICATION NOTES & DETAILS PLAN
CALE JOSE A. NORA "PIRULO"
BO. BARRANCA
ARECIBO, PR 00612

CERTIFICATION RULE 2.1.9.2 k

CERTIFICATION:

I, JOSE HUGO ORTIZ PAGAN, LICENSED ENGINEER 18138, CERTIFY THAT I AM THE PROFESSIONAL WHO DESIGNED THESE PLANS AND THE COMPLEMENTARY SPECIFICATIONS, I ALSO CERTIFY THAT I UNDERSTAND THAT SAID PLANS AND SPECIFICATIONS COMPLY WITH THE APPLICABLE PROVISIONS OF THE JOINT REGULATIONS AND THE APPLICABLE PROVISIONS OF THE REGULATIONS AND BUILDING CODES IN FORCE OF THE AGENCIES, REGULATORY BOARDS OR PUBLIC CORPORATIONS WITH JURISDICTION. I FURTHER CERTIFY THAT THE PROJECT DESIGNED IN THESE PLANS AND SPECIFICATIONS HAS FULLY COMPLIED WITH THE PROVISIONS OF ACT NO. 14 OF JANUARY 8, 2004, AS AMENDED, KNOWN AS THE "LAW FOR INVESTMENT BY THE PUERTO RICAN INDUSTRY" AND WITH ACT NO. 96 OF JULY 6, 1978, AS AMENDED. I ACKNOWLEDGE THAT ANY FALSE STATEMENT OR FALSIFICATION OF THE FACTS THAT HAS BEEN PRODUCED BY IGNORANCE OR NEGLIGENCE EITHER BY ME, MY AGENTS OR EMPLOYEES, OR BY OTHERS WITH MY KNOWLEDGE, AND I AM RESPONSIBLE FOR ANY JUDICIAL AND DISCIPLINARY ACTION BY THE OGPe.

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NETPR - 2022 - XX - XXXX
OGPe - 2022-462970-SRI-061710

NET NEGOCIADO de TELECOMUNICACIONES DE PUERTO RICO

Negociado de Telecomunicaciones de Puerto Rico

ENDOSO DE PLANOS DE FACILIDADES Y/O SERVIDUMBRE DE TELECOMUNICACIONES Y TELEVISIÓN POR CABLE

Revisado por:

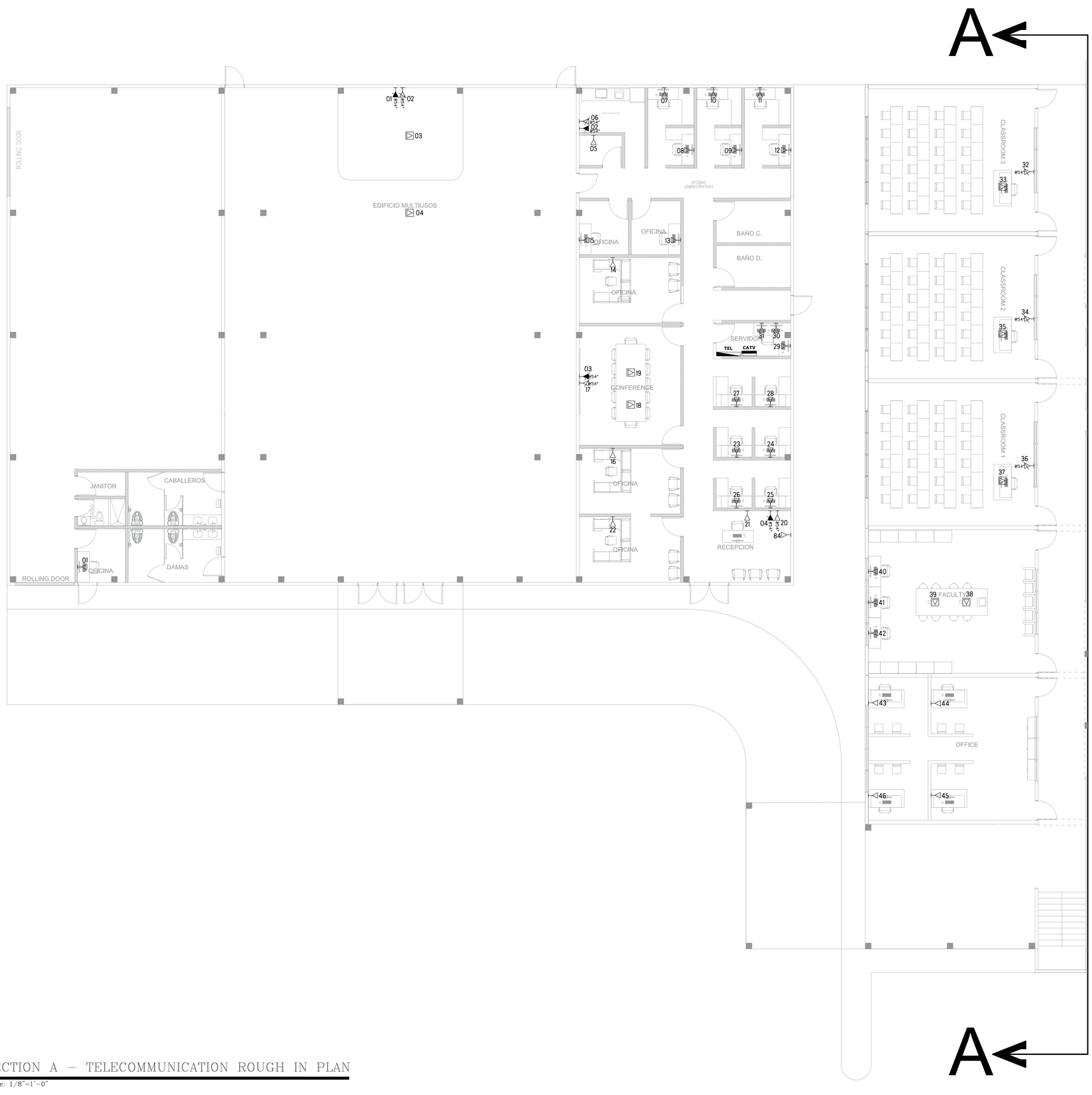
recomendado por:

Aprobado por:

ESTE ENDOSO NO EXIME AL CONSTRUCTOR Y AL DESARROLADOR DE CUMPLIR CON LOS REQUERIMIENTOS DE CONSTRUCCIÓN CONFORME A TODAS LAS DISPOSICIONES DE LOS REGLAMENTOS APLICABLES.

Project number	XXXX
Date	24/OCT/2022
Drawn by	ENG. JOSE HUGO ORTIZ PAGAN
Checked by	ENG. RUBEN ORTIZ GALARZA
	TS-3.0
Scale	NOT TO SCALE
	17 OF 20
	FILE: FILELOCATION

SHEET REV: JUNE 1, 2012



LEGEND:

- TEL — NEW TLEPHONE CABINET AS SPECIFIED ON ONE LINE DIAGRAM
- NEW CATV CABINET AS SPECIFIED ON ONE LINE DIAGRAM
- NEW TELEPHONE OUTLET IN 4"X 4" X 2-1/8" METAL BOX, 1" & 3/4" KO's CONDUIT RUN IN 1" AND BETWEEN BOXES IN 3/4"
- NEW CATV OUTLET IN 4" X 4" X 2-1/8" METAL BOX, 1" KO's
- NEW TELEPHONE OUTLET IN FLOOR PVC BOX, 1" & 3/4" KO's EQUAL TO BRYANT # RF400 AND BRONZE PLATE EQUAL TO HUBBELL # # GF5362SGW

KEY PLAN

SECTION - A | SECTION - B



SECTION A – TELECOMMUNICATION ROUGH IN PLAN

Scale: 1/8"=1'-0"

Project review

INSTITUTO PRE-VOCACIONAL E INDUSTRIAL DE P.R. INC.
SECTION A – TELECOMMUNICATION ROUGH IN PLAN

CALE JOSE A. NORA "PIRULO"
BO. BARRANCA
ARECIBO, PR 00612

CERTIFICATION RULE 2.1.9.2 k

CERTIFICATION:

I, JOSE HUGO ORTIZ PAGÁN, LICENSED ENGINEER 18138, CERTIFY THAT I AM THE PROFESSIONAL WHO DESIGNED THESE PLANS AND THE COMPLEMENTARY SPECIFICATIONS. I ALSO CERTIFY THAT I UNDERSTAND THAT SAID PLANS AND SPECIFICATIONS COMPLY WITH THE APPLICABLE PROVISIONS OF THE JOINT REGULATIONS AND THE APPLICABLE PROVISIONS OF THE REGULATIONS AND BUILDING CODES IN FORCE OF THE AGENCIES, REGULATORY BOARDS OR PUBLIC CORPORATIONS HAVING JURISDICTION OVER THE WORK AND THAT THE PREPARATION OF THESE PLANS AND SPECIFICATIONS HAS FULLY COMPLIED WITH THE PROVISIONS OF ACT NO. 14 OF JANUARY 9, 2004, AS AMENDED, KNOWN AS THE "LAW FOR INVESTMENT BY THE PUERTO RICAN INDUSTRY" AND WITH ACT NO. 96 OF JULY 6, 1978, AS AMENDED. I ACKNOWLEDGE THAT ANY FALSE STATEMENT OR FALSIFICATION OF THE FACTS THAT HAS BEEN PRODUCED BY IGNORANCE OR NEGLIGENCE EITHER BY ME, MY AGENTS OR EMPLOYEES, OR BY OTHERS WITH MY KNOWLEDGE, AND I AM RESPONSIBLE FOR ANY JUDICIAL AND DISCIPLINARY ACTION BY THE OGPe.

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Project number XXXX
Date 24/OCT/2022
Drawn by ENG. JOSE HUGO ORTIZ PAGAN
Checked by ENG. RUBEN ORTIZ GALARZA

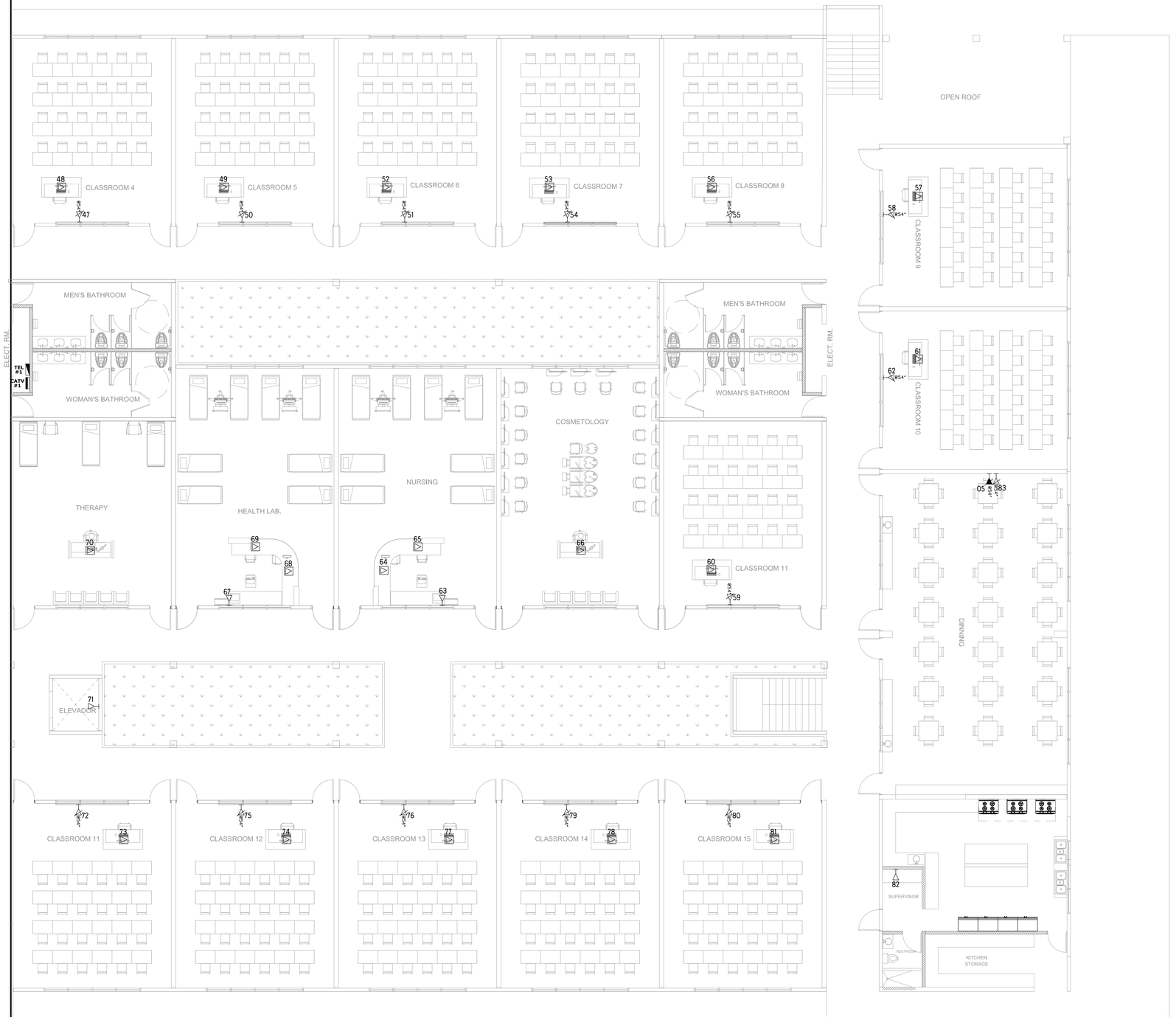
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Scale 1/8" - 1'-0"

18 OF 20

FILE:FILELOCATION

SHEET REV. JUNE 1, 2012



SECTION B – TELECOMMUNICATION ROUGH IN PLAN

Scale: 1/8"=1'-0"

LEGEND:

- TEL — NEW TLEPHONE CABINET AS SPECIFIED ON ONE LINE DIAGRAM
- NEW CATV CABINET AS SPECIFIED ON ONE LINE DIAGRAM
- NEW TELEPHONE OUTLET IN 4"X 4" X 2-1/8" METAL BOX, 1" & 3/4" KO's CONDUIT RUN IN 1" AND BETWEEN BOXES IN 3/4"
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Project review

INSTITUTO PRE-VOCACIONAL E INDUSTRIAL DE P.R. INC.
SECTION B – TELECOMMUNICATION ROUGH IN PLAN
CALE JOSE A. NORA "PIRULO"
BO. BARRANCA
ARECIBO, PR 00612

CERTIFICATION RULE 2.1.9.2 k

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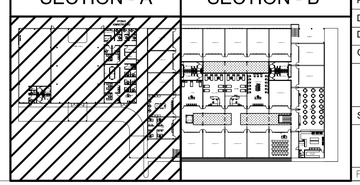
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KEY PLAN

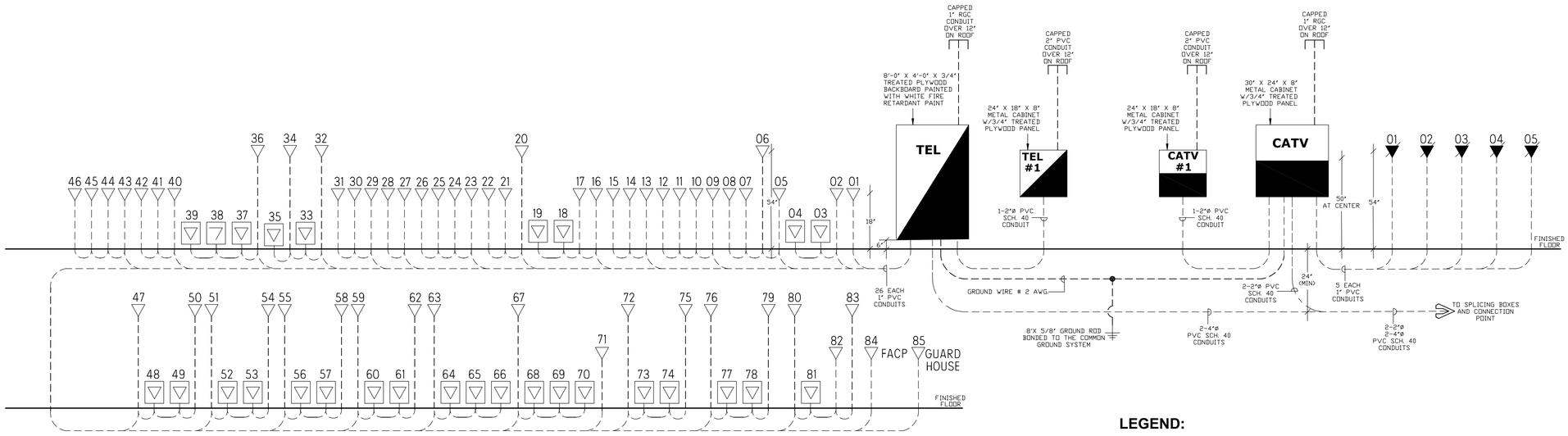
SECTION - A | SECTION - B



Project number	XXXX
Date	24/OCT/2022
Drawn by	ENG. JOSE HUGO ORTIZ PAGAN
Checked by	ENG. RUBEN ORTIZ GALARZA
	TI-2.0
Scale	1/8" - 1'-0"

FILE:FILELOCATION

SHEET REV: JUNE 1, 2012



TELECOMMUNICATION ROUGH IN ONE LINE DIAGRAM

NOT TO SCALE

LEGEND:

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Project review

INSTITUTO PRE-VOCACIONAL E INDUSTRIAL DE P.R. INC.
TELECOMMUNICATION SYSTEM ONE LINE DIAGRAM

CALE JOSE A. NORA "PIRULO"
BO. BARRANCA
ARECIBO, PR 00612

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Project number	XXXX
Date	24/OCT/2022
Drawn by	ENG. JOSE HUGO ORTIZ PAGAN
Checked by	ENG. RUBEN ORTIZ GALARZA

TI-3.0

Scale N.T.S

20 OF 20

FILE: FILELOCATION

SHEET REV. JUNE 1, 2012