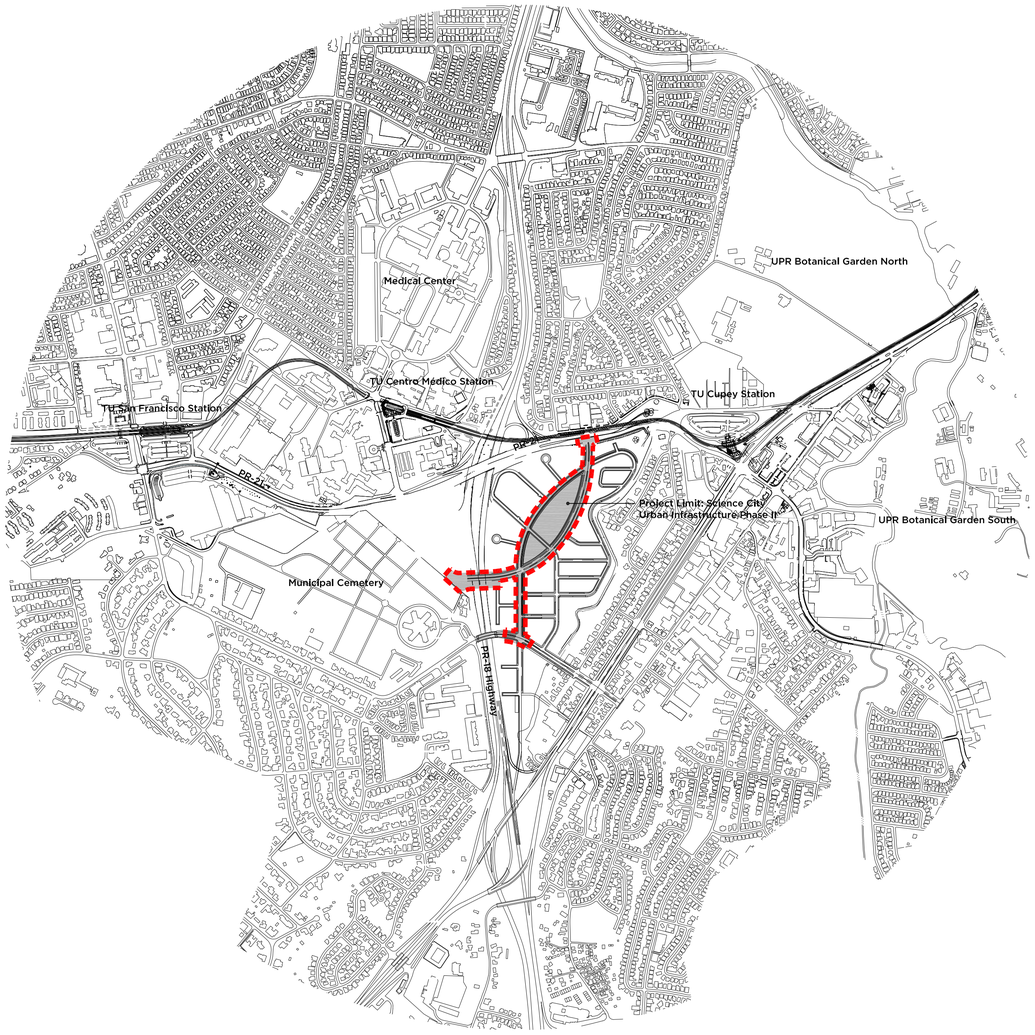
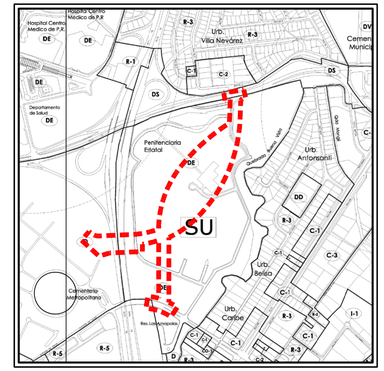
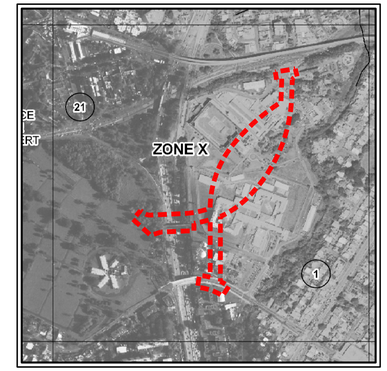


Location Plan

SCALE: 1" 10,000



Zoning Map



Flood Map

Map Number 72000C0555L Revised: November 19, 2009

Aerial Site View

FINAL CONSTRUCTION DRAWINGS (100%) FOR THE

SCIENCE CITY URBAN INFRASTRUCTURE-PHASE II

SEGMENT EAST OF PR-18
SAN JUAN, PUERTO RICO
MAY 13, 2013

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FINALCONSTRUCTION DRAWINGS FOR THE

SCIENCE CITY URBAN INFRASTRUCTURE-PHASE II

DRAWING INDEX

T-1 TITLE SHEET
T-2 INDEX SHEET

SECTION "GR" GENERAL
GR/2 INDEX SHEET
GR/3 NOTES & ABBREVIATIONS
GR/4-5 TYPICAL SECTIONS
GR/5.1-5.2 MISCELLANEOUS DETAILS
GR/6 CENTERLINE GEOMETRY
GR/7 VERTEX DATA TABLES
GR/8 CONTROL POINTS
GR/9 PLAN SHEET KEY MAP
GR/10 TERMINAL DETAILS & PAVEMENT ELEVATIONS KEY MAP
GR/11 HYDRAULIC STRUCTURE TABLE
EX/1-4 EXISTING CONDITION PLAN

SECTION "MOT" GENERAL
MOT/1 MAINTENANCE OF TRAFFIC (PHASE - I)
MOT/2 MAINTENANCE OF TRAFFIC (PHASE - II)
MOT/3 MAINTENANCE OF TRAFFIC (PHASE - IIA)
MOT/4-5 MAINTENANCE OF TRAFFIC (PHASE - IIB)
MOT/6 MAINTENANCE OF TRAFFIC (PHASE - IIB/BRIDGE BR-3)
MOT/7 CONSTRUCTION SIGNS

SECTION "C" CIVIL SITE PLAN & PROFILES
C/1-4 GEOMETRIC LAYOUT PLAN SHEETS
C/5 PROFILE LINE BLVD
C/6 PROFILE LINE BLVD & PS
C/7 PROFILE LINE LS

SECTION "DR" DRAINAGE PLAN
DR/1-4 DRAINAGE PLAN
DR/5 PROPOSED DRAINAGE TABLES
DR/6 EXISTING DRAINAGE TABLES
DR/7-9 DRAINAGE PROFILES
DR/10-12 DRAINAGE SECTIONS
DR/13-19 DRAINAGE DETAILS

SECTION "MCD" EROSION CONTROL PLANS
MCD/1-4 EROSION CONTROL PLAN
MCD/5 EROSION CONTROL DETAILS

SECTION "TD" TERMINAL DETAILS
TD/1-5 TERMINAL DETAILS & PAVEMENT ELEVATION KEY PLAN

SECTION "UTW" P.R.A.S.A. WATER UTILITIES PLANS
UTW/1-4 P.R.A.S.A. WATER UTILITIES PLAN
UTW/5-6 P.R.A.S.A. WATER STANDARD DETAILS

SECTION "UTS" P.R.A.S.A. SANITARY UTILITIES PLANS
UTS/1-4 P.R.A.S.A. SANITARY UTILITIES PLAN
UTS/5-6 P.R.A.S.A. SANITARY UTILITIES PROFILE
UTS/7-8 P.R.A.S.A. STANDARD DETAILS

SECTION "UTE" P.R.E.P.A. UTILITIES PLANS
UTE/1A LEGEND, NOTES & POLE SCHEDULE
UTE/1-4 P.R.E.P.A. UTILITIES PLAN
UTE/5 ONE LINE DIAGRAM
UTE/6 TRENCH SECTIONS DETAILS

SECTION "UTT" COMMUNICATION UTILITIES PLANS
UTT/1-4 COMMUNICATION PLAN
UTT/5 COMMUNICATION DETAILS

SECTION "UTC" CABLE TV UTILITIES PLANS
UTC/1-4 CABLE UTILITIES PLAN

SECTION "LT" LIGHTING PLANS
LT/1A LEGEND AND DESIGN PARAMETERS
LT/1B ONE LINE DIAGRAMS
LT/1-4 LIGHTING PLANS

SECTION "TS" TRAFFIC SIGNING, PAVEMENT MARKING PLANS
TS/1-4 TRAFFIC SIGNING & PAVEMENT MARKING PLAN
TS/5-6 SIGN DATA SHEETS

SECTION "TSS" TRAFFIC SIGNALS PLANS
TSS/1-4 TRAFFIC SIGNAL SYSTEM PLAN
TSS/5-6 TRAFFIC SIGNAL SYSTEM DETAILS

SECTION "BR-3" BRIDGE BR-3
BR3/1 GENERAL PLAN & ELEVATION, DESIGN CRITERIA
BR3/2 FRAMING PLAN, SCREED ELEVATIONS & GENERAL NOTES
BR3/3 DECK SLAB STRUCTURAL DETAILS
BR3/4-6 SUPERSTRUCTURE DETAILS
BR3/7 WEST ABUTMENT PLAN
BR3/8 WEST ABUTMENT STRUCTURAL DETAILS
BR3/9 NW & SW WINGWALL ALL STRUCTURAL DETAILS
BR3/10 EAST ABUTMENT PLAN
BR3/11 EAST ABUTMENT STRUCTURAL DETAILS
BR3/12 NE & SE WINGWALL ALL STRUCTURAL DETAILS
BR3/13 APPROACH SLAB & EXP. JOINT DETAILS
BR3/14 SAFETY FENCE & RAILING DETAILS
BR3/15 TRAFFIC RAILING & EXP. JOINT DETAILS
BR3/16-18 BAR SCHEDULE & QUANTITY SUMMARY

SECTION "RW10" RETAINING WALL 10
RW10/1 RW10 PLAN, TYPICAL SECTION & CRITERIA
RW10/2 RW10 ELEVATION & STRUCTURAL DETAILS
RW10/3 CROSS SECTIONS LINE LS

SECTION "CS" CROSS SECTIONS PLANS
CS/1 CROSS SECTIONS KEY MAP PLAN
CS/2-15 CROSS SECTIONS LINE BLVD
CS/16-27 CROSS SECTIONS LINE LS

SECTION "ROW" RIGHT-OF-WAY PLANS
ROW/1-4 RIGHT OF WAY PLAN
ROW/5-7 RIGHT OF WAY TABLES

LANDSCAPE
L-0 LADSCAPE SITE PLAN (KEY PLAN)
L/1-4 LANDSCAPE - PARTIAL PLAN
L-5 LADSCAPE SITE PLAN (KEY PLAN)
L-6 LANDSCAPE PARTIAL PLANS - NORTH ENTRANCE
L-7 LANDSCAPE PARTIAL PLAN - NORTH ENTRANCE
L/8-19 LANDSCAPE PARTIAL PLAN - LABORATORY ROAD
L-20 LANDSCAPE PARTIAL PLANS - SOUTH ENTRANCE
L-21 STREET LAYOUT - PLANTING PLANS
L-22 PLANTING DETAILS
L-23 PLANTING DETAILS
L-24 PLANTING DETAILS

ARCHITECTURE
ED-0 EXISTING CONDITIONS SITE PLAN
A-00 GENERAL NOTES, SYMBOLS LEGEND AND ABBREVIATIONS
A-0 GENERAL SITE PLAN (KEY PLAN)
A-1 SITE IMPROVEMENTS-PARTIAL PLAN
A-2 SITE IMPROVEMENTS-PARTIAL PLAN
A-3 SITE IMPROVEMENTS-PARTIAL PLAN
A-4 SITE IMPROVEMENTS-PARTIAL PLAN
A/5-14 STREET INTERSECTIONS LAYOUT PLAN
A/15-16 STREET LAYOUT - SECTIONS
A/17-21 BOULEVARD STREET LAYOUT & DETAILS
A-22 TYPICAL LABORATORY ROAD LAYOUT PLANS
A-23 PLANTER LAYOUT PLAN AND DETAILS
A-24 PLANTER DETAILS
A/25-27 SIDEWALK DETAILS
A/28-30 PRECAST PLANK DETAILS
A/30-33 BRIDGE BR3 PLAN, ELEVATION, SECTION & DETAILS
A-34 URBAN FURNITURE, LIGHT FIXTURE, RAMPS & DETAILS
A-35 CHAIN LINK FENCE & GATE DETAILS
A-36 RETAINING WALL ELEVATIONS
A-37 PLANTING SCUPPERS DETAILS

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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

INDEX SHEET

DRAWN BY: LR/FDJ
REVISED BY: JJT
DATE: MAY 13, 2013

T-2

- OF -

INDEX OF SHEETS

SHEET NO.	DESCRIPTION	SECTIONAL REFERENCE
SECTION "GR" GENERAL		
1	TITLE SHEET	T/1
2	INDEX SHEET	GR/2
3	NOTES & ABBREVIATIONS	GR/3
4–5	TYPICAL SECTIONS	GR/4–5
6–7	MISCELLANEOUS DETAILS	GR/5.1–5.2
8	CENTERLINE GEOMETRY PLAN	GR/6
9	VERTEX DATA TABLES	GR/7
10	CONTROL POINTS	GR/8
11	PLAN SHEET KEY MAP	GR/9
12	TERMINAL DETAILS & PAVEMENT ELEVATIONS KEY MAP	GR/10
13	HYDRAULIC STRUCTURE TABLE	GR/11
14–17	EXISTING CONDITION PLAN	EX/1–4
SECTION "MOT" MAINTENANCE OF TRAFFIC		
18	MAINTENANCE OF TRAFFIC (PHASE–I)	MOT/1
19	MAINTENANCE OF TRAFFIC (PHASE–II)	MOT/2
20	MAINTENANCE OF TRAFFIC (PHASE–IIA)	MOT/3
21	MAINTENANCE OF TRAFFIC (PHASE–IIB)	MOT/4
22	MAINTENANCE OF TRAFFIC (PHASE–IIB)	MOT/5
23	MAINTENANCE OF TRAFFIC (PHASE–IIB BRIDGE BR–3)	MOT/6
24	CONSTRUCTION SIGNS	MOT/7
SECTION "C" CIVIL SITE PLAN & PROFILES		
25–28	GEOMETRIC LAYOUT PLAN SHEETS	C/1–4
29	PROFILE LINE BLVD	C/5
30	PROFILE LINE BLVD & PS	C/6
31	PROFILE LINES LS	C/7
SECTION "DR" DRAINAGE PLAN		
32–35	DRAINAGE PLAN	DR/1–4
36	PROPOSED DRAINAGE TABLES	DR/5
37	EXISTING DRAINAGE TABLES	DR/6
38–40	DRAINAGE PROFILES	DR/7–9
41–43	DRAINAGE SECTIONS	DR/10–12
44–50	DRAINAGE DETAILS	DR/13–19
SECTION "MCD" EROSION CONTROL PLAN		
51–54	EROSION CONTROL PLAN	MCD/1–4
55	EROSION CONTROL DETAILS	MCD/5
SECTION "TD" TERMINAL DETAILS PLAN		
56–60	TERMINAL DETAILS & PAVEMENT ELEVATION PLAN	TD/1–5
SECTION "UTW" P.R.A.S.A. WATER UTILITIES PLAN		
61–64	P.R.A.S.A. WATER UTILITIES PLAN	UTW/1–4
65–66	P.R.A.S.A. STANDARD DETAILS	UTW/5–6
SECTION "UTS" P.R.A.S.A. SANITARY UTILITIES PLAN		
67–70	P.R.A.S.A. SANITARY UTILITIES PLAN	UTS/1–4
71–72	P.R.A.S.A. SANITARY UTILITIES PROFILE	UTS/5–6
73–74	P.R.A.S.A. STANDARD DETAILS	UTS/7–8
SECTION "UTE" P.R.E.P.A. UTILITIES PLAN		
75	LEGEND, NOTES & POLES SCHEDULE	UTE/1A
76–79	P.R.E.P.A. UTILITIES PLAN	UTE/1–4
80	ONE LINE DIAGRAM	UTE/5
81	TRENCH SECTION DETAILS	UTE/6
SECTION "UTT" COMMUNICATION UTILITIES PLAN		
82–85	COMMUNICATION UTILITIES PLAN	UTT/1–4
86	COMMUNICATION DETAILS	UTT/5

SHEET NO.	DESCRIPTION	SECTIONAL REFERENCE
SECTION "UTC" CABLE TV UTILITIES PLAN		
87–90	CABLE TV UTILITIES PLAN	UTC/1–4
SECTION "LT" LIGHTING PLAN		
91	LEGEND & DESIGN PARAMETERS	LT/1A
92	ONE LINE DIAGRAMS	LT/1B
93–96	LIGHTING PLAN	LT/1–4
SECTION "TS" TRAFFIC SIGNING & PAVEMENT MARKING PLAN		
97–100	TRAFFIC SIGNING & PAVEMENT MARKING PLAN	TS/1–4
101–102	SIGN DATA SHEETS	TS/5–6
SECTION "TSS" TRAFFIC SIGNAL SYSTEM PLAN		
103–106	TRAFFIC SIGNAL SYSTEM PLAN	TSS/1–4
107	TRAFFIC SIGNAL SYSTEM TRENCH DETAILS	TSS/5
108	TRAFFIC SIGNAL SYSTEM DETAILS	TSS/6
SECTION "BR–3" BRIDGE BR–3		
109	GENERAL PLAN & ELEVATION, DESIGN CRITERIA	BR3/1
110	FRAMING PLAN, SCREED ELEVATIONS & GEN. NOTES	BR3/2
111	DECK SLAB STRUCTURAL DETAILS	BR3/3
112–113	SUPERSTRUCTURE DETAILS	BR3/4,6
114	WEST ABUTMENT PLAN	BR3/7
115	WEST ABUTMENT STRUCTURAL DETAILS	BR3/8
116	NW & SW WINGWALL ALL STRUCTURAL DETAILS	BR3/9
117	EAST ABUTMENT PLAN	BR3/10
118	EAST ABUTMENT STRUCTURAL DETAILS	BR3/11
119	NE & SE WINGWALL STRUCTURAL DETAILS	BR3/12
120	APPROACH SLAB & EXP. JOINT DETAILS	BR3/13
121	SAFETY FENCE DETAILS	BR3/14
122	TRAFFIC RAILING & EXP. JOINT DETAILS	BR3/15
123–125	BAR SCHEDULE & QUANTITY SUMMARY	BR3/16–18
SECTION "RW" RETAINING WALL PLANS		
126	RW10 PLAN, TYPICAL SECTION & CRITERIA	RW10/1
127	RW10 ELEVATION & STRUCT. DETAILS	RW10/2
128	RW10 BAR SCHEDULE & QUANTITY ESTIMATE	RW10/3
SECTION "CS" CROSS SECTIONS PLANS		
129	CROSS SECTIONS KEY MAP PLAN	CS/1
130–143	CROSS SECTIONS LINE BLVD	CS/2–15
144–155	CROSS SECTIONS LINE LS	CS/16–27
SECTION "ROW" RIGHT OF WAY PLAN		
156–159	RIGHT OF WAY PLAN	ROW/1–4
160–162	RIGHT OF WAY SUMMARY TABLE	ROW/5–7

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INDEX SHEET

DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

GR-2

ABBREVIATIONS

ROAD ALIGNMENT HORIZONTAL

△c	CENTRAL ANGLE OF CIRCULAR CURVE
L	TOTAL LENGTH OF CURVE
PC	POINT OF CIRCULAR CURVE
PI	POINT OF INTERSECTION OF TWO TANGENTS
PT	POINT OF TANGENCY

ROAD ALIGNMENT VERTICAL

PVC	POINT OF VERTICAL CURVE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
VC	VERTICAL CURVE

UTILITY COMPANY / AGENCY ABBREVIATIONS

AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
ACI	AMERICAN CONCRETE INSTITUTE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
CATV	CABLE TV OF GREATER SAN JUAN
DTPW	DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
FGCC	FEDERAL GEODETIC CONTROL COMMITTEE
FHWA	FEDERAL HIGHWAY ADMINISTRATION
NGS	NATIONAL GEODETIC SURVEY
PRASA	PUERTO RICO AQUEDUCT AND SEWER AUTHORITY
PREPA	PUERTO RICO ELECTRIC POWER AUTHORITY
PRHTA	PUERTO RICO HIGHWAY AND TRANSPORTATION AUTHORITY
PRTC	PUERTO RICO TELEPHONE COMPANY
USGS	UNITED STATES GEOLOGICAL SURVEY

MISCELLANEOUS

&	AND
@	AT
∠	ANGLE
⊏	CHANNEL
℄	CENTER LINE
∅	DIAMETER
ℙ	PLATE OR PROPERTY LINE
⊥	PERPENDICULAR
A/E	ARCHITECT/ENGINEER
ABUT	ABUTMENT
A\C	AIR CONDITIONING
A.D.A.	AMERICAN DISABILITY ACT
ADJ	ADJUSTABLE
A.F.F	ABOVE FINISHED FLOOR
AGG	AGGREGATE
AL	ALUMINUM
ALIGN	ALIGNMENT
ALT	ALTERNATE
ANCH	ANCHOR
ANOD	ANODIZED
APP	APPROVED (REF)
APPROX	APPROXIMATELY
ARCH	ARCHITECT, ARCHITECTURAL
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
ASPH	ASPHALT
AUTO	AUTOMATIC
AUX	AUXILIARY
AVE	AVENUE

BEG	BEGIN OR BEGINNING
BF	BOTTOM FACE OR BACK FACE
BFP	BACKFLOW PREVENTER
BIT	BITUMINOUS
BITCONC	BITUMINOUS CONCRETE
BK	BACK
BL	BASELINE OR BUILDING LINE
BLDG	BUILDING
BLVD	BOULEVARD
BM	BENCH MARK
B.O.P	BEGINS OF PROJECT
BOT	BOTTOM
B.P	BACK PLASTER/PLASTERED
BRG	BEARING
B.S	BOTH SIDES
BVL	BEVELED
BW	BOTTOM OF WALL OR BACK OF WALL
BWF	BARBED WIRE FENCE
B TO B	BACK TO BACK
CB	CATCH BASIN OR CONCRETE BASE
CEM	CEMENT
C.G	CORNER GUARD
CHAM	CHAMFER
CI	CAST IRON OR CURB INLET
CIP	CAST-IN-PLACE
CJ	CONSTRUCTION JOINT
℄	CENTERLINE
CLF	CHAIN LINK FENCE
CLR	CLEARANCE OR CLEAR
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT, COUNTRY, OR COMPANY
COL	COLUMN
COMM	COMMUNICATION
CONC	CONCRETE
COND	CONDUIT
CONN	CONNECT, CONNECTION, OR CONNECTOR
CONST	CONSTRUCT OR CONSTRUCTION
CONT	CONTINUED, CONTINUOUS, OR CONTINUATION
COORD	COORDINATE
CORR	CORRUGATE OR CORRUGATED
C.P.W.	CONCRETE PAVED WATERWAY
CP	CONCRETE PIPE OR CEMENT PIPE
CS	CONCRETE SLAB
CSW	CONCRETE SIDEWALK
CSW	CONCRETE SIDEWALK
C TO C	CENTER TO CENTER
CULV	CULVERT
CMU	CONCRETE MANSORY UNITS
CUM	CUBIC METER
CTJ	CONTROL JOINT
D, d	DEPTH
DEG	DEGREES
DEPT	DEPARTMENT
DESC	DESCRIPTION
DET	DETAIL
DI	DUCTILE IRON, DROP INLET
DIA OR ø	DIAMETER
DIAG	DIAGRAM
DIM	DIMENSION
DIST	DISTANCE
DN	DOWN
DWG	DRAWING
EXP	EXPOSED, EXPANSION
EMERG	EMERGENCY
EA	EACH
EB	EASTBOUND
EF	EACH FACE
EG	EXISTING GROUND
EL	ELEVATION
ELEC	ELECTRIC OR ELECTRICAL
ELECT	ELECTRIC (REF)
ELEV	ELEVATION
EMH	ELECTRICAL MANHOLE
E.O.P	END OF PROJECT
EP	EDGE OF PAVEMENT
EQ	EQUAL
EQUIP	EQUIPMENT
ETC	ETCETERA
EW	EACH WAY
EX OR EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR, EXTERNAL
EST	ESTIMATE
EP	ELECTRIC POLE

F.A	FIRE ALARM
F.D	FLOOR DRAIN
FFE	FINISHED FLOOR ELEVATION
FG	FINISH GRADE
FH	FIRE HYDRANT
FIN	FINISH
FLR	FLOOR
F TO F	FACE TO FACE
FWD	FORWARD
G	GAS OR GAS LINE
GA	GAUGE (GAGE)
GALV	GALVANIZE OR GALVANIZED
GAL(S)	GALLON(S)
GEN	GENERAL
GRD	GROUND
GP	GENERAL
GRN	GRANITE
G.S.M	GALVANIZED SHEET METAL
GV	GATE VALVE, GAS VALVE
GW	GUY WIRE
GYP	GYPSUM
H	HEIGHT
HB	HOSE BIBB
H.D	HEAVY DUTY
HORIZ	HORIZONTAL
HOV	HIGH OCCUPANCY VEHICLE
HP	HIGH POINT
HW	HIGH WATER
HWY	HIGHWAY
HYD	HYDRANT
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
INCL	INCLUDING
INV	INVERT
INT	INTERIOR
JB	JUNCTION BOX
J.F	JOINT FILLER
JT	JOINT
L	LINE, LINING, OR LENGTH OF CURVE
LAT	LATERAL
LIN	LINEAR
LM	LINEAR METER
LOC	LOCATION
LP	LOW POINT OR LIGHT POLE
LT	LIGHTING
LW	LIGHTWEIGHT
m 2	SQUARE METERS
MAINT	MAINTENANCE
MAX	MAXIMUM
MECH	MECHANICAL
MED	MEDIUM
MH	MANHOLE
MIN	MINIMUM, MINUTE
MISC	MISCELLANEOUS
mm	MILLIMITERS
MON	MONUMENT
MSL	MEAN SEA LEVEL
MT	METER
MTD	MOUNT, MOUNTED
MTG	MOUNTING
MTL, MET	METAL
MSE	MECHANICALLY STABILIZED EARTH

N	NORTH
N/A	NOT APPLICABLE
NB	NORTHBOUND
NF	NEAR FACE
NIC	NOT IN CONTRACT
NO. OR #	NUMBER
NOM	NOMINAL
N/R	NON-RATED
NS	NEAR SIDE
N.T.S	NOT TO SCALE
n.f.	NEW FACE OF WALL
O/	OVER
O.A	OVERALL
OBS	OBSCURE
OD	OUTSIDE DIAMETER
O.C	ON CENTER, CENTERS
OH	OVERHEAD
OP	OPAQUE
OPP	OPPOSITE
P	PIPE
PAR	PARALLEL
PART	PARTIAL
PB	PULL BOX
PC	PRECAST
PCCP	PORTLAND CEMENT CONCRETE PAVEMENT
PED	PEDESTRIAN
PERF	PERFORATE, PERFORATED
PG	PROPOSED GRADE
PGL	PROFILE GRADE LINE
PLUM	PLUMBING
PM	PARKING METER
P.R	PUERTO RICO
PRASA	PUERTO RICO AQUEDUCT & SEWER AUTHORITY
PRHTA	PUERTO RICO HIGHWAY & TRANSPORTATION AUTHORITY
PROD	PRODUCT
PROJ	PROJECTION OR PROJECT
PROP	PROPERTY OR PROPOSED
PT	POINT
P/STRIP	PLANTING STRIP
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
PWR	POWER
Q.T	QUARRY TILE
QTY	QUANTITY
QUAD	QUADRANT
RAD, R	RADIUS
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
RDWAY	ROADWAY
REF	REFERENCE
REFL	REFLECT, REFLECTED, REFLECTIVE, REFLECTOR
REINF	REINFORCE, REINFORCED, OR REINFORCEMENT
REQ'D	REQUIRED OR REQUIRE
RET	RETAINING
RET/W	RETAINING WALL
REV	REVISE, REVISED, OR REVISION
ROW OR R/W	RIGHT-OF-WAY
RT	RIGHT
SCHED	SCHEDULE
SD	STORM DRAIN
SDMH	STORM DRAIN MANHOLE
SECT	SECTION
SHT	SHEET
SMH	SEWER MANHOLE
SPEC	SPECIFICATION(S) (REF)
SQ	SQUARE
SQM	SQUARE METER
SS	SANITARY SEWER OR STOP SIGN
SSMH	SANITARY SEWER MANHOLE
ST	STREET
STA	STATION
STD	STANDARD
STL	STEEL
STRUCT	STRUCTURE
SWK	SIDEWALK
SYM	SYMMETRICAL
SHDR	SHOULDER

TAN	TANGENT
T.D	TRENCH DRAIN
TE	TOP ELEVATION
TEL. OR T	TELEPHONE
TEMP	TEMPERATURE OR TEMPORARY
THK	THICK, THICKNESS
TL	TRAFFIC LIGHT
TMH	TELEPHONE MANHOLE
T.O.S	TOE OF SLOPE
T.O.C	TOP OF CUT
T.O.W	TOP OF WALL
T.U.	TREN URBANO
TV	TELEVISION
TW	TOP OF WALL
TYP	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
UD	UNDERDRAIN
V	VALVE, RATE OF SPEED, OR DESIGN SPEED
VERT	VERTICAL
W	WEST, WATER OR WOOD
W/	WITH
WL	WATER LEVEL
WM	WATER MAIN OR WATER METER
WMH	WATER MANHOLE
W/O	WITHOUT
WP	WORKING POINT, WORK POINT OR WATERPROOFING
WV	WATER VALVE
X-DRAIN	CROSS DRAIN
X-ING	CROSSING
X-SECT	CROSS SECTION
ZR	ZINC ROOF
ZW	ZINC WALLS

GENERAL NOTES

1. ALL WORK AND MATERIALS ON THIS PROJECT SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION OF THE PUERTO RICO HIGHWAY AUTHORITY AND SPECIAL PROVISIONS AND TECHNICAL SPECIFICATIONS INCLUDED IN THE CONTRACT DOCUMENTS.

2. THE SURVEY PLAN WAS PREPARED BY PEDRO J. DAVILA COLON PLS. LIC. # 9323.

3. ALL DISTANCES AND ELEVATIONS ARE IN METERS UNLESS OTHERWISE NOTED.

4. ELEVATIONS ARE REFERRED TO LAMBERT COORDINATE SYSTEM NAD 83 (SEE CONTROL SHEET).

5. THE CONTRACTOR IS RESPONSIBLE TO OBTAIN THE FOLLOWING PERMITS PRIOR TO COMMENCE WITH THE CONSTRUCTION.
A. Erosion and Sedimentation Control (CES)
B. Atmospheric emission (PFE)
C. Non Hazardous Solid Waste (DS-3)
D. Disposal of Hazardous Waste
E. Discharge of Storm Water runoff During Construction (NPDES)
F. In case of Removal and Disposal of Materials Containing Asbestos and Lead Paint, the Contractor shall submit a Plan for Removal, Management and Disposal of such materials.

6. ALL EROSION AND SEDIMENTATION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO COMMENCE WITH ANY EARTHWORK OR EXCAVATION, AND MAINTAINED THROUGHOUT THE DURATION OF THE CONSTRUCTION. NO ADDITIONAL PAYMENT WILL BE MADE FOR THE MAINTENANCE OF THE EROSION AND SEDIMENTATION CONTROL DEVICES.

7. THE SIZE AND LOCATION OF EXISTING UTILITIES SHOWN ON THE CONTRACT PLANS, BOTH ABOVE AND BELOW GROUND, IS BASED ON AN EXAMINATION OF EXISTING PLANS AND THE RESULT OF FIELD INSPECTION. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING IN THE FIELD THE LOCATION AND SIZE OF ALL UTILITIES INCLUDING ELECTRIC, SANITARY, TELEPHONE, STORM SEWER AND WATER. NO EXTRA COMPENSATION WILL BE MADE TO THE CONTRACTOR FOR DISCREPANCIES BETWEEN THE SIZE AND LOCATION OF THE UTILITIES SHOWN ON THE PLANS AND THE UTILITIES AS DETERMINED BY HIS FIELD VERIFICATION. HOWEVER, ANY MAJOR CONFLICT THAT CANNOT BE RESOLVED IN THE FIELD SHALL BE NOTIFIED TO THE ENGINEER FOR ITS RESOLUTION.

8. THE CONTRACTOR SHALL VERIFY ALL HORIZONTAL AND VERTICAL CONTROLS.

9. ALL DEMOLITION TO BE PERFORMED BY THE CONTRACTOR UNDER REMOVAL OF STRUCTURES AND OBSTRUCTIONS, SPEC. 202, UNLESS OTHERWISE NOTED. PAYMENT WILL BE INCLUDED IN THE LUMP SUM AMOUNT FOR SITE CONSTRUCTION.

10. REMOVAL OF CONSTRUCTION DEBRIS AND DEMOLITION OF CONCRETE PIECES WILL BE UNDER REMOVAL OF SPEC. 202 AND PAID AS PART OF SITE CONSTRUCTION.

11. THE REMOVAL AND DISPOSAL OF CONTAMINATED SOIL ASSOCIATED WITH UNDERGROUND STORAGE TANKS AND/OR WITH ANY OTHER SOURCE SHALL BE PERFORMED IN ACCORDANCE WITH SPECIAL PROVISION 955, CONTAMINATED MATERIALS EXCAVATION AND DISPOSAL.

12. IN CASE OF DOUBT IN THE INTERPRETATION OF ANY ASPECTS OF THESE DRAWINGS AND/OR SPECIFICATIONS, THE ENGINEER SHALL BE CONSULTED.

13. INFORMATION PROVIDED ON THESE PLANS MAY OR MAY NOT SHOW ALL EXISTING STRUCTURES ABOVE OR BELOW GROUND. THE CONTRACTOR MAY ENCOUNTER UNDERGROUND STRUCTURES AND FOUNDATIONS OF PREVIOUS STRUCTURES. IN THE EVENTUALITY OF UNDERGROUND STRUCTURE, THE DEMOLITION, REMOVAL AND DISPOSAL WILL BE PAID BY THE CUBIC METER OF STRUCTURE UNDER SPEC. 202. A MAXIMUM QUANTITY OF 100 CUBIC METERS WILL BE ALLOWED FOR THIS ITEM.

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PHASE II

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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

NOTES & ABBREVIATIONS

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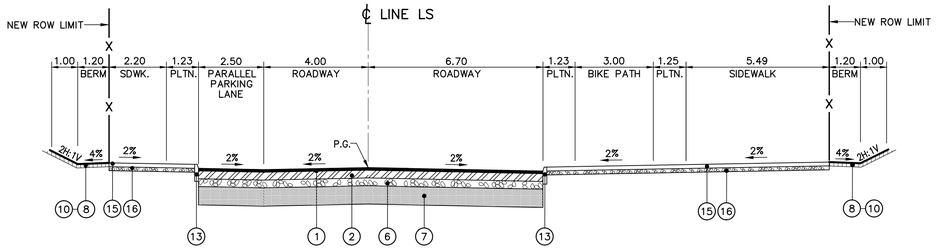
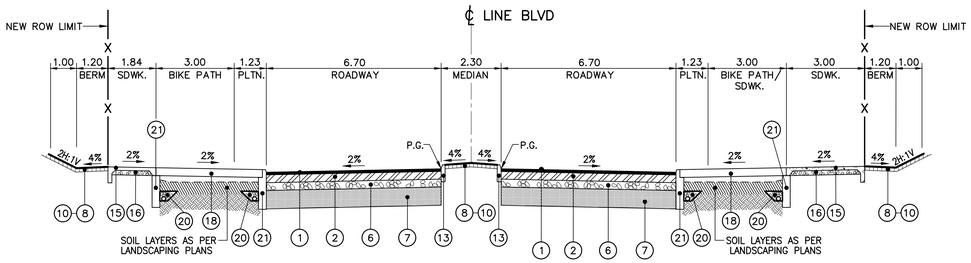
REVISED BY:
DATE: JUNE-19-2012

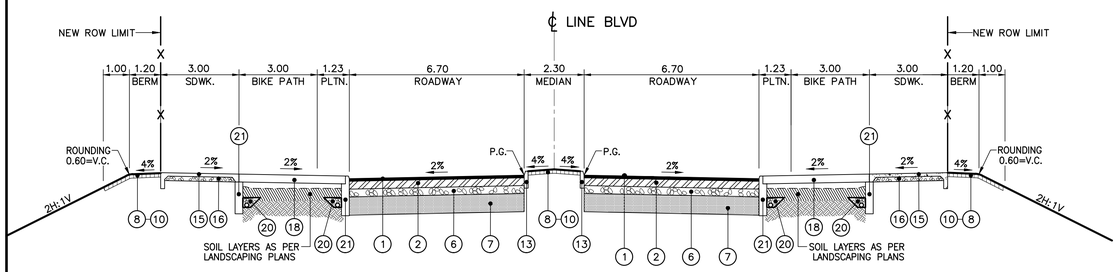
GR-3



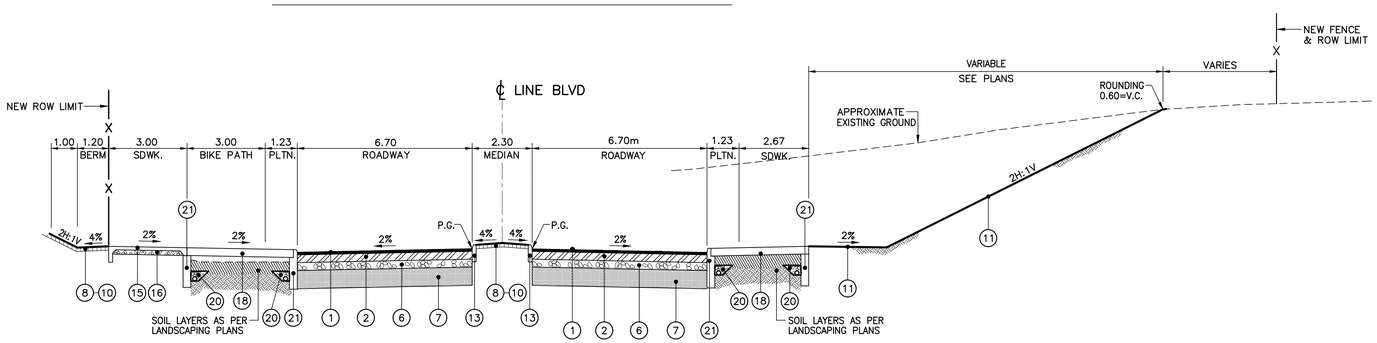
TYPICAL SECTION D–D (STA. 2+00(LS) SHOWN)



TYPICAL SECTION C–C (STA. 14+00(BLVD) SHOWN)



TYPICAL SECTION B–B (STA. 11+20(BLVD) SHOWN)



TYPICAL SECTION A–A (STA. 6+60(BLVD) SHOWN)

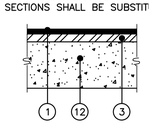
LEGEND:

1	0.05m	HOT PLANT MIX BITUMINOUS SURFACE COURSE, MIX S–1 (75)
2	0.20m	HOT PLANT MIX BITUMINOUS BASE COURSE, MIX B–1 (75)
3	0.075m	HOT PLANT MIX BITUMINOUS BASE COURSE, MIX B–1 (75)
4	VARIES	0.075 MIN. HOT PLANT MIX BITUMINOUS LEVELING COURSE, MIX L–1 (75)
5	VARIES	0.025 MIN. HOT PLANT MIX BITUMINOUS LEVELING COURSE, MIX L–2 (75)
6	0.15m	AGGREGATE BASE COURSE MATERIAL
7	0.60m	SUBBASE COURSE MATERIAL
8	0.10m	LOAMY TOPSOIL
9		CONCRETE PAVED WATERWAY (LOCATION AND TYPE AS SPECIFIED ON DR SERIES SHEETS)
10		SODDING
11		TURF ESTABLISHMENT
12	0.40m	LEAN CONCRETE
12A	0.20m	LEAN CONCRETE
13		CONCRETE CURB, TYPE AS SPECIFIED ON PLANS
14		CONCRETE BARRIER, TYPE AS SPECIFIED ON PLANS
15	0.10m	CONCRETE PAVING OR SIDEWALK
16	0.10m	AGGREGATE BASE COURSE MATERIAL
17		CORRUGATED STEEL BEAM GUARDRAIL (LOCATION AND TYPE AS SPECIFIED ON TS SERIES SHEETS)
18		PRECAST CONCRETE SLAB (SEE ARCH. DRAWINGS FOR DETAILS)
19		BORROW CLASS "A"
20		6 INCH PIPE UNDERDRAIN TYPE 4 (SEE SHEET GR–6.1 FOR DETAILS)
21		PRECAST CONCRETE SLAB SUPPORT FOUNDATION (SEE ARCH. DRAWINGS FOR DETAILS)
*		CROSS SLOPE TO MATCH EXISTING

- STRUCTURE OR PAVEMENT TO BE REMOVED
- SUBBASE COARSE
- HOT PLANT MIX BIT. SURFACE PAVEMENT, MIX S–1 (75)
- HOT PLANT MIX BIT. BASE PAVEMENT, MIX B–1 (75)
- AGGREGATE BASE COARSE
- SODDING & TOPSOIL

NOTES:

1– WHERE ROADWAY WIDENING IS LESS THAN 2.0m, OR AT LOCATIONS DETERMINED BY THE ENGINEER TO BE CRITICAL FOR THE MAINTENANCE OF TRAFFIC (M.O.T), THE ASPHALT, BASE, & SUBBASE SHOWN IN THE TYPICAL SECTIONS SHALL BE SUBSTITUTED WITH THE SECTION SHOWN BELOW.



2– THE L–2 MIX, WHERE SPECIFIED, SHALL BE PLACED ATOP THE COLD–MILLED SURFACES PRIOR TO OPENING TO TRAFFIC. AT LOCATIONS WHERE THE M.O.T. ALLOWS THE OTHER LAYERS OF ASPHALT TO BE PLACED PRIOR TO OPENING TO TRAFFIC, THE L–2 MIX MAY BE OMITTED AS DIRECTED BY THE ENGINEER.

3– WHEN THE MATERIAL ENCOUNTERED DURING THE ROADWAY EXCAVATION IS CLASSIFIED AS UNSUITABLE MATERIAL AS PER SECTION 203–2.03 OF THE STANDARD SPECIFICATIONS, THE CONTRACTOR SHALL EXCAVATE TO THE DEPTH DETERMINED BY THE ENGINEER AND BACKFILL WITH BORROW CLASS "B".

4– FOR TYPICAL SECTIONS OF TEMPORARY DETOURS & WIDENINGS, SEE SCOPE & SCHEDULE OF CONSTRUCTION.

Scale= 1:100
0M 2M 4M 6M

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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

TYPICAL SECTIONS

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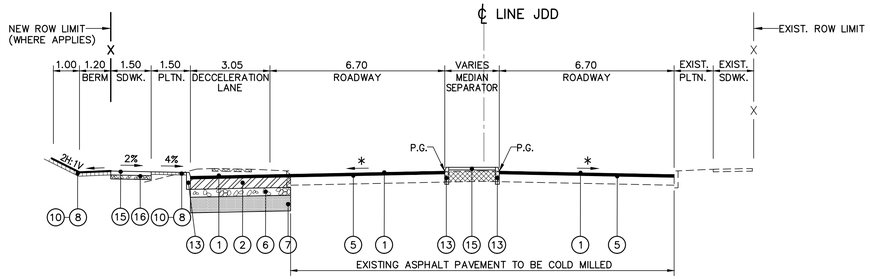
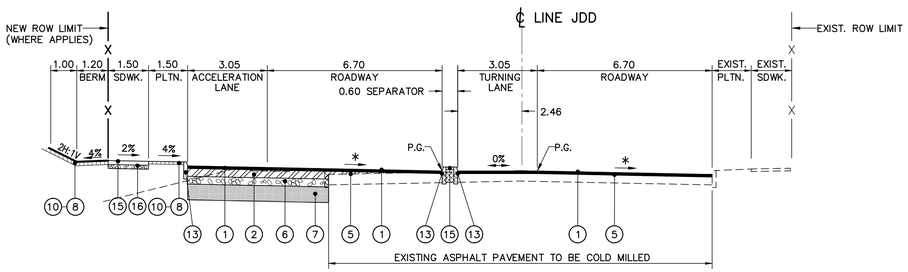
DATE: JUNE-19-2012

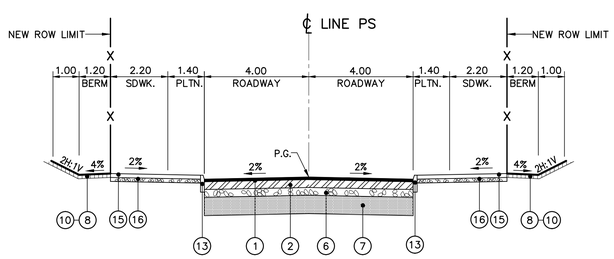
GR-4



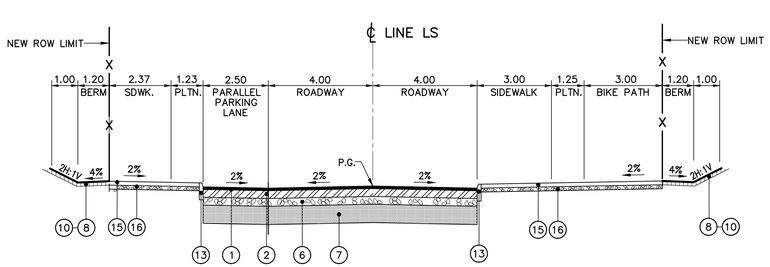
TYPICAL SECTION H–H (STA. 3+20(JDD) SHOWN)



TYPICAL SECTION G–G (STA. 2+60(JDD) SHOWN)



TYPICAL SECTION F–F (STA. 1+60(PS) SHOWN)



TYPICAL SECTION E–E (STA. 4+00(LS) SHOWN)

Scale= 1:100
0M 2M 4M 6M

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TYPICAL SECTIONS

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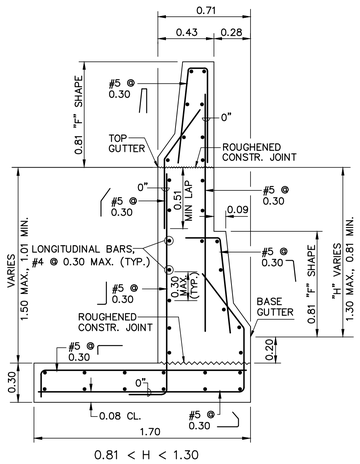
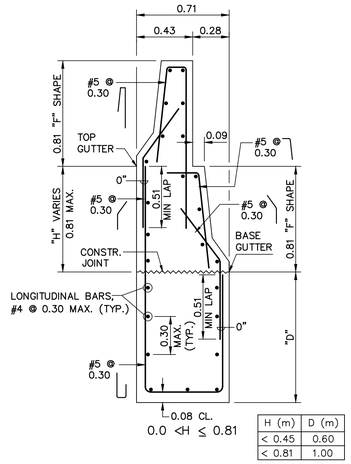
GR-5

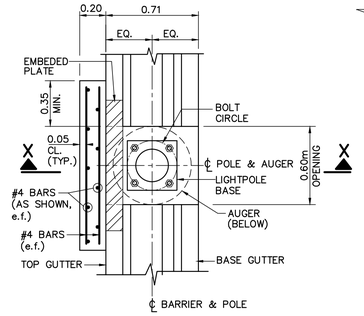




H (m)	D (m)
< 0.45	0.60
< 0.81	1.00

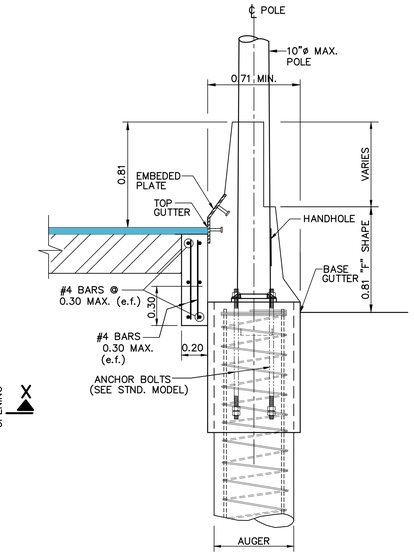
MODIFIED TYPE "B" CONC. BARRIER DETAILS

SCALE = 1:20



PLAN

NOTE: SEE LS5 OF 17 & LS12 OF 17 FOR ADD'L DETAILS



SECTION X–X

MODIFIED TYPE "B" BARRIER NOTES:

1–REINFORCING (GR.60).....Fy = 60,000 psi

2–CLASS "A" CONCRETE.....f'c = 3,000 psi

3–PROVIDE CONTRACTION JOINTS AT 6.00m MAX. SPACING (SEE DETAIL HEREON)

4–PROVIDE 0.05m CLEAR COVER ON ALL REBAR EXCEPT WHERE OTHERWISE NOTED

5–CONSTRUCTION JOINTS SHALL BE INTENTIONALLY ROUGHENED TO AMPLITUDE OF ¼" & SHALL BE CLEAN & FREE OF LOOSE MATERIAL.

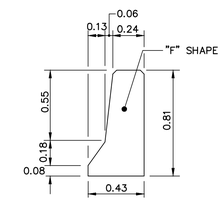
6–LONGITUDINAL BARS SHALL BE SPACED NO FURTHER THAN 0.30m & SHALL CONSIST OF CONTINUOUS #4 BARS. SPLICES TO BE 0.41 MIN. LENGTH & STAGGERED.

7–THE LOWER LIMIT OF EXCAVATIONS SHALL BE INSPECTED BY THE ENGINEER TO ASSURE ADEQUATE BEARING STRATA HAS BEEN ENCOUNTERED.

8–ALL BARRIER SECTIONS SHALL BE PAINTED WITH WHITE PAINT. (SEE STND MODEL)

9–CONCRETE END SECTION OR TEMPORARY IMPACT ATTENUATOR SHALL BE USED AS THE END SECTION OF THE CONCRETE BARRIER DURING CONSTRUCTION.

10–FOR LOCATIONS & LIMITS, SEE ID SHTS.

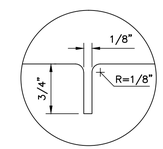


"F" SHAPE BARRIER DIMENSIONS

SCALE = 1:20

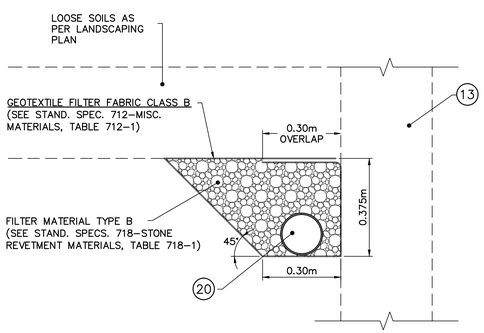
MOD. TYPE "B" AT LIGHTPOLE

SCALE = 1:20



CONTRACTION JOINT DETAIL

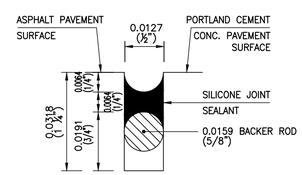
NOT TO SCALE



TYPICAL UNDERDRAIN DETAIL

3 GR-6.1

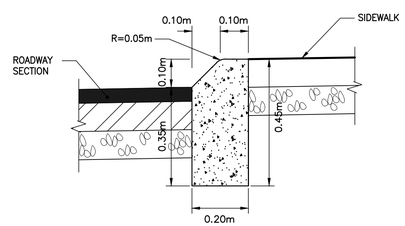
SCALE = 1:20



LONGITUDINAL JOINT

A GR-6.1

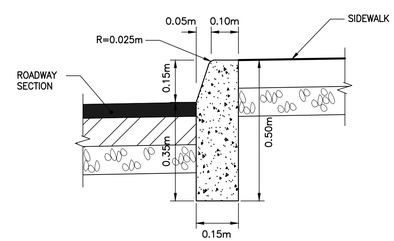
NOT TO SCALE



TYPE "A" CURB

4 GR-6.1

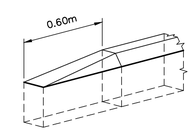
NOT TO SCALE



TYPE "D" CURB

1 GR-6.1

NOT TO SCALE



TYPE "A" & "D" CURB END SECTION

2 GR-6.1

NOT TO SCALE

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MISCELLANEOUS DETAILS

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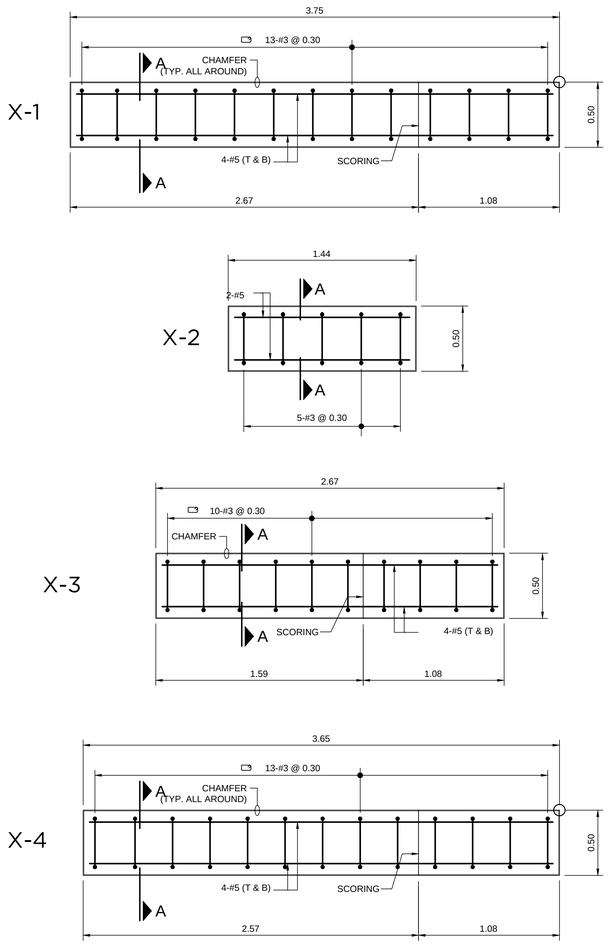
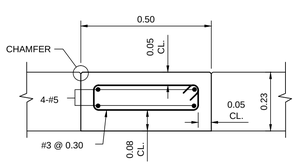
GR-5.1



PLAN

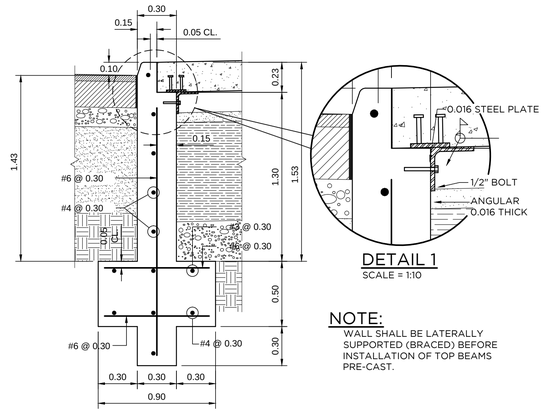


SECTION A-A

SCALE 1:10

TYPICAL PRECAST CONCRETE PLANKS DETAILS

SCALE 1:20



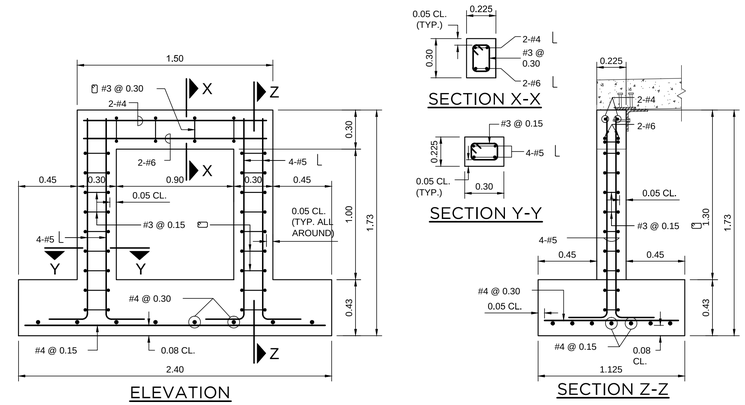
DETAIL 1

SCALE = 1:10

NOTE:
WALL SHALL BE LATERALLY SUPPORTED (BRACED) BEFORE INSTALLATION OF TOP BEAMS PRE-CAST.

TYP. RESTRAINED WALL CONCRETE CURB STRUCTURAL DETAILS

SCALE = 1:20

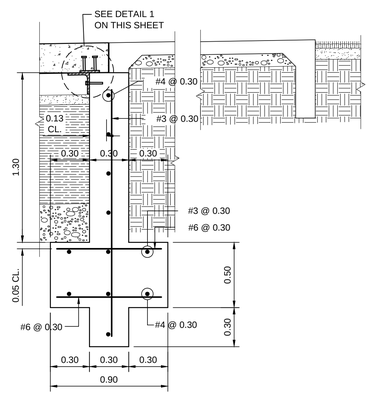


ELEVATION

SECTION Z-Z

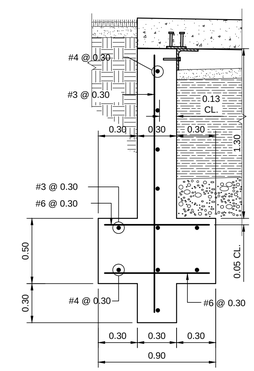
CONCRETE SUPPORT DETAIL @ TREE

SCALE = 1:20



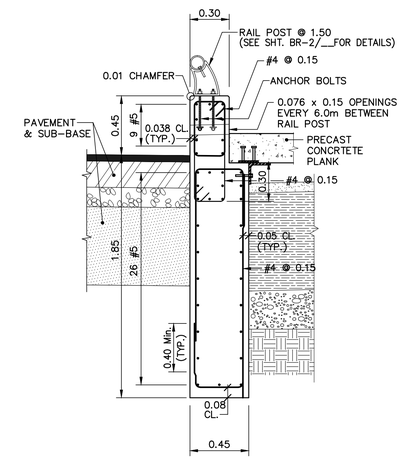
TYP. RESTRAINED WALL CONCRETE SUPPORT DETAIL (@ CAST IN PLACE AREAS)

SCALE = 1:20



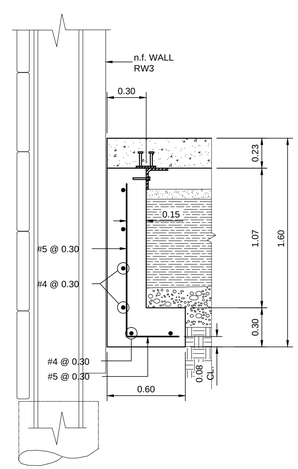
TYP. RESTRAINED WALL CONCRETE SUPPORT DETAIL (INSIDE EDGE OF SIDEWALK)

SCALE = 1:20



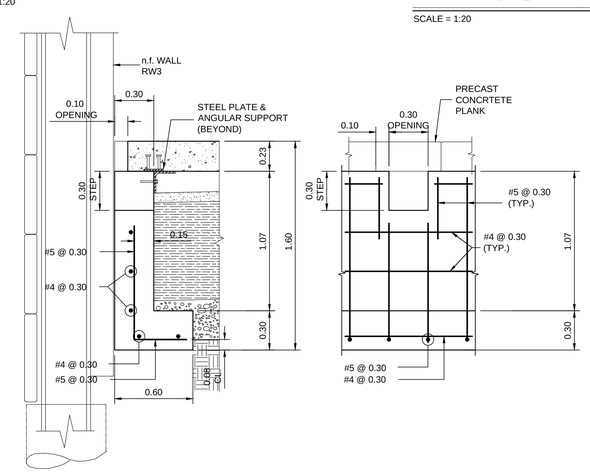
TRAFFIC BARRIER DETAIL (ROADWAY)

SCALE = 1:20



TYP. RESTRAINED WALL CONCRETE SUPPORT DETAIL @ RW-3

SCALE = 1:20



TYP. RESTRAINED WALL CONCRETE SUPPORT DETAIL @ RW-3 (WITH PLANTING AREA OPENINGS)

SCALE = 1:20

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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

MISCELLANEOUS DETAILS

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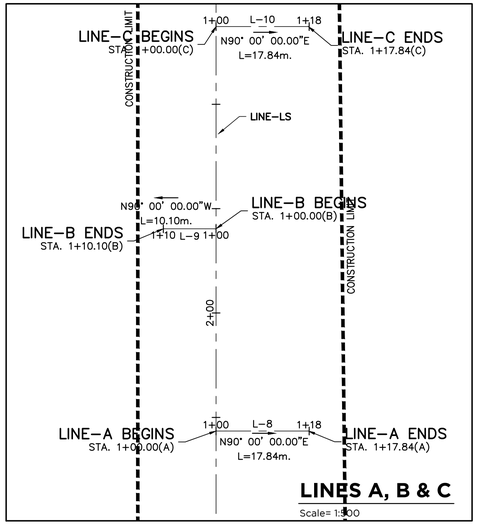
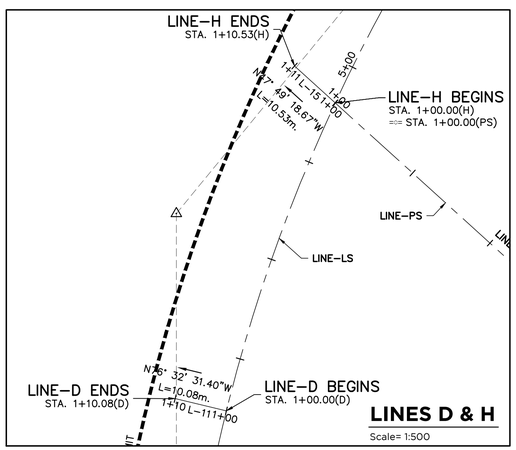
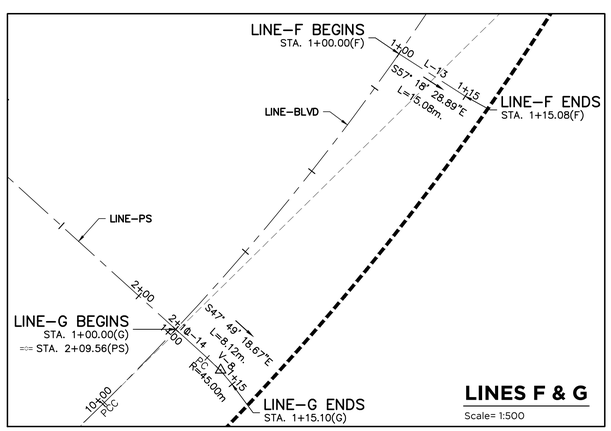
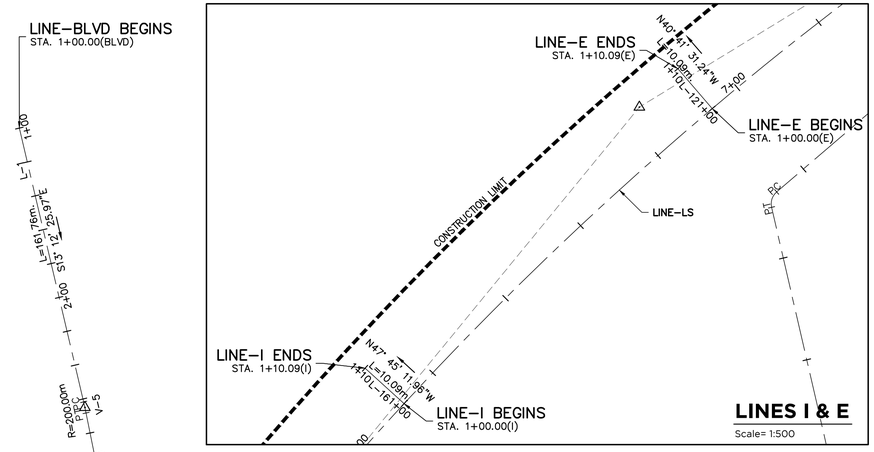
REVISED BY:
DATE: JUNE-19-2012

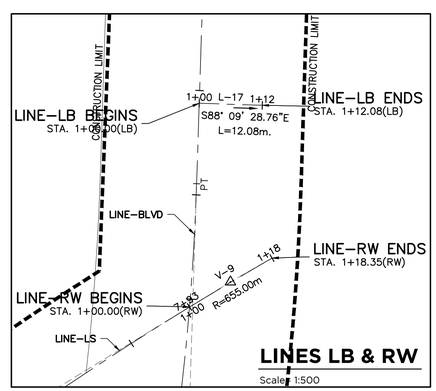
GR-5.2

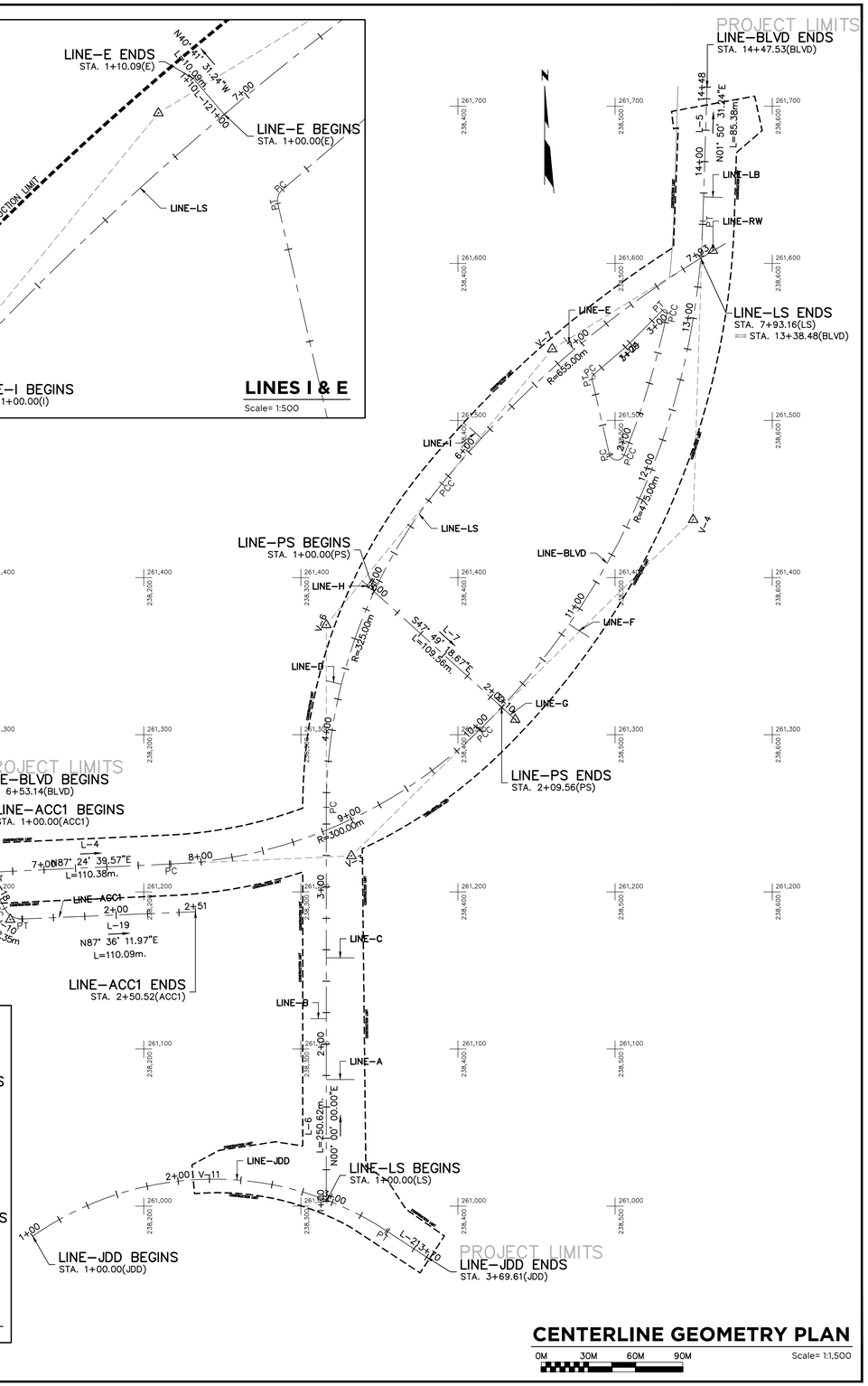












CENTERLINE GEOMETRY PLAN

0M 30M 60M 90M

Scale= 1:1,500

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CENTERLINE GEOMETRY PLAN

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REVISED BY:
DATE: JUNE-19-2012

GR-6

LINE–BLVD

LABEL	VERTEX	DIST.	Δ	R	T	E	L	COORDINATES N	COORDINATES E	BEARING
L–1	STA. 1+00.00	161.76						261683.6112	237852.9343	S13–12–26E
	STA. 2+61.76							261526.1302	237889.8920	
V–5	PC STA. 2+61.76		1–51–23	200.00	3.24	0.03	6.48	261526.1302	237889.8920	
	PI VERTEX							261522.9754	237890.6324	
	PT STA. 2+68.24							261519.7983	237891.2702	
L–2	STA. 2+68.24	132.52						261519.7983	237891.2702	S11–21–03E
	STA. 4+00.76							261389.8683	237917.3523	
V–1	PC STA. 4+00.76		38–11–11	130.00	45.00	7.57	86.64	261389.8683	237917.3523	
	PI VERTEX							261345.7493	237926.2088	
	PT STA. 4+87.40							261316.5468	237960.4453	
L–3	STA. 4+87.40	137.96						261316.5468	237960.4453	S49–32–13E
	STA. 6+25.37							261227.0148	238065.4111	
V–2	PC STA. 6+25.37		43–03–07	60.00	23.67	4.50	45.08	261227.0148	238065.4111	
	PI VERTEX							261211.6566	238083.4168	
	PT STA. 6+70.45							261212.7256	238107.0588	
L–4	STA. 6+70.45	110.38						261212.7256	238107.0588	N87–24–40E
	STA. 7+80.84							261217.7118	238217.3310	
V–3	PC STA. 7+80.84		41–56–12	300.00	114.97	21.28	219.58	261217.7118	238217.3310	
	PI VERTEX							261222.9051	238332.1823	
	PT STA. 10+00.42							261303.5243	238414.1478	
V–4	PC STA. 10+00.42		43–37–57	475.00	190.14	36.64	361.73	261303.5243	238414.1478	
	PI VERTEX							261436.8573	238549.7075	
	PT STA. 13+62.14							261626.9015	238555.8194	
L–5	STA. 13+62.14	85.38						261626.9015	238555.8194	N1–50–31E
	STA. 14+47.53							261712.2414	238558.5640	

LINE–ACC1

LABEL	VERTEX	DIST.	Δ	R	T	E	L	COORDINATES N	COORDINATES E	BEARING
L–18	STA. 1+00.00	26.42						261212.8763	238099.3094	S27–23–48E
	STA. 1+26.42							261189.4228	238111.4649	
V–10	PC STA. 1+26.42		65–00–00	12.35	7.87	2.29	14.01	261189.4228	238111.4649	
	PI VERTEX							261182.4374	238115.0853	
	PT STA. 1+40.43							261182.7664	238122.9462	
L–19	STA. 1+40.43	110.09						261182.7664	238122.9462	N87–36–12E
	STA. 2+50.52							261187.3702	238232.9414	

LINE–LS

LABEL	VERTEX	DIST.	Δ	R	T	E	L	COORDINATES N	COORDINATES E	BEARING
L–6	STA. 1+00.00	250.62						261003.1682	238316.2046	N0–00–00E
	STA. 3+50.62							261253.7877	238316.2046	
V–6	PC STA. 3+50.62		39–19–24	325.00	116.12	20.12	223.05	261253.7877	238316.2046	
	PI VERTEX							261369.9093	238316.2046	
	PT STA. 5+73.67							261459.7388	238389.7903	
V–7	PC STA. 5+73.67		19–11–57	655.00	110.78	9.30	219.48	261459.7388	238389.7903	
	PI VERTEX							261545.4368	238459.9915	
	PT STA. 7+93.16							261603.2823	238554.4704	

LINE–PS

LABEL	VERTEX	DIST.	Δ	R	T	E	L	COORDINATES N	COORDINATES E	BEARING
L–7	STA. 1+00.00	109.56						261391.1070	238346.6398	S47–49–19E
	STA. 2+09.56							261317.5465	238427.8280	

LINE–LB

LABEL	VERTEX	DIST.	Δ	R	T	E	L	COORDINATES N	COORDINATES E	BEARING
L–17	STA. 1+00.00	12.08						261642.3151	238556.3151	S88–09–29E
	STA. 1+12.08							261641.9268	238568.3889	

LINE–JDD

LABEL	VERTEX	DIST.	Δ	R	T	E	L	COORDINATES N	COORDINATES E	BEARING
V–11	PC STA. 1+00.00		68–14–53	200.60	135.94	41.72	238.95	260980.8579	238129.3701	
	PI VERTEX							261058.8752	238240.6927	
	PT STA. 3+38.95							260984.3915	238354.4099	
L–21	STA. 3+38.95	30.67						260984.3915	238354.4099	S56–46–32E
	STA. 3+69.61							260967.5881	238380.0643	

LINE–RW

LABEL	VERTEX	DIST.	Δ	R	T	E	L	COORDINATES N	COORDINATES E	BEARING
V–9	PC STA. 1+00.00		1–36–19	655.00	9.18	0.06	18.35	261603.2823	238554.4704	
	PI VERTEX							261608.0742	238562.2969	
	PT STA. 1+18.35							261612.6449	238570.2547	

LINE–A

LABEL	VERTEX	DIST.	Δ	R	T	E	L	COORDINATES N	COORDINATES E	BEARING
L–8	STA. 1+00.00	17.84						261080.5581	238316.2046	N90–00–00E
	STA. 1+17.84							261080.5581	238334.0446	

LINE–B

LABEL	VERTEX	DIST.	Δ	R	T	E	L	COORDINATES N	COORDINATES E	BEARING
L–9	STA. 1+00.00	10.10						261119.3081	238316.2046	N90–00–00W
	STA. 1+10.10							261119.3081	238306.1046	

LINE–C

LABEL	VERTEX	DIST.	Δ	R	T	E	L	COORDINATES N	COORDINATES E	BEARING
L–10	STA. 1+00.00	17.84						261158.0581	238316.2046	N90–00–00E
	STA. 1+17.84							261158.0581	238334.0446	

LINE–D

LABEL	VERTEX	DIST.	Δ	R	T	E	L	COORDINATES N	COORDINATES E	BEARING
L–11	STA. 1+00.00	10.08						261332.1155	238325.7846	N76–32–31W
	STA. 1+10.08							261334.4623	238315.9779	

LINE–E

LABEL	VERTEX	DIST.	Δ	R	T	E	L	COORDINATES N	COORDINATES E	BEARING
L–12	STA. 1+00.00	10.09						261545.1566	238473.9512	N40–41–31W
	STA. 1+10.09							261552.8086	238467.3713	

LINE–F

LABEL	VERTEX	DIST.	Δ	R	T	E	L	COORDINATES N	COORDINATES E	BEARING
L–13	STA. 1+00.00	15.08						261370.3682	238470.6145	S57–18–29E
	STA. 1+15.08							261362.2207	238483.3094	

LINE–G

LABEL	VERTEX	DIST.	Δ	R	T	E	L	COORDINATES N	COORDINATES E	BEARING
L–14	STA. 1+00.00	8.12						261317.5464	238427.8280	S47–49–19E
	STA. 1+08.12							261312.0949	238433.8448	
V–8	PC STA. 1+08.12		8–53–23	45.00	3.50	0.14	6.98	261312.0949	238433.8448	
	PI VERTEX							261309.7462	238436.4370	
	PT STA. 1+15.10							261307.0252	238438.6352	

LINE–H

LABEL	VERTEX	DIST.	Δ	R	T	E	L	COORDINATES N	COORDINATES E	BEARING
L–15	STA. 1+00.00	10.53						261391.1070	238346.6398	N47–49–19W
	STA. 1+10.53							261398.1770	238338.8367	

LINE–I

LABEL	VERTEX	DIST.	Δ	R	T	E	L	COORDINATES N	COORDINATES E	BEARING
L–16	STA. 1+00.00	10.09						261488.6266	238414.8999	N47–45–12W
	STA. 1+10.09							261495.4091	238407.4320	

VERTEX DATA TABLES

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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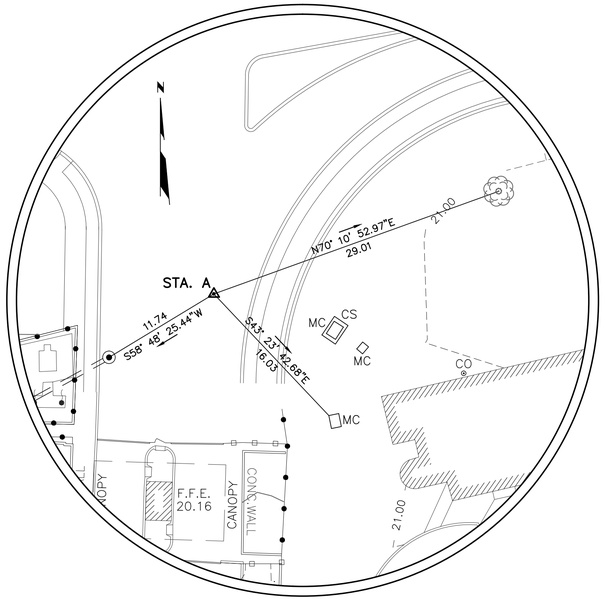
GR-7



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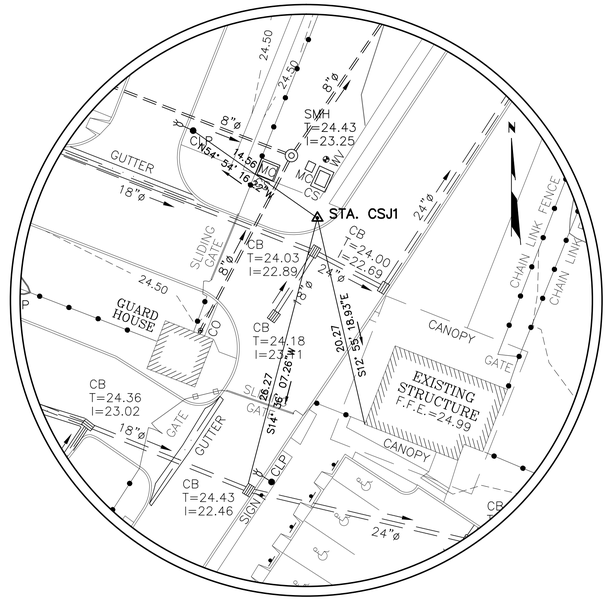
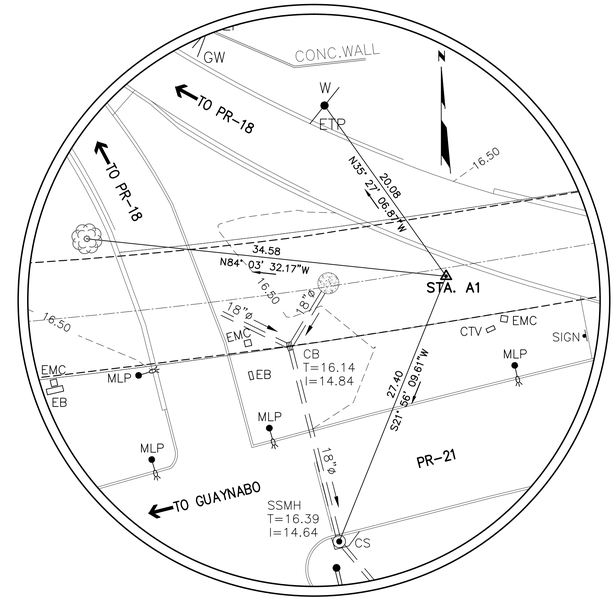
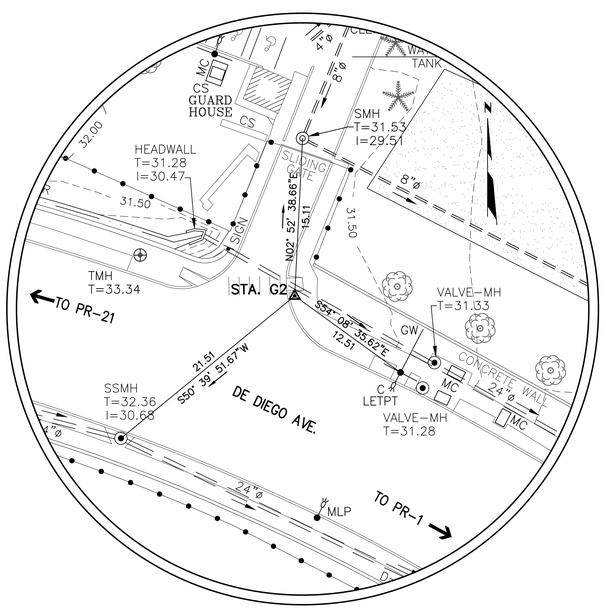
(ALUMINIUM DISK)
N = 261677.3681
E = 238562.0971
ELEV. = 18.6090



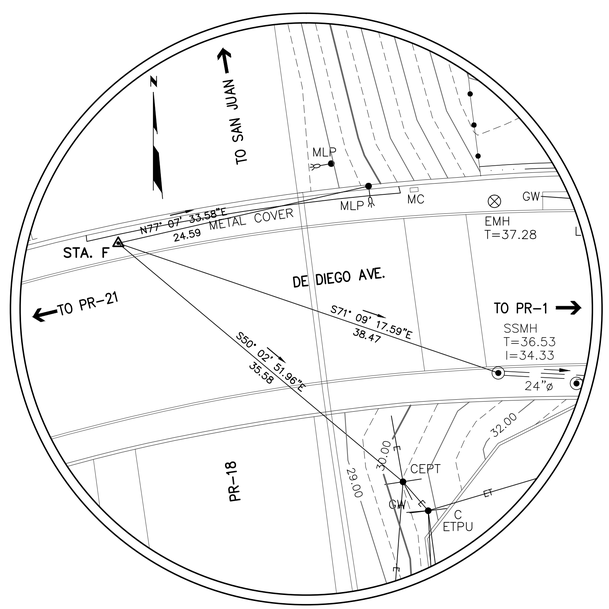
STA. CSJ1
(PK NAIL WITH RING)
N = 261078.1454
E = 238468.0673
ELEV. = 24.2000



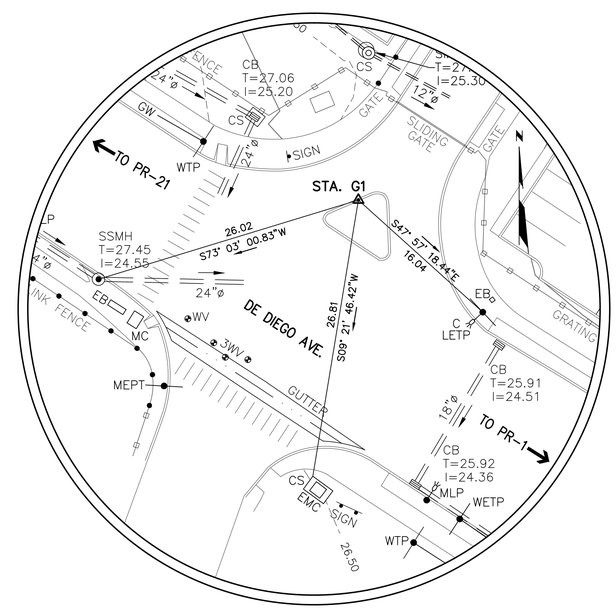
STA. A1
(PK NAIL WITH RING)
N = 261708.0843
E = 238401.2488
ELEV. = 16.5380



STA. G2
(PK NAIL WITH RING)
N = 261011.2734
E = 238327.3150
ELEV. = 31.9985



STA. F
(ALUMINIUM DISK)
N = 261021.5138
E = 238199.8727
ELEV. = 37.4541



STA. G1
(ALUMINIUM DISK)
N = 260968.8662
E = 238400.2982
ELEV. = 26.6730

CONTROL POINTS

0M 5M 10M 15M Scale: 1=250

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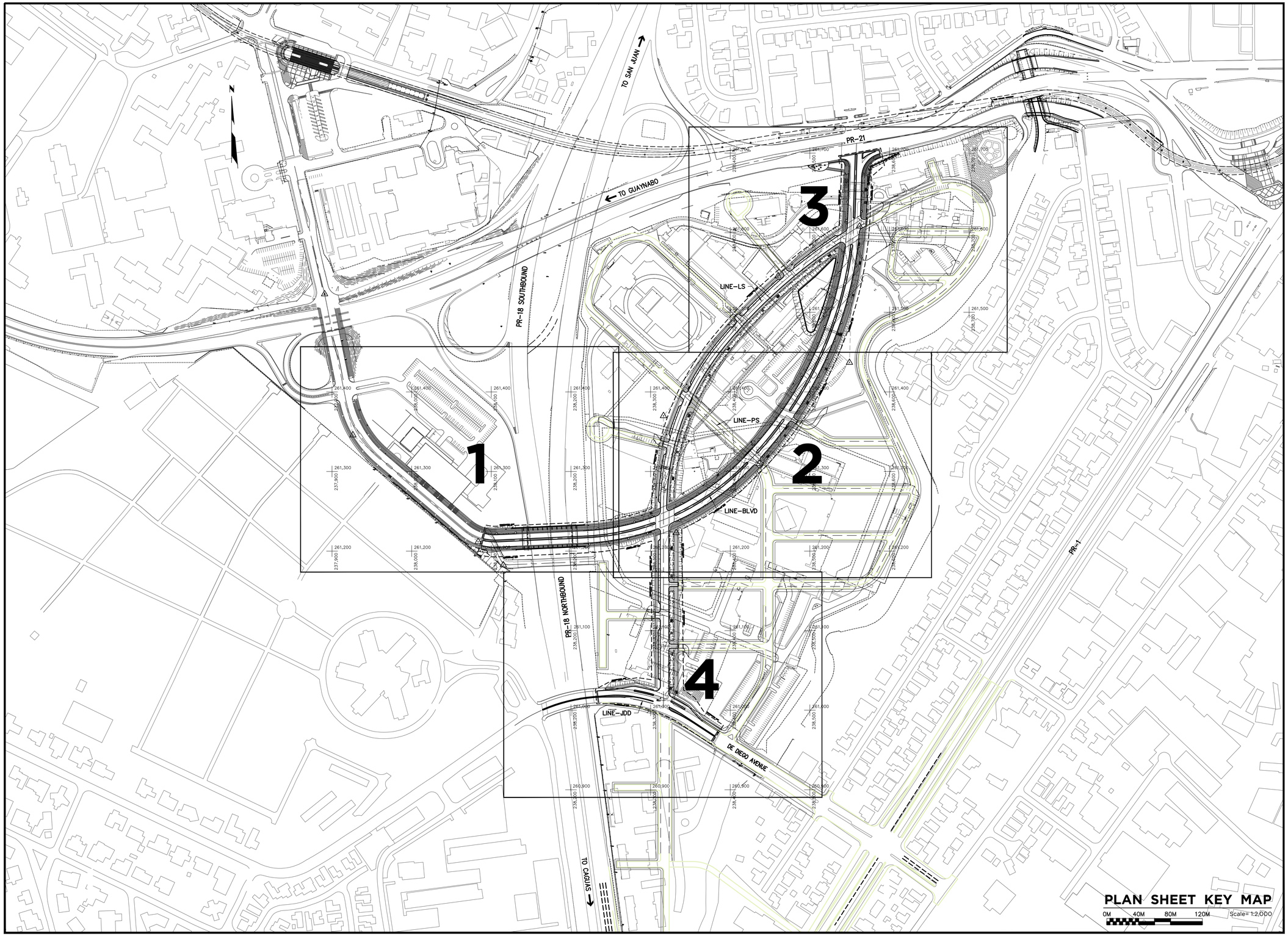

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FINAL CONSTRUCTION
DOCUMENTS (100%)
MAY 13, 2013

PLAN SHEET KEY MAP

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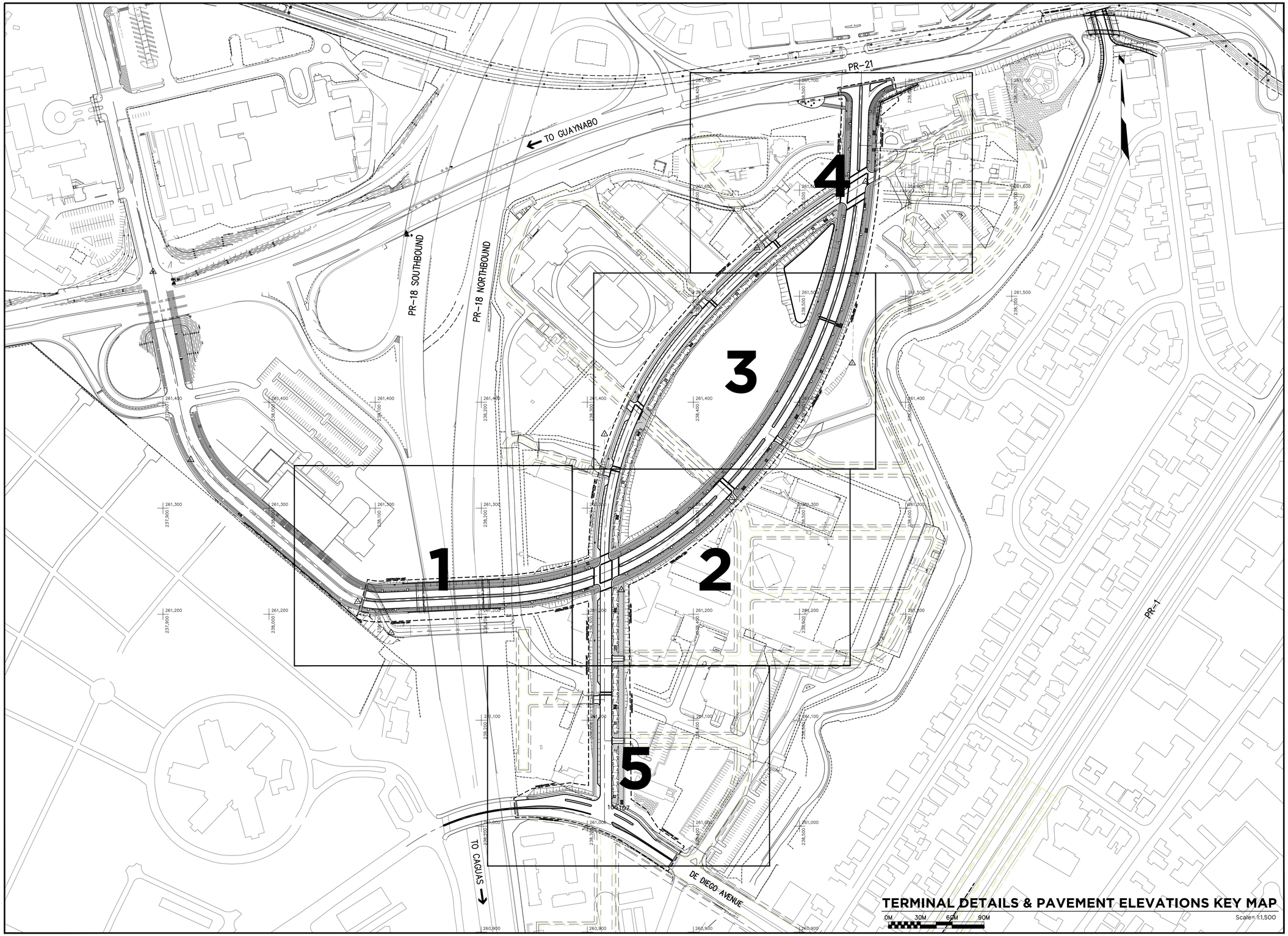
GR-9



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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

TERMINAL DETAILS & PAVEMENT ELEVATIONS KEY MAP

DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

GR-10

HYDRAULIC STRUCTURE TABLE

SHEET NO.	STRUCTURE NUMBER	DIAMETER OF PIPE	STATION	TRENCH EXCAVATION UNCLASSIFIED	PIPE LENGTH[A]	HEIGHT[B]	CONCRETE CURB (LnM)				CONC. CURB & GUTTER (LnM)		0.10m CONCRETE LINING	0.15m BED COURSE	FOUNDATION FILL	HEADWALLS[C]				FILTER MATERIAL (SqM)						18"ø PIPE PLUG	MANHOLES		INLETS						EXISTING INLET TO BE CONVERTED TO TYPE 4 INLET	EXISTING INLET TO BE REMOVED	EXISTING INLET TO REMAIN	EXISTING MANHOLE TO BE REMOVED	EXISTING MANHOLE TO BE CONVERTED TO TYPE 2 INLET	EXISTING CATCH BASIN TO REMAIN	EXISTING TYPE 4 INLET TO REMAIN	EXISTING TYPE 4 INLET TO BE CONVERTED TO TYPE A MANHOLE
		INCHES		CuM	MtS	MtS	TYPE A	TYPE B	TYPE D	TYPE E	TYPE C	TYPE F	SqM	CuM	CuM	TYPE A	TYPE B	TYPE C	TYPE D	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	EACH	TYPE A	TYPE B	TYPE 1	1 MOD.	TYPE 2	TYPE 3	TYPE 4	TYPE 5	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
DR/1	238–239–240	18	6+95(BLVD) TO 6+60(BLVD)	111	36																											1		2							
DR/1	235–236–EXIST.																																		2						
DR/1	1, 2, 3, 4, 24, 242, 243		7+86.37(BLVD) TO 6+82.33(BLVD)	10																									7												
DR/2	32–33–250	36	10+16.51(BLVD) TO 10+28.93(BLVD)	146	23								372	56	372	1										2															
DR/2	5–10–16–20–26–31	18/30	3+22.37(BLVD) TO 10+08.57(BLVD)	896	70/129																					1						5									
DR/2	9–10	18	8+70.36(BLVD) TO 8+08.67(BLVD)	31	15																											1									
DR/2	25–26	18	9+60.69(BLVD)	65	15																											1									
DR/2	30–31	18	10+08.60(BLVD)	62	15																											1									
DR/2	69–70	18	10+66.85(BLVD)	34	15																											2									
DR/2	70–78–83	18	10+66.85(BLVD) TO 11+62.85(BLVD)	203	98																											2									
DR/2	77–78	18	11+14.85(BLVD)	29	15																											1									
DR/2	82–83	18	11+62.85(BLVD)	29	15																											1									
DR/2	64–EXIST.																																		1						
DR/2	73–74–EXIST.																																		2						
DR/2	EXIST.–74																																								
DR/2	40–39–EXIST.																																		2						
DR/2	6, 7, 8, 19, 21, 23, 24, 22, 27, 28, 29, 34, 67, 68		8+34.22(BLVD) TO 10+54.72(BLVD)	21																									14												
DR/2	71, 72, 76, 79, 80, 81, 84		10+78.72(BLVD) TO 11+74.72(BLVD)	10																									7												
DR/2	14–15–16	18	3+17.16(LS) TO 8+90.36(BLVD)	56	23																											2									
DR/2	51–49–47	18/24	4+32.40(LS) TO 4+21.95(LS)	83	6/9																											3									
DR/2	52–47–44–17–16	18/24	4+37.94(LS) TO 8+90.36(LS)	577	16/93																											3									
DR/2	48–47	18	4+21.95(LS)	19	7																											1									
DR/2	18–17	18	3+60(LS) TO 3+56.94(LS)	20	8																											1									
DR/2	56–57	18	4+99.12(LS) TO 4+92.02(LS)	26	7																											2									
DR/2	58–59	18	5+05(LS) TO 5+02.95(LS)	24	7																											2									
DR/2	45–44	18	3+90.84(LS)	19	8																											1									
DR/2	57–55–61–36–32	24	4+92.02(LS) TO 10+16.51(BLVD)	730	127																					1						2									
DR/2	60–61	18	1+53.47(PS)	30	7																											1									
DR/2	35–36	18	1+92.47(PS)	31	7																											1			3						
DR/2	41–42–43–EXIST.																																		2						
DR/2	46–50–39																																		1						
DR/2	EXIST.–53–50																																		1						
DR/2	54–53																																								
DR/2,3	83–89	18	11+62.85(BLVD) TO 12+06.05(BLVD)	96	44																					1															
DR/2,3	90–PIPE END			13																						1															
DR/2,4	13–15	18		105	52																																				
DR/2,4	62–63																																		2						
DR/2,4	38																																		1						
DR/2,4	37, 65–66																																		3						
DR/2,4	122–202																																		2						
DR/3	226–88–89–90–PIPE END		12+06.05(BLVD)	255	27/62																				1							1									
DR/3	103–108–225–226–199–200–201–203		12+70.72(BLVD) TO 14+37.68(BLVD)	291	139																					1						3				3		1			
DR/3	202–203																																			1					
DR/3	102–103	18	12+70.72(BLVD)	29	19																											1									
DR/3	107–108	18	13+13.57(BLVD) TO 13+25.43(BLVD)	35	19																											1									
DR/3	125–126	18	13+73.74(BLVD)	29	15																											1									
DR/3	85, 86, 91, 92, 93, 94, 101, 104, 105, 106, 109, 123		11+86.85(BLVD) TO 13+50.25(BLVD)	18																									12												
DR/3	124, 128, 127		13+62.23(BLVD) TO 13+85.74(BLVD)	4																									3												
DR/3	EXIST. PIPE–87																																								
DR/3	EXIST. PIPE–95–96–204–205–EXIST.																																		4						
DR/3	99–95																																		1						
DR/3	100–96																																		1						
DR/3	EXIST. PIPE–234–EXIST. PIPE																																		1						
DR/3	233–234																																		1						
DR/3	229–230–232	18	6+08.44(LS) TO 6+14.94(LS)	65	21																											3									
DR/3	231–232–112–114–228	18/24	6+03.96(LS) TO 6+96.94(LS)	392	95/16																				1							3									
DR/3	110–111–112	18	6+52.05(LS) TO 6+55(LS)	38	17																											1									
DR/3	115–116–114	18	6+90.86(LS) TO 6+96.95(LS)	93	20																											2									
DR/3	113–114	18	6+85.95(LS) TO 6+95.96(LS)	71	13												1															2									
DR/3	117–118–119–227	18	7+35.97(LS) TO 7+38.95(LS)	67	30												1															2									
DR/3	121–120–225	18	7+68.95(LS) TO 13+48.24(BLVD)	77	39																											2									
DR/3	97–98–99	18																																			1				
DR/4	218–219–EXIST.	18	1+18.92(LS) TO 1+13.85(LS)	40	17																					1				1											
DR/4	214–215–216–217–220–EXIST.	18	1+70.91(LS) TO 1+94.57(LS)	212	84																					1						3									
DR/4	209–210	18	2+12.89(LS) TO 2+19.39(LS)	30	7																											2									
DR/4	211–212	18	2+12.89(LS) TO 2+19.57(LS)	45	12																					1						1									
DR/4	210–212–213	18	2+19.39(LS) TO 2+19.57(LS)	60	17																											1									
DR/4	213–208–207–206	18	2+19.57(LS) TO 2+57.07(LS)	215	53												1															2									
DR/4	11–12–13	18	2+68.91(LS)	36	19												1															1									
DR/4	221–EXIST. PIPE																																		1						
DR/4	222–EXIST. PIPE																																		1						
DR/4	223–224–EXIST.																																		2						

HYDRAULIC STRUCTURE TABLE

Scale= N/A

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

SEGMENT EAST OF PR 18
SAN JUAN, PUERTO RICO

TORO ARQUITECTOS
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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

HYDRAULIC STRUCTURE TABLE

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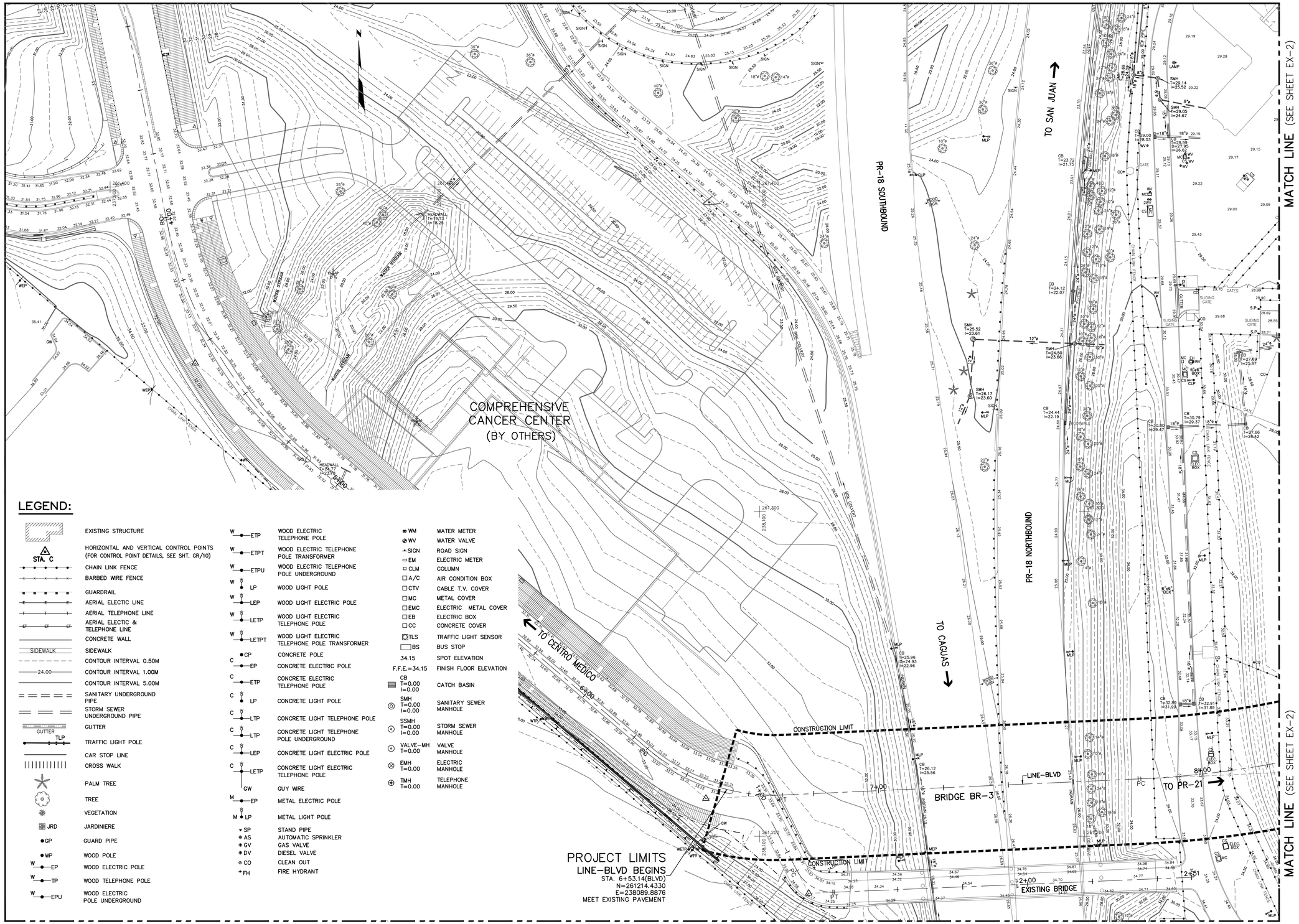
GR-11



LEGEND:

- EXISTING STRUCTURE
- STA. C — HORIZONTAL AND VERTICAL CONTROL POINTS (FOR CONTROL POINT DETAILS, SEE SHT. GR/10)
- CHAIN LINK FENCE
- BARBED WIRE FENCE
- GUARDRAIL
- E — AERIAL ELECTIC LINE
- T — AERIAL TELEPHONE LINE
- ET — AERIAL ELECTIC & TELEPHONE LINE
- CONCRETE WALL
- SIDEWALK — SIDEWALK
- CONTOUR INTERVAL 0.50M
- 24.00 — CONTOUR INTERVAL 1.00M
- CONTOUR INTERVAL 5.00M
- SANITARY UNDERGROUND PIPE
- STORM SEWER UNDERGROUND PIPE
- GUTTER — GUTTER
- TLP — TRAFFIC LIGHT POLE
- CAR STOP LINE
- CROSS WALK
- PALM TREE
- TREE
- VEGETATION
- JRD — JARDINIERE
- GP — GUARD PIPE
- WP — WOOD POLE
- W — EP — WOOD ELECTRIC POLE
- W — TP — WOOD TELEPHONE POLE
- W — EPU — WOOD ELECTRIC POLE UNDERGROUND
- W — ETP — WOOD ELECTRIC TELEPHONE POLE
- W — ETPT — WOOD ELECTRIC TELEPHONE POLE TRANSFORMER
- W — ETPU — WOOD ELECTRIC TELEPHONE POLE UNDERGROUND
- W — LP — WOOD LIGHT POLE
- W — LEP — WOOD LIGHT ELECTRIC POLE
- W — LETP — WOOD LIGHT ELECTRIC TELEPHONE POLE
- W — LETPT — WOOD LIGHT ELECTRIC TELEPHONE POLE TRANSFORMER
- CP — CONCRETE POLE
- C — EP — CONCRETE ELECTRIC POLE
- C — ETP — CONCRETE ELECTRIC TELEPHONE POLE
- C — LP — CONCRETE LIGHT POLE
- C — LTP — CONCRETE LIGHT TELEPHONE POLE
- C — LTP — CONCRETE LIGHT TELEPHONE POLE UNDERGROUND
- C — LEP — CONCRETE LIGHT ELECTRIC POLE
- C — LETP — CONCRETE LIGHT ELECTRIC TELEPHONE POLE
- GW — GUY WIRE
- M — EP — METAL ELECTRIC POLE
- M — LP — METAL LIGHT POLE
- SP — STAND PIPE
- AS — AUTOMATIC SPRINKLER
- GV — GAS VALVE
- DV — DIESEL VALVE
- CO — CLEAN OUT
- FH — FIRE HYDRANT
- WM — WATER METER
- WV — WATER VALVE
- SIGN — ROAD SIGN
- EM — ELECTRIC METER
- CLM — COLUMN
- A/C — AIR CONDITION BOX
- CTV — CABLE T.V. COVER
- MC — METAL COVER
- EMC — ELECTRIC METAL COVER
- EB — ELECTRIC BOX
- CC — CONCRETE COVER
- TLS — TRAFFIC LIGHT SENSOR
- BS — BUS STOP
- 34.15 — SPOT ELEVATION
- F.F.E.=34.15 — FINISH FLOOR ELEVATION
- CB T=0.00 I=0.00 — CATCH BASIN
- SMH T=0.00 I=0.00 — SANITARY SEWER MANHOLE
- SSMH T=0.00 I=0.00 — STORM SEWER MANHOLE
- VALVE-MH T=0.00 — VALVE MANHOLE
- EMH T=0.00 — ELECTRIC MANHOLE
- TMH T=0.00 — TELEPHONE MANHOLE

MATCH LINE (SEE SHEET EX-4)

MATCH LINE (SEE SHEET EX-4)

EXISTING CONDITION PLAN

0M 10M 20M 30M Scale= 1:500

SCIENCE CITY
URBAN INFRASTRUCTURE
PHASE II

SEGMENT EAST OF PR 18
SAN JUAN, PUERTO RICO

TORO ARQUITECTOS
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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

EXISTING CONDITION PLAN

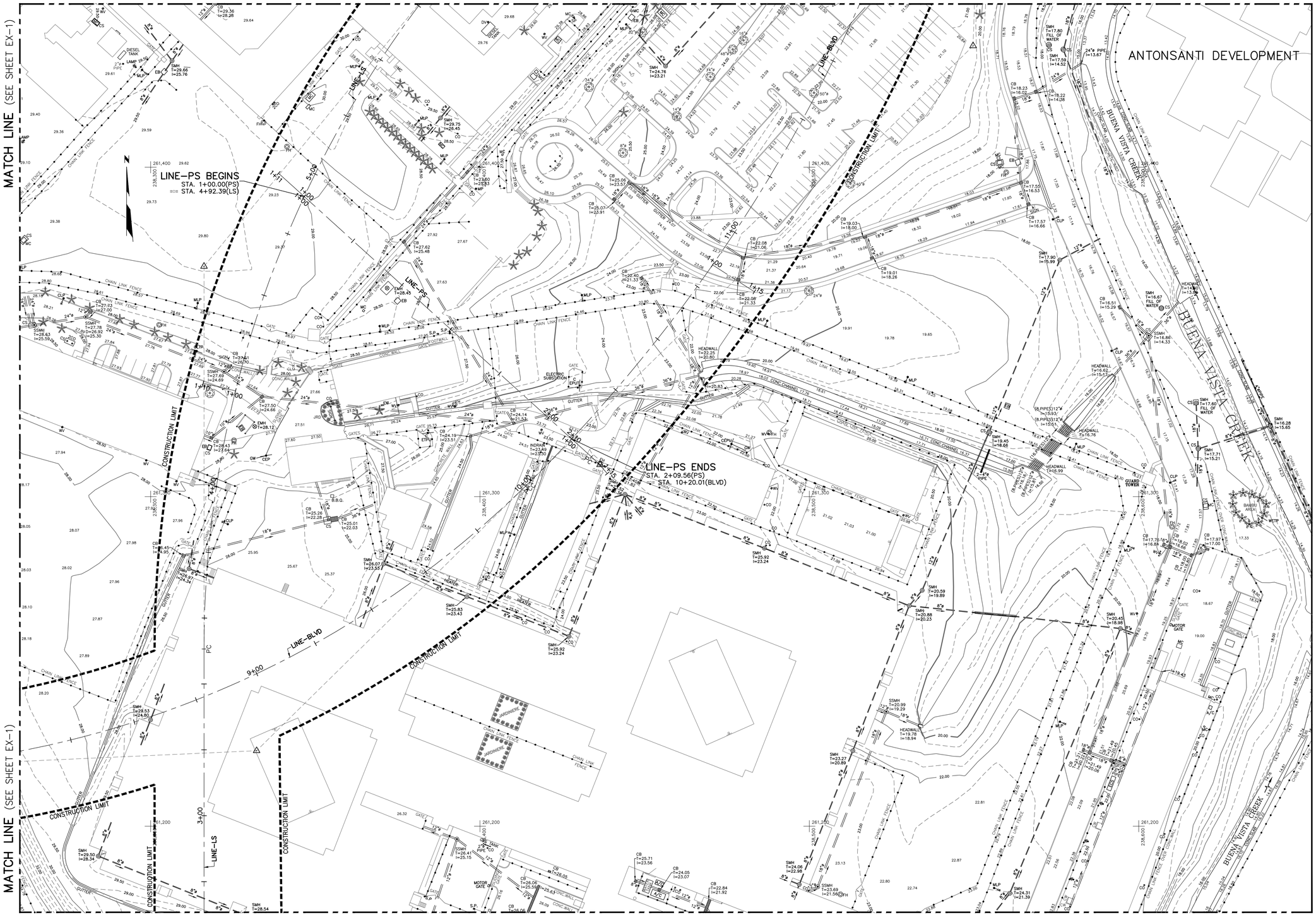
DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

EX-1

MATCH LINE (SEE SHEET EX-3)

MATCH LINE (SEE SHEET EX-3)

MATCH LINE (SEE SHEET EX-1)



MATCH LINE (SEE SHEET EX-4)

MATCH LINE (SEE SHEET EX-4)

EXISTING CONDITION PLAN

0M 10M 20M 30M Scale= 1:500

SCIENCE CITY
URBAN INFRASTRUCTURE
PHASE II

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FINAL CONSTRUCTION
DOCUMENTS (100%)
MAY 13, 2013

EXISTING CONDITION PLAN

DRAWN BY:
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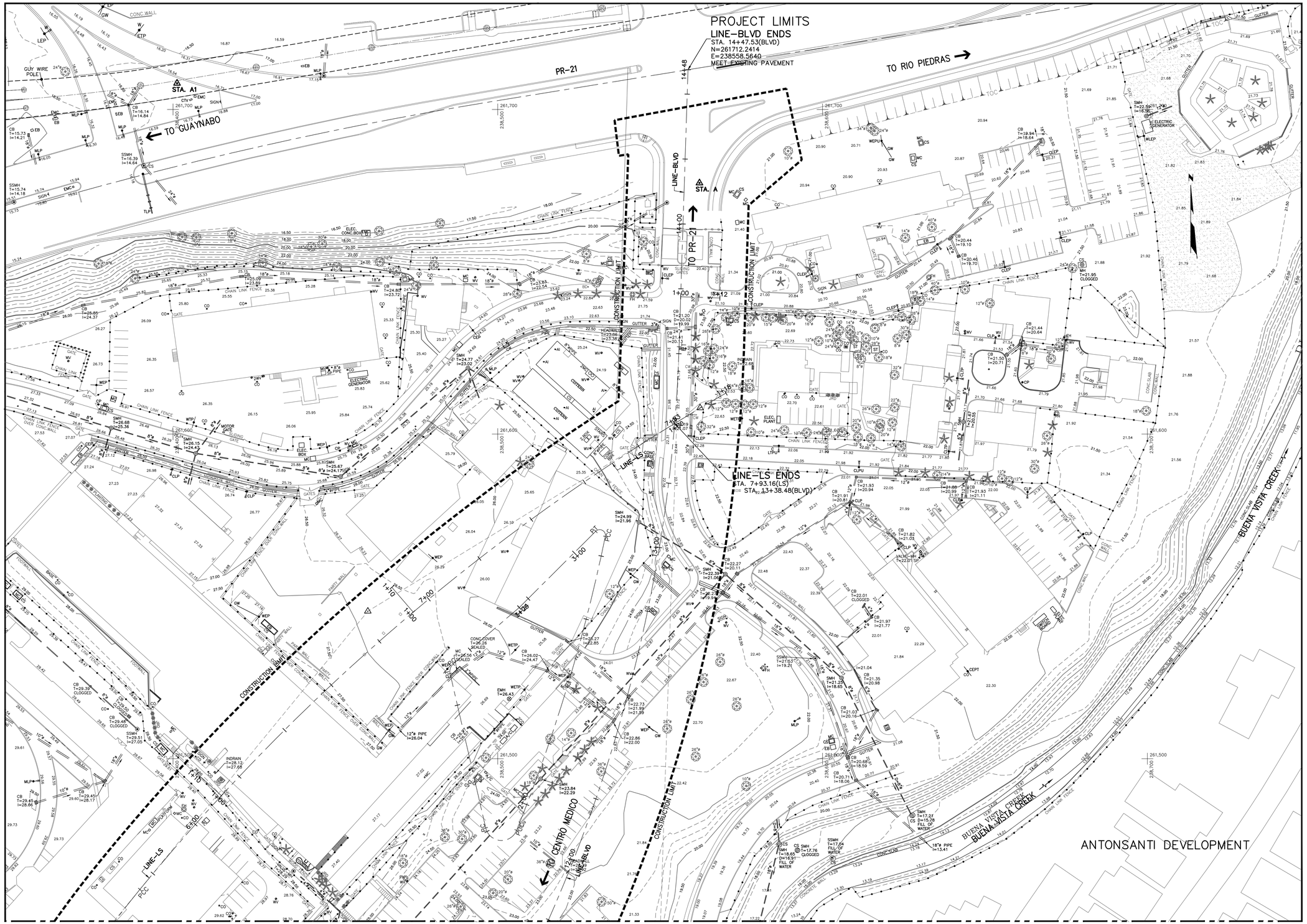
DATE: JUNE-19-2012

EX-2



MATCH LINE (SEE SHEET EX-2)

MATCH LINE (SEE SHEET EX-2)

EXISTING CONDITION PLAN

0M 10M 20M 30M Scale= 1:500

SCIENCE CITY
URBAN INFRASTRUCTURE
PHASE II

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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

EXISTING CONDITION PLAN

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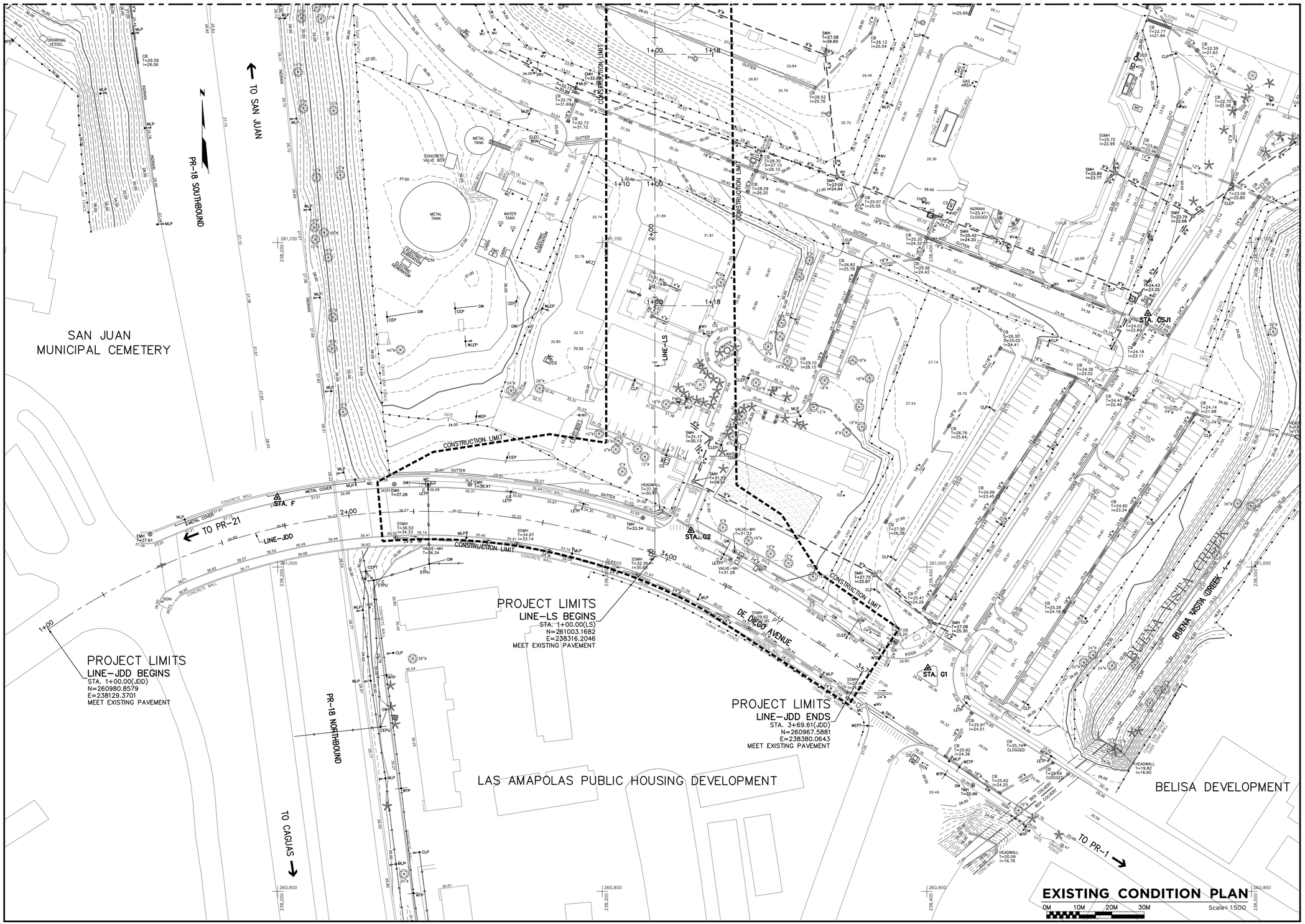
EX-3

MATCH LINE (SEE SHEET EX-3)

MATCH LINE (SEE SHEET EX-3)



EXISTING CONDITION PLAN

SCIENCE CITY
URBAN INFRASTRUCTURE
PHASE II

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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

EXISTING CONDITION PLAN

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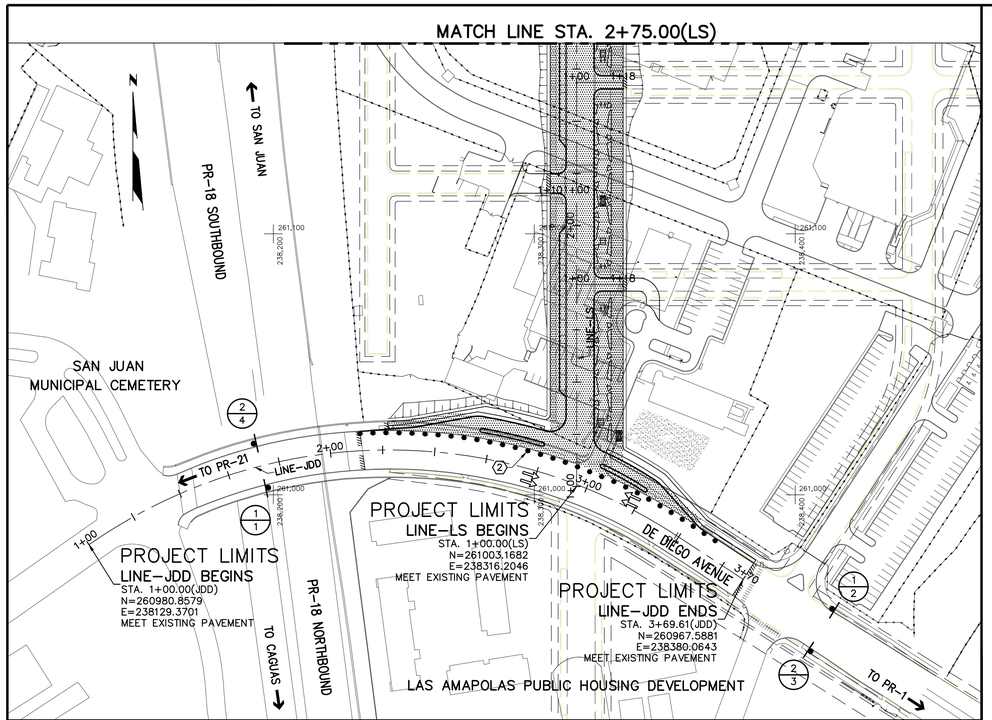
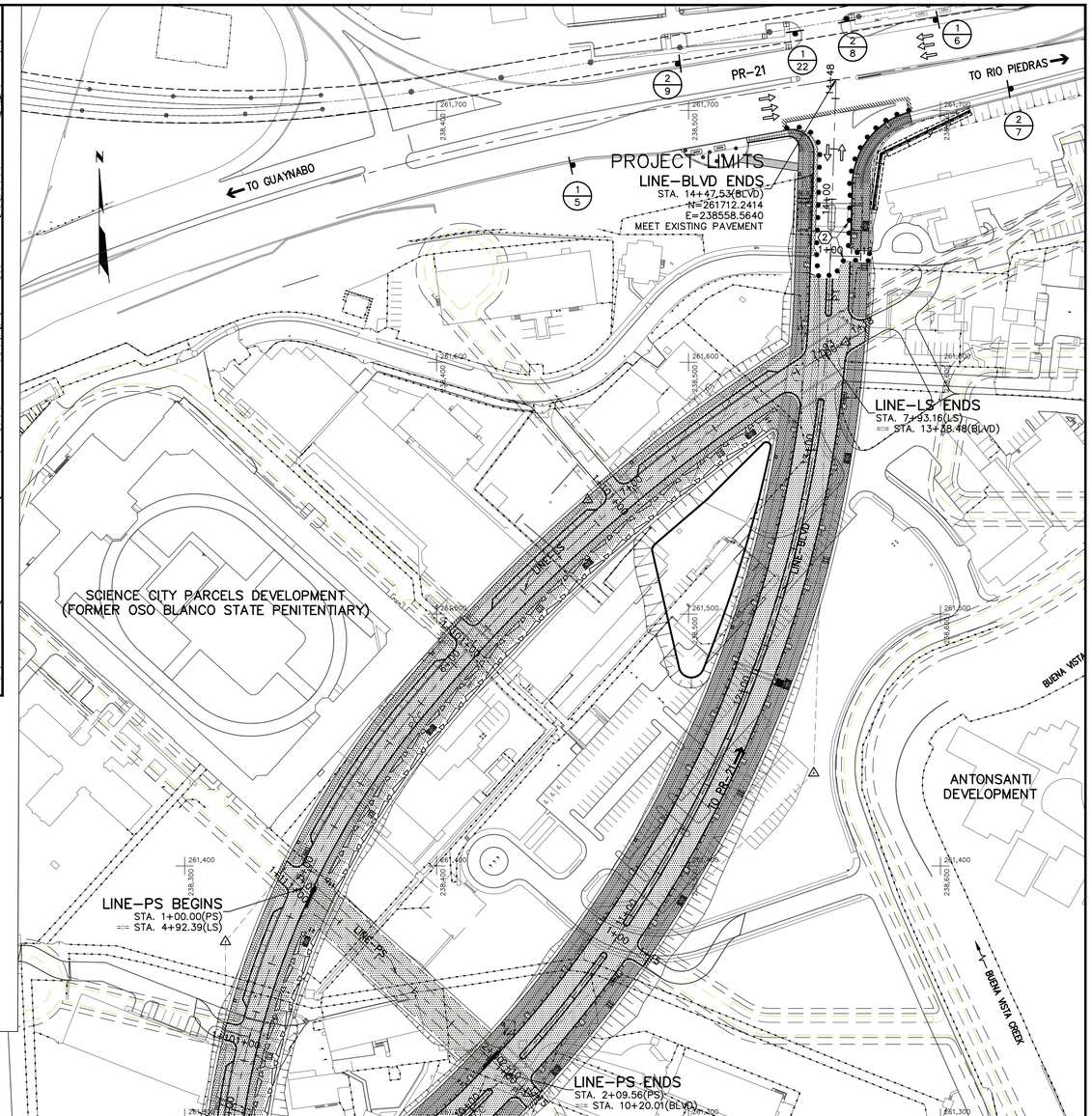
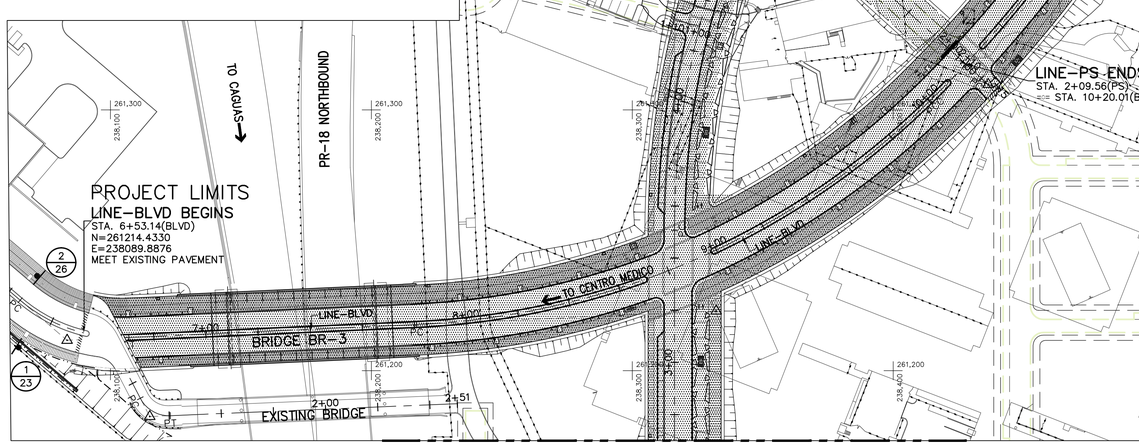
EX-4







MATCH LINE STA. 2+75.00(LS)

MAINTENANCE OF TRAFFIC

THE CONSTRUCTION SCHEDULE SHOWN ON THIS SHEET SHALL BE FOLLOWED IN ORDER TO MAINTAIN TRAFFIC FLOW WITH THE LEAST INTERFERENCE TO CONSTRUCTION WORK WHILE PROVIDING SAFE CONDITIONS TO MOTORISTS, PEDESTRIANS AND WORKERS. ANY CHANGE TO THIS SCHEDULE SHALL BE SUBMITTED IN WRITING FOR APPROVAL TO THE RESIDENT ENGINNER PRIOR TO APPLICATION.

TRAFFIC CONTROL DEVICES SHALL BE INSTALLED FROM THE COMMENCEMENT OF THE CONSTRUCTION AND BE MAINTAINED DURING THE PERTINENT PHASE. ALL TRAFFIC CONTROL DEVICES NOT APPLICABLE TO THE CONSTRUCTION PHASE BEING PERFORMED SHALL BE REMOVED OR RELOCATED AS REQUIRED BY THE PROJECT ENGINEER.

PAYMENT FOR THE MAINTENANCE OF TRAFFIC SHALL BE IN ACCORDANCE WITH THE UNIT BID PRICES FOR CONSTRUCTION ITEMS LISTED UNDER SPEC 638.

THE CONTRACTOR SHALL MAINTAIN ACCESS TO ADJACENT PROPERTIES DURING CONSTRUCTION. THE ROADWAY SHALL BE FREE OF MATERIALS, OBJECTS AND EQUIPMENT. FLAGMEN SHALL BE UTILIZED ON THOSE POINTS OF ACCESS FOR HEAVY EQUIPMENT TO AND FROM THE CONSTRUCTION AREA, AS DIRECTED BY THE CONTRACTOR.

FOR BRIDGE BR-3 CONSTRUCTION SCHEDULE, REFER TO SHEETS MOT/3-6.

SOIL EROSION AND POLLUTION CONTROL

CONTROL MEASURES AS DESCRIBED IN SPEC 210 OR AS DIRECTED BY THE ENGINEER, SHALL BE EMPLOYED TO ASSURE EROSION CONTROL THROUGHOUT THE CONSTRUCTION AND POST CONSTRUCTION PERIOD. THE PRIMARY MEASURES TO BE UTILIZED ARE DESCRIBED ON PRHTA STANDARD DRAWINGS SHEETS ER/1-17 AND AS SHOWN ON SHEETS MCD/1-3.

PAYMENT FOR EROSION CONTROL MEASURES

PAYMENT FOR THESE MEASURES WITH THE EXCEPTION OF EXCAVATION SPEC 203, TURF ESTABLISHMENT SPEC 627 AND SODDING SPEC 628 SHALL BE IN ACCORDANCE WITH SPEC 210-4.01.

SCOPE OF CONSTRUCTION

THE PROJECT "SCIENCE CITY BOULEVARD, PHASE II" CONSISTS IN THE CONSTRUCTION OF THE REMAINING HALF SECTION OF THE BOULEVARD FROM STATION 6+53.14 (BLVD) TO STATION 14+47.53 (BLVD), A NEW LOCAL STREET INTERSECTING THE BOULEVARD TWICE, AND THE WIDENING OF DE DIEGO AVENUE AT INTERSECTION WITH NEW LOCAL STREET. THE PROJECT ALSO INCLUDES THE CONSTRUCTION OF MEDIAN ISLANDS AT DE DIEGO AVENUE NEAR LOCAL STREET INTERSECTION.

THE PROJECT INCLUDES THE CONSTRUCTION OF BRIDGE BR-3, LIGHTING, DRAINAGE, SIGNING, PAVEMENT MARKING, TRAFFIC SIGNALIZATION AND ALL THE INCIDENTAL WORK REQUIRED FOR THE COMPLETION OF THE PROJECT.

INSTALLATION OF ALL SAFETY DEVICES AND CONSTRUCTION SIGNING SHALL BE INSTALLED AND MAINTAINED THROUGHOUT THE ENTIRE CONSTRUCTION. ANY CHANGE TO THE MOT BY THE CONTRACTOR SHALL BE REQUESTED IN WRITING PRIOR TO COMMENCE WITH THE CONSTRUCTION PHASE. EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED AND MAINTAINED FOR THE CORRESPONDING CONSTRUCTION PHASE.

PHASE I

TRAFFIC

TRAFFIC WILL GENERALLY BE MAINTAINED ON EXISTING DE DIEGO AVENUE AND PR-21 ROADWAYS DURING THIS PHASE OF CONSTRUCTION. NO SIGNIFICANT CHANGES TO TRAFFIC PATTERNS ARE REQUIRED DURING THIS PHASE.

CONSTRUCTION

- PARTIAL CONSTRUCTION OF LINE-BLVD ROADWAY.
- WIDENING OF DE DIEGO AVENUE.
- CONSTRUCTION OF LINE-LS AND LINE-PS ROADWAYS.
- DRAINAGE & UTILITIES TO BE INSTALLED WITHIN AREAS UNDER CONSTRUCTION.
- ALL INCIDENTAL WORK REQUIRED FOR THE COMMENCEMENT OF PHASE II.

LEGEND:

1	TEMPORARY CONCRETE BARRIER
2	PLASTIC DRUMS (SHALL BE PLACED AT 5.00m)
OR	CONSTRUCTION SIGN
XX / XX	CODE NUMBER / LOCATION NUMBER
	ADVANCE WARNING ARROW
	PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)
	AREA UNDER CONSTRUCTION

NOTES:

1. FOR CONSTRUCTION SIGNS TABLE SEE SHEET MOT-7.

MAINTENANCE OF TRAFFIC PLAN

0M 20M 40M 60M Scale= 1:1,000

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

SEGMENT EAST OF PR 18
SAN JUAN, PUERTO RICO

TORO ARQUITECTOS
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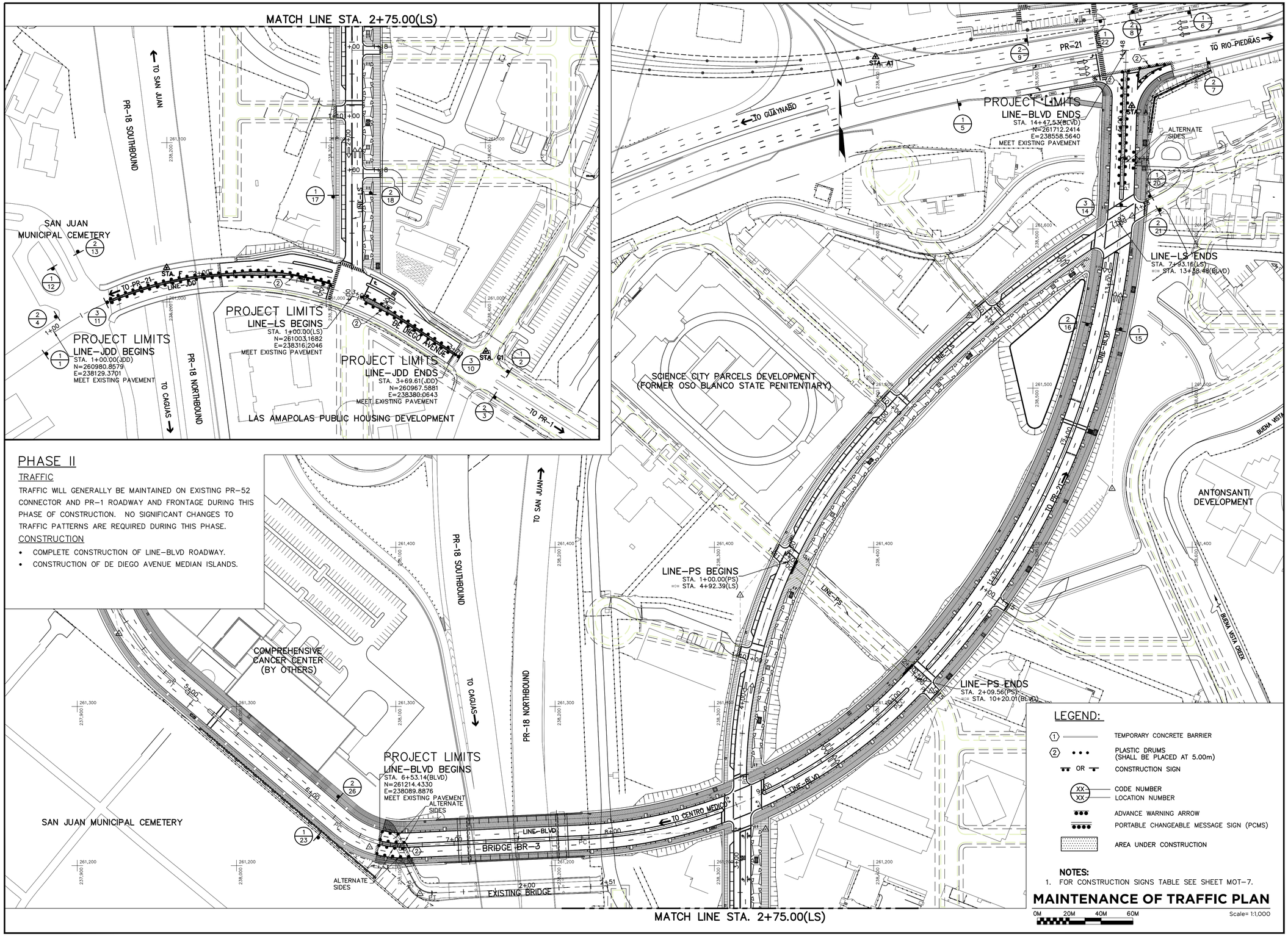
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

MAINTENANCE OF TRAFFIC (PHASE-I)

DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

MOT-1



PHASE II

TRAFFIC

TRAFFIC WILL GENERALLY BE MAINTAINED ON EXISTING PR-52 CONNECTOR AND PR-1 ROADWAY AND FRONTAGE DURING THIS PHASE OF CONSTRUCTION. NO SIGNIFICANT CHANGES TO TRAFFIC PATTERNS ARE REQUIRED DURING THIS PHASE.

CONSTRUCTION

- COMPLETE CONSTRUCTION OF LINE-BLVD ROADWAY.
- CONSTRUCTION OF DE DIEGO AVENUE MEDIAN ISLANDS.

LEGEND:

1	TEMPORARY CONCRETE BARRIER
2	PLASTIC DRUMS (SHALL BE PLACED AT 5.00m)
OR	CONSTRUCTION SIGN
XX / XX	CODE NUMBER / LOCATION NUMBER
	ADVANCE WARNING ARROW
	PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)
	AREA UNDER CONSTRUCTION

NOTES:

1. FOR CONSTRUCTION SIGNS TABLE SEE SHEET MOT-7.

MAINTENANCE OF TRAFFIC PLAN

0M 20M 40M 60M Scale= 1:1,000

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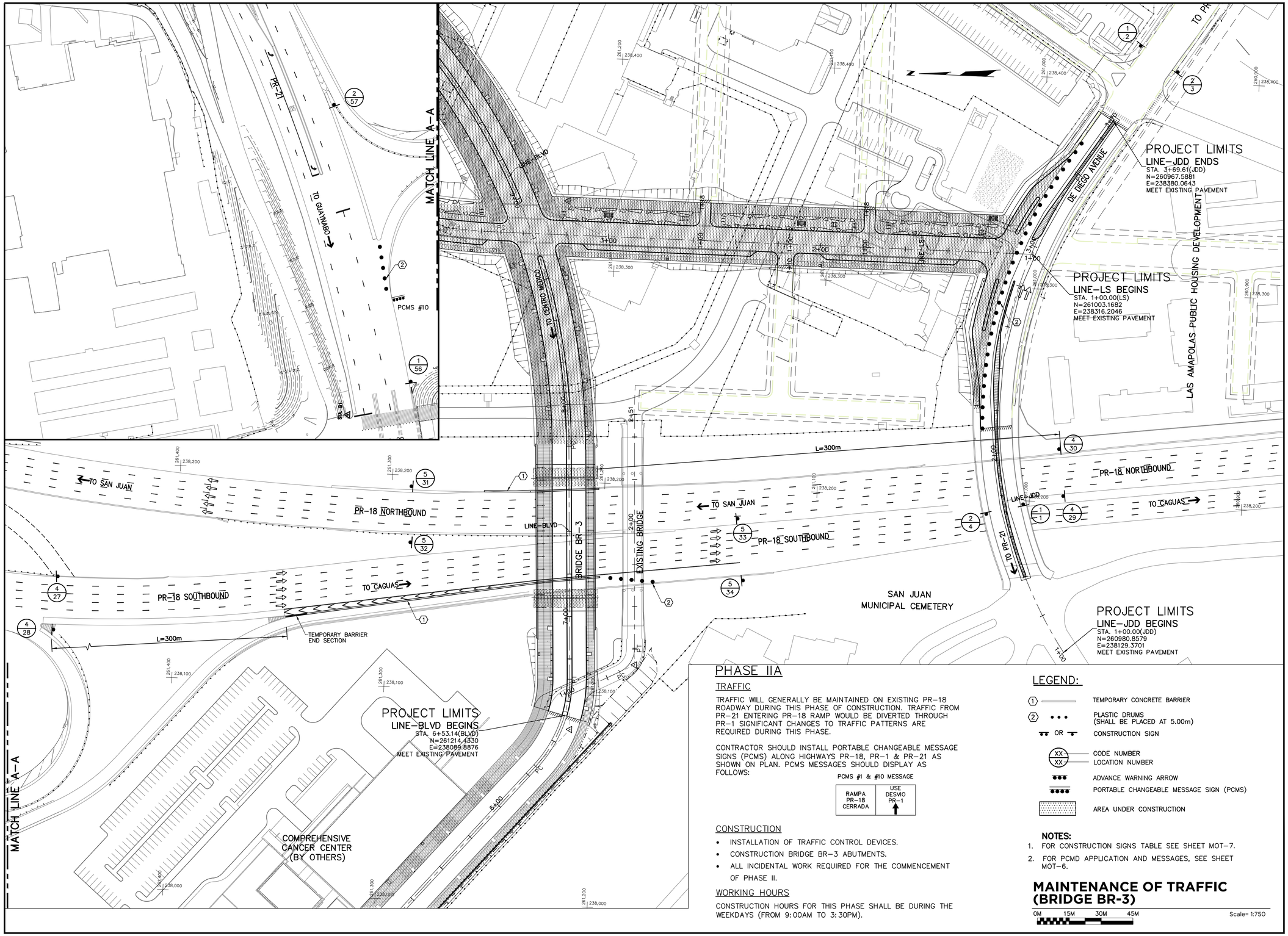
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

MAINTENANCE OF TRAFFIC (PHASE-II)

DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

MOT-2



PHASE IIA

TRAFFIC

TRAFFIC WILL GENERALLY BE MAINTAINED ON EXISTING PR–18 ROADWAY DURING THIS PHASE OF CONSTRUCTION. TRAFFIC FROM PR–21 ENTERING PR–18 RAMP WOULD BE DIVERTED THROUGH PR–1 SIGNIFICANT CHANGES TO TRAFFIC PATTERNS ARE REQUIRED DURING THIS PHASE.

CONTRACTOR SHOULD INSTALL PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) ALONG HIGHWAYS PR–18, PR–1 & PR–21 AS SHOWN ON PLAN. PCMS MESSAGES SHOULD DISPLAY AS FOLLOWS:

PCMS #1 & #10 MESSAGE

RAMPA PR–18 CERRADA	USE DESVIO PR–1 ↑

CONSTRUCTION

- INSTALLATION OF TRAFFIC CONTROL DEVICES.
- CONSTRUCTION BRIDGE BR–3 ABUTMENTS.
- ALL INCIDENTAL WORK REQUIRED FOR THE COMMENCEMENT OF PHASE II.

WORKING HOURS

CONSTRUCTION HOURS FOR THIS PHASE SHALL BE DURING THE WEEKDAYS (FROM 9:00AM TO 3:30PM).

LEGEND:

- (1) TEMPORARY CONCRETE BARRIER
- (2) PLASTIC DRUMS (SHALL BE PLACED AT 5.00m)
- OR — CONSTRUCTION SIGN
- XX / XX — CODE NUMBER / LOCATION NUMBER
- ADVANCE WARNING ARROW
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)
- AREA UNDER CONSTRUCTION

NOTES:

1. FOR CONSTRUCTION SIGNS TABLE SEE SHEET MOT–7.
2. FOR PCMD APPLICATION AND MESSAGES, SEE SHEET MOT–6.

MAINTENANCE OF TRAFFIC (BRIDGE BR-3)

0M 15M 30M 45M Scale= 1:750

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

MAINTENANCE OF TRAFFIC (PHASE-IIA)

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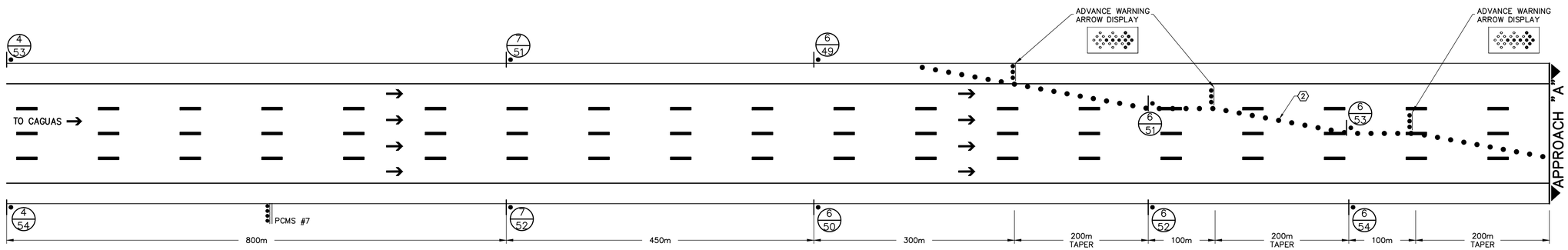
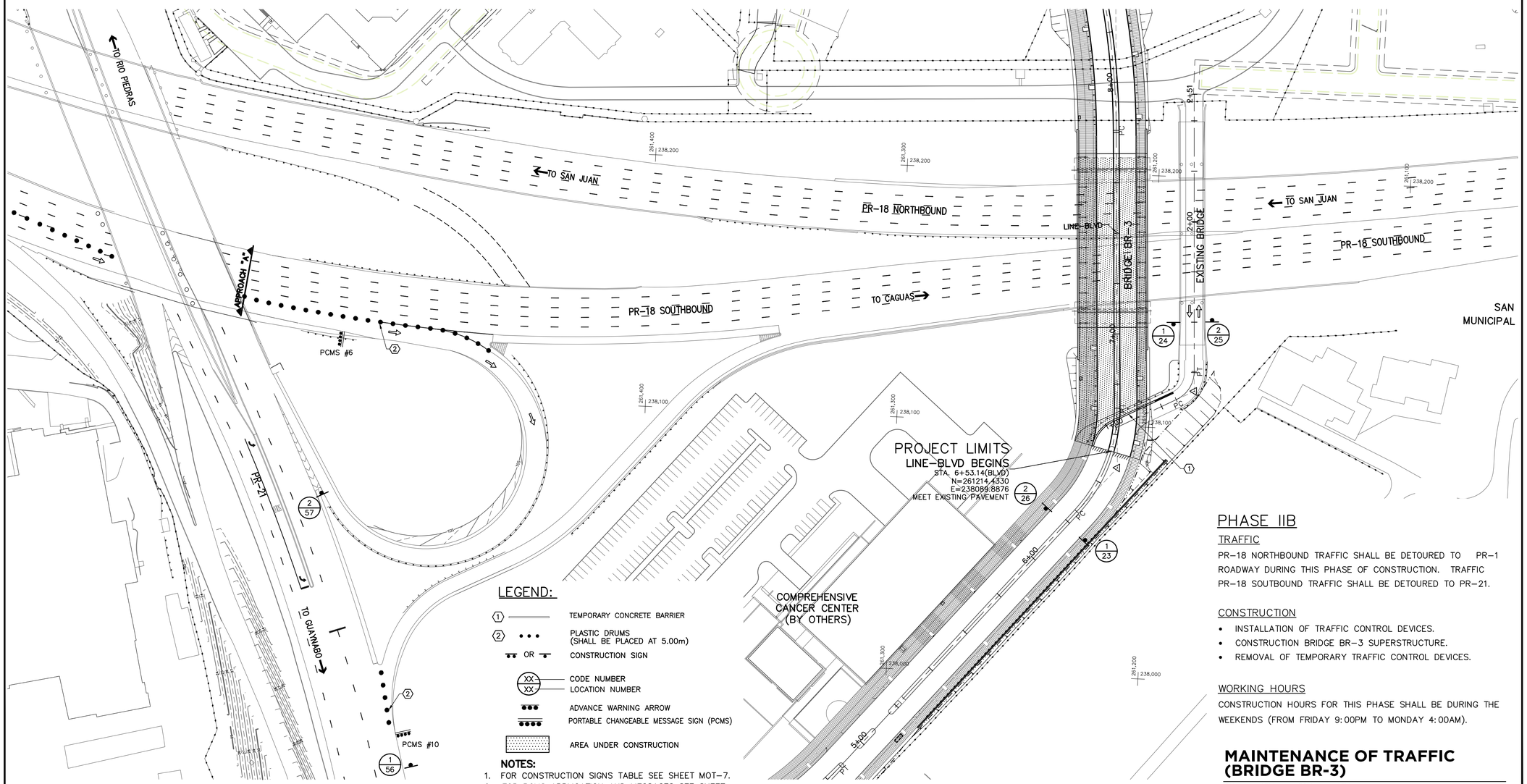
MOT-3





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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

MAINTENANCE OF TRAFFIC (PHASE-IIB)

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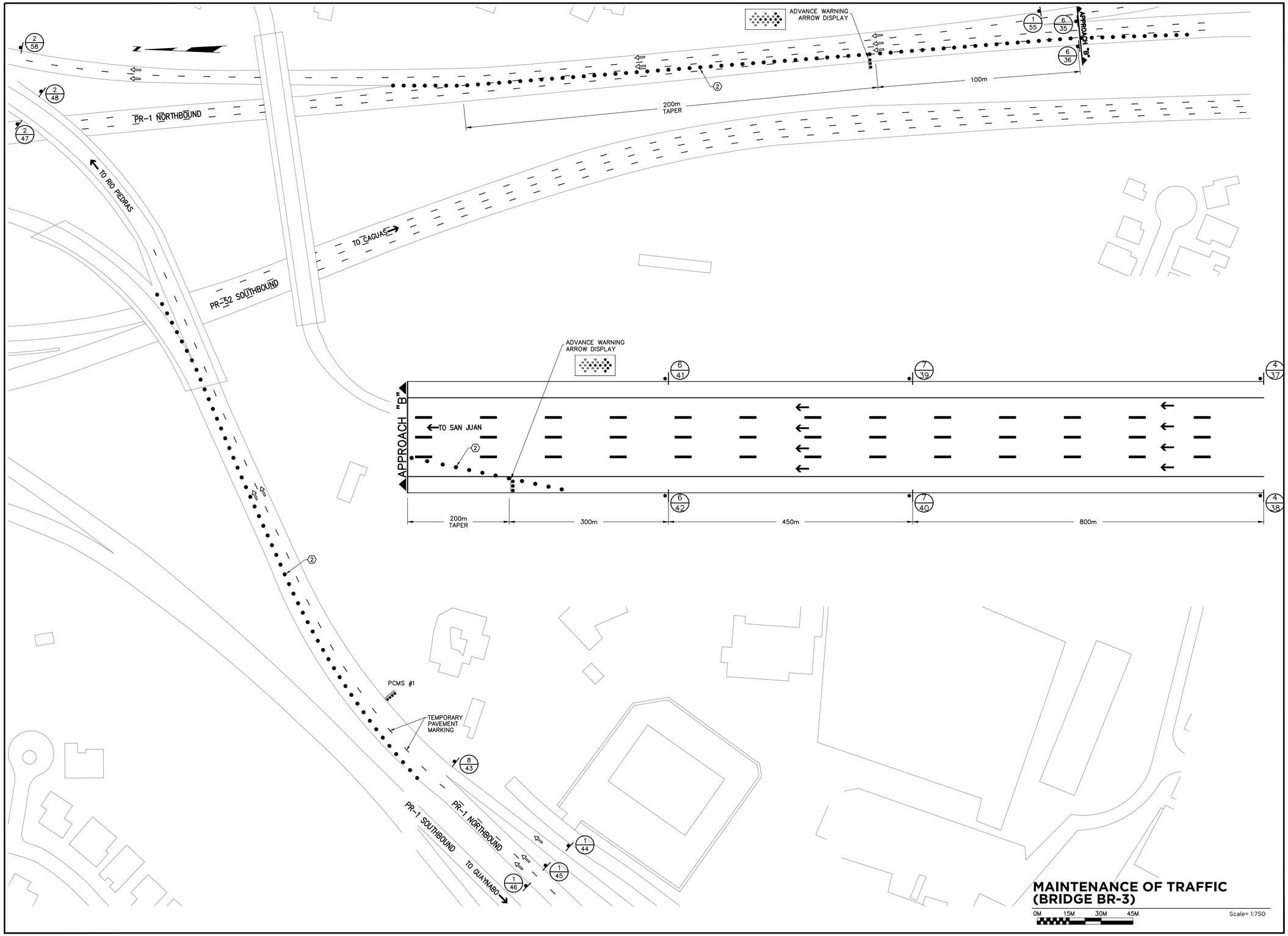
REVISED BY:
DATE: JUNE-19-2012

MOT-4



MAINTENANCE OF TRAFFIC (BRIDGE BR-3)

0M 15M 30M 45M

Scale= 1:750

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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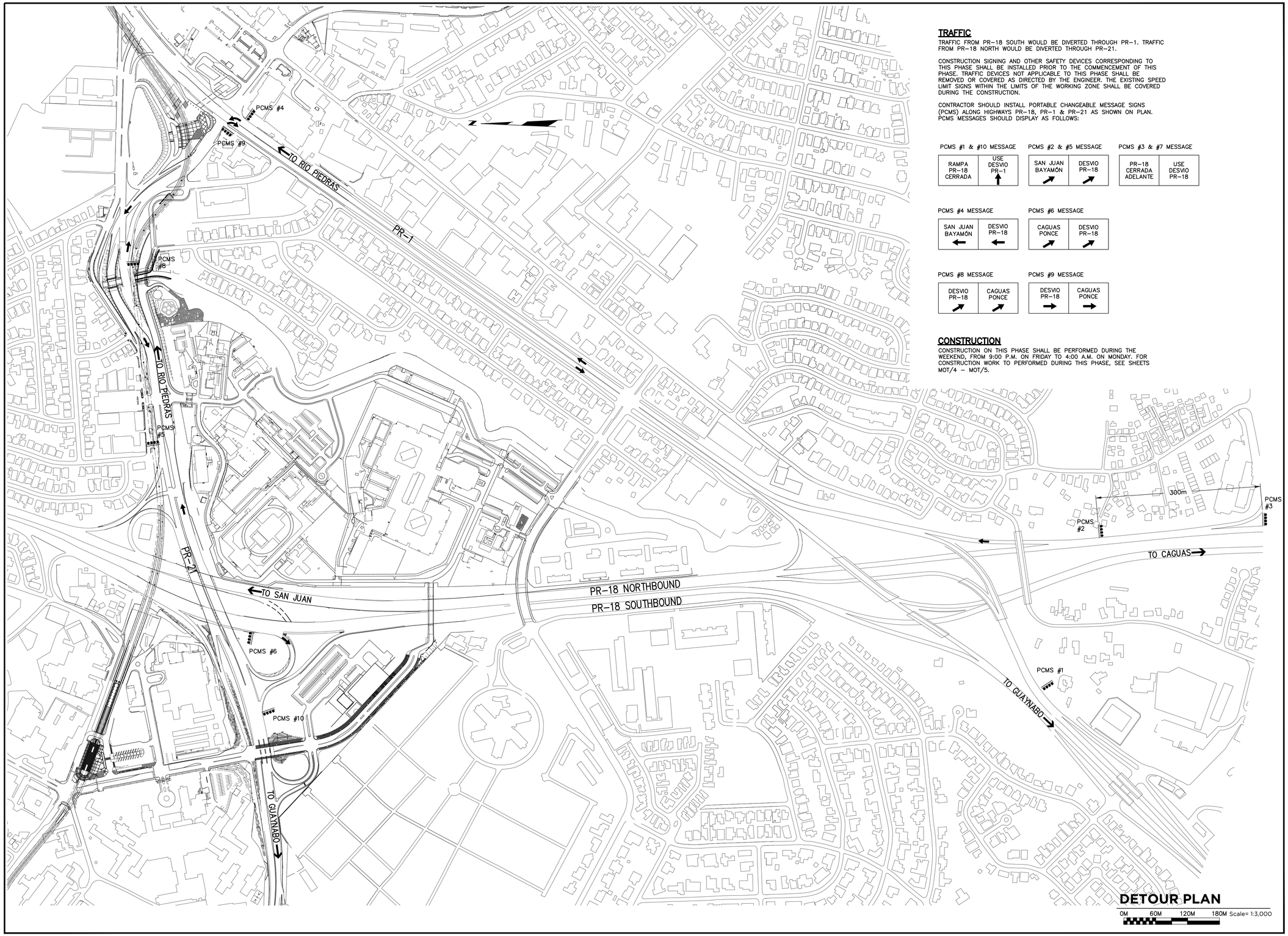
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

MAINTENANCE OF TRAFFIC (PHASE-IIB)

DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

MOT-5



DETOUR PLAN

TRAFFIC

TRAFFIC FROM PR–18 SOUTH WOULD BE DIVERTED THROUGH PR–1. TRAFFIC FROM PR–18 NORTH WOULD BE DIVERTED THROUGH PR–21.

CONSTRUCTION SIGNING AND OTHER SAFETY DEVICES CORRESPONDING TO THIS PHASE SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF THIS PHASE. TRAFFIC DEVICES NOT APPLICABLE TO THIS PHASE SHALL BE REMOVED OR COVERED AS DIRECTED BY THE ENGINEER. THE EXISTING SPEED LIMIT SIGNS WITHIN THE LIMITS OF THE WORKING ZONE SHALL BE COVERED DURING THE CONSTRUCTION.

CONTRACTOR SHOULD INSTALL PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) ALONG HIGHWAYS PR–18, PR–1 & PR–21 AS SHOWN ON PLAN. PCMS MESSAGES SHOULD DISPLAY AS FOLLOWS:

PCMS #1 & #10 MESSAGE

RAMPA PR–18 CERRADA	USE DESVIO PR–1 ↑

PCMS #2 & #5 MESSAGE

SAN JUAN BAYAMÓN	DESVIO PR–18 ↗

PCMS #3 & #7 MESSAGE

PR–18 CERRADA ADELANTE	USE DESVIO PR–18

PCMS #4 MESSAGE

SAN JUAN BAYAMÓN ←	DESVIO PR–18 ←

PCMS #6 MESSAGE

CAGUAS PONCE ↗	DESVIO PR–18 ↗

PCMS #8 MESSAGE

DESVIO PR–18 ↗	CAGUAS PONCE ↗

PCMS #9 MESSAGE

DESVIO PR–18 →	CAGUAS PONCE →

CONSTRUCTION

CONSTRUCTION ON THIS PHASE SHALL BE PERFORMED DURING THE WEEKEND, FROM 9:00 P.M. ON FRIDAY TO 4:00 A.M. ON MONDAY. FOR CONSTRUCTION WORK TO PERFORMED DURING THIS PHASE, SEE SHEETS MOT/4 – MOT/5.

SCIENCE CITY
URBAN INFRASTRUCTURE
PHASE II

SEGMENT EAST OF PR 18
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AVENIDA McLEARY 2004
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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

MAINTENANCE OF TRAFFIC (PHASE-IIB BRIDGE BR-3)

DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

MOT-6

CODE NUMBER	LOCATION NUMBER	SIGN CODE	L E G E N D	SIZE OF SIGN PANELS	OVERHEAD STRUCTURE TYPE	REFERENCE MANUAL	TOTAL ITEM
1	1, 2, 5, 6, 12, 15, 17, 20, 22, 23, 24, 44, 45, 46, 55, 56	W20–1		36"X36"	N/A	SEE DTPW MANUAL	16
2	3, 4, 7, 8, 9, 13, 16, 18, 21, 25, 26, 47, 48, 57, 58	G20–2		36"X18"	N/A	SEE DTPW MANUAL	15
3	10, 11, 14,	R4–7		24"X30"	N/A	SEE DTPW MANUAL	3
4	27, 28, 29, 30, 37, 38, 53, 54	W20–1		48"X48"	N/A	SEE DTPW MANUAL	8
5	31, 32, 33, 34	G20–2		48"X24"	N/A	SEE DTPW MANUAL	4
6	35, 36, 41, 42, 49, 50, 51, 52, 53, 54	W4–2		48"X48"	N/A	SEE DTPW MANUAL	10
7	39, 40, 51, 52	W20–5		48"X48"	N/A	SEE DTPW MANUAL	4
8	43	R1–2		36"X36"X36"	N/A	SEE DTPW MANUAL	1

CONSTRUCTION SIGNS

Scale= N.T.S.

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

SEGMENT EAST OF PR 18
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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

CONSTRUCTION SIGNS

DRAWN BY:
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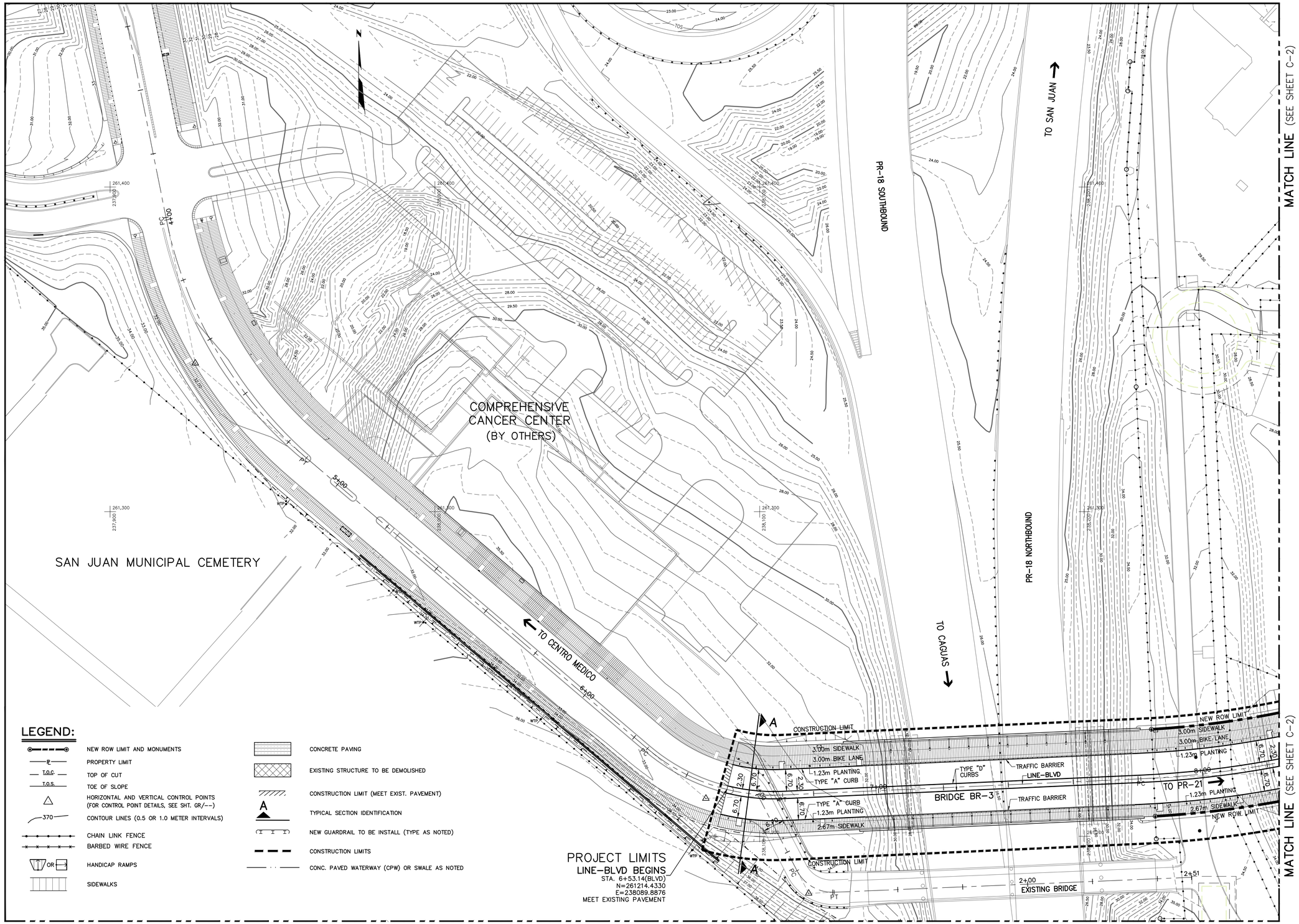
MOT-7



GEOMETRIC LAYOUT PLAN

0M 10M 20M 30M Scale= 1:500

SCIENCE CITY
URBAN INFRASTRUCTURE
PHASE II

SEGMENT EAST OF PR 18
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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

GEOMETRIC LAYOUT PLAN

DRAWN BY:
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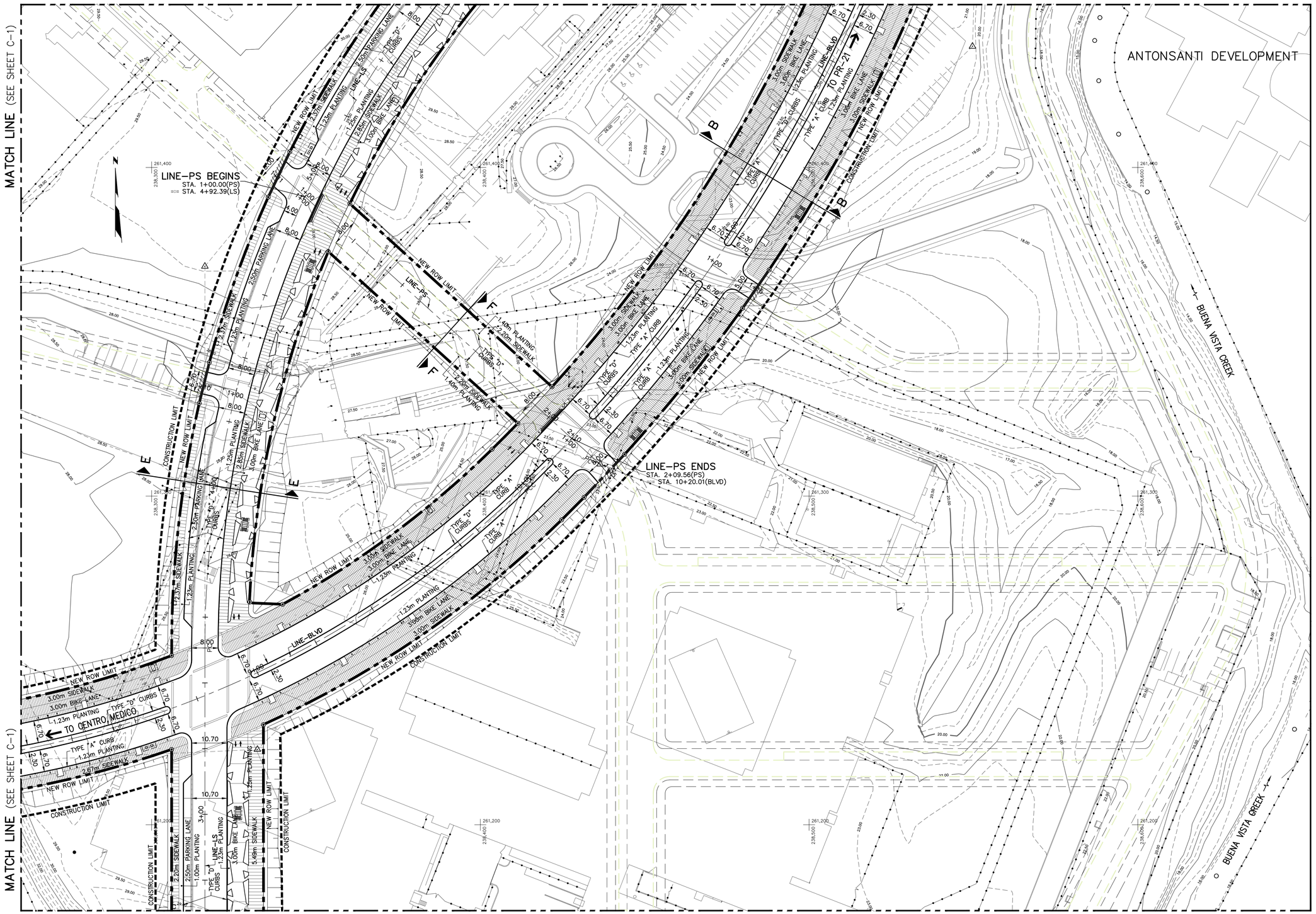
DATE: JUNE-19-2012

C-1



GEOMETRIC LAYOUT PLAN

0M 10M 20M 30M Scale= 1:500

SCIENCE CITY
URBAN INFRASTRUCTURE
PHASE II

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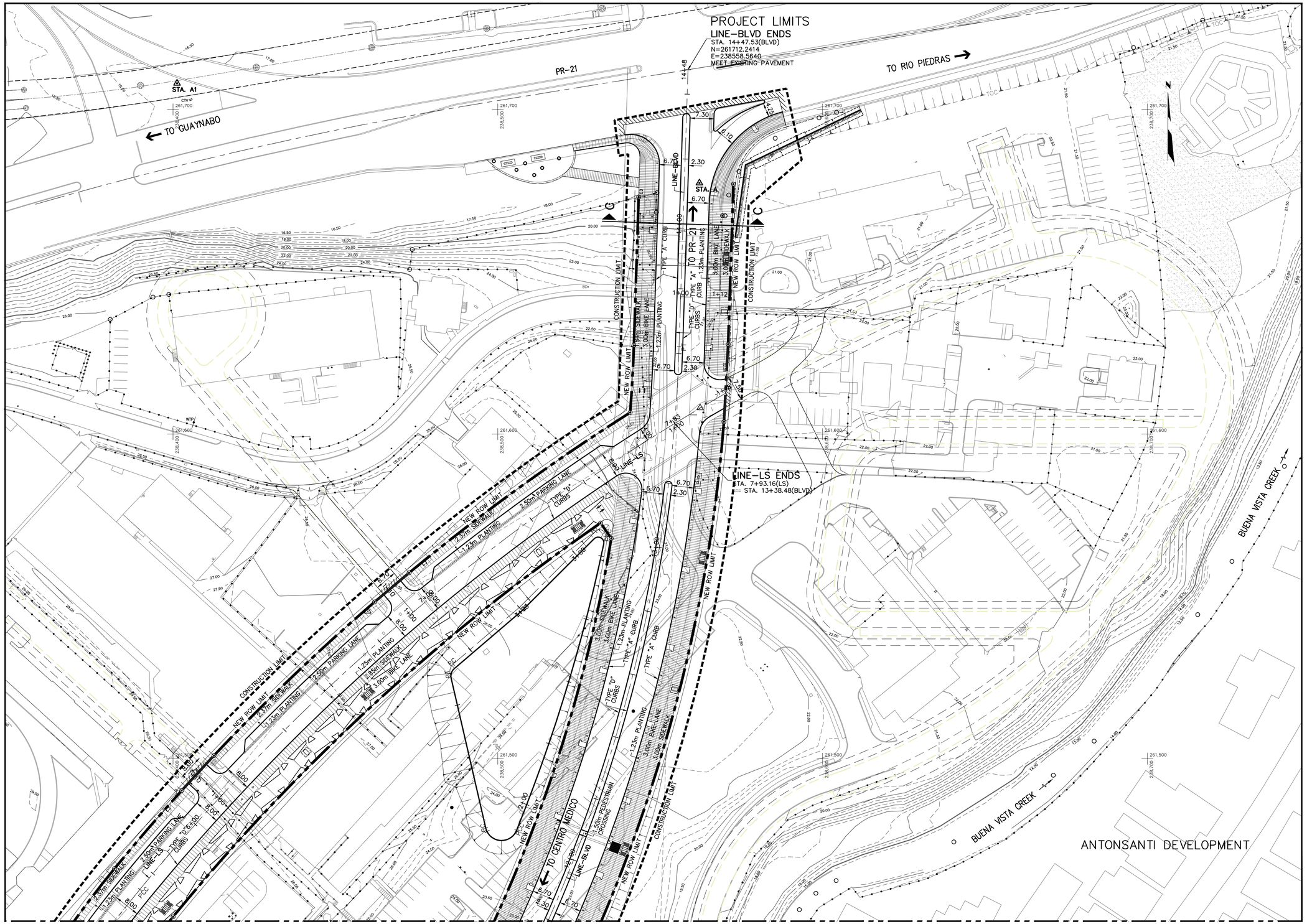
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

GEOMETRIC LAYOUT PLAN

DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

C-2



MATCH LINE (SEE SHEET C-2)

MATCH LINE (SEE SHEET C-2)

GEOMETRIC LAYOUT PLAN

0M 10M 20M 30M Scale= 1:500

SCIENCE CITY
URBAN INFRASTRUCTURE
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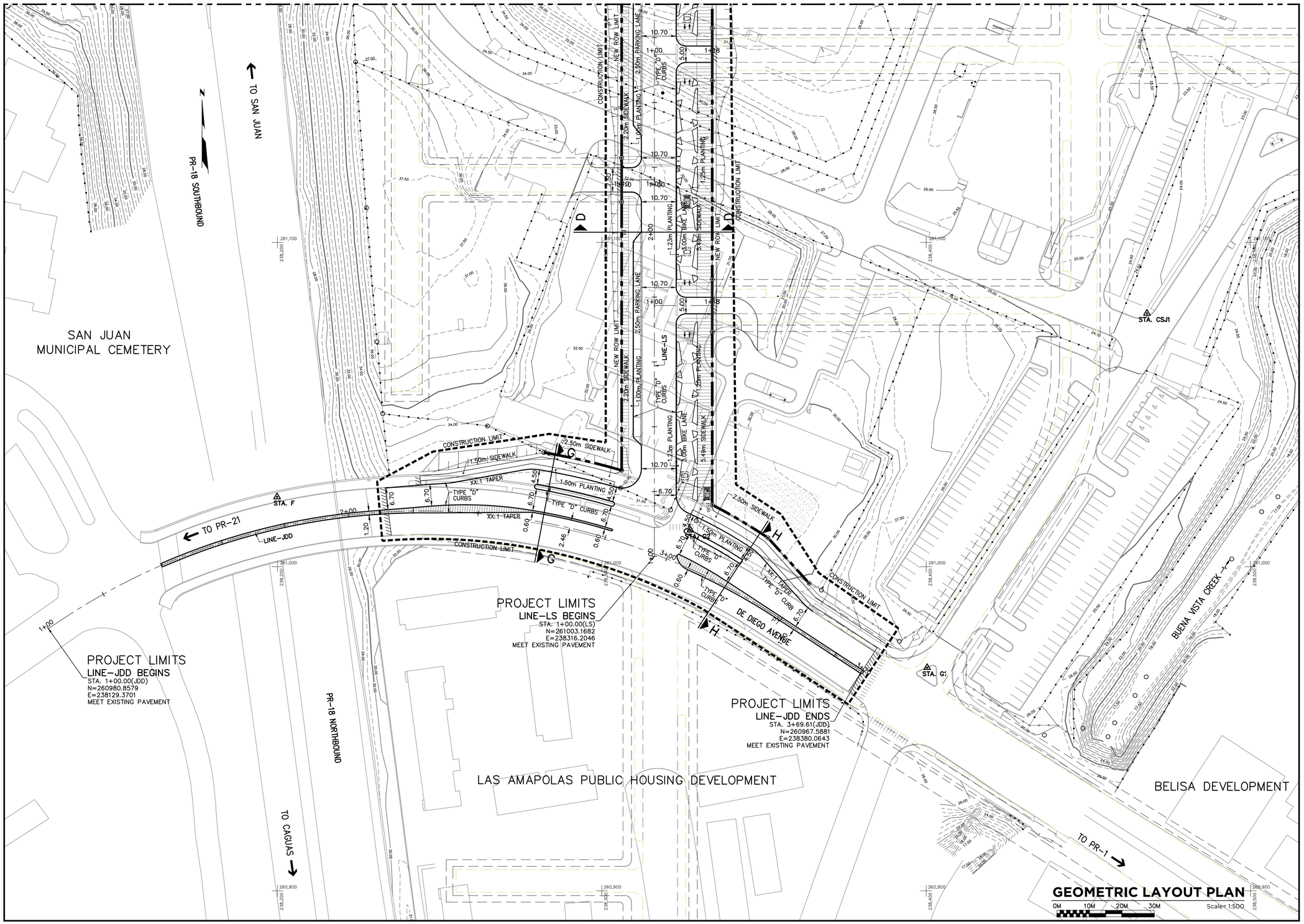
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

GEOMETRIC LAYOUT PLAN

DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

C-3



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URBAN INFRASTRUCTURE
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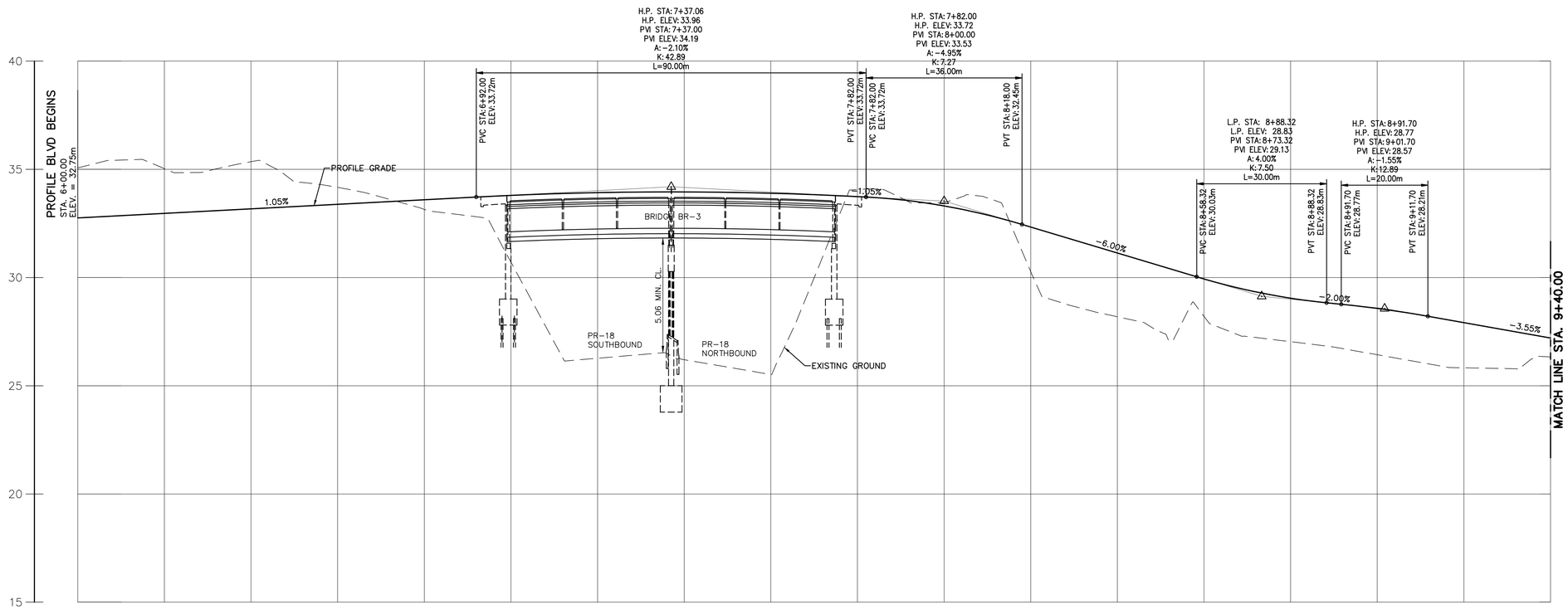
FINAL CONSTRUCTION
DOCUMENTS (100%)
MAY 13, 2013

GEOMETRIC LAYOUT PLAN

DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

C-4



PROFILE GRADE	32.75	32.96	33.17	33.38	33.59	33.80	33.92	33.96	33.90	33.74	33.31	32.33	31.13	29.93	29.05	28.57	27.92	27.21
EXISTING GROUND	35.07	35.03	35.36	34.17	33.15	30.71	26.27	26.20	25.52	34.07	33.46	30.27	28.19	28.21	27.04	26.43	25.83	26.33
STATIONS	6+00	6+20	6+40	6+60	6+80	7+00	7+20	7+40	7+60	7+80	8+00	8+20	8+40	8+60	8+80	9+00	9+20	9+40

6+00 7+00 8+00 9+00 9+40

PROFILE BLVD

PROFILE LINE BLVD

0M 10M 20M 30M Scale: H= 1:500

0M 2M 4M 6M Scale: V= 1:100

SCIENCE CITY
URBAN INFRASTRUCTURE
PHASE II

SEGMENT EAST OF PR 18
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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

PROFILE LINE BLVD

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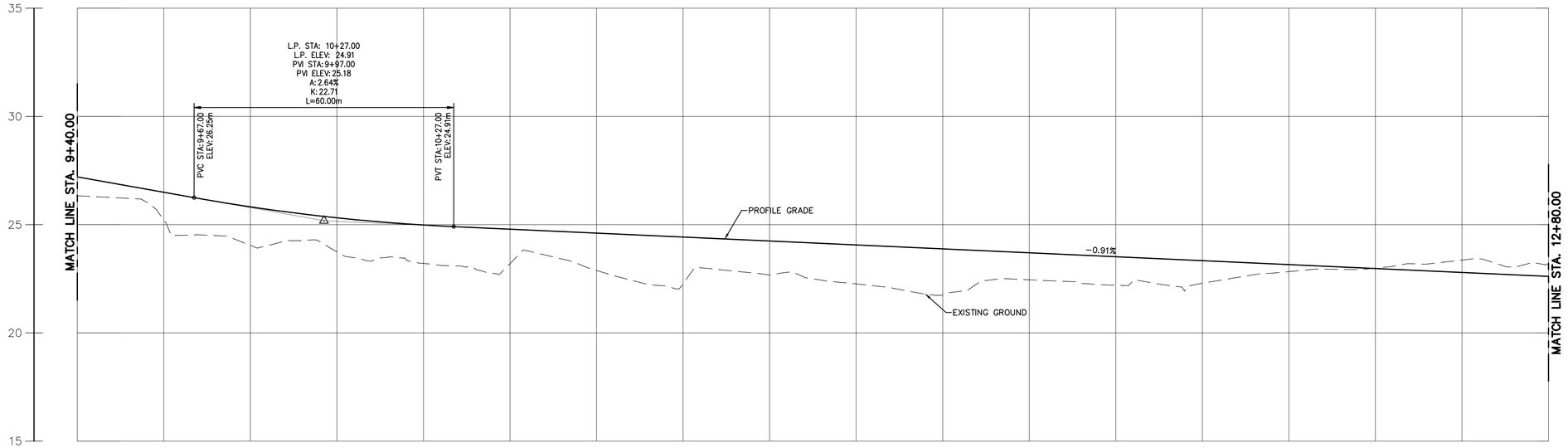
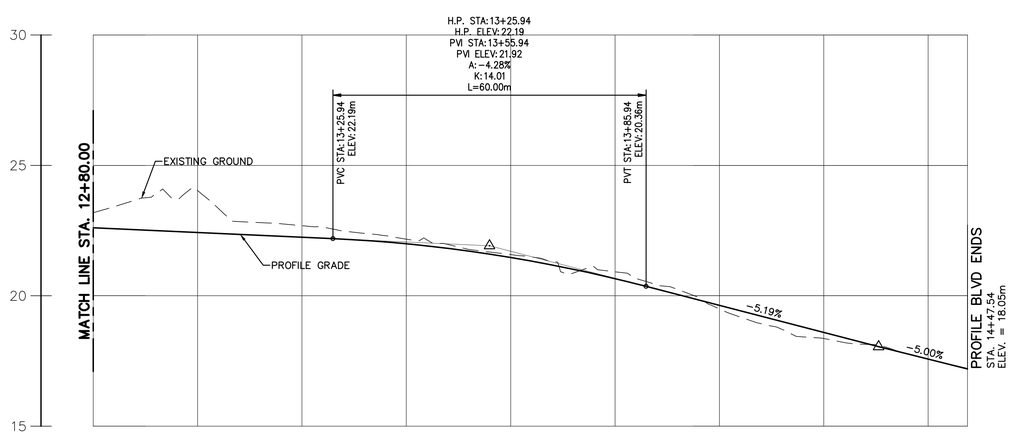
C-5



STATIONS	PROFILE GRADE	EXISTING GROUND
9+40	27.21	26.33
9+60	26.50	25.21
9+80	25.82	24.04
10+00	25.32	23.74
10+20	24.98	23.22
10+40	24.79	23.20
10+60	24.61	22.88
10+80	24.43	22.27
11+00	24.25	22.67
11+20	24.06	22.26
11+40	23.88	21.76
11+60	23.70	22.45
11+80	23.52	22.20
12+00	23.34	22.29
12+20	23.15	22.83
12+40	22.97	22.99
12+60	22.79	23.36
12+80	22.61	23.18

9+40 10+00 11+00 12+00 12+80

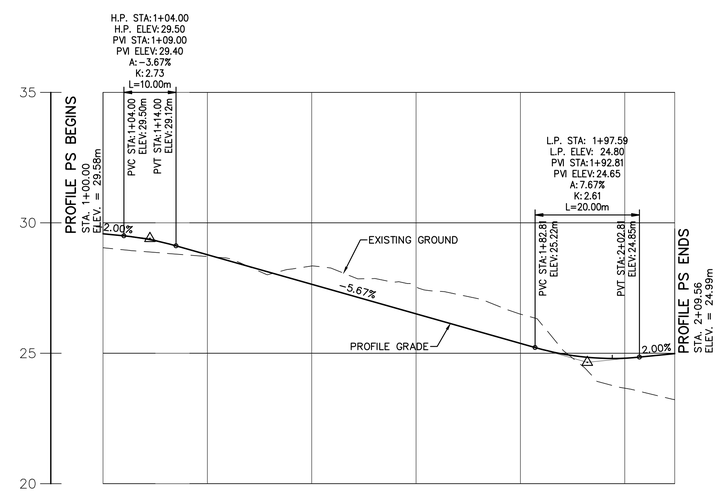
PROFILE BLVD



STATIONS	PROFILE GRADE	EXISTING GROUND
12+80	22.61	23.18
13+00	22.43	24.04
13+20	22.25	22.69
13+40	21.99	22.17
13+60	21.47	21.58
13+80	20.66	20.92
14+00	19.63	19.50
14+20	18.59	18.36
14+40	17.57	17.58
14+48	17.20	

12+80 13+00 14+00 14+47.53

PROFILE BLVD



STATIONS	PROFILE GRADE	EXISTING GROUND
1+00	29.58	29.04
1+20	28.78	28.71
1+40	27.64	28.35
1+60	26.51	27.54
1+80	25.38	26.50
2+00	24.81	23.66
2+10	24.99	23.22

1+00 2+00 2+09.56

PROFILE PS

PROFILE LINES BLVD AND PS

0M 10M 20M 30M Scale: H= 1:500

0M 2M 4M 6M Scale: V= 1:100

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PROFILE LINES BLVD (CONT.) AND PS

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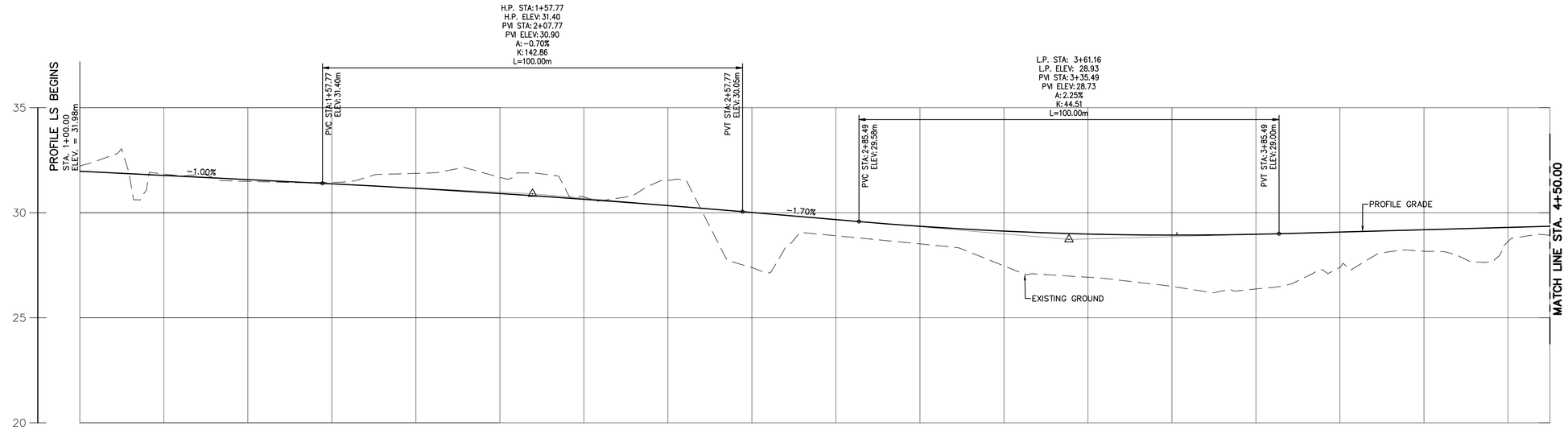
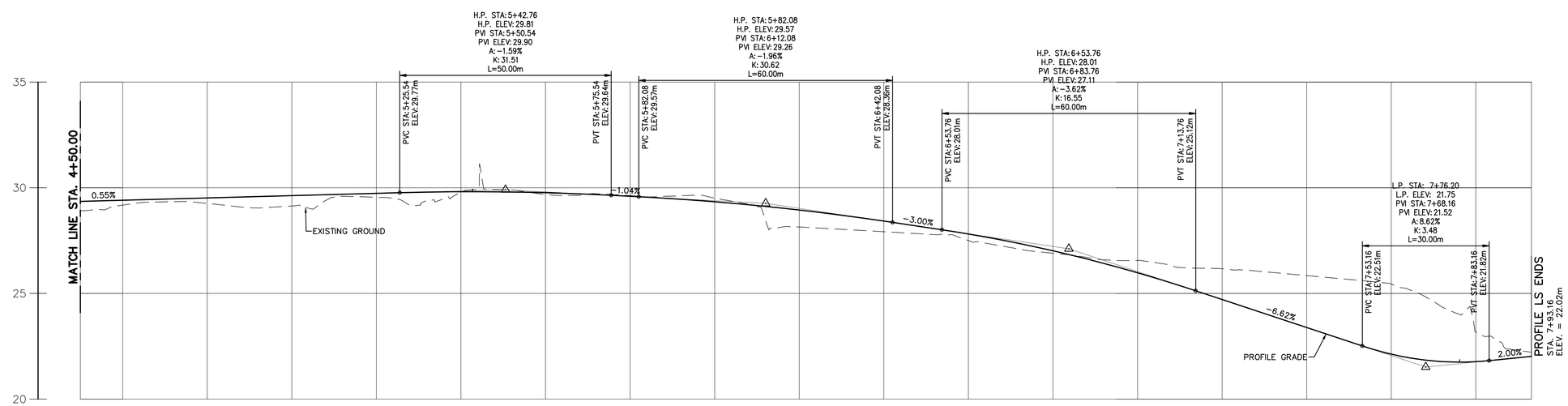
C-6



PROFILE GRADE	31.98	31.78	31.58	31.38	31.16	30.91	30.64	30.34	30.01	29.67	29.35	29.12	28.98	28.93	28.97	29.08	29.19	29.30	29.35					
EXISTING GROUND	32.22	31.84	31.49	31.44	31.87	31.68	30.75	31.54	27.39	28.91	28.52	27.47	26.93	26.49	26.37	27.40	28.16	28.62	28.92					
STATIONS	1+00	1+20	1+40	1+60	1+80	2+00	2+20	2+40	2+60	2+80	3+00	3+20	3+40	3+60	3+80	4+00	4+20	4+40	4+50					
	1+00					2+00					3+00					4+00			4+50					

PROFILE LS



PROFILE GRADE	29.35	29.41	29.52	29.63	29.73	29.81	29.77	29.60	29.33	28.94	28.42	27.81	27.02	26.98	25.98	24.71	23.39	22.13	21.77	22.02				
EXISTING GROUND	28.92	29.18	29.26	29.14	29.55	29.78	29.68	29.63	29.51	28.14	27.92	27.50	26.90	26.56	26.17	25.84	25.45	23.18	22.22					
STATIONS	4+50	4+60	4+80	5+00	5+20	5+40	5+60	5+80	6+00	6+20	6+40	6+60	6+80	7+00	7+20	7+40	7+60	7+80	7+93					
	4+50			5+00					6+00					7+00					7+93.16					

PROFILE LS

PROFILE LINE LS

0M 10M 20M 30M Scale: H= 1:500

0M 2M 4M 6M Scale: V= 1:100

SCIENCE CITY
URBAN INFRASTRUCTURE
PHASE II

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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

PROFILE LINE LS

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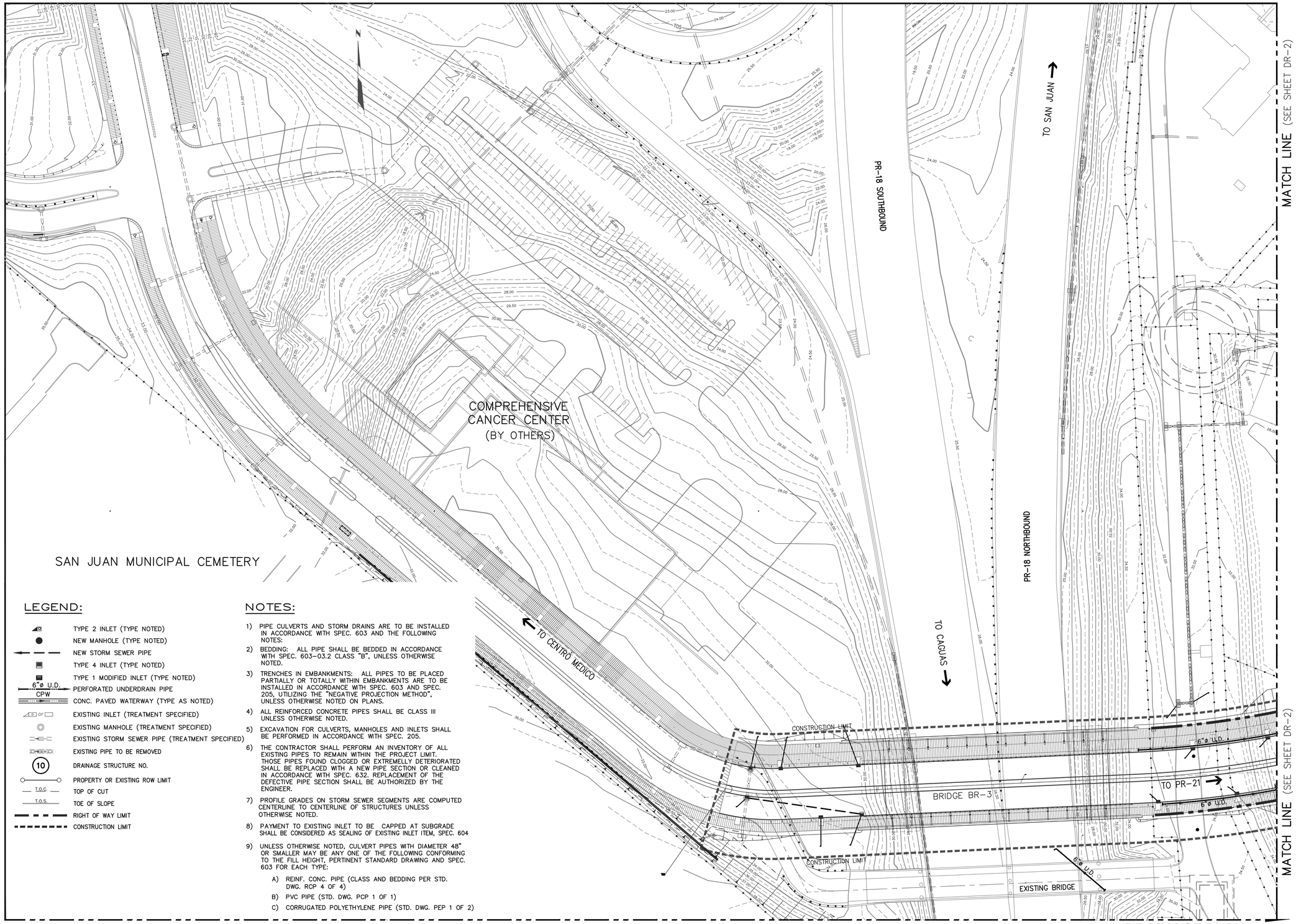
C-7



LEGEND:

- TYPE 2 INLET (TYPE NOTED)
- NEW MANHOLE (TYPE NOTED)
- NEW STORM SEWER PIPE
- TYPE 4 INLET (TYPE NOTED)
- TYPE 1 MODIFIED INLET (TYPE NOTED)
- 6"ø U.D. CPW — PERFORATED UNDERDRAIN PIPE
- CONC. PAVED WATERWAY (TYPE AS NOTED)
- EXISTING INLET (TREATMENT SPECIFIED)
- EXISTING MANHOLE (TREATMENT SPECIFIED)
- EXISTING STORM SEWER PIPE (TREATMENT SPECIFIED)
- EXISTING PIPE TO BE REMOVED
- (10) DRAINAGE STRUCTURE NO.
- PROPERTY OR EXISTING ROW LIMIT
- T.O.C. — TOP OF CUT
- T.O.S. — TOE OF SLOPE
- RIGHT OF WAY LIMIT
- CONSTRUCTION LIMIT

NOTES:

1) PIPE CULVERTS AND STORM DRAINS ARE TO BE INSTALLED IN ACCORDANCE WITH SPEC. 603 AND THE FOLLOWING NOTES:
2) BEDDING: ALL PIPE SHALL BE BEDDED IN ACCORDANCE WITH SPEC. 603-03.2 CLASS "B", UNLESS OTHERWISE NOTED.
3) TRENCHES IN EMBANKMENTS: ALL PIPES TO BE PLACED PARTIALLY OR TOTALLY WITHIN EMBANKMENTS ARE TO BE INSTALLED IN ACCORDANCE WITH SPEC. 603 AND SPEC. 205, UTILIZING THE "NEGATIVE PROJECTION METHOD", UNLESS OTHERWISE NOTED ON PLANS.
4) ALL REINFORCED CONCRETE PIPES SHALL BE CLASS III UNLESS OTHERWISE NOTED.
5) EXCAVATION FOR CULVERTS, MANHOLES AND INLETS SHALL BE PERFORMED IN ACCORDANCE WITH SPEC. 205.
6) THE CONTRACTOR SHALL PERFORM AN INVENTORY OF ALL EXISTING PIPES TO REMAIN WITHIN THE PROJECT LIMIT. THOSE PIPES FOUND CLOGGED OR EXTREMELLY DETERIORATED SHALL BE REPLACED WITH A NEW PIPE SECTION OR CLEANED IN ACCORDANCE WITH SPEC. 632. REPLACEMENT OF THE DEFECTIVE PIPE SECTION SHALL BE AUTHORIZED BY THE ENGINEER.
7) PROFILE GRADES ON STORM SEWER SEGMENTS ARE COMPUTED CENTERLINE TO CENTERLINE OF STRUCTURES UNLESS OTHERWISE NOTED.
8) PAYMENT TO EXISTING INLET TO BE CAPPED AT SUBGRADE SHALL BE CONSIDERED AS SEALING OF EXISTING INLET ITEM, SPEC. 604
9) UNLESS OTHERWISE NOTED, CULVERT PIPES WITH DIAMETER 48" OR SMALLER MAY BE ANY ONE OF THE FOLLOWING CONFORMING TO THE FILL HEIGHT, PERTINENT STANDARD DRAWING AND SPEC. 603 FOR EACH TYPE:
   - A) REINF. CONC. PIPE (CLASS AND BEDDING PER STD. DWG. RCP 4 OF 4)
   - B) PVC PIPE (STD. DWG. PCP 1 OF 1)
   - C) CORRUGATED POLYETHYLENE PIPE (STD. DWG. PEP 1 OF 2)

DRAINAGE PLAN

0M 10M 20M 30M Scale= 1:500

SCIENCE CITY
URBAN INFRASTRUCTURE
PHASE II

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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

DRAINAGE PLAN

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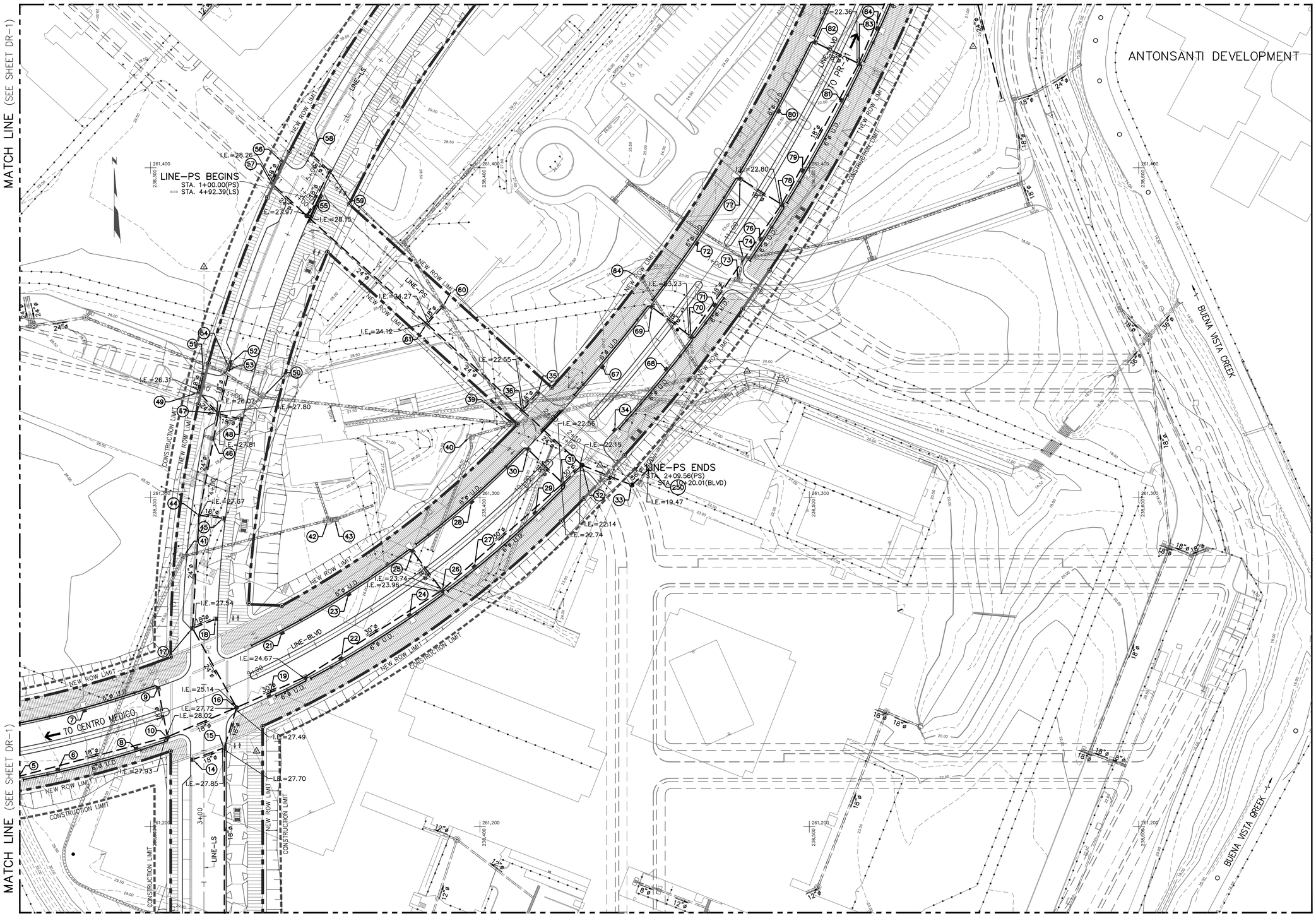
DATE: JUNE-19-2012

DR-1

MATCH LINE (SEE SHEET DR-3)

MATCH LINE (SEE SHEET DR-3)

MATCH LINE (SEE SHEET DR-1)



MATCH LINE (SEE SHEET DR-4)

MATCH LINE (SEE SHEET DR-4)

DRAINAGE PLAN

0M 10M 20M 30M Scale= 1:500

SCIENCE CITY
URBAN INFRASTRUCTURE
PHASE II

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MAY 13, 2013

DRAINAGE PLAN

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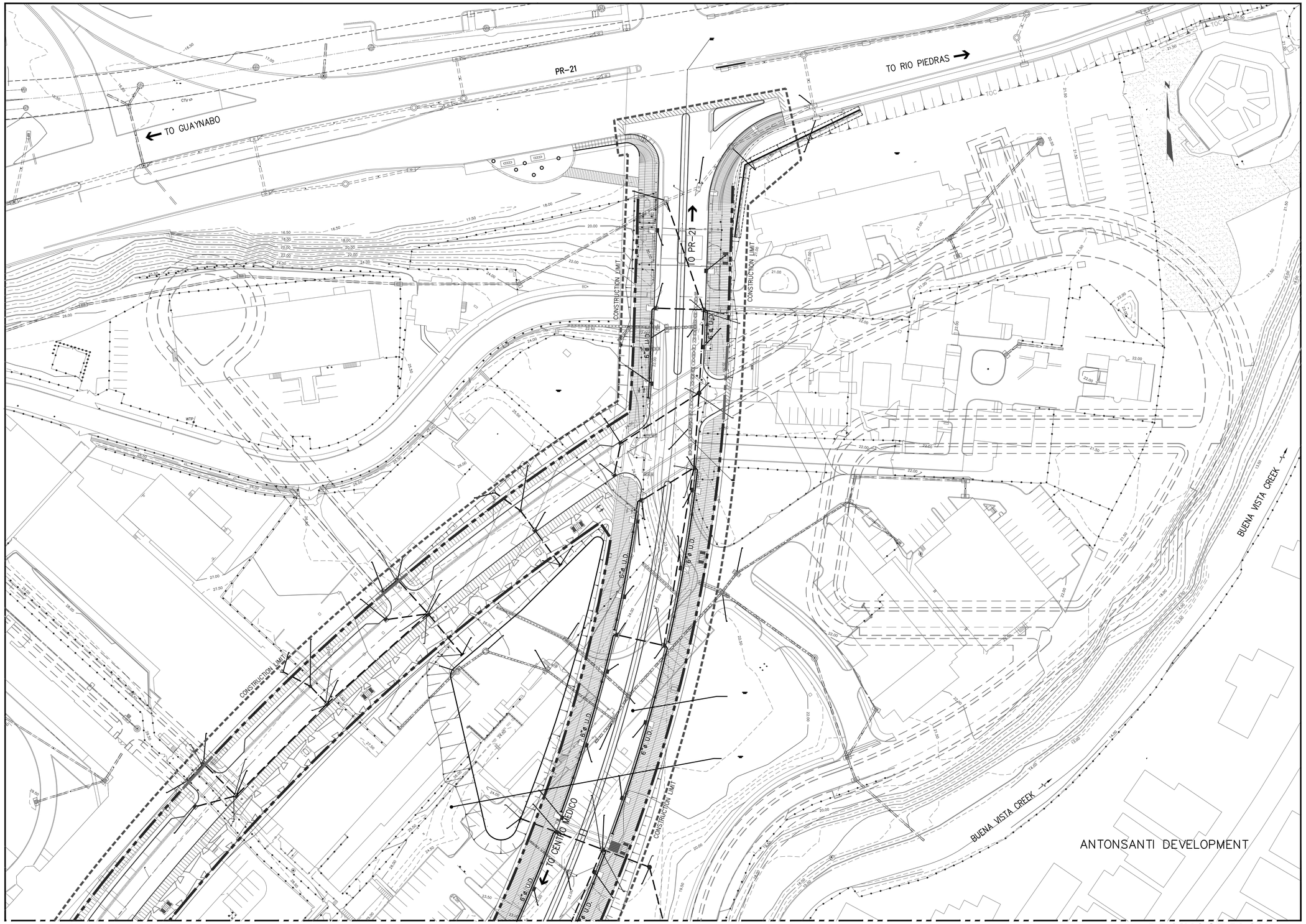
DR-2



DRAINAGE PLAN

0M 10M 20M 30M Scale= 1:500

SCIENCE CITY
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MAY 13, 2013

DRAINAGE PLAN

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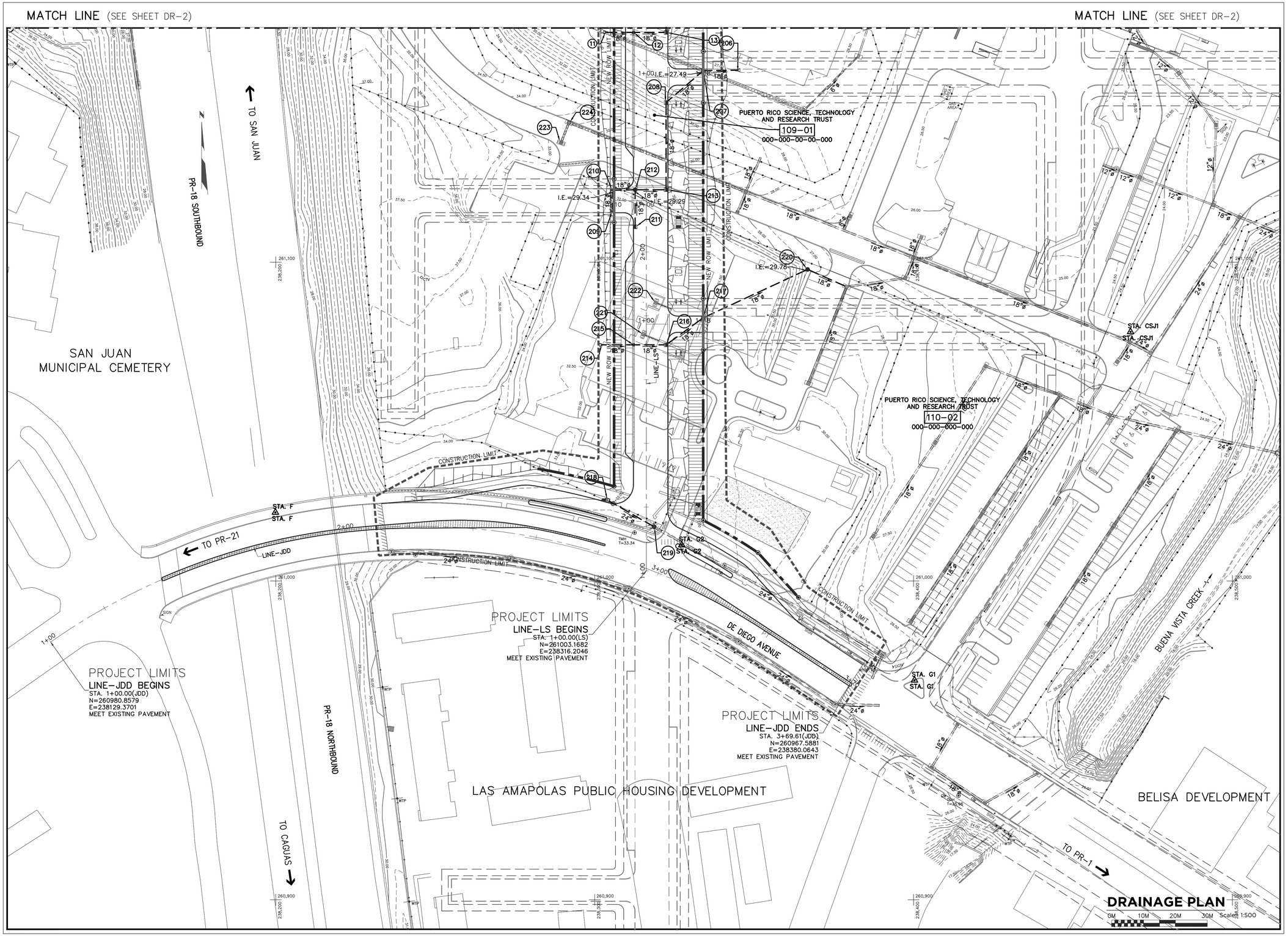
DR-3



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FINAL CONSTRUCTION
DOCUMENTS (100%)
MAY 13, 2013

DRAINAGE PLAN

DRAWN BY:
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DR-4

STRUCTURE NO.	STATION	OFFSET	T.E.	I.E.	TYPE OF STRUCTURE
242	6+94.60(BLVD)	7.69m Lt.	33.62	33.22	TYPE 1 MODIFIED INLET
238	6+95.00(BLVD)	7.35m Rt.	33.61	31.71	TYPE 4 INLET
1	7+86.37(BLVD)	7.69m Rt.	33.53	33.14	TYPE 1 MODIFIED INLET
243	6+82.33(BLVD)	7.70m Rt.	33.49	33.10	TYPE 1 MODIFIED INLET
239	6+60.00(BLVD)	1.65m Rt.	33.37	31.20	EXIST. MANHOLE TO BE CONVERTED TO TYPE 4 INLET
241	6+70.67(BLVD)	7.85m Lt.	33.36	32.97	TYPE 1 MODIFIED INLET
240	6+60.00(BLVD)	7.35m Lt.	33.26	30.95	EXIST. MANHOLE TO BE CONVERTED TO TYPE 4 INLET
2	7+98.37(BLVD)	7.69m Lt.	33.23	32.84	TYPE 1 MODIFIED INLET
3	8+10.22(BLVD)	7.70m Rt.	32.75	32.36	TYPE 1 MODIFIED INLET
5	8+22.37(BLVD)	7.35m Rt.	32.09	30.99	TYPE 4 INLET
4	8+22.37(BLVD)	7.70m Lt.	32.06	31.67	TYPE 1 MODIFIED INLET
218	1+22.17(LS)	12.08m Lt.	32.00	30.55	TYPE 2 INLET
6	8+34.22(BLVD)	7.70m Rt.	31.35	30.96	TYPE 1 MODIFIED INLET
219	1+13.85(LS)	2.44m Rt.	31.28	30.47	TYPE A MANHOLE
217	1+79.39(LS)	17.84m Rt.	31.18	29.96	TYPE 4 INLET
215	1+70.91(LS)	4.00m Lt.	31.18	30.08	TYPE 4 INLET
216	1+70.91(LS)	6.20m Rt.	31.13	30.03	TYPE 4 INLET
209	2+12.89(LS)	10.58m Lt.	30.82	29.37	TYPE 4 INLET
211	2+07.91(LS)	3.50m Lt.	30.73	29.35	TYPE 4 INLET
210	2+19.39(LS)	10.58m Lt.	30.71	27.79	TYPE 4 INLET
220	1+94.57(LS)	50.58m Rt.	30.68	25.84	TYPE A MANHOLE
214	1+70.91(LS)	14.00m Lt.	30.65	???	TYPE B HEADWALL
7	8+46.37(BLVD)	7.70m Lt.	30.62	30.23	TYPE 1 MODIFIED INLET

STRUCTURE NO.	STATION	OFFSET	T.E.	I.E.	TYPE OF STRUCTURE
212	2+19.57(LS)	3.50m Lt.	30.55	27.76	TYPE A MANHOLE
213	2+19.57(LS)	6.20m Rt.	30.51	27.71	TYPE 4 INLET
208	2+46.91(LS)	6.20m Rt.	30.10	27.57	TYPE 4 INLET
207	2+56.89(LS)	17.84m Rt.	30.07	26.30	TYPE 4 INLET
8	8+58.22(BLVD)	7.70m Rt.	29.91	29.52	TYPE 1 MODIFIED INLET
13	2+68.91(LS)	6.20m Rt.	29.78	28.33	TYPE 4 INLET
12	2+68.91(LS)	4.00m Lt.	29.78	28.53	TYPE 4 INLET
56	4+99.12(LS)	10.70m Lt.	29.70	28.30	TYPE 4 INLET
57	4+92.02(LS)	10.59m Lt.	29.70	28.11	TYPE 4 INLET
58	5+05.00(LS)	3.50m Lt.	29.57	28.26	TYPE 4 INLET
59	5+02.95(LS)	3.50m Rt.	29.56	28.23	TYPE 4 INLET
55	4+87.54(LS)	3.07m Rt.	29.46	24.61	TYPE A MANHOLE
10	8+68.07(BLVD)	7.35m Rt.	29.38	27.63	TYPE 4 INLET
52	4+37.94(LS)	3.50m Lt.	29.32	27.88	TYPE 4 INLET
9	8+70.36(BLVD)	7.35m Lt.	29.27	28.17	TYPE 4 INLET
11	2+68.91(LS)	12.72m Lt.	29.24	???	TYPE B HEADWALL
231	6+03.96(LS)	3.50m Lt.	29.24	27.39	TYPE 4 INLET
47	4+21.95(LS)	3.50m Lt.	29.23	26.07	TYPE 4 INLET
48	4+21.94(LS)	3.50m Rt.	29.12	27.84	TYPE 4 INLET
230	6+15.33(LS)	10.57m Lt.	29.10	27.54	TYPE 4 INLET
229	6+08.44(LS)	10.57m Lt.	29.10	27.86	TYPE 4 INLET
14	3+17.16(LS)	3.50m Lt.	29.07	27.90	TYPE 4 INLET
15	3+20.80(LS)	6.20m Rt.	28.98	27.55	TYPE 4 INLET

STRUCTURE NO.	STATION	OFFSET	T.E.	I.E.	TYPE OF STRUCTURE
232	6+14.94(LS)	3.50m Rt.	28.97	26.34	TYPE 4 INLET
45	3+90.94(LS)	3.50m Rt.	28.95	27.71	TYPE 4 INLET
44	3+90.94(LS)	4.00m Lt.	28.95	25.76	TYPE 4 INLET
17	3+56.94(LS)	3.50m Lt.	28.86	25.42	TYPE 4 INLET
18	3+60.00(LS)	3.50m Rt.	28.85	27.58	TYPE 4 INLET
16	8+90.36(BLVD)	6.71m Rt.	28.68	24.99	TYPE A MANHOLE
19	9+00.53(BLVD)	7.70m Rt.	28.43	27.88	TYPE 1 MODIFIED INLET
51	4+32.40(LS)	10.70m Lt.	28.36	26.34	TYPE 4 INLET
49	4+26.88(LS)	10.70m Lt.	28.33	26.16	TYPE 4 INLET
20	9+12.68(BLVD)	7.35m Rt.	28.06	24.67	TYPE 4 INLET
21	9+12.68(BLVD)	7.70m Lt.	28.04	27.65	TYPE 1 MODIFIED INLET
112	6+55.00(LS)	3.50m Rt.	27.89	24.93	TYPE 4 INLET
111	6+55.00(LS)	4.00m Lt.	27.89	26.18	TYPE 4 INLET
22	9+24.53(BLVD)	7.70m Rt.	27.62	27.23	TYPE 1 MODIFIED INLET
110	6+52.05(LS)	12.99m Lt.	27.36	???	TYPE B HEADWALL
23	9+36.67(BLVD)	7.70m Lt.	27.19	26.80	TYPE 1 MODIFIED INLET
61	1+53.47(PS)	3.50m Rt.	26.80	22.79	TYPE 4 INLET
60	1+53.47(PS)	3.50m Lt.	26.80	24.31	TYPE 4 INLET
24	9+48.53(BLVD)	7.70m Rt.	26.77	26.38	TYPE 1 MODIFIED INLET
206	2+57.07(LS)	28.68m Rt.	26.77	???	TYPE B HEADWALL
113	6+85.93(LS)	3.50m Lt.	26.66	23.46	TYPE 4 INLET
115	6+90.86(LS)	10.57m Lt.	26.57	24.88	TYPE 4 INLET
116	6+96.47(LS)	10.57m Lt.	26.57	23.47	TYPE 4 INLET

STRUCTURE NO.	STATION	OFFSET	T.E.	I.E.	TYPE OF STRUCTURE
26	9+60.69(BLVD)	7.35m Rt.	26.36	23.44	TYPE 4 INLET
25	9+60.69(BLVD)	7.35m Lt.	26.34	23.81	TYPE 4 INLET
114	6+96.95(LS)	3.50m Rt.	26.22	23.26	TYPE 4 INLET
27	9+72.54(BLVD)	7.70m Rt.	25.93	25.54	TYPE 1 MODIFIED INLET
32	10+16.51(BLVD)	7.65m Rt.	25.86	19.83	TYPE A MANHOLE
33	10+22.28(BLVD)	22.83m Rt.	25.86	???	TYPE A MANHOLE
28	9+84.68(BLVD)	7.70m Lt.	25.56	25.17	TYPE 1 MODIFIED INLET
29	9+96.54(BLVD)	7.70m Rt.	25.26	24.87	TYPE 1 MODIFIED INLET
30	10+08.60(BLVD)	7.35m Lt.	25.02	22.63	TYPE 4 INLET
31	10+08.59(BLVD)	7.35m Rt.	25.01	22.26	TYPE 4 INLET
36	1+92.47(PS)	3.50m Rt.	24.77	22.40	TYPE 4 INLET
35	1+92.47(PS)	3.50m Lt.	24.77	22.58	TYPE 4 INLET
34	10+30.79(BLVD)	7.70m Rt.	24.74	24.35	TYPE 1 MODIFIED INLET
67	10+42.85(BLVD)	7.70m Lt.	24.63	24.24	TYPE 1 MODIFIED INLET
68	10+54.72(BLVD)	7.70m Rt.	24.53	24.14	TYPE 1 MODIFIED INLET
70	10+66.85(BLVD)	7.35m Rt.	24.43	23.08	TYPE 4 INLET
69	10+66.85(BLVD)	7.35m Lt.	24.41	23.31	TYPE 4 INLET
71	10+78.72(BLVD)	7.70m Rt.	24.31	23.92	TYPE 1 MODIFIED INLET
72	10+90.85(BLVD)	7.70m Lt.	24.20	23.81	TYPE 1 MODIFIED INLET
76	11+02.72(BLVD)	7.70m Rt.	24.09	23.70	TYPE 1 MODIFIED INLET
228	6+96.95(LS)	19.89m Rt.	23.99	23.10	18" PIPE PLUG
78	11+14.85(BLVD)	7.35m Rt.	23.98	22.65	TYPE 4 INLET
77	11+14.85(BLVD)	7.35m Lt.	23.98	22.88	TYPE 4 INLET

STRUCTURE NO.	STATION	OFFSET	T.E.	I.E.	TYPE OF STRUCTURE
79	11+26.72(BLVD)	7.70m Rt.	23.87	23.48	TYPE 1 MODIFIED INLET
80	11+38.85(BLVD)	7.70m Lt.	23.76	23.37	TYPE 1 MODIFIED INLET
81	11+50.72(BLVD)	7.70m Rt.	23.65	23.26	TYPE 1 MODIFIED INLET
83	11+62.85(BLVD)	7.35m Rt.	23.54	22.21	TYPE 4 INLET
82	11+62.85(BLVD)	7.35m Lt.	23.54	22.44	TYPE 4 INLET
119	7+38.95(LS)	3.50m Rt.	23.53	21.82	TYPE 4 INLET
84	11+74.72(BLVD)	7.84m Rt.	23.43	23.04	TYPE 1 MODIFIED INLET
118	7+38.95(LS)	4.00m Lt.	23.37	21.85	TYPE 4 INLET
85	11+86.85(BLVD)	7.70m Lt.	23.33	22.94	TYPE 1 MODIFIED INLET
86	11+98.72(BLVD)	7.70m Rt.	23.22	22.83	TYPE 1 MODIFIED INLET
89	12+06.05(BLVD)	7.35m Rt.	23.16	20.65	TYPE 4 INLET
88	12+06.05(BLVD)	7.35m Lt.	23.15	20.98	TYPE 4 INLET
91	12+10.85(BLVD)	7.70m Lt.	23.11	22.72	TYPE 1 MODIFIED INLET
92	12+22.72(BLVD)	7.70m Rt.	23.00	22.61	TYPE 1 MODIFIED INLET
93	12+34.85(BLVD)	7.70m Lt.	22.89	22.50	TYPE 1 MODIFIED INLET
117	7+35.97(LS)	13.10m Lt.	22.85	???	TYPE B HEADWALL
94	12+46.72(BLVD)	7.70m Rt.	22.78	22.39	TYPE 1 MODIFIED INLET
101	12+58.85(BLVD)	7.70m Lt.	22.67	22.28	TYPE 1 MODIFIED INLET
103	12+70.72(BLVD)	7.35m Rt.	22.57	21.23	TYPE 4 INLET
102	12+70.72(BLVD)	7.35m Lt.	22.56	21.46	TYPE 4 INLET
227	7+38.97(LS)	16.81m Rt.	22.50	21.74	18" PIPE PLUG
104	12+82.85(BLVD)	7.70m Lt.	22.45	22.06	TYPE 1 MODIFIED INLET
105	12+94.72(BLVD)	7.70m Rt.	22.34	21.95	TYPE 1 MODIFIED INLET

STRUCTURE NO.	STATION	OFFSET	T.E.	I.E.	TYPE OF STRUCTURE
106	13+06.86(BLVD)	7.70m Lt.	22.23	21.84	TYPE 1 MODIFIED INLET
107	13+13.57(BLVD)	7.35m Lt.	22.17	21.07	TYPE 4 INLET
109	13+18.72(BLVD)	7.70m Rt.	22.13	21.74	TYPE 1 MODIFIED INLET
108	13+25.43(BLVD)	7.35m Rt.	22.06	20.75	TYPE 4 INLET
121	7+68.95(LS)	3.50m Rt.	21.87	20.77	TYPE 4 INLET
226	12+06.05(BLVD)	19.67m Lt.	21.86	−0.23	18" PIPE PLUG
225	13+48.24(BLVD)	6.99m Rt.	21.80	19.84	TYPE A MANHOLE
120	7+75.95(LS)	3.50m Lt.	21.67	20.57	TYPE 4 INLET
123	13+50.25(BLVD)	7.70m Lt.	21.63	21.24	TYPE 1 MODIFIED INLET
90	12+06.05(BLVD)	22.85m Rt.	21.60	19.48	TYPE A MANHOLE
124	13+62.23(BLVD)	7.70m Rt.	21.26	20.87	TYPE 1 MODIFIED INLET
125	13+73.74(BLVD)	7.35m Lt.	20.84	19.74	TYPE 4 INLET
126	13+73.74(BLVD)	7.35m Rt.	20.81	18.79	TYPE 4 INLET
127	13+85.74(BLVD)	7.69m Rt.	20.24	19.85	TYPE 1 MODIFIED INLET
128	13+97.74(BLVD)	7.69m Lt.	19.62	19.23	TYPE 1 MODIFIED INLET

PROPOSED DRAINAGE TABLES

Scale:NONE

SCIENCE CITY
URBAN INFRASTRUCTURE
PHASE II

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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

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EXISTING DRAINAGE TABLE

Scale:NONE

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FINAL CONSTRUCTION
DOCUMENTS (100%)
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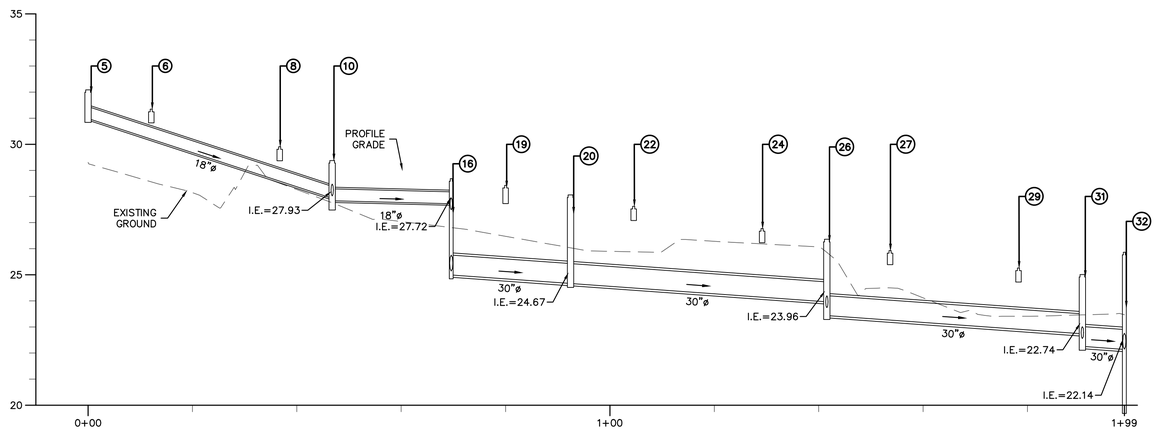

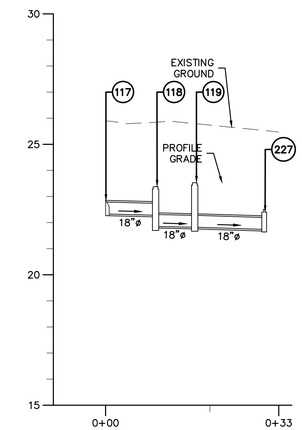

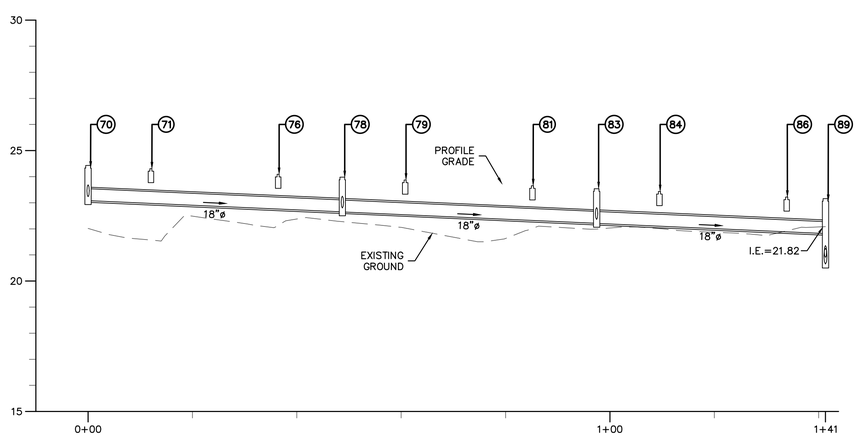

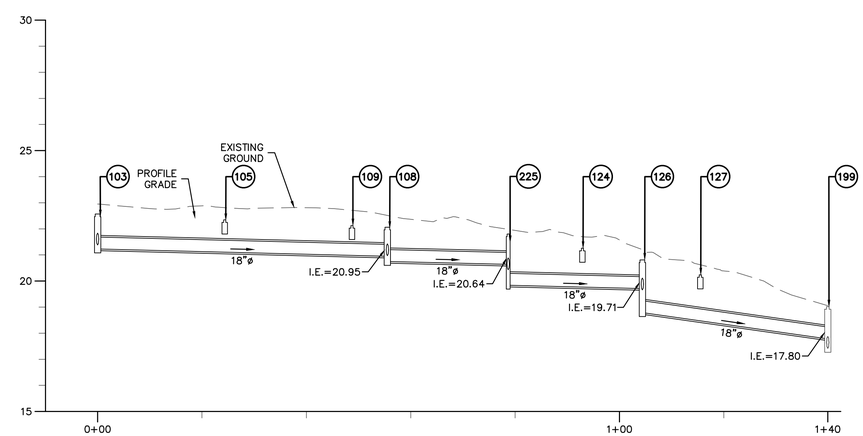

DRAINAGE PROFILES

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0M 2M 4M 6M Scale: V= 1:100

SCIENCE CITY
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PHASE II

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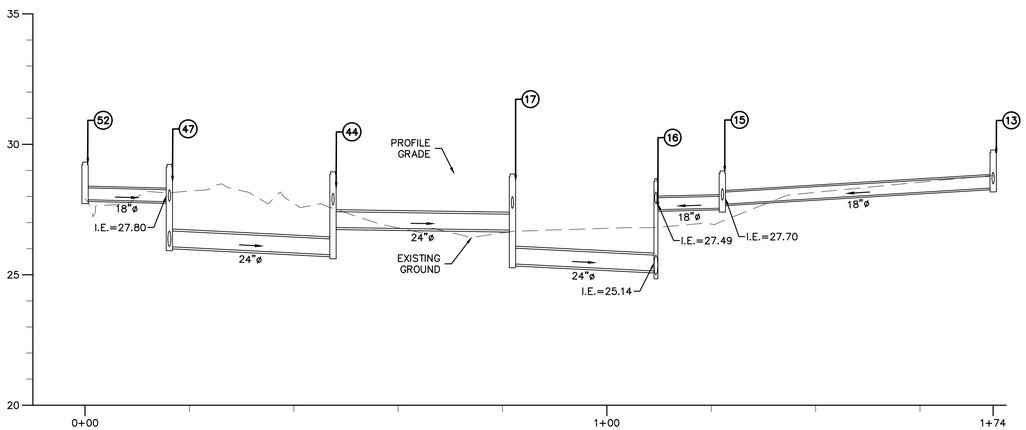

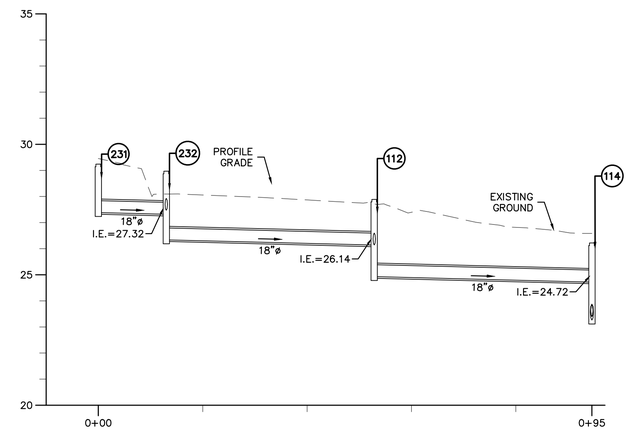

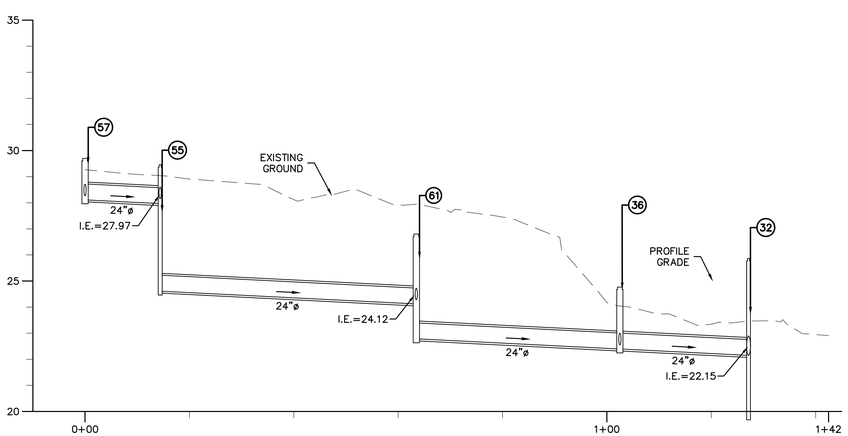

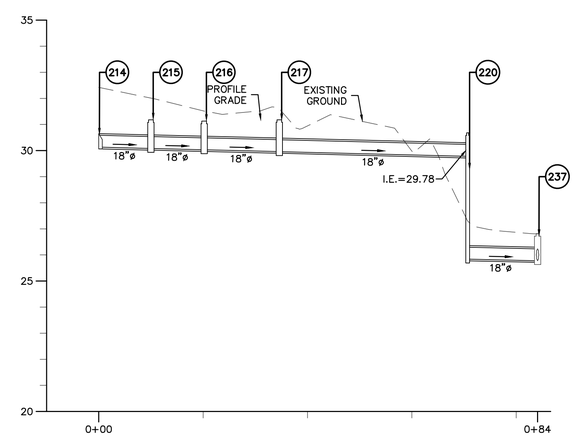

DRAINAGE PROFILES

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0M 2M 4M 6M Scale: V= 1:100

SCIENCE CITY
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PHASE II

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FINAL CONSTRUCTION DOCUMENTS (100%)
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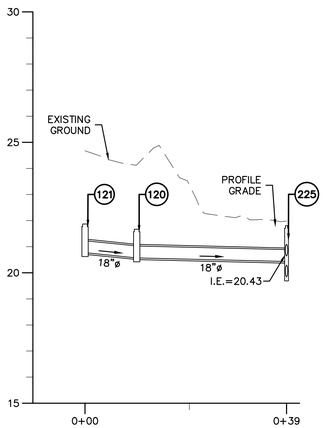

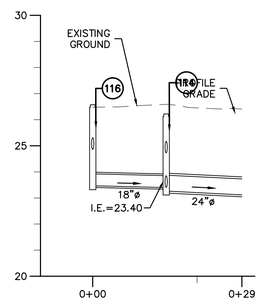

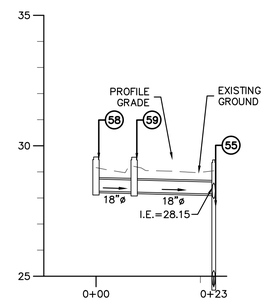

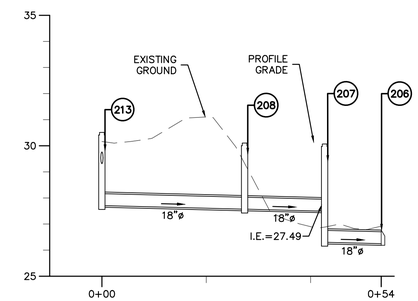

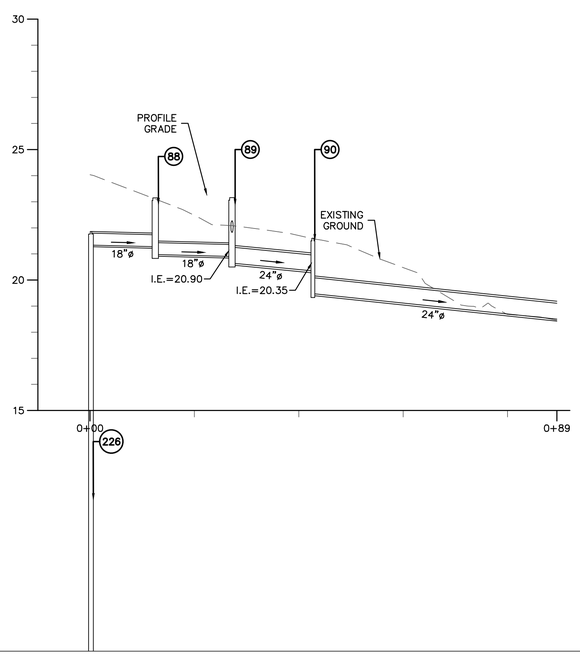

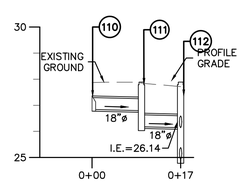

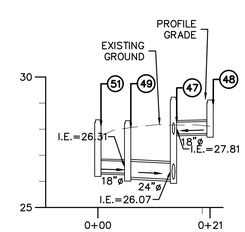

DRAINAGE PROFILES

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0M 2M 4M 6M Scale: V= 1:100

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MAY 13, 2013

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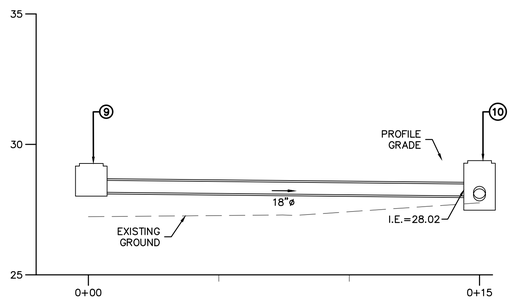

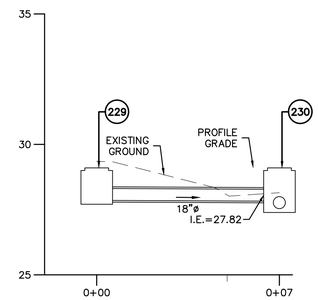

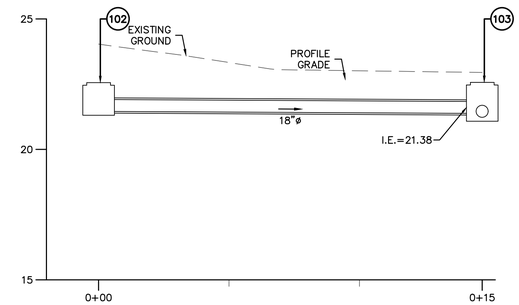

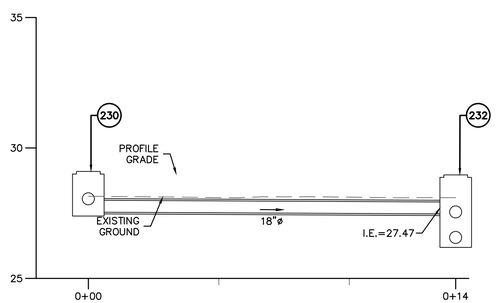

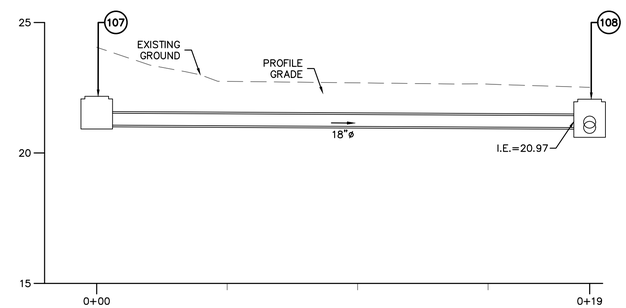

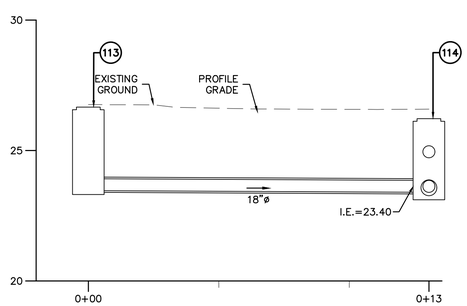

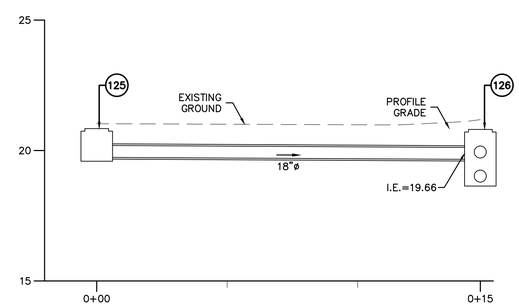

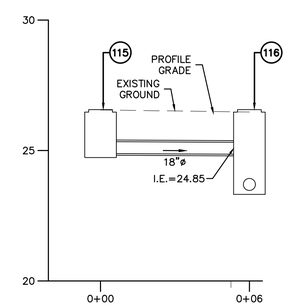

DRAINAGE SECTIONS

0M 2M 4M 6M Scale: 1:100

SCIENCE CITY
URBAN INFRASTRUCTURE
PHASE II

SEGMENT EAST OF PR 18
SAN JUAN, PUERTO RICO

TORO ARQUITECTOS
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COURTY HILLS PLAZA
AVE. SAN PATRICIO
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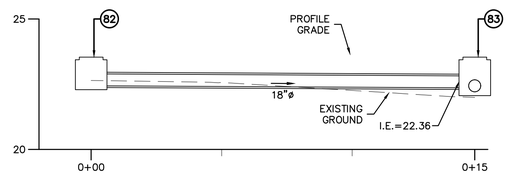
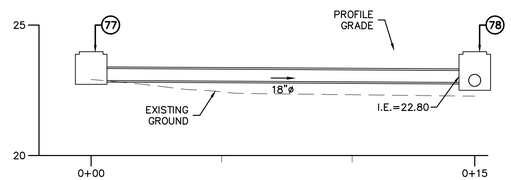
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

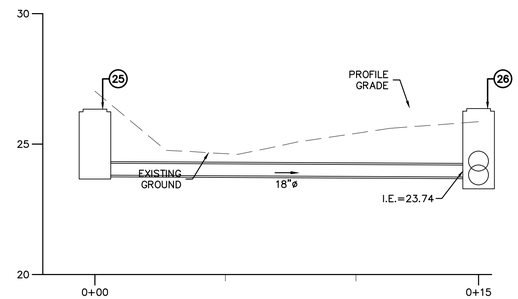
DRAINAGE SECTIONS

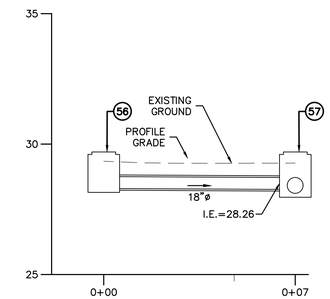
DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

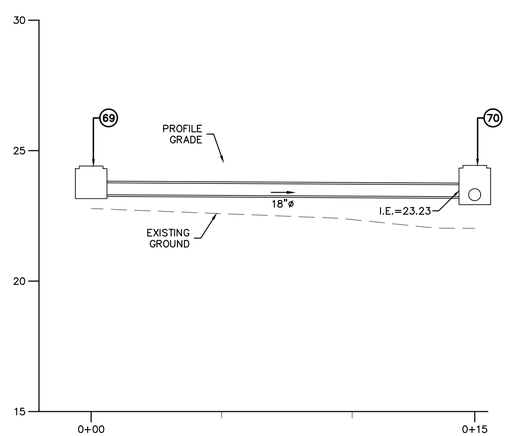
DR-10

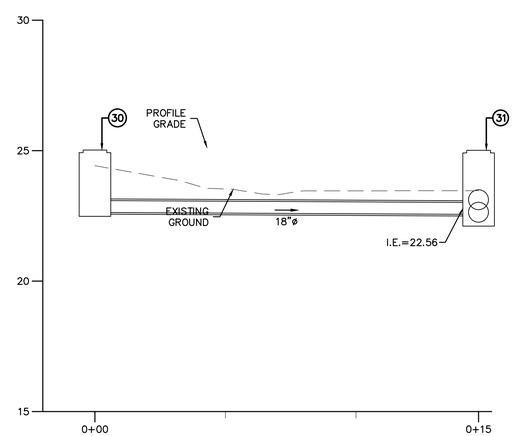


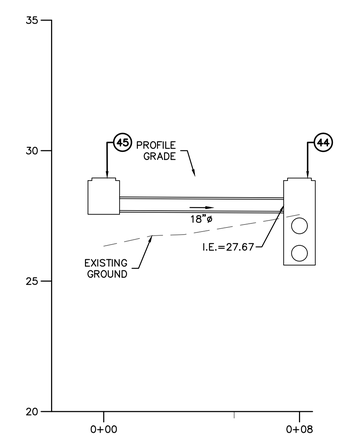












DRAINAGE SECTIONS

0M 2M 4M 6M Scale: 1:100

SCIENCE CITY
URBAN INFRASTRUCTURE
PHASE II

SEGMENT EAST OF PR 18
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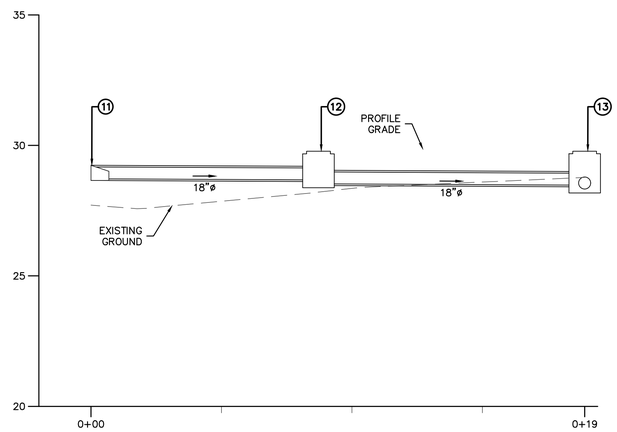
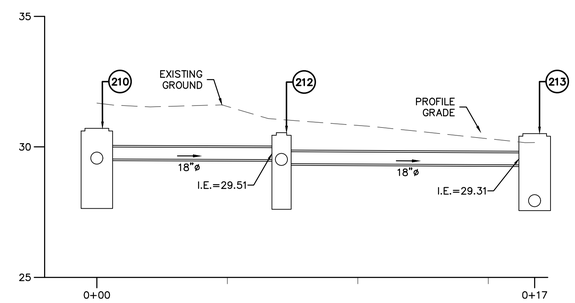
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

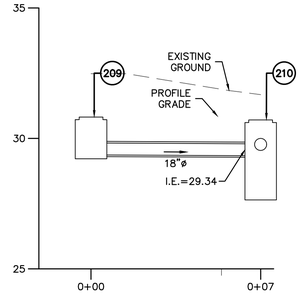
DRAINAGE SECTIONS

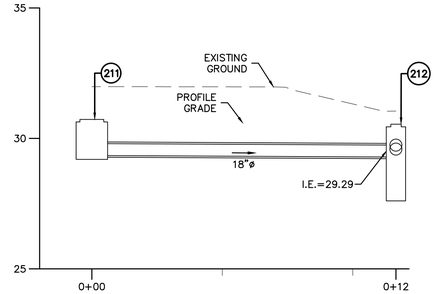
DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

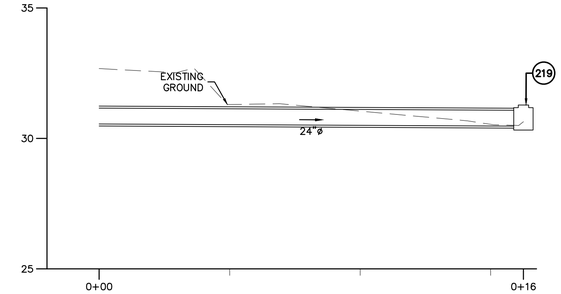
DR-11

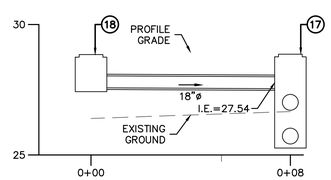


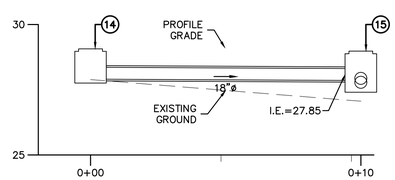












DRAINAGE SECTIONS

0M 2M 4M 6M Scale: 1:100

SCIENCE CITY
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PHASE II

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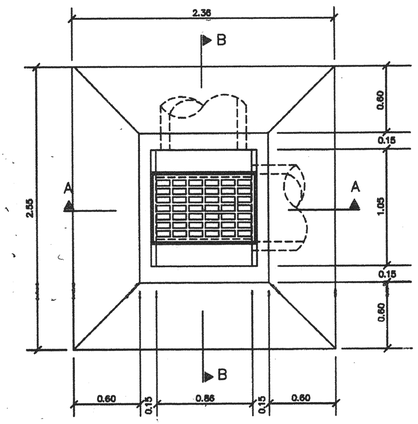
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

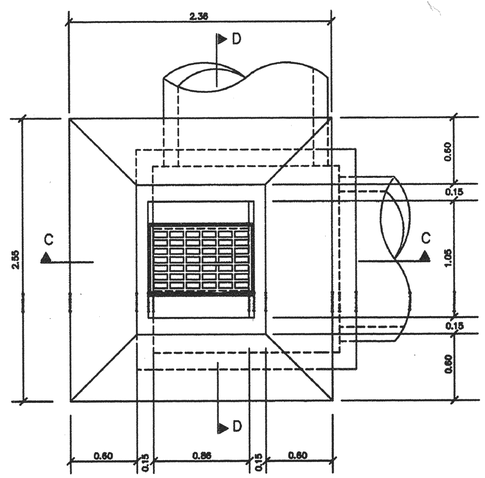
DRAINAGE SECTIONS

DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

DR-12



PLAN



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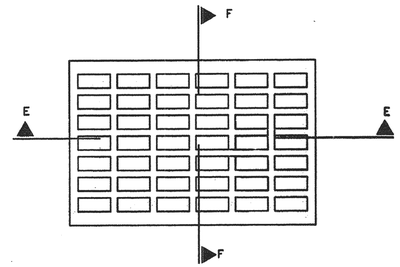

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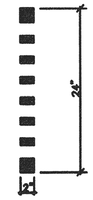
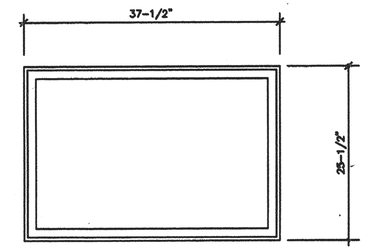
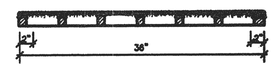


SECTION F–F



FRAME



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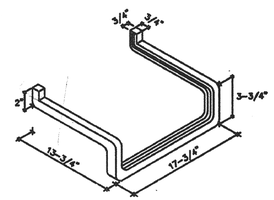
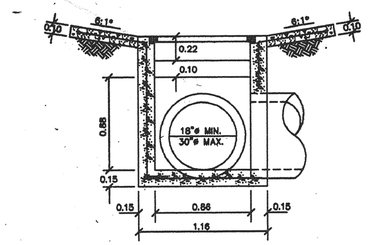
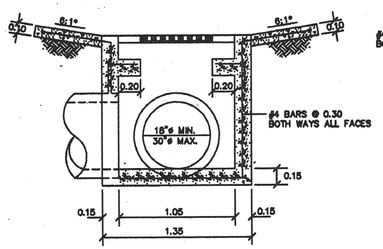


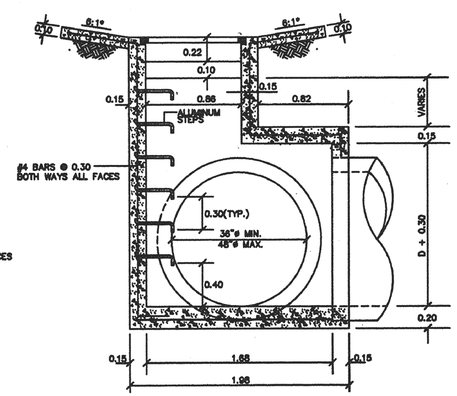
ALUMINUM STEP DETAIL



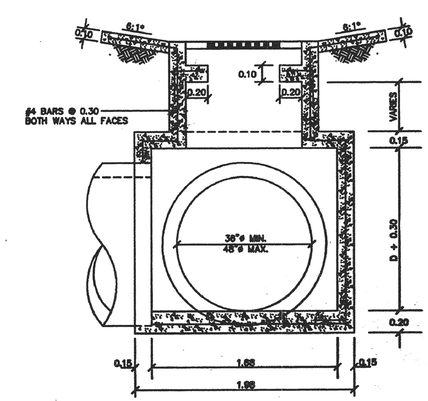
SECTION A–A



SECTION B–B



SECTION C–C



SECTION D–D

FOR PIPES FROM 18"ø TO 30"ø

TYPE 5 INLET DETAIL

NOT TO SCALE

FOR PIPES FROM 36"ø TO 48"ø

TYPE 5A INLET DETAIL

NOT TO SCALE

LEGEND:

- e = % SUPERELEVATION
- * OR ADJUST TO MEDIAN SLOPE

NOTES:

1– PORTLAND CEMENT CONCRETE SHALL BE CLASS A.

2– REINFORCING STEEL SHALL BE GRADE 60, AASHTO M–31 OR M–31M.

3– NO ALUMINUM STEPS WILL BE REQUIRED WHERE DEPTH IS 1.00 OR LESS. INSTALL ONE STEP .40 ABOVE FLOOR WHEN DEPTH IS MORE THAN 1.00 BUT LESS THAN 1.50. WHERE DEPTH IS MORE THAN 1.50, STEPS SHALL BE EVENLY SPACED AT .30 INTERVALS FROM .40 ABOVE FLOOR TO WITHIN .60 OF THE TOP OF THE BOX. PLACE STEPS IN WALL WITHOUT PIPE AND ADJACENT TO FRAME OPENING.

4– INLET SHALL BE CAST IN PLACE. NO PRE–CAST ALTERNATES ARE ALLOWED. CONSTRUCTION OF CANTILEVER REINFORCED CONCRETE LEDGES SHOWN ON SECTION B–B AND D–D ARE MANDATORY.

5– ALL GRAY CAST IRON PRODUCTS USED IN THE "DR" SERIES OF THE STANDARD DRAWINGS MUST BE FROM APPROVED MANUFACTURERS AND THE APPROVED PRODUCTS IDENTIFIED BY PRODUCT NUMBER OR CATALOG NUMBER LISTED IN THE APPROVED LIST OF MANUFACTURERS AND PRODUCTS CONTAINED IN THE FIRST PAGE OF THE "DR" SERIES.

SCIENCE CITY
URBAN INFRASTRUCTURE
PHASE II

SEGMENT EAST OF PR 18
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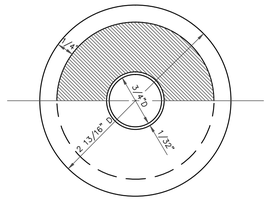
FINAL CONSTRUCTION
DOCUMENTS (100%)
MAY 13, 2013

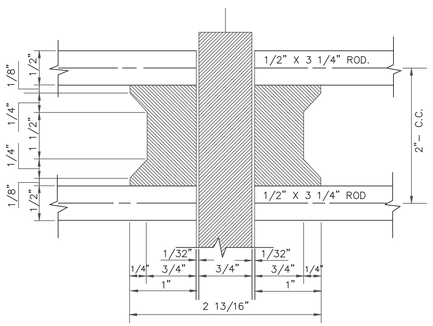
DRAINAGE DETAILS
TYPE 5 & 5A INLETS

DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

DR-13

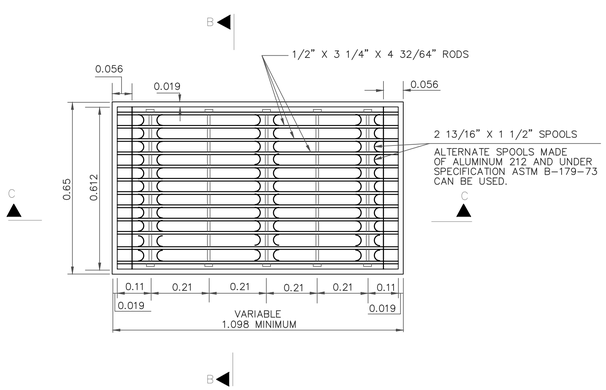


HALF PLAN AND HALF SECTION



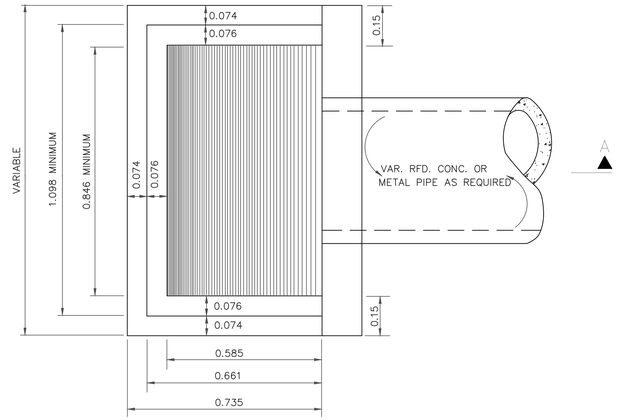
CROSS SECTION OF SPOOL

FULL SCALE



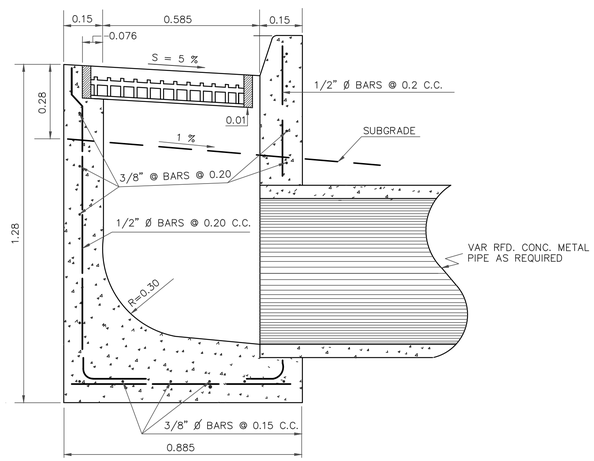
CAST IRON GRATING & FRAME

SCALE 1:10



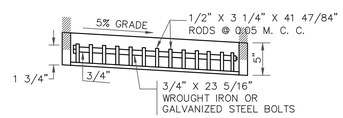
PLAN

SCALE 1:10



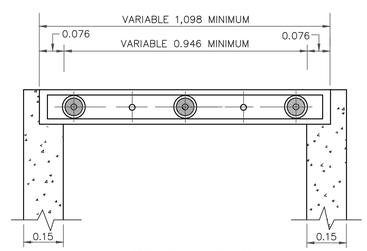
SECTION A – A

SCALE 1:10



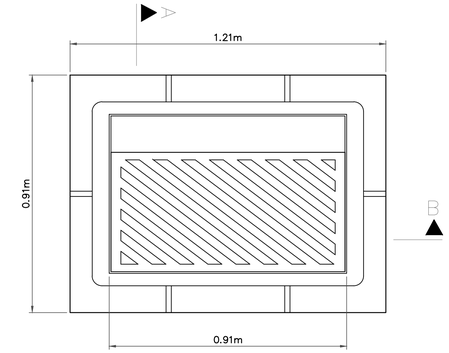
SECTION B–B

SCALE 1:10

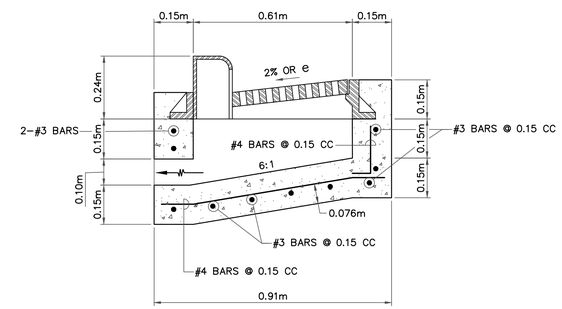


SECTION C–C

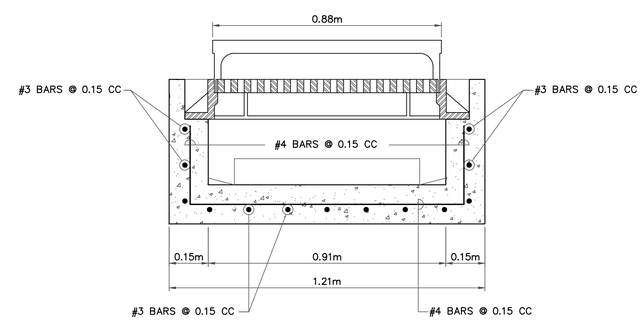
SCALE 1:10



TOP VIEW



SECTION A



SECTION B

MODIFIED INLET TYPE 1 DETAILS

SCALE = 1:10

1 / DR-9

SCIENCE CITY
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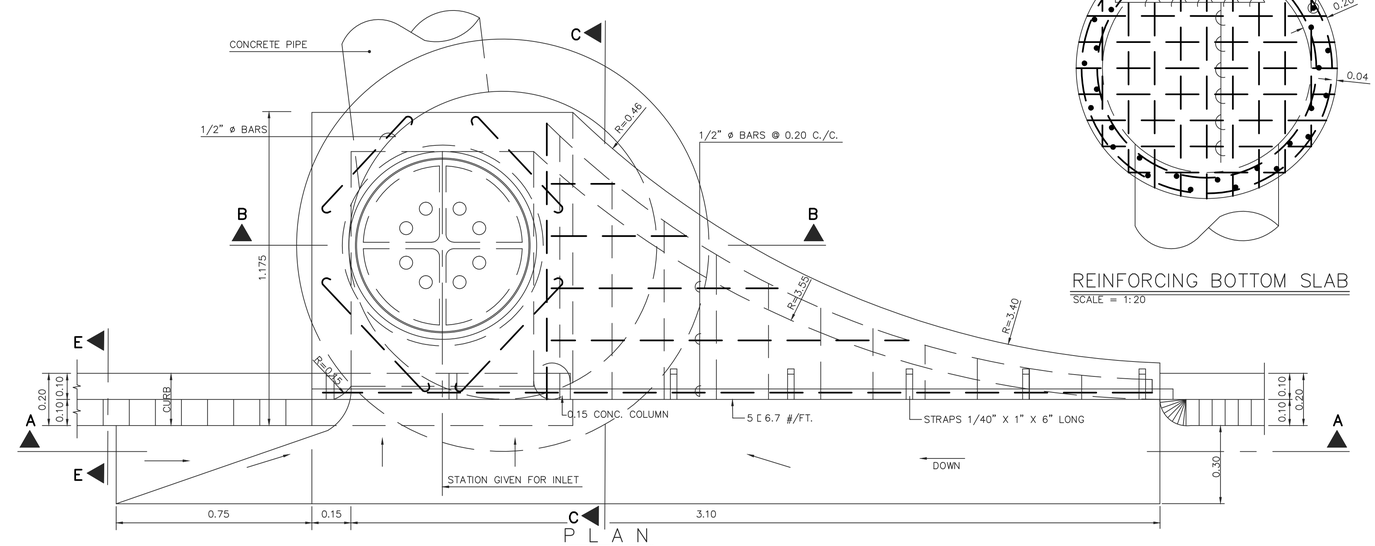
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

DRAINAGE DETAILS
TYPE 4 & 1 INLETS

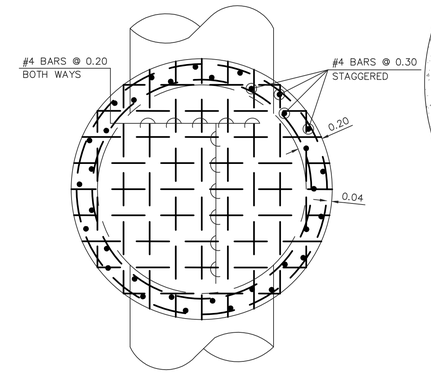
DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

DR-14



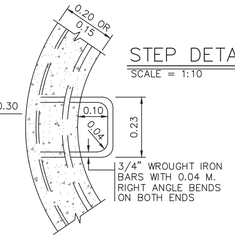
PLAN

SCALE = 1:10



REINFORCING BOTTOM SLAB

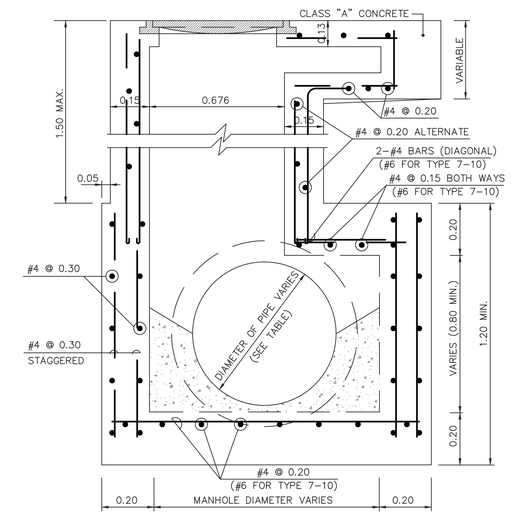
SCALE = 1:20



STEP DETAIL

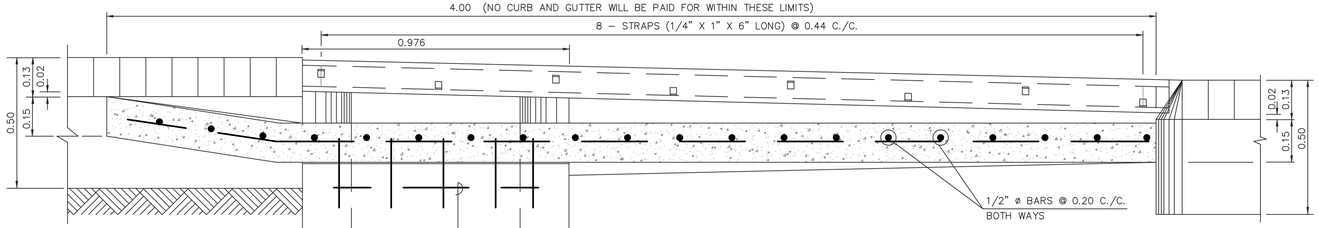
SCALE = 1:10

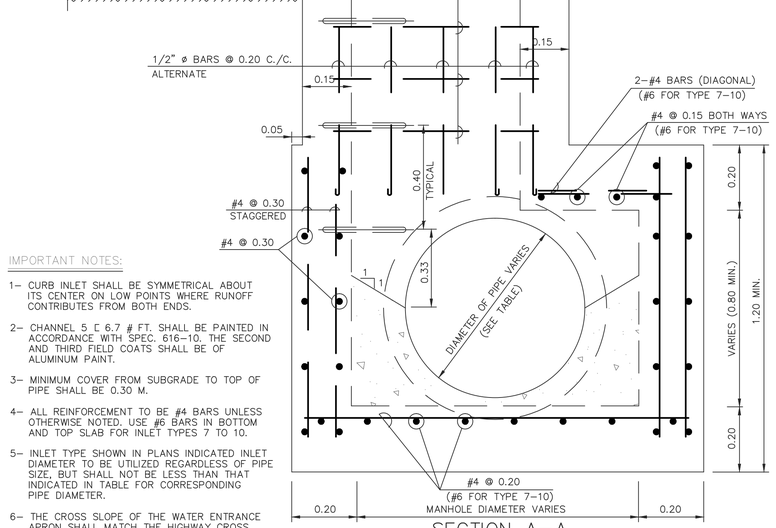
MAXIMUM PIPE SIZE FOR INLET		
TYPE	INLET DIAM. (M.)	MAX. PIPE DIAM. (IN.)
1	1.20	30"
2	1.50	36"
3	1.75	42"
4	2.00	48"
5	2.20	54"
6	2.45	60"
7	2.70	66"
8	2.95	72"
9	3.30	84"
10	3.80	96"



SECTION B-B

SCALE = 1:15





SECTION A-A

SCALE = 1:10

IMPORTANT NOTES:

1- CURB INLET SHALL BE SYMMETRICAL ABOUT ITS CENTER ON LOW POINTS WHERE RUNOFF CONTRIBUTES FROM BOTH ENDS.

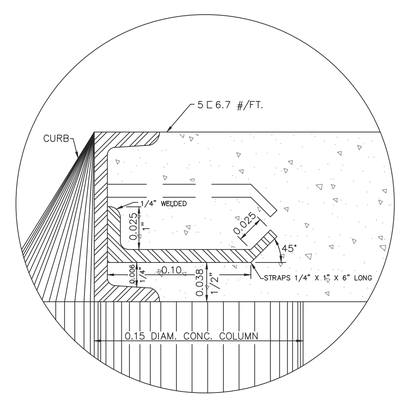
2- CHANNEL, 5 [6.7 # FT. SHALL BE PAINTED IN ACCORDANCE WITH SPEC. 616-10. THE SECOND AND THIRD FIELD COATS SHALL BE OF ALUMINUM PAINT.

3- MINIMUM COVER FROM SUBGRADE TO TOP OF PIPE SHALL BE 0.30 M.

4- ALL REINFORCEMENT TO BE #4 BARS UNLESS OTHERWISE NOTED. USE #6 BARS IN BOTTOM AND TOP SLAB FOR INLET TYPES 7 TO 10.

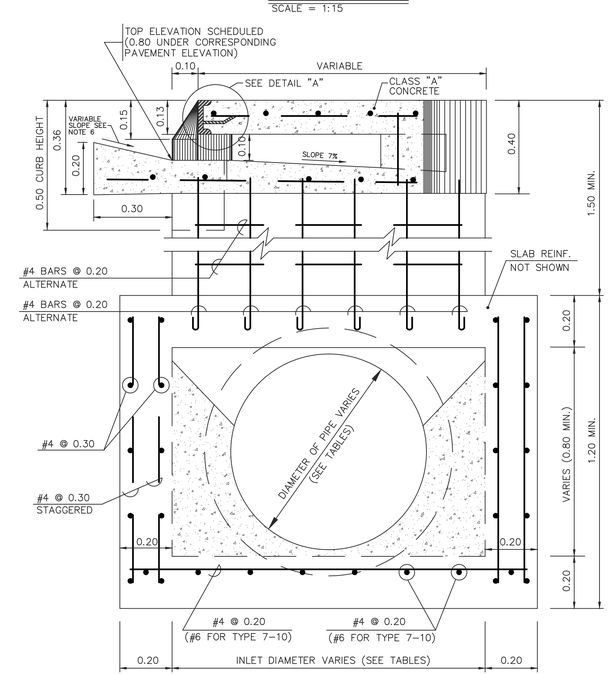
5- INLET TYPE SHOWN IN PLANS INDICATED INLET DIAMETER TO BE UTILIZED REGARDLESS OF PIPE SIZE, BUT SHALL NOT BE LESS THAN THAT INDICATED IN TABLE FOR CORRESPONDING PIPE DIAMETER.

6- THE CROSS SLOPE OF THE WATER ENTRANCE APRON SHALL MATCH THE HIGHWAY CROSS SLOPE.



DETAIL "A"

SCALE = 1:2



SECTION C-C

SCALE = 1:10

SCIENCE CITY
URBAN INFRASTRUCTURE
PHASE II

SEGMENT EAST OF PR 18
SAN JUAN, PUERTO RICO

TORO ARQUITECTOS
AVENIDA McLEARY 2004
SAN JUAN, PUERTO RICO 00911
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P.O. BOX 19453 SAN JUAN, P.R. 00910-1953
SUBASTA ACTIVA #13 PARQUE INDUSTRIAL FOREST HILLS BAYAMON, P.R.
PJDC

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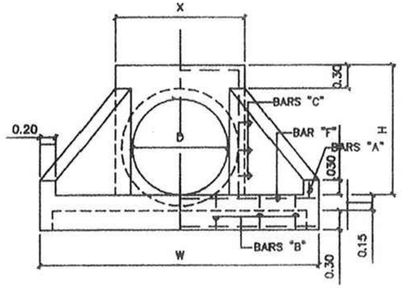
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

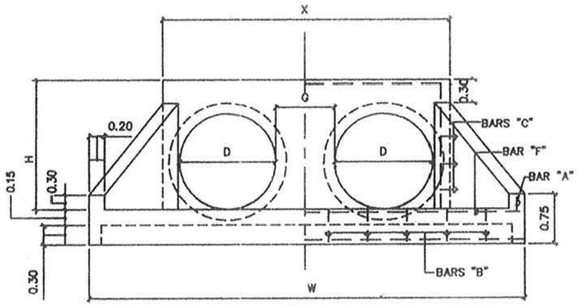
DRAINAGE DETAILS
TYPE 2 INLET

DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

DR-15



ELEVATION



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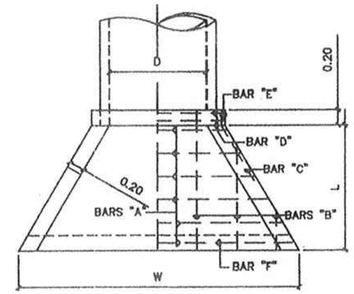
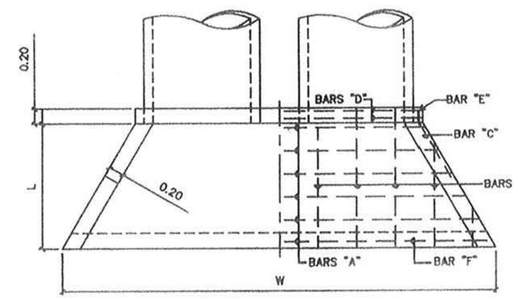


PLAN



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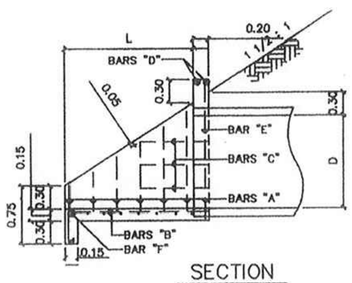

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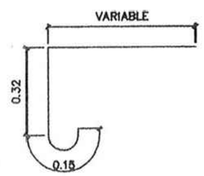

"B" BAR BENDING DETAIL

HEADWALL TYPE "B" DETAILS

N.T.S.

TABLE OF DIMENSIONS AND APPROXIMATE QUANTITIES FOR TYPE "B" HEADWALLS

NO. OF PIPES	DIA.	TABLE OF DIMENSIONS					BILL OF REINFORCING STEEL & QUANTITIES FOR ONE HEADWALL															QUANTITIES		
							5/8" ø BAR "A" @ 0.30M. C/C				3/8" ø BAR "B" @ 0.45M. C/C			3/8" ø BAR "C" @ 0.30M. C/C		3/8"ø BARS"D"		5/8"O BARS"E"		3/8" ø BAR "F"			
		W	X	H	L	G	NO.	LENGTH	LENGTH	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	LENGTH	STEEL (LBS.)	CONC. (C.M.)	TRENCH EXC. (C.M.)
2	18"	2.25	1.69	1.91	0.48	0.30	"	2.79	2.84		4	0.99			2	0.81	2	1.57	2	0.97	2.13	40	0.77	2
3	18"	3.01	2.45	0.91	0.48	0.30	"	3.55	3.60		6	0.99			2	0.81	2	2.33	2	0.97	2.89	50	1.14	3
2	24"	2.95	2.12	1.07	0.71	0.43	"	3.51	3.56	3.61	7	1.22			2	0.91	2	2.01	2	1.12	2.84	67	0.95	2
3	24"	3.98	3.15	1.07	0.71	0.43	"	4.54	4.59	4.64	9	1.22			2	0.91	2	3.04	2	1.12	3.87	83	1.42	3
2	30"	2.58	2.50	1.22	0.94	0.51	"	4.14	4.19	4.24	7	1.45			4	0.91	2	2.39	2	1.27	3.48	81	1.31	2
3	30"	4.85	3.77	1.22	0.94	0.51	"	5.41	5.46	5.51	8	1.45	2	0.80	4	0.91	2	3.06	2	1.27	4.75	100	1.79	2
2	36"	4.23	2.88	1.37	1.17	0.58	"	4.80 4.85	4.90	4.95	7	1.68	2	0.74	4	0.91	2	2.77	2	1.42	3.20	110	1.72	2
3	36"	5.73	4.38	1.37	1.17	0.58	"	6.30 6.35	6.40	6.45	10	1.68	2	0.84	4	0.91	2	4.27	2	1.42	5.61	144	2.34	3
1	42"	3.16	1.54	1.52	1.40		"	3.71 3.76	3.81	3.86	4	1.91	2	1.02	6	0.91	2	1.42	2	1.58	3.05	90	1.40	2
2	42"	4.88	3.26	1.52	1.40	0.66	"	5.44 5.49	5.64	5.59	8	1.91	2	0.99	6	0.91	2	3.15	2	1.58	4.78	128	2.20	2
3	42"	6.60	4.99	1.52	1.40	0.66	"	7.16 7.21	7.26	7.32	12	1.91	2	0.81	6	0.91	2	4.88	2	1.58	6.50	166	3.00	3
1	48"	3.57	1.69	1.68	1.63		"	4.11 4.16	4.21 4.26	4.31	5	2.13	2	1.04	6	0.91	2	1.58	2	1.73	3.46	115	1.72	2
2	48"	5.52	3.65	1.68	1.63	0.74	"	6.07 6.12	6.17 6.22	6.27	9	2.13	2	0.99	6	0.91	2	3.63	2	1.73	5.41	167	2.68	3
3	48"	7.48	5.59	1.68	1.63	0.74	"	8.03 8.08	8.13 8.18	8.23	12	2.13	2	1.63	6	0.91	2	5.49	2	1.73	7.37	217	3.64	4
1	54"	3.89	1.87	1.83	1.85		"	4.50 4.56	4.62 4.68	4.74 4.80 4.86	4 4	2.45	2	1.70 0.90	6	1.33	2	1.77	2	1.88	3.80	128	2.10	3
2	54"	6.07	4.05	1.83	1.85	0.81	"	6.68 6.74	6.80 6.86	6.92 6.98 7.04	10	2.45	2 2	1.70 0.90	6	1.33	2	3.95	2	1.88	5.98	218	3.63	3
3	54"	8.25	6.23	1.83	1.85	0.81	"	8.86 8.92	8.94 9.04	9.10 9.16 9.22	15	2.45	2 2	1.70 0.90	6	1.33	2	6.13	2	1.88	8.16	308	5.15	4
1	60"	4.48	2.04	1.98	2.08		"	5.42 5.30	5.26 5.12	5.18 5.12 5.2	5 2	2.50 1.95	2	1.17	8	1.00	2	1.95	2	2.62	4.40	184	2.52	3
2	60"	6.81	4.40	1.98	2.08	0.89	"	7.28 7.48 7.38	7.39 7.50	7.60 7.69	9 2	2.30 2.10	2	1.40	8	1.00	2	4.31	2	2.62	6.70	250	3.88	4
3	60"	9.44	7.00	1.98	2.08	0.89	"	9.98 10.08 10.08	10.14 10.20	10.25 10.34	15 2	2.50 1.95	2	0.90	8	1.00	2	6.80	2	2.62	9.35	347	5.36	6
1	72"	5.23	2.30	2.29	2.54		"	6.18 6.18 6.21	6.22 6.25 6.27	6.30 6.31 6.34	5 2	3.00 2.55	2 2	1.77 1.00	10	1.07	2	2.24	2	2.35	5.12	265	3.38	3
2	72"	8.10	5.17	2.29	2.54	1.04	"	8.02 8.06 8.07 8.07	8.09 8.12 8.13 8.13	8.16 8.17 8.20 8.20	11	3.00 2.69	2 2	1.91 1.13	10	1.07	2	5.10	2	2.35	8.00	385	5.25	5
3	72"	10.97	8.04	2.29	2.54	1.04	"	11.85 11.92 11.94	11.96 11.98 12.00	12.03 12.06 12.07	17 4	3.25 2.94	2 2	2.16 0.97	10	1.07	2	7.97	2	2.35	10.90	517	7.11	7
1	84"	5.60	2.69	2.54	2.91		"	6.08 6.18	6.48 6.58	6.78 6.88	8	3.70	2 2	1.91 1.13	8	1.10	2	2.60	2	2.60	5.50	291	4.70	5
2	84"	9.48	6.10	2.56	2.94	1.20	"	10.10 10.16	10.34 10.40	10.52 10.58	14 8	3.70 VARIES	2 2	2.16 0.97	8	1.10	2	6.00	2	2.60	9.40	610	7.20	6
3	84"	12.81	9.43	2.54	2.91	1.20	"	13.43 13.49	13.67 13.73	13.85 13.91	14 8	3.70 VARIES	2 2	2.95 2.20	10	1.10	2	9.33	8	2.60	12.73	915	11.97	8

NOTES:

1– PORTLAND CEMENT CONCRETE SHALL BE CLASS A.

2– IN SUCH CASES WHEN THE PIPE IS NOT PERPENDICULAR TO THE HEADWALL AND/OR IF THE NUMBER OF PIPES EXCEED THOSE TABULATED, THE CONTRACTOR SHALL MODIFY THE DIMENSIONS AND QUANTITIES AS REQUIRED AND SUCH ADJUSTMENTS MUST BE APPROVED BY THE ENGINEER.

3– THE CONTRACTOR IS RESPONSIBLE TO ADJUST THE GRADING WHEN SLOPES ARE DIFFERENT TO THE SLOPES SHOWN IN THIS PLAN.

4– REINFORCING STEEL SHALL BE GRADE 60, ASSHTO M–31 OR M–31M.

SCIENCE CITY
URBAN INFRASTRUCTURE
PHASE II

SEGMENT EAST OF PR 18
SAN JUAN, PUERTO RICO

TORO ARQUITECTOS
AVENIDA McLEARY 2004
SAN JUAN, PUERTO RICO 00911
T 787 727 7700 F 787 727 8094
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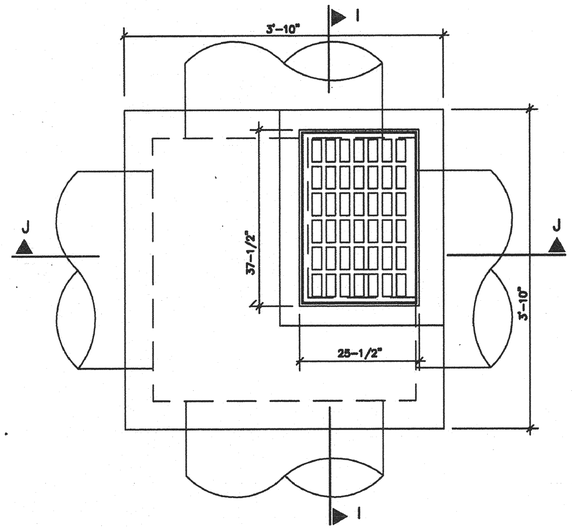
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

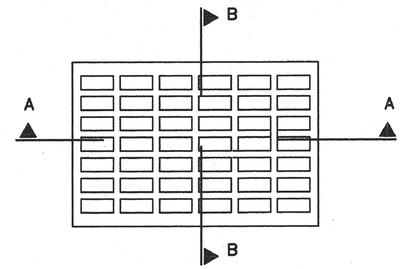
DRAINAGE DETAILS
TYPE B HEADWALL

DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

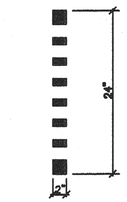
DR-16



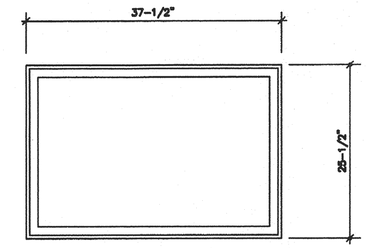
TOP VIEW



GRATE



SECTION B–B



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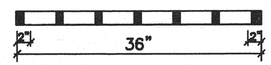
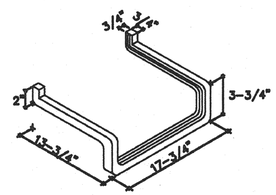


SECTION A–A



ALUMINUM STEP DETAIL

* THESE DIMENSIONS SHALL COMPLY WITH THE TYPE OF CURB, CURB AND GUTTER OR BARRIER AS SPECIFIED IN THE PROJECT.

LEGEND:

e = % SUPERELEVATION

NOTES:

1– PORTLAND CEMENT CONCRETE SHALL BE CLASS A.

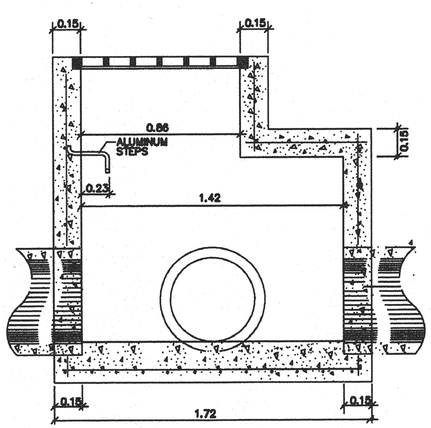
2– REINFORCING STEEL SHALL BE GRADE 60, AASHTO M–31 OR M–31M.

3– NO ALUMINUM STEPS WILL BE REQUIRED WHERE DEPTH IS 1.00 OR LESS. INSTALL ONE STEP .40 ABOVE FLOOR WHEN DEPTH IS MORE THAN 1.00 BUT LESS THAN 1.50. WHERE DEPTH IS MORE THAN 1.50, STEPS SHALL BE EVENLY SPACED AT .30 INTERVALS FROM .40 ABOVE FLOOR TO WITHIN .60 OF THE TOP OF THE BOX. PLACE STEPS IN WALL WITHOUT PIPE AND ADJACENT TO FRAME OPENING.

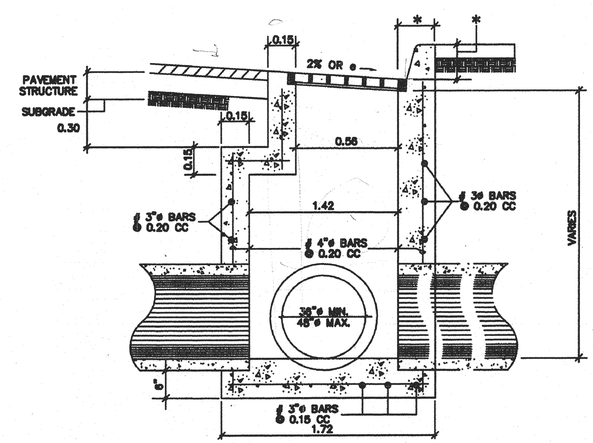
4–ALL GRAY CAST IRON PRODUCTS USED IN THE "DR" SERIES OF THE STANDARD DRAWINGS MUST BE FROM APPROVED MANUFACTURERS AND THE APPROVED PRODUCTS IDENTIFIED BY PRODUCT NUMBER OR CATALOG NUMBER LISTED IN THE APPROVED LIST OF MANUFACTURERS AND PRODUCTS CONTAINED IN THE FIRST PAGE OF THE "DR" SERIES.

REVISION: 06/12/08

1) NEW SHEET ADDED.



SECTION I–I



SECTION J–J

TYPE 4A INLET DETAIL

NOT TO SCALE

SCIENCE CITY
URBAN INFRASTRUCTURE
PHASE II

SEGMENT EAST OF PR 18
SAN JUAN, PUERTO RICO

TORO ARQUITECTOS
AVENIDA McLEARY 2004
SAN JUAN, PUERTO RICO 00911
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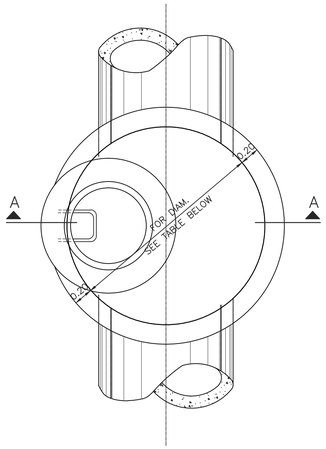
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

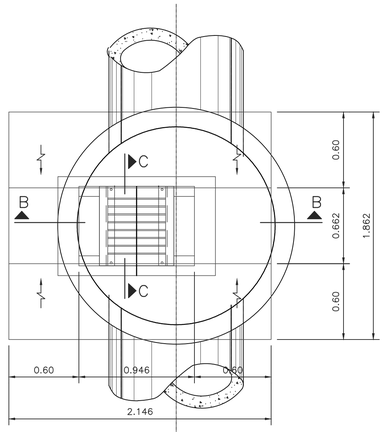
DRAINAGE DETAILS
TYPE 4A INLET

DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

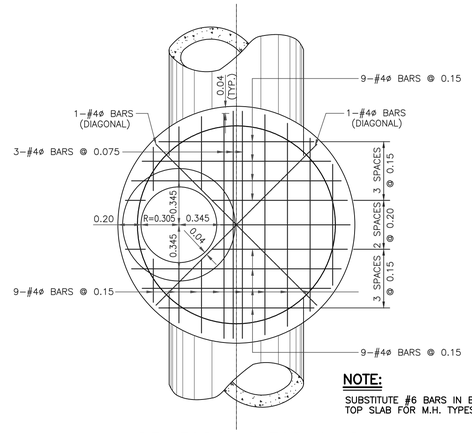
DR-17



PLAN



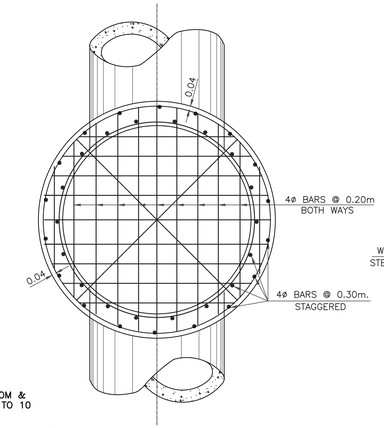
PLAN



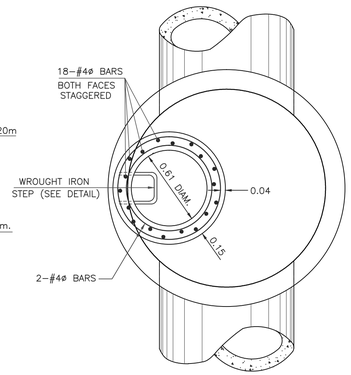
NOTE:

SUBSTITUTE #6 BARS IN BOTTOM & TOP SLAB FOR M.H. TYPES 7 TO 10

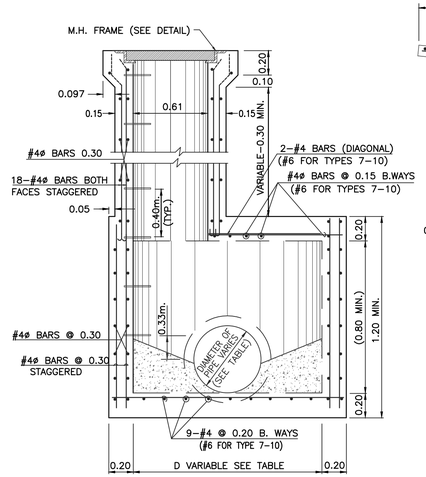
REINFORCING TOP SLAB
CLASS "A" & "B" MANHOLES



REINFORCING BOTTOM SLAB
CLASS "A" & "B" MANHOLES

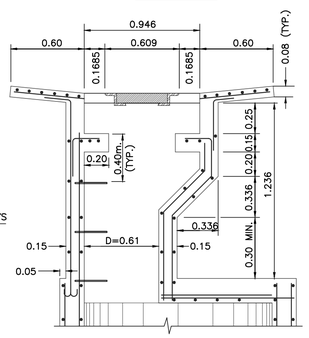


SHAFT REINFORCING
CLASS "A" & "B" MANHOLE



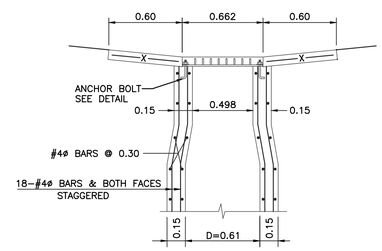
SECTION A–A

CLASS "A" MANHOLE



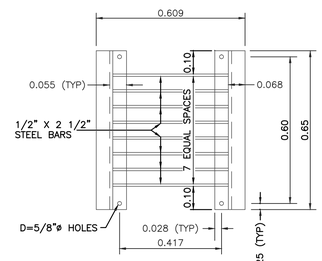
SECTION B–B

CLASS "B" MANHOLE

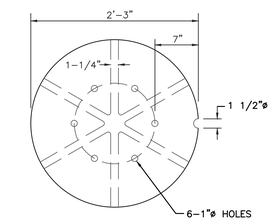


SECTION C–C

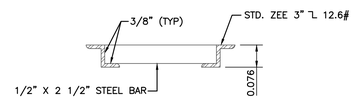
CLASS "B" MANHOLE



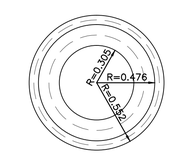
PLAN



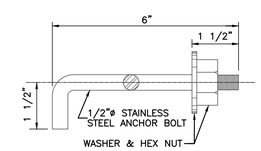
MANHOLE COVER



SECTION

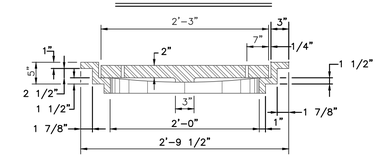


MANHOLE FRAME



ANCHOR BOLT DETAIL

STEEL GRATING DETAILS
FOR CLASS "B" MANHOLE

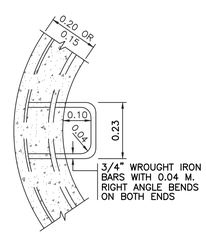


COVER & FRAME SECTION

COVER & FRAME DETAILS
FOR CLASS "A" MANHOLE

NOTES:

1 – FOR SURFACE INSTALLATION DETAILS OF CLASS "B" MANHOLE SEE TYPE B INLET DETAILS.
2 – ALL REINFORCING TO BE #4 BARS UNLESS OTHERWISE NOTED.
3 – PAYMENT FOR REINF. CONC. MAT APRONS ON CLASS "B" MANHOLE SHALL BE INCLUDED IN IN THE UNIT PRICE BID FOR ITEM 604.
4 – MANHOLE TOPS FOR CLASS "A" MANHOLES ARE TO BE SLOPED PARALLEL TO THE PROPOSED FINISHED GRADE.
5 – PAYMENT FOR CLASS "A" OR "B" MANHOLE SHALL BE THE UNIT PRICE BID FOR ITEM 604.



STEP DETAIL

MAXIMUM PIPE SIZE FOR MANHOLES

TYPE	M.H. DIAM. IN M.	MAX. PIPE DIAM. IN INCHES
1	1.20	30"
2	1.50	36"
3	1.75	42"
4	2.00	48"
5	2.20	54"
6	2.45	60"
7	2.70	66"
8	2.95	72"
9	3.30	84"
10	3.80	96"

NOTE:

MANHOLE TYPE INDICATED IN PLANS INDICATES MANHOLE DIAMETER TO BE UTILIZED REGARDLESS OF PIPE SIZE, BUT SHALL NOT BE LESS THAN THAT INDICATED IN TABLE FOR CORRESPONDING PIPE DIAM.

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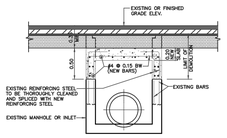
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

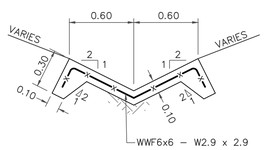
DRAINAGE DETAILS
MANHOLES TYPE A & B

DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

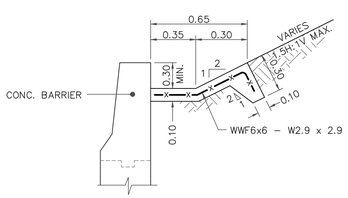
DR-18



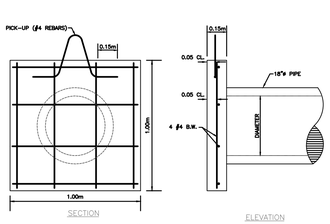
MANHOLES & INLETS
TYPICAL DETAIL FOR CAPPING
NOT TO SCALE



CONC. PAVED WATERWAY, TYPE A
NOT TO SCALE



CONC. PAVED WATERWAY, TYPE C
NOT TO SCALE



18"ø PIPE PLUG
SCALE = 1:20
(PAYMENT FOR PIPE PLUG SHALL BE AT THE BID UNIT PRICES FOR CONCRETE SPEC-601 AND REINFORCING STEEL SPEC-602)

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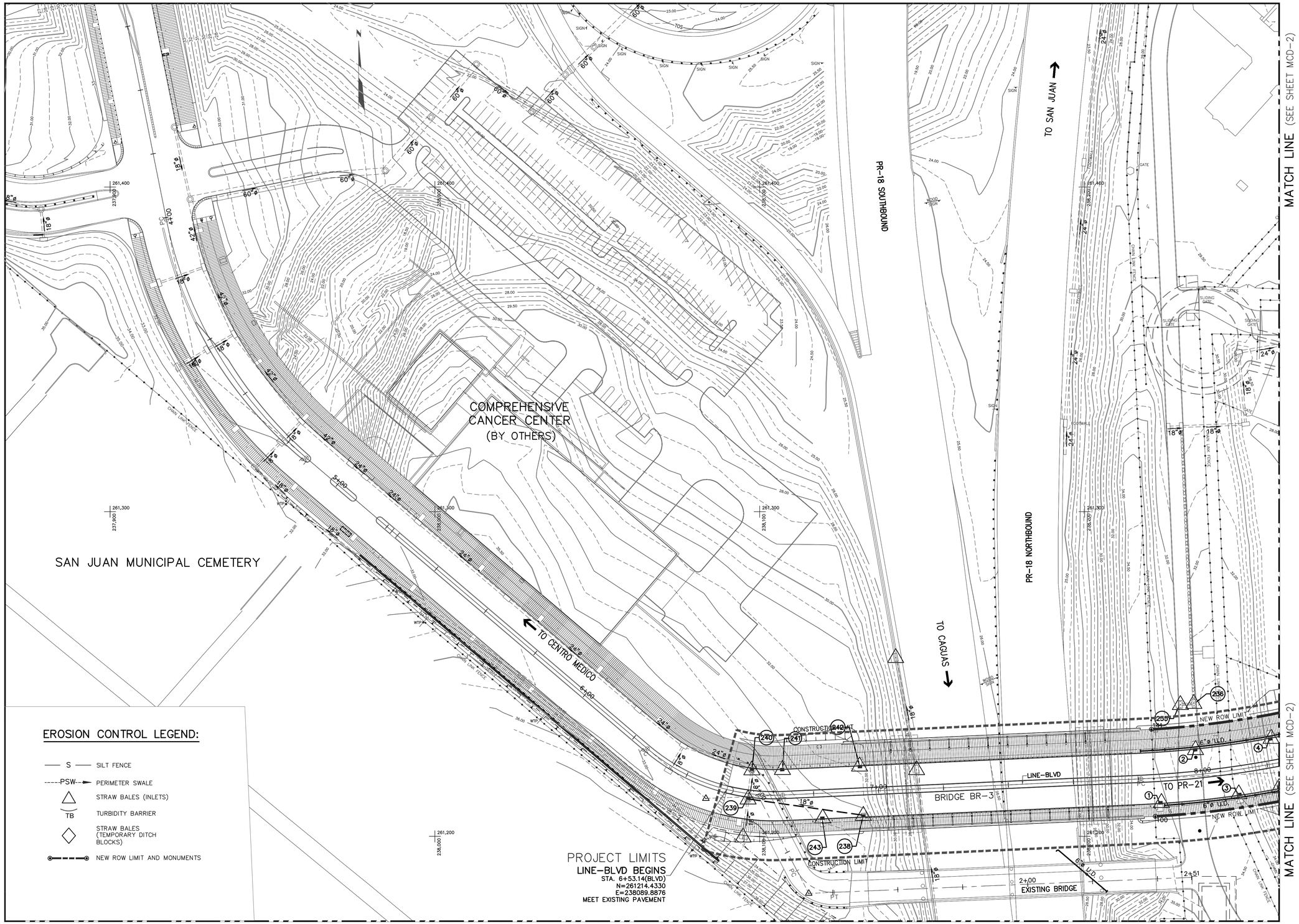

EROSION CONTROL PLAN

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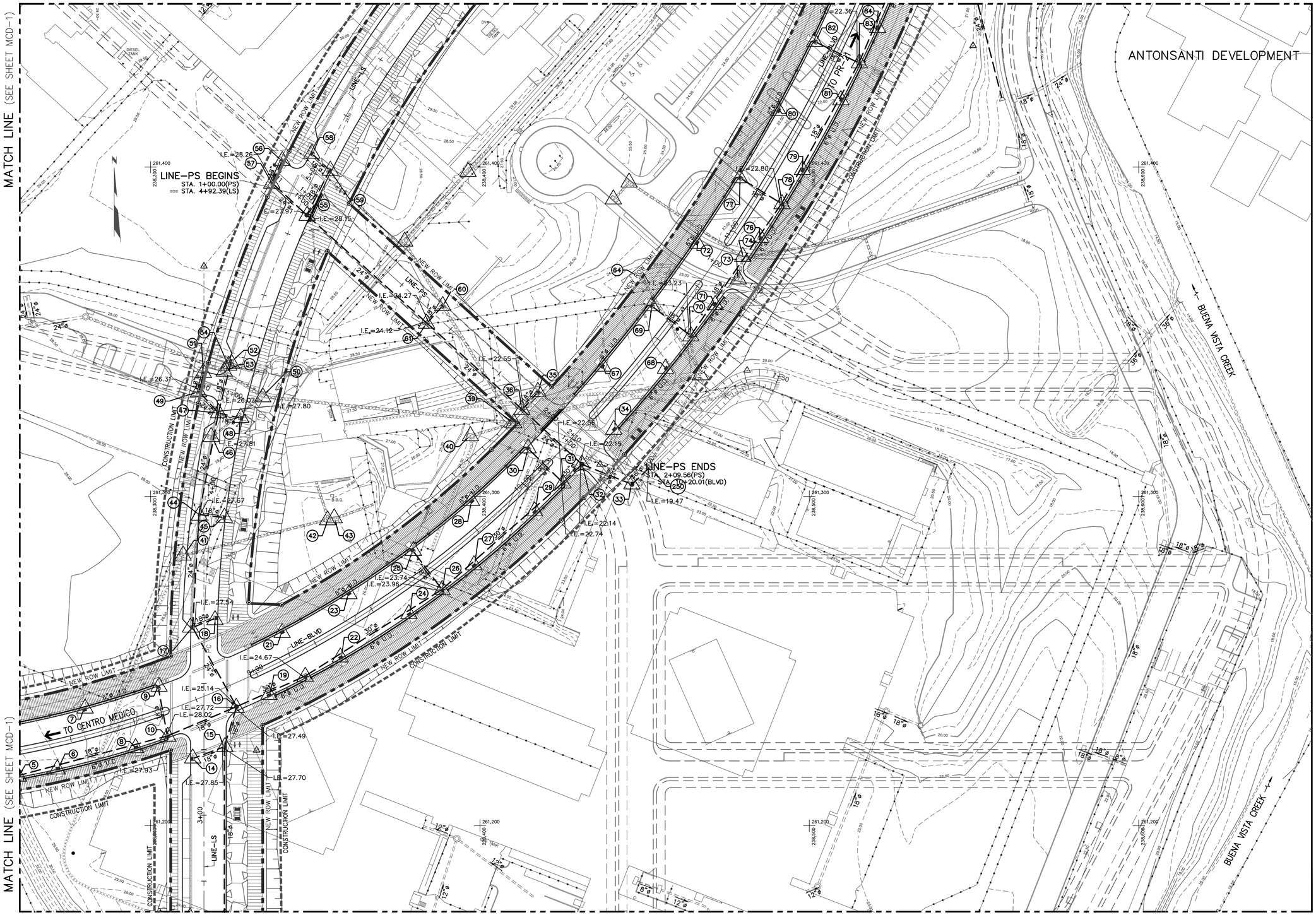
MCD-1

MATCH LINE (SEE SHEET MCD-3)

MATCH LINE (SEE SHEET MCD-3)

MATCH LINE (SEE SHEET MCD-1)



MATCH LINE (SEE SHEET MCD-4)

MATCH LINE (SEE SHEET MCD-4)

EROSION CONTROL PLAN

0M 10M 20M 30M Scale= 1:500

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EROSION CONTROL PLAN

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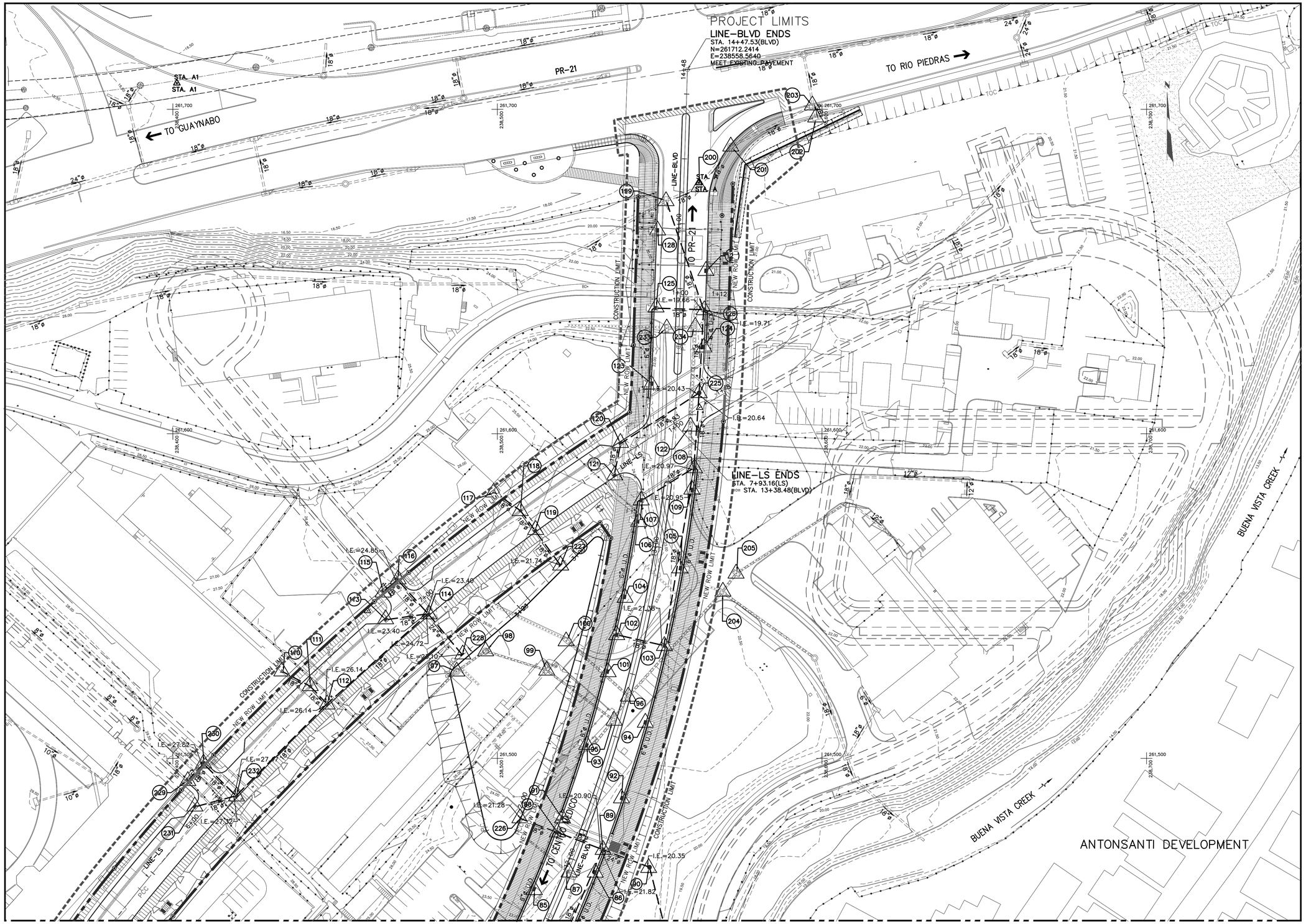
MCD-2



MATCH LINE (SEE SHEET MCD-2)

MATCH LINE (SEE SHEET MCD-2)

EROSION CONTROL PLAN

0M 10M 20M 30M Scale= 1:500

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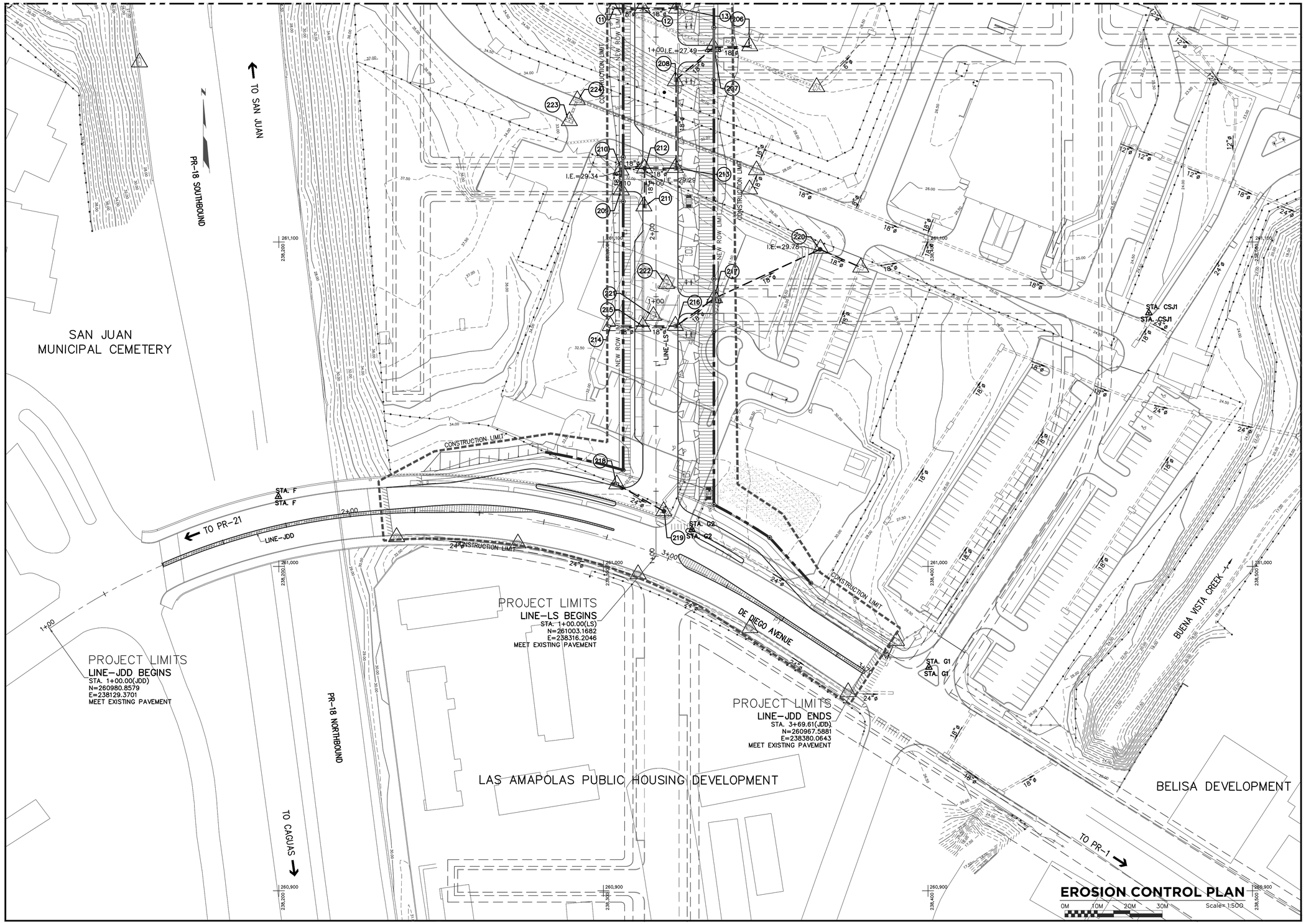
MCD-3



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EROSION CONTROL PLAN

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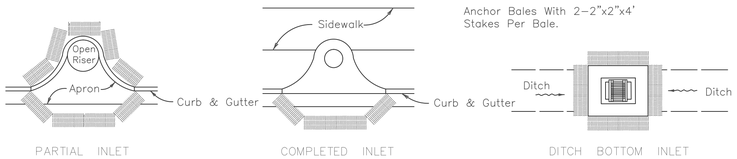
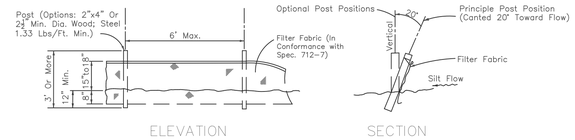
DATE: JUNE-19-2012

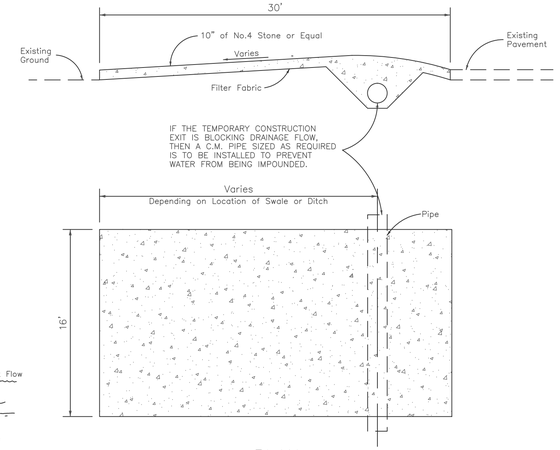
MCD-4



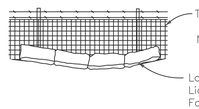
PROTECTION AROUND INLETS OR SIMILAR STRUCTURES



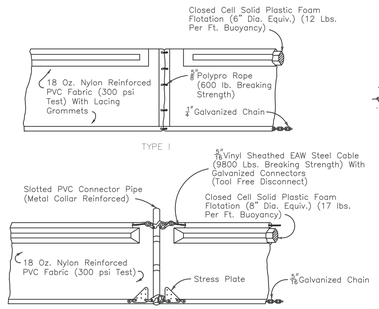
TYPE III SILT FENCE



TEMPORARY CONSTRUCTION EXIT



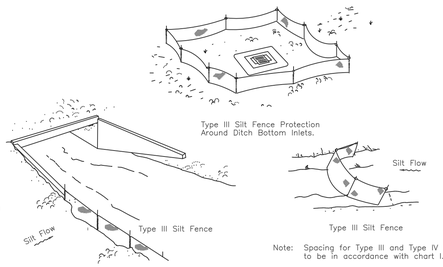
BALES BACKED BY FENCE



D_1 =5' Std. (Single Panel For Depths 5' or Less).
D_2 =5' Std. (Additional Panel For Depths 5').
Curtain To Reach Bottom Up To Depths Of 10 Feet.
Two(2) Panels To Be Used For Depths Greater Than 10 Feet Unless Special Depth Curtains Specifically Called For In The Plans Or As Determined By The Engineer.

NOTICE: COMPONENTS OF TYPES I AND II MAY BE SIMILAR OR IDENTICAL TO PROPRIETARY DESIGNS. ANY INFRINGEMENT ON THE PROPRIETARY RIGHTS OF THE DESIGNER SHALL BE THE SOLE RESPONSIBILITY OF THE USER. SUBSTITUTIONS FOR TYPES I AND II SHALL BE AS APPROVED BY THE ENGINEER.

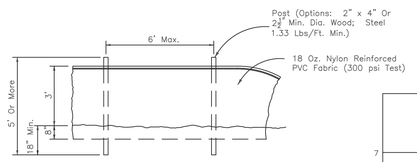
FLOATING TURBIDITY BARRIERS



Note: Spacing for Type III and Type IV Fences to be in accordance with chart I.

SILT FENCE APPLICATIONS

Do not deploy in a manner that silt fences will act as a dam across permanent flowing watercourses. Silt fences are to be used at upland locations and turbidity barriers used in permanent bodies of water.



STAKED TURBIDITY BARRIER

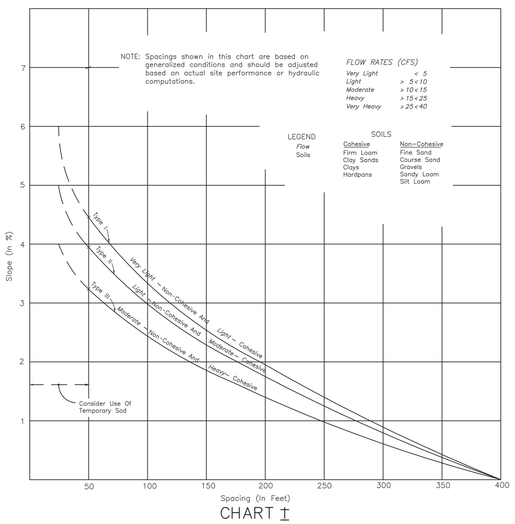
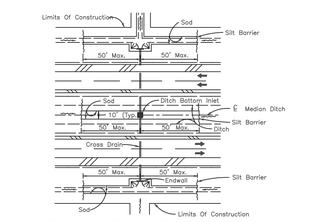


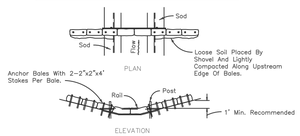
CHART I

RECOMMENDED SPACING FOR TYPE I AND TYPE II HAY BALE BARRIERS, AND TYPE III SILT FENCES

BALED HAY OR STRAW BARRIERS AND SILT FENCES

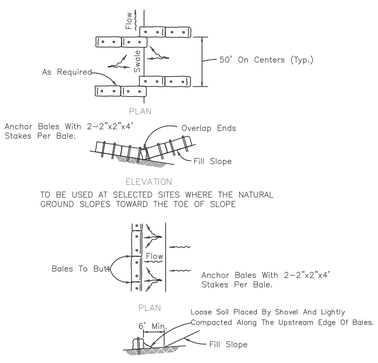


DITCH INSTALLATIONS AT DRAINAGE STRUCTURES

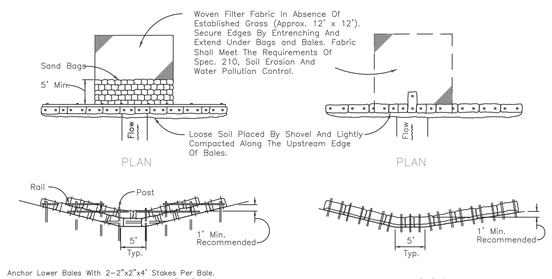


Spacing: Bale barriers for paved ditches should be spaced in accordance with Chart I.

BARRIER FOR PAVED DITCH



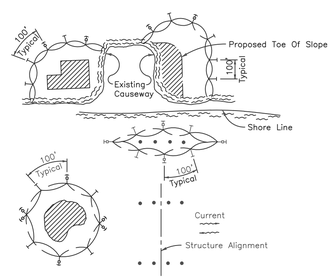
BARRIERS FOR FILL SLOPES



Application and Spacing: The use of Types I & II bale barriers should be limited to the conditions outlined in

TYPE II TYPE I

BARRIER FOR UNPAVED DITCHES



NOTES:

1. Turbidity barriers are to be used in all permanent bodies of water regardless of water depth.
2. Number and spacing of anchors dependent on current velocities.
3. Deployment of barrier around pile locations may vary to accommodate construction operations.
4. Navigation may require segmenting barrier during construction operations.
5. The above application indicate Type I floating turbidity barrier since anchors are shown, however, if conditions warrant, Type II floating turbidity barrier may be used. For additional information see Standard Specifications.

Note:
Turbidity barriers for flowing streams and tidal creeks may be either floating, or staked types or any combinations of types that will suit site conditions and meet erosion control and water quality requirements. The barrier type(s) will be at the Contractors option unless otherwise specified in the plans, however, payment will be under the pay item(s) established in the plans for Floating Turbidity Barrier and/or Staked Turbidity Barrier. Posts in staked turbidity barriers to be installed in vertical position unless otherwise directed by the Engineer.

TURBIDITY BARRIER APPLICATIONS

EROSION CONTROL DETAILS

Scale: NONE

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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

EROSION CONTROL DETAILS

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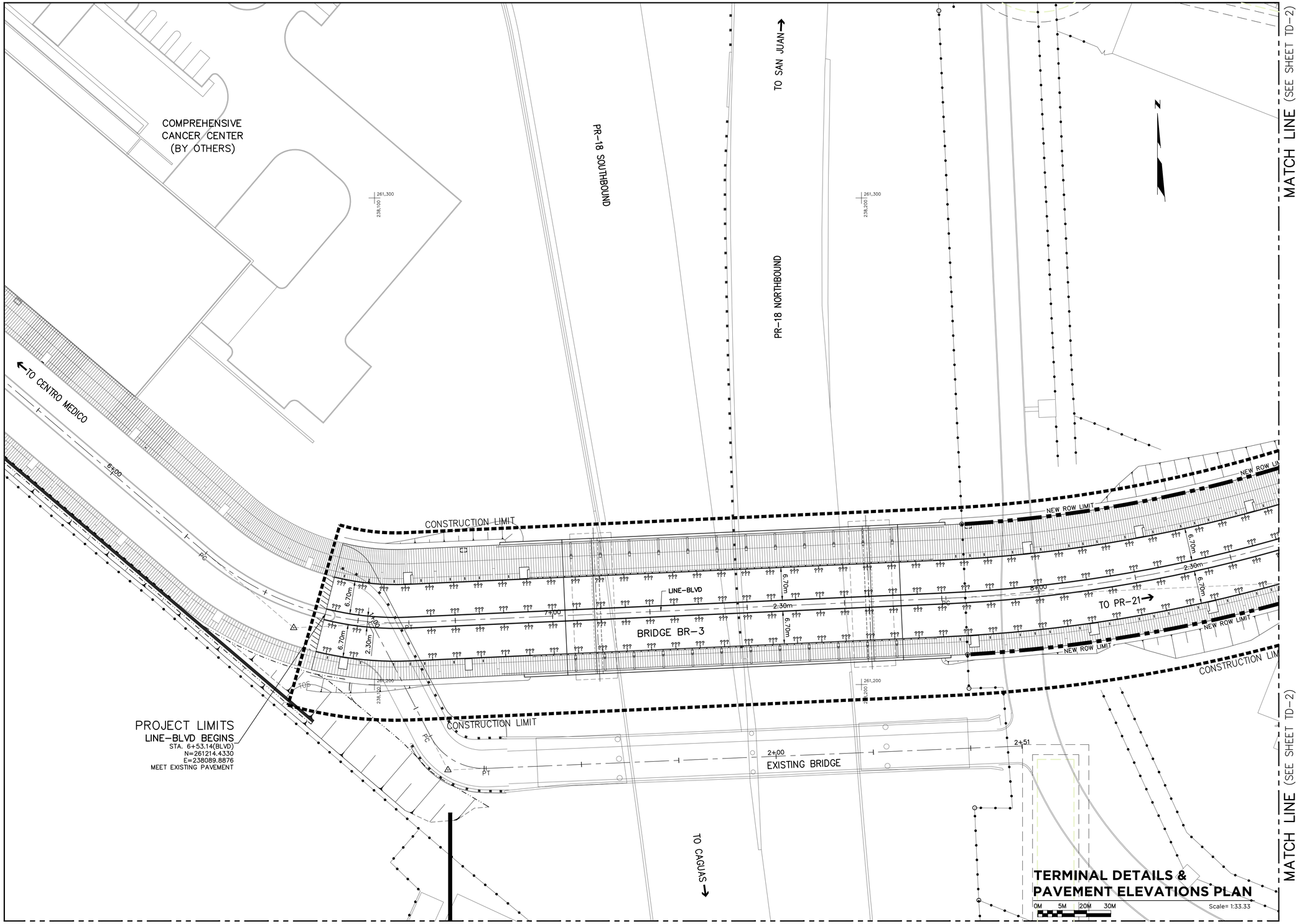
MCD-5



SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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TERMINAL DETAILS & PAVEMENT ELEVATIONS PLAN

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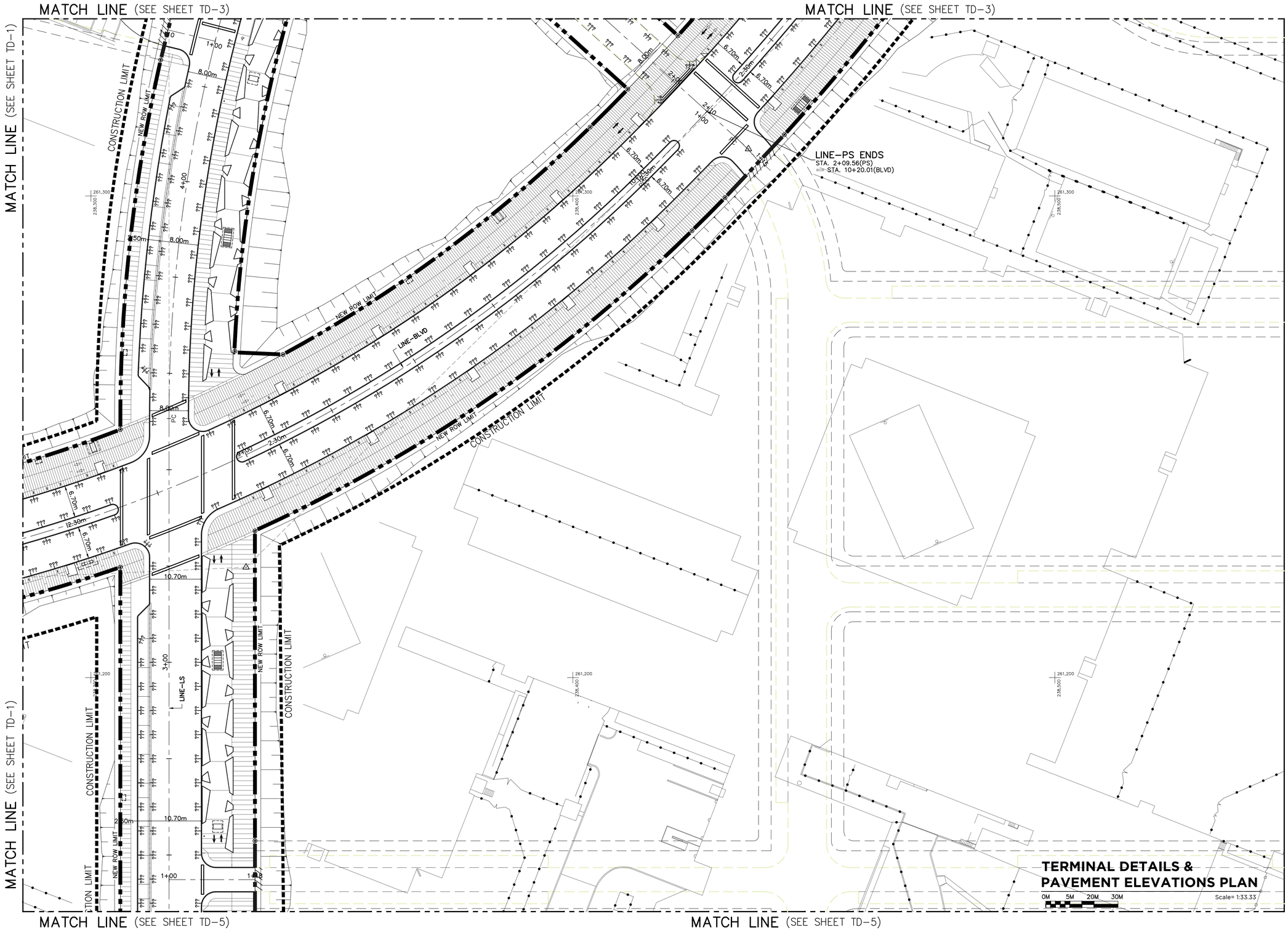
TD-1



SCIENCE CITY
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PHASE II

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FINAL CONSTRUCTION
DOCUMENTS (100%)
MAY 13, 2013

TERMINAL DETAILS &
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ELEVATIONS PLAN

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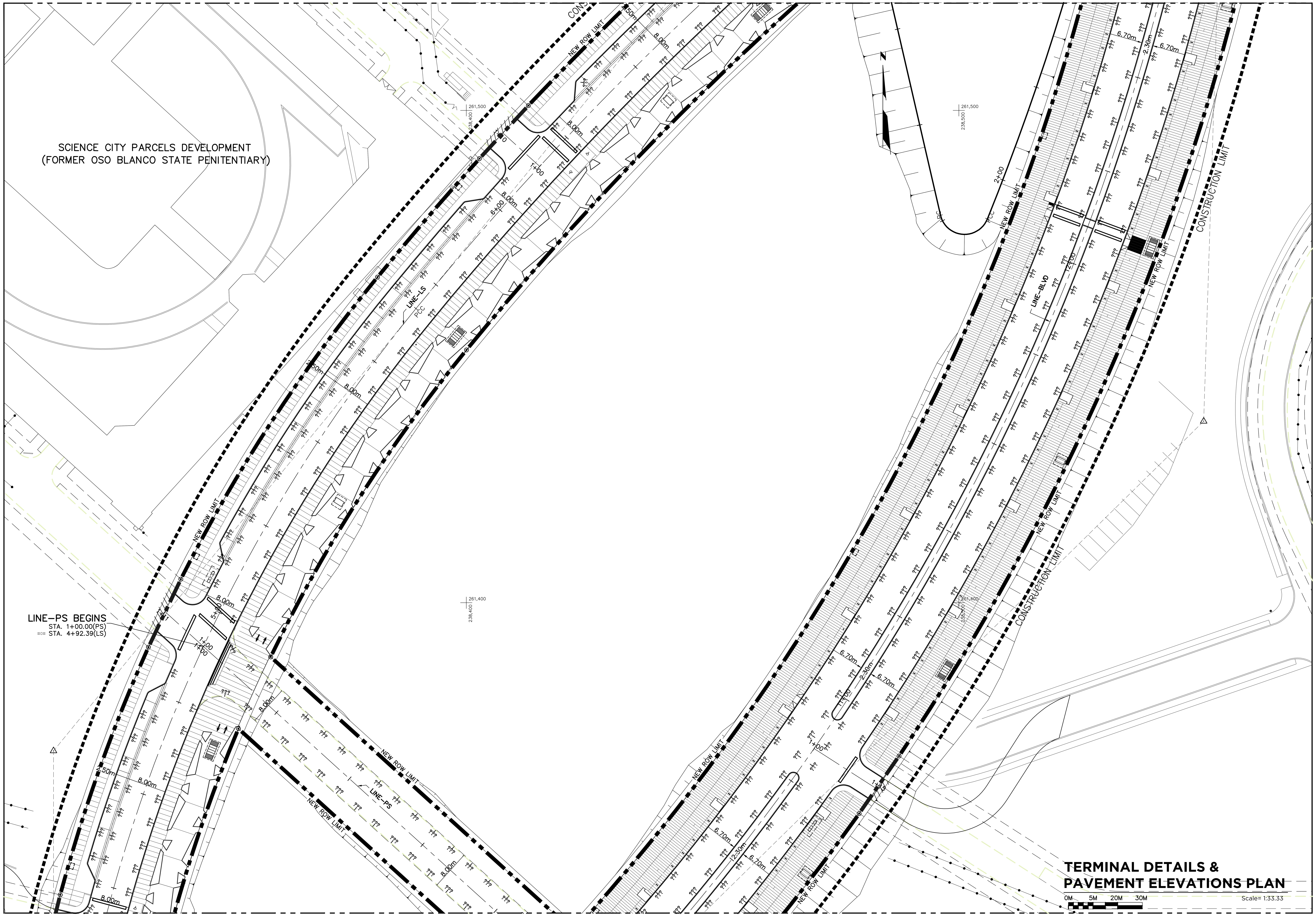
REVISED BY:
DATE: JUNE-19-2012

TD-2

MATCH LINE (SEE SHEET TD-4) MATCH LINE (SEE SHEET TD-4)



MATCH LINE (SEE SHEET TD-2) MATCH LINE (SEE SHEET TD-2)

SCIENCE CITY
URBAN INFRASTRUCTURE
PHASE II

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TERMINAL DETAILS & PAVEMENT ELEVATIONS PLAN

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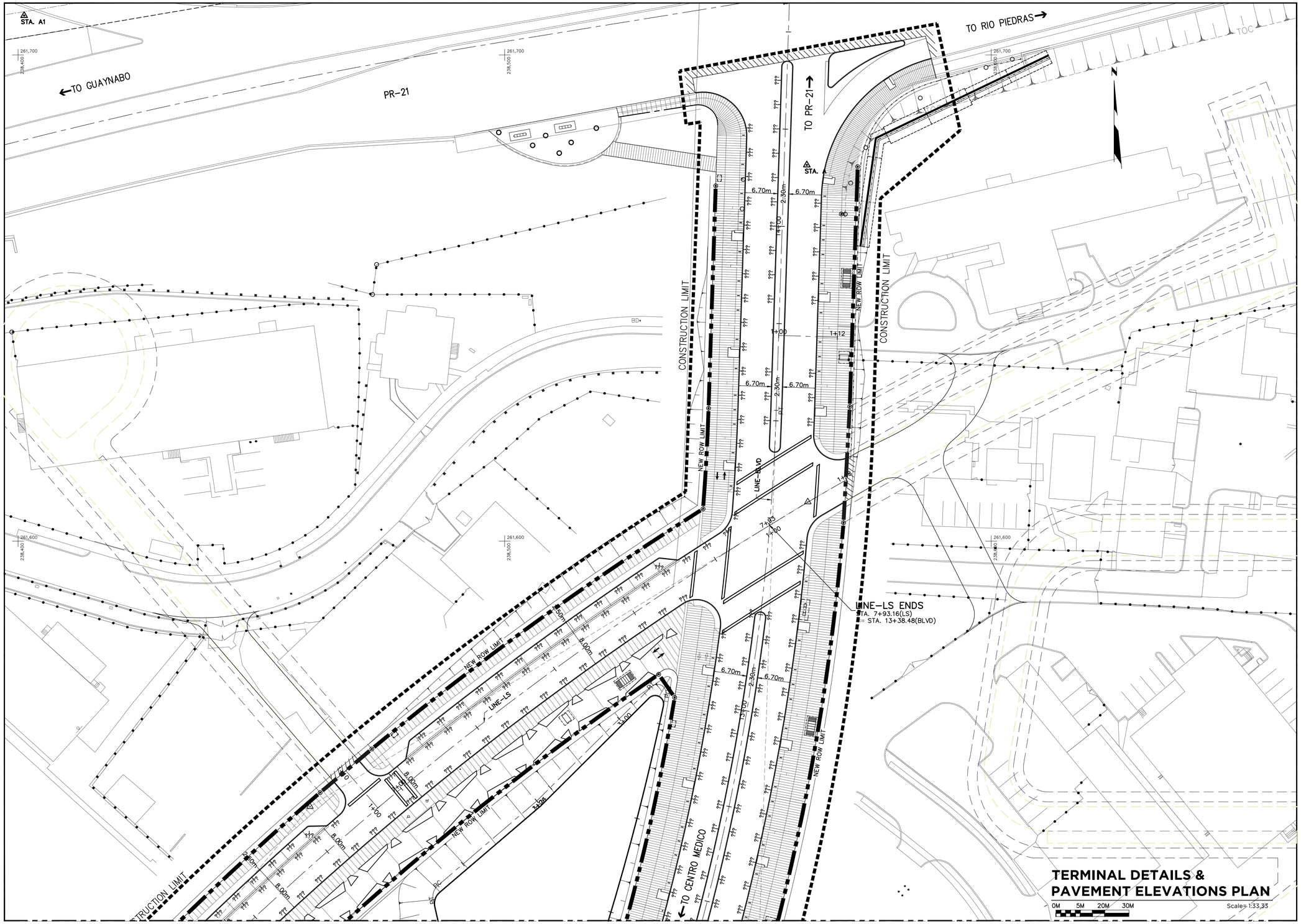
TD-3



MATCH LINE (SEE SHEET TD-3)

MATCH LINE (SEE SHEET TD-3)

SCIENCE CITY
URBAN INFRASTRUCTURE
PHASE II

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FINAL CONSTRUCTION
DOCUMENTS (100%)
MAY 13, 2013

TERMINAL DETAILS &
PAVEMENT
ELEVATIONS PLAN

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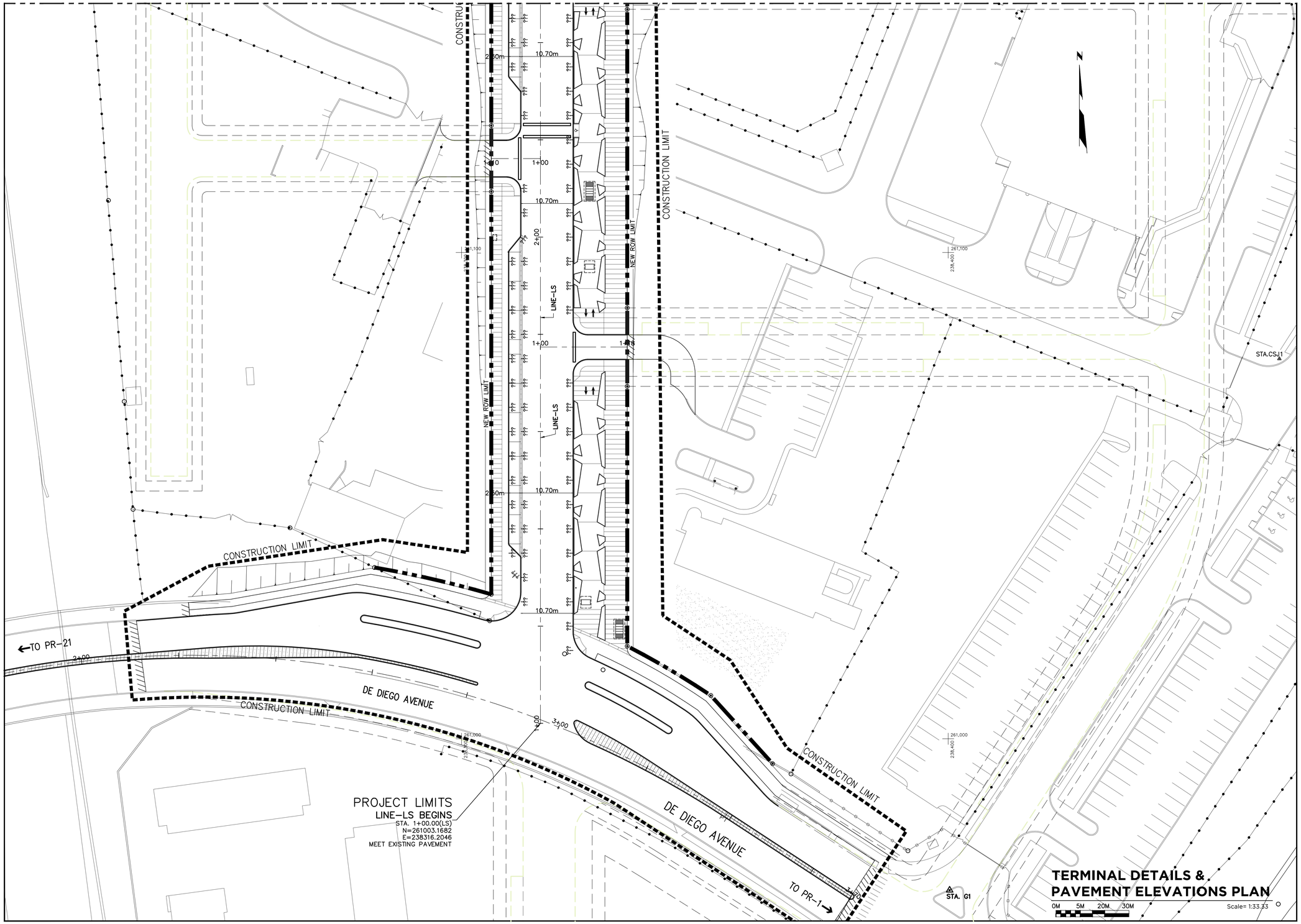
TD-4

MATCH LINE (SEE SHEET TD-2)

MATCH LINE (SEE SHEET TD-2)



TERMINAL DETAILS & PAVEMENT ELEVATIONS PLAN

0M 5M 20M 30M

Scale= 1:33.33

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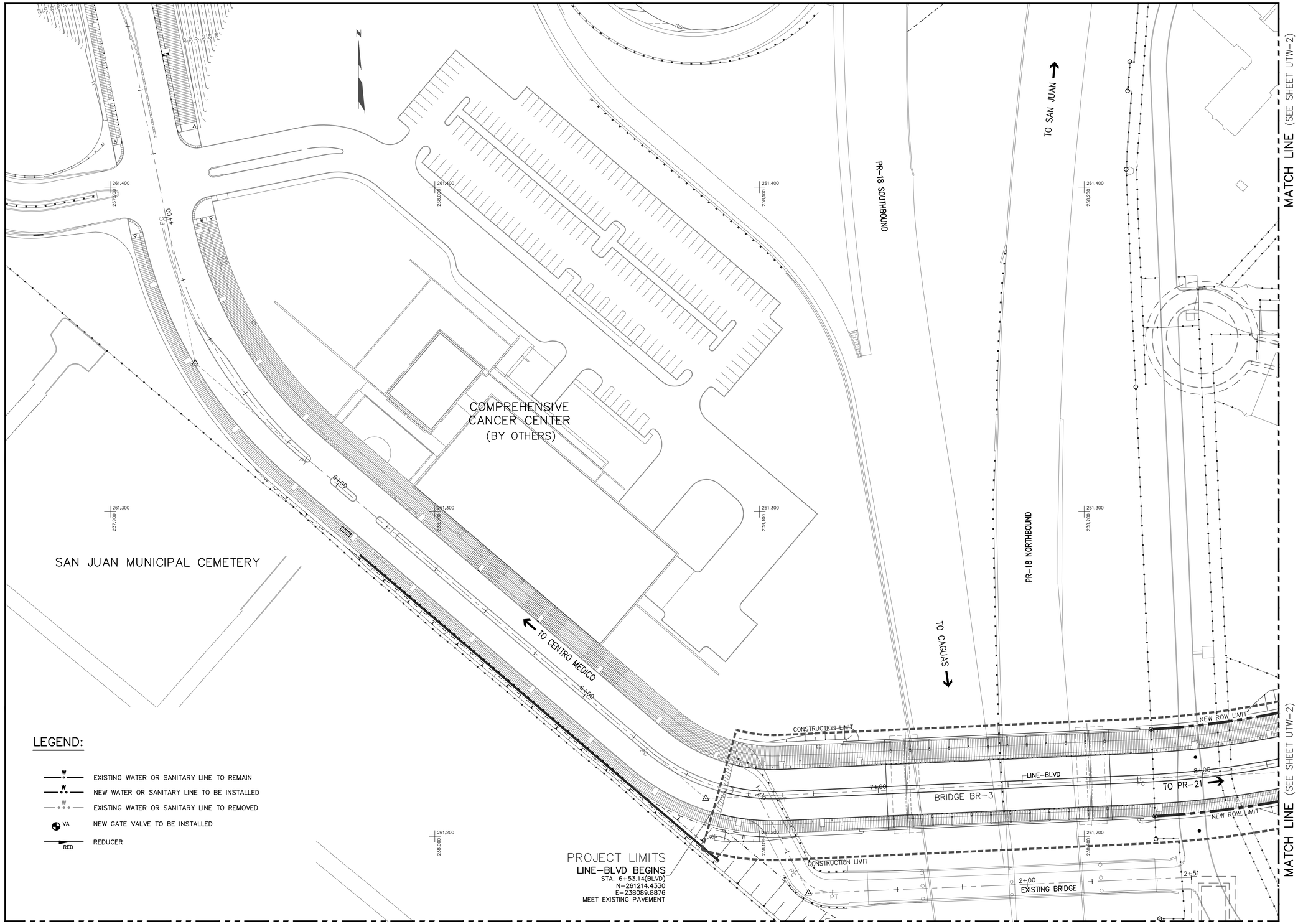
TD-5



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MAY 13, 2013

P.R.A.S.A. WATER UTILITIES PLAN

DRAWN BY:
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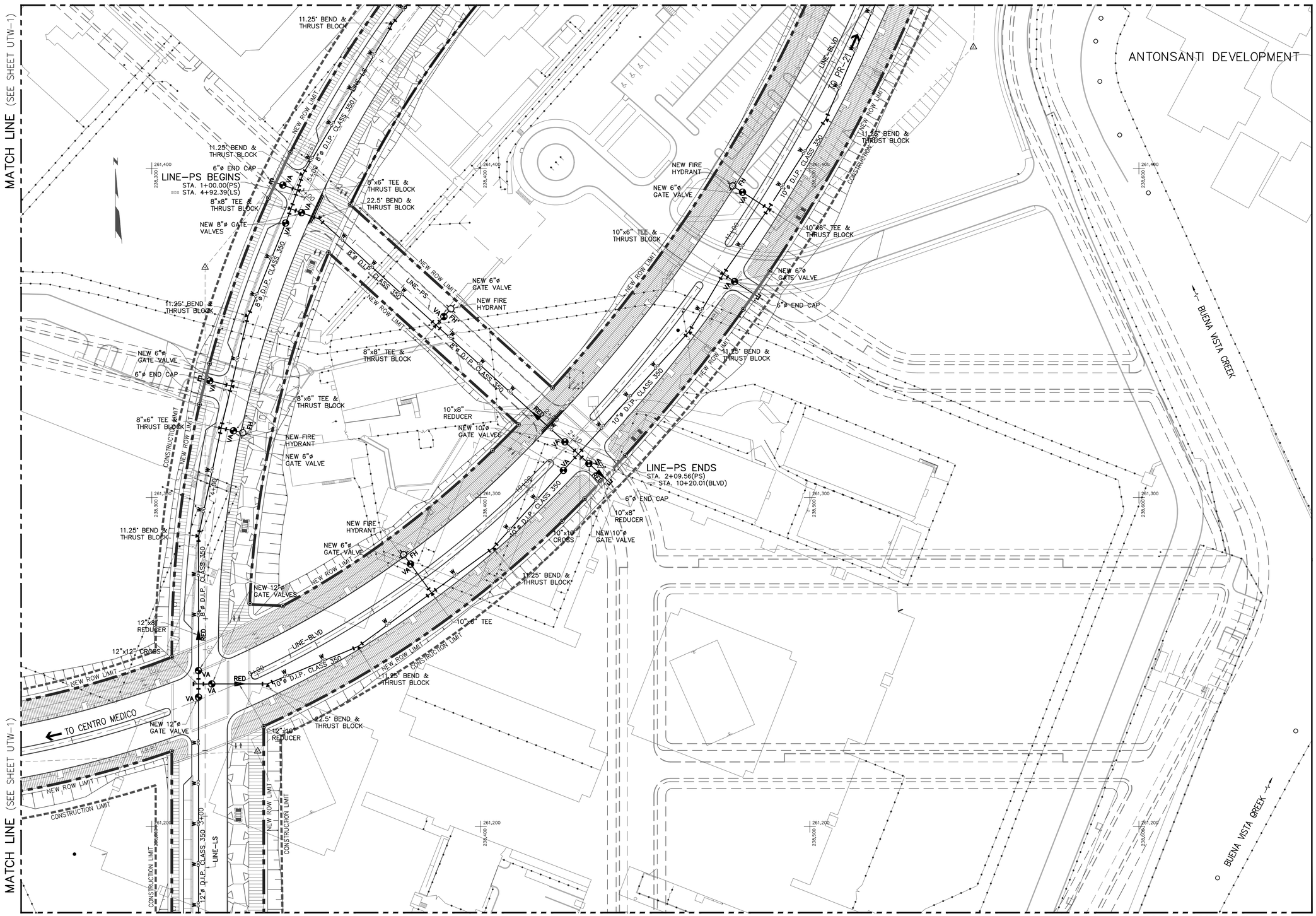
DATE: JUNE-19-2012

UTW-1

P.R.A.S.A WATER UTILITIES PLAN

0M 10M 20M 30M Scale= 1:500



P.R.A.S.A. WATER UTILITIES PLAN

0M 10M 20M 30M Scale= 1:500

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P.R.A.S.A. WATER UTILITIES PLAN

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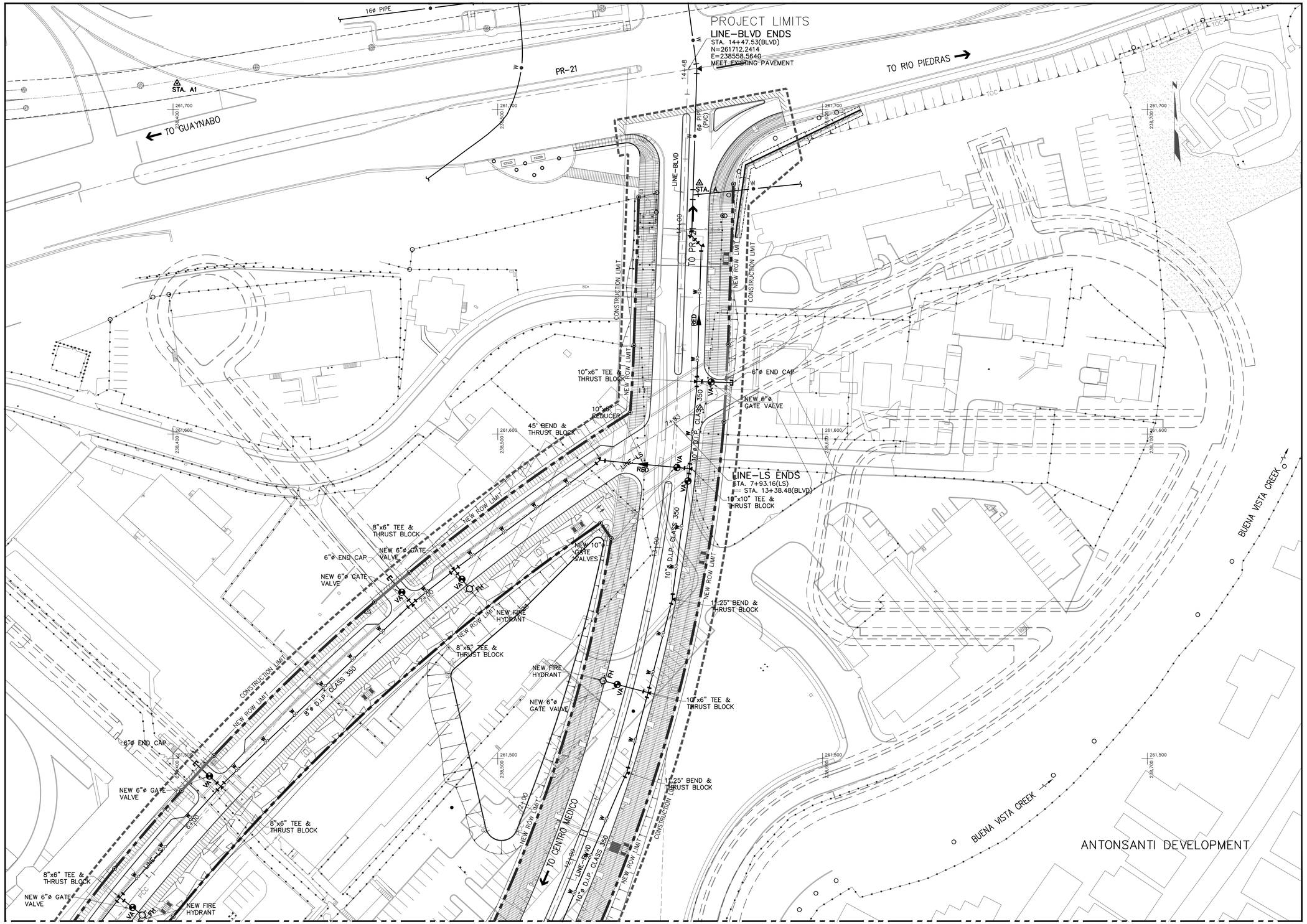
UTW-2



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P.R.A.S.A. WATER UTILITIES PLAN

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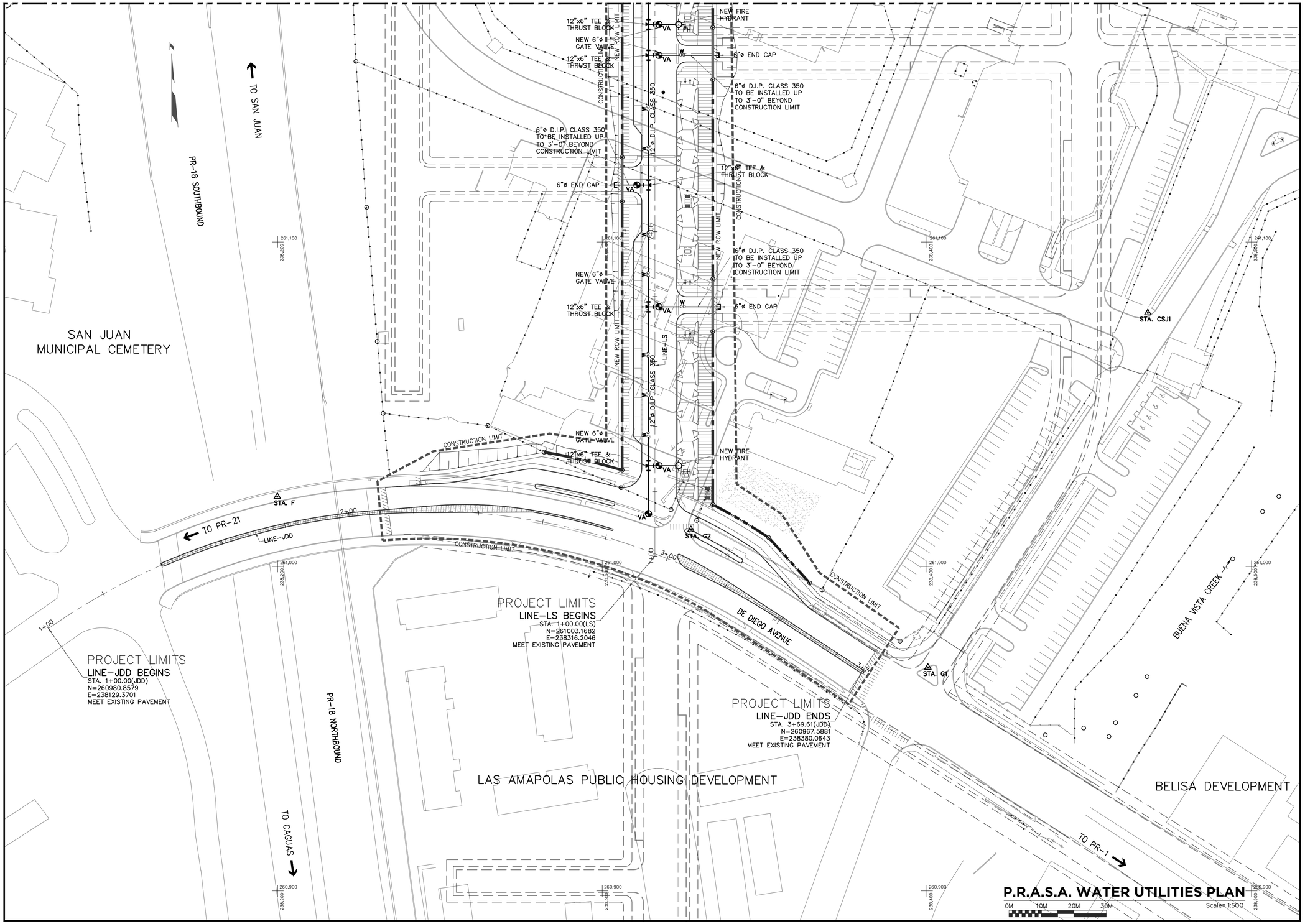
UTW-3

P.R.A.S.A. WATER UTILITIES PLAN

0M 10M 20M 30M Scale= 1:500

MATCH LINE (SEE SHEET UTW-2)

MATCH LINE (SEE SHEET UTW-2)



P.R.A.S.A. WATER UTILITIES PLAN

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P.R.A.S.A. WATER UTILITIES PLAN

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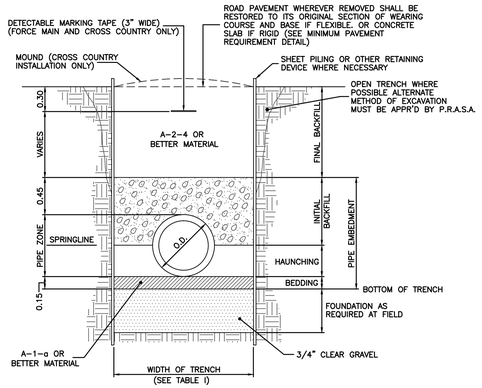
UTW-4



TRENCH DETAIL FOR P.V.C. PIPE

NOT TO SCALE

TABLE I WIDTH OF TRENCH	
DIAMETER (INCHES)	*WIDTH OF TRENCH (INCHES)
4" – 15"	O.D. + 24"
16" – 27"	O.D. + 36"

NOTE:

* WHENEVER MOVABLE SHEET PILING OR OTHER TRENCH PROTECTION IS USED BELOW THE TOP OF THE PIPE, THE CLEAR DISTANCE BETWEEN THE OUTSIDE FACE OF THE PIPE AND THE MOVABLE TRENCH SUPPORT SHALL BE NOT LESS THAN 2 1/2" OUTSIDE PIPE DIAMETER.

NOTES:

FOUNDATION AND BEDDING:

1. MATERIALS AS CLASSIFIED BY USCS AS PER ASTM D-2487 SOILS CLASS "B" (OR A.A.S.H.T.O. A-1-a OR A-1-b) WHERE CRUSHED GRAVEL OR CRUSHED STONE IS USED IT SHALL PER ASTM C-33 GRADATION NO. 67.
2. FILL MATERIAL SHALL BE PLACED IN 0.15 MT. LAYERS.
3. COMPACT TO 90% OF MAX. COMPACTION AS PER ASTM D-698 FOR COHESIVE SOILS OR DENSIFY TO 70% OF MAX. RELATIVE DENSITY AS PER ASTM D-2049 FOR GRANULAR SOILS. TESTS SHALL BE PERFORMED AT 50 MTS INTERVALS.

HAUNCHING:

1. SAME MATERIALS AS FOR FOUNDATION AND BEDDING.
2. FILL MATERIAL SHALL BE PLACED IN 0.15 MT. LAYERS.
3. COMPACT 70% OF MAX. RELATIVE DENSITY AS PER ASTM D-2049.

INITIAL BACKFILL-CROSS COUNTRY:

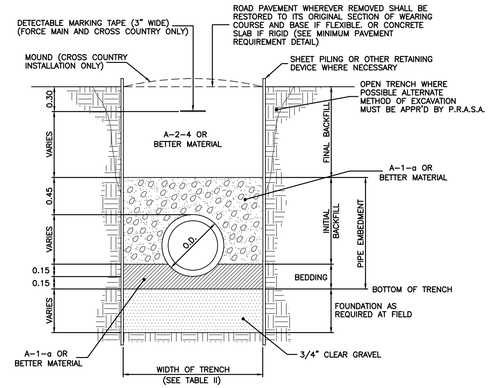
1. PREVIOUS EXCAVATED MATERIALS FREE FROM BOULDERS AND STONES LARGER THAN 2".
2. FILL MATERIAL SHALL BE PLACED IN 0.30 MT. LAYERS.
3. COMPACTION EFFORT NOT REQUIRED OTHER THAN OBTAINED BY SPREADING AND LEVELLING BACKFILL MATERIAL. ROLLING EQUIPMENT NOT ALLOWED FOR WORKING BACKFILL MATERIAL IN THIS SECTOR OF TRENCH.

FINAL BACKFILL-CROSS COUNTRY:

1. PREVIOUS EXCAVATED MATERIAL.
2. FILL MATERIAL SHALL BE LOOSELY PLACED IN 0.90 MT. LAYERS.
3. COMPACTION AS OBTAINED BY ROLLING WITH THE PLACEMENT EQUIPMENT.
4. MOUND THE SURFACE AND FILL AND MAINTAIN ALL SUNKEN TRENCHES UNTIL FINAL ACCEPTANCE OF THE PROJECT.

INITIAL AND FINAL BACKFILL-UNDER ROADS, STREETS, WALKS, APRONS AND OTHERS IMPROVED SURFACES:

1. ANY MATERIALS AS CLASSIFIED BY USCS AS PER ASTM D-2487 SOIL CLASS "B" (OR A.A.S.H.T.O. A-1-a THRU A-2-4) WHERE CRUSHED GRAVEL OR CRUSHED STONE IS USED IT SHALL BE AS PER ASTM C-33 GRADATION NO. 67.
2. FILL MATERIAL SHALL BE PLACED IN 0.30 MT. LAYERS.
3. COMPACT TO 90% OF MAX. COMPACTION AS PER ASTM D-698 FOR COHESIVE SOILS OR 70% OF MAX. RELATIVE DENSITY AS PER ASTM D-2049 FOR GRANULAR SOILS. ROLLING EQUIPMENT NOT ALLOWED FOR WORKING BACKFILL MATERIAL IN THE INITIAL BACKFILL SECTOR.



TRENCH DETAIL FOR CONCRETE PIPE

NOT TO SCALE

TABLE II WIDTH OF TRENCH	
DIAMETER (INCHES)	*WIDTH OF TRENCH (INCHES)
15" AND SMALLER	O.D. + 24"
16" – 72"	O.D. + 36"
84" – UP	O.D. + 60"

NOTE:

* WHENEVER MOVABLE SHEET PILING OR OTHER TRENCH PROTECTION IS USED BELOW THE TOP OF THE PIPE, THE CLEAR DISTANCE BETWEEN THE OUTSIDE FACE OF THE PIPE AND THE MOVABLE TRENCH SUPPORT SHALL BE NOT LESS THAN 2 1/2" OUTSIDE PIPE DIAMETER.

NOTES:

FOUNDATION AND BEDDING:

1. MATERIALS AS CLASSIFIED BY USCS AS PER ASTM D-2487 SOILS CLASS "B" (OR A.A.S.H.T.O. A-1-a OR A-1-b) WHERE CRUSHED GRAVEL OR CRUSHED STONE IS USED IT SHALL PER ASTM C-33 GRADATION NO. 67.
2. FILL MATERIAL SHALL BE PLACED IN 0.15 MT. LAYERS.
3. COMPACT TO 90% OF MAX. COMPACTION AS PER ASTM D-698 FOR COHESIVE SOILS OR DENSIFY TO 70% OF MAX. RELATIVE DENSITY AS PER ASTM D-2049 FOR GRANULAR SOILS. TESTS SHALL BE PERFORMED AT 50 MTS INTERVALS.

INITIAL BACKFILL-CROSS COUNTRY:

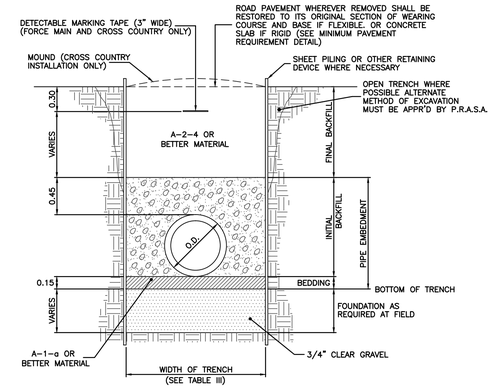
1. PREVIOUS EXCAVATED MATERIALS FREE FROM BOULDERS AND STONES LARGER THAN 2".
2. FILL MATERIAL SHALL BE PLACED IN 0.30 MT. LAYERS.
3. COMPACTION EFFORT NOT REQUIRED OTHER THAN OBTAINED BY SPREADING AND LEVELLING BACKFILL MATERIAL. ROLLING EQUIPMENT NOT ALLOWED FOR WORKING BACKFILL MATERIAL IN THIS SECTOR OF TRENCH.

FINAL BACKFILL-CROSS COUNTRY:

1. PREVIOUS EXCAVATED MATERIAL.
2. FILL MATERIAL SHALL BE LOOSELY PLACED IN 0.90 MT. LAYERS.
3. COMPACTION AS OBTAINED BY ROLLING WITH THE PLACEMENT EQUIPMENT.
4. MOUND THE SURFACE AND FILL AND MAINTAIN ALL SUNKEN TRENCHES UNTIL FINAL ACCEPTANCE OF THE PROJECT.

INITIAL AND FINAL BACKFILL-UNDER ROADS, STREETS, WALKS, APRONS AND OTHERS IMPROVED SURFACES:

1. ANY MATERIALS AS CLASSIFIED BY USCS AS PER ASTM D-2487 SOIL CLASS "B" (OR A.A.S.H.T.O. A-1-a THRU A-2-4) WHERE CRUSHED GRAVEL OR CRUSHED STONE IS USED IT SHALL BE AS PER ASTM C-33 GRADATION NO. 67.
2. FILL MATERIAL SHALL BE PLACED IN 0.30 MT. LAYERS.
3. COMPACT TO 90% OF MAX. COMPACTION AS PER ASTM D-698 FOR COHESIVE SOILS OR 70% OF MAX. RELATIVE DENSITY AS PER ASTM D-2049 FOR GRANULAR SOILS. ROLLING EQUIPMENT NOT ALLOWED FOR WORKING BACKFILL MATERIAL IN THE INITIAL BACKFILL SECTOR.



TRENCH DETAIL FOR DUCTILE IRON PIPE

NOT TO SCALE

TABLE III WIDTH OF TRENCH	
DIAMETER (INCHES)	*WIDTH OF TRENCH (INCHES)
4" – 14"	O.D. + 24"
16" – 54"	O.D. + 36"

NOTE:

* WHENEVER MOVABLE SHEET PILING OR OTHER TRENCH PROTECTION IS USED BELOW THE TOP OF THE PIPE, THE CLEAR DISTANCE BETWEEN THE OUTSIDE FACE OF THE PIPE AND THE MOVABLE TRENCH SUPPORT SHALL BE NOT LESS THAN 2 1/2" OUTSIDE PIPE DIAMETER.

NOTES:

FOUNDATION AND BEDDING:

1. MATERIALS AS CLASSIFIED BY USCS AS PER ASTM D-2487 SOILS CLASS "B" (OR A.A.S.H.T.O. A-1-a OR A-1-b) WHERE CRUSHED GRAVEL OR CRUSHED STONE IS USED IT SHALL PER ASTM C-33 GRADATION NO. 67.
2. FILL MATERIAL SHALL BE PLACED IN 0.15 MT. LAYERS.
3. COMPACT TO 90% OF MAX. COMPACTION AS PER ASTM D-698 FOR COHESIVE SOILS OR DENSIFY TO 70% OF MAX. RELATIVE DENSITY AS PER ASTM D-2049 FOR GRANULAR SOILS. TESTS SHALL BE PERFORMED AT 50 MTS INTERVALS.

INITIAL BACKFILL-CROSS COUNTRY:

1. PREVIOUS EXCAVATED MATERIALS FREE FROM BOULDERS AND STONES LARGER THAN 2".
2. FILL MATERIAL SHALL BE PLACED IN 0.30 MT. LAYERS.
3. COMPACTION EFFORT NOT REQUIRED OTHER THAN OBTAINED BY SPREADING AND LEVELLING BACKFILL MATERIAL. ROLLING EQUIPMENT NOT ALLOWED FOR WORKING BACKFILL MATERIAL IN THIS SECTOR OF TRENCH.

FINAL BACKFILL-CROSS COUNTRY:

1. PREVIOUS EXCAVATED MATERIAL.
2. FILL MATERIAL SHALL BE LOOSELY PLACED IN 0.90 MT. LAYERS.
3. COMPACTION AS OBTAINED BY ROLLING WITH THE PLACEMENT EQUIPMENT.
4. MOUND THE SURFACE AND FILL AND MAINTAIN ALL SUNKEN TRENCHES UNTIL FINAL ACCEPTANCE OF THE PROJECT.

INITIAL AND FINAL BACKFILL-UNDER ROADS, STREETS, WALKS, APRONS AND OTHERS IMPROVED SURFACES:

1. ANY MATERIALS AS CLASSIFIED BY USCS AS PER ASTM D-2487 SOIL CLASS "B" (OR A.A.S.H.T.O. A-1-a THRU A-2-4) WHERE CRUSHED GRAVEL OR CRUSHED STONE IS USED IT SHALL BE AS PER ASTM C-33 GRADATION NO. 67.
2. FILL MATERIAL SHALL BE PLACED IN 0.30 MT. LAYERS.
3. COMPACT TO 90% OF MAX. COMPACTION AS PER ASTM D-698 FOR COHESIVE SOILS OR 70% OF MAX. RELATIVE DENSITY AS PER ASTM D-2049 FOR GRANULAR SOILS. ROLLING EQUIPMENT NOT ALLOWED FOR WORKING BACKFILL MATERIAL IN THE INITIAL BACKFILL SECTOR.

GENERAL NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY, INTEGRITY AND STABILITY OF PEOPLE, BUILDINGS, EMBANKMENTS, EXISTING PIPE LINES, OR ANY OTHER STRUCTURES IN THE VICINITY OF EXCAVATIONS OR ANY OTHER CONSTRUCTION OPERATIONS WHERE NECESSARY. SHEET PILING, FENCING, OR ANY OTHER DEVICE, TO INSURE THE PROTECTION OF SUCH PEOPLE OR STRUCTURES, SHALL BE INSTALLED.
2. OPEN TRENCH: SLOPE TO BE DETERMINED BY CONTRACTOR.
3. TRENCH PROTECTION: TO BE DETERMINED BY CONTRACTOR TO ENSURE PROTECTION OF ADJACENT STRUCTURES, TRENCH WALLS AND WORKING CREWS INSIDE AND OUT OF TRENCH.
4. GROUND OR PAVED SURFACES: TO BE REPLACED OR RESTORED IN ACCORDANCE TO THE SPECIFICATIONS.
5. DETECTABLE MARKING TAPE: SEE THE SPECIFICATIONS FOR INSCRIPTIONS.

P.R.A.S.A. TRENCH DETAILS

Not to Scale

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

SEGMENT EAST OF PR 18
SAN JUAN, PUERTO RICO

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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

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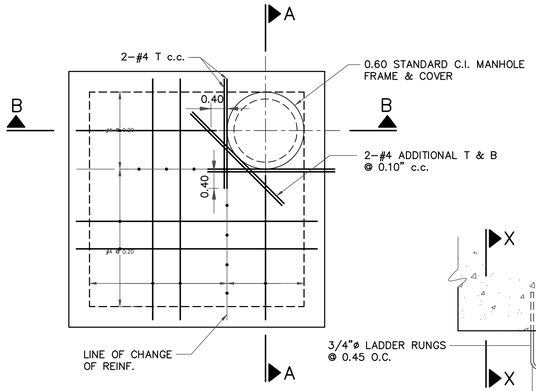
DATE: JUNE-19-2012

UTW-7



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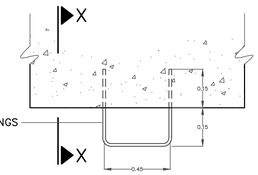

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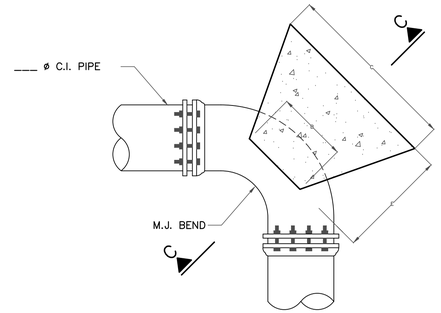

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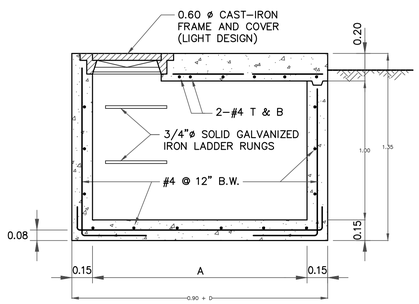
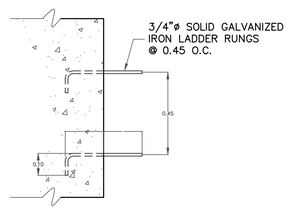
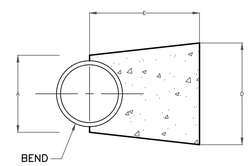


SECTION A–A



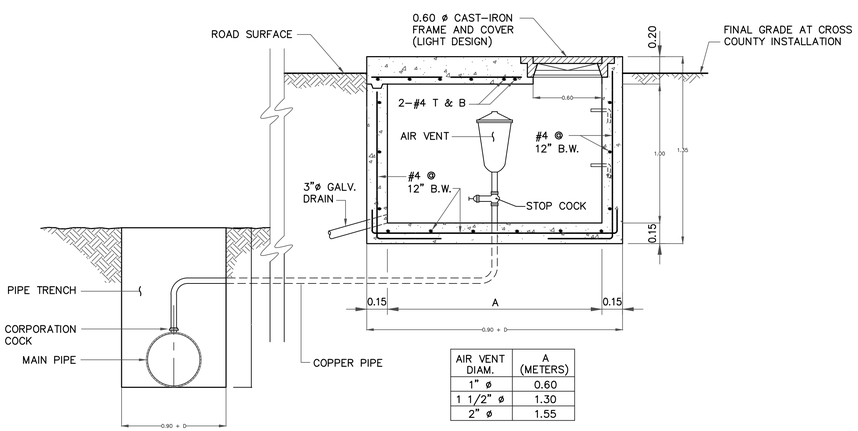
SECTION X–X

LADDER RUNGS DETAIL



SECTION C–C

THRUST BLOCK DETAILS FOR HORIZONTAL BENDS



AIR VENT DIAM.	A (METERS)
1" ø	0.60
1 1/2" ø	1.30
2" ø	1.55

SECTION B–B

AIR VENT AND CONCRETE BOX DETAIL

HORIZONTAL BENDS

90° – BENDS AND T'S

DIAMETER	A	B	C	D	E	VOL. CuM.
4"	1'–6"	1'–0"	2'–0"	2'–6"	3'–0"	0.30
6"	2'–0"	1'–3"	2'–0"	3'–0"	5'–0"	0.60
8"	2'–6"	1'–3"	3'–6"	5'–0"	6'–0"	1.80
10"	2'–6"	1'–6"	4'–6"	5'–0"	7'–0"	2.70
16"	3'–6"	2'–6"	6'–0"	6'–0"	7'–0"	4.40
20"	4'–0"	3'–0"	7'–0"	7'–0"	8'–0"	6.90
24"	4'–0"	4'–0"	8'–0"	8'–0"	9'–0"	10.20
30"	4'–6"	4'–0"	10'–0"	10'–0"	10'–0"	16.70

45° – BENDS AND Y'S

DIAMETER	A	B	C	D	E	VOL. CuM.
4"	1'–0"	0'–8"	1'–6"	3'–0"	4'–0"	0.30
6"	1'–6"	0'–9"	2'–0"	4'–6"	6'–0"	0.90
8"	2'–6"	0'–9"	3'–0"	5'–0"	6'–6"	1.60
10"	2'–6"	1'–0"	4'–0"	6'–0"	7'–0"	2.60
16"	3'–6"	1'–0"	6'–0"	8'–0"	9'–6"	6.90
20"	4'–0"	1'–6"	7'–0"	9'–0"	10'–6"	10.30
24"	4'–0"	1'–9"	9'–0"	10'–0"	11'–0"	15.10
30"	6'–0"	2'–6"	11'–0"	11'–0"	11'–0"	21.20

22 1/2° – 11 1/4° BENDS

DIAMETER	A	B	C	D	E	VOL. CuM.
4"	1'–6"	0'–8"	2'–0"	3'–0"	4'–0"	0.40
6"	1'–6"	0'–8"	3'–6"	4'–6"	4'–6"	1.10
8"	2'–0"	0'–10"	4'–6"	5'–0"	5'–6"	1.90
10"	2'–0"	1'–0"	5'–6"	5'–6"	6'–6"	3.00
16"	3'–0"	1'–3"	7'–6"	8'–0"	8'–0"	7.20
20"	4'–0"	1'–6"	8'–6"	9'–6"	9'–6"	11.70
24"	6'–0"	1'–8"	10'–0"	10'–0"	9'–6"	14.80
30"	7'–0"	2'–6"	11'–0"	11'–0"	11'–0"	21.60

VERTICAL BENDS

90° – BENDS AND T'S

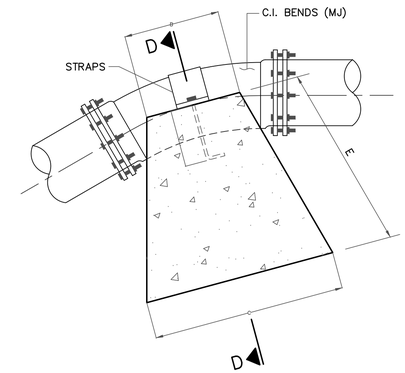
DIAMETER	A	B	C	D	E	VOL. CuM.
4"	2'–0"	1'–0"	2'–0"	3'–0"	3'–0"	0.30
6"	2'–6"	1'–3"	2'–0"	4'–0"	5'–0"	0.80
8"	2'–6"	1'–3"	4'–0"	4'–0"	5'–6"	1.50
10"	2'–6"	1'–6"	5'–0"	5'–0"	6'–0"	2.40
16"	3'–6"	2'–6"	7'–0"	7'–0"	7'–6"	6.10
20"	4'–0"	3'–0"	8'–0"	8'–0"	9'–0"	9.70
24"	4'–0"	4'–0"	9'–0"	9'–0"	10'–0"	13.70
30"	6'–0"	4'–0"	11'–0"	11'–0"	10'–6"	21.60

45° – BENDS AND Y'S

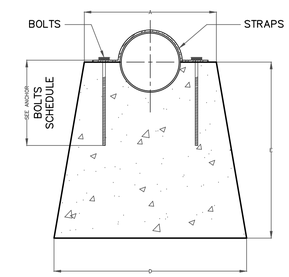
DIAMETER	A	B	C	D	E	VOL. CuM.
4"	1'–0"	0'–8"	1'–6"	3'–0"	3'–0"	0.20
6"	1'–6"	0'–9"	2'–0"	3'–0"	4'–6"	0.50
8"	2'–0"	0'–9"	3'–0"	4'–0"	4'–6"	0.90
10"	2'–0"	1'–0"	4'–0"	5'–0"	5'–0"	1.60
16"	3'–0"	1'–0"	5'–0"	7'–0"	6'–6"	3.50
20"	4'–0"	1'–6"	6'–0"	7'–0"	7'–6"	5.10
24"	4'–0"	2'–0"	7'–0"	8'–0"	8'–6"	7.70
30"	5'–0"	2'–6"	7'–6"	9'–0"	11'–0"	11.30

22 1/2° – 11 1/4° BENDS

DIAMETER	A	B	C	D	E	VOL. CuM.
4"	1'–0"	0'–8"	1'–6"	2'–0"	2'–0"	0.10
6"	1'–6"	0'–8"	1'–6"	3'–0"	3'–0"	0.20
8"	2'–0"	1'–0"	2'–0"	3'–0"	3'–6"	0.40
10"	2'–0"	1'–0"	3'–0"	3'–0"	4'–0"	0.60
16"	2'–0"	1'–6"	4'–0"	5'–0"	5'–6"	1.80
20"	2'–6"	2'–0"	5'–0"	6'–0"	5'–6"	2.70
24"	3'–0"	2'–0"	6'–0"	6'–0"	6'–6"	3.90
30"	3'–0"	2'–6"	7'–0"	7'–0"	7'–6"	6.00

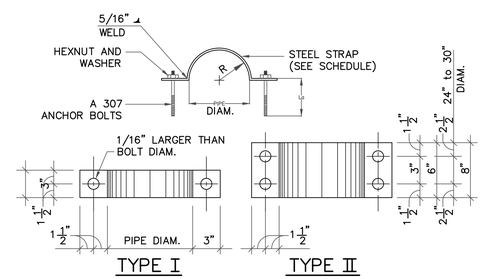


ELEVATION



SECTION D–D

THRUST BLOCK DETAILS FOR VERTICAL BENDS



ANCHOR BOLTS AND STEEL STRAP SCHEDULE

PIPE DIAMETER	ANCHOR BOLTS–A–307			STEEL STRAP (A–36 STEEL)	
	NO.	SIZE	LENGTH	TYPE	SIZE
4" to 10"	2	3/4"	12"	I	3/4"x 3"x L*
12"	4	7/8"	18"	II	1"x 6"x L*
20"	4	1"	21"	II	1 1/4"x 6"xL*
24" to 30"	4	1 1/2"	26"	II	1 1/4"x 6"xL*

* L=3.14 x R + 6

NOTE:

ANCHOR BOLTS, STEEL STRAPS, HEXNUTS, WASHERS, AND ALL OTHER EXPOSED HARDWARE GALVANIZED IN ACCORDANCE WITH AASHTO M–111.

P.R.A.S.A. STANDARD DETAILS

Not to Scale

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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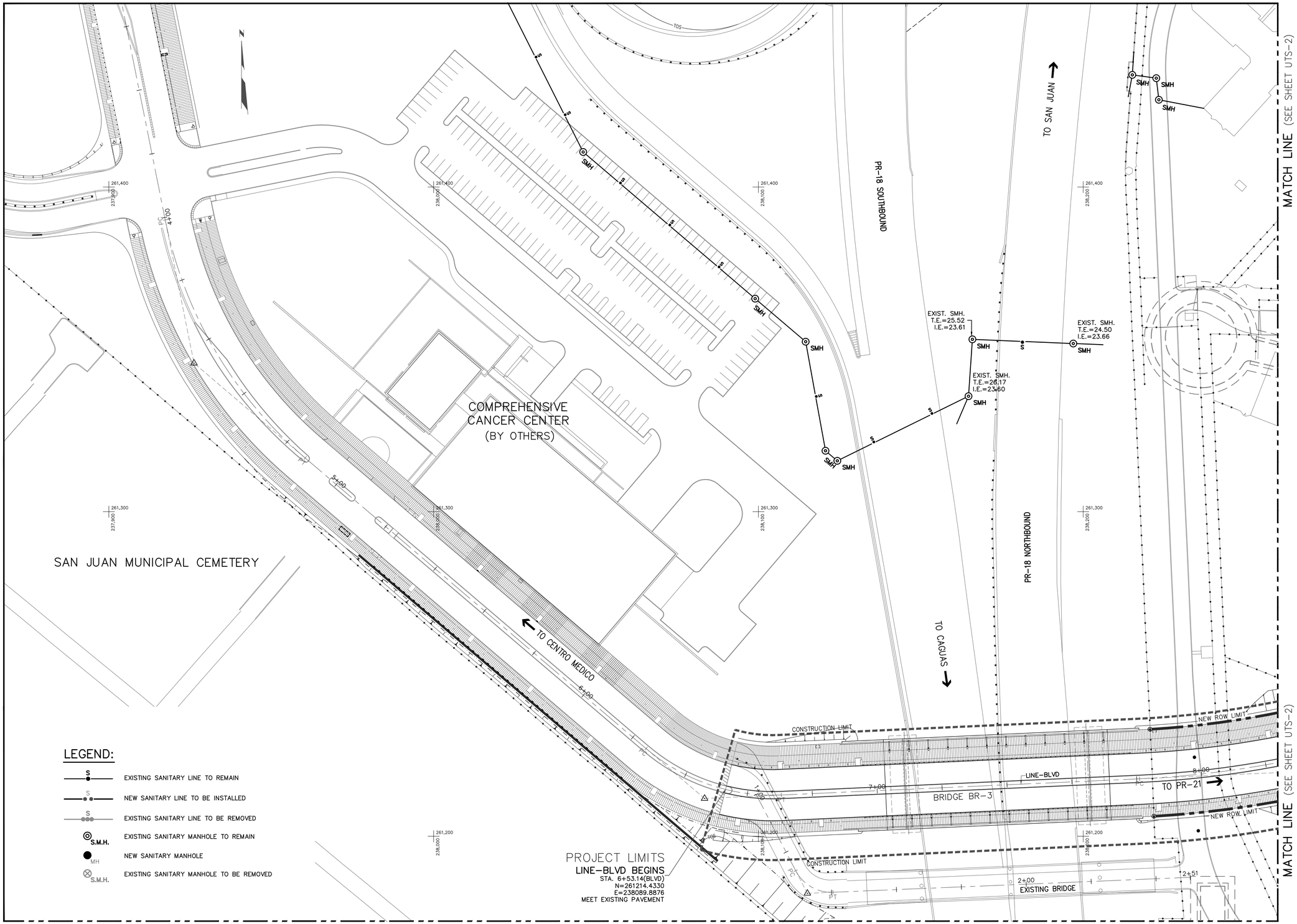
UTW-6



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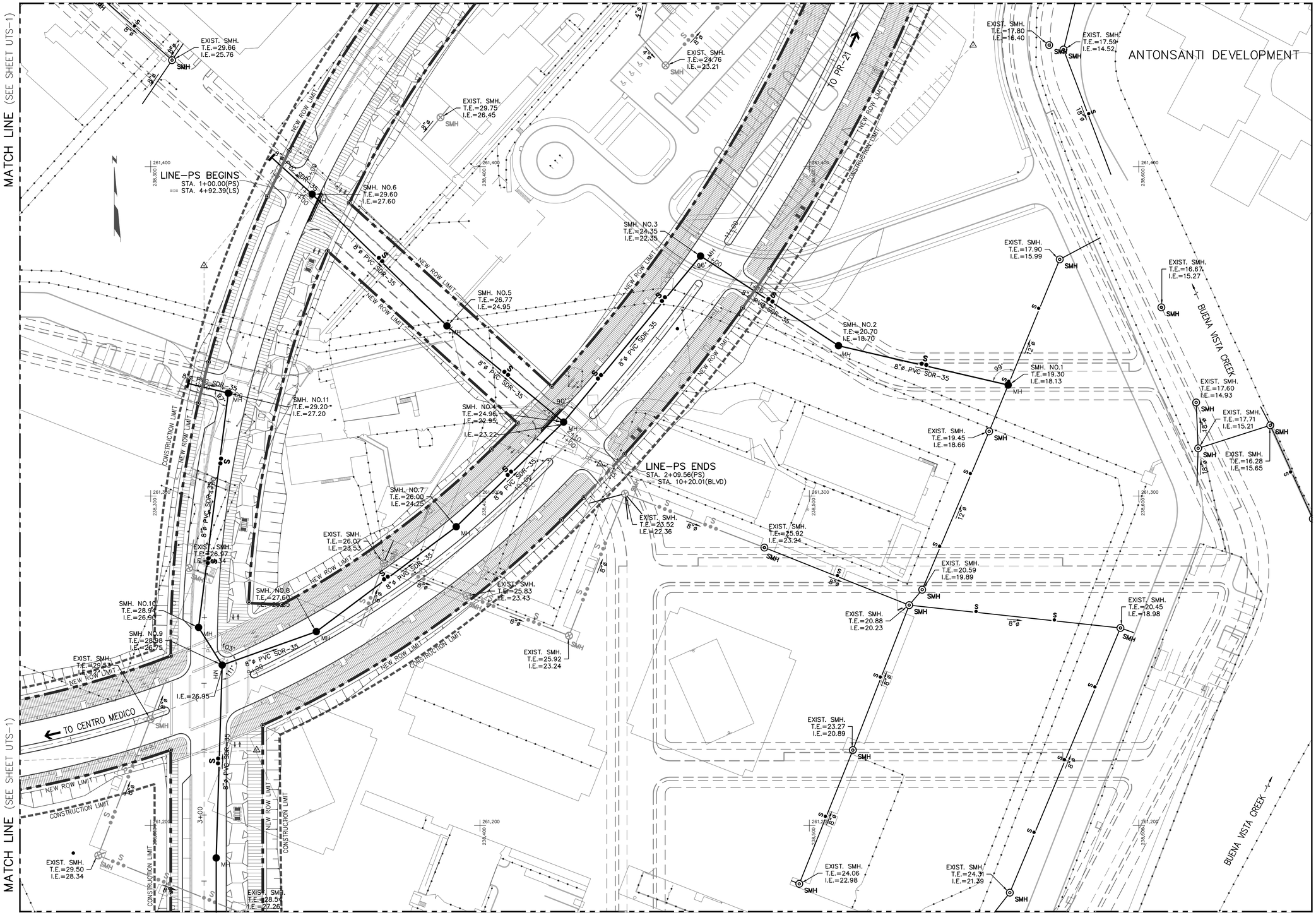
UTS-1

MATCH LINE (SEE SHEET UTS-3)

MATCH LINE (SEE SHEET UTS-3)

MATCH LINE (SEE SHEET UTS-1)



MATCH LINE (SEE SHEET UTS-4)

MATCH LINE (SEE SHEET UTS-4)

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0M 10M 20M 30M

Scale= 1:500

SCIENCE CITY
URBAN INFRASTRUCTURE
PHASE II

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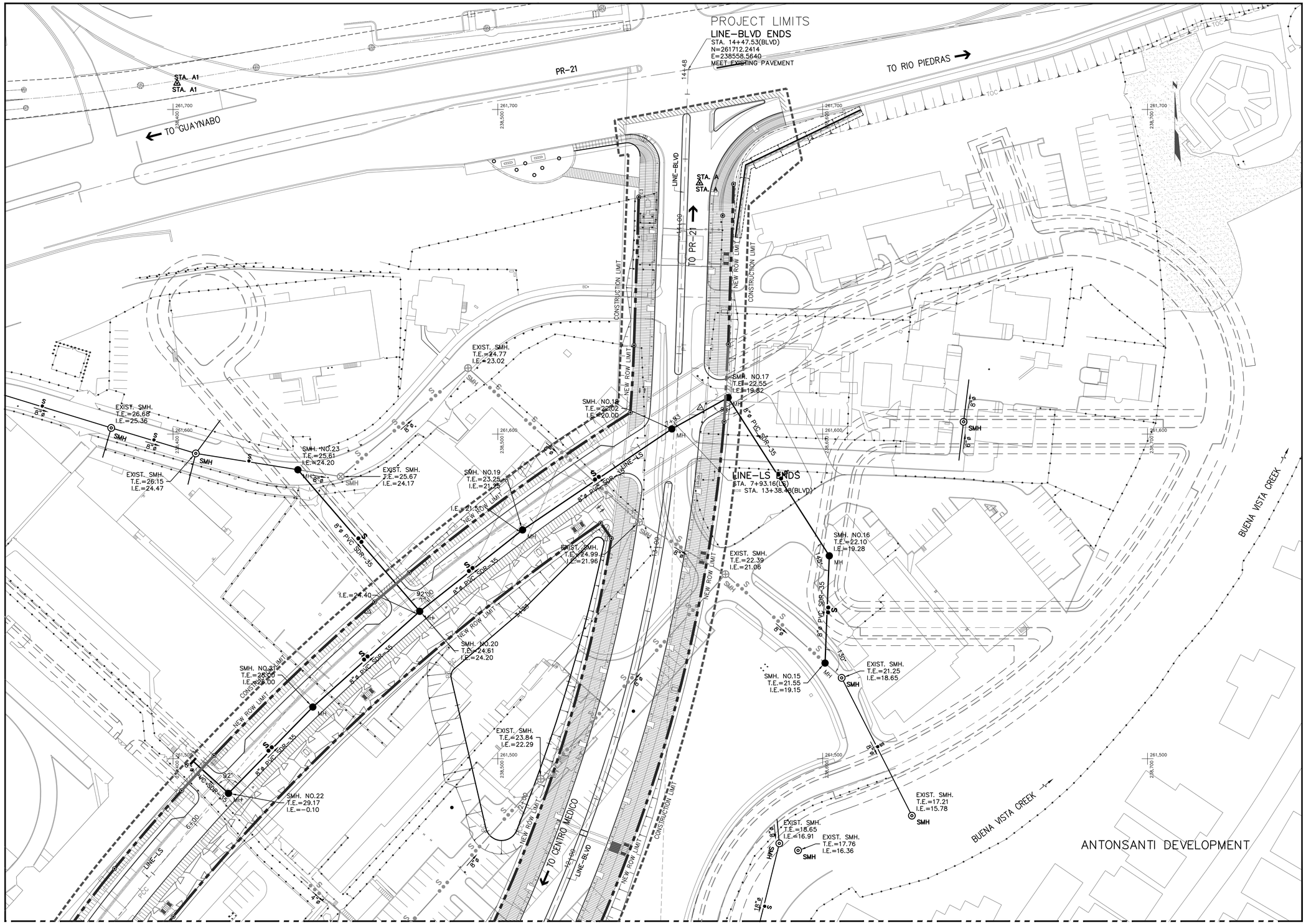
UTS-2



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0M 10M 20M 30M

Scale= 1:500

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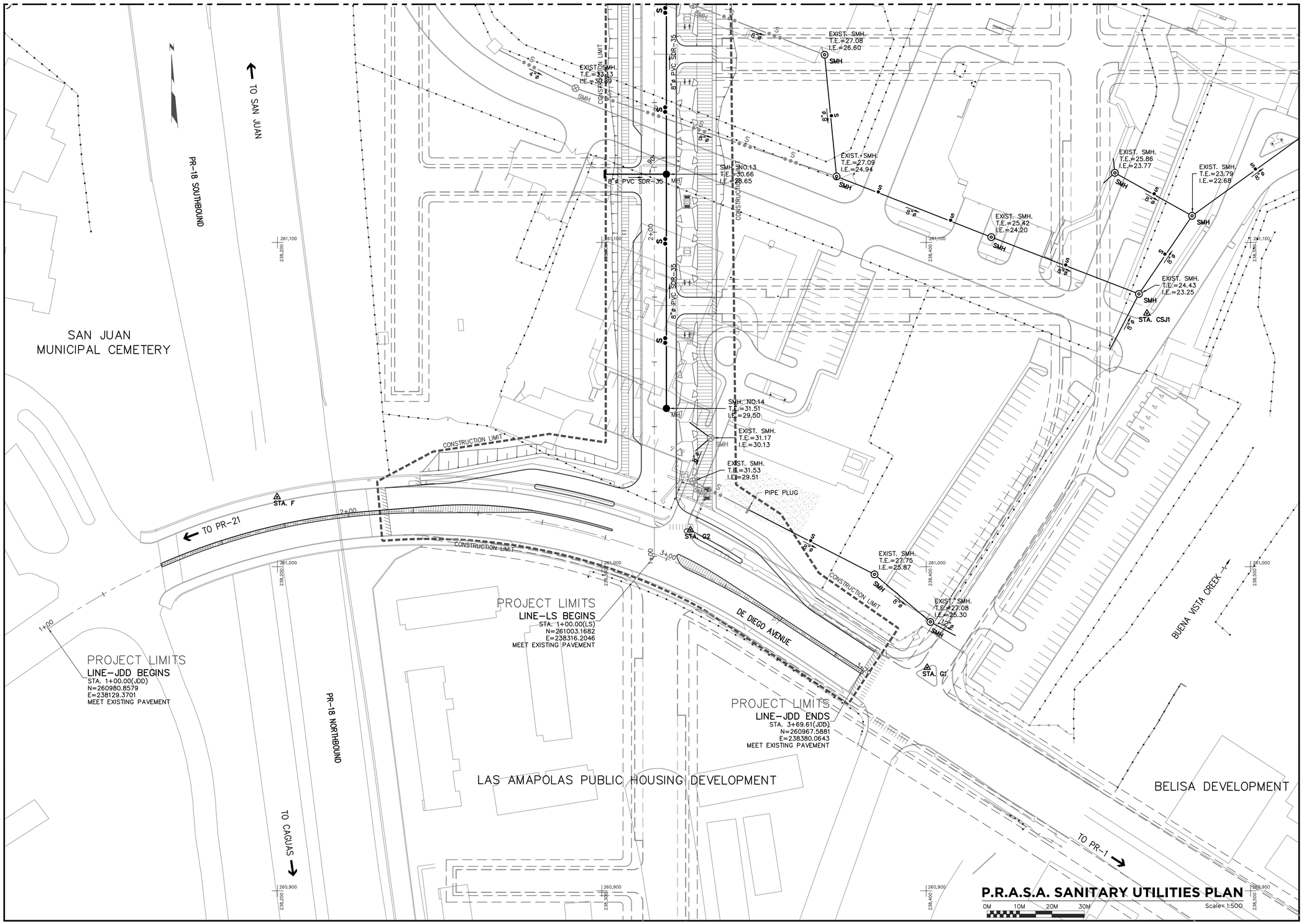
UTS-3

MATCH LINE (SEE SHEET UTS-2)

MATCH LINE (SEE SHEET UTS-2)



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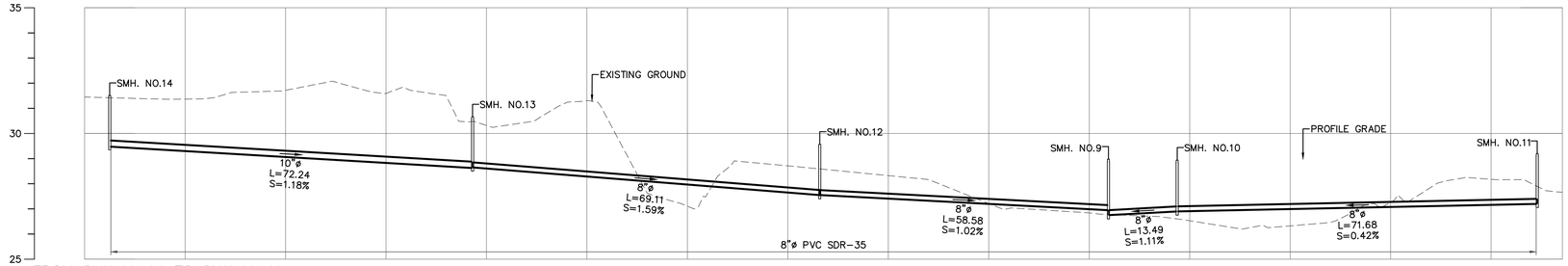
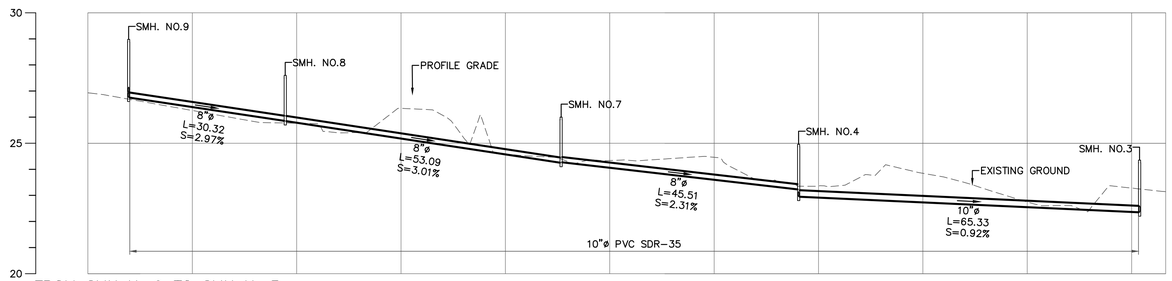
DATE: JUNE-19-2012

UTS-4



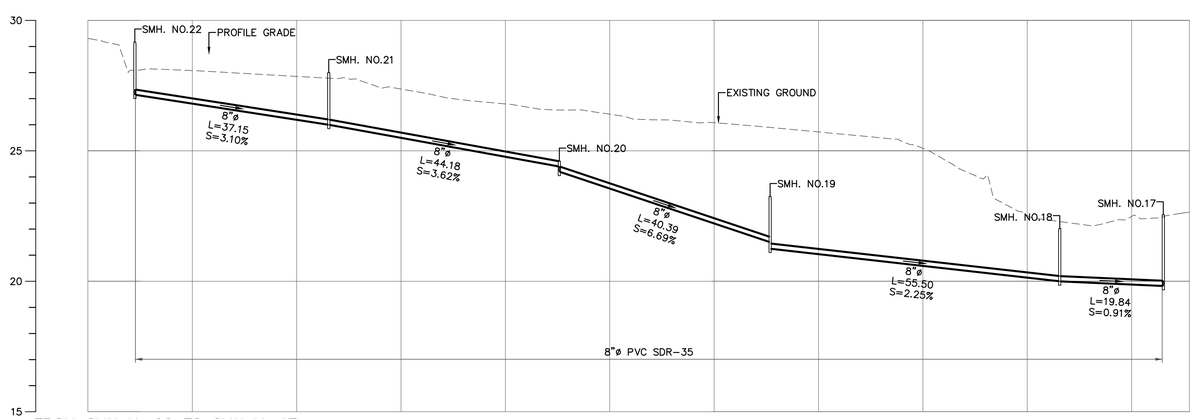
FROM SMH No.14 TO SMH No.11

TOP ELEVATION	31.51	30.66	29.57	28.98	28.94	29.20
INVERT ELEVATION	29.50	28.65	27.55	26.75	26.90	27.20
STATION	1+02.00	1+77.24	2+42.36	3+02.82	3+77.51	3+92.18



FROM SMH No.9 TO SMH No.3

TOP ELEVATION	28.98	27.60	26.00	24.96	24.35
INVERT ELEVATION	26.75	25.85	24.25	22.95	22.35
STATION	1+07.82	1+37.81	1+90.68	2+36.20	3+01.52



FROM SMH No.22 TO SMH No.17

TOP ELEVATION	29.17	28.00	24.61	23.25	22.02	22.55
INVERT ELEVATION	0.10	26.00	24.20	21.25	20.00	19.82
STATION	1+09.00	1+46.16	1+90.34	2+30.73	2+86.23	3+06.09

P.R.A.S.A. STANDARD DETAILS

Not to Scale

SCIENCE CITY
URBAN INFRASTRUCTURE
PHASE II

SEGMENT EAST OF PR 18
SAN JUAN, PUERTO RICO

TORO ARQUITECTOS
AVENIDA McLEARY 2004
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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

P.R.A.S.A. SANITARY UTILITIES PROFILE

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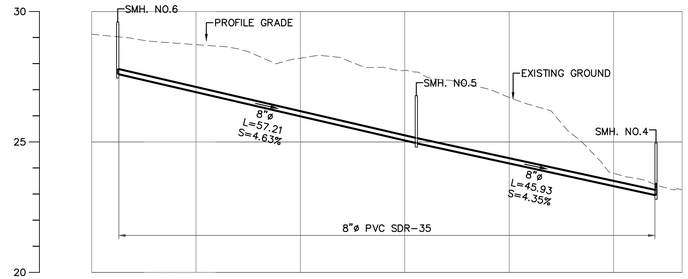
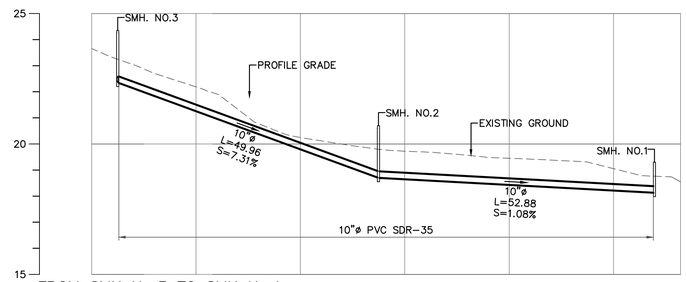
REVISED BY:
DATE: JUNE-19-2012

UTS-5



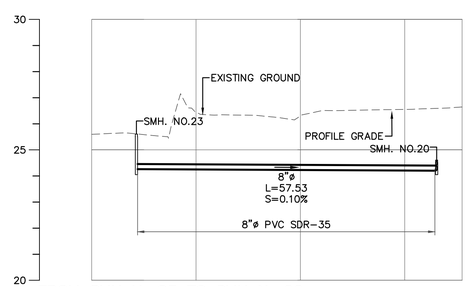
FROM SMH No.6 TO SMH No.4

TOP ELEVATION	29.60	26.77	24.96
INVERT ELEVATION	27.60	24.95	22.95
STATION	1+05.00	1+62.21	2+08.14



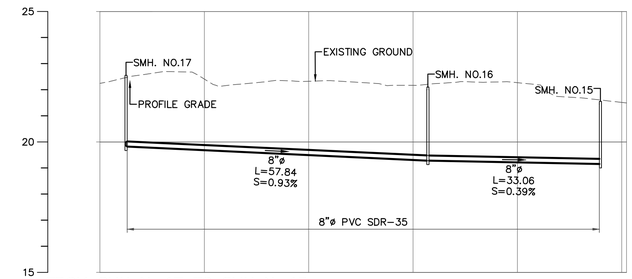
FROM SMH No.3 TO SMH No.1

TOP ELEVATION	24.35	20.70	19.30
INVERT ELEVATION	22.35	18.70	18.13
STATION	1+05.00	1+54.96	2+07.84



FROM SMH No.23 TO SMH No.20

TOP ELEVATION	25.61	24.61
INVERT ELEVATION	24.20	24.20
STATION	1+08.58	1+61.99



FROM SMH No.17 TO SMH No.15

TOP ELEVATION	22.55	22.10	21.55
INVERT ELEVATION	19.82	19.28	19.15
STATION	1+05.00	1+62.84	1+95.90

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DRAWN BY:
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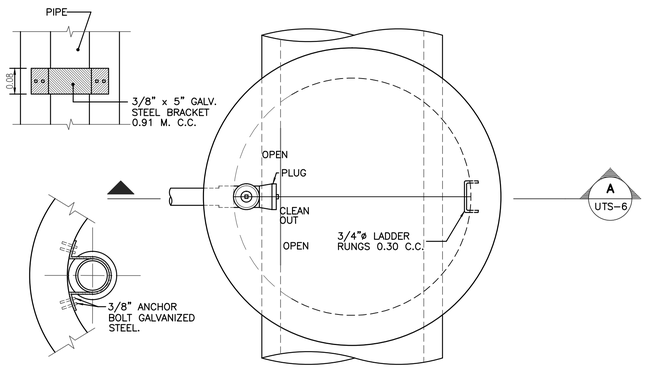
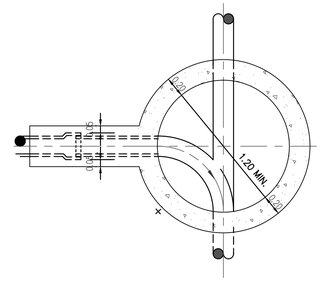
UTS-6



STEEL BRACKET
NOT TO SCALE

PLAN
NOT TO SCALE



SECTIONAL PLAN
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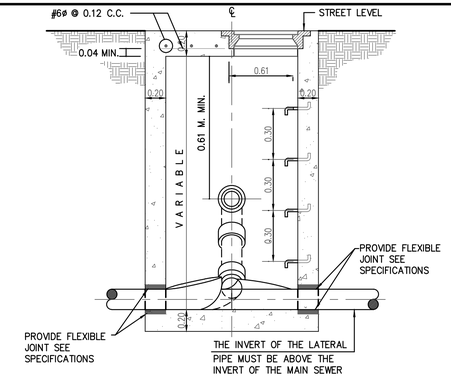

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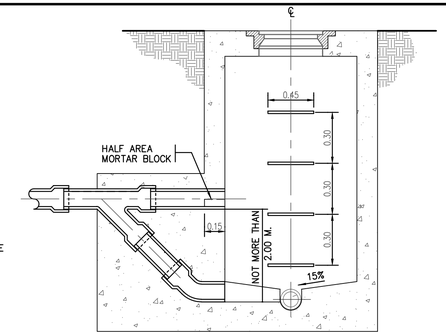
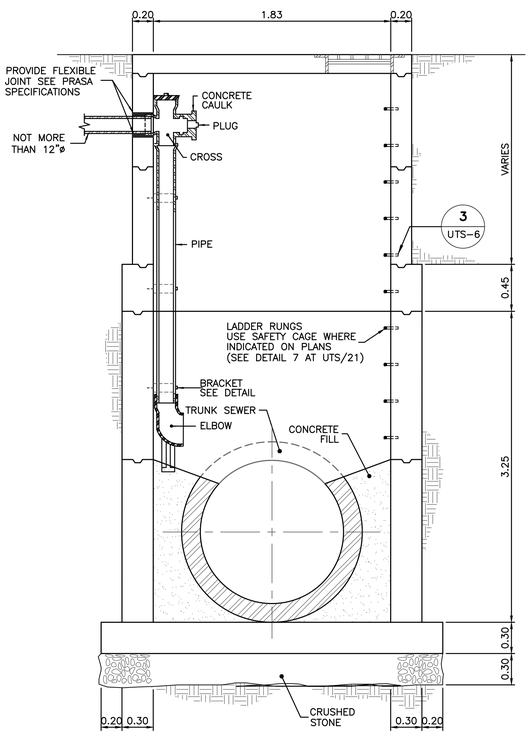
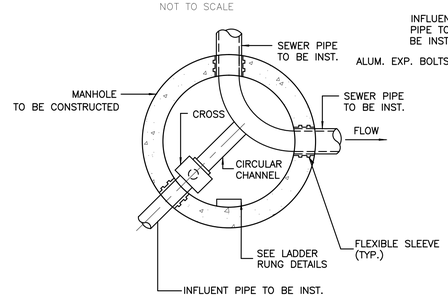




SECTION
NOT TO SCALE
A
UTS-6

CONNECTION TO EXISTING MANHOLE DETAILS FOR PIPES LESS THAN 12"ø
4
UTS-6



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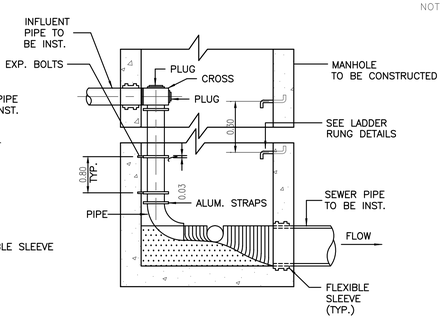

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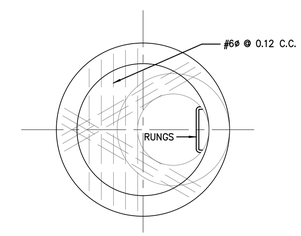
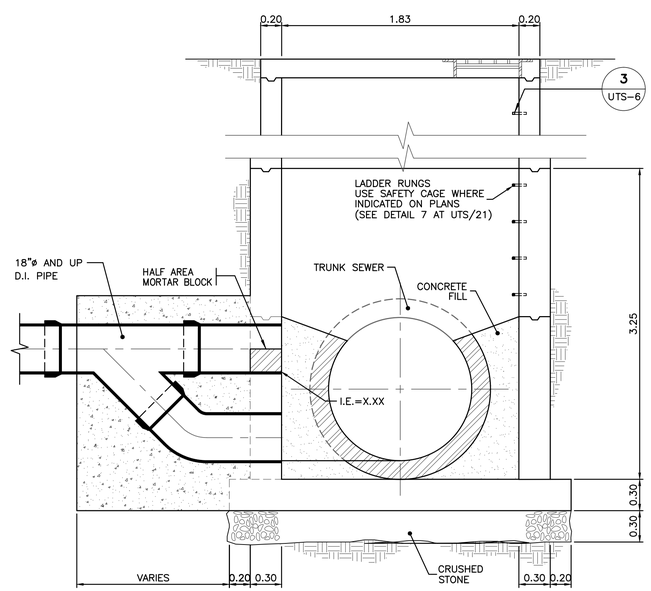
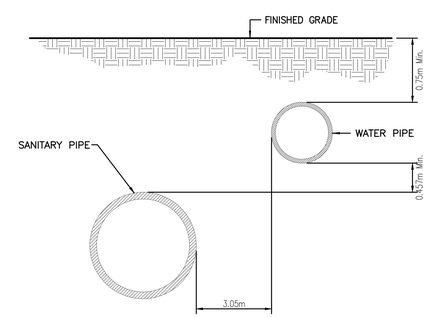


STRUCTURAL PLAN
NOT TO SCALE

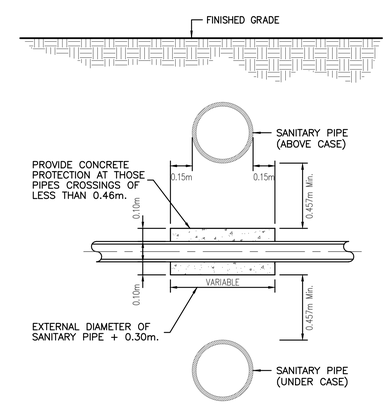
DROP MANHOLE DETAILS FOR PIPES LESS THAN 12"ø
12
UTS-6



DROP MANHOLE DETAILS FOR PIPES 18"ø AND UP
NOT TO SCALE
5
UTS-6



PARALLEL INSTALATION
NOT TO SCALE



CROSSING INSTALATION
NOT TO SCALE

SEPARATION DETAILS
NOT TO SCALE
13
UTS-6

P.R.A.S.A. STANDARD DETAILS
Not to Scale

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

P.R.A.S.A. STANDARD DETAILS

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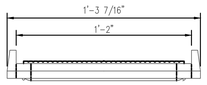
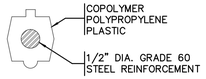
DATE: JUNE-19-2012

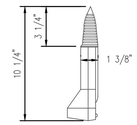
UTS-7



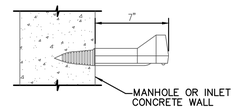
FRONT VIEW
NOT TO SCALE



SECTION G UTS-5
NOT TO SCALE

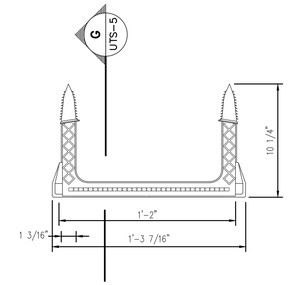


SIDE VIEW
NOT TO SCALE

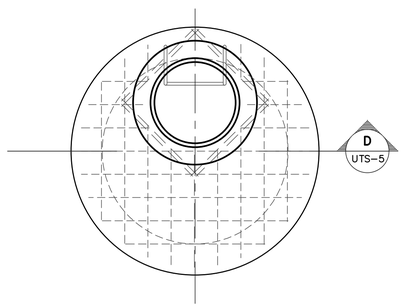


ANCHORAGE DETAIL
NOT TO SCALE

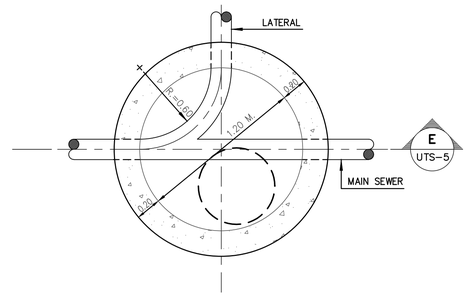
RUNGS DETAIL 3 UTS-5
NOT TO SCALE



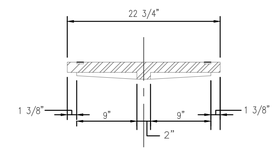
PLAN
NOT TO SCALE



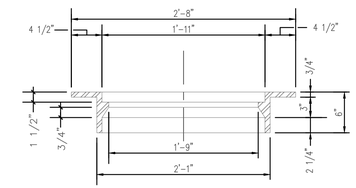
PLAN SHOWING REINFORCEMENT
NOT TO SCALE



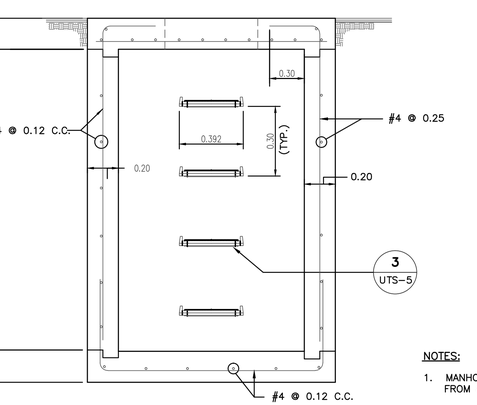
SECTIONAL PLAN
NOT TO SCALE



SECTION C UTS-5
NOT TO SCALE



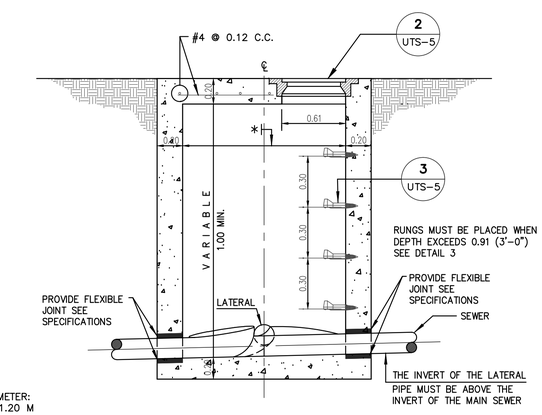
SECTION B UTS-5
NOT TO SCALE



SECTION D UTS-5
NOT TO SCALE

NOTES:

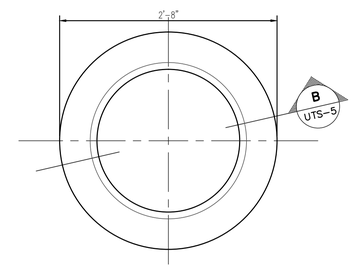
1. MANHOLE INTERIOR DIAMETER: FROM 8"ø TO 15"ø = 1.20 M
2. ALL MANHOLES SHALL BE COATED IN THE INTERIOR WITH AN ANTI CORROSIVE (EPOXY) EQUAL OR SIMILAR TO CEILGUARD 663 OR DURALKOTE 313.



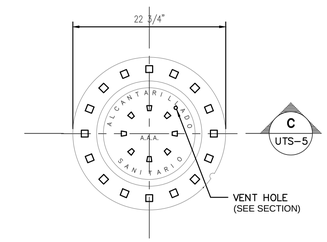
SECTION E UTS-5
NOT TO SCALE

*MANHOLE INTERIOR DIAMETER SHOULD BE 1.20M FOR PIPES BETWEEN 8" – 15" DIA. AND, 1.50M FOR PIPES BETWEEN 16" – 27" DIA.

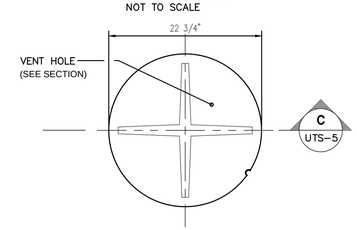
SANITARY MANHOLE DETAILS 1 UTS-5
NOT TO SCALE



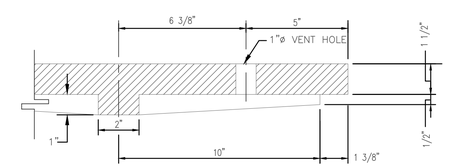
PLAN
NOT TO SCALE



TOP VIEW OF COVER
NOT TO SCALE



BOTTOM VIEW OF COVER
NOT TO SCALE



SECTION SHOWING VENT HOLE
NOT TO SCALE

MANHOLE COVER DETAILS 2 UTS-5
NOT TO SCALE

P.R.A.S.A. STANDARD DETAILS
Not to Scale

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

P.R.A.S.A. STANDARD DETAILS

DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

UTS-8

NOTES:

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE APPLICABLE CONSTRUCTION STANDARDS OF PREPA.
2. ALL WORK ON ENERGIZED ELECTRICAL LINES SHALL BE DONE BY PREPA AT OWNERS EXPENSE
3. THE CONTRACTOR SHALL COORDINATE ALL RELOCATION WORK WITH PREPA
4. THE CONTRACTOR SHALL COORDINATE POINT OF CONNECTION WITH THE LOCAL PREPA OFFICE BEFORE CONSTRUCTION BEGINS.
5. FOR ALL STANDARD NUMBERS ON THESE DRAWINGS REFER TO PREPA TRANSMISSION AND DISTRIBUTION MANUALS.
6. ALL CONSTRUCTION WORK SHALL BE DONE IN A THOROUGH AND WORKMAN LIKE MANNER IN ACCORDANCE WITH THE PLANS, SPECIFICATIONS, AND CONSTRUCTION DRAWINGS. THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE SHALL BE FOLLOWED EXCEPT WHERE LOCAL REGULATIONS ARE MORE STRINGENT. IN WHICH CASE LOCAL REGULATIONS SHALL GOVERN.
7. ALL EXISTING SERVICES WHICH ARE INTERRUPTED DUE TO RELOCATION OR REMOVAL OF EXISTING LINES WILL BE RE-ESTABLISHED AT CONTRACTOR'S EXPENSE.
8. THE CONTRACTOR SHALL NOTIFY PREPA PRIOR TO COMMENCEMENT OF ELECTRICAL WORK FOR PROPER INSPECTION ,APPROVAL AND COORDINATION.
9. THE CONTRACTOR SHALL LEAVE THE ELECTRICAL SYSTEM IN PERFECT WORKING CONDITION AND IS RESPONSIBLE FOR ANY DEFECTS FOUND WHEN SERVICE IS CONNECTED
10 IN NO CASE SHALL THE DESIGN BE ALTERED WITHOUT THE WRITTEN CONSENT OF THE P.R. HIGHWAY AUTHORITY
11 ANY RELOCATION WORK SHALL BE EQUAL OR BETTER THAN THE EXISTING INSTALLATION IN ACCORDANCE WITH THE LASTEST ENFORCED STANDARDS.
12 PREPA WILL NOT BE LIABLE FOR ANY CHANGE DURING CONSTRUCTION DUE TO FIELD CONDITIONS.
CONDUITS CAPPED ON BOTH ENDS FOR FUTURE POLE RISERS ACCORDING TO PREPA REVISION 02-01.
13. ALL SELF SUPPORT POLES SHALL BE PROVIDED WITH TWO 4"ø OR 6"ø RIGID GALVANIZED STEEL
14. CONTRACTOR SHALL COORDINATE WITH PREPA BEFORE CASTING THE BASES OF THE SELF-SUPPORTING POLES
15. ALL EXISTING MATERIAL WHICH IS REMOVED SHALL BE DELIVERED TO THE APPROPRIATE DISTRICT ENGINEER.
16. CONDUCTORS OR LINES TO BE RELOCATED SHALL BE REPLACED BY THE SAME CABLE SIZE OR AS PER PREPA RECOMMENDATIONS. CABLE SIZE SHALL BE COORDINATED AT THE PREPA DISTRICT OFFICE BEFORE COMMENCENT OF WORK.
17. IN THOSE PLACES WHERE THE ELECTRIC PVC CONDUITS CROSS ANY WATER OR GAS LINES OR OTHER UTILITY SERVICE THE CONTRACTOR SHALL TAKE THE FOLLOWING PRECAUTIONS:
A) THE ELECTRIC CONDUIT IF IT IS NECESSARY SHALL BE INSTALLED BELOW OTHER SERVICE CONDUITS SO THAT IN NO PLACE THE ELECTRIC LINES BE LESS THAN FOUR (4) FEET DEEP
B) THERE SHALL BE A DISTANCE OF NOT LESS THAN THIRTEEN INCHES (13") BETWEEN ELECTRIC CONDUITS AND OTHER CONDUITS FOR OTHER SERVICES.
C) THE ELECTRIC CONDUITS SHALL BE INSTALLED IN A 3" THICK MINIMUM CONCRETE CASING.
18. UNDERGROUND CONDUIT RUNS SHALL BE ENCASED IN A 3" THICK MINIMUM CONCRETE BEAM WHEREVER THESE CROSS UNDER ROADWAYS, PARKING LOTS AND OTHER AREAS SUBJECT TO VEHICULAR TRAFFIC AND WHERE SHOWN ON PLANS AND DETAILS.
19. ALL TYPE OF INSULATOR (POST,STRAIN,SUSPENSION,ETC) SHALL BE MANUFACTURED OF SILICONE RUBBER AS PER PREPA NEW REGULATION RELEASE 00-01 EFECTIVE MAY 15,2000

SYSTEMS

1. THE OWNER OF THE PROYECT IS RESPONSIBLE TO EXECUTE THE PRIMARY AND SECONDARY CABLES TEST INCLUDING THEIR TERMINATIONS. THE RESULTS OF THESE TESTS SHALL AGREE WITH THE PARAMETERS ESTABLISHED FOR THEM BY PREPA. THESE TESTS SHALL BE PERFORMED IN COORDINATION WITH A REPRESENTATIVE FROM THE INSPECTION OFFICE OF THE DISTRIBUTION ENGINEERING DEPARTMENT OF THE CORRESPONDING REGION.
2. DURING THE CABLE INSTALLATION, THIS SHALL BE PROTECTED FROM HUMIDITY AND ABRASIONS. THE CONTRACTOR SHALL BE RESPONSIBLE TO INSTALL THE CABLE FOLLOWING THE PULLING RECOMMENDED PRACTICES TO AVOID EXCEEDING THE SPECIFIED CABLE TENSION.
3. THE COVER OF THE MANHOLES THAT WILL BE INSTALLED IN THE PLANTING, STRIP SHALL BE PROTECTED BY A REINFORCED CONCRETE SLAB, ACCORDING TO PREPA STANDARD URD-52.
4. IN THOSE CASES, WHERE THE PROJECT LOCATION IS LESS THAN ONE MILE FROM SEA SHORE OR SALT WATER AREAS THE CONDUIT RISERS SHALL BE PVC SCH 80 OR FIBERGLASS, SUBJECT TO PREPA APPROVAL.
5. THE DUCT BANKS OF THE UNDERGROUND SYSTEM MUST BE INSPECTED BY PREPA PRIOR TO BE COVERED AND COMPACTED.
6. EVERY DUCT BANK SUBJECT TO VEHICLE TRAFFIC SHALL BE PROTECTED (ENCASED) IN CONCRETE. THOSE NEAR DIFFERENT UTILITIES INSTALLATIONS SHALL HAVE A MINIMUM CLEARANCE OF 13" FROM THEM, IF THE UTILITIES CARRY FUEL, GAS OR LIQUIDS OR GASES UNDER PRESSURE, THE CLEARANCE SHALL BE 24" MIN.
7. THE SPARE FUSES TO BE PROVIDED BY CONTRACTOR SHALL BE EQUAL TO THE AMOUNT INSTALLED AT EACH SUBSTATION.
8. THE CONNECTORS THAT WILL BE USED FOR THE GROUND CONNECTION OF ANTENAS AND SUBSTATION SHALL BE OF THE EXOTHERMIC WELD OR COMPRESSION TYPE.
9. THE CONTRACTOR SHALL PROVIDE FISHWIRE IN EACH SPARE CONDUIT.
10. ALL DISTRIBUTION SYSTEM SHALL HAVE A RESISTANCE TO GROUND OF 10 OHMS MAX. A COPPERWELD GROUND ROD SHALL BE CONT.
11. INSTALLED TO CONNECT THE NEUTRAL EVERY 4 POLES OR EACH 1000 FEET AND IN EVERY TRANSFORMER.
12. EACH POLE CONCRETE BASE SHALL INCLUDE TWO SPARE CONDUITS FOR FUTURE USE, AS REQUIRED BY PREPA.
13. THE POLE BASES SHALL BE INSPECTED BY PREPA DURING THEIR CONSTRUCTIN PHASE.

LEGEND

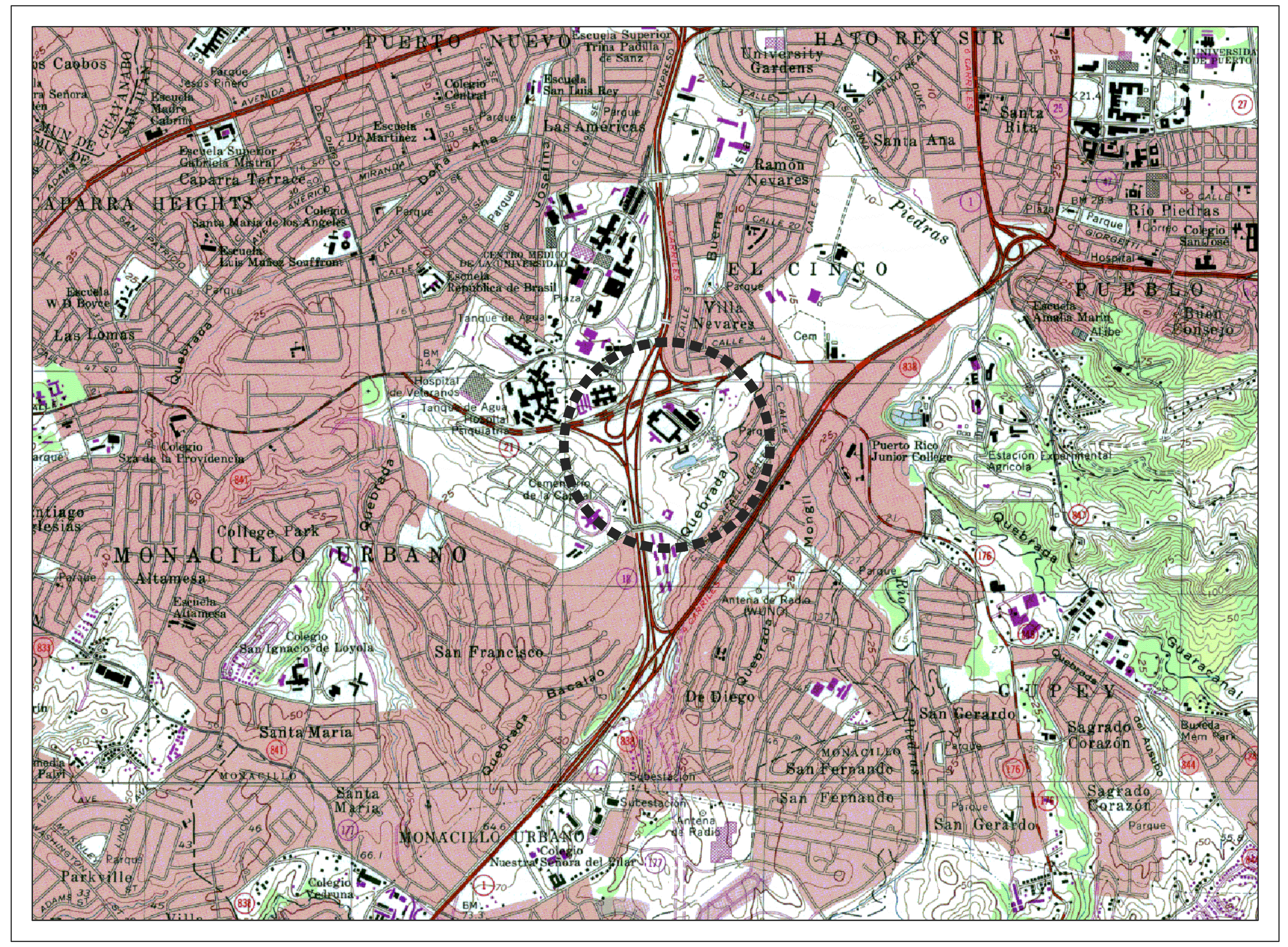
Symbol	Description
E	EXISTING POLE AND RISER TO REMAIN.
E 1	EXISTING POLE TO REMAIN. NUMBER INDICATES POLE NUMBER-SEE SCHEDULE
R 1	EXISTING POLE TO BE REMOVED. NUMBER INDICATES POLE NUMBER- SEE SCHEDULE
I 1	NEW POLE TO BE INSTALLED. NUMBER INDICATES POLE NUMBER -SEE SCHEDULE
	PVC END CAP
E	EXISTING AERIAL LINE TO REMAIN. VOLTAGE AS INDICATED ON PLANS
R	EXISTING AERIAL LINE TO BE REMOVED. VOLTAGE AS INDICATED ON PLANS
I	NEW AERIAL LINE TO BE INSTALLED.VOLTAGE AS INDICATED ON PLANS
IU	NEW UNDERGROUND FEEDER TO BE INSTALLED, VOLTAGE AND CONDUIT DATA AS INDICATED ON PLANS
PSF	INDIVIDUAL PARCEL UNDERGROUND ELECTRICAL FACILITIES AS INDICATED ON PLANS
E MH MH-1	EXISTING MANHOLE TO REMAIN M H-1 INDICATES MANHOLE NUMBER SEE SCHEDULE
I MH MH-1	NEW MANHOLE TO BE INSTALLED FOR DETAIL SEE SHEET UTE-14.DWG

GENERAL NOTES:

1. THESE PLANS AGREE WITH THE INSCRIPTION PLANS FILED IN THE PERMITS AND REGULATIONS ADMINISTRATION (ARPE).
2. THE OWNER OF THE PROJECT IS RESPONSIBLE TO REQUEST AND OBTAIN, PRIOR TO THE PROJECT STARTING DATE, ALL THE ENDORSEMENTS, PERMITS AND EASEMENTS, REQUIRED BY GOVERMENTAL AGENCIES, STATE, MUNINCIPAL, FEDERAL AND PRIVATE CONCERNED WITH THE DEVELOPMENT OF THE PROPOSED TYPE OF PROJECT.
3. THE OWNER OF THIS WORK SHALL HIRE THE PROFESSIONAL SERVICES OF A COLLEGIATE AND LICENSED ENGINEER TO INSPECT THE ELECTRICAL CONSTRUCTION WORKS IN ACCORDANCE WITH LAW # 7 OF JULY 19, 1985, AS AMENDED, AND WITH THE REQUIREMENTS OF PLANS ENDORSEMENT REGULATION FOR PREPA ELECTRICAL CONSTRUCTION PROJECTS, IN FORCE.
4. THE EXECUTION OF THE ELECTRICAL WORKS, AS DESIGNED IN THESE PLANS SHALL STRICTLY FOLLOW THE BEST CONSTRUCTION CRAFTMANSHIP OF THE ELECTRICAL CONSTRUCTION INDUSTRY ACCORDING TO THE RULES AND REGULATIONS ADOPTED BY PREPA AND RELATED AGENCIES, AS WELL AS WITH THE CODES, NEC, NESC AND THE ADDITIONAL STANDARDS IEEE, NFPA, NEMA AND ANSI.
5. THE CONTRACTOR IS NOT AUTHORIZED TO MAKE VARIATIONS TO THIS DESIGN. IS THE CONTRACTORS RESPONSABILITY TO CONSULT THE DESIGNATED DESIGNER OR INSPECTOR FOR THIS WORK ANY DOUBT THAT COULD EMERGE IN THE INTERPRETATION OF THE PLANS, THE EXECUTION OF THE PROPOSED WORKS, TECHNICAL SPECIFICATIONS OR ANY DISCREPANCIES BETWEEN THE EXISTING FIELD CONDITIONS AND THOSE USED FOR DESIGN PURPOSES.
6. THE OWNER OR THE ELECTRICAL CONTRACTOR WILL NOTIFY PREPA, THE STARTING OF THESE WORKS, BY THE DELIVERY OF THE DOCUMENT, NOTIFICATION OF PROJECT BEGINNING, AT THE DISTRIBUTION ENGINEERING DEPARTMENT OF THE CORRESPONDING REGION.
7. THE PRIVATE INSPECTOR AND THE ELECTRICAL CONTRACTOR ARE RESPONSIBLES TO ATTEND A PRECONSTRUCTION MEETING TO BE COORDINATED WITH THE THE DISTRIBUTION ENGINEERING DEPARTMENT OF THE CORRESPONDING REGION.
8. ALL WORK TO BE PERFORMED ON ENERGIZED LINES, INCLUDING THE CONNECTION OF THIS PROJECT, SHALL BE DONE BY PREPA. THE PROPOSER, SHALL REQUEST PREPA A CONSTRUCTION ESTIMATE FOR THESE WORKS, AND IT WILL BE IN FORCE FOR 3 MONTHS FROM ITS ISSUED DATE.
9. IT IS FORBIDDEN, TO EXECUTE ANY TYPE OF WORK AT THE ELECTRICAL EASEMENT BORDERS WITHOUT PREPA WRITTEN AUTHORIZATION.
10. PREPA WILL NOT APPROVE THE CONNECTION OF PROJECTS WITH EASEMENT INVASION CONDITIONS OR THAT DO NOT COMPLY WITH THE REQUIRED SECURITY CLEARENCES.

MATERIALS

1. ALL THE EQUIPMENTS THAT WILL BE USED IN THE CONSTRUCTION SHALL COMPLY WITH THE FOLLOWING STANDARDS; IEEE, ANSI, NEMA, ASTM.
2. THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY WITH PREPA, THAT ALL MATERIAL OR EQUIPMENT THAT WILL BE USED AT THIS PROJECT, IS PREPA APPROVED PRIOR TO ITS INSTALLATION.
3. ALL EQUIPMENT AND MATERIAL (INCLUDING, TRANSFORMERS AND SUBSTATION CABINETS) TO BE INSTALLED AT ONE MILE OR LESS FROM SEA SHORE OR SALT WATER BODIES, SHALL BE CONSTRUCTED IN STAINLESS STEEL WITH EXCEPTION OF THE METER BASES.
4. THE TERMINALS, FOR PRIMARY CABLES IN UNDERGROUND SYSTEMS, SHALL BE 15KV FOR DISTRIBUTION VOLTAGES AND 46KV FOR SUBTRANSMISION VOLTAGES (38KV).
5. IN THE OVERHEAD LINES SYSTEM THE INSULATORS SHALL BE OF POLYMER AND 15KV INSULATION FOR DISTRIBUTION VOLTAGES AND 46KV INSULATION FOR SUBTRANSMISION VOLTAGES (38KV).
6. THE CONTRACTOR SHALL BE RESPONSIBLE TO LABEL EACH TRANSFORMER THAT WILL BE TRANSFERED TO PREPA WITH A PROPERTY NUMBER PROVIDED BY THE CORRESPONDING DISTRIBUTION ENGINEERING DEPARTMENT.



LOCATION MAP

SCALE = 1:20,000

LAMBERT COORDINATES (NAD83)

X = 237,950
Y = 261,345

CERTIFICATION ENDORSEMENT
PUERTO RICO ELECTRICAL POWER AUTHORITY
EXAMINED ______
RECCOMMENDED ______
ENDORSED ______
APPLICATION NO. ______
DATE______ LOAD IN KVA ______

COMMENTS:

A- PREPA'S ENDORSEMENT OF THESE DRAWINGS DOES NOT RELIEVE THE DESIGNERS RESPONSIBILITY. PREPA DOES NOT ASSUME ANY RESPONSIBILITY ON THIS DESIGN. THE ELECTRICAL DESIGNERS SIGNATURE CERTIFIES THAT THESE DRAWINGS HAVE BEEN DESIGNED ACCORDING TO ALL CODES, STANDARDS AND REGULATIONS APPROVED BY PREPA.

B- RELOCATION OF EXISTING LINES OR ANY OTHER WORK TO BE PERFORMED ON ENERGIZED LINES SHALL BE DONE BY PREPA AT OWNERS EXPENSE. THE ESTIMATE FOR SUCH WORK SHALL BE REQUESTED AT LEAST THREE MONTHS IN ADVANCE

C- COORDINATION BEFORE AND AFTER APPROVAL OF THESE DRAWINGS SHALL BE MADE WITH THE PREPA'S LOCAL TECHNICAL SECTION TO AVOID PROBLEMS WITH THE SERVICE CONNECTION.

D- THE ENDORSEMENT OF THESE DRAWINGS BY THE AUTHORITY DOES NOT RELIEVE THE BUILDER OF COMPLYING WITH REGULATIONS OF OTHER GOVERMENT AGENCIES & ENTITIES.

REVISION	DATE	APPROVED
1		
2		
3		
4		
5		

THIS PLAN IS APPROVED BY MEANS OF CERTIFICATION OF THE ELECTRICAL ENGINEER THAT IT COMPLIES WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AND THE REGULATIONS OF THE P.R. ELECTRICAL POWER AUTHORITY

DESIGNER ______
ELECTRICAL ENG.LIC. NO.______

P.R.E.P.A. - LEGEND, NOTES & POLE SCHEDULE

Scale: NONE

SCIENCE CITY
URBAN INFRASTRUCTURE
PHASE II

SEGMENT EAST OF PR 18
SAN JUAN, PUERTO RICO

TORO FERRER ARQUITECTOS
TORO FERRER ARQUITECTOS, CSP
AVENIDA PONCE DE LEÓN 1957
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ARCHUD PSC
ARCHITECTURE + URBAN DESIGN

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PJDC

CIVIL ENGINEER CONSULTANT

BH&A
Barrett Hale & Alamo
CONSULTING ENGINEERS

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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

LEGEND, NOTES & POLE SCHEDULE

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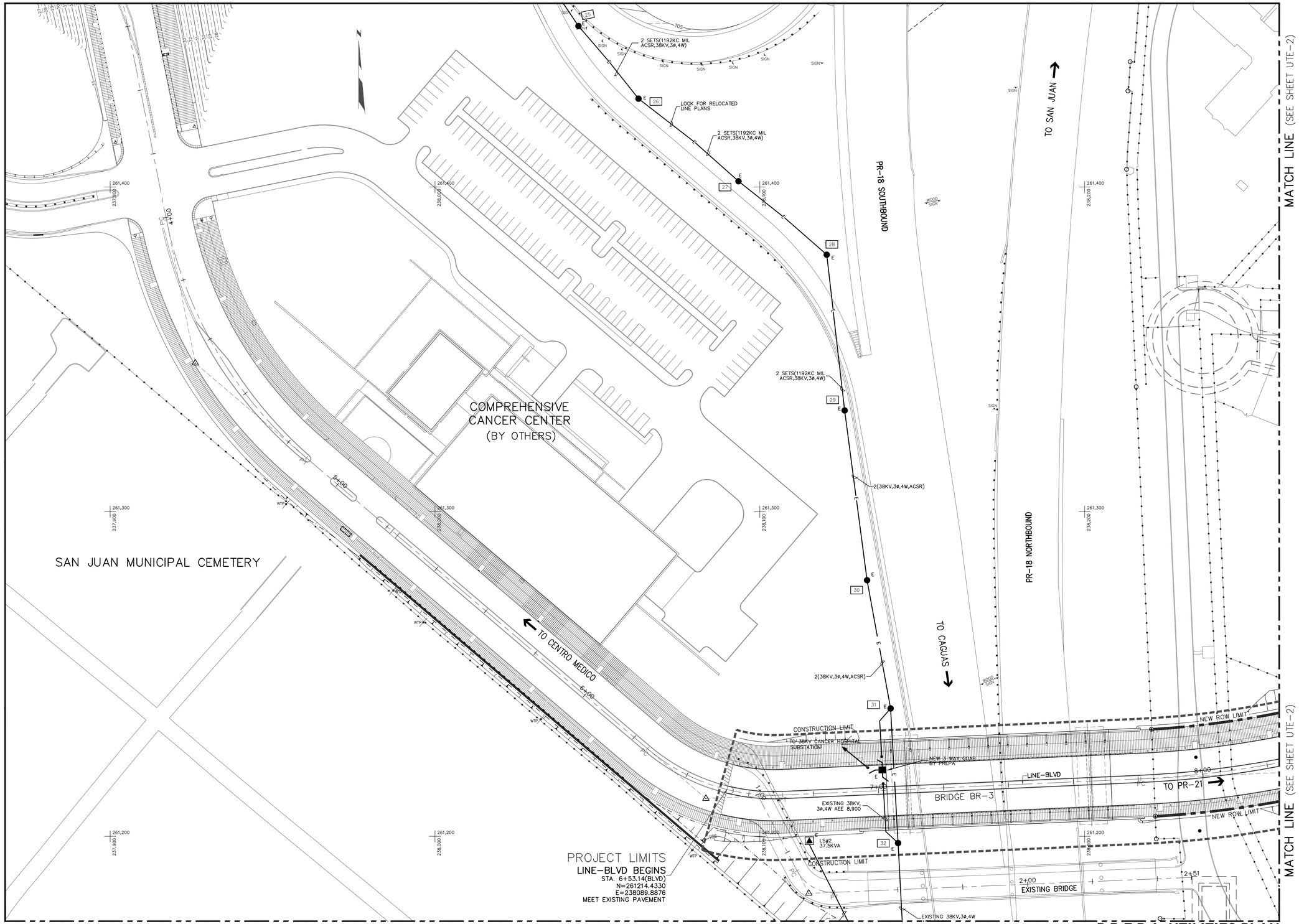
REVISED BY:
DATE: JUNE-19-2012

UTE-1A



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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

P.R.E.P.A. UTILITIES PLAN

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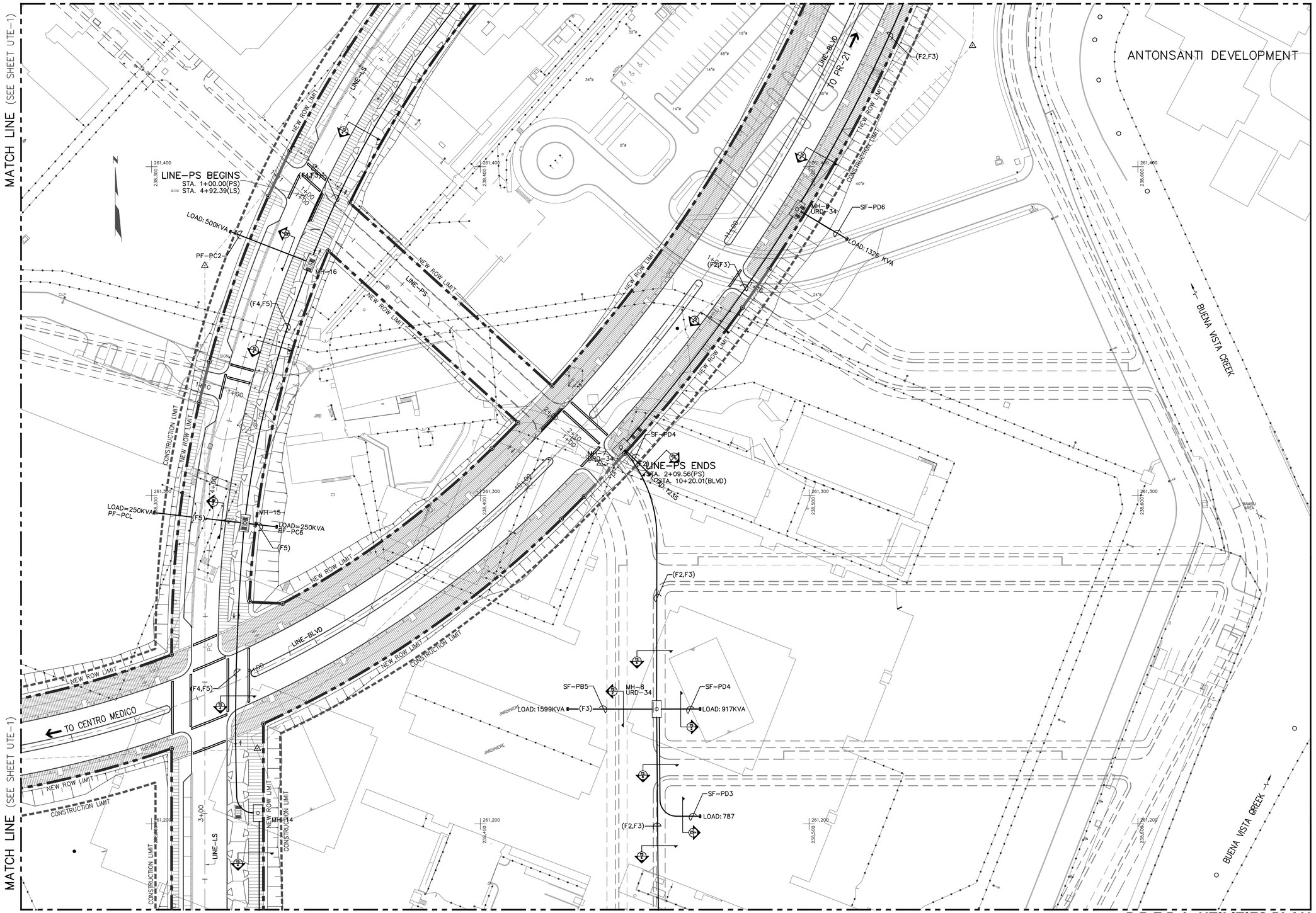
REVISED BY:
DATE: JUNE-19-2012

UTE-1



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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

P.R.E.P.A. UTILITIES PLAN

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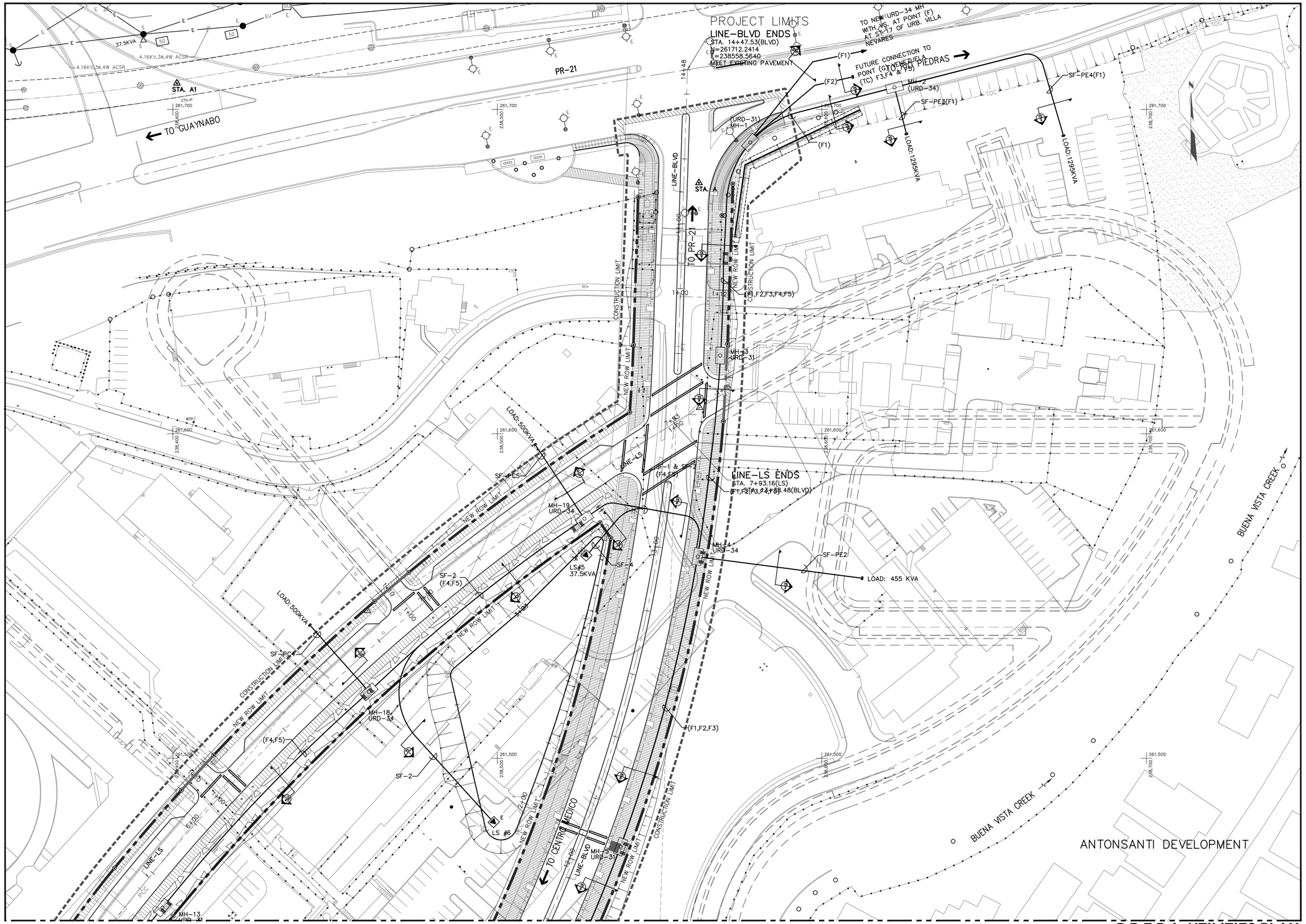
DATE: JUNE-19-2012

UTE-2

P.R.E.P.A. UTILITIES PLAN

0M 10M 20M 30M Scale= 1:500



MATCH LINE (SEE SHEET UTE-2)

MATCH LINE (SEE SHEET UTE-2)

P.R.E.P.A. UTILITIES PLAN

0M 10M 20M 30M Scale= 1:500

SCIENCE CITY
URBAN INFRASTRUCTURE
PHASE II

SEGMENT EAST OF PR 18
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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

P.R.E.P.A. UTILITIES PLAN

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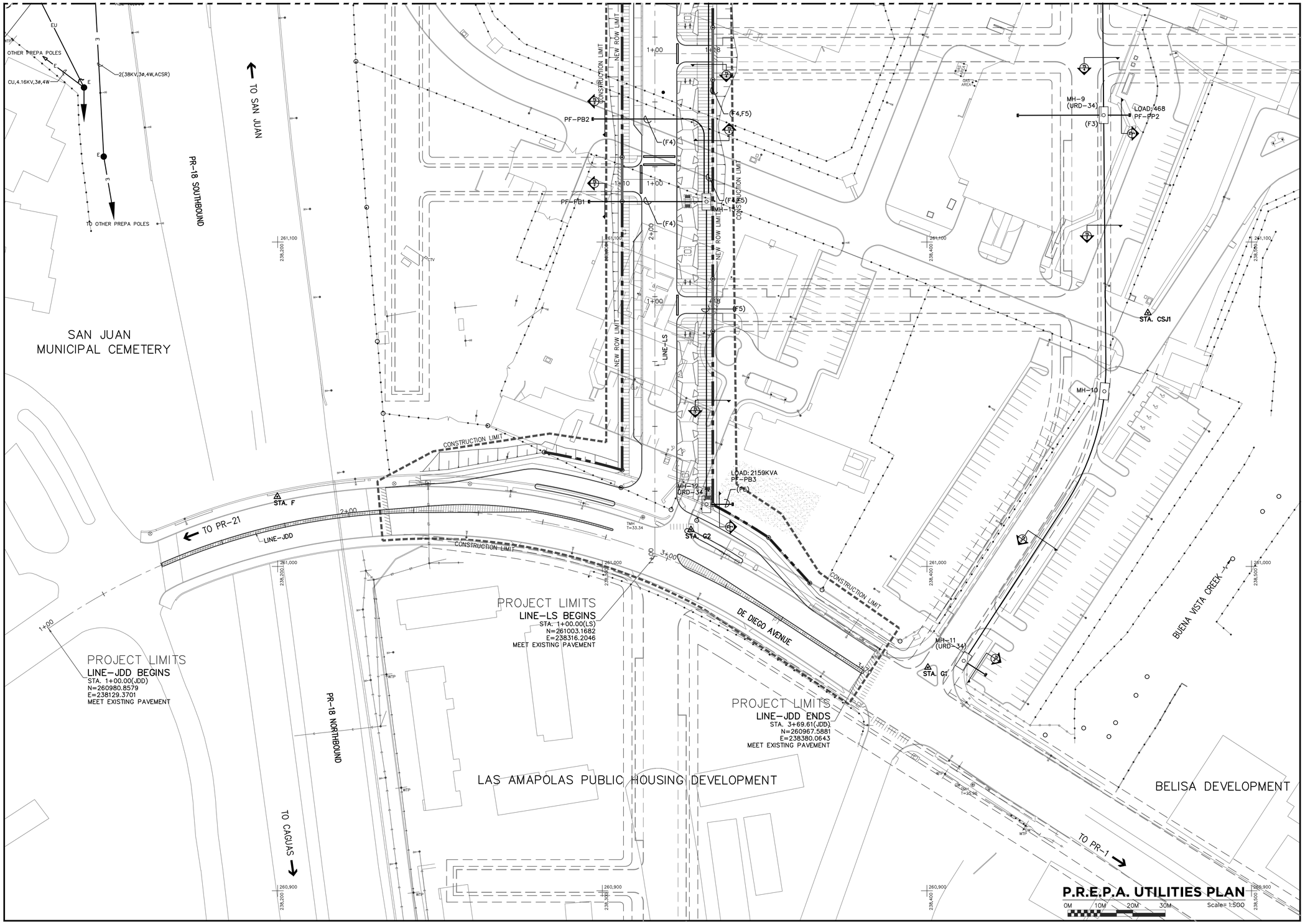
DATE: JUNE-19-2012

UTE-3



SCIENCE CITY
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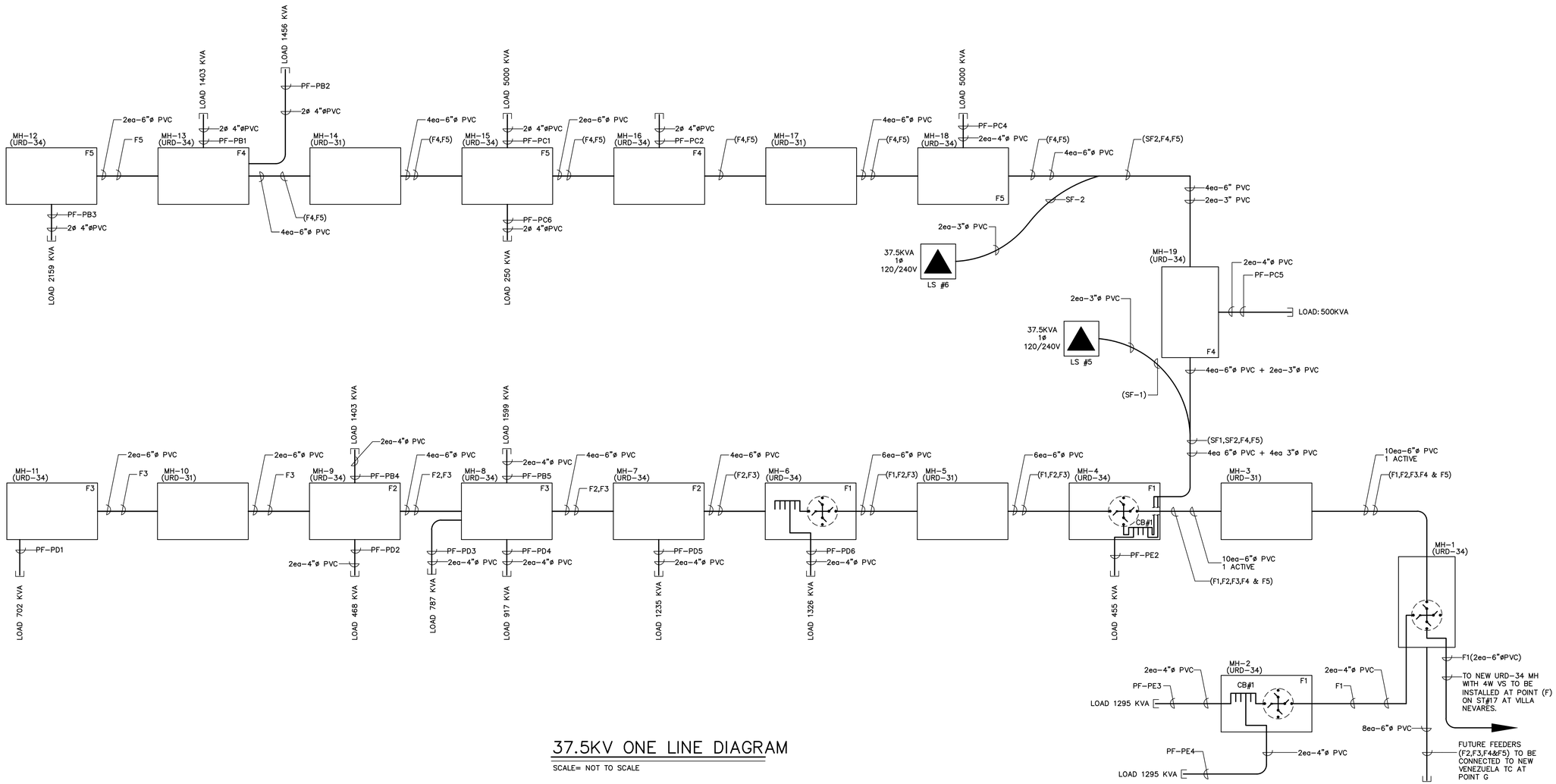
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

P.R.E.P.A. UTILITIES PLAN

DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

UTE-4



37.5KV ONE LINE DIAGRAM

SCALE= NOT TO SCALE

ONE LINE DIAGRAM

0M 10M 20M 30M Scale= NTS

SCIENCE CITY
URBAN INFRASTRUCTURE
PHASE II

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ONE LINE DIAGRAM

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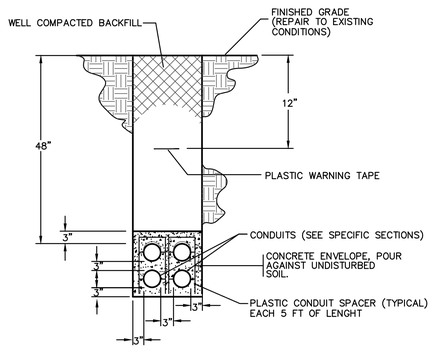
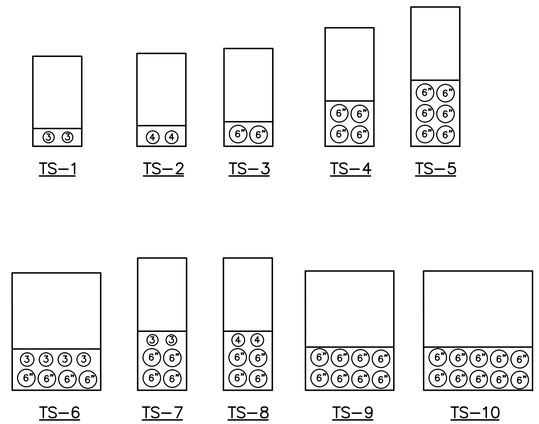
DATE: JUNE-19-2012

UTE-5



TYPICAL SECTION



TRENCH SECTION DETAILS

0M 10M 20M 30M Scale= NTS

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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

TRENCH SECTION DETAILS

DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

UTE-6

---- OF 149

8-4" PVC SCH. 40 AT 36" BELOW FINISHED GRADE AND 3'-0" BEYOND CONSTRUCTION LIMIT

2-4" PVC SCH. 40 AT 24" BELOW FINISHED GRADE AND 3'-0" BEYOND CONSTRUCTION LIMIT

UTI (E)

UTI (I)

COMPREHENSIVE CANCER CENTER (BY OTHERS)

SAN JUAN MUNICIPAL CEMETERY

PR-18 SOUTHBOUND

PR-18 NORTHBOUND

TO SAN JUAN

TO CAGUAS

TO CENTRO MEDICO

TO PR-21

BRIDGE BR-3

LINE-BLVD

EXISTING 8-4" PVC SCH. 40 AT 36" BELOW FINISHED GRADE TO BE CONSTRUCTED AT STA. 6+80(BLVD)

NEW ROW LIMIT

CONSTRUCTION LIMIT

EXISTING BRIDGE

PROJECT LIMITS

LINE-BLVD BEGINS
STA. 6+53.14(BLVD)
N=261214.4330
E=238089.8876
MEET EXISTING PAVEMENT

MATCH LINE (SEE SHEET UTT-2)

MATCH LINE (SEE SHEET UTT-4)

MATCH LINE (SEE SHEET UTT-4)

Junta Reglamentadora de Telecomunicaciones de Puerto Rico

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

Revisado por: _____ fecha

Recomendado por: _____ fecha

Aprobado por: _____ fecha

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.

LEGEND:

- NEW 4' X 4'-6" X 7' TELEPHONE MANHOLE TO BE INSTALLED
- UTI — NEW 8-4" PVC SCH. 40 TELEPHONE CONDUITS WITH PULLING WIRE AT 24" BELOW FINISHED GRADE (UNLESS OTHERWISE SPECIFIED)
- E — EMPTY CAPPED PVC SCH. 40 TELEPHONE SPARE CONDUITS, CAP SIZE TO MATCH CONDUITS SIZE.
- RIGHT OF WAY LIMIT
- CONSTRUCTION LIMIT

COMMUNICATION PLAN

0M 10M 20M 30M Scale= 1:500

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

SEGMENT EAST OF PR 18
SAN JUAN, PUERTO RICO

TORO ARQUITECTOS
AVENIDA McLEARY 2004
SAN JUAN, PUERTO RICO 00911
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SURVEYOR CONSULTANT

PJDC

CIVIL ENGINEER CONSULTANT

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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

COMMUNICATION PLAN

DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

UTT-1

MATCH LINE (SEE SHEET UTT-3)

MATCH LINE (SEE SHEET UTT-3)

MATCH LINE (SEE SHEET UTT-1)

MATCH LINE (SEE SHEET UTT-1)

MATCH LINE (SEE SHEET UTT-4)

MATCH LINE (SEE SHEET UTT-4)

8-4" PVC SCH.40 AT 36" BELOW FINISHED GRADE

LINE-PS BEGINS
STA. 1+00.00(PS)
STA. 4+92.39(LS)

LINE-PS ENDS
STA. 2+09.56(PS)
STA. 10+20.01(BLVD)

8-4" PVC SCH.40 AT 36" BELOW FINISHED GRADE

8-4" PVC SCH.40 AT 36" BELOW FINISHED GRADE

LINE-LS

LINE-PS

LINE-BLVD

NEW ROW LIMIT

CONSTRUCTION LIMIT

TO PR-21

TO CENTRO MEDICO

ANTONSANTI DEVELOPMENT

BUENA VISTA CREEK

BUENA VISTA CREEK

UTT (1)

261,400

261,300

261,200

238,300

238,400

238,500

238,600

1+00

2+00

3+00

4+00

Junta Reglamentadora de Telecomunicaciones de Puerto Rico

JUNTA REGLAMENTADORA DE TELECOMUNICACIONES DE PUERTO RICO 1996

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

Revisado por: _____ fecha _____

Recomendado por: _____ fecha _____

Aprobado por: _____ fecha _____

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COMMUNICATION PLAN

0M 10M 20M 30M Scale= 1:500

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

COMMUNICATION PLAN

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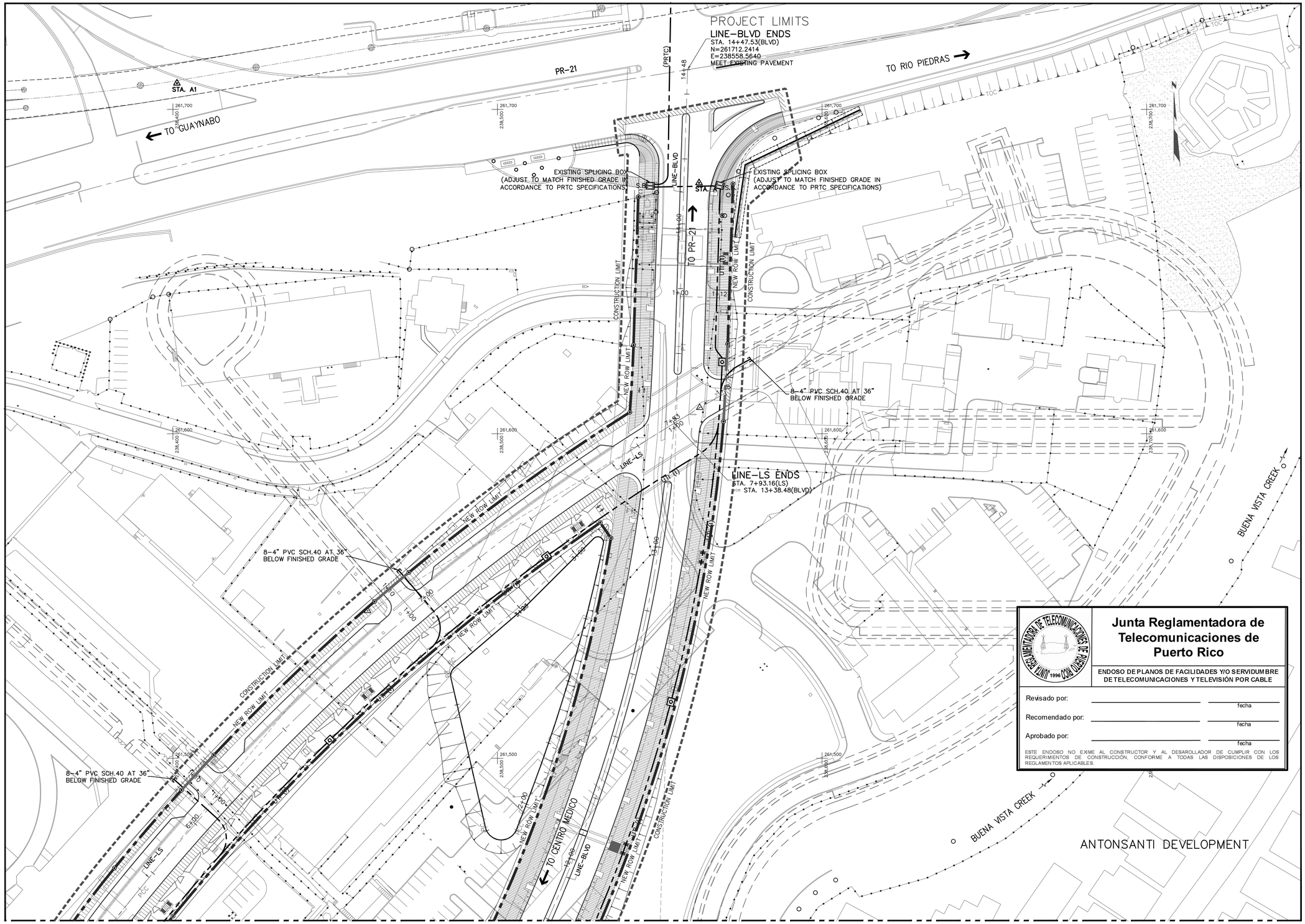
REVISED BY:
DATE: JUNE-19-2012

UTT-2



MATCH LINE (SEE SHEET UTT-2)

MATCH LINE (SEE SHEET UTT-2)

COMMUNICATION PLAN

0M 10M 20M 30M Scale= 1:500

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

SEGMENT EAST OF PR 18
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UTT-3

MATCH LINE (SEE SHEET UTT-2)

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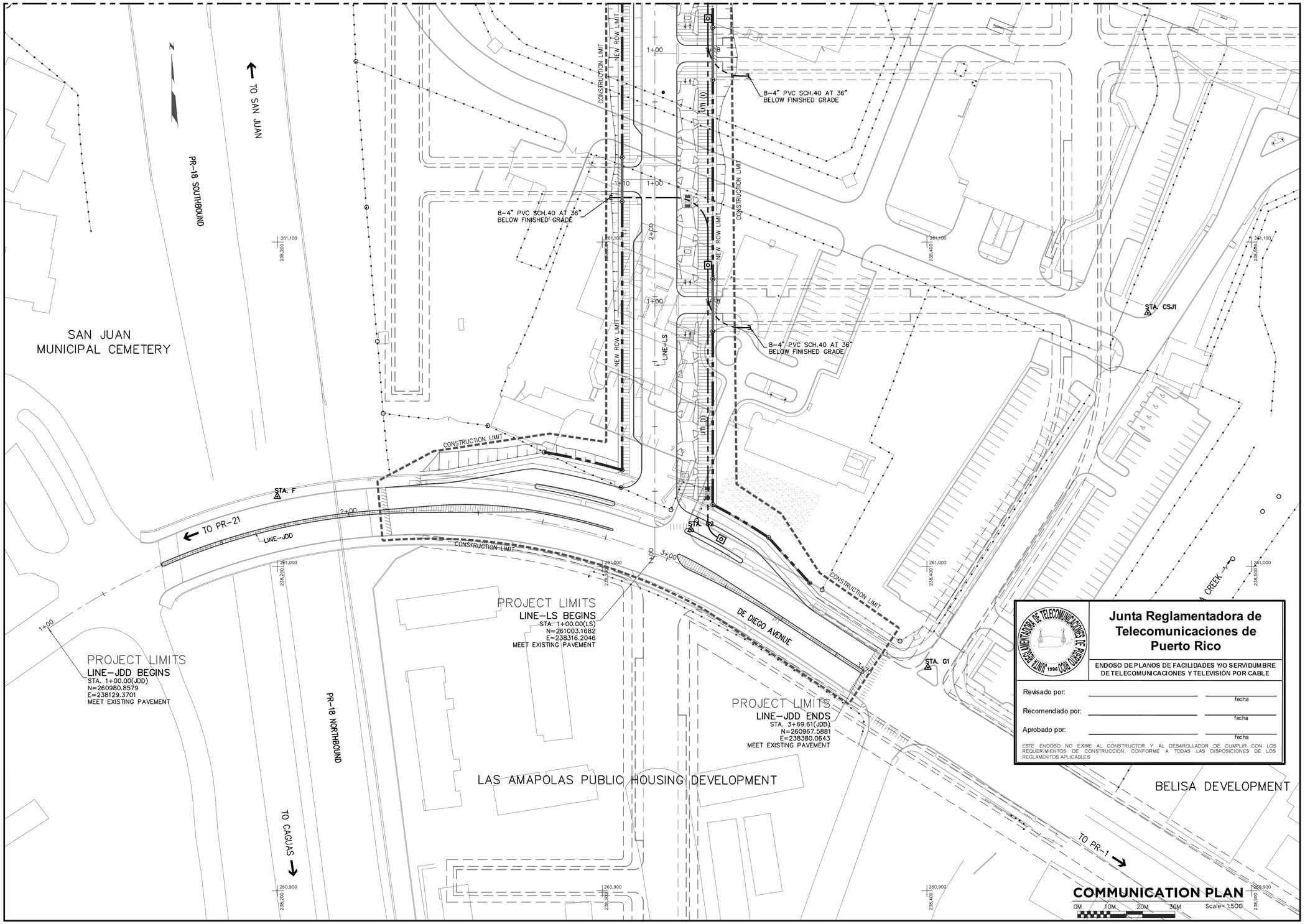

Junta Reglamentadora de Telecomunicaciones de Puerto Rico

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

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Recomendado por: _____ fecha

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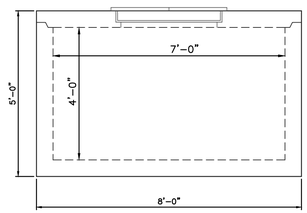
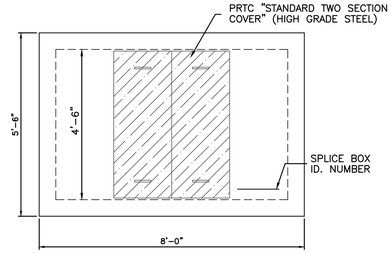
UTT-4

NOTE:

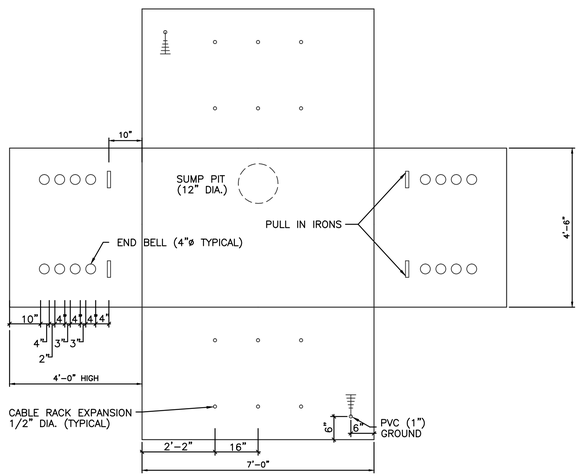
PROVIDE COLLAR TO AVOID OR MINIMIZE SPLICING BOX PROJECTION TO NEW SIDEWALKS.



SECTIONAL VIEW

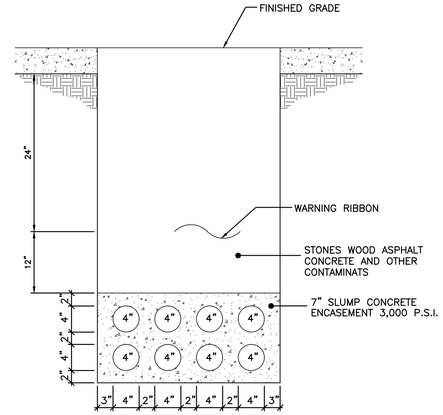


TOP VIEW



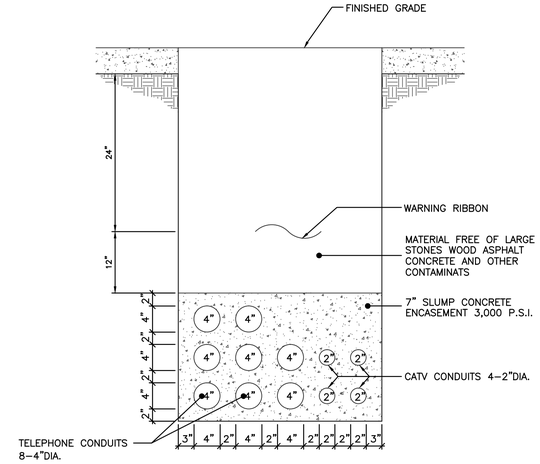
"SPLICING BOX" (TYPICAL)

(4'–6" x 7'–0 x 4'–0")



TYPICAL SECTION

(FOR TELEPHONE EQUIPMENT LOT))



TYPICAL SECTION

(INTERNAL DISTRIBUTION)

COMMUNICATION PLAN DETAILS

Not to Scale

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PHASE II

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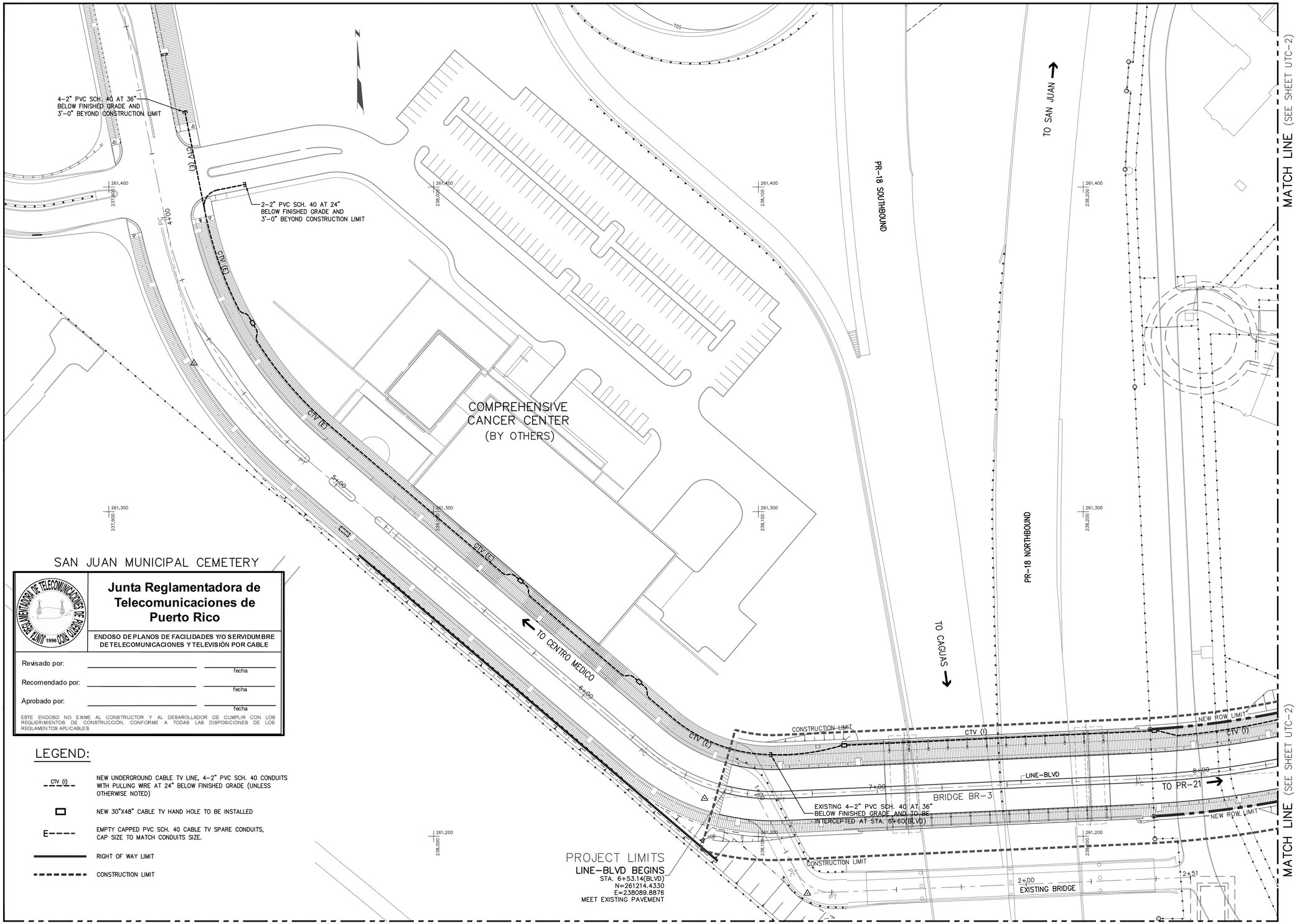
UTT-5



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LEGEND:

- CTV (I) — NEW UNDERGROUND CABLE TV LINE, 4-2" PVC SCH. 40 CONDUITS WITH PULLING WIRE AT 24" BELOW FINISHED GRADE (UNLESS OTHERWISE NOTED)
- NEW 30"X48" CABLE TV HAND HOLE TO BE INSTALLED
- E---- EMPTY CAPPED PVC SCH. 40 CABLE TV SPARE CONDUITS, CAP SIZE TO MATCH CONDUITS SIZE.
- RIGHT OF WAY LIMIT
- CONSTRUCTION LIMIT

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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CABLE UTILITIES PLAN

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UTC-1

87 OF 149

CABLE UTILITIES PLAN

0M 10M 20M 30M Scale= 1:500

MATCH LINE (SEE SHEET UTC-3)

MATCH LINE (SEE SHEET UTC-3)

MATCH LINE (SEE SHEET UTC-1)

MATCH LINE (SEE SHEET UTC-1)

MATCH LINE (SEE SHEET UTC-4)

MATCH LINE (SEE SHEET UTC-4)

4-2" PVC SCH.40 AT 36" BELOW FINISHED GRADE

LINE-PS BEGINS
STA. 1+00.00(PS)
STA. 4+92.39(LS)

LINE-PS ENDS
STA. 2+09.56(PS)
STA. 10+20.01(BLVD)

4-2" PVC SCH.40 AT 36" BELOW FINISHED GRADE

4-2" PVC SCH.40 AT 36" BELOW FINISHED GRADE

ANTONSANTI DEVELOPMENT

BUENA VISTA CREEK

TO PR-21

TO CENTRO MEDICO

LINE-LS

LINE-PS

LINE-BLVD

NEW ROW LIMIT

CONSTRUCTION LIMIT

CV (C)

1+00

2+00

3+00

4+00

10+00

261,400

261,300

261,200

238,300

238,400

238,500

238,600

Junta Reglamentadora de Telecomunicaciones de Puerto Rico

JUNTA REGLAMENTADORA DE TELECOMUNICACIONES DE PUERTO RICO 1996

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CABLE UTILITIES PLAN

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SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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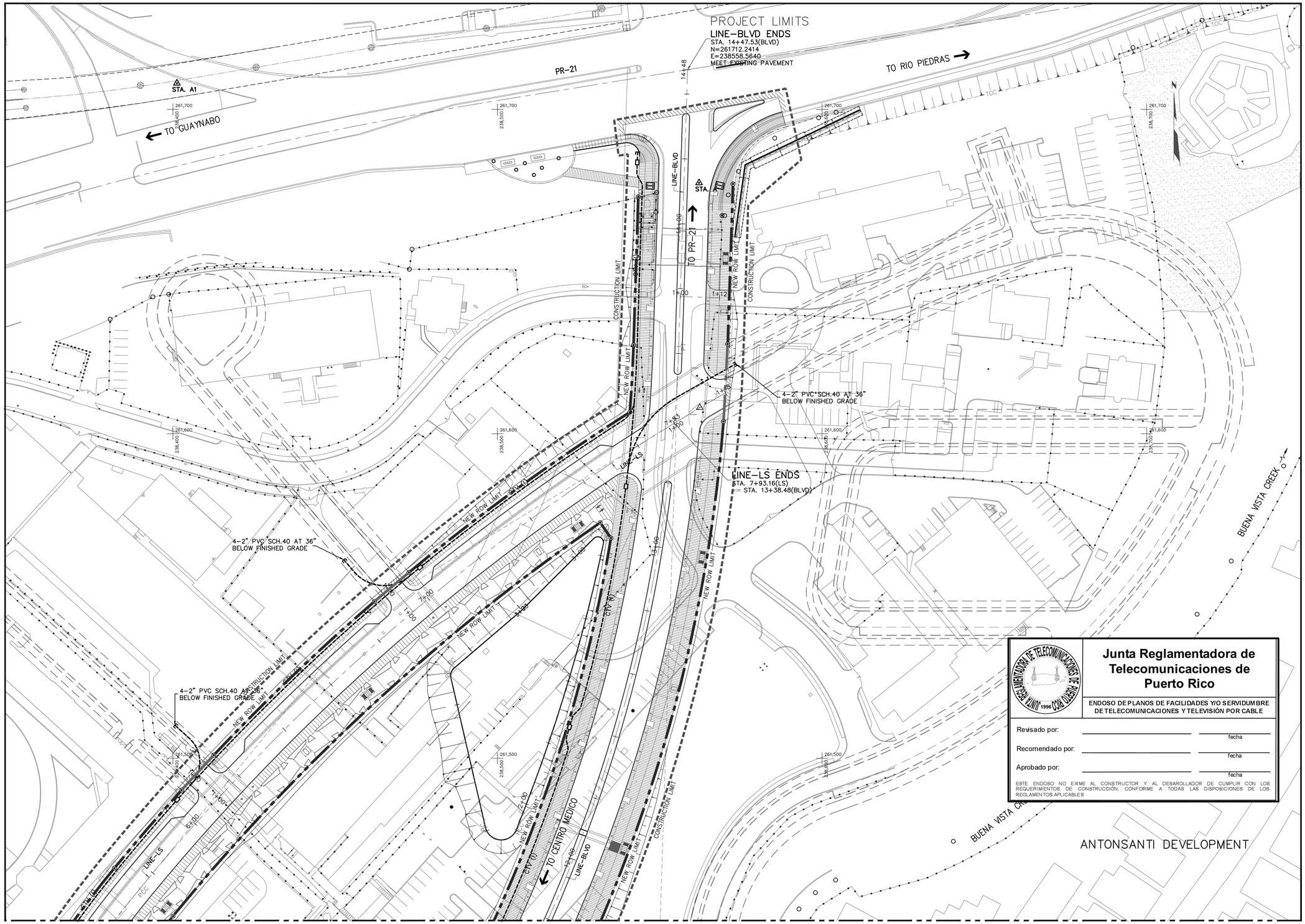

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UTC-3

MATCH LINE (SEE SHEET UTC-2)

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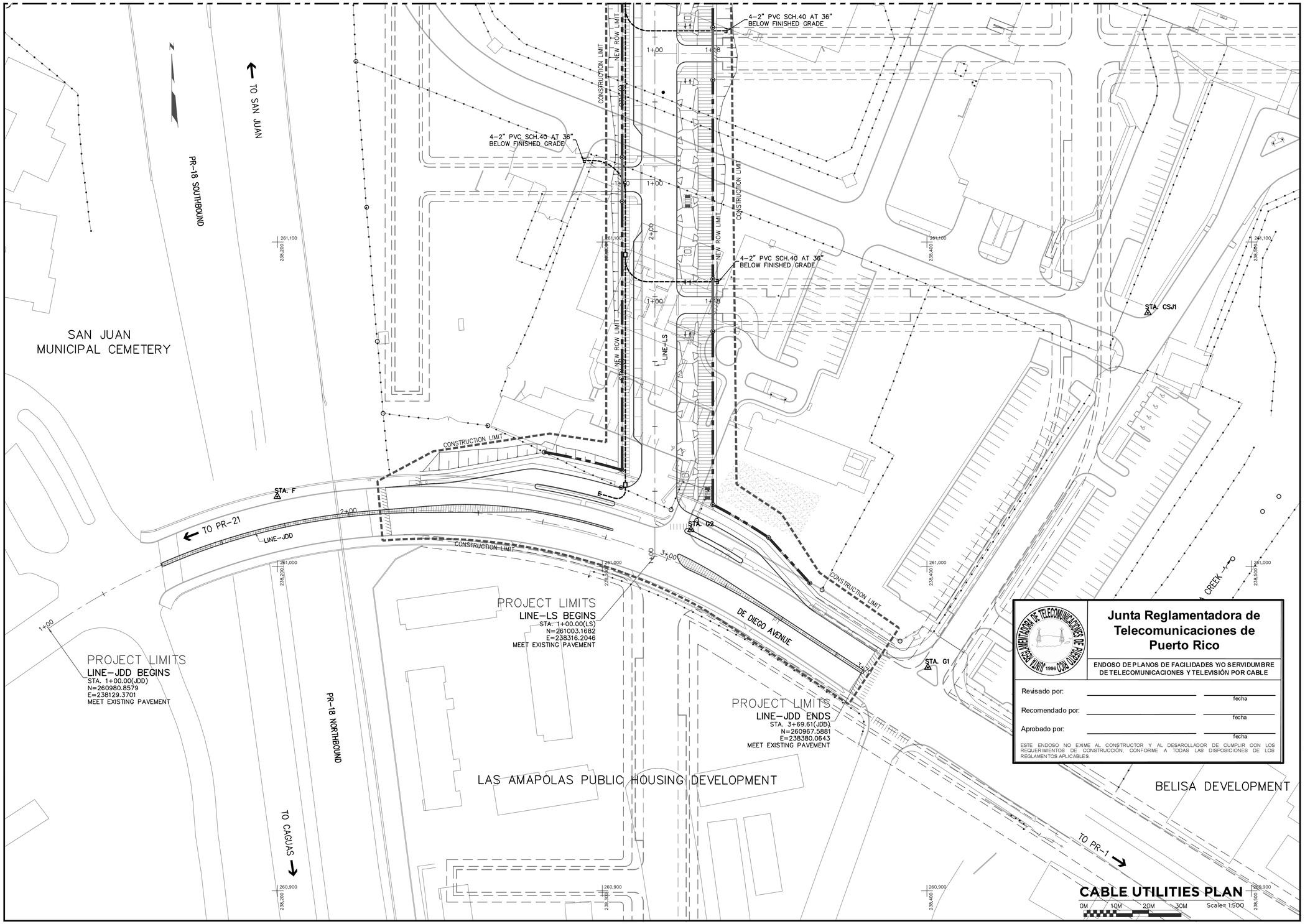

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UTC-4

LEGEND

SEE HIGHWAY AND TRANSP. AUTHORITY STANDARD DWG. LS-1 FOR STANDARD SYMBOLS NOT SHOWN HERE.

SYMBOLS		DESCRIPTION
PLAN	ONE LINE DIAGRAM	
F		EXIST. JUNCTION BOX PER STANDARD DWG. LS-6 LETTER INDICATES SIZE (SEE STANDARD DWG. LS-6)
E	E	EXIST. WIRING TO REMAIN.
R	R	EXIST. WIRING TO BE REMOVED OR ABANDONED
TYPE(A)		NEW PHILIPS LUMEC CAT#40W 49LED 4K,240V SINGLE LUMINARIE MOUNTED AT 22FT
TYPE(A1)		DITTO AS A BUT DOUBLE FIXTURE
TYPE(B)		NEW PHILIPS LUMEC CAT#40W 49LED 4K,240V SINGLE LUMINARIES MOUNTED AT 22FT AIMED TO STREET SIDE AND ONE PHILIPS LUMEC CAT# 40W 30 LED,4K,240V MOUNTED AT 12FT AIMED TO PEDESTRIAN SIDE SEE POLE & LUMINARIES DETAILS ON THIS DRAWING.
TYPE(C)		NEW LECCOR COLLECTION D68 SERIES TO BE MOUNTED HORIZONTALLY UNDERNEATH THE I-BEAM AT BRIDGE BR-2 AREA ONLY 58W FLUORESCENT TUBE AT 120V MODEL CAT# D68-35-CO-81/58-16-CD-F
TYPE(D)		SAME AS TYPE (A) BUT MOUNTED HORIZONTALLY AT THE STREET END OF THE I-BEAM AT THE BRIDGE AREA AND AIMED TO THE STREET MEDIAN AREA
I		NEW PAD MOUNTED TRANSFORMER PER STANDARD DWG. #LS-10 SEE ONE LINE AND SCHEDULE. TRANSFORMER SHALL BE LOW LOSS TYPE PER PREPA REQUIREMENTS.

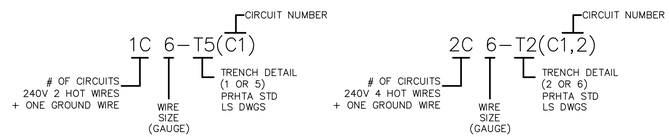
LOAD CALCULATION

SUBSTATION	CIRCUIT NUMBER	1	2	3	4	5	6	7	8	9	10	TOTAL
SUBSTATION #5 37.5KVA,1ø,7.62KV 120/240V	LUM. 40W 30LED 4K	15	15	15	15	19	15	16	16	–	–	126
	LUM. 40W 49LED 4K	15	15	15	15	10	10	16	16			112
	TOTAL VOLT-AMPS	3,600	3,600	3,600	3,600	3,400	3,400	3,400	3,400			29,160
	TOTAL AMPS	15	15	15	15	14.50	14.50	15	16			121.5
	BREAKER (2p) CAP.	20	20	20	20	20	20	20	20			200
	WIRE SIZE	#2	#2	#2	#2	#2	#2	#2	#2			–
	% VOLT. DROP	1.65%	1.70%	1.66%	1.60%	1.90%	1.90%	2.34%	2.30%			–
SUBSTATION #6 37.5KVA,1ø,7.62KV 120/240V	LUM. 40W 30LED 4K	9	9	9	8	10	9	14	14	13	13	108
	LUM. 40W 49LED 4K	9	9	9	8	10	9	14	14	13	13	108
	TOTAL VOLT-AMPS	2160	2160	2160	1,920	2,400	2160	3360	3360	3120	3120	25,920
	TOTAL AMPS	9	9	9	8	10	9	14	14	13	13	108
	BREAKER (2p) CAP.	15	15	15	15	15	15	20	20	20	20	200
	WIRE SIZE	#2	#2	#2	#2	#2	#2	#2	#2	#2	#2	–
	% VOLT. DROP	0.51%	0.53%	0.55%	0.50%	0.50%	0.48%	2.15%	2.15%	2.00%	2.02%	–
												–

DESIGN PARAMETERS

ROAD DESIGNATION	PR-21
ROAD CLASSIFICATION	MAJOR
AREA CLASSIFICATION	URBAN
MAX. ROADWAY WIDTH CONSIDERED	VARIES
LUMINIARE OVERHANG MOUNTING HEIGHT DISTRIBUTION TYPICAL SPACING TYPICAL DISTANCE FROM TRAVELED WAY	N/A VARIES III – CUTOFF VARIES VARIES
LAMP CHARACTERISTICS TYPE WATTS	LED 40W
FACTORS DIRT MAINTENANCE	0.9 0.8
CALCULATED VALUES MAINTAINED ILLUMINATION LEVEL UNIFORMITY RATIO (AVG./MIN.)	2.0 3.1

NOTE: CIRCUIT ID LEGEND

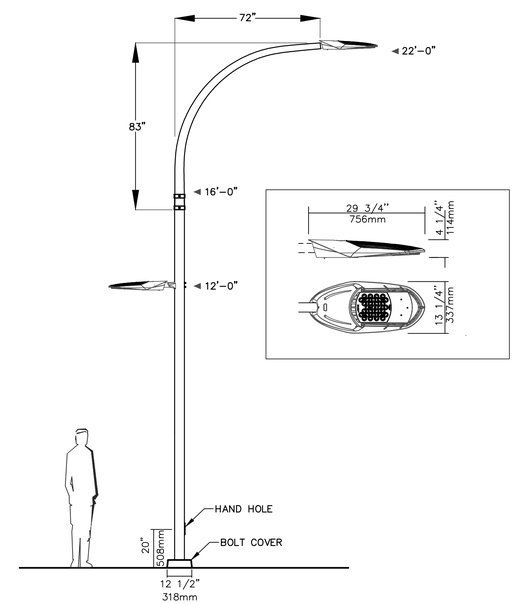


ABBREVIATIONS

1. ECB: ENCLOSED CIRCUIT BREAKER
2. N-1: NEMA ONE RATING
3. MOV: METAL OXIDE VARISTOR
4. LA: LIGHTNING ARRESTER
5. FL: FUSE LINE
6. ETPC: ELECTRONIC TYPE PHOTOCELL,VANDAL PROOF
7. CB: CIRCUIT BREAKER
8. HOAS: HAND-OFF AUTOMATIC SWITCH
9. TYP: TYPICAL

IMPORTANT NOTE:

CONTRACTOR SHALL BE RESPONSIBLE TO CHECK THE CROSS SECTION PLANS (CS) OF ALL THE AREAS WHERE UTILITIES CROSSING MIGHT OCCUR



DETAIL FOR TYPE (A) POLE AND LUMINARIES

LIGHTING LEGEND & DESIGN PARAMETERS

Scale: NONE

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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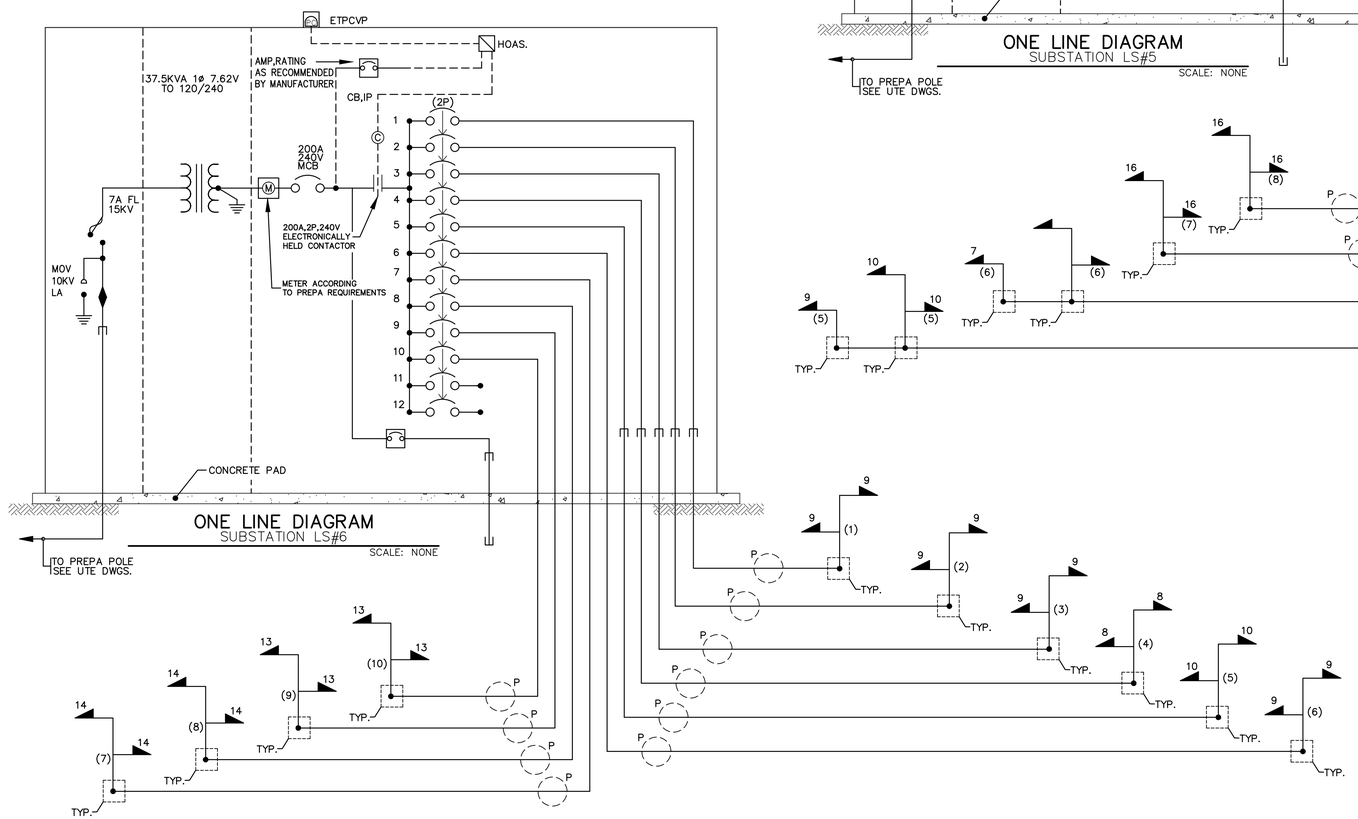
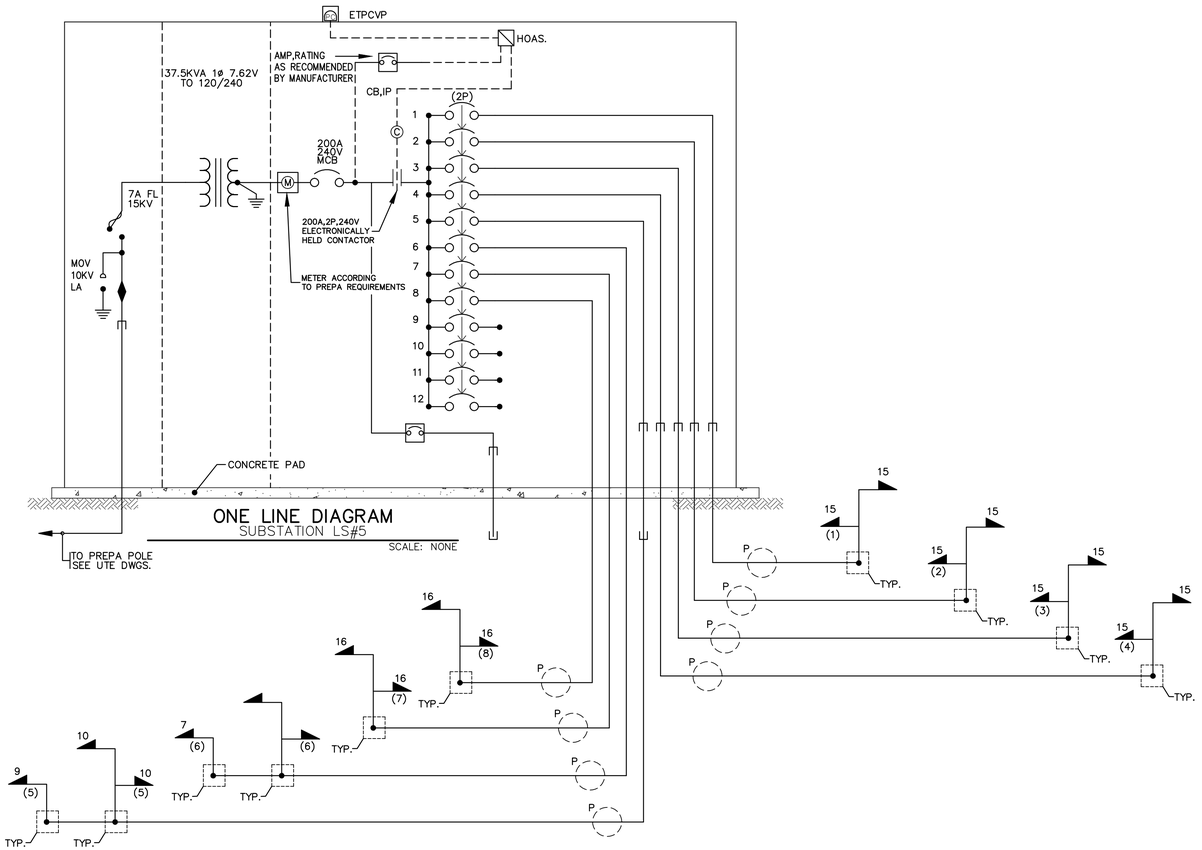
DATE: JUNE-19-2012

LT-1A





LIGHTING LEGEND & DESIGN PARAMETERS

Scale: NONE

SCIENCE CITY
URBAN INFRASTRUCTURE
PHASE II

SEGMENT EAST OF PR 18
SAN JUAN, PUERTO RICO

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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

ONE LINE DIAGRAMS

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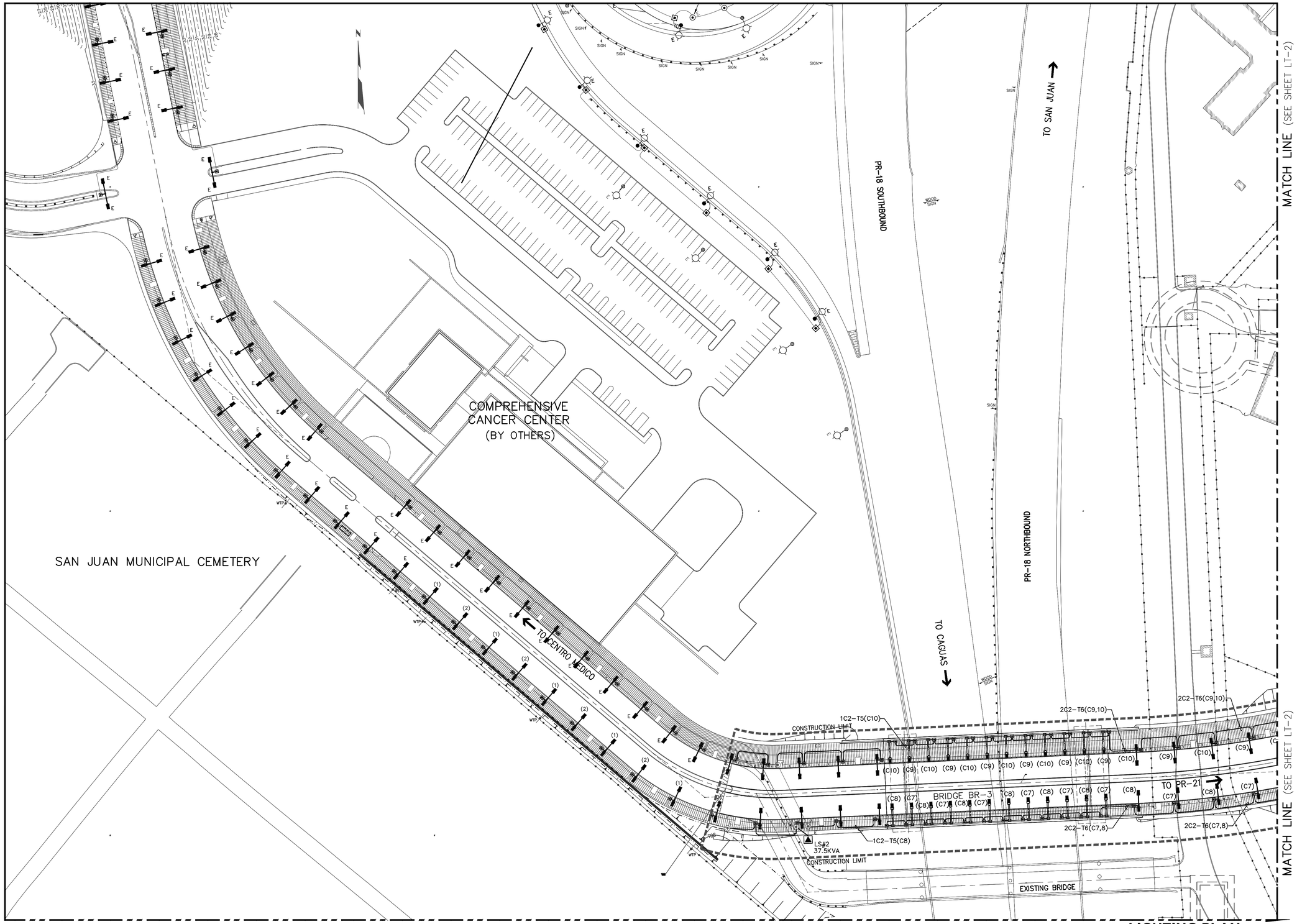
DATE: JUNE-19-2012

LT-1B



LIGHTING PLAN

0M 10M 20M 30M

Scale= 1:500

SCIENCE CITY
URBAN INFRASTRUCTURE
PHASE II

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LIGHTING PLAN

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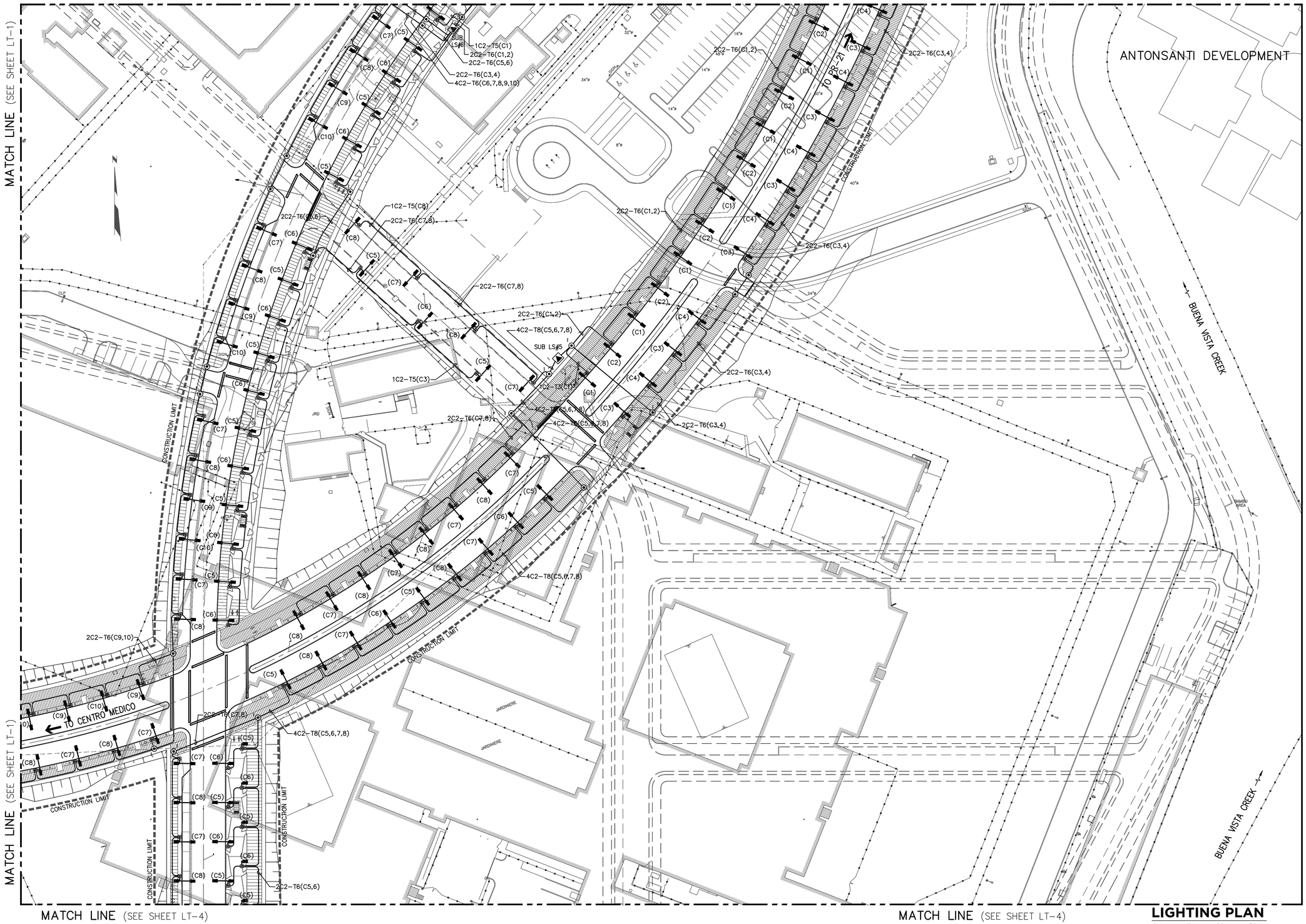
DATE: JUNE-19-2012

LT-1



LIGHTING PLAN

0M 10M 20M 30M Scale= 1:500

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LIGHTING PLAN

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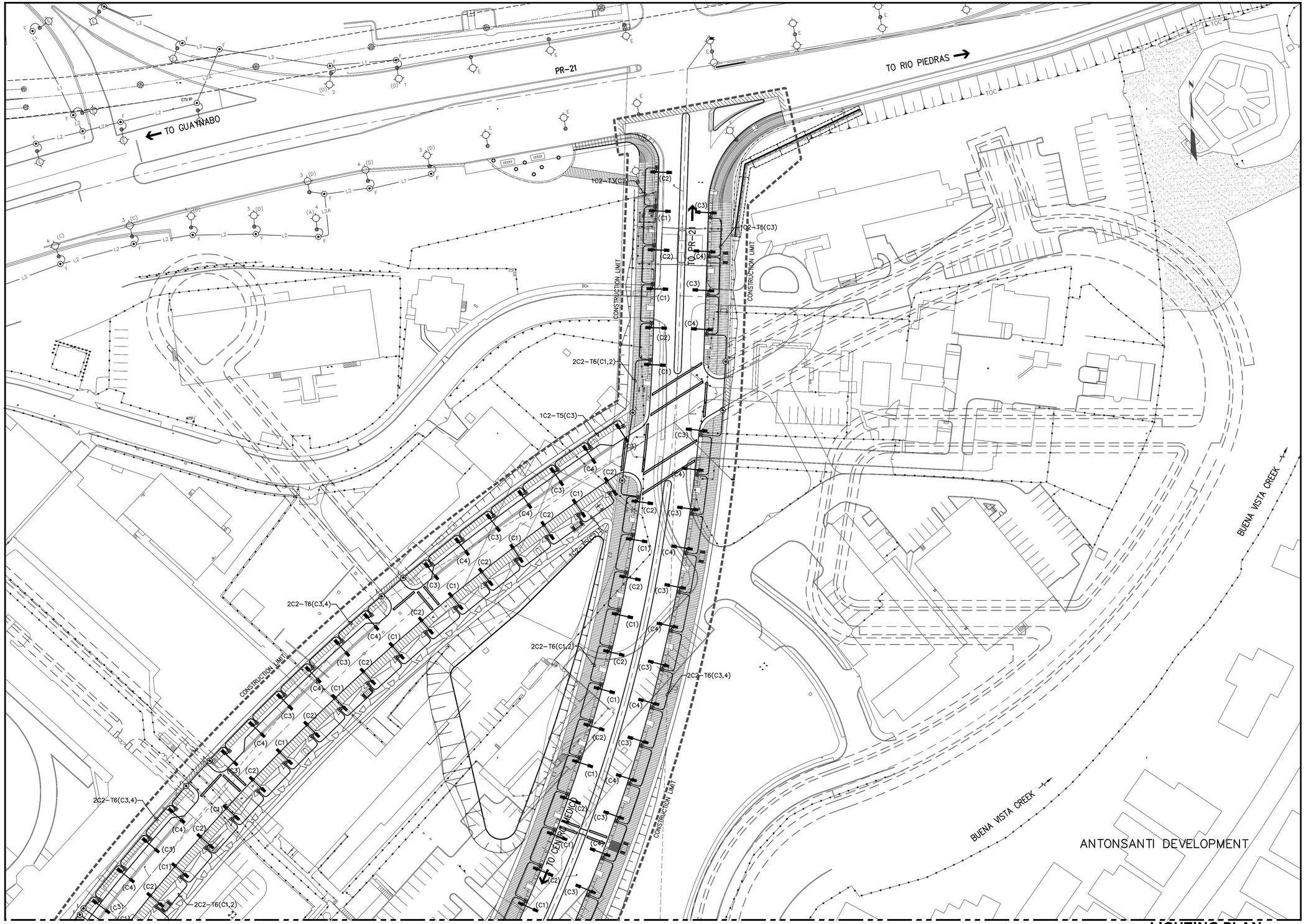
LT-2



LIGHTING PLAN

0M 10M 20M 30M

Scale= 1:500

SCIENCE CITY
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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

LIGHTING PLAN

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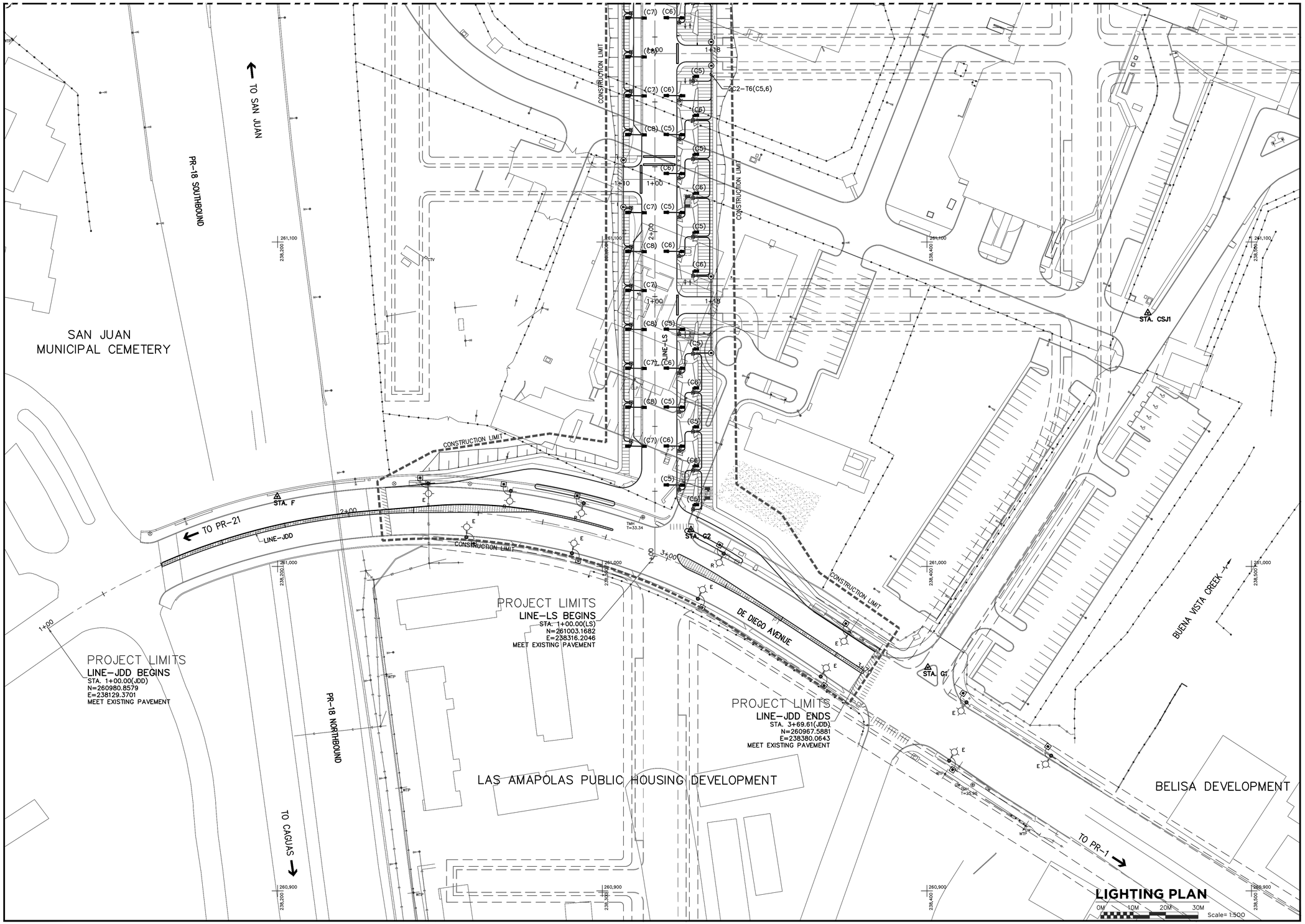
DATE: JUNE-19-2012

LT-3

MATCH LINE (SEE SHEET LT-2)

MATCH LINE (SEE SHEET LT-2)



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MAY 13, 2013

LIGHTING PLAN

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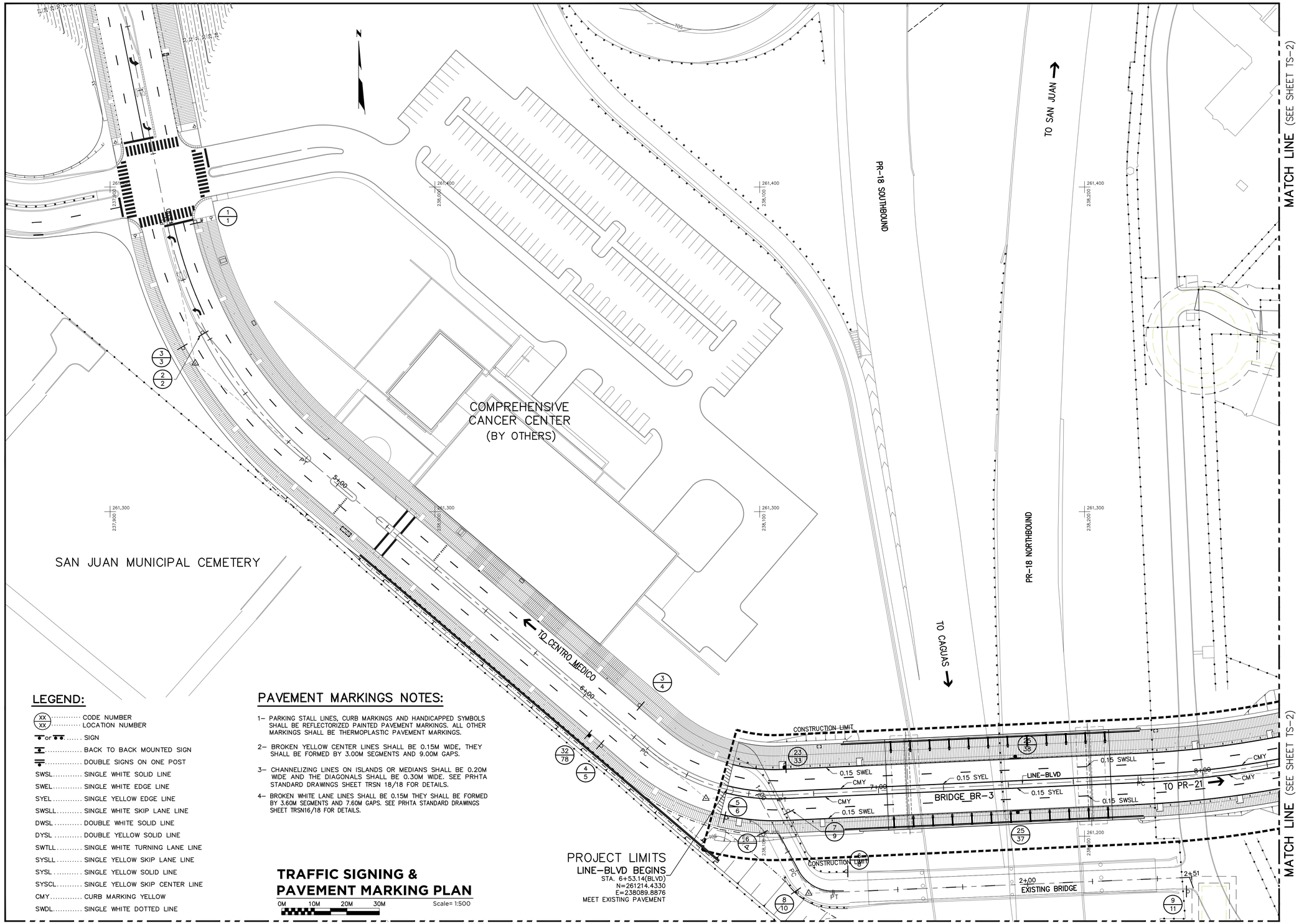
REVISED BY:
DATE: JUNE-19-2012

LT-4



LEGEND:

- (XX / XX) ..... CODE NUMBER / LOCATION NUMBER
- or ..... SIGN
- ..... BACK TO BACK MOUNTED SIGN
- ..... DOUBLE SIGNS ON ONE POST
- SWSL ..... SINGLE WHITE SOLID LINE
- SWEL ..... SINGLE WHITE EDGE LINE
- SYEL ..... SINGLE YELLOW EDGE LINE
- SWSLL ..... SINGLE WHITE SKIP LANE LINE
- DWSL ..... DOUBLE WHITE SOLID LINE
- DYSL ..... DOUBLE YELLOW SOLID LINE
- SWTLL ..... SINGLE WHITE TURNING LANE LINE
- SYSLL ..... SINGLE YELLOW SKIP LANE LINE
- SYSL ..... SINGLE YELLOW SOLID LINE
- SYSCL ..... SINGLE YELLOW SKIP CENTER LINE
- CMY ..... CURB MARKING YELLOW
- SWDL ..... SINGLE WHITE DOTTED LINE

PAVEMENT MARKINGS NOTES:

1– PARKING STALL LINES, CURB MARKINGS AND HANDICAPPED SYMBOLS SHALL BE REFLECTORIZED PAINTED PAVEMENT MARKINGS. ALL OTHER MARKINGS SHALL BE THERMOPLASTIC PAVEMENT MARKINGS.

2– BROKEN YELLOW CENTER LINES SHALL BE 0.15M WIDE, THEY SHALL BE FORMED BY 3.00M SEGMENTS AND 9.00M GAPS.

3– CHANNELIZING LINES ON ISLANDS OR MEDIANS SHALL BE 0.20M WIDE AND THE DIAGONALS SHALL BE 0.30M WIDE. SEE PRHTA STANDARD DRAWINGS SHEET TRSN 18/18 FOR DETAILS.

4– BROKEN WHITE LANE LINES SHALL BE 0.15M THEY SHALL BE FORMED BY 3.60M SEGMENTS AND 7.60M GAPS. SEE PRHTA STANDARD DRAWINGS SHEET TRSN16/18 FOR DETAILS.

TRAFFIC SIGNING & PAVEMENT MARKING PLAN

0M 10M 20M 30M Scale= 1:500

SCIENCE CITY
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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

TRAFFIC SIGNING & PAVEMENT MARKING PLAN

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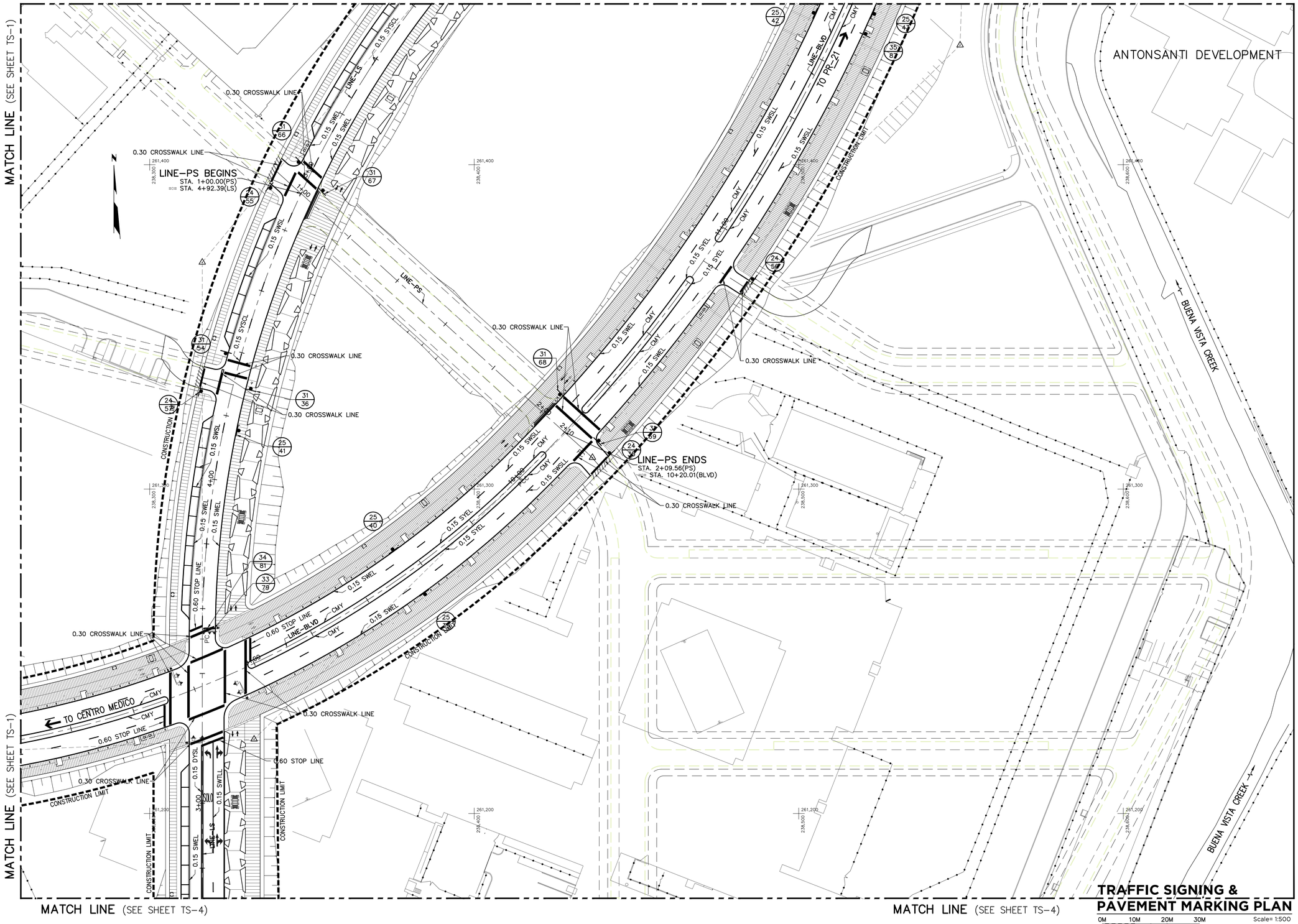
TS-1



TRAFFIC SIGNING & PAVEMENT MARKING PLAN

0M 10M 20M 30M Scale= 1:500

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TRAFFIC SIGNING & PAVEMENT MARKING PLAN

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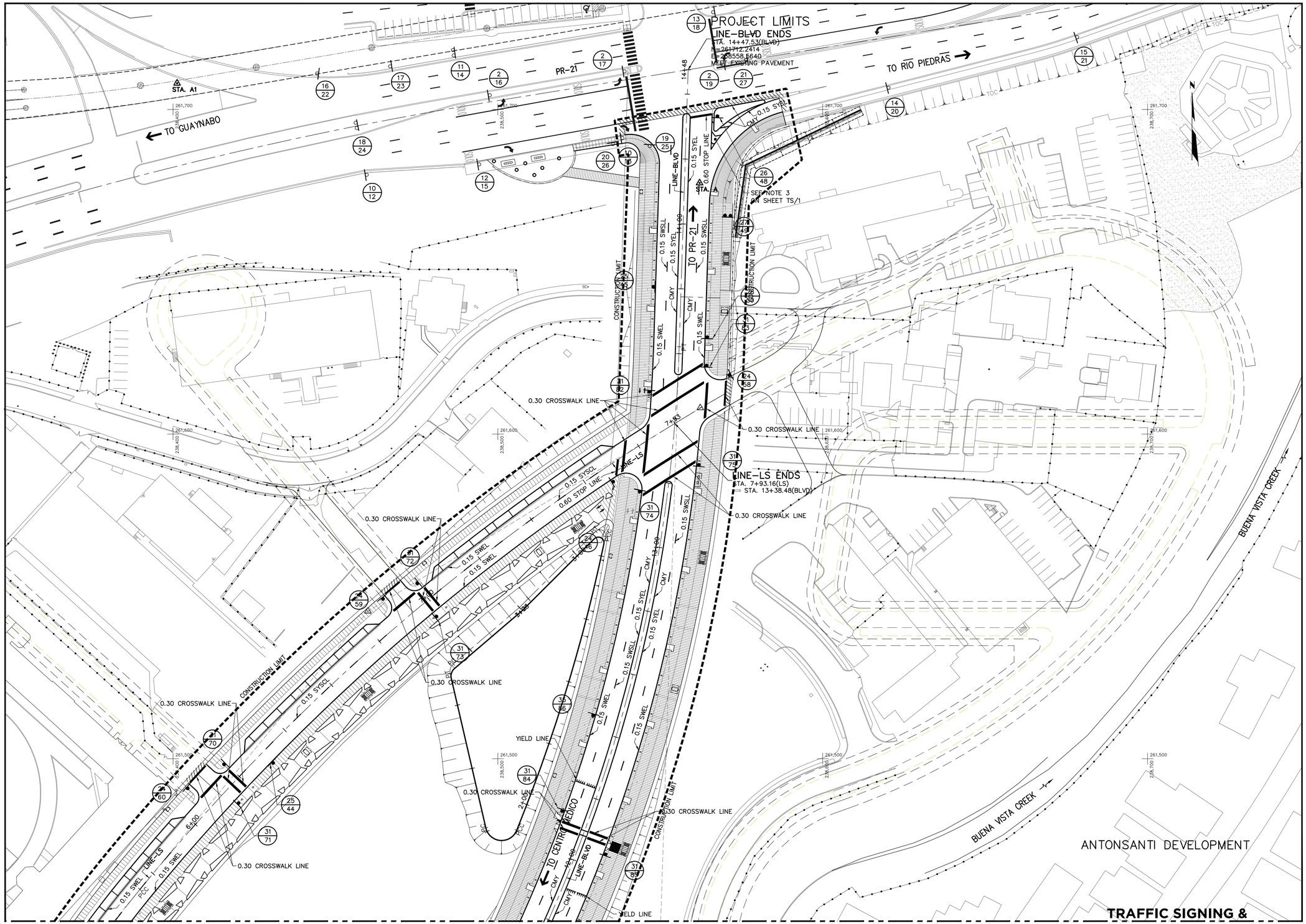
TS-2



TRAFFIC SIGNING & PAVEMENT MARKING PLAN

0M 10M 20M 30M Scale= 1:500

SCIENCE CITY
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TRAFFIC SIGNING & PAVEMENT MARKING PLAN

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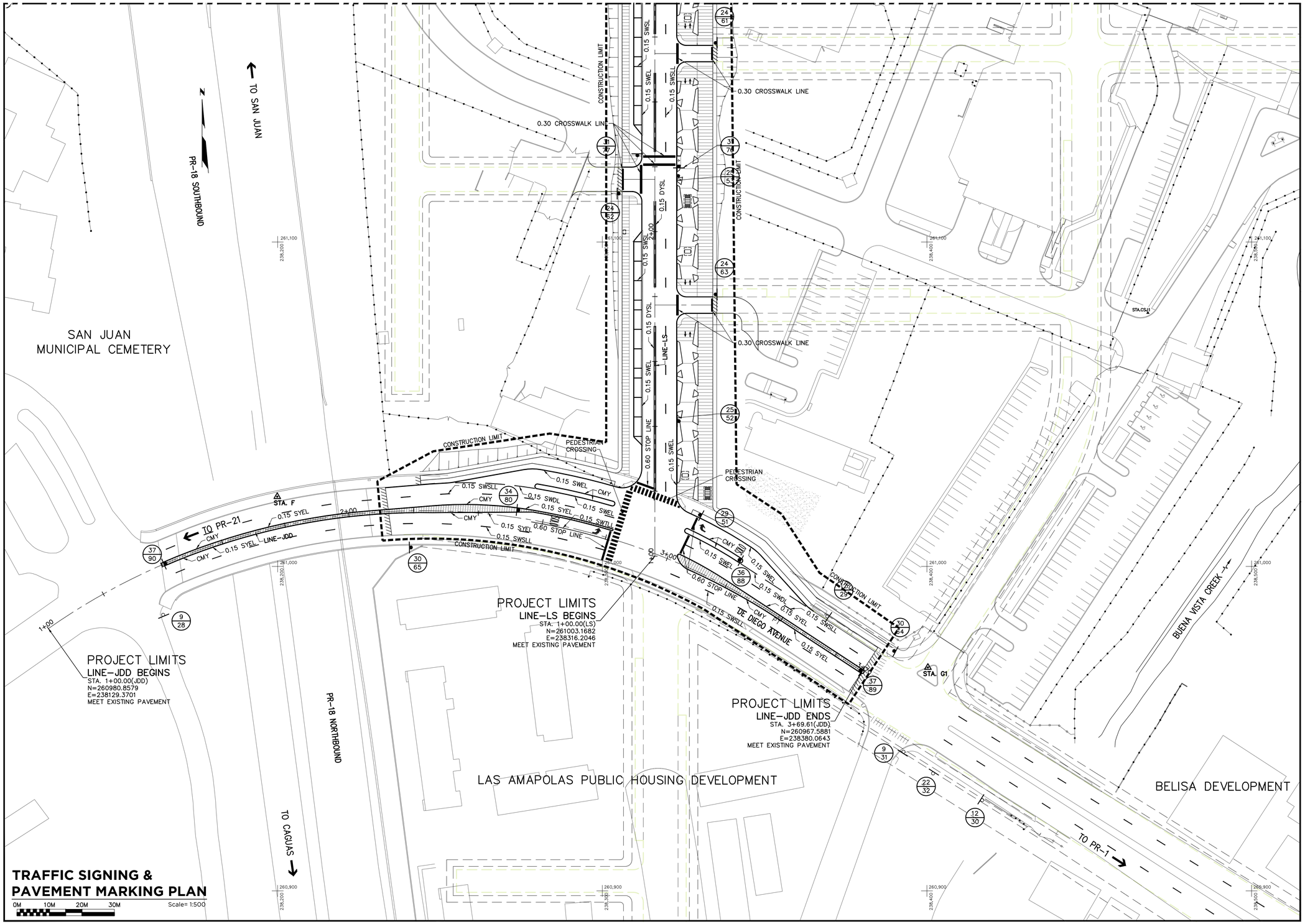
TS-3

MATCH LINE (SEE SHEET TS-2)

MATCH LINE (SEE SHEET TS-2)



TRAFFIC SIGNING & PAVEMENT MARKING PLAN

0M 10M 20M 30M Scale= 1:500

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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MAY 13, 2013

TRAFFIC SIGNING & PAVEMENT MARKING PLAN

DRAWN BY:
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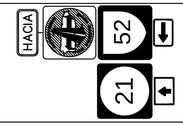
TS-4

CODE NUMBER	LOCATION NUMBER	SIGN CODE	LEGEND	SIZE OF SIGN PANELS	OVERHEAD STRUCTURE TYPE	REFERENCE MANUAL	TOTAL ITEM
1	1	M1–6D M6–2 M4–1 M1–6E M1–6A M6–2		EXISTING SIGN TO REMAIN	N/A	SEE D.T.P.W. MANUAL	1
2	2, 16, 17, 19	R3–5		EXISTING SIGN TO REMAIN	N/A	SEE D.T.P.W. MANUAL	4
3	3, 4	R2–1		EXISTING SIGN TO REMAIN	N/A	SEE D.T.P.W. MANUAL	2
4	5	W4–2		EXISTING SIGN TO BE REMOVED	N/A	SEE MUTCD 2009	1
5	6	W6–2		EXISTING SIGN TO BE REMOVED	N/A	SEE D.T.P.W. MANUAL	1
6	7, 8	W1–4R		EXISTING SIGN TO BE REMOVED	N/A	SEE D.T.P.W. MANUAL	2
7	9	W6–1		EXISTING SIGN TO BE REMOVED	N/A	SEE D.T.P.W. MANUAL	1
8	10	W1–2		EXISTING SIGN TO BE REMOVED	N/A	SEE D.T.P.W. MANUAL	1
9	11	R1–1		EXISTING SIGN TO BE REMOVED	N/A	SEE D.T.P.W. MANUAL	1
	28, 31			EXISTING SIGN TO REMAIN			2
10	12, 13	R3–5R		EXISTING SIGN TO REMAIN	N/A	SEE D.T.P.W. MANUAL	2
11	14	D2–2A		EXISTING SIGN TO REMAIN	N/A	N/A	1

CODE NUMBER	LOCATION NUMBER	SIGN CODE	LEGEND	SIZE OF SIGN PANELS	OVERHEAD STRUCTURE TYPE	REFERENCE MANUAL	TOTAL ITEM
12	15, 29, 30	R1–6A		EXISTING SIGN TO REMAIN	N/A	SEE D.T.P.W. MANUAL	3
13	18	R3–1		EXISTING SIGN TO REMAIN	N/A	SEE D.T.P.W. MANUAL	1
14	20	R1–2		EXISTING SIGN TO REMAIN	N/A	SEE D.T.P.W. MANUAL	1
15	21	R2–1		EXISTING SIGN TO REMAIN	N/A	SEE D.T.P.W. MANUAL	1
16	22	M4–1 M1–6A M1–6D M6–3		EXISTING SIGN TO REMAIN	N/A	SEE D.T.P.W. MANUAL	1
17	23	W13–2		EXISTING SIGN TO REMAIN	N/A	SEE D.T.P.W. MANUAL	1
18	24			EXISTING SIGN TO REMAIN	N/A	N/A	1
19	25	R6–1L		EXISTING SIGN TO BE REMOVED	N/A	SEE D.T.P.W. MANUAL	1
20	26			EXISTING SIGN TO BE REMOVED	N/A	N/A	1
21	27	R3–2		EXISTING SIGN TO BE REMOVED	N/A	SEE D.T.P.W. MANUAL	1
22	32			EXISTING SIGN TO REMAIN	N/A	N/A	1

SIGN DATA SHEET

Scale: Not to Scale

SCIENCE CITY
URBAN INFRASTRUCTURE
PHASE II

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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

SIGN DATA SHEET

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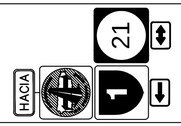
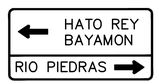
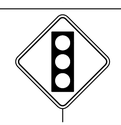
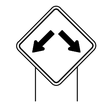
DATE: JUNE-19-2012

TS-5

CODE NUMBER	LOCATION NUMBER	SIGN CODE	LEGEND	SIZE OF SIGN PANELS	OVERHEAD STRUCTURE TYPE	REFERENCE MANUAL	TOTAL ITEM
23	33	W1–2R		36"x36"	N/A	SEE D.T.P.W. MANUAL	1
24	35, 46, 55, 56, 57, 58, 59, 60, 61, 62, 63	R1–1		30"x30"	N/A	SEE D.T.P.W. MANUAL	11
25	37, 38, 39, 40, 41, 42, 43, 44, 45, 52, 53	R7–1		12"x18"	N/A	SEE D.T.P.W. MANUAL	11
26	48	M4–1 M1–6E M1–6A M6–2 M1–6D M6–4		24"x12" 24"x24" 24"x24" 21"x15" 24"x24" 21"x15"	N/A	SEE D.T.P.W. MANUAL	1
27	49	D1–2		4' – 6" X 2' – 6"	N/A	N/A	1
28	50	M2–1 M1–6D		21"x15" 24"x24"	N/A	SEE D.T.P.W. MANUAL	1
29	51	R3–5R		30"x36"	N/A	SEE D.T.P.W. MANUAL	1
30	64, 65	W3–3		30"x30"	N/A	SEE D.T.P.W. MANUAL	2
31	66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77 82, 83, 84 85, 36, 54	W11–2 W16–7P		36"X36" 24"X12"	N/A	SEE D.T.P.W. MANUAL	18
32	78	W1–2		36"X36"	N/A	N/A	1
33	79	R3–6		21"x15" 24"x24"	MAST ARM MOUNTED	SEE D.T.P.W. MANUAL	1

CODE NUMBER	LOCATION NUMBER	SIGN CODE	LEGEND	SIZE OF SIGN PANELS	OVERHEAD STRUCTURE TYPE	REFERENCE MANUAL	TOTAL ITEM
34	80	R3–5L		30"x36"	N/A	SEE D.T.P.W. MANUAL	1
	81				MAST ARM MOUNTED		1
35	86, 87	W11–2 W16–9D		36"X36" 24"X12"	N/A	SEE D.T.P.W. MANUAL	2
36	88	R4–7		24"X30"	N/A	SEE D.T.P.W. MANUAL	1
37	89, 90	W12–1		36"X36"	N/A	SEE D.T.P.W. MANUAL	2

SIGN DETAIL
1:15

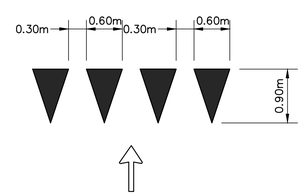
SIGN NUMBER	27/49
WIDTH x HGHT.	4'–6" x 2'–6"
BORDER WIDTH	0.5"
CORNER RADIUS	4"
MOUNTING	Ground
BACKGROUND	TYPE: Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT
ARUP	5	15.8	8	10
ARSHRT	43.3	3.5	6	6

Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)																					LENGTH	SERIES/SIZE
H	A	T	O		R	E	Y															D4
21.4	24.8	28.4	31.6	34.5	38.5	42.1	45														27	
B	A	Y	A	M	O	N																D4
21.4	24.8	28.4	32.1	36.2	40.2	44															25.3	
R	I	O		P	I	E	D	R	A	S												D4
4.5	8.2	9.8	12.6	16.6	20.2	21.8	25	28.7	32.1	36.2											34.4	



DIRECTION OF TRAVEL

YIELD LINE LAYOUT

WHITE THERMOPLASTIC MATERIAL
(NOT TO SCALE)

SIGN DATA SHEET & DETAILS

Scale: Not to Scale

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

SEGMENT EAST OF PR 18
SAN JUAN, PUERTO RICO

TORO ARQUITECTOS
AVENIDA McLEARY 2004
SAN JUAN, PUERTO RICO 00911
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archUD ARCHITECTURE + URBAN DESIGN

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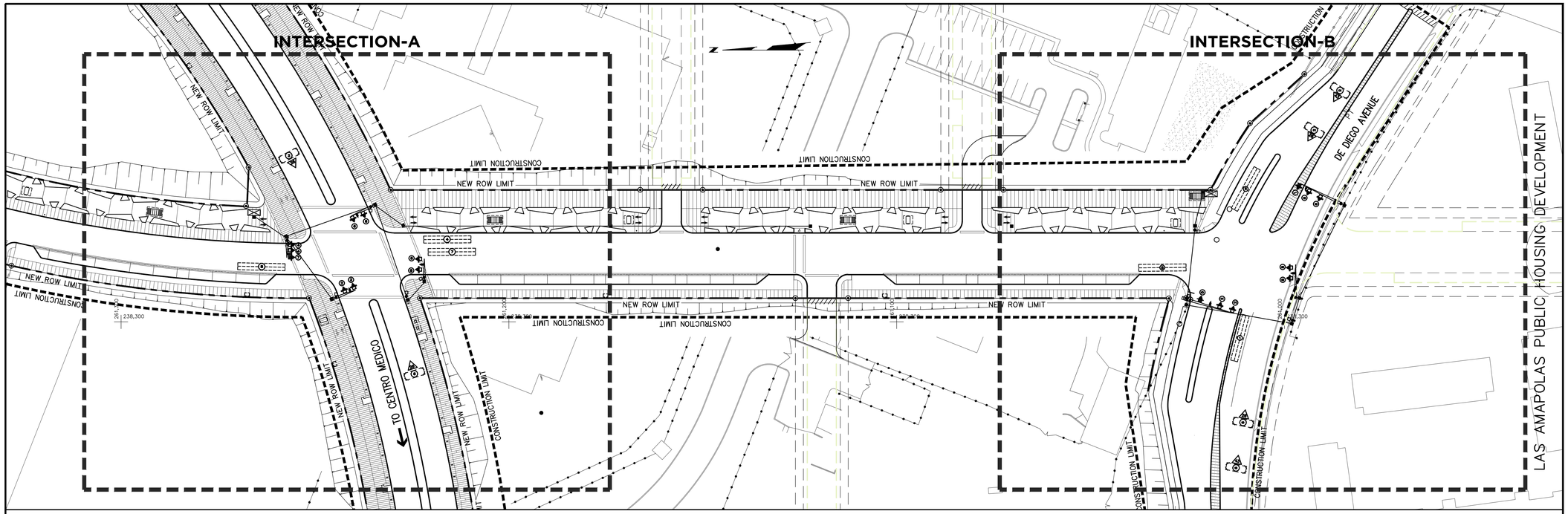
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

SIGN DATA SHEET & DETAILS

DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

TS-6



TRAFFIC SIGNAL SYSTEM KEY PLAN

0M 10M 20M 30M Scale= 1:500

TRAFFIC SIGNAL SYSTEM NOTES

SYSTEM'S DESCRIPTION AND REQUIREMENTS

1. THE MAIN COMPONENTS OF THE SYSTEM ARE THE TRAFFIC SIGNAL MASTER CONTROLLER, THE LOCAL INTERSECTION CONTROLLERS, THE TRAFFIC SIGNAL FACES, PEDESTRIAN PUSH BUTTONS AND PEDESTRIAN SIGNAL FACES.
2. PULL BOXES AND MANHOLES SHALL BE PROVIDED AS PER PLANS. FOR ALL CONDUIT RUNS CONNECTING ALL ROADWAY SECTIONS ALONG THE PROJECT, A SPECIAL TYPE 30" X 30" MANHOLE SHALL BE PROVIDED.
3. TRAFFIC SIGNAL MAST ARM SHALL BE PROVIDED SUBJECT TO THE HIGHWAY AND TRANSPORTATION AUTHORITY'S SPECIFICATIONS. COMPLIANCE WITH ALL ENVIRONMENTAL REQUIREMENTS IS MANDATORY.
4. PUSH BUTTOMS SHALL BE PUSH STATION CAST MAN WITH LEFT, RIGHT OR TWO WAY ARROW AND BORDER 5"x7-3/4" WITH HEAVY TENSION SWITCH COVER ASSEMBLY AND 2" MUSHROOM PLUNGER (ADA).
5. THE MONITOR SHALL BE MALFUNCTION MANAGEMENT UNIT WITH LCD DISPLAY.
6. THE TRAFFIC SIGNAL CONTROLLER CABINET SHALL HAVE SIXTEEN (16) SLOT ON BACK PANEL FILLED WITH SIX (6) DUAL INDUCTIVE LOOP DETECTOR AS SPECIFIED ON NOTE 9 AND TRAFFIC COUNT DETECTOR NECESSARY. ALSO SHALL HAVE SIX (6) TRANSFER RELAYS AND SIXTEEN (16) LOAD SWITCH.
7. THE TRAFFIC SIGNAL CONTROLLER TO BE PROVIDED FOR THIS PROJECT IS A NEMA TS-2 TYPE 2.
8. ALL TRAFFIC SIGNAL CONTROL SYSTEMS SHALL COMPLY WITH LATEST NTCIP STANDARDS.

WIRELESS COMMUNICATION SYSTEM

1. THE CONTRACTOR SHALL PROVIDE A WIRELESS COMMUNICATION SYSTEM THAT INTERCONNECTS ALL LOCAL CONTROLLERS TO THE MASTER CONTROLLER AND TO ROBERTO SANCHEZ VILELLA GOVERNMENT CENTER, 801 OFFICE, USING RADIO LINKS.
2. THE SYSTEM SHALL INCLUDE, BUT NOT BE LIMITED, TO THE FOLLOWING: RADIO TRANSCEIVERS, ACCESS POINTS, ANTENNAS, REPEATERS, NETWORK DEVICES, SURGE SUPPRESSORS TO PROTECT FROM LIGHTNING POWER SURGES AND ROUTER, NETWORK MANAGEMENT SOFTWARE, AND ALL OTHER EQUIPMENT NECESSARY FOR OPERATION.
3. THE ANALYSIS OF RANGE, RECEPTION CAPABILITY, AND COVERTURES OF THE WIRELESS COMMUNICATION SHALL BE A SUBSIDIARY OBLIGATION UNDER THE ITEM OF WIRELESS COMMUNICATION SYSTEM, PER SECTION 654-3.21, SPECIAL PROVISION, DATED JUNE 19, 2007.

VIDEO IMAGE DETECTION SYSTEM

1. THE CONTRACTOR SHALL PROVIDE A VIDEO IMAGE DETECTION SYSTEM CONSISTING OF VIDEO CAMERAS AND MOUNTING HARDWARE ASSEMBLIES FOR INSTALLATION ON MAST ARMS AS SHOWN ON THE PLANS AND AS PER SPECIAL PROVISION 654-3.22.
2. THE SYSTEM SHALL INCLUDE, BUT NOT BE LIMITED, TO THE FOLLOWING: EXTENSION MODULES, COMMUNICATIONS MODULE, CABLES, CONNECTORS, AND WIRING TO TRAFFIC SIGNAL CONTROL SYSTEMS.

GENERAL NOTES

1. WHEN NECESSARY, CONNECTIONS TO THE ELECTRICAL UTILITY FOR SERVICE INSTALLATION SHALL BE MADE BY PREPA, UPON CERTIFICATION REQUESTED BY THE CONTRACTOR.
2. ALL CONDUIT INSTALLATIONS ARE SPECIFIED BY INSIDE DIAMETER IN INCHES.
3. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND DETAILS AS SHOWN ON THE PLANS AND ANY OTHER PERTINENT DATA RECEIVED FROM THE ENGINEER, AND NOTIFY HIM FOR ALL ERRORS, OMISSIONS, CONFLICTS, AND DISCREPANCIES FOUND. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF THESE PROBLEMS IN WRITING BEFORE PROCEEDING WITH THE WORK.
4. IF DURING THE PROGRESS OF THE WORK, CONDITIONS ARE DISCOVERED WHICH MAKE IT IMPOSSIBLE TO PRODUCE WORK IN ACCORDANCE WITH THE BEST GENERAL PRACTICE, OR SHOULD CAUSE ANY CHANGE IN THE WORK AS SPECIFIED, THE CONTRACTOR SHALL REFER THE MATTER TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK. IF THE CONTRACTOR FAILS TO MAKE SUCH REFERENCE TO THE ENGINEER, HE MAY PROCEED ON HIS OWN RISK, AND SHOULD SUCH WORK NOT BE SATISFACTORY TO THE ENGINEER, THE CONTRACTOR SHALL REMOVE AND REPLACE IT AT HIS OWN COST, TO THE SATISFACTION OF THE ENGINEER.

WORK PLAN

THE PROPOSED CONSTRUCTION SCHEDULE IS AS FOLLOWS:

A. ERECT NEW POLE AND CONTROLLER'S FOUNDATIONS AT EACH INTERSECTION.
B. INSTALL UNDERGROUND CONDUITS AND NEW PULL BOXES.
C. INSTALL AND WIRE NEW LOCAL AND MASTER CONTROLLER ASSEMBLIES, SIGNAL FACES, PEDESTRIAN PUSH BUTTONS, AND OTHER INTERSECTION SIGNAL HARDWARE, AS REQUIRED BY PLANS.
D. START-UP AND TEST ALL SYSTEM.
E. SYSTEM'S FINE TUNING SHALL BE DONE BY OTHERS.
F. PERFORM ANY OTHER MISCELLANEOUS ACTIVITIES AS PER PLANS.

SUMMARY OF QUANTITIES

ITEM NUMBER	SPEC. NUMBER	DESCRIPTION	UNIT	INTERSECTION A	INTERSECTION B	TOTAL
1	654	TRAFFIC SIGNAL MASTER CONTROLLER	EACH	–	1	1
2	654	LOCAL TRAFFIC SIGNAL CONTROLLER ASSEMBLY TS2 TYPE 2 16 CHANNELS	EACH	1	–	1
3	654	STANDARD TRAFFIC SIGNAL HEAD TYPE 3-S-V MAST ARM MOUNTED WITH LED CONFIGURATION	EACH	8	6	14
4	654	STANDARD TRAFFIC SIGNAL HEAD TYPE 3-L-V MAST ARM MOUNTED WITH LED CONFIGURATION	EACH	1	1	2
5	654	STANDARD TRAFFIC SIGNAL HEAD TYPE 3-R-V MAST ARM MOUNTED WITH LED CONFIGURATION	EACH	–	1	1
6	654	PEDESTRIAN PUSH BUTTON DETECTOR	EACH	8	4	12
7	654	PEDESTRIAN SIGNAL HEAD TYPE P-18-16 COUNTDOWN LED CONFIGURATION	EACH	8	4	12
8	654	PEDESTRIAN SIGNAL POST 8 FEET	EACH	1	2	3
9	654	TRAFFIC SIGNAL SUPPORT-SINGLE MAST ARM TYPE 20', STEEL GALVANIZED	EACH	4	–	4
10	654	TRAFFIC SIGNAL SUPPORT-SINGLE MAST ARM TYPE 30', STEEL GALVANIZED	EACH	–	1	1
11	654	TRAFFIC SIGNAL SUPPORT-SINGLE MAST ARM TYPE 40', STEEL GALVANIZED	EACH	–	2	2
12	654	VIDEO DETECTION CAMERA	EACH	4	3	7
13	654	WIRELESS COMMUNICATION SYSTEM	LS	–	–	1
14	654	VIDEO COMMUNICATION MODULE	EACH	–	–	1
15	654	P.V.C. CONDUIT 4" DIAMETER	LnM	570	520	1,090
16	654	P.V.C. CONDUIT 2" DIAMETER	LnM	420	300	720
17	654	CONCRETE PULL BOX 30"X30"	EACH	9	7	16
18	654	ELECTRICAL CONDUCTOR NO. 14 RHH AWG. 3C STRANDED FOR PUSH BUTTONS	LnM	350	110	460
19	654	ELECTRICAL CONDUCTOR NO. 14 RHH AWG. 4C FOR PEDESTRIAN SIGNAL HEADS TYPE P-18-16	LnM	360	120	480
20	654	ELECTRICAL CONDUCTOR NO. 14 RHH AWG. 5C FOR TRAFFIC SIGNALS	LnM	410	520	930
21	654	CAMERA SUPPORT POLE FOR MOUNTING BRACKETS	EACH	4	3	7
22	654	VIDEO IMAGE PROCESSOR	EACH	4	3	7
23	654	VIDEO DETECTION SYSTEM PROGRAM & SOFTWARE	EACH	–	–	1
24	654	SURGE SUPPRESSOR FOR VIDEO DETECTION CAMERAS	EACH	4	3	7
25	654	COAXIAL AND POWER CABLE	LnM	200	210	410
26	654	FIBER OPTIC CABLE SINGLE MODE 24 STRANDS	LnM	160	120	280
27	654	MULTI-GARD TYPE PVL CONDUIT FOR FIBER OPTIC CABLE 24 STRANDS	LnM	170	130	300
28	654	INVERTER/CHARGER/CONTROLLER	EACH	1	1	2
29	654	BATTERY	EACH	10	7	17
30	654	TRANSFER RELAY	EACH	1	1	2
31	654	MANUAL BY PASS SWITCH	EACH	1	1	2
32	654	TSBBS CABINET	LnM	1	1	2

LEGEND:

- (2) TRAFFIC SIGNAL HEAD TYPE 3-L-V (NUMBER IN CIRCLE INDICATES SIGNAL NUMBER)
- (2) TRAFFIC SIGNAL HEAD TYPE 3-S-V (NUMBER IN CIRCLE INDICATES SIGNAL NUMBER)
- (2) EXISTING TRAFFIC SIGNAL HEAD
- MAST ARM ASSEMBLY AND POLE (USED FOR SPANS UP TO 45 FT.)
- EXISTING MAST ARM ASSEMBLY AND POLE
- NEW 30"X30" PULL BOX TO BE INSTALLED
- EXISTING PULL BOX
- PVC CONDUIT IN TRENCH WITH PULL BOX (4" DIA. UNLESS SHOWN OTHERWISE)
- 60' DISTANCE FROM STOP LINE TO DETECTOR (METERS)
- (4) VIRTUAL SENSOR, PULSE MODE
- (4) VIRTUAL SENSOR, PRESENCE MODE
- (7) PREFORMED LOOP DETECTOR (6' X 40')
- PROPOSED VIDEO CAMERA
- PB-5 PEDESTRIAN PUSH BUTTON
- P-9 PEDESTRIAN SIGNAL HEAD P-9
- M.C. TRAFFIC SIGNAL MASTER CONTROLLER

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

SEGMENT EAST OF PR 18
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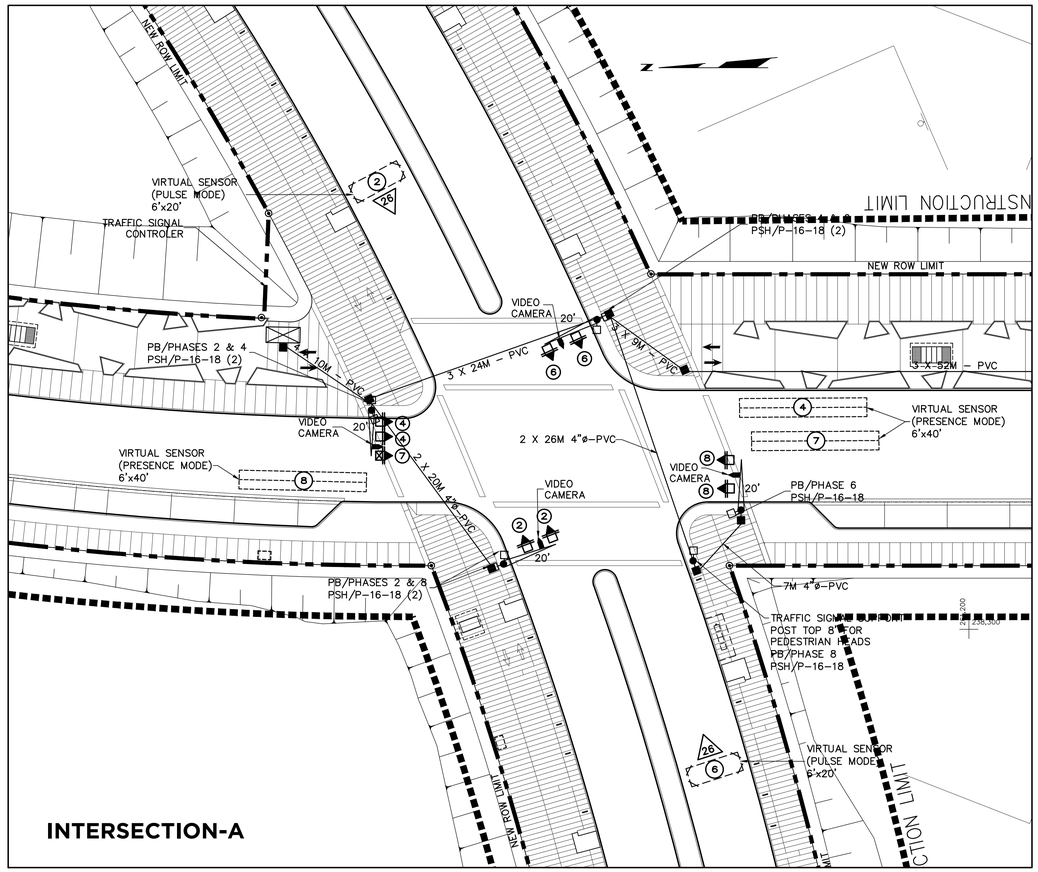
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

TRAFFIC SIGNAL SYSTEM PLAN

DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

TSS-1

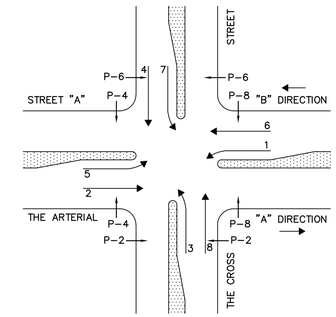


INTERSECTION-A

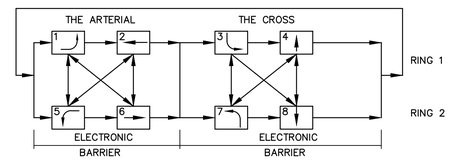
SIGNAL TIMING DIAGRAM

SIGNAL DISPLAY	SIGNAL NUMBER	DISPLAY	REMARKS
	2 6 4 8		STANDARD TRAFFIC SIGNAL HEAD TYPE 3-S-V WITH TUNNEL VISORS PLUS BACKPLATES, MAST ARM MOUNTED
	7		STANDARD TRAFFIC SIGNAL HEAD TYPE 3-L-V WITH TUNNEL VISORS PLUS BACKPLATES, MAST ARM MOUNTED
	PB-2 PB-4 PB-6 PB-8		TYPE P-12 (SEE PRHTA STANDARD DRAWINGS SHEETS TRSI/ 4 OF 40)

PHASE NUMBERING SYSTEM



PHASE SEQUENCE FOR DUAL-RING CONTROLLER



NOTES:

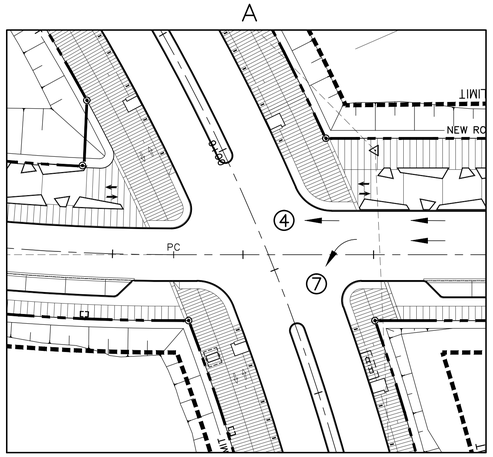
1. WHENEVER A GIVEN PHASE IS NOT PROGRAMMED INTO THE ORIGINAL INTERSECTIONS PHASE SEQUENCE, THE CONTROLLER SHALL BE PROVIDED WITH AN 8-PHASE SEQUENCE AS SHOWN. HOWEVER, RESISTING LOADS SHALL BE PLACED AT THE SIGNAL OUTPUT STAGE IN-LIEU OF PHASE LAMPS. ALL LOAD SWITCHES SHALL BE PROVIDED.
2. WHENEVER A PEDESTRIAN PUSHBUTTON PHASE IS PROGRAMMED BUT NO PEDESTRIAN SIGNALS ARE PROVIDED, SUCH PHASE SHALL BE ATTAINED THROUGH THE PROCEDURE OUTLINED IN NOTE 1. ABOVE AND OPERATED WITH ITS CORRESPONDENT CONCURRENT PHASE.
3. ALL NEMA STANDARD COMPONENTS SHALL BE PROVIDED AS PER LATEST NEMA RELEASE.
4. A TIME DATA COORDINATOR SHALL BE PROVIDED AS PART OF THE CONTROLLER, COMPLETELY WIRED TO IT, AND WITH THE PROGRAMMING CAPABILITIES AS PER SPECIFICATIONS.

SIGNAL TIMING DIAGRAM

PHASE	DETECTOR NUMBER	SIGNAL NUMBER	TIME (SECONDS) INITIAL	EXTENSION	YELLOW	ALL-RED	MAXIMUM	MINIMUM *	CRUCE	FLASHING NO-CRUCE	FLASHING OPERATION
1											
2	2	2	10	3	3	1	65				Y
3											
4	4	4	7	3	3	1	36				R
5											
6	6	6	10	3	3	1	65				Y
7	7	7	7	3	1	2	17				OFF
8	8	8	7	3	3	1	17				R
OVERLAP-A											
OVERLAP-B											
OVERLAP-C											
OVERLAP-D											
PEDESTRIAN-2									3	5	
PEDESTRIAN-4									5	10	
PEDESTRIAN-6									4	8	
PEDESTRIAN-8									5	10	

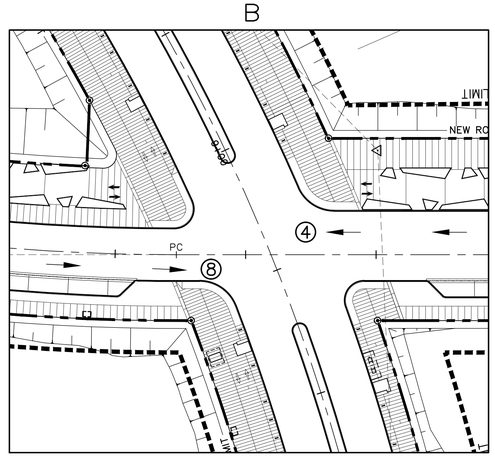
* - NOT PROGRAMMED. TO BE PROVIDED AND RESERVED FOR FUTURE USE. SEE NOTES.
** - APPLIES ONLY TO NON-ACTUADED PHASES
*** - CONCURRENT WITH PHASE 2
**** - CONCURRENT WITH PHASE 4
***** - CONCURRENT WITH PHASE 6
****** - CONCURRENT WITH PHASE 8

A



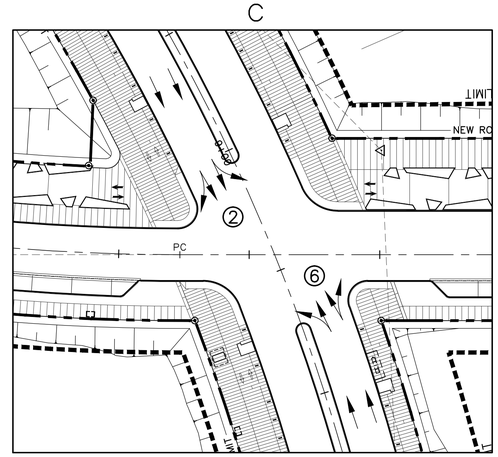
SET DETECTION AT 4 & 7

B



SET DETECTION AT 4 & 8

C



SET DETECTION AT 2 & 6

PHASE MOVEMENT DIAGRAM

TRAFFIC SIGNAL SYSTEM PLAN

0M 5M 10M 15M Scale= 1:250

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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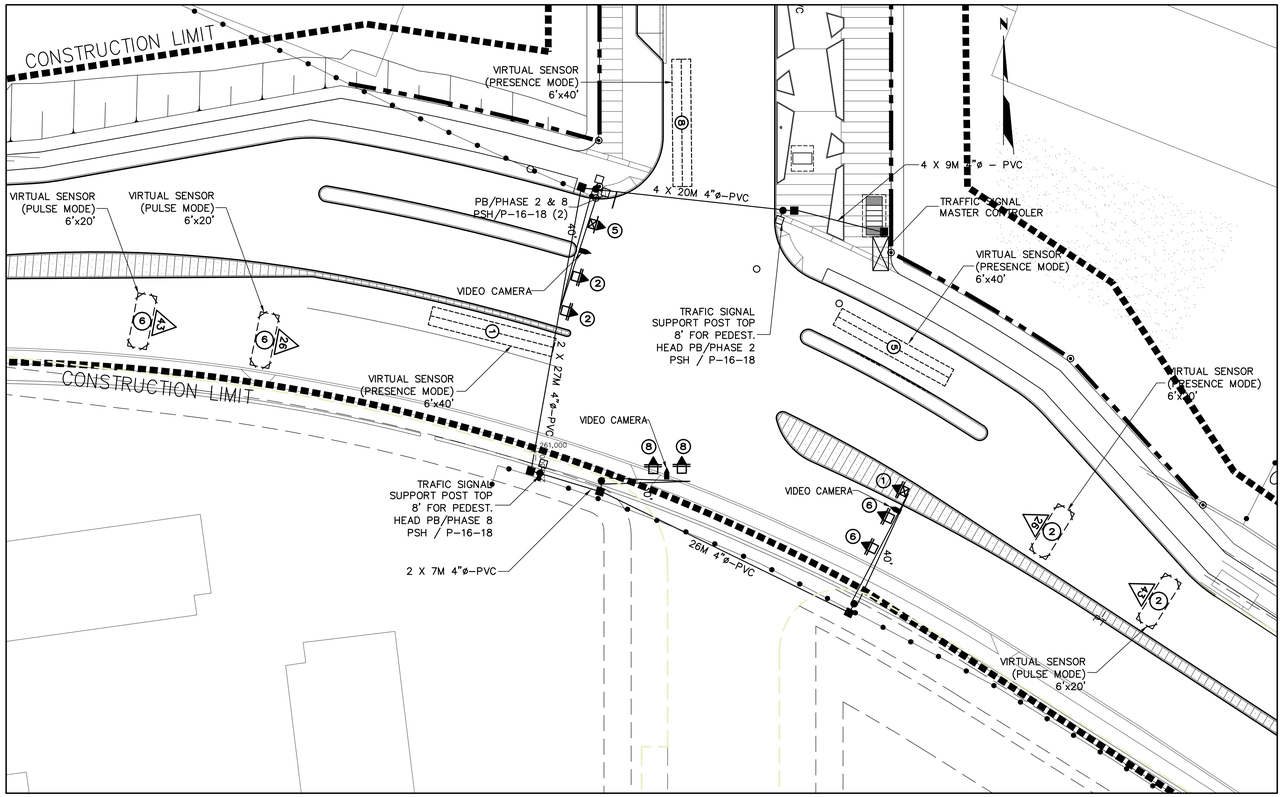
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

TRAFFIC SIGNAL SYSTEM PLAN

DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

TSS-2

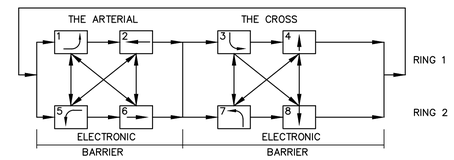


INTERSECTION-B

SIGNAL TIMING DIAGRAM

	SIGNAL NUMBER	DISPLAY	REMARKS
SIGNAL DISPLAY	2 6 8		STANDARD TRAFFIC SIGNAL HEAD TYPE 3-S-V WITH TUNNEL VISORS PLUS BACKPLATES, MAST ARM MOUNTED
	1		STANDARD TRAFFIC SIGNAL HEAD TYPE 3-L-V WITH TUNNEL VISORS PLUS BACKPLATES, MAST ARM MOUNTED
	5		STANDARD TRAFFIC SIGNAL HEAD TYPE 3-R-V WITH TUNNEL VISORS PLUS BACKPLATES, MAST ARM MOUNTED
	PB-2 PB-8		TYPE P-12 (SEE PRHTA STANDARD DRAWINGS SHEETS TRSI/ 4 OF 40)

PHASE SEQUENCE FOR DUAL-RING CONTROLLER



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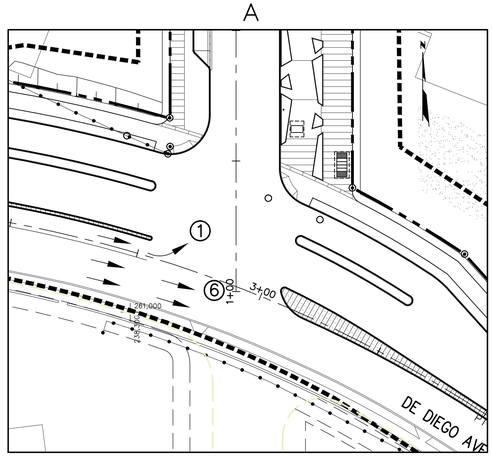
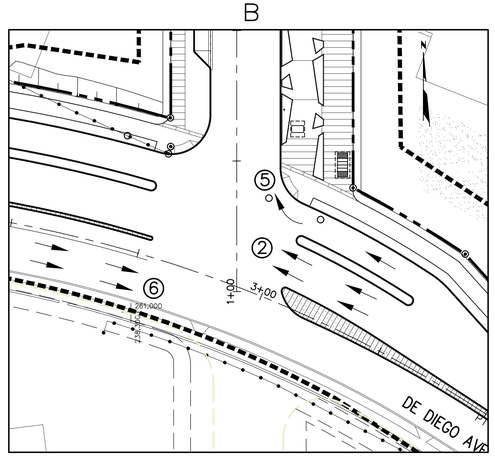
1. WHENEVER A GIVEN PHASE IS NOT PROGRAMMED INTO THE ORIGINAL INTERSECTIONS PHASE SEQUENCE, THE CONTROLLER SHALL BE PROVIDED WITH AN 8-PHASE SEQUENCE AS SHOWN. HOWEVER, RESISTING LOADS SHALL BE PLACED AT THE SIGNAL OUTPUT STAGE IN-LIEU OF PHASE LAMPS. ALL LOAD SWITCHES SHALL BE PROVIDED.
2. WHENEVER A PEDESTRIAN PUSHBUTTON PHASE IS PROGRAMMED BUT NO PEDESTRIAN SIGNALS ARE PROVIDED, SUCH PHASE SHALL BE ATTAINED THROUGH THE PROCEDURE OUTLINED IN NOTE 1. ABOVE AND OPERATED WITH ITS CORRESPONDENT CONCURRENT PHASE.
3. ALL NEMA STANDARD COMPONENTS SHALL BE PROVIDED AS PER LATEST NEMA RELEASE.
4. A TIME DATA COORDINATOR SHALL BE PROVIDED AS PART OF THE CONTROLLER, COMPLETELY WIRED TO IT, AND WITH THE PROGRAMMING CAPABILITIES AS PER SPECIFICATIONS.

A



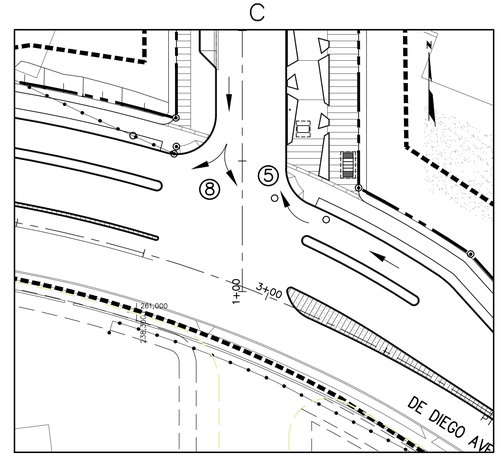
SET DETECTION AT 1 & 6

B



SET DETECTION AT 2, 5 & 6

C



SET DETECTION AT 5 & 8

P H A S E M O V E M E N T D I A G R A M

SIGNAL TIMING DIAGRAM

PHASE	DETECTOR NUMBER	SIGNAL NUMBER	TIME (SECONDS) INITIAL	EXTENSION	YELLOW	ALL-RED	MAXIMUM	MINIMUM *	CRUCE	FLASHING NO-CRUCE	FLASHING OPERATION
1	1	1	7	3	3	2	17				OFF
2	2	2	10	3	3	1	46				Y
3											
4											
5	5	5	7	3	3	2	17				OFF
6	6	6	10	3	3	1	65				Y
7											
8	8	8	7	3	3	1	22				R
OVERLAP-A											
OVERLAP-B											
OVERLAP-C											
OVERLAP-D											
PEDESTRIAN-2									4	8	
PEDESTRIAN-4											
PEDESTRIAN-6											
PEDESTRIAN-8									7	15	

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** - APPLIES ONLY TO NON-ACTUADED PHASES
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TRAFFIC SIGNAL SYSTEM PLAN

0M 5M 10M 15M Scale= 1:250

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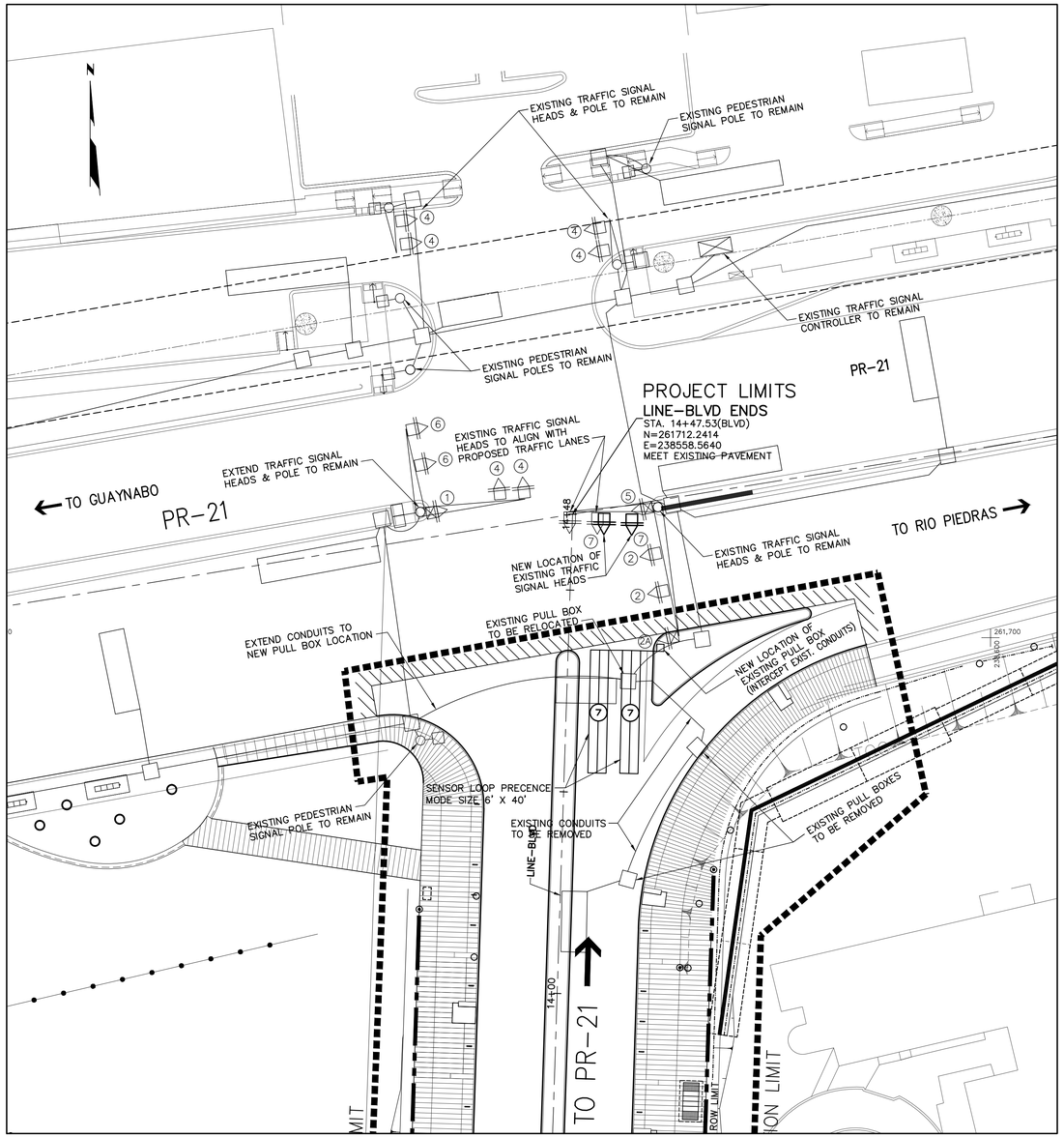
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

TRAFFIC SIGNAL SYSTEM PLAN

DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

TSS-3

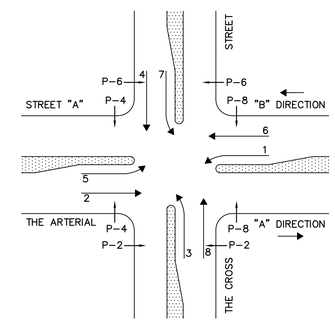


INTERSECTION-C

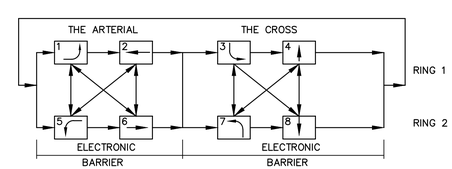
EXISTING SIGNAL TIMING DIAGRAM

SIGNAL DISPLAY	SIGNAL NUMBER	DISPLAY	REMARKS
	2 6 7 4	R Y G	EXISTING STANDARD TRAFFIC SIGNAL HEAD TYPE 3-S-V WITH TUNNEL VISORS PLUS BACKPLATES, MAST ARM MOUNTED
	1 5	R Y G	EXISTING STANDARD TRAFFIC SIGNAL HEAD TYPE 3-L-V WITH TUNNEL VISORS PLUS BACKPLATES, MAST ARM MOUNTED
	PB-4		EXISTING PEDESTRIAN SIGNAL HEADS

PHASE NUMBERING SYSTEM



PHASE SEQUENCE FOR DUAL-RING CONTROLLER



NOTES:

1. WHENEVER A GIVEN PHASE IS NOT PROGRAMMED INTO THE ORIGINAL INTERSECTIONS PHASE SEQUENCE, THE CONTROLLER SHALL BE PROVIDED WITH AN 8-PHASE SEQUENCE AS SHOWN. HOWEVER, RESISTING LOADS SHALL BE PLACED AT THE SIGNAL OUTPUT STAGE IN-LIEU OF PHASE LAMPS. ALL LOAD SWITCHES SHALL BE PROVIDED.
2. WHENEVER A PEDESTRIAN PUSHBUTTON PHASE IS PROGRAMMED BUT NO PEDESTRIAN SIGNALS ARE PROVIDED, SUCH PHASE SHALL BE ATTAINED THROUGH THE PROCEDURE OUTLINED IN NOTE 1. ABOVE AND OPERATED WITH ITS CORRESPONDENT CONCURRENT PHASE.
3. ALL NEMA STANDARD COMPONENTS SHALL BE PROVIDED AS PER LATEST NEMA RELEASE.
4. A TIME DATA COORDINATOR SHALL BE PROVIDED AS PART OF THE CONTROLLER, COMPLETELY WIRED TO IT, AND WITH THE PROGRAMMING CAPABILITIES AS PER SPECIFICATIONS.

TRAFFIC SIGNAL SYSTEM PLAN

0M 5M 10M 15M

Scale= 1:250

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

SEGMENT EAST OF PR 18
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TORO ARQUITECTOS
AVENIDA McLEARY 2004
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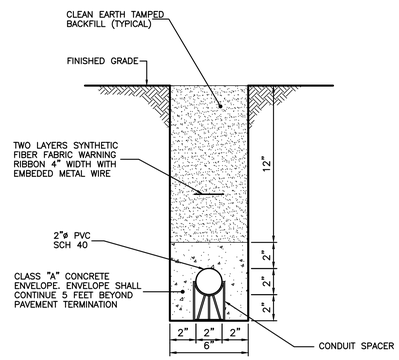
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

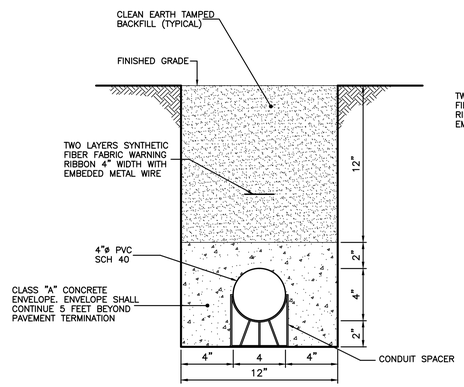
TRAFFIC SIGNAL SYSTEM PLAN

DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

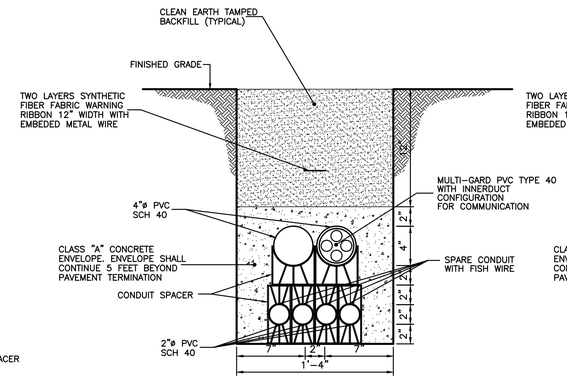
TSS-4



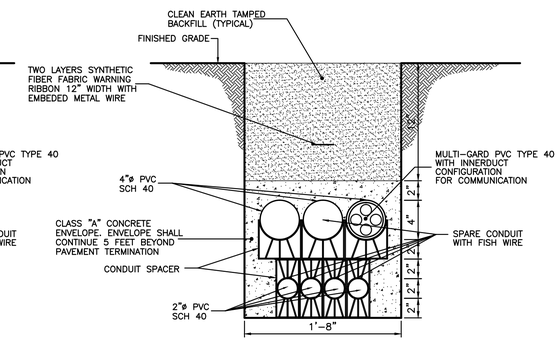
UNDERPAVEMENT (ROADWAY SURFACE) CROSSING

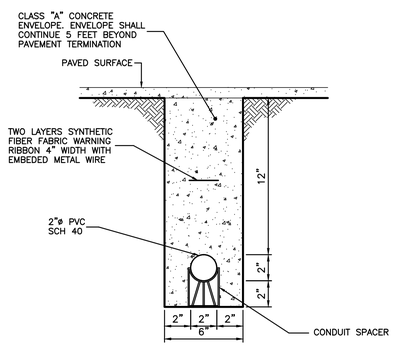


UNDERPAVEMENT (ROADWAY SURFACE) CROSSING

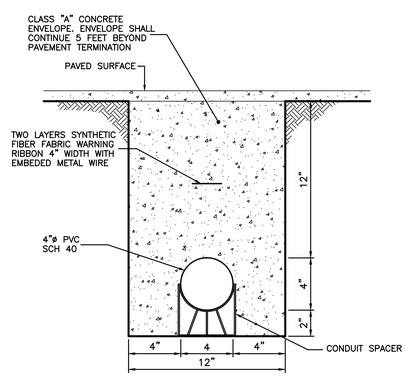


UNDERPAVEMENT (ROADWAY SURFACE) CROSSING

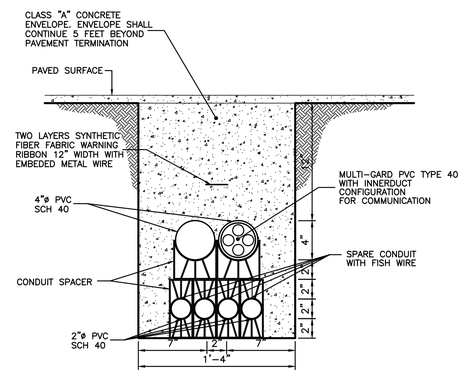




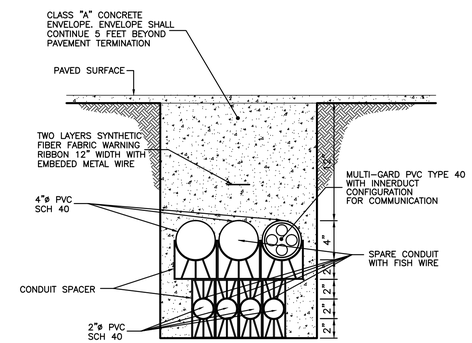
UNDERPAVEMENT (ROADWAY SURFACE) CROSSING



UNDERPAVEMENT (ROADWAY SURFACE) CROSSING



UNDERPAVEMENT (ROADWAY SURFACE) CROSSING



UNDERPAVEMENT (ROADWAY SURFACE) CROSSING

NOTES:

1. SPACER SPACING SHALL BE 1.5m MAXIMUM.
2. PAVED SURFACE CUTTING SHALL BE WITH DIAMOND BLADE OR ABRASION DISK SAWING WHEN INSTALLING CONDUITS IN EXISTING ROADS.
3. CONTRACTOR SHALL REPLACE PAVEMENT OR SIDEWALK WITH IDENTICAL MATERIAL AND THICKNESS WHERE CONDUIT ARE INSTALLED ON EXISTING PAVED SURFACE.
4. ALL TRENCH EXCAVATION SHALL COMPLY WITH SPECIFICATION 205–TRENCH EXCAVATION.
5. ALL BACK FILL UNDERNEATH PAVEMENT SHALL CONFORM TO THE REQUIREMENTS OF BORROW CLASS "B" AND COMPACTED IN ACCORDANCE WITH T–180D, AS A SUBSIDIARY OBLIGATION.
6. ALL CLASS "A" CONCRETE ENVELOPE SHALL BE SUBSIDIARY OBLIGATION OF P.V.C. CONDUITS.

SCIENCE CITY
URBAN INFRASTRUCTURE
PHASE II

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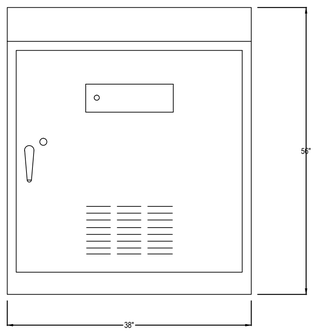
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

TRAFFIC SIGNAL SYSTEM TRENCH DETAILS

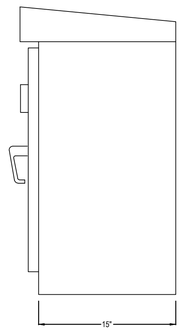
DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

TSS-5



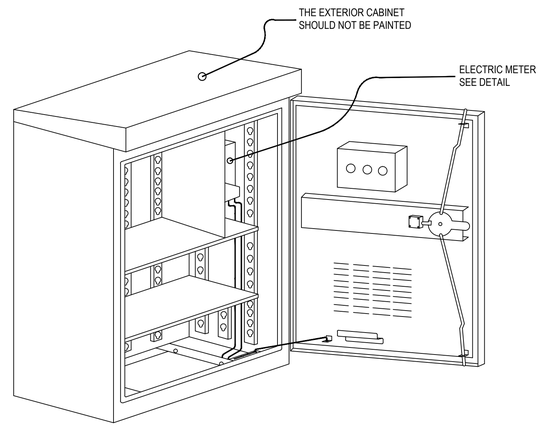
FRONT VIEW

NOT TO SCALE



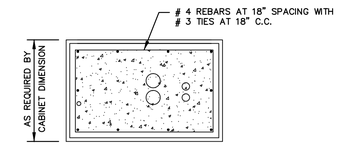
SIDE VIEW "A"

NOT TO SCALE



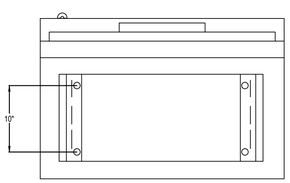
TRAFFIC CONTROL CABINET

NOT TO SCALE



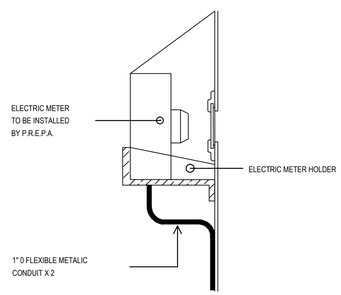
ANCHOR BOLTS FOR CONTROLLER CABINET AS PER MANUFACTURER'S TEMPLATE

NOT TO SCALE



BASE VIEW

NOT TO SCALE



ELECTRIC METER SECTION

NOT TO SCALE

IMPORTANT NOTES:

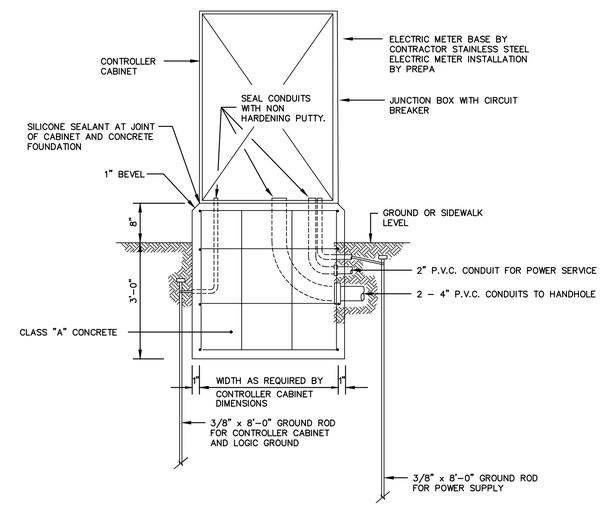
1. ALL MATERIALS FITTINGS AND ELECTRIC ACCESORIES SHALL COMPLY WITH THE LATEST NEMA - TS. STANDARDS AND THE STANDARD SPECIFICATION 645, HIGHWAY AND TRANSPORTATION AUTORITY, 2005 EDITION.

2. THIS STANDARD SHALL BE USED IN ALL D.T. & P.W. CONSTRUCTION PROJECT ON INSOLATED INTERSECTIONS LOCATED AT URBAN AREAS ISLANDWIDE.

3. THE PORTION OF THE CONCRETE FOUNDATION PROJECTING ABOVE SIDEWALK OR GRADE LEVEL SHALL BE PAINTED WITH AN APPROVED FEDERAL YELLOW POLYURETHANE PAINT.

4. ALL DIMENSIONS ARE IN INCHES.

5. DIMENSIONS SHOWN ARE THE MINIMUM TO BE PROVIDED FOR THIS TYPE OF CABINET.



TRAFFIC SIGNAL CONTROLLER FOUNDATION AND SERVICE INSTALLATION DETAIL

NOT TO SCALE

SCIENCE CITY
URBAN INFRASTRUCTURE
PHASE II

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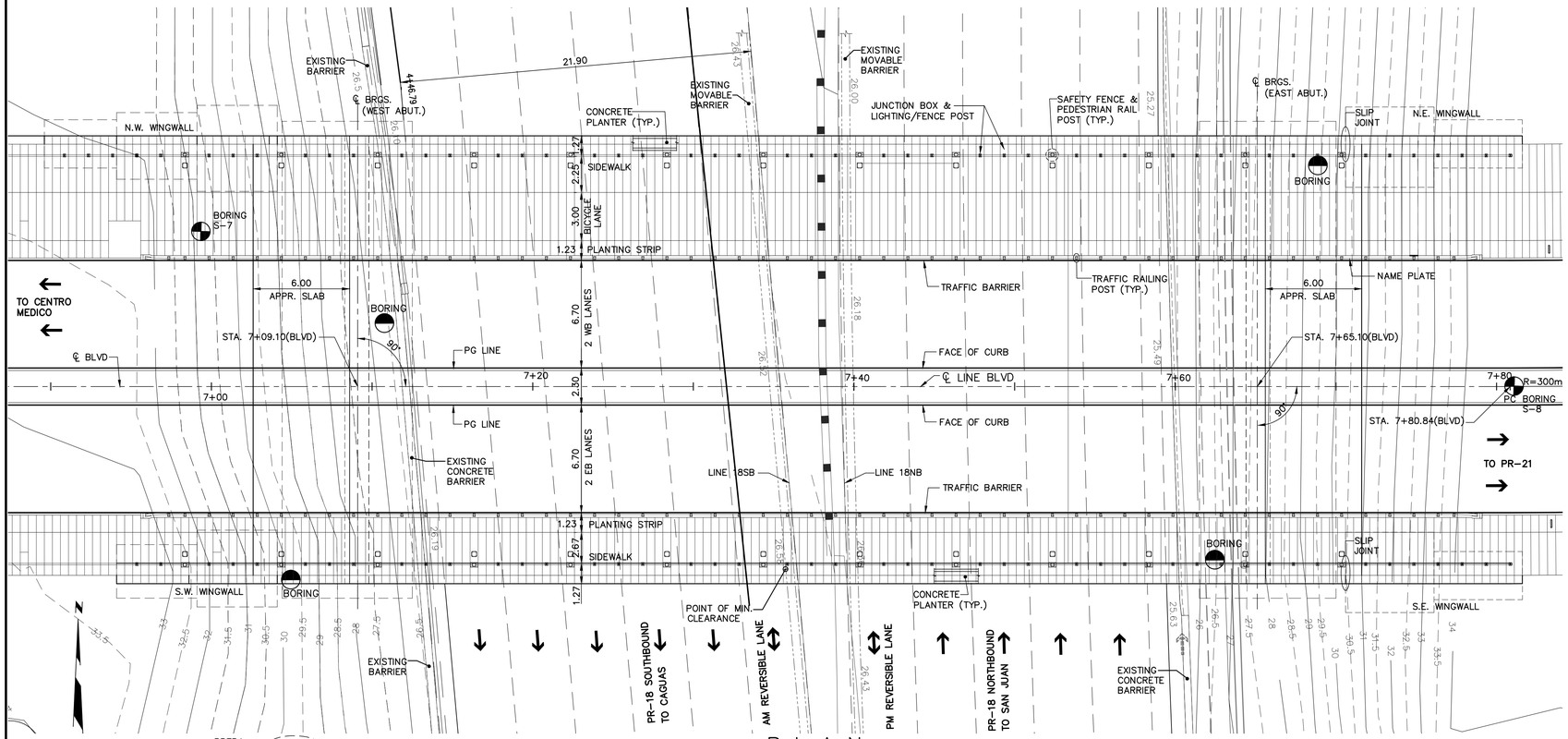
FINAL CONSTRUCTION
DOCUMENTS (100%)
MAY 13, 2013

TRAFFIC SIGNAL
SYSTEM DETAILS

DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

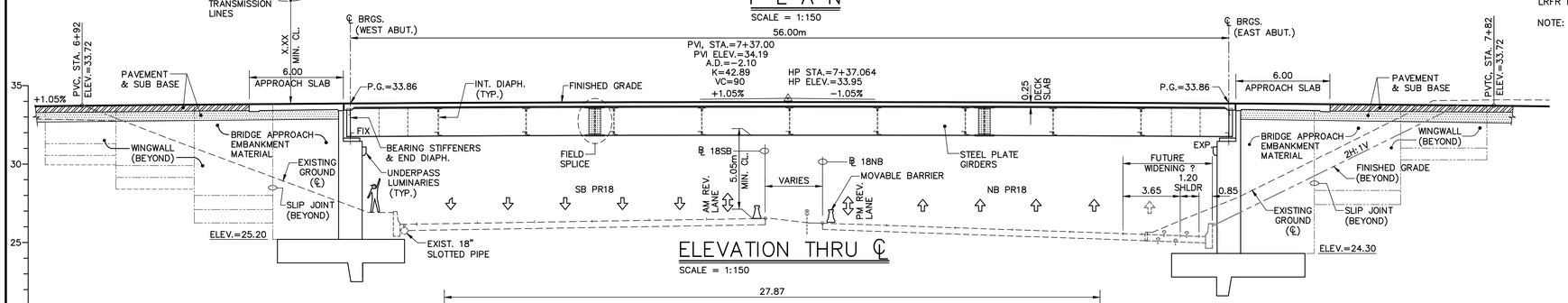
TSS-6

SINGLE SPAN, 56.00m. STEEL PLATE GIRDER BRIDGE



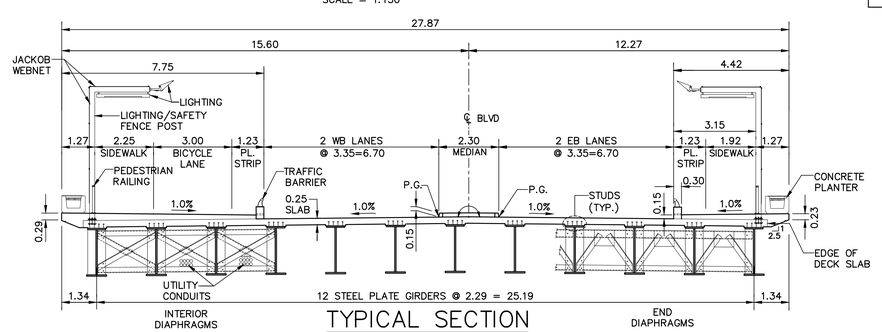
PLAN

SCALE = 1:150



ELEVATION THRU ℄

SCALE = 1:150



TYPICAL SECTION

SCALE = 1:100

BORING LEGEND:

(SEE SS SERIES SHTS. FOR BORING LOGS)

PRELIMINARY BORINGS PROVIDED BY SUELOS INC., OCT. 2009

FINAL BORINGS XXXXXXXXXXXXXXXXXXXX

DESIGN CRITERIA

SPECIFICATIONS:
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR HIGHWAY BRIDGES 5th EDITION, 2010.
P.R.H.T.A. STANDARD SPECIFICATION FOR ROAD & BRIDGE CONSTRUCTION–2005.
P.R.H.T.A. HIGHWAY DESIGN MANUAL.

LOADS:
LIVE LOAD....HL93
ADTT (AVG. DAILY TRUCK TRAFFIC, 2035)....
BLVD POSTED VELOCITY....25 MPH
TRAFFIC RAILING TEST LEVEL....TL2
PEDESTRIAN LIVE LOAD....75 psf
FUTURE WEARING SURFACE (TOPPING)....25 psf
INTEGRAL WEARING SURFACE (SACRIFICIAL).... 0.038m
SEISMIC LOADING DATA:
PEAK GROUND ACCELERATION, PGA....0.29
SITE CLASS....C
As....0.32
OPERATIONAL CLASSIFICATION....ESSENTIAL
ANALYSIS PROCEDURE....SINGLE SPAN
DESIGN WIND VELOCITY (FASTEST MILE OF WIND ASCE 7–88).....V30 = 125 MPH
DESIGN TEMPERATURE RANGE (MODERATE)....70° F
ABUTMENT BACKFILL PARAMETERS
ANGLE OF INTERNAL FRICTION, ø....
UNIT WEIGHT, γ ....

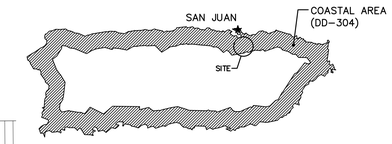
STRESSES:
SP–934 CLASS "V" (GENERAL USE) CONCRETE (DD–304).....f'c = 5,000 psi (28 DAYS) (SUBSTRUCTURES, SIDEWALKS & BARRIERS)
SP–934 CLASS "V" (BRIDGE DECK) CONCRETE (DD–304).....f'c = 5,000 psi (28 DAYS) (BRIDGE DECK & APPROACH SLABS, DIAPHRAGMS)
CONCRETE PERMEABILITY LEVEL (ALL).... 2
EXPOSURE CONDITIONS (DD–304)....COASTAL
REINFORCING STEEL (ASTM–A615, GR 60)....fy = 60,000 psi

STRUCTURAL STEEL
AASHTO M270 (ASTM A709) GRADE–HPS–70W....fy = 70 ksi (GIRDER FLANGES, WEBS, SPLICE MATERIAL & BEARING STIFFENERS)
AASHTO M270 (ASTM A709) GRADE 50....fy = 50 ksi (DIAPHRAGM ASSEMBLIES, INTERIOR STIFFENERS)

FOUNDATIONS
FACTORED GEOTECHNICAL RESISTANCES
STRENGTH BEARING PRESSURES, ø=0.45....ksf
SERVICE BEARING PRESSURES, ø=1.0 ....ksf
SUBGRADE FRICTION ANGLE ....xx deg

DESIGN METHOD....LRFD
LRFR LOAD RATING....

NOTE: DD = PRHTA DESIGN DIRECTIVE



BRIDGE BR3
BLVD. OVERPASS, HIGHWAY PR–18

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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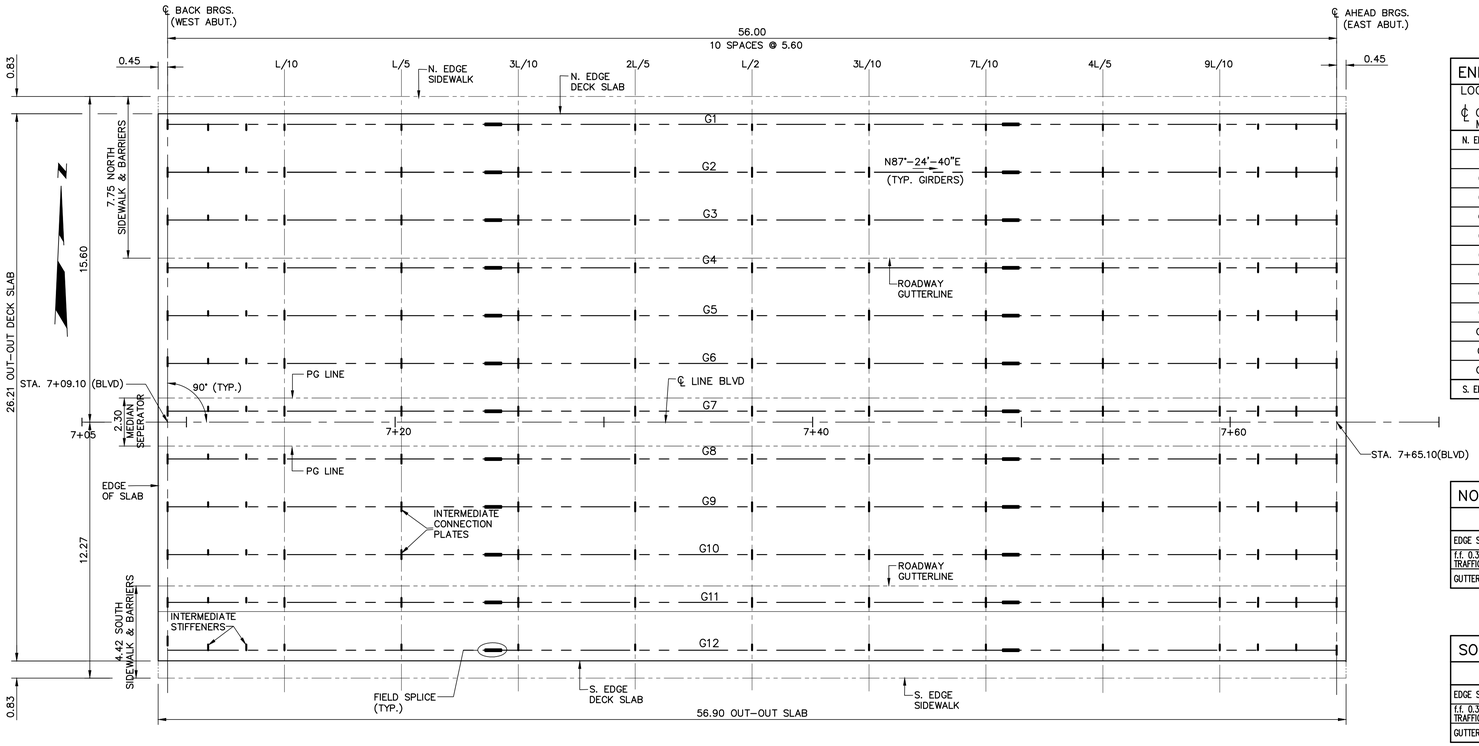
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

BRIDGE BR3 GENERAL PLAN & ELEVATION

DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

BR3/1

xx OF xx



FRAMING PLAN

SCALE = 1:125

END OF CONSTRUCTION (E.O.C.) DECK SLAB SCREED ELEVATIONS											
LOCATION OR ℄ GIRDER MKD.	LOCATION ALONG SPAN										
	BACK BRGS.	"L/10"	"L/5"	"3L/10"	"2L/5"	"L/2"	"3L/10"	"7L/10"	"4L/5"	"9L/10"	AHEAD BRGS.
N. EDGE SLAB	33.717	33.750	33.776	33.794	33.805	33.808	33.805	33.794	33.775	33.750	33.717
G1	33.727	33.760	33.786	33.804	33.815	33.818	33.815	33.804	33.785	33.760	33.727
G2	33.751	33.784	33.809	33.828	33.838	33.842	33.838	33.827	33.809	33.783	33.751
G3	33.775	33.807	33.833	33.851	33.862	33.866	33.862	33.851	33.833	33.807	33.774
G4	33.798	33.831	33.857	33.875	33.886	33.889	33.886	33.875	33.856	33.931	33.798
G5	33.822	33.855	33.880	33.899	33.910	33.913	33.910	33.899	33.880	33.855	33.822
G6	33.846	33.879	33.904	33.922	33.933	33.937	33.933	33.922	33.904	33.878	33.845
G7	33.869	33.902	33.928	33.946	33.957	33.961	33.957	33.946	33.928	33.902	33.869
G8	33.855	33.888	33.914	33.932	33.943	33.946	33.943	33.932	33.913	33.888	33.855
G9	33.832	33.864	33.890	33.908	33.919	33.923	33.919	33.908	33.890	33.864	33.831
G10	33.808	33.841	33.866	33.885	33.895	33.899	33.895	33.884	33.866	33.840	33.808
G11	33.784	33.817	33.843	33.861	33.872	33.875	33.872	33.861	33.842	33.817	33.784
G12	33.760	33.793	33.819	33.837	33.848	33.852	33.848	33.837	33.819	33.793	33.760
S. EDGE SLAB	33.750	33.783	33.809	33.827	33.838	33.842	33.838	33.827	33.809	33.783	33.750

NORTH SIDEWALK ELEVATIONS											
	BACK BRGS.	"L/10"	"L/5"	"3L/10"	"2L/5"	"L/2"	"3L/10"	"7L/10"	"4L/5"	"9L/10"	AHEAD BRGS.
EDGE SIDEWALK	34.032	34.065	34.090	34.109	34.120	34.123	34.120	34.109	34.090	34.065	34.032
f.f. 0.30m TRAFFIC BARRIER	33.949	33.982	34.007	34.025	34.036	34.040	34.036	34.025	34.007	33.981	33.948
GUTTER ELEVATION	33.796	33.829	33.854	33.872	33.883	33.887	33.883	33.872	33.854	33.828	33.795

SOUTH SIDEWALK ELEVATIONS											
	BACK BRGS.	"L/10"	"L/5"	"3L/10"	"2L/5"	"L/2"	"3L/10"	"7L/10"	"4L/5"	"9L/10"	AHEAD BRGS.
EDGE SIDEWALK	33.796	33.829	33.854	33.872	33.883	33.887	33.883	33.872	33.854	33.828	33.795
f.f. 0.30m TRAFFIC BARRIER	33.949	33.982	34.007	34.025	34.036	34.040	34.036	34.025	34.007	33.981	33.948
GUTTER ELEVATION	33.999	34.032	34.057	34.075	34.086	34.090	34.086	34.075	34.057	34.031	33.998

GENERAL NOTES:

- FOR CONSTRUCTION PHASING & MAINTENANCE OF TRAFFIC (MOT), SEE MOT SERIES SHEETS.
- CONCRETE WORK SHALL BE IN ACCORDANCE WITH SPECIAL PROVISION SP934. EXCEPT WHERE OTHERWISE INDICATED, ALL 90 DEG. CORNERS SHALL BE CHAMFERED 0.02m & CONSTRUCTION JOINTS INTENTIONALLY ROUGHENED (1/4 INCH AMPLITUDE, CLEAN & FREE OF LOOSE MATERIAL). UNLESS OTHERWISE INDICATED, ALL REBAR SHALL BE UNCOATED & PROVIDED WITH 0.05m MINIMUM CONCRETE CLEAR COVER.
- HANDLING & PLACING OF DECK & APPROACH SLAB CONCRETE TO BE IN ACCORDANCE WITH SUBSECTIONS 934-3.07 & 934-3.08 OF SPECIAL PROVISION SP934. CONCRETE DECK & APPROACH SLABS SHALL BE CURED BY THE "WATER METHOD" IN ACCORDANCE WITH ART. 934-3.20b OF SPECIAL PROVISION SP934.
- "THE CONSTRUCTION TOLERANCES FOR THE SLAB THICKNESS SHALL BE AS FOLLOWS: +0.025m, -0.000m. THE CONSTRUCTION TOLERANCES FOR THE SLAB REINFORCEMENT COVER SHALL BE AS FOLLOWS: +0.006m, -0.006m." (DD304)
- "PRIOR TO BEGINNING OF ANY CONCRETE PLACEMENT, A BRIDGE DECK PRE-PLACEMENT MEETING CONDUCTED BY THE ENGINEER SHALL BE HELD AT THE JOBSITE. THE CONTRACTOR SHALL INCLUDE REPRESENTATIVES OF ALL SUBCONTRACTORS AND SUPPLIERS INVOLVED IN THE CONCRETE PLACEMENT PROCESS. DURING THE MEETING THE CONTRACTOR SHALL SUBMIT A PRELIMINARY CONCRETE PLACEMENT PLAN TO BE DISCUSSED. IN THIS MEETING THE CONTRACTOR SHALL EXPLAIN ALL THE PHASES OF THE CONCRETE PLACEMENT OPERATIONS TO VERIFY ALL THE PARTS INVOLVED ARE PROPERLY PREPARED TO CONDUCT THE CONCRETING OPERATION. THE PRESENCE OF THE CONTRACTOR, SUPPLIER, ENGINEER & INSPECTOR TO THE MEETING SHALL BE MANDATORY. AFTER THE CONCRETE PRE-PLACEMENT MEETING, THE CONTRACTOR SHALL SUBMIT A WRITTEN FINAL DETAILED PROCEDURE (AT LEAST 3 DAYS BEFORE THE PROPOSED CONCRETING DATE) FOR THE PLACEMENT OF BRIDGE SLAB CONCRETE TO BE VERIFIED AND RECOMMENDED BY THE ENGINEER." (DD304)
- "THE DECK & APPROACH SLAB SURFACES SHALL BE SCARIFIED USING THE DIAMOND GRINDING METHOD FOR SMOOTHNESS. IN ORDER TO PERFORM THE SCARIFICATION, THE BRIDGE DECK WILL BE THICKENED. THE ADDITIONAL SLAB THICKNESS (FROM 0.0125 TO 0.025 METERS DEPENDING ON THE CONSTRUCTION TECHNIQUE) WILL BE REMOVED DURING THE SCARIFICATION PROCEDURE. THE FINAL SMOOTHNESS OF THE BRIDGE DECK SHALL MEET THE REQUIREMENTS OF SPECIAL PROVISION 680 - BRIDGE DECK SMOOTHNESS. ALL WORK & EQUIPMENT FOR SCARIFICATION SHALL BE CONSIDERED A SUBSIDIARY OBLIGATION COVERED UNDER CLASS V (BRIDGE DECK) CONCRETE." (DD 304)
- "IN ANY CONSTRUCTION OPERATION ON NEW OR EXISTING BRIDGE, THE CONTRACTOR SHALL ENSURE THAT ANY CONSTRUCTION LOADING AND STOCKPILED RAW MATERIALS ON A STRUCTURE DOES NOT OVERLOAD ITS MEMBERS." (DD308)
- REINFORCEMENT SHOP DRAWINGS SHALL BE IN METERS. BAR MARKS SHOULD NOT BE CHANGED. WHERE BARS ARE OF VARIABLE LENGTH, SUFFIXES CAN BE ADDED TO BAR MARKS.

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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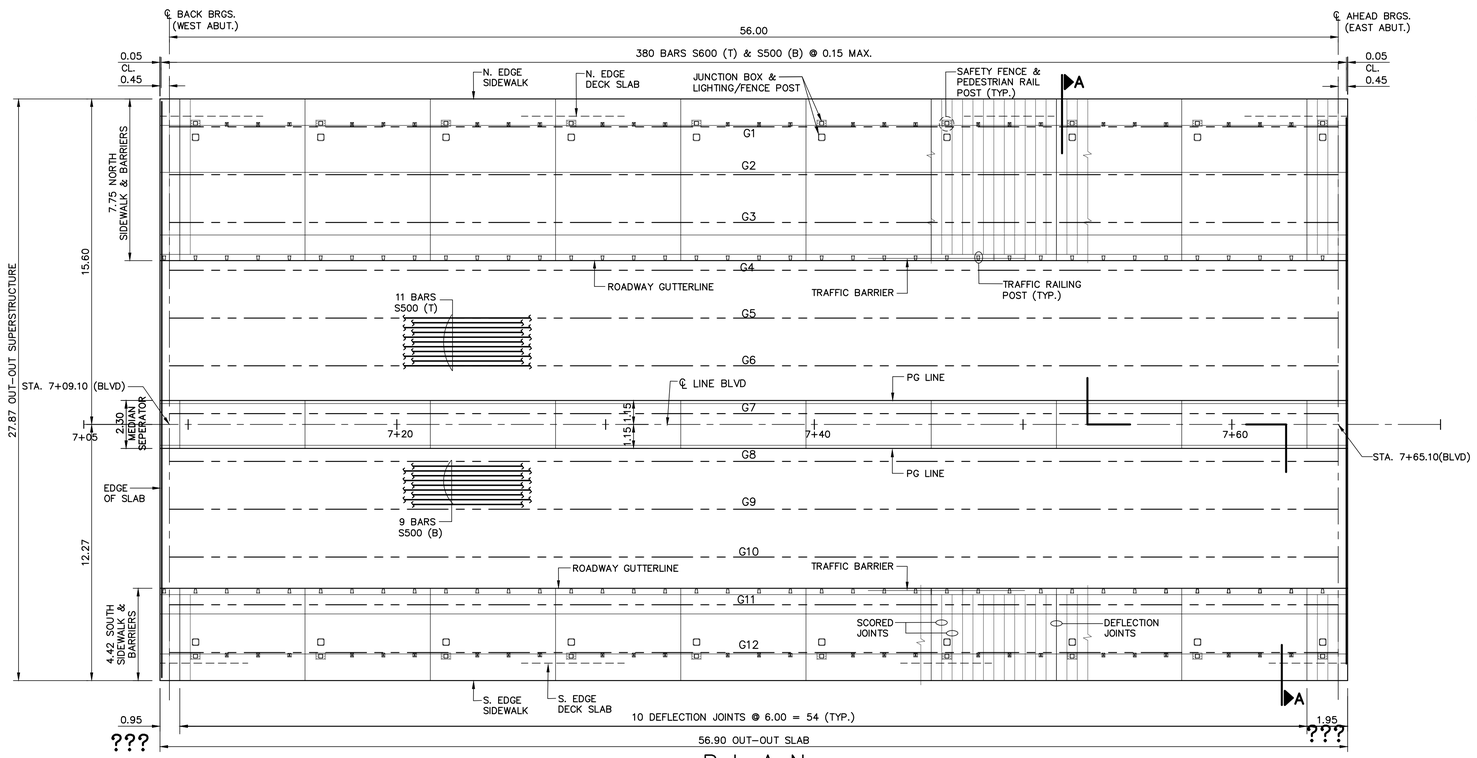
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

FRAMING PLAN, SCREED ELEVATIONS & GENERAL NOTES

DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

BR3/2

xx OF xx



PLAN

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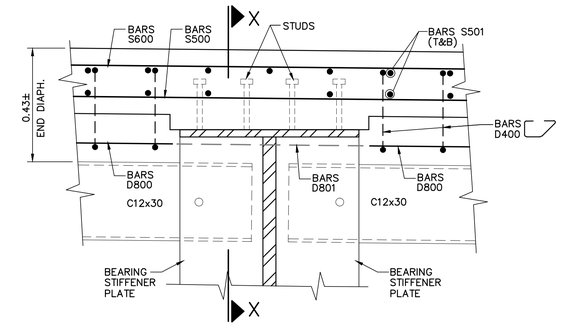
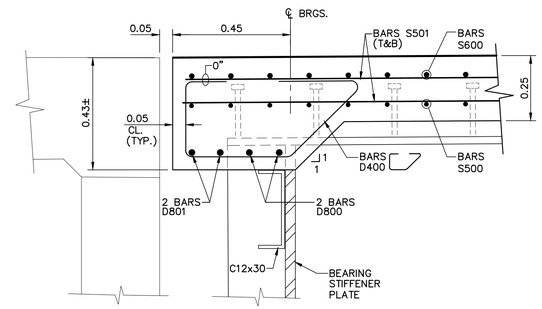


ELEVATION



SECTION X–X

END DIAPHRAGM STRUCTURAL DETAILS

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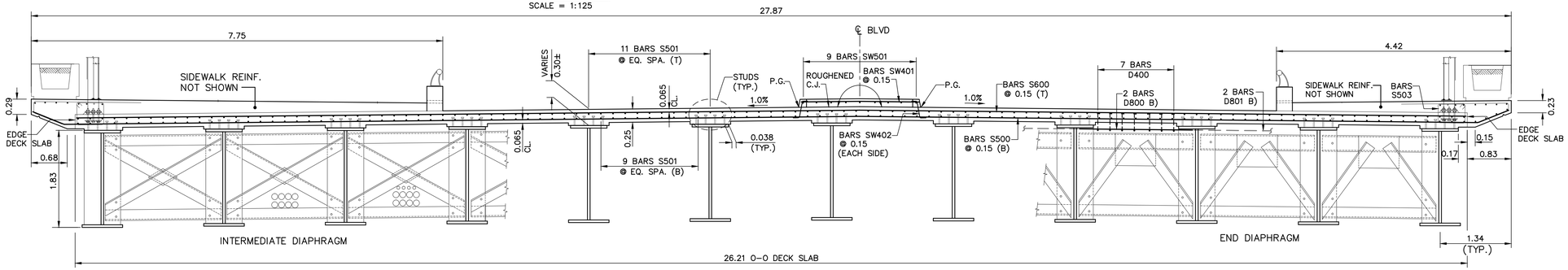

TYPICAL SECTION A–A

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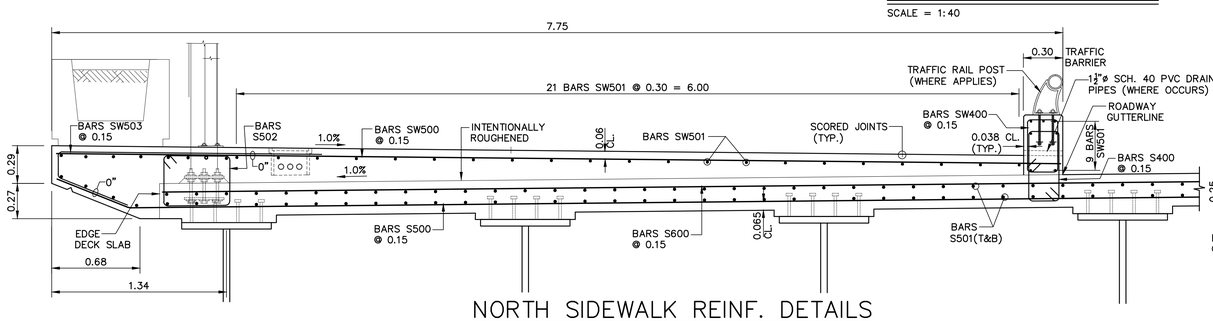
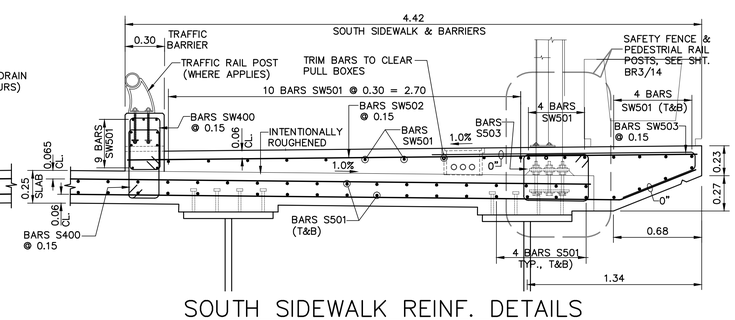


NORTH SIDEWALK REINF. DETAILS

SCALE = 1:20



SOUTH SIDEWALK REINF. DETAILS

SCALE = 1:20

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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

DECK SLAB STRUCTURAL DETAILS

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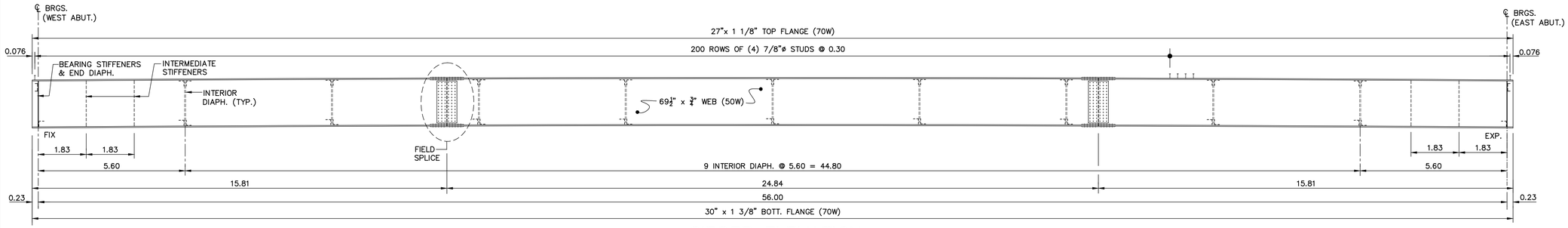

GIRDER ELEVATION

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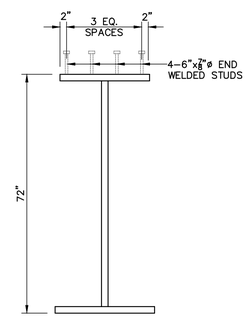
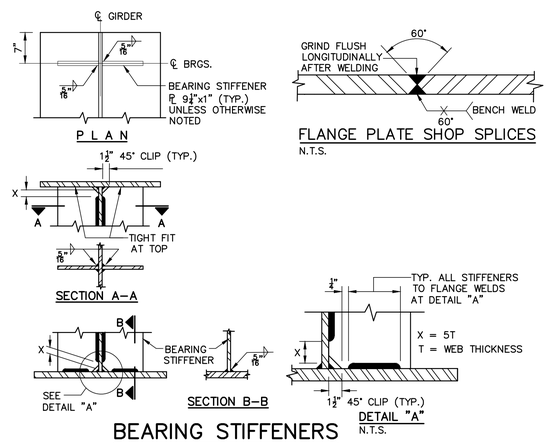


TYPICAL SECTION

SCALE = 1:20 (NEAR MIDSPAN)

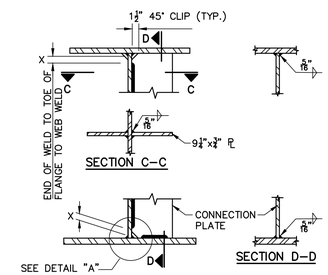


BEARING STIFFENERS

SCALE = 1:15

FLANGE PLATE SHOP SPLICES

N.T.S.



INTERMEDIATE CROSS FRAME CONNECTION PLATE

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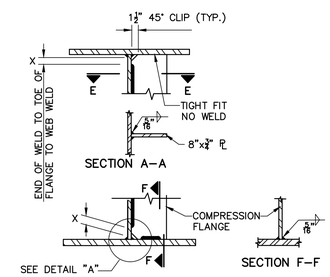
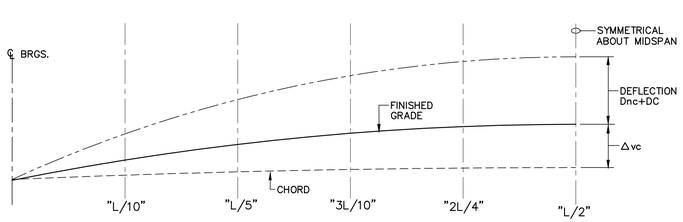


INTERMEDIATE STIFFENER

SCALE = 1:15



INDUCED CAMBER DIAGRAM (ALL GIRDERS)

N.T.S.

	"L/10"	"L/5"	"3L/10"	"2L/4"	"L/2"
Dnc 1	0.034	0.064	0.087	0.102	0.107
Dnc 2	0.065	0.122	0.167	0.196	0.206
Dc	0.019	0.035	0.048	0.056	0.059
subtotal	0.117	0.221	0.302	0.354	0.372
Δvc	0.033	0.058	0.077	0.088	0.091
TOTAL	0.150	0.279	0.379	0.442	0.463

INDUCED CAMBER NOTES

Dnc 1 NON-COMPOSITE SECTION DEFLECTION DUE TO WEIGHT OF STRUCTURAL STEEL GIRDERS & DIAPHRAGMS

Dnc 2 NON-COMPOSITE SECTION DEFLECTION DUE TO WEIGHT OF DECK SLAB & HAUNCH

Dc COMPOSITE SECTION DEFLECTION DUE TO WEIGHT OF SIDEWALKS, MEDIAN SEPERATOR, BARRIERS, UTILITIES, & FENCES.

Δvc VERTICAL CURVE CHORD OFFSET

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

SUPERSTRUCTURE DETAILS, PLATE GIRDERS

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DATE: JUNE-19-2012

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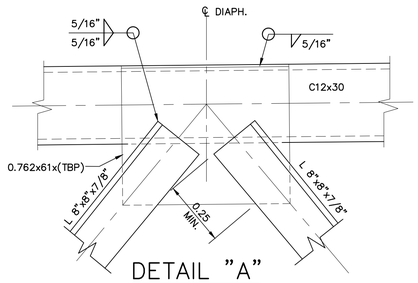
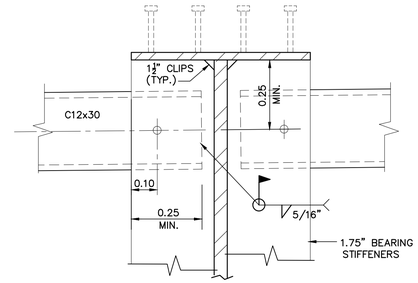


DETAIL "A"

SCALE = 1:10

(TBP)–THICKNESS BEARING STIFFENER



DETAIL "B"

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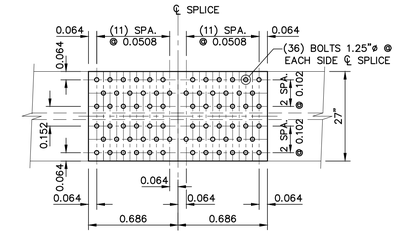
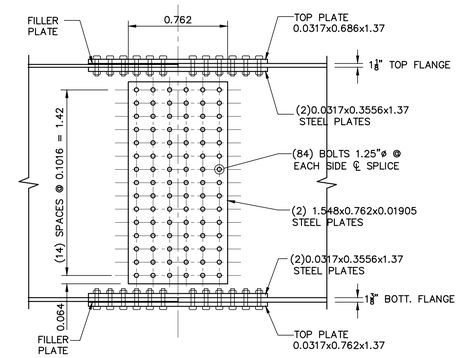


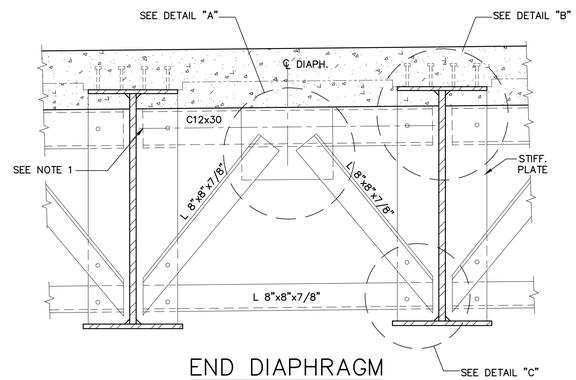
TOP FLANGE SPLICE

SCALE = 1:20



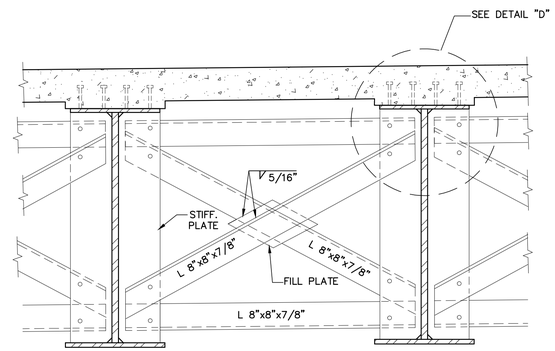
WEB SPLICE ELEVATION

SCALE = 1:20



END DIAPHRAGM

SCALE = 1:20



INTERMEDIATE DIAPHRAGM

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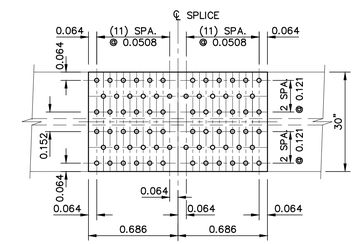

BOTTOM FLANGE SPLICE

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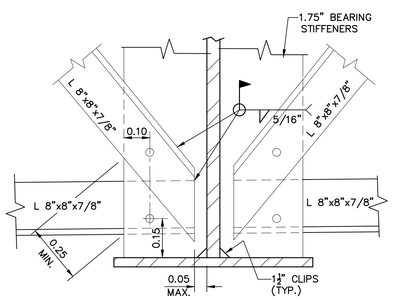

DETAIL "C"

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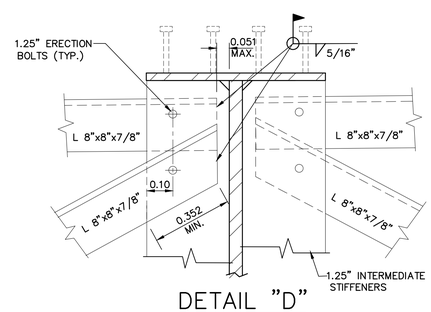

DETAIL "D"

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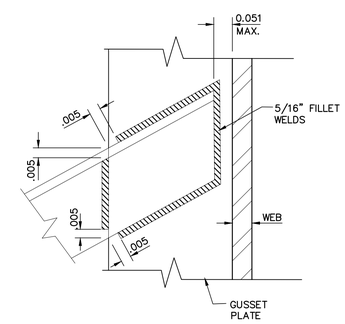

WELD DETAIL

SCALE = 1:10

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URBAN INFRASTRUCTURE
PHASE II

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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

TYPICAL DIAPHRAGM & SPLICE DETAILS

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DATE: JUNE-19-2012

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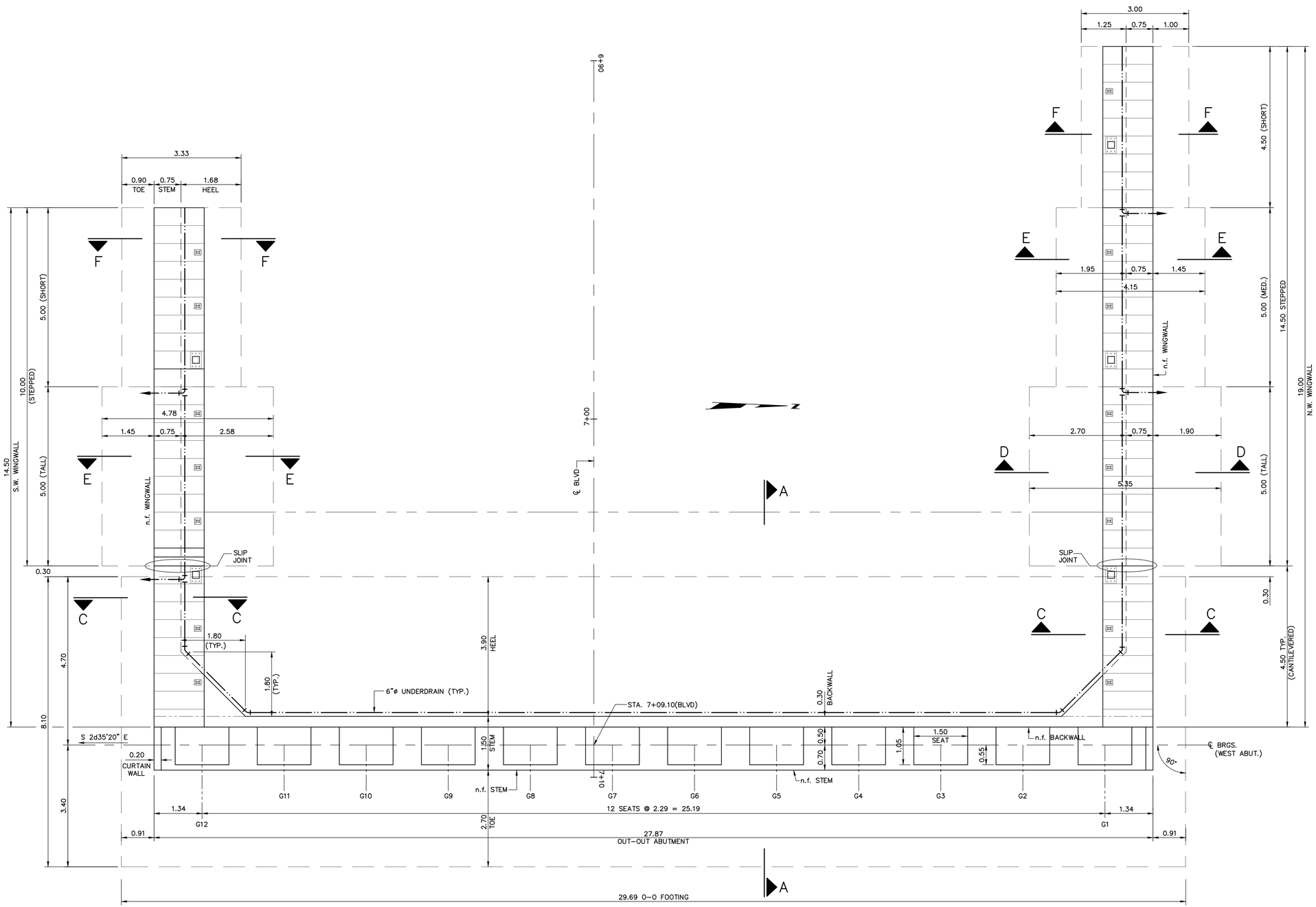

WEST ABUTMENT PLAN

SCALE = 1:50

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PHASE II

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MAY 13, 2013

WEST ABUTMENT STRUCTURAL DETAILS (PLAN)

DRAWN BY:
REVISED BY:
DATE: AUGUST-XX-2012

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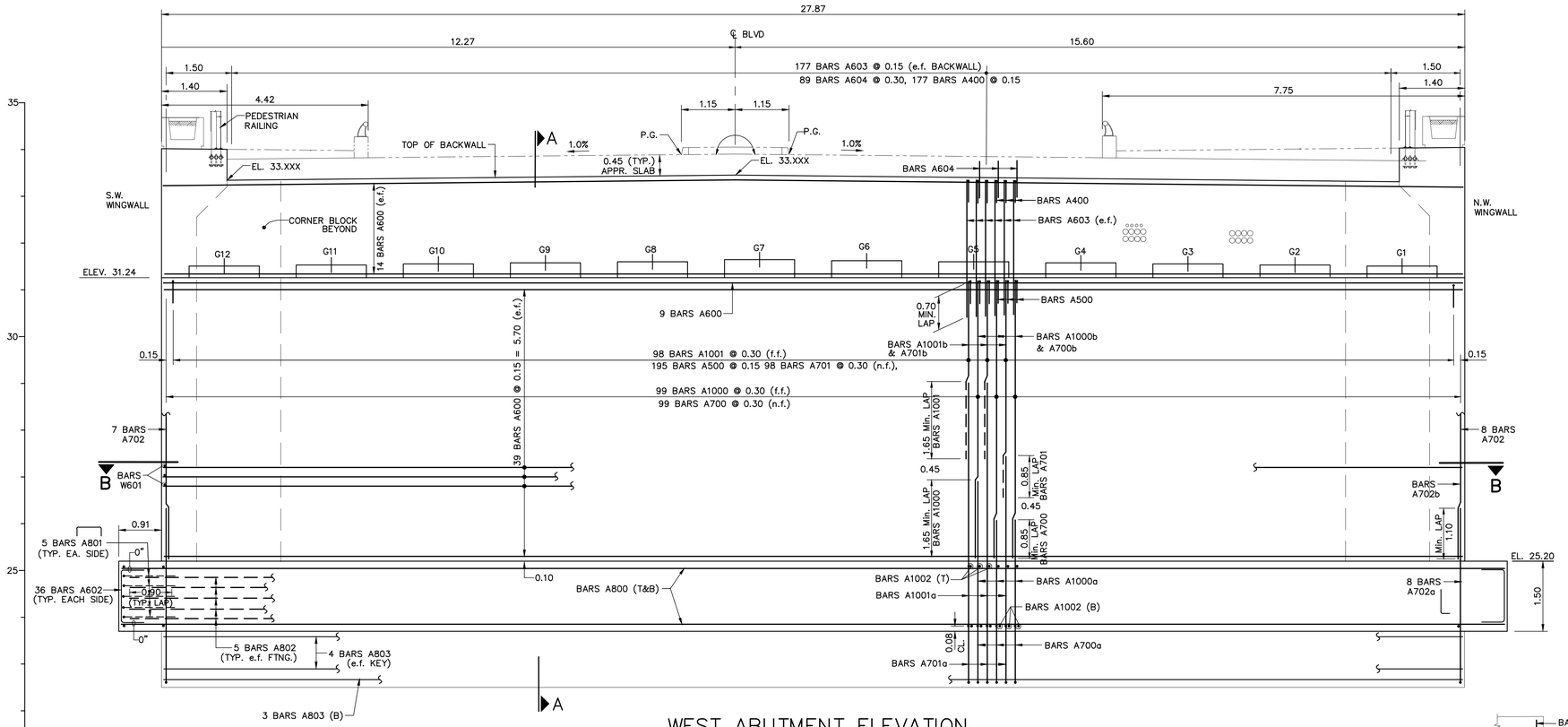
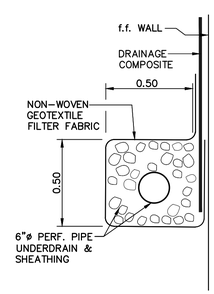


WEST ABUTMENT ELEVATION

SCALE = 1:50

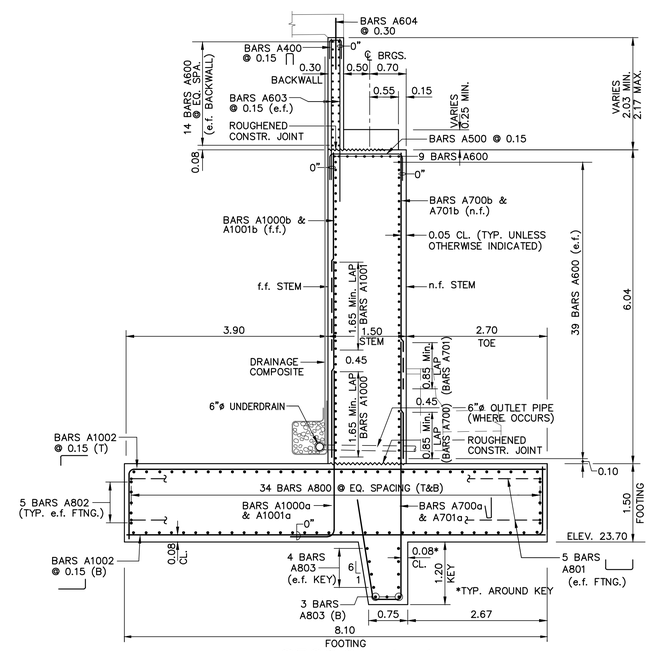
BEAM SEAT ELEVATIONS

SEAT MKD.	ELEVATION
G1	31.498
G2	31.522
G3	31.545
G4	31.568
G5	31.591
G6	31.614
G7	31.637
G8	31.624
G9	31.601
G10	31.578
G11	31.555
G12	31.532



UNDERDRAIN DETAIL

SCALE = 1:15



SECTION A–A

SCALE = 1:50

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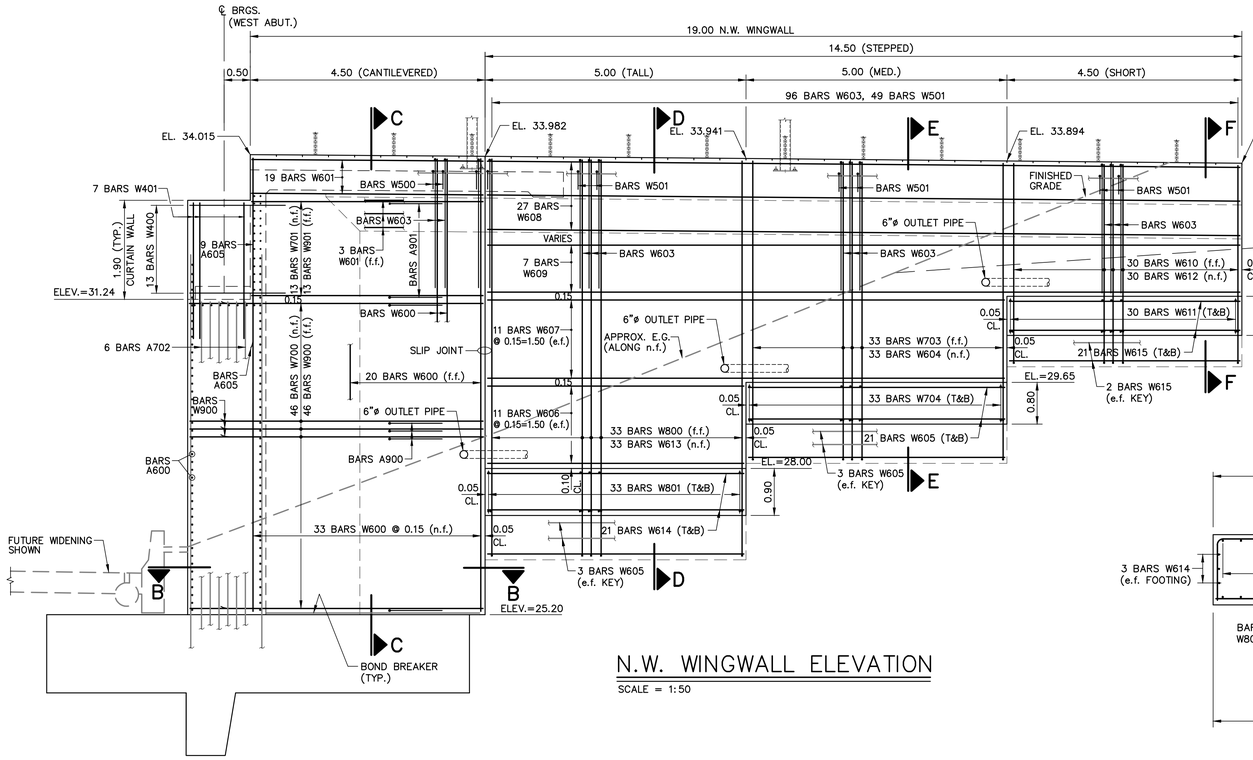
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

WEST ABUTMENT STRUCTURAL DETAILS (ELEVATION & SECTIONS)

DRAWN BY:
REVISED BY:
DATE: AUGUST-XX-2012

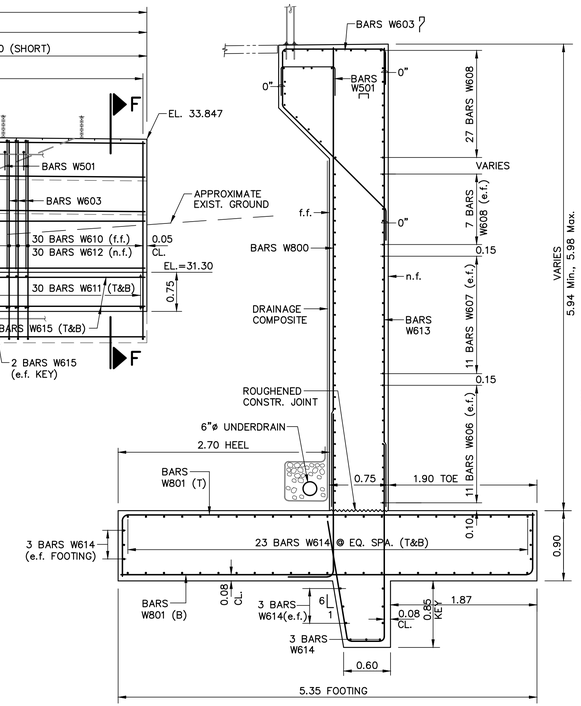
BR3/8

xx OF xx



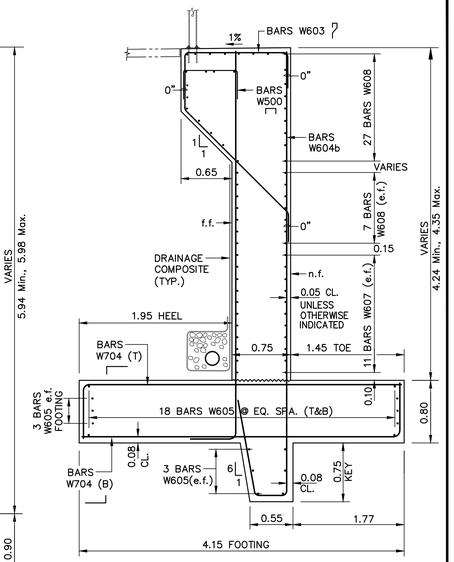
N.W. WINGWALL ELEVATION

SCALE = 1:50



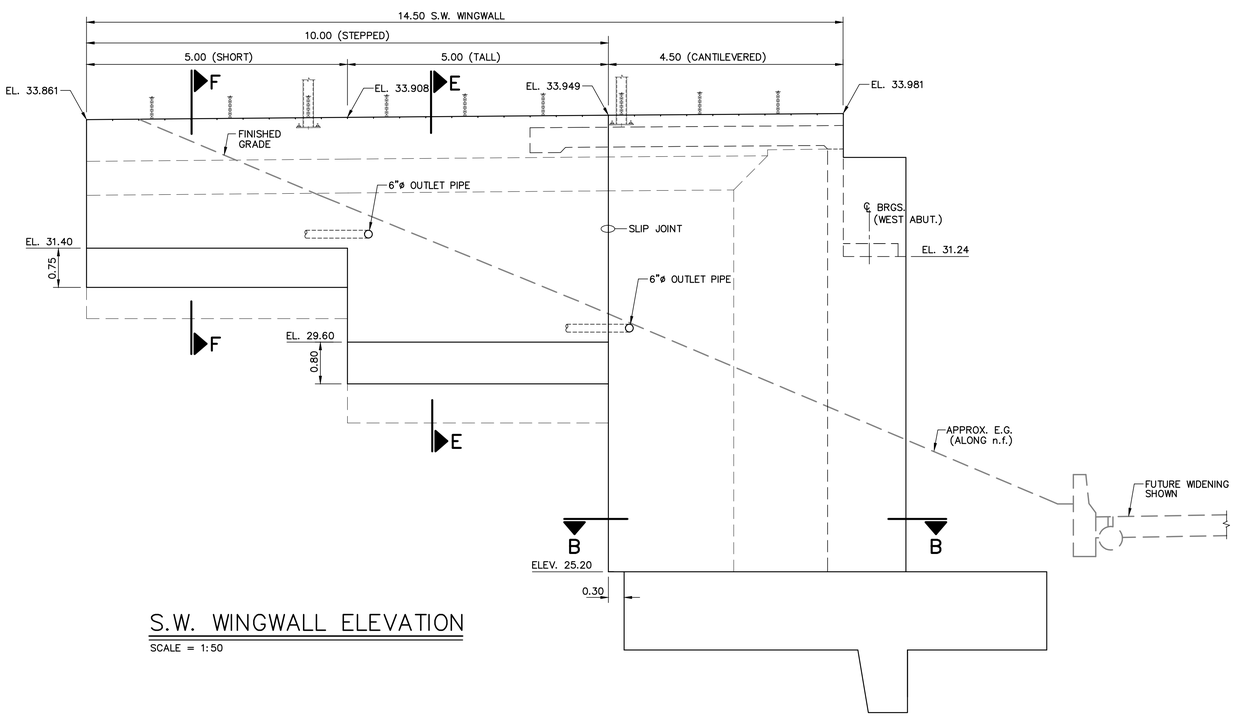
SECTION D–D

SCALE = 1:33.333



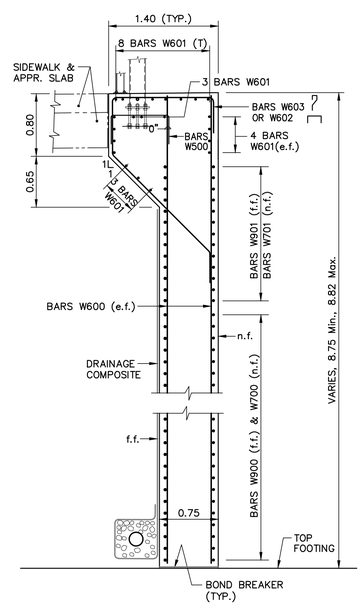
SECTION E–E

SCALE = 1:33.333



S.W. WINGWALL ELEVATION

SCALE = 1:50



SECTION C–C

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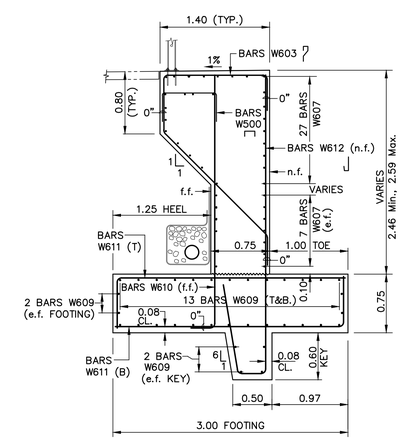

SECTION F–F

SCALE = 1:33.333

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

SEGMENT EAST OF PR 18
SAN JUAN, PUERTO RICO

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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

NW & SW WINGWALL STRUCTURAL DETAILS

DRAWN BY:
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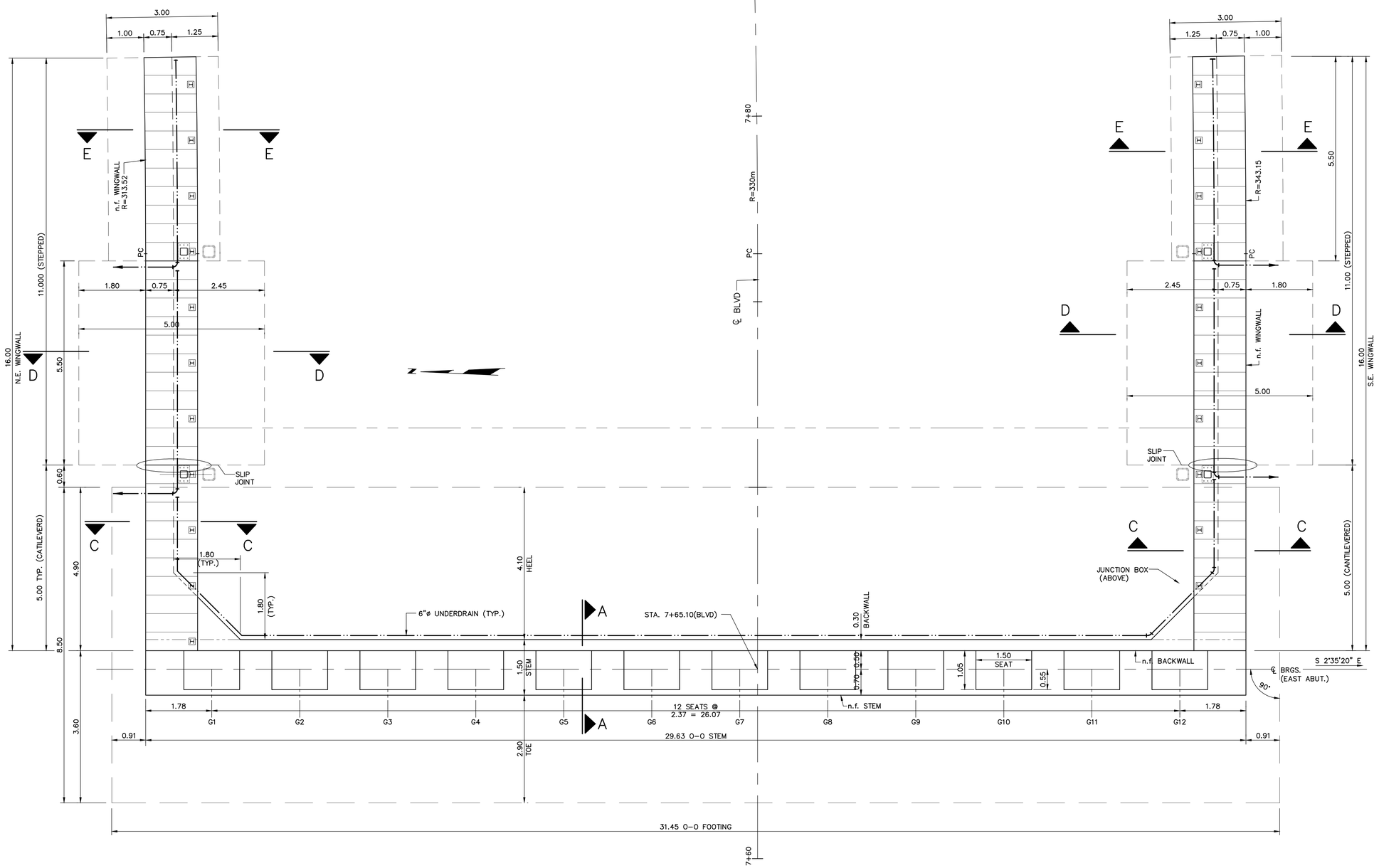
DATE: AUGUST-XX-2012

BR3/9

XX OF XX



EAST ABUTMENT PLAN

SCALE = 1:50

SCIENCE CITY
URBAN INFRASTRUCTURE
PHASE II

SEGMENT EAST OF PR 18
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FINAL CONSTRUCTION
DOCUMENTS (100%)
MAY 13, 2013

EAST ABUTMENT PLAN

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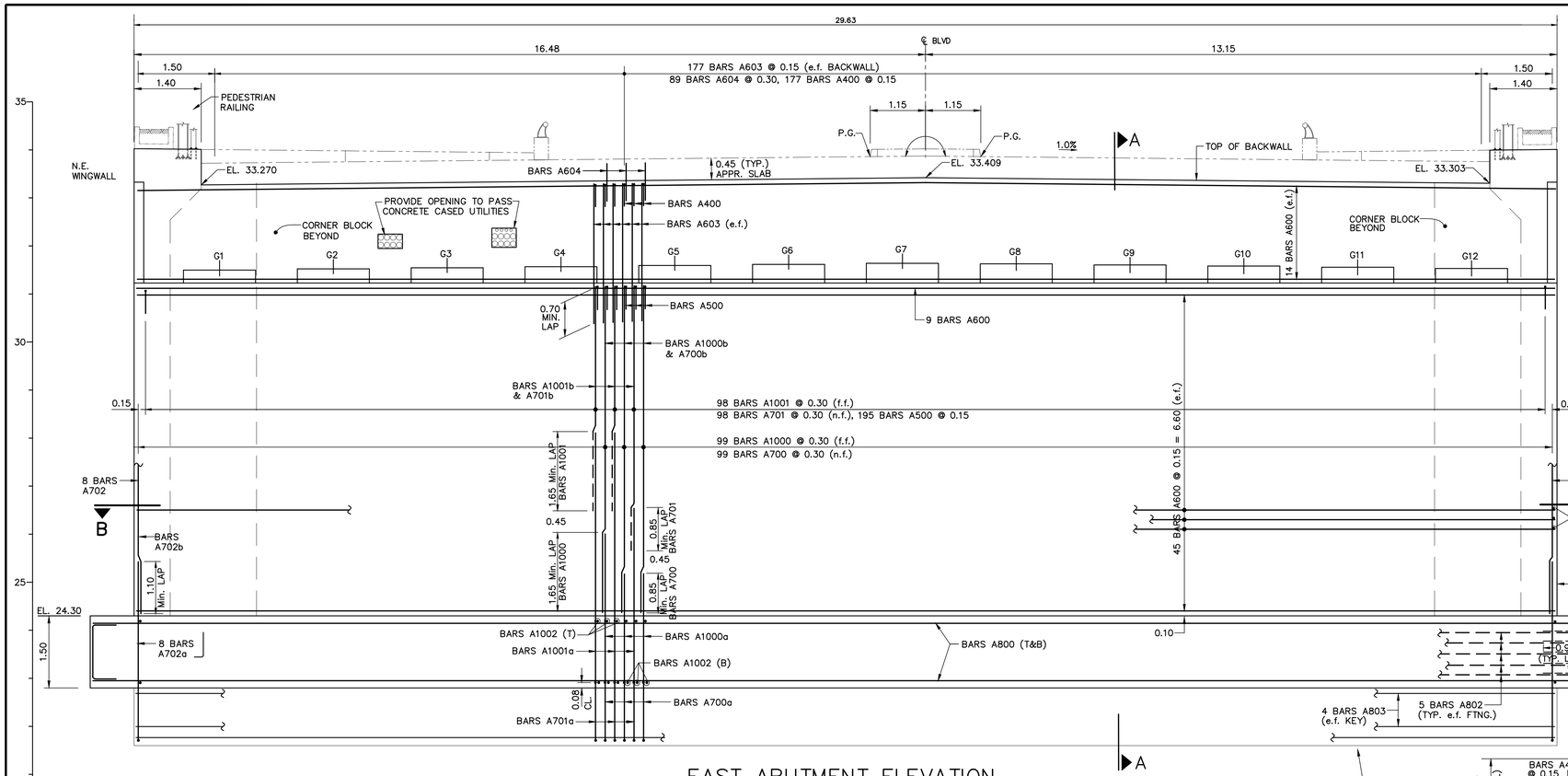
xx OF xx

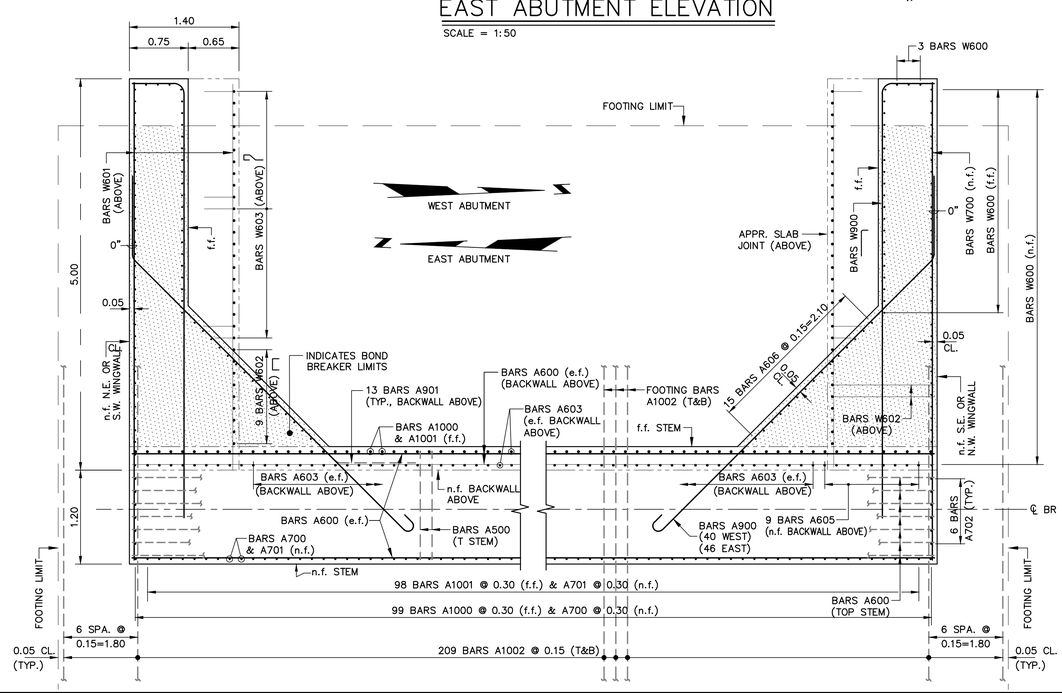


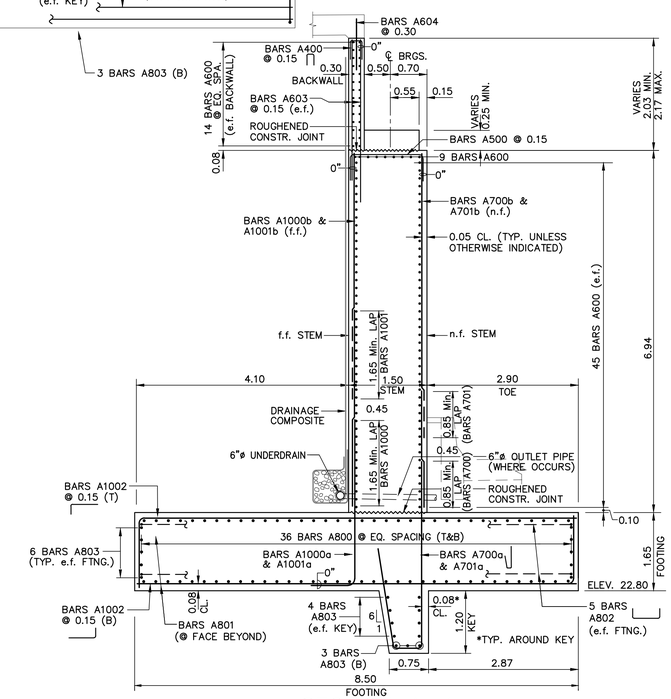
EAST ABUTMENT ELEVATION

SCALE = 1:50

BEAM SEAT ELEVATIONS

SEAT MKD.	ELEVATION
G1	31.498
G2	31.521
G3	31.544
G4	31.567
G5	31.591
G6	31.614
G7	31.637
G8	31.624
G9	31.601
G10	31.578
G11	31.555
G12	31.531





SECTION A–A

SCALE = 1:50

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

SEGMENT EAST OF PR 18
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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

EAST ABUTMENT STRUCTURAL DETAILS (ELEVATION & SECTIONS)

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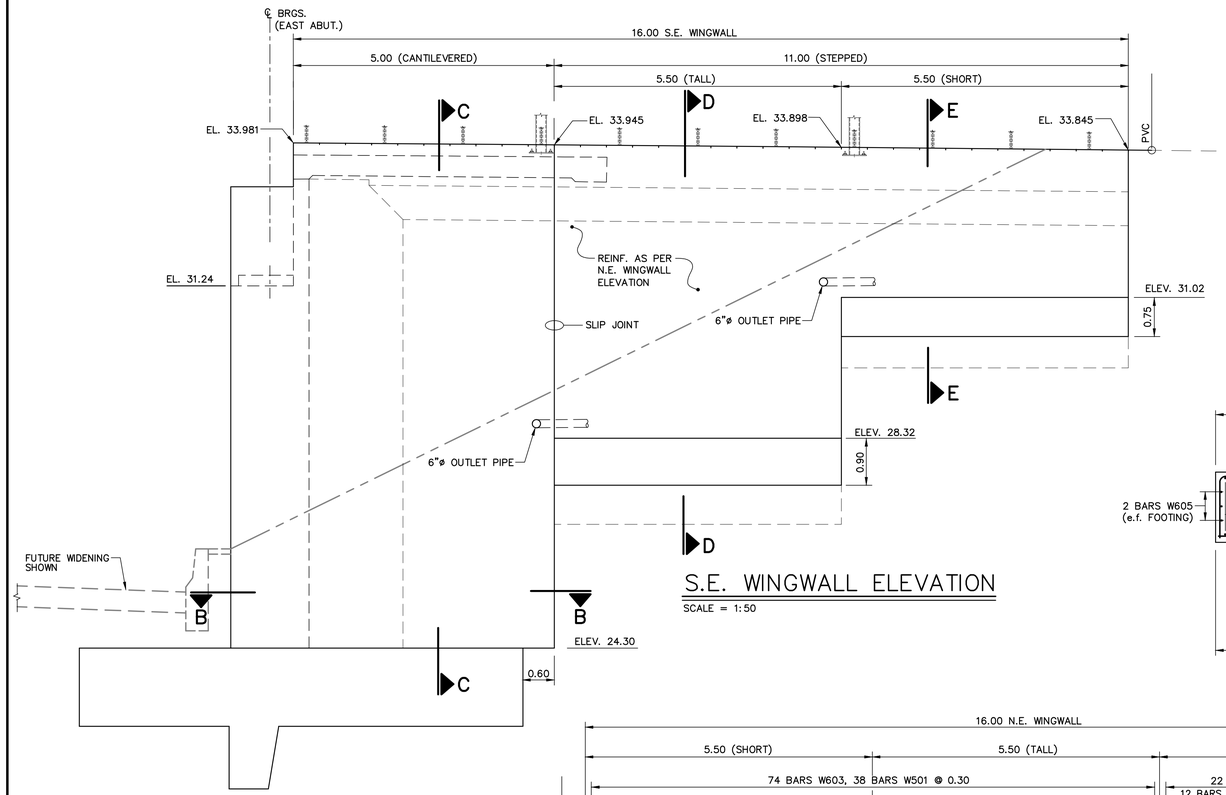
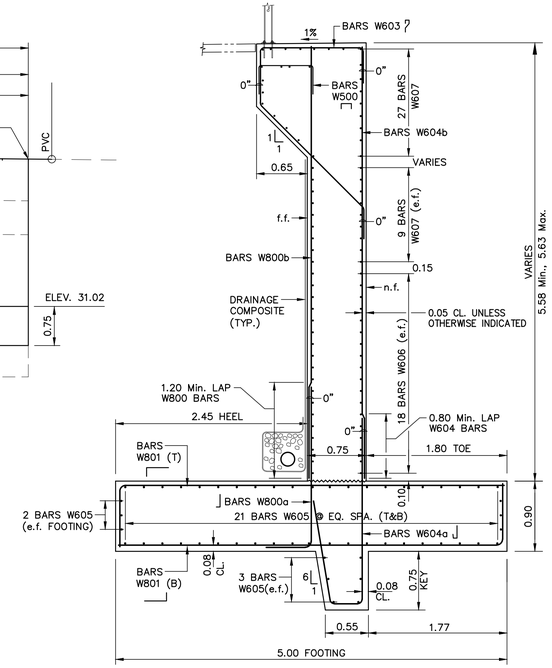
XX OF XX



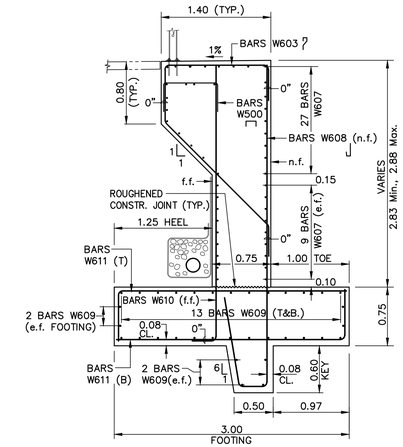
S.E. WINGWALL ELEVATION

SCALE = 1:50



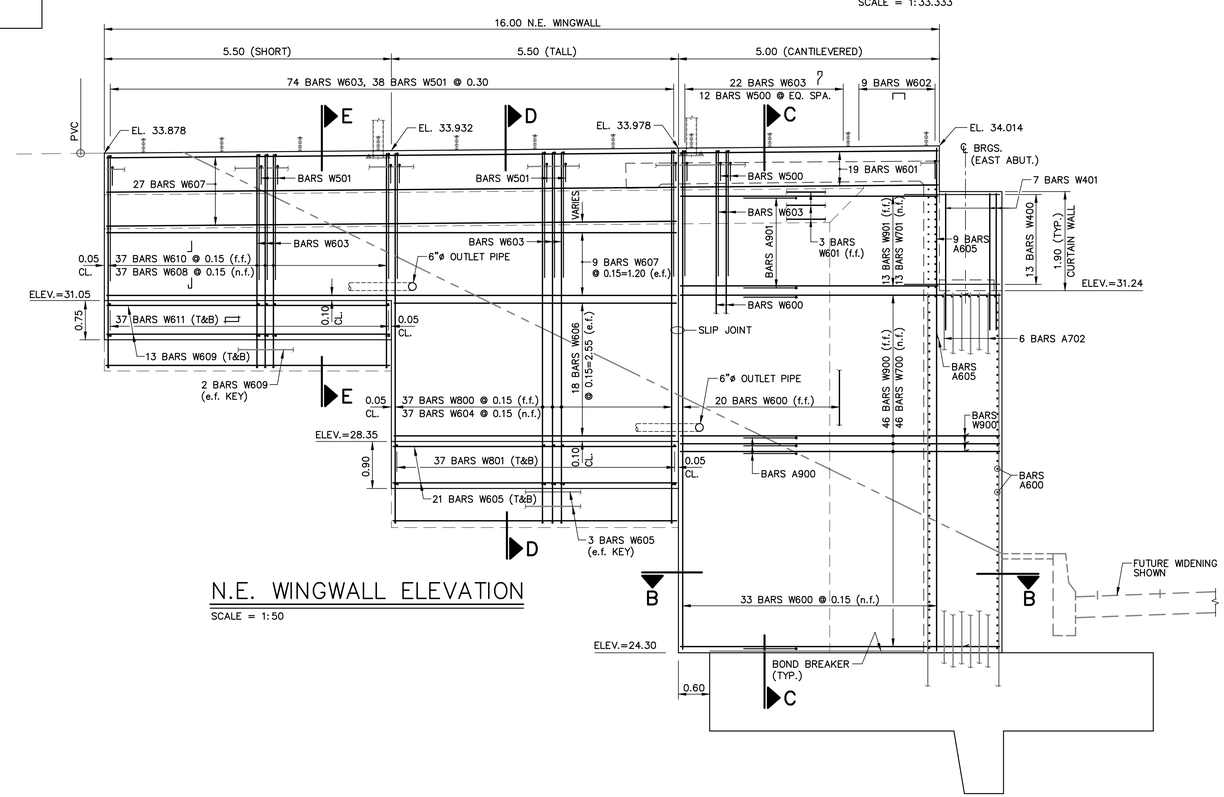
SECTION D–D

SCALE = 1:33.333



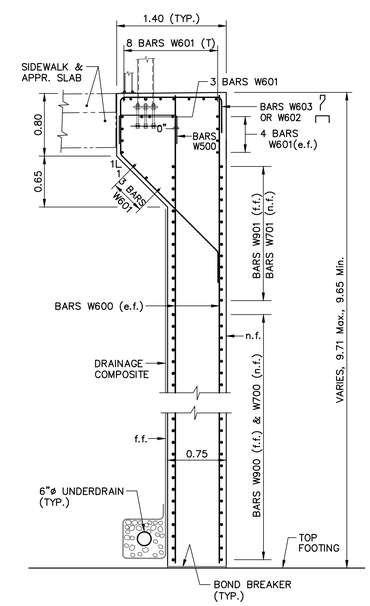
SECTION E–E

SCALE = 1:33.333



N.E. WINGWALL ELEVATION

SCALE = 1:50



SECTION C–C

SCALE = 1:33.333

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

SEGMENT EAST OF PR 18
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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

NE & SE WINGWALL STRUCTURAL DETAILS

DRAWN BY:
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DATE: AUGUST-XX-2012

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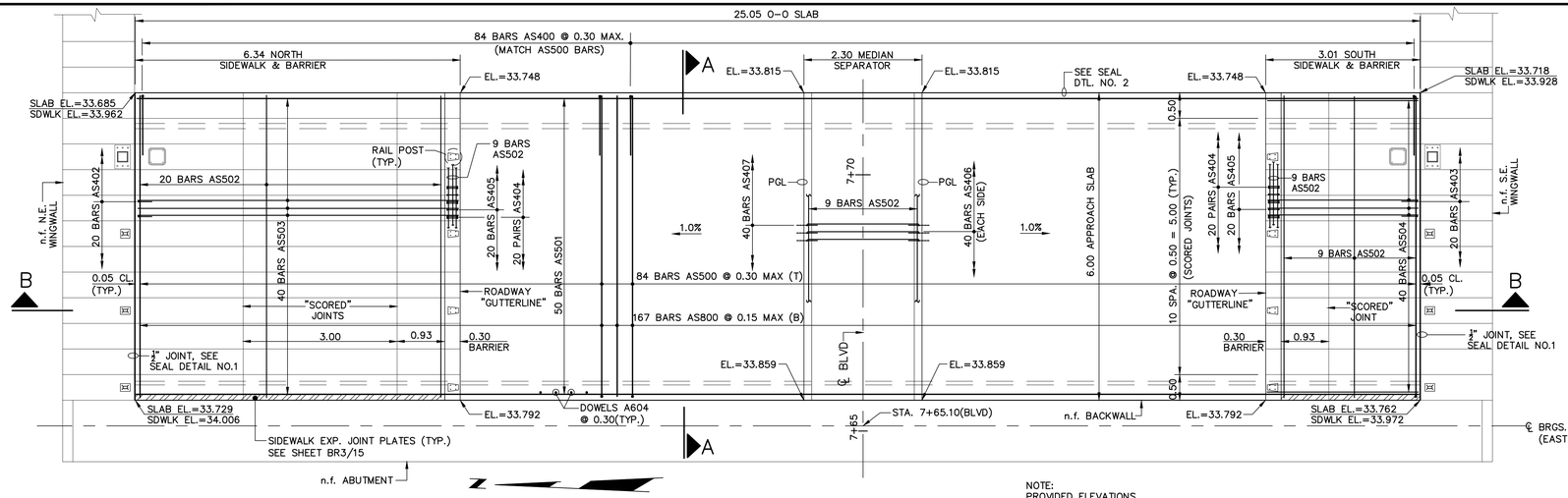
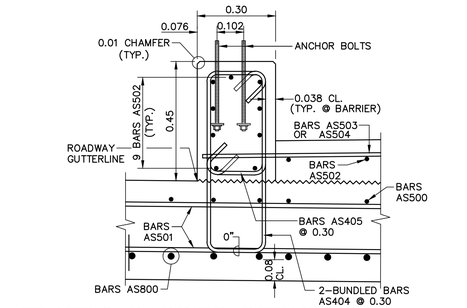
xx OF xx



PLAN (EAST APPR. SLAB)

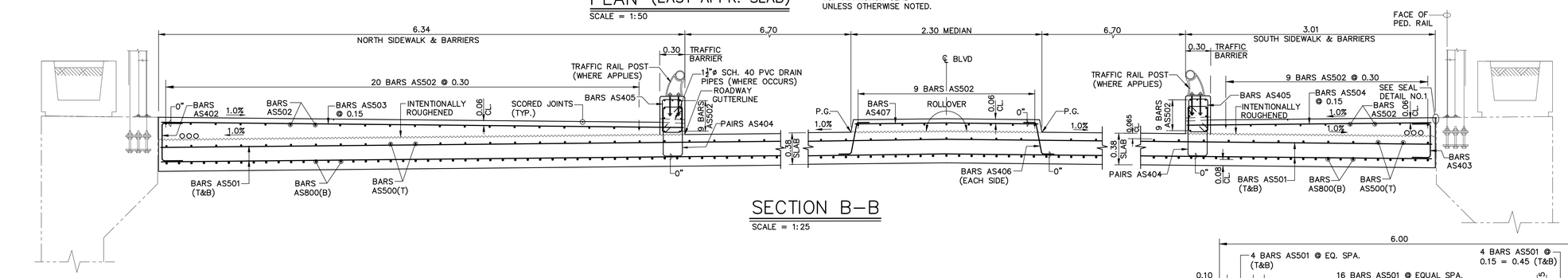
SCALE = 1:50

NOTE:
PROVIDED ELEVATIONS
TOP APPROACH SLAB
UNLESS OTHERWISE NOTED.



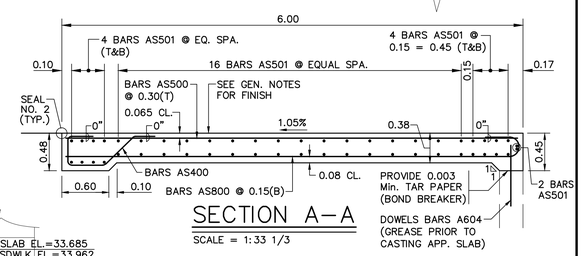
TRAFFIC BARRIER DETAIL (S. WEST SHOWN)

SCALE = 1:10



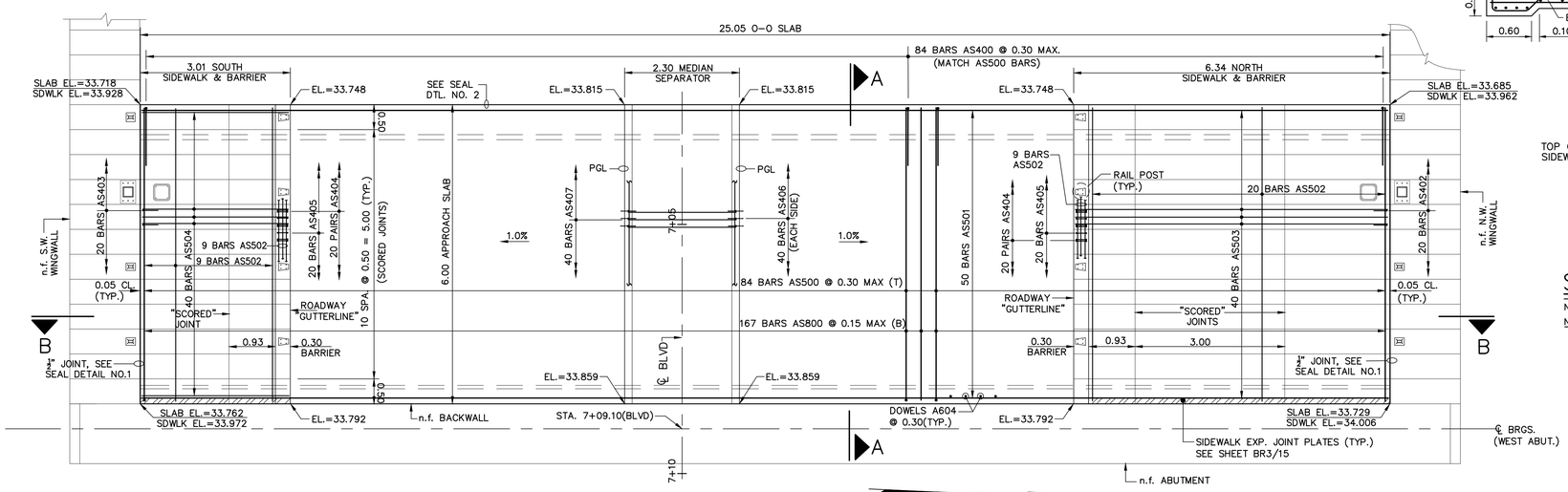
SECTION B–B

SCALE = 1:25



SECTION A–A

SCALE = 1:33 1/3



PLAN (WEST APPR. SLAB)

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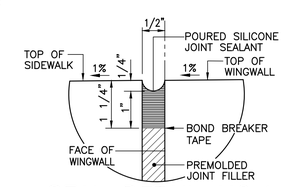
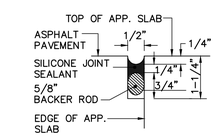


SEAL DETAIL NO.1

NOT TO SCALE

NOTE: FOR SCORED JOINT DETAILS, SEE SHT. BR3/X



SEAL DETAIL NO.2

NOT TO SCALE

BRIDGE BR3

SCIENCE CITY
URBAN INFRASTRUCTURE
PHASE II

SEGMENT EAST OF PR 18
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FINAL CONSTRUCTION
DOCUMENTS (100%)
MAY 13, 2013

EXPANSION JOINT
& MISCELLANEOUS
DETAILS

DRAWN BY:
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DATE: AUGUST-XX-2012

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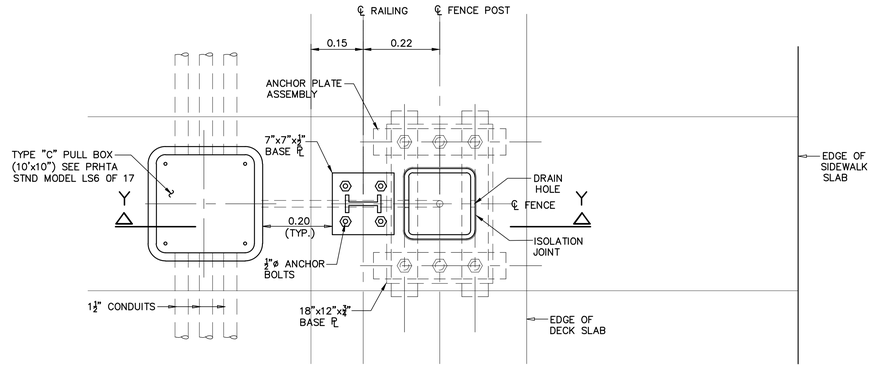
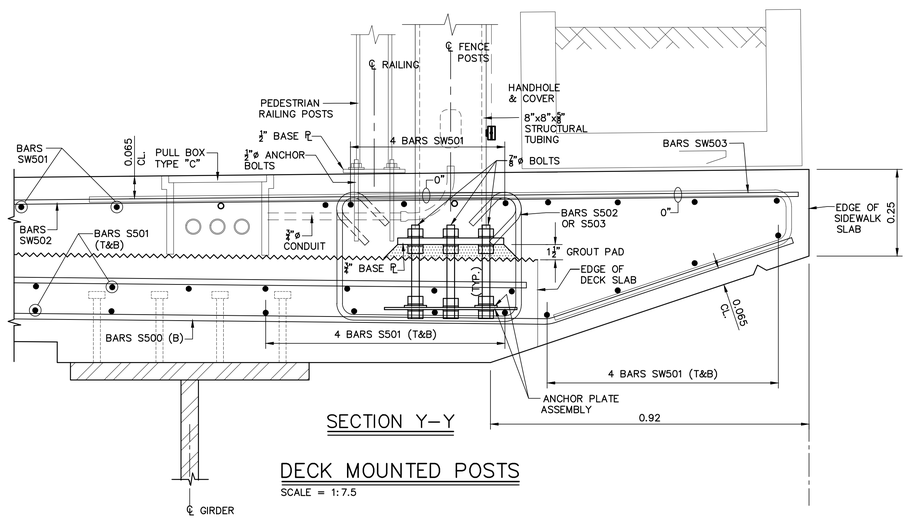
xx OF xx



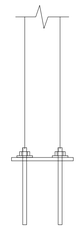
PLAN (SHOWN DECK MOUNTED)

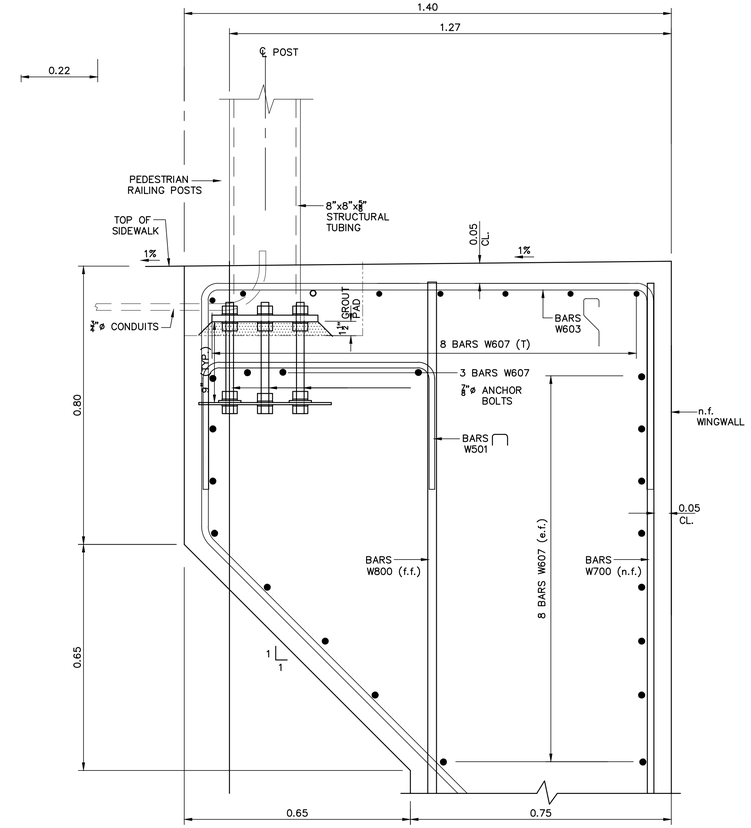


SECTION Y–Y

DECK MOUNTED POSTS

SCALE = 1:7.5

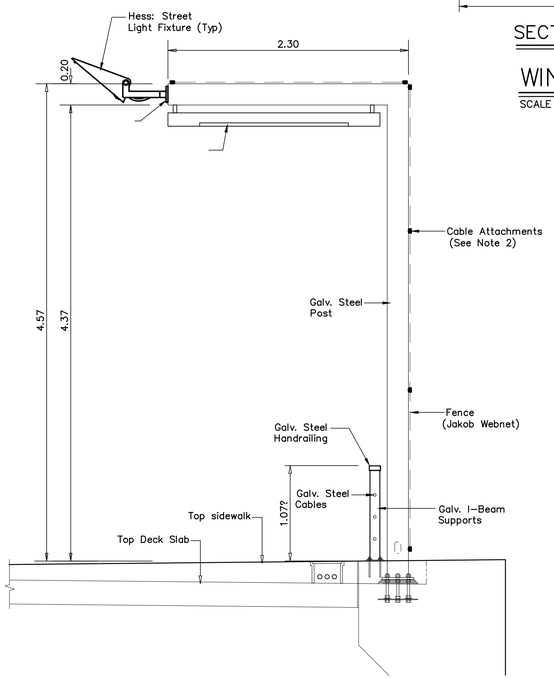




SECTION X–X (CANTILEVERED WALLS)

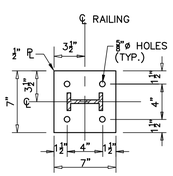
WINGWALL MOUNTED POSTS

SCALE = 1:7.5



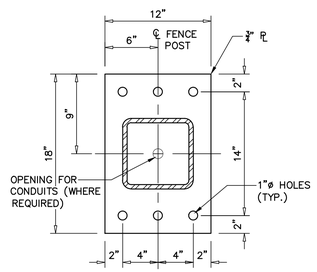
SAFETY FENCE NOTES:

1) SEE ARCHITECTURAL PLANS FOR ADDITIONAL DETAILS.
2) FENCE CABLES SHALL NOT FIXED (LOGITUDINALLY) TO BRIDGE DECK MOUNTED POSTS. FIX TO WINGWALL MOUNTED POSTS ONLY.
3) POSTS SHALL BE REINFORCED NEAR HANDHOLES. DETAILS TO BE INCLUDED IN SHOP DRAWINGS.
4) SEE DESIGN CRITERIA FOR DESIGN WIND VELOCITY.
5) LIGHT FIXTURE MOUNTING DETAILS TO BE INCLUDED IN SHOP DRAWINGS.



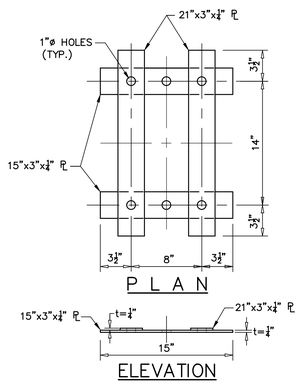
PEDESTRIAN RAILING BASE PLATE DETAIL

SCALE = 1:7.5



BASE PLATE DETAIL

SCALE = 1:7.5



ANCHOR PLATE ASSEMBLY

SCALE = 1:7.5

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

SAFETY FENCE & RAILING DETAILS

DRAWN BY:
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DATE: AUGUST-XX-2012

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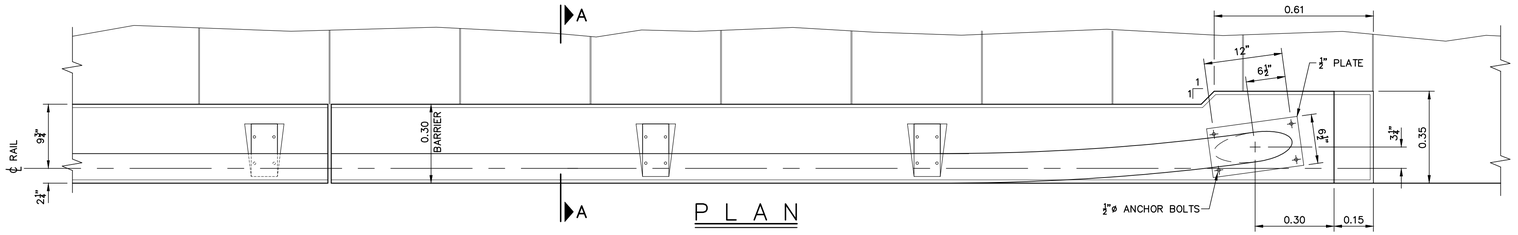
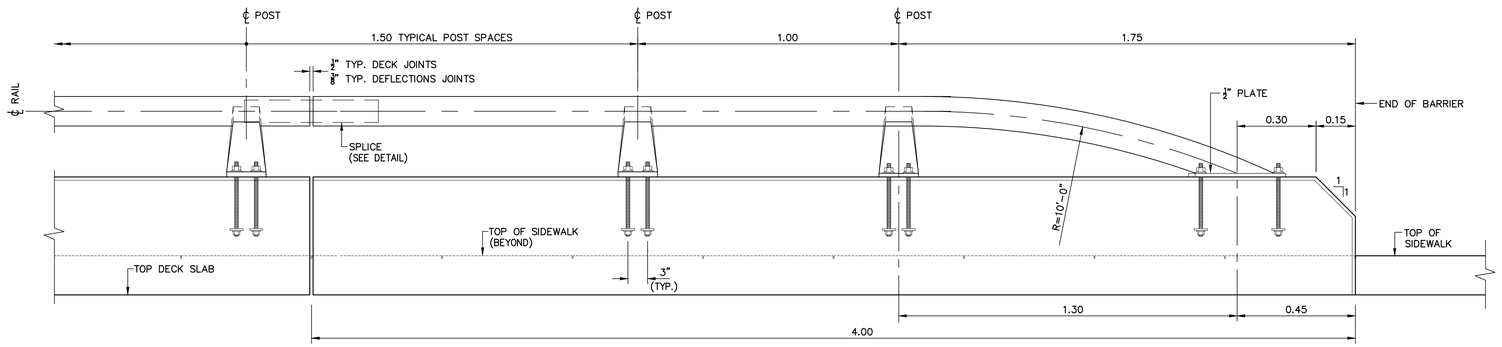


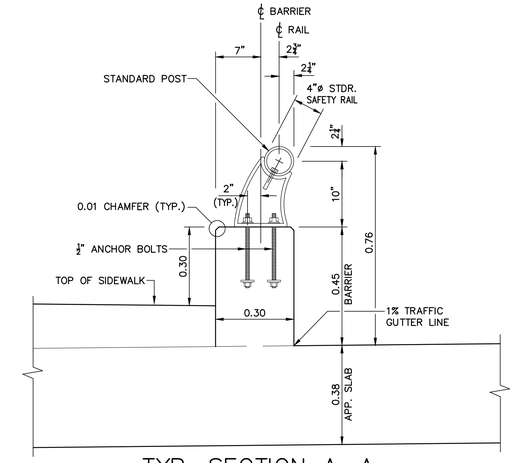
PLAN



ELEVATION

TRAFFIC RAILING DETAILS

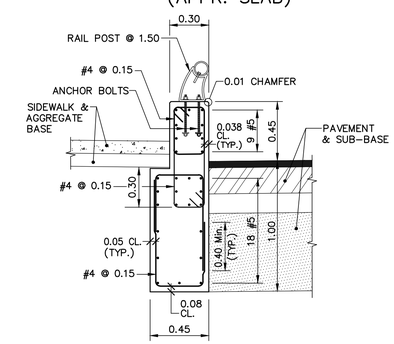
SCALE = 1:10



TYP. SECTION A–A

SCALE = 1:10

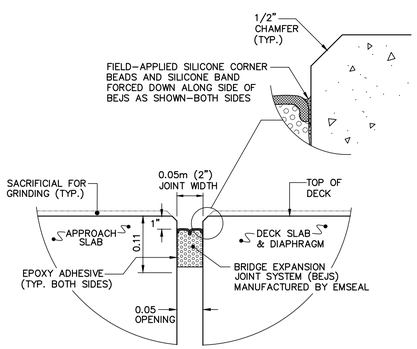
(APPR. SLAB)



TYP. SECTION A–A

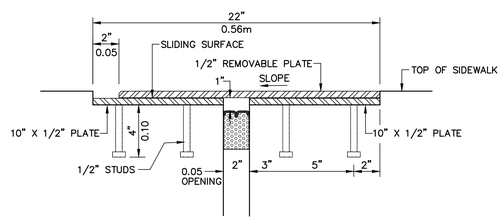
SCALE = 1:20

(RDWAY)



SECTION D–D

N.T.S.



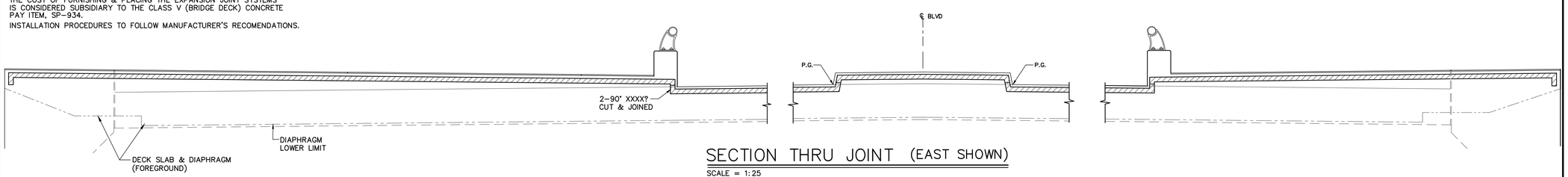
SIDEWALK PLATE ASSEMBLY

N.T.S.

EXP. JOINT NOTES

THE COST OF FURNISHING & PLACING THE EXPANSION JOINT SYSTEMS IS CONSIDERED SUBSIDIARY TO THE CLASS V (BRIDGE DECK) CONCRETE PAY ITEM, SP–934.

INSTALLATION PROCEDURES TO FOLLOW MANUFACTURER'S RECOMENDATIONS.



SECTION THRU JOINT (EAST SHOWN)

SCALE = 1:25

SCIENCE CITY
URBAN INFRASTRUCTURE
PHASE II

SEGMENT EAST OF PR 18
SAN JUAN, PUERTO RICO

TORO ARQUITECTOS
AVENIDA McLEARY 2004
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FINAL CONSTRUCTION
DOCUMENTS (100%)
MAY 13, 2013

TRAFFIC RAILING &
EXP. JOINT DETAILS

DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

BR3/15

XX OF XX

WEST ABUTMENT

BAR	SPACING C TO C	SIZE	TYPE	BAR DETAILS A	B	C	D	E	F	G	LENGTH	NO.	LBS.	REMARKS
A400	0.15	4	2	0.30	0.20	0.30					0.80	177	310	TOP BACKWALL REINF.
A500	0.15	5	2	0.45	1.40	0.45					2.30	195	1535	TOP STEM REINF.
A501	0.16	5	2	0.90	1.40	0.90					3.20	72	788	SEAT REINF, 6 EACH
A502	0.15	5	2	0.90	0.95	0.90					2.75	120	1129	SEAT REINF, 10 EACH
A600	0.15	6	STR	31.25							31.25	115	17710	STEM & BACKWALL HORIZ. REINF., 2 STAGGERED 0.85M LAPS INCLU
A601	0.15	6	STR	8.90							8.90	30	1316	CORNER BLOCK REINF., 15 EACH, TRIM TO FIT
A602	0.23	6	2	0.60	1.30	0.60					2.50	68	838	FOOTING FACE REINF., 34 PER SIDE
A603	0.15	6	STR	2.90							2.90	354	5059	BACKWALL PRIMARY (VERT.) BARS
A604	0.30	6	STR	0.75							0.75	89	329	NON-DEFORMED (SMOOTH) REBAR INTO APPR. SLAB
A605	0.15	6	STR	3.65							3.65	18	323	BACKWALL NF REINF NEAR WINGWALLS, 9 PER SIDE
A700A	0.30	7	4	3.55	0.60	2.25					6.40	99	4249	STEM N.F. VERTICAL BARS, LOWER
A700B	0.30	7	STR	5.90							5.90	99	3917	STEM N.F. VERTICAL BARS, UPPER
A701A	0.30	7	4	4.85	0.60	2.25					7.70	98	5060	STEM N.F. VERTICAL BARS, LOWER
A701B	0.30	7	STR	4.60							4.60	98	3023	STEM N.F. VERTICAL BARS, UPPER
A702A	0.15	7	1	0.45	2.55						3.00	12	241	EDGE STEM REINF., LOWER, 6 PER SIDE
A702B	0.15	7	STR	5.90							5.90	12	475	EDGE STEM REINF., UPPER, 6 PER SIDE
A800	0.23	8	STR	35.10							35.10	68	20908	FOOTING T & B LONG. REINF., 3 STAGGERED 1.25M LAPS INCLUDED
A801	0.23	8	2	1.10	7.93	1.10					10.13	10	887	FOOTING TRANSV. FACE REINF., 5 EACH
A802	0.23	8	STR	32.85							32.85	10	2878	FOOTING LONG. FACE REINF., 5 EACH, 2 STAGGERED 0.90M LAPS INCI
A803	VARIES	8	STR	31.35							31.35	11	3021	KEY REINF., 2 STAGGERED 0.90M LAPS INCLUDED
A900	0.15	9	12	0.38	4.95	1.00					6.33	80	5649	CORNER BLOCK REINF., BOTT., 40 PER SIDE
A901	0.15	9	11	1.00	3.65	1.00					5.65	28	1765	CORNER BLOCK REINF., TOP, 14 PER SIDE
A1000A	0.30	10	1	0.60	3.15						3.75	99	5241	STEM PRIMARY REINF., LOWER
A1000B	0.30	10	STR	5.90							5.90	99	8246	STEM PRIMARY REINF., UPPER
A1001A	0.30	10	1	0.60	5.25						5.85	98	8094	STEM PRIMARY REINF., LOWER
A1001B	0.30	10	STR	3.80							3.80	98	5258	STEM PRIMARY REINF., UPPER
A1002	0.15	10	1	1.37	8.00						9.37	418	55295	FOOTING PRIMARY (TRANSV.) REINF. (T & B)
													163544	Lbs

NW & SW CANTILEVERED WINGWALL (EACH)

BAR	SPACING C TO C	SIZE	TYPE	BAR DETAILS A	B	C	D	E	F	G	LENGTH	NO.	LBS.	REMARKS
W400	0.17	4	STR	1.65							1.65	13	47	CURTAIN WALL HORIZ. REINF.
W401	0.16	4	STR	2.60							2.60	7	40	CURTAIN WALL VERT. REINF.
W500	0.30	5	2	0.30	0.70	0.30					1.30	12	53	
W600	0.15	6	STR	9.55							9.55	55	2588	VERTICAL BARS, 30 NF, 17 FF, 3 NEAR END
W601	VARIES	6	STR	4.90							4.90	19	459	NF HORIZONTAL BARS NEAR TOP
W602	0.15	6	2	0.40	1.30	1.20					2.90	8	114	TOP REINF.
W603	0.15	6	5	0.40	1.30	0.75	1.84	0.40			4.69	22	509	TOP REINF.
W700	0.15	7	STR	5.60							5.60	40	1502	NF HORIZONTAL BARS, LOWER
W701	0.15	7	STR	4.40							4.40	14	413	NF HORIZONTAL BARS, UPPER
W900	0.15	9	1	1.30	5.10						6.40	40	2856	PRIMARY REINF., LOWER
W901	0.15	9	1	1.30	4.40						5.70	14	890	PRIMARY REINF., UPPER
												SUBTOTAL (1 WNGWALL	9471	
												SUBTOTAL (2 WNGWALL	18942	

SW STEPPED WINGWALL

BAR	SPACING C TO C	SIZE	TYPE	BAR DETAILS A	B	C	D	E	F	G	LENGTH	NO.	LBS.	REMARKS
W501	0.30	5	2	0.30	0.67	0.30					1.27	34	148	
W603	0.15	6	5	0.40	1.30	0.75	1.84	0.40			4.69	66	1525	TOP REINF.
W604	0.15	6	4	5.66	0.40	1.30					7.36	33	1197	TALL WALL NF STEM VERT. BARS
W605	0.23	6	STR	4.90							4.90	48	1159	TALL WALL FOOTING & KEY LONG. BARS
W606	0.15	6	STR	4.90							4.90	24	580	STEM HORIZ. BARS (LOWER)
W607	VARIES	6	STR	9.90							9.90	41	2000	STEM HORIZ. BARS (UPPER)
W609	0.23	6	STR	4.90							4.90	34	821	SHORT WALL FOOTING & KEY LONG. BARS
W610	0.15	6	1	0.40	3.08						3.48	33	566	PRIMARY STEM REINF. SHORT WALL
W611	0.15	6	1	0.62	2.90						3.52	66	1145	FOOTING TRANSVERSE T & B REINF., SHORT WALL
W612	0.15	6	4	3.68	0.35	1.10					5.13	33	834	SHORT WALL NF VERT. BARS
W703	0.15	7	1	0.45	4.91						5.36	33	1186	PRIMARY STEM REINF. TALL WALL
W704	0.15	7	1	0.67	4.05						4.72	66	2089	FOOTING TRANSVERSE T & B REINF., TALL WALL
												SUBTOTAL (1 WNGWALL	13250	Lbs
												SUBTOTAL (2 WNGWALL	26500	

NW STEPPED WINGWALL

BAR	SPACING C TO C	SIZE	TYPE	BAR DETAILS A	B	C	D	E	F	G	LENGTH	NO.	LBS.	REMARKS
W501	0.30	5	2	0.30	0.67	0.30					1.27	49	213	
W603	0.15	6	5	0.40	1.30	0.75	1.84	0.40			4.69	96	2219	TOP REINF.
W604	0.15	6	4	5.66	0.40	1.30					7.36	33	1197	MED. WALL NF STEM VERT. BARS
W605	0.23	6	STR	4.90							4.90	48	1159	MED. WALL FOOTING & KEY LONG. BARS
W606	0.15	6	STR	4.90							4.90	22	531	STEM HORIZ. BARS (LOWER)
W607	0.15	6	STR	9.90							9.90	22	1073	STEM HORIZ. BARS (CENTER)
W608	VARIES	6	STR	14.40							14.40	41	2910	STEM HORIZ. BARS (UPPER)
W609	0.23	6	STR	4.40							4.40	34	737	SHORT WALL FOOTING & KEY LONG. BARS
W610	0.15	6	1	0.40	3.08						3.48	30	515	PRIMARY STEM REINF. SHORT WALL
W611	0.15	6	1	0.62	2.90						3.52	60	1041	FOOTING TRANSVERSE T & B REINF., SHORT WALL
~~W612~~	~~0.15~~	~~6~~	~~4~~	~~3.68~~	~~0.35~~	~~1.10~~					~~5.13~~	~~30~~	~~758~~	~~SHORT WALL NF VERT. BARS~~
W613A	0.15	6	4	2.57	0.45	1.40					4.42	33	719	TALL WALL NF VERT. BARS, LOWER
W613B	0.15	6	STR	5.84							5.84	33	950	TALL WALL NF VERT. BARS, UPPER
W614	0.15	6	STR	4.90							4.90	61	1473	TALL WALL FOOTING & KEY LONG. BARS
W703	0.15	7	1	0.45	4.91						5.36	33	1186	PRIMARY STEM REINF. MED. WALL
W704	0.15	7	1	0.67	4.05						4.72	66	2089	FOOTING TRANSVERSE T & B REINF., MED. WALL
W800A	0.15	8	1	0.50	2.10						2.60	33	752	PRIMARY STEM REINF. TALL WALL (LOWER)
W800B	0.15	8	STR	5.84							5.84	33	1688	PRIMARY STEM REINF. TALL WALL (UPPER)
W801	0.15	8	1	0.77	5.25						6.02	66	3481	FOOTING TRANSVERSE T & B REINF., TALL. WALL
												SUBTOTAL (1 WNGWALL	24691	Lbs
												SUBTOTAL (2 WNGWALL	49382	

EAST ABUTMENT

BAR	SPACING C TO C	SIZE	TYPE	BAR DETAILS A	B	C	D	E	F	G	LENGTH	NO.	LBS.	REMARKS
A400	0.15	4	2	0.30	0.20	0.30					0.80	177	310	TOP BACKWALL REINF.
A500	0.15	5	2	0.45	1.40	0.45					2.30	195	1535	TOP STEM REINF.
A501	0.16	5	2	0.90	1.40	0.90					3.20	72	788	SEAT REINF, 6 EACH
A502	0.15	5	2	0.90	0.95	0.90					2.75	120	1129	SEAT REINF, 10 EACH
A600	0.15	6	STR	31.25							31.25	127	19558	STEM & BACKWALL HORIZ. REINF., 2 STAGGERED 0.85M LAPS INCLU
A601	0.15	6	STR	8.90							8.90	30	1316	CORNER BLOCK REINF., 15 EACH, TRIM TO FIT
A602	0.23	6	2	0.60	1.30	0.60					2.50	72	887	FOOTING FACE REINF., 36 PER SIDE
A603	0.15	6	STR	2.90							2.90	354	5059	BACKWALL PRIMARY (VERT.) BARS
A604	0.30	6	STR	0.75							0.75	90	333	NON-DEFORMED (SMOOTH) REBAR INTO APPR. SLAB
A605	0.30	6	STR	3.65							3.65	18	323	BACKWALL NF REINF. NEAR WINGWALLS, 9 EACH
A700A	0.30	7	4	3.55	0.60	2.25					6.40	99	4249	STEM N.F. VERTICAL BARS, LOWER
A700B	0.30	7	STR	6.80							6.80	99	4515	STEM N.F. VERTICAL BARS, UPPER
A701A	0.30	7	4	4.85	0.60	2.25					7.70	98	5060	STEM N.F. VERTICAL BARS, LOWER
A701B	0.30	7	STR	5.50							5.50	98	3615	STEM N.F. VERTICAL BARS, UPPER
A702A	0.15	7	1	0.45	2.55						3.00	12	241	EDGE STEM REINF., LOWER, 6 PER SIDE
A702B	0.15	7	STR	6.80							6.80	12	547	EDGE STEM REINF., UPPER, 6 PER SIDE
A800	0.23	8	STR	35.10							35.10	72	22138	FOOTING T & B LONG. REINF., 3 STAGGERED 1.25M LAPS INCLUDED
A801	0.23	8	2	1.10	8.33	1.10					10.53	10	922	FOOTING TRANSV. FACE REINF., 5 EACH
A802	0.23	8	STR	32.85							32.85	10	2878	FOOTING LONG. FACE REINF., 5 EACH, 2 STAGGERED 0.90M LAPS INCI
A803	VARIES	8	STR	31.35							31.35	11	3021	KEY REINF., 2 STAGGERED 0.90M LAPS INCLUDED
A900	0.15	9	12	0.38	4.95	1.00					6.33	92	6496	CORNER BLOCK REINF., BOTT., 46 PER SIDE
A901	0.15	9	11	1.00	3.65	1.00					5.65	28	1765	CORNER BLOCK REINF., TOP, 14 PER SIDE
A1000A	0.30	10	1	0.60	3.15						3.75	99	5241	STEM PRIMARY REINF., LOWER
A1000B	0.30	10	STR	6.80							6.80	99	9504	STEM PRIMARY REINF., UPPER
A1001A	0.30	10	1	0.60	5.25						5.85	98	8094	STEM PRIMARY REINF., LOWER
A1001B	0.30	10	STR	4.70							4.70	98	6503	STEM PRIMARY REINF., UPPER
A1002	0.15	10	1	1.37	8.40						9.77	418	57656	FOOTING PRIMARY (TRANSV.) REINF. (T & B)
													173683	Lbs

NE & SE CANTILEVERED WINGWALL (EACH)

BAR	SPACING C TO C	SIZE	TYPE	BAR DETAILS A	B	C	D	E	F	G	LENGTH	NO.	LBS.	REMARKS
W400	0.17	4	STR	1.65							1.65	13	47	CURTAIN WALL HORIZ. REINF.
W401	0.16	4	STR	2.60							2.60	7	40	CURTAIN WALL VERT. REINF.
W500	0.30	5	2	0.30	0.70	0.30					1.30	12	53	
W600	0.15	6	STR	9.55							9.55	56	2636	VERTICAL BARS, 33 NF, 20 FF, 3 NEAR END
W601	VARIES	6	STR	4.90							4.90	19	459	NF HORIZONTAL BARS NEAR TOP
W602	0.15	6	2	0.40	1.30	1.20					2.90	8	114	TOP REINF.
W603	0.15	6	5	0.40	1.30	0.75	1.84	0.40			4.69	25	578	TOP REINF.
W700	0.15	7	STR	6.10							6.10	46	1882	NF HORIZONTAL BARS, LOWER
W701	0.15	7	STR	4.90							4.90	14	460	NF HORIZONTAL BARS, UPPER
W900	0.15	9	1	1.30	5.60						6.90	46	3541	PRIMARY REINF., LOWER
W901	0.15	9	1	1.30	4.90						6.20	14	968	PRIMARY REINF., UPPER
												SUBTOTAL (1 WNGWALL	10778	
												SUBTOTAL (2 WNGWALL	21556	

BRIDGE BR3

SCIENCE CITY
URBAN INFRASTRUCTURE
PHASE II

SEGMENT EAST OF PR 18
SAN JUAN, PUERTO RICO

TORO ARQUITECTOS
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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

BAR SCHEDULE

DRAWN BY:
REVISED BY:
DATE: AUGUST-XX-2012

BR3/16

NE & SE STEPPED WINGWALL (EACH)

BAR	SPACING C TO C	SIZE	TYPE	BAR DETAILS A	B	C	D	E	F	G	LENGTH	NO.	LBS.	REMARKS
W501	0.30	5	2	0.30	0.67	0.30					1.27	38	165	
W603	0.15	6	5	0.40	1.30	0.75	1.84	0.40			4.69	74	1710	TOP REINF.
W604A	0.15	6	4	2.45	0.40	1.40					4.25	37	775	TALL WALL NF STEM VERT. BARS, LOWER
W604B	0.15	6	STR	5.48							5.48	37	999	TALL WALL NF STEM VERT. BARS, UPPER
W605	0.23	6	STR	4.90							4.90	54	1304	TALL WALL FOOTING & KEY LONG. BARS
W606	0.15	6	STR	4.90							4.90	38	918	STEM HORIZ. BARS (LOWER)
W607	VARIES	6	STR	10.90							10.90	45	2417	STEM HORIZ. BARS (UPPER)
W608	0.15	6	4	4.05	0.35	1.10					5.50	37	1003	SHORT WALL NF VERT. BARS
W609	0.23	6	STR	4.90							4.90	34	821	SHORT WALL FOOTING & KEY LONG. BARS
W610	0.15	7	1	0.40	3.45						3.85	37	702	PRIMARY STEM REINF. SHORT WALL
W611	0.15	7	1	0.62	2.90						3.52	74	1284	FOOTING TRANSVERSE T & B REINF., SHORT WALL
W800A	0.15	8	1	0.50	2.12						2.62	37	849	PRIMARY STEM REINF. TALL WALL, LOWER
W800B	0.15	8	STR	5.48							5.48	37	1776	PRIMARY STEM REINF. TALL WALL, UPPER
W801	0.15	8	1	0.77	4.90						5.67	74	3676	FOOTING TRANSVERSE T & B REINF., TALL WALL
											SUBTOTAL (1 WNGWALL		18399	Lbs
											SUBTOTAL (2 WNGWALL		36798	

DECK SLAB

BAR	SPACING C TO C	SIZE	TYPE	BAR DETAILS A	B	C	D	E	F	G	LENGTH	NO.	LBS.	REMARKS
S400	0.15	4	3	0.11	0.54	0.22	0.54	0.22	0.11		1.74	760	2899	BARRIER REINF., 380 PER SIDE
S500	0.15	5	STR	30.30							30.30	380	39401	PRIMARY (TRANSV) BOTT BARS, 2 STAGGERED 0.51M LAPS INCLUDE
S501	0.24	5	STR	59.30							59.30	226	45861	LONG. REINF., 5 STAGGERED 0.50M LAPS INCLUDED
S502	0.15	5	3	0.14	0.44	0.53	0.44	0.53	0.14		2.22	380	2887	NORTH EDGE REINF.
S503	0.15	5	3	0.14	0.36	0.53	0.36	0.53	0.14		2.06	380	2679	SOUTH EDGE REINF.
S600	0.15	6	STR	29.20							29.20	380	54681	PRIMARY (TRANSV) TOP BARS, 2 STAGGERED 0.60M LAPS INCLUDED
SW501	0.30	5	STR	5.90							5.90	72	1454	MEDIAN SEPERATOR LONG REINF (8 GROUPS OF 9)
SW501W	0.30	5	STR	3.85							3.85	9	119	MEDIAN SEPERATOR LONG REINF., WEST END
SW501E	0.30	5	STR	4.85							4.85	9	149	MEDIAN SEPERATOR LONG REINF., EAST END
SW401	0.15	4	STR	2.10							2.10	380	1749	MEDIAN SEPERATOR TRANSV. REINF.
SW402	0.15	4	15	0.15	0.27	0.15					0.57	760	950	MEDIAN SEPERATOR CURB REINF.
													152829	Lbs

END DIAPHRAGMS

BAR	SPACING C TO C	SIZE	TYPE	BAR DETAILS A	B	C	D	E	F	G	LENGTH	NO.	LBS.	REMARKS
D400	0.24	4	8	0.20	0.33	0.25	0.41	0.20			1.39	154	469	STIRRUPS, 7 PER BAY
D800	?	8	STR	2.25							2.25	44	867	2 PER BAY
D801	?	8	STR	28.50							28.50	4	999	2 PER END, 2 STAGGERED 0.90M LAPS INCLUDED
													2335	Lbs

NORTH SIDEWALK & BARRIER

BAR	SPACING C TO C	SIZE	TYPE	BAR DETAILS A	B	C	D	E	F	G	LENGTH	NO.	LBS.	REMARKS
SW400	0.15	4	3	0.11	0.38	0.22	0.38	0.22	0.11		1.42	380	1183	BARRIER REINF.
SW500	0.15	5	STR	8.63							8.63	380	11222	TRANSV. REINF., ADUST TO CLEAR DEFL. JOINTS
SW501	0.30	5	STR	5.90							5.90	360	7268	LONG. REINF. (8 GROUPS OF 45)
SW501W	0.30	5	STR	3.85							3.85	45	593	LONG. REINF. WEST END
SW501E	0.30	5	STR	4.85							4.85	45	747	LONG. REINF. EAST END
SW503	0.15	5	16	2.00	0.12	0.75					2.87	380	3732	EDGE REINF.
													24745	Lbs

SOUTH SIDEWALK & BARRIER

BAR	SPACING C TO C	SIZE	TYPE	BAR DETAILS A	B	C	D	E	F	G	LENGTH	NO.	LBS.	REMARKS
SW400	0.15	4	3	0.11	0.38	0.22	0.38	0.22	0.11		1.42	380	1183	BARRIER REINF.
SW502	0.15	5	STR	5.30							5.30	380	6892	TRANSV. REINF., ADUST TO CLEAR DEFL. JOINTS
SW501	VARIES	5	STR	5.90							5.90	272	5492	LONG. REINF. (8 GROUPS OF 34)
SW501W	VARIES	5	STR	3.85							3.85	34	448	LONG. REINF. WEST END
SW501E	VARIES	5	STR	4.85							4.85	34	564	LONG. REINF. EAST END
SW503	0.15	5	16	2.00	0.12	0.75					2.87	380	3732	EDGE REINF.
													18311	Lbs

APPROACH SLABS (EACH)

BAR	SPACING C TO C	SIZE	TYPE	BAR DETAILS A	B	C	D	E	F	G	LENGTH	NO.	LBS.	REMARKS
AS400	0.30	4	7	0.30	0.35	0.55	0.49	0.30			1.99	90	393	REINF. NEAR END
AS402	0.30	4	2	0.30	0.51	0.30					1.11	20	49	NORTH EDGE REINF
AS403	0.30	4	2	0.30	0.44	0.30					1.04	20	46	SOUTH EDGE REINF.
AS404	0.30	4	3	0.11	0.68	0.22	0.68	0.22	0.11		2.02	80	354	BARRIER REINF., 20 PAIRS PER SIDE
AS405	0.30	4	3	0.11	0.38	0.22	0.38	0.22	0.11		1.42	40	125	BARRIER REINF., 20 PER SIDE
AS406	0.15	4	15	0.20	0.36	0.20					0.76	80	133	MEDIAN CURB REINF.
AS407	0.15	4	STR	2.20							2.20	40	193	MEDIAN REINF
AS500	0.30	5	STR	5.90							5.90	90	1817	TOP TRANVERSE BARS
AS501	VARIES	5	STR	28.15							28.15	50	4817	LONG. BARS, 2 STAGGERED 0.71M LAPS INCLUDED
AS502	0.30	5	STR	5.90							5.90	62	1252	32 NORTH SWLK, 21 SOUTH SWLK, 9 MEDIAN
AS503	0.15	5	STR	7.13							7.13	40	976	NORTH SIDEWALK REINF
AS504	0.15	5	STR	3.80							3.80	40	520	SOUTH SIDEWALK REINF
AS800	0.15	8	14	0.31	5.90						6.21	179	9738	PRIMARY (BOTT.) BARS
											SUBTOTAL (1 SLAB)		20413	Lbs
											SUBTOTAL (2 SLABS)		40826	Lbs

BRIDGE BR3

SCIENCE CITY
URBAN INFRASTRUCTURE
PHASE II

SEGMENT EAST OF PR 18
SAN JUAN, PUERTO RICO

TORO ARQUITECTOS
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FINAL CONSTRUCTION
DOCUMENTS (100%)
MAY 13, 2013

BAR SCHEDULE

DRAWN BY:
REVISED BY:
DATE: AUGUST-XX-2012

BR3/17

QUANTITY ESTIMATE (a)

SPEC. NO.	CLASS OF WORK	QUANTITY	UNIT
206	UNCLASSIFIED EXCAVATION FOR STRUCTURES	3,476	CuM.
207	FOUNDATION FILL	334	CuM.
209	SHEATHING	23	CuM.
211	BRIDGE APPROACH EMBANKMENT MATERIAL	3,000	CuM.
SP934	CLASS IV (GENERAL USE) (2) CONCRETE (c)	223	CuM.
SP934	CLASS V (BRIDGE DECK) (2) CONCRETE	542	CuM.
SP934	CLASS V (GENERAL USE) (2) CONCRETE	1,873	CuM.
SP901	STRUCTURAL STEEL (GR. 50 & 70) (b)	1,076,172	LBS.
602	REINF. STEEL (GR. 60)	729,451	LBS.
SP909	PREFABRICATED DRAINAGE COMPOSITE	688	SqM.
605	6" DIAM. PERF. PIPE UNDERDRAIN	130	LnM.
SPXXX	TRAFFIC RAILING (RAILING & POST ASSEMBLY) (c)	138	LnM.
SPXXX	SAFETY FENCE (d)	180	LnM.
SPXXX	PEDESTRIAN RAILING (d)	180	LnM.
660	NAME PLATE	1	EACH

(a) GEOTECHNIACAL RECOMMENDATIONS PENDING
(b) INCLUDES COST BEARING & EXPANSION JOINT ASSEMBLIES
(c) QUANTITIES SIDEWALK/TRAFFIC RAILING TO END APPROACH
(d) QUANTITIES FENCE/PED RAIL TO END WWALL

REINFORCING NOTES:

1. ALL DIMENSIONS ARE "OUT TO OUT" OF BARS.

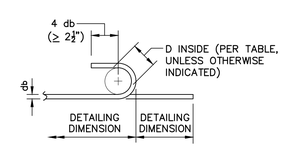
2. NO ALLOWANCE FOR BEND CURVATURE IS MADE EXCEPT FOR STANDARD HOOK AND RADII IN EXCESS OF SAME.

3. TENSILE REINFORCEMENT SHALL NOT BE SPLICED AT POINT OF MAXIMUM STRESS. SPLICES SHALL BE STAGGERED AS FAR AS POSSIBLE. UNLESS OTHERWISE NOTED, NUMBER OF LAP SPLICES BASED ON AVAILABILITY OF 12.19m (40ft.) LONG REINF. BARS

4. ALL BARS 0.05 CLEAR FROM CONCRETE FACES UNLESS OTHERWISE INDICATED.

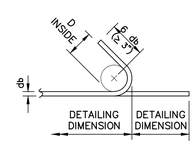
5. UNLESS OTHERWISE CALLED FOR OR SHOWN ON PLANS, BARS SHALL BE LAPPED 40 DIAMETERS. LAPS SHALL BE STAGGERED.

6. UNLESS OTHERWISE INDICATED, REINFORCING STEEL SHALL CONFORM TO SPECIFICATION 602, GRADE 60.



180° HOOK DETAIL

NOT TO SCALE

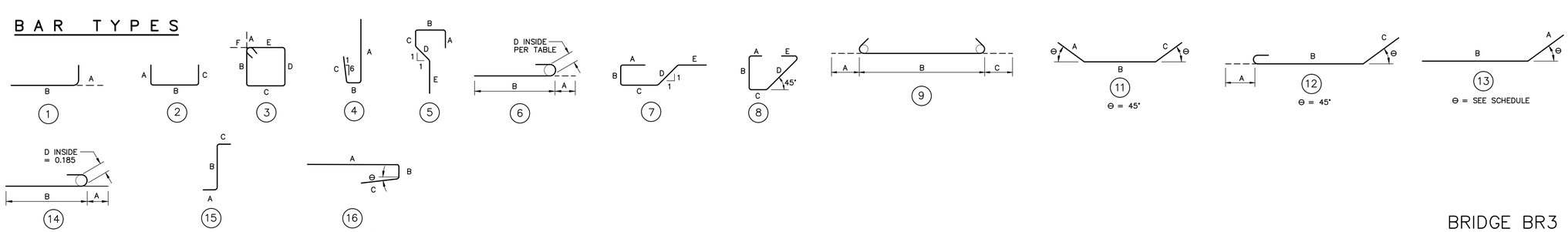


135° SEISMIC HOOK DETAIL

NOT TO SCALE

BAR SIZE AND USE	MINIMUM INSIDE DIAMETER
No. 3 THROUGH NO. 5 – GENERAL	6.0 db
No. 3 THROUGH NO. 5 – STIRRUPS AND TIES	4.0 db
No. 6 THROUGH NO. 8 – GENERAL	6.0 db
No. 9 No. 10, AND No. 11	8.0 db

BAR TYPES



BRIDGE BR3

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

SEGMENT EAST OF PR 18
SAN JUAN, PUERTO RICO

TORO ARQUITECTOS
AVENIDA McLEARY 2004
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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

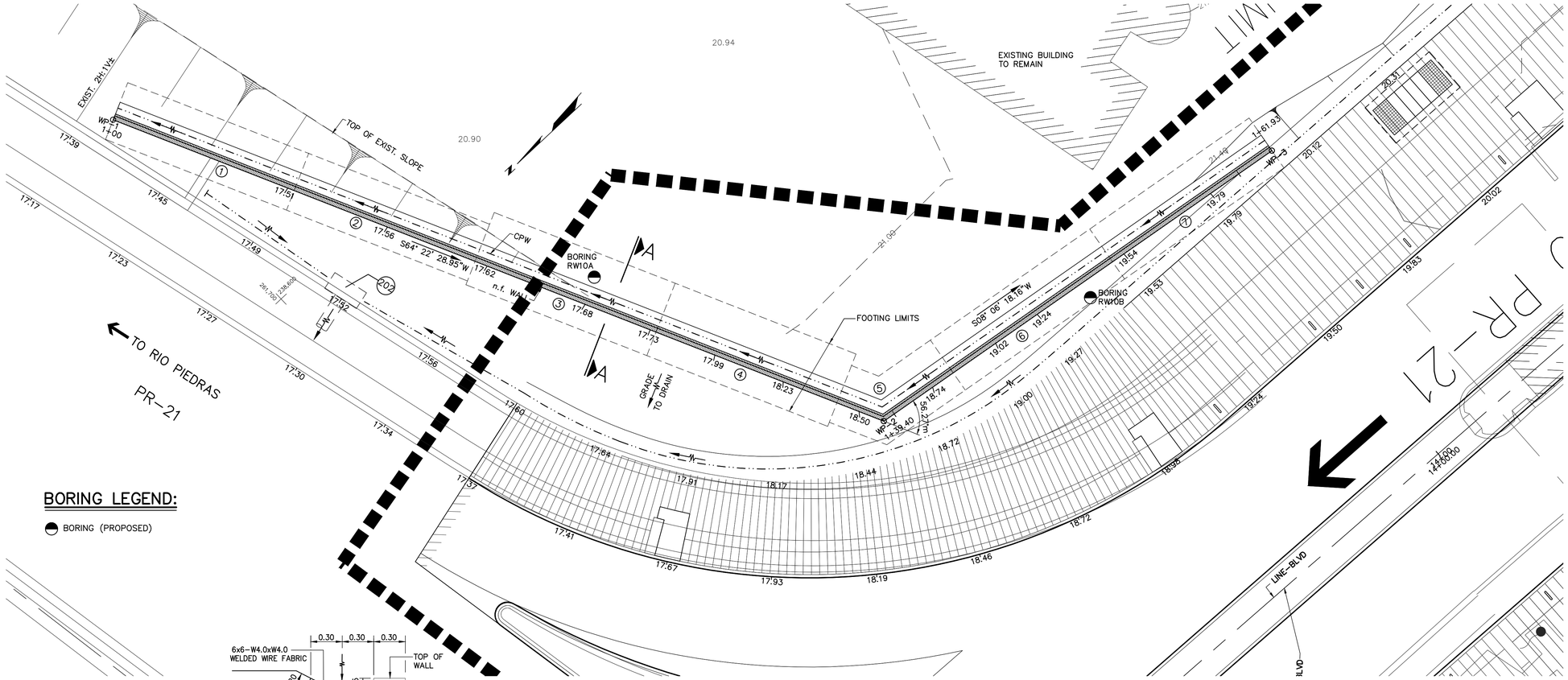
BAR SHEDULE & QUANTITY SUMMARY

DRAWN BY:
REVISED BY:
DATE: AUGUST-XX-2012

BR3/18

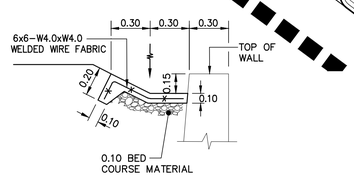
XX OF XX

61.93m. REINFORCED CONCRETE RETAINING WALL



BORING LEGEND:

BORING (PROPOSED)



CPW DETAIL

N.T.S.

PLAN

SCALE = 1:100

XX.XX EXISTING ELEVATIONS
XX.XX PROPOSED ELEVATIONS

DESIGN CRITERIA

SPECIFICATIONS:
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR HIGHWAY BRIDGES 5th EDITION, 2010.
P.R.H.T.A. STANDARD SPECIFICATION FOR ROAD & BRIDGE CONSTRUCTION-2005.
P.R.H.T.A. HIGHWAY DESIGN MANUAL.

LOADS:
LIVE LOAD SURCHARGE..... NONE
SEISMIC LOADING DATA
PEAK GROUND ACCELERATION..... 0.29
SITE CLASS..... C
As..... 0.32

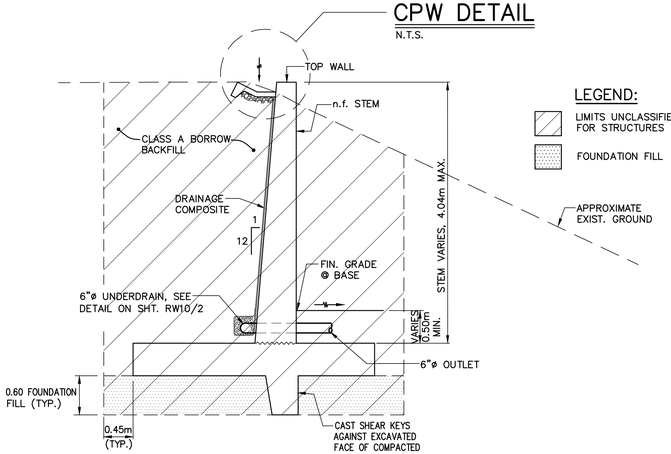
STRESSES:
SP-934 CLASS "III" (GEN. USE) (2) CONCRETE.....f'c = 3,000 psi (28 DAYS)
REINFORCING STEEL (GRADE 60).....fy = 60,000 psi

SOIL PARAMETERS
IN-SITU MATERIAL (ASSUMED, PENDING GEOTECH CONFIRMATION)
UNIT WEIGHT, γ = 125 PCF
FRICTION ANGLE, ϕ = 26 DEGREES (MIN)
COHESION, c' = 0 PSF
BACKFILL & FONDATION FILL
UNIT WEIGHT, γ = 125 PCF
FRICTION ANGLE, ϕ = 30 DEGREES (MIN)
COHESION, c' = 0 PSF

FOUNDATIONS:
MAXIMUM COMPUTED BEARING PRESSURES
SERVICE I ..... 1.5 ksf.
SERVICE II ..... 2.1 ksf.

MINIMUM FACTORS OF SAFETY:
MAXIMUM ECCENTRICITY (OVERTURNING)
STRENGTH I B/4
EXTREME EVENT I B/3
SLIDING ..... Rr/Q>1.0
GLOBAL STABILITY
STATIC ..... >1.30
SEISMIC ..... >1.10
DESIGN METHOD..... LRFD

WORKING POINT DATA		
WP	NORTHING	EASTING
WP1	261,700.0238	238,611.6932
WP2	261,682.9847	238,576.1703
WP3	261,660.6816	238,572.9941



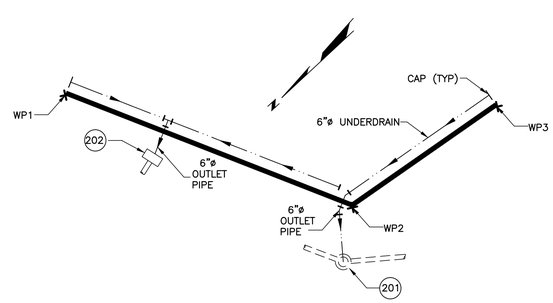
TYPICAL SECTION A-A

SCALE=1:40

LEGEND:

LIMITS UNCLASSIFIED EXCAVATION FOR STRUCTURES

FOUNDATION FILL



DRAINAGE SCHEMATIC DETAIL

SCALE =NTS

RETAINING WALL RW10

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

SEGMENT EAST OF PR 18
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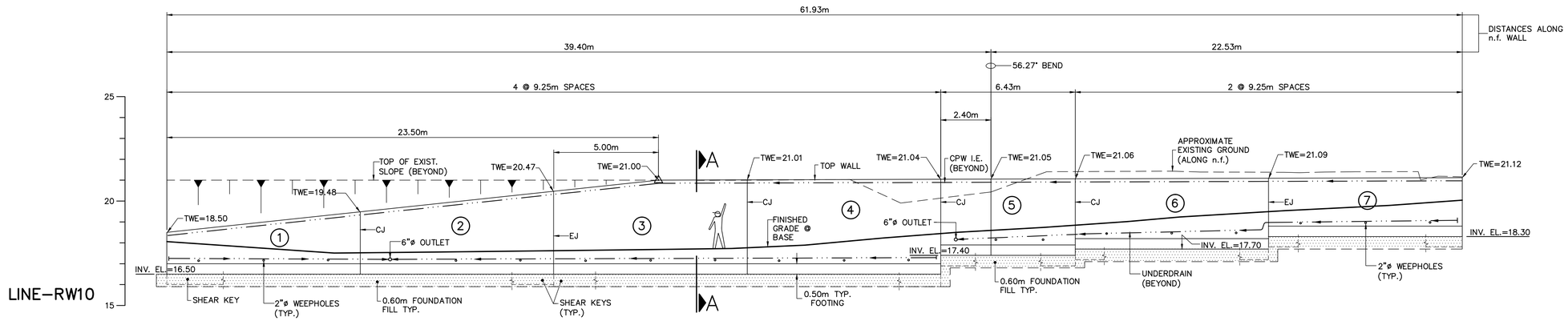
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

RW10 PLAN, TYPICAL SECTION & CRITERIA

DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

RW10/1

xx OF xx

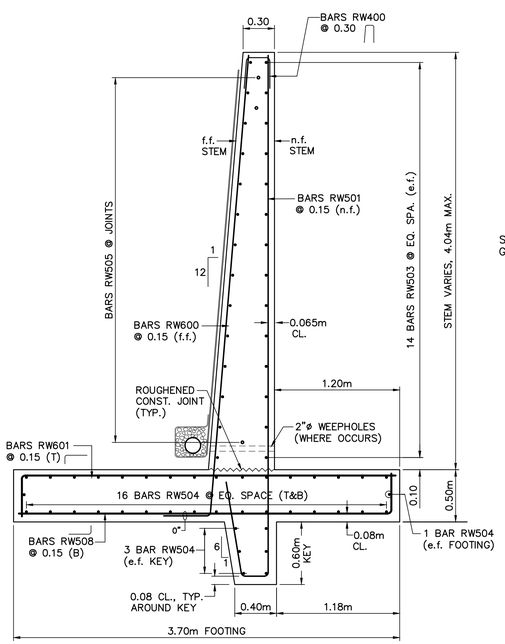


TOP WALL	18.50	19.03	19.56	20.10	20.63	21.00	21.02	21.04	21.05	21.07	21.08	21.10	21.11	21.12
FINISH GRADE BASEWALL	18.06	17.72	17.53	17.58	17.64	17.70	17.87	18.29	18.63	18.96	19.33	19.62	19.90	20.04

1+00 1+10 1+20 1+30 1+40 1+50 1+60 1+61.93

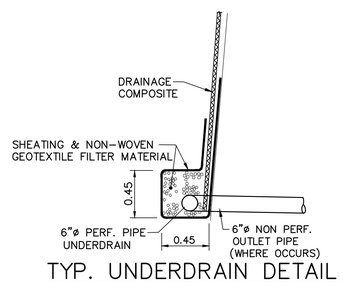
ELEVATION

SCALE = 1:100



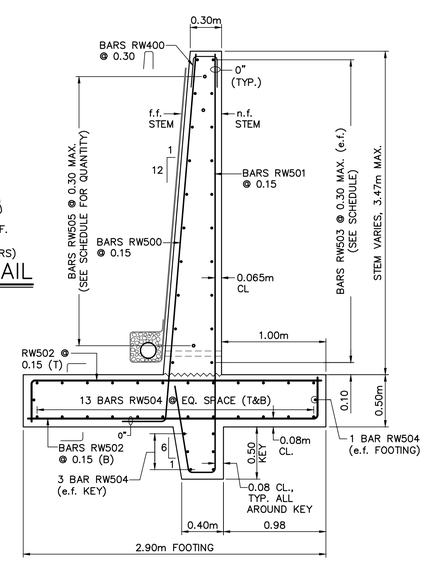
TYPICAL SECTION ③ & ④

SCALE = 1:25



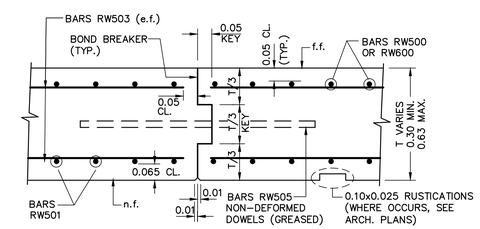
TYP. UNDERDRAIN DETAIL

NOT TO SCALE



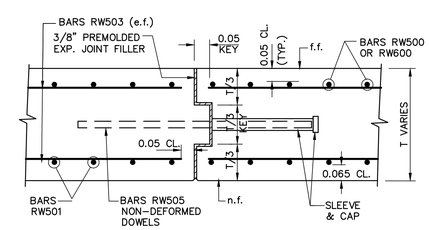
TYPICAL SECTION ①②⑤⑥⑦

SCALE = 1:25



CONTRACTION JOINT (C.J.) DETAIL

SCALE = 1:10



EXPANSION JOINT (E.J.) DETAIL

SCALE = 1:10

WALL NOTES

- PRIOR TO COMMENCING WORK, THE CONTRACTOR SHALL VERIFY THE EXISTING SITE CONDITIONS. THE ENGINEER SHALL BE NOTIFIED OF ANY DESCREPENCIES FROM THOSE SHOWN IN PLANS.
- FOR APPROXIMATE LOCATION OF UTILITIES, SEE UTILITY PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UTILITIES AND TAKE THE NECCESARY PRECAUTIONS TO AVOID DISTURBING.
- PRIOR TO PLACING FOUNDATION FILL, THE LOWER LIMIT OF EXCAVATION SHALL BE INSPECTED BY THE ENGINEER TO ASSURE ADEQUATE BEARING STRATA HAS BEEN ENCOUNTERED.
- CONCRETE WORK SHALL BE IN ACCORDANCE WITH SPECIAL PROVISION SP934. UNLESS OTHERWISE INDICATED, ALL 90 DEG. CORNERS SHALL BE CHAMFERED 0.02m & CONSTRUCTION JOINTS INTENTIONALLY ROUGHENED (1/4 INCH AMPLITUDE, CLEAN & FREE OF LOOSE MATERIAL). EXCEPT WHERE INDICATED OTHERWISE, REINFORCING STEEL SHALL BE UNCOATED & PROVIDED WITH 0.05m MINIMUM CONCRETE CLEAR COVER. REINFORCING STEEL SHALL MEET THE REQUIREMENTS OF ASTM A615.
- FOR DETAILS & LOCATIONS OF WALL RUSTICATIONS, SEE ARCHITECTURAL PLANS.
- BACKFILL MATERIAL SHALL MEET THE REQUIREMENTS OF A CLASS "A" BORROW MATERIAL, PAR. 203-2.03(d).
- REINFORCEMENT SHOP DRAWINGS SHALL BE IN METERS. BAR MARKS SHOULD NOT BE CHANGED. WHERE BARS ARE OF VARIABLE LENGTH, SUFFIXES CAN BE ADDED TO BAR MARKS.

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

RW10 ELEVATION & STRUCT. DETAILS

DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

RW10/2

XX OF XX

BAR SCHEDULE

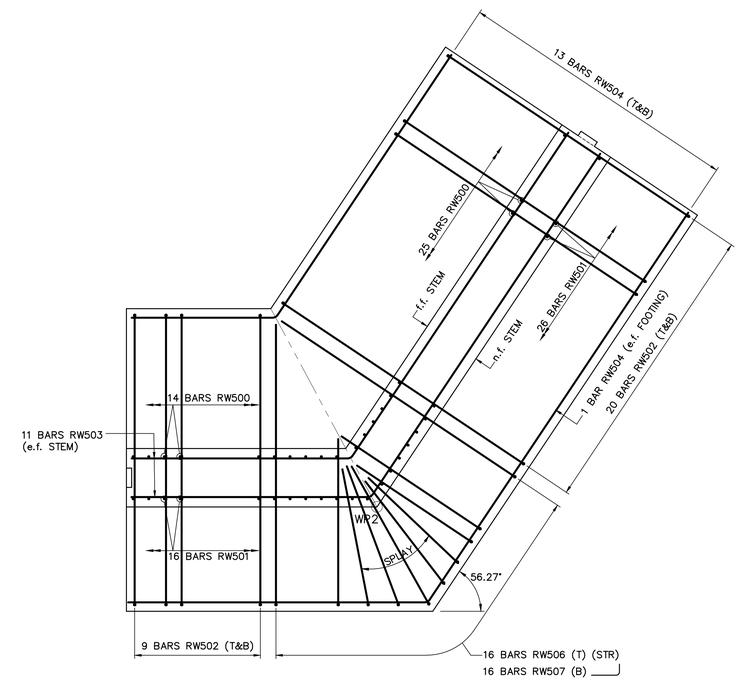
BOLD INDICATES AVERAGE QUANTITY OR LENGTH

BAR	SPACING C TO C	SIZE	TYPE	BAR DETAILS A	B	C	D	E	F	G	H		LENGTH	NO.	LBS.	REMARKS
SECTIONS 1&2																
RW400	0.30	4	2	0.30	0.18	0.30							0.78	64	109	TOP STEM REINF., 32 PER SECTION
RW500	0.15	5	1	0.30	**2.86**								**3.16**	124	1341	STEM PRIMARY REINF., LEG "B" VARIES, 62 PER SECTION
RW501	0.15	5	3	**3.36**	0.25	0.82							**4.43**	124	1880	STEM NF VERT. REINF., LEG "A" VARIES, 62 PER SECTION
RW502	0.15	5	1	0.37	2.80								3.17	248	2690	FOOTING TRANSVERSE T&B REINF., 124 PER SECTION
RW503	VARIES	5	STR	9.15									9.15	42	1315	STEM LONG. REINF., 9 E.F. AT SECT. 1, 12 E.F. AT SECT. 2
RW504	0.22	5	STR	19.05									19.05	34	2216	T&B FOOTING & KEY LONGITUDINAL RENF., 1 STAGGERED 0.65M LAP INCLUDED
RW505	0.30 MAX	5	STR	0.90									0.90	19	59	NON-DEFORMED DOWELS, 8 AT JOINT 1 - 2, 11 AT JOINT 2 - 3
													SUBTOTAL:		9610	
SECTIONS 3&4																
RW400	0.30	4	2	0.30	0.18	0.30							0.78	64	109	TOP STEM REINF., 32 PER SECTION
RW501	0.15	5	3	**4.95**	0.25	0.82							**6.02**	124	2555	STEM NF VERT. REINF., LEG "A" VARIES, 62 PER SECTION
RW503	VARIES	5	STR	9.15									9.15	56	1753	STEM LONG. REINF., 14 E.F. PER SECT.
RW504	0.23	5	STR	19.05									19.05	40	2608	T&B FOOTING & KEY LONGITUDINAL RENF., 1 STAGGERED 0.65M LAP INCLUDED
RW505	0.29	5	STR	0.90									0.90	23	71	NON-DEFORMED DOWELS, 13 AT JOINT 3 - 4, 10 AT JOINT 4 - 5
RW508	0.15	5	1	0.37	3.60								3.97	124	1685	FOOTING TRANSVERSE BOTT. REINF., 62 PER SECTION
RW600	0.15	6	1	0.40	**4.35**								**4.75**	124	2903	STEM PRIMARY REINF., LEG "B" VARIES, 62 PER SECTION
RW601	0.15	6	1	0.37	3.60								3.97	124	2426	FOOTING TRANSVERSE TOP REINF., 62 PER SECTION
													SUBTOTAL:		14110	
SECTION 5																
RW400	0.30	4	2	0.30	0.18	0.30							0.78	20	34	TOP STEM REINF.
RW500	0.15	5	1	0.30	**3.52**								**3.82**	39	510	STEM PRIMARY REINF.
RW501	0.15	5	3	**4.02**	0.25	0.82							**5.09**	42	732	STEM NF VERT. REINF.
RW502	0.15	5	1	0.37	2.80								3.17	58	629	FOOTING TRANSVERSE T&B REINF.
RW503	0.30	5	4	**2.25**	**3.85**								**6.10**	22	459	STEM LONG. REINF., 11 E.F.
RW504	0.22	5	4	**2.15**	**3.75**								**5.90**	34	687	T&B FOOTING & KEY LONGITUDINAL RENF.
RW506	VARIES	5	STR	**2.10**									**2.10**	16	115	FOOTING TRANSVERSE T REINF. NEAR BEND
RW507	VARIES	5	1	0.37	**2.10**								**2.47**	16	135	FOOTING TRANSVERSE B REINF. NEAR BEND
RW505	0.30	5	STR	0.90									0.90	9	28	NON-DEFORMED DOWELS AT JOINT 5 - 6
													SUBTOTAL:		3329	
SECTION 6																
RW400	0.30	4	2	0.30	0.18	0.30							0.78	32	55	TOP STEM REINF.
RW500	0.15	5	1	0.30	**3.25**								**3.55**	62	753	STEM PRIMARY REINF., LEG "B" VARIES
RW501	0.15	5	3	**3.75**	0.25	0.82							**4.82**	62	1023	STEM NF VERT. REINF., LEG "A" VARIES
RW502	0.15	5	1	0.37	2.80								3.17	124	1345	FOOTING TRANSVERSE T&B REINF.
RW503	0.29	5	STR	9.15									9.15	20	626	STEM LONG. REINF., 10 E.F.
RW504	0.22	5	STR	9.15									9.15	34	1065	T&B FOOTING & KEY LONGITUDINAL RENF.
RW505	0.29	5	STR	0.90									0.90	7	22	NON-DEFORMED DOWELS AT JOINT 6 - 7
													SUBTOTAL:		4889	
SECTION 7																
RW400	0.30	4	2	0.30	0.18	0.30							0.78	32	55	TOP STEM REINF.
RW500	0.15	5	1	0.30	**2.68**								**2.98**	62	632	STEM PRIMARY REINF., LEG "B" VARIES
RW501	0.15	5	3	**3.18**	0.25	0.82							**4.25**	62	902	STEM NF VERT. REINF., LEG "A" VARIES
RW502	0.15	5	1	0.37	2.80								3.17	124	1345	FOOTING TRANSVERSE T&B REINF.
RW503	0.29	5	STR	9.15									9.15	16	501	STEM LONG. REINF., 8 E.F.
RW504	0.22	5	STR	9.15									9.15	34	1065	T&B FOOTING & KEY LONGITUDINAL RENF.
													SUBTOTAL:		4500	
													GRAND TOTAL = 36,438 Lbs.			

QUANTITY ESTIMATE *

PRHTA SPEC. NO.	CLASS OF WORK	QUANTITY	UNIT
203	BORROW, CLASS A	443	CuM
206	UNCLASS. EXCAVATION FOR STRUCTURES	1014	CuM
207	FOUNDATION FILL	152	CuM
209	SHEATHING	13	CuM
SP934	CLASS III (GEN USE)–(2) CONCRETE	192	CuM
602	REINFORCING STEEL (GR 60)	36,438	Lbs.
SP909	DRAINAGE COMPOSITE	162	SqM.
605	6" DIAMETER UNDEDRAIN (a)	73	LnM.

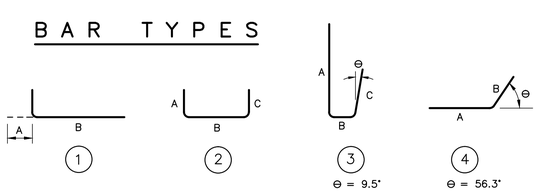
* THE CONTRACTOR SHALL MAKE HIS OWN TAKE–OFF FOR BID PURPOSES
(a) INCLUDES OUTLET PIPES



SECTION 5 PLAN

SCALE = 1:25

BAR TYPES



REINFORCING NOTES:

1. ALL DIMENSIONS ARE "OUT TO OUT" OF BARS.

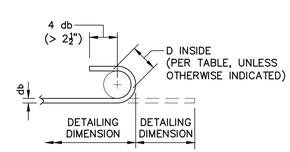
2. NO ALLOWANCE FOR BEND CURVATURE IS MADE EXCEPT FOR STANDARD HOOK AND RADII IN EXCESS OF SAME.

3. TENSILE REINFORCEMENT SHALL NOT BE SPLICED AT POINT OF MAXIMUM STRESS. SPLICES SHALL BE STAGGERED AS FAR AS POSSIBLE. NUMBER OF LAP SPLICES BASED ON AVAILABILITY OF 12.19m (40ft.) LONG REINF. BARS

4. ALL BARS 0.05 CLEAR FROM CONCRETE FACES UNLESS OTHERWISE INDICATED.

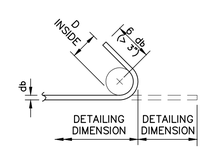
5. UNLESS OTHERWISE CALLED FOR OR SHOWN ON PLANS, BARS SHALL BE LAPPED IN 40 DIAMETERS. LAPS SHALL BE STAGGERED.

6. UNLESS OTHERWISE INDICATED, REINFORCING STEEL SHALL CONFORM TO SPECIFICATION 602, AND TO THE REQUIREMENTS OF SPEC. NO.709.01, GRADE 60.



180° HOOK DETAIL

NOT TO SCALE



135° SEISMIC HOOK DETAIL

NOT TO SCALE

BAR SIZE AND USE	MINIMUM INSIDE DIAMETER
No. 3 THROUGH NO. 5 – GENERAL	6.0 db
No. 3 THROUGH NO. 5 – STIRRUPS AND TIES	4.0 db
No. 6 THROUGH NO. 8 – GENERAL	6.0 db
No. 9 No. 10, AND No. 11	8.0 db

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RW10 BAR SCHEDULE
& QUANTITY ESTIMATE

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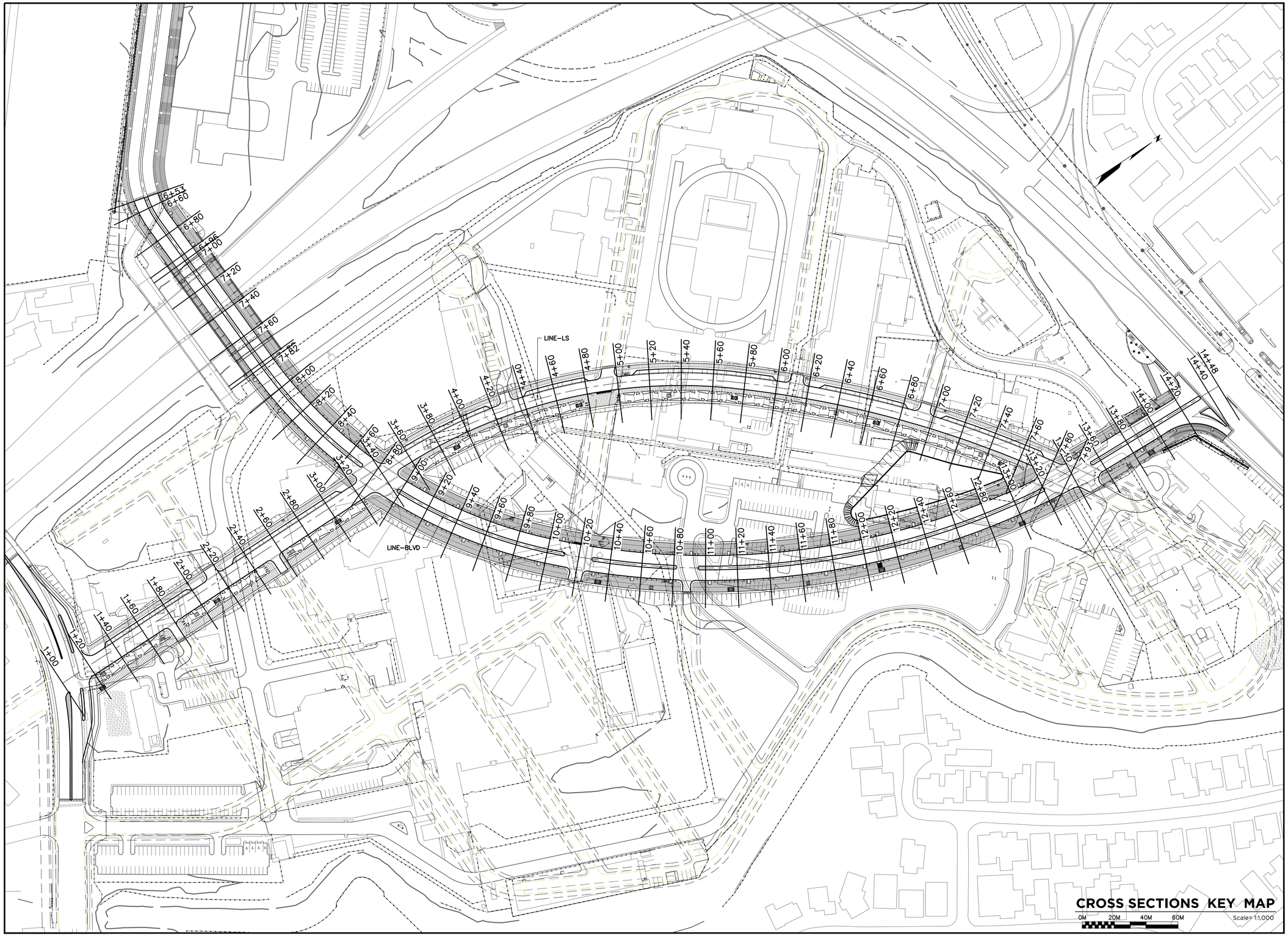
RW10/3

xx OF xx



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CROSS SECTIONS
KEY MAP

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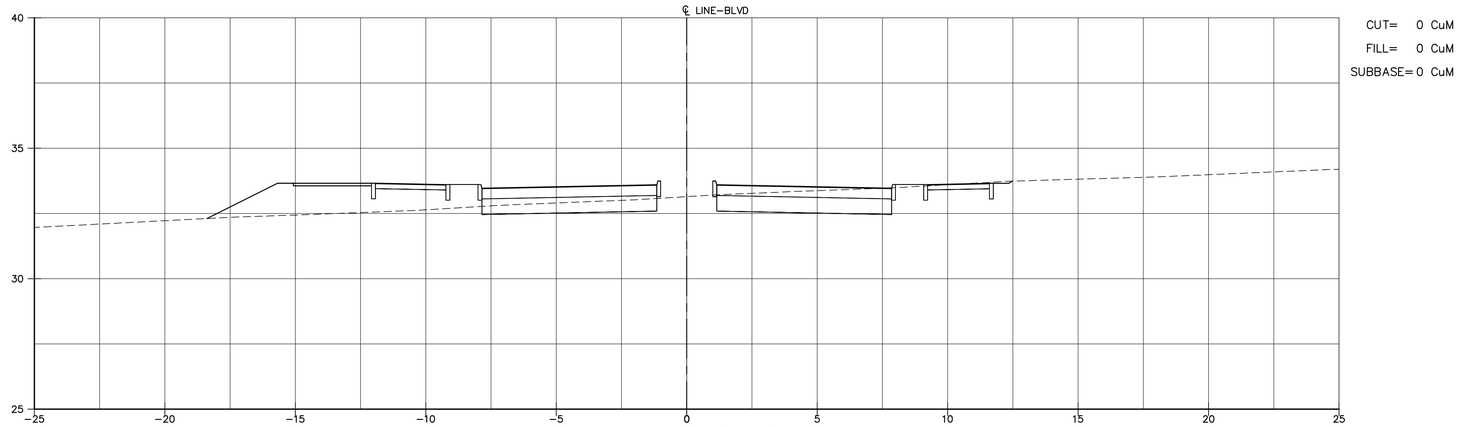
CS-01



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P.G. = 33.14
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FILL= 0 SqM
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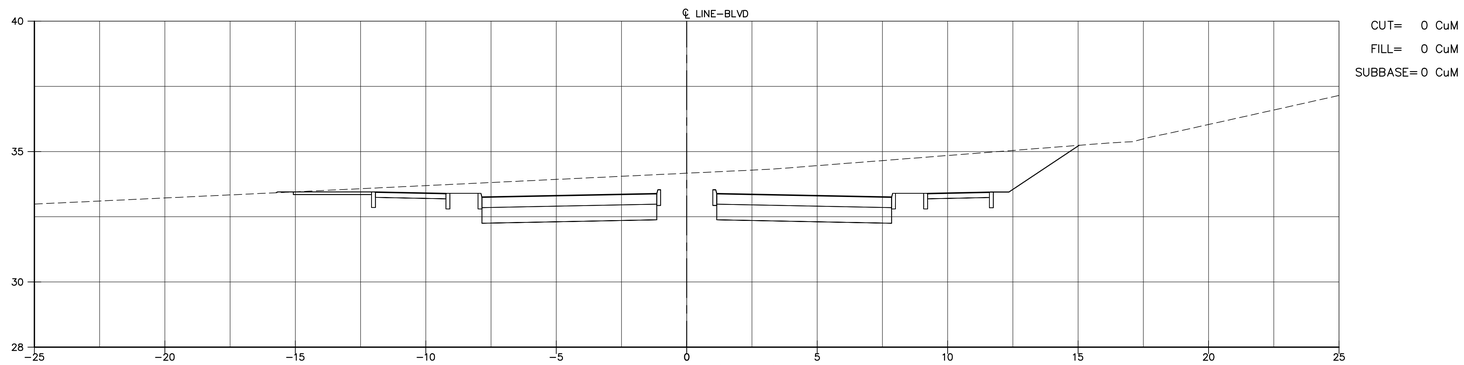

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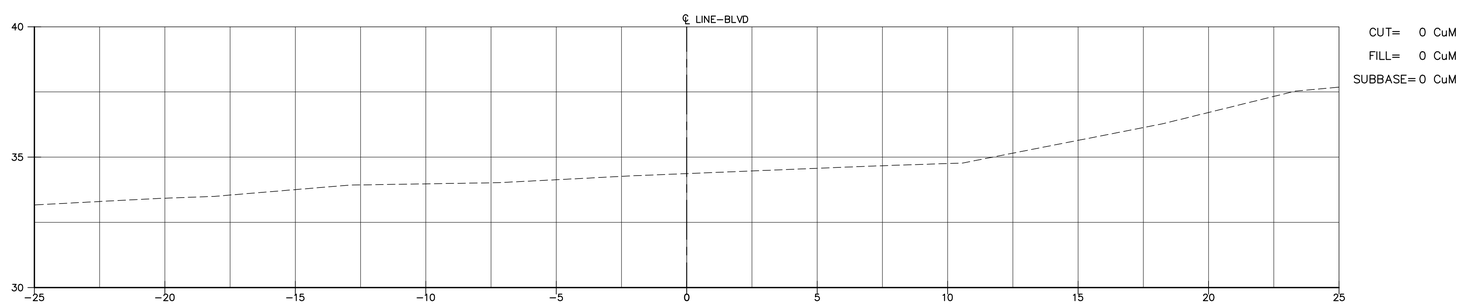

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P.G. =
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FILL= 0 SqM
SUBBASE= 0 SqM

Scale= 1:100
0M 2M 4M 6M

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FROM STA. 6+53(BLVD)
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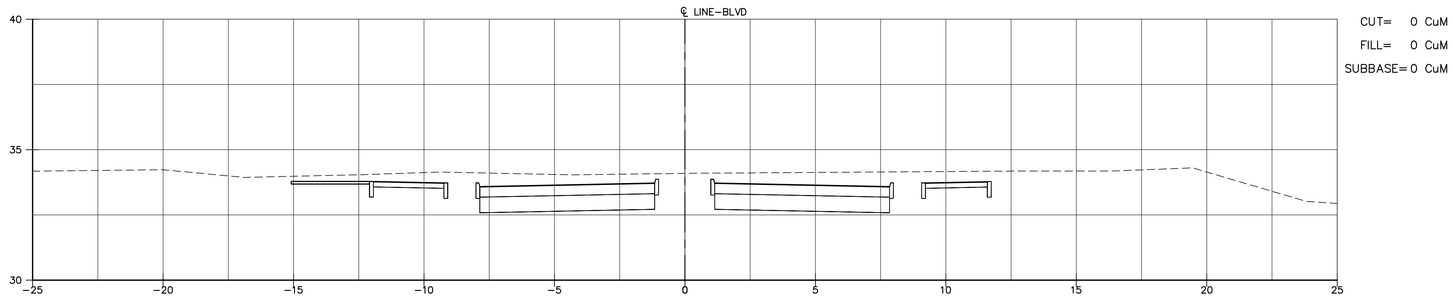
CS-02



STA. 7+82 (BLVD)
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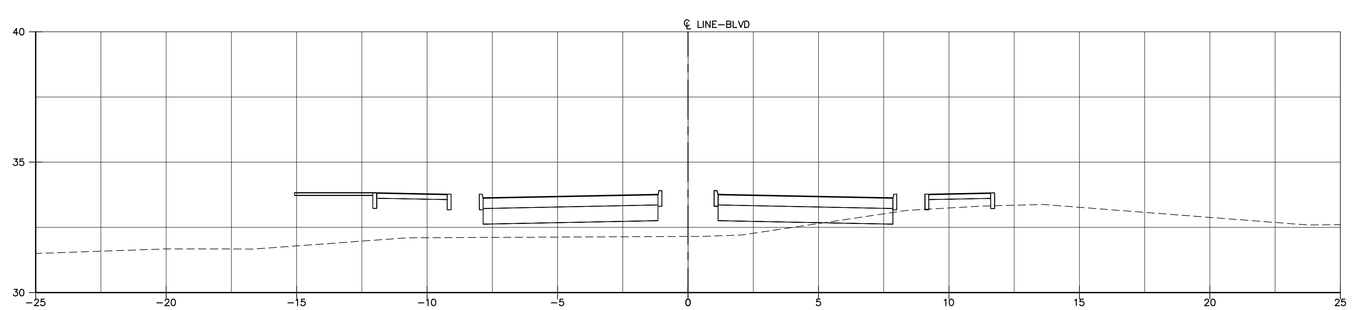
FILL= 0 SqM
SUBBASE= 0 SqM

BRIDGE BR–3



STA. 6+96 (BLVD)
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P.G. = 33.17
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FILL= 0 SqM
SUBBASE= 0 SqM

Scale= 1:100
0M 2M 4M 6M

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CROSS SECTIONS FROM STA. 6+96(BLVD) TO STA. 7+82(BLVD)

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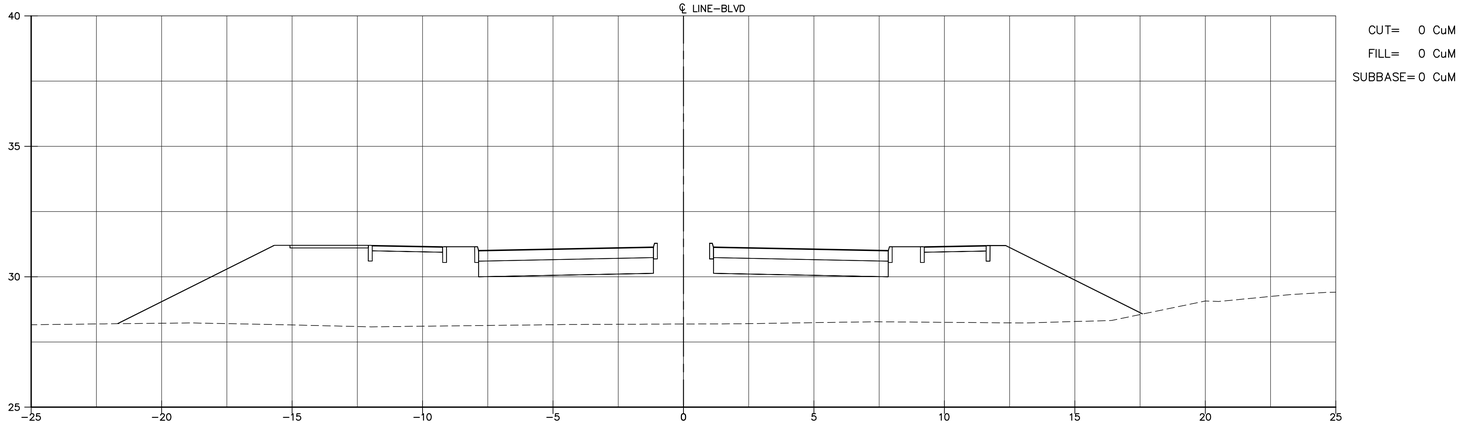
CS-03



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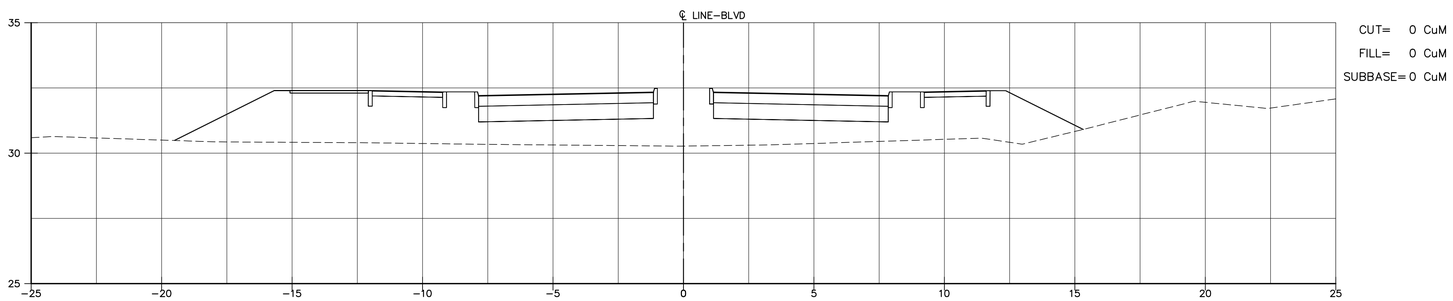

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P.G. = 31.88
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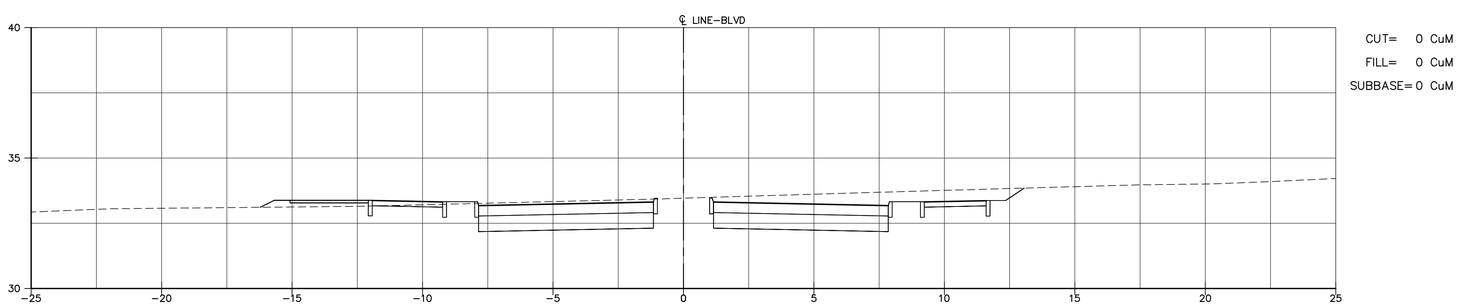

STA. 8+00 (BLVD)
E.G. = 33.46
P.G. = 32.86
CUT= 0 SqM
FILL= 0 SqM
SUBBASE= 0 SqM

Scale= 1:100
0M 2M 4M 6M

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TO STA. 8+40(BLVD)

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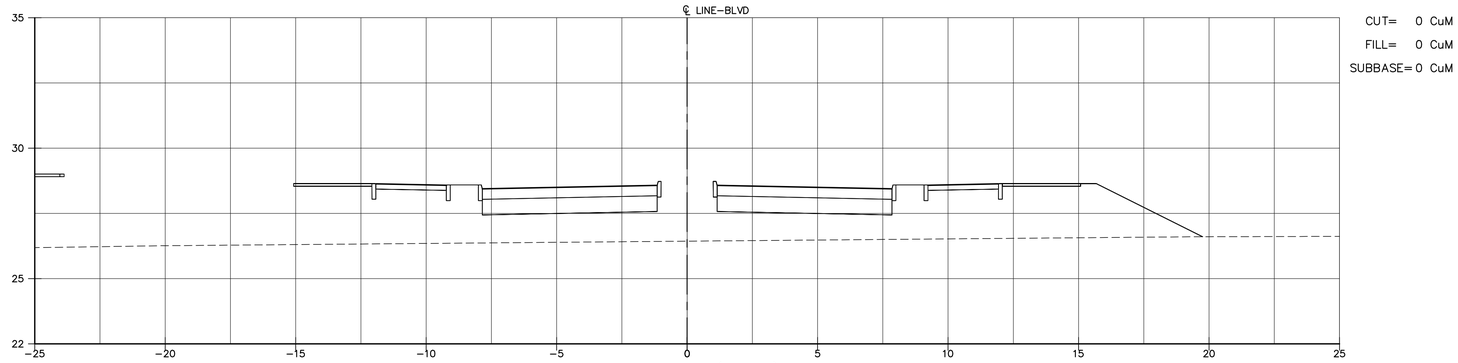
CS-04



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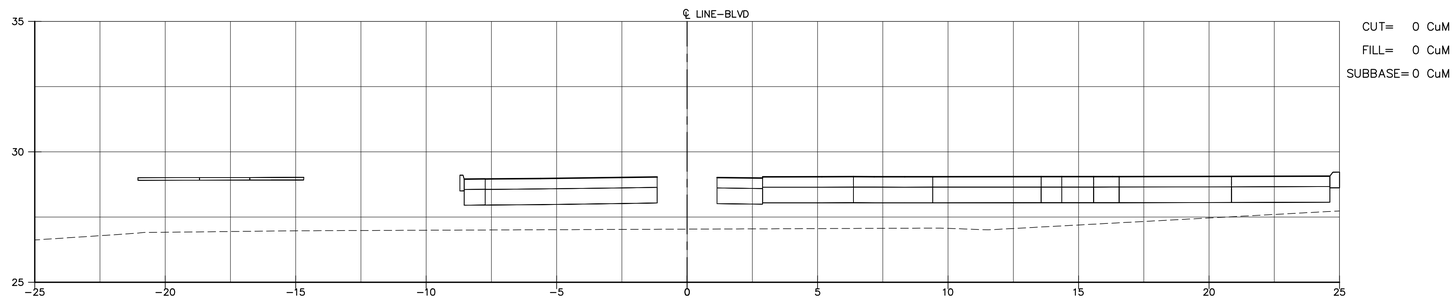

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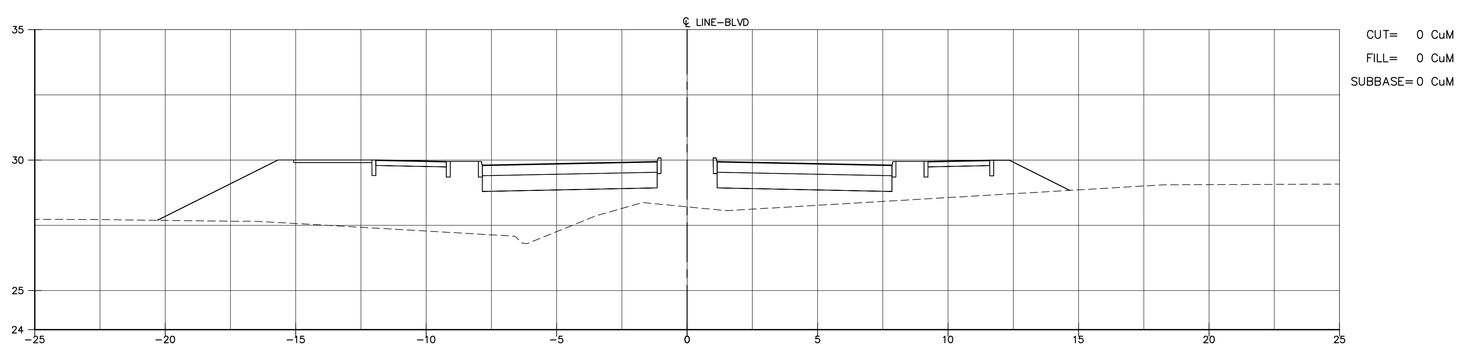

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P.G. = 29.48
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FILL= 0 SqM
SUBBASE= 0 SqM

Scale= 1:100
0M 2M 4M 6M

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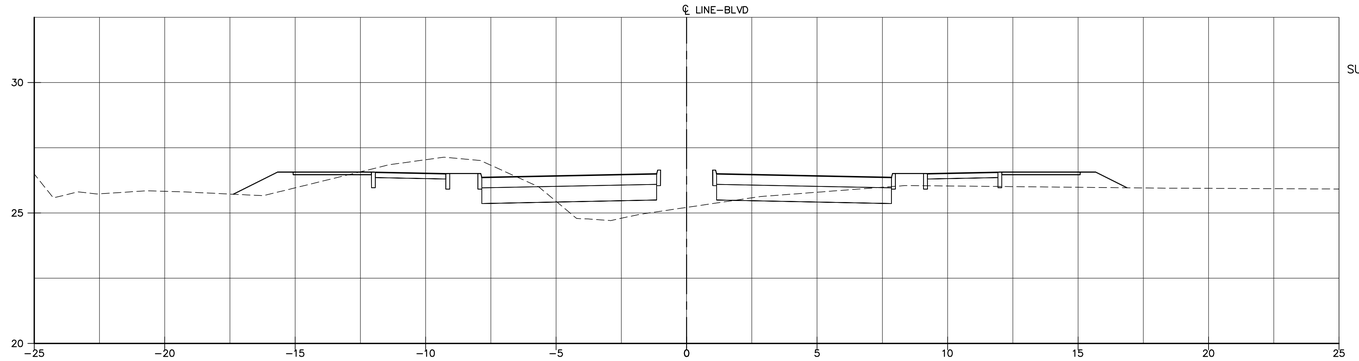
CS-05



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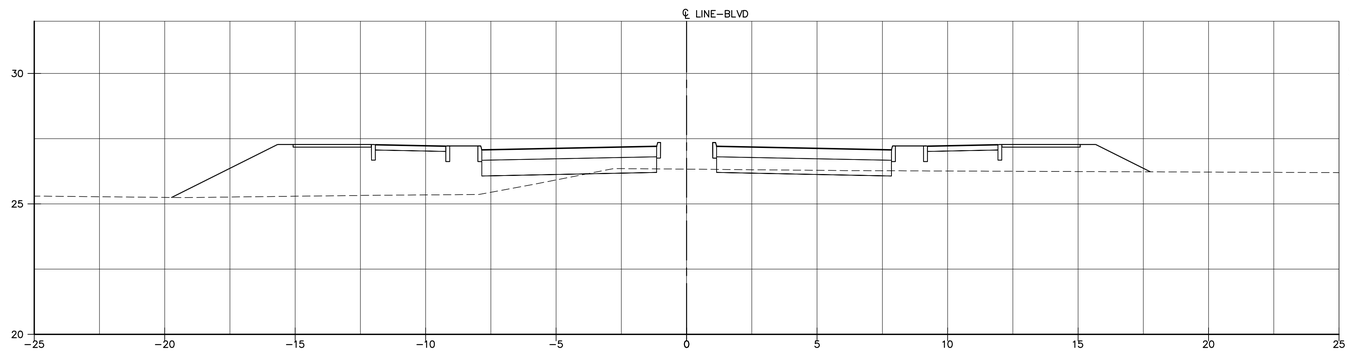

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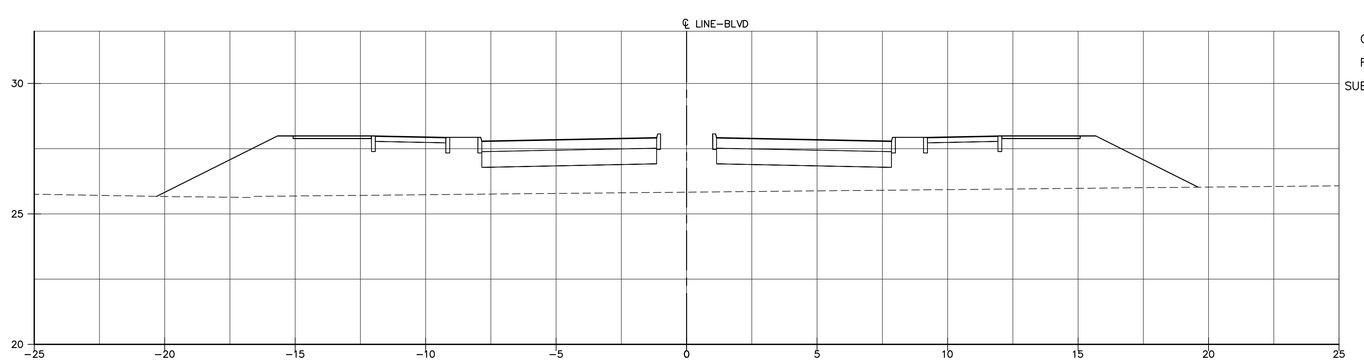

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STA. 9+20 (BLVD)

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FILL= 0 SqM
SUBBASE= 0 SqM

Scale= 1:100
0M 2M 4M 6M

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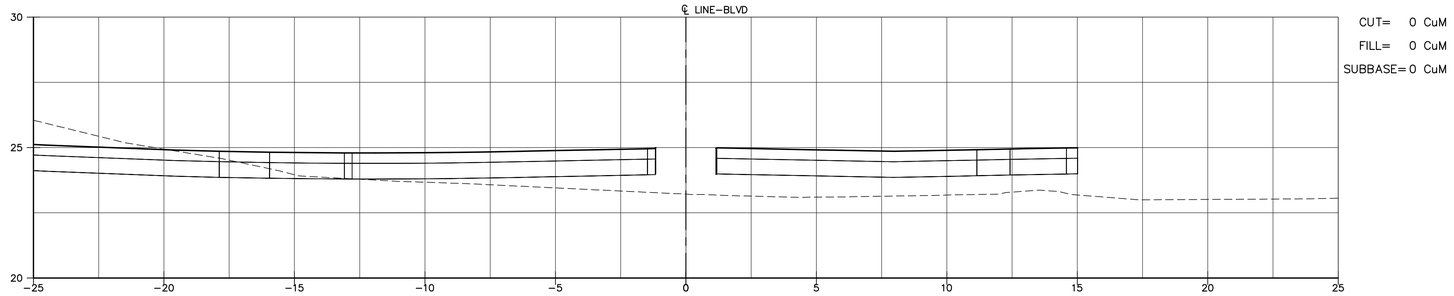
CS-06



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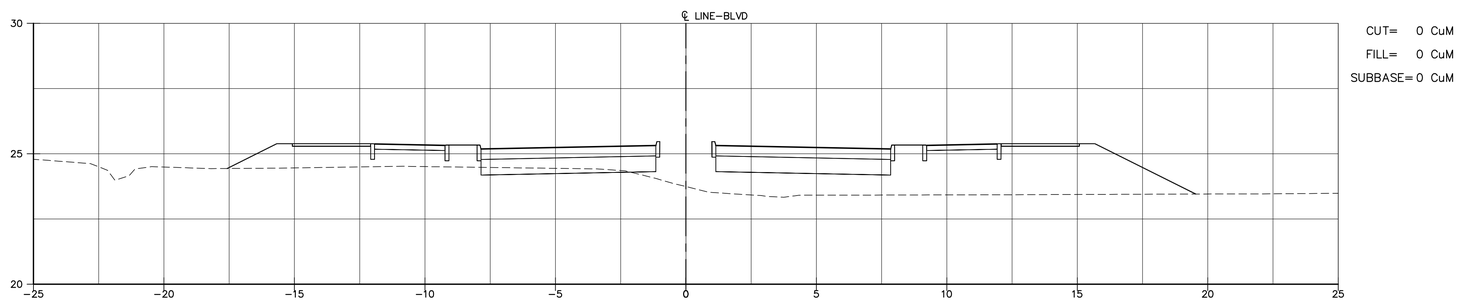

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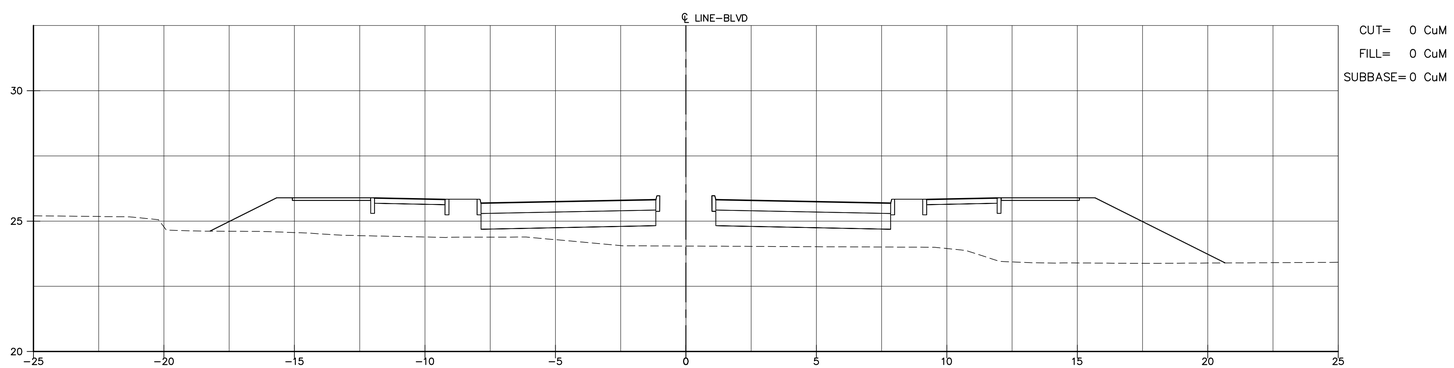
SUBBASE= 0 SqM



STA. 9+80 (BLVD)
E.G. = 24.04
P.G. = 25.37
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SUBBASE= 0 SqM

Scale= 1:100
0M 2M 4M 6M

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FINAL CONSTRUCTION
DOCUMENTS (100%)
MAY 13, 2013

CROSS SECTIONS
FROM STA. 9+80(BLVD)
TO STA. 10+20(BLVD)

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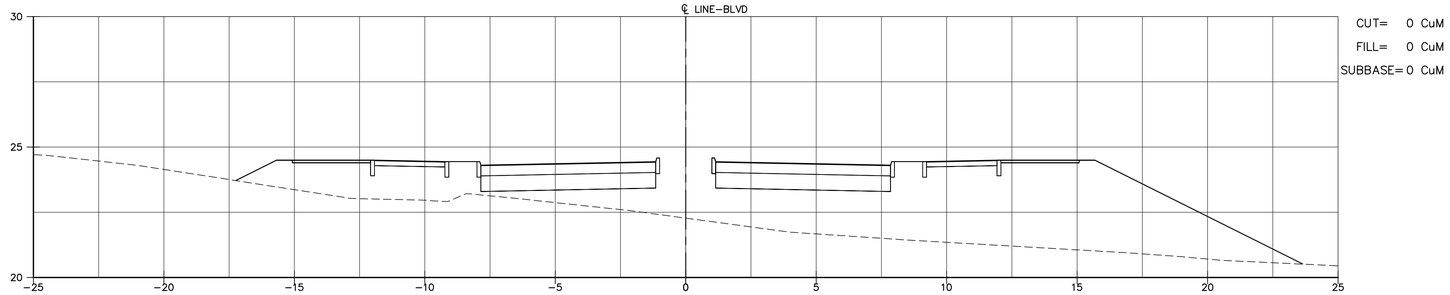
CS-07



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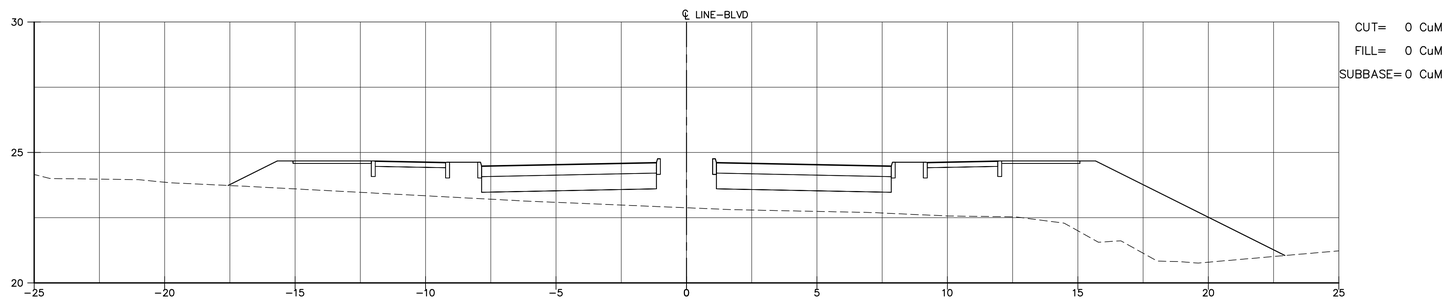

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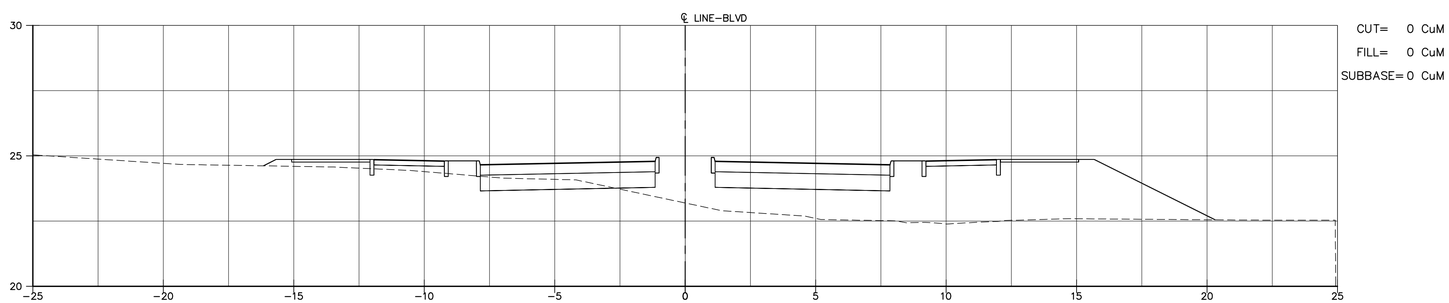

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Scale= 1:100
0M 2M 4M 6M

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FINAL CONSTRUCTION DOCUMENTS (100%)
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CROSS SECTIONS FROM STA. 10+40(BLVD) TO STA. 10+80(BLVD)

DRAWN BY:
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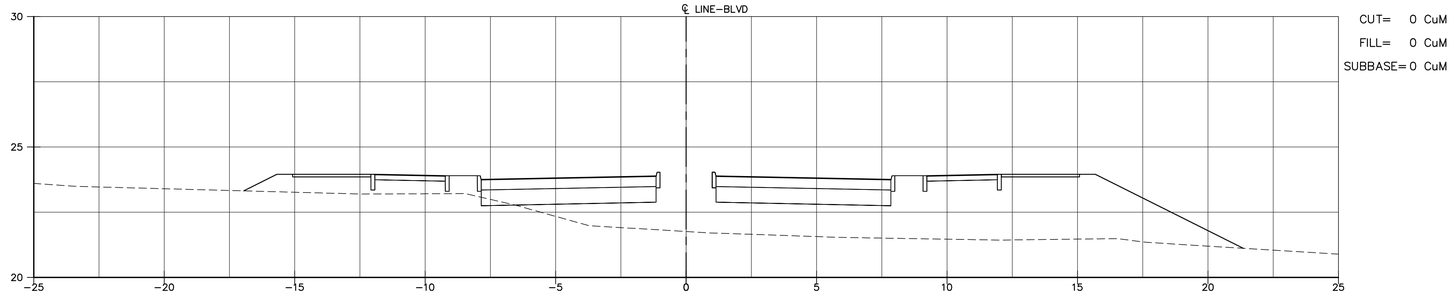
CS-08



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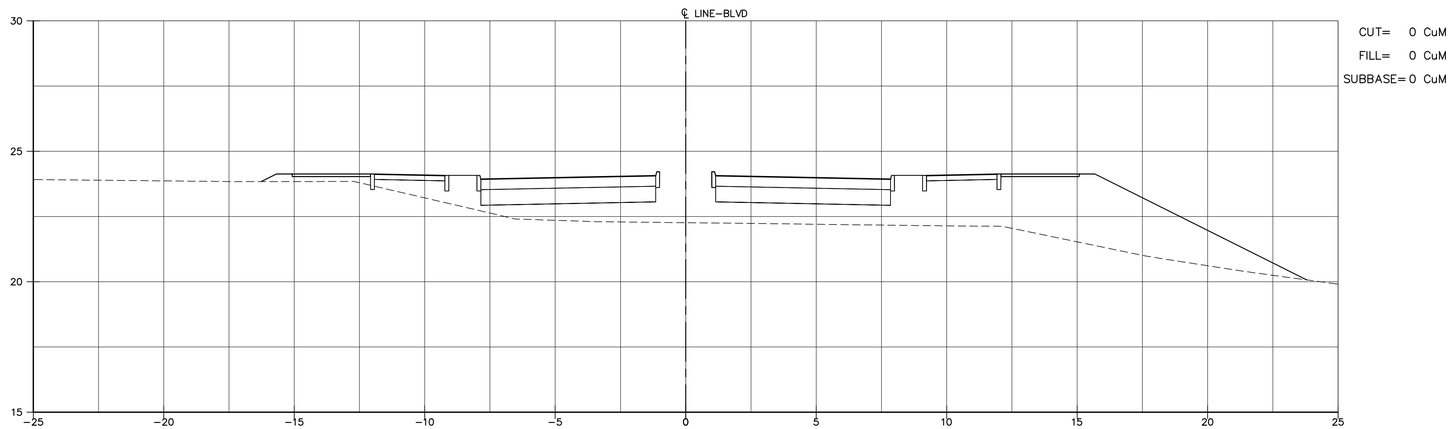

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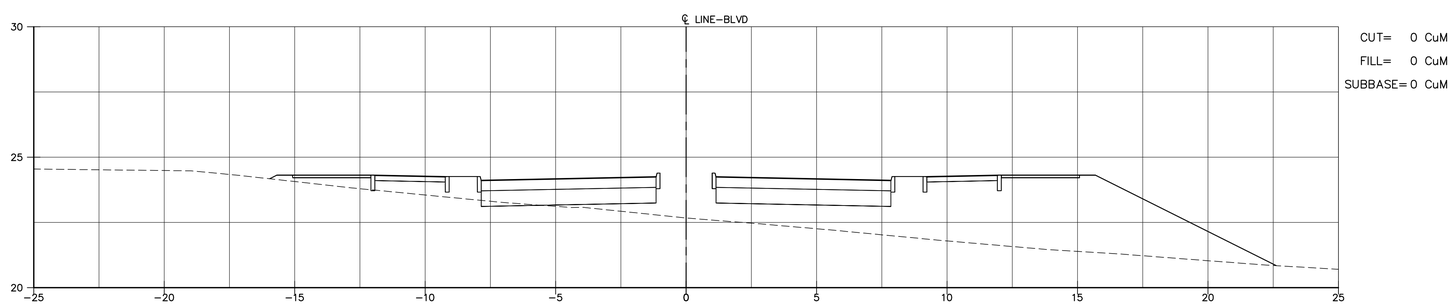

STA. 11+00 (BLVD)

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FILL= 0 SqM

SUBBASE= 0 SqM

Scale= 1:100

0M 2M 4M 6M

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FINAL CONSTRUCTION
DOCUMENTS (100%)
MAY 13, 2013

CROSS SECTIONS FROM STA. 11+00(BLVD) TO STA. 11+40(BLVD)

DRAWN BY:
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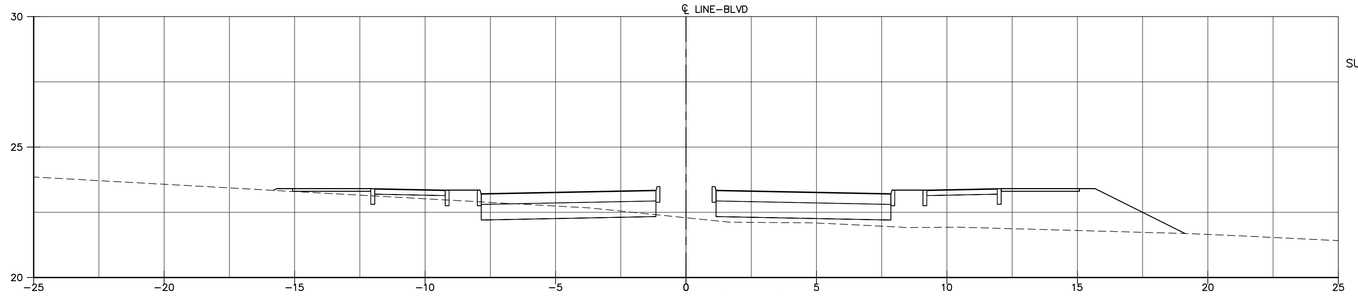
CS-09



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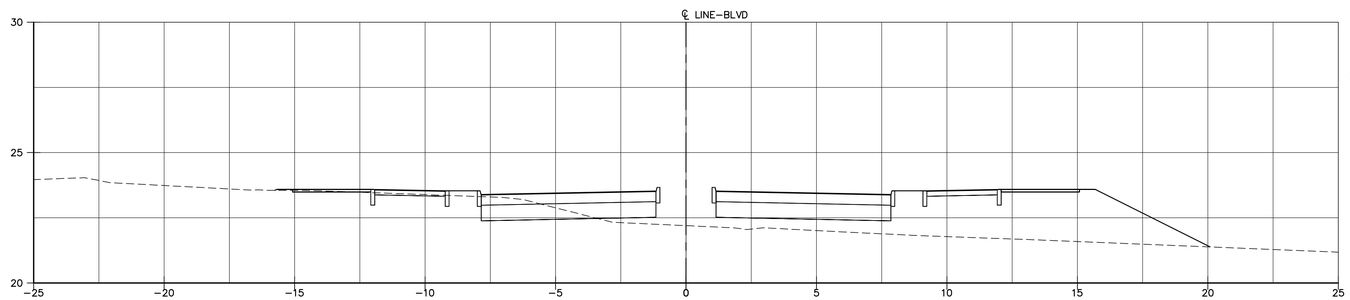

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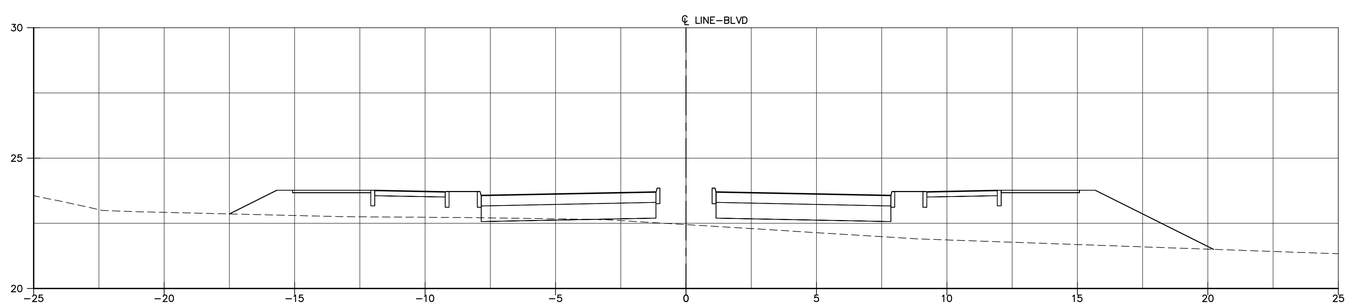

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STA. 11+60 (BLVD)
E.G. = 22.45
P.G. = 23.25
CUT= 0 SqM
FILL= 0 SqM
SUBBASE= 0 SqM

Scale= 1:100
0M 2M 4M 6M

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FINAL CONSTRUCTION
DOCUMENTS (100%)
MAY 13, 2013

CROSS SECTIONS FROM STA. 11+60(BLVD) TO STA. 12+00(BLVD)

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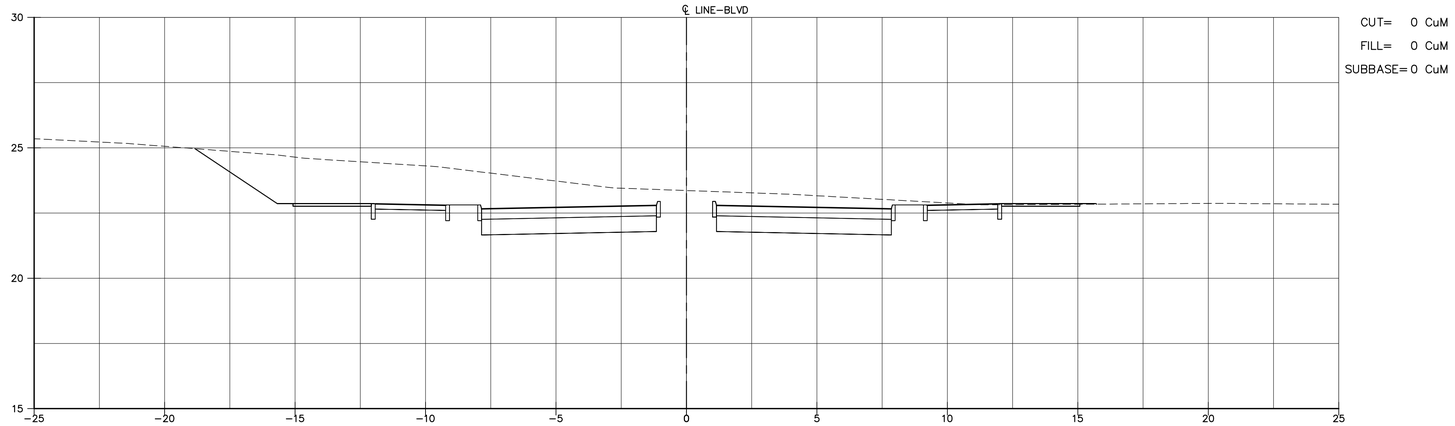
CS-10



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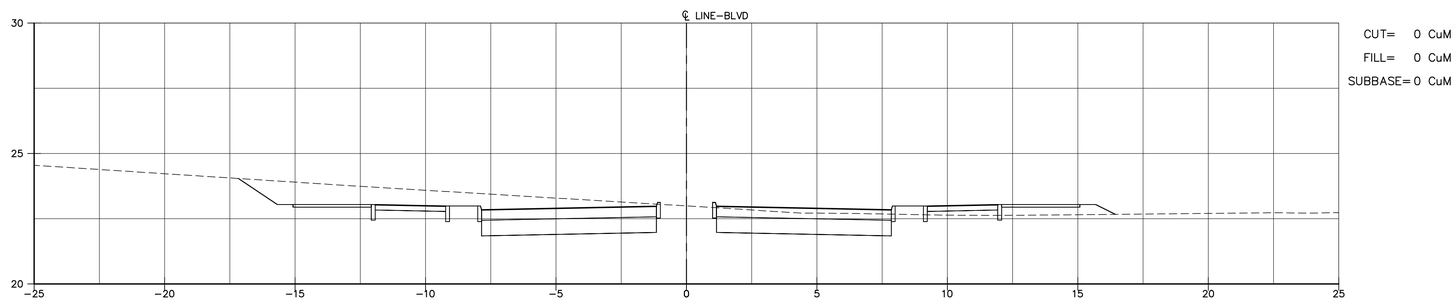

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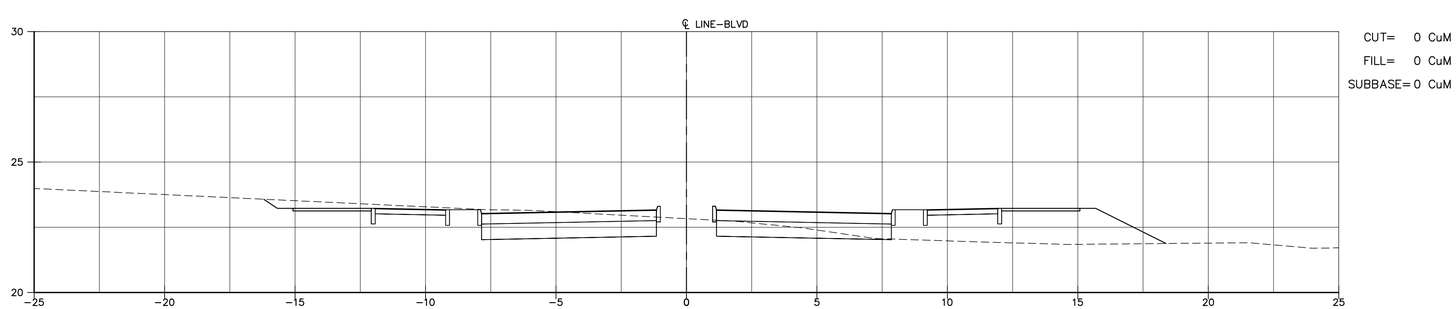

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P.G. = 22.70
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Scale= 1:100
0M 2M 4M 6M

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DOCUMENTS (100%)
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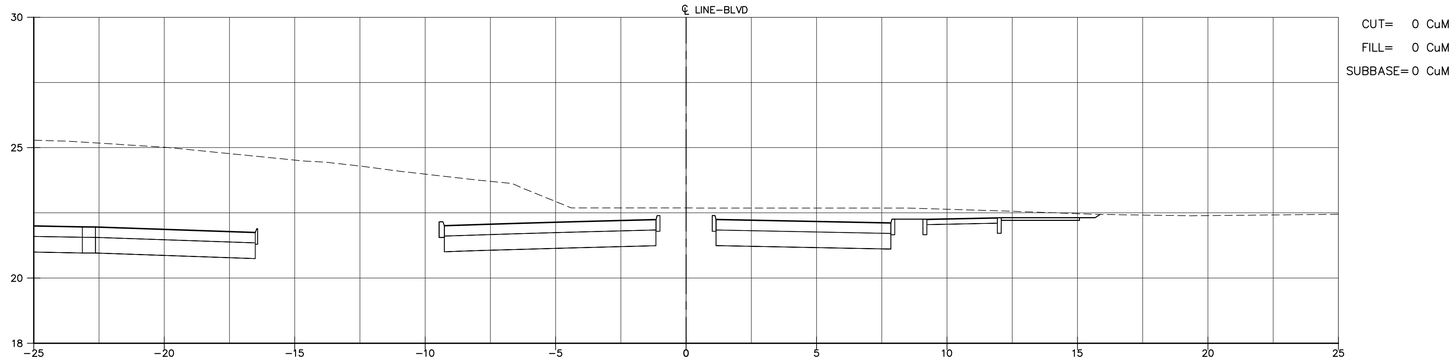

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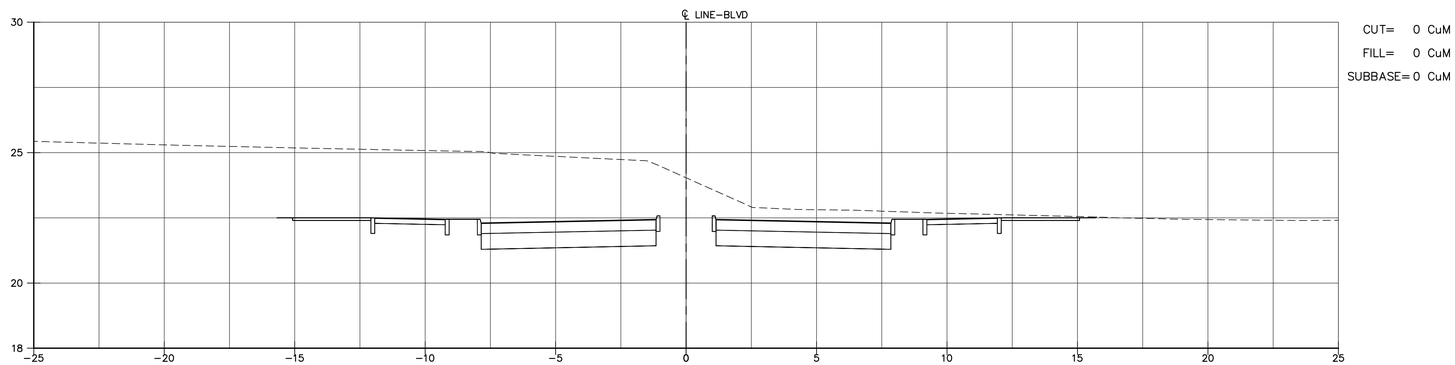

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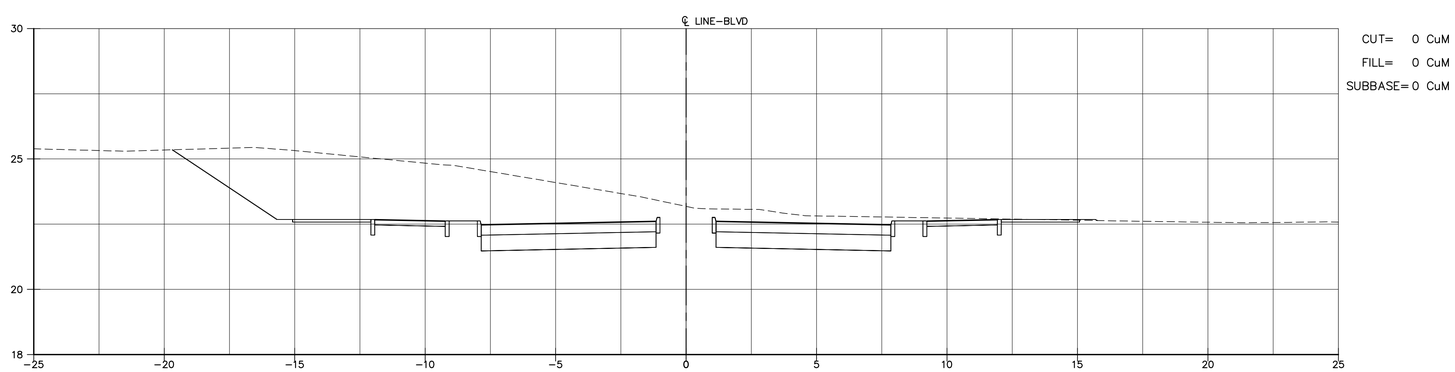

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Scale= 1:100
0M 2M 4M 6M

SCIENCE CITY
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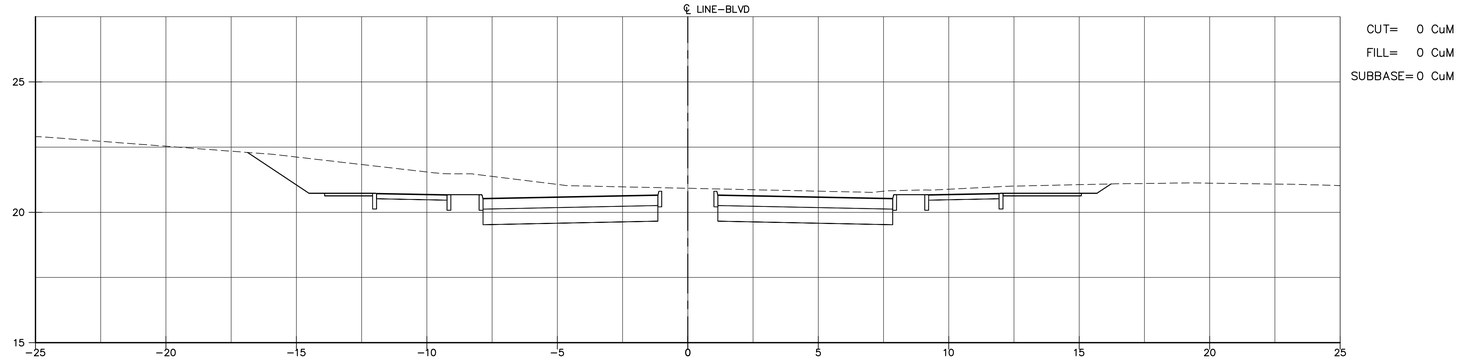

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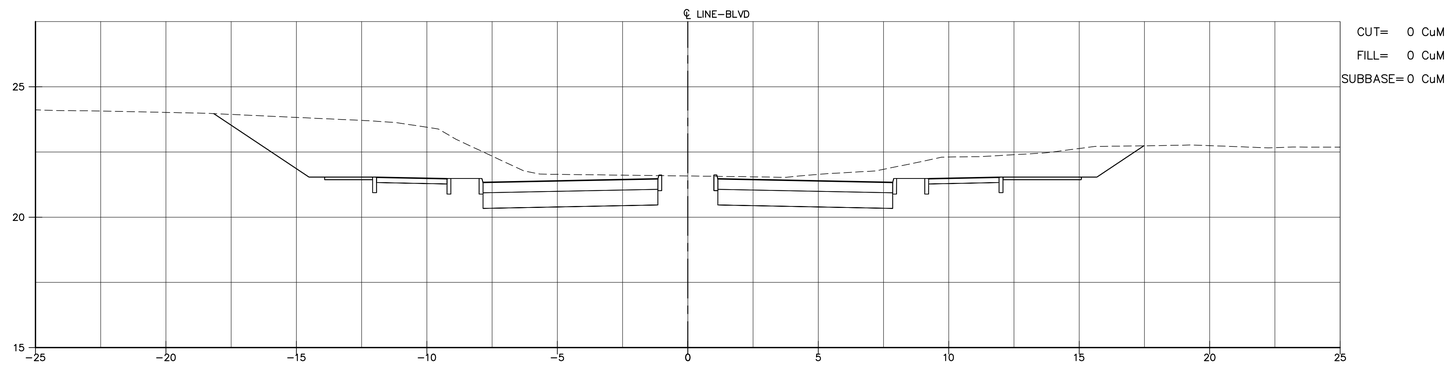

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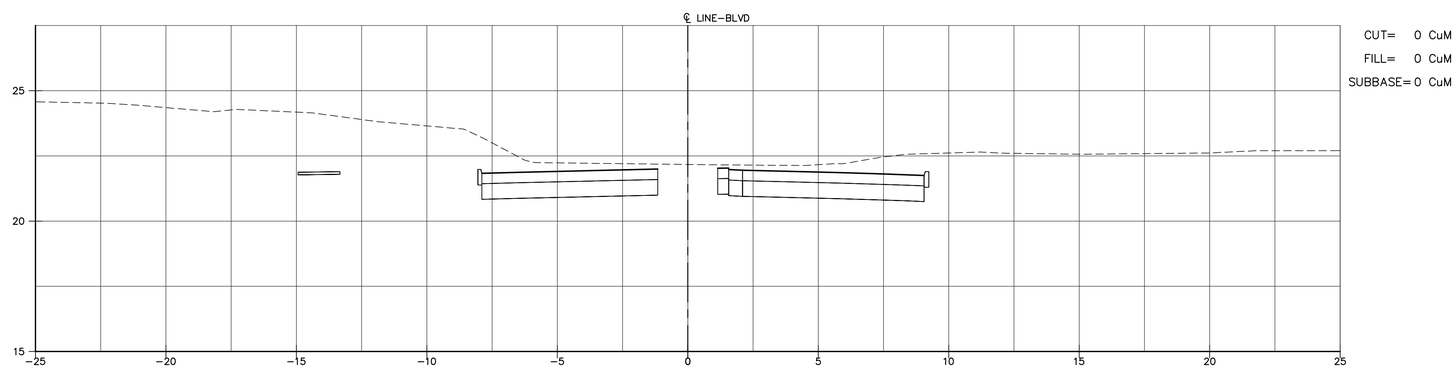

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Scale= 1:100
0M 2M 4M 6M

SCIENCE CITY
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FINAL CONSTRUCTION
DOCUMENTS (100%)
MAY 13, 2013

CROSS SECTIONS FROM STA. 13+40(BLVD) TO STA. 13+80(BLVD)

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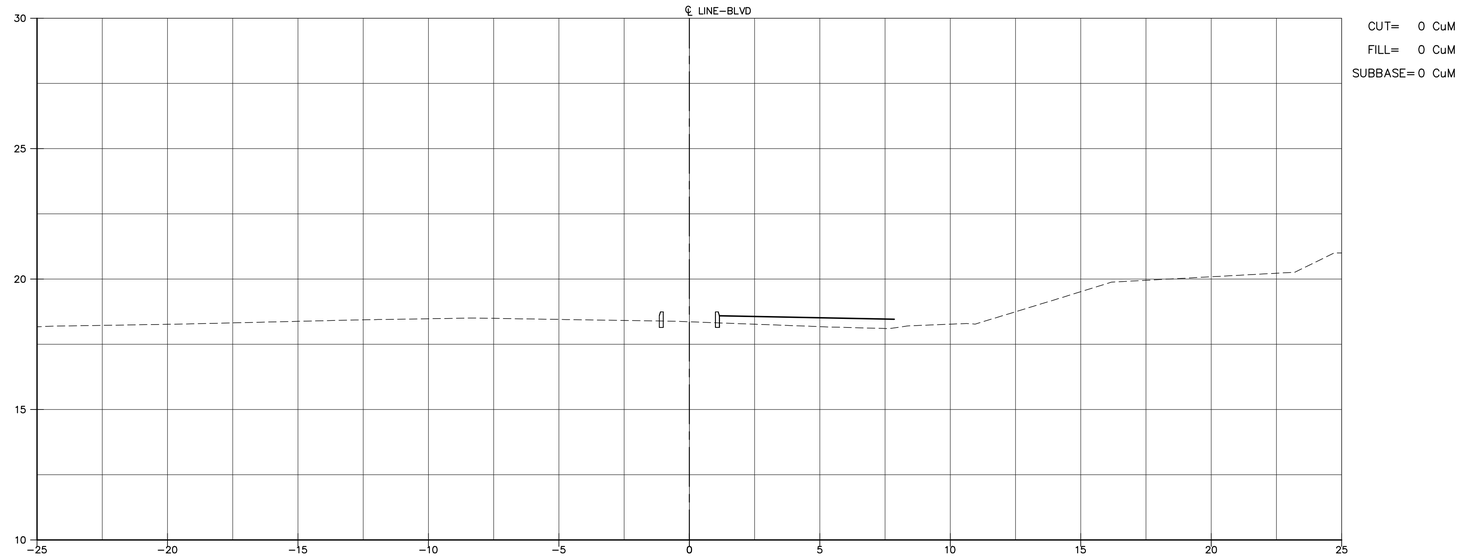

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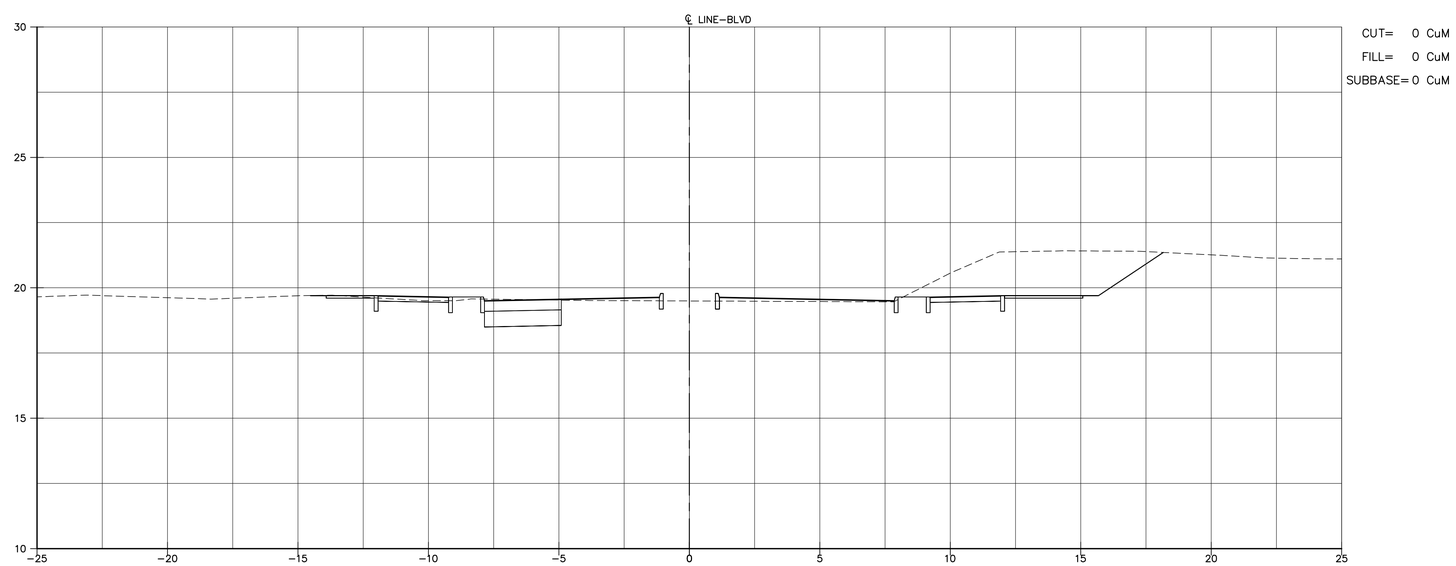

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Scale= 1:100
0M 2M 4M 6M

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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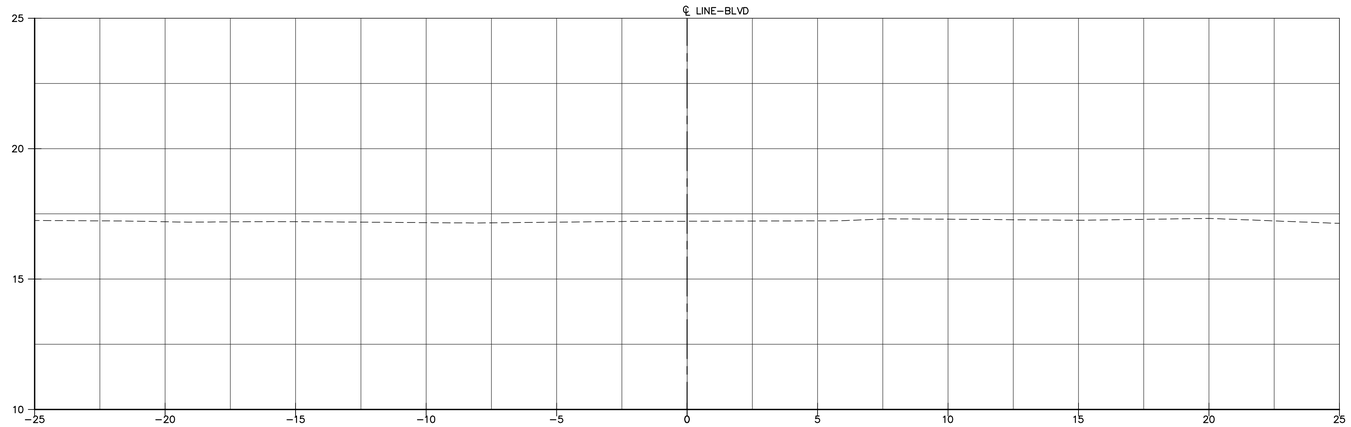
CS-14



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P.G. =

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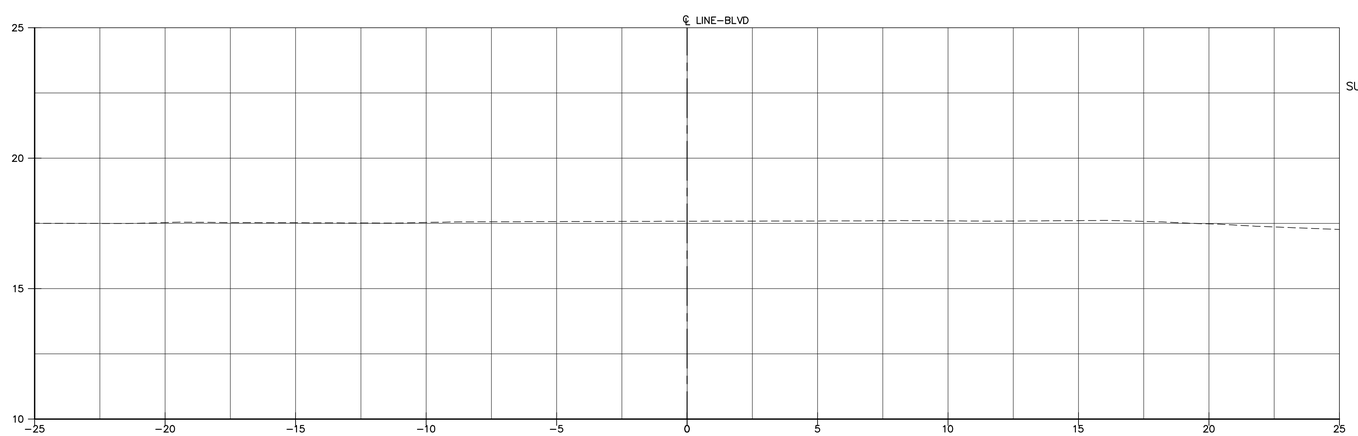

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FILL= 0 CuM

SUBBASE= 0 CuM

STA. 14+40 (BLVD)

E.G. = 17.58
P.G. =

CUT= 0 SqM

FILL= 0 SqM

SUBBASE= 0 SqM

Scale= 1:100

0M 2M 4M 6M

SCIENCE CITY
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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

CROSS SECTIONS FROM STA. 14+40(BLVD) TO STA. 14+48(BLVD)

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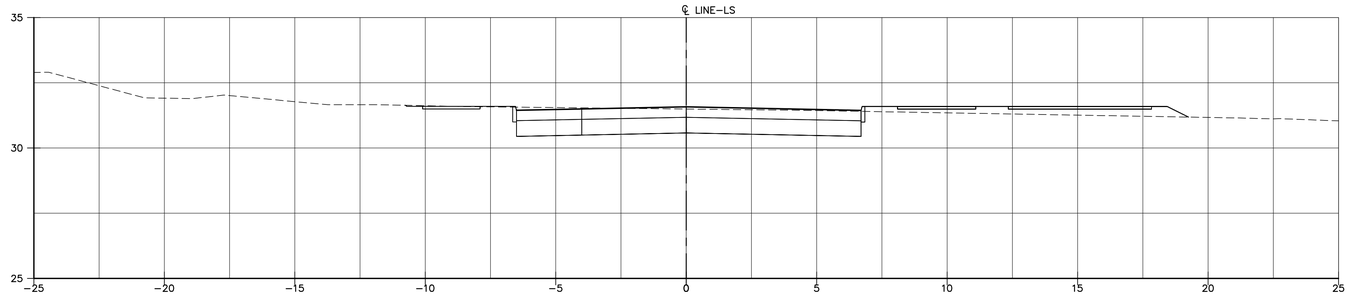
DATE: JUNE-19-2012

CS-15



CUT= 0 CuM
FILL= 0 CuM
SUBBASE= 0 CuM

STA. 1+40 (LS)

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P.G. = 30.58
CUT= 0 SqM
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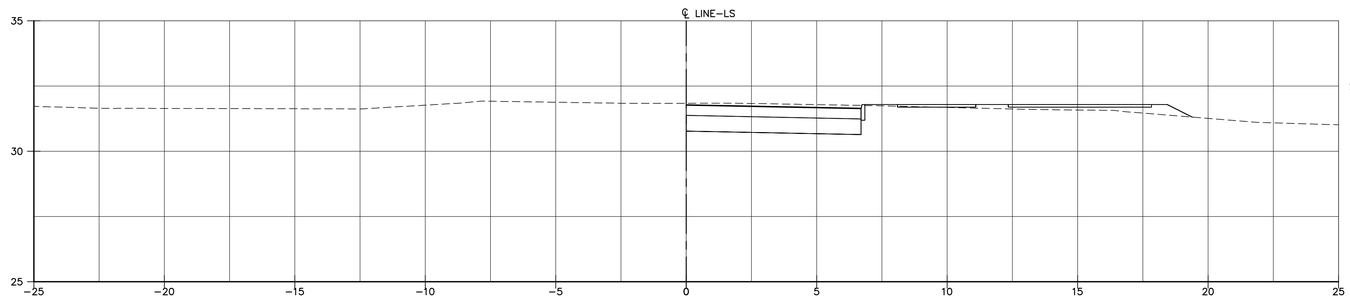
SUBBASE= 0 SqM



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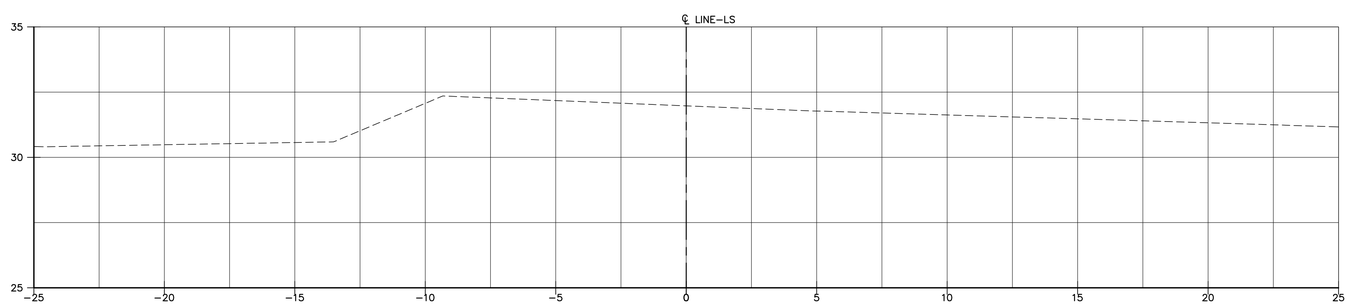
SUBBASE= 0 SqM



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FILL= 0 CuM
SUBBASE= 0 CuM

STA. 1+00 (LS)

E.G. = 31.98
P.G. =
CUT= 0 SqM
FILL= 0 SqM
SUBBASE= 0 SqM

Scale= 1:100
0M 2M 4M 6M

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PHASE II

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FINAL CONSTRUCTION
DOCUMENTS (100%)
MAY 13, 2013

CROSS SECTIONS
FROM STA. 1+00(LS)
TO STA. 1+40(LS)

DRAWN BY:
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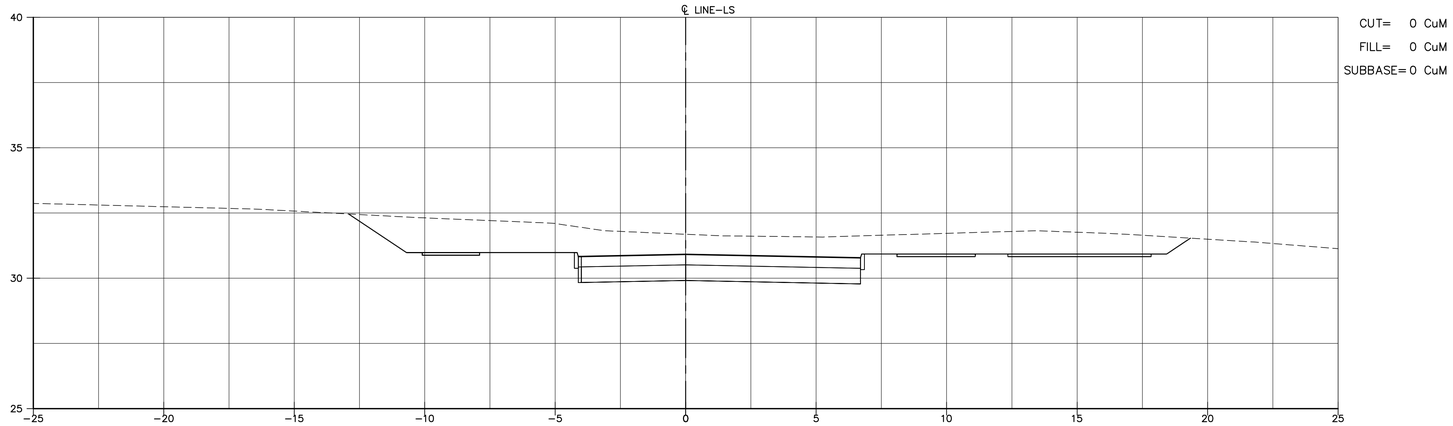
DATE: JUNE-19-2012

CS-16



STA. 2+00 (LS)

E.G. = 31.68
P.G. = 29.91

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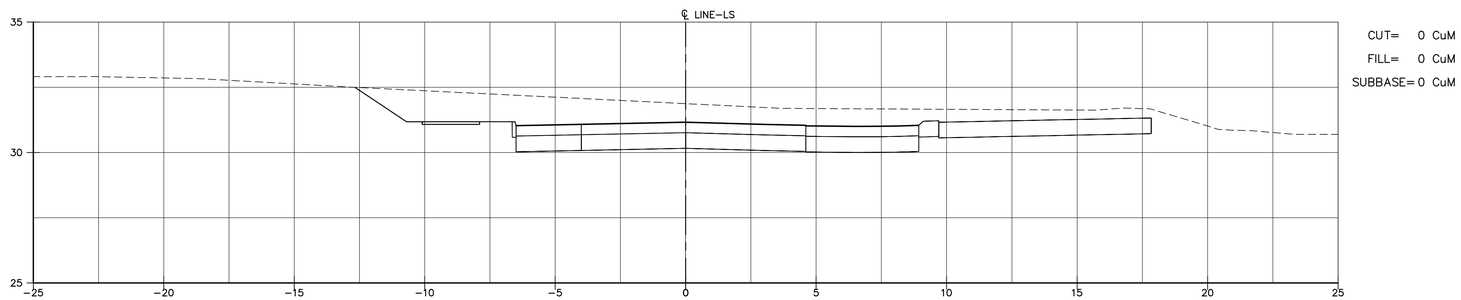
FILL= 0 SqM

SUBBASE= 0 SqM



STA. 1+80 (LS)

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P.G. = 30.16

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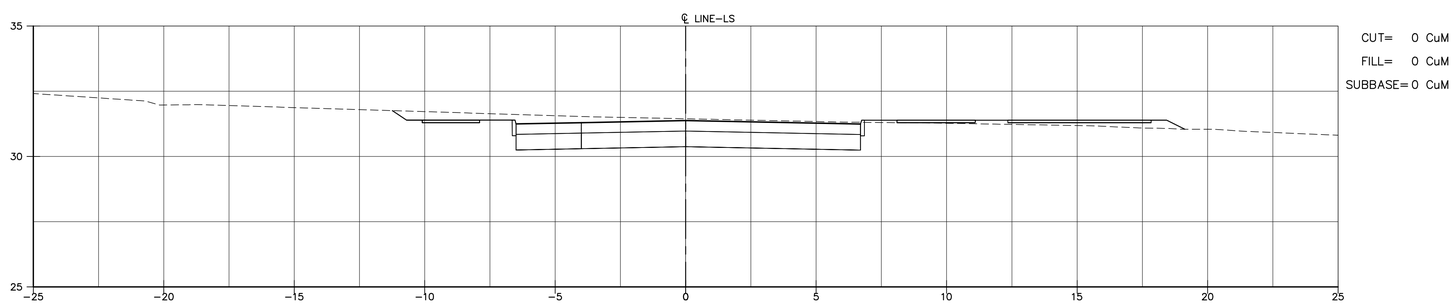
FILL= 0 SqM

SUBBASE= 0 SqM



STA. 1+60 (LS)

E.G. = 31.44
P.G. = 30.38

CUT= 0 SqM

FILL= 0 SqM

SUBBASE= 0 SqM

Scale= 1:100

0M 2M 4M 6M

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FINAL CONSTRUCTION
DOCUMENTS (100%)
MAY 13, 2013

CROSS SECTIONS
FROM STA. 1+60(LS)
TO STA. 2+00(LS)

DRAWN BY:
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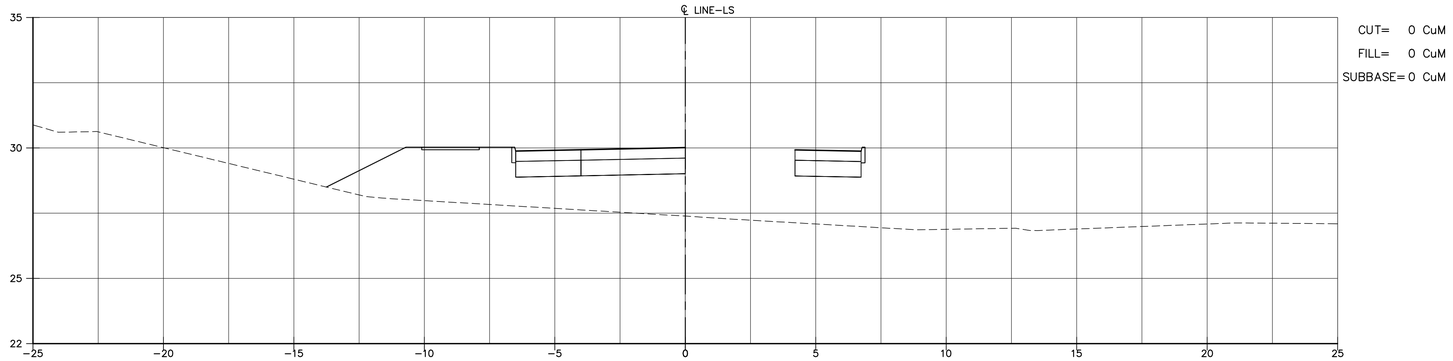
CS-17



STA. 2+60 (LS)
E.G. = 27.39
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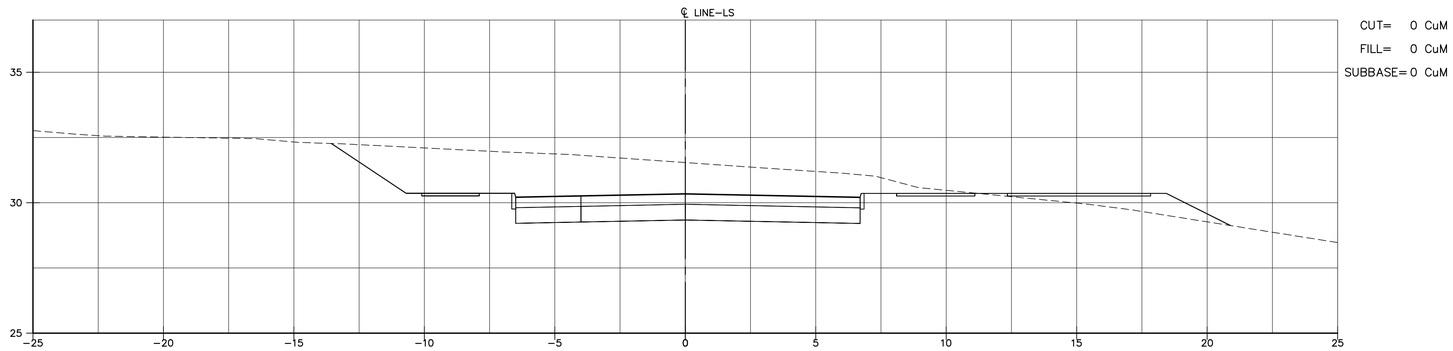
FILL= 0 SqM
SUBBASE= 0 SqM



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E.G. = 31.54
P.G. = 29.34
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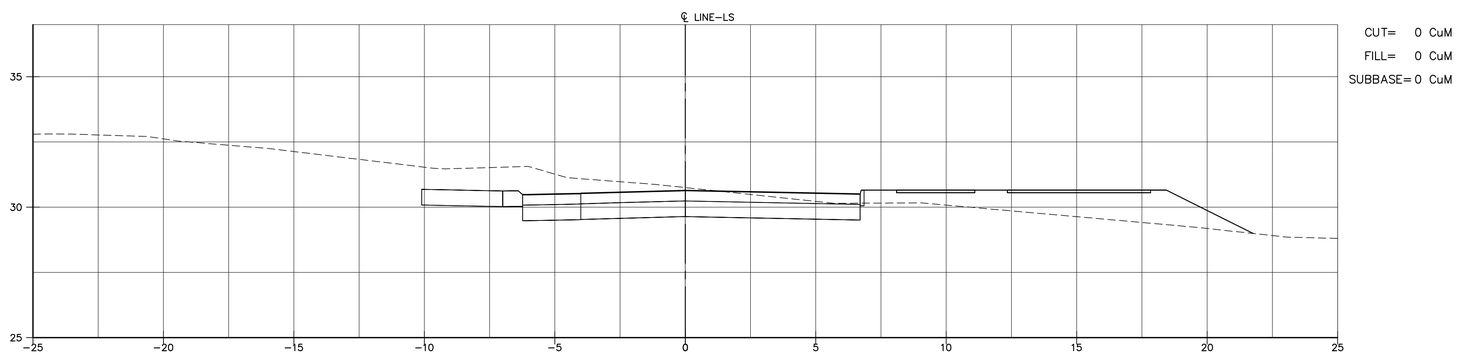
SUBBASE= 0 SqM



STA. 2+20 (LS)
E.G. = 30.75
P.G. = 29.64
CUT= 0 SqM
FILL= 0 SqM
SUBBASE= 0 SqM

Scale= 1:100
0M 2M 4M 6M

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FINAL CONSTRUCTION
DOCUMENTS (100%)
MAY 13, 2013

CROSS SECTIONS
FROM STA. 2+20(LS)
TO STA. 2+60(LS)

DRAWN BY:
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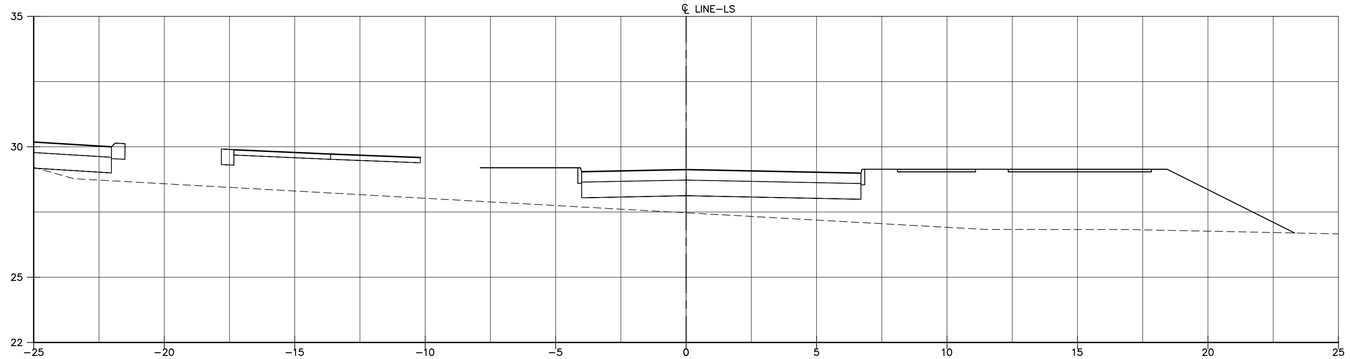
DATE: JUNE-19-2012

CS-18



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SUBBASE= 0 CuM

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P.G. = 28.12
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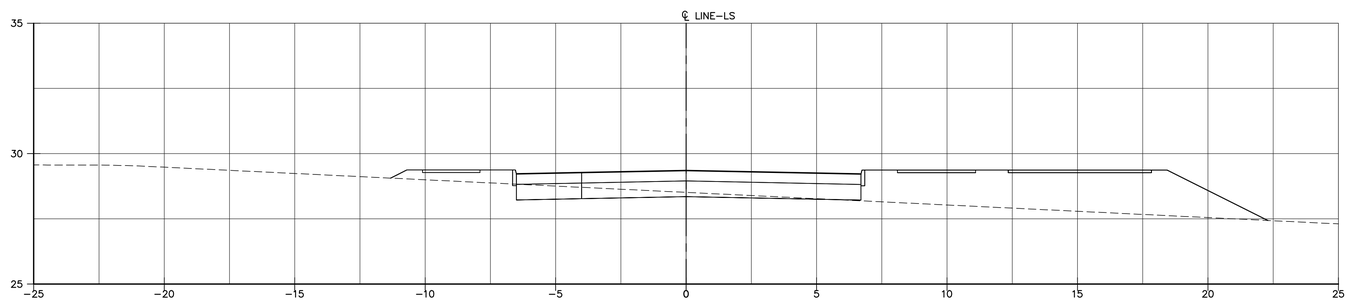
FILL= 0 SqM
SUBBASE= 0 SqM



CUT= 0 CuM
FILL= 0 CuM
SUBBASE= 0 CuM

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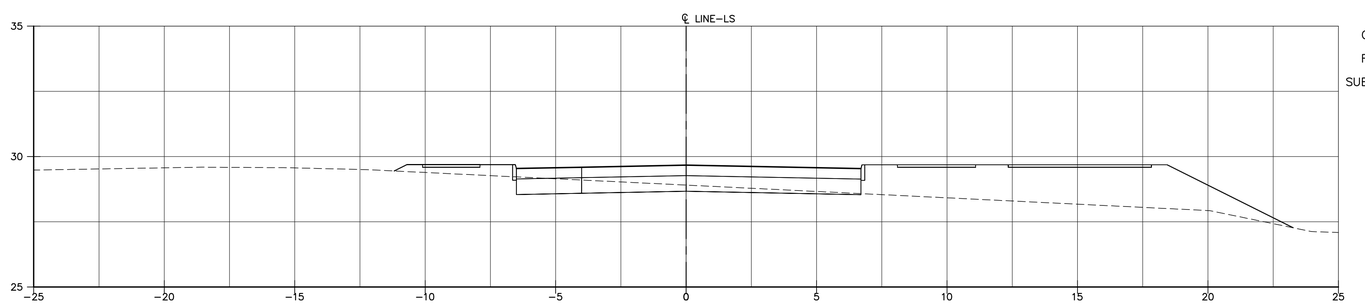
E.G. = 28.52
P.G. = 28.35
CUT= 0 SqM
FILL= 0 SqM
SUBBASE= 0 SqM



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FILL= 0 CuM
SUBBASE= 0 CuM

STA. 2+80 (LS)

E.G. = 28.91
P.G. = 28.67
CUT= 0 SqM
FILL= 0 SqM
SUBBASE= 0 SqM

Scale= 1:100
0M 2M 4M 6M

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FINAL CONSTRUCTION
DOCUMENTS (100%)
MAY 13, 2013

CROSS SECTIONS FROM STA. 2+80(LS) TO STA. 3+20(LS)

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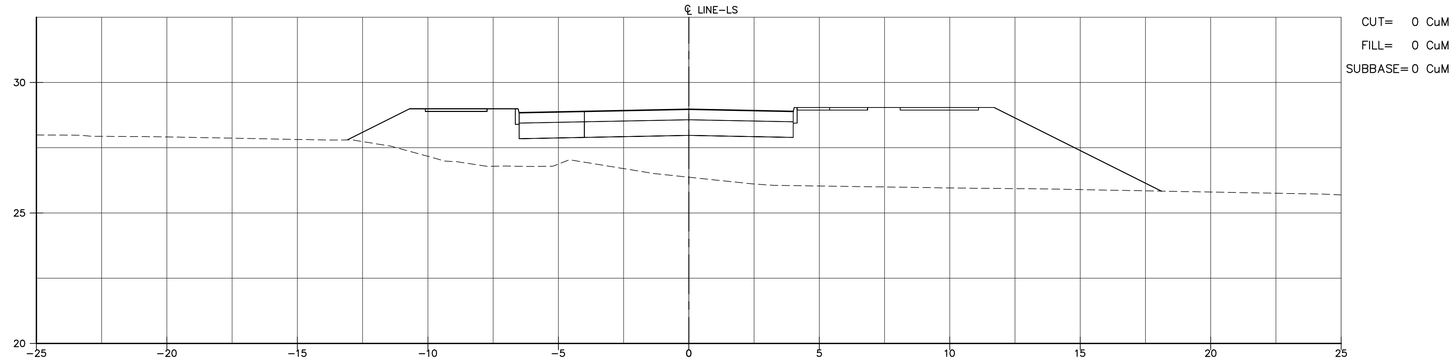
DATE: JUNE-19-2012

CS-19



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FILL= 0 CuM
SUBBASE= 0 CuM

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E.G. = 26.37
P.G. = 27.97
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FILL= 0 SqM
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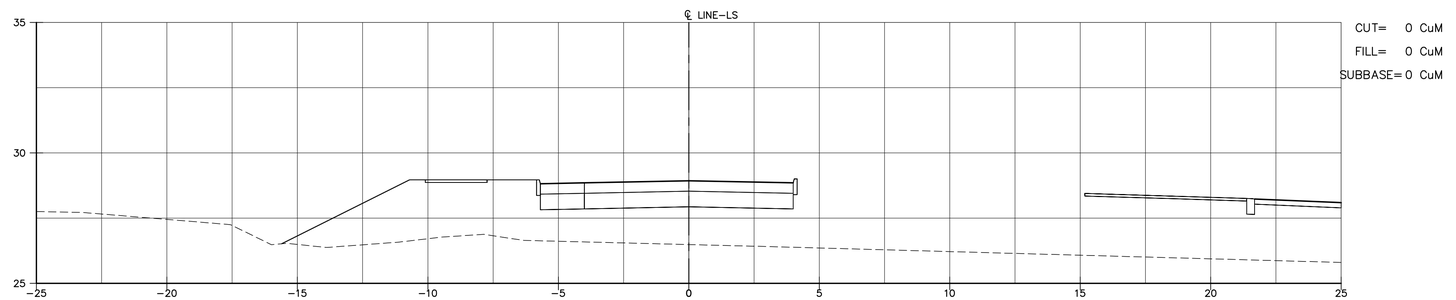

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FILL= 0 CuM
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P.G. = 27.93
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FILL= 0 SqM
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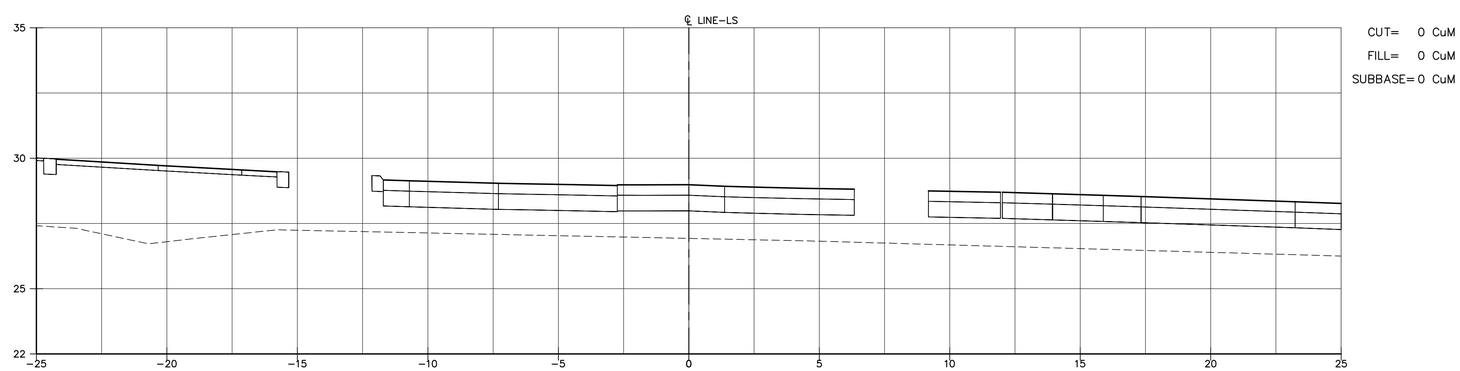

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FILL= 0 CuM
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STA. 3+40 (LS)
E.G. = 26.93
P.G. = 27.98
CUT= 0 SqM
FILL= 0 SqM
SUBBASE= 0 SqM

Scale= 1:100
0M 2M 4M 6M

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FINAL CONSTRUCTION
DOCUMENTS (100%)
MAY 13, 2013

CROSS SECTIONS
FROM STA. 3+40(LS)
TO STA. 3+80(LS)

DRAWN BY:
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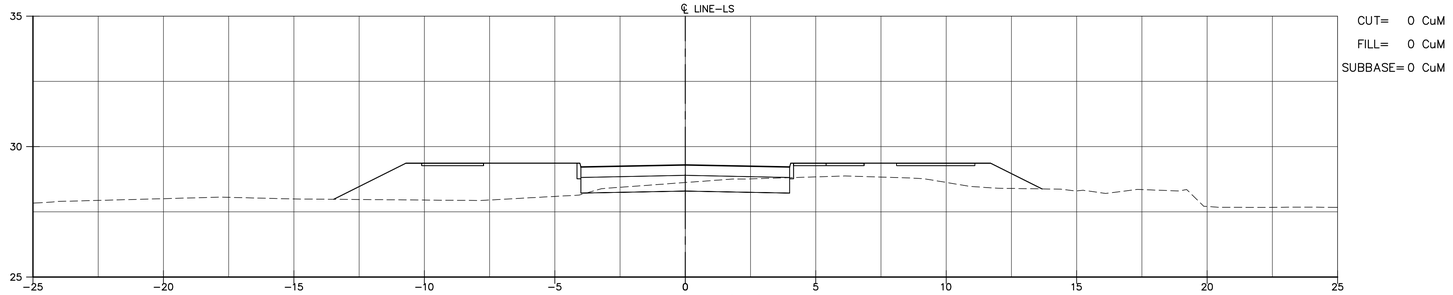
DATE: JUNE-19-2012

CS-20



STA. 4+40 (LS)
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P.G. = 28.30
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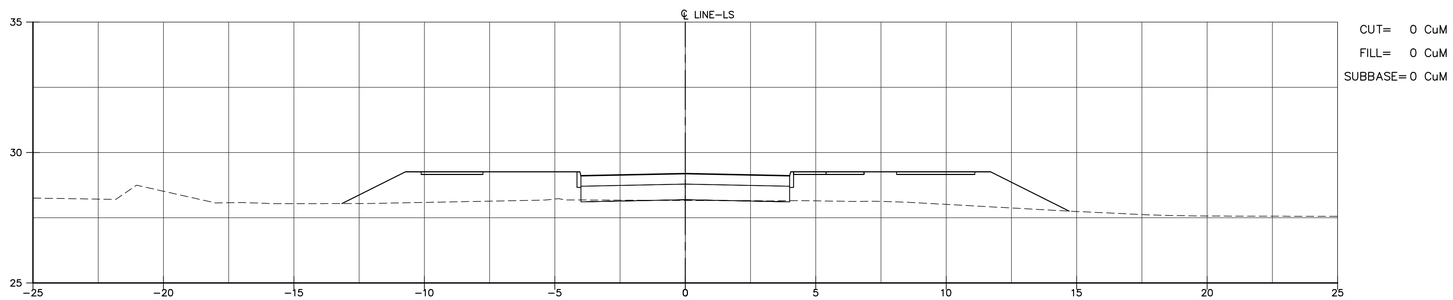
FILL= 0 SqM
SUBBASE= 0 SqM



STA. 4+20 (LS)
E.G. = 28.16
P.G. = 28.19
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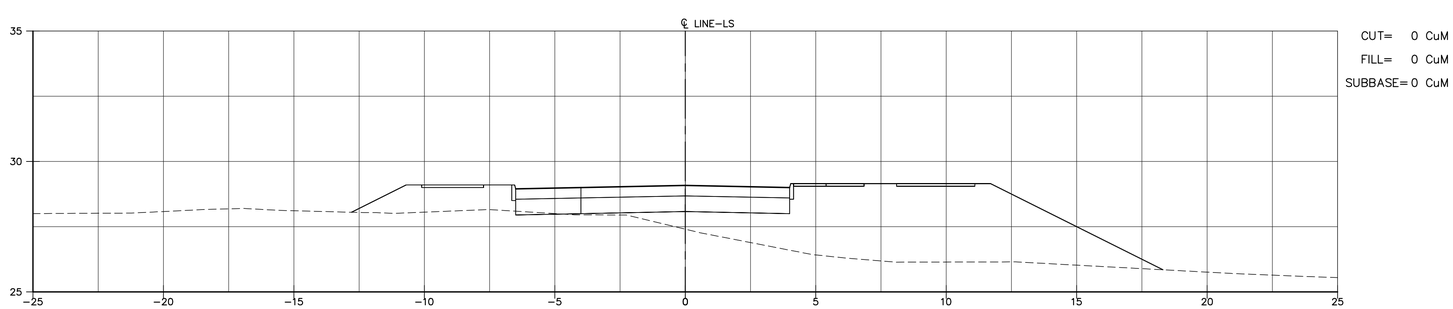
SUBBASE= 0 SqM



STA. 4+00 (LS)
E.G. = 27.40
P.G. = 28.08
CUT= 0 SqM
FILL= 0 SqM
SUBBASE= 0 SqM

Scale= 1:100
0M 2M 4M 6M

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FINAL CONSTRUCTION
DOCUMENTS (100%)
MAY 13, 2013

CROSS SECTIONS
FROM STA. 4+00(LS)
TO STA. 4+40(LS)

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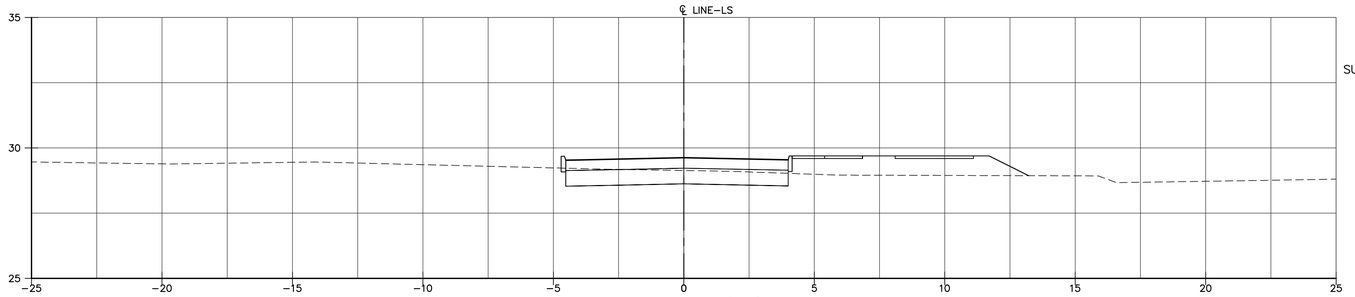
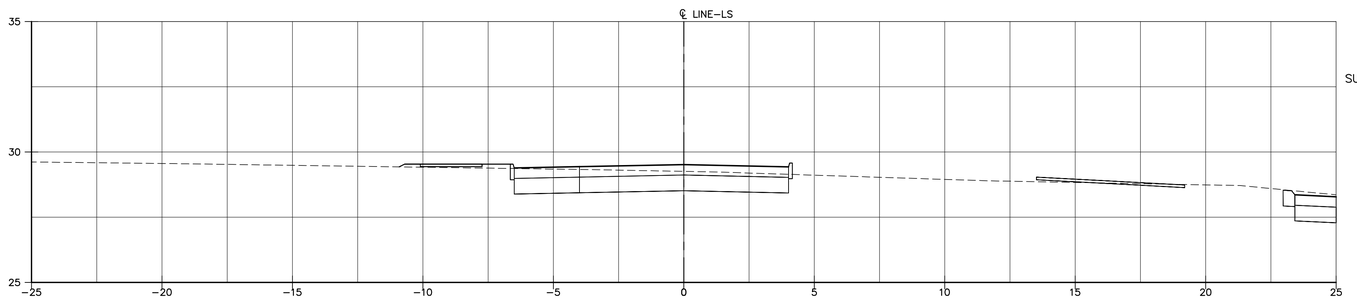
CS-21



CUT= 0 CuM
FILL= 0 CuM
SUBBASE= 0 CuM

STA. 5+00 (LS)

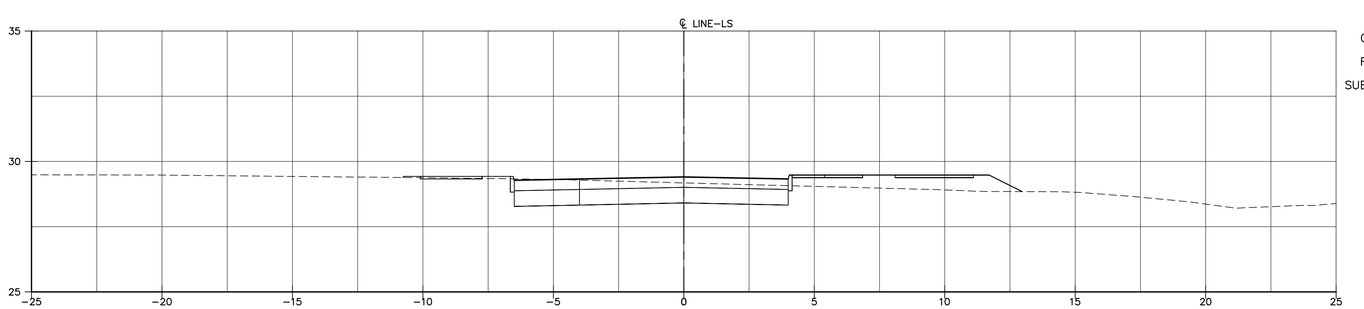
E.G. = 29.14
P.G. = 28.63
CUT= 0 SqM
FILL= 0 SqM
SUBBASE= 0 SqM



CUT= 0 CuM
FILL= 0 CuM
SUBBASE= 0 CuM

STA. 4+80 (LS)

E.G. = 29.26
P.G. = 28.52
CUT= 0 SqM
FILL= 0 SqM
SUBBASE= 0 SqM



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FILL= 0 CuM
SUBBASE= 0 CuM

STA. 4+60 (LS)

E.G. = 29.18
P.G. = 28.41
CUT= 0 SqM
FILL= 0 SqM
SUBBASE= 0 SqM

Scale= 1:100
0M 2M 4M 6M

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FINAL CONSTRUCTION
DOCUMENTS (100%)
MAY 13, 2013

CROSS SECTIONS
FROM STA. 4+60(LS)
TO STA. 5+00(LS)

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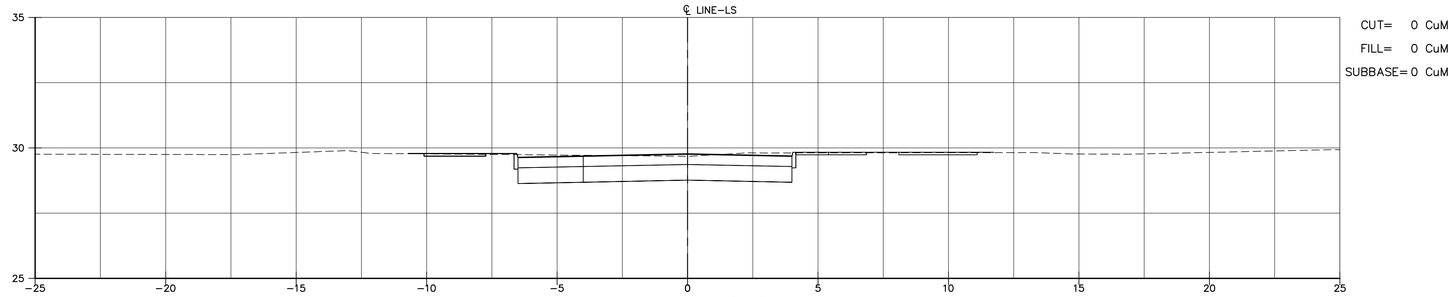

STA. 5+60 (LS)

E.G. = 29.68
P.G. = 28.77

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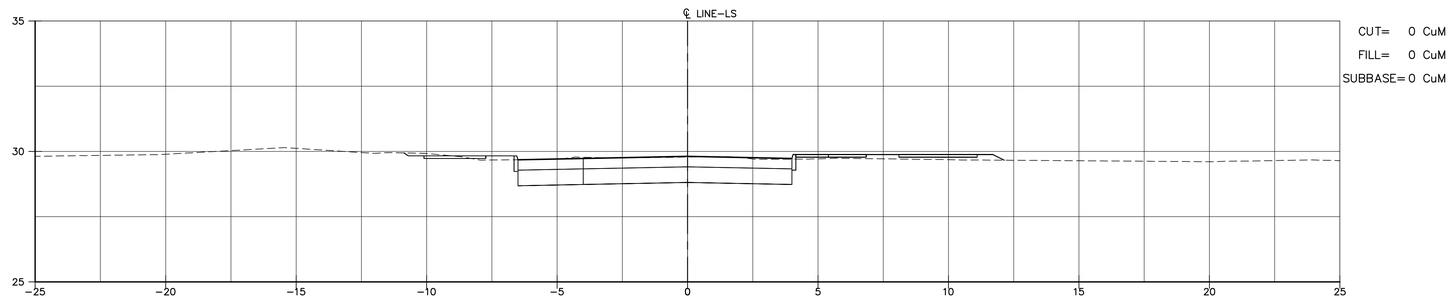
FILL= 0 SqM

SUBBASE= 0 SqM



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E.G. = 29.78
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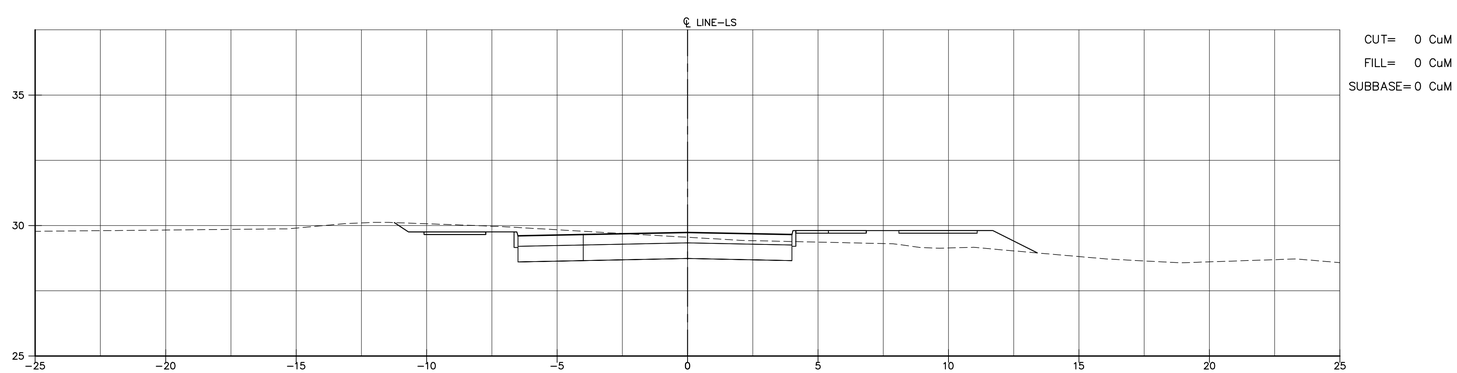

STA. 5+20 (LS)

E.G. = 29.55
P.G. = 28.73

CUT= 0 SqM

FILL= 0 SqM

SUBBASE= 0 SqM

Scale= 1:100

0M 2M 4M 6M

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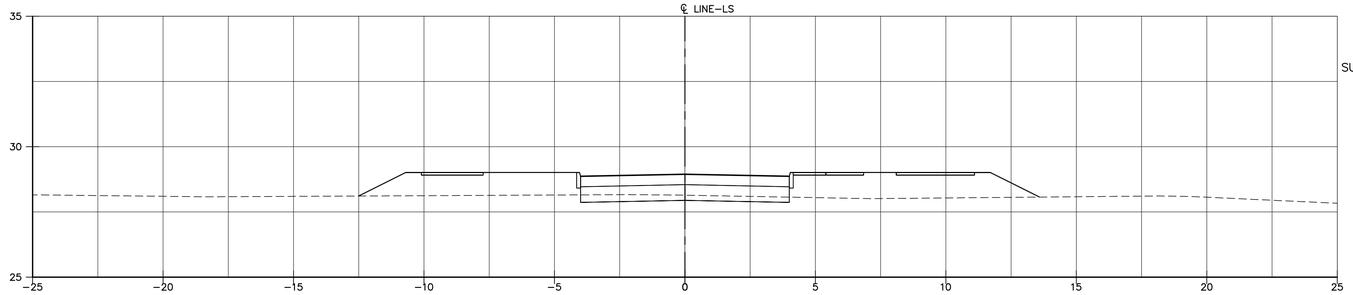
FINAL CONSTRUCTION
DOCUMENTS (100%)
MAY 13, 2013

CROSS SECTIONS
FROM STA. 5+20(LS)
TO STA. 5+60(LS)

DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

CS-23



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FILL= 0 CuM
SUBBASE= 0 CuM

STA. 6+20 (LS)

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P.G. = 27.94
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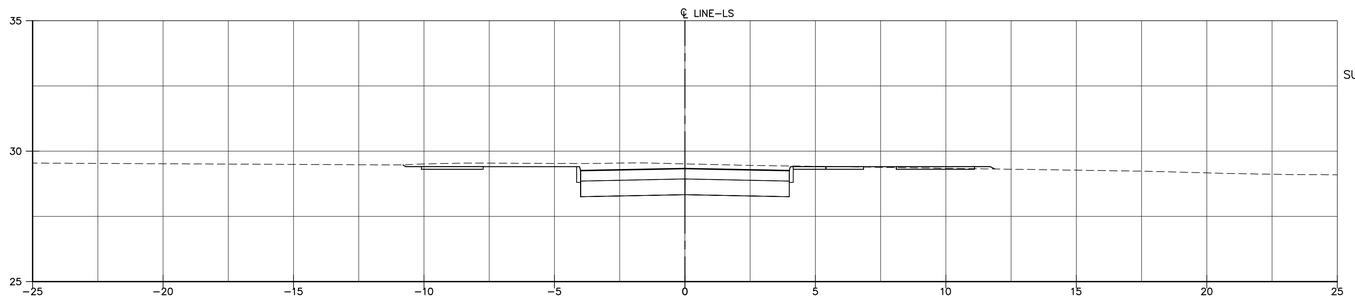
FILL= 0 SqM
SUBBASE= 0 SqM



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FILL= 0 CuM
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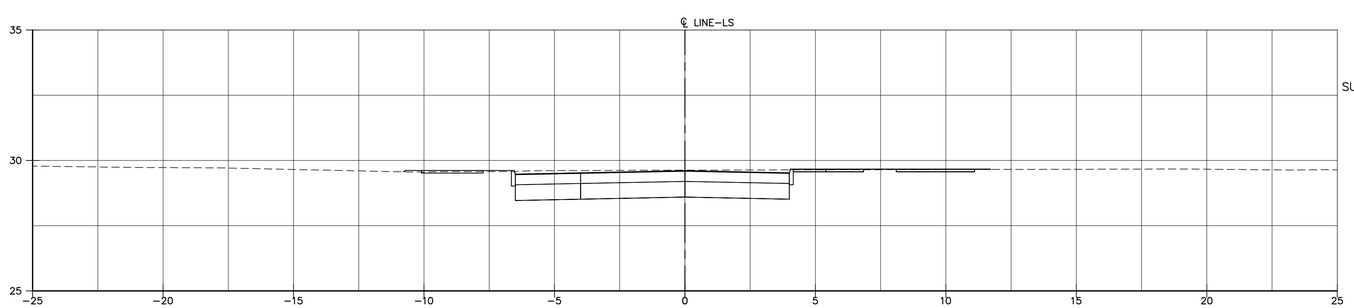
SUBBASE= 0 SqM



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FILL= 0 CuM
SUBBASE= 0 CuM

STA. 5+80 (LS)

E.G. = 29.63
P.G. = 28.60
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FILL= 0 SqM
SUBBASE= 0 SqM

Scale= 1:100
0M 2M 4M 6M

SCIENCE CITY
URBAN INFRASTRUCTURE
PHASE II

SEGMENT EAST OF PR 18
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FINAL CONSTRUCTION
DOCUMENTS (100%)
MAY 13, 2013

CROSS SECTIONS
FROM STA. 5+80(LS)
TO STA. 6+20(LS)

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DATE: JUNE-19-2012

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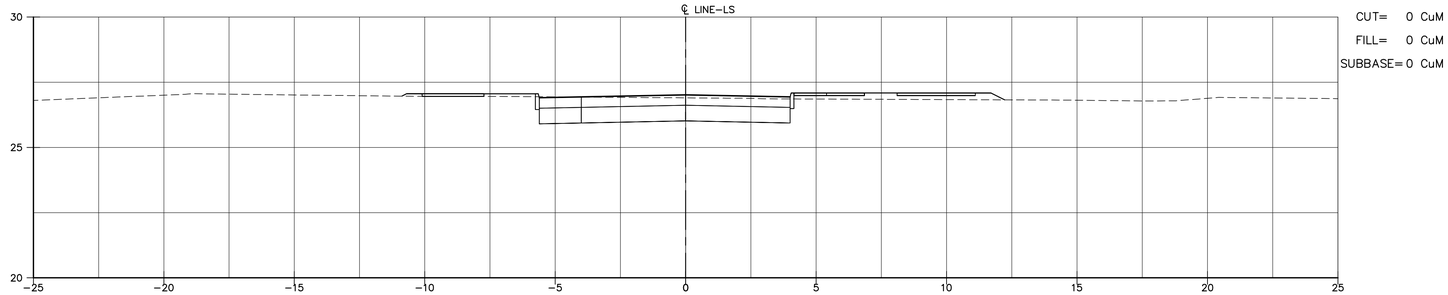

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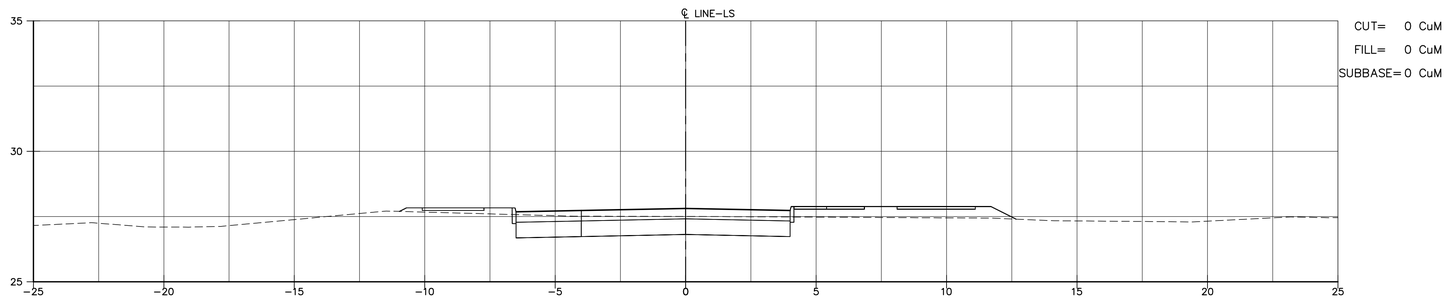
FILL= 0 SqM
SUBBASE= 0 SqM



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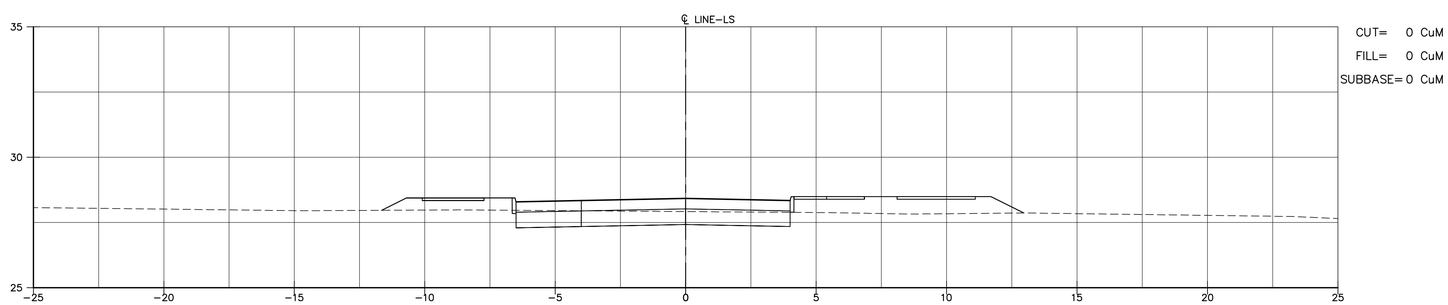
SUBBASE= 0 SqM



STA. 6+40 (LS)
E.G. = 27.92
P.G. = 27.42
CUT= 0 SqM
FILL= 0 SqM
SUBBASE= 0 SqM

Scale= 1:100
0M 2M 4M 6M

SCIENCE CITY
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PHASE II

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FINAL CONSTRUCTION
DOCUMENTS (100%)
MAY 13, 2013

CROSS SECTIONS
FROM STA. 6+40(LS)
TO STA. 6+80(LS)

DRAWN BY:
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DATE: JUNE-19-2012

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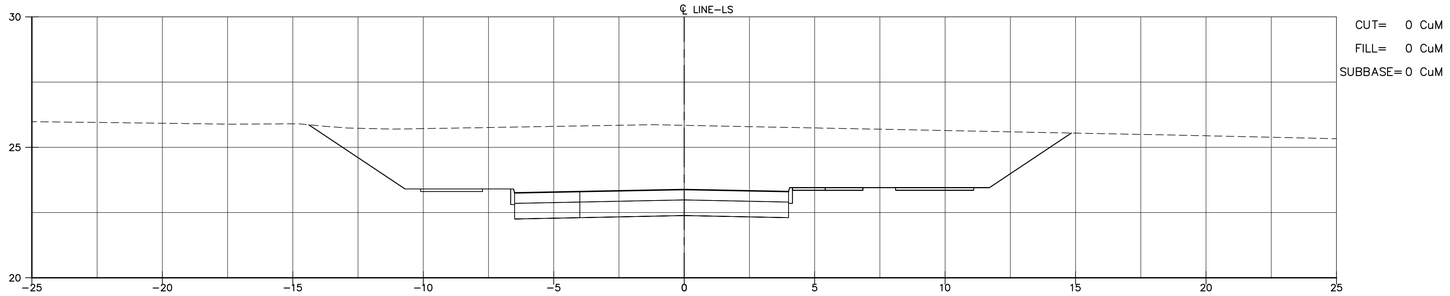

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FILL= 0 CuM
SUBBASE= 0 CuM

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E.G. = 25.84
P.G. = 22.39
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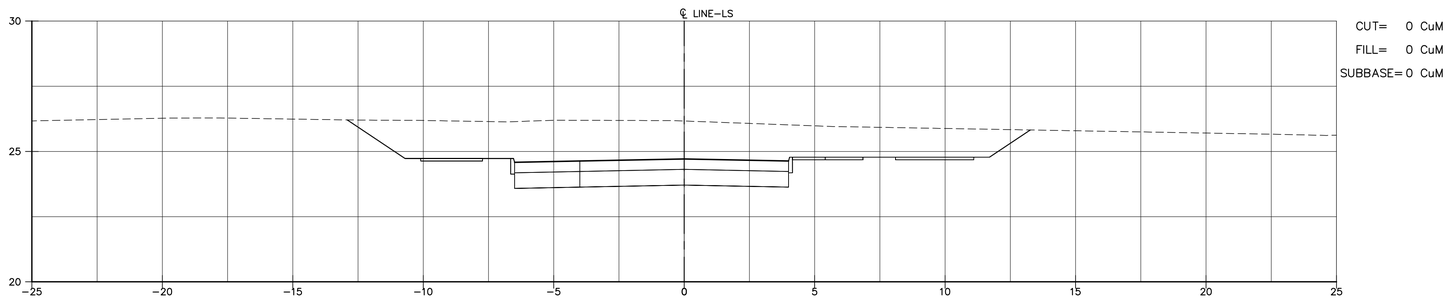
FILL= 0 SqM
SUBBASE= 0 SqM



CUT= 0 CuM
FILL= 0 CuM
SUBBASE= 0 CuM

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E.G. = 26.17
P.G. = 23.71
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FILL= 0 SqM
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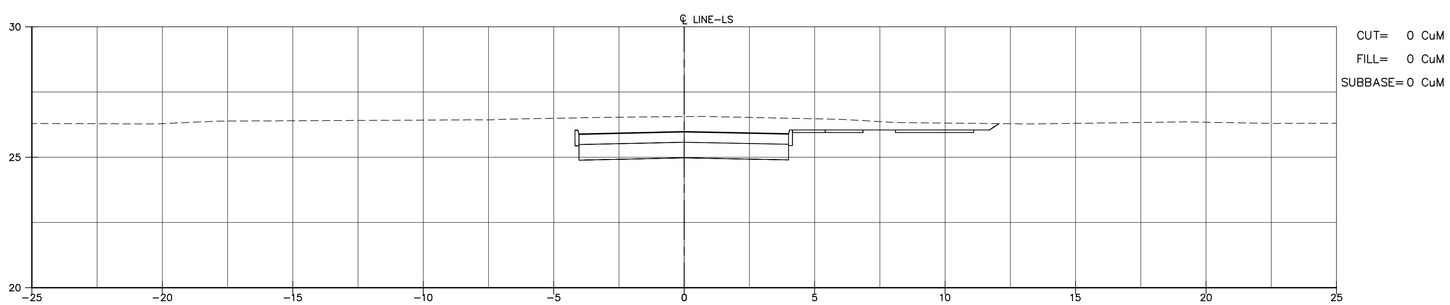

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FILL= 0 CuM
SUBBASE= 0 CuM

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E.G. = 26.56
P.G. = 24.98
CUT= 0 SqM
FILL= 0 SqM
SUBBASE= 0 SqM

Scale= 1:100
0M 2M 4M 6M

SCIENCE CITY
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FINAL CONSTRUCTION
DOCUMENTS (100%)
MAY 13, 2013

CROSS SECTIONS
FROM STA. 7+00(LS)
TO STA. 7+40(LS)

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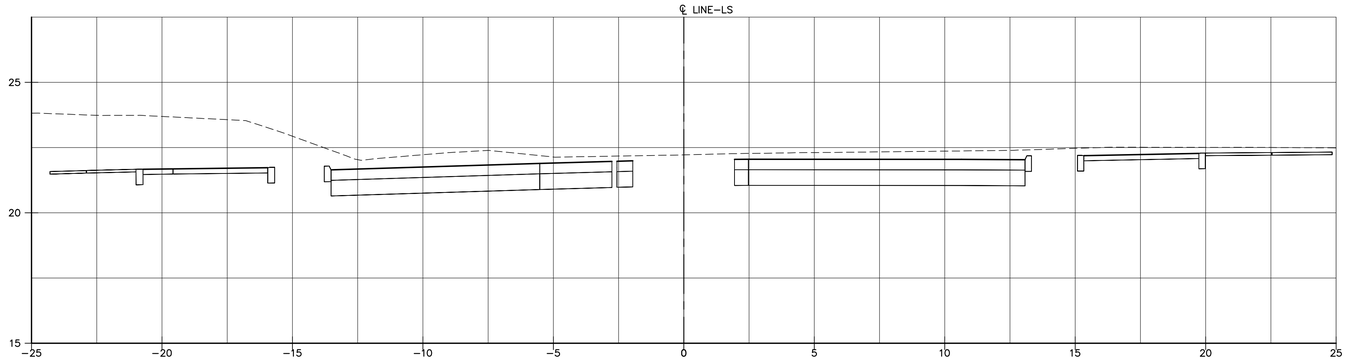
CS-26



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P.G. = 21.02
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FILL= 0 SqM
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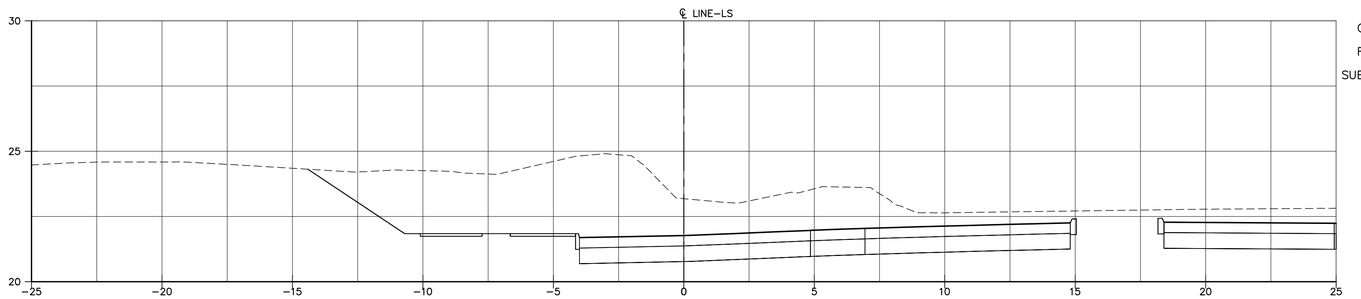

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FILL= 0 CuM
SUBBASE= 0 CuM

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P.G. = 20.77
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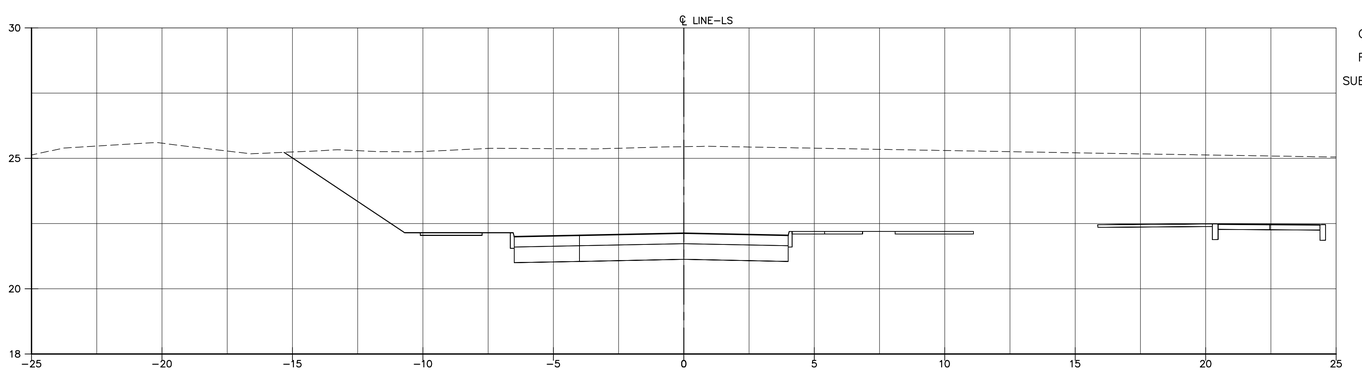
SUBBASE= 0 SqM



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SUBBASE= 0 CuM

STA. 7+60 (LS)
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P.G. = 21.13
CUT= 0 SqM
FILL= 0 SqM
SUBBASE= 0 SqM

Scale= 1:100
0M 2M 4M 6M

SCIENCE CITY
URBAN INFRASTRUCTURE
PHASE II

SEGMENT EAST OF PR 18
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FINAL CONSTRUCTION
DOCUMENTS (100%)
MAY 13, 2013

CROSS SECTIONS
FROM STA. 7+60(LS)
TO STA. 7+93(LS)

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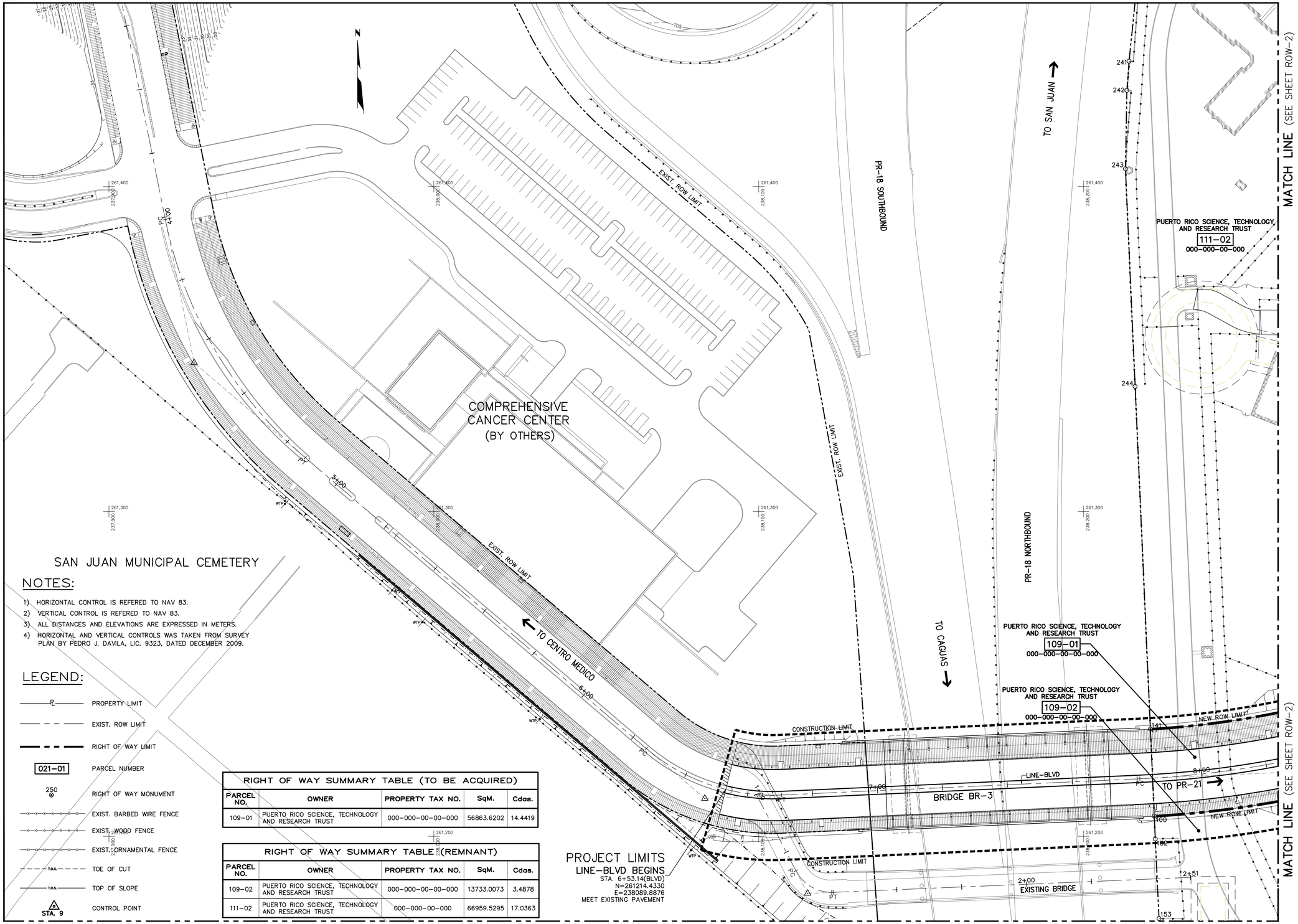
CS-27



NOTES:

1) HORIZONTAL CONTROL IS REFERED TO NAV 83.
2) VERTICAL CONTROL IS REFERED TO NAV 83.
3) ALL DISTANCES AND ELEVATIONS ARE EXPRESSED IN METERS.
4) HORIZONTAL AND VERTICAL CONTROLS WAS TAKEN FROM SURVEY PLAN BY PEDRO J. DAVILA, LIC. 9323, DATED DECEMBER 2009.

LEGEND:

- PROPERTY LIMIT
- EXIST. ROW LIMIT
- RIGHT OF WAY LIMIT
- 021-01 — PARCEL NUMBER
- 250 — RIGHT OF WAY MONUMENT
- EXIST. BARBED WIRE FENCE
- EXIST. WOOD FENCE
- EXIST. ORNAMENTAL FENCE
- T.O.C. — TOE OF CUT
- T.O.S. — TOP OF SLOPE
- STA. 9 — CONTROL POINT

RIGHT OF WAY SUMMARY TABLE (TO BE ACQUIRED)

PARCEL NO.	OWNER	PROPERTY TAX NO.	SqM.	Cdas.
109-01	PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST	000-000-00-00-000	56863.6202	14.4419

RIGHT OF WAY SUMMARY TABLE (REMNANT)

PARCEL NO.	OWNER	PROPERTY TAX NO.	SqM.	Cdas.
109-02	PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST	000-000-00-00-000	13733.0073	3.4878
111-02	PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST	000-000-00-000	66959.5295	17.0363

MATCH LINE (SEE SHEET ROW-4)

MATCH LINE (SEE SHEET ROW-4)

RIGHT OF WAY PLAN

0M 10M 20M 30M Scale= 1:500

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

SEGMENT EAST OF PR 18
SAN JUAN, PUERTO RICO

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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

RIGHT OF WAY PLAN

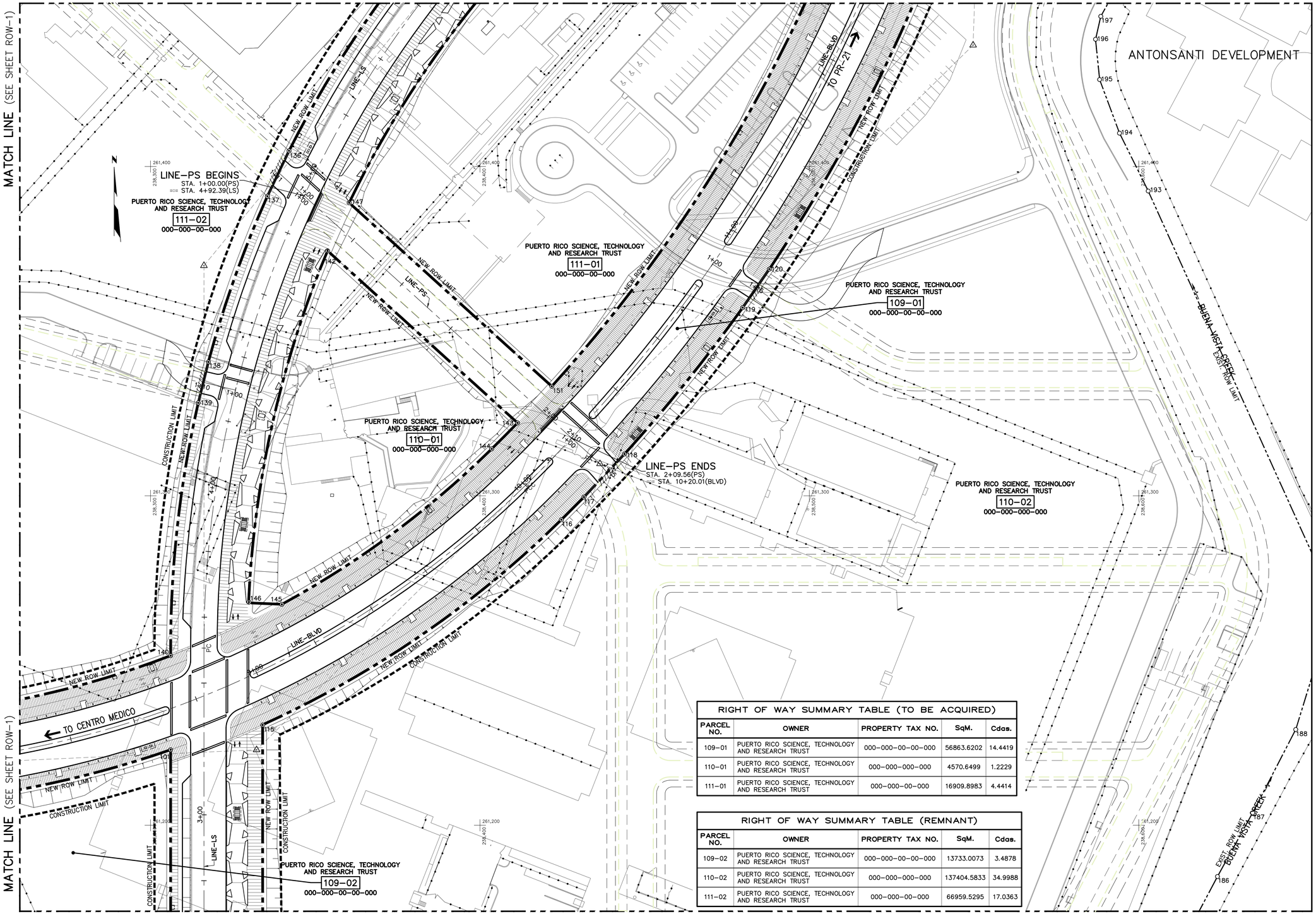
DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

ROW-1

MATCH LINE (SEE SHEET ROW-3)

MATCH LINE (SEE SHEET ROW-3)

MATCH LINE (SEE SHEET ROW-1)



MATCH LINE (SEE SHEET ROW-4)

MATCH LINE (SEE SHEET ROW-4)

RIGHT OF WAY PLAN

0M 10M 20M 30M Scale= 1:500

RIGHT OF WAY SUMMARY TABLE (TO BE ACQUIRED)

PARCEL NO.	OWNER	PROPERTY TAX NO.	SqM.	Cdas.
109-01	PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST	000-000-00-00-000	56863.6202	14.4419
110-01	PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST	000-000-000-000	4570.6499	1.2229
111-01	PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST	000-000-00-000	16909.8983	4.4414

RIGHT OF WAY SUMMARY TABLE (REMNANT)

PARCEL NO.	OWNER	PROPERTY TAX NO.	SqM.	Cdas.
109-02	PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST	000-000-00-00-000	13733.0073	3.4878
110-02	PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST	000-000-000-000	137404.5833	34.9988
111-02	PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST	000-000-00-000	66959.5295	17.0363

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

RIGHT OF WAY PLAN

DRAWN BY:
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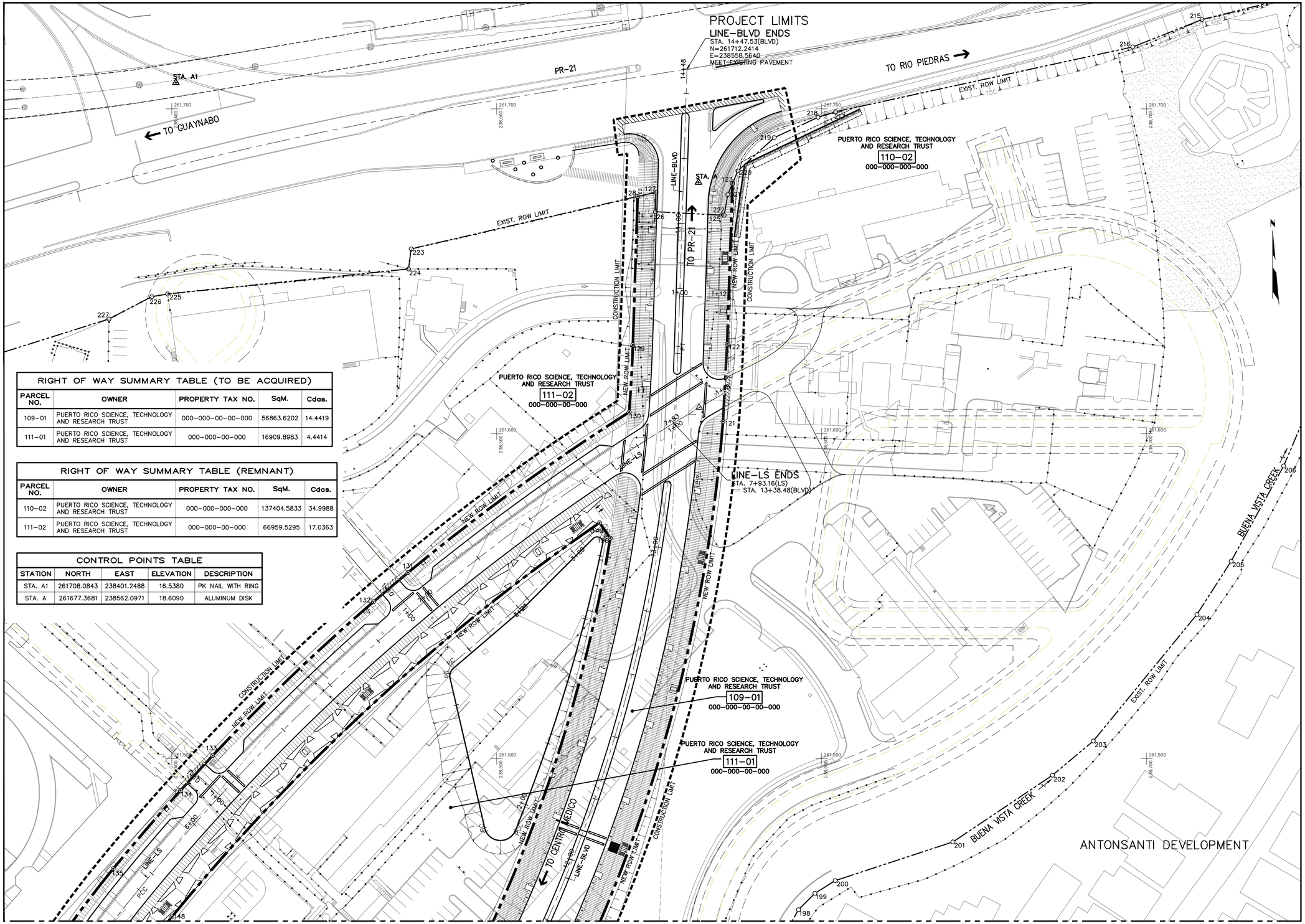
DATE: JUNE-19-2012

ROW-2



RIGHT OF WAY SUMMARY TABLE (TO BE ACQUIRED)

PARCEL NO.	OWNER	PROPERTY TAX NO.	SqM.	Cdas.
109-01	PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST	000-000-00-00-000	56863.6202	14.4419
111-01	PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST	000-000-00-000	16909.8983	4.4414

RIGHT OF WAY SUMMARY TABLE (REMNANT)

PARCEL NO.	OWNER	PROPERTY TAX NO.	SqM.	Cdas.
110-02	PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST	000-000-000-000	137404.5833	34.9988
111-02	PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST	000-000-00-000	66959.5295	17.0363

CONTROL POINTS TABLE

STATION	NORTH	EAST	ELEVATION	DESCRIPTION
STA. A1	261708.0843	238401.2488	16.5380	PK NAIL WITH RING
STA. A	261677.3681	238562.0971	18.6090	ALUMINUM DISK

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

RIGHT OF WAY PLAN

DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

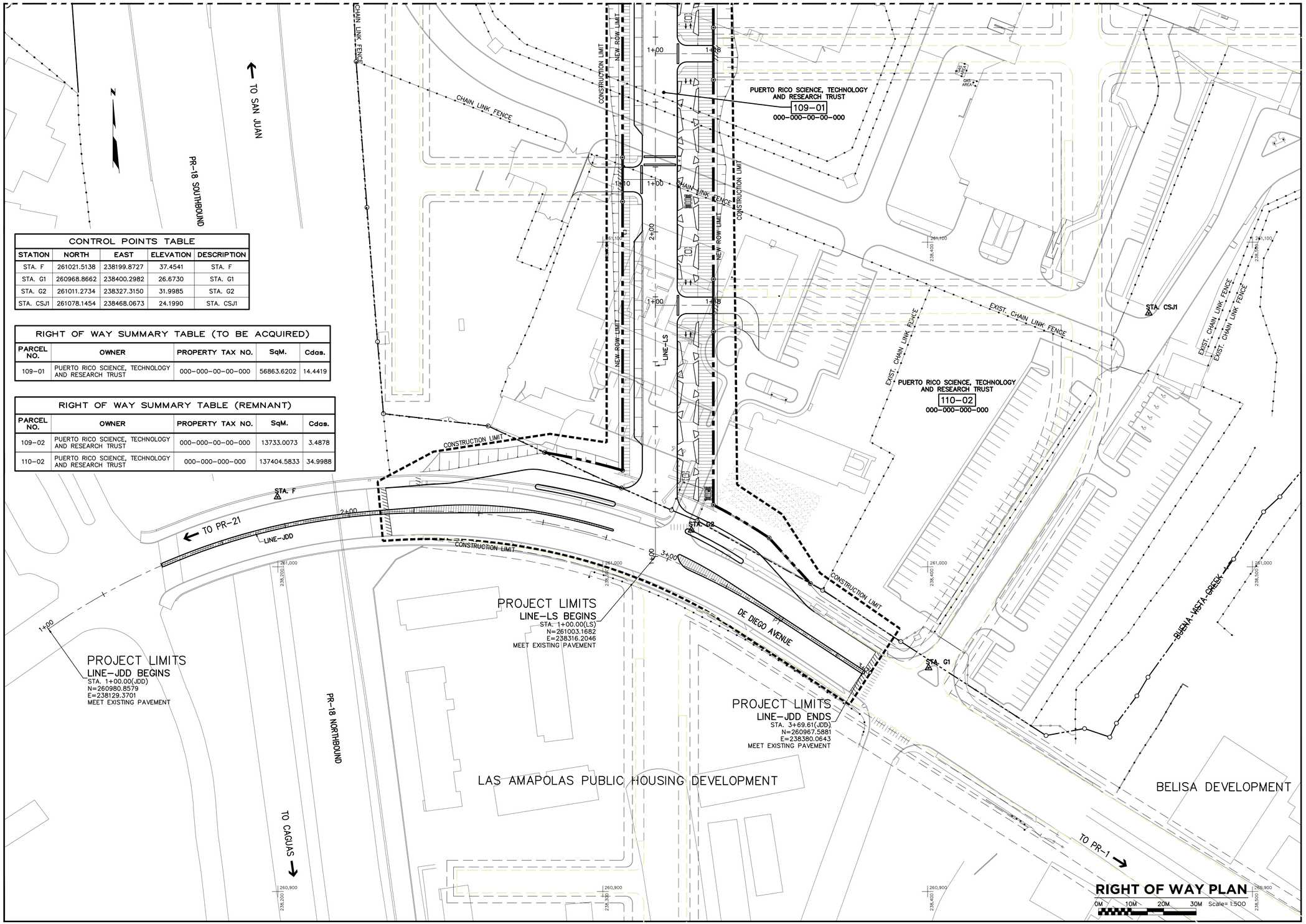
ROW-3

RIGHT OF WAY PLAN

0M 10M 20M 30M Scale= 1:500

MATCH LINE (SEE SHEET ROW-3)

MATCH LINE (SEE SHEET ROW-3)



CONTROL POINTS TABLE				
STATION	NORTH	EAST	ELEVATION	DESCRIPTION
STA. F	261021.5138	238199.8727	37.4541	STA. F
STA. G1	260968.8662	238400.2982	26.6730	STA. G1
STA. G2	261011.2734	238327.3150	31.9985	STA. G2
STA. CSJ1	261078.1454	238468.0673	24.1990	STA. CSJ1

RIGHT OF WAY SUMMARY TABLE (TO BE ACQUIRED)				
PARCEL NO.	OWNER	PROPERTY TAX NO.	SqM.	Cdas.
109-01	PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST	000-000-00-00-000	56863.6202	14.4419

RIGHT OF WAY SUMMARY TABLE (REMNANT)				
PARCEL NO.	OWNER	PROPERTY TAX NO.	SqM.	Cdas.
109-02	PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST	000-000-00-00-000	13733.0073	3.4878
110-02	PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST	000-000-000-000	137404.5833	34.9988

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REVISIONS

THIS DRAWING AND ITS CONTENTS ARE THE PROPERTY OF THE OFFICE OF TORO FERRER ARQUITECTOS CSP, AND SHALL BE USED AS A REFERENCE DOCUMENT AND WORKING INSTRUMENT ONLY BY AUTHORIZED PERSONNEL. ANY TOTAL OR PARTIAL REPRODUCTION OR USE OF SAID DOCUMENT OR THE INFORMATION CONTAINED THEREIN IS STRICTLY PROHIBITED WITHOUT APPROPRIATE WRITTEN CONSENT AND SHALL BE RETURNED TO TORO FERRER ARQUITECTOS CSP.

FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

RIGHT OF WAY PLAN

DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

ROW-4

PARCEL NO. 109–01					OWNER PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST
POINTS	BEARING	DISTANCE	NORTH COORDINATE	EAST COORDINATE	DESCRIPTION
100 – 141	N2° 32' 53"W	26.833	261206.1752	238221.7722	NEW CORNER FENCE TO BE ESTABLISHED
141 – 140	A=17 40 01	R=284.92	T=44.28	L=87.85	NEW CORNER FENCE TO BE ESTABLISHED
140 – 139	A=13 12 21	R=335.70	T=38.86	L=77.37	NEW CORNER FENCE TO BE ESTABLISHED
139 – 138	N13° 55' 53"E	12.800	261328.2400	238314.4801	NEW CORNER FENCE TO BE ESTABLISHED
138 – 137	A=9 08 24	R=335.10	T=26.78	L=53.46	NEW CORNER FENCE TO BE ESTABLISHED
137 – 136	N25° 28' 25"E	15.295	261390.9707	238335.4713	NEW CORNER FENCE TO BE ESTABLISHED
136 – 135	A=12 32 31	R=335.10	T=36.82	L=73.35	NEW CORNER FENCE TO BE ESTABLISHED
135 – 134	A=2 44 05	R=665.10	T=15.88	L=31.75	NEW CORNER FENCE TO BE ESTABLISHED
134 – 133	N42° 41' 21"E	14.650	261490.2079	238402.6727	NEW CORNER FENCE TO BE ESTABLISHED
133 – 132	A=5 54 02	R=665.10	T=34.28	L=68.49	NEW CORNER FENCE TO BE ESTABLISHED
132 – 131	N49° 49' 10"E	13.901	261548.3031	238462.0793	NEW CORNER FENCE TO BE ESTABLISHED
131 – 130	A=7 14 59	R=665.10	T=42.13	L=84.16	NEW CORNER FENCE TO BE ESTABLISHED
130 – 129	A=2 34 33	R=461.08	T=10.37	L=20.73	NEW CORNER FENCE TO BE ESTABLISHED
129 – 128	N1° 50' 31"E	45.750	261627.3489	238541.9066	NEW CORNER FENCE TO BE ESTABLISHED
128 – 127	N76° 55' 52"E	5.803	261673.0755	238543.3772	NEW CORNER FENCE TO BE ESTABLISHED
127 – 126	S2° 02' 26"W	6.049	261674.3877	238549.0299	EXISTING CORNER FENCE TO REMAIN
126 – 125	S87° 03' 34"E	20.417	261668.3422	238548.8145	EXISTING CORNER FENCE TO REMAIN
125 – 222	S87° 03' 34"E	0.802	261667.2948	238569.2047	NEW CORNER FENCE TO BE ESTABLISHED
222 – 221	N9° 55' 30"E	6.484	261667.2537	238570.0056	EXISTING CORNER FENCE TO REMAIN
221 – 123	A=0 03 53	R=3251.25	T=1.83	L=3.67	EXISTING CORNER FENCE TO REMAIN
123 – 122	S1° 53' 40"W	49.363	261677.0161	238572.5625	NEW CORNER FENCE TO BE ESTABLISHED
122 – 121	A=2 47 49	R=490.08	T=11.96	L=23.92	NEW CORNER FENCE TO BE ESTABLISHED
121 – 120	A=29 24 14	R=490.08	T=128.59	L=251.51	NEW CORNER FENCE TO BE ESTABLISHED
120 – 119	S34° 43' 35"W	14.219	261368.8649	238487.8607	NEW CORNER FENCE TO BE ESTABLISHED
119 – 118	A=6 40 57	R=490.08	T=28.61	L=57.16	NEW CORNER FENCE TO BE ESTABLISHED
118 – 117	A=2 05 56	R=490.16	T=8.98	L=17.95	NEW CORNER FENCE TO BE ESTABLISHED
117 – 116	A=1 08 07	R=490.08	T=4.86	L=9.71	NEW CORNER FENCE TO BE ESTABLISHED
116 – 115	A=20 06 17	R=315.08	T=55.85	L=110.56	NEW CORNER FENCE TO BE ESTABLISHED
115 – 114	S0° 00' 00"E	64.406	261230.5146	238334.0446	NEW CORNER FENCE TO BE ESTABLISHED
114 – 113	S0° 00' 00"E	16.100	261166.1081	238334.0446	NEW CORNER FENCE TO BE ESTABLISHED
113 – 112	S0° 00' 00"E	61.400	261150.0081	238334.0446	NEW CORNER FENCE TO BE ESTABLISHED
112 – 111	S0° 00' 00"E	16.134	261088.6081	238334.0446	NEW CORNER FENCE TO BE ESTABLISHED
111 – 110	S0° 00' 00"E	53.418	261072.4746	238334.0446	NEW CORNER FENCE TO BE ESTABLISHED
110 – 109	A=6 36 28	R=173.20	T=10.00	L=19.98	NEW CORNER FENCE TO BE ESTABLISHED
109 – 108	S42° 08' 13"E	18.915	261008.8992	238351.2313	NEW CORNER FENCE TO BE ESTABLISHED
108 – 107	N61° 00' 43"W	39.837	260994.8726	238363.9217	NEW CORNER FENCE TO BE ESTABLISHED
107 – 106	N67° 22' 05"W	8.568	261014.1785	238329.0757	EXISTING CORNER FENCE TO REMAIN
106 – 105	N66° 10' 05"W	16.835	261017.4755	238321.1677	EXISTING CORNER FENCE TO REMAIN
105 – 159	S65° 10' 57"E	26.079	261035.2238	238282.0974	NEW CORNER FENCE TO BE ESTABLISHED
159 – 104	A=6 21 54	R=221.85	T=12.34	L=24.65	EXIST. CORNER FENCE TO REMAIN
104 – 103	S0° 00' 00"E	82.800	261112.5081	238306.1046	NEW CORNER FENCE TO BE ESTABLISHED
103 – 102	S0° 00' 00"E	13.600	261126.1081	238306.1046	NEW CORNER FENCE TO BE ESTABLISHED
102 – 101	S0° 00' 00"E	96.819	261222.9270	238306.1046	NEW CORNER FENCE TO BE ESTABLISHED
101 – 100	A=15 51 09	R=311.75	T=43.40	L=86.25	NEW CORNER FENCE TO BE ESTABLISHED
AREA = 56863.6202 SqM = 14.4419 Cdas					

PARCEL NO. 109–02					OWNER PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST
POINTS	BEARING	DISTANCE	NORTH COORDINATE	EAST COORDINATE	DESCRIPTION
100 – 101	A=15 51 09	R=311.75	T=43.40	L=86.25	NEW CORNER FENCE TO BE ESTABLISHED
101 – 102	S0° 00' 00"E	96.819	261222.9270	238306.1046	NEW CORNER FENCE TO BE ESTABLISHED
102 – 103	S0° 00' 00"E	13.600	261126.1081	238306.1046	NEW CORNER FENCE TO BE ESTABLISHED
103 – 104	S0° 00' 00"E	82.800	261112.5081	238306.1046	NEW CORNER FENCE TO BE ESTABLISHED
104 – 159	A=6 21 54	R=221.85	T=12.34	L=24.65	NEW CORNER FENCE TO BE ESTABLISHED
159 – 158	N64° 49' 47"W	19.185	261035.2238	238282.0974	EXIST. CORNER FENCE TO REMAIN
158 – 157	N83° 16' 59"W	32.470	261043.3832	238264.7345	EXIST. CORNER FENCE TO REMAIN
157 – 156	N4° 40' 06"W	22.267	261047.1810	238232.4877	EXIST. CORNER FENCE TO REMAIN
156 – 155	N4° 30' 13"W	41.467	261069.3741	238230.6754	EXIST. CORNER FENCE TO REMAIN
155 – 154	N4° 13' 45"W	45.086	261110.7132	238227.4194	EXIST. CORNER FENCE TO REMAIN
154 – 153	N2° 34' 40"W	19.012	261155.6762	238224.0946	EXIST. CORNER FENCE TO REMAIN
153 – 152	N2° 42' 00"W	24.563	261174.6694	238223.2395	EXIST. CORNER FENCE TO REMAIN
152 – 100	N2° 32' 53"W	6.977	261199.2047	238222.0824	EXIST. CORNER FENCE TO REMAIN
AREA = 13733.0073 SqM = 3.4878 Cdas					

PARCEL NO. 110–01					OWNER PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST
POINTS	BEARING	DISTANCE	NORTH COORDINATE	EAST COORDINATE	DESCRIPTION
145 – 146	N87° 28' 47"W	10.106	261267.0792	238339.8536	NEW CORNER FENCE TO BE ESTABLISHED
146 – 142	A=20 13 00	R=312.10	T=55.64	L=110.12	NEW CORNER FENCE TO BE ESTABLISHED
142 – 143	S47° 49' 19"E	77.818	261374.4188	238353.7394	NEW CORNER FENCE TO BE ESTABLISHED
143 – 144	A=1 23 07	R=459.94	T=5.56	L=11.12	NEW CORNER FENCE TO BE ESTABLISHED
144 – 145	A=15 59 52	R=284.92	T=40.04	L=79.55	NEW CORNER FENCE TO BE ESTABLISHED
AREA = 4570.6499 SqM = 1.2229 Cdas					

RIGHT OF WAY SUMMARY TABLE (TO BE ACQUIRED)

PARCEL NO.	OWNER	PROPERTY TAX NO.	SqM.	Cdas.
109–01	PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST	000–000–00–00–000	56863.6202	14.4419
110–01	PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST	000–000–000–000	4570.6499	1.2229

RIGHT OF WAY SUMMARY TABLE (REMNANT)

PARCEL NO.	OWNER	PROPERTY TAX NO.	SqM.	Cdas.
109–02	PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST	000–000–00–00–000	13733.0073	3.4878

RIGHT OF WAY SUMMARY TABLES

Scale:NONE

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

SEGMENT EAST OF PR 18
SAN JUAN, PUERTO RICO

TORO ARQUITECTOS
AVENIDA McLEARY 2004
SAN JUAN, PUERTO RICO 00911
T 787 727 7700 F 787 727 8094

archUD ARCHITECTURE • URBAN DESIGN

SURVEYOR CONSULTANT

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00916-1283
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SAN JUAN, P.R.
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PJDC

CIVIL ENGINEER CONSULTANT

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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

RIGHT OF WAY TABLES

DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

ROW-5

PARCEL NO.					OWNER
110-02					PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST
POINTS	BEARING	DISTANCE	NORTH COORDINATE	EAST COORDINATE	DESCRIPTION
110 – 111	N0° 00' 00"E	53.418	261019.0569	238334.0446	NEW CORNER FENCE TO BE ESTABLISHED
111 – 112	N0° 00' 00"E	16.134	261072.4746	238334.0446	NEW CORNER FENCE TO BE ESTABLISHED
112 – 113	N0° 00' 00"E	61.400	261088.6081	238334.0446	NEW CORNER FENCE TO BE ESTABLISHED
113 – 114	N0° 00' 00"E	16.100	261150.0081	238334.0446	NEW CORNER FENCE TO BE ESTABLISHED
114 – 115	N0° 00' 00"E	64.406	261166.1081	238334.0446	NEW CORNER FENCE TO BE ESTABLISHED
115 – 116	A=20 06 17	R=315.08	T=55.85	L=110.56	NEW CORNER FENCE TO BE ESTABLISHED
116 – 117	A=1 08 07	R=490.08	T=4.86	L=9.71	NEW CORNER FENCE TO BE ESTABLISHED
117 – 118	A=2 05 56	R=490.16	T=8.98	L=17.95	NEW CORNER FENCE TO BE ESTABLISHED
118 – 119	A=6 40 57	R=490.08	T=28.61	L=57.16	NEW CORNER FENCE TO BE ESTABLISHED
119 – 120	N34° 43' 35"E	14.219	261357.1786	238479.7608	NEW CORNER FENCE TO BE ESTABLISHED
120 – 121	A=29 24 14	R=490.08	T=128.59	L=251.51	NEW CORNER FENCE TO BE ESTABLISHED
121 – 122	A=2 47 49	R=490.08	T=11.96	L=23.92	NEW CORNER FENCE TO BE ESTABLISHED
122 – 123	N1° 53' 40"E	49.363	261627.6804	238570.9306	NEW CORNER FENCE TO BE ESTABLISHED
123 – 220	A=0 03 53	R=3761.47	T=2.12	L=4.25	EXISTING CORNER FENCE TO REMAIN
220 – 219	N47° 35' 26"E	15.156	261680.9218	238574.2278	EXISTING CORNER FENCE TO REMAIN
219 – 218	N65° 02' 58"E	14.892	261691.1430	238585.4179	EXISTING CORNER FENCE TO REMAIN
218 – 217	N72° 37' 49"E	5.657	261697.4252	238598.9204	EXISTING CORNER FENCE TO REMAIN
217 – 216	N77° 41' 34"E	93.595	261699.1140	238604.3195	EXISTING CORNER FENCE TO REMAIN
216 – 215	N68° 25' 45"E	22.884	261719.0642	238695.7637	EXISTING CORNER FENCE TO REMAIN
215 – 214	N75° 59' 56"E	24.853	261727.4775	238717.0448	EXISTING CORNER FENCE TO REMAIN
214 – 213	N76° 04' 39"E	38.827	261733.4903	238741.1593	EXISTING CORNER FENCE TO REMAIN
213 – 212	S2° 05' 29"W	9.056	261742.8325	238778.8458	EXISTING CORNER FENCE TO REMAIN
212 – 211	S9° 49' 13"W	22.669	261733.7822	238778.5153	EXISTING CORNER FENCE TO REMAIN
211 – 210	S16° 30' 43"W	7.964	261711.4458	238774.6490	EXISTING CORNER FENCE TO REMAIN
210 – 209	S70° 00' 12"E	14.471	261703.8099	238772.3854	EXISTING CORNER FENCE TO REMAIN
209 – 208	S9° 14' 18"W	10.855	261698.8611	238785.9845	EXISTING CORNER FENCE TO REMAIN
208 – 207	S23° 12' 42"W	51.869	261688.1467	238784.2417	EXISTING CORNER FENCE TO REMAIN
207 – 206	S23° 12' 26"W	54.821	261640.4766	238763.7987	EXISTING CORNER FENCE TO REMAIN
206 – 205	S28° 51' 24"W	33.455	261590.0913	238742.1961	EXISTING CORNER FENCE TO REMAIN
205 – 204	S32° 42' 25"W	19.479	261560.7906	238726.0501	EXISTING CORNER FENCE TO REMAIN
204 – 203	S39° 18' 40"W	50.363	261544.4000	238715.5247	EXISTING CORNER FENCE TO REMAIN
203 – 202	S50° 03' 11"W	16.392	261505.4332	238683.6180	EXISTING CORNER FENCE TO REMAIN
202 – 201	S56° 10' 14"W	36.867	261494.9084	238671.0515	EXISTING CORNER FENCE TO REMAIN
201 – 200	S71° 47' 14"W	38.159	261474.3839	238640.4263	EXISTING CORNER FENCE TO REMAIN
200 – 199	S58° 01' 50"W	7.352	261462.4572	238604.1786	EXISTING CORNER FENCE TO REMAIN
199 – 198	S45° 06' 11"W	7.151	261458.5648	238597.9419	EXISTING CORNER FENCE TO REMAIN
198 – 197	S29° 06' 38"W	9.062	261453.5173	238592.8762	EXISTING CORNER FENCE TO REMAIN
197 – 196	S12° 51' 22"W	7.138	261445.5997	238588.4674	EXISTING CORNER FENCE TO REMAIN
196 – 195	S5° 45' 39"E	12.300	261438.6405	238586.8791	EXISTING CORNER FENCE TO REMAIN
195 – 194	S20° 23' 01"E	17.360	261426.4025	238588.1138	EXISTING CORNER FENCE TO REMAIN
194 – 193	S26° 23' 16"E	19.608	261410.1293	238594.1604	EXISTING CORNER FENCE TO REMAIN
193 – 192	S24° 19' 19"E	122.373	261392.5640	238602.8752	EXISTING CORNER FENCE TO REMAIN
192 – 191	S20° 06' 43"E	13.250	261281.0518	238653.2764	EXISTING CORNER FENCE TO REMAIN
191 – 190	S3° 09' 02"E	9.699	261268.6095	238657.8326	EXISTING CORNER FENCE TO REMAIN
190 – 189	S32° 49' 48"W	5.364	261258.9252	238658.3656	EXISTING CORNER FENCE TO REMAIN
189 – 188	S17° 06' 36"W	26.523	261254.4183	238655.4577	EXISTING CORNER FENCE TO REMAIN
188 – 187	S27° 21' 17"W	28.510	261229.0691	238647.6545	EXISTING CORNER FENCE TO REMAIN
187 – 186	S28° 53' 32"W	22.066	261203.7469	238634.5541	EXISTING CORNER FENCE TO REMAIN
186 – 185	S27° 55' 44"W	52.457	261184.4274	238623.8926	EXISTING CORNER FENCE TO REMAIN
185 – 184	S31° 01' 56"W	11.863	261138.0800	238599.3230	EXISTING CORNER FENCE TO REMAIN
184 – 183	S44° 22' 16"W	9.489	261127.9146	238593.2071	EXISTING CORNER FENCE TO REMAIN
183 – 182	S63° 44' 33"W	13.469	261121.1316	238586.5714	EXISTING CORNER FENCE TO REMAIN
182 – 181	S72° 18' 40"W	13.989	261115.1729	238574.4925	EXISTING CORNER FENCE TO REMAIN
181 – 180	S81° 23' 50"W	22.390	261110.9224	238561.1650	EXISTING CORNER FENCE TO REMAIN
180 – 179	S75° 10' 57"W	10.172	261107.5733	238539.0273	EXISTING CORNER FENCE TO REMAIN
179 – 178	S63° 26' 58"W	8.876	261104.9719	238529.1938	EXISTING CORNER FENCE TO REMAIN
178 – 177	S35° 45' 30"W	5.584	261101.0044	238521.2537	EXISTING CORNER FENCE TO REMAIN
177 – 176	S17° 54' 39"W	5.102	261096.4730	238517.9906	EXISTING CORNER FENCE TO REMAIN
176 – 175	S6° 23' 45"E	6.176	261091.6179	238516.4214	EXISTING CORNER FENCE TO REMAIN
175 – 174	S18° 27' 57"E	24.746	261085.4809	238517.1093	EXISTING CORNER FENCE TO REMAIN
174 – 173	S2° 55' 07"E	9.638	261062.0091	238524.9473	EXISTING CORNER FENCE TO REMAIN
173 – 172	S10° 59' 41"W	9.113	261052.3836	238525.4380	EXISTING CORNER FENCE TO REMAIN
172 – 171	S27° 52' 41"W	11.279	261043.4382	238523.7001	EXISTING CORNER FENCE TO REMAIN
171 – 170	S40° 01' 22"W	15.535	261033.4684	238518.4262	EXISTING CORNER FENCE TO REMAIN
170 – 169	S47° 19' 43"W	6.837	261021.5716	238508.4356	EXISTING CORNER FENCE TO REMAIN
169 – 168	S32° 15' 53"W	17.235	261016.9376	238503.4087	EXISTING CORNER FENCE TO REMAIN
168 – 167	S35° 57' 14"W	44.913	261002.3635	238494.2079	EXISTING CORNER FENCE TO REMAIN
167 – 166	S30° 46' 21"W	6.687	260966.0068	238467.8378	EXISTING CORNER FENCE TO REMAIN
166 – 165	S36° 43' 26"W	10.519	260960.2609	238464.4163	EXISTING CORNER FENCE TO REMAIN
165 – 164	S25° 30' 33"W	4.744	260951.8293	238458.1261	EXISTING CORNER FENCE TO REMAIN
164 – 163	N71° 15' 47"W	8.210	260947.5473	238456.0828	EXISTING CORNER FENCE TO REMAIN
163 – 162	S79° 44' 10"W	12.046	260950.1844	238448.3084	EXISTING CORNER FENCE TO REMAIN
162 – 161	N57° 05' 40"W	53.265	260948.0380	238436.4549	EXISTING CORNER FENCE TO REMAIN
161 – 160	N56° 41' 01"W	28.759	260976.9746	238391.7350	EXISTING CORNER FENCE TO REMAIN
160 – 108	N60° 55' 44"W	4.326	260992.7707	238367.7026	NEW CORNER FENCE TO BE ESTABLISHED
108 – 109	N42° 08' 13"W	18.915	260994.8726	238363.9217	NEW CORNER FENCE TO BE ESTABLISHED
109 – 110	A=6 36 28	R=173.20	T=10.00	L=19.98	NEW CORNER FENCE TO BE ESTABLISHED
AREA = 137404.5833 SqM = 34.9988 Cdas					

PARCEL NO.					OWNER
111-01					PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST
POINTS	BEARING	DISTANCE	NORTH COORDINATE	EAST COORDINATE	DESCRIPTION
151 – 147	N47° 49' 19"W	82.996	261333.2615	238421.8024	NEW CORNER FENCE TO BE ESTABLISHED
147 – 148	A=13 38 27	R=311.32	T=37.23	L=74.12	NEW CORNER FENCE TO BE ESTABLISHED
148 – 149	A=16 01 54	R=641.75	T=90.37	L=179.56	NEW CORNER FENCE TO BE ESTABLISHED
149 – 150	S34° 38' 43"E	5.782	261572.6286	238531.6569	NEW CORNER FENCE TO BE ESTABLISHED
150 – 151	A=32 53 54	R=459.92	T=135.79	L=264.08	NEW CORNER FENCE TO BE ESTABLISHED
AREA = 16909.8983 SqM = 4.4414 Cdas					

RIGHT OF WAY SUMMARY TABLE (REMNANT)

PARCEL NO.	OWNER	PROPERTY TAX NO.	SqM.	Cdas.
110-02	PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST	000-000-000-000	137404.5833	34.9988

RIGHT OF WAY SUMMARY TABLE (TO BE ACQUIRED)

PARCEL NO.	OWNER	PROPERTY TAX NO.	SqM.	Cdas.
111-01	PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST	000-000-00-000	16909.8983	4.4414

RIGHT OF WAY SUMMARY TABLES

Scale:NONE

SCIENCE CITY
URBAN INFRASTRUCTURE
PHASE II

SEGMENT EAST OF PR 18
SAN JUAN, PUERTO RICO

TORO ARQUITECTOS
AVENIDA McLEARY 2004
SAN JUAN, PUERTO RICO 00911
T 787 727 7700 F 787 727 8094
archUD ARCHITECTURE + URBAN

SURVEYOR CONSULTANT
TELEPHONE: (787) 273-6702
FAX: (787) 273-6729
E-MAIL pjdcinc @ coqui.net
P.O. BOX 194523 SAN JUAN, P.R. 00919-4523
SUMMIT HILLS #640 AVE. SAN PATRICIO, SAN JUAN, P.R. 00920
PJDC

CIVIL ENGINEER CONSULTANT
BARRETT • HALE • ALAMO

REVISIONS

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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

RIGHT OF WAY TABLES

DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

ROW-6

PARCEL NO.	OWNER
111–02	PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST

POINTS	BEARING	DISTANCE	NORTH COORDINATE	EAST COORDINATE	DESCRIPTION
141 – 140	A=17 40 01	R=284.92	T=44.28	L=87.85	NEW CORNER FENCE TO BE ESTABLISHED
140 – 139	A=13 12 21	R=335.70	T=38.86	L=77.37	NEW CORNER FENCE TO BE ESTABLISHED
139 – 138	N13° 55' 53"E	12.800	261328.2400	238314.4801	NEW CORNER FENCE TO BE ESTABLISHED
138 – 137	A=9 08 24	R=335.10	T=26.78	L=53.46	NEW CORNER FENCE TO BE ESTABLISHED
137 – 136	N25° 28' 25"E	15.295	261390.9707	238335.4713	NEW CORNER FENCE TO BE ESTABLISHED
136 – 135	A=12 32 31	R=335.10	T=36.82	L=73.35	NEW CORNER FENCE TO BE ESTABLISHED
135 – 134	A=2 44 05	R=665.10	T=15.88	L=31.75	NEW CORNER FENCE TO BE ESTABLISHED
134 – 133	N42° 41' 21"E	14.650	261490.2079	238402.6727	NEW CORNER FENCE TO BE ESTABLISHED
133 – 132	A=5 54 02	R=665.10	T=34.28	L=68.49	NEW CORNER FENCE TO BE ESTABLISHED
132 – 131	N49° 49' 10"E	13.901	261548.3031	238462.0793	NEW CORNER FENCE TO BE ESTABLISHED
131 – 130	A=7 14 59	R=665.10	T=42.13	L=84.16	NEW CORNER FENCE TO BE ESTABLISHED
130 – 129	A=2 34 33	R=461.08	T=10.37	L=20.73	NEW CORNER FENCE TO BE ESTABLISHED
129 – 128	N1° 50' 31"E	45.750	261627.3489	238541.9066	NEW CORNER FENCE TO BE ESTABLISHED
128 – 223	S76° 55' 52"W	71.551	261673.0755	238543.3772	EXISTING CORNER FENCE TO REMAIN
223 – 224	S7° 37' 17"W	6.217	261656.8962	238473.6792	EXISTING CORNER FENCE TO REMAIN
224 – 225	S84° 03' 35"W	74.549	261650.7339	238472.8547	EXISTING CORNER FENCE TO REMAIN
225 – 226	S80° 28' 33"W	4.927	261643.0188	238398.7055	EXISTING CORNER FENCE TO REMAIN
226 – 227	S62° 28' 26"W	14.853	261642.2035	238393.8462	EXISTING CORNER FENCE TO REMAIN
227 – 228	S72° 31' 04"W	63.524	261635.3389	238380.6741	EXISTING CORNER FENCE TO REMAIN
228 – 229	S69° 25' 40"W	20.773	261616.2557	238320.0842	EXISTING CORNER FENCE TO REMAIN
229 – 230	S67° 36' 28"W	16.761	261608.9564	238300.6363	EXISTING CORNER FENCE TO REMAIN
230 – 231	N57° 18' 13"W	9.730	261602.5713	238285.1389	EXISTING CORNER FENCE TO REMAIN
231 – 232	S68° 38' 29"W	46.425	261607.8272	238276.9508	EXISTING CORNER FENCE TO REMAIN
232 – 233	S60° 24' 10"W	4.196	261590.9192	238233.7146	EXISTING CORNER FENCE TO REMAIN
233 – 234	S47° 23' 16"W	4.196	261588.8470	238230.0665	EXISTING CORNER FENCE TO REMAIN
234 – 235	S38° 36' 32"W	2.663	261586.0065	238226.9788	EXISTING CORNER FENCE TO REMAIN
235 – 236	S31° 46' 18"W	2.374	261583.9254	238225.3170	EXISTING CORNER FENCE TO REMAIN
236 – 237	S24° 05' 44"W	3.280	261581.9069	238224.0669	EXISTING CORNER FENCE TO REMAIN
237 – 238	S15° 11' 18"W	3.280	261578.9129	238222.7278	EXISTING CORNER FENCE TO REMAIN
238 – 239	S9° 16' 41"W	81.250	261575.7476	238221.8685	EXISTING CORNER FENCE TO REMAIN
239 – 240	S31° 45' 52"E	18.053	261495.5603	238208.7687	EXISTING CORNER FENCE TO REMAIN
240 – 241	S5° 50' 21"W	41.828	261480.2111	238218.2724	EXISTING CORNER FENCE TO REMAIN
241 – 242	S4° 16' 30"W	9.026	261438.6001	238214.0170	EXISTING CORNER FENCE TO REMAIN
242 – 243	S1° 02' 20"W	24.153	261429.5994	238213.3442	EXISTING CORNER FENCE TO REMAIN
243 – 244	S2° 32' 46"E	67.042	261405.4500	238212.9063	EXISTING CORNER FENCE TO REMAIN
244 – 141	S2° 32' 53"E	105.597	261338.4738	238215.8845	NEW CORNER FENCE TO BE ESTABLISHED

AREA = 66959.5295 SqM = 17.0363 Cdas

RIGHT OF WAY SUMMARY TABLE (REMNANT)

PARCEL NO.	OWNER	PROPERTY TAX NO.	SqM.	Cdas.
111–02	PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST	000–000–00–000	66959.5295	17.0363

RIGHT OF WAY SUMMARY TABLE

Scale:NONE

SCIENCE CITY
URBAN INFRASTRUCTURE
PHASE II

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PUERTO RICO AVE.
SAN PATRICIO
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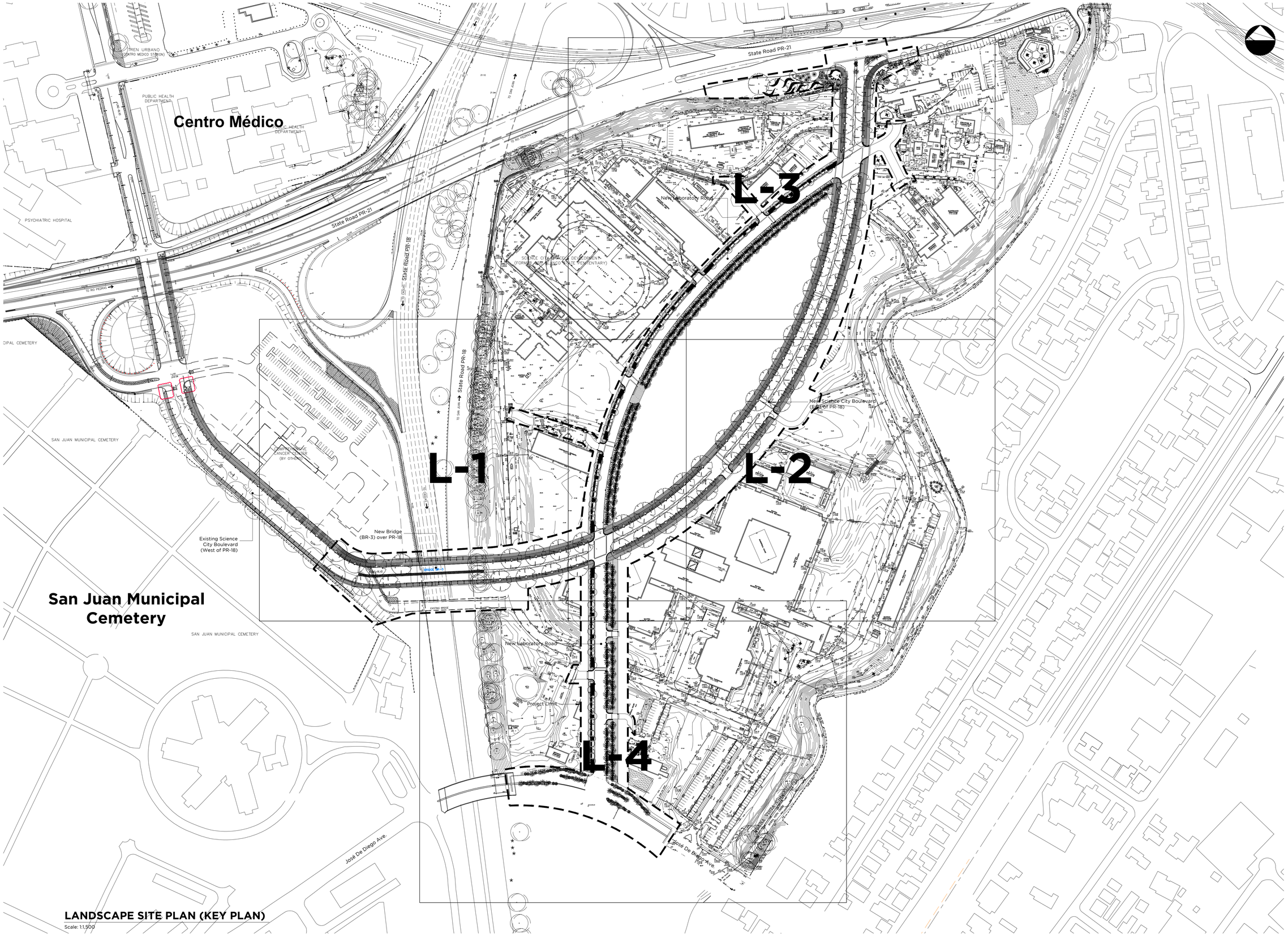
FINAL CONSTRUCTION
DOCUMENTS (100%)
MAY 13, 2013

RIGHT OF WAY
TABLES

DRAWN BY:
REVISED BY:
DATE: JUNE-19-2012

ROW-7



LANDSCAPE SITE PLAN (KEY PLAN)

Scale: 1:1,500

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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

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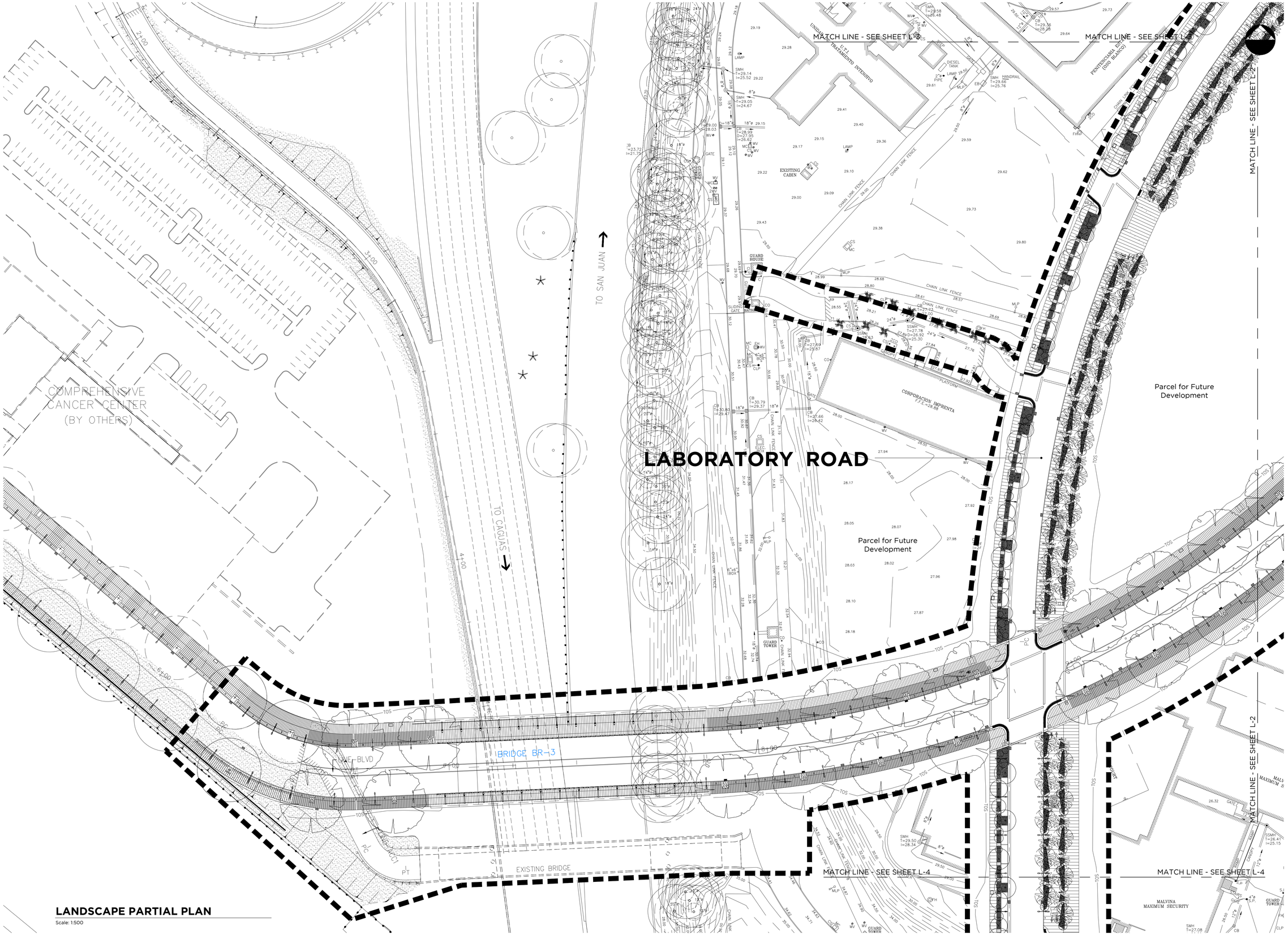
REVISED BY: JJT
DATE: OCTOBER 31, 2012

L-0

OF



LANDSCAPE PARTIAL PLAN

Scale: 1:500

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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LANSDCAPE PARTIAL PLAN

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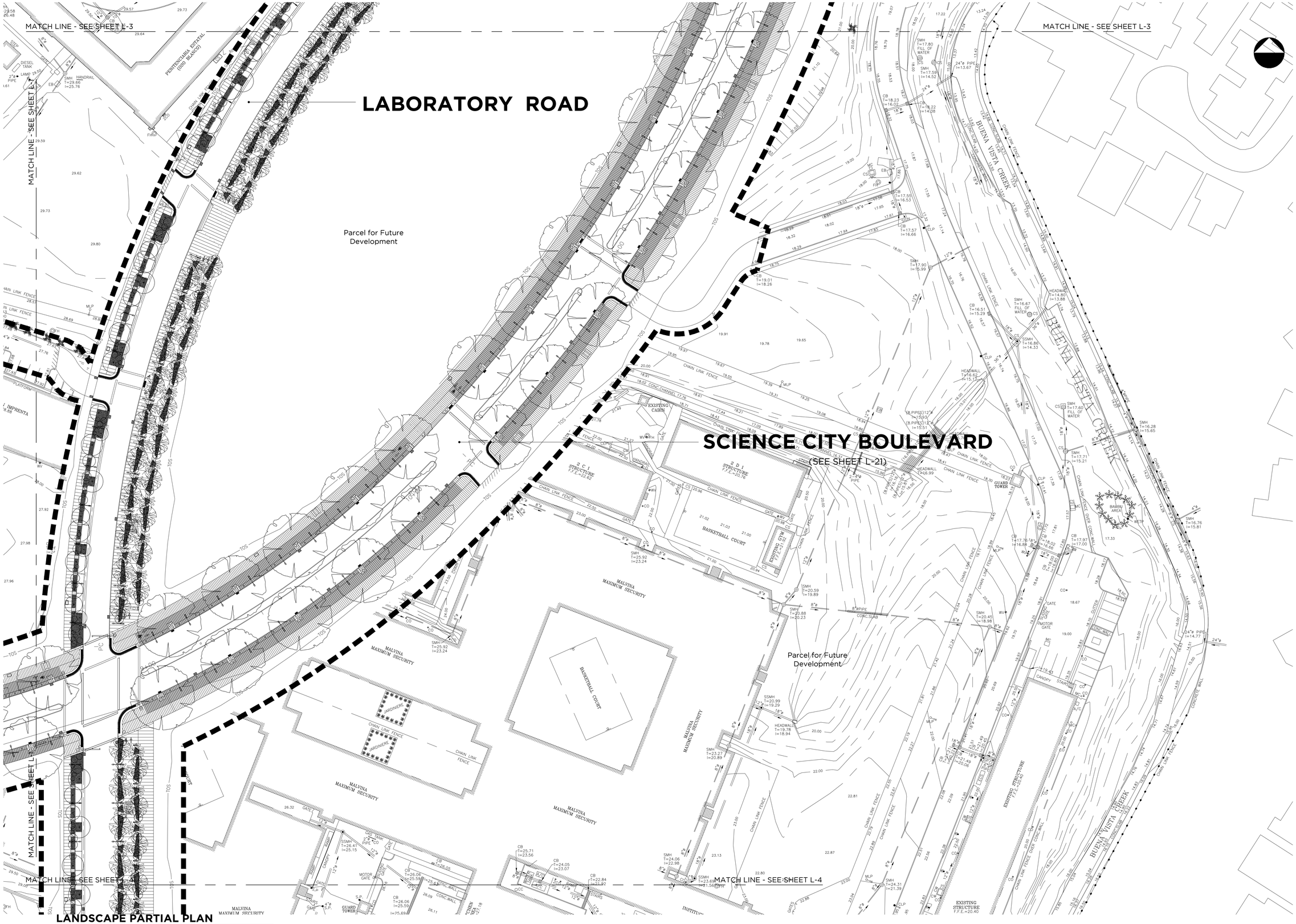
L-1

OF



LANDSCAPE PARTIAL PLAN

Scale: 1:500

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LANDSCAPE PARTIAL PLAN

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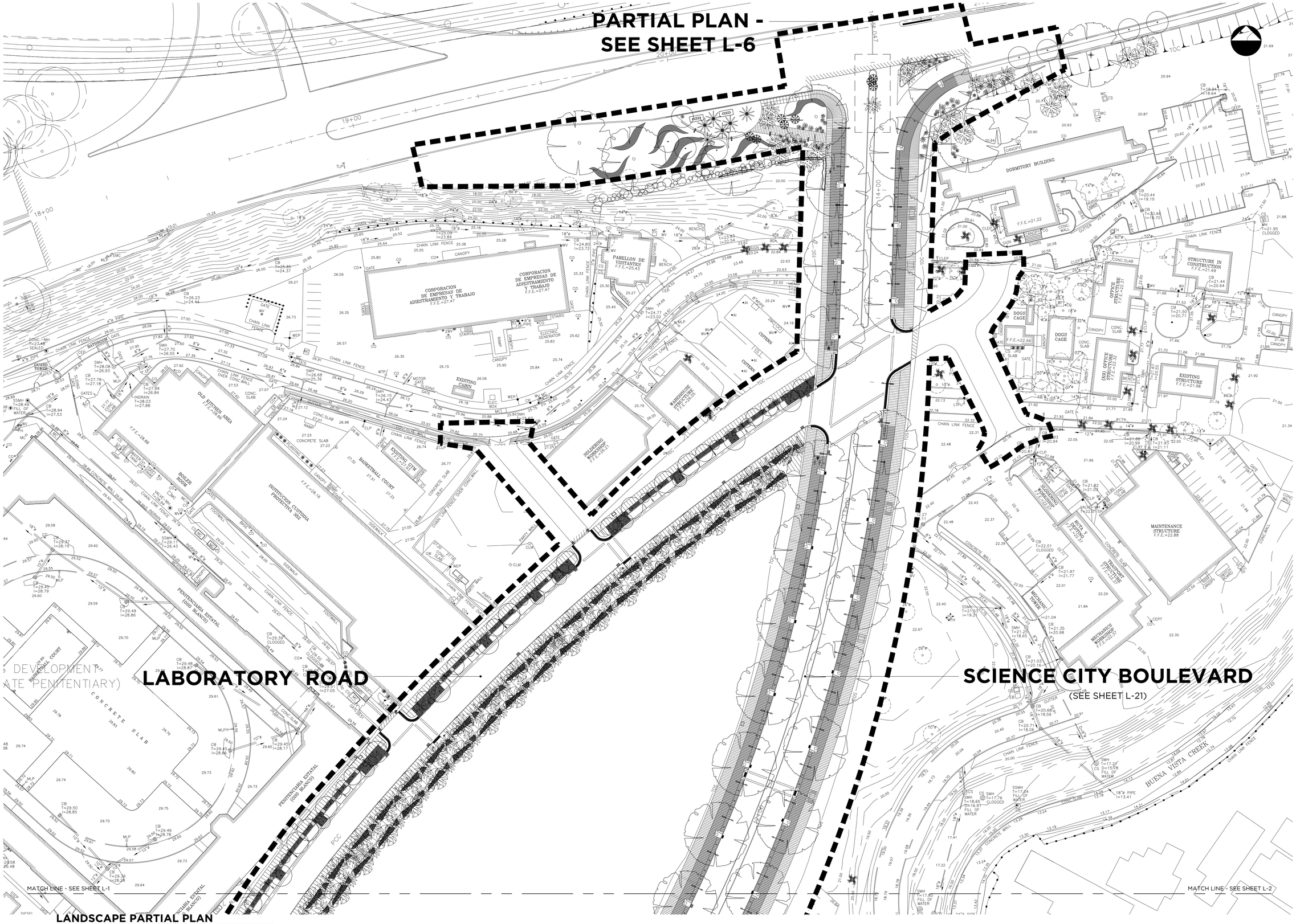
L-2

OF



LANDSCAPE PARTIAL PLAN

Scale: 1:500

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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LANDSCAPE PARTIAL PLAN

DRAWN BY: LR/FDJ
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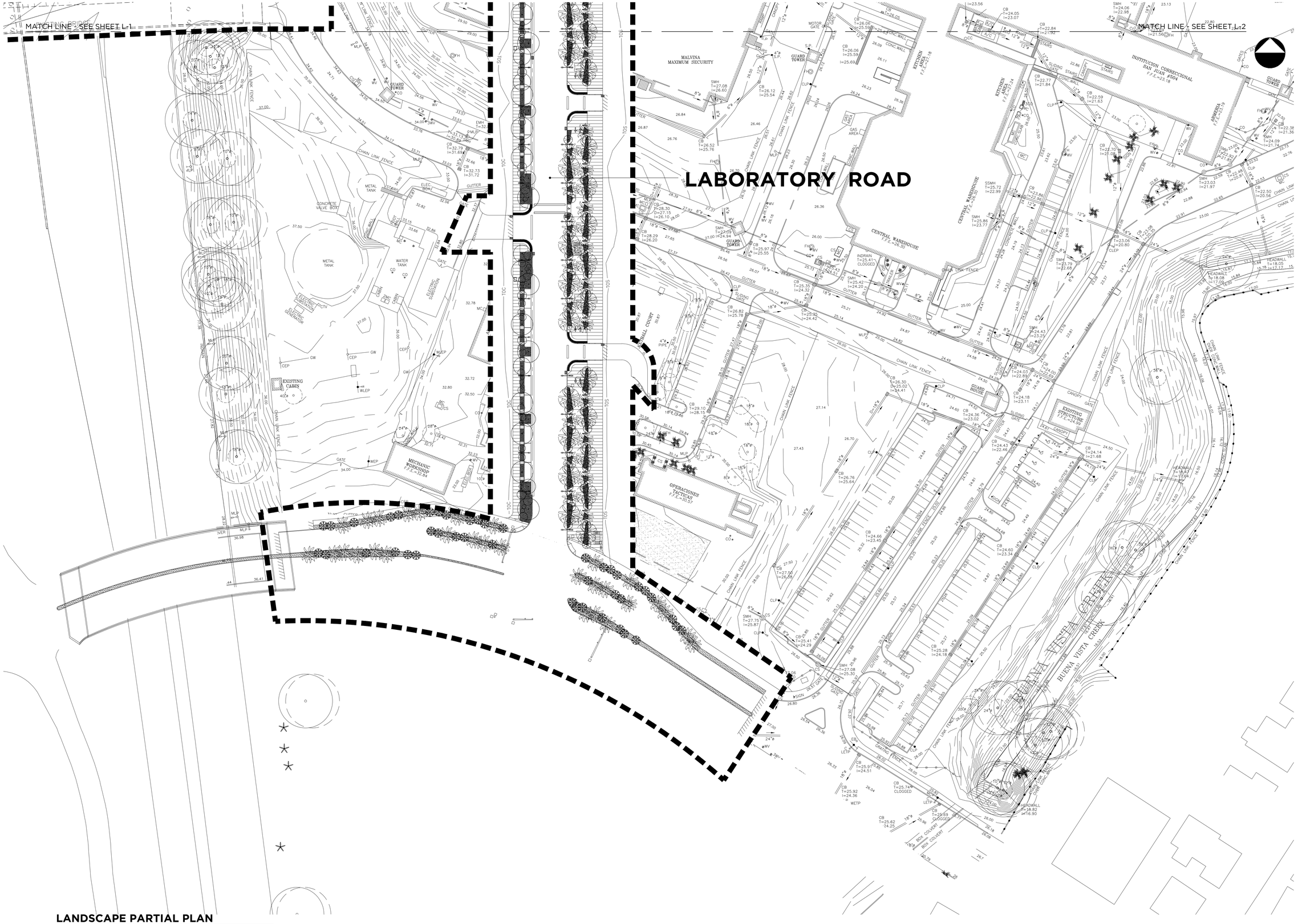
DATE: OCTOBER 31, 2012

L-3

OF



LANDSCAPE PARTIAL PLAN

Scale: 1:500

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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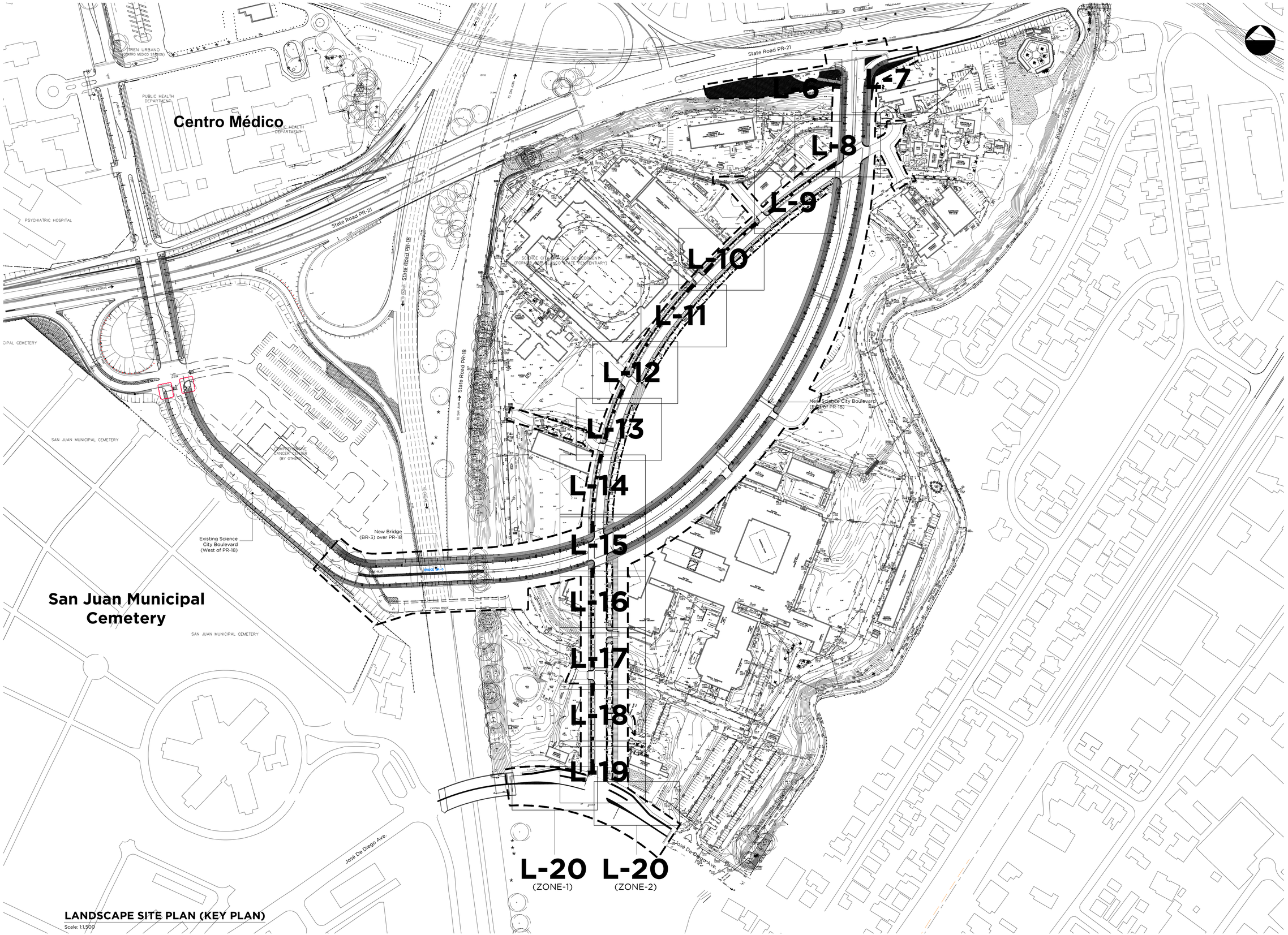
LANDSCAPE PARTIAL PLAN

DRAWN BY: LR/FDJ
REVISED BY: JJT
DATE: OCTOBER 31, 2012

L-4

OF



LANDSCAPE SITE PLAN (KEY PLAN)

Scale: 1:1,500

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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LANDSCAPE SITE PLAN (KEY PLAN)

DRAWN BY: LR/FDJ
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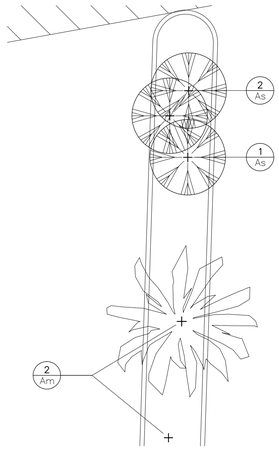
DATE: OCTOBER 31, 2012

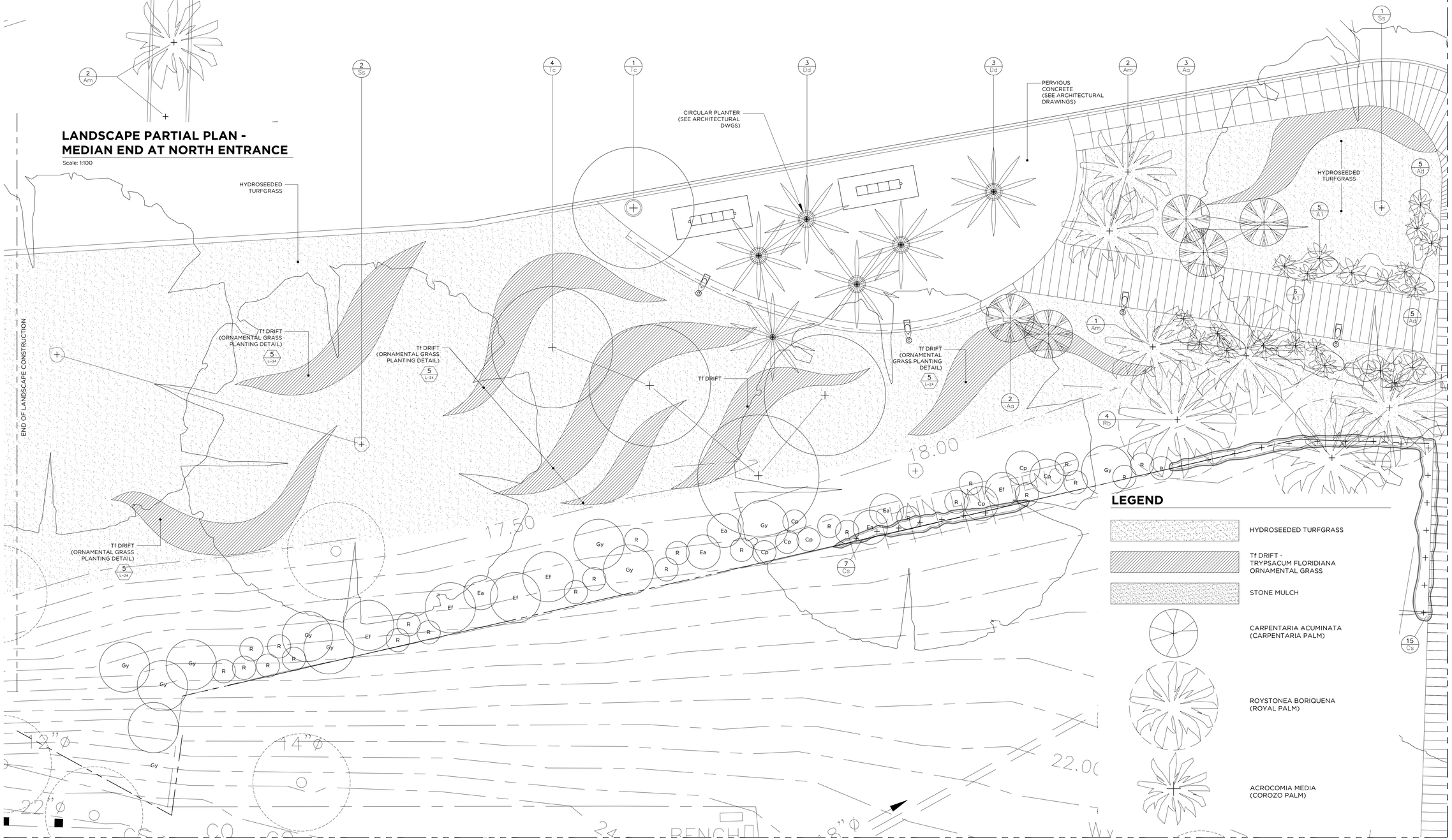
L-5

OF



LANDSCAPE PARTIAL PLAN - MEDIAN END AT NORTH ENTRANCE

Scale: 1:100



LEGEND

- HYDROSEEDED TURFGRASS
- Tf DRIFT - TRYPSACUM FLORIDIANA ORNAMENTAL GRASS
- STONE MULCH
- CARPENTARIA ACUMINATA (CARPENTARIA PALM)
- ROYSTONEA BORIQUENA (ROYAL PALM)
- ACROCOMIA MEDIA (COROZO PALM)

Note:
Refer to Geometrical Layout Plans in Civil Dwgs

LANDSCAPE PARTIAL PLAN

Scale: 1:100

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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LANDSCAPE PARTIAL PLANS- NORTH ENTRANCE

DRAWN BY: LR/FDJ
REVISED BY: JJT
DATE: OCTOBER 31, 2012

L-6

OF

MATCH LINE - SEE SHEET L-6

21+00

Remove Existing Bb Trees
Under Proposed SS Canopy

Hydroseeded Grass

Agave Planting Detail
2
L-12

HYDROSEEDED TURFGRASS

FICUS PUMILA VINE
COVERING THE WHOLE
RETAINING WALL. FOR
QUANTITY SEE PLANT
SCHEDULE
6
L-24

PLANTING
IN SCUPPERS
1
L-24

16.28

9.14

26.18

9.14

3
Am

3
Am

1
Ss

6
Ad

Tree Planting On Sidewalk
1
L-22

1
Ss

2
Bb

2
Bb

2
Rb

34"ø

24"ø

7
L-11

Bromeliad Scuppers
See Arch.Drawings
2
L-24

20.71

GW

GW

20.93

20.90

3
Rb

CO

20.94

CO

CANOPY

Bromeliad Planting
Detail
2
L-24

3
Rb

2
Ss

CO

DORMITORY BUILDING

MATCH LINE - SEE SHEET L-8

Note:
Refer to Geometrical Layout Plans in Civil Dwgs.

LANDSCAPE PARTIAL PLAN

Scale: 1:100

LEGEND

- HYDROSEEDED TURFGRASS
- Tf DRIFT - TRYPSACUM FLORIDIANA ORNAMENTAL GRASS
- STONE MULCH
- CARPENTARIA ACUMINATA (CARPENTARIA PALM)
- ROYSTONEA BORIQUENA (ROYAL PALM)
- ACROCOMIA MEDIA (COROZO PALM)

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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LANDSCAPE PARTIAL PLAN - NORTH ENTRANCE

DRAWN BY: LR/FDJ
REVISED BY: JJT
DATE: OCTOBER 31, 2012

L-7

OF

LEGEND

- HYDROSEEDED TURFGRASS
- Tf DRIFT - TRYPSACUM FLORIDIANA ORNAMENTAL GRASS
- STONE MULCH
- CARPENTARIA ACUMINATA (CARPENTARIA PALM)
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Note:
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LANDSCAPE PARTIAL PLAN

Scale: 1:100

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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LANDSCAPE PARTIAL PLAN - LABORATORY ROAD

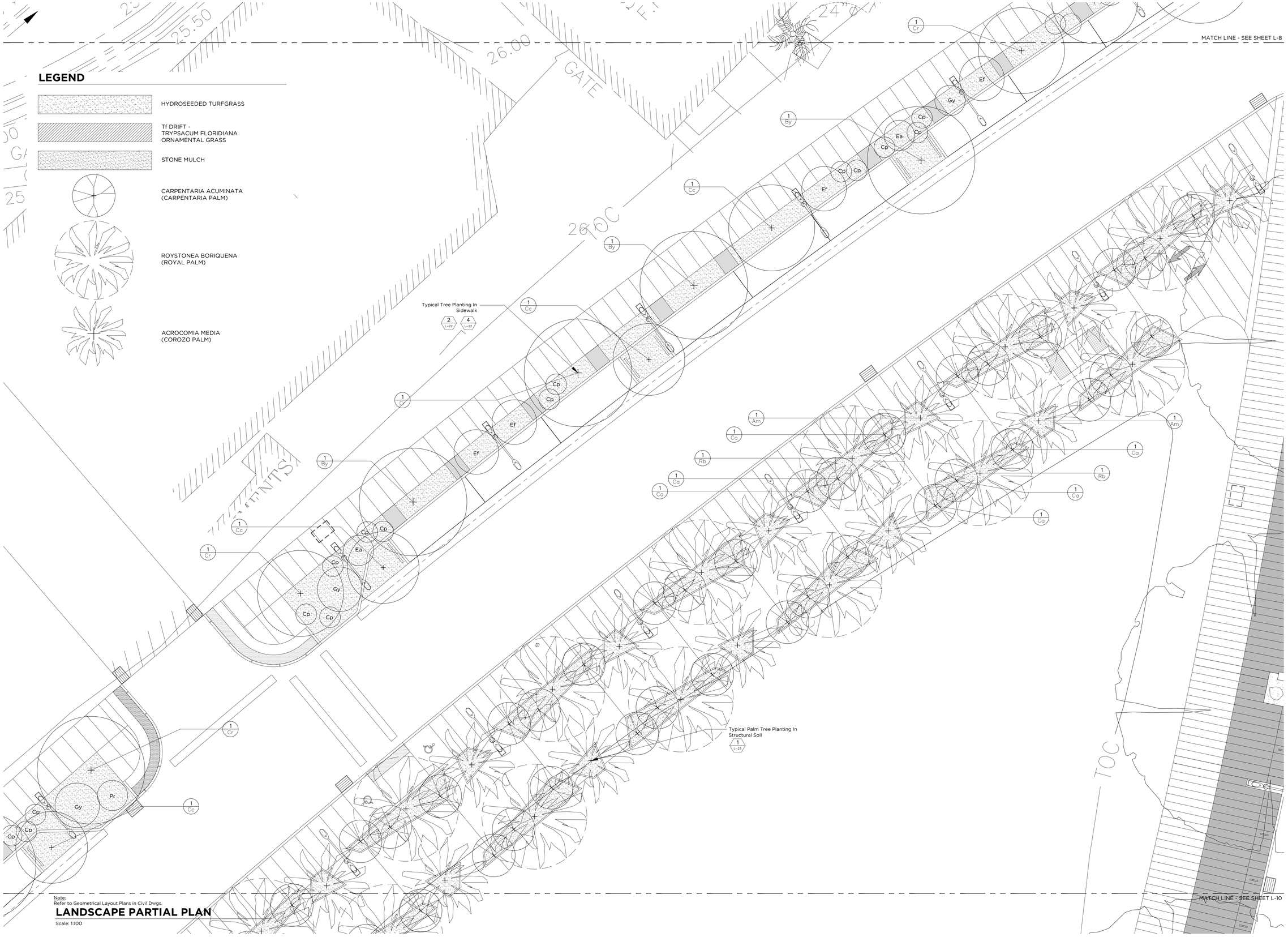
DRAWN BY: LR/FDJ
REVISED BY: JJT
DATE: OCTOBER 31, 2012

L-8

OF

LEGEND

- HYDROSEEDED TURFGRASS
- Tf DRIFT - TRYPSACUM FLORIDIANA ORNAMENTAL GRASS
- STONE MULCH
- CARPENTARIA ACUMINATA (CARPENTARIA PALM)
- ROYSTONEA BORIQUENA (ROYAL PALM)
- ACROCOMIA MEDIA (COROZO PALM)



Note:
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LANDSCAPE PARTIAL PLAN

Scale: 1:100

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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LANDSCAPE PARTIAL PLAN - LABORATORY ROAD

DRAWN BY: LR/FDJ
REVISED BY: JJT
DATE: OCTOBER 31, 2012

L-9

OF

MATCH LINE - SEE SHEET L-9

LEGEND

- HYDROSEEDED TURFGRASS
- Tf DRIFT - TRYPSACUM FLORIDIANA ORNAMENTAL GRASS
- STONE MULCH
- CARPENTARIA ACUMINATA (CARPENTARIA PALM)
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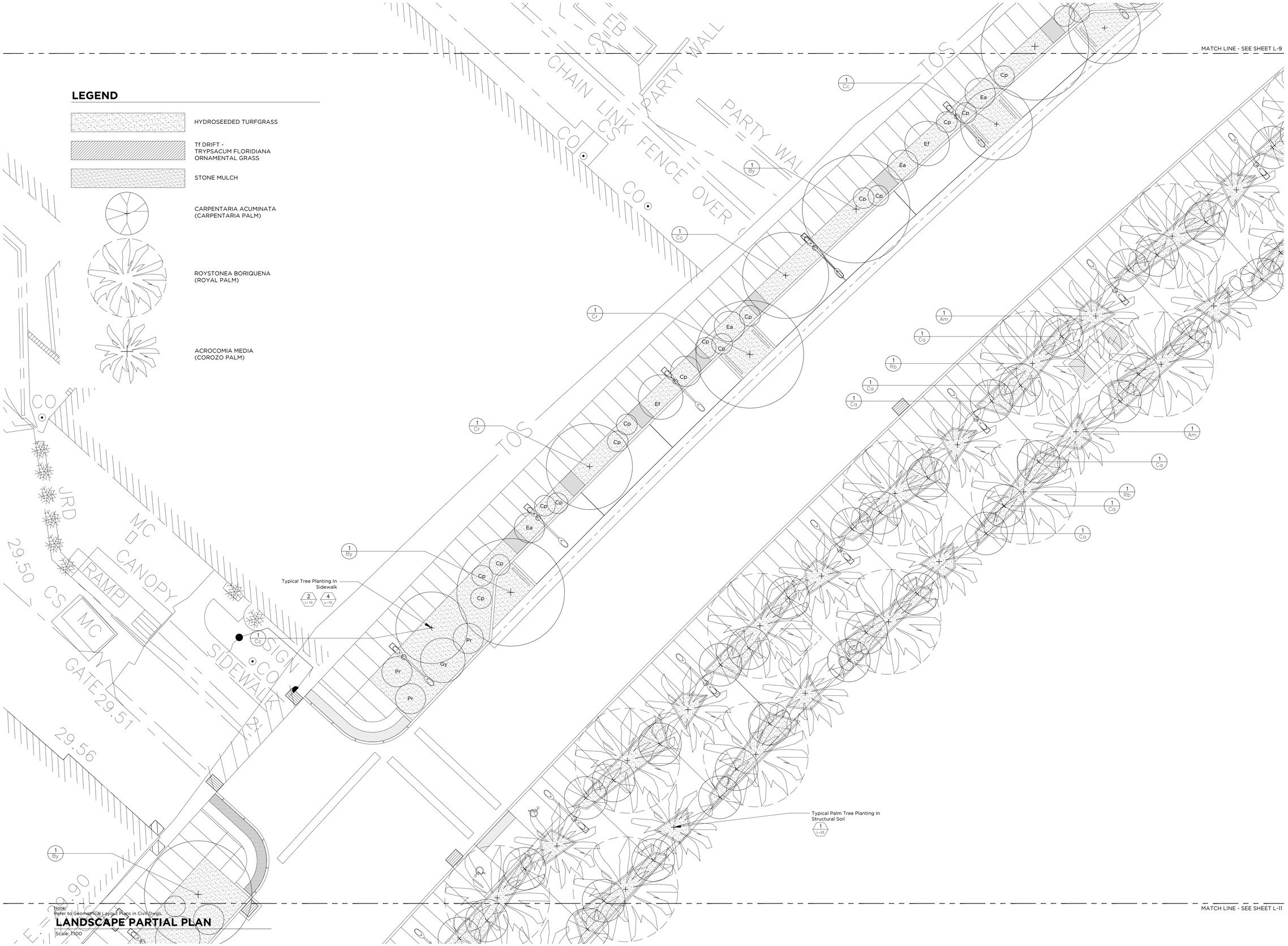

MATCH LINE - SEE SHEET L-11

Note:
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LANDSCAPE PARTIAL PLAN

Scale: 1:100

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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LANDSCAPE PARTIAL PLAN - LABORATORY ROAD

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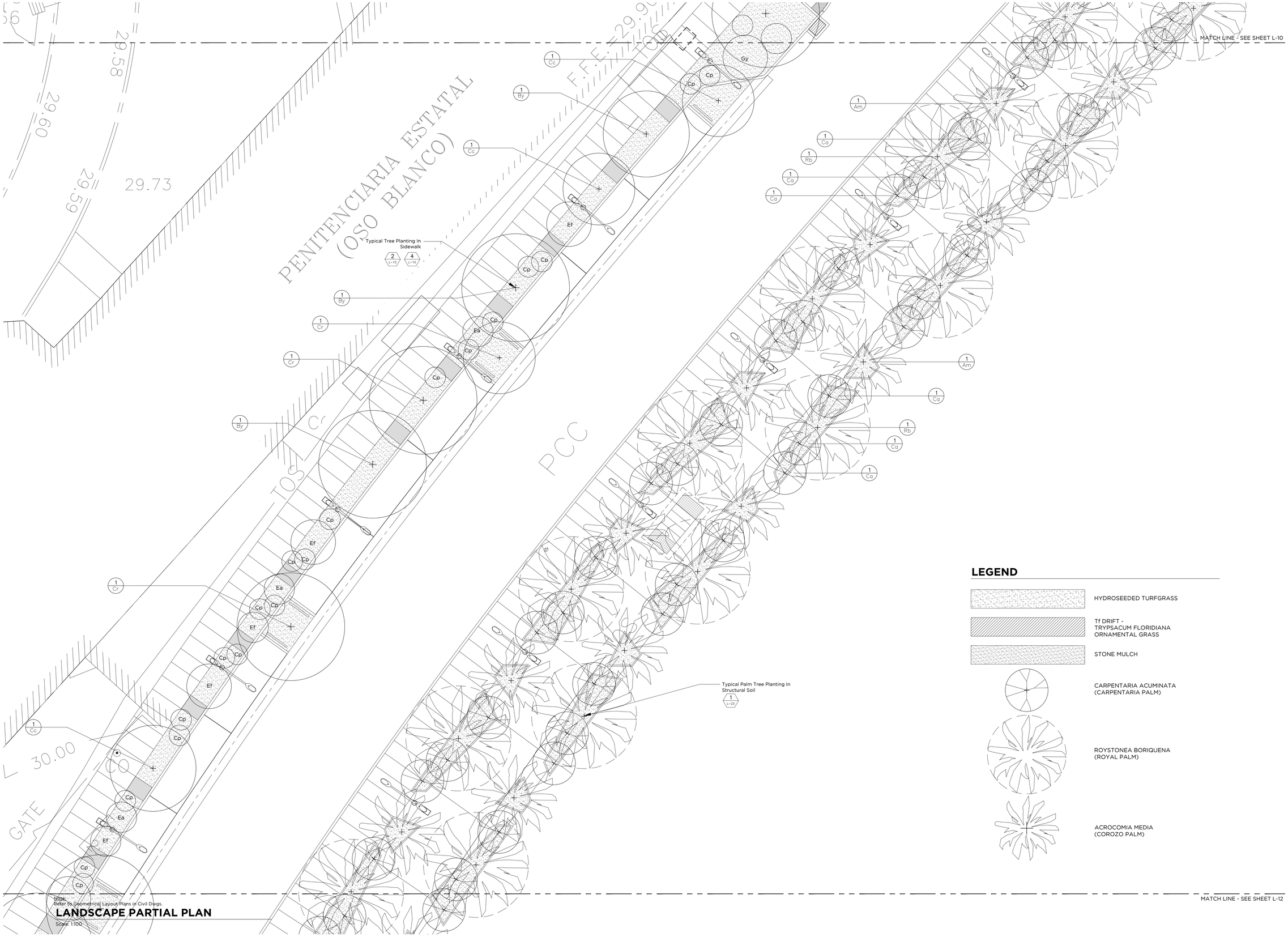
REVISED BY: JJT
DATE: OCTOBER 31, 2012

L-10

OF



Note:
Refer to Geometrical Layout Plans in Civil Dwgs.

LANDSCAPE PARTIAL PLAN

Scale: 1:100

LEGEND

- HYDROSEEDED TURFGRASS
- Tf DRIFT - TRYPSACUM FLORIDIANA ORNAMENTAL GRASS
- STONE MULCH
- CARPENTARIA ACUMINATA (CARPENTARIA PALM)
- ROYSTONEA BORIQUENA (ROYAL PALM)
- ACROCOMIA MEDIA (COROZO PALM)

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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LANDSCAPE PARTIAL PLAN - LABORATORY ROAD

DRAWN BY: LR/FDJ
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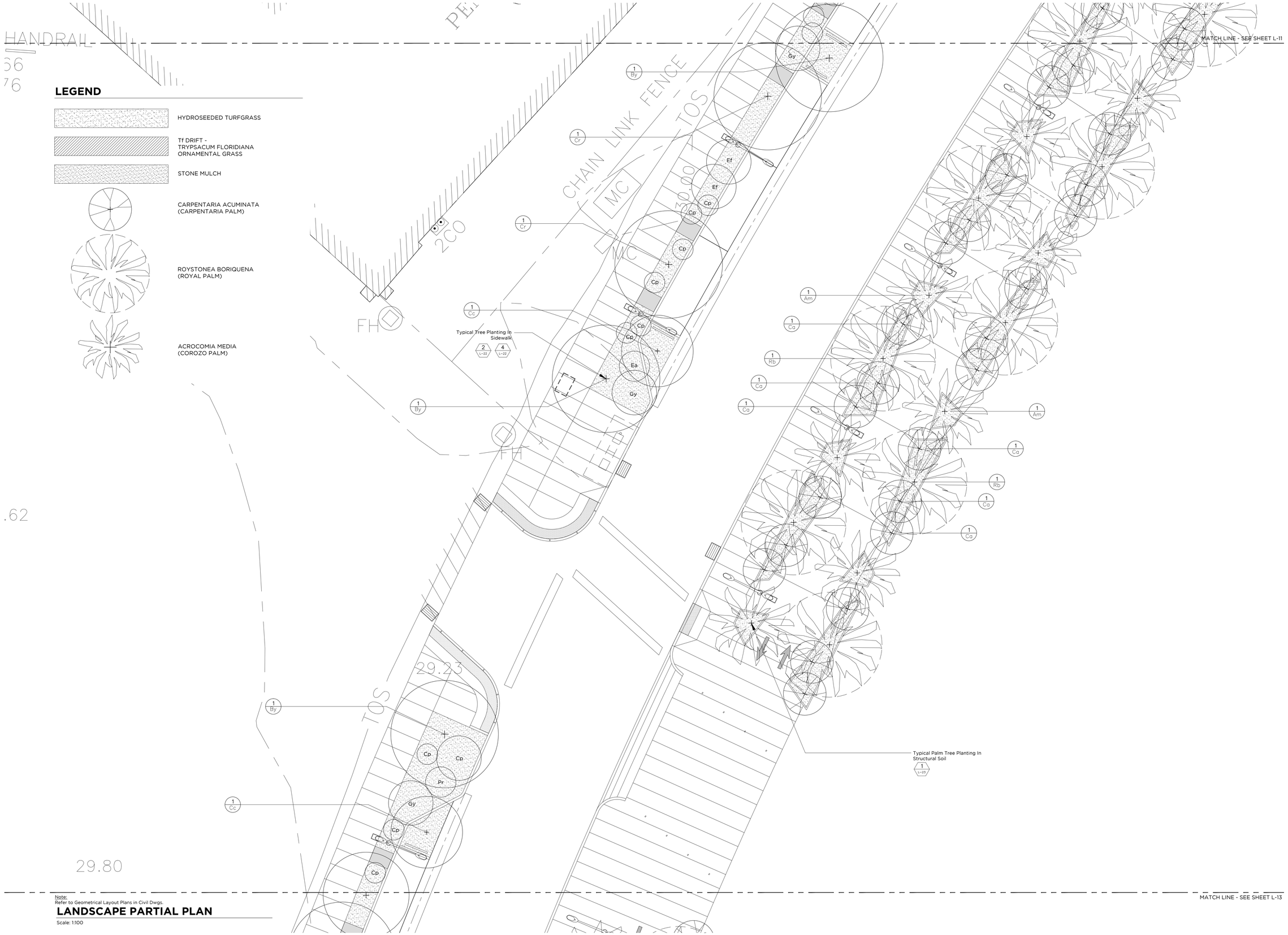
DATE: OCTOBER 31, 2012

L-11

OF

LEGEND

- HYDROSEEDED TURFGRASS
- Tf DRIFT - TRYPSACUM FLORIDIANA ORNAMENTAL GRASS
- STONE MULCH
- CARPENTARIA ACUMINATA (CARPENTARIA PALM)
- ROYSTONEA BORIQUENA (ROYAL PALM)
- ACROCOMIA MEDIA (COROZO PALM)



Note:
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LANDSCAPE PARTIAL PLAN

Scale: 1:100

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L-12

OF

Note:
Refer to Geometrical Layout Plans in Civil Dwgs.

LANDSCAPE PARTIAL PLAN

Scale: 1:100

LEGEND

- HYDROSEEDED TURFGRASS
- Tf DRIFT - TRYPSACUM FLORIDIANA ORNAMENTAL GRASS
- STONE MULCH
- CARPENTARIA ACUMINATA (CARPENTARIA PALM)
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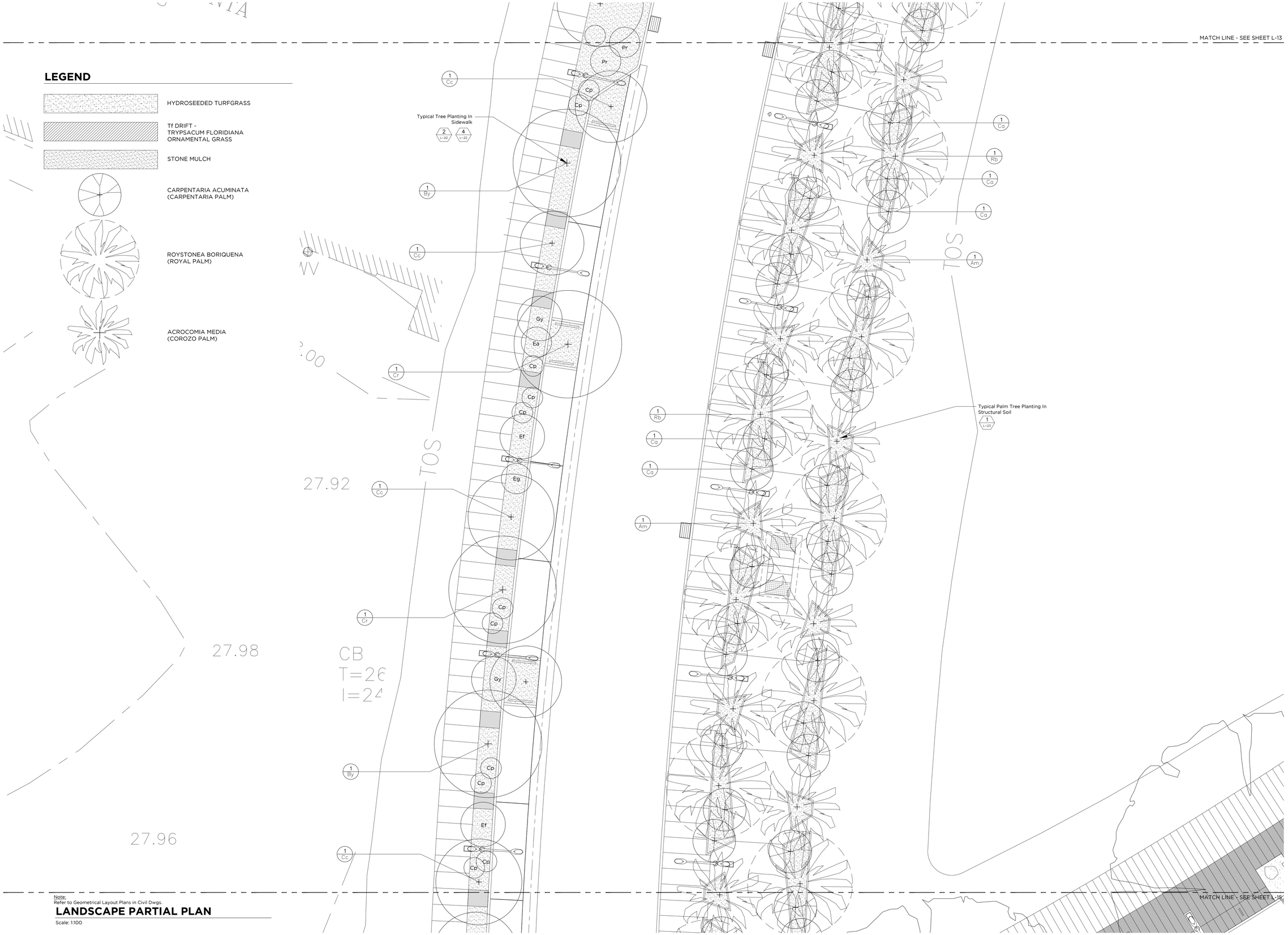
L-13

OF

LEGEND

- HYDROSEEDED TURFGRASS
- Tf DRIFT - TRYPSACUM FLORIDIANA ORNAMENTAL GRASS
- STONE MULCH
- CARPENTARIA ACUMINATA (CARPENTARIA PALM)
- ROYSTONEA BORIQUENA (ROYAL PALM)
- ACROCOMIA MEDIA (COROZO PALM)



Note:
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LANDSCAPE PARTIAL PLAN

Scale: 1:100

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LANDSCAPE PARTIAL PLAN - LABORATORY ROAD

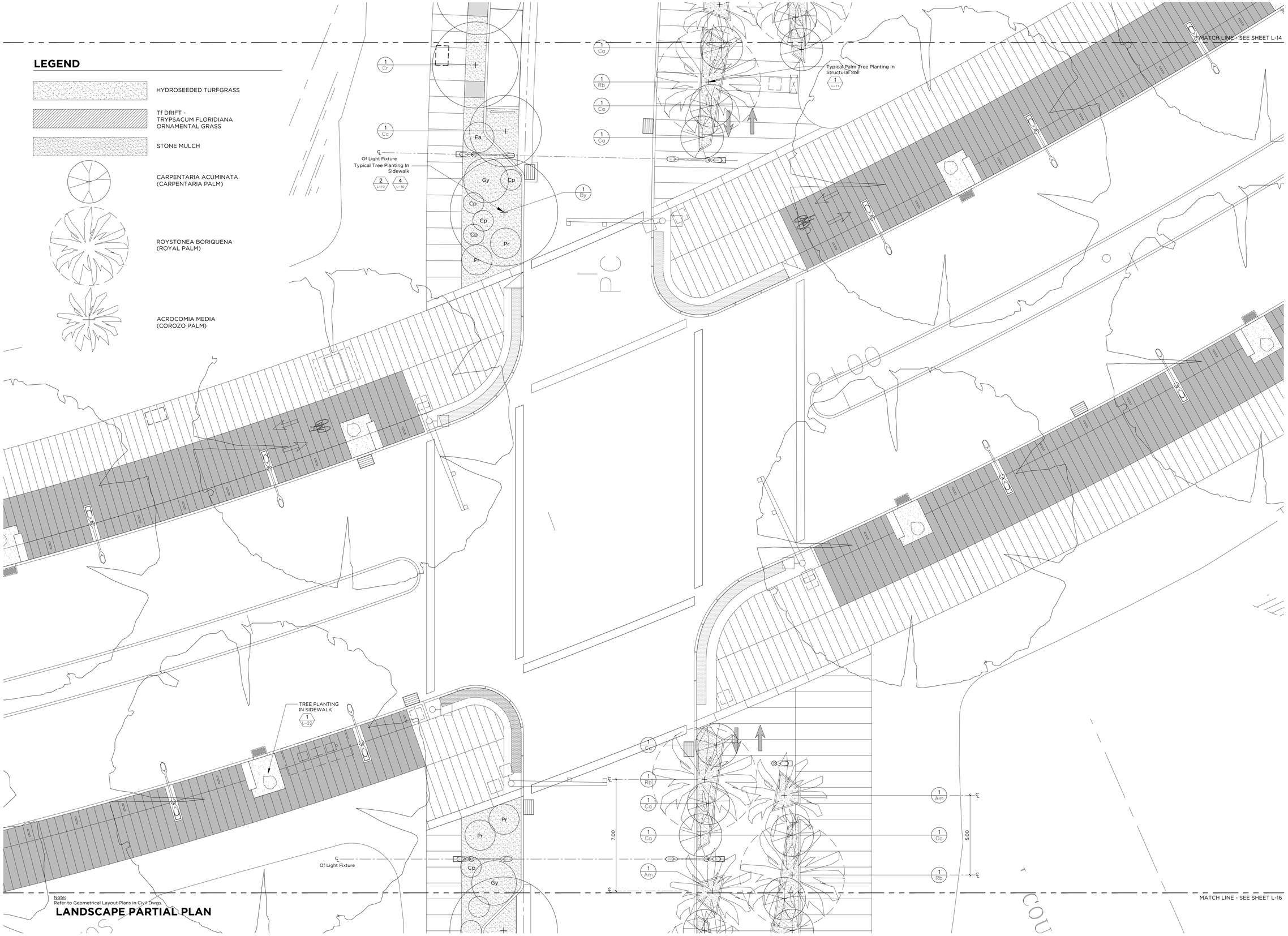
DRAWN BY: LR/FDJ
REVISED BY: JJT
DATE: OCTOBER 31, 2012

L-14

OF

LEGEND

- HYDROSEEDED TURFGRASS
- Tf DRIFT - TRYPSACUM FLORIDIANA ORNAMENTAL GRASS
- STONE MULCH
- CARPENTARIA ACUMINATA (CARPENTARIA PALM)
- ROYSTONEA BORIQUENA (ROYAL PALM)
- ACROCOMIA MEDIA (COROZO PALM)



Note:
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LANDSCAPE PARTIAL PLAN

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LANDSCAPE PARTIAL PLAN - LABORATORY ROAD

DRAWN BY: LR/FDJ
REVISED BY: JJT
DATE: OCTOBER 31, 2012

L-15

OF

LEGEND

- HYDROSEEDED TURFGRASS
- Tf DRIFT - TRYPSACUM FLORIDIANA ORNAMENTAL GRASS
- STONE MULCH
- CARPENTARIA ACUMINATA (CARPENTARIA PALM)
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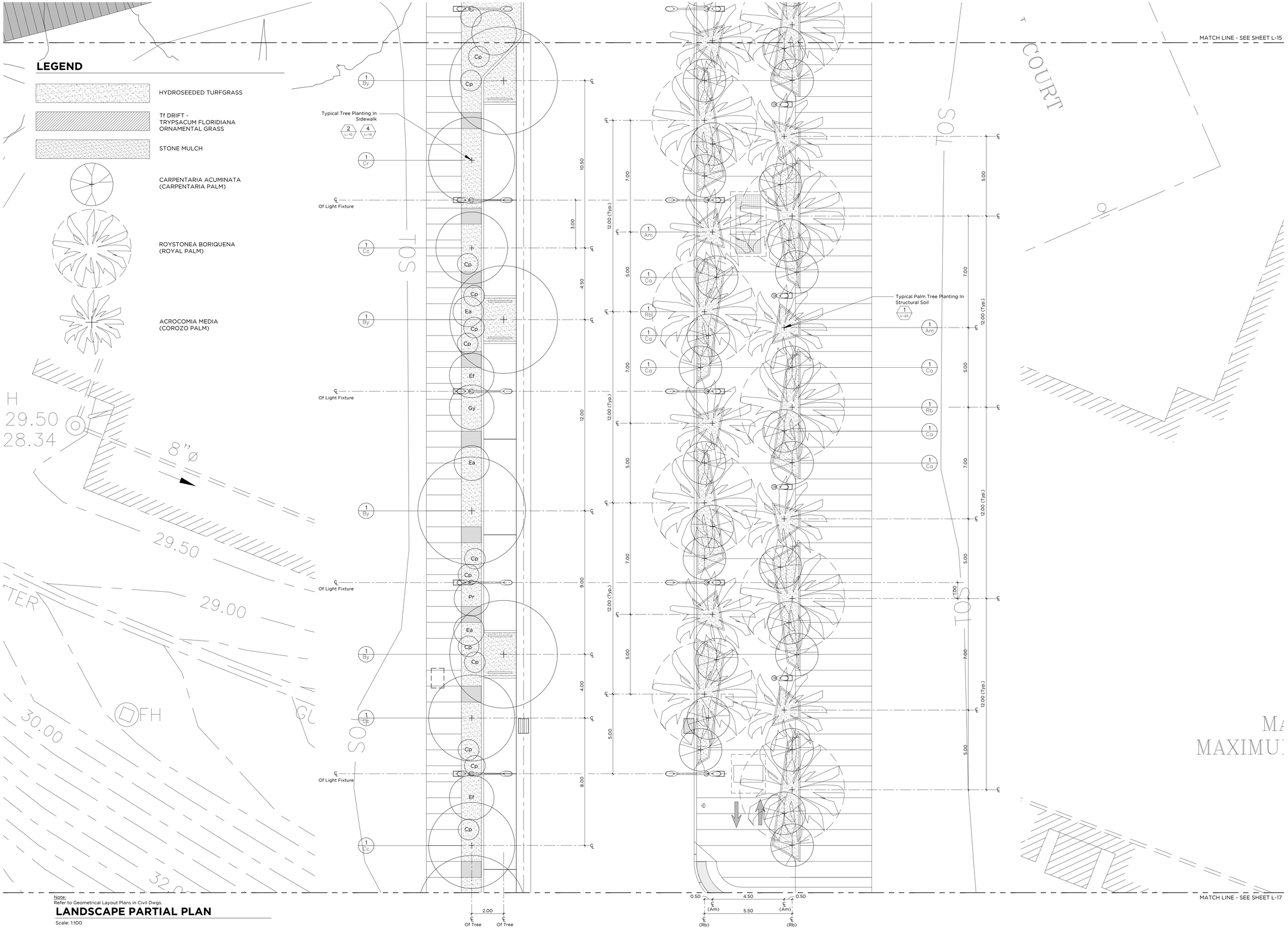

Note:
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LANDSCAPE PARTIAL PLAN

Scale: 1:100

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LANDSCAPE PARTIAL PLAN - LABORATY ROAD

DRAWN BY: LR/FDJ
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DATE: OCTOBER 31, 2012

L-16

OF

LEGEND

- HYDROSEEDED TURFGRASS
- Tf DRIFT - TRYPSACUM FLORIDIANA ORNAMENTAL GRASS
- STONE MULCH
- CARPENTARIA ACUMINATA (CARPENTARIA PALM)
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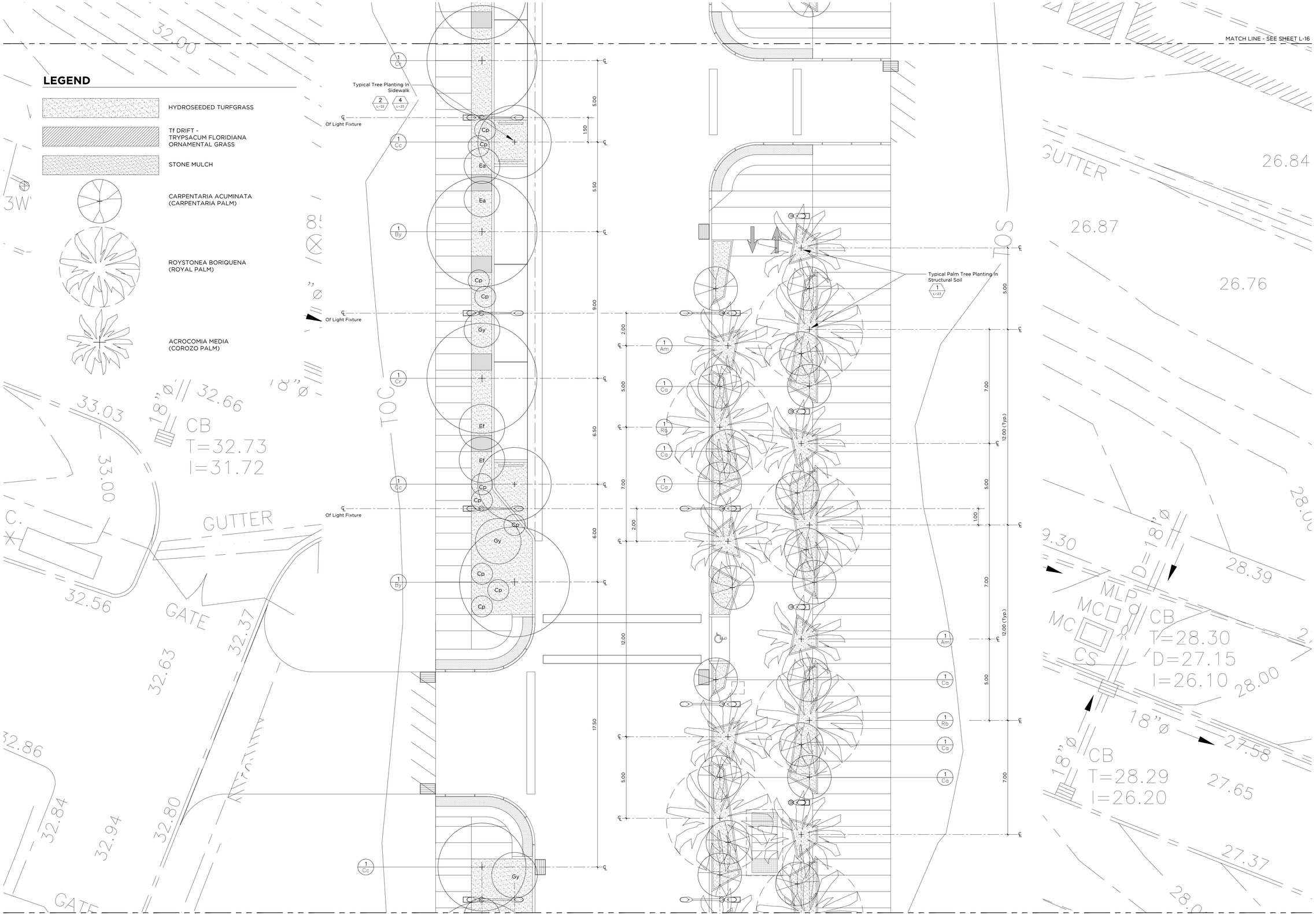

Note:
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LANDSCAPE PARTIAL PLAN

Scale: 1:100

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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LANDSCAPE PARTIAL PLAN - LABORATORY ROAD

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DATE: OCTOBER 31, 2012

L-17

OF

LEGEND

- HYDROSEEDED TURFGRASS
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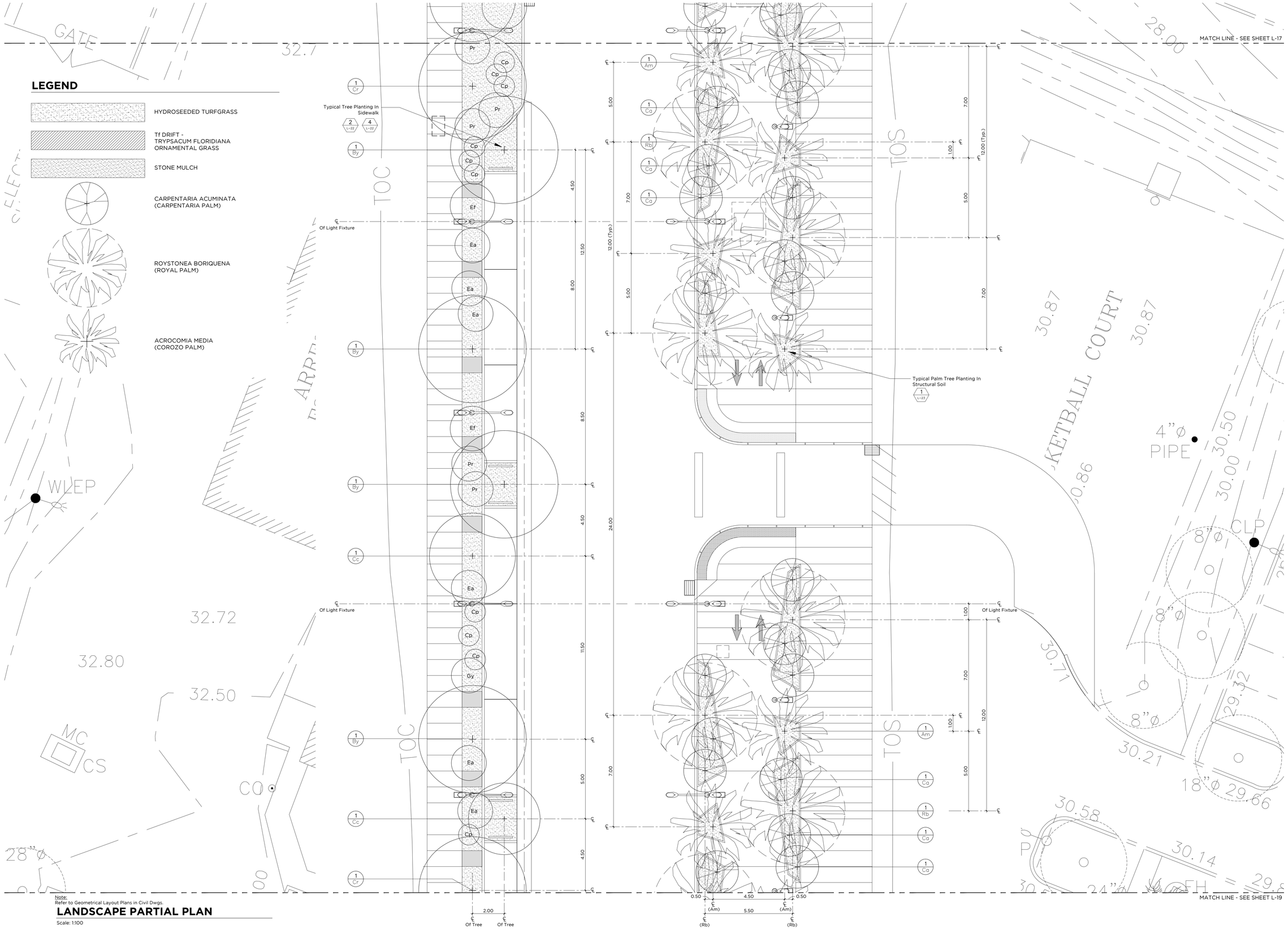

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LANDSCAPE PARTIAL PLAN

Scale: 1:100

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LANDSCAPE PARTIAL PLAN - LABORATORY ROAD

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REVISED BY: JJT
DATE: OCTOBER 31, 2012

L-18

OF

LEGEND

- HYDROSEEDED TURFGRASS
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- STONE MULCH
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Note:
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LANDSCAPE PARTIAL PLAN

Scale: 1:100

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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LANDSCAPE PARTIAL PLAN - LABORATORY ROAD

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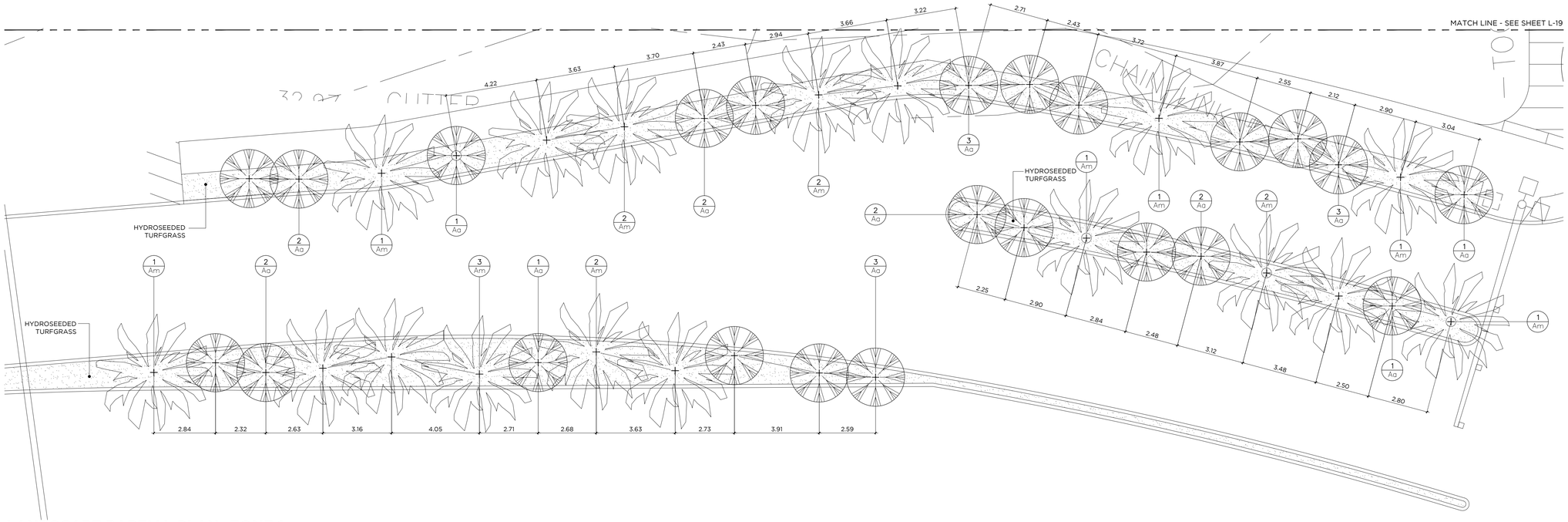
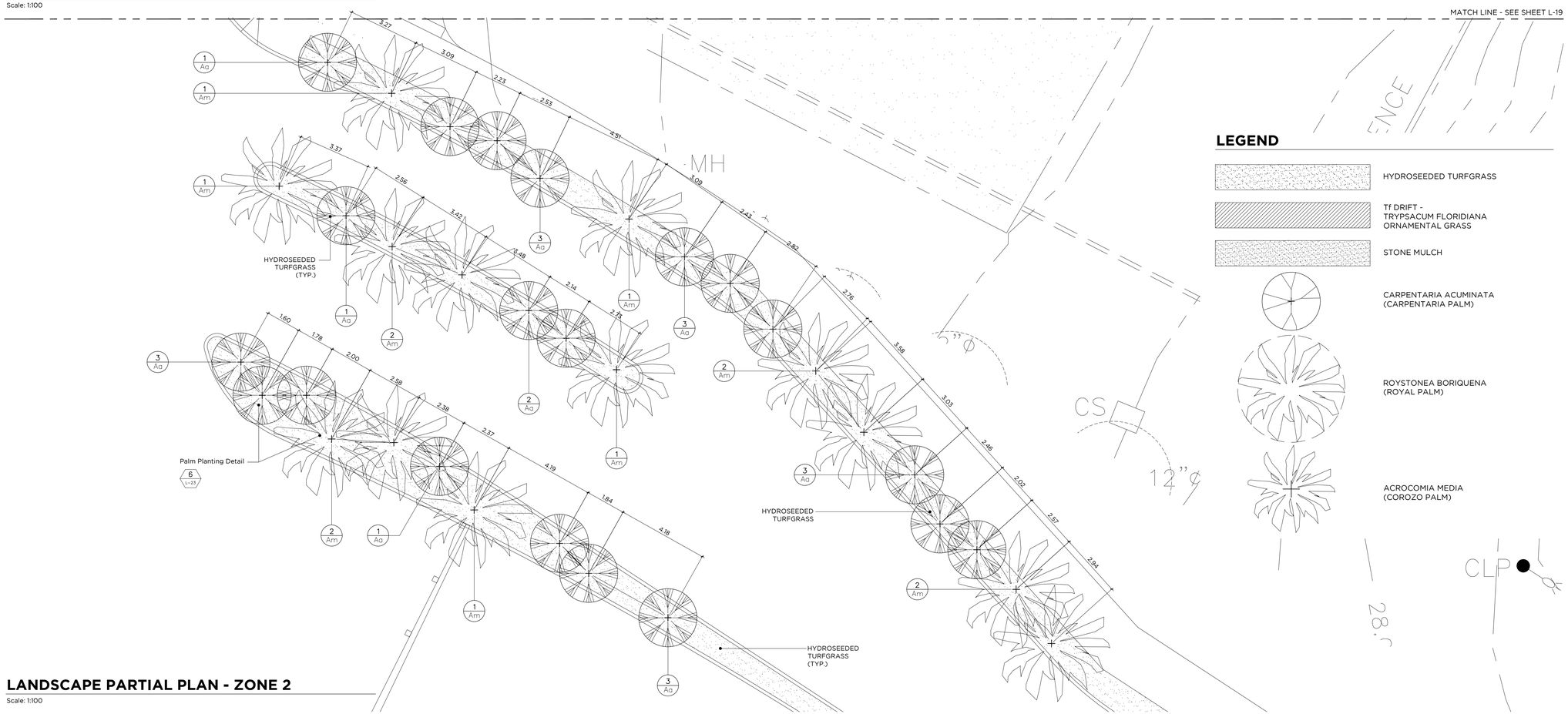
L-19

OF



LANDSCAPE PARTIAL PLAN -ZONE 1

Scale: 1:100



LANDSCAPE PARTIAL PLAN - ZONE 2

Scale: 1:100

LEGEND

- HYDROSEEDED TURFGRASS
- Tf DRIFT - TRYPSACUM FLORIDIANA ORNAMENTAL GRASS
- STONE MULCH
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SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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LANDSCAPE PARTIAL PLANS - SOUTH ENTRANCE

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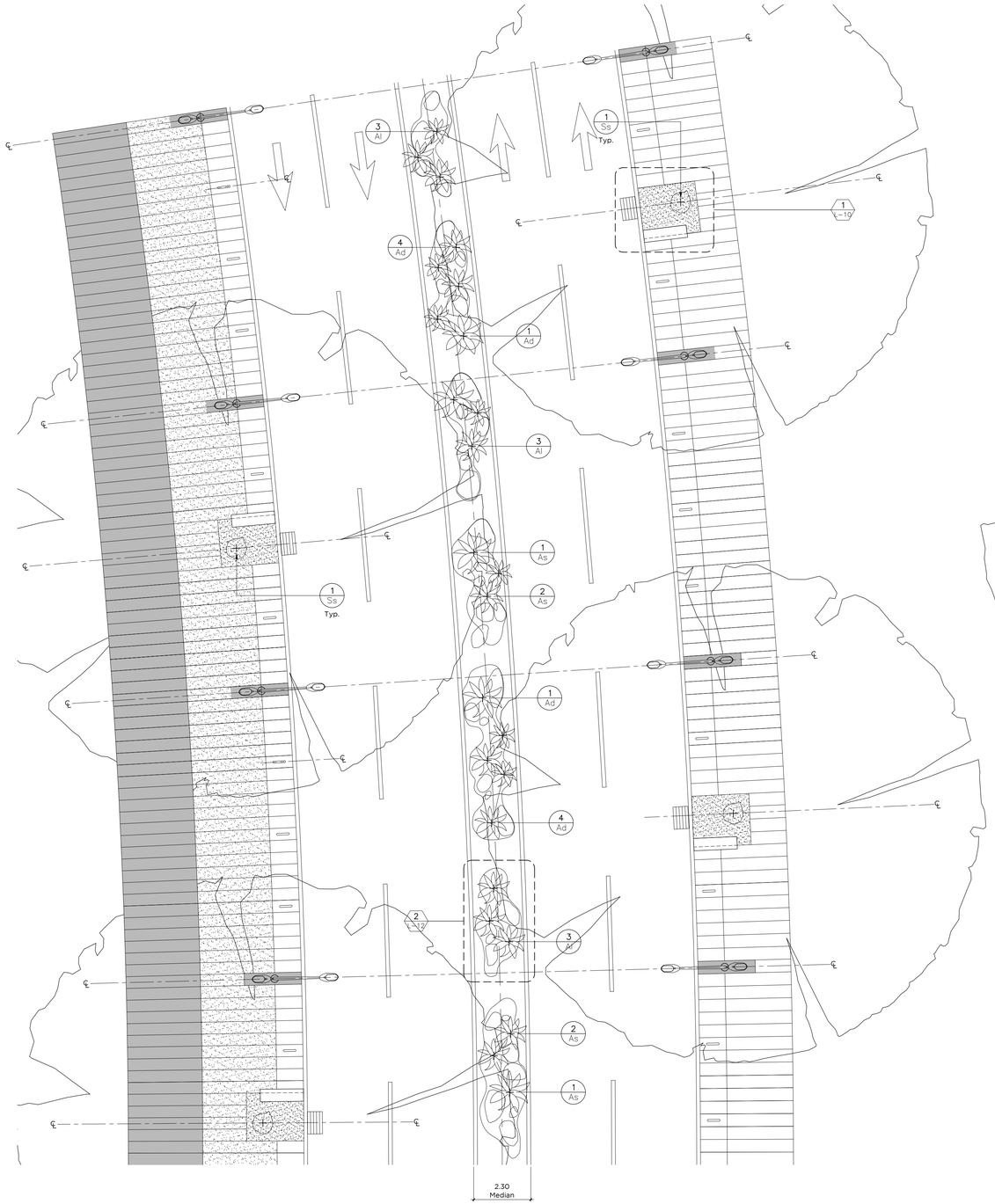
REVISED BY: JJT
DATE: OCTOBER 31, 2012

L-20

OF



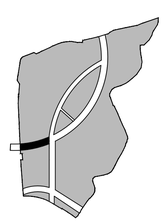
NOTE:

AGAVE PLANTS PRECISE LOCATION AND BOULDERS LAYOUT TO BE APPROVED BY LANDSCAPE ARCHITECT PRIOR TO PLANTING.

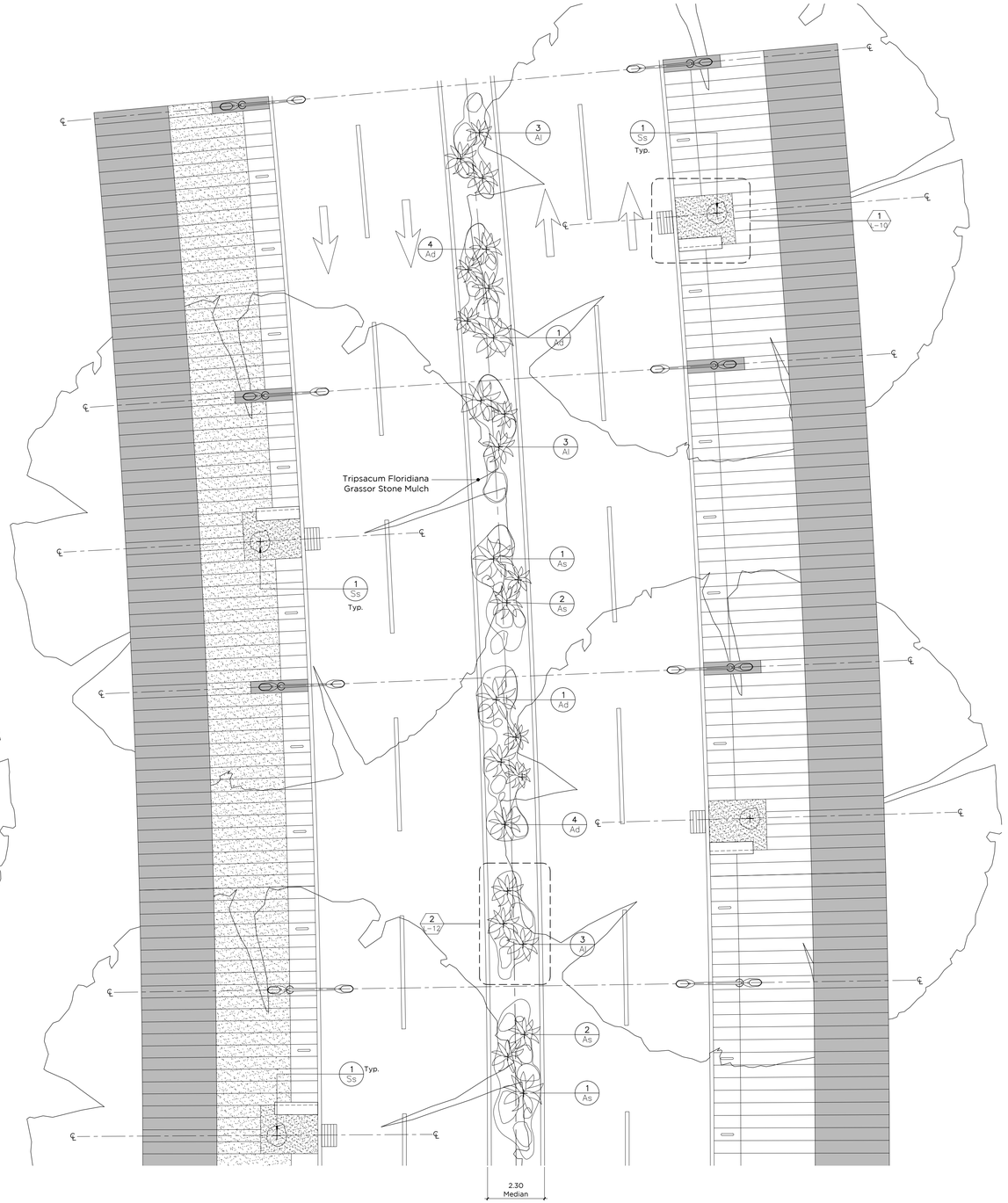
SEGMENT EAST OF BRIDGE- MEDIAN AND SIDEWALK PLANTING

Scale: 1:100

Note:
Refer to Geometrical Layout Plans in Civil Dwgs.



KEY PLAN



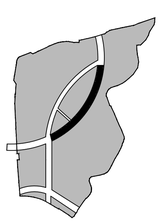
NOTE:

AGAVE PLANTS PRECISE LOCATION AND BOULDERS LAYOUT TO BE APPROVED BY LANDSCAPE ARCHITECT PRIOR TO PLANTING.

MAIN BOULEVARD MEDIAN AND SIDEWALK PLANTING

Scale: 1:100

Note:
Refer to Geometrical Layout Plans in Civil Dwgs.



KEY PLAN

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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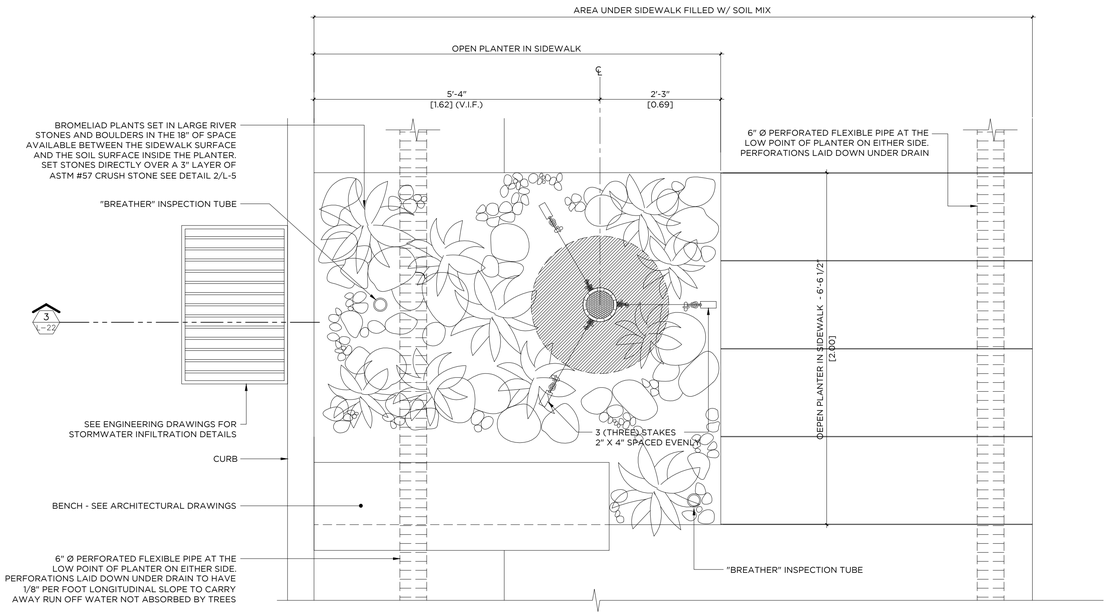
STREET LAYOUT - PLANTING PLANS

DRAWN BY: LR/FDJ
REVISED BY: JJT
DATE: OCTOBER 31, 2012.

L-21

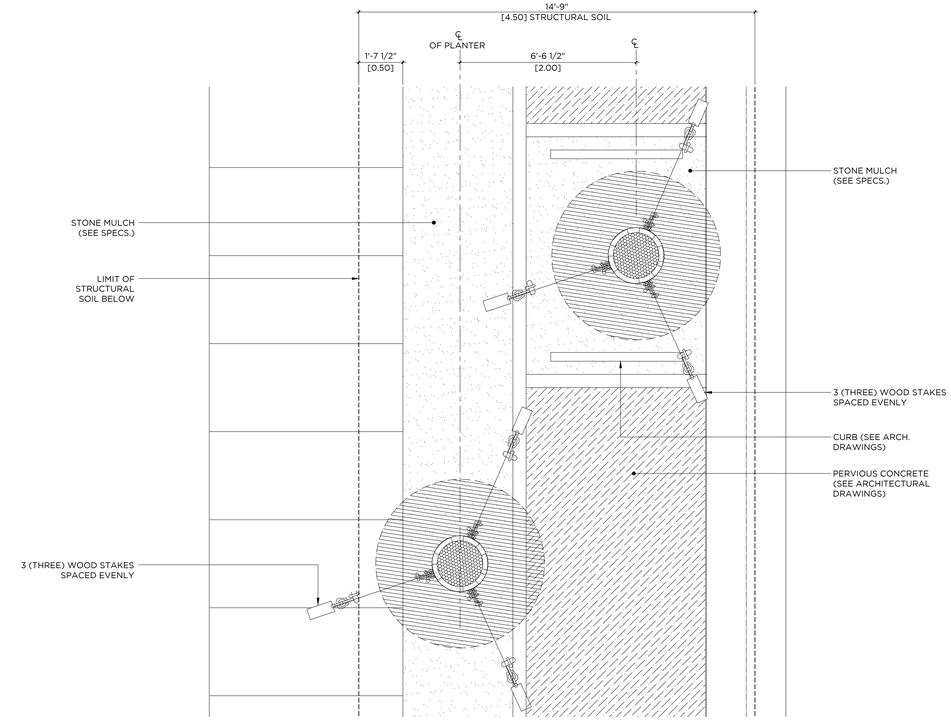
- OF -



TREE PLANTING IN SIDEWALK - PLAN

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

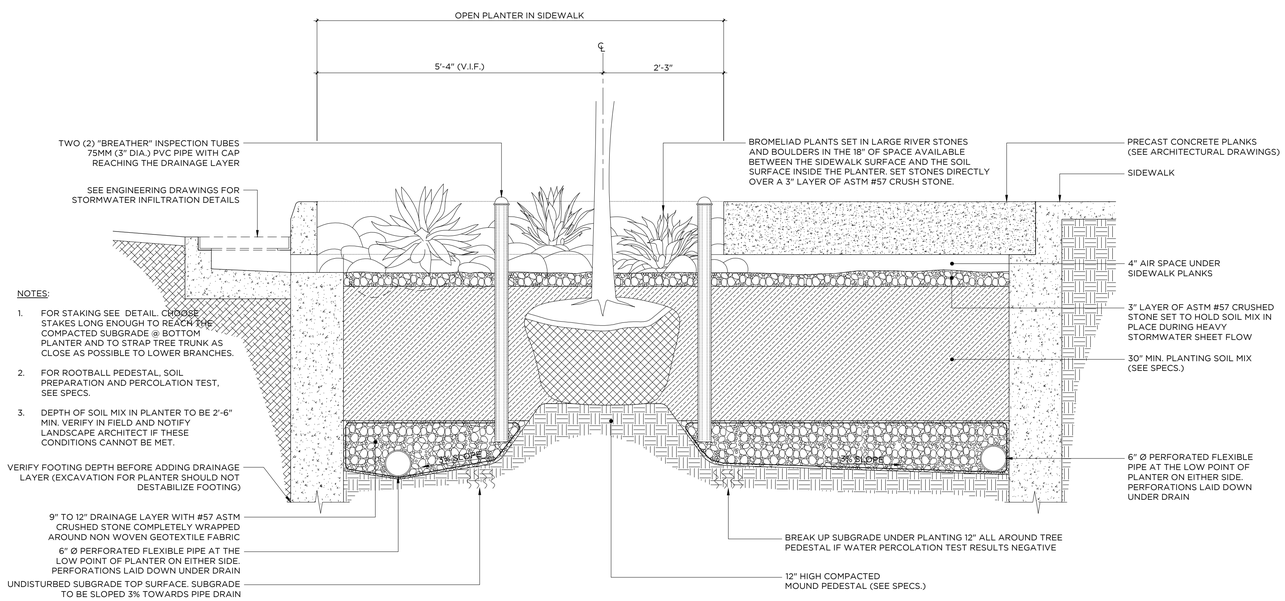
1
L-22



TREE PLANTING ON SIDEWALK PLAN @ LABORATORY AND MIXED USE ROAD

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

2
L-22



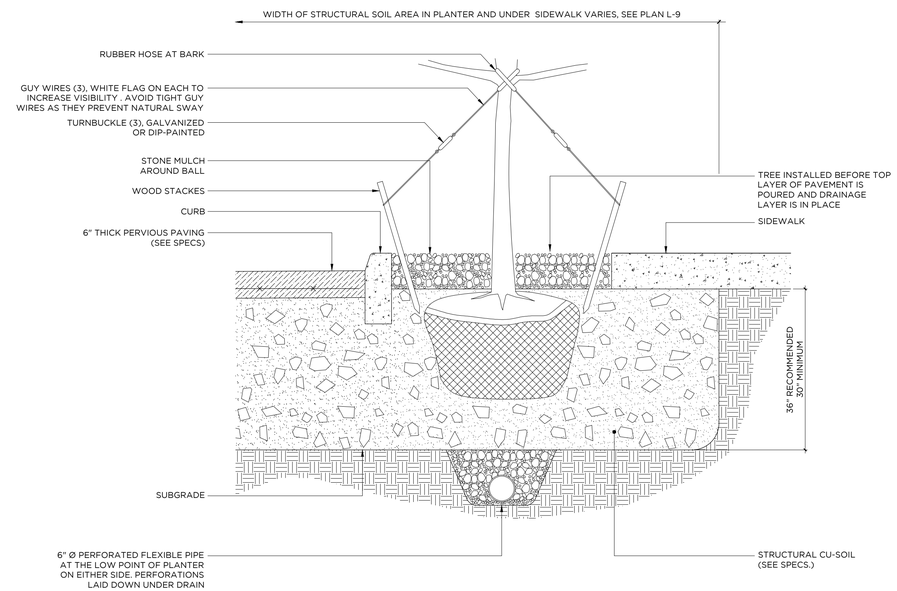
NOTES:

1. FOR STAKING SEE DETAIL. CHOOSE STAKES LONG ENOUGH TO REACH THE COMPACTED SUBGRADE @ BOTTOM PLANTER AND TO STRAP TREE TRUNK AS CLOSE AS POSSIBLE TO LOWER BRANCHES.
2. FOR ROOTBALL PEDESTAL, SOIL PREPARATION AND PERCOLATION TEST, SEE SPECS.
3. DEPTH OF SOIL MIX IN PLANTER TO BE 2'-6" MIN. VERIFY IN FIELD AND NOTIFY LANDSCAPE ARCHITECT IF THESE CONDITIONS CANNOT BE MET.

TREE PLANTING ON SIDEWALK SECTION

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

3
L-22



TREE PLANTING IN SIDEWALK SECTION @ LABORATORY AND MIXED USE ROAD SECTION

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

4
L-22

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

SEGMENT WEST OF PR-18
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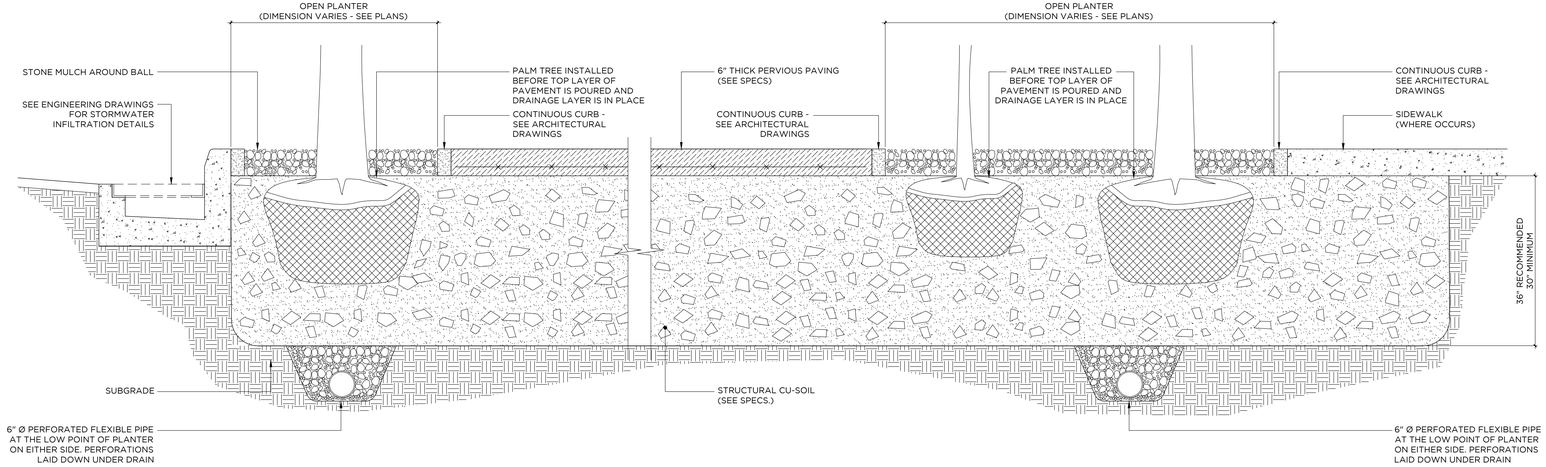
PLANTING DETAILS

DRAWN BY: LR/FDJ
REVISED BY: JJT
DATE: OCTOBER 31, 2012.

L-22

- OF -



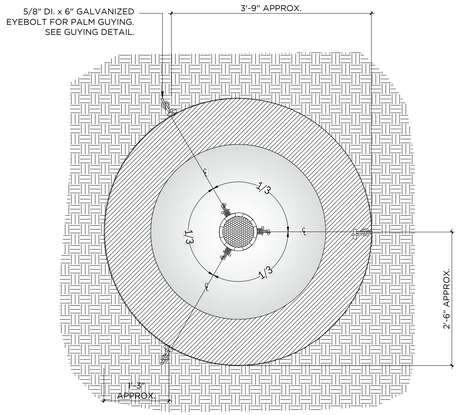
NOTES:

1. FOR STAKING SEE DETAIL. CHOOSE STAKES LONG ENOUGH TO REACH A COUPLE OF FEET INSIDE THE STRUCTURAL SOIL AND TO STRAP TREE TRUNK AS HIGH AS POSSIBLE ON THE GREY WOOD AREA OF THE TRUNK. IF STAKING NEEDS TO BE MODIFIED PROVIDE SHOP DRAWINGS
2. FOR STRUCTURAL SOIL PREPARATION AND PERCOLATION TEST, SEE SPECS.
3. DEPTH OF STRUCTURAL SOIL MIX IN PLANTER TO BE 2'-6" MIN. VERIFY IN FIELD AND NOTIFY LANDSCAPE ARCHITECT IF THESE CONDITIONS CANNOT BE MET.

PALM TREE PLANTING IN STRUCTURAL SOIL @ SIDEWALK SECTION (LABORATORY / MIXED USED)

1 / L-23

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



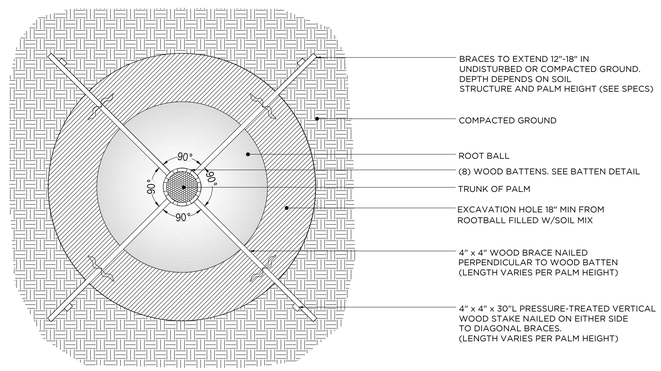
NOTE:

PLACE GUY WIRES ON A SINGLE HORIZONTAL PLANE ABOVE THE PUBLIC'S REACH. WHERE BUILDING WALLS ARE NOT AVAILABLE TO PROVIDE ANCHOR POINTS, GROUND ANCHORING WITH GALVANIZED STEEL RODS ARE REQUIRED. SUBMIT FINAL GUYING DETAILS TO LANDSCAPE ARCHITECT FOR APPROVAL.

EYEBOLT LOCATION - PLAN

2 / L-23

N.T.S.



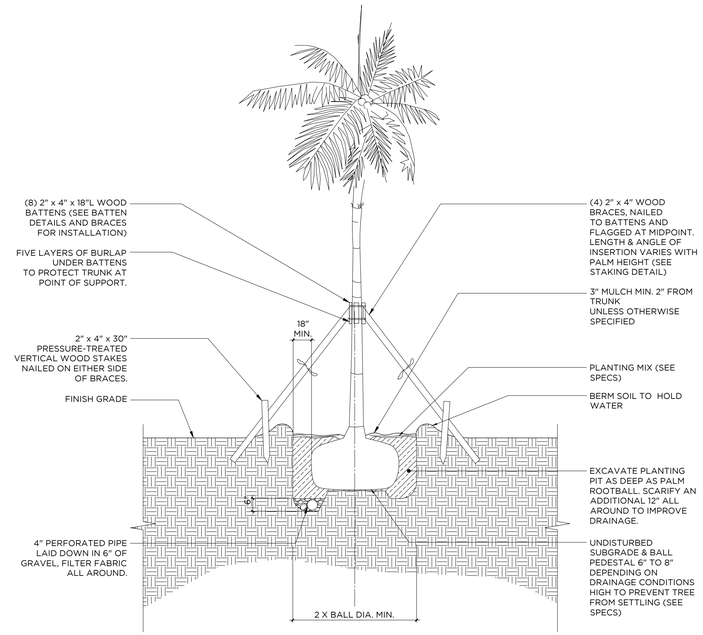
NOTES:

1. MUST INSURE THAT 90° ANGLE OF STAKES POINT IN ORIENTATION OF PRIMARY WIND DIRECTION SO THAT THE WIND BISECTS THE ANGLE OF THE STAKES AT 45°.
2. CONTRACTOR TO MOUNT ONE SET OF STAKES & BRACES FOR LANDSCAPE ARCHITECT'S APPROVAL PRIOR TO STAKING ALL PALMS.
3. FOR SMALLER CARPENTARIA PALMS, 2" X 4" BRACES MAY BE USED

PALM STACKING DETAIL - PLAN

3 / L-23

N.T.S.



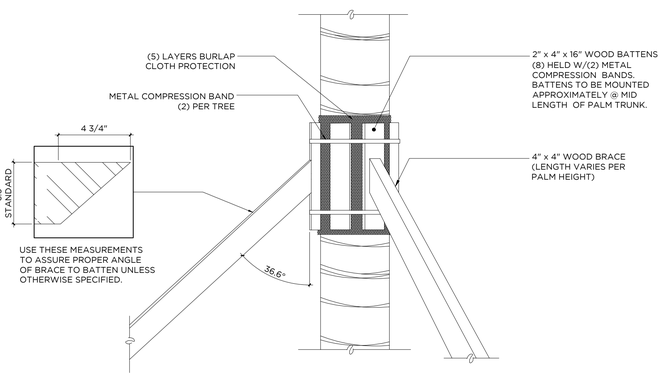
NOTES:

1) MAKE SURE CROWN OF ROOTBALL HAS SAME RELATIONSHIP TO FINISH GRADE AS DID IN NURSERY.
2) CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.
3) FOR SMALLER CARPENTARIA PALMS, 2" X 4" BRACES MAY BE USED

PALM PLANTING DETAIL

6 / L-23

N.T.S.



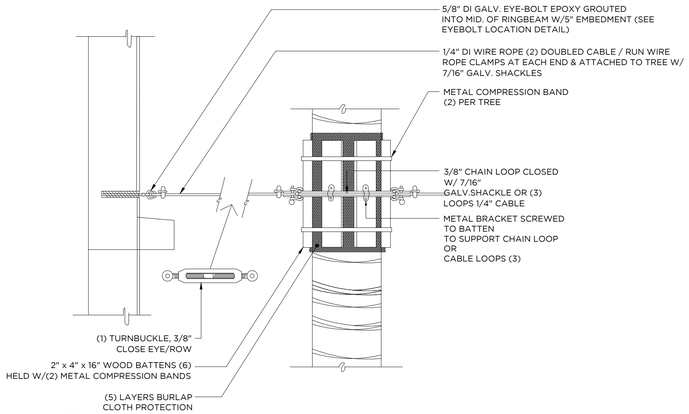
NOTES:

1. BATTENS LOCATION IS RELATIVE TO PALM HEIGHT. FINAL STAKING & BATTENS PLACEMENT TO BE APPROVED BY LANDSCAPE ARCHITECT.
2. 4" X 4" STAKES ARE REQUIRED FOR LARGER SIZE PALMS SUCH "ROYALS" AND "COROZO" PALMS. FOR SMALLER PALMS SUCH AS "CARPENTARIA" AND "AIPHANES", SMALLER STAKES 2" X 4" STAKES ARE REQUIRED.

BATTENS AND BRACES DETAIL

4 / L-23

N.T.S.



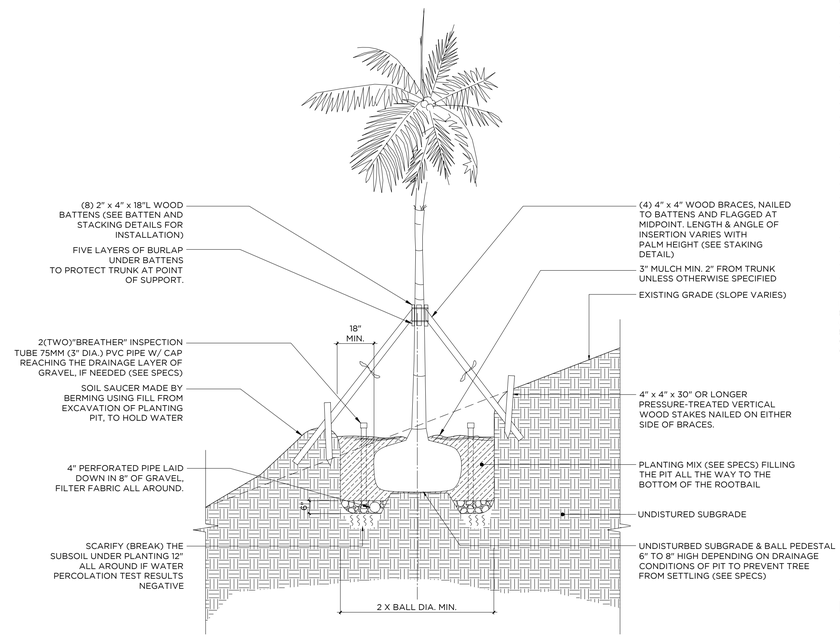
NOTE:

SIZE OF ANCHOR BOLTS VARY WITH SIZE OF PALMS. STRUCTURAL ENGINEER TO APPROVE FINAL GUYING DETAIL AND CABLE DIMENSIONS.

PALM GUYING DETAIL

5 / L-23

N.T.S.



NOTES:

1) MAKE SURE CROWN OF ROOTBALL HAS SAME RELATIONSHIP TO FINISH GRADE AS DID IN NURSERY.
2) CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.
3) FOR SMALLER CARPENTARIA PALMS, 2" X 4" BRACES MAY BE USED

PALM PLANTING ON SLOPE DETAIL

7 / L-23

N.T.S.

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PLANTING DETAILS

DRAWN BY: LR/FDJ
REVISED BY: JJT
DATE: OCTOBER 31, 2012.

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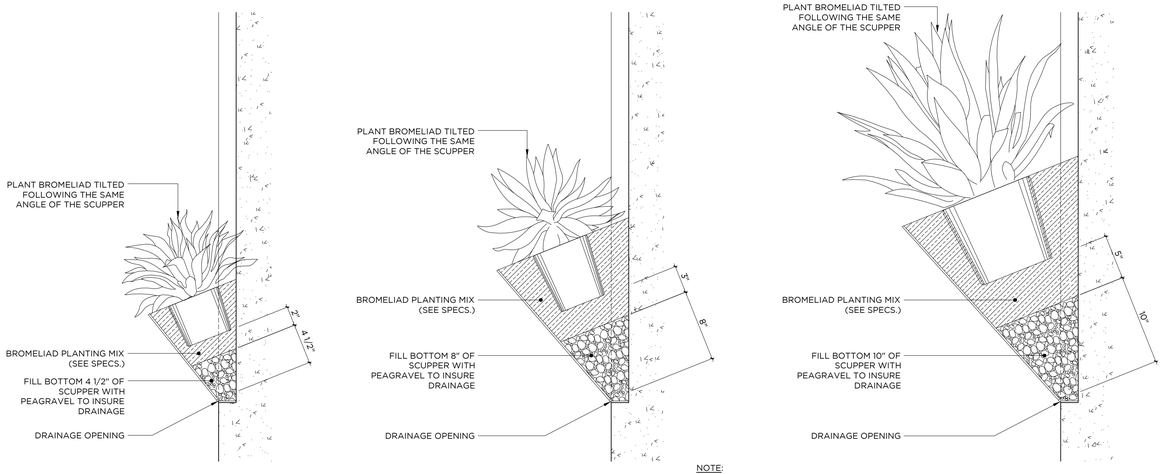
- OF -



6" AZALEA CONTAINER
(SCUPPER TYPE 1)

1 GALLON CONTAINER
(SCUPPER TYPE 2)

3 GALLON CONTAINER
(SCUPPER TYPE 3)

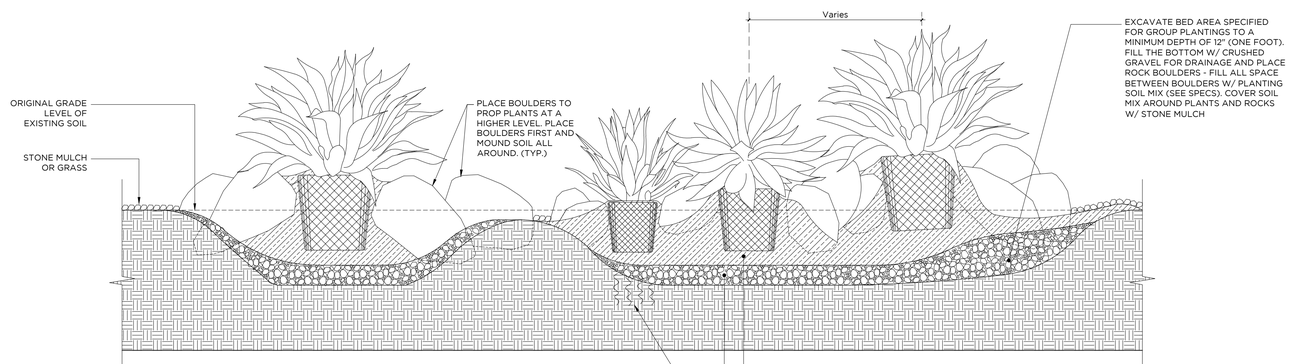
NOTE:

FOR SCUPPERS MOUNTING DETAILS SEE ARCHITECTURAL DWGS. FOR LOCATION OF BROMELIADS AND SCUPPER ON WALLS (SEE DETAILS)

BROMELIAD PLANTING IN SCUPPERS

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

1 / L-24



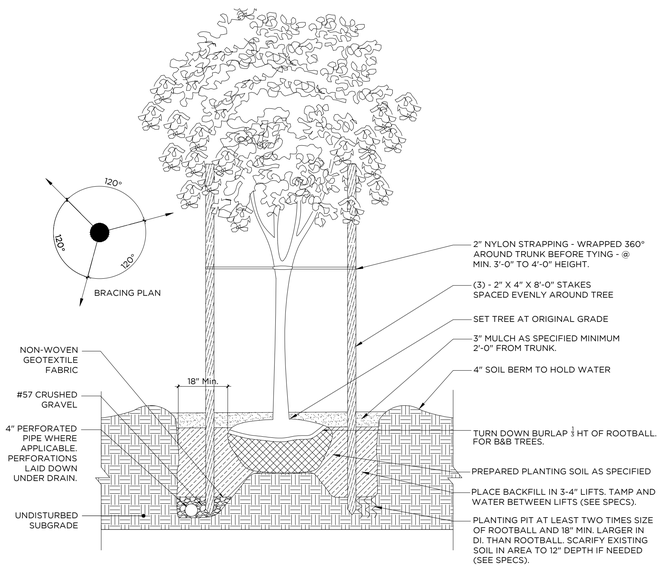
NOTES:

1. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.
2. PREPARE SOIL MIX AS SPECIFIED. WHEN PLANTS ARE USED IN DRIFTS OR MASSES, THE ENTIRE BED AREA SHALL BE EXCAVATED, EXCEPT WHEN SPECIFIED.
3. COVER ALL PLANTING AND ALL SURROUNDING BED AREA W/ STONE MULCH AS SPECIFIED.
4. PRECISE SPACING AND PLACING OF ALL PLANTS TO BE APPROVED ON SITE BY LANDSCAPE ARCHITECT PRIOR TO PLANTING.

AGAVE OR BROMELIAD PLANTING DETAIL

N.T.S.

2 / L-24



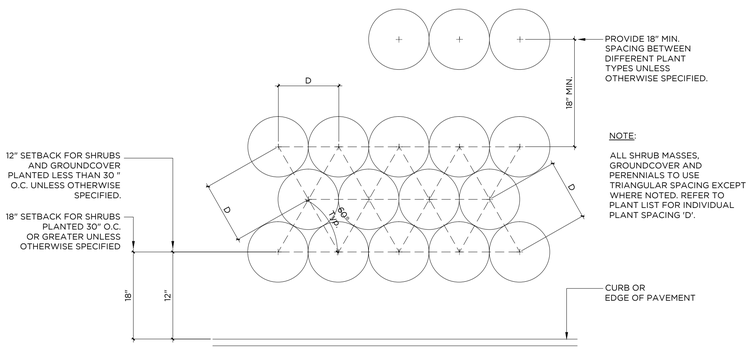
NOTES:

1. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.
2. LEAVE A HIGH MOUND OF UNDISTURBED AND COMPACTED SUBGRADE (BALL PEDESTAL) TO PREVENT TREE FROM SETTLING. MAKE SURE CROWN OF ROOTBALL HAS SAME RELATIONSHIP TO FINISH GRADE AS DID IN NURSERY.
3. DO NOT ALLOW AIR POCKETS TO FORM WHEN BACKFILLING.
4. FINAL TREE STACKING DETAILS AND PLACEMENT TO BE APPROVED BY THE LANDSCAPE ARCHITECT.

TYPICAL TREE PLANTING

N.T.S.

3 / L-24



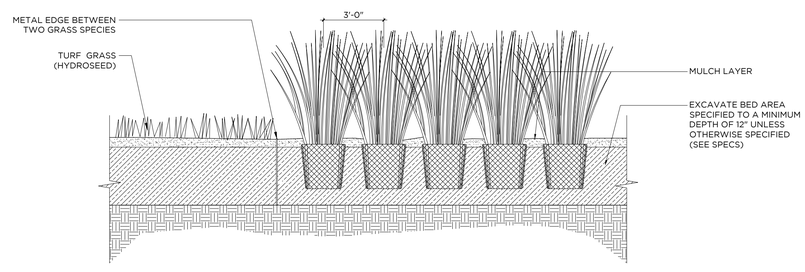
NOTE:

ALL SHRUB MASSES, GROUNDCOVER AND PERENNIALS TO USE TRIANGULAR SPACING EXCEPT WHERE NOTED. REFER TO PLANT LIST FOR INDIVIDUAL PLANT SPACING 'D'.

TYPICAL GRASS AND GROUNDCOVER SPACING

N.T.S.

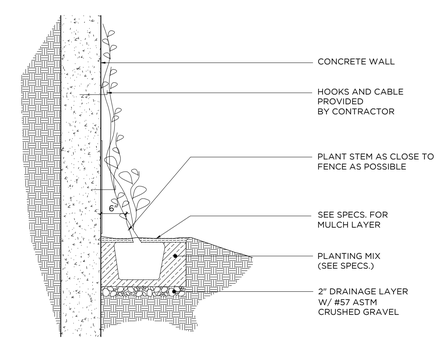
4 / L-24



ORNAMENTAL GRASS PLANTING SECTION DETAIL

N.T.S.

5 / L-24



TYPICAL VINE PLANTING

N.T.S.

6 / L-24

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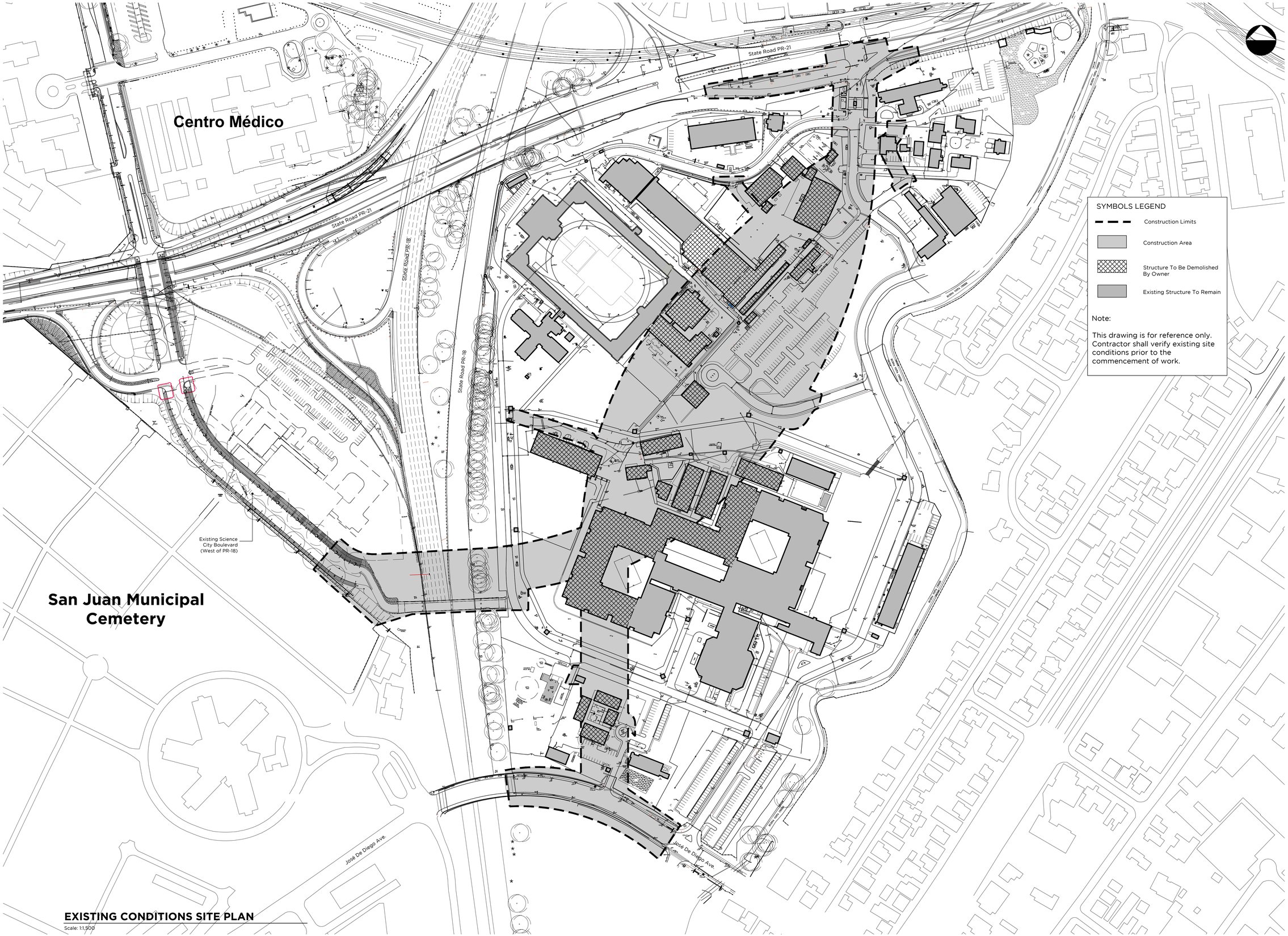
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

PLANTING DETAILS

DRAWN BY: LR/FDJ
REVISED BY: JJT
DATE: OCTOBER 31, 2012.

L-24

- OF -



EXISTING CONDITIONS SITE PLAN

Scale: 1:1,500

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

EXISTING CONDITIONS SITE PLAN

DRAWN BY:
REVISED BY:
DATE: MAY 13, 2013

ED-0

OF

Abbreviations

ALUM.	= ALUMINUM
A/C	= AIR CONDITIONING
A	= ARCHITECTURAL
A/E	= ARCHITECT OR ENGINEER
A.F.F.	= ABOVE FINISHED FLOOR
AHU	= AIR HANDLING UNIT
ARCH.	= ARCHITECT/ ARCHITECTURAL
ANOD.	= ANODIZED
APP.	= APPROVED
APPROX.	= APPROXIMATED
AL	= ALUMINUM
A.F.G.	= ABOVE FINISH GRADE
B/S	= BOTH SIDES
B.W.	= BOTH WAYS
BLDG.	= BUILDING
BM.	= BEAM
B.M.	= BENCH MARK
B.O.B.	= BOTTOM OF BEAM
B.O.C.	= BOTTOM OF CANOPY
B.O.C.S.	= BOTTOM OF CONCRETE SLAB
B.M.	= BEAM MOUNTED (SIGNAGE ONLY)
CAP.	= CAPACITY
C.C.	= CENTER TO CENTER
C.C.C.	= COMPREHENSIVE CANCER CENTER
C.P.	= CEMENT PLASTER
CEM.	= CEMENT
C.I.P.	= CAST IN PLACE CONCRETE
CL.	= CONTRACT SCOPE LIMITS
CLG.	= CEILING
CLO.	= CLOSET
CLR.	= CLEAR
COLS.	= COLUMNS
COMP.	= COMPARTMENTS
CONC.	= CONCRETE
CONN.	= CONNECTION
CONT.	= CONTINUOUS
CONTR.	= CONTRACT OR CONTRACTOR
CORR.	= CORRIDOR
C.W.	= COLD WATER
CAP.	= CAPITAL (SIGNAGE ONLY)
C.M.	= COLUMN MOUNTED
C.M.U.	= CONCRETE MASONRY UNIT
C/L	= CENTER LINE
D	= DEEP
DN.	= DOWN
DET.	= DETAIL
DWG.	= DRAWING
DIAM.	= DIAMETER
DTL.	= DETAIL
EQ.	= EQUAL
E	= ELECTRICAL
ELECT.	= ELECTRICAL
EQUIP.	= EQUIPMENT
ELEV.	= ELEVATION
EL.	= ELEVATION
EA.	= EACH
EST.	= ESTIMATED
E.W.	= EACH WAY
EXP.	= EXPANSION
EXT.	= EXTERIOR
EXIST.	= EXISTING
FL.	= FLOOR
FT.	= FEET, FOOT
F.F.E.	= FINISH FLOOR ELEVATION
F.E.	= FIRE EXTINGUISHER
F.H.C.	= FIRE HOSE CABINET
FIN.	= FINISH
F.D.	= FLOOR DRAIN
FIN.	= FINISHED
FIXT.	= FIXTURE
FLR.	= FLOOR
GA.	= GAUGE
GAL.	= GALLONS
GALV.	= GALVANIZED
GL.	= GLASS
GRD.	= GROUND
GYM.	= GYMNASIUM
G.M.	= GROUND MOUNTED
HORIZ.	= HORIZONTAL
HOR.	= HORIZONTAL
H	= HIGH
HT.	= HEIGHT
H.M.	= HOLLOW METAL
H.W.	= HOT WATER
H.P.	= HIGH POINT
I.E.	= INVERT ELEVATION
INCL.	= INCLUDED
I.N.C.	= INCLUDED IN CONTRACT
IN.	= INCH OR INCHES
IPS	= INTERIOR PIPE SIZES
ID	= INSIDE DIAMETER
INT.	= INTERIOR
INST.	= INSTALLATION
I.D.	= INSIDE DIMENSION
INSUL.	= INSULATION
JAN.	= JANITOR
J.C.	= JANITOR CLOSET
LEV.	= LEVEL
L.W.C.	= LIGHTWEIGHT CONCRETE
LIN	= LINEAL
L	= STEEL ANGLE
LAM.	= LAMINATED
LIC.	= LICENSE
LB	= POUND
LT.	= LIGHT
LIN	= LINEAL
L. OR LG.	= LENGTH, LONG
LAV.	= LAVATORY
L.F.	= LINEAR FOOT
L.P.	= LOW POINT
MTL.	= METAL
M.O.	= MASONRY OPENING
M	= MECHANICAL
MANUF.	= MANUFACTURED
MD.	= MODEL
MAX.	= MAXIMUM
MK'D.	= MARKED
MAT.	= MATERIAL
MIN.	= MINIMUM
N	= NORTH
NA	= NOT AVAILABLE OR NOT APPLICABLE
N.I.C.	= NOT INCLUDED IN CONTRACT
NO.	= NUMBER
N.T.S.	= NOT TO SCALE
O.C.	= ON CENTER
OD	= OUTSIDE DIAMETER
O.D.	= OUTSIDE DIMENSION
O.H.	= OPPOSITE HAND
OPNG.	= OPENING
P.F.D.	= PLANTING FLOOR DRAIN
PLUMB. R. IN	= PLUMBING ROUGHING-IN
P	= PLUMBING
PL	= PLATE OR PLASTER
PVC	= POLYVINYL CHLORIDE
P/W	= PLYWOOD
PLY.	= PLYWOOD
PT.	= PRESSURE TREATED
PTD.	= PAINTED
PR-HTA	= P.R. HIGHWAY AND TRANSPORTATION AUTHORITY
RM.	= ROOM
R.IN	= ROUGHING-IN
R	= RADIUS
REINF.	= REINFORCED OR REINFORCEMENT
REQ'D.	= REQUIRED
RET.	= RETAINING
R.	= RAISERS
REQ.	= REQUIRED
RE:	= REFER TO
R.O.W.	= RIGHT OF WAY
S	= SOUTH
S.A.C.	= SUSPENDED ACOUSTICAL CEILING
STL.	= STEEL
S.S.	= STAINLESS STEEL
SYM.	= SYMBOL
SHT.	= SHEET
S.	= STRUCTURAL
S.L.	= STAIR LANDING
SPEC.	= SPECIFICATIONS
SCH.	= SCHEDULE
SQ.	= SQUARE
STRUCT.	= STRUCTURAL
STD.	= STANDARD
SI	= SITE IMPROVEMENTS
SIM.	= SIMILAR
SKY.	= SKYLIGHT
T.	= TOILET
T.	= TREAD
T.E.	= TOP ELEVATION
T.O.B.	= TOP OF BEAM
TYP.	= TYPICAL
TP	= TOPOGRAPHIC PLAN
TH.	= THICK
TR.	= TREATED
T.O.J.	= TOP OF JOIST
T.O.P.	= TOP OF PARAPET
T.O.R.	= TOP OF ROOF
T.O.S.	= TOP OF SLAB
T.O.C.W.	= TOP OF CONCRETE WALL
TOIL.	= TOILET
T.O.O.	= TOP OF OPENING
T.U.	= TREN URBANO
USI	= UTILITY SITE IMPROVEMENT
U.O.N.	= UNLESS OTHERWISE NOTED
VERT.	= VERTICAL
W	= WEST
W.	= WIDE
WI.	= WIRING
W/	= WITH
W.C.	= WATER CLOSET
WD.	= WOOD
W.S.	= WALL SECTION
WDWS.	= WINDOWS
W.A.	= WINDOWS ABOVE
W.M.	= WALL MOUNTED

Symbols Legend

- Construction Limits
- Property Line
- Existing Fence
- Chain Link Fence
- Center Line of Road
- Area to be Hydroseeded or Turf Grass
- New Tree (Arch Drawings)
- Street Lights "Roadstar" by Lumec
- Street Lights "Cobra"
- Traffic Signals
- Bollard
- Trash Receptacle
- Type of Precast Plank
- Fire Hydrant
- Telephone Pull Box
- Cable TV Pull Box
- Catch Basin

Section Number / Section Sheet Reference / Drawing Number

Elevation Letter / Partial Elevation Sheet Reference / Drawing Number

Wall Section Number / Wall Section Sheet Reference / Drawing Number

Detail Number / Detail Sheet Reference / Drawing Number

General Notes

1. Refer to project specifications for general contract requirements, materials, workmanship and shop drawings.
2. All dimensions shown on architectural drawings shall be field coordinated by the contractor with all other discipline drawings, and any inconsistencies reported to the architect/engineer before proceeding with the work.
3. Contractor shall verify all proposed and existing dimensions and elevations in the field. notify the architect/engineer immediately–before preceding with relevant aspects 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 architect/engineer immediately and before proceeding with relevant aspect of the work of any layout conditions that is not consistent with, or missing from, the drawings or that will impair layout.
5. Dimensioning format for the architectural drawings is:
   A. All architectural & site work dimensional information is complemented by information on "c" (geometric layout) drawings.
   B. Dimensions for masonry are nominal unless otherwise indicated.
6. Refer also to landscaping, mechanical and electrical drawings and approved shop drawings for location and dimensions of inserts, openings, sleeves, depressions and attachment requirements.
7. 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.
8. Details not shown are similar in character to details shown. where specific dimensions, details or design intent cannot be determined, consult the architect/engineer before proceeding with work.
9. Detailed drawings and larger scale drawings take precedence over small scale drawings.
10. All steel items shall be galvanized, u.n.o.
11. All exposed areas subject to foot traffic (stairs, ramps, crosswalks, sidewalks, etc...) shall be slip resistant. Coefficient of friction 0.6 min. wet & dry. (astm c–1028).
12. All fasteners shall be stainless steel, unless otherwise noted.
13. Contractor is responsible for determining the length of all handicap ramps according to each particular sidewalk condition. Contact architect when in doubt.
14. Refer to landscape drawings "L" and specs. for information on landscape design.
15. Refer to "It," and "ute" drawings and specs. for information on all illumination and power materials.
16. All sidewalks shall maintain a continuous and uniform walking surface, as well as positive drainage to ensure pedestrian safety.
17. Existing sidewalks, planting areas, & curbs to be reconstructed shall match existing geometry.
18. All coordinates shown on drawings are refered to lambert coordinate system north american datum 83 (nad 83) unless otherwise noted.

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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GENERAL NOTES, SYMBOLS LEGEND & ABBREVIATIONS

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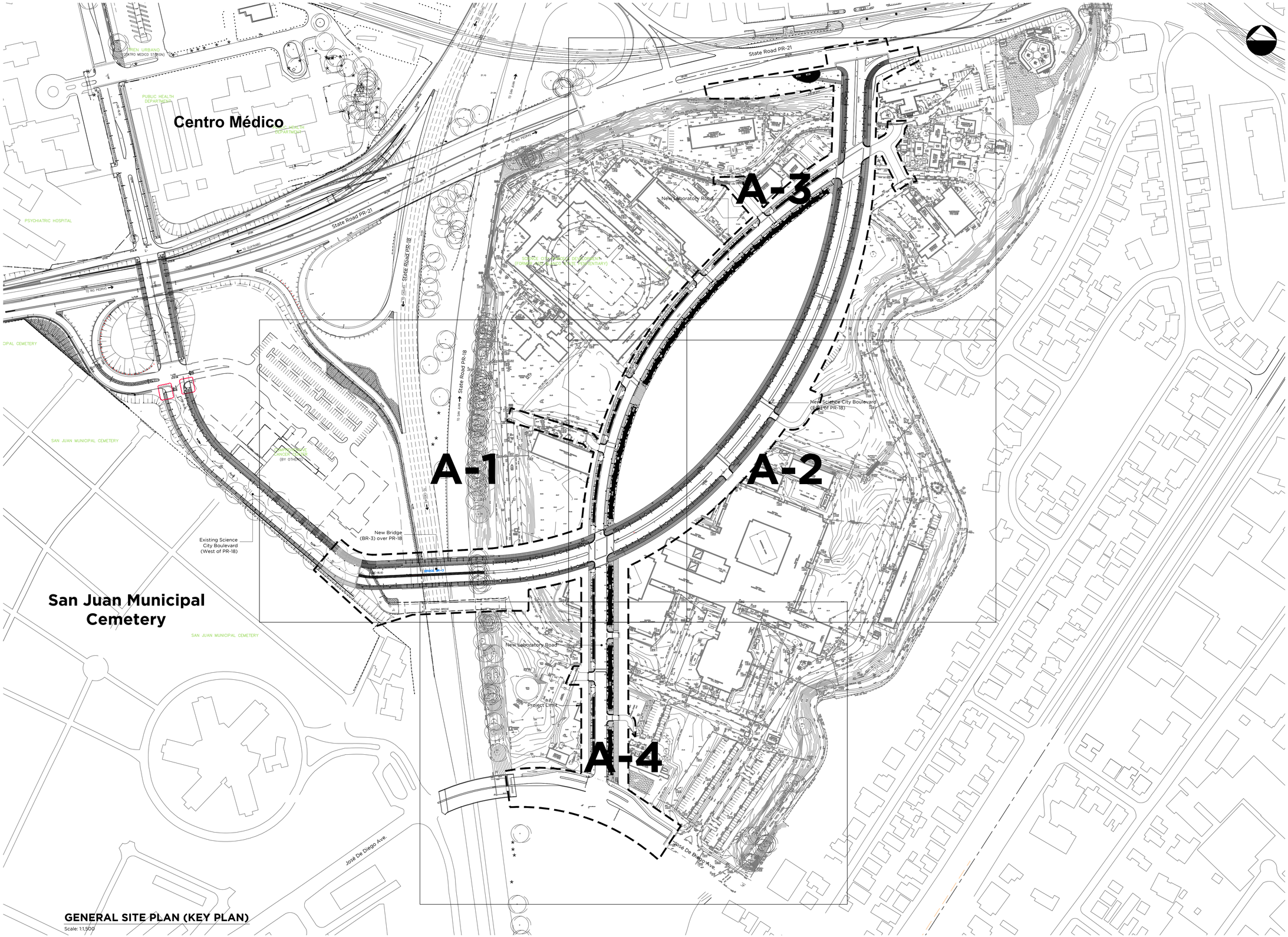
A-00

OF



GENERAL SITE PLAN (KEY PLAN)

Scale: 1:1,500

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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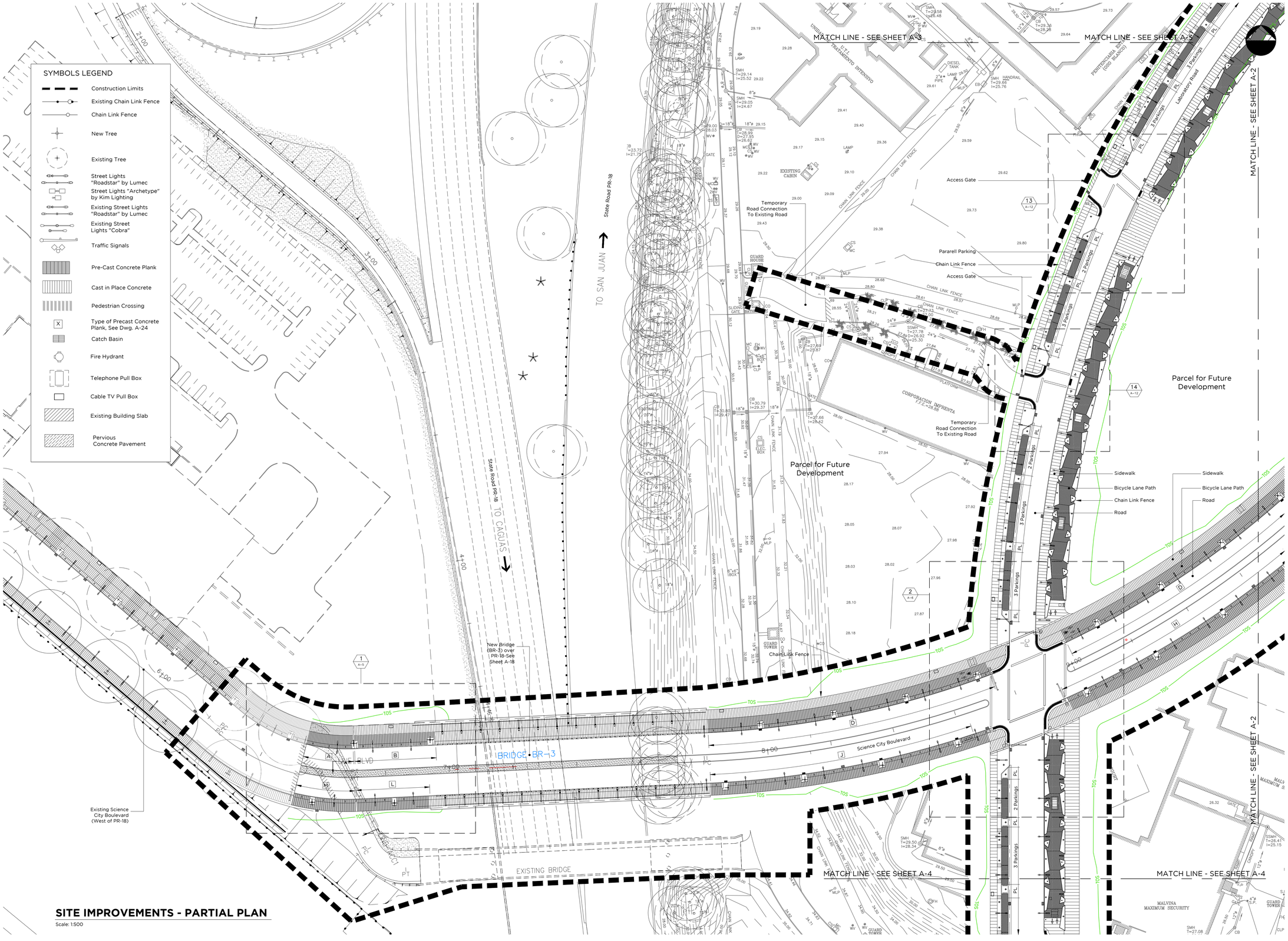
GENERAL SITE PLAN (KEY PLAN)

DRAWN BY: LR/FDJ
REVISED BY: JJT
DATE: MAY 13, 2013

A-0

OF



SITE IMPROVEMENTS - PARTIAL PLAN

Scale: 1:500

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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SITE IMPROVEMENTS PARTIAL PLAN

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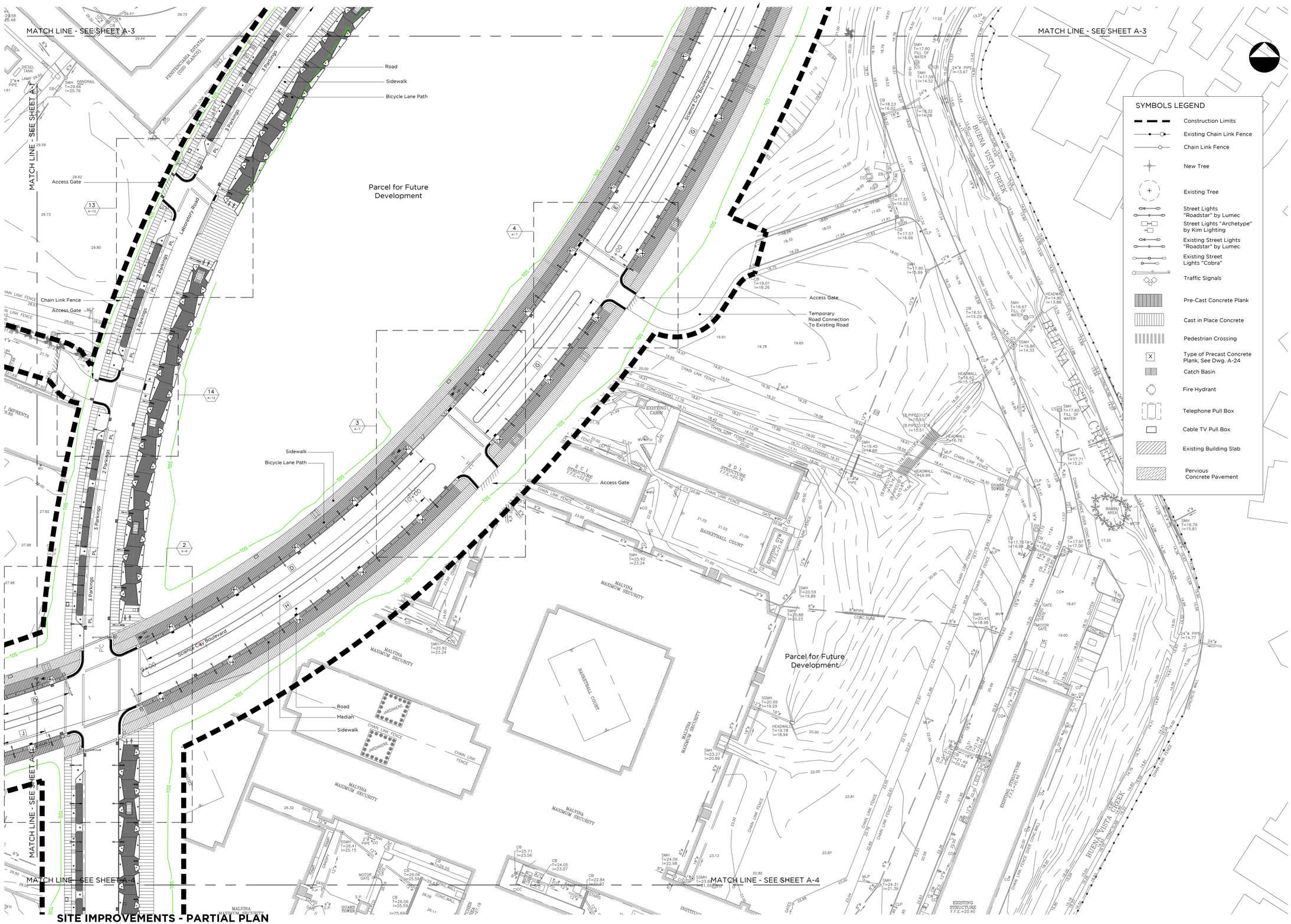
A-1

OF



SITE IMPROVEMENTS - PARTIAL PLAN

Scale: 1:500

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SITE IMPROVEMENTS PARTIAL PLAN

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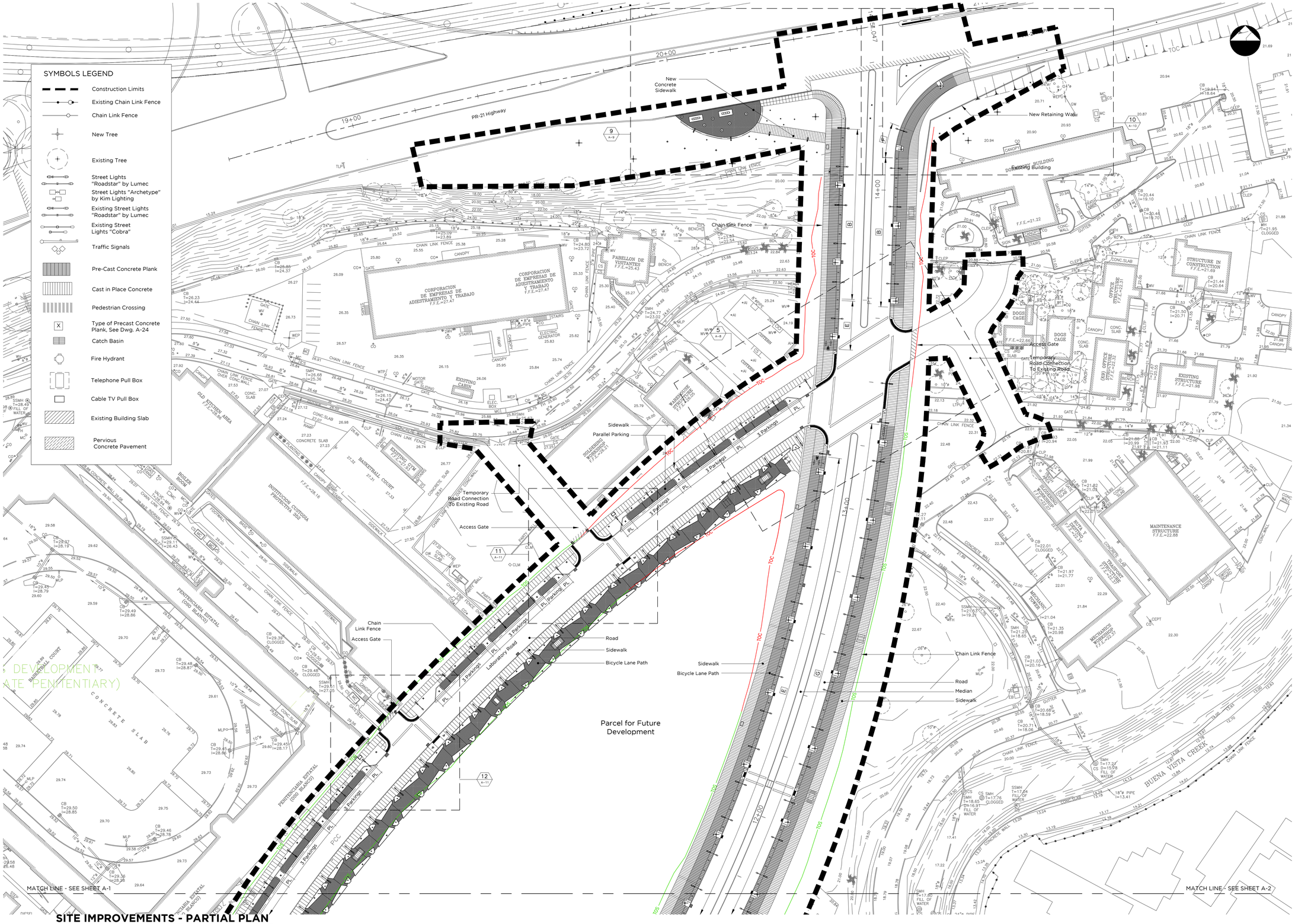
DATE: MAY 13, 2013

A-2

OF



SITE IMPROVEMENTS - PARTIAL PLAN

Scale: 1:500

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SITE IMPROVEMENTS PARTIAL PLAN

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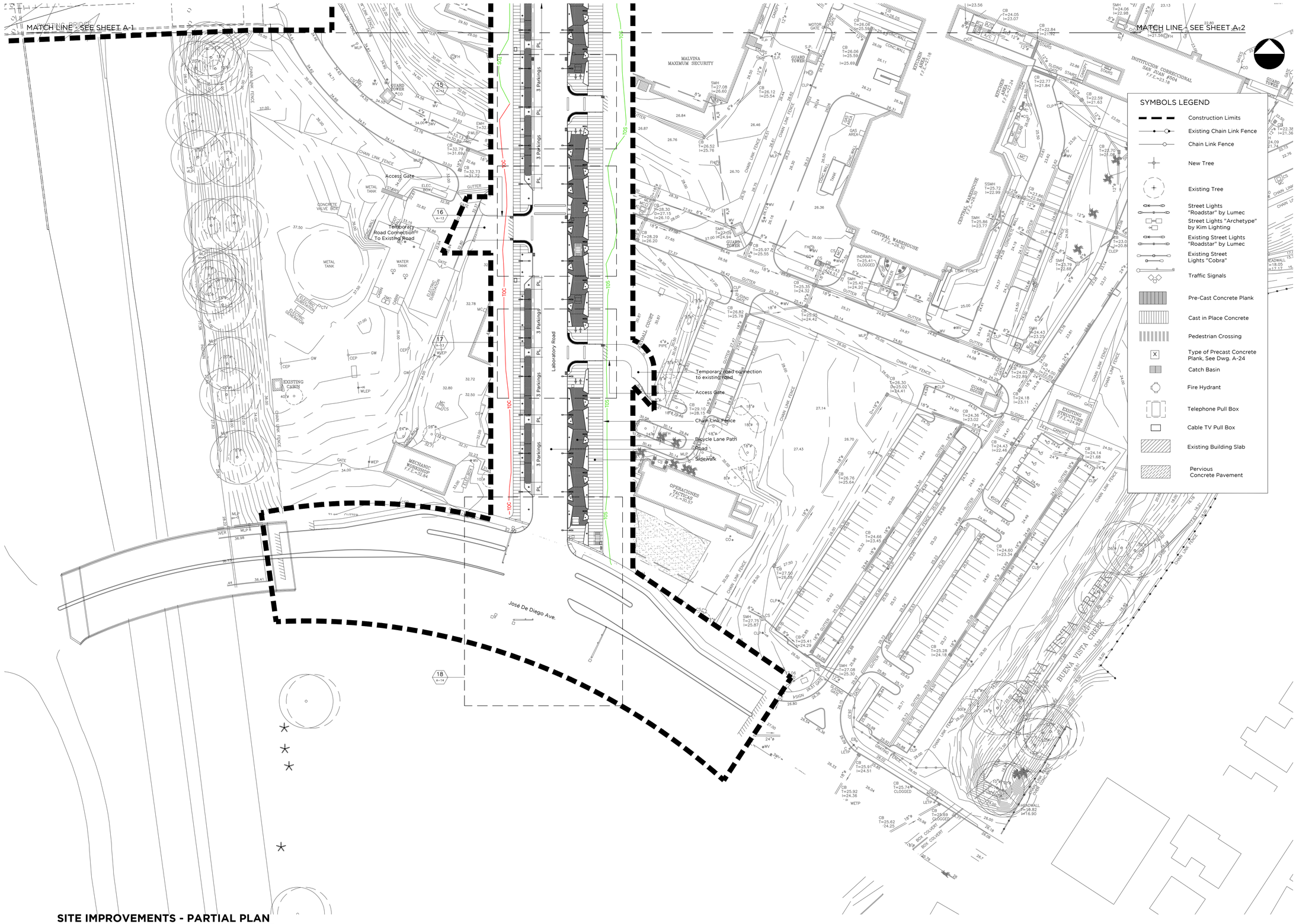
A-3

OF



SITE IMPROVEMENTS - PARTIAL PLAN

Scale: 1:500

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SITE IMPROVEMENTS PARTIAL PLAN

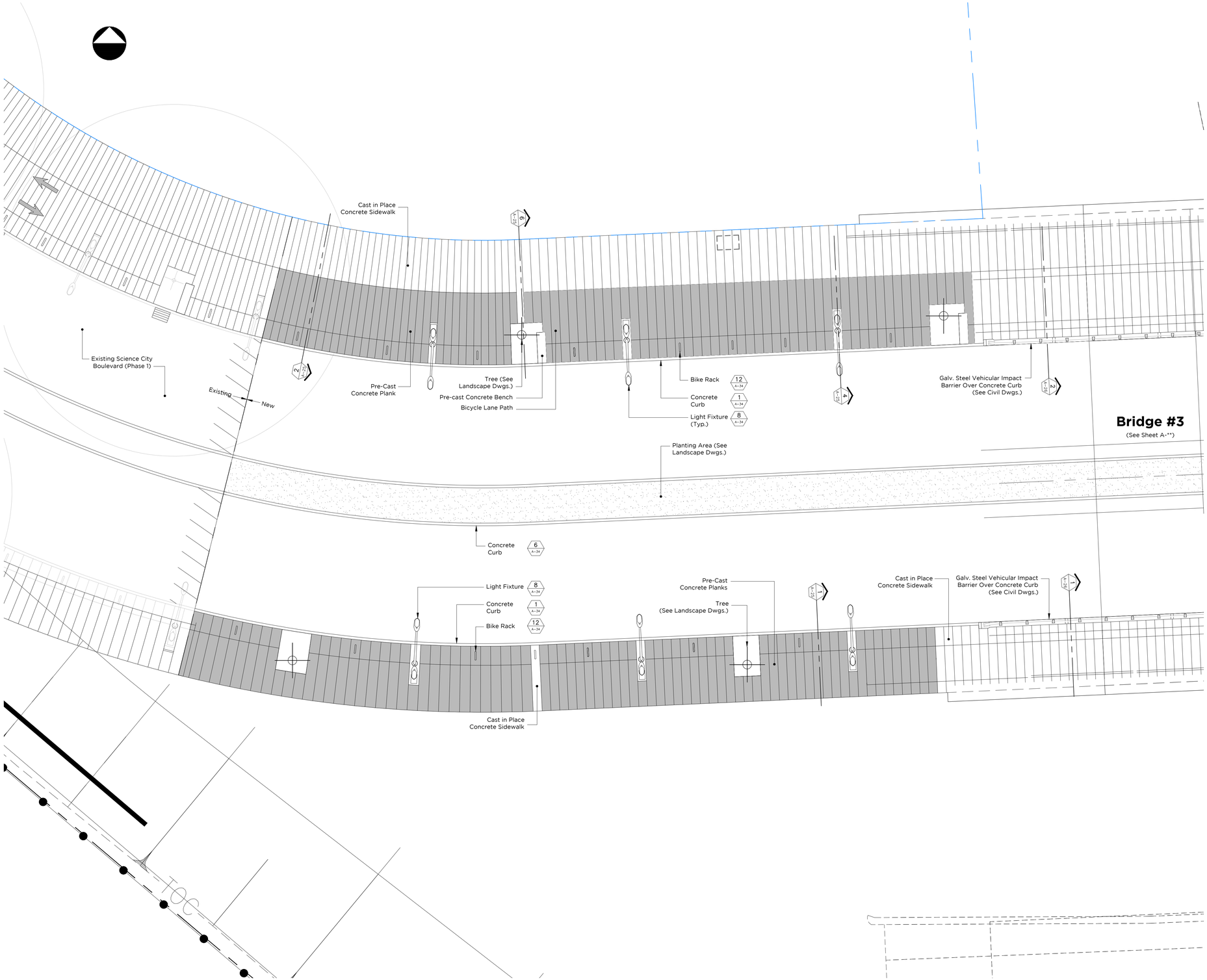
DRAWN BY: LR/FDJ
REVISED BY: JJT
DATE: MAY 13, 2013

A-4

OF

SYMBOLS LEGEND

- Construction Limits
- Existing Chain Link Fence
- Chain Link Fence
- New Tree
- Existing Tree
- Street Lights "Roadstar" by Lumec
- Street Lights "Archetype" by Kim Lighting
- Existing Street Lights "Roadstar" by Lumec
- Existing Street Lights "Cobra"
- Traffic Signals
- Pre-Cast Concrete Plank
- Cast in Place Concrete
- Pedestrian Crossing
- Type of Precast Concrete Plank, See Dwg. A-24
- Catch Basin
- Fire Hydrant
- Telephone Pull Box
- Cable TV Pull Box
- Existing Building Slab
- Pervious Concrete Pavement



Note:
Refer to Geometrical Layout Plans in Civil Dwgs.

STREET INTERSECTION LAYOUT PLAN 1 A-5

Scale: 1:100

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STREET LAYOUT PLAN

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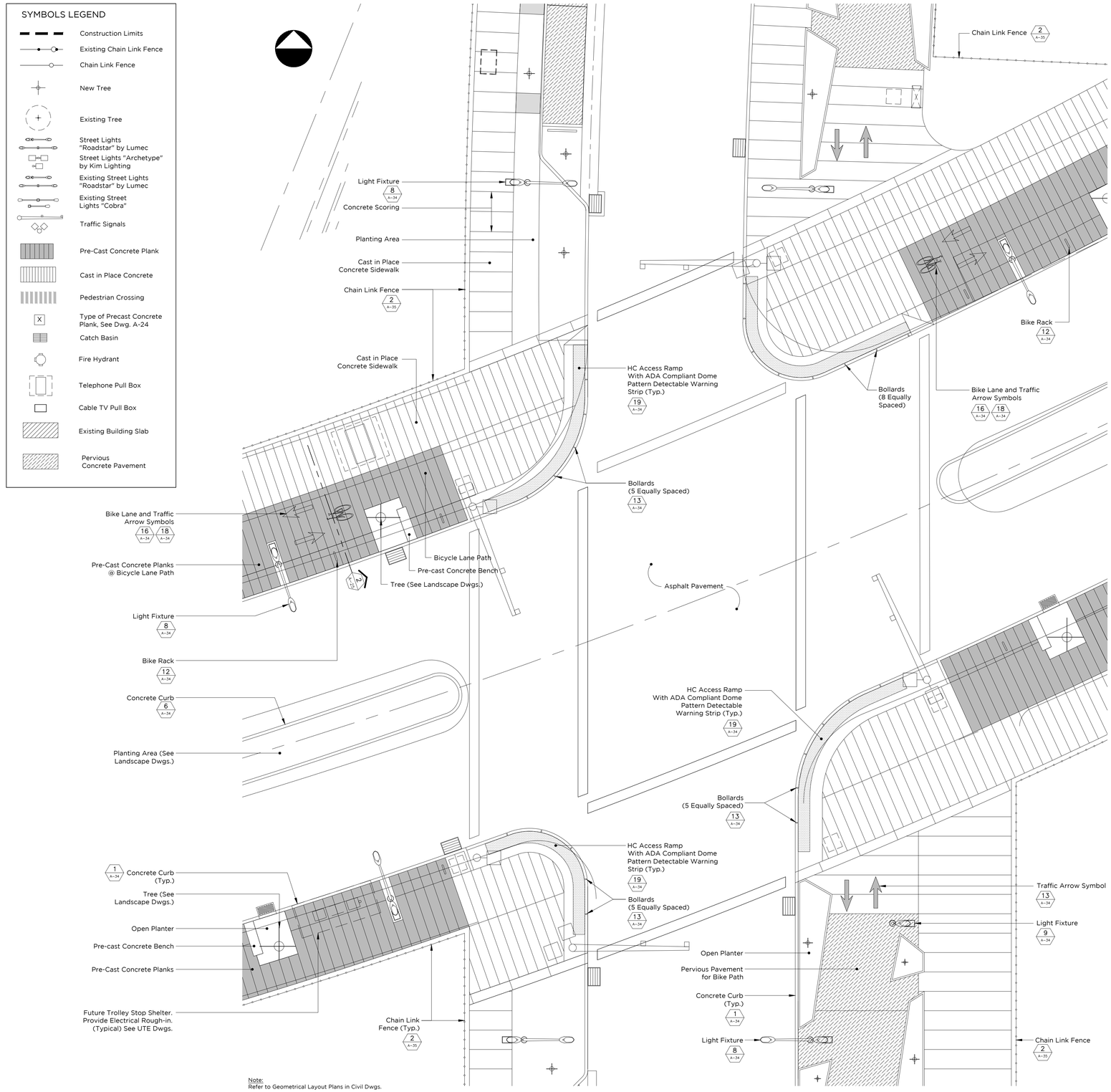
DATE: MAY 13, 2013

A-5

OF



Note:
Refer to Geometrical Layout Plans in Civil Dwgs.

STREET INTERSECTION LAYOUT PLAN 2 A-6

Scale: 1:100

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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STREET INTERSECTION LAYOUT PLAN

DRAWN BY:
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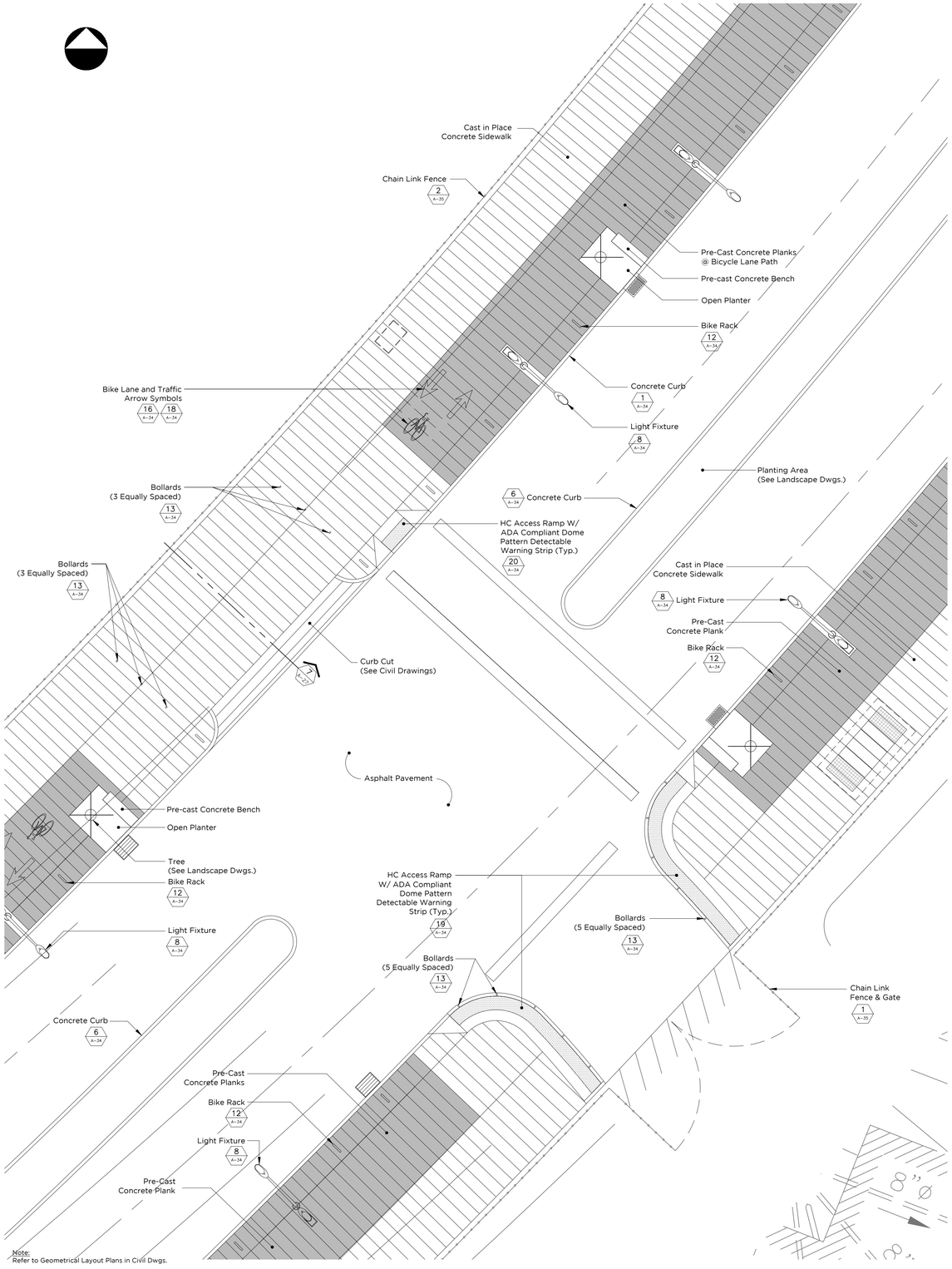
DATE: MAY 13, 2013

A-6

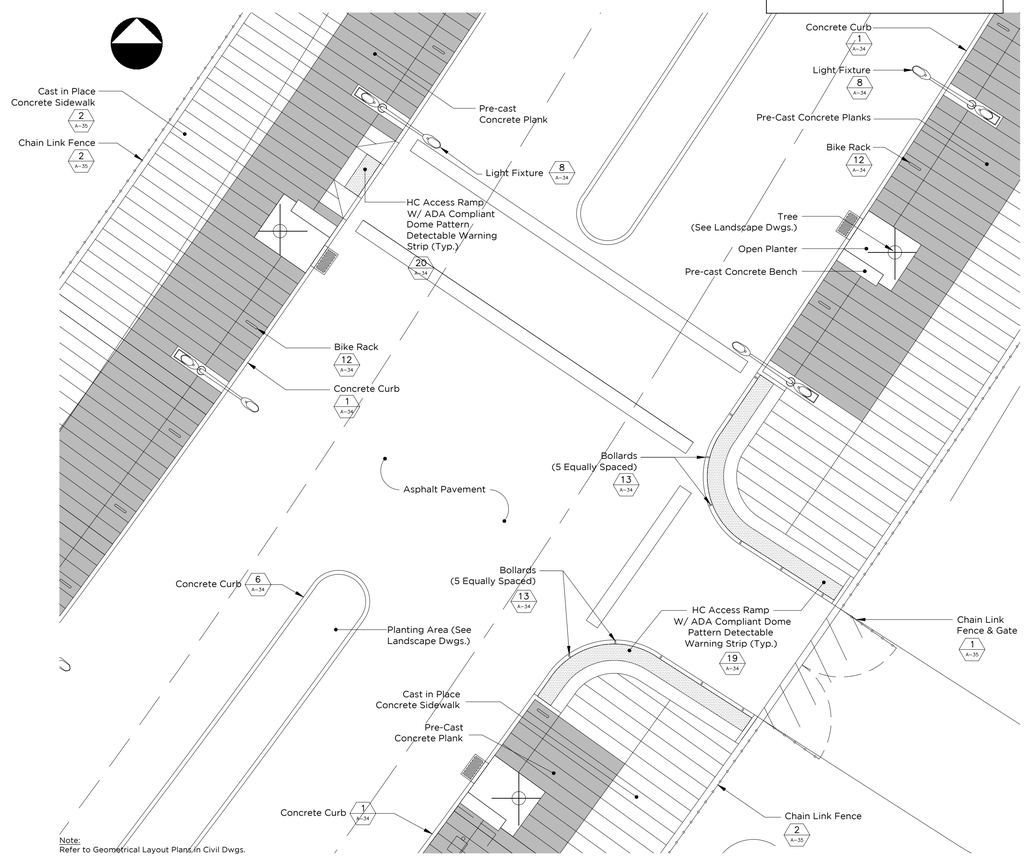
OF



Note:
Refer to Geometrical Layout Plans in Civil Dwgs.

STREET INTERSECTION LAYOUT PLAN 3 A-9

Scale: 1:100



Note:
Refer to Geometrical Layout Plans in Civil Dwgs.

STREET INTERSECTION LAYOUT PLAN 4 A-9

Scale: 1:100

SYMBOLS LEGEND

- Construction Limits
- Existing Chain Link Fence
- Chain Link Fence
- New Tree
- Existing Tree
- Street Lights "Roadstar" by Lumec
- Street Lights "Archetype" by Kim Lighting
- Existing Street Lights "Roadstar" by Lumec
- Existing Street Lights "Cobra"
- Traffic Signals
- Pre-Cast Concrete Plank
- Cast in Place Concrete
- Pedestrian Crossing
- Type of Precast Concrete Plank, See Dwg. A-24
- Catch Basin
- Fire Hydrant
- Telephone Pull Box
- Cable TV Pull Box
- Existing Building Slab
- Pervious Concrete Pavement

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STREET INTERSECTION LAYOUT PLAN

DRAWN BY:
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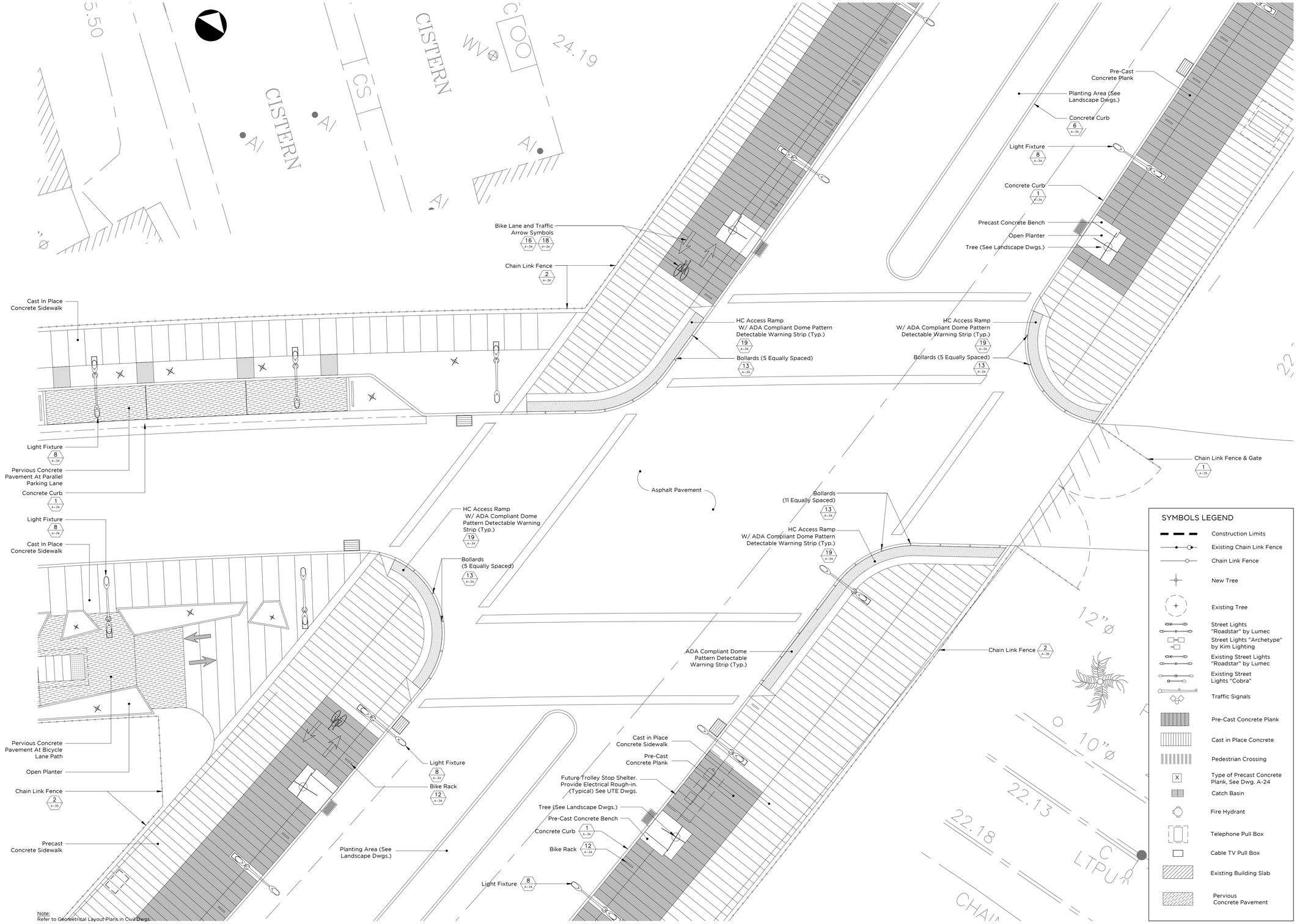
A-7

OF



Note:
Refer to Geometrical Layout Plans in Civil Dwgs.

STREET INTERSECTION LAYOUT PLAN 5 A-8

Scale: 1:100

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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STREET INTERSECTION LAYOUT PLAN

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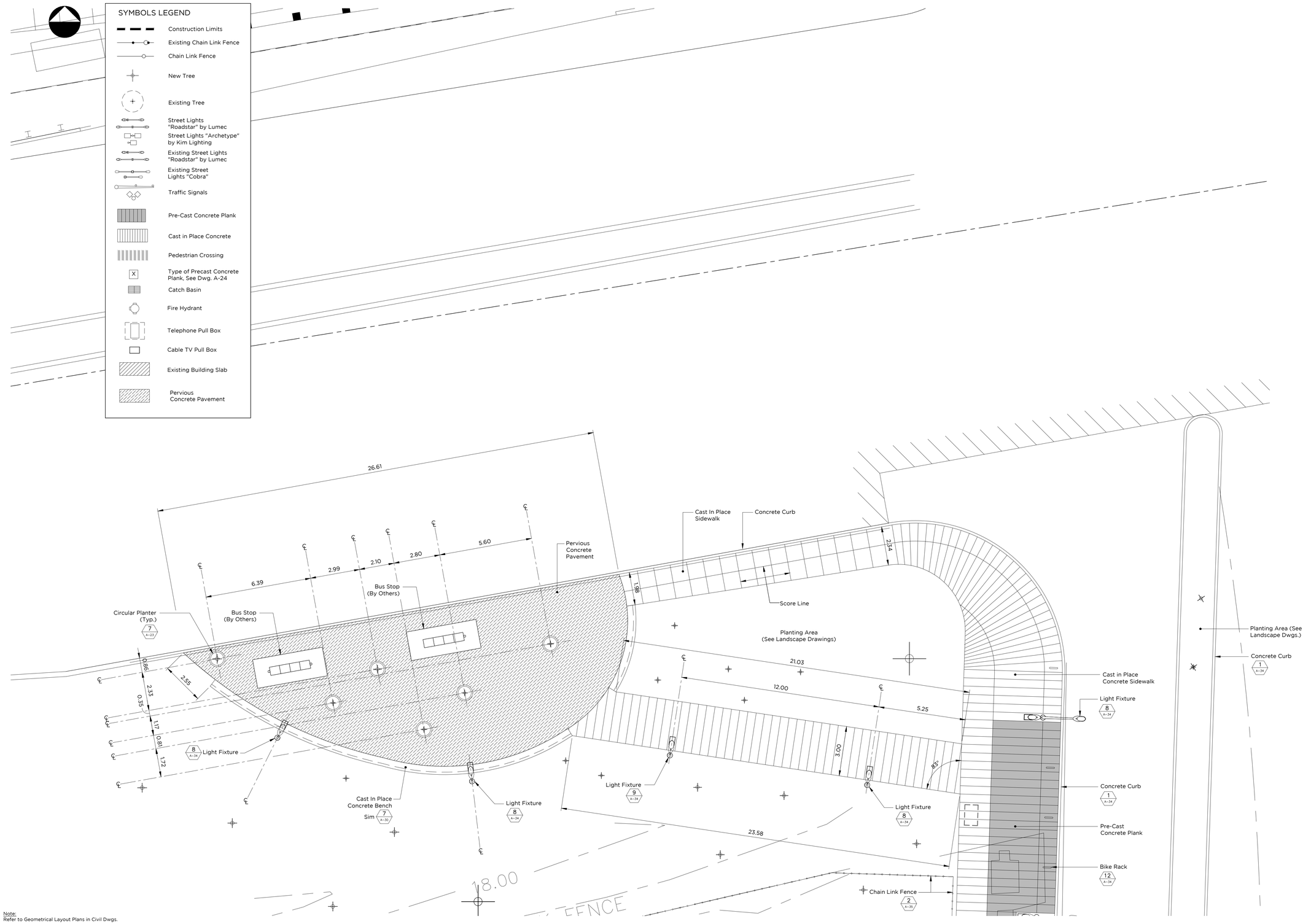
A-8

OF



Note:
Refer to Geometrical Layout Plans in Civil Dwgs.

STREET INTERSECTION LAYOUT PLAN 9 A-9

Scale: 1:100

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STREET INTERSECTION LAYOUT PLAN

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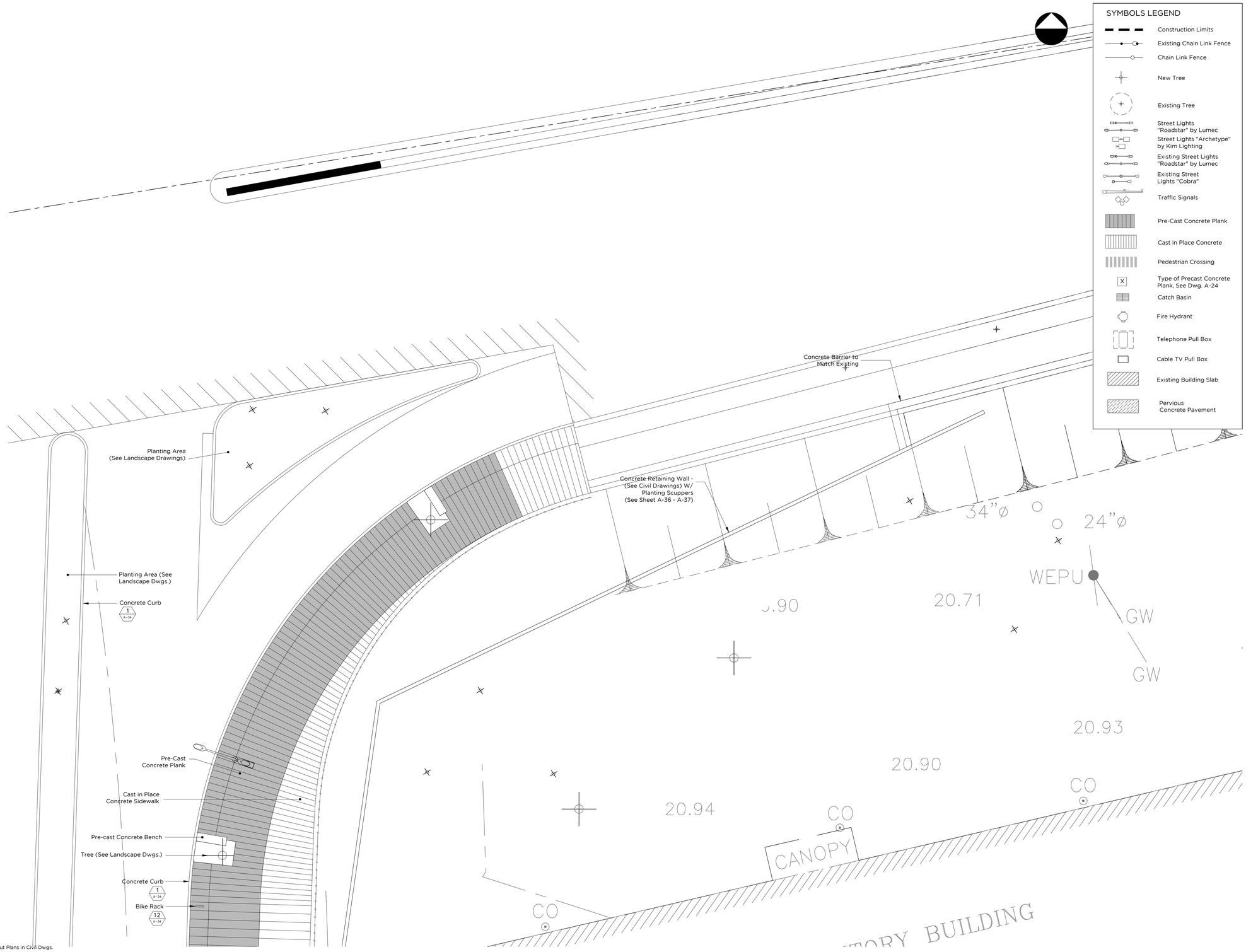
A-9

OF



SYMBOLS LEGEND

- Construction Limits
- Existing Chain Link Fence
- Chain Link Fence
- New Tree
- Existing Tree
- Street Lights "Roadstar" by Lumec
- Street Lights "Archetype" by Kim Lighting
- Existing Street Lights "Roadstar" by Lumec
- Existing Street Lights "Cobra"
- Traffic Signals
- Pre-Cast Concrete Plank
- Cast in Place Concrete
- Pedestrian Crossing
- Type of Precast Concrete Plank, See Dwg. A-24
- Catch Basin
- Fire Hydrant
- Telephone Pull Box
- Cable TV Pull Box
- Existing Building Slab
- Pervious Concrete Pavement

Note:
Refer to Geometrical Layout Plans in Civil Dwgs.

STREET INTERSECTION LAYOUT PLAN

10
A-10

Scale: 1:100

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A-10

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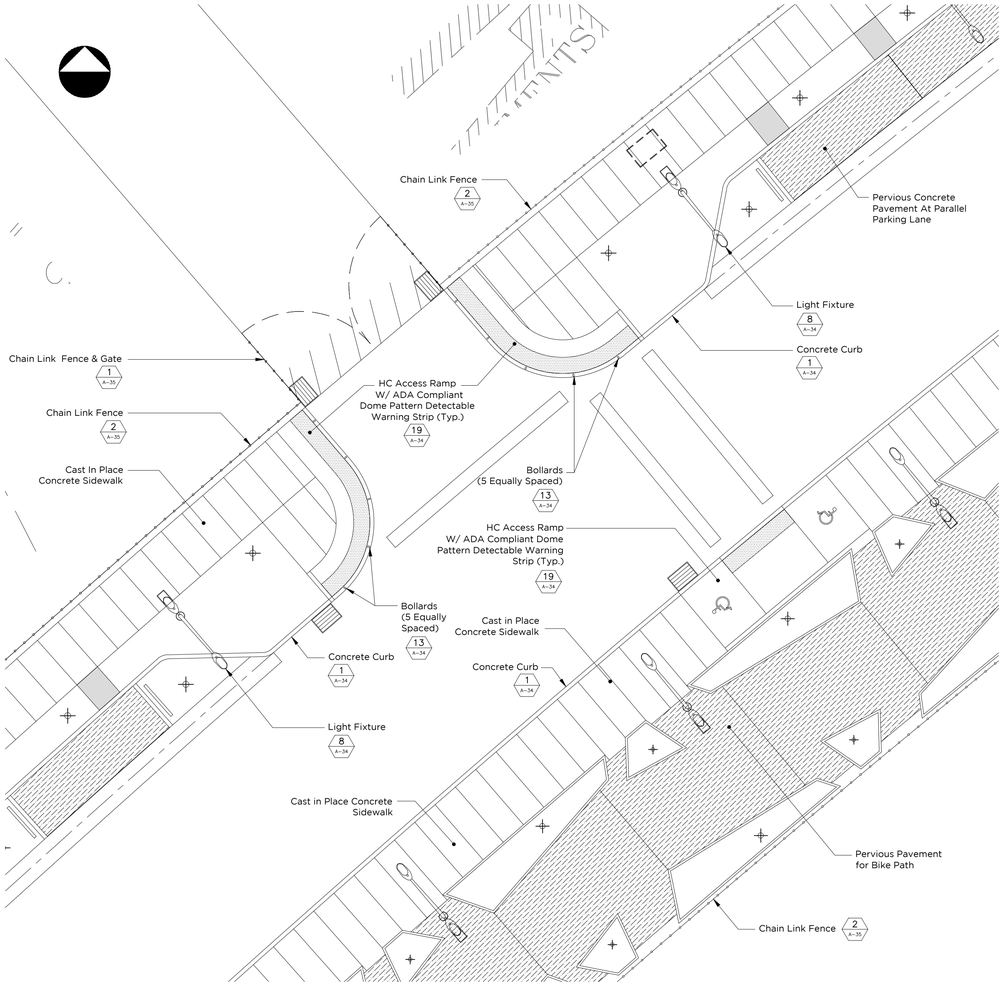
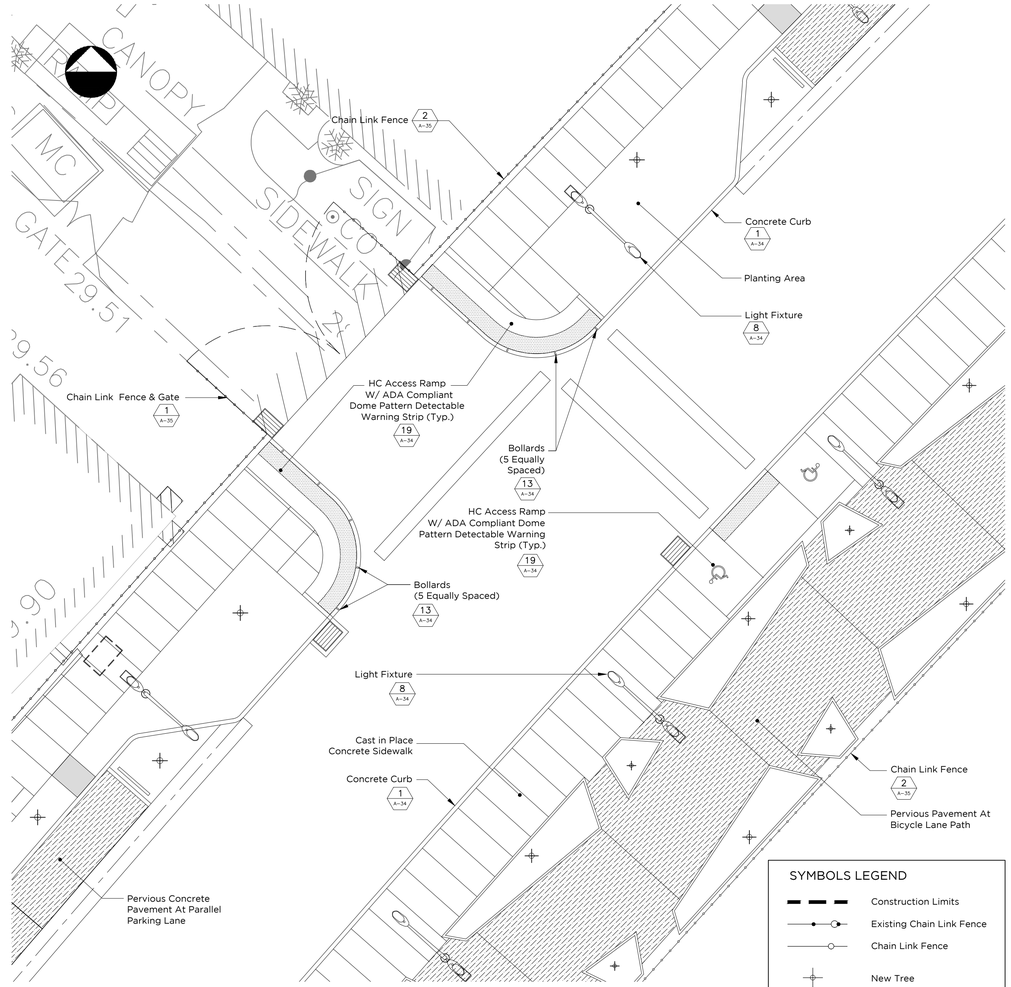


STREET INTERSECTION LAYOUT PLAN (11 / A-11)

Scale: 1:100



STREET INTERSECTION LAYOUT PLAN (12 / A-11)

Scale: 1:100

SYMBOLS LEGEND

- Construction Limits
- Existing Chain Link Fence
- Chain Link Fence
- New Tree
- Existing Tree
- Street Lights "Roadstar" by Lumec
- Street Lights "Archetype" by Kim Lighting
- Existing Street Lights "Roadstar" by Lumec
- Existing Street Lights "Cobra"
- Traffic Signals
- Pre-Cast Concrete Plank
- Cast in Place Concrete
- Pedestrian Crossing
- Type of Precast Concrete Plank, See Dwg. A-24
- Catch Basin
- Fire Hydrant
- Telephone Pull Box
- Cable TV Pull Box
- Existing Building Slab
- Pervious Concrete Pavement

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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STREET INTERSECTION LAYOUT PLAN

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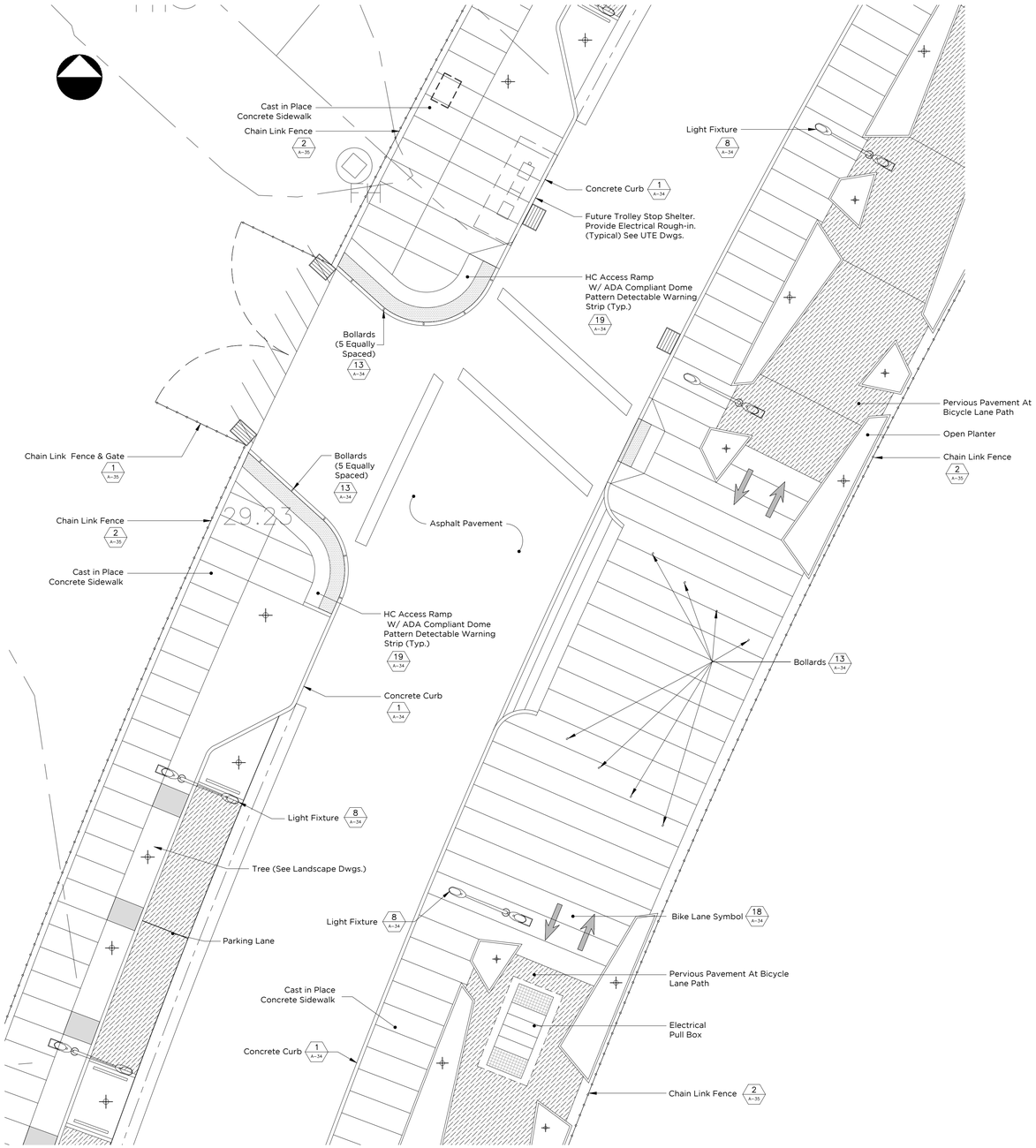
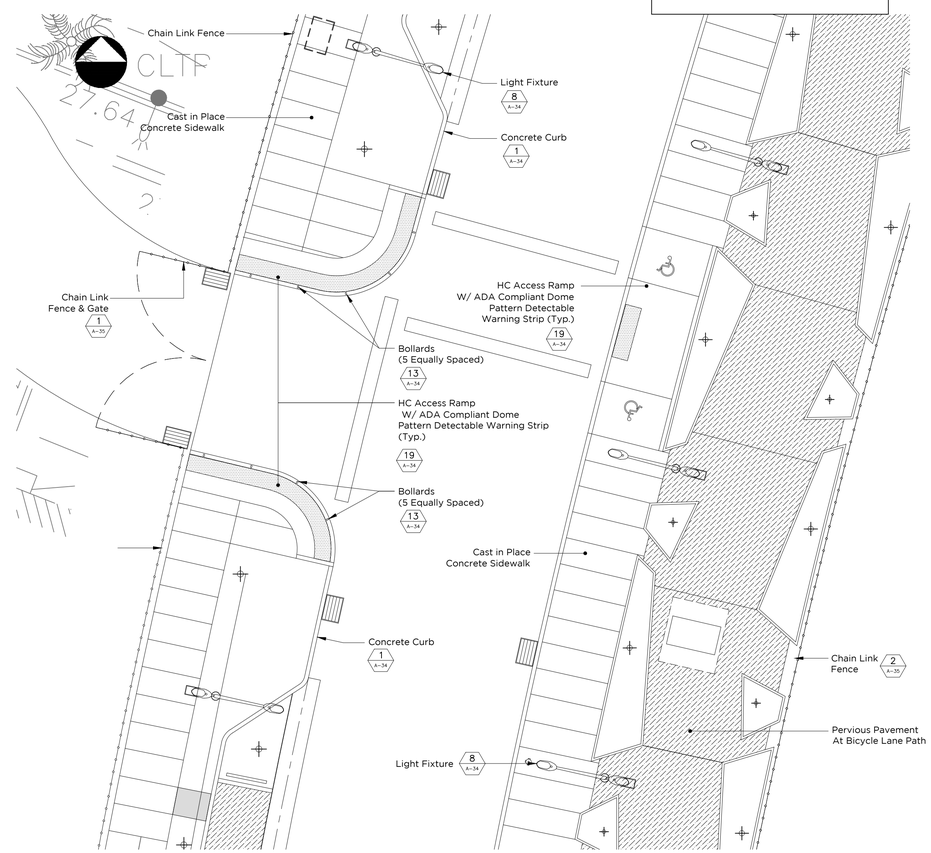


STREET INTERSECTION LAYOUT PLAN 13 A-12

Scale: 1:100



STREET INTERSECTION LAYOUT PLAN 14 A-12

Scale: 1:100

SYMBOLS LEGEND

- Construction Limits
- Existing Chain Link Fence
- Chain Link Fence
- New Tree
- Existing Tree
- Street Lights "Roadstar" by Lumec
- Street Lights "Archetype" by Kim Lighting
- Existing Street Lights "Roadstar" by Lumec
- Existing Street Lights "Cobra"
- Traffic Signals
- Pre-Cast Concrete Plank
- Cast in Place Concrete
- Pedestrian Crossing
- Type of Precast Concrete Plank, See Dwg. A-24
- Catch Basin
- Fire Hydrant
- Telephone Pull Box
- Cable TV Pull Box
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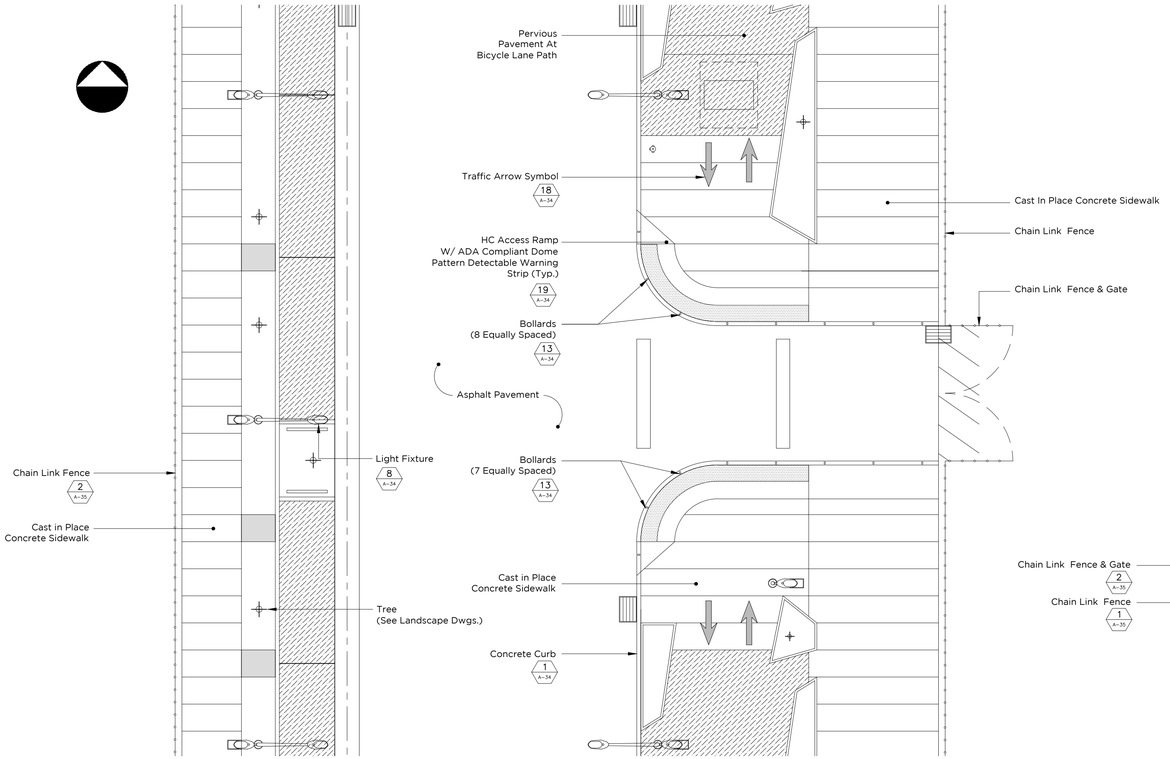
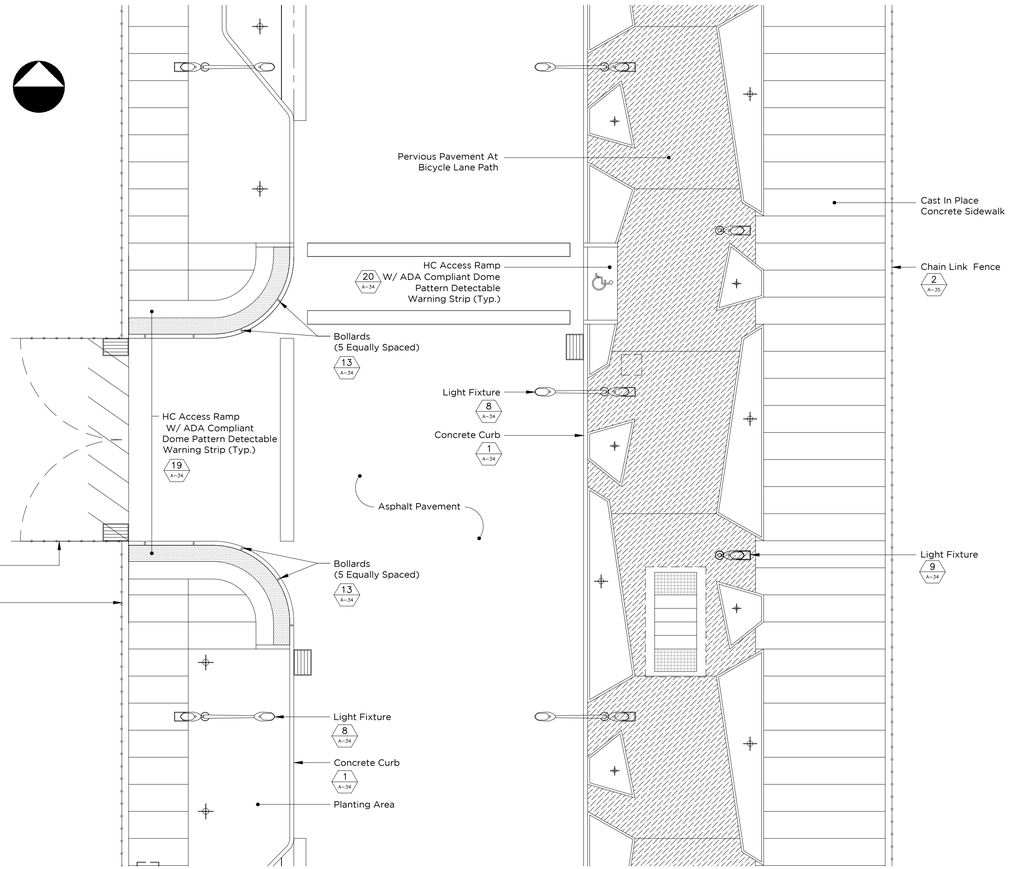


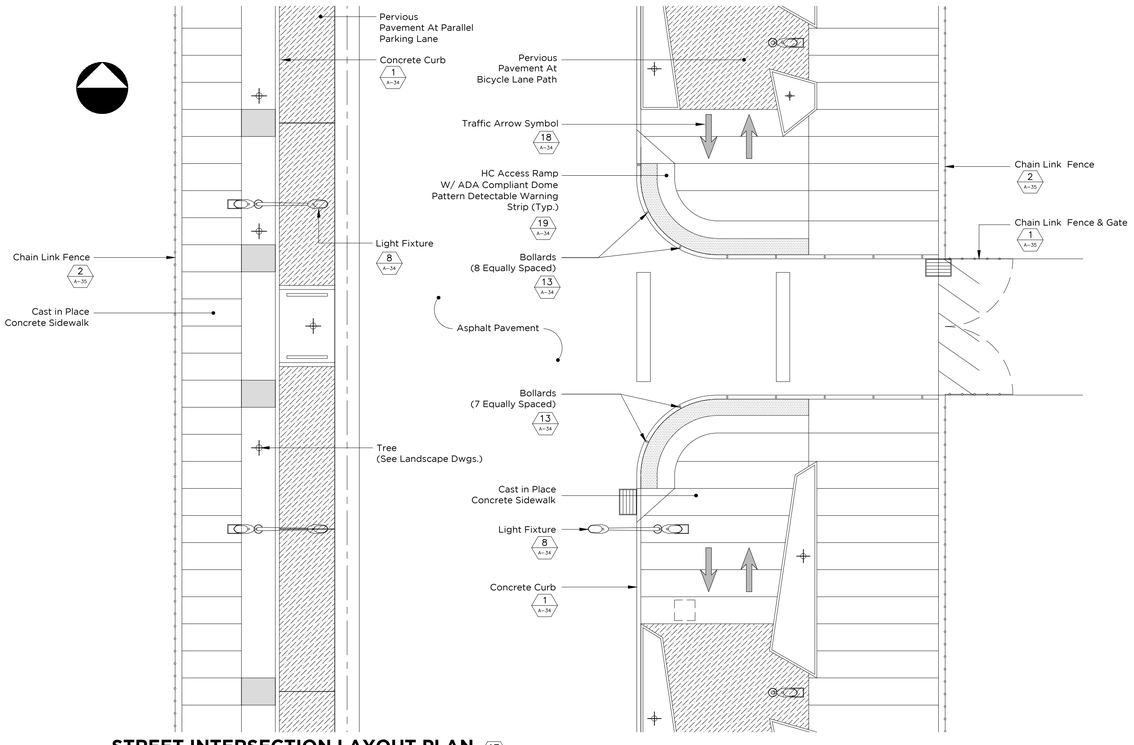
STREET INTERSECTION LAYOUT PLAN 15 A-13

Scale: 1:100



STREET INTERSECTION LAYOUT PLAN 16 A-13

Scale: 1:100



STREET INTERSECTION LAYOUT PLAN 17 A-13

Scale: 1:100

SYMBOLS LEGEND

- Construction Limits
- Existing Chain Link Fence
- Chain Link Fence
- New Tree
- Existing Tree
- Street Lights "Roadstar" by Lumec
- Street Lights "Archetype" by Kim Lighting
- Existing Street Lights "Roadstar" by Lumec
- Existing Street Lights "Cobra"
- Traffic Signals
- Pre-Cast Concrete Plank
- Cast in Place Concrete
- Pedestrian Crossing
- Type of Precast Concrete Plank, See Dwg. A-24
- Catch Basin
- Fire Hydrant
- Telephone Pull Box
- Cable TV Pull Box
- Existing Building Slab
- Pervious Concrete Pavement

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

SEGMENT WEST OF PR-18
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ARCHITECTURE URBAN DESIGN

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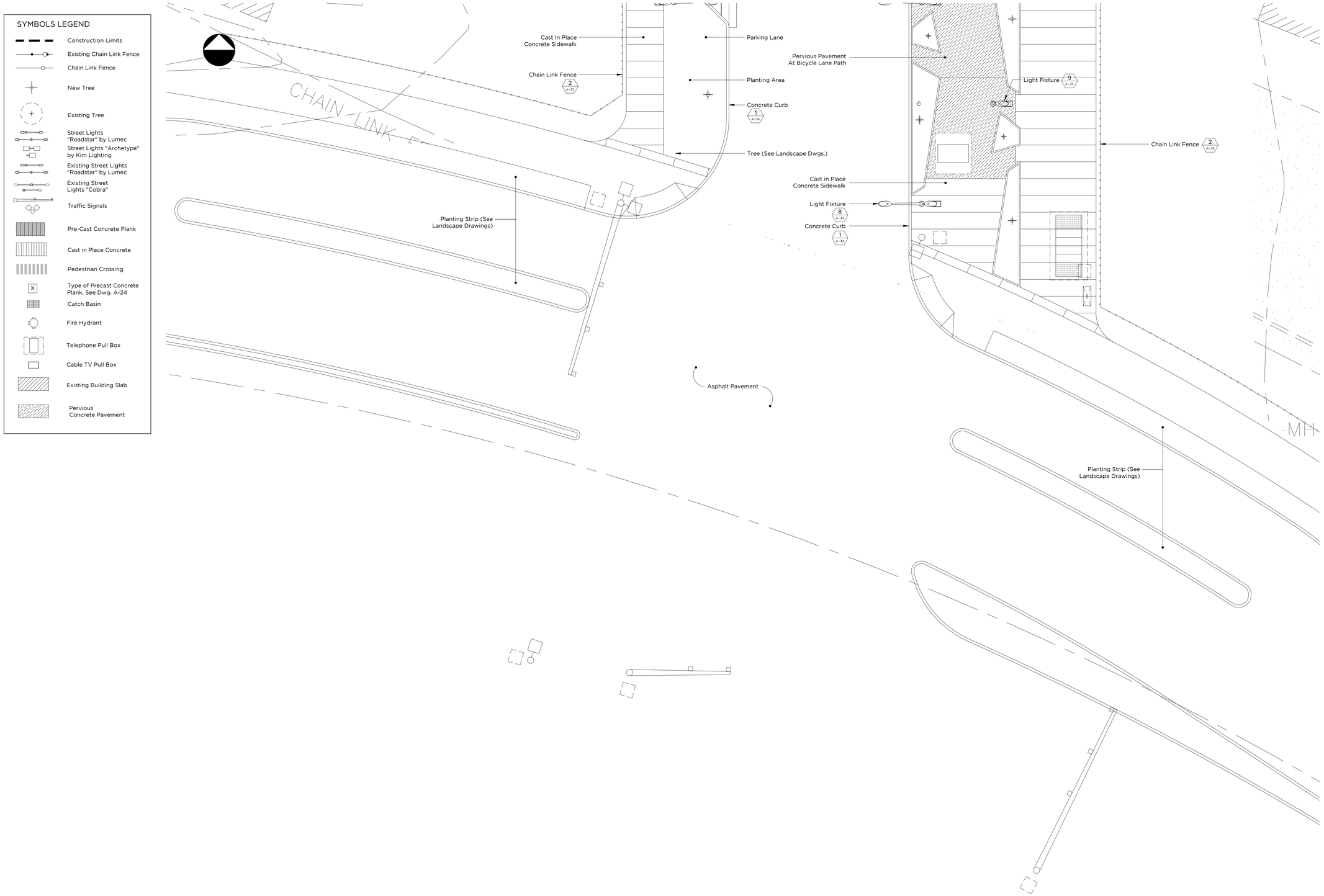
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

STREET INTERSECTION LAYOUT PLAN

DRAWN BY:
REVISED BY:
DATE: MAY 13, 2013

A-13

OF



STREET INTERSECTION LAYOUT PLAN

18
A-14

Scale: 1:100

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

SEGMENT WEST OF PR-18
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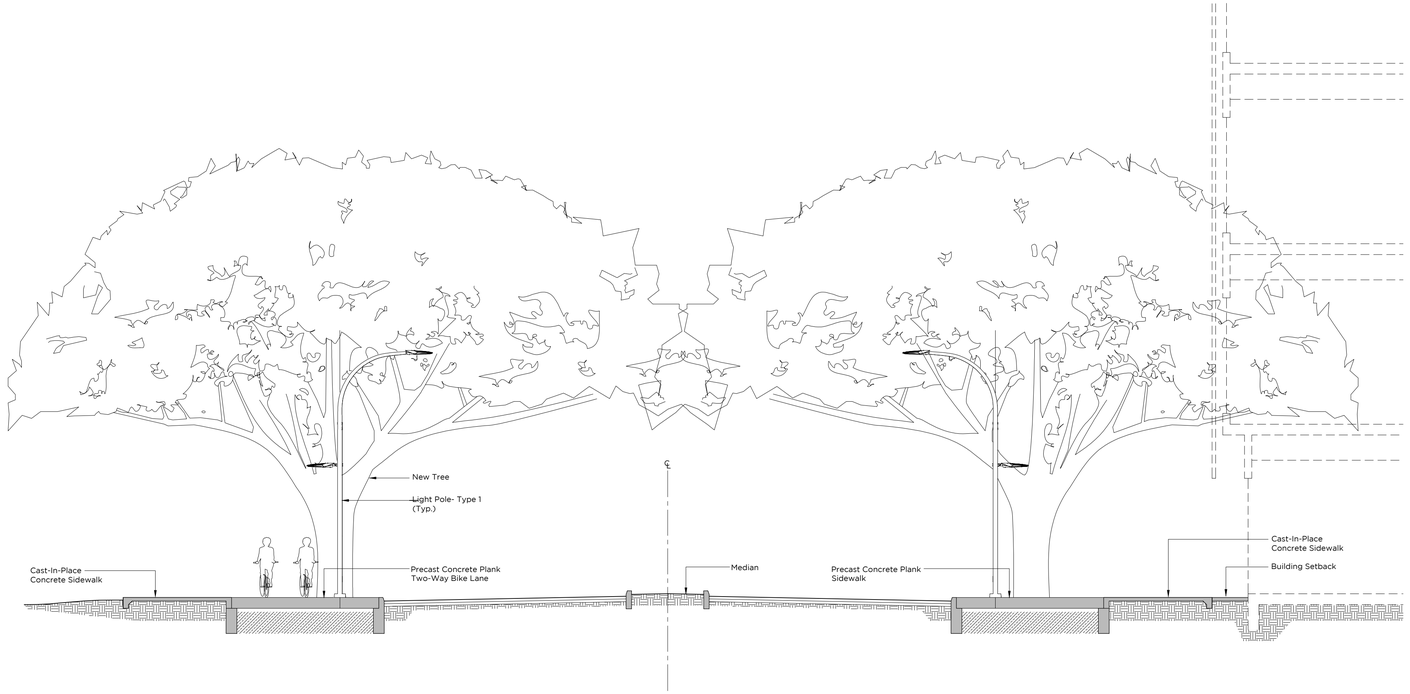
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

STREET INTERSECTION LAYOUT PLAN

DRAWN BY:
REVISED BY:
DATE: MAY 13, 2013

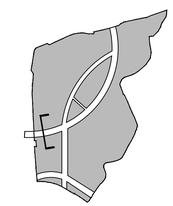
A-14

OF

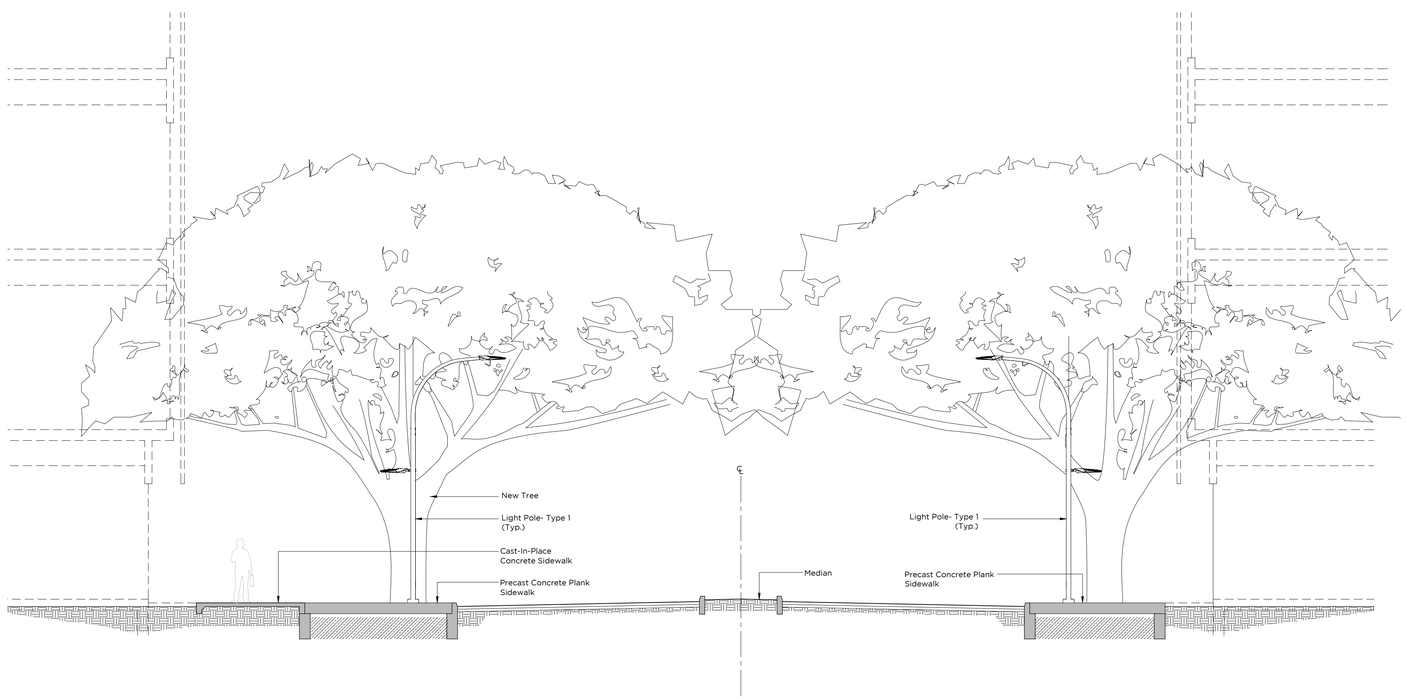


SEGMENT EAST OF BRIDGE- LAYOUT SECTION

Scale: 1:75

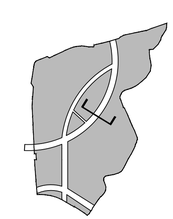


KEY PLAN



MAIN BOULEVARD LAYOUT SECTION

Scale: 1:75



KEY PLAN

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

SEGMENT EAST OF PR 18
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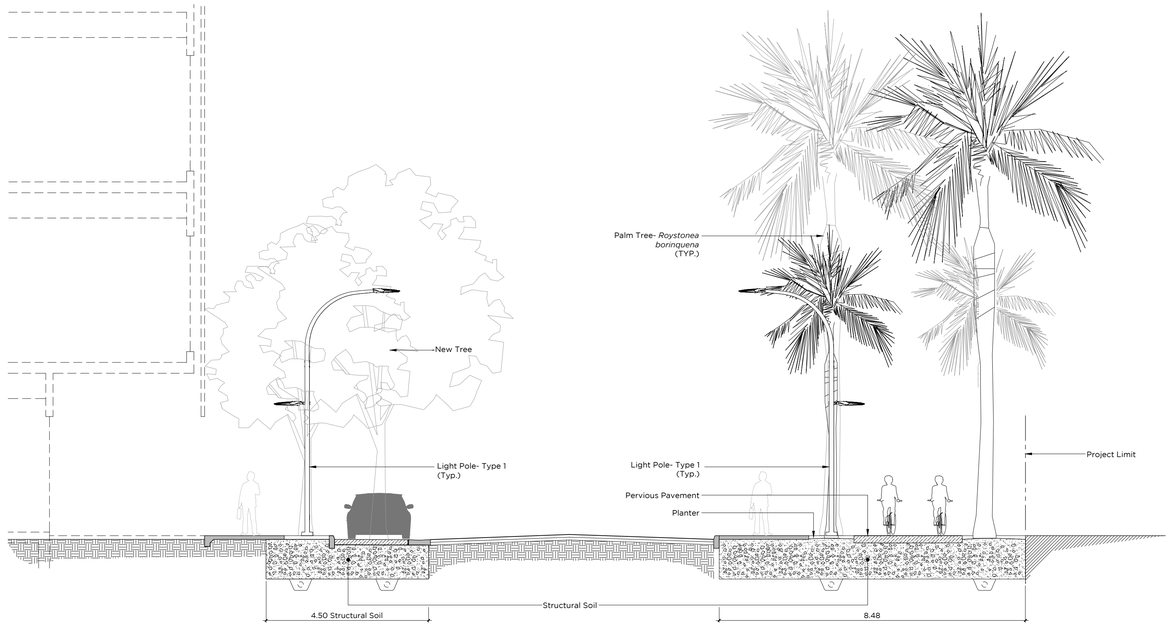
MAY 13, 2013

STEET LAYOUT SECTIONS

DRAWN BY: LR/FDJ
REVISED BY: JJT
DATE: OCTOBER 31, 2012.

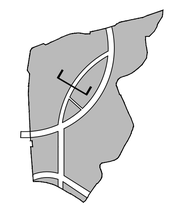
A-15

- OF -

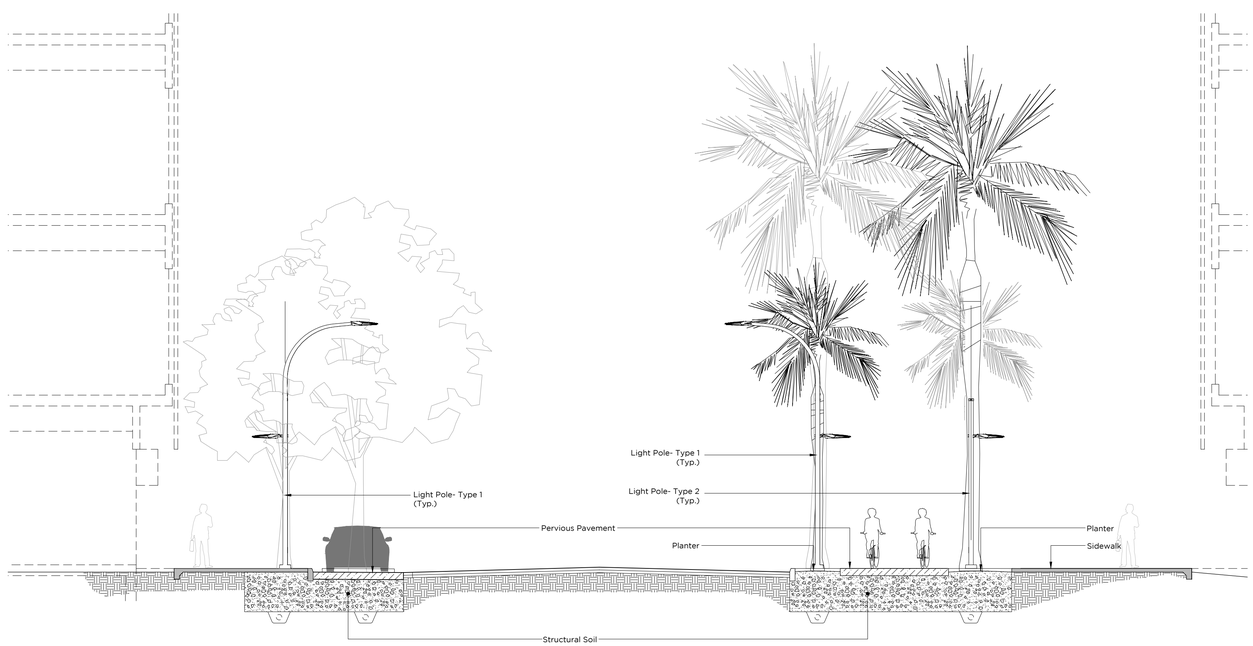


LABORATORY ROAD SECTION

Scale: 1:75

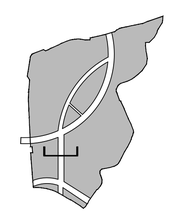


KEY PLAN



MIXED-USE ROAD SECTION

Scale: 1:75



KEY PLAN

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

SEGMENT EAST OF PR 18
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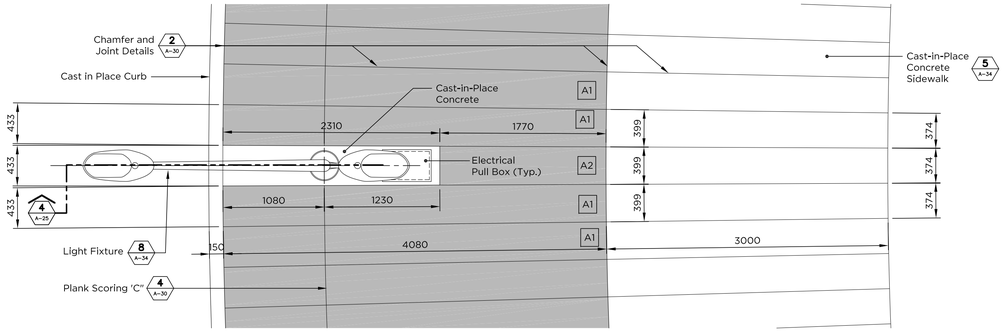
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

STEET LAYOUT SECTIONS

DRAWN BY: LR/FDJ
REVISED BY: JJT
DATE: OCTOBER 31, 2012.

A-16

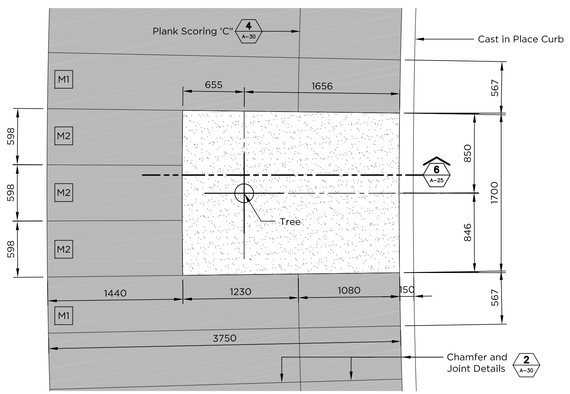
- OF -



TYPICAL SIDEWALK PAVING PATTERN & LIGHT POLE 1 A-17

Scale:1:30

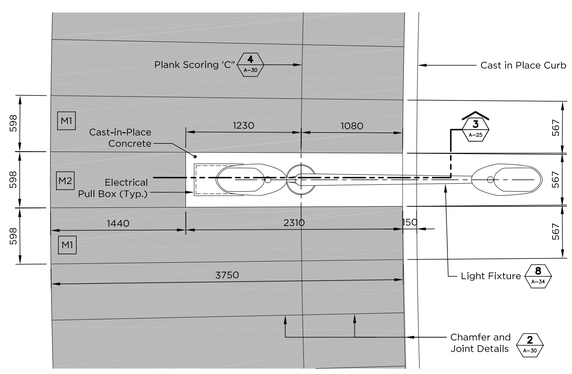
Note:
For Pre-Cast Concrete Plank Type A. Refer to Dwg. A-28



TYPICAL SIDEWALK PAVING PATTERN & LIGHT POLE 2 A-17

Scale:1:30

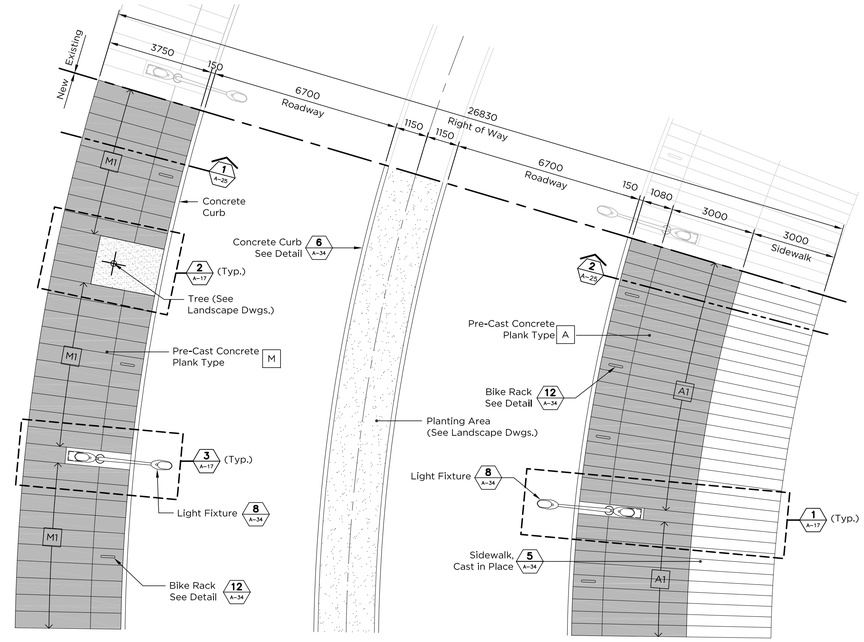
Note:
For Pre-Cast Concrete Plank Type M. Refer to Dwg. A-30



TYPICAL SIDEWALK PAVING PATTERN & LIGHT POLE 3 A-17

Scale:1:30

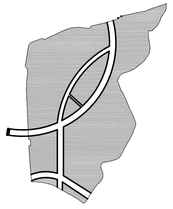
Note:
For Pre-Cast Concrete Plank Type M. Refer to Dwg. A-30



STREET LAYOUT PLAN A & M

Scale: 1:100

Note:
Refer to Geometrical Layout Plans in Civil Dwgs.



KEY PLAN

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

SEGMENT WEST OF PR-18
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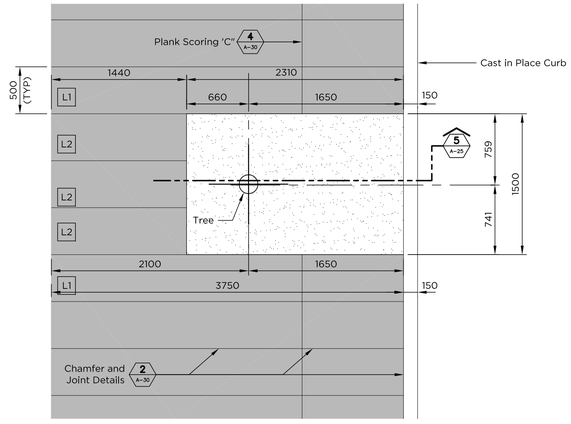
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

BOULEVARD LAYOUT & SIDEWALK PATTERN

DRAWN BY:
REVISED BY:
DATE: OCTOBER 31, 2012

A-17

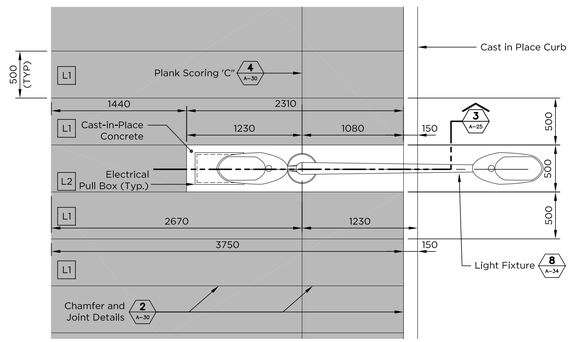
OF



TYPICAL SIDEWALK PAVING PATTERN & LIGHT POLE 1 A-18

Scale:1:30

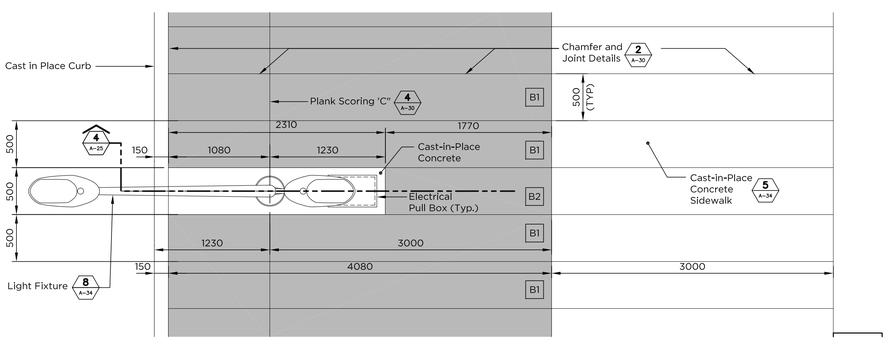
Note:
For Pre-Cast Concrete Plank Type L, Refer to Dwg. A-29



TYPICAL SIDEWALK PAVING PATTERN & LIGHT POLE 2 A-18

Scale:1:30

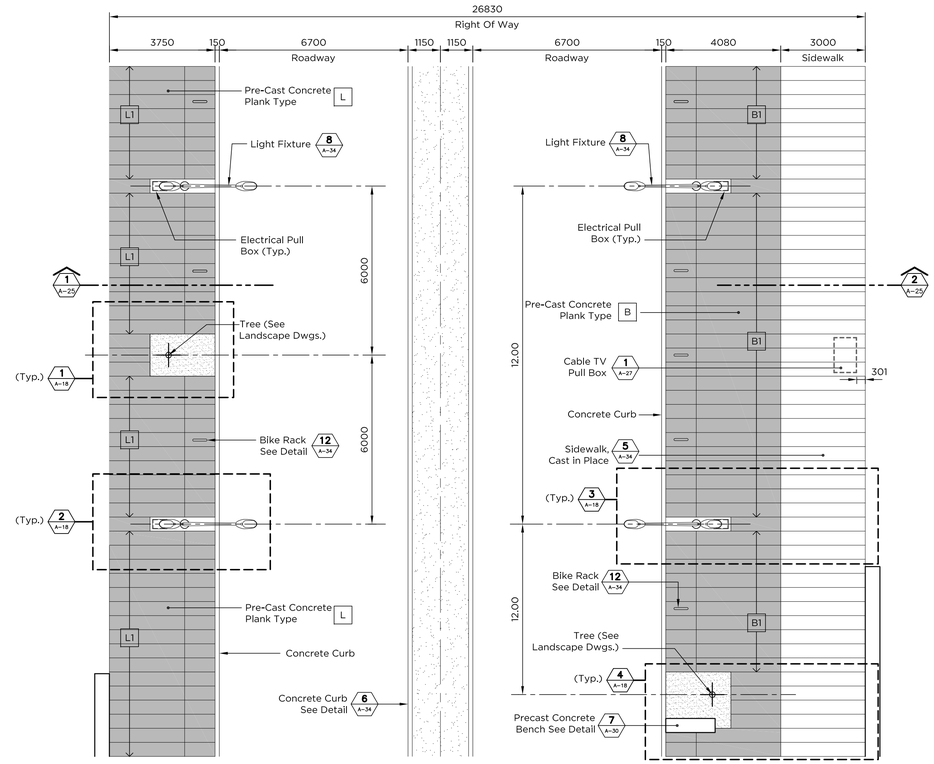
Note:
For Pre-Cast Concrete Plank Type L, Refer to Dwg. A-29



TYPICAL SIDEWALK PAVING PATTERN & LIGHT POLE 3 A-18

Scale:1:30

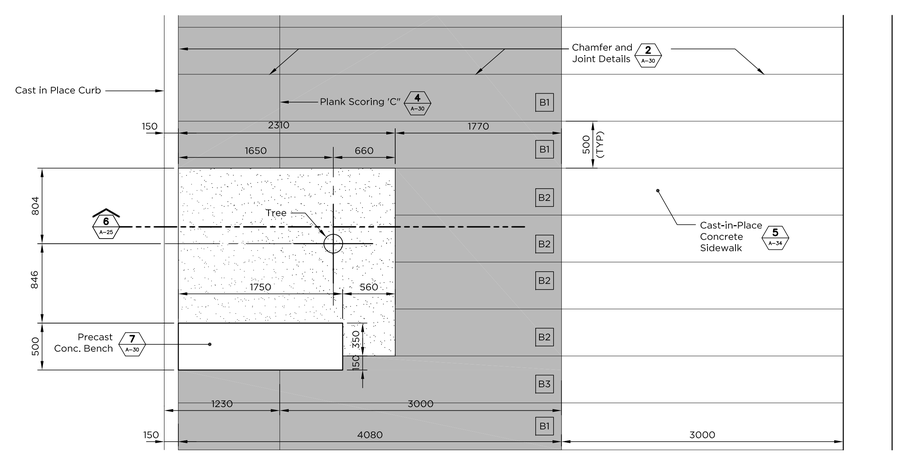
Note:
For Pre-Cast Concrete Plank Type B, Refer to Dwg. A-28



STREET LAYOUT PLAN B & L

Scale: 1:100

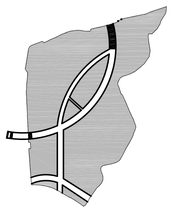
Note:
Refer to Geometrical Layout Plans in Civil Dwgs.



TYPICAL SIDEWALK PAVING PATTERN & LIGHT POLE 4 A-18

Scale:1:30

Note:
For Pre-Cast Concrete Plank Type B, Refer to Dwg. A-28



KEY PLAN

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

SEGMENT WEST OF PR-18
SAN JUAN, PUERTO RICO

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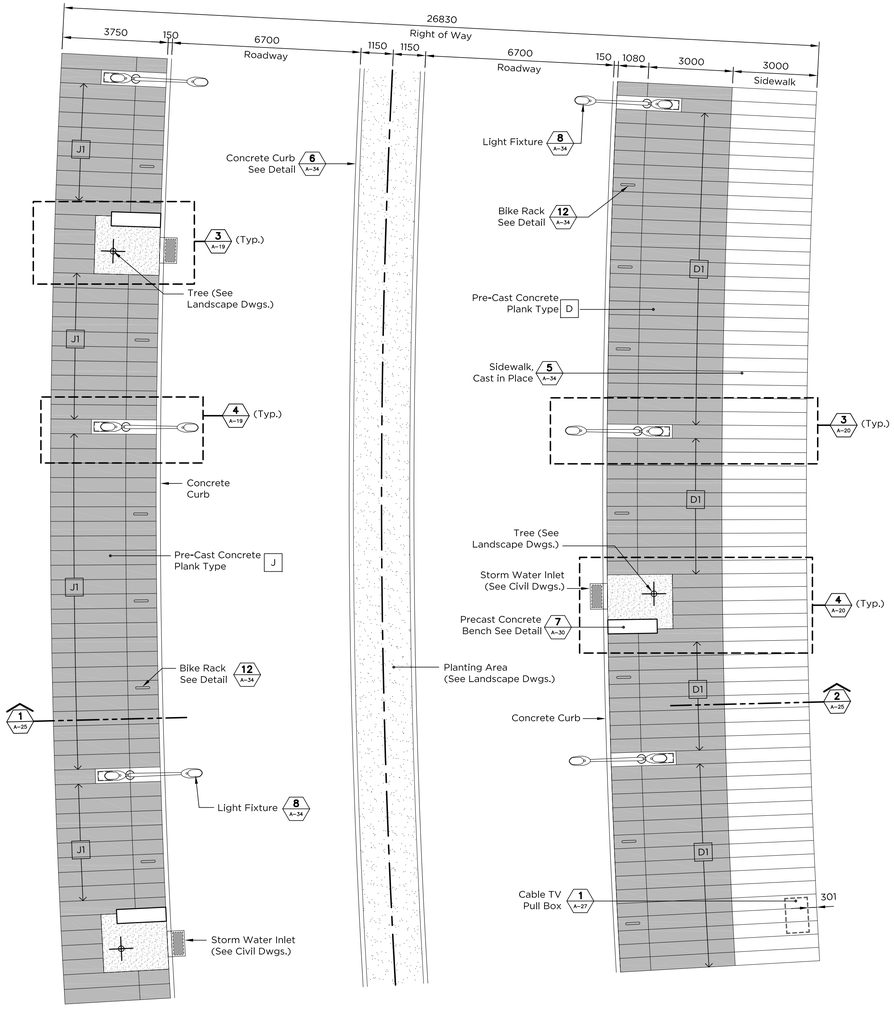
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

BOULEVARD LAYOUT & SIDEWALK PATTERN

DRAWN BY:
REVISED BY:
DATE: OCTOBER 31, 2012

A-18

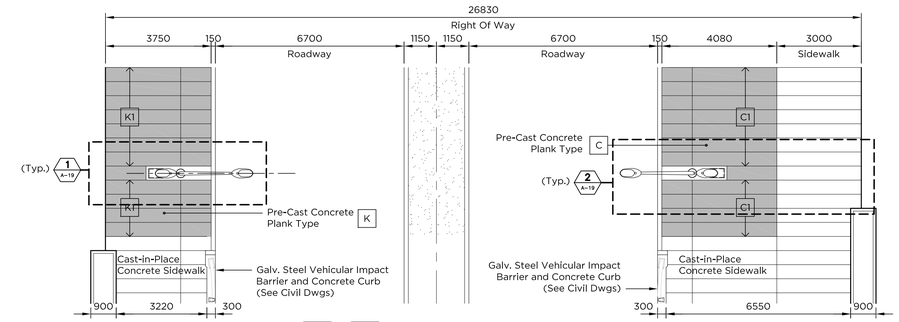
OF



STREET LAYOUT PLAN D & J

Scale: 1:100

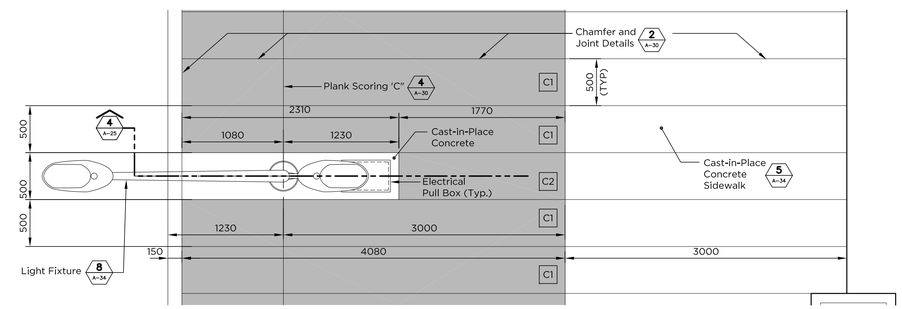
Note:
Refer to Geometrical Layout Plans in Civil Dwgs.



STREET LAYOUT PLAN C & K

Scale: 1:100

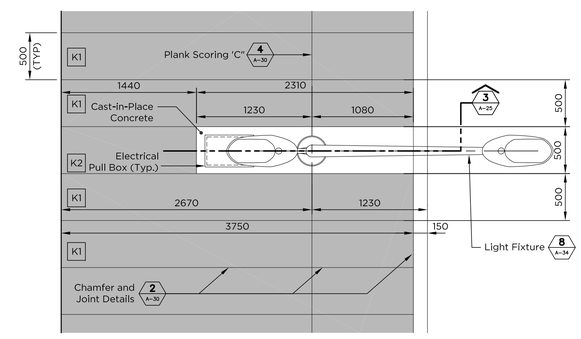
Note:
Refer to Geometrical Layout Plans in Civil Dwgs.



TYPICAL SIDEWALK PAVING PATTERN & LIGHT POLE 1 A-19

Scale:1:30

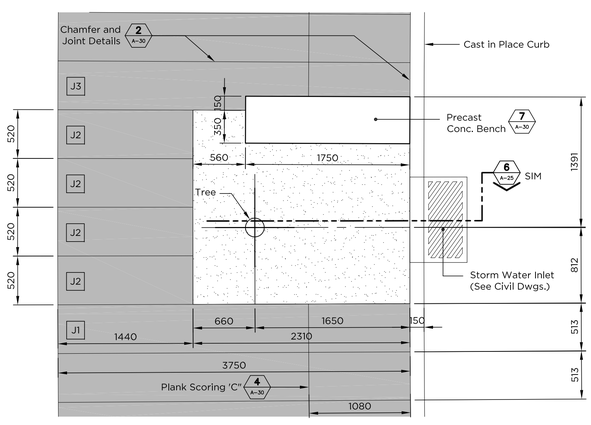
Note:
For Pre-Cast Concrete Plank Type C, Refer to Dwg. A-28



TYPICAL SIDEWALK PAVING PATTERN & LIGHT POLE 2 A-19

Scale:1:30

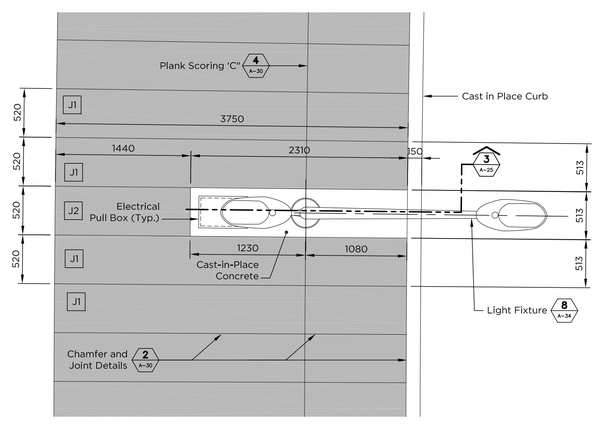
Note:
For Pre-Cast Concrete Plank Type K, Refer to Dwg. A-29



TYPICAL SIDEWALK PAVING PATTERN & LIGHT POLE 3 A-19

Scale:1:30

Note:
For Pre-Cast Concrete Plank Type J, Refer to Dwg. A-29



TYPICAL SIDEWALK PAVING PATTERN & LIGHT POLE 4 A-19

Scale:1:30

Note:
For Pre-Cast Concrete Plank Type J, Refer to Dwg. A-29

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

SEGMENT WEST OF PR-18
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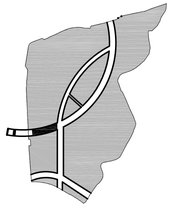
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013



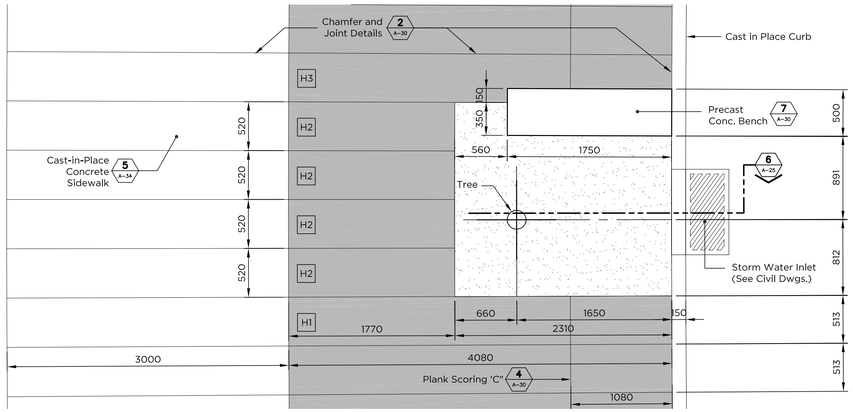
KEY PLAN

BOULEVARD LAYOUT & SIDEWALK PATTERN

DRAWN BY:
REVISED BY:
DATE: OCTOBER 31, 2012

A-19

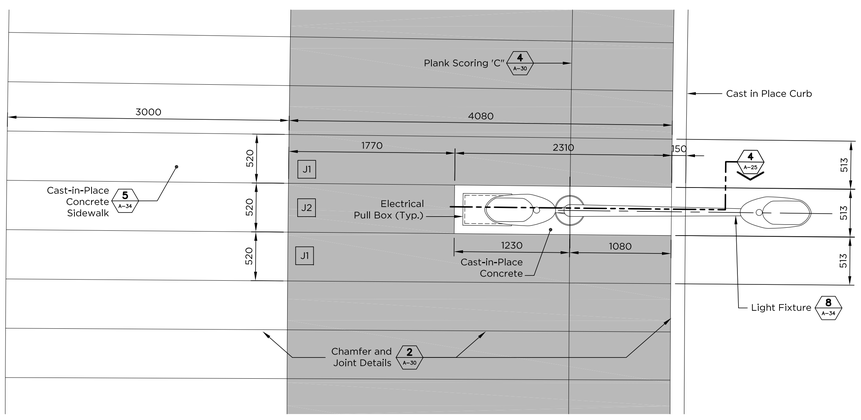
OF



TYPICAL SIDEWALK PAVING PATTERN & LIGHT POLE 2 A-20

Scale:1:30

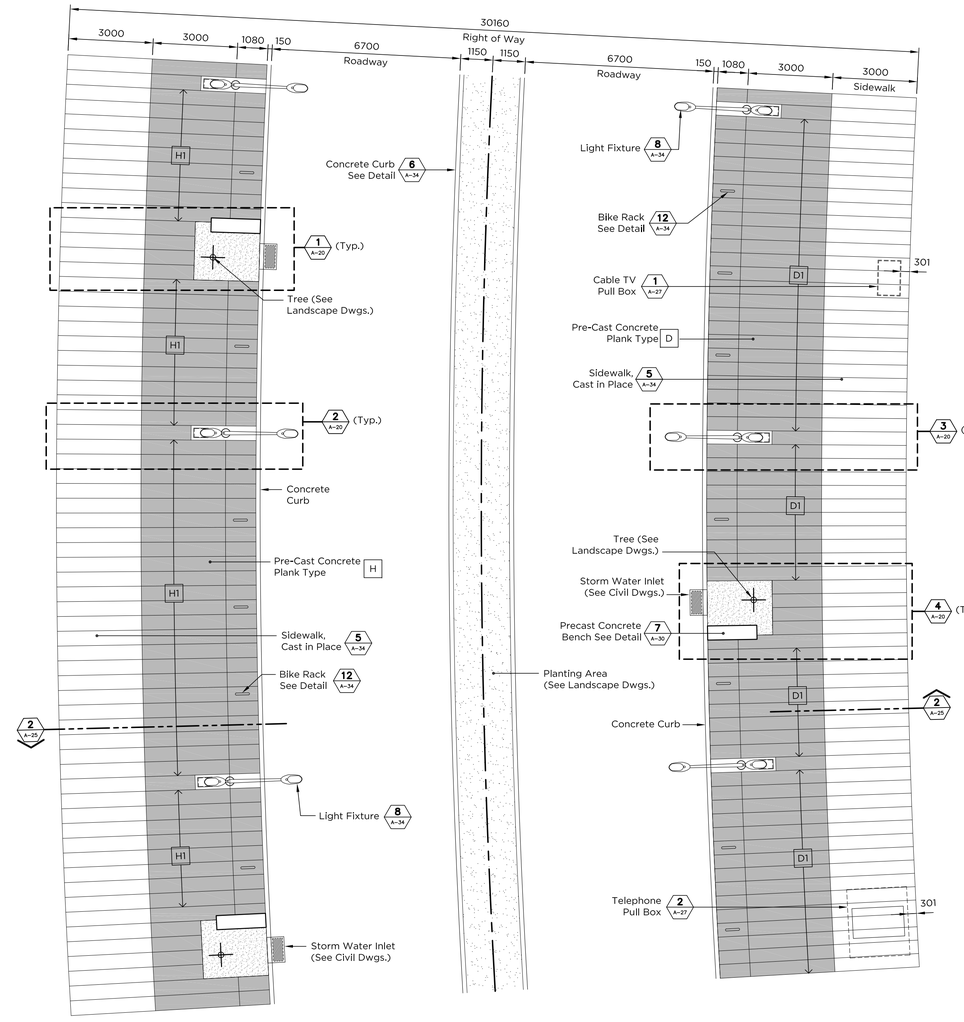
Note:
For Pre-Cast Concrete Plank Type H, Refer to Dwg. A-29



TYPICAL SIDEWALK PAVING PATTERN & LIGHT POLE 2 A-20

Scale:1:30

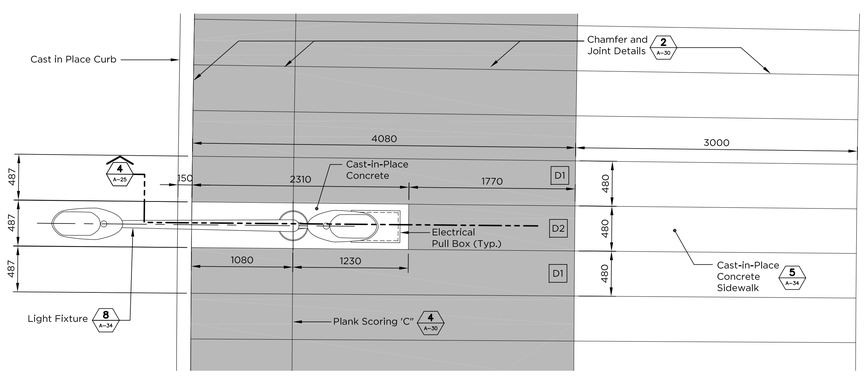
Note:
For Pre-Cast Concrete Plank Type H, Refer to Dwg. A-29



STREET LAYOUT PLAN D & H

Scale: 1:100

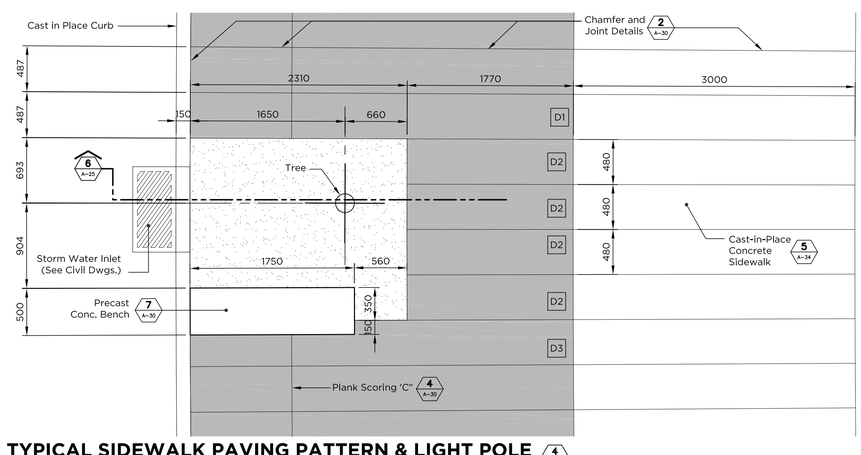
Note:
Refer to Geometrical Layout Plans in Civil Dwgs.



TYPICAL SIDEWALK PAVING PATTERN & LIGHT POLE 3 A-20

Scale:1:30

Note:
For Pre-Cast Concrete Plank Type D, Refer to Dwg. A-28



TYPICAL SIDEWALK PAVING PATTERN & LIGHT POLE 4 A-20

Scale:1:30

Note:
For Pre-Cast Concrete Plank Type D, Refer to Dwg. A-28

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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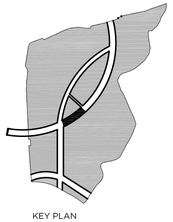
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013



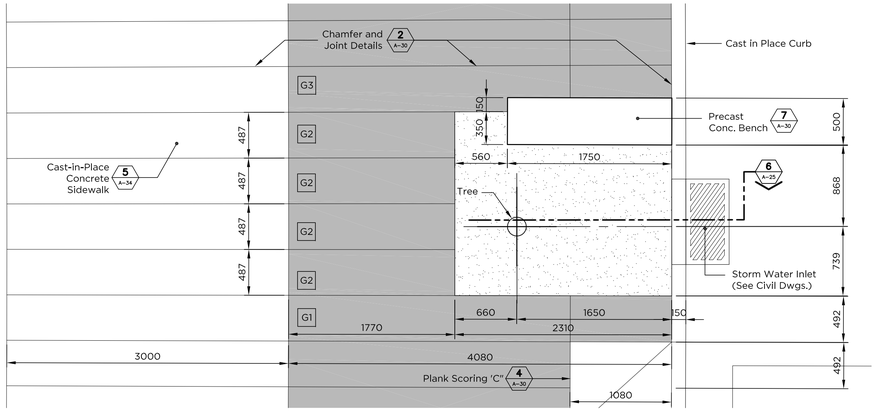
KEY PLAN

BOULEVARD LAYOUT & SIDEWALK PATTERN

DRAWN BY:
REVISED BY:
DATE: OCTOBER 31, 2012

A-20

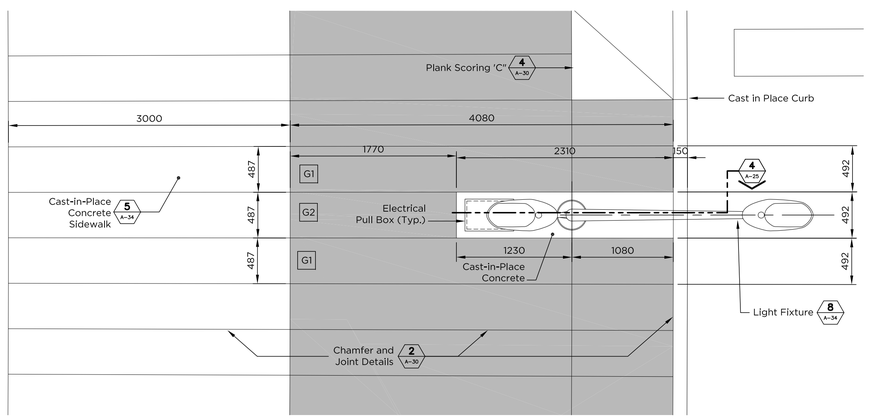
OF



TYPICAL SIDEWALK PAVING PATTERN & LIGHT POLE 1 A-21

Scale:1:30

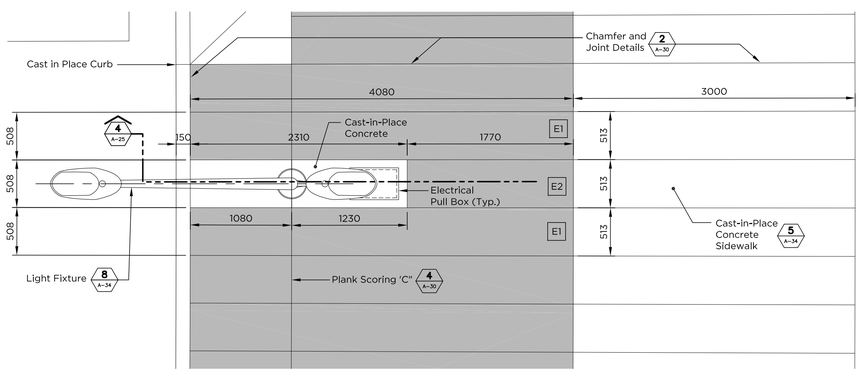
Note:
For Pre-Cast Concrete Plank Type G, Refer to Dwg. A-29



TYPICAL SIDEWALK PAVING PATTERN & LIGHT POLE 2 A-21

Scale:1:30

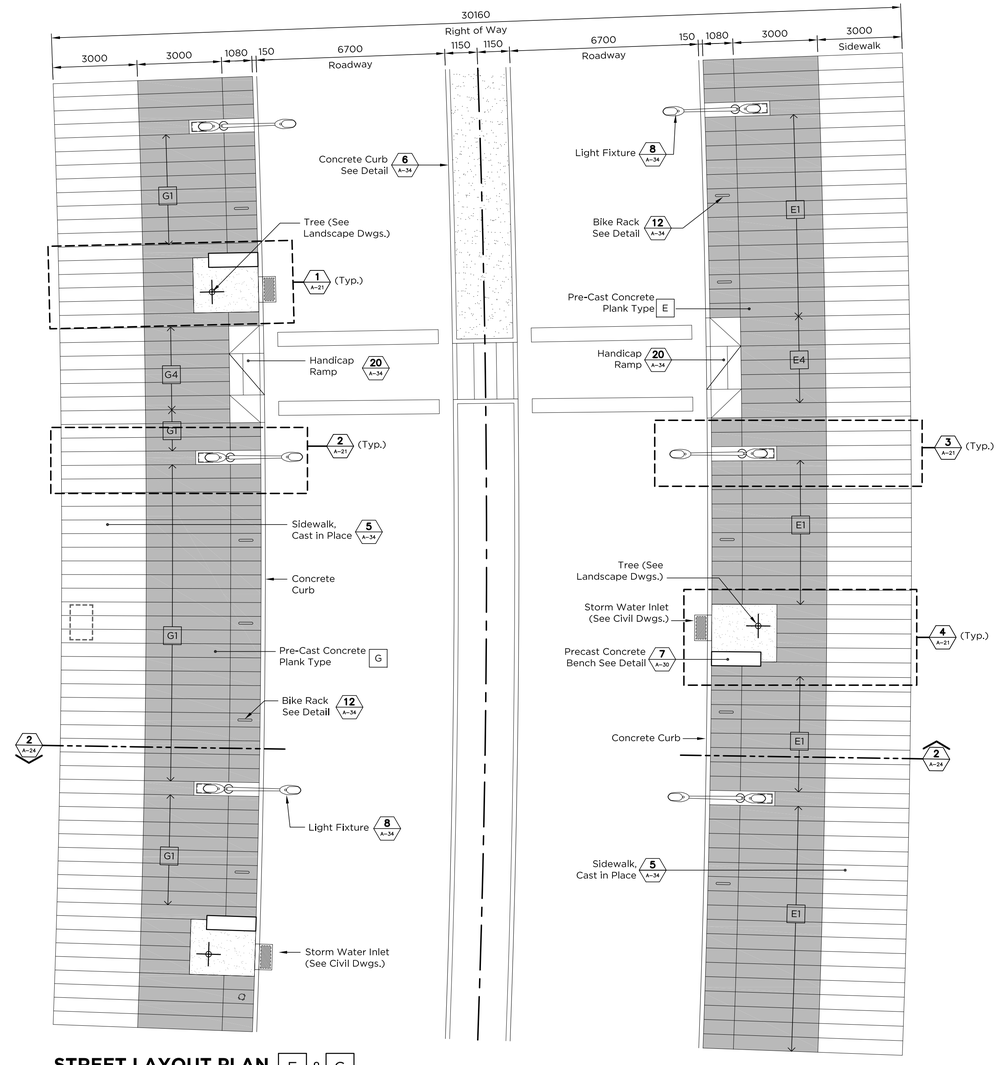
Note:
For Pre-Cast Concrete Plank Type G, Refer to Dwg. A-29



TYPICAL SIDEWALK PAVING PATTERN & LIGHT POLE 3 A-21

Scale:1:30

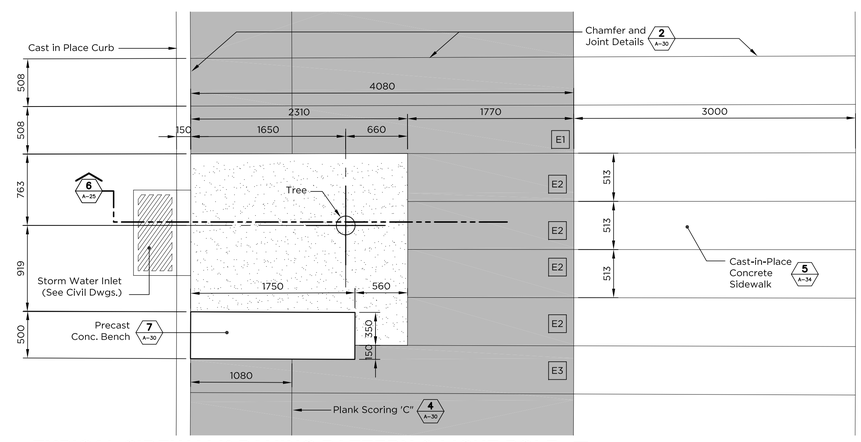
Note:
For Pre-Cast Concrete Plank Type E, Refer to Dwg. A-28



STREET LAYOUT PLAN E & G

Scale: 1:100

Note:
Refer to Geometrical Layout Plans in Civil Dwgs.



TYPICAL SIDEWALK PAVING PATTERN & LIGHT POLE 4 A-21

Scale:1:30

Note:
For Pre-Cast Concrete Plank Type E, Refer to Dwg. A-28

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

SEGMENT WEST OF PR-18
SAN JUAN, PUERTO RICO

TORO ARQUITECTOS
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archUD DESIGN

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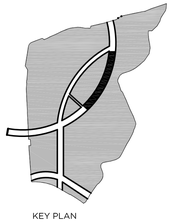
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013



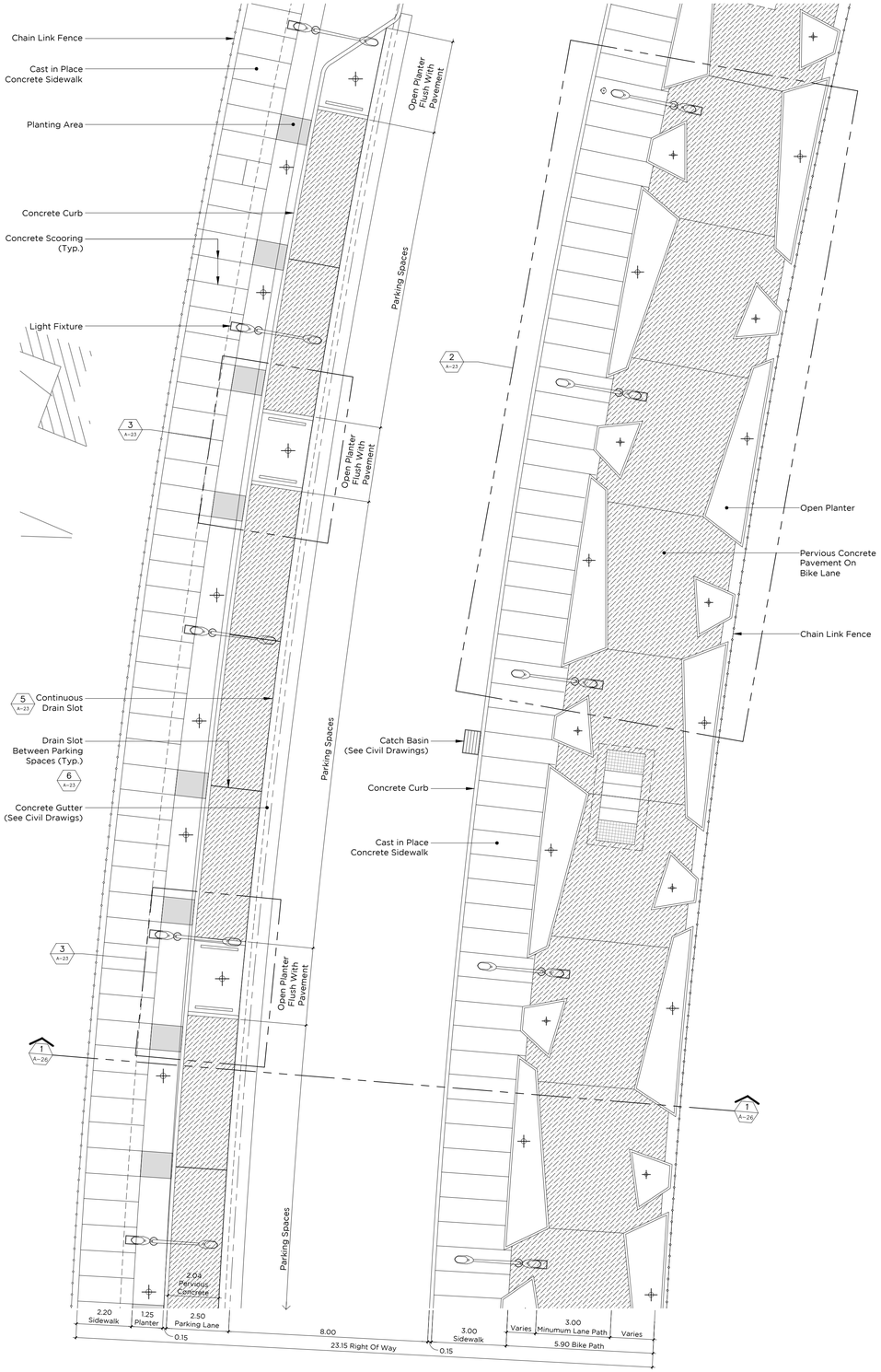
KEY PLAN

BOULEVARD LAYOUT & SIDEWALK PATTERN

DRAWN BY:
REVISED BY:
DATE: OCTOBER 31, 2012

A-21

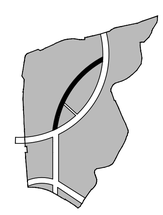
OF



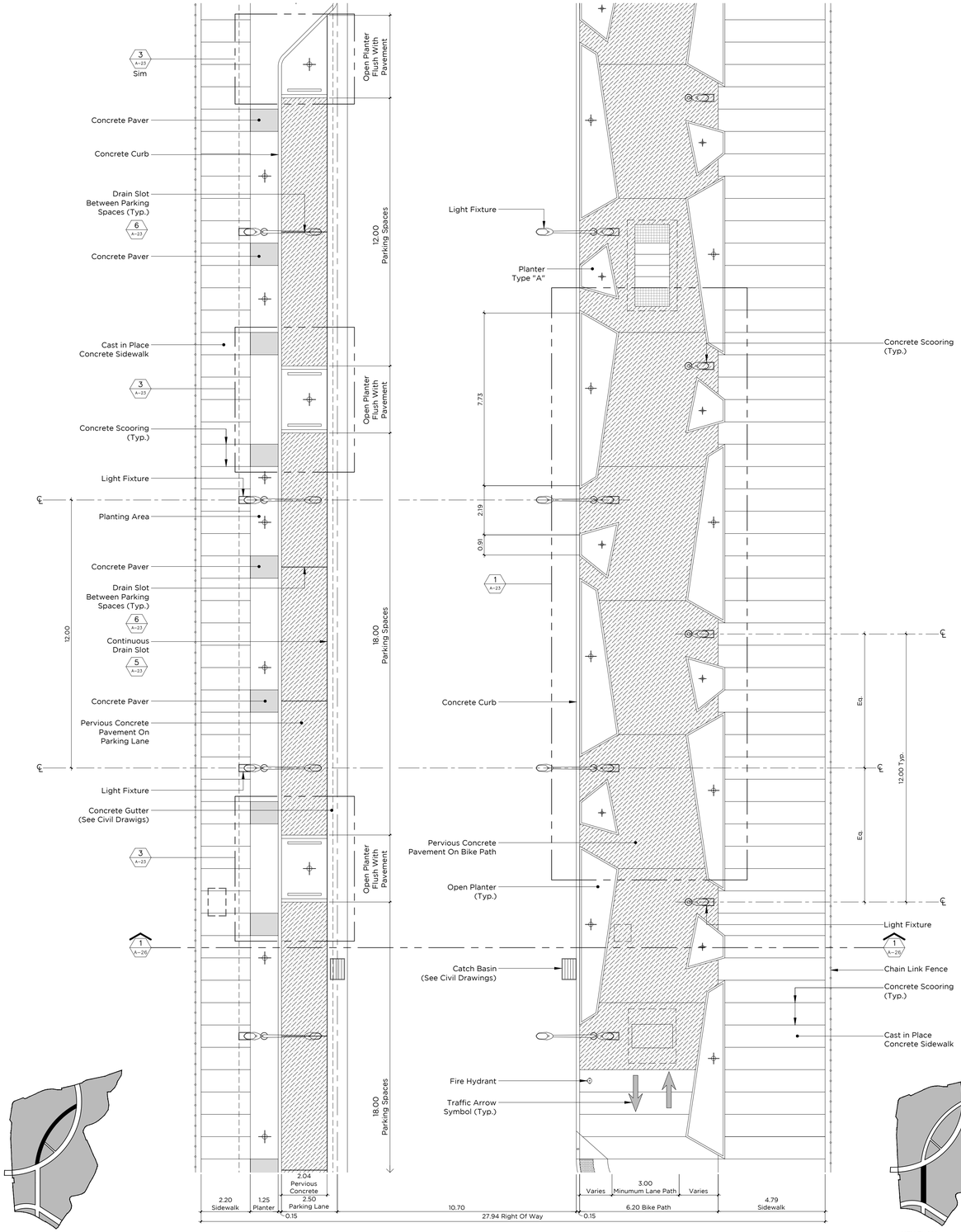
LABORATORY ROAD LAYOUT PLAN

Scale: 1:100

Note:
Refer to Geometrical Layout Plans in Civil Dwgs.

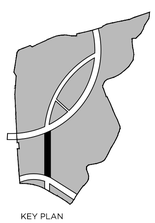


KEY PLAN



MIXED-USE ROAD LAYOUT PLAN

Scale: 1:100



KEY PLAN

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

SEGMENT WEST OF PR-18
SAN JUAN, PUERTO RICO

TORO ARQUITECTOS
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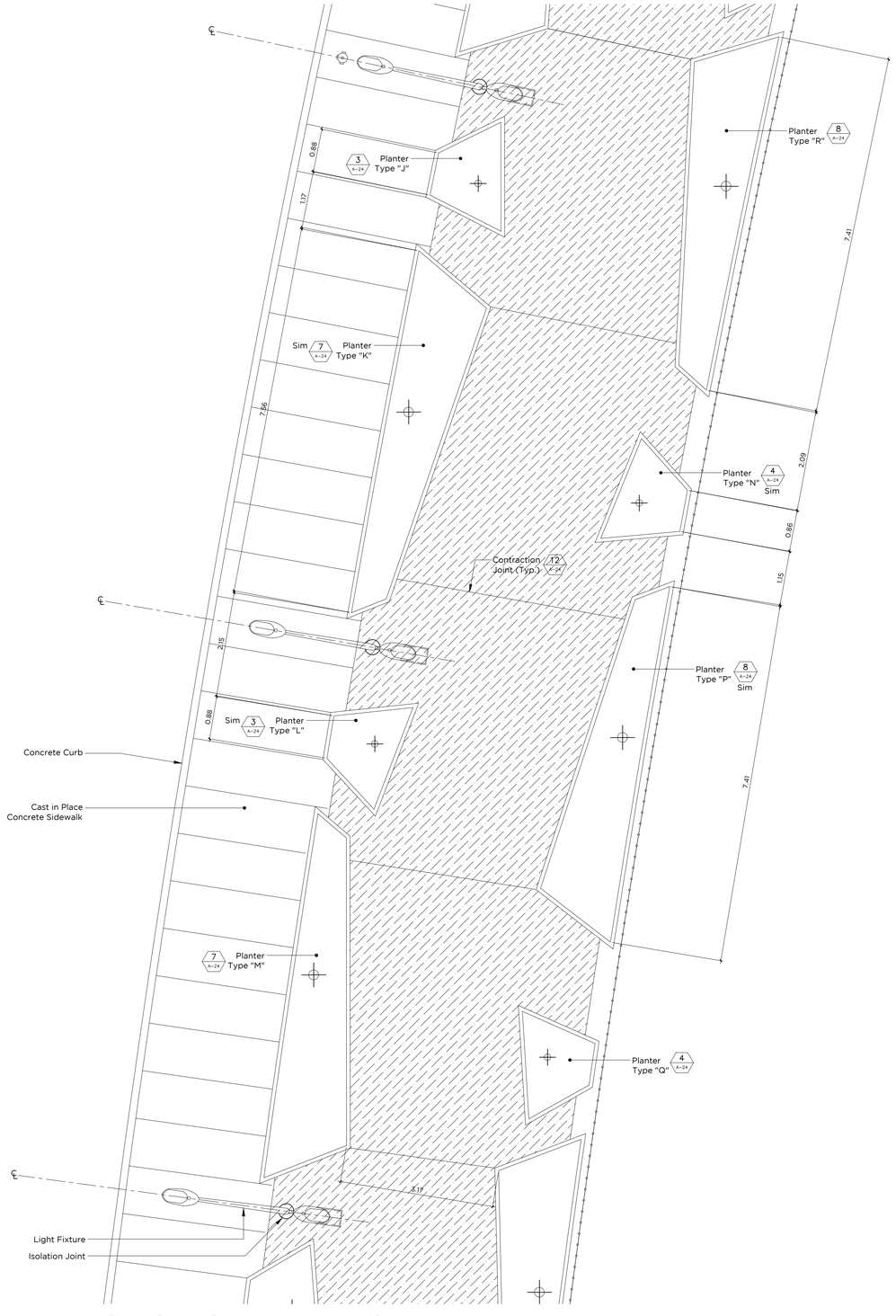
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

TYPICAL LABORATORY ROAD LAYOUT PLAN

DRAWN BY:
REVISED BY:
DATE: MAY 13, 2013

A-22

OF

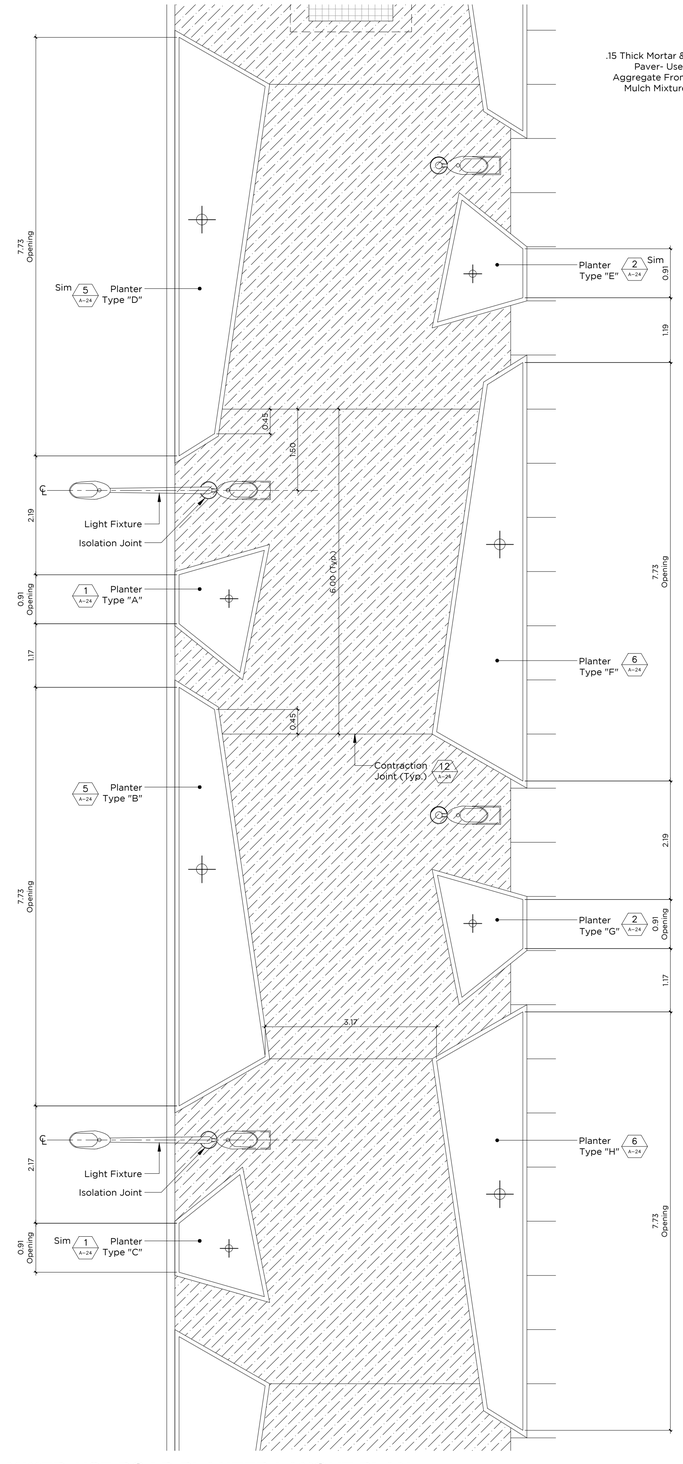


LABORATORY ROAD PLANTER LAYOUT PLAN

1 A-23

Scale: 1:50

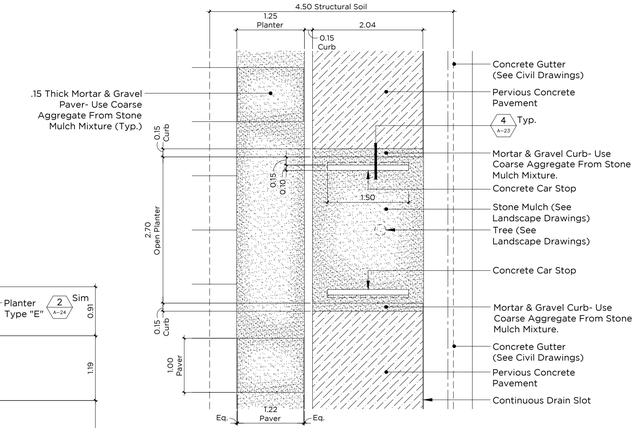
Note:
Refer to Geometrical Layout Plans in Civil Dwgs.



MIXED-USE ROAD PLANTER LAYOUT PLAN

2 A-23

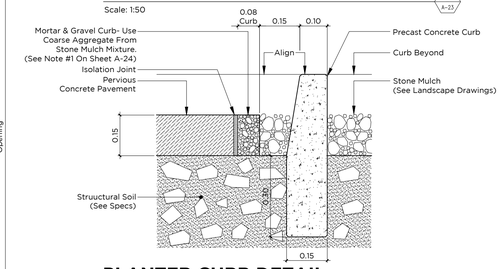
Scale: 1:50



PLANTER CURB DETAIL @ PERVIOUS CONCRETE

3 A-23

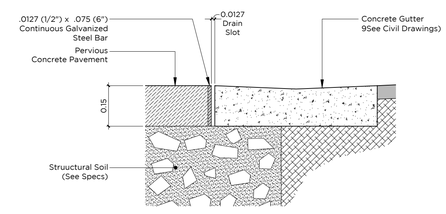
Scale: 1:50



PLANTER CURB DETAIL

4 A-23

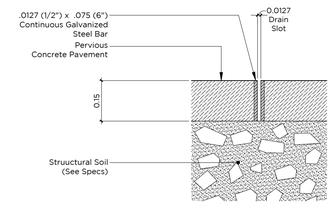
Scale: 1:10



DRAIN SLOT DETAL

5 A-23

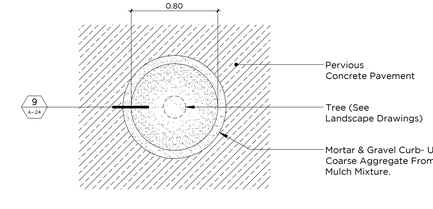
Scale: 1:10



DRAIN SLOT BETWEEN PARKING

6 A-23

Scale: 1:10



CIRCULAR PLANTER DETAIL

7 A-23

Scale: 1:10

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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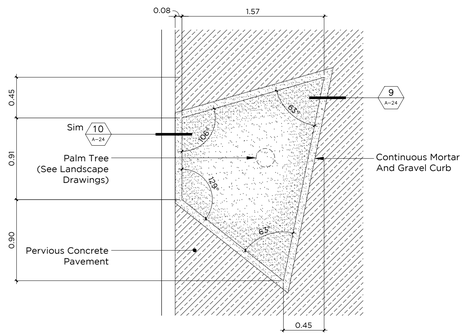
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

PLANTER LAYOUT PLAN AND DETAILS

DRAWN BY:
REVISED BY:
DATE: MAY 13, 2013

A-23

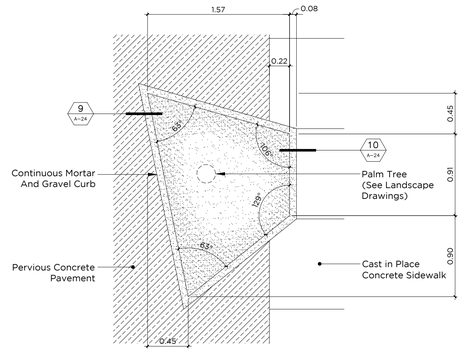
OF



PLANTER TYPE "A" AND "C"

1 A-24

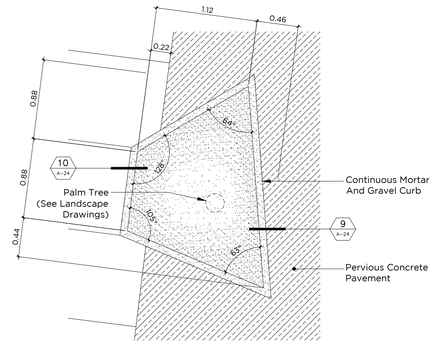
Scale: 1:30



PLANTER TYPE "E" AND "G"

2 A-24

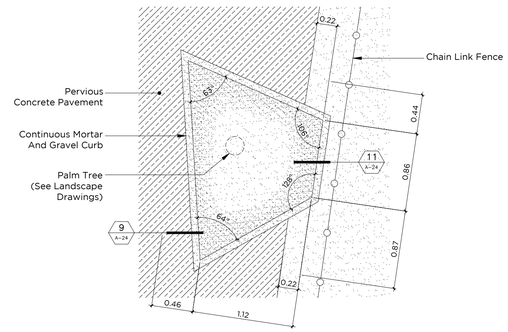
Scale: 1:30



PLANTER TYPE "J" AND "L"

3 A-24

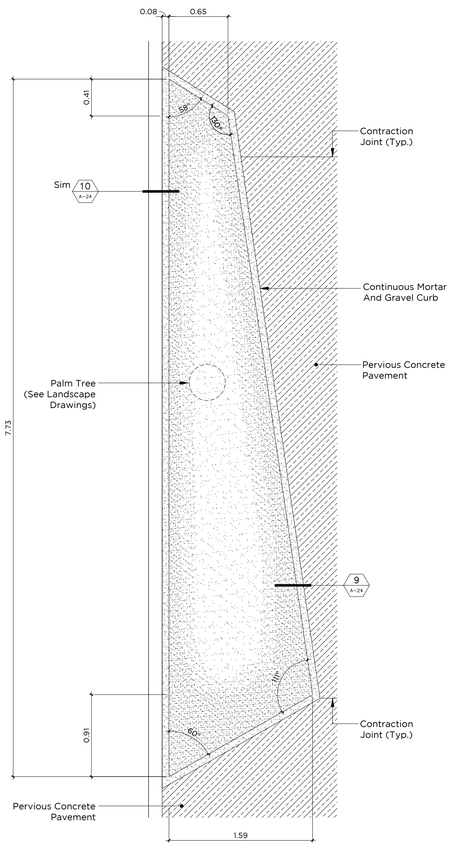
Scale: 1:30



PLANTER TYPE "N" AND "Q"

4 A-24

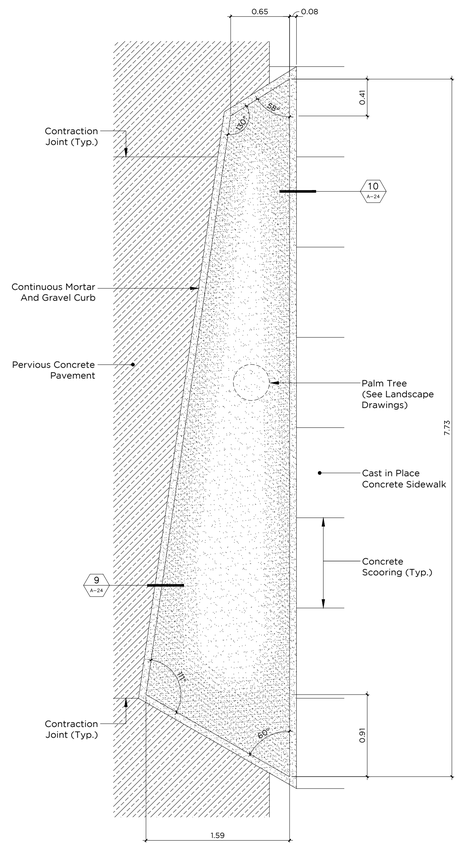
Scale: 1:30



PLANTER TYPE "B" AND "D"

5 A-24

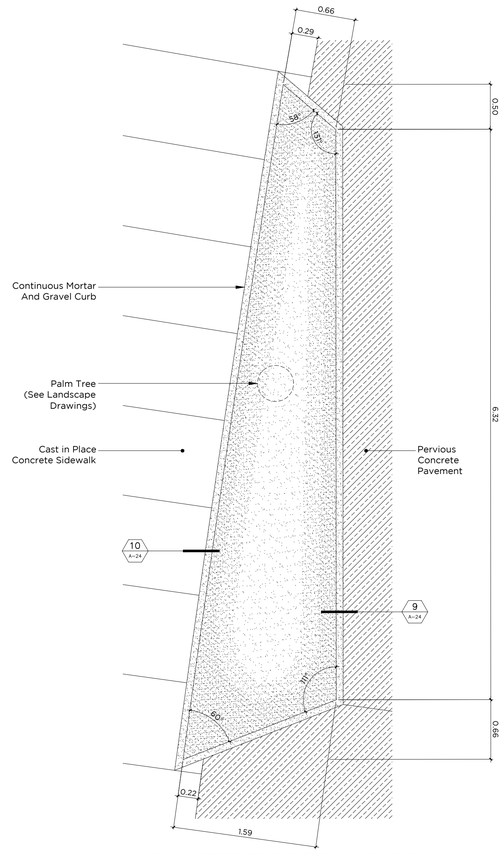
Scale: 1:30



PLANTER TYPE "F" AND "H"

6 A-24

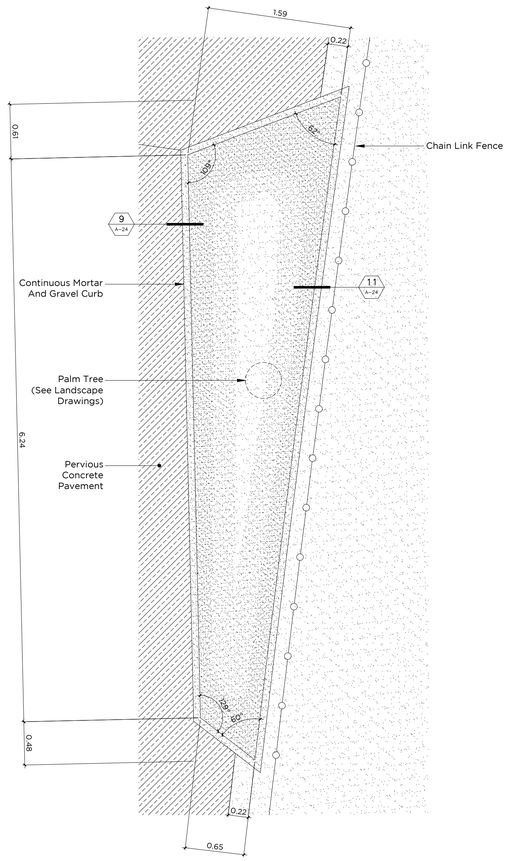
Scale: 1:30



PLANTER TYPE "K" AND "M"

7 A-24

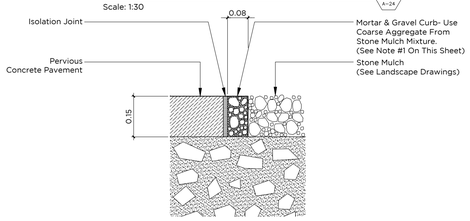
Scale: 1:30



PLANTER TYPE "P" AND "R"

8 A-24

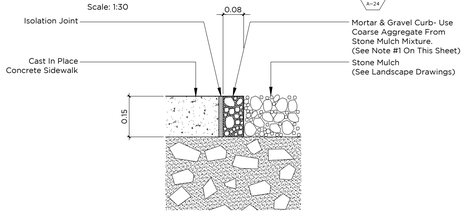
Scale: 1:30



PLANTER CURB DETAIL @ PERVIOUS CONCRETE

9 A-24

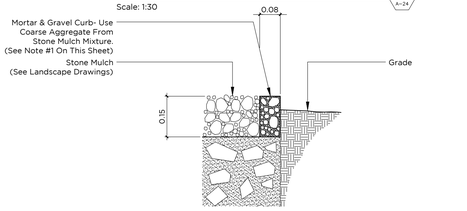
Scale: 1:10



PLANTER CURB DETAIL @ CONCRETE SIDEWALK

10 A-24

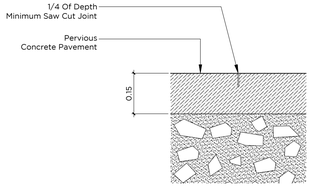
Scale: 1:10



PLANTER CURB DETAIL @ CONCRETE SIDEWALK

11 A-24

Scale: 1:10



Note:
Curb Mock-up: Contractor shall perform three (3) 0.60 x .08 curb mock-ups with different aggregate mixtures for final mixture approval:
-Type A: ASTM #57 or ASTM #67 Coarse Crushed Stone
-Type B: Combination of equal parts ASTM #57 AND ASTM#67 Coarse Crushed Stone
-Type C: Combination of equal parts ASTM #8 Medium Crushed Stone (washed), ASTM#57 and ASTM #67

TYPICAL CONTRACTOR JOINT @ PERVIOUS CONCRETE

12 A-24

Scale: 1:10

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

SEGMENT WEST OF PR-18
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TORO ARQUITECTOS
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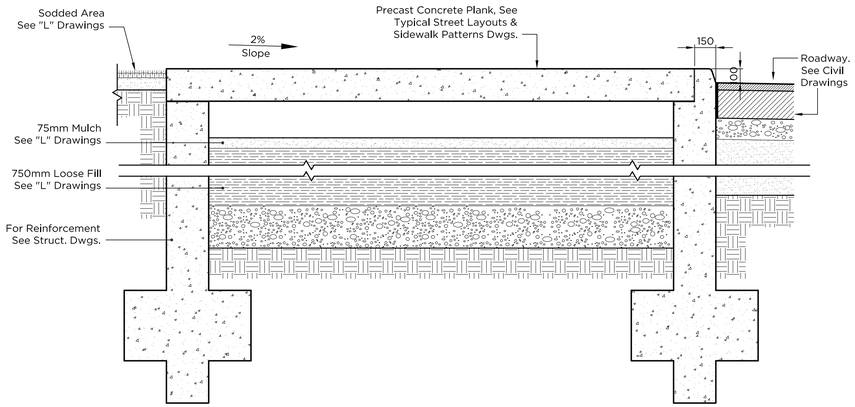
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

PLANTER DETAILS

DRAWN BY:
REVISED BY:
DATE: MAY 13, 2013

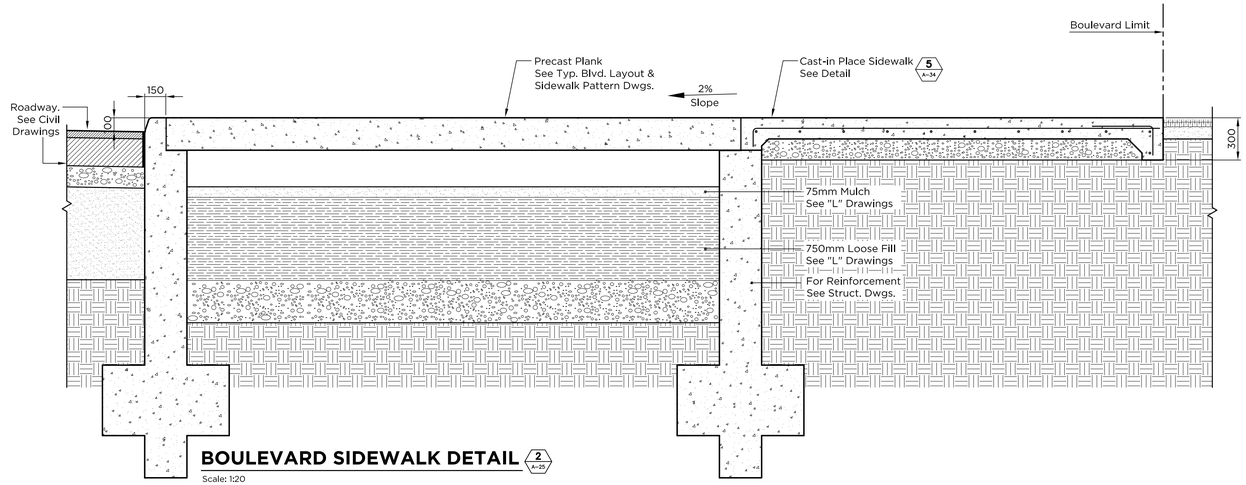
A-24

OF



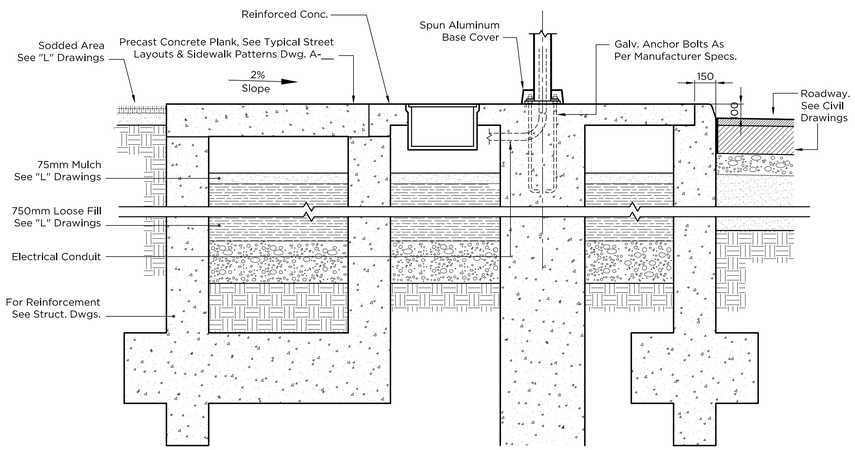
BOULEVARD SIDEWALK DETAIL (1 / A-25)

Scale: 1:20



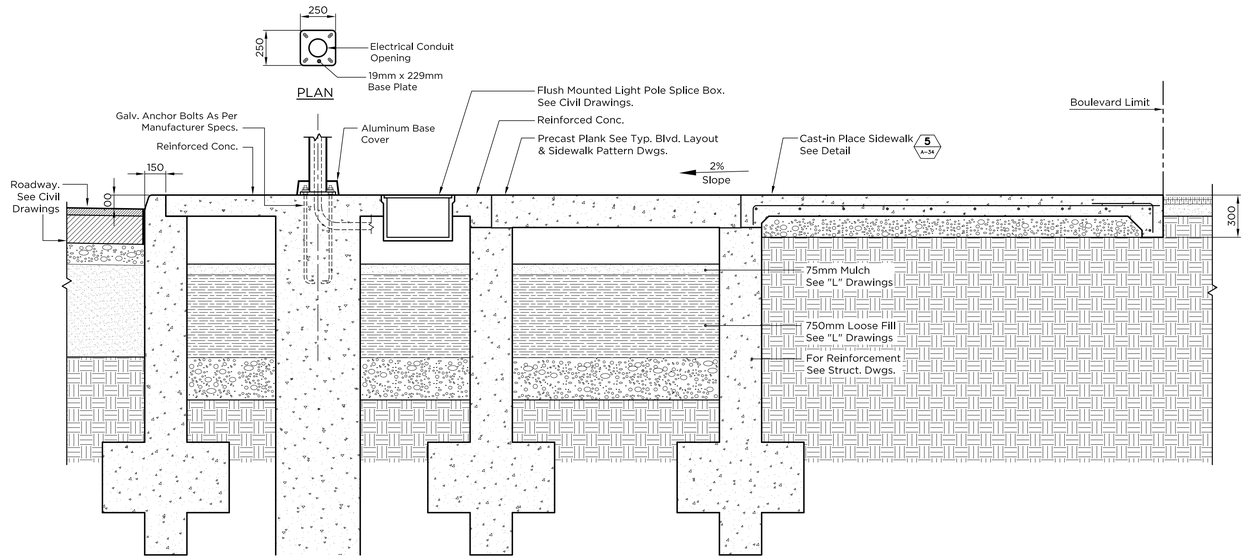
BOULEVARD SIDEWALK DETAIL (2 / A-25)

Scale: 1:20



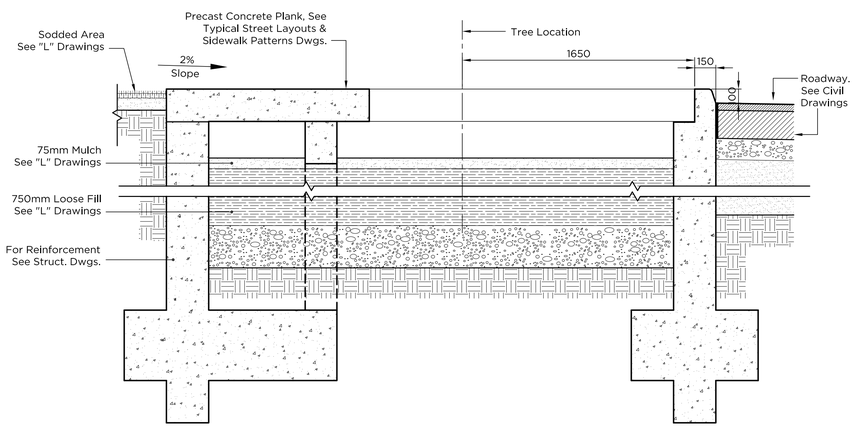
BOULEVARD LIGHT POLE BASE DETAIL (3 / A-25)

Scale: 1:20



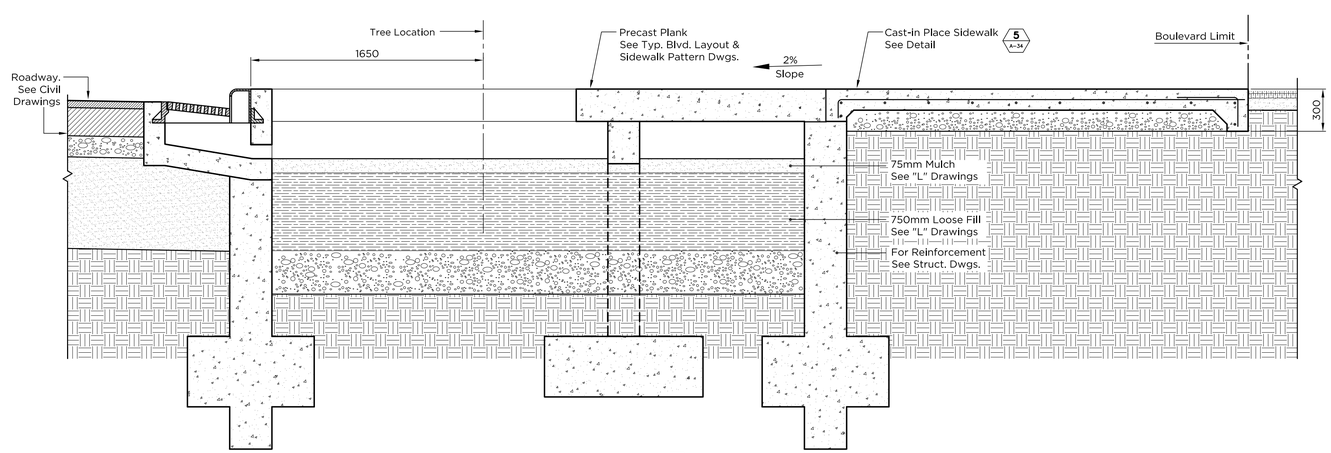
BOULEVARD LIGHT POLE BASE DETAIL (4 / A-25)

Scale: 1:20



BOULEVARD TREE PLANTER DETAIL (5 / A-25)

Scale: 1:20



BOULEVARD TREE PLANTER DETAIL (6 / A-25)

Scale: 1:20

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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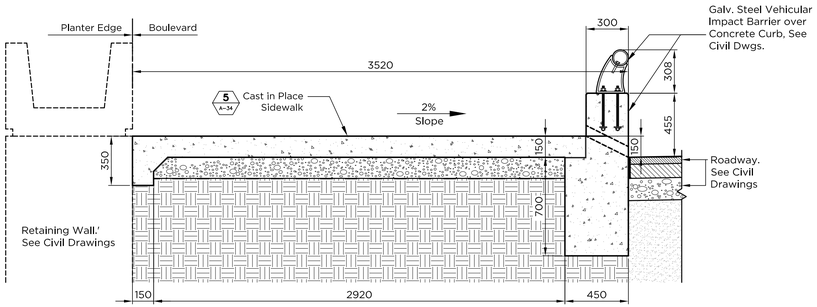
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

BOULEVARD SIDEWALK DETAILS

DRAWN BY:
REVISED BY:
DATE: OCTOBER 31, 2012

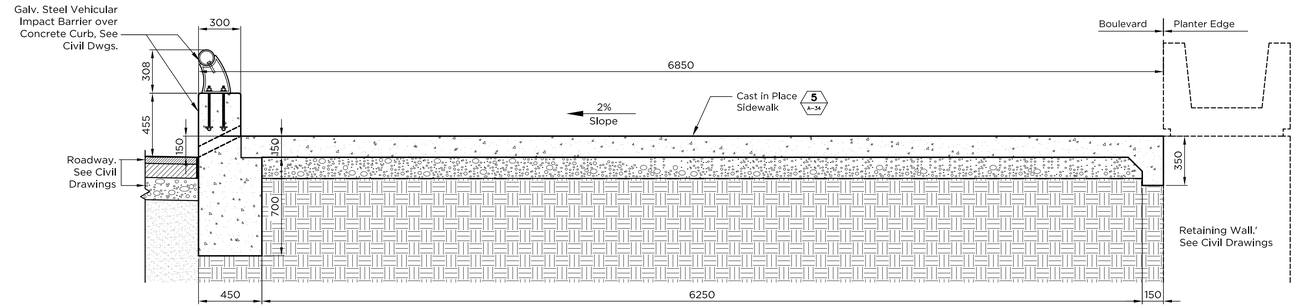
A-25

OF



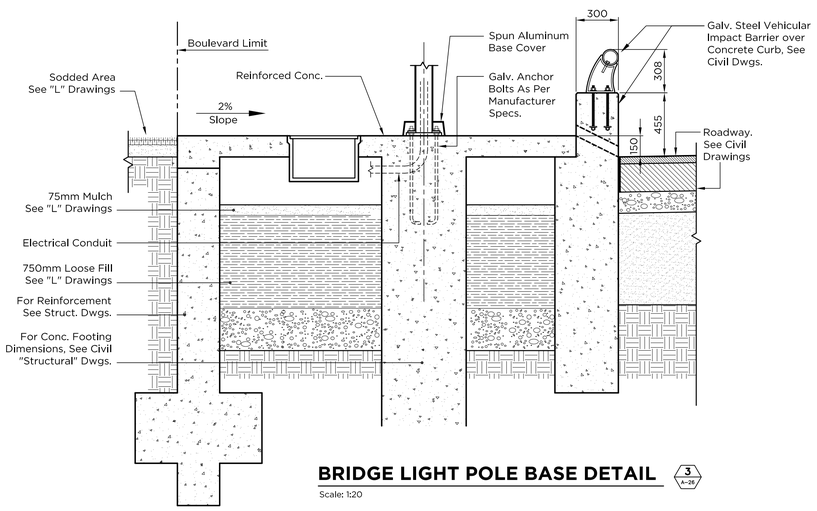
BRIDGE SIDEWALK DETAIL 1 A-26

Scale: 1:20



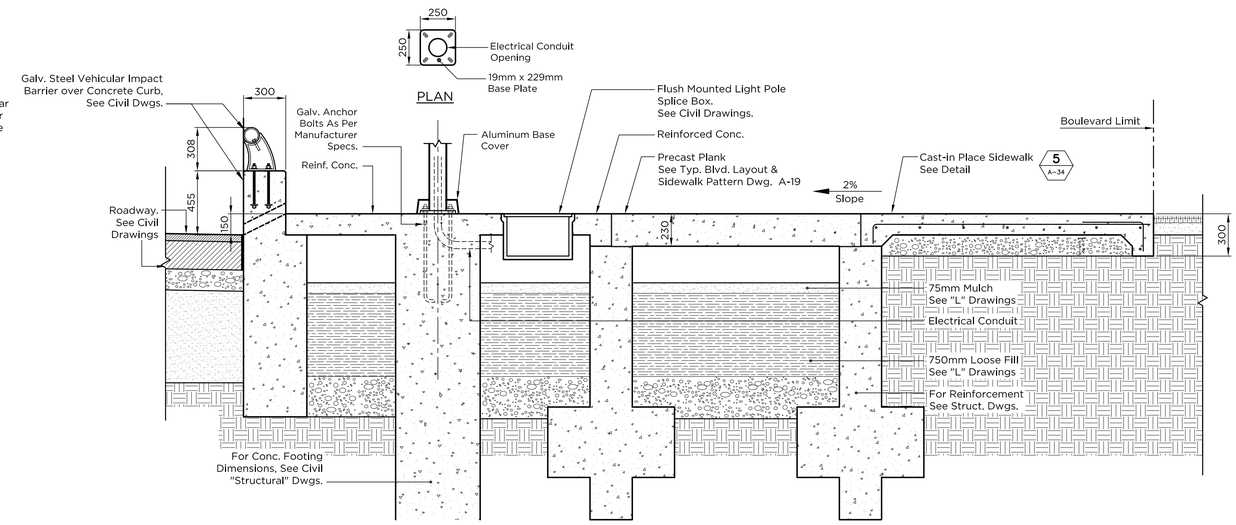
BRIDGE SIDEWALK DETAIL 2 A-26

Scale: 1:20



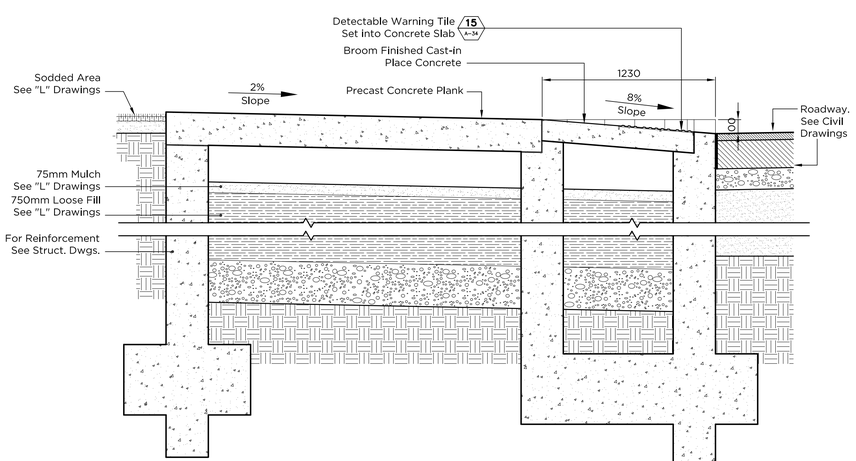
BRIDGE LIGHT POLE BASE DETAIL 3 A-26

Scale: 1:20



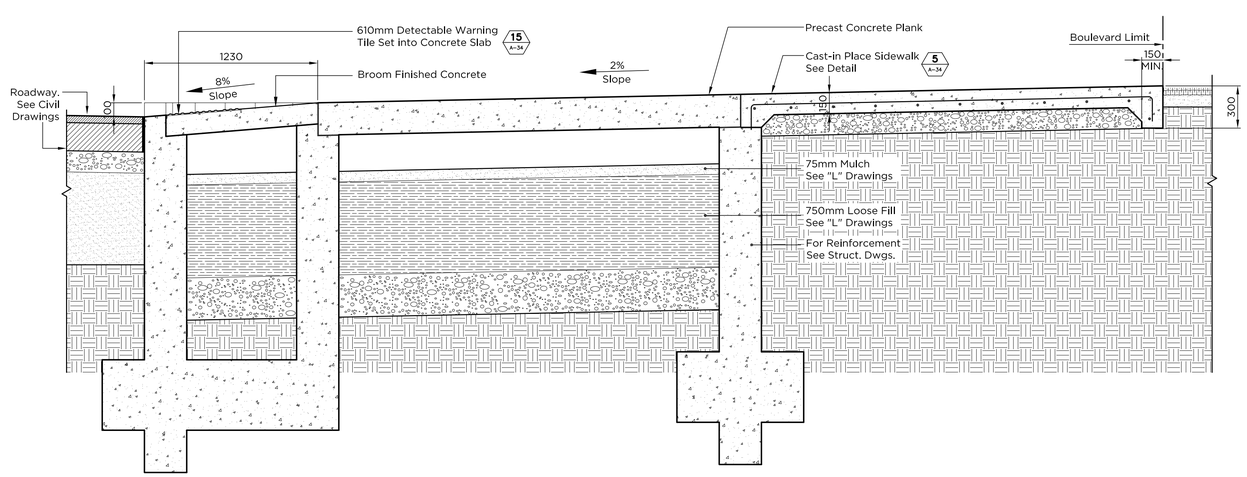
BRIDGE LIGHT POLE BASE DETAIL 4 A-

Scale: 1:20



BOULEVARD MID-BLOCK HANDICAP RAMP DETAIL 5 A-26

Scale: 1:20



BOULEVARD MID-BLOCK HANDICAP RAMP DETAIL 6 A-26

Scale: 1:20

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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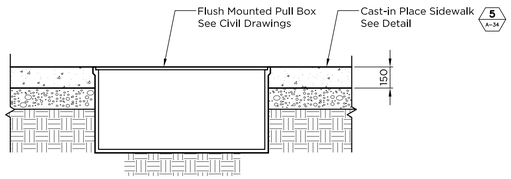
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

BOULEVARD SIDEWALK DETAILS

DRAWN BY:
REVISED BY:
DATE: OCTOBER 31, 2012

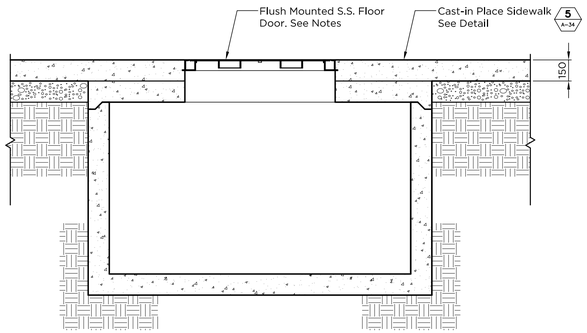
A-26

OF



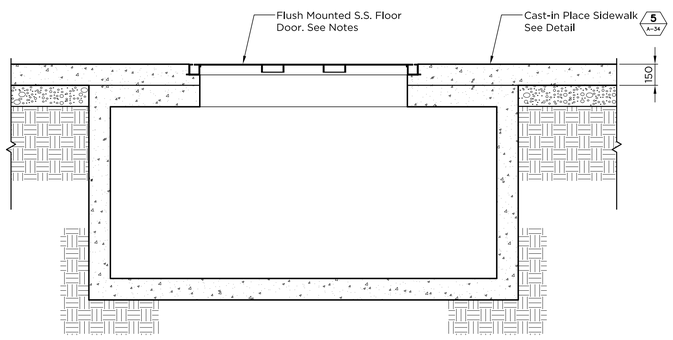
CABLE TV PULL BOX DETAIL (1 / A-27)

Scale: 1:20



TELEPHONE PULL BOX DETAIL (2 / A-27)

Scale: 1:20

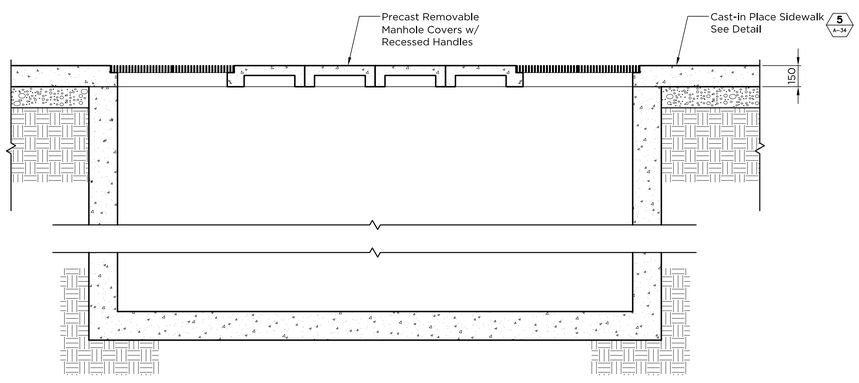


Note:

1. All Floor Door Covers Shall Be Installed Flush With Sidewalk.
2. Coordinate Elevation of Water and Telephone Pull Boxes so that .15m Thick Sidewalk can be Cast Over Box. Additional Thickness Shall be Considered for Sidewalk Slope.
3. Align Pull Box with Proposed Location of Floor Doors. Provide Pull Box Top Opening as Required to Match Floor Door.
4. Telecommunication's Floor Door shall be 1.07 x 1.37 Stainless Steel Double Door Flush Mounted Cover Model FD-D-H-S-42" x 54"-D by NYSTROM with Pull Handles and Lock. Cover shall comply with the latest J.R.T.P.R. Standard.
5. Water Meter Floor Door shall be 0.71 x 1.63 Stainless Steel Single Door Flush Mounted Cover Model FD-D-H-S-28" x 64"-S by NYSTROM. Floor shall comply with the latest P.R.A.S.A. Standard.

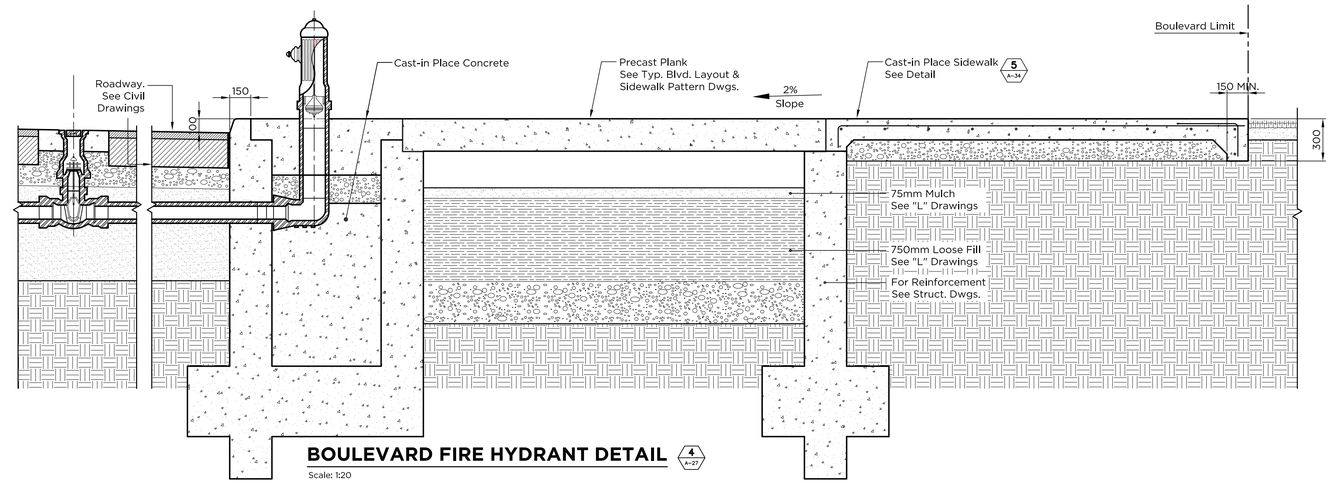
WATER METER PULL BOX DETAIL (3 / A-27)

Scale: 1:20



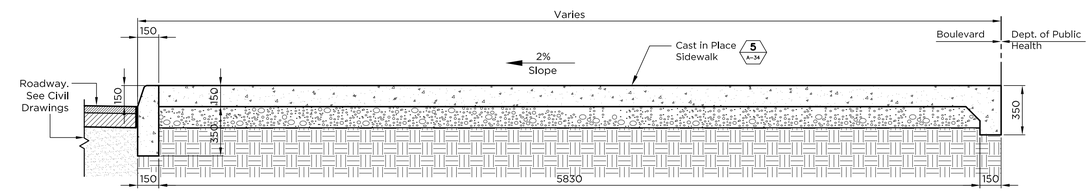
SUBMERSIBLE TRANSFORMER DETAIL (3B / A-27)

Scale: 1:20



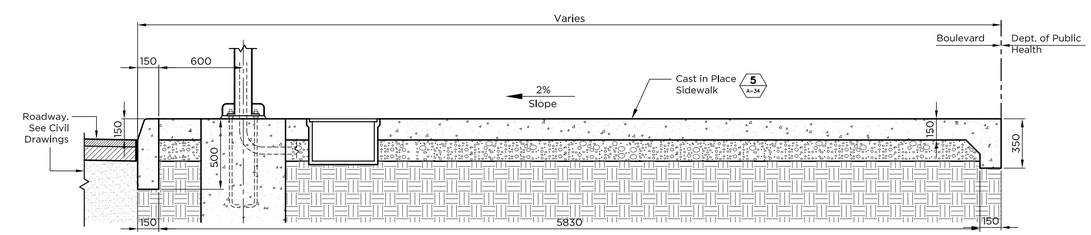
BOULEVARD FIRE HYDRANT DETAIL (4 / A-27)

Scale: 1:20



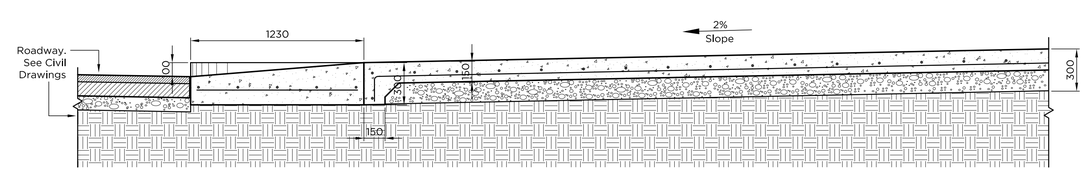
TYPICAL CONCRETE SIDEWALK DETAIL (5 / A-27)

Scale: 1:20



LIIGHT POLE BASE DETAIL (6 / A-27)

Scale: 1:20



CONCRETE CURB/DRIVEWAY DETAIL (7 / A-27)

Scale: 1:20

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

SEGMENT WEST OF PR-18
SAN JUAN, PUERTO RICO

TORO ARQUITECTOS
AVENIDA McLEARY 2004
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archUD DESIGN

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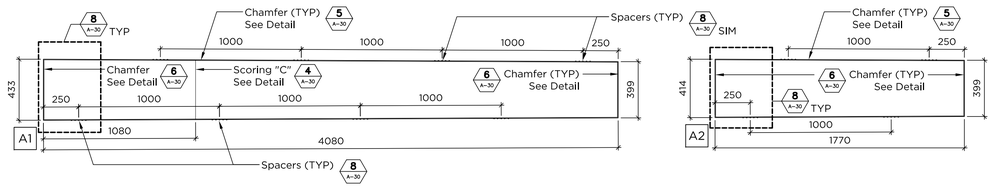
FINAL CONSTRUCTION
DOCUMENTS (100%)
MAY 13, 2013

BOULEVARD SIDEWALK DETAILS

DRAWN BY:
REVISED BY:
DATE: OCTOBER 31, 2012

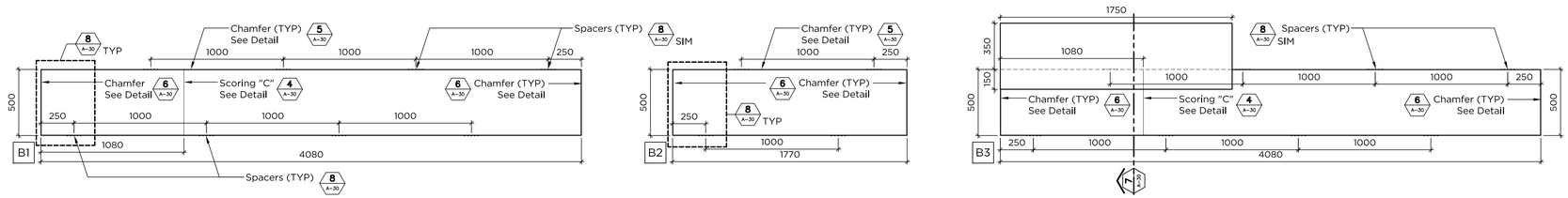
A-27

OF



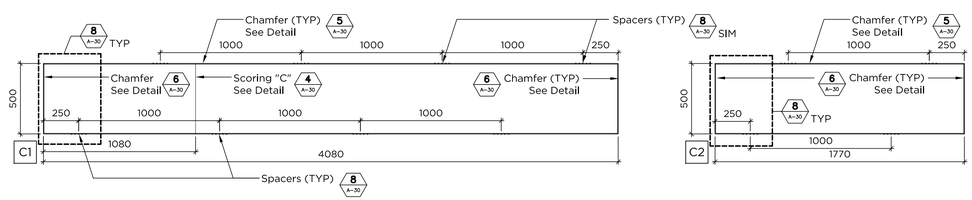
A RADIAL PRECAST CONC. PLANKS

Scale: 1:20



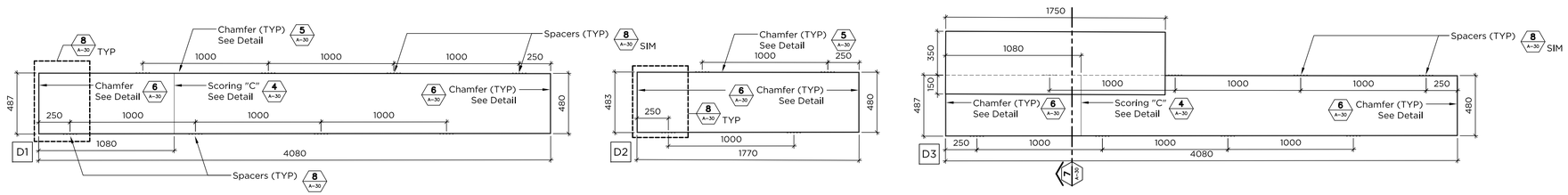
B PRECAST CONC. PLANKS

Scale: 1:20



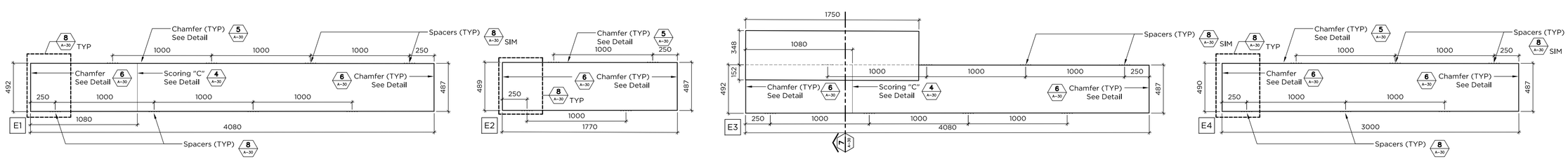
C PRECAST CONC. PLANKS

Scale: 1:20



D RADIAL PRECAST CONC. PLANKS

Scale: 1:20



E RADIAL PRECAST CONC. PLANKS

Scale: 1:20

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

SEGMENT WEST OF PR-18
SAN JUAN, PUERTO RICO

TORO ARQUITECTOS
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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

PRE-CAST CONCRETE PLANKS

DRAWN BY:
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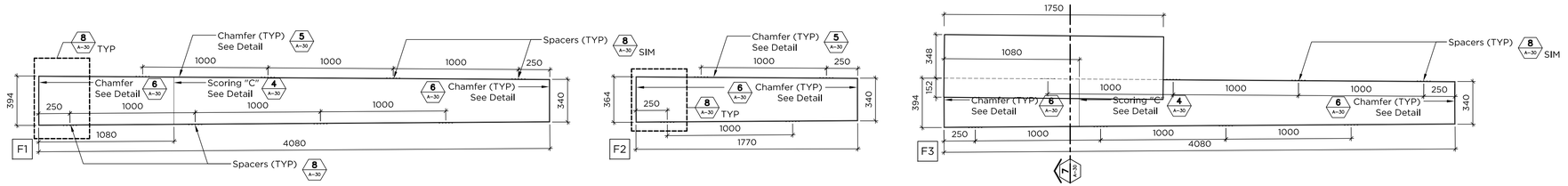
DATE: OCTOBER 31, 2012

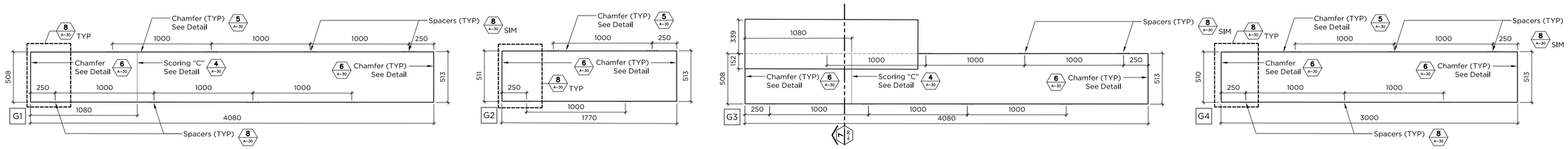
A-28

OF



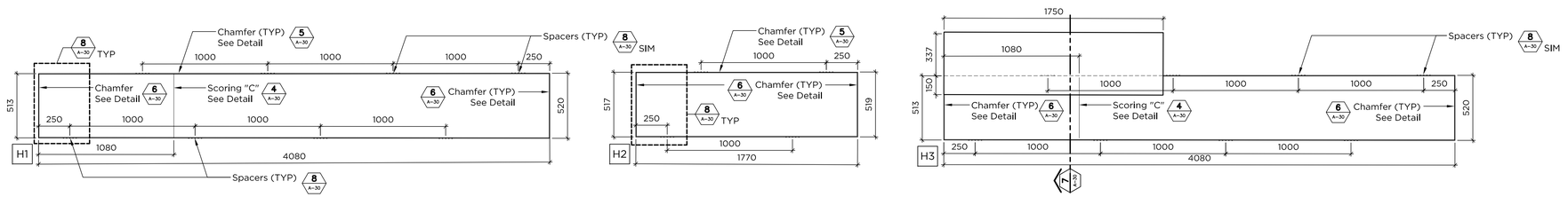
F RADIAL PRECAST CONC. PLANKS

Scale: 1:20



G RADIAL PRECAST CONC. PLANKS

Scale: 1:20



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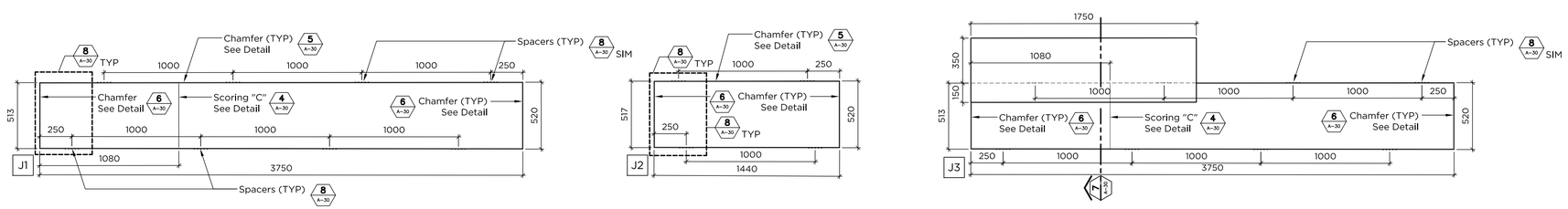
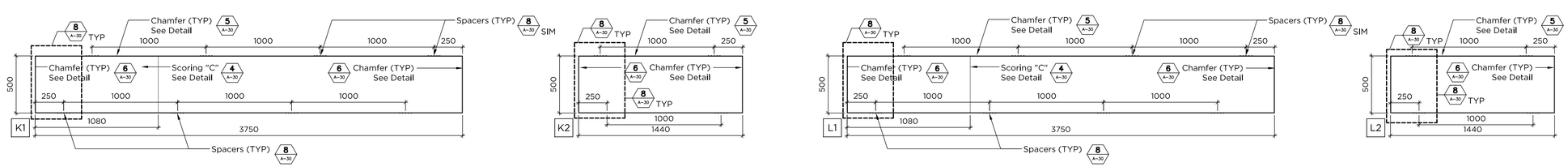


J RADIAL PRECAST CONC. PLANKS

Scale: 1:20



K PRECAST CONC. PLANKS

Scale: 1:20

L PRECAST CONC. PLANKS

Scale: 1:20

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

SEGMENT WEST OF PR-18
SAN JUAN, PUERTO RICO

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FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

PRE-CAST CONCRETE PLANKS

DRAWN BY:
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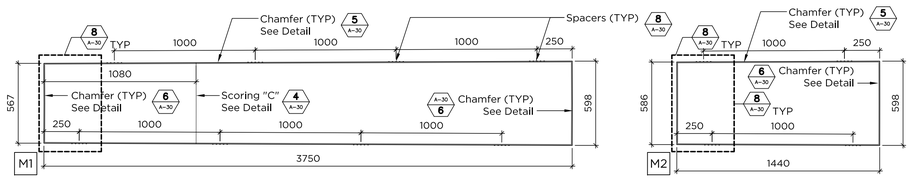
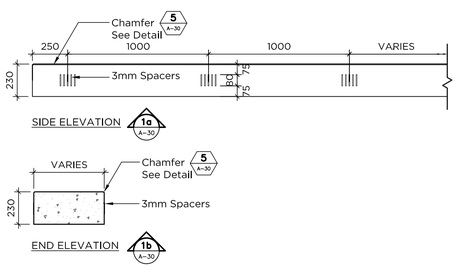
A-29

OF



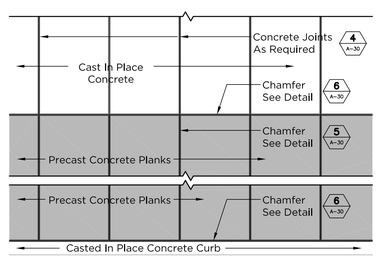
M RADIAL PRECAST CONC. PLANKS

Scale: 1:20



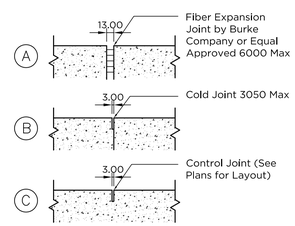
TYP. PRECAST CONC. PLANK DETAILS 1 A-30

Scale: 1:20



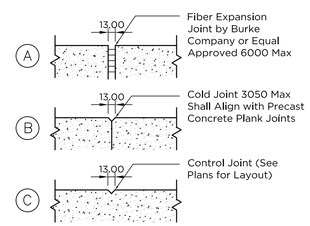
CONC. CHAMFER/ JOINTS CONDITIONS 2 A-30

Scale: 1:20



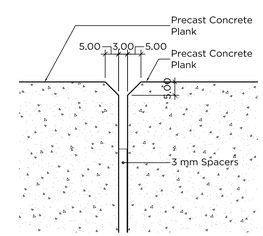
TYP. CONCRETE JOINT DETAILS 3 A-30

Scale: 1:5



CONC. PLANK & CAST IN PLACE JOINT DETAILS 4 A-30

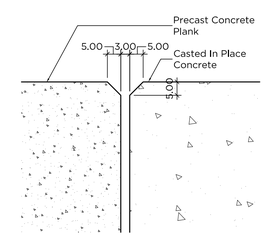
Scale: 1:5



Note: Detail Reflects Joint Conditions Between Precast Conc Plank And Precast Conc. Plank

CHAMFER DETAIL 5 A-30

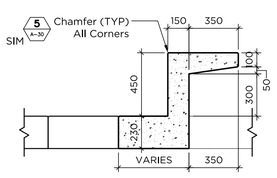
Full Scale



Note: Detail Reflects Joint Conditions Between Precast Conc. Plank And Cast In Place Conc.

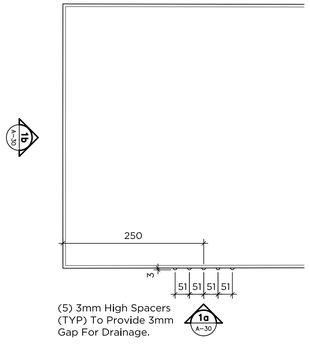
CHAMFER DETAIL 6 A-30

Full Scale



PRECAST CONC. BENCHES 7 A-30

Scale: 1:20



SPACER DETAIL 8 A-30

Scale: 1:5

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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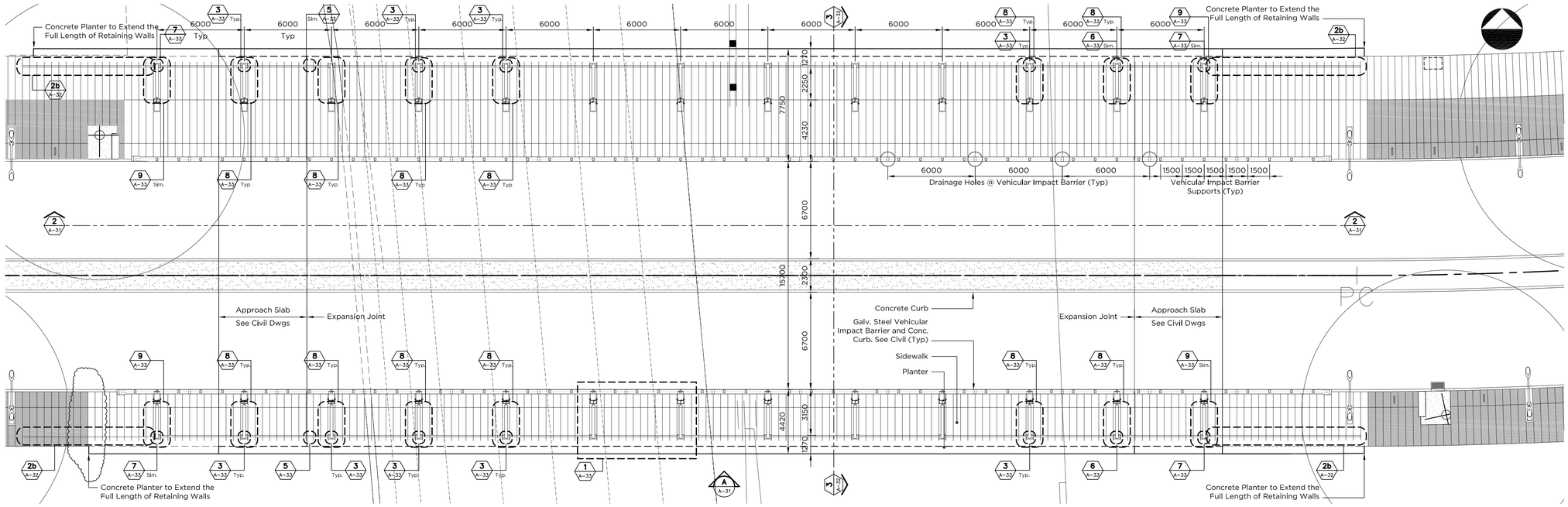
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

PRE-CAST CONCRETE PLANKS & DETAILS

DRAWN BY:
REVISED BY:
DATE: OCTOBER 31, 2012

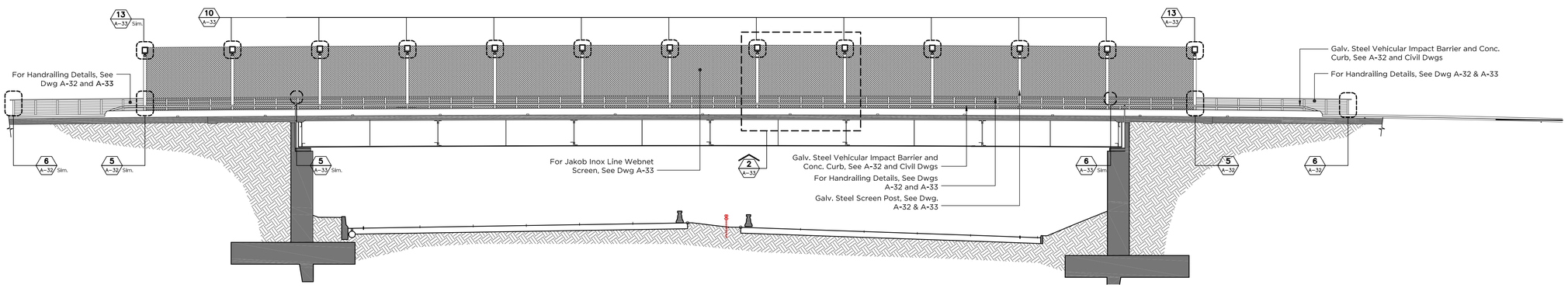
A-30

OF



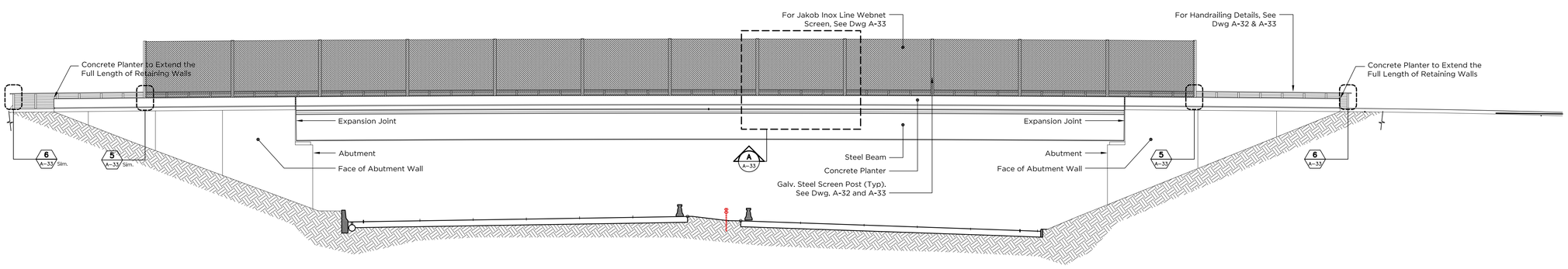
BRIDGE 3 PLAN

Scale: 1:150



BRIDGE 3 LONGITUDINAL SECTION

Scale: 1:150



BRIDGE 3 ELEVATION

Scale: 1:150

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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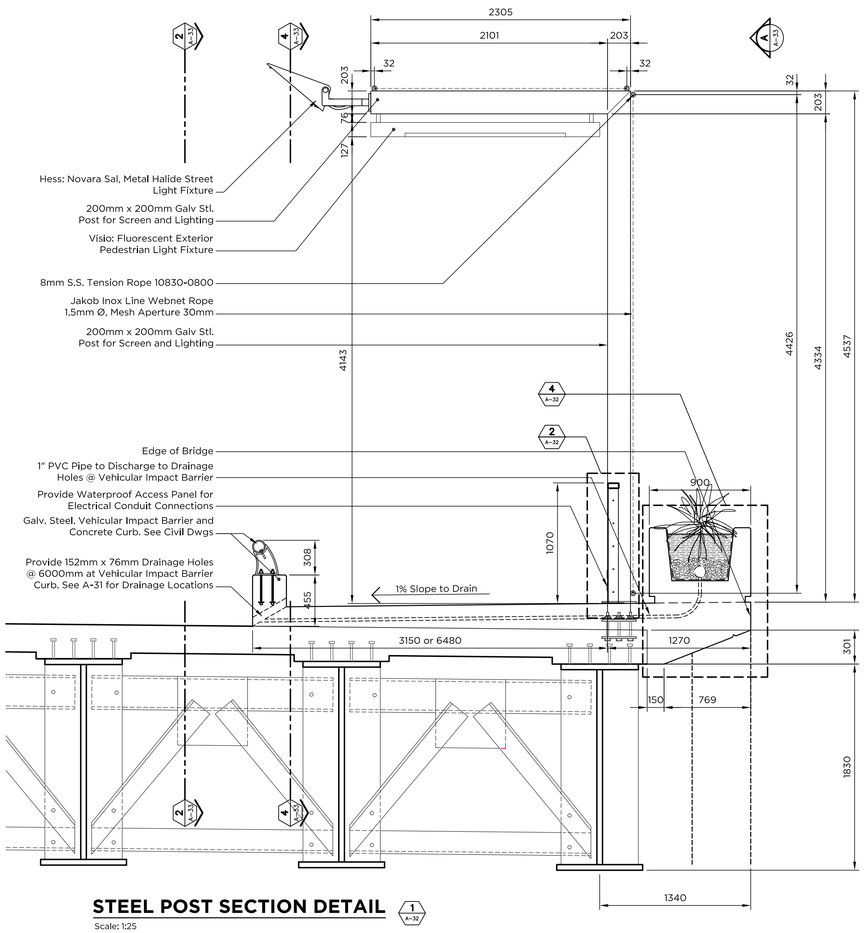
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

BRIDGE 3 PLAN, ELEVATION & SECTION

DRAWN BY:
REVISED BY:
DATE: OCTOBER 31, 2012

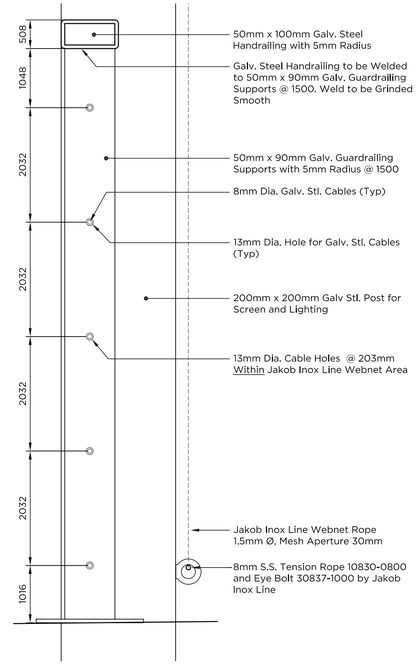
A-31

OF

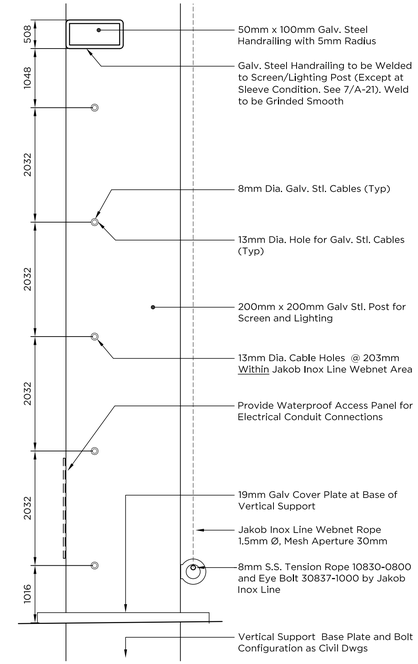


STEEL POST SECTION DETAIL (1 / A-32)

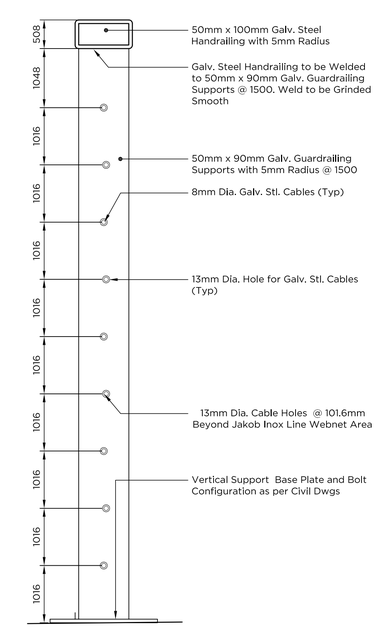
Scale: 1:25



SECTION



SECTION



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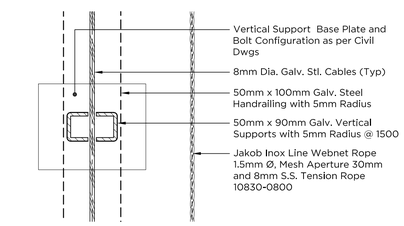
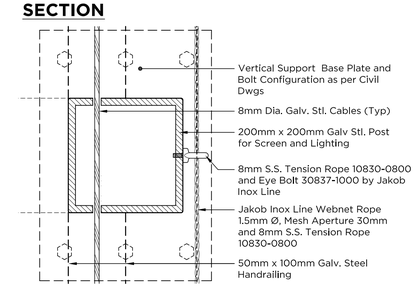


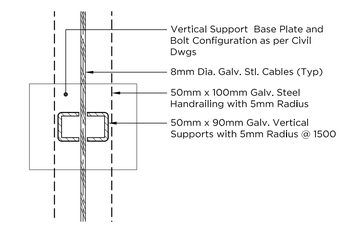
PLAN Within Webnet Area
BRIDGE RAILING DETAIL (2 / A-32)

Scale: 1:5



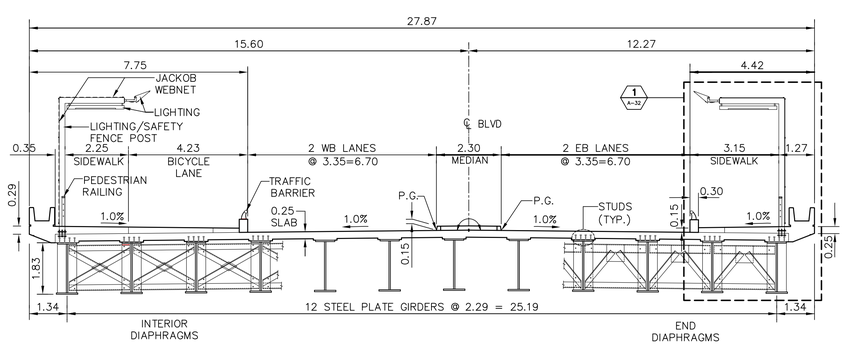
PLAN Within Webnet Area
BRIDGE POST DETAIL (2a / A-32)

Scale: 1:5



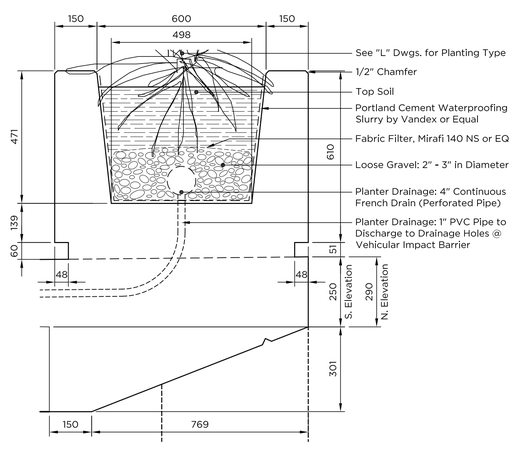
PLAN Beyond Webnet Area
BRIDGE RAILING DETAIL (2b / A-32)

Scale: 1:5



BRIDGE CROSS SECTION (3 / A-32)

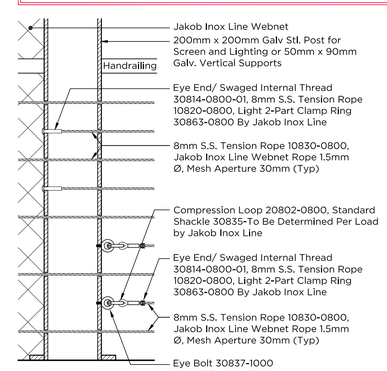
Scale: 1:5



PLANTER DETAIL (4 / A-32)

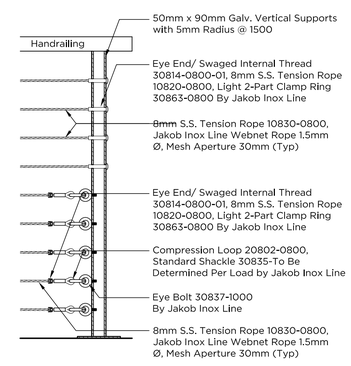
Scale: 1:10

Note: Contract Shall Provide Shop Drawings of Entire Bridge Webnet System. Additional Items and/or Modifications to Contract Drawings such as Turnbuckles, Eye Ends, Sleeves, Diagonal Supports, etc Shall be Determined by Jakob Inc. with Regards to Economy, Durability and Safety.



WEBNET TENSION ROPE TRANSITION (5 / A-32)

Scale: 1:10



WEBNET END CONDITION (6 / A-32)

Scale: 1:10

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

SEGMENT WEST OF PR-18
SAN JUAN, PUERTO RICO

TORO ARQUITECTOS
AVENIDA McLEARY 2004
SAN JUAN, PUERTO RICO 00911
T 787 727 7700 F 787 727 8094

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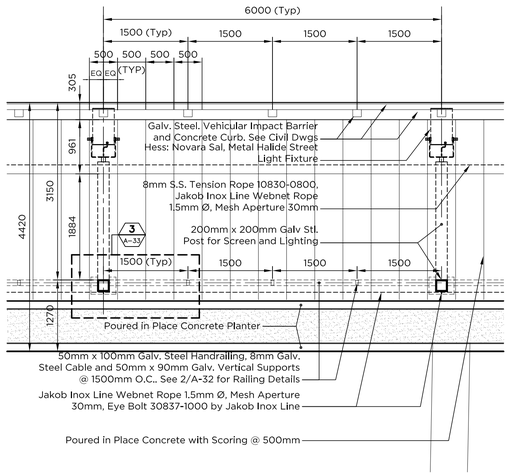
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

BRIDGE 3 SECTIONS & SECTION DETAILS

DRAWN BY:
REVISED BY:
DATE: OCTOBER 31, 2012

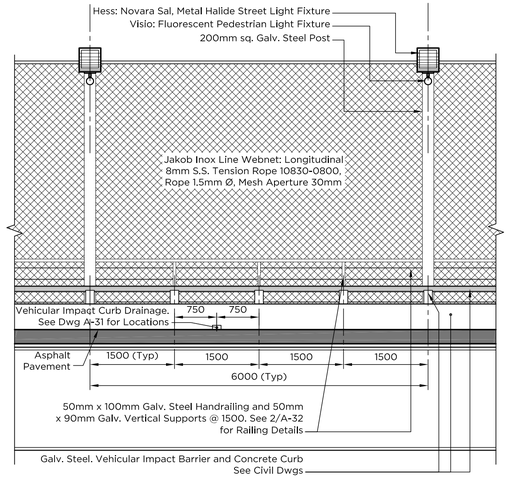
A-32

OF



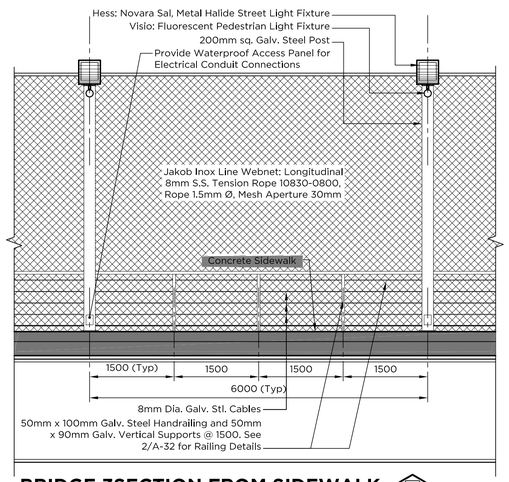
BRIDGE 3 PARTIAL PLAN (1 / A-33)

Scale: 1:50



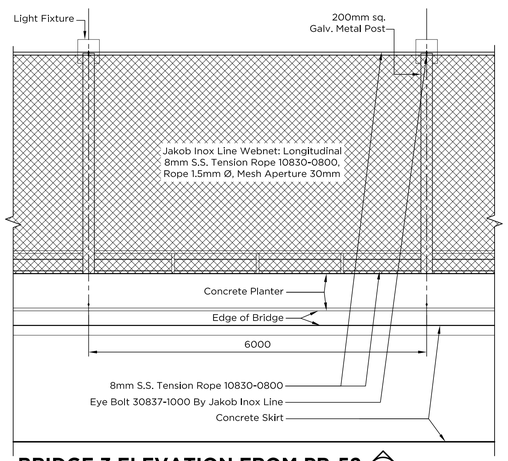
BRIDGE 3 SECTION FROM BOULEVARD (2 / A-33)

Scale: 1:50



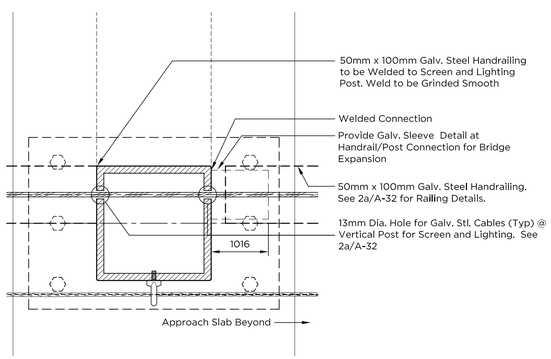
BRIDGE 3SECTION FROM SIDEWALK (4 / A-33)

Scale: 1:50



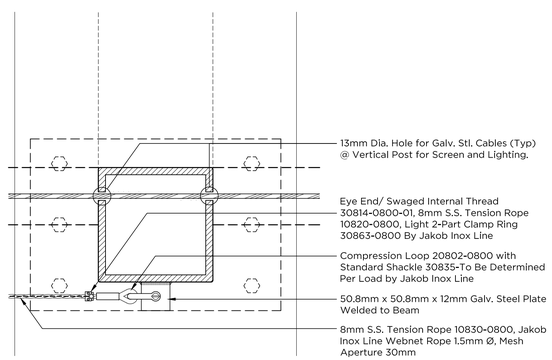
BRIDGE 3 ELEVATION FROM PR-52 (A / A-33)

Scale: 1:50



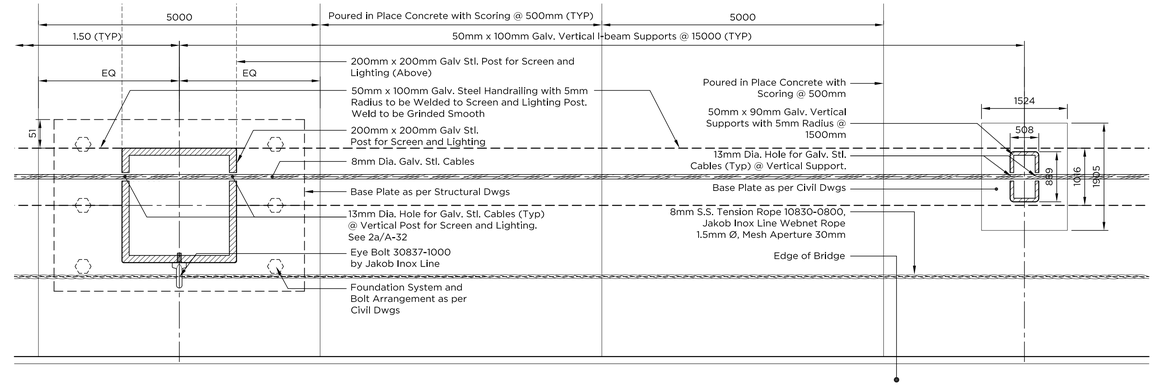
BRIDGE 3 PARTIAL PLAN (END) (6 / A-33)

Scale: 1:5



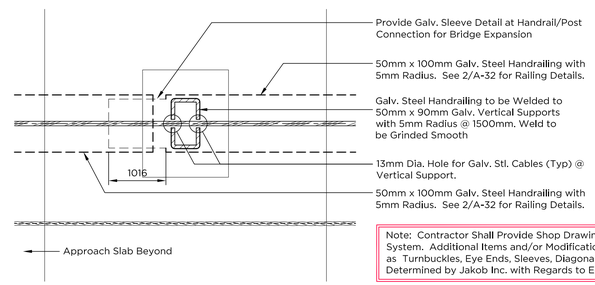
BRIDGE 3 PARTIAL PLAN (END) (7 / A-33)

Scale: 1:5



BRIDGE 3 PARTIAL PLAN (TYPICAL) (3 / A-33)

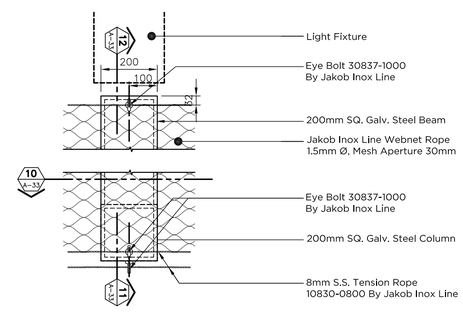
Scale: 1:5



Note: Contractor Shall Provide Shop Drawings of Entire Bridge Webnet System. Additional Items and/or Modifications to Contract Drawings such as Turnbuckles, Eye Ends, Sleeves, Diagonal Supports, etc Shall be Determined by Jakob Inc. with Regards to Economy, Durability and Safety.

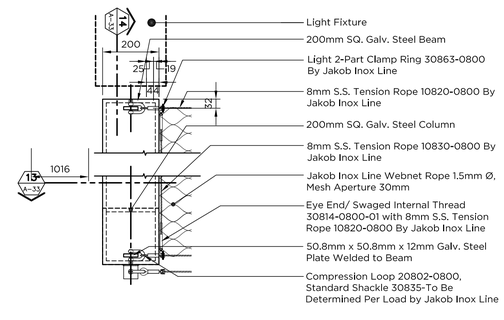
BRIDGE 3 PARTIAL PLAN (END) (5 / A-33)

Scale: 1:5



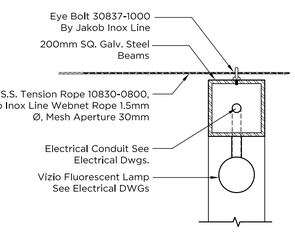
TYPICAL CONDITION PLAN DETAIL (8 / A-33)

Scale: 1:10



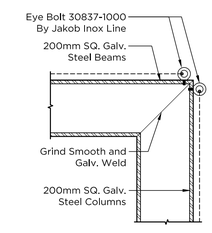
END CONDITION PLAN DETAIL (9 / A-33)

Scale: 1:10



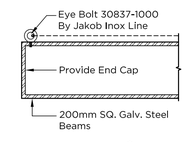
SECTION (10 / A-33)

Scale: 1:10



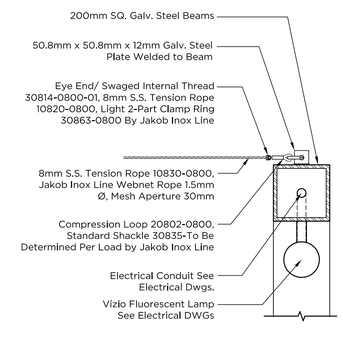
SECTION (11 / A-33)

Scale: 1:10



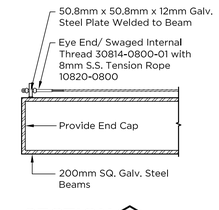
SECTION (12 / A-33)

Scale: 1:10



SECTION (13 / A-33)

Scale: 1:10



SECTION (14 / A-33)

Scale: 1:10

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

SEGMENT WEST OF PR-18
SAN JUAN, PUERTO RICO

TORO ARQUITECTOS
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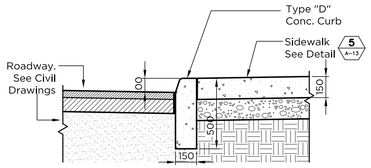
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

BRIDGE 3 ELEVATIONS AND DETAILS

DRAWN BY:
REVISED BY:
DATE: OCTOBER 31, 2012

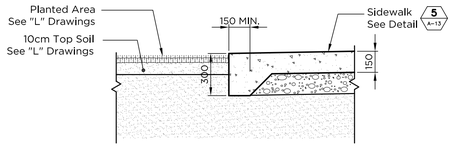
A-33

OF



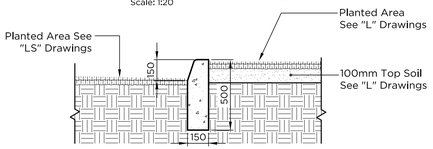
CURB DETAIL 1 A-34

Scale: 1:20



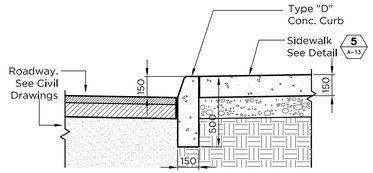
CONC. SIDEWALK DET. 2 A-34

Scale: 1:20



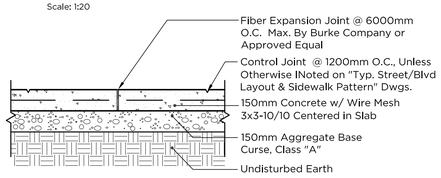
MEDIAN CURB DET. 3 A-34

Scale: 1:20



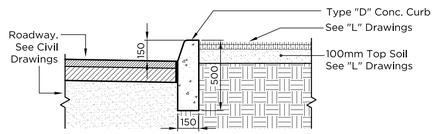
CURB DETAIL 4 A-34

Scale: 1:20



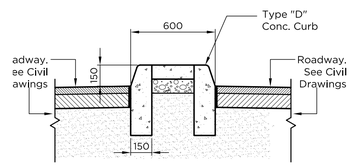
TYP. CONC. SIDEWALK LONGITUDAL SECTION DET. 5 A-34

Scale: 1:20



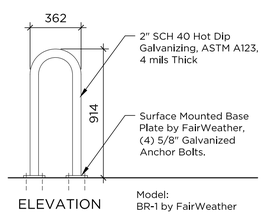
TYPICAL LANDSCAPE STRIP CURB DET. 6 A-34

Scale: 1:20



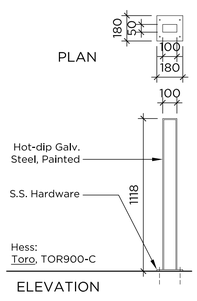
CURB DETAIL 7 A-34

Scale: 1:20



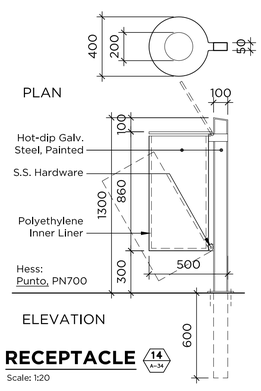
BIKE RACK 12 A-34

Scale: 1:20



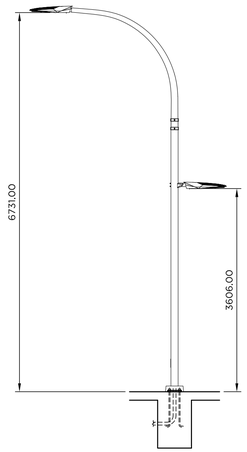
BOLLARD 13 A-34

Scale: 1:20



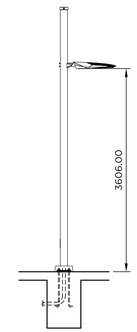
RECEPTACLE 14 A-34

Scale: 1:20



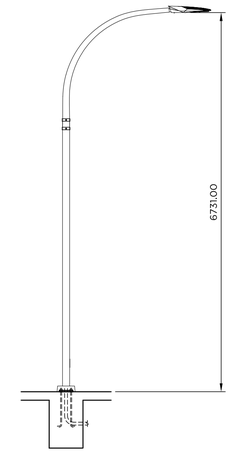
STREET/PEDESTRIAN LIGHT POLE 8 A-34

Scale: 1:50



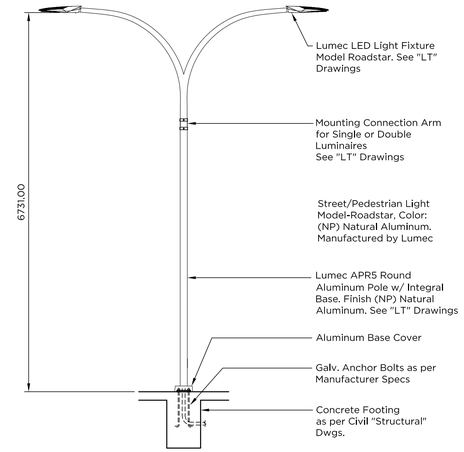
PEDESTRIAN LIGHT POLE 9 A-34

Scale: 1:50



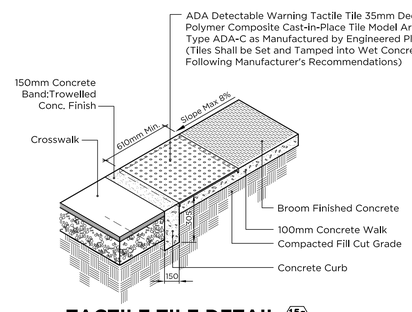
STREET MEDIAN LIGHT POLE 10 A-34

Scale: 1:50



STREET MEDIAN LIGHT POLE 11 A-34

Scale: 1:50

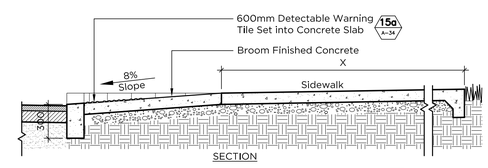


TACTILE TILE DETAIL 15a A-34

N.T.S.

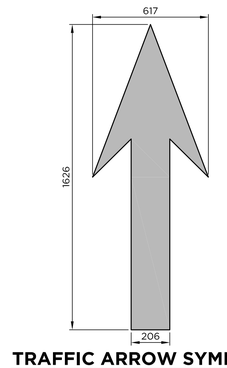
Handicap Ramp Notes:

1. Provide International Handicap Graphic Symbol at Handicap Ramp Locations.
2. Typical Handicap Ramp Dimensions are Based on a 100mm or 150mm Curb Height.
3. When Curb Height Varies Dimensions Shall Vary as per Compliance with Specified Max. Slopes.
4. If x is Less Than 1200 mm, Then the Slopes of the Flared Side Shall Not Exceed 1:12.



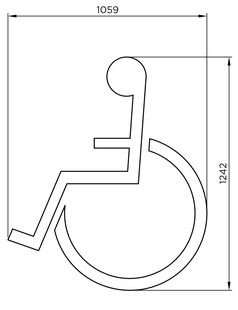
TYPICAL HANDICAP RAMP SECTION 15b A-34

Scale: 1:25



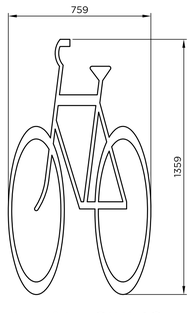
TRAFFIC ARROW SYMBOL 16 A-34

Scale: 1:15



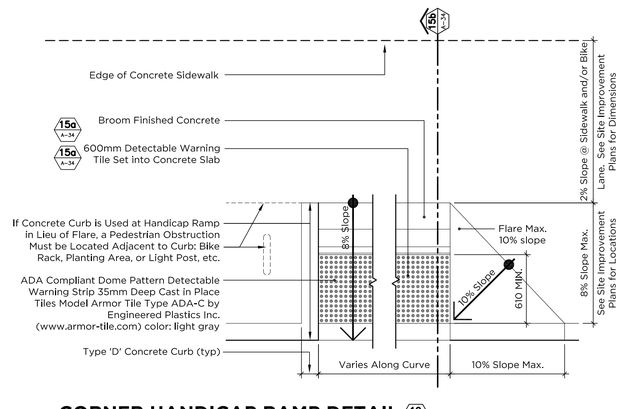
HANDICAP SYMBOL 17 A-34

Scale: 1:15



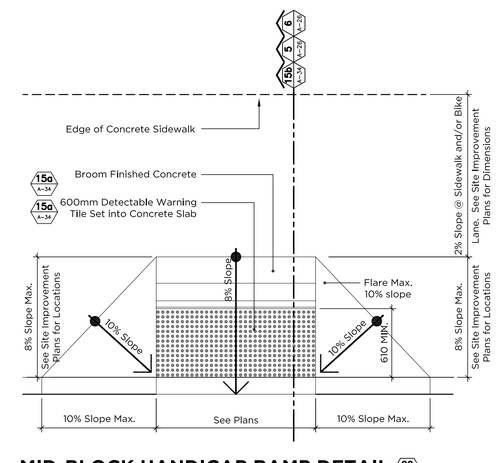
BIKE LANE SYMBOL 18 A-34

Scale: 1:15



CORNER HANDICAP RAMP DETAIL 19 A-34

Scale: 1:25



MID-BLOCK HANDICAP RAMP DETAIL 20 A-34

Scale: 1:25

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

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archUD DESIGN

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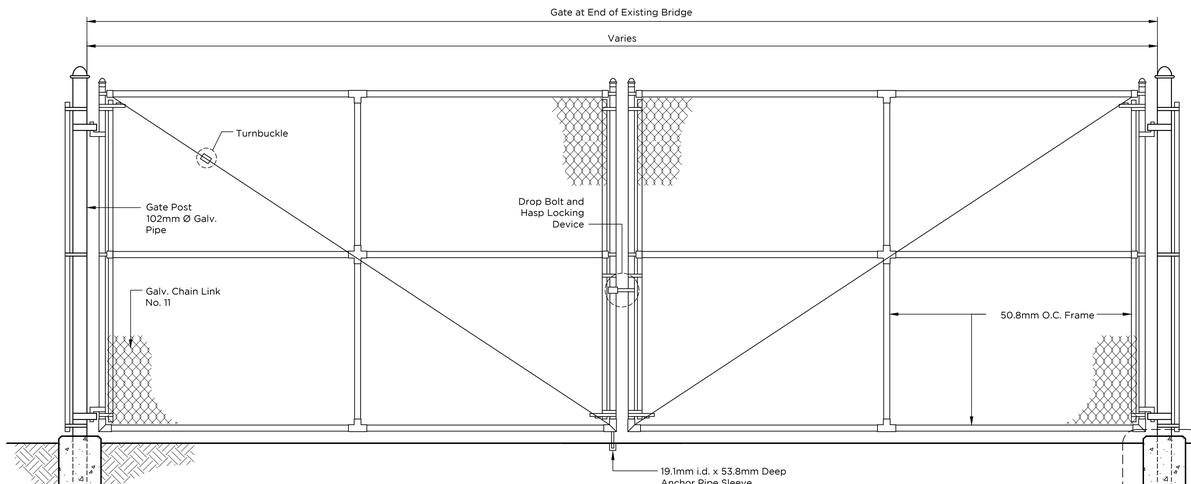
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

URBAN FURN.,LIGHT FIXTURES, HANDICAP RAMPS & DETAILS

DRAWN BY:
REVISED BY:
DATE: OCTOBER 31, 2012

A-34

OF



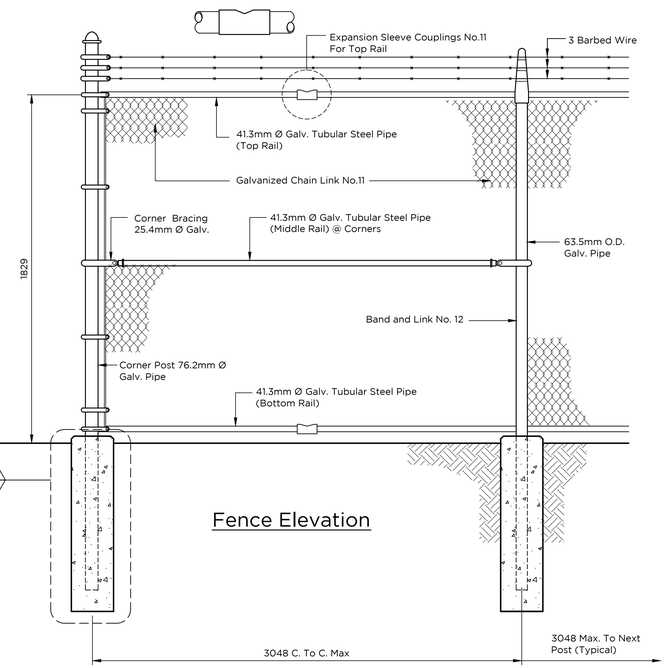
Typical Gate Elevation at Bridge

Typical Chain Link Gate Notes:

1. Chain link fence-industrial type no.423
2. Line posts 63.5mm o.d. galv. -std.weight pipe- 3.85 lbs. per line ft.
3. Top, middle and bottom rail -1 5/8" o.d. galv.- std.weight pipe- 2.27 lbs. per line ft.
4. Corner post 76.2mm Ø o.d. galv. -std. weight pipe- 6.79 lbs. per line ft.
5. Tension wire ga. no.7 galvanized
6. Gate post 102mm o.d. galv. -std. weight pipe- 9.10 lbs. per line ft.
7. Galvanized chain link ga. 11-50.8mm x 50.8mm-1.2 ounces galvanized after woven.
8. Std. weight pipe, schedule 40a. 120
9. All fittings - extra heavy duty
10. Mill certificate shall be submitted.
11. Provide one(1) padlock per gate model A5260COV by American Lock.
12. Gate must open 180° at east end gate. Provide gate jinges accordingly.

BRIDGE CHAIN LINK GATE ELEVATION & DETAILS

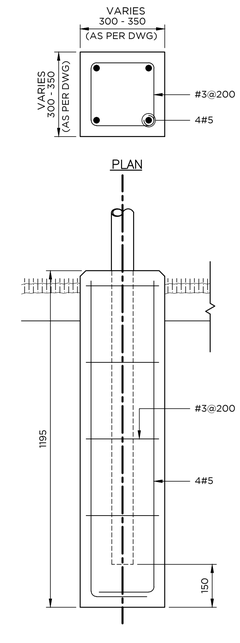
Scale: 1:20



Fence Elevation

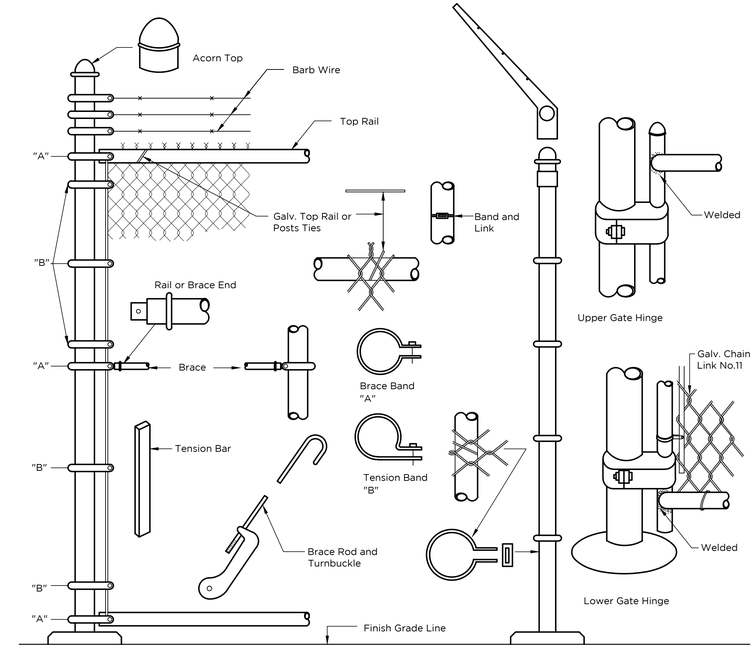
TYPICAL CHAIN LINK FENCE ELEVATION & DETAILS

Scale: 1:20



FOUNDATION DETAILS

Scale: 1:10



Details

Chain Link Fence Notes:

1. Chain link fence-industrial type no.423
2. Line posts 63.5mm o.d. galv. -std.weight pipe- 3.85 lbs. per line ft.
3. Top, middle and bottom rail -1 5/8" o.d. galv.- std.weight pipe- 2.27 lbs. per line ft.
4. Corner post 76.2mm Ø o.d. galv. -std. weight pipe- 6.79 lbs. per line ft.
5. Tension wire ga. no.7 galvanized
6. Gate post 102mm o.d. galv. -std. weight pipe- 9.10 lbs. per line ft.
7. Galvanized chain link ga. 11-50.8mm x 50.8mm-1.2 ounces galvanized after woven.
8. Std. weight pipe, schedule 40a. 120
9. All fittings - extra heavy duty
10. Mill certificate shall be submitted.

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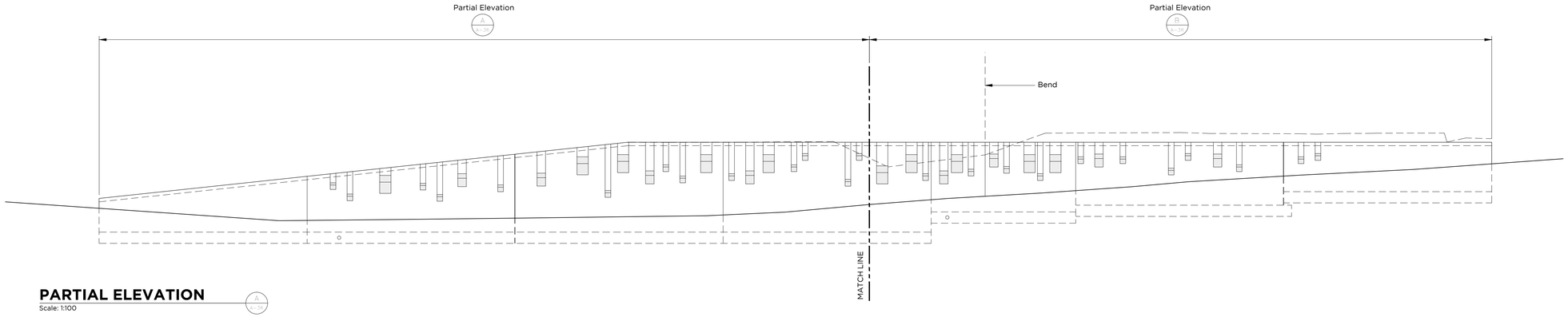
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

CHAIN LINK FENCE & GATE ELEVATIONS & DETAILS

DRAWN BY:
REVISED BY:
DATE: MAY 13, 2013

A-35

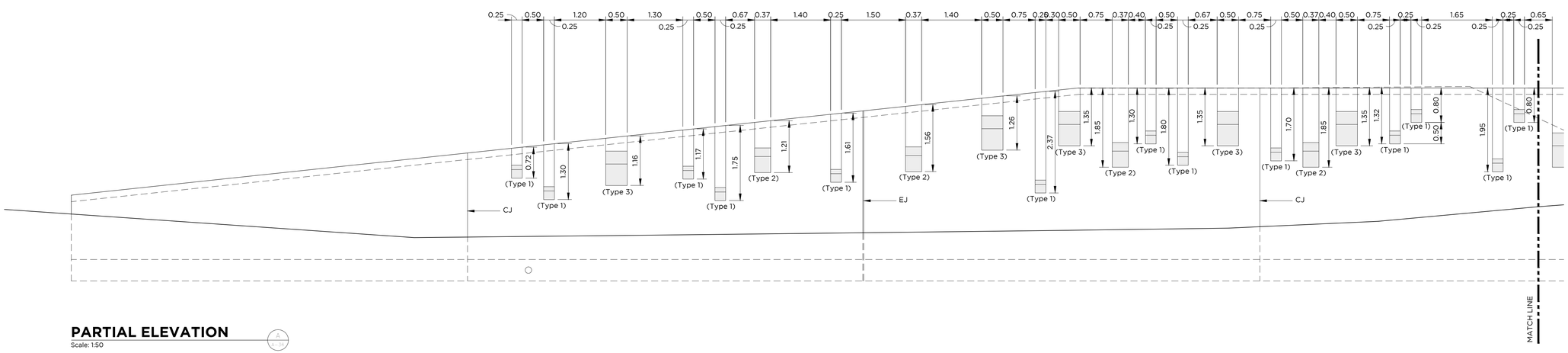
OF



PARTIAL ELEVATION

Scale: 1:100

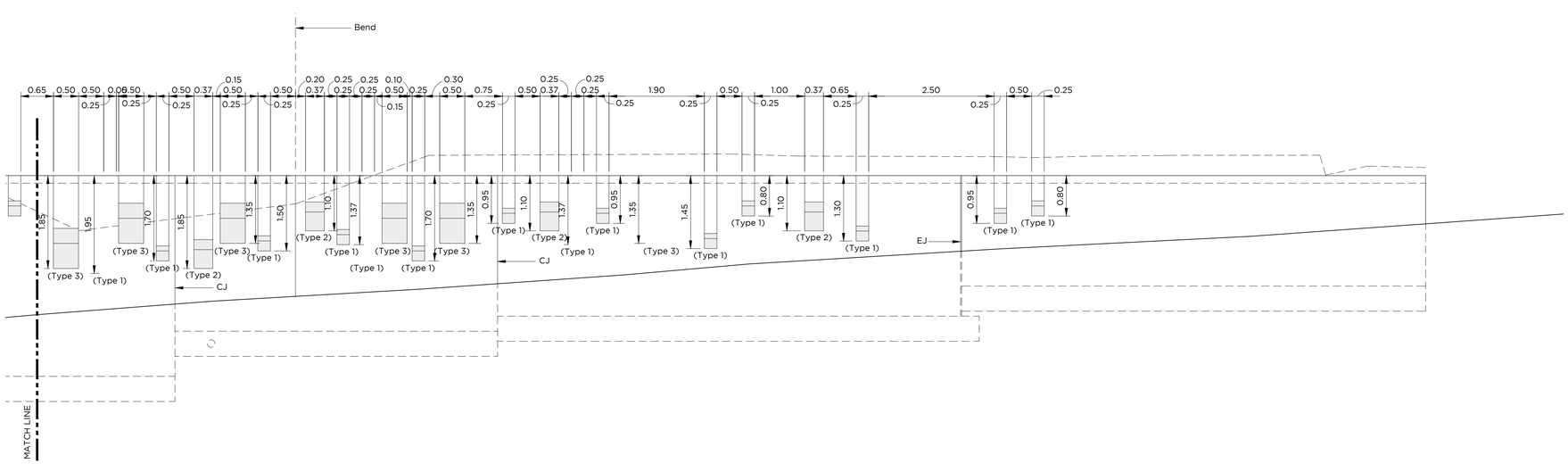
A
A-36



PARTIAL ELEVATION

Scale: 1:50

A
A-36



PARTIAL ELEVATION

Scale: 1:50

A
A-36

Note: Refer to Sheet A-16 for wall planter details.

SCIENCE CITY URBAN INFRASTRUCTURE PHASE II

SEGMENT EAST OF PR-18
SAN JUAN, PUERTO RICO

TORO ARQUITECTOS
AVENIDA McLEARY 2004
SAN JUAN, PUERTO RICO 00911
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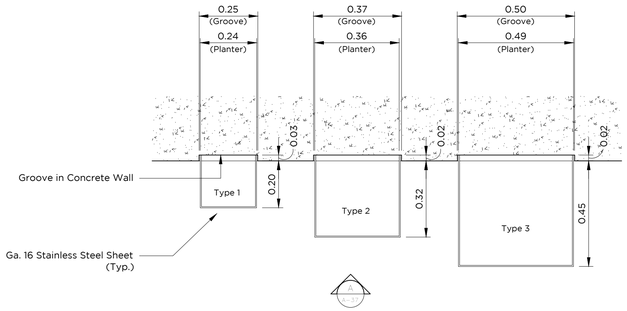
FINAL CONSTRUCTION DOCUMENTS (100%)
MAY 13, 2013

RETAINING WALL ELEVATIONS

DRAWN BY: LR/FDJ
REVISED BY: JJT
DATE: OCTOBER 31, 2012

A-36

OF



METAL PLANTER PLAN
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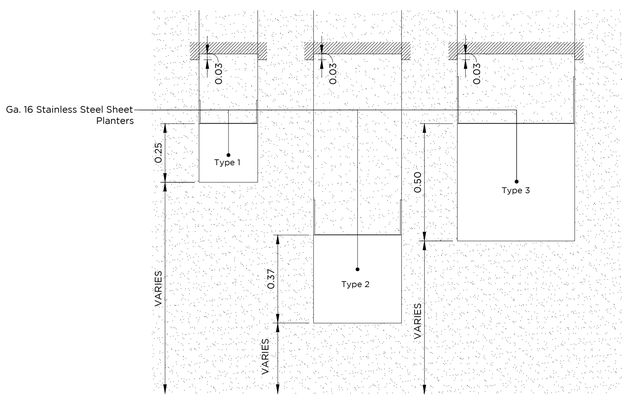
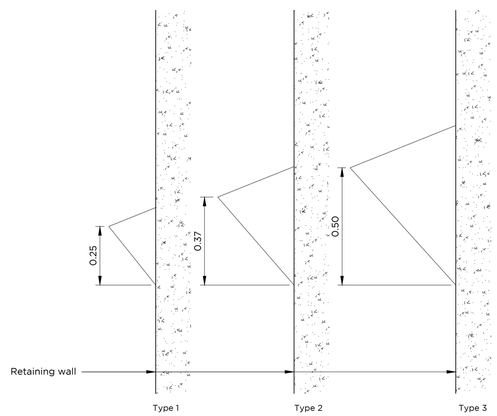
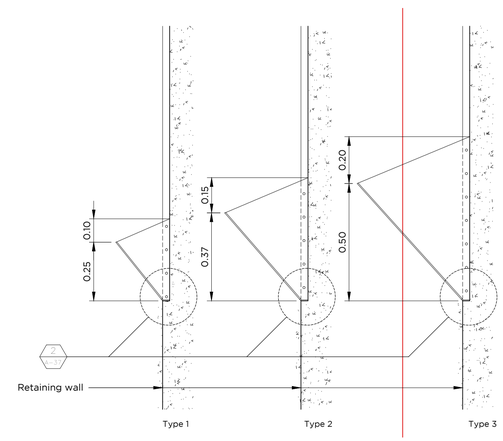


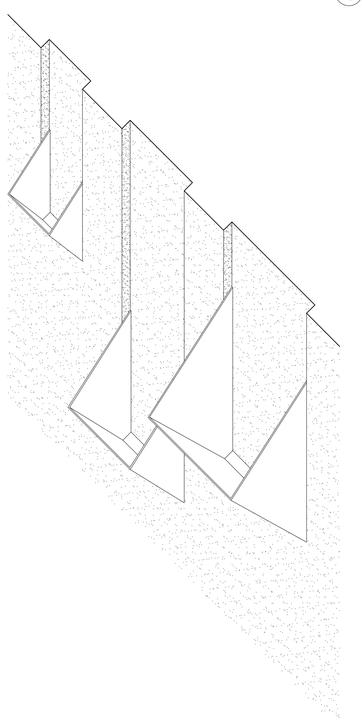
METAL PLANTERS FRONT ELEVATION
Scale: 1:12



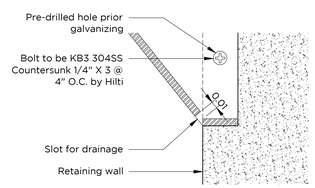
SIDE ELEVATIONS
Scale: 1:12



SECTIONS
Scale: 1:12



METAL PLANTERS AXONOMETRIC
Scale: 1:12



DETAIL
Half Scale

METAL PLANTERS GENERAL NOTES

1.0 All wall planters to be made from hot-dipped galvanized steel after fabrication, 3/16" thickness unless otherwise noted.

2.0 Contractor shall verify in field all grove dimensions in retaining wall prior fabrication of metal planters and submitt shop drawings for approval by architect.

3.0 Contractor shall make a full size mock-up of the three typical metal sheet planters installed on the wall to be approved by architect prior fabrication.

4.0 Welds to be grinded smooth and polished.

5.0 Refer to Landscape Drawings for planting details on wall planters.

6.0 Refer to Technical Specifications-Section 055000 "Metal Fabrications".

SCIENCE CITY URBA
INFRASTRUCTURE
PHASE II

SEGMENT EAST OF PR-18
SAN JUAN, PUERTO RICO

TORO ARQUITECT
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FINAL CONSTRUCTION
DOCUMENTS (100%)
MAY 13, 2013

RETAINING WALL
METAL PLANTER
DETAILS

DRAWN BY: LR/FDJ
REVISED BY: JIT
DATE: OCTOBER 31, 2012

A-37

OF