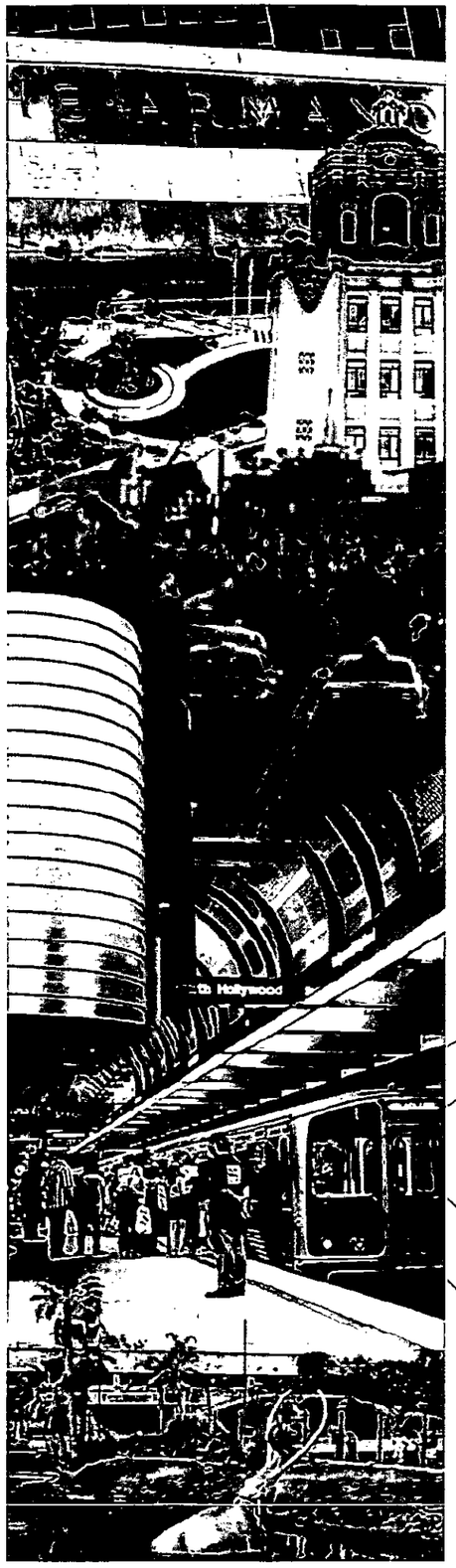

WESTSIDE SUBWAY EXTENSION

Project No. PS-4350-2000

Draft Alternative Tunneling Methods Study

Appendix A - Drawings

Task 10.17.5

Prepared for:

Metro

Prepared by:

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Originator	26 August 2010	Multiple
Checked	27 August 2010	J. Coers
Back checked	30 August 2010	Multiple
Verified	31 August 2010	A. Elioff

August 2010

DRAFT

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* NOT INCLUDED IN THIS SUBMITTAL

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

Metro
LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

PB
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING

INDEX OF DRAWINGS
ALT. TUNNELING METHODS STUDY

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SHEET NO

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AE1.002	SINGLE BORE (TUNNEL-THROUGH) WILSHIRE/LA CIENEGA STATION, SITE PLAN
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REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

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DRAWN BY
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WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING

INDEX OF DRAWINGS
ALT. TUNNELING METHODS STUDY

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SHEET NO

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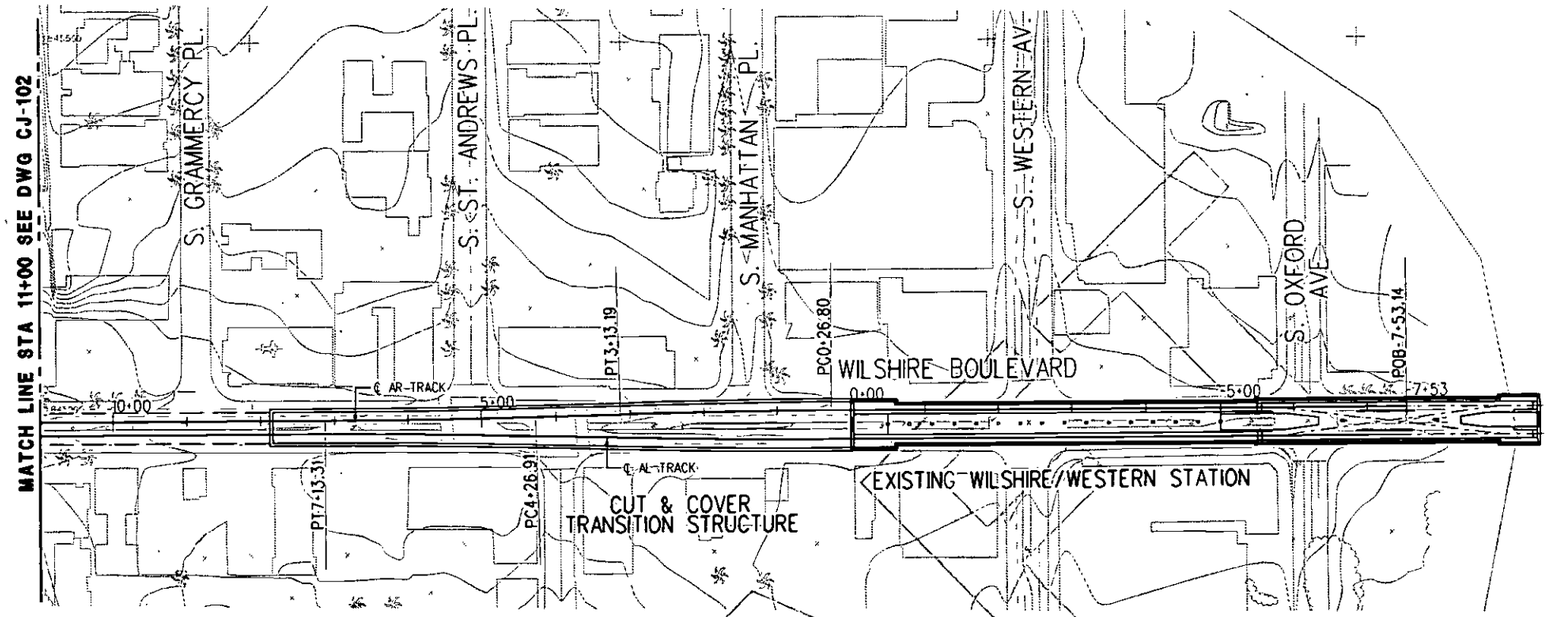

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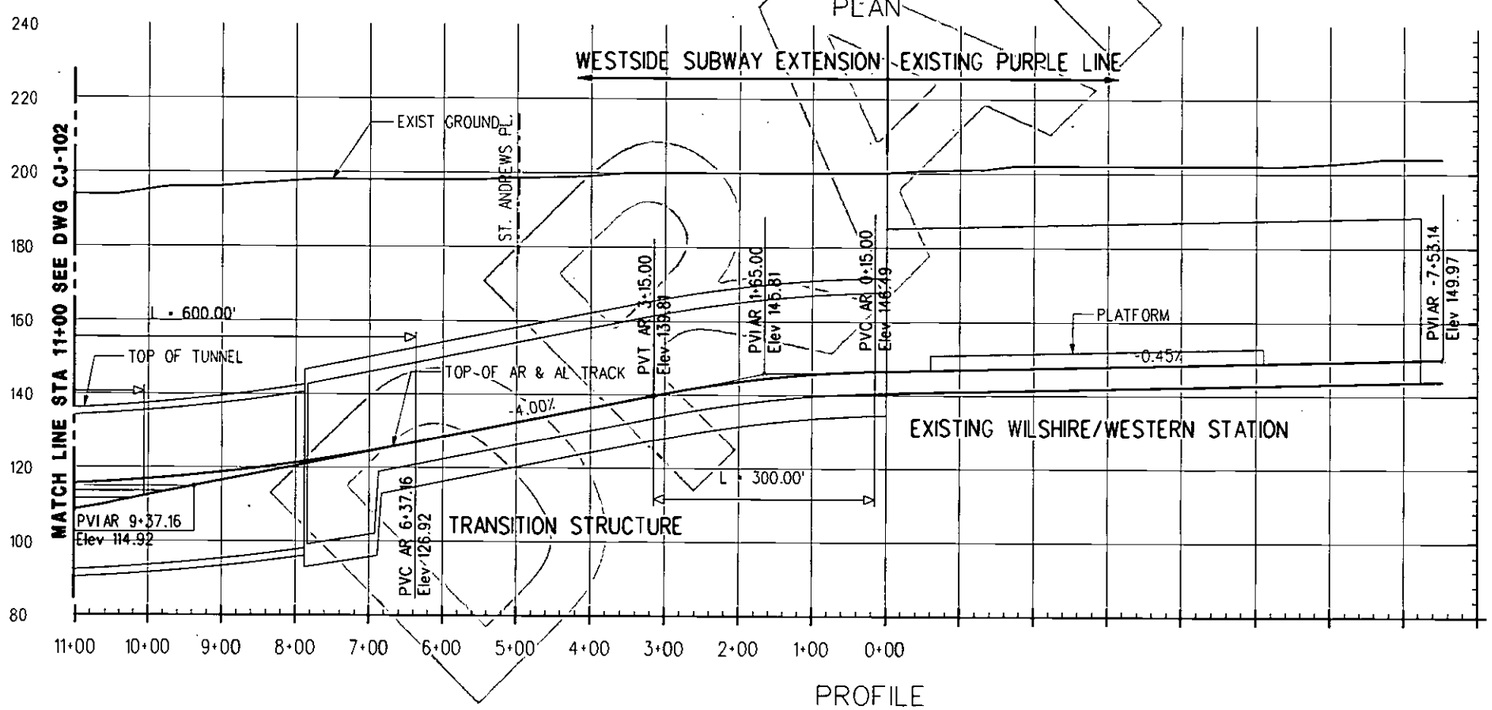

PROFILE

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METROPOLITAN TRANSPORTATION AUTHORITY

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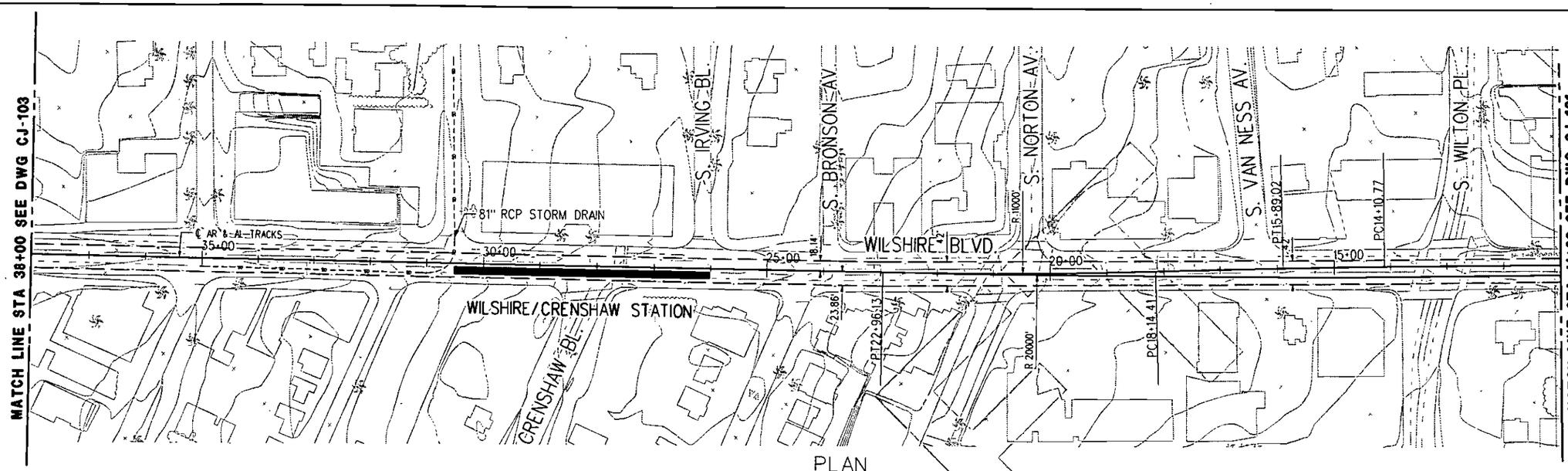
PB

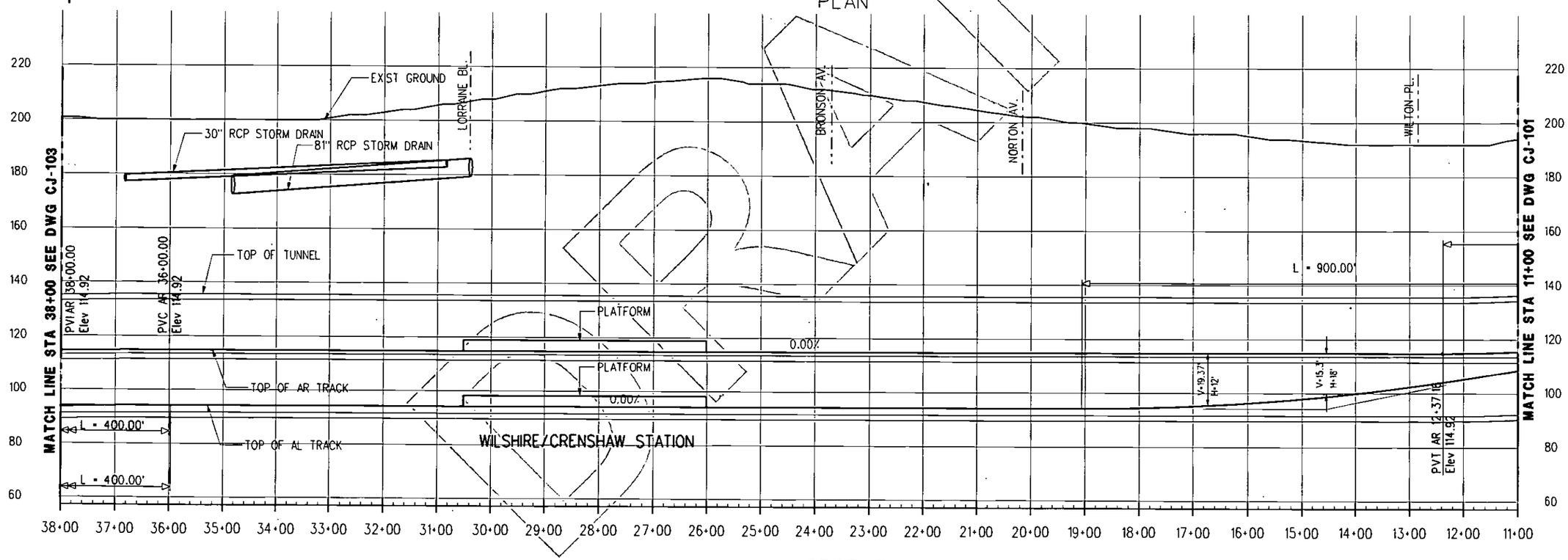
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-BY)
PLAN & PROFILE
STATION 0+00 TO 11+00
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CJ-101
REV
SCALE 1'=100'
SHEET NO



PLAN



PROFILE

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

Metro

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-BY)
PLAN & PROFILE
STATION 11+00 TO 38+00
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CJ-102 REV
SCALE 1"=100'
SHEET NO

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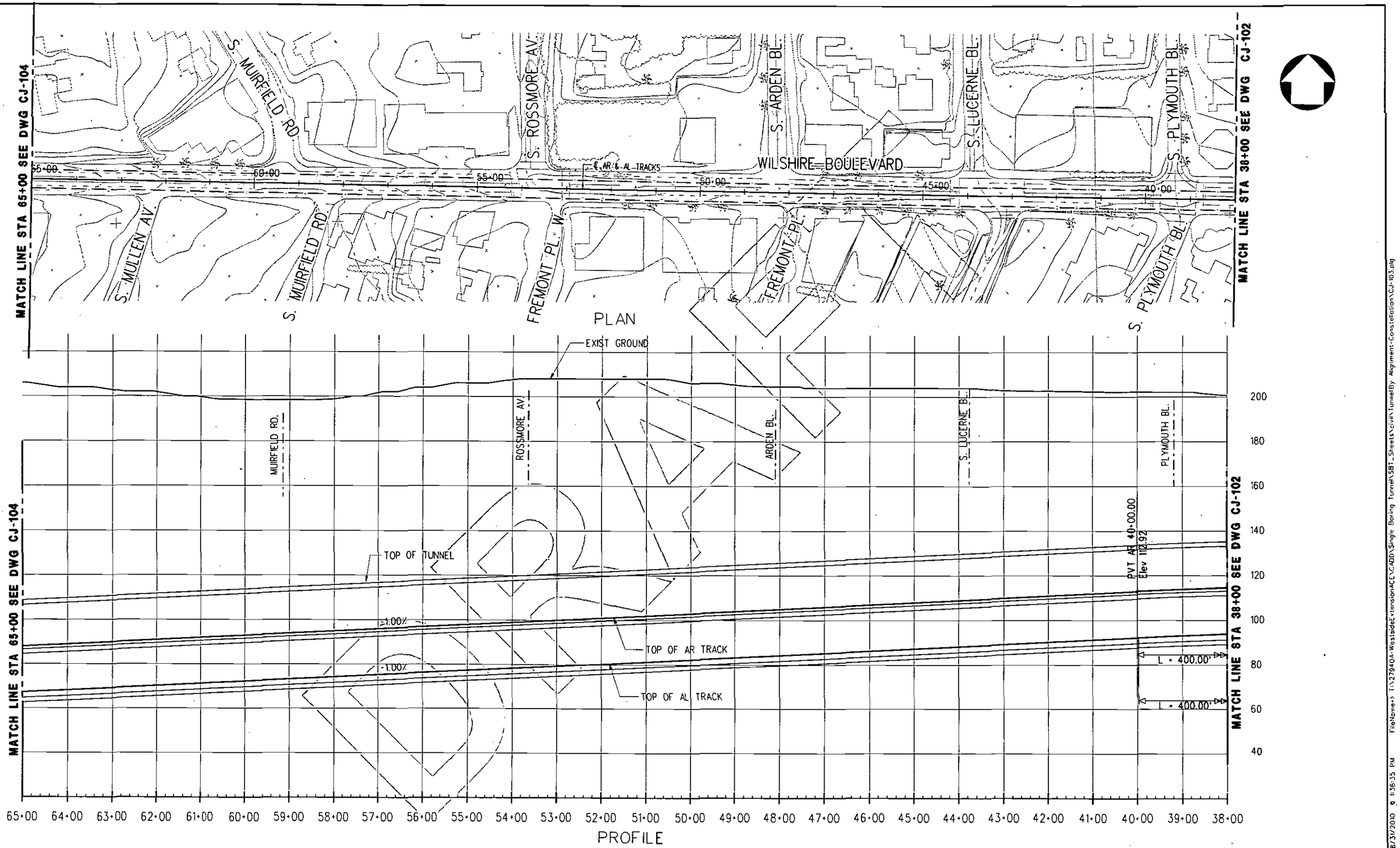

REV	DATE	BY	APP	REC NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

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PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-BY)
PLAN AND PROFILE
STATION 38+00 TO 65+00
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CJ-103
REV
SCALE 1"=100'
SHEET NO

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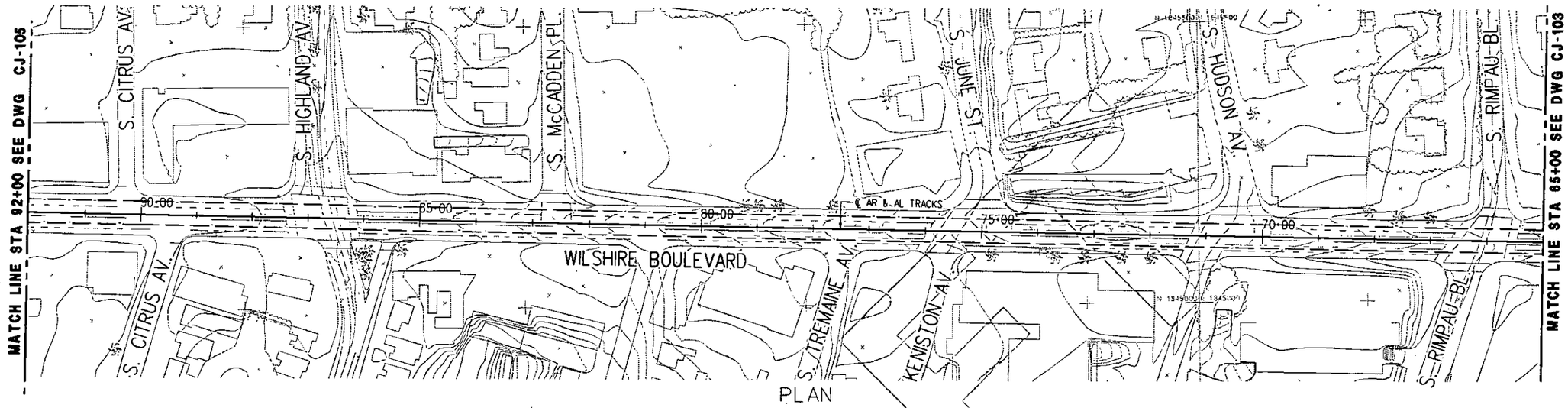
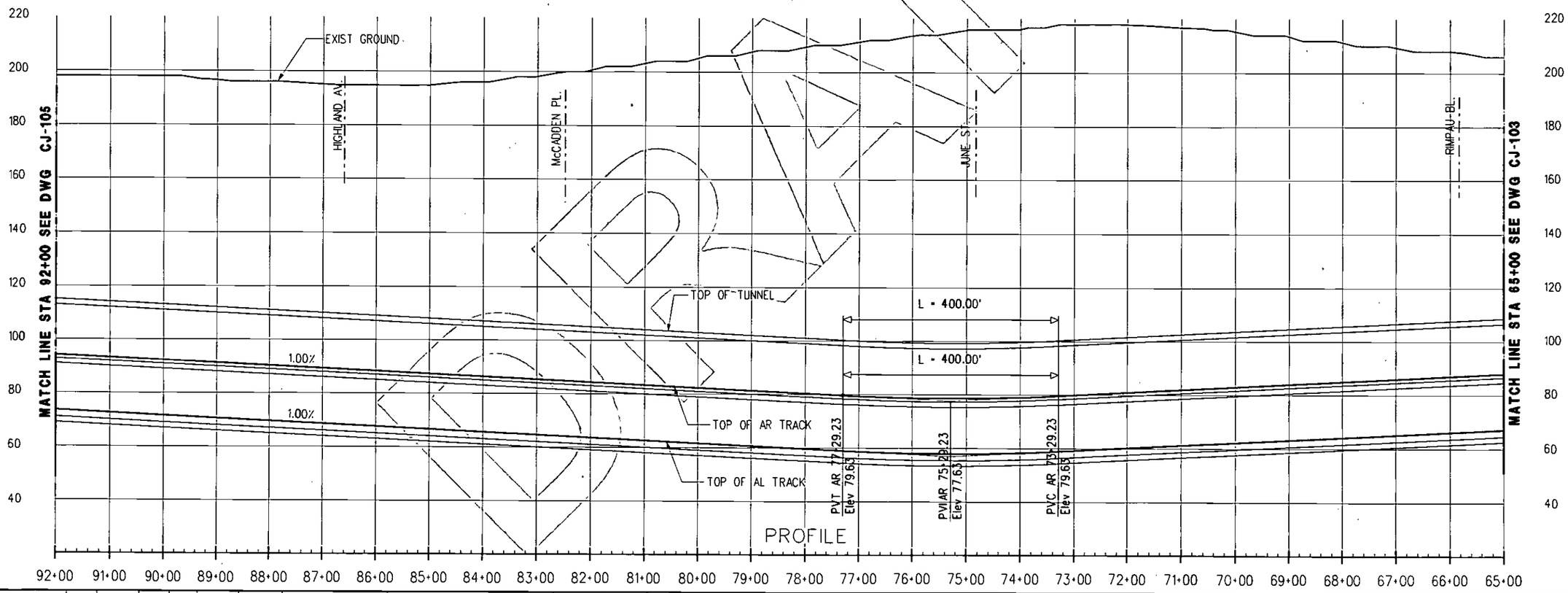




REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

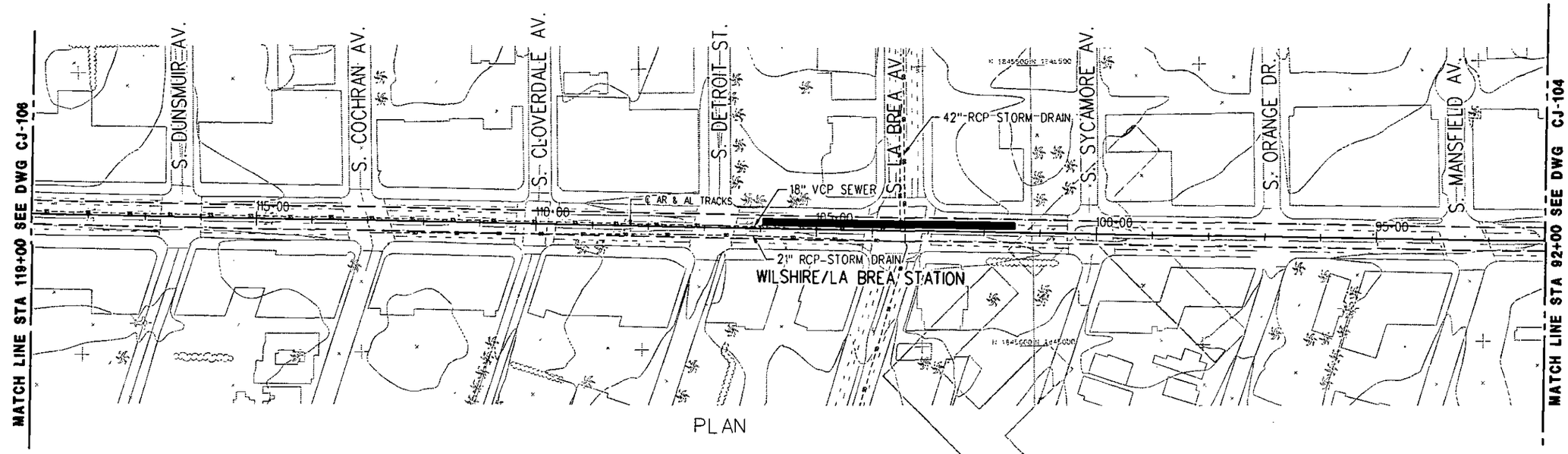
PB

PROJECT MANAGER

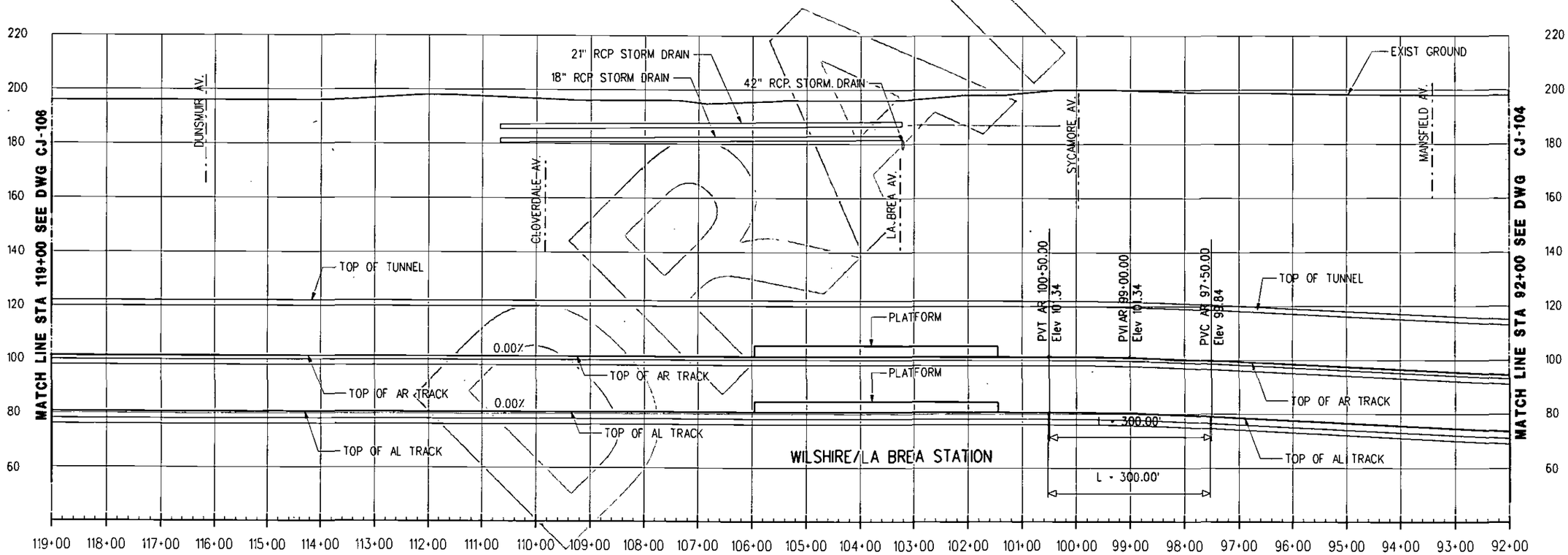
WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-BY)
PLAN & PROFILE
STATION 65+00 TO 92+00
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CJ-104
REV
SCALE 1"=100'
SHEET NO

UserName: USER-oldreteB/31/2010 @ 1:36:44 PM FileName>> T:\27940A-WestsideExtensionACE\CADD\Single Boring Tunnel\SBT_Sheets\civil\Tunnel By Alignment-Constellation\CJ-104.plg



PLAN



PROFILE

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

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PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-BY)
PLAN & PROFILE
STATION 92+00 TO 119+00
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CJ-105
REV
SCALE 1"=100'
SHEET NO

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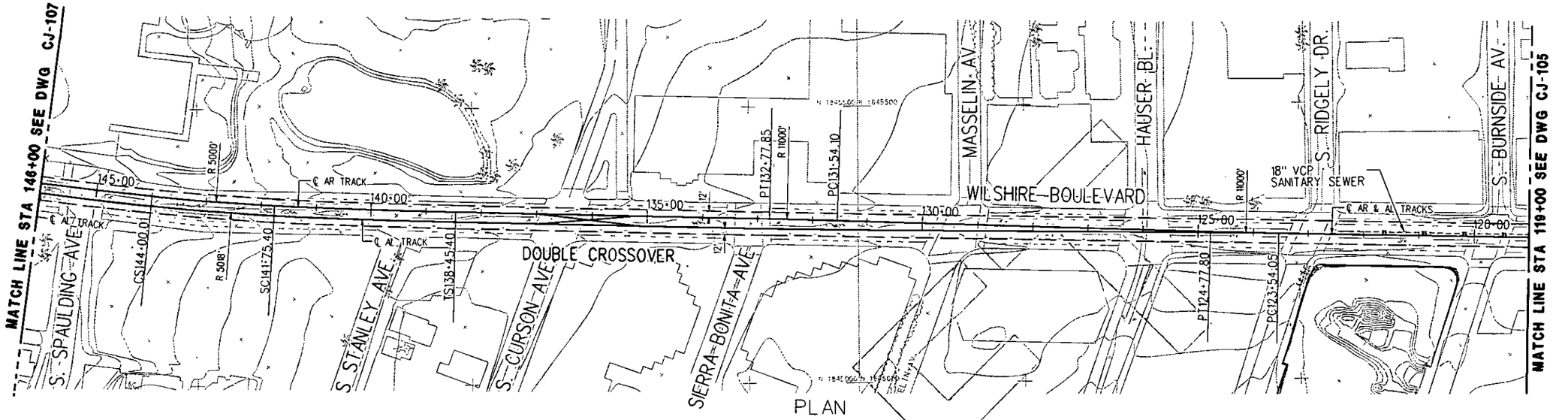
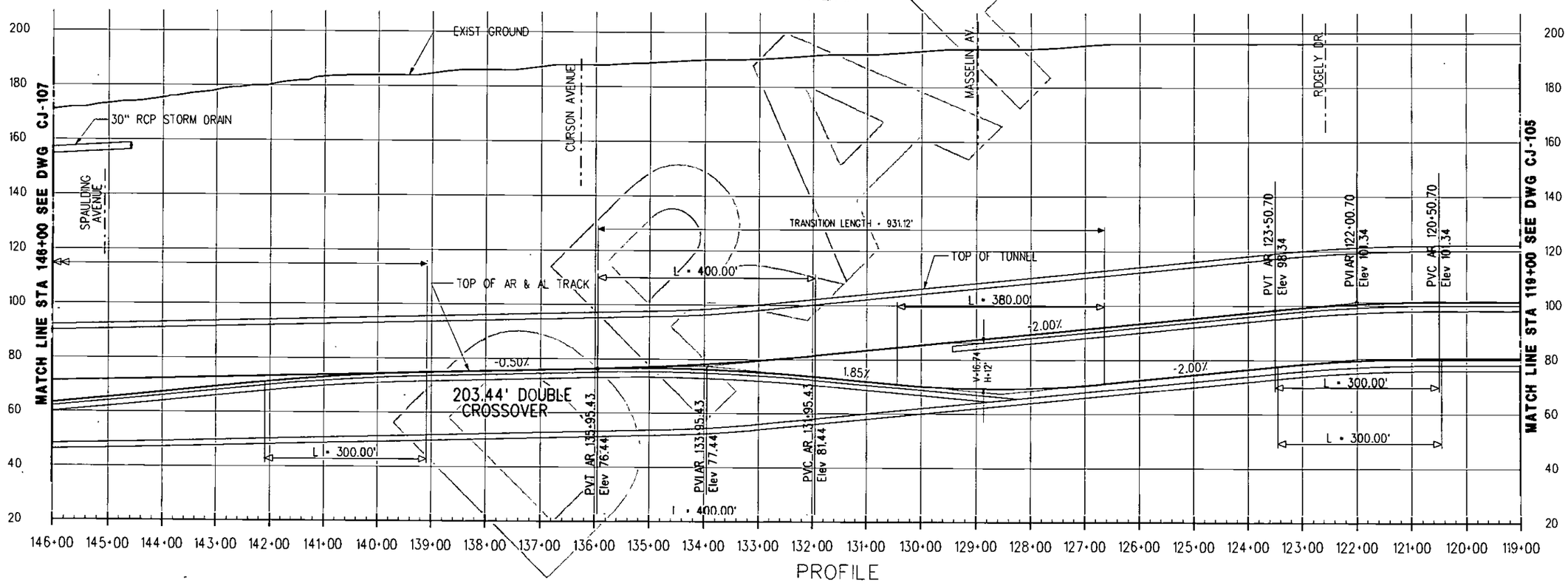




REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

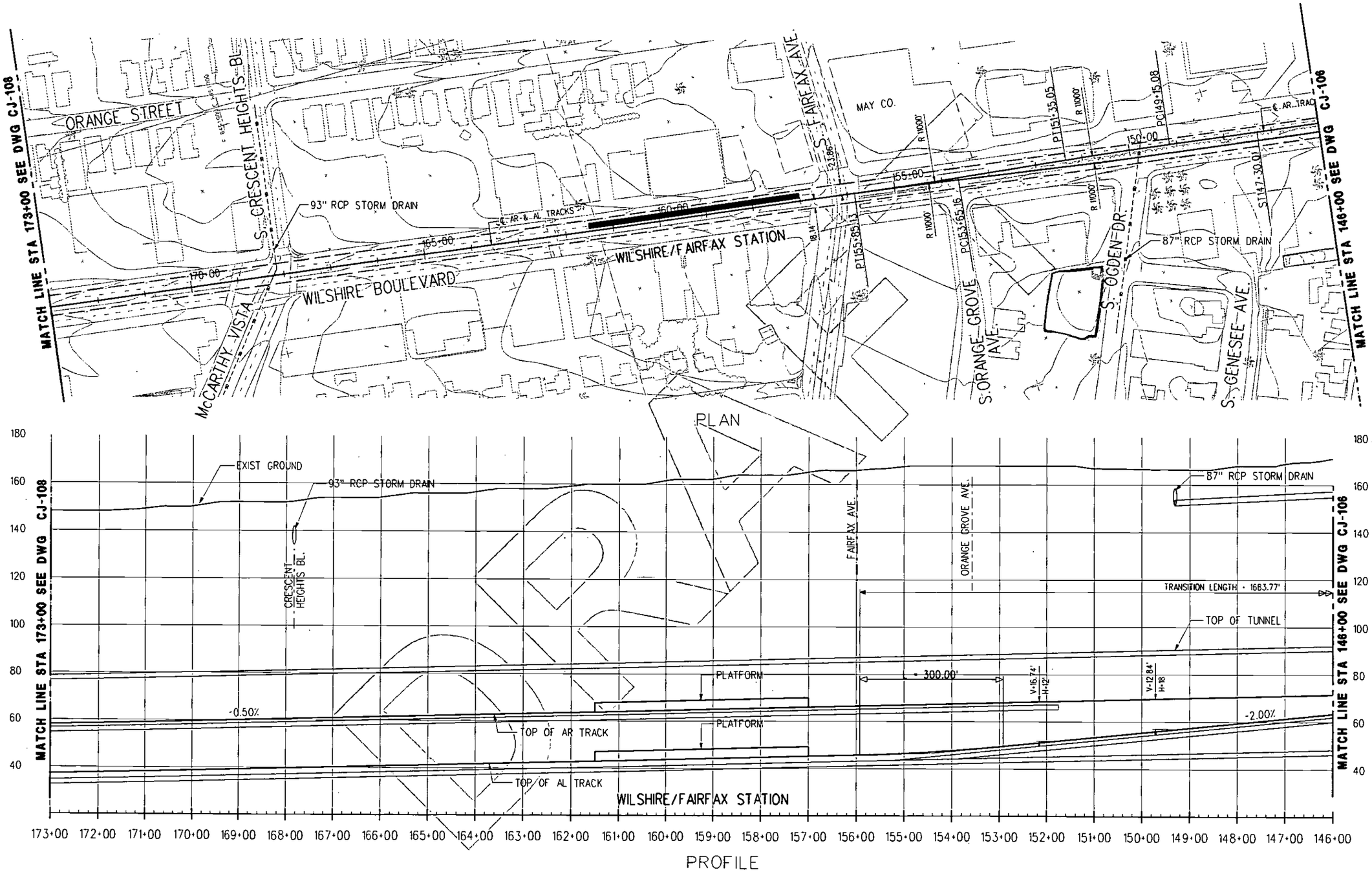
PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-BY)
PLAN & PROFILE
STATION 119+00 TO 146+00
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CJ-106 REV
SCALE 1" = 100'
SHEET NO

UserName: USER-aldrete 8/31/2010 @ 1:36:58 PM FileName: T:\27940A-WestsideExtension\CADD\Single Boring Tunnel\SBT_Sheets\Civil\Tunnel By Alignment-Constellation\CJ-106.plg



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

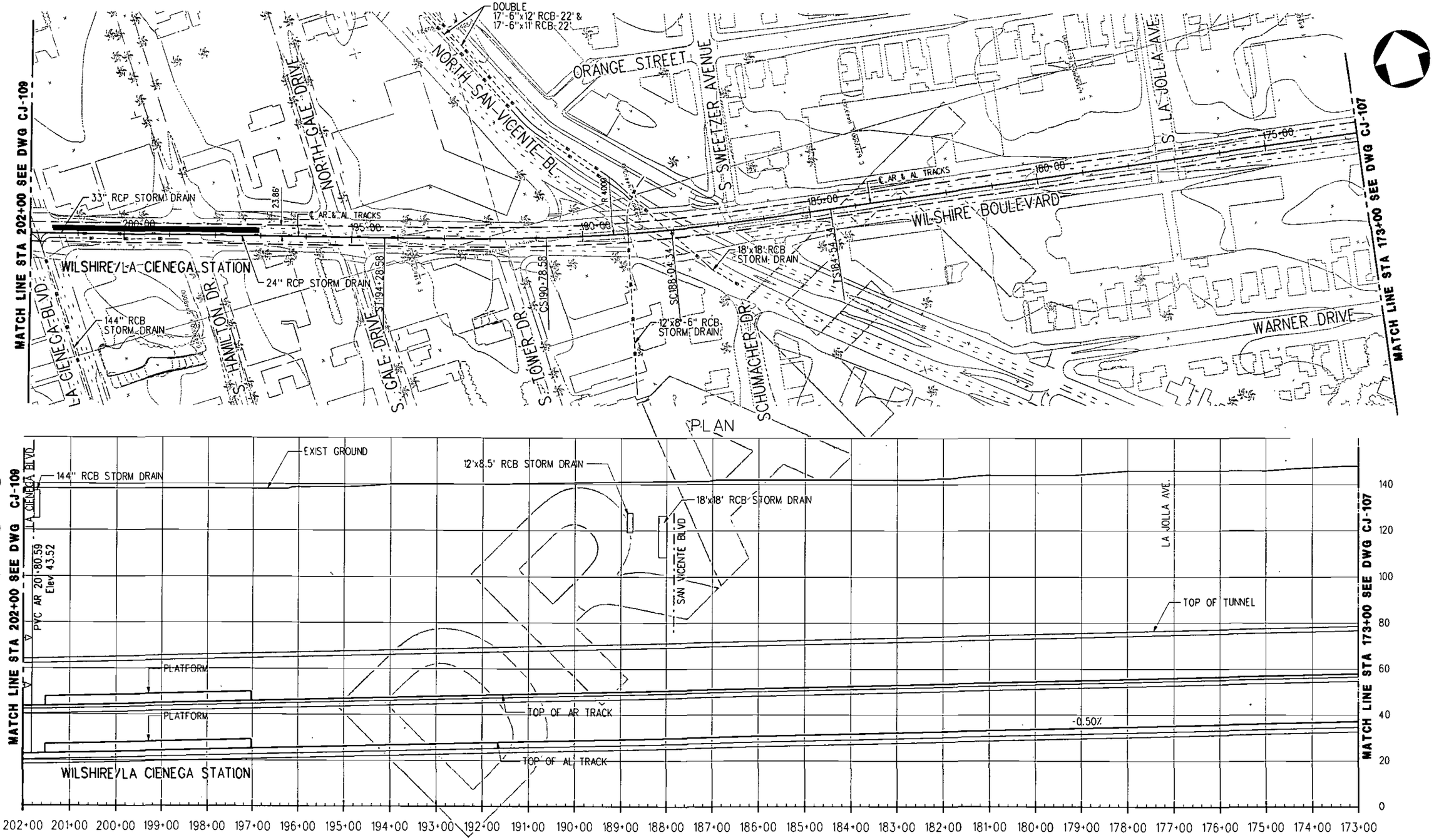
PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-BY)
PLAN & PROFILE
STATION 146+00 TO 173+00
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CJ-107
REV
SCALE 1"=200'
SHEET NO

UserName: USER=aldrete&/31/2010 @ 1:37:07 PM FileName=> F:\2794OA-WestsideExtensionACE\CADD\Single Boring Tunnel\SBT_Sheets\civil\Tunnel By Alignment-Constellation\CJ-107.plg



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

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PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-BY)
PLAN & PROFILE
STATION 173+00 TO 202+00
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CJ-108 REV
SCALE 1"=100'
SHEET NO

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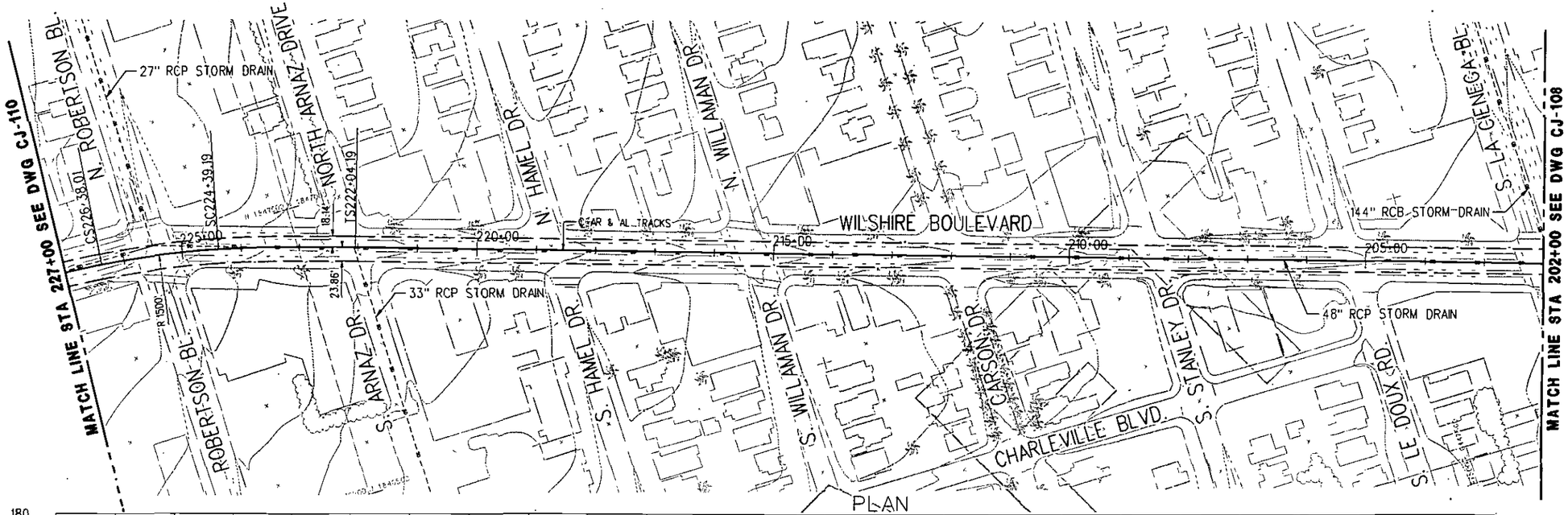
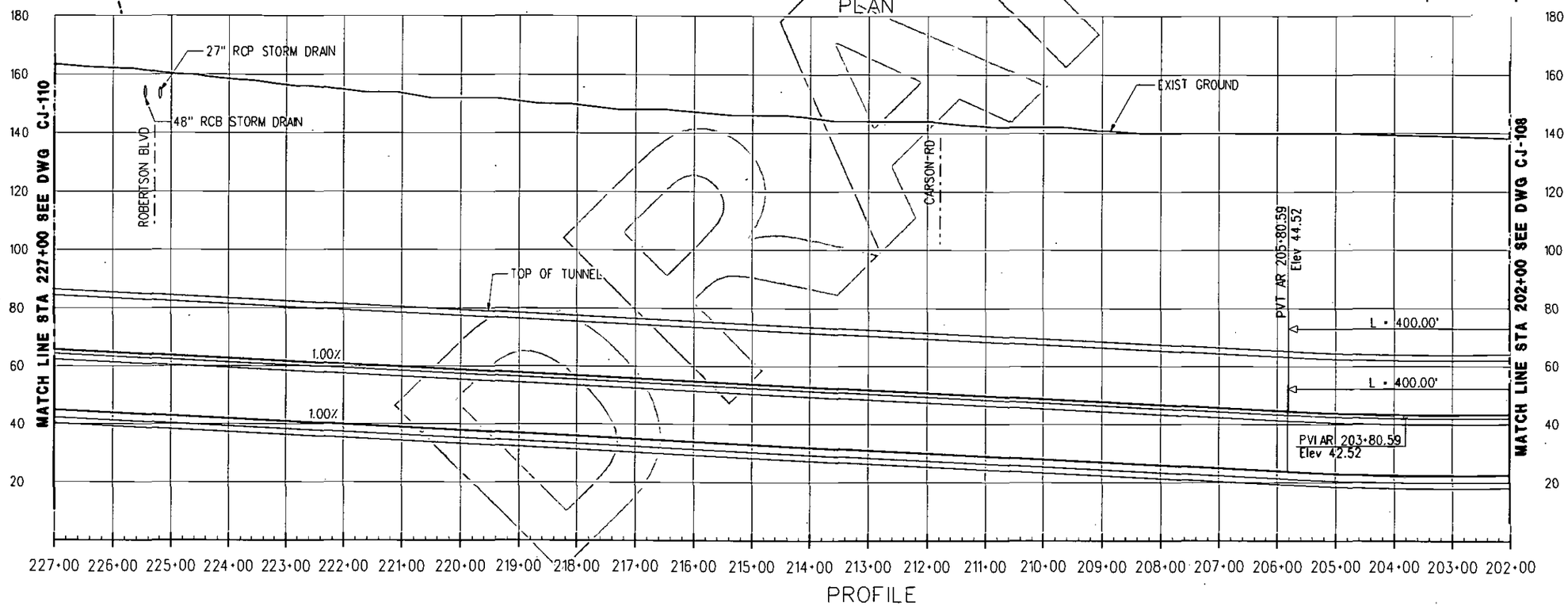




REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

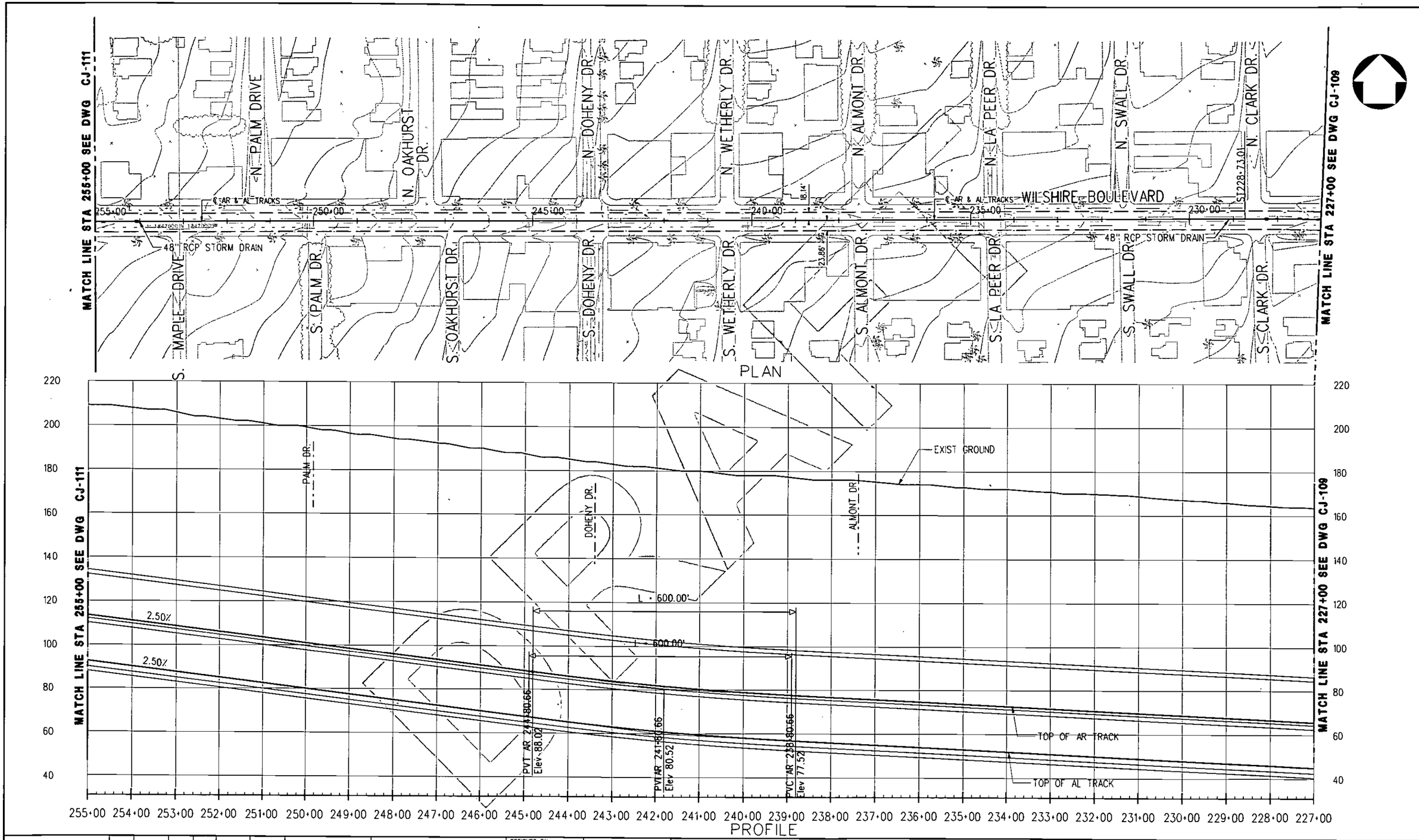
PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-BY)
PLAN & PROFILE
STATION 202+00 TO 227+00
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CJ-109 REV
SCALE 1" = 100'
SHEET NO

UserName: USER-aldrete6/31/2010 @ 1:37:23 PM FileName: I:\27940A-WestsideExtensionACE\CADD\Single Boring Tunnel\SBT_Sheets\civil\Tunnel By Alignment-Constellation\CJ-109.pg



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
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IN CHARGE
DATE AUGUST 2010

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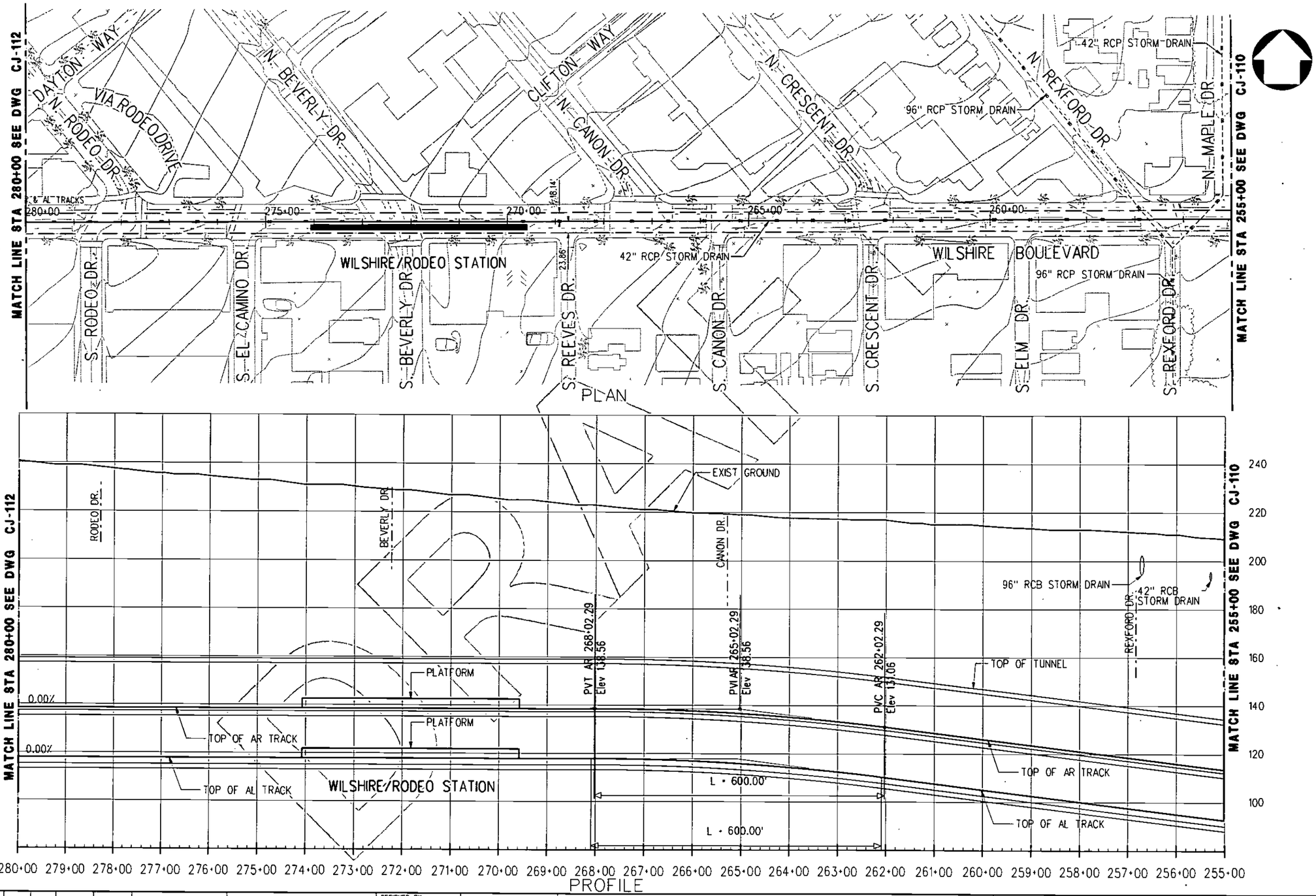
LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

PB
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-BY)
PLAN & PROFILE
STATION 227+00 TO 255+00
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CJ-110 REV
SCALE 1"=100'
SHEET NO

User-Name: USER+oldrete 8/31/2010 @ 1:37:29 PM Filename> T:\27940A-WestsideExtension-ACE\CADD\Single Boring Tunnel\SBT_Sheets\civil\Tunnel By Alignment-Constellation\CJ-110.plg



REV	DATE	BY	APP	REC NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

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LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

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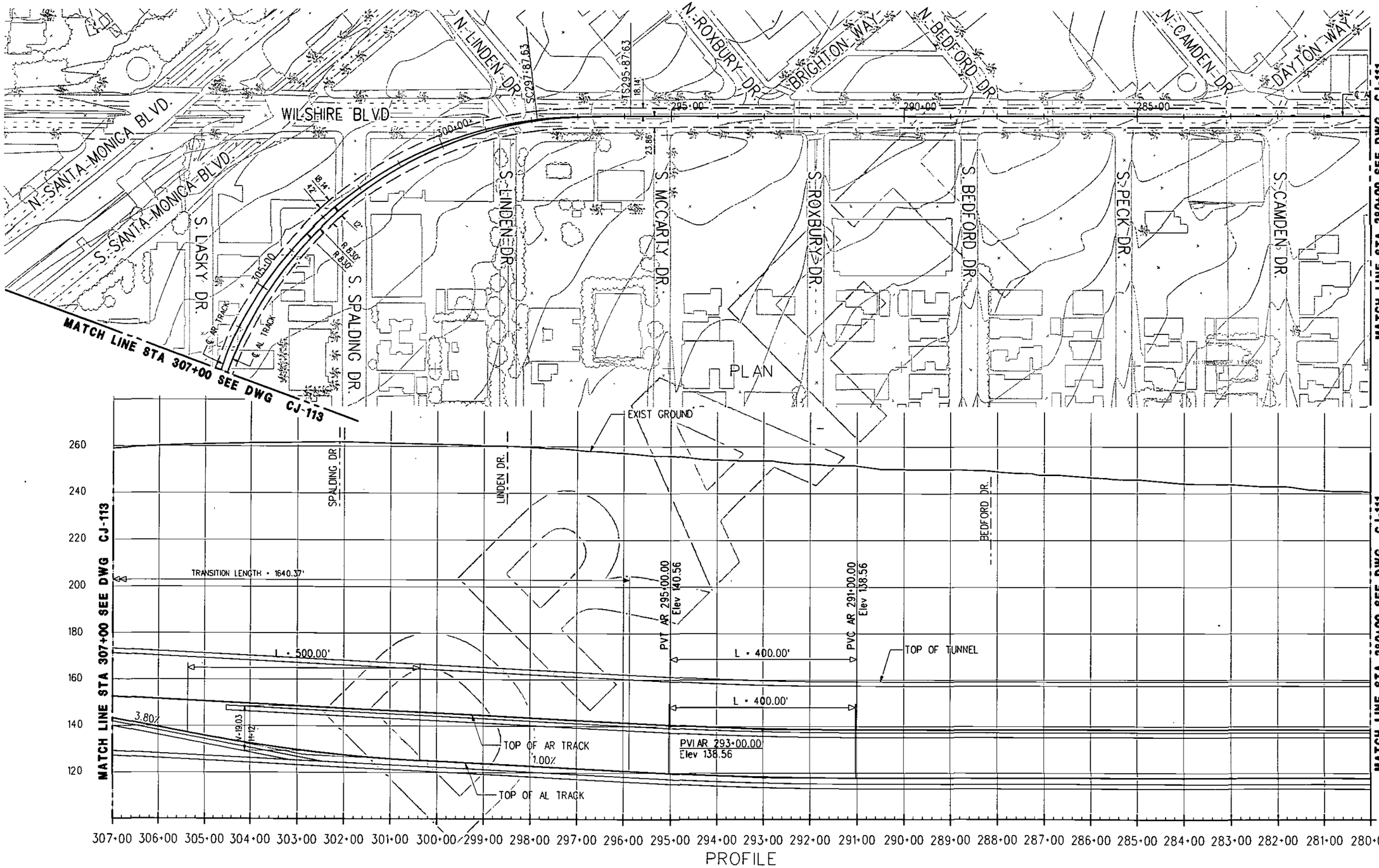
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-BY)
PLAN & PROFILE
STATION 255+00 TO 280+00
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CJ-111
REV
SCALE 1"=100'
SHEET NO

UserName: USER-oldrelease/31/2010 @ 1:37:36 PM FileName: T:\276404-WestsideExtensionACE\CADD\Single Boring Tunnel\SBT_Sheets\civil\Tunnel By Alignment-Constellation\CJ-111.plg



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

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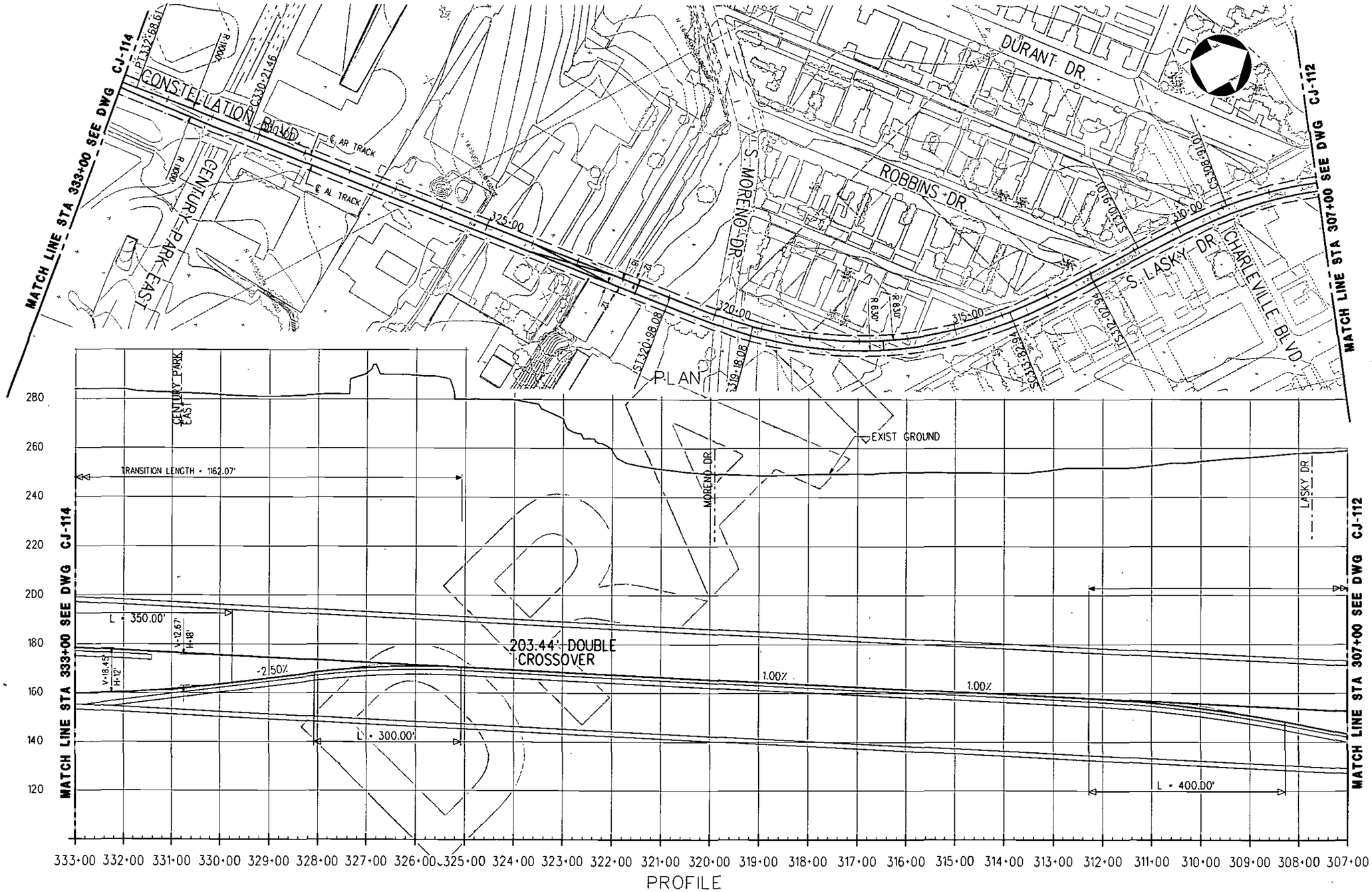
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-BY)
PLAN & PROFILE
STATION 280+00 TO 307+00
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CJ-112
REV
SCALE 1"=100'
SHEET NO

UserName: USERrodrete 8/31/2010 @ 1:37:43 PM FileName=> F:\27840A-WestsideExtensionACE\CADD\Single Boring Tunnel\SBT_Sheets\civil\Tunnel By Alignment-Constellation\CJ-112.plg



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

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PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-BY)
PLAN & PROFILE
STATION 307+00 TO 333+00
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CJ-113 REV
SCALE 1"=100'
SHEET NO

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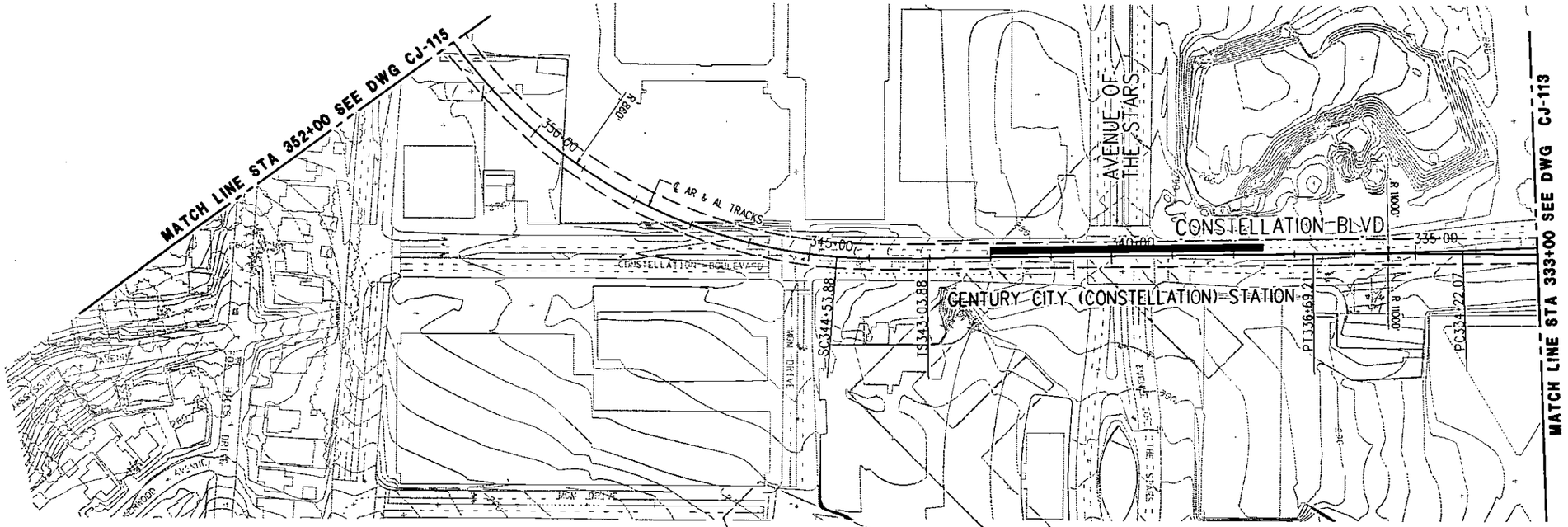

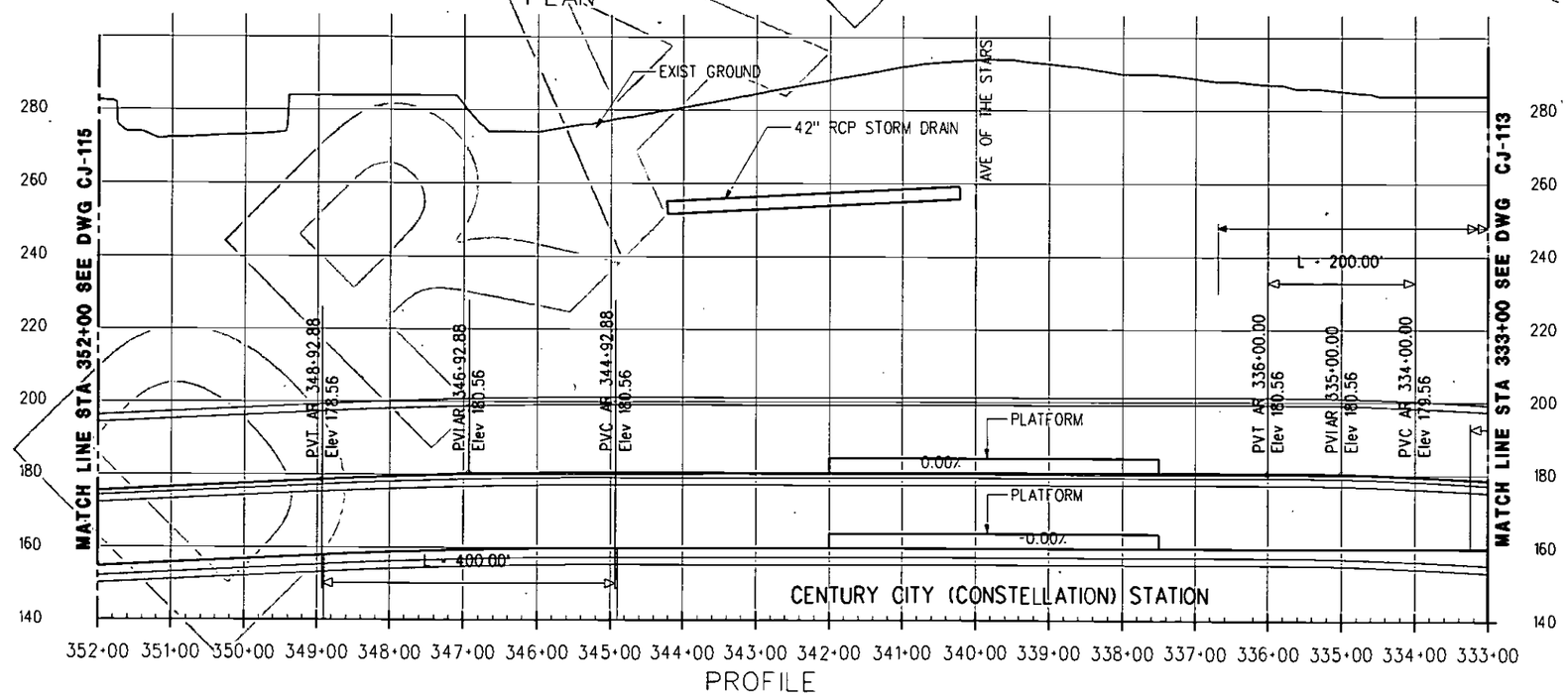

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

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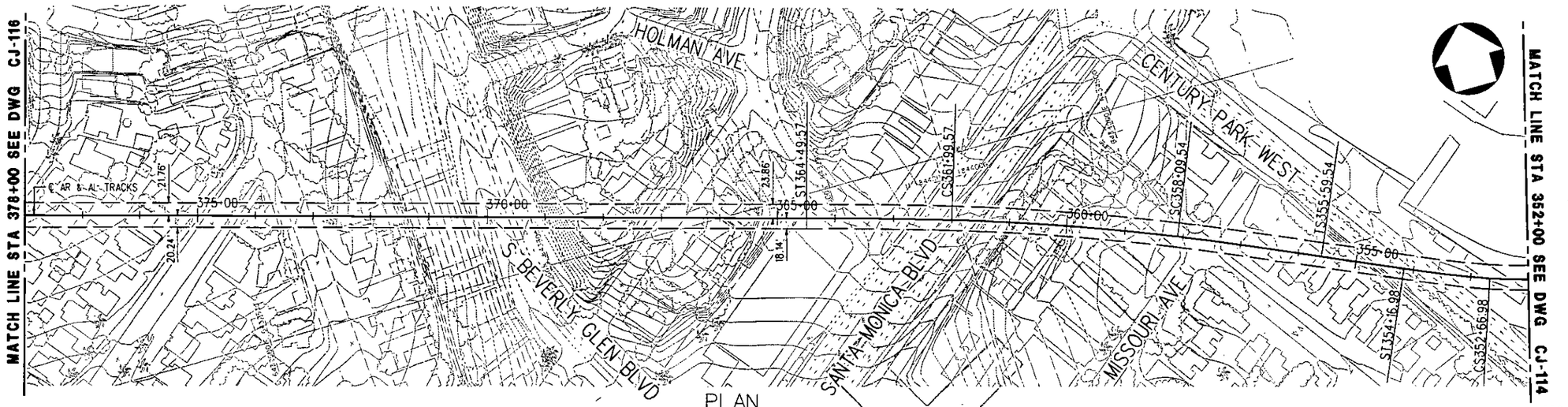
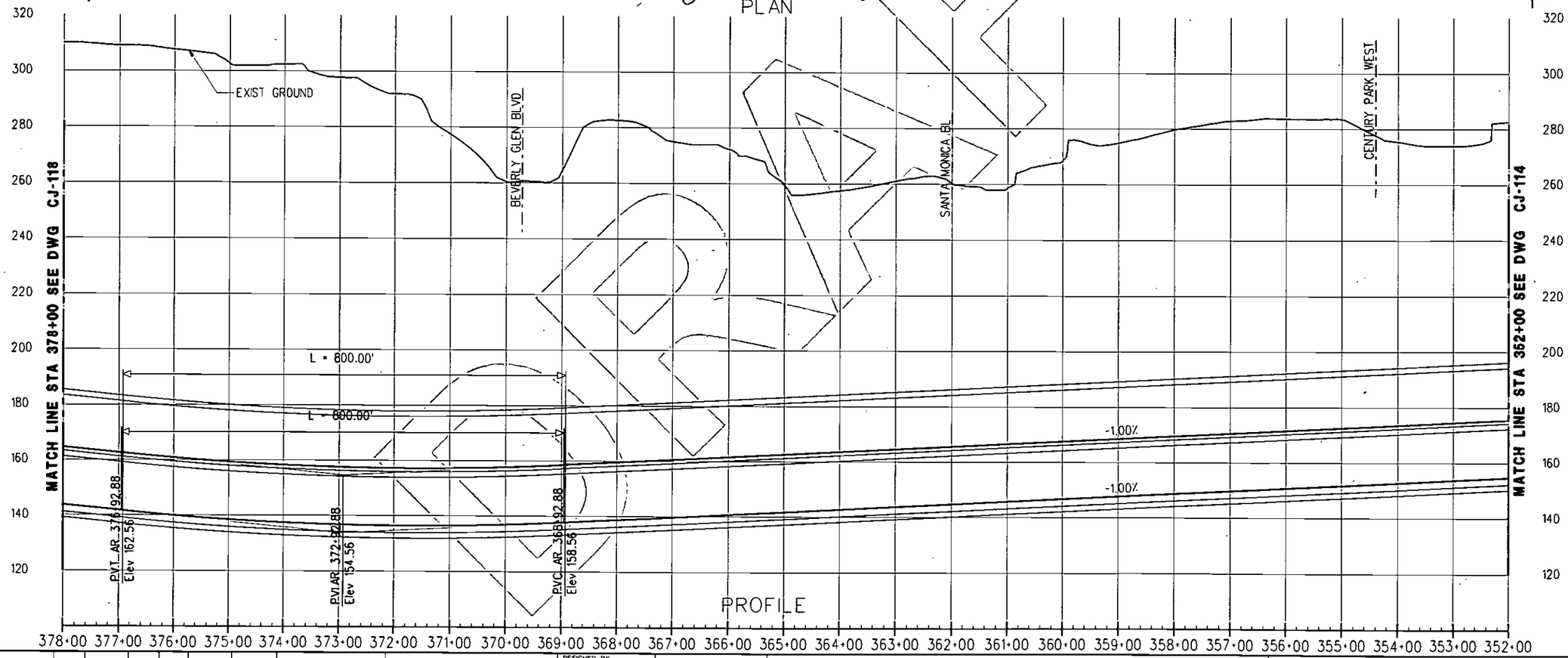
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-BY)
PLAN & PROFILE
STATION 333+00 TO 352+00
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CJ-114
REV
SCALE 1"=100'
SHEET NO

User Name: USER-adrate8/31/2010 @ 1:37:57 PM FileName>> T:\279404-WestsideExtensionACE\CADD\Single Boring Tunnel\SBT_Sheets\civil\Tunnel By Alignment-Constellation\CJ-114.dgn





REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

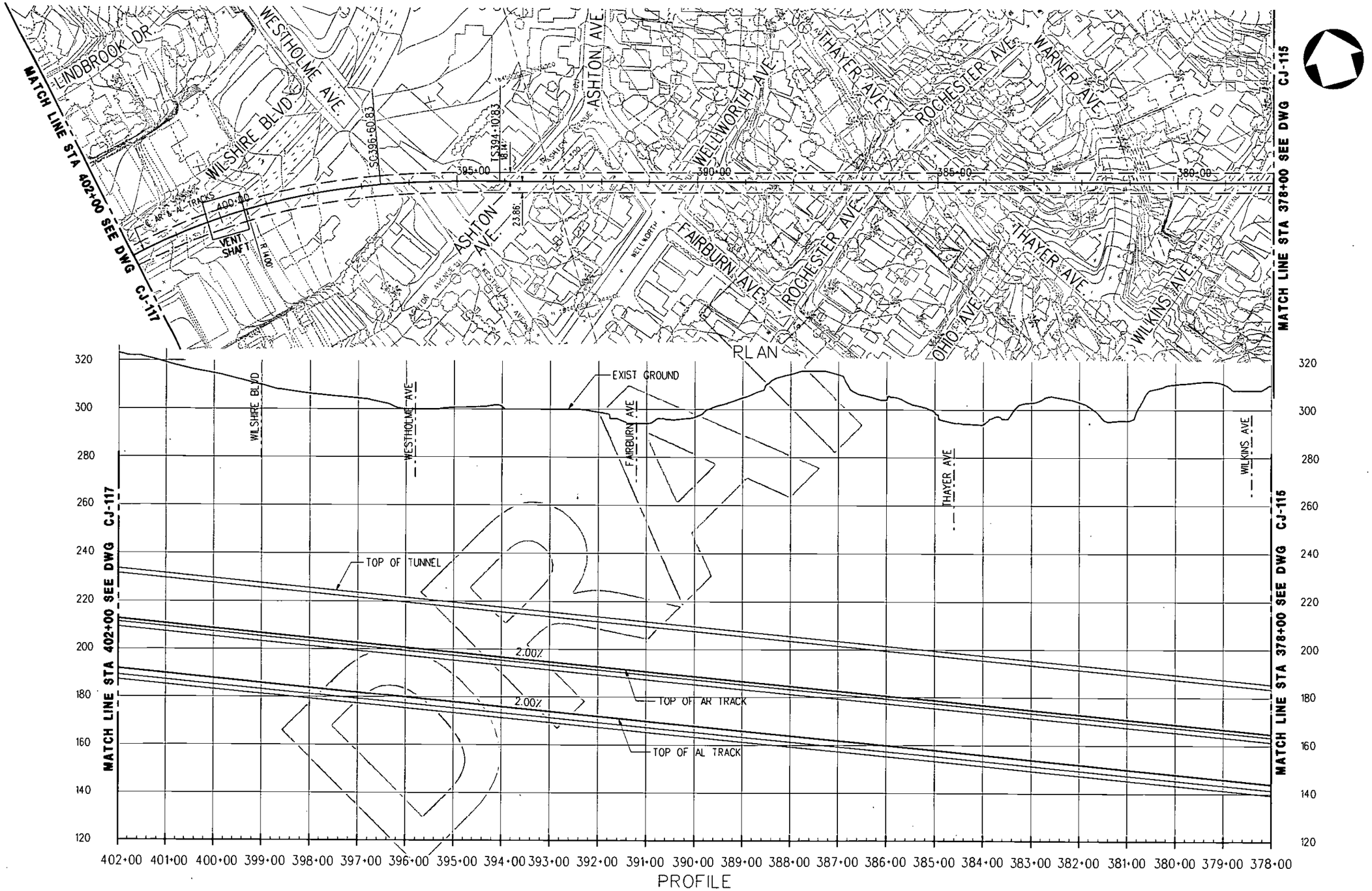
PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-BY)
PLAN & PROFILE
STATION 352+00 TO 378+00
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CJ-115
REV
SCALE 1" = 100'
SHEET NO

UserName: USER-oldrete8 6/31/2010 @ 1:38:04 PM FileName=> T:\27940A-WestsideExtensionACE\C-QD\Single Boring Tunnel\SBT_Sheets\civil\TunnelBy Alignment-Constellation\CJ-115.dwg



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

Metro

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

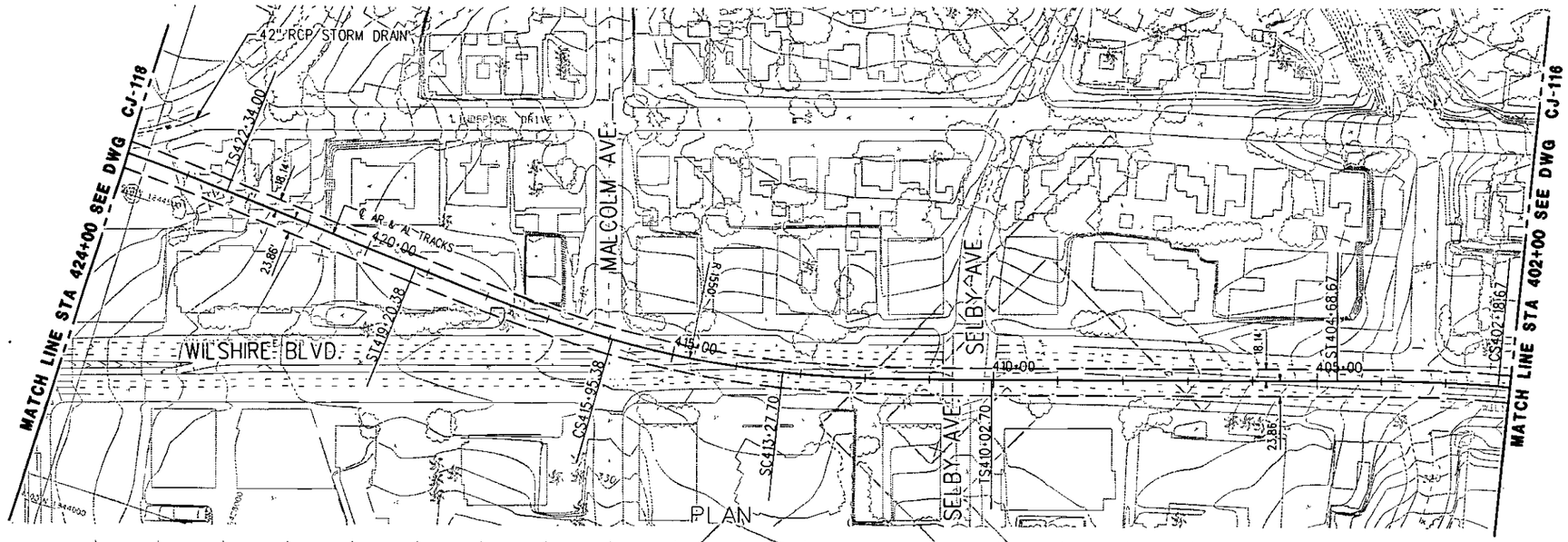
PB

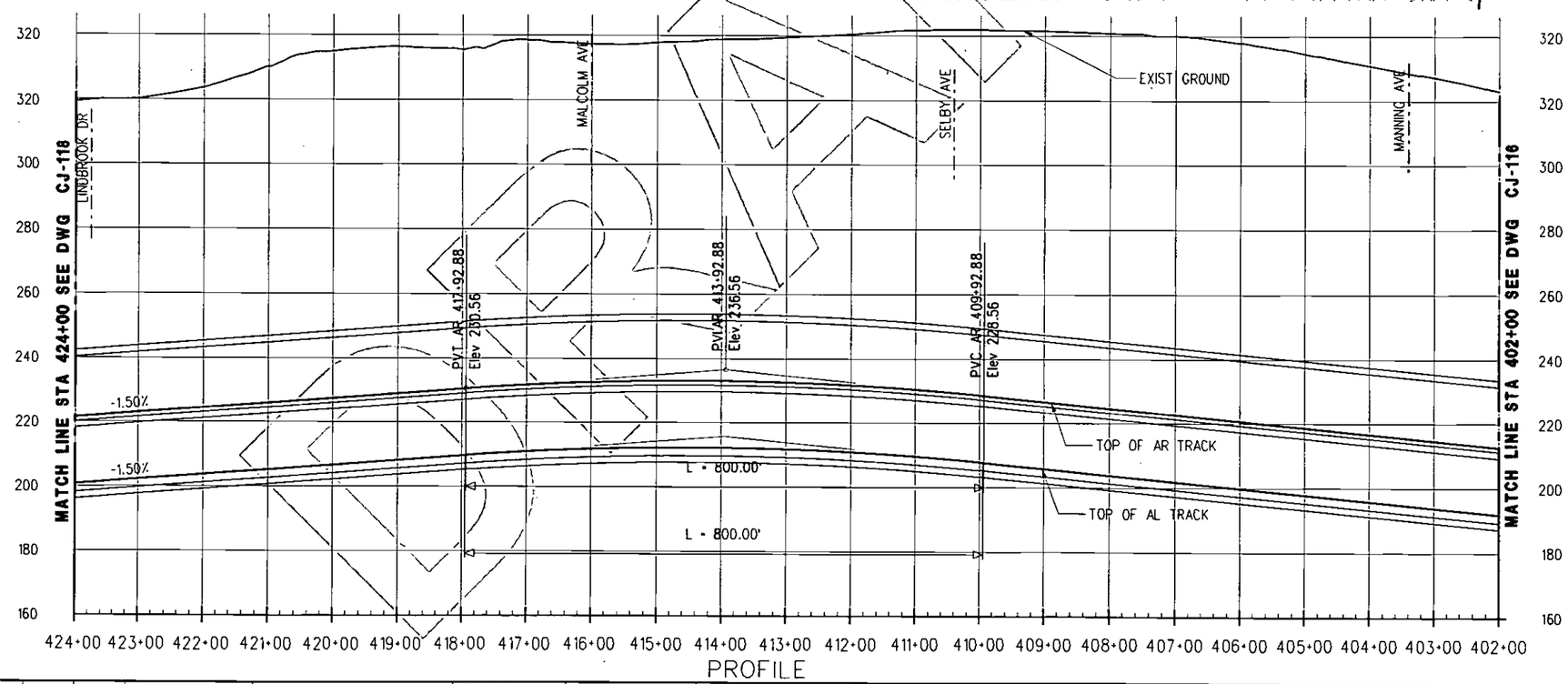
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-BY)
PLAN & PROFILE
STATION 378+00 TO 402+00
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CJ-116 REV
SCALE 1" = 100'
SHEET NO

UserName: USER-oldreteg8/31/2010 @ 1:38:12 PM FileName> T:\27940A-WestsideEx\tensionACE\CADD\Single Boring Tunnel\S37_Sheets\civil\Tunnel By Alignment-Constellation\CJ-116.plg





REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

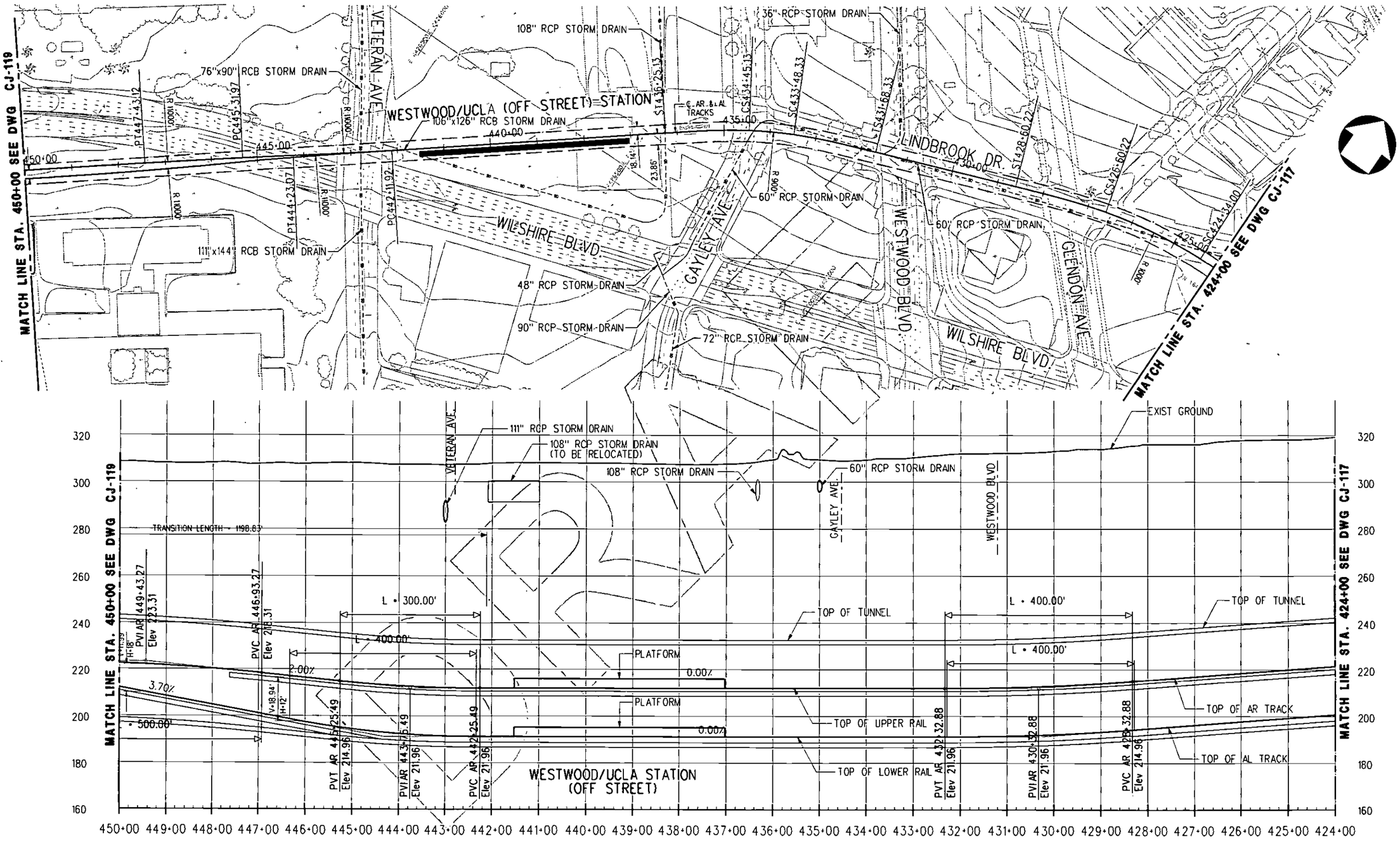
PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-BY)
PLAN & PROFILE
STATION 402+00 TO 424+00
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CJ-117 REV
SCALE 1"=100'
SHEET NO

UserName: USER-aldriete8/31/2010 @ 1:38:18 PM FileName-> I:\27940A-WestsideExtensionACE\CADD\Single Boring Tunnel\SET_Sheets\civil\Tunnel By Alignment-Constellation\CJ-117.plg



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

Metro

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

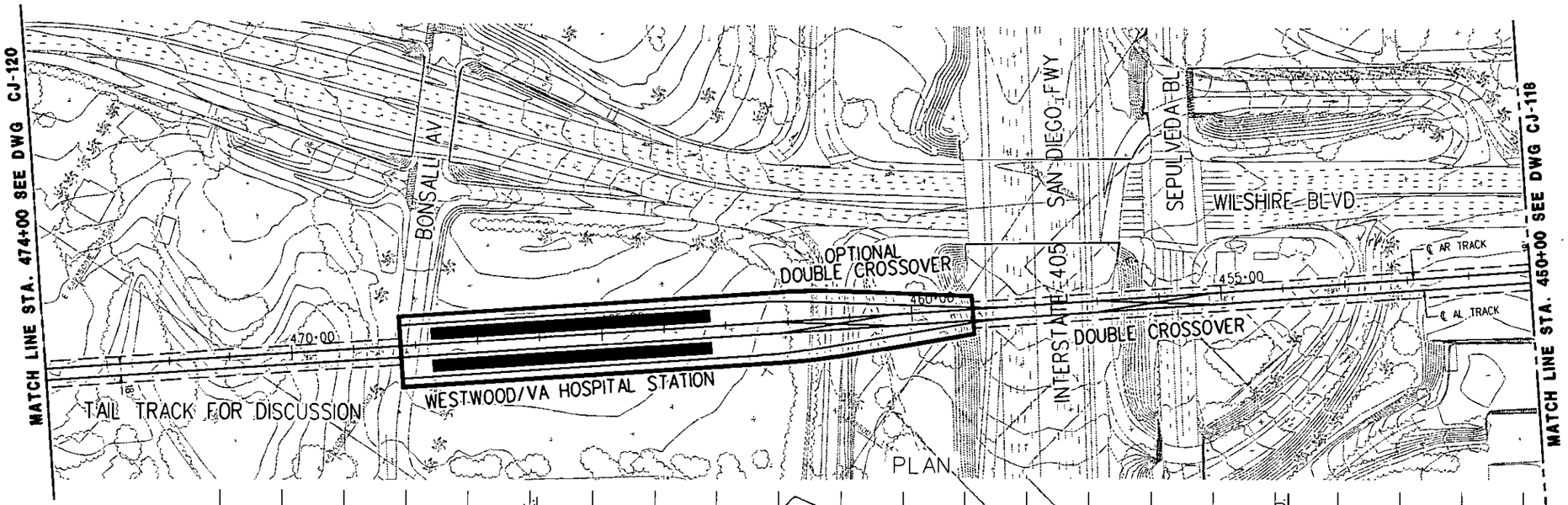
PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-BY)
PLAN & PROFILE
STATION 424+00 TO 450+00
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CJ-118
REV
SCALE 1"=100'
SHEET NO

User Name: USER-old/ele 8/31/2010 @ 1:38:28 PM FileName=> T:\27940A-WestsideExtensionACE\CADD\Single Boring Tunnel\SBT_Sheets\Civil\Tunnel By Alignment-Constellation\CJ-118.dgn



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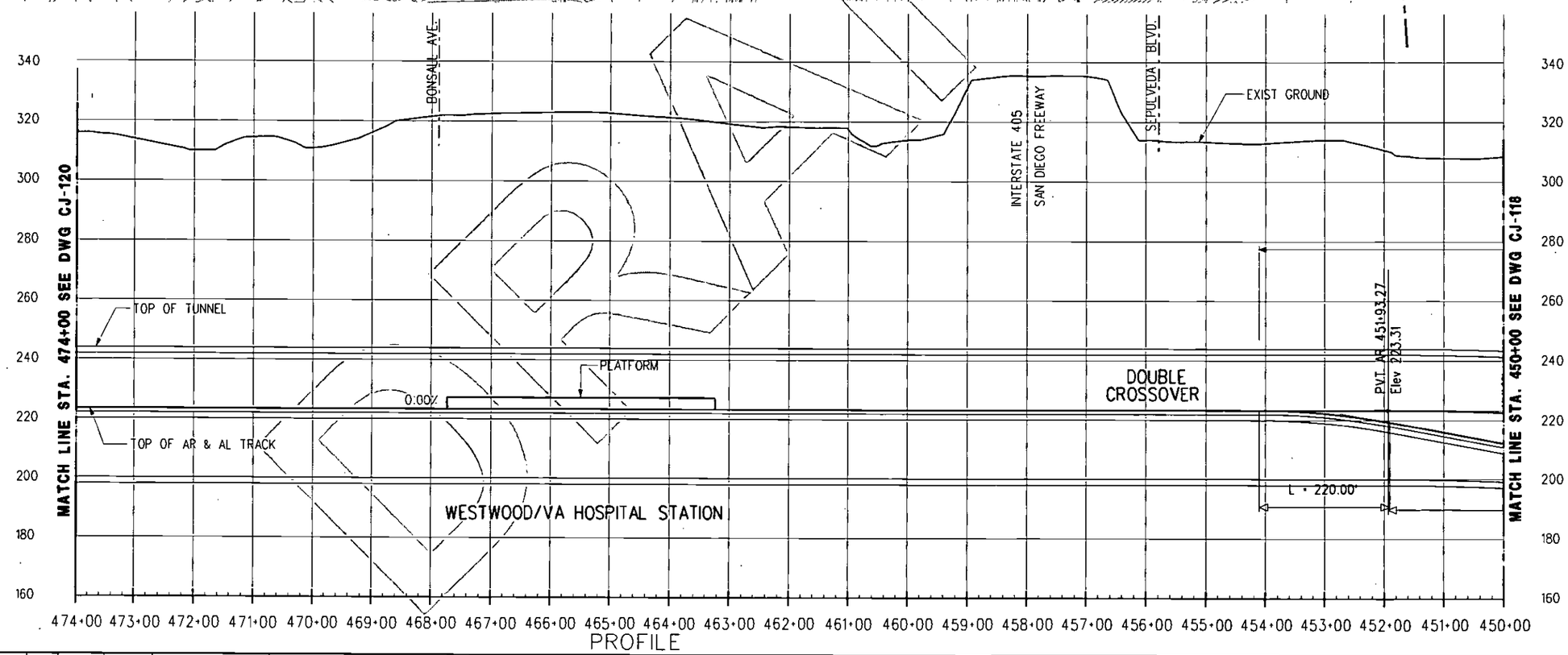


PROFILE

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

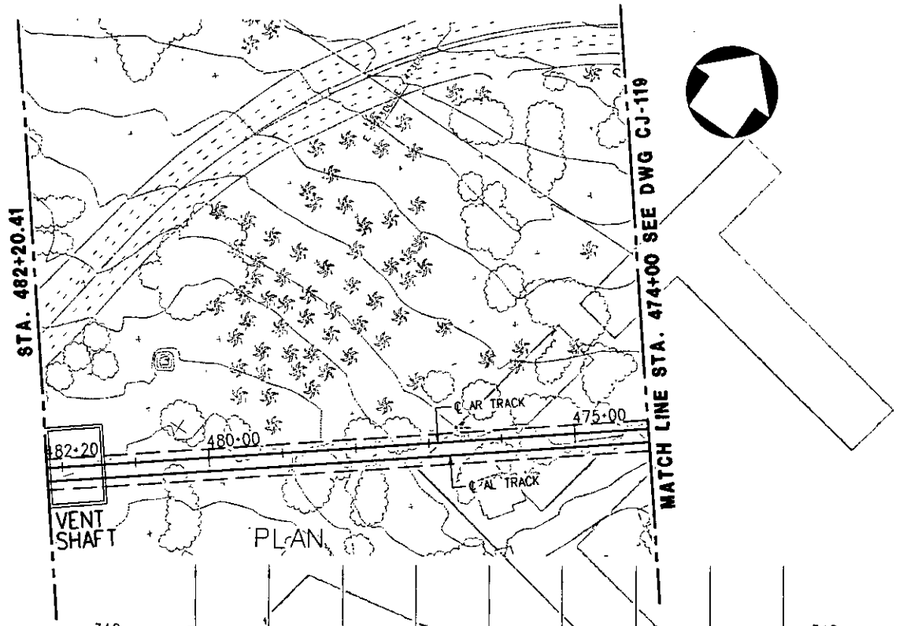
PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-BY)
PLAN AND PROFILE
STATION 450+00 TO 474+00
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CJ-119
REV
SCALE 1" = 100'
SHEET NO

UserName: USER-oldrete8/31/2010 @ 1:38:33 PM FileName=> T:\27940A-WestsideExtensionACE\CADD\Single Boring Tunnel\SBT_Sheets\civil\Tunnel By Alignment-Constellation\CJ-119.plg



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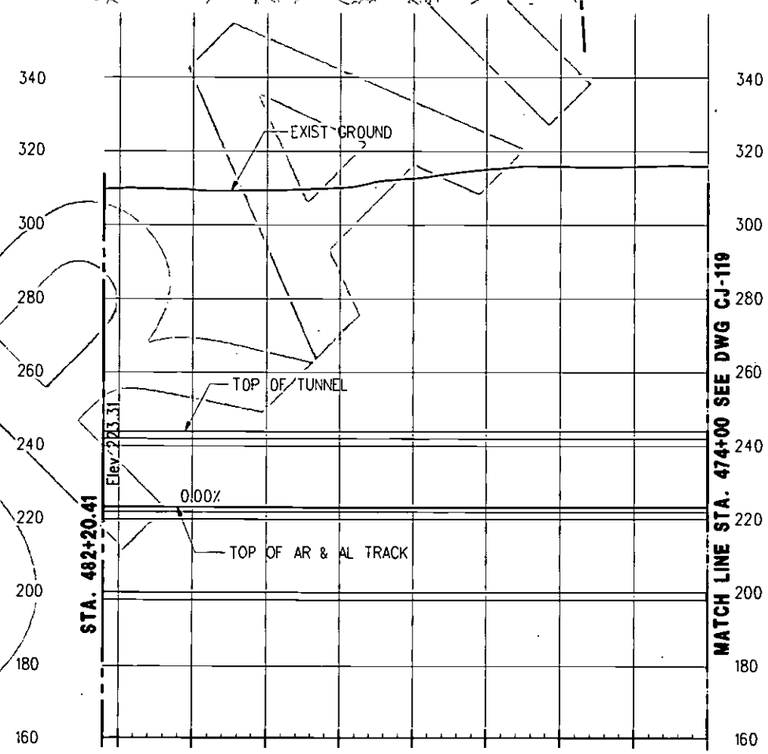


PROFILE

DRAFT

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

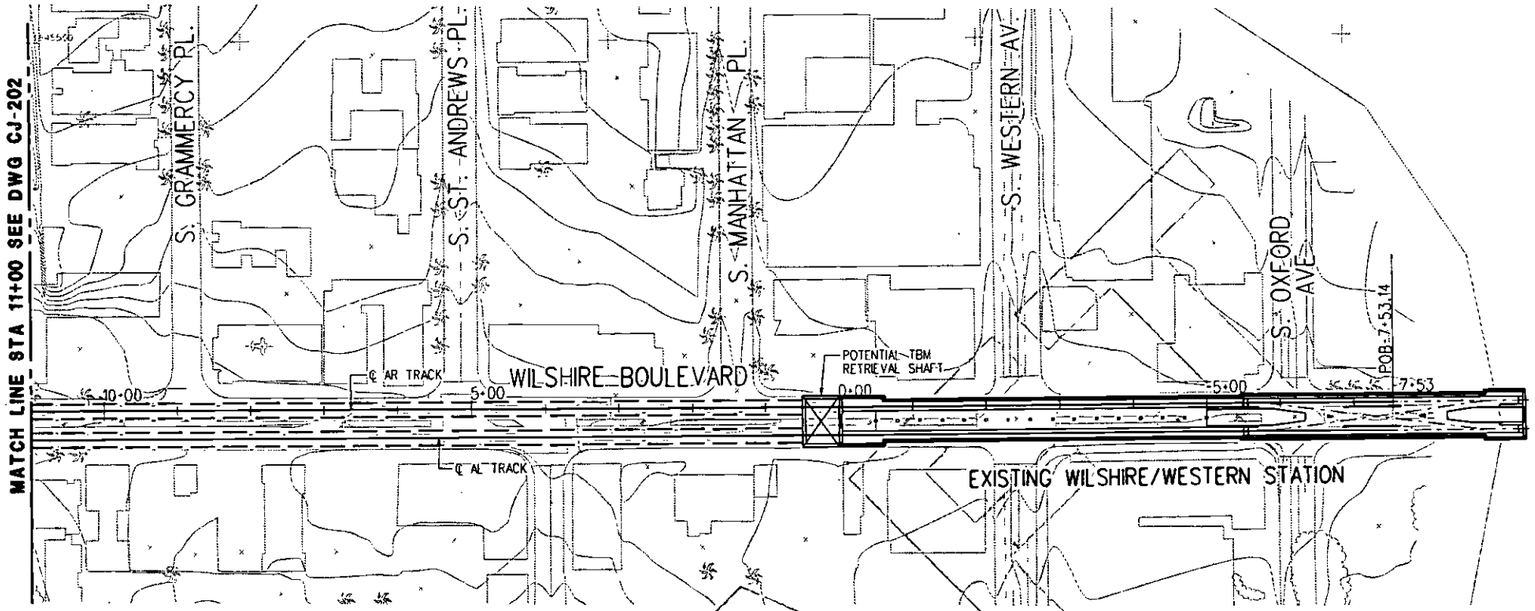
PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-BY)
PLAN AND PROFILE
STATION 474+00 TO 482+20.41
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CJ-120
REV
SCALE 1"=100'
SHEET NO

UserName: USER-oldrete 8/31/2010 @ 1:38:41 PM FileName>> T:\27940A-WestsideExtension\CE\CADD\Single Boring Tunnel\SBT_Sheets\civil\Tunnel By Alignment-Constellation\CJ-120.plg



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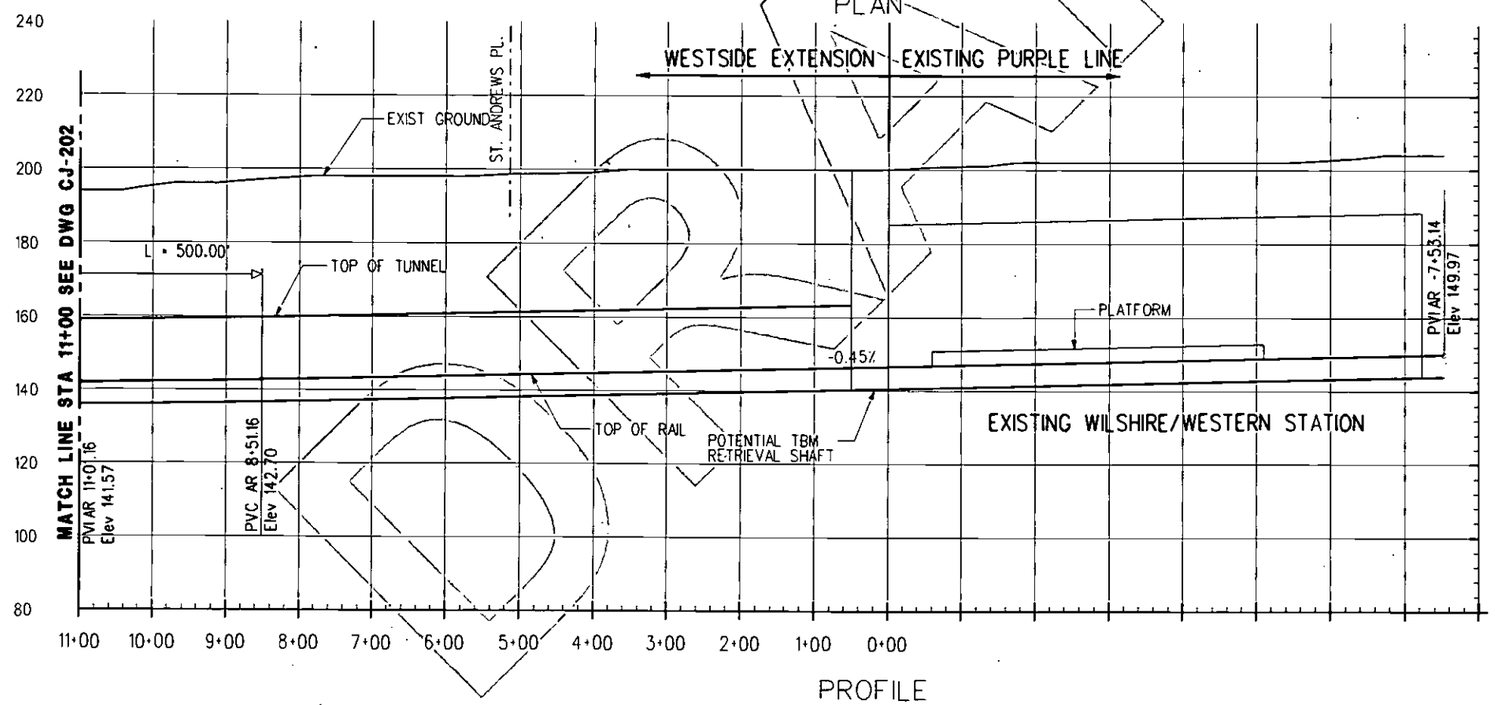

PROFILE

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

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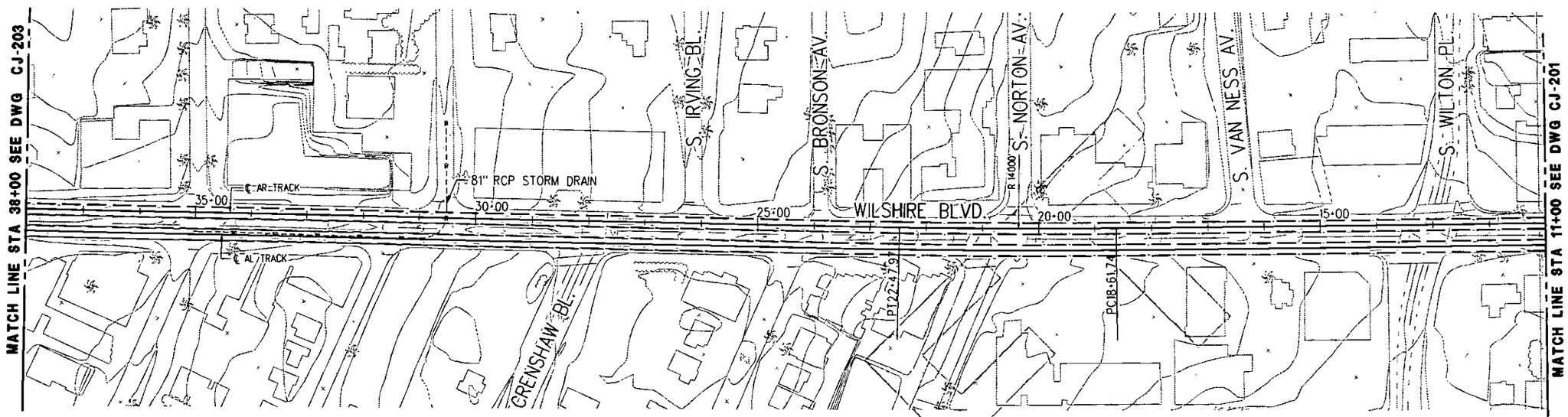
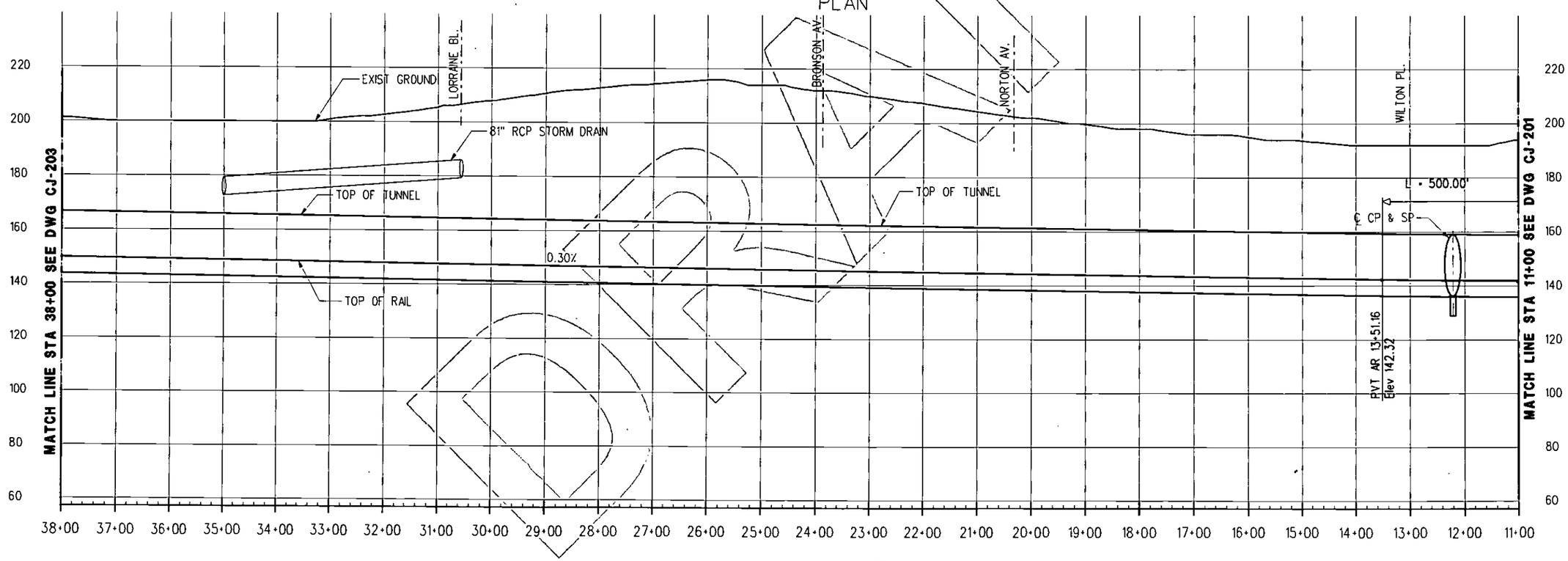
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-THROUGH)
PLAN & PROFILE
STATION 0+00 TO 11+00
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CJ-201
REV
SCALE 1'=100'
SHEET NO



PLAN



PROFILE

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
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LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

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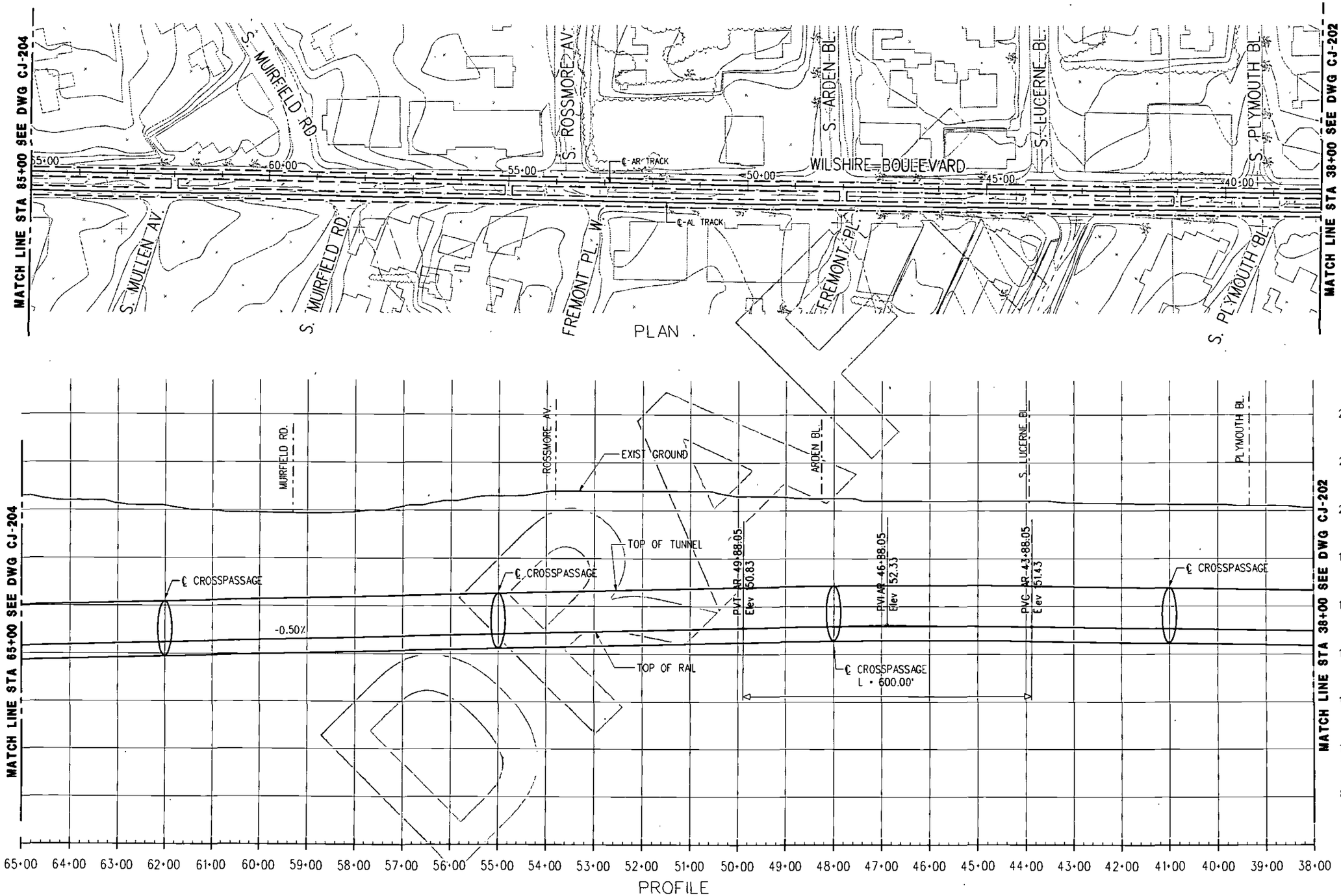
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-THROUGH)
PLAN & PROFILE
STATION 11+00 TO 38+00
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CJ-202
REV
SCALE 1" = 100'
SHEET NO

UserName: USER-aldrete8/31/2010 @ 1:39:04 PM FileName=> T:\27940A-WestsideExtensionACE\C400\Single Boring Tunnel\SBT_Sheets\civil\Tunnel Thru Alignment-Constellation\CJ-202.plg



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

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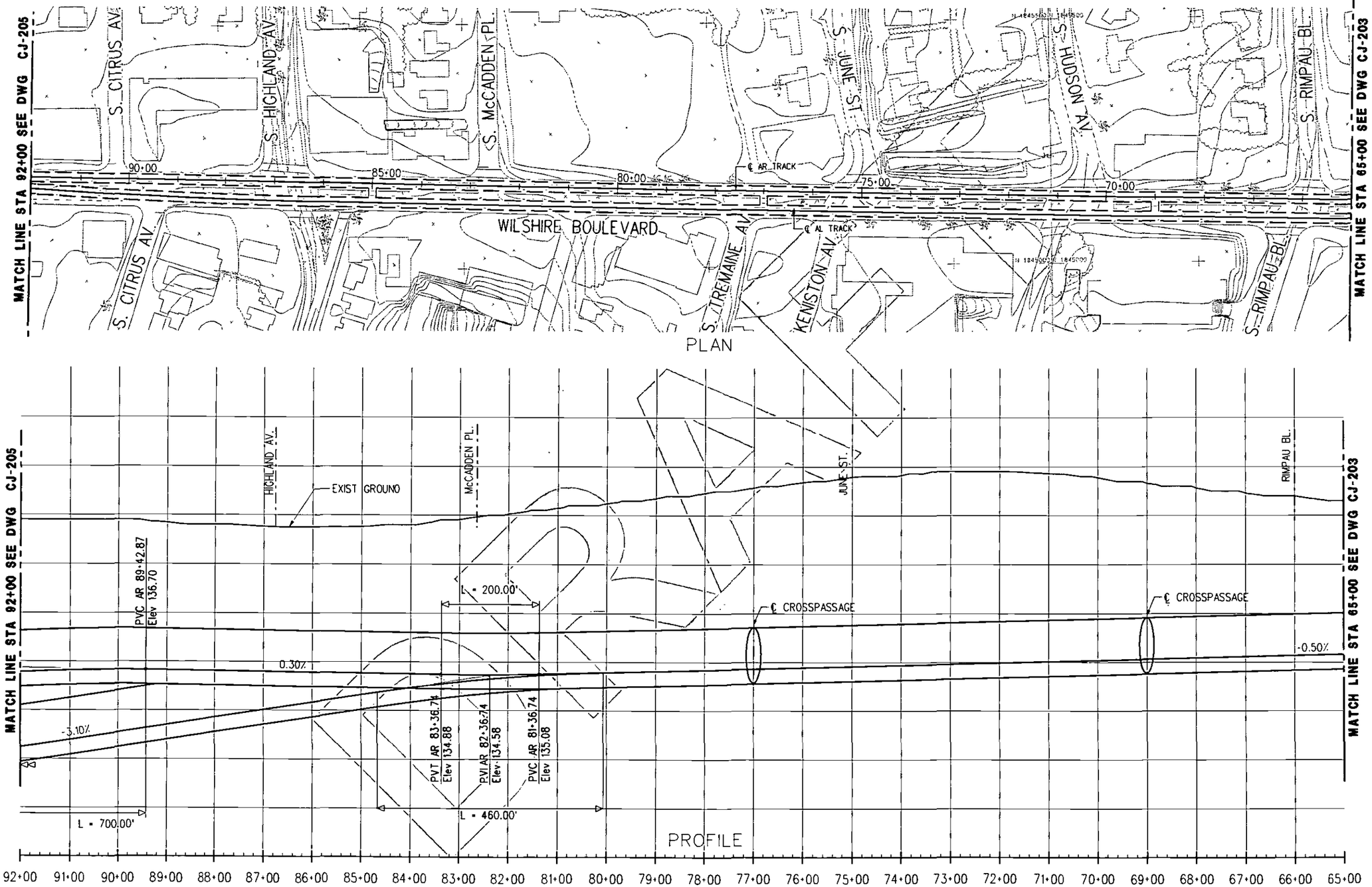
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-THROUGH)
PLAN AND PROFILE
STATION 38+00 TO 65+00
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CJ-203
REV
SCALE 1"=100'
SHEET NO

UserName: USER-oldrete 8/31/2010 @ 1:39:10 PM FileName=> T:\27940A-WestsideExtension4CE\CADD\Single Boring Tunnel\SBT_Sheets\civil\Tunnel Thru Alignment-Constellation\CJ-203.plg



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
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IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
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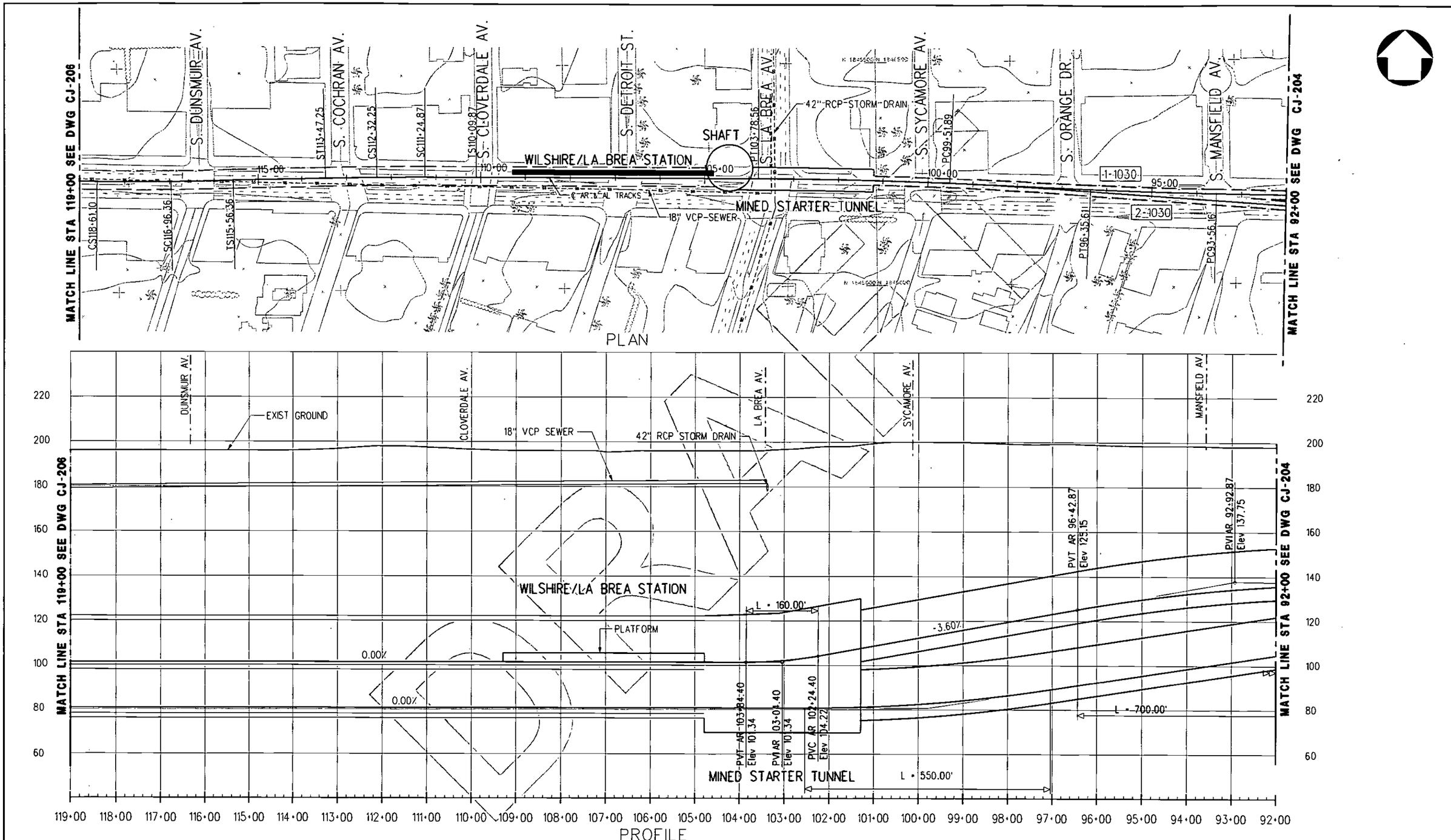
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-THROUGH)
PLAN & PROFILE
STATION 65+00 TO 92+00
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CJ-204
REV
SCALE 1" = 100'
SHEET NO

UserName: USER-aldrete@7/31/2010 @ 1:39:18 PM FileName=> T:\27940A-WestsideExtensionACE\CADD\Single Boring Tunnel\SBT_Sheets\civil\Tunnel Thru Alignment-Constellation\CJ-204.plg



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
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DATE AUGUST 2010

LOS ANGELES COUNTY
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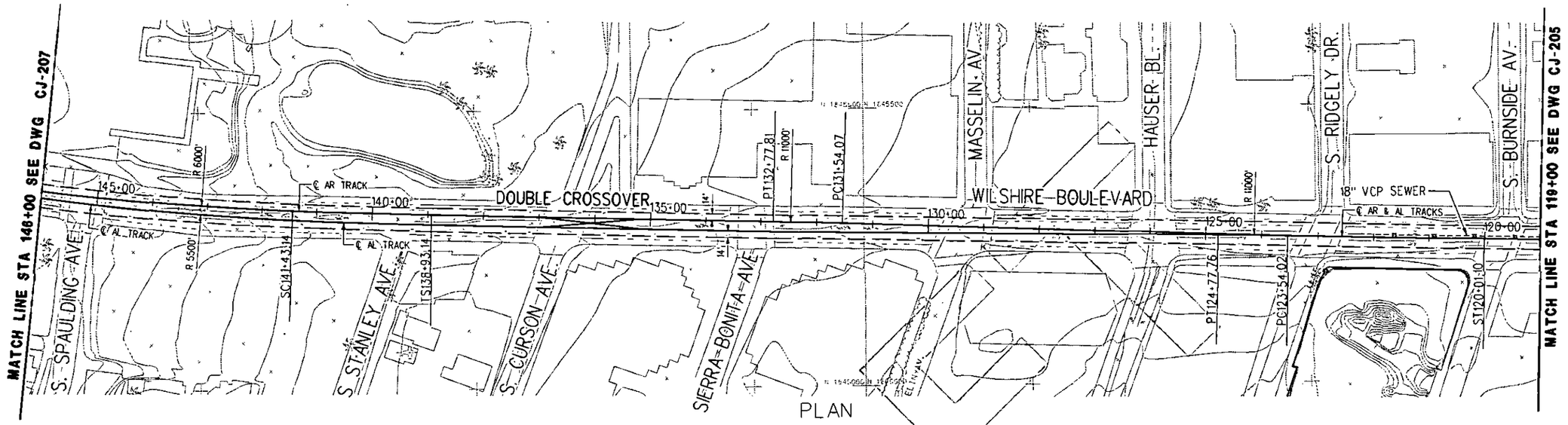
PROJECT MANAGER

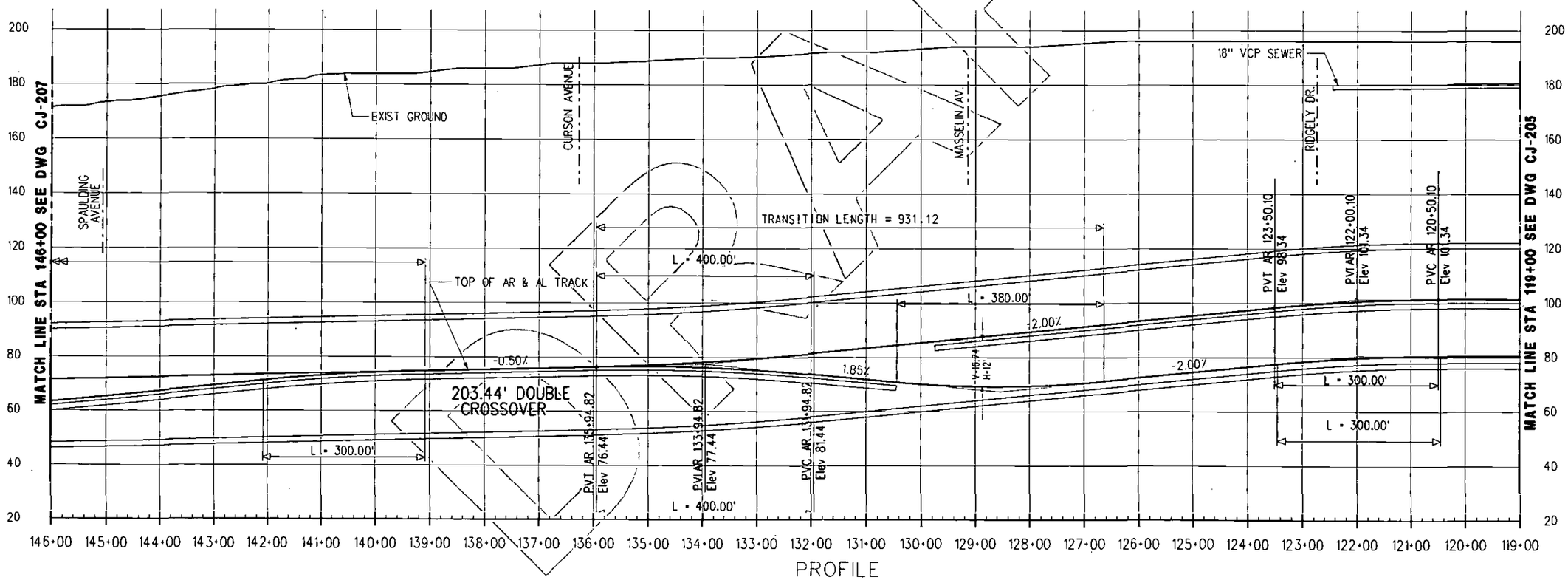
WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-THROUGH)
PLAN & PROFILE
STATION 92+00 TO 119+00
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CJ-205
REV
SCALE 1"=100'
SHEET NO

UserName: USER-oldretek8/31/2010 @ 1:39:25 PM FileName=> T:\27940A-WestsideExtension\ACE\CADD\Single Boring Tunnel\SBT_Sheets\civil\Tunnel Thru Alignment-Constellation\CJ-205.plg



PLAN



PROFILE

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
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LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

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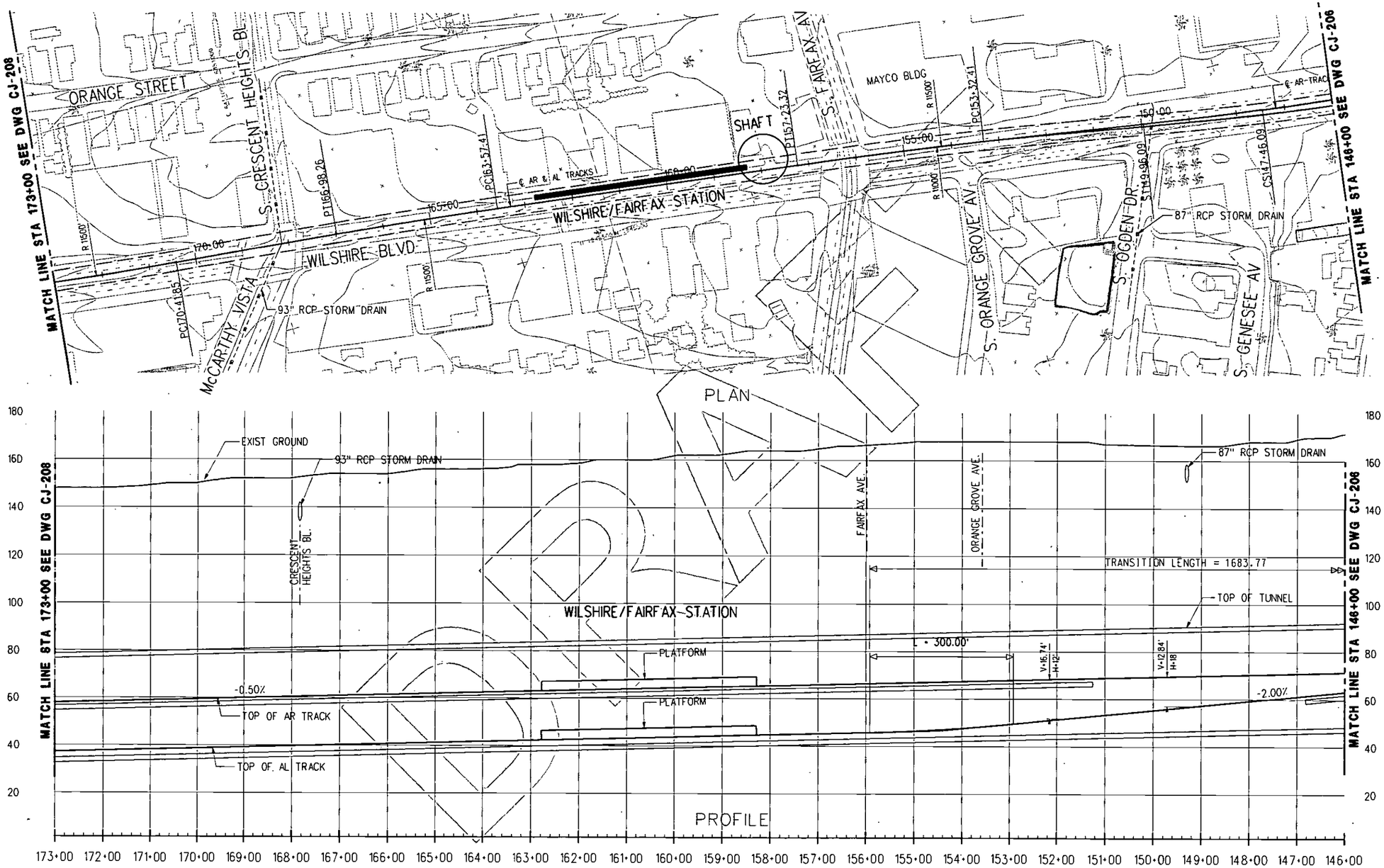
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-THROUGH)
PLAN & PROFILE
STATION 119+00 TO 146+00
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CJ-206
REV
SCALE 1"=100'
SHEET NO

UserName: USER=aldrete8/31/2010 @ 1:39:32 PM FileName=> T:\27940A-WestsideExtensionACE\CADD\Single Boring Tunnel\SBT_Sheets\civil\Tunnel Thru Alignment-Constellation\CJ-206.plg



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
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IN CHARGE
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LOS ANGELES COUNTY
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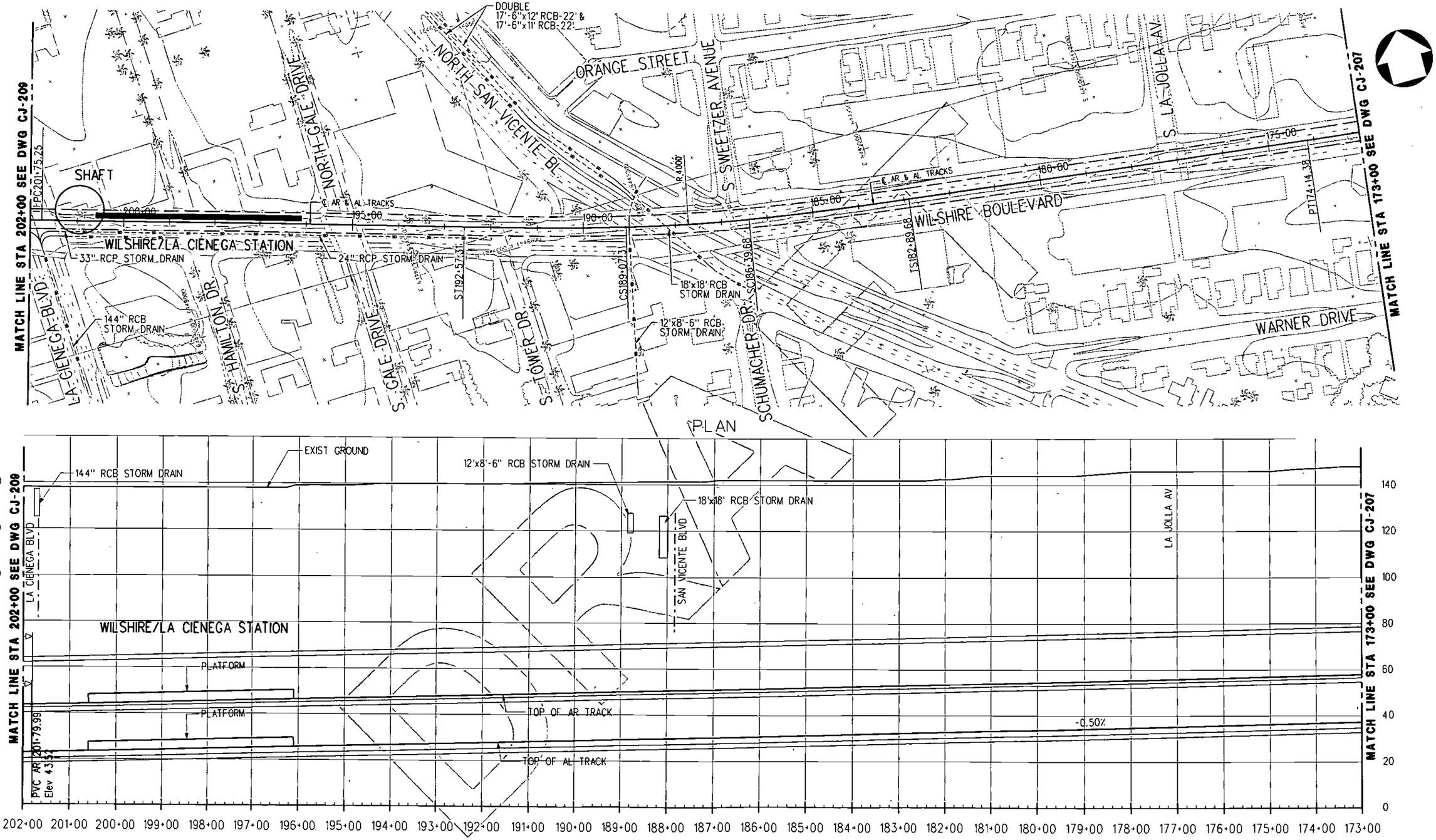
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-THROUGH)
PLAN & PROFILE
STATION 146+00 TO 173+00
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CJ-207
REV
SCALE 1"=100'
SHEET NO

UserName: USER-dldrake8/31/2010 @ 1:39:40 PM FileName>> T:\27940A-WestsideExtension\ACE\CADD\Single Boring Tunnel\SBT_Sheets\civil\Tunnel Thru Alignment-Constellation\CJ-207.plg



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
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IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

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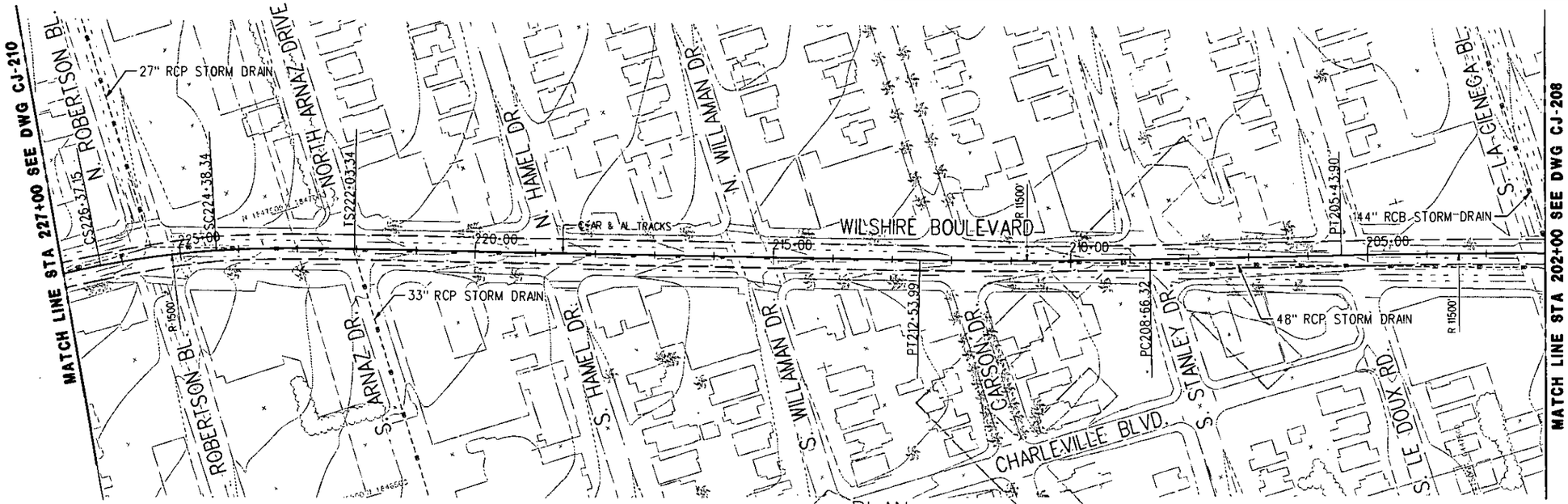
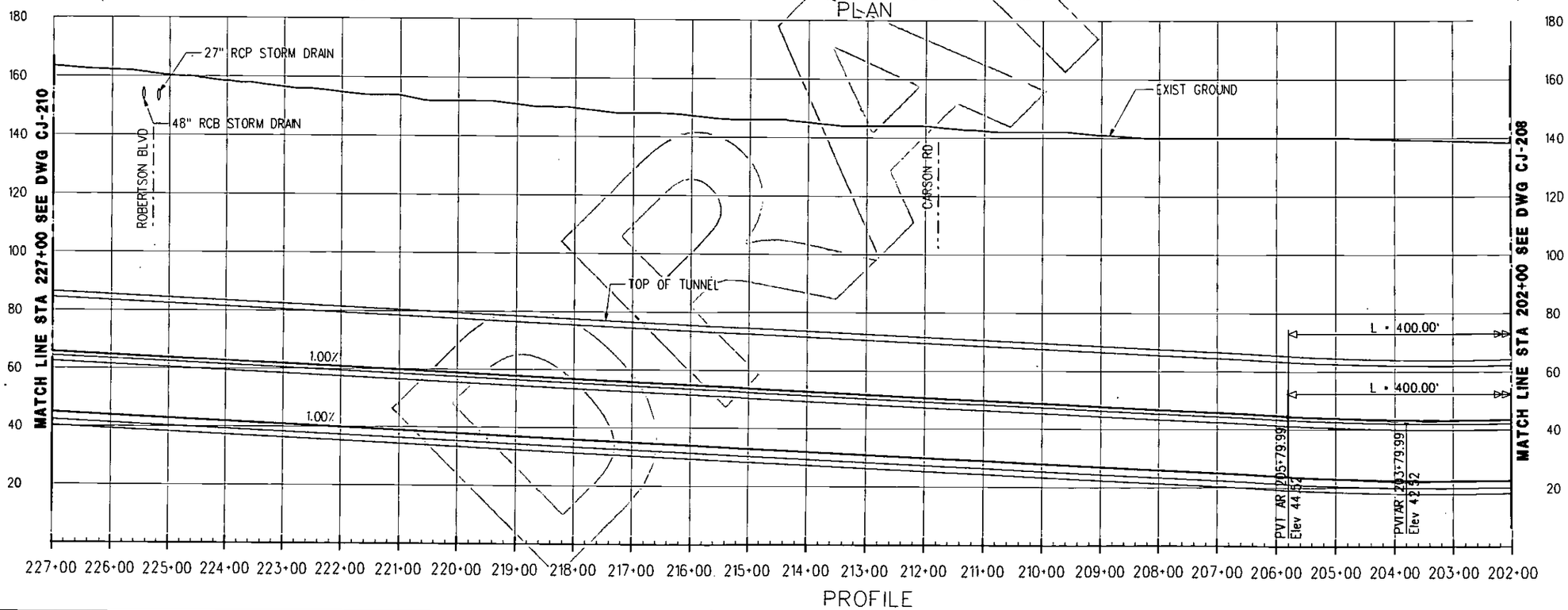
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-THROUGH)
PLAN & PROFILE
STATION 173+00 TO 202+00
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CJ-208
REV
SCALE 1"=100'
SHEET NO

UserName: USER=aldrete8/31/2010 @ 1:39:48 PM FileName=> T:\27940A-WestsideExtension\ACE\CADD\Single Boring Tunnel\SBT_Sheets\Civil\Tunnel Thru Alignment-Constellation\CJ-208.plg





REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

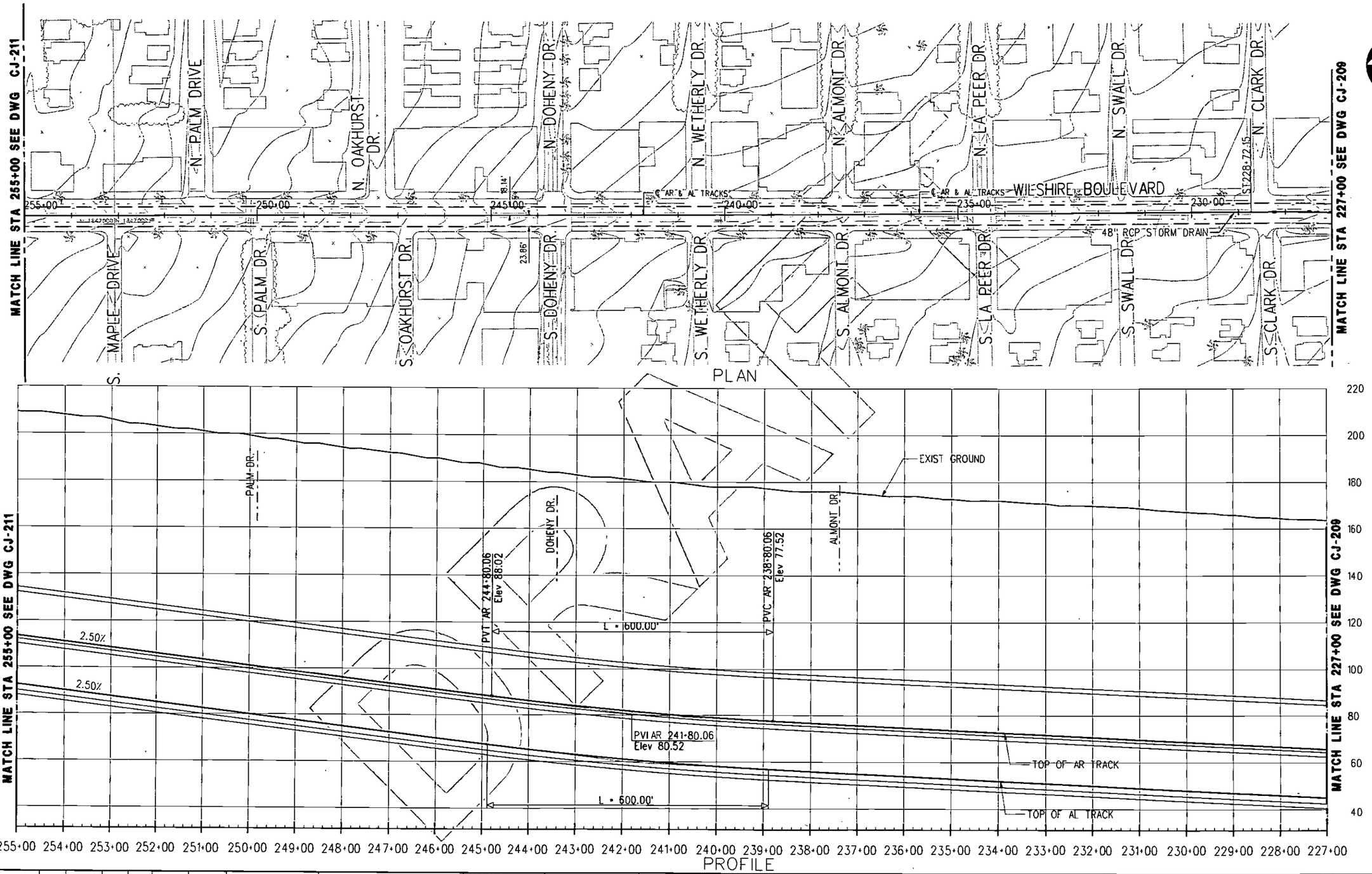
PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-THROUGH)
PLAN & PROFILE
STATION 202+00 TO 227+00
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CJ-209
REV
SCALE 1" =100'
SHEET NO

UserName: USER-aldrete 8/31/2010 @ 1:39:55 PM FileName=> T:\27940A-WestsideExtensionACE\CADD\Single Boring Tunnel\SBT_Sheets\civil\Tunnel Thru Alignment-Constellation\CJ-209.plg



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

Metro

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-THROUGH)
PLAN & PROFILE
STATION 227+00 TO 255+00
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CJ-210
REV
SCALE 1" = 100'
SHEET NO

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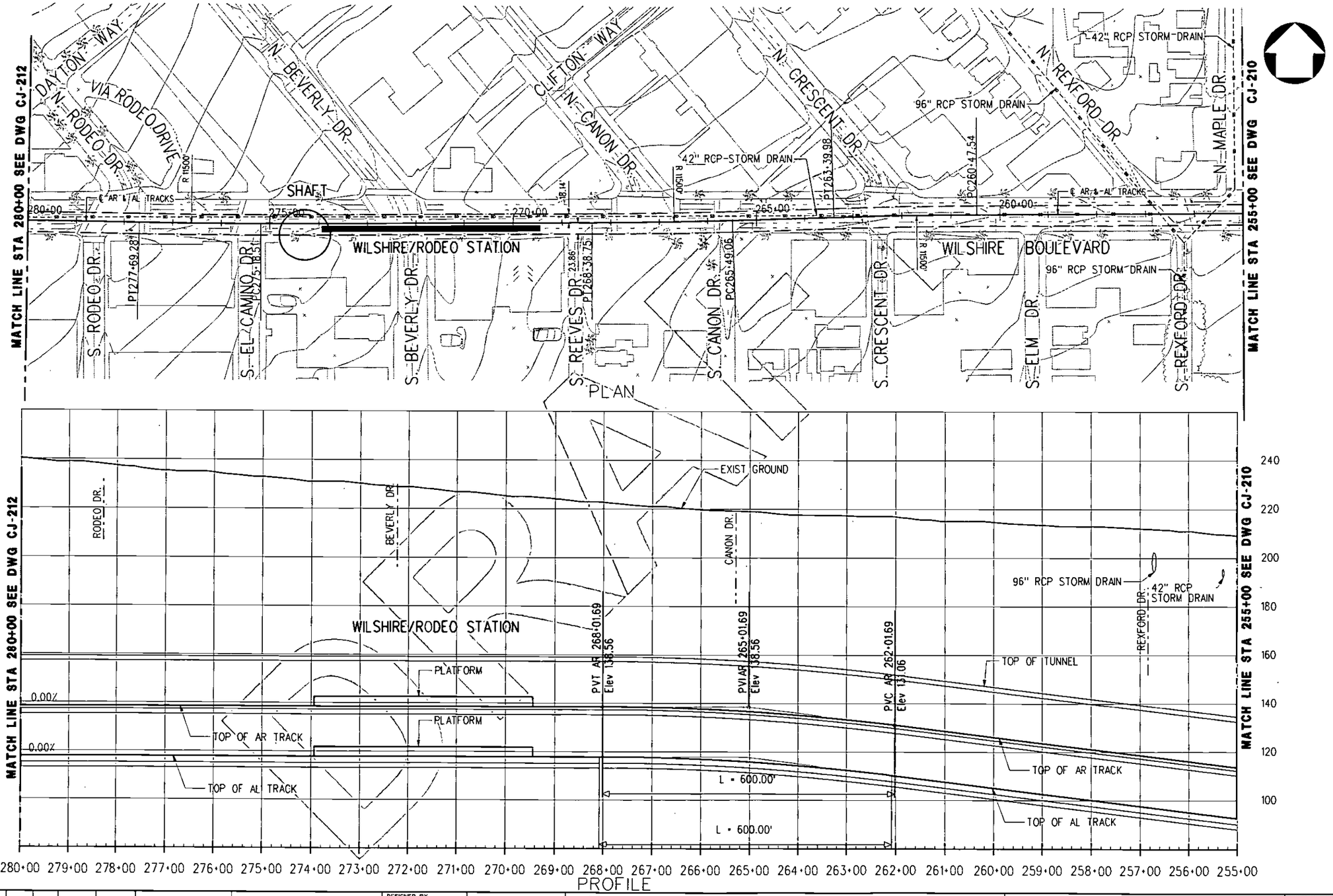

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

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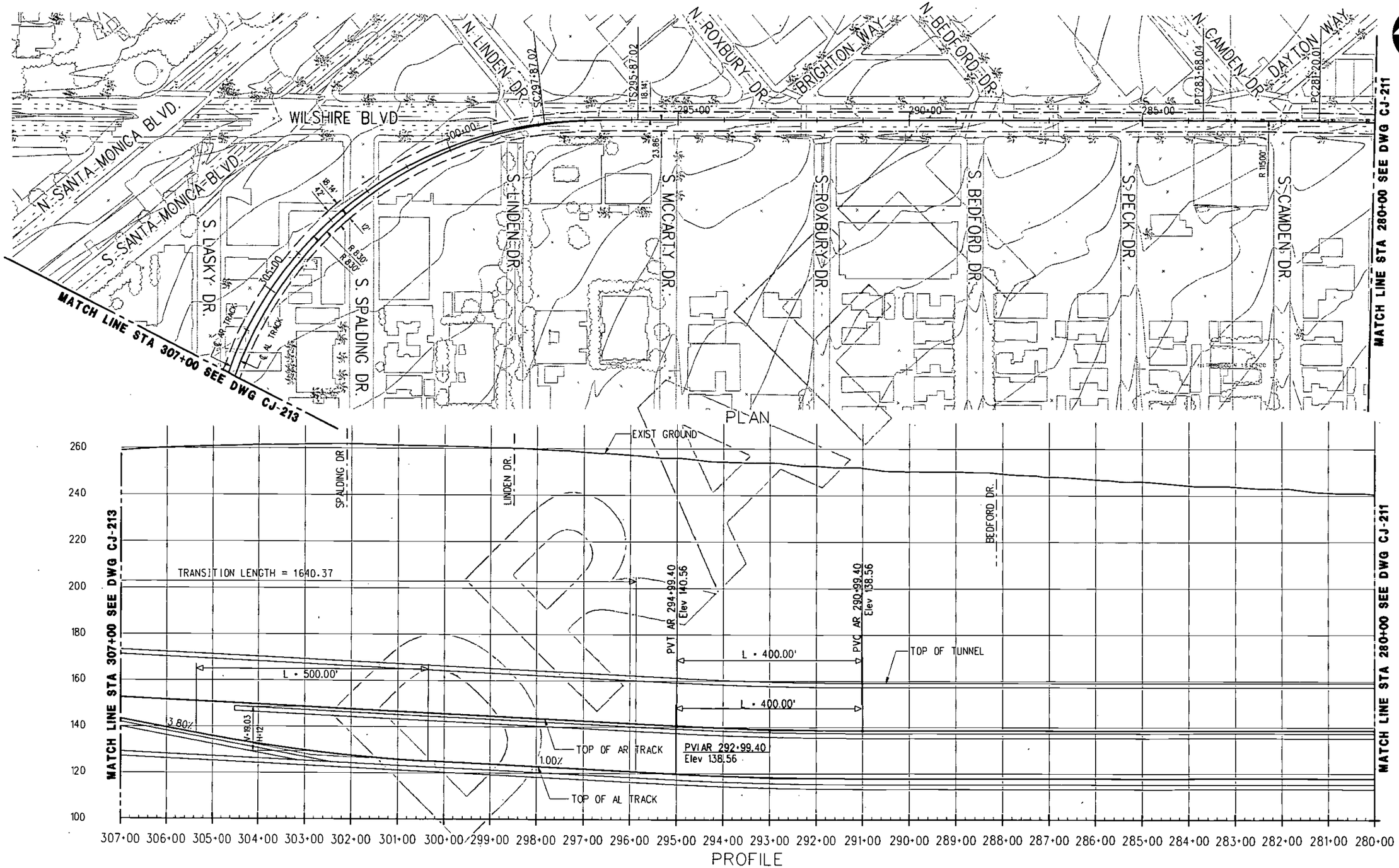
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-THROUGH)
PLAN & PROFILE
STATION 255+00 TO 280+00
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CJ-211
REV
SCALE 1" = 100'
SHEET NO

UserName: USER-oldrete6/3/2010 @ 1:40:08 PM FileName: T:\27940A-WestsideExtensionACE\CADD\Single Boring Tunnel\SBT_Sheets\civil\Tunnel Thru Alignment-Constellation\CJ-211.pdg



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

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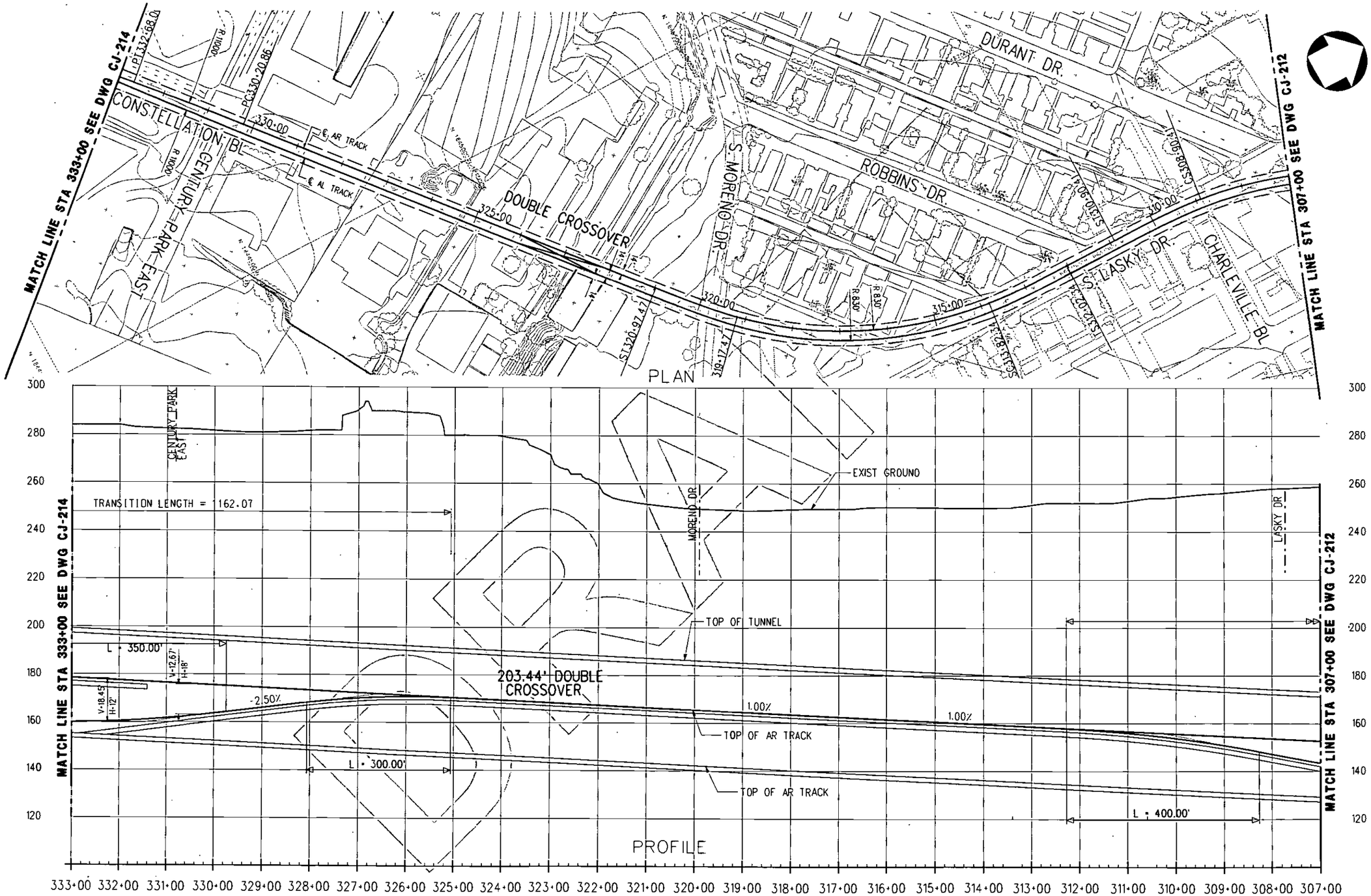
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-THROUGH)
PLAN & PROFILE
STATION 280+00 TO 307+00
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CJ-212
REV
SCALE 1"=100'
SHEET NO

UserName: USER-updated-8/31/2010 @ 1:40:15 PM FileName-> T:\27940A-WestsideExtension\CE\CADD\Single Boring Tunnel\SBT_Sheets\civil\Tunnel Thru Alignment-Constellation\CJ-212.plg



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

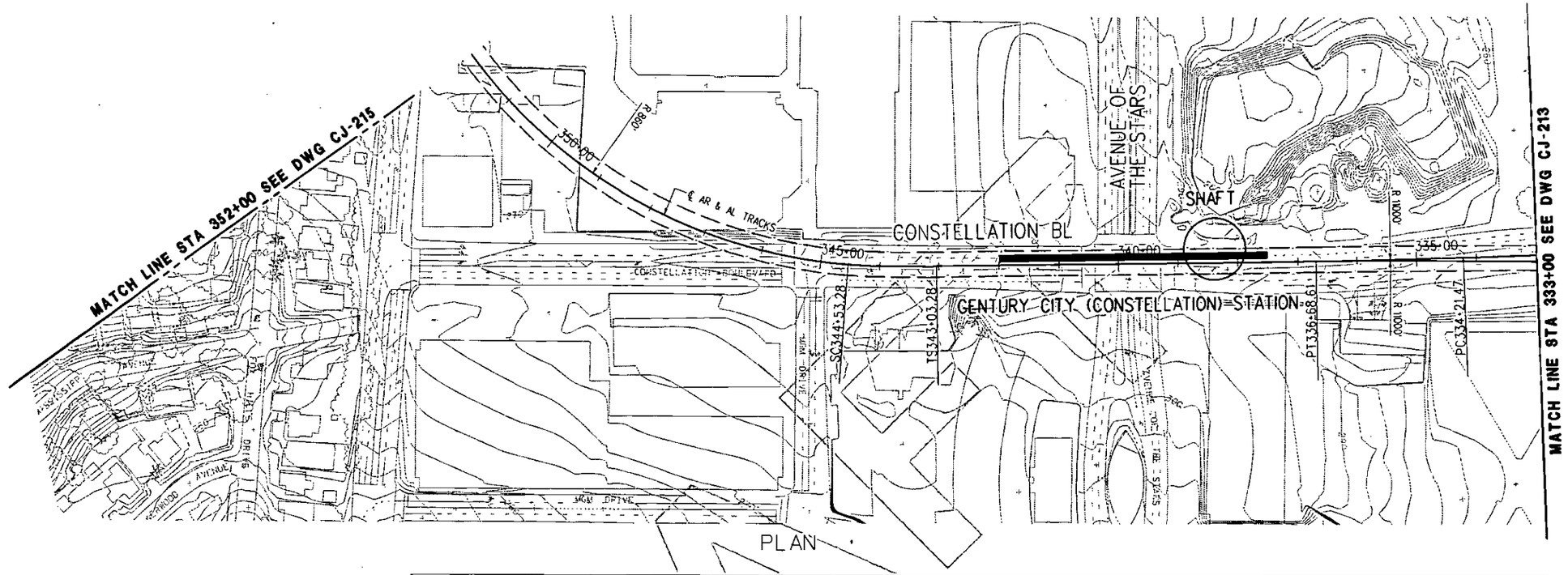
PB

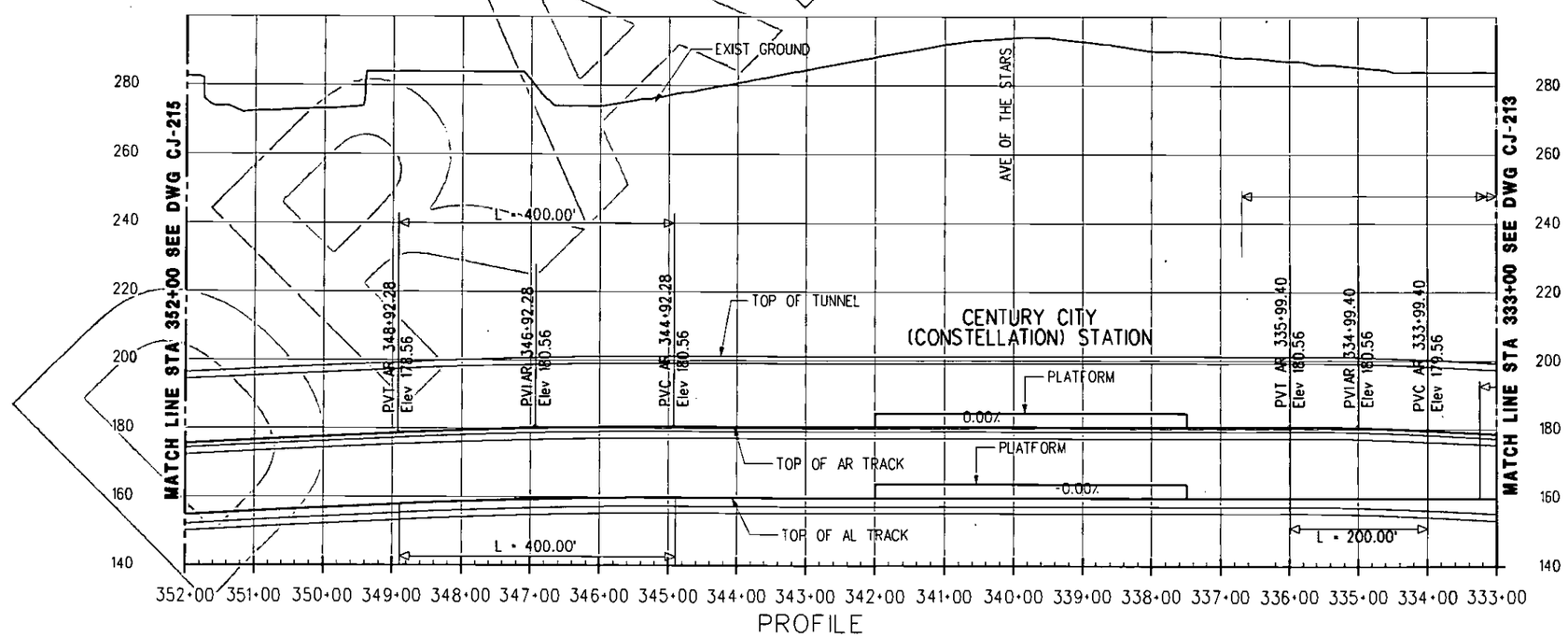
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-THROUGH)
PLAN & PROFILE
STATION 307+00 TO 333+00
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CJ-213
REV
SCALE 1"=100'
SHEET NO

UserName: USER-adrelele8/31/2010 @ 1:40:22 PM FileName=> T:\27940A-WestsideExtension\CE\CADD\Single Boring Tunnel\SBT_Sheets\civil\Tunnel Thru Alignment-Constellation\CJ-213.plg





PROFILE

REV	DATE	BY	APP	REC NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

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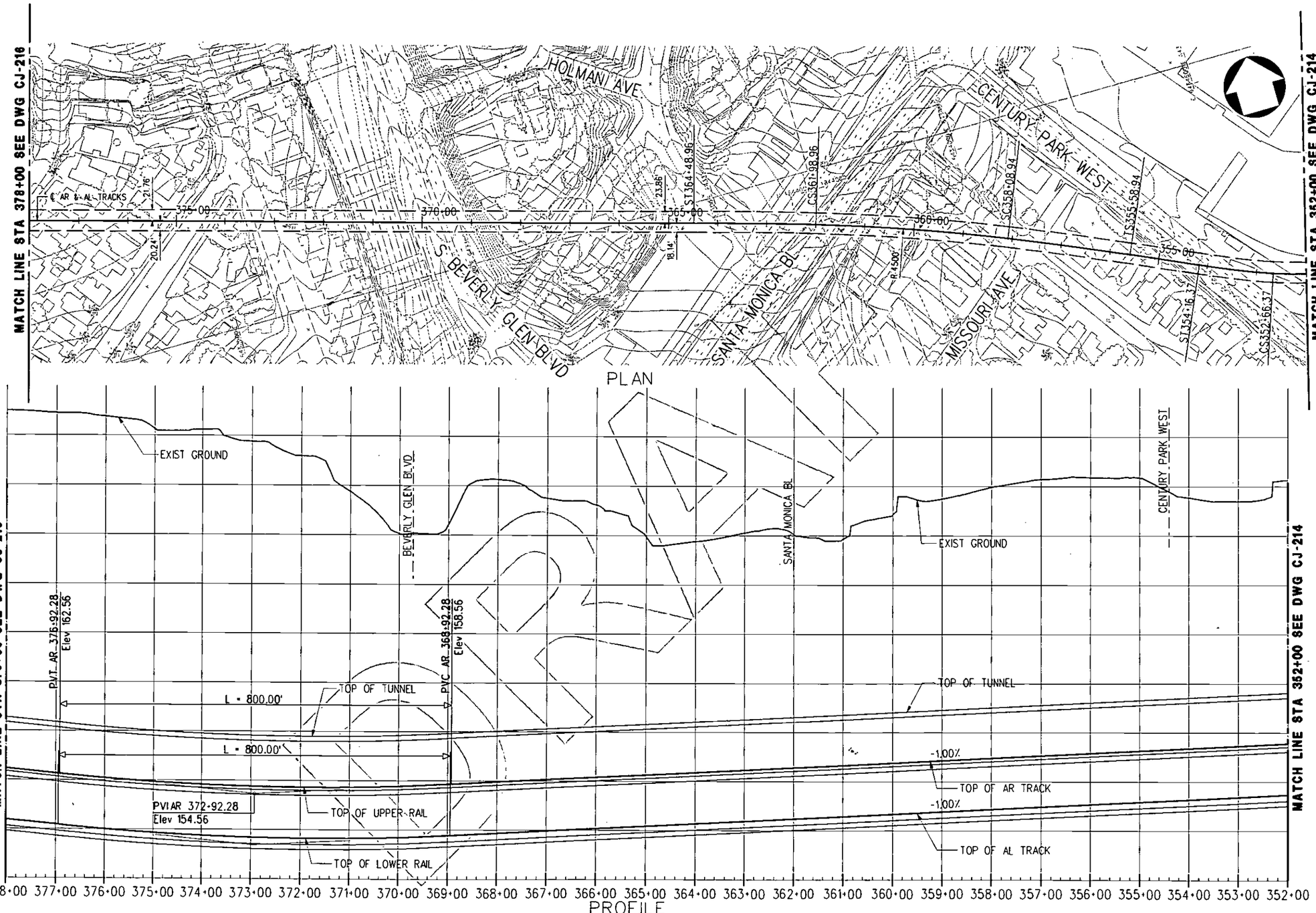
LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-THROUGH)
PLAN & PROFILE
STATION 333+00 TO 352+00
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CJ-214 REV
SCALE 1"=100'
SHEET NO

UserName: USER-date8/31/2010 @ 1:40:29 PM FileName> T:\27940A-WestsideExtensionACE\CADD\Single Boring Tunnel\SBT_Sheets\Civil\Tunnel Thru Alignment-Constellation\CJ-214.plg



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
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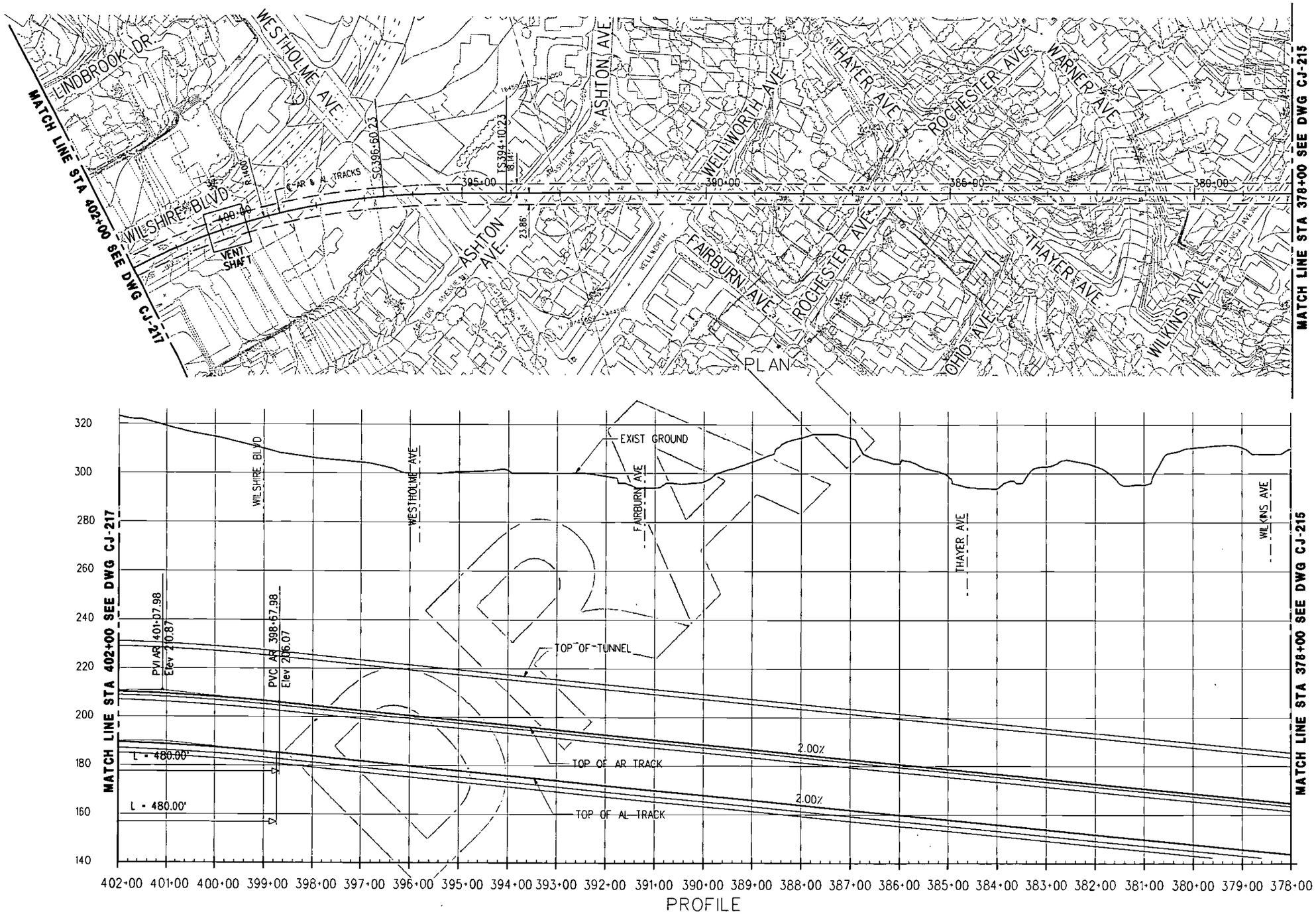
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-THROUGH)
PLAN & PROFILE
STATION 352+00 TO 378+00
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CJ-215
REV
SCALE 1" = 100'
SHEET NO

UserName: USER=oldrete&/31/2010 @ 11:40:36 PM Filename>> T:\27940A-WestsideExtension\CADD\Single Boring Tunnel\SBT_Sheets\Civil\Tunnel Thru Alignment-Constellation\CJ-215.plg



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

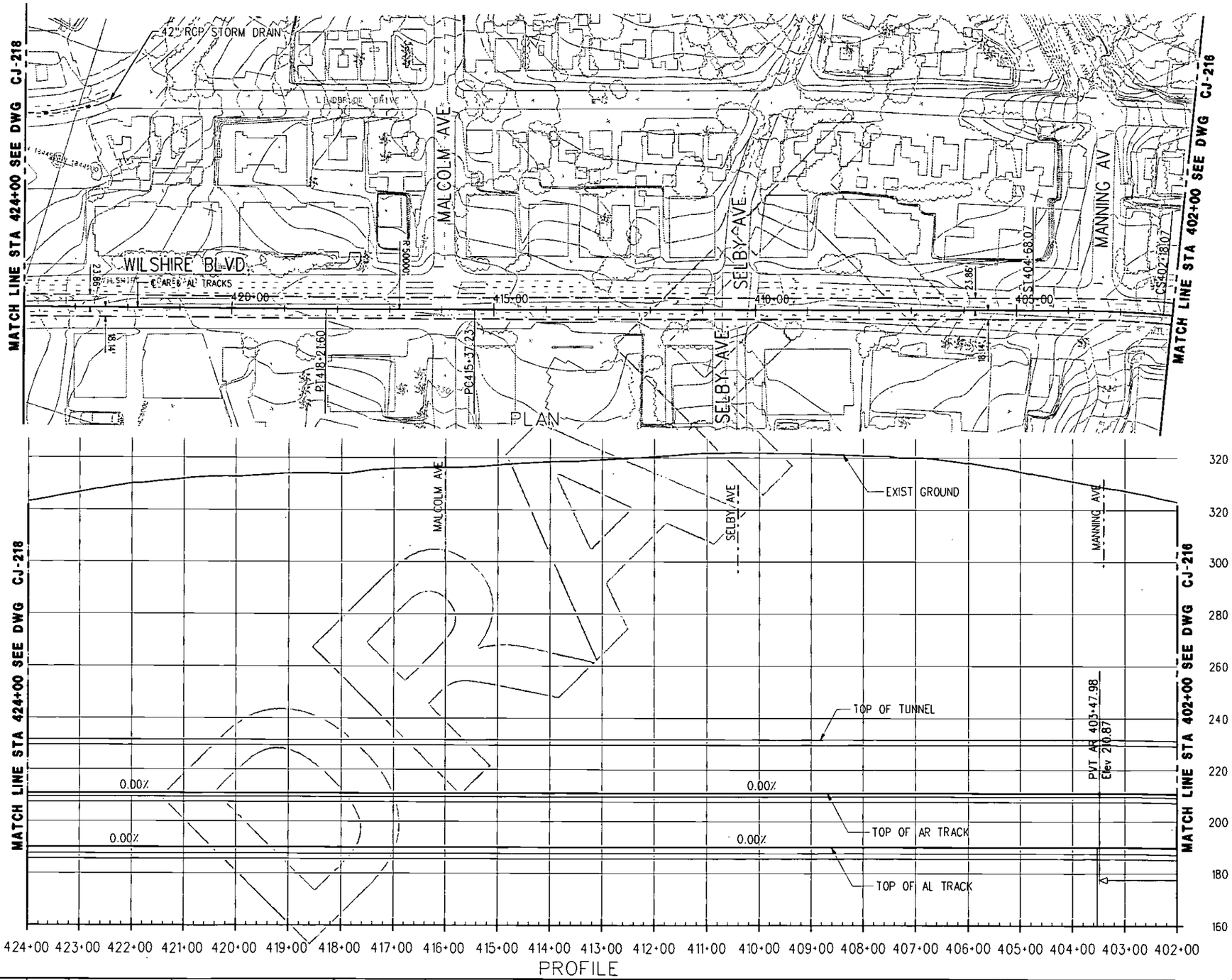
PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-THROUGH)
PLAN & PROFILE
STATION 378+00 TO 402+00
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CJ-216
REV
SCALE 1" = 100'
SHEET NO

UserName: USER-rdirete 8/31/2010 @ 1:40:43 PM FileName: T:\279404-WestsideExtension\ACE\CADD\Single Boring Tunnel\SBT_Sheets\civil\Tunnel Thru Alignment-Constellation\CJ-216.plg



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-THROUGH)
PLAN & PROFILE
STATION 402+00 TO 424+00
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CJ-217 REV
SCALE 1"=100'
SHEET NO

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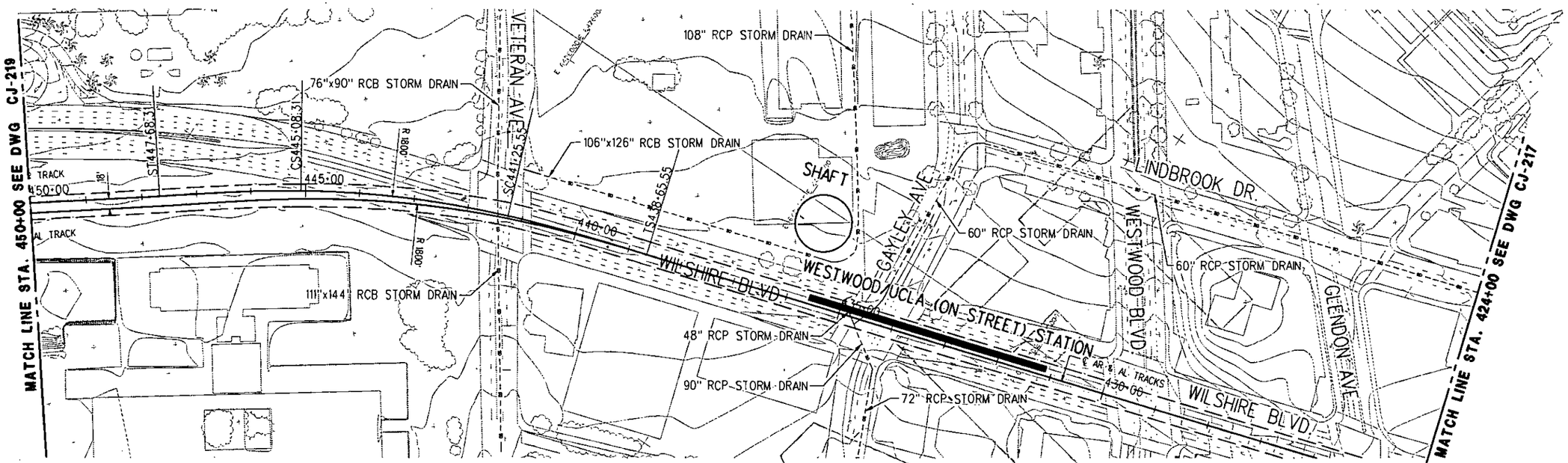

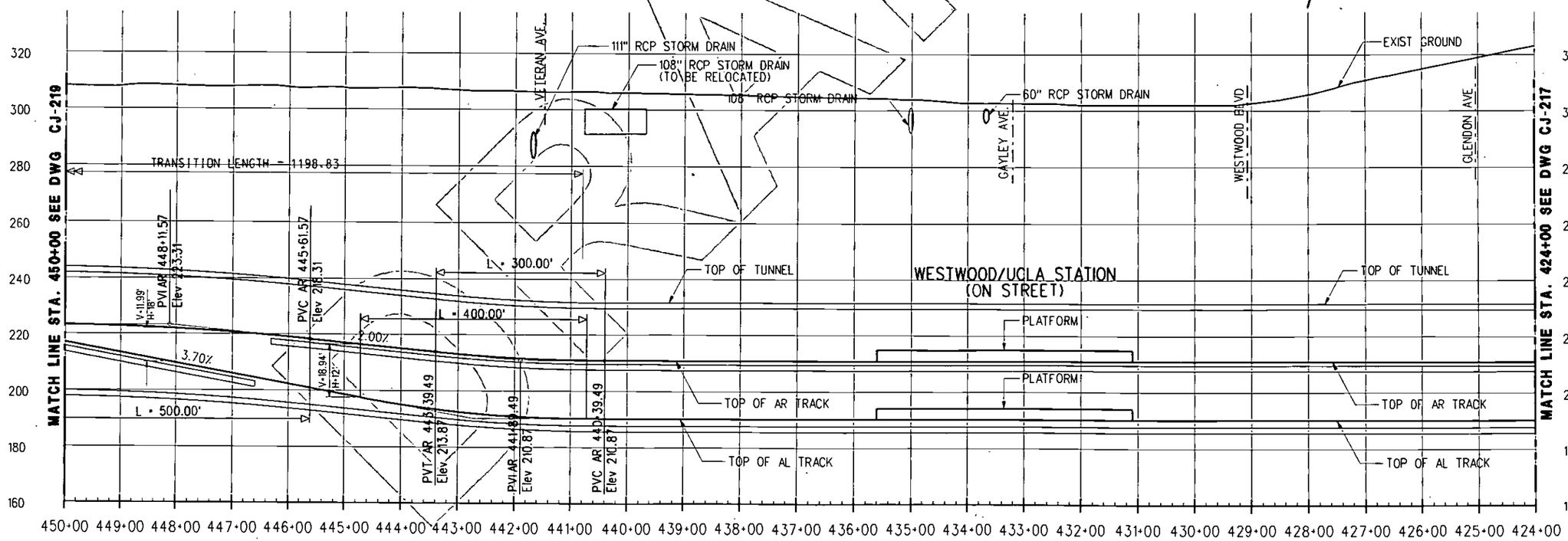

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
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Metro

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

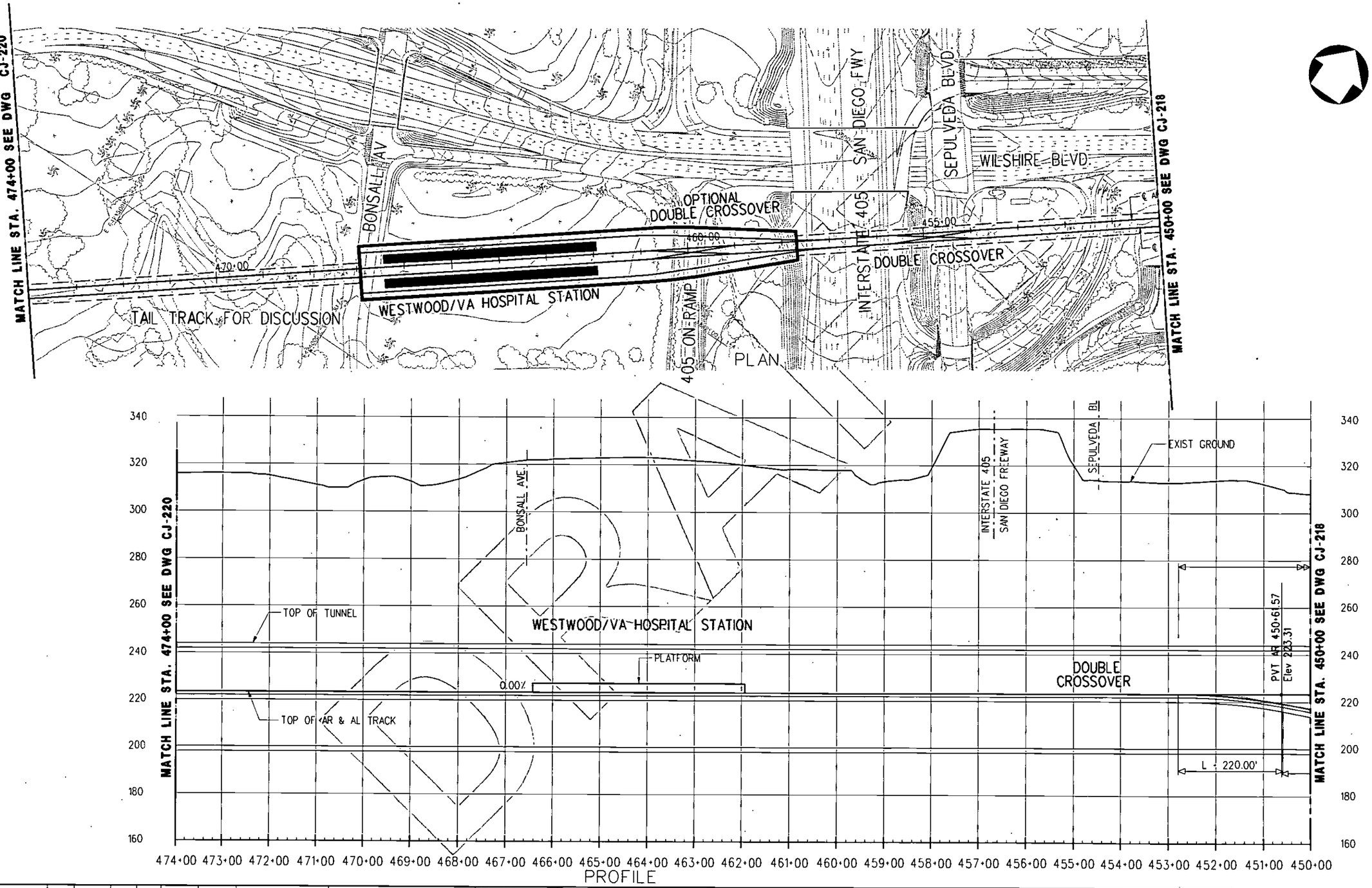
PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-THROUGH)
PLAN & PROFILE
STATION 424+00 TO 450+00
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CJ-218
REV
SCALE 1"=100'
SHEET NO

UserName: USER-cdcrete 8/31/2010 @ 1:40:57 PM FileName=> T:\27940A-WestsideExtension\ACE\CADD\Single Boring Tunnel\SBT_Sheets\civil\Tunnel Thru Alignment-Constellation\CJ-218.dwg



REV	DATE	BY	APP	REC NO	EXPIRES	SEAL HOLDER	DESCRIPTION

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IN CHARGE
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LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

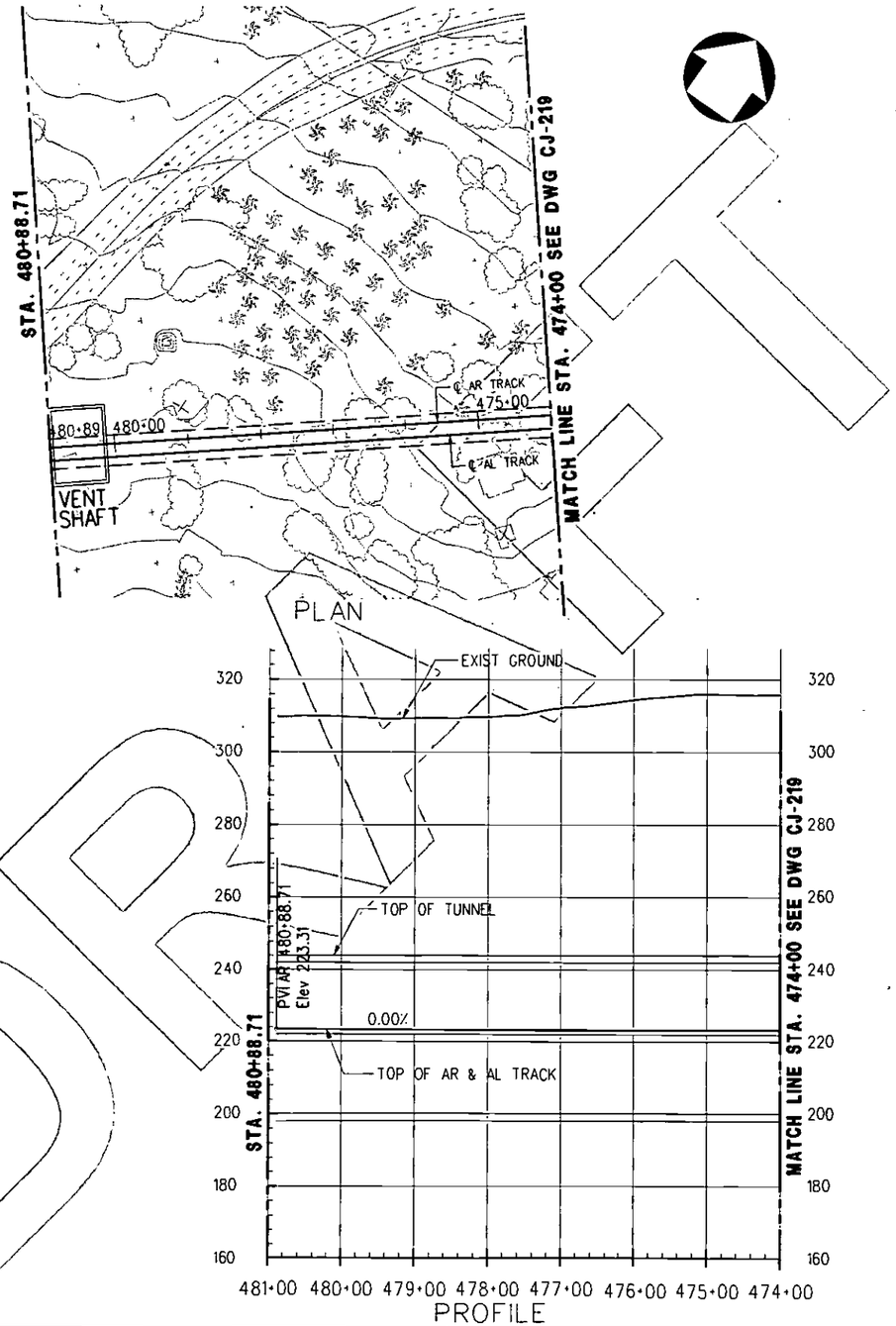
PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-THROUGH)
PLAN AND PROFILE
STATION 450+00 TO 474+00
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CJ-219 REV
SCALE 1"=100'
SHEET NO

UserName: USER=oldrete&/31/2010 @ 1:41:05 PM FileName=> T:\27940A-WestsideExtension\ACE\CADD\Single Boring Tunnel\SBT_Sheets\civil\Tunnel Thru Alignment-Constellation\CJ-219.plg



DRAFT

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
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IN CHARGE
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LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

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PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-THROUGH)
PLAN AND PROFILE
STATION 474+00 TO 480+88.71
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CJ-220
REV
SCALE 1"=100'
SHEET NO

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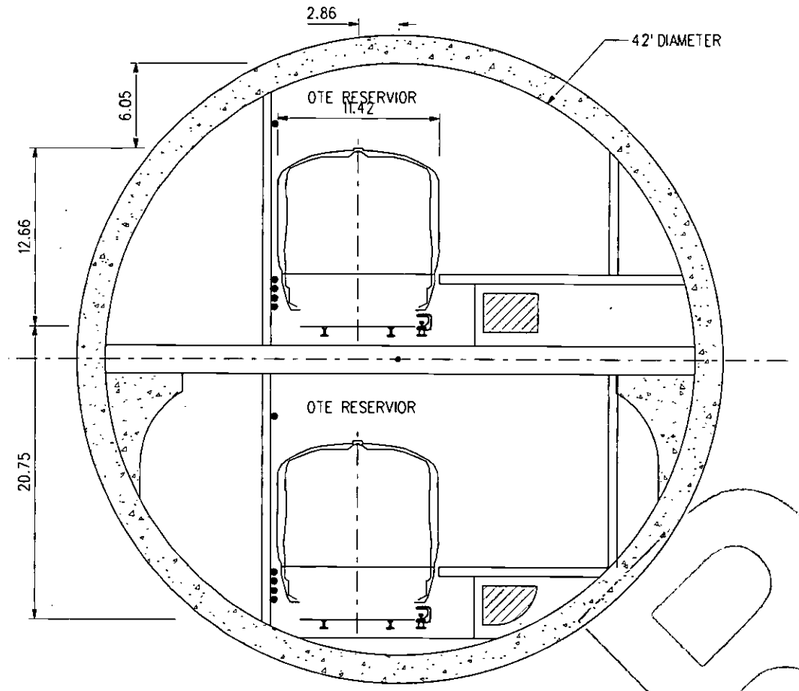
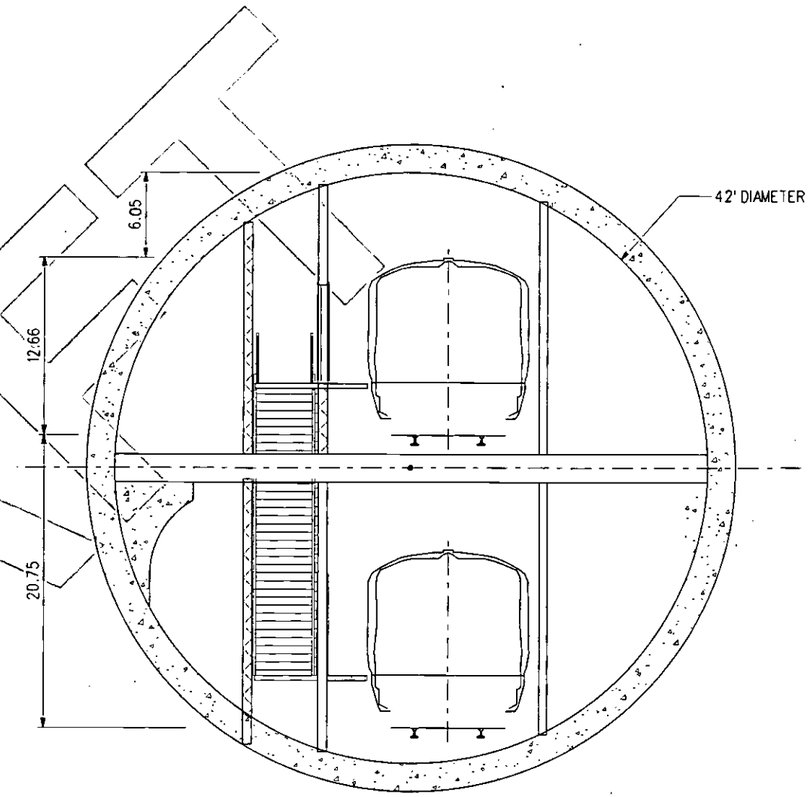


AT STATION PLATFORM



AT CROSSPASSAGE

DRAFT

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

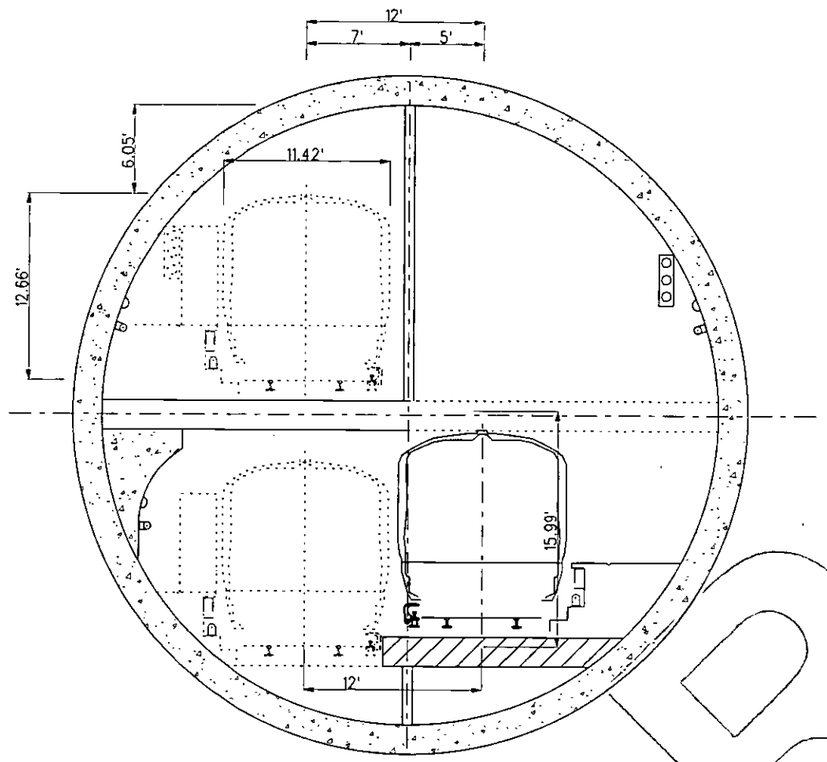
Metro
LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

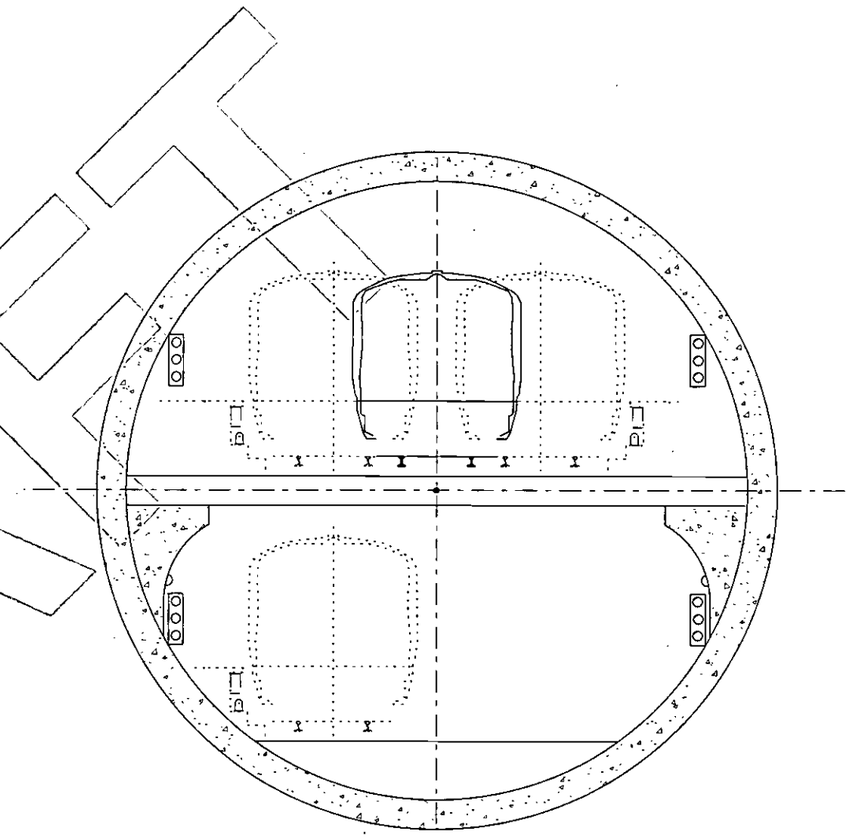
PB
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE TUNNEL
TYPICAL SECTIONS
SHEET 1 OF 2
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CX-001 REV
SCALE 1"=5'
SHEET NO

UserName: USER-mirxo 8/31/2010 @ 3:11:36 PM FileName=> I:\27940c-westsideextensionce\cadd\single boring tunnel\sbt_sheets\Cross Sections\CX-001-TypicalCrossS1.plg





AT CROSSOVER

DRAFT

REV	DATE	BY	APP	REC NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

Metro

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

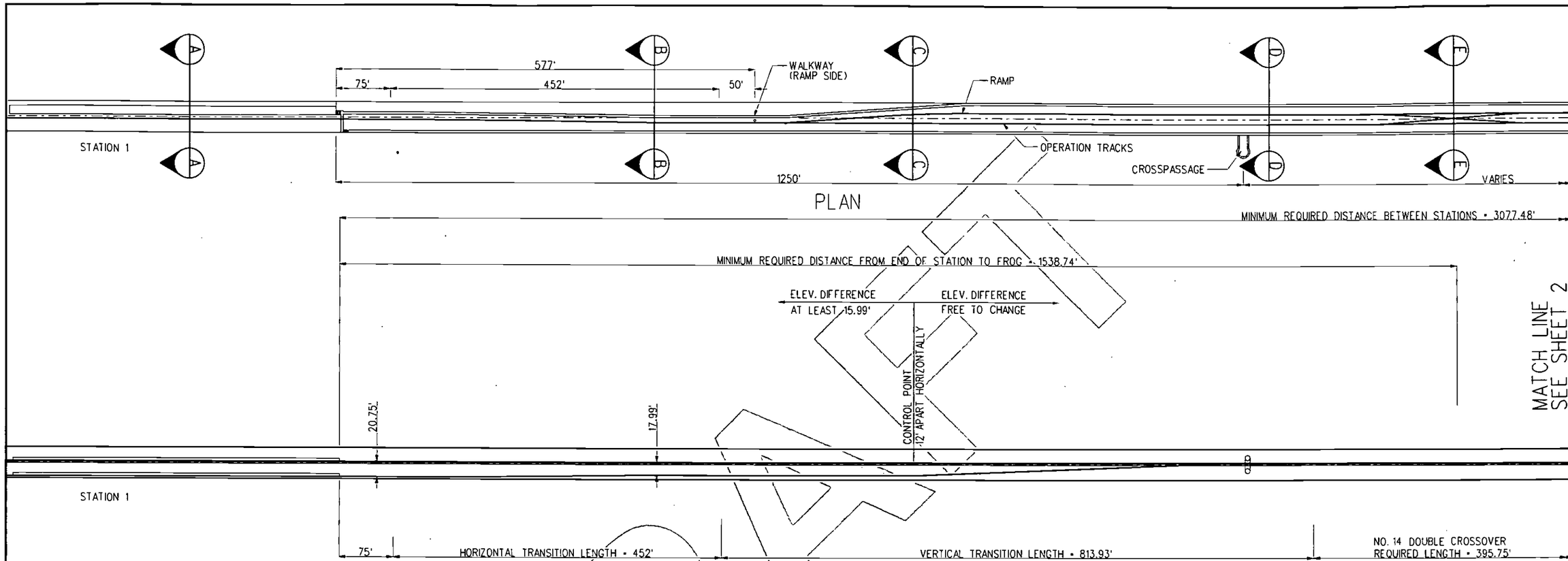
PB

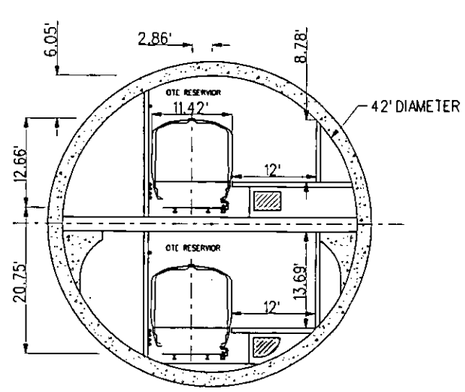
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE TUNNEL
TYPICAL SECTIONS
SHEET 2 OF 2
ALT. TUNNELING METHODS STUDY

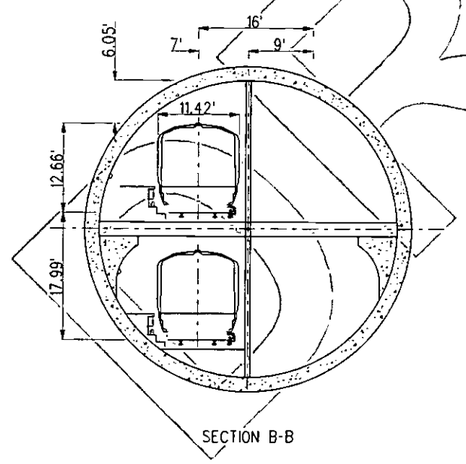
CONTRACT NO
DRAWING NO CX-002
REV
SCALE 1" = 5'
SHEET NO

UserName: USER-mireo 8/31/2010 @ 3:11:38 PM FileName=> I:\2794Ge-westsideextensionce\cadd\single boring tunnel\sbt_sheets\Cross Sections\CX-002-TypicalCrossS2.plg

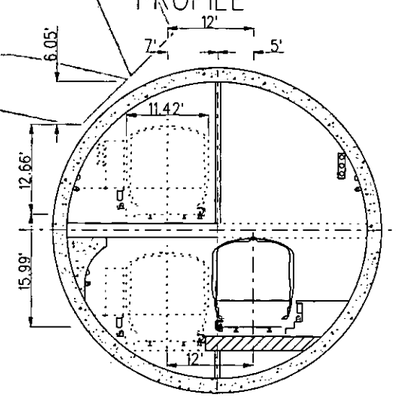




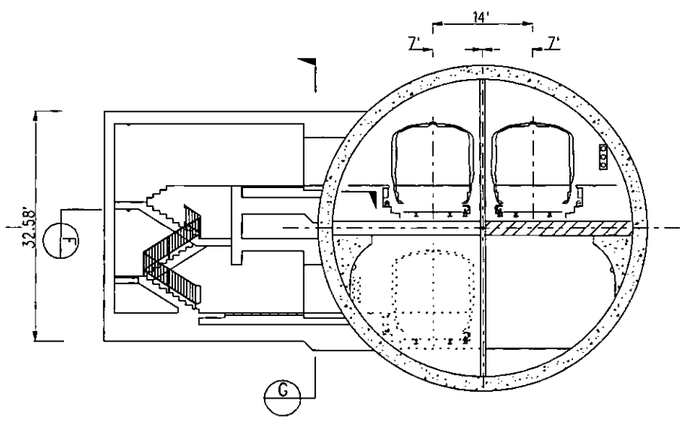
SECTION A-A



SECTION B-B



SECTION C-C
RAMP



SECTION D-D
CROSSPASSAGE

NOTE: SEE SHEET 2 FOR SECTION E-E, F-F, AND G-G

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

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Metro
LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

PB
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE TUNNEL
TYPICAL CROSSOVER
SHEET 1 OF 2
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CX-003 REV
SCALE NO SCALE
SHEET NO

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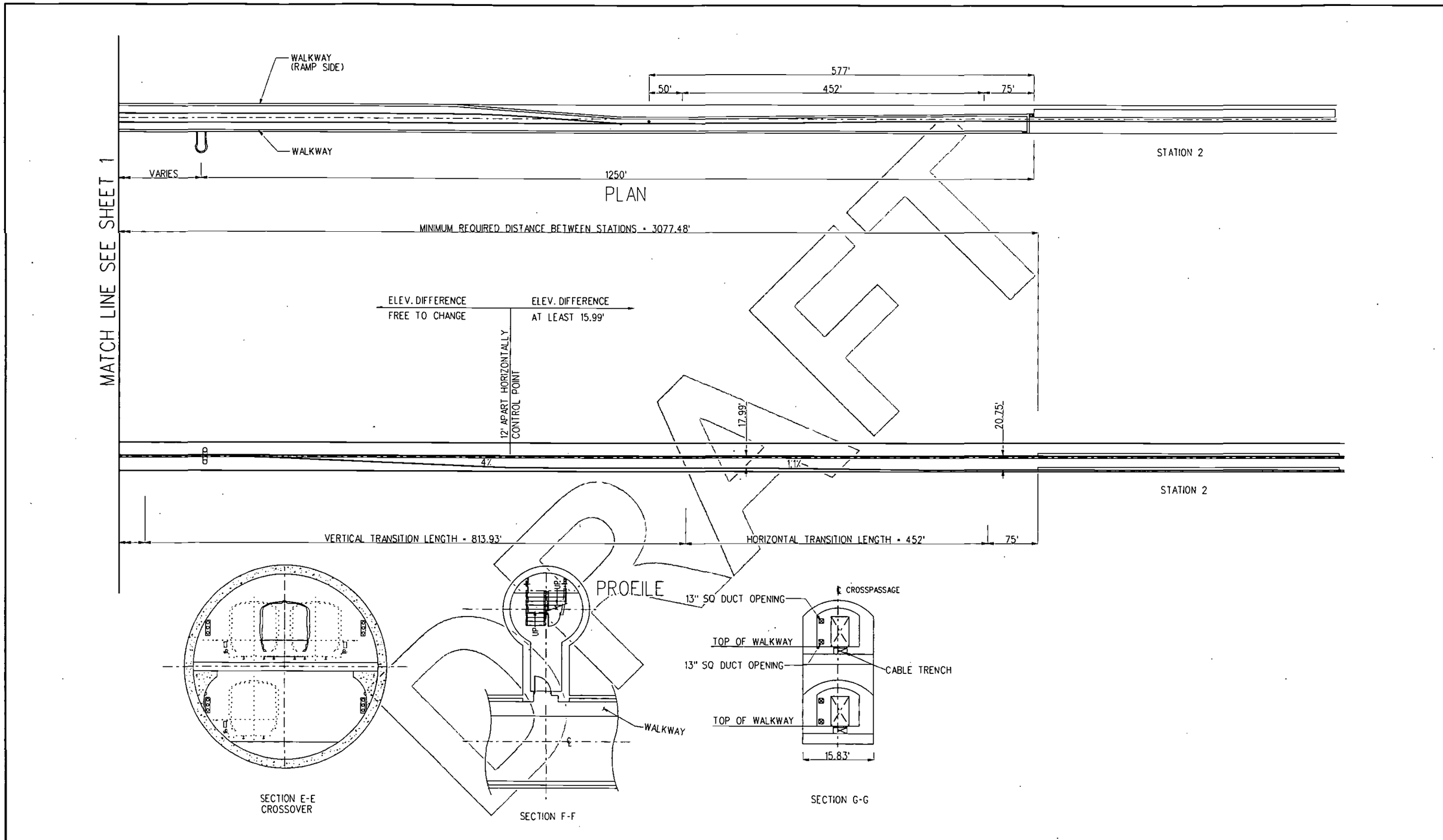

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

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Metro

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE TUNNEL
TYPICAL CROSSOVER
SHEET 2 OF 2
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CX-004
REV
SCALE NO SCALE
SHEET NO

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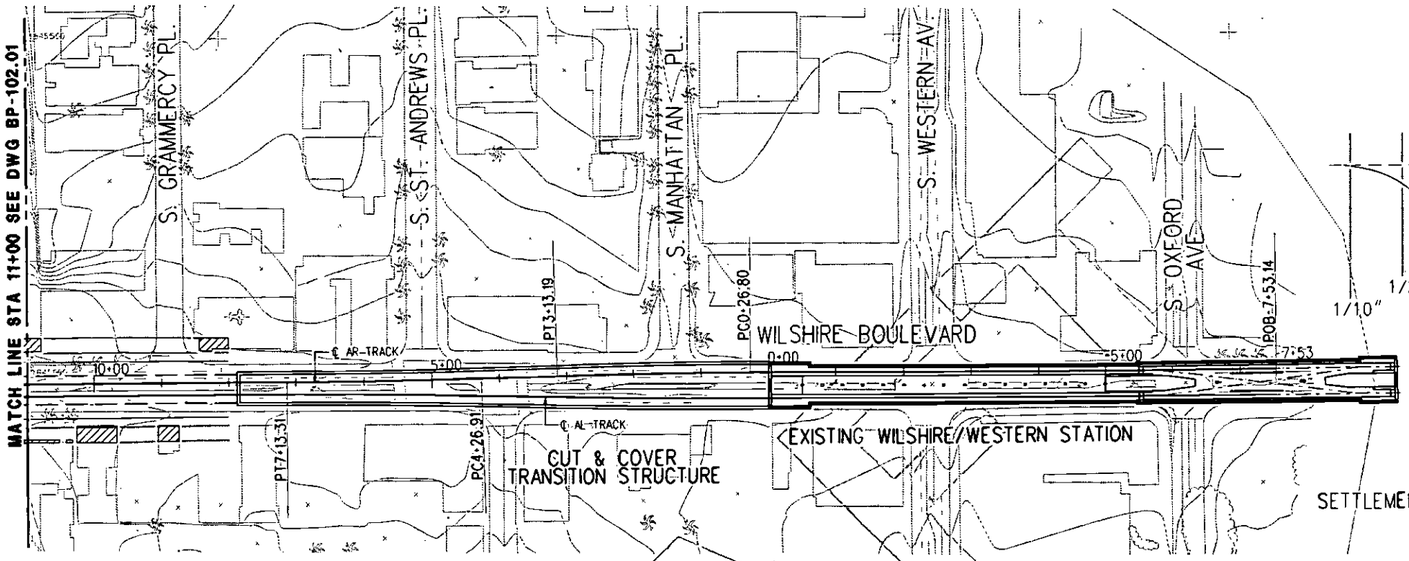
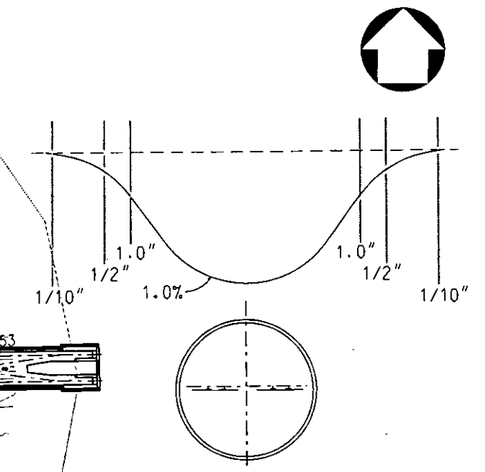
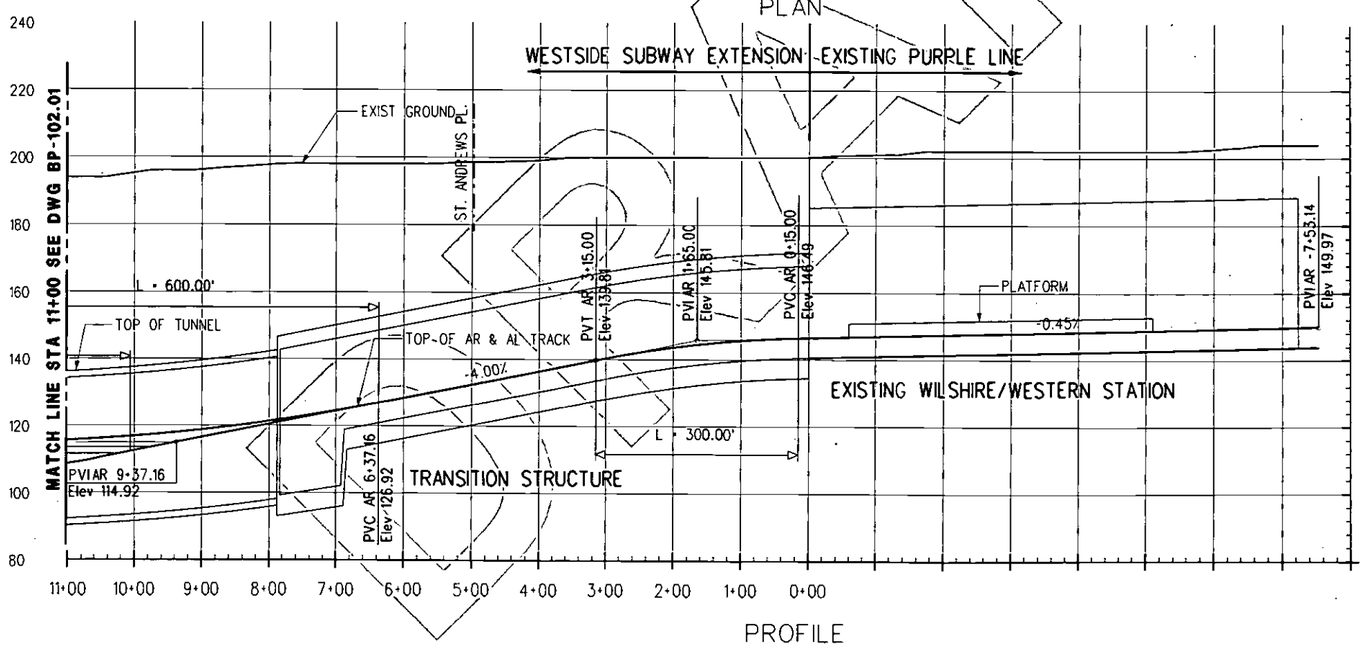


PLAN



SETTLEMENT TROUGH FOR SINGLE BORED TUNNEL
(NOT TO SCALE)



PROFILE

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

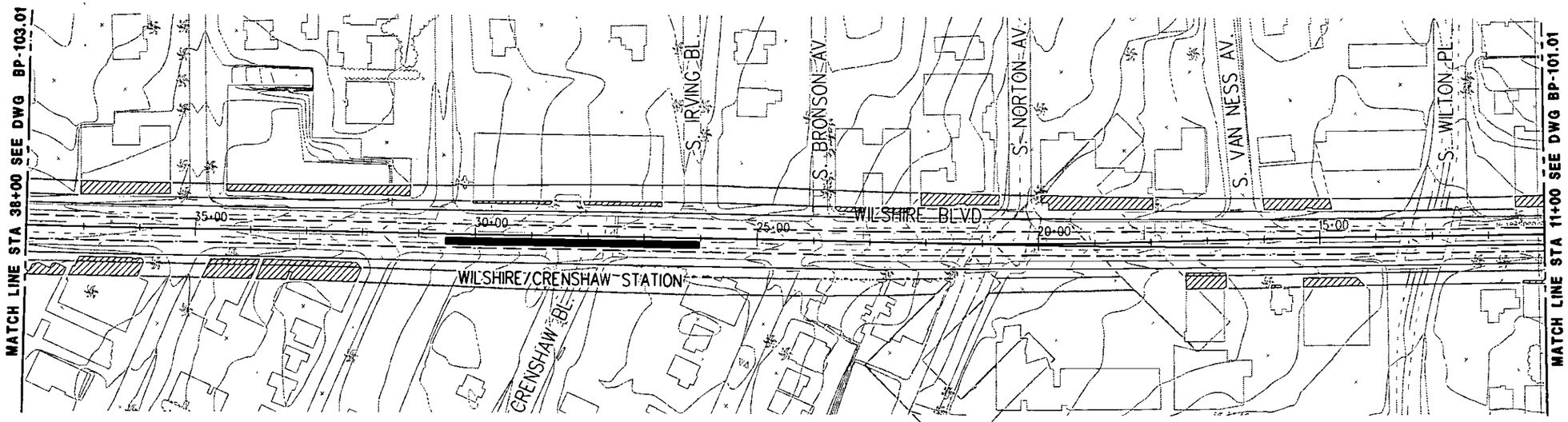
DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

Metro
LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

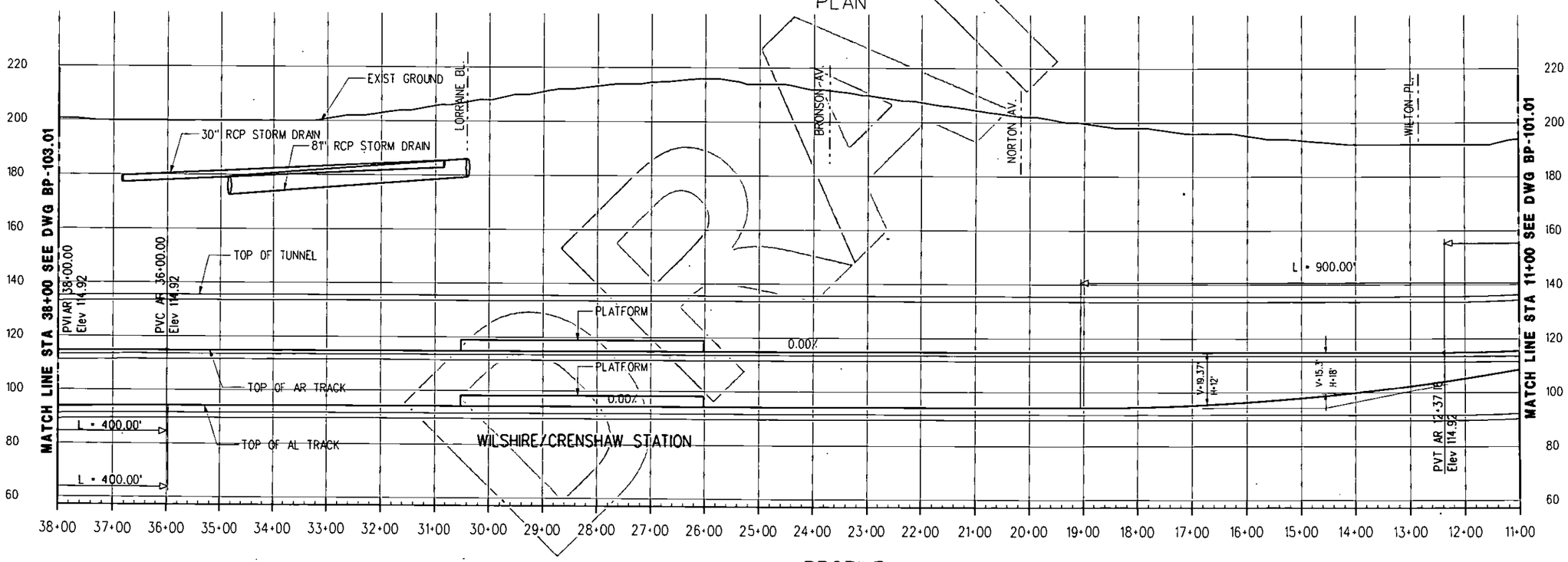
PB
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-BY)
PLAN & PROFILE
STATION 0+00 TO 11+00
BUILDING PROTECTION STUDY - 1% GL

CONTRACT NO
DRAWING NO BP-101.01
REV
SCALE 1"=100'
SHEET NO



PLAN



PROFILE

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

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DRAWN BY
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IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

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PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-BY)
PLAN & PROFILE
STATION 11+00 TO 38+00
BUILDING PROTECTION STUDY - 1% GL

CONTRACT NO
DRAWING NO BP-102.01
REV
SCALE 1" = 100'
SHEET NO

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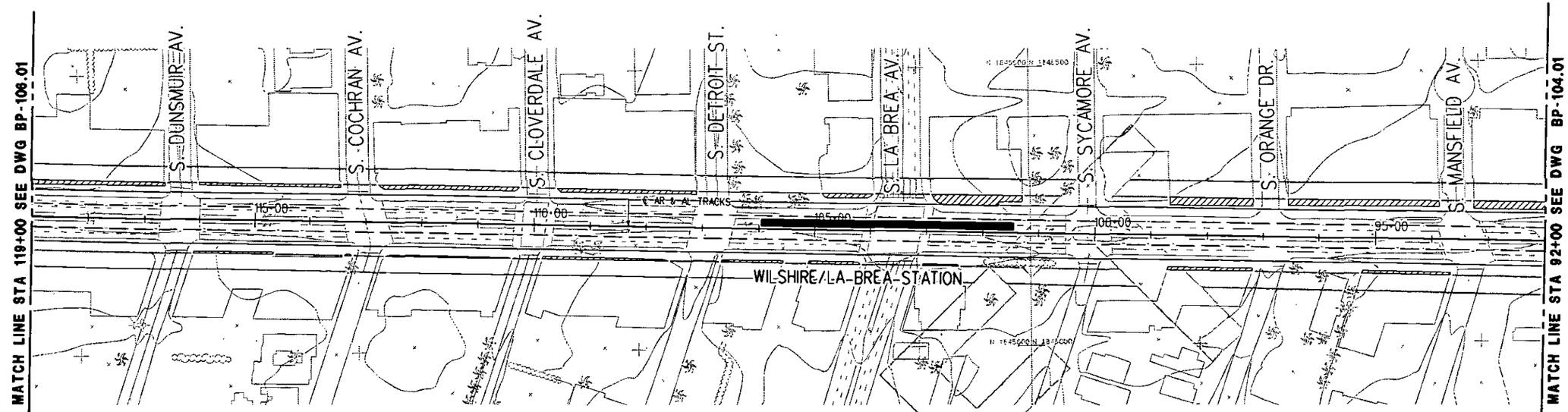
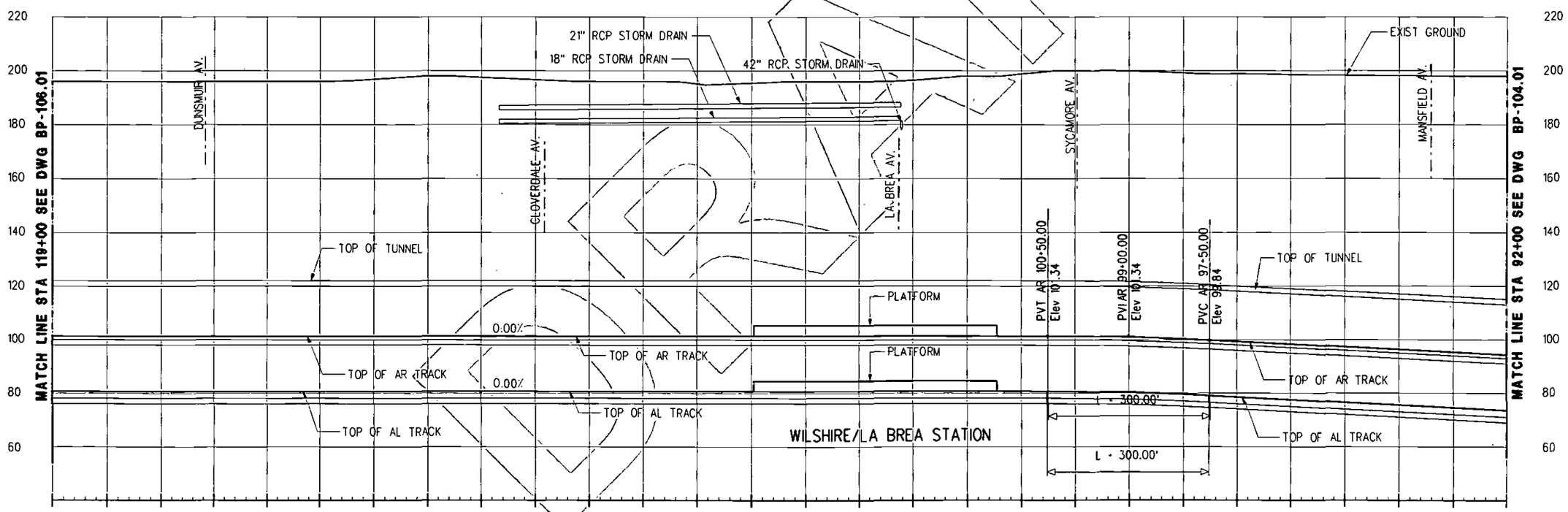


PLAN



PROFILE

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

Metro
LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

PB
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-BY)
PLAN & PROFILE
STATION 92+00 TO 119+00
BUILDING PROTECTION STUDY - 1% GL

CONTRACT NO
DRAWING NO BP-105.01
REV
SCALE 1"=100'
SHEET NO

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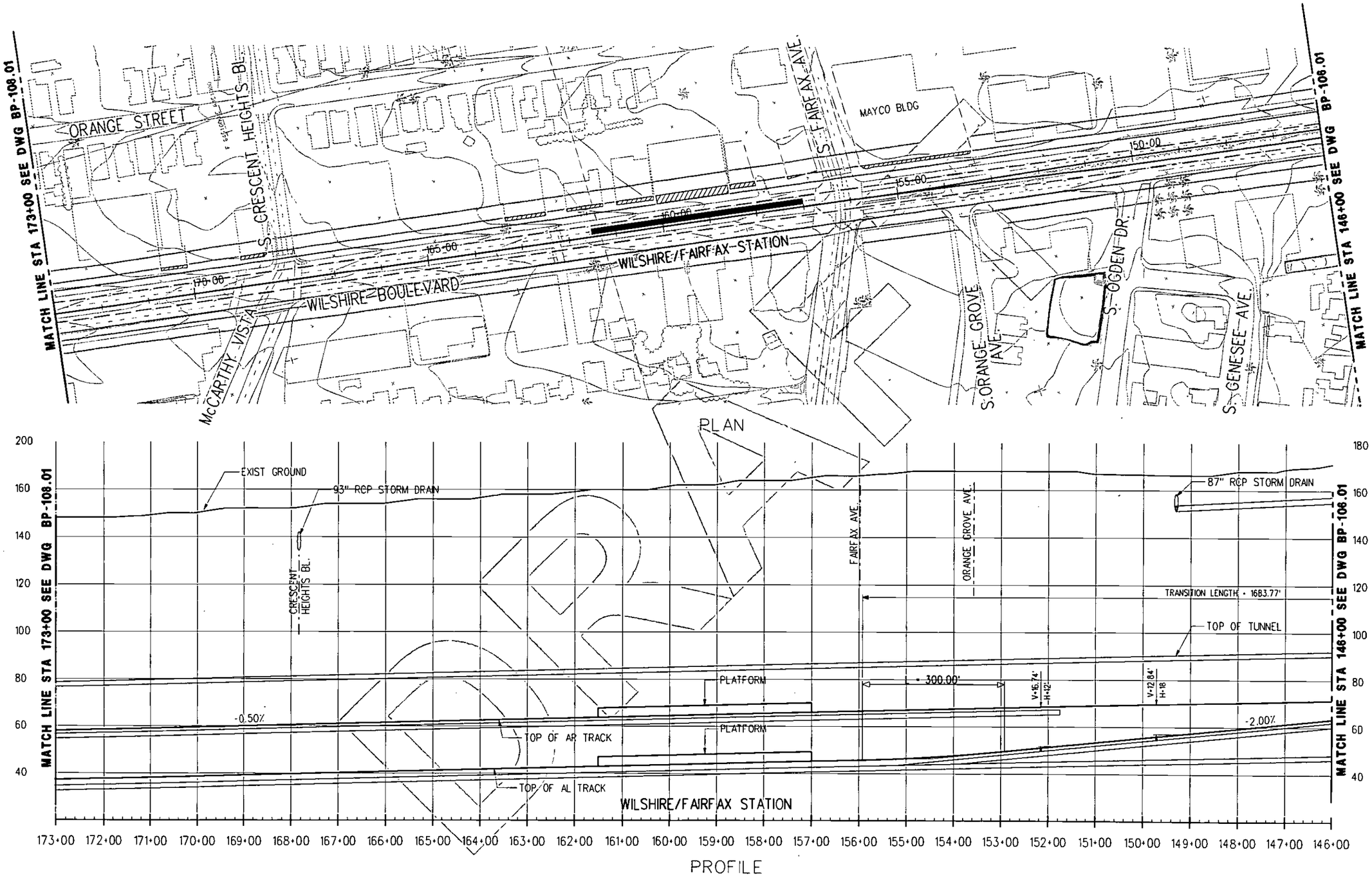


REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

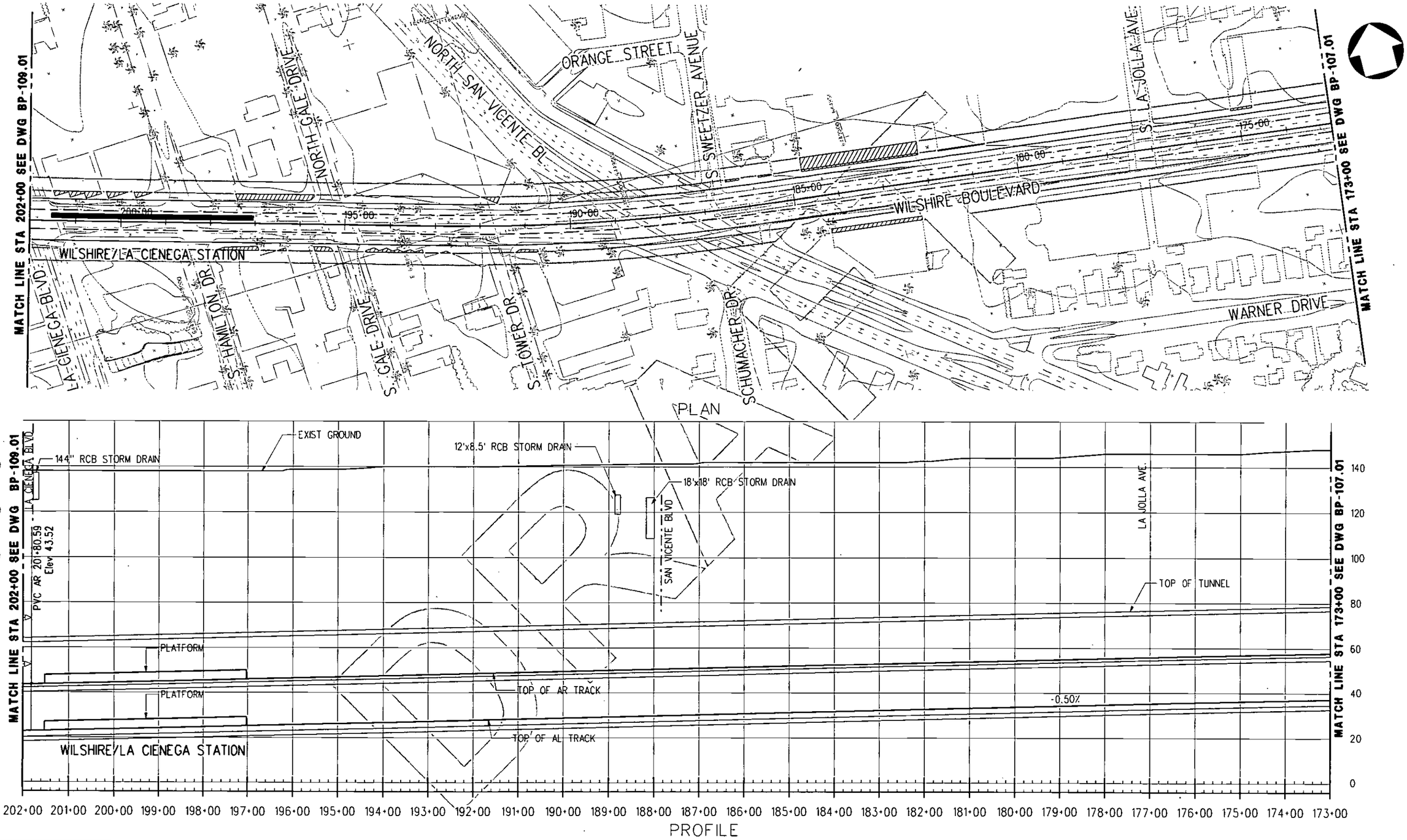
PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-BY)
PLAN & PROFILE
STATION 146+00 TO 173+00
BUILDING PROTECTION STUDY - 1% GL

CONTRACT NO
DRAWING NO BP-107.01
REV
SCALE 1"=100'
SHEET NO

UserName: USER-aldrete8/31/2010 @ 3:10:48 PM FileName-> T:\27940A-WestsideExtensionACE\CADD\Single Boring Tunnel\SBT_Sheets\Settlement\Tunnel By Alignment\1% Groundloss\BP-107.01.plg



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

Metro

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

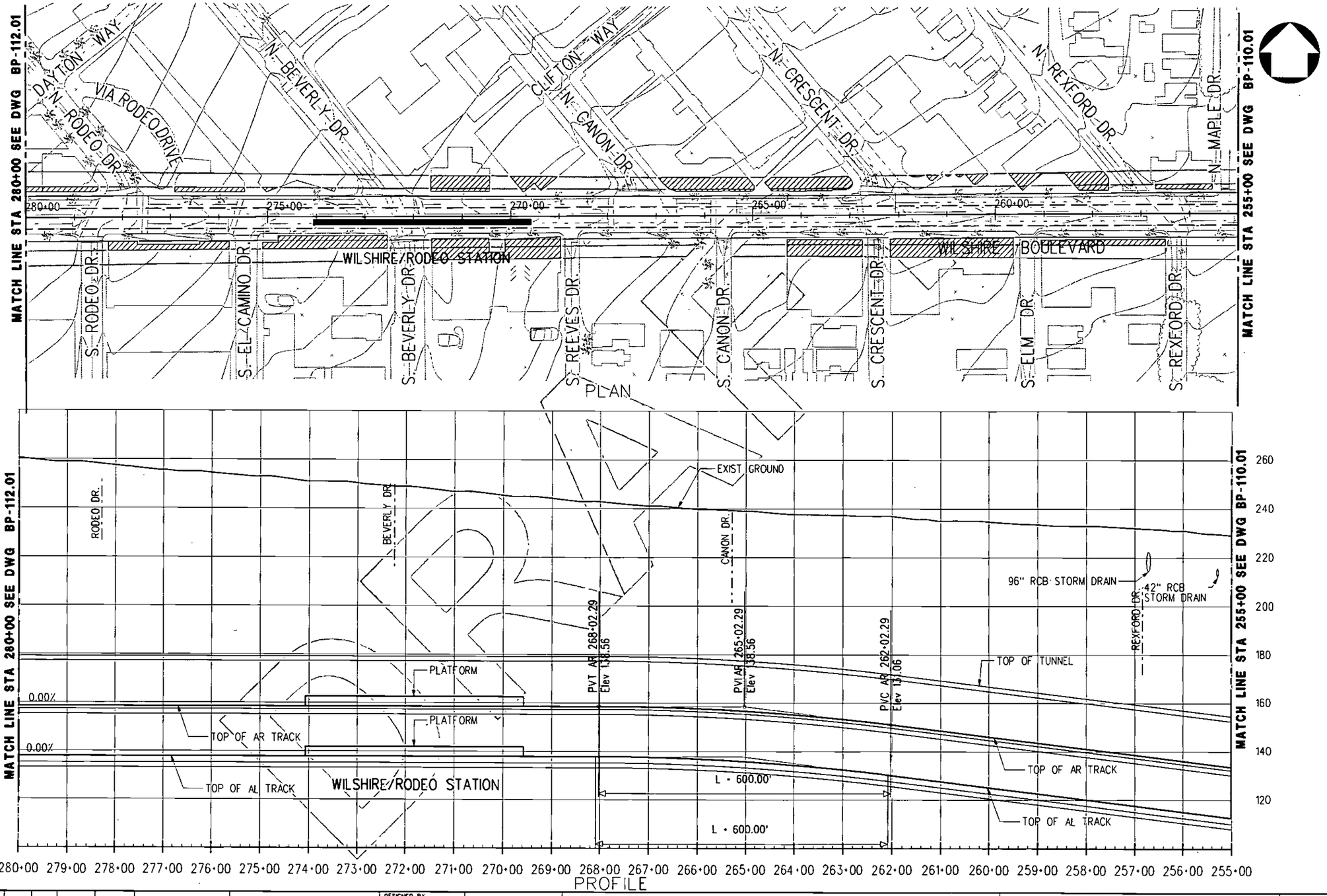
PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-BY)
PLAN & PROFILE
STATION 173+00 TO 202+00
BUILDING PROTECTION STUDY - 1% GL

CONTRACT NO
DRAWING NO BP-108.01
REV
SCALE 1"=100'
SHEET NO

UserName: USER=aldrate8/31/2010 @ 3:10:58 PM FileName=> F:\27940A-WestsideExtensionACE\CADD\Single Boring Tunnel\SBT_Sheets\Settlement\Tunnel By Alignment\17 Groundloss\BP-108.01.plg



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-BY)
PLAN & PROFILE
STATION 255+00 TO 280+00
BUILDING PROTECTION STUDY - 1% GL

CONTRACT NO
DRAWING NO BP-111.01
REV
SCALE 1"=100'
SHEET NO

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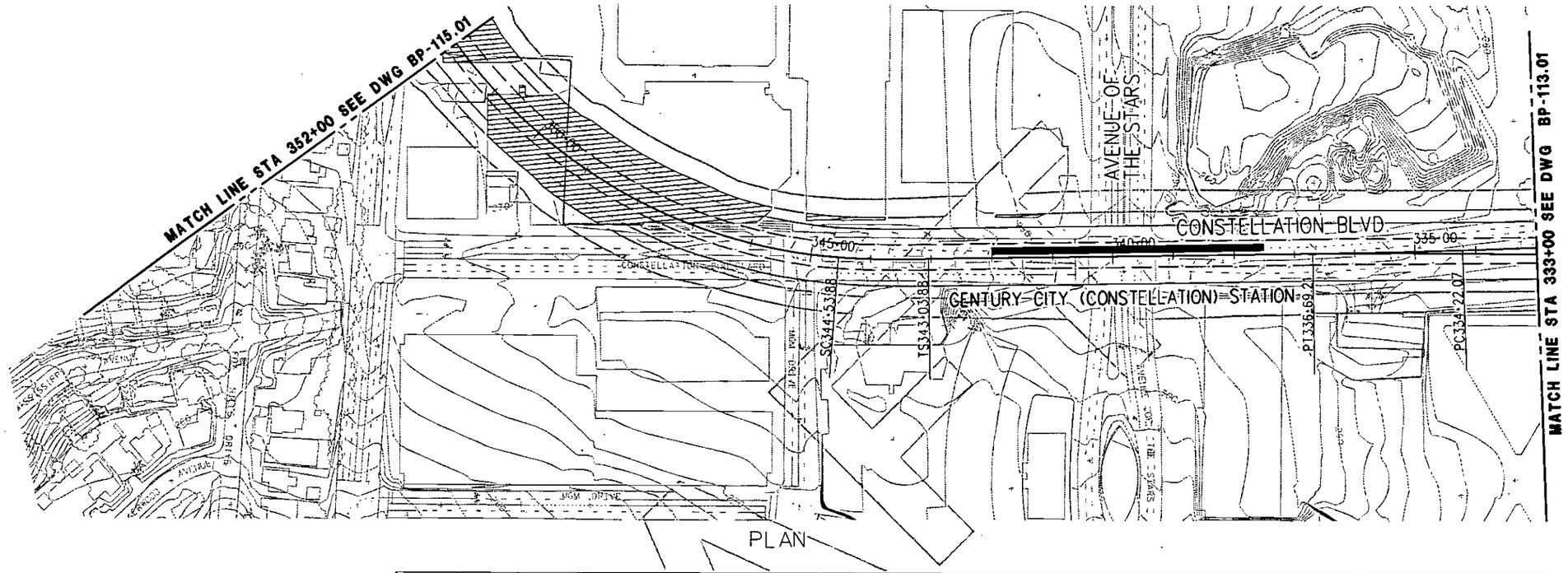

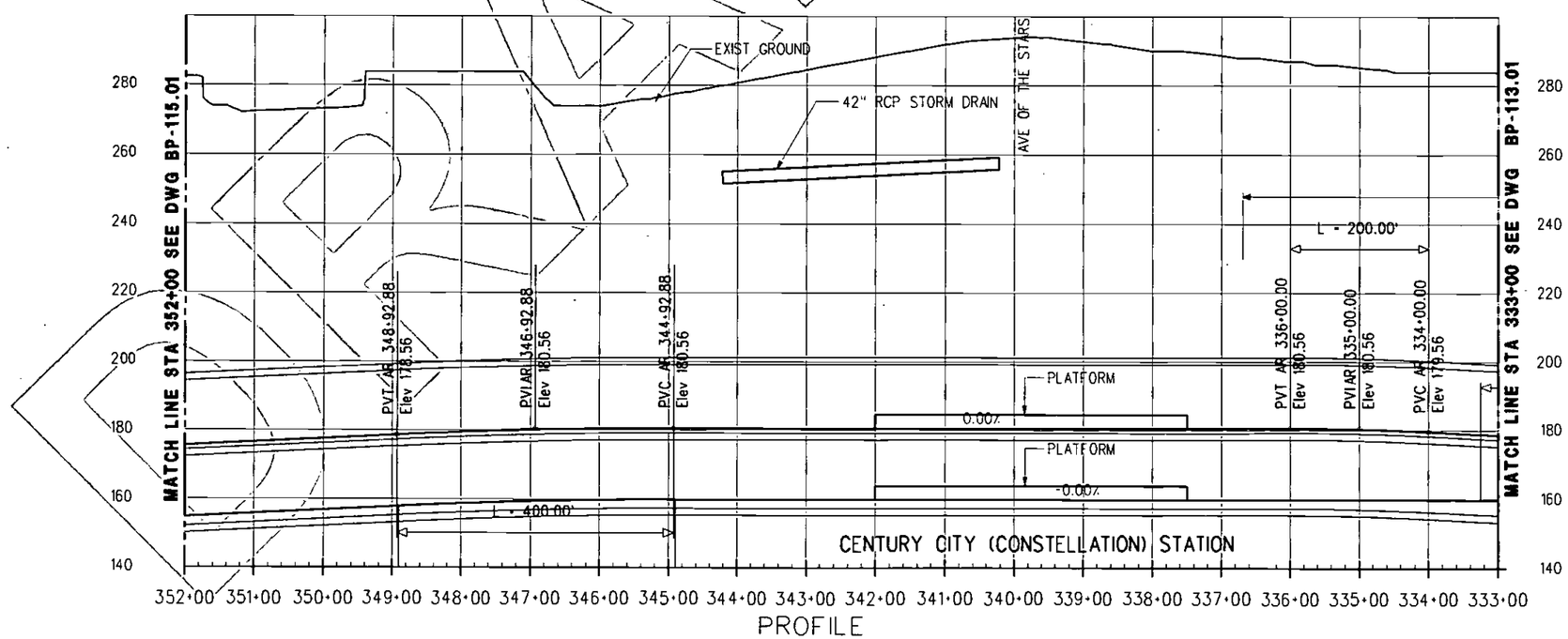

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

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DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

Metro

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-BY)
PLAN & PROFILE
STATION 333+00 TO 352+00
BUILDING PROTECTION STUDY - 1% GL

CONTRACT NO
DRAWING NO BP-114.01
REV
SCALE 1"=100'
SHEET NO

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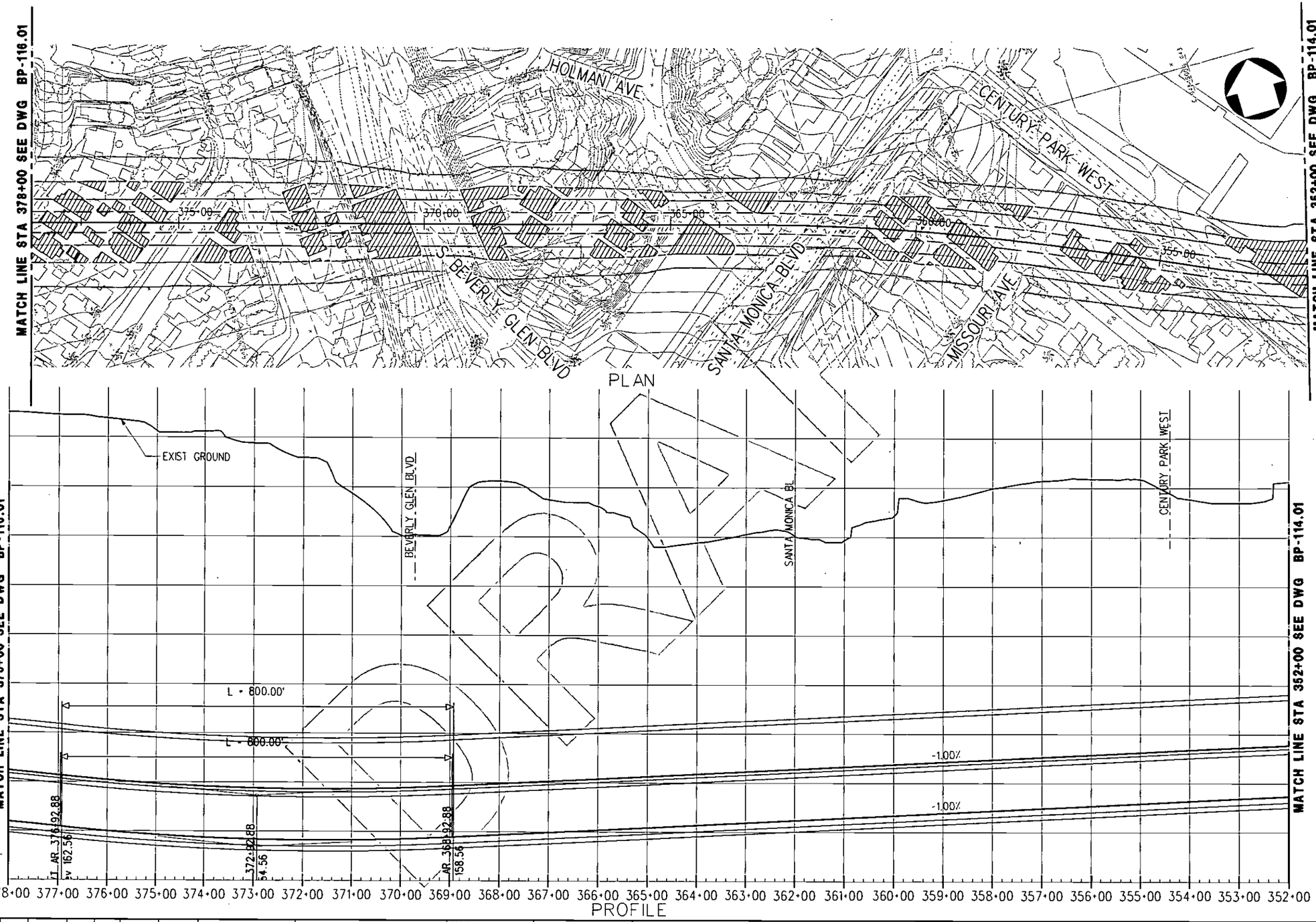

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-BY)
PLAN & PROFILE
STATION 352+00 TO 378+00
BUILDING PROTECTION STUDY - 1% GL

CONTRACT NO
DRAWING NO BP-115.01 REV
SCALE 1"=100'
SHEET NO

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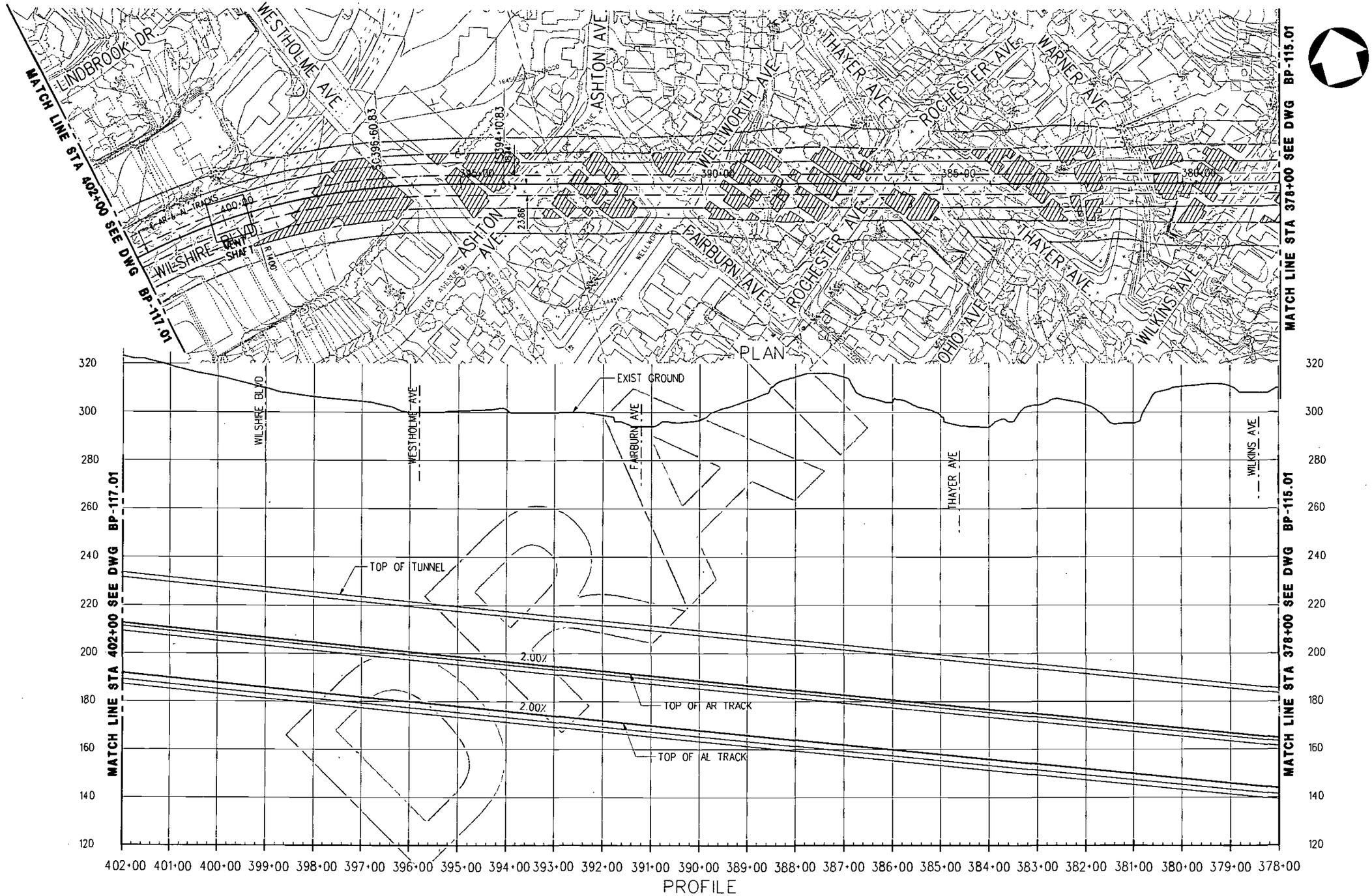

REV	DATE	BY	APP	REC NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
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IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-BY)
PLAN & PROFILE
STATION 378+00 TO 402+00
BUILDING PROTECTION STUDY - 1% GL

CONTRACT NO
DRAWING NO BP-116.01
REV
SCALE 1" = 100'
SHEET NO

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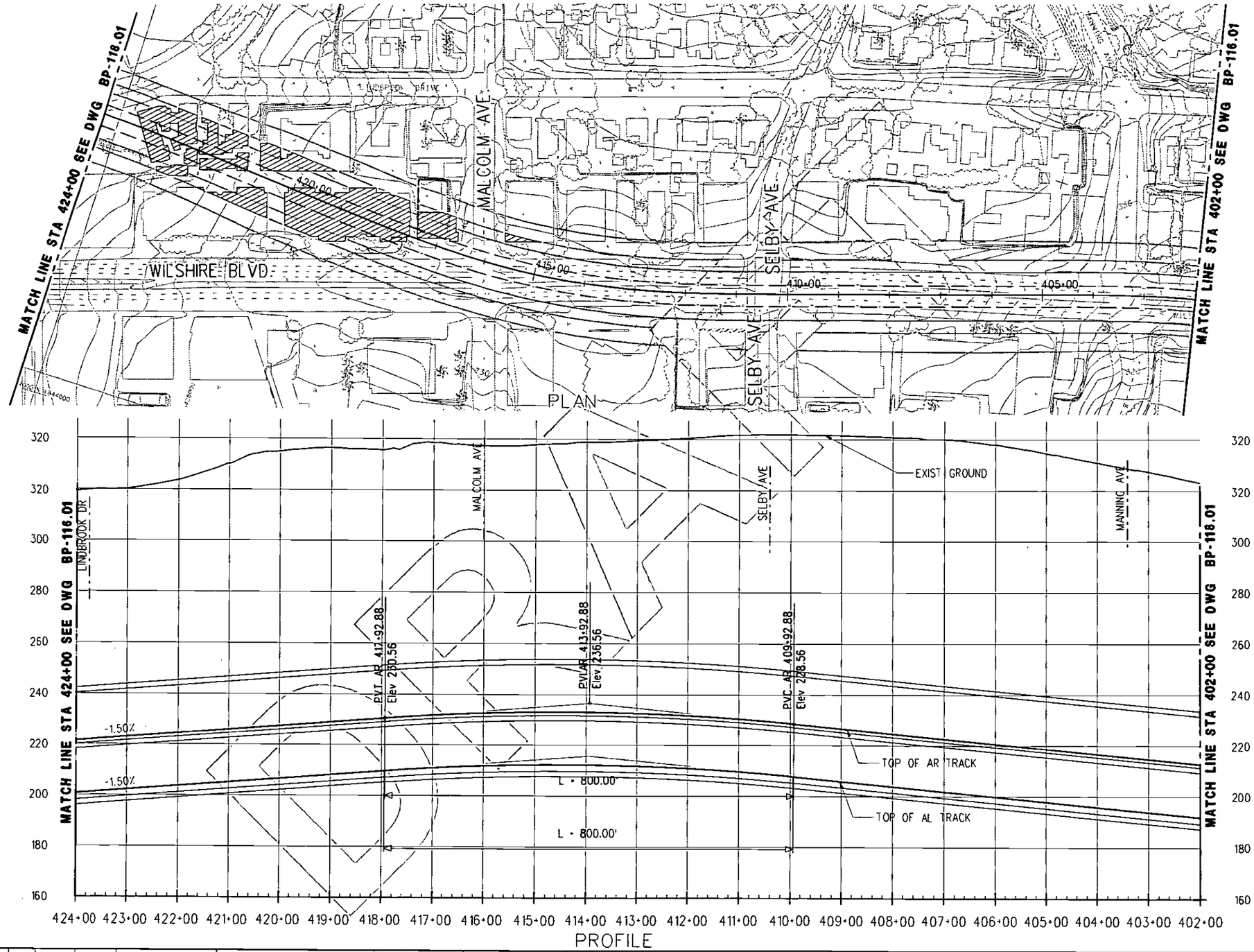

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

Metro
LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

PB
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-BY)
PLAN & PROFILE
STATION 402+00 TO 424+00
BUILDING PROTECTION STUDY - 1% GL

CONTRACT NO
DRAWING NO BP-117.01
REV
SCALE 1"=100'
SHEET NO

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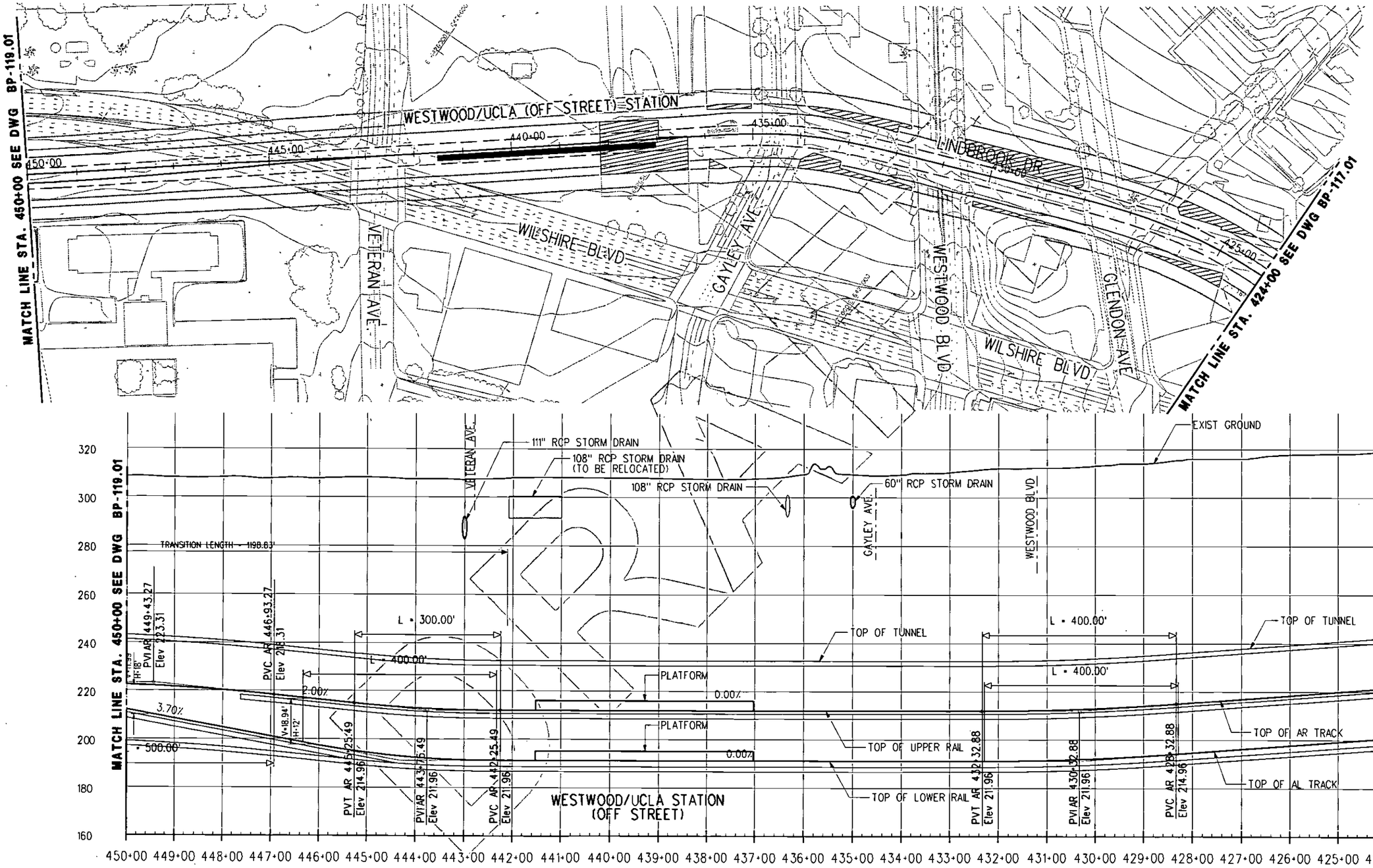

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
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LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-BY)
PLAN & PROFILE
STATION 424+00 TO 450+00
BUILDING PROTECTION STUDY - 1% GL

CONTRACT NO
DRAWING NO BP-118.01 REV
SCALE 1"=100'
SHEET NO

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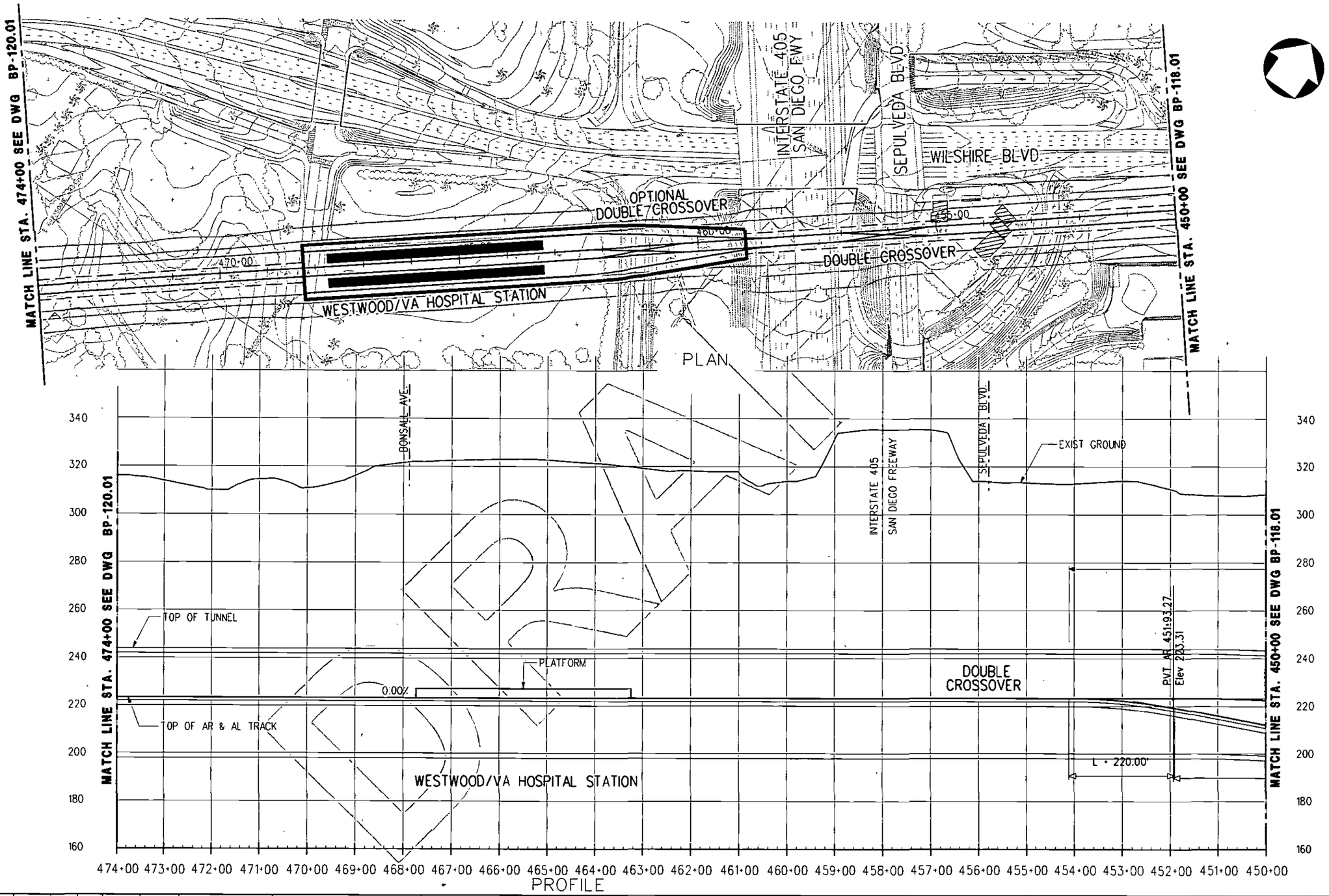

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

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LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

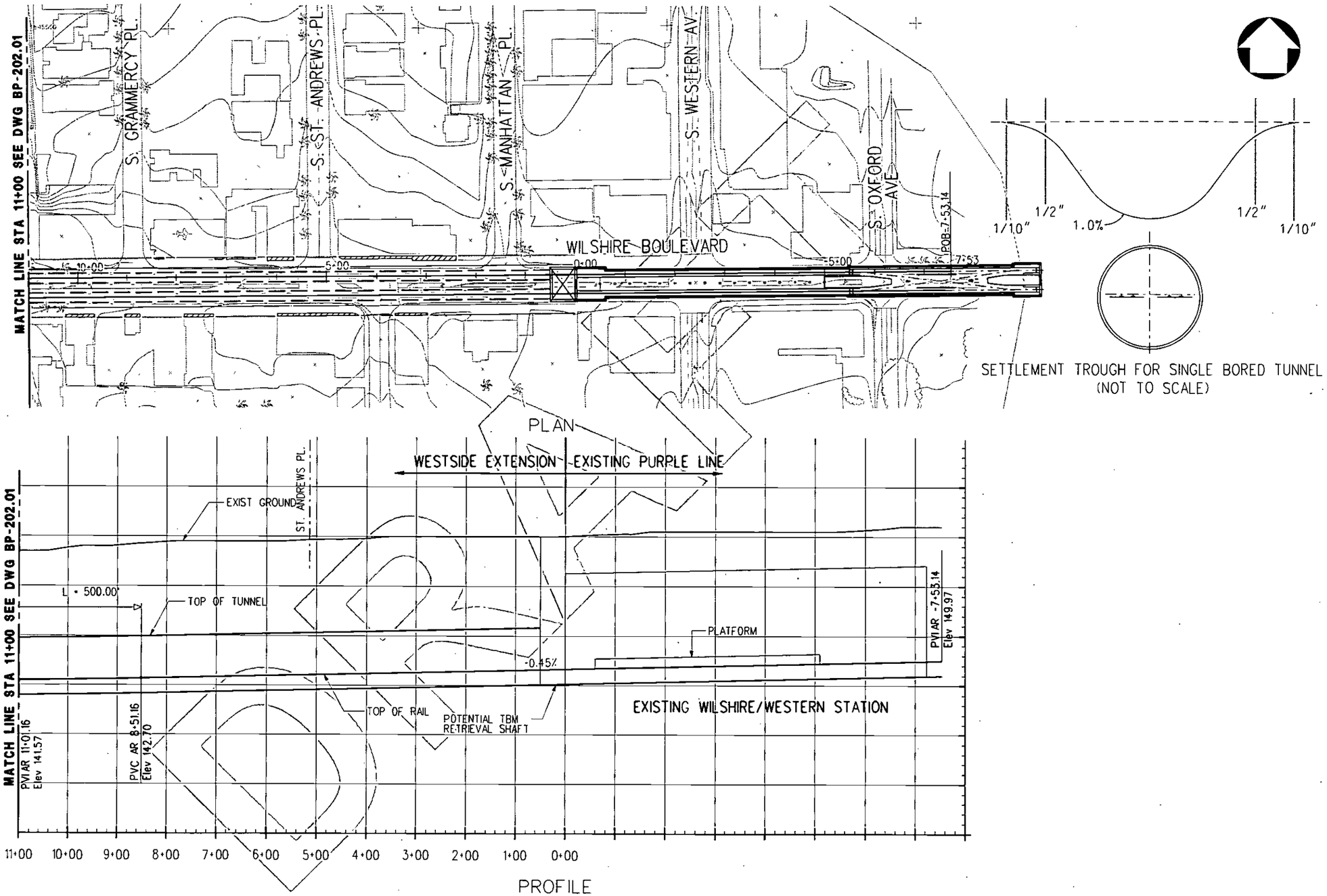
PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-BY)
PLAN AND PROFILE
STATION 450+00 TO 474+00
BUILDING PROTECTION STUDY - 1% GL

CONTRACT NO
DRAWING NO BP-119.01
REV
SCALE 1" = 100'
SHEET NO

User-name: USER=adrielle6/31/2010 @ 3:10:15 PM FileName=> T:\27940A-WestsideExtension\ACE\CADD\Single Boring Tunnel\SBT_Sheets\Settlement\Tunnel By Alignment\1% Groundloss\BP-119.01.dgn



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
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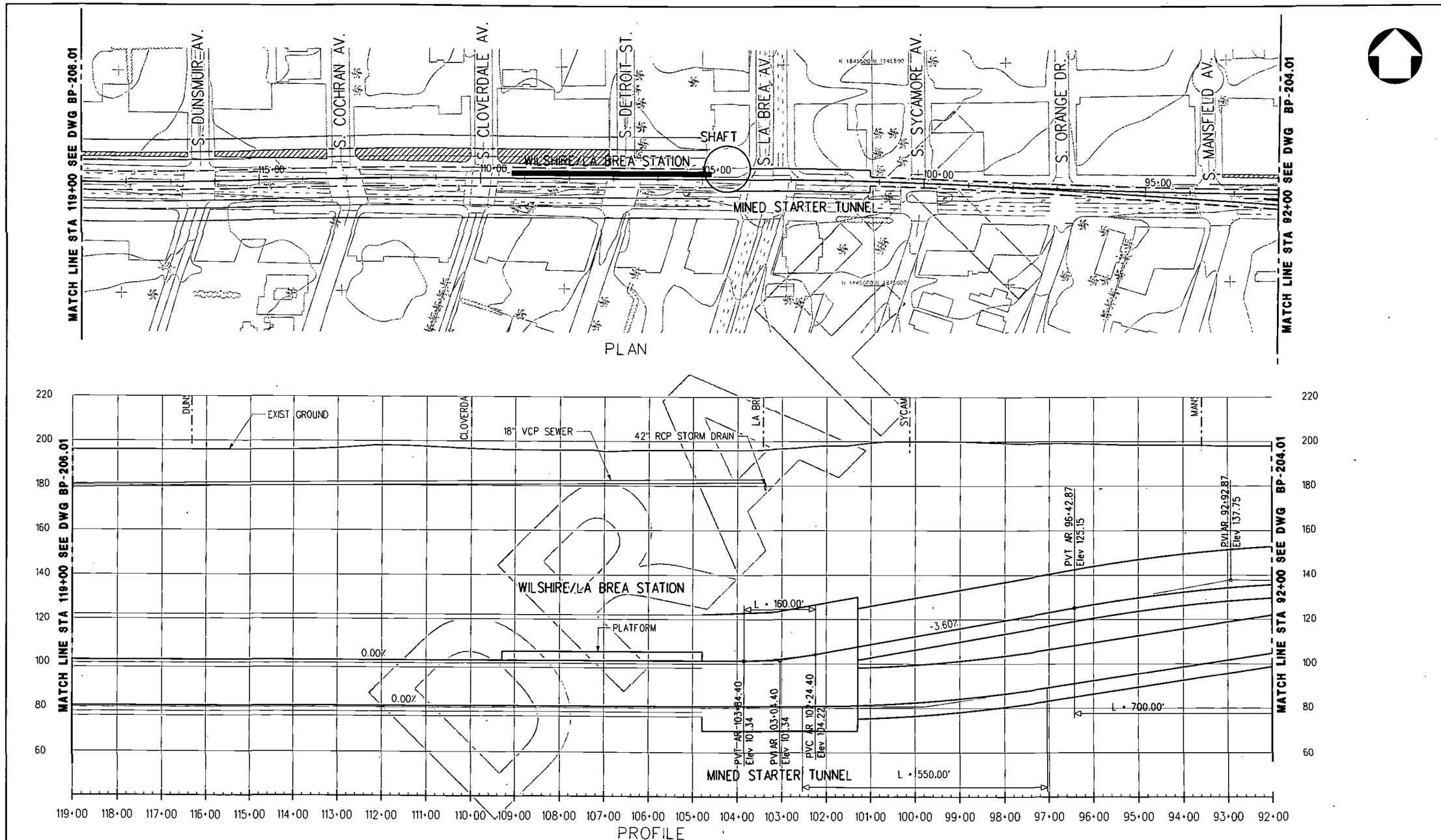
Metro
LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

PB
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-THROUGH)
PLAN & PROFILE
STATION 0+00 TO 11+00
BUILDING PROTECTION STUDY - 1% GL

CONTRACT NO
DRAWING NO BP-201.01
REV
SCALE 1'=100'
SHEET NO



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
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IN CHARGE
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LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

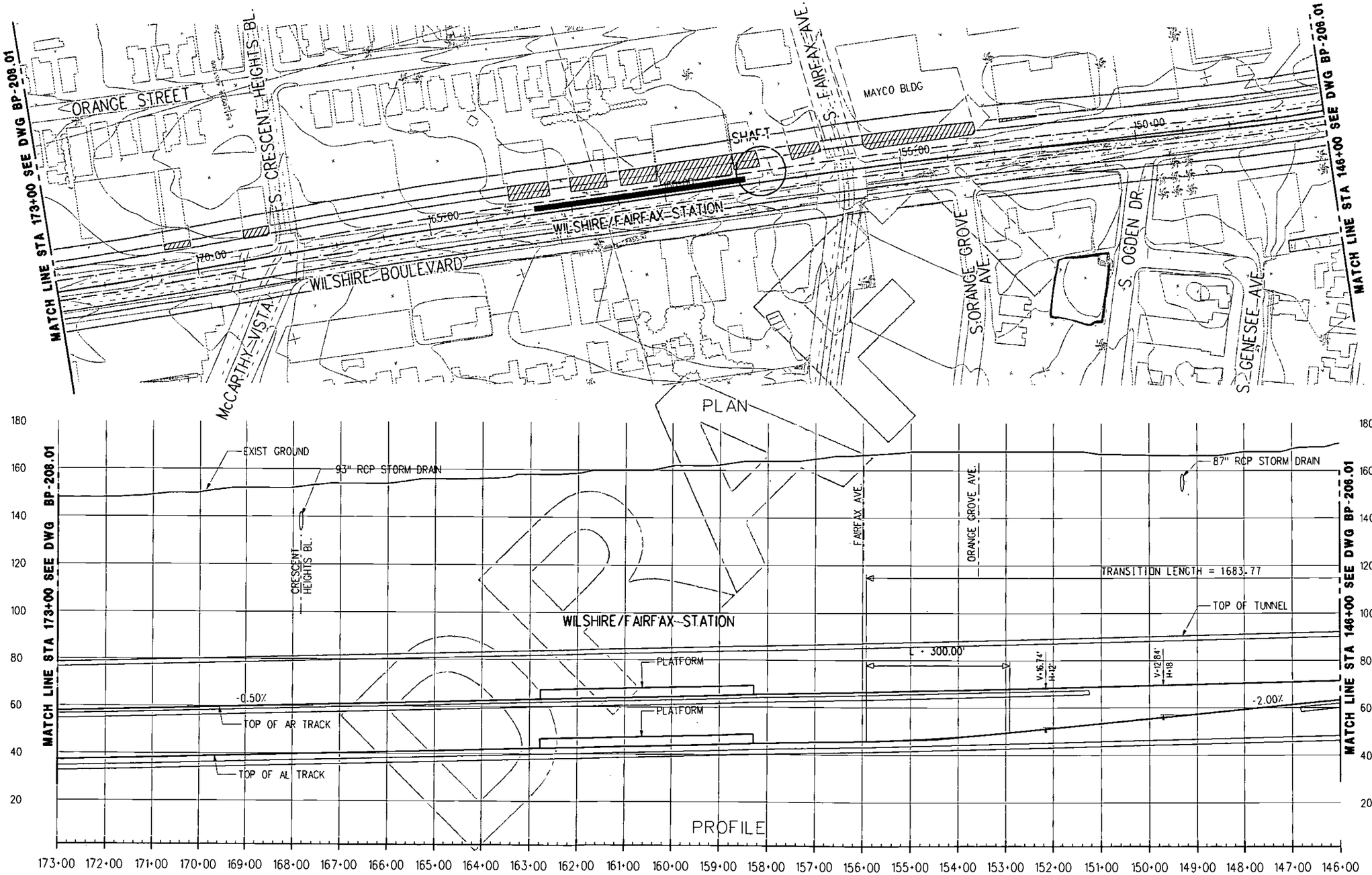
PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-THROUGH)
PLAN & PROFILE
STATION 92+00 TO 119+00
BUILDING PROTECTION STUDY - 1% GL

CONTRACT NO
DRAWING NO BP-205.01 REV
SCALE 1" = 100'
SHEET NO

User-Name: USER-oldrete 8/31/2010 @ 3:12:04 PM FileName=> T:\27940A-WestsideExtensionACE\CADD\Single Boring Tunnel\SBT_Sheets\Settlement\Tunnel Thru Alignment\1% Groundloss\BP-205.01.plg



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
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LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

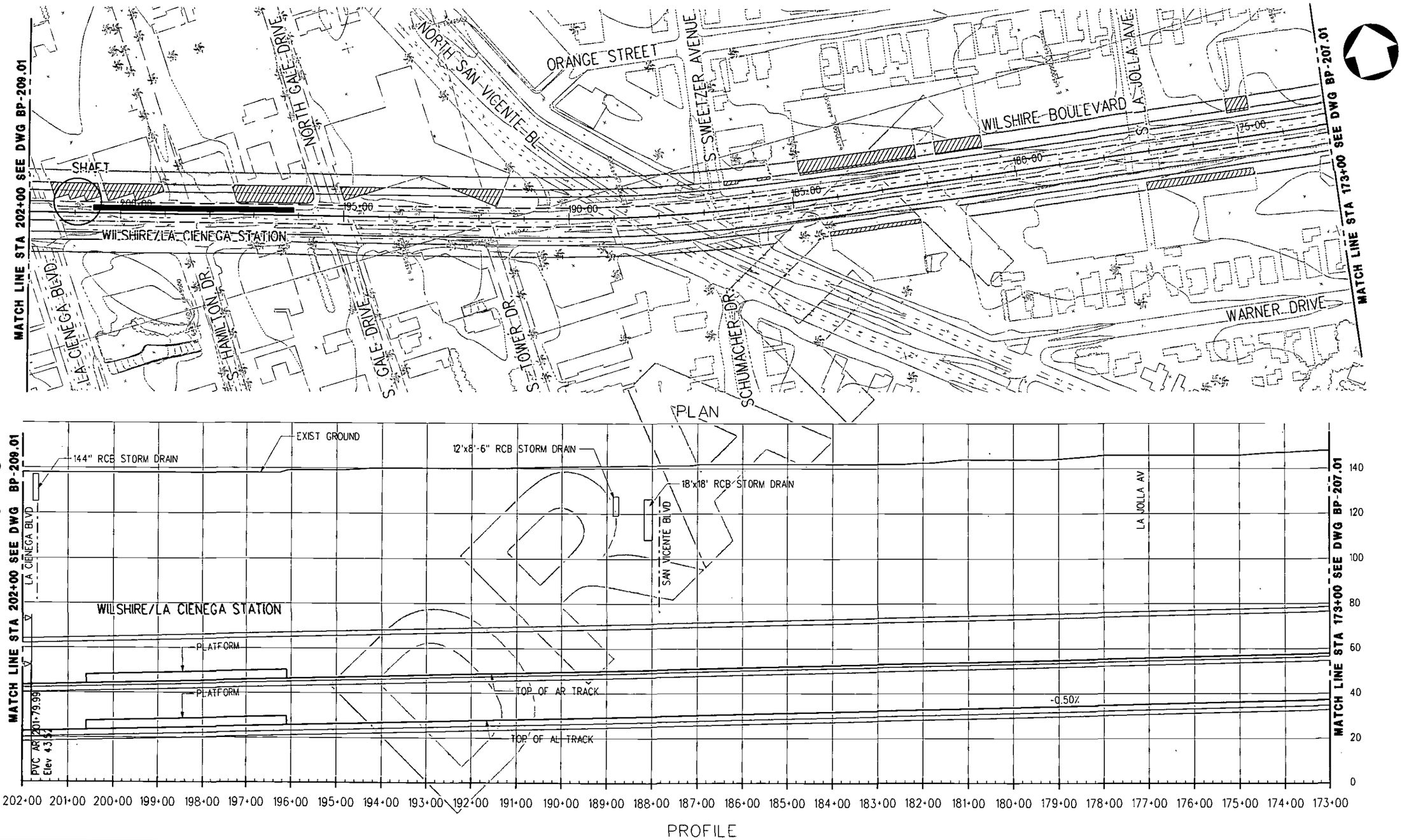
PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-THROUGH)
PLAN & PROFILE
STATION 146+00 TO 173+00
BUILDING PROTECTION STUDY - 1% GL

CONTRACT NO
DRAWING NO BP-207.01
REV
SCALE 1"=100'
SHEET NO

UserName: USER-pldrelete 8/31/2010 @ 3:12:12 PM Filename: F:\27940A-WestsideExtension\ACE\CADD\Single Boring Tunnel\SBT_Sheets\Settlement\Tunnel Thru Alignment\1% Groundloss\BP-207.01.dgn



REV	DATE	BY	APP	REC NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
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IN CHARGE
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LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

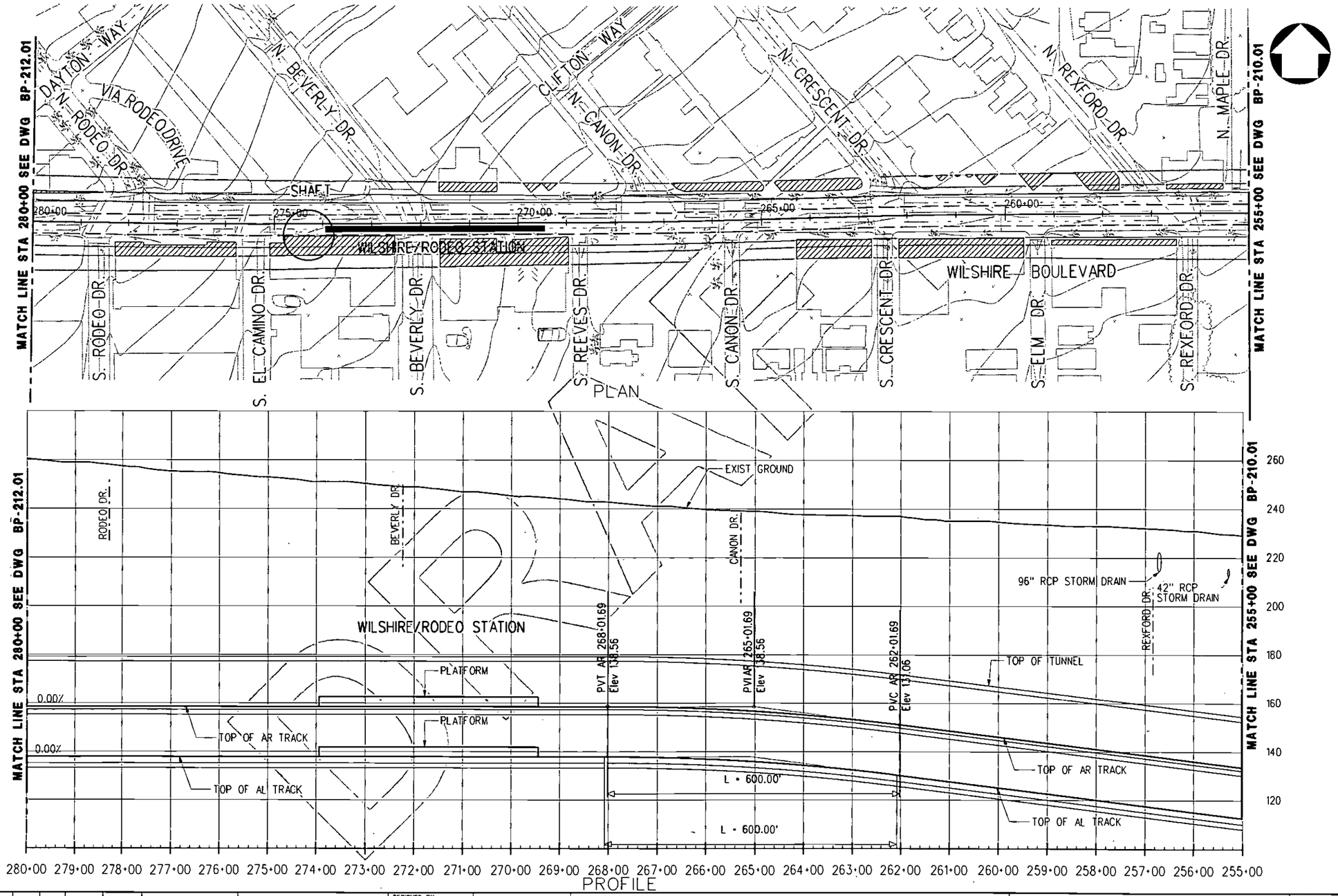
PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-THROUGH)
PLAN & PROFILE
STATION 173+00 TO 202+00
BUILDING PROTECTION STUDY - 1% GL

CONTRACT NO
DRAWING NO BP-208.01
REV
SCALE 1"=100'
SHEET NO

UserName: USER=odrete6/31/2010 @ 3:12:19 PM FileName=> T:\27940A-WestsideExtensionACE\CADD\Single Boring Tunnel\SBT_Sheets\Settlement\Tunnel Thru Alignment\1% Groundloss\BP-208.01.plg



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
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IN CHARGE
DATE AUGUST 2010

Metro

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

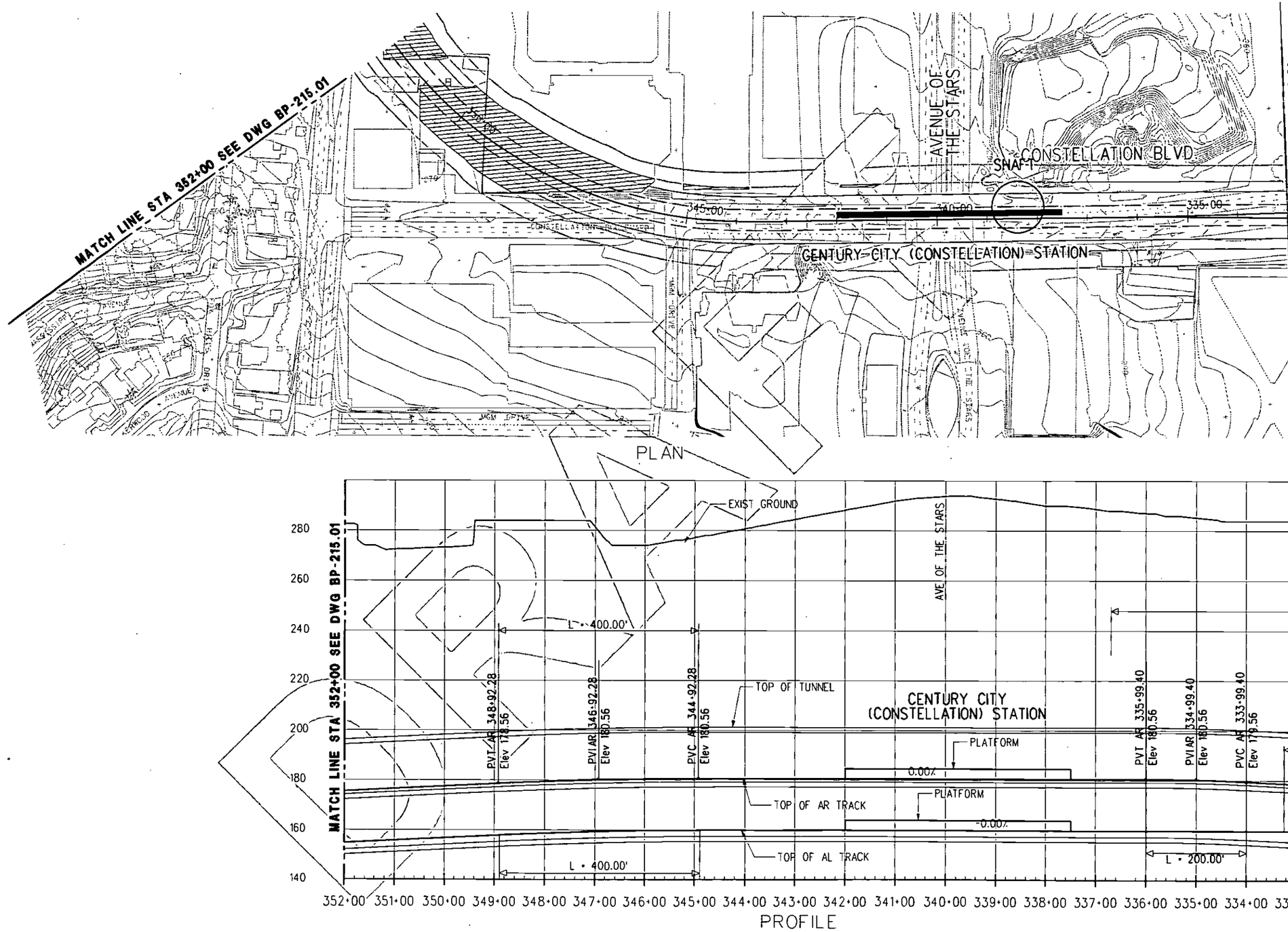
PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-THROUGH)
PLAN & PROFILE
STATION 255+00 TO 280+00
BUILDING PROTECTION STUDY - 1% GL

CONTRACT NO
DRAWING NO BP-211.01
REV
SCALE 1" = 100'
SHEET NO

UserName: USER-updated8/31/2010 @ 3:12:26 PM FileName> T:\279404-WestsideExtension\ACE\C400\Single Boring Tunnel\SBT-Sheets\Settlement\Tunnel Thru Alignment\17 Groundloss\BP-211.01.dgn



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

Metro

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

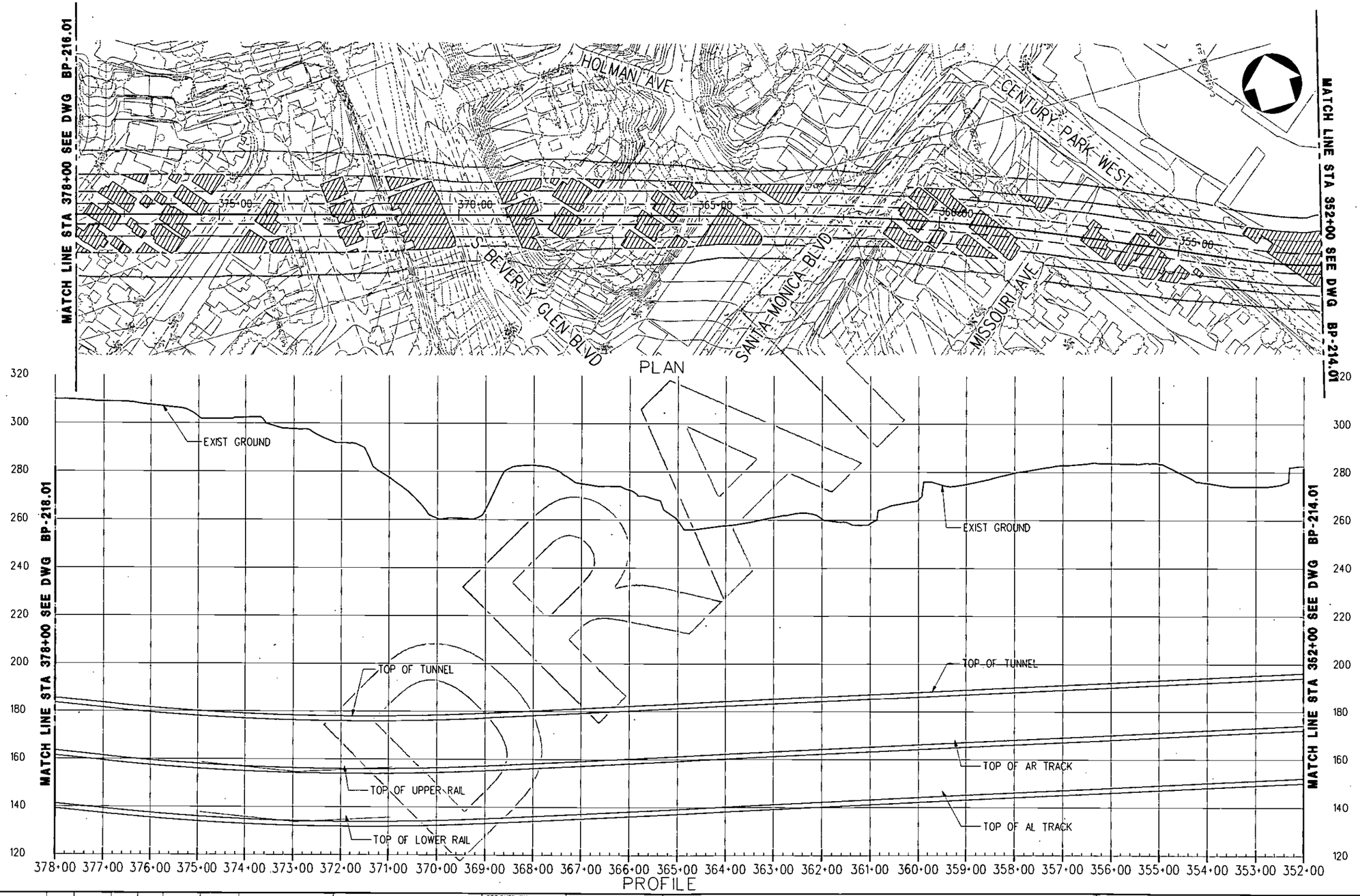
PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-THROUGH)
PLAN & PROFILE
STATION 333+00 TO 352+00
BUILDING PROTECTION STUDY - 1% GL

CONTRACT NO
DRAWING NO BP-214.01
REV
SCALE 1"=100'
SHEET NO

UserName: USER-aldrete8/31/2010 @ 3:12:34 PM FileName>> T:\27940A-WestsideExtensionACE\CADD\Single Boring Tunnel\SBT_Sheets\Settlement\Tunnel Thru Alignment\1% Groundloss\BP-214.01.plg



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

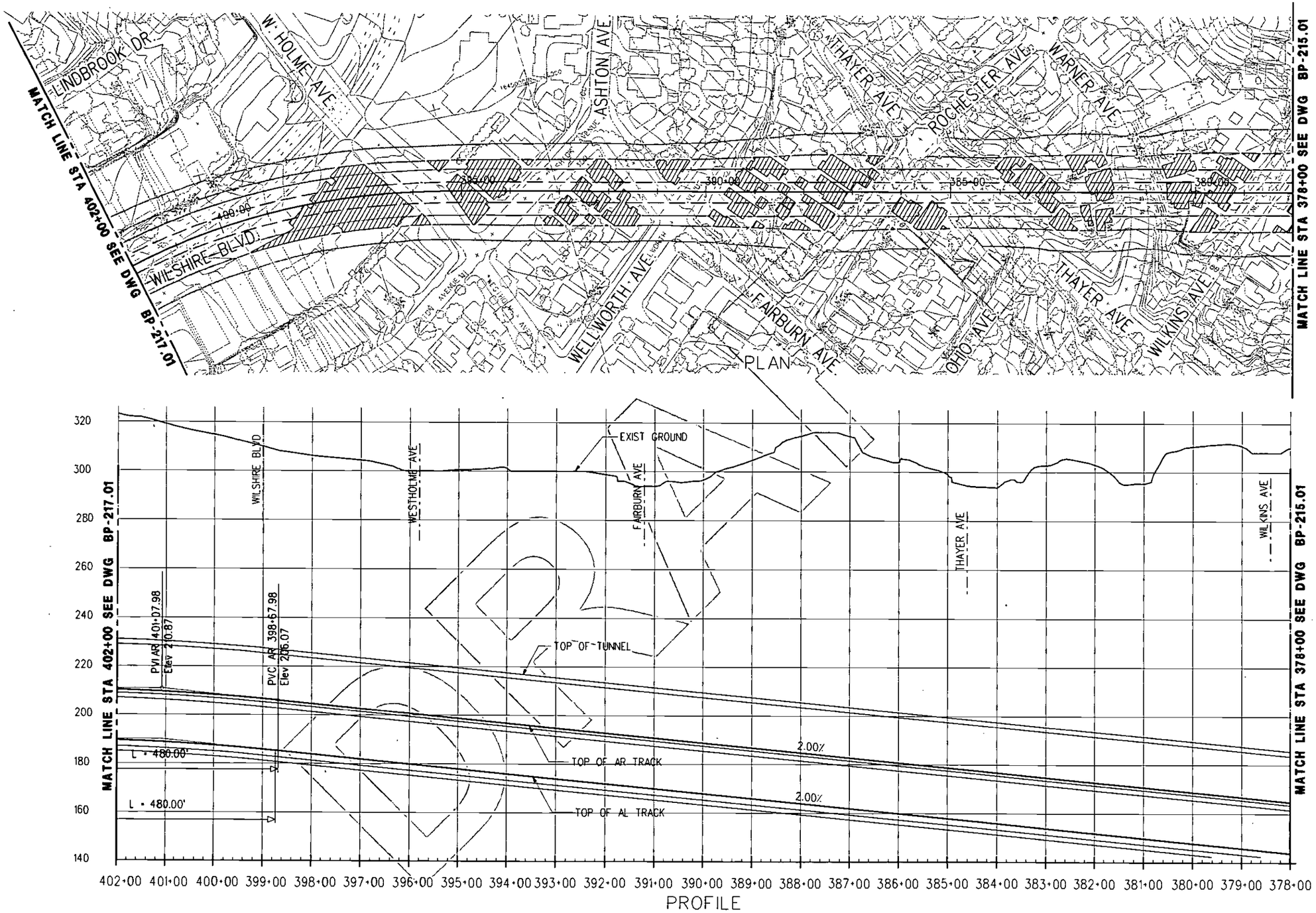
PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-THROUGH)
PLAN & PROFILE
STATION 352+00 TO 378+00
BUILDING PROTECTION STUDY - 1% GL

CONTRACT NO
DRAWING NO BP-215.01
REV
SCALE 1"=100'
SHEET NO

UserName: USER=oldrelee@/31/2010 @ 3:12:42 PM FileName=> T:\27940A-WestsideExtensionACE\CADD\Single Boring Tunnel\SBT_Sheets\Settlement\Tunnel Thru Alignment\1% Groundloss\BP-215.01.plg



REV	DATE	BY	APP	REC NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
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IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

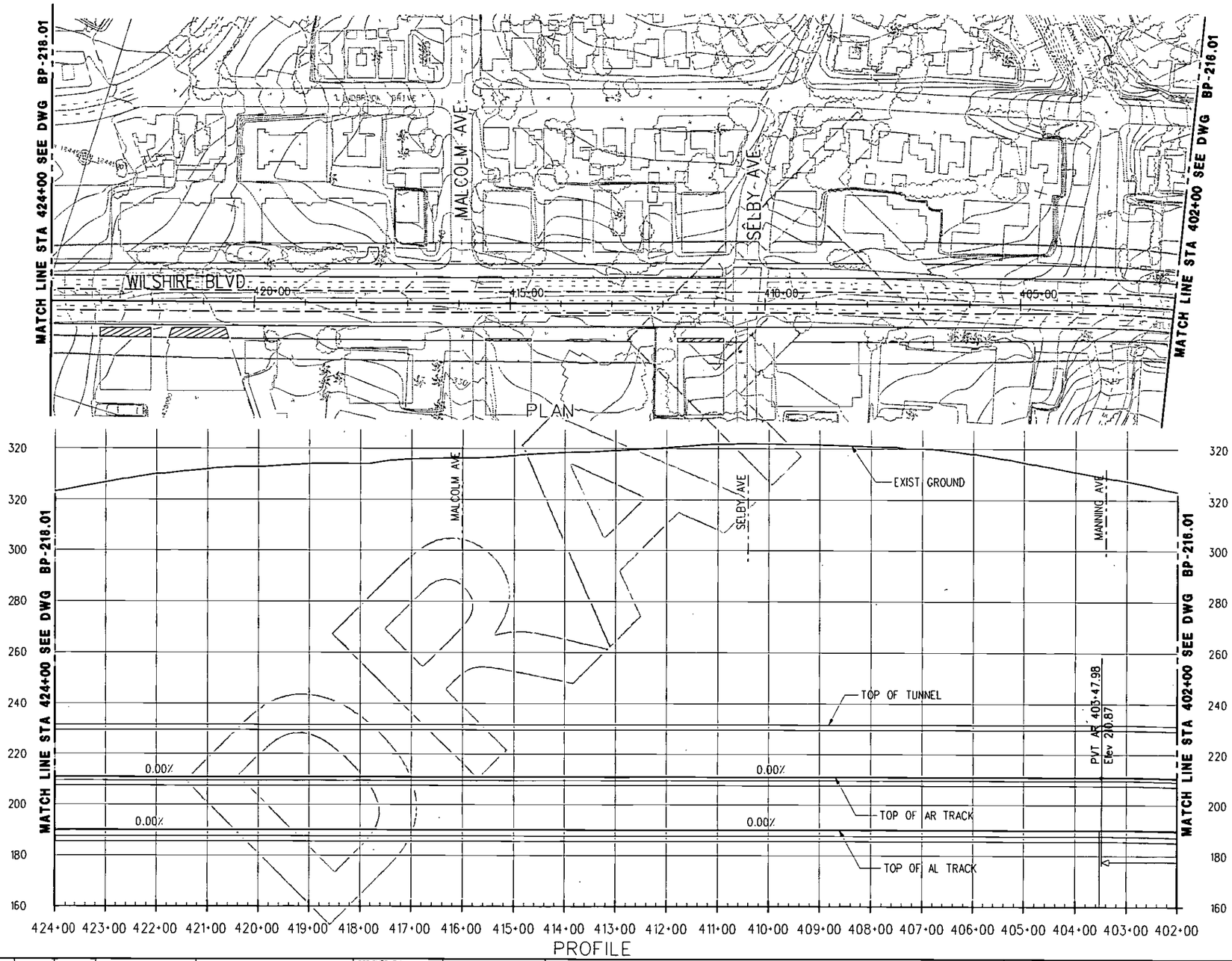
PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-THROUGH)
PLAN & PROFILE
STATION 378+00 TO 402+00
BUILDING PROTECTION STUDY - 1% GL

CONTRACT NO
DRAWING NO BP-216.01
REV
SCALE 1"=100'
SHEET NO

UserName: USER-oldetebf 3/1/2010 @ 3:12:50 PM FileName=> T:\27940A-WestsideExtension\ACE\CADD\Single Boring Tunnel\SBT_Sheets\SetUlement\Tunnel Thru Alignment\1% Groundloss\BP-216.01.plg



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
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IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

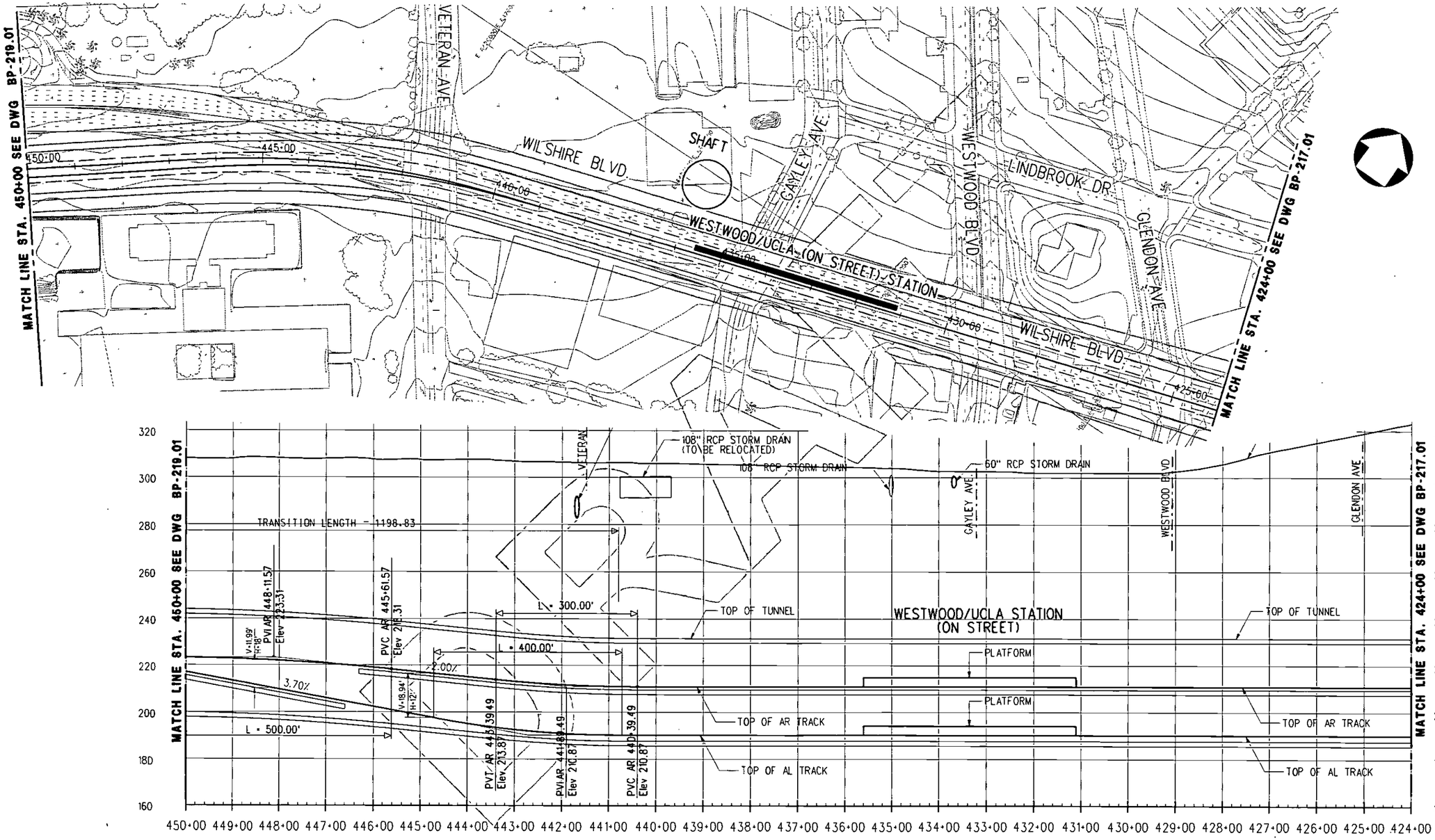
PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-THROUGH)
PLAN & PROFILE
STATION 402+00 TO 424+00
BUILDING PROTECTION STUDY - 1% GL

CONTRACT NO
DRAWING NO BP-217.01 REV
SCALE 1"=100'
SHEET NO

UserName: USER-deleted6/31/2010 @ 3:12:56 PM FileName>> T:\27940A-WestsideExtensionACEVCADD\Single Boring Tunnel\SBT_Sheets\SBT_Sheets\Settlement\Tunnel Thru Alignment\1% Groundloss\BP-217.01.plg



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

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CHECKED BY
IN CHARGE
DATE AUGUST 2010

Metro
LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

PB
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-THROUGH)
PLAN & PROFILE
STATION 424+00 TO 450+00
BUILDING PROTECTION STUDY - 1% GL

CONTRACT NO
DRAWING NO BP-218.01
REV
SCALE 1"=100'
SHEET NO

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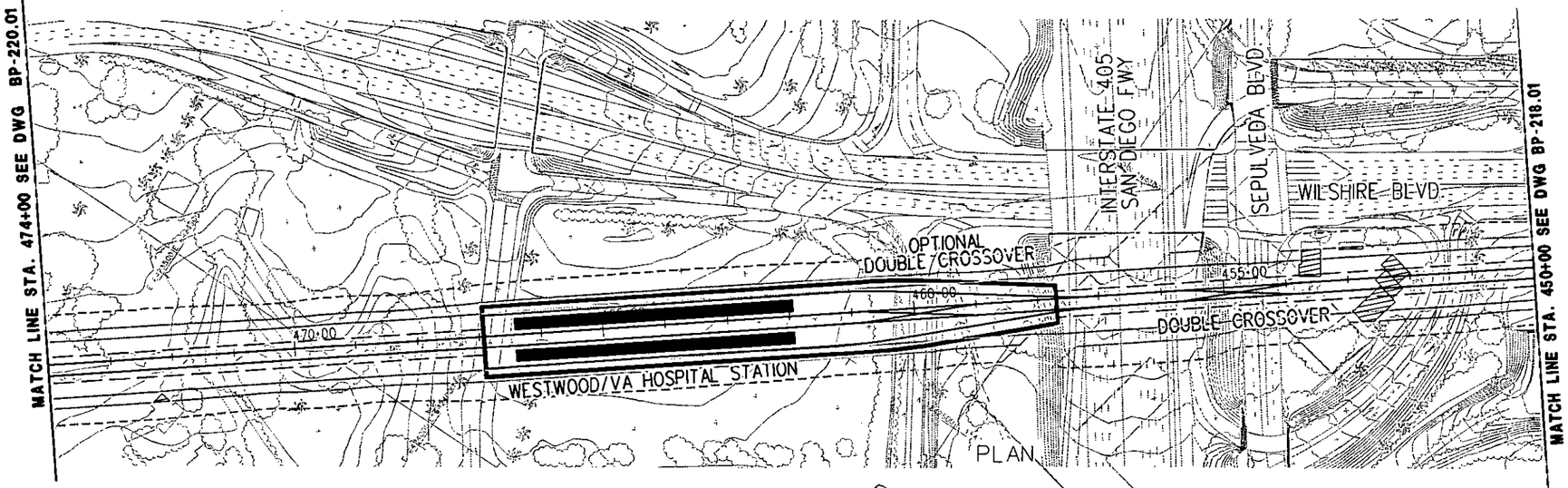

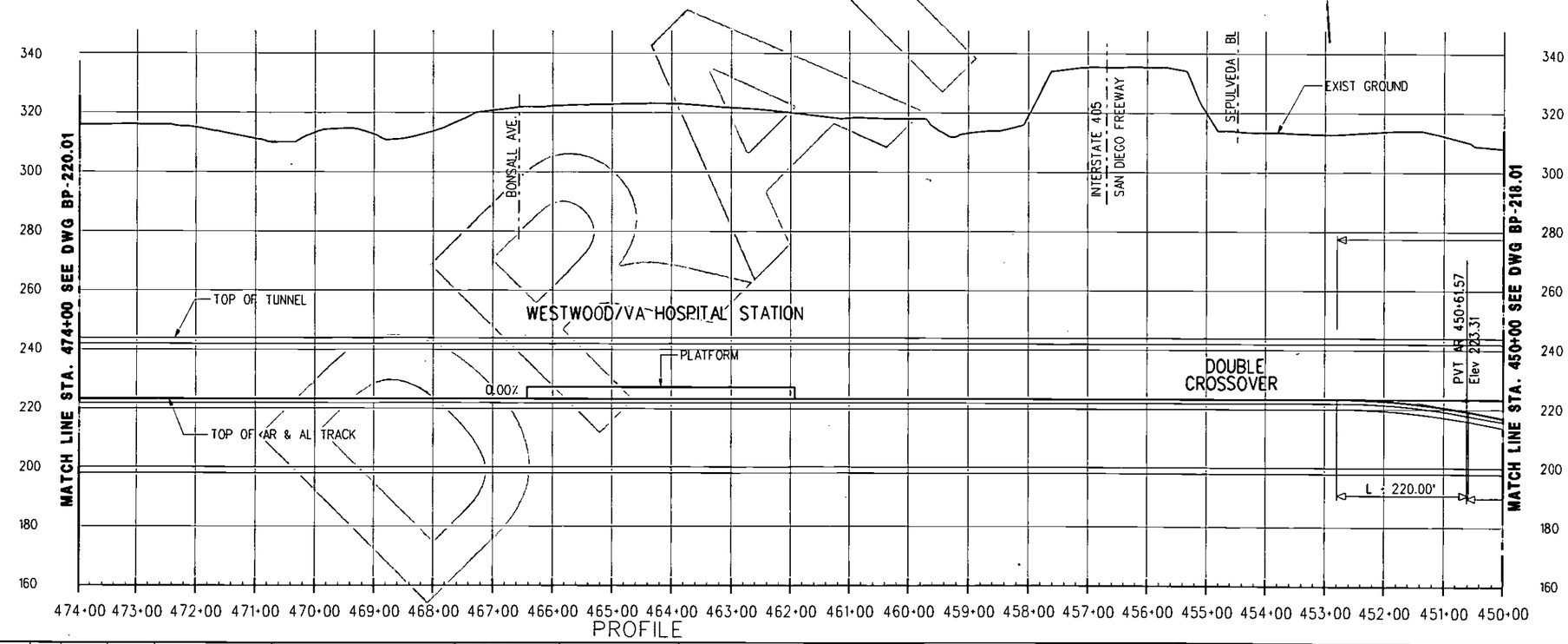

REV	DATE	BY	APP	REC NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

Metro
LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

PB
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-THROUGH)
PLAN AND PROFILE
STATION 450+00 TO 474+00
BUILDING PROTECTION STUDY - 1% GL

CONTRACT NO
DRAWING NO BP-219.01
REV
SCALE 1"=100'
SHEET NO

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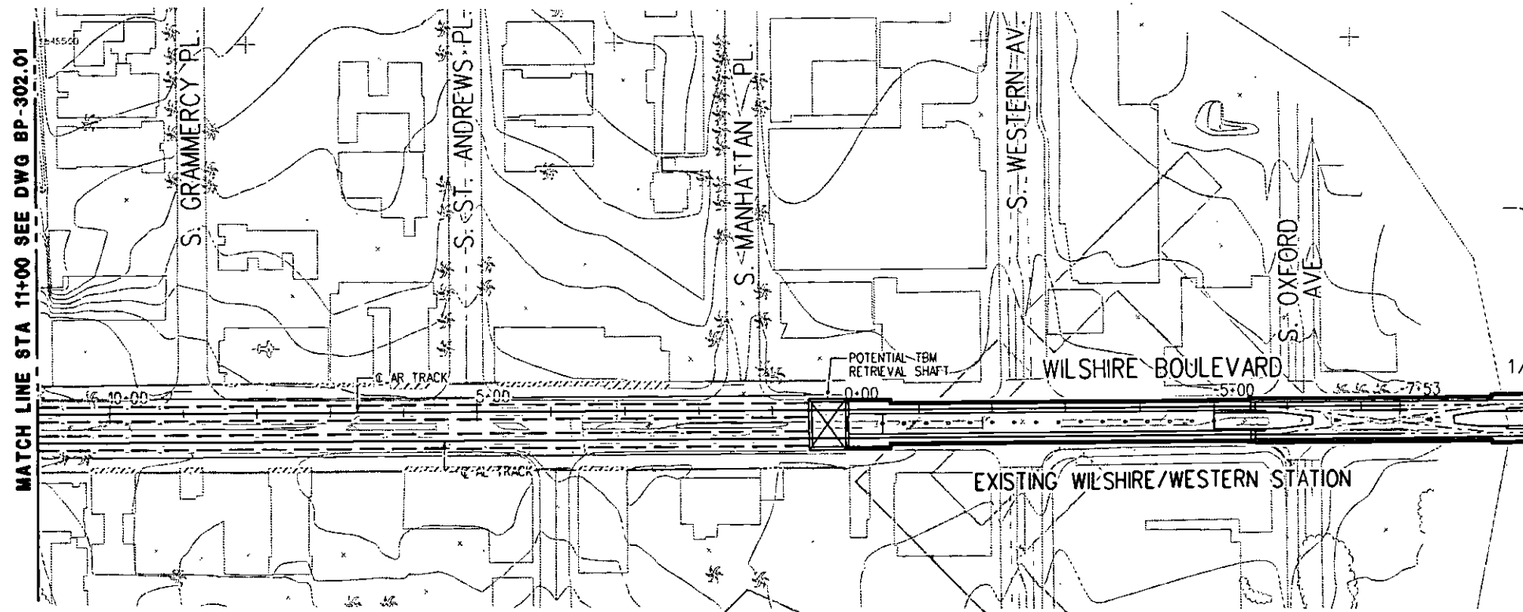
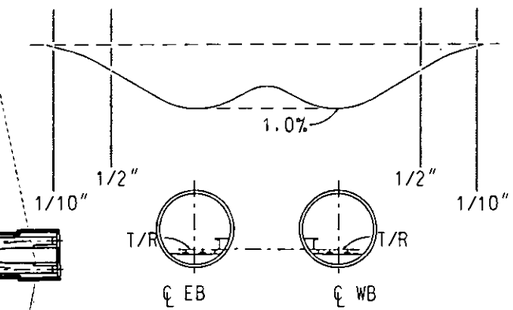
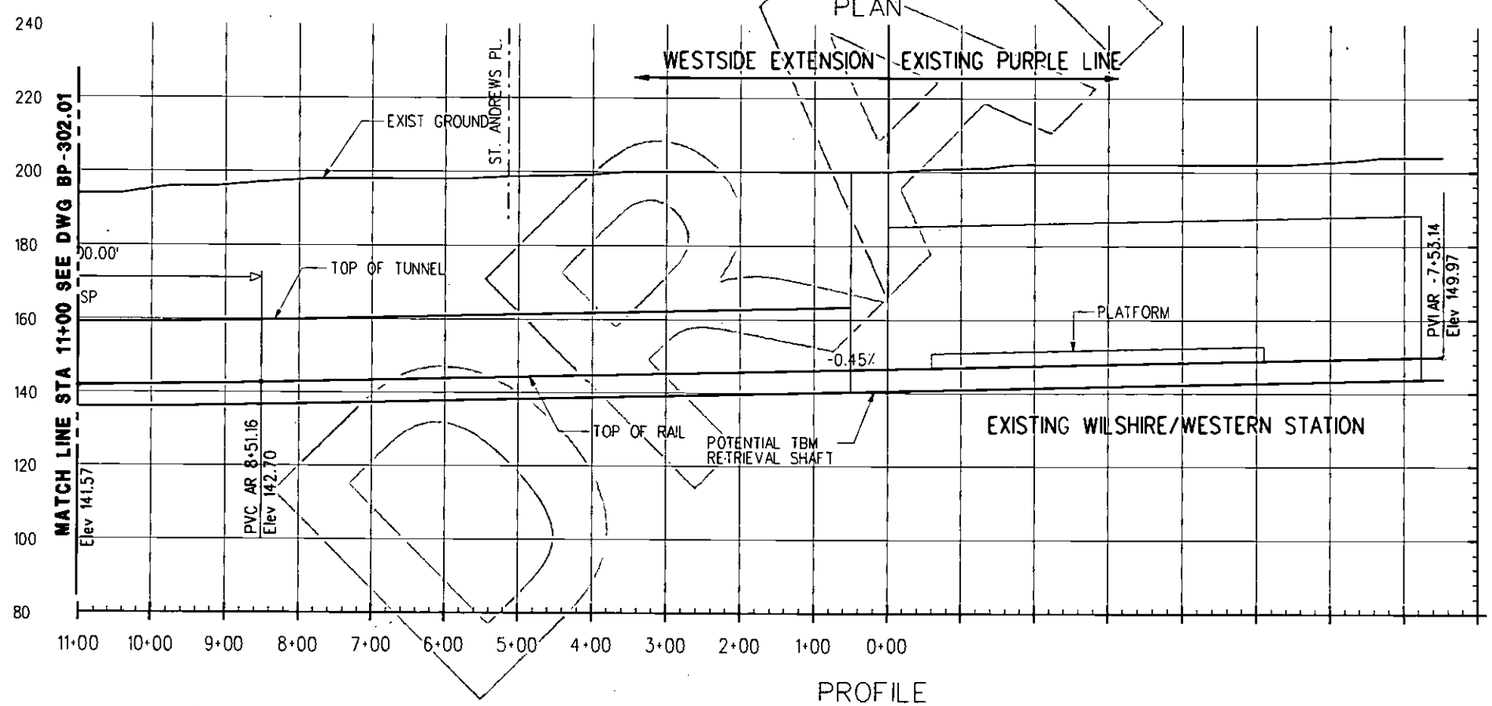


PLAN



SETTLEMENT TROUGH FOR TWIN TUNNELS
(NOT TO SCALE)



PROFILE

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

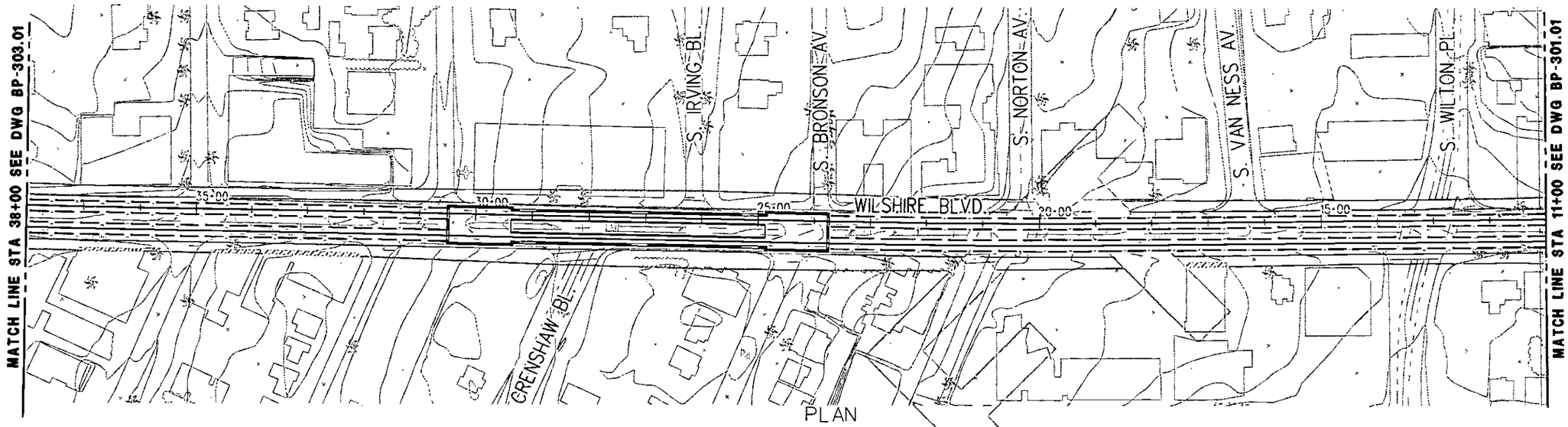
DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

Metro
LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

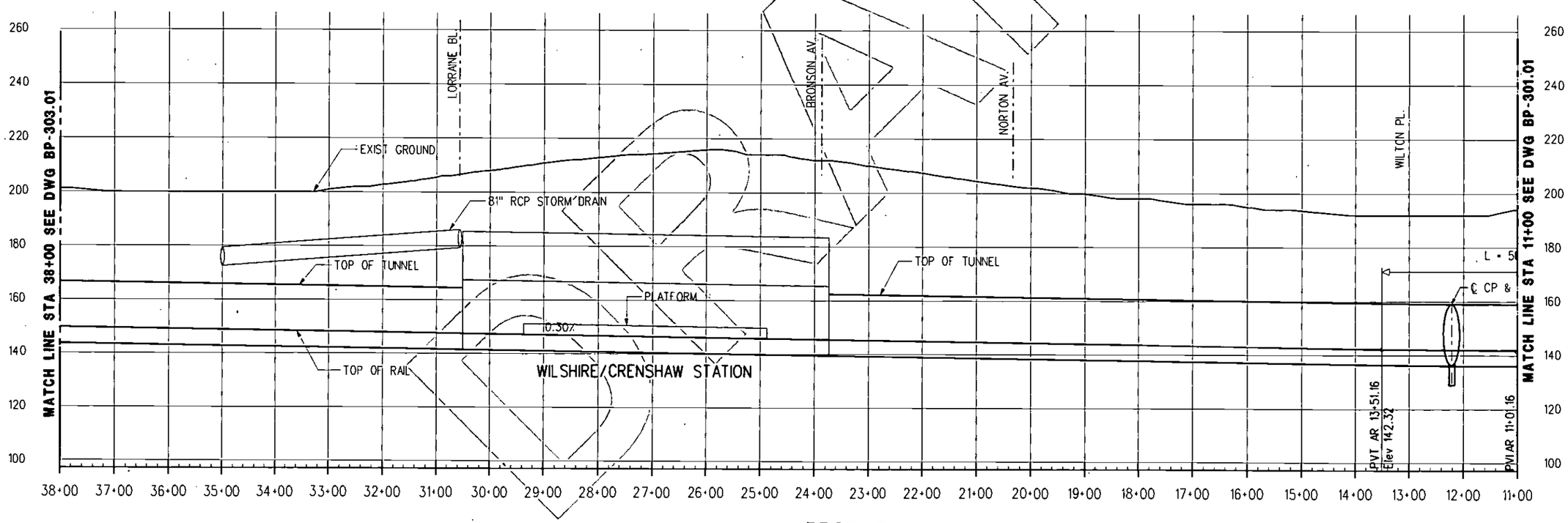
PB
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TWIN BORE (TUNNEL-OPTION 2E)
PLAN & PROFILE
STATION 0+00 TO 11+00
BUILDING PROTECTION STUDY - 1% GL

CONTRACT NO
DRAWING NO BP-301.01
REV
SCALE 1'=100'
SHEET NO



PLAN



PROFILE

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

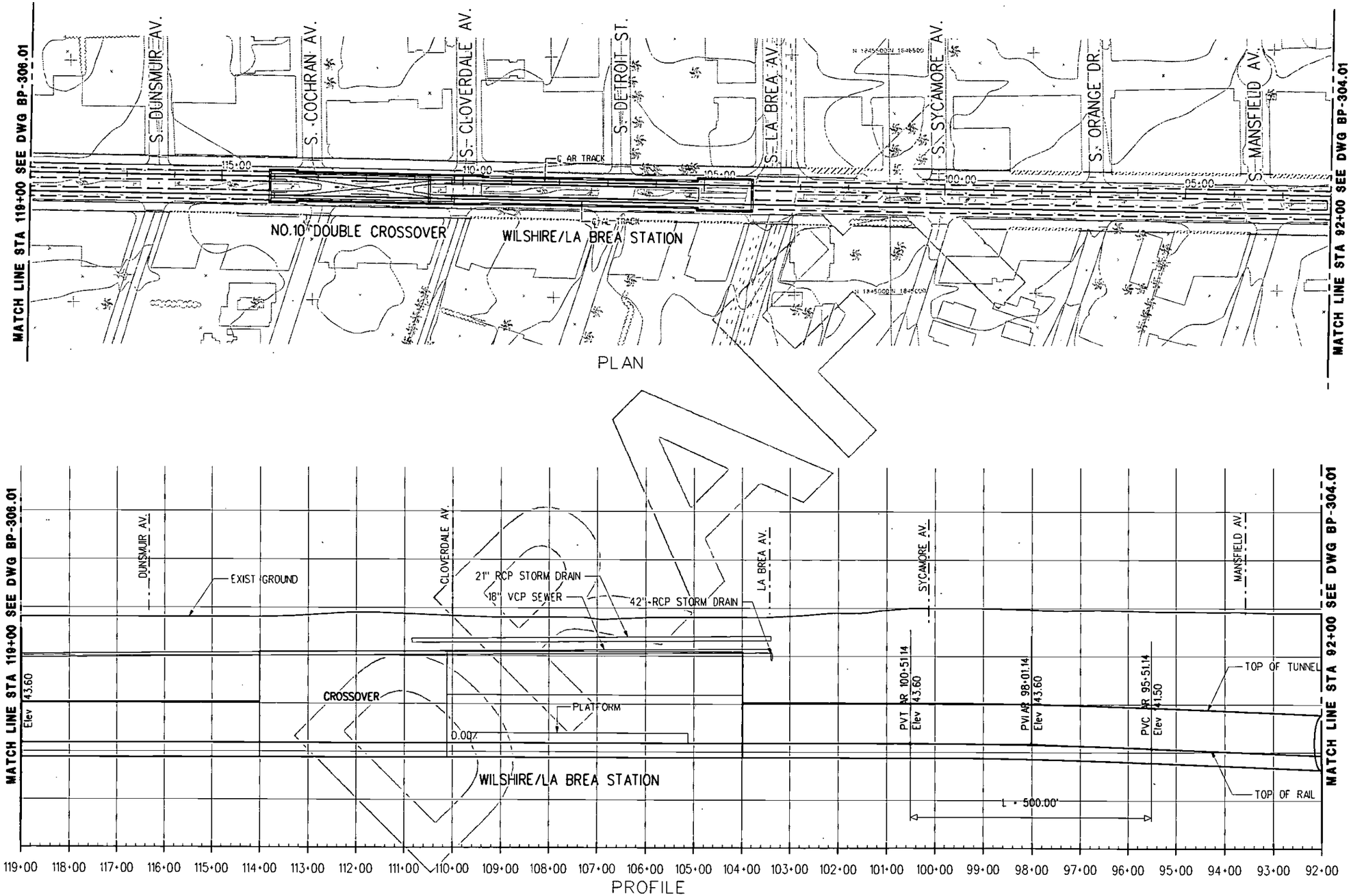
PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TWIN BORE (TUNNEL-OPTION 2E)
PLAN & PROFILE
STATION 11+00 TO 38+00
BUILDING PROTECTION STUDY - 1% GL

CONTRACT NO
DRAWING NO BP-302.01
REV
SCALE 1" = 100'
SHEET NO

UserName: USER-aldrete6/31/2010 @ 3:32:27 PM FileName> T:\279404-WestsideExtension\CE\CADD\Single Boring Tunnel\SBT_Sheets\Settlement\Twin Bore Tunnel\1% Groundloss\BP-302.01.plg



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

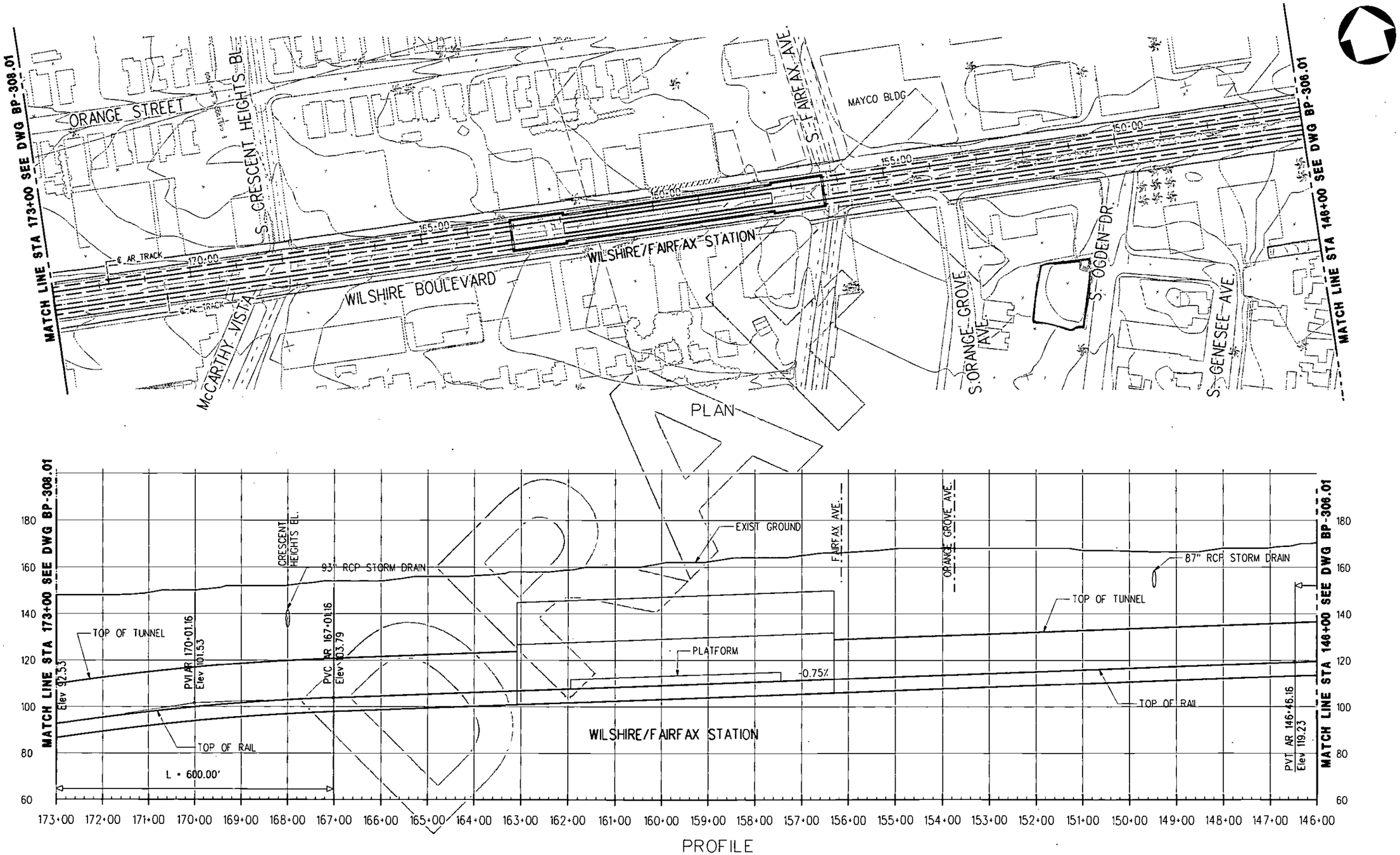
PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TWIN BORE (TUNNEL-OPTION 2E)
PLAN & PROFILE
STATION 92+00 TO 119+00
BUILDING PROTECTION STUDY - 1% GL

CONTRACT NO
DRAWING NO BP-305.01
REV
SCALE 1" = 100'
SHEET NO

UserName: USER-adrate8/31/2010 @ 3:32:37 PM FileName=> T:\27940A-WestsideExtensionACE\CADD\Single Boring Tunnel\SBT_Sheets\Settlement\Twin Bore Tunnel\1% Groundloss\BP-305.01.plg



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

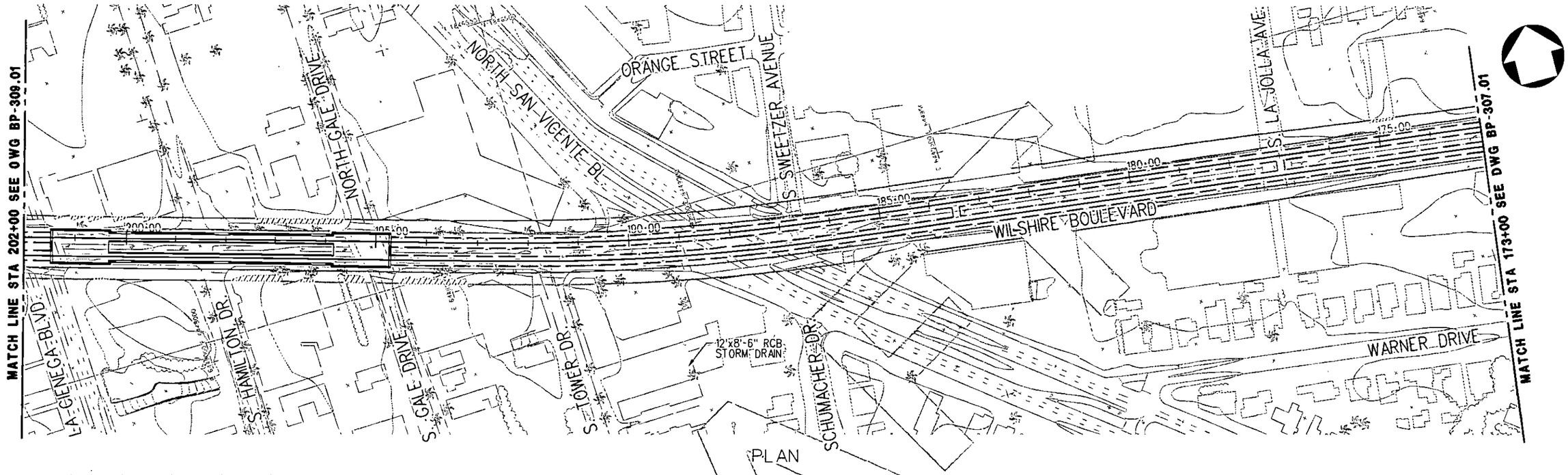
PB

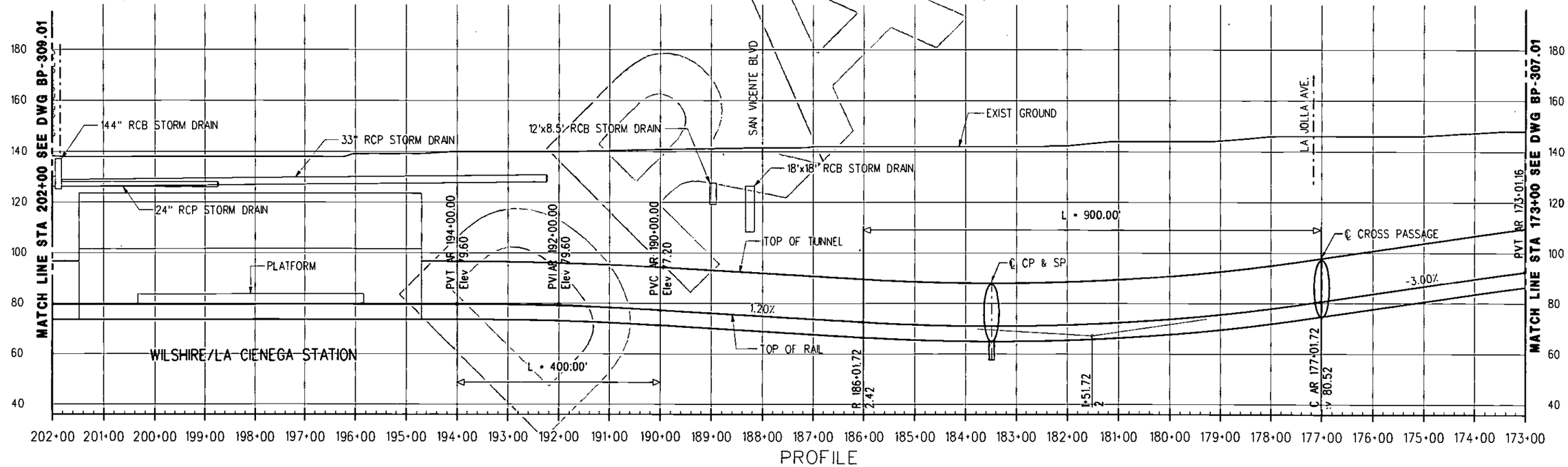
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TWIN BORE (TUNNEL-OPTION 2E)
PLAN & PROFILE
STATION 146+00 TO 173+00
BUILDING PROTECTION STUDY - 1% GL

CONTRACT NO
DRAWING NO BP-307.01
REV
SCALE 1"=100'
SHEET NO

User Name: USER-adrete8/31/2010 @ 3:32:47 PM FileName=> T:\279404-WestsideExtension\CENCADD\Single Boring Tunnel\SBT_Sheets\Settlement\Twin Bore Tunnel\1% Groundloss\BP-307.01.dgn





REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TWIN BORE (TUNNEL-OPTION 2E)
PLAN & PROFILE
STATION 173+00 TO 202+00
BUILDING PROTECTION STUDY - 1% GL

CONTRACT NO
DRAWING NO BP-308.01
REV
SCALE 1"=100'
SHEET NO

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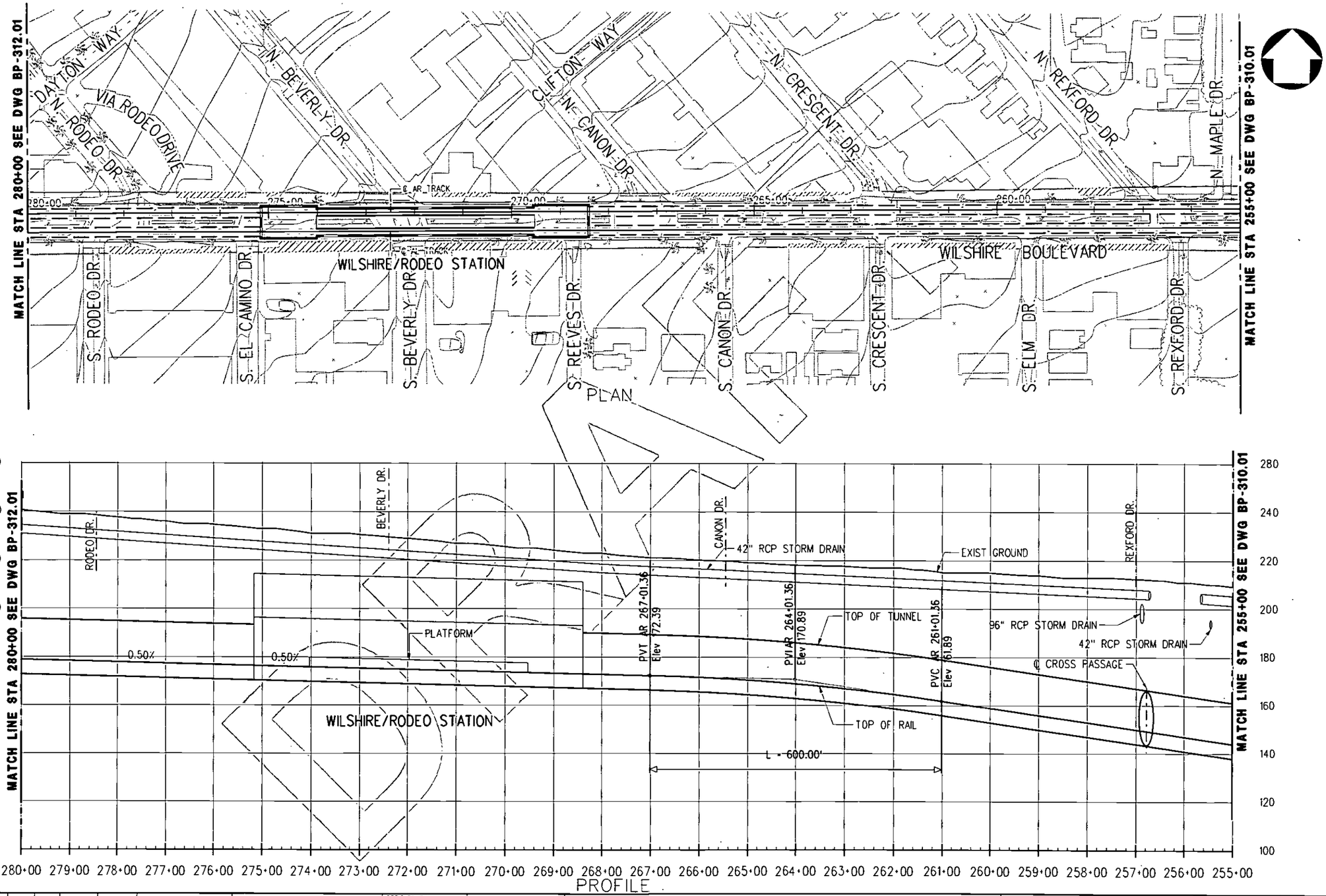

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TWIN BORE (TUNNEL-OPTION 2E)
PLAN & PROFILE
STATION 255+00 TO 280+00
BUILDING PROTECTION STUDY - 1% GL

CONTRACT NO
DRAWING NO BP-311.01
REV
SCALE 1" = 100'
SHEET NO

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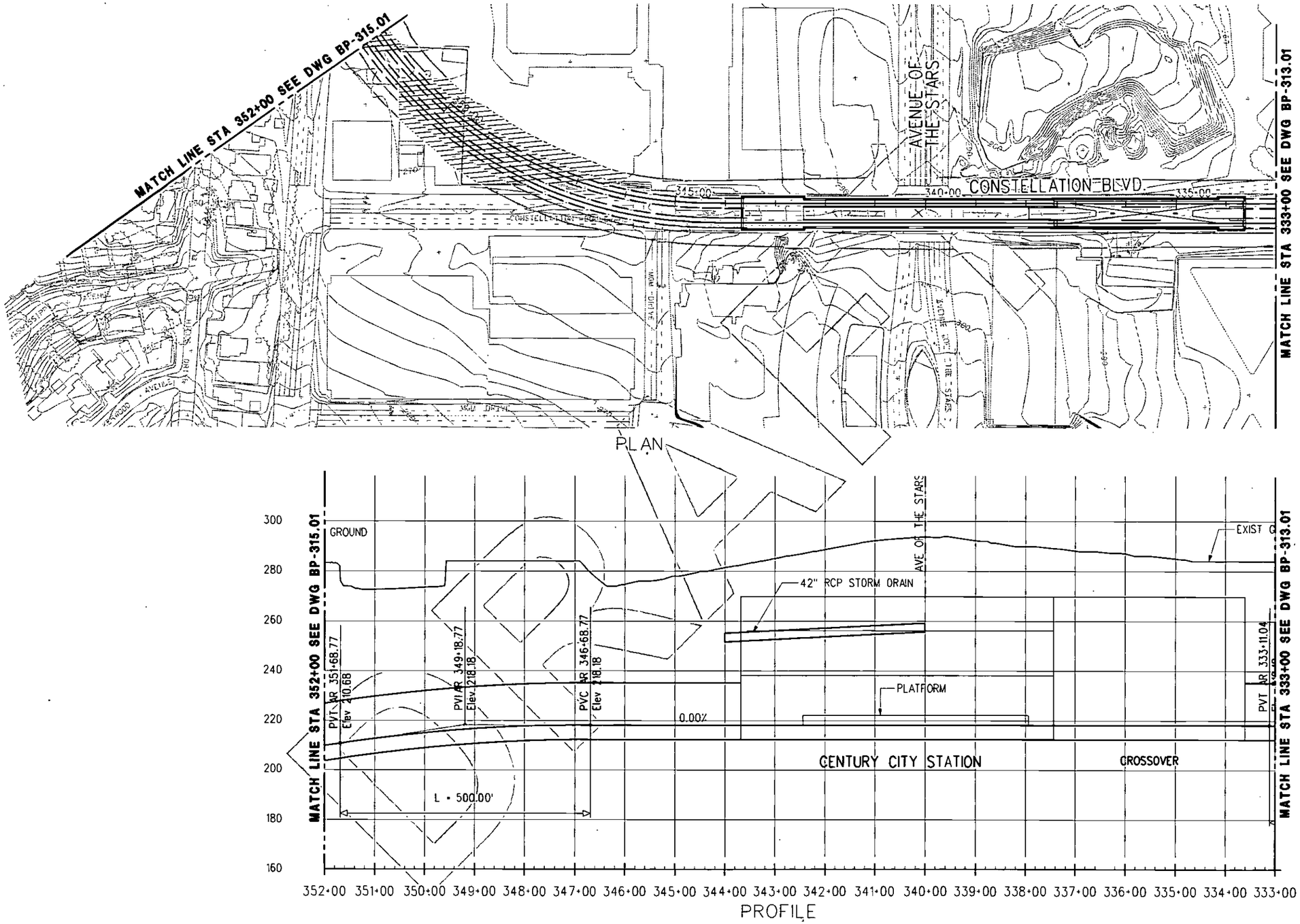


REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

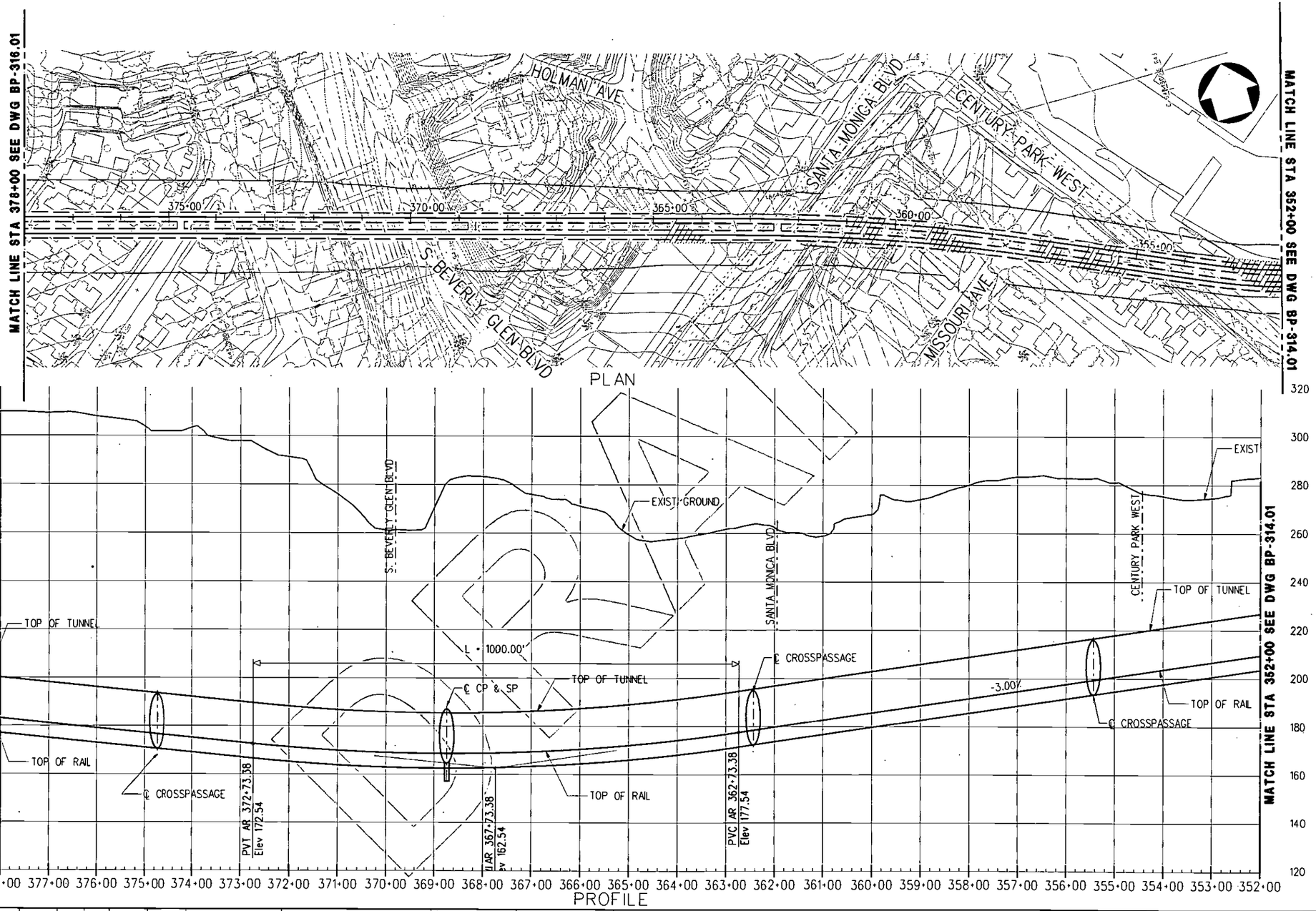
PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TWIN BORE (TUNNEL-OPTION 2E)
PLAN & PROFILE
STATION 333+00 TO 352+00
BUILDING PROTECTION STUDY - 1% GL

CONTRACT NO
DRAWING NO BP-314.01
REV
SCALE 1" = 100'
SHEET NO

User Name: USER-clarete8/31/2010 @ 3:33:20 PM FileName> T:\279940A-WestsideExtension\CADD\Single Boring Tunnel\SBT_Sheets\Settlement\Twin Bore Tunnel\1% Groundloss\BP-314.01.plg



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

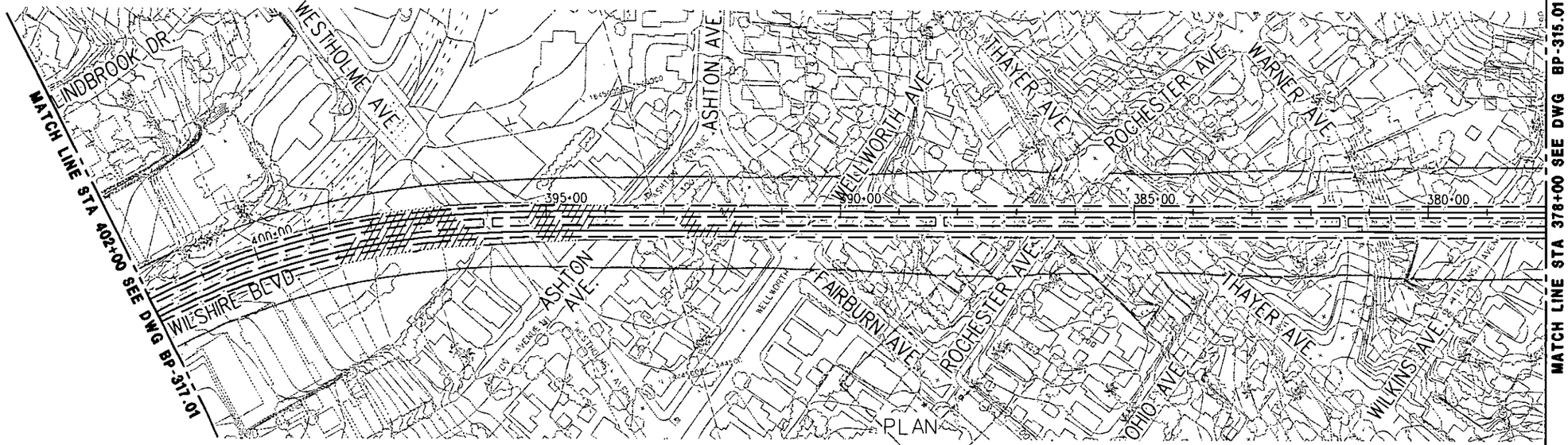
PB

PROJECT MANAGER

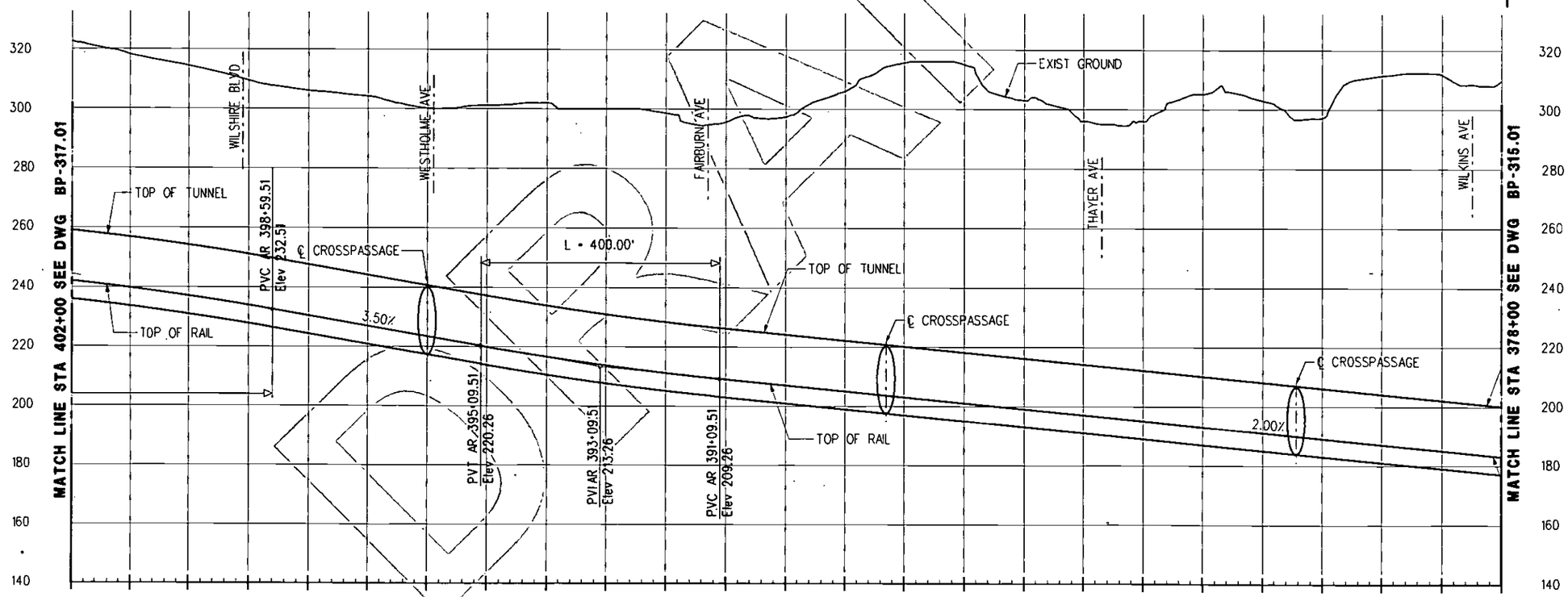
WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TWIN BORE (TUNNEL-OPTION 2E)
PLAN & PROFILE
STATION 352+00 TO 378+00
BUILDING PROTECTION STUDY - 1% GL

CONTRACT NO
DRAWING NO BP-315.01
REV
SCALE 1"=100'
SHEET NO

UserName: USERprdirate8/31/2010 @ 3:33:27 PM FileName=> T:\27940A-WestsideExtensionACE\CADD\Single Boring Tunnel\SBT_Sheets\Settlement\Twin Bore Tunnel\1% Groundloss\BP-315.01.plg



PLAN



PROFILE

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

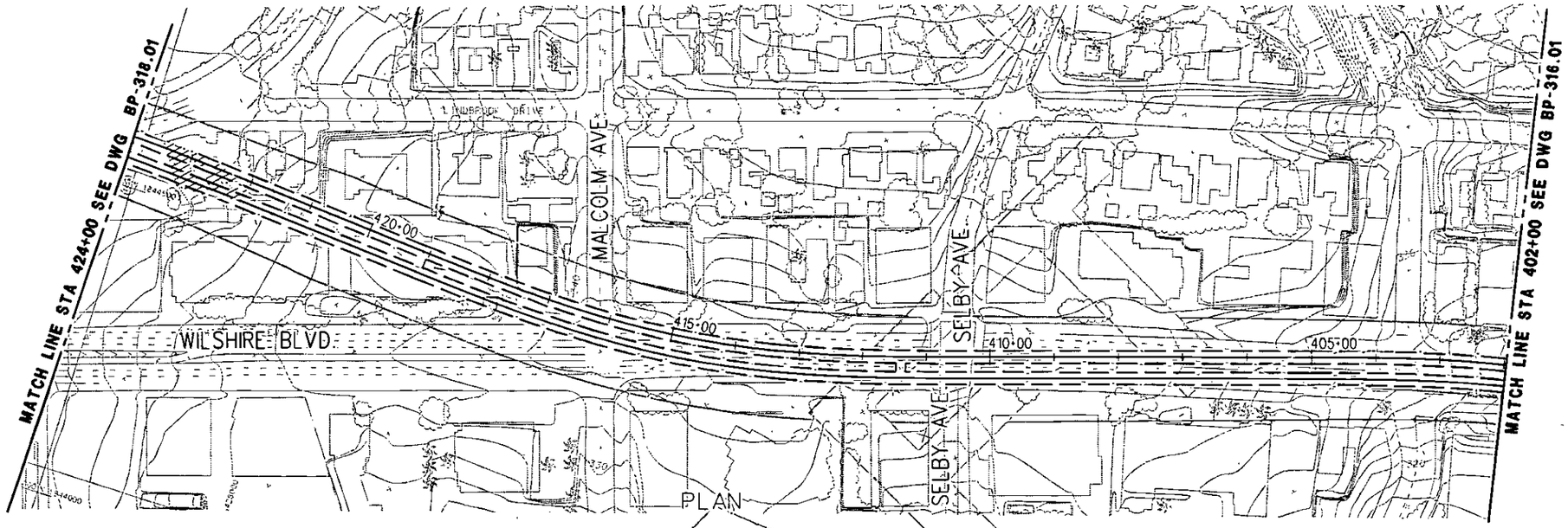
PB

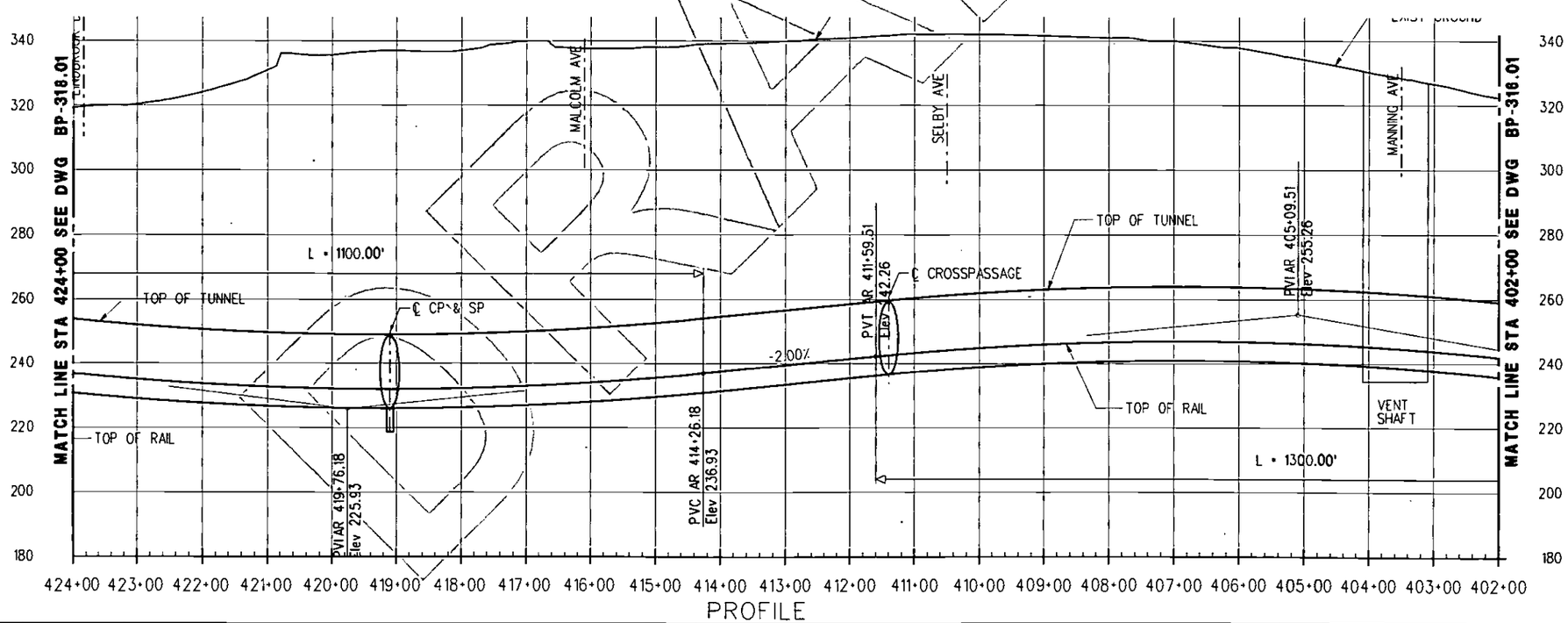
PROJECT MANAGER:

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TWIN BORE (TUNNEL-OPTION 2E)
PLAN & PROFILE
STATION 378+00 TO 402+00
BUILDING PROTECTION STUDY - 1% GL

CONTRACT NO
DRAWING NO BP-316.01
REV
SCALE 1"=100'
SHEET NO

UserName: USER-deleted 8/31/2010 @ 3:33:38 PM FileName-> T:\27940A-WestsideExtension\ACE\CADD\Single Boring Tunnel\SBT_Sheets\Settlement\Twin Bore Tunnel\1% Groundloss\BP-316.01.plg





REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TWIN BORE (TUNNEL-OPTION 2E)
PLAN & PROFILE
STATION 402+00 TO 424+00
BUILDING PROTECTION STUDY -1% GL

CONTRACT NO
DRAWING NO BP-317.01
REV
SCALE 1"=100'
SHEET NO

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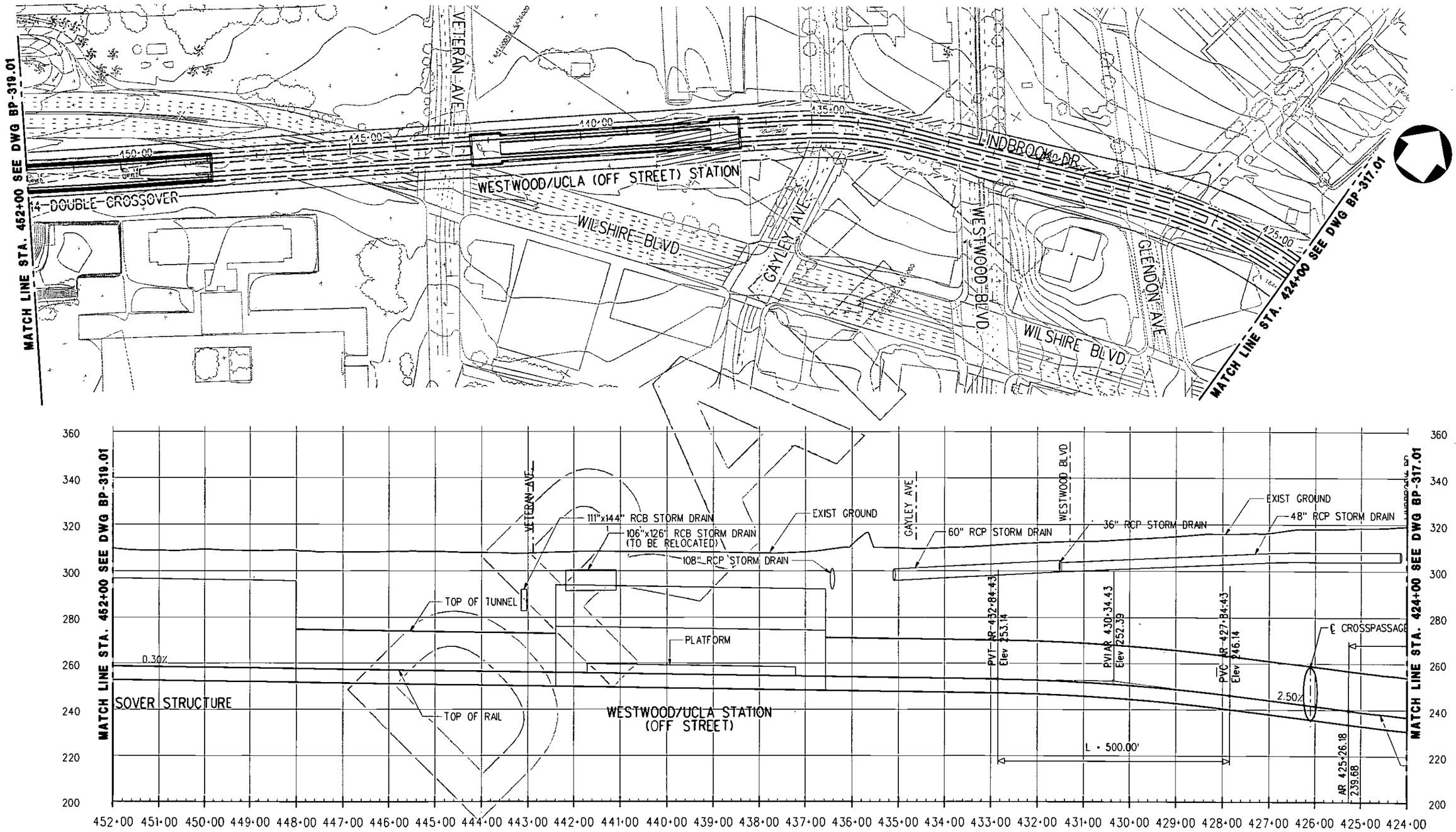

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

Metro

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TWIN BORE (TUNNEL-OPTION 2E)
PLAN & PROFILE
STATION 424+00 TO 452+00
BUILDING PROTECTION STUDY - 1% GL

CONTRACT NO
DRAWING NO BP-318.01
REV
SCALE 1"=100'
SHEET NO

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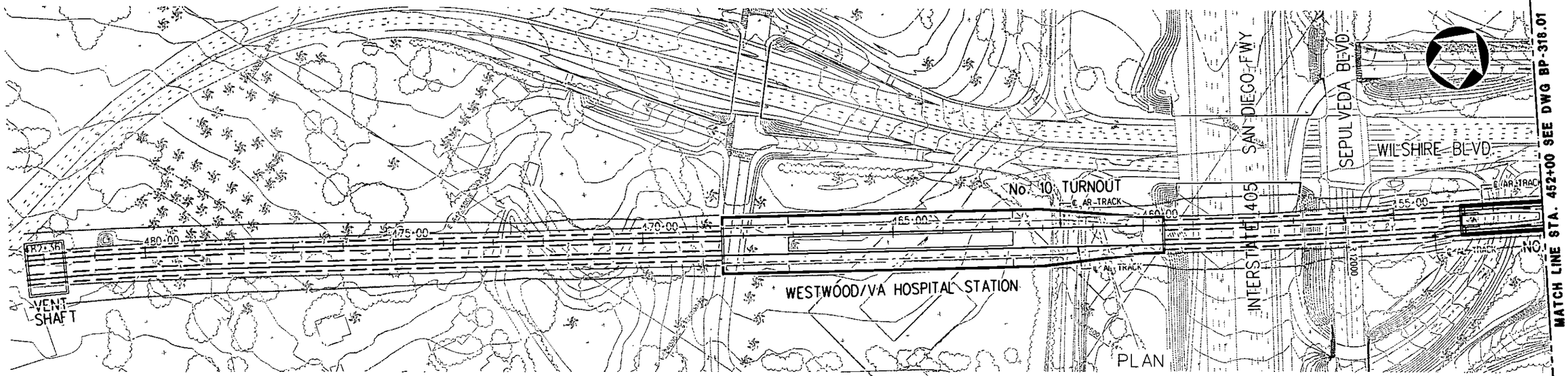
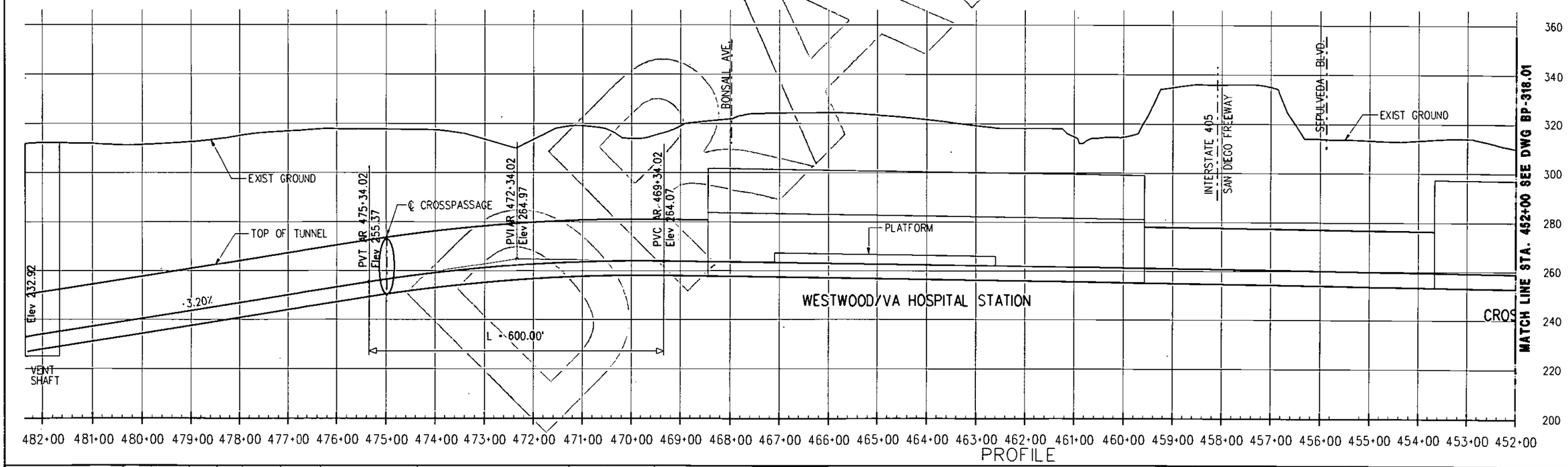




REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

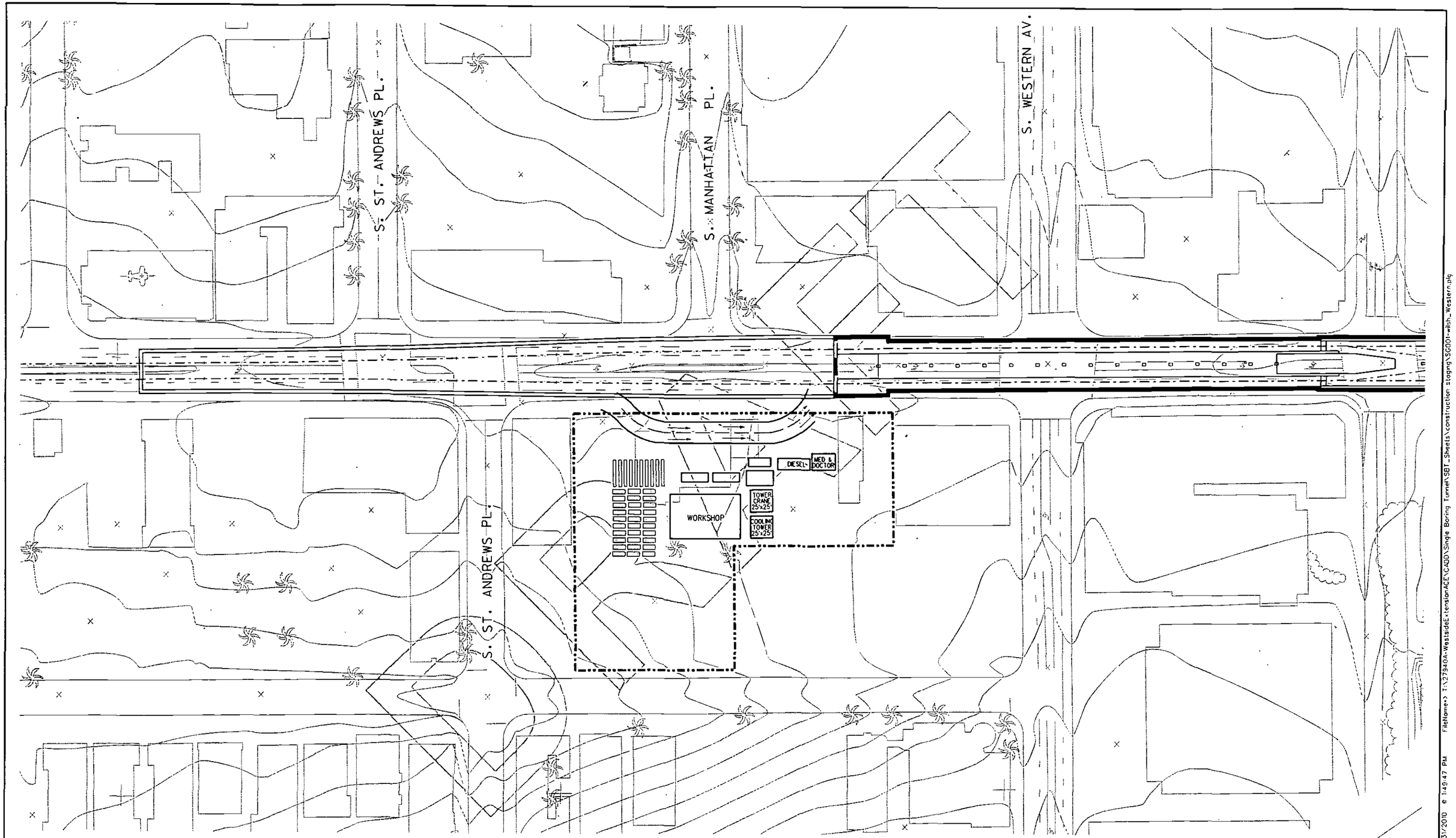
PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TWIN BORE (TUNNEL-OPTION 2E)
PLAN AND PROFILE
STATION 452+00 TO 482+00
BUILDING PROTECTION STUDY - 1% GL

CONTRACT NO
DRAWING NO BP-319.01
REV
SCALE 1"=100'
SHEET NO

UserName: USER-oldrete 8/31/2010 @ 3:32:04 PM FileName>> T:\27940A-WestsideExtension\ACE\CADD\Single Boring Tunnel\SBT_Sheets\Settlement\Twin Bore Tunnel\% Groundloss\BP-319.01.dwg



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

Metro

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

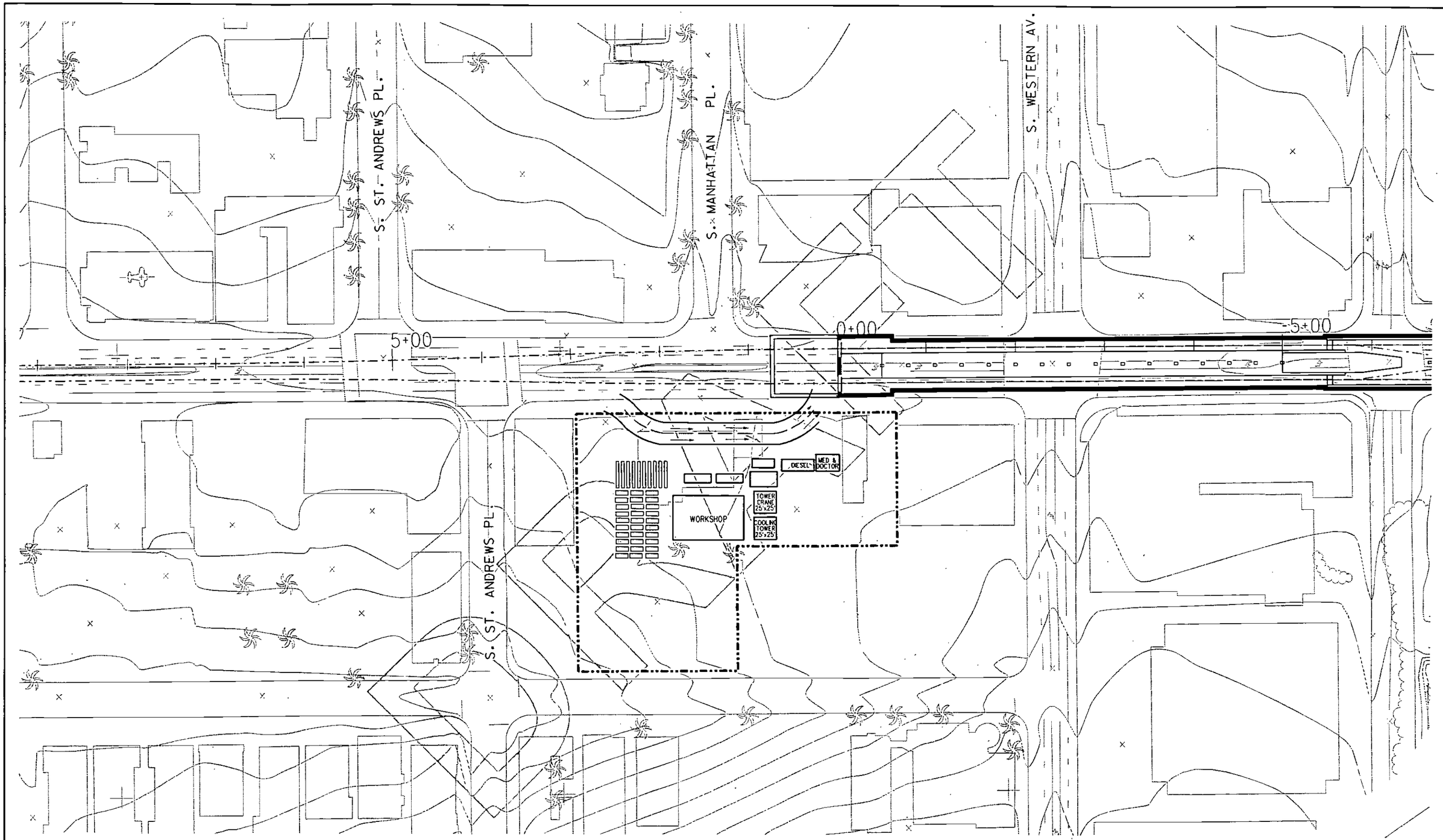
PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TUNNEL CONSTRUCTION SITE
WILSHIRE/WESTERN STATION
TRANSITION STRUCTURE
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO SG-001
REV
SCALE 1"=100'
SHEET NO

UserName: USER=aldrete&/31/2010 @ 1:49:47 PM FileName=> T:\27940A-WestsideExtensionACE\CADD\Single Boring Tunnel\SBT_Sheets\construction stagmg\SG001-wlsh_Western.plg



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

Metro

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TUNNEL CONSTRUCTION SITE
WILSHIRE/WESTERN STATION
TBM RETRIVAL SHAFT
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO SG-002 REV
SCALE 1"=100'
SHEET NO

User Name: USER-oldrete8/31/2010 @ 1:49:57 PM Filename> T:\27940A-WestsideExtensionACE\CADD\Single Boring Tunnel\SBT_Sheets\construction staging\SG002-wlsh_Western.dgn

S. CLOVERDALE AV.

S. DETROIT ST.

S. LA BREA AV.

S. SYCAMORE AV.

S. ORANGE DR.

42" RCP STORM DRAIN

N 1845500 N 1845500

18"-VCP-SEWER

110+00

105+00

100+00

WILSHIRE BLVD.

21"-RCP-STORM-DRAIN

21"-RCP-STORM-DRAIN

WILSHIRE/LA BREA STATION

WORKSHOP

DIESEL

MED. & DOCTOR

TOWER CRANE 25'x25'

COOLING TOWER 25'x25'

Ø90FT

SHAFT

BEGINNING

100FT

SLURRY SEPARATION PLANT 100'x100'

HOPPER

HOPPER

TANK

TANK

15000

S. LA BREA AV.

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY

DRAWN BY

CHECKED BY

IN CHARGE

DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TUNNEL CONSTRUCTION SITE
WILSHIRE/LA BREA STATION
S.E. OF LA BREA
ALT. TUNNELING METHODS STUDY

CONTRACT NO

DRAWING NO SG-003 REV

SCALE 1"=100'

SHEET NO

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S. CLOVERDALE AV.

S. DETROIT ST.

S. LA BREA AV.

42" RCP STORM DRAIN

N 1845500 N 1845500

S. SYCAMORE AV.

S. ORANGE DR.

TOWER CRANE 25'x25'

COOLING TOWER 25'x25'

Ø80FT

SHAFT

BEDDING

WORKSHOP

DIESEL

MED & ELECTRIC

18"-VCP-SEWER

℄ AR & AL TRACKS

110+00

105+00

100+00

21"-RCP-STORM-DRAIN

21" RCP STORM DRAIN

WILSHIRE/LA BREA STATION

WIDENED STREET

ROCK LANE

SLURRY SEPARATION PLANT 60'x100'

80FT

MANHOLE

DROPPED

N 1845000 N 1845000

S. LA BREA AV.

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY

DRAWN BY

CHECKED BY

IN CHARGE

DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TUNNEL CONSTRUCTION SITE
WILSHIRE/LA BREA STATION
S.W. OF LA BREA
ALT. TUNNELING METHODS STUDY

CONTRACT NO

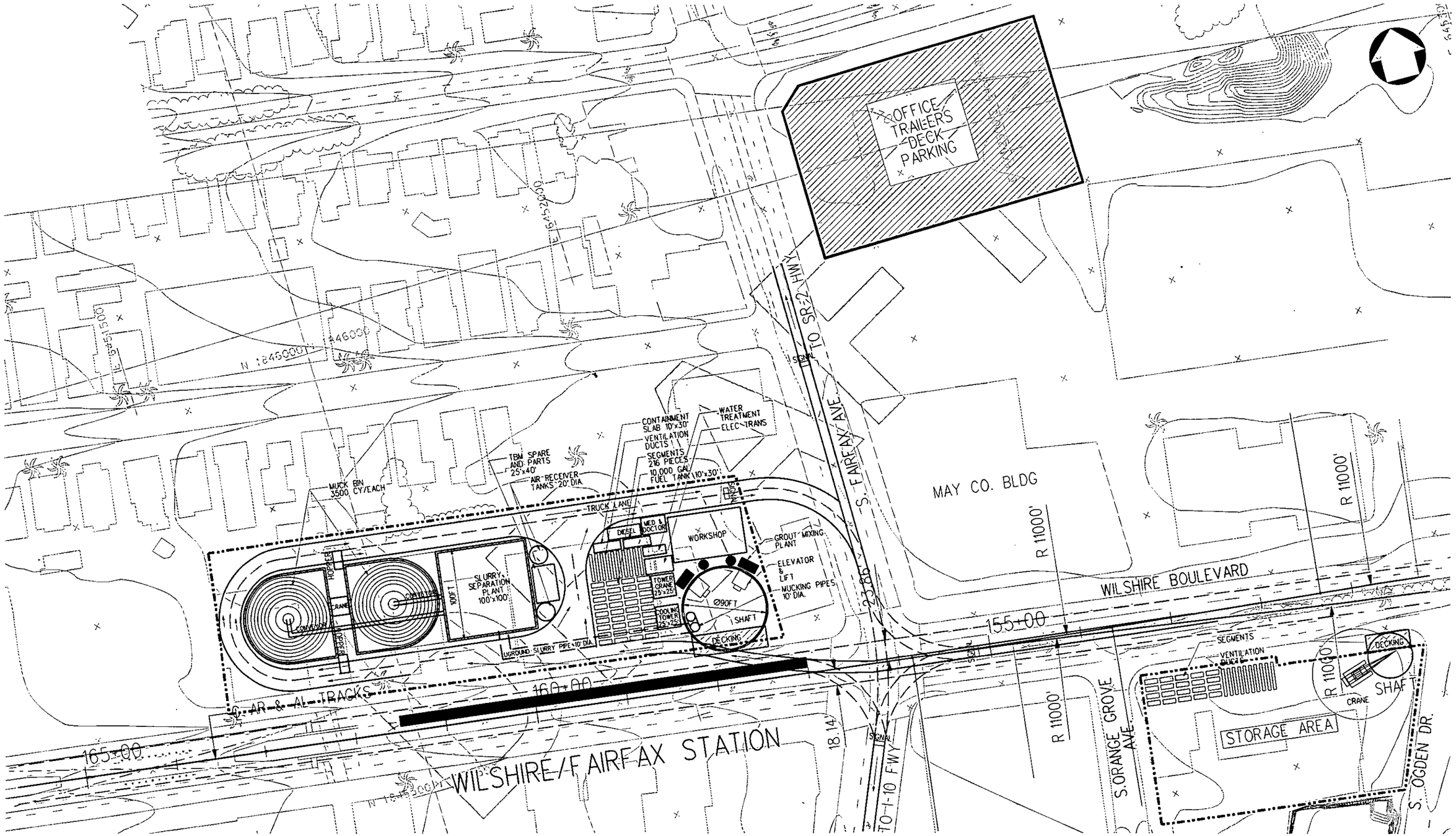
DRAWING NO SG-004

REV

SCALE 1"=100'

SHEET NO

UserName: USER=oldrete6/31/2010 @ 1:50:16 PM FileName=> T:\27940A-WestsideExtension\ACE\C\ADD\Single Boring Tunnel\SBT_Sheets\construction staging\SG004-wlsh_laBrea.plg



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

Metro

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

PB

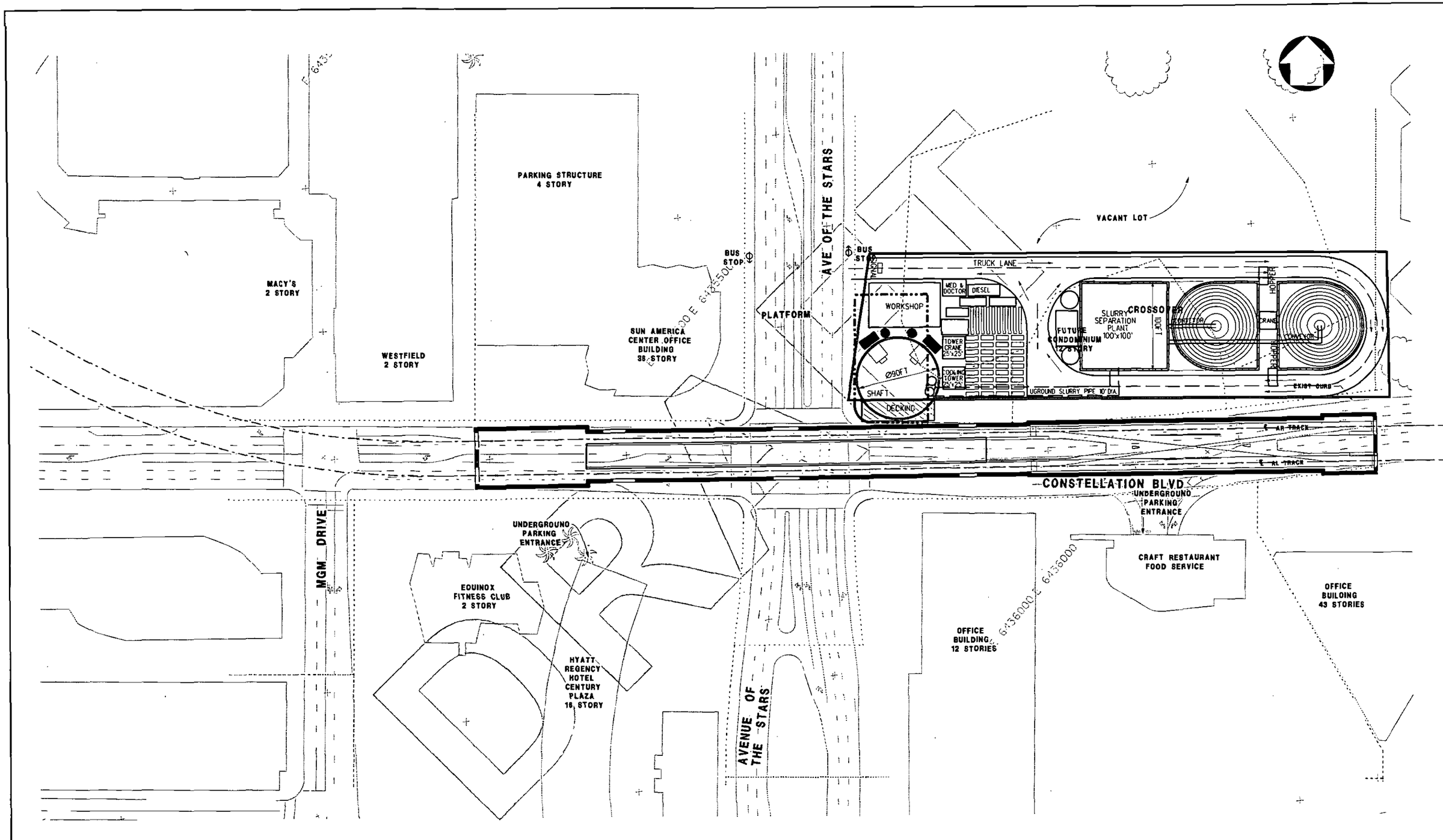
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TUNNEL CONSTRUCTION SITE
WILSHIRE/FAIRFAX STATION

ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO SG-005
REV
SCALE 1"=100'
SHEET NO

UserName: USER-oldrelease
8/31/2010 @ 1:50:24 PM
FileName=> T:\279940A-WestsideExtensionACE\CADD\Single Boring Tunnel\SBT_Sheets\construction staging\SG005_with_Fairfax.plg



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

Metro

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

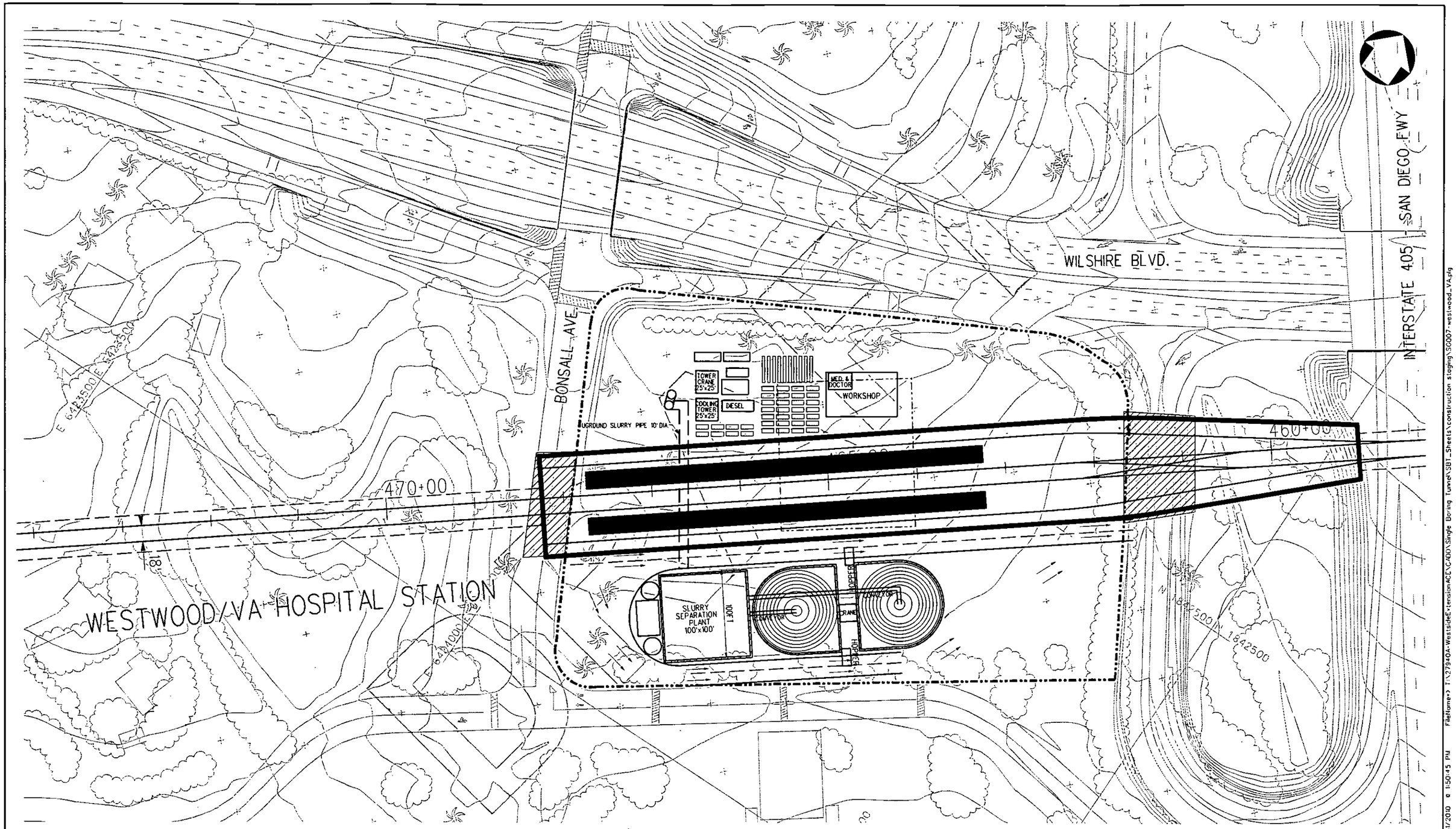
PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TUNNEL CONSTRUCTION SITE
CENTURY CITY STATION
(CONSTELLATION)
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO SG-006
REV
SCALE 1'=100'
SHEET NO

UserName: USER-aldrete8/31/2010 - 8 1:50:33 PM FileName> T:\2940A-WestsideExtensionACE\CADD\Single Boring Tunnel\SBT_Sheets\construction staging\SG006_Constellation.plg



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

Metro

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TUNNEL CONSTRUCTION SITE
WESTWOOD/VA HOSPITAL STATION

ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO SG-007 REV
SCALE 1'=100'
SHEET NO

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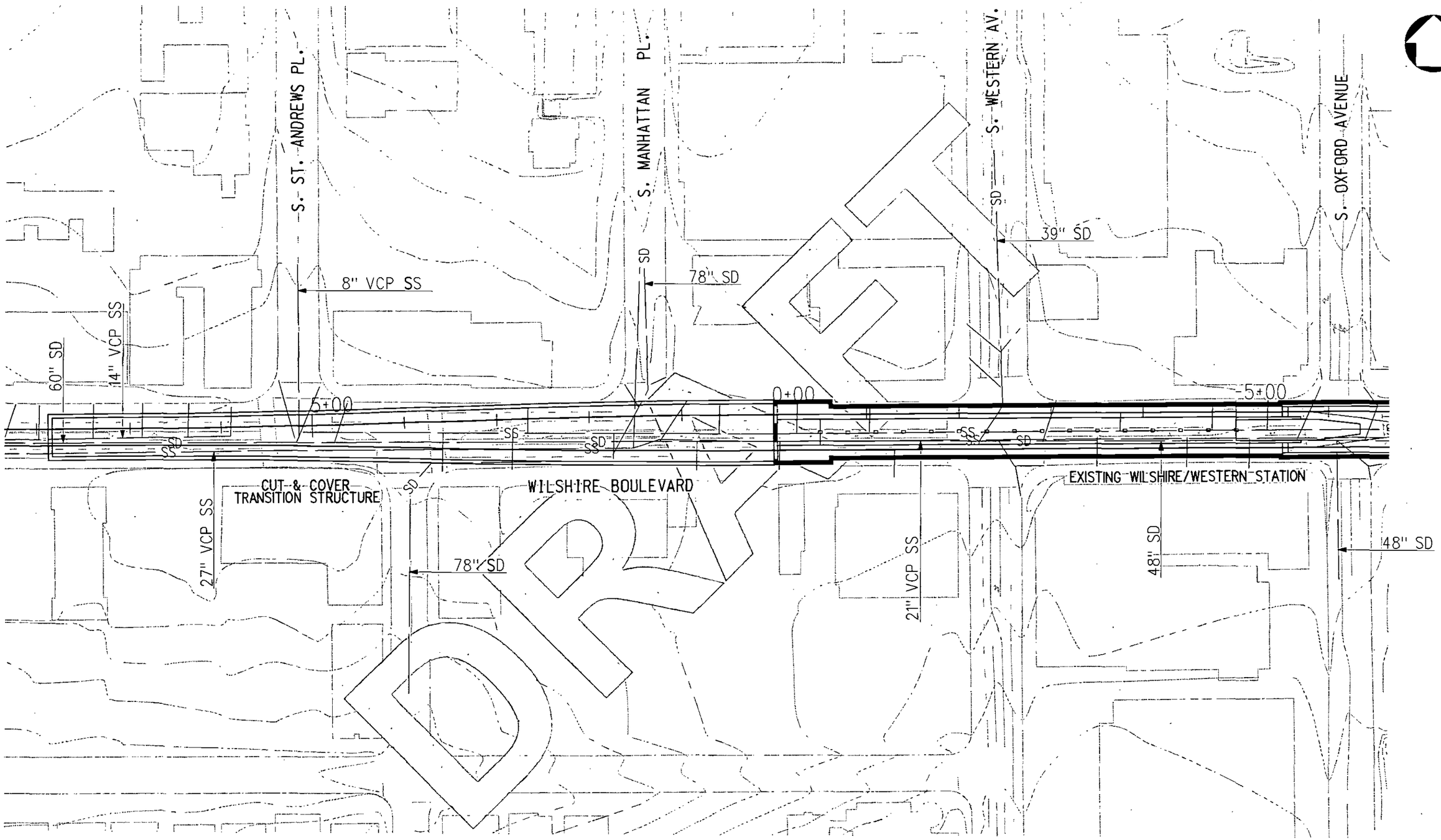


REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

Metro

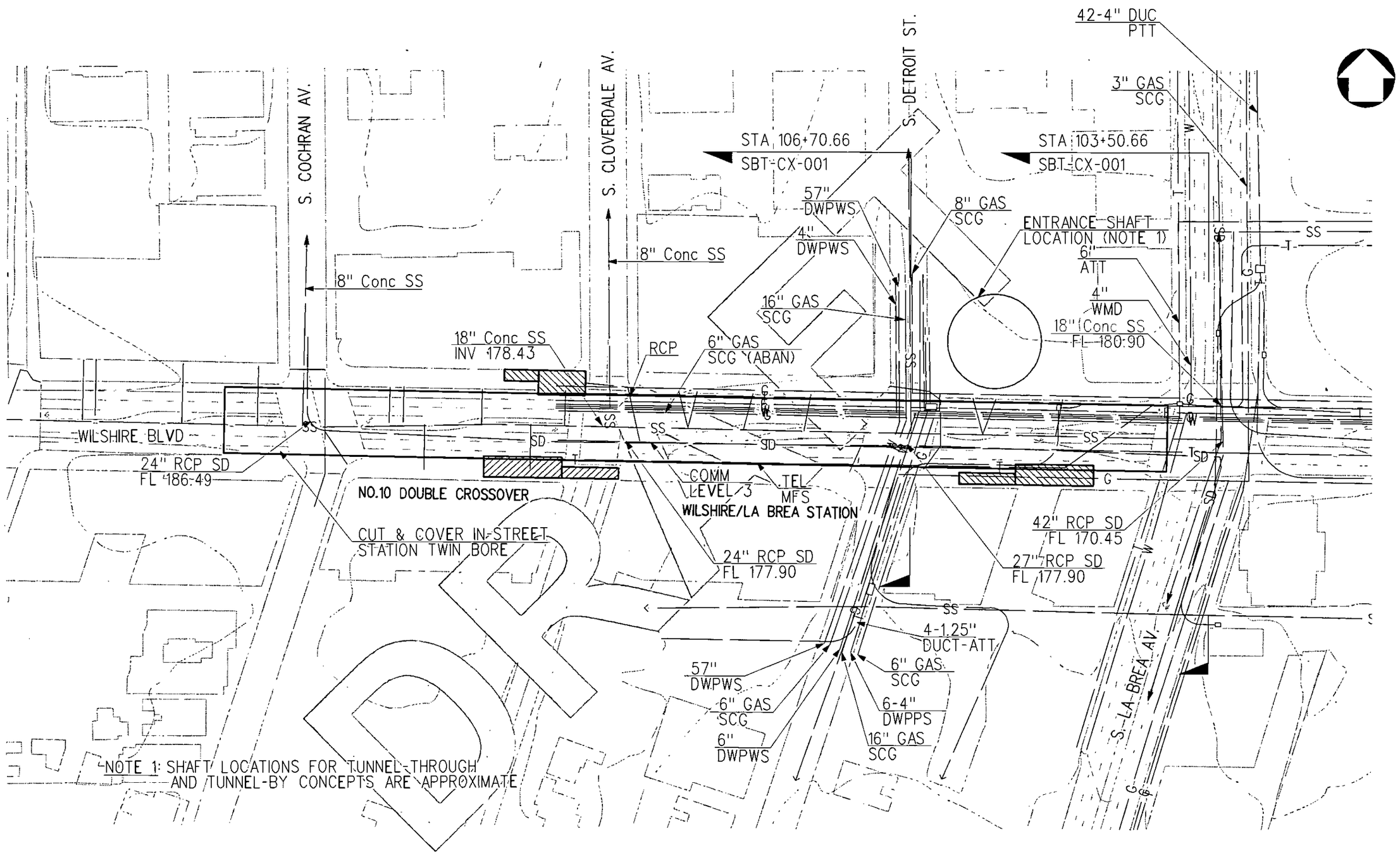
LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-BY)
EXISTING UTILITY PLANS
WILSHIRE/WESTERN TRANS. STRUCTURE
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO UE-001
REV
SCALE 1"=50'
SHEET NO

UserName: USER-rainey 8/31/2010 1:47:43 PM FileName=> T:\27940A-WestsideExtensionACE\CADD\Single Boring Tunnel\SBT_Sheets\utilities\SBT-BY1U-001.dgn



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

Metro

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-BY)
EXISTING UTILITY PLANS
WILSHIRE/LA BREA STATION
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO UE-002
REV
SCALE 1'=50'
SHEET NO

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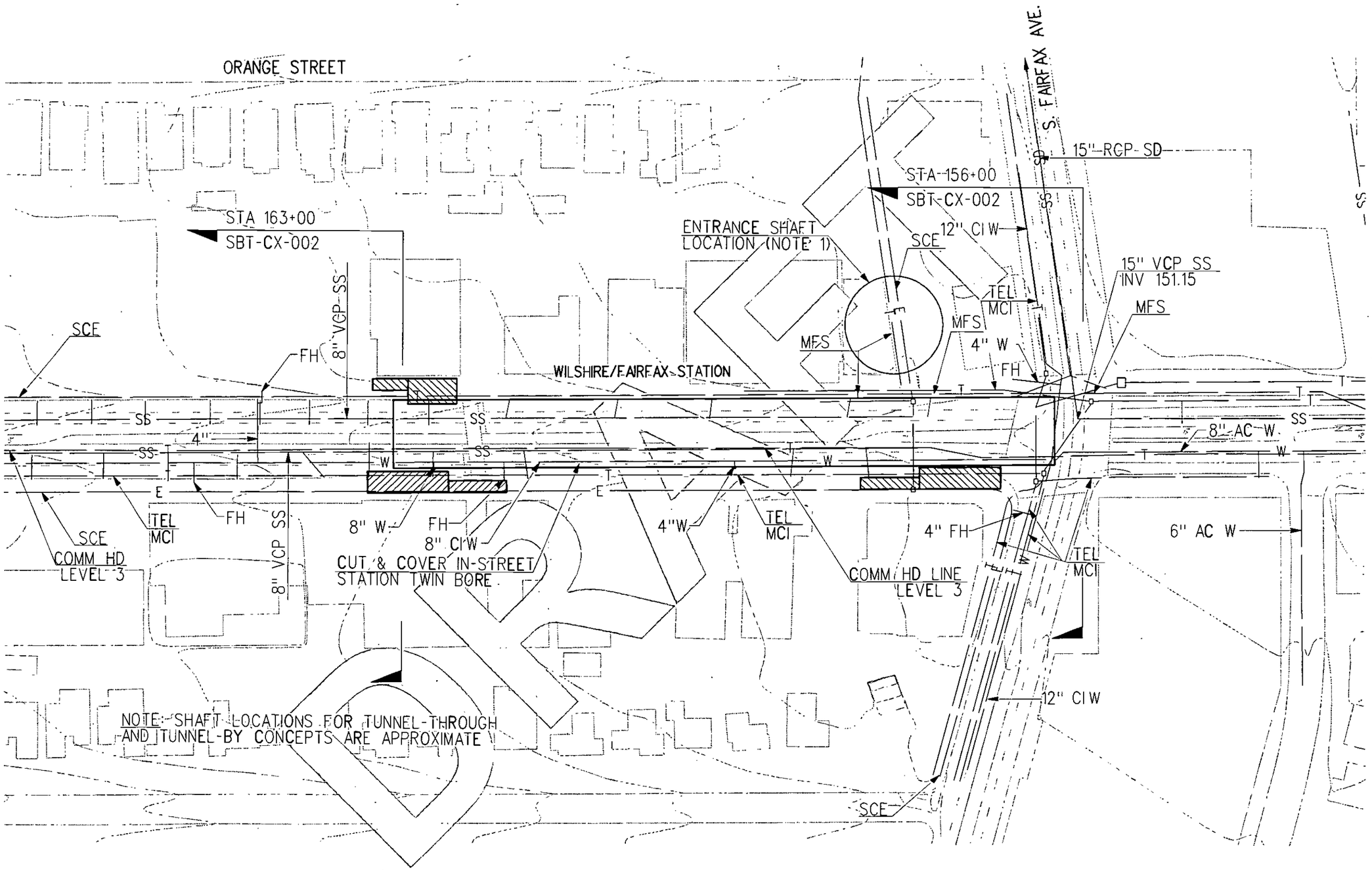

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

Metro

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-BY)
EXISTING UTILITY PLANS
WILSHIRE/FAIRFAX STATION
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO UE-003 REV
SCALE 1"=50'
SHEET NO

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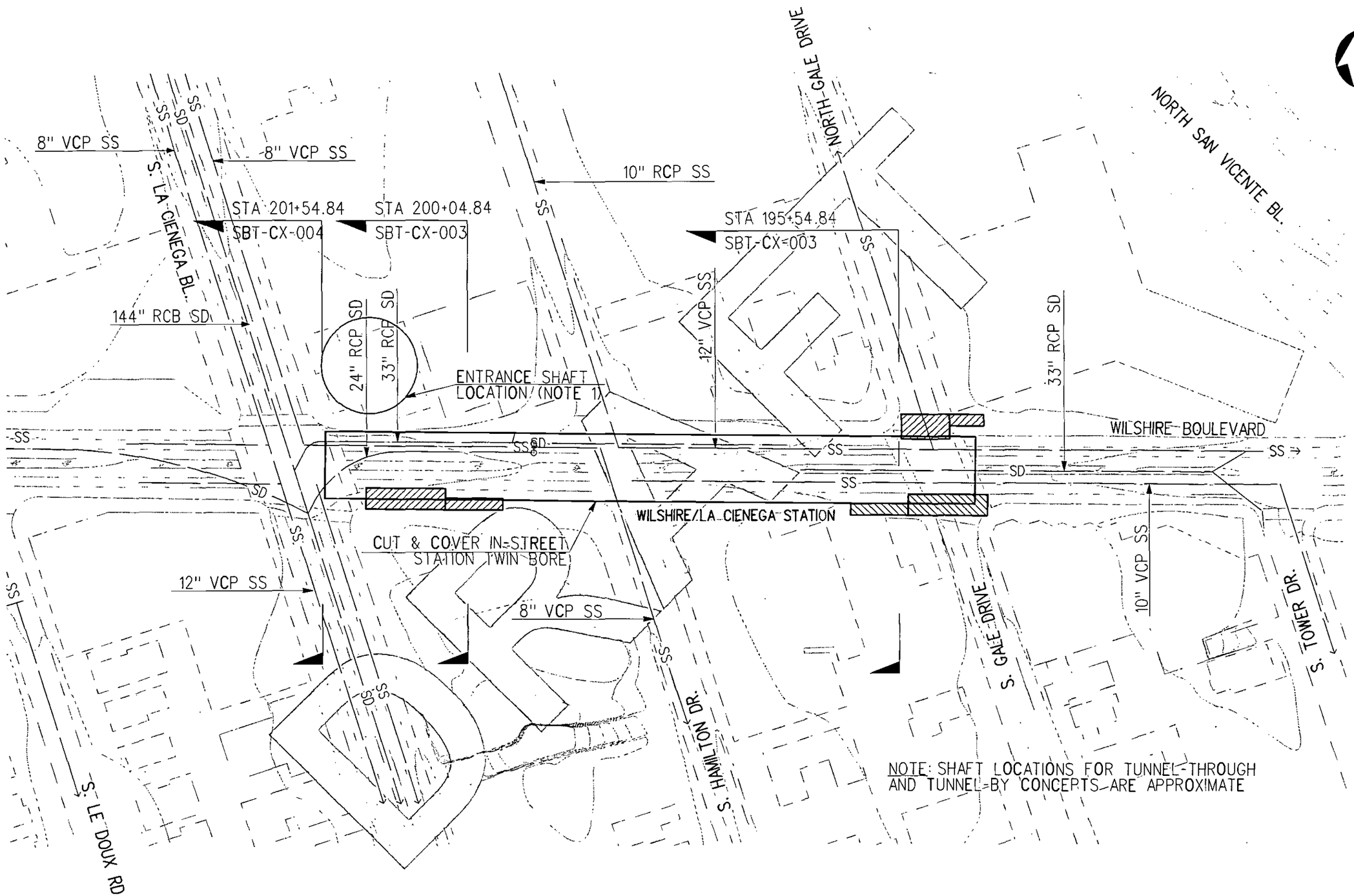

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

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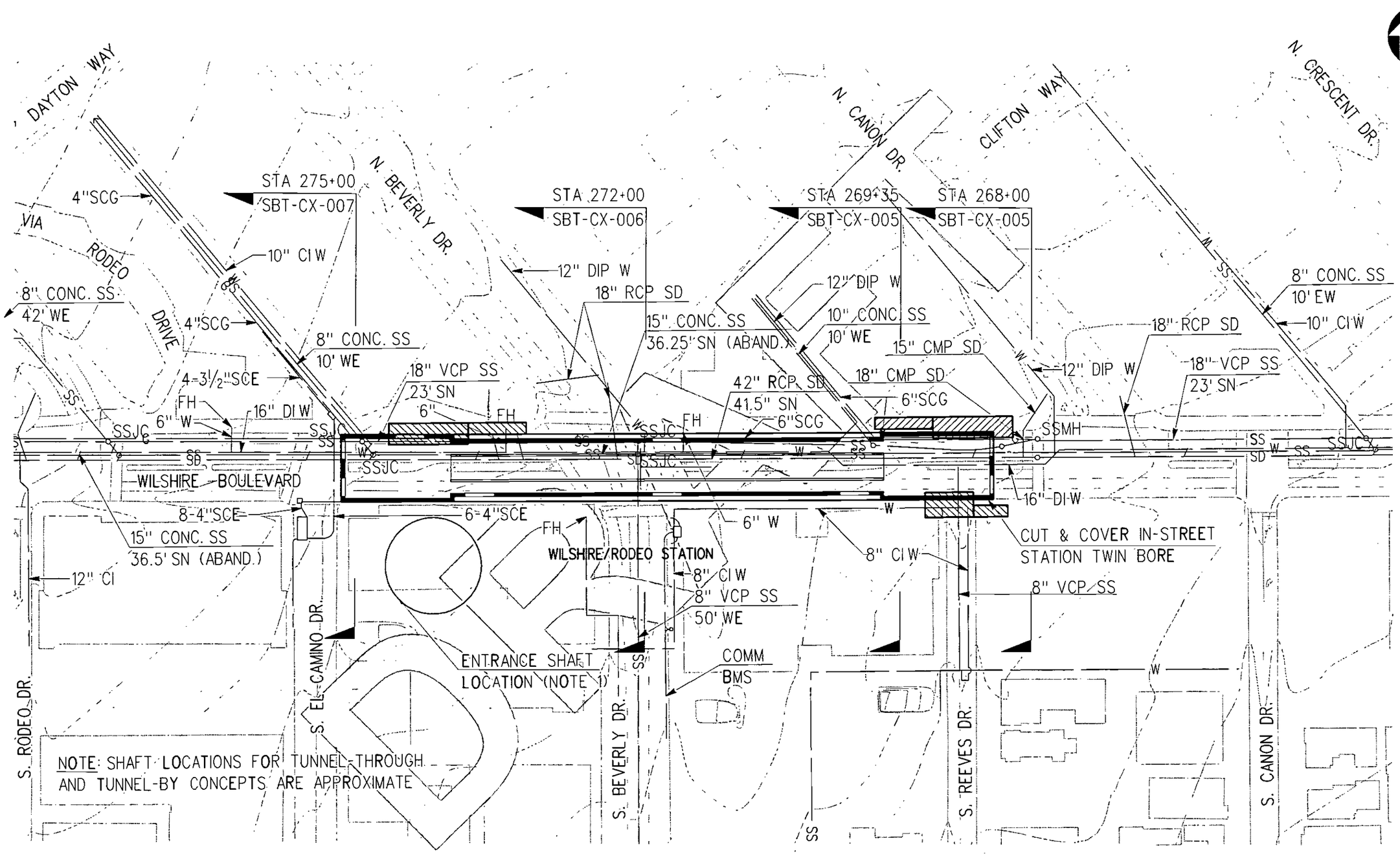
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-BY)
EXISTING UTILITY PLANS
WILSHIRE/LA CIENEGA STATION
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO UE-004
REV
SCALE 1"=50'
SHEET NO

UserName: USER•ramsy 9/15/2010 @ 12:57:28 PM FileName•) T:\279404-WestsideExtensionACE\CADD\Single Boring Tunnel\SBT_Sheets\utilities\(SBT-BY) U-004.dgn



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

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Metro

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

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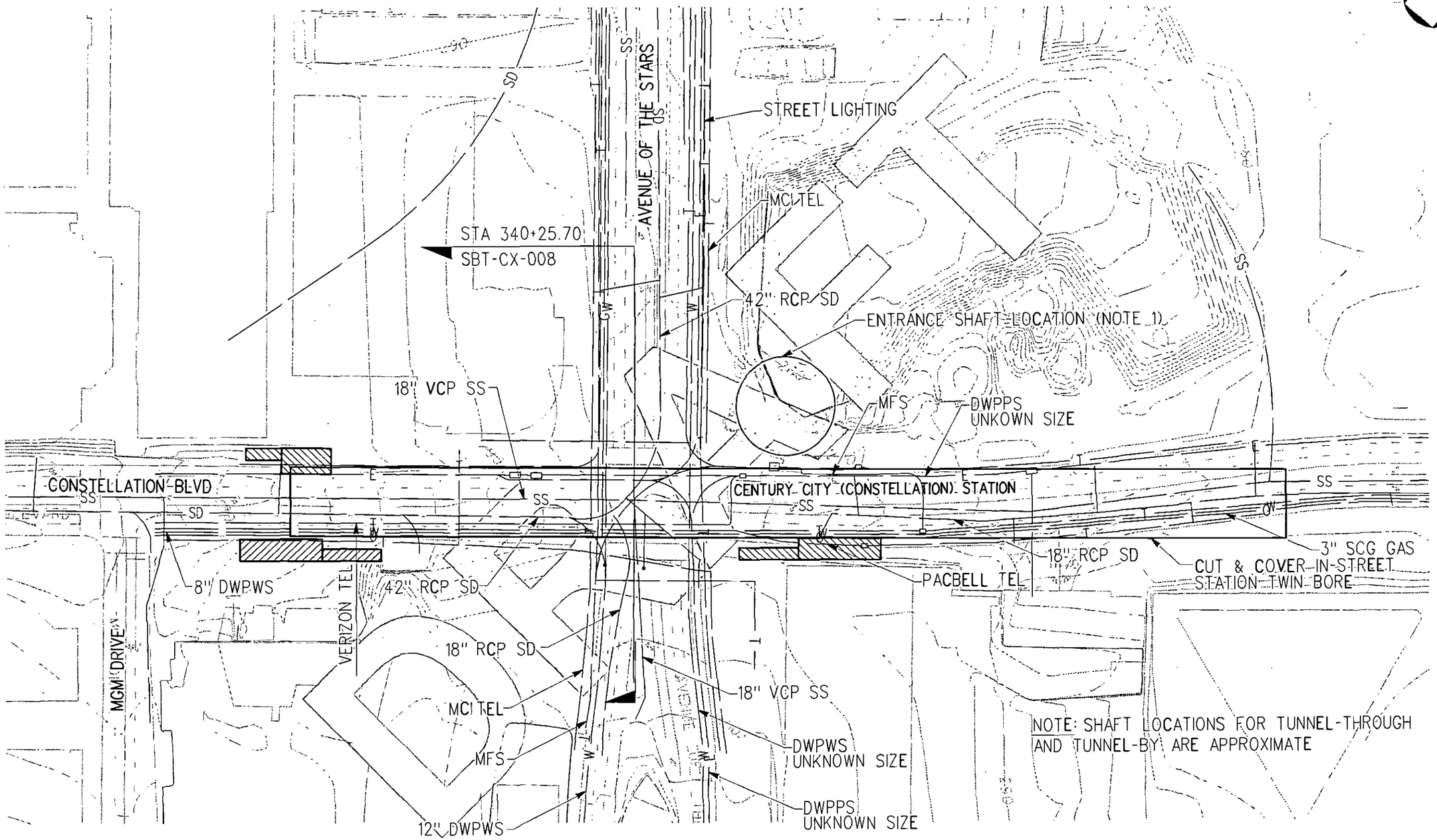
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-BY)
EXISTING UTILITY PLANS
WILSHIRE/RODEO STATION
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO UE-005
REV
SCALE 1"=50'
SHEET NO

UserName: USER-rainey 8/31/2010 @ 11:54:33 PM FileName=> T:\27940A-WestsideExtensionACE\CADD\Single Boring Tunnel\SBT_Sheets\utilities\SBT-BY1 U-005.dgn



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

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LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

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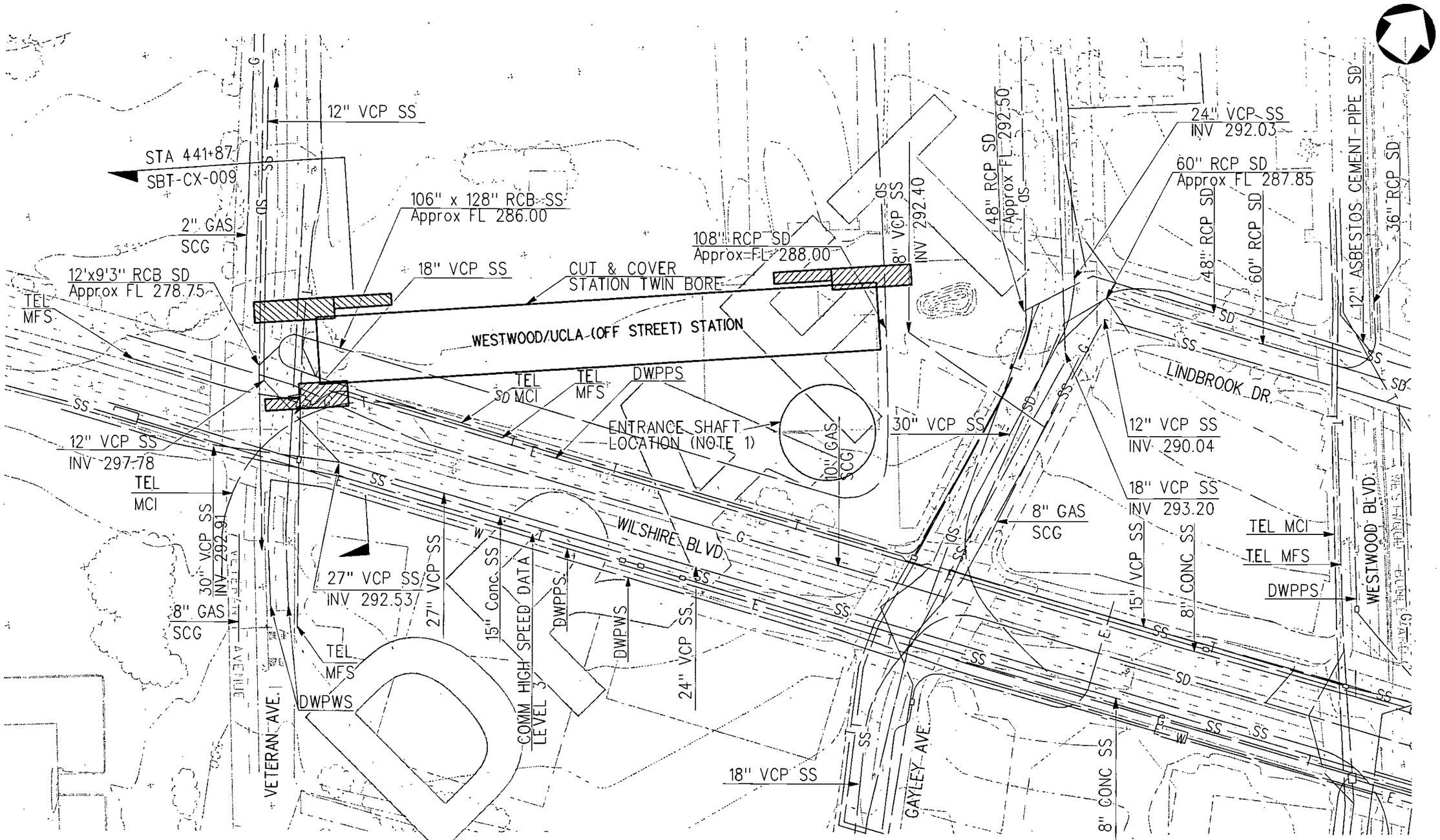
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-BY)
EXISTING UTILITY PLANS
CONSTELLATION STATION
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO UE-006
REV
SCALE 1"=50'
SHEET NO

UserName: USER-rolney 9/15/2010 @ 11:54:49 AM FileName-> T:\27940A-WestsideExtension\CEV\ADD\Single Boring Tunnel\SBT_Sheets\utilities\SBT-BY UE-006.dgn



NOTE: LOCATIONS FOR TUNNEL-THROUGH AND TUNNEL-BY ARE APPROXIMATE

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
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LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

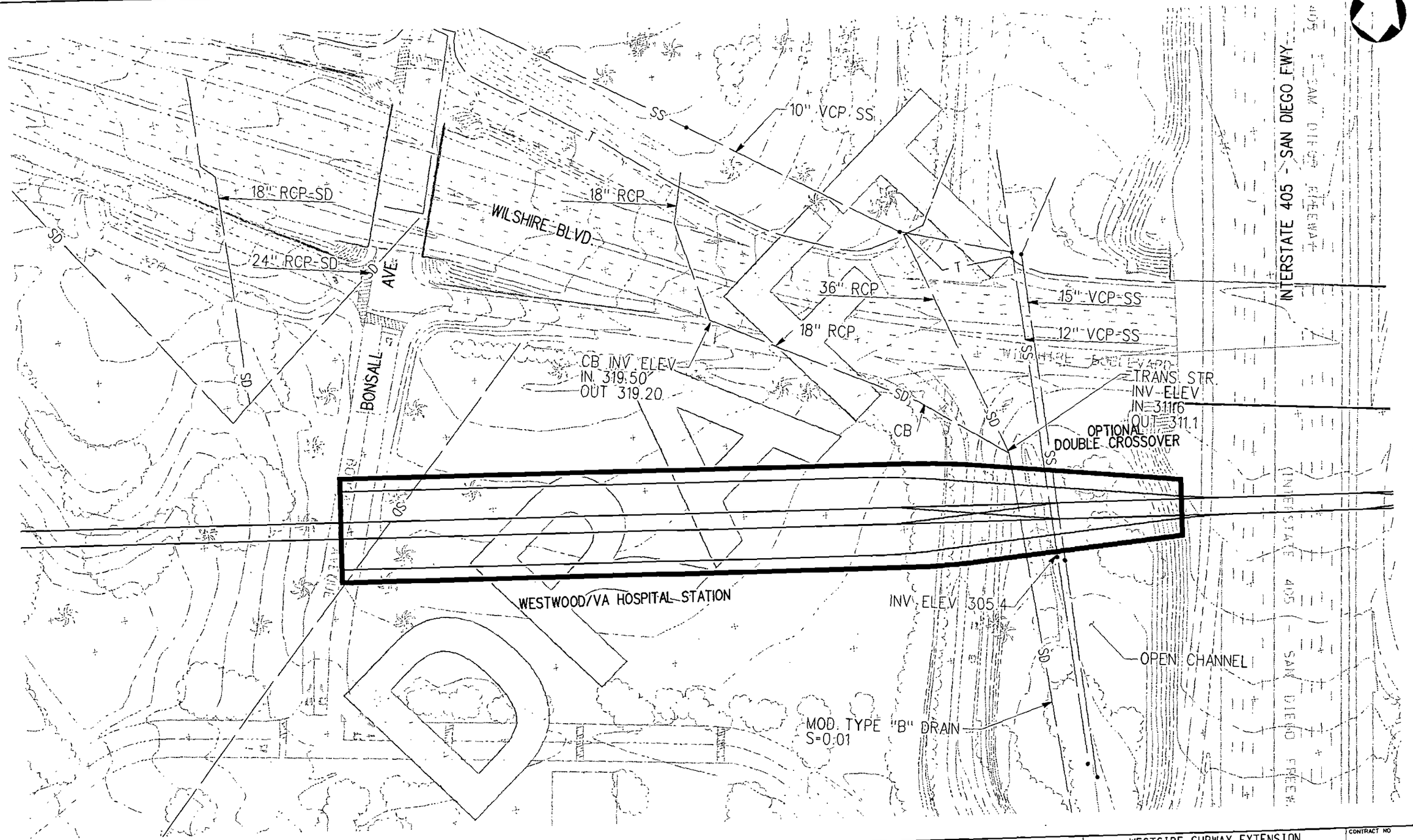
Metro

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-BY)
EXISTING UTILITY PLANS
WESTWOOD/UCLA (OFF STREET) STATION
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO UE-007
REV
SCALE 1"=50'
SHEET NO

UserName: USER=rainey 8/31/2010 @ 1:55:57 PM FileName=> T:\27940A-WestsideExtensionACE\CADD\Single Boring Tunnel\SBT_Sheets\Utilities\SBT-BY1 U-007.dgn



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

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IN CHARGE
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Metro
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METROPOLITAN TRANSPORTATION AUTHORITY

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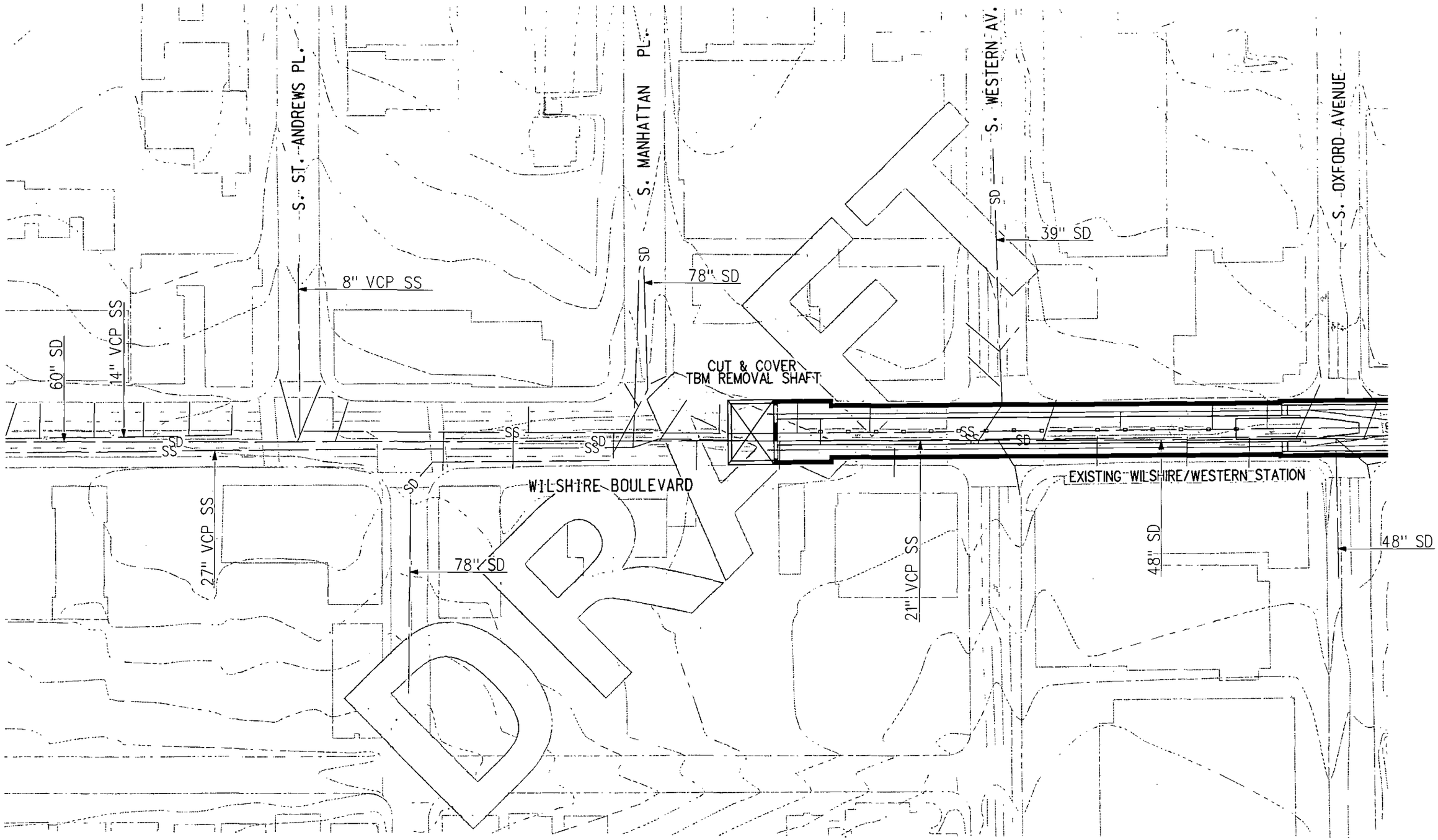
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-BY)
EXISTING UTILITY PLANS
WESTWOOD/VA HOSPITAL STATION
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO UE-008
REV
SCALE 1"=50'
SHEET NO

UserName: USER-rainey 8/31/2010 @ 1:56:21 PM FileName>> T:\27940A-WestsideExtensionACE\CADD\Single Boring Tunnel\SBT_Sheets\utilities\SBT-BY1 U-008.dgn



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE

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LOS ANGELES COUNTY
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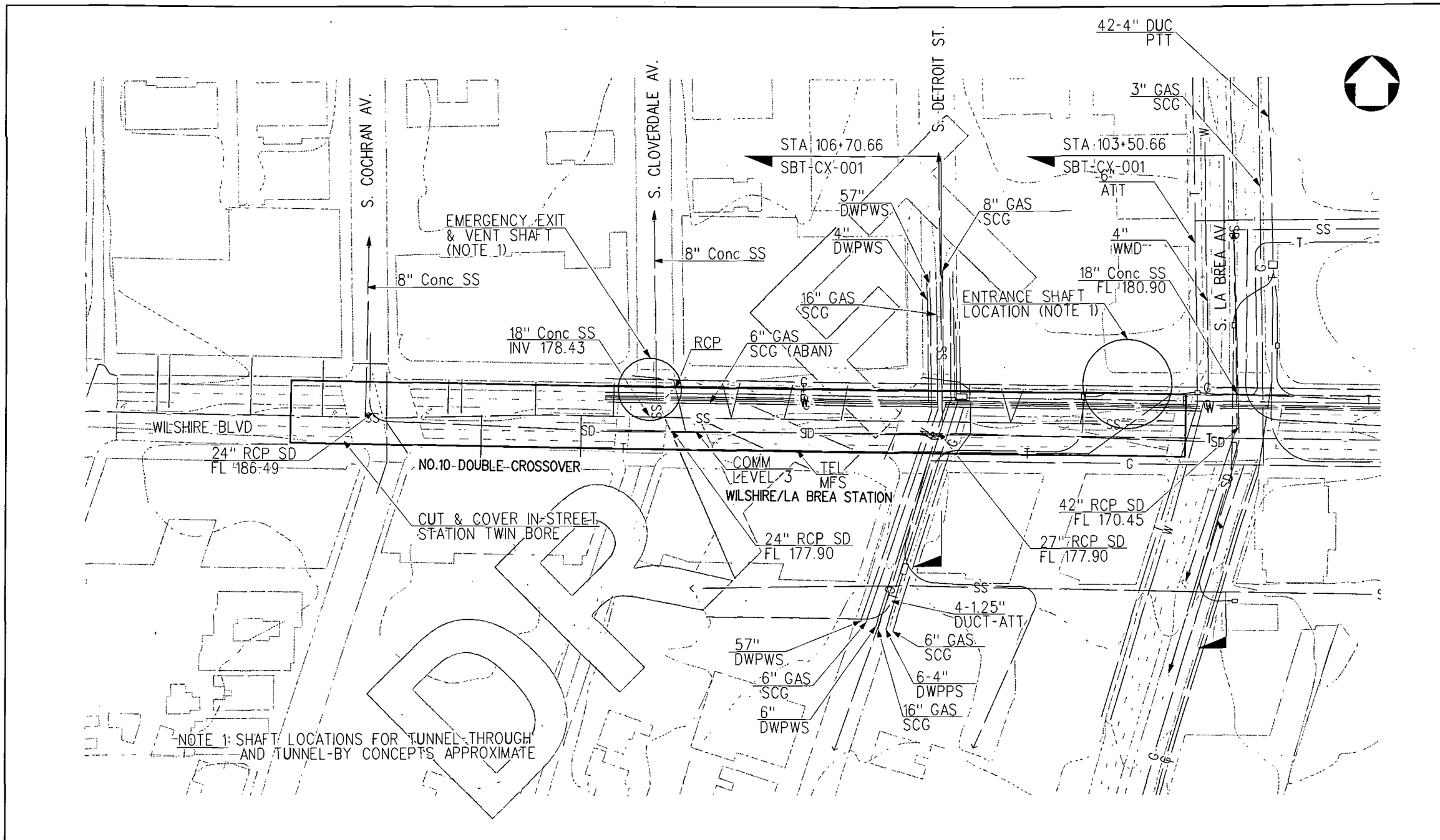
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-THROUGH)
EXISTING UTILITY PLANS
WILSHIRE/WESTERN TBM REMOVAL SHAFT
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO UE-001.1
REV
SCALE 1"=50'
SHEET NO

UserName: USER-rainey 8/31/2010 @ 1:56:45 PM FileName-> T:\27940A-WestsideExtensionACE\CADD\Single Boring Tunnel\SBT_Sheets\Utilities\SBT-THRU UE-001.1.dgn



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

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METROPOLITAN TRANSPORTATION AUTHORITY

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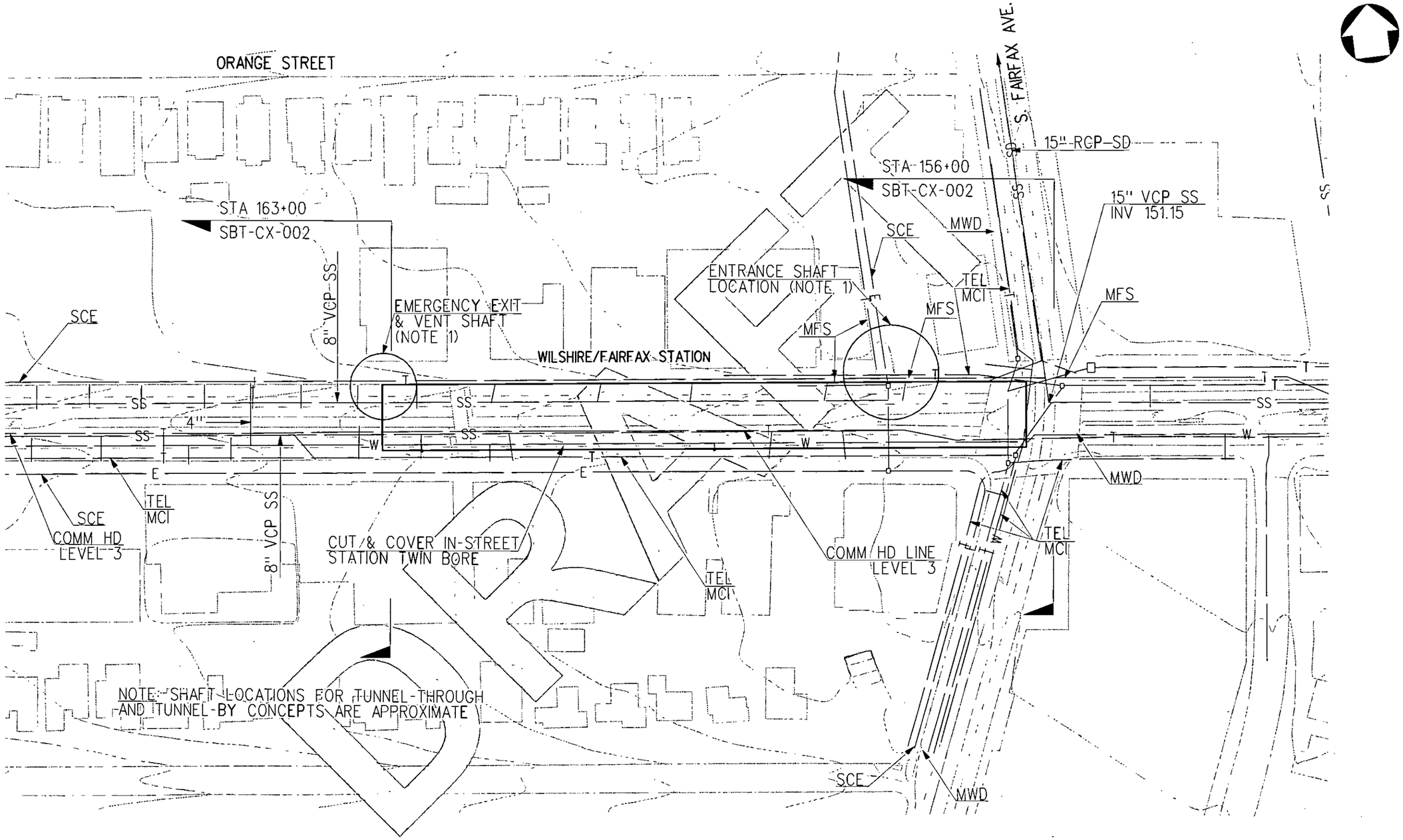
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-THROUGH)
EXISTING UTILITY PLANS
WILSHIRE/LA BREA STATION
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO UE-002.1
REV
SCALE 1"=50'
SHEET NO

UserName: USER-rainey 8/31/2010 @ 1:57:16 PM FileName:> T:\27940A-WestsideExtension\ACE\CADD\Single Boring Tunnel\SBT_Sheets\Utilities\SBT-THRU UE-002.1.dgn



REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

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LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

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PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-THROUGH)
EXISTING UTILITY PLANS
WILSHIRE/FAIRFAX STATION
ALT TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO UE-003.1
REV
SCALE 1"=50'
SHEET NO

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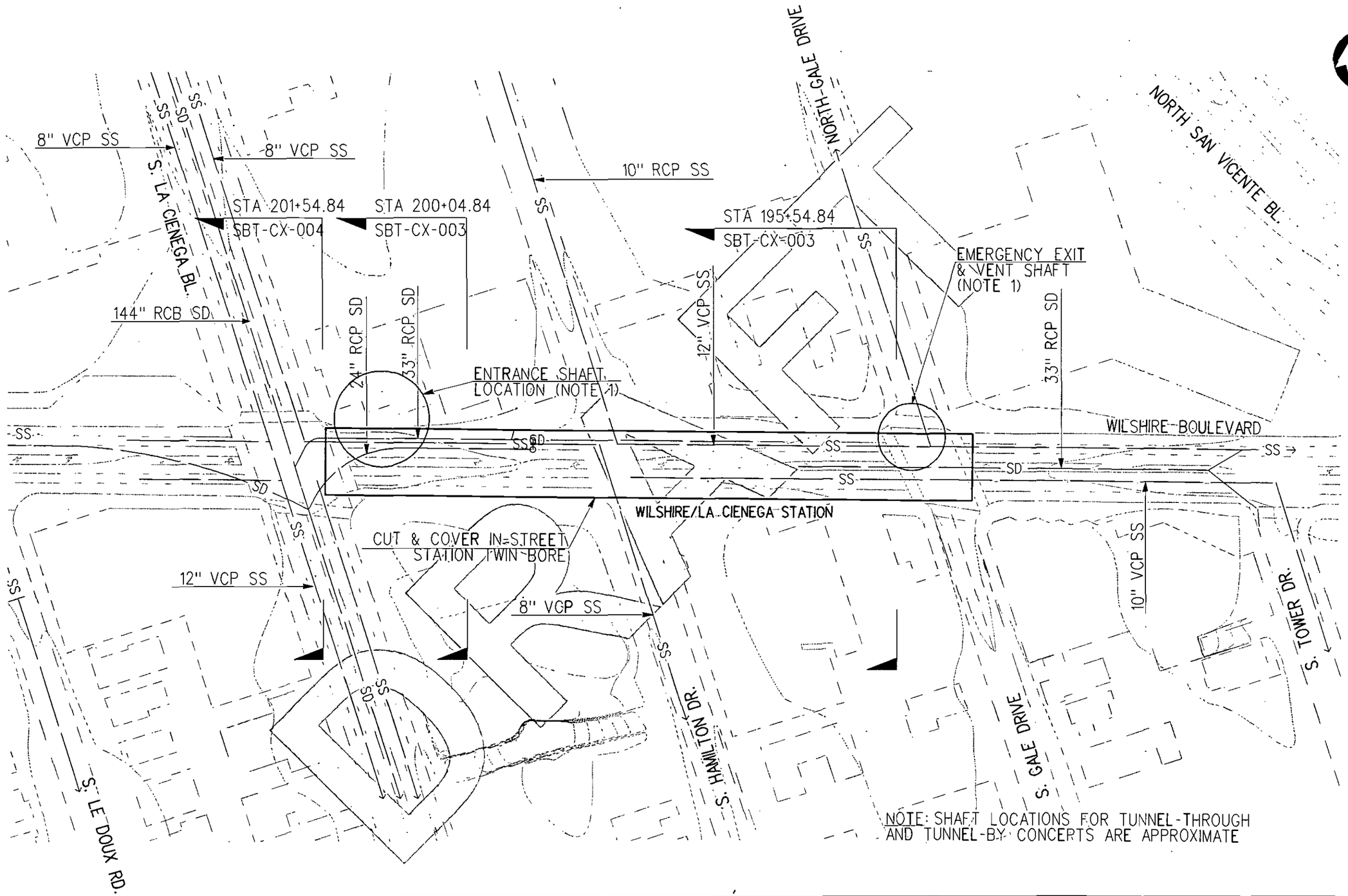

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

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Metro

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

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PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-THROUGH)
EXISTING UTILITY PLANS
WILSHIRE/LA CIENEGA STATION
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO UE-004.1
REV
SCALE 1"=50'
SHEET NO

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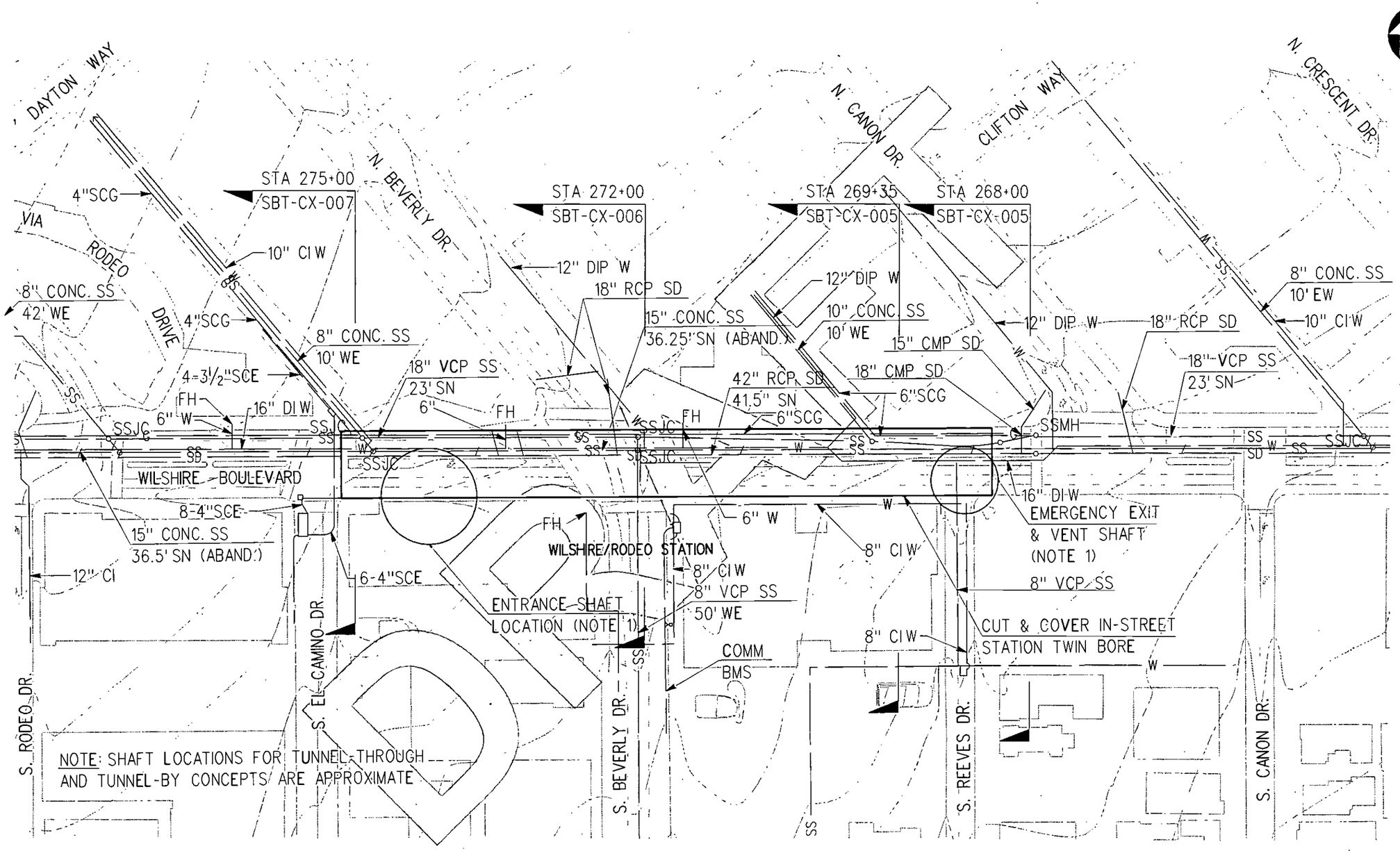

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

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Metro
LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

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PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-THROUGH)
EXISTING UTILITY PLANS
WILSHIRE/RODEO STATION
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO UE-005.1
REV
SCALE 1"=50'
SHEET NO

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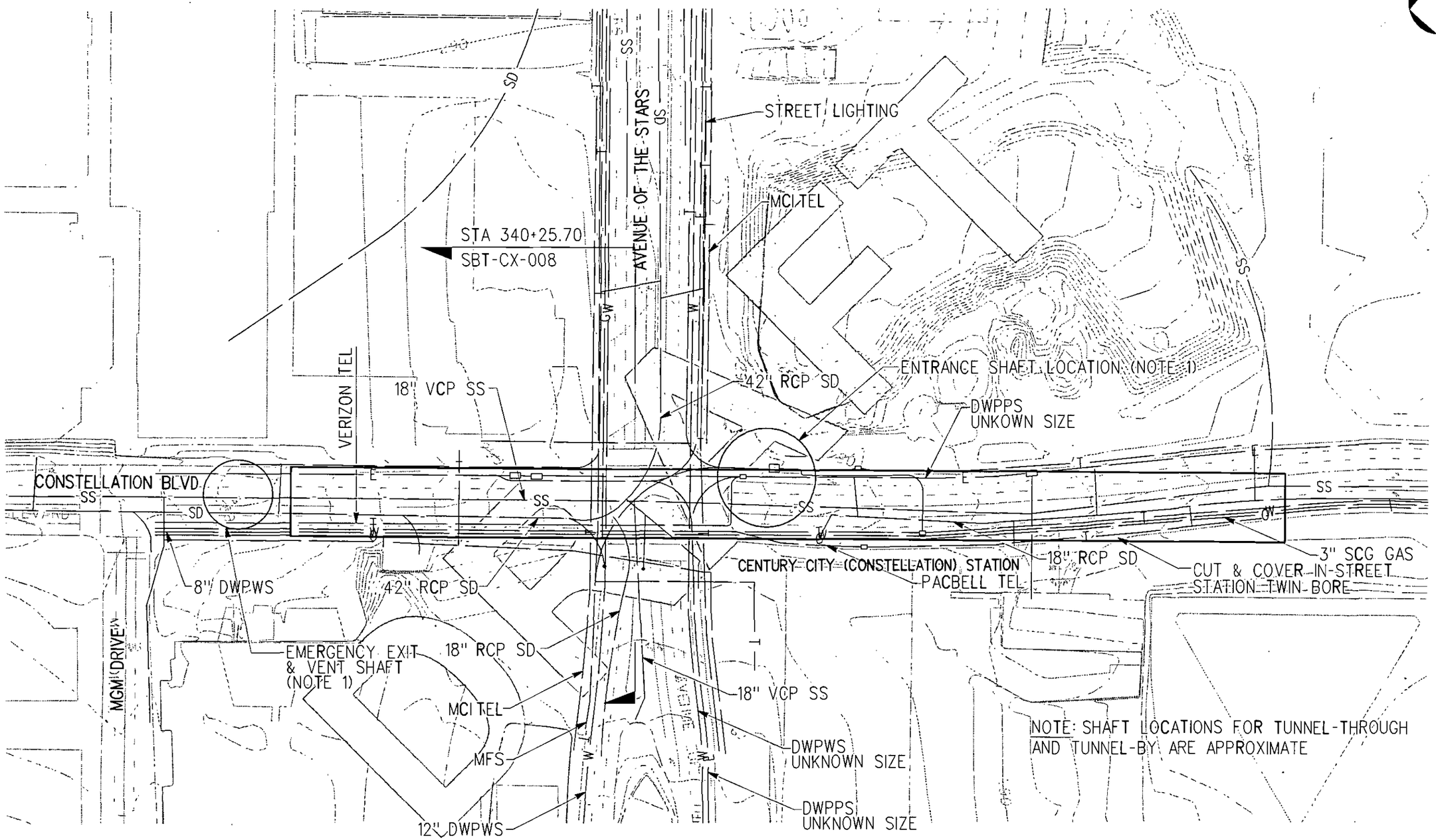

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

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DRAWN BY
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IN CHARGE
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Metro
LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

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PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-THROUGH)
EXISTING UTILITY PLANS
CONSTELLATION STATION
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO UE-006.1
REV
SCALE 1"=50'
SHEET NO

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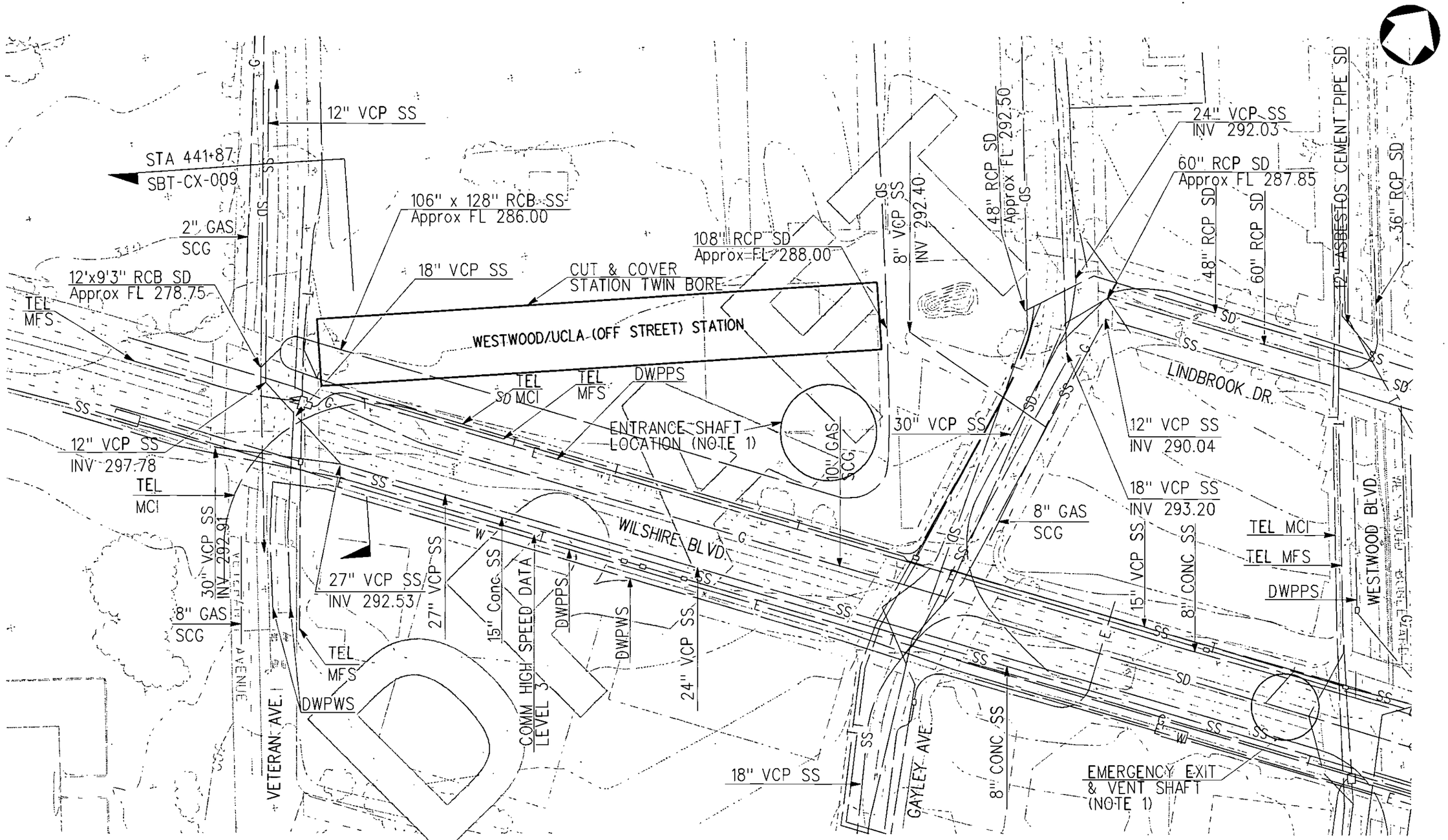

NOTE: LOCATIONS FOR TUNNEL-THROUGH AND TUNNEL-BY ARE APPROXIMATE

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
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LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

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PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-THROUGH)
EXISTING UTILITY PLANS
WESTWOOD/UCLA (OFF STREET) STATION
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO UE-007.1 REV
SCALE 1"=50'
SHEET NO

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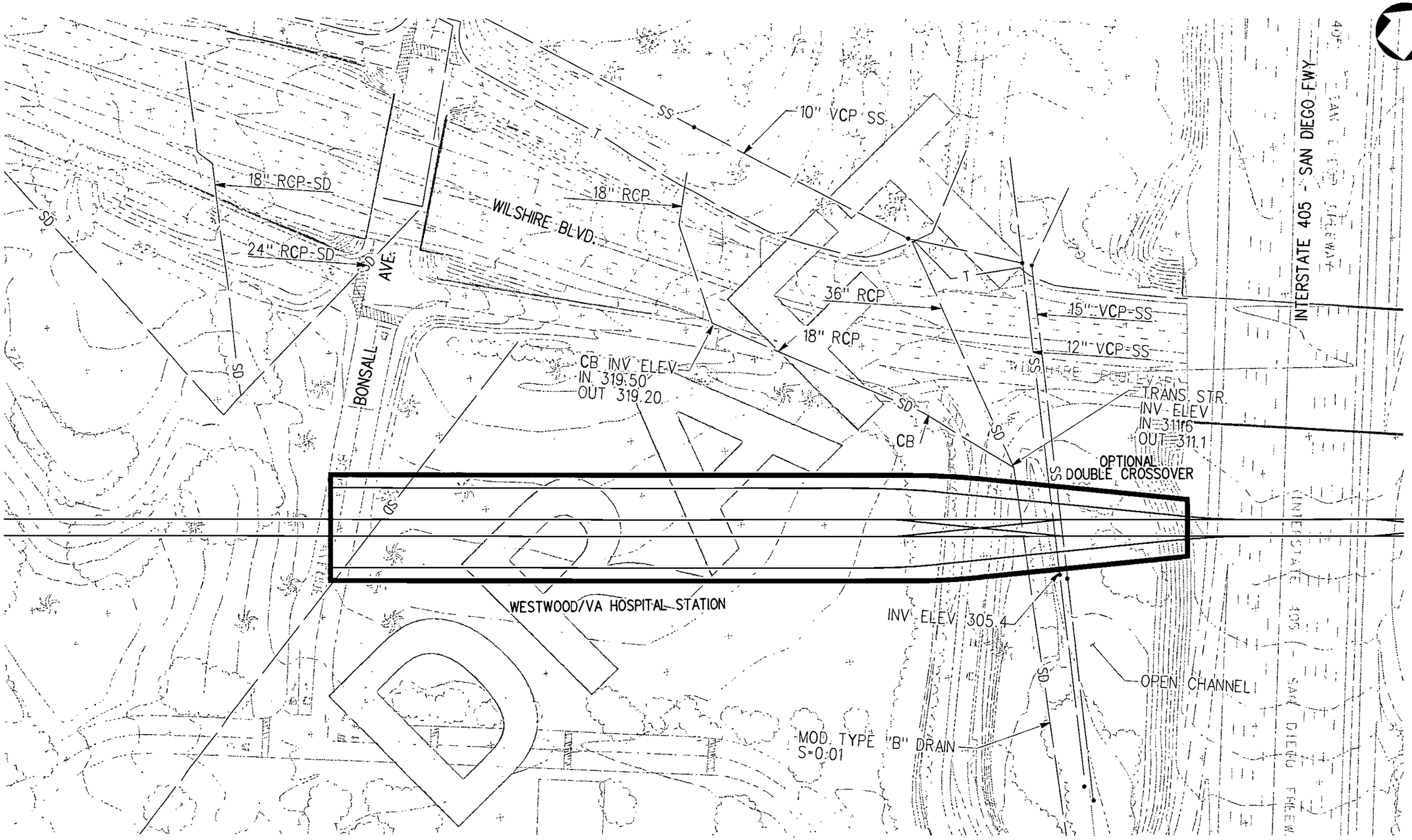

REV	DATE	BY	APP	REC NO	EXPIRES	SEAL HOLDER	DESCRIPTION

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IN CHARGE
DATE AUGUST 2010

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LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

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PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE (TUNNEL-THROUGH)
EXISTING UTILITY PLANS
WESTWOOD/VA HOSPITAL STATION
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO UE-008.1
REV
SCALE 1"=50'
SHEET NO

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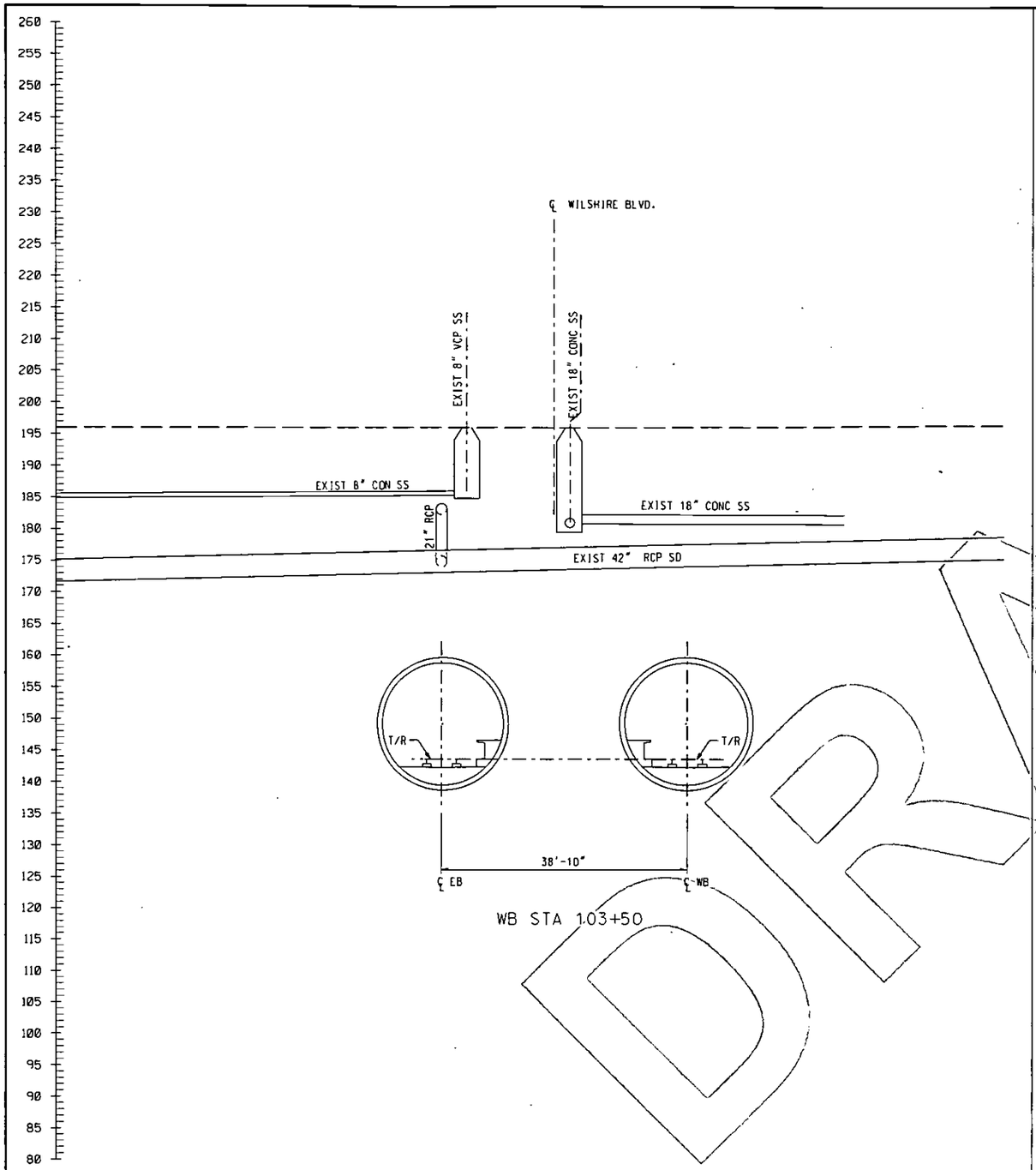

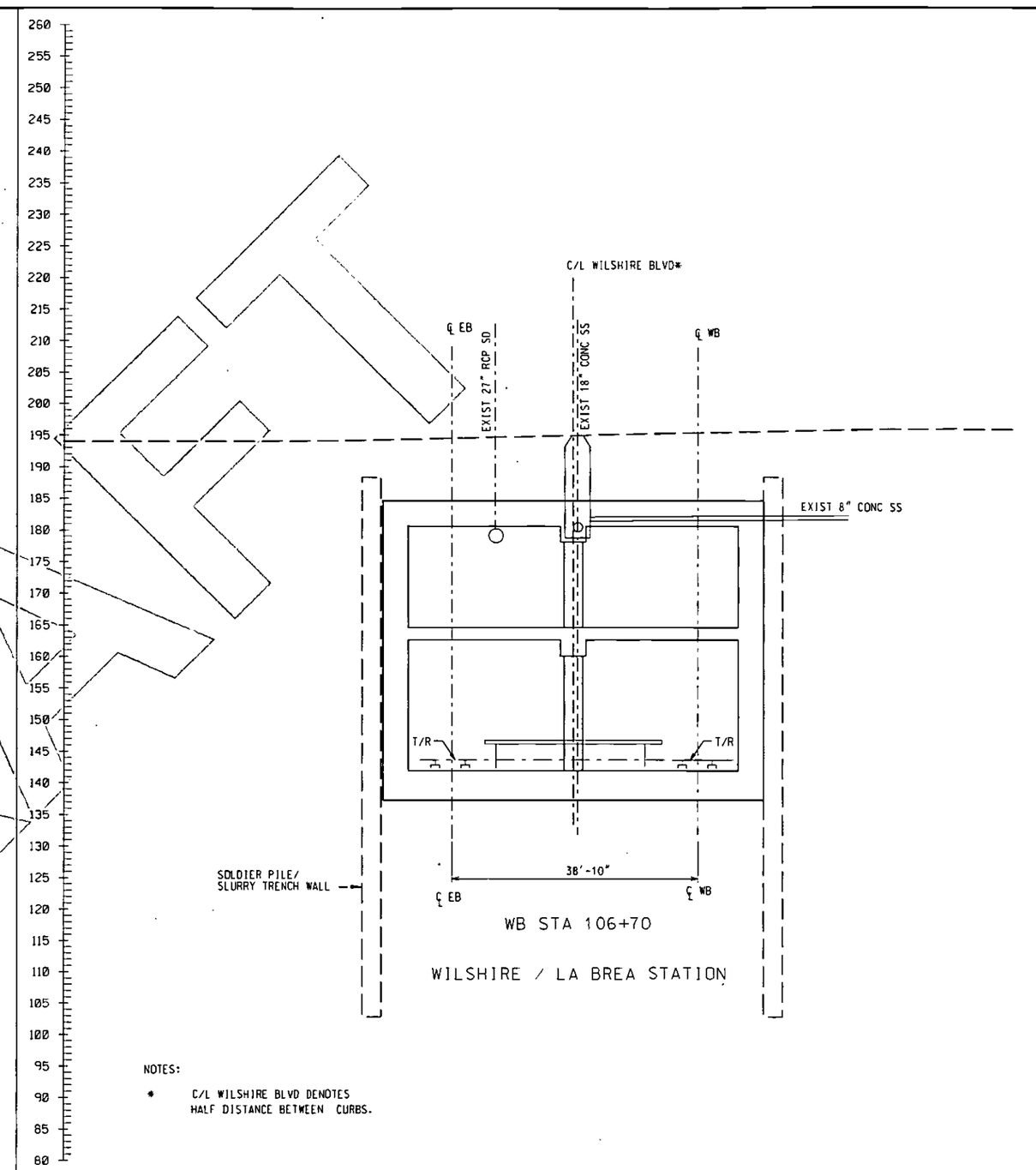

NOTES:

* C/L WILSHIRE BLVD DENOTES HALF DISTANCE BETWEEN CURBS.

DRAFT

REV	DATE	BY	APP	REC NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
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Metro

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TWIN BORE TUNNEL (OPTION 2E)
CROSS SECTIONS
WILSHIRE/LA BREA STATION
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO TBT-CX-001
REV
SCALE 1"=10'
SHEET NO

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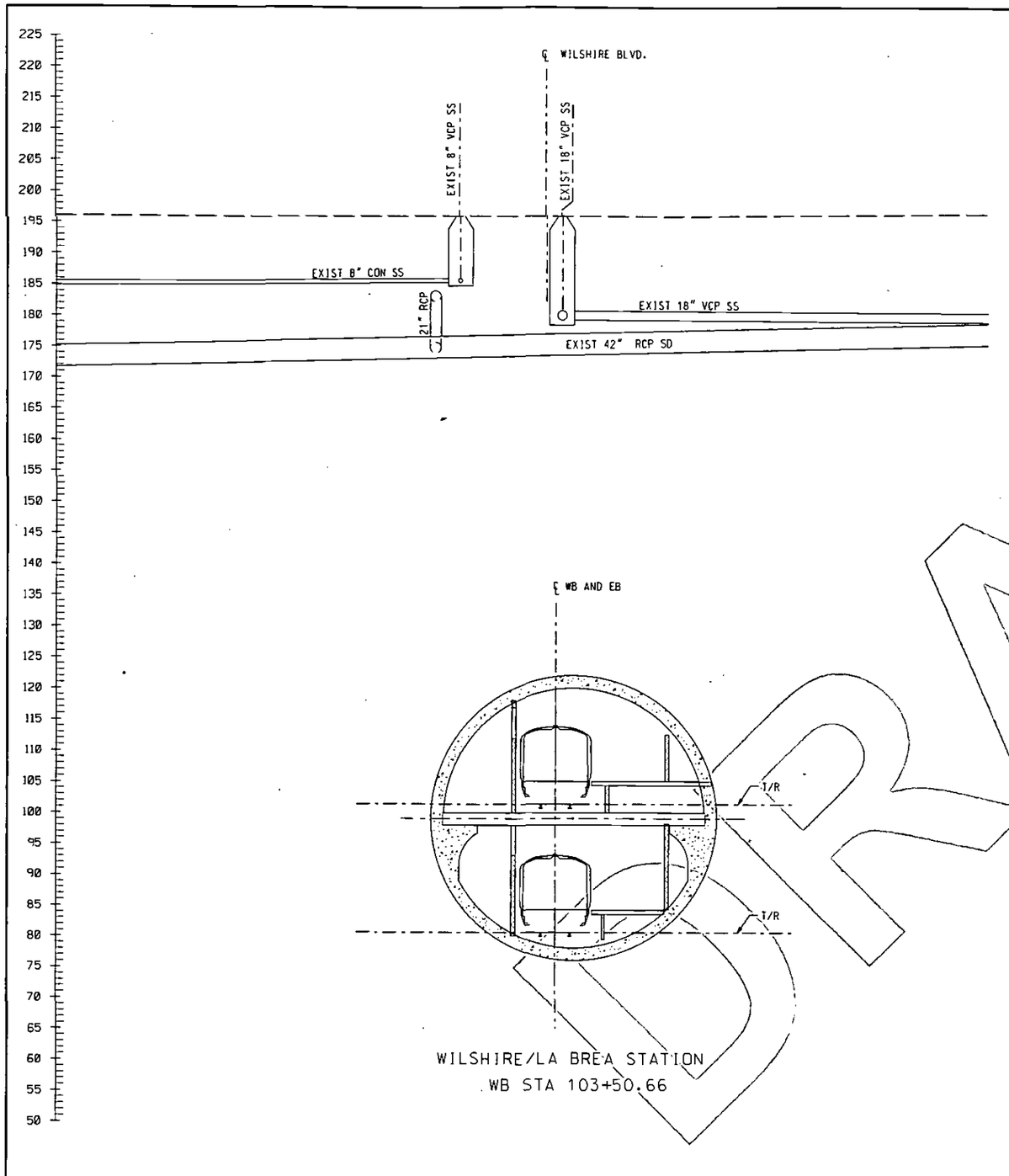

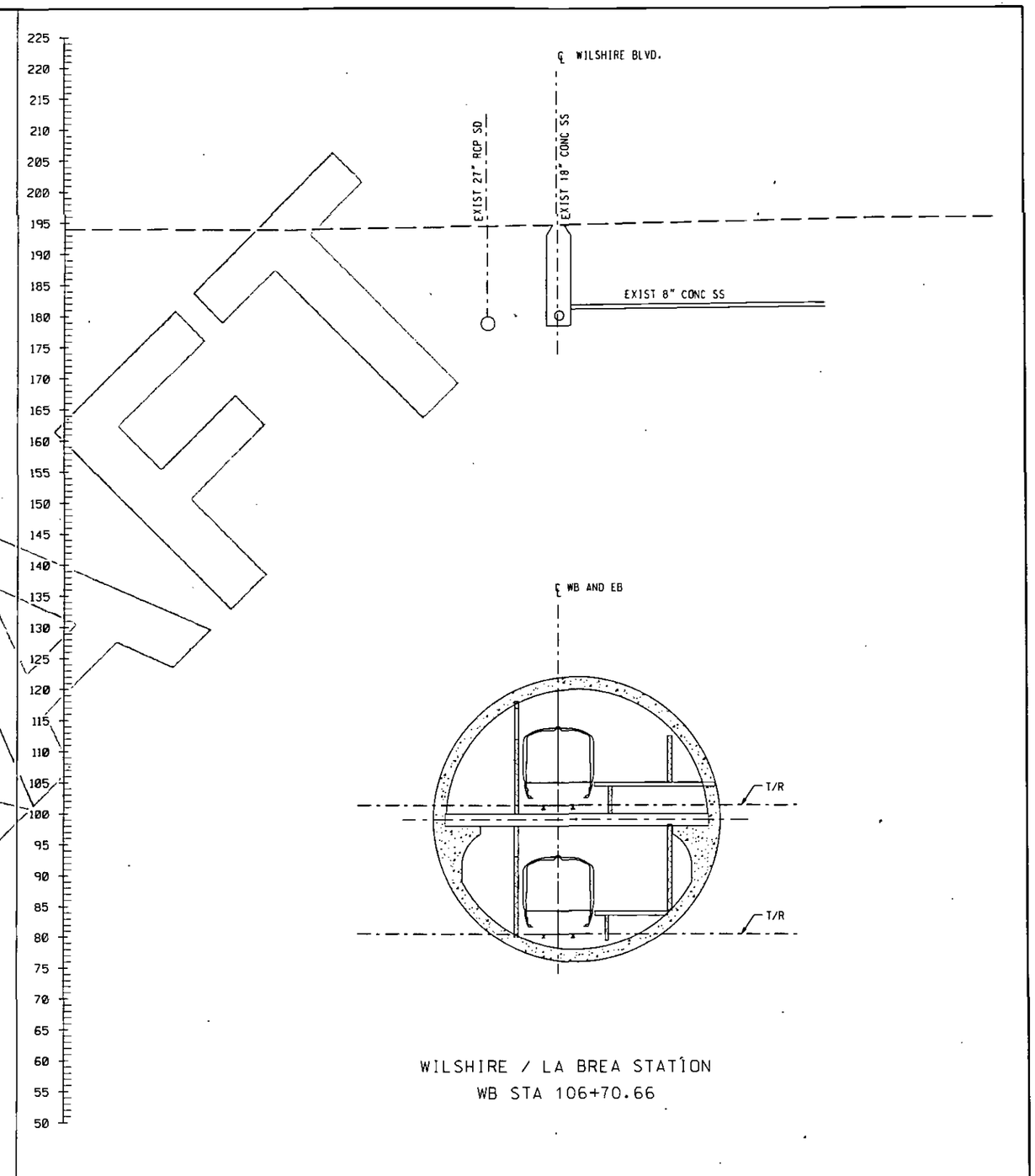

DRAFT

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
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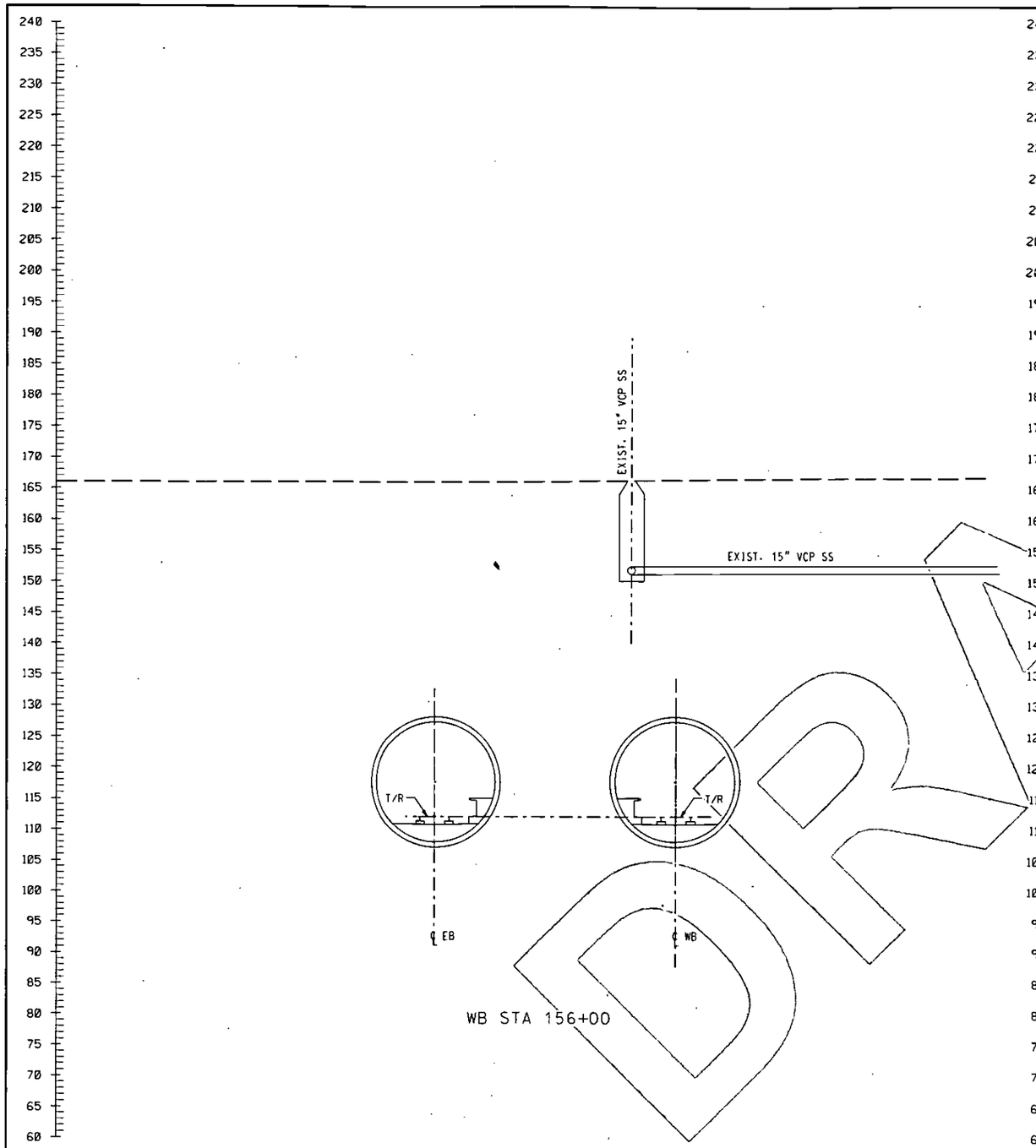
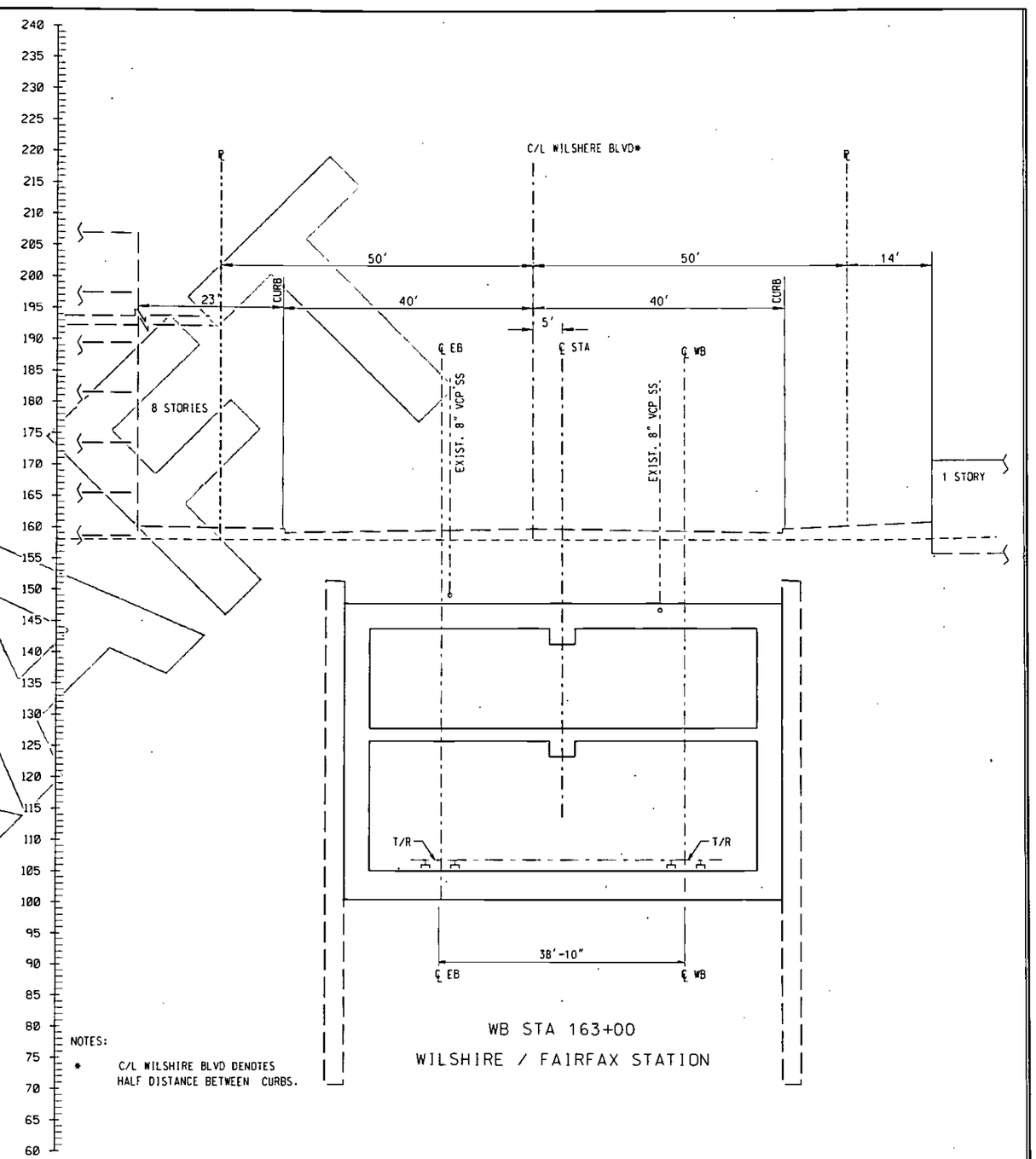
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE TUNNEL
CROSS SECTIONS
WILSHIRE/LA BREA STATION
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO SBT-CX-001 REV
SCALE 1"=10'
SHEET NO



WB STA 156+00



WB STA 163+00

WILSHIRE / FAIRFAX STATION

NOTES:

* C/L WILSHIRE BLVD DENOTES HALF DISTANCE BETWEEN CURBS.

DRAFT

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

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LOS ANGELES COUNTY
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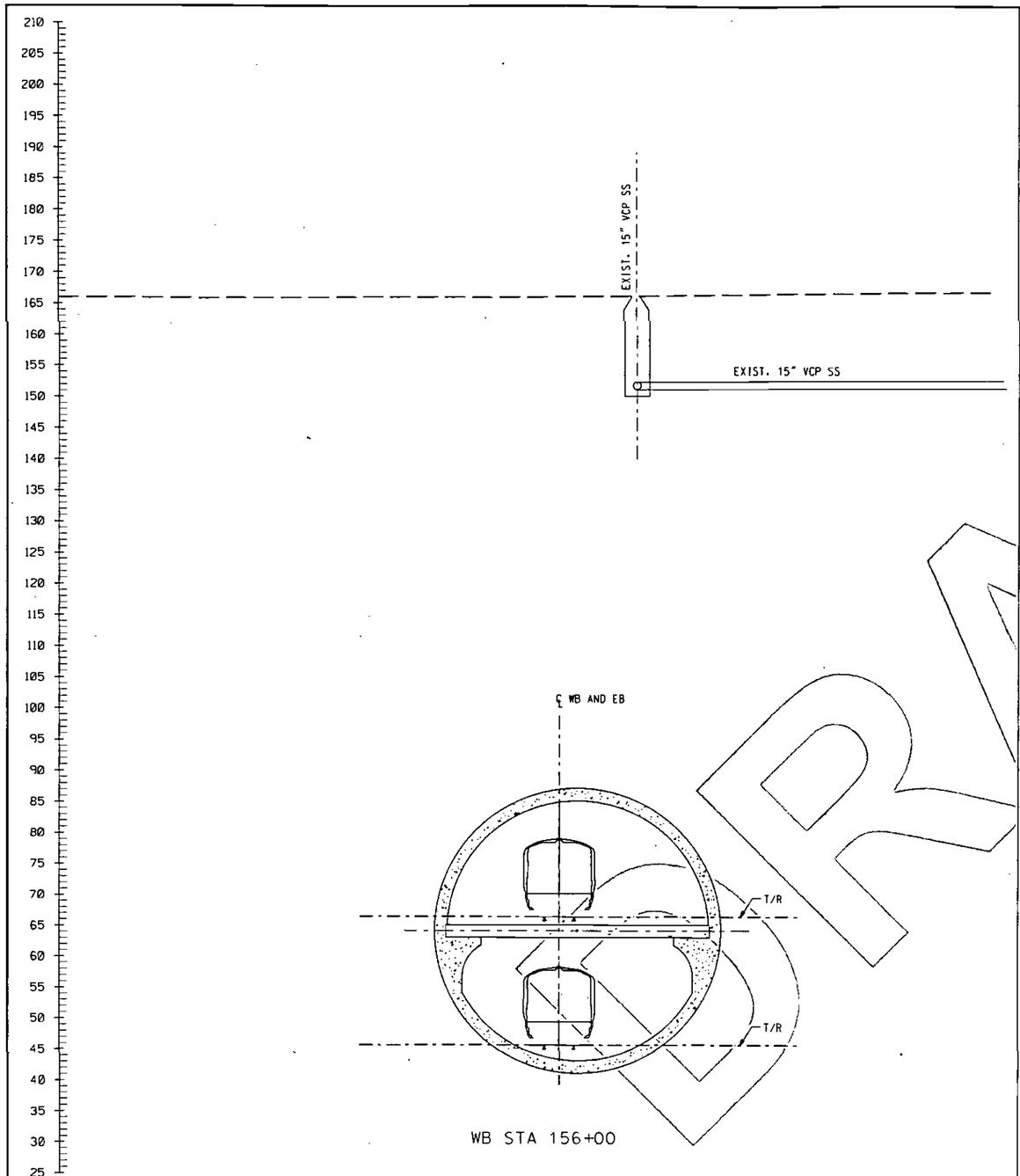
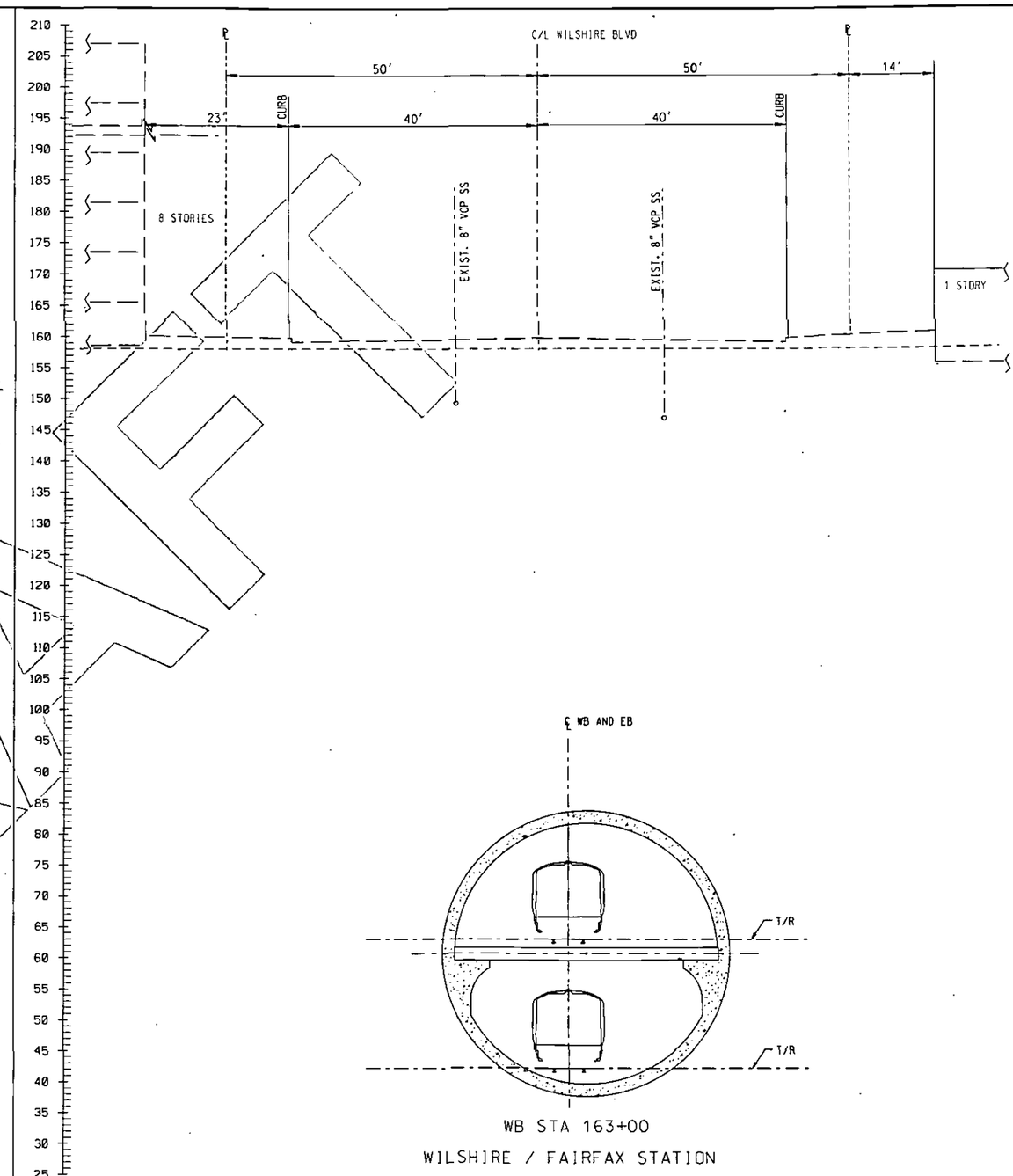
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TWIN BORE TUNNEL (OPTION 2E)
CROSS SECTIONS
WILSHIRE/FAIRFAX STATION
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO TBT-CX-002 REV
SCALE 1"=10'
SHEET NO



WB STA 156+00



WB STA 163+00

WILSHIRE / FAIRFAX STATION

DRAFT

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
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METROPOLITAN TRANSPORTATION AUTHORITY

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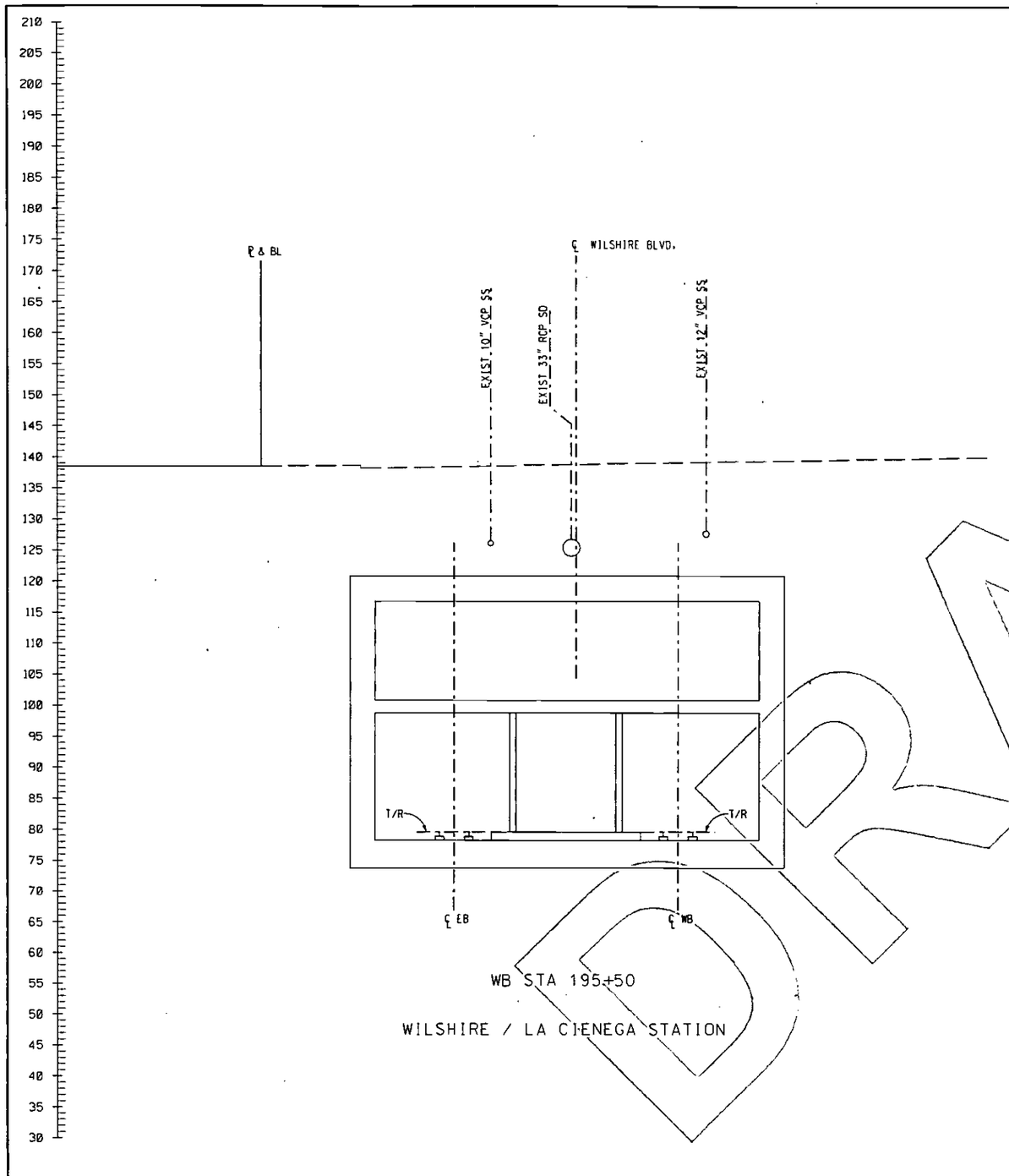
PROJECT MANAGER

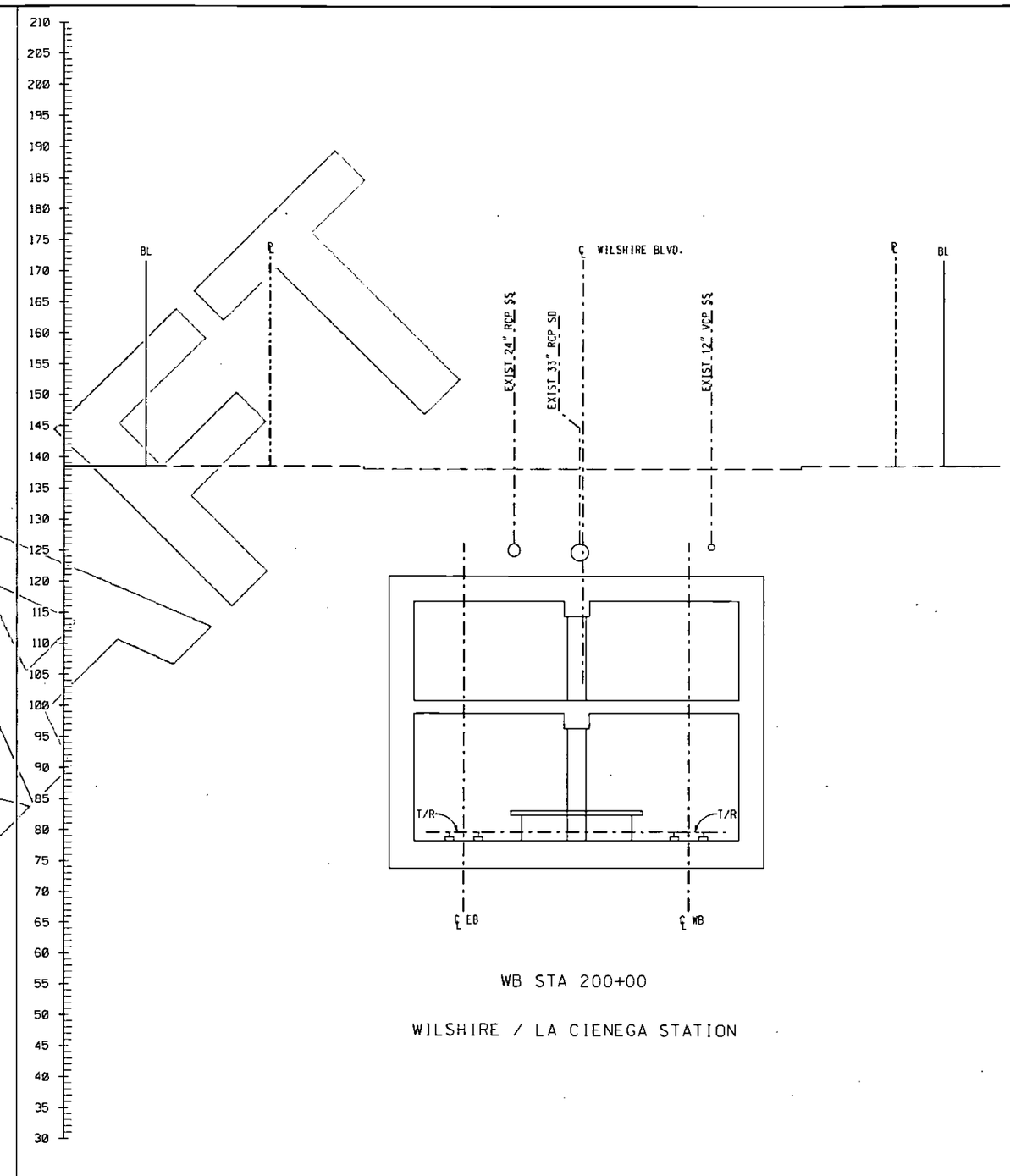
WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE TUNNEL
CROSS SECTIONS
WILSHIRE/FAIRFAX STATION
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO SBT-CX-002
REV
SCALE 1"=10'
SHEET NO



WB STA 195+50

WILSHIRE / LA CIENEGA STATION



WB STA 200+00

WILSHIRE / LA CIENEGA STATION

DRAFT

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TWIN BORE TUNNEL (OPTION 2E)
CROSS SECTIONS
WILSHIRE/LA CIENEGA STATION
ALT. TUNNELING METHODS STUDY

CONTRACT NO
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SCALE 1"=10'
SHEET NO

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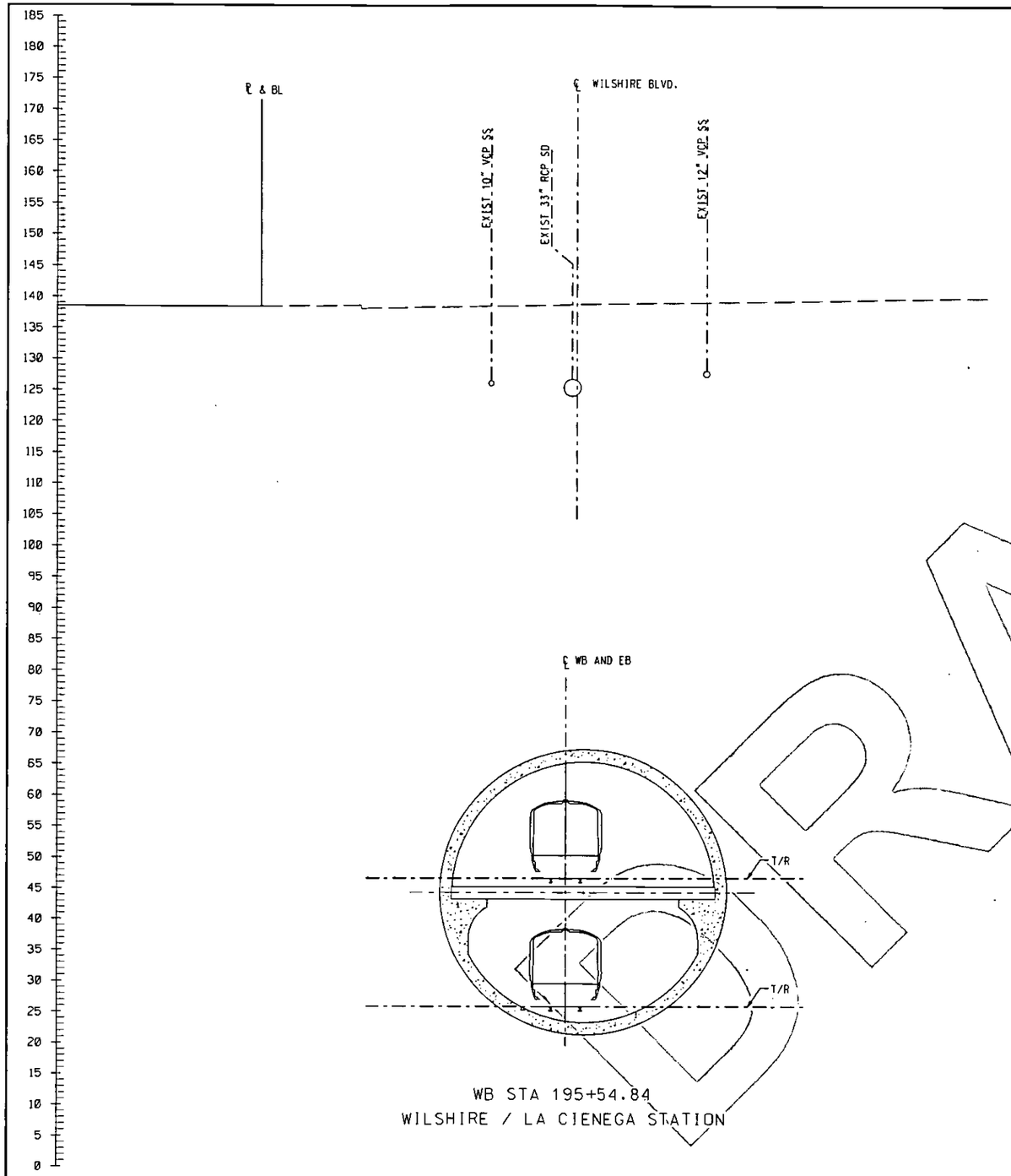
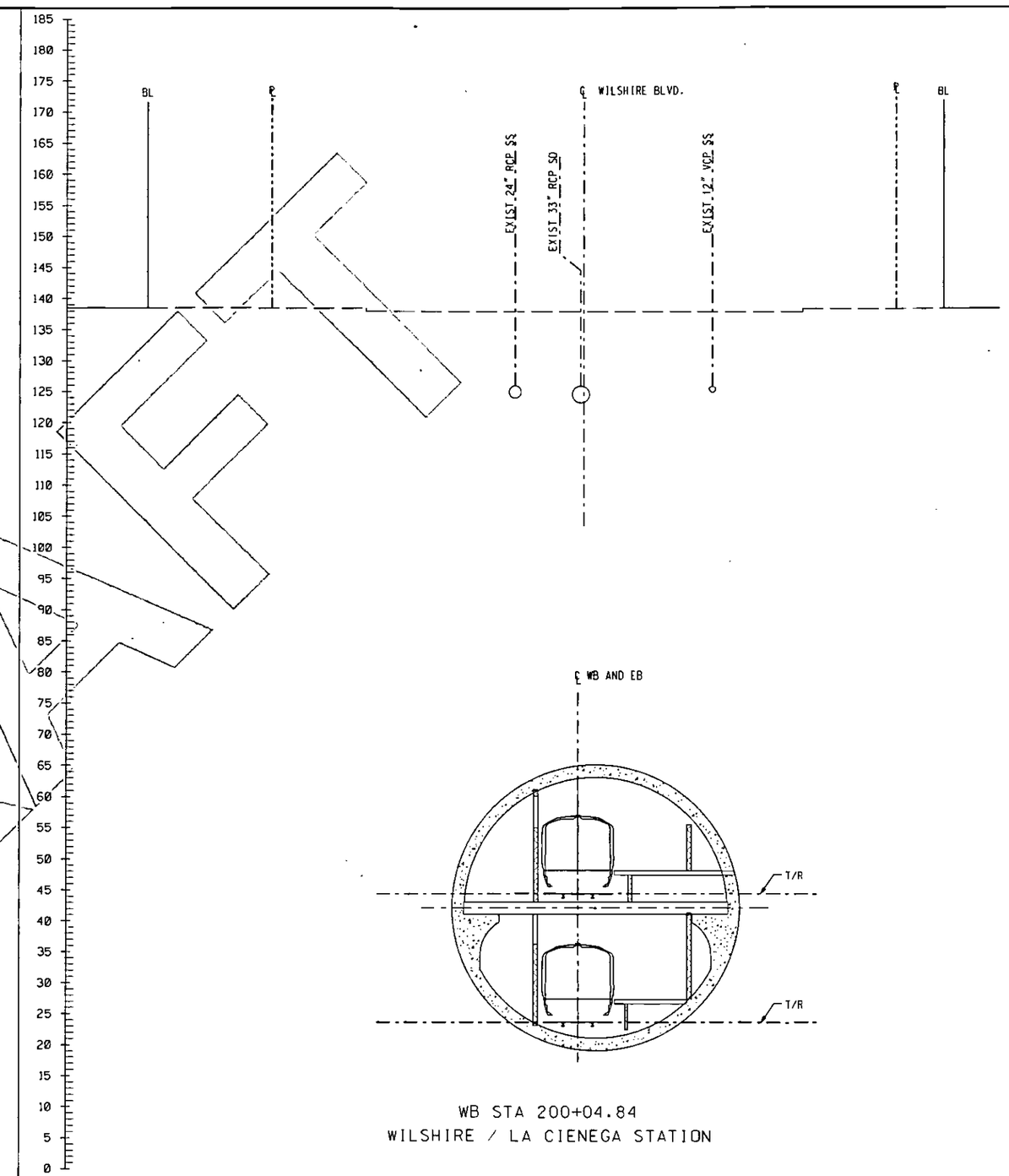


WB STA 195+54.84
WILSHIRE / LA CIENEGA STATION



WB STA 200+04.84
WILSHIRE / LA CIENEGA STATION

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REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
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Metro
LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

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PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE TUNNEL
CROSS SECTIONS
WILSHIRE/LA CIENEGA STATION
ALT. TUNNELING METHODS STUDY

CONTRACT NO
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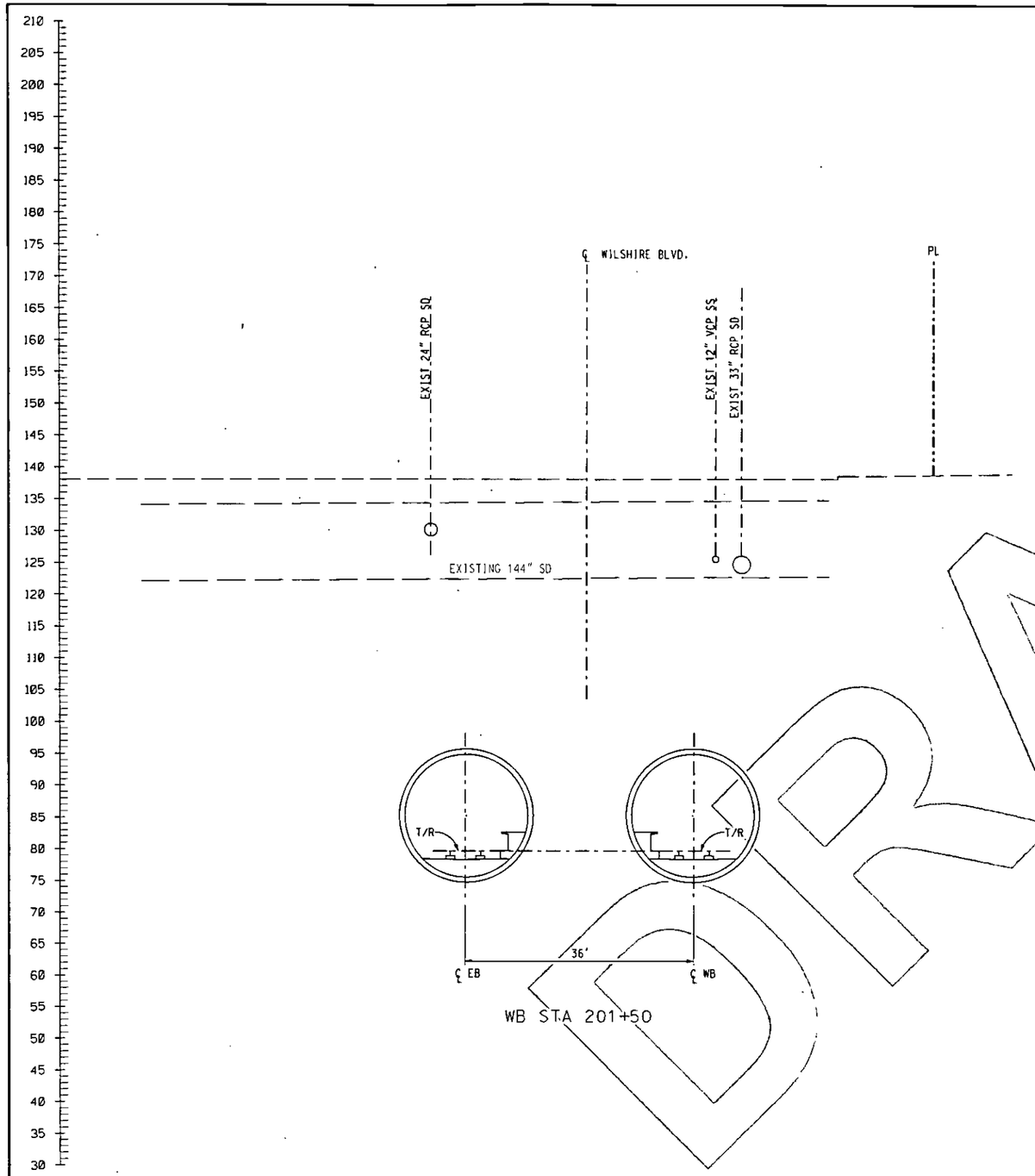
SCALE 1"=10'
SHEET NO



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REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

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Metro
LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

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WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TWIN BORE TUNNEL (OPTION 2E)
CROSS SECTIONS
WILSHIRE/LA CIENEGA STATION
ALT. TUNNELING METHODS STUDY

CONTRACT NO
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REV
SCALE 1"=10'
SHEET NO

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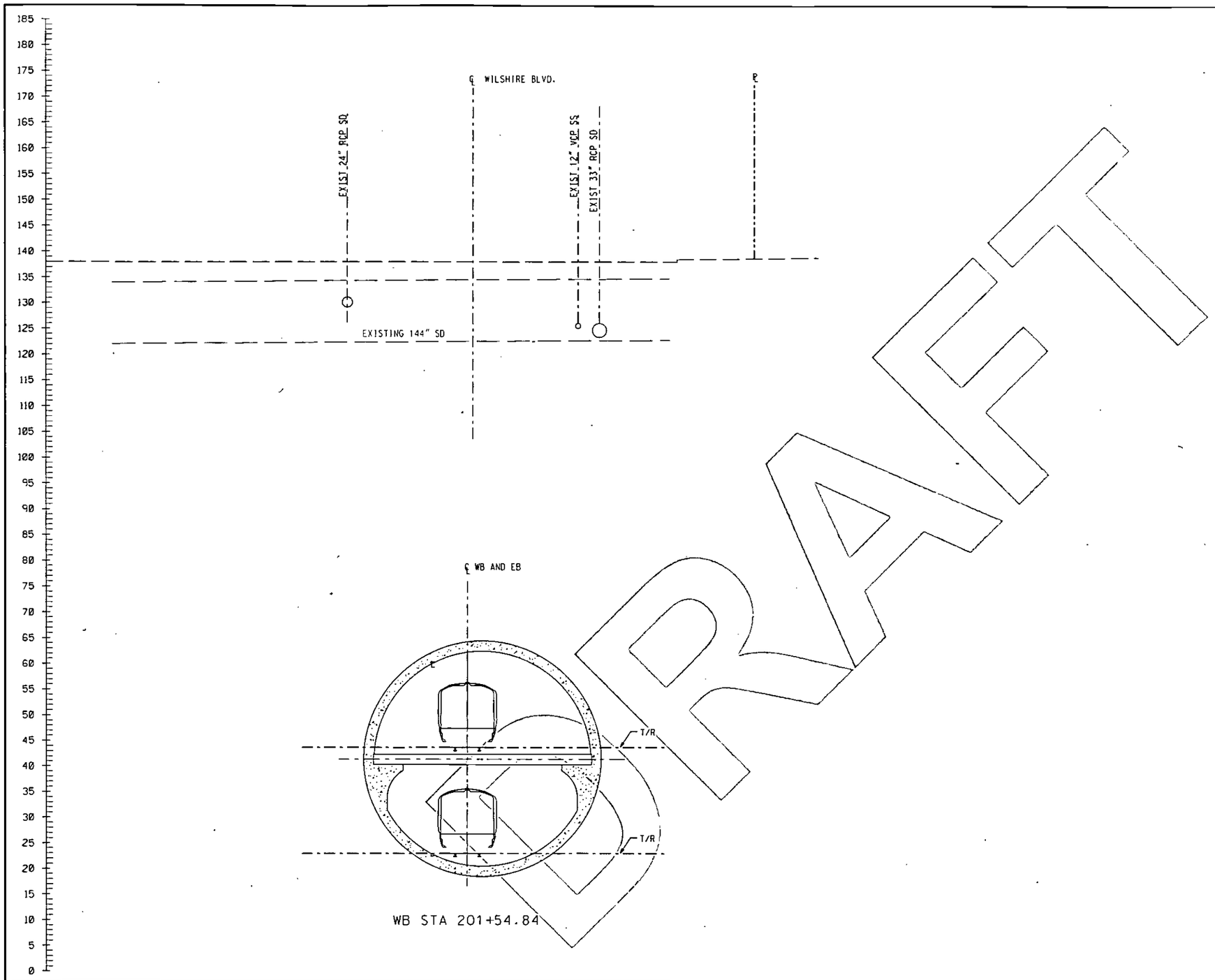

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REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
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LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

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WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE TUNNEL
CROSS SECTIONS
WILSHIRE/LA CIENEGA STATION
ALT. TUNNELING METHODS STUDY

CONTRACT NO
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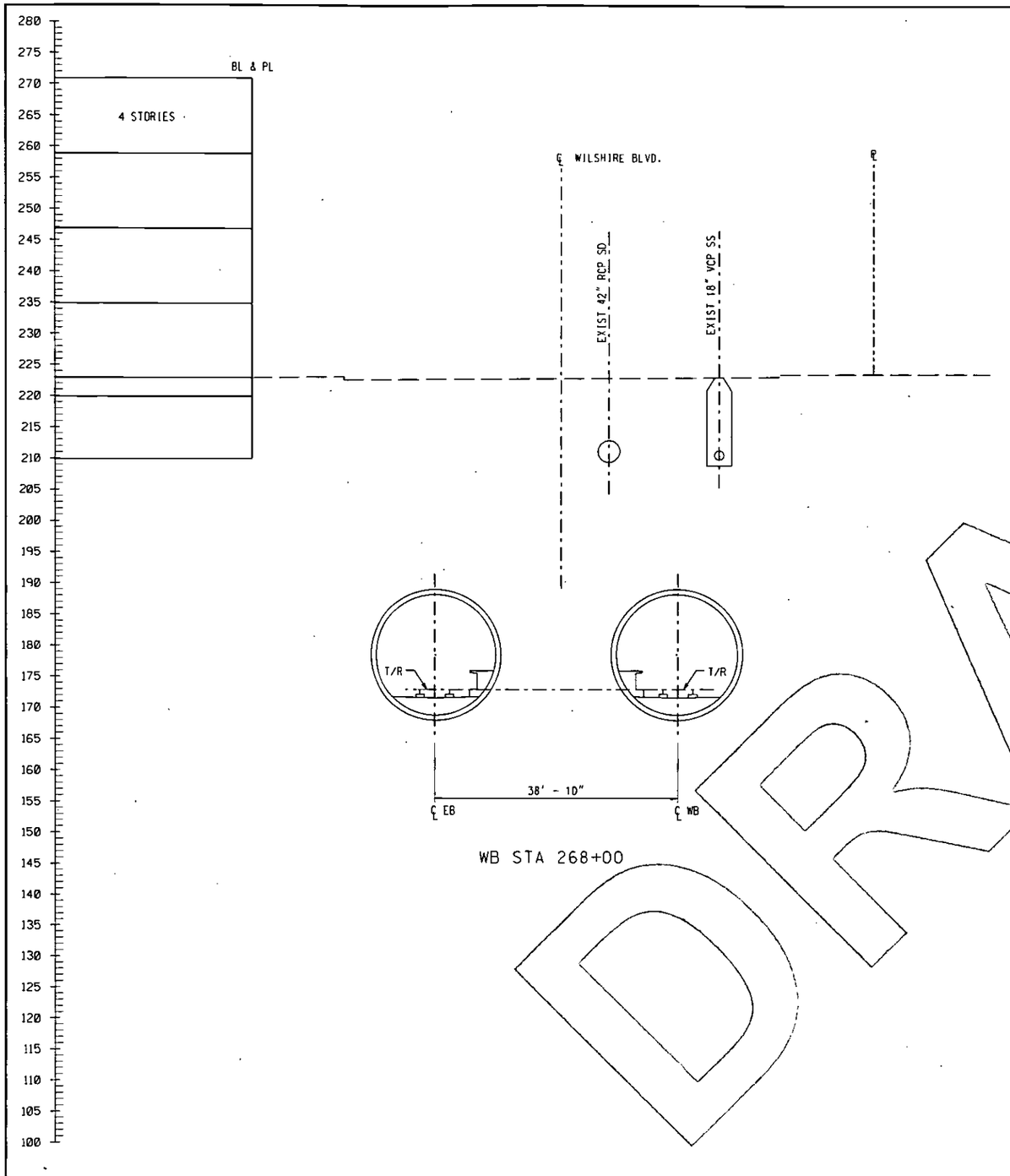
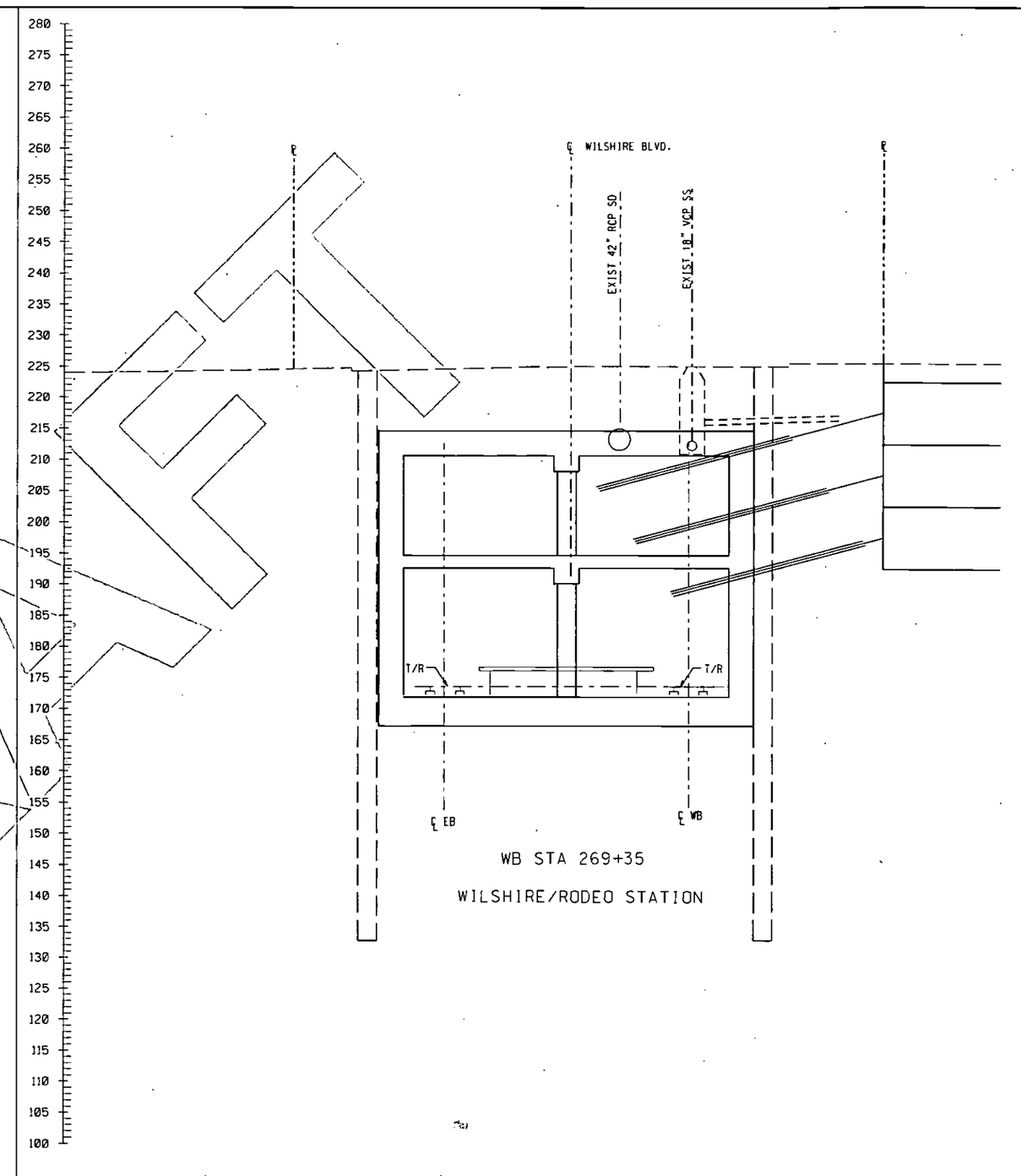
SCALE 1"=10'
SHEET NO





DRAFT

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
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IN CHARGE
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LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

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PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TWIN BORE TUNNEL (OPTION 2E)
CROSS SECTIONS
WILSHIRE/RODEO STATION
ALT. TUNNELING METHODS STUDY

CONTRACT NO
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SCALE 1"=10'
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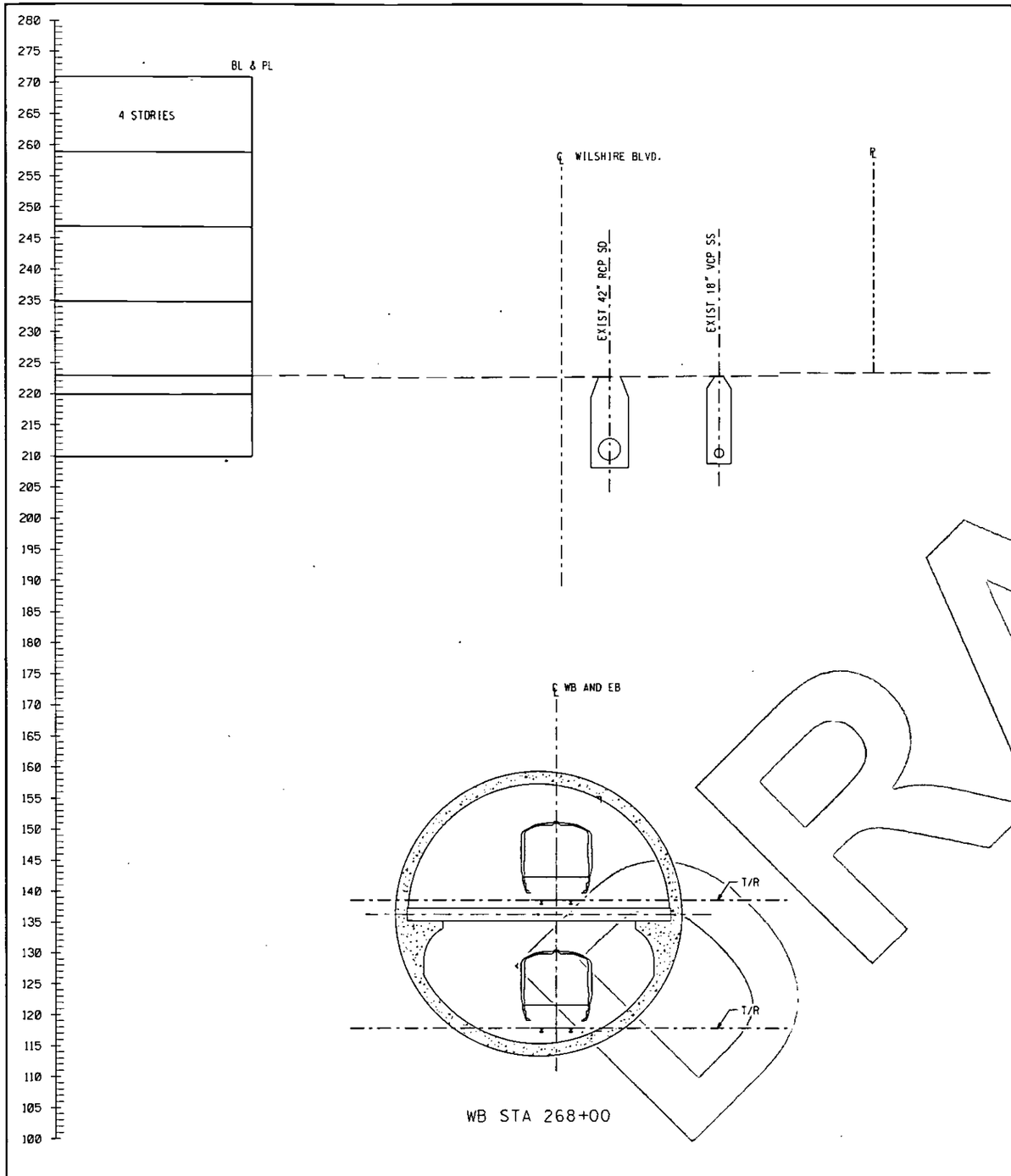
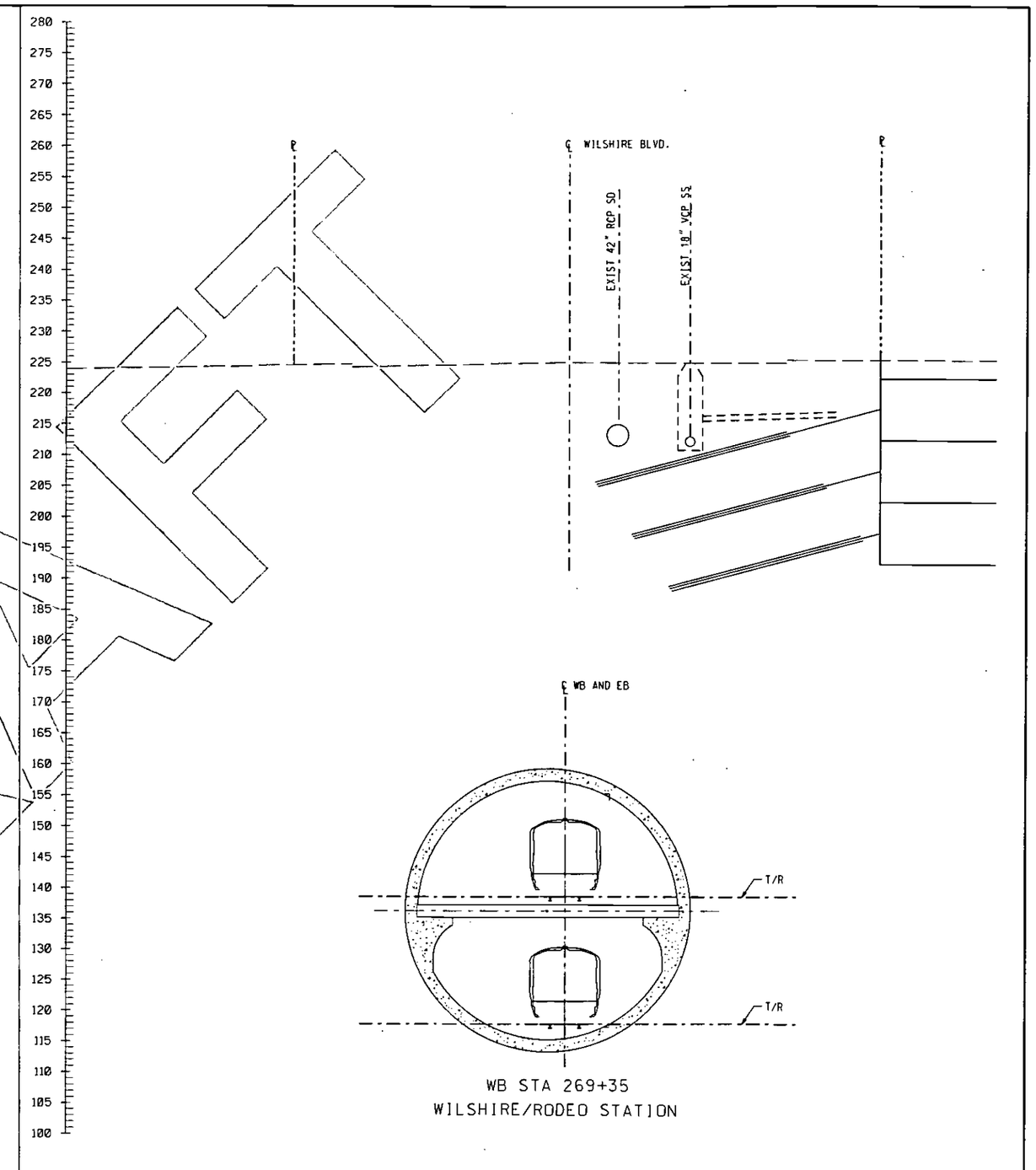


WB STA 268+00



WB STA 269+35
WILSHIRE/RODEO STATION

DRAFT

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

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LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

PB
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE TUNNEL
CROSS SECTIONS
WILSHIRE/RODEO STATION
ALT. TUNNELING METHODS STUDY

CONTRACT NO
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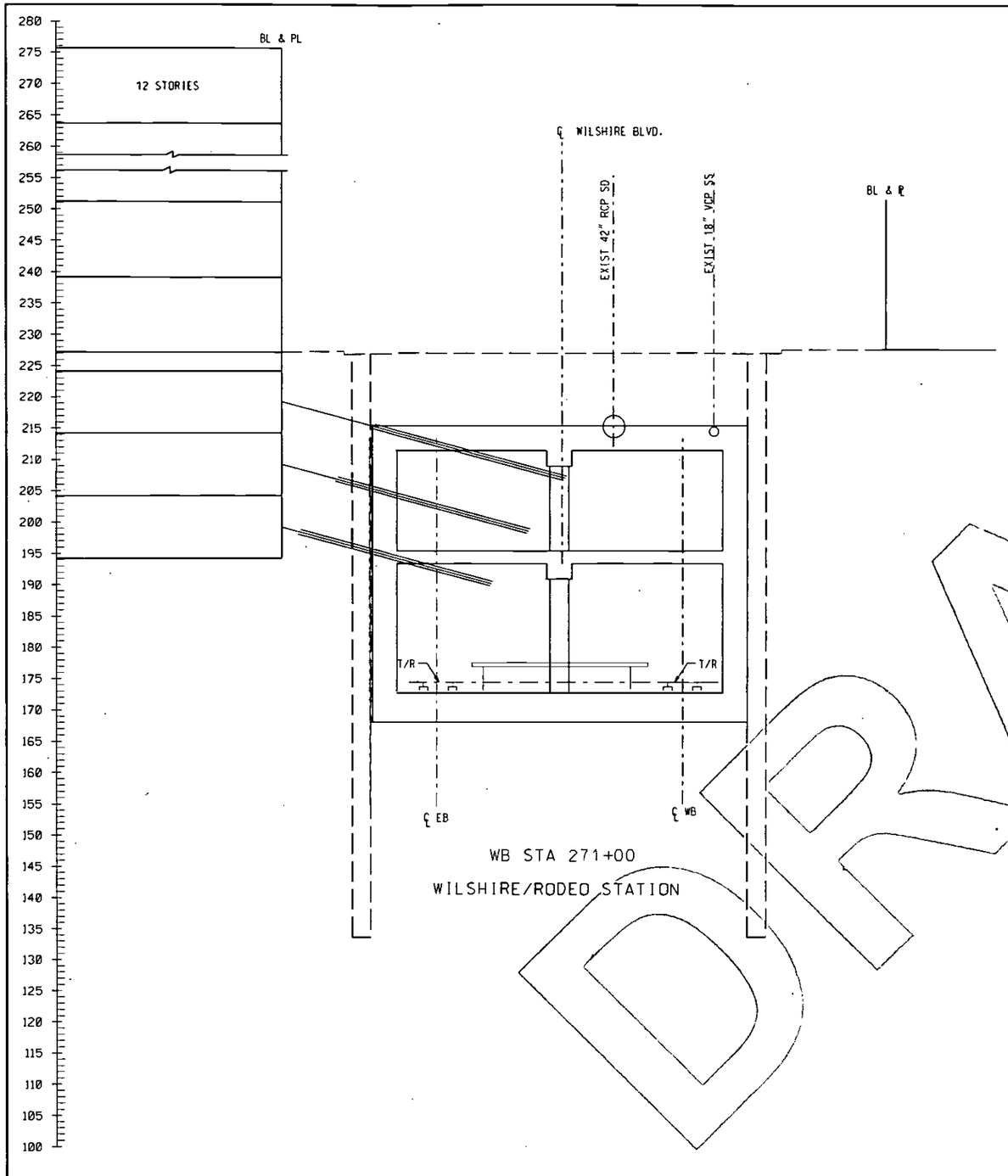
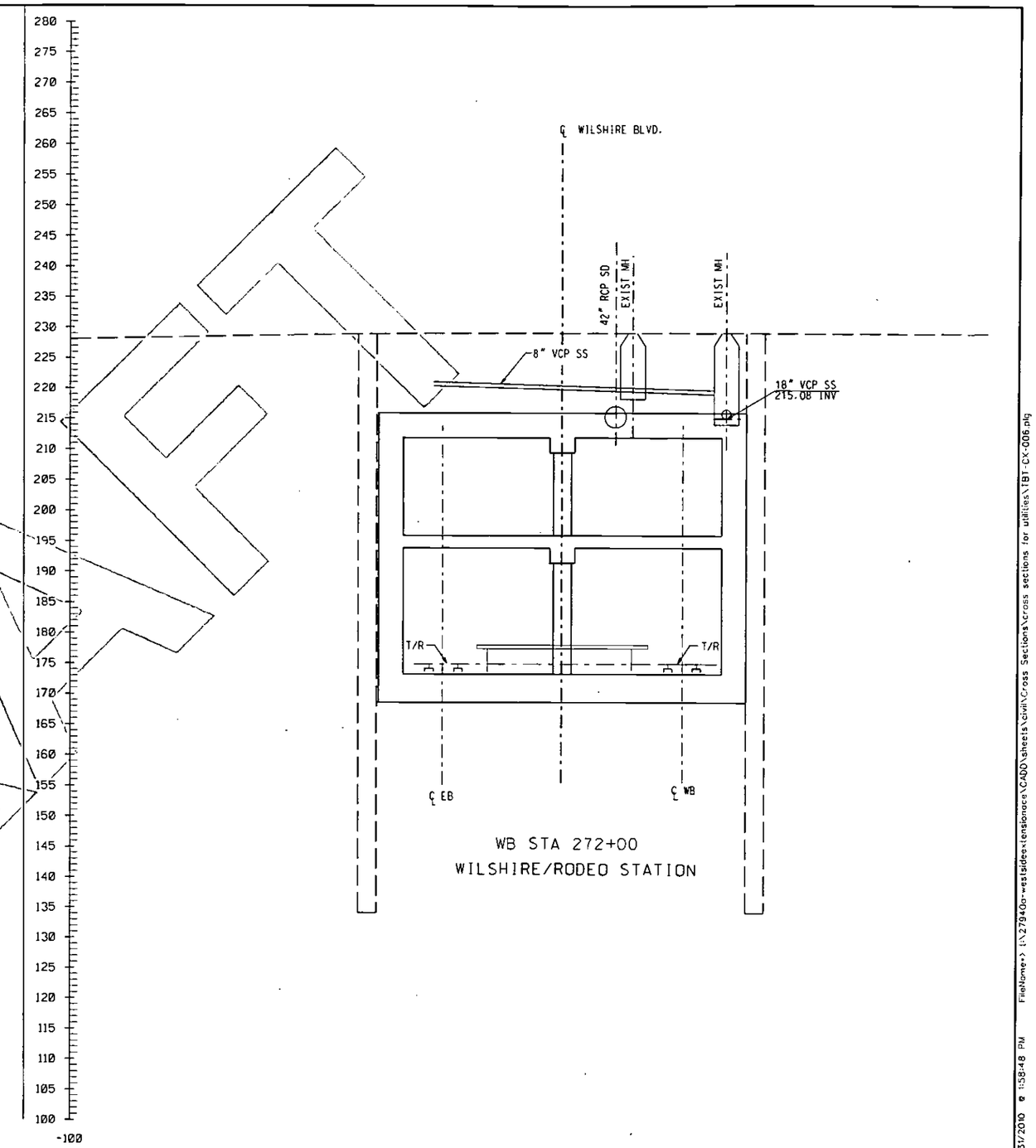
SCALE 1" = 10'
SHEET NO





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REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
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CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

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PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TWIN BORE TUNNEL (OPTION 2E)
CROSS SECTIONS
WILSHIRE/RODEO STATION
ALT. TUNNELING METHODS STUDY

CONTRACT NO
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SCALE 1"=10'
SHEET NO

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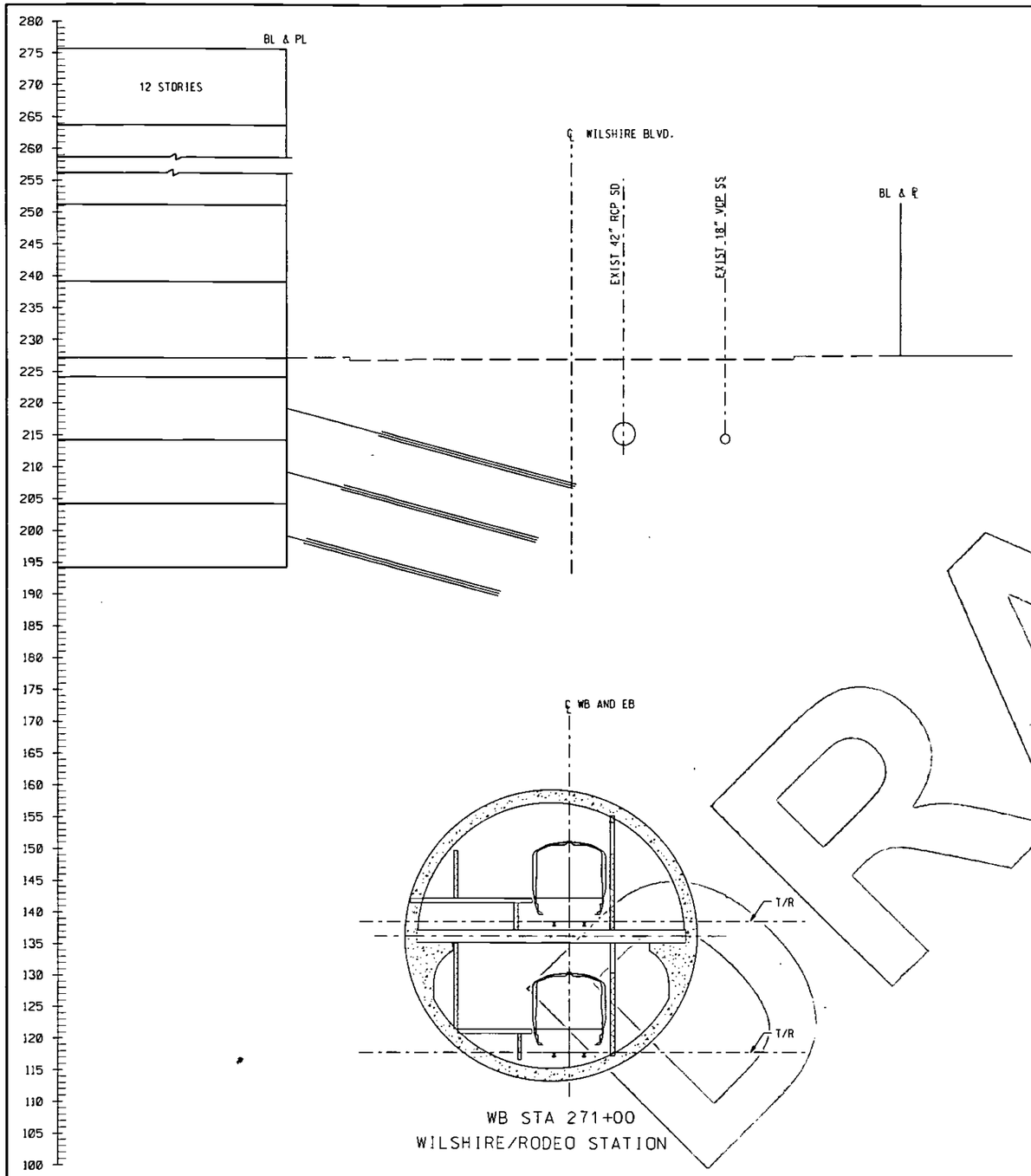
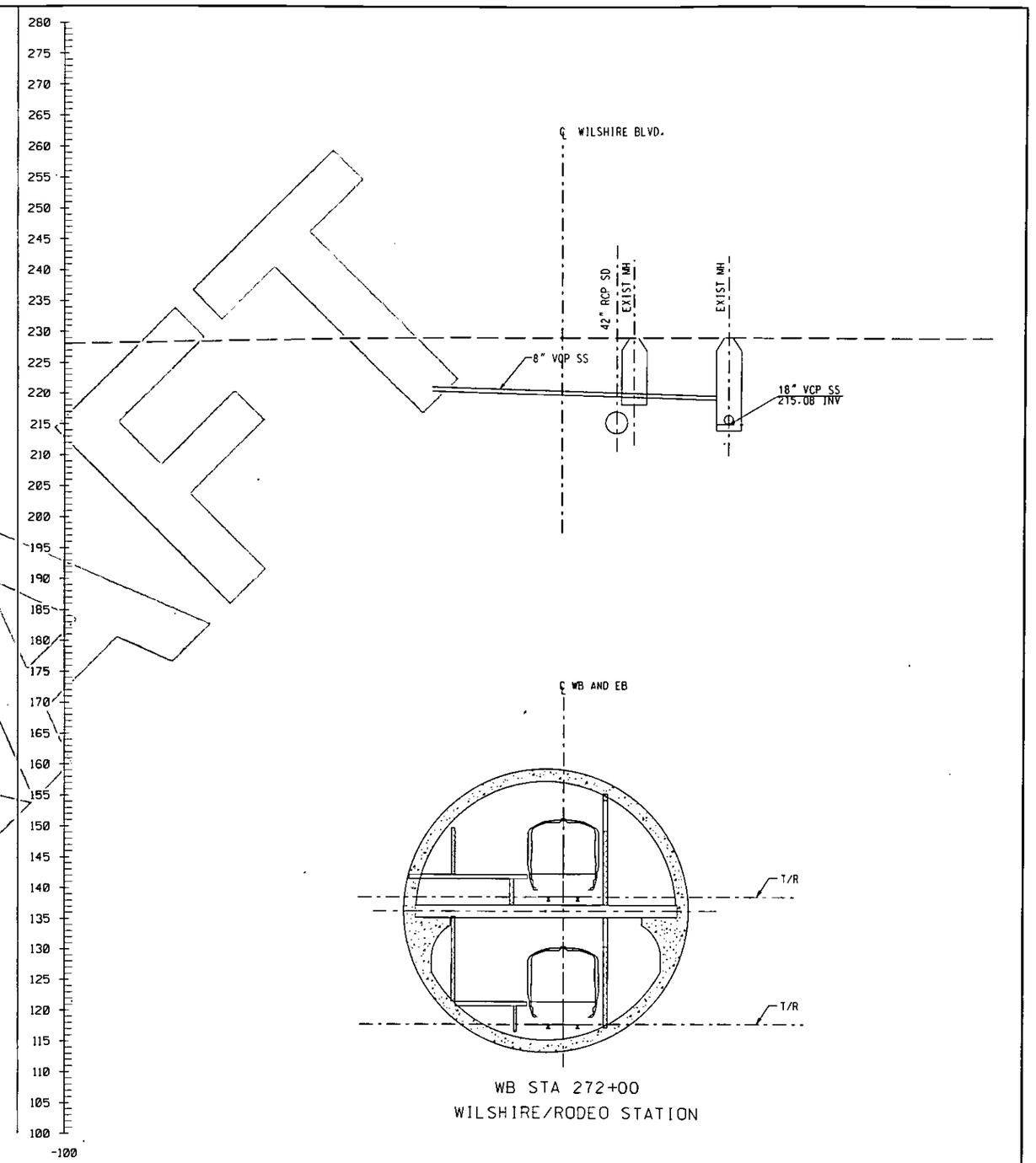


WB STA 271+00
WILSHIRE/RODEO STATION



WB STA 272+00
WILSHIRE/RODEO STATION

DRAFT

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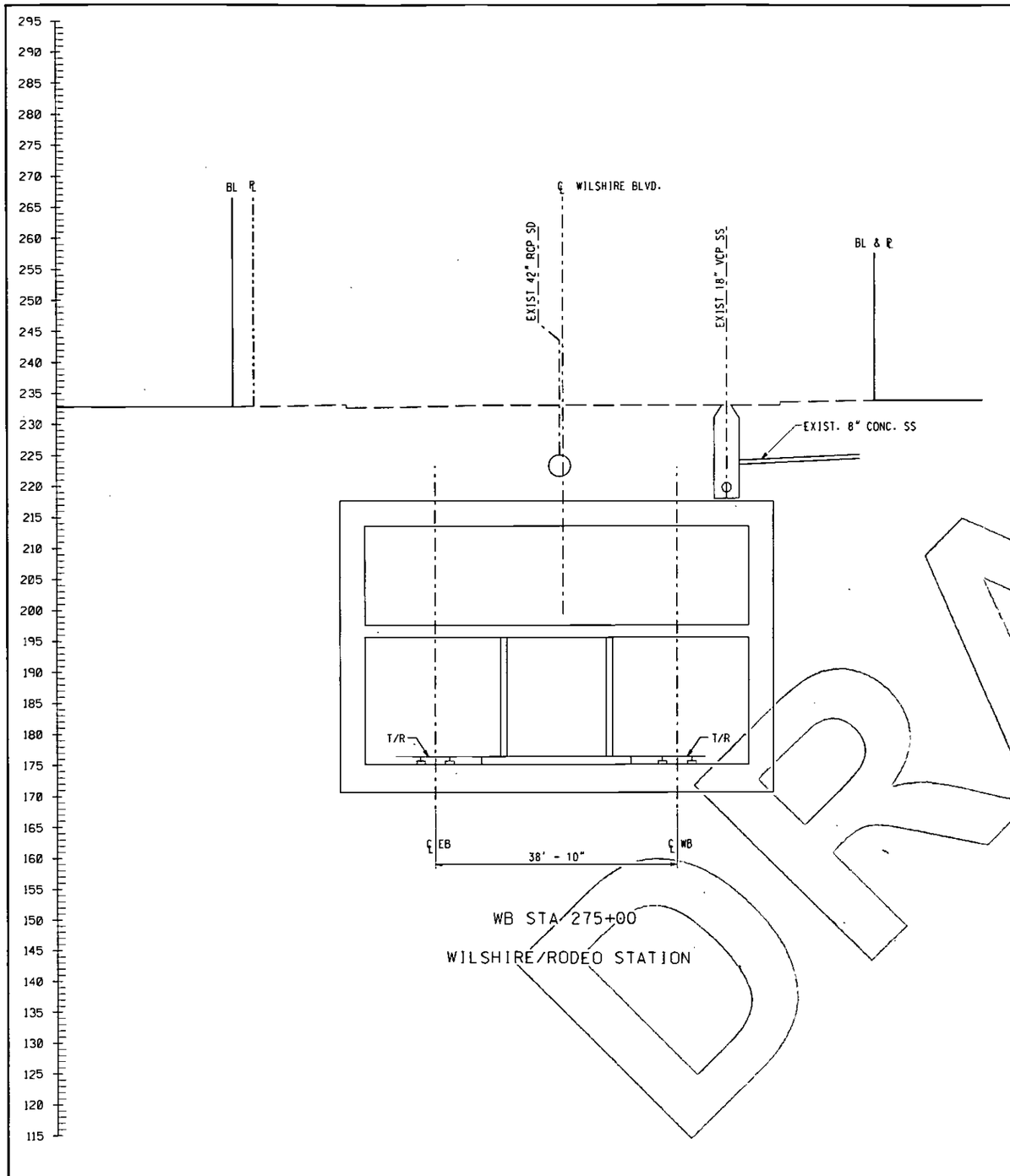
PROJECT MANAGER

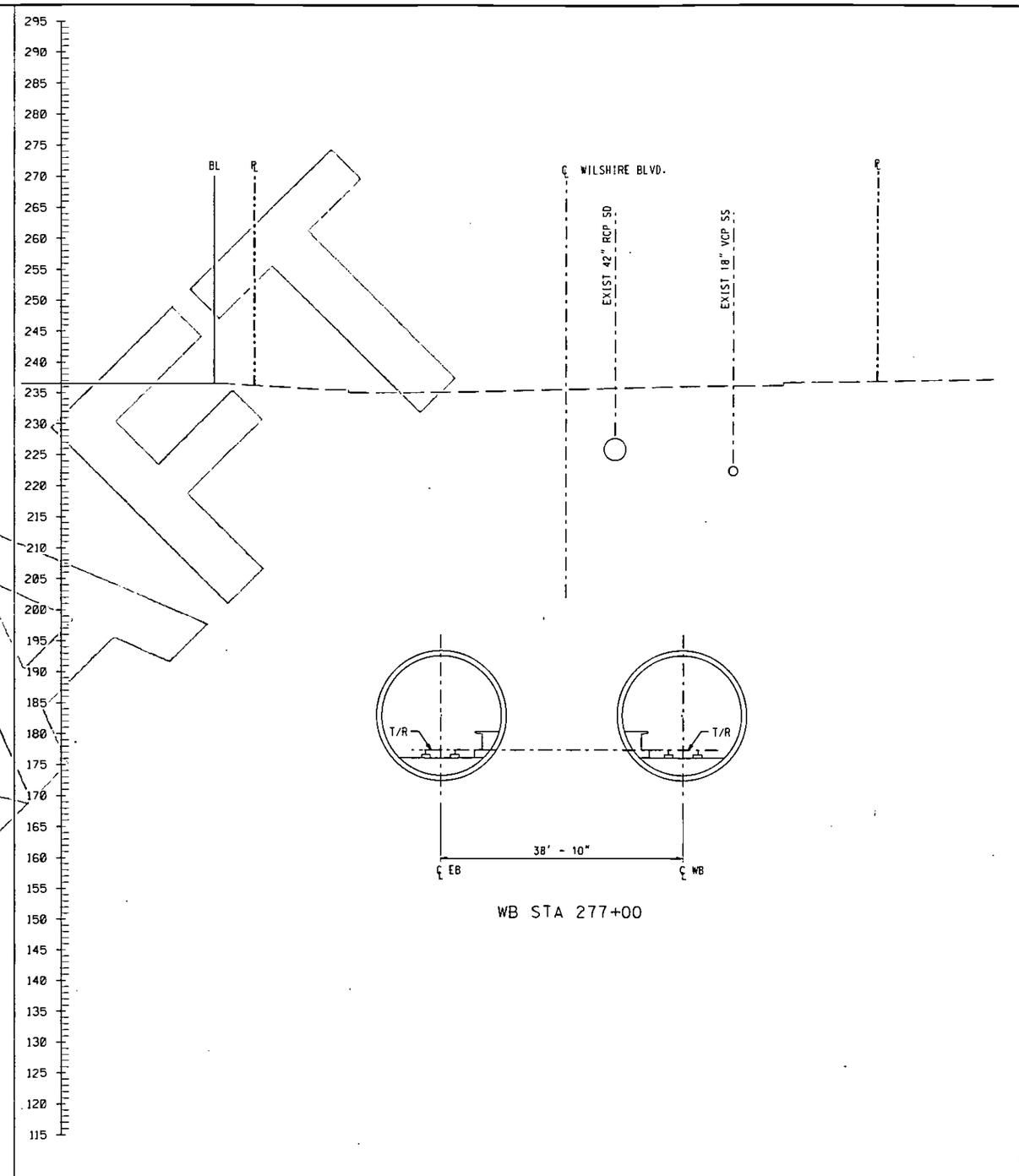
WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE TUNNEL
CROSS SECTIONS
WILSHIRE/RODEO STATION
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO SBT-CX-006 REV
SCALE 1"=10'
SHEET NO



WB STA 275+00

WILSHIRE/RODEO STATION



WB STA 277+00

DRAFT

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

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LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

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PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TWIN BORE TUNNEL (OPTION 2E)
CROSS SECTIONS
WILSHIRE/RODEO STATION
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO TBT-CX-007 REV
SCALE 1" = 10'
SHEET NO

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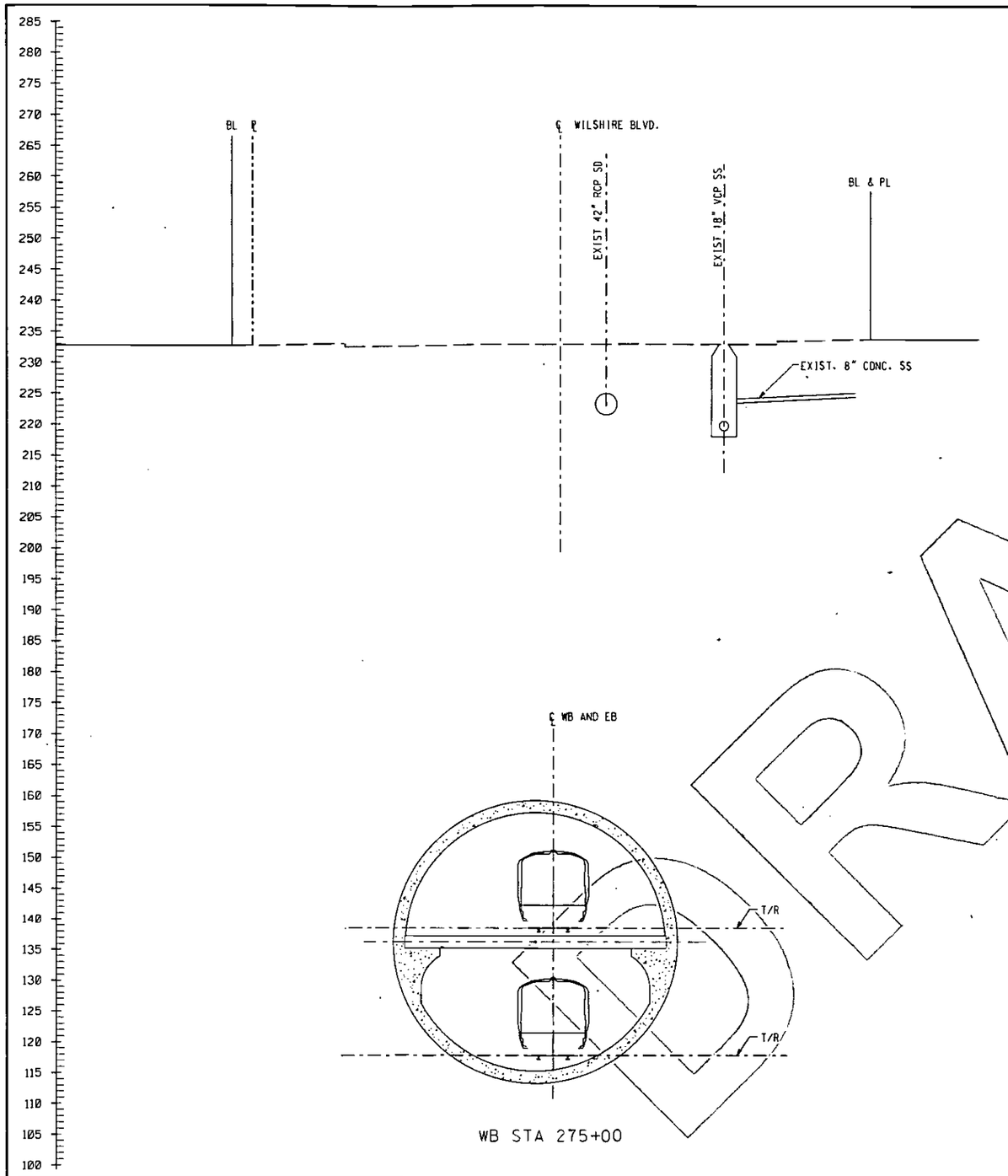
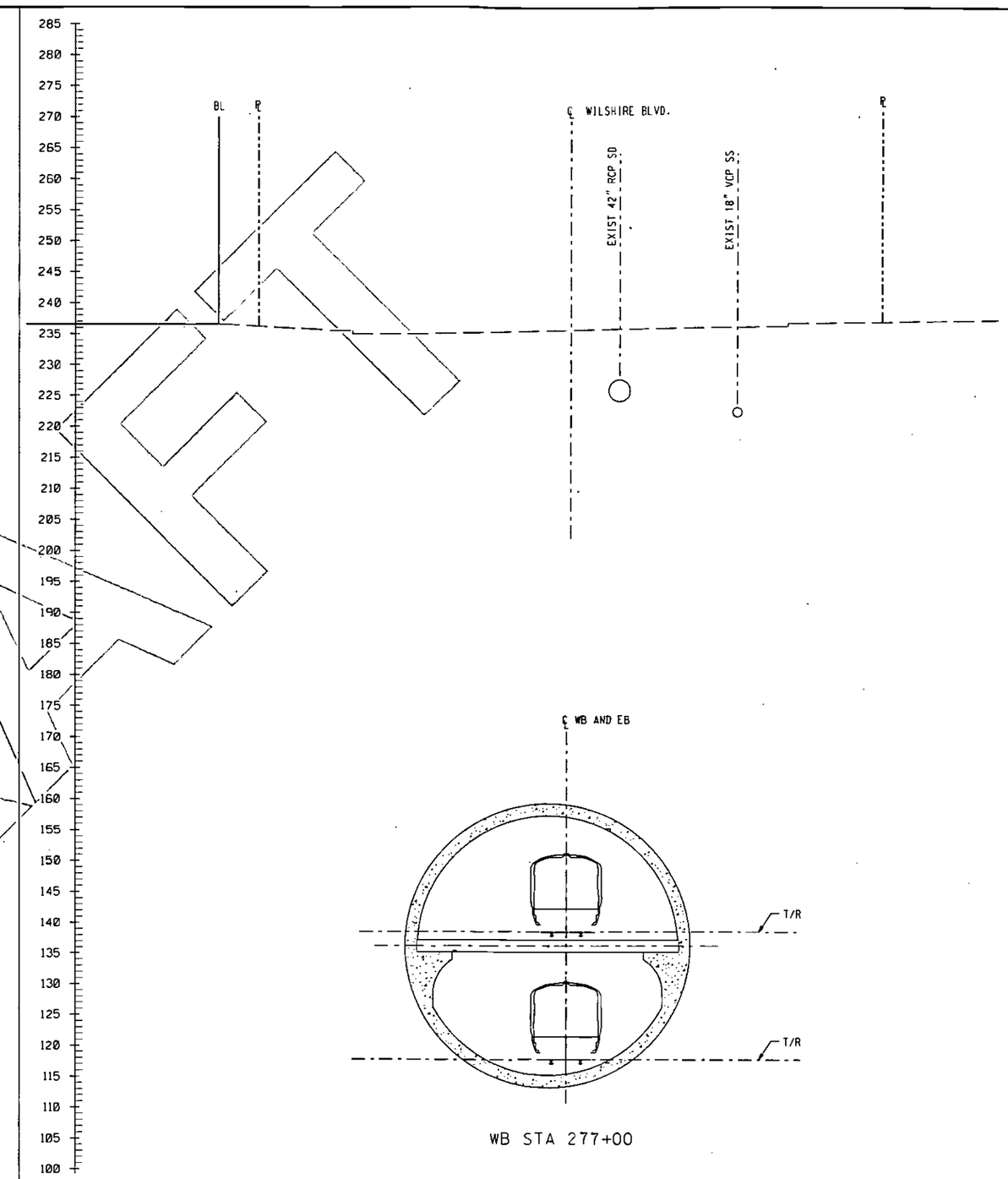


WB STA 275+00



WB STA 277+00

DRAFT

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

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LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

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PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE TUNNEL
CROSS SECTIONS
WILSHIRE/RODEO STATION
ALT. TUNNELING METHODS STUDY

CONTRACT NO
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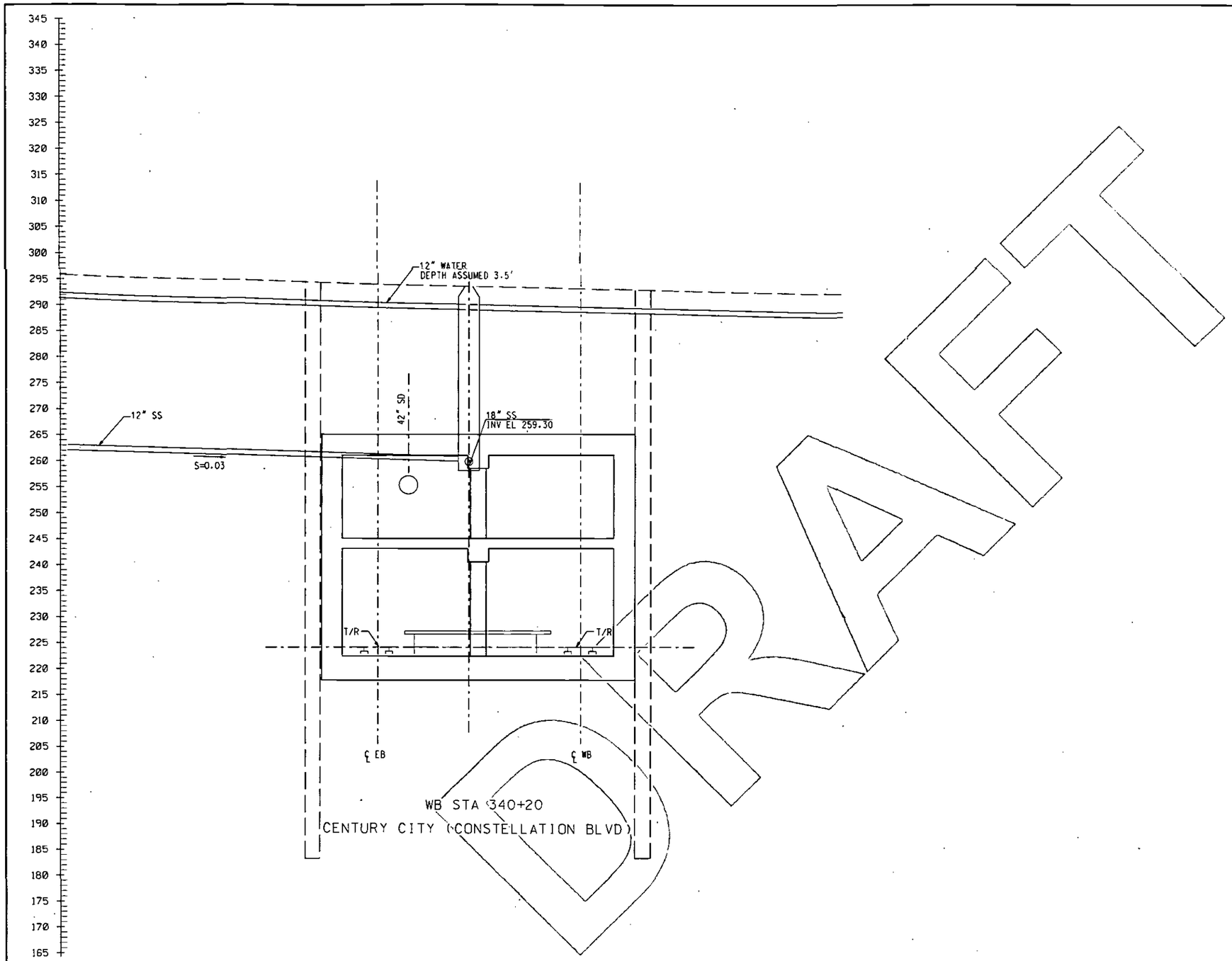
REV
SCALE 1" = 10'
SHEET NO



DRAFT

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

Metro
LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

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PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TWIN BORE TUNNEL (OPTION 2E)
CROSS SECTIONS
CENTURY CITY (CONSTELLATION BLVD)
ALT. TUNNELING METHODS STUDY

CONTRACT NO
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SCALE 1"=10'
SHEET NO

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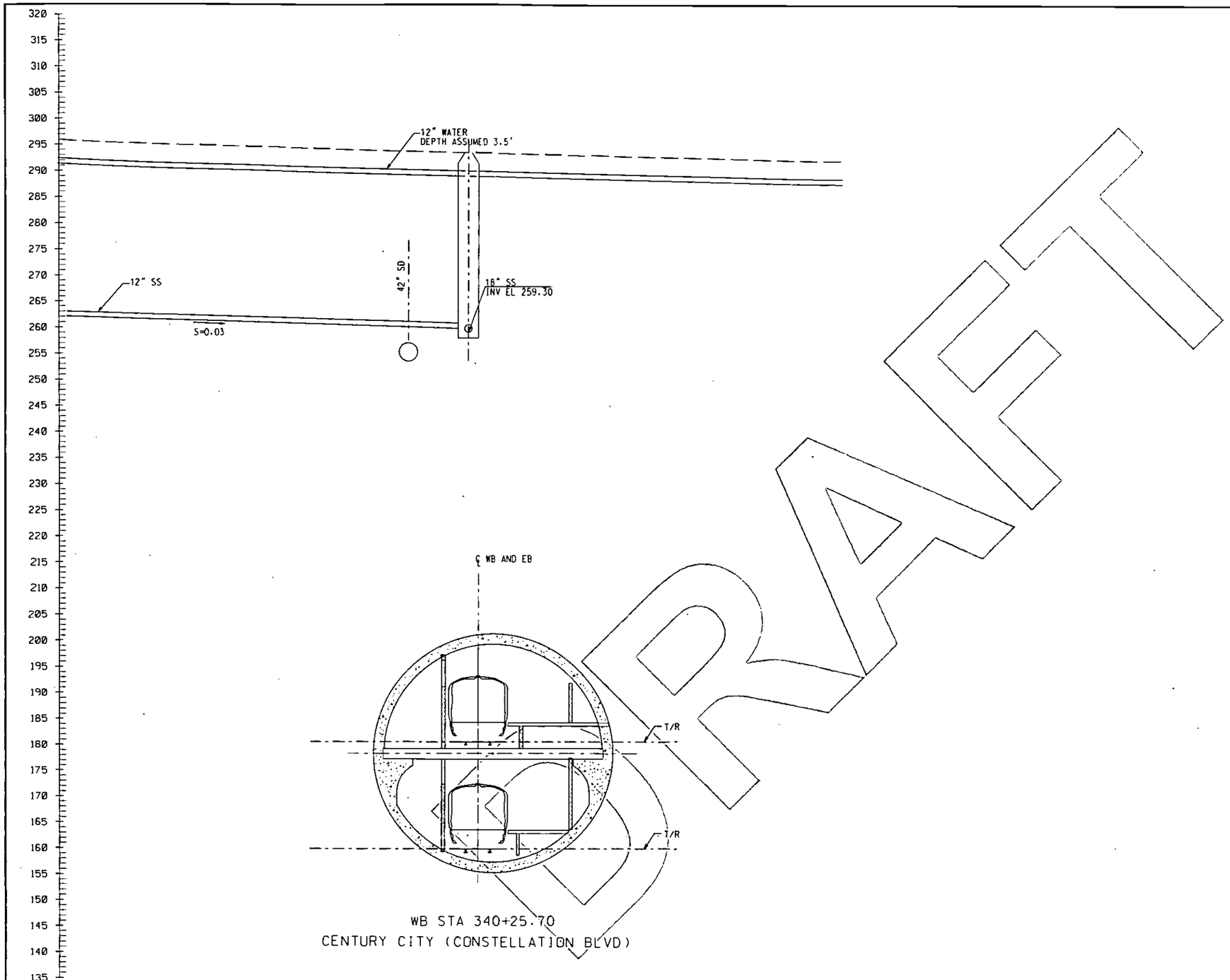

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REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
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IN CHARGE
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LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

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WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE TUNNEL
CROSS SECTIONS
CENTURY CITY (CONSTELLATION BLVD)
ALT. TUNNELING METHODS STUDY

CONTRACT NO
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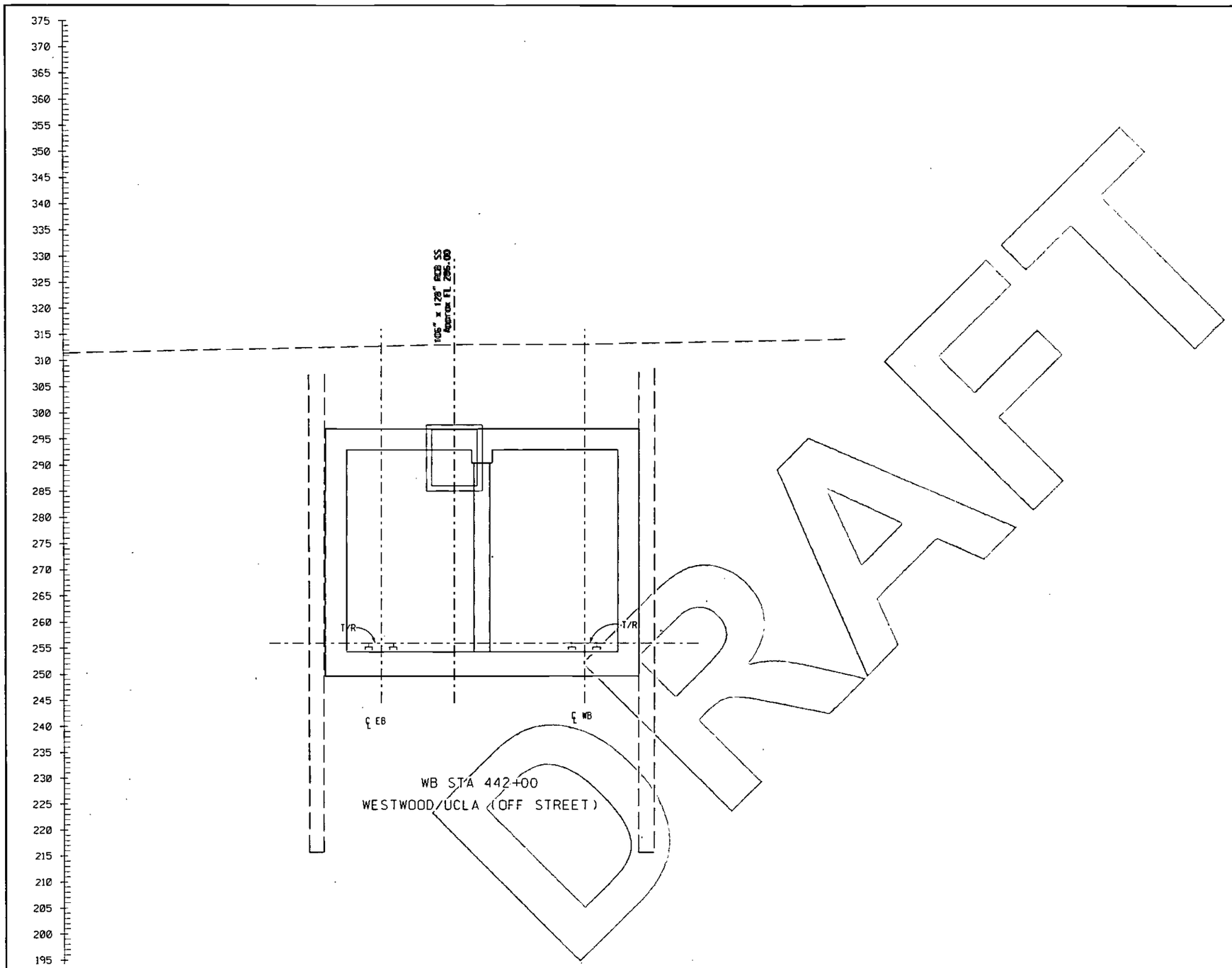
REV
SCALE 1"=10'
SHEET NO



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DESIGNED BY
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CHECKED BY
IN CHARGE
DATE AUGUST 2010

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PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TWIN BORE TUNNEL (OPTION 2E)
CROSS SECTIONS
WESTWOOD/UCLA (OFF STREET) STATION
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO TBT-CX-009
REV
SCALE 1"=10'
SHEET NO

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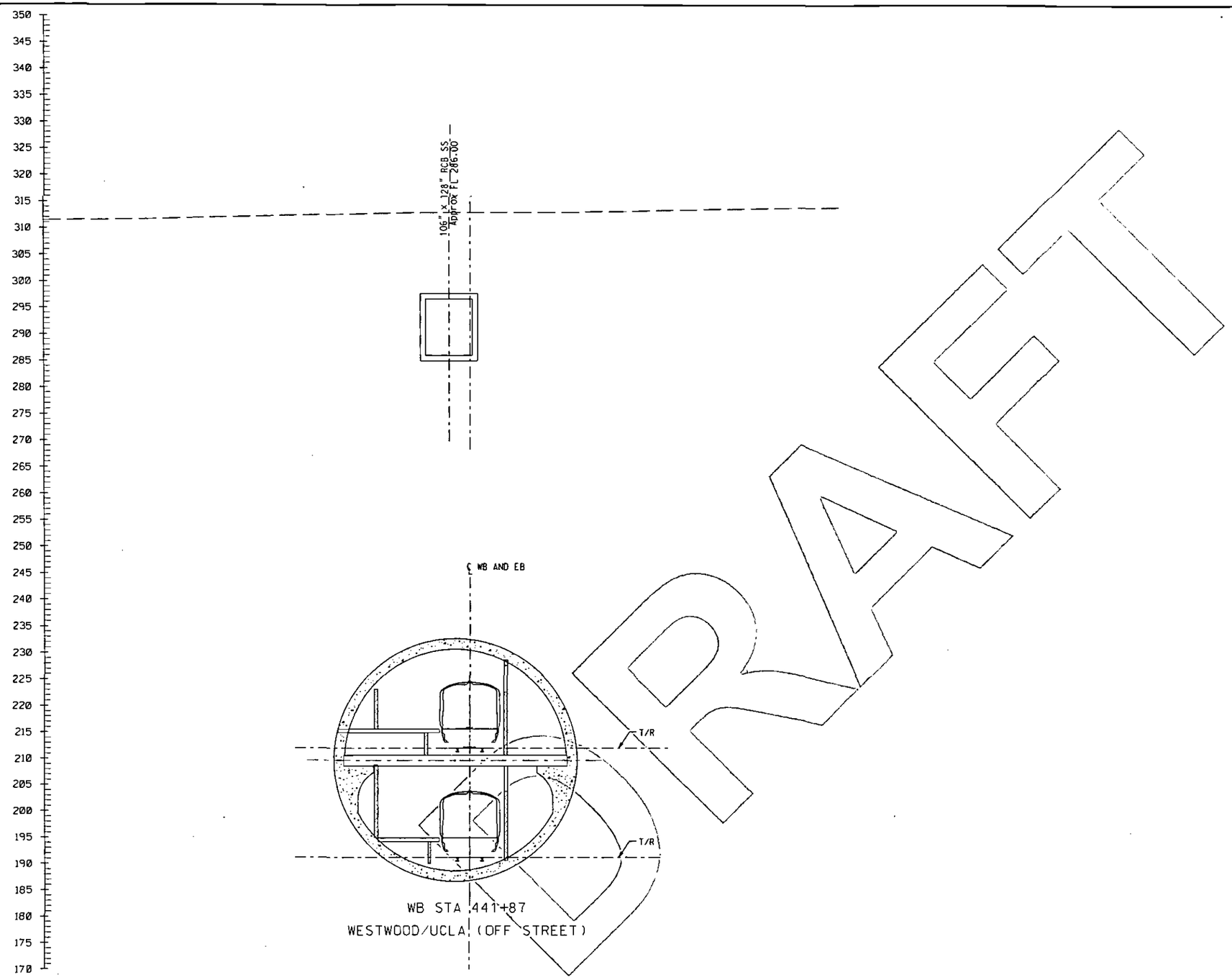

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DESIGNED BY
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WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE TUNNEL
CROSS SECTIONS
WESTWOOD/UCLA (OFF STREET) STATION
ALT. TUNNELING METHODS STUDY

CONTRACT NO
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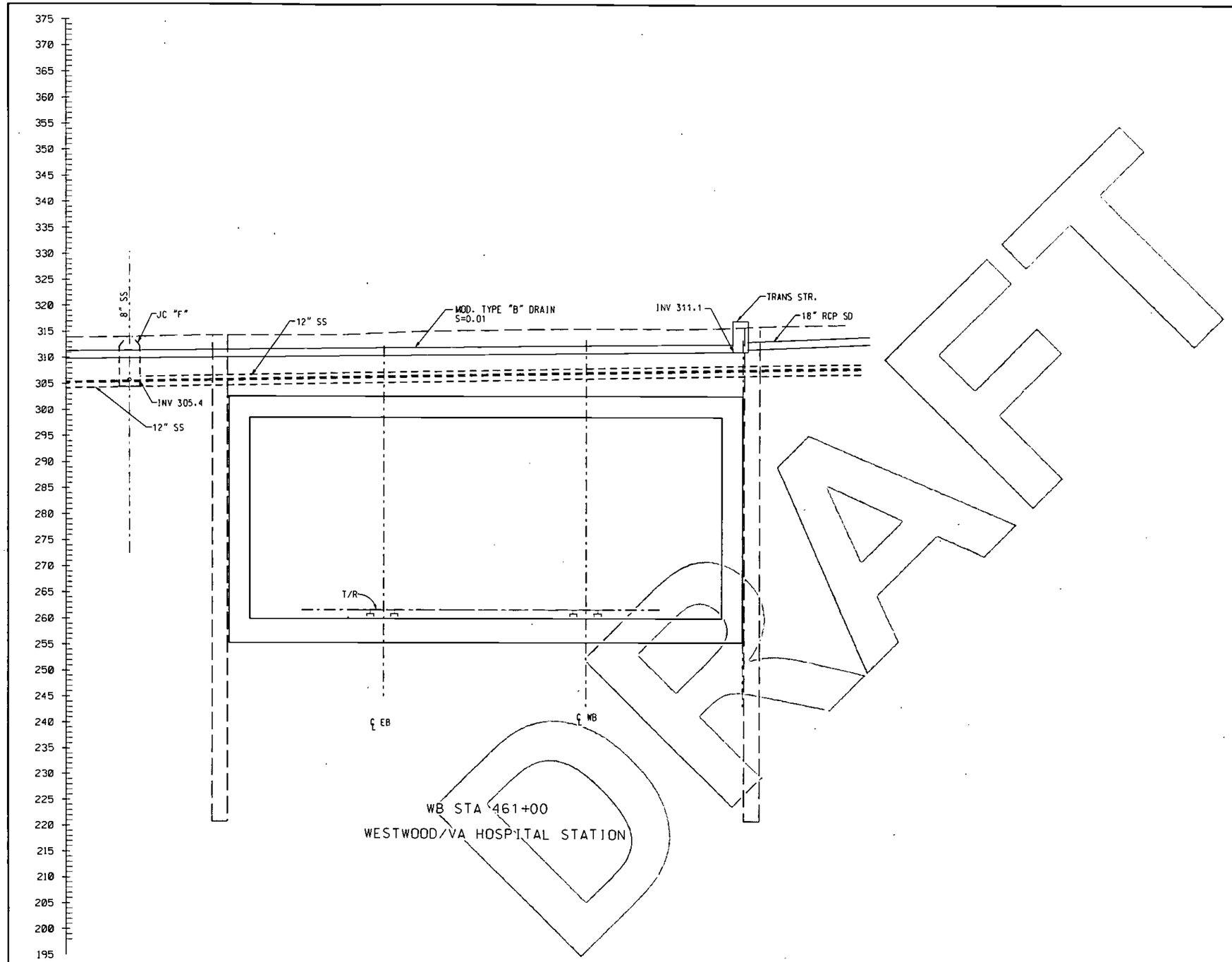
SCALE 1"=10'
SHEET NO



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DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

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PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TWIN BORE TUNNEL (OPTION 2E)
CROSS SECTIONS
WESTWOOD/VA HOSPITAL STATION
ALT. TUNNELING METHODS STUDY

CONTRACT NO
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SCALE 1"=10'
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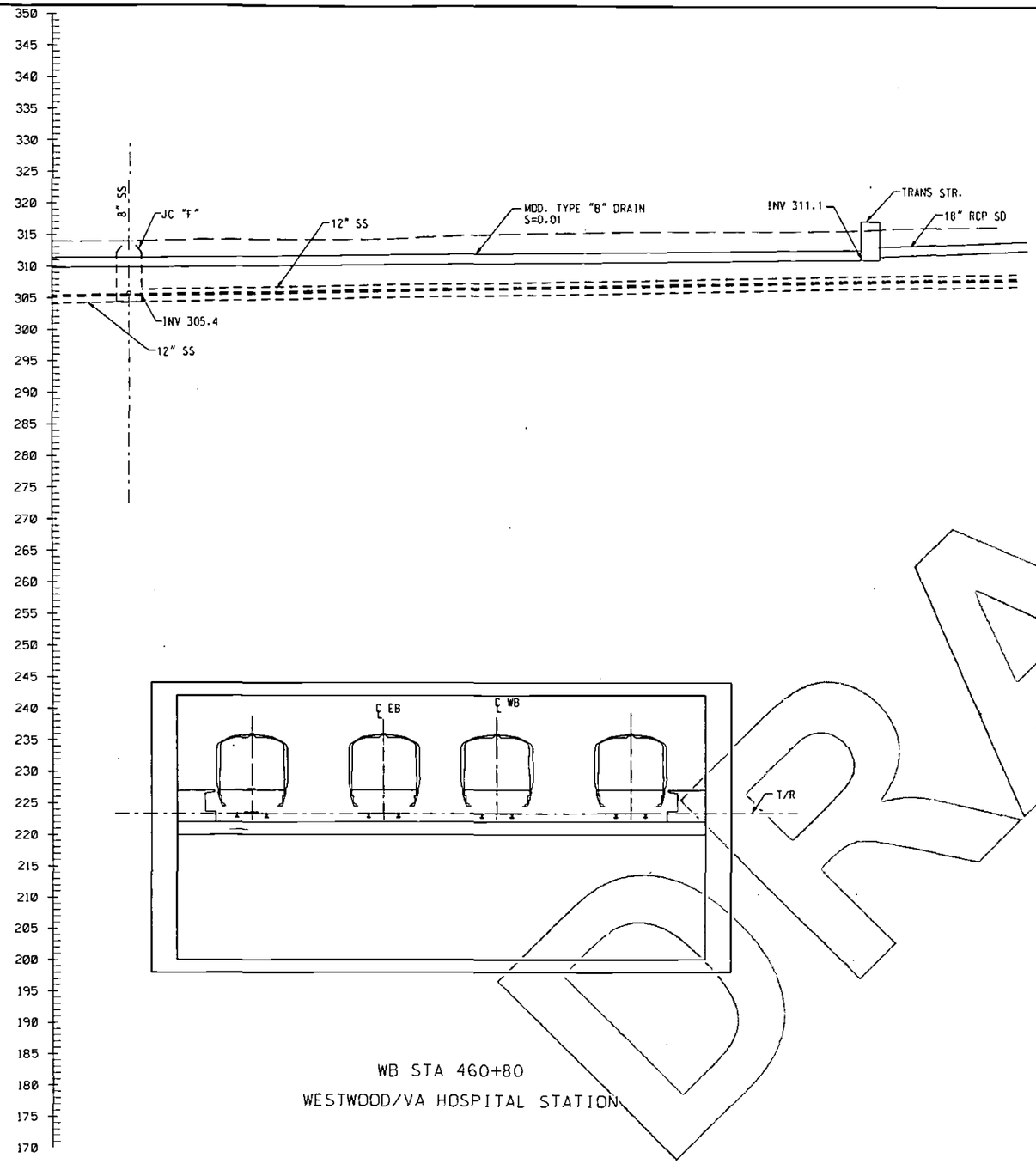

WB STA 460+80

WESTWOOD/VA HOSPITAL STATION

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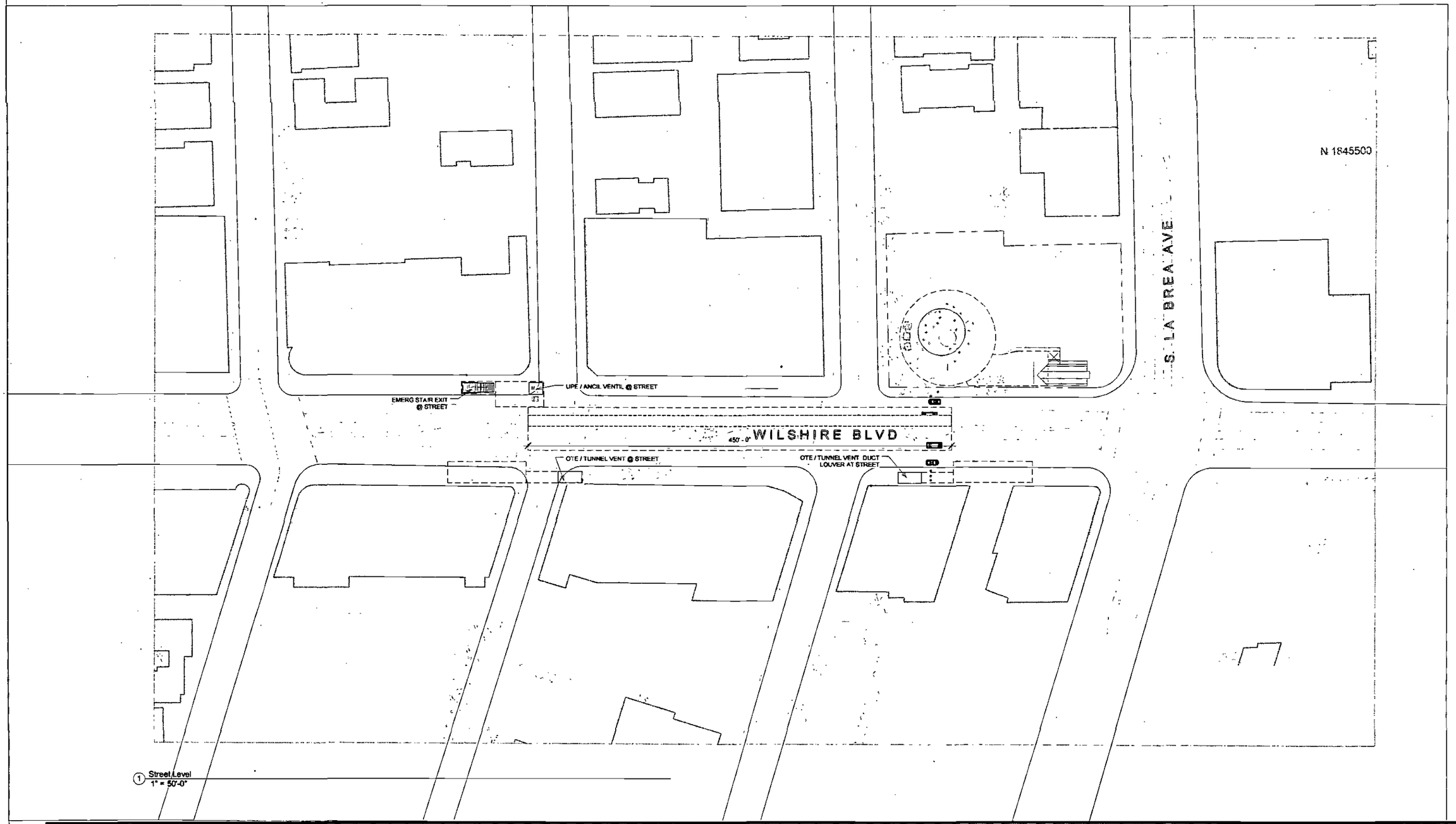
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
SINGLE BORE TUNNEL
CROSS SECTIONS
WESTWOOD/VA HOSPITAL STATION
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO SBT-CX-010 REV
SCALE 1"=10'
SHEET NO



Designer	
Author	
Checker	
Designer	
Date	08/30/2010

Metro

LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

WESTSIDE SUBWAY EXTENSION
SINGLE BORE, TUNNEL BY
STREET LEVEL WISHIRE @LaBrea

Drawing Number A101

Scale 1" = 50'-0"

T:\27940A-WestsideExtensionACE\CADD\work\Revit\StationModels\SingleBorePrototype\SingleBore-42ID END LOADED-tunnel by.rvt

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Department Legend

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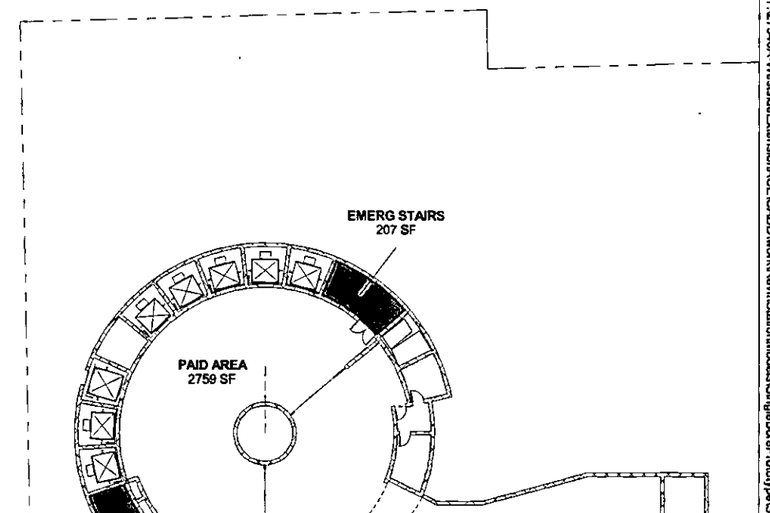
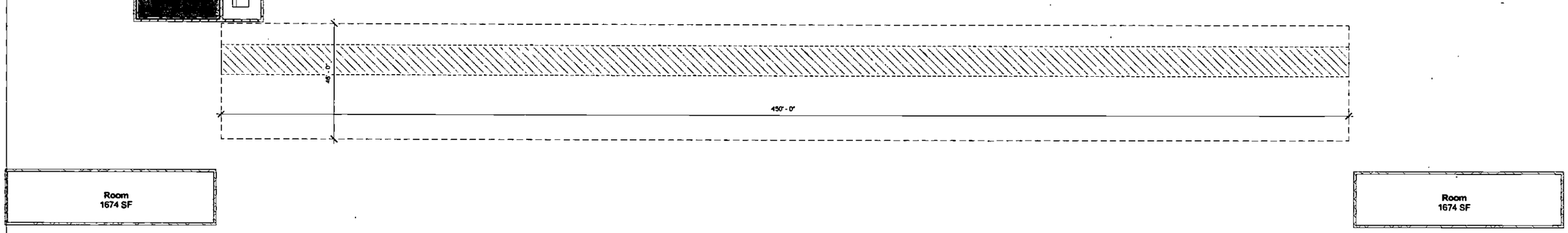
- EGRESS
- PAID
- UNPAID PUBLIC





1 Concourse
1" = 20'-0"

Designer	
Author	
Checker	
Designer	
Date	08/30/2010

Metro

LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

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WESTSIDE SUBWAY EXTENSION SINGLE BORE, TUNNEL BY

CONCOURSE LEVEL

Drawing Number A102

Scale 1" = 20'-0"

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Department Legend

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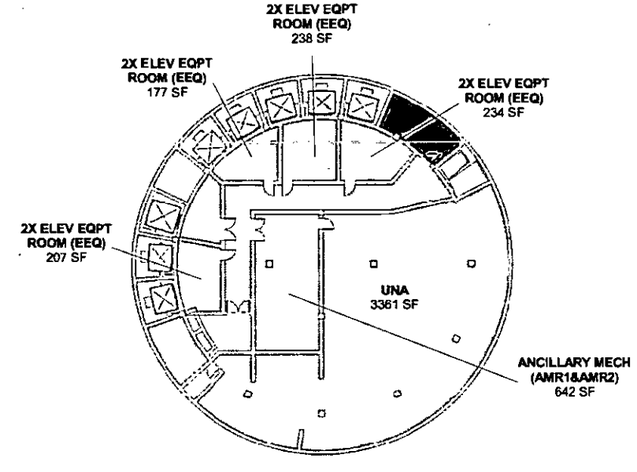
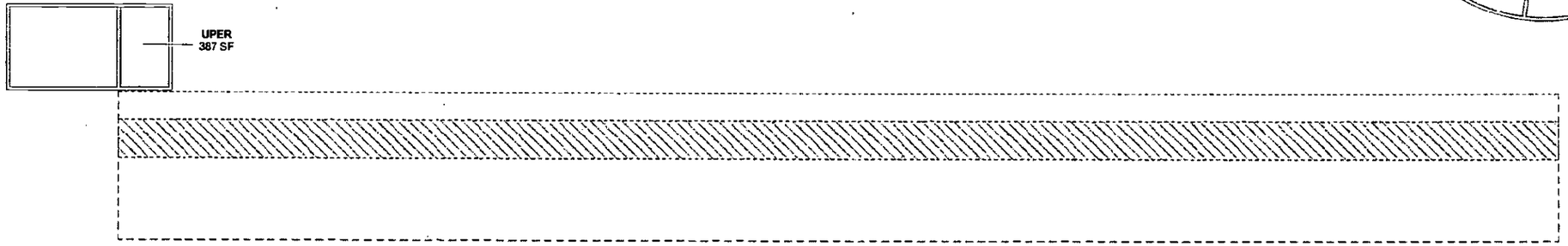
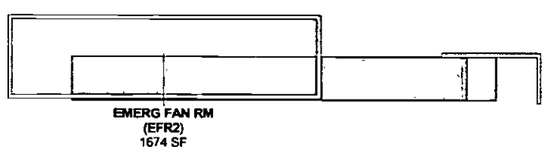
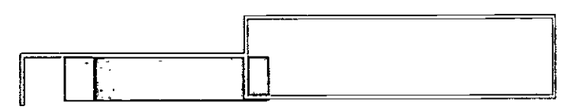
- EGRESS









1 UG1 Ancillary
1" = 20'-0"

Designer	
Author	
Checker	
Designer	
Date	08/30/2010

Metro

LOS ANGELES COUNTY METROPOLITAN
TRANSPORTATION AUTHORITY

PB

WESTSIDE SUBWAY EXTENSION
SINGLE BORE, TUNNEL BY
ANCILLARY UG01

Drawing Number A103

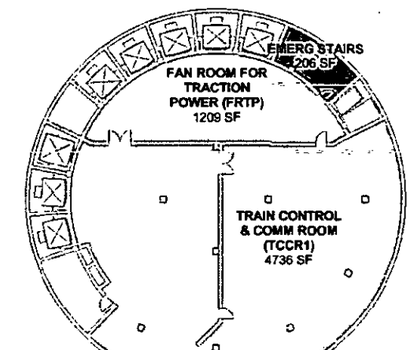
Scale 1" = 20'-0"

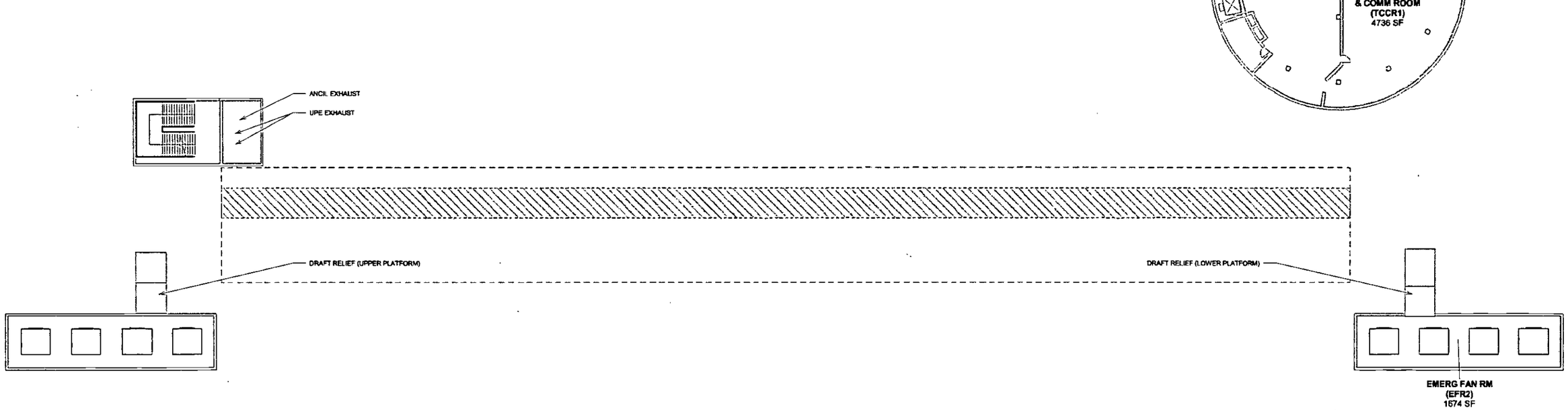
T:\27940A-WestsideExtensionA\CEVCADD\work\Revit\StationModels\SingleBorePrototype\SingleBore-42ID END LOADED-tunnel by.rvt

8/31/2010 2:19:57 PM

Department Legend

- ANCILLARY
- EGRESS





1 UG2 Ancillary
1" = 20'-0"

Designer	
Author	
Checker	
Designer	
Date	08/30/2010

Metro

LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

WESTSIDE SUBWAY EXTENSION
SINGLE BORE, TUNNEL BY
ANCILLARY UG02

Drawing Number A104

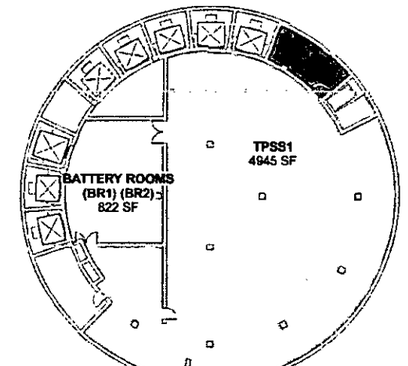
Scale 1" = 20'-0"

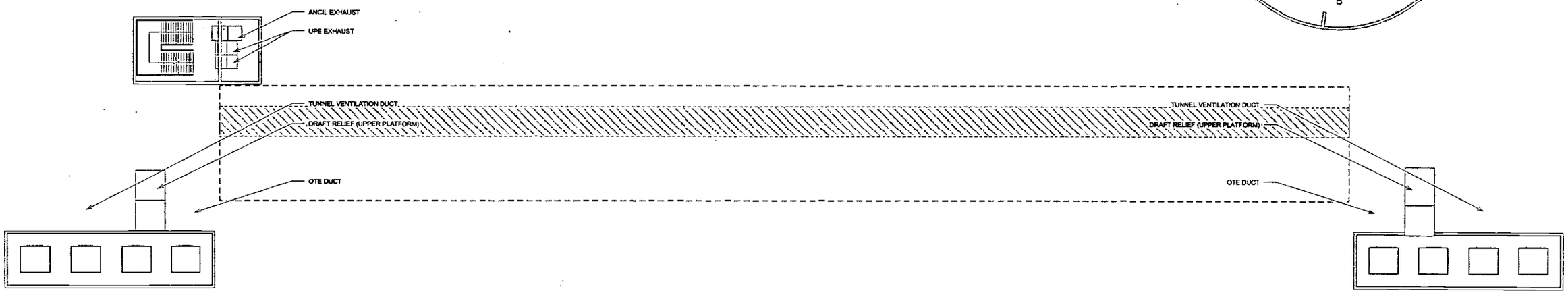
T:\27940A-WestsideExtensionACE\CADD\work\Revit\StationModels\SingleBorePrototype\SingleBore-42ID END LOADED-tunnel by.rvt

8/31/2010 2:20:01 PM

Department Legend

- ANCILLARY
- EGRESS





1 UG3 Ancillary
1" = 20'-0"

Designer	
Author	
Checker	
Designer	
Date	08/30/2010

Metro

LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

PB

WESTSIDE SUBWAY EXTENSION
SINGLE BORE, TUNNEL BY
ANCILLARY UG03

Drawing Number A105

Scale 1" = 20'-0"

T:\27940A-WestsideExtensionACE\CADD\work\Revit\StationModels\SingleBorePrototype\SingleBore-42ID END LOADED-tunnel by.rvt

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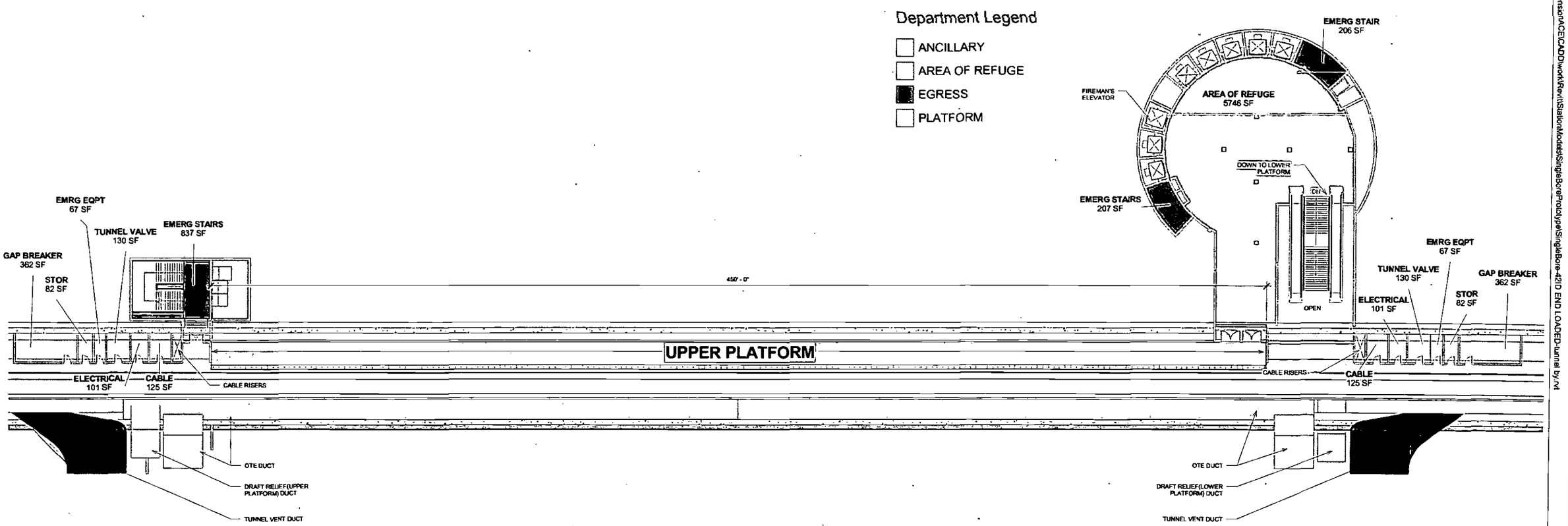

1 TO Upper Platform
1" = 20'-0"

Designer	
Author	
Checker	
Designer	
Date	08/30/2010

Metro

LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

PB

WESTSIDE SUBWAY EXTENSION
SINGLE BORE, TUNNEL BY
UPPER PLATFORM

Drawing Number A106
Scale 1" = 20'-0"

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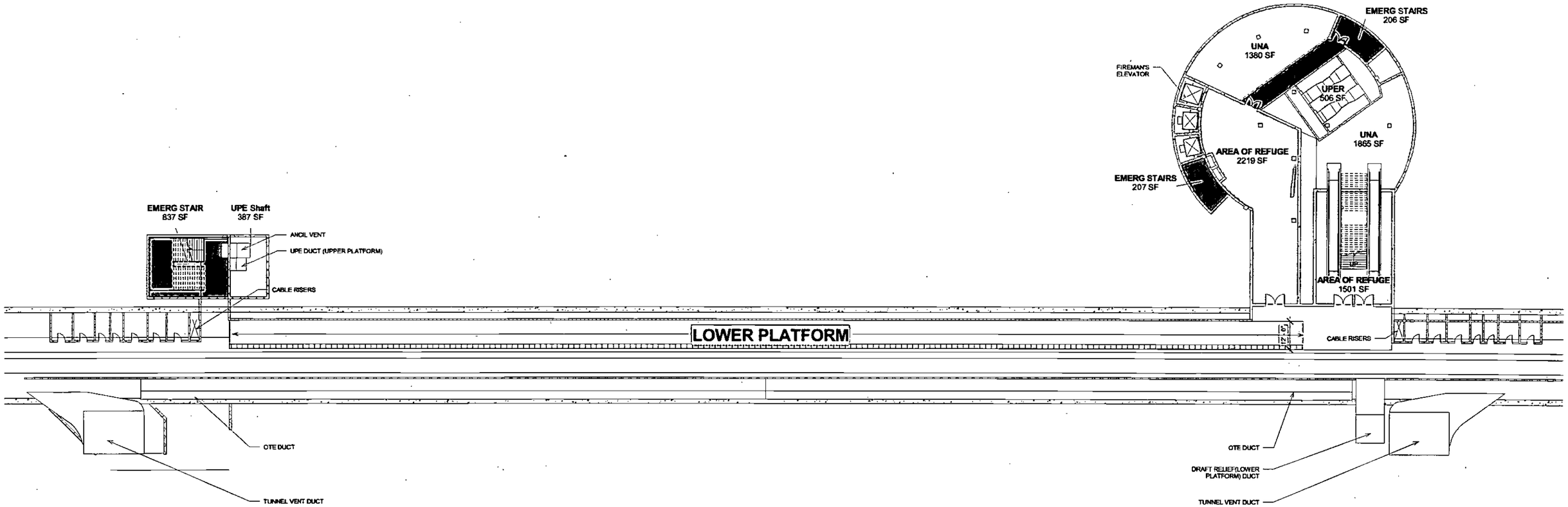


1 TO Lower Platform
1" = 20'-0"

Department Legend

- ANCILLARY
- AREA OF REFUGE
- EGRESS

Designer	
Author	
Checker	
Designer	
Date	08/30/2010

Metro

LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

PB

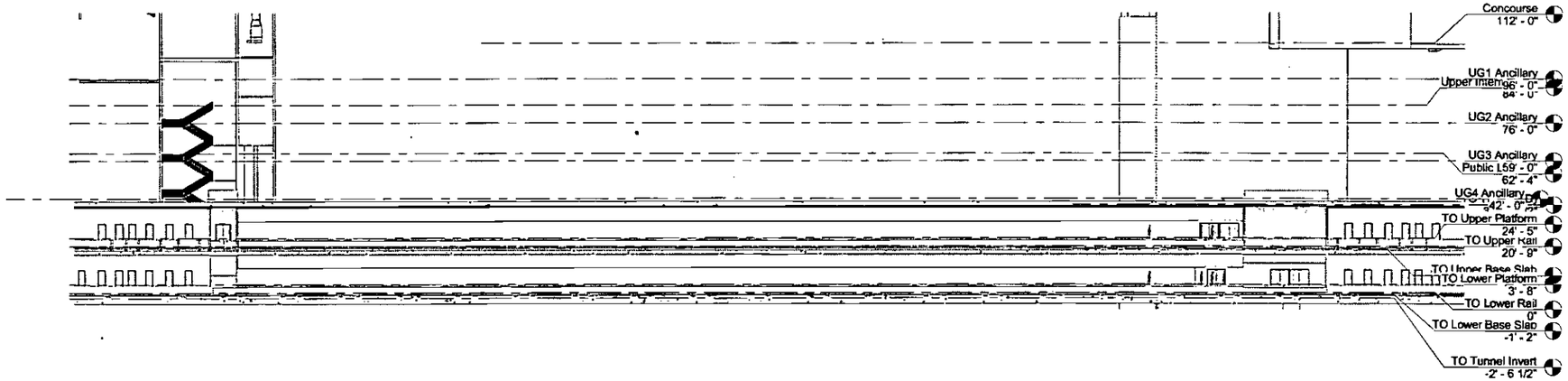
WESTSIDE SUBWAY EXTENSION
SINGLE BORE, TUNNEL BY
LOWER PLATFORM

Drawing Number A107

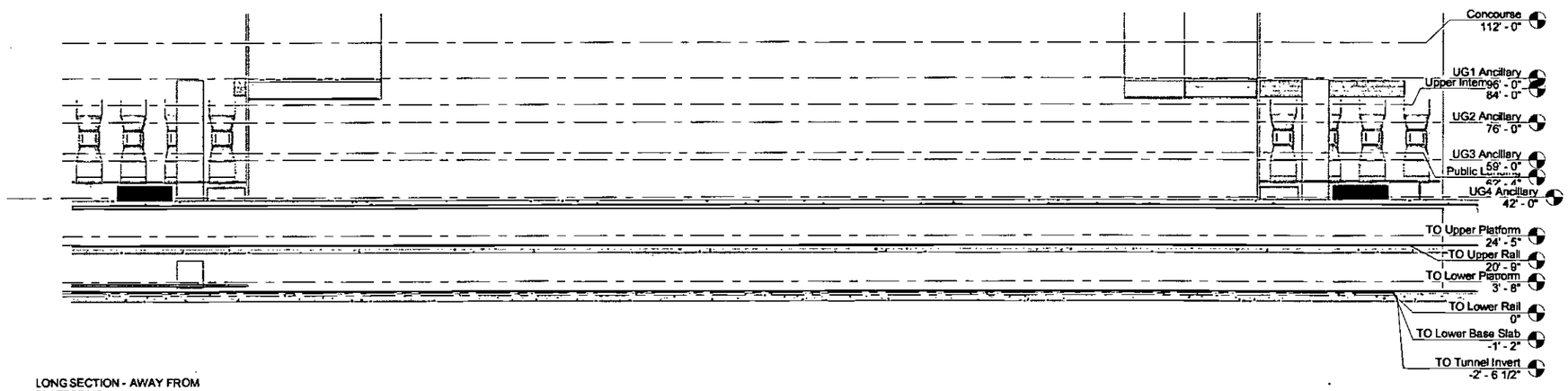
Scale 1" = 20'-0"

T:\27940A-WestsideExtensionACE\CADD\work\Rev\IlStation\Models\SingleBore-Prototype\SingleBore-42ID END LOADED-tunnel by.rvt

8/31/2010 2:20:13 PM



1 LONG SECTION - TOWARD PLATFORMS
1" = 30'-0"



2 LONG SECTION - AWAY FROM PLATFORMS
1" = 30'-0"

Designer	
Author	
Checker	
Designer	
Date	08/30/2010

Metro

LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

PB

WESTSIDE SUBWAY EXTENSION SINGLE BORE, TUNNEL BY

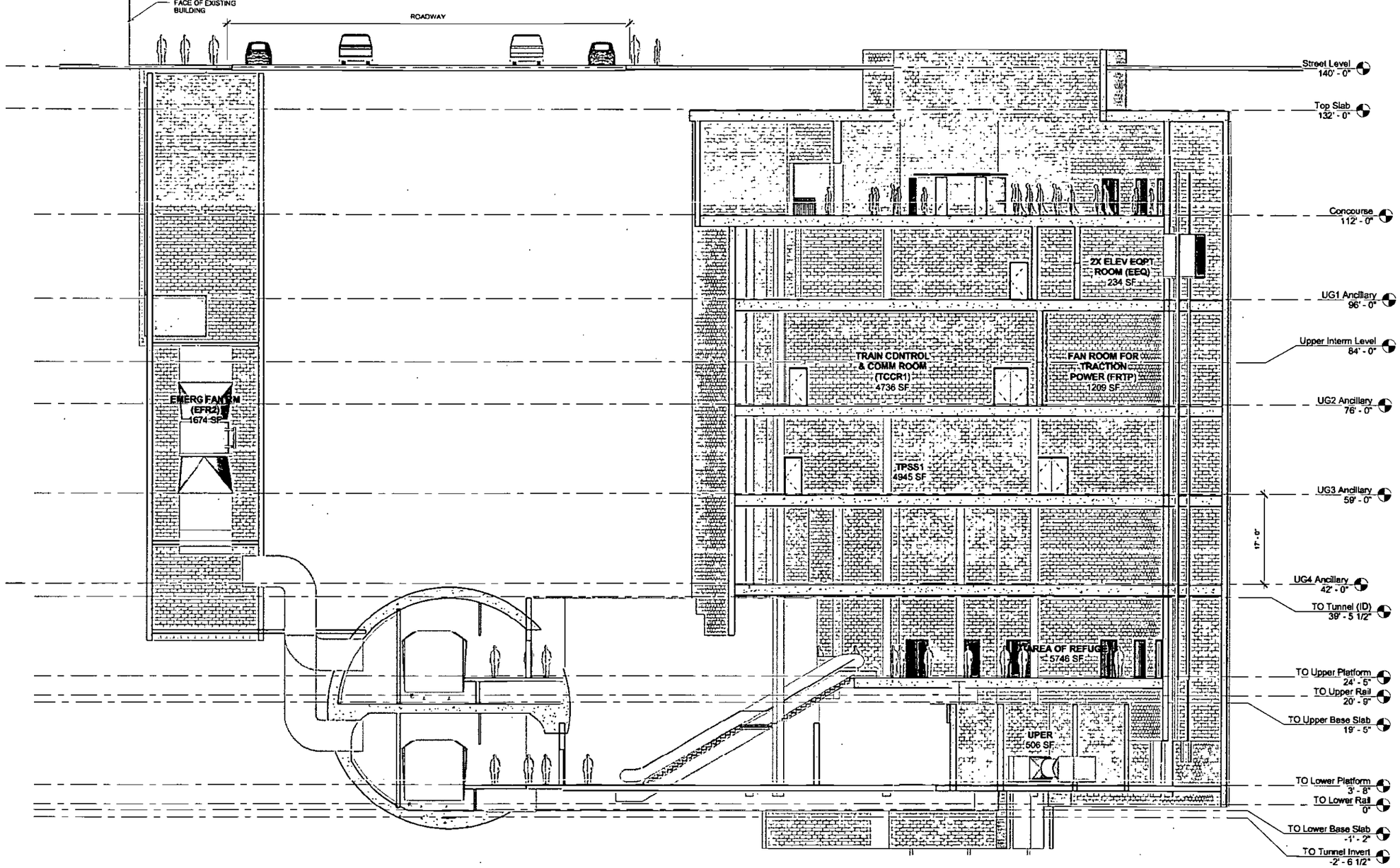
LONG SECTIONS TOWARD PLATFORMS AND AWAY FROM PLATFORMS

Drawing Number A108

Scale 1" = 30'-0"

T:\27940A-WestsideExtensionACE\CADD\work\Revit\Station\Models\SingleBore\Prototype\SingleBore-42ID END LOADED-tunnel by.rvt

8/31/2010 2:20:18 PM



1 Cross Section @ Entry
1" = 10'-0"

Designer	
Author	
Checker	
Designer	
Date	08/30/2010

Metro

LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

PB

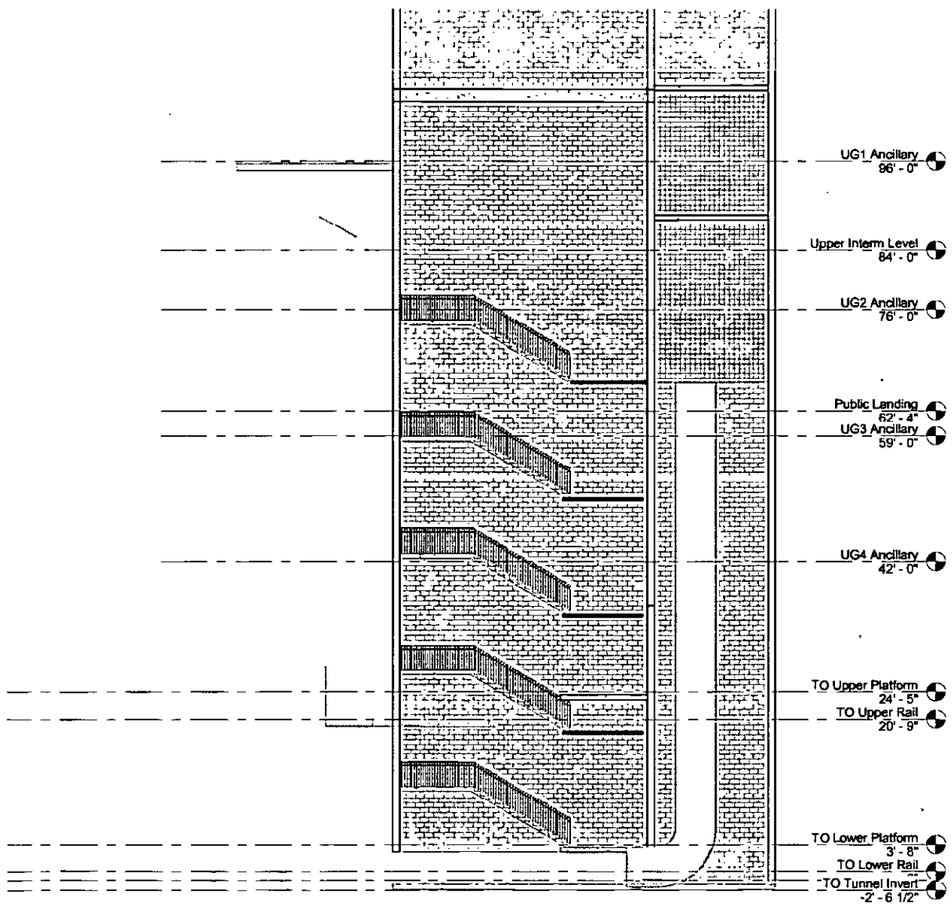
WESTSIDE SUBWAY EXTENSION
SINGLE BORE, TUNNEL BY
CROSS SECTION @ ENTRY

Drawing Number A109

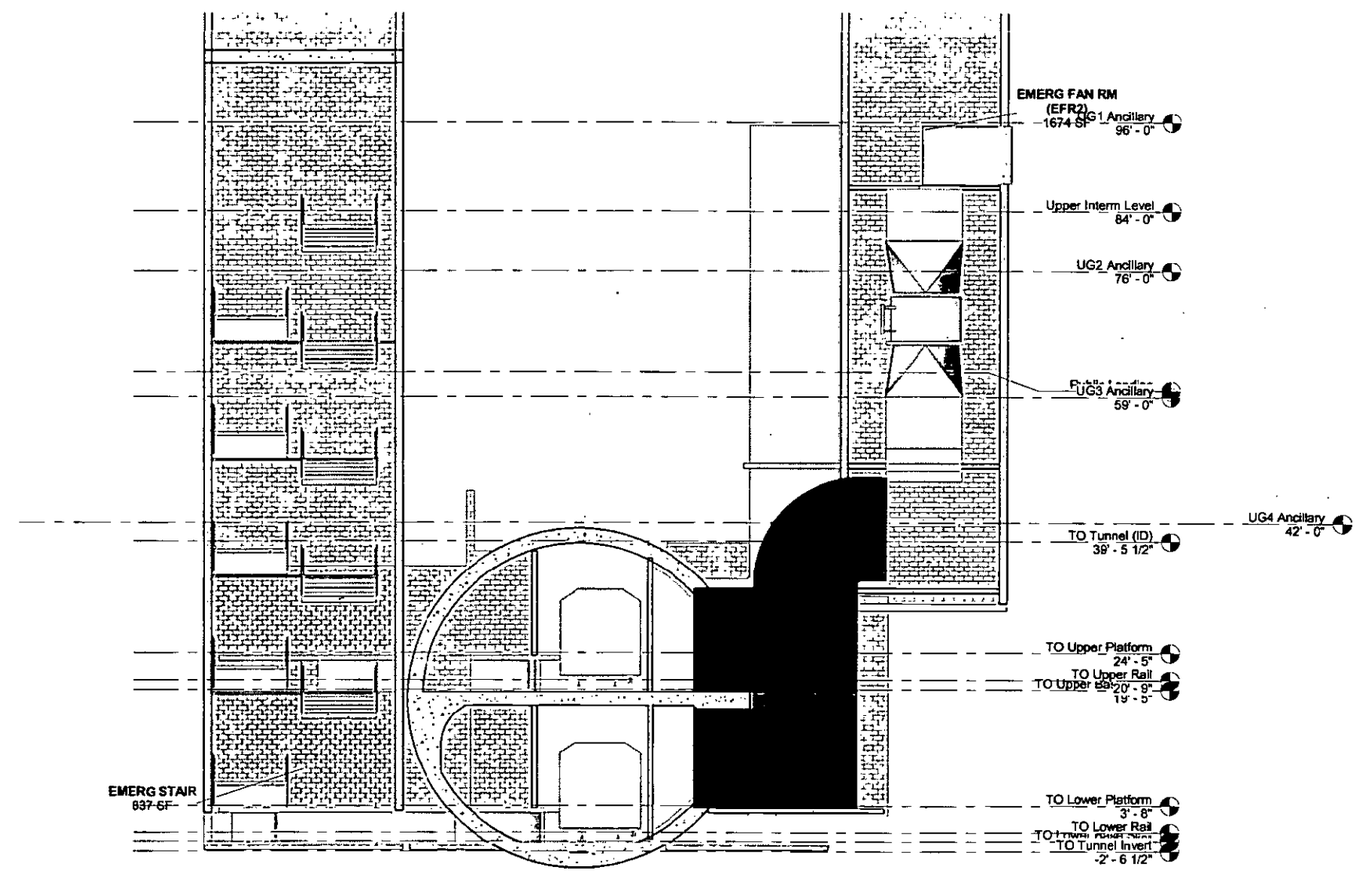
Scale 1" = 10'-0"

8/31/2010 2:20:24 PM

1:\27940A-WestsideExtensionACE\CADD\work\Revit\StationModels\SingleBorePrototype\SingleBore-42ID END LOADED-tunnel by.rvt



2 CROSS SECTION @ UPE AND STAIRS
1" = 10'-0"



1 CROSS SECTION @ STACKED SHAFTS
1" = 10'-0"

Designer	
Author	
Checker	
Designer	
Date	08/30/2010

Metro

LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

PB

WESTSIDE SUBWAY EXTENSION SINGLE BORE, TUNNEL BY

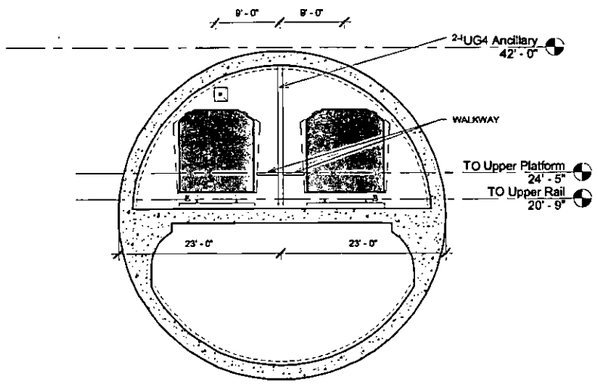
CROSS SECTIONS @ UPE AND STAIRS AND @ STACKED SHAFTS

Drawing Number A110

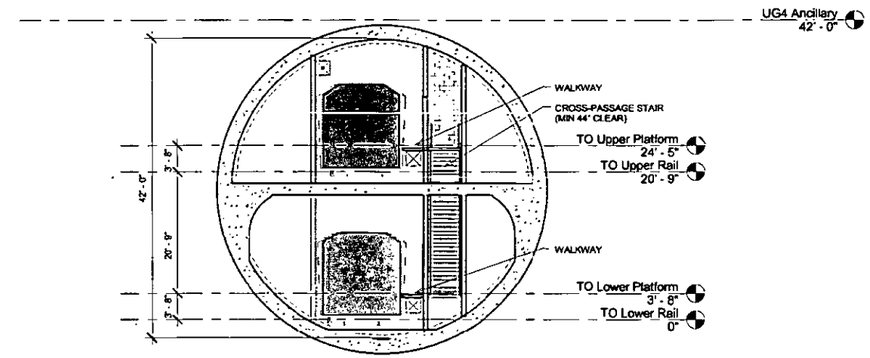
Scale 1" = 10'-0"

T:\27940A-WestsideExtensionACE\CADD\work\Revit\StationModels\SingleBorePrototype\SingleBore-42ID END LOADED-tunnel by.rvt

8/31/2010 2:20:30 PM

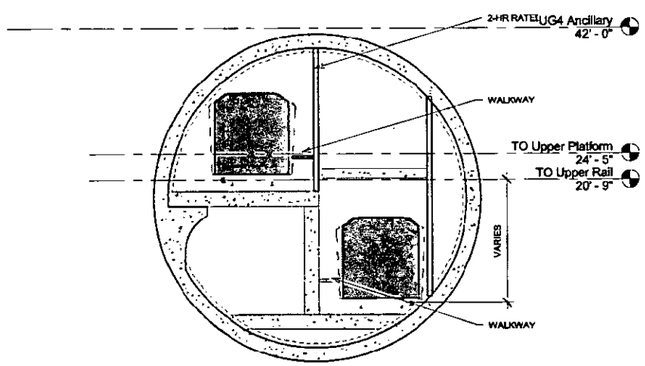


4 CROSS SECTION - @ CROSS PASSAGE, NEAR CROSSOVER
1" = 10'-0"

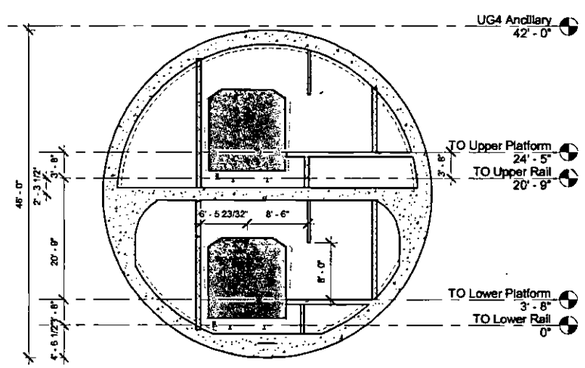


2 CROSS SECTION - STACKED IN TUNNEL
1" = 10'-0"

2' - 10 9/32"



3 CROSS SECTION - UNSTACKED / OFFSET IN TUNNEL
1" = 10'-0"



1 CROSS SECTION - IN STATION
1" = 10'-0"

Designer	
Author	
Checker	
Designer	
Date	06/30/2010

Metro

LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

PB

WESTSIDE SUBWAY EXTENSION SINGLE BORE, TUNNEL BY

TUNNEL CROSS SECTIONS

Drawing Number A111

Scale 1" = 10'-0"

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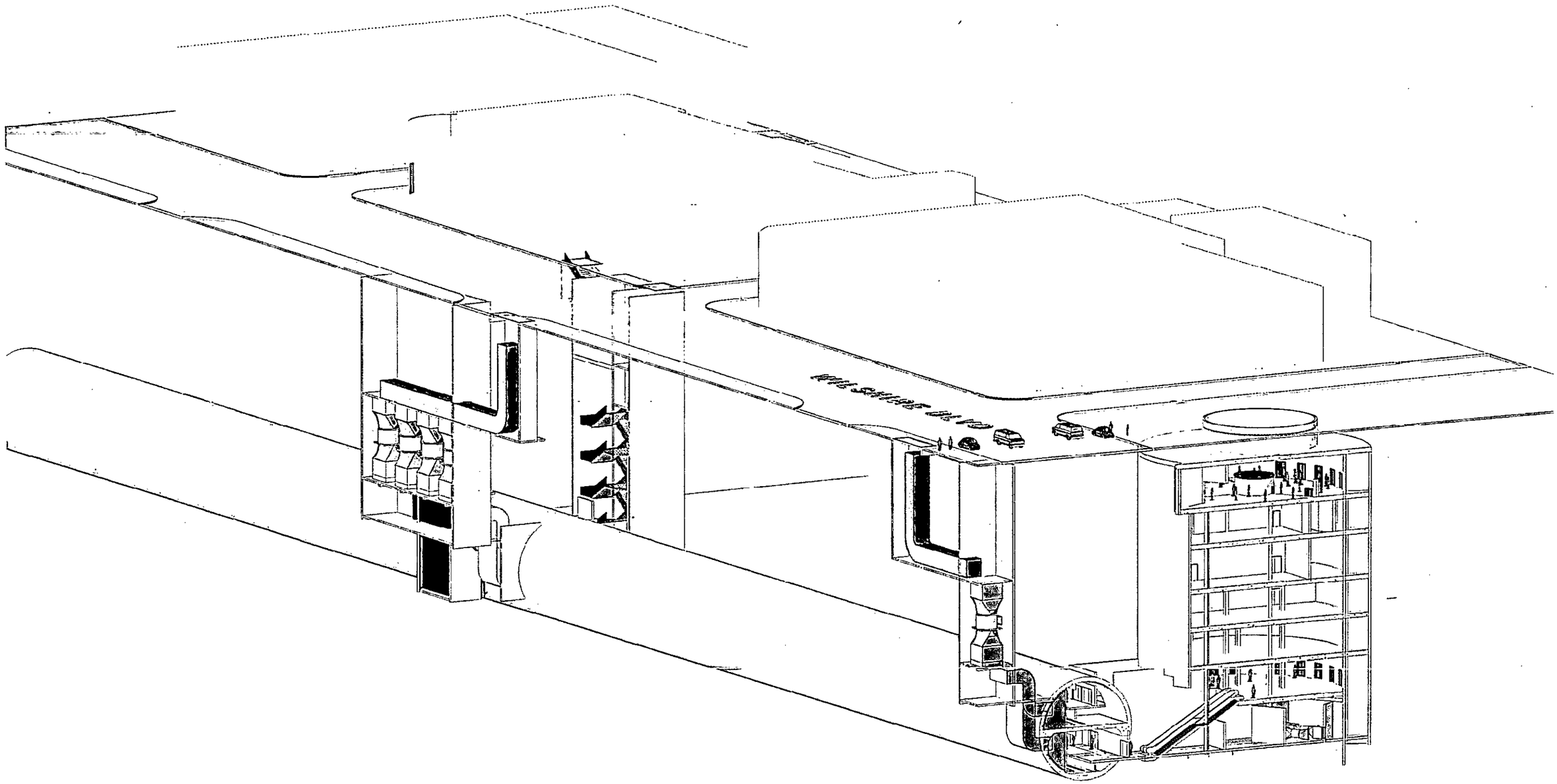
8/31/2010 2:20:35 PM



② 3D-Section Box

Designer	
Author	
Checker	
Designer	
Date	08/30/2010

Metro

LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

PB

WESTSIDE SUBWAY EXTENSION SINGLE BORE, TUNNEL BY

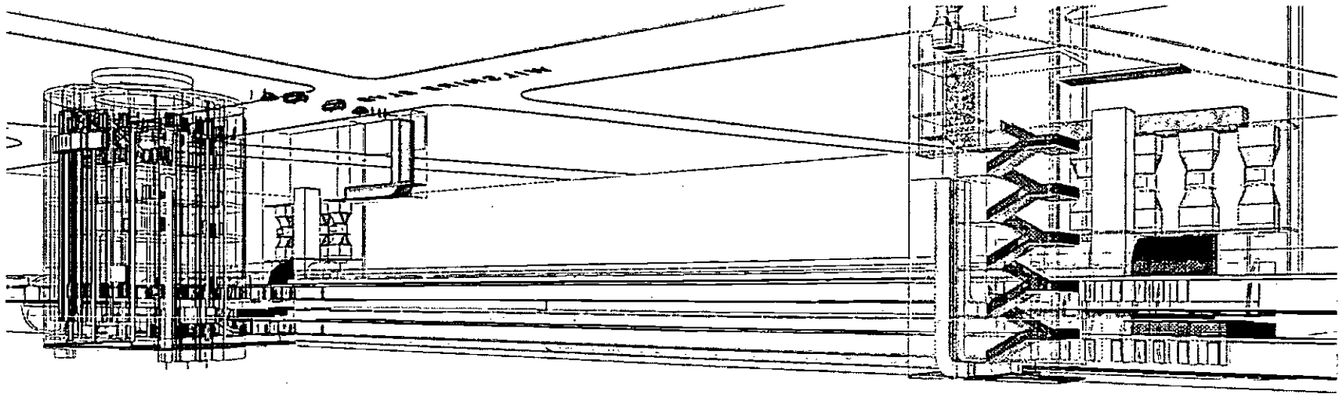
3D SECTION BOX VIEW

Drawing Number A112

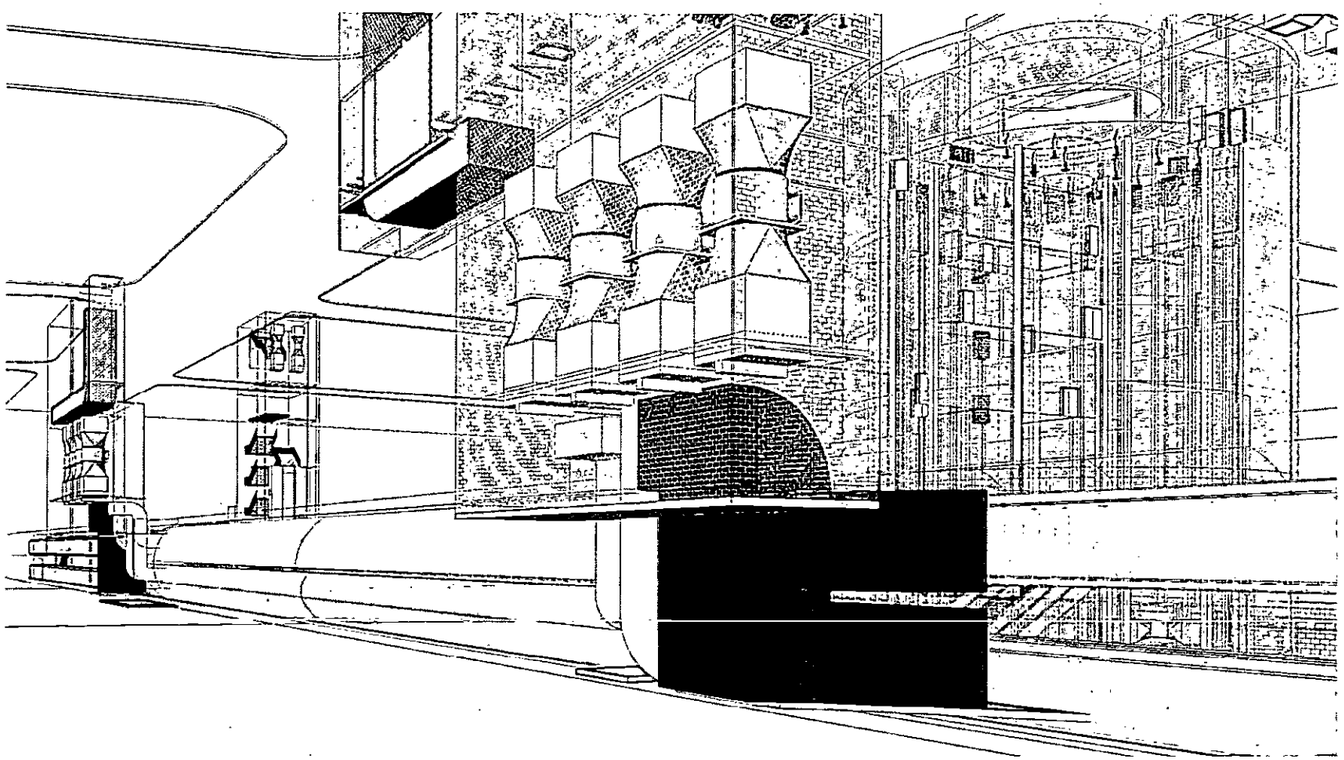
Scale

T:\27940A-WestsideExtensionACE\CADD\work\Revit\StationModels\SingleBorePrototype\SingleBore-42ID END LOADED-tunnel by.rvt

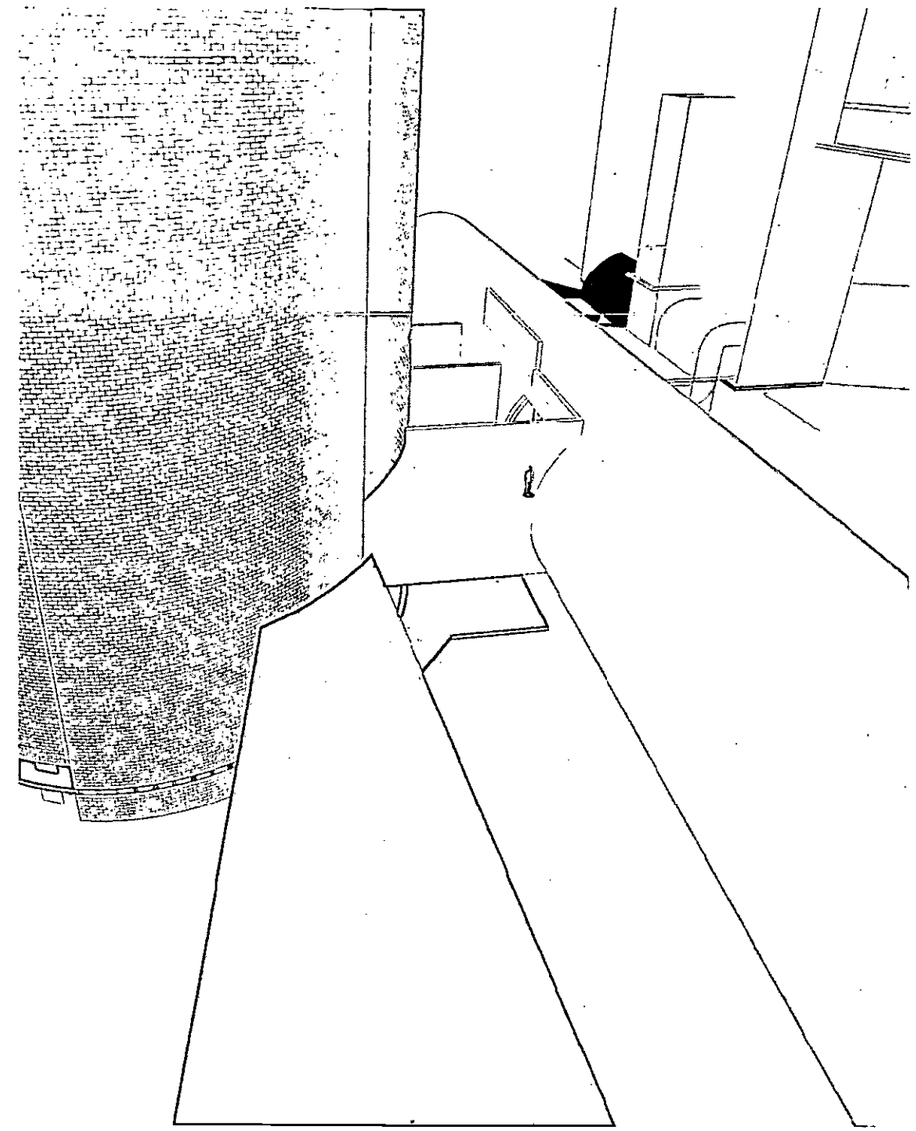
8/31/2010 2:21:04 PM



2 UG view - UPE side



3 UG view - walls transp



1 switchback

Designer	
Author	
Checker	
Designer	
Date	08/30/2010

Metro

LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

PB

WESTSIDE SUBWAY EXTENSION
SINGLE BORE, TUNNEL BY
3D VIEWS

Drawing Number A113

Scale

T:\27940A-WestsideExtensionACE\CADD\work\Revit\StationModels\SingleBorePrototype\SingleBore-42ID END LOADED-tunnel by.rvt

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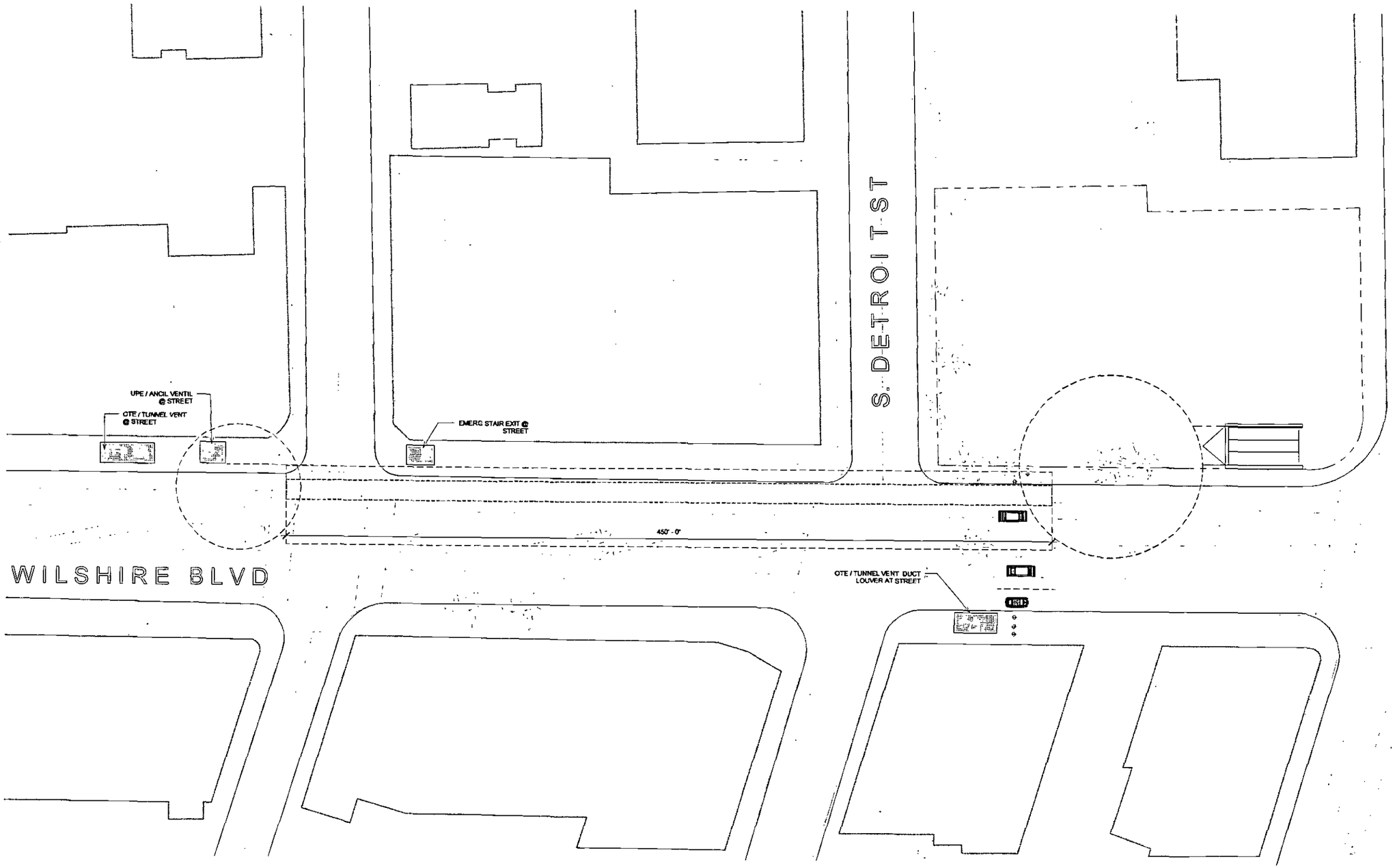


1 Street Level
1" = 30'-0"

Designer	
Author	
Checker	
Designer	
Date	08/31/2010

Metro

LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

WESTSIDE SUBWAY EXTENSION SINGLE BORE, TUNNEL THROUGH

STREET LEVEL AT WILSHIRE @LaBrea

Drawing Number A201

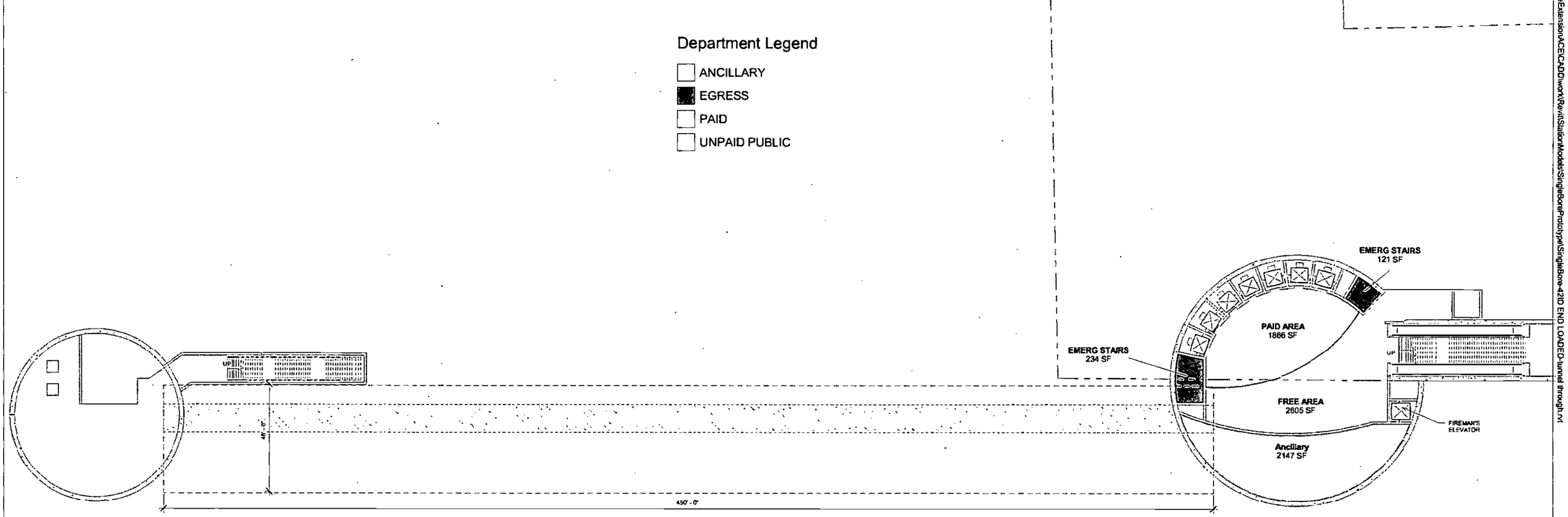
Scale 1" = 30'-0"

8/31/2010 4:10:10 PM

r:\27940A-WestsideExtensionACE\CAD\Work\Rov\ttStationModels\SingleBore\Prototype\SingleBore-42ID END LOADED-tunnel through.rvt

Department Legend

- ANCILLARY
- EGRESS
- PAID
- UNPAID PUBLIC



1 Concourse
1" = 20'-0"

Designer	
Author	
Checker	
Designer	
Date	08/31/2010

Metro

LOS ANGELES COUNTY METROPOLITAN
TRANSPORTATION AUTHORITY

PB

WESTSIDE SUBWAY EXTENSION
SINGLE BORE, TUNNEL THROUGH

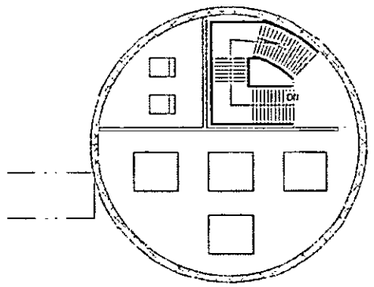
CONCOURSE

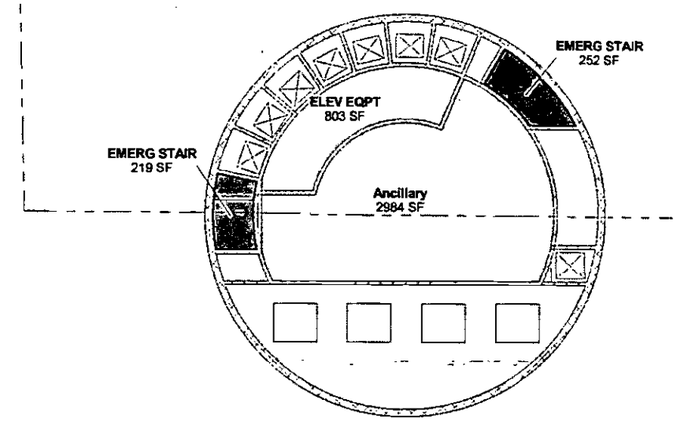
Drawing Number A202

Scale 1" = 20'-0"

T:\2940A-WestsideExtensionACE\CADD\work\Revit\StationModels\SingleBore\Prototype\SingleBore-42ID END LOADED-tunnel through.rvt

8/31/2010 4:10:12 PM





1 UG1 Ancillary
1" = 20'-0"

Designer	
Author	
Checker	
Designer	
Date	08/31/2010

Metro

LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

PB

WESTSIDE SUBWAY EXTENSION
SINGLE BORE, TUNNEL THROUGH

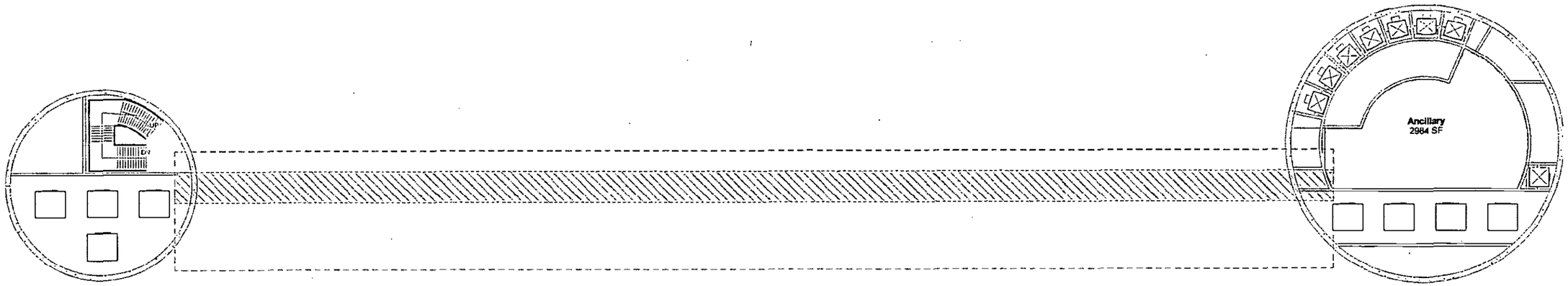
ANCILLARY UG01

Drawing Number A203

Scale 1" = 20'-0"

T:\27940A-WestsideExtensionACEVCADDwork\Revit\StationModels\SingleBorePrototype\SingleBore-4210 END LOADED-tunnel through.rvt

8/31/2010 4:03:01 PM



1 UG2 Ancillary
1" = 20'-0"

Designer	
Author	
Checker	
Designer	
Date	08/31/2010

Metro

LOS ANGELES COUNTY METROPOLITAN
TRANSPORTATION AUTHORITY

PB

WESTSIDE SUBWAY EXTENSION
SINGLE BORE, TUNNEL THROUGH

ANCILLARY UG02

Drawing Number A204

Scale 1" = 20'-0"

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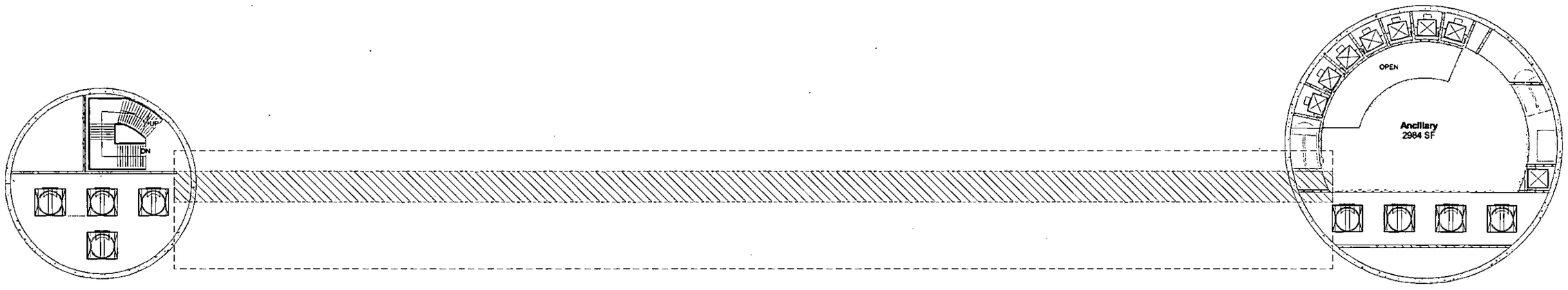

1 UG3 Ancillary
1" = 20'-0"

Designer	
Author	
Checker	
Designer	
Date	08/31/2010

Metro

LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

PB

WESTSIDE SUBWAY EXTENSION
SINGLE BORE, TUNNEL THROUGH

ANCILLARY UG03

Drawing Number A205

Scale 1" = 20'-0"

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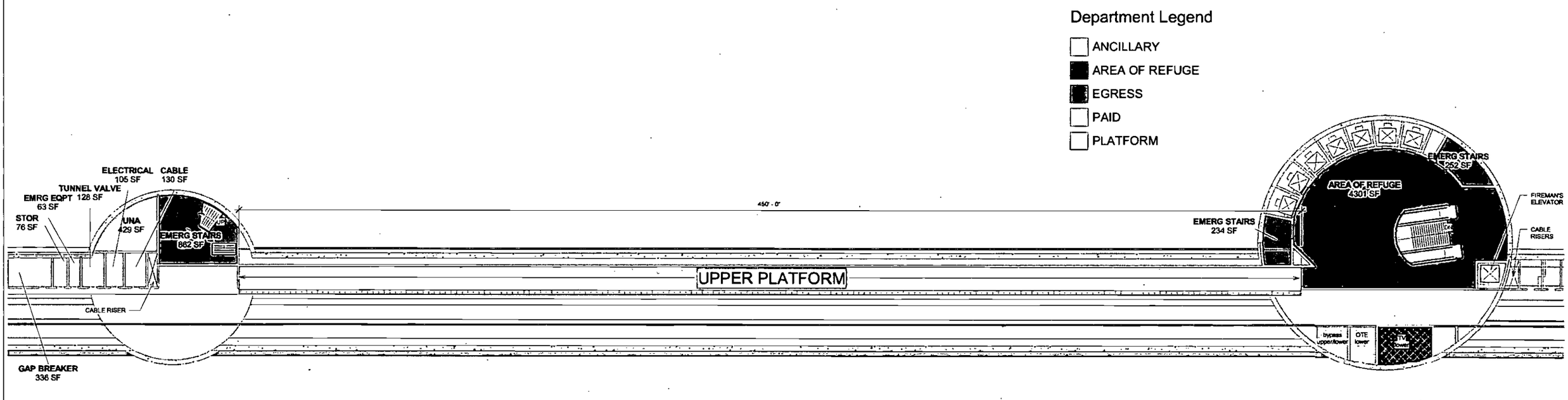
8/31/2010 4:03:21 PM



1 TO Upper Platform
1" = 20'-0"

Designer	
Author	
Checker	
Designer	
Date	08/31/2010

Metro

LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

PB

WESTSIDE SUBWAY EXTENSION SINGLE BORE, TUNNEL THROUGH

UPPER PLATFORM

Drawing Number A206

Scale 1" = 20'-0"

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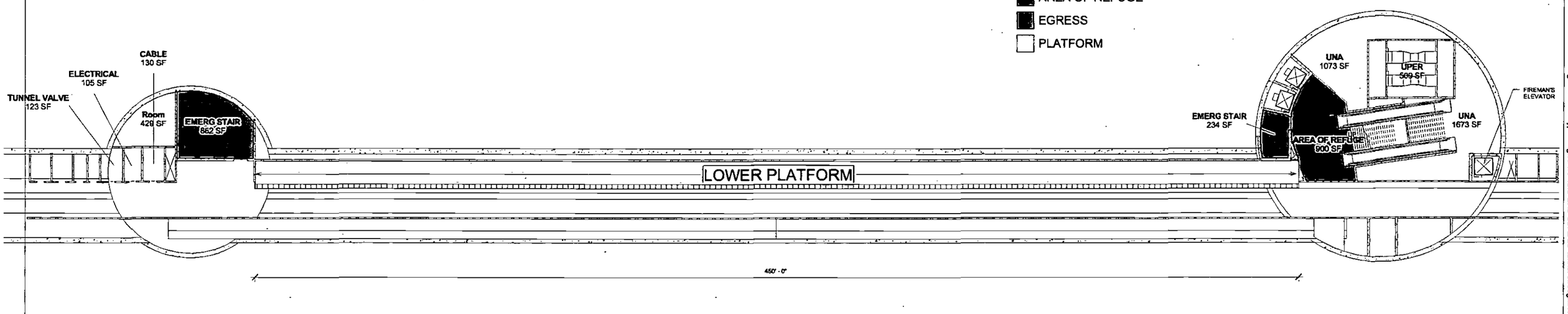


1 TO Lower Platform
1" = 20'-0"

Designer	
Author	
Checker	
Designer	
Date	08/31/2010

Metro

LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

PB

WESTSIDE SUBWAY EXTENSION SINGLE BORE, TUNNEL THROUGH

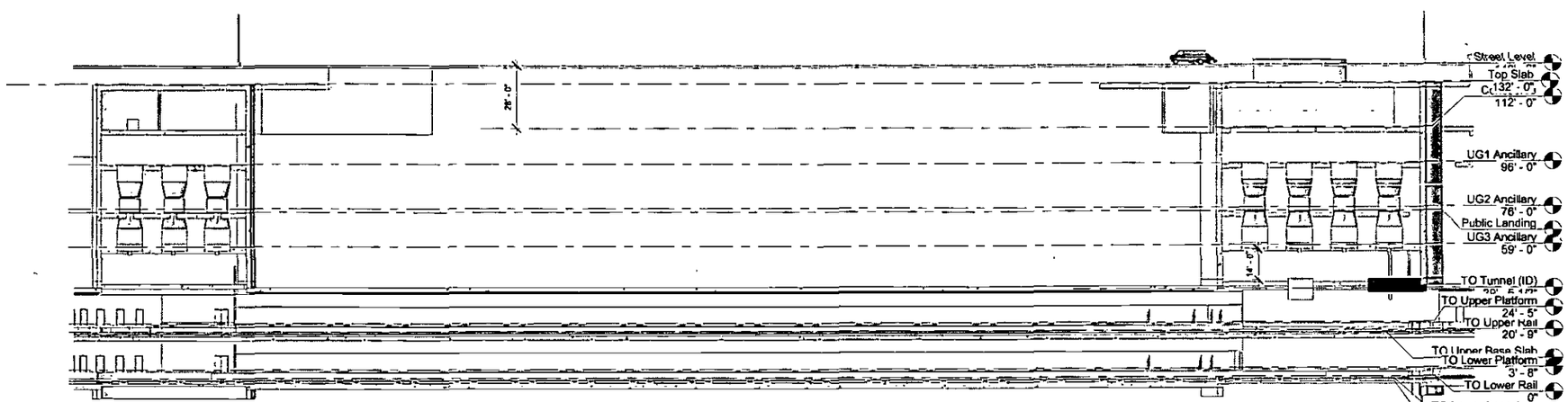
LOWER PLATFORM

Drawing Number A207

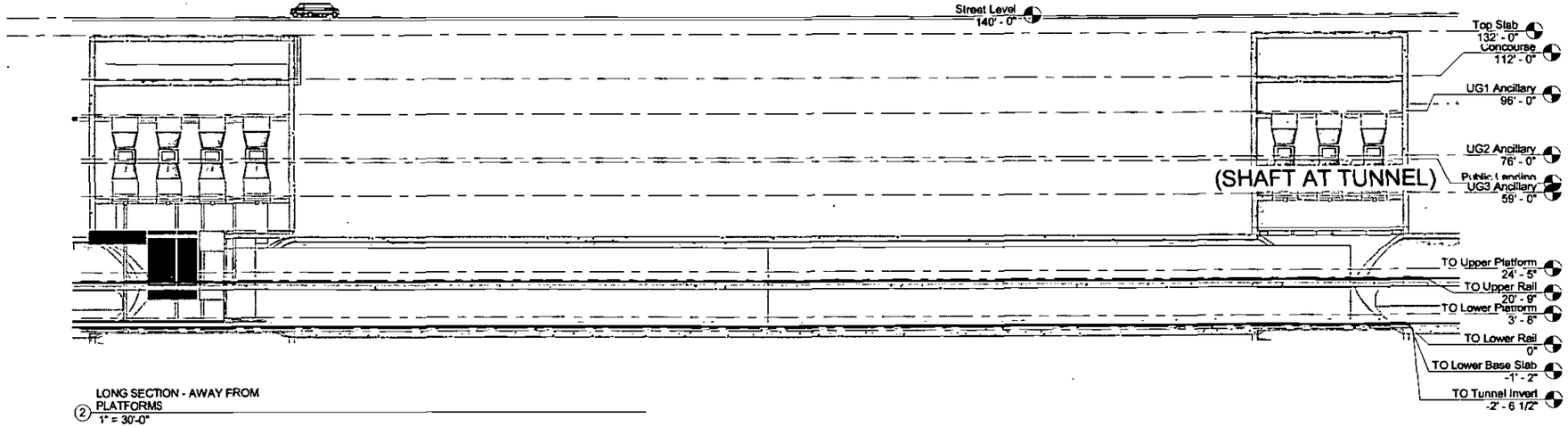
Scale 1" = 20'-0"

T:\2794OA-WestsideExtensionACE\CAD\work\Revit\StationModels\SingleBore\Prototype\SingleBore-42ID END LOADED-tunnel through.rvt

8/31/2010 4:03:28 PM



1 LONG SECTION - TOWARD PLATFORMS
1" = 30'-0"



2 LONG SECTION - AWAY FROM PLATFORMS
1" = 30'-0"

Designer	
Author	
Checker	
Designer	
Date	08/31/2010

Metro

LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

PB

WESTSIDE SUBWAY EXTENSION SINGLE BORE, TUNNEL THROUGH

LONG SECTIONS TOWARD PLATFORMS AND AWAY FROM PLATFORMS

Drawing Number A208

Scale 1" = 30'-0"

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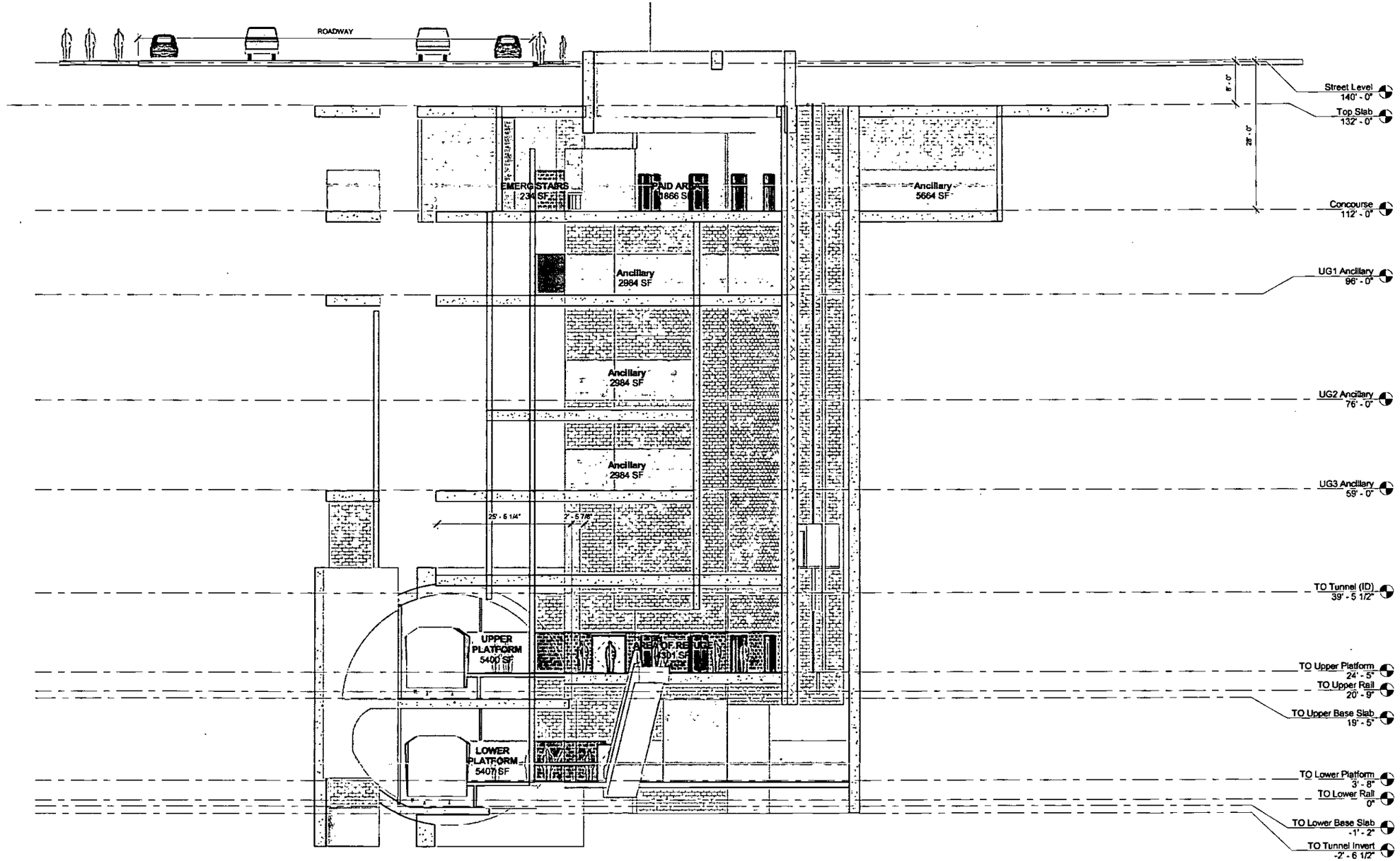

1 Cross Section @ Entry
1" = 10'-0"

Designer	
Author	
Checker	
Designer	
Date	08/31/2010

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LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

WESTSIDE SUBWAY EXTENSION SINGLE BORE, TUNNEL THROUGH

CROSS SECTION @ ENTRY

Drawing Number A209

Scale 1" = 10'-0"

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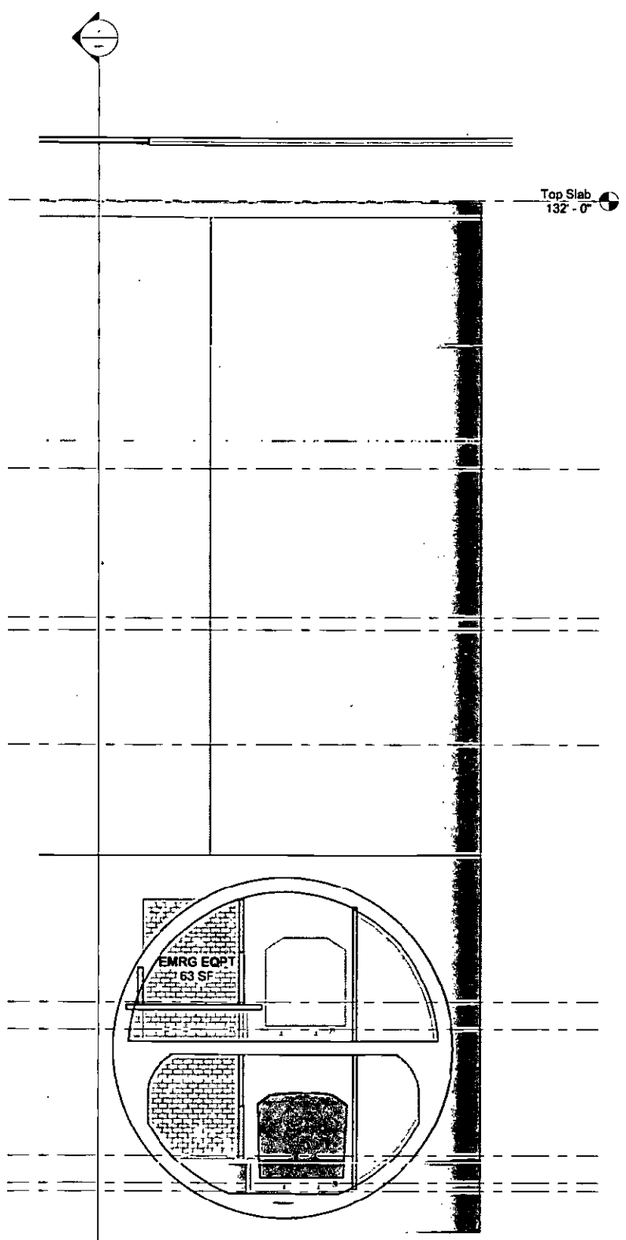
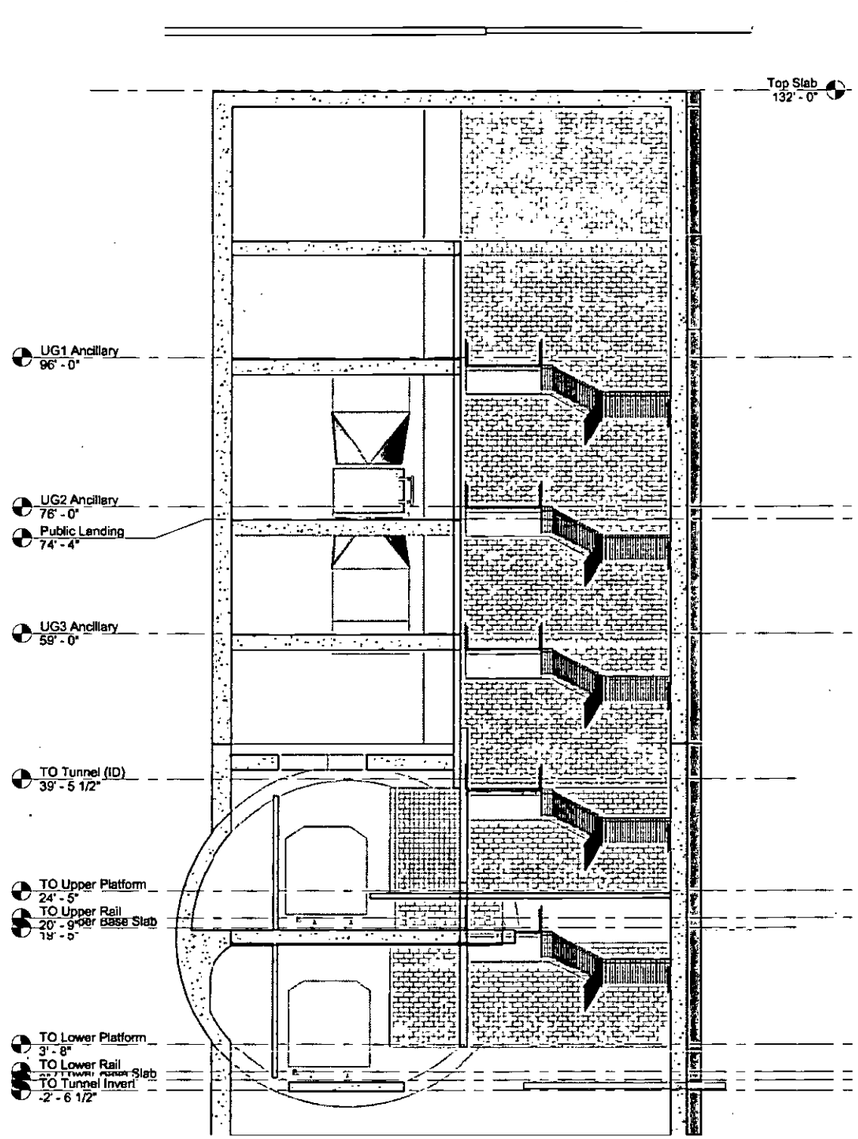
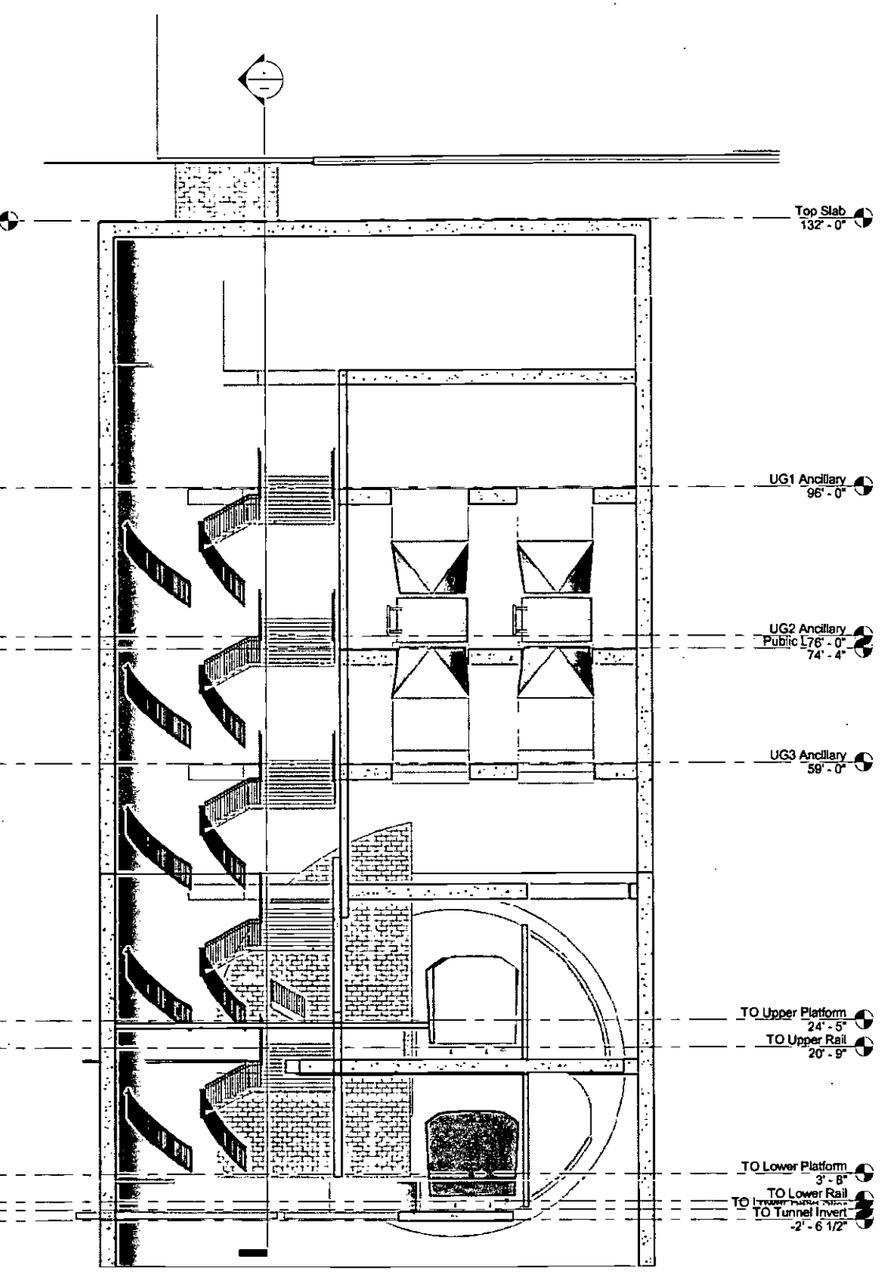


2 Cross Section - Ancil in Tunnel
1" = 10'-0"



2 CROSS SECTION @ STACKED SHAFTS
1" = 10'-0"



1 Cross Section - Small Shaft
1" = 10'-0"

Designer	
Author	
Checker	
Designer	
Date	08/31/2010

Metro

LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

WESTSIDE SUBWAY EXTENSION SINGLE BORE, TUNNEL THROUGH

CROSS SECTIONS

Drawing Number A210

Scale 1" = 10'-0"

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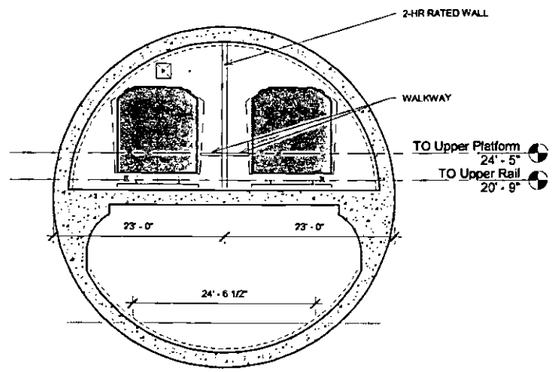
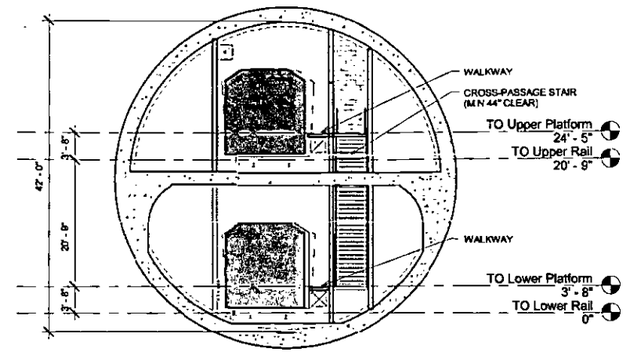
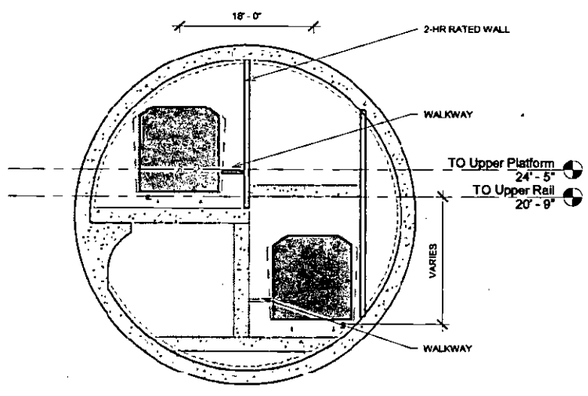
8/31/2010 4:03:47 PM



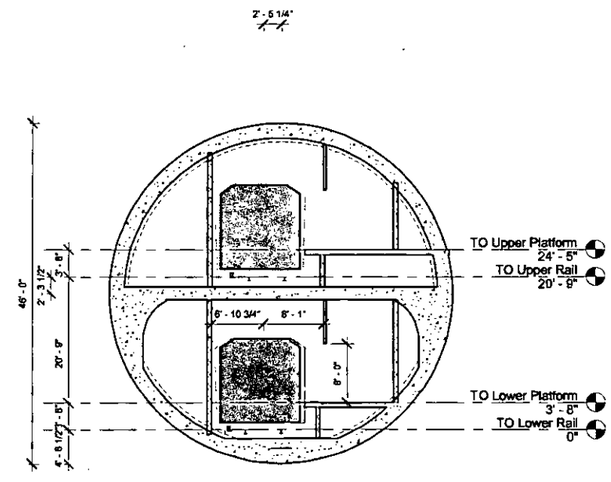
CROSS SECTION - @ CROSS PASSAGE, NEAR CROSSOVER
(4) 1" = 10'-0"



CROSS SECTION - STACKED IN TUNNEL
(2) 1" = 10'-0"



CROSS SECTION - UNSTACKED / OFFSET IN TUNNEL
(3) 1" = 10'-0"



CROSS SECTION - IN STATION
(1) 1" = 10'-0"

Designer	
Author	
Checker	
Designer	
Date	08/31/2010

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LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

PB

WESTSIDE SUBWAY EXTENSION SINGLE BORE, TUNNEL THROUGH

TUNNEL CROSS SECTIONS

Drawing Number A211

Scale 1" = 10'-0"

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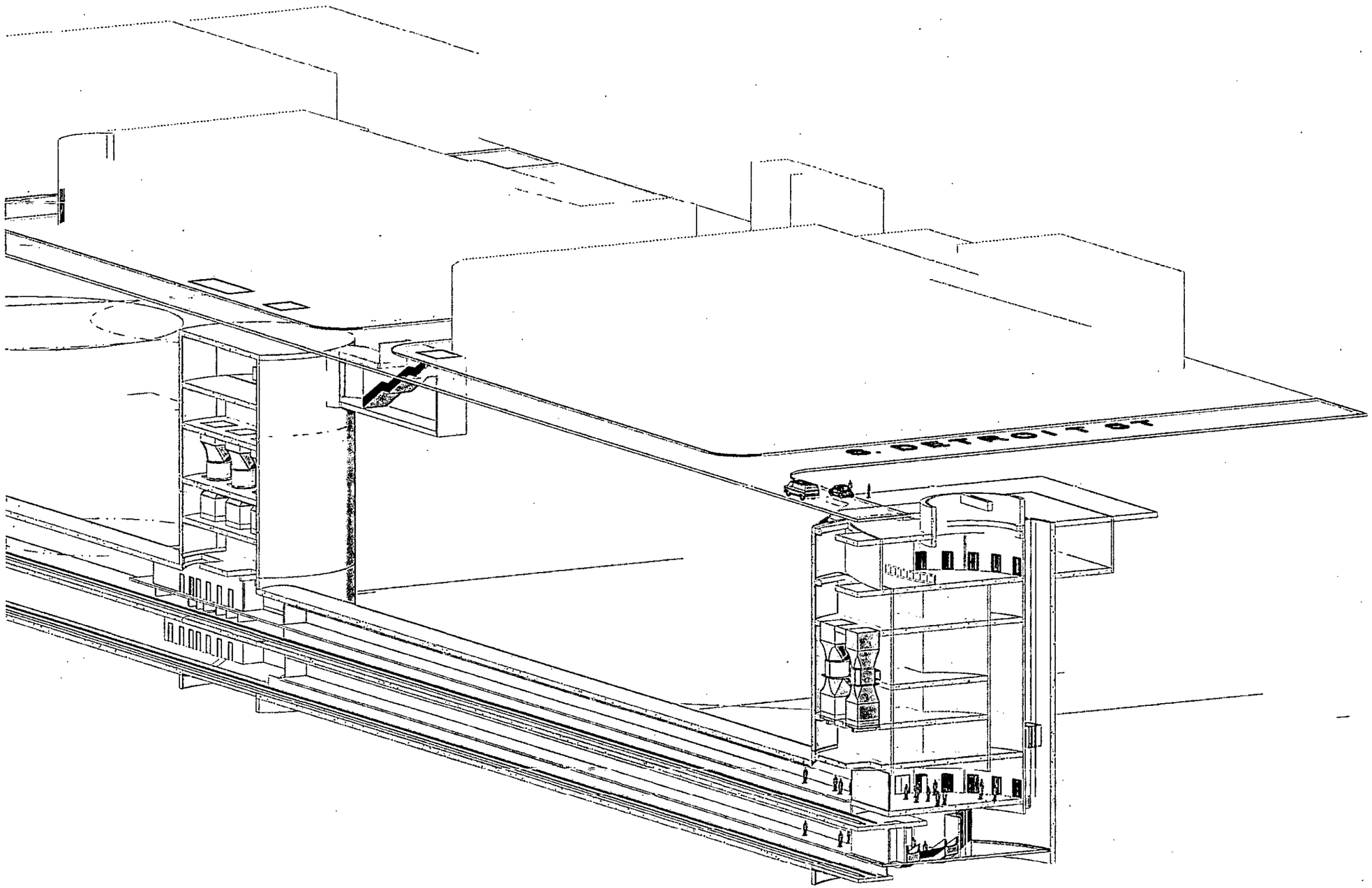

2 SECTION PERSPECTIVE

Designer	
Author	
Checker	
Designer	
Date	08/31/2010

Metro

LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

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WESTSIDE SUBWAY EXTENSION SINGLE BORE, TUNNEL THROUGH

SECTION PERSPECTIVE

Drawing Number A212

Scale

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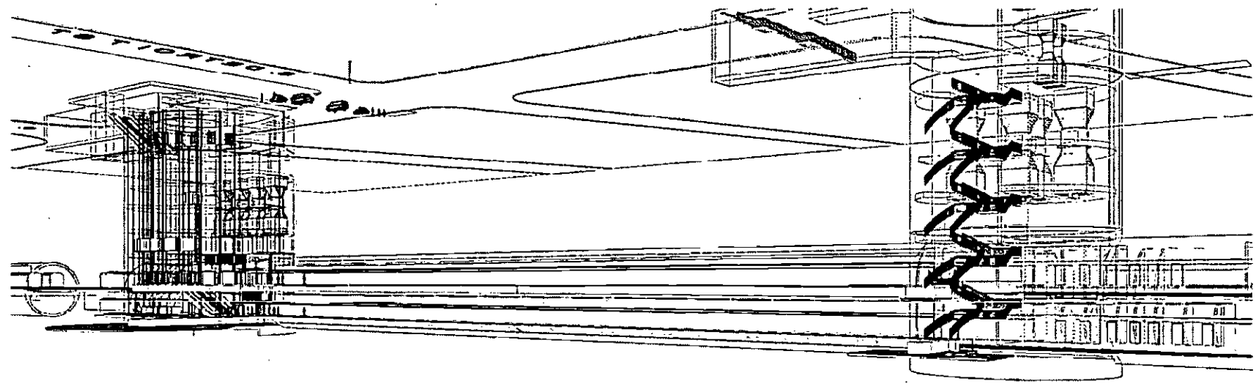
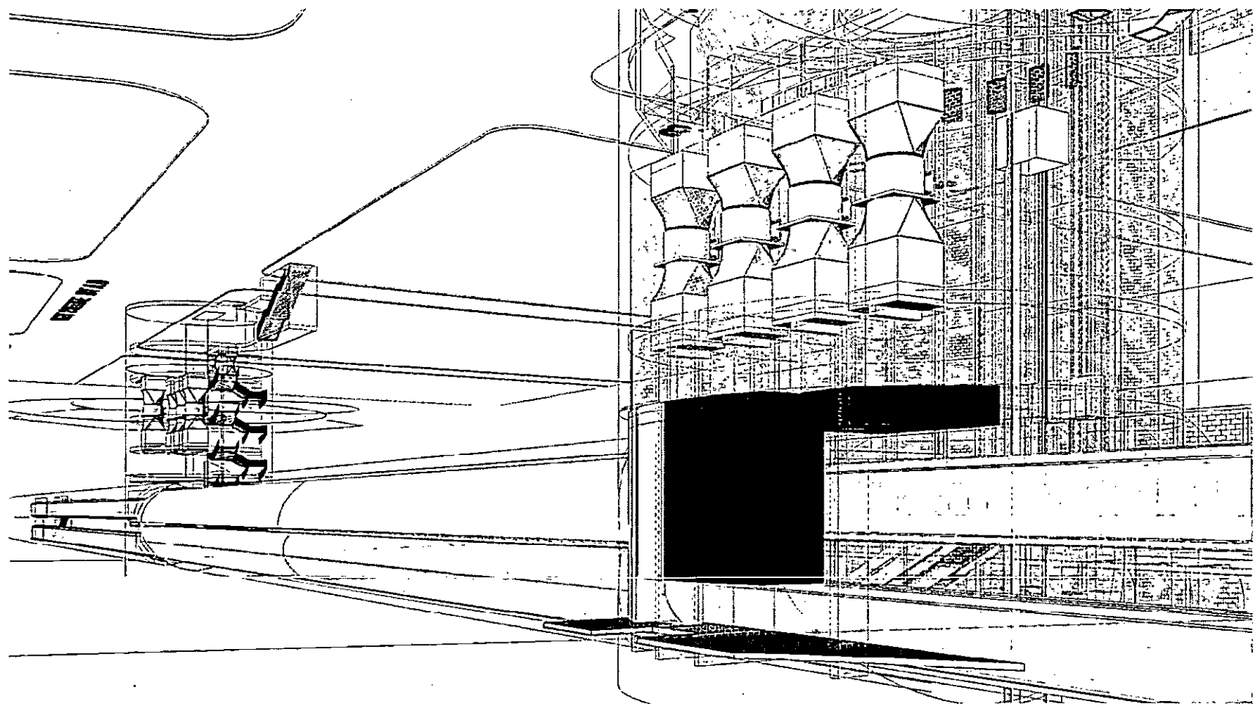


2 UG view - UPE side



3 UG view - walls transp

								Designer	
								Author	
								Checker	
								Designer	
								Date 08/31/2010	

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LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

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WESTSIDE SUBWAY EXTENSION
SINGLE BORE, TUNNEL THROUGH

3D VIEWS

Drawing Number A213

Scale

8/31/2010 4:04:08 PM

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S. COCHRAN AVE

S. CLOVERDALE AVE

S. DETROIT ST

S. LA BREA AVE

WILSHIRE BLVD

845500

N 18450

WILSHIRE BEAUTY

RETAIL/ OFFICES 2 STORIES

RESIDENTIAL MUSEUM GARDENS 5 STORIES

STARBUCKS 6 STORIES

PLATFORM

EXISTING NEWS STAND

METRO PROPERTY

EXISTING PARK & PAY PARKING LOT

BUILDING TO BE REMOVED

BLOCKBUSTER VIDEO

AT&T 5 STORIES

RETAIL/ OFFICES

EXIST CURB

BUS STOP

℄ TRACK

CONTINUOUS TUNNEL

RETAIL

RETAIL & SERVICE 2 STORIES

BANK OF AMERICA

WILSHIRE GRACE CHURCH

COLUMBIA SAVINGS

POTENTIAL ENTRANCE

POTENTIAL REDEVELOPMENT SITE

RETAIL

Note- Drawings For Determining Station Entrance Locations and Vent Shaft only

LEGEND:

POTENTIAL CONSTRUCTION LAYDOWN AREA/ENTRANCE AREA

ENTRANCE AT STREET LEVEL

STATION MEZZANINE

STATION PLATFORM & ENTRANCE

SHAFTS, GRATES AND SIDEWALK

NOTE:
PRELIMINARY - FOR STUDY PURPOSES ONLY. LOCATION OF SHAFTS, GRATES AND SIDEWALK HATCHES TO BE DETERMINED.

40' 20' 0 40' 80'

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

Metro

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING

SINGLE BORE - TUNNEL BY
WILSHIRE / LA BREA STATION
SITE PLAN

CONTRACT NO
DRAWING NO AC.001 REV
SCALE
SHEET NO

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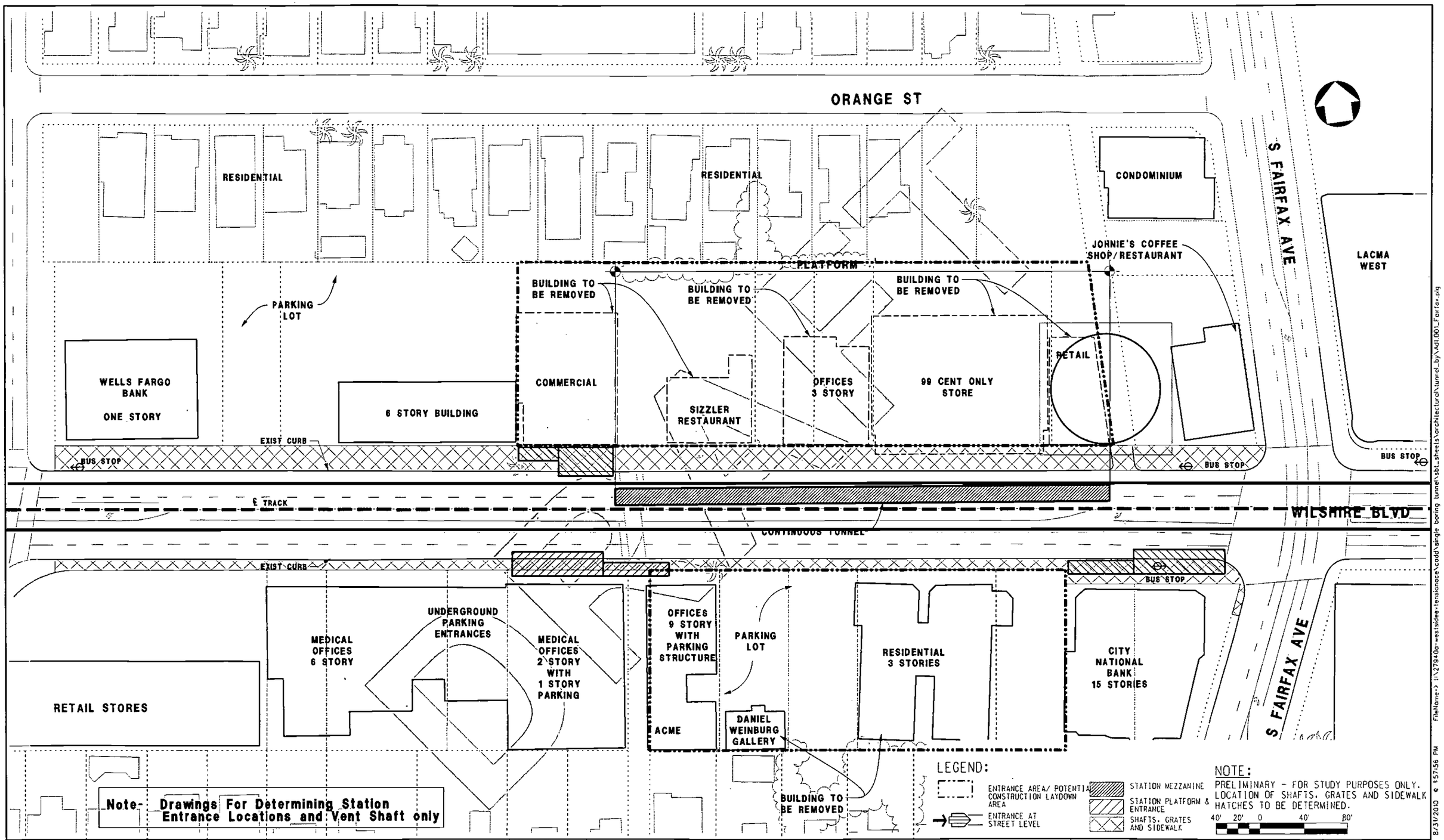

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DESIGNED BY
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DATE AUGUST 2010

Metro

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

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PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING

SINGLE BORE-TUNNEL BY
WILSHIRE/ FAIRFAX STATION
WEST OF FAIRFAX, ON STREET

CONTRACT NO
DRAWING NO AD1.001
REV
SCALE
SHEET NO

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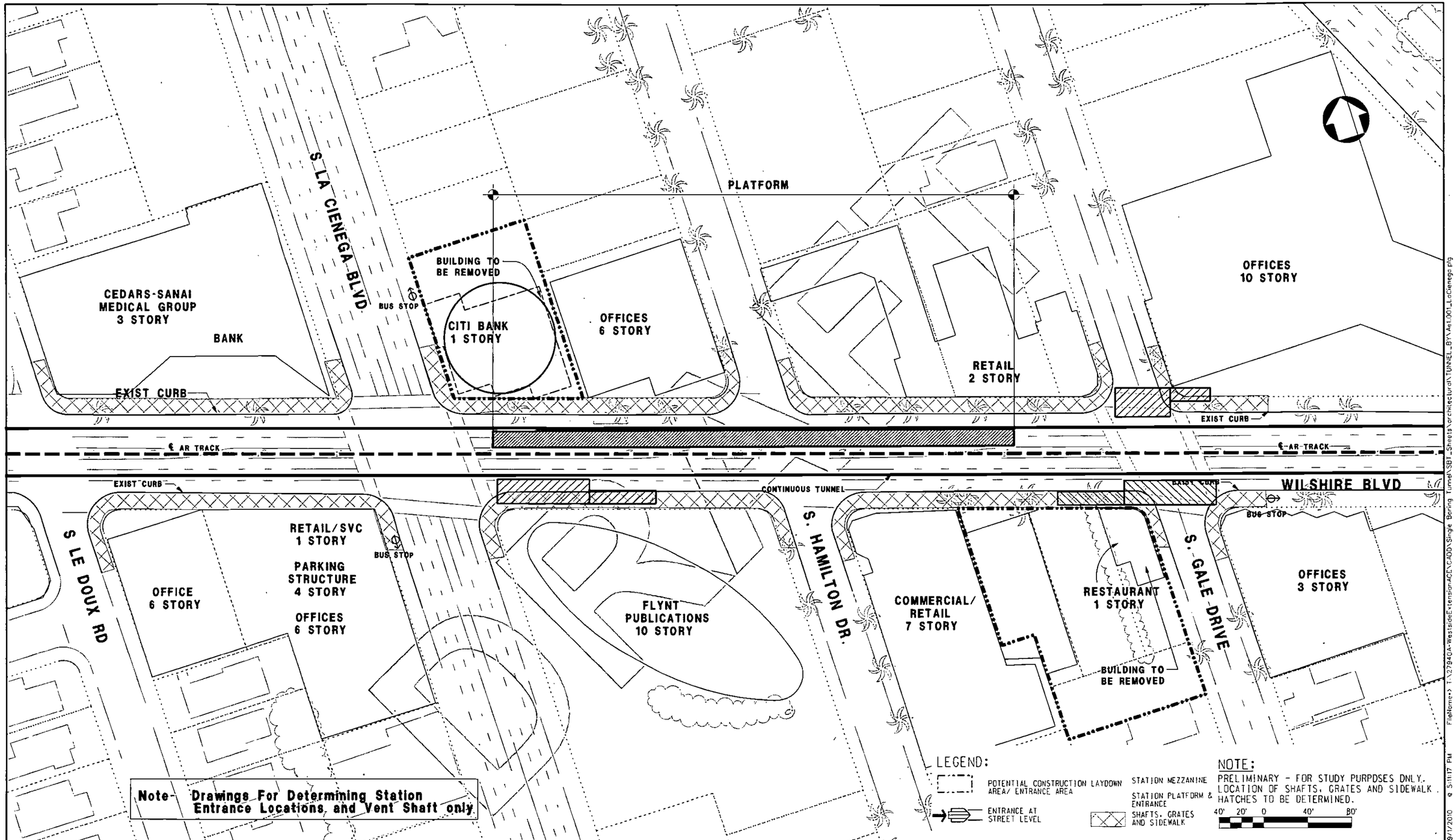

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DESIGNED BY
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IN CHARGE
DATE AUGUST 2010

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LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

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PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING

SINGLE BORE-TUNNEL BY
WILSHIRE/ LA CIENEGA STATION
SITE PLAN

CONTRACT NO
DRAWING NO AE1.001
REV
SCALE
SHEET NO

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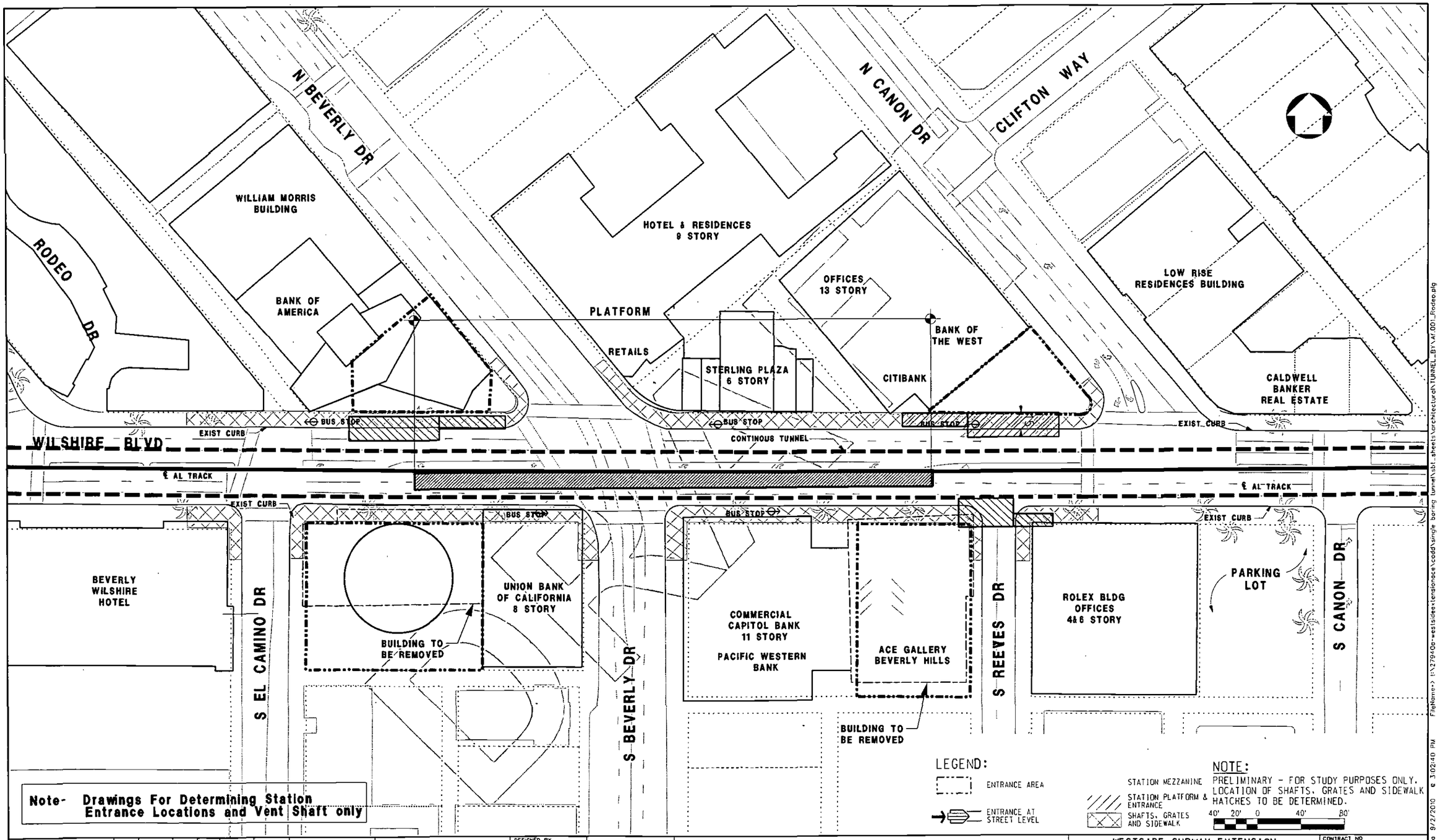

Note- Drawings For Determining Station Entrance Locations and Vent Shaft only

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
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IN CHARGE
DATE AUGUST 2010

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LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

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PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING

SINGLE BORE-TUNNEL BY WILSHIRE / RODEO STATION SITE PLAN

CONTRACT NO
DRAWING NO AF.001
REV
SCALE
SHEET NO

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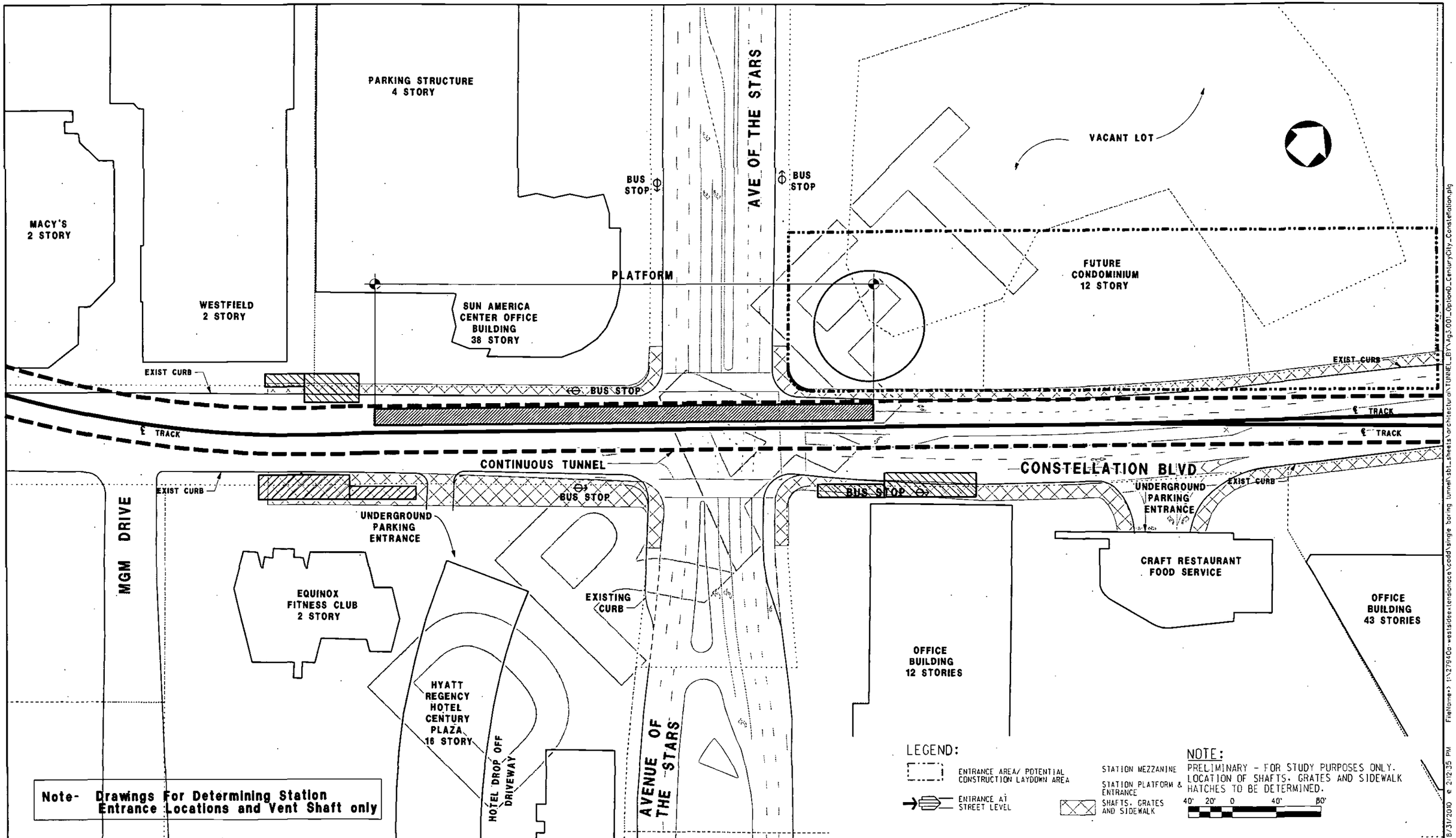

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
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IN CHARGE
DATE AUGUST 2010

Metro

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

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PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING

SINGLE BORE- TUNNEL BY
CENTURY CITY (CONSTELLATION)
SITE PLAN

CONTRACT NO
DRAWING NO AG2.001
REV
SCALE
SHEET NO

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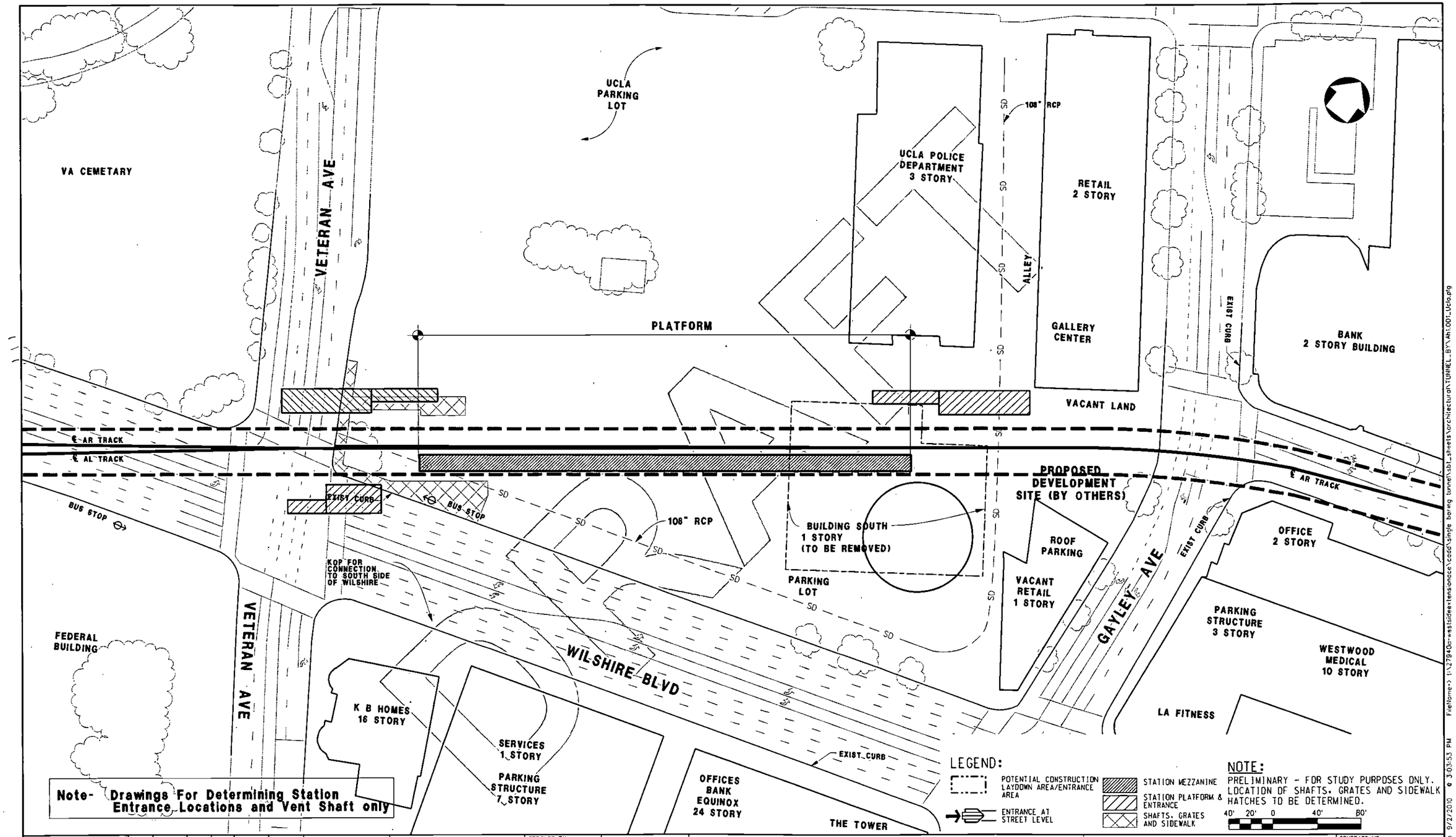

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

Metro
LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

PB
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING

SINGLE BORE- TUNNEL BY
WESTWOOD/ UCLA OFF-STREET STATION
SITE PLAN

CONTRACT NO
DRAWING NO AH1.001
REV
SCALE
SHEET NO

UserName: USER-mirec 9/2/2010 @ 3:03:53 PM FileName> I:\27840cr-westsideextensionce\cadd\single boring tunnel\sbt_sheets\architectural\TUNNEL_BY\AH1.001_Uclo.plg

S. COCHRAN AVE

S. CLOVERDALE AVE

S. DETROIT ST

S. LA BREA AVE

WILSHIRE BLVD

845500

N 18450

WILSHIRE BEAUTY

RETAIL/ OFFICES
2 STORIES

RESIDENTIAL
MUSEUM GARDENS
5 STORIES

STARBUCKS
6 STORIES

PLATFORM

METRO
PROPERTY

BUILDING TO
BE REMOVED

BLOCKBUSTER
VIDEO

EXISTING
PARK & PAY
PARKING LOT

EXISTING
NEWS STAND

AT&T
5 STORIES

RETAIL/
OFFICES

EXIST CURB

BUS STOP

℄ TRACK

CONTINUOUS TUNNEL

RETAIL

RETAIL & SERVICE
2 STORIES

BANK OF
AMERICA

WILSHIRE
GRACE
CHURCH

COLUMBIA
SAVINGS

POTENTIAL
ENTRANCE

POTENTIAL
REDEVELOPMENT
SITE

RETAIL

Note- Drawings For Determining Station Entrance Locations and Vent Shaft only

LEGEND:

- POTENTIAL CONSTRUCTION LAYDOWN AREA/ENTRANCE AREA
- ENTRANCE AT STREET LEVEL
- STATION MEZZANINE
- STATION PLATFORM & ENTRANCE
- SHAFTS, GRATES AND SIDEWALK

40' 20' 0 40' 80'

NOTE:
PRELIMINARY - FOR STUDY PURPOSES ONLY. LOCATION OF SHAFTS, GRATES AND SIDEWALK HATCHES TO BE DETERMINED.

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

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IN CHARGE
DATE AUGUST 2010

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LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING

SINGLE BORE - TUNNEL THROUGH
WILSHIRE / LA BREA STATION
SITE PLAN

CONTRACT NO
DRAWING NO AC.002
REV
SCALE
SHEET NO

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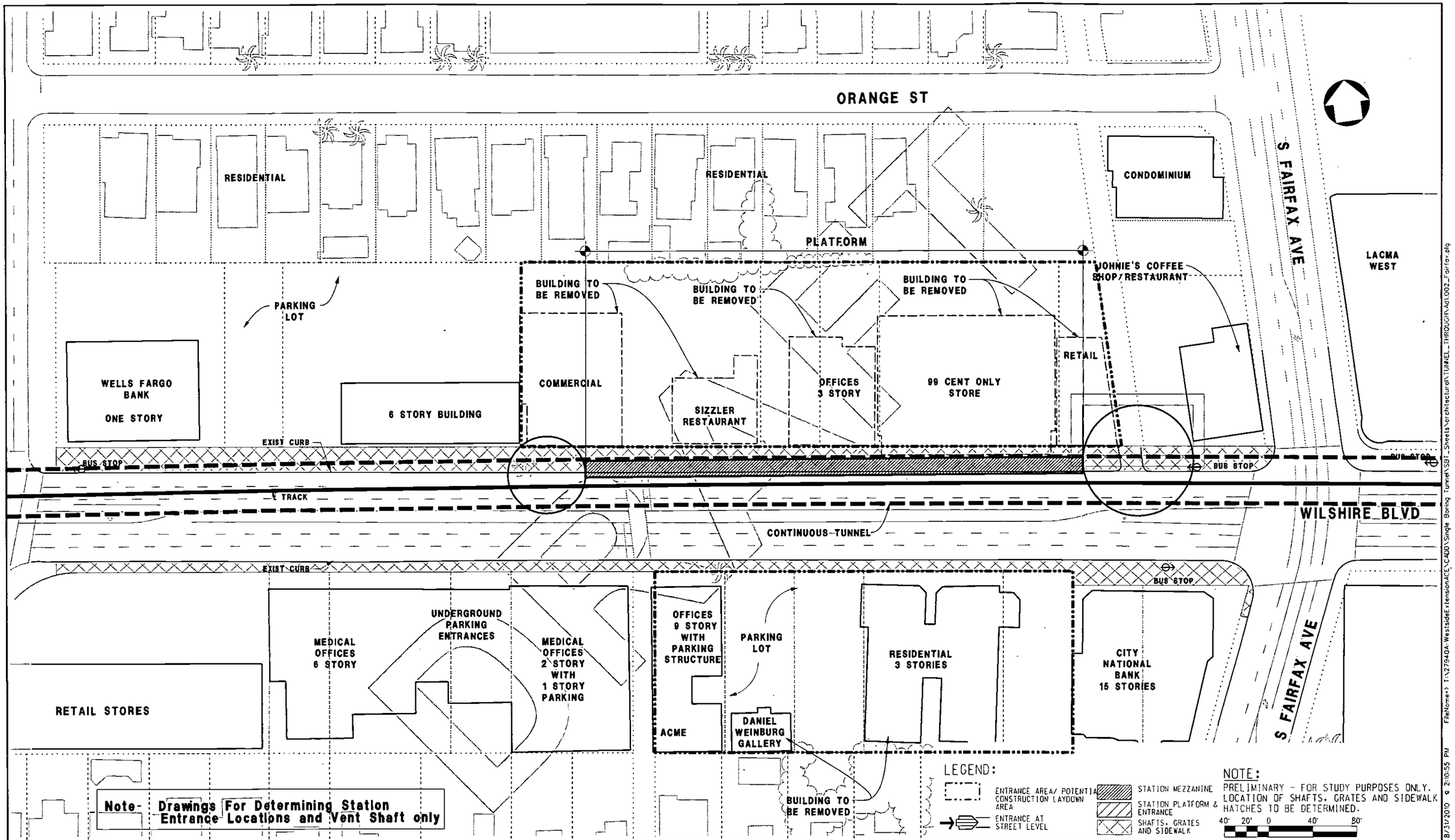

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DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING

SINGLE BORE-TUNNEL THROUGH
WILSHIRE/ FAIRFAX STATION
WEST OF FAIRFAX, ON STREET

CONTRACT NO
DRAWING NO AD1.002 REV
SCALE
SHEET NO

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PLATFORM

S LA CIENEGA BLVD

CEDARS-SANAI MEDICAL GROUP 3 STORY

BANK

EXIST CURB

BUILDING TO BE REMOVED

BUS STOP

CITI BANK 1 STORY

OFFICES 6 STORY

RETAIL 2 STORY

OFFICES 10 STORY

EXIST CURB

℄ AR TRACK

℄ AR TRACK

CONTINUOUS TUNNEL

EXIST CURB

EXIST CURB

WILSHIRE BLVD

BUS STOP

S LE DOUX RD

RETAIL/SVC 1 STORY

BUS STOP

PARKING STRUCTURE 4 STORY

OFFICE 6 STORY

OFFICES 6 STORY

FLYNT PUBLICATIONS 10 STORY

S. HAMILTON DR.

COMMERCIAL/ RETAIL 7 STORY

RESTAURANT 1 STORY

S. GALE DRIVE

BUILDING TO BE REMOVED

OFFICES 3 STORY

Note- Drawings For Determining Stetion Entrance Locations and Vent Shaft only

LEGEND:

POTENTIAL CONSTRUCTION LAYDOWN AREA/ ENTRANCE AREA

ENTRANCE AT STREET LEVEL

STATION MEZZANINE

STATION PLATFORM & ENTRANCE

SHAFTS, GRATES AND SIDEWALK

40' 20' 0 40' 80'

NOTE:
PRELIMINARY - FOR STUDY PURPOSES ONLY. LOCATION OF SHAFTS, GRATES AND SIDEWALK HATCHES TO BE DETERMINED.

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

Metro

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

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PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING

SINGLE BORE- TUNNELTHROUGH
WILSHIRE / LA CIENEGA STATION
SITE PLAN

CONTRACT NO
DRAWING NO AE1.002
REV
SCALE
SHEET NO

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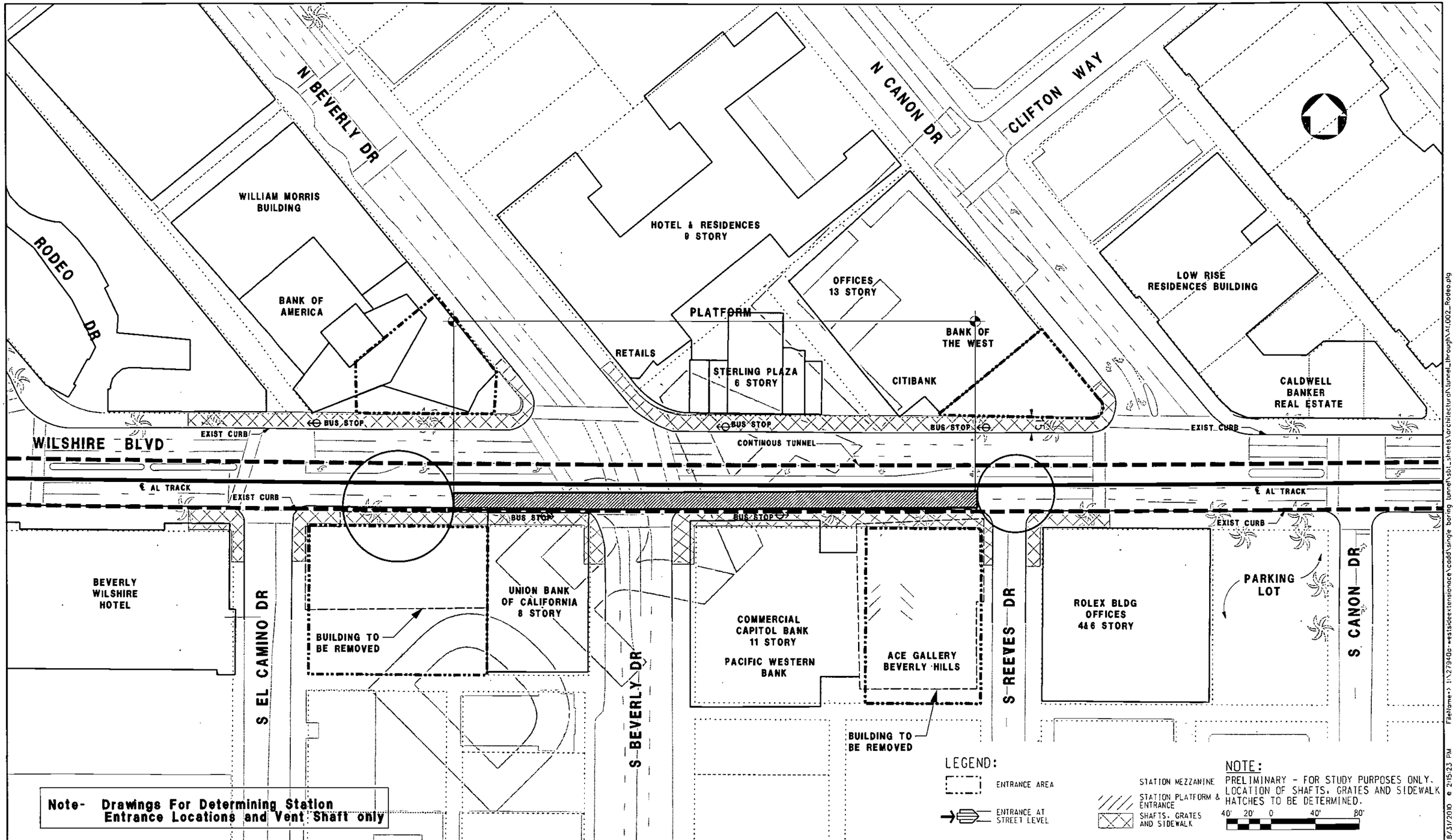

Note- Drawings For Determining Station Entrance Locations and Vent Shaft only

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

Metro

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING

SINGLE BORE -TUNNEL THROUGH
WILSHIRE / RODEO STATION
SITE PLAN

CONTRACT NO
DRAWING NO AF.002
REV
SCALE
SHEET NO

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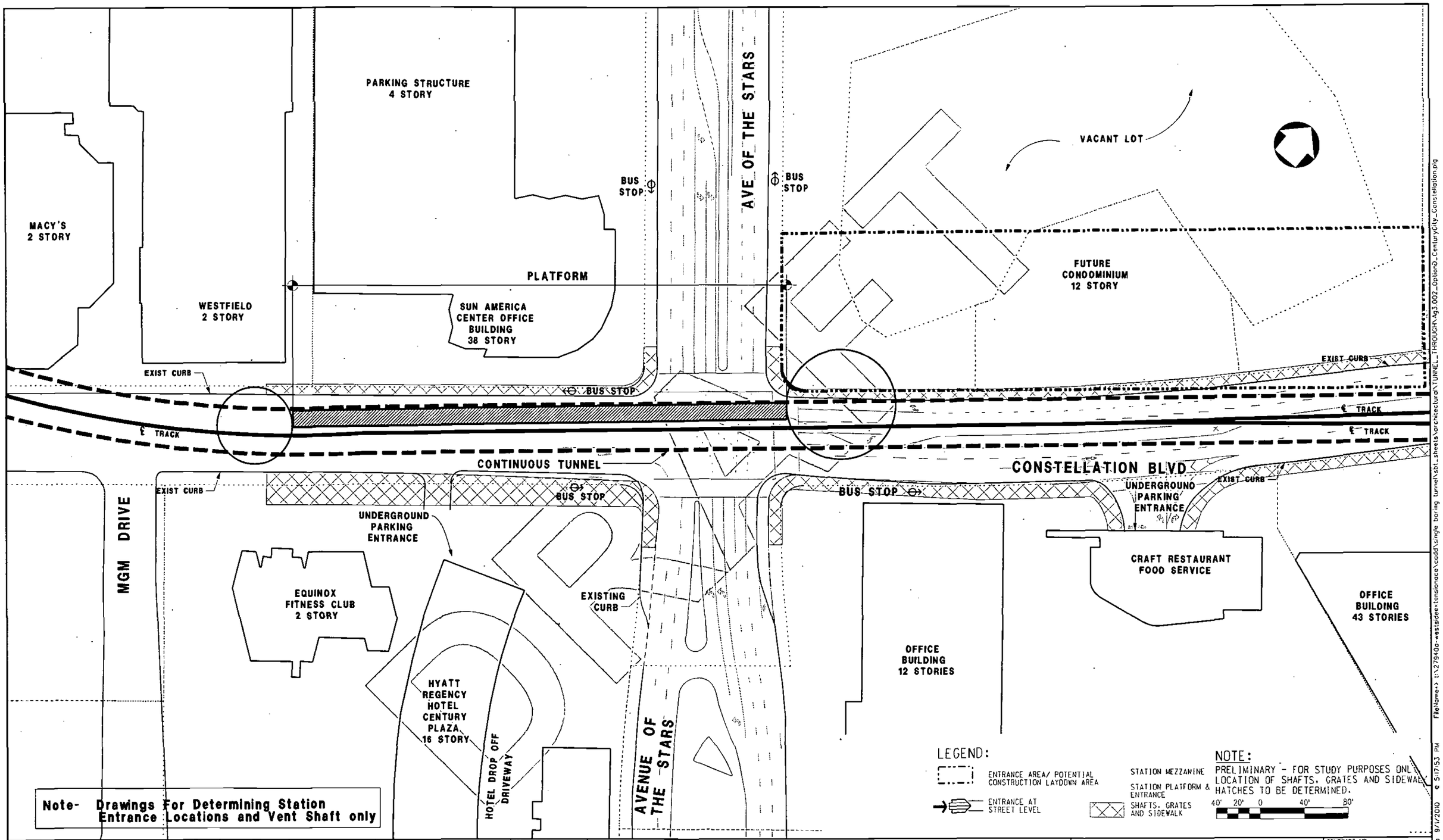

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DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING

SINGLE BORE- TUNNEL THROUGH
CENTURY CITY (CONSTELLATION)
SITE PLAN

CONTRACT NO
DRAWING NO AG2.002
REV
SCALE
SHEET NO

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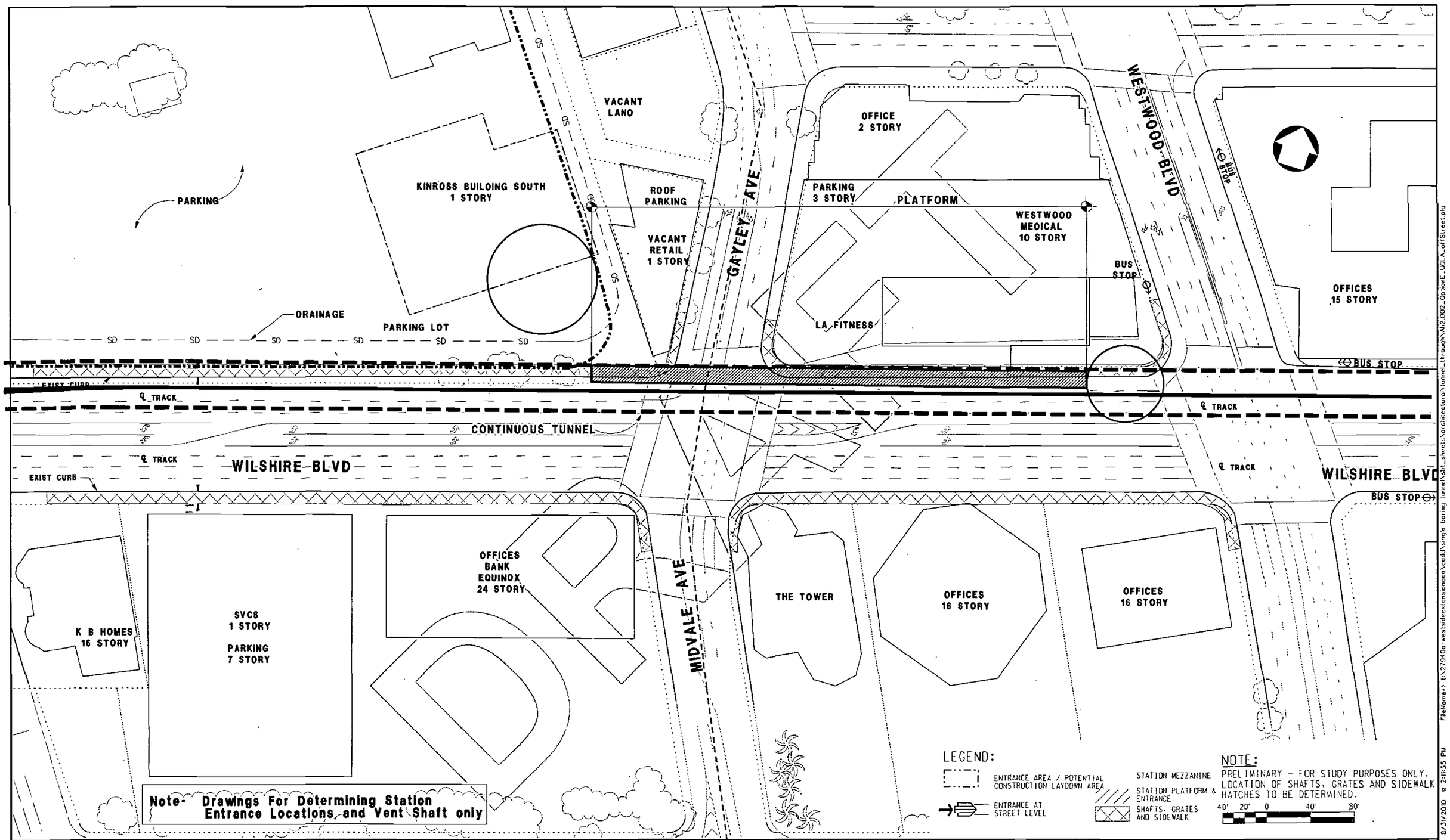

Note- Drawings For Determining Station Entrance Locations and Vent Shaft only

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING

SINGLE BORE- TUNNEL THROUGH
WESTWOOD/UCLA STATION
(ON STREET) SITE PLAN

CONTRACT NO
DRAWING NO AH2.002
REV
SCALE
SHEET NO

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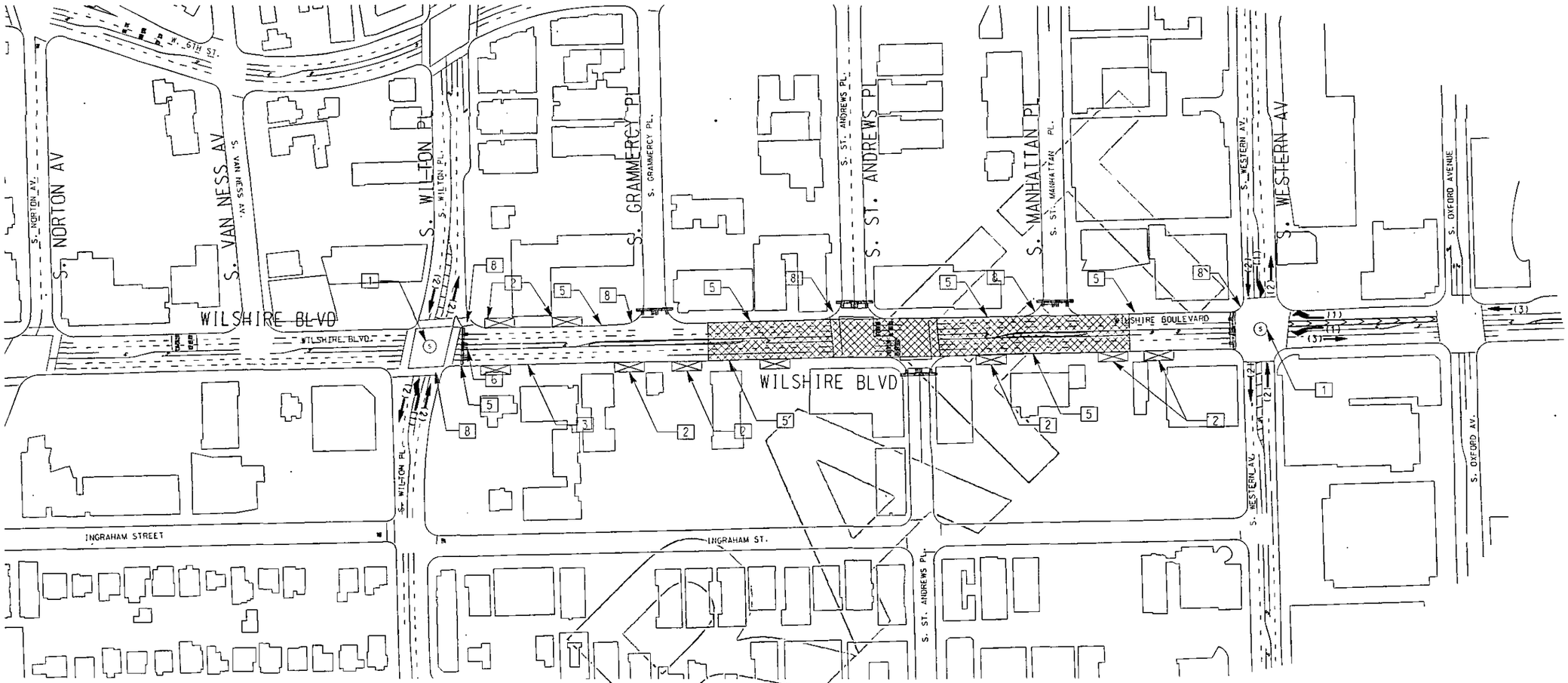

SLURRY WALL AND DECKING INSTALLATION.

TRAFFIC HANDLING NOTES:

1. PROVIDE TEMPORARY TRAFFIC SIGNAL PLAN.
2. DRIVEWAY ACCESS SHALL BE COORDINATED WITH EACH PROPERTY OWNER.
3. PASSENGER AND COMMERCIAL LOADING ZONE SHALL BE COORDINATED WITH EACH PROPERTY OWNER.
4. NOT USED.
5. TEMPORARY "TOW AWAY NO STOPPING ANY TIME" AND REMOVE OR COVER EXISTING PARKING METER.
6. ROAD CLOSED. SEE DETOUR PLANS.
7. EXISTING BUS STOP LOCATION AND COORDINATE WITH EACH TRANSIT AGENCY FOR RELOCATION. IF NEEDED.
8. MAINTAIN PEDESTRIAN ACCESS.
9. LOCAL ACCESS ONLY.
10. CONSTRUCT INTERSECTION AREA IN TWO OR THREE STAGES TO MAINTAIN VEHICLE ACCESS.

LEGEND:

- (X) → TRAFFIC LANES MAINTAINED
- (S) SIGNALIZED INTERSECTION
- CONSTRUCTION AREA
- ROAD CLOSED
- BUS STOP SIGN

100' 0 100' 200'

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TRAFFIC HANDLING PLAN
TRANSITION STRUCTURE
WILSHIRE/WESTERN STATION
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO TR-001 REV
SCALE 1"=100'
SHEET NO

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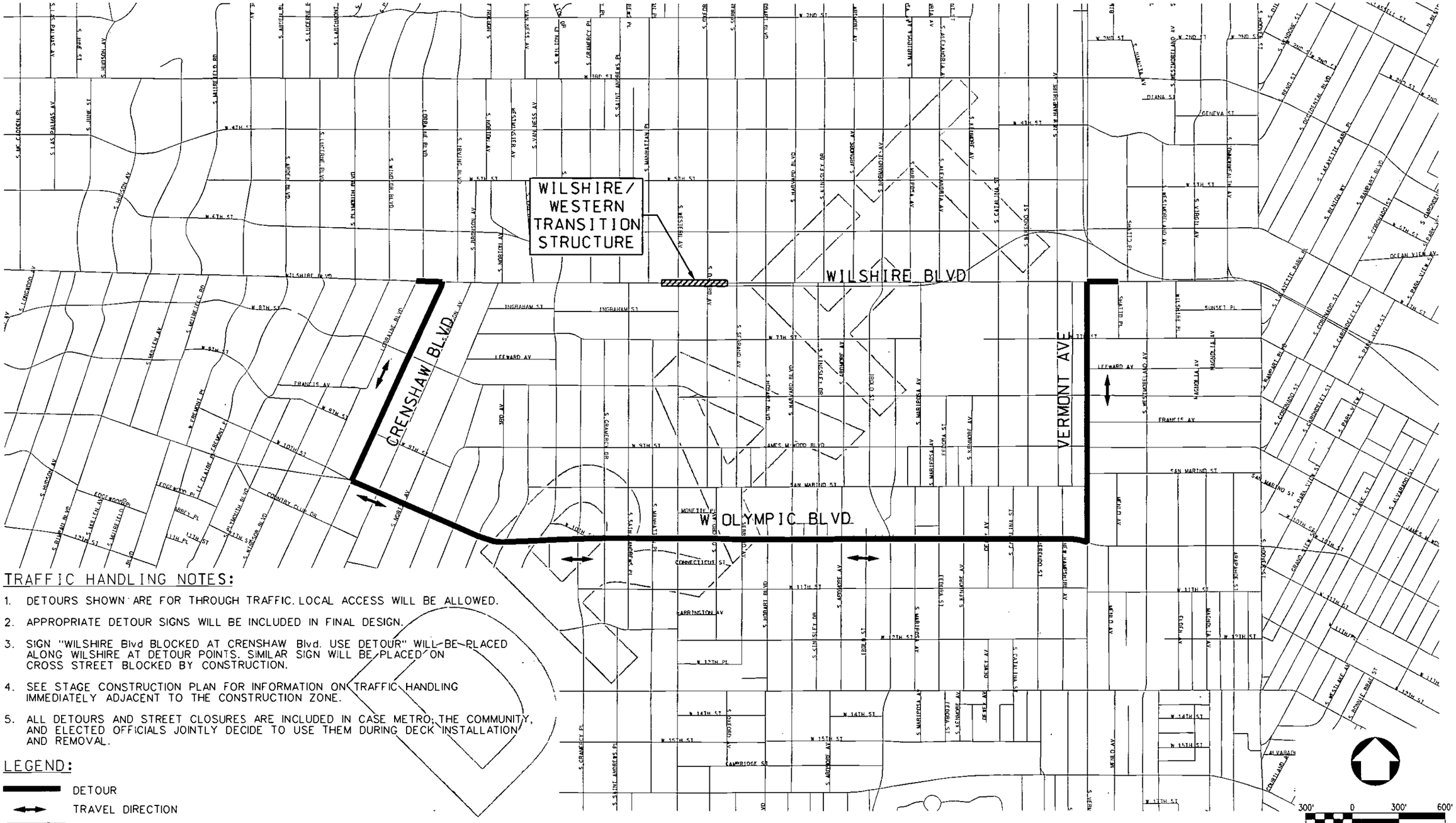

TRAFFIC HANDLING NOTES:

1. DETOURS SHOWN ARE FOR THROUGH TRAFFIC. LOCAL ACCESS WILL BE ALLOWED.
2. APPROPRIATE DETOUR SIGNS WILL BE INCLUDED IN FINAL DESIGN.
3. SIGN "WILSHIRE Blvd BLOCKED AT CRENSHAW Blvd. USE DETOUR" WILL BE PLACED ALONG WILSHIRE AT DETOUR POINTS. SIMILAR SIGN WILL BE PLACED ON CROSS STREET BLOCKED BY CONSTRUCTION.
4. SEE STAGE CONSTRUCTION PLAN FOR INFORMATION ON TRAFFIC HANDLING IMMEDIATELY ADJACENT TO THE CONSTRUCTION ZONE.
5. ALL DETOURS AND STREET CLOSURES ARE INCLUDED IN CASE METRO, THE COMMUNITY, AND ELECTED OFFICIALS JOINTLY DECIDE TO USE THEM DURING DECK INSTALLATION AND REMOVAL.

LEGEND:

- DETOUR
- TRAVEL DIRECTION
- PROPOSED STATION SITE

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

Metro

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TRAFFIC DETOUR PLAN
TRANSITION STRUCTURE
WILSHIRE/WESTERN
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO TR-002
REV
SCALE 1"=600'
SHEET NO

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SLURRY WALL AND DECKING INSTALLATION.

DRAFT

TRAFFIC HANDLING NOTES:

1. PROVIDE TEMPORARY TRAFFIC SIGNAL PLAN.
2. DRIVEWAY ACCESS SHALL BE COORDINATED WITH EACH PROPERTY OWNER.
3. PASSENGER AND COMMERCIAL LOADING ZONE SHALL BE COORDINATED WITH EACH PROPERTY OWNER.
4. NOT USED.
5. TEMPORARY "TOW AWAY NO STOPPING ANY TIME" AND REMOVE OR COVER EXISTING PARKING METER.
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7. EXISTING BUS STOP LOCATION AND COORDINATE WITH EACH TRANSIT AGENCY FOR RELOCATION, IF NEEDED.
8. MAINTAIN PEDESTRIAN ACCESS.
9. LOCAL ACCESS ONLY.
10. CONSTRUCT INTERSECTION AREA IN TWO OR THREE STAGES TO MAINTAIN VEHICLE ACCESS.

LEGEND:

- (X) → TRAFFIC LANES MAINTAINED
- (S) SIGNALIZED INTERSECTION
- CONSTRUCTION AREA
- ROAD CLOSED
- BUS STOP SIGN

100' 0 100' 200'

REV	DATE	BY	APP	REC NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TRAFFIC HANDLING PLAN
TUNNEL-THROUGH
WILSHIRE/LA BREA STATION
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO TR-003 REV
SCALE 1"=100'
SHEET NO

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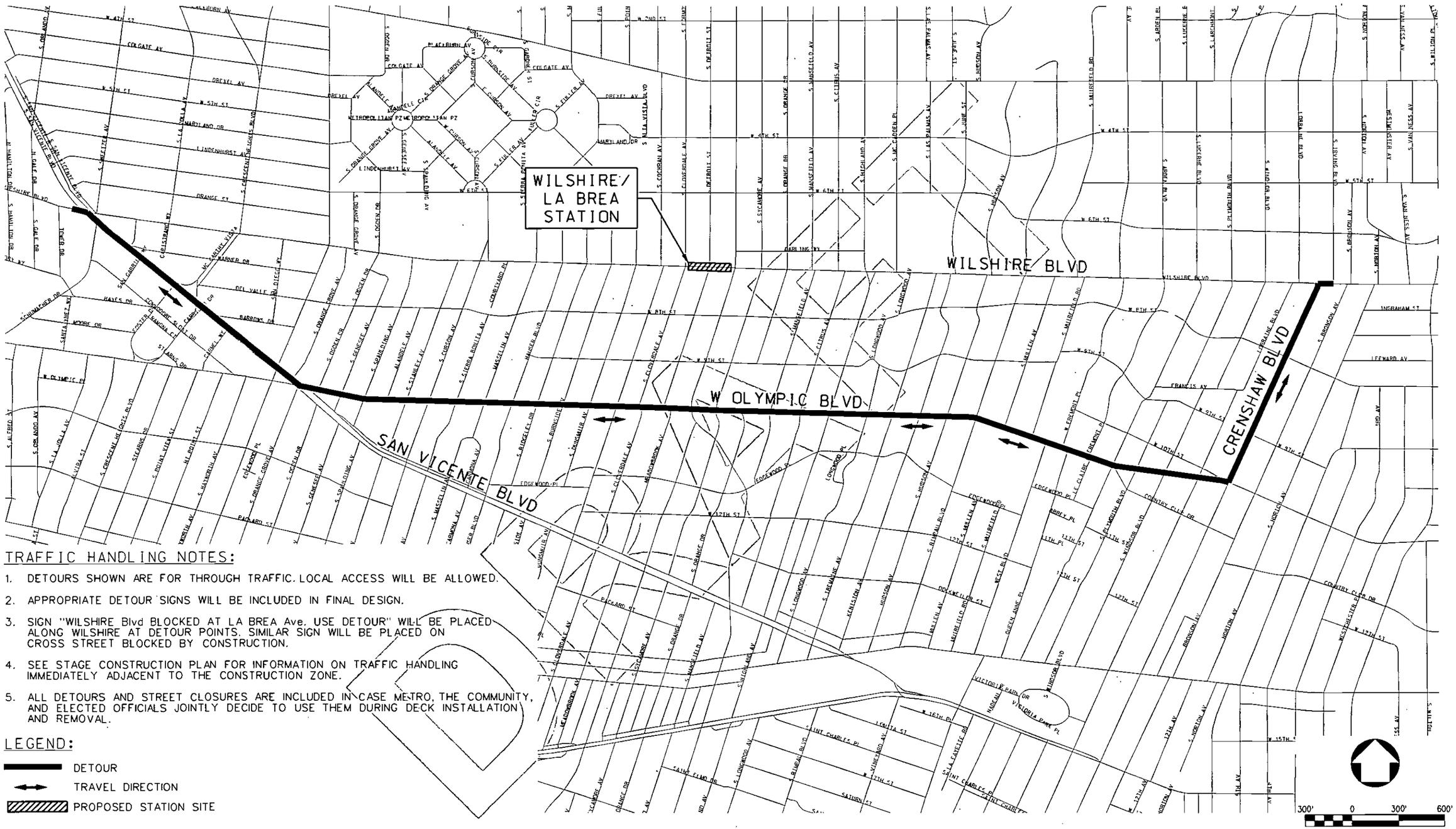

TRAFFIC HANDLING NOTES:

1. DETOURS SHOWN ARE FOR THROUGH TRAFFIC. LOCAL ACCESS WILL BE ALLOWED.
2. APPROPRIATE DETOUR SIGNS WILL BE INCLUDED IN FINAL DESIGN.
3. SIGN "WILSHIRE Blvd BLOCKED AT LA BREA Ave. USE DETOUR" WILL BE PLACED ALONG WILSHIRE AT DETOUR POINTS. SIMILAR SIGN WILL BE PLACED ON CROSS STREET BLOCKED BY CONSTRUCTION.
4. SEE STAGE CONSTRUCTION PLAN FOR INFORMATION ON TRAFFIC HANDLING IMMEDIATELY ADJACENT TO THE CONSTRUCTION ZONE.
5. ALL DETOURS AND STREET CLOSURES ARE INCLUDED IN CASE METRO, THE COMMUNITY, AND ELECTED OFFICIALS JOINTLY DECIDE TO USE THEM DURING DECK INSTALLATION AND REMOVAL.

LEGEND:

- DETOUR
- TRAVEL DIRECTION
- PROPOSED STATION SITE

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

Metro

PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TRAFFIC DETOUR PLAN
TUNNEL-THROUGH
WILSHIRE/LA BREA STATION
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO TR-004
REV
SCALE 1" =600'
SHEET NO

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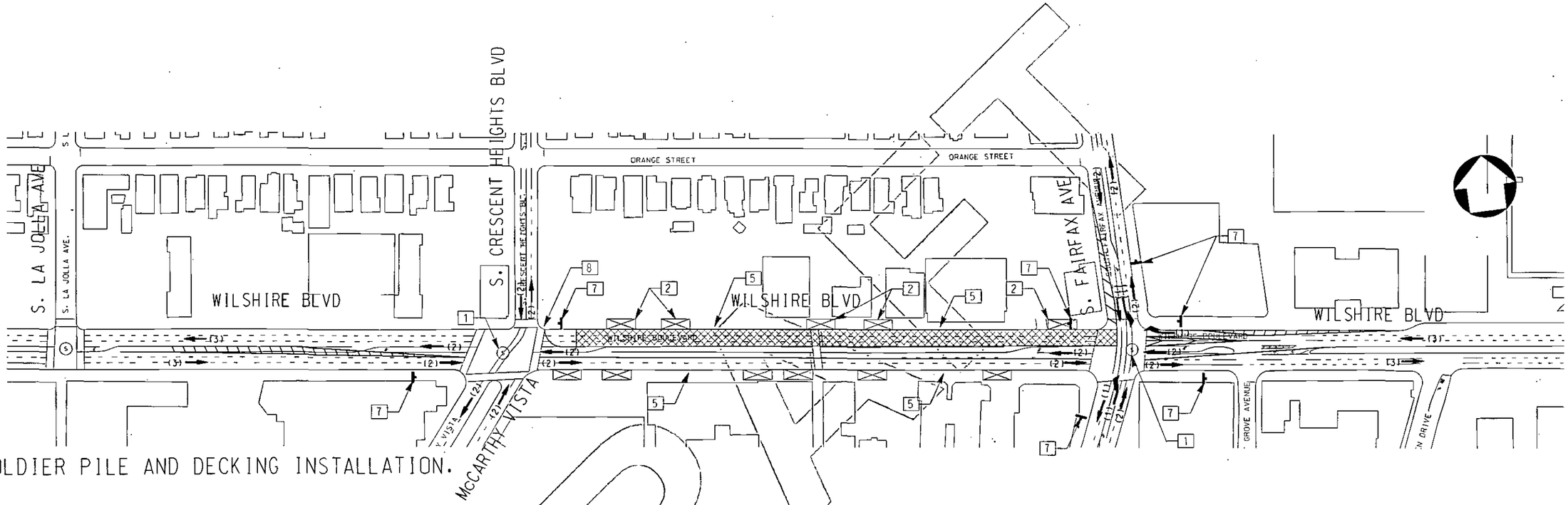

SOLDIER PILE AND DECKING INSTALLATION.

DRAFT

TRAFFIC HANDLING NOTES:

1. PROVIDE TEMPORARY TRAFFIC SIGNAL PLAN.
2. DRIVEWAY ACCESS SHALL BE COORDINATED WITH EACH PROPERTY OWNER.
3. PASSENGER AND COMMERCIAL LOADING ZONE SHALL BE COORDINATED WITH EACH PROPERTY OWNER.
4. NOT USED.
5. TEMPORARY "TOW AWAY NO STOPPING ANY TIME" AND REMOVE OR COVER EXISTING PARKING METER.
6. ROAD CLOSED. SEE DETOUR PLANS.
7. EXISTING BUS STOP LOCATION AND COORDINATE WITH EACH TRANSIT AGENCY FOR RELOCATION, IF NEEDED.
8. MAINTAIN PEDESTRIAN ACCESS.
9. LOCAL ACCESS ONLY.
10. CONSTRUCT INTERSECTION AREA IN TWO OR THREE STAGES TO MAINTAIN VEHICLE ACCESS.

LEGEND:

- (X) → TRAFFIC LANES MAINTAINED
- (S) SIGNALIZED INTERSECTION
- CONSTRUCTION AREA
- ROAD CLOSED
- BUS STOP SIGN

100' 0 100' 200'

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

Metro
LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

PB
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TRAFFIC HANDLING PLAN
OFF-STREET
WILSHIRE/FAIRFAX STATION
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO TR-005 REV
SCALE 1" = 100'
SHEET NO

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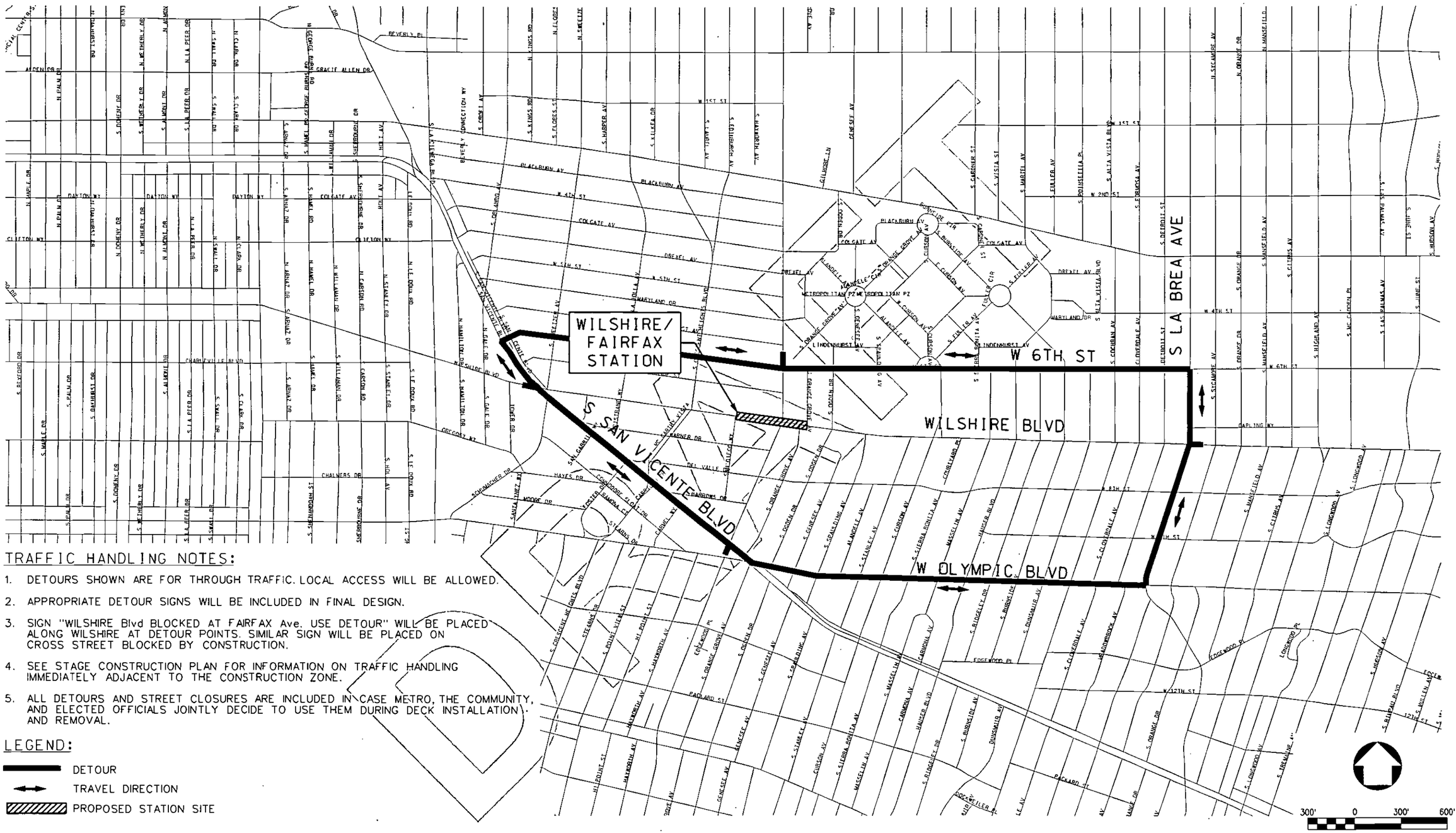

TRAFFIC HANDLING NOTES:

1. DETOURS SHOWN ARE FOR THROUGH TRAFFIC. LOCAL ACCESS WILL BE ALLOWED.
2. APPROPRIATE DETOUR SIGNS WILL BE INCLUDED IN FINAL DESIGN.
3. SIGN "WILSHIRE Blvd BLOCKED AT FAIRFAX Ave. USE DETOUR" WILL BE PLACED ALONG WILSHIRE AT DETOUR POINTS. SIMILAR SIGN WILL BE PLACED ON CROSS STREET BLOCKED BY CONSTRUCTION.
4. SEE STAGE CONSTRUCTION PLAN FOR INFORMATION ON TRAFFIC HANDLING IMMEDIATELY ADJACENT TO THE CONSTRUCTION ZONE.
5. ALL DETOURS AND STREET CLOSURES ARE INCLUDED IN CASE METRO, THE COMMUNITY, AND ELECTED OFFICIALS JOINTLY DECIDE TO USE THEM DURING DECK INSTALLATION AND REMOVAL.

LEGEND:

- DETOUR
- TRAVEL DIRECTION
- PROPOSED STATION SITE

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

Metro

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TRAFFIC DETOUR PLAN
OFF-STREET
WILSHIRE/FAIRFAX STATION
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO TR-006 REV
SCALE 1"=600'
SHEET NO

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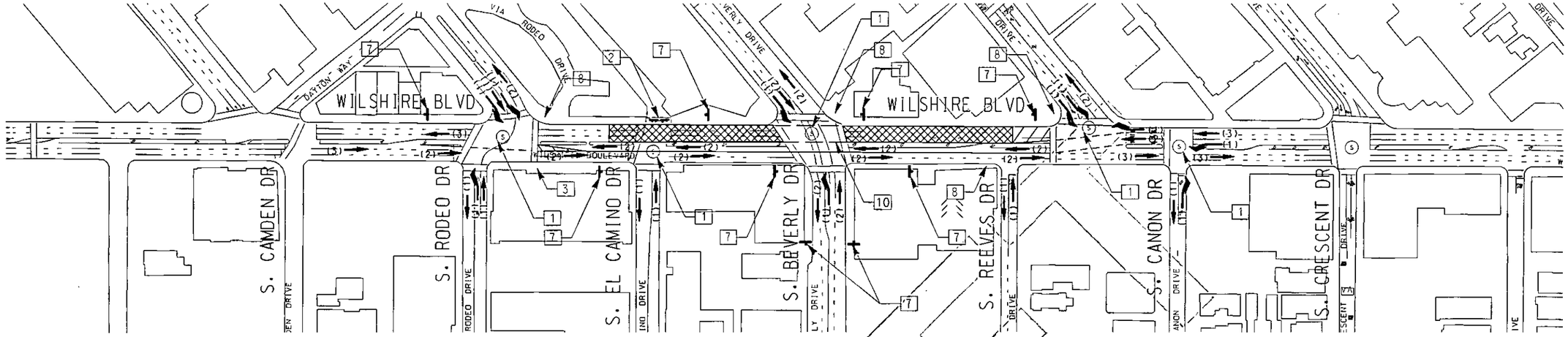
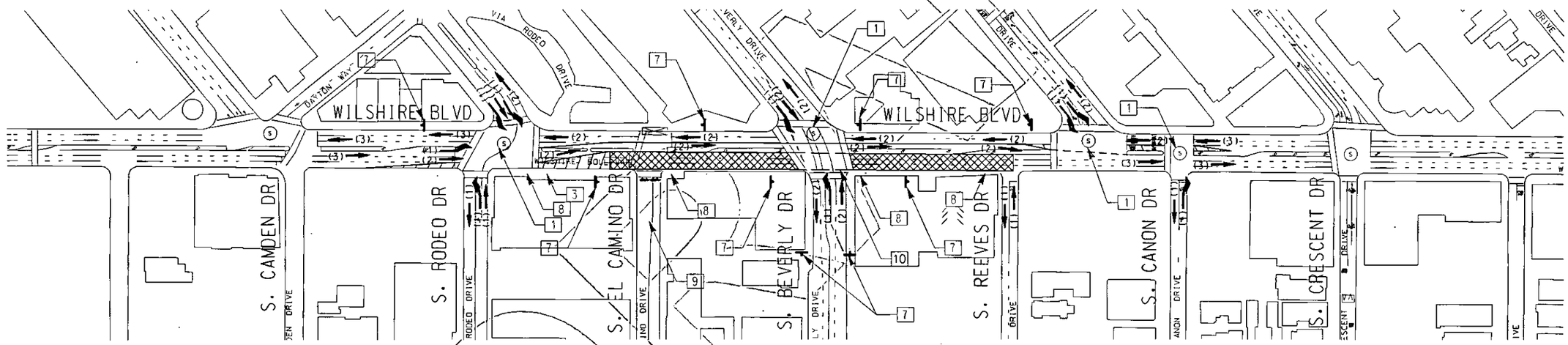


STAGE 1 (SOLDIER PILE AND DECKING INSTALLATION)



STAGE 2 (SOLDIER PILE AND DECKING INSTALLATION)

TRAFFIC HANDLING NOTES:

1. PROVIDE TEMPORARY TRAFFIC SIGNAL PLAN.
2. DRIVEWAY ACCESS SHALL BE COORDINATED WITH EACH PROPERTY OWNER.
3. PASSENGER AND COMMERCIAL LOADING ZONE SHALL BE COORDINATED WITH EACH PROPERTY OWNER.
4. NOT USED.
5. TEMPORARY "TOW AWAY NO STOPPING ANY TIME" AND REMOVE OR COVER EXISTING PARKING METER.
6. ROAD CLOSED. SEE DETOUR PLANS.
7. EXISTING BUS STOP LOCATION AND COORDINATE WITH EACH TRANSIT AGENCY FOR RELOCATION. IF NEEDED.
8. MAINTAIN PEDESTRIAN ACCESS.
9. LOCAL ACCESS ONLY.
10. CONSTRUCT INTERSECTION AREA IN TWO OR THREE STAGES TO MAINTAIN VEHICLE ACCESS.

LEGEND:

- (X) → TRAFFIC LANES MAINTAINED
- (S) SIGNALIZED INTERSECTION
- CONSTRUCTION AREA
- ROAD CLOSED
- BUS STOP SIGN

SEE SHEET S-001 AND S-002 FOR TYPICAL CONSTRUCTION SEQUENCING

100' 0 100' 200'

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

Metro
LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

PB
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TRAFFIC HANDLING PLAN
TOP DOWN CONCEPT 2 OR 3
WILSHIRE/RODEO STATION
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO TR-007 REV
SCALE 1"=100'
SHEET NO

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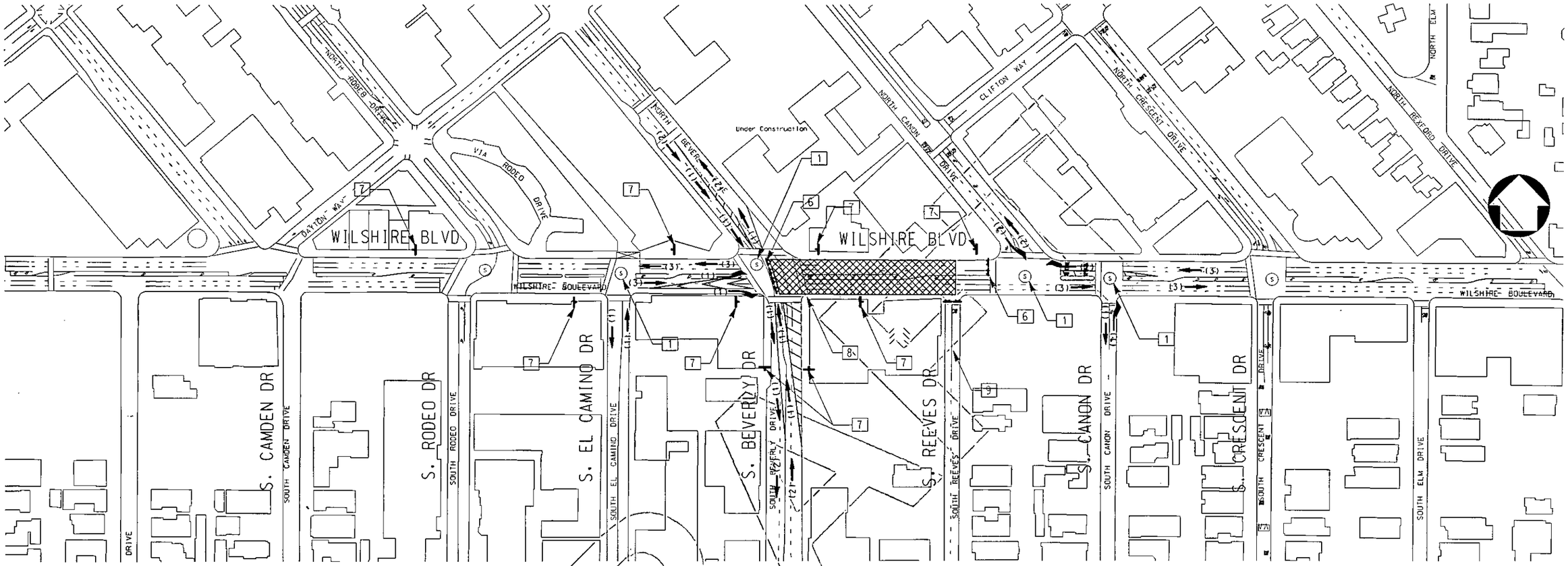

STAGE 1 (SOLDIER PILE PERMANENT DECKING INSTALLATION)

TRAFFIC HANDLING NOTES:

1. PROVIDE TEMPORARY TRAFFIC SIGNAL PLAN.
2. DRIVEWAY ACCESS SHALL BE COORDINATED WITH EACH PROPERTY OWNER.
3. PASSENGER AND COMMERCIAL LOADING ZONE SHALL BE COORDINATED WITH EACH PROPERTY OWNER.
4. NOT USED.
5. TEMPORARY "TOW AWAY NO STOPPING ANY TIME" AND REMOVE OR COVER EXISTING PARKING METER.
6. ROAD CLOSED. SEE DETOUR PLANS.
7. EXISTING BUS STOP LOCATION AND COORDINATE WITH EACH TRANSIT AGENCY FOR RELOCATION, IF NEEDED.
8. MAINTAIN PEDESTRIAN ACCESS.
9. LOCAL ACCESS ONLY.
10. CONSTRUCT INTERSECTION AREA IN TWO OR THREE STAGES TO MAINTAIN VEHICLE ACCESS.

LEGEND:

- (X) → TRAFFIC LANES MAINTAINED
- (S) SIGNALIZED INTERSECTION
- CONSTRUCTION AREA
- ROAD CLOSED
- BUS STOP SIGN

SEE SHEET S-002 FOR TYPICAL CONSTRUCTION SEQUENCING

100' 0 100' 200'

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

Metro
LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

PB
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TRAFFIC HANDLING PLAN
TOP DOWN CONCEPT 4
WILSHIRE/RODEO STATION - SHT 1 OF 2
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO TR-008 REV
SCALE 1"=100'
SHEET NO

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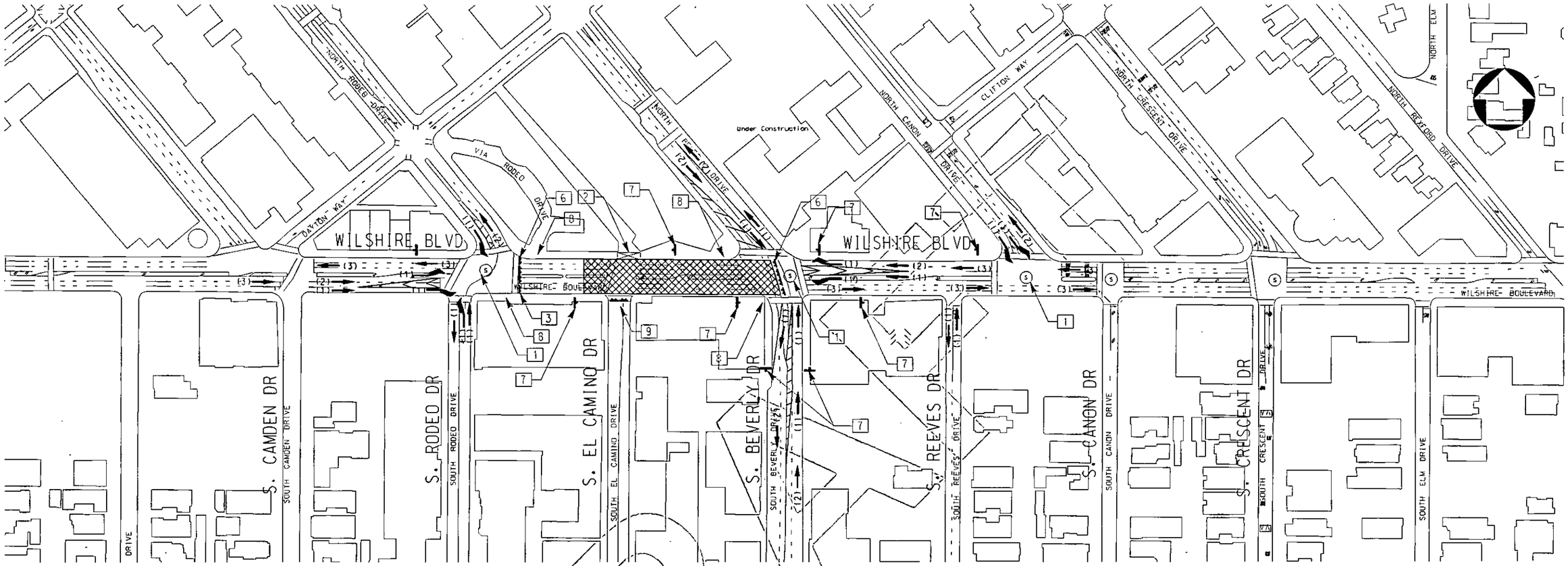

STAGE 2 (SOLDIER PILE PERMANENT DECKING INSTALLATION)

TRAFFIC HANDLING NOTES:

1. PROVIDE TEMPORARY TRAFFIC SIGNAL PLAN.
2. DRIVEWAY ACCESS SHALL BE COORDINATED WITH EACH PROPERTY OWNER.
3. PASSENGER AND COMMERCIAL LOADING ZONE SHALL BE COORDINATED WITH EACH PROPERTY OWNER.
4. NOT USED.
5. TEMPORARY "TOW AWAY NO STOPPING ANY TIME" AND REMOVE OR COVER EXISTING PARKING METER.
6. ROAD CLOSED. SEE DETOUR PLANS.
7. EXISTING BUS STOP LOCATION AND COORDINATE WITH EACH TRANSIT AGENCY FOR RELOCATION, IF NEEDED.
8. MAINTAIN PEDESTRIAN ACCESS.
9. LOCAL ACCESS ONLY.
10. CONSTRUCT INTERSECTION AREA IN TWO OR THREE STAGES TO MAINTAIN VEHICLE ACCESS.

LEGEND:

- (X) → TRAFFIC LANES MAINTAINED
- (S) SIGNALIZED INTERSECTION
- CONSTRUCTION AREA
- ROAD CLOSED
- BUS STOP SIGN

SEE SHEET S-002 FOR TYPICAL CONSTRUCTION SEQUENCING

100' 0 100' 200'

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

Metro
LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

PB
PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TRAFFIC HANDLING PLAN
TOP DOWN CONCEPT 4
WILSHIRE/RODEO STATION - SHT 2 OF 2
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO TR-009
REV
SCALE 1"=100'
SHEET NO

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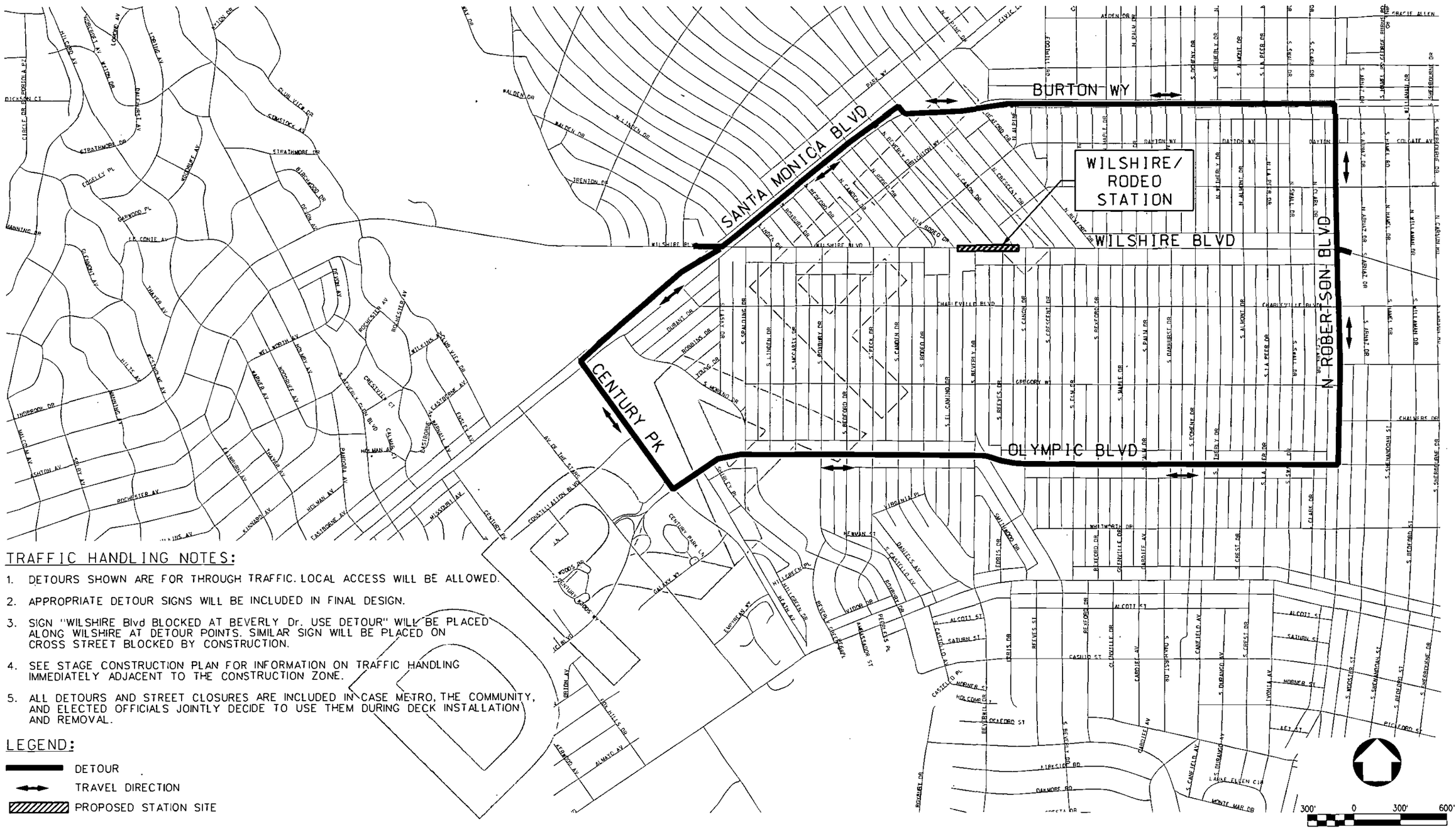

TRAFFIC HANDLING NOTES:

1. DETOURS SHOWN ARE FOR THROUGH TRAFFIC. LOCAL ACCESS WILL BE ALLOWED.
2. APPROPRIATE DETOUR SIGNS WILL BE INCLUDED IN FINAL DESIGN.
3. SIGN "WILSHIRE Blvd BLOCKED AT BEVERLY Dr. USE DETOUR" WILL BE PLACED ALONG WILSHIRE AT DETOUR POINTS. SIMILAR SIGN WILL BE PLACED ON CROSS STREET BLOCKED BY CONSTRUCTION.
4. SEE STAGE CONSTRUCTION PLAN FOR INFORMATION ON TRAFFIC HANDLING IMMEDIATELY ADJACENT TO THE CONSTRUCTION ZONE.
5. ALL DETOURS AND STREET CLOSURES ARE INCLUDED IN CASE METRO, THE COMMUNITY, AND ELECTED OFFICIALS JOINTLY DECIDE TO USE THEM DURING DECK INSTALLATION AND REMOVAL.

LEGEND:

- DETOUR
- TRAVEL DIRECTION
- PROPOSED STATION SITE

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

Metro

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

PB

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TRAFFIC DETOUR PLAN
TOP-DOWN
WILSHIRE/RODEO STATION
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO TR-010 REV
SCALE 1" =600'
SHEET NO

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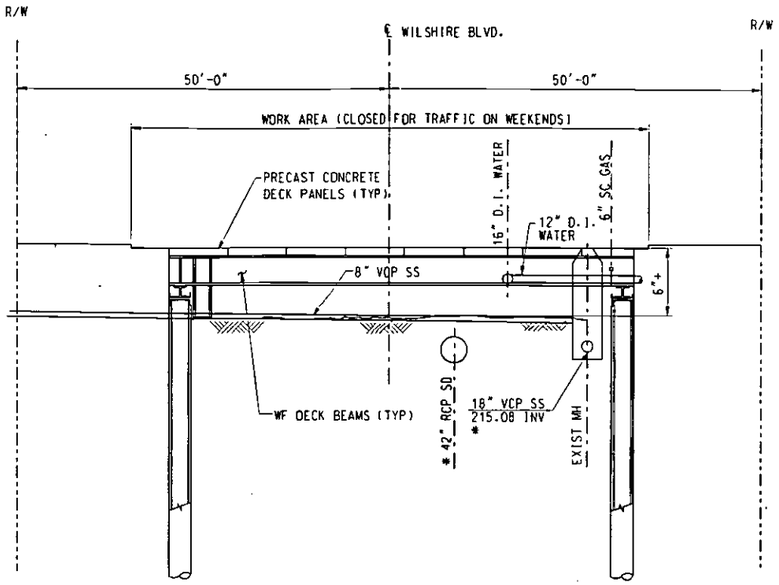

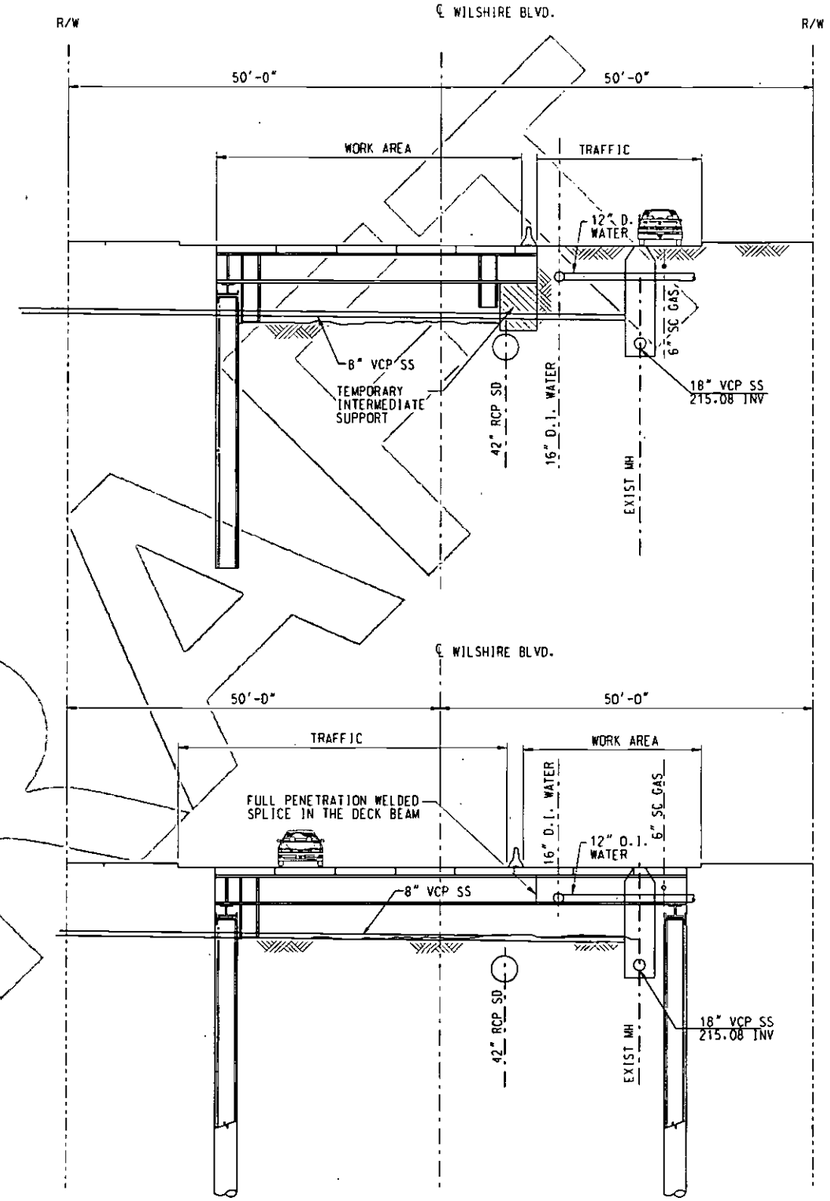

DRAFT

NOTES:

(A) * UTILITIES AT WILSHIRE/RODEO STATION. INFORMATION ABOUT ALL UTILITIES NOT AVAILABLE AT THIS TIME.

(B) TO EXPEDITE THE INSTALATION OF DECKING SYSTEM:

ADVANCE RELOCATION OF UTILITIES TO OUTSIDE OF THE STATION BOX
IT IS ESSENTIAL THAT THE FEWEST UTILITIES ARE TO BE SUPPORTED BY THE DECKING SYSTEM
THE RELOCATION OF UTILITIES NEED TO START SOON.
PROVIDE MULTIPLE LAYOUT AREA FOR DECK BEAMS AND DECKING PANELS.
ALLOW CONTRACTOR TO WORK WITH MULTIPLE CREWS AT VARIOUS POINTS BY ALLOWING ACCESS AND HOUL ROUTS.
DESIGN DECK BEAMS WITH MINIMUM FIELD WELDING.
DURING REMOVAL OF DECKING PHASE, BACKFILL WITH SLURRY RATHER THAN COMPACTED SOIL.
PROVIDE MONETARY INCENTIVE TO THE CONTRACTOR FOR EARLY FINISH.(SIMILAR TO BRIDGES AFTER NORTHRIDGE EARTHQUAKE, EXPO-1 BRIDGE AT VENICE CONTRACTED TO BBI)

ALTERNATIVE 1 (CURRENT PARCTICE)

CONSTRUTION SEQUENCES
STAGE 1

(1) INSTALL SOLDIER PILES, CAP WALES, CAP BEAMS IN A TRENCH ON BOTH SIDES OF THE STREET.

(2) EXCAVATE TRENCH IN THE STREET. INSTALL DECK BEAMS.

(3) CONTINUE EXCAVATING IN THE STREET. INSTALL LATERAL SUPPORTS FOR THE BEAM.

(4) INSTALL DECKING - OPEN STREET TO TRAFFIC

STAGE 2

(5) AT THE END OF THE PROJECT CLOSE STREET TO TRAFFIC TO REMOVE DECKING AND CONSTRUCT PAVEMENT.

ALTERNATIVE 2 (SIMILAR TO ALTERNATIVE 1 BUT IN TWO STAGES)

INSTALLATION OF THE DECKING SYSTEM IN THE STREET FOR CUT AND COVER CONSTRUCTION OF THE STATION

CONSTRUCTION SEQUENCE FOR STREET DECKING

STAGE 1

(1.) TRENCH FOR SOLDIER PILES ON ONE SIDE OF THE STREET AT A TIME (CLOSURE OF END LANE REQUIRED).

(2.) PLACE SOLDIER PILES IN CIDH. PLACE CAP WALL AND BEAM.

(3.) TRENCH NEAR THE CENTER OF THE STREET AT DECK BEAM LOCATION (CLOSURE OF CENTER LANE REQUIRED).

(4.) PLACE CONCRETE PAD FOR CENTER SUPPORT OF DECK BEAMS.

(5.) KEEP MINIMUM REQUIRED LANES OPEN. CLOSE REST OF THE LANES.

(6.) PLACE DECK BEAMS AND DECKING PANELS OVER CLOSED STREET.

(7.) OPEN THE STREET TO TRAFFIC OVER DECKED LANES.

STAGE 2

REPEAT STEP 1 TO 5 FOR THE REMAINING WIDTH OF THE STREET.

(8.) SPLICE THE DECK BEAM WITH FULL PENETRATION WELD WHEN THERE IS FULL CLOSURE OF THE STREET

REPEAT STEPS 6 AND 7

(9.) CONTINUE EXCAVATION BELOW. SUPPORT UTILITIES AND PLACE STRUTS AS EXCAVATION PROGRESSES

STAGE 3

CLOSE STREET TO TRAFFIC. REMOVE THE DECKING SYSTEM. RESTORE STREET AND TRAFFIC.

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE AUGUST 2010

Metro
LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

PROJECT MANAGER

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TOP DOWN CONCEPT
INSTALLATION OF DECKING SYSTEM
ALTERNATIVE 1 AND 2
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO S-001 REV
SCALE 1"=50'
SHEET NO 1 OF 2

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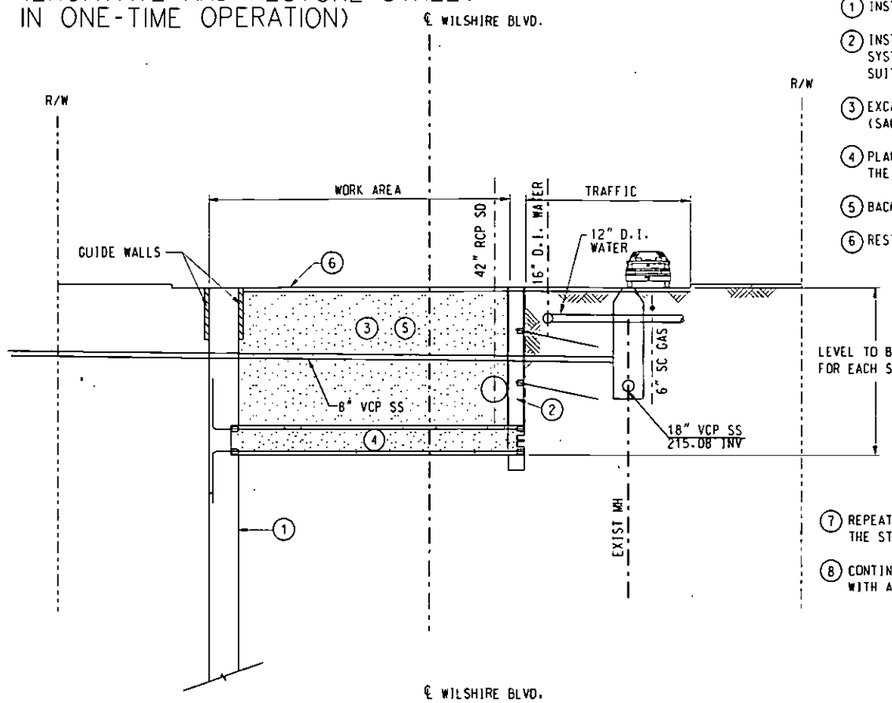
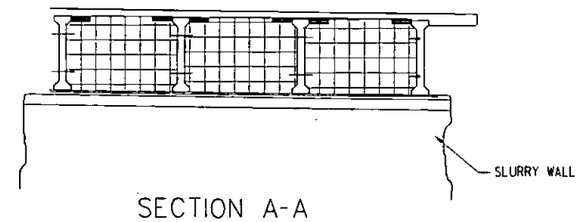
ALTERNATIVE 3
(EXCAVATE AND RESTORE STREET IN ONE-TIME OPERATION)



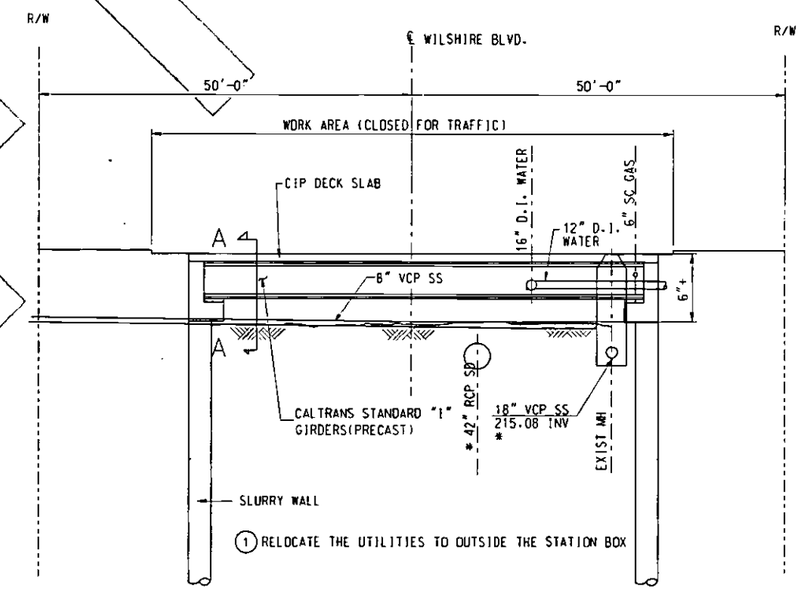
CONSTRUTION SEQUENCES

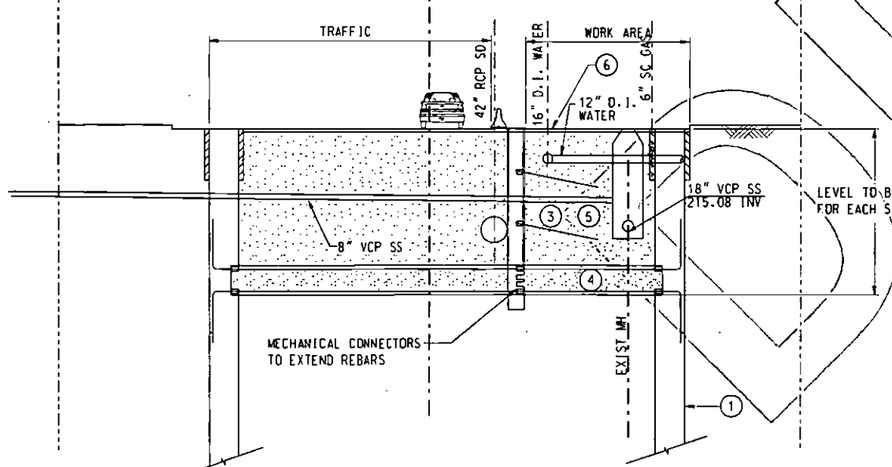
1. INSTALL SLURRY WALL
2. INSTALL TEMPORARY EXCAVATION SUPPORT SYSTEM (SOIL NAIL WALL OR ANY OTHER SUITABLE SYSTEM)
3. EXCAVATE TO THE BOTTOM OF THE INTERMEDIATE (SACRIFICIAL) SLAB
4. PLACE SLAB DESIGNED TO SPAN THE WIDTH OF THE ECAVATION
5. BACKFILL WITH SLURRY
6. RESTORE STREET
7. REPEAT STEP FOR THE REMAING PORTION OF THE STREET
8. CONTINUE EXCAVATION BELOW THE SLAB WITH AN ACCESS FROM THE SIDE SHAFTS.

ALTERNATIVE 4 - PERMANENT BRIDGE AT THE STREET LEVEL
(TO BE DEVELOPED)



SECTION A-A





ALTERNATIVES TO CUT AND COVER CONSTRUCTION
(NO TRAFFIC IMPACT)

PIPE ARCH ROOF

MICRO-TUNNELING STEEL PIPES AROUND THE PERIPHERY OF THE PROPOSED EXCAVATION. EXCAVATION FOR STATION TO PROCEED SYSTEMATICALLY UNDER THE PROTECTION OF THE STEEL PIPE ARCHED ROOF. CUT OFF WALLS AND SHAFTS MAY BE REQUIRED TO LAUNCH TBM'S

MINED STATION

CONSTRUCTING CAVERN FOR STATION BY SEQUENTIAL EXCAVATION METHOD

DRAFT

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
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WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TOP DOWN CONCEPT
INSTALLATION OF DECKING SYSTEM
ALTERNATIVE 3 AND 4
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO S-002 REV
SCALE 1"=50'
SHEET NO 2 OF 2

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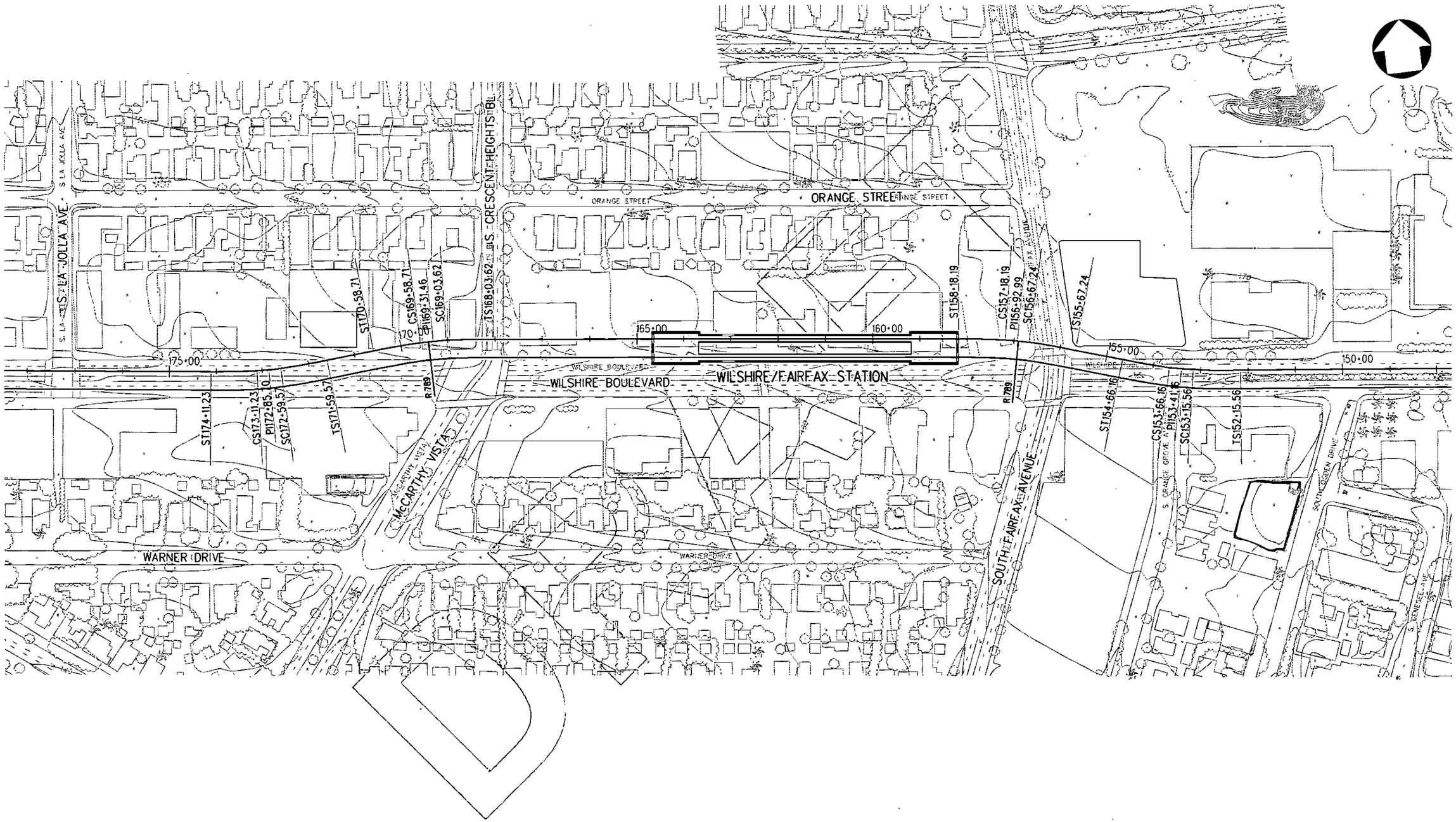

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
DRAWN BY
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LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY

PB

PROJECT MANAGER _____

WESTSIDE SUBWAY EXTENSION
ADV. CONCEPTUAL ENGINEERING
TWIN BORE TUNNEL
OFF STREET
WILSHIRE/FAIRFAX STATION
ALT. TUNNELING METHODS STUDY

CONTRACT NO
DRAWING NO CJ-401 REV
SCALE 1" = 100'
SHEET NO

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