

PLAN AND PROFILE FOR STORM DRAIN SYSTEM OFFICIAL MAP NO. 4 TORRANCE TRANSIT PARK & RIDE REGIONAL TERMINAL PHASE 2 (WEST SIDE OF CRENSHAW BLVD. NORTH OF DOMINGUEZ ST.)

STORM DRAIN GENERAL NOTES

- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITION AND SUPPLEMENTS THERETO, AS WRITTEN AND PROMULGATED BY PUBLIC WORKS STANDARDS, INC., HEREINAFTER REFERRED TO AS THE STANDARD SPECIFICATIONS, THE TORRANCE STANDARDS, AND TO THE SATISFACTION OF THE COMMUNITY DEVELOPMENT OR PUBLIC WORKS DIRECTOR.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE, VERIFY DEPTH AND PROTECT ALL STRUCTURES, INCLUDING SUBSTRUCTURES, SHOWN ON THE PLAN. THE CONTRACTOR SHALL BEAR THE ENTIRE COST OF REPAIRING OR REPLACING ANY OF SAID STRUCTURES DAMAGED BY HIM/HER DURING PROSECUTION OF THE WORK. ALL REPAIRS AND REPLACEMENTS SHALL BE DONE IN THE PRESENCE OF THE INSPECTOR. ALL LOCATIONS SHOWN ON THE PLAN FOR UTILITY LINES HAVE BEEN TAKEN FROM AVAILABLE RECORDS AND THEIR COMPLETENESS AND CORRECTNESS ARE IN NO WAY GUARANTEED.
- THE CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT (USA) AT 1-800-227-2800 AND ALL PUBLIC UTILITY COMPANIES AND OWNERS OF PRIVATE FACILITIES WITHIN THE AREA OF CONSTRUCTION AT LEAST 2 WORKING DAYS IN ADVANCE OF PERFORMING ANY WORK WITHIN SAID AREA.
- THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FROM THE CITY BEFORE COMMENCING WORK. TRAFFIC CONTROL WITHIN PUBLIC STREET RIGHTS OF WAY SHALL BE IN CONFORMANCE WITH THE CALIFORNIA MUTCD MANUAL OR CITY OF TORRANCE STANDARD FOR TRAFFIC CONTROL, LATEST EDITION. THE CONTRACTOR SHALL PROVIDE A 24-HOUR TELEPHONE NUMBER FOR EMERGENCY REPAIRS TO TRAFFIC CONTROL AND PAVEMENT MARKINGS.
- CAUTION: REVIEW APPROVED CONSTRUCTION PLAN. IF CONSTRUCTION REQUIRES WORKERS AND/OR EQUIPMENT TO BE WITHIN 6 FEET OR CRANES OR HOISTING DEVICES TO BE WITHIN 10 FEET OF OVERHEAD ELECTRIC LINES, CALL SOUTHERN CALIFORNIA EDISON AT 310-783-9336.
- PRIOR TO COMMENCEMENT OF WORK, ALL SURVEY MONUMENTS IN THE PROJECT AREA SHALL BE LOCATED AND TIED OUT. ALL CENTERLINE MONUMENTS OR TIES LOST OR DESTROYED BY THIS WORK SHALL BE REPLACED EITHER BY A LICENSED SURVEYOR OR A CIVIL ENGINEER REGISTERED PRIOR TO JANUARY 1, 1982 AND NEW TIE SHEETS PROVIDED. METHOD OF ESTABLISHMENT SHALL BE STATED ON THE TIE SHEET.
- GRADE SHEETS PREPARED AND STAMPED BY A LICENSED ENGINEER OR SURVEYOR SHALL BE DELIVERED TO THE INSPECTOR 24 HRS PRIOR TO COMMENCEMENT OF WORK.
- THE CONTRACTOR SHALL NOTIFY THE PUBLIC WORKS DEPARTMENT AT 310-781-6900 PRIOR TO TRIMMING, REMOVING OR RELOCATING ANY EXISTING TREES.
- UNLESS OTHERWISE SHOWN, ALL TRAFFIC SIGNS SHALL BE RELOCATED OR REMOVED BY THE CONTRACTOR. THE CONTRACTOR SHALL NOTIFY THE PUBLIC WORKS DEPARTMENT AT 310-781-6900 AT LEAST 2 WORKING DAYS IN ADVANCE OF THE WORK.
- STORM DRAIN CONNECTIONS TO THE L.A. COUNTY STORM DRAIN SYSTEM REQUIRE A PERMIT FROM L.A. COUNTY (1-626-458-3129) BEFORE ISSUANCE OF A CITY PERMIT.
- IN CASE OF CONFLICT BETWEEN A CONNECTOR PIPE AND AN EXISTING UNDERGROUND LINE, THE CONNECTOR PIPE MAY BE REALIGNED OVER OR UNDER THE CONFLICTING LINE. CONNECTOR PIPE GRADES SHALL DRAIN POSITIVELY TOWARD THE MAIN LINE, AND WHERE GRADE BREAKS EXCEED FIVE DEGREES A CONCRETE COLLAR PER A.P.W.A. STD. DRAWING 380 SHALL BE CONSTRUCTED. APPROVAL FOR REALIGNMENT SHALL BE OBTAINED FROM THE COMMUNITY DEVELOPMENT/PUBLIC WORKS DIRECTOR PRIOR TO COMMENCEMENT OF WORK.
- TRENCH CUT INTO AN EXISTING ROADWAY WITHIN THE PUBLIC RIGHT OF WAY SHALL BE BACKFILLED AND PAVED AS PER TORRANCE STANDARD T116.
- MANHOLE AND CATCH BASIN COVERS SHALL BE CAST WITH THE WORDS "TORRANCE DRAIN" FOR CITY MAINTAINED LINES AND "PRIVATE DRAIN" FOR PRIVATELY MAINTAINED LINES.
- DURING NON-CONSTRUCTION HOURS, ALL EXCAVATIONS MUST BE APPROPRIATELY SHORED, PLATED OR BACKFILLED EXCEPT BORE PITS WHICH SHALL BE SECURED WITH K-RAIL AND 6' HIGH CHAIN LINK FENCE PANELS SECURED IN PLACE TO THE SATISFACTION OF THE PUBLIC WORKS INSPECTOR. STEEL PLATES SHALL BE TACK WELDED, PINNED AND/OR SECURED IN PLACE BY ANOTHER METHOD APPROVED BY THE INSPECTOR.
- THE CONTRACTOR SHALL MAKE AVAILABLE FOR THE INSPECTOR'S REVIEW, ON A DAILY BASIS, AS-BUILT DRAWINGS FOR WORK PERFORMED UP TO AND INCLUDING THE PREVIOUS DAY'S ACTIVITIES. WORK SHALL NOT BE CONSIDERED AS COMPLETE UNTIL AS-BUILT DRAWINGS ARE SUBMITTED TO AND ACCEPTED BY THE COMMUNITY DEVELOPMENT DIRECTOR.

SURVEY MONUMENTS

CONTRACTOR SHALL BE RESPONSIBLE FOR ANY MONUMENTATION AND/OR BENCHMARKS THAT ARE DISTURBED OR DESTROYED BY CONSTRUCTION. SUCH POINTS SHALL BE REFERENCED AND REPLACED WITH APPROPRIATE MONUMENTATION BY A LICENSED LAND SURVEYOR OR REGISTERED ENGINEER AUTHORIZED TO PRACTICE LAND SURVEYING. A CORNER RECORD OF SURVEY AS APPROPRIATE, SHALL BE FILED BY THE LICENSED LAND SURVEYOR OR REGISTERED CIVIL ENGINEER AS REQUIRED BY THE LAND SURVEYOR'S ACT FOR ANY REPLACED MONUMENTATION.

BASIS OF BEARINGS

THE BEARING OF THE CENTERLINE OF CRENSHAW BOULEVARD, SHOWN AS N00°34'10"W ON RECORD OF SURVEY FILED IN BOOK 230, PAGE 47 OF RECORDS OF SURVEYS, RECORDS OF LOS ANGELES COUNTY, WAS TAKEN AS THE BASIS OF BEARINGS FOR THESE PLANS.

SOURCE OF TOPOGRAPHY

PHOTOGRAMMETRIC TOPOGRAPHY PROVIDED BY: PSOMAS
DATED: 09/10/2013

EROSION CONTROL

THE CONTRACTOR IS RESPONSIBLE TO REPAIR ANY EROSION DAMAGE TO THE SLOPES, PADS OR STREETS SHOWN ON THESE PLANS WHETHER THE SLOPES ARE EXISTING OR NEW SLOPES, UNTIL THE PROJECT IS ACCEPTED BY THE CITY ENGINEER.

GEOTECHNICAL REPORT

A GEOTECHNICAL REPORT ENTITLED "GEOTECHNICAL SERVICES FOR ADVANCED CONCEPTUAL ENGINEERING, TORRANCE TRANSIT PARK & RIDE REGIONAL TERMINAL, 465 CRENSHAW BLVD., TORRANCE, CALIFORNIA" PREPARED BY "DIAZ YOURMAN & ASSOCIATES" DATED APRIL 14, 2014 HAS BEEN PREPARED FOR THIS PROJECT AND IS AVAILABLE FOR REVIEW BY THE CONTRACTOR FOR REFERENCE AT THE OFFICE OF THE CITY ENGINEER.

ENGINEER'S NOTICE TO CONTRACTORS

THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITY PIPES OF STRUCTURES SHOWN ON THESE PLANS WERE OBTAINED BY A SEARCH OF AVAILABLE RECORDS. THESE LOCATIONS ARE APPROXIMATE AND SHALL BE CONFIRMED IN THE FIELD BY THE CONTRACTOR, SO THAT ANY NECESSARY ADJUSTMENT CAN BE MADE IN ALIGNMENT AND/OR GRADE OF THE PROPOSED IMPROVEMENT. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURE TO PROTECT ANY UTILITY LINES SHOWN AND ANY OTHER LINES NOT OF RECORD OR NOT SHOWN ON THESE PLANS.

PRIVATE ENGINEERING NOTE

CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT TO BE LIMITED TO NORMAL WORKING HOURS, AND CONSTRUCTION CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD THE CITY OF TORRANCE AND DESIGN PROFESSIONAL HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE CITY OF TORRANCE AND/OR DESIGN PROFESSIONAL.

LIST OF DRAWINGS

SHEET No.	DESCRIPTION
1	TITLE SHEET
2	STORM DRAIN PLAN AND PROFILE
3	DETAILS

REFERENCE DRAWINGS

SD-1003

WORK TO BE DONE

THE IMPROVEMENTS CONSIST OF THE FOLLOWING WORK TO BE DONE ACCORDING TO THESE PLANS AND THE SPECIFICATIONS AND STANDARD DRAWINGS LISTED BELOW.

STANDARD SPECIFICATIONS

- STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (SSPWC), LATEST EDITION.
- CALIFORNIA DEPARTMENT OF TRANSPORTATION, "MANUAL OF TRAFFIC CONTROLS FOR CONSTRUCTION AND MAINTENANCE WORK ZONES" (MAY 19, 2004)

STANDARD DRAWINGS

CITY OF TORRANCE STANDARD DRAWINGS, LATEST EDITION.

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION (SPPWC), LATEST EDITION.

LEGEND

EXISTING CONDITIONS

ITEM

- EXISTING SEWER LINE
- EXISTING SEWER CLEANOUT
- EXISTING SEWER MANHOLE
- EXISTING WATER LINE
- EXISTING WATER METER
- EXISTING WATER VALVE
- EXISTING FIRE HYDRANT
- EXISTING STORM DRAIN LINE
- EXISTING STORM DRAIN INLET
- EXISTING POWER POLE
- EXISTING ELECTRIC OR UNDERGROUND
- EXISTING STREET LIGHT
- EXISTING GAS LINE
- EXISTING TELEPHONE LINE
- EXISTING TELEPHONE PEDESTAL
- EXISTING CABLE TV LINE
- EXISTING PULL BOX
- EXISTING SIGN
- EXISTING TREE/BUSH
- EXISTING BOLLARD
- EXISTING FENCE

SYMBOL

- S — EXIST SIZE & MAT'L
- o
- SMH OR SMH
- W — EXIST SIZE & MAT'L
- WM
- ⊙
- ⊙ FH
- SD — EXIST SIZE & MAT'L
- DI
- ⊙ (U/G) OR (O/H)
- E
- ⊙ EXIST SIZE
- T
- CATV
-
- T
- ⊙
- ⊙
- X

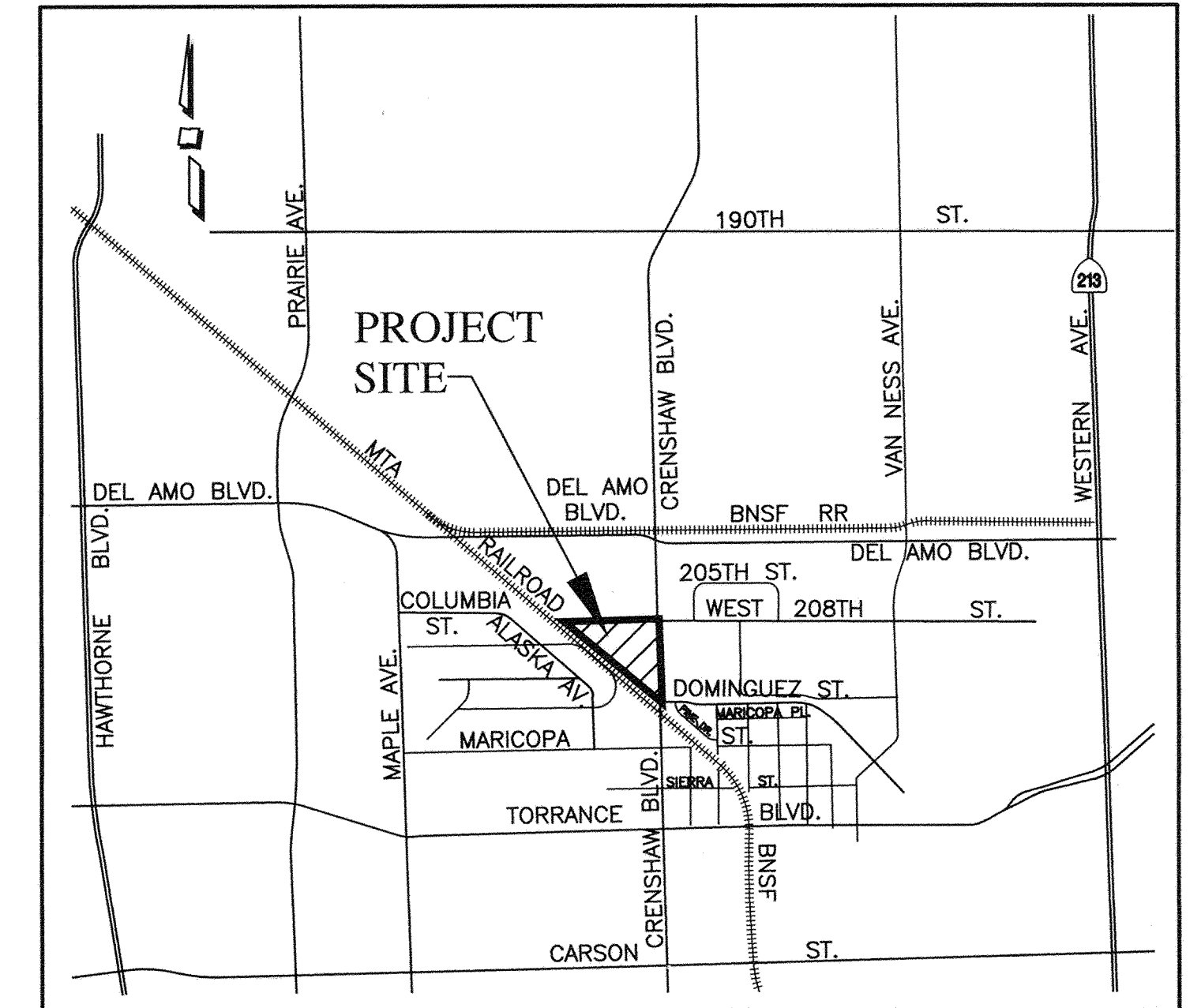
NEW IMPROVEMENTS

ITEM DESCRIPTION STD DWG NO./DETAIL NO.

BEDDING FOR STORM DRAIN (SIZE/TYPE AS SHOWN).....T.302.....	
GRATING CATCH BASIN.....SPPWC.304-3.....	
STORM DRAIN MANHOLE.....SPPWC.321-1.....	
STORM WATER BMP MANHOLE.....	②
WEIR MANHOLE.....	①
UNDERGROUND DETENTION BASIN.....	② ③ ④
SPPWC = STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION	
TRENCH BACKFILL & PAVEMENT REPAIRS	T 116
JUNCTION STRUCTURE	SPPWC 335-2
FLAP GATE	T 301

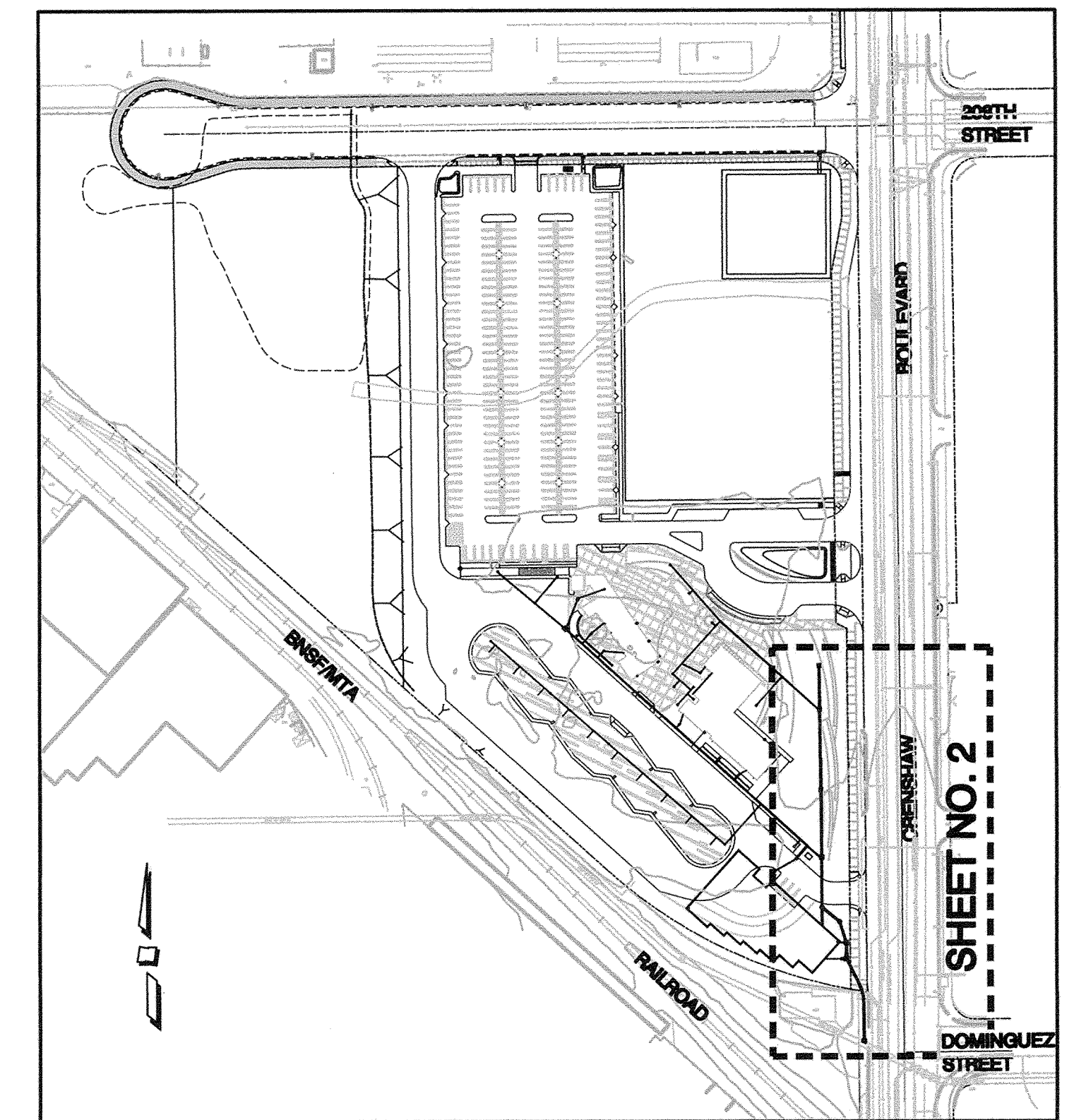
SYMBOL

- ⊙
- ⊙
- ⊙
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- ⊙
- ⊙
- ⊙



VICINITY MAP

N.T.S.



KEY MAP

SCALE: 1=150'

SHEET NO. 2

REV.	DATE	DESCRIPTION	BY	CHECKED

**CITY OF TORRANCE
COMMUNITY DEVELOPMENT DEPARTMENT**

DRAWN: PRIVATE ENGINEER
DESIGNED: PRIVATE ENGINEER
PROJECT ENGINEER: *Ted Symms*
APPROVED: *Felipe Segovia*

RECOMMENDED:
[Signature] 23 July 15
JEFFERY GIBSON
COMMUNITY DEVELOPMENT DIRECTOR
DATE: _____
SCALE: AS SHOWN SHEET 1 OF 3
PLAN NO. **SD-504**

BUILDING REGULATION ADMINISTRATOR
FELIPE SEGOVIA
R.C.E. NO. 41102 (EXP.03/31/2017)

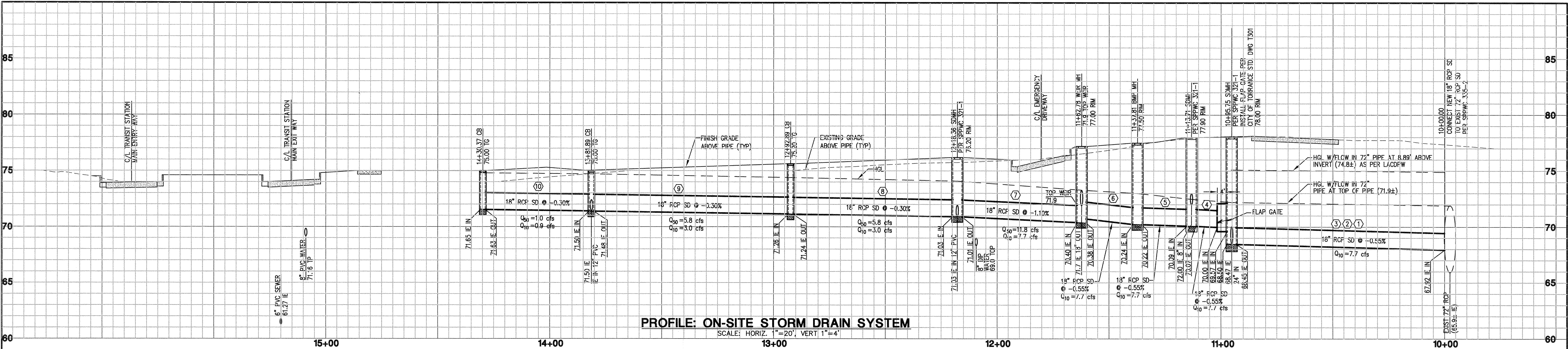
NO WORK SHALL BE DONE ON THIS SITE UNTIL BELOW AGENCY IS NOTIFIED OF INTENTION TO GRADE OR EXCAVATE.

811
Know what's below.
Call before you dig.
TWO WORKING DAYS BEFORE YOU DIG

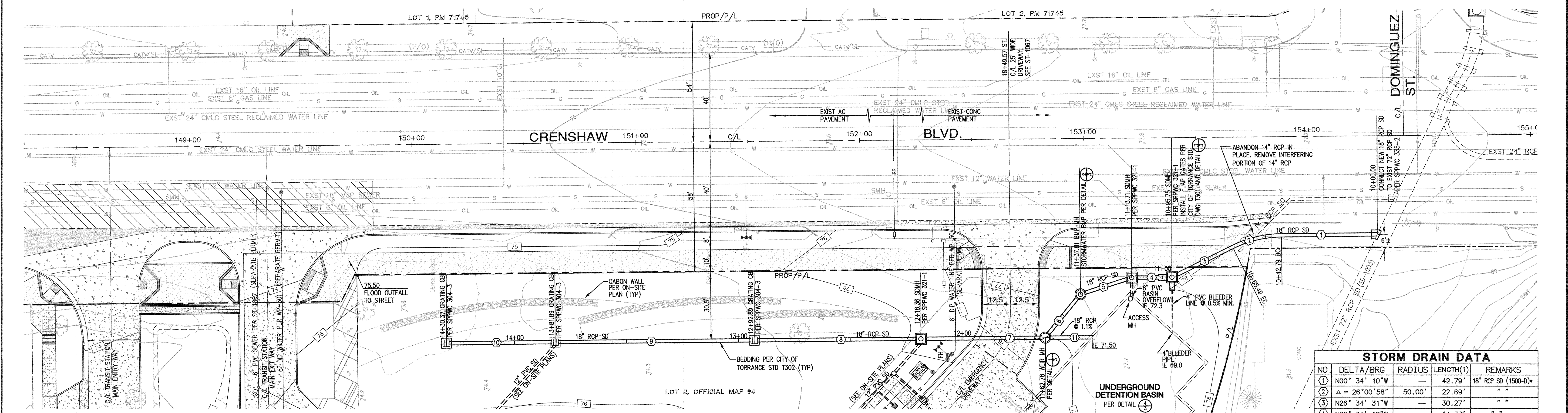
BENCHMARK
BENCH MARK: Y10874
DPW BM TAG IN E CB 1M(3.3FT) N/O BCR @ NE COR CRENSHAW BLVD & 208TH ST.
TORRANCE QUAD 2005 EL. 72.904
NOTE: ELEVATIONS SHOWN ON THIS PLAN EQUAL ELEVATIONS SHOWN ON SD-1003 PLUS 1.7'

REGISTERED PROFESSIONAL ENGINEER
JAMES S. BULLOCK
No. 41785
Exp. 3-31-16
STATE OF CALIFORNIA

PSOMAS
3111 Camino Del Rio North, Suite 702
San Diego, CA 92108
(619) 961-2800 (619) 961-2392 fax
www.psomas.com



PROFILE: ON-SITE STORM DRAIN SYSTEM
SCALE: HORIZ. 1"=20', VERT. 1"=4'

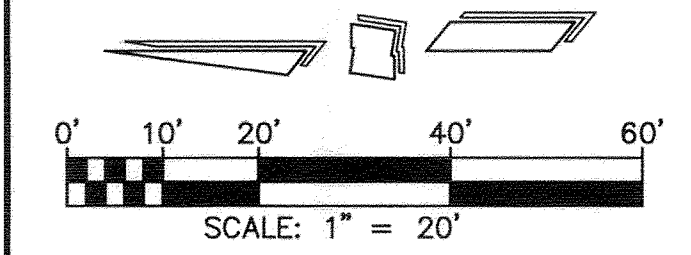


PLAN: ON-SITE STORM DRAIN SYSTEM
SCALE: HORIZ. 1"=20'

NOTE: ELEVATIONS ON THESE PLANS ARE EQUAL TO ELEVATIONS ON PLANS SD-1003 PLUS 1.7'

STORM DRAIN DATA				
NO.	DELTA/BRG	RADIUS	LENGTH(1)	REMARKS
①	N00° 34' 10"W	—	42.79'	18" RCP SD (1500-D)*
②	Δ = 26°00'58"	50.00'	22.69'	" "
③	N26° 34' 31"W	—	30.27'	" "
④	N00° 34' 10"W	—	14.37'	" " **
⑤	N18° 02' 47"W	—	24.11'	" "
⑥	N51° 02' 38"W	—	24.97'	" "
⑦	N00° 34' 10"W	—	55.60'	" "
⑧	N00° 34' 10"W	—	74.51'	" "
⑨	N00° 34' 10"W	—	89.00'	" "
⑩	N00° 34' 10"W	—	48.48'	" "
⑪	N00° 34' 10"W	—	19.29'	" "

* PROVIDE WATER-TIGHT JOINTS AS PER SECTION 306-1.2.4 OF THE GREENBOOK (GASKET-TYPE).
** SEE STD PLAN T301 FOR CONNECTION TO MANHOLE.
(1) LENGTHS SHOWN ARE TO C/L OF BOXES.



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REV.	DATE	DESCRIPTION	BY	CHECKED

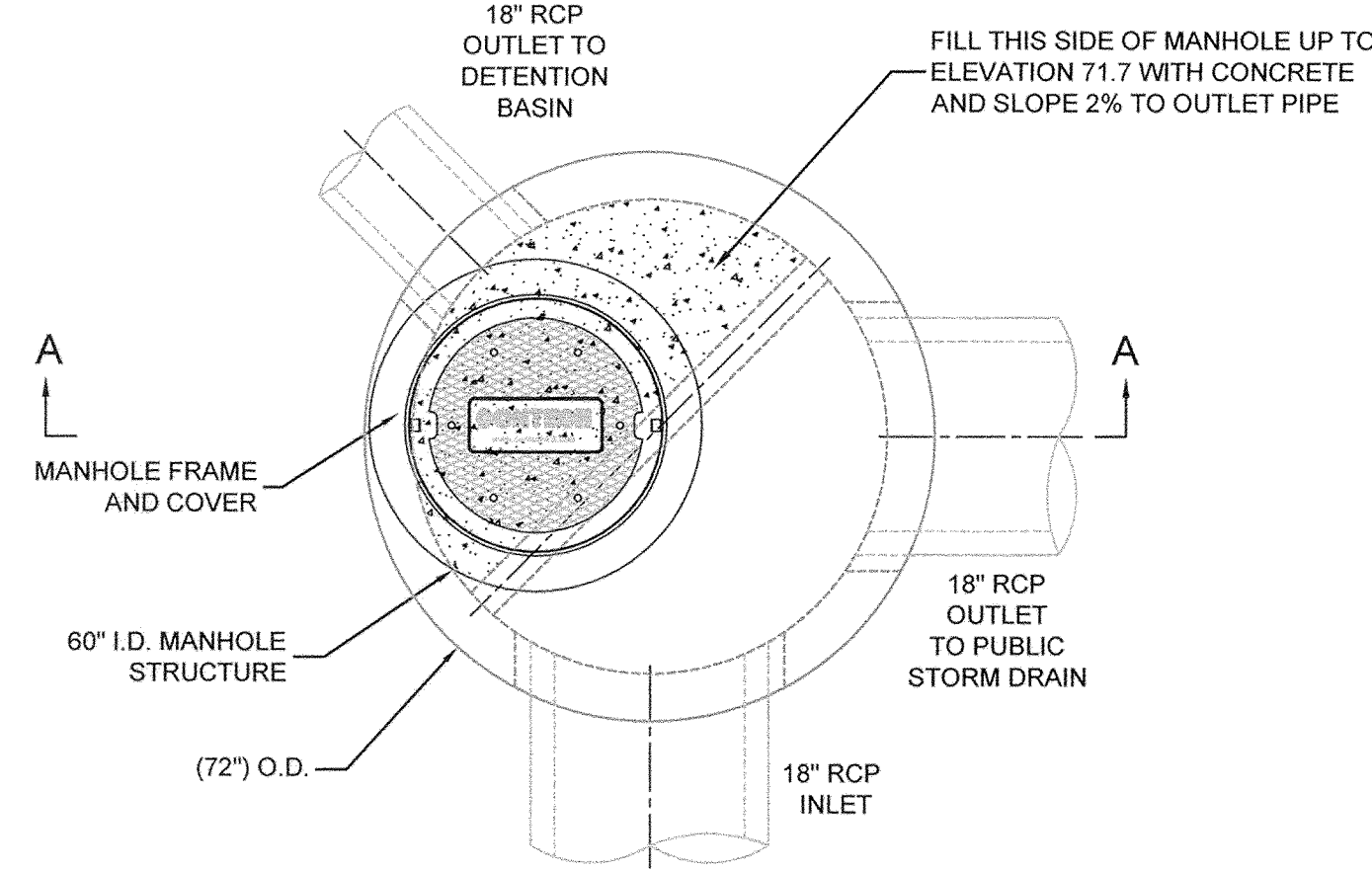
CITY OF TORRANCE
COMMUNITY DEVELOPMENT DEPARTMENT

DRAWN: PRIVATE ENGINEER
DESIGNED: PRIVATE ENGINEER
PROJECT ENGINEER: *Ted Symms*
APPROVED: *Felipe Segovia*

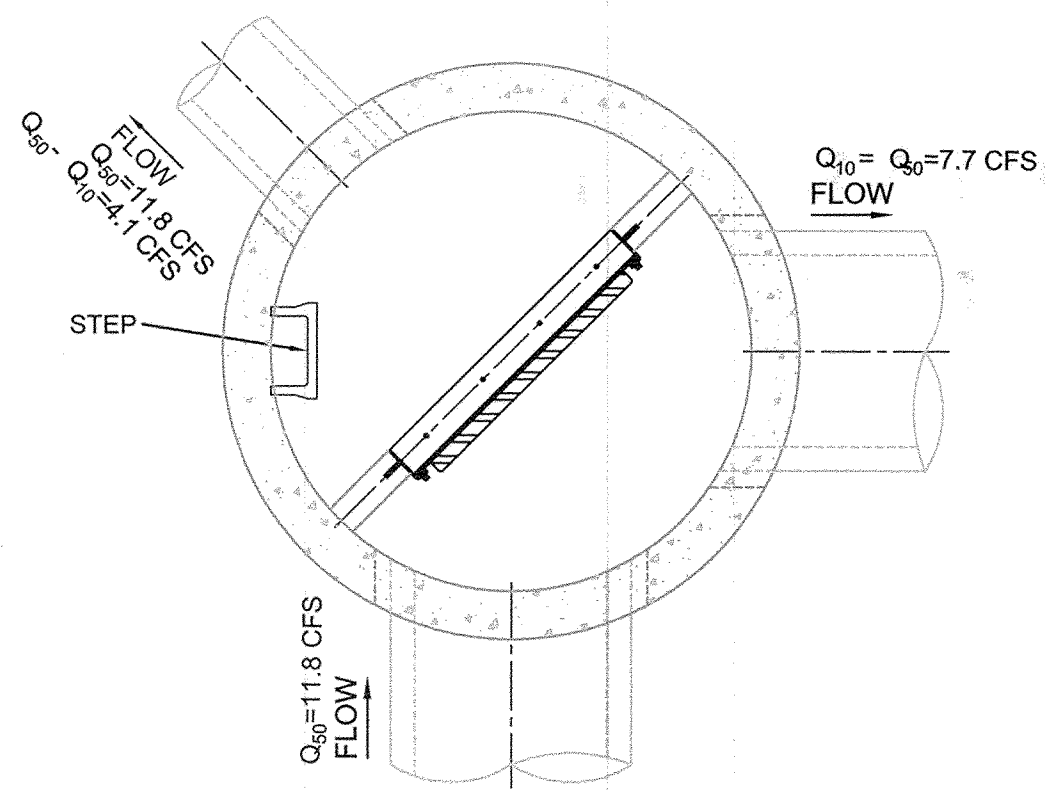
RECOMMENDED: *Jeffery Gibson* 23 July 15
JEFFERY GIBSON
COMMUNITY DEVELOPMENT DIRECTOR
DATE: 23 July 15

BUILDING REGULATION ADMINISTRATOR
FELIPE SEGOVIA
R.C.E. NO. 41102 (EXP.03/31/2017)

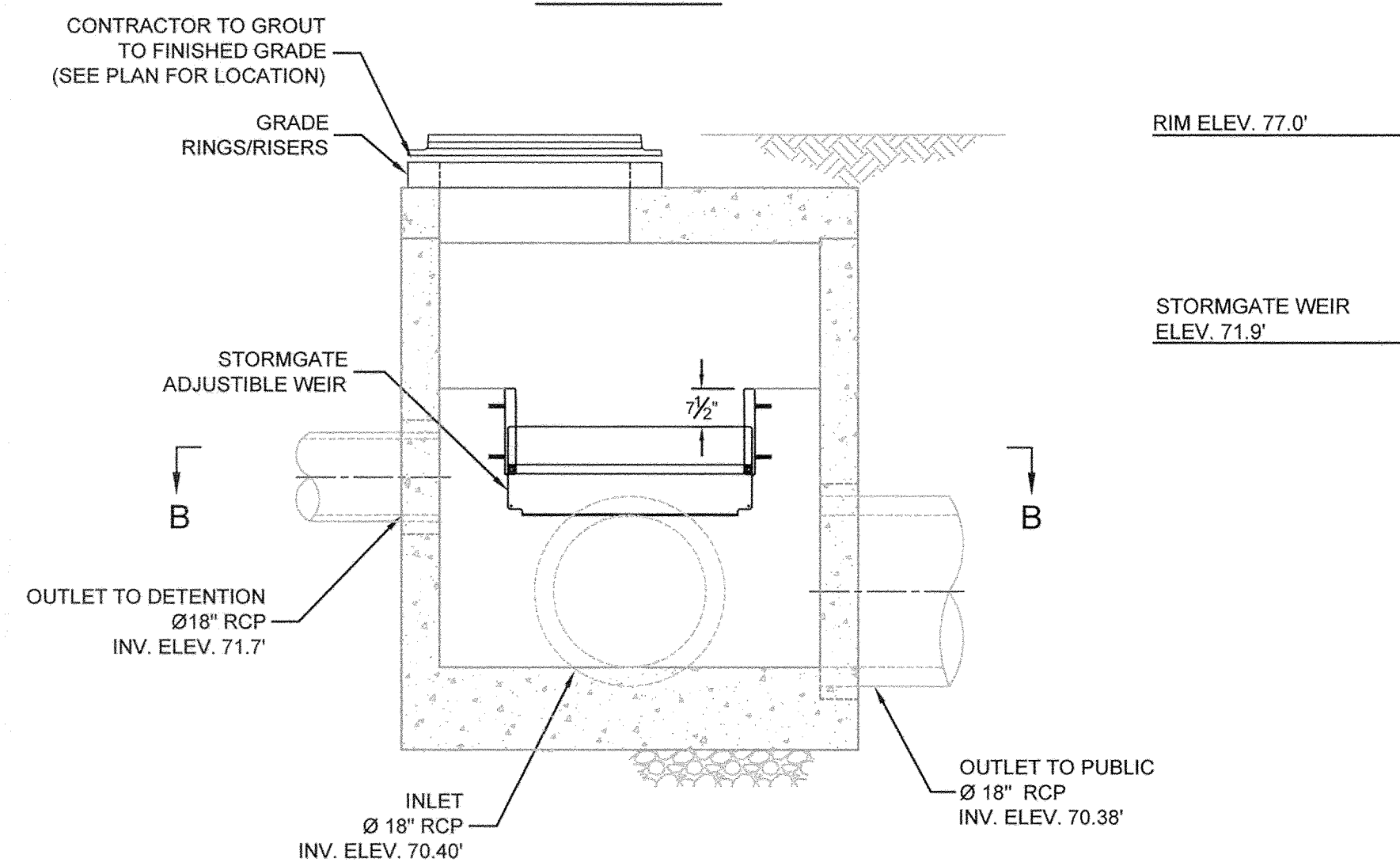
SCALE: AS SHOWN SHEET 2 OF 3
PLAN NO. **SD-504**



PLAN VIEW



SECTION B-B



SECTION A-A

CONTECH PROPOSAL DRAWING

StormGate™
THE PRODUCT NAME IS REGISTERED BY U.S. PATENTS, RELATED FOREIGN PATENTS, OR OTHER PATENTS PENDING.

MATERIALS LIST - PROVIDED BY CONTECH

COUNT	DESCRIPTION	INSTALLED BY
1	STORMGATE WEIR ASSEMBLY	CONTECH
1	SEALANT FOR JOINTS	CONTRACTOR
1	Ø30" x 4" FRAME AND COVER	CONTRACTOR

GENERAL NOTES

- CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
- DIMENSIONS MARKED WITH () ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
- FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS PLEASE CONTACT YOUR LOCAL CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.conteches.com
- STORMGATE BYPASS STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
- STRUCTURE AND CASTINGS SHALL MEET AASHTO H20 LOAD RATING.

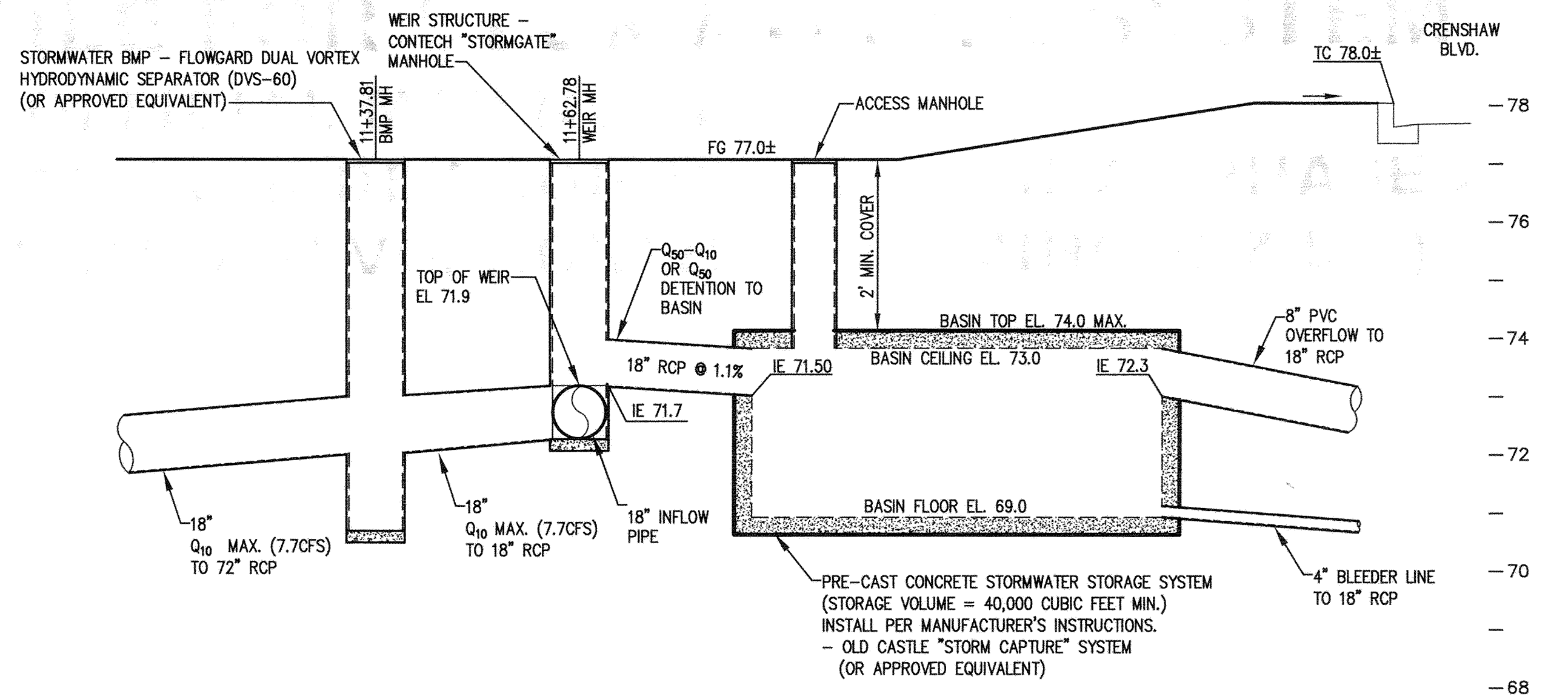
INSTALLATION NOTES

- ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
- CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STORMGATE STRUCTURE (LIFTING CLUTCHES PROVIDED).
- CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
- CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
- ADJUST STORMGATE WEIR TO DESIGN ELEVATION SPECIFIED IN DRAWING. DO NOT EXCEED 5.0 FT-LBS TORQUE WHEN TIGHTENING SCREWS ON WEIR FRAME. SEAL WEIR TO FRAME WITH RTV SILICONE SEALANT AFTER FINAL ADJUSTMENT.

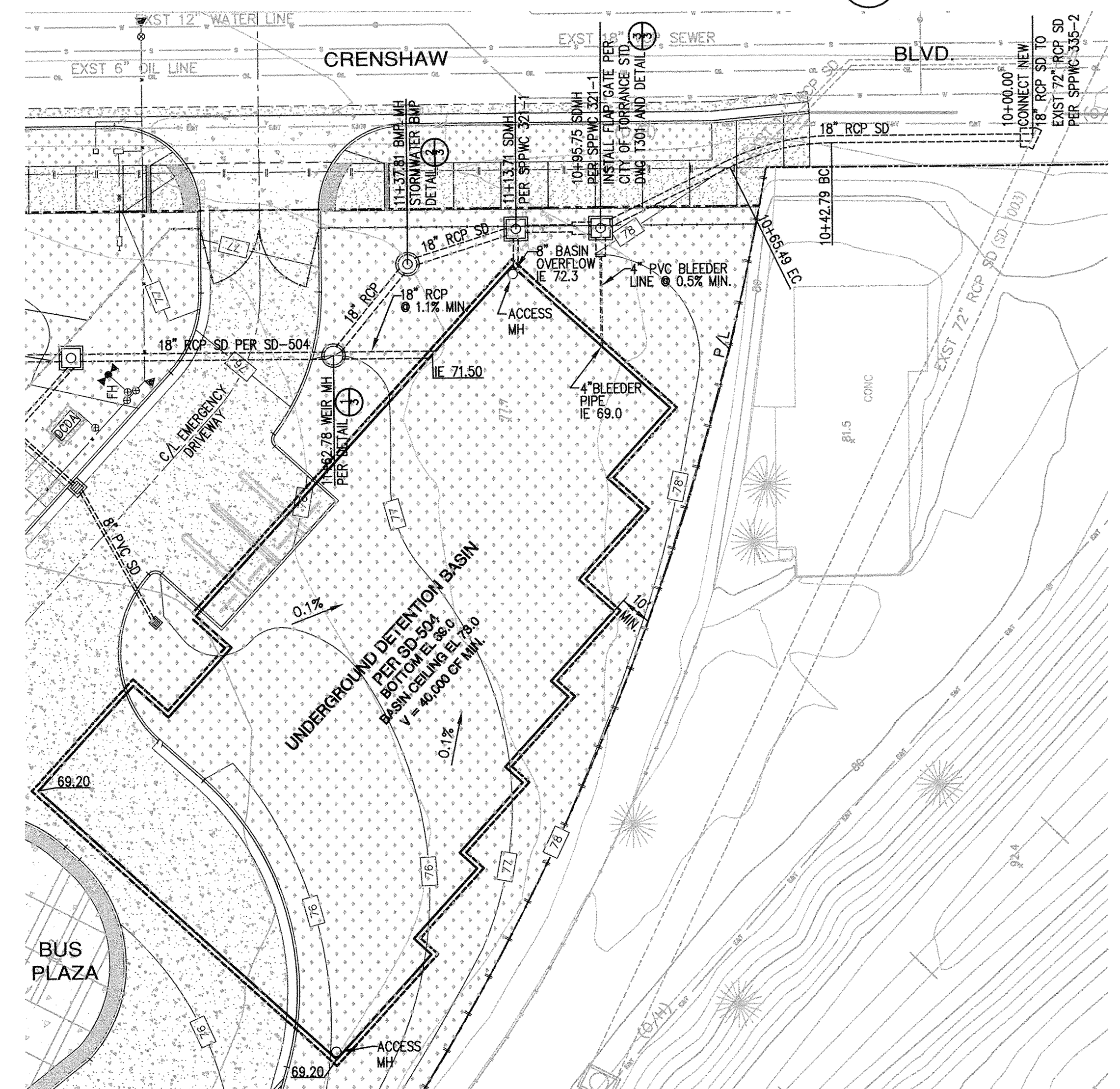


BASE FILE NAME: S060-SUB.DWG
SCALE: NONE
DESIGNED: MBB
DRAWN: N/A
DATE: 6/24/2014
REV: #

Ø60" STORMGATE BYPASS STRUCTURE - 604458-01
TORRANCE TRANSIT CENTER
TORRANCE, CA
SITE DESIGNATION: STORMGATE MANHOLE

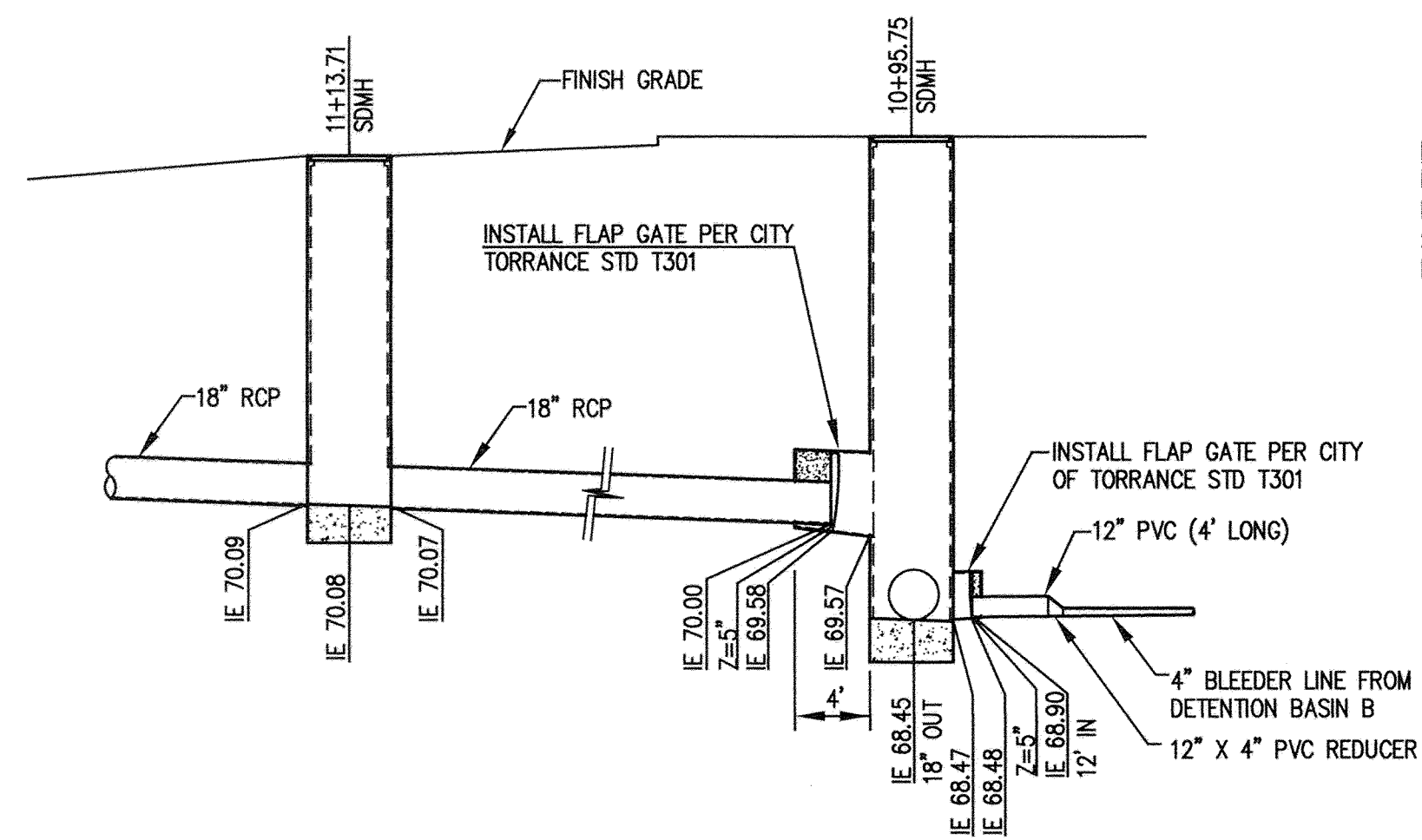


STORM WATER BMP AND DETENTION BASIN 2
N.T.S.



UNDERGROUND DETENTION BASIN 4
SCALE: 1" = 20'

WEIR MANHOLE 1
N.T.S.



DETAIL AT FLAP GATE 3
N.T.S.

NOTE:
DETENTION BASIN IS SIZED TO STORE 65% OF ENTIRE Qsp STORM VOLUME BECAUSE WEIR IS SET 2.9' LOWER THAN MAXIMUM HGL IN CITY/COUNTY STORM DRAIN. (MAX. HGL IN CITY/COUNTY SD=74.6). FLAP GATES, AS A RESULT, MAY BE CLOSED FOR AN EXTENDED PERIOD OF TIME.

REV.	DATE	DESCRIPTION	BY	CHECKED

CITY OF TORRANCE
COMMUNITY DEVELOPMENT DEPARTMENT

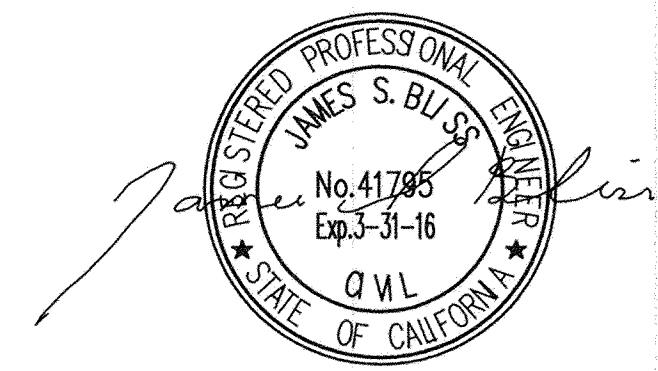
DRAWN: PRIVATE ENGINEER
DESIGNED: PRIVATE ENGINEER

PROJECT ENGINEER: *Ted Syms*
APPROVED: *Felipe Segovia*

BUILDING REGULATION ADMINISTRATOR
FELIPE SEGOVIA
R.C.E. NO. 41102 (EXP.03/31/2017)

RECOMMENDED:
Jeffery Gibson 2/3/2015
JEFFERY GIBSON DATE
COMMUNITY DEVELOPMENT DIRECTOR
SCALE: AS SHOWN SHEET 3 OF 3
PLAN NO. **SD-504**

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