

PLANS FOR THE MADRONA STREET LANDFILL LANDFILL GAS COLLECTION SYSTEM IMPROVEMENTS FACILITIES LOS ANGELES COUNTY, CALIFORNIA



MARCH 2014

PREPARED FOR:

City of Torrance
Public Works



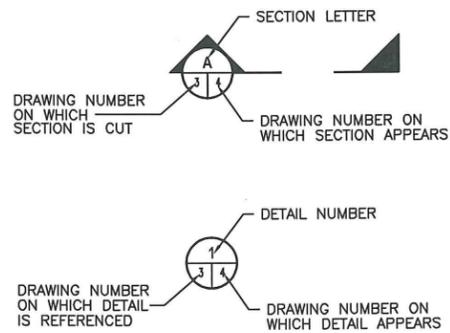
PREPARED BY:
Shaw Environmental, Inc.
(a CB&I Company)



PROJECT NO.
148081

DRAWING INDEX			
DWG. NO.	TITLE	REV. NO.	DATE
1	TITLE SHEET	0	3/27/14
2	SITE PLAN	0	3/27/14
3	PROPOSED WELL LOCATIONS	0	3/27/14
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SYMBOLS



GENERAL NOTES

1. CONTRACTOR SHALL PROVIDE ALL UTILITIES (WATER, ELECTRICAL AND TELEPHONE SERVICE) AS NECESSARY TO SUCCESSFULLY COMPLETE ANY AND ALL CONSTRUCTION ACTIVITIES.
2. ALL EXISTING AND PROPOSED LOCATIONS DIMENSIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO STARTING WORK.
3. CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT EXISTING UTILITIES WHICH ARE TO REMAIN IN PLACE FROM DAMAGE. ANY DAMAGE DONE BY THE CONTRACTOR'S OPERATIONS SHALL BE EXPEDITIOUSLY REPAIRED OR RECONSTRUCTED TO THE ENGINEER'S SATISFACTION AT THE CONTRACTOR'S SOLE EXPENSE WITHOUT ADDITIONAL COMPENSATION.
4. CONTRACTOR AGREES TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB-SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, AS REQUIRED BY THE CONTRACT DOCUMENTS.
5. THE CONTRACTOR SHALL KEEP A COPY OF THE PROJECT'S HEALTH AND SAFETY PLAN ON SITE. ALL CONTRACTOR PERSONNEL AND SUBCONTRACTORS ARE REQUIRED TO READ AND ADHERE TO THE PROVISIONS AS SET FORTH IN THE HEALTH AND SAFETY PLAN AT ALL TIMES.
6. CONTRACTOR SHALL CALL U.S.A. (DIAL 811) PRIOR TO ANY EXCAVATION.
7. ALL EXISTING UTILITIES SHOWN IN THE PLANS SHALL BE FIELD VERIFIED.
8. CONTRACTOR SHALL POSSESS THE CLASS, OR (CLASSES) OF LICENSE AS SPECIFIED IN THE NOTICE TO CONTRACTORS.
9. WORK SHALL BE COMPLETED IN COMPLIANCE WITH SCAQMD PERMIT TO OPERATE FOR FACILITY ID 143206, PERMIT NO. 49115

ABBREVIATIONS

- CL CENTERLINE
- CMP CORRUGATED METAL PIPE
- CP CONTROL POINT
- CPE CORRUGATED POLYETHYLENE PIPE
- Ø DIAMETER
- E EASTING
- EL ELEVATION
- HDPE HIGH DENSITY POLYETHYLENE
- LCRS LEACHATE COLLECTION AND REMOVAL SYSTEM
- LFG LANDFILL GAS
- N NORTHING
- NAG NORTH AMERICAN GREEN
- NIC NOT IN CONTRACT
- NTS NOT TO SCALE
- PT POINT
- PVC POLYVINYL CHLORIDE
- SDR STANDARD DIMENSION RATIO
- TYP TYPICAL
- SCH SCHEDULE



APPROVALS	
 ERIC SCHNEIDER, P.E. 69219 PROJECT MANAGER	3-27-14 DATE

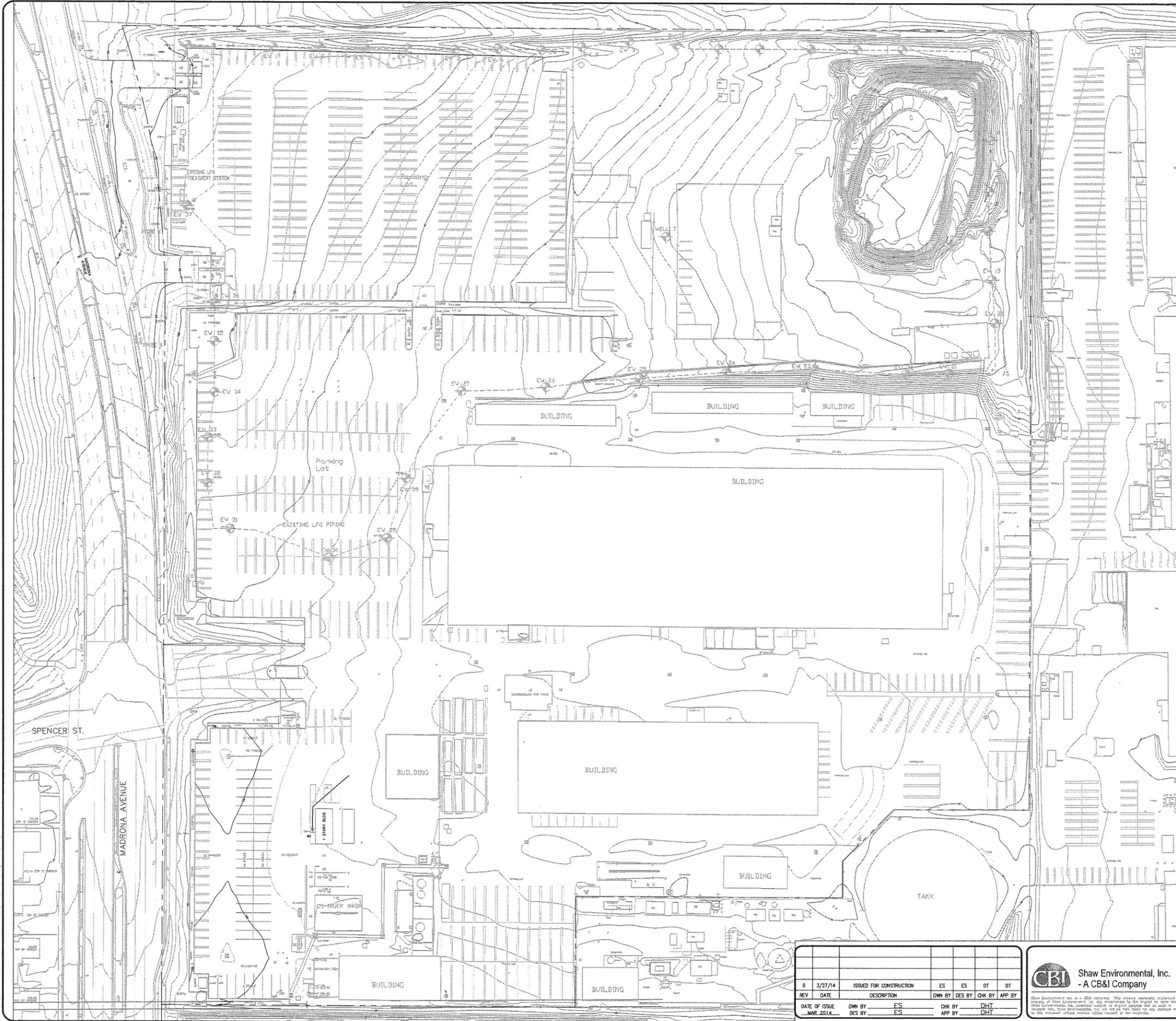


REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY
0	3/27/14	ISSUED FOR CONSTRUCTION	ES	ES	DT	DT
DATE OF ISSUE			DWN BY	DES BY	CHK BY	APP BY
MAR 2014			DES BY	ES	APP BY	DHT

Shaw Environmental, Inc.
 - A CB&I Company

CITY OF TORRANCE
 MADRONA STREET LANDFILL
 LOS ANGELES COUNTY, CALIFORNIA
 LFG COLLECTION SYSTEM IMPROVEMENTS
TITLE SHEET

DRAWING NO.
1
 PROJECT NO.
 148081



- LEGEND**
- EXISTING 1' CONTOUR
 - EXISTING 5' CONTOUR
 - - - EASEMENT LINE
 - - - PROPERTY LINE
 - CURB UNLESS OTHERWISE NOTED
 - WALL
 - FENCE
 - GUY WIRE
 - POWER POLE
 - GUARD POST
 - STREET LIGHT
 - YARD LIGHT
 - FIRE HYDRANT
 - SURFACE DRAIN
 - SIGN
 - EW 37 ••• EXISTING LFG WELL

- AC ASPHALT CONCRETE
- AV AIR VENT
- BLDG BUILDING
- BSW BACK OF SIDEWALK
- BWL BLOCK WALL
- C&G CURB & GUTTER
- CB CATCH BASIN
- CC CONCRETE
- CLF CHAIN LINK FENCE
- CP CONCRETE PIPE
- DP DRAIN PIPE
- DWY DRIVEWAY
- ECAB ELECTRICAL CABINET
- EG EDGE OF GUTTER
- EOC EDGE OF CONCRETE
- EOP EDGE OF PAVEMENT
- ER EARTH
- EVLT ELECTRICAL VALVE
- FDC FIRE DEPARTMENT CONNECTION
- FG FIBER GLASS FLOW LINE
- FSCV FIRE SPRINKLER CONTROL VALVE
- GP GUARD POST
- GR GRAVEL
- GW GUY WIRE
- HT HEIGHT
- INF IRON FENCE
- INV INVERT
- MH MANHOLE
- MDN MONUMENT
- MP METAL POST
- MPIG METAL PIPE IN GROUND
- MW MONUMENT WELL
- LFG LAND FILL GAS OVERHEAD
- DHD OVERHANG
- OHG OVERHANG
- PA PLANTING AREA
- PEFD PEDESTRIAN POWER POLE
- PP POWER POLE
- PWR POWER
- RCV REGULATOR CONTROL VALVE
- RET RETAINING
- S.GATE SLIDING GATE
- SCD SEWER CLEAN OUT
- SDMH STORM DRAIN MANHOLE
- SLT STREET LIGHT
- SMH SEWER MANHOLE
- TC TOP OF CURB
- TCB TOP OF CATCH BASIN
- TEL TELEPHONE
- TMH TELEPHONE MANHOLE
- TRANS TRANSFORMER
- TV TOP OF WALL
- TYP TYPICAL
- UG UNDERGROUND
- VERT VERTICAL
- VLT VAULT
- VDF WOOD FENCE
- WM WATER METER
- WN WINDOW
- WV WATER VALVE
- YBE YARD BOX ELECTRICAL
- YBSL YARD BOX STREET LIGHT
- YBTS YARD BOX TRAFFIC SIGNAL
- YBW YARD BOX WATER



NOTES

- ASSESSOR'S PARCEL NUMBER: 7352-012-909
- PROPERTY LINES SHOWN HEREON WERE ESTABLISHED BY RECORD DATA PER PARCEL MAP NO. 15380, P.M.B. 226/59-60.

BASIS OF BEARINGS

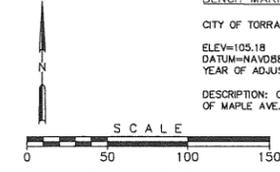
BEARINGS SHOWN HEREON ARE BASED ON THE CALIFORNIA COORDINATE SYSTEM, ZONE 5, TIED TO POINT NO. LA208, N=1763512.123, E=6458661.433 PROVIDED BY THE CITY OF TORRANCE.

BENCH MARK

CITY OF TORRANCE BENCH MARK NO. 925

ELEV=105.18
 DATUM=NAVD88
 YEAR OF ADJUSTMENT=1960

DESCRIPTION: CHIS "T" AT BOR ON MAPLE AVE. AT N.E. COR. OF MAPLE AVE. & OREGON COURT.



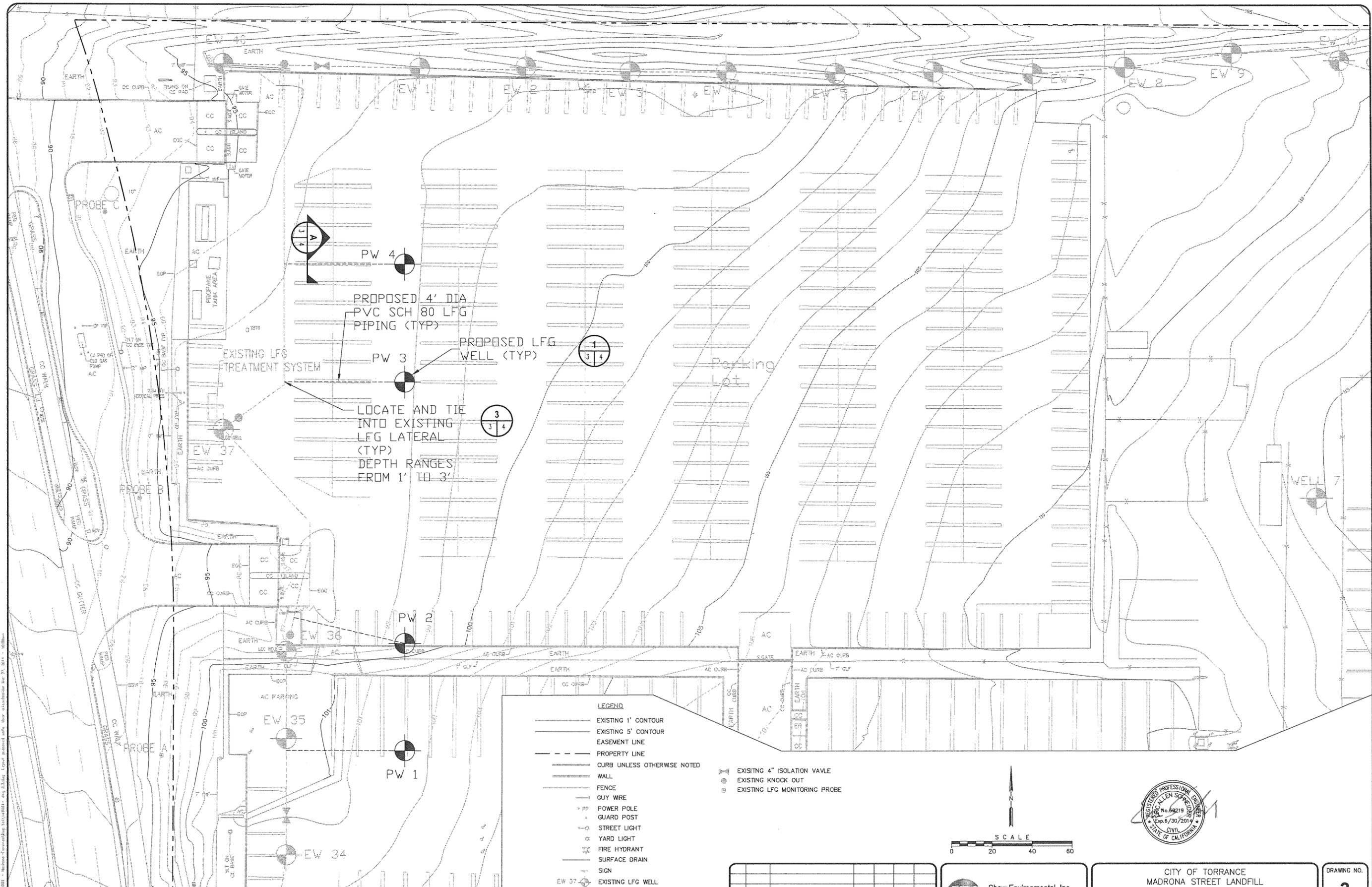
REV	DATE	DESCRIPTION	DES BY	CHK BY	APP BY
0	3/27/14	ISSUED FOR CONSTRUCTION	ES	ES	DT
1			ES	DHT	DHT
2			ES	DHT	DHT

CBI Shaw Environmental, Inc.
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CITY OF TORRANCE
 MADRONA LANDFILL
 LOS ANGELES COUNTY, CALIFORNIA
LFG COLLECTION SYSTEM IMPROVEMENTS
SITE PLAN

DRAWING NO.
2
 PROJECT NO.
 148081



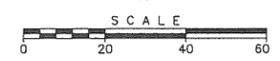
PROPOSED 4' DIA
PVC SCH 80 LFG
PIPING (TYP)

PROPOSED LFG
WELL (TYP)

EXISTING LFG
TREATMENT SYSTEM

LOCATE AND TIE
INTO EXISTING
LFG LATERAL
(TYP)
DEPTH RANGES
FROM 1' TO 3'

- LEGEND**
- EXISTING 1' CONTOUR
 - EXISTING 5' CONTOUR
 - - - EASEMENT LINE
 - PROPERTY LINE
 - CURB UNLESS OTHERWISE NOTED
 - WALL
 - FENCE
 - GUY WIRE
 - PP POWER POLE
 - GP GUARD POST
 - SL STREET LIGHT
 - YL YARD LIGHT
 - FH FIRE HYDRANT
 - SD SURFACE DRAIN
 - SIGN
 - EW 37 EXISTING LFG WELL
 - PW 2 PROPOSED LFG WELL
 - EXISTING LFG PIPING
 - - - PROPOSED LFG PIPING
 - ⊕ EXISTING 4" ISOLATION VALVE
 - ⊙ EXISTING KNOCK OUT
 - ⊙ EXISTING LFG MONITORING PROBE



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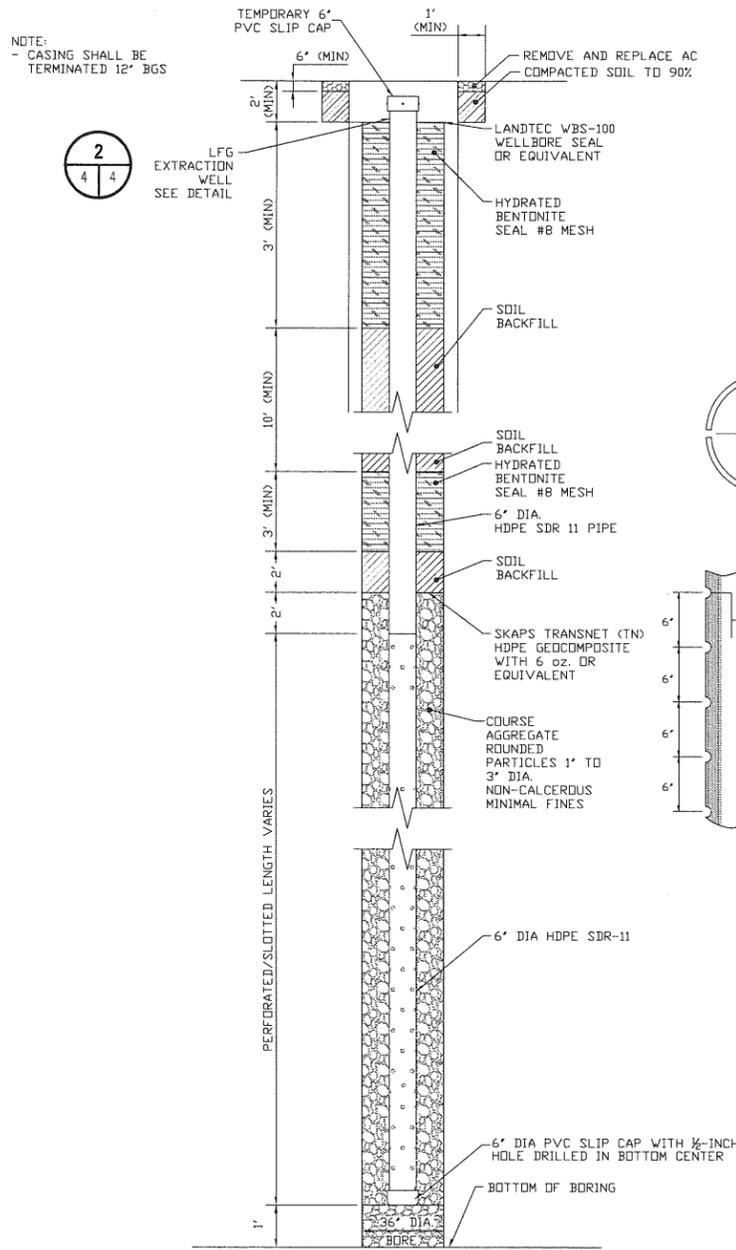
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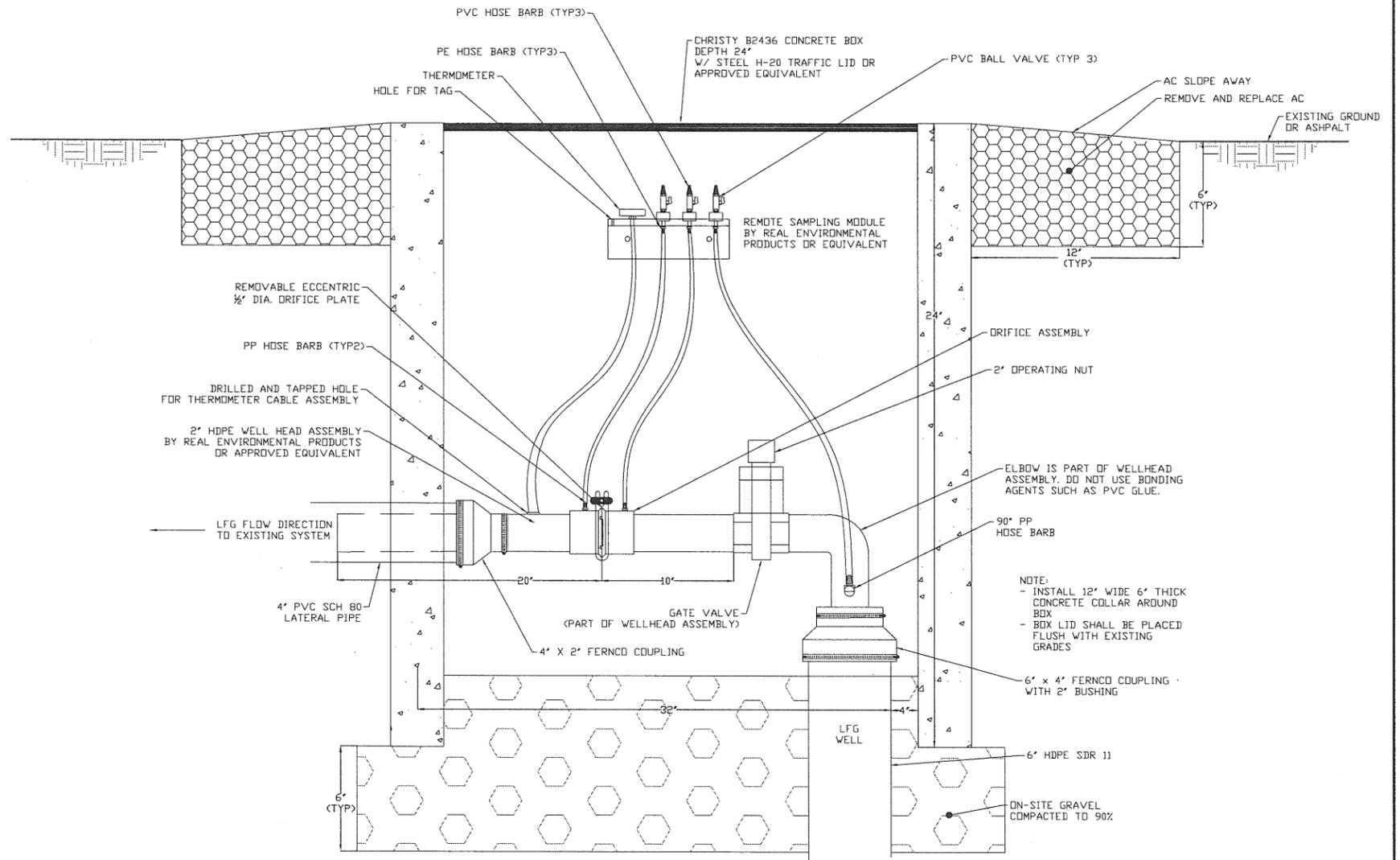
CITY OF TORRANCE
MADRONA STREET LANDFILL
LOS ANGELES COUNTY, CALIFORNIA
LFG COLLECTION SYSTEM IMPROVEMENTS
PROPOSED WELL LOCATIONS

DRAWING NO.
3
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1" = 172' 0"
 The City of Torrance, California, is hereby authorized to use this drawing for the project described herein.



1 LFG GAS EXTRACTION WELL DETAIL
NOT TO SCALE

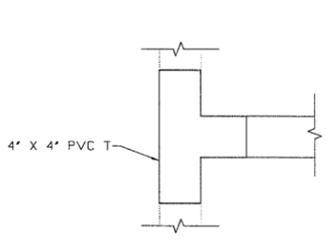


2 LFG EXTRACTION WELL DETAIL
NOT TO SCALE

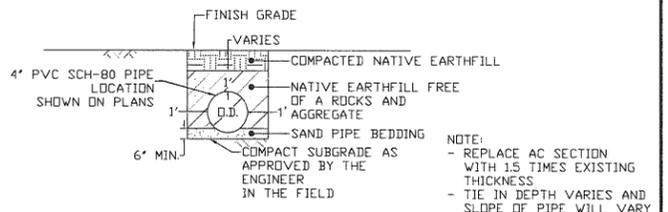
WELL SCHEDULE

WELL ID	COORDINATES		ELEVATIONS		DEPTHS (FT)			
	NORTH	EAST	GROUND	BORE	SOLID	PERF.	ROCK	
PW-1	1766842.31	6457148.34	101.69	56	20	35	38	
PW-2	1766654.59	6457148.34	98.55	56	20	35	38	
PW-3	1766788.95	6457148.34	97.94	56	20	35	38	
PW-4	1766601.52	6457148.34	97.87	56	20	35 </tr		

- NOTES:**
- COORDINATES AND ELEVATIONS ARE BASED ON SURVEY INFORMATION PRIOR TO WELL INSTALLATION. ALL DEPTHS ARE NOTED FROM GROUND ELEVATION. ACTUAL GROUND ELEVATIONS MAY HAVE CHANGED.
 - EXTRACTION WELL LOCATIONS AND ELEVATIONS TO BE FIELD VERIFIED. ALL CHANGES FROM ABOVE WELL SCHEDULE MUST BE APPROVED BY ENGINEER.
PLACE APPROXIMATELY 1 FT OF 1' TO 3' DIA. COARSE AGGREGATE STONE IN BOREHOLE PRIOR TO SETTING WELL CASING.
 - LIMESTONE, CRUSHED CONCRETE, AND LIKE MATERIALS ARE NOT APPROVED BACKFILL MATERIALS.



3 LFG TIE-IN DETAIL
NOT TO SCALE



A PIPE TRENCH AND BEDDING SECTION
NOT TO SCALE

1" = 12' 0"



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MAR 2014	ES	ES	DHT	DHT		

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Shaw Environmental, Inc. is a CB&I company. The client's contract documents shall govern. Shaw Environmental, Inc. is not responsible for the accuracy of the data used in this report. Shaw Environmental, Inc. is not responsible for the accuracy of the data used in this report.

CITY OF TORRANCE
MADRONA STREET LANDFILL
LOS ANGELES COUNTY, CALIFORNIA
LFG COLLECTION SYSTEM IMPROVEMENTS
WELL SCHEDULE AND DETAILS

DRAWING NO.
4
PROJECT NO.
148081