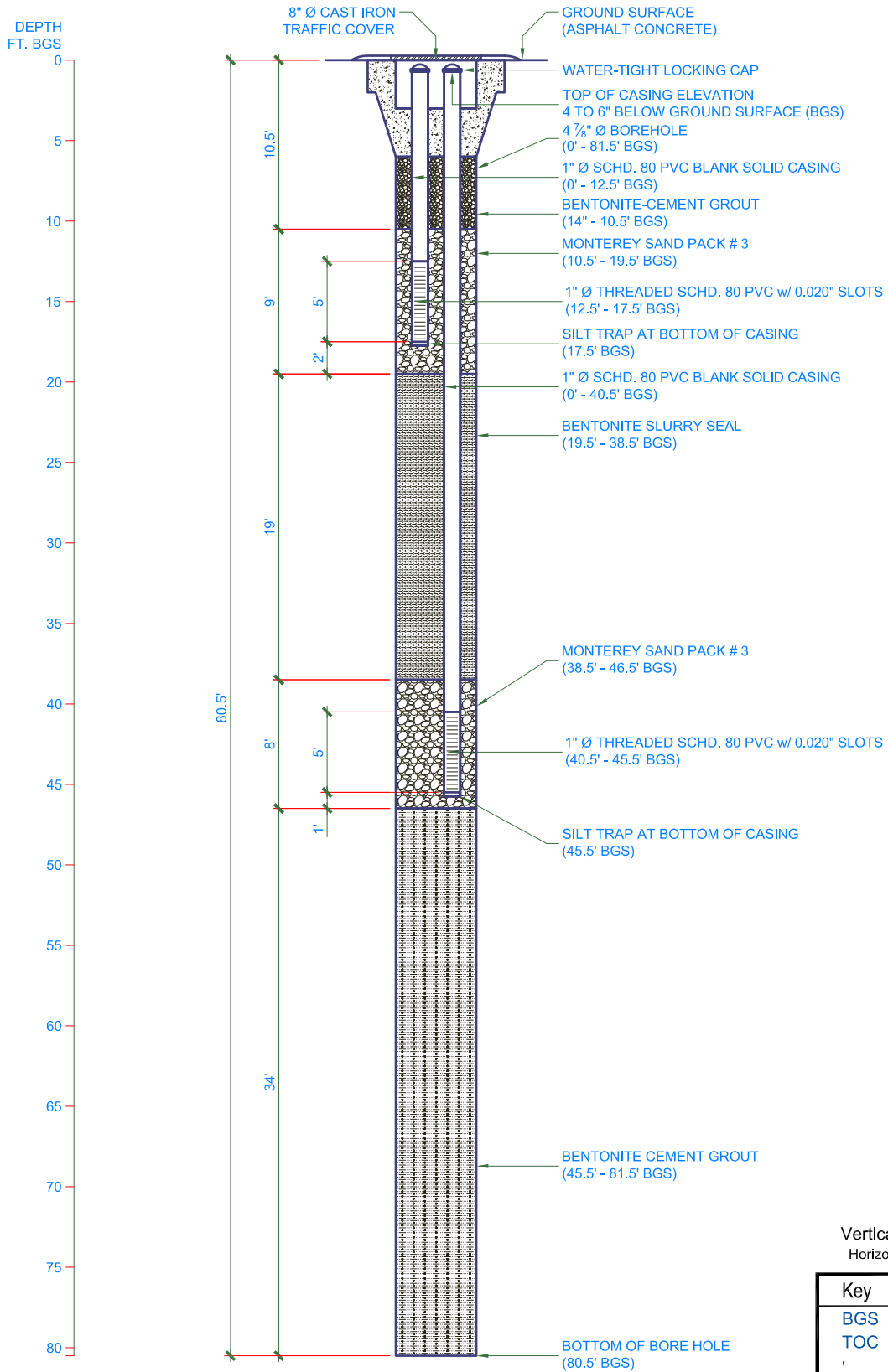


BORING G-6 MONITORING WELL DETAIL

GROUNDWATER



Vertical Scale: 1" = 10'-0"
Horizontal Scale Exaggerated

Key	
BGS	Below Ground Surface
TOC	Top Of Casing
'	Feet
"	Inches



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WELL NO.:	G-6	DRAWN:	L. Morley
INSTALLED:	08/18/2009	CHKD:	Jag
SCALE:	1" = 10' Vertical	DATE:	December 2, 2011
DRILL CO.:	C&L Pacific	TECHNIQUE:	Rotary-Wash
FIELD PERSONNEL:	A. Recio		
PROJECT NAME:	MTA Westside Subway Extension		
WELL LOCATION:	Wilshire and Fairfax, Los Angeles, CA		

MTA WESTSIDE SUBWAY EXTENSION
Parsons Brinckerhoff

WELL CONSTRUCTION
DETAIL
Groundwater Monitoring Well

FIGURE NO.

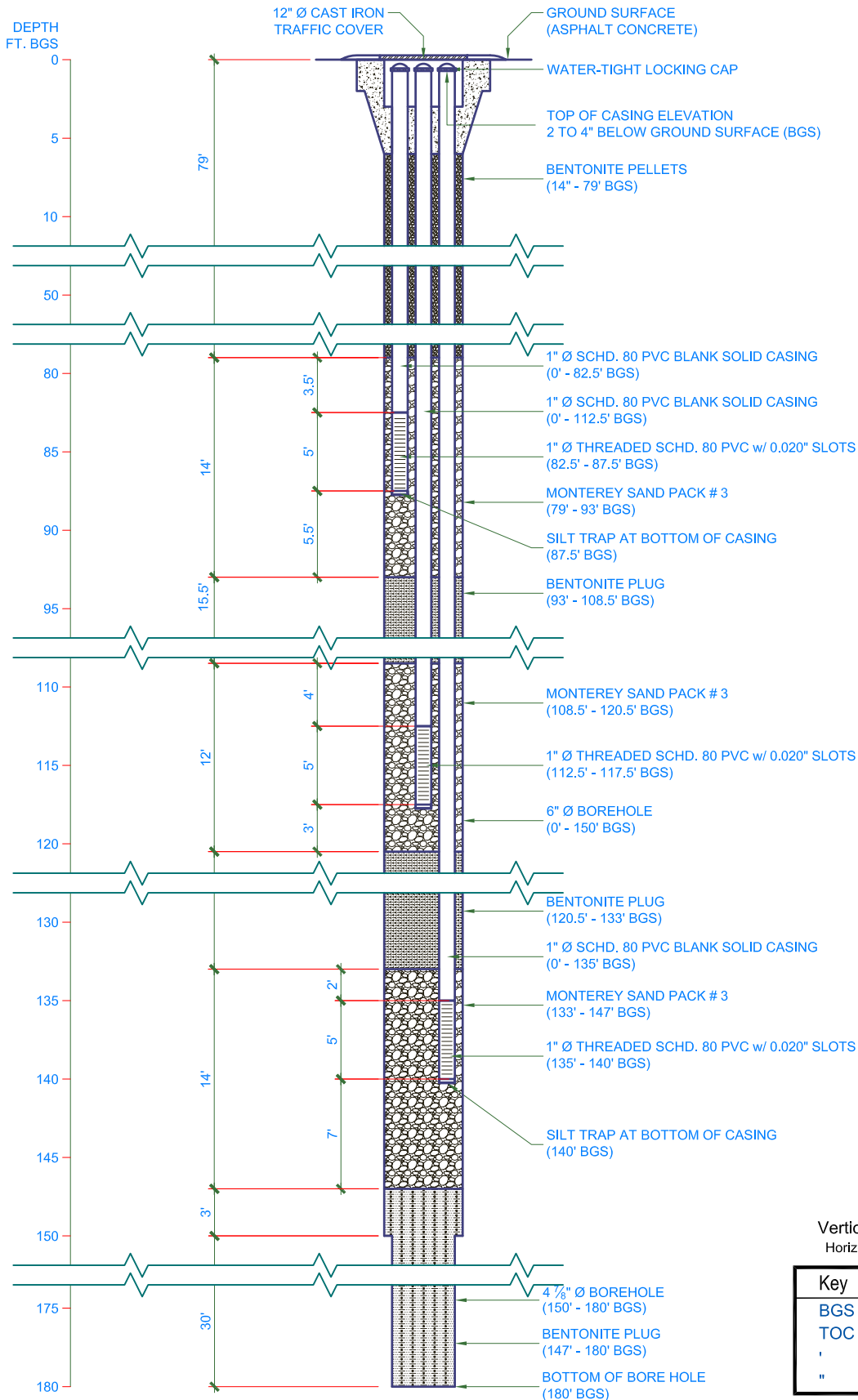
A-7.2

PROJECT NO.

4953-11-1421

BORING G-7A MONITORING WELL DETAIL

GROUNDWATER



Vertical Scale: 1" = 10'-0"
Horizontal Scale Exaggerated

Key	
BGS	Below Ground Surface
TOC	Top Of Casing
'	Feet
"	Inches



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WELL NO.:	G-7A	DRAWN:	L. Morley
INSTALLED:	08/19/2010	CHKD:	Jag
SCALE:	1" = 10' Vertical	DATE:	December 2, 2011
DRILL CO.:	C&L Pacific	TECHNIQUE:	Rotary-Wash
FIELD PERSONNEL:	A. Recio		
PROJECT NAME:	MTA Westside Subway Extension		
WELL LOCATION:	Wilshire and Fairfax, Los Angeles, CA		

MTA WESTSIDE SUBWAY EXTENSION
Parsons Brinckerhoff

WELL CONSTRUCTION
DETAIL
Groundwater Monitoring Well

FIGURE NO.

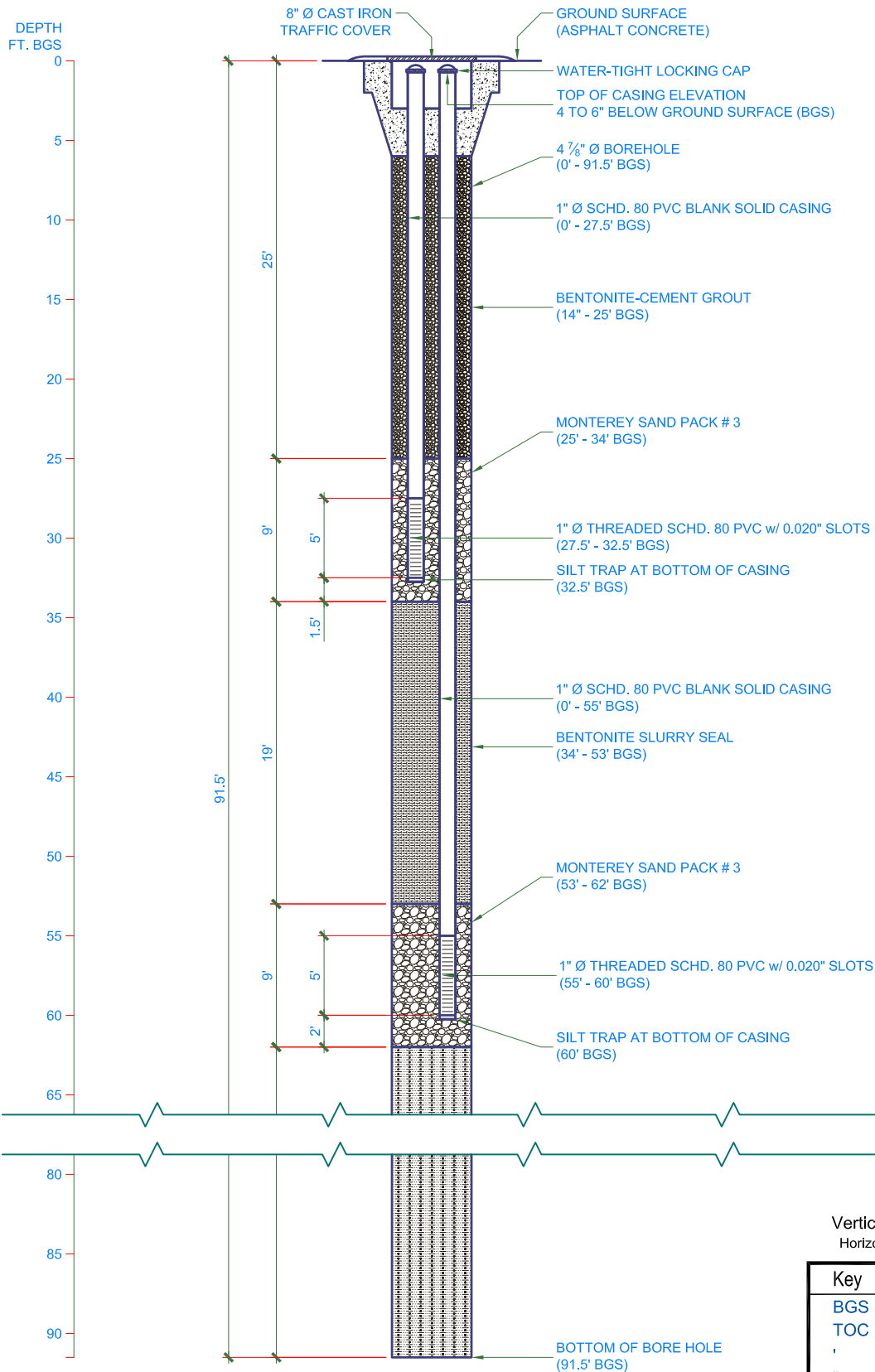
A-7.3

PROJECT NO.

4953-11-1421

BORING G-11 MONITORING WELL DETAIL

GROUNDWATER



Vertical Scale: 1" = 10'-0"
Horizontal Scale Exaggerated

Key	
BGS	Below Ground Surface
TOC	Top Of Casing
'	Feet
"	Inches



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WELL NO.:	G-11	DRAWN:	L. Morley
INSTALLED:	06/15/2009	CHKD:	Jag
SCALE:	1" = 10' Vertical	DATE:	December 2, 2011
DRILL CO.:	C&L Pacific	TECHNIQUE:	Rotary-Wash
FIELD PERSONNEL:	A. Recio		
PROJECT NAME:	MTA Westside Subway Extension		
WELL LOCATION:	Wilshire and Beverly, Los Angeles, CA		

MTA WESTSIDE SUBWAY EXTENSION
Parsons Brinckerhoff

WELL CONSTRUCTION
DETAIL
Groundwater Monitoring Well

FIGURE NO.

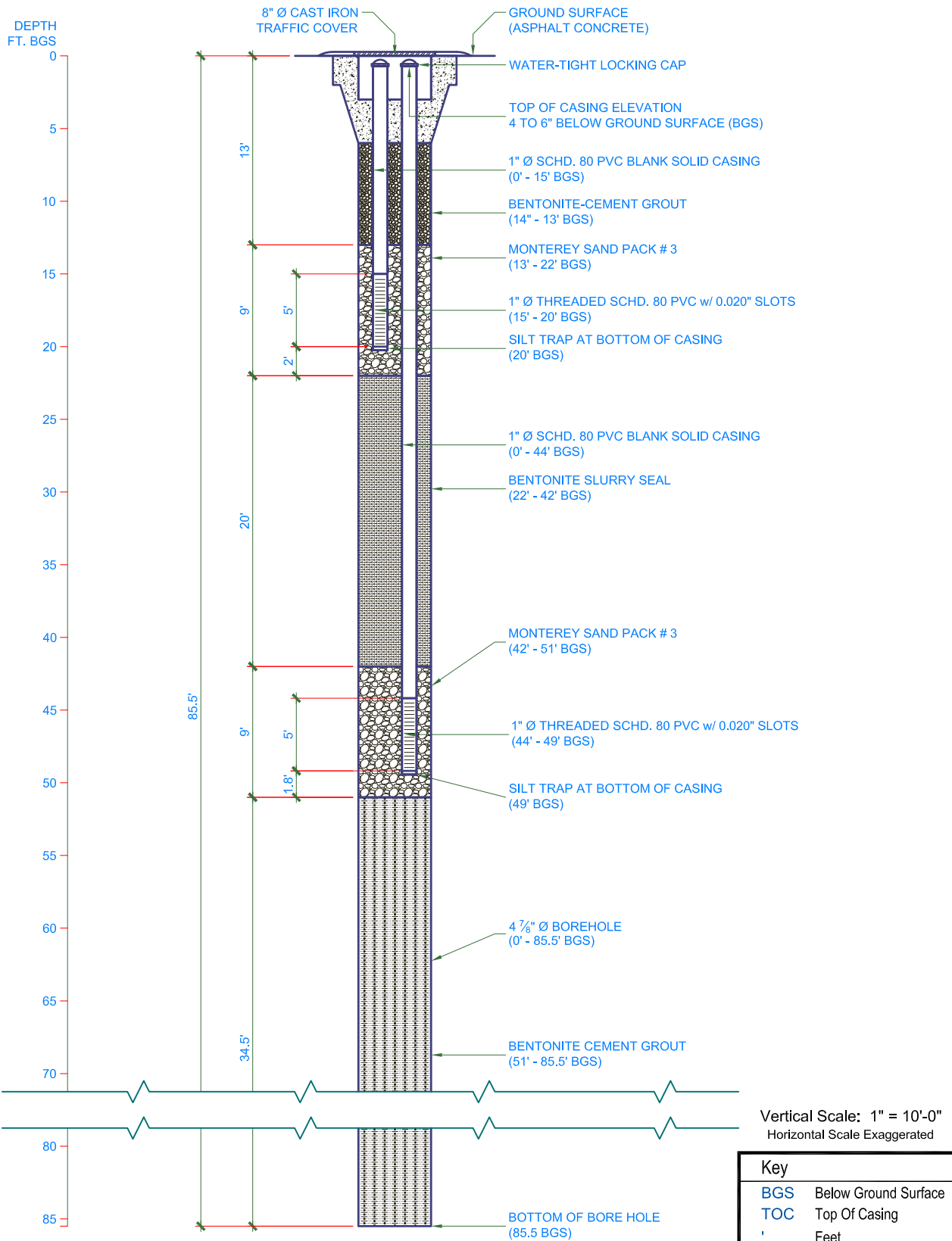
A-7.4

PROJECT NO.

4953-11-1421

BORING G-14 MONITORING WELL DETAIL

GROUNDWATER



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WELL NO.:	G-14	DRAWN:	L. Morley
INSTALLED:	07/15/2009	CHKD:	Jag
SCALE:	1" = 10' Vertical	DATE:	December 2, 2011
DRILL CO.:	C&L Pacific	TECHNIQUE:	Rotary-Wash
FIELD PERSONNEL:			A. Recio
PROJECT NAME:	MTA Westside Subway Extension		
WELL LOCATION:	Santa Monica/Ave of Stars, Los Angeles, CA		

MTA WESTSIDE SUBWAY EXTENSION
Parsons Brinckerhoff

**WELL CONSTRUCTION
DETAIL**
Groundwater Monitoring Well

FIGURE NO.

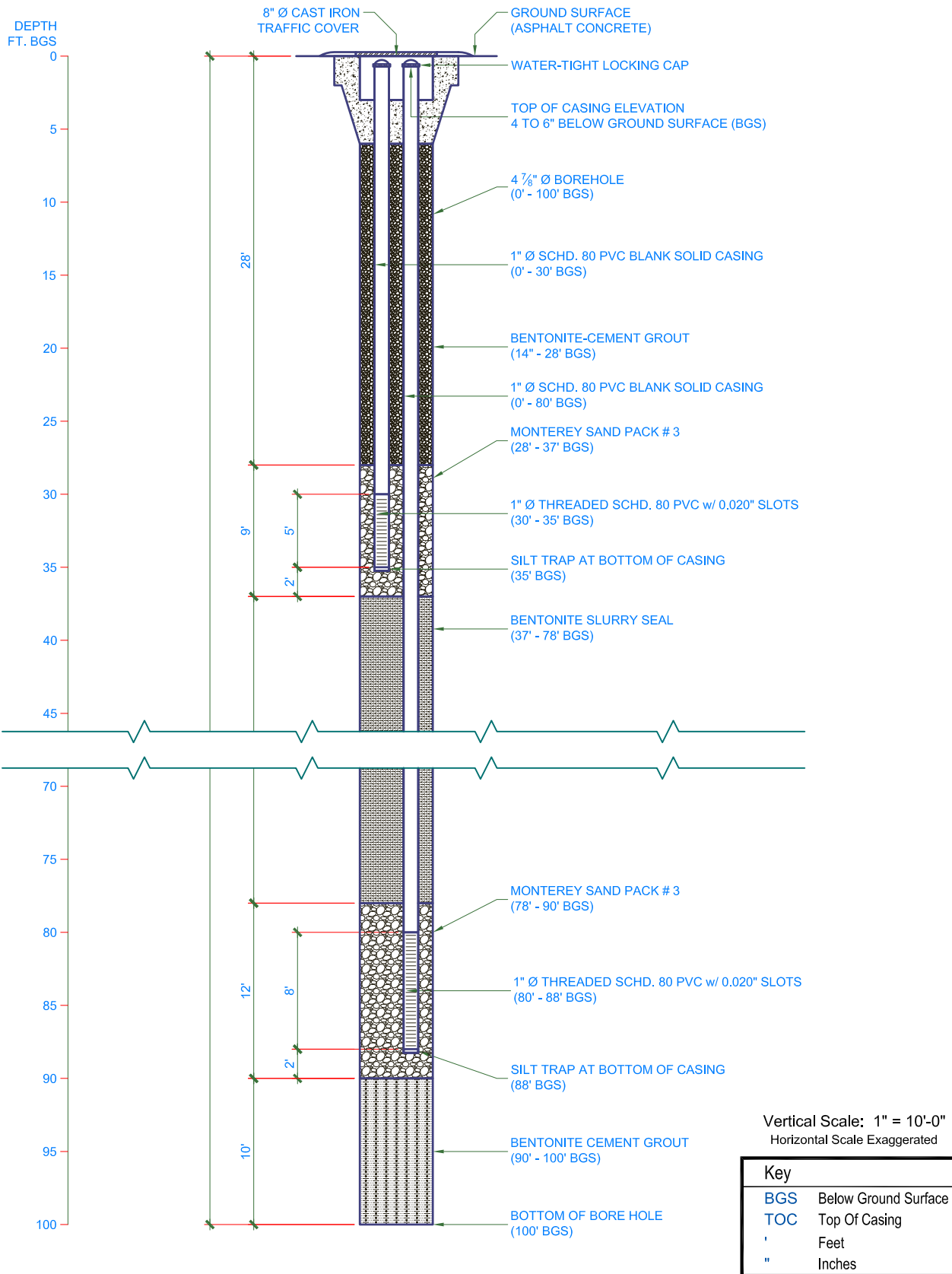
A-7.5

PROJECT NO.

4953-11-1421

BORING G-20 MONITORING WELL DETAIL

GROUNDWATER



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WELL NO.:	G-20	DRAWN:	L. Morley
INSTALLED:	08/24/2009	CHKD:	Jag
SCALE:	1" = 10' Vertical	DATE:	December 2, 2011
DRILL CO.:	C&L Pacific	TECHNIQUE:	Rotary-Wash
FIELD PERSONNEL:			A. Recio
PROJECT NAME:	MTA Westside Subway Extension		
WELL LOCATION:	North of Wilshire & Midvale, Los Angeles, CA		

MTA WESTSIDE SUBWAY EXTENSION
 Parsons Brinckerhoff

**WELL CONSTRUCTION
 DETAIL**
 Groundwater Monitoring Well

FIGURE NO.

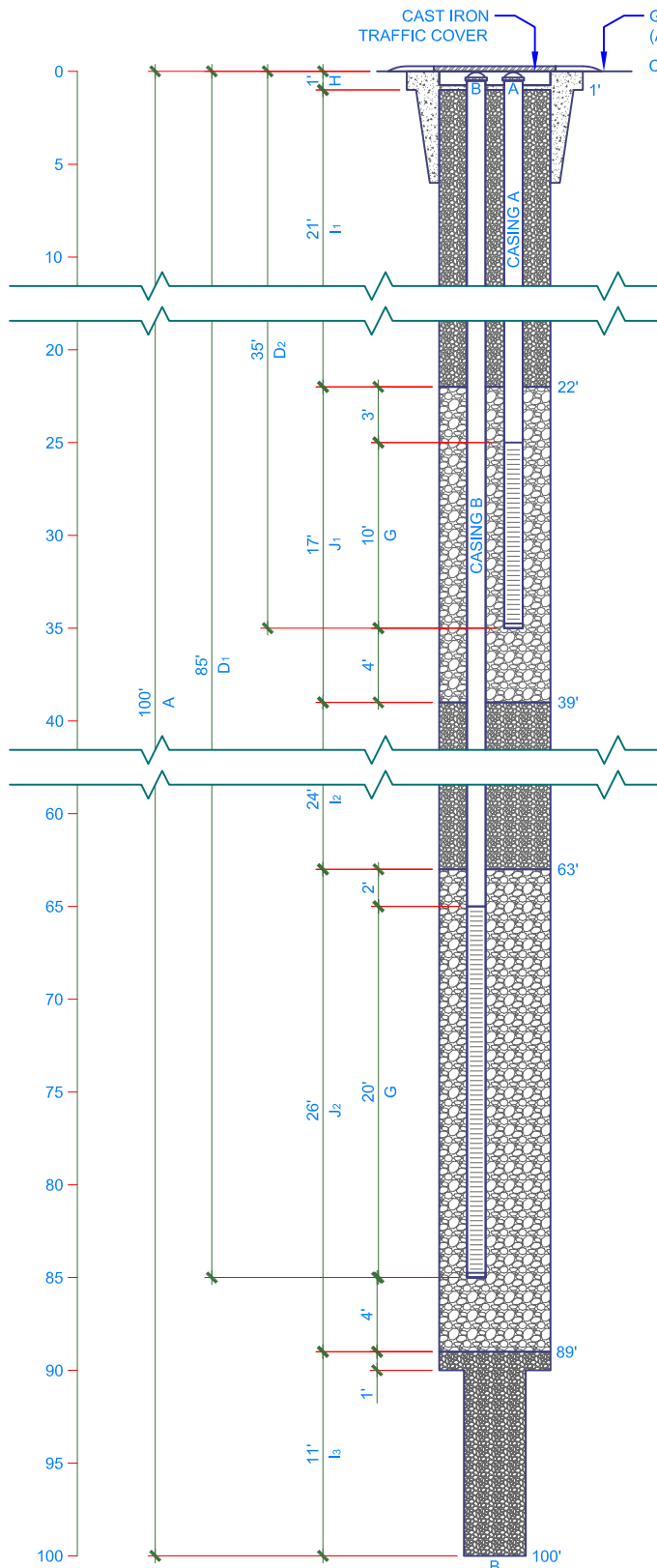
A-7.6

PROJECT NO.

4953-11-1421

**FIGURES A-8.1 THROUGH A-8.11
GROUNDWATER MONITORING WELL DIAGRAMS (PE PHASE)**

GROUNDWATER OBSERVATION WELL G-104



- A. TOTAL DEPTH OF BORING: 100' BGS
- B. DIAMETER OF BORING: 8"Ø, 4 7/8"Ø AT BOTTOM 10' DRILLING METHOD: ROTARY-WASH
- C. TOP OF BOX ELEVATION: NA
- D. CASING LENGTH: 35' (A), 85' (B) MATERIAL: PVC
- E. CASING DIAMETER: 2"Ø (EACH)
- F. DEPTH TO TOP OF SCREEN: 25' (A) & 65' (B)
- G. PERFORATION LENGTH: 10' (A), 20' (B) PERFORATION SIZE: 0.020" SLOTS
- H. SUBSURFACE SEAL: 1' CONCRETE, 6" GROUT
- I. SEAL: 1'-22', 39'-63', 89'-100' (BGS) MATERIAL: HYDRATED BENTONITE (CHIPS)
 - I1. 1'-22': BENTONITE CEMENT GROUT OVER 1' OF BENTONITE CHIPS HYDRATED
 - I2. 39'-63': BENTONITE CHIPS HYDRATED
 - I3. 89'-100': BENTONITE CHIPS HYDRATED
- J. SAND PACK: 22'-39', 63'-89' (BGS) MATERIAL: # 3 SAND PACK w/ TRANSITION SAND AT TOP AND FILTER FABRIC SOCK PLACED OVER SCREEN
 - J1. 22'-39'
 - J2. 63'-89'
- K. WATER LEVELS ON 07/29/2011 WERE AS FOLLOWS:
 - A. 33.3 FEET BELOW TOC
 - B. 34.5 FEET BELOW TOC

Vertical Scale: 1" = 10'-0"
Horizontal Scale Exaggerated

Key	
BGS	Below Ground Surface
TOC	Top Of Casing
'	Feet
"	Inches

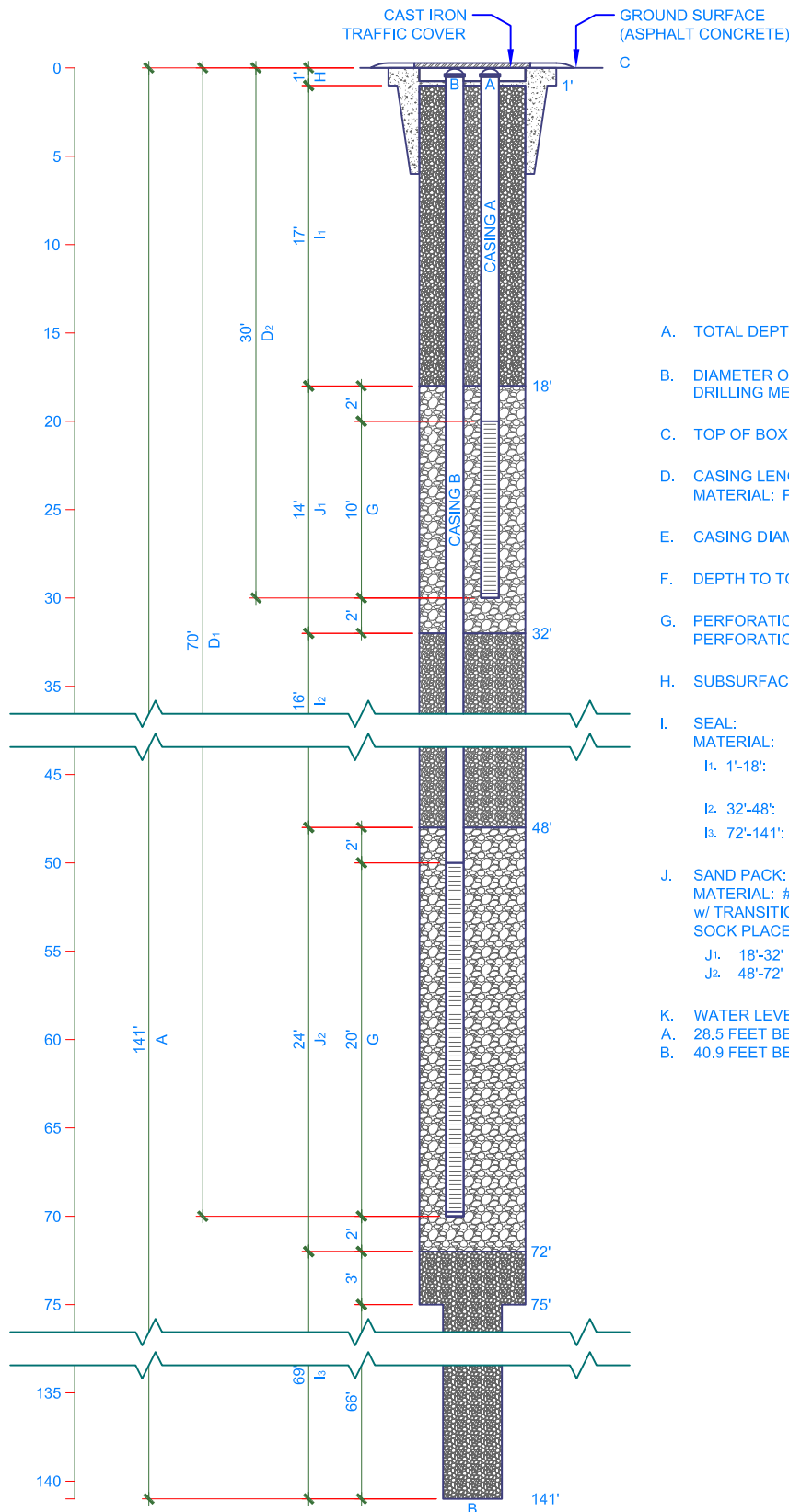


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WELL NO.:	G-104	DRAWN:	L. Morley
INSTALLED:	05/03/2011	CHKD:	Jag
SCALE:	1" = 10' Vertical	DATE:	December 2, 2011
DRILL CO.:	C & L Drilling	TECHNIQUE:	Rotary-Wash
FIELD PERSONNEL:	Larry Hong		
PROJECT NAME:	MTA Westside Subway Extension		
WELL LOCATION:	Wilshire west of Crenshaw, Los Angeles, CA		

MTA WESTSIDE SUBWAY EXTENSION Parsons Brinckerhoff	
WELL CONSTRUCTION DETAIL Groundwater Observation Well	FIGURE NO. A-8.1 PROJECT NO. 4953-11-1421

GROUNDWATER OBSERVATION WELL G-109



- A. TOTAL DEPTH OF BORING: 141' BGS
- B. DIAMETER OF BORING: 8"Ø, 4 7/8"Ø AT BOTTOM 66'
DRILLING METHOD: ROTARY-WASH
- C. TOP OF BOX ELEVATION: NA
- D. CASING LENGTH: 30' (A), 70' (B)
MATERIAL: PVC
- E. CASING DIAMETER: 2"Ø (EACH)
- F. DEPTH TO TOP OF SCREEN: 20' (A) & 50' (B)
- G. PERFORATION LENGTH: 10' (A), 20' (B)
PERFORATION SIZE: 0.020" SLOTS
- H. SUBSURFACE SEAL: 1' CONCRETE, 6" GROUT
- I. SEAL:
MATERIAL: HYDRATED BENTONITE (CHIPS)
 - I1. 1'-18': BENTONITE CEMENT GROUT OVER 1' OF BENTONITE CHIPS HYDRATED
 - I2. 32'-48': BENTONITE CHIPS HYDRATED
 - I3. 72'-141': BENTONITE CHIPS HYDRATED
- J. SAND PACK: 18'-32', 48'-72' (BGS)
MATERIAL: # 3 SAND PACK
w/ TRANSITION SAND AT TOP AND FILTER FABRIC
SOCK PLACED OVER SCREEN
 - J1. 18'-32'
 - J2. 48'-72'
- K. WATER LEVELS ON 07/29/2011 WERE AS FOLLOWS:
 - A. 28.5 FEET BELOW TOC
 - B. 40.9 FEET BELOW TOC

Vertical Scale: 1" = 10'-0"
Horizontal Scale Exaggerated

Key	
BGS	Below Ground Surface
TOC	Top Of Casing
'	Feet
"	Inches

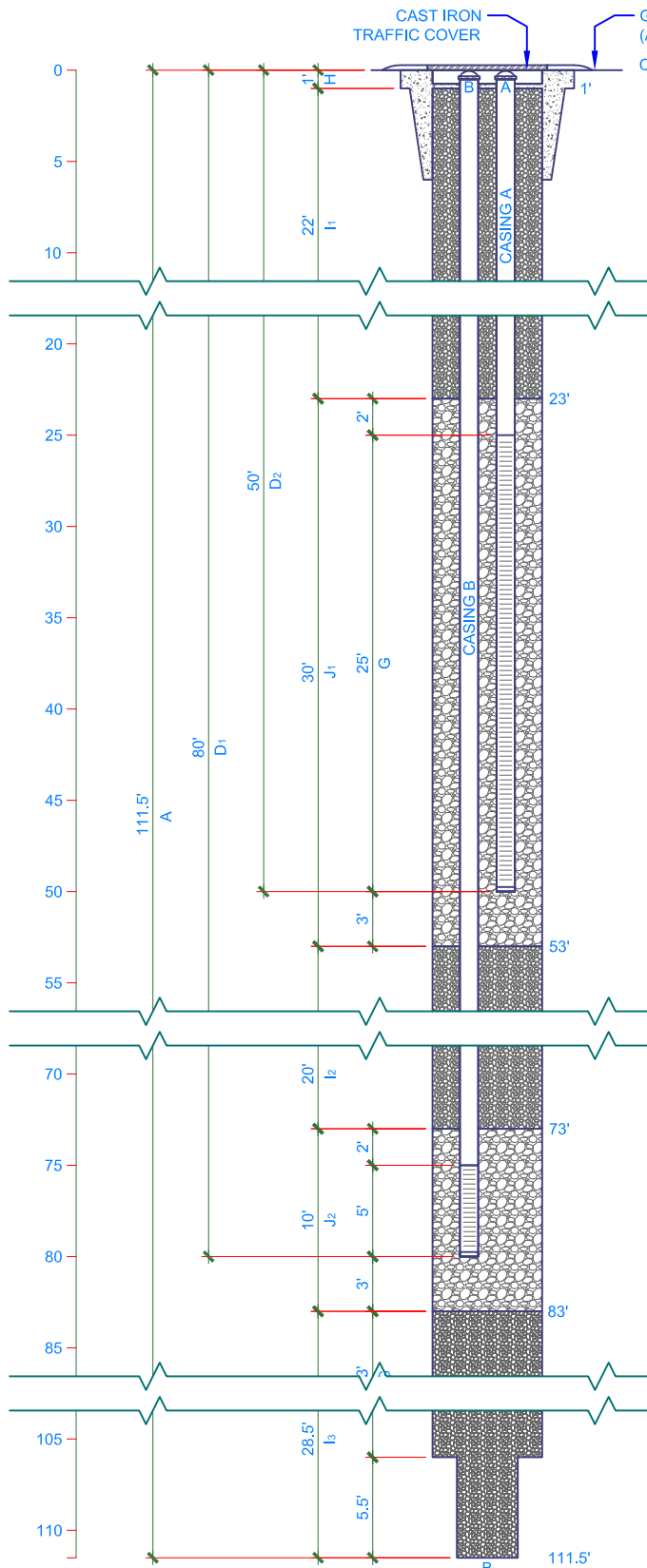


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WELL NO.:	G-109	DRAWN:	L. Morley
INSTALLED:	05/11/2011	CHKD:	Jag
SCALE:	1" = 10' Vertical	DATE:	December 2, 2011
DRILL CO.:	C & L Drilling	TECHNIQUE:	Rotary-Wash
FIELD PERSONNEL:	Angel Recio		
PROJECT NAME:	MTA Westside Subway Extension		
WELL LOCATION:	Wilshire west of Hudson, Los Angeles, CA		

MTA WESTSIDE SUBWAY EXTENSION Parsons Brinckerhoff	
WELL CONSTRUCTION DETAIL	FIGURE NO. A-8.2
Groundwater Observation Well	PROJECT NO. 4953-11-1421

GROUNDWATER OBSERVATION WELL G-139



- A. TOTAL DEPTH OF BORING: 111.5' BGS
- B. DIAMETER OF BORING: 8"Ø, 4 7/8"Ø AT BOTTOM 5.5' DRILLING METHOD: ROTARY-WASH
- C. TOP OF BOX ELEVATION: NA
- D. CASING LENGTH: 50' (A), 80' (B) MATERIAL: PVC
- E. CASING DIAMETER: 2"Ø (EACH)
- F. DEPTH TO TOP OF SCREEN: 25' (A) & 75' (B)
- G. PERFORATION LENGTH: 25' (A), 5' (B) PERFORATION SIZE: 0.020" SLOTS
- H. SUBSURFACE SEAL: 1' CONCRETE, 6" GROUT
- I. SEAL: 1'-23', 53'-73', 83'-111.5' (BGS) MATERIAL: HYDRATED BENTONITE (CHIPS)
 - I1. 1'-23': BENTONITE CEMENT GROUT OVER 1' OF BENTONITE CHIPS HYDRATED
 - I2. 53'-73': BENTONITE CHIPS HYDRATED
 - I3. 83'-111.5' BENTONITE CHIPS HYDRATED
- J. SAND PACK: 23'-53', 73'-83' (BGS) MATERIAL: # 3 SAND PACK w/ TRANSITION SAND AT TOP AND FILTER FABRIC SOCK PLACED OVER SCREEN
 - J1. 23'-53'
 - J2. 73'-83'
- K. WATER LEVELS ON 07/29/2011 WERE AS FOLLOWS:
 - A. 36.3 FEET BELOW TOC
 - B. 42.2 FEET BELOW TOC

Vertical Scale: 1" = 10'-0"
Horizontal Scale Exaggerated

Key	
BGS	Below Ground Surface
TOC	Top Of Casing
'	Feet
"	Inches

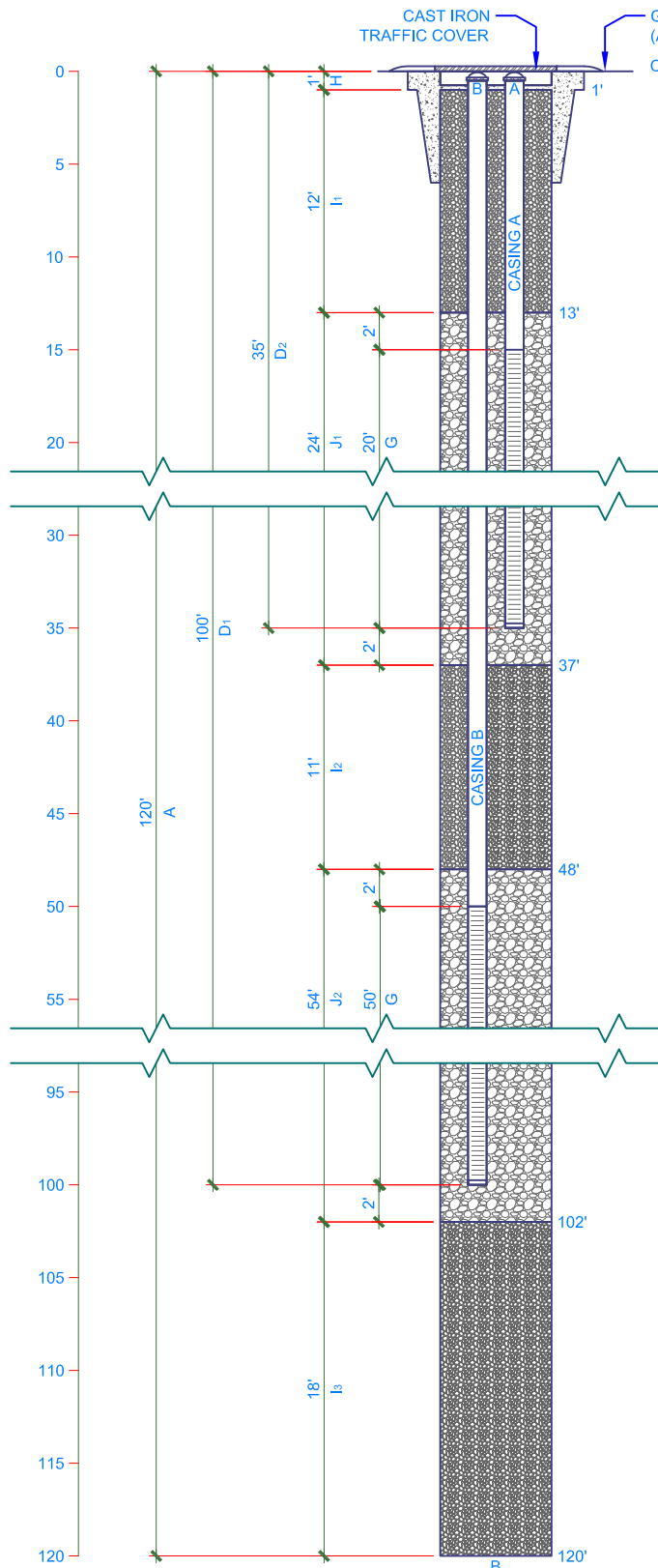


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Phone (323) 889-5300 Fax (323) 889-5398

WELL NO.:	G-139	DRAWN:	L. Morley
INSTALLED:	05/20/2011	CHKD:	Jag
SCALE:	1" = 10' Vertical	DATE:	December 2, 2011
DRILL CO.:	C & L Drilling	TECHNIQUE:	Rotary-Wash
FIELD PERSONNEL:	Angel Recio		
PROJECT NAME:	MTA Westside Subway Extension		
WELL LOCATION:	Wilshire west of Altmont, Century City, CA		

MTA WESTSIDE SUBWAY EXTENSION Parsons Brinckerhoff	
WELL CONSTRUCTION DETAIL	FIGURE NO. A-8.3
Groundwater Observation Well	PROJECT NO. 4953-11-1421

GROUNDWATER OBSERVATION WELL G-156



- A. TOTAL DEPTH OF BORING: 120' BGS
- B. DIAMETER OF BORING: 8"Ø
DRILLING METHOD: ROTARY-WASH
- C. TOP OF BOX ELEVATION: NA
- D. CASING LENGTH: 35' (A), 100' (B)
MATERIAL: PVC
- E. CASING DIAMETER: 2"Ø (EACH)
- F. DEPTH TO TOP OF SCREEN: 15' (A) & 50' (B)
- G. PERFORATION LENGTH: 20' (A), 50' (B)
PERFORATION SIZE: 0.020" SLOTS
- H. SUBSURFACE SEAL: 1' CONCRETE, 6" GROUT
- I. SEAL: 1'-13', 37'-48', 102'-120' (BGS)
MATERIAL: HYDRATED BENTONITE (CHIPS)
 - I1. 1'-13': BENTONITE CEMENT GROUT OVER 1' OF BENTONITE CHIPS HYDRATED
 - I2. 37'-48': BENTONITE CHIPS HYDRATED
 - I3. 102'-120': BENTONITE CHIPS HYDRATED
- J. SAND PACK: 13'-37', 48'-102' (BGS)
MATERIAL: # 3 SAND PACK
w/ TRANSITION SAND AT TOP AND FILTER FABRIC SOCK PLACED OVER SCREEN
 - J1. 13'-37'
 - J2. 48'-102'
- K. WATER LEVELS ON 06/10/2011 WERE AS FOLLOWS:
 - A. 27.02 FEET BELOW TOC
 - B. 45.38 FEET BELOW TOC

Vertical Scale: 1" = 10'-0"
Horizontal Scale Exaggerated

Key	
BGS	Below Ground Surface
TOC	Top Of Casing
'	Feet
"	Inches

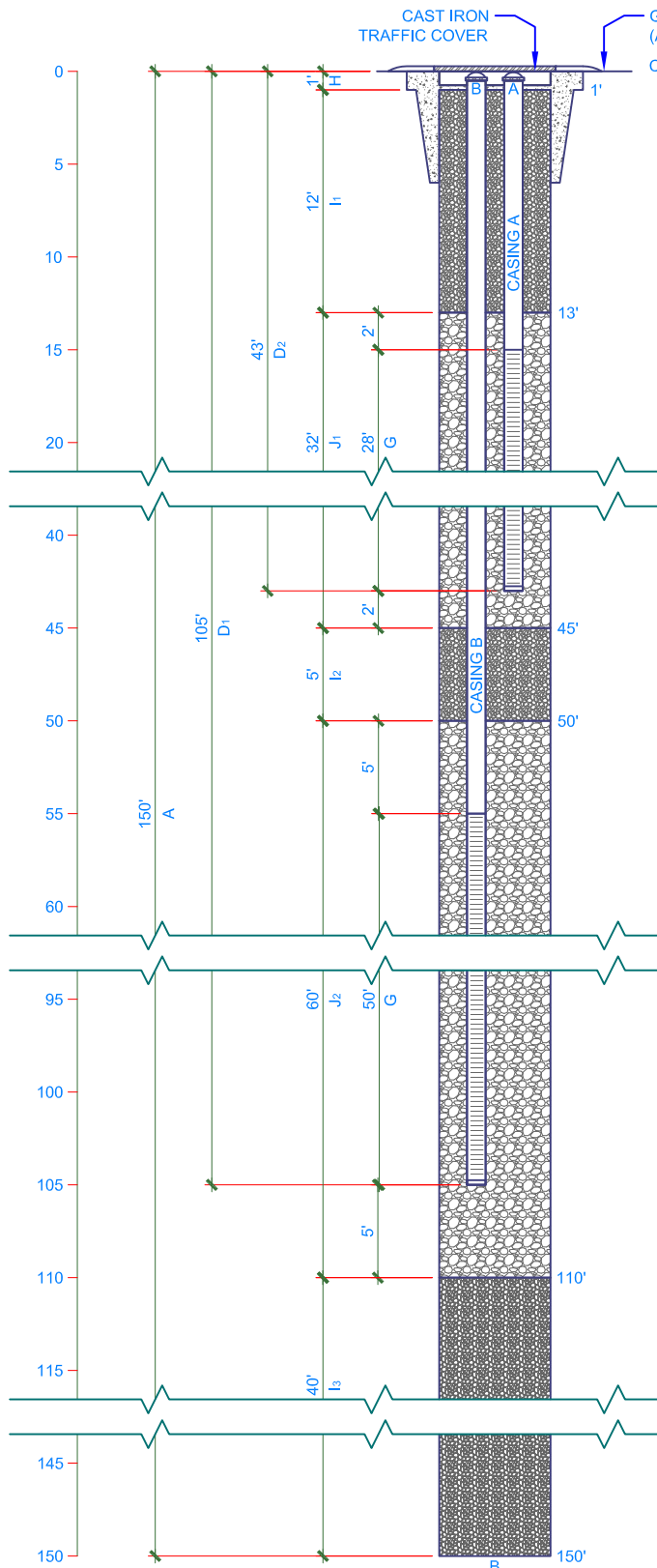


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5628 E. Slauson Avenue, Los Angeles, California 90040
Phone (323) 889-5300 Fax (323) 889-5398

WELL NO.:	G-156	DRAWN:	L. Morley
INSTALLED:	02/15/2011	CHKD:	Jag
SCALE:	1" = 10' Vertical	DATE:	December 2, 2011
DRILL CO.:	C & L Drilling	TECHNIQUE:	Rotary-Wash
FIELD PERSONNEL:	Angel Recio		
PROJECT NAME:	MTA Westside Subway Extension		
WELL LOCATION:	Santa Monica Blvd, Century City, CA		

MTA WESTSIDE SUBWAY EXTENSION Parsons Brinckerhoff	
WELL CONSTRUCTION DETAIL Groundwater Observation Well	FIGURE NO. A-8.4 PROJECT NO. 4953-11-1421

GROUNDWATER OBSERVATION WELL G-165



- A. TOTAL DEPTH OF BORING: 150' BGS
- B. DIAMETER OF BORING: 8"Ø
DRILLING METHOD: ROTARY WASH
- C. TOP OF BOX ELEVATION: NA
- D. CASING LENGTH: 43' (A), 105' (B)
MATERIAL: PVC
- E. CASING DIAMETER: 2"Ø (EACH)
- F. DEPTH TO TOP OF SCREEN: 15' (A) & 55' (B)
- G. PERFORATION LENGTH: 28' (A), 50' (B)
PERFORATION SIZE: 0.010" SLOTS
- H. SUBSURFACE SEAL: 1' CONCRETE, 6" GROUT
- I. SEAL: 1'-13', 45'-50', 110'-150' (BGS)
MATERIAL: HYDRATED BENTONITE (CHIPS)
 - I1. 1'-13': 8" OF BENTONITE CEMENT GROUT
OVER 4" OF BENTONITE CHIPS HYDRATED
 - I2. 45'-50': BENTONITE CHIPS HYDRATED
 - I3. 110'-150': BENTONITE CHIPS HYDRATED
- J. SAND PACK: 13'-45', 50'-110' (BGS)
MATERIAL: # 3 SAND PACK
 - J1. 13'-45'
 - J2. 50'-110'
- K. WATER LEVELS ON 04/22/2011 WERE AS FOLLOWS:
 - A. 26.0 FEET BELOW TOC
 - B. 64.5 FEET BELOW TOC

Vertical Scale: 1" = 10'-0"
Horizontal Scale Exaggerated

Key	
BGS	Below Ground Surface
TOC	Top Of Casing
'	Feet
"	Inches



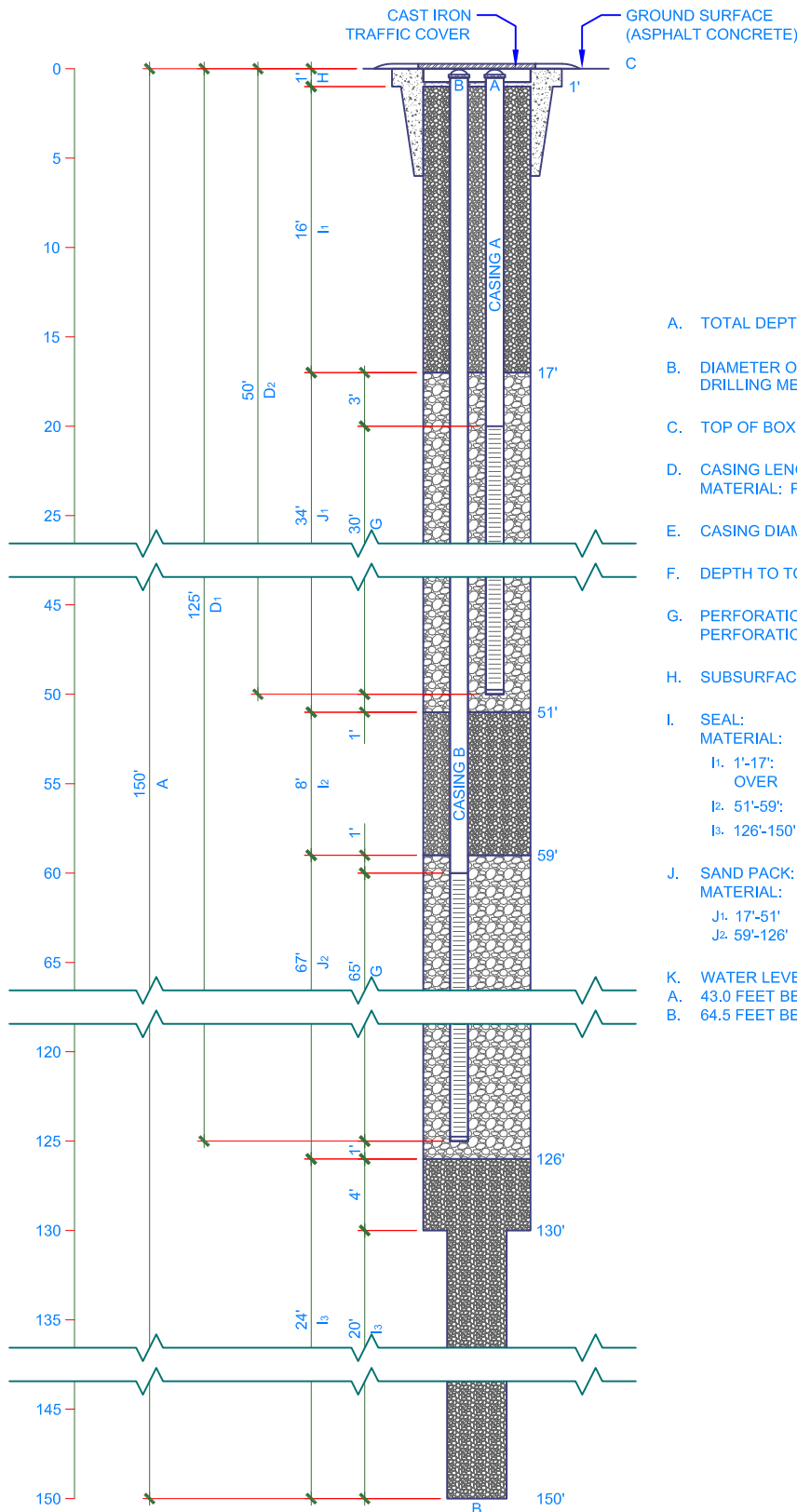
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WELL NO.:	G-165	DRAWN:	L. Morley
INSTALLED:	03/19/2011	CHKD:	H.P. / Jag
SCALE:	1" = 10' Vertical	DATE:	December 2, 2011
DRILL CO.:	C & L Drilling	TECHNIQUE:	Rotary-Wash
FIELD PERSONNEL:	Daniel Wader		
PROJECT NAME:	MTA Westside Subway Extension		
WELL LOCATION:	Beverly Hills High School, Beverly Hills, CA		

MTA WESTSIDE SUBWAY EXTENSION	
Parsons Brinckerhoff	
WELL CONSTRUCTION DETAIL	FIGURE NO. A-8.5
Groundwater Observation Well	PROJECT NO. 4953-11-1421

Path: G:\4893_Geotech\2011\11421_Metro\Hatch\CD\m\Well\4893-11-1421_(PE)\Wells.dwg [G:165]
Date: December 01, 2011 9:39am By: LAINORLEY

GROUNDWATER OBSERVATION WELL G-166



- A. TOTAL DEPTH OF BORING: 150' BGS
- B. DIAMETER OF BORING: 8"Ø, 4⁷/₈"Ø BOTTOM 20'
DRILLING METHOD: ROTARY WASH
- C. TOP OF BOX ELEVATION: NA
- D. CASING LENGTH: 50' (A), 125' (B)
MATERIAL: PVC
- E. CASING DIAMETER: 2"Ø (EACH)
- F. DEPTH TO TOP OF SCREEN: 20' (A) & 60' (B)
- G. PERFORATION LENGTH: 30' (A), 65' (B)
PERFORATION SIZE: 0.010" SLOTS
- H. SUBSURFACE SEAL: 1' CONCRETE, 6' GROUT
- I. SEAL: 1'-17', 51'-59', 126'-150' (BGS)
MATERIAL: HYDRATED BENTONITE (CHIPS)
 - I₁ 1'-17': 12' OF BENTONITE CEMENT GROUT
OVER 4' OF BENTONITE CHIPS HYDRATED
 - I₂ 51'-59': BENTONITE CHIPS HYDRATED
 - I₃ 126'-150': BENTONITE CHIPS HYDRATED
- J. SAND PACK: 17'-51', 59'-126' (BGS)
MATERIAL: # 3 SAND PACK
 - J₁ 17'-51'
 - J₂ 59'-126'
- K. WATER LEVELS ON 04/22/2011 WERE AS FOLLOWS:
 - A. 43.0 FEET BELOW TOC
 - B. 64.5 FEET BELOW TOC

Vertical Scale: 1" = 10'-0"
Horizontal Scale Exaggerated

Key	
BGS	Below Ground Surface
TOC	Top Of Casing
'	Feet
"	Inches

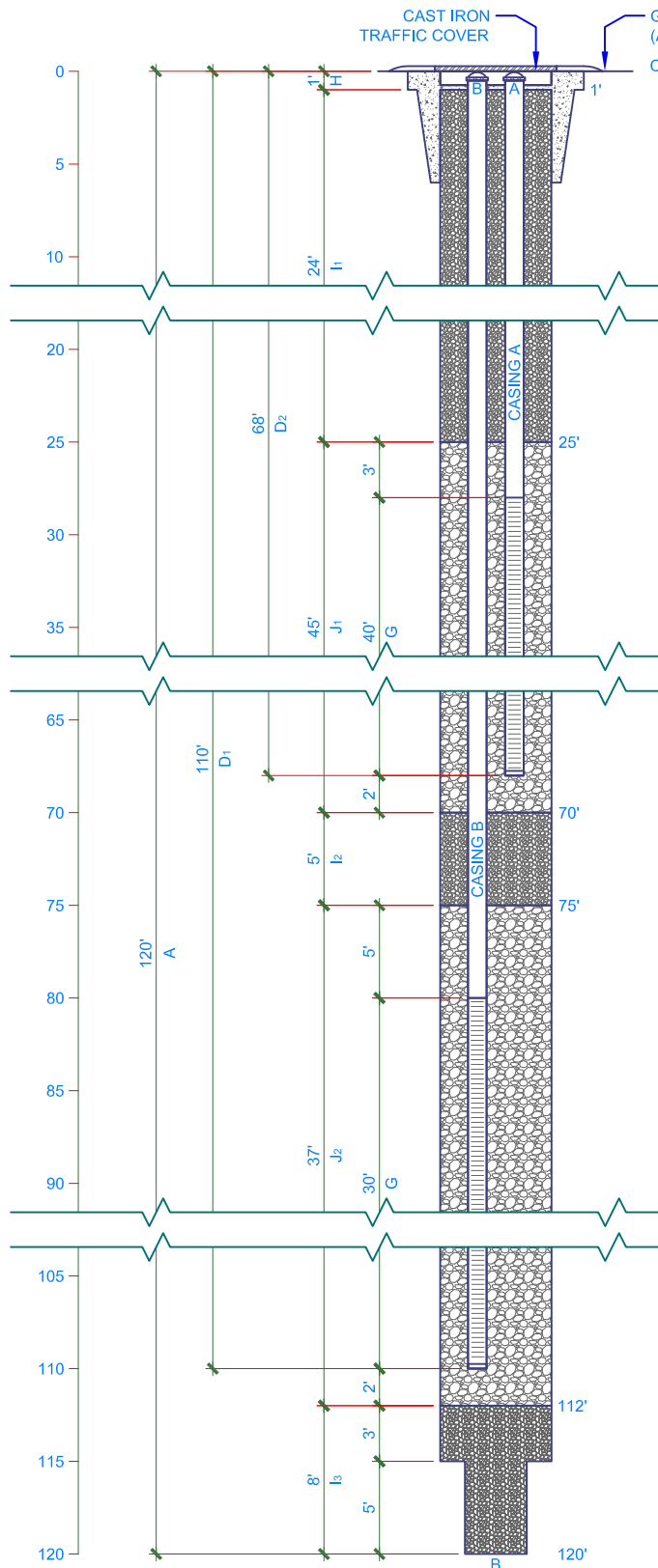


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WELL NO.:	G-166	DRAWN:	L. Morley
INSTALLED:	04/20/2011	CHKD:	H.P. / Jag
SCALE:	1" = 10' Vertical	DATE:	December 2, 2011
DRILL CO.:	C & L Drilling	TECHNIQUE:	Rotary-Wash
FIELD PERSONNEL:	Angel Recio		
PROJECT NAME:	MTA Westside Subway Extension		
WELL LOCATION:	Beverly Hills High School, Beverly Hills, CA		

MTA WESTSIDE SUBWAY EXTENSION	
Parsons Brinckerhoff	
WELL CONSTRUCTION DETAIL	FIGURE NO. A-8.6
Groundwater Observation Well	PROJECT NO. 4953-11-1421

GROUNDWATER OBSERVATION WELL G-174A



- A. TOTAL DEPTH OF BORING: 120' BGS
- B. DIAMETER OF BORING: 8"Ø, 6"Ø AT BOTTOM 5'
DRILLING METHOD: ROTARY-WASH
- C. TOP OF BOX ELEVATION: NA
- D. CASING LENGTH: 68' (A), 110' (B)
MATERIAL: PVC
- E. CASING DIAMETER: 2"Ø (EACH)
- F. DEPTH TO TOP OF SCREEN: 28' (A) & 80' (B)
- G. PERFORATION LENGTH: 40' (A), 30' (B)
PERFORATION SIZE: 0.020" SLOTS
- H. SUBSURFACE SEAL: 1' CONCRETE, 6' GROUT
- I. SEAL: 1'-25', 70'-75', 112'-120' (BGS)
MATERIAL: HYDRATED BENTONITE (CHIPS)
 - I1. 1'-25': BENTONITE CEMENT GROUT OVER 1' OF BENTONITE CHIPS HYDRATED
 - I2. 70'-75': BENTONITE CHIPS HYDRATED
 - I3. 112'-120': BENTONITE CHIPS HYDRATED
- J. SAND PACK: 25'-70', 75'-112' (BGS)
MATERIAL: # 3 SAND PACK
w/ TRANSITION SAND AT TOP AND FILTER FABRIC SOCK PLACED OVER SCREEN
 - J1. 25'-70'
 - J2. 75'-112'
- K. WATER LEVELS ON 03/29/2011 WERE AS FOLLOWS:
 - A. 0 FEET BELOW TOC (OVERFLOWING TO GS)
 - B. 0 FEET BELOW TOC (OVERFLOWING TO GS)

Vertical Scale: 1" = 10'-0"
Horizontal Scale Exaggerated

Key	
BGS	Below Ground Surface
TOC	Top Of Casing
'	Feet
"	Inches

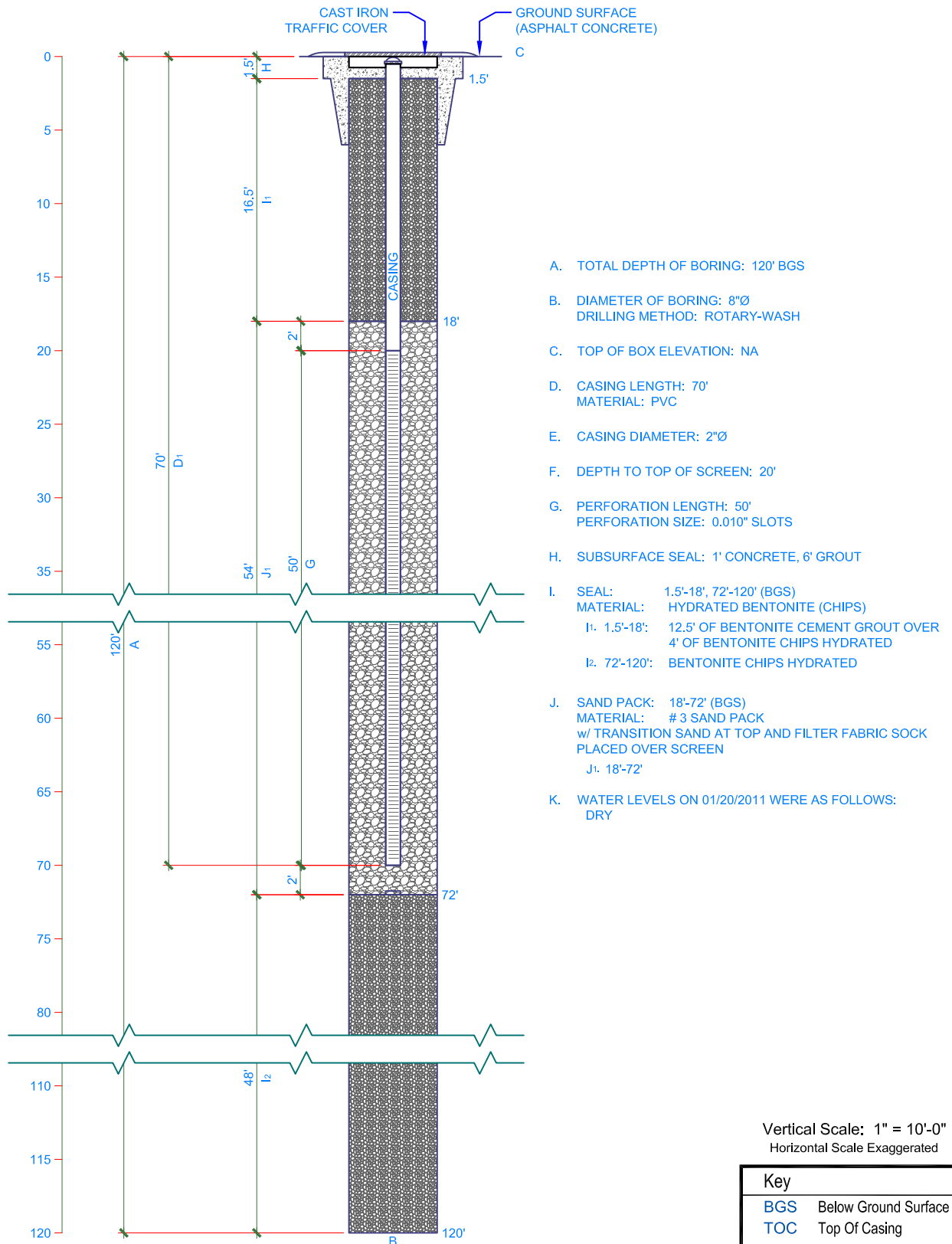


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WELL NO.:	G-174A	DRAWN:	L. Morley
INSTALLED:	3/10/2011	CHKD:	Jag
SCALE:	1" = 10' Vertical	DATE:	December 2, 2011
DRILL CO.:	C & L Drilling	TECHNIQUE:	Rotary-Wash
FIELD PERSONNEL:	Larry Hong		
PROJECT NAME:	MTA Westside Subway Extension		
WELL LOCATION:	Santa Monica & Fox Hills, Los Angeles, CA		

MTA WESTSIDE SUBWAY EXTENSION Parsons Brinckerhoff	
WELL CONSTRUCTION DETAIL Groundwater Observation Well	FIGURE NO. A-8.7 PROJECT NO. 4953-11-1421

GROUNDWATER OBSERVATION WELL G-179



- A. TOTAL DEPTH OF BORING: 120' BGS
- B. DIAMETER OF BORING: 8"Ø
DRILLING METHOD: ROTARY-WASH
- C. TOP OF BOX ELEVATION: NA
- D. CASING LENGTH: 70'
MATERIAL: PVC
- E. CASING DIAMETER: 2"Ø
- F. DEPTH TO TOP OF SCREEN: 20'
- G. PERFORATION LENGTH: 50'
PERFORATION SIZE: 0.010" SLOTS
- H. SUBSURFACE SEAL: 1' CONCRETE, 6' GROUT
- I. SEAL: 1.5'-18', 72'-120' (BGS)
MATERIAL: HYDRATED BENTONITE (CHIPS)
 - I1. 1.5'-18': 12.5' OF BENTONITE CEMENT GROUT OVER 4' OF BENTONITE CHIPS HYDRATED
 - I2. 72'-120': BENTONITE CHIPS HYDRATED
- J. SAND PACK: 18'-72' (BGS)
MATERIAL: #3 SAND PACK
w/ TRANSITION SAND AT TOP AND FILTER FABRIC SOCK PLACED OVER SCREEN
 - J1. 18'-72'
- K. WATER LEVELS ON 01/20/2011 WERE AS FOLLOWS: DRY

Key	
BGS	Below Ground Surface
TOC	Top Of Casing
'	Feet
"	Inches

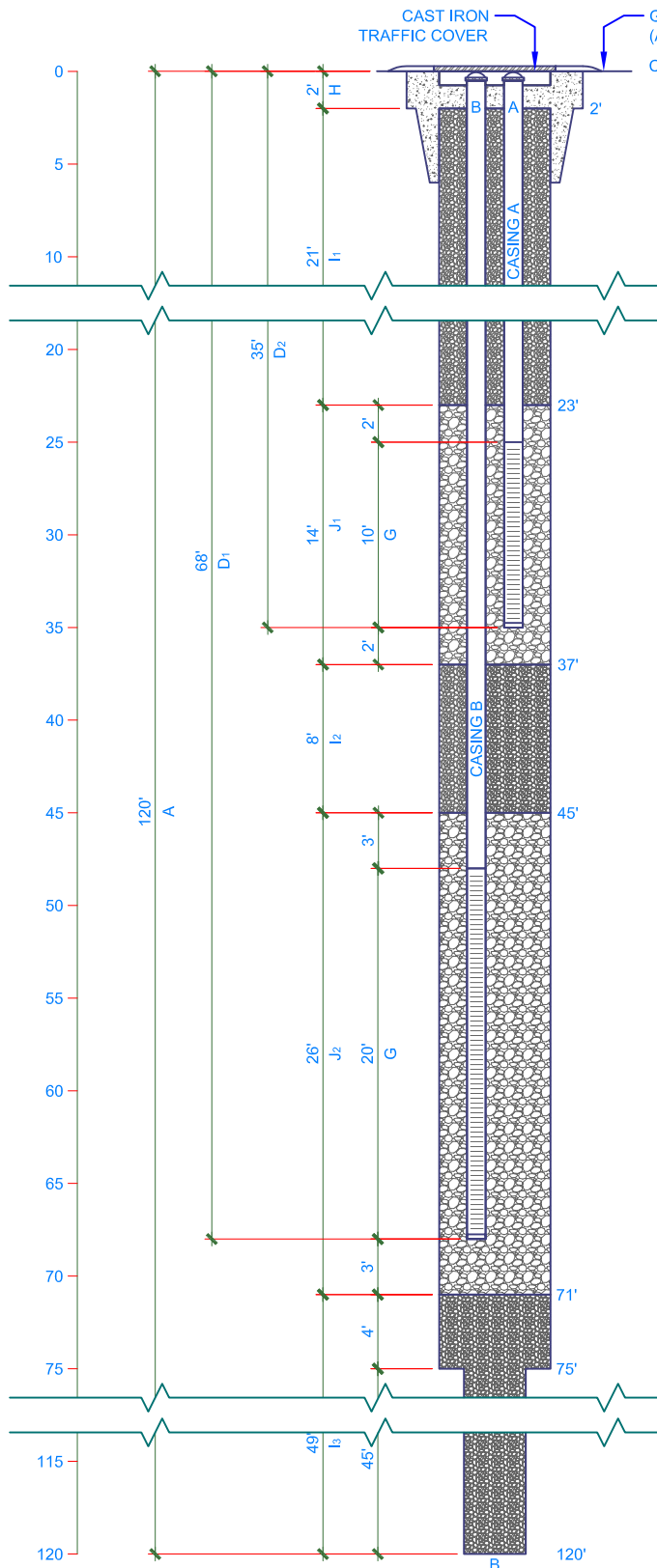


AMEC Environment & Infrastructure
 5628 E. Slauson Avenue, Los Angeles, California 90040
 Phone (323) 889-5300 Fax (323) 889-5398

WELL NO.:	G-179	DRAWN:	L. Morley
INSTALLED:	01/20/2011	CHKD:	Jag
SCALE:	1" = 10' Vertical	DATE:	December 2, 2011
DRILL CO.:	C & L Drilling	TECHNIQUE:	Rotary-Wash
FIELD PERSONNEL:	Daniel Wader		
PROJECT NAME:	MTA Westside Subway Extension		
WELL LOCATION:	Wilshire and Manning, Los Angeles, CA		

MTA WESTSIDE SUBWAY EXTENSION Parsons Brinckerhoff	
WELL CONSTRUCTION DETAIL Groundwater Observation Well	FIGURE NO. A-8.8 PROJECT NO. 4953-11-1421

GROUNDWATER OBSERVATION WELL G-186 / OB-105



- A. TOTAL DEPTH OF BORING: 120' BGS
- B. DIAMETER OF BORING: 8"Ø, 4 7/8"Ø AT BOTTOM 45'
DRILLING METHOD: ROTARY-WASH
- C. TOP OF BOX ELEVATION: 307.9 FT (MSL)
- D. CASING LENGTH: 35' (A), 68' (B)
MATERIAL: PVC
- E. CASING DIAMETER: 2"Ø (EACH)
- F. DEPTH TO TOP OF SCREEN: 25' (A) & 48' (B)
- G. PERFORATION LENGTH: 10' (A), 20' (B)
PERFORATION SIZE: 0.020" SLOTS
- H. SUBSURFACE SEAL: 1' CONCRETE, 6' GROUT
- I. SEAL:
MATERIAL: HYDRATED BENTONITE (CHIPS)
 - I1. 2'-23': BENTONITE CEMENT GROUT OVER 1' OF BENTONITE CHIPS HYDRATED
 - I2. 37'-45': BENTONITE CHIPS HYDRATED
 - I3. 71'-120': BENTONITE CHIPS HYDRATED
- J. SAND PACK: 23'-37', 45'-71' (BGS)
MATERIAL: # 3 SAND PACK
w/ TRANSITION SAND AT TOP AND FILTER FABRIC SOCK PLACED OVER SCREEN
 - J1. 23'-37'
 - J2. 45'-71'
- K. WATER LEVELS ON 05/28/2011 WERE AS FOLLOWS:
 - A. DRY
 - B. 47.91 FEET BELOW TOC

Vertical Scale: 1" = 10'-0"
Horizontal Scale Exaggerated

Key	
BGS	Below Ground Surface
TOC	Top Of Casing
'	Feet
"	Inches

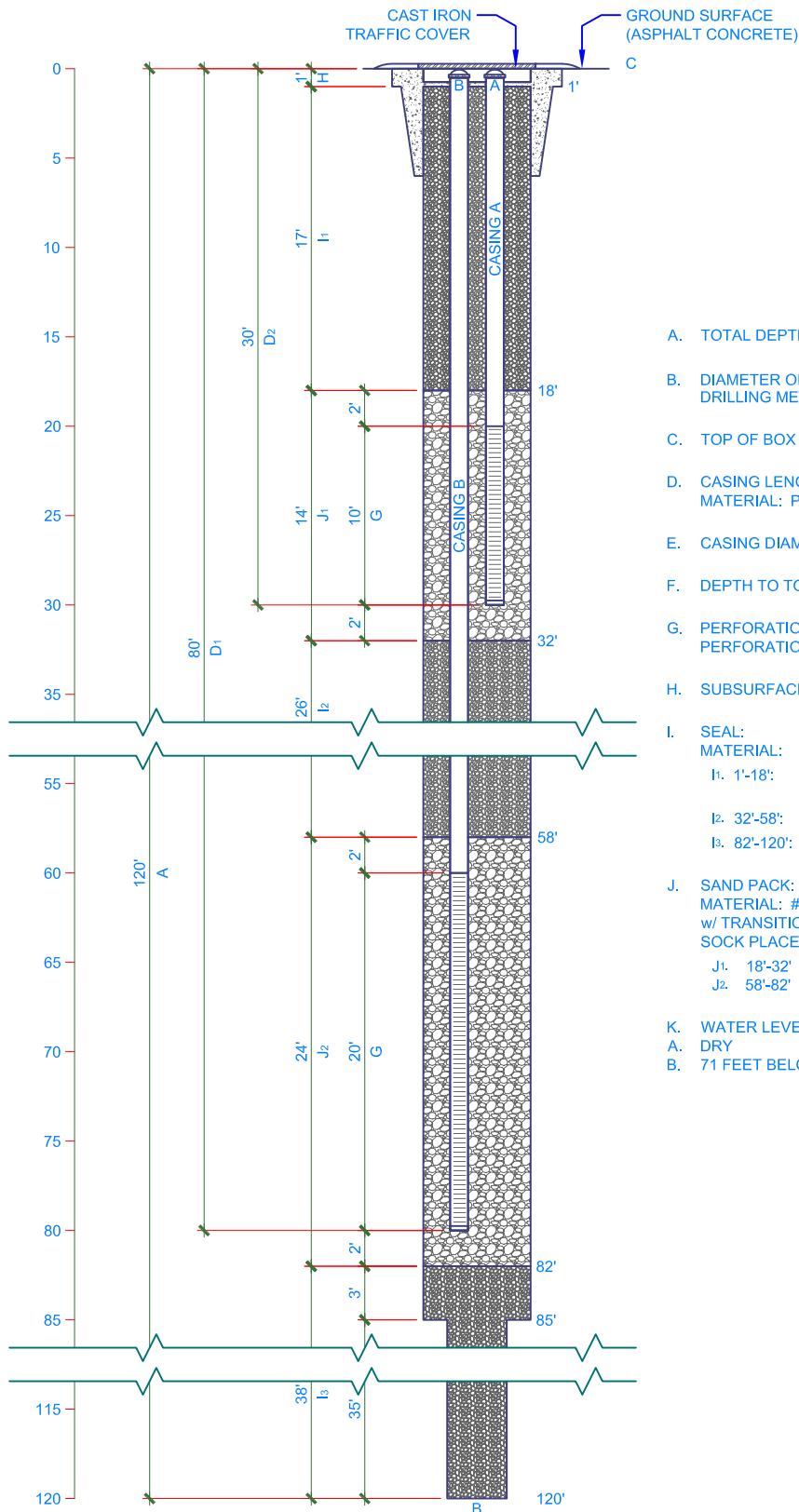


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WELL NO.: G-186 / OB-105	DRAWN: L. Morley
INSTALLED: 05/28/2011	CHKD: Jag
SCALE: 1" = 10' Vertical	DATE: December 2, 2011
DRILL CO.: C & L Drilling	TECHNIQUE: Rotary-Wash
FIELD PERSONNEL:	Mary Holland-Ford
PROJECT NAME:	MTA Westside Subway Extension
WELL LOCATION:	Westwood, UCLA, Los Angeles, CA

MTA WESTSIDE SUBWAY EXTENSION Parsons Brinckerhoff	
WELL CONSTRUCTION DETAIL Groundwater Observation Well	FIGURE NO. A-8.9 PROJECT NO. 4953-11-1421

GROUNDWATER OBSERVATION WELL G-203



- A. TOTAL DEPTH OF BORING: 120' BGS
- B. DIAMETER OF BORING: 8"Ø, 4 7/8"Ø AT BOTTOM 35'
DRILLING METHOD: ROTARY-WASH
- C. TOP OF BOX ELEVATION: NA
- D. CASING LENGTH: 30' (A), 80' (B)
MATERIAL: PVC
- E. CASING DIAMETER: 2"Ø (EACH)
- F. DEPTH TO TOP OF SCREEN: 20' (A) & 60' (B)
- G. PERFORATION LENGTH: 10' (A), 20' (B)
PERFORATION SIZE: 0.020" SLOTS
- H. SUBSURFACE SEAL: 1' CONCRETE, 6" GROUT
- I. SEAL: 1'-18', 32'-58', 82'-120' (BGS)
MATERIAL: HYDRATED BENTONITE (CHIPS)
 - I1. 1'-18': BENTONITE CEMENT GROUT OVER 1' OF BENTONITE CHIPS HYDRATED
 - I2. 32'-58': BENTONITE CHIPS HYDRATED
 - I3. 82'-120': BENTONITE CHIPS HYDRATED
- J. SAND PACK: 18'-32', 58'-82' (BGS)
MATERIAL: # 3 SAND PACK
w/ TRANSITION SAND AT TOP AND FILTER FABRIC
SOCK PLACED OVER SCREEN
 - J1. 18'-32'
 - J2. 58'-82'
- K. WATER LEVELS ON 06/10/2011 WERE AS FOLLOWS:
 - A. DRY
 - B. 71 FEET BELOW TOC

Vertical Scale: 1" = 10'-0"
Horizontal Scale Exaggerated

Key	
BGS	Below Ground Surface
TOC	Top Of Casing
'	Feet
"	Inches

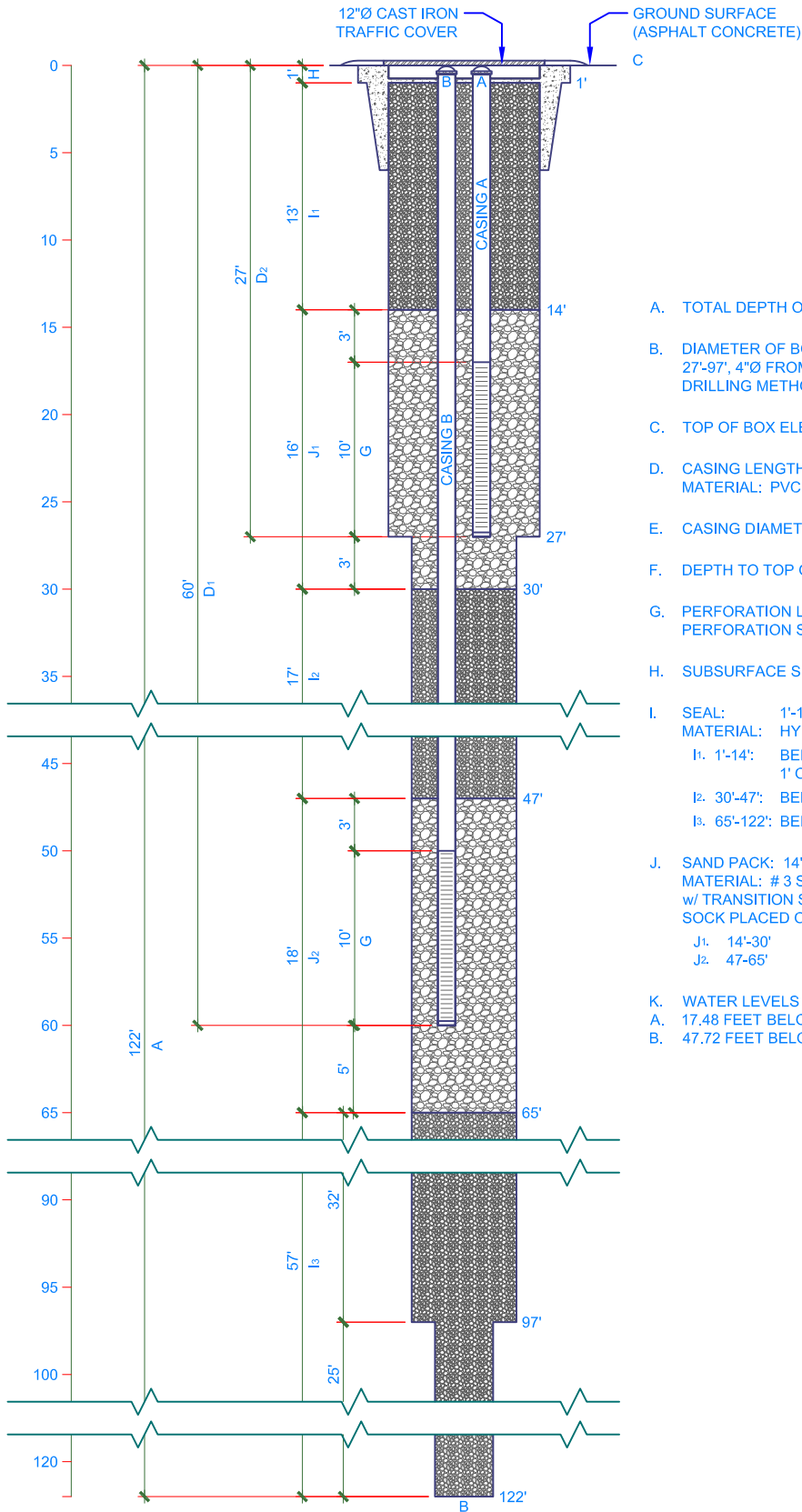


AMEC Environment & Infrastructure
5628 E. Slauson Avenue, Los Angeles, California 90040
Phone (323) 889-5300 Fax (323) 889-5398

WELL NO.:	G-203	DRAWN:	L. Morley
INSTALLED:	05/04/2011	CHKD:	Jag
SCALE:	1" = 10' Vertical	DATE:	December 2, 2011
DRILL CO.:	C & L Drilling	TECHNIQUE:	Rotary-Wash
FIELD PERSONNEL:	Angel Recio		
PROJECT NAME:	MTA Westside Subway Extension		
WELL LOCATION:	VA Hospital, Los Angeles, CA		

MTA WESTSIDE SUBWAY EXTENSION Parsons Brinckerhoff	
WELL CONSTRUCTION DETAIL Groundwater Observation Well	FIGURE NO. A-8.10 PROJECT NO. 4953-11-1421

GROUNDWATER OBSERVATION WELL S-106



- A. TOTAL DEPTH OF BORING: 122' BGS
- B. DIAMETER OF BORING: 8"Ø FROM 0'-27', 6"Ø FROM 27'-97', 4"Ø FROM 97' TO BOTTOM 122' BGS
DRILLING METHOD: SONIC-CORE
- C. TOP OF BOX ELEVATION: NA
- D. CASING LENGTH: 27' (A), 60' (B)
MATERIAL: PVC
- E. CASING DIAMETER: 2"Ø (EACH)
- F. DEPTH TO TOP OF SCREEN: 17' (A) & 50' (B)
- G. PERFORATION LENGTH: 10' (A), 10' (B)
PERFORATION SIZE: 0.020" SLOTS
- H. SUBSURFACE SEAL: 1' CONCRETE, 6' GROUT
- I. SEAL: 1'-14'; 30'-47'; 65'-122' (BGS)
MATERIAL: HYDRATED BENTONITE (CHIPS)
 - I1. 1'-14': BENTONITE CEMENT GROUT OVER 1' OF BENTONITE CHIPS HYDRATED
 - I2. 30'-47': BENTONITE CHIPS HYDRATED
 - I3. 65'-122': BENTONITE CHIPS HYDRATED
- J. SAND PACK: 14'-30'; 47'-65' (BGS)
MATERIAL: # 3 SAND PACK
w/ TRANSITION SAND AT TOP AND FILTER FABRIC SOCK PLACED OVER SCREEN
 - J1. 14'-30'
 - J2. 47'-65'
- K. WATER LEVELS ON 06/10/2011 WERE AS FOLLOWS:
 - A. 17.48 FEET BELOW TOC
 - B. 47.72 FEET BELOW TOC

Vertical Scale: 1" = 10'-0"
Horizontal Scale Exaggerated

Key	
BGS	Below Ground Surface
TOC	Top Of Casing
'	Feet
"	Inches



AMEC Environment & Infrastructure
5628 E. Slauson Avenue, Los Angeles, California 90040
Phone (323) 889-5300 Fax (323) 889-5398

WELL NO.:	S-106	DRAWN:	L. Morley
INSTALLED:	4/29/2011	CHKD:	Jag
SCALE:	1" = 10' Vertical	DATE:	December 2, 2011
DRILL CO.:	Boart Long Year	TECHNIQUE:	Sonic Core
FIELD PERSONNEL:	Dave Perry		
PROJECT NAME:	MTA Westside Subway Extension		
WELL LOCATION:	Wilshire west of Fairfax, Los Angeles, CA		

MTA WESTSIDE SUBWAY EXTENSION Parsons Brinckerhoff	
WELL CONSTRUCTION DETAIL Groundwater Observation Well	FIGURE NO. A-8.11 PROJECT NO. 4953-11-1421

Path: G:\4953_Geotech\2011\11-1421_MetroWestside\CAD\m\Wells\4953-11-1421_JPE\Wells.dwg [S:106]
Date: December 02, 2011 - 3:08pm By: LAMorley

**FIGURES A-9.1 THROUGH A-9.101
SONIC CORE PHOTOGRAPHIC LOGS (PE PHASE)**



S-101 [6 – 7 feet]



S-101 [7.2 – 17 feet]

Figure A-9.1



S-101 [17 – 27 feet]



S-101 [27 – 37 feet]

Figure A-9.2

Westside Subway Extension, Project No. 4953-10-1561

By: Y.N. 6/15/11, Checked By: APR 6/30/2011



S-101 [37 – 47 feet]

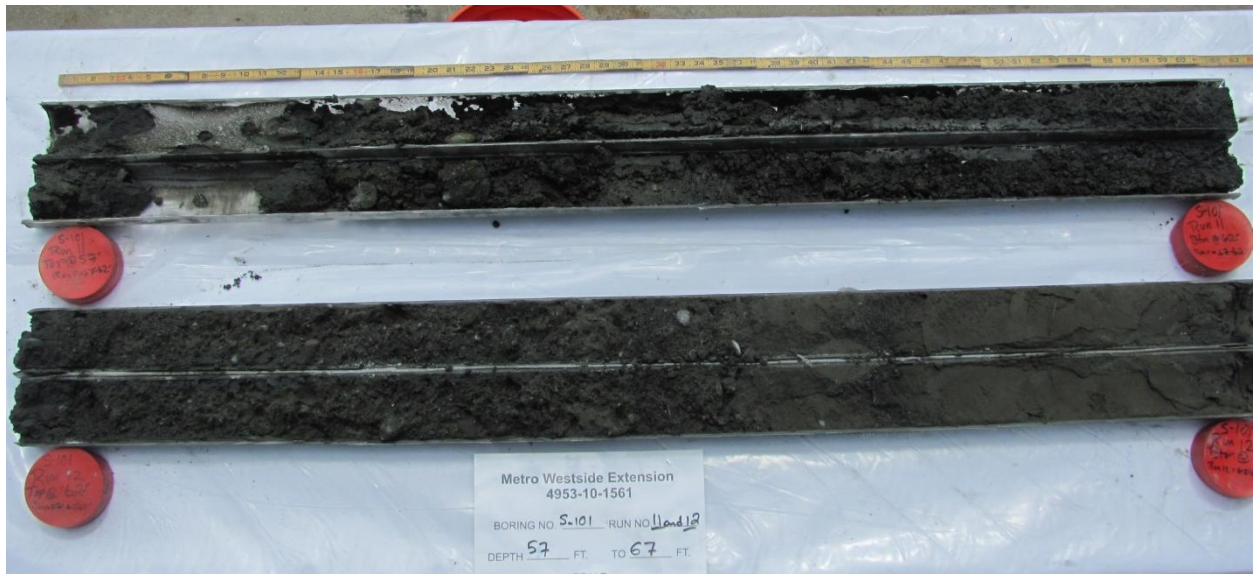


S-101 [47– 57 feet]

Figure A-9.3

Westside Subway Extension, Project No. 4953-10-1561

By: Y.N. 6/15/11, Checked By: APR 6/30/2011



S-101 [57– 67 feet]



S-101 [67 – 77 feet]

Figure A-9.4

Westside Subway Extension, Project No. 4953-10-1561

By: Y.N. 6/15/11, Checked By: APR 6/30/2011



S-101 [77 – 87 feet]



S-101 [87– 92 feet]

Figure A-9.5



S-102 [9 – 17 feet]



S-102 [17 – 27 feet]

Figure A-9.6

Westside Subway Extension, Project No. 4953-10-1561

By: Y.N. 6/15/11, Checked By: APR 6/30/2011



S-102 [27 – 37 feet]



S-102 [37 – 47 feet]

Figure A-9.7



S-102 [47 – 57 feet]

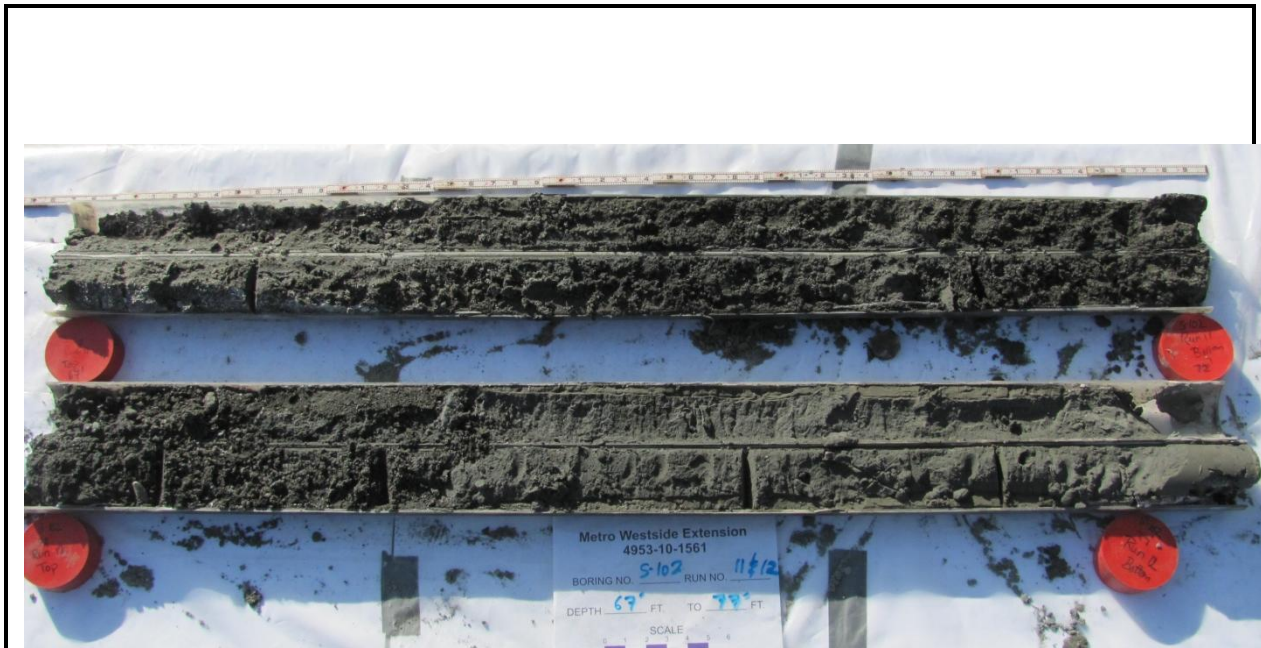


S-102 [57– 67 feet]

Figure A-9.8

Westside Subway Extension, Project No. 4953-10-1561

By: Y.N. 6/15/11, Checked By: APR 6/30/2011



S-102 [67– 77 feet]



S-102 [77 – 87 feet]

Figure A-9.9

Westside Subway Extension, Project No. 4953-10-1561

By: Y.N. 6/15/11, Checked By: APR 6/30/2011

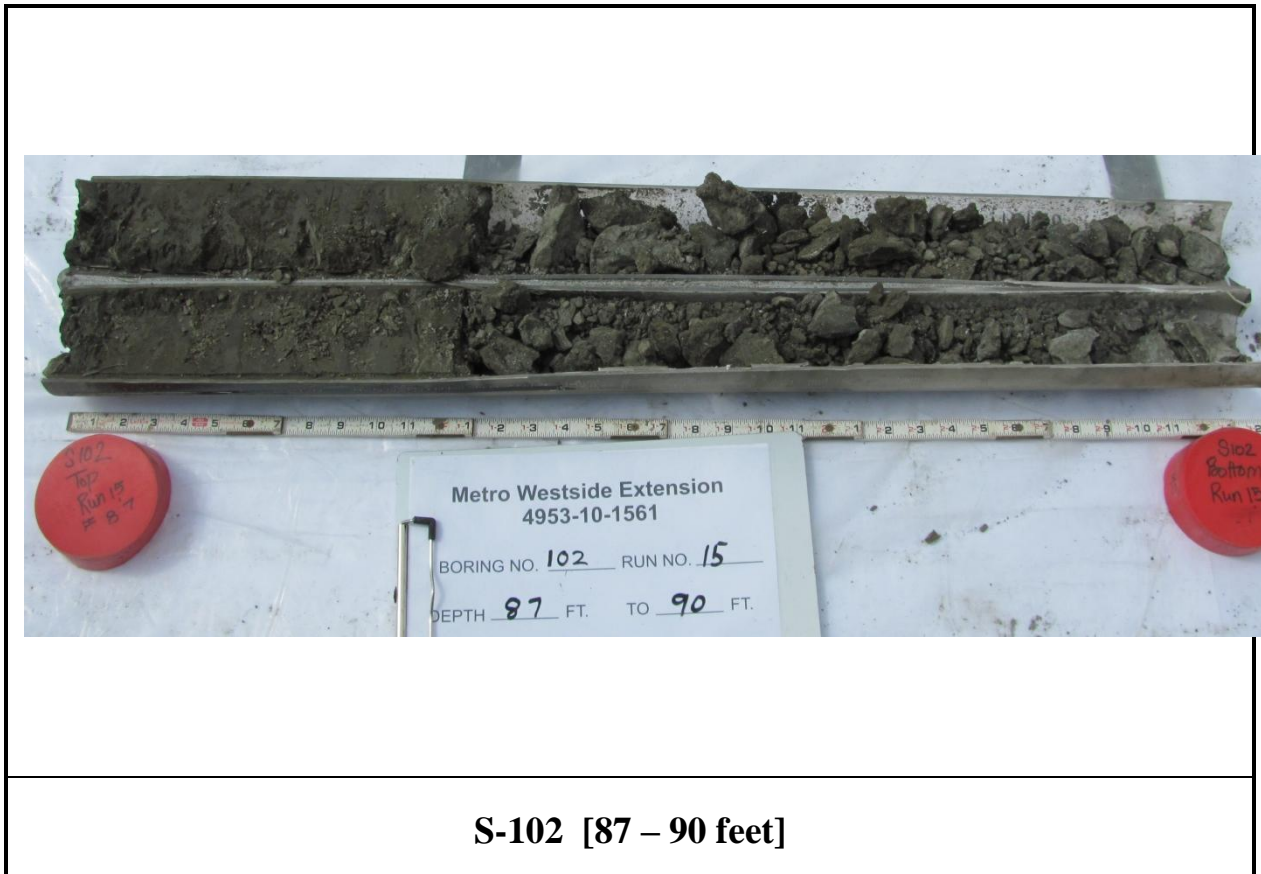


Figure A-9.10

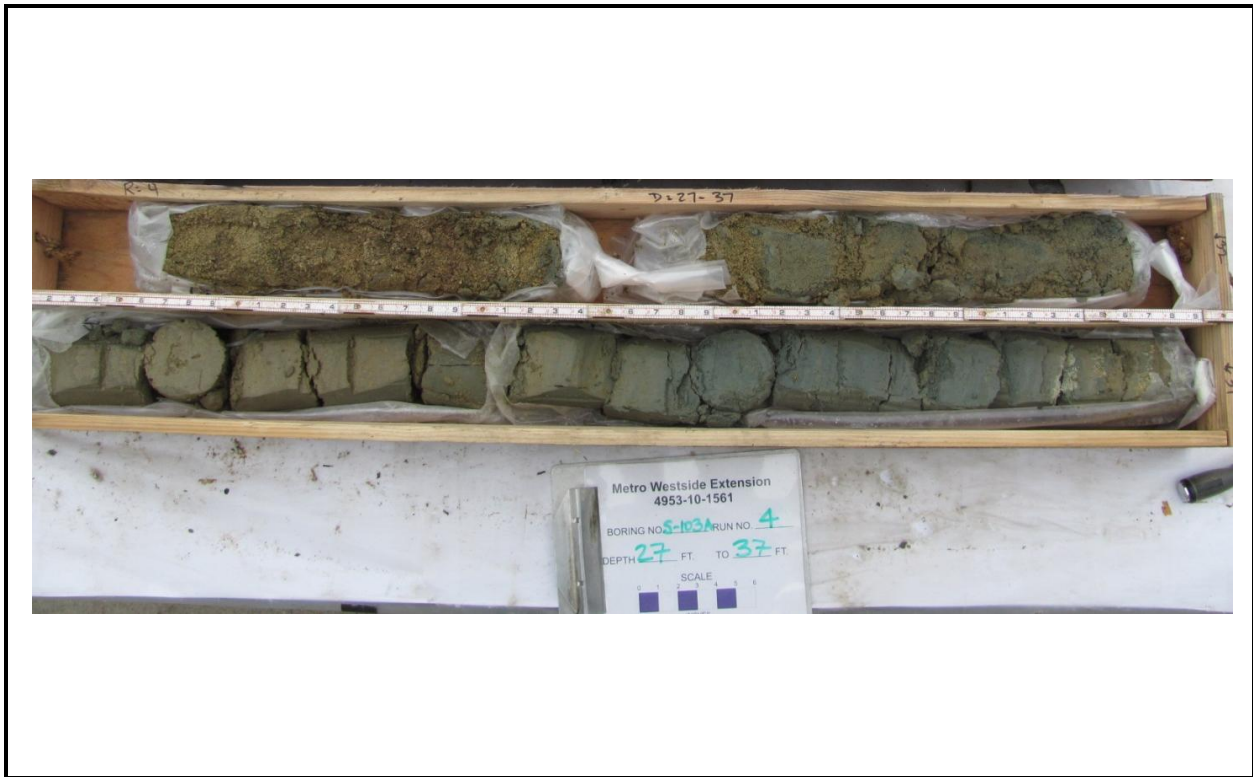


S-103A [7 – 17 feet]



S-103A [17 – 27 feet]

Figure A-9.11



S-103A [27 – 37 feet]



S-103A [37 – 47 feet]

Figure A-9.12

Westside Subway Extension, Project No. 4953-10-1561

By: Y.N. 6/15/11, Checked By: APR 6/30/2011



S-103A [47 – 57 feet]



S-103A [57– 67 feet]

Figure A-9.13

Westside Subway Extension, Project No. 4953-10-1561

By: Y.N. 6/15/11, Checked By: APR 6/30/2011



S-103A [67– 77 feet]



S-103A [77 - 87 feet]

Figure A-9.14



S-103A [87 - 97 feet]

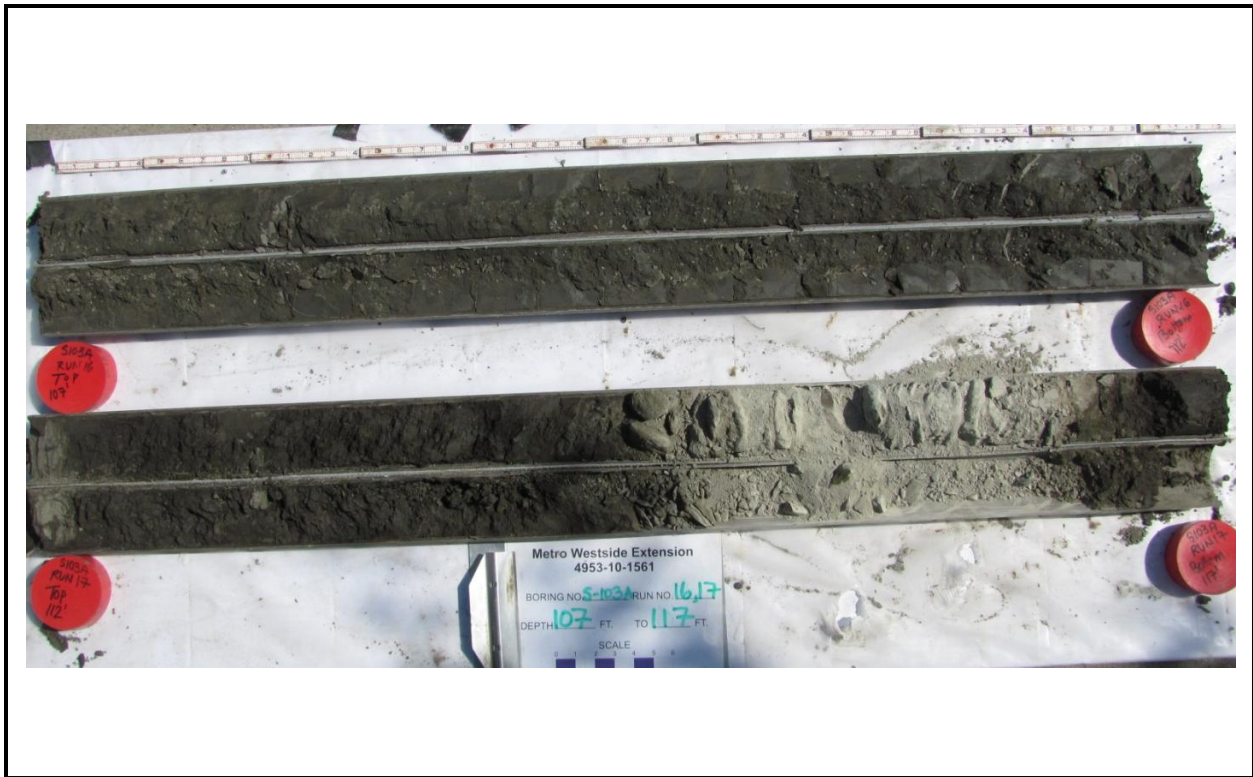


S-103A [97 - 107 feet]

Figure A-9.15

Westside Subway Extension, Project No. 4953-10-1561

By: Y.N. 6/15/11, Checked By: APR 6/30/2011



S-103A [107 - 117 feet]



S-103A [117 - 127 feet]

Figure A-9.16

Westside Subway Extension, Project No. 4953-10-1561

By: Y.N. 6/15/11, Checked By: APR 6/30/2011



S-104 [8 – 17 feet]



S-104 [17 – 27 feet]

Figure A-9.17

Westside Subway Extension, Project No. 4953-10-1561

By: Y.N. 6/15/11, Checked By: APR 6/30/2011



S-104 [27 – 37 feet]

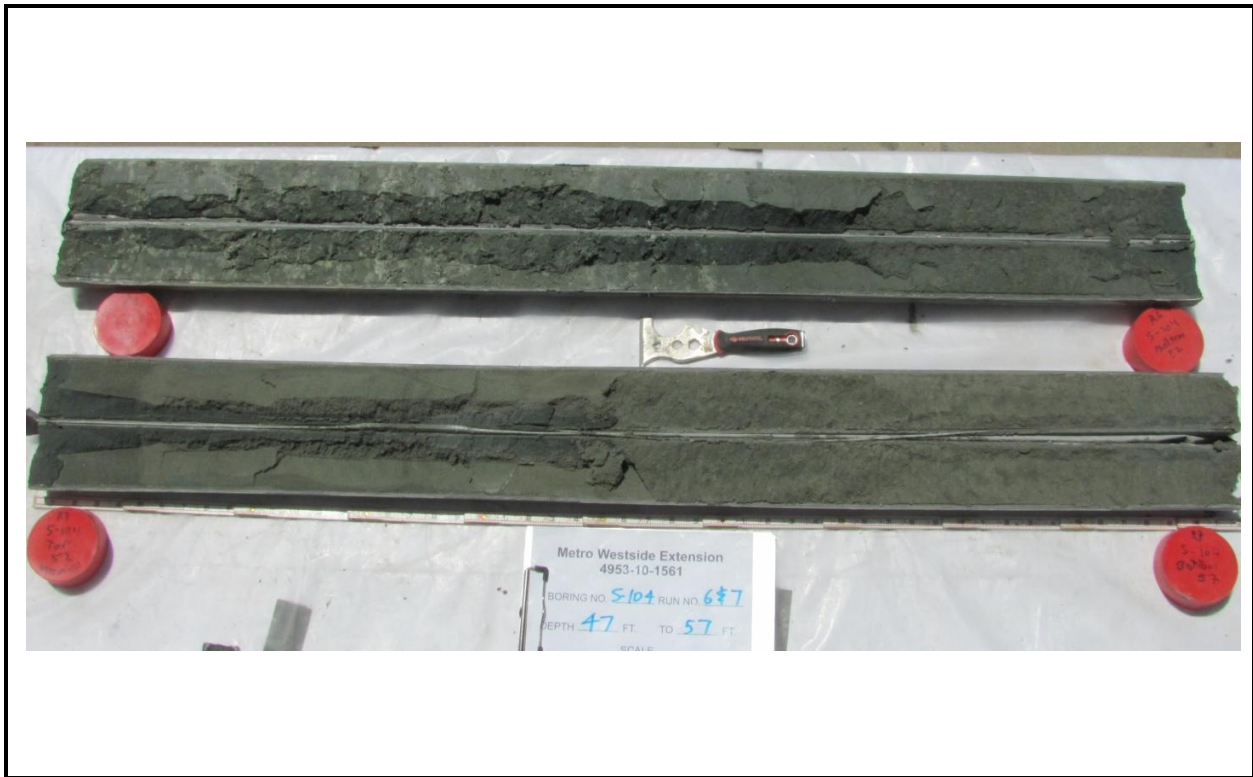


S-104 [37 – 47 feet]

Figure A-9.18

Westside Subway Extension, Project No. 4953-10-1561

By: Y.N. 6/15/11, Checked By: APR 6/30/2011



S-104 [47 – 57 feet]



S-104 [57– 67 feet]

Figure A-9.19

Westside Subway Extension, Project No. 4953-10-1561

By: Y.N. 6/15/11, Checked By: APR 6/30/2011



S-104 [67– 77 feet]



S-104 [77 – 87 feet]

Figure A-9.20

Westside Subway Extension, Project No. 4953-10-1561

By: Y.N. 6/15/11, Checked By: APR 6/30/2011