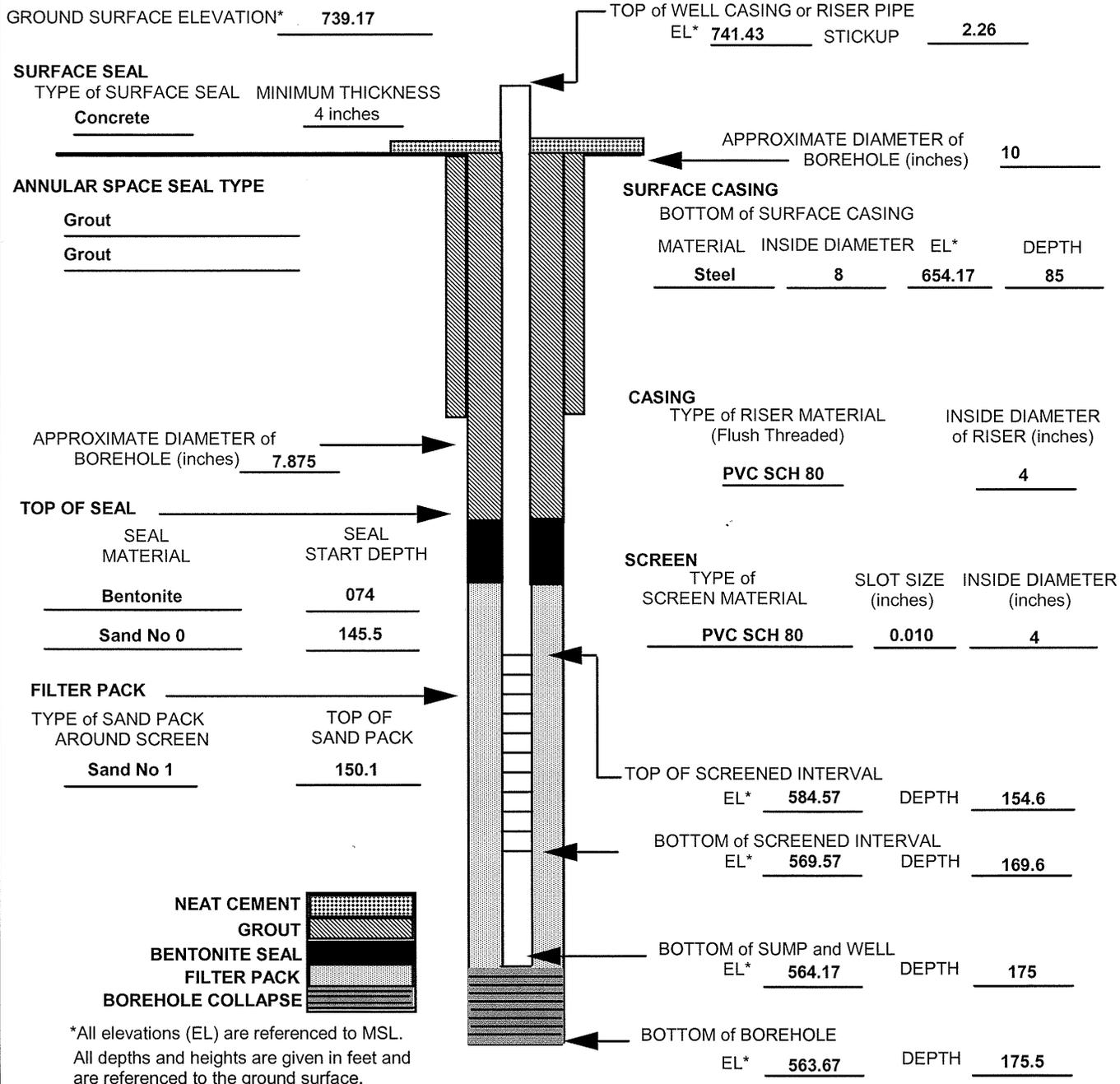


WELL CONSTRUCTION LOGS

MONITORING WELL INSTALLATION DETAIL

PROJECT: Fort McClellan
LOCATION: Anniston, AL
CLIENT: USACE Mobile District
CONTRACTOR: Boart Longyear
DRILLER: Mike Czech
SHAW FIELD REPRESENTATIVE: Dennis Mayton

WELL NO: OLF-G20
DRILLING METHOD: Rotasonic
INSTALLATION DATE: 19-JUL-01
NORTHING: 1180139.5
EASTING: 668518.42
HORIZONTAL SURVEY DATUM: NAD83
VERTICAL SURVEY DATUM: NAVD88
JOB NO: 796886



*All elevations (EL) are referenced to MSL. All depths and heights are given in feet and are referenced to the ground surface.

MONITORING WELL INSTALLATION DETAIL

PROJECT: Fort McClellan
LOCATION: Anniston, AL
CLIENT: USACE Mobile District
CONTRACTOR: Boart Longyear
DRILLER: Mark Biermier
SHAW FIELD REPRESENTATIVE: Dennis Mayton

WELL NO: OLF-G21
DRILLING METHOD: Rotasonic
INSTALLATION DATE: 28-JUN-01
NORTHING: 1179811.73
EASTING: 668211.45
HORIZONTAL SURVEY DATUM: NAD83
VERTICAL SURVEY DATUM: NAVD88
JOB NO: 796886

GROUND SURFACE ELEVATION* 742.76

TOP of WELL CASING or RISER PIPE
EL* 742.57 STICKUP N/A

SURFACE SEAL

TYPE of SURFACE SEAL Concrete MINIMUM THICKNESS 4 inches

APPROXIMATE DIAMETER of BOREHOLE (inches) 10

ANNULAR SPACE SEAL TYPE

Grout
Grout

SURFACE CASING

BOTTOM of SURFACE CASING
MATERIAL Steel INSIDE DIAMETER 8 EL* 647.76 DEPTH 95

APPROXIMATE DIAMETER of BOREHOLE (inches) 7.875

CASING

TYPE of RISER MATERIAL (Flush Threaded) PVC SCH 80 INSIDE DIAMETER of RISER (inches) 4

TOP OF SEAL

SEAL MATERIAL	SEAL START DEPTH
<u>Bentonite</u>	<u>086</u>
<u>Sand No 0</u>	<u>145.8</u>

SCREEN

TYPE of SCREEN MATERIAL	SLOT SIZE (inches)	INSIDE DIAMETER (inches)
<u>PVC SCH 80</u>	<u>0.010</u>	<u>4</u>

FILTER PACK

TYPE of SAND PACK AROUND SCREEN	TOP OF SAND PACK
<u>Sand No 1</u>	<u>150</u>

TOP OF SCREENED INTERVAL
EL* 588.16 DEPTH 154.6

BOTTOM of SCREENED INTERVAL
EL* 573.16 DEPTH 169.6

BOTTOM of SUMP and WELL
EL* 567.76 DEPTH 175

BOTTOM of BOREHOLE
EL* 566.76 DEPTH 176



*All elevations (EL) are referenced to MSL.
All depths and heights are given in feet and are referenced to the ground surface.

MONITORING WELL INSTALLATION DETAIL

PROJECT: Fort McClellan
LOCATION: Anniston, AL
CLIENT: USACE Mobile District
CONTRACTOR: Boart Longyear
DRILLER: Mike Czech
SHAW FIELD REPRESENTATIVE: Leslie O'Hare

WELL NO: OLF-G22
DRILLING METHOD: Rotasonic
INSTALLATION DATE: 23-JUN-01
NORTHING: 1180564.97
EASTING: 668533.46
HORIZONTAL SURVEY DATUM: NAD83
VERTICAL SURVEY DATUM: NAVD88
JOB NO: 796886

GROUND SURFACE ELEVATION* 746.67

TOP of WELL CASING or RISER PIPE
EL* 746.54 STICKUP N/A

SURFACE SEAL
 TYPE of SURFACE SEAL Concrete MINIMUM THICKNESS 4 inches

ANNULAR SPACE SEAL TYPE

Grout
Grout

APPROXIMATE DIAMETER of BOREHOLE (inches) 10

SURFACE CASING

BOTTOM of SURFACE CASING
 MATERIAL Steel INSIDE DIAMETER 8 EL* 646.67 DEPTH 100

APPROXIMATE DIAMETER of BOREHOLE (inches) 7.88

CASING

TYPE of RISER MATERIAL (Flush Threaded) PVC SCH 80 INSIDE DIAMETER of RISER (inches) 4

TOP OF SEAL

SEAL MATERIAL	SEAL START DEPTH
<u>Bentonite</u>	<u>088</u>
<u>Sand No 0</u>	<u>144</u>

SCREEN

TYPE of SCREEN MATERIAL	SLOT SIZE (inches)	INSIDE DIAMETER (inches)
<u>PVC SCH 80</u>	<u>0.010</u>	<u>4</u>

FILTER PACK

TYPE of SAND PACK AROUND SCREEN	TOP OF SAND PACK
<u>Sand No 1</u>	<u>150</u>

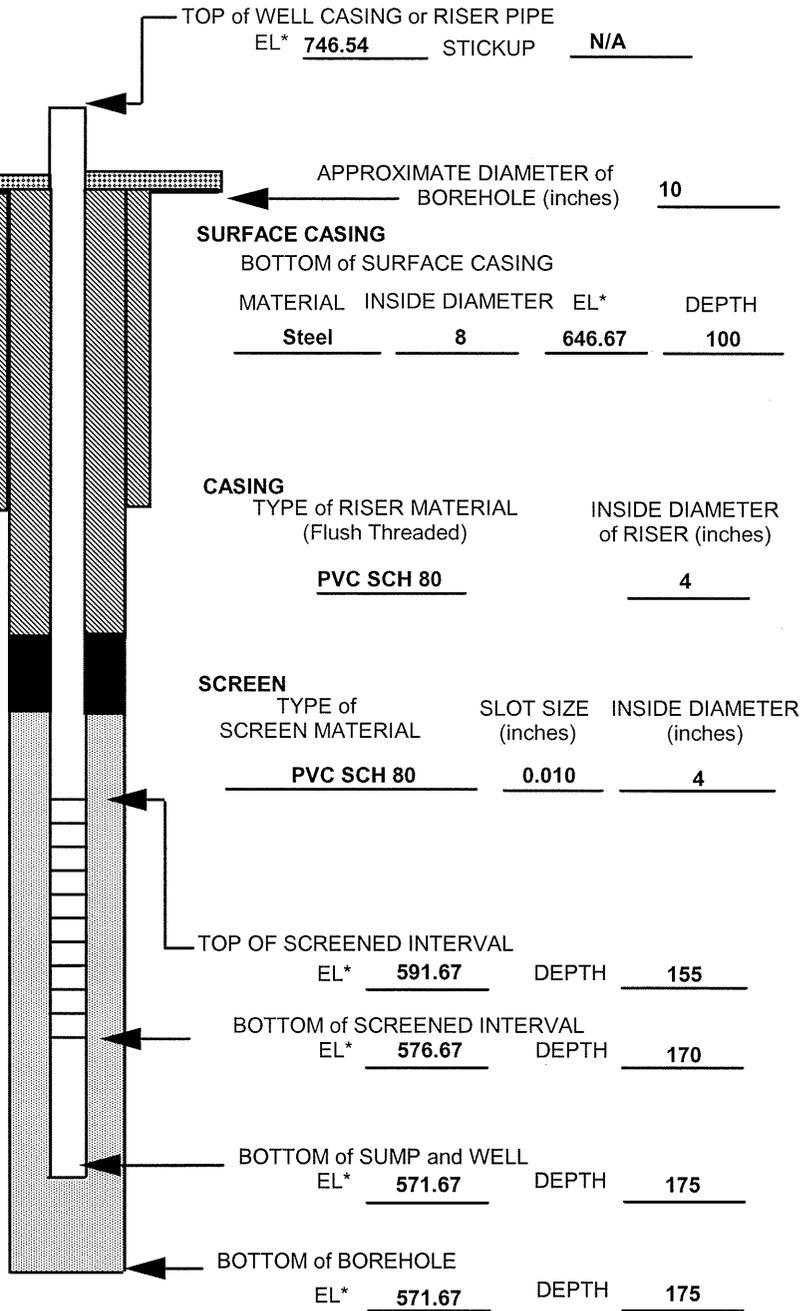
TOP OF SCREENED INTERVAL
EL* 591.67 DEPTH 155

BOTTOM of SCREENED INTERVAL
EL* 576.67 DEPTH 170

BOTTOM of SUMP and WELL
EL* 571.67 DEPTH 175

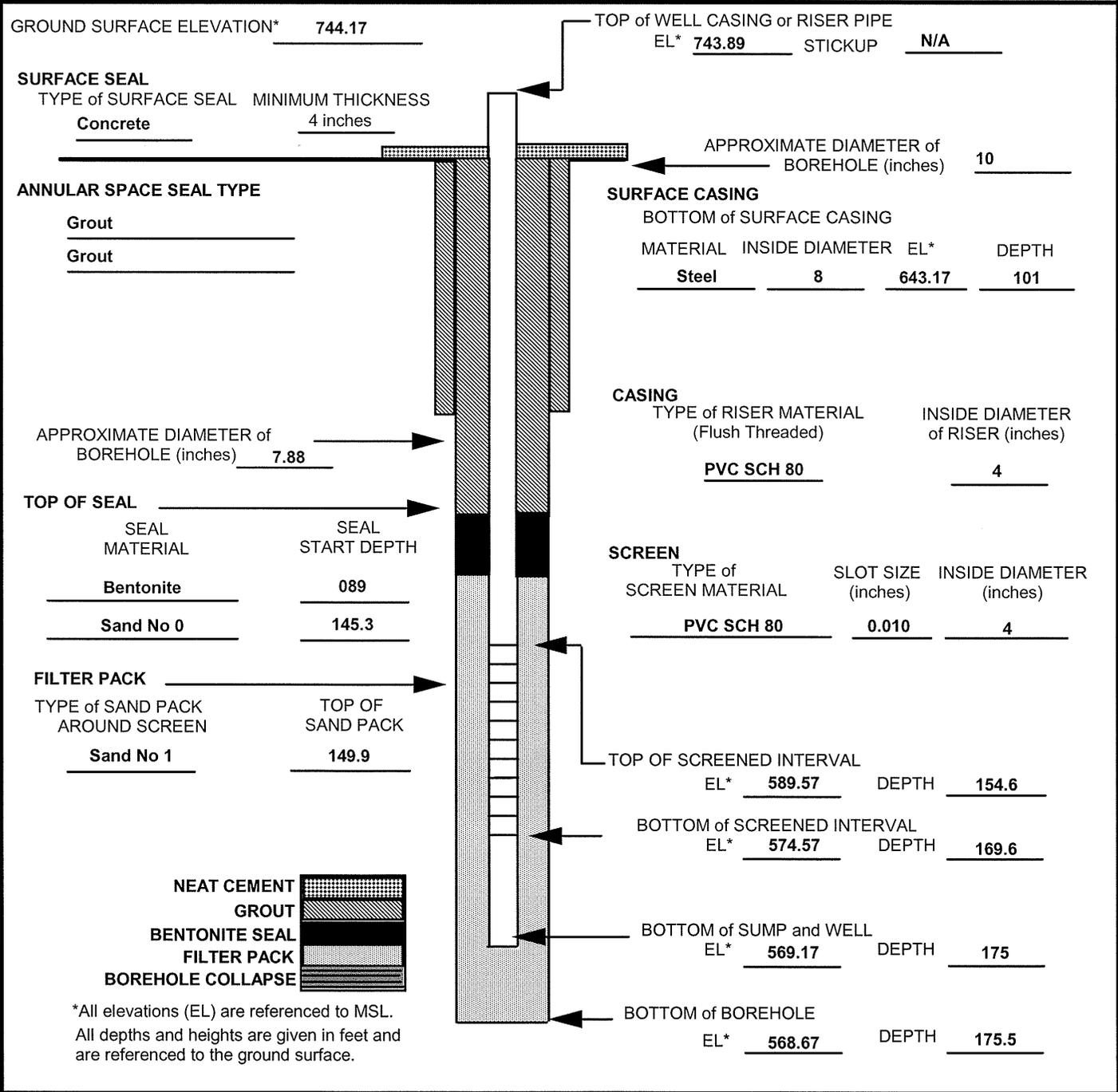


*All elevations (EL) are referenced to MSL. All depths and heights are given in feet and are referenced to the ground surface.



MONITORING WELL INSTALLATION DETAIL

PROJECT: <u>Fort McClellan</u> LOCATION: <u>Anniston, AL</u> CLIENT: <u>USACE Mobile District</u> CONTRACTOR: <u>Boart Longyear</u> DRILLER: <u>Mark Biermier</u> SHAW FIELD REPRESENTATIVE: <u>Dennis Mayton</u>	WELL NO: <u>OLF-G23</u> DRILLING METHOD: <u>Rotasonic</u> INSTALLATION DATE: <u>29-JUN-01</u> NORTHING: <u>1180966.4</u> EASTING: <u>668706.61</u> HORIZONTAL SURVEY DATUM: <u>NAD83</u> VERTICAL SURVEY DATUM: <u>NAVD88</u> JOB NO: <u>796886</u>
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MONITORING WELL INSTALLATION DETAIL

PROJECT: Fort McClellan
LOCATION: Anniston, AL
CLIENT: USACE Mobile District
CONTRACTOR: Boart Longyear
DRILLER: Kevin Smith
SHAW FIELD REPRESENTATIVE: Dennis Mayton/James Roel

WELL NO: OLF-G24
DRILLING METHOD: Rotasonic
INSTALLATION DATE: 12-JUL-01
NORTHING: 1180979.87
EASTING: 668712.87
HORIZONTAL SURVEY DATUM: NAD83
VERTICAL SURVEY DATUM: NAVD88
JOB NO: 796886

GROUND SURFACE ELEVATION* 743.9

TOP of WELL CASING or RISER PIPE
EL* 743.56 STICKUP N/A

SURFACE SEAL
 TYPE of SURFACE SEAL Concrete MINIMUM THICKNESS 4 inches

ANNULAR SPACE SEAL TYPE
Grout

APPROXIMATE DIAMETER of BOREHOLE (inches) 7.88

CASING
 TYPE of RISER MATERIAL (Flush Threaded) PVC SCH 80 INSIDE DIAMETER of RISER (inches) 4

SEAL MATERIAL	SEAL START DEPTH
<u>Bentonite</u>	<u>65</u>
<u>Sand No 0</u>	<u>72</u>

TYPE of SCREEN MATERIAL	SLOT SIZE (inches)	INSIDE DIAMETER (inches)
<u>PVC SCH 80</u>	<u>0.010</u>	<u>4</u>

TYPE of SAND PACK AROUND SCREEN	TOP OF SAND PACK
<u>Sand No 1</u>	<u>75.5</u>

TOP OF SCREENED INTERVAL
EL* 664.3 DEPTH 79.6

BOTTOM of SCREENED INTERVAL
EL* 649.3 DEPTH 94.6



BOTTOM of SUMP and WELL
EL* 648.9 DEPTH 95

BOTTOM of BOREHOLE
EL* 648.9 DEPTH 95

*All elevations (EL) are referenced to MSL. All depths and heights are given in feet and are referenced to the ground surface.

MONITORING WELL INSTALLATION DETAIL

PROJECT: Fort McClellan
LOCATION: Anniston, AL
CLIENT: USACE Mobile District
CONTRACTOR: Boart Longyear
DRILLER: Kevin Smith
SHAW FIELD REPRESENTATIVE: Dennis Mayton

WELL NO: OLF-G25
DRILLING METHOD: Rotasonic
INSTALLATION DATE: 27-JUL-01
NORTHING: 1180079.69
EASTING: 668170.14
HORIZONTAL SURVEY DATUM: NAD83
VERTICAL SURVEY DATUM: NAVD88
JOB NO: 796886

GROUND SURFACE ELEVATION* 745.17

TOP of WELL CASING or RISER PIPE
EL* 745.04 STICKUP N/A

SURFACE SEAL
TYPE of SURFACE SEAL Concrete MINIMUM THICKNESS 4 inches

ANNULAR SPACE SEAL TYPE

Grout
Grout

APPROXIMATE DIAMETER of BOREHOLE (inches) 10

SURFACE CASING

BOTTOM of SURFACE CASING
MATERIAL Steel INSIDE DIAMETER 8 EL* 638.17 DEPTH 107

APPROXIMATE DIAMETER of BOREHOLE (inches) 7.88

CASING

TYPE of RISER MATERIAL (Flush Threaded) PVC SCH 80 INSIDE DIAMETER of RISER (inches) 4

TOP OF SEAL

SEAL MATERIAL	SEAL START DEPTH
<u>Bentonite</u>	<u>096.5</u>
<u>Sand No 0</u>	<u>146</u>

SCREEN

TYPE of SCREEN MATERIAL	SLOT SIZE (inches)	INSIDE DIAMETER (inches)
<u>PVC SCH 80</u>	<u>0.010</u>	<u>4</u>

FILTER PACK

TYPE of SAND PACK AROUND SCREEN	TOP OF SAND PACK
<u>Sand No 1</u>	<u>150.1</u>

TOP OF SCREENED INTERVAL
EL* 590.07 DEPTH 155.1

BOTTOM of SCREENED INTERVAL
EL* 575.07 DEPTH 170.1

BOTTOM of SUMP and WELL
EL* 569.67 DEPTH 175.5

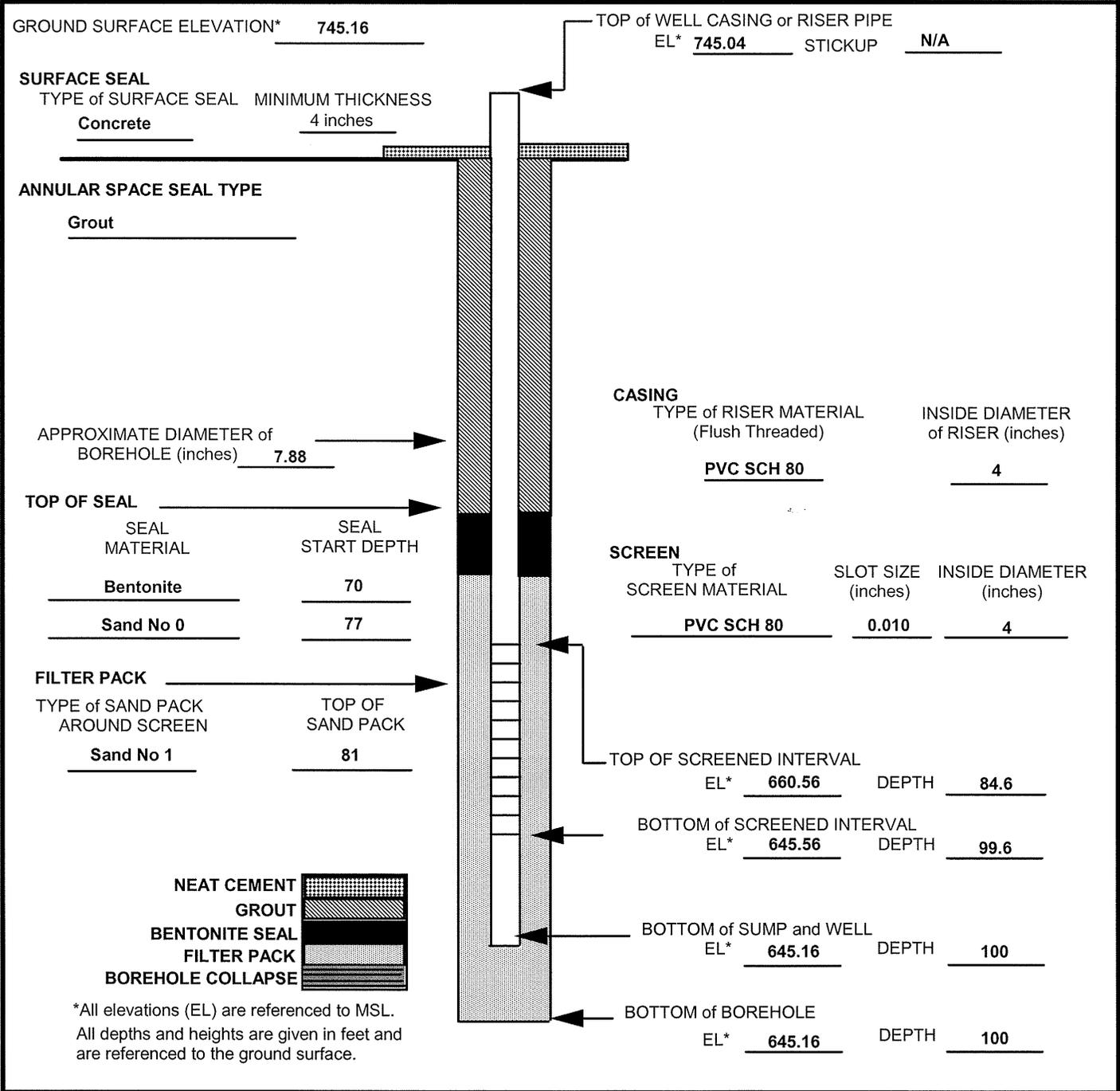


*All elevations (EL) are referenced to MSL.
All depths and heights are given in feet and are referenced to the ground surface.

BOTTOM of BOREHOLE
EL* 569.67 DEPTH 175.5

MONITORING WELL INSTALLATION DETAIL

PROJECT: <u>Fort McClellan</u> LOCATION: <u>Anniston, AL</u> CLIENT: <u>USACE Mobile District</u> CONTRACTOR: <u>Boart Longyear</u> DRILLER: <u>Kevin Smith</u> SHAW FIELD REPRESENTATIVE: <u>Dennis Mayton</u>	WELL NO: <u>OLF-G26</u> DRILLING METHOD: <u>Rotasonic</u> INSTALLATION DATE: <u>14-JUL-01</u> NORTHING: <u>1180090.46</u> EASTING: <u>668172.18</u> HORIZONTAL SURVEY DATUM: <u>NAD83</u> VERTICAL SURVEY DATUM: <u>NAVD88</u> JOB NO: <u>796886</u>
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MONITORING WELL INSTALLATION DETAIL

PROJECT: Fort McClellan
LOCATION: Anniston, AL
CLIENT: USACE Mobile District
CONTRACTOR: Boart Longyear
DRILLER: Kevin Smith
SHAW FIELD REPRESENTATIVE: Wally Cooper

WELL NO: OLF-G27
DRILLING METHOD: Rotasonic
INSTALLATION DATE: 23-MAY-01
NORTHING: 1182182.64
EASTING: 666520.25
HORIZONTAL SURVEY DATUM: NAD83
VERTICAL SURVEY DATUM: NAVD88
JOB NO: 796886

GROUND SURFACE ELEVATION* 779.13

TOP of WELL CASING or RISER PIPE
EL* 778.8 STICKUP N/A

SURFACE SEAL
 TYPE of SURFACE SEAL Concrete MINIMUM THICKNESS 4 inches

ANNULAR SPACE SEAL TYPE
Grout

APPROXIMATE DIAMETER of BOREHOLE (inches) 8

CASING
 TYPE of RISER MATERIAL (Flush Threaded) PVC SCH 80 INSIDE DIAMETER of RISER (inches) 4

TOP OF SEAL
 SEAL MATERIAL Bentonite SEAL START DEPTH 32

SCREEN
 TYPE of SCREEN MATERIAL PVC SCH 80 SLOT SIZE (inches) 0.010 INSIDE DIAMETER (inches) 4

FILTER PACK
 TYPE of SAND PACK AROUND SCREEN Sand No 1 TOP OF SAND PACK 276

TOP OF SCREENED INTERVAL
EL* 499.13 DEPTH 280

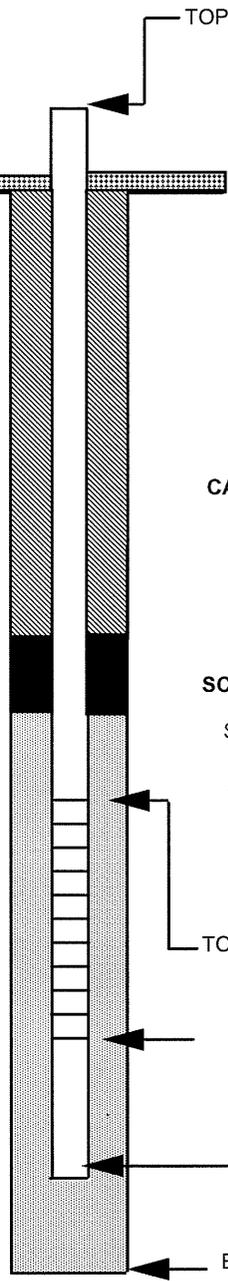
BOTTOM of SCREENED INTERVAL
EL* 484.13 DEPTH 295

BOTTOM of SUMP and WELL
EL* 479.13 DEPTH 300

BOTTOM of BOREHOLE
EL* 479.13 DEPTH 300



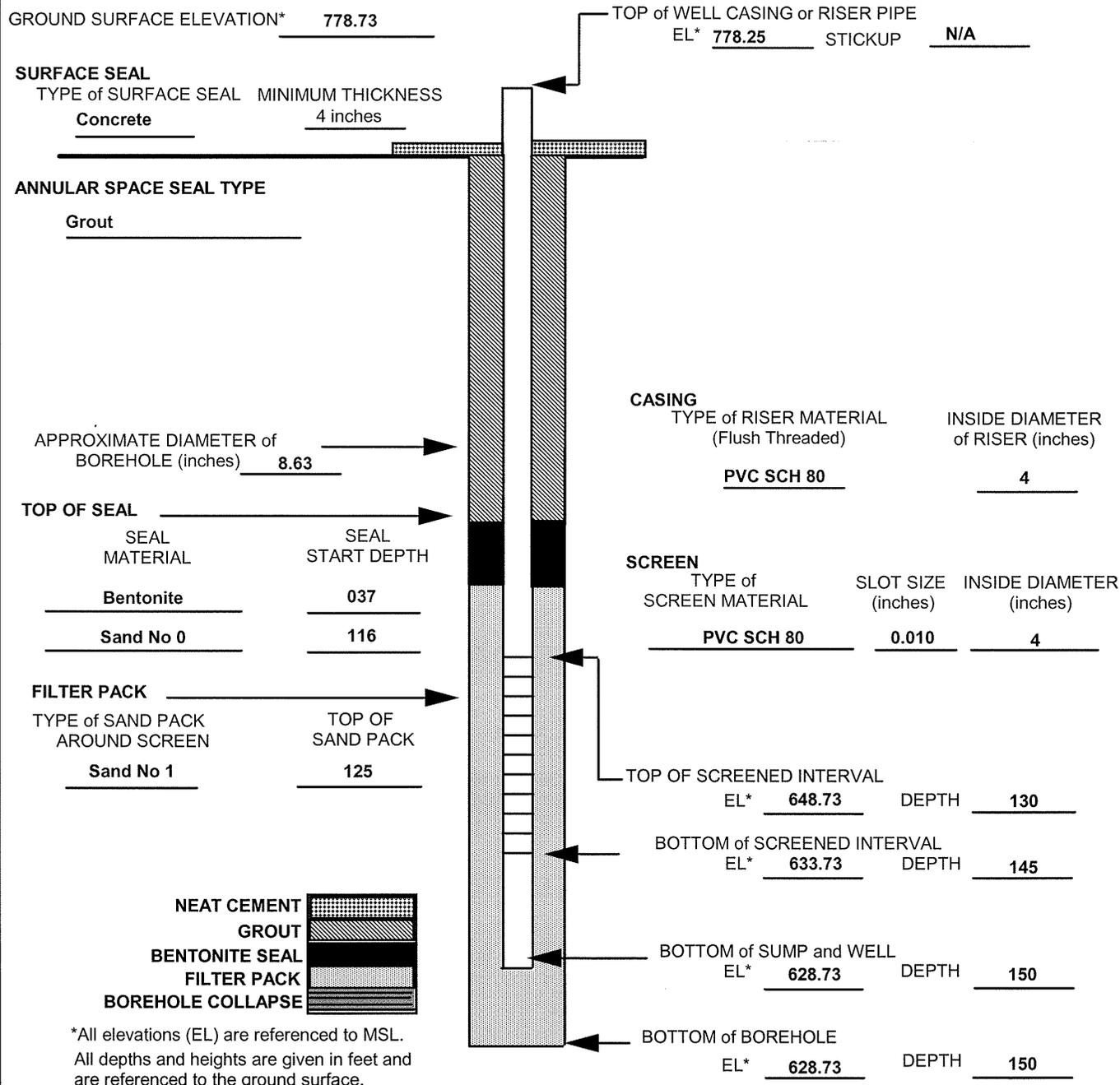
*All elevations (EL) are referenced to MSL. All depths and heights are given in feet and are referenced to the ground surface.



MONITORING WELL INSTALLATION DETAIL

PROJECT: Fort McClellan
LOCATION: Anniston, AL
CLIENT: USACE Mobile District
CONTRACTOR: Boart Longyear
DRILLER: Kevin Smith
SHAW FIELD REPRESENTATIVE: Wally Cooper

WELL NO: OLF-G28
DRILLING METHOD: Rotasonic
INSTALLATION DATE: 03-JUN-01
NORTHING: 1182178.48
EASTING: 666511.03
HORIZONTAL SURVEY DATUM: NAD83
VERTICAL SURVEY DATUM: NAVD88
JOB NO: 796886



*All elevations (EL) are referenced to MSL. All depths and heights are given in feet and are referenced to the ground surface.

MONITORING WELL INSTALLATION DETAIL

PROJECT: Fort McClellan
LOCATION: Anniston, AL
CLIENT: USACE Mobile District
CONTRACTOR: Miller Drilling Company
DRILLER: Mike Martin
SHAW FIELD REPRESENTATIVE: Nicole Badon

WELL NO: OLF-G29
DRILLING METHOD: Air Percussion
INSTALLATION DATE: 25-APR-02
NORTHING: 1180850.13
EASTING: 667724.28
HORIZONTAL SURVEY DATUM: NAD83
VERTICAL SURVEY DATUM: NAVD88
JOB NO: 796886

GROUND SURFACE ELEVATION* 770.62

TOP of WELL CASING or RISER PIPE
EL* 770.25 STICKUP N/A

SURFACE SEAL
TYPE of SURFACE SEAL Concrete MINIMUM THICKNESS 4 inches

ANNULAR SPACE SEAL TYPE
Grout

SURFACE CASING
BOTTOM of SURFACE CASING
MATERIAL Steel INSIDE DIAMETER 8 EL* 627.62 DEPTH 143

APPROXIMATE DIAMETER of BOREHOLE (inches) 8

CASING
TYPE of RISER MATERIAL (Flush Threaded) PVC SCH 80 INSIDE DIAMETER of RISER (inches) 4

TOP OF SEAL

SEAL MATERIAL	SEAL START DEPTH
<u>Bentonite</u>	<u>134</u>
<u>Sand No 0</u>	<u>190</u>

SCREEN

TYPE of SCREEN MATERIAL	SLOT SIZE (inches)	INSIDE DIAMETER (inches)
<u>PVC SCH 80</u>	<u>0.010</u>	<u>4</u>

FILTER PACK

TYPE of SAND PACK AROUND SCREEN	TOP OF SAND PACK
<u>Sand No 1</u>	<u>195</u>

TOP OF SCREENED INTERVAL
EL* 565.52 DEPTH 205.1

BOTTOM of SCREENED INTERVAL
EL* 545.52 DEPTH 225.1

BOTTOM of SUMP and WELL
EL* 545.12 DEPTH 225.5

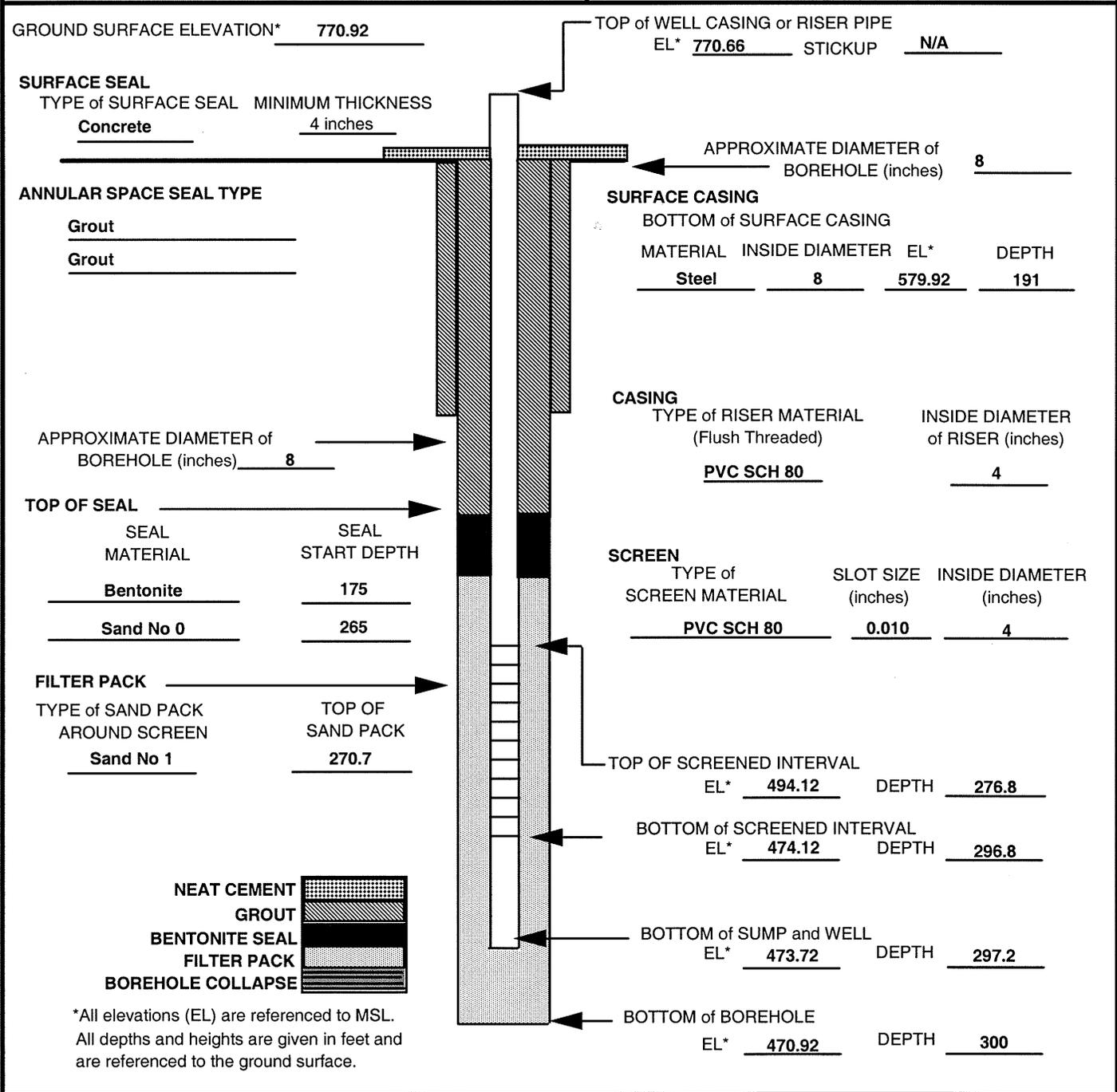


*All elevations (EL) are referenced to MSL. All depths and heights are given in feet and are referenced to the ground surface.

BOTTOM of BOREHOLE
EL* 542.62 DEPTH 228

MONITORING WELL INSTALLATION DETAIL

<p>PROJECT: <u>Fort McClellan</u></p> <p>LOCATION: <u>Anniston, AL</u></p> <p>CLIENT: <u>USACE Mobile District</u></p> <p>CONTRACTOR: <u>Miller Drilling Company</u></p> <p>DRILLER: <u>Mike Martin</u></p> <p>SHAW FIELD REPRESENTATIVE: <u>Nicole Badon</u></p>	<p>WELL NO: <u>OLF-G30</u></p> <p>DRILLING METHOD: <u>Air Rotary</u></p> <p>INSTALLATION DATE: <u>22-APR-02</u></p> <p>NORTHING: <u>1180862.77</u></p> <p>EASTING: <u>667720.58</u></p> <p>HORIZONTAL SURVEY DATUM: <u>NAD83</u></p> <p>VERTICAL SURVEY DATUM: <u>NAVD88</u></p> <p>JOB NO: <u>796886</u></p>
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MONITORING WELL INSTALLATION DETAIL

PROJECT: Fort McClellan
LOCATION: Anniston, AL
CLIENT: USACE Mobile District
CONTRACTOR: Miller Drilling Company
DRILLER: Mike Martin
SHAW FIELD REPRESENTATIVE: Mark Shoemaker

WELL NO: OLF-G31
DRILLING METHOD: Air Rotary
INSTALLATION DATE: 09-APR-02
NORTHING: 1181368.91
EASTING: 667801.64
HORIZONTAL SURVEY DATUM: NAD83
VERTICAL SURVEY DATUM: NAVD88
JOB NO: 796886

GROUND SURFACE ELEVATION* 794.25

TOP of WELL CASING or RISER PIPE
EL* 793.69 STICKUP N/A

SURFACE SEAL
TYPE of SURFACE SEAL Concrete MINIMUM THICKNESS 4 inches

ANNULAR SPACE SEAL TYPE
Grout

APPROXIMATE DIAMETER of BOREHOLE (inches) 8

SURFACE CASING
BOTTOM of SURFACE CASING
MATERIAL Steel INSIDE DIAMETER 8 EL* 626.25 DEPTH 168

APPROXIMATE DIAMETER of BOREHOLE (inches) 7.5

CASING
TYPE of RISER MATERIAL (Flush Threaded) PVC SCH 80 INSIDE DIAMETER of RISER (inches) 4

TOP OF SEAL

SEAL MATERIAL	SEAL START DEPTH
<u>Bentonite</u>	<u>160</u>
<u>Sand No 0</u>	<u>195</u>

SCREEN
TYPE of SCREEN MATERIAL PVC SCH 80 SLOT SIZE (inches) 0.010 INSIDE DIAMETER (inches) 4

FILTER PACK
TYPE of SAND PACK AROUND SCREEN Sand No 1 TOP OF SAND PACK 200

TOP OF SCREENED INTERVAL
EL* 589.25 DEPTH 205

BOTTOM of SCREENED INTERVAL
EL* 569.25 DEPTH 225



BOTTOM of SUMP and WELL
EL* 569.25 DEPTH 225

BOTTOM of BOREHOLE
EL* 566.25 DEPTH 228

*All elevations (EL) are referenced to MSL.
All depths and heights are given in feet and are referenced to the ground surface.

MONITORING WELL INSTALLATION DETAIL

PROJECT: Fort McClellan
LOCATION: Anniston, AL
CLIENT: USACE Mobile District
CONTRACTOR: Miller Drilling Company
DRILLER: Mike Martin
SHAW FIELD REPRESENTATIVE: Mark Shoemaker

WELL NO: OLF-G32
DRILLING METHOD: Air Rotary
INSTALLATION DATE: 09-APR-02
NORTHING: 1181351.14
EASTING: 667802.78
HORIZONTAL SURVEY DATUM: NAD83
VERTICAL SURVEY DATUM: NAVD88
JOB NO: 796886

GROUND SURFACE ELEVATION* 793.64

TOP of WELL CASING or RISER PIPE
EL* 793.41 STICKUP N/A

SURFACE SEAL

TYPE of SURFACE SEAL Concrete MINIMUM THICKNESS 4 inches

APPROXIMATE DIAMETER of BOREHOLE (inches) 8

ANNULAR SPACE SEAL TYPE

Grout
Grout

SURFACE CASING

BOTTOM of SURFACE CASING
MATERIAL Steel INSIDE DIAMETER 8 EL* 688.64 DEPTH 105

APPROXIMATE DIAMETER of BOREHOLE (inches) 7.63

CASING

TYPE of RISER MATERIAL (Flush Threaded) PVC SCH 80 INSIDE DIAMETER of RISER (inches) 4

TOP OF SEAL

SEAL MATERIAL	SEAL START DEPTH
<u>Bentonite</u>	<u>090</u>
<u>Sand No 0</u>	<u>260</u>

SCREEN

TYPE of SCREEN MATERIAL	SLOT SIZE (inches)	INSIDE DIAMETER (inches)
<u>PVC SCH 80</u>	<u>0.010</u>	<u>4</u>

FILTER PACK

TYPE of SAND PACK AROUND SCREEN	TOP OF SAND PACK
<u>Sand No 1</u>	<u>266</u>

TOP OF SCREENED INTERVAL
EL* 522.64 DEPTH 271

BOTTOM of SCREENED INTERVAL
EL* 502.64 DEPTH 291

BOTTOM of SUMP and WELL
EL* 502.64 DEPTH 291



*All elevations (EL) are referenced to MSL.
All depths and heights are given in feet and are referenced to the ground surface.

BOTTOM of BOREHOLE
EL* 493.64 DEPTH 300

MONITORING WELL INSTALLATION DETAIL

PROJECT: Fort McClellan
LOCATION: Anniston, AL
CLIENT: USACE Mobile District
CONTRACTOR: Boart Longyear
DRILLER: Bob Erickson
SHAW FIELD REPRESENTATIVE: Adam Day

WELL NO: OLF-G33
DRILLING METHOD: Rotasonic
INSTALLATION DATE: 14-FEB-02
NORTHING: 1181493.21
EASTING: 668931.93
HORIZONTAL SURVEY DATUM: NAD83
VERTICAL SURVEY DATUM: NAVD88
JOB NO: 796886

GROUND SURFACE ELEVATION* 737.26

TOP of WELL CASING or RISER PIPE
EL* 736.98 STICKUP N/A

SURFACE SEAL
 TYPE of SURFACE SEAL Concrete MINIMUM THICKNESS 4 inches

ANNULAR SPACE SEAL TYPE
Grout

APPROXIMATE DIAMETER of BOREHOLE (inches) 7.63

CASING
 TYPE of RISER MATERIAL (Flush Threaded) PVC SCH 80 INSIDE DIAMETER of RISER (inches) 4

TOP OF SEAL

SEAL MATERIAL	SEAL START DEPTH
<u>Bentonite</u>	<u>10</u>
<u>Sand No 0</u>	<u>155</u>

SCREEN

TYPE of SCREEN MATERIAL	SLOT SIZE (inches)	INSIDE DIAMETER (inches)
<u>PVC SCH 80</u>	<u>0.010</u>	<u>4</u>

FILTER PACK

TYPE of SAND PACK AROUND SCREEN	TOP OF SAND PACK
<u>Sand No 1</u>	<u>160</u>

TOP OF SCREENED INTERVAL
 EL* 571.26 DEPTH 166

BOTTOM of SCREENED INTERVAL
 EL* 555.26 DEPTH 182

BOTTOM of SUMP and WELL
 EL* 555.26 DEPTH 182

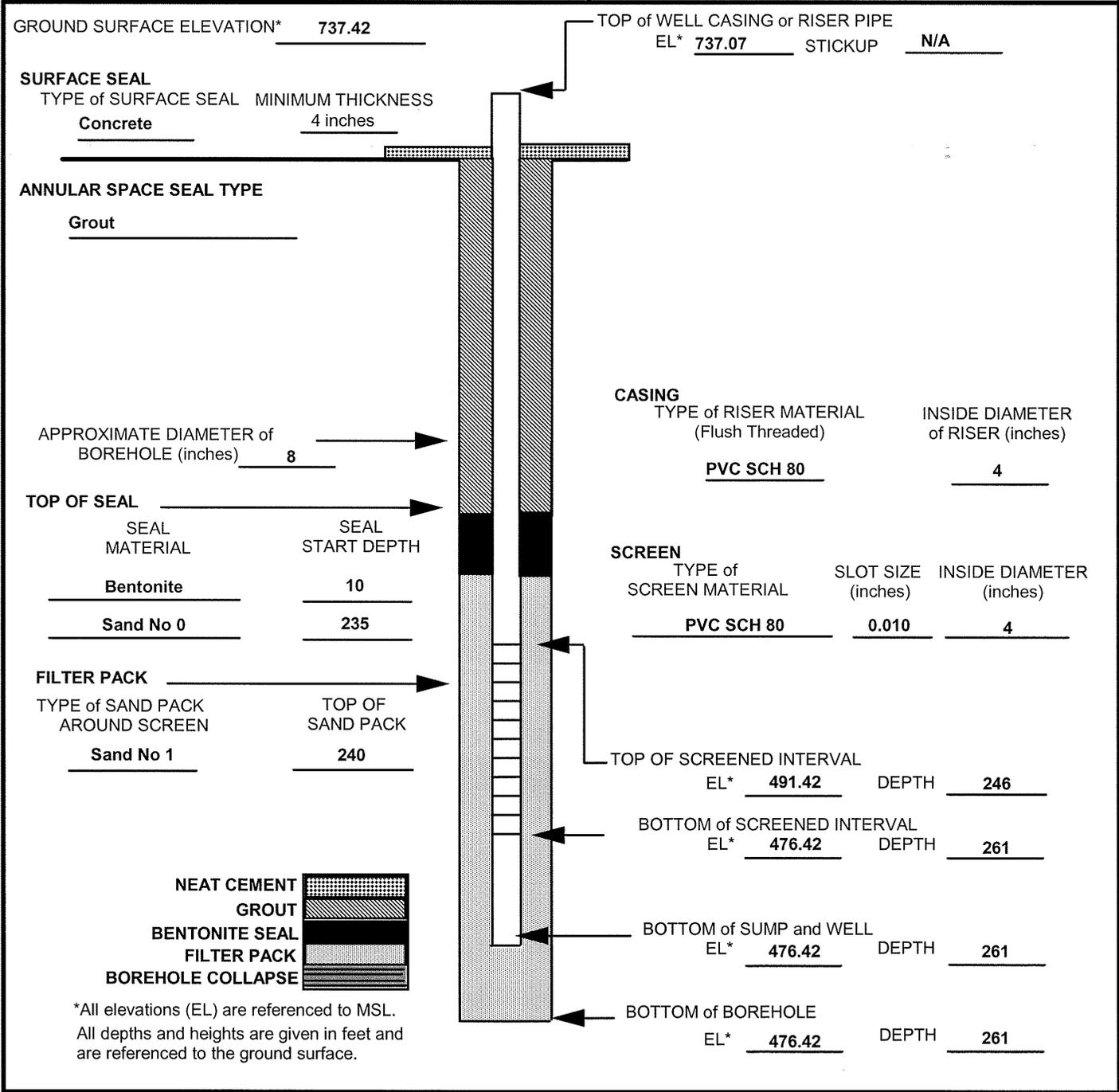
BOTTOM of BOREHOLE
 EL* 555.26 DEPTH 182



*All elevations (EL) are referenced to MSL.
 All depths and heights are given in feet and are referenced to the ground surface.

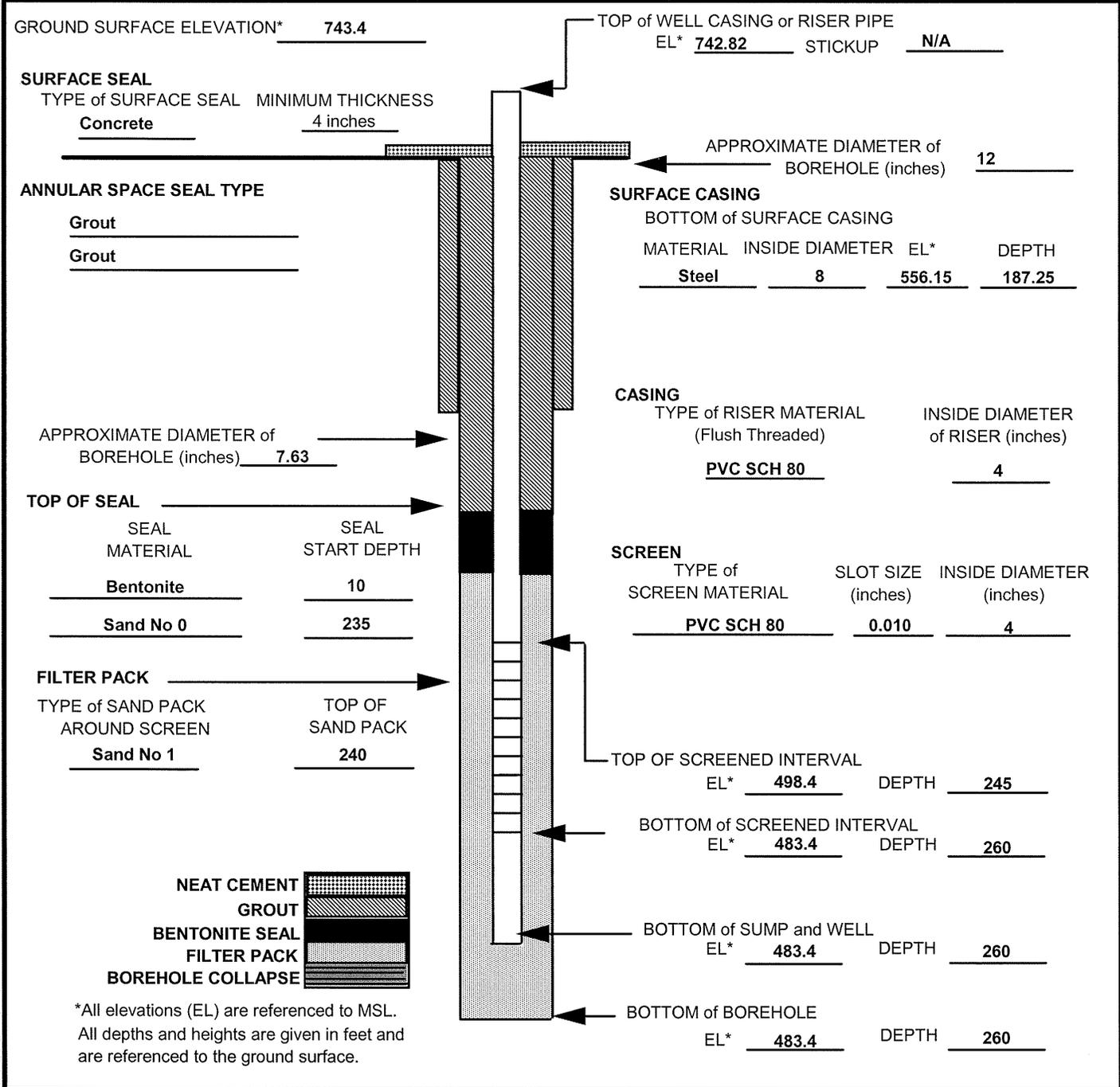
MONITORING WELL INSTALLATION DETAIL

PROJECT: <u>Fort McClellan</u> LOCATION: <u>Anniston, AL</u> CLIENT: <u>USACE Mobile District</u> CONTRACTOR: <u>Boart Longyear</u> DRILLER: <u>Bob Erickson</u> SHAW FIELD REPRESENTATIVE: <u>Adam Day</u>	WELL NO: <u>OLF-G34</u> DRILLING METHOD: <u>Rotasonic</u> INSTALLATION DATE: <u>10-FEB-02</u> NORTHING: <u>1181484.77</u> EASTING: <u>668928.66</u> HORIZONTAL SURVEY DATUM: <u>NAD83</u> VERTICAL SURVEY DATUM: <u>NAVD88</u> JOB NO: <u>796886</u>
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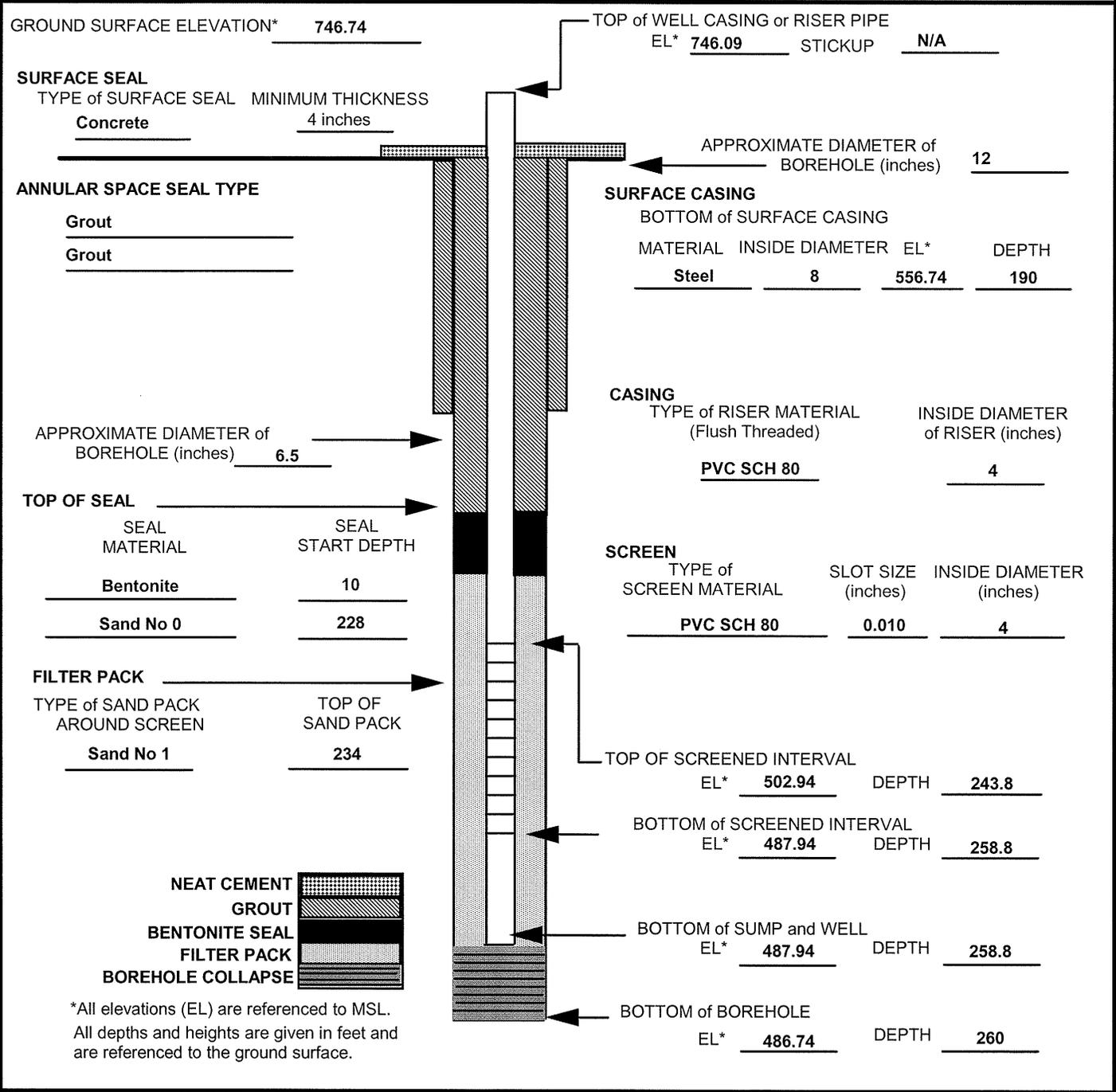
MONITORING WELL INSTALLATION DETAIL

PROJECT: <u>Fort McClellan</u> LOCATION: <u>Anniston, AL</u> CLIENT: <u>USACE Mobile District</u> CONTRACTOR: <u>Boart Longyear</u> DRILLER: <u>T.Schmalfeldt/J. Weeks</u> SHAW FIELD REPRESENTATIVE: <u>Adam Day/Cindy Levaas</u>	WELL NO: <u>OLF-G35</u> DRILLING METHOD: <u>Rotasonic</u> INSTALLATION DATE: <u>06-APR-02</u> NORTHING: <u>1180999.58</u> EASTING: <u>668721.98</u> HORIZONTAL SURVEY DATUM: <u>NAD83</u> VERTICAL SURVEY DATUM: <u>NAVD88</u> JOB NO: <u>796886</u>
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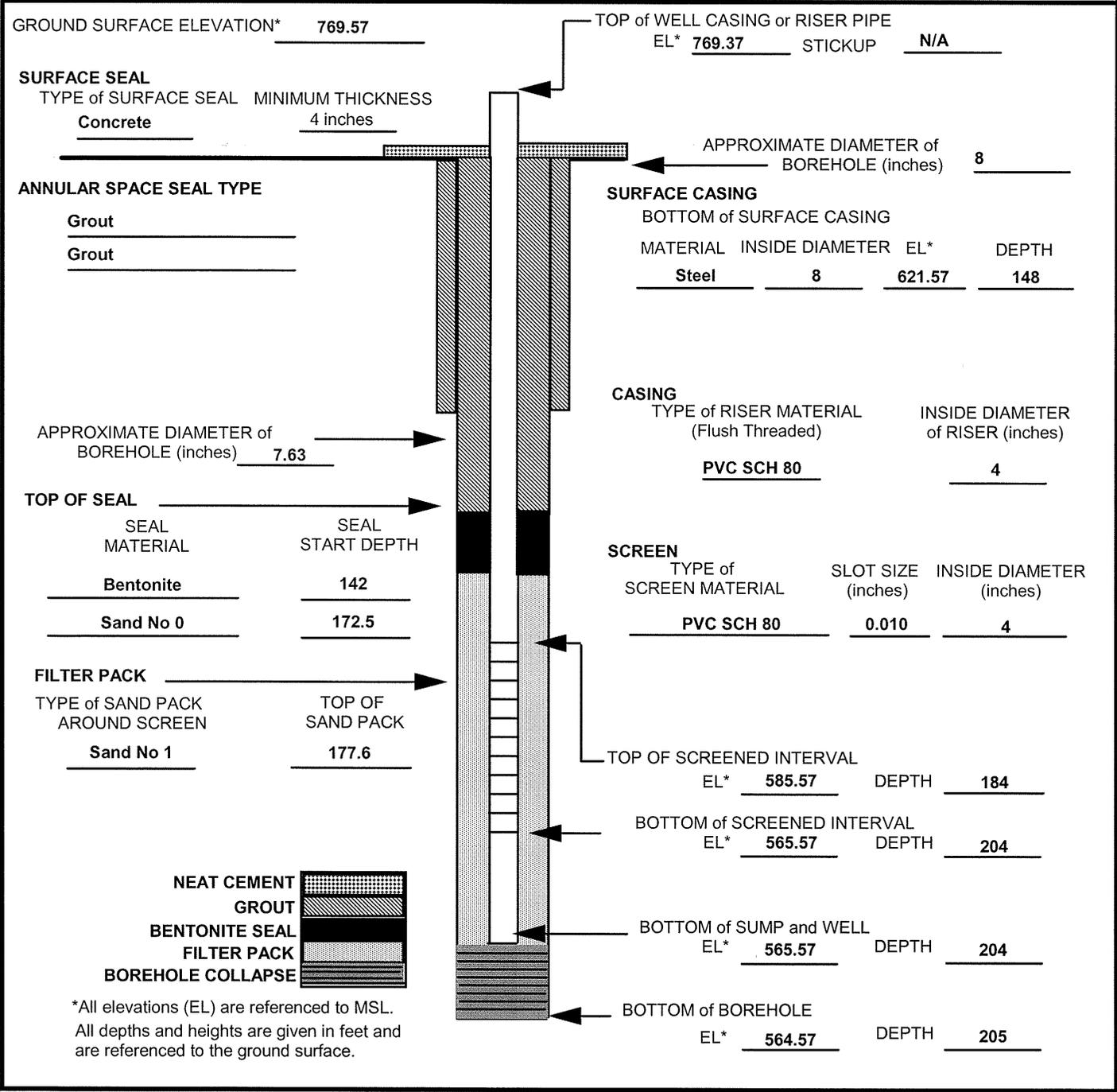
MONITORING WELL INSTALLATION DETAIL

PROJECT: <u>Fort McClellan</u> LOCATION: <u>Anniston, AL</u> CLIENT: <u>USACE Mobile District</u> CONTRACTOR: <u>Boart Longyear</u> DRILLER: <u>T. Schmalfeldt/J. Weeks</u> SHAW FIELD REPRESENTATIVE: <u>Adam Day</u>	WELL NO: <u>OLF-G36</u> DRILLING METHOD: <u>Rotasonic</u> INSTALLATION DATE: <u>17-APR-02</u> NORTHING: <u>1180534.17</u> EASTING: <u>668520.27</u> HORIZONTAL SURVEY DATUM: <u>NAD83</u> VERTICAL SURVEY DATUM: <u>NAVD88</u> JOB NO: <u>796886</u>
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MONITORING WELL INSTALLATION DETAIL

PROJECT: <u>Fort McClellan</u> LOCATION: <u>Anniston, AL</u> CLIENT: <u>USACE Mobile District</u> CONTRACTOR: <u>Miller Drilling Company</u> DRILLER: <u>Mike Martin</u> SHAW FIELD REPRESENTATIVE: <u>Mark Shoemaker</u>	WELL NO: <u>OLF-G37</u> DRILLING METHOD: <u>Air Rotary</u> INSTALLATION DATE: <u>22-MAR-02</u> NORTHING: <u>1180356.11</u> EASTING: <u>667751.32</u> HORIZONTAL SURVEY DATUM: <u>NAD83</u> VERTICAL SURVEY DATUM: <u>NAVD88</u> JOB NO: <u>796886</u>
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MONITORING WELL INSTALLATION DETAIL

PROJECT: Fort McClellan
LOCATION: Anniston, AL
CLIENT: USACE Mobile District
CONTRACTOR: Miller Drilling Company
DRILLER: Mike Martin
SHAW FIELD REPRESENTATIVE: Adam Day

WELL NO: OLF-G38
DRILLING METHOD: Air Rotary
INSTALLATION DATE: 06-MAY-02
NORTHING: 1181192.2
EASTING: 669310.07
HORIZONTAL SURVEY DATUM: NAD83
VERTICAL SURVEY DATUM: NAVD88
JOB NO: 796886

GROUND SURFACE ELEVATION* 737.63

TOP of WELL CASING or RISER PIPE
EL* 739.92 STICKUP 2.29

SURFACE SEAL
 TYPE of SURFACE SEAL Concrete MINIMUM THICKNESS 4 inches

ANNULAR SPACE SEAL TYPE

Grout
Grout

APPROXIMATE DIAMETER of BOREHOLE (inches) 10

SURFACE CASING

BOTTOM of SURFACE CASING
 MATERIAL Steel INSIDE DIAMETER 8 EL* 530.63 DEPTH 207

APPROXIMATE DIAMETER of BOREHOLE (inches) 7.88

CASING

TYPE of RISER MATERIAL (Flush Threaded) PVC SCH 80 INSIDE DIAMETER of RISER (inches) 4

TOP OF SEAL

SEAL MATERIAL	SEAL START DEPTH
<u>Bentonite</u>	<u>187</u>
<u>Sand No 0</u>	<u>216</u>

SCREEN

TYPE of SCREEN MATERIAL PVC SCH 80 SLOT SIZE (inches) 0.010 INSIDE DIAMETER (inches) 4

FILTER PACK

TYPE of SAND PACK AROUND SCREEN Sand No 1 TOP OF SAND PACK 221

TOP OF SCREENED INTERVAL
EL* 511.63 DEPTH 226

BOTTOM of SCREENED INTERVAL
EL* 491.63 DEPTH 246

BOTTOM of SUMP and WELL
EL* 491.63 DEPTH 246

BOTTOM of BOREHOLE
EL* 491.63 DEPTH 246



*All elevations (EL) are referenced to MSL.
 All depths and heights are given in feet and are referenced to the ground surface.

MONITORING WELL INSTALLATION DETAIL

PROJECT: Fort McClellan
LOCATION: Anniston, AL
CLIENT: USACE Mobile District
CONTRACTOR: Boart Longyear
DRILLER: Kevin Smith
SHAW FIELD REPRESENTATIVE: Adam Day

WELL NO: OLF-G39
DRILLING METHOD: Rotasonic
INSTALLATION DATE: 24-FEB-03
NORTHING: 1181349.83
EASTING: 669728.14
HORIZONTAL SURVEY DATUM: NAD83
VERTICAL SURVEY DATUM: NAVD88
JOB NO: 796886

GROUND SURFACE ELEVATION* 739.9

TOP of WELL CASING or RISER PIPE
EL* 742.05 STICKUP 2.15

SURFACE SEAL
 TYPE of SURFACE SEAL Concrete MINIMUM THICKNESS 4 inches

ANNULAR SPACE SEAL TYPE
Grout

APPROXIMATE DIAMETER of BOREHOLE (inches) 6

CASING
 TYPE of RISER MATERIAL (Flush Threaded) PVC SCH 80 INSIDE DIAMETER of RISER (inches) 2.5

TOP OF SEAL

SEAL MATERIAL	SEAL START DEPTH
<u>Bentonite</u>	<u>120</u>
<u>Sand No 0</u>	<u>139</u>

SCREEN

TYPE of SCREEN MATERIAL	SLOT SIZE (inches)	INSIDE DIAMETER (inches)
<u>PVC SCH 80</u>	<u>0.010</u>	<u>2.5</u>

FILTER PACK
 TYPE of SAND PACK AROUND SCREEN Sand No 1 TOP OF SAND PACK 144.5

TOP OF SCREENED INTERVAL
 EL* 590.3 DEPTH 149.6

BOTTOM of SCREENED INTERVAL
 EL* 575.3 DEPTH 164.6

BOTTOM of SUMP and WELL
 EL* 574.5 DEPTH 165.4

BOTTOM of BOREHOLE
 EL* 464.9 DEPTH 275



*All elevations (EL) are referenced to MSL.
 All depths and heights are given in feet and are referenced to the ground surface.

MONITORING WELL INSTALLATION DETAIL

PROJECT: Fort McClellan
LOCATION: Anniston, AL
CLIENT: USACE Mobile District
CONTRACTOR: Boart Longyear
DRILLER: Steve Johnson
SHAW FIELD REPRESENTATIVE: Adam Day

WELL NO: OLF-G40
DRILLING METHOD: Rotasonic
INSTALLATION DATE: 12-FEB-03
NORTHING: 1180064.29
EASTING: 669636.2
HORIZONTAL SURVEY DATUM: NAD83
VERTICAL SURVEY DATUM: NAVD88
JOB NO: 796886

GROUND SURFACE ELEVATION* 737.2

TOP of WELL CASING or RISER PIPE
EL* 739.51 STICKUP 2.31

SURFACE SEAL
TYPE of SURFACE SEAL Concrete MINIMUM THICKNESS 4 inches

ANNULAR SPACE SEAL TYPE
Grout

APPROXIMATE DIAMETER of BOREHOLE (inches) 6

CASING
TYPE of RISER MATERIAL (Flush Threaded) PVC SCH 80 INSIDE DIAMETER of RISER (inches) 2.5

TOP OF SEAL

SEAL MATERIAL	SEAL START DEPTH
<u>Bentonite</u>	<u>84</u>
<u>Sand No 0</u>	<u>95</u>

SCREEN

TYPE of SCREEN MATERIAL	SLOT SIZE (inches)	INSIDE DIAMETER (inches)
<u>PVC SCH 80</u>	<u>0.010</u>	<u>2.5</u>

FILTER PACK

TYPE of SAND PACK AROUND SCREEN	TOP OF SAND PACK
<u>Sand No 1</u>	<u>100</u>

TOP OF SCREENED INTERVAL
EL* 633 DEPTH 104.2

BOTTOM of SCREENED INTERVAL
EL* 613 DEPTH 124.2



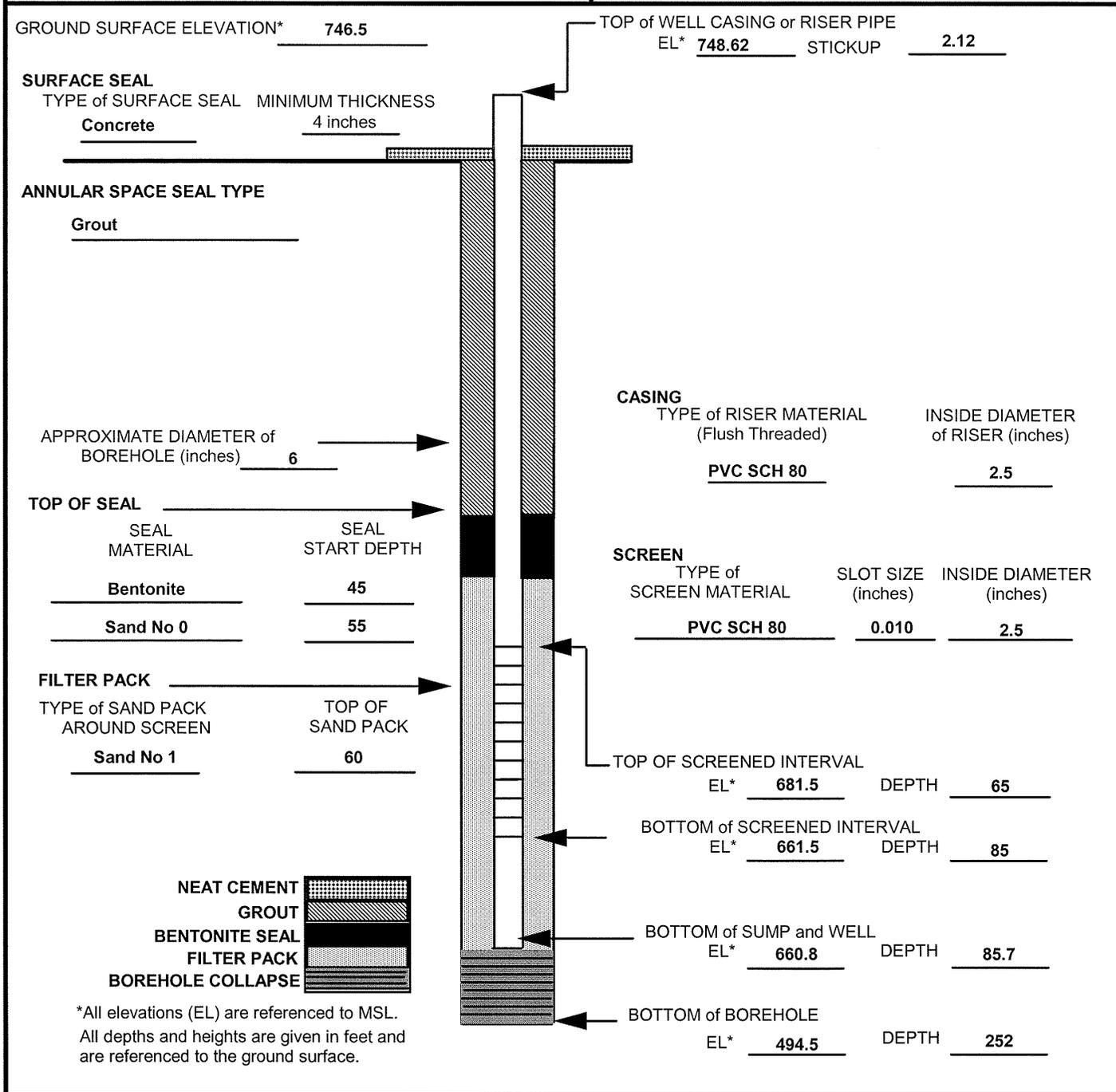
BOTTOM of SUMP and WELL
EL* 612.2 DEPTH 125

BOTTOM of BOREHOLE
EL* 582.2 DEPTH 155

*All elevations (EL) are referenced to MSL.
All depths and heights are given in feet and are referenced to the ground surface.

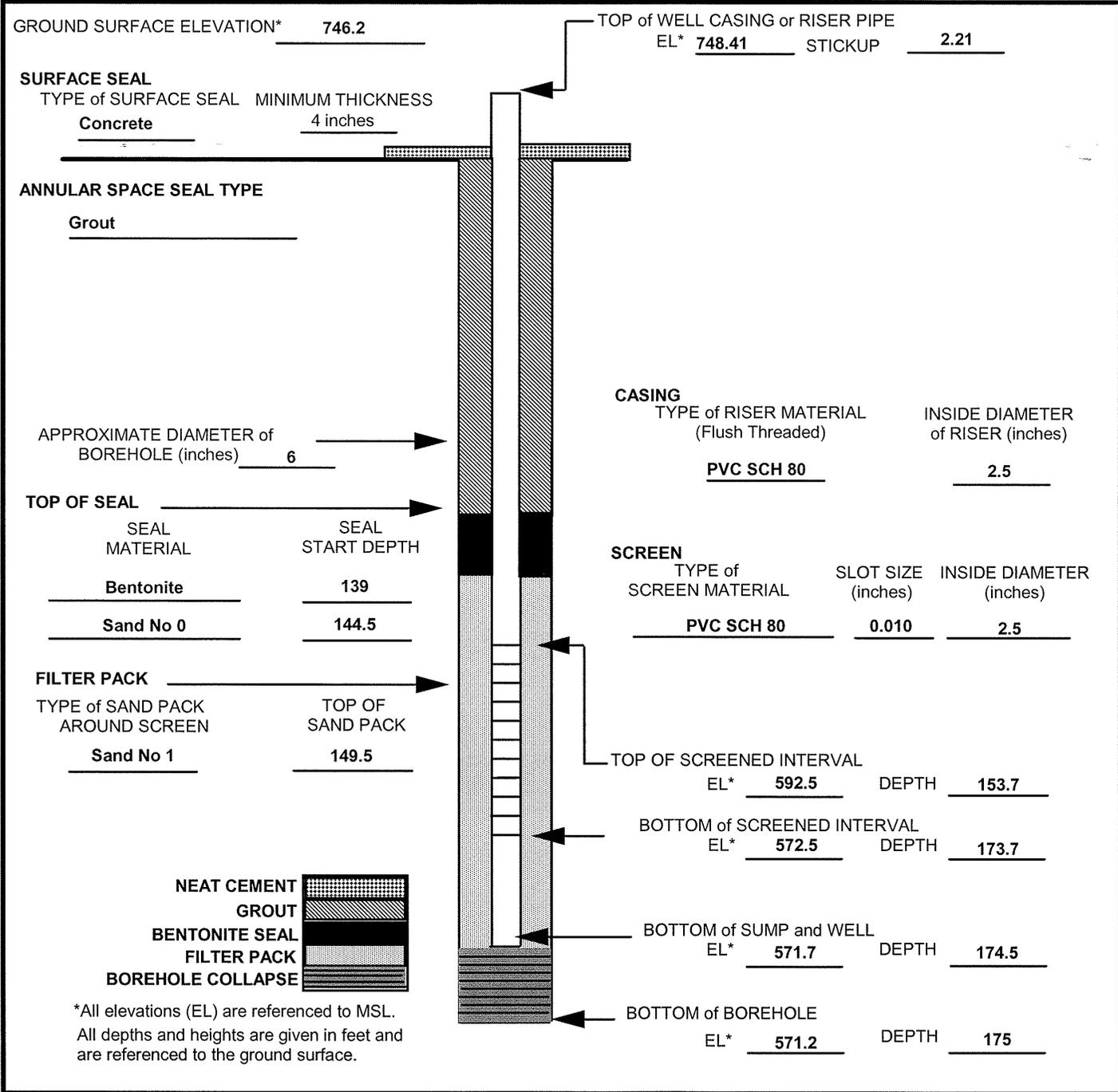
MONITORING WELL INSTALLATION DETAIL

PROJECT: <u>Fort McClellan</u> LOCATION: <u>Anniston, AL</u> CLIENT: <u>USACE Mobile District</u> CONTRACTOR: <u>Boart Longyear</u> DRILLER: <u>Mark Beimairer</u> SHAW FIELD REPRESENTATIVE: <u>Adam Day</u>	WELL NO: <u>OLF-G41</u> DRILLING METHOD: <u>Rotasonic</u> INSTALLATION DATE: <u>29-JAN-03</u> NORTHING: <u>1179368.67</u> EASTING: <u>668720.31</u> HORIZONTAL SURVEY DATUM: <u>NAD83</u> VERTICAL SURVEY DATUM: <u>NAVD88</u> JOB NO: <u>796886</u>
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MONITORING WELL INSTALLATION DETAIL

PROJECT: <u>Fort McClellan</u> LOCATION: <u>Anniston, AL</u> CLIENT: <u>USACE Mobile District</u> CONTRACTOR: <u>Boart Longyear</u> DRILLER: <u>Steve Johnson</u> SHAW FIELD REPRESENTATIVE: <u>Adam Day</u>	WELL NO: <u>OLF-G42</u> DRILLING METHOD: <u>Rotasonic</u> INSTALLATION DATE: <u>10-FEB-03</u> NORTHING: <u>1180803.72</u> EASTING: <u>669123.91</u> HORIZONTAL SURVEY DATUM: <u>NAD83</u> VERTICAL SURVEY DATUM: <u>NAVD88</u> JOB NO: <u>796886</u>
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MONITORING WELL INSTALLATION DETAIL

PROJECT: Fort McClellan
LOCATION: Anniston, AL
CLIENT: USACE Mobile District
CONTRACTOR: Boart Longyear
DRILLER: Jim Robinson
SHAW FIELD REPRESENTATIVE: Adam Day

WELL NO: OLF-G43
DRILLING METHOD: Rotasonic
INSTALLATION DATE: 02-JUN-03
NORTHING: 1181810.96
EASTING: 668663.1
HORIZONTAL SURVEY DATUM: NAD83
VERTICAL SURVEY DATUM: NAVD88
JOB NO: 796886

GROUND SURFACE ELEVATION* 761.5

TOP of WELL CASING or RISER PIPE
EL* 761.05 STICKUP N/A

SURFACE SEAL
 TYPE of SURFACE SEAL Concrete MINIMUM THICKNESS 4 inches

ANNULAR SPACE SEAL TYPE
Grout

APPROXIMATE DIAMETER of BOREHOLE (inches) 6

CASING
 TYPE of RISER MATERIAL (Flush Threaded) PVC SCH 80 INSIDE DIAMETER of RISER (inches) 2.5

SEAL MATERIAL	SEAL START DEPTH
<u>Bentonite</u>	<u>020</u>
<u>Sand No 0</u>	<u>195</u>

SCREEN
 TYPE of SCREEN MATERIAL PVC SCH 80 SLOT SIZE (inches) 0.010 INSIDE DIAMETER (inches) 2.5

FILTER PACK
 TYPE of SAND PACK AROUND SCREEN Sand No 1 TOP OF SAND PACK 200

TOP OF SCREENED INTERVAL
EL* 555.9 DEPTH 205.6

BOTTOM of SCREENED INTERVAL
EL* 540.9 DEPTH 220.6

BOTTOM of SUMP and WELL
EL* 540.9 DEPTH 220.6

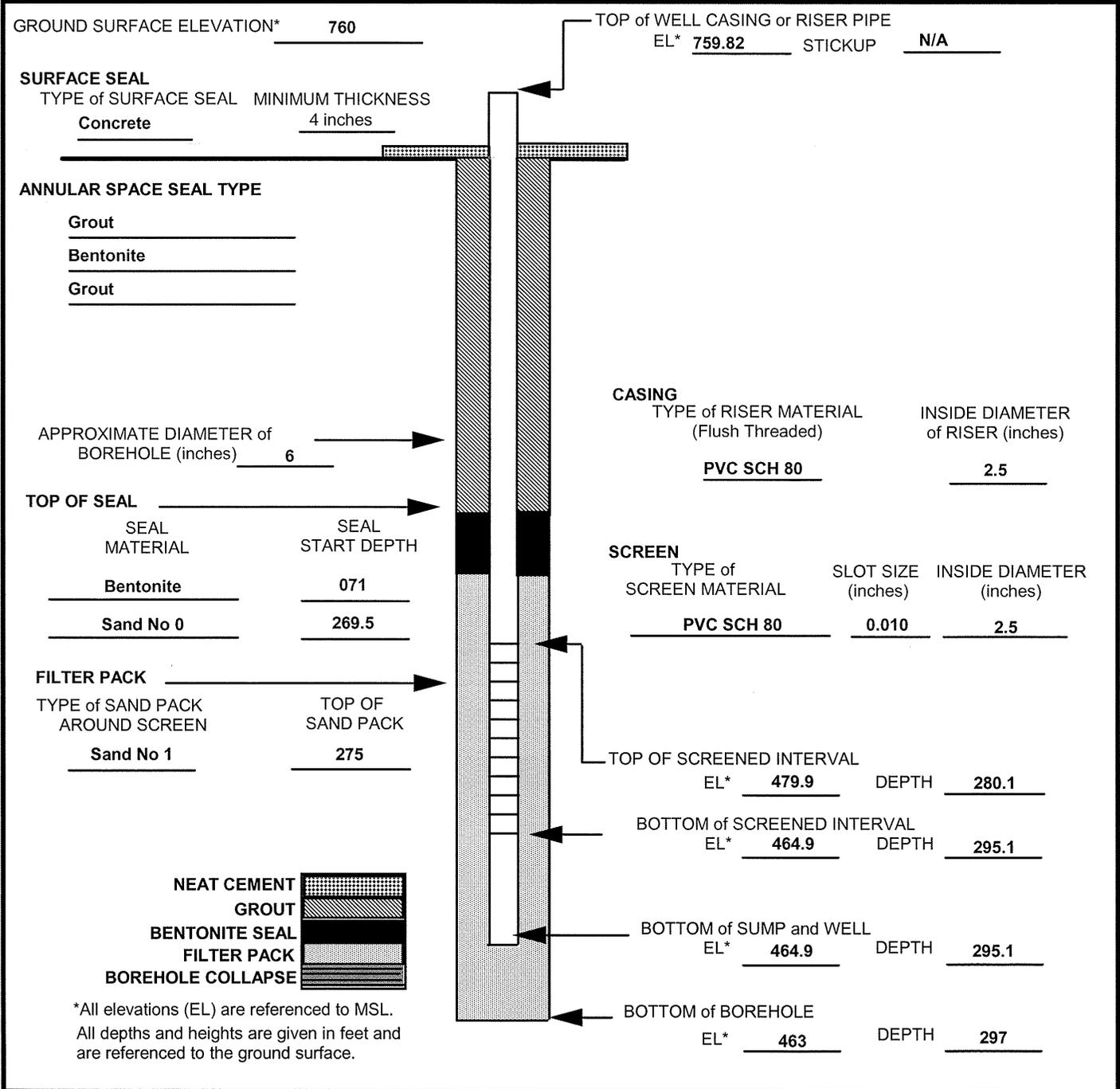


BOTTOM of BOREHOLE
EL* 540.5 DEPTH 221

*All elevations (EL) are referenced to MSL. All depths and heights are given in feet and are referenced to the ground surface.

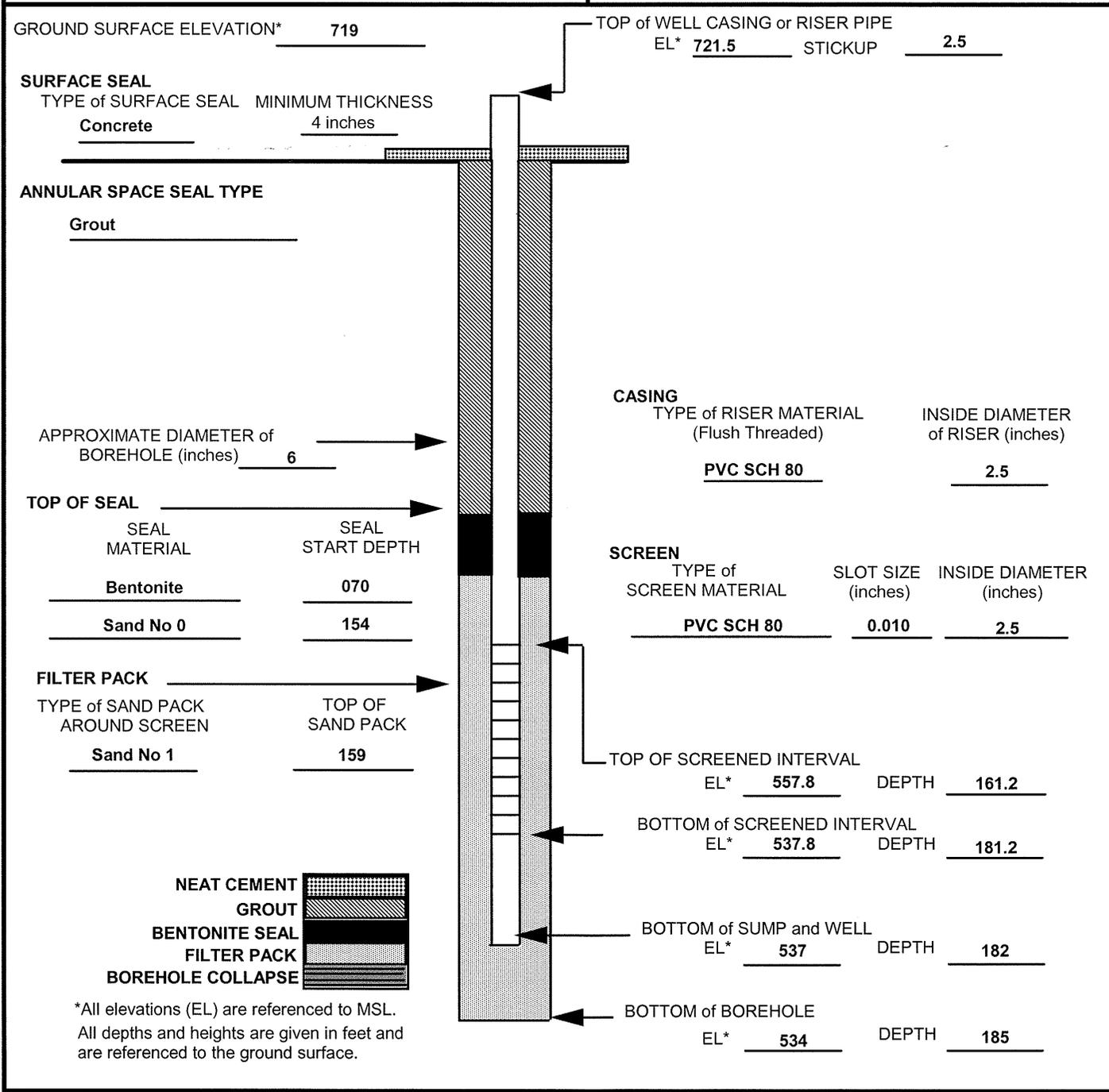
MONITORING WELL INSTALLATION DETAIL

PROJECT: <u>Fort McClellan</u> LOCATION: <u>Anniston, AL</u> CLIENT: <u>USACE Mobile District</u> CONTRACTOR: <u>Boart Longyear</u> DRILLER: <u>Jim Robinson</u> SHAW FIELD REPRESENTATIVE: <u>Adam Day</u>	WELL NO: <u>OLF-G44</u> DRILLING METHOD: <u>Rotasonic</u> INSTALLATION DATE: <u>29-MAY-03</u> NORTHING: <u>1181818.46</u> EASTING: <u>668672.2</u> HORIZONTAL SURVEY DATUM: <u>NAD83</u> VERTICAL SURVEY DATUM: <u>NAVD88</u> JOB NO: <u>796886</u>
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MONITORING WELL INSTALLATION DETAIL

PROJECT: <u>Fort McClellan</u> LOCATION: <u>Anniston, AL</u> CLIENT: <u>USACE Mobile District</u> CONTRACTOR: <u>Boart Longyear</u> DRILLER: <u>Matt Osterberg</u> SHAW FIELD REPRESENTATIVE: <u>Adam Day</u>	WELL NO: <u>OLF-G45</u> DRILLING METHOD: <u>Rotasonic</u> INSTALLATION DATE: <u>18-MAR-03</u> NORTHING: <u>1181806.93</u> EASTING: <u>669697.3</u> HORIZONTAL SURVEY DATUM: <u>NAD83</u> VERTICAL SURVEY DATUM: <u>NAVD88</u> JOB NO: <u>796886</u>
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MONITORING WELL INSTALLATION DETAIL

PROJECT: Fort McClellan
LOCATION: Anniston, AL
CLIENT: USACE Mobile District
CONTRACTOR: Boart Longyear
DRILLER: Matt Osterberg
SHAW FIELD REPRESENTATIVE: Adam Day

WELL NO: OLF-G46
DRILLING METHOD: Rotasonic
INSTALLATION DATE: 13-MAR-03
NORTHING: 1181819.59
EASTING: 669722.26
HORIZONTAL SURVEY DATUM: NAD83
VERTICAL SURVEY DATUM: NAVD88
JOB NO: 796886

GROUND SURFACE ELEVATION* 719.8

TOP of WELL CASING or RISER PIPE
EL* 722.08 STICKUP 2.28

SURFACE SEAL

TYPE of SURFACE SEAL Concrete MINIMUM THICKNESS 4 inches

ANNULAR SPACE SEAL TYPE

Grout

APPROXIMATE DIAMETER of BOREHOLE (inches) 6

CASING

TYPE of RISER MATERIAL (Flush Threaded) INSIDE DIAMETER of RISER (inches)

PVC SCH 80 2.5

TOP OF SEAL

SEAL MATERIAL SEAL START DEPTH

Bentonite 073

Sand No 0 119.4

SCREEN

TYPE of SCREEN MATERIAL SLOT SIZE (inches) INSIDE DIAMETER (inches)

PVC SCH 80 0.010 2.5

FILTER PACK

TYPE of SAND PACK AROUND SCREEN TOP OF SAND PACK

Sand No 1 224

TOP OF SCREENED INTERVAL
EL* 490.6 DEPTH 229.2

BOTTOM of SCREENED INTERVAL
EL* 470.6 DEPTH 249.2

BOTTOM of SUMP and WELL
EL* 469.8 DEPTH 250

BOTTOM of BOREHOLE
EL* 469.8 DEPTH 250



*All elevations (EL) are referenced to MSL.
All depths and heights are given in feet and are referenced to the ground surface.

MONITORING WELL INSTALLATION DETAIL

PROJECT: Fort McClellan
LOCATION: Anniston, AL
CLIENT: USACE Mobile District
CONTRACTOR: Boart Longyear
DRILLER: Kevin Smith
SHAW FIELD REPRESENTATIVE: Kyle Wilson

WELL NO: OLF-G47
DRILLING METHOD: Rotasonic
INSTALLATION DATE: 29-MAY-03
NORTHING: 1182261.42
EASTING: 669269.84
HORIZONTAL SURVEY DATUM: NAD83
VERTICAL SURVEY DATUM: NAVD88
JOB NO: 796886

GROUND SURFACE ELEVATION* 717.4

TOP of WELL CASING or RISER PIPE
EL* 717.46 STICKUP .06

SURFACE SEAL

TYPE of SURFACE SEAL Concrete MINIMUM THICKNESS 4 inches

ANNULAR SPACE SEAL TYPE

Grout

APPROXIMATE DIAMETER of BOREHOLE (inches) 6

CASING

TYPE of RISER MATERIAL (Flush Threaded) PVC SCH 80 INSIDE DIAMETER of RISER (inches) 2.5

TOP OF SEAL

SEAL MATERIAL	SEAL START DEPTH
<u>Bentonite</u>	<u>20</u>
<u>Sand No 0</u>	<u>292</u>

SCREEN

TYPE of SCREEN MATERIAL	SLOT SIZE (inches)	INSIDE DIAMETER (inches)
<u>PVC SCH 80</u>	<u>0.010</u>	<u>2.5</u>

FILTER PACK

TYPE of SAND PACK AROUND SCREEN	TOP OF SAND PACK
<u>Sand No 1</u>	<u>297</u>

TOP OF SCREENED INTERVAL
EL* 415.4 DEPTH 302

BOTTOM of SCREENED INTERVAL
EL* 395.4 DEPTH 322

BOTTOM of SUMP and WELL
EL* 395.4 DEPTH 322

BOTTOM of BOREHOLE
EL* 395.4 DEPTH 322



*All elevations (EL) are referenced to MSL.
All depths and heights are given in feet and are referenced to the ground surface.

MONITORING WELL INSTALLATION DETAIL

PROJECT: <u>Fort McClellan</u> LOCATION: <u>Anniston, AL</u> CLIENT: <u>USACE Mobile District</u> CONTRACTOR: <u>Boart Longyear</u> DRILLER: <u>Kevin Smith</u> SHAW FIELD REPRESENTATIVE: <u>Kyle Wilson</u>	WELL NO: <u>OLF-G48</u> DRILLING METHOD: <u>Rotasonic</u> INSTALLATION DATE: <u>22-MAY-03</u> NORTHING: <u>1182252.11</u> EASTING: <u>669265.97</u> HORIZONTAL SURVEY DATUM: <u>NAD83</u> VERTICAL SURVEY DATUM: <u>NAVD88</u> JOB NO: <u>796886</u>
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