

COMPLETION REPORT OF WELL No. MW-1021

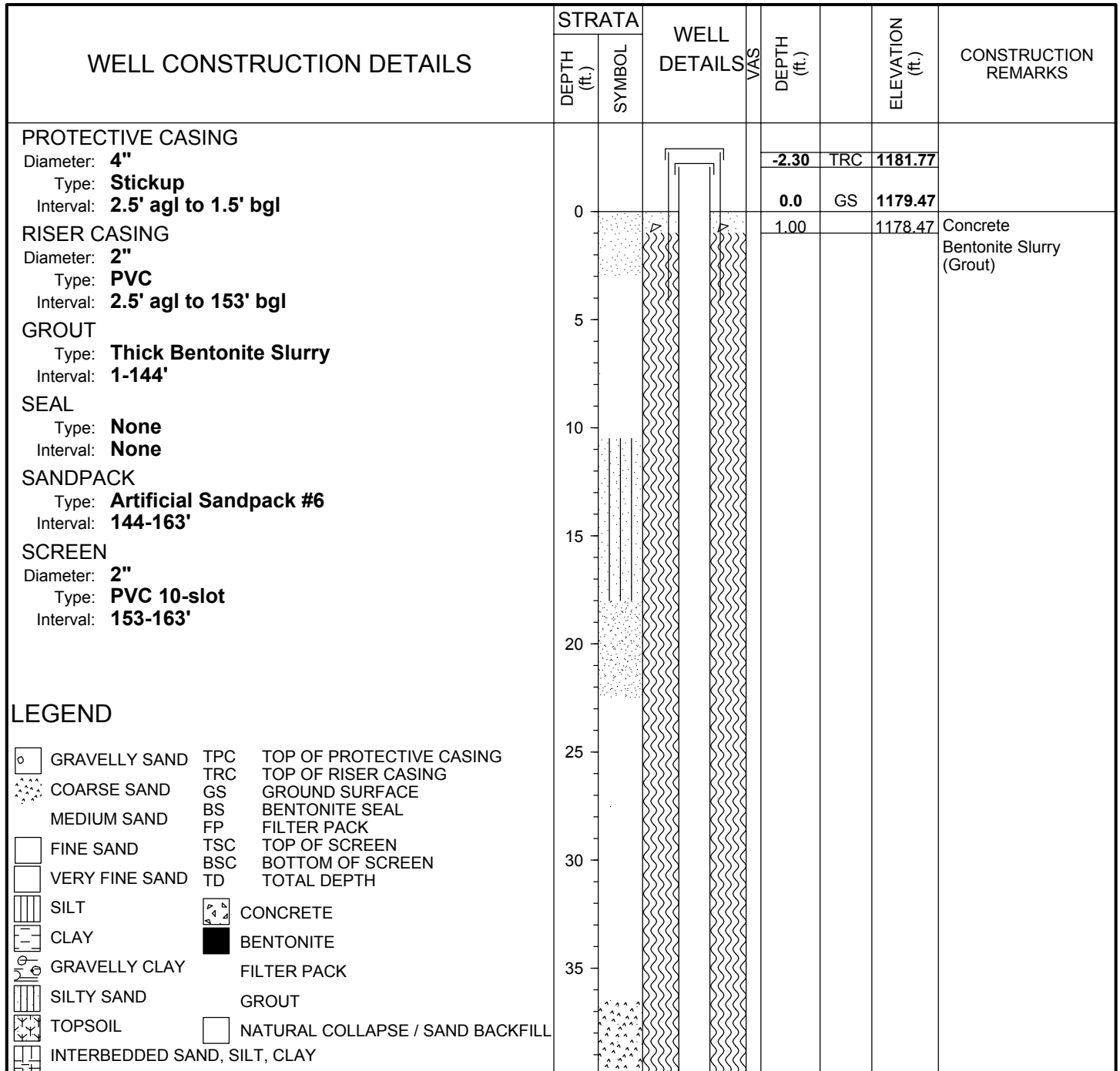
Sheet 1 of 4

PROJECT: **GSWA: Spring Hill Camp Phase III**
 PROJECT NO: **4065-005**
 PROJECT LOCATION: **Osceola Township, MI**

WATER LEVEL: ∇ **NA** ∇ **NA** ∇ **NA**
 DATE: **NA**
 TIME: **NA**

DRILLING CONTRACTOR: **Stearns**
 DRILLING METHOD: **4 1/4" HSA**
 DATE COMPLETED: **November 2, 2000**

GROUND SURFACE ELEVATION: **1179.5**
 DATUM: **USGS**
 LOGGED BY: **Mike Brennan**



**MALCOLM
PIRNIE**

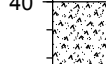
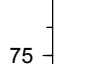
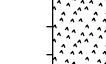
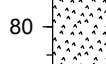
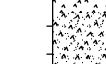
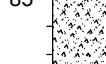
1500 Abbott Road, Suite 210
 East Lansing, MI 48823
 Telephone: (517) 337-0111
 Fax: (517) 337-0417

**COMPLETION REPORT OF
WELL No. MW-1021**

Sheet 1 of 4

PROJECT: **GSWA: Spring Hill Camp Phase III**
 PROJECT NO: **4065-005**
 PROJECT LOCATION: **Osceola Township, MI**

GROUND SURFACE ELEVATION: **1179.5**
 DATUM: **USGS**
 LOGGED BY: **Mike Brennan**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.A.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL					
							(See Previous Page)
	40						Bentonite Slurry (Grout) <i>(continued)</i>
	45						
	50						
	55						
	60						
	65						
	70						
	75						
	80						
	85						

LEGEND

	GRAVELLY SAND	TPC	TOP OF PROTECTIVE CASING
	COARSE SAND	TRC	TOP OF RISER CASING
	MEDIUM SAND	GS	GROUND SURFACE
	FINE SAND	BS	BENTONITE SEAL
	VERY FINE SAND	FP	FILTER PACK
	SILT	TSC	TOP OF SCREEN
	CLAY	BSC	BOTTOM OF SCREEN
	GRAVELLY CLAY	TD	TOTAL DEPTH
	SILTY SAND		CONCRETE
	TOPSOIL		BENTONITE
	INTERBEDDED SAND, SILT, CLAY		FILTER PACK
			GROUT
			NATURAL COLLAPSE / SAND BACKFILL

**MALCOLM
PIRNIE**

1500 Abbott Road, Suite 210
 East Lansing, MI 48823
 Telephone: (517) 337-0111
 Fax: (517) 337-0417

**COMPLETION REPORT OF
WELL No. MW-102I**

GROUND SURFACE ELEVATION: **1179.5**
 DATUM: **USGS**
 LOGGED BY: **Mike Brennan**

LEGEND

	GRAVELLY SAND	TPC	TOP OF PROTECTIVE CASING
	COARSE SAND	TRC	TOP OF RISER CASING
	MEDIUM SAND	GS	GROUND SURFACE
	FINE SAND	BS	BENTONITE SEAL
	VERY FINE SAND	FP	FILTER PACK
	SILT	TSC	TOP OF SCREEN
	CLAY	BSC	BOTTOM OF SCREEN
	GRAVELLY CLAY	TD	TOTAL DEPTH
	SILTY SAND		
	TOPSOIL		CONCRETE
	INTERBEDDED SAND, SILT, CLAY		BENTONITE
			FILTER PACK
			GROUT
			NATURAL COLLAPSE / SAND BACKFILL

PROJECT: **GSWA: Spring Hill Camp Phase III**
 PROJECT NO: **4065-005**
 PROJECT LOCATION: **Osceola Township, MI**

GROUND SURFACE ELEVATION: **1179.5**
 DATUM: **USGS**
 LOGGED BY: **Mike Brennan**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL					
							(See Previous Page)
	145				144.00	1035.47	Bentonite Slurry (Grout) <i>(continued)</i>
	150						Artificial Sandpack
	155						10 Slot Screen
	160				163.00	1016.47	

LEGEND

	GRAVELLY SAND	TPC	TOP OF PROTECTIVE CASING
	COARSE SAND	TRC	TOP OF RISER CASING
	MEDIUM SAND	GS	GROUND SURFACE
	FINE SAND	BS	BENTONITE SEAL
	VERY FINE SAND	FP	FILTER PACK
	SILT	TSC	TOP OF SCREEN
	CLAY	BSC	BOTTOM OF SCREEN
	GRAVELLY CLAY	TD	TOTAL DEPTH
	SILTY SAND		CONCRETE
	TOPSOIL		BENTONITE
	INTERBEDDED SAND, SILT, CLAY		FILTER PACK
			GROUT
			NATURAL COLLAPSE / SAND BACKFILL

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PIRNIE**

1500 Abbott Road, Suite 210
 East Lansing, MI 48823
 Telephone: (517) 337-0111
 Fax: (517) 337-0417

**COMPLETION REPORT OF
WELL No. MW-1021**

COMPLETION REPORT OF WELL No. MW-103D

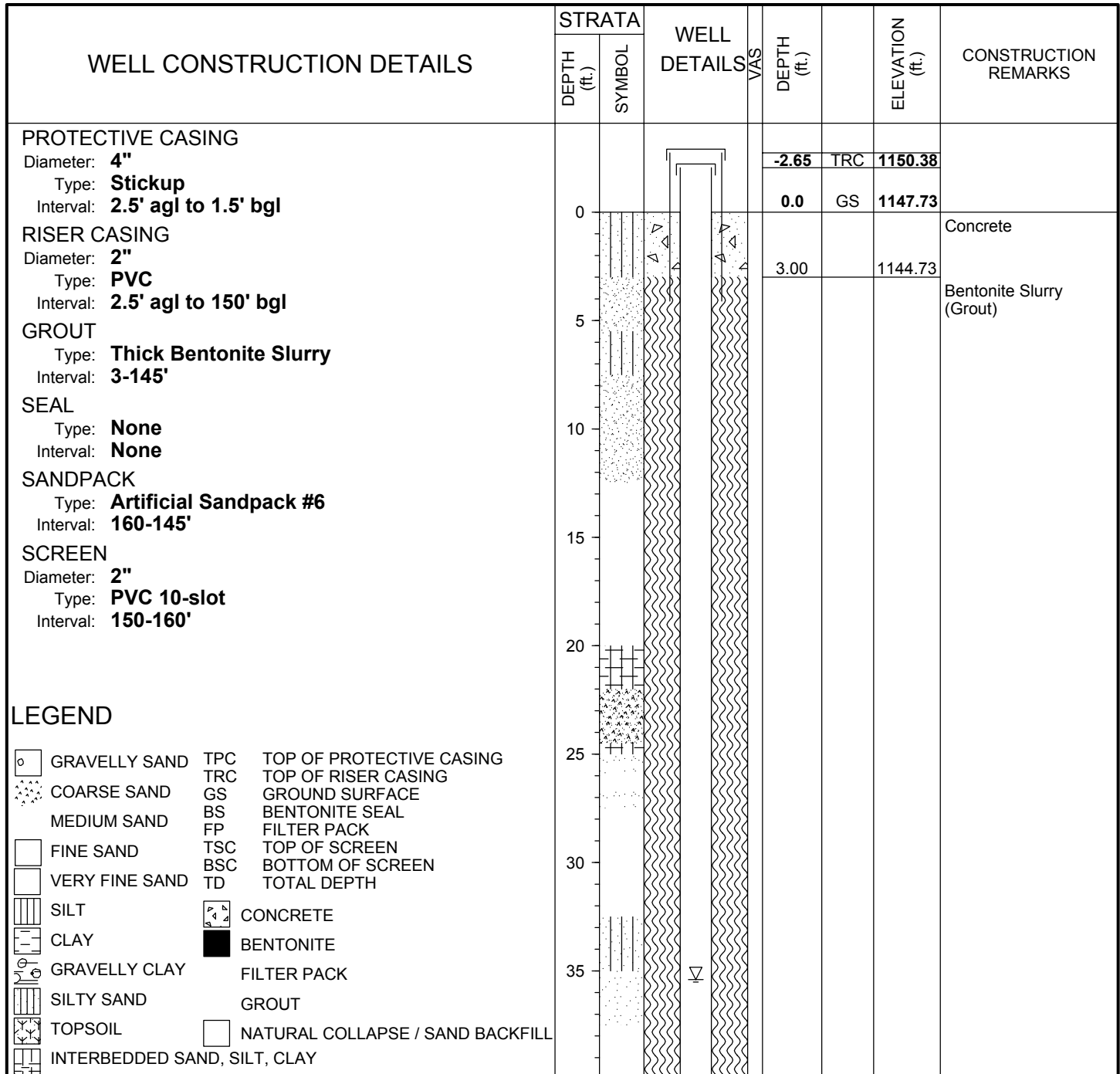
Sheet 1 of 5

PROJECT: **GSWA: Spring Hill Camp Phase III**
 PROJECT NO: **4065-005**
 PROJECT LOCATION: **Osceola Township, MI**

WATER LEVEL: ∇ **35.40** ∇ _____
 DATE: **10-30-00** _____
 TIME: **NA** _____

DRILLING CONTRACTOR: **Stearns**
 DRILLING METHOD: **4 1/4" HSA**
 DATE COMPLETED: **November 2, 2000**

GROUND SURFACE ELEVATION: **1147.7**
 DATUM: **USGS**
 LOGGED BY: **GF/BM**



**MALCOLM
PIRNIE**

1500 Abbott Road, Suite 210
 East Lansing, MI 48823
 Telephone: (517) 337-0111
 Fax: (517) 337-0417

**COMPLETION REPORT OF
WELL No. MW-103D**

Sheet 1 of 5

PROJECT: **GSWA: Spring Hill Camp Phase III**
 PROJECT NO: **4065-005**
 PROJECT LOCATION: **Osceola Township, MI**

GROUND SURFACE ELEVATION: **1147.7**
 DATUM: **USGS**
 LOGGED BY: **GF/BM**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.A.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL					
							(See Previous Page)
	40						Bentonite Slurry (Grout) <i>(continued)</i>
	45						
	50						
	55						
	60						
	65						
	70						
	75						
	80						
	85						

LEGEND

	GRAVELLY SAND	TPC	TOP OF PROTECTIVE CASING
	COARSE SAND	TRC	TOP OF RISER CASING
	MEDIUM SAND	GS	GROUND SURFACE
	FINE SAND	BS	BENTONITE SEAL
	VERY FINE SAND	FP	FILTER PACK
	SILT	TSC	TOP OF SCREEN
	CLAY	BSC	BOTTOM OF SCREEN
	GRAVELLY CLAY	TD	TOTAL DEPTH
	SILTY SAND		
	TOPSOIL		
	INTERBEDDED SAND, SILT, CLAY		
	CONCRETE		
	BENTONITE		
	FILTER PACK		
	GROUT		
	NATURAL COLLAPSE / SAND BACKFILL		

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PIRNIE**

1500 Abbott Road, Suite 210
 East Lansing, MI 48823
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**COMPLETION REPORT OF
WELL No. MW-103D**

PROJECT: **GSWA: Spring Hill Camp Phase III**
 PROJECT NO: **4065-005**
 PROJECT LOCATION: **Osceola Township, MI**

GROUND SURFACE ELEVATION: **1147.7**
 DATUM: **USGS**
 LOGGED BY: **GF/BM**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.A.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL					
							(See Previous Page)
	95						Bentonite Slurry (Grout) <i>(continued)</i>
	100						
	105						
	110						
	115						
	120						
	125						
	130						
	135						
	140						

LEGEND

	GRAVELLY SAND	TPC	TOP OF PROTECTIVE CASING
	COARSE SAND	TRC	TOP OF RISER CASING
	MEDIUM SAND	GS	GROUND SURFACE
	FINE SAND	BS	BENTONITE SEAL
	VERY FINE SAND	FP	FILTER PACK
	SILT	TSC	TOP OF SCREEN
	CLAY	BSC	BOTTOM OF SCREEN
	GRAVELLY CLAY	TD	TOTAL DEPTH
	SILTY SAND		
	TOPSOIL		
	INTERBEDDED SAND, SILT, CLAY		
	CONCRETE		
	BENTONITE		
	FILTER PACK		
	GROUT		
	NATURAL COLLAPSE / SAND BACKFILL		

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PIRNIE**

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PROJECT: **GSWA: Spring Hill Camp Phase III**
 PROJECT NO: **4065-005**
 PROJECT LOCATION: **Osceola Township, MI**

GROUND SURFACE ELEVATION: **1147.7**
 DATUM: **USGS**
 LOGGED BY: **GF/BM**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL					
LEGEND GRAVELLY SAND COARSE SAND MEDIUM SAND FINE SAND VERY FINE SAND SILT CLAY GRAVELLY CLAY SILTY SAND TOPSOIL INTERBEDDED SAND, SILT, CLAY TPC TRC GS BS FP TSC BSC TD CONCRETE BENTONITE FILTER PACK GROUT NATURAL COLLAPSE / SAND BACKFILL TOP OF PROTECTIVE CASING TOP OF RISER CASING GROUND SURFACE BENTONITE SEAL FILTER PACK TOP OF SCREEN BOTTOM OF SCREEN TOTAL DEPTH	145				145.00	1002.73	Bentonite Slurry (Grout) <i>(continued)</i>
	150						Artificial Sandpack
	155						
	160				160.00	987.73	
	165						
	170						
	175						
	180						
	185						
	190						

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**COMPLETION REPORT OF
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PROJECT: **GSWA: Spring Hill Camp Phase III**
 PROJECT NO: **4065-005**
 PROJECT LOCATION: **Osceola Township, MI**

GROUND SURFACE ELEVATION: **1147.7**
 DATUM: **USGS**
 LOGGED BY: **GF/BM**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.A.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL					
					(See Previous Page)		
	195						
	200						
	205						

LEGEND

	GRAVELLY SAND	TPC	TOP OF PROTECTIVE CASING
	COARSE SAND	TRC	TOP OF RISER CASING
	MEDIUM SAND	GS	GROUND SURFACE
	FINE SAND	BS	BENTONITE SEAL
	VERY FINE SAND	FP	FILTER PACK
	SILT	TSC	TOP OF SCREEN
	CLAY	BSC	BOTTOM OF SCREEN
	GRAVELLY CLAY	TD	TOTAL DEPTH
	SILTY SAND		CONCRETE
	TOPSOIL		BENTONITE
	INTERBEDDED SAND, SILT, CLAY		
			FILTER PACK
			GROUT
			NATURAL COLLAPSE / SAND BACKFILL

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PIRNIE**

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 East Lansing, MI 48823
 Telephone: (517) 337-0111
 Fax: (517) 337-0417

**COMPLETION REPORT OF
WELL No. MW-103D**

COMPLETION REPORT OF WELL No. MW-1031

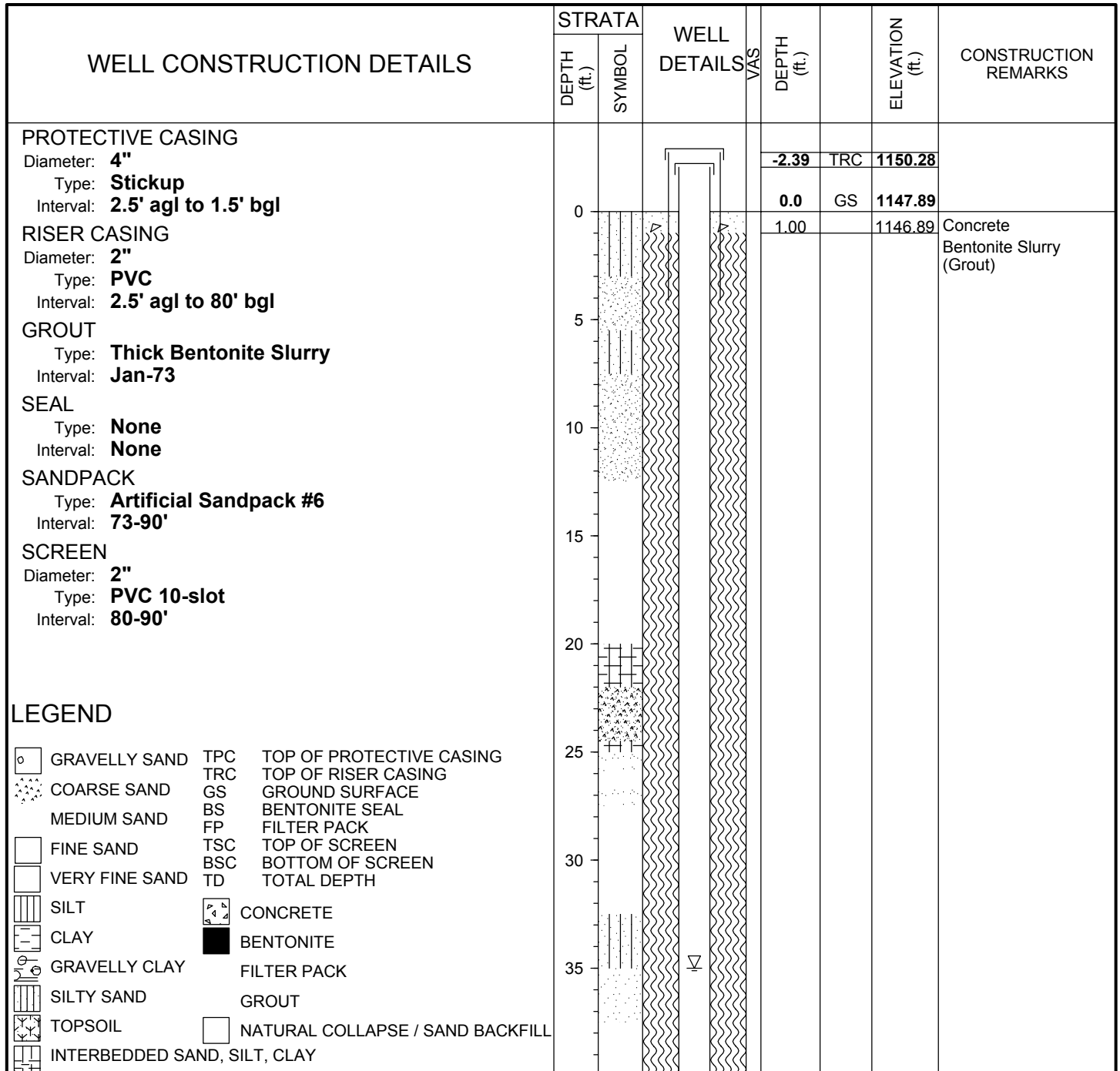
Sheet 1 of 2

PROJECT: **GSWA: Spring Hill Camp Phase III**
 PROJECT NO: **4065-005**
 PROJECT LOCATION: **Osceola Township, MI**

WATER LEVEL: ∇ **35.00** ∇ _____
 DATE: **11-14-00** _____
 TIME: **NA** _____

DRILLING CONTRACTOR: **Stearns**
 DRILLING METHOD: **4 1/4" HSA**
 DATE COMPLETED: **November 14, 2000**

GROUND SURFACE ELEVATION: **1147.9**
 DATUM: **USGS**
 LOGGED BY: **Mike Brennan**



**MALCOLM
PIRNIE**

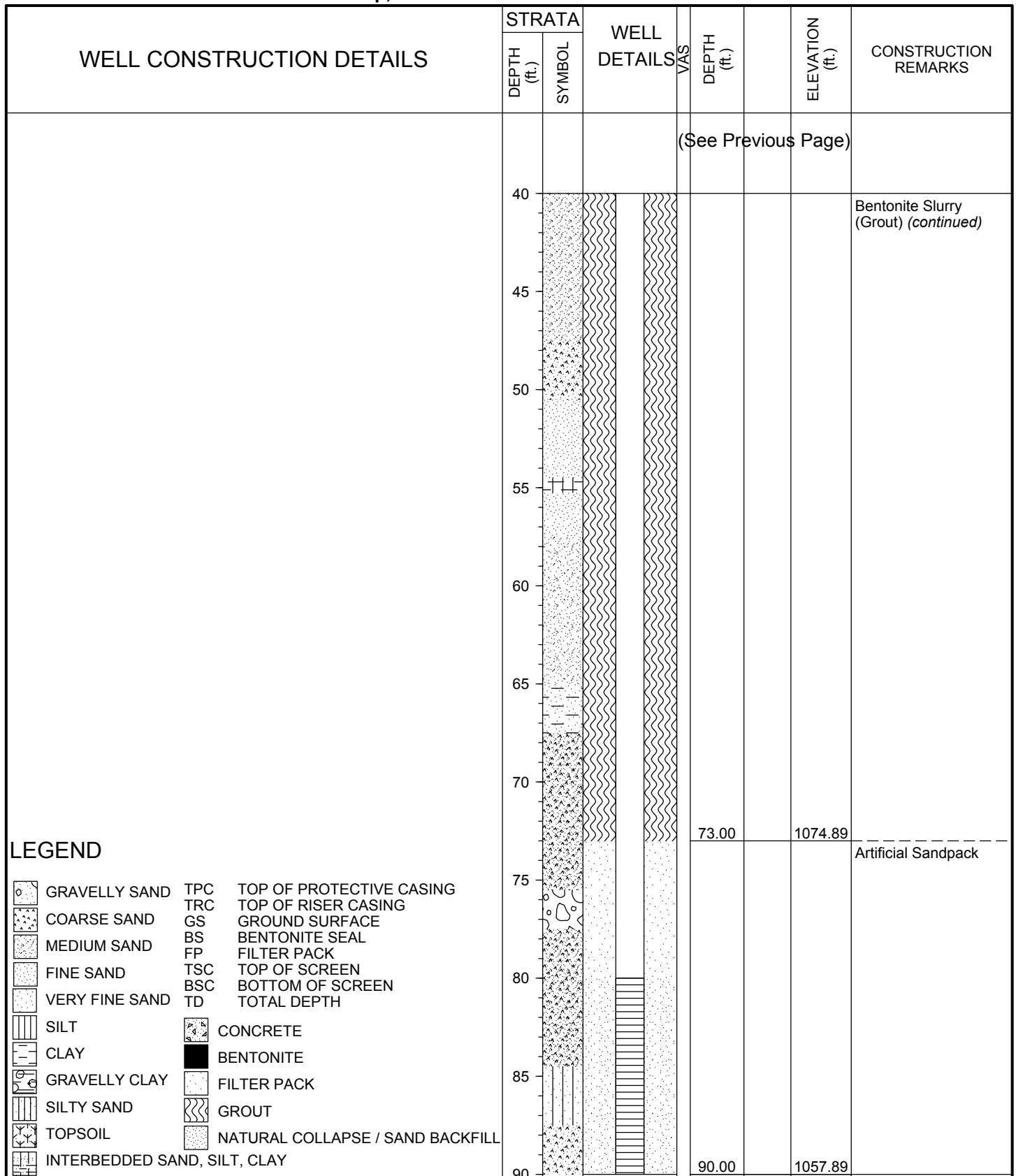
1500 Abbott Road, Suite 210
 East Lansing, MI 48823
 Telephone: (517) 337-0111
 Fax: (517) 337-0417

**COMPLETION REPORT OF
WELL No. MW-1031**

Sheet 1 of 2

PROJECT: **GSWA: Spring Hill Camp Phase III**
 PROJECT NO: **4065-005**
 PROJECT LOCATION: **Osceola Township, MI**

GROUND SURFACE ELEVATION: **1147.9**
 DATUM: **USGS**
 LOGGED BY: **Mike Brennan**



LEGEND

	GRAVELLY SAND	TPC	TOP OF PROTECTIVE CASING
	COARSE SAND	TRC	TOP OF RISER CASING
	MEDIUM SAND	GS	GROUND SURFACE
	FINE SAND	BS	BENTONITE SEAL
	VERY FINE SAND	FP	FILTER PACK
	SILT	TSC	TOP OF SCREEN
	CLAY	BSC	BOTTOM OF SCREEN
	GRAVELLY CLAY	TD	TOTAL DEPTH
	SILTY SAND		
	TOPSOIL		
	INTERBEDDED SAND, SILT, CLAY		
	CONCRETE		
	BENTONITE		
	FILTER PACK		
	GROUT		
	NATURAL COLLAPSE / SAND BACKFILL		

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PIRNIE**

1500 Abbott Road, Suite 210
 East Lansing, MI 48823
 Telephone: (517) 337-0111
 Fax: (517) 337-0417

**COMPLETION REPORT OF
WELL No. MW-1031**

COMPLETION REPORT OF WELL No. MW-104D

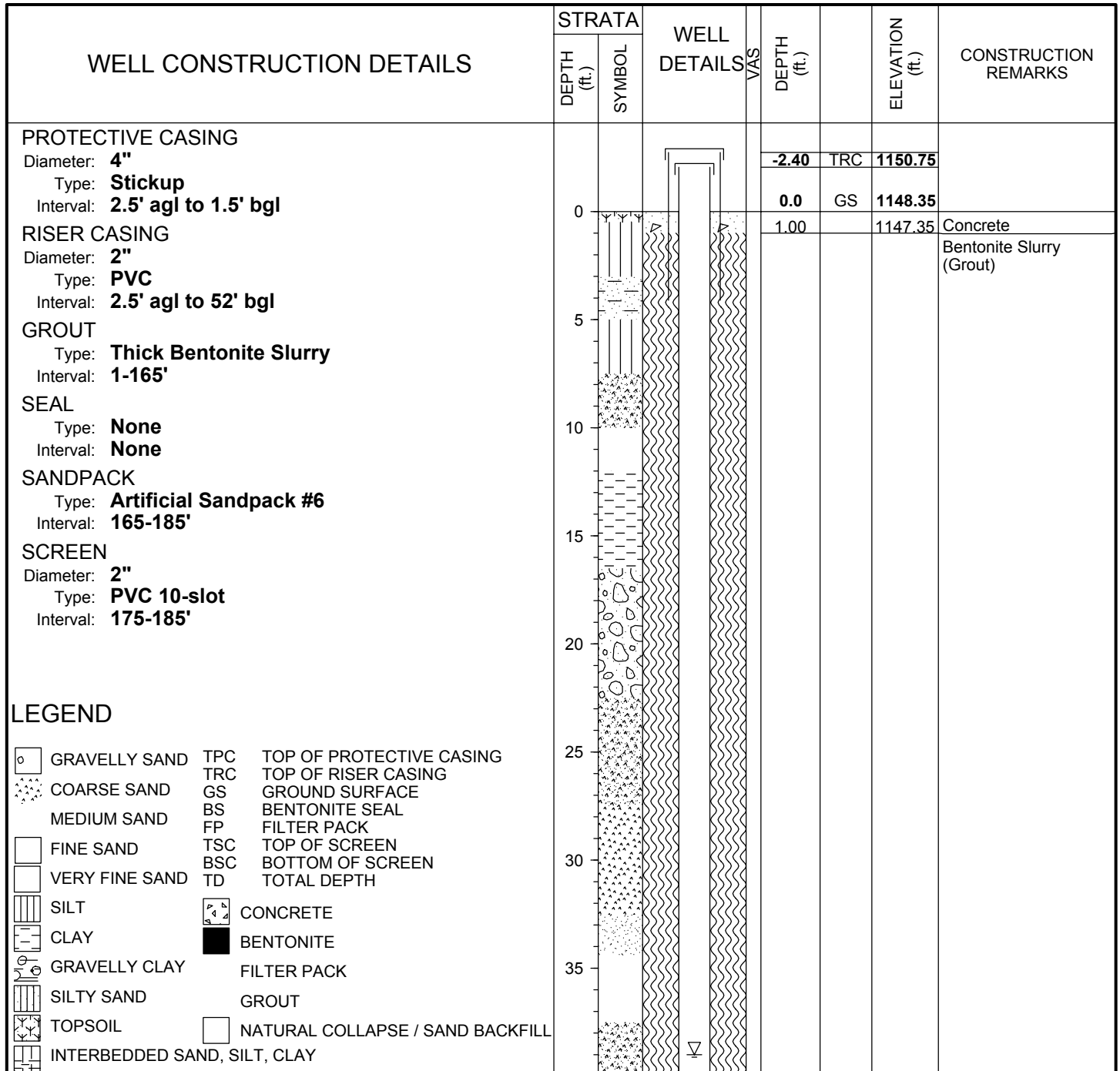
Sheet 1 of 6

PROJECT: **GSWA: Spring Hill Camp Phase III**
 PROJECT NO: **4065-005**
 PROJECT LOCATION: **Osceola Township, MI**

WATER LEVEL: ∇ **39.00** ∇ _____
 DATE: **11-2-00** _____
 TIME: **NA** _____

DRILLING CONTRACTOR: **Stearns**
 DRILLING METHOD: **4 1/4" HSA**
 DATE COMPLETED: **November 7, 2000**

GROUND SURFACE ELEVATION: **1148.4**
 DATUM: **USGS**
 LOGGED BY: **Mike Brennan**



**MALCOLM
PIRNIE**

1500 Abbott Road, Suite 210
 East Lansing, MI 48823
 Telephone: (517) 337-0111
 Fax: (517) 337-0417

**COMPLETION REPORT OF
WELL No. MW-104D**

Sheet 1 of 6

PROJECT: **GSWA: Spring Hill Camp Phase III**
 PROJECT NO: **4065-005**
 PROJECT LOCATION: **Osceola Township, MI**

GROUND SURFACE ELEVATION: **1148.4**
 DATUM: **USGS**
 LOGGED BY: **Mike Brennan**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	VAS	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL					
							(See Previous Page)
	40						Bentonite Slurry (Grout) <i>(continued)</i>
	45						
	50						
	55						
	60						
	65						
	70						
	75						
	80						
	85						

LEGEND

	GRAVELLY SAND	TPC	TOP OF PROTECTIVE CASING
	COARSE SAND	TRC	TOP OF RISER CASING
	MEDIUM SAND	GS	GROUND SURFACE
	FINE SAND	BS	BENTONITE SEAL
	VERY FINE SAND	FP	FILTER PACK
	SILT	TSC	TOP OF SCREEN
	CLAY	BSC	BOTTOM OF SCREEN
	GRAVELLY CLAY	TD	TOTAL DEPTH
	SILTY SAND		
	TOPSOIL		
	INTERBEDDED SAND, SILT, CLAY		
	CONCRETE		
	BENTONITE		
	FILTER PACK		
	GROUT		
	NATURAL COLLAPSE / SAND BACKFILL		

**MALCOLM
PIRNIE**

1500 Abbott Road, Suite 210
 East Lansing, MI 48823
 Telephone: (517) 337-0111
 Fax: (517) 337-0417

**COMPLETION REPORT OF
WELL No. MW-104D**

PROJECT: **GSWA: Spring Hill Camp Phase III**
 PROJECT NO: **4065-005**
 PROJECT LOCATION: **Osceola Township, MI**

GROUND SURFACE ELEVATION: **1148.4**
 DATUM: **USGS**
 LOGGED BY: **Mike Brennan**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	VAS	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL					
							(See Previous Page)
	95						Bentonite Slurry (Grout) <i>(continued)</i>
	100						
	105						
	110						
	115						
	120						
	125						
	130						
	135						
	140						

LEGEND

	GRAVELLY SAND	TPC	TOP OF PROTECTIVE CASING
	COARSE SAND	TRC	TOP OF RISER CASING
	MEDIUM SAND	GS	GROUND SURFACE
	FINE SAND	BS	BENTONITE SEAL
	VERY FINE SAND	FP	FILTER PACK
	SILT	TSC	TOP OF SCREEN
	CLAY	BSC	BOTTOM OF SCREEN
	GRAVELLY CLAY	TD	TOTAL DEPTH
	SILTY SAND		CONCRETE
	TOPSOIL		BENTONITE
	INTERBEDDED SAND, SILT, CLAY		FILTER PACK
			GROUT
			NATURAL COLLAPSE / SAND BACKFILL

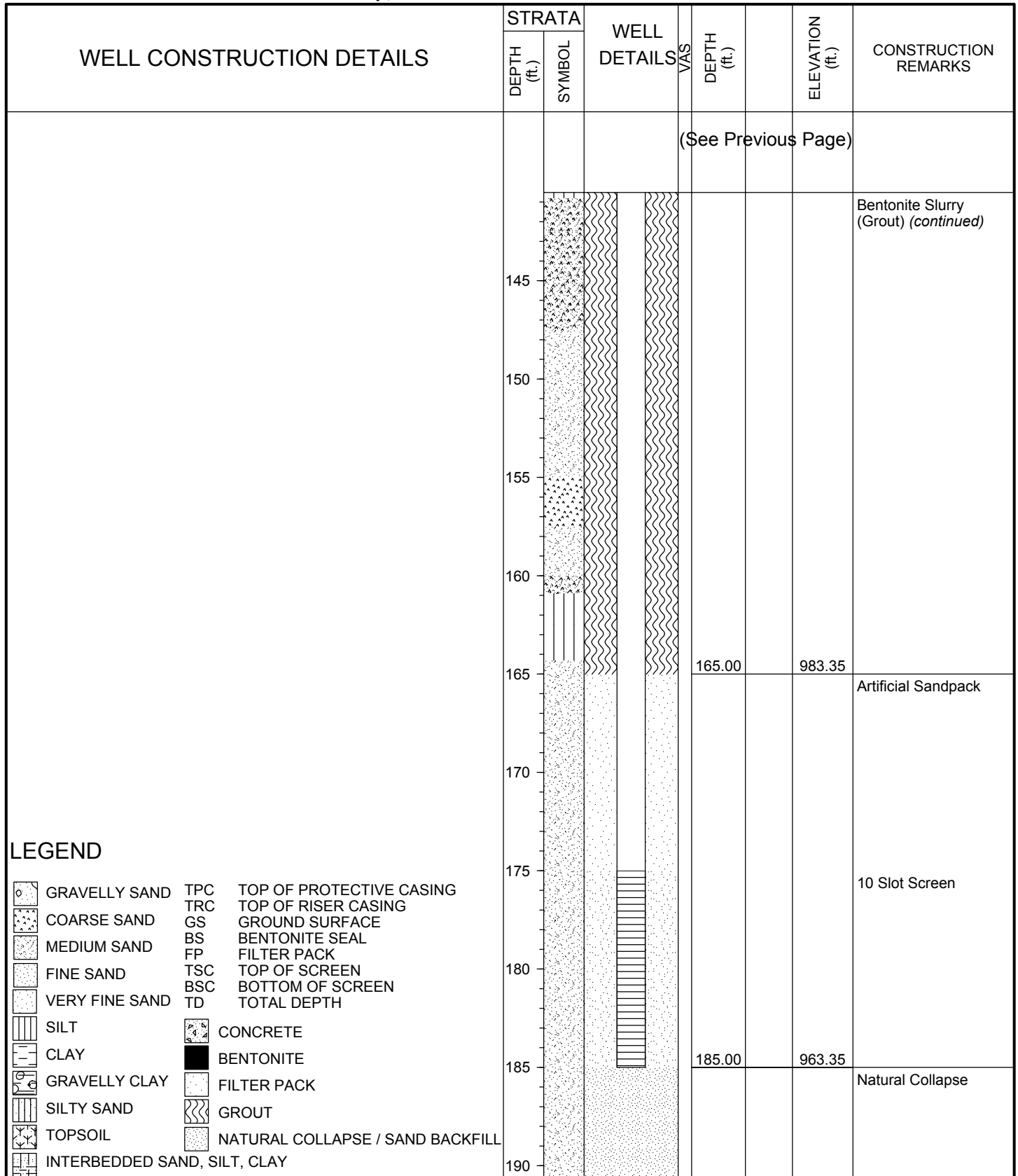
**MALCOLM
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**COMPLETION REPORT OF
WELL No. MW-104D**

PROJECT: **GSWA: Spring Hill Camp Phase III**
 PROJECT NO: **4065-005**
 PROJECT LOCATION: **Osceola Township, MI**

GROUND SURFACE ELEVATION: **1148.4**
 DATUM: **USGS**
 LOGGED BY: **Mike Brennan**



LEGEND

	GRAVELLY SAND	TPC	TOP OF PROTECTIVE CASING
	COARSE SAND	TRC	TOP OF RISER CASING
	MEDIUM SAND	GS	GROUND SURFACE
	FINE SAND	BS	BENTONITE SEAL
	VERY FINE SAND	FP	FILTER PACK
	SILT	TSC	TOP OF SCREEN
	CLAY	BSC	BOTTOM OF SCREEN
	GRAVELLY CLAY	TD	TOTAL DEPTH
	SILTY SAND		
	TOPSOIL		
	INTERBEDDED SAND, SILT, CLAY		
	CONCRETE		
	BENTONITE		
	FILTER PACK		
	GROUT		
	NATURAL COLLAPSE / SAND BACKFILL		

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WELL No. MW-104D**

PROJECT: **GSWA: Spring Hill Camp Phase III**
 PROJECT NO: **4065-005**
 PROJECT LOCATION: **Osceola Township, MI**

GROUND SURFACE ELEVATION: **1148.4**
 DATUM: **USGS**
 LOGGED BY: **Mike Brennan**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.A.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL					
							(See Previous Page)
	195						Natural Collapse (continued)
	200						
	205						
	210						
	215						
	220						
	225						
	230						
	235						
	240						

LEGEND

	GRAVELLY SAND	TPC	TOP OF PROTECTIVE CASING
	COARSE SAND	TRC	TOP OF RISER CASING
	MEDIUM SAND	GS	GROUND SURFACE
	FINE SAND	BS	BENTONITE SEAL
	VERY FINE SAND	FP	FILTER PACK
	SILT	TSC	TOP OF SCREEN
	CLAY	BSC	BOTTOM OF SCREEN
	GRAVELLY CLAY	TD	TOTAL DEPTH
	SILTY SAND		
	TOPSOIL		
	INTERBEDDED SAND, SILT, CLAY		
	CONCRETE		
	BENTONITE		
	FILTER PACK		
	GROUT		
	NATURAL COLLAPSE / SAND BACKFILL		

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PROJECT: **GSWA: Spring Hill Camp Phase III**
 PROJECT NO: **4065-005**
 PROJECT LOCATION: **Osceola Township, MI**

GROUND SURFACE ELEVATION: **1148.4**
 DATUM: **USGS**
 LOGGED BY: **Mike Brennan**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL					
							(See Previous Page)
	245						Natural Collapse (continued)
	250				251.00	897.35	

LEGEND

	GRAVELLY SAND	TPC	TOP OF PROTECTIVE CASING
	COARSE SAND	TRC	TOP OF RISER CASING
	MEDIUM SAND	GS	GROUND SURFACE
	FINE SAND	BS	BENTONITE SEAL
	VERY FINE SAND	FP	FILTER PACK
	SILT	TSC	TOP OF SCREEN
	CLAY	BSC	BOTTOM OF SCREEN
	GRAVELLY CLAY	TD	TOTAL DEPTH
	SILTY SAND		CONCRETE
	TOPSOIL		BENTONITE
	INTERBEDDED SAND, SILT, CLAY		
			FILTER PACK
			GROUT
			NATURAL COLLAPSE / SAND BACKFILL

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**COMPLETION REPORT OF
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COMPLETION REPORT OF WELL No. MW-104I

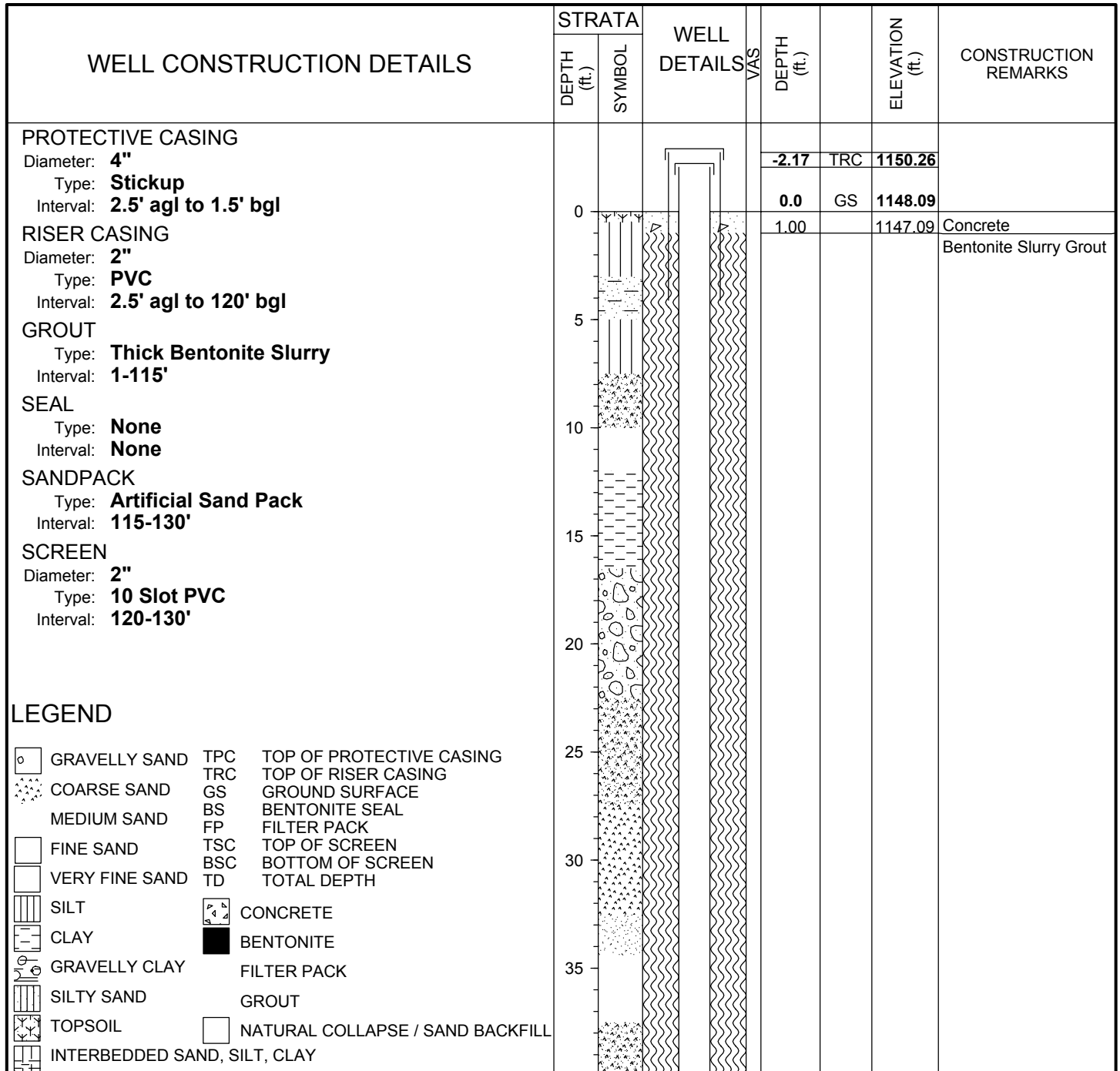
Sheet 1 of 3

PROJECT: **GSWA: Spring Hill Camp Phase III**
 PROJECT NO: **4065-005**
 PROJECT LOCATION: **Osceola Township, MI**

WATER LEVEL: ▽ _____ ▽ _____ ▽ _____
 DATE: _____
 TIME: _____

DRILLING CONTRACTOR: **Stearns**
 DRILLING METHOD: **4 1/4" HSA**
 DATE COMPLETED: **November 16, 2000**

GROUND SURFACE ELEVATION: **1148.1**
 DATUM: **USGS**
 LOGGED BY: **Larry Jordan**



**MALCOLM
PIRNIE**

1500 Abbott Road, Suite 210
 East Lansing, MI 48823
 Telephone: (517) 337-0111
 Fax: (517) 337-0417

**COMPLETION REPORT OF
WELL No. MW-104I**

Sheet 1 of 3

PROJECT: **GSWA: Spring Hill Camp Phase III**
 PROJECT NO: **4065-005**
 PROJECT LOCATION: **Osceola Township, MI**

GROUND SURFACE ELEVATION: **1148.1**
 DATUM: **USGS**
 LOGGED BY: **Larry Jordan**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.A.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL					
							(See Previous Page)
	40						Bentonite Slurry Grout (continued)
	45						
	50						
	55						
	60						
	65						
	70						
	75						
	80						
	85						

LEGEND

	GRAVELLY SAND	TPC	TOP OF PROTECTIVE CASING
	COARSE SAND	TRC	TOP OF RISER CASING
	MEDIUM SAND	GS	GROUND SURFACE
	FINE SAND	BS	BENTONITE SEAL
	VERY FINE SAND	FP	FILTER PACK
	SILT	TSC	TOP OF SCREEN
	CLAY	BSC	BOTTOM OF SCREEN
	GRAVELLY CLAY	TD	TOTAL DEPTH
	SILTY SAND		
	TOPSOIL		
	INTERBEDDED SAND, SILT, CLAY		
	CONCRETE		
	BENTONITE		
	FILTER PACK		
	GROUT		
	NATURAL COLLAPSE / SAND BACKFILL		

**MALCOLM
PIRNIE**

1500 Abbott Road, Suite 210
 East Lansing, MI 48823
 Telephone: (517) 337-0111
 Fax: (517) 337-0417

**COMPLETION REPORT OF
WELL No. MW-104I**

PROJECT: **GSWA: Spring Hill Camp Phase III**
 PROJECT NO: **4065-005**
 PROJECT LOCATION: **Osceola Township, MI**

GROUND SURFACE ELEVATION: **1148.1**
 DATUM: **USGS**
 LOGGED BY: **Larry Jordan**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	V.A.S.	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS	
	DEPTH (ft.)	SYMBOL						
LEGEND  GRAVELLY SAND  COARSE SAND  MEDIUM SAND  FINE SAND  VERY FINE SAND  SILT  CLAY  GRAVELLY CLAY  SILTY SAND  TOPSOIL  INTERBEDDED SAND, SILT, CLAY TPC TRC GS BS FP TSC BSC TD  CONCRETE  BENTONITE  FILTER PACK  GROUT  NATURAL COLLAPSE / SAND BACKFILL					(See Previous Page)			
		95						Bentonite Slurry Grout (continued)
		100						
		105						
		110						
	115				115.00	1033.09	Artificial Sand Pack	
	120						10 Slot PVC Screen	
	125							
	130				130.00	1018.09		

LEGEND

	GRAVELLY SAND	TPC	TOP OF PROTECTIVE CASING
	COARSE SAND	TRC	TOP OF RISER CASING
	MEDIUM SAND	GS	GROUND SURFACE
	FINE SAND	BS	BENTONITE SEAL
	VERY FINE SAND	FP	FILTER PACK
	SILT	TSC	TOP OF SCREEN
	CLAY	BSC	BOTTOM OF SCREEN
	GRAVELLY CLAY	TD	TOTAL DEPTH
	SILTY SAND		
	TOPSOIL		CONCRETE
	INTERBEDDED SAND, SILT, CLAY		BENTONITE
			FILTER PACK
			GROUT
			NATURAL COLLAPSE / SAND BACKFILL

**MALCOLM
PIRNIE**

1500 Abbott Road, Suite 210
 East Lansing, MI 48823
 Telephone: (517) 337-0111
 Fax: (517) 337-0417

**COMPLETION REPORT OF
WELL No. MW-104I**

COMPLETION REPORT OF WELL No. MW-105D

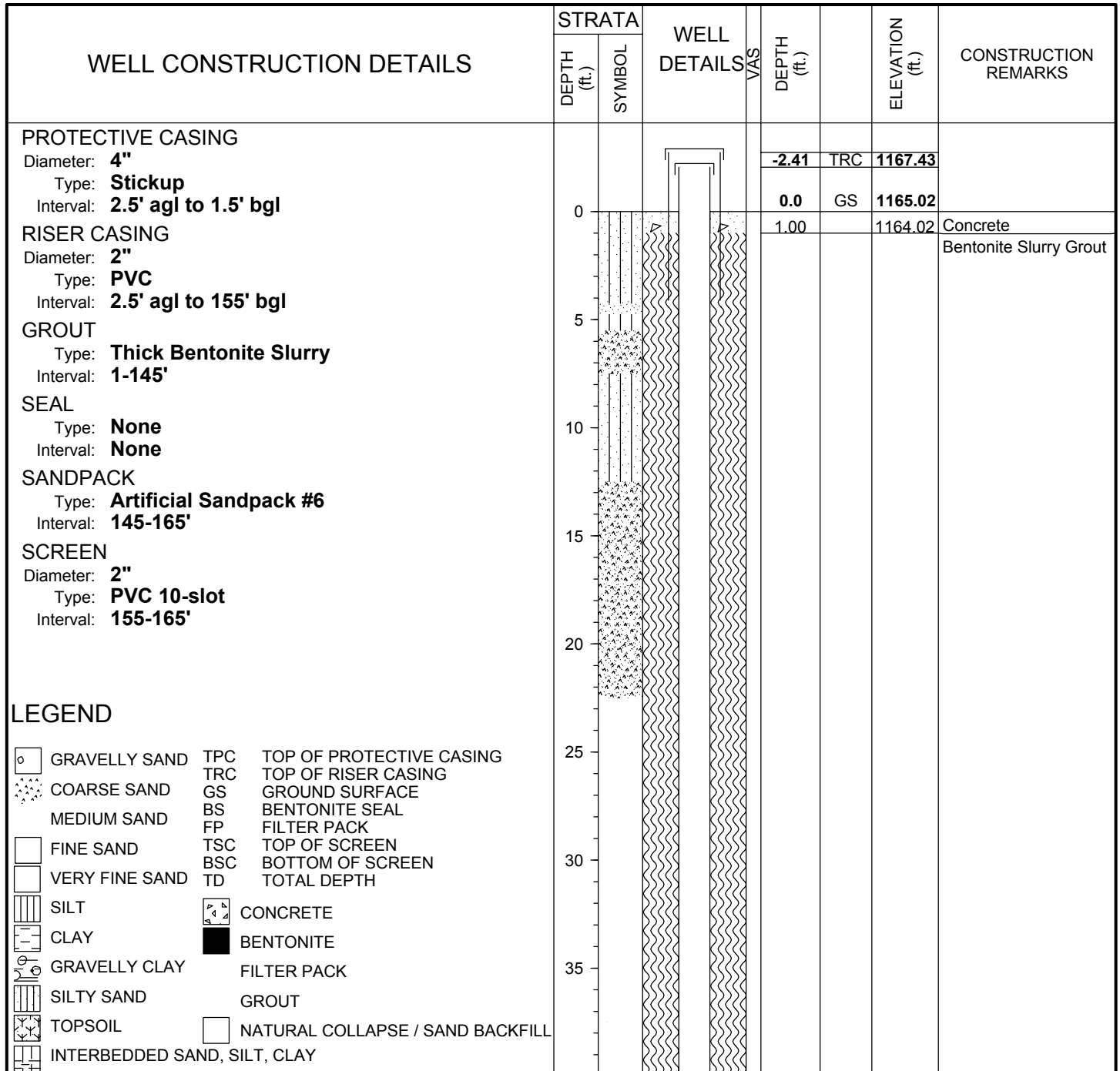
Sheet 1 of 4

PROJECT: **GSWA: Spring Hill Camp Phase III**
 PROJECT NO: **4065-005**
 PROJECT LOCATION: **Osceola Township, MI**

WATER LEVEL: ∇ **54.49** ∇ _____
 DATE: **2-13-01** _____
 TIME: _____

DRILLING CONTRACTOR: **Stearns**
 DRILLING METHOD: **4 1/4" HSA**
 DATE COMPLETED: **November 17, 2000**

GROUND SURFACE ELEVATION: **1165.0**
 DATUM: **USGS**
 LOGGED BY: **Bobbi McClead**



**MALCOLM
PIRNIE**

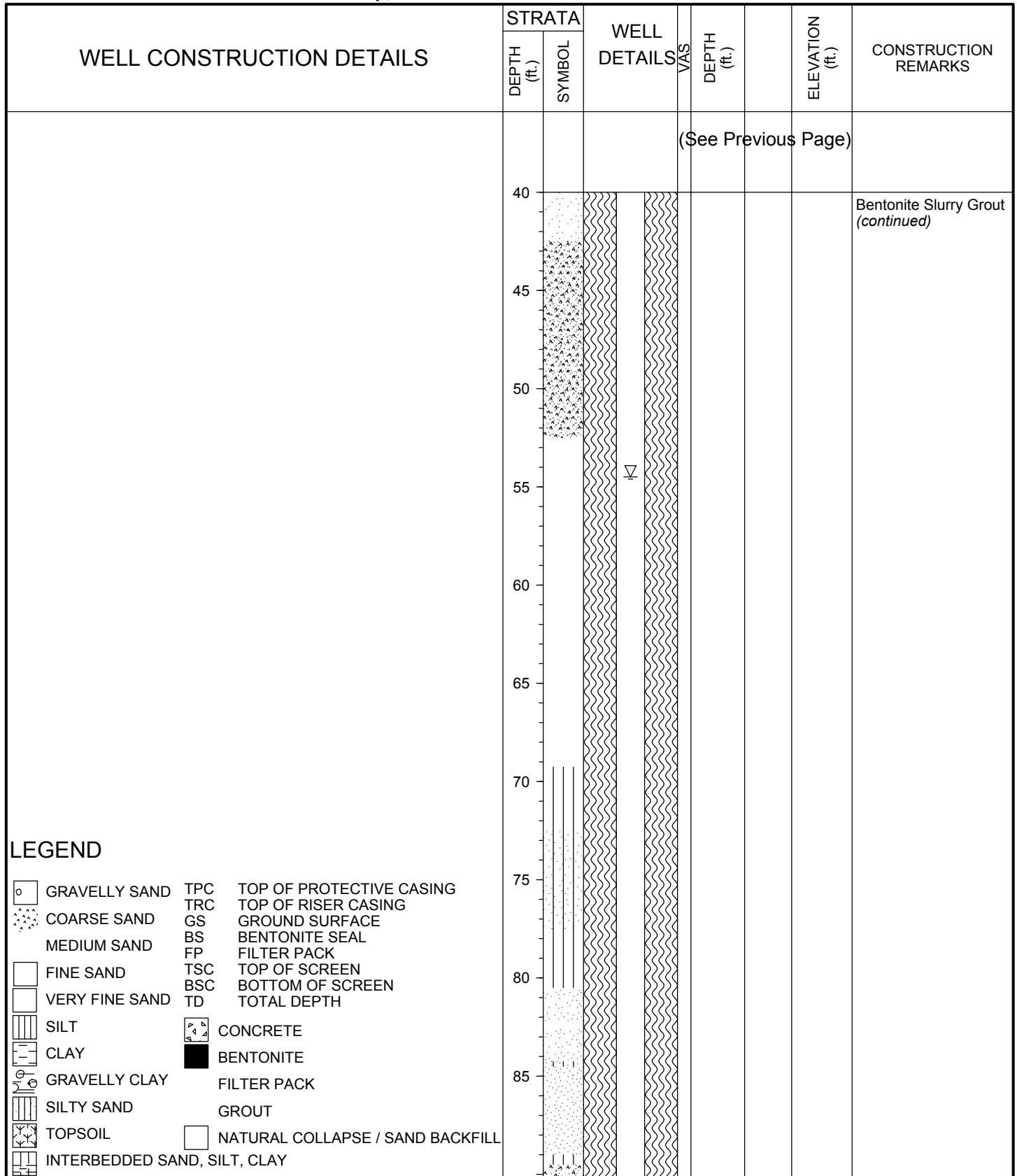
1500 Abbott Road, Suite 210
 East Lansing, MI 48823
 Telephone: (517) 337-0111
 Fax: (517) 337-0417

**COMPLETION REPORT OF
WELL No. MW-105D**

Sheet 1 of 4

PROJECT: **GSWA: Spring Hill Camp Phase III**
 PROJECT NO: **4065-005**
 PROJECT LOCATION: **Osceola Township, MI**

GROUND SURFACE ELEVATION: **1165.0**
 DATUM: **USGS**
 LOGGED BY: **Bobbi McClead**



LEGEND

	GRAVELLY SAND	TPC	TOP OF PROTECTIVE CASING
	COARSE SAND	TRC	TOP OF RISER CASING
	MEDIUM SAND	GS	GROUND SURFACE
	FINE SAND	BS	BENTONITE SEAL
	VERY FINE SAND	FP	FILTER PACK
	SILT	TSC	TOP OF SCREEN
	CLAY	BSC	BOTTOM OF SCREEN
	GRAVELLY CLAY	TD	TOTAL DEPTH
	SILTY SAND		CONCRETE
	TOPSOIL		BENTONITE
	INTERBEDDED SAND, SILT, CLAY		FILTER PACK
			GROUT
			NATURAL COLLAPSE / SAND BACKFILL

**MALCOLM
PIRNIE**

1500 Abbott Road, Suite 210
 East Lansing, MI 48823
 Telephone: (517) 337-0111
 Fax: (517) 337-0417

**COMPLETION REPORT OF
WELL No. MW-105D**

PROJECT: **GSWA: Spring Hill Camp Phase III**
 PROJECT NO: **4065-005**
 PROJECT LOCATION: **Osceola Township, MI**

GROUND SURFACE ELEVATION: **1165.0**
 DATUM: **USGS**
 LOGGED BY: **Bobbi McClead**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	VAS	DEPTH (ft.)	ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL					
							(See Previous Page)
	95						Bentonite Slurry Grout (continued)
	100						
	105						
	110						
	115						
	120						
	125						
	130						
	135						
	140						

LEGEND

	GRAVELLY SAND	TPC	TOP OF PROTECTIVE CASING
	COARSE SAND	TRC	TOP OF RISER CASING
	MEDIUM SAND	GS	GROUND SURFACE
	FINE SAND	BS	BENTONITE SEAL
	VERY FINE SAND	FP	FILTER PACK
	SILT	TSC	TOP OF SCREEN
	CLAY	BSC	BOTTOM OF SCREEN
	GRAVELLY CLAY	TD	TOTAL DEPTH
	SILTY SAND		
	TOPSOIL		
	INTERBEDDED SAND, SILT, CLAY		
	CONCRETE		
	BENTONITE		
	FILTER PACK		
	GROUT		
	NATURAL COLLAPSE / SAND BACKFILL		

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**COMPLETION REPORT OF
WELL No. MW-105D**

PROJECT: **GSWA: Spring Hill Camp Phase III**
 PROJECT NO: **4065-005**
 PROJECT LOCATION: **Osceola Township, MI**

GROUND SURFACE ELEVATION: **1165.0**
 DATUM: **USGS**
 LOGGED BY: **Bobbi McClead**

WELL CONSTRUCTION DETAILS	STRATA		WELL DETAILS	VAS	DEPTH (ft.)		ELEVATION (ft.)	CONSTRUCTION REMARKS
	DEPTH (ft.)	SYMBOL						
							(See Previous Page)	
	145				145.00		1020.02	Bentonite Slurry Grout (continued)
	150							Artificial Sand Pack #6
	155							10 Slot PVC Screen
	160							
	165				165.00		1000.02	

LEGEND

 GRAVELLY SAND

 COARSE SAND

 MEDIUM SAND

 FINE SAND

 VERY FINE SAND

 SILT

 CLAY

 GRAVELLY CLAY

 SILTY SAND

 TOPSOIL

 INTERBEDDED SAND, SILT, CLAY

TPC TOP OF PROTECTIVE CASING

TRC TOP OF RISER CASING

GS GROUND SURFACE

BS BENTONITE SEAL

FP FILTER PACK

TSC TOP OF SCREEN

BSC BOTTOM OF SCREEN

TD TOTAL DEPTH

 CONCRETE

 BENTONITE

 FILTER PACK

 GROUT

 NATURAL COLLAPSE / SAND BACKFILL

LEGEND

	GRAVELLY SAND	TPC	TOP OF PROTECTIVE CASING
	COARSE SAND	TRC	TOP OF RISER CASING
	MEDIUM SAND	GS	GROUND SURFACE
	FINE SAND	BS	BENTONITE SEAL
	VERY FINE SAND	FP	FILTER PACK
	SILT	TSC	TOP OF SCREEN
	CLAY	BSC	BOTTOM OF SCREEN
	GRAVELLY CLAY	TD	TOTAL DEPTH
	SILTY SAND		CONCRETE
	TOPSOIL		BENTONITE
	INTERBEDDED SAND, SILT, CLAY		FILTER PACK
			GROUT
			NATURAL COLLAPSE / SAND BACKFILL

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 East Lansing, MI 48823
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 Fax: (517) 337-0417

**COMPLETION REPORT OF
WELL No. MW-105D**

COMPLETION REPORT OF WELL No. MW-105L

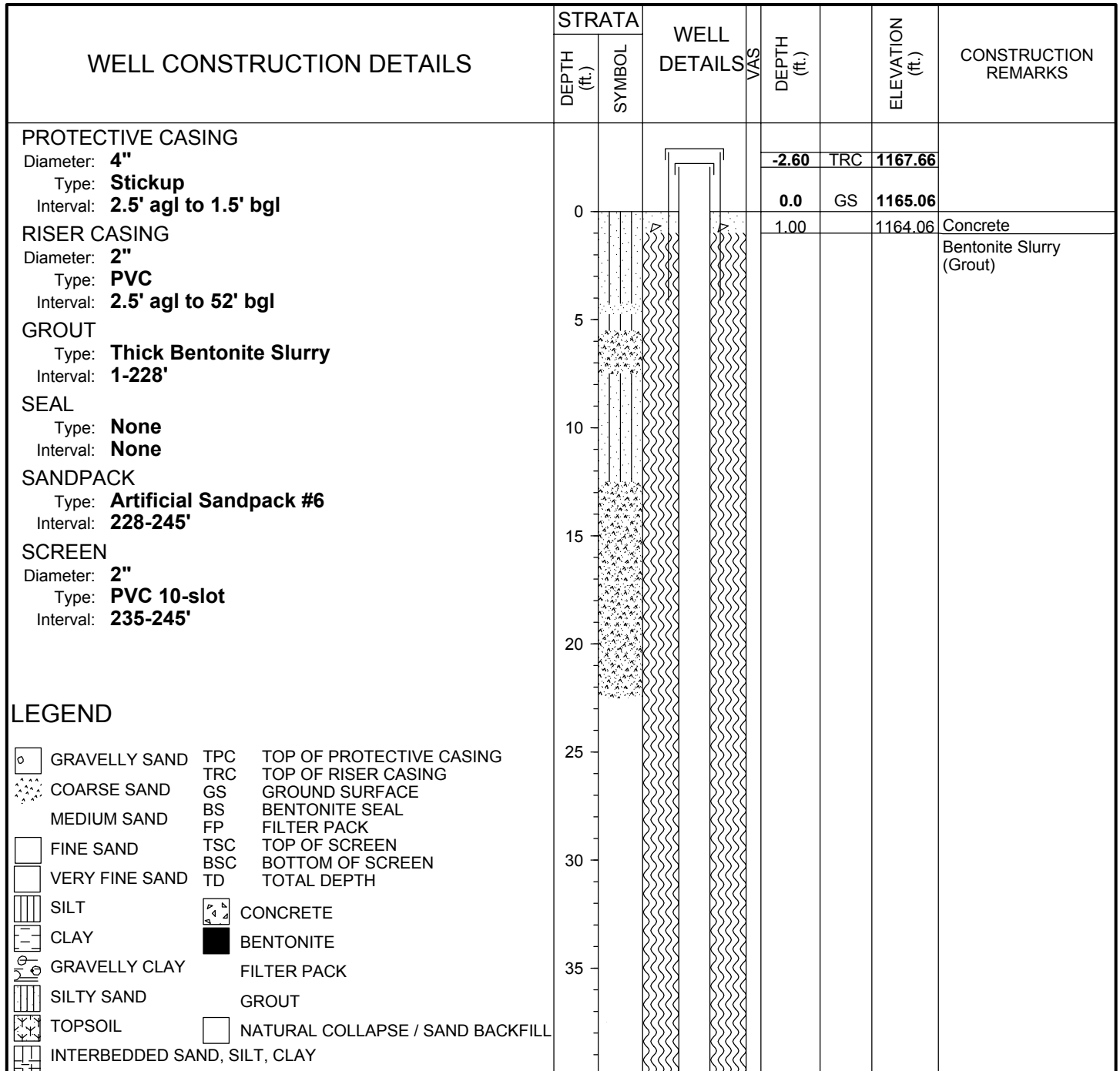
Sheet 1 of 6

PROJECT: **GSWA: Spring Hill Camp Phase III**
 PROJECT NO: **4065-005**
 PROJECT LOCATION: **Osceola Township, MI**

WATER LEVEL: ∇ **50.00** ∇ _____
 DATE: **11-7-00** _____
 TIME: **NA** _____

DRILLING CONTRACTOR: **Stearns**
 DRILLING METHOD: **4 1/4" HSA**
 DATE COMPLETED: **November 8, 2000**

GROUND SURFACE ELEVATION: **1165.1**
 DATUM: **USGS**
 LOGGED BY: **Mike Brennan**



**MALCOLM
PIRNIE**

1500 Abbott Road, Suite 210
 East Lansing, MI 48823
 Telephone: (517) 337-0111
 Fax: (517) 337-0417

**COMPLETION REPORT OF
WELL No. MW-105L**

Sheet 1 of 6