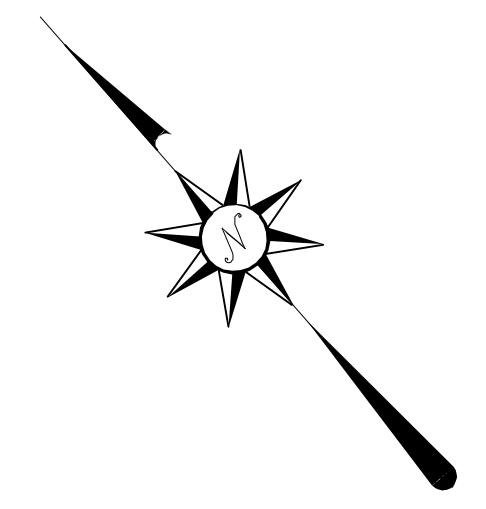
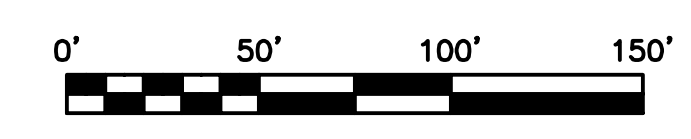


- NOTES:**
- ALL PIPE SHALL BE EITHER:
 - PVC SCHEDULE 40;
 - PVC SDR-35;
 - SLCPP;
 - OR APPROVED EQUALS.
 - ALL SPOT ELEVATIONS SHOWN REPRESENT FINISHED GROUND SURFACE.

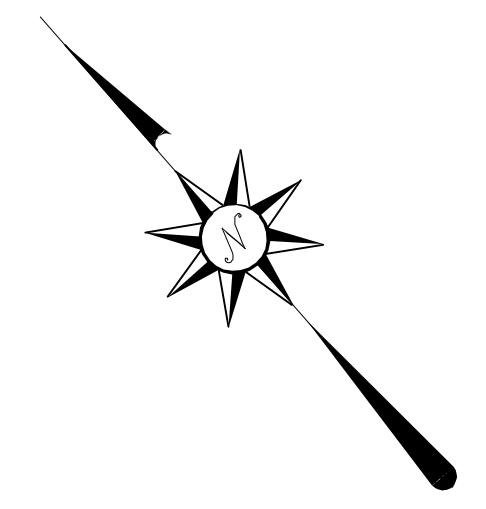
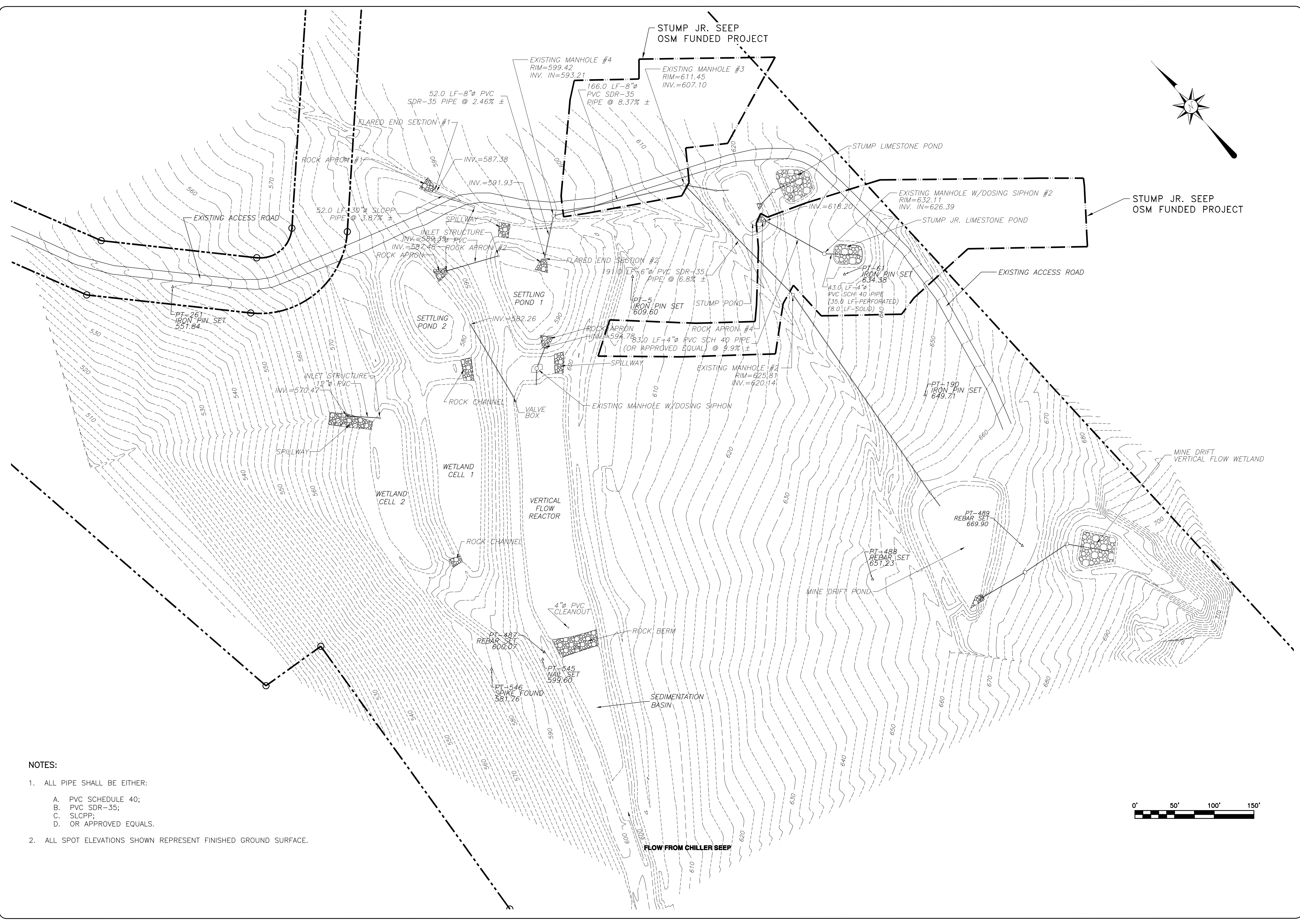
DRAWING NO. C-1	SHEET 1 OF 4
"AS-BUILT PLAN" for MINE DRIFT SEEP MINE DRAINAGE ABATEMENT RUSH TOWNSHIP CENTRE COUNTY, PA GRADING PLAN	
DESIGN DATE T.W.S. 05/13/02	DESIGN DATE B.A.S. 05/13/02
CHECK DATE T.W.S. 05/13/02	CHECK DATE A.P.V. 05/13/02
SCALE 1" = 50'	
1 AS-BUILT PLAN REV	DESCRIPTION DATE
SKELLY AND LOY, INC. ENGINEERS-CONSULTANTS 2601 NORTH FRONT STREET HARRISBURG, PENNSYLVANIA (717)232-0593 (800)892-6532 FAX (717)232-1799	
JOB NUMBER: 1601096	DATE: MAY 13 2002



- NOTES:**
- ALL PIPE SHALL BE EITHER:
 - PVC SCHEDULE 40;
 - PVC SDR-35;
 - SLCPP;
 - OR APPROVED EQUALS.
 - ALL SPOT ELEVATIONS SHOWN REPRESENT FINISHED GROUND SURFACE.

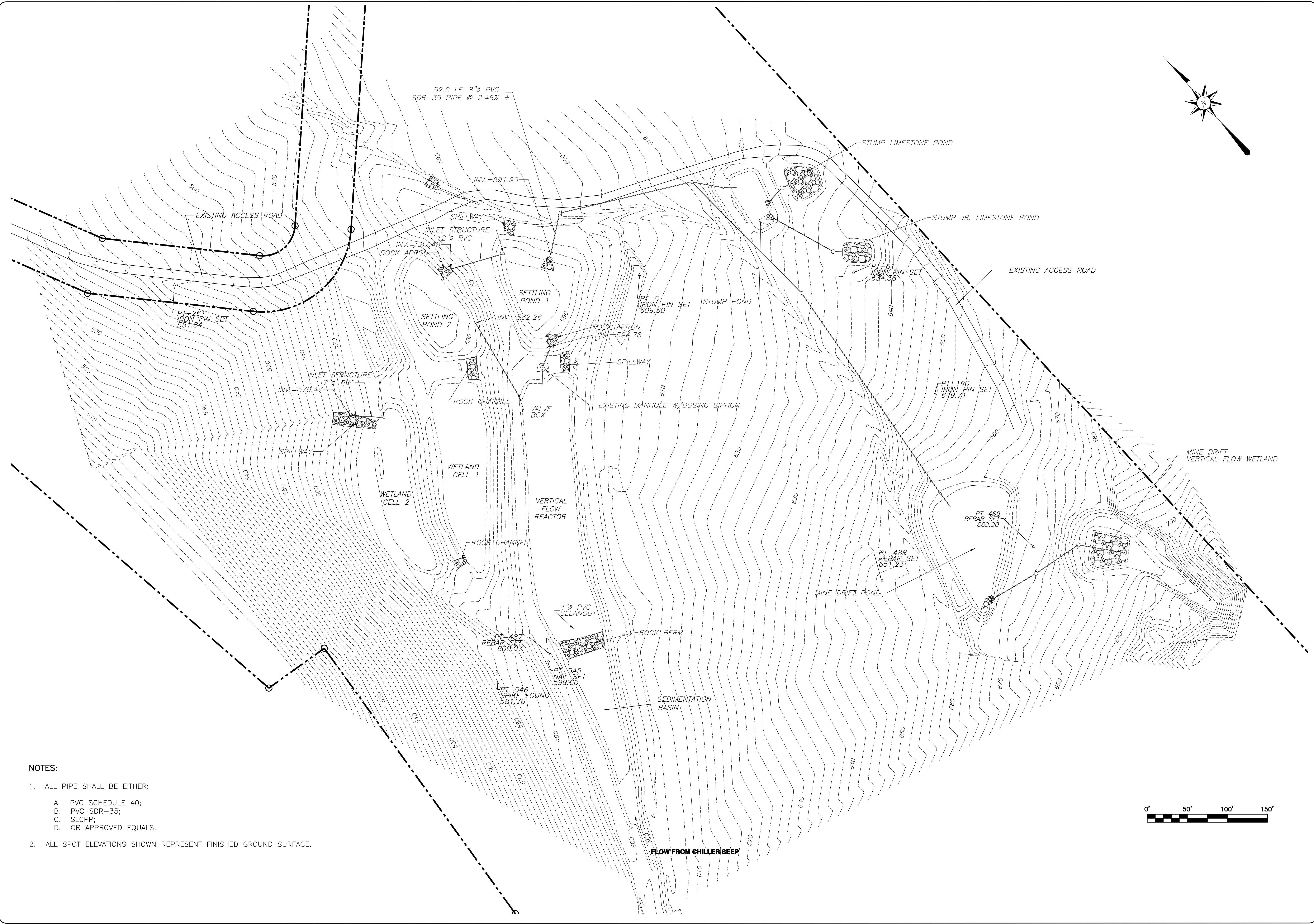


JOB NUMBER: 1601096	DATE: MAY 13 2002	<p style="text-align: center;">SKELLY AND LOY, INC. ENGINEERS-CONSULTANTS</p> <p style="text-align: center;">2601 NORTH FRONT STREET HARRISBURG, PENNSYLVANIA (800)892-6532 FAX (717)232-1799</p>
DRAWING NO. C-1 SHEET 1 OF 4		
"AS-BUILT PLAN" FOR STUMP SEEP MINE DRAINAGE ABATEMENT CENTRE COUNTY, PA RUSH TOWNSHIP GRADING PLAN		
DESIGN T.W.S. DATE: 05/13/02 DFTSMN B.A.S. DATE: 05/13/02 CHKR T.W.S. DATE: 05/13/02 APPY T.W.S. DATE: 05/13/02	TMS: 6/27/02 BY: APPY	SCALE: 1" = 50' DESCRIPTION: 1 AS-BUILT PLAN



- NOTES:**
- ALL PIPE SHALL BE EITHER:
 - PVC SCHEDULE 40;
 - PVC SDR-35;
 - SLCPP;
 - OR APPROVED EQUALS.
 - ALL SPOT ELEVATIONS SHOWN REPRESENT FINISHED GROUND SURFACE.

DRAWING NO. C-1	SHEET 1 OF 4
"AS-BUILT PLAN" for STUMP JR. SEEP MINE DRAINAGE ABATEMENT CENTRE COUNTY, PA RUSH TOWNSHIP GRADING PLAN	
DESIGN T.W.S. DATE 05/13/02	DESIGN B.A.S. DATE 05/13/02
CHECKER T.W.S. DATE 05/13/02	APPROVED APPV DATE 6/27/03
SCALE 1" = 50'	
1 AS-BUILT PLAN REV	DESCRIPTION BY DATE
SKELLY AND LOY, INC. ENGINEERS-CONSULTANTS 2601 NORTH FRONT STREET HARRISBURG, PENNSYLVANIA (800)892-6532 FAX (717)232-1799 (717)232-0593	
JOB NUMBER: 1601096	DATE: MAY 13 2002



- NOTES:**
- ALL PIPE SHALL BE EITHER:
 - PVC SCHEDULE 40;
 - PVC SDR-35;
 - SLCPP;
 - OR APPROVED EQUALS.
 - ALL SPOT ELEVATIONS SHOWN REPRESENT FINISHED GROUND SURFACE.

DRAWING NO.	C-1		
	SHEET	1 OF 4	
"AS-BUILT PLAN" FOR CHILLER SEEP MINE DRAINAGE ABATEMENT			
RUSH TOWNSHIP		CENTRE COUNTY, PA.	
DATE	05/13/02	DATE	05/13/02
T.W.S.	B.A.S.	T.W.S.	B.A.S.
CHKR	APPR	CHKR	APPR
SCALE: 1" = 50'		DATE: 6/27/03	
REV		DESCRIPTION	DATE
1	AS-BUILT PLAN		
BY: TMS		DATE: 6/27/03	
APPV: BAS		DATE: 6/27/03	
SKELLY AND LOY, INC. ENGINEERS-CONSULTANTS 2601 NORTH FRONT STREET HARRISBURG, PENNSYLVANIA (800)892-6532 FAX (717)232-1799 (717)232-0593			
JOB NUMBER:	1601096	DATE:	MAY 13 2002

CONSTRUCTION SEQUENCE

1. MOBILIZE EQUIPMENT AND PERSONNEL ON SITE.
2. STAKE OUT LIMITS OF WORK.
3. INSTALL CULVERT AND ROCK FILTER FOR ROAD CROSSING AT WESTERN LIMIT OF WORK AREA. UTILIZE TEMPORARY SANDBAG COFFER DAM AS NEEDED.
4. GRADE AND CONSTRUCT ACCESS ROAD TO STUMP SEEP, STUMP JR. SEEP, AND MINE DRIFT AREAS. INSTALL FILTER FABRIC FENCE AND/OR SEDIMENT TRAPS AS NEEDED TO CONTROL RUNOFF FROM THE ACCESS ROAD.
5. INSTALL FILTER FABRIC FENCE AT LOCATIONS SHOWN.
6. CONSTRUCT PIPING SYSTEM AND MANHOLE NUMBERS 2, 3, AND 4 FROM EXISTING BASIN TO MINE DRIFT POND BEGINNING DOWNSLOPE AND PROCEEDING UPSLOPE. UTILIZE TEMPORARY SANDBAG COFFER DAM AS NEEDED TO INSTALL PIPING BETWEEN FLARED END SECTION #2 AND MANHOLE #4.
7. CONSTRUCT MINE DRIFT POND WITH EMERGENCY SPILLWAY. INSTALL IN-LINE STRUCTURE.
8. CONSTRUCT PIPING SYSTEM FROM MINE DRIFT POND TO DOSING SIPHON #1. CONSTRUCT MINE DRIFT VERTICAL FLOW WETLAND (VFW). INSTALL BENTONITE LINE, PIPING, AND LIMESTONE IN MINE DRIFT VFW.
9. CONCURRENT WITH ITEM NUMBERS 7 AND 8, CONSTRUCT PIPING SYSTEM FROM MANHOLE #3 TO IN-LINE STRUCTURE IN STUMP POND. CONSTRUCT STUMP POND WITH EMERGENCY SPILLWAY.
10. CONSTRUCT PIPING SYSTEM FROM RISER TO DOSING SIPHONS #2 AND #3. CONSTRUCT STUMP LIMESTONE POND AND STUMP JR. LIMESTONE POND. INSTALL PIPING AND LIMESTONE IN PONDS.
11. SEED AND MULCH DISTURBED AREAS ON SITE.
12. UPON SITE STABILIZATION, REMOVE FILTER FABRIC FENCE.

E&S NOTES

EROSION AND SEDIMENT CONTROLS MUST BE CONSTRUCTED, STABILIZED, AND FUNCTIONAL BEFORE SITE DISTURBANCE BEGINS WITHIN THE TRIBUTARY AREAS OF THOSE CONTROLS.

AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT CONTROLS, SUCH AS FILTER FABRIC FENCE AND ROCK FILTERS, MUST BE REMOVED. AREAS DISTURBED DURING THE REMOVAL OF THE TEMPORARY CONTROLS MUST BE STABILIZED IMMEDIATELY.

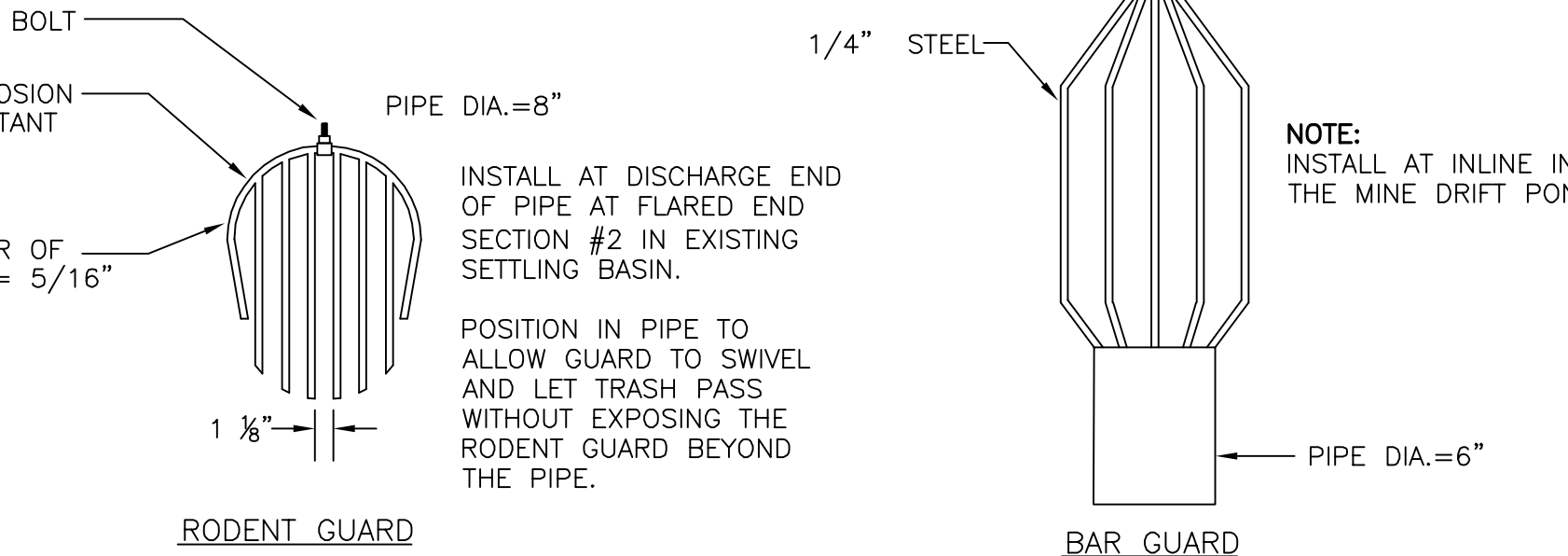
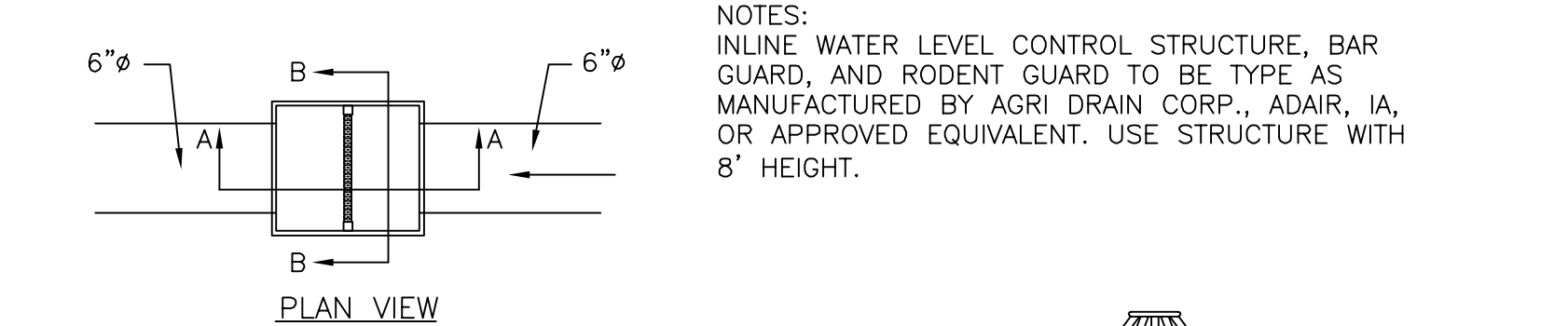
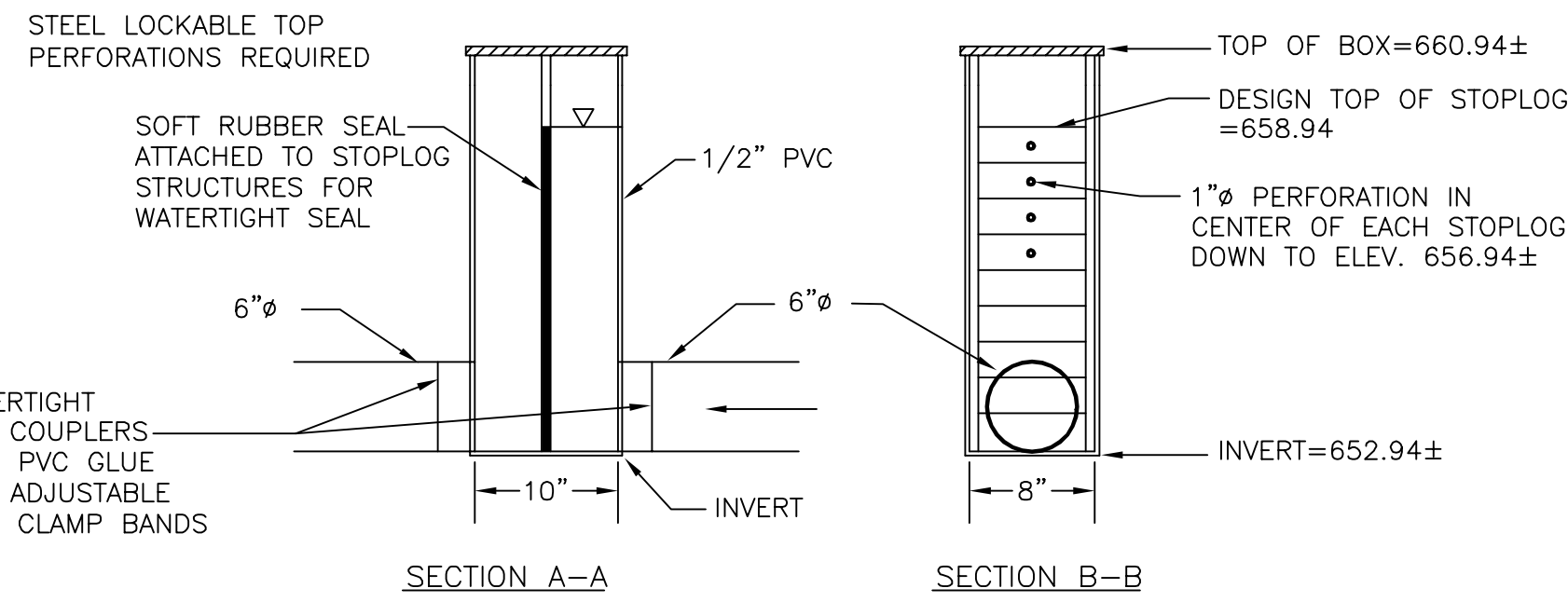
STOCKPILE HEIGHTS MUST NOT EXCEED 35 FEET. STOCKPILE SLOPES MUST BE 2H:1V OR FLATTER.

SEDIMENT MUST BE REMOVED FROM FILTER FABRIC FENCE WHEN ACCUMULATIONS REACH 1/2 OF THE ABOVE-GROUND HEIGHT OF THE FENCE.

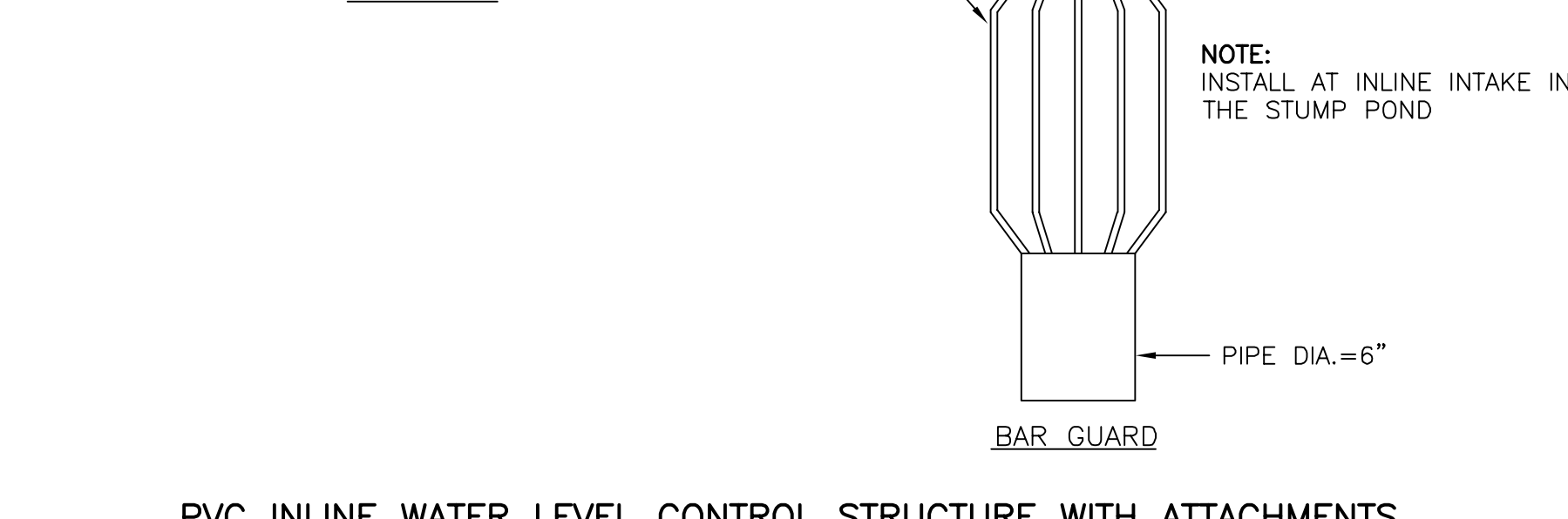
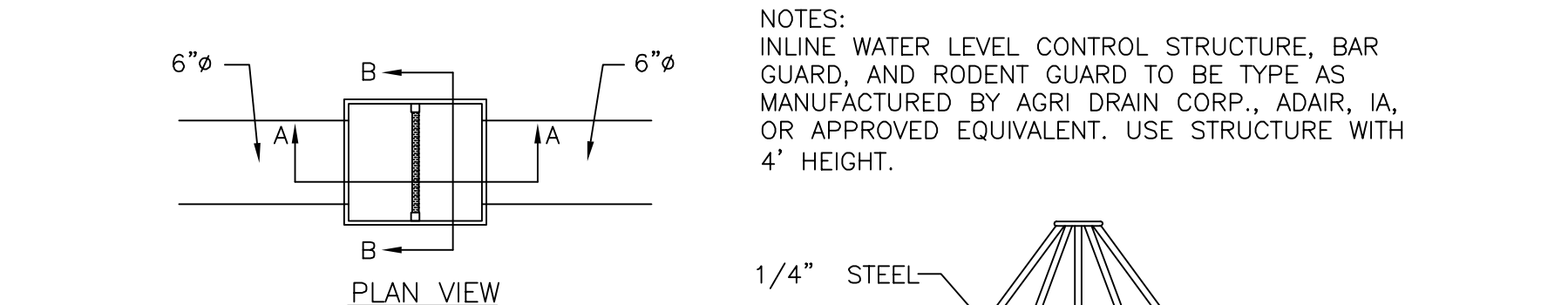
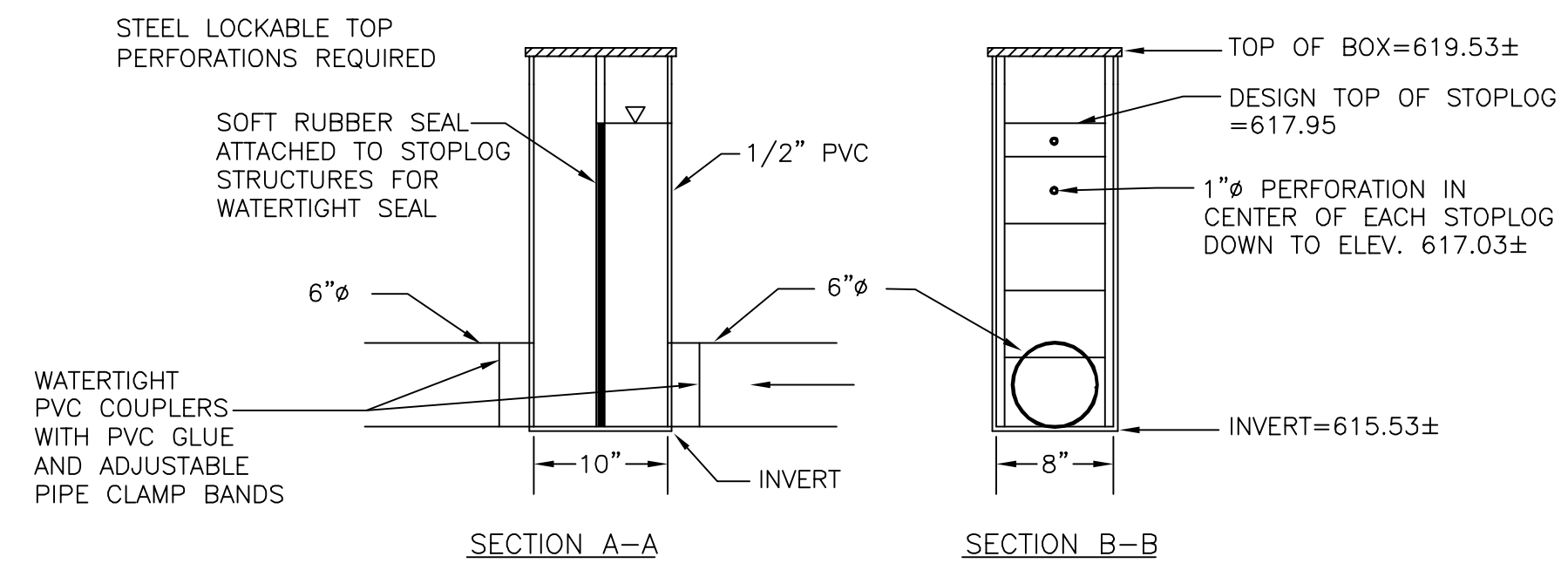
ANY FILTER FABRIC FENCE SECTION WHICH HAS BEEN UNDERMINED OR TOPPED MUST BE IMMEDIATELY REPLACED WITH A ROCK FILTER OUTLET.

SEDIMENT MUST BE REMOVED FROM ROCK FILTERS WHEN ACCUMULATIONS REACH 1/2 OF THE HEIGHT OF THE FILTERS.

UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT CONTROLS MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTION OF ALL CONTROLS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING, AND RENEWING MUST BE PERFORMED IMMEDIATELY. IF EROSION AND SEDIMENT CONTROLS FAIL TO PERFORM AS EXPECTED, REPLACEMENT OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.



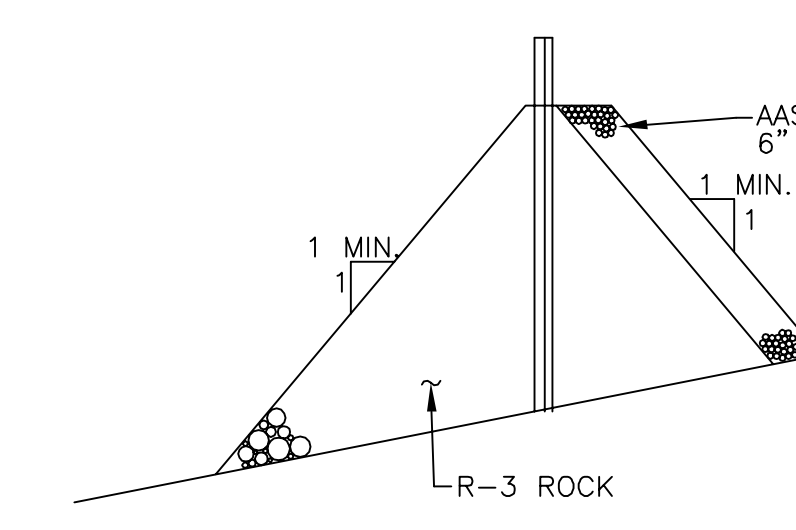
PVC INLINE WATER LEVEL CONTROL STRUCTURE WITH ATTACHMENTS
MINE DRIFT POND
NO SCALE



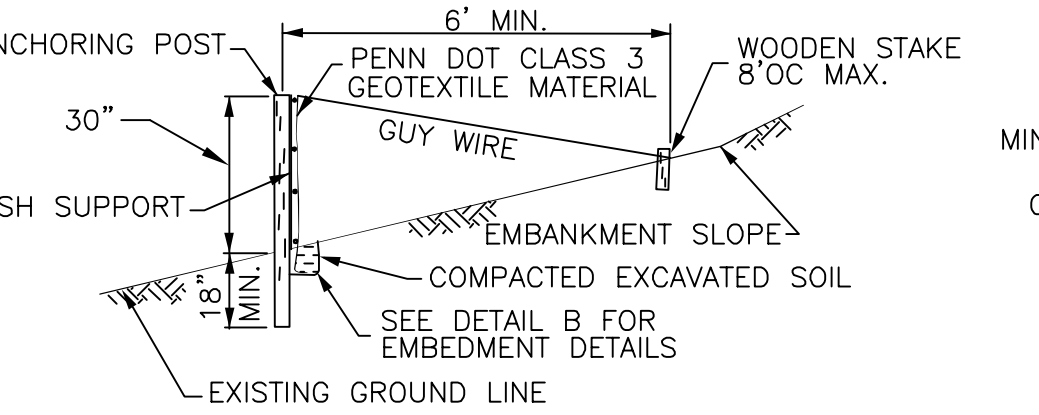
PVC INLINE WATER LEVEL CONTROL STRUCTURE WITH ATTACHMENTS
STUMP SEEP POND
NO SCALE

CONSTRUCTION NOTES:

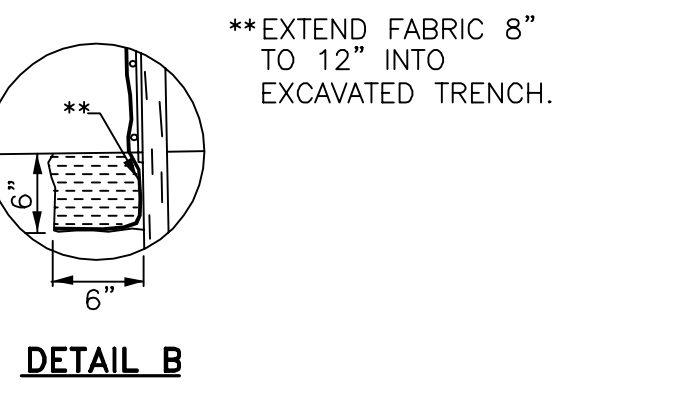
1. FILTER FABRIC FENCE MUST BE INSTALLED AT LEVEL GRADE. BOTH ENDS OF FENCE SECTION MUST EXTEND AT LEAST 10 FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT.
2. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
3. GEOTEXTILE TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
4. WHEN TWO SECTIONS OF GEOTEXTILE ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
5. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE ABOVE GROUND HEIGHT OF THE FENCE.
6. FILTER FABRIC FENCE SHALL NOT BE PLACED IN AREAS OF CONCENTRATED FLOW.
7. SEDIMENT SHALL BE REMOVED FROM A ROCK FILTER OUTLET WHEN ACCUMULATIONS REACH 1/3 THE HEIGHT OF THE OUTLET.



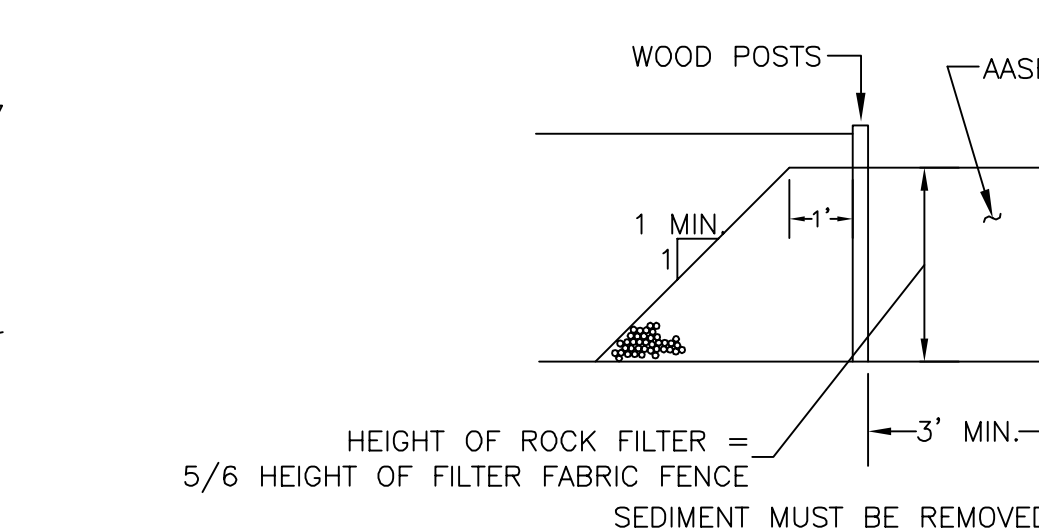
OUTLET CROSS SECTION



TOE OF SLOPE CONDITION



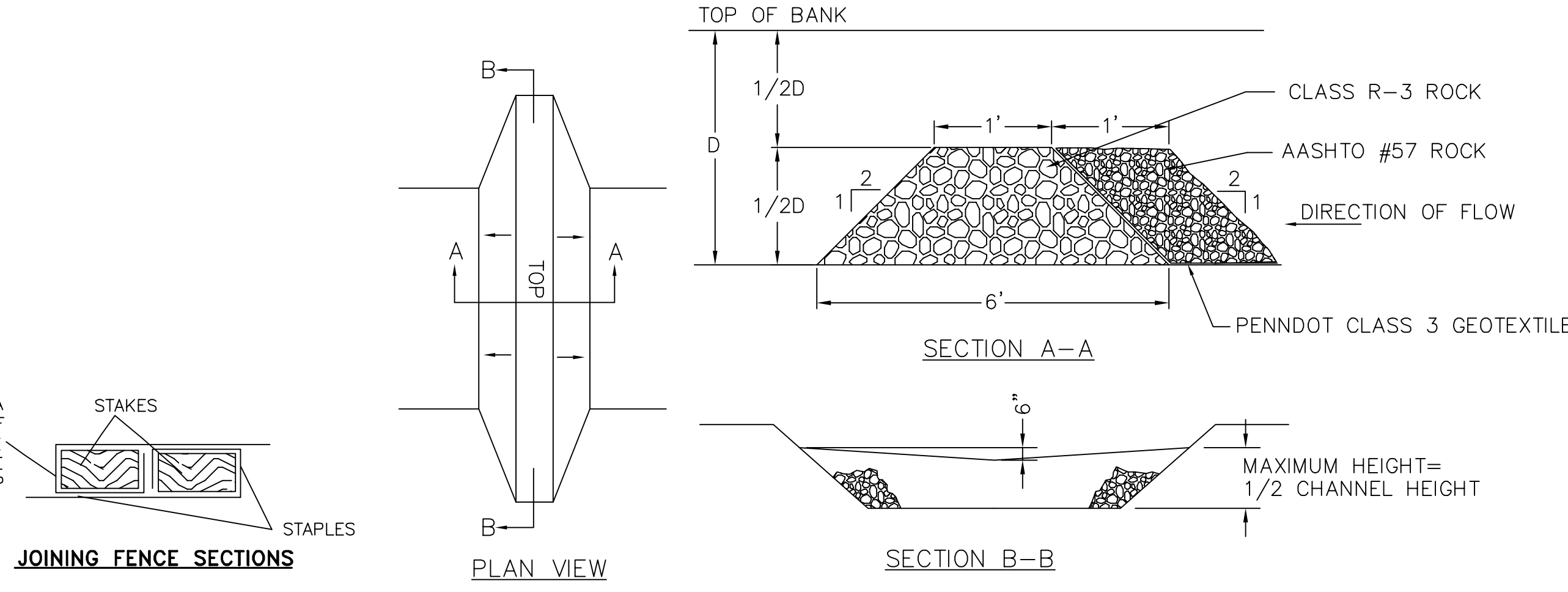
DETAIL B



UPSLOPE FACE OF OUTLET

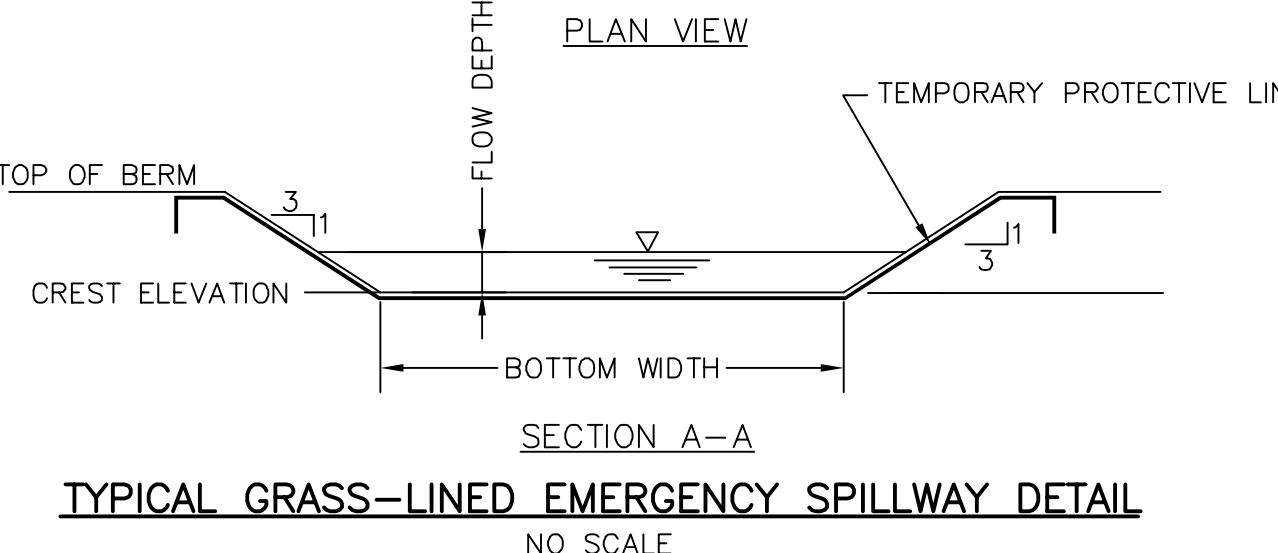
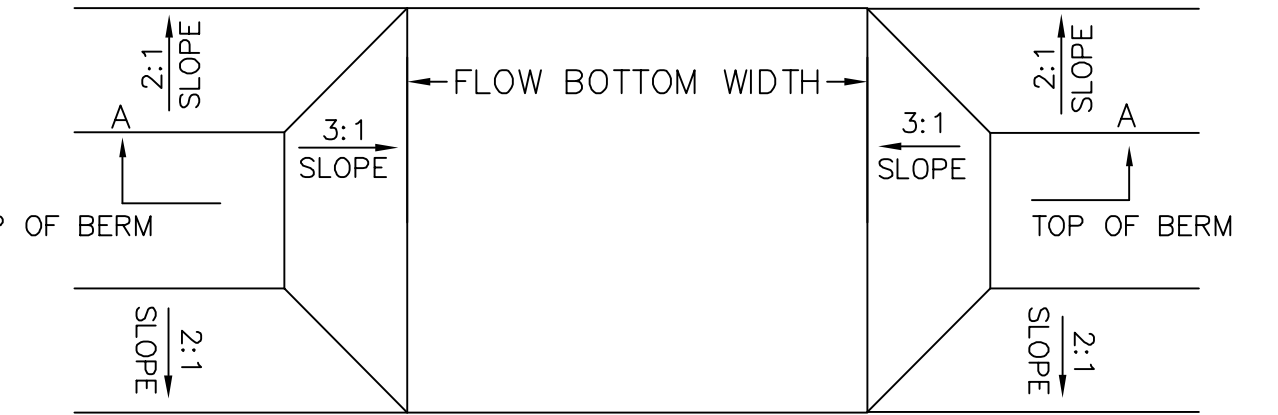
ROCK FILTER OUTLET DETAIL

FILTER FABRIC FENCE
NO SCALE

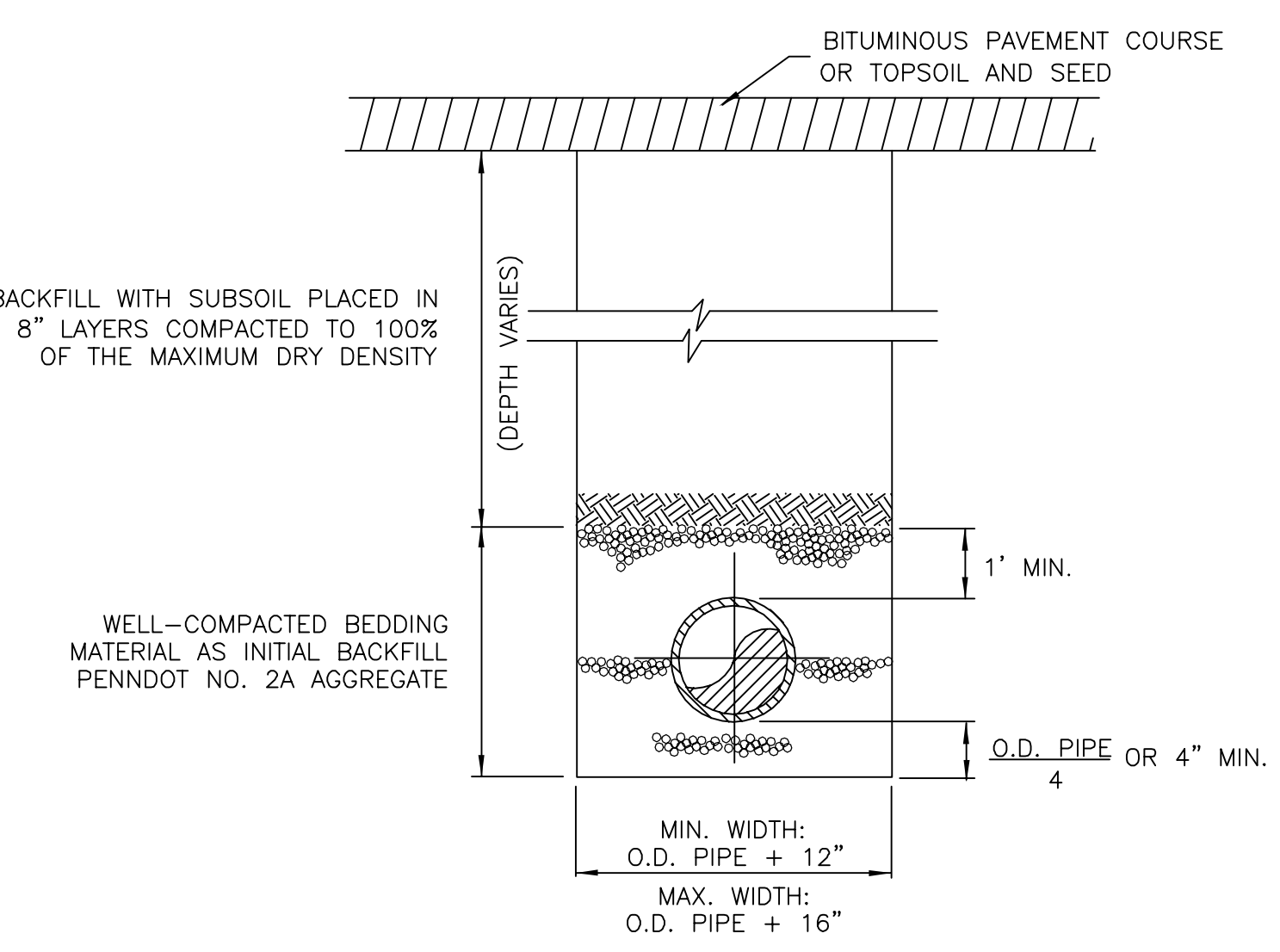


ROCK FILTER DETAIL
NO SCALE

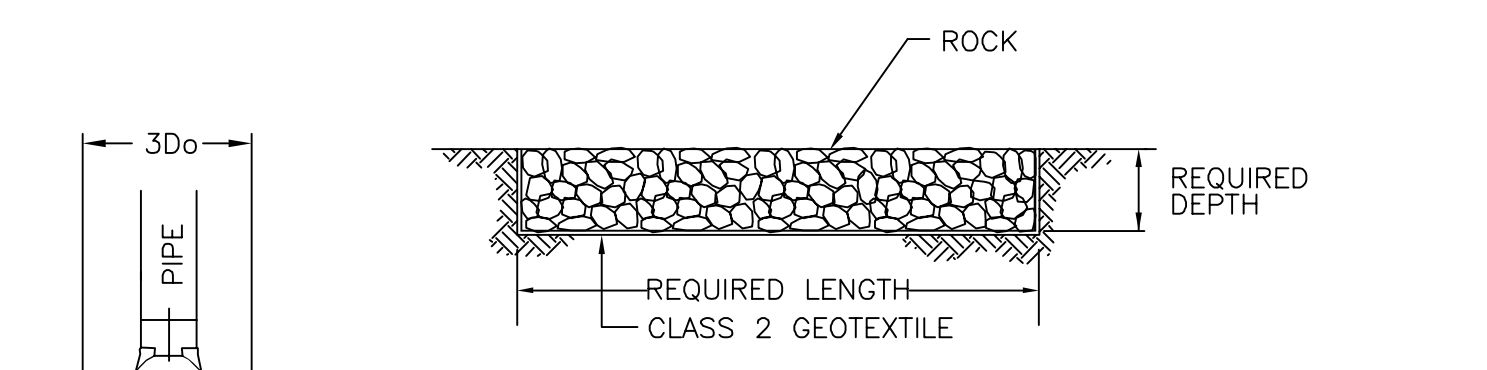
BASIN	TOP OF BERM ELEV.	SPILLWAY CREST ELEV.	FLOW BOTTOM WIDTH (FT)	FLOW DEPTH (FT)	TEMPORARY SPILLWAY LINING
MINE DRIFT SPILLWAY	662.54±	659.92±	6±	0.2±	JUTE MAT
STUMP SEEP SPILLWAY	620.07±	618.82±	8±	0.2±	JUTE MAT



TYPICAL GRASS-LINED EMERGENCY SPILLWAY DETAIL
NO SCALE



TYPICAL TRENCH AND BEDDING DETAIL
NO SCALE



ROCK APRON TABLE

DESIGNATION	TAILWATER CONDITION	3Dø	L	W	SIZE	REQUIRED DEPTH
1	MIN.	8'	24'	32'	R-5	30"
2 & 5	MAX.	3'	14'	9'	R-3	18"
3 & 4	MAX.	3'	8'	7'	R-3	18"

ROCK APRON
NO SCALE

DRAWING NO. **C-2** SHEET 2 OF 4

"AS-BUILT PLAN" FOR **MINE DRIFT/STUMP SEEP/STUMP JR. SEEP** MINE DRAINAGE ABATEMENT RUSH TOWNSHIP CENTRE COUNTY, PA

DATE: 05/13/02
DESIGN: T.W.S.
CHECK: B.A.S.
DATE: 05/13/02
SCALE: AS SHOWN

DATE: 6/27/03
TWS
APFY

DATE: 1
BUS
BY

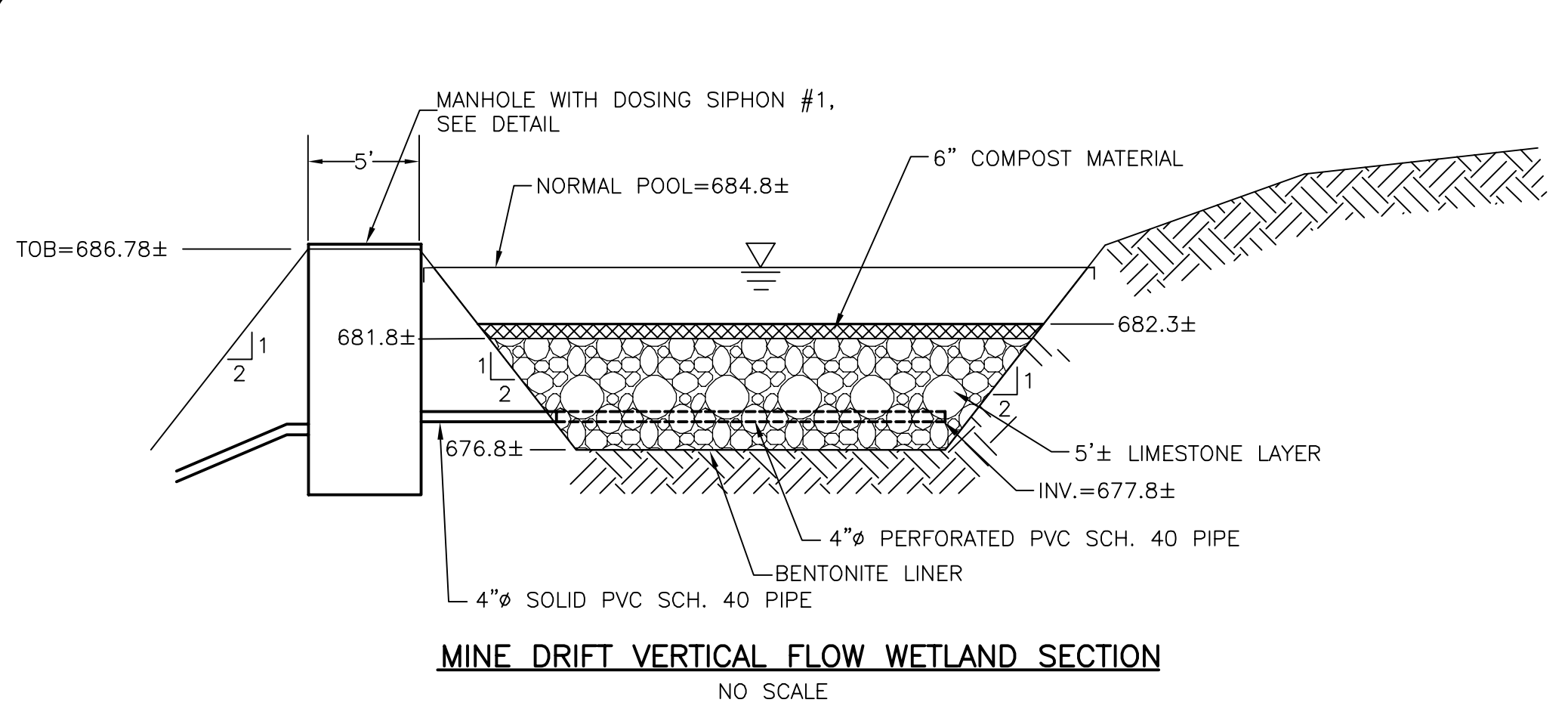
DESCRIPTION

SKELLY AND LOY, INC.
ENGINEERS-CONSULTANTS
2601 NORTH FRONT STREET
HARRISBURG, PENNSYLVANIA
(717)232-0593 (800)892-6532 FAX (717)232-1799

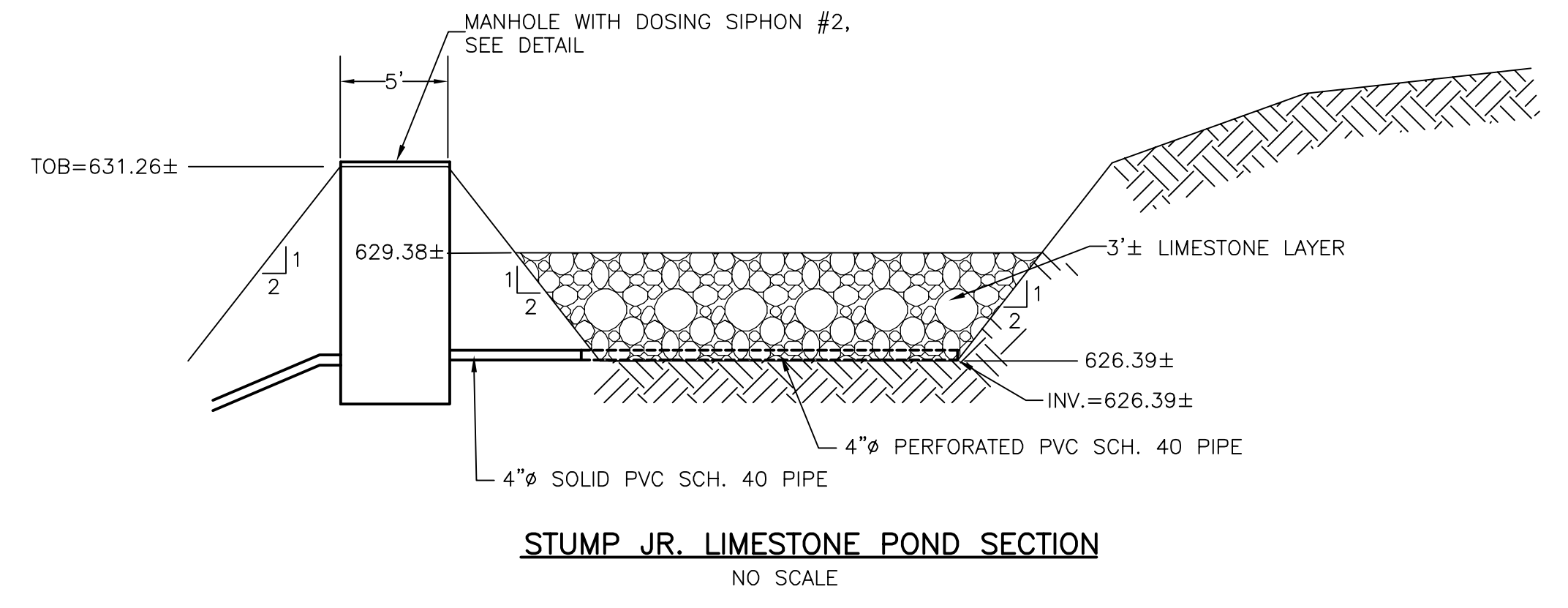
JOB NUMBER: 1601096
DATE: MAY 13 2002

REV	DESCRIPTION	DATE	BY	APPV
1	AS-BUILT PLAN	6/27/03	TWS	APV

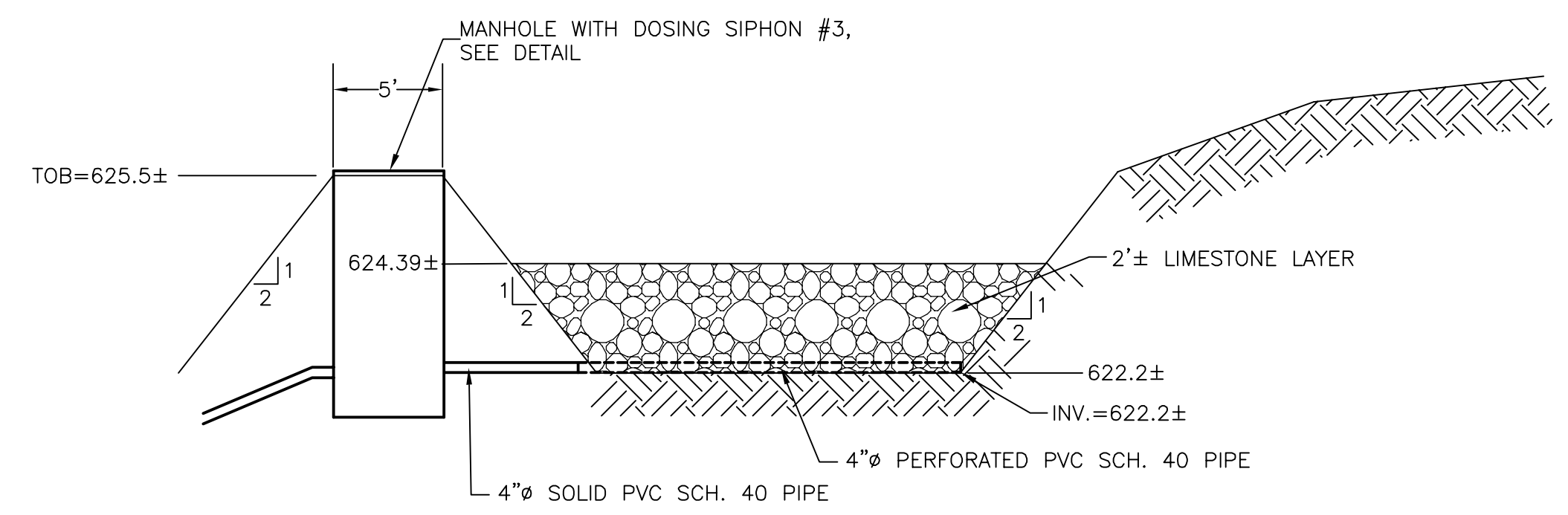
REV	DESCRIPTION	DATE	BY	APPV



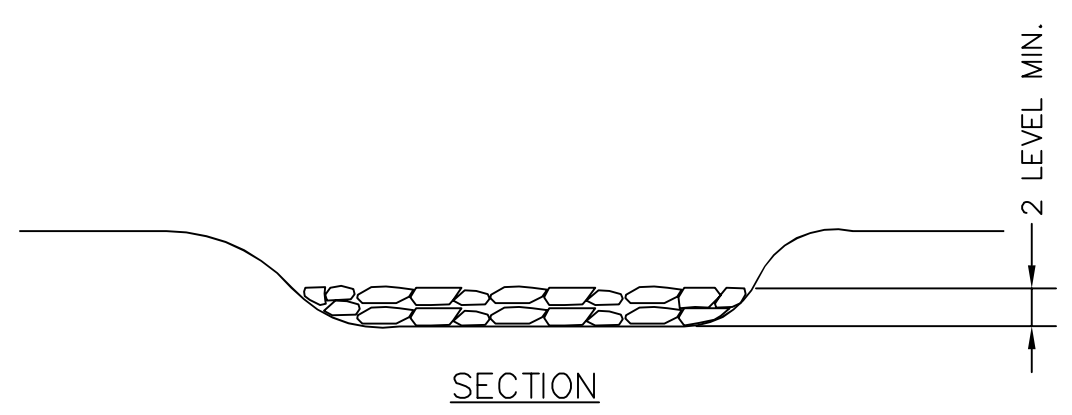
MINE DRIFT VERTICAL FLOW WETLAND SECTION
 NO SCALE



STUMP JR. LIMESTONE POND SECTION
 NO SCALE



STUMP LIMESTONE POND SECTION
 NO SCALE

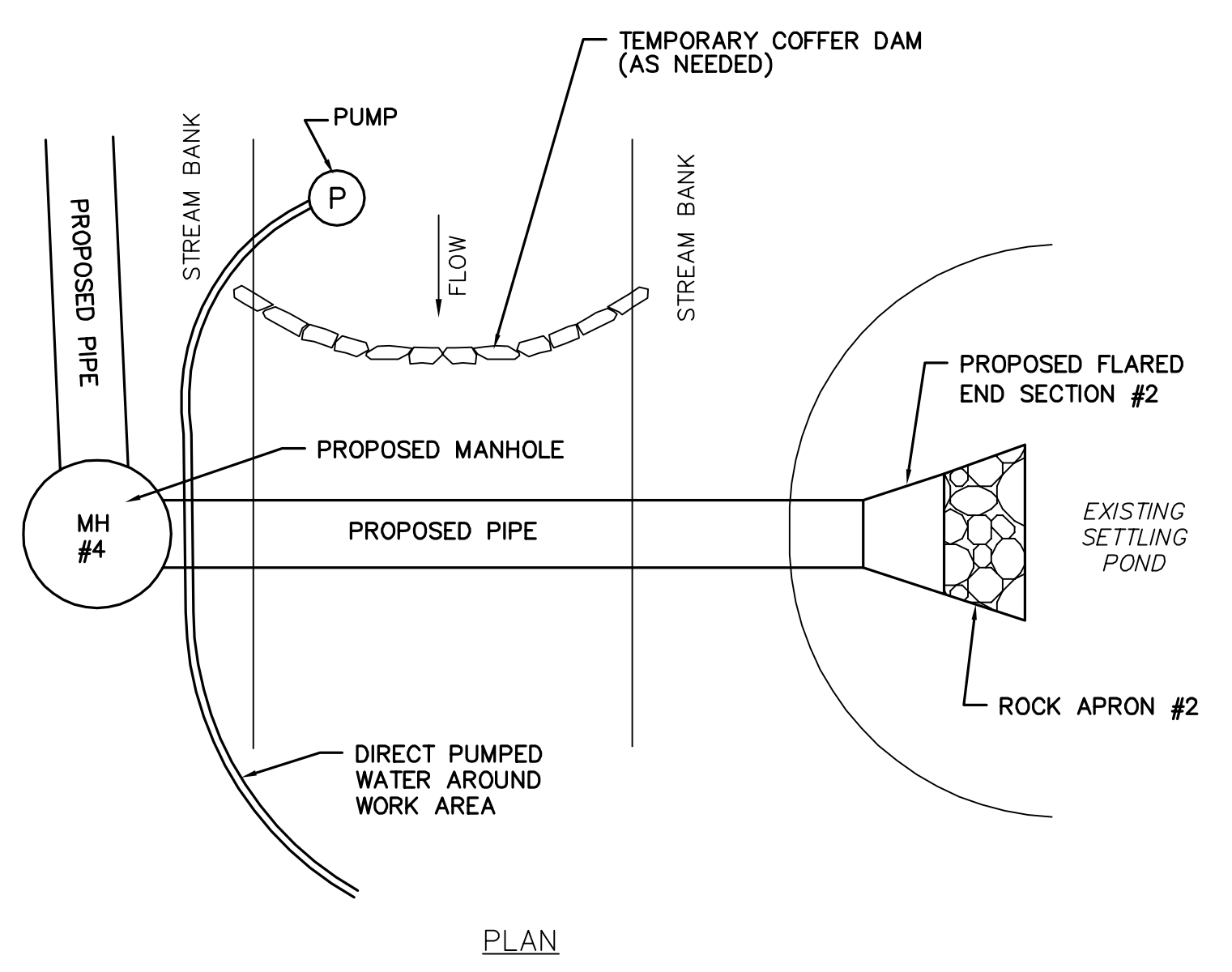


TEMPORARY COFFER DAM CONSTRUCTION SPECIFICATIONS:

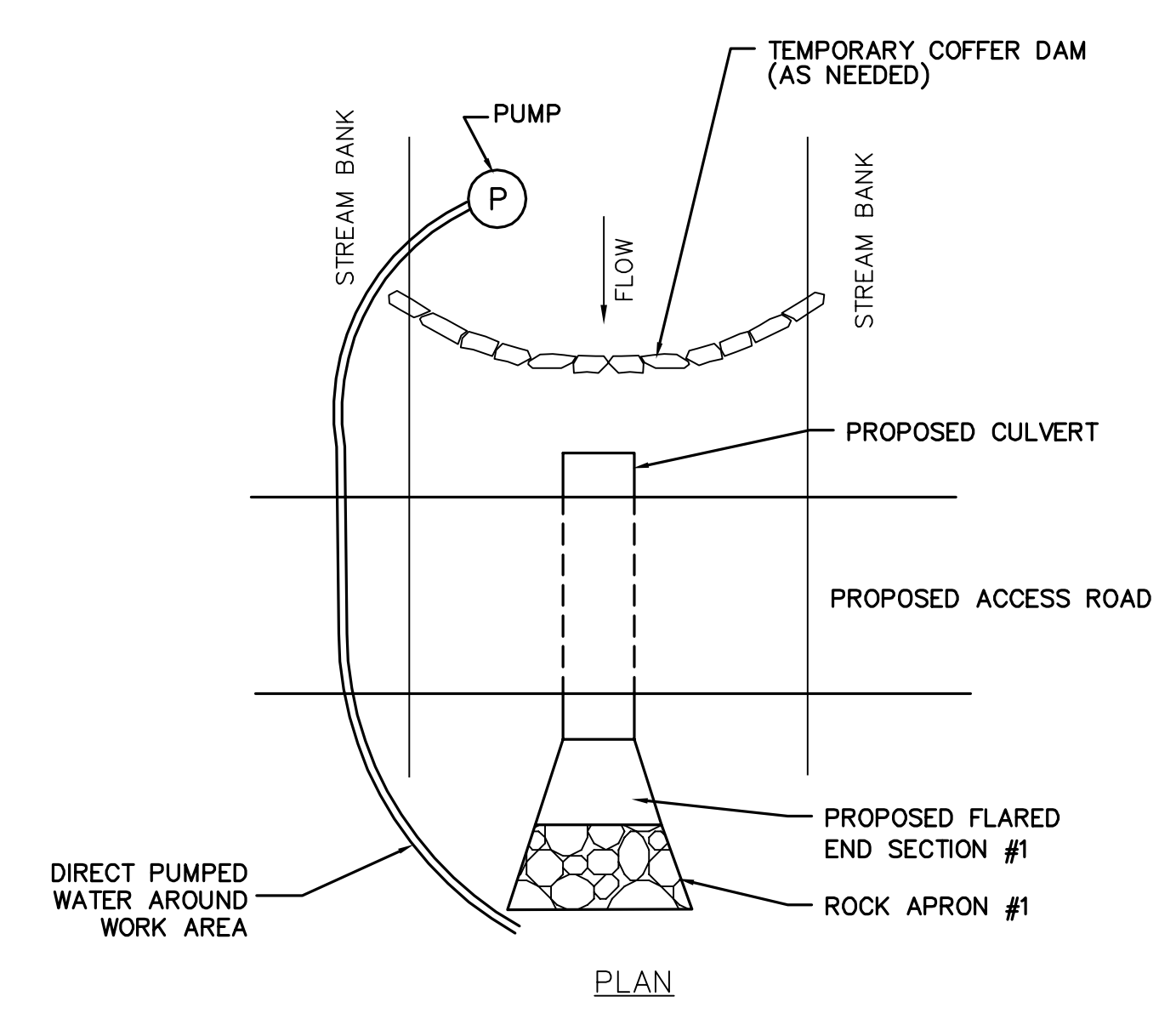
1. COFFER DAM SHALL CONSIST OF STACKED, SEALED, SAND BAGS.
2. SAND BAGS SHALL BE PLACED ACROSS ENTIRE WIDTH OF STREAM CHANNEL.
3. SAND BAGS SHALL BE STACKED TO AN ELEVATION 2' ABOVE NORMAL STREAM WATER ELEVATION. A MIN. OF 2 LEVELS OF SAND BAGS SHALL BE PLACED.
4. SAND BAGS SHALL BE STACKED SUCH THAT THE DAM IS STABLE. PROVIDE MULTIPLE ROWS OF BAGS AT BOTTOM TO STABILIZE DAM, IF NEEDED.

TEMPORARY COFFER DAM MAINTENANCE NOTES:

1. COFFER DAM AND PUMPING EQUIPMENT SHOULD BE INSPECTED ONCE PER HOUR DURING OPERATION.
2. ADD ADDITIONAL SAND BAG LEVELS IF POOL BEHIND DAM RISES ABOVE BOTTOM OF TOP LEVEL OF BAGS.
3. ADJUST AND REPLACE SAND BAGS AS INSPECTION REQUIRES.

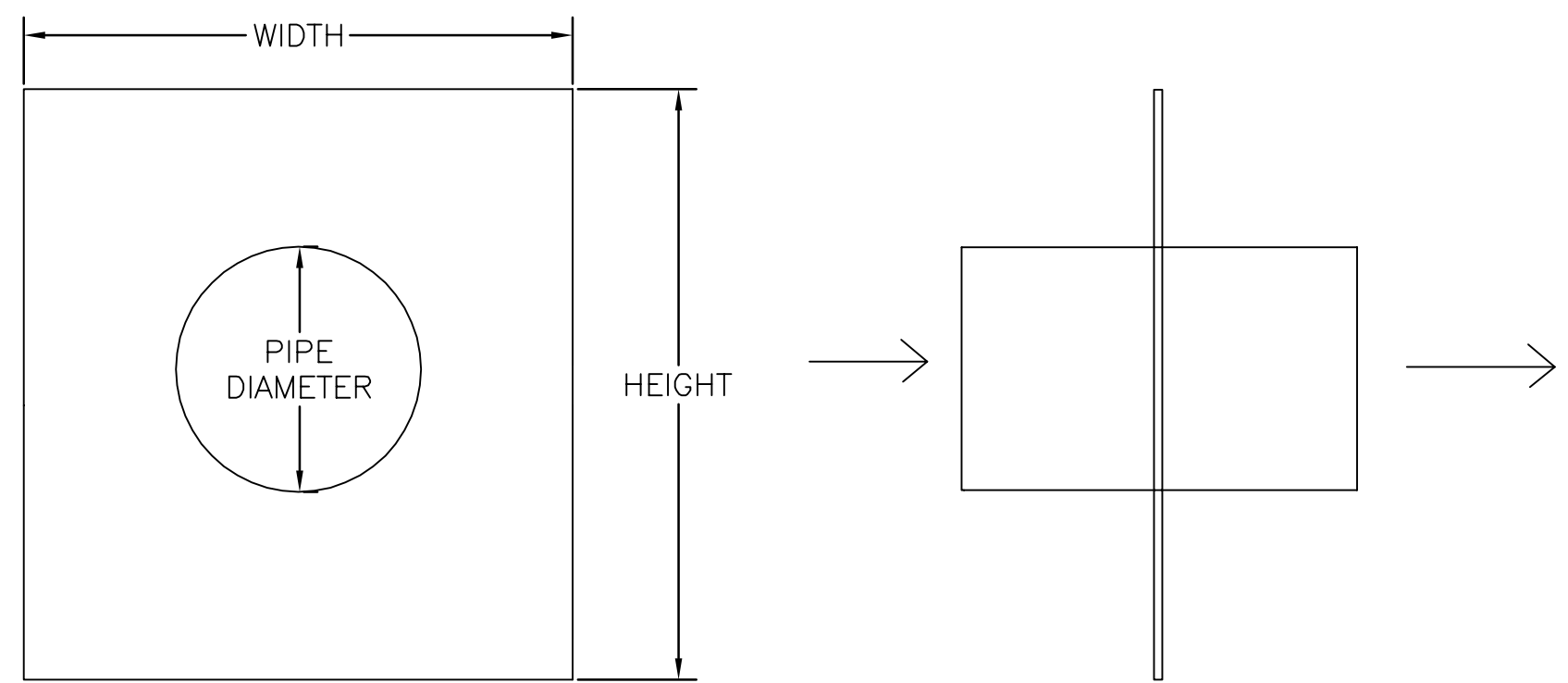


PLAN



PLAN

TEMPORARY COFFER DAM
 NO SCALE

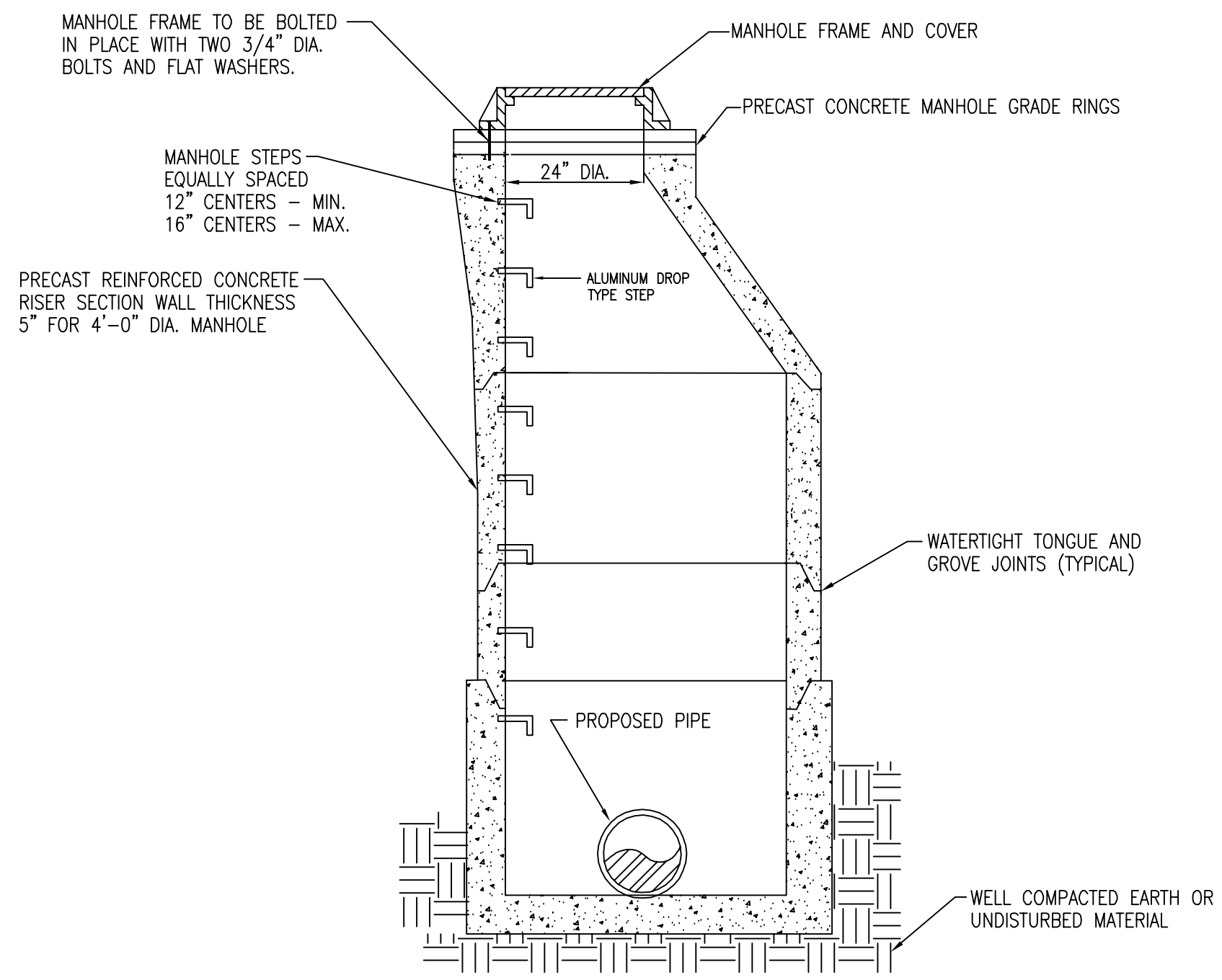


SECTION VIEW

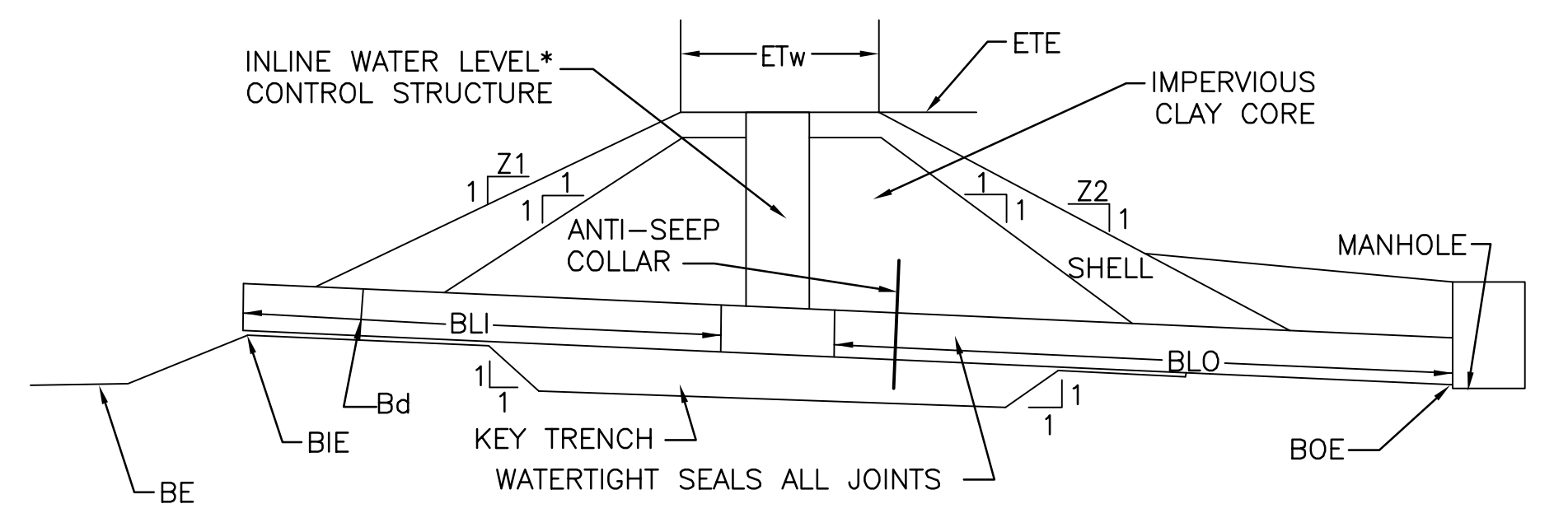
BASIN	PIPE DIAMETER (IN)	WIDTH AND HEIGHT (FT)	NUMBER OF COLLARS
MINE DRIFT POND	6	4	2
STUMP SEEP POND	6	4	2

NOTE: USE RUBBER ANTI-SEEP COLLARS AS MANUFACTURED BY AGRI DRAIN CORP, ADAIR, IOWA, FOR USE WITH PVC INLINE WATER LEVEL CONTROL STRUCTURES.

ANTI-SEEP COLLAR DETAIL
 NO SCALE



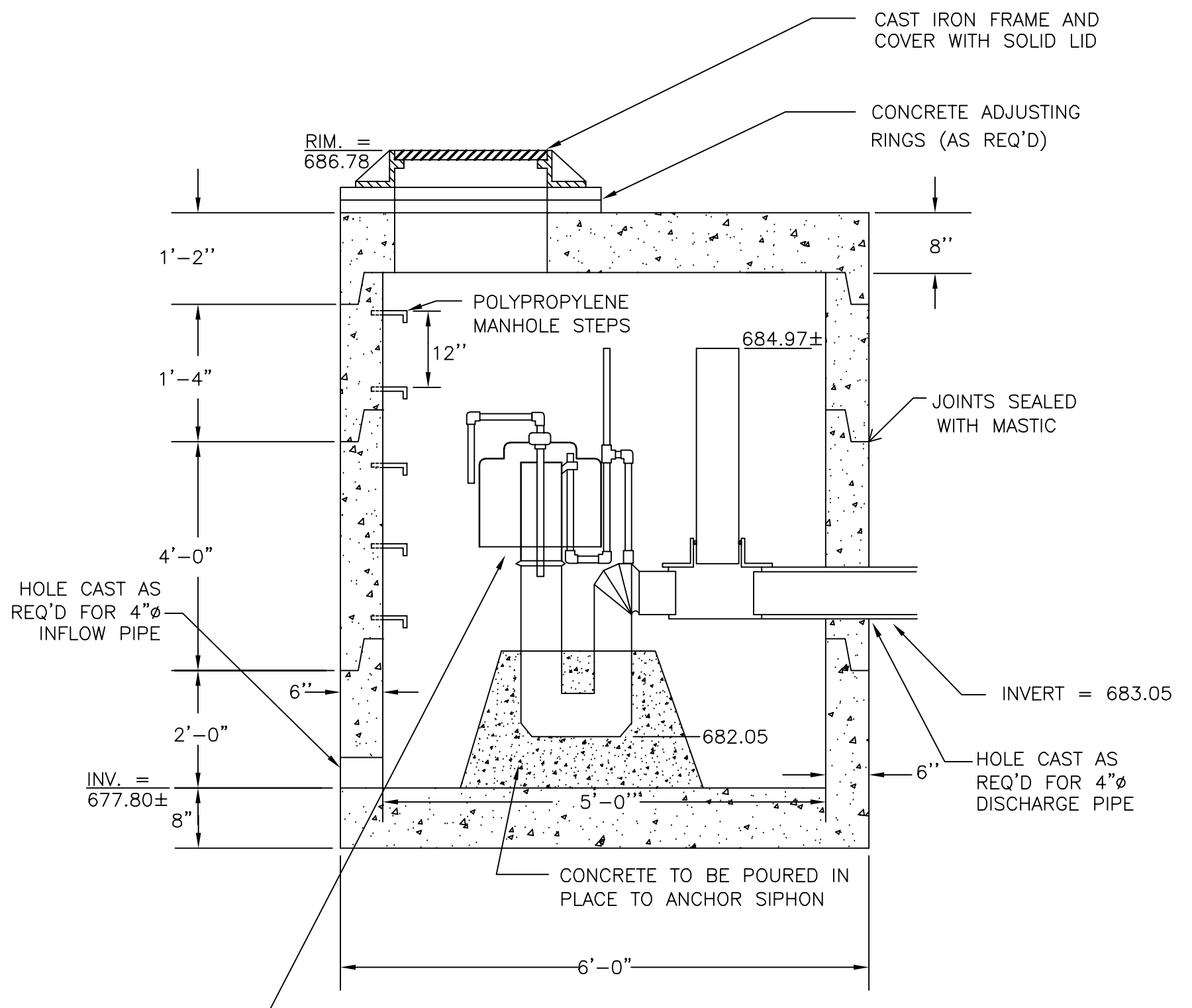
MANHOLE DETAIL
 NO SCALE



BASIN	INLET		BARREL		EMBANKMENT		BOTTOM
	Z1 (FT)	Z2 (FT)	INFLOW LENGTH (FT)	DISCHARGE LENGTH (FT)	OUTLET ELEV (FT)	TOP ELEV (FT)	
MINE DRIFT POND	2	2	6	20	301	620.14	662.54±
STUMP POND	2	2	6	18	37	607.10	620.07±

*ALSO REFER TO INLINE WATER LEVEL CONTROL STRUCTURE, EMERGENCY SPILLWAY, ROCK APRON, AND ANTI-SEEP COLLAR DETAILS.

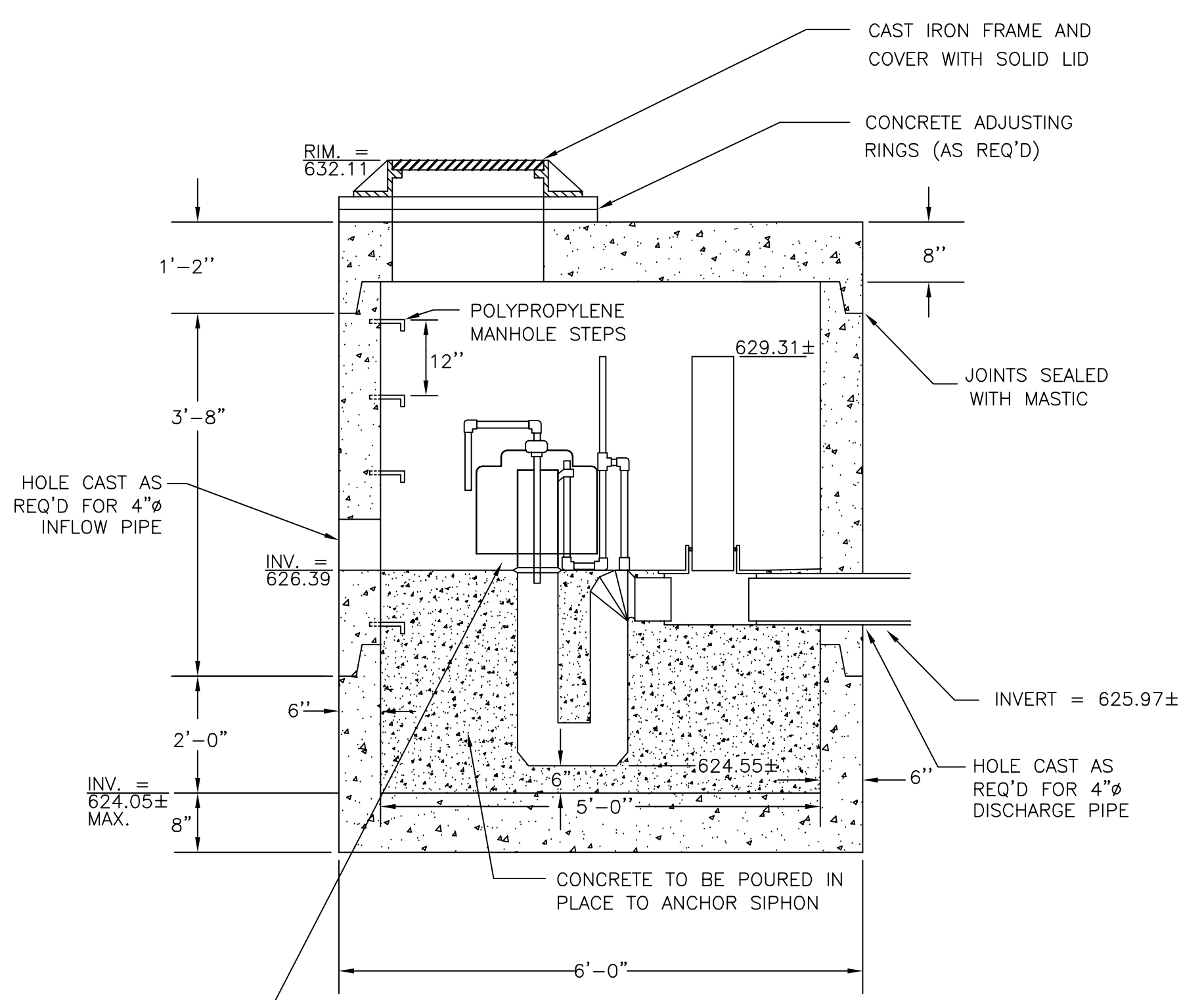
POND CROSS SECTION *
 NO SCALE



NOTE: MEETS ASTM C-478 SPECIFICATIONS

SEE MANUFACTURER'S INSTRUCTIONS FOR MOUNTING SIPHON IN MANHOLE.

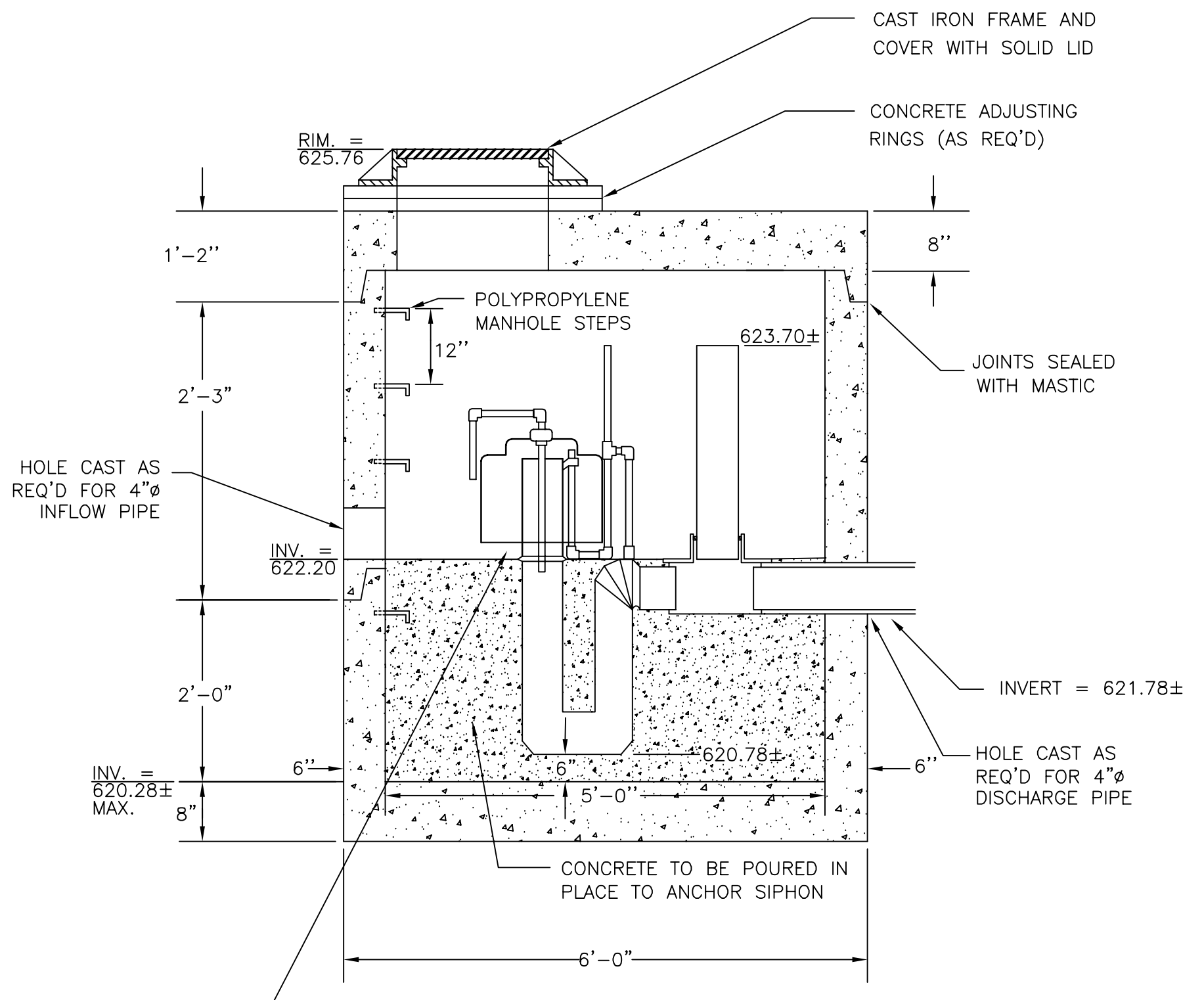
PRECAST CONCRETE MANHOLE #1 - 5' DIAMETER
NO SCALE



NOTE: MEETS ASTM C-478 SPECIFICATIONS

SEE MANUFACTURER'S INSTRUCTIONS FOR MOUNTING SIPHON IN MANHOLE.

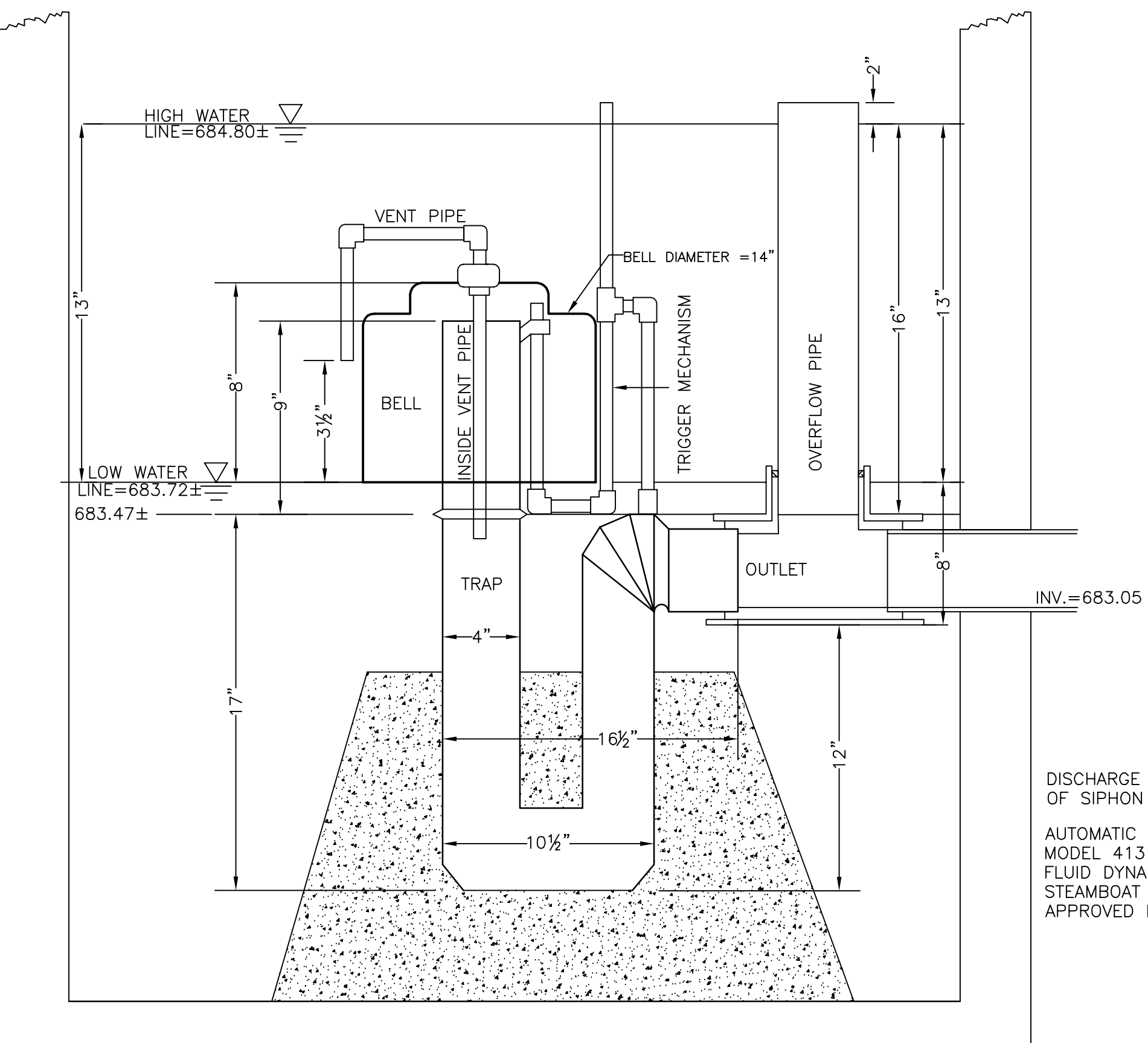
PRECAST CONCRETE MANHOLE #2 - 5' DIAMETER
NO SCALE



NOTE: MEETS ASTM C-478 SPECIFICATIONS

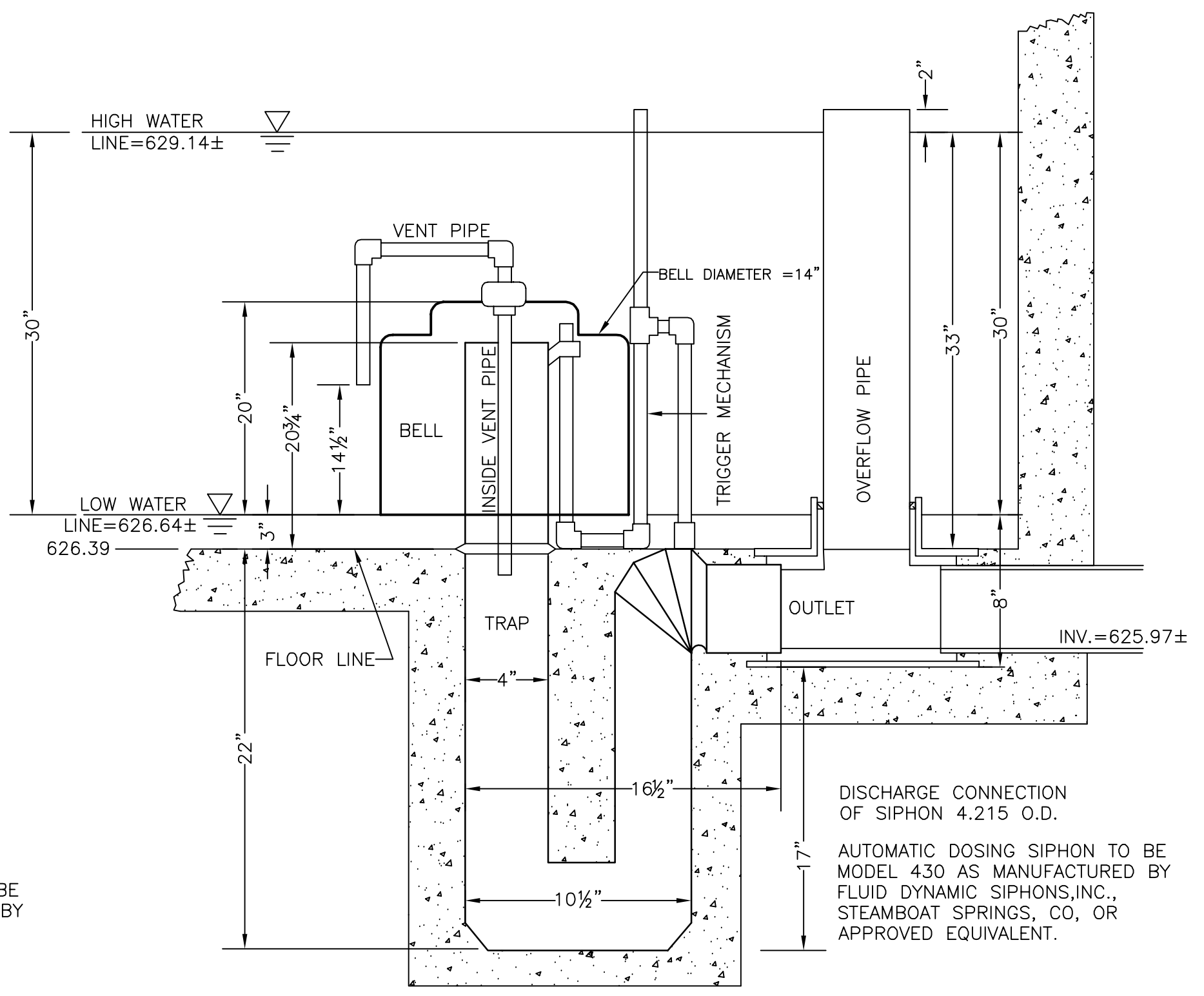
SEE MANUFACTURER'S INSTRUCTIONS FOR MOUNTING SIPHON IN MANHOLE.

PRECAST CONCRETE MANHOLE #3 - 5' DIAMETER
NO SCALE



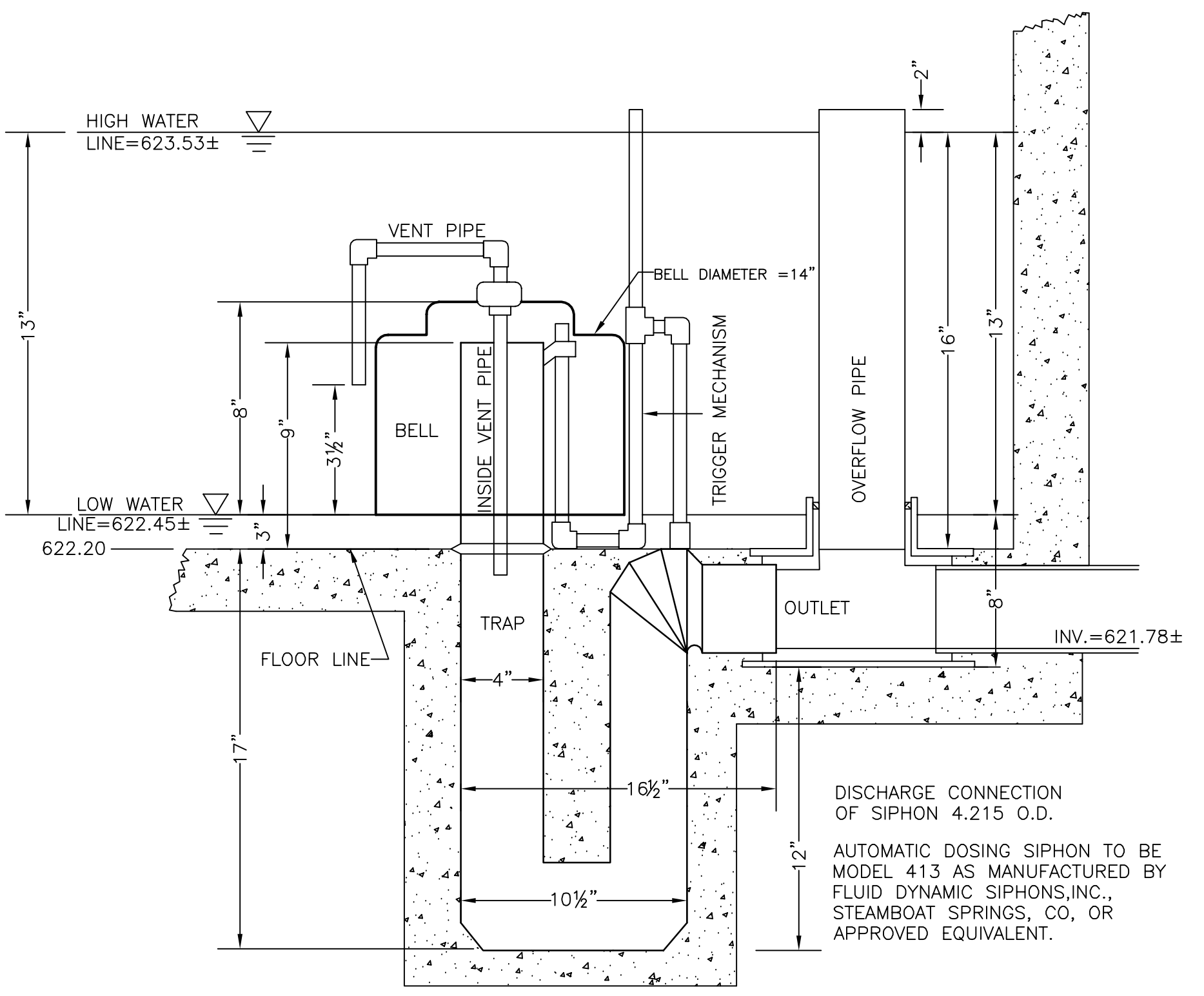
AUTOMATIC DOSING SIPHON (MH #1)
NO SCALE

MINE DRIFT DOSING MANHOLE #1
NO SCALE



AUTOMATIC DOSING SIPHON (MH #2)
NO SCALE

STUMP JR. SEEP DOSING MANHOLE #2
NO SCALE



AUTOMATIC DOSING SIPHON (MH #3)
NO SCALE

STUMP SEEP DOSING MANHOLE #3
NO SCALE

REV	DESCRIPTION	DATE	BY	APPV
1	AS-BUILT PLAN	6/27/03		

REV	DESCRIPTION	DATE	BY	APPV