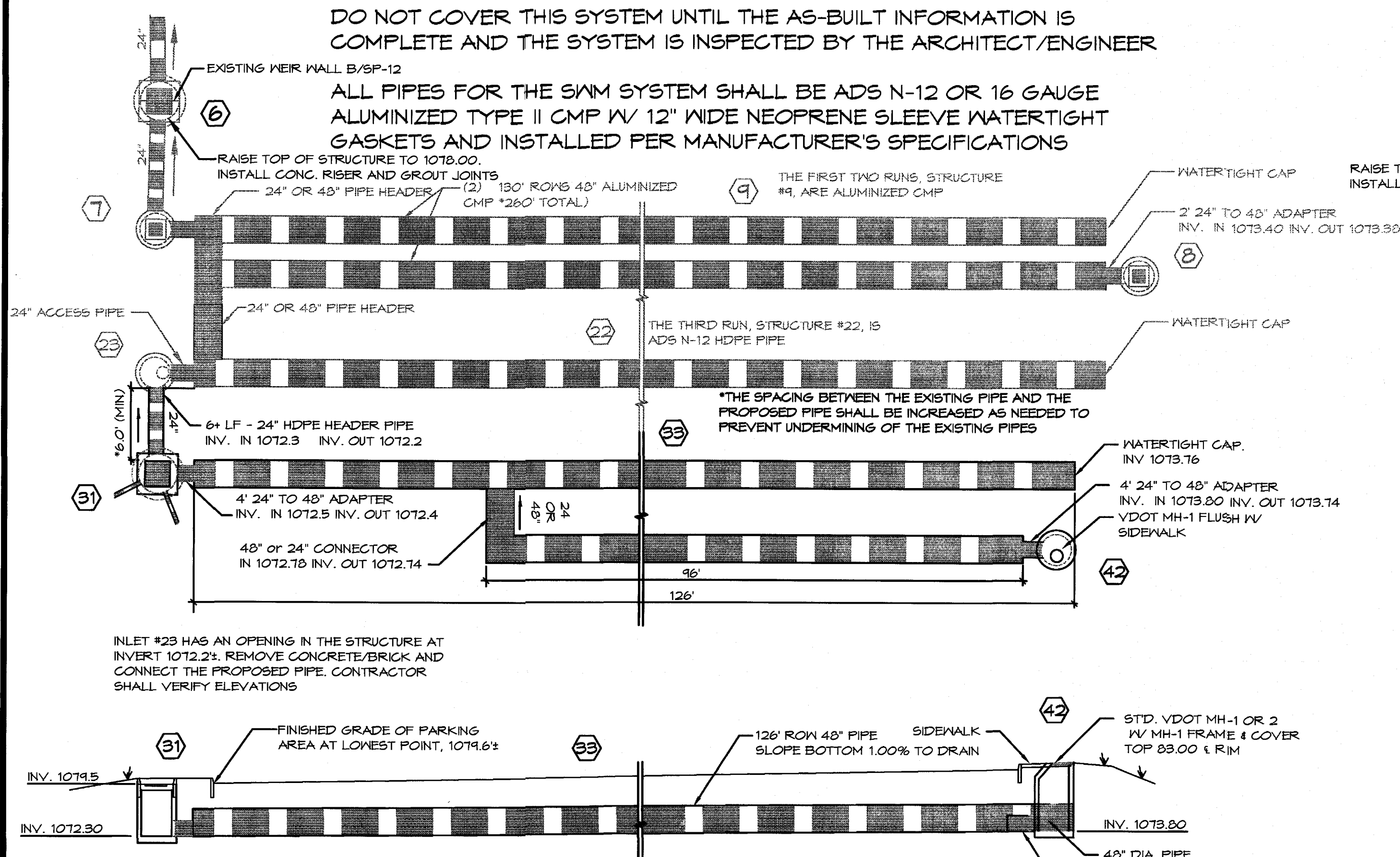


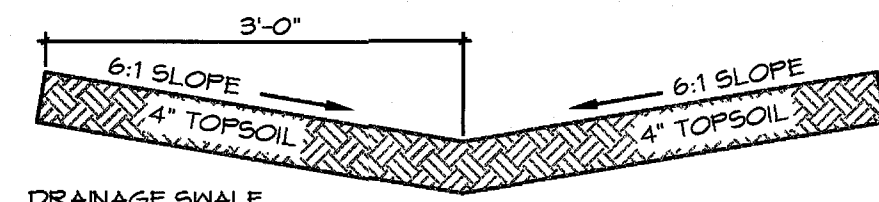
Drawn: 11/11/2015 11:03 AM
Checked: 11/11/2015 11:03 AM
Project: 124-43-00-101
Sheet: SP-12

DO NOT COVER THIS SYSTEM UNTIL THE AS-BUILT INFORMATION IS COMPLETE AND THE SYSTEM IS INSPECTED BY THE ARCHITECT/ENGINEER

ALL PIPES FOR THE SWM SYSTEM SHALL BE ADS N-12 OR 16 GAUGE ALUMINIZED TYPE II CMP W/ 12" WIDE NEOPRENE SLEEVE WATERTIGHT GASKETS AND INSTALLED PER MANUFACTURER'S SPECIFICATIONS

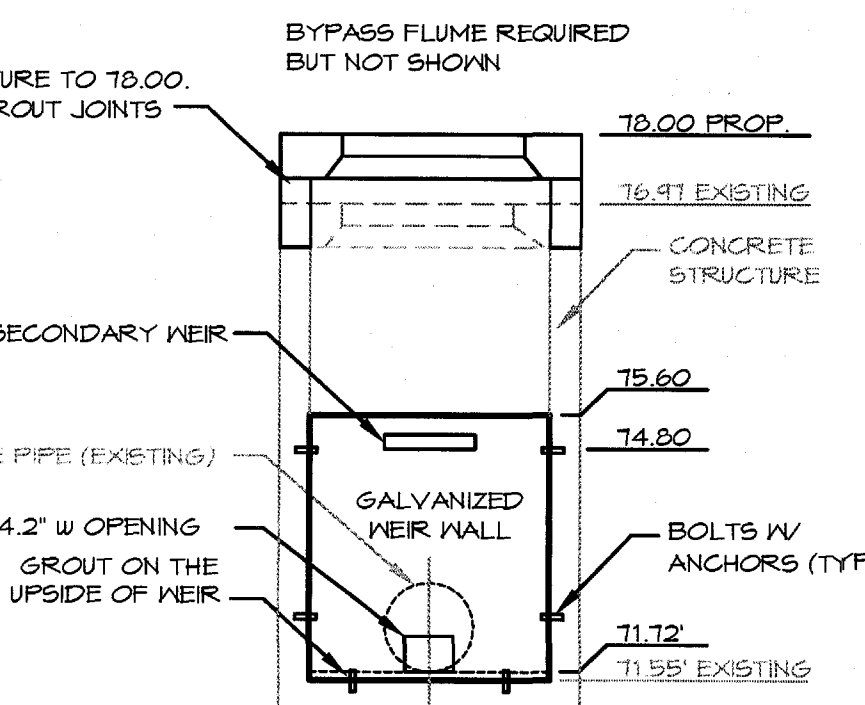


A UNDERGROUND STORMWATER MANAGEMENT SYSTEM
NO SCALE



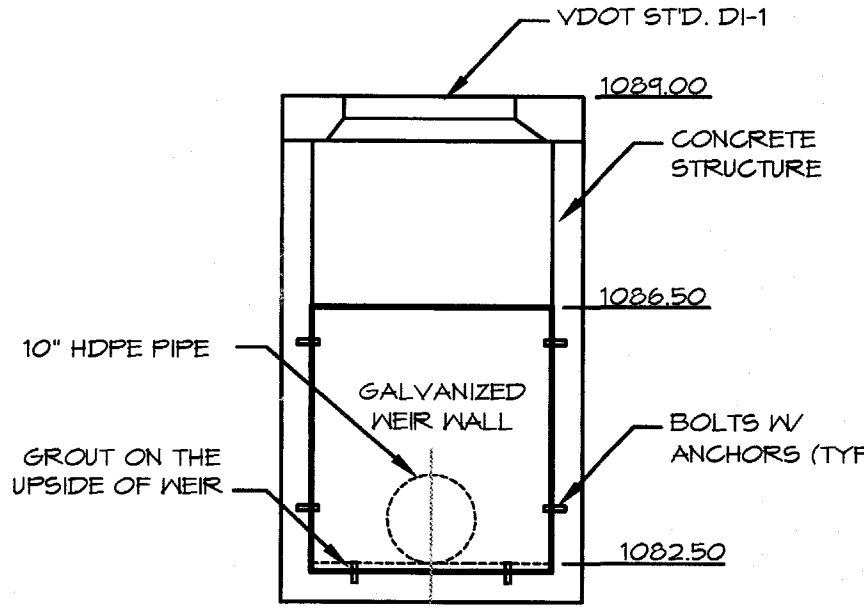
1. PERMANENT SEED AS SPECIFIED IN THE SPECIFICATIONS
2. THE LONGITUDINAL SLOPE MATCHES THE PARKING LOT/SIDEWALK
3. THE CENTER OF THE SWALE IS 8' FROM THE BACK OF THE SIDEWALK

E DRAINAGE SWALE (#34)
NOT TO SCALE



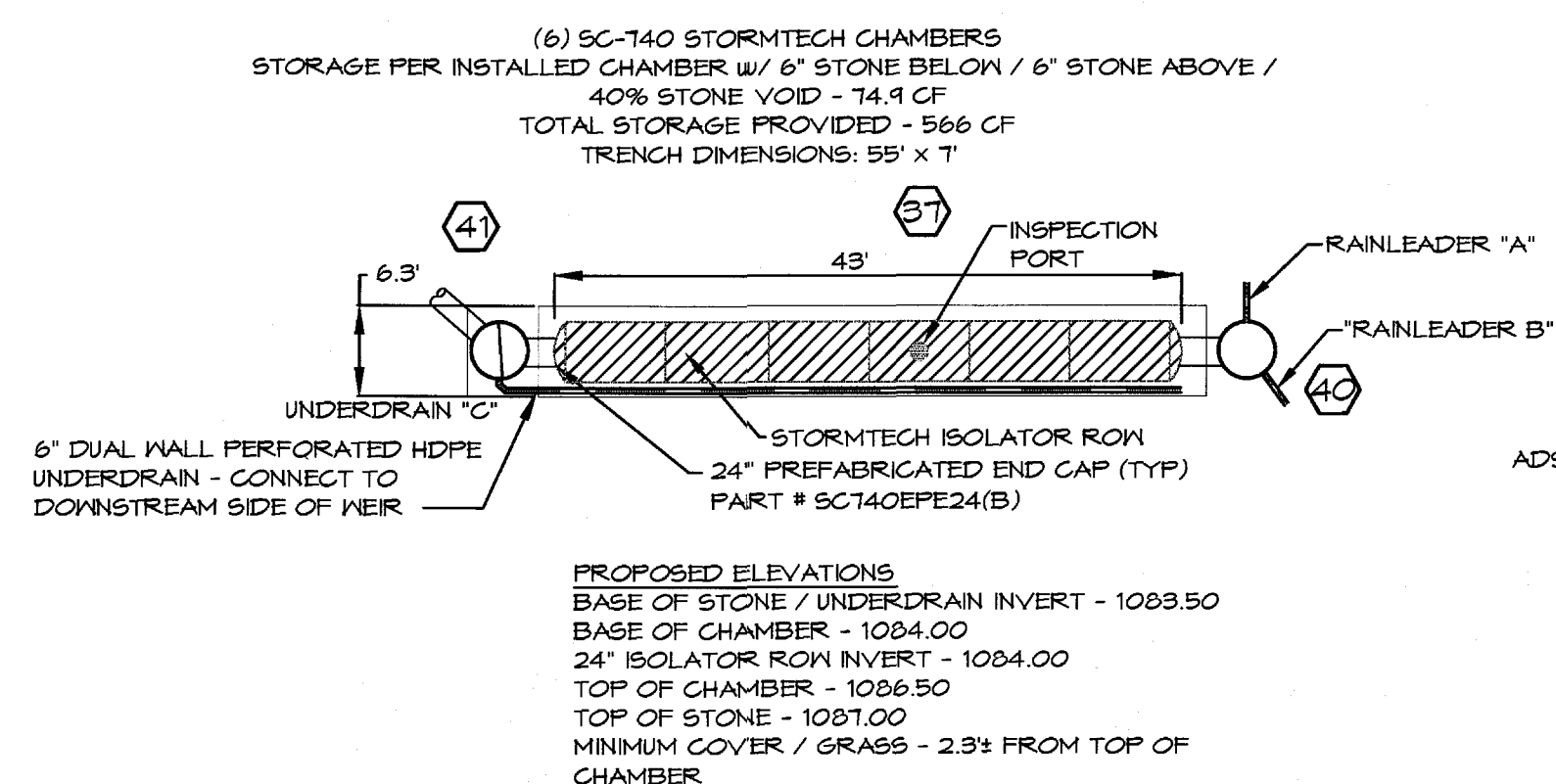
- NOTES:
1. WEIR WALL W/ 6" (H) X 4" (W) ORIFICE INV. 11.72'
 2. SECONDARY OPENING 2' (H) X 6' (W) INV. 14.80'
 3. ATTACH TO MANHOLE WALL WITH SIX, TWO ON EACH SIDE AND BOTTOM, STAINLESS STEEL BOLTS WITH CONCRETE ANCHORS AND GROUT BOTTOM AND SIDES AS NEEDED TO PROVIDE WATERTIGHT SEAL (1/4" PLATE STEEL, GALVANIZED)
 4. THE CONTRACTOR SHALL REMOVE EXISTING WEIR WALL AND REPLACE WITH ONE SHOWN ABOVE
 5. CORE A NEW 4" OPENING AT 1074.30 ON UPWARD SIDE OF WEIR

B DRAINAGE STRUCTURE #6
NO SCALE



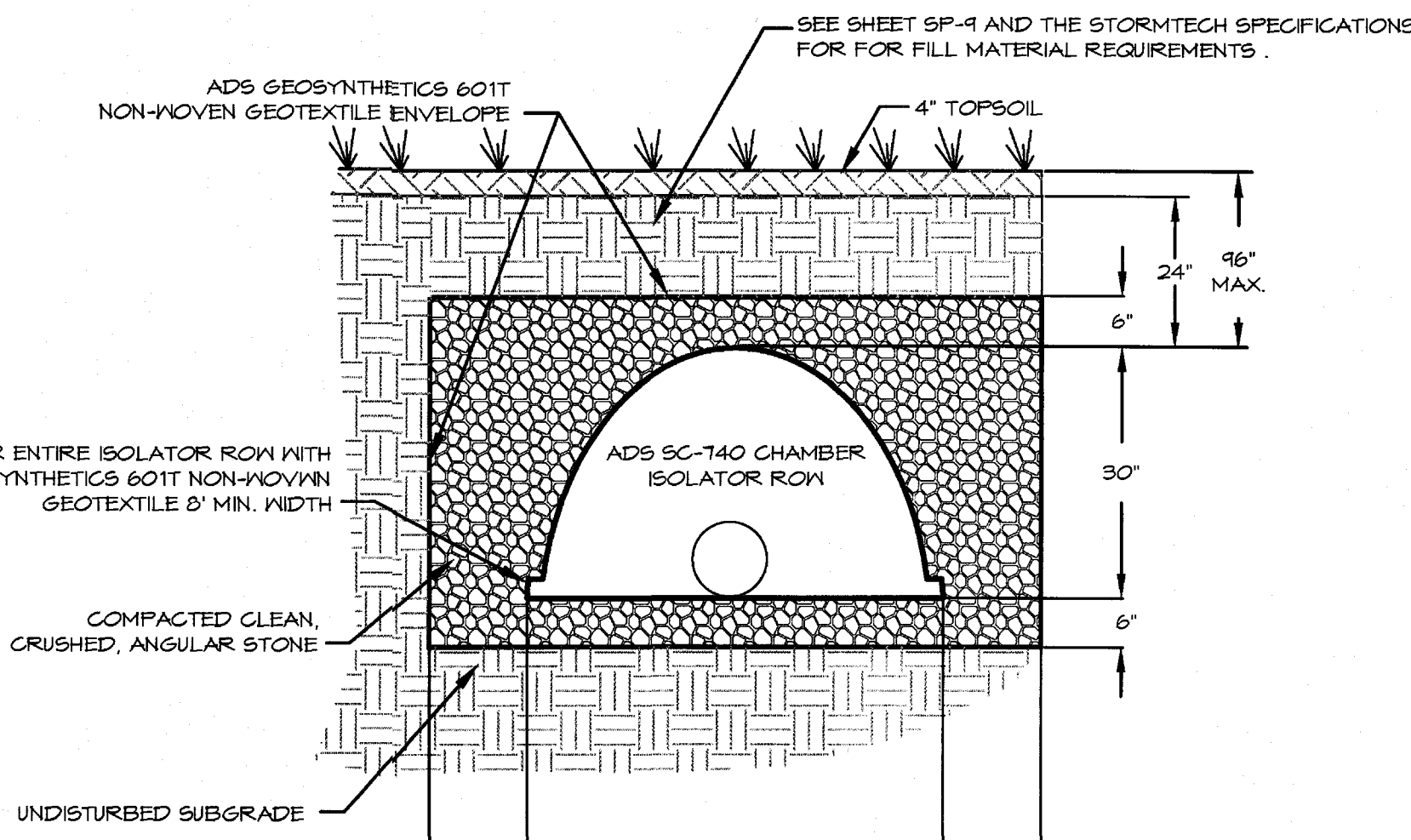
- NOTES:
1. ATTACH TO MANHOLE WALL WITH SIX, TWO ON EACH SIDE AND BOTTOM, STAINLESS STEEL BOLTS WITH CONCRETE ANCHORS AND GROUT BOTTOM AND SIDES AS NEEDED TO PROVIDE WATERTIGHT SEAL (1/4" PLATE STEEL, GALVANIZED)
 2. 6" UNDERDRAIN FROM THE STORMTECH CHAMBERS MUST BE ON DOWNSTREAM OF WEIR WALL

G OUTLET STRUCTURE #41
NO SCALE



- STORMTECH NOTES:
1. THE STORMTECH CHAMBERS SHALL BE CONFIGURED AS THE ISOLATOR ROW
 2. REFER TO THE MANUFACTURER FOR ALL DETAILS AND SPECIFICATIONS

F STORMTECH CHAMBERS #37
NO SCALE



ALL OF THE DETAILS ON THIS SHEET HAVE BEEN MODIFIED WITH ADDITIONAL INFORMATION TO AID IN CONSTRUCTION AND LAYOUT. CONTRACTOR SHALL REVIEW THIS SHEET IN ITS ENTIRETY.

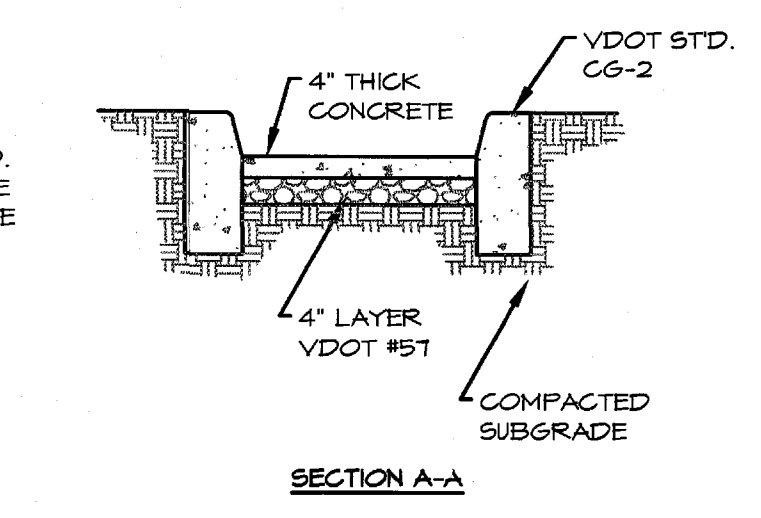
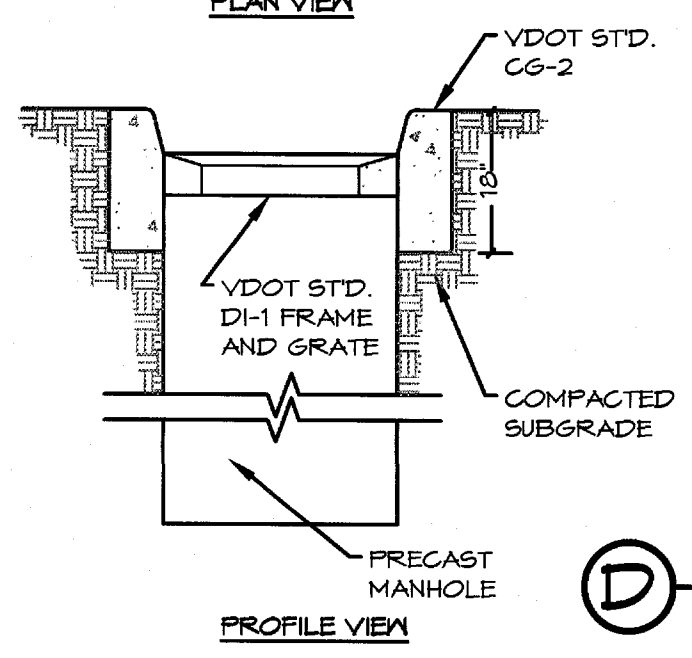
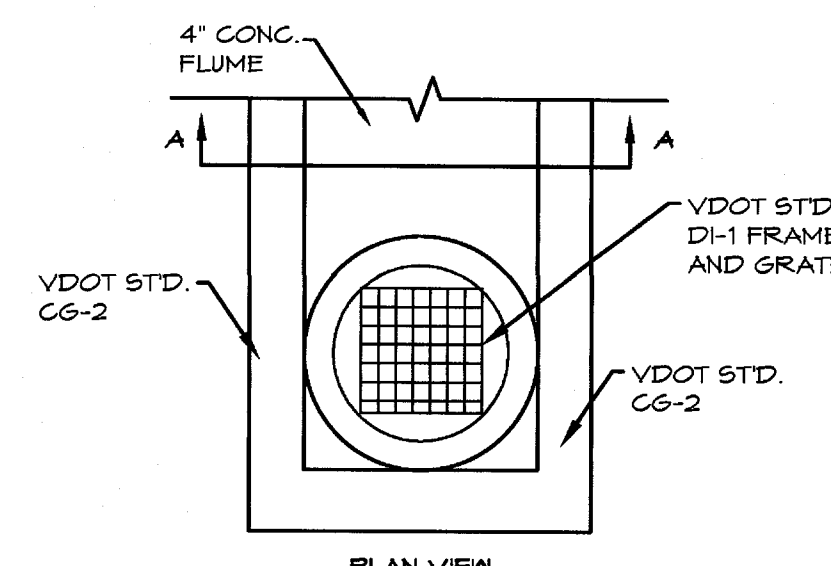
DRAINAGE DESCRIPTIONS

- EXISTING INLET #6
RAISE EXISTING TOP TO 1078.00'
INSTALL CONC. RISER AND GROUT
CORE 4" OPENING INV. 1074.30'
REMOVE THE EXISTING WEIR WALL AND
REPLACE WITH A NEW 1/4" THICK GALVANIZED
STEEL WEIR WALL. SEE DETAILS THIS SHEET
INSTALL CONC. BYPASS FLUME
- EXISTING INLET #8
RAISE EXISTING TOP TO 1081.00'
INSTALL CONC. RISER AND GROUT
- REMOVE THE EXISTING INLET AND REPLACE W/
6" PVC CLEANOUT (MATCH EX. ELEVATION)
RIM ELEV. 1082.2' (EX)
INV. IN 1084.1' (EX)
- EXISTING INLET #19
RAISE EXISTING TOP TO 1084.40'
INSTALL CONC. RISER AND GROUT
GROUT EXISTING 6" OPENING
CORE 10" OPENING INV. 1081.10'
- EXISTING INLET #23
RAISE EXISTING TOP TO 1084.40'
INSTALL CONC. RISER AND GROUT
GROUT EXISTING 6" OPENING
CORE 10" OPENING INV. 1081.10'
- VDOT STD. DI-1 H=1.2'
RIM ELEV. 1079.50'
INV. IN 1076.50' (4" PVC)
INV. IN 1075.50' (6" RAINLEADER)
INV. IN 1074.50' (24" HDPE)
INV. OUT 1073.50' (24" HDPE)
W/ BYPASS FLUME
- 15 LF 4" PVC / SDR-35 S=4.9%
INV. IN 1077.24' INV. OUT 1076.50'
- 6' x 4' FILTERRA BIOTRETENTION SYSTEM
TOP 1079.00'
INV. OUT 1075.50' (4" PVC)
CONNECT TO STRUCTURE #6 ON UPWARD SIDE
OF WEIR WALL
SILKY DOGWOOD (cornus amomum)
- 7 LF 4" PVC / SDR-35 S=11.2%
INV. IN 1075.50' INV. OUT 1074.30'
- UNDERGROUND SWM SYSTEM
SINGLE ROW 126'-48" N-12 HDPE
INV. UPPER 1073.76' INV. LOWER 1072.50'
SINGLE ROW 46'-48" N-12 HDPE
INV. UPPER 1073.74' INV. LOWER 1072.78'
CONNECT WITH 24" OR 48" HDPE @ LOWER END
SEE DETAILS THIS SHEET
- GRASS "VEE" DRAINAGE SWALE
6:1 SIDE SLOPES, 12" O.S.
SEE DETAIL THIS SHEET
- EXISTING INLET #7
RAISE EXISTING TOP TO 1079.00'
INSTALL CONC. RISER AND GROUT
- 6 LF 24" HDPE PIPE S=1.6%
INV. IN 1072.30' INV. OUT 1072.20'
CONNECT TO EXISTING SEALED OPENING IN
STRUCTURE #23
- 8.5 LF VDOT STD DI-1 / 2
STD. MH-1 FRAME & COVER
(RIM ELEV. 1083.00')
INV. OUT 1073.80' (24" HDPE)
- 4 LF 24" HDPE PIPE
INV. IN 1073.80' INV. OUT 1073.74'
- 6 LF 24" HDPE PIPE S=1.6%
INV. IN 1072.30' INV. OUT 1072.20'
CONNECT TO EXISTING SEALED OPENING IN
STRUCTURE #23
- 6' x 4' FILTERRA BIOTRETENTION SYSTEM FTRD6A
TOP 1081.10' (ALL CORNERS) W/TREE
INV. IN 1085.43' INV. OUT 1082.60' (6" PVC)
CONNECT TO STRUCTURE #31
CRAPE MYRTLE (lagarstroomia indica)
- 105 LF 6" PCV/SDR-35 RAINLEADER S=3.8%
INV. IN 1082.60' INV. OUT 1075.50'
W/ THREE 6" CLEANOUTS- MIN. 3.0' COVER
- 100 LF 6" PCV/SDR-35 RAINLEADER S=2.6%
INV. IN 1080.1' INV. OUT 1082.73'
W/ FOUR 6" CLEANOUTS- MIN. 2.0' COVER
- STORMTECH WATER QUALITY CHAMBERS
6 CHAMBER ISOLATOR ROW
INV. IN 1084.00' (24" HDPE)
INV. OUT 1084.00' (24" HDPE)
INV. OUT 1083.50' (6" HDPE UNDERDRAIN 'C')
SEE DETAILS THIS SHEET AND SHEET SP-4
- 6' x 4' FILTERRA BIOTRETENTION SYSTEM FTRD6C
TOP 1080.40' (ALL CORNERS) W/TREE
INV. IN 1085.73' INV. OUT 1085.9' (6" PVC)
CONNECT TO STRUCTURE #40
- 110 LF 6" PCV/SDR-35 RAINLEADER S=3.5%
INV. IN 1081.90' INV. OUT 1084.50'
W/ FOUR 6" CLEANOUTS- MIN. 3.0' COVER
- STD. VDOT DI-1 H=4.6'
TOP ELEV. 1084.00'
INV. IN 1084.50' (6" RAINLEADER 'A')
INV. IN 1085.00' (6" RAINLEADER 'B')
INV. OUT 1084.40' (24" HDPE)
- VDOT STD. DI-1 H=6.5'
TOP ELEV. 1089.00'
INV. IN 1083.00' (6" UNDERDRAIN 'C')
INV. IN 1083.00' (24" HDPE)
INV. OUT 1082.50' (10" HDPE)
GALVANIZED WEIR WALL
SEE DETAIL THIS SHEET
- 25 LF 6" PCV/SDR-35 RAINLEADER S=3.5%
INV. IN 1085.90' INV. OUT 1085.00'
- 4' - 24" HDPE S= 7.5%
INV. IN 1084.40' INV. OUT 1084.10'
- 4' - 24" HDPE PIPE S= 7.5%
INV. IN 1084.00' INV. OUT 1083.70'
- 35 LF 10" HDPE PIPE S=7.5%
INV. IN 1082.50' INV. OUT 1081.00'
- 4 LF 24" HDPE PIPE
INV. IN 1073.80' INV. OUT 1073.74'
- 6 LF 24" HDPE PIPE S=1.6%
INV. IN 1072.30' INV. OUT 1072.20'
CONNECT TO EXISTING SEALED OPENING IN
STRUCTURE #23

THESE TWO DRAINAGE DESCRIPTIONS WERE ADDED ALONG WITH TREE SPECIES FOR THE FILTERRA UNITS. A GOOD NUMBER OF THE DRAINAGE ITEMS WERE ADJUSTED SLIGHTLY TO ADDRESS REVIEW COMMENTS. CONTRACTOR SHALL REVIEW ALL DRAINAGE DESCRIPTIONS.

DRAINAGE NOTES:

1. ALL HDPE PIPE SHALL BE ADS N-12 OR EQUIVALENT APPROVED BY THE ARCHITECT
2. ALL CONCRETE PIPE SHALL BE REINFORCED, VDOT CLASS III
3. ALL PIPING SHALL BE INSTALLED PER VDOT STD. PB-1, METHOD A
4. VERIFY ALL ELEVATIONS PRIOR TO ORDERING MATERIALS
5. ADJUST ELEVATIONS TO MATCH FIELD CONDITIONS. ALL STRUCTURE HEIGHTS ARE FOR CONTRACTOR'S CONVENIENCE, VERIFY
6. CONTACT THE ARCHITECT/ENGINEER IF ROCK IS ENCOUNTERED
7. PIPE LENGTHS ARE FROM STRUCTURE TO STRUCTURE AND BASED ON PLAN VIEW
8. ALL ELEVATIONS ARE TO 1/4" OF RIM AS SHOWN ON THE PLANS
9. ALL STRUCTURES 4' OR HIGH OR MORE SHALL HAVE STEPS, VDOT ST-1 FOR DETAILS
10. ALL INLET SHAPING SHALL BE CONFORM TO VDOT STANDARD IS-1
11. ALL RAINLEADERS SHALL HAVE A MINIMUM SLOPE OF 2% AND A MINIMUM COVER OF 3.0'
12. ALL CLEANOUTS SHALL BE 6" DIAMETER



CONCRETE FLUME AND INLET NOTES:

1. CONCRETE FINISH: CONCRETE SHALL FIRST BE SMOOTH TONED, THEN FINISH WITH A "LIGHT BROOM FINISH".
2. WHERE SLAB ABUTS A STRUCTURE, A 1/2" EXPANSION JOINT FILLED WITH PREFORMED JOINT FILLER EXTENDING FROM THE BOTTOM OF THE SLAB TO APPROXIMATELY 1/4" BELOW THE TOP SURFACE SHALL BE USED.
3. TOOLED CONTROL JOINTS SHALL EXTEND INTO THE CONCRETE FOR AT LEAST 1" AND BE APPROXIMATELY 1/8" IN WIDTH.
4. VDOT A3, 4" THICK, 3000 PSI AIR-ENTRAINED REINFORCED CONCRETE WITH 6" X 6" #14 W/ 4" WELDED WIRE FABRIC.
5. THE 4" AGGREGATE BASE - VDOT NO. 57 STONE OR EQUAL THE FLUME ABOVE STRUCTURE #31 HAS A 6.0' DIA. RADIUS ALONG THE CENTERLINE

D BYPASS FLUME
NOT TO SCALE

| | |
|------------|---------------|
| DATE: | April 1, 2015 |
| REVISIONS: | |
| 1 | May 28, 2015 |
| 2 | July 28, 2015 |
| 3 | Aug. 12, 2015 |
| 4 | Dec. 07, 2015 |

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2020 Oakland Blvd. NW

DRAWN BY: mja
CHECKED BY: mja

**DRAINAGE
DETAILS &
DESCRIPTIONS**

SCHOOL PLAN NO.
124-43-00-101

12/07/15
MARK JOHN AYLES
Lic. No. 034160
PROFESSIONAL ENGINEER

COMMISSION No.
12090.015

SHEET
SP-12

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