

4. ALL PIPE AND APPURTENANCES SHALL BE LAID ON A PROPERLY PREPARED

12. DRAINAGE INLETS (STUB-OUTS) SHALL BE PROVIDED FOR EACH INDIVIDUAL LOT, EXCEPT FOR THOSE LOTS APPROVED FOR INFILTRATION BY THE CITY OF SEATAC. STUB-OUTS SHALL CONFORM TO THE FOLLOWING:
 - a. EACH OUTLET SHALL BE SUITABLY LOCATED AT THE LOWEST ELEVATION ON THE LOT, SO AS TO DRAIN FUTURE LOT IMPROVEMENTS AND FOOTING DRAINS, DRIVEWAYS, YARD DRAINS, AND ANY OTHER SURFACE OR SUBSURFACE DRAINAGE NECESSARY TO RENDER THE LOTS SUITABLE FOR THEIR INTENDED USE. EACH OUTLET SHALL HAVE FREE-FLOWING, POSITIVE DRAINAGE TO AN APPROVED STORMWATER CONVEYANCE SYSTEM OR TO AN APPROVED OUTFALL LOCATION.
 - b. OUTLETS ON EACH LOT SHALL BE LOCATED WITH A FIVE-FOOT-HIGH, 2' X 4' STAKE MARKED "STORM" OR "DRAIN". THE STAKE SHALL EXTEND ABOVE SURFACE LEVEL, BE VISIBLE, AND BE SECURED TO THE STUB-OUT.
 - c. PIPE MATERIAL SHALL CONFORM TO UNDERPINN SPECIFICATIONS DESCRIBED IN KORS 7.03. IF NON-METALLIC, THE PIPE SHALL CONTAIN WIRE OR OTHER ACCEPTABLE DETECTION.
 - d. DRAINAGE EASEMENTS ARE REQUIRED FOR DRAINAGE SYSTEMS DESIGNED TO CONVEY FLOWS THROUGH INDIVIDUAL LOTS.
 13. THE APPLICANT/CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE LOCATIONS OF ALL STUB-OUTS WITH RESPECT TO UTILITIES (E.G., POWER, GAS, TELEPHONE, TELEVISION, ETC.).
 14. ALL INDIVIDUAL STUB-OUTS SHALL BE PRIVATELY OWNED AND MAINTAINED BY THE LOT HOMEOWNER.
13. PIPE COVER NOTES:
- a. FOR COVER LESS THAN 1 FT. DUCTILE IRON PIPE IS USED.
 - b. FOR COVER FROM 1 FT. TO 2 FT. USE REINFORCED CONCRETE PIPE.
 - c. FOR A MIN. 2 FT. COVER - AN MATERIAL LISTED IN THE 2016 KING COUNTY SURFACE WATER DESIGN MANUAL OTHER THAN PVC MAY BE USED.
 - d. PVC PIPE REQUIRES AT LEAST 3 FT. COVER.

STORM STRUCTURE TABLE		
STRUCTURE NAME	STRUCTURE DETAILS	
AD #3	RIM = 352.32	
ARC #3000.00	RIM = 352.14 (6" SW)	
IN 62022.08	RIM = 352.14 (6" SW)	
E 1230030.62	RIM = 352.14 (6" SW)	
CB #1	RIM = 352.23	
TYPE 1	RIM = 349.84 (6" SW)	
N 102009.50	RIM = 349.84 (6" SW)	
E 1233303.62	RIM = 349.84 (12" W)	
CB #2	RIM = 352.82	
TYPE 1	RIM = 352.82	
N 102005.69	RIM = 350.29 (12" W)	
E 1233209.54	RIM = 352.82	
CB #3	RIM = 352.58	
TYPE 1	RIM = 350.01 (6" S)	
N 102035.21	RIM = 350.01 (6" S)	
E 123331.03	RIM = 350.01 (6" S)	
CB #4	RIM = 354.22	
TYPE 1	RIM = 348.50 (12" W)	
N 102005.10	RIM = 348.50 (12" W)	
E 123362.91	RIM = 348.50 (12" W)	
CB #5	RIM = 354.64	
TYPE 1	RIM = 353.04 (6" SW)	
N 101940.55	RIM = 353.04 (6" SW)	
E 1233029.75	RIM = 354.64	
CB #6	RIM = 356.21	
TYPE 1	RIM = 351.86 (6" S)	
N 101940.34	RIM = 351.86 (6" S)	
E 1232996.99	RIM = 351.86 (6" S)	
CB #7	RIM = 352.45	
TYPE 1	RIM = 352.45	
N 102018.87	RIM = 352.45	
E 1232981.85	RIM = 352.45	
CB #8	RIM = 353.12	
TYPE 1	RIM = 353.12	
N 102000.40	RIM = 352.30 (6" SW)	
E 1230006.06	RIM = 353.12	
CB #9	RIM = 354.02	
TYPE 1	RIM = 350.29 (6" NW)	
N 101987.57	RIM = 350.29 (6" NW)	
E 1232777.96	RIM = 354.02	
CB #10	RIM = 355.55	
TYPE 1	RIM = 350.64 (6" S)	
N 101986.78	RIM = 350.64 (6" S)	
E 1232730.90	RIM = 355.55	
CB #11	RIM = 352.25	
TYPE 1	RIM = 352.25	
N 101986.63	RIM = 352.25	
E 1232795.64	RIM = 352.25	

STORM STRUCTURE TABLE	
STRUCTURE NAME	STRUCTURE DETAILS
CR #12	IR = 353.61 (°)
E 120327.29	IE = 351.12 (8° S)
E 120723.78	IE = 351.12 (8° S)
CR #13	IR = 354.06
E 120313.81	IE = 351.73 (8° S)
E 120110.81	IE = 351.58 (8° S)
E 122827.55.71	IE = 351.73 (8° S)
CR #14	IR = 355.47
E 120103.67	IE = 352.50 (12° W)
E 122663.64	
CR #15	IR = 355.47
E 120212.43	IE = 351.79 (12° W)
E 122827.18.02	IE = 351.79 (12° W)
CR #56	IR = 351.74
E 191670.71	IE = 349.62 (8° N)
E 123308.72	IE = 349.62 (8° N)
CR #57	IR = 354.06
E 191604.18	IE = 347.63 (8° N)
E 122782.40	
CR #58	IR = 354.58
E 191679.73	IE = 347.63 (12° W)
E 123048.12	
CR #59	IR = 353.96
E 191678.80	IE = 347.63 (12° W)
E 123246.13	
CR #65	IR = 353.94
E 191675.13	IE = 350.32 (8° N)
E 191604.96	IE = 350.32 (8° N)
E 122678.90	
CR #66	IR = 354.21
E 191687.12	IE = 351.53 (8° N)
E 122689.64	IE = 351.53 (8° N)
CR #67	IR = 354.28
E 122965.67	IE = 352.21 (8° W)
E 122967.65	
CR #69	IR = 353.77
E 191672.48	IE = 347.26 (8° N)
E 123246.73	IE = 347.78 (12° W)
CR #70	IR = 354.48
E 191646.14	IE = 346.67 (12° W)
E 123318.60	IE = 346.67 (12° W)





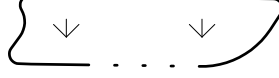

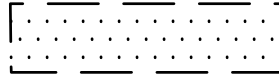





STORM STRUCTURE TABLE	
STRUCTURE NAME	STRUCTURE DETAILS
CS #71	RIM = 334.28
N16181.34	IE = 330.75 (12" E)
IE12304.14	
CS #72	RIM = 352.59
N16184.33	IE = 350.25 (12" W)
IE123204.96	
CS #73	RIM = 352.94
N16184.93	IE = 350.26 (8" N)
IE12321.43	
CS #74	RIM = 344.22
N16191.18	IE = 350.18 (E)
IE12297.44	
CS #81	RIM = 333.25
N16191.26	
IE12321.72	
CS #82	RIM = 333.25
T105.1	
IE12307.46	
CS #83	RIM = 334.49
T105.1	IE = 330.50 (12" E)
N16198.18	IE = 335.61 (8" W)
IE12306.82	
CS #BP1	RIM = 351.84
T105.1	IE = 350.12 (12" W)
IE12375.28	IE = 347.65 (8" E)
CS #BP5	RIM = 352.99
T105.1	IE = 340.67 (8" S)
N16197.26	IE = 347.66 (8" W)
IE12326.21	IE = 341.91 (8" E)
CS #BP6	RIM = 355.09
48" T105.1	IE = 349.50 (12" E)
N16186.40	IE = 347.33 (12" W)
IE1381.93	
CS #CS-5	RIM = 333.26
48" T105.1	IE = 347.63 (12" W)
N16187.13	IE = 347.63 (12" E)
IE12327.47	
CS #P2	RIM = 351.15
N16187.25	IE = 347.36 (8" E)
IE12320.11	IE = 347.36 (8" E)
EX CB 20	RIM = 351.61
EXISTING T105.2	IE = 357.80 (19" E)
N12673.09	IE = 357.80 (19" E)

- ① CONNECT TO EXISTING STRUCTURE.
- ② OVERFLOW STRUCTURE CONNECTION DIRECTLY TO STORMTECH CHAMBER SYSTEM, PER DETAIL 11, SHEET C5.04.
- ③ SEE LANDSCAPE PLANS FOR OUTFALL PROTECTION DETAIL.
- ④ SEE LANDSCAPE PLANS FOR DOWNSPOUT CONNECTION DETAIL.
- ⑤ CONNECTION TO FIELD UNDERDRAIN SYSTEM. SEE LANDSCAPE PLANS FOR CONTINUATION.
- ⑥ BIOPOD STORMWATER BIOFILTRATION SYSTEM. REFER TO STRUCTURE TABLE, THIS SHEET.
- ⑦ CONNECTION TO STORM CHAMBER SYSTEM, SEE SHEET C5.07.
- ⑧ CONNECTION TO STORM CHAMBER SYSTEM, SEE SHEET C5.08.

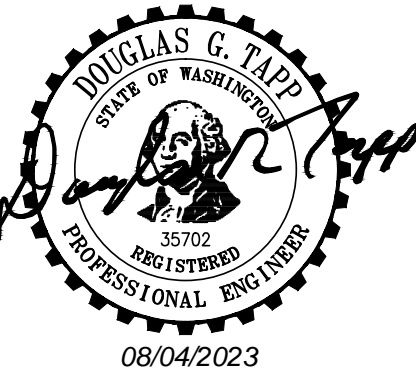
1. PROVIDE SOLID 6" PVC ROOF DRAIN AT A MINIMUM SLOPE 1% UNLESS OTHERWISE

1. PROVIDE SLOD 36" P.V.C. FOOTING CATCH AT A MINIMUM SLOPE 1% UNLESS OTHERWISE SPECIFIED. PROVIDE 1" OF MINIMUM COVER IN LANDSCAPE/PEDESTRIAN AREAS AND 3" IN MINIMUM COVER IN ROAD AND DRIVE TRAFFIC AREAS. PROVIDE CLEANOUTS AT ALL BENDS GREATER THAN 90° AND AT ENDS.
2. PROVIDE RECORD DRAWINGS OF THE SITE DRAINAGE, FOOTING CATCH, AND ROOF DRAIN SYSTEM PER SPECIFICATIONS.
3. VERIFY VERTICAL AND HORIZONTAL LOCATIONS OF ALL EXISTING UTILITIES AT CONNECTIONS WITH NEW UTILITIES PRIOR TO CONSTRUCTION. INFORM ARCHITECT AND ENGINEERING CONSULTANT OF ANY DISCREPANCIES FROM THIS PLAN.
4. ALL CATCH BASINS ARE TYPE 1 UNLESS OTHERWISE SPECIFIED. ALL LIDS SHALL BE LOCKING.
5. ALL STORM DRAINAGE STRUCTURES SHALL BE INSTALLED WITH A STANDARD FRAME AND VANED GRATE PER WDOT STANDARD PLAN 8-30-30-00 UNLESS OTHERWISE NOTED.
6. CONTRACTOR TO FURNISH CATCH BASIN MONUMENT FROM THE CITY OF SEABOARD. CONTRACTOR TO INSTALL PER THE CITY'S INSTALLATION INSTRUCTIONS.
7. SEE STRUCTURAL PLANS FOR WALL AND FOUNDATION DETAILS.
8. ALL STORMWATER PIPE MATERIAL SHALL BE CPEP UNLESS OTHERWISE NOTED.
9. ALL FOOTING DRAIN PIPE MATERIAL SHALL BE 6" PERFORATED RIGID PVC PIPE. FOUNDATION DRAIN PIPE SHALL CONNECT TO A STORM CATCH BASIN WITH NON PERFORATED PVC.
10. NORTHING AND EASTING COORDINATES ON STORM STRUCTURES IF USING REFERENCE THE CENTER OF STRUCTURE.
11. SEE LANDSCAPE PLANS AND SPECIFICATIONS FOR THE REQUIRED SOIL QUALITY AND DEPTHS. ALL AREAS SUBJECT TO CLEARING AND GRADING THAT HAVE NOT BEEN EXPOSED BY ANY PREVIOUS SURFACE SHALL PROVIDE MINIMUM SOIL QUALITY AND DEPTH PER DETAIL.
12. ALL STORM LINES SUBJECT TO PRESSURE TESTING AND CCTV VIDEO INSPECTION AT PROJECT COMPLETION PER SPECIFICATION SECTION 334.10.
13. SEE SHEETS C5.09-C5.12 FOR STORM DRAIN LINE PROFILES.

LEGEND:

—XXX—	PROPOSED COLOUR MINOR	
—XXX—	PROPOSED COLOUR MAJOR	
D	STORM DRAIN	
FD	FOOTING DRAIN	
RD	ROOF DRAIN	
—...— >	DRAINAGE SWALE, SEE GRADING PLANS FOR ELEVATIONS	
U — U —	UNDER DRAIN	
■	CATCH BASIN, TYPE 1	
⊙	CATCH BASIN, TYPE 2	
●	CLEANOUT	
DS A	DOWNSPOUT CONNECTION	
CC	CURB CUT	
	BIORETENTION CELL	
	ARCH CHAMBER FLOW CONTROL	
●	AREA DRAIN	
	TRENCH DRAIN	
	RIP RAP OUTFALL PAD	

Date:	06/30/23	
Job No.:	2190992.10	
Drawn By:	CTJ	
Checked by:	DGT	
Revisions		
#	Date	Description

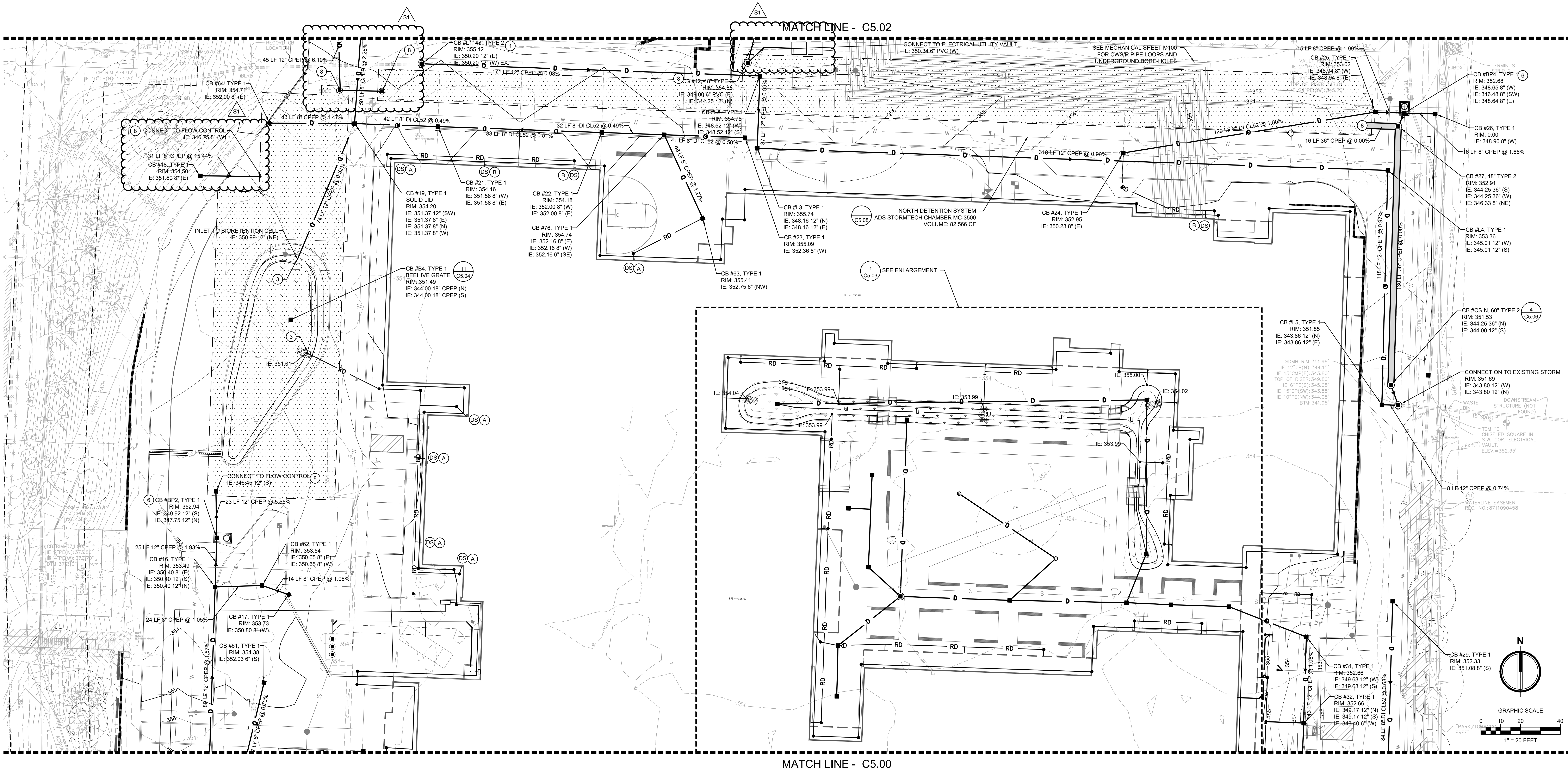


08/04/2023



HIGHLINE PUBLIC SCHOOLS
TYEE HIGH SCHOOL REPLACEMENT PROJECT

4424 S 188th St
SeaTac, WA 98188



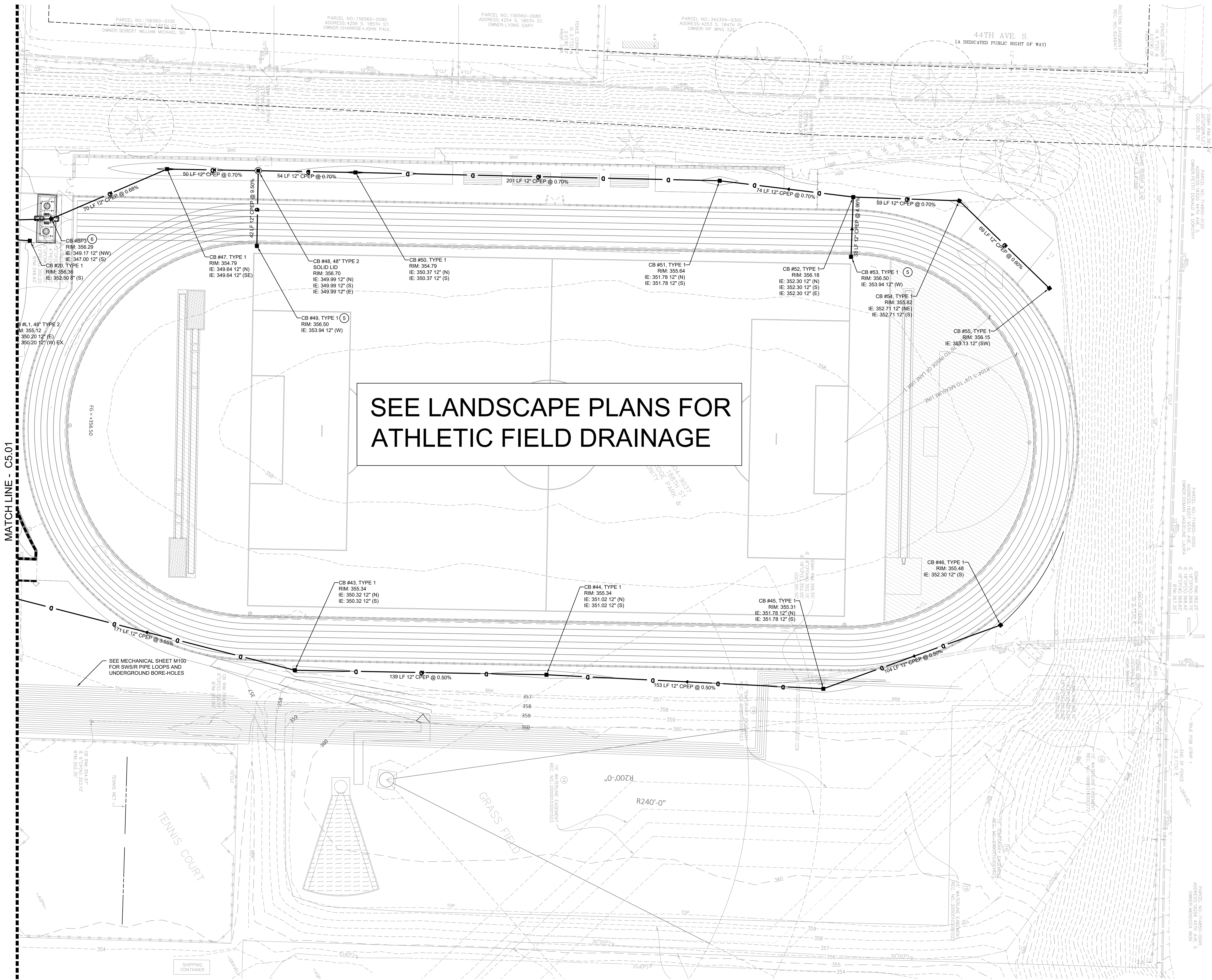
CITY OF SEATAC DRAINAGE NOTES

- ALL PIPE AND APPURTENANCES SHALL BE Laid ON A PROPERLY PREPARED FOUNDATION IN ACCORDANCE WITH WSDOT 7-02.3(1). REDUCTIONS IN COMPACTION REQUIREMENTS ARE ALLOWED TO ACCOMMODATE BIORETENTION OR PERMEABLE PAVEMENT INSTALLATIONS.
- STEEL PIPE SHALL BE GALVANIZED AND HAVE ASPHALT TREATMENT #1 OR BETTER INSIDE AND OUTSIDE (KCRS 7.03).
- ALL DRAINAGE STRUCTURES, SUCH AS CATCH BASINS AND MANHOLES, SHALL HAVE LOCKING FRAMES AND GRATES OR SOLID LOCKING LIDS. ALL DRAINAGE STRUCTURES ASSOCIATED WITH A PERMANENT RETENTION/DETENTION FACILITY SHALL HAVE SOLID LOCKING LIDS.
- ALL CATCH BASIN GRATES SHALL CONFORM TO THE LATEST EDITION OF THE KCRS/DSD DRAWING NUMBERS 7-013, 7-017, 7-018, 7-019, 7-020, OR 7-021, AND SHALL INCLUDE THE STAMPING "OUTFALL TO STREAM, DUMP NO POLLUTANTS". ALL GRATES AND SOLID COVERS WITHIN THE RIGHT-OF-WAY SHALL HAVE EON LOCK, ERGO ROUND COVERS, OR APPROVED EQUIVALENT.
- ALL DRIVEWAY CULVERTS LOCATED WITHIN CITY OF SEATAC RIGHT-OF-WAY SHALL BE OF SUFFICIENT LENGTH TO PROVIDE A MINIMUM 3:1 SLOPE FROM THE EDGE OF THE DRIVEWAY TO THE BOTTOM OF THE DITCH. DRIVEWAY CULVERTS SHALL BE 12" DIAMETER CONCRETE OR EQUIVALENT WITH BEVELED END SECTIONS ON ALL EXPOSED ENDS TO MATCH THE SIDE SLOPE, AND ARE TO HAVE QUARRY SPALLS FOR EXPOSED PROTECTION ON EACH END (SEE KCRS 7.03(G), DRAWING NO. 7-001).
- THE STANDARD ROCK LINING OF DITCHES SHALL BE IN ACCORDANCE WITH THE MOST RECENT EDITION OF THE KING COUNTY SURFACE WATER DESIGN MANUAL AND SECTION 9-13 OF THE WSDOT STANDARD SPECIFICATIONS. ROCK GRADATION SHALL BE AS FOLLOWS: PASSING 8-INCH SQUARE SIEVE 100%; PASSING 3-INCH SQUARE SIEVE 40%; AND PASSING 3/4-INCH SIEVE 10%. INSTALLATION SHALL BE PLACED SO AS TO FORM A FIRM, DENSE PROTECTIVE MAT CONSISTENT WITH EXAMPLES IN KCRS/DSD DRAWING NUMBER 7-024, AND CONFORMING TO THE DESIGN SURFACE OF THE DITCH. INDIVIDUAL ROCKS SHALL NOT PROTRUDE MORE THAN 3 INCHES FROM THAT SURFACE.
- ALL STORM PIPE, DETENTION TANKS & VAULTS, WATER QUALITY TANKS & VAULTS, AND COMBINED DETENTION & WATER QUALITY TANKS & VAULTS SHALL BE SUBJECT TO TESTING PER SECTION 7.4.4 OF THE WSDOT STANDARD SPECIFICATIONS AND CITY OF SEATAC STANDARD PROCEDURES.
- DETENTION TANKS MUST PASS AN EXFILTRATION TEST PER THE WSDOT 2016 7-04.3(1) STANDARD PRIOR TO FINALIZING THE SITE PERMIT.
- ALL DISTURBED PERVIOUS AREAS (COMPACTED, GRADED, LANDSCAPED, ETC.) OF THE DEVELOPMENT SITE MUST DEMONSTRATE ONE OF THE FOLLOWING: THE EXISTING DUFF LAYER SHALL BE STAGED AND REDISTRIBUTED TO MAINTAIN THE MOISTURE CAPACITY OF THE SOIL, OR AMENDED SOIL SHALL BE ADDED TO MAINTAIN THE MOISTURE CAPACITY PURSUANT TO CITY OF SEATAC SOIL AMENDMENT STANDARDS.
- SITE CLEARING IS LIMITED SEASONALLY BETWEEN OCTOBER 1 AND MARCH 30 INCLUSIVE, UNLESS OTHERWISE APPROVED WITH A WRITTEN DECISION BY THE CITY OF SEATAC ENGINEERING REVIEW DIVISION.
- PRIOR TO THE CONSTRUCTION OF ANY IMPROVEMENTS AND/OR BUILDINGS ON THE SITE, THOSE PORTIONS OF THE STORMWATER FACILITIES NECESSARY TO ACCOMMODATE THE CONTROL OF SURFACE AND STORMWATER RUNOFF DISCHARGE FROM THE SITE DURING CONSTRUCTION MUST BE CONSTRUCTED, APPROVED, AND FUNCTIONING PROPERLY.
- DRAINAGE INLETS (STUB-OUTS) SHALL BE PROVIDED FOR EACH INDIVIDUAL LOT, EXCEPT FOR THOSE LOTS APPROVED FOR INFILTRATION BY THE CITY OF SEATAC. STUB-OUTS SHALL CONFORM TO THE FOLLOWING:
 - EACH OUTLET SHALL BE SUITABLY LOCATED AT THE LOWEST ELEVATION ON THE LOT, SO AS TO SERVICE, ALL FUTURE ROOF DOWNSPOUTS AND FOOTING DRAINS, DRIVEWAYS, YARD DRAINS, AND ANY OTHER SURFACE OR SUBSURFACE DRAINS NECESSARY TO RENDER THE LOTS SUITABLE FOR THEIR INTENDED USE. EACH OUTLET SHALL HAVE FREE-FLOWING POSITIVE DRAINAGE TO AN APPROVED STORMWATER CONVEYANCE SYSTEM OR TO AN APPROVED OUTFALL LOCATION.
 - OUTLETS ON EACH LOT SHALL BE LOCATED WITH A FIVE-FOOT-HIGH, 2" X 4" STAKE MARKED "STORM" OR "DRAIN". THE STAKE SHALL EXTEND ABOVE SURFACE LEVEL, BE VISIBLE, AND BE SECURED TO THE STUB-OUT.
 - PIPE MATERIAL SHALL CONFORM TO UNDERDRAIN SPECIFICATIONS DESCRIBED IN KCRS 7.03. IF NON-METALLIC, THE PIPE SHALL CONTAIN WIRE OR OTHER ACCEPTABLE DETECTION.
 - DRAINAGE EASEMENTS ARE REQUIRED FOR DRAINAGE SYSTEMS DESIGNED TO CONVEY FLOWS THROUGH INDIVIDUAL LOTS.
 - THE APPLICANT/CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE LOCATIONS OF ALL STUB-OUT, CONVEYANCE LINES WITH RESPECT TO UTILITIES (E.G., POWER, GAS, TELEPHONE, TELEVISION, ETC.).
 - ALL INDIVIDUAL STUB-OUTS SHALL BE PRIVATELY OWNED AND MAINTAINED BY THE LOT HOMEOWNER.
- PIPE COVER NOTES:
 - FOR COVER LESS THAN 1 FT. DUCTILE IRON PIPE IS USED.
 - FOR COVER FROM 1 FT. TO 2 FT. USE REINFORCED CONCRETE PIPE.
 - FOR A MIN. 2 FT. COVER - ANY MATERIAL LISTED IN THE 2016 KING COUNTY SURFACE WATER DESIGN MANUAL OTHER THAN PVC MAY BE USED.
 - PVC PIPE REQUIRES AT LEAST 3 FT. COVER.
 - ALL PVC PIPES REQUIRE A SAND COLLAR WHEN CONNECTING TO A CONCRETE STRUCTURE. NOTES: ALL DIMENSIONS ARE MEASURED FROM TOP (OUTSIDE) OF PIPE. A) COVER IS THE MATERIAL OVER THE OUTSIDE TOP OF THE PIPE (COVER MAY NOT INCLUDE THE MATERIAL OF THE PIPE). IF YOU HAVE A THREE-FOOT GRADE DIFFERENTIAL BETWEEN THE INVERT OF A 12" DIAMETER PIPE AND THE FINISHED GRADE, YOU DO NOT HAVE TWO FOOT OF COVER OVER THE PIPE. EXCEPTIONS MAY BE GRANTED IN NON-VEHICULAR AREAS.
- THE CONTRACTOR SHALL PROVIDE CCTV FOOTAGE OF ALL PIPES INSTALLED IN RIGHT-OF-WAY TO THE CITY.

STORM STRUCTURE TABLE	
STRUCTURE NAME	STRUCTURE DETAILS
CB #11	RIM = 355.25 IE = 352.50 (8" W)
CB #12	RIM = 353.61 IE = 351.12 (8" S)
CB #13	RIM = 354.06 IE = 351.73 (8" N)
CB #14	RIM = 354.20 IE = 351.37 (12" SW)
CB #15	RIM = 354.16 IE = 351.58 (8" W)
CB #16	RIM = 354.18 IE = 352.00 (8" W)
CB #17	RIM = 354.18 IE = 352.00 (8" W)
CB #18	RIM = 354.18 IE = 352.00 (8" W)
CB #19	RIM = 354.18 IE = 352.00 (8" W)
CB #20	RIM = 354.18 IE = 352.00 (8" W)
CB #21	RIM = 354.18 IE = 352.00 (8" W)
CB #22	RIM = 354.18 IE = 352.00 (8" W)
CB #23	RIM = 354.18 IE = 352.00 (8" W)
CB #24	RIM = 354.18 IE = 352.00 (8" W)
CB #25	RIM = 354.18 IE = 352.00 (8" W)
CB #26	RIM = 354.18 IE = 352.00 (8" W)
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CB #30	RIM = 354.18 IE = 352.00 (8" W)
CB #31	RIM = 354.18 IE = 352.00 (8" W)
CB #32	RIM = 354.18 IE = 352.00 (8" W)
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CB #42	RIM = 354.18 IE = 352.00 (8" W)
CB #43	RIM = 354.18 IE = 352.00 (8" W)
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CB #45	RIM = 354.18 IE = 352.00 (8" W)
CB #46	RIM = 354.18 IE = 352.00 (8" W)
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CB #48	RIM = 354.18 IE = 352.00 (8" W)
CB #49	RIM = 354.18 IE = 352.00 (8" W)
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CB #52	RIM = 354.18 IE = 352.00 (8" W)
CB #53	RIM = 354.18 IE = 352.00 (8" W)
CB #54	RIM = 354.18 IE = 352.00 (8" W)
CB #55	RIM = 354.18 IE = 352.00 (8" W)
CB #56	RIM = 354.18 IE = 352.00 (8" W)
CB #57	RIM = 354.18 IE = 352.00 (8" W)
CB #58	RIM = 354.18 IE = 352.00 (8" W)
CB #59	RIM = 354.18 IE = 352.00 (8" W)
CB #60	RIM = 354.18 IE = 352.00 (8" W)
CB #61	RIM = 354.18 IE = 352.00 (8" W)
CB #62	RIM = 354.18 IE = 352.00 (8" W)
CB #63	RIM = 354.18 IE = 352.00 (8" W)
CB #64	RIM = 354.18 IE = 352.00 (8" W)
CB #65	RIM = 354.18 IE = 352.00 (8" W)
CB #66	RIM = 354.18 IE = 352.00 (8" W)
CB #67	RIM = 354.18 IE = 352.00 (8" W)
CB #68	RIM = 354.18 IE = 352.00 (8" W)
CB #69	RIM = 354.18 IE = 352.00 (8" W)
CB #70	RIM = 354.18 IE = 352.00 (8" W)
CB #71	RIM = 354.18 IE = 352.00 (8" W)
CB #72	RIM = 354.18 IE = 352.00 (8" W)
CB #73	RIM = 354.18 IE = 352.00 (8" W)
CB #74	RIM = 354.18 IE = 352.00 (8" W)
CB #75	RIM = 354.18 IE = 352.00 (8" W)
CB #76	RIM = 354.18 IE = 352.00 (8" W)
CB #77	RIM = 354.18 IE = 352.00 (8" W)
CB #78	RIM = 354.18 IE = 352.00 (8" W)
CB #79	RIM = 354.18 IE = 352.00 (8" W)
CB #80	RIM = 354.18 IE = 352.00 (8" W)
CB #81	RIM = 354.18 IE = 352.00 (8" W)
CB #82	RIM = 354.18 IE = 352.00 (8" W)
CB #83	RIM = 354.18 IE = 352.00 (8" W)
CB #84	RIM = 354.18 IE = 352.00 (8" W)
CB #85	RIM = 354.18 IE = 352.00 (8" W)
CB #86	RIM = 354.18 IE = 352.00 (8" W)
CB #87	RIM = 354.18 IE = 352.00 (8" W)
CB #88	RIM = 354.18 IE = 352.00 (8" W)
CB #89	RIM = 354.18 IE = 352.00 (8" W)
CB #90	RIM = 354.18 IE = 352.00 (8" W)
CB #91	RIM = 354.18 IE = 352.00 (8" W)
CB #92	RIM = 354.18 IE = 352.00 (8" W)
CB #93	RIM = 354.18 IE = 352.00 (8" W)
CB #94	RIM = 354.18 IE = 352.00 (8" W)
CB #95	RIM = 354.18 IE = 352.00 (8" W)
CB #96	RIM = 354.18 IE = 352.00 (8" W)
CB #97	RIM = 354.18 IE = 352.00 (8" W)
CB #98	RIM = 354.18 IE = 352.00 (8" W)
CB #99	RIM = 354.18 IE = 352.00 (8" W)
CB #100	RIM = 354.18 IE = 352.00 (8" W)

STORM STRUCTURE TABLE	
STRUCTURE NAME	STRUCTURE DETAILS
CB #23	RIM = 355.09 IE = 352.36 (8" W)
CB #24	RIM = 352.95 IE = 350.23 (8" E)
CB #25	RIM = 353.02 IE = 348.84 (8" W)
CB #26	RIM = 352.91 IE = 344.25 (36" W)
CB #27	RIM = 352.91 IE = 344.25 (36" W)
CB #28	RIM = 352.91 IE = 344.25 (36" W)
CB #29	RIM = 352.91 IE = 344.25 (36" W)
CB #30	RIM = 352.91 IE = 344.25 (36" W)
CB #31	RIM = 352.91 IE = 344.25 (36" W)
CB #32	RIM = 352.91 IE = 344.25 (36" W)
CB #33	RIM = 352.91 IE = 344.25 (36" W)
CB #34	RIM = 352.91 IE = 344.25 (36" W)
CB #35	RIM = 352.91 IE = 344.25 (36" W)
CB #36	RIM = 352.91 IE = 344.25 (36" W)
CB #37	RIM = 352.91 IE = 344.25 (36" W)
CB #38	RIM = 352.91 IE = 344.25 (36" W)
CB #39	RIM = 352.91 IE = 344.25 (36" W)
CB #40	RIM = 352.91 IE = 344.25 (36" W)
CB #41	RIM = 352.91 IE = 344.25 (36" W)
CB #42	RIM = 352.91 IE = 344.25 (36" W)
CB #43	RIM = 352.91 IE = 344.25 (36" W)
CB #44	RIM = 352.91 IE = 344.25 (36" W)
CB #45	RIM = 352.91 IE = 344.25 (36" W)
CB #46	RIM = 352.91 IE = 344.25 (36" W)
CB #47	RIM = 352.91 IE = 344.25 (36" W)
CB #48	RIM = 352.91 IE = 344.25 (36" W)
CB #49	RIM = 352.91 IE = 344.25 (36" W)
CB #50	RIM = 352.91 IE = 344.25 (36" W)
CB #51	RIM = 352.91 IE = 344.25 (36" W)
CB #52	RIM = 352.91 IE = 344.25 (36" W)
CB #53	RIM = 352.91 IE = 344.25 (36" W)
CB #54	RIM = 352.91 IE = 344.25 (36" W)
CB #55	RIM = 352.91 IE = 344.25 (36" W)
CB #56	RIM = 352.91 IE = 344.25 (36" W)
CB #57	RIM = 352.91 IE = 344.25 (36" W)
CB #58	RIM = 352.91 IE = 344.25 (36" W)
CB #59	RIM = 352.91 IE = 344.25 (36" W)
CB #60	RIM = 352.91 IE = 344.25 (36" W)
CB #61	RIM = 352.91 IE = 344.25 (36" W)
CB #62	RIM = 352.91 IE = 344.25 (36" W)
CB #63	RIM = 352.91 IE = 344.25 (36" W)
CB #64	RIM = 352.91 IE = 344.25 (36" W)
CB #65	RIM = 352.91 IE = 344.25 (36" W)
CB #66	RIM = 352.91 IE = 344.25 (36" W)
CB #67	RIM = 352.91 IE = 344.25 (36" W)
CB #68	RIM = 352.91 IE = 344.25 (36" W)
CB #69	RIM = 352.91 IE = 344.25 (36" W)
CB #70	RIM = 352.91 IE = 344.25 (36" W)
CB #71	RIM = 352.91 IE = 344.25 (36" W)
CB #72	RIM = 352.91 IE = 344.25 (36" W)
CB #73	RIM = 352.91 IE = 344.25 (36" W)
CB #74	RIM = 352.91 IE = 344.25 (36" W)
CB #75	RIM = 352.91 IE = 344.25 (36" W)
CB #76	RIM = 352.91 IE = 344.25 (36" W)
CB #77	RIM = 352.91 IE = 344.25 (36" W)
CB #78	RIM = 352.91 IE = 344.25 (36" W)
CB #79	RIM = 352.91 IE = 344.25 (36" W)
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CB #81	RIM = 352.91 IE = 344.25 (36" W)
CB #82	RIM = 352.91 IE = 344.25 (36" W)
CB #83	RIM = 352.91 IE = 344.25 (36" W)
CB #84	RIM = 352.91 IE = 344.25 (36" W)
CB #85	RIM = 352.91 IE = 344.25 (36" W)
CB #86	RIM = 352.91 IE = 344.25 (36" W)
CB #87	RIM = 352.91 IE = 344.25 (36" W)
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CB #89	RIM = 352.91 IE = 344.25 (36" W)
CB #90	RIM = 352.91 IE = 344.25 (36" W)
CB #91	RIM = 352.91 IE = 344.25 (36" W)
CB #92	RIM = 352.91 IE = 344.25 (36" W)
CB #93	RIM = 352.91 IE = 344.25 (36" W)
CB #94	RIM = 352.91 IE = 344.25 (36" W)
CB #95	RIM = 352.91 IE = 344.25 (36" W)
CB #96	RIM = 352.91 IE = 344.25 (36" W)
CB #97	RIM = 352.91 IE = 344.25 (36" W)
CB #98	RIM = 352.91 IE = 344.25 (36" W)
CB #99	RIM = 352.91 IE = 344.25 (36" W)
CB #100	RIM = 352.91 IE = 344.25 (36" W)

STORM STRUCTURE TABLE	
STRUCTURE NAME	STRUCTURE DETAILS
CB #BP2	RIM = 352.94 IE = 349.92 (12" S)
CB #BP4	RIM = 352.68 IE = 346.48 (8" SW)
CB #C5-N	RIM = 351.53 IE = 344.25 (36" N)
CB #C5-S	RIM = 351.53 IE = 344.25 (36" S)
CB #C5-E	RIM = 351.53 IE = 344.25 (36" E)
CB #C5-W	RIM = 351.53 IE = 344.25 (36" W)
CB #C5-NE	RIM = 351.53 IE = 344.25 (36" NE)
CB #C5-NW	RIM = 351.53 IE = 344.25 (36" NW)
CB #C5-SE	RIM = 351.53 IE = 344.25 (36" SE)
CB #C5-SW	RIM = 351.53 IE = 344.25 (36" SW)
CB #C5-NE	RIM = 351.53 IE = 344.25 (36" NE)
CB #C5-NW	RIM = 351.53 IE = 344.25 (36" NW)
CB #C5-SE	RIM = 351.53 IE = 344.25 (36" SE)
CB #C5-SW	RIM = 351.53 IE = 344.25 (36" SW)
CB #C5-NE	RIM = 351.53 IE = 344.25 (36" NE)
CB #C5-NW	RIM = 351.53 IE = 344.25 (36" NW)
CB #C5-SE	RIM = 351.53 IE = 344.25 (36" SE)
CB #C5-SW	RIM = 351.53 IE = 344.25 (36" SW)
CB #C5-NE	RIM = 351.53 IE = 344.25 (36" NE)
CB #C5-NW	RIM = 351.53 IE = 344.25 (36" NW)
CB #C5-SE	RIM = 351.53 IE = 344.25 (36" SE)
CB #C5-SW	RIM = 351.53 IE = 344.25 (36" SW)
CB #C5-NE	RIM = 351.53 IE = 344.25 (36" NE)
CB #C5-NW	RIM = 351.53 IE = 344.25 (36" NW)
CB #C5-SE	RIM = 351.53 IE = 344.25 (36" SE)
CB #C5-SW	RIM = 351.53 IE = 344.25 (36" SW)
CB #C5-NE	RIM = 351.53 IE = 344.25 (36" NE)
CB #C5-NW	RIM = 351.53 IE = 344.25 (36" NW)
CB #C5-SE	RIM = 351.53 IE = 344.25 (36" SE)
CB #C5-SW	RIM = 351.53 IE = 344.25 (36" SW)
CB #C5-NE	RIM = 351.53 IE = 344.25 (36" NE)
CB #C5-NW	RIM = 351.53 IE = 344.25 (36" NW)
CB #C5-SE	RIM = 351.53 IE = 344.25 (36" SE)
CB #C5-SW	RIM = 351.53 IE = 344.25 (36" SW)
CB #C5-NE	RIM = 351.53 IE = 344.25 (36" NE)
CB #C5-NW	RIM = 351.53 IE = 344.25 (36" NW)
CB #C5-SE	RIM = 351.53 IE = 344.25 (36" SE)
CB #C5-SW	RIM = 351.53 IE = 344.25 (36" SW)
CB #C5-NE	RIM = 351.53 IE = 344.25 (36" NE)
CB #C5-NW	RIM = 351.53 IE = 344.25 (36" NW)
CB #C5-SE	RIM = 351.53 IE = 344.25 (36" SE)
CB #C5-SW	RIM = 351.53 IE = 344.25 (36" SW)
CB #C5-NE	RIM = 351.53 IE = 344.25 (36" NE)
CB #C5-NW	RIM = 351.53 IE = 344.25 (36" NW)
CB #C5-SE	RIM = 351.53 IE = 344.25 (36" SE)
CB #C5-SW	RIM = 351.53 IE = 344.25 (36" SW)
CB #C5-NE	RIM = 351.53 IE = 344.25 (36" NE)
CB #C5-NW	RIM = 351.53 IE = 344.25 (36" NW)
CB #C5-SE	RIM = 35



SEE MECHANICAL SHEET M100
FOR GROUND SOURCE LOOPS
AND UNDERGROUND BORE-HOLES

DRAINAGE NOTES

- PROVIDE SOLID 6" PVC ROOF DRAIN AT A MINIMUM SLOPE 1% UNLESS OTHERWISE SPECIFIED. PROVIDE 1" OF MINIMUM COVER IN LANDSCAPE/PEDESTRAIN AREAS AND 3" OF MINIMUM COVER IN VEHICULAR TRAFFIC AREAS. PROVIDE CLEANOUTS AT ALL BENDS GREATER THAN 90° AND AT ENDS.
- PROVIDE RECORD DRAWINGS OF THE SITE DRAINAGE, FOOTING DRAIN, AND ROOF DRAIN SYSTEM PER SPECIFICATIONS.
- VERIFY VERTICAL AND HORIZONTAL LOCATIONS OF ALL EXISTING UTILITIES AT CONNECTIONS WITH NEW UTILITIES PRIOR TO CONSTRUCTION. INFORM ARCHITECT AND ENGINEERING IMMEDIATELY OF DISCREPANCIES FROM THIS PLAN.
- ALL CATCH BASINS ARE TYPE 1 UNLESS OTHERWISE SPECIFIED. ALL LIDS SHALL BE LOCKING.
- ALL STORM DRAINAGE STRUCTURES SHALL BE INSTALLED WITH A STANDARD FRAME AND VANED GRATE PER WSDOT STANDARD PLAN 8-30-30-00 UNLESS OTHERWISE NOTED.
- CONTRACTOR TO FURNISH CATCH BASIN MONUMENT FROM THE CITY OF SEACAT. CONTRACTOR TO INSTALL PER THE CITY'S INSTALLATION INSTRUCTIONS.
- SEE STRUCTURAL PLANS FOR WALL AND FOUNDATION DETAILS.
- ALL STORMWATER PIPE MATERIAL SHALL BE CPEP UNLESS OTHERWISE NOTED.
- ALL FOOTING DRAIN PIPE MATERIAL SHALL BE 8" PERFORATED RIGID PVC PIPE. FOUNDATION DRAINS SHALL CONNECT TO A STORM CATCH BASIN WITH NON PERFORATED PVC.
- NORTHING AND EASTING COORDINATES ON STORM STRUCTURES IF SHOWN REFERENCE THE CENTER OF STRUCTURE.
- SEE LANDSCAPE PLANS AND SPECIFICATIONS FOR THE REQUIRED SOIL QUALITY AND DEPTHS. ALL AREAS SUBJECT TO CLEARING AND GRADING THAT HAVE NOT BEEN COVERED BY IMPERVIOUS SURFACE SHALL PROVIDE MINIMUM SOIL QUALITY AND DEPTH PER DETAIL.
- ALL STORM LINES SUBJECT TO PRESSURE TESTING AND CCTV VIDEO INSPECTION AT PROJECT COMPLETION PER SPECIFICATION SECTION 334100.
- SEE SHEETS C5.09-C5.12 FOR STORM DRAIN LINE PROFILES.

LEGEND:

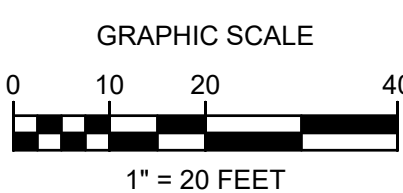
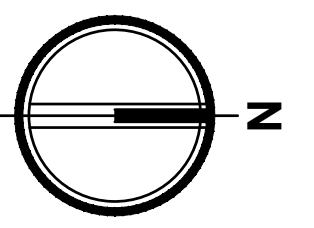
XXX	PROPOSED CONTOUR MINOR
XXX	PROPOSED CONTOUR MAJOR
D	STORM DRAIN
FD	FOOTING DRAIN
RD	ROOF DRAIN
---	DRAINAGE SWALE SEE GRADING PLANS FOR ELEVATIONS
U	UNDER DRAIN
■	CATCH BASIN, TYPE 1
●	CATCH BASIN, TYPE 2
DS	CLEANOUT
CC	DOWNSPOUT CONNECTION
CC	CURB CUT
CC	BIORETENTION CELL
CC	ARCH CHAMBER FLOW CONTROL
●	AREA DRAIN
	TRENCH DRAIN
	RIP RAP OUTFALL PAD

DRAINAGE KEYNOTES

- CONNECT TO EXISTING STRUCTURE.
- OVERFLOW STRUCTURE CONNECTION DIRECTLY TO STORMTECH CHAMBER SYSTEM, PER DETAIL 11, SHEET C5.04.
- SEE LANDSCAPE PLANS FOR OUTFALL PROTECTION DETAIL.
- SEE LANDSCAPE PLANS FOR DOWNSPOUT CONNECTION DETAIL.
- CONNECTION TO FIELD UNDERDRAIN SYSTEM. SEE LANDSCAPE PLANS FOR CONTINUATION.
- BIOPOD STORMWATER BIOFILTRATION SYSTEM. REFER TO STRUCTURE TABLE, THIS SHEET.
- CONNECTION TO STORM CHAMBER SYSTEM, SEE SHEET C5.07.
- CONNECTION TO STORM CHAMBER SYSTEM, SEE SHEET C5.08.

STORM STRUCTURE TABLE	
STRUCTURE NAME	STRUCTURE DETAILS
CB #20 TYPE 1 N 162474.79 E 1282794.72	RIM = 356.36 IE = 352.50 (8" S)
CB #42 48" TYPE 2 N 162455.49 E 1282989.43	RIM = 354.65 IE = 344.25 (12" N)
CB #43 TYPE 1 N 162621.23 E 1283032.01	RIM = 355.34 IE = 350.32 (12" N) IE = 350.32 (12" S)
CB #44 TYPE 1 N 162760.21 E 1283034.49	RIM = 355.34 IE = 351.02 (12" N) IE = 351.02 (12" S)
CB #45 TYPE 1 N 162913.15 E 1283042.23	RIM = 355.31 IE = 351.78 (12" N) IE = 351.78 (12" S)
CB #46 TYPE 1 N 163011.04 E 1283007.07	RIM = 355.48 IE = 352.30 (12" S)
CB #47 TYPE 1 N 162550.62 E 1282755.13	RIM = 354.79 IE = 349.64 (12" N) IE = 349.64 (12" SE)
CB #48 48" TYPE 2 SOLID LID N 162560.99 E 1282756.02	RIM = 356.70 IE = 349.89 (12" N) IE = 349.89 (12" E)

STORM STRUCTURE TABLE	
STRUCTURE NAME	STRUCTURE DETAILS
CB #49 TYPE 1 N 162600.24 E 1282797.59	RIM = 356.50 IE = 353.94 (12" W)
CB #50 TYPE 1 N 162455.49 E 1282756.98	RIM = 354.79 IE = 350.37 (12" N) IE = 350.37 (12" S)
CB #51 TYPE 1 N 162655.87 E 1282761.56	RIM = 355.64 IE = 351.78 (12" N) IE = 351.78 (12" S)
CB #52 TYPE 1 N 162929.66 E 1282770.56	RIM = 356.18 IE = 352.30 (12" N) IE = 352.30 (12" S) IE = 352.30 (12" E)
CB #53 TYPE 1 N 162928.43 E 1282903.61	RIM = 356.50 IE = 353.94 (12" W)
CB #54 TYPE 1 N 162988.24 E 1282772.65	RIM = 355.82 IE = 352.71 (12" NE) IE = 352.71 (12" S)
CB #55 TYPE 1 N 163037.99 E 1282820.97	RIM = 356.15 IE = 353.13 (12" SW)
CB #56 TYPE 1 N 163037.99 E 1282820.97	RIM = 356.29 IE = 349.89 (12" N) IE = 349.89 (12" E)



HIGHLINE PUBLIC SCHOOLS TYEE HIGH SCHOOL REPLACEMENT PROJECT

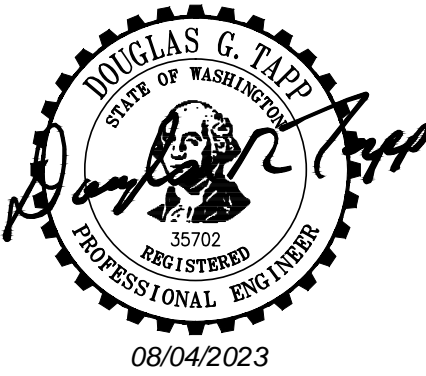
4424 S 188th St
SeaTac, WA 98188

Date:	06/30/23	
Job No.:	2190982.10	
Drawn By:	CTJ	
Checked by:	DGT	
Revisions		
#	Date	Description

DRAINAGE PLAN

C5.02

PERMIT SET



DRAINAGE NOTES

- PROVIDE SOLID 8" PVC ROOF DRAIN AT A MINIMUM SLOPE 1% UNLESS OTHERWISE SPECIFIED. PROVIDE 1" OF MINIMUM COVER IN LANDSCAPE/PEDESTRAIN AREAS AND 3" OF MINIMUM COVER IN VEHICULAR TRAFFIC AREAS. PROVIDE CLEANOUTS AT ALL BENDS GREATER THAN 90° AND AT ENDS.
- PROVIDE RECORD DRAWINGS OF THE SITE DRAINAGE, FOOTING DRAIN, AND ROOF DRAIN SYSTEM PER SPECIFICATIONS.
- VERIFY VERTICAL AND HORIZONTAL LOCATIONS OF ALL EXISTING UTILITIES AT CONNECTIONS WITH NEW UTILITIES PRIOR TO CONSTRUCTION. INFORM ARCHITECT AND ENGINEERING IMMEDIATELY OF DISCREPANCIES FROM THIS PLAN.
- ALL CATCH BASINS ARE TYPE 1 UNLESS OTHERWISE SPECIFIED. ALL LIDS SHALL BE LOCKING.
- ALL STORM DRAINAGE STRUCTURES SHALL BE INSTALLED WITH A STANDARD FRAME AND VANED GRATE PER WSDOT STANDARD PLAN B-30-30-00 UNLESS OTHERWISE NOTED.
- CONTRACTOR TO FURNISH CATCH BASIN MONUMENT FROM THE CITY OF SEATAC. CONTRACTOR TO INSTALL PER THE CITY'S INSTALLATION INSTRUCTIONS.
- SEE STRUCTURAL PLANS FOR WALL AND FOUNDATION DETAILS.
- ALL STORMWATER PIPE MATERIAL SHALL BE CPEP UNLESS OTHERWISE NOTED.
- ALL FOOTING DRAIN PIPE MATERIAL SHALL BE 8" PERFORATED RIGID PVC PIPE. FOUNDATION DRAINS SHALL CONNECT TO A STORM CATCH BASIN WITH NON PERFORATED PVC.
- NORTHING AND EASTING COORDINATES ON STORM STRUCTURES IF SHOWN REFERENCE THE CENTER OF STRUCTURE.
- SEE LANDSCAPE PLANS AND SPECIFICATIONS FOR THE REQUIRED SOIL QUALITY AND DEPTHS. ALL AREAS SUBJECT TO CLEARING AND GRADING THAT HAVE NOT BEEN COVERED BY INTERVIOUS SURFACE SHALL PROVIDE MINIMUM SOIL QUALITY AND DEPTH PER DETAIL.
- ALL STORM LINES SUBJECT TO PRESSURE TESTING AND CCTV VIDEO INSPECTION AT PROJECT COMPLETION PER SPECIFICATION SECTION 334100.
- SEE SHEETS C5.09-C5.12 FOR STORM DRAIN LINE PROFILES.

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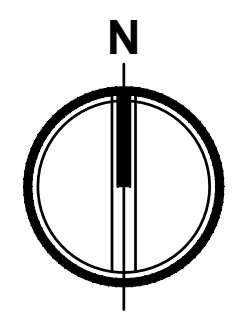
XXX	PROPOSED CONTOUR MINOR
XXX	PROPOSED CONTOUR MAJOR
D	STORM DRAIN
FD	FOOTING DRAIN
RD	ROOF DRAIN
—>	DRAINAGE SWALE, SEE GRADING PLANS FOR ELEVATIONS
— U — U —	UNDER DRAIN
■	CATCH BASIN, TYPE 1
●	CATCH BASIN, TYPE 2
●	CLEANOUT
DS A	DOWNSPOUT CONNECTION
CC	CURB CUT
↓ ↓	BIORETENTION CELL
↓ ↓	ARCH CHAMBER FLOW CONTROL
●	AREA DRAIN
	TRENCH DRAIN
	RIP RAP OUTFALL PAD

DRAINAGE KEYNOTES

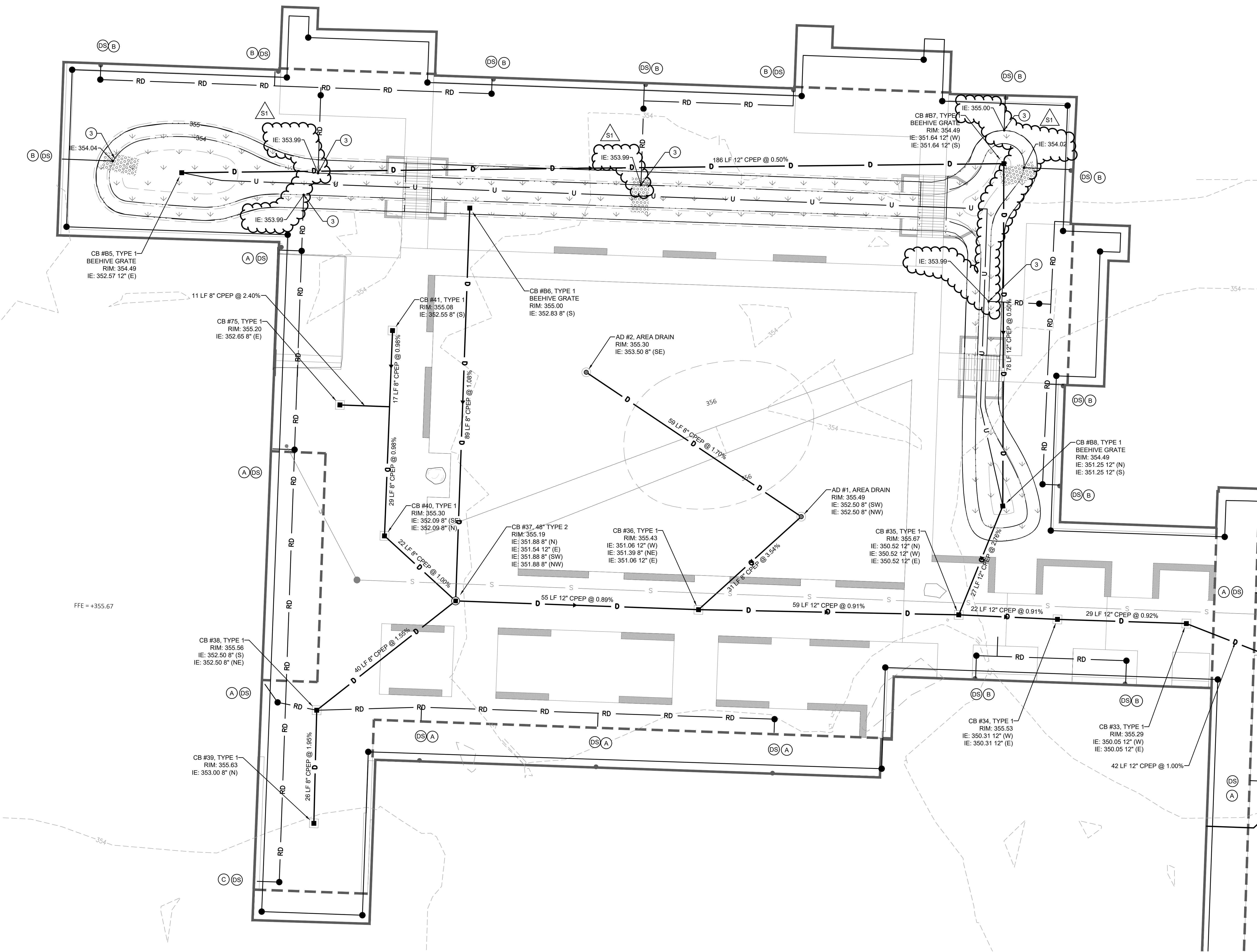
- CONNECT TO EXISTING STRUCTURE.
- OVERFLOW STRUCTURE CONNECTION DIRECTLY TO STORMTECH CHAMBER SYSTEM, PER DETAIL 11, SHEET C5.04.
- SEE LANDSCAPE PLANS FOR OUTFALL PROTECTION DETAIL.
- SEE LANDSCAPE PLANS FOR DOWNSPOUT CONNECTION DETAIL.
- CONNECTION TO FIELD UNDERDRAIN SYSTEM. SEE LANDSCAPE PLANS FOR CONTINUATION.
- BIOPOD STORMWATER BIOFILTRATION SYSTEM. REFER TO STRUCTURE TABLE, THIS SHEET.
- CONNECTION TO STORM CHAMBER SYSTEM, SEE SHEET C5.07.
- CONNECTION TO STORM CHAMBER SYSTEM, SEE SHEET C5.08.

STORM STRUCTURE TABLE	
STRUCTURE NAME	STRUCTURE DETAILS
AD #1 AREA DRAIN N 162205.58 E 1283144.65	RIM = 355.49 IE = 352.50 (8° SW) IE = 352.50 (8° NW)
AD #2 AREA DRAIN N 162238.28 E 1283095.96	RIM = 355.30 IE = 353.50 (8° SE)
CB #33 TYPE 1 N 162181.37 E 1283231.86	RIM = 355.29 IE = 350.05 (12° W) IE = 350.05 (12° E)
CB #34 TYPE 1 N 162184.52 E 1283121.38	RIM = 355.53 IE = 350.31 (12° W) IE = 350.31 (12° E)
CB #35 TYPE 1 N 162183.32 E 1283190.32	RIM = 355.67 IE = 350.52 (12° W) IE = 350.52 (12° W) IE = 350.52 (12° E)
CB #36 TYPE 1 N 162184.52 E 1283121.38	RIM = 355.43 IE = 351.06 (12° W) IE = 351.39 (8° NE) IE = 351.06 (12° E)
CB #37 48" TYPE 2 N 162186.50 E 1283096.37	RIM = 355.19 IE = 351.88 (8° NW) IE = 351.54 (12° E) IE = 351.88 (8° SW) IE = 351.88 (8° NW)
CB #38 TYPE 1 N 162186.74 E 1283034.91	RIM = 355.56 IE = 352.50 (8° S) IE = 352.50 (8° NE)
CB #39 TYPE 1 N 162136.12 E 1283034.27	RIM = 355.63 IE = 353.00 (8° N)
CB #40 TYPE 1 N 162201.22 E 1283050.27	RIM = 355.30 IE = 352.05 (12° W) IE = 352.05 (12° E)

STORM STRUCTURE TABLE	
STRUCTURE NAME	STRUCTURE DETAILS
CB #41 TYPE 1 N 162247.73 E 1283052.08	RIM = 355.08 IE = 352.55 (8° S) IE = 352.55 (8° S)
CB #75 TYPE 1 N 162230.88 E 1283040.16	RIM = 355.20 IE = 352.65 (8° E)
CB #85 TYPE 1 N 162283.48 E 1283201.86	RIM = 354.49 IE = 352.57 (12° E)
CB #86 TYPE 1 N 162276.47 E 1283202.66	RIM = 355.00 IE = 352.83 (8° S)
CB #87 TYPE 1 N 162285.53 E 1283190.52	RIM = 354.49 IE = 351.64 (12° W) IE = 351.64 (12° S)
CB #88 TYPE 1 N 162207.99 E 1283190.29	RIM = 354.49 IE = 351.25 (12° N) IE = 351.25 (12° S)



GRAPHIC SCALE
0 5 10 20
1" = 10 FEET



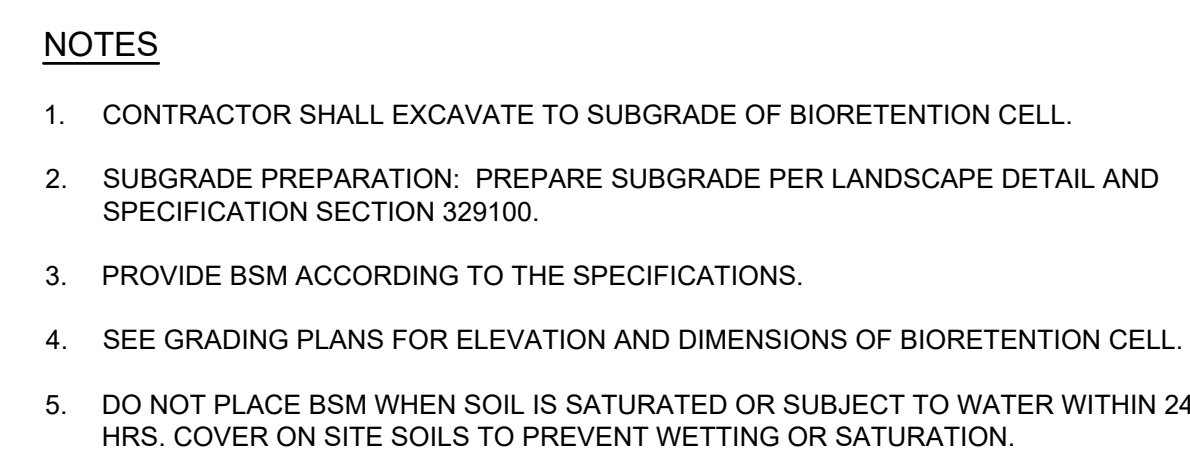
ENLARGEMENT #1A
SCALE: 1"= 10'

CITY OF SEATAC DRAINAGE NOTES

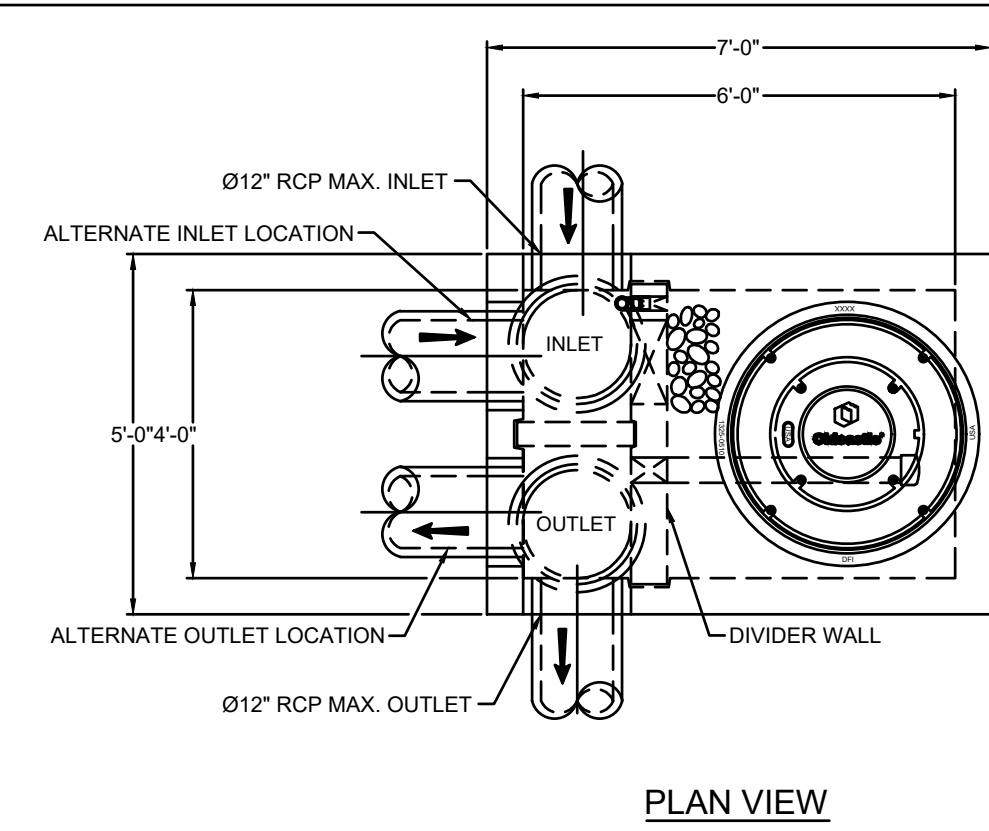
- ALL PIPE AND APPURTENANCES SHALL BE LAID ON A PROPERLY PREPARED FOUNDATION IN ACCORDANCE WITH WSDOT 7-02.3(1). REDUCTIONS IN COMPACTION REQUIREMENTS ARE ALLOWED TO ACCOMMODATE BIORETENTION OR PERMEABLE PAVEMENT INSTALLATIONS.
- STEEL PIPE SHALL BE GALVANIZED AND HAVE ASPHALT TREATMENT #1 OR BETTER INSIDE AND OUTSIDE. (KCRS 7.03).
- ALL DRAINAGE STRUCTURES, SUCH AS CATCH BASINS AND MANHOLES, SHALL HAVE LOCKING FRAMES AND GRATES OR SOLID LOCKING LIDS. ALL DRAINAGE STRUCTURES ASSOCIATED WITH A PERMANENT RETENTION/DETENTION FACILITY SHALL HAVE SOLID LOCKING LIDS.
- ALL CATCH BASIN GRATES SHALL CONFORM TO THE LATEST EDITION OF THE KCRDCS DRAWINGS NUMBERS 7-013, 7-017, 7-018, 7-019, 7-020, 08-7-021, AND SHALL INCLUDE THE STAMPING "OUTFALL TO STREAM. DUMP NO POLLUTANTS". ALL GRATES AND SOLID COVERS WITHIN THE RIGHT-OF-WAY SHALL HAVE EON LOCK, ERGO ROUND COVERS, OR APPROVED EQUIVALENT.
- ALL DRIVEWAY CULVERTS LOCATED WITHIN CITY OF SEATAC RIGHT-OF-WAY SHALL BE OF SUFFICIENT LENGTH TO PROVIDE A MINIMUM 3:1 SLOPE FROM THE EDGE OF THE DRIVEWAY TO THE BOTTOM OF THE DITCH. DRIVEWAY CULVERTS SHALL BE 12" DIAMETER CONCRETE OR EQUIVALENT WITH BEVELED END SECTIONS ON ALL EXPOSED ENDS TO MATCH THE SIDE SLOPE, AND ARE TO HAVE QUARRY SPALLS FOR EROSION PROTECTION ON EACH END (SEE KCRS 7.05(G), DRAWING NO. 7-001).
- THE STANDARD ROCK LINING OF DITCHES SHALL BE IN ACCORDANCE WITH THE MOST RECENT EDITION OF THE KING COUNTY SURFACE WATER DESIGN MANUAL AND SECTION 9-13 OF THE WSDOT STANDARD SPECIFICATIONS. ROCK GRADATION SHALL BE AS FOLLOWS: PASSING 8-INCH SQUARE SIEVE 100%; PASSING 3-INCH SQUARE SIEVE 40%; AND PASSING 1/2-INCH SIEVE 10%. INSTALLATION SHALL BE PLACED SO AS TO FORM A FIRM, DENSE PROTECTIVE MAT CONSISTENT WITH EXAMPLES IN KCRDCS DRAWING NUMBER 7-024 AND CONFORMING TO THE DESIGN SURFACE OF THE DITCH. INDIVIDUAL ROCKS SHALL NOT PROTRUDE MORE THAN 3 INCHES FROM THAT SURFACE.
- ALL STORM PIPE, DETENTION TANKS & VAULTS, WATER QUALITY TANKS & VAULTS, AND COMBINED DETENTION & WATER QUALITY TANKS & VAULTS SHALL BE SUBJECT TO TESTING PER SECTION 7-04 OF THE WSDOT STANDARD SPECIFICATIONS AND CITY OF SEATAC STANDARD PROCEDURES.
- DETENTION TANKS MUST PASS AN EXFILTRATION TEST PER THE WSDOT 2016 7-04.3(1)B STANDARD PRIOR TO FINALIZING THE SITE PERMIT.
- ALL DISTURBED PERVIOUS AREAS (COMPACTED, GRADED, LANDSCAPED, ETC.) OF THE DEVELOPMENT SITE MUST DEMONSTRATE ONE OF THE FOLLOWING: THE EXISTING DUFF LAYER SHALL BE STAGED AND REDISTRIBUTED TO MAINTAIN THE MOISTURE CAPACITY OF THE SOIL, OR AMENDED SOIL SHALL BE ADDED TO MAINTAIN THE MOISTURE CAPACITY PURSUANT TO CITY OF SEATAC SOIL AMENDMENT STANDARDS.
- SITE CLEARING IS LIMITED SEASONALLY BETWEEN OCTOBER 1 AND MARCH 30 INCLUSIVE, UNLESS OTHERWISE APPROVED WITH A WRITTEN DECISION BY THE CITY OF SEATAC ENGINEERING REVIEW DIVISION.
- PRIOR TO THE CONSTRUCTION OF ANY IMPROVEMENTS AND/OR BUILDINGS ON THE SITE, THOSE PORTIONS OF THE STORMWATER FACILITIES NECESSARY TO ACCOMMODATE THE CONTROL OF SURFACE AND STORMWATER RUNOFF DISCHARGE FROM THE SITE DURING CONSTRUCTION MUST BE CONSTRUCTED, APPROVED, AND FUNCTIONING PROPERLY.
- DRAINAGE INLETS (STUB-OUTS) SHALL BE PROVIDED FOR EACH INDIVIDUAL LOT, EXCEPT FOR THOSE LOTS APPROVED FOR INFILTRATION BY THE CITY OF SEATAC. STUB-OUTS SHALL CONFORM TO THE FOLLOWING:
 - EACH OUTLET SHALL BE SUITABLY LOCATED AT THE LOWEST ELEVATION ON THE LOT, SO AS TO SERVICE ALL FUTURE ROOF DOWNSPOUTS AND FOOTING DRAINS, DRIVEWAYS, YARD DRAINS, AND ANY OTHER SURFACE OR SUBSURFACE DRAINS NECESSARY TO RENDER THE LOTS SUITABLE FOR THEIR INTENDED USE. EACH OUTLET SHALL HAVE FREE-FLOWING, POSITIVE DRAINAGE TO AN APPROVED STORMWATER CONVEYANCE SYSTEM OR TO AN APPROVED OUTFALL LOCATION.
 - OUTLETS ON EACH LOT SHALL BE LOCATED WITH A FIVE-FOOT-HIGH, 2" X 4" STAKE MARKED "STORM" OR "DRAIN". THE STAKE SHALL EXTEND ABOVE SURFACE LEVEL, BE VISIBLE, AND BE SECURED TO THE STUB-OUT.
 - PIPE MATERIAL SHALL CONFORM TO UNDERDRAIN SPECIFICATIONS DESCRIBED IN KCRS 7.03. IF NON-METALLIC, THE PIPE SHALL CONTAIN WIRE OR OTHER ACCEPTABLE DETECTION.
 - DRAINAGE EASEMENTS ARE REQUIRED FOR DRAINAGE SYSTEMS DESIGNED TO CONVEY FLOWS THROUGH INDIVIDUAL LOTS.
 - THE APPLICANT/CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE LOCATIONS OF ALL STUB-OUT CONVEYANCE LINES WITH RESPECT TO UTILITIES (E.G., POWER, GAS, TELEPHONE, TELEVISION, ETC.).
 - ALL INDIVIDUAL STUB-OUTS SHALL BE PRIVATELY OWNED AND MAINTAINED BY THE LOT HOMEOWNER.
- PIPE COVER NOTES:
 - FOR COVER LESS THAN 1 FT. DUCTILE IRON PIPE IS USED.
 - FOR COVER FROM 1 FT. TO 2 FT. USE REINFORCED CONCRETE PIPE.
 - FOR A MIN. 2 FT. COVER - ANY MATERIAL LISTED IN THE 2016 KING COUNTY SURFACE WATER DESIGN MANUAL OTHER THAN PVC MAY BE USED.
 - PVC PIPE REQUIRES AT LEAST 3 FT. COVER.
 - ALL PVC PIPES REQUIRE A SAND COLLAR WHEN CONNECTING TO A CONCRETE STRUCTURE. NOTES: ALL DIMENSIONS ARE MEASURED FROM TOP (OUTSIDE) OF PIPE. A COVER IS THE MATERIAL OVER THE OUTSIDE TOP OF THE PIPE (COVER MAY NOT INCLUDE THE MATERIAL OF THE PIPE). IF YOU HAVE A THREE-FOOT GRADE DIFFERENTIAL BETWEEN THE INVERT OF A 12" DIAMETER PIPE AND THE FINISHED GRADE, YOU DO NOT HAVE TWO FEET OF COVER OVER THE PIPE. EXCEPTIONS MAY BE GRANTED IN NON-VEHICULAR AREAS.
- THE CONTRACTOR SHALL PROVIDE CCTV FOOTAGE OF ALL PIPES INSTALLED IN RIGHT-OF-WAY TO THE CITY.

DRAINAGE ENLARGEMENTS

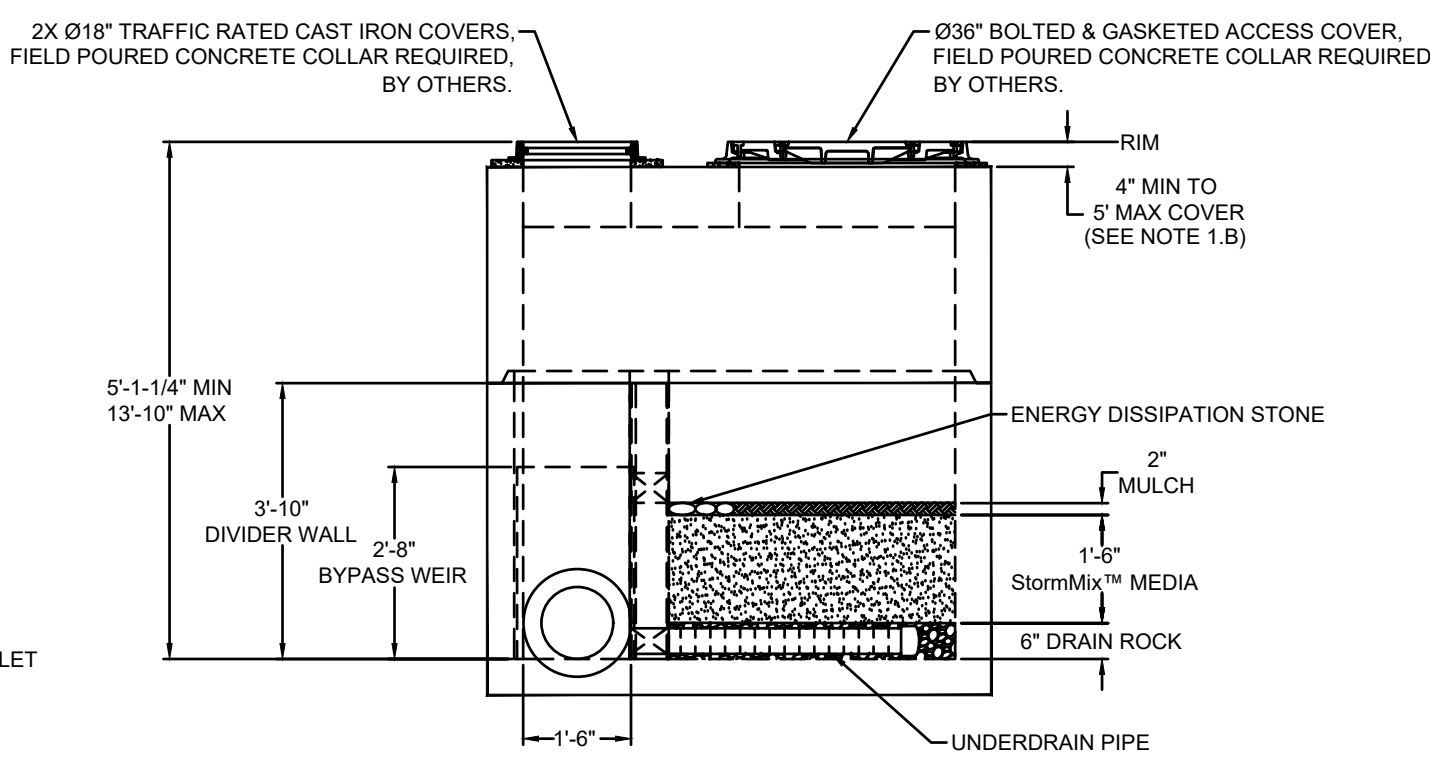
C5.03



SITE SPECIFIC DATA					SITE SPECIFIC DATA				
Structure ID	BP #4	Structure ID	BP #6		Structure ID	BP #4	Structure ID	BP #6	
Treatment Flow Rate (cfs)	0.144	Treatment Flow Rate (cfs)	0.052		Treatment Flow Rate (cfs)	0.144	Treatment Flow Rate (cfs)	0.052	
Peak Flow Rate (cfs)	0.144	Peak Flow Rate (cfs)	0.15		Peak Flow Rate (cfs)	0.144	Peak Flow Rate (cfs)	0.15	
Rim Elevation	352.48	Rim Elevation	354.07		Rim Elevation	352.48	Rim Elevation	354.07	
Top of Vault Elevation	-	Top of Vault Elevation	-		Top of Vault Elevation	-	Top of Vault Elevation	-	
Pipe Data	Pipe Location	Pipe Size	Pipe Type	Invert Elevation	Pipe Location	Pipe Size	Pipe Type	Invert Elevation	
Inlet	-	8	-	348.66	Inlet	-	10	-	351.07
Outlet	-	8	-	348.48	Outlet	-	10	-	348.9
Notes:					Notes:				
PERFORMANCE SPECIFICATIONS					PERFORMANCE SPECIFICATIONS				
Treatment Flow Capacity:					Treatment Flow Capacity:				
NIDEF 80% Removal, 75 micron					NIDEF 80% Removal, 75 micron				
WA Ecology COLD - Basic					WA Ecology COLD - Basic				
Enhanced & Phosphorus					Enhanced & Phosphorus				
Bypass Capacity					Bypass Capacity				
5.0 cfs					5.0 cfs				



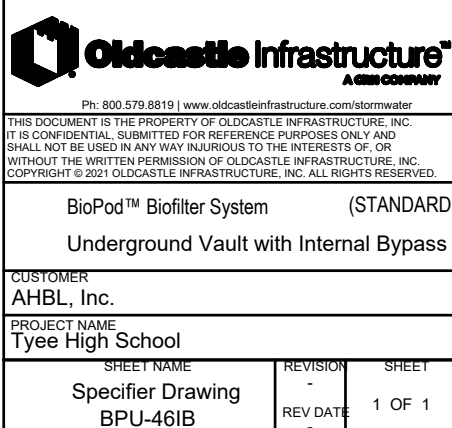
PLAN VIEW



ELEVATION VIEW

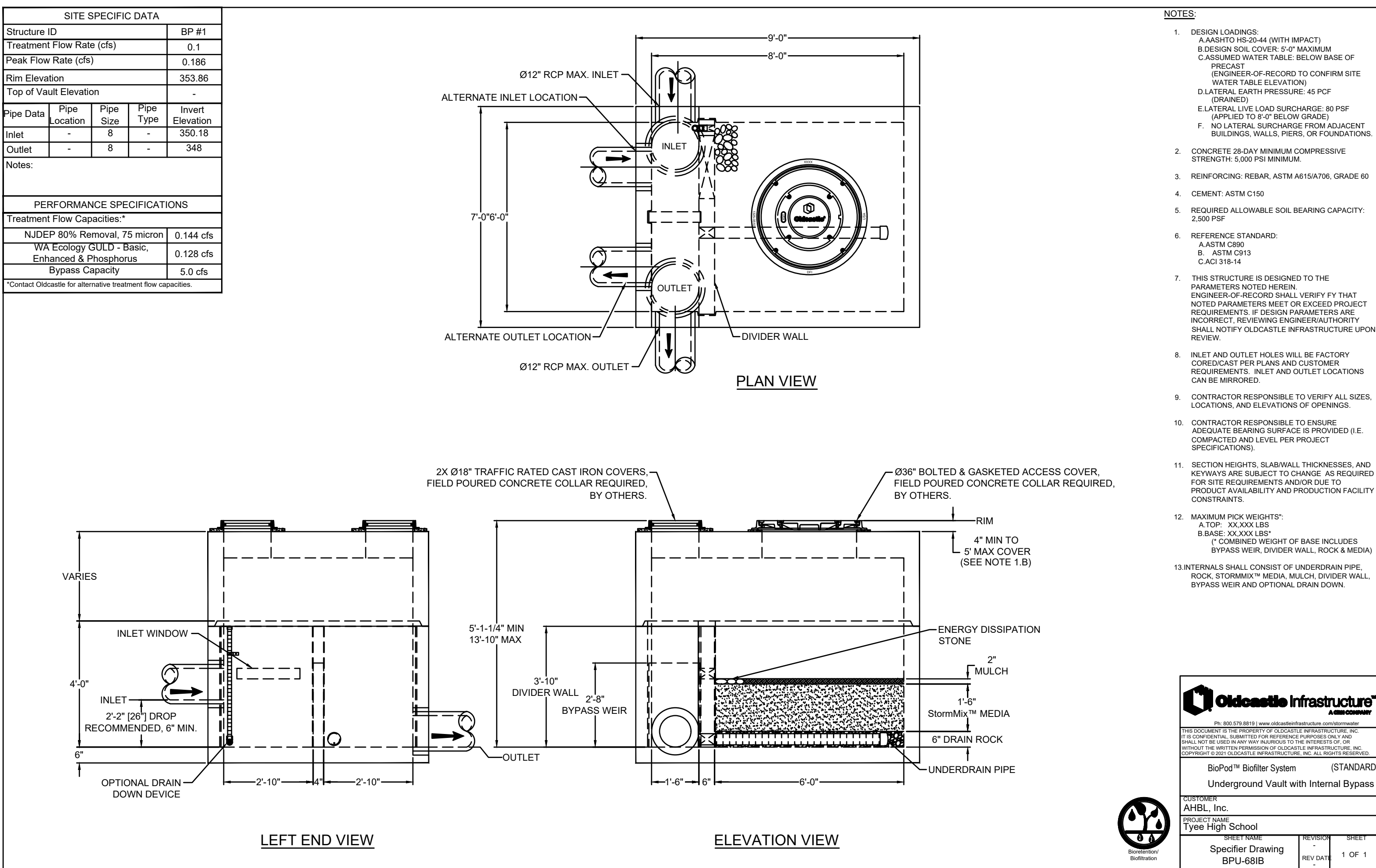
LEFT END VIEW

- NOTES:**
- DESIGN LOADINGS:
A. UNIFORM LOAD (WITH IMPACT)
B. DESIGN SOIL COVER: 8" MINIMUM
C. DESIGN WIND SPEED: 100 MPH
D. LATERAL EARTH PRESSURE: 40 PCF (APPLIED TO 8" BELOW GRADE)
E. INSULATION: 2" MINIMUM (SEE NOTE 1.B)
 - CONCRETE: 3000 PSI MINIMUM COMPRESSIVE STRENGTH, 5000 PSI MINIMUM TENSILE STRENGTH.
 - REINFORCING: #4 BARS, 18" ON CENTER, 18" DEEP.
 - CEMENT: ASTM C150.
 - REQUIRED ALLOWABLE SOIL BEARING CAPACITY: 2.00 PSF.
 - REFERENCE STANDARD:
A. ASTM C150
B. ASTM C153
C. ACI 308.1R-14
 - THIS STRUCTURE IS DESIGNED TO THE PARAMETERS NOTED HERE. VERIFY THAT NOTED PARAMETERS MEET OR EXCEED PROJECT REQUIREMENTS. IF DESIGN PARAMETERS ARE INCORRECT, REVEALING ENGINEER/AUTHORITY SHALL NOTIFY OLDCASTLE INFRASTRUCTURE UPON REVIEW.
 - INLET AND OUTLET HOLES WILL BE FACTORY CONNECTED PER PLANS AND CUSTOMER REQUIREMENTS. INLET AND OUTLET LOCATIONS CAN BE MODIFIED.
 - CONTRACTOR RESPONSIBLE TO VERIFY ALL SIZES, LOCATIONS, AND ELEVATIONS OF OPENINGS.
 - CONTRACTOR RESPONSIBLE TO ENSURE ADEQUATE BEARING SURFACE IS PROVIDED (I.E. COMPACTED AND LEVEL PER PROJECT SPECIFICATIONS).
 - SECTION HEIGHTS, SLABWALL THICKNESSES, AND REINFORCEMENT ARE SUBJECT TO CHANGE AS REQUIRED FOR SITE REQUIREMENTS AND/OR DUE TO PRODUCT AVAILABILITY AND PRODUCTION FACILITY CONSTRAINTS.
 - MAXIMUM RISE HEIGHT:
A. TOP: 10' X 10' X 10' LBS
B. BASE: 10' X 10' X 10' LBS
C. COVERED HEIGHT OF BASE INCLUDES BYPASS WEIR, DIVIDER WALL, ROCK & MEDIA.
 - INTERIORS SHALL CONSIST OF UNDERDRAIN PIPE, ROCK, STORMWATER MEDIA, MULCH, DIVIDER WALL, BYPASS WEIR AND OPTIONAL DRAIN DOWN.

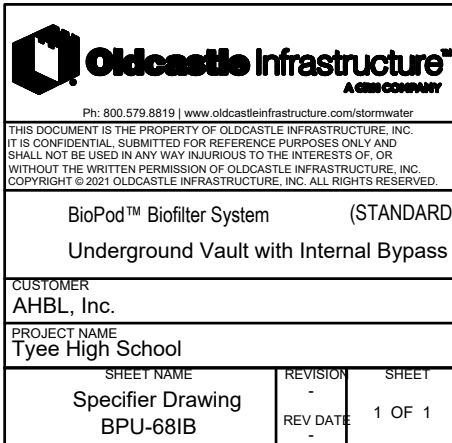


1 OLDCASTLE BIOPOD BPU-461B

NOT TO SCALE

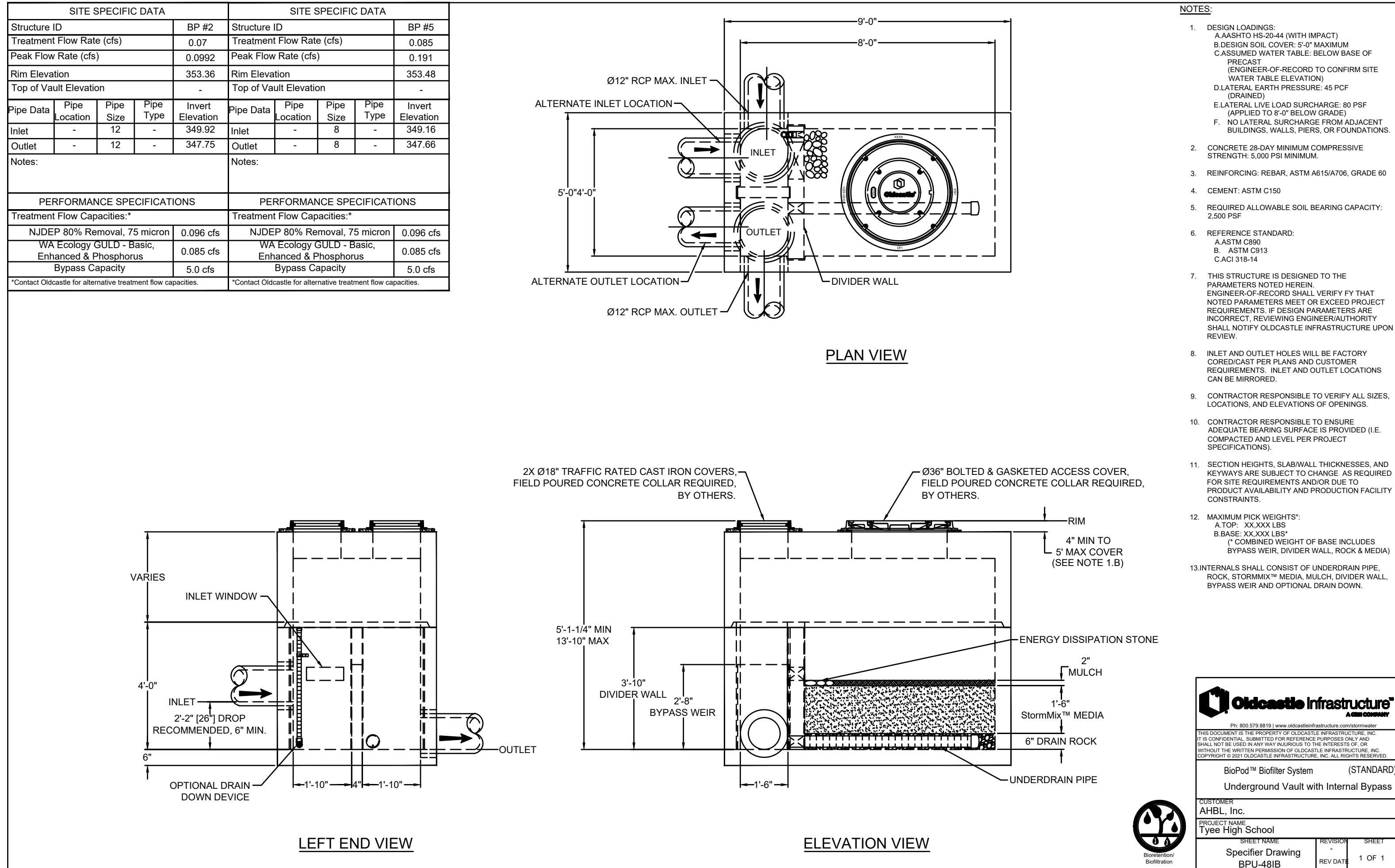


- NOTES:**
- DESIGN LOADINGS:
A. UNIFORM LOAD (WITH IMPACT)
B. DESIGN SOIL COVER: 8" MINIMUM
C. DESIGN WIND SPEED: 100 MPH
D. LATERAL EARTH PRESSURE: 40 PCF (APPLIED TO 8" BELOW GRADE)
E. INSULATION: 2" MINIMUM (SEE NOTE 1.B)
 - CONCRETE: 3000 PSI MINIMUM COMPRESSIVE STRENGTH, 5000 PSI MINIMUM TENSILE STRENGTH.
 - REINFORCING: #4 BARS, 18" ON CENTER, 18" DEEP.
 - CEMENT: ASTM C150.
 - REQUIRED ALLOWABLE SOIL BEARING CAPACITY: 2.00 PSF.
 - REFERENCE STANDARD:
A. ASTM C150
B. ASTM C153
C. ACI 308.1R-14
 - THIS STRUCTURE IS DESIGNED TO THE PARAMETERS NOTED HERE. VERIFY THAT NOTED PARAMETERS MEET OR EXCEED PROJECT REQUIREMENTS. IF DESIGN PARAMETERS ARE INCORRECT, REVEALING ENGINEER/AUTHORITY SHALL NOTIFY OLDCASTLE INFRASTRUCTURE UPON REVIEW.
 - INLET AND OUTLET HOLES WILL BE FACTORY CONNECTED PER PLANS AND CUSTOMER REQUIREMENTS. INLET AND OUTLET LOCATIONS CAN BE MODIFIED.
 - CONTRACTOR RESPONSIBLE TO VERIFY ALL SIZES, LOCATIONS, AND ELEVATIONS OF OPENINGS.
 - CONTRACTOR RESPONSIBLE TO ENSURE ADEQUATE BEARING SURFACE IS PROVIDED (I.E. COMPACTED AND LEVEL PER PROJECT SPECIFICATIONS).
 - SECTION HEIGHTS, SLABWALL THICKNESSES, AND REINFORCEMENT ARE SUBJECT TO CHANGE AS REQUIRED FOR SITE REQUIREMENTS AND/OR DUE TO PRODUCT AVAILABILITY AND PRODUCTION FACILITY CONSTRAINTS.
 - MAXIMUM RISE HEIGHT:
A. TOP: 10' X 10' X 10' LBS
B. BASE: 10' X 10' X 10' LBS
C. COVERED HEIGHT OF BASE INCLUDES BYPASS WEIR, DIVIDER WALL, ROCK & MEDIA.
 - INTERIORS SHALL CONSIST OF UNDERDRAIN PIPE, ROCK, STORMWATER MEDIA, MULCH, DIVIDER WALL, BYPASS WEIR AND OPTIONAL DRAIN DOWN.

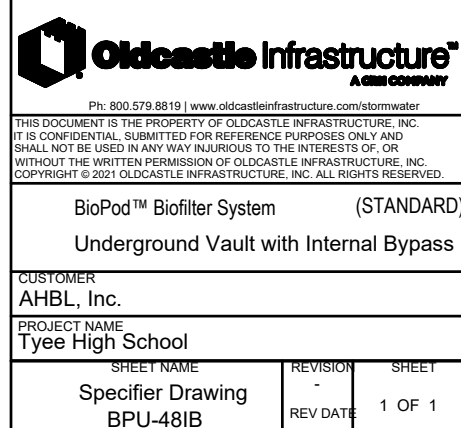


3 OLDCASTLE BIOPOD BPU-681B

NOT TO SCALE

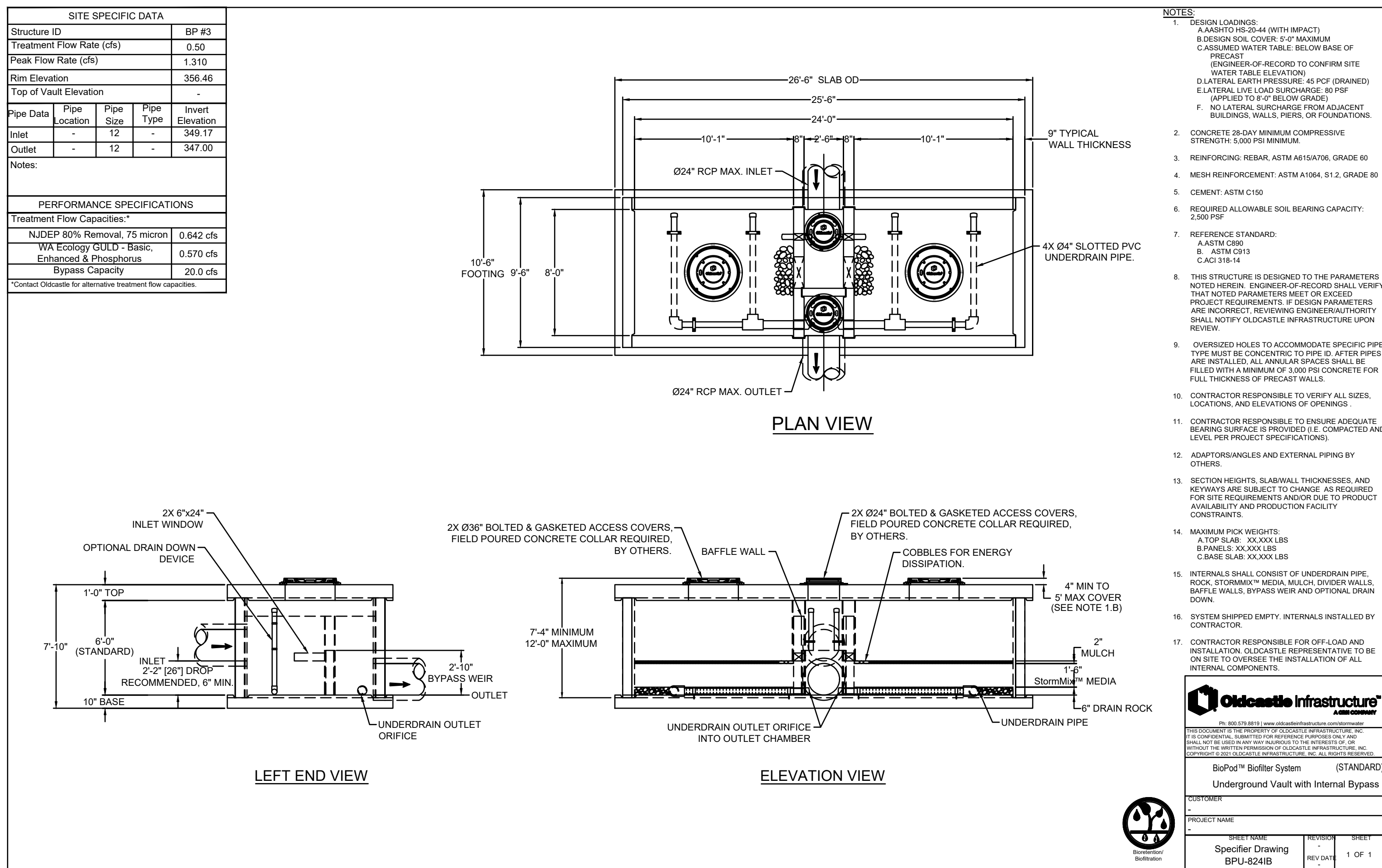


- NOTES:**
- DESIGN LOADINGS:
A. UNIFORM LOAD (WITH IMPACT)
B. DESIGN SOIL COVER: 8" MINIMUM
C. DESIGN WIND SPEED: 100 MPH
D. LATERAL EARTH PRESSURE: 40 PCF (APPLIED TO 8" BELOW GRADE)
E. INSULATION: 2" MINIMUM (SEE NOTE 1.B)
 - CONCRETE: 3000 PSI MINIMUM COMPRESSIVE STRENGTH, 5000 PSI MINIMUM TENSILE STRENGTH.
 - REINFORCING: #4 BARS, 18" ON CENTER, 18" DEEP.
 - CEMENT: ASTM C150.
 - REQUIRED ALLOWABLE SOIL BEARING CAPACITY: 2.00 PSF.
 - REFERENCE STANDARD:
A. ASTM C150
B. ASTM C153
C. ACI 308.1R-14
 - THIS STRUCTURE IS DESIGNED TO THE PARAMETERS NOTED HERE. VERIFY THAT NOTED PARAMETERS MEET OR EXCEED PROJECT REQUIREMENTS. IF DESIGN PARAMETERS ARE INCORRECT, REVEALING ENGINEER/AUTHORITY SHALL NOTIFY OLDCASTLE INFRASTRUCTURE UPON REVIEW.
 - INLET AND OUTLET HOLES WILL BE FACTORY CONNECTED PER PLANS AND CUSTOMER REQUIREMENTS. INLET AND OUTLET LOCATIONS CAN BE MODIFIED.
 - CONTRACTOR RESPONSIBLE TO VERIFY ALL SIZES, LOCATIONS, AND ELEVATIONS OF OPENINGS.
 - CONTRACTOR RESPONSIBLE TO ENSURE ADEQUATE BEARING SURFACE IS PROVIDED (I.E. COMPACTED AND LEVEL PER PROJECT SPECIFICATIONS).
 - SECTION HEIGHTS, SLABWALL THICKNESSES, AND REINFORCEMENT ARE SUBJECT TO CHANGE AS REQUIRED FOR SITE REQUIREMENTS AND/OR DUE TO PRODUCT AVAILABILITY AND PRODUCTION FACILITY CONSTRAINTS.
 - MAXIMUM RISE HEIGHT:
A. TOP: 10' X 10' X 10' LBS
B. BASE: 10' X 10' X 10' LBS
C. COVERED HEIGHT OF BASE INCLUDES BYPASS WEIR, DIVIDER WALL, ROCK & MEDIA.
 - INTERIORS SHALL CONSIST OF UNDERDRAIN PIPE, ROCK, STORMWATER MEDIA, MULCH, DIVIDER WALL, BYPASS WEIR AND OPTIONAL DRAIN DOWN.

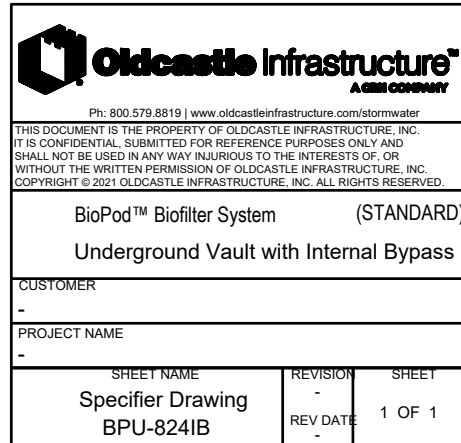


2 OLDCASTLE BIOPOD BPU-481B

NOT TO SCALE



- NOTES:**
- DESIGN LOADINGS:
A. UNIFORM LOAD (WITH IMPACT)
B. DESIGN SOIL COVER: 8" MINIMUM
C. DESIGN WIND SPEED: 100 MPH
D. LATERAL EARTH PRESSURE: 40 PCF (APPLIED TO 8" BELOW GRADE)
E. INSULATION: 2" MINIMUM (SEE NOTE 1.B)
 - CONCRETE: 3000 PSI MINIMUM COMPRESSIVE STRENGTH, 5000 PSI MINIMUM TENSILE STRENGTH.
 - REINFORCING: #4 BARS, 18" ON CENTER, 18" DEEP.
 - CEMENT: ASTM C150.
 - REQUIRED ALLOWABLE SOIL BEARING CAPACITY: 2.00 PSF.
 - REFERENCE STANDARD:
A. ASTM C150
B. ASTM C153
C. ACI 308.1R-14
 - THIS STRUCTURE IS DESIGNED TO THE PARAMETERS NOTED HERE. VERIFY THAT NOTED PARAMETERS MEET OR EXCEED PROJECT REQUIREMENTS. IF DESIGN PARAMETERS ARE INCORRECT, REVEALING ENGINEER/AUTHORITY SHALL NOTIFY OLDCASTLE INFRASTRUCTURE UPON REVIEW.
 - OVERSIZED HOLES TO ACCOMMODATE SPECIFIC PIPE TYPES MUST BE CONCRETE CAST INTO THE PIPES AND NOTED IN ALL PLANS AND SPECIFICATIONS. BE FILLED WITH A MINIMUM OF 1000 PSI CONCRETE FOR FULL THICKNESS OF PRECAST WALLS.
 - CONTRACTOR RESPONSIBLE TO VERIFY ALL SIZES, LOCATIONS, AND ELEVATIONS OF OPENINGS.
 - CONTRACTOR RESPONSIBLE TO ENSURE ADEQUATE BEARING SURFACE IS PROVIDED (I.E. COMPACTED AND LEVEL PER PROJECT SPECIFICATIONS).
 - ADJUSTERS/ANGLES AND EXTERNAL PIPING BY OTHERS.
 - SECTION HEIGHTS, SLABWALL THICKNESSES, AND REINFORCEMENT ARE SUBJECT TO CHANGE AS REQUIRED FOR SITE REQUIREMENTS AND/OR DUE TO PRODUCT AVAILABILITY AND PRODUCTION FACILITY CONSTRAINTS.
 - MAXIMUM RISE HEIGHT:
A. TOP: 10' X 10' X 10' LBS
B. BASE: 10' X 10' X 10' LBS
C. COVERED HEIGHT OF BASE INCLUDES BYPASS WEIR, DIVIDER WALL, ROCK & MEDIA.
 - INTERIORS SHALL CONSIST OF UNDERDRAIN PIPE, ROCK, STORMWATER MEDIA, MULCH, DIVIDER WALL, BYPASS WEIR AND OPTIONAL DRAIN DOWN.
 - SYSTEM SHIPPED EMPTY. INTERNALS INSTALLED BY CONTRACTOR.
 - CONTRACTOR RESPONSIBLE FOR OFF-LOAD AND INSTALLATION. OLDCASTLE INFRASTRUCTURE WILL BE ON SITE TO OVERSEE THE INSTALLATION OF ALL INTERNAL COMPONENTS.



4 OLDCASTLE BIOPOD BPU-8241B

NOT TO SCALE



08/04/2023



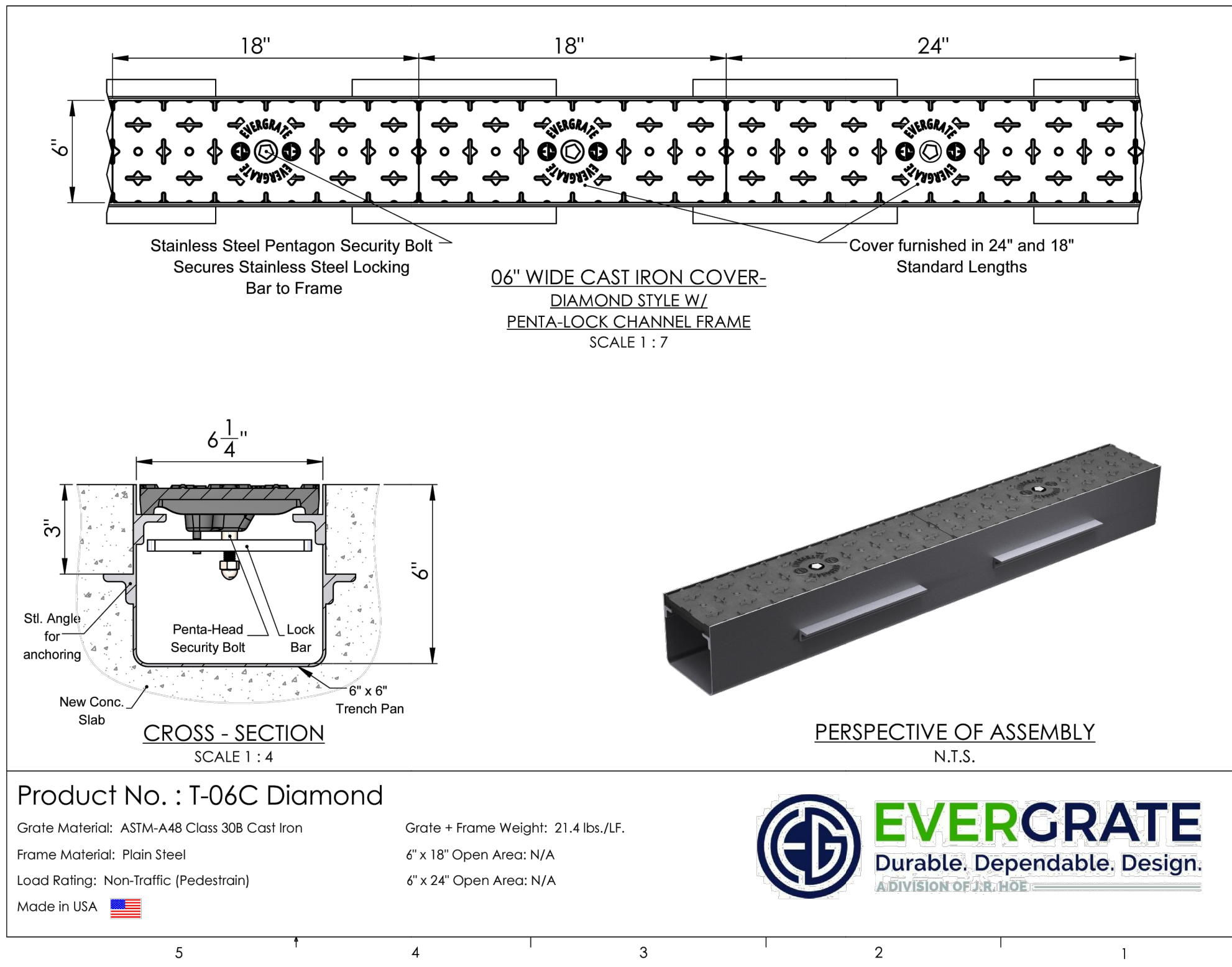
HIGHLINE PUBLIC SCHOOLS TYEE HIGH SCHOOL REPLACEMENT PROJECT

4424 S 188th St
SeaTac, WA 98188

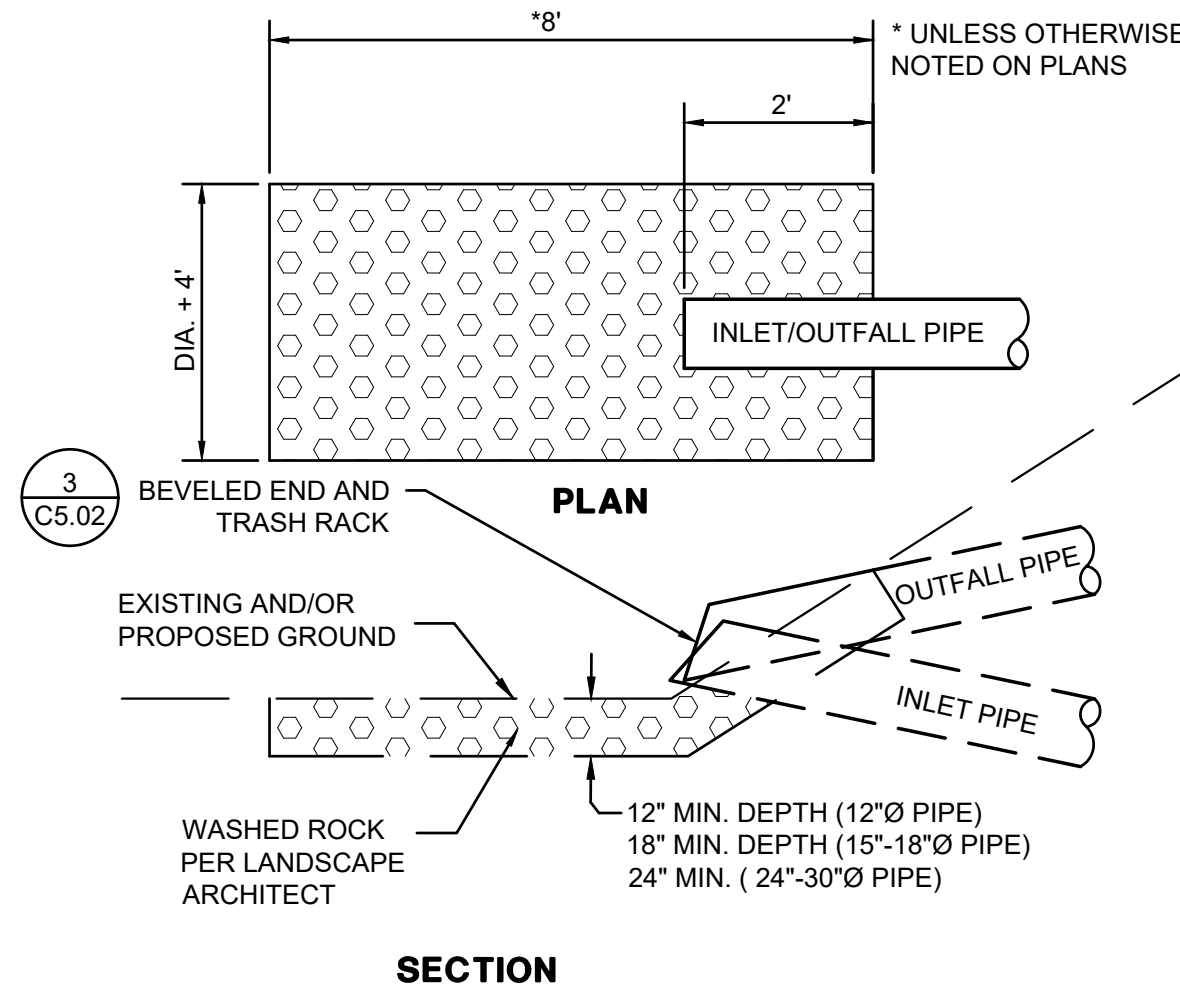
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Job No.:	2190992.10
Drawn By:	CTJ
Checked by:	DGT
Revisions	
#	Date Description

DRAINAGE
DETAILS

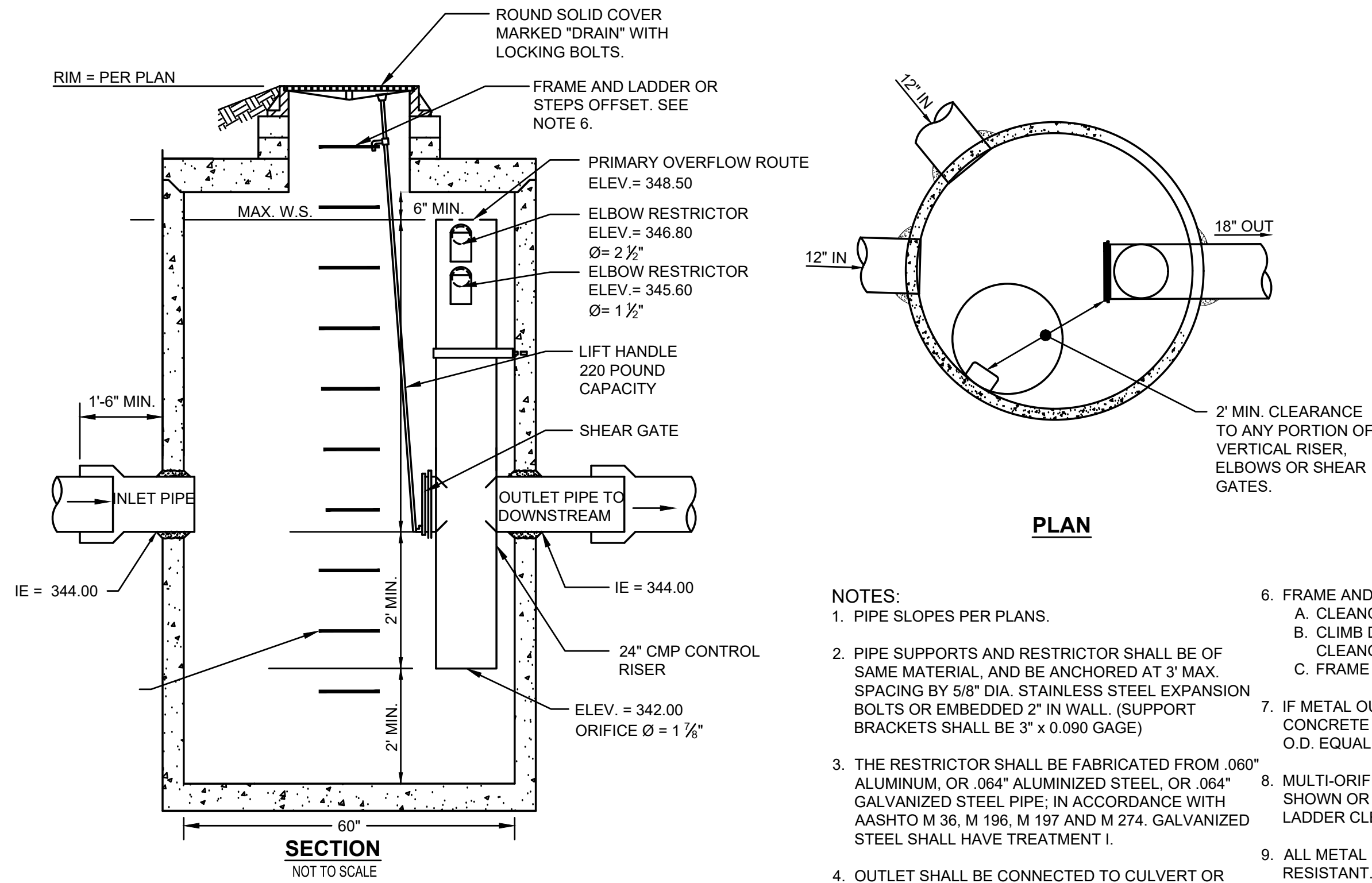
C5.05



1 EVERGRATE TRENCH DRAIN
NOT TO SCALE

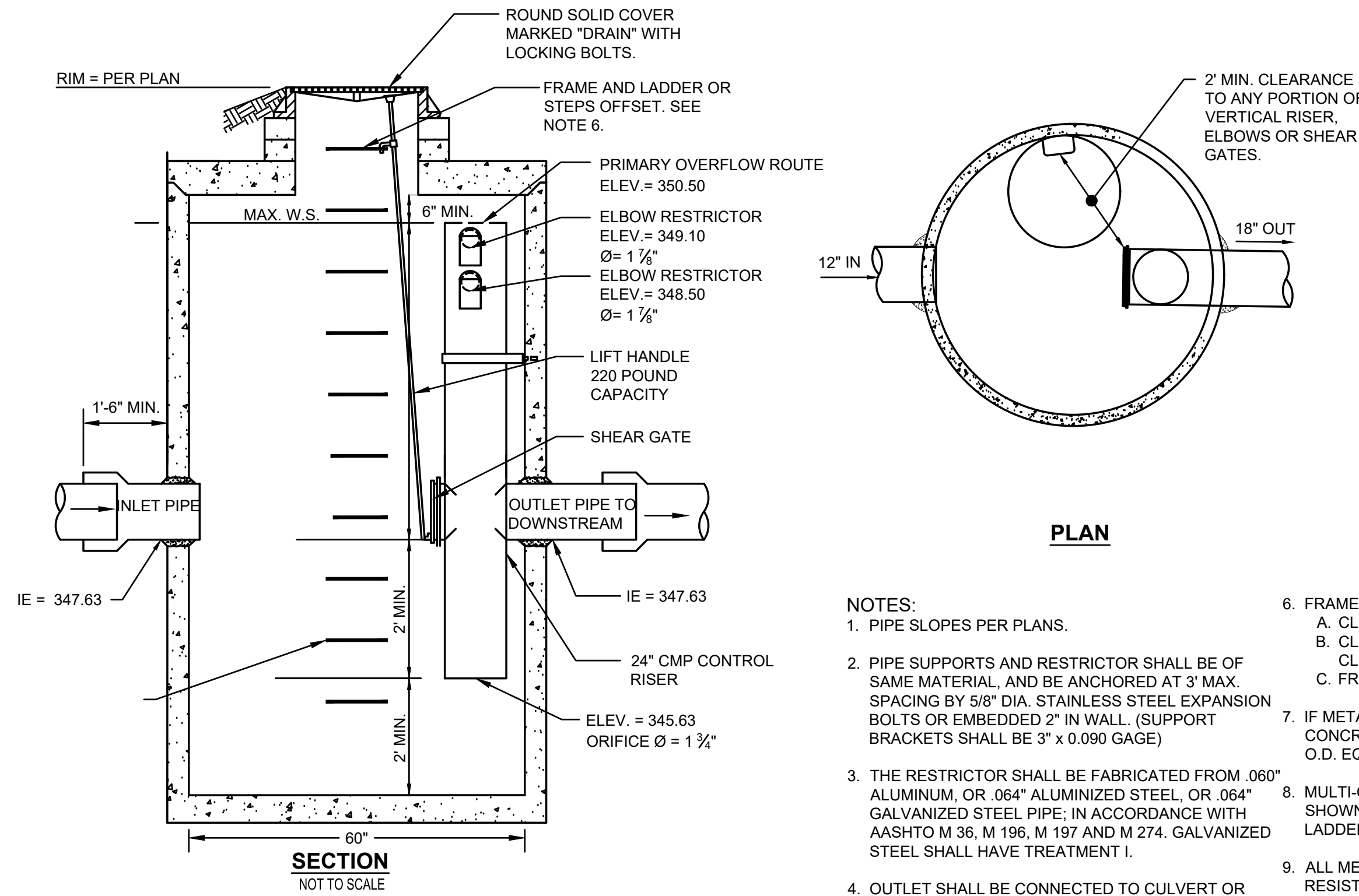


2 RIP RAP PAD
NOT TO SCALE



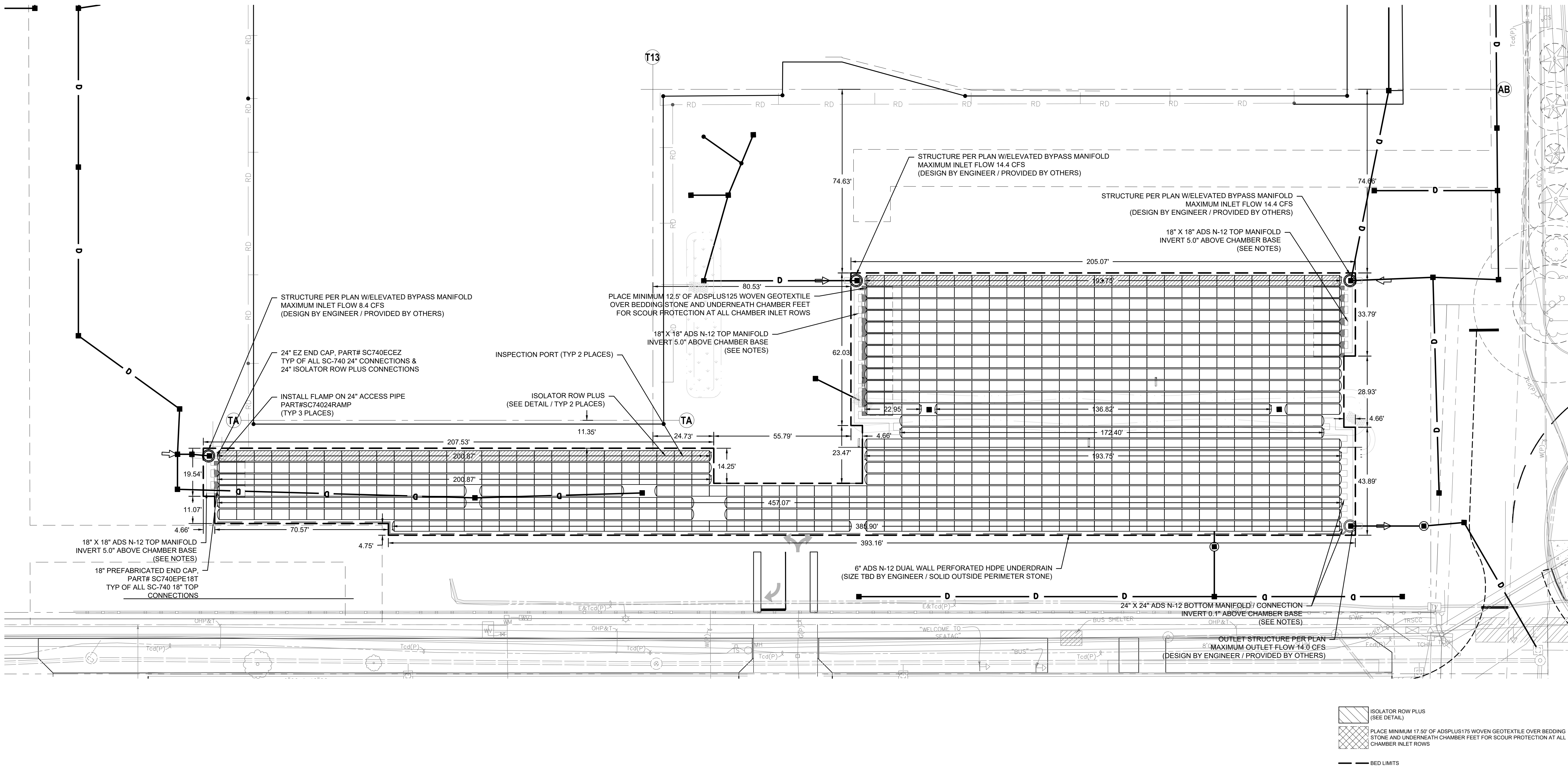
- NOTES:
- PIPE SLOPES PER PLANS.
 - PIPE SUPPORTS AND RESTRICTOR SHALL BE OF SAME MATERIAL, AND BE ANCHORED AT 3' MAX SPACING BY 5/8" DIA. STAINLESS STEEL EXPANSION BOLTS OR EMBEDDED 2" IN WALL. (SUPPORT BRACKETS SHALL BE 3" x 0.090 GAGE).
 - THE RESTRICTOR SHALL BE FABRICATED FROM .060" ALUMINUM, OR .064" ALUMINIZED STEEL, OR .064" GALVANIZED STEEL PIPE, IN ACCORDANCE WITH AASHTO M 36, M 196, M 197 AND M 274. GALVANIZED STEEL SHALL HAVE TREATMENT I.
 - OUTLET SHALL BE CONNECTED TO CULVERT OR SEWER PIPE WITH A STANDARD COUPLING BAND FOR CORRUGATED METAL PIPE, OR GROUTED INTO THE BELL OF CONCRETE PIPE.
 - THE VERTICAL RISER STEM OF THE RESTRICTOR / SEPARATOR SHALL BE 18" MIN. DIA.
 - FRAME AND LADDER OR STEPS OFFSET SO THAT:
A. CLEANOUT GATE IS VISIBLE FROM TOP.
B. CLIMB DOWN SPACE IS CLEAR OF RISER AND CLEANOUT GATE.
C. FRAME IS CLEAR OF CURB.
 - IF METAL OUTLET PIPE CONNECTS TO CEMENT CONCRETE PIPE, OUTLET PIPE TO HAVE SMOOTH O.D. EQUAL TO CONCRETE PIPE I.D. LESS 1/4".
 - MULTI-ORIFICE ELBOWS MAY BE LOCATED AS SHOWN OR ALL ON ONE SIDE OF RISER TO ASSURE LADDER CLEARANCE.
 - ALL METAL PARTS SHALL BE CORROSION RESISTANT.

3 CONTROL STRUCTURE - CB #CS-S
NOT TO SCALE



- NOTES:
- PIPE SLOPES PER PLANS.
 - PIPE SUPPORTS AND RESTRICTOR SHALL BE OF SAME MATERIAL, AND BE ANCHORED AT 3' MAX SPACING BY 5/8" DIA. STAINLESS STEEL EXPANSION BOLTS OR EMBEDDED 2" IN WALL. (SUPPORT BRACKETS SHALL BE 3" x 0.090 GAGE).
 - THE RESTRICTOR SHALL BE FABRICATED FROM .060" ALUMINUM, OR .064" ALUMINIZED STEEL, OR .064" GALVANIZED STEEL PIPE, IN ACCORDANCE WITH AASHTO M 36, M 196, M 197 AND M 274. GALVANIZED STEEL SHALL HAVE TREATMENT I.
 - OUTLET SHALL BE CONNECTED TO CULVERT OR SEWER PIPE WITH A STANDARD COUPLING BAND FOR CORRUGATED METAL PIPE, OR GROUTED INTO THE BELL OF CONCRETE PIPE.
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 - FRAME AND LADDER OR STEPS OFFSET SO THAT:
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C. FRAME IS CLEAR OF CURB.
 - IF METAL OUTLET PIPE CONNECTS TO CEMENT CONCRETE PIPE, OUTLET PIPE TO HAVE SMOOTH O.D. EQUAL TO CONCRETE PIPE I.D. LESS 1/4".
 - MULTI-ORIFICE ELBOWS MAY BE LOCATED AS SHOWN OR ALL ON ONE SIDE OF RISER TO ASSURE LADDER CLEARANCE.
 - ALL METAL PARTS SHALL BE CORROSION RESISTANT.

4 CONTROL STRUCTURE - CB #CS-N
NOT TO SCALE



PROPOSED LAYOUT SOUTH BED	
789	STORMTECH SC-740 CHAMBERS
86	STORMTECH SC-740 END CAPS
6	STONE ABOVE (IN)
6	STONE BELOW (IN)
40	1/2" STONE VOID
63.68	INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED)
297.21	SYSTEM AREA (SF)
1226	SYSTEM PERIMETER (IN)

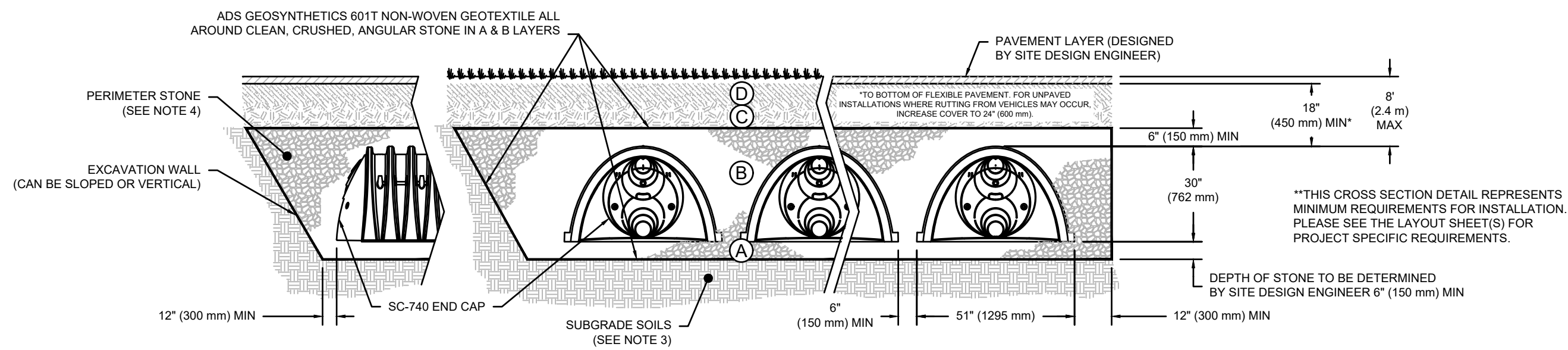
PROPOSED ELEVATIONS SOUTH BED	
351.13	MINIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED)
352.13	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC)
351.63	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC)
351.63	MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT)
351.63	MINIMUM ALLOWABLE GRADE (TOP OF RIDE PAVEMENT)
356.83	TOP OF STONE
356.13	TOP OF SC-740 CHAMBER
348.06	18" TOP MANHOLE INVERT
347.64	24" BOTTOM MANHOLE CONNECTION INVERT
347.64	24" ISOLATOR ROW PLUS CONNECTION INVERT
347.63	BOTTOM OF SC-740 CHAMBER
347.13	UNDERDRAIN INVERT
347.13	BOTTOM OF STONE

- NOTES**
- MANHOLE SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECHNICAL NOTE 6.32 FOR MANHOLE SIZING GUIDANCE.
 - DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANHOLE COMPONENTS IN THE FIELD.
 - THIS CHAMBER SYSTEM WAS DESIGNED WITHOUT SITE SPECIFIC INFORMATION ON SOIL CONDITIONS OR BEARING CAPACITY. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR DETERMINING THE RELIABILITY OF THE SOIL AND PROVIDING THE BEARING CAPACITY OF THE INSTALLED SOIL. THE BASE STONE DEPTH MAY BE INCREASED OR DECREASED ONCE THIS INFORMATION IS PROVIDED.

ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D INITIAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE EMBEDEDMENT STONE (8" LAYER) TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'D' LAYER.	ANY SOLIDLOCK MATERIAL, NATIVE SOIL, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDEDMENT STONE (8" LAYER) TO 18" (457 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL-AGGREGATE MIXTURES, <3% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M454 A-1, A-2.4, A-3 OR AASHTO M437 3, 3S7, 4, 4S7, 5, 5S, 7, 8, 9, 9S, 7, 8, 8S, 9, 9S, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 90% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 90% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GRADES VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN) DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B EMBEDEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE (8" LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M437 3, 3S7, 4, 4S7, 5, 5S, 97	NO COMPACTION REQUIRED.
A FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M437 3, 3S7, 4, 4S7, 5, 5S, 97	FLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ¹⁾

- PLEASE NOTE:
- THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
 - STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'C' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) MAX LIFTS USING TWO FULL COVERS WITH A VIBRATORY COMPACTOR.
 - WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
 - ONCE LAYER 'C' IS PLACED, ANY SOLIDLOCK MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOLIDS CAN BE USED TO REPLACE THE MATERIAL. REQUIREMENTS OF LAYER 'C' OR AT THE SITE DESIGN ENGINEER'S DISCRETION.



NOTES:

- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE, ALLOWABLE BEARING CAPACITY OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LOGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, A) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 100 (LEFT-FR. AND B) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C). CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

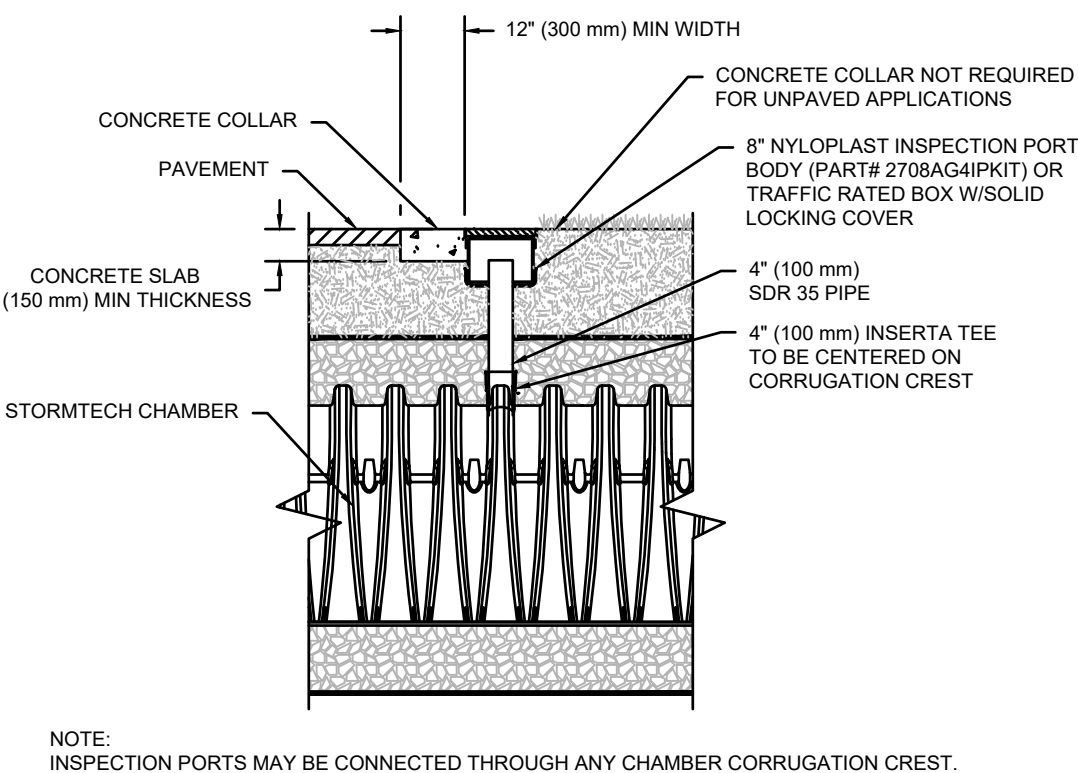
INSPECTION & MAINTENANCE

- STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- INSPECTION PORTS (IF PRESENT)
 - REMOVE COVER LID ON INLET OR LAST INLINE DRAIN
 - REMOVE AND CLEAN FLUXSTORM FILTER IF INSTALLED
 - USING A FLASHLIGHT AND STAIN ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
 - COVER CHAMBER INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
 - IF SEDIMENT IS AT OR ABOVE 2" (50 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
 - ALL SOLID ROW PLUS
 - REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
 - USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
 - MIRROR ON POLES OR CAMERA MAY BE USED TO AVOID A CONFINED SPACE ENTRY
 - FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
 - IF SEDIMENT IS AT OR ABOVE 2" (50 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A FROD CLOUET CLEANING NOZZLE WITH REAR FACING SPREAD OF 40° (1.1 m) OR MORE IS PREFERRED
 - APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLOW WATER IS CLEAN
 - VACUUM STRUCTURE SUMP AS REQUIRED
- STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.
- STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

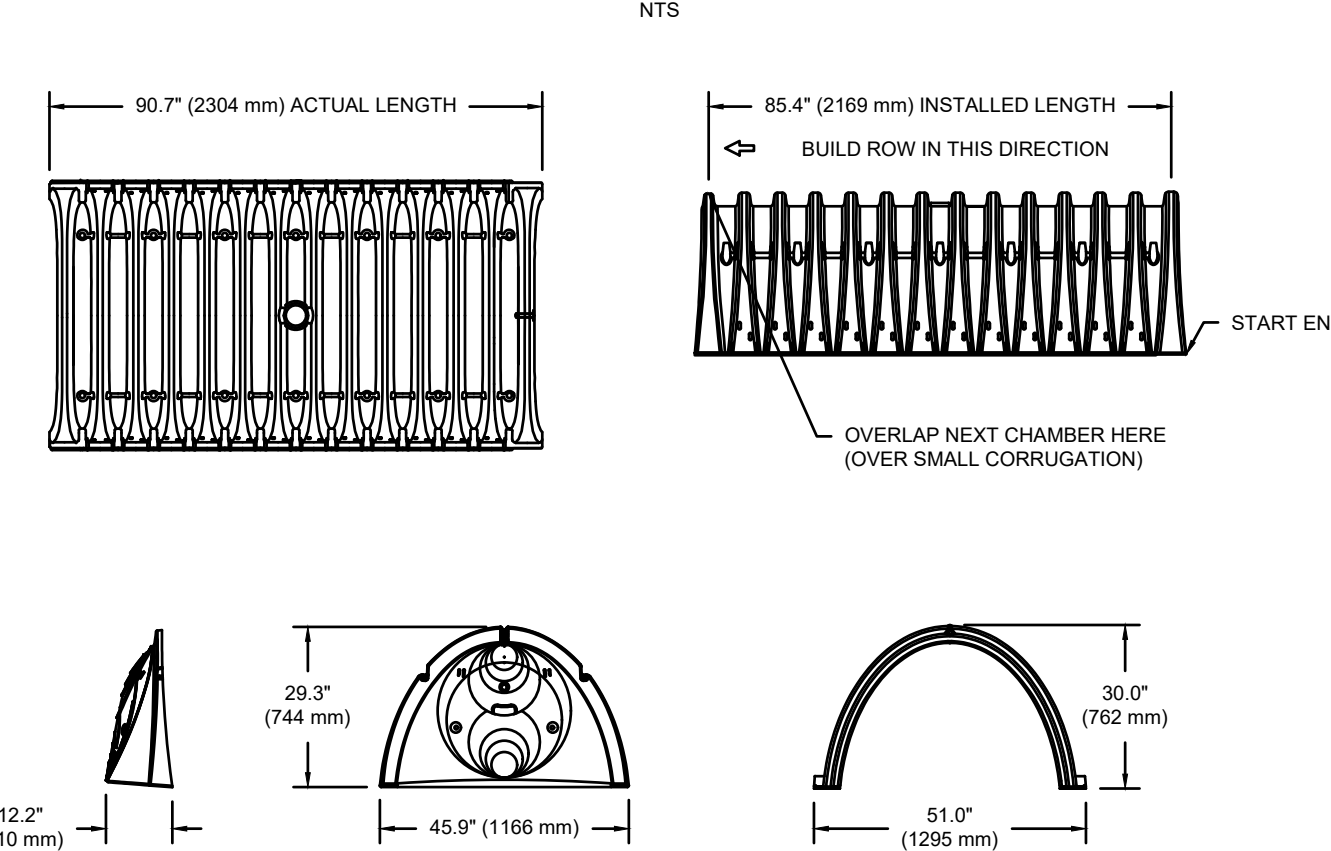
NOTES

- INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
- CONDUCT JETTING AND VACUUMING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

4" PVC INSPECTION PORT DETAIL (SC SERIES CHAMBER)



SC-740 TECHNICAL SPECIFICATION



NOMINAL CHAMBER SPECIFICATIONS

SIZE (BY 4" X 4" INSTALLED LENGTH)	51.0" X 30.0" X 30.0" (1295 mm X 762 mm X 762 mm)
CHAMBER STORAGE	45.0 CUBIC FEET (1.30 m³)
MINIMUM INSTALLED STORAGE ¹⁾	74.0 CUBIC FEET (2.12 m³)
WEIGHT	75.0 lbs. (33.6 kg)

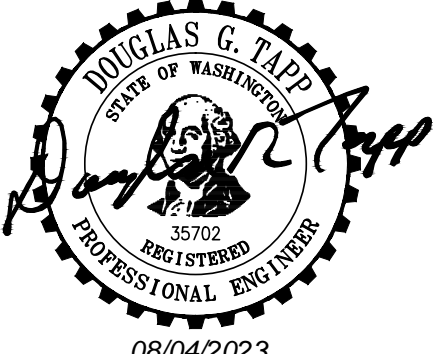
¹⁾ ASSUMES 9" (152 mm) STONE ABOVE, BELOW, AND BETWEEN CHAMBERS

PRE-FAB STUB AT BOTTOM OF END CAP WITH FLANGE END WITH "B" PRE-FAB STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B" PRE-FAB STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T" PRE-CORRODED END CAPS END WITH "T"

PART #	STUB	A	B	C
SC740PE18T / SC740PE18B	6" (150 mm)	10.0" (257 mm)	18.5" (470 mm)	0.0" (0 mm)
SC740PE24T / SC740PE24B	8" (200 mm)	12.2" (310 mm)	16.5" (419 mm)	0.0" (0 mm)
SC740PE30T / SC740PE30B	10" (250 mm)	13.4" (340 mm)	14.5" (368 mm)	0.0" (0 mm)
SC740PE36T / SC740PE36B	12" (300 mm)	14.7" (373 mm)	12.5" (318 mm)	1.2" (30 mm)
SC740PE42T / SC740PE42B	14" (350 mm)	16.4" (417 mm)	9.0" (229 mm)	1.2" (30 mm)
SC740PE48T / SC740PE48B	16" (400 mm)	19.7" (500 mm)	5.0" (127 mm)	1.3" (33 mm)
SC740PE54T / SC740PE54B	24" (600 mm)	18.5" (470 mm)	---	1.4" (35 mm)

ALL STUBS, EXCEPT FOR THE SC740PE24, THE 24" (600 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 1.75" (44 mm). BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.

NOTE: ALL DIMENSIONS ARE NOMINAL.



08/04/2023



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HIGHLINE PUBLIC SCHOOLS TYEE HIGH SCHOOL REPLACEMENT PROJECT

4424 S 188th St
SeaTac, WA 98188

Date:	06/00/23
Job No.:	2190982.10
Drawn By:	CTJ
Checked by:	DGT
Revisions	
#	Date Description

STORMTECH
CHAMBER
LAYOUT - SOUTH

C5.07

