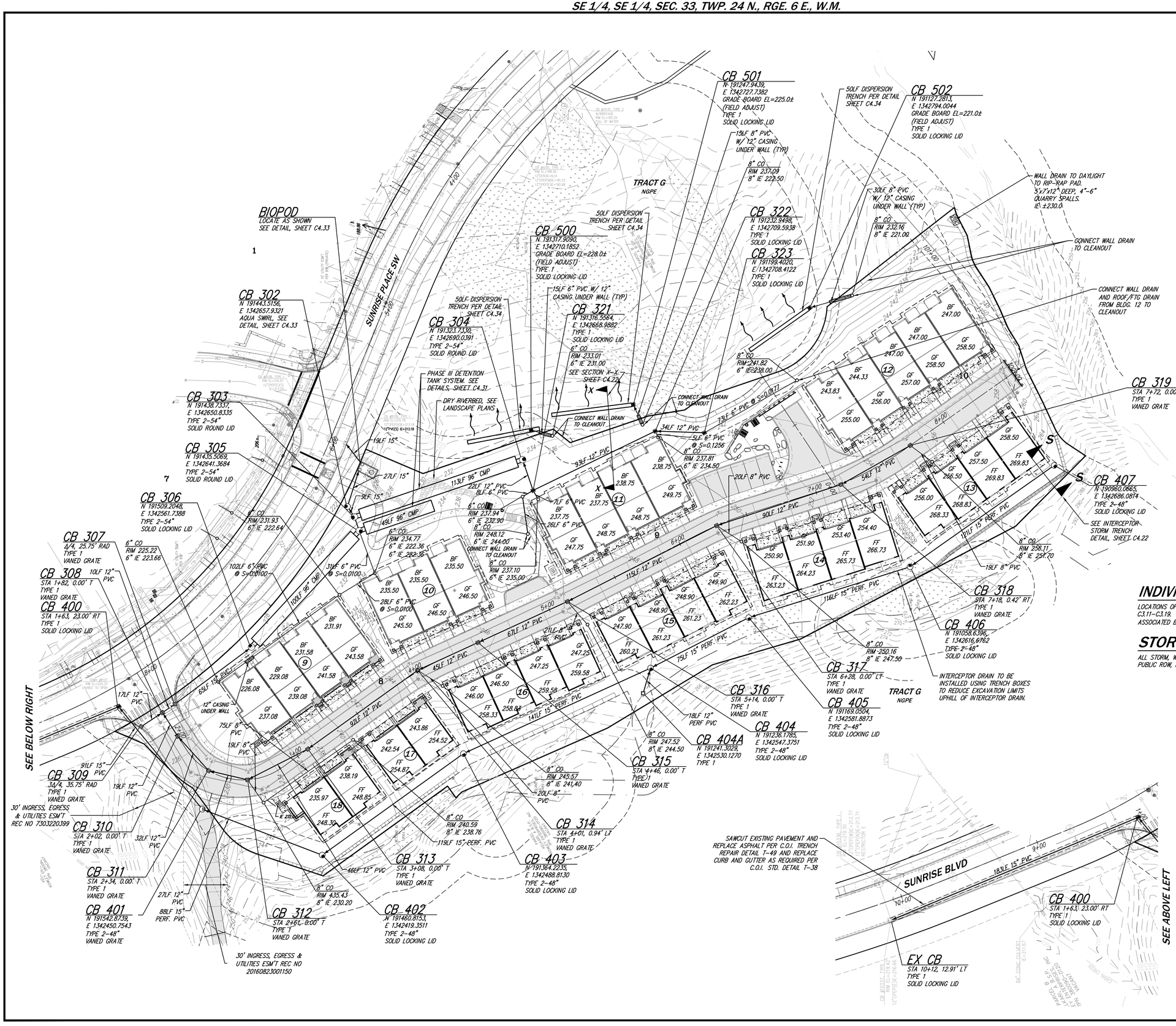



SCALE: 1" = 30'

0 15 30 60

## BASIS OF BEARING

N67°47'47"W BETWEEN THE MONUMENTS FOUND IN PLACE ON THE CENTERLINE OF SUNRISE PLACE SW, PER REF. 1.

## REFERENCES

1. KELKARI, A BINDING SITE PLAN, ACCORDING TO THE PLAT THEREOF, RECORDED IN VOLUME 191 OF PLATS, PAGES 16 THROUGH 21, IN KING COUNTY, WASHINGTON.

## VERTICAL DATUM

NAVD 88

## HORIZONTAL DATUM

NAVD 83 (91)

## BENCHMARK

HELD PER GNSS OBSERVATIONS

## LEGEND

- TYPE 1 CB
- TYPE 2 CB
- CLEANOUT

## INDIVIDUAL DRIVEWAY TRENCH DRAINS

LOCATIONS OF INDIVIDUAL DRIVEWAY TRENCH DRAINS ARE SHOWN ON SHEETS C3.11–C3.19. THESE TRENCH DRAINS WILL BE INSTALLED DURING CONSTRUCTION OF ASSOCIATED BUILDING AND CONNECTED TO THE BUILDING'S ROOF DRAIN LINE.

## STORM OWNERSHIP

ALL STORM, WITH THE EXCEPTION OF STORM WITHIN PUBLIC ROW, IS PRIVATE.

**AS-BUILT NOTICE**

CONTACT PROJECT SURVEYOR PRIOR TO BACKFILLING TO LOCATE AS-CONSTRUCTED FACILITIES TO MEET CITY OF ISSAQUAH REQUIREMENTS!

**UNDERGROUND LOCATOR SERVICE**
CALL BEFORE YOU DIG!
811

ONLY SHEETS WITH AUTHORIZING SIGNATURES HAVE BEEN APPROVED FOR CONSTRUCTION
**SW19-XXXXX**

| NO. | REVISIONS | DATE |
|---|---|---|
| 1 | REVISED PER CITY COMPLETENESS REVIEW | 2/11/20 |
| 2 | REVISED PER MINOR MODIFICATION | 8/18/20 |

8-18-20

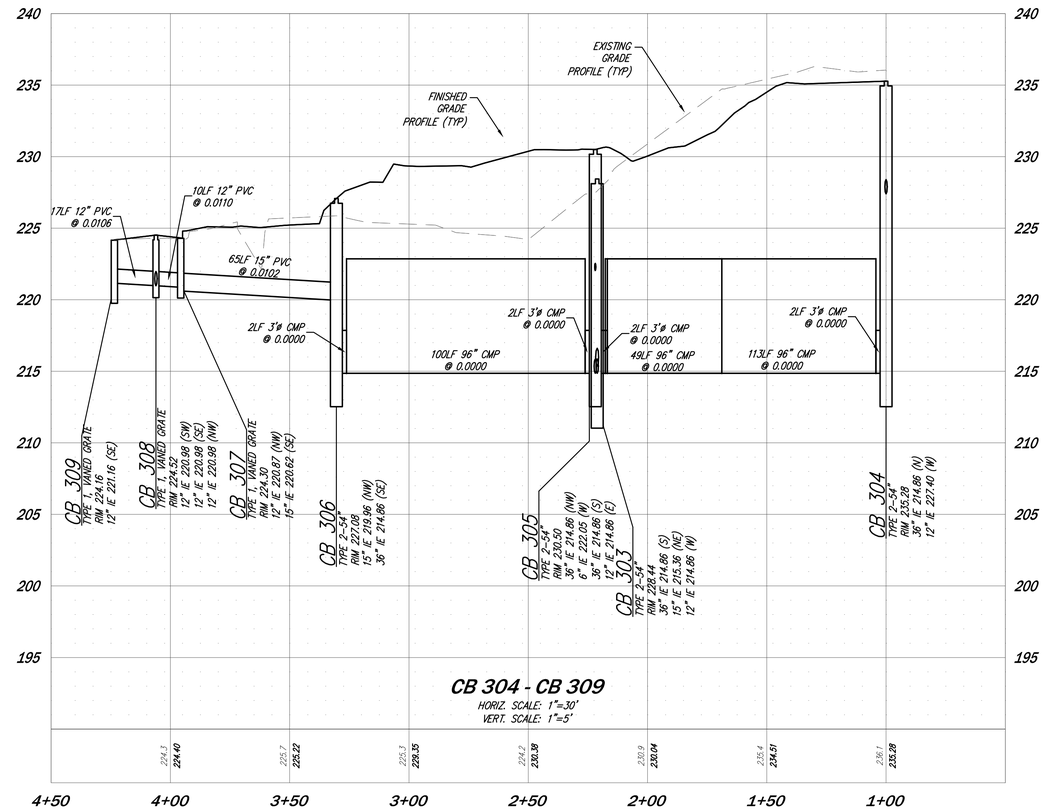
CIVIL ENGINEERING
LANDSCAPE ARCHITECTURE
PLANNING
SURVEYING
CORE DESIGN
12100 NE 195th St, Suite 300 Bothell, Washington 98011 425.885.7877

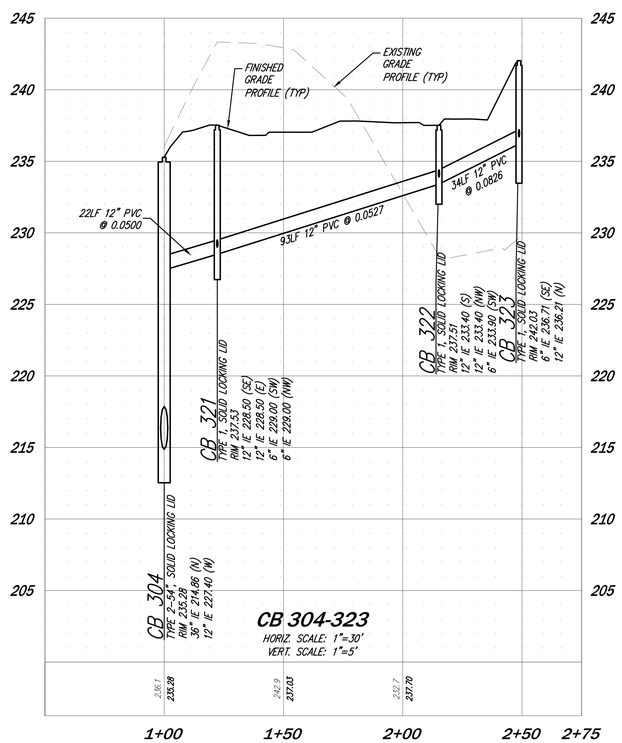
STORM DRAINAGE PLAN
**KELKARI TOWNHOMES PHASE III**
**KELKARI TWO DEVELOPMENT LLC**
411 FIRST AVENUE SOUTH, SUITE 650
SEATTLE, WA 98104

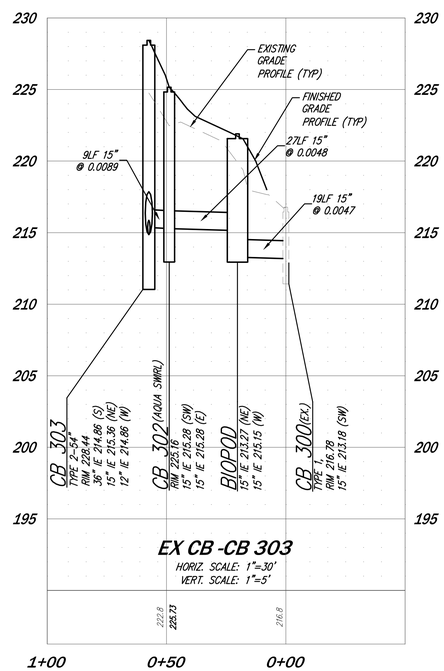
| | |
|---|---|
| DATE | SEE STAMP DATE |
| DESIGNED | JAMES A. OLSEN, P.E. |
| DRAWN | DAVID S. VAUGHN |
| APPROVED | GINA R. BROOKS, P.E. |
| | GINA R. BROOKS, P.E. PROJECT MANAGER |

| SHEET | OF |
|---|---|
| C4.01 | 36 |

PROJECT NUMBER
15061




**AS-BUILT NOTICE**

CONTACT PROJECT SURVEYOR PRIOR TO BACKFILLING TO LOCATE AS-CONSTRUCTED FACILITIES TO MEET CITY OF ISSAQUAH REQUIREMENTS!

**UNDERGROUND LOCATOR SERVICE**
*CALL BEFORE YOU DIG!*
*811*

ONLY SHEETS WITH AUTHORIZING SIGNATURES HAVE BEEN APPROVED FOR CONSTRUCTION

***SW19-XXXXX***

| NO. | REVISIONS | DATE |
|---|---|---|
| 1 | REVISED PER CITY COMPLETENESS REVIEW | 2/11/20 |
| 2 | REVISED PER MINOR MODIFICATION | 8/18/20 |

8-18-20

CORE DESIGN
CIVIL ENGINEERING
LANDSCAPE ARCHITECTURE
PLANNING
SURVEYING
12100 NE 195th St, Suite 300 Bothell, Washington 98011 • 425.885.7877

# ROAD AND STORM DRAINAGE PROFILES
# KELKARI TOWNHOMES PHASE III

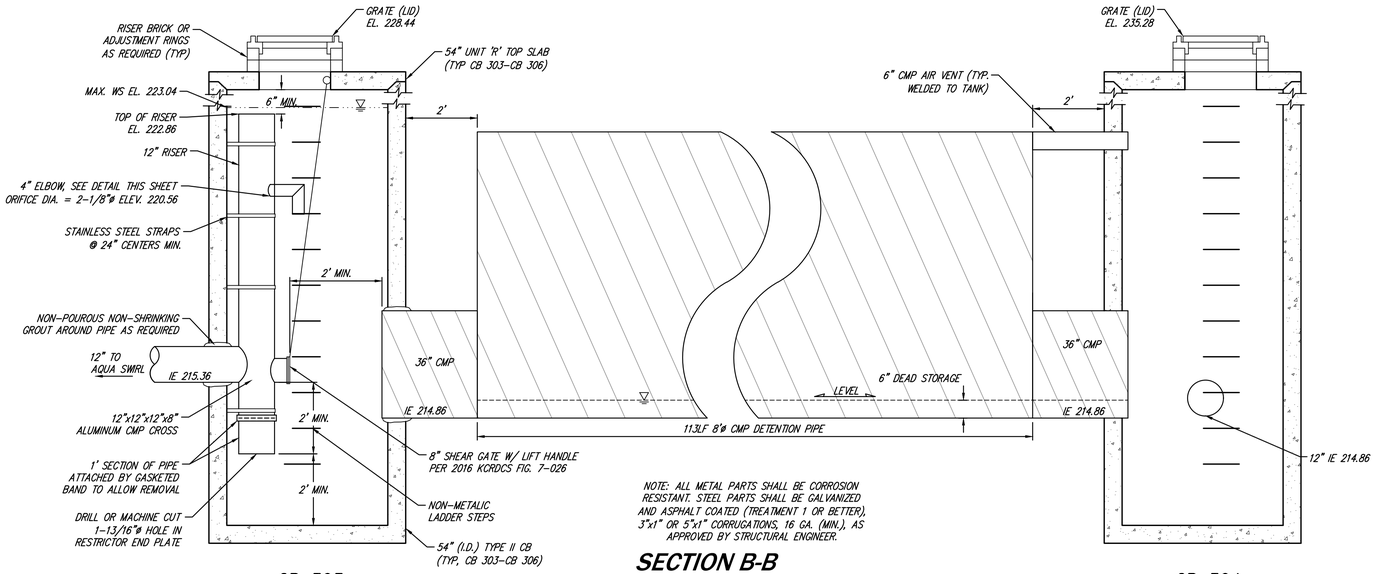
## KELKARI TWO DEVELOPMENT LLC
411 FIRST AVENUE SOUTH, SUITE 650
SEATTLE, WA 98104

| | | |
|---|---|---|
| DATE | SEE STAMP DATE | |
| DESIGNED | JAMES A. OLSEN, P.E. | |
| DRAWN | DAVID S. VAUGHN | |
| APPROVED | GINA R. BROOKS, P.E. | |
| | GINA R. BROOKS, P.E. PROJECT MANAGER | |

| SHEET | OF |
|---|---|
| C4.23 | 36 |

PROJECT NUMBER 15061

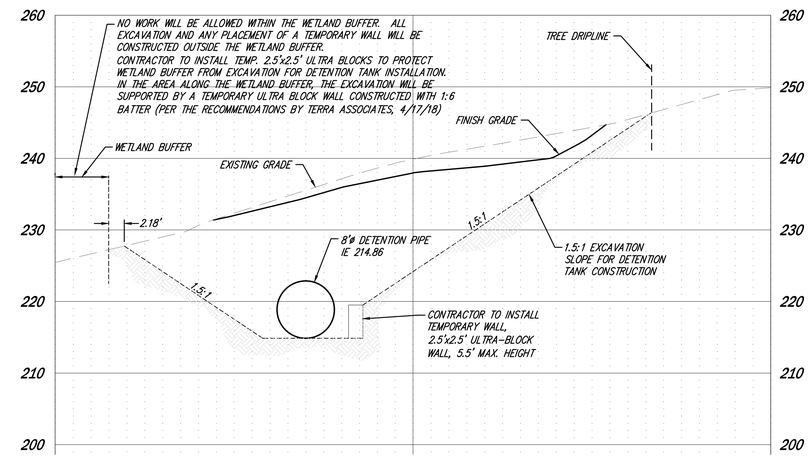
L:\2015\15061\Engineering\Final\Sheets\PHASE 3\15061 C4SD.dwg, 8/18/2020 11:46:09 AM, dbv, 1:1




NOTE: ALL METAL PARTS SHALL BE CORROSION RESISTANT. STEEL PARTS SHALL BE GALVANIZED AND ASPHALT COATED (TREATMENT 1 OR BETTER), 3"x1" OR 5"x1" CORRUGATIONS, 16 GA. (MIN.), AS APPROVED BY STRUCTURAL ENGINEER.

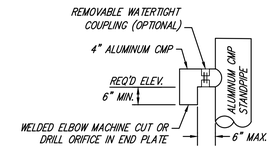
## SECTION B-B
## TANK DETENTION SYSTEM SECTION

1" = 2' HORIZ. AND VERT.



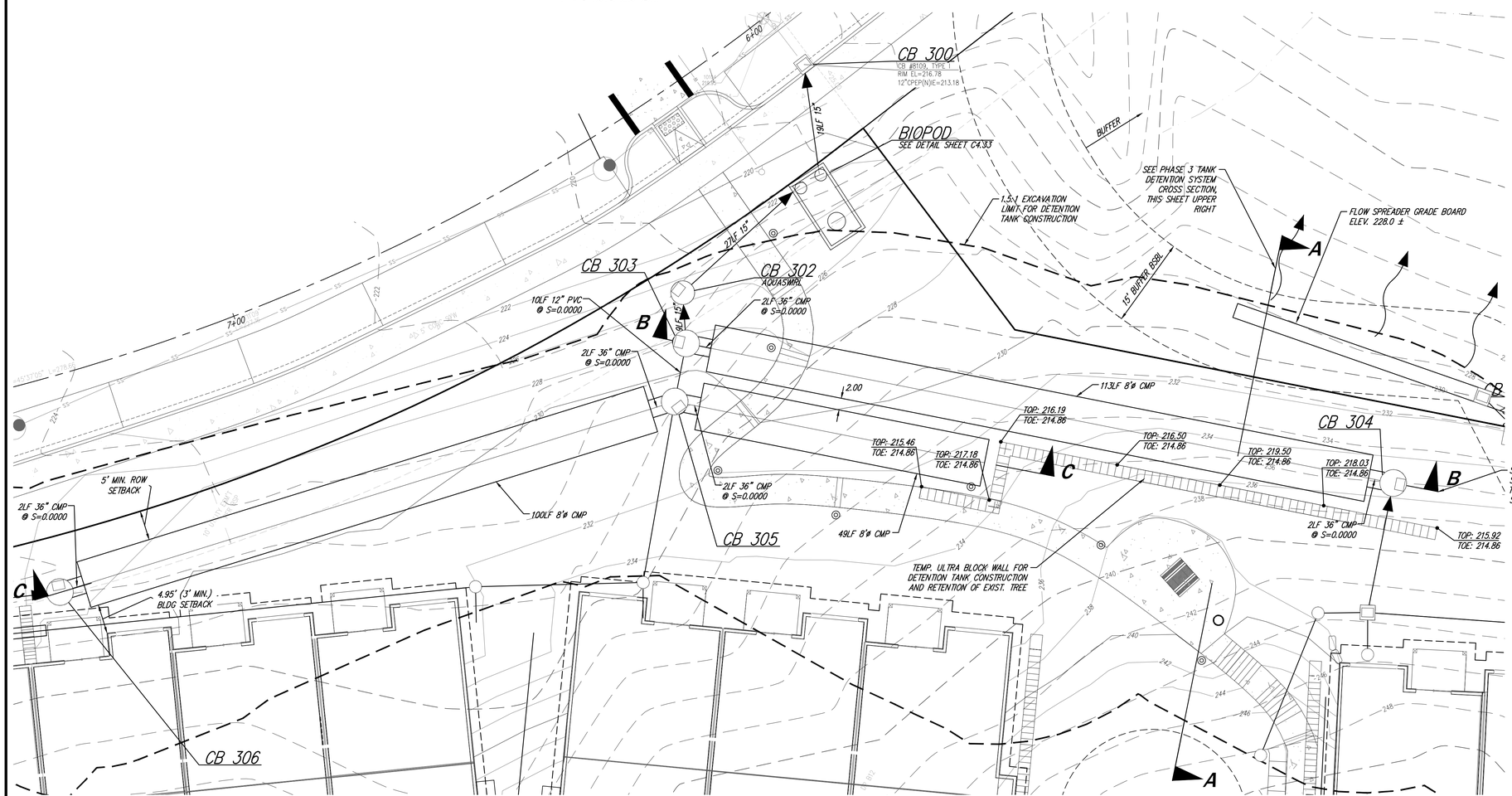

## SECTION A-A
## TANK DETENTION SYSTEM CROSS SECTION

1"=10' HORIZ.
1"=10' VERT




## ELBOW DETAIL

NO SCALE




## TANK DETENTION SYSTEM PLAN VIEW

1"=10'

SCALE: 1" = 10'

0 5 10 20

THIS SHEET FOR INFORMATION ONLY. REFER TO SEPARATE PERMIT FOR DETENTION TANKS.

**AS-BUILT NOTICE**

CONTACT PROJECT SURVEYOR PRIOR TO BACKFILLING TO LOCATE AS-CONSTRUCTED FACILITIES TO MEET CITY OF ISSAQUAH REQUIREMENTS!

**UNDERGROUND LOCATOR SERVICE**
CALL BEFORE YOU DIG!
811

ONLY SHEETS WITH AUTHORIZING SIGNATURES HAVE BEEN APPROVED FOR CONSTRUCTION

**SW19-XXXXX**

| NO. | REVISIONS | DATE |
|---|---|---|
| 1 | REVISED PER CITY COMPLETENESS REVIEW | 2/11/20 |
| 2 | REVISED PER MINOR MODIFICATION | 8/18/20 |

8-18-20

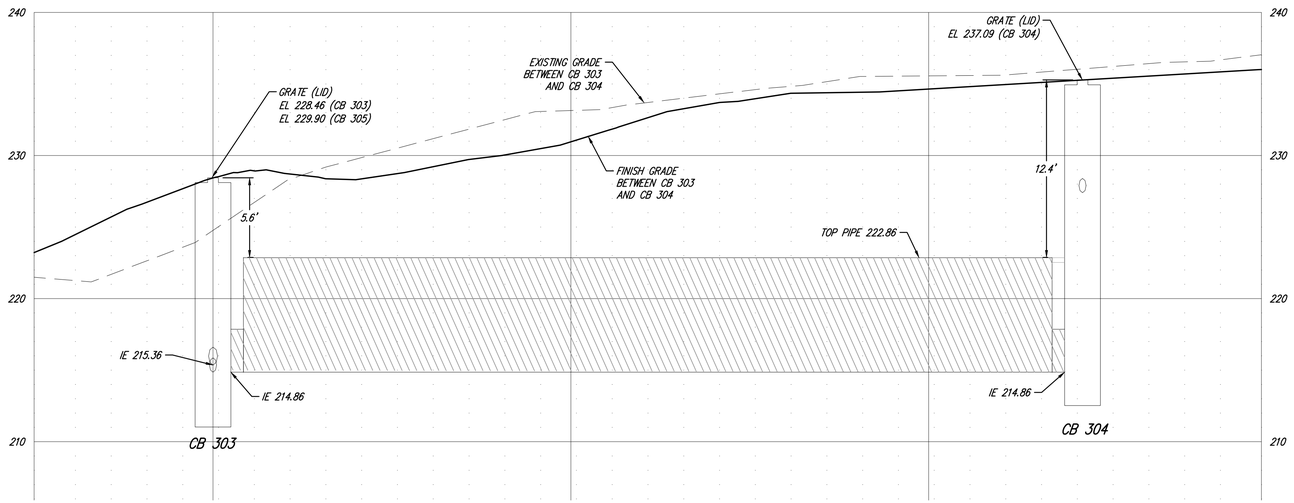
CORE DESIGN
CIVIL ENGINEERING
LANDSCAPE ARCHITECTURE
PLANNING
SURVEYING
12100 NE 195th St, Suite 300 Bothell, Washington 98011 425.885.7877

TANK DETAILS
KELKARI TOWNHOMES PHASE III
KELKARI TWO DEVELOPMENT LLC
411 FIRST AVENUE SOUTH, SUITE 650
SEATTLE, WA 98104

| | | |
|---|---|---|
| DATE | SEE STAMP DATE | |
| DESIGNED | JAMES A. OLSEN, P.E. | |
| DRAWN | DAVID S. VAUGHN | |
| APPROVED | GINA R. BROOKS, P.E. | PROJECT MANAGER |

SHEET C4.31 OF 36

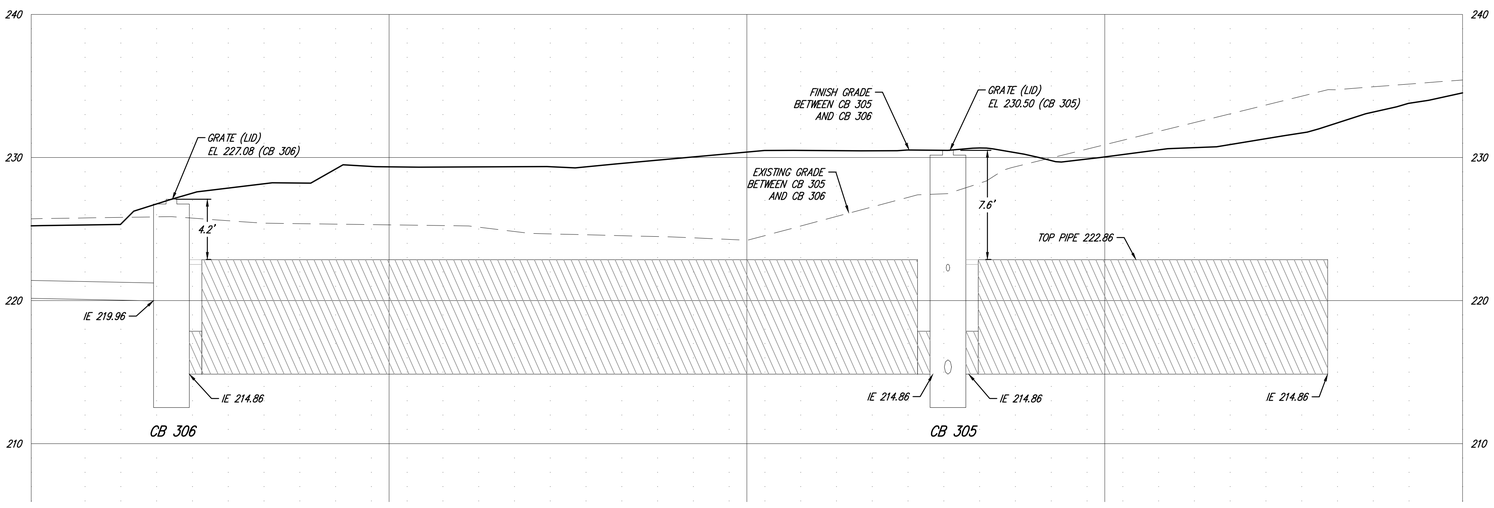
PROJECT NUMBER 15061




## SECTION B-B
## TANK DETENTION SYSTEM PROFILE

1"=10' HORIZ.
1"=5' VERT

NOTE: DETENTION TANKS ARE REQUIRED TO MEET OUTRIGGER LOADING OF 45 KIP. AND MEET HS-20 LOADING.




## SECTION C-C
## TANK DETENTION SYSTEM PROFILE

1"=10' HORIZ.
1"=5' VERT

NOTE: DETENTION TANKS ARE REQUIRED TO MEET OUTRIGGER LOADING OF 45 KIP. AND MEET HS-20 LOADING.

THIS SHEET FOR INFORMATION ONLY. REFER TO SEPARATE PERMIT FOR DETENTION TANKS.

**AS-BUILT NOTICE**

CONTACT PROJECT SURVEYOR PRIOR TO BACKFILLING TO LOCATE AS-CONSTRUCTED FACILITIES TO MEET CITY OF ISSAQUAH REQUIREMENTS!

**UNDERGROUND LOCATOR SERVICE**
CALL BEFORE YOU DIG!
811

ONLY SHEETS WITH AUTHORIZING SIGNATURES HAVE BEEN APPROVED FOR CONSTRUCTION

**SW19-XXXXX**

| NO. | REVISIONS | DATE |
|---|---|---|
| 1 | REVISED PER CITY COMPLETENESS REVIEW | 2/11/20 |
| 2 | REVISED PER MINOR MODIFICATION | 8/18/20 |

8-18-20

CORE DESIGN
CIVIL ENGINEERING
LANDSCAPE ARCHITECTURE
PLANNING
SURVEYING
12100 NE 195th St, Suite 300 Bothell, Washington 98011 425.885.7877

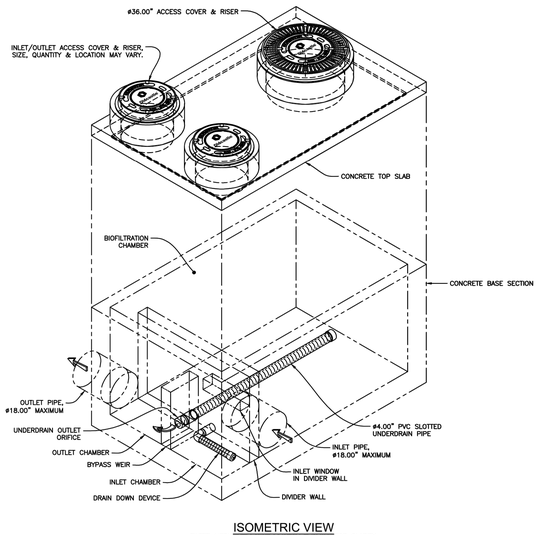
TANK DETAILS
**KELKARI TOWNHOMES PHASE III**
**KELKARI TWO DEVELOPMENT LLC**
411 FIRST AVENUE SOUTH, SUITE 650
SEATTLE, WA 98104

| | |
|---|---|
| DATE | SEE STAMP DATE |
| DESIGNED | JAMES A. OLSEN, P.E. |
| DRAWN | DAVID S. VAUGHN |
| APPROVED | GINA R. BROOKS, P.E. |
| | GINA R. BROOKS, P.E. PROJECT MANAGER |

SHEET C4.32 OF 36

PROJECT NUMBER 15061

J:\2015\15061\Engineering\Final\Sheets\PHASE 3\15061 C4.30.dwg, 8/18/2020 11:46:55 AM, Kim, 1:1




ISOMETRIC VIEW
FILTER MEDIA & DRAIN ROCK NOT SHOWN FOR CLARITY.
SCALE: 1X

NOTES:
1. LEFT CONFIGURATION SHOWN, MIRROR RIGHT CONFIGURATION OF INLET AND OUTLET CHAMBER AVAILABLE.
2. CONTACT OLDCASTLE INFRASTRUCTURE FOR ENGINEERING ASSISTANCE AND DETAIL DRAWINGS.
3. CONCRETE COMPONENTS SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM C890 & C913.

US Patents Pending

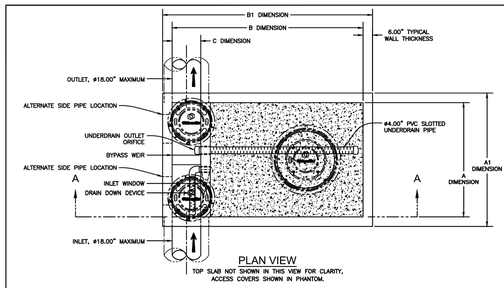
Bioretention/ Biofiltration

**BioPod™ Biofilter Underground**
*Vault with Internal Bypass*

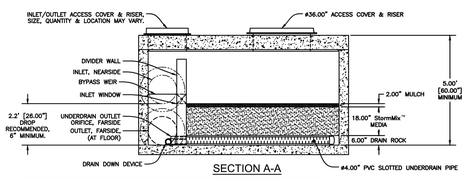
Oldcastle Infrastructure™ A CRH COMPANY

THIS DOCUMENT IS THE PROPERTY OF OLDCASTLE INFRASTRUCTURE, INC. IT IS SUBMITTED FOR REFERENCE PURPOSES ONLY AND SHALL NOT BE USED IN WHOLE OR IN PART WITHOUT THE AUTHORITY OF SAID COMPANY. COPYRIGHT © 2020 OLDCASTLE INFRASTRUCTURE, INC. ALL RIGHTS RESERVED.

| DRAWING NO. | REV | ECO | DATE | SHEET |
|---|---|---|---|---|
| BPU-IB | C | ECO-0169 CJS 3/6/20 | PPS 3/9/20 | SHEET 1 OF 2 |




PLAN VIEW
TOP SLAB NOT SHOWN IN THIS VIEW FOR CLARITY, ACCESS COVERS SHOWN IN PHANTOM.




SECTION A-A

| MODEL | VAULT SIZE [1] (ID) | | | VAULT FOOTPRINT [1] (OD) | | TREATMENT FLOW CAPACITY (GPM/CFS) | |
|---|---|---|---|---|---|---|---|
| | A DIM | B DIM | C DIM | A1 DIM | B1 DIM | 1.6 GPM/SF (WA GULD[2]) | 1.8 GPM/SF (NJCAT[3]) |
| BPU-46IB | 4' | 6' | 1.5' | 5' | 7' | 25.6 / 0.057 | 28.8 / 0.064 |
| BPU-48IB | 4' | 8' | 1.5' | 5' | 9' | 38.4 / 0.086 | 43.2 / 0.096 |
| BPU-412IB | 4' | 12' | 1.5' | 5' | 13' | 64.0 / 0.143 | 72.0 / 0.160 |
| BPU-66IB | 6' | 6' | 1.5' | 7' | 7' | 38.4 / 0.086 | 43.2 / 0.096 |
| BPU-68IB | 6' | 8' | 1.5' | 7' | 9' | 57.6 / 0.128 | 64.8 / 0.144 |
| BPU-612IB | 6' | 12' | 2' | 7' | 13' | 91.2 / 0.203 | 102.6 / 0.229 |
| BPU-812IB | 8' | 12' | 2' | 9' | 13' | 121.6 / 0.271 | 136.9 / 0.305 |
| BPU-816IB | 8' | 16' | 2' | 9' | 17' | 172.8 / 0.385 | 194.4 / 0.433 |

[1] All Dimensions are nominal, ID=Inside Dimension, OD=Outside Dimension.
[2] Treatment flow capacity at 1.6 gpm/sf media surface area based on an WA Ecology GULD Approval for Basic, Enhanced & Phosphorus.
[3] Treatment flow capacity at 1.8 gpm/sf media surface area based on an NJCAT Verification & NJ DEP Certification.

| SITE SPECIFIC DATA | | | | |
|---|---|---|---|---|
| Structure ID | | | | |
| Model Size | | | | |
| Orientation (Left or Right) | | | | |
| Treatment Flow Rate (cfs) | | | | |
| Peak Flow Rate (cfs) | | | | |
| Rim Elevation | | | | |
| Pipe Data | Pipe Location (Front or Side) | Pipe Size | Pipe Type | Invert Elevation |
| Inlet | | | | |
| Outlet | | | | |
| Notes: | | | | |

US Patents Pending

Bioretention/ Biofiltration

**BioPod™ Biofilter Underground**
*Vault with Internal Bypass*

Oldcastle Infrastructure™ A CRH COMPANY

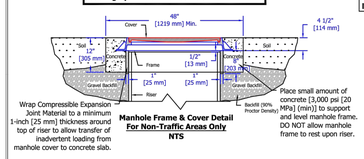
THIS DOCUMENT IS THE PROPERTY OF OLDCASTLE INFRASTRUCTURE, INC. IT IS SUBMITTED FOR REFERENCE PURPOSES ONLY AND SHALL NOT BE USED IN WHOLE OR IN PART WITHOUT THE AUTHORITY OF SAID COMPANY. COPYRIGHT © 2020 OLDCASTLE INFRASTRUCTURE, INC. ALL RIGHTS RESERVED.

| DRAWING NO. | REV | ECO | DATE | SHEET |
|---|---|---|---|---|
| BPU-IB | C | ECO-0169 CJS 3/6/20 | PPS 3/9/20 | SHEET 2 OF 2 |

*NOTE: BIOPOD AND AQUASWIRL DESIGNS SHOWN HEREIN WERE NOT CONDUCTED UNDER DIRECT SUPERVISION OF CORE DESIGN, INC. THEY ARE INCLUDED WITHIN THIS PLAN SET FOR INFORMATION PURPOSES ONLY. CORE DESIGN, INC. DOES NOT ACCEPT LIABILITY FOR THESE DESIGNS.*

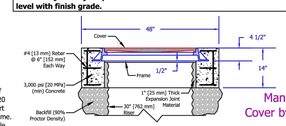
**Aqua-Swirl Polymer Coated Steel (PCS) Stormwater Treatment System**

**Unless other traffic barriers are present, bollards shall be placed around access riser(s) in non-traffic areas to prevent inadvertent loading by maintenance vehicles.**




**Manhole Frame & Cover Detail For Non-Traffic Areas Only**
**NTS**

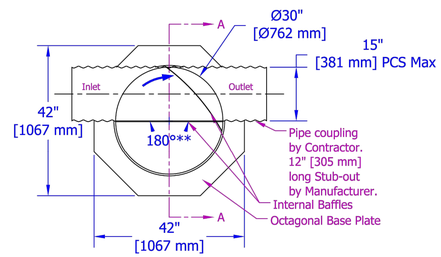
**If traffic loading (HS-25) is required or anticipated, a 4-foot [1.22 m] diameter, 14-inch [356 mm] thick reinforced concrete pad must be placed over the Stormwater Treatment System Riser to support and level the manhole frame, as shown. The top of riser pipe must be wrapped with compressible expansion joint material to a minimum 1-inch [25 mm] thickness to allow transfer of wheel loads from manhole cover to concrete slab. Manhole cover shall bear on concrete slab and not on riser pipe. The concrete slab shall have a minimum strength of 3,000 psi [20 MPa] and be reinforced with #4 [13 mm] reinforcing steel as shown. Minimum cover over reinforcing steel shall be 1-inch [25 mm]. Top of manhole cover and concrete slab shall be level with finish grade.**



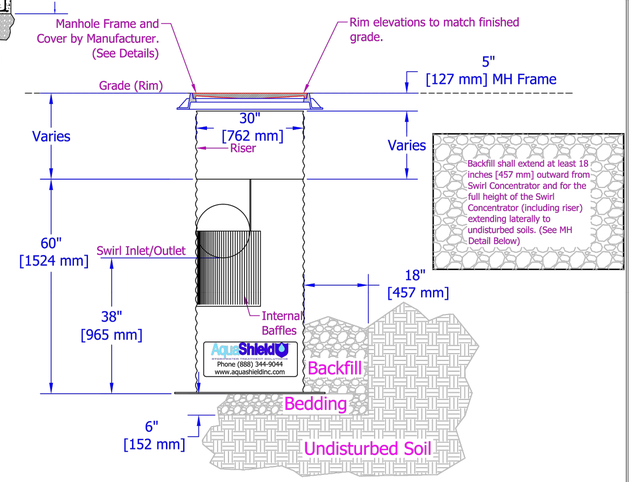

**Manhole Frame & Cover Detail For Traffic Loading Areas**
**NTS**

**Note: As an alternative, 42-inch OD, HS-20/25 rated precast concrete rings may be substituted. 14-inch thickness must be maintained.**

*** Please see accompanied Aqua-Swirl specification notes.**
*** See Site Plan for actual system orientation.**
**** Orientation may vary from 90°, 180°, or custom angles to meet site conditions.**




**Plan View**




**Section A-A**

AquaShield™ STORMWATER TREATMENT SOLUTIONS
2733 Kanasita Drive, Suite 111, Chattanooga, TN 37343
Phone (888) 344-9044 Fax (423) 826-2112
www.aquashieldinc.com

| | |
|---|---|
| Document: | AS-2 PCS STD |
| Drawn By: | JCW |
| Scale: | 1:20 |
| Date: | 01/06/15 |

U.S. Patent No. 6524473 and other Patent Pending

Aqua-Swirl Concentrator Model AS-2 BYP PCS Standard Detail

| NO. | REVISIONS | DATE |
|---|---|---|
| 1 | REVISED PER CITY COMPLETENESS REVIEW | 2/11/20 |
| 2 | REVISED PER MINOR MODIFICATION | 8/18/20 |

CORE DESIGN
CIVIL ENGINEERING
LANDSCAPE ARCHITECTURE
PLANNING
SURVEYING
12100 NE 195th St, Suite 300 Bothell, Washington 98011 425.885.7877

**STORM DRAINAGE DETAILS**
**KELKARI TWO DEVELOPMENT LLC**
*411 FIRST AVENUE SOUTH, SUITE 650*
*SEATTLE, WA 98104*

**KELKARI TWO DEVELOPMENT LLC**
**KELKARI TOWNHOMES PHASE III**

**AS-BUILT NOTICE**
CONTACT PROJECT SURVEYOR PRIOR TO BACKFILLING TO LOCATE AS-CONSTRUCTED FACILITIES TO MEET CITY OF ISSAQUAH REQUIREMENTS!

**UNDERGROUND LOCATOR SERVICE**
*CALL BEFORE YOU DIG!*
*811*

ONLY SHEETS WITH AUTHORIZING SIGNATURES HAVE BEEN APPROVED FOR CONSTRUCTION
***SW19-XXXXX***

| | | |
|---|---|---|
| DATE | SEE STAMP DATE | |
| DESIGNED | JAMES A. OLSEN, P.E. | |
| DRAWN | DAVID S. VAUGHN | |
| APPROVED | GINA R. BROOKS, P.E. | |
| | GINA R. BROOKS, P.E. | PROJECT MANAGER |

| SHEET | OF |
|---|---|
| C4.33 | 36 |

PROJECT NUMBER
15061