APPENDIX A: STANDARD DETAILS

STREETS AND RELATED WORK

340. .... Concrete Curb Type E-1, E-2, E-3, and E-4
341. .... Extruded Asphalt Concrete Sections
342. .... Extruded Cement Concrete Curb
343. .... Concrete Sidewalk Detail
344. .... Concrete Sidewalk Corner Treatment
345. .... Cement Concrete Driveway Type-1
346. .... Cement Concrete Driveway Type-2
347. .... Reserved
348. .... Outdoor Dining Public Right-of-Way
349. .... Perpendicular CurbRamp
350. .... Parallel Curb Ramp
351. .... Combination Curb Ramp
352. .... Single Direction Curb Ramp
353. .... Wheelchair Ramp Typical Locations
354. .... Intersection Curb Radius & Ramp Locations
356A… Pedestrian Railing
356B… Pedestrian Railing Notes
357. .... Cement Concrete Steps
358. .... Cement Concrete Stairway
359. .... Non-Structural Rockery
360. .... Survey Control Monument
361. .... Mailbox Structure Installation
362. .... Reserved
363. .... Street Tree Location
364. .... Typical Parking Layout
365. .... Minimum Parking Lot Stall and Isle Dimensions
366. .... Conduit Riser for PUD Service Drop
367. .... Removable and Fixed Bollard
368. .... Reserved
369. .... Typical Site Plan
370. .... Bicycle Lanes
371. .... Raised Pavement Lane Marking
372. .... Raised Pavement Lane Marking Arterial
373. .... Lane Drop and Intersection Channelization Lines
374. .... Pavement ArrowMarkings
375. .... Raised Pavement Lane Marking Collector
376. .... Left Turn Lane Markings
377. .... Left Turn and Two Way Left Turn Lane Markings
378. .... Intersection Channelization Markings
379. .... Pavement Marking Local Streets
380. .... Typical Crosswalk Striping
381. .... Median Crosswalk
382. .... RaisedCrosswalk
383. .... Raised Crosswalk Adjacent to Sidewalk Ramp
384. .... Median Crosswalk Signalized
385. .... Street Name Sign Collector and Local
386. .... Mastarm Mounted Street Name Sign
387. .... Luminary Mounting Height and Utility Clearances
388. .... Street Light Location Alternates
389. .... Fire Lane Marking and Signage

390. .... Typical Sign Location at Intersection
391. .... Sign Post Installation
392. .... Signal Poles1
393. .... Signal Poles2
394. .... Signal Poles3
395. .... Bike Lane Treatment Right Turn Pocket
396. .... Combination Guardrail & Handrail
397. .... No Parking Fire Lane Public Streets
398. .... Post Mounting Address Signs
399. .... Building Address Numbers

DOWNTOWN STREETS AND RELATED WORK

D300.…Typical Roadway Section Downtown
D301.…Typical Section Downtown City Street
D302.…Typical Section Downtown Neighborhood Ave
D303.…Typical Section Downtown Neighborhood Green Street
D304.…Typical Section Downtown Neighborhood Street
D305.…Reserved
D306.…Reserved
D307.…Reserved
D308.…Reserved
D309.…Reserved
D310.…Twin-Head Post Top
D311.…Single-Head Post Top
D313.…Single Arm Pendant
D314.…Victorian Single Arm Pendant
SCD310…Small Cell Wireless Facility: Twin-Head Post Complete Top Assembly
SCD310A.Small Cell Wireless Facility: Twin-Head Post Top
SCD311…Small Cell Wireless Facility: Twin-Head Post Complete Assembly
SCD313…Small Cell Wireless Facility: Single Arm Pendant Complete Assembly
SCD313A.Small Cell Wireless Facility: Single Arm Pendant
SCD314…Small Cell Wireless Facility: Victorian Single Arm Pendant Complete Assembly

STORM DRAINAGE

410. .... Yard Drain
411. .... Reserved
412. .... Catch Basin Type 1
413. .... Catch Basin Type 1L
414. .... Catch Basin Type 2
415. .... Reserved
416. .... Reserved
417. .... Reserved
418. .... Reserved
419. .... Reserved
420. .... Catch BasinInstallation

421. .... Thru-Curb Inlet Frame and Grate with Vertical Curb Installation
422. .... Frame and Grate(20 inch X 24 inch)
422a. .. Frame and Grate (18 inch X 24 inch)
423. .... Solid Cover Rectangle
424. .... Vaned-Grate Rectangle
425. .... Open Curb Face Frame and Grate Detail
426. .... Storm Drain Locking Manhole Frame and Cover
427. .... Frame and Cover Adjustment
428. .... Reserved
429. .... Reserved
430. .... Reserved
431. .... Reserved
432. .... Reserved
433. .... Reserved
434. .... Reserved
435. .... Reserved
436. .... Reserved
437. .... Reserved
438. .... Reserved
439. .... Reserved
440. .... Reserved
441. .... Reserved
442. .... Reserved
443. .... Secondary Orifice Detail
444. .... Shear Gate
445. .... Reserved
446. .... Reserved
447. .... Reserved
448. .... Reserved
449. .... Reserved
450. .... Reserved
451. .... Reserved
452. .... Reserved
453. .... Reserved
454. .... Reserved
455. .... Reserved
456. .... Reserved
457. .... Reserved
458. .... Reserved
459. .... Reserved
460. .... Swale Biofiltration Typical Section
461. .... Pipe Outfall Quarry Spalls
462. .... Pipe Outfall Gabion Type
463. .... Reserved
464. .... Reserved
465. .... Pipe and Section Trash Rack
466. .... Cone Trash Rack
467. .... Reserved
468. .... Flow Splitter Type A
469. .... Reserved

470. .... Reserved
471. .... Reserved
472. .... Reserved
473. .... Reserved
474. .... Reserved
475. .... Reserved
476. .... Reserved
477. .... Reserved
478. .... Reserved
479. .... Reserved
480. .... Steep Slope Sign Installation
481. .... Wetland Sign Installation
482. .... Stream Sign Installation
483. .... Reserved
484. .... Reserved
485. .... Reserved
486. .... Reserved
487. .... Reserved
488. .... Reserved
489. .... Reserved
490. .... Reserved
491. .... Reserved
492. .... Reserved
493. .... Reserved
494. .... Reserved
495. .... Outfall to Ditch Layout Small Projects
496. .... Outfall to Ditch Detail Small Projects
497. .... Footing Drain
498. .... Storm Pipe Cleanout
499. .... Reserved

T400 ....Reserved
T401 ....Sediment Trap Earth Berm
T402 ....Riser Piping Element
T403 ....Sediment Pond with Riser Element
T404 ....Stabilized Construction Entrance
T405 ....Interceptor Ditch with Rock Check Dams
T406 ....Pipe Slope Drain
T407 ....Reserved
T408 ....Storm Inlet Protection
T409 ....Silt Fence

WATER DISTRIBUTION

500. .... Reserved
501. .... Reserved
502. .... Reserved
503. .... Reserved
504. .... Reserved

505. .... Reserved
506. .... Reserved
507. .... Reserved
508. .... Reserved
509. .... Reserved
510. .... 1 inch Water Service Assembly
511. .... Reserved
512. .... Reserved
513. .... Reserved
514. .... 1 ½ inch Water Service Assembly
515. .... 2 inch Water Service Assembly
516. .... 3 inch Domestic Water Service
517. .... 4 inch Domestic Water Service
518. .... Reserved
519. .... Reserved
520. .... Fire Hydrant Assembly
521. .... Fire Hydrant Placement
522. .... Fire Hydrant Pad
523. .... Fire Hydrant Markers
524. .... Fire Hydrant Placement/Guard Posts
525. .... Reserved
526. .... Reserved
527. .... Valve Box Inside Paved Roadway
527A… Valve Box Outside Paved Area
528. .... Valve Operating Nut Extension
529. .... Valve Marker and Guard Post
530. .... Water Main Thrust Blocking
531. .... Water Main Vertical Thrust Blocking
532. .... Existing Water Main Vertical Thrust Blocking
533. .... Water Main Slope Anchors
534. .... Water Main Trench in Paved Areas and Within the Right-of-Way
535. .... Water Main Trench in Unpaved Areas and Outside the Right-of-Way
536. .... Reserved
537. .... Reserved
538. .... Reserved
539. .... Reserved
540. .... Undercrossing Existing AsbestosConcrete Mains
541. .... Reserved
542. .... Reserved
543. .... Reserved
544. .... Reserved
545. .... Connection to ExistingMain
546. .... Hydrant Run Over 50’ Length ExMain
547. .... Hydrant Run Over 50’ Length NewInstallation
548. .... Reserved
549. .... Reserved
550. .... 2 inch Blowoff Assembly
551. .... Reserved
552. .... Temporary Connection Flushing/Testing
553. .... Flushing Table

554. .... Automatic Flushing Unit
555. .... Reserved
556. .... Reserved
557. .... Reserved
558. .... Reserved
559. .... Reserved
560. .... Reserved
561. .... Reserved
562. .... Reserved
563. .... Reserved
564. .... 1 inch Air Vacuum Release Valve Assembly
565. .... Reserved
566. .... Reserved
567. .... Reserved
568. .... Reserved
569. .... Reserved
570. .... Typical Installation with Minimum Clearances
571. .... RP Backflow Assembly greater than 3 inch Domestic and Irrigation
572. .... Reserved
573. .... Fire Sprinkler Double Check Detector Assembly w/FDC
574. .... Fire Sprinkler-Duel Service Double Check Detector Assembly W/FDC
575A… 1 inch Single Family Fire Sprinkler Service Connection NFPA 13D
576. .... 1 ½ inch to 2 inch NFPA 13R Sprinkler Dedicated Service Connection
577. .... 3 inch to 10 inch NFPA 13D Fire Sprinkler Service Connection
578. .... Premise Isolation Domestic and Irrigation Service Connection
579. .... Double Check Valve Assembly Irrigation, Domestic or Fire NFPA 13 R ¾ inch to 2 ½ inch
580. .... Reserved
581. .... Double Check Valve Assembly for Irrigation & Domestic 3 inch to 4 inch
582. .... Reserved
583. .... Reserved
584. .... Reserved
585. .... Double Check Detector Assembly Fire Line 2 inch
586. .... Double Check Detector Assembly Fire Lines 2½ inch to 10 inch
587. .... Reserved
588. .... Reserved
589. .... Reserved
590. .... Ladder Detail with Pull-Up Extender
591. .... RP Backflow Assembly (up to 2 inch) Domestic & Irrigation
592. .... Hydrant Meter WaterMake-Up
593. .... Sump Pump
594. .... Reserved
595. .... Reserved
596. .... Reserved
597. .... Reserved
598. .... Reserved
599. .... Reserved

SANITARY SEWERS

600. .... Reserved
601. .... Side Sewer Layouts
602. .... Side Sewer Connections
603. .... Sewer Pump System Private
604. .... Pump System Pump and Wet Well
605. .... Pump System Notes
606. .... Sewer Cleanout
607. .... Side Sewer Marker Post
608. .... Typical Sewer Service Requiring Backwater Valve
609. .... Backwater Valve
610. .... Grease Interceptor
611. .... Oil/Water Separator
612. .... Reserved
613. .... Reserved
614. .... Reserved
615. .... Reserved
616. .... Reserved
617. .... Reserved
618. .... Reserved
619. .... Reserved
620. .... Reserved
621. .... Standard 48 inch Sanitary Sewer Manhole
622. .... Saddle Manhole
623. .... MH Installation and Connection Notes
624. .... Locking Sewer Manhole Cover and Frame
625. .... Reserved
626. .... Reserved
627. .... Reserved
628. .... Reserved
629. .... Reserved
630. .... Reserved
631. .... Reserved
632. .... Reserved
633. .... Reserved
634. .... Reserved
635. .... Reserved
636. .... Reserved
637. .... Reserved
638. .... Reserved
639. .... Reserved
640. .... Reserved
641. .... Reserved
642. .... Reserved
643. .... Polypropylene Plastic Steps
644. .... Reserved
645. .... Reserved
646. .... Reserved
647. .... Outside Drop Manhole Connection

648. .... Reserved
649. .... Reserved
650. .... Reserved
651. .... Reserved
652. .... Reserved
653. .... Reserved
654. .... Reserved
655. .... Reserved
656. .... Reserved
657. .... Reserved
658. .... Reserved
659. .... Reserved
660. .... Reserved
661. .... Reserved
662. .... Reserved
663. .... Reserved
664. .... Reserved
665. .... Reserved
666. .... Sewer Connection to Existing Sewer Mains
667. .... Alternate Connection to Existing/New Sewer Mains
668. .... Reserved
669. .... Reserved
670. .... Reserved
671. .... Reserved
672. .... Crossing Asbestos Concrete Pipe
673. .... Reserved
674. .... Reserved
675. .... Reserved
676. .... Lift Station Emergency Bypass Pump Port
677. .... Reserved
678. .... Reserved
679. .... Reserved
680. .... Reserved
681. .... Reserved
682. .... Reserved
683. .... Reserved
684. .... Reserved
685. .... Reserved
686. .... Reserved
687. .... Reserved
688. .... Reserved
689. .... Reserved
690. .... Uncovered Paved Vehicle Service Area Drainage
691. .... Reserved
692. .... Reserved
693. .... Reserved
694. .... Reserved
695. .... Reserved
696. .... Reserved
697. .... Reserved

698. .... Reserved
699. .... Reserved

TRAFFIC CONTROL (700)

700.... Reserved
701.... Lane Roadway with One Lane Closed
702.... Lane Roadway Partial Lane Closure
703.... Shoulder Work
704.... Lane Right Lane Closed
705.... Lane Left Turn Lane Closed
706.... Center of Intersection Work
707.... Lane Roadway Left Lane Closed
708.... Lane at Intersection Right Lane Closed
709.... Full Street Closure
710.... 5 Lane Multilane Closure
711.... 2 Way Left Turn Lane Closure
712.... 5 Lane Left Lane Closure
713.... Traffic Control Devices 714-799 Reserved

COMMUNITY RISK REDUCTION (900)

900.... Aerial Apparatus Auto Turn Detail
901.... Aerial Design Specifications
902.... Commercial & Multifamily Building Address Standard
903.... Fire Alarm Control Room Door Signage
904.... Fire Alarm Notification Sign
905.... Riser Room Door Signage
906.... Reserved
907.... Fire Lane Marking and Signage (Private Access)
908.... Engine Design Specifications
909.... Vehicle Impact Protection

ROADWAY FUNCTIONAL CLASSIFICATIONS

	Alley	Local Access	Arterial		
			Principal	Minor	Collector
Maximum Number of Dwelling Unit Serviced [2]	40	100	n/a	>100	>100
Min. ROW-ft	20 [4]	31-51 [6]	68 [3]	68 [3]	68
Min. Pavement Width-ft	20 [4]	20-28 [6]	45 [3]	45 [3]	41-45
Sidewalks-ft	n/a	5' both sides [3]	5' both sides [3]	5' both sides [3]	5' both sides [3]
Bike Lane width-ft	n/a	Share with other vehicles	5' in each direction	5' in each direction	5' in each direction
Geometrics and Structural Sections	See Std. Dwg. No. 311	See Std. Dwg. No. 310	See Std. Dwg. No. 305	See Std. Dwg. No. 306	See Std. Dwg. No. 307
Max. Grade, % [1]	15%	15%	12%	15%	15%
Utility easement Beyond ROW req'd	n/a	10' both sides [6]	10' both sides	10' both sides	10' both sides
Number of lanes	2	min. 2	2-7	2-5	min. 2
Parking	not permitted	Permitted (on one side) [3]	not permitted	Permitted where applicable [3]	Permitted where applicable [3]
Pavement Markings	n/a	Based on Engineering judgments	Edge line, lane line and center line [3]	Edge line, lane line and center line [3]	Edge line, lane line and center line [3]

FOR DOWNTOWN STREETS, SEE D300 TO D304.

NOTES:

(1) Maximum grade may be exceeded subject to approval by the Public Works Director and Fire Marshal. Such approval may be conditional upon the following:
   a) No practical alternative exists.
   b) Any grade over 15% will be reviewed by the City on a case by case basis.

(2) Maximum potential number of dwelling units serviced will include FORECASTED future development of adjacent areas.

(3) Unless otherwise approved in accordance with Section 1–8.

(4) 20 feet for new alleys, 16 feet for existing alleys.

(5) For Downtown streets see D300–series standards details.

(6) See Section 3–4.2.7

City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	ROADWAY FUNCTIONAL CLASSIFICATION	Standard Detail **300** Revision Date Dec, 2019

Commercial / Multi Family Driveway		
	Residential Driveway	Commercial / Multifamily Driveway
Maximum Number of Dwelling Unit Serviced [2]	2	3-4
Min. Tract width-ft	18	22
Min. Pavement Width-ft	16	20
Sidewalks-ft	n/a	n/a
Bike Lane width-ft	n/a	n/a
Geometrics and Structural Sections	See Std. Dwg. No. 301	See Std. Dwg. No. 302
Max. Grade, % [1]	15%	15%
Utility easement Beyond ROW req'd	as required to serve area	as required to serve area
Number of lanes	2	2
Parking	not permitted	not permitted
Pavement Markings	n/a	n/a

NOTES:

(1) Maximum grade may be exceeded subject to approval by the Public Works Director and Fire Marshal. Such approval may be conditional upon the following:
   a) No practical alternative exists.
   b) Any grade over 15% will be reviewed by the City on a case by case basis.

(2) Maximum potential number of dwelling units serviced will include FORECASTED future development of adjacent areas.

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PUBLIC WORKS DEPARTMENT

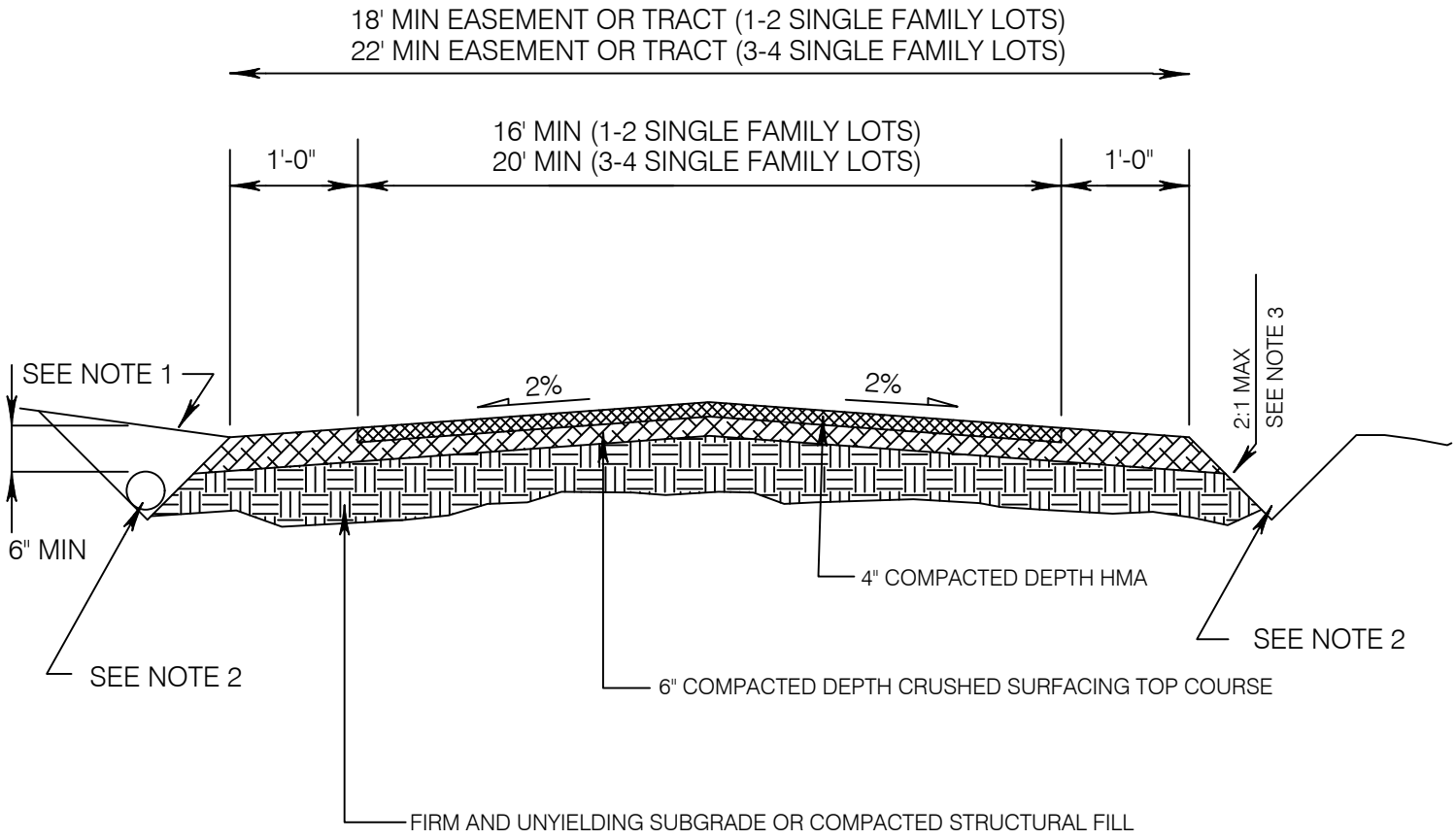
Approved By:

City Engineer

COMMERCIAL/ MULTI FAMILY DRIVEWAY

Standard Detail **300A**

Revision Date Dec, 2019



NOTES:

1. DRIVEWAY GRADE SHALL CONFORM TO SECTION 3 UNLESS OTHERWISE APPROVED BY DIRECTOR

2. A 12 INCH MINIMUM PVC (SDR-35) SMOOTH INTERIOR PIPE OR DITCH (STANDARD DETAIL: 495) IS REQUIRED FOR DRIVEWAY DRAINAGE. COVER OVER PIPE SHALL CONFORM TO THE PIPE MANUFACTURER'S RECOMMENDATIONS.

3. SLOPE EASEMENTS MAY BE REQUIRED

4. THE 1' CLEAR AREA ON EITHER SIDE SHALL BE FREE OF OBSTRUCTIONS.

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Approved By:

City Engineer

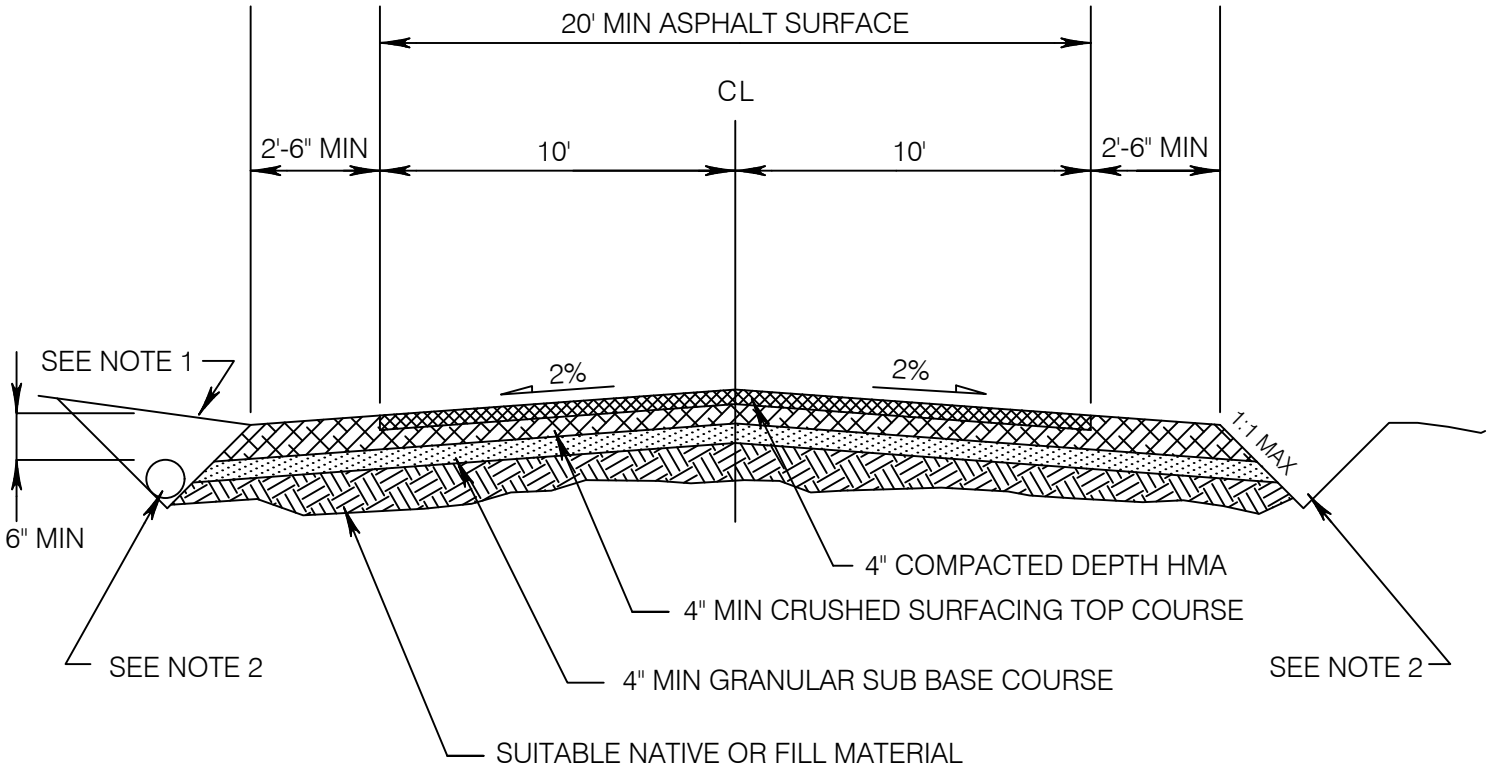
RESIDENTIAL DRIVEWAY

Standard Detail

301

Revision Date

Dec, 2019



NOTES:

1. DRIVE GRADE SHALL CONFORM TO SECTION 3 UNLESS OTHERWISE APPROVED BY DIRECTOR

2. A 12 INCH MINIMUM PVC (SDR-35) INTERIOR PIPE OR DITCH (STANDARD DETAIL: 495) IS REQUIRED FOR DRIVEWAY DRAINAGE. COVER OVER PIPE SHALL CONFORM TO THE PIPE MANUFACTURER'S RECOMMENDATIONS.

3. SLOPE EASEMENTS MAY BE REQUIRED.

4. THE 2'-6" AREA SHALL BE FREE OF OBSTRUCTIONS.

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PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

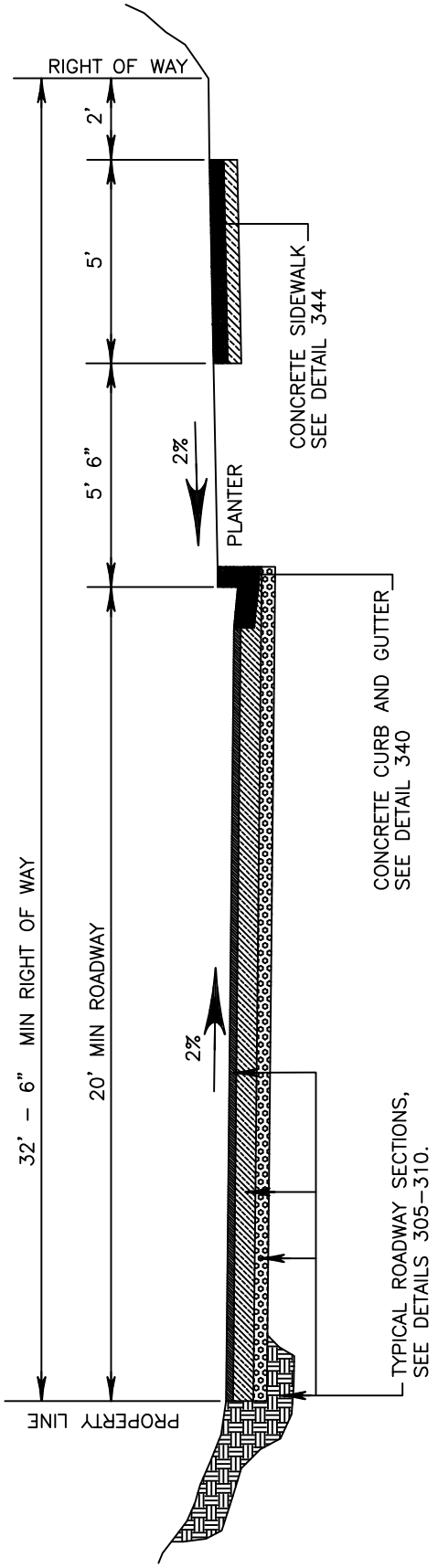
COMMERCIAL/ MULTIFAMILY DRIVEWAY

Standard Detail

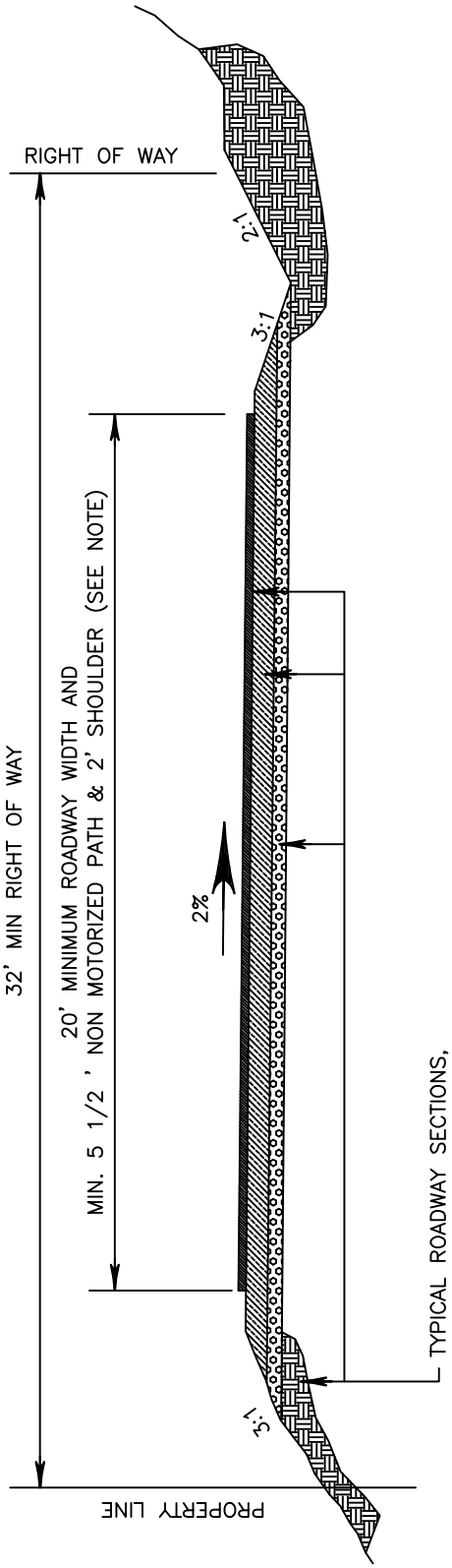
302

Revision Date

Dec, 2019



CURB SECTION



SHOULDER SECTION

NOTE: USE REINFORCED 6–8" CONCRETE CURB TO DELINEATE NON MOTORIZED PATH

City of Bothell™	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	TYPICAL MINIMUM HALF STREET SECTION	Standard Detail **303** Revision Date Nov, 2018

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PUBLIC WORKS DEPARTMENT

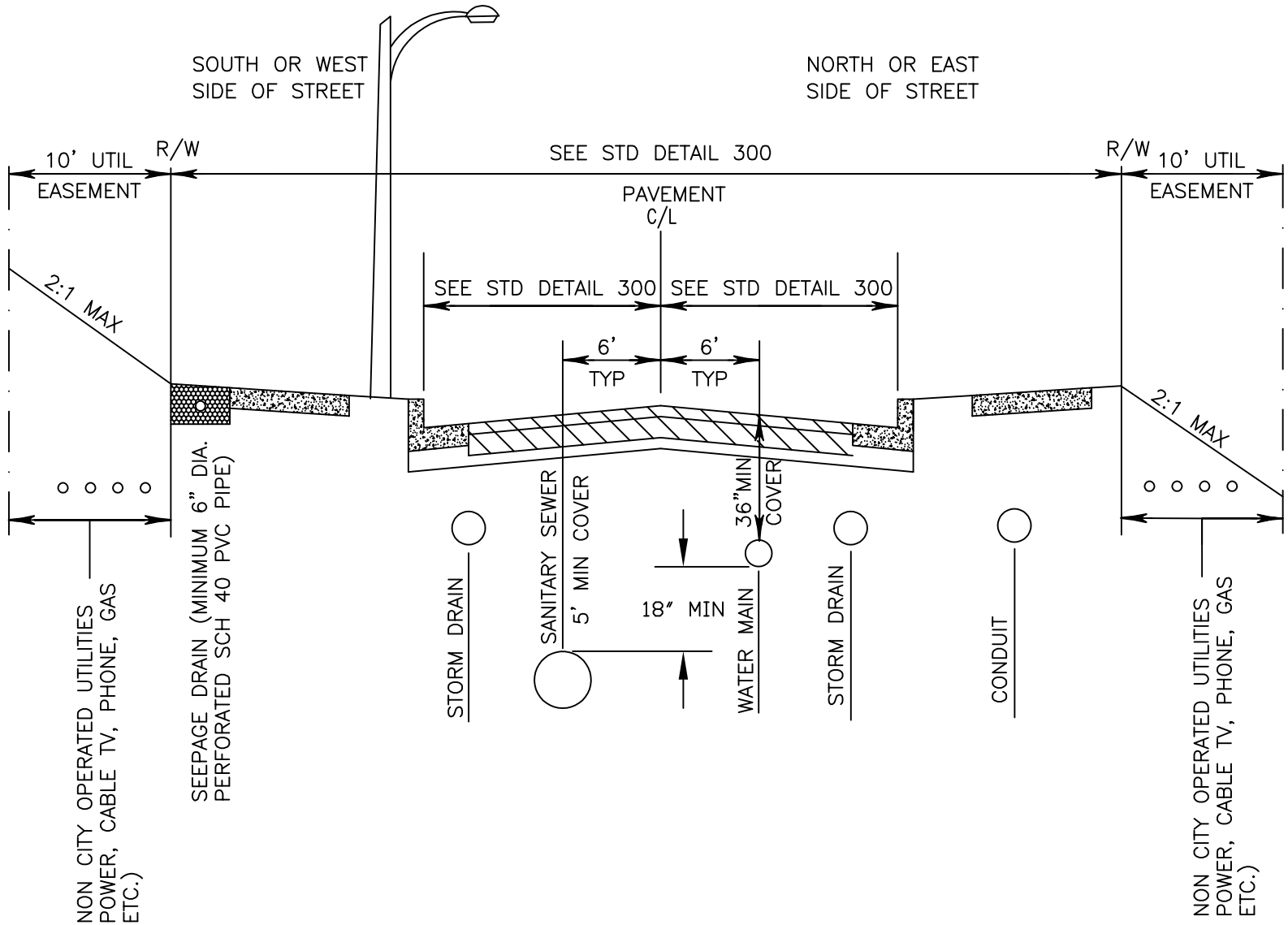
Approved By:

City Engineer

TYPICAL PUBLIC UTILITY LOCATION

Standard Detail **304**

Revision Date Nov, 2018



NOTES:

1. 18" MIN VERTICAL AND 5' MIN HORIZONTAL SEPARATION BETWEEN PUBLIC UTILITIES OR FROM PRIVATE UTILITIES IN THE PUBLIC RIGHT OF WAY.
2. MIN SEPARATION REQUIREMENTS FROM PUBLIC UTILITIES APPLY WITHIN EASEMENTS AND PRIVATE PROPERTY.
3. CONDUIT APPLIES TO COLLECTOR STREETS OR ABOVE WITHIN THE LIMITS OF LANDSCAPE STRIP.
4. MINIMUM 10' HORIZONTAL AND 18" VERTICAL SEPARATION BETWEEN WATER AND SANITARY SEWER MAINS.

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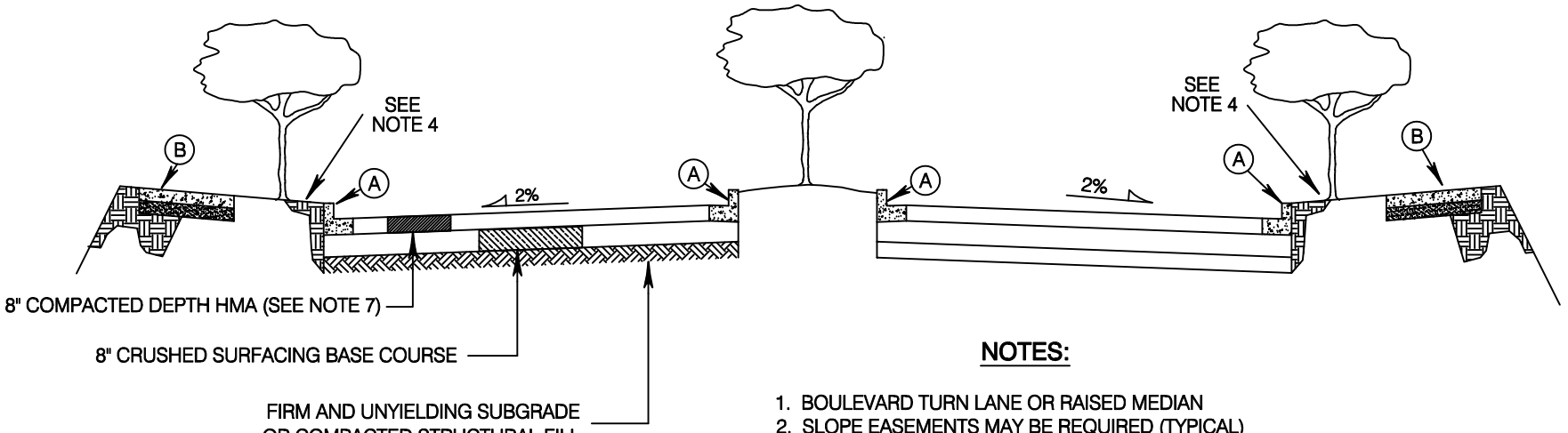
City Engineer

TYPICAL ROADWAY SECTION PRINCIPAL ARTERIAL

Standard Detail **305**

Revision Date Nov, 2018

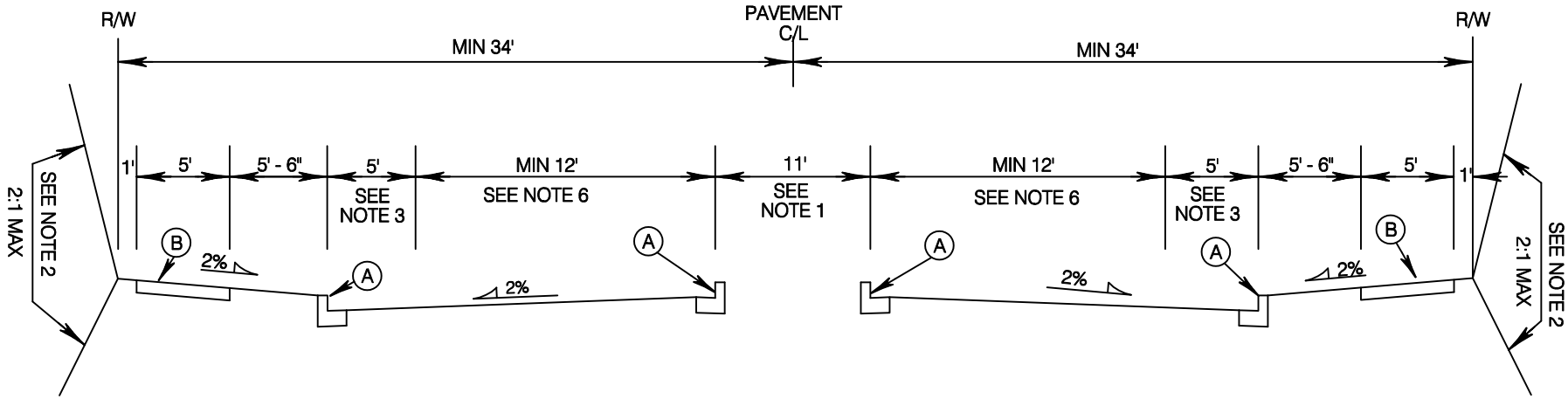


STANDARD PAVEMENT SECTION

LEFT SIDE (RIGHT SIDE TO BE MIRROR IMAGE)

NOTES:

1. BOULEVARD TURN LANE OR RAISED MEDIAN
2. SLOPE EASEMENTS MAY BE REQUIRED (TYPICAL)
3. 5' BIKE LANE
4. SEE STREET TREE LOCATION DETAIL 363
5. NO PARKING ON PRINCIPAL ARTERIALS
6. 12 FT WIDTH IF ONE LANE, IF MORE THAN ONE LANE, 11 FT WIDTH PER LANE
7. MINIMUM PAVEMENT THICKNESS SHALL BE 8 INCHES OF HOT MIX ASPHALT PLACED IN THE FOLLOWING COURSES TO CONFORM TO WSDOT STANDARD SPECIFICATION 5-04.3(9): 2 INCHES OF HMA CLASS 1/2" PG 64-22 WEARING COURSE, OVER TWO 3" LIFTS OF HMA CLASS 1/2" PG 64-22. A GEOTECHNICAL REPORT/SOIL ANALYSIS MAY BE REQUIRED BY THE ENGINEER, AND ADDITIONAL PAVEMENT THICKNESS MAY BE REQUIRED.



(A) CONCRETE CURB AND GUTTER, SEE STD DETAIL 340

(B) CONCRETE SIDEWALK, SEE STD DETAIL 344

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

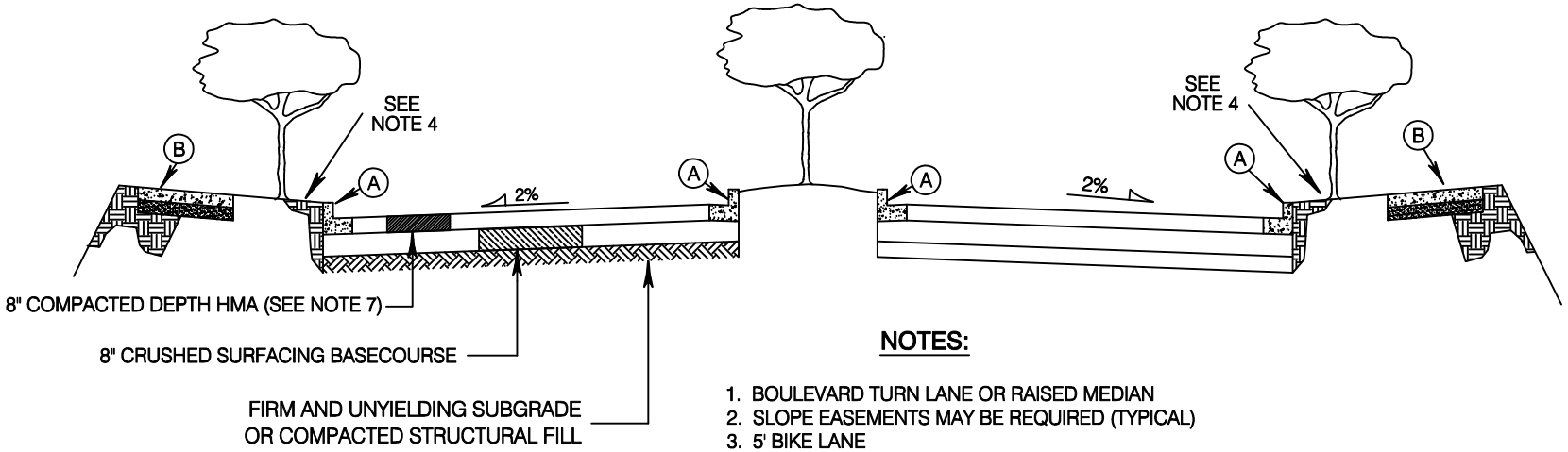
Approved By:

City Engineer

TYPICAL ROADWAY SECTION
MINOR ARTERIAL

Standard Detail **306**

Revision Date Nov, 2018

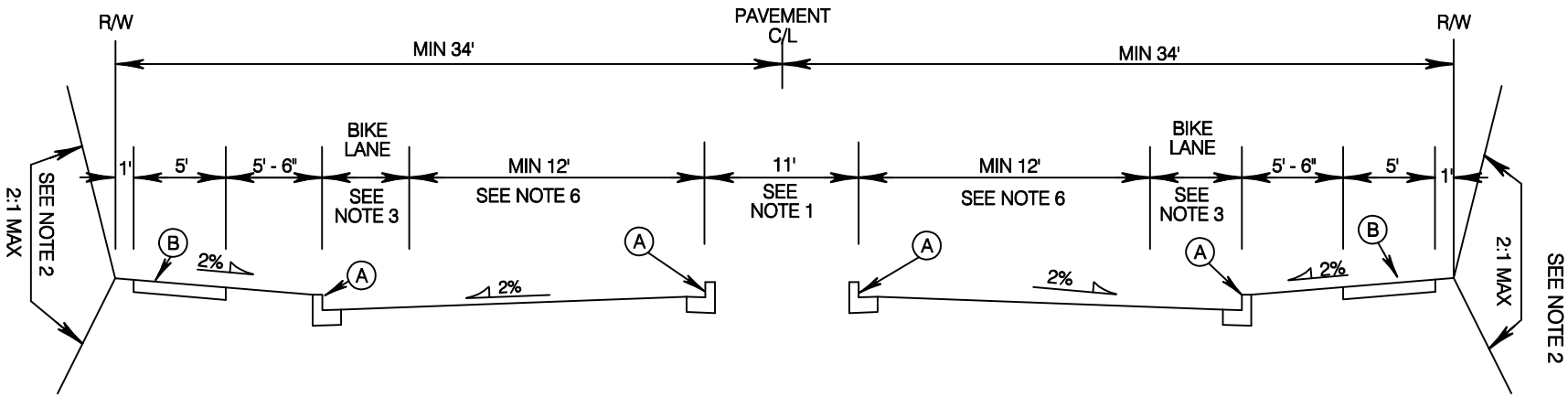


STANDARD PAVEMENT SECTION

LEFT SIDE (RIGHT SIDE TO BE MIRROR IMAGE)

NOTES:

1. BOULEVARD TURN LANE OR RAISED MEDIAN
2. SLOPE EASEMENTS MAY BE REQUIRED (TYPICAL)
3. 5' BIKE LANE
4. SEE LANDSCAPE DETAIL 363
5. NO PARKING ON ARTERIALS
6. 12 FT WIDTH IF ONE LANE, IF MORE THAN ONE LANE, 11 FT WIDTH PER LANE
7. MINIMUM PAVEMENT THICKNESS SHALL BE 8 INCHES OF HOT MIX ASPHALT PLACED IN THE FOLLOWING COURSES TO CONFORM TO WSDOT STANDARD SPECIFICATION 5-04.3(9): 2 INCHES OF HMA CLASS 1/2" PG 64-22 WEARING COURSE, OVER TWO 3" LIFTS OF HMA CLASS 1/2" PG 64-22. A GEOTECHNICAL REPORT/SOIL ANALYSIS MAY BE REQUIRED BY THE ENGINEER, AND ADDITIONAL PAVEMENT THICKNESS MAY BE REQUIRED.



(A) CONCRETE CURB AND GUTTER , SEE STD DETAIL 340

(B) CONCRETE SIDEWALK, SEE STD DETAIL 344

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City of Bothell

PUBLIC WORKS DEPARTMENT

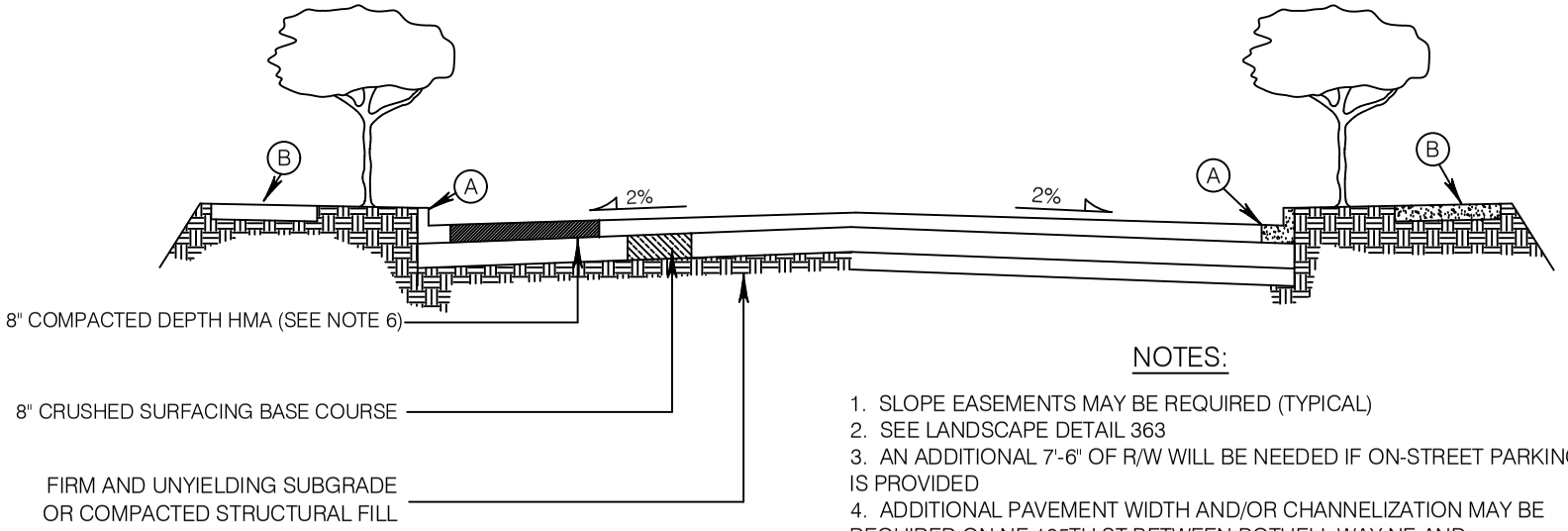
Approved By:

City Engineer

TYPICAL ROADWAY SECTION COLLECTOR CLASS II BIKE LANE

Standard Detail **307**

Revision Date Dec, 2019

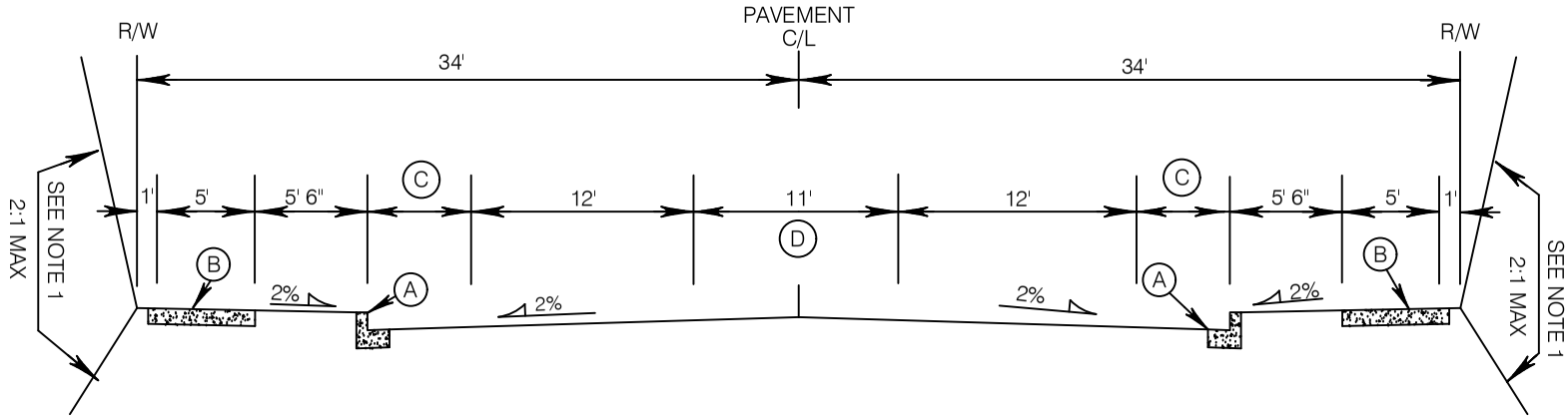


STANDARD PAVEMENT SECTION

LEFT SIDE (RIGHT SIDE TO BE MIRROR IMAGE)

NOTES:

1. SLOPE EASEMENTS MAY BE REQUIRED (TYPICAL)
2. SEE LANDSCAPE DETAIL 363
3. AN ADDITIONAL 7'-6" OF R/W WILL BE NEEDED IF ON-STREET PARKING IS PROVIDED
4. ADDITIONAL PAVEMENT WIDTH AND/OR CHANNELIZATION MAY BE REQUIRED ON NE 185TH ST BETWEEN BOTHELL WAY NE AND BEARDSLEE BLVD, THE COMPACTED DEPTH OF HMA SHALL BE 9"
5. ON NE 185TH ST BETWEEN 104TH AVE NE AND BEARDSLEE BLVD, A GEOTECHNICAL REPORT PER SECTION 3-4.1.1 SHALL BE PROVIDED TO EVALUATE THE NEED FOR ADDITIONAL SUBGRADE PREPARATION THAT MAY BE REQUIRED TO ALLEVIATE POTENTIAL ROADWAY SETTLEMENT
6. MINIMUM PAVEMENT THICKNESS SHALL BE 8 INCHES OF HOT MIX ASPHALT PLACED IN THE FOLLOWING COURSES TO CONFORM TO WSDOT STANDARD SPECIFICATION 5-04.3(9): 2 INCHES OF HMA CLASS 1/2" PG 64-22 WEARING COURSE, OVER TWO 3" LIFTS OF HMA CLASS 1/2" PG 64-22. A GEOTECHNICAL REPORT/SOIL ANALYSIS MAY BE REQUIRED BY THE ENGINEER, AND ADDITIONAL PAVEMENT THICKNESS MAY BE REQUIRED.



(A) CONCRETE CURB AND GUTTER, SEE STD DETAIL 340

(B) CONCRETE SIDEWALK, SEE STD DETAIL 344

(C) 5' BIKE LANE IF DESIGNATED AS A BIKE FACILITY IN COMPREHENSIVE PLAN

(D) 12' LANE IF TURN LANE IS NOT REQUIRED, AS DIRECTED BY PUBLIC WORKS DIRECTOR

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

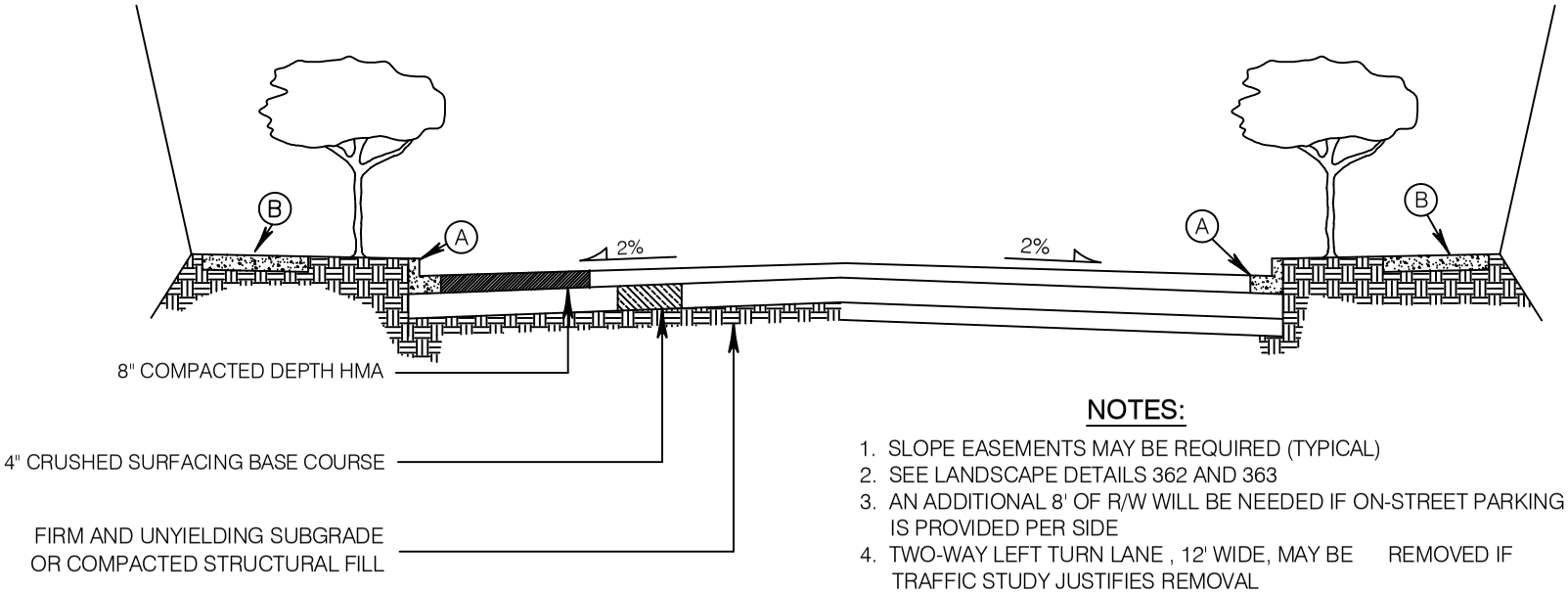
Approved By:

City Engineer

TYPICAL ROADWAY SECTION COLLECTOR CLASS II BIKE TRAIL

Standard Detail **308**

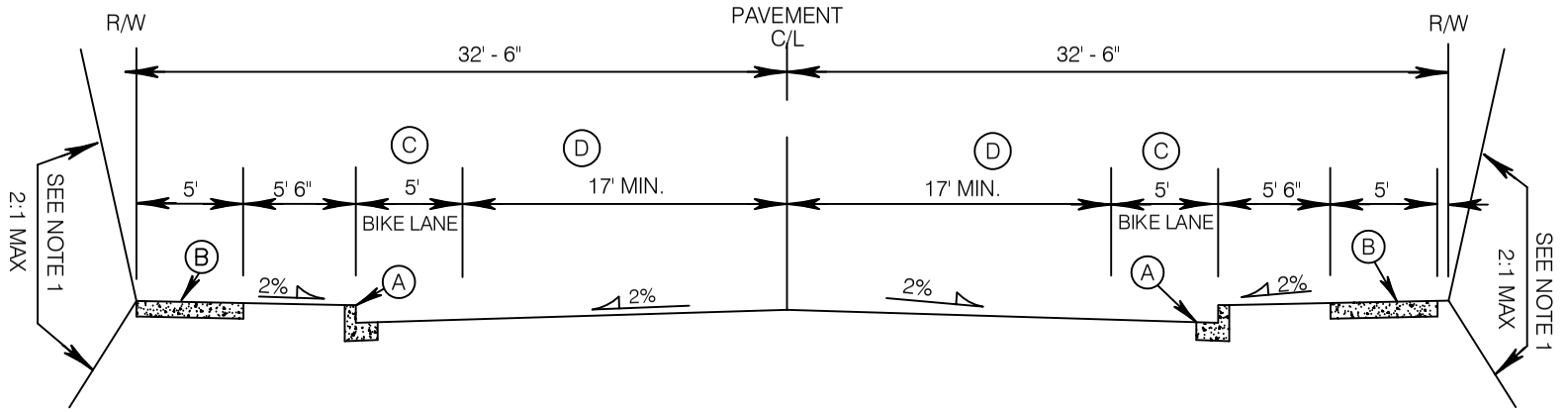
Revision Date Nov, 2018



STANDARD PAVEMENT SECTION

NOTES:

1. SLOPE EASEMENTS MAY BE REQUIRED (TYPICAL)
2. SEE LANDSCAPE DETAILS 362 AND 363
3. AN ADDITIONAL 8' OF R/W WILL BE NEEDED IF ON-STREET PARKING IS PROVIDED PER SIDE
4. TWO-WAY LEFT TURN LANE , 12' WIDE, MAY BE REMOVED IF TRAFFIC STUDY JUSTIFIES REMOVAL
5. MINIMUM PAVEMENT THICKNESS SHALL BE 8 INCHES OF HOT MIX ASPHALT PLACED IN THE FOLLOWING COURSES TO CONFORM TO WSDOT STANDARD SPECIFICATION 5-04.3(9): 2 INCHES OF HMA CLASS 1/2" PG 64-22 WEARING COURSE, OVER TWO 3" LIFTS OF HMA CLASS 1/2" PG 64-22. A GEOTECHNICAL REPORT/SOIL ANALYSIS MAY BE REQUIRED BY THE ENGINEER, AND ADDITIONAL PAVEMENT THICKNESS MAY BE REQUIRED



(A) CONCRETE CURB AND GUTTER TYPE A-1, SEE STD DETAIL 340

(B) CONCRETE SIDEWALK, SEE STD DETAIL 344

(C) 5' BIKE LANE IF COMPREHENSIVE PLAN REQUIRES BIKE LANE

(D) 12' LANE IF THRU LANE IS NOT REQUIRED, AS DIRECTED BY PUBLIC WORKS DIRECTOR

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

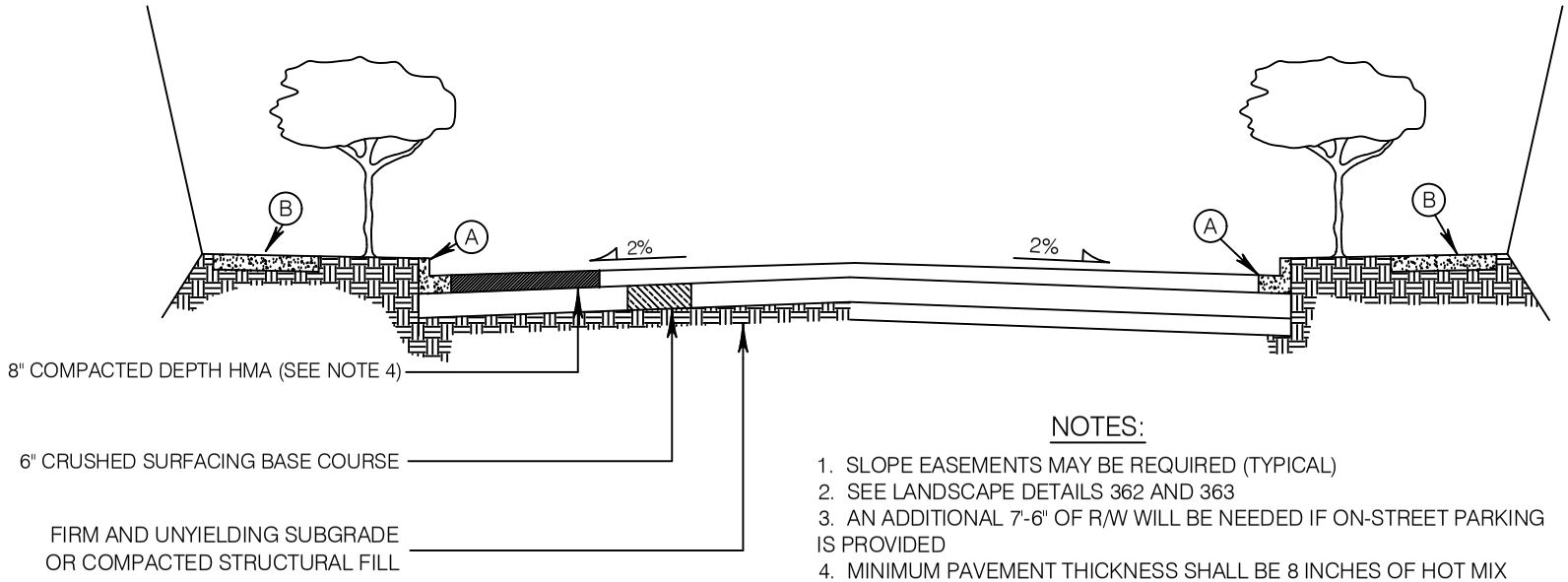
Approved By:

City Engineer

TYPICAL ROAD SECTION
COLLECTOR
CLASS III BIKE LANE

Standard Detail **309**

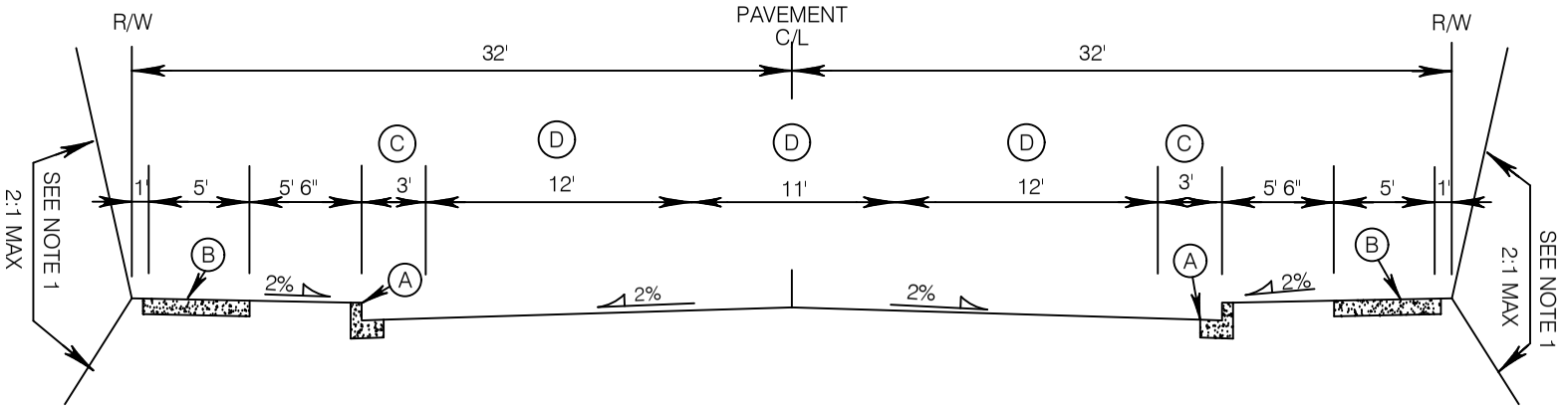
Revision Date Dec, 2019



STANDARD PAVEMENT SECTION

NOTES:

1. SLOPE EASEMENTS MAY BE REQUIRED (TYPICAL)
2. SEE LANDSCAPE DETAILS 362 AND 363
3. AN ADDITIONAL 7'-6" OF R/W WILL BE NEEDED IF ON-STREET PARKING IS PROVIDED
4. MINIMUM PAVEMENT THICKNESS SHALL BE 8 INCHES OF HOT MIX ASPHALT PLACED IN THE FOLLOWING COURSES TO CONFORM TO WSDOT STANDARD SPECIFICATION 5-04.3(9): 2 INCHES OF HMA CLASS 1/2" PG 64-22 WEARING COURSE, OVER TWO 3" LIFTS OF HMA CLASS 1/2" PG 64-22. A GEOTECHNICAL REPORT/SOIL ANALYSIS MAY BE REQUIRED BY THE ENGINEER, AND ADDITIONAL PAVEMENT THICKNESS MAY BE REQUIRED



(A) CONCRETE CURB AND GUTTER TYPE A-1

(B) SEE STD DETAIL 340 CONCRETE SIDEWALK, SEE STD DETAIL 344

(C) CLASS III BIKE TRAIL

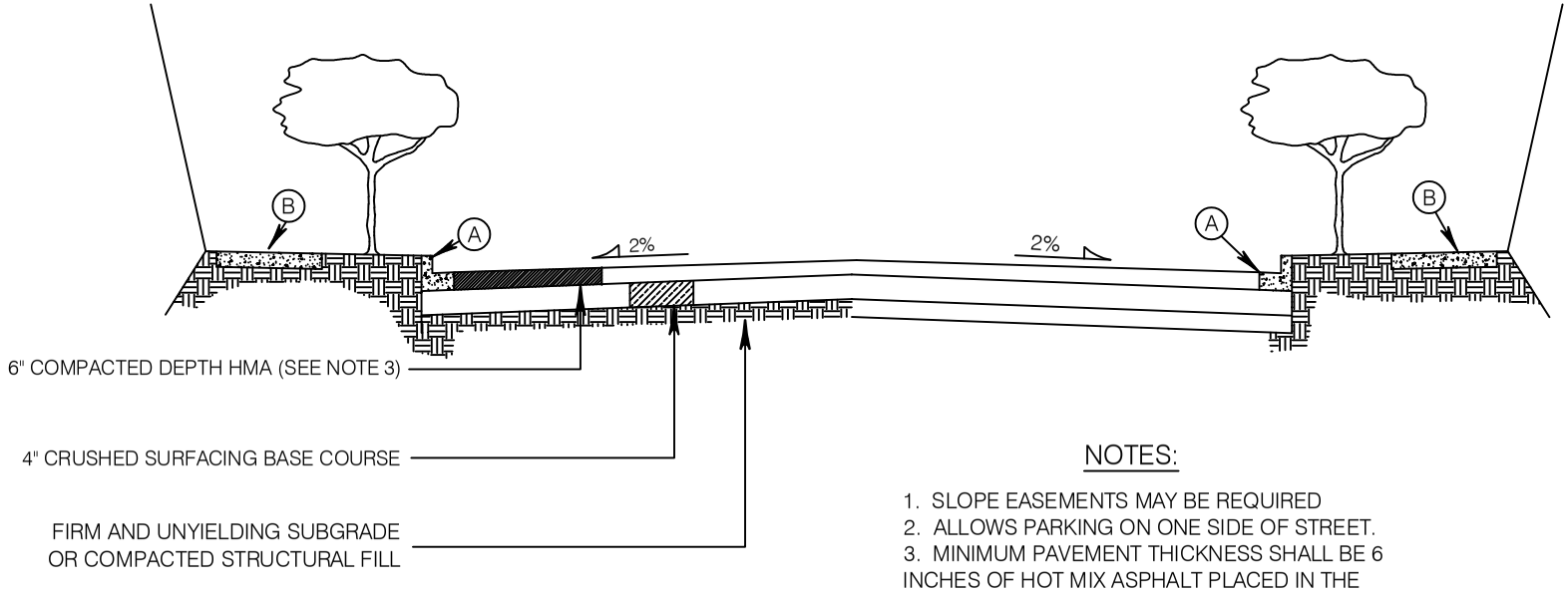
City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

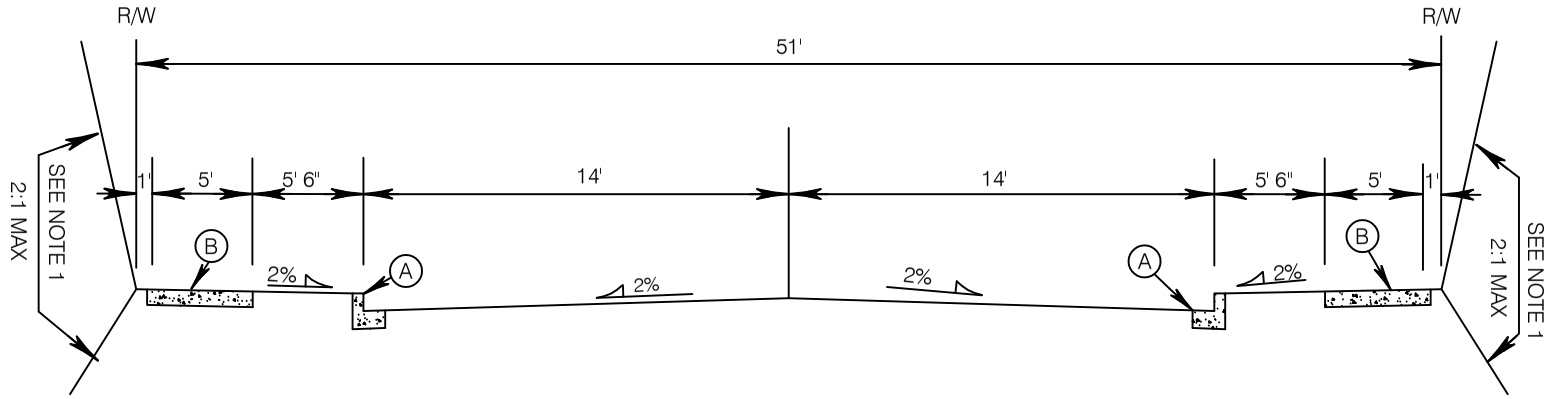


STANDARD PAVEMENT SECTION

LEFT SIDE (RIGHT SIDE TO BE MIRROR IMAGE)

NOTES:

1. SLOPE EASEMENTS MAY BE REQUIRED
2. ALLOWS PARKING ON ONE SIDE OF STREET.
3. MINIMUM PAVEMENT THICKNESS SHALL BE 6 INCHES OF HOT MIX ASPHALT PLACED IN THE FOLLOWING COURSES TO CONFORM TO WSDOT STANDARD SPECIFICATION 5-04.3(9): 2 INCHES OF HMA CLASS 1/2" PG 64-22 WEARING COURSE, OVER ONE 4" LIFT OF HMA CLASS 1/2" PG 64-22. A GEOTECHNICAL REPORT/SOIL ANALYSIS MAY BE REQUIRED BY THE ENGINEER, AND ADDITIONAL PAVEMENT THICKNESS MAY BE REQUIRED

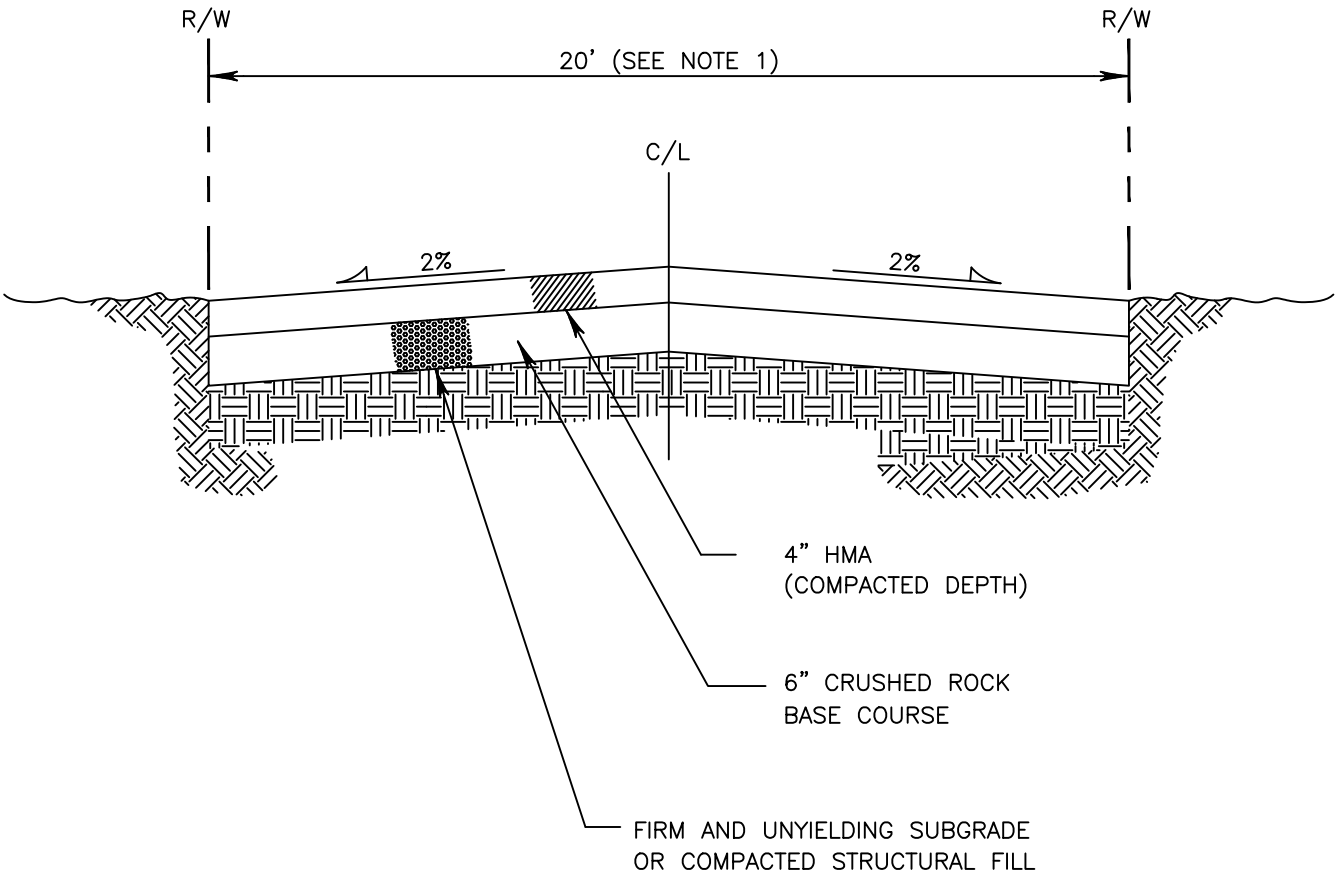


Ⓐ CONCRETE CURB AND GUTTER, SEE STD DETAIL 340

Ⓑ CONCRETE SIDEWALK, SEE STD DETAIL 344

TYPICAL ROADWAY SECTION LOCAL ACCESS

Standard Detail	Revision Date
310	Nov, 2018



NOTES:

1 ALL NEW ALLEYS SHALL HAVE A MINIMUM WIDTH OF 20'. EXISTING ALLEY RIGHT-OF-WAY WIDTH IS 16'.

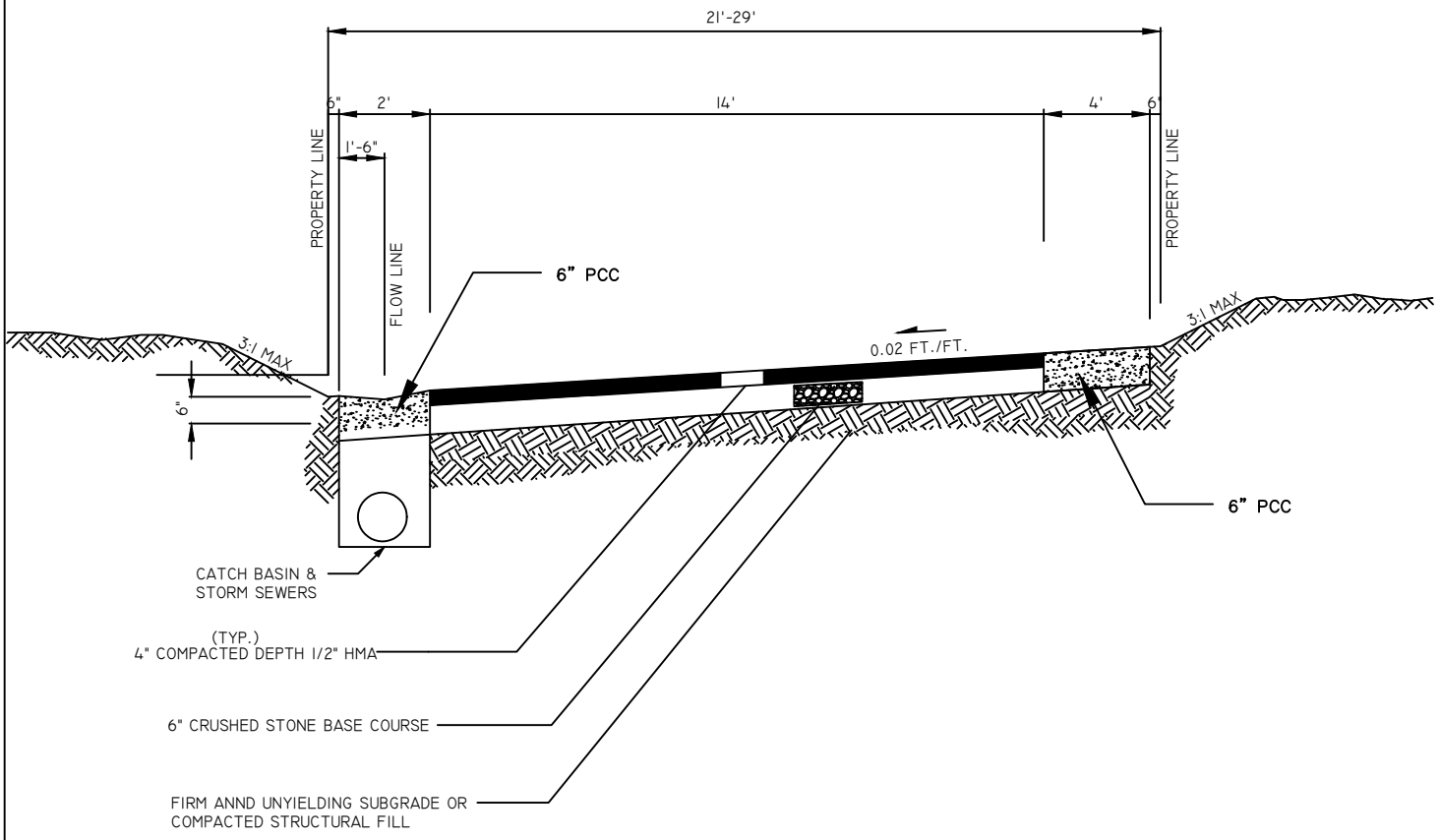
2 INVERT DRAINAGE TO BE COLLECTED AT LOW END OF IMPROVED SECTION WITH CATCH BASIN INSTALLATION AND TIGHTLINED TO STORM DRAINAGE SYSTEM.

3 COMPACTION TESTS ON SUBGRADE AND TOP OF ROCK WILL BE REQUIRED. THE NUMBER OF TESTS SHALL BE AT THE DISCRETION OF THE DIRECTOR. ALL TESTING SHALL BE THROUGH A LICENSED TESTING LABORATORY AT THE EXPENSE OF CONTRACTOR OR DEVELOPER. THE MINIMUM COMPACTION SHALL BE 95% OF MAXINUM DRY DENSITY OF BOTH SUBGRADE AND TOP OF ROCK.

4 ADJUSTMENT OF CATCH BASIN LIDS OR GRATES, MONUMENT CASES, VALVE BOXES, ETC SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR OR DEVELOPER AS REQUIRED.

5 MINIMUM PAVEMENT THICKNESS SHALL BE 3 INCHES OF HOT MIX ASPHALT IN THE FOLLOWING COURSES TO CONFORM TO WSDOT STANDARD SPECIFICATION 5-04.3(9): ONE 3" LIFT OF HMA CLASS 1/2" PG 64-22 WEARING COURSE. A GEOTECHNICAL REPORT/SOIL ANALYSIS MAY BE REQUIRED BY THE ENGINEER, AND ADDITIONAL PAVEMENT THICKNESS MAY BE REQUIRED.

City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	TYPICAL ALLEY	Standard Detail **311** Revision Date Dec, 2019



NOTES:

1. *CROSS SLOPE OR NORMAL CROWN ROADWAY SECTIONS ACCEPTED. NO REVERSE OR INVERTED CROWN ROADWAY SECTIONS ACCEPTED UNLESS ENTIRE WIDTH IS PORTLAND CEMENT CONCRETE AND UPON APPROVAL OF PUBLIC WORKS DIRECTOR.
2. *28' TOTAL SURFACING WIDTH WITH PARKING LANE.
3. MINIMUM PAVEMENT THICKNESS SHALL BE 4 INCHES OF HOT MIX ASPHALT PLACED IN THE FOLLOWING COURSES TO CONFORM TO WSDOT STANDARD SPECIFICATION 5-03.3(9): 4 INCHES OF HOT MIX ASPHALT CLASS 1/2" PG 64-22 WEARING COURSE USING ONE 4" LIFT. A GEOTECHNICAL REPORT/SOIL ANALYSIS MAY BE REQUIRED BY THE ENGINEER, AND ADDITIONAL PAVEMENT THICKNESS MAY BE REQUIRED.

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

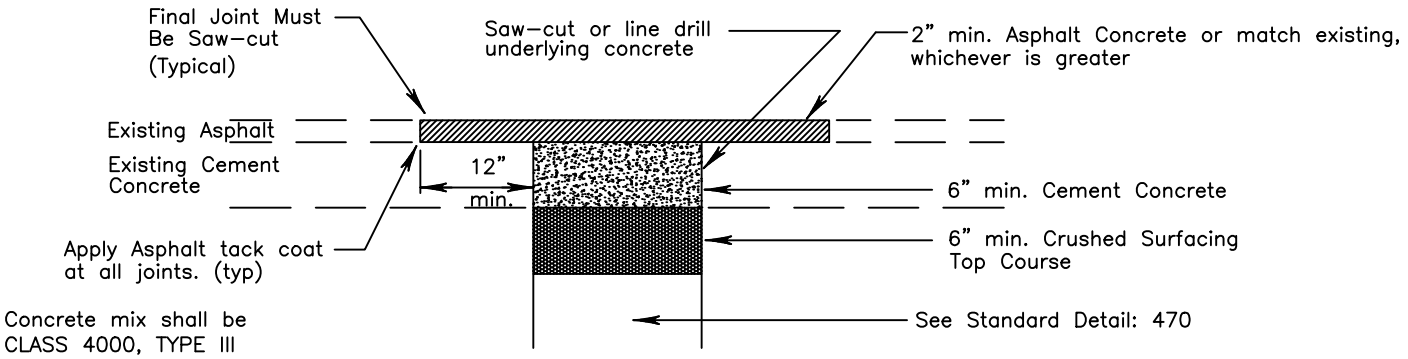
PRIVATE ACCESS TRACT

Detail

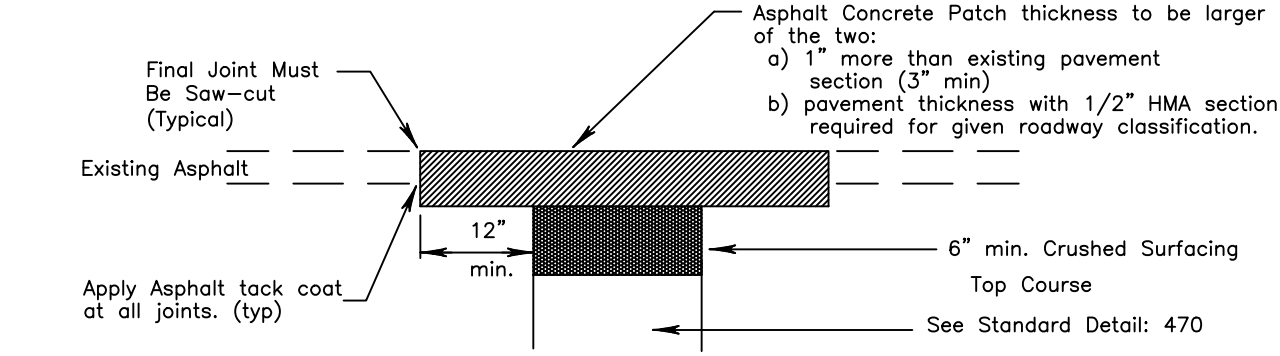
312

Revision Date

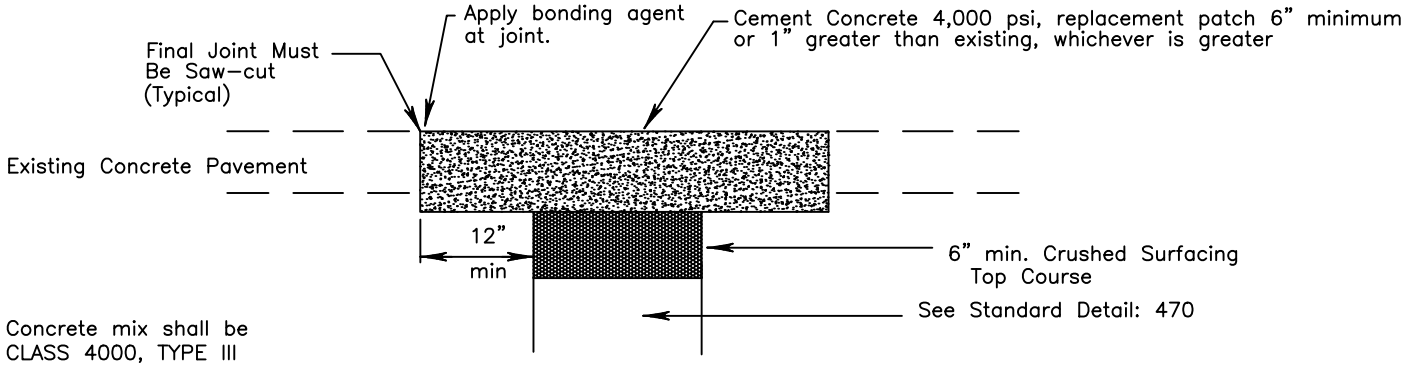
Dec, 2019



EXISTING ASPHALT CONCRETE OVER CEMENT CONCRETE



EXISTING ASPHALT CONCRETE OVER PREPARED GRADE



EXISTING CEMENT CONCRETE OVER PREPARED GRADE

NOTES:

1. ALL TRENCHES IN ROADWAY AREAS SHALL BE BACKFILLED AND PATCHED WITH TEMPORARY ASPHALT AT THE END OF EACH WORK DAY, UNLESS PERMISSION IS GRANTED TO DO OTHERWISE BY THE PUBLIC WORKS DIRECTOR.
2. ALL TEMPORARY PATCHES ON TRENCHES SHALL BE PERMANENTLY PATCHED WITHIN 2 WEEKS OF COMPLETION OF WORK WITHIN THE ROADWAY AREA.
3. A MINIMUM FULL–LANE WIDTH, 2" THICKNESS GRIND AND OVERLAY IS REQUIRED FOR ROAD WIDENING OR PAVEMENT CUTS PARALLEL TO ROADWAY.
4. CONTINUOUS GRIND AND OVERLAY REQUIRED BETWEEN NEW SAWCUT OR EXCAVATION SEPARATED BY LESS THAN 25'.

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

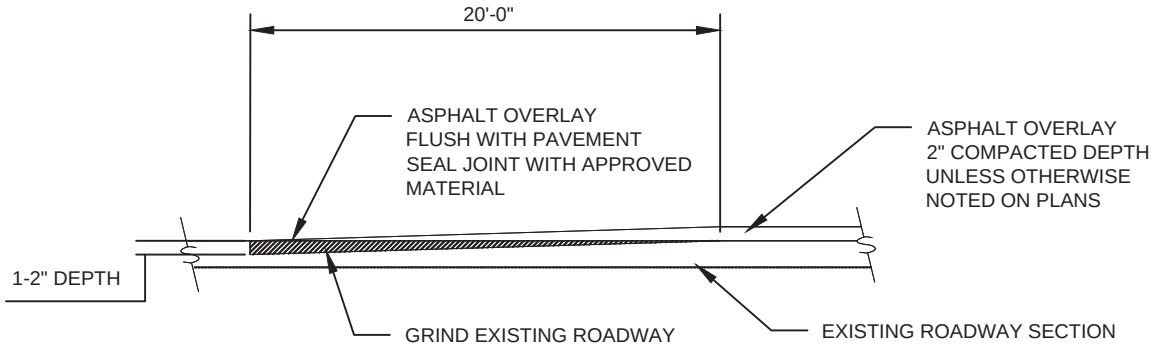
PAVEMENT PATCHING

Standard Detail

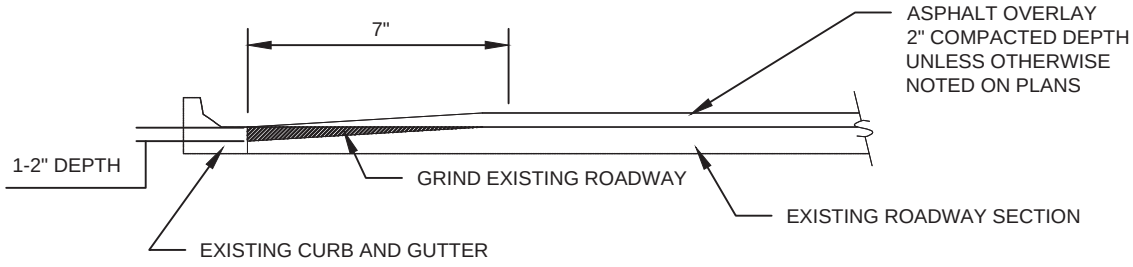
317

Revision Date

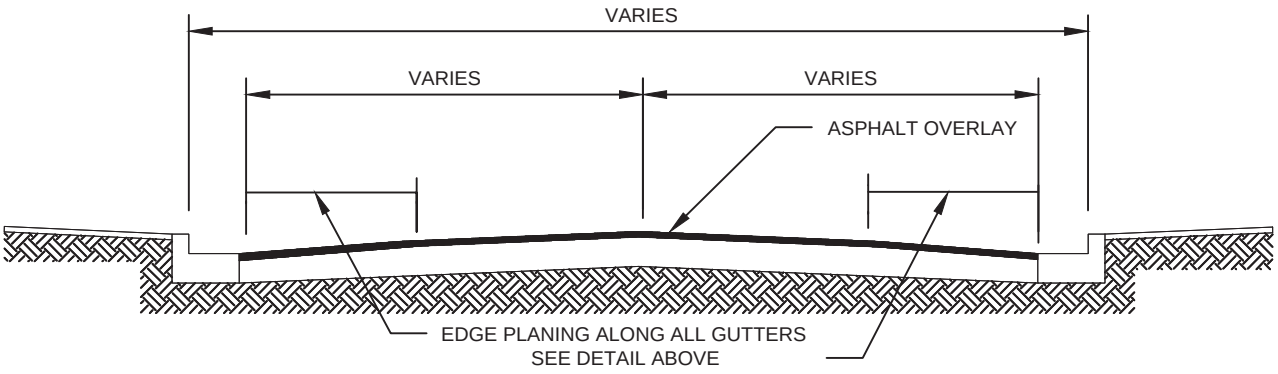
Dec, 2019



BUTT JOINT DETAIL

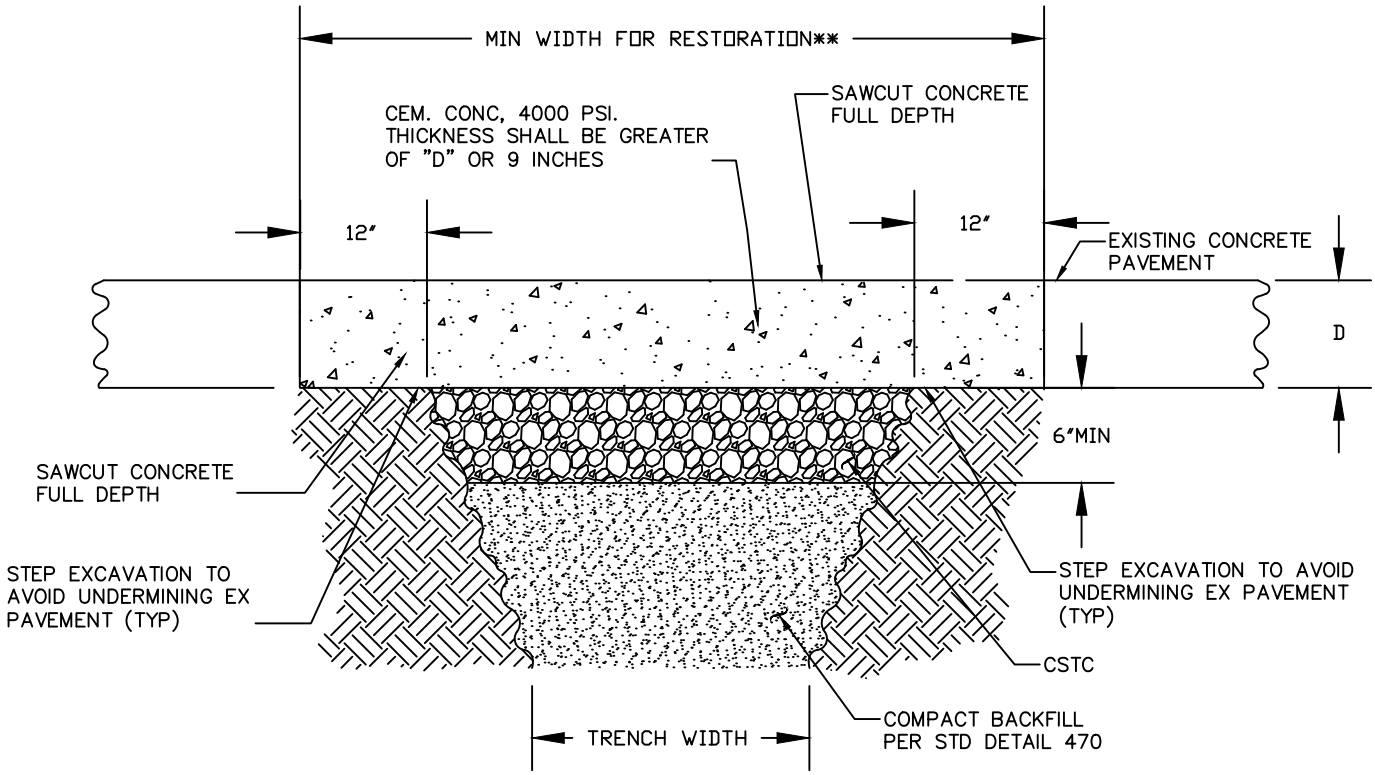


EDGE PLANING DETAIL



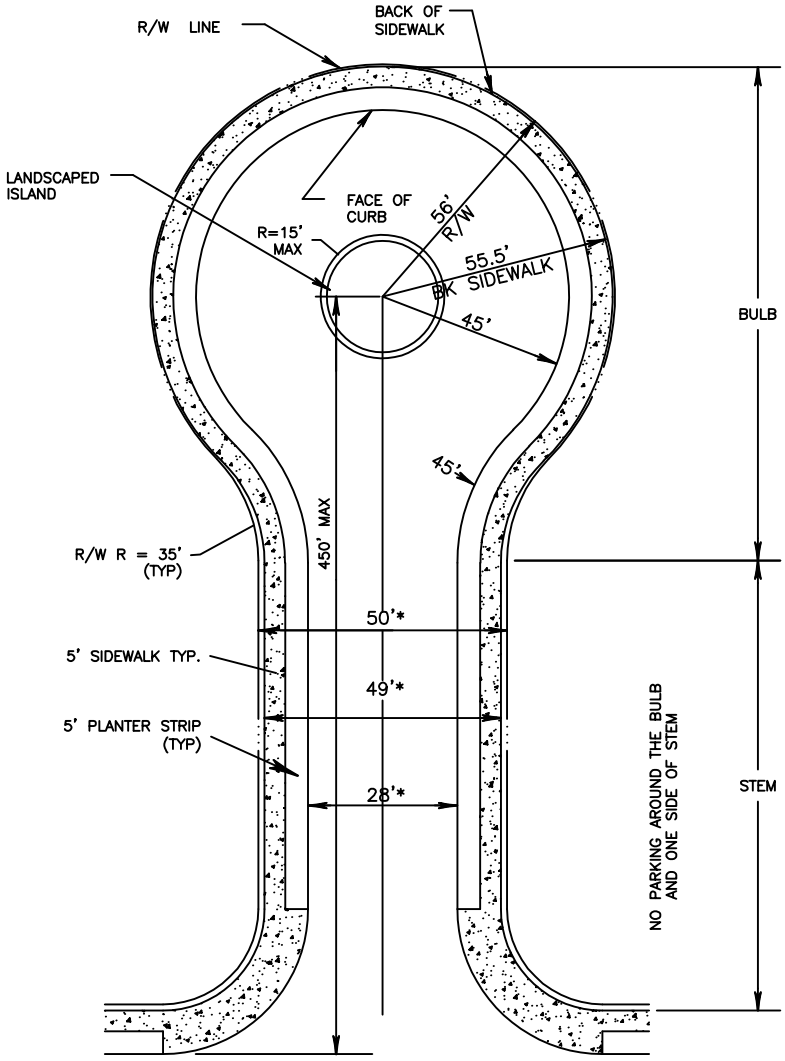
TYPICAL OVERLAY DETAIL

City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	PAVEMENT PLANING	Standard Detail **318** Revision Date Feb, 2012



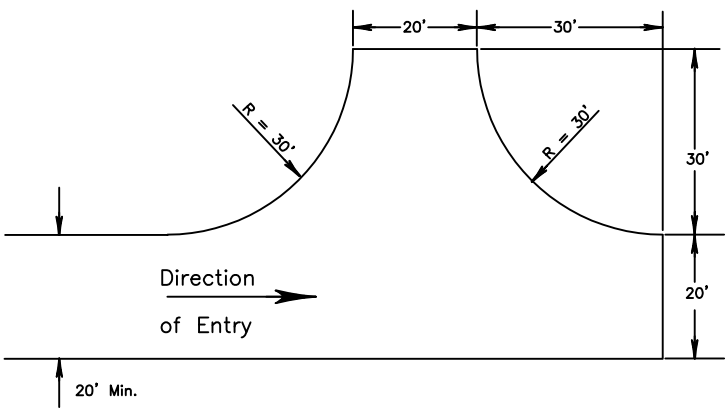
** DEPTH OF RESTORATION SHALL MATCH THE EXISTING DEPTH

City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	CONCRETE PAVEMENT PATCHING	Standard Detail **319** Revision Date Dec, 2019

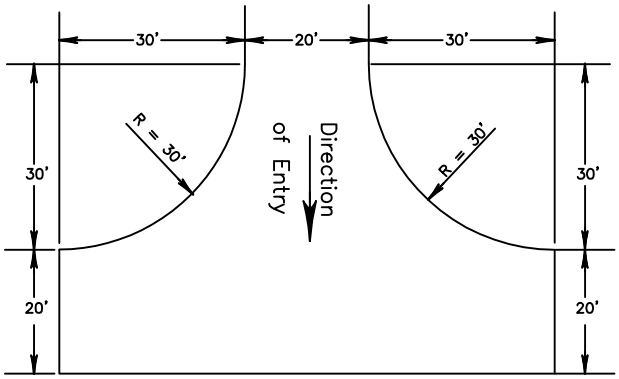


CUL-DE-SAC

* SEE SECTION 3-4.2.7 FOR REQUIRED STREET WIDTH

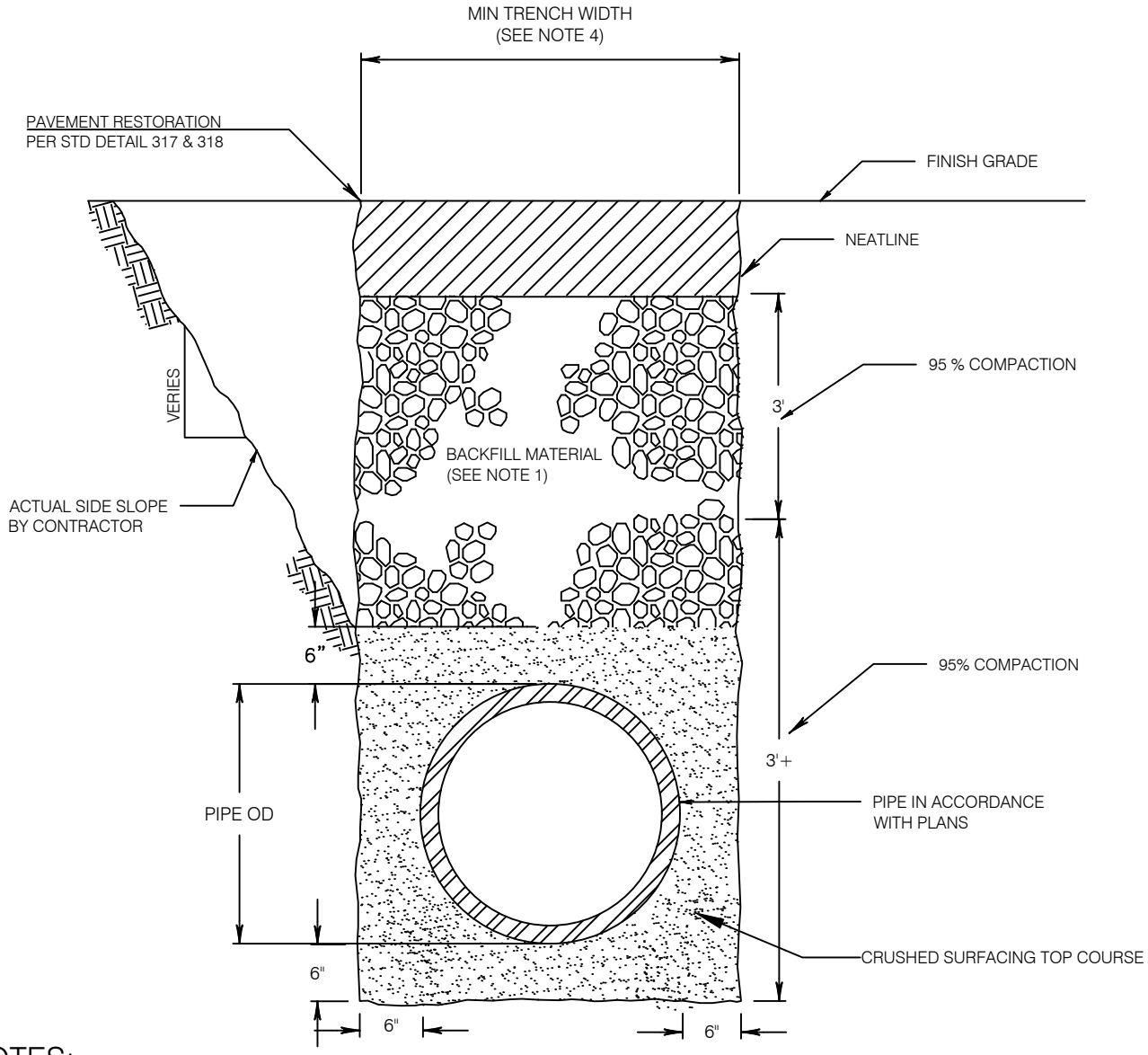


SIDE ENTRY



CENTER ENTRY

City of Bothell™	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	TYPICAL CUL-DE-SAC AND HAMMERHEAD TURNAROUND FOR FIRE DEPARTMENT	Standard Detail **320** Revision Date Nov, 2018



NOTES:

1. ALL TRENCH BACKFILL MATERIAL SHALL CONSIST OF SUITABLE NATIVE EXCAVATED MATERIAL OR IMPORTED BACKFILL MATERIAL AS AUTHORIZED BY THE PUBLIC WORKS DIRECTOR. ALL TRENCH MATERIAL SHALL BE COMPACTED TO 95% MDD.

2. FOUNDATION GRAVEL SHALL BE REQUIRED TO PROVIDE A SOLID FOUNDATION FOR THE
UTILITIES IN THOSE AREAS OF THE TRENCH WHICH HAVE UNSUITABLE MATERIAL OR SOFT SPOTS.

3. PLACE AND COMPACT BACKFILL IN A MINIMUM 4" LIFT TO PIPE SPRINGLINE TO ASSURE
NO VOIDS UNDER PIPE.

4. MINIMUM TRENCH WIDTH FOR THE PIPE DIAM. 15" AND UNDER IS I.D. + 30", FOR PIPE DIAM.
16" AND OVER IS (1.5 X I.D.) + 18".

TRENCH WIDTHS			
NOMINAL PIPE DIAMETER	MINIMUM EARTH	MINIMUM ROCK	MAXIMUM
2	18	24	36
3	18	24	36
4	18	24	36
6	21	24	36
8	24	24	36
12	28	28	40

(IN INCHES)

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

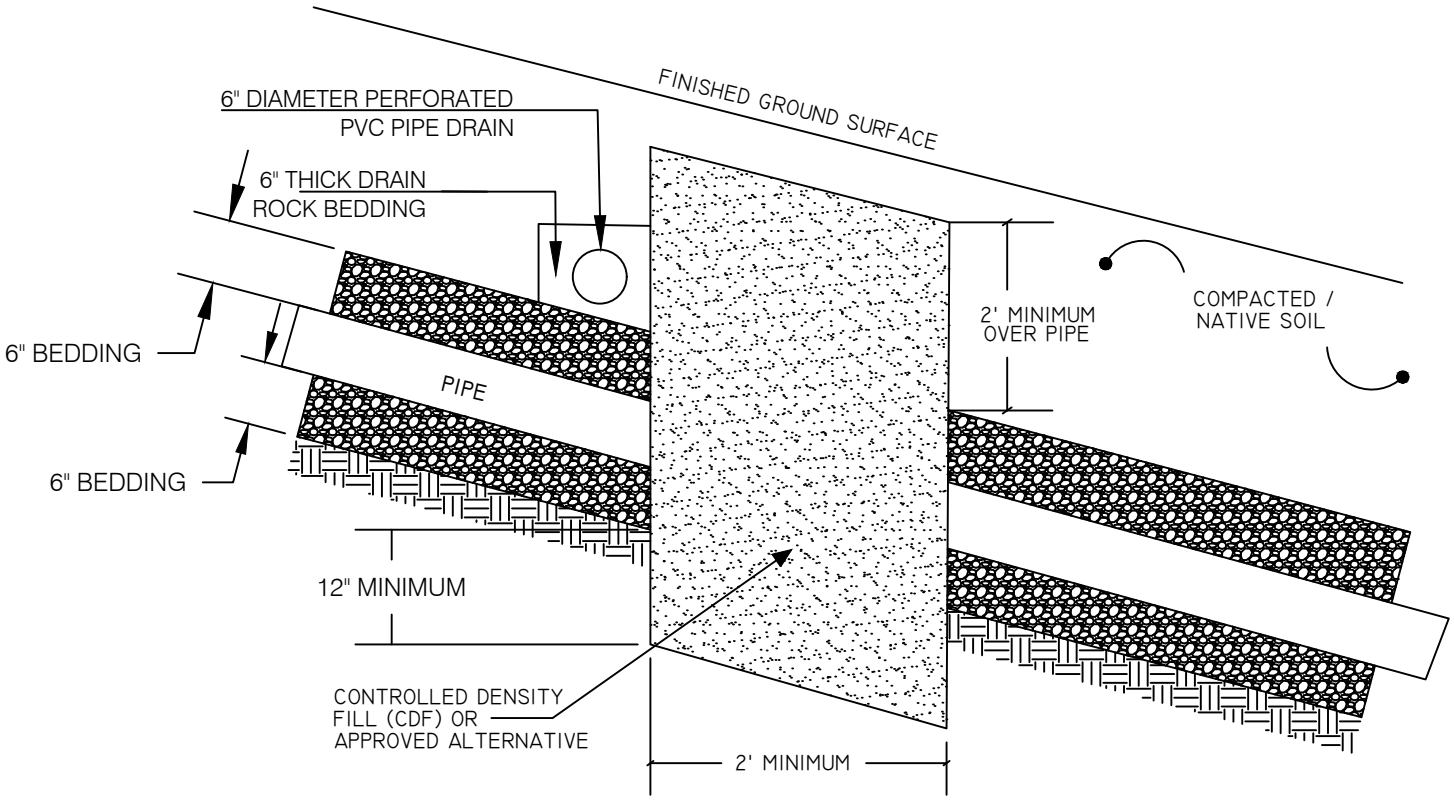
UTILITY TRENCH

Standard Detail

323

Revision Date

Dec, 2019



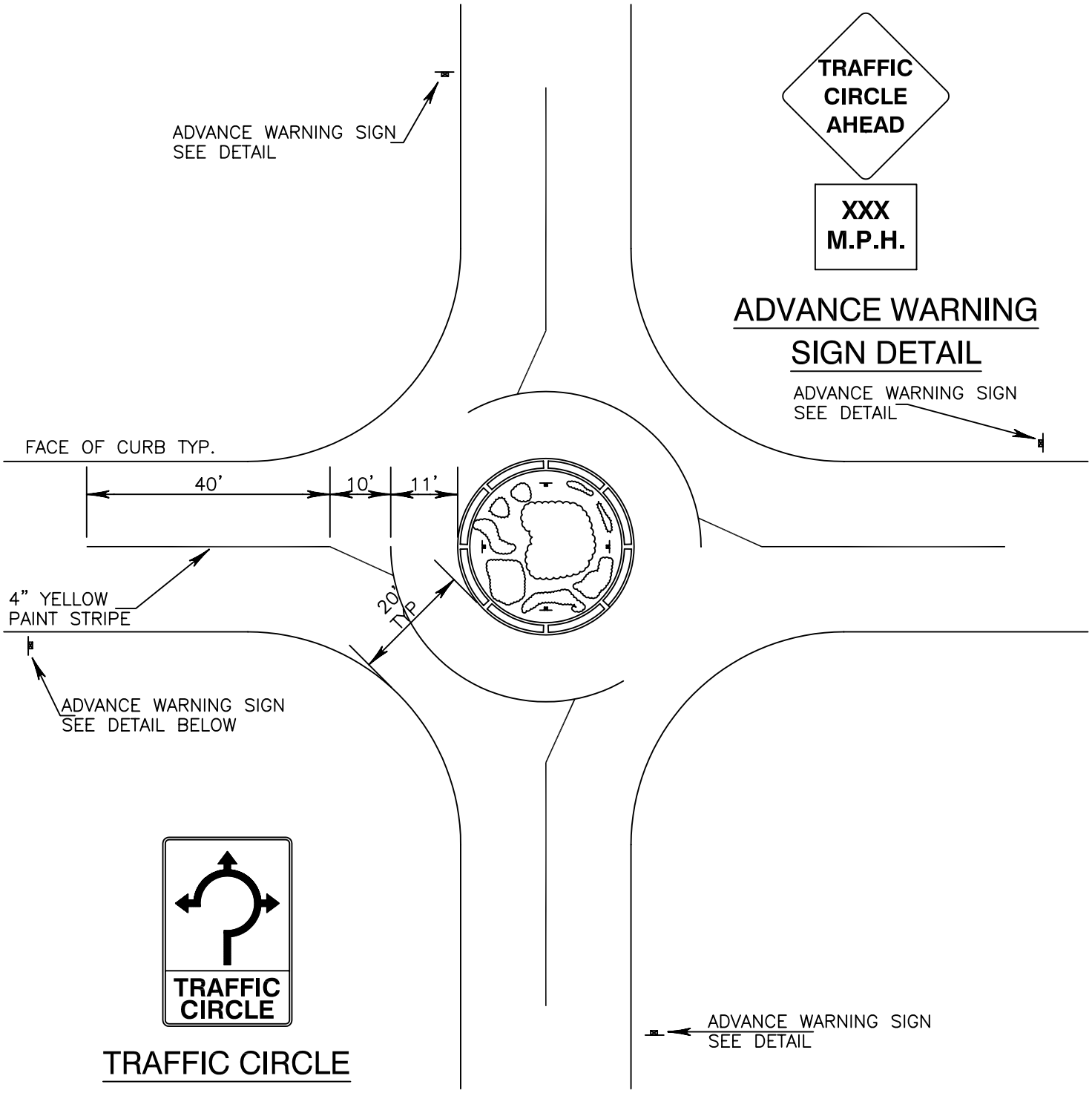
PIPE TRENCH BEDDING AND SEEPAGE BARRIERS

Seepage barriers shall consist of CDF (controlled density fill) or an approved equivalent. Each seepage barrier shall be notched at least 12 inches into the base and sides of the trench to key the barrier into the native soils.

The barriers shall extend from the base of the key trench, surround each pipe, and extend a distance of at least 2 feet or one pipe diameter, whichever is greater, above the top of the pipe bedding. They shall be at least 2 feet long measured parallel to the pipes.

Pipe drain will be tied into the nearest catch basin on the uphill side of the barrier. City Inspector to verify location.

City of Bothell™	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	SEEPAGE BARRIER (TRENCH DAM)	Standard Detail **324** Revision Date Dec, 2019



ADVANCE WARNING SIGN DETAIL

TRAFFIC CIRCLE SIGN DETAIL

TYPICAL TRAFFIC CIRCLE DESIGN FOR 20 M.P.H.

City of Bothell

PUBLIC WORKS

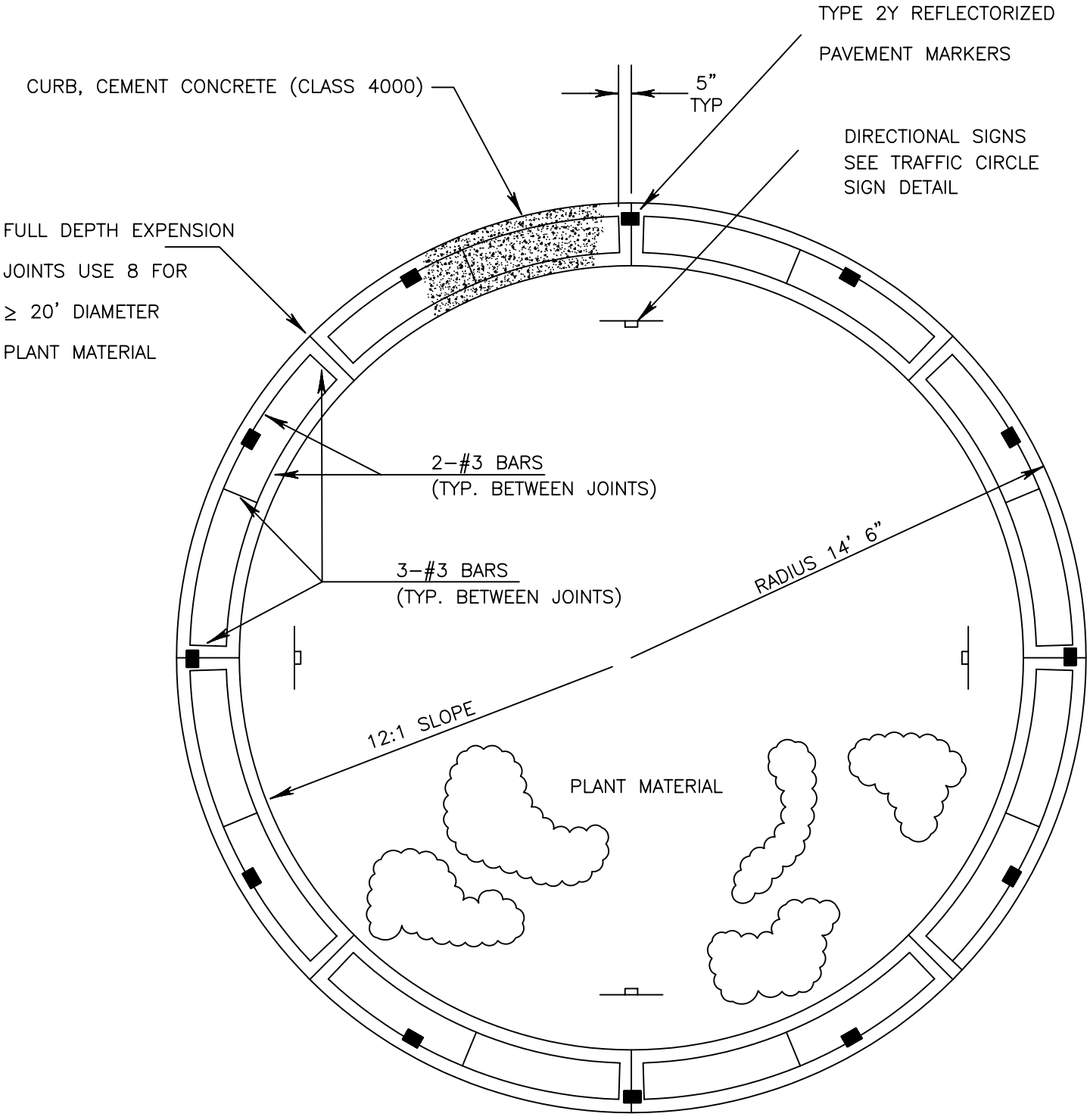
COMMUNITY DEVELOPMENT

EDDIE K. LOW
STATE OF WASHINGTON
22172
REGISTERED
PROFESSIONAL ENGINEER
EXPIRES 08-29-05

TRAFFIC CALMING DEVICES
TRAFFIC CIRCLE

326

Revision Date
Oct, 2000



City of Bothell

PUBLIC WORKS

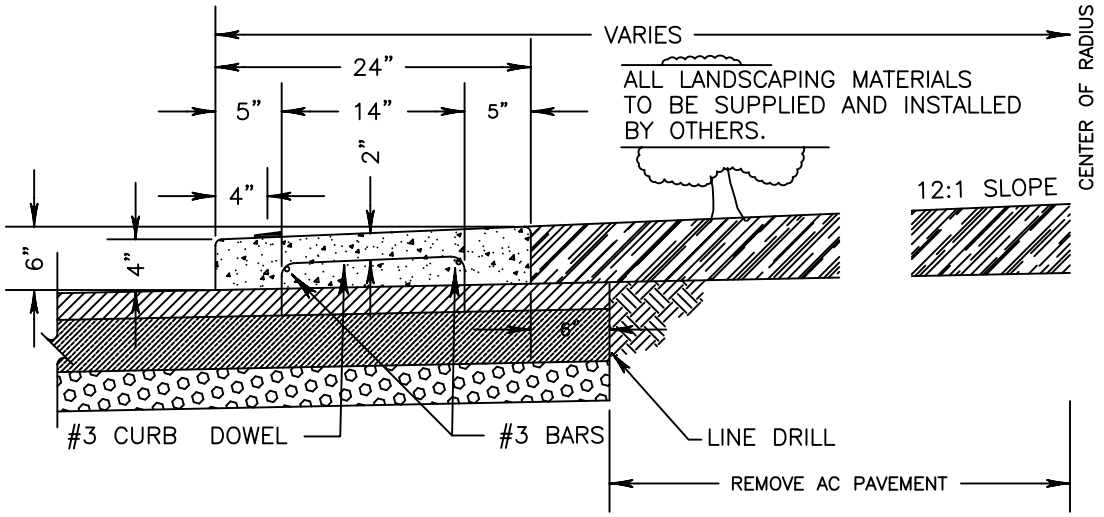
COMMUNITY DEVELOPMENT

EDDIE K. LOW
STATE OF WASHINGTON
22172
REGISTERED
PROFESSIONAL ENGINEER
EXPIRES 08-29-05

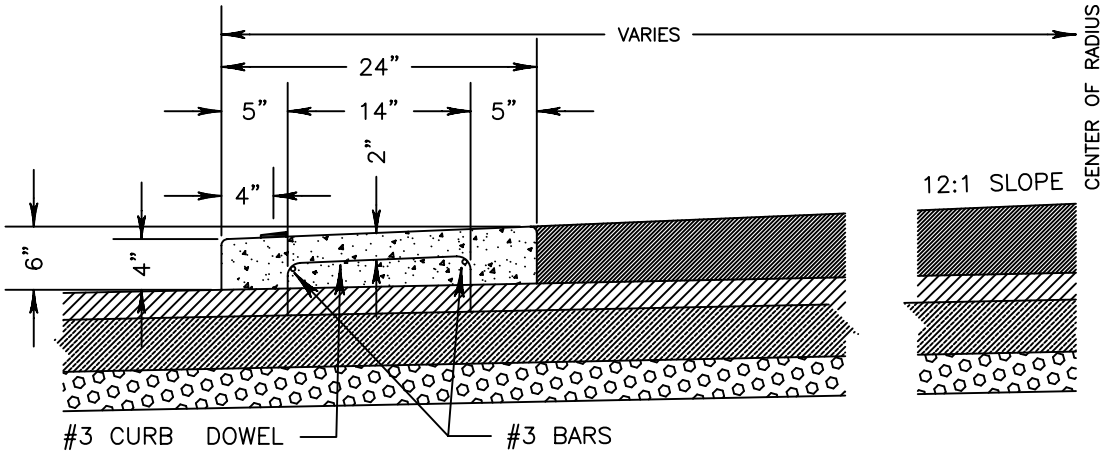
TRAFFIC CALMING DEVICES
TRAFFIC CIRCLE

326A

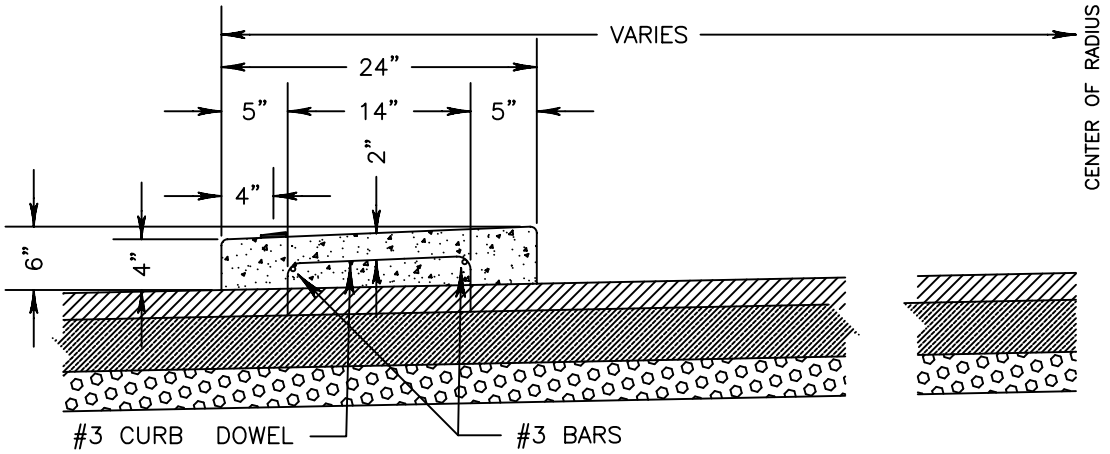
Revision Date
Oct, 2000



OPTION 1 CROSS SECTION
CURBING W/TOP SOIL BACKFILL



OPTION 2 CROSS SECTION
CURBING W/ASPHALT BACKFILL



OPTION 3 CROSS SECTION
CURBING ONLY

City of Bothell

PUBLIC WORKS

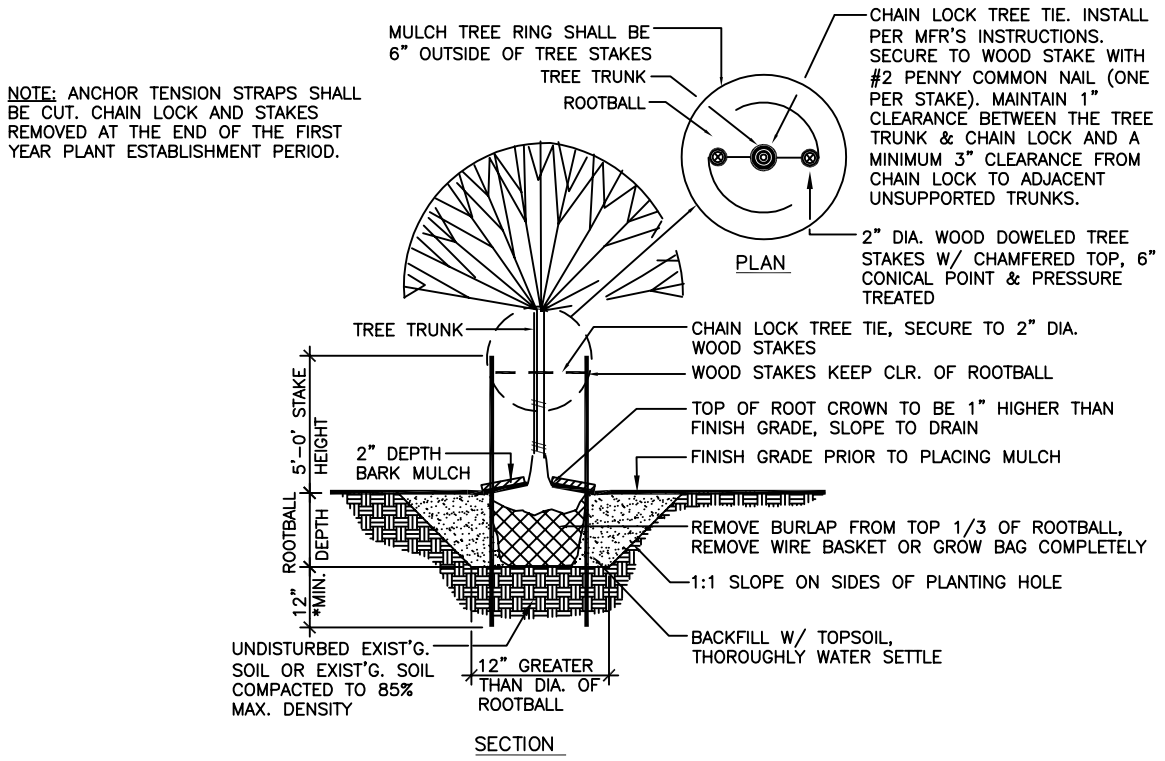
COMMUNITY DEVELOPMENT

EDDIE K. LOW
STATE OF WASHINGTON
22172
REGISTERED PROFESSIONAL ENGINEER
EXPIRES 08-29-05

TRAFFIC CALMING DEVICE
TRAFFIC CIRCLE
TYPICAL CROSS SECTIONS

326B

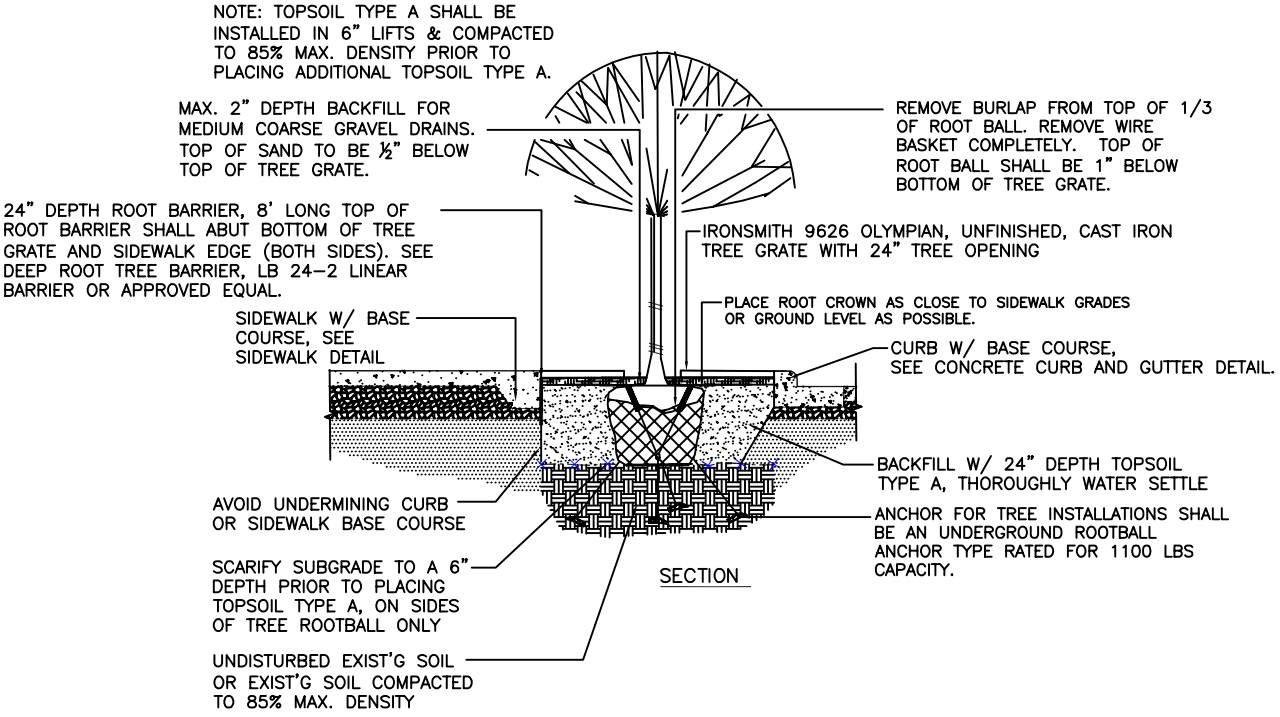
Revision Date
Oct, 2000



* UP TO 24" DEEP DEPENDING ON AVAILABLE PLANTING WIDTH.

DECIDUOUS/CONIFER TREE PLANTING DETAIL

NTS



DECIDUOUS TREE PLANTING IN TREE GRATE DETAIL

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

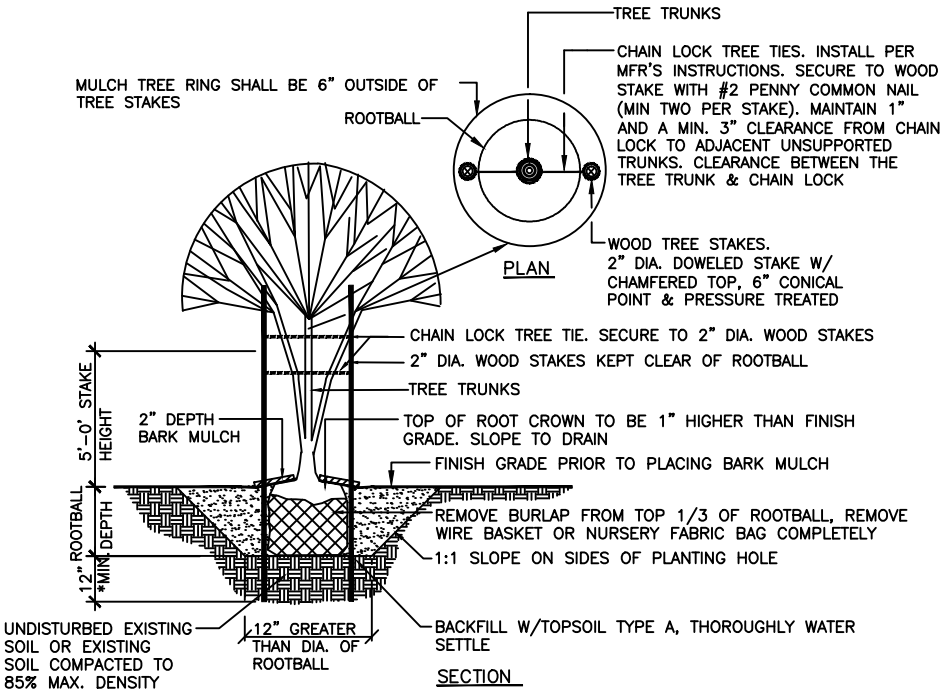
TREE PLANTING

Standard Detail

330

Revision Date

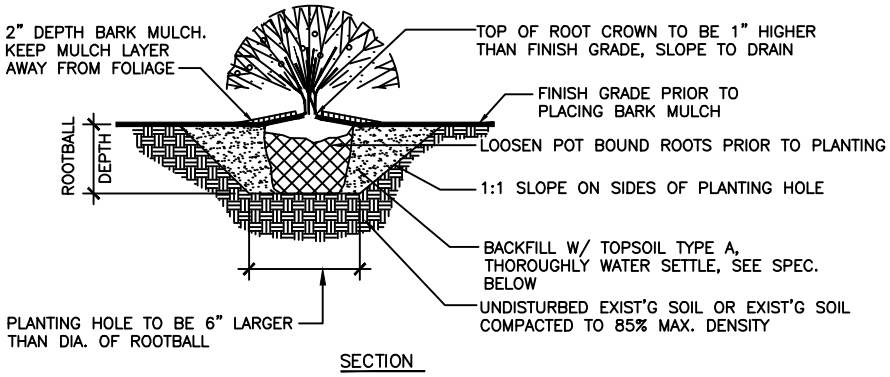
Nov, 2018



* UP TO 24" DEEP DEPENDING ON AVAILABLE PLANTING WIDTH.

MULTI–STEM DECIDUOUS TREE PLANTING DETAIL

NTS

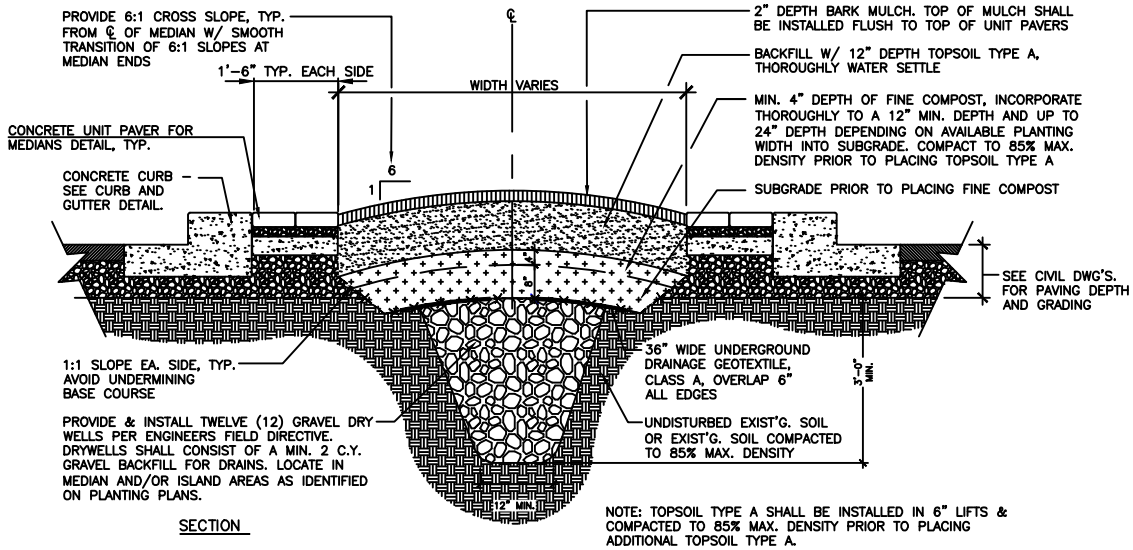


NOTE:
1. PLACE ROOT CROWN AS CLOSE TO SIDEWALK GRADES OR GROUND LEVEL AS POSSIBLE.

GROUNDCOVER & SHRUB PLANTING DETAIL

NTS

City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	City Engineer	GROUNDCOVER SHRUB AND MULTI-STEM TREE PLANTING	Standard Detail **331** Revision Date Feb, 2012



SECTION

MEDIAN PLANTING DETAIL

NTS

City of Bothell™	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	MEDIAN PLANTING	Standard Detail **332** Revision Date Nov, 2013

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

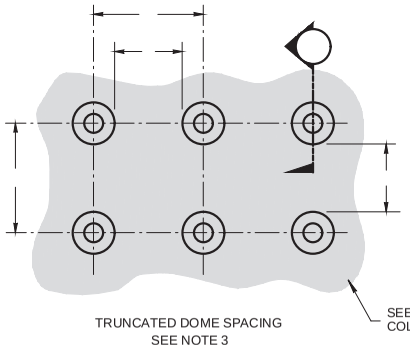
DETECTABLE WARNING SURFACE

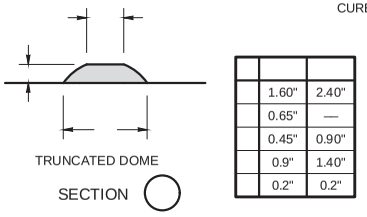
Standard Detail

334

Revision Date

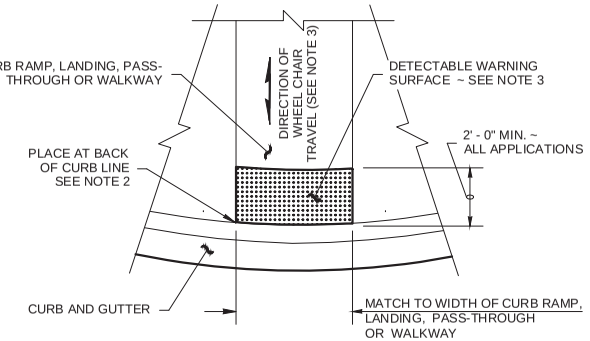
Feb, 2012



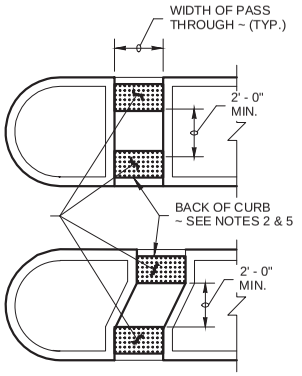


1.60"	2.40"
0.65"	—
0.45"	0.90"
0.9"	1.40"
0.2"	0.2"

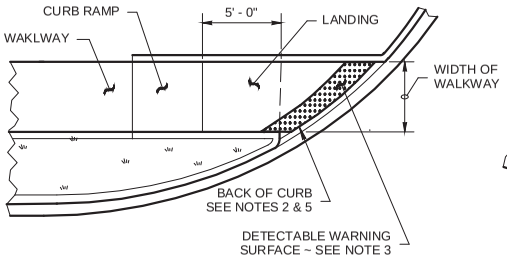
TRUNCATED DOME DETAILS



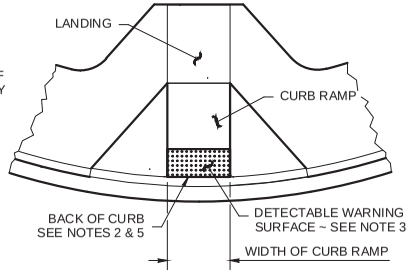
DETECTABLE WARNING SURFACE DETAIL



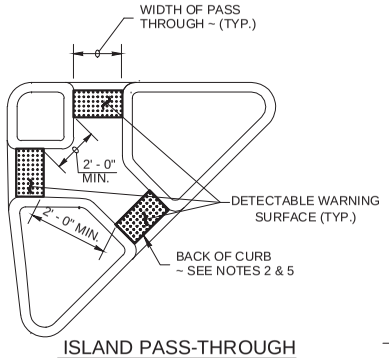
MEDIAN PASS-THROUGH



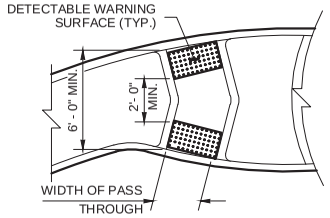
SINGLE DIRECTION CURB RAMP



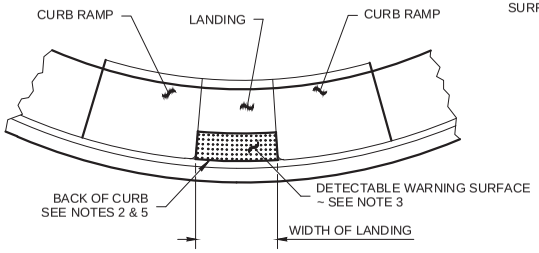
PERPENDICULAR CURB RAMP



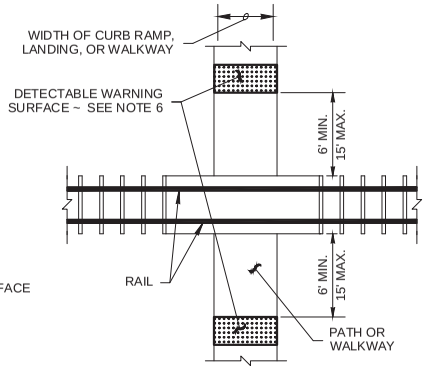
ISLAND PASS-THROUGH



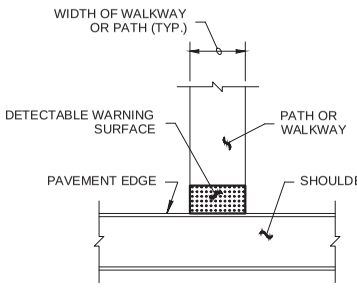
ROUNDABOUT SPLITTER ISLAND



PARALLEL CURB RAMP



PEDESTRIAN RAILROAD CROSSING

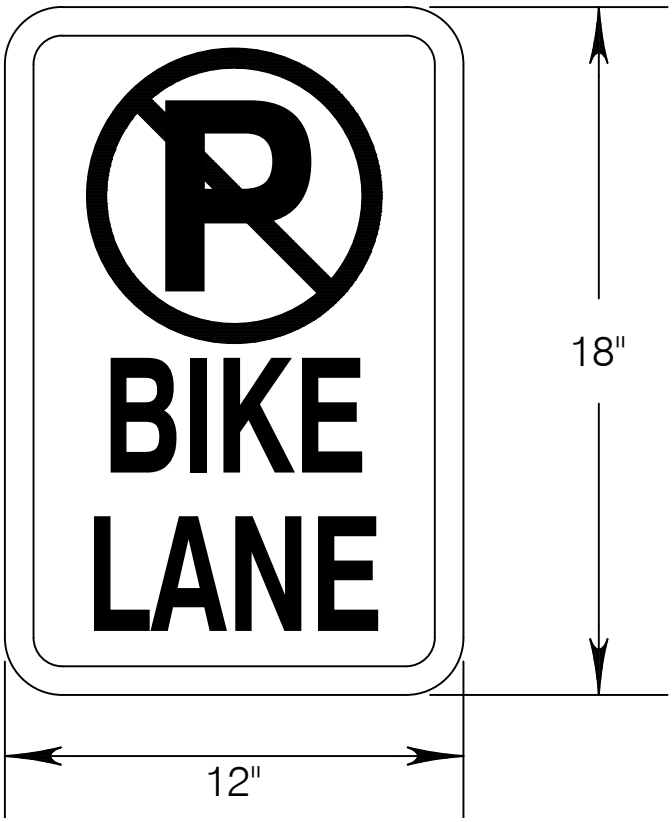


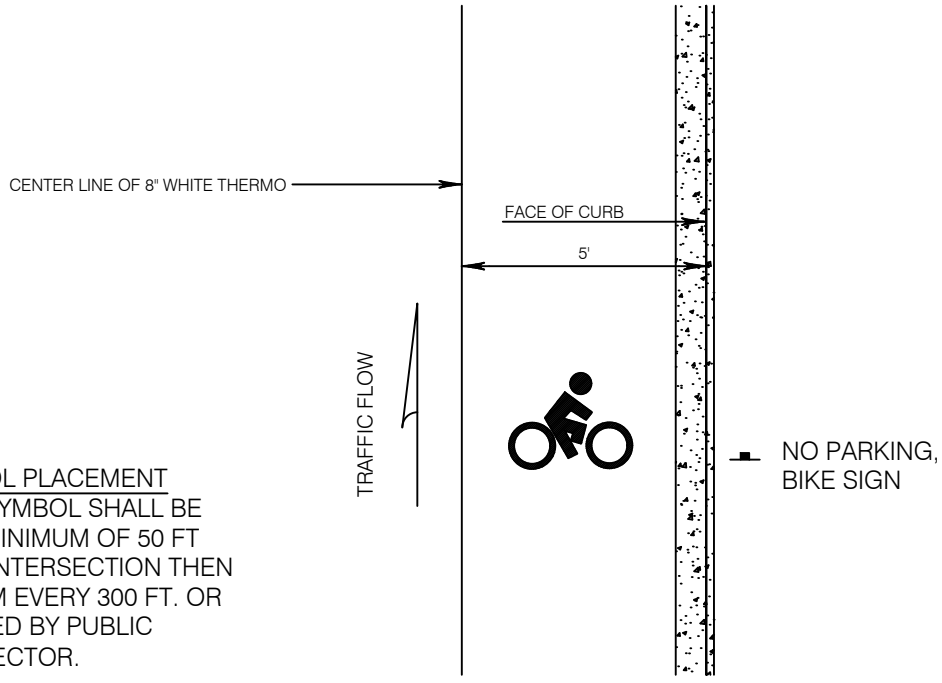
SHARED-USE PATH CONNECTION

NOTES:

1. The Detectable Warning Surface shall extend the full width of the curb ramp (exclusive of flares) or the landing.
2. The edge of the Detectable Warning Surface shall be placed along the back of the curb line.
3. The rows of truncated domes in a Detectable Warning Surface shall be parallel with the direction of wheel.
4. See Std Details 340 and 344 for curb ramp and sidewalk details.
5. If a curb is not present, place the Detectable Warning Surface at the edge of the pavement.
6. If a curb ramp is required, the location of the Detectable Warning Surface must be at the bottom of the ramp and within the required distance from rail.

PLACEMENT GUIDELINES





BIKE SYMBOL PLACEMENT
THE FIRST SYMBOL SHALL BE PLACED A MINIMUM OF 50 FT FROM THE INTERSECTION THEN PLACE THEM EVERY 300 FT. OR AS APPROVED BY PUBLIC WORKS DIRECTOR.

City of Bothell™

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PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

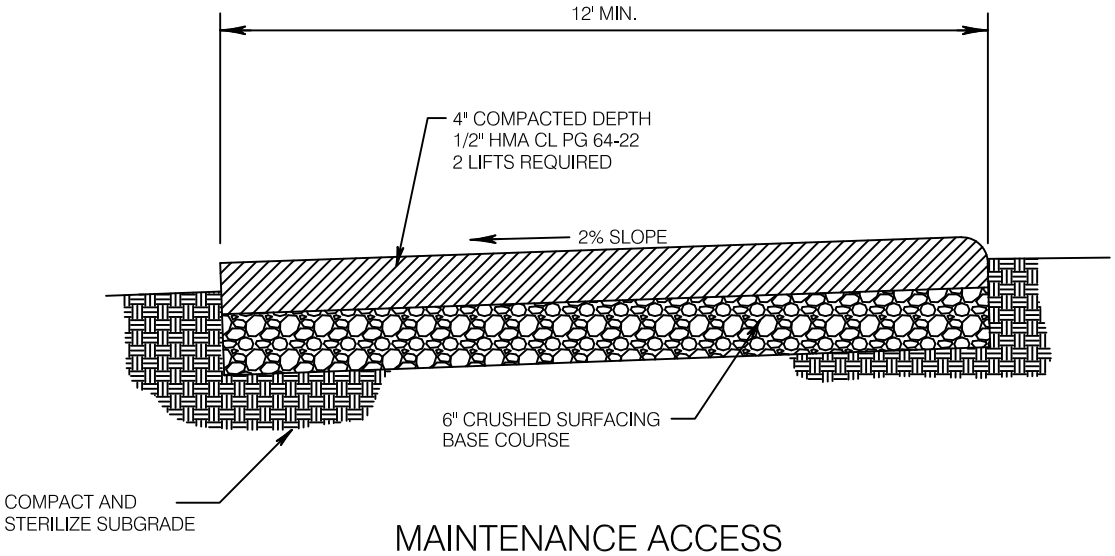
SIGNAGE AND BIKE LANE MARKINGS

Detail

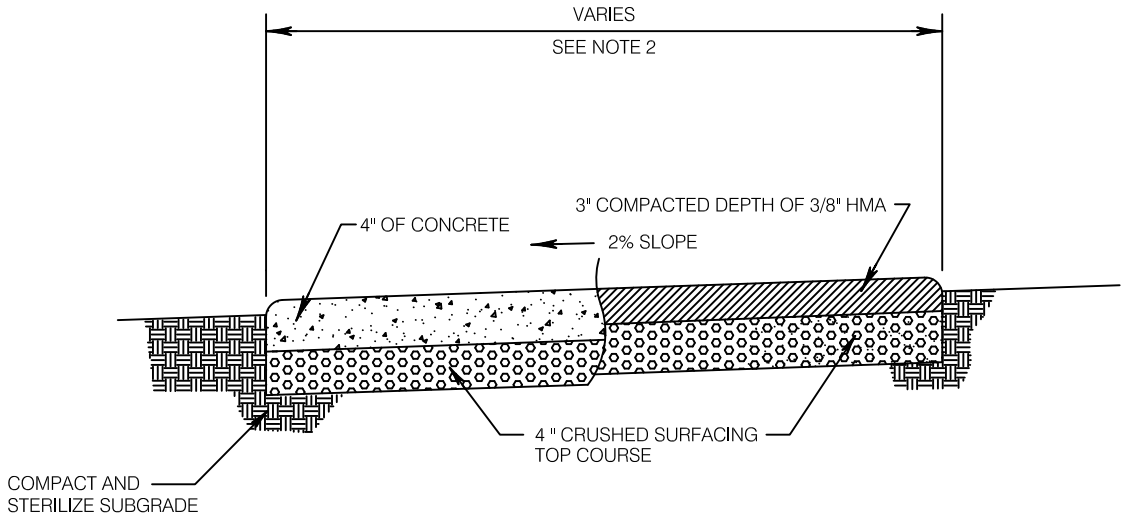
335

Revision Date

Dec, 2019



MAINTENANCE ACCESS



PEDESTRIAN PATH/BIKEWAY
CLASS I

NOTE:

1. CONCRETE SHALL BE 3000 P.S.I. AT 8 DAYS, SIX SAC MIX, SLUMP RANGE OF 1 1/2"-3".

2. ONE-WAY = 5' MIN.; TWO-WAY = 8' MIN.

City of Bothell™	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	MAINTENANCE ACCESS PEDESTRIAN/PATH/ BIKEWAY CLASS - 1	Standard Detail **336** Revision Date Nov, 2018

City of Bothell

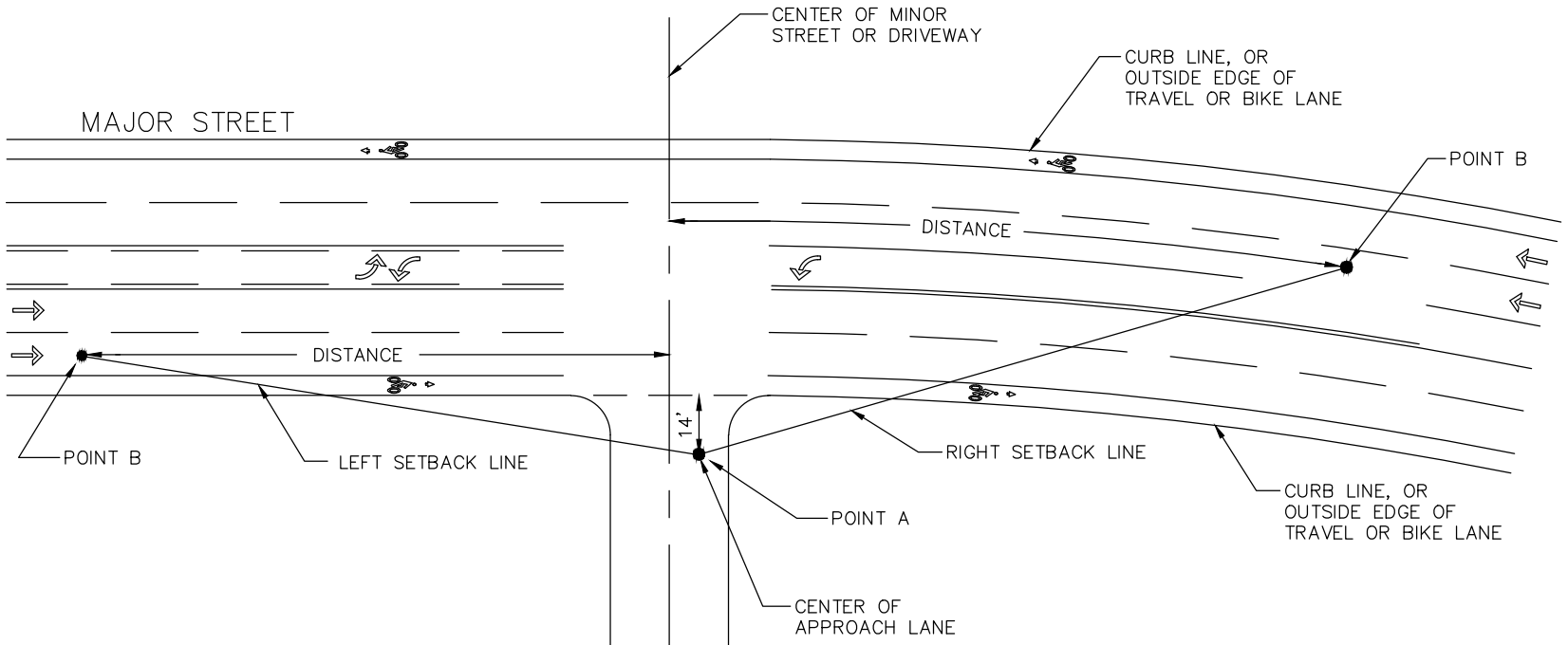
City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

SIGHT DISTANCE SETBACK LINES



SIGNALIZED INTERSECTION WITH RIGHT ON RED PERMITTED

SPEED LIMIT	DISTANCE (LEFT APPROACH ONLY)
40 MPH	325 FEET
35 MPH	250 FEET
30 MPH	200 FEET
25 MPH	150 FEET

MINOR STREETS, PRIVATE ROADS, AND COMMERCIAL DRIVEWAYS

SPEED LIMIT	DISTANCE
40 MPH	410 FEET
35 MPH	360 FEET
30 MPH	300 FEET
25 MPH	250 FEET

RESIDENTIAL DRIVEWAYS

SPEED LIMIT	DISTANCE
40 MPH	325 FEET
35 MPH	250 FEET
30 MPH	200 FEET
25 MPH	150 FEET

Standard Detail **337**

Revision Date Feb, 2012

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

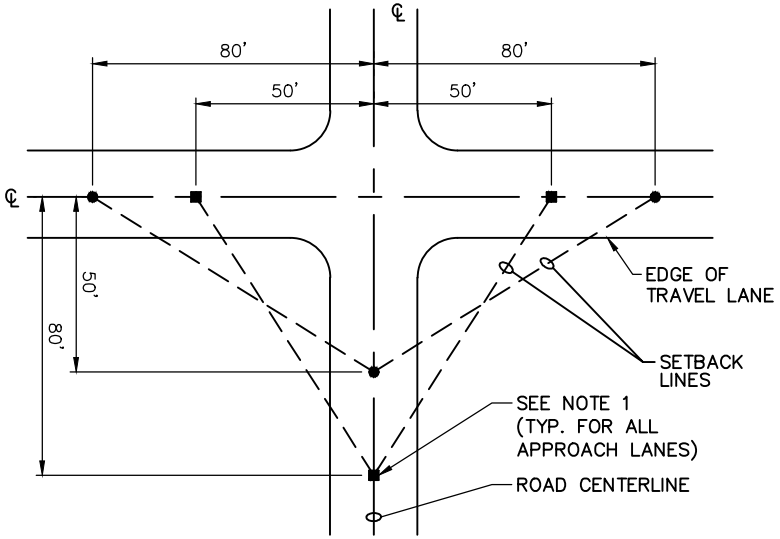
City Engineer

SIGHT DISTANCE UNCONTROLLED AND YIELD INTERSECTIONS

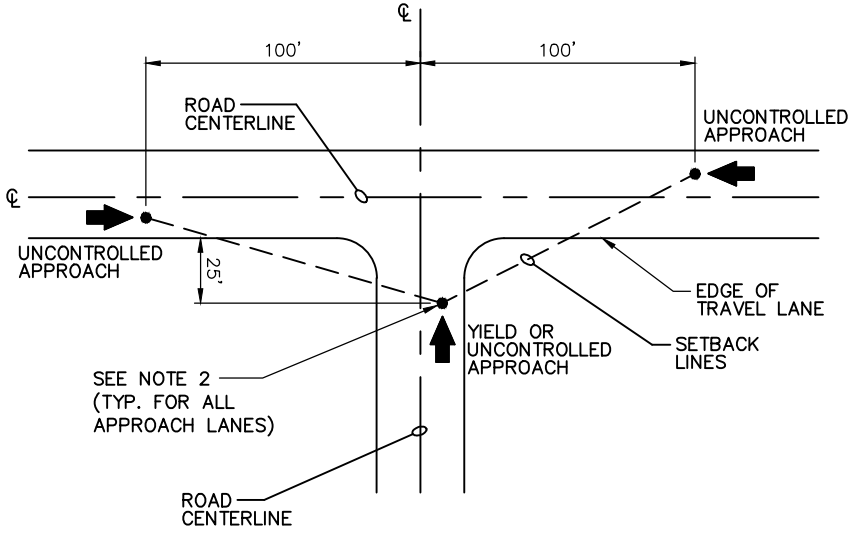
Standard Detail

338

Revision Date Feb. 2012



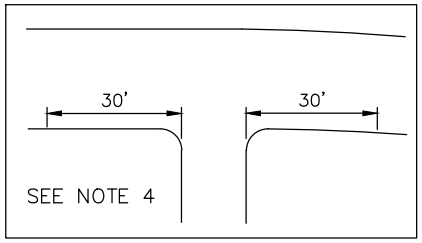
UNCONTROLLED 4–WAY INTERSECTION

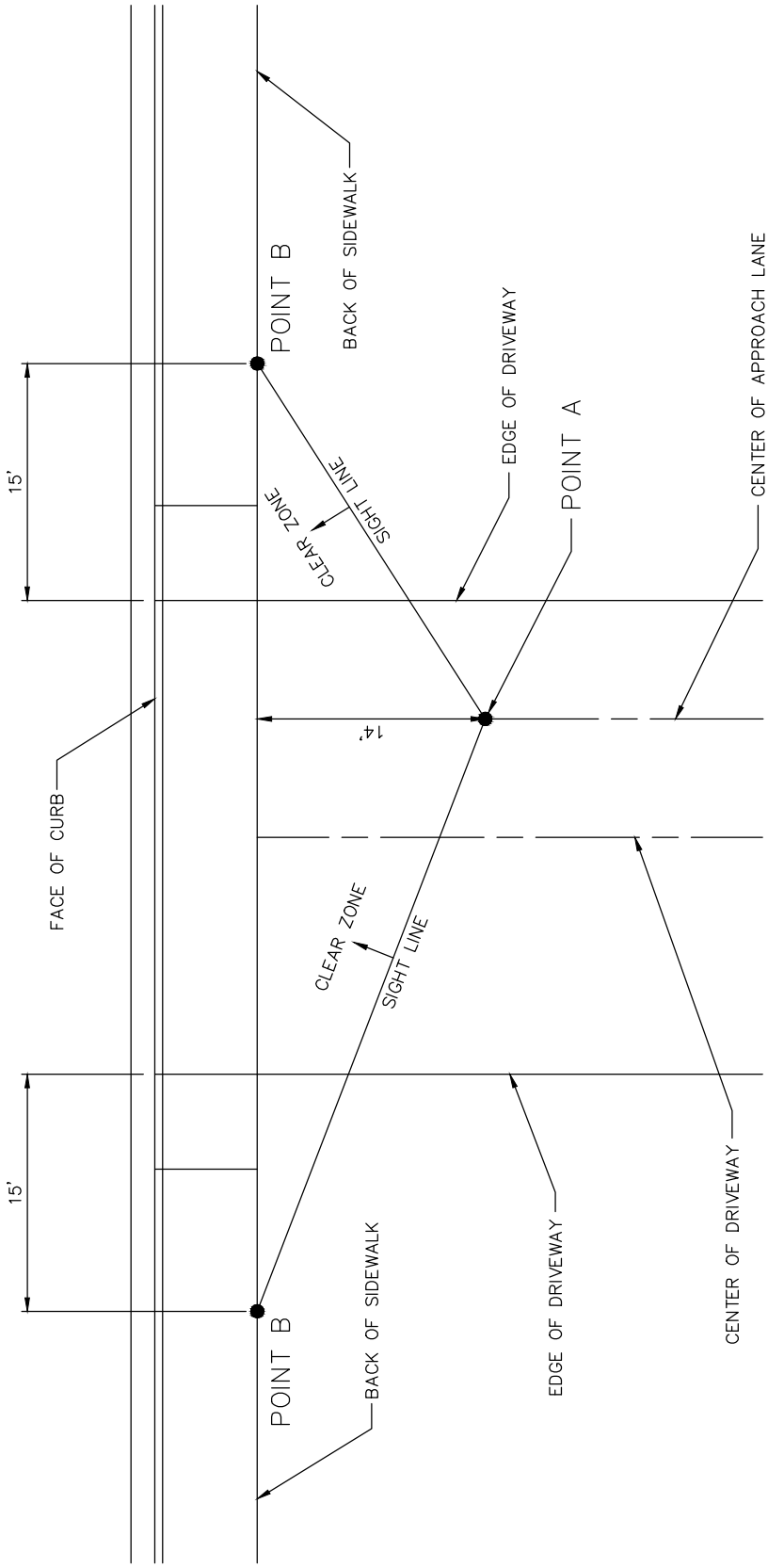


YIELD OR UNCONTROLLED "T" INTERSECTIONS

NOTES:

1. FOR UNCONTROLLED 4–WAY INTERSECTION SETBACK POINTS MEASURED FROM ROAD CENTERLINES.
2. FOR YIELD OR UNCONTROLLED "T" INTERSECTION SETBACK POINTS MEASURED FROM CENTER OF APPROACH LANE.
3. FOR USE ON 25 MPH STREETS. FOR STREETS WITH SPEED LIMITS GREATER THAN 25 MPH, SEE ENGINEER.
4. FOR DOWNTOWN AREA, MUST HAVE 30' CLEARANCE FROM EDGE OF PAVEMENT.





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PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

PEDESTRIAN SIGHT LINES

Standard Detail

339

Revision Date

Feb, 2012

City of Bothell

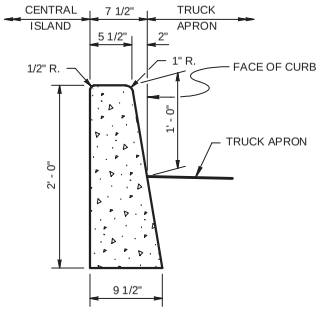
City of Bothell

PUBLIC WORKS DEPARTMENT

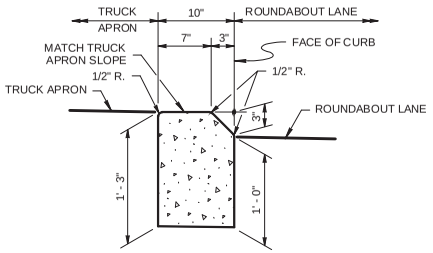
Approved By:

City Engineer

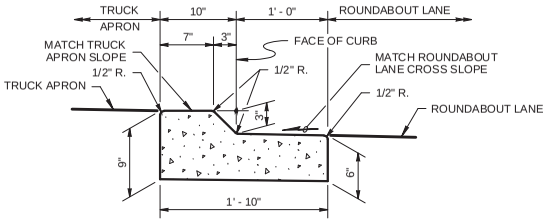
CEMENT CONCRETE CURBS



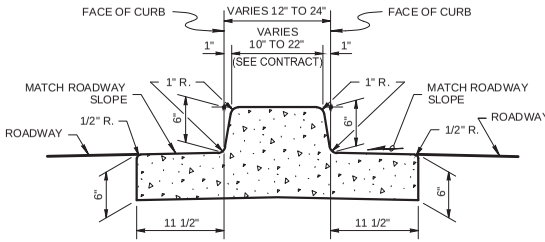
ROUNDABOUT CENTRAL ISLAND
CEMENT CONCRETE CURB



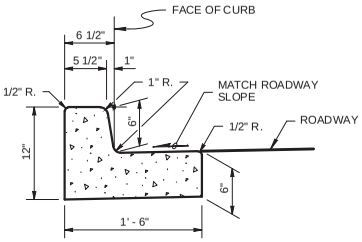
ROUNDABOUT TRUCK APRON
CEMENT CONCRETE CURB



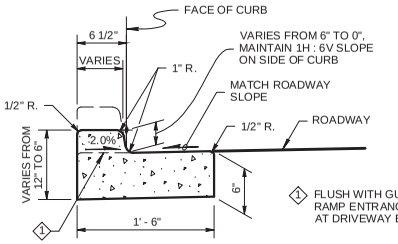
ROUNDABOUT TRUCK APRON
CEMENT CONCRETE
CURB AND GUTTER



DUAL-FACED CEMENT CONCRETE
TRAFFIC CURB AND GUTTER



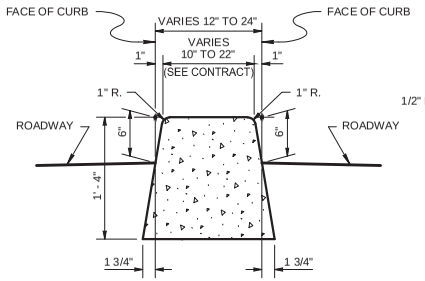
CEMENT CONCRETE
TRAFFIC CURB AND GUTTER



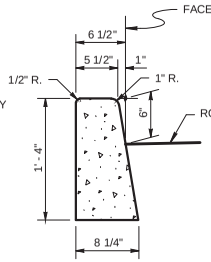
DEPRESSED CURB SECTION
AT CURB RAMPS AND
DRIVEWAY ENTRANCES

Note:

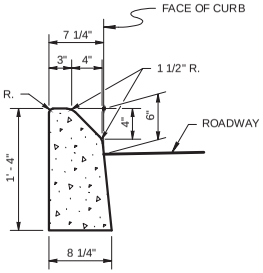
See WSDOT Standard Plan F-30.10 for Curb Expansion and Contraction Joint spacing.



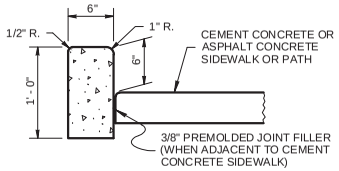
DUAL-FACED CEMENT
CONCRETE TRAFFIC CURB



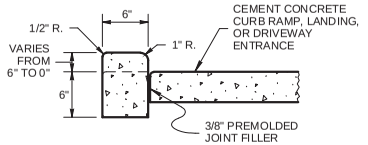
CEMENT CONCRETE
TRAFFIC CURB



MOUNTABLE CEMENT
CONCRETE TRAFFIC CURB



CEMENT CONCRETE
PEDESTRIAN CURB

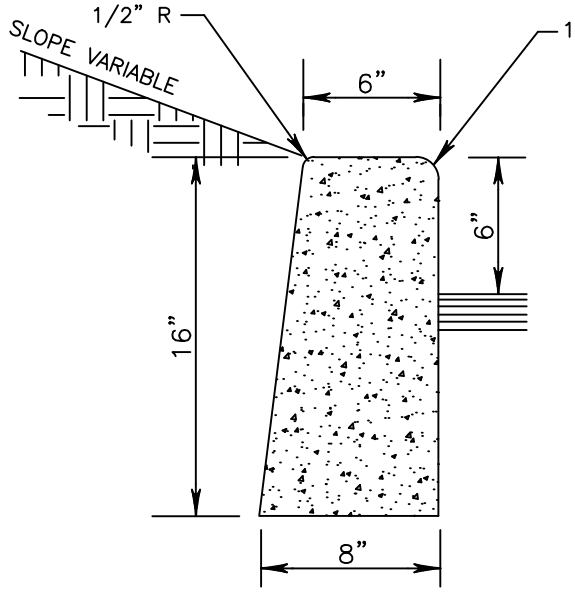


CEMENT CONCRETE
PEDESTRIAN CURB
AT CURB RAMPS, LANDINGS,
AND DRIVEWAY ENTRANCES

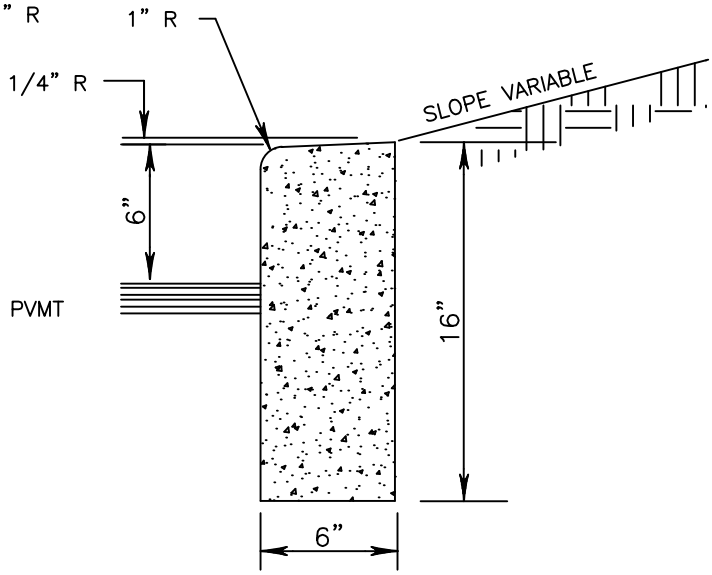
Standard Detail

340

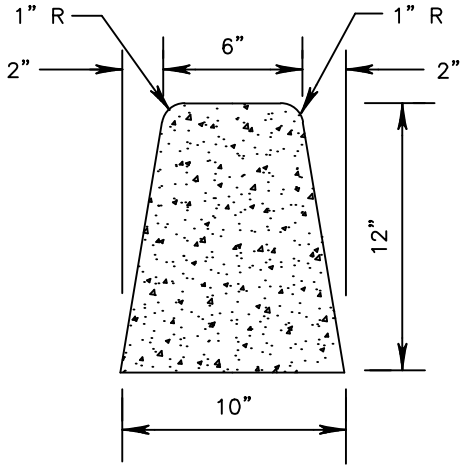
Revision Date
Feb, 2012



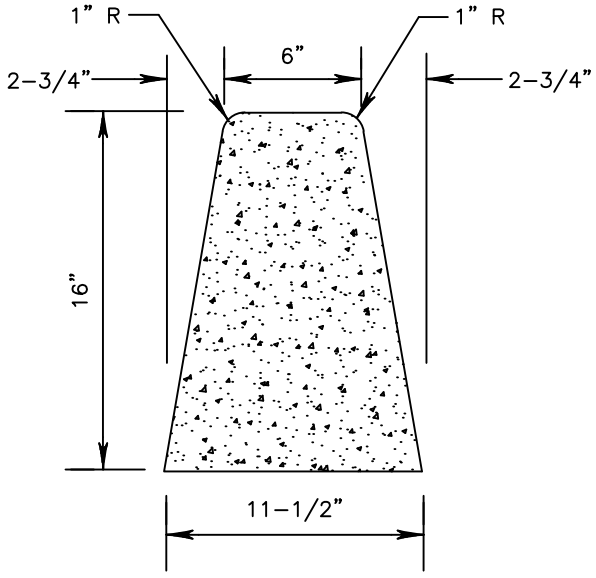
TYPE E-1 CURB



TYPE E-2 CURB

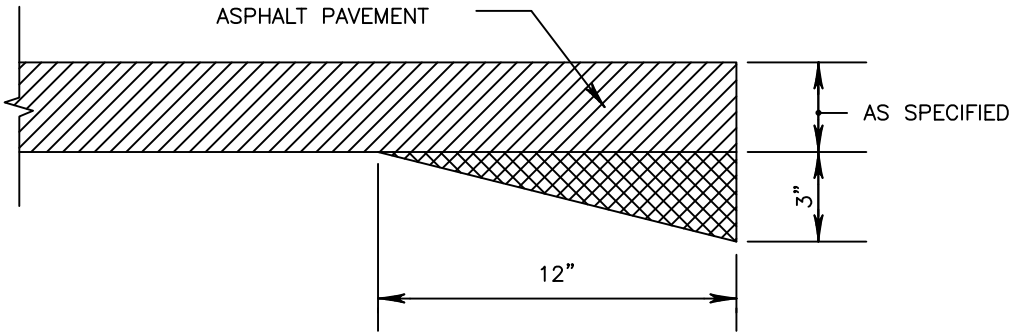


TYPE E-3 CURB

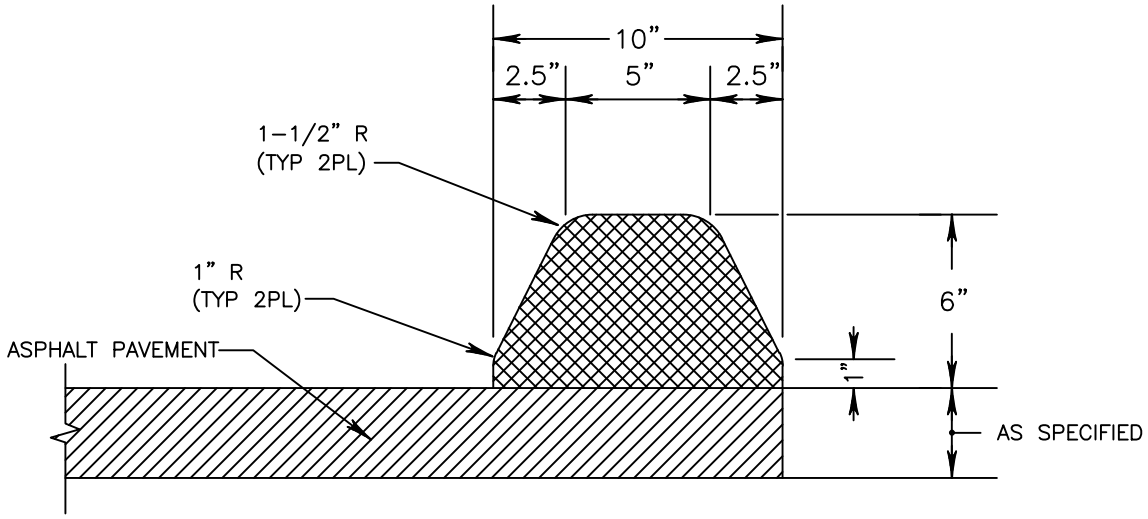


TYPE E-4 CURB

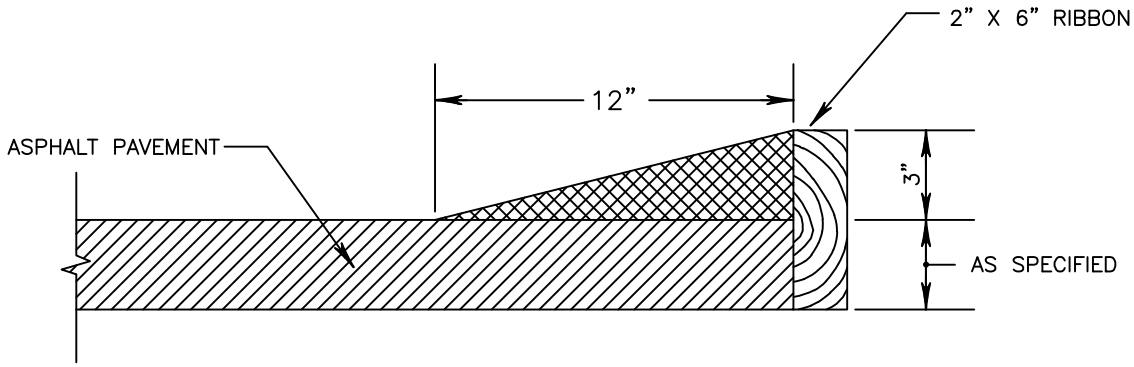
City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	CONCRETE CURB TYPE E-1, E-2, E-3, E-4	Standard Detail **341** Revision Date Feb, 2012



THICKENED EDGE FOR ASPHALT PAVEMENT

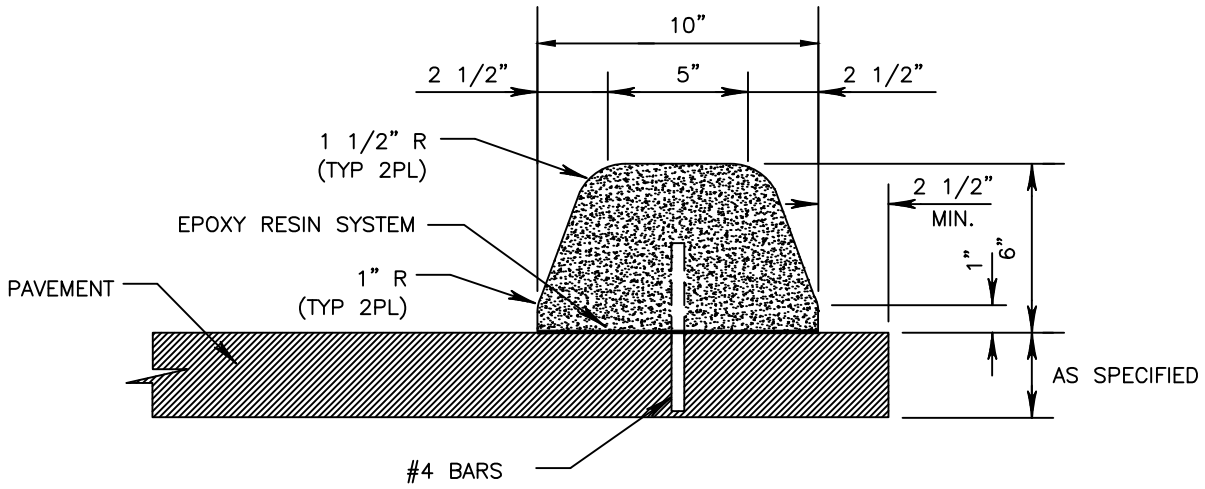


EXTRUDED ASPHALT CONCRETE CURB

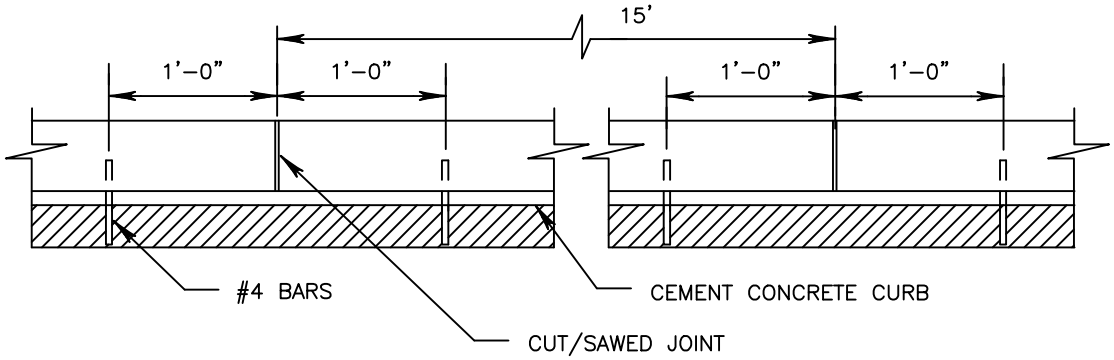


ASPHALT WEDGE CURB

City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	EXTRUDED ASPHALT CONCRETE SECTIONS	Standard Detail **342** Revision Date Feb, 2012



EXTRUDED CEMENT CONCRETE CURB



SPACING OF ANCHOR BARS

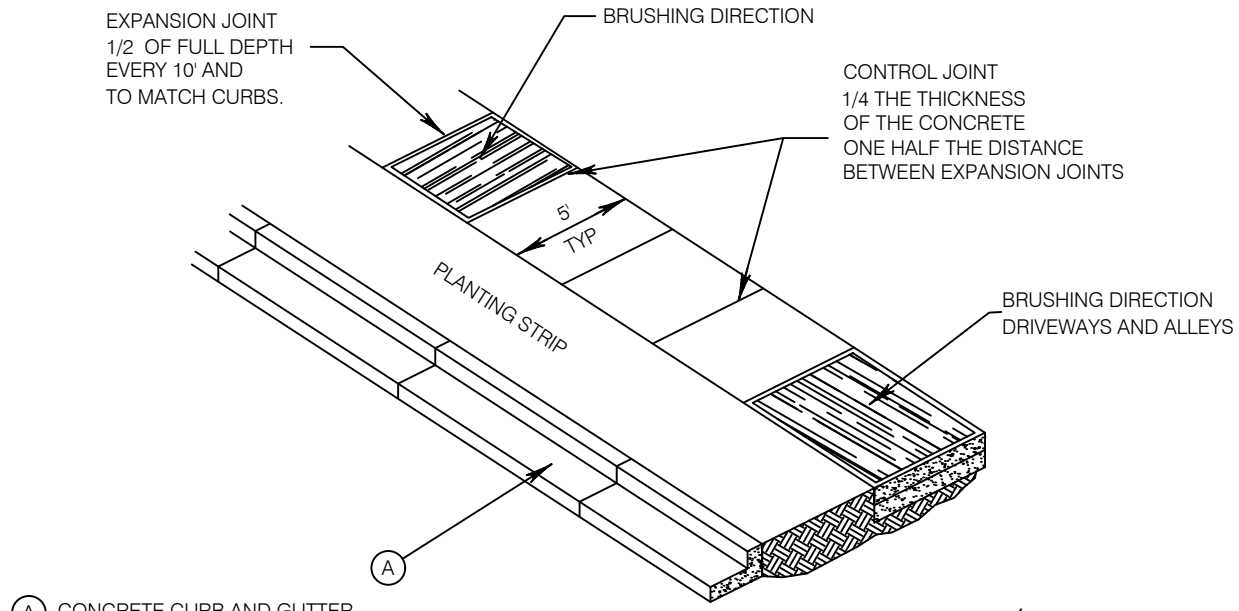
NOTES:

1. CONTROL JOINTS SHALL BE PLACED NOT TO EXCEED 10' CLS. THRU JOINTS SHALL BE PLACED ONLY AT POINTS OF TANGENCY ON STREET ALLEY AND DRIVEWAY RETURNS AND WHERE EXPANSION JOINTS OCCUR IN THE PAVEMENT SLAB.

2. CONCRETE SHALL BE CLASS 3000 OR COMMERCIAL WITH AIR–ENTRAINMENT.

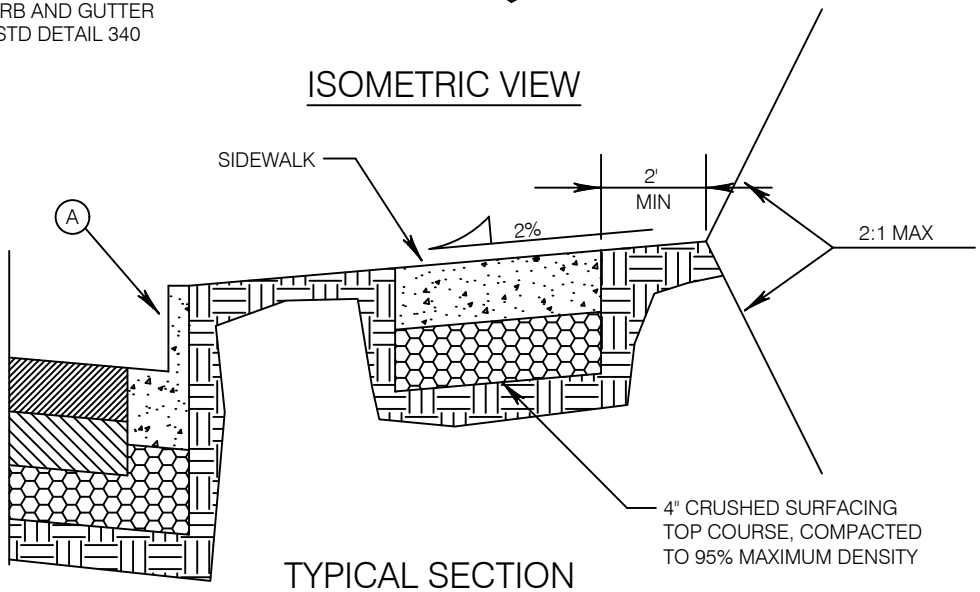
3. CONCRETE CURBS SHALL BE ANCHORED TO THE EXISTING PAVEMENT BY PLACING STEEL TIE BARS 1 FOOT ON EACH SIDE OF EVERY JOINT AND BY USING AN ADHESIVE. THE ADHESIVE SHALL MEET THE REQUIREMENTS OF SECTION 9–20 OF THE WSDOT/APWA STANDARD SPECIFICATIONS FOR TYPE II EPOXY RESIN.

City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	EXTRUDED CEMENT CONCRETE CURB	Standard Detail **343** Revision Date Nov, 2013



(A) CONCRETE CURB AND GUTTER
TYPE A-1, SEE STD DETAIL 340

ISOMETRIC VIEW



TYPICAL SECTION

NOTES

1. SIDEWALKS ARE TYPICALLY 5' WIDE AND A MINIMUM DEPTH OF 4". SEE TYPICAL SECTION FOR EXACT DIMENSIONS.

2. THE SIDEWALK AREA THROUGH THE DRIVEWAY SHALL BE 6" THICK. SEE DETAILS 346 AND 347 FOR THIS AREA.

3. SIDEWALKS SHALL ALL BE CLASS 4000 CEMENT CONCRETE, WITH AIR ENTRAINMENT (MIN. 4%, MAX. 8%).

4. SUB GRADE SHALL BE COMPACTED TO NOT LESS THAN 95% OF MAXIMUM DENSITY.

5. SIDEWALK JOINTS SHALL BE EDGED WITH A 1/4" INCH RADIUS EDGER.
SIDEWALK EDGES SHALL BE TOOLED WITH A 1/2" INCH RADIUS EDGER.

6. THE FINISHED SURFACE SHALL BE BRUSHED IN A TRANSVERSE DIRECTION EXCEPT THAT AREA AT DRIVEWAYS AND ALLEY CROSSINGS, WHERE IT SHALL BE BRUSHED LONGITUDINALLY.

7. THE FINISHED SIDEWALK SHALL BE SPRAYED WITH A TRANSPARENT CURING COMPOUND COVERED BY WATERPROOF PAPER OR PLASTIC SHEETING IN THE EVENT OF RAIN OR OTHER INCLEMENT WEATHER. CURING TIME SHALL BE FOR A MINIMUM OF 72 HOURS.

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

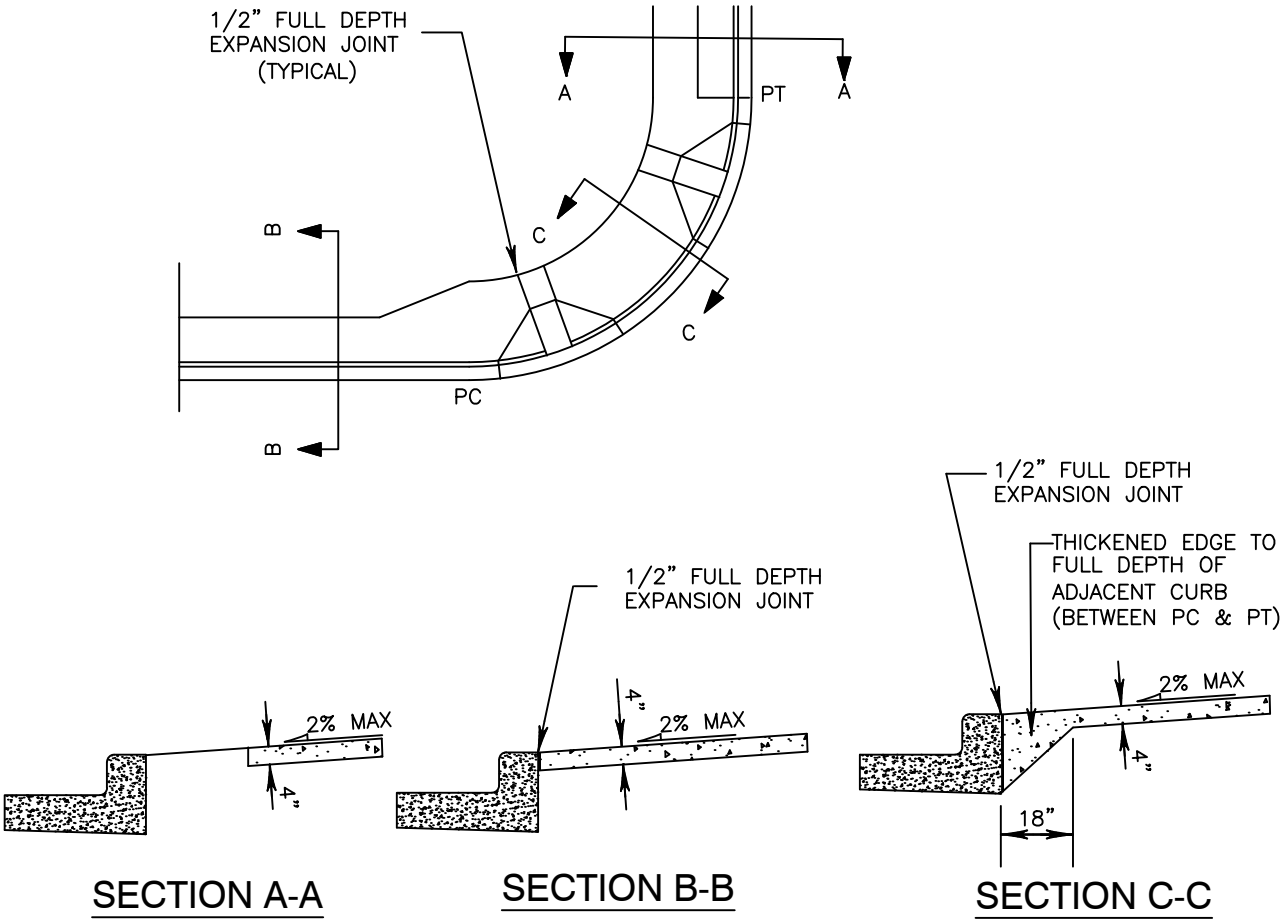
City Engineer

CONCRETE
SIDEWALK DETAIL

Standard
Detail

344

Revision Date
Dec, 2016



SECTION A-A

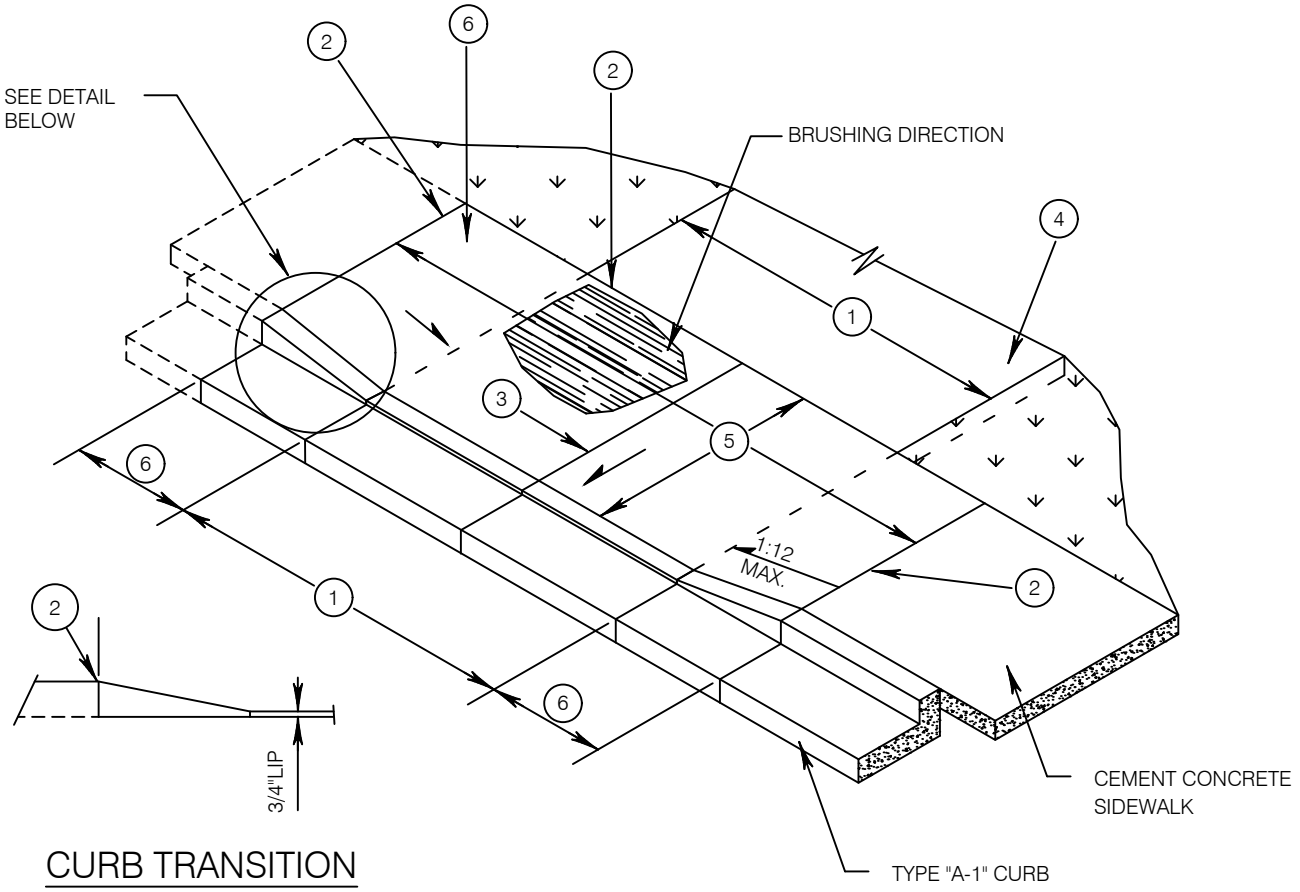
SECTION B-B

SECTION C-C

NOTES:

1. CONTROL JOINTS SHALL BE SPACED TO CORRESPOND TO THE MARKINGS IN EXISTING SIDEWALKS, OR AS DIRECTED BY THE DIRECTOR.
2. ALL UTILITY POLES, METER BOXES AND OTHER OBSTRUCTIONS SHALL HAVE 1/2" EXPANSION JOINT MATERIAL PLACED AROUND THEM.
3. ALL SIDEWALK EDGES SHALL HAVE 1/2"RADIUS.
4. MINIMUM WIDTH OF SIDEWALK IS 5' (NOT INCLUDING THE WIDTH OF THE CURB OR POLES).
5. THICKENED EDGES ARE REQUIRED FOR SIDEWALKS AT CORNERS, BUT NOT ON TANGENT SECTIONS. ALL CURB RAMPS SHALL HAVE A THICKENED EDGE TO THE DEPTH OF THE ADJACENT CURB, INCLUDING CURB RAMPS BUILT ON TANGENT SECTIONS OF SIDEWALK. WHEN MONOLITHIC CURB AND SIDEWALK IS APPROVED FOR USE, THICKENED EDGES ARE REQUIRED AT ALL LOCATIONS.
6. FOR WHEELCHAIR RAMP USE STD DETAILS 350 OR 351 OR 352 OR 353.

City of Bothell™	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	CONCRETE SIDEWALK CORNER TREATMENT	Standard Detail **345** Revision Date Dec, 2016



CURB TRANSITION DETAIL

ISOMETRIC VIEW

(1) EQUALS WIDTH OF DRIVEWAY AT PROPERTY LINE. MINIMUM WIDTH = 16' (REF. 3-4.2(6))

(2) 1/2" WIDE FULL DEPTH EXPANSION JOINT.

(3) FULL DEPTH EXPANSION JOINT IF (1) IS 10' OR GREATER.

(4) DRIVEWAY TO BE SURFACED WITH ASPHALT OR CONCRETE.

(5) DRIVEWAY WIDTH AREA. SEE PLANS FOR EXACT DIMENSIONS

(6) RAMP LENGTH VARIES (WITH A MINIMUM OF 6') AND SHALL BE CALCULATED BASED ON A RAMP SLOPE (PARALLEL TO THE CURB) WHICH DOES NOT EXCEED 8.3%. THE CURB RAMP MAXIMUM RUNNING SLOPE SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15 FEET TO AVOID CHASING THE SLOPE INDEFINITELY WHEN CONNECTING TO STEEP GRADES. WHEN APPLYING THE 15 FOOT MAXIMUM LENGTH, THE RUNNING SLOPE OF THE CURB RAMP SHALL BE AS FLAT AS FEASIBLE.

NOTES

1. DRIVEWAY CEMENT CONCRETE SHALL BE A MIN OF 6" THICK AND IS TO BE PLACED ON A MINIMUM OF 4" CRUSHED SURFACING TOP COURSE COMPACTED TO 95% MAXIMUM DENSITY.

2. DRIVEWAY SHALL ALL BE CLASS 4000 CEMENT CONCRETE, WITH AIR ENTRAINMENT (MIN. 4%, MAX. 8%).

3. DRIVEWAY AND ALLEY CROSSINGS SHALL BE BRUSHED LONGITUDINALLY.

4. DRIVEWAY JOINTS SHALL BE EDGED WITH A 1/4" INCH RADIUS EDGER.
DRIVEWAY EDGES SHALL BE TOOLED WITH A 1/2" INCH RADIUS EDGER.

5. THE FINISHED DRIVEWAY SHALL BE SPRAYED WITH A TRANSPARENT CURING COMPOUND COVERED BY WATERPROOF PAPER OR PLASTIC SHEETING IN THE EVENT OF RAIN OR OTHER INCLEMENT WEATHER. CURING TIME SHALL BE FOR A MINIMUM OF 72 HOURS.

6. 5 FOOT WIDE ADA COMPLIANT PATH MAY EXTEND ONTO DRIVEWAY WITHIN 10 FOOT WIDE UTILITY EASEMENT.

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

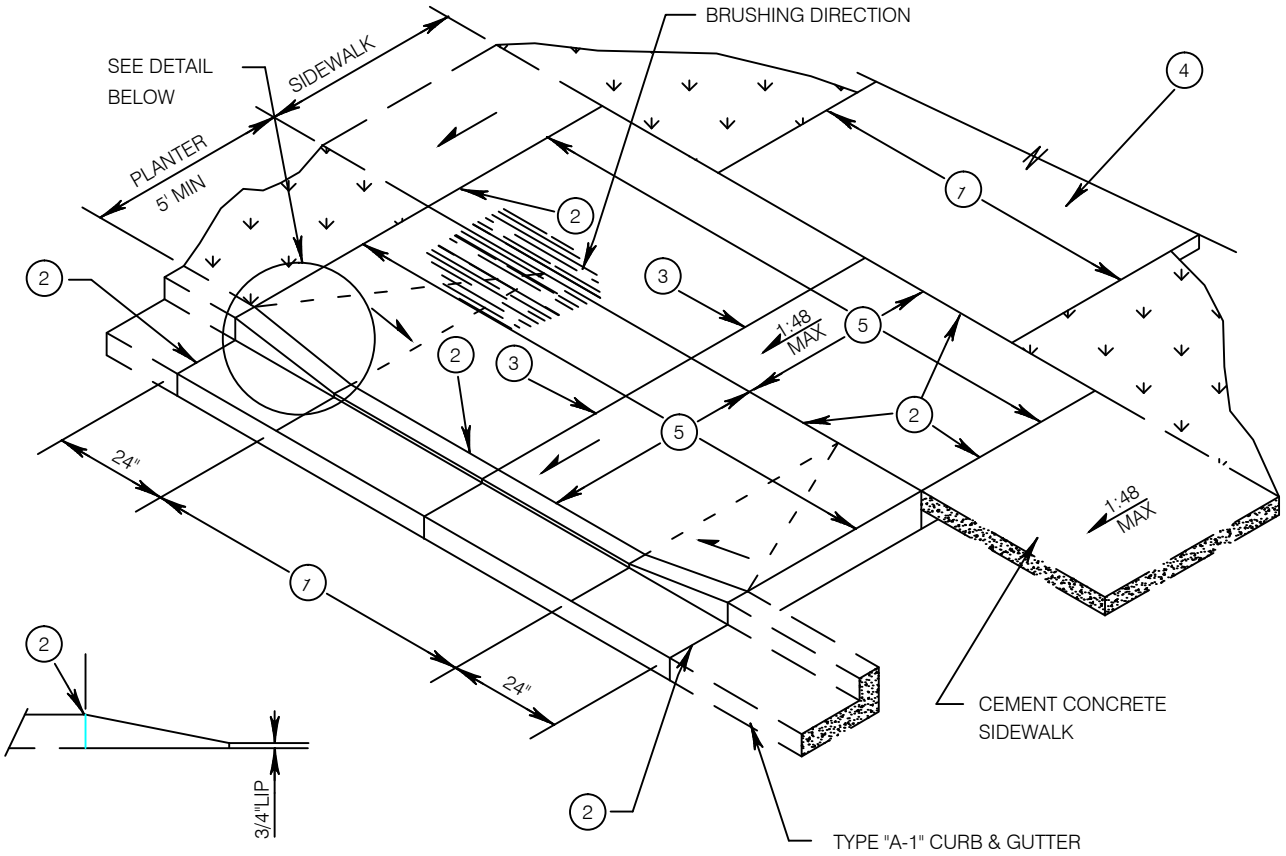
CEMENT CONCRETE DRIVEWAY TYPE - 1

Standard Detail

346

Revision Date

Dec, 2019



CURB TRANSITION DETAIL

ISOMETRIC VIEW

(1) EQUALS WIDTH OF DRIVEWAY AT PROPERTY LINE. MINIMUM WIDTH = 14' (REF. 3-4.2(6))

(2) 1/2" WIDE FULL DEPTH EXPANSION JOINT.

(3) FULL DEPTH EXPANSION JOINT IF (1) IS 10' OR GREATER.

(4) DRIVEWAY TO BE SURFACED WITH ASPHALT OR CONCRETE.

(5) DRIVEWAY WIDTH AREA. SEE PLANS FOR EXACT DIMENSIONS

NOTES

1. DRIVEWAY CEMENT CONCRETE SHALL BE A MIN OF 6" THICK AND IS TO BE PLACED ON A MINIMUM OF 4" CRUSHED SURFACING TOP COURSE COMPACTED TO 95% MAXIMUM DENSITY.

2. DRIVEWAY SHALL ALL BE CLASS 4000 CEMENT CONCRETE, WITH AIR ENTRAINMENT (MIN. 4%, MAX. 8%).

3. DRIVEWAY AND ALLEY CROSSINGS SHALL BE BRUSHED LONGITUDINALLY.

4. DRIVEWAY JOINTS SHALL BE EDGED WITH A 1/4" INCH RADIUS EDGER.
DRIVEWAY EDGES SHALL BE TOOLED WITH A 1/2" INCH RADIUS EDGER.

5. THE FINISHED DRIVEWAY SHALL BE SPRAYED WITH A TRANSPARENT CURING COMPOUND COVERED BY WATERPROOF PAPER OR PLASTIC SHEETING IN THE EVENT OF RAIN OR OTHER INCLEMENT WEATHER. CURING TIME SHALL BE FOR A MINIMUM OF 72 HOURS.

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

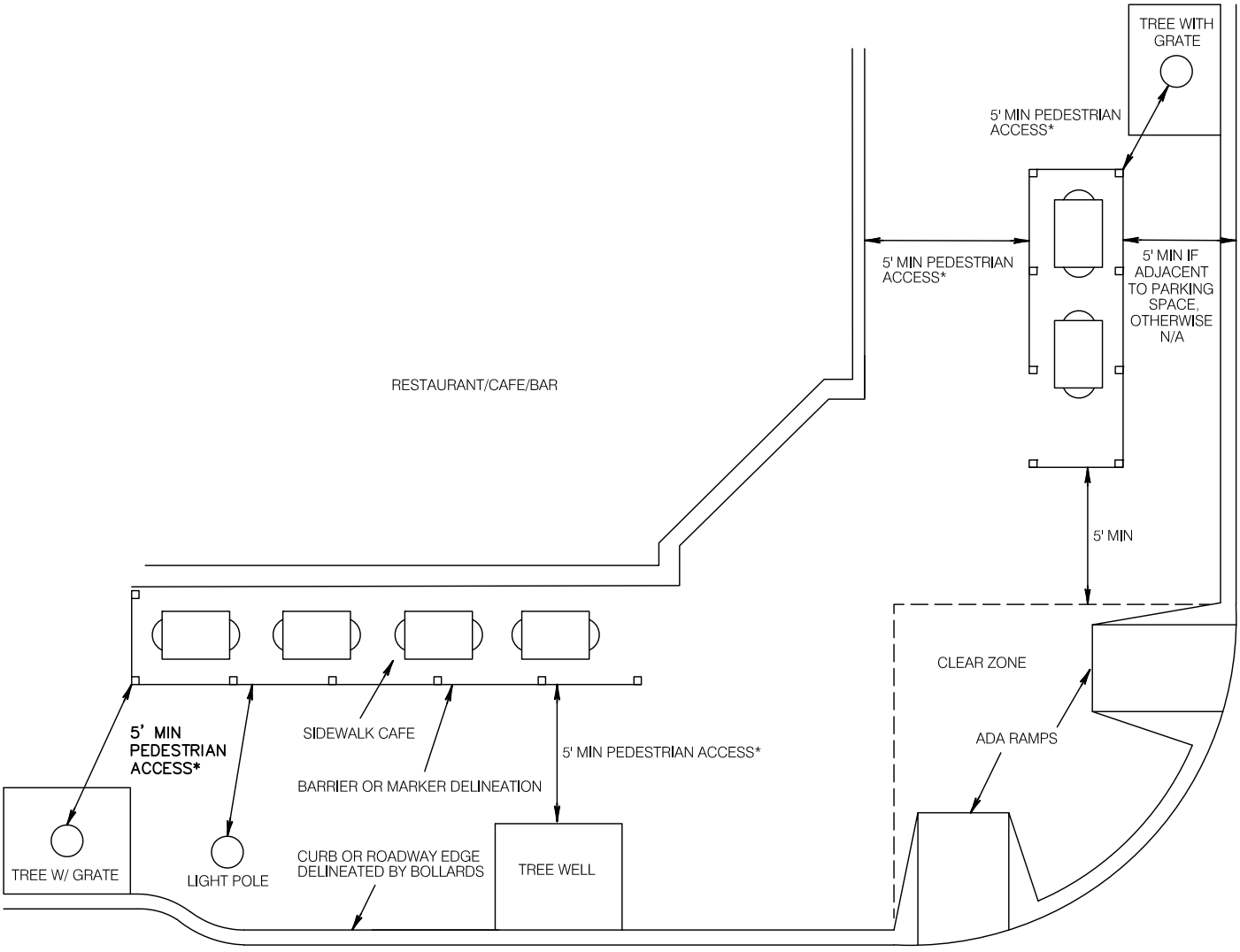
CEMENT CONCRETE DRIVEWAY TYPE - 2

Standard Detail

347

Revision Date

Jun, 2015



* 4' MINIMUM WILL BE CONSIDERED FOR SHORT DISTANCES WHERE THERE IS AT LEAST 1' OF ROOM TO PASS ON THE OTHER SIDE OF THE IMPEDIMENT; SUBJECT TO STAFF REVIEW

NOTES:

1. PUBLIC AREA USE PERMIT REQUIRED PRIOR TO ESTABLISHMENT OF OUTDOOR DINING AREA.

2. MUST COMPLY WITH ALL WA STATE LIQUOR & CANNABIS BOARD REQUIREMENTS REGARDING OUTDOOR SEATING AREAS SERVING ALCOHOL IF APPLICABLE.

3. BARRIER CONSTRUCTION PLANS MUST BE APPROVED BY CITY PRIOR TO INSTALLATION. USE OF PAVEMENT MARKERS INSTEAD OF BARRIERS IS ENCOURAGED.

4. SIDEWALK CAFE RAILINGS AND FURNISHINGS SHALL HAVE HIGH QUALITY, WEATHER RESISTANT MATERIALS AND FINISHES IF APPLICABLE.

5. RAILINGS SHALL BE DESIGNED TO MINIMIZE DISTURBANCE OF SIDEWALK FINISHES, AND ANY HOLES SHALL BE PATCHED TO MATCH EXISTING WHEN REMOVED IF APPLICABLE.

6. RAILINGS SHOULD BE DESIGNED WITH A BOTTOM RAIL 4 TO 6 INCHES ABOVE THE SIDEWALK GRADE.

City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	OUTDOOR DINING PUBLIC RIGHT-OF-WAY	Standard Detail **349** Revision Date Nov, 2018

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

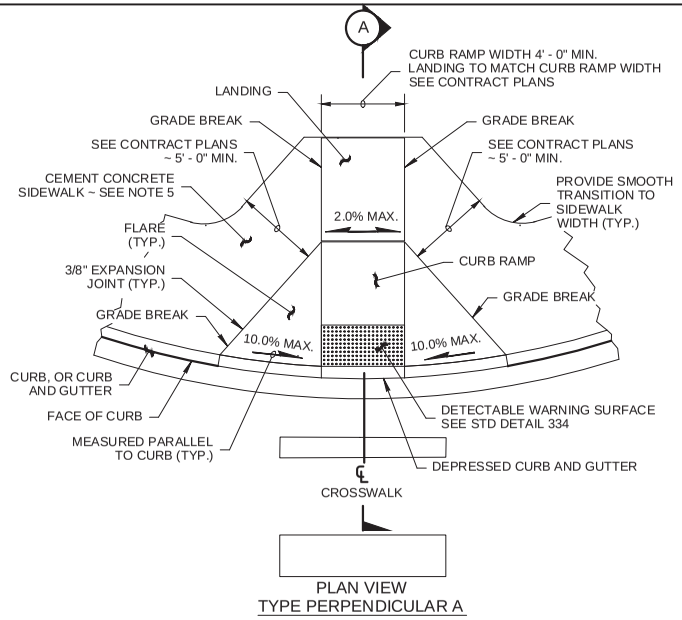
Approved By:

City Engineer

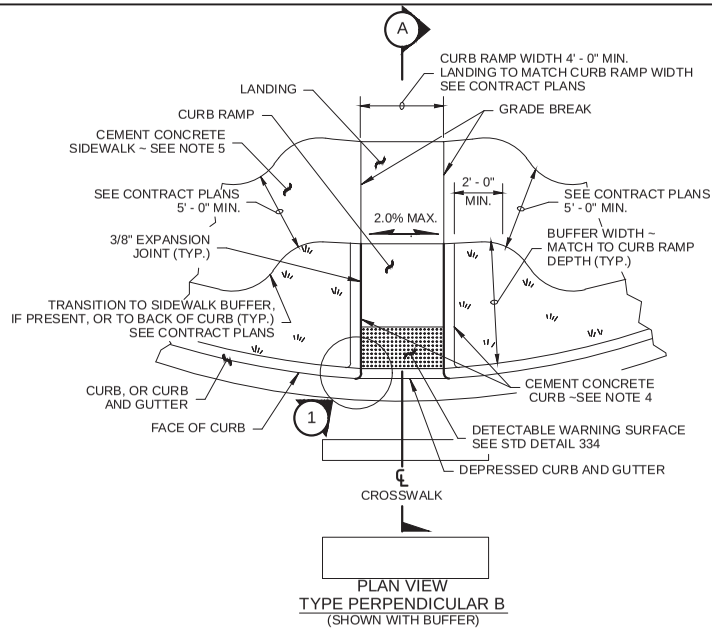
PERPENDICULAR CURB RAMP

Standard Detail **350**

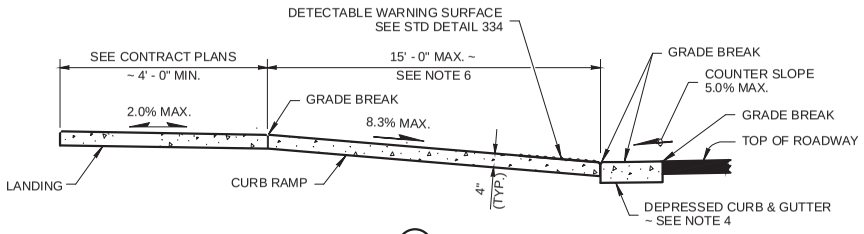
Revision Date Feb, 2012



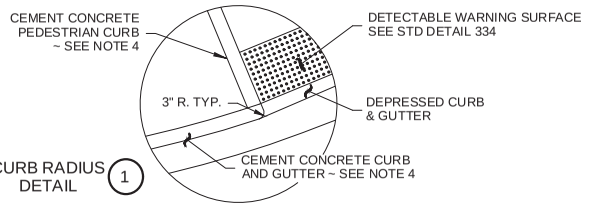
PLAN VIEW
TYPE PERPENDICULAR A



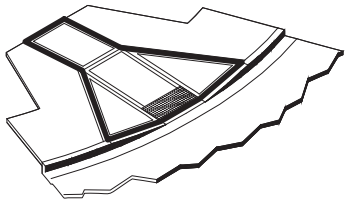
PLAN VIEW
TYPE PERPENDICULAR B
(SHOWN WITH BUFFER)



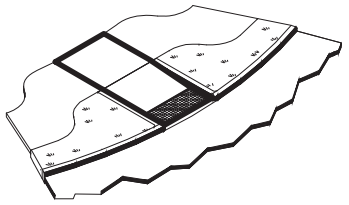
SECTION A



CURB RADIUS DETAIL 1



ISOMETRIC VIEW
TYPE A



ISOMETRIC VIEW
TYPE B

NOTES:

1. Provide a separate curb ramp for each marked or unmarked crosswalk. Curb ramp location shall be placed within the width of the associated crosswalk, or as shown in the Contract Plans.
2. Where "GRADE BREAK" is called out, the entire length of the grade break between the two adjacent surface planes shall be flush.
3. Do not place gratings, junction boxes, access covers, or other appurtenances in front of the curb ramp or on any part of the curb ramp or landing.
4. See the Contract Plans for the curb design specified. See Std Detail 340 for Curb, and Curb and Gutter Details.
5. See Std Detail 344 for Cement Concrete Sidewalk Details. See Contract Plans for width and placement of sidewalk.
6. The curb ramp maximum running slope shall not require the ramp length to exceed 15 feet to avoid chasing the slope indefinitely when connecting to steep grades. When applying the 15 foot max. length, the running slope of the curb ramp shall be as flat as feasible.
7. Curb ramp, landing, & flares shall receive broom finish. See WSDOT Standard Specifications 8-14.

LEGEND:

SLOPE IN EITHER DIRECTION

City of Bothell

City of Bothell

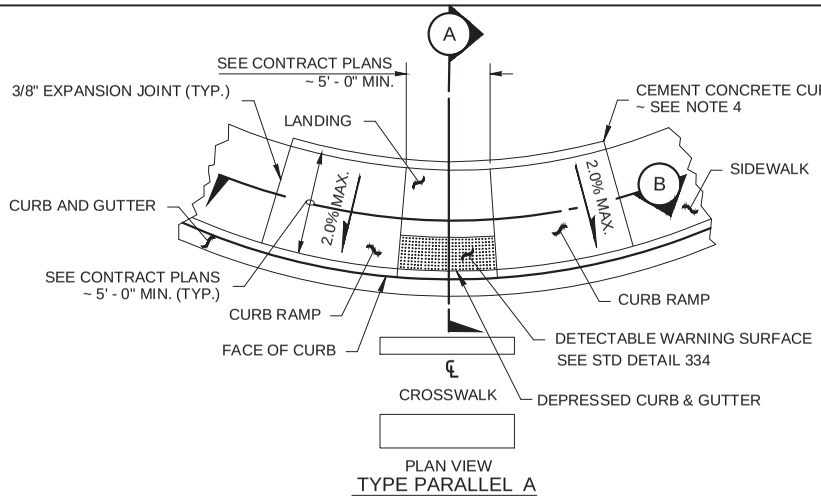
PUBLIC WORKS DEPARTMENT

Approved By:
City Engineer

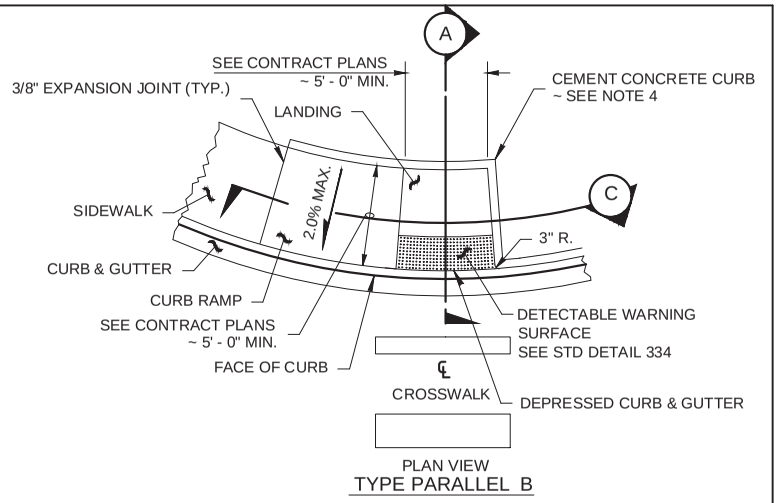
PARALLEL CURB RAMP

Standard Detail **351**

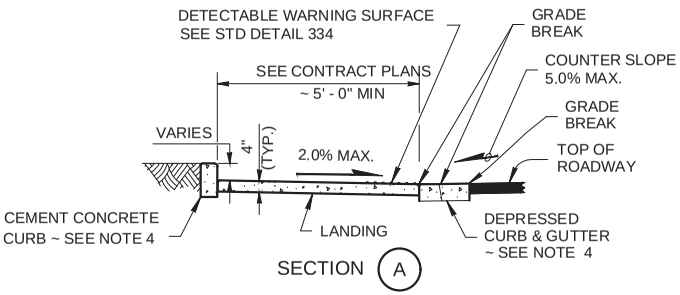
Revision Date Feb, 2012



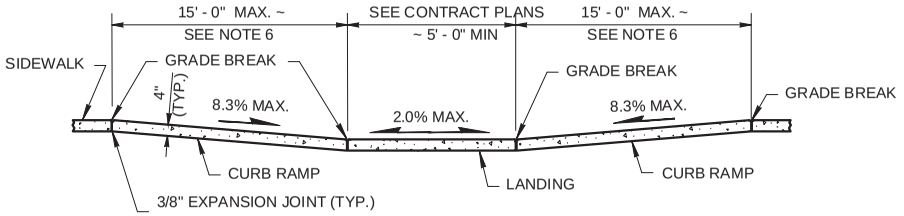
PLAN VIEW
TYPE PARALLEL A



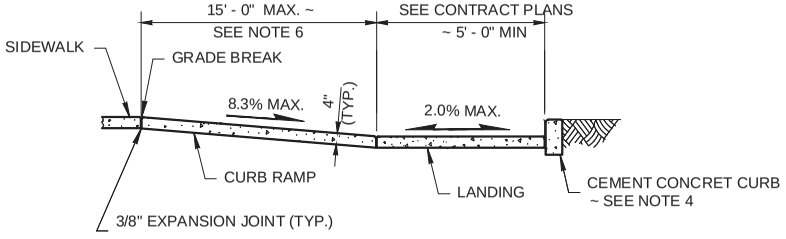
PLAN VIEW
TYPE PARALLEL B



SECTION A



SECTION B



SECTION C

NOTES:

1. Provide a separate curb ramp for each marked or unmarked crosswalk. Curb ramp location shall be placed within the width of the associated crosswalk, or as shown in the Contract Plans.
2. Where "GRADE BREAK" is called out, the entire length of the grade break between the two adjacent surface planes shall be flush.
3. Do not place gratings, junction boxes, access covers, or other appurtenances in front of the curb ramp or on any part of the curb ramp or landing.
4. See the Contract Plans for the curb design specified.d. See Std Detail 340 for Curb, and Curb and Gutter Curb Details.
5. See Std Detail 344 for Cement Concrete Sidewalk Details. See Contract Plans for width and placement of sidewalk.
6. The curb ramp maximum running slope shall not require the ramp length to exceed 15 feet to avoid chasing the slope indefinitely when connecting to steep grades. When applying the 15 foot max. length, the running slope of the curb ramp shall be as flat as feasible.
7. Curb ramp, landing, & flares shall receive broom finish. See WSDOT Standard Specifications 8-14.

LEGEND:

SLOPE IN EITHER DIRECTION

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

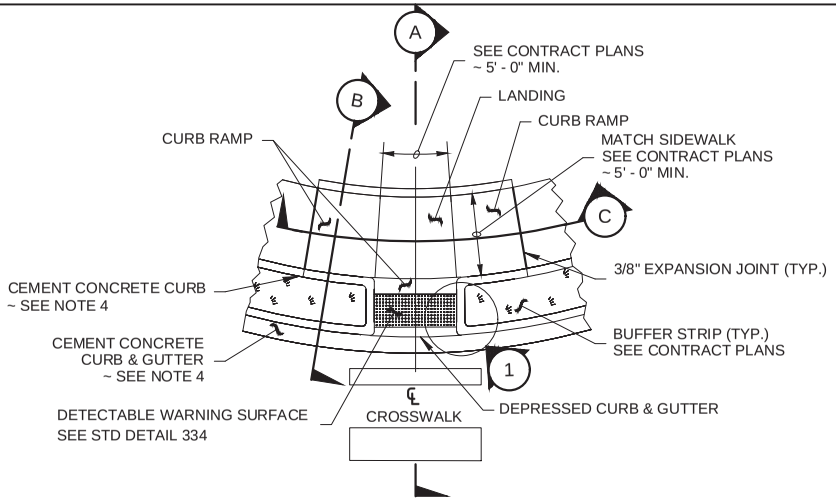
Approved By:

City Engineer

COMBINATION CURB RAMP

Standard Detail **352**

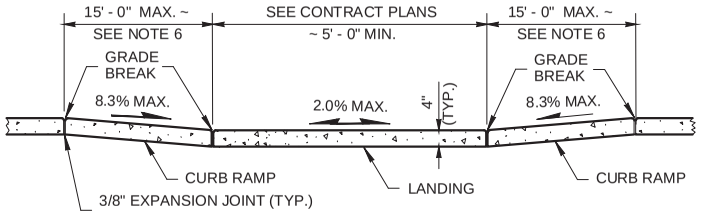
Revision Date Feb, 2012



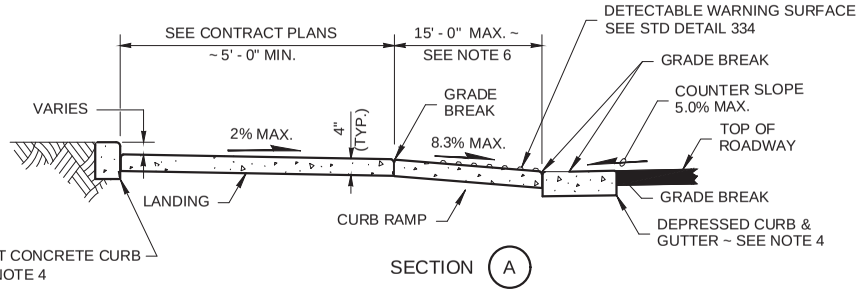
PLAN VIEW

TYPE COMBINATION

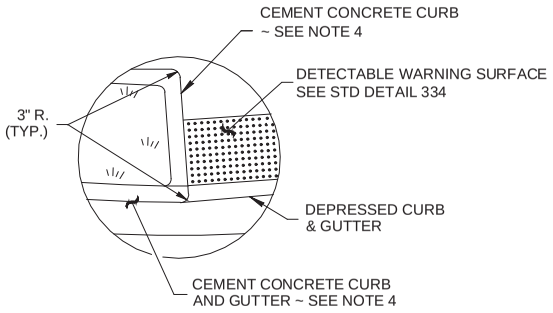
WITH BUFFER



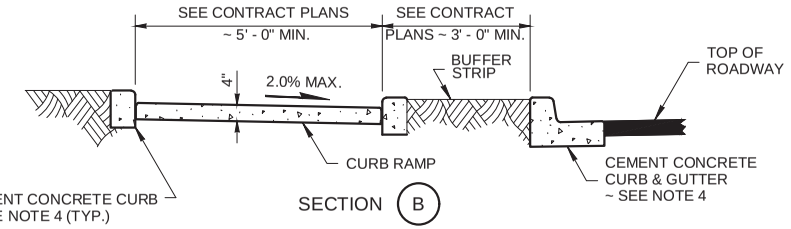
SECTION C



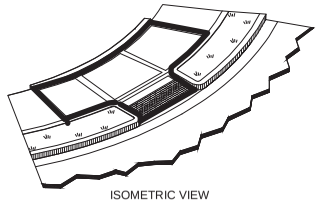
SECTION A



CURB RADIUS DETAIL 1



SECTION B



ISOMETRIC VIEW

NOTES:

1. Provide a separate curb ramp for each marked or unmarked crosswalk. Curb ramp location shall be placed within the width of the associated crosswalk, or as shown in the Contract Plans.
2. Where "GRADE BREAK" is called out, the entire length of the grade break between the two adjacent surface planes shall be flush.
3. Do not place gratings, junction boxes, access covers, or other appurtenances in front of the curb ramp or on any part of the curb ramp or landing.
4. See the Contract Plans for the curb design specified. See Std Detail 340 for Curb, and Curb and Gutter Details.
5. See Std Detail 344 for Cement Concrete Sidewalk Details. See Contract Plans for width and placement of sidewalk.
6. The curb ramp maximum running slope shall not require the ramp length to exceed 15 feet to avoid chasing the slope indefinitely when connecting to steep grades. When applying the 15 foot max. length, the running slope of the curb ramp shall be as flat as feasible.
7. Curb ramp, landing, & flares shall receive broom finish. See WSDOT Standard Specifications 8-14.

LEGEND:

SLOPE IN EITHER DIRECTION

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

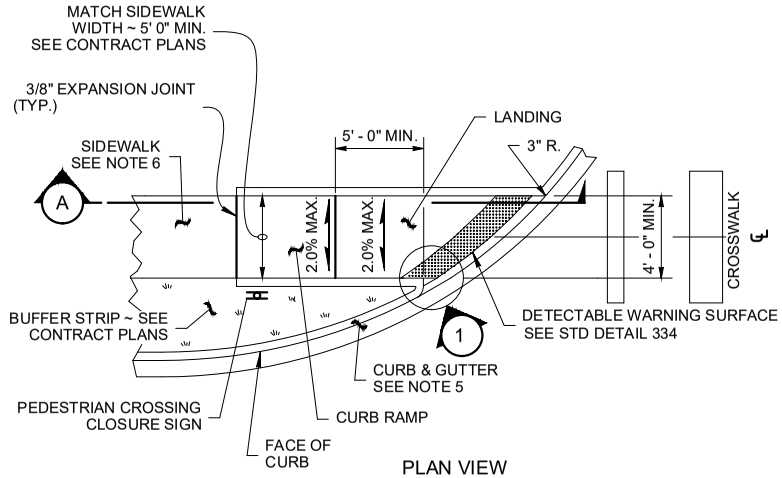
Approved By:

City Engineer

SINGLE DIRECTION CURB RAMP

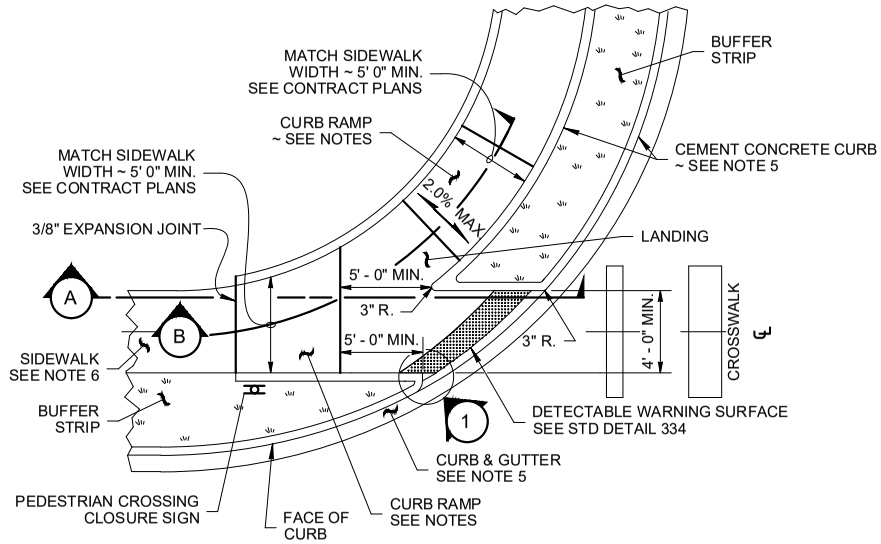
Standard Detail **353**

Revision Date Dec, 2019



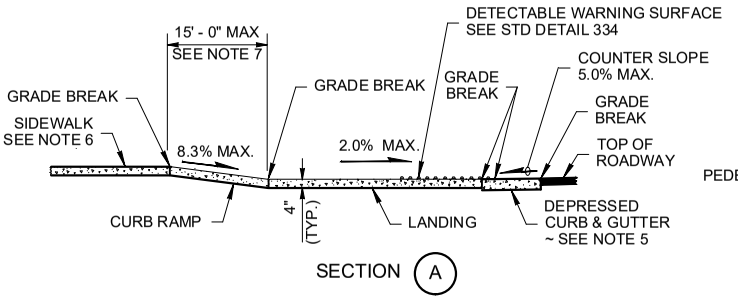
PLAN VIEW

TYPE SINGLE DIRECTION A

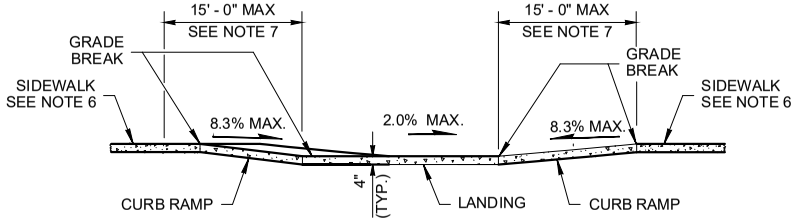


PLAN VIEW

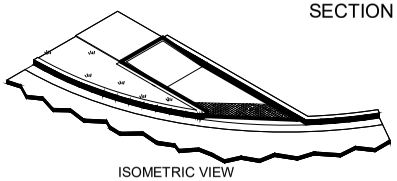
TYPE SINGLE DIRECTION B



SECTION (A)

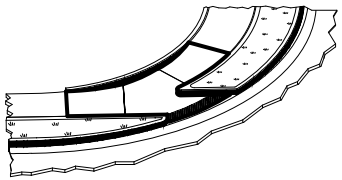


SECTION (B)



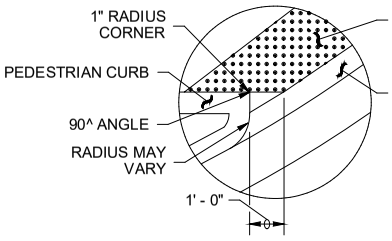
ISOMETRIC VIEW

DIRECTION A



ISOMETRIC VIEW

DIRECTION B



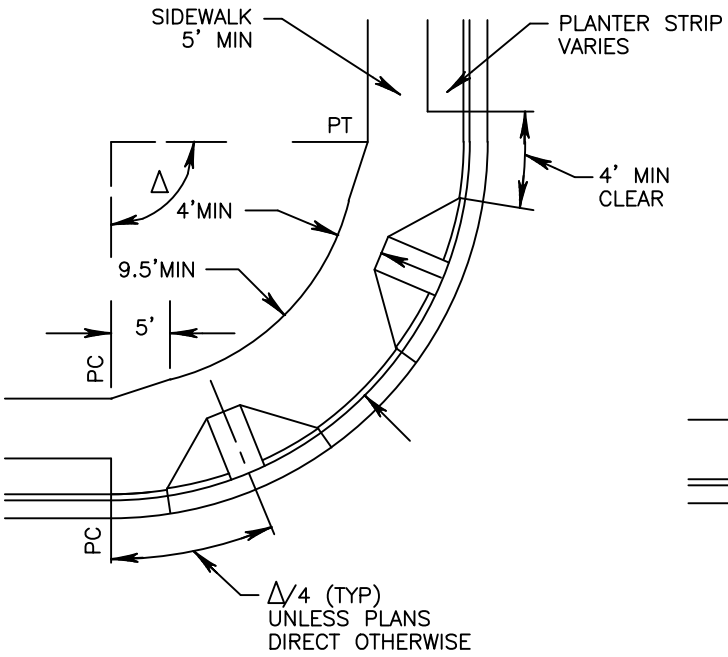
DETAIL (1)

NOTES:

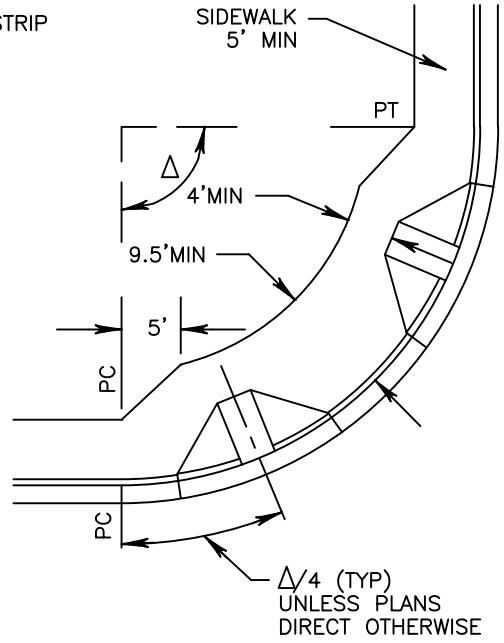
1. *This plan is to be used where pedestrian crossing in one direction is not permitted.*
2. *Curb ramp location shall be placed within the width of the associated crosswalk, or as shown in the Contract Plans.*
3. *Where "GRADE BREAK" is called out, the entire length of the grade break between the two adjacent surface planes shall be flush.*
4. *Do not place gratings, junction boxes, access covers, or other appurtenances in front of the curb ramp or on any part of the curb ramp or landing.*
4. *See the* Contract *Plans for the curb design specified.* See Std Detail 340 *for Curb, and Curb and Gutter Details.*
5. See Std Detail 344 *for Cement Concrete Sidewalk Details. See Contract Plans for width and placement of sidewalk.*
6. *The Curb Ramp length is not required to exceed 15 feet (unless otherwise shown in Approved Plans). When applying the 15-foot max. length, the running slope of the curb ramp is allowed to exceed 8.3%. Use a single constant slope from bottom of ramp to top of ramp to match into the sidewalk over a horizontal distance of 15 feet. Do not include abutting landing(s) in the 15-foot max. measurement. When a ramp is constructed on a radius, the 15-foot max. length is measured on the inside radius along the back of the walkway.*
7. *Curb ramp, landing, & flares shall receive broom finish. See* WSDOT Standard Specifications 8-14.

LEGEND:

SLOPE IN EITHER DIRECTION

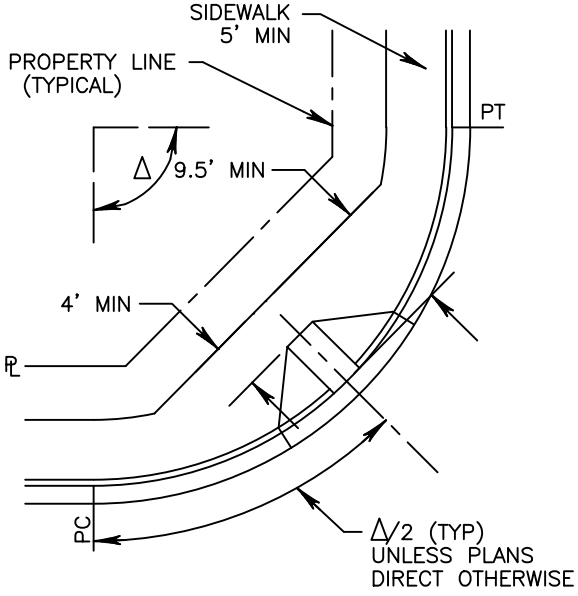


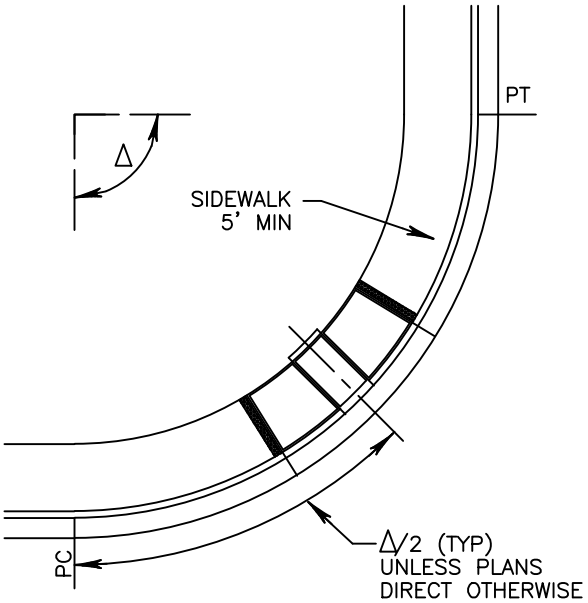
WITH LANDSCAPE STRIP



WITHOUT LANDSCAPE STRIP

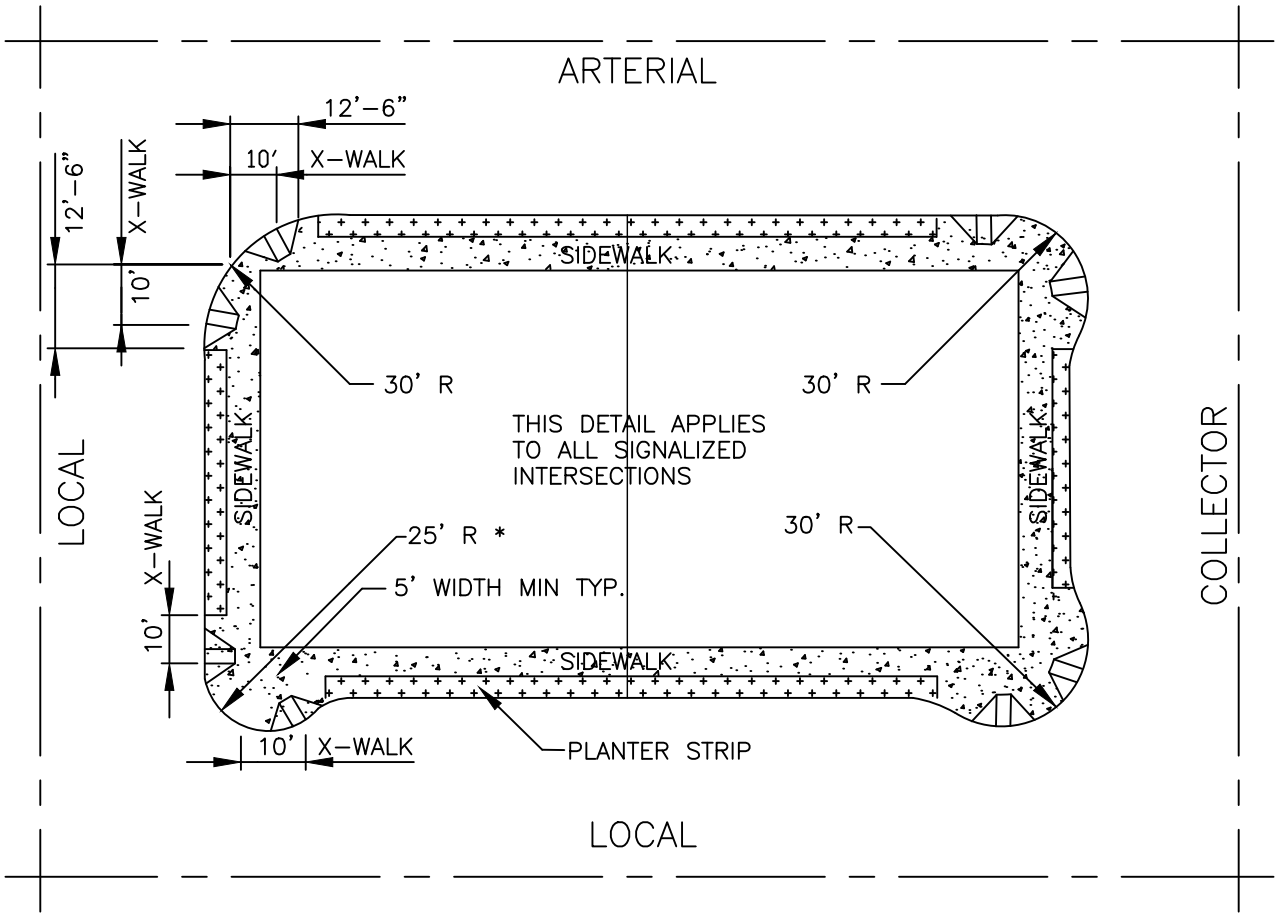
CURB RAMP FOR ARTERIAL OR COLLECTOR STREETS





CURB RAMP FOR LOCAL STREETS

City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	WHEELCHAIR RAMP TYPICAL LOCATIONS	Standard Detail **354** Revision Date Feb, 2012

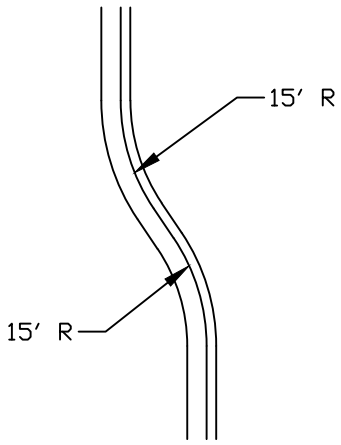


CURB RADIUS AT INTERSECTIONS

	ARTERIAL	COLLECTOR	LOCAL
ARTERIAL	35'	30'	30'
COLLECTOR	X	25'	30'
LOCAL	X	X	25'

NOTES

1. STORM DRAINAGE INLETS SHALL BE OUTSIDE THE CURB RAMP.
2. THE CURB RAMP MAY BE MOVED AWAY FROM THE CROSSWALK TO AVOID CONFLICTS WITH HYDRANTS, POLES, INLETS OR OTHER UTILITIES, EXCEPT WHERE THE STREET GRADE EXCEEDS 4%.
3. FOR SWEEPING EFFICIENCY WHEN CURB BULBS (PARKING SETBACKS) ARE USED, REVERSE CURVE RADII SHALL NOT BE LESS THAN 15 FEET. REFER TO DETAIL A.
4. ADD CURB BULBS ON STREETS WITH ON–STREET PARKING.
5. 27' RADII MAY BE REQUIRED. SEE STANDARD DETAIL: 901.



DETAIL A – MINIMUM RADIUS FOR CURB BULB/PARKING SETBACK

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

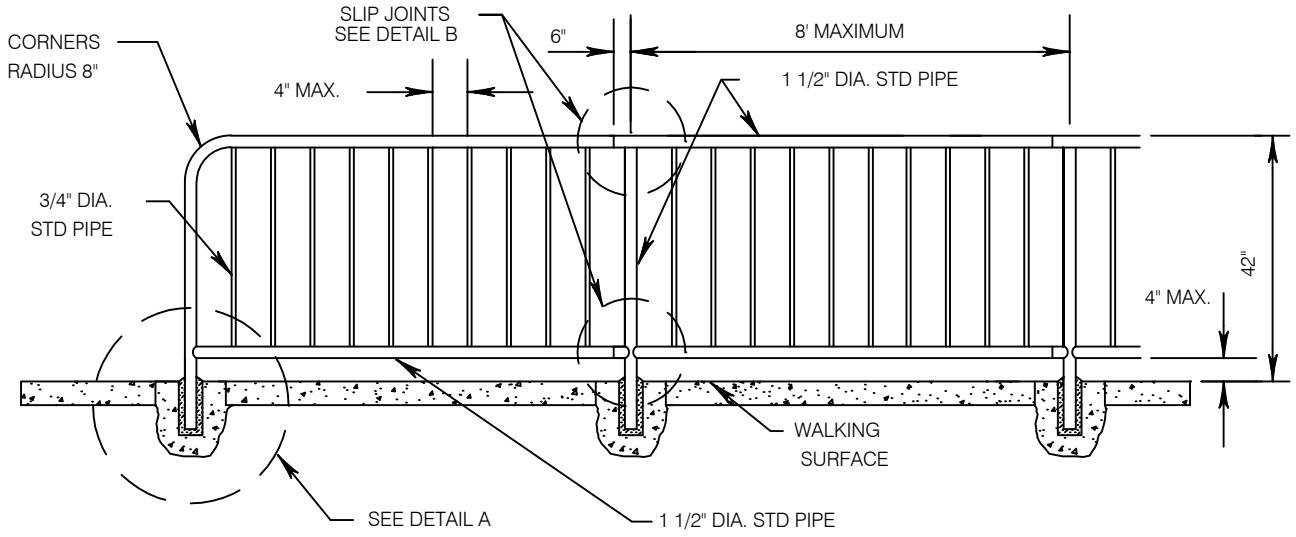
INTERSECTION CURB RADIUS & RAMP LOCATIONS

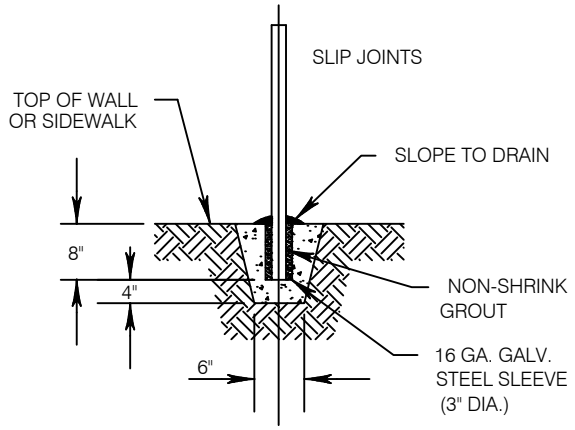
Standard Detail

355

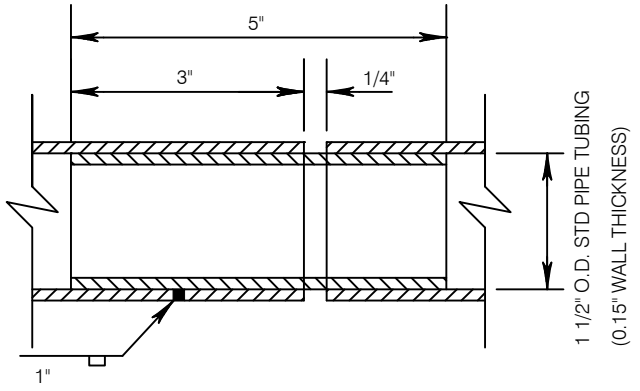
Revision Date

Dec, 2019

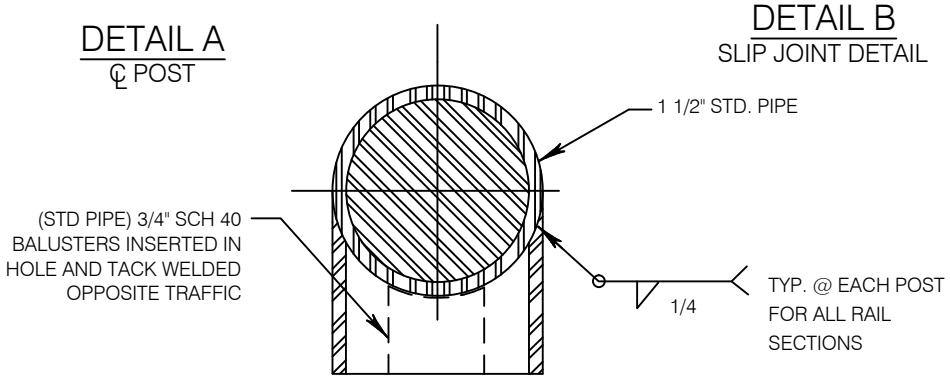




DETAIL A
℄ POST



DETAIL B
SLIP JOINT DETAIL



NOTES:

1. MATERIAL FOR PEDESTRIAN HANDRAIL SHALL BE ALUMINUM (ASTM B-429) OR HOT DIPPED GALVINIZED STEEL (ASTM 120) AS APPROVED BY THE DIRECTOR.

2. SEE STANDARD DRAWING No. 356 FOR ADDITIONAL FABRICATION AND SPECIFICATION REQUIREMENTS.

3. PROVIDE SLIP JOINTS AT STAIRWAY EXPANSION JOINTS AND AT EVERY 24 FEET ON CENTER MAXIMUM.

4. MAXIMUM OF 4" CLEAR SPACE BETWEEN BALUSTERS

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

PEDESTRIAN RAILING

Standard Detail

356A

Revision Date

Nov, 2013

PEDESTRIAN RAIL (ALUMINUM)

ALUMINUM PEDESTRIAN RAIL SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH THESE SPECIAL PROVISIONS AND STANDARD DRAWING NO. 358.

ALUMINUM PEDESTRIAN RAIL SHALL BE NATURAL ALUMINUM COLOR.

COMPLETED ALUMINUM RAILING UNITS SHALL BE ANODIZED AFTER FABRICATION CONFORMING TO THE REQUIREMENTS OF THE ALUMINUM ASSOCIATION STANDARD FOR ANODIZED ARCHITECTURAL ALUMINUM, CLASS I ANODIC COATING, AA-C22-A41.

WELDING SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR ALUMINUM STRUCTURES" OF THE ALUMINUM ASSOCIATION. ALL EXPOSED WELDS SHALL BE GROUND FLUSH WITH ADJACENT SURFACES.

THE BASE METAL FOR ALUMINUM RAILING SHALL BE ASA ALLOY DESIGNATION 6063-T6. PIPE AND TUBING SHALL BE EXTRUDED CONFORMING TO THE REQUIREMENTS OF ASTM B 429, PLATES AND SHEETS SHALL BE ROLLED CONFORMING TO ASTM B 209, AND RODS, BARS OR SHAPES SHALL BE EXTRUDED CONFORMING TO ASTM B 221.

HORIZONTAL RAILS AND VERTICAL SUPPORT POSTS SHALL BE 1 1/2 INCH DIAMETER STANDARD PIPE AND BALUSTERS SHALL BE 3/4 INCH DIAMETER STANDARD ALUMINUM PIPE. RAILS, POSTS, AND BALUSTERS SHALL BE MACHINE CUT TO PROVIDE A UNIFORM LENGTH PRIOR TO ASSEMBLY.

RAILING SHALL BE ERECTED AND ADJUSTED, IF NECESSARY, TO ASSURE A CONTINUOUS LINE AND GRADE.

PEDESTRIAN RAIL (GALVANIZED STEEL)

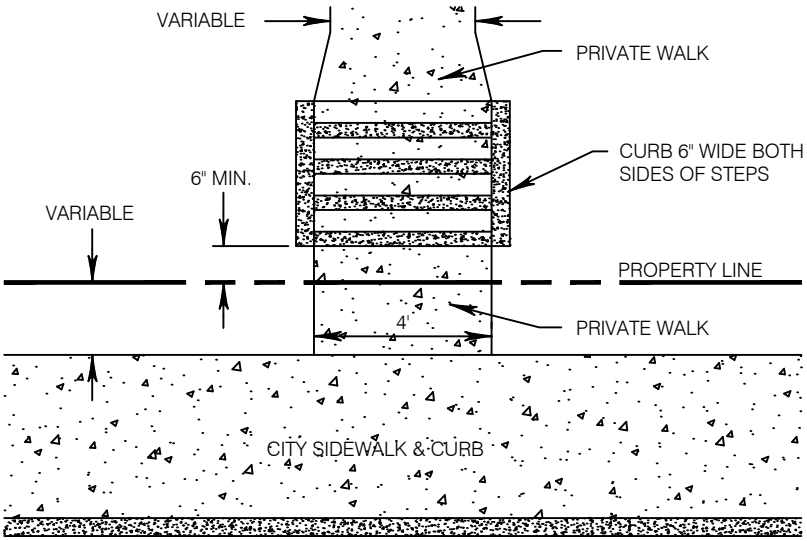
GALVANIZED PEDESTRIAN RAIL SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH THESE SPECIAL PROVISIONS AND STANDARD DRAWING NO. 358.
STEEL RAILINGS MATERIALS SHALL BE WELDED OR SEAMLESS STEEL PIPE CONFORMING TO THE REQUIREMENTS OF ASTM A 120, STRUCTURAL STEEL CONFORMING TO ASTM A 36, OR TUBULAR SECTIONS OF HOT ROLLED MILD STEEL, CONFORMING TO ASTM A 501. ALL WELDING SHALL CONFORM TO AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE AWS D1.1. AFTER FABRICATION EACH SECTION OF RAILING SHALL BE HOT-DIPPED GALVANIZED WITH A MINIMUM ZINC COATING OF 2 OUNCES PER SQUARE FOOT. ALL BURRS AND SHARP EDGES SHALL BE REMOVED PRIOR TO GALVANIZING.

FIELD WELDS SHALL BE GALVANIZED WITH 3 COATS OF SUCH MATERIALS AS "GALVALLOY" OR GALVICON. PAINTING OF WELDS WILL NOT BE PERMITTED.

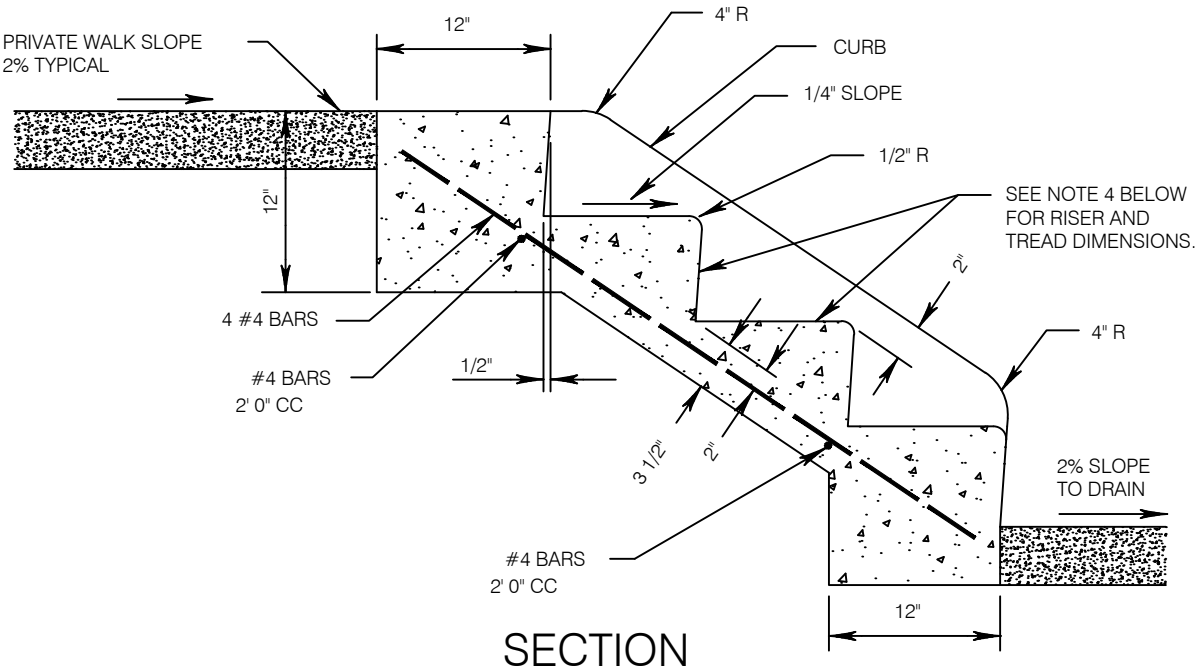
HORIZONTAL RAILS AND VERTICAL SUPPORT POSTS SHALL BE BE 1 1/2 INCH DIAMETER AND BALUSTERS SHALL BE 3/4 INCH DIAMETER STANDARD WEIGHT GALVANIZED STEEL PIPE. RAILS, POSTS AND BALUSTERS SHALL BE MACHINE CUT TO PROVIDE A UNIFORM LENGTH PRIOR TO ASSEMBLY.

RAILING SHALL BE ERECTED AND ADJUSTED, IF NECESSARY, TO ASSURE A CONTINUOUS LINE AND GRADE.

City of Bothell™	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	PEDESTRIAN RAILING NOTES	Standard Detail **356B** Revision Date Dec, 2019



PLAN



SECTION

NOTES :

1. STEPS SHALL BE 4'-0" WIDE, CURB TO CURB, PLUS 6" CURBS ON EACH SIDE.

2. CEMENT CONCRETE SHALL BE CLASS 3000, TROWEL FINISH.

3. NUMBER OF STEPS SHALL SUIT INDIVIDUAL CONDITIONS, WITH TREAD AND RISER DIMENSIONS TO SUIT THE GRADE.

4. RISER SHALL BE 5" MIN. 7" MAX., TREAD SHALL BE 11" MIN. 12" MAX.

5. ALL STEPS SHALL HAVE RAILINGS (BOTH SIDES) INSTALLED PER STD'S 356A AND 356B.

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PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

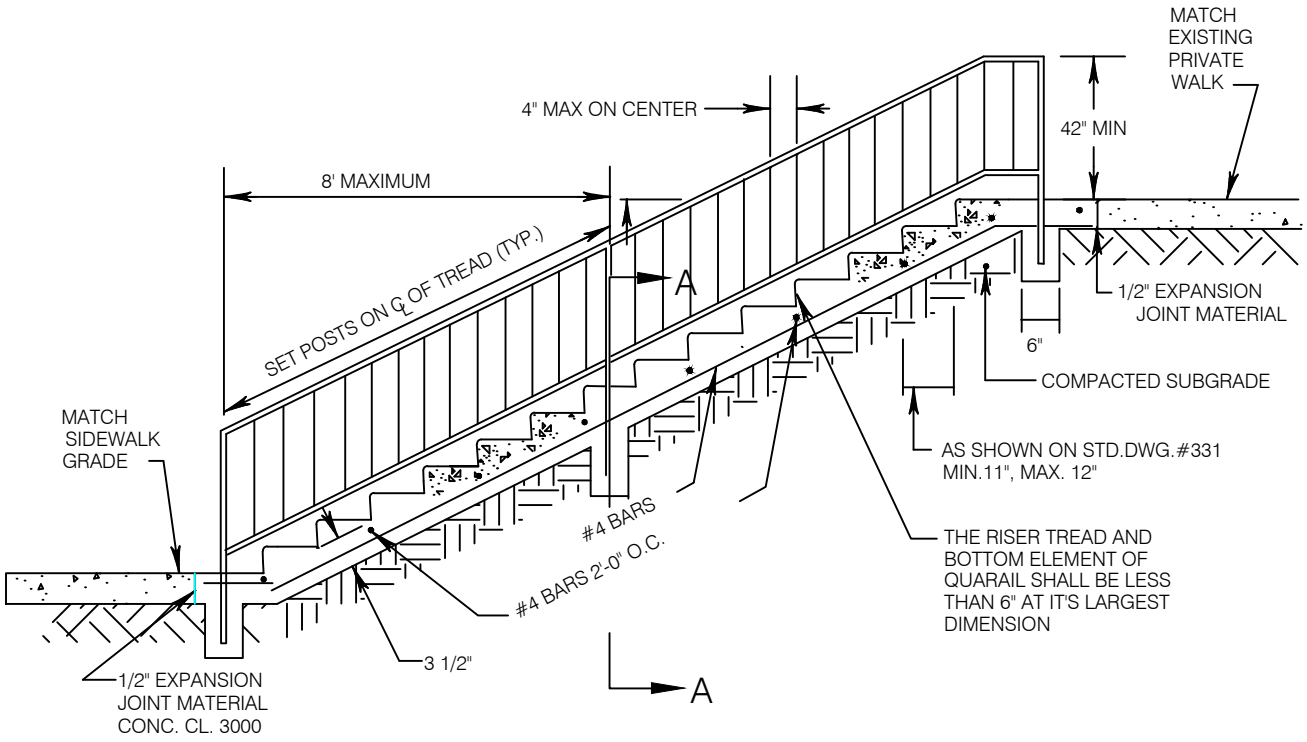
CEMENT CONCRETE STEPS

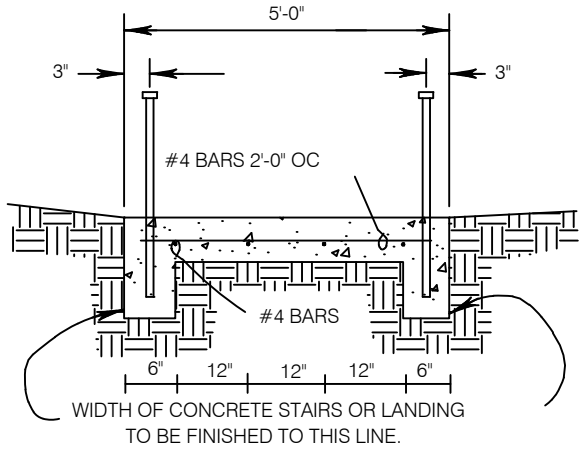
Standard Detail

357

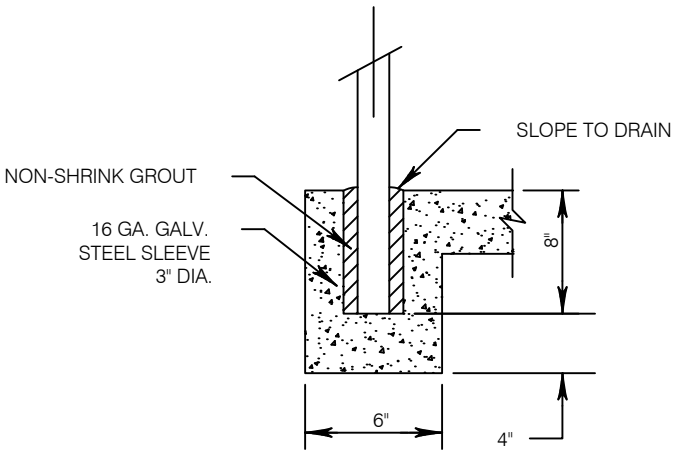
Revision Date

Nov, 2013





SECTION A-A



POST DETAIL

NOTES:

1. CEMENT CONCRETE STEPS AND CURBS SHALL BE CONSTRUCTED AS SHOWN ON DETAIL 357
2. HEIGHT OF RAILING SHALL BE 36" MINIMUM, 38" MAXIMUM TOP OF NOSING TO TOP OF RAILING.
3. PEDESTRIAN RAILING SHALL BE CONSTRUCTED AS SHOWN ON DETAIL 356A AND 356B.
4. CLEAR SPACE BETWEEN BALUSTERS SHALL BE A MAXIMUM OF 4".
5. ALL STEPS SHALL HAVE HANDRAIL ON BOTH SIDES.

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City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

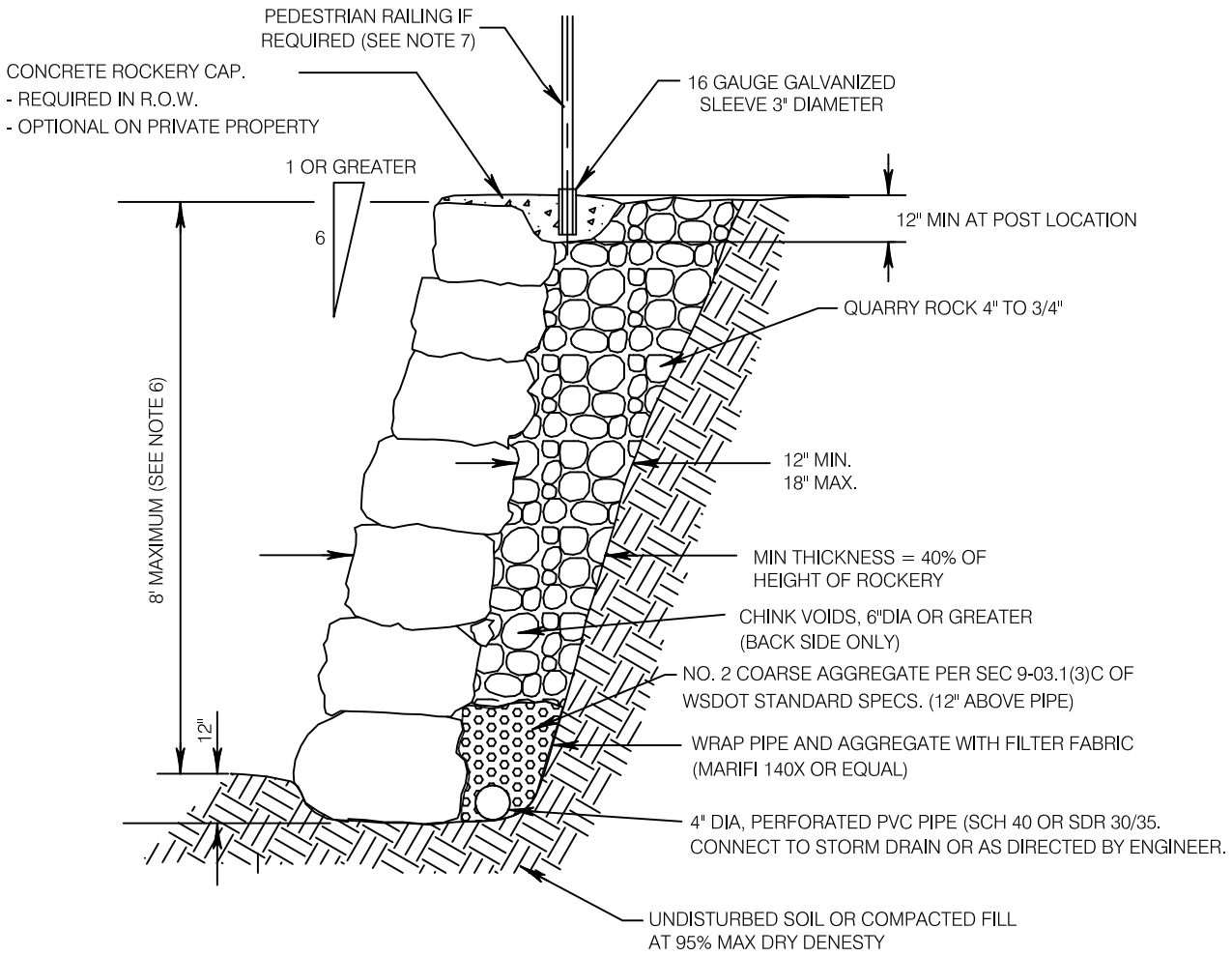
CEMENT CONCRETE STAIRWAY

Standard Detail

358

Revision Date

Nov, 2013



NOTES:

1. ROCK FACINGS SHALL BE CONSTRUCTED BY INTERLOCKING THE ROCKS SO THAT EACH ROCK IS IN CONTACT WITH AT LEAST TWO OTHER ROCKS, AND WITH EACH ROCK HAVING A MINIMUM OF THREE BEARING SURFACES.

2. EACH ROCK SHALL BE LAID WITH A FLAT SURFACE ALONG THE ROCKERY AND WITH THE LONG DIMENSION HORIZONTAL.

3. THE DENSITY OF ROCK MATERIAL SHALL BE A MINIMUM OF 160 POUNDS PER CUBIC FOOT.
THE SIZE CATEGORIES FOR ROCK SHALL BE AS FOLLOWS:

SIZE	APPROXIMATE WEIGHT - LB.	APPROXIMATE DIAMETER - INCHES
1-MAN ROCK	50 - 200	12 - 18
2-MAN ROCK	200 - 700	18 - 28
3-MAN ROCK	700 - 2000	28 - 36
4-MAN ROCK	2000 - 4000	36 - 48
5-MAN ROCK	4000 - 6000	48 - 54
6-MAN ROCK	6000 - 8000	54 - 60

4. THE CONTRACTOR SHALL USE THE ROCK SIZES AS SET FORTH IN THE ABOVE TABLE AND SHALL INSURE A DISTRIBUTION OF ROCK SIZES WITH THE LARGEST ROCKS ON THE BOTTOM AND PROGRESSIVELY SMALLER ON TOP.

5. VOIDS IN THE ROCKERY FACE SHALL NOT BE GRATER THAN 50 SQUARE INCHES FOR ROCKS OVER 3 FEET HIGH AND 36 SQUARE INCHES FOR ROCKS UNDER 3 FEET HIGH.

6. ROCKERIES OVER EIGHT (8) FEET HIGH MUST BE DESIGNED BY A CIVIL/GEOTECHINCAL ENGINEER LICENSED IN THE STATE OF WASHINGTON.

7. ROCKERIES WHICH ARE MORE THAN 30 INCHES ABOVE GRADE OD FLOOR BELOW SHALL BE PROTECTED BY A 36 INCH HIGH PEDESTRIAN RAILING. (SEE DETAILS 356A AND 356B)

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

NON-STRUCTURAL ROCKERY

Standard Detail

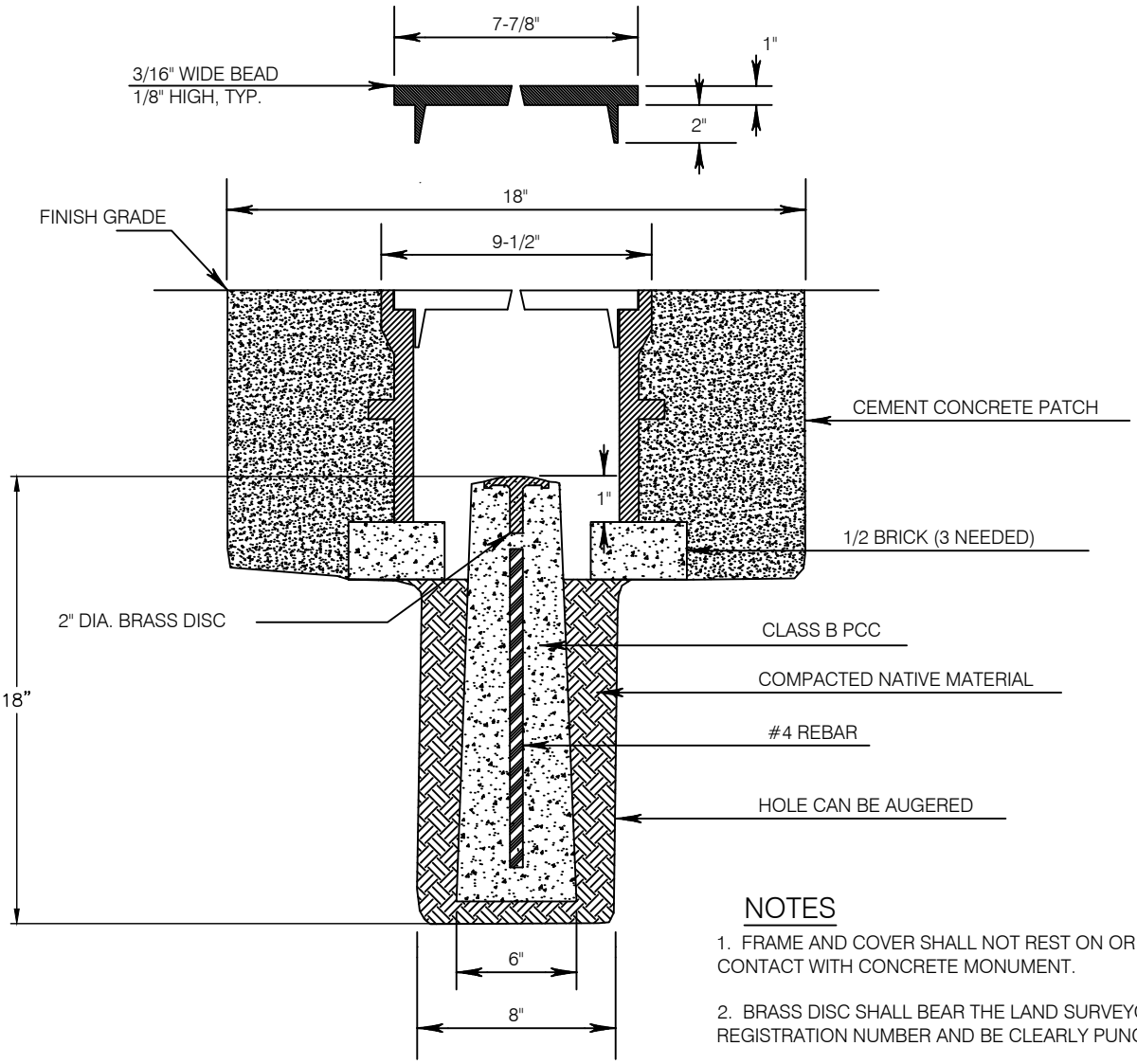
359

Revision Date

Nov, 2018

MON

LID PLAN



NOTES

1. FRAME AND COVER SHALL NOT REST ON OR BE IN CONTACT WITH CONCRETE MONUMENT.

2. BRASS DISC SHALL BEAR THE LAND SURVEYORS REGISTRATION NUMBER AND BE CLEARLY PUNCHED.

3. FRAME AND COVER : SATHER MANUFACTURING COMPANY (No. 2022 FOR KING COUNTY OR 36950 IN SNOHOMISH COUNTY) W/CONCRETE MONUMENT OR EQUAL.

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City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

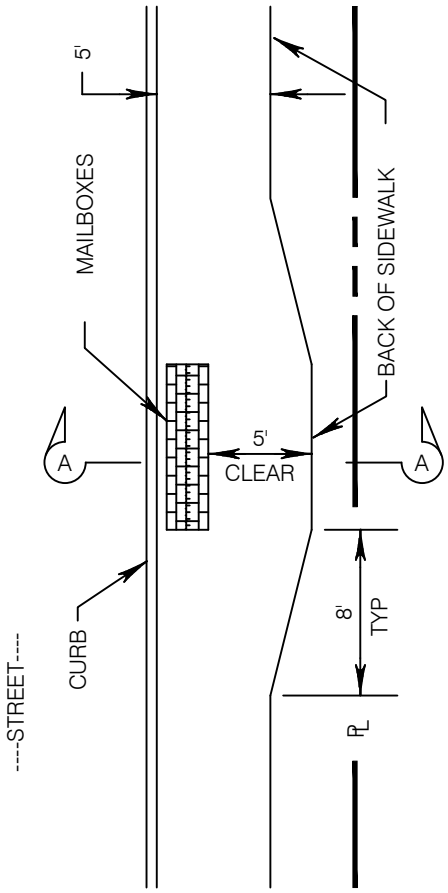
SURVEY CONTROL MONUMENT

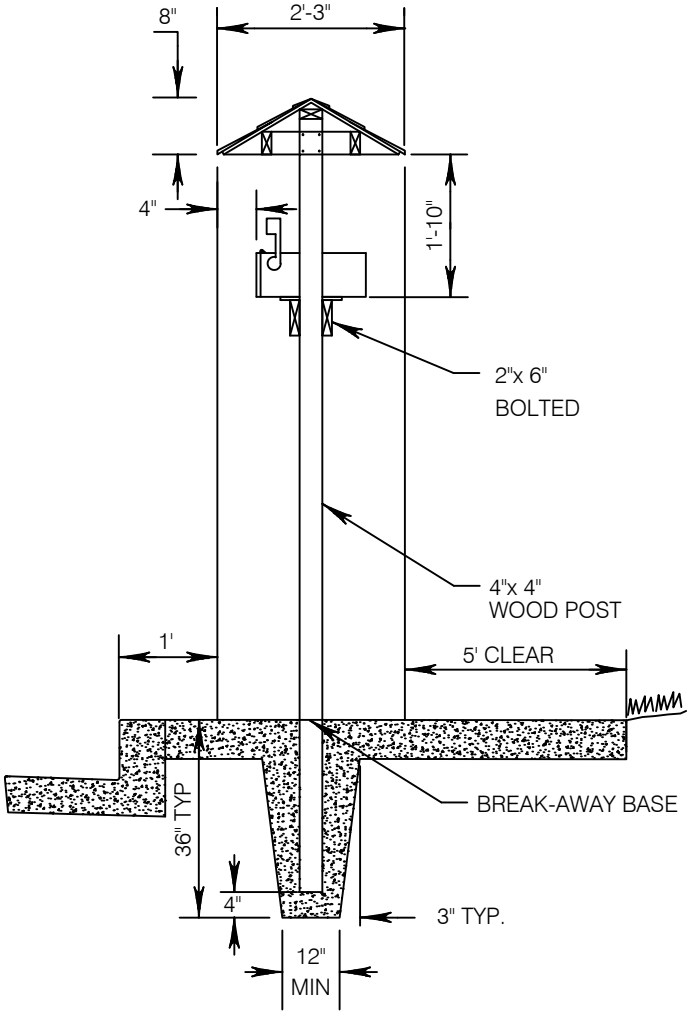
Standard Detail

360

Revision Date

Dec, 2019





SECTION A-A

NOTES:

1. MAILBOX MUST BE TYPE "APPROVED BY THE POSTMASTER GENERAL" WITH A UNIFORM BOX STYLE AND METHOD OF ADDRESS IDENTIFICATION.

2. LOCATION IS SUBJECT TO APPROVAL BY THE CITY, FOR PROTECTION OF VIEWS, OUTSIDE SIGHT DISTANCE TRIANGLE, ACCESS AND ARE TO BE SHOWNON STREET IMPROVEMENT PLANS.

3. THE SKETCH DEPICTS A MINIMUM STRUCTURAL AND DIMENSIONAL STANDARD. INNOVATIVE DESIGNS MEETING THE MINIMUM DIMENSIONAL AND STRUCTURAL REQUIREMENTS ARE ACCEPTABLE.

4. ALL WOOD TO BE PRESSURE TREATED FIR OR HEMLOCK.

5. CONCRETE PAD FOR CLUSTER BOX SHALL BE 4' X 4' X 12" DEEP

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City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

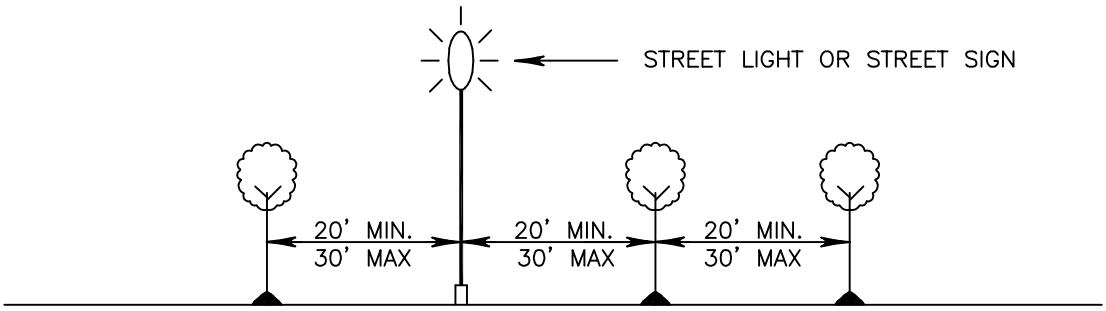
MAILBOX STRUCTURE INSTALLATION

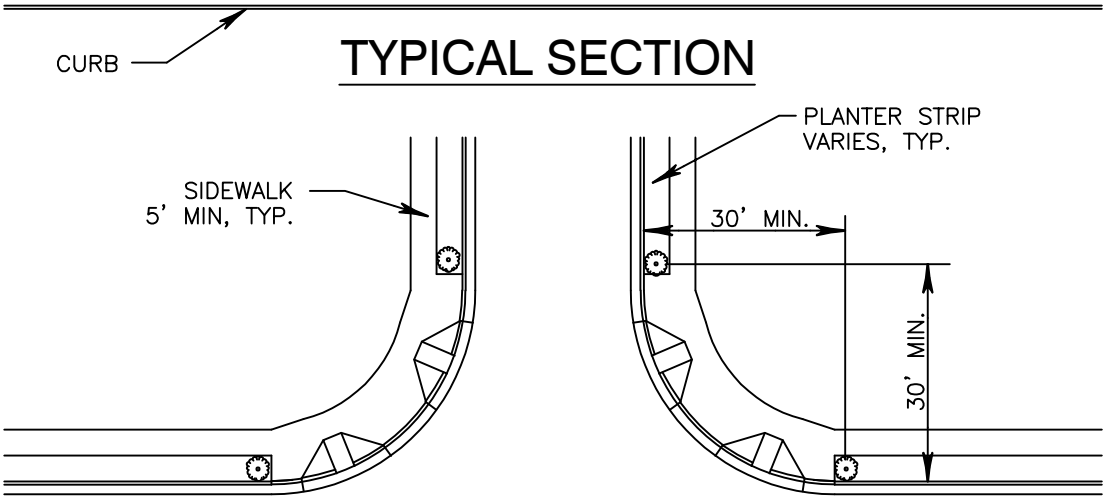
Standard Detail

361

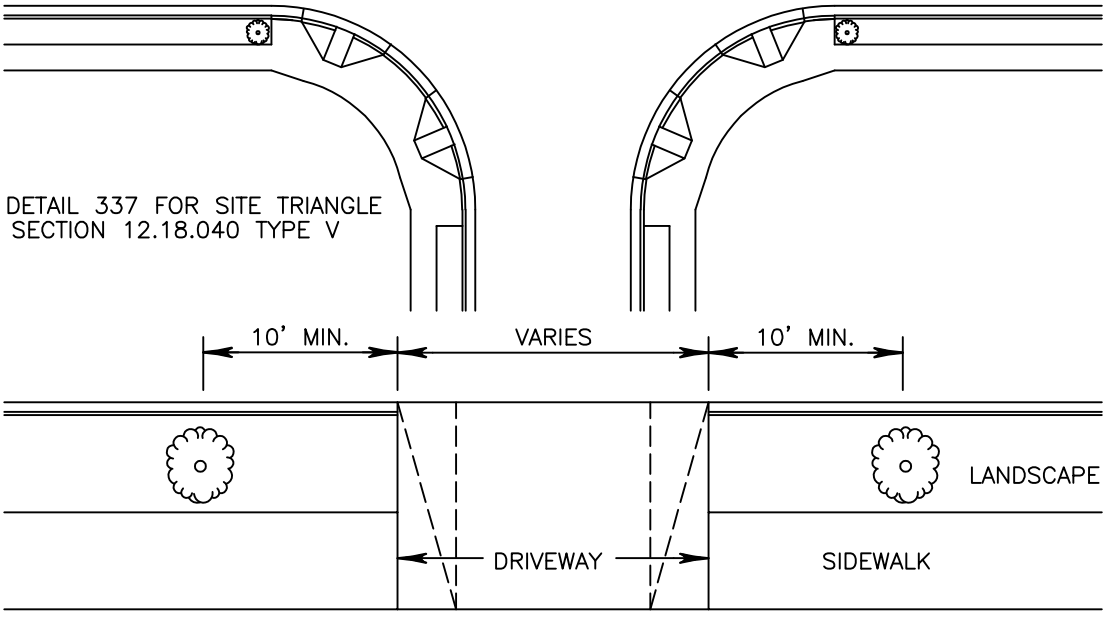
Revision Date

Nov, 2013





TYPICAL TREE
LOCATION AT
4–WAY INTERSECTION



Note:
Street trees in the downtown core – roughly from 96th Ave NE to 104th Ave NE and NE 180th St. and SR 522 to NE 186th St.(NE188th St. along Bothell Way NE) should be planted in a formal pattern, with regular spacing of the same or similar trees along a block face. Outside the downtown core, street trees should be planted in a more naturalistic pattern, with a variety of trees planted in clusters with irregular spacing.

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City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

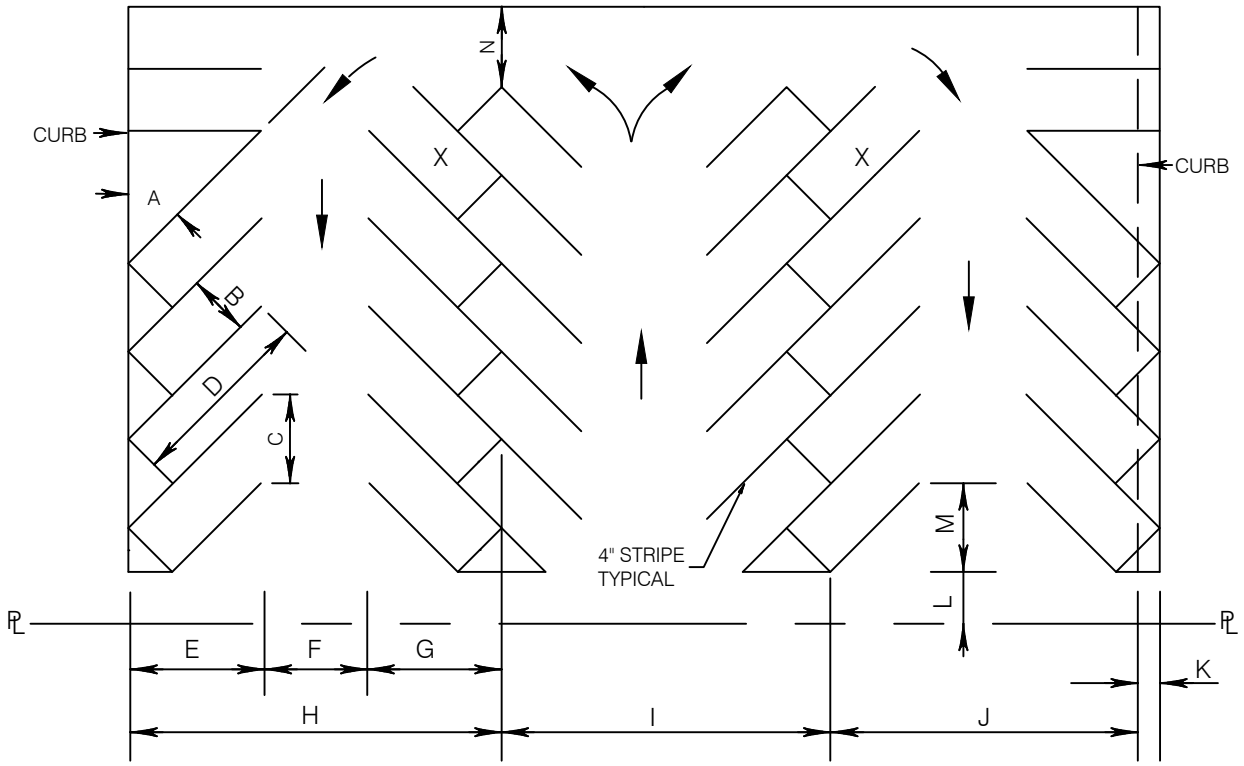
STREET TREE LOCATION

Standard Detail

363

Revision Date

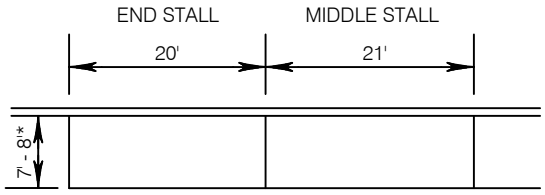
Nov, 2018



X = STALL NOT ACCESSIBLE IN CERTAIN LAYOUTS.

A = PARKING ANGLE
B = STALL WIDTH, PERPENDICULAR TO STALL LINES
C = STALL WIDTH, PARALLEL TO AISLE
D = LENGTH OF STALL LINE
E = STALL DEPTH,PERPENDICULAR TO AISLE
F = AISLE WIDTH, BETWEEN STALL LINES
G = STALL DEPTH, INTERLOCKING
H = MODULE, WALL TO INTERLOCK
I = MODULE, INTERLOCK TO INTERLOCK
J = MODULE, INTERLOCK TO CURB
K = BUMPER OVERHANG
L = OFFSET
M = SETBACK
N = CROSS AISLE, ONE WAY
N = CROSS AISLE, TWO WAY

PARALLEL PARKING:



* USE 8' WHERE THERE IS ADEQUATE PAVEMENT WIDTH. 7' MINIMUM ON EXISTING STREETS AND LOTS WITH LIMITED SPACE

NOTE:

SEE SECTION 3 OF DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS FOR FURTHER CONDITIONS AND RESTRICTIONS.

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

TYPICAL PARKING LAYOUT

Standard Detail

364

Revision Date

Dec, 2016

STALL GEOMETRY

FOR OFF-STREET PARKING

SEE STANDARD DETAIL 364 FOR TYPICAL PARKING LAYOUT

	PARKING ANGLE (DEGREES) A	STALL WIDTH PERPENDICULAR TO STALL LINES B	STALL WIDTH PARALLEL TO AISLE C	LENGTH OF STALL LINE D	STALL DEPTH PERPENDICULAR TO AISLE E	AISLE WIDTH BETWEEN STALL LINES (SEE NOTE 1) F*	STALL DEPTH INTERLOCKING G	MODULE, WALL TO INTERLOCK H	MODULE, INTERLOCK TO INTERLOCK I	MODULE, INTERLOCK TO CURB J	BUMPER, OVERHANG (TYPICAL) K	OFFSET L	SETBACK M	CROSS AISLE (ONE WAY) N	CROSS AISLE (TWO WAY) N
STANDARD	45°	8' 6"	12' 0"	27' 6"	19' 6"	13' 0"	19' 6"	52' 0"	52' 0"	52' 0"	0' 0"	6' 5"	13' 2"	14" 0"	24' 0"
	HS	13' 0"	18' 4"	27' 6"	19' 6"	11' 0"								14" 0"	24' 0"
	VS	16' 0"	22' 6"	32' 0"	22' 7"	12' 0"								14" 0"	24' 0"
	60°	8' 6"	9' 10"	23' 8"	20' 6"	18' 0"	20' 6"	59' 0"	59' 0"	59' 0"	0' 0"	2' 6"	9' 4"	14" 0"	24' 0"
	HS	13' 0"	15' 0"	23' 8"	20' 6"	15' 0"								14" 0"	24' 0"
	VS	16' 0"	18' 0"	26'11"	23' 4"	16' 0"								14" 0"	24' 0"
	90°	8' 6"	8' 6"	18' 0"	18' 0"	24' 0"	18' 0"	60' 0"	60' 0"	60' 0"	0' 0"	0' 0"	0' 0"	14" 0"	24' 0"
	HS	13' 0"	13' 0"	18' 0"	18' 0"	24' 0"								14" 0"	24' 0"
	VS	16' 0"	16' 0"	18' 0"	18' 0"	24' 0"								14" 0"	24' 0"
COMPACT (4)	45°	7' 6"	10' 7"	22' 6"	15' 11"	11' 0"	15' 11"	42' 10"	42' 10"	42' 10"	0' 0"	6' 5"	10' 0"	14" 0"	24' 0"
	60°	7' 6"	8' 8"	19' 4"	16' 9"	14' 0"	16' 9"	47' 6"	47' 6"	47' 6"	0' 0"	2' 6"	7' 5"	14" 0"	24' 0"
	90°	7' 6"	7' 6"	15' 0"	15' 0"	20' 0"	15' 0"	50' 0"	50' 0"	50' 0"	0' 0"	0' 0"	0' 0"	14" 0"	24' 0"

* ONE WAY EXCEPT FOR 90°

NOTES:

1. AISLE WIDTH MAY BE REQUIRED TO BE WIDER IF MULTIPLE UTILITY LINES ARE LOCATED WITHIN THE AISLE CORRIDOR.

2. HS = HANDICAP SPACE, VS = HANDICAP VAN ACCESSIBLE SPACE, (SEE WASHINGTON STATE REGULATIONS FOR BARRIER FREE FACILITIES).

3. COLUMNS MAY ENCROACH UP TO 6" INTO STALL BEFORE STALL WIDENING IS REQUIRED. COLUMNS MAY NOT INTERFERE WITH DOOR SWING OR MANEUVERABILITY IN AND OUT OF THE STALL.

4. COMPACT STALLS ONLY PERMITTED FOR ASSIGNED USAGE. UP TO 50 PERCENT OF PARKING SPACES ARE PERMITTED TO BE COMPACT. IF APPLICANT DESIRES TO IMPLEMENT COMPACT PARKING, A PARKING MANAGEMENT PLAN MUST BE SUBMITTED TO THE CITY FOR REVIEW.

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

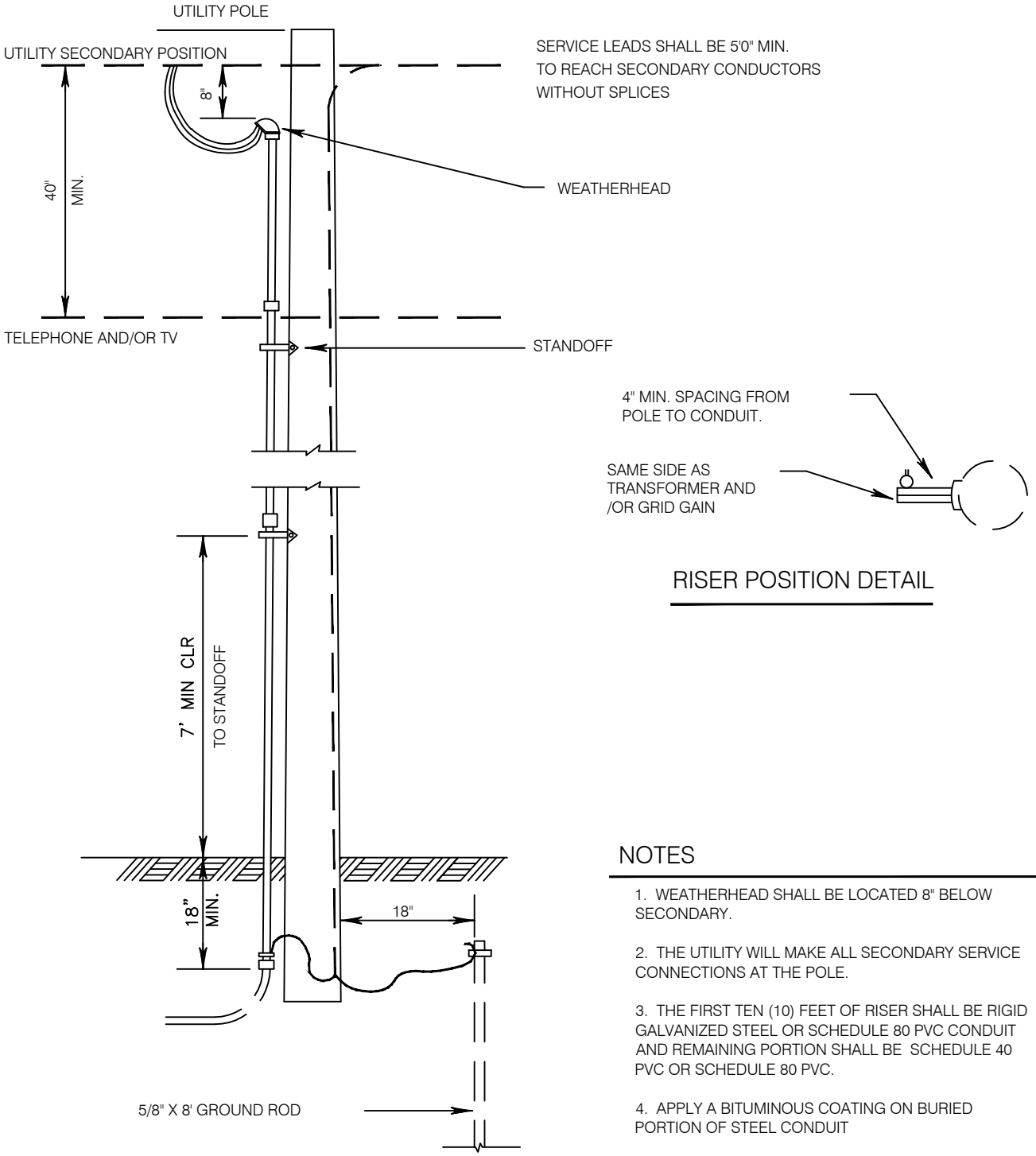
MINIMUM PARKING LOT STALL AND AISLE DIMENSIONS

Standard Detail

365

Revision Date

Dec, 2016



RISER POSITION DETAIL

NOTES

1. WEATHERHEAD SHALL BE LOCATED 8" BELOW SECONDARY.

2. THE UTILITY WILL MAKE ALL SECONDARY SERVICE CONNECTIONS AT THE POLE.

3. THE FIRST TEN (10) FEET OF RISER SHALL BE RIGID GALVANIZED STEEL OR SCHEDULE 80 PVC CONDUIT AND REMAINING PORTION SHALL BE SCHEDULE 40 PVC OR SCHEDULE 80 PVC.

4. APPLY A BITUMINOUS COATING ON BURIED PORTION OF STEEL CONDUIT

5. GROUND CLAMP & TAP TO POLE GROUND REQUIRED WHEN FIRST TEN (10) FEET OF RISER IS RIGID STEEL.

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

CONDUIT RISER FOR PUD SERVICE DROP

Standard Detail

366

Revision Date

Nov, 2013

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

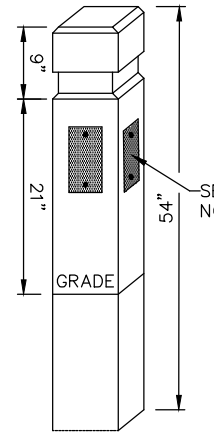
Approved By:

City Engineer

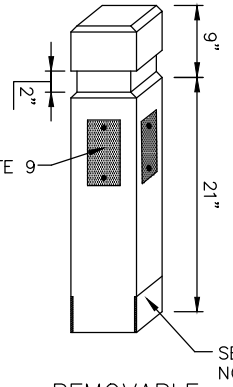
REMOVABLE AND FIXED BOLLARD

Standard Detail **367**

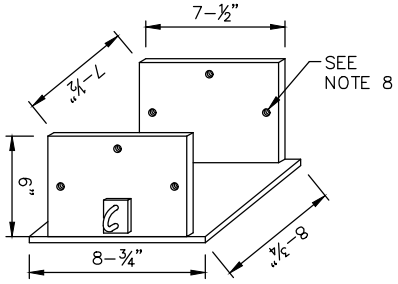
Revision Date Feb, 2012



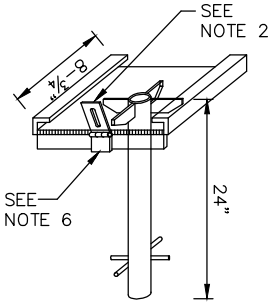
FIXED BOLLARD



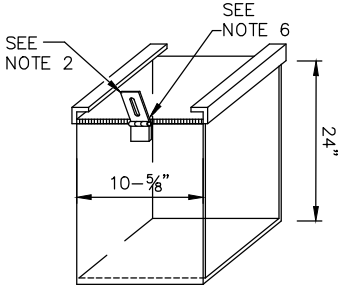
REMOVABLE BOLLARD



SLIDE-THROUGH POST BRACKET
(FOR REMOVABLE BOLLARD)



2" SCHEDULE 40 GALVANIZE PIPE
(FOR SUPPORT PLATE)

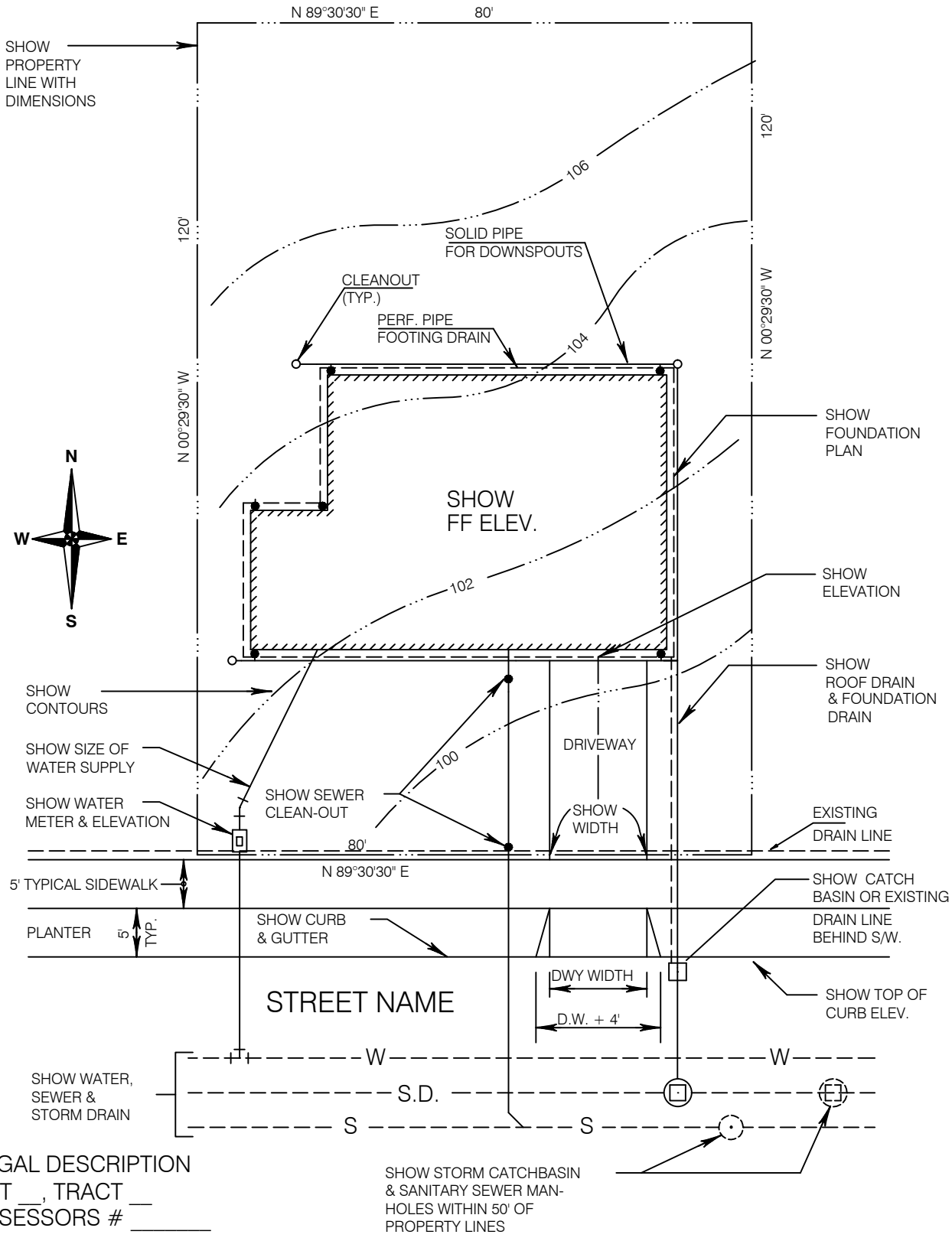


GALVANIZED STEEL PLATE
(FOR SUPPORT PLATE)

ALTERNATE BRACKET SUPPORT
(FOR REMOVABLE BOLLARD)

NOTES:

1. ALL PLATE MATERIALS SHALL BE ⅜" GALVANIZED STEEL.
2. LOCKING HINGE SHALL BE HEAVY DUTY CLASP. PROVIDE ADEQUATE CLEARANCE BETWEEN PAVEMENT & CLASP TO ALLOW CLASP TO LIE FLAT WHEN OPEN.
3. BOLLARD SHALL BE MANUFACTURED FROM 8" X 8" DOUGLAS FIR #2 OR BETTER AND PRESSURE-TREATED WITH LP-22.
4. REMOVABLE BOLLARD INSTALLATION: PIPE BASES ARE SET IN A 12" DIAMETER HOLE, 32" DEEP; PLATE BASES ARE SET IN A HOLE WITH 2" OF CLEARANCE ON ALL SIDES AND BOTH ARE TO BE BACKFILLED WITH CONCRETE. LOCK HASP FACES THE STREET.
5. FIXED BOLLARD INSTALLATION: SET FIXED BOLLARDS IN A IN A 16" DIAMETER HOLE, 24" DEEP, AND BACKFILL WITH CONCRETE.
6. USE ¼" WELD (BOTH SIDES) TO MOUNT CLASP.
7. FOR REMOVABLE BOLLARD BASE BRACKET INCISE ¼" TO FIT BOLLARD BASE.
8. FOR REMOVABLE BOLLARD SLIDE THROUGH POST BRACKET. DRILL THREE HOLES FOR ½" x 1.5" MACHINE SCREWS (STAINLESS STEEL) AS SHOWN.
9. FOR BOLLARD REFLECTIVITY USE HIGH INTENSITY DELINEATOR 4" x 8" ZUMAR OR EQUIVALENT; USE WHITE COLOR ONLY. INSTALL ON ALL SIDES OF THE BOLLARD VISIBLE FROM APPROACHING BICYCLIST. FASTEN WITH STAINLESS STEEL LAG SCREWS.
10. DELINEATORS SHOULD BE ATTACHED TO ALL BOLLARDS THAT ARE LOCATED WITHIN THE CITY OF BOTHELL OR AS SPECIFIED BY ENGINEER.



LEGAL DESCRIPTION
LOT __, TRACT __
ASSESSORS # _____

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

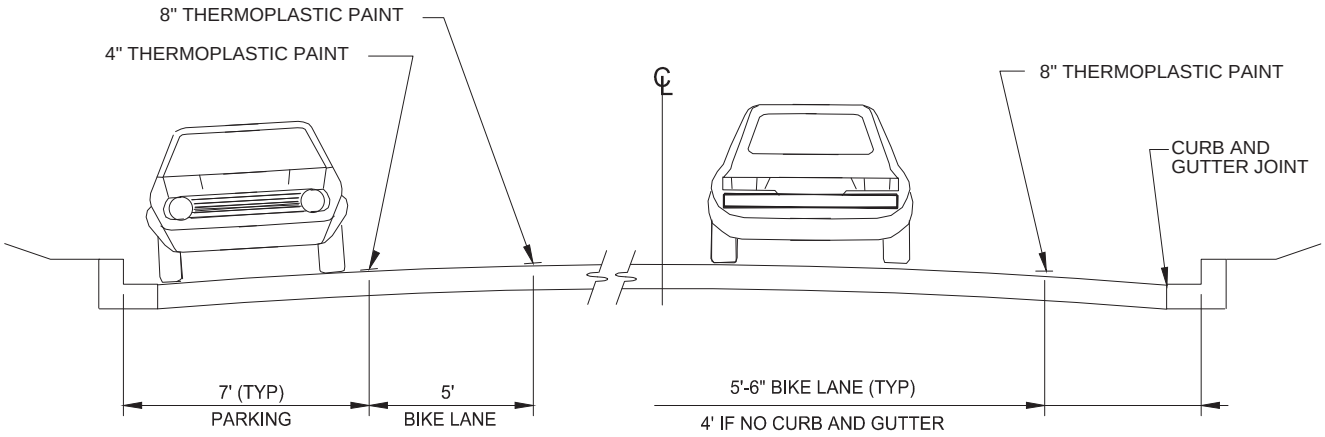
City Engineer

TYPICAL SITE PLAN

Standard Detail

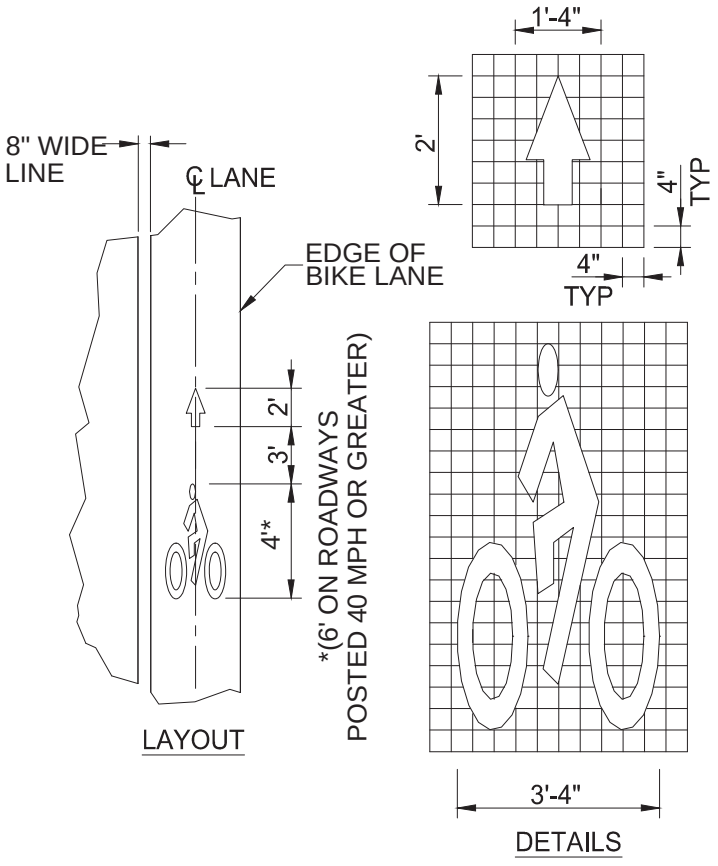
369

Revision Date
Nov, 2013

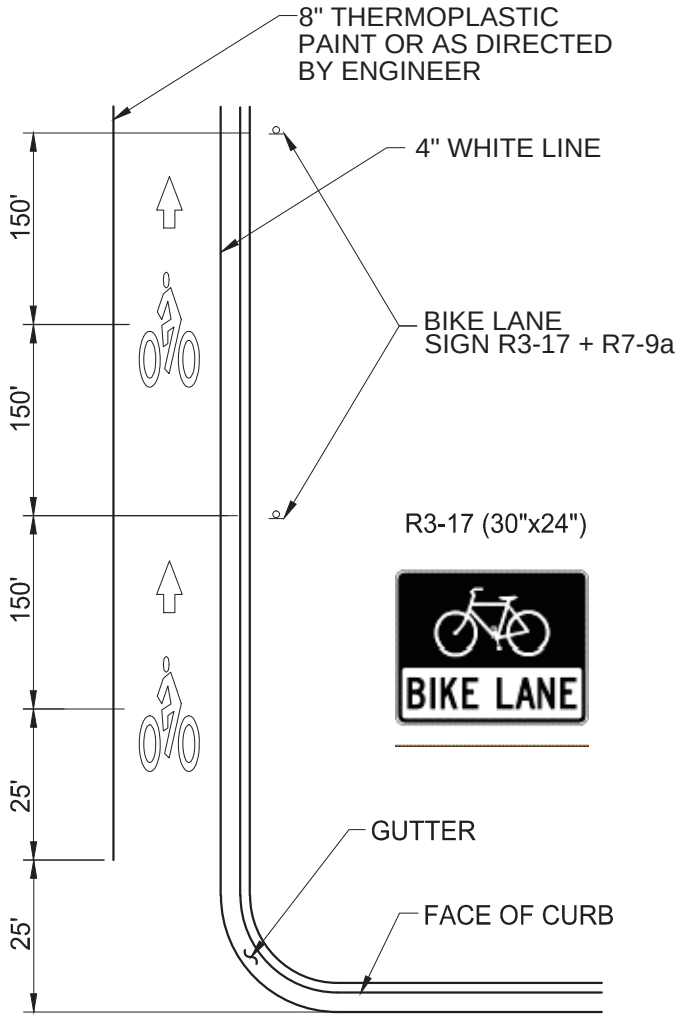


BICYCLE LANE WITH PARKING
NTS

BICYCLE LANE WITHOUT PARKING
NTS



BICYCLE LANE SYMBOL
NTS



TYPICAL BICYCLE LANE
NTS

NOTE:

USE THERMOPLASTIC EXCEPT FOR BIKE SYMBOL (PAINT ONLY),UNLESS DIRECTED OTHERWISE BY ENGINEER.

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

BICYCLE LANES

Standard Detail

370

Revision Date

Nov, 2013

City of Bothell

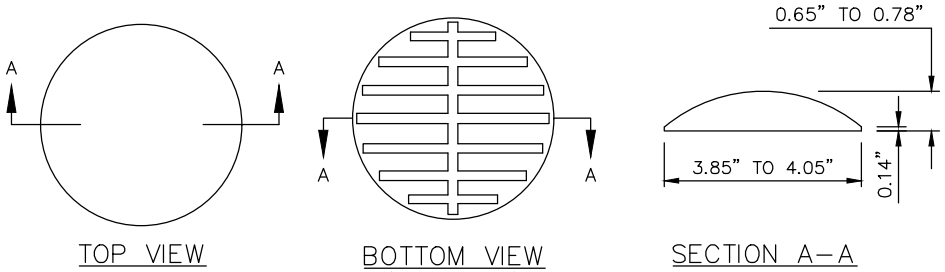
City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

RAISED PAVEMENT MARKER



TOP VIEW

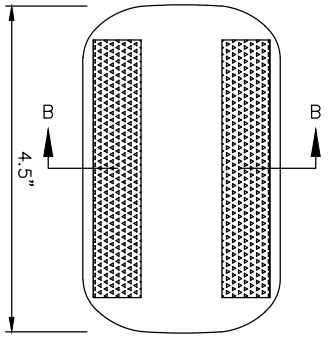
BOTTOM VIEW
(SEE NOTE 2)

SECTION A–A

TYPE 1

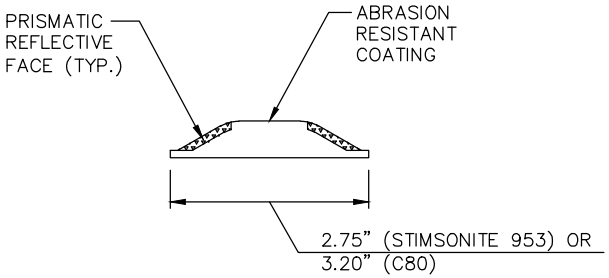
NOTES:

1. TYPE 1 MATERIAL– MARKER SHALL BE MOLDED OF A HIGH IMPACT, RECYCLED ACRYLONITRILE BUTADIENE STYRENE (ABS), CONFORMING TO ASTM SPEC DI 78888.
2. MARKER BOTTOM SHALL ALLOW UPWARD FLOW OF ADHESIVE AND VENTING TO PREVENT AIR ENTRAPMENT.



PLAN

DIRECTION OF TRAFFIC



SECTION B–B

TYPE 2

NOTES:

1. RAISED PAVEMENT MARKERS TYPE 2 SHALL BE STIMSONITE 953 OR C80.
2. SUBSTITUTE PAVEMENT MARKERS SHALL NOT BE ACCEPTED WITHOUT WRITTEN APPROVAL BY ENGINEER, PRIOR TO THE INSTALLATION.
3. ALL MARKERS INSTALLED ON CEMENT CONCRETE PAVEMENT SHALL BE INSTALLED WITH AN EAS–60 TWO PART EPOXY.
4. ALL MARKERS INSTALLED ON HMA PAVEMENTS SHALL BE INSTALLED WITH BITUMINOUS ADHESIVE, CRAFCO STANDARD PAVEMENT MARKER ADHESIVE.

Standard Detail

371

Revision Date

Feb, 2012

NOTES:

1. A SINGLE LINE OF TYPE 2 RAISED PAVEMENT MARKERS MAY BE APPROPRIATE FOR CENTER LINE ON LOWER VOLUME STREETS, AS APPROVED BY ENGINEER.
2. FOR RAISED PAVEMENT MARKER DETAIL, SEE STD DETAIL 371.

● TYPE 1 RAISED PAVEMENT MARKER
□ TYPE 2 RAISED PAVEMENT MARKER

SEE STD DETAIL 371

TYPE 2 RPM RAISED FACE COLORS	
TYPE 2YY	YELLOW AND YELLOW
TYPE 2W	WHITE–ONE SIDE ONLY
TYPE 2Y	YELLOW–ONE SIDE ONLY
TYPE 1 RPM COLORS	
TYPE 1W	WHITE
TYPE 1Y	YELLOW

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

RAISED PAVEMENT LANE MARKING ARTERIAL

Standard Detail

372

Revision Date

Feb, 2012

TYPE 2 RPM RAISED FACE COLORS	
TYPE 2YY	YELLOW AND YELLOW
TYPE 2W	WHITE–ONE SIDE ONLY
TYPE 2Y	YELLOW–ONE SIDE ONLY
TYPE 1 RPM COLORS	
TYPE 1W	WHITE
TYPE 1Y	YELLOW

● TYPE 1 RAISED PAVEMENT MARKER
□ TYPE 2 RAISED PAVEMENT MARKER

NOTES:

MATERIAL SHALL BE THERMOPLASTIC OR RAISED PAVEMENT MARKER. FINAL DETERMINATION TO BE MADE BY ENGINEER.

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

LANE DROP AND INTERSECTION CHANNELIZATION LINES

Standard Detail

373

Revision Date

Feb, 2012

NOTE:

MATERIAL SHALL BE THERMOPLASTIC UNLESS OTHERWISE APPROVED BY ENGINEER.

DETAIL E – STRAIGHT/LEFT

DETAIL B – RIGHT

DETAIL D – STRAIGHT

DETAIL A – LEFT

DETAIL C – TWO WAY LEFT TURN

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

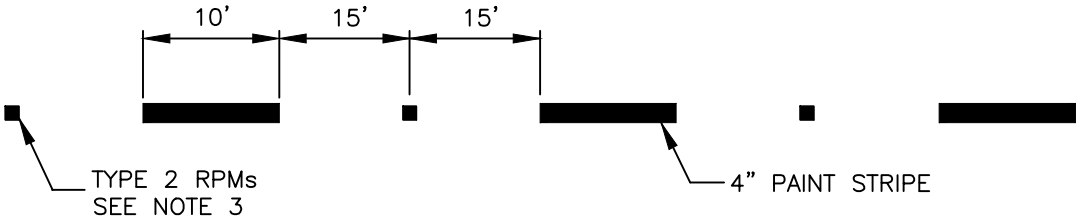
PAVEMENT ARROW MARKINGS

Standard Detail

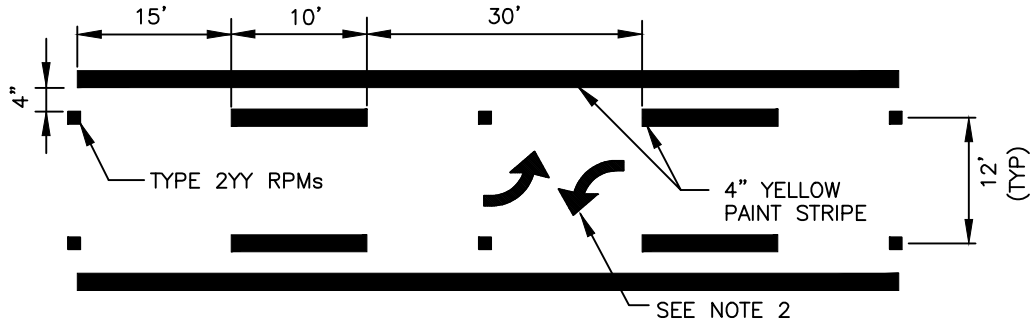
374

Revision Date

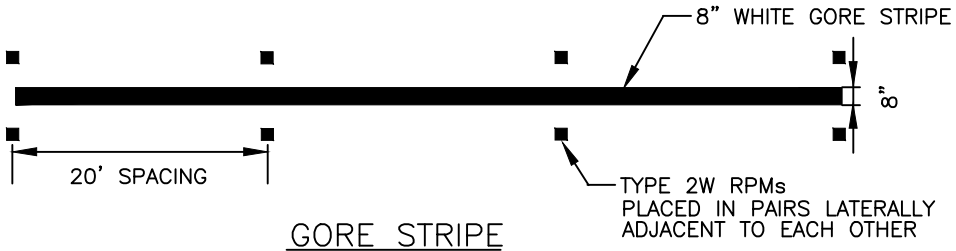
Feb, 2012



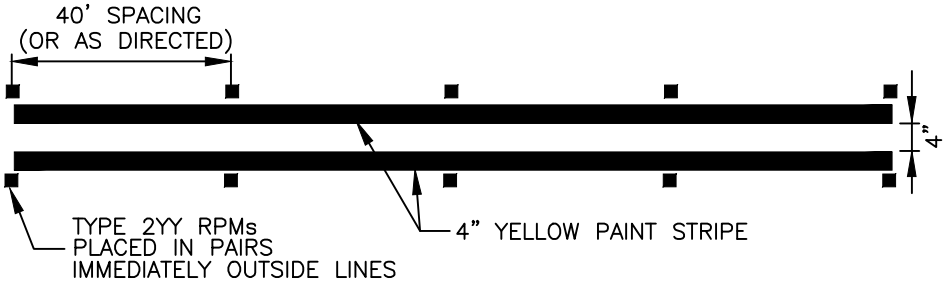
SKIP CENTER & LANE STRIPE



TWO–WAY LEFT TURN



GORE STRIPE



DOUBLE YELLOW CENTER

NOTES:

1. MATCH EXISTING PAVEMENT MARKING DIMENSIONS.
2. SEE STD DETAIL 376 FOR TWO–WAY LEFT TURN ARROW PLACEMENT.
3. RAISED PAVEMENT MARKER COLOR SHALL CONFORM TO THE COLOR OF THE MARKING FOR WHICH THEY SUPPLEMENT, SUBSTITUTE FOR, OR SERVE AS A POSITIONING GUIDE FOR.
4. ALL STRIPING NOTED SHALL BE IN THERMAL PLASTIC.

City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	RAISED PAVEMENT LANE MARKING COLLECTOR	Standard Detail **375** Revision Date Feb, 2012

LEFT TURN LANE

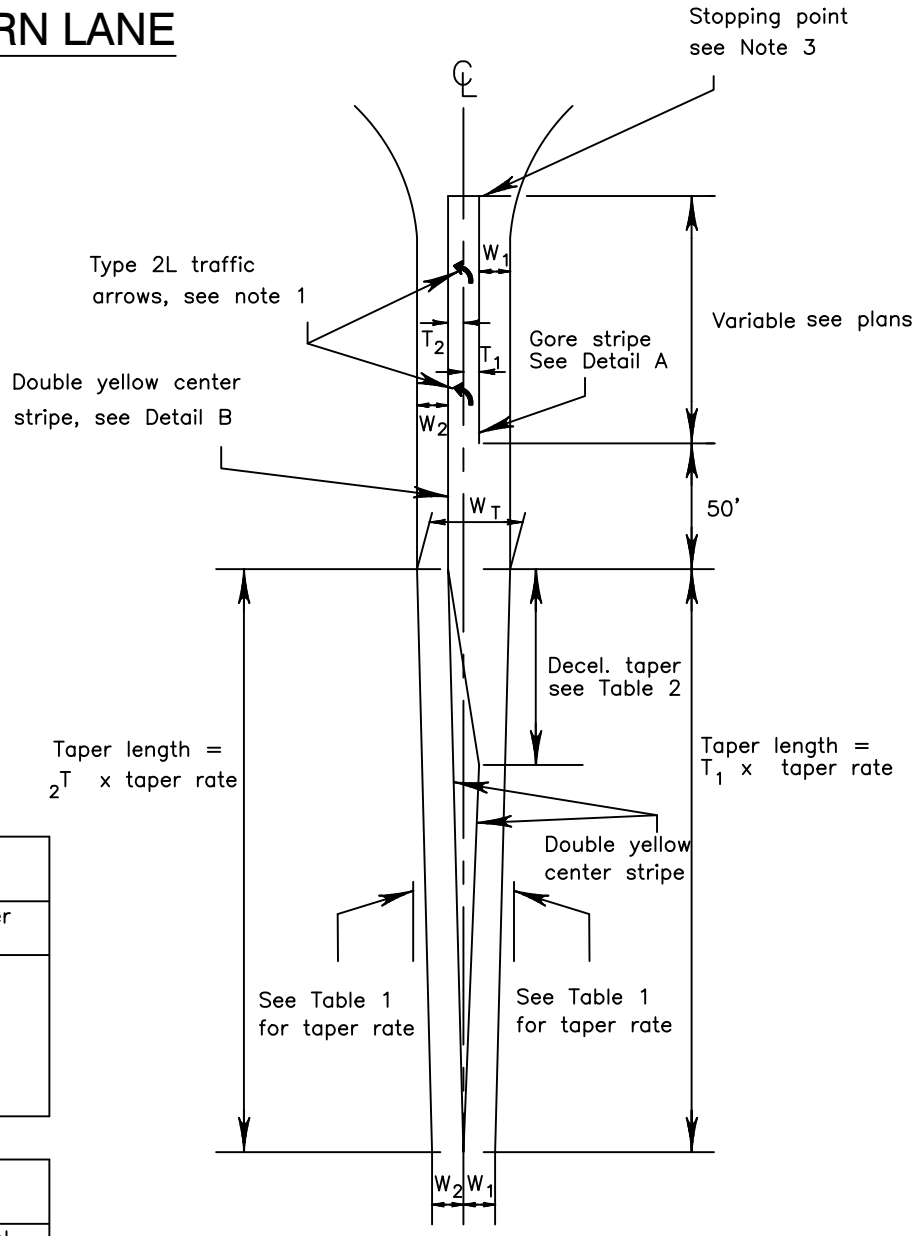


TABLE 1	
Posted Speed	Taper Rate
45 mph	45:1
40 mph	40:1
35 mph	35:1
30 mph	30:1
25 mph	25:1

TABLE 2	
Posted Speed	Decel . Taper Length
45 mph	135'
40 mph	120'
35 mph	105'
30 mph	90'
25 mph	70'

LEGEND

W_1 = Approaching Through Lane

W_2 = Departing Lane

T_1 = Width of Left Turn lane on approach side of ℄

T_2 = Width of Left Turn lane on departure side of ℄

W_1 = Total width of channelization $(W_1 + W_2 + T_1 + T_2)$

NOTES:

1. First Type 2L arrow is installed 50' back of stop bar or crosswalk. Second arrow is located 100' back, or at left turn pocket.
2. Stop bar is to be installed at the stopping point only when mainline movement is controlled by a stop sign or traffic signal.
3. See Std Detail 372 for marker designation.

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

LEFT TURN LANE MARKINGS

Standard Detail

376

Revision Date

Jun, 2015

NOTES:

1. DIMENSIONS SHOWN MAY BE MODIFIED TO ACCOMMODATE DRIVEWAYS.
2. SEE ENGINEER FOR POCKET LENGTH AND FOR LAYOUT AND PLACEMENT OF TURN ARROWS.
3. SEE DETAIL 380 FOR CROSSWALK TYPICAL DIMENSIONS.

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

LEFT TURN AND TWO WAY LEFT TURN LANE MARKINGS

Standard Detail

377

Revision Date

Nov, 2018

NOTES:

1. DIMENSIONS SHOWN MAY BE MODIFIED TO ACCOMMODATE DRIVEWAYS.
2. SEE ENGINEER FOR POCKET LENGTH AND FOR LAYOUT AND PLACEMENT OF TURN ARROWS.
3. SEE DETAIL 380 FOR CROSSWALK TYPICAL DIMENSIONS.

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

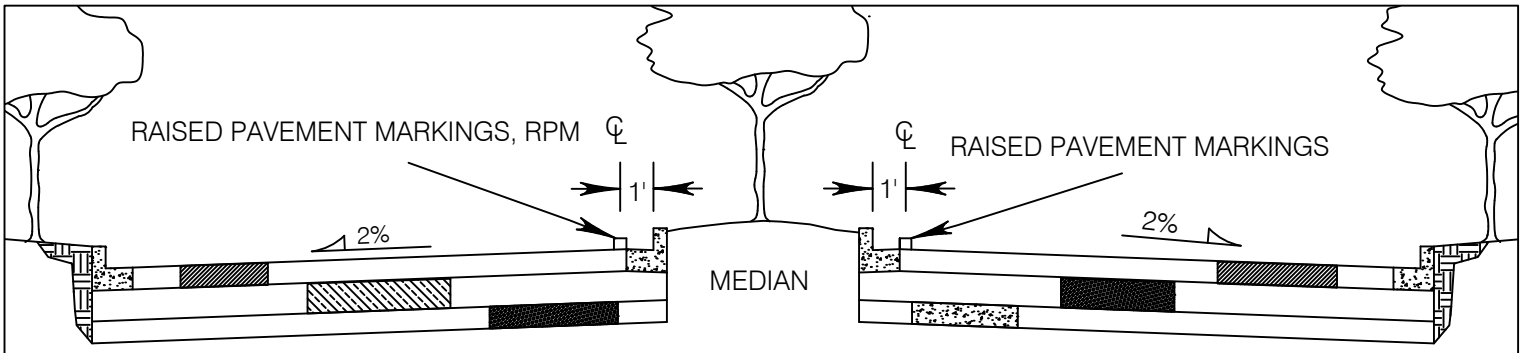
INTERSECTION CHANNELIZATION MARKINGS

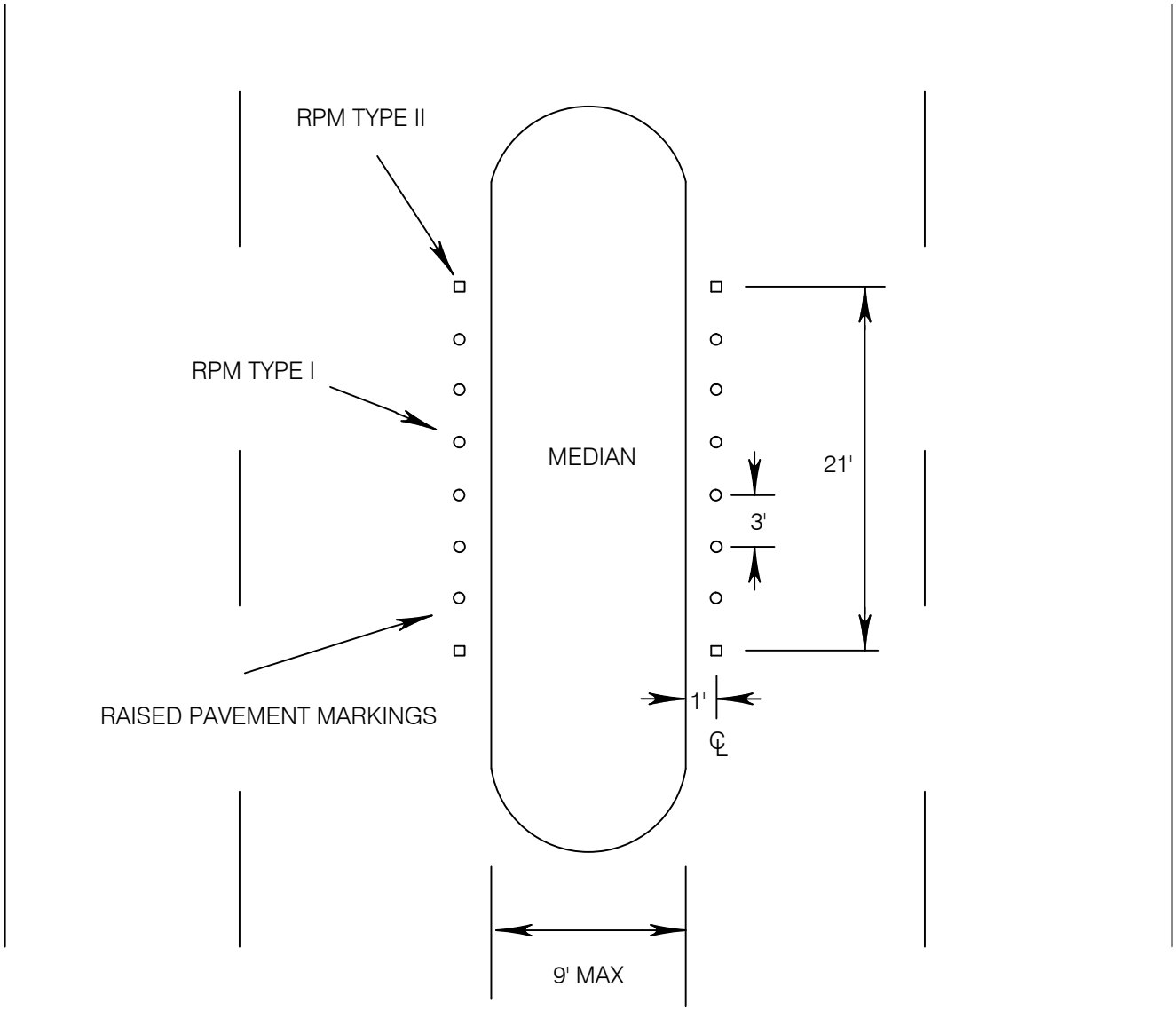
Standard Detail

378

Revision Date

Nov, 2018





City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

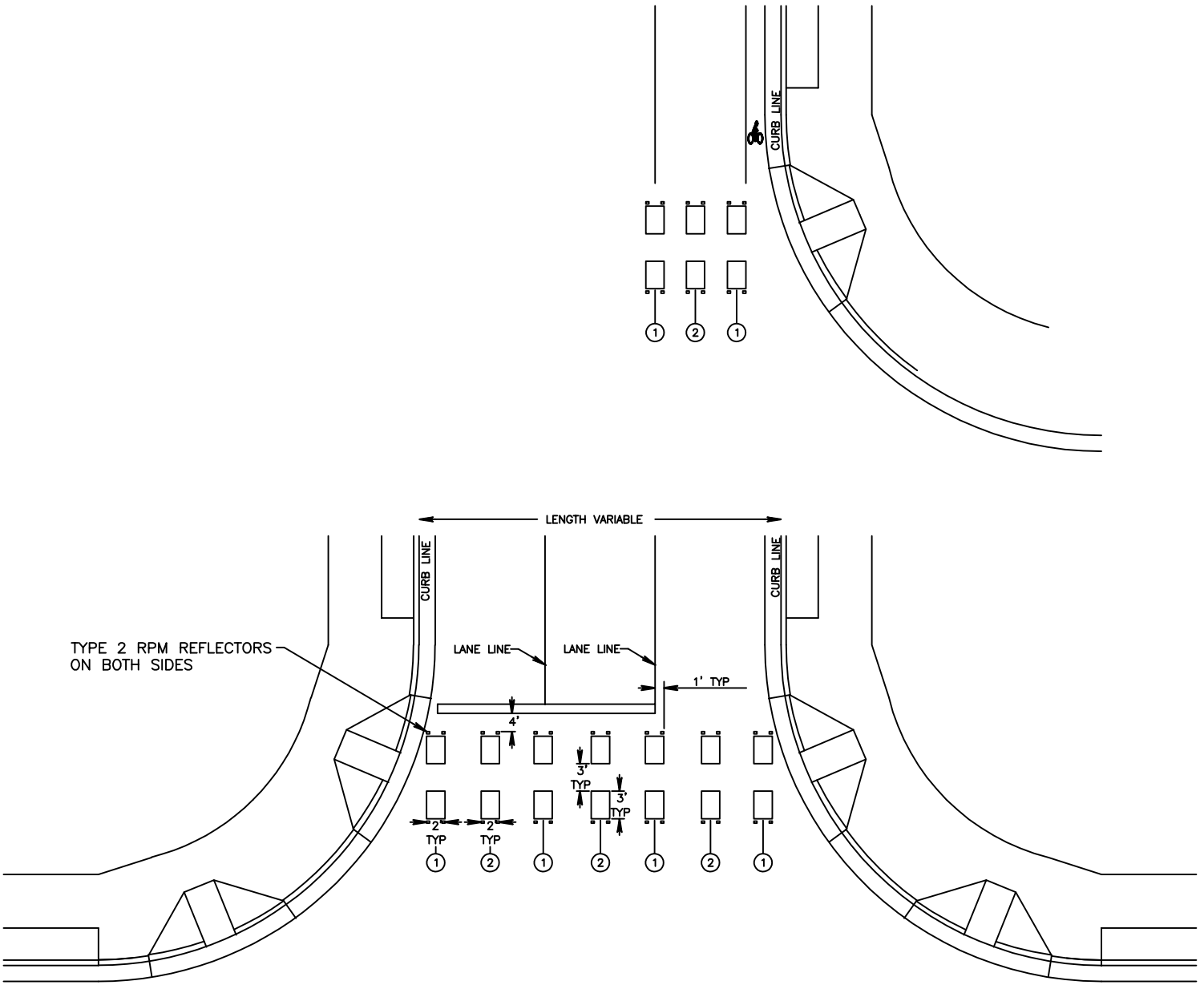
LOCATION OF RPMs

Standard Detail

379

Revision Date

Dec, 2016



① LANE LINE STRIP: THIS IS LOCATED IN THE LINE WITH EACH LANE LINE AND HALF THE STRIP ON EACH SIDE.
IF TYPE II OR III BIKE LANES PUT OUTSIDE AND BAR IN ALIGNMENT.

② MID LINE STRIP: THIS IS LOCATED MID WAY BETWEEN EACH LANE LINE STRIP.

NOTES:

1. THERMOPLASTIC AND RPM MATERIALS SHALL BE USED UNLESS OTHERWISE DIRECTED BY ENGINEER.
2. FOR CEMENT CONCRETE CROSSINGS: APPROVED ADHESIVE PRIMER OR SCARIFICATION PRIOR TO THERMOPLASTIC INSTALLATION

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

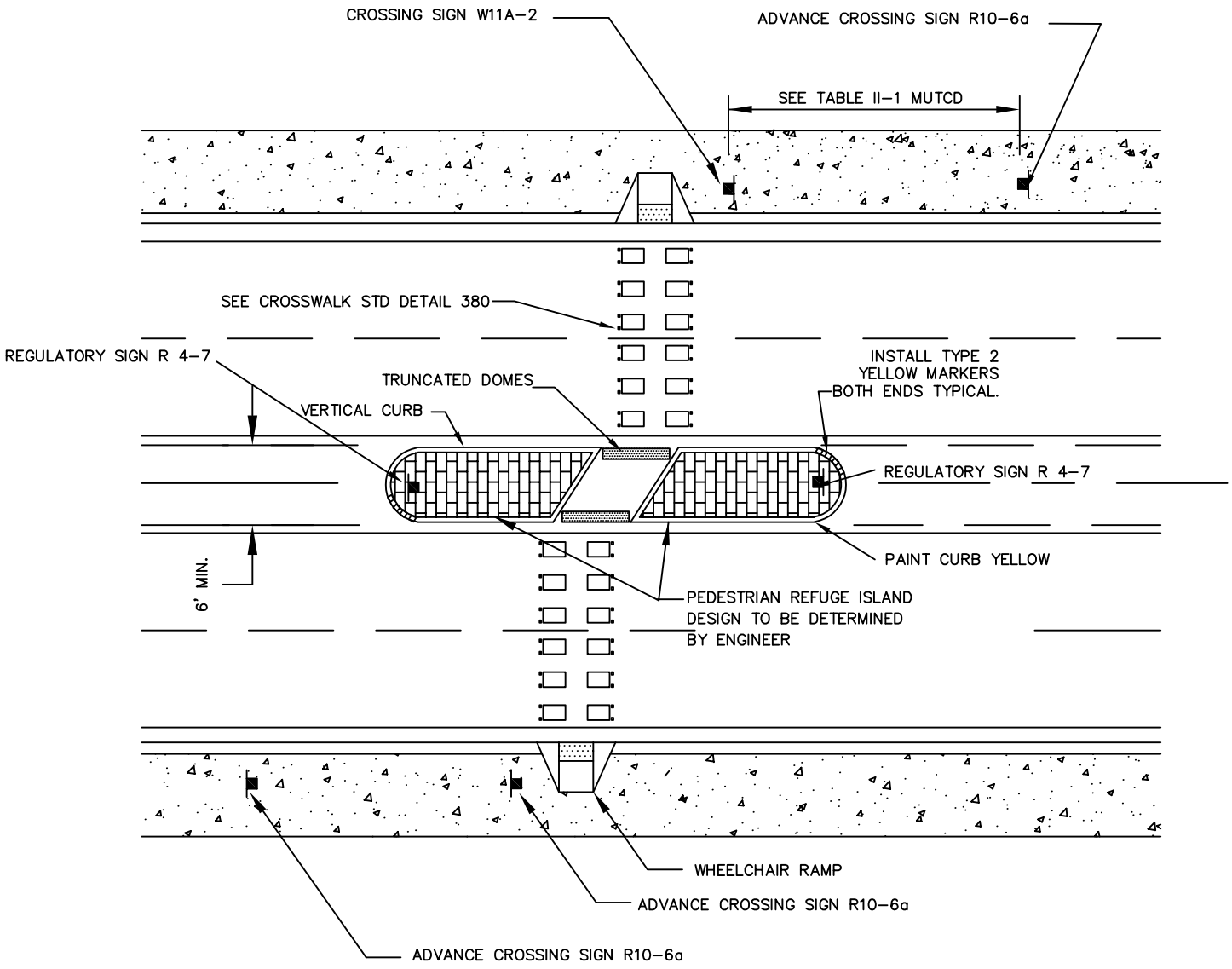
TYPICAL CROSSWALK STRIPING

Standard Detail

380

Revision Date

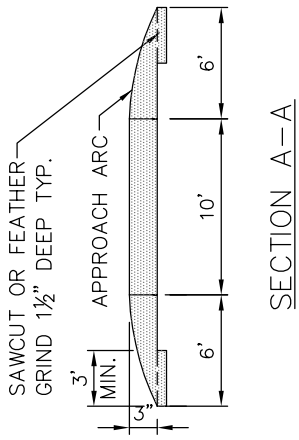
Nov, 2018



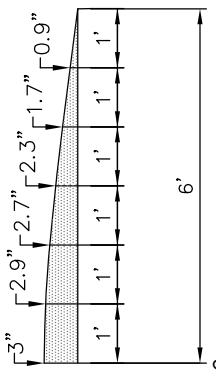
NOTE:

FOR CEMENT CONCRETE CROSSINGS: APPROVED ADHESIVE PRIMER OR SCARIFICATION PRIOR TO THERMOPLASTIC INSTALLATION

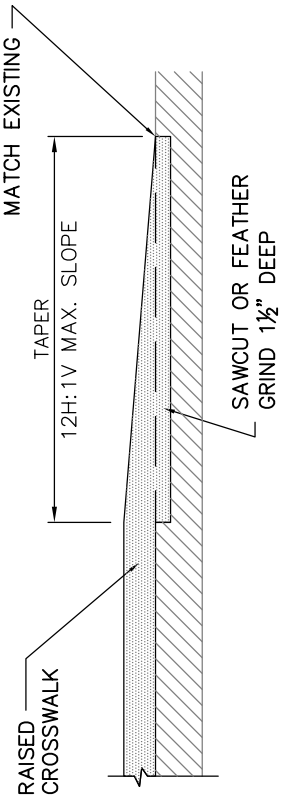
City of Bothell™	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	MEDIAN CROSSWALK	Standard Detail **381** Revision Date Nov, 2018



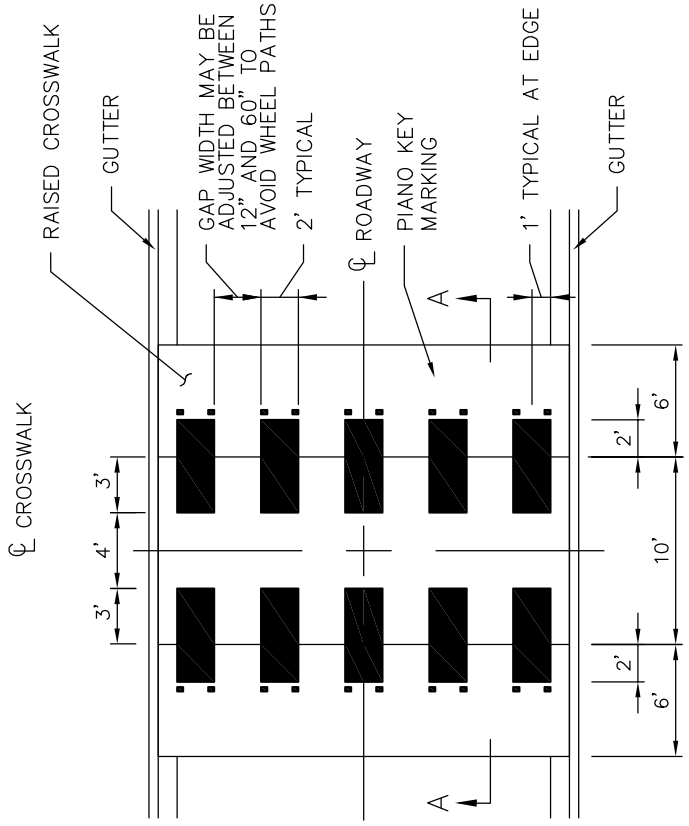
SECTION A–A



APPROACH ARC DETAIL



RAISED CROSSWALK/ASPHALT WIDENING SECTION



MARKING DETAIL

NOTE:

FOR CEMENT CONCRETE CROSSINGS: APPROVED ADHESIVE PRIMER OR SCARIFICATION PRIOR TO THERMOPLASTIC INSTALLATION

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

RAISED CROSSWALK

Standard Detail

382

Revision Date

Nov, 2018

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

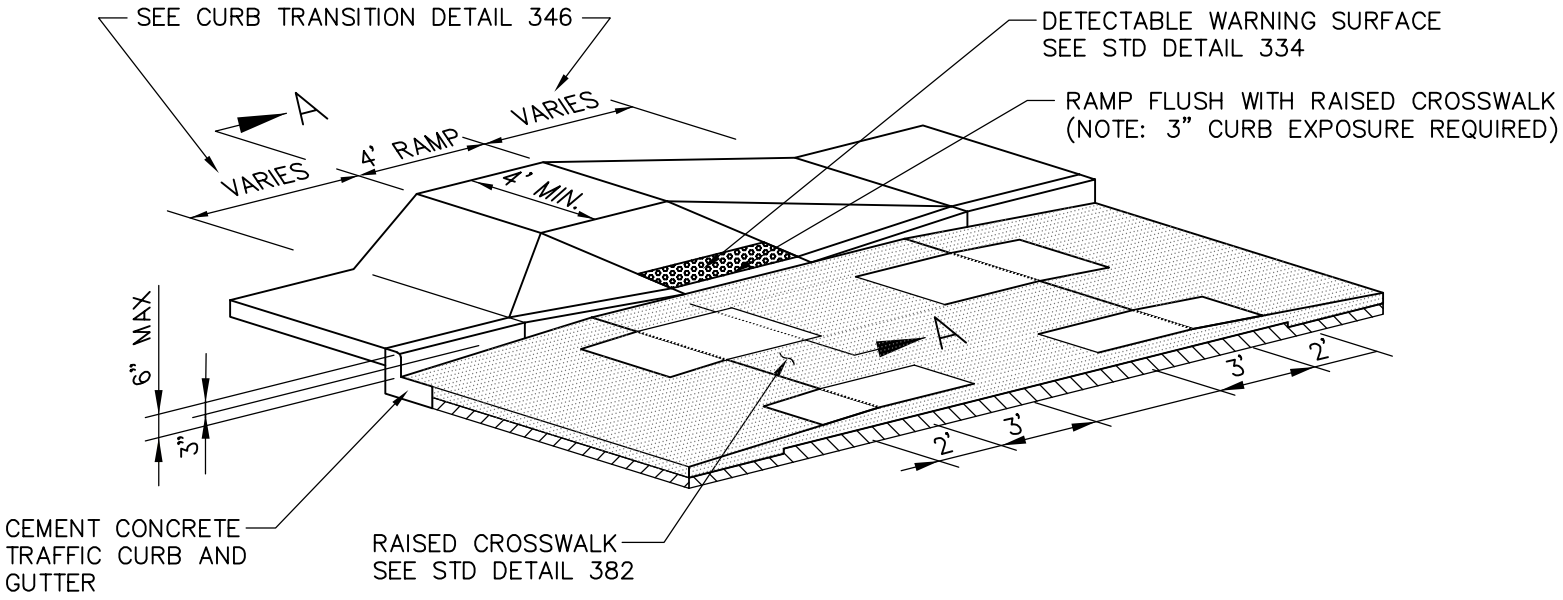
Approved By:

City Engineer

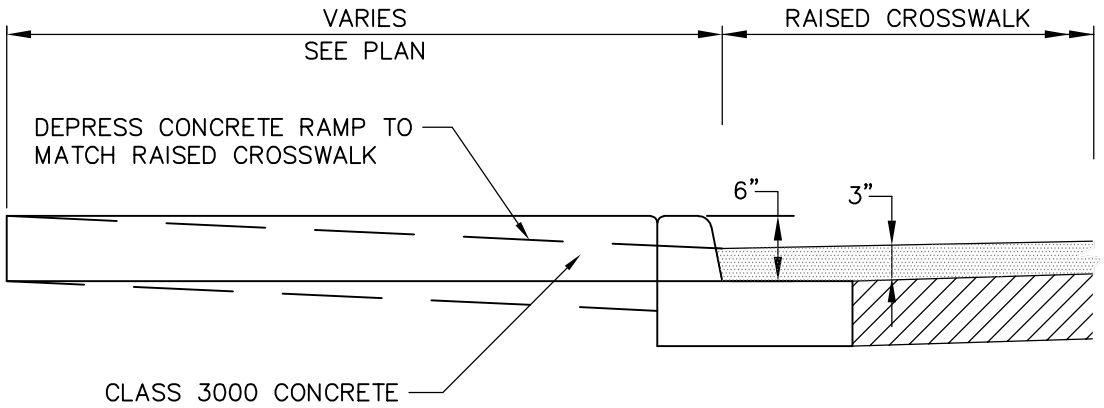
RAISED CROSSWALK ADJACENT TO SIDEWALK RAMP

Standard Detail **383**

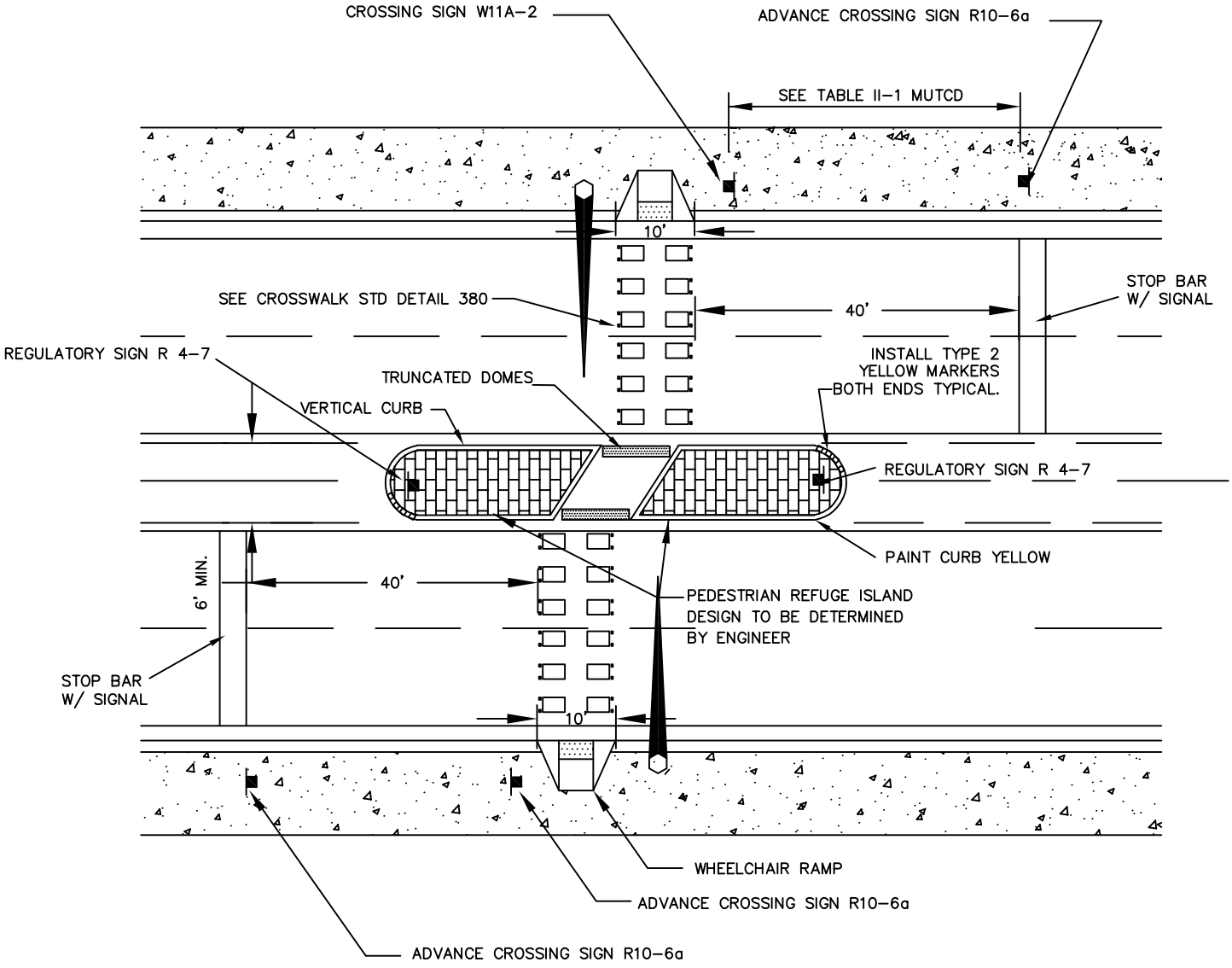
Revision Date Nov. 2018



MODIFIED SIDEWALK RAMP TYPE 1



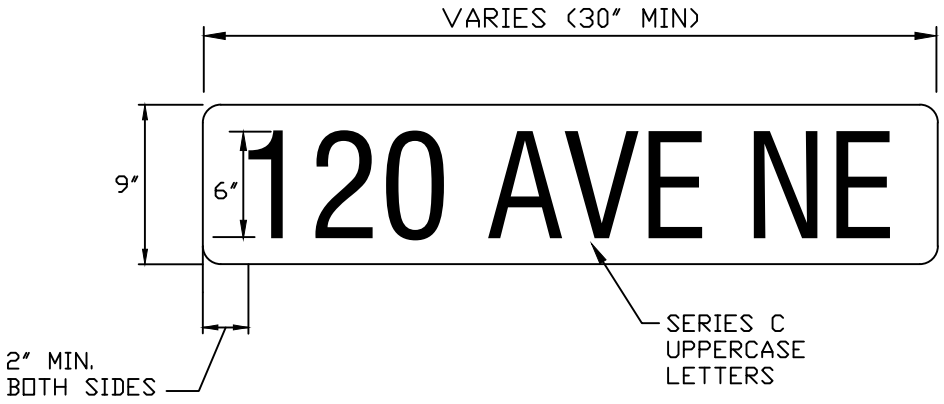
SECTION A–A

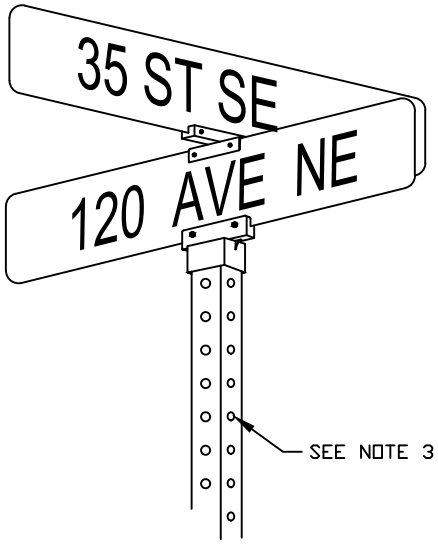


NOTE:

FOR CEMENT CONCRETE CROSSINGS: APPROVED ADHESIVE PRIMER OR SCARIFICATION PRIOR TO THERMOPLASTIC INSTALLATION

City of Bothell™	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	MEDIAN CROSSWALK SIGNALIZED	Standard Detail **384** Revision Date Nov, 2018





NOTES:

1. SIGN:
   9"x VARIES (MIN. 30"), EXTRUDED ALUMINUM, TREATED.

2. BACKGROUND AND COPY:
   WHITE LETTERS ON GREEN BACKGROUND. USE 3M HIGH INTENSITY PRISMATIC REFLECTIVE, 6" UPPERCASE, C SERIES LETTERS OVER 3M HIGH INTENSITY PRISMATIC REFLECTIVE SHEETING, OR SCREEN WHITE INK ONTO GREEN 3M HIGH INTENSITY PRISMATIC REFLECTIVE SHEETING.

3. POST:
   2"x2" TELESPAR SQUARE METAL POST.

4. HARDWARE:
   SQUARE METAL POST: 850 EXL2 CAP, 850 EX90 CROSSPIECE (ZUMAR OR APPROVED EQUAL).

City of Bothell™	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	STREET NAME SIGN POST MOUNTED COLLECTOR AND LOCAL ACCESS STREETS	Standard Detail **385** Revision Date Dec, 2016

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

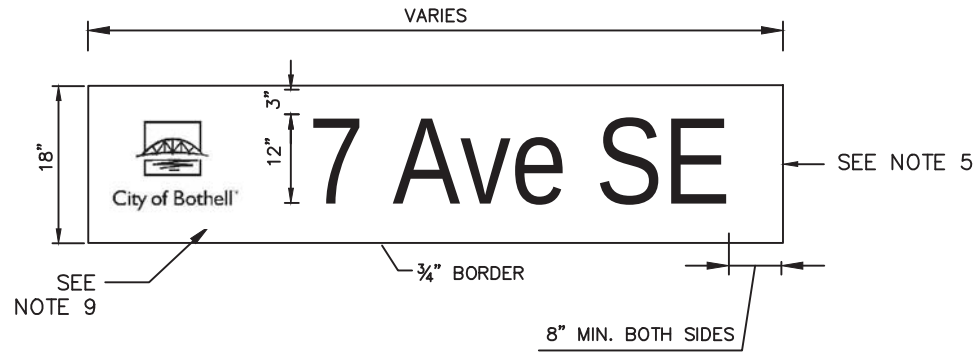
Approved By:
City Engineer

STREET NAME SIGNS
TYPES A,B,C ON
MAST ARM

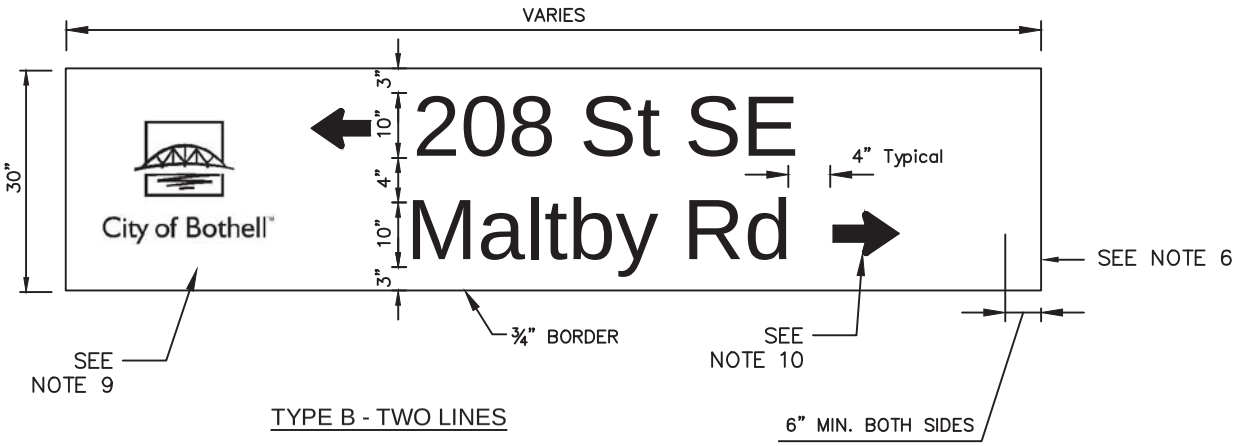
Standard Detail

386

Revision Date
Feb, 2012



TYPE A - NUMERIC

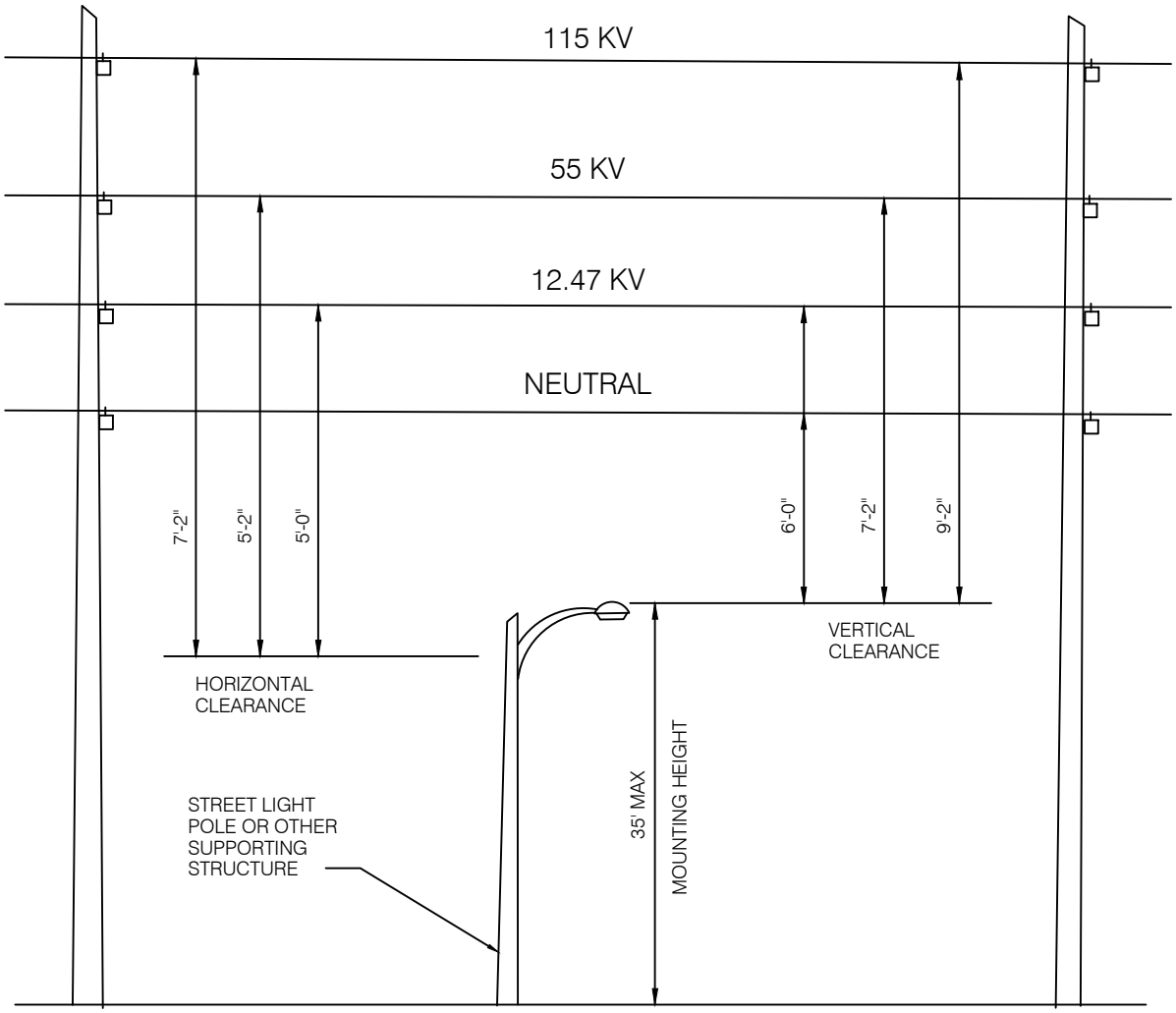


TYPE B - TWO LINES

TYPE C - ALL LETTERS

NOTES:

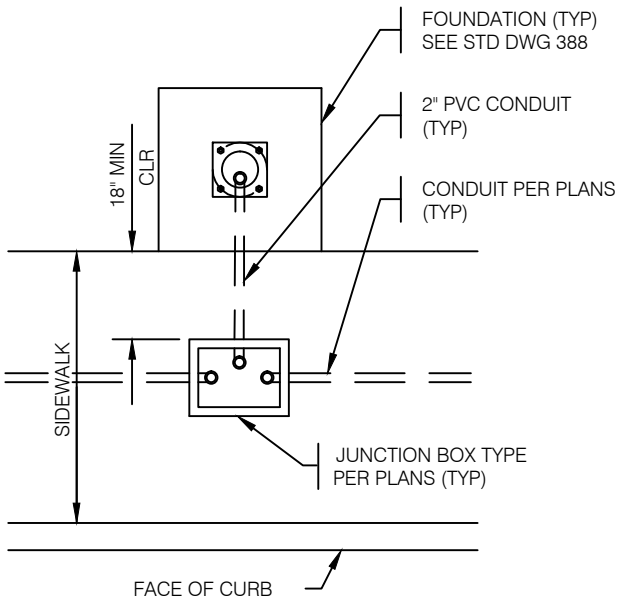
1. SIGN:
   ALUMINUM, TREATED, 0.125 GAUGE.
2. BACKGROUND:
   GREEN, 3M DIAMOND GRADE CUBED SERIES 4000 SHEETING, 3/4" WHITE BORDER, NO MARGIN.
3. COPY:
   WHITE DIAMOND GRADE VIP CUT-OUT LETTERS OR 3M SCOTCHLITE EC FILM SERIES 1170. COPY MAY ALSO BE SCREENED ONTO BACKGROUND, SEE SECTION 9-28 OF THE LATEST WSDOT STANDARD SPECIFICATIONS.
4. FONT:
   HIGHWAY GOTHIC SERIES D.
5. TYPE A – NUMERIC:
   12" SERIES D UPPER CASE AND LOWER CASE EXCEPT SUFFIX (th,st,etc) IS 10" SERIES D LOWER CASE.
6. TYPE B – TWO LINES:
   10" SERIES D UPPER CASE AND LOWER CASE EXCEPT SUFFIX (th,nd,rd.) IS 8" SERIES D LOWER CASE.
7. TYPE C – ALL LETTERS:
   12" SERIES D UPPER CASE AND LOWER CASE. USE 18" SIGN HEIGHT.
8. FOR SIGN ATTACHMENT DETAILS, SEE WSDOT STANDARD PLAN G-9b.
9. SEE CITY OF BOTHELL LOGO GUIDELINES.
10. STANDARD 6" x 9" ARROW.
11. MAST ARM STREET NAME SIGNS SHALL BE CONSTRUCTED USING INTERNALLY ILLUMINATED LED PANELS.



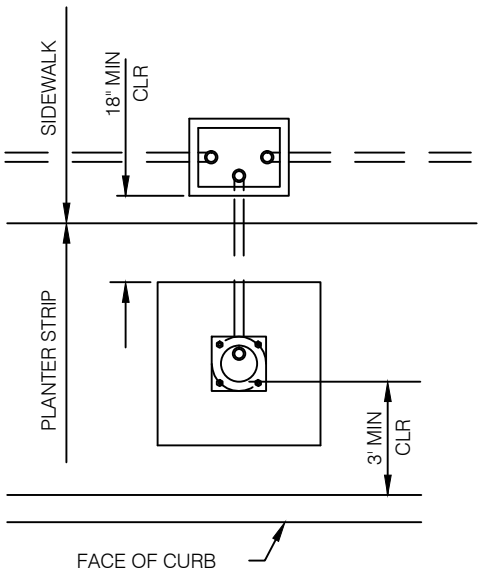
NOTES:

1. FOR ADDITIONAL INFORMATION ON MIN. CLEARANCES REFER TO P.U.D. No. 1 CONSTRUCTION STANDARDS SECTION 4
2. ALL FINAL INSTALLATION CLEARANCES FROM EXISTING UTILITIES MUST BE APPROVED BY THE AFFECTED UTILITY.

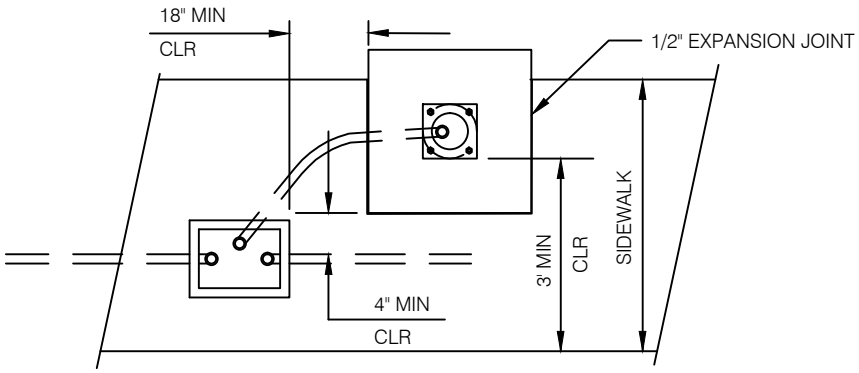
City of Bothell™	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	LUMINARY MOUNTING HEIGHT AND UTILITY CLEARANCES	Standard Detail **387** Revision Date Nov, 2013



CONDITION 1



CONDITION 2



NOTES:

1. IF POLE FOUNDATION FALLS WITHIN SIDEWALK AREA, TOP OF FOUNDATION WILL BE FLUSH WITH FINISHED SIDEWALK AND BE FINISHED IN THE SAME MANNER AS SIDEWALK.

2. 1/2" EXPANSION JOINT WILL BE PLACED BETWEEN FOUNDATION AND SIDEWALK.

CONDITION 3

GENERAL NOTES:

1. CONDITION 1 & 2 ARE NORMAL INSTALLATION OPTIONS DEPENDING ON STREET DESIGN.

2. CONDITION 3 INSTALLATION IS ALLOWED WITH APPROVAL OF DIRECTOR WHERE EXISTING R/W OR PHYSICAL CONDITIONS WARRANT THIS TYPE INSTALLATION.

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

STREET LIGHT LOCATION ALTERNATES

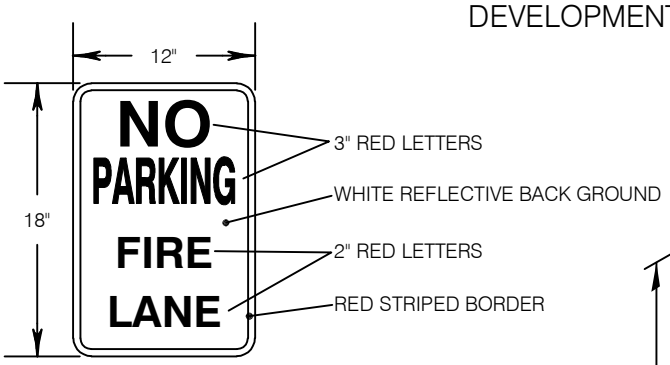
Standard Detail

388

Revision Date

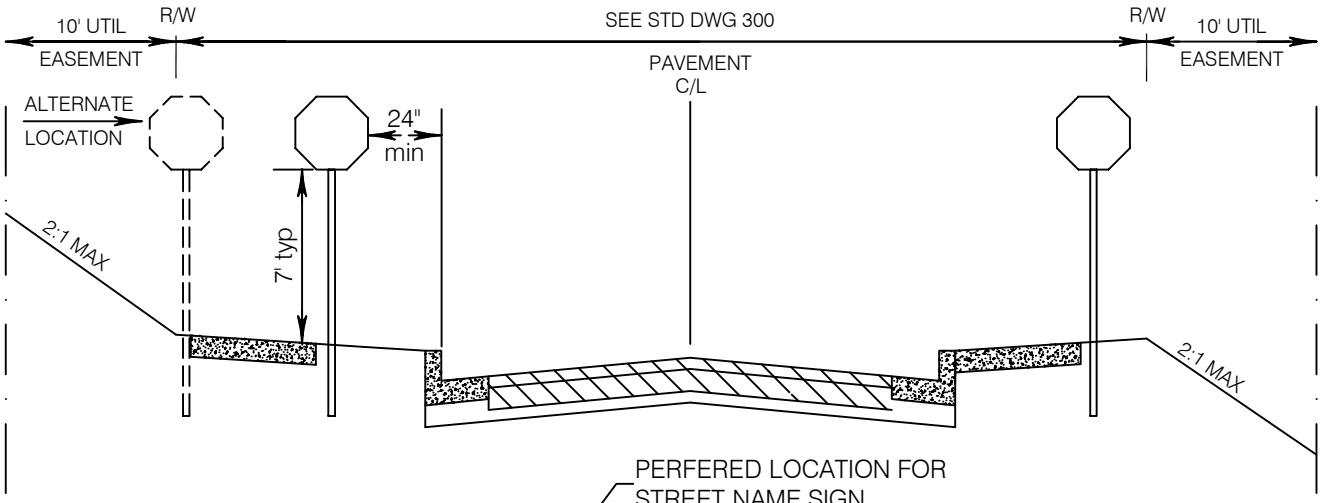
Nov, 2013

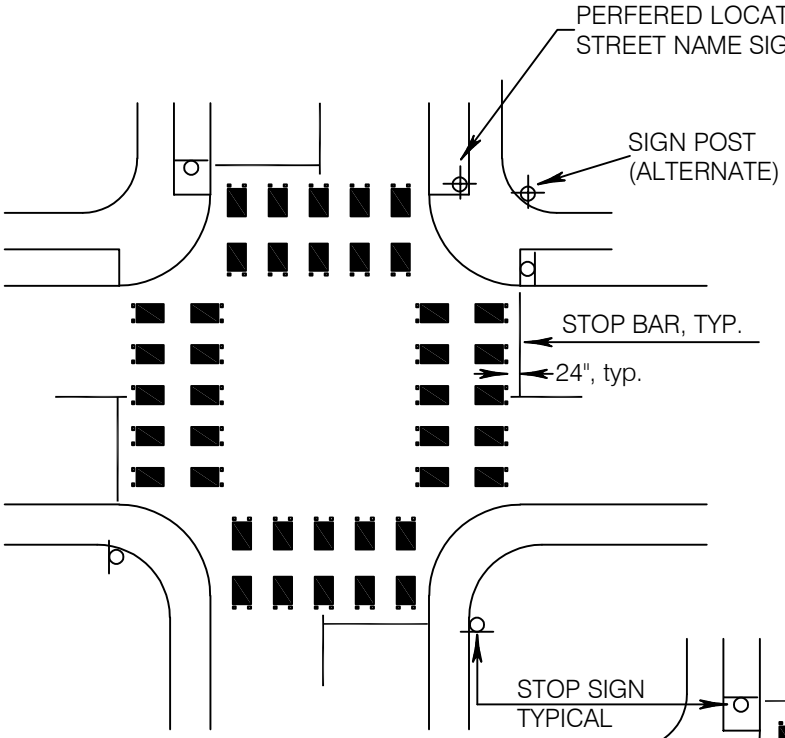
SIGN WITHIN PUBLIC RIGHT OF WAY. SIGNS AND/OR PAVEMENT LETTERING REQUIRED FOR PRIVATE ACCESS AND PRIVATE STREETS WITHIN COMMERCIAL OR MIXED DEVELOPMENT.



SIGN DETAIL

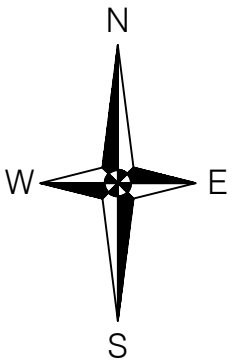
City of Bothell™	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	FIRE LANE MARKINGS AND SIGNAGE	Standard Detail **389** Revision Date Nov, 2018

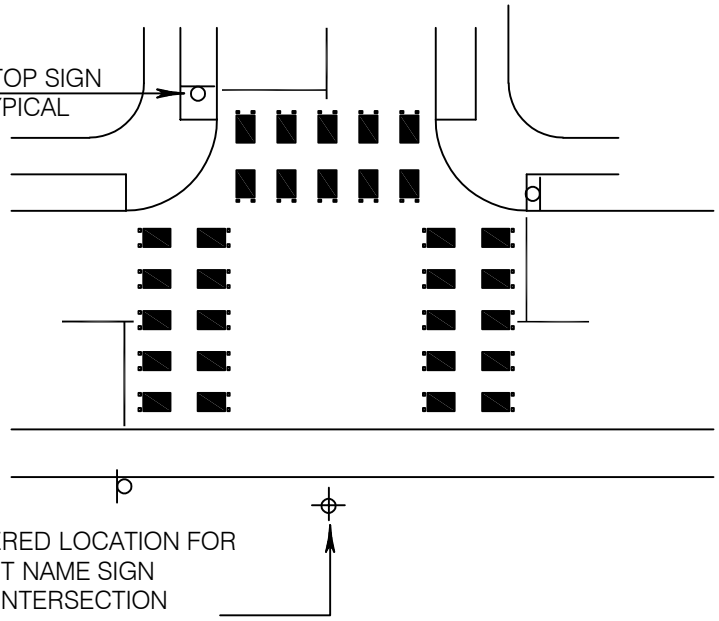




NOTES:

1. DIMENSIONS SHOWN MAY BE MODIFIED TO ACCOMMODATE DRIVEWAYS.
2. SEE ENGINEER FOR POCKET LENGTH AND FOR LAYOUT AND PLACEMENT OF TURN ARROWS.
3. SEE DETAIL 380 FOR CROSSWALK TYPICAL DIMENSIONS.





City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

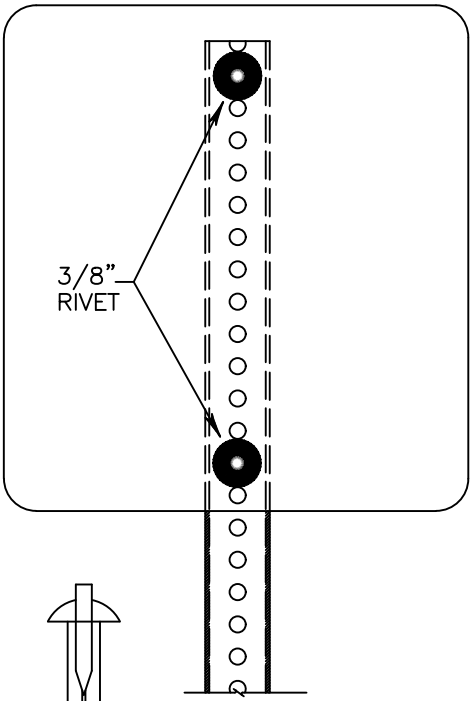
TYPICAL SIGN LOCATION AT INTERSECTION

Standard Detail

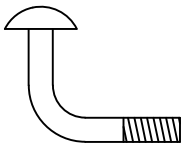
390

Revision Date

Nov, 2018



DRIVE RIVET
TL-3806



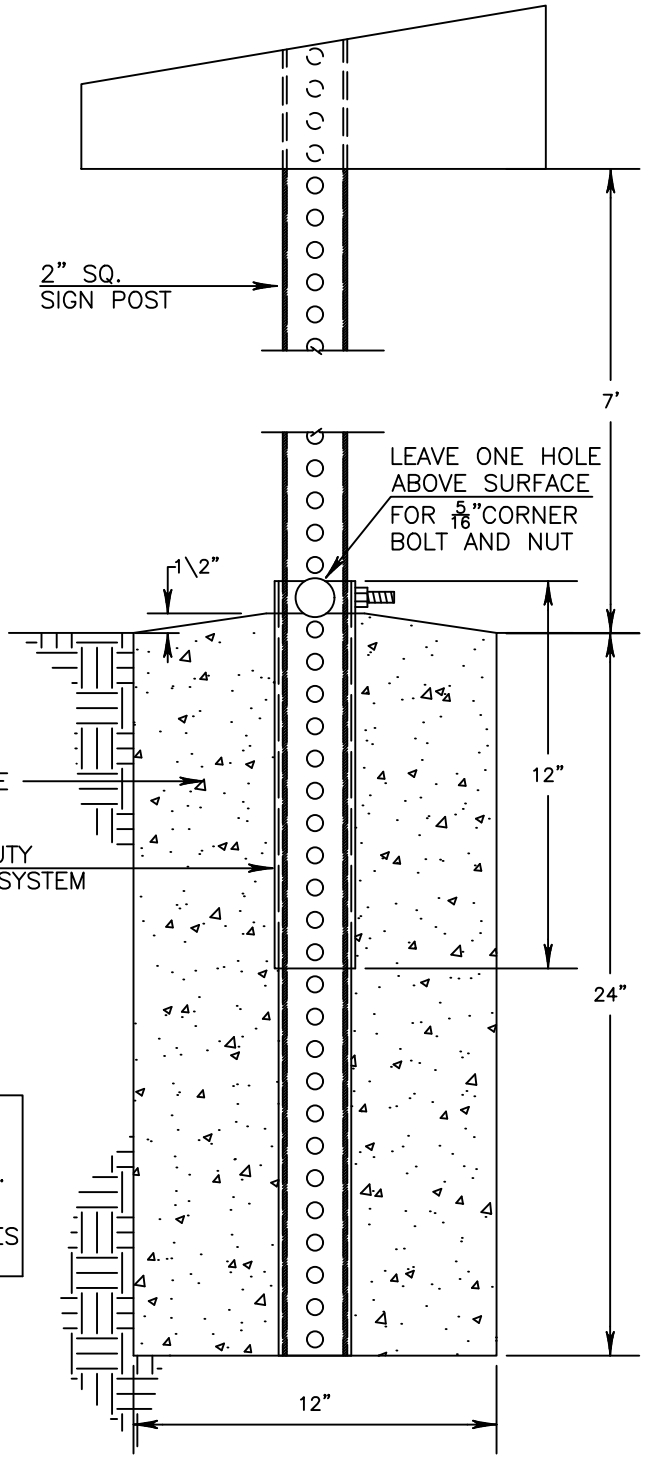
CORNER BOLT
TL070

JAM NUT
TL062

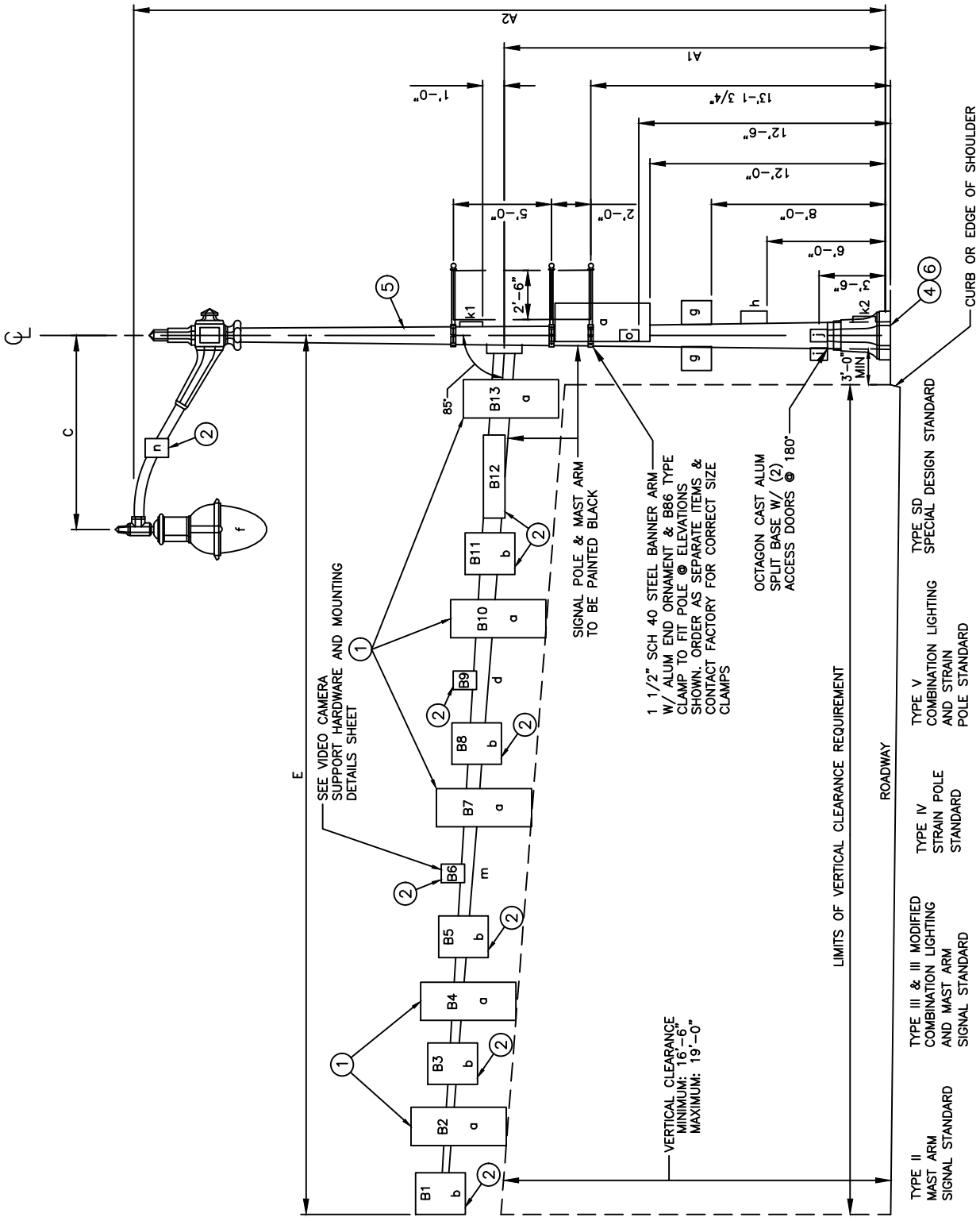
SQUARE TUBE SIZE	WALL THICKNESS U.S. STD. GAGE AND INCH	WT/FT LBS.	
2" X 2"	12(.105)	2.416	7/16" DIA. HOLES AT 1" O.C. FOUR SIDES
2¼" X 2¼"	12(.105)	2.773	
2½" X 2½"	12(.105)	3.141	

NOTES

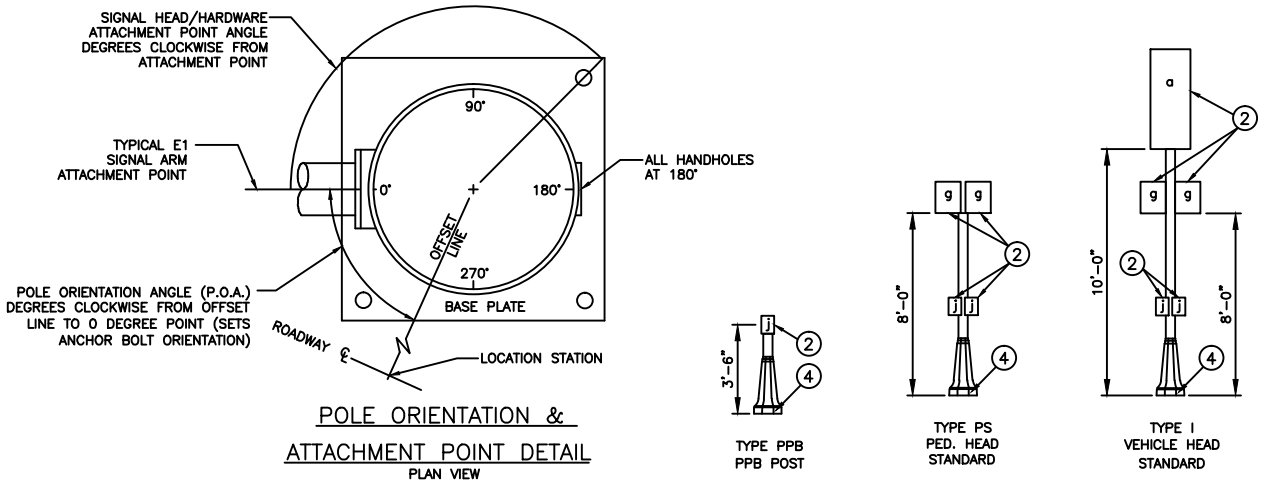
1 ALL TUBE STEEL TO BE GALVANIZED AND UNPAINTED.
2 THE POST SHALL BE CENTERED.
3 WRAP DUCT TAPE AROUND 2' AND 1" LONG ANCHORS AND COVER BOTTOM OF 2' ANCHOR WITH TAPE.
4. JAM NUT SHOULD BE INSTALLED ON SAME SIDE OF POST AS THE SIGN.



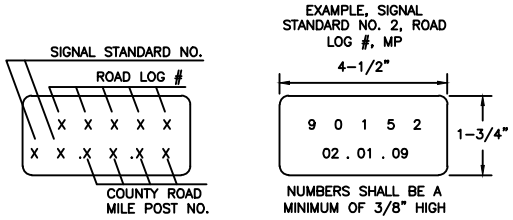
City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	SIGN POST INSTALLATION	Standard Detail **391** Revision Date Dec, 2019



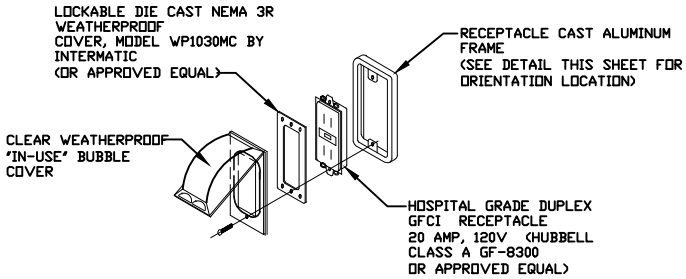
City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	SIGNAL POLE DETAILS - 1	Standard Detail **392** Revision Date Feb, 2012



POLE ORIENTATION &
ATTACHMENT POINT DETAIL
PLAN VIEW



SIGNAL STANDARD IDENTIFICATION TAG DETAIL



POLE RECEPTACLE DETAIL

LEGEND

a. VEHICLE SIGNAL HEAD
b. SIGN, WSDOT STD. PLAN G-30.10-00
c. LUMINAIRE ARM (SEE IP SHEETS)
d. PRE-EMPT DETECTOR
e. SIGNAL MAST ARM
f. LUMINAIRE
g. PEDESTRIAN SIGNAL HEAD
h. TERMINAL CABINET
j. PEDESTRIAN PUSHBUTTON ASSEMBLY, WSDOT STD. PLAN J-20.26-00
k. HANDHOLE, WSDOT STD. PLAN J-7c OR J-28.50-00
m. VIDEO CAMERA
n. PAN-TILT-ZOOM (PTZ) CAMERA
o. POLE RECEPTACLE

NOTES:

(1) MOUNTING TENON TO BE INSTALLED BY FABRICATOR AT OFFSET DISTANCES INDICATED IN CHART. IF TYPE "N" MOUNTING IS USED, DRILL 1" HOLE IN MAST ARM AND INSTALL PLASTIC SPLIT BUSHING FOR CABLE ENTRANCE.

(2) FIELD INSTALLED.

(3) NOT USED THIS SHEET.

(4) FOUNDATIONS SHALL CONFORM TO THE MOST RECENT SNOHOMISH COUNTY DETAILS

(5) ALL TYPE III SIGNAL STANDARDS AND STREET LIGHT STANDARDS SHALL HAVE BOLT ON LUMINAIRE ARMS. THE BOLTS AND/OR NUTS SHALL BE FIELD INSTALLED AND BE ACCESSIBLE AFTER INSTALLATION FROM OUTSIDE OF POLE.

(6) ANCHOR BOLTS AND ANCHOR PLATE SUPPLIED BY SIGNAL POLE MANUFACTURER.

* INSTALL TENON FOR FUTURE DISPLAY.
** TOP OF POLE FOUNDATION ELEVATION IS TO BE VERIFIED BY ENGINEER AFTER SIDEWALK GRADES ARE SET.
\+ WIND LOAD CALCULATIONS BASED ON FUTURE LOADINGS.

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

SIGNAL POLE DETAILS - 2

Standard Detail

393

Revision Date

Jun, 2015

SIGNAL STANDARD DETAIL CHART

SIGNAL STD. NO.	FIELD LOCATION			TYPE	MOUNTING HEIGHT (FT)		ARM LENGTH (FT)		OFFSET DISTANCES (FT) (Z) (POLE CL TO ATTACHMENT POINT)											
	STATION	OFFSET (FT)	P.O.A.		A1	A2	E	C	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
1	15+69.3	39.3' (RT)	90°	III	17.5	25, 25	55	6, 6		52		42								12
2	15+70.2	54.2' (LT)	0°	III	17.5	25, 25	45	6, 6		41.5		28.5					6,34	38.5		13
3	16+76.5	40.9' (RT)	0°	III	17.5	25, 25	40	6, 6		37		25			13					8
4	15+93.4	65.2' (LT)	0°	LT.STD.		25, 25		6, 6												
5	16+57.5	62.6' (LT)	0°	LT.STD.		25, 25		6, 6												
6	16+77.7	44.4' (LT)	0°	LT.STD.		25, 25		6, 6									0,0			

SIGNAL STD. NO.	(X)(Y)(Z) TOTAL (FT^3)	POLE ATTACHMENT POINT ANGLES (DEG.)										FOUNDATION DEPTH (FT)			BOTTOM OF FLANGE ELEVATION	TOP OF FOUNDATION ELEVATION	REMARKS
		a/b	c	d	e	g	h	j1	j2	k1	k2	3' RD	3' SQ	4' RD			
1	960.8		45°,315°		0°	180°	90°	90°		180°	180°	10					
2	1102.2	180°	45°,315°	90°,285°	0°	90°	180°	270°		180°	180°	13					
3	754.0		45°,315°		0°	270°	180°	270°		180°	180°	15					
4			45°,315°			90°		90°			180°						PER WSDOT STD. PLAN J-28.30-01
5		85°	45°,315°			270°		270°			180°						PER WSDOT STD. PLAN J-28.30-01
6			75°,135°	75°,135°		90°		90°			180°						PER WSDOT STD. PLAN J-28.30-01

SIGNAL STD. NO.	WINDLOAD AREAS (FT) (X)(Y)										
	B1	B2	B3	B4	B5	B7	B8	B10	B11	B12	B13
1		9.2		9.2						8	
2		9.2		9.2				9.2		8	
3		9.2		9.2		9.2				8	
4											
5											
6											

* INSTALL TENON FOR FUTURE DISPLAY.

** TOP OF FOUNDATION ELEVATION IS TO BE VERIFIED BY ENGINEER AFTER SIDEWALK GRADES ARE SET

\+ WIND LOAD CALCULATIONS BASED ON FUTURE LOADINGS.

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

SIGNAL POLE DETAILS - 3

Standard Detail

394

Revision Date

Feb, 2012

City of Bothell

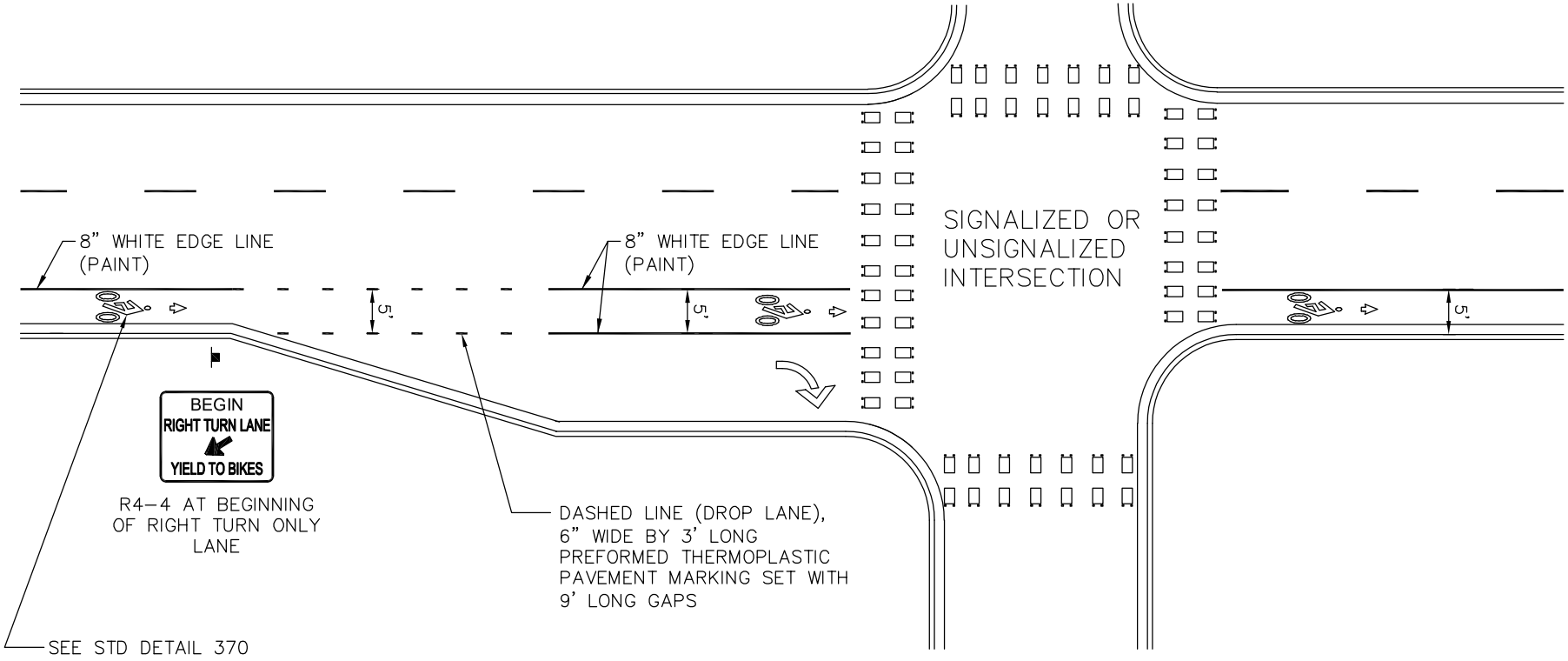
City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

BIKE LANE TREATMENT AT RIGHT TURN POCKET



NOTES:

1. DIMENSIONS SHOWN MAY BE MODIFIED TO ACCOMMODATE DRIVEWAYS.
2. SEE ENGINEER FOR POCKET LENGTH AND FOR LAYOUT AND PLACEMENT OF TURN ARROWS.
3. SEE DETAIL 380 FOR CROSSWALK TYPICAL DIMENSIONS.

Standard Detail **395**

Revision Date Nov, 2018

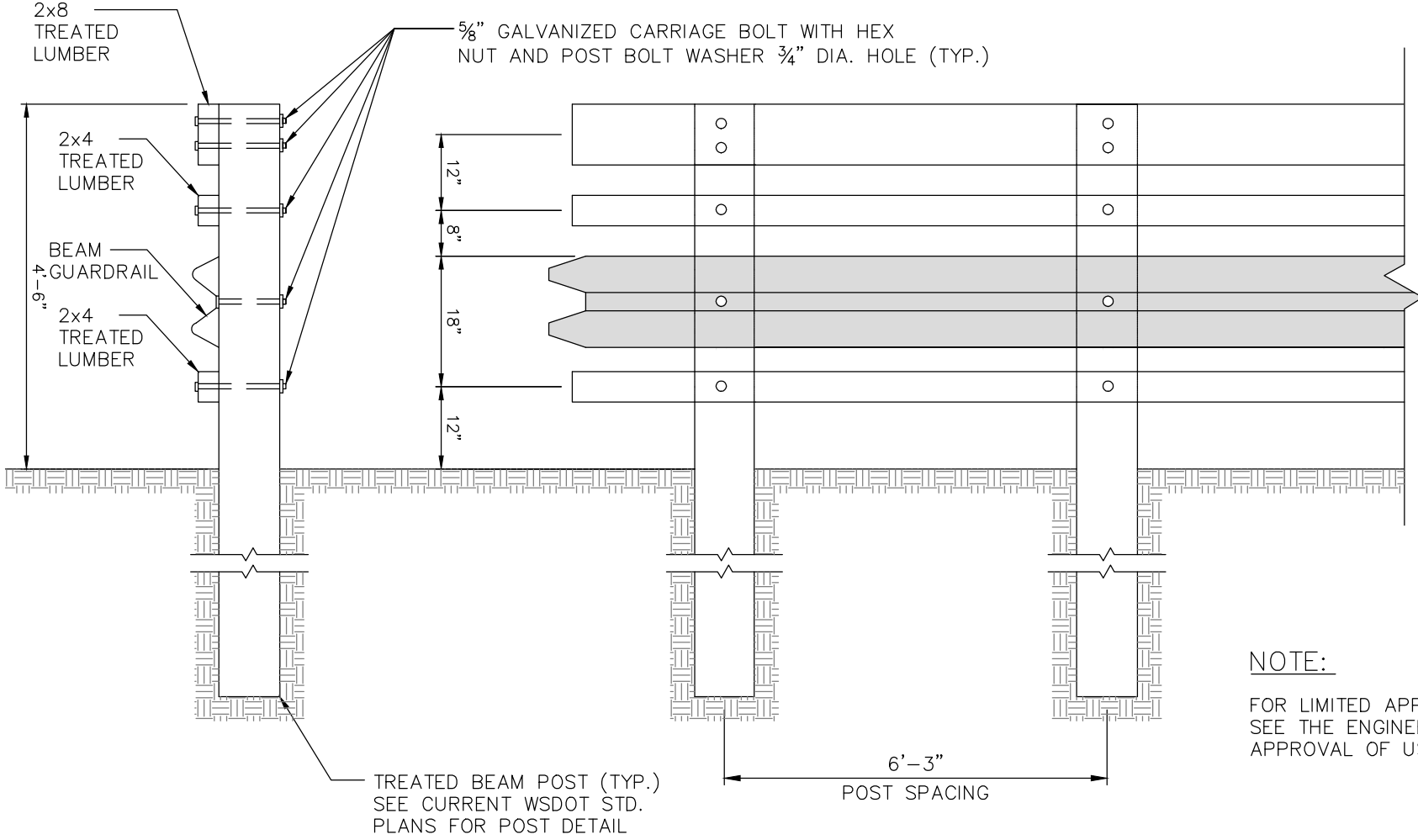
City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:
City Engineer

COMBINATION GUARDRAIL & HANDRAIL



NOTE:

FOR LIMITED APPLICATIONS. SEE THE ENGINEER FOR APPROVAL OF USE.

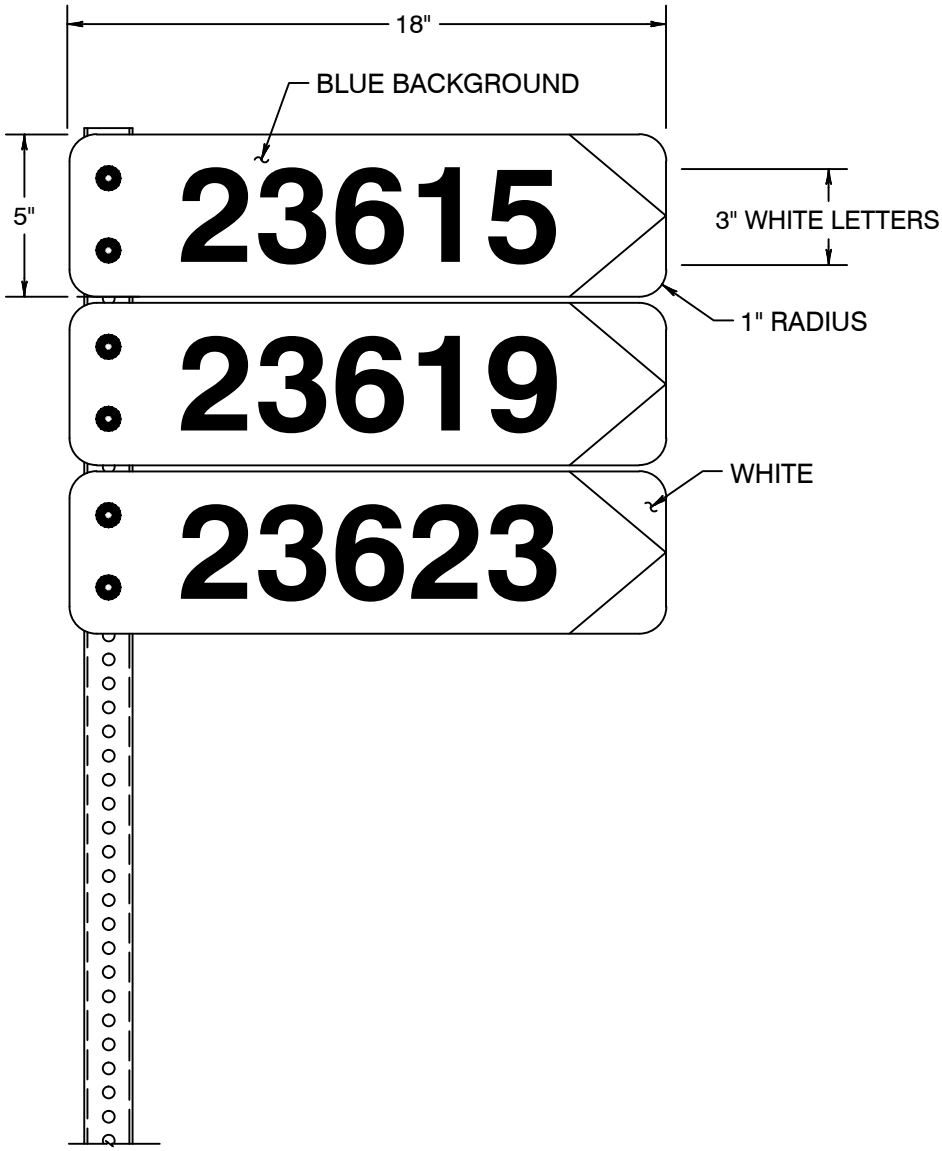
Standard Detail	Revision Date
396	Nov, 2013

R7-1

12" x 18"

PLACE 50 FEET ON CENTER ON PUBLIC STREETS FLUSH
WITH CURB SET BACK 12" - 14" FROM CURB FACE

City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	NO PARKING FIRE LANE PUBLIC STREETS	Standard Detail **397** Revision Date Nov, 2013



NOTES:

1. ALL ADHESIVE MATERIALS TO BE SUPER ENGINEERING GRADE.

2. MATERIAL SHALL BE 10 GA. ANODIZED ALUMINUM SHEET STOCK UNLESS OTHERWISE SPECIFIED.

3. ADDRESS ON BOTH SIDES.

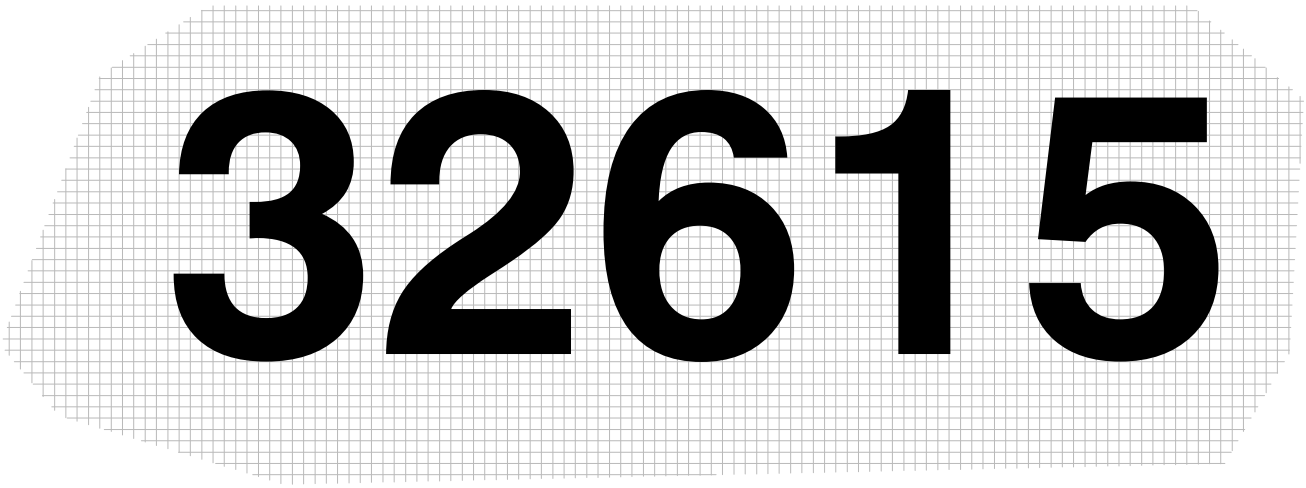
4. MOUNT ON 2" SQ. SIGN POST - SEE STD 391.

City of Bothell™	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	POST MOUNTING ADDRESS SIGNS

Standard Detail

398

Revision Date
Nov, 2013



Distance	Size
0 - 50 feet	6
51 - 100 feet	8
101 - 150 feet	10
151 - 200 feet	12
over 200 feet	14

1. DISTANCE IS MEASURED FROM THE FACE OF THE BUILDING TO THE FACE OF CURB ON ADDRESSED STREET

2. NUMBERS SHALL BE CONTRASTING COLOR TO BACKGROUND

3. NUMBER SIZE EQUATES TO LETTER HEIGHT 6"-10" SHALL BE 1"STROKE AND 12" - 14" NUMBERS SHALL BE 1 1/2" STROKE

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

BUILDING ADDRESS NUMBERS

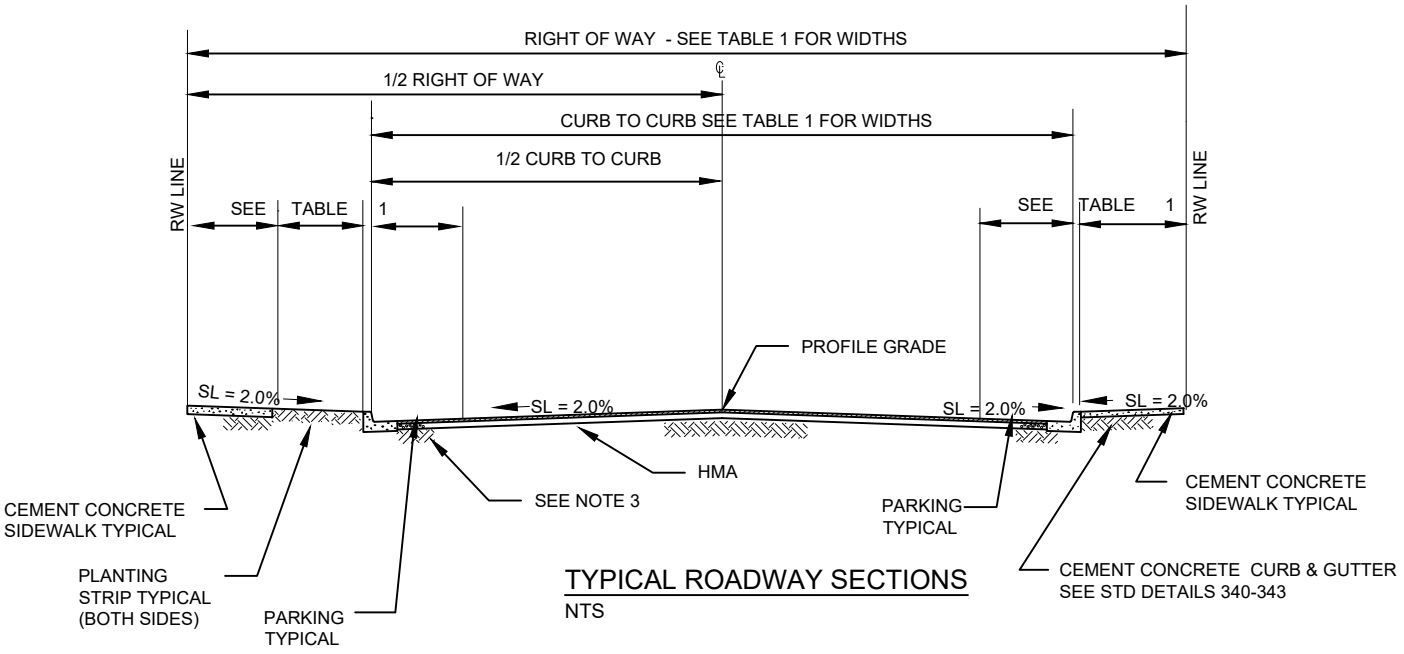
Standard Detail

399

Revision Date

Nov, 2013

TABLE 1 - REQUIREMENTS BY ROADWAY LOCATION					
Location	ROW Width	Parking Width	Travelway Width	Sidewalk Width	Landscape Area
NE 185th St (Bothell Way NE to Beardslee Blvd)	57'	7' Both Sides	24'	9' Both Sides	None
NE 183rd St (Bothell Way NE to 98th)	52'	7' Both Sides	20'	8.5' Both Sides	None
NE 183rd St (Bothell Way NE to 104th) See Note 6	52'	7' Both Sides	20'	8.5' Both Sides	None
Main St (96th to 98th) See Notes 7 & 8	46'	7' North Side Only	20'	8' Both Sides	5' South Side
101st Ave NE (SR 522 to NE 185th St)	52'	7' Both Sides	20'	8.5' Both Sides	None
102nd Ave NE (NE 185th to Bridge) See Note 9	52'	7' Both Sides	20'	8.5' Both Sides	None
103rd Ave NE (Main St to NE 185th)	52'	7' Both Sides	20'	8.5' Both Sides	None



TYPICAL ROADWAY SECTIONS

NTS

NOTES:

1. PAVEMENT DEPTHS FROM STD DETAIL 310.
2. 4 INCH OF 1-1/4 INCH MINUS CRUSHED ROCK BASE COURSE PER WSDOT STANDARD SPEC 9-03.9(3).
3. SUBGRADE SHALL BE COMPACTED TO 95% DENSITY AS DETERMINED BY MODIFIED PROCTOR ASTM D 1557.
4. GRAVEL BASE MAY BE REQUIRED PENDING SOIL CONDITIONS. A SOILS REPORT PREPARED BY A REGISTERED PROFESSIONAL ENGINEER SHALL CERTIFY THAT THE ABOVE SECTION IS ACCEPTABLE.
5. ASPHALT PAVEMENT SHALL MEET WSDOT STANDARD SPEC 5-04.
6. ROW DEDICATION OF 2' IS ON THE SOUTH SIDE ONLY FROM BOTHELL WAY TO 101ST AVE NE. ROW DEDICATION FROM 101ST AVE NE TO 104TH AVE NE WILL BE 1' FROM EACH SIDE.
7. ROW DEDICATION WILL OCCUR ONLY ON THE SOUTH SIDE OF MAIN ST BETWEEN 98TH AVE NE AND 96TH AVE NE.
8. IF ON-STREET PARKING IS DESIRED ON SOUTH SIDE, ADDITIONAL 7' DEDICATION WILL BE NEEDED.
9. FOR THE SECTION BETWEEN BRIDGE AND MAIN ST, ADDITIONAL ROW DEDICATION WILL BE REQUIRED ON THE WEST SIDE. FOR THE SECTION BETWEEN MAIN ST AND NE 185TH, ADDITIONAL ROW DEDICATION WILL BE REQUIRED ON BOTH SIDES.

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

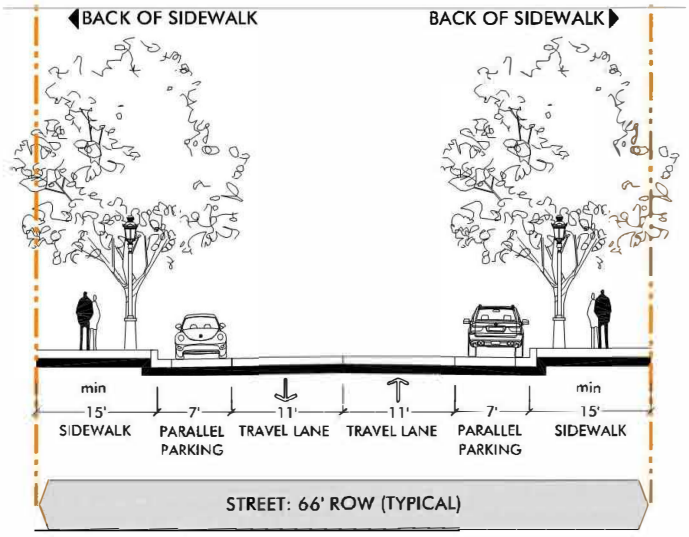
TYPICAL ROADWAY SECTION DOWNTOWN

Standard Detail

D300

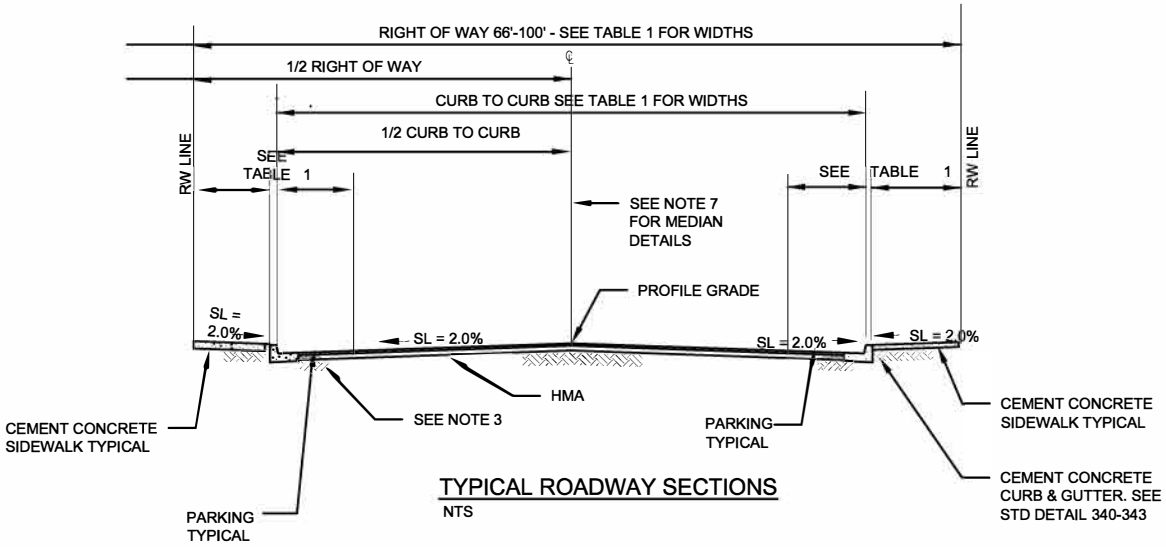
Revision Date

Dec, 2017



NOTES:

1. PAVEMENT AND CRUSHED ROCK DEPTHS FROM STD DETAIL 305 TO 310.
2. SUBGRADE SHALL BE COMPACTED TO 95% DENSITY AS DETERMINED BY MODIFIED PROCTOR ASTM D 1557.
3. ASPHALT PAVEMENT SHALL MEET WSDOT STANDARD SPEC 5-04.
4. FRANCHISE UTILITIES SHOULD BE LOCATED IN EASEMENTS OUTSIDE RIGHT-OF-WAY.
5. MEDIAN DETAILS DETERMINED BY ENGINEER.
6. DEVELOPMENT AMENITIES, INCLUDING BUT NOT LIMITED TO LOAD AND UNLOAD ZONES, GARBAGE COLLECTION, AND MAIL AND DELIVERY LOCATIONS SHALL BE LOCATED OUTSIDE OF PUBLIC RIGHT-OF-WAY IN ACCORDANCE WITH STANDARDS SECTION 3-4.7



TYPICAL ROADWAY SECTIONS
NTS

TABLE 1					
ROW Width (ft)	Sidewalk Width (ft)	Parking Width (ft)	Type of Parking	Median (ft)	Travel Lane Width (ft)
66	15	7	Parallel	None	11
68	12	7	Parallel	8	11
90	15	18	Angled	None	12
100	12	7	Parallel	40	11
Note: 100' ROW with 40' park between travel lanes (Fountain: Optional)					

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

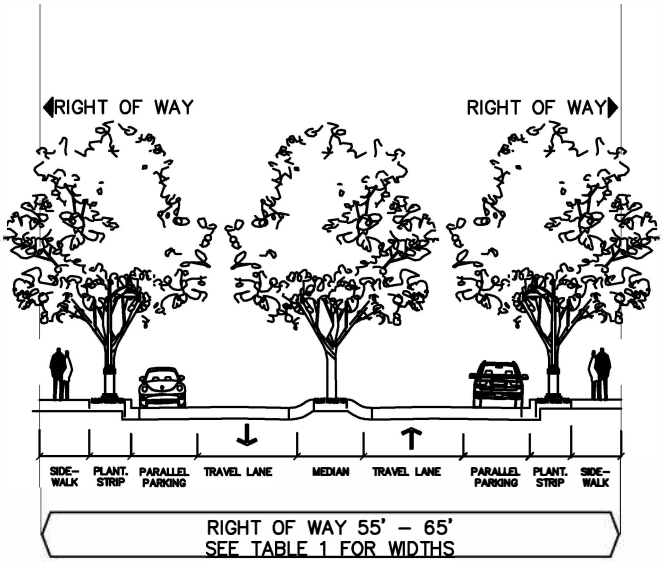
TYPICAL SECTION DOWNTOWN CITY STREET

Standard Detail

D301

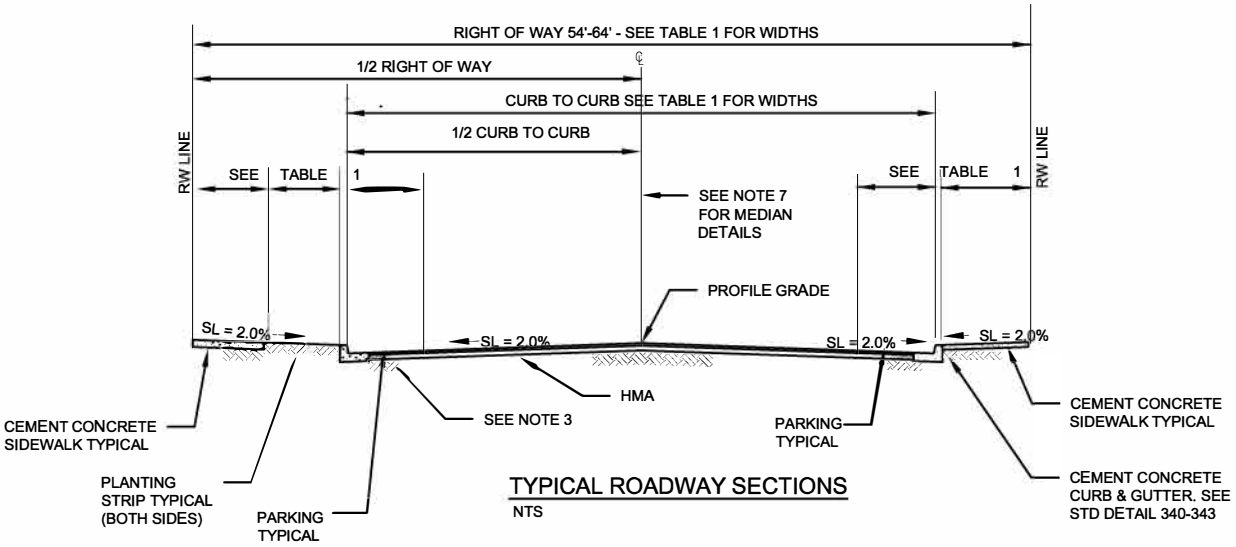
Revision Date

Nov, 2018



NOTES:

1. PAVEMENT AND CRUSHED ROCK DEPTHS FROM STD DETAIL 305 TO 310.
2. SUBGRADE SHALL BE COMPACTED TO 95% DENSITY AS DETERMINED BY MODIFIED PROCTOR ASTM D 1557.
3. ASPHALT PAVEMENT SHALL MEET WSDOT STANDARD SPEC 5-04.
4. FRANCHISE UTILITIES SHOULD BE LOCATED IN EASEMENTS OUTSIDE RIGHT-OF-WAY.
5. MEDIAN DETAILS DETERMINED BY ENGINEER.
6. WHERE TREES ARE LOCATED IN PARKING LANES, TREES WITHIN THE PLANTING STRIPS ARE ENCOURAGED TO BE STAGGERED BETWEEN THE TREES IN PARKING LANES. (ALLOWED WITH AN APPROVED MAINTENANCE PLAN.)
7. PLANTING STRIP DETERMINED BY ENGINEER.
8. DEVELOPMENT AMENITIES, INCLUDING BUT NOT LIMITED TO LOAD AND UNLOAD ZONES, GARBAGE COLLECTION, AND MAIL AND DELIVERY LOCATIONS SHALL BE LOCATED OUTSIDE OF PUBLIC RIGHT-OF-WAY IN ACCORDANCE WITH STANDARDS SECTION 3-4.7



TYPICAL ROADWAY SECTIONS
NTS

TABLE 1						
ROW Width (ft)	Sidewalk Width (ft)	Plant Strip Width (ft)*	Parking Width (ft)	Type of Parking	Travel Lane Width (ft)	Median Width (ft)
55	6	5	7	Parallel	20	None
65	6	5	7	Parallel	22	8
Note: Additional option of 54' ROW see note 8						
* includes curb						

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

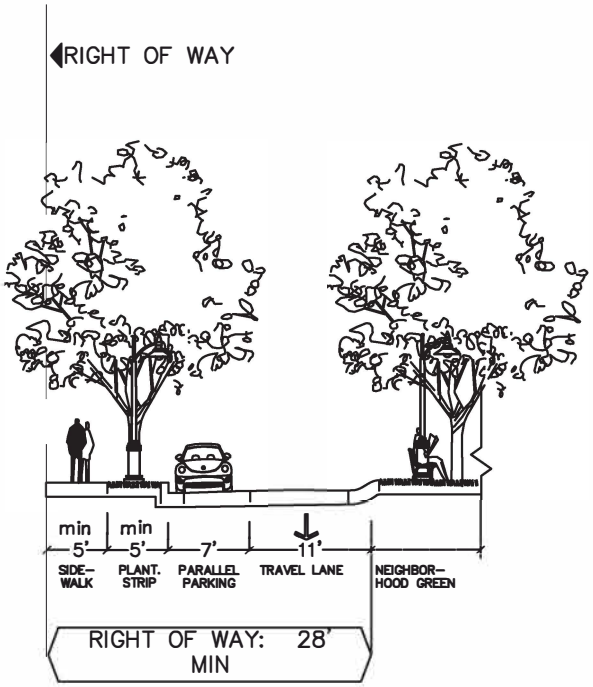
TYPICAL SECTION DOWNTOWN NEIGHBORHOOD AVE

Standard Detail

D302

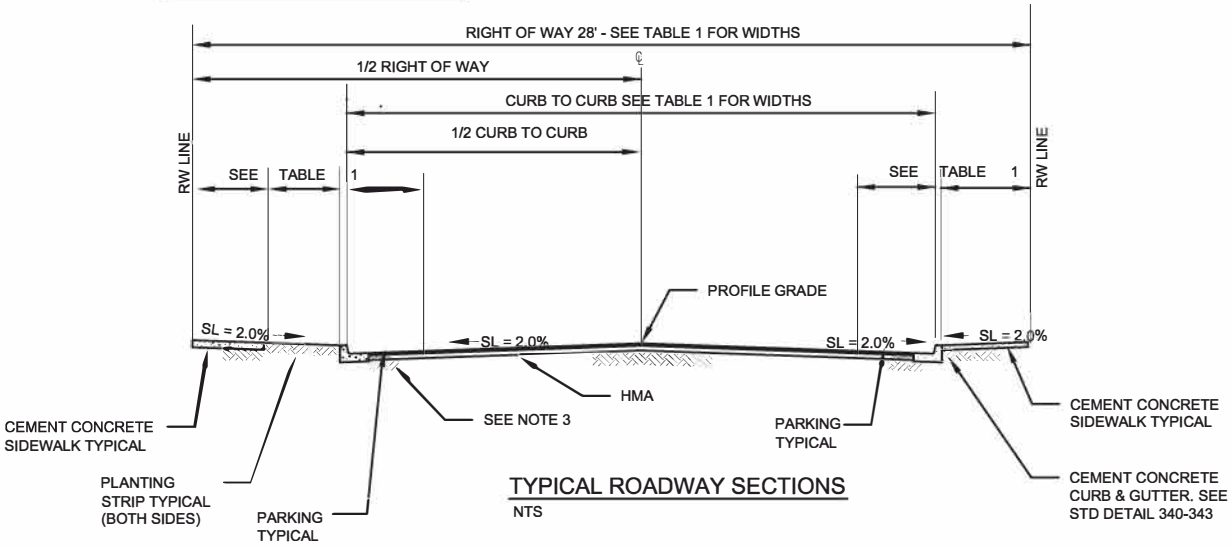
Revision Date

Nov, 2018



NOTES:

1. PAVEMENT AND CRUSHED ROCK DEPTHS FROM STD DETAIL 305 TO 310.
2. SUBGRADE SHALL BE COMPACTED TO 95% DENSITY AS DETERMINED BY MODIFIED PROCTOR ASTM D 1557.
3. ASPHALT PAVEMENT SHALL MEET WSDOT STANDARD SPEC 5-04.
4. FRANCHISE UTILITIES SHOULD BE LOCATED IN EASEMENTS OUTSIDE RIGHT-OF-WAY.
5. SEE ENGINEER FOR DETAILS OF NEIGHBORHOOD GREEN.
6. PLANTING STRIP DETERMINED BY ENGINEER.
7. DEVELOPMENT AMENITIES, INCLUDING BUT NOT LIMITED TO LOAD AND UNLOAD ZONES, GARBAGE COLLECTION, AND MAIL AND DELIVERY LOCATION SHALL BE LOCATED OUTSIDE OF PUBLIC RIGHT-OF-WAY IN ACCORDANCE WITH STANDARDS SECTION 3-4.7



TYPICAL ROADWAY SECTIONS
NTS

TABLE 1					
ROW Width (ft)	Sidewalk Width (ft)	Planting Strip Width (ft)	Parking Width (ft)	Type of Parking	Travel Lane Width (ft)
28	5	5	7	Parallel	11 (One lane only)

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

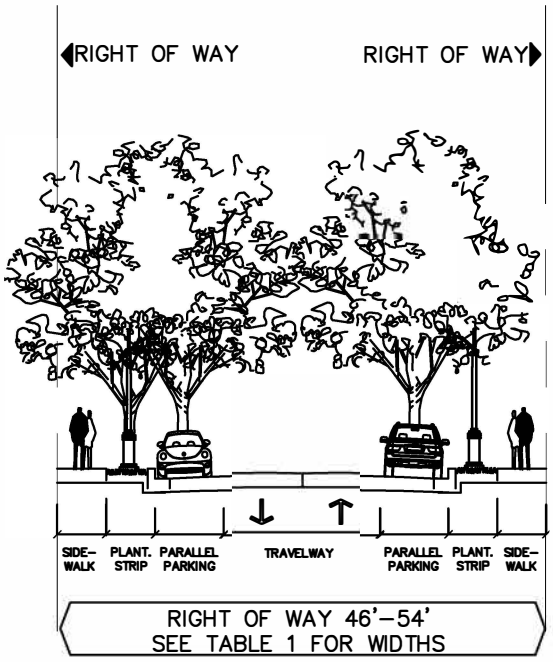
TYPICAL SECTION DOWNTOWN NEIGHBORHOOD GREEN STREET

Standard Detail

D303

Revision Date

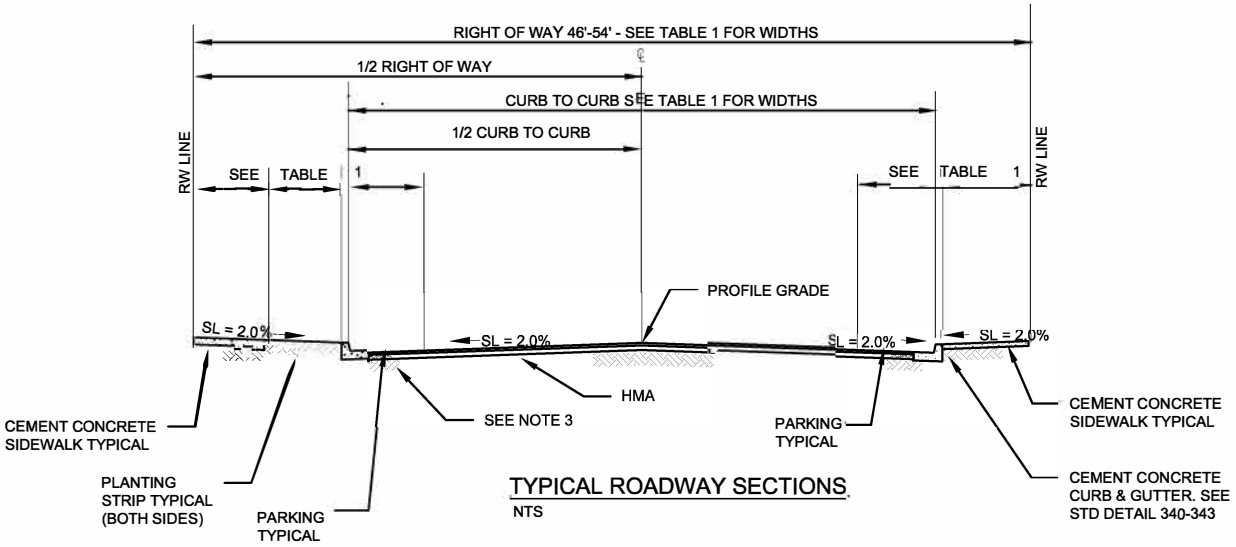
Nov, 2018



RIGHT OF WAY 46'–54'
SEE TABLE 1 FOR WIDTHS

NOTES:

1. PAVEMENT AND CRUSHED ROCK DEPTHS FROM STD DETAIL 310.
2. SUBGRADE SHALL BE COMPACTED TO 95% DENSITY AS DETERMINED BY MODIFIED PROCTOR ASTM D 1557.
3. ASPHALT PAVEMENT SHALL MEET WSDOT STANDARD SPEC 5-04.
4. FRANCHISE UTILITIES SHOULD BE LOCATED IN EASEMENTS OUTSIDE RIGHT-OF-WAY.
5. WHERE TREES ARE LOCATED IN PARKING LANES, TREES WITHIN THE PLANTING STRIPS ARE ENCOURAGED TO BE STAGGERED BETWEEN THE TREES IN PARKING LANES. (ALLOWED WITH AN APPROVED MAINTENANCE PLAN.)
6. DEVELOPMENT AMENITIES, INCLUDING BUT NOT LIMITED TO LOAD AND UNLOAD ZONES, GARBAGE COLLECTION, AND MAIL AND DELIVERY LOCATIONS SHALL BE LOCATED OUTSIDE OF PUBLIC RIGHT-OF-WAY IN ACCORDANCE WITH STANDARDS SECTION 3-4.7



TYPICAL ROADWAY SECTIONS
NTS

TABLE 1						
ROW Width (ft)	Sidewalk Width (ft)	Planting Strip Width (ft)*	Parking Width (ft)	Type of Parking	Travel Lane Width (ft)	Median Width (ft)
46	6	5.5	7	Parallel (one side only)	16**	None
54	6	5	7	Parallel	16**	8
Note: Additional option of 54' ROW see note 8						

* includes curb width

** minimum allowed with low volume. 20' preferred.

City of Bothell™

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PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

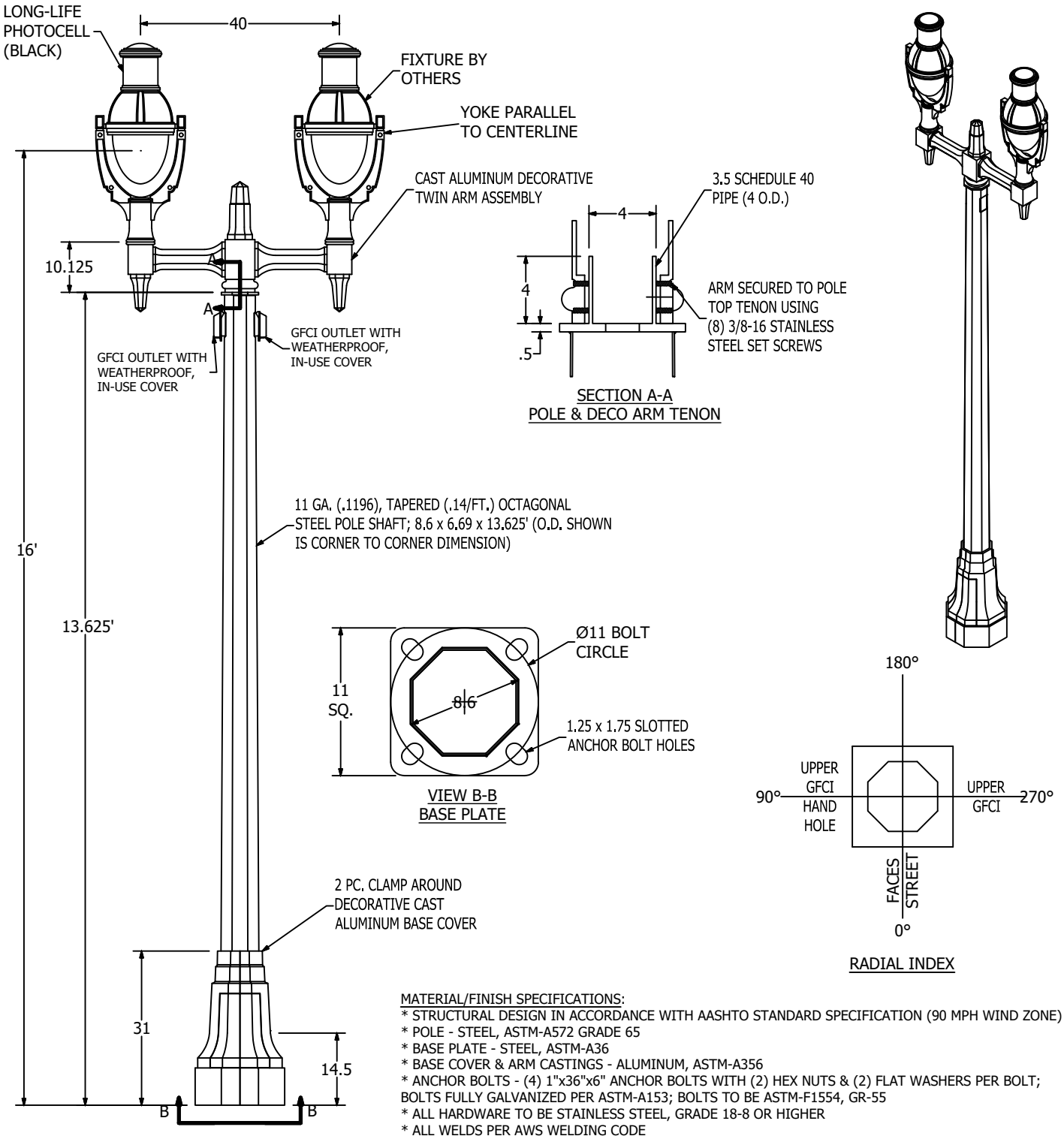
TYPICAL SECTION DOWNTOWN NEIGHBORHOOD STREET

Standard Detail

D304

Revision Date

Nov, 2018



MATERIAL/FINISH SPECIFICATIONS:
* STRUCTURAL DESIGN IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATION (90 MPH WIND ZONE)
* POLE - STEEL, ASTM-A572 GRADE 65
* BASE PLATE - STEEL, ASTM-A36
* BASE COVER & ARM CASTINGS - ALUMINUM, ASTM-A356
* ANCHOR BOLTS - (4) 1"x36"x6" ANCHOR BOLTS WITH (2) HEX NUTS & (2) FLAT WASHERS PER BOLT; BOLTS FULLY GALVANIZED PER ASTM-A153; BOLTS TO BE ASTM-F1554, GR-55
* ALL HARDWARE TO BE STAINLESS STEEL, GRADE 18-8 OR HIGHER
* ALL WELDS PER AWS WELDING CODE
* ENTIRE ASSEMBLY TO BE FINISH POWDER COATED EXTERIOR GRADE RAL-9004 (SOLID BLACK), UV REFLECTIVE PROPERTIES OF 60% OR HIGHER; GLOSS TO BE 85% OR HIGHER AND SHALL HAVE A POLYURETHANE CLEARCOAT
* ALL STEEL COMPONENTS HOT DIP GALVANIZED PER ASTM-A123 AFTER FABRICATION

NOTES:
1. SOUTH COAST LIGHTING & DESIGN 12DP-BCUNI1828-8.6OCT-.120-163-AR-UNI-40-TWIN OR APPROVED EQUAL
2. DESIGN AND CALCULATIONS FOR ANCHOR BOLTS AND FOUNDATION SHALL BE SUBMITTED
3. LUMEC RENAISSANCE SERIES (SMALL) WITH LED LIGHT ENGINE AND IMPACT RESISTANT (ACDR) ACRYLIC PRISMATIC GLOBE

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PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

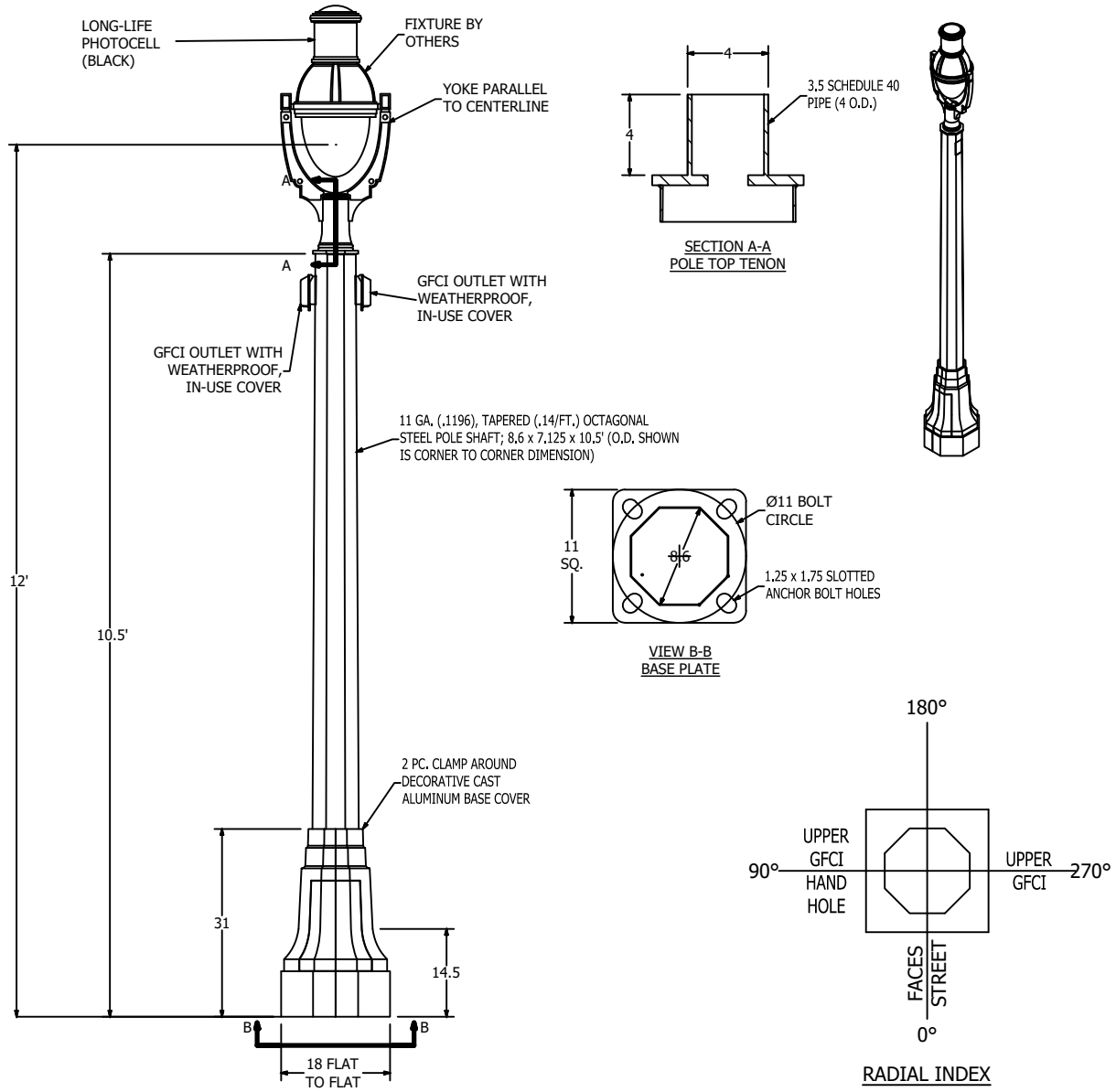
TWIN-HEAD POST TOP

Detail

D310

Revision Date

Dec, 2019



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* ALL WELDS PER AWS WELDING CODE
* ENTIRE ASSEMBLY TO BE FINISH POWDER COATED EXTERIOR GRADE RAL-9004 (SOLID BLACK), UV REFLECTIVE PROPERTIES OF 60% OR HIGHER; GLOSS TO BE 85% OR HIGHER AND SHALL HAVE A POLYURETHANE CLEARCOAT
* ALL STEEL COMPONENTS HOT DIP GALVANIZED PER ASTM-A123 AFTER FABRICATION

NOTES:

1. SOUTH COAST LIGHTING & DESIGN 12DP-BCBOT1831-8.6OCT-.120-126 OR APPROVED EQUAL
2. DESIGN AND CALCULATIONS FOR ANCHOR BOLTS AND FOUNDATION SHALL BE SUBMITTED
3. LUMEC RENAISSANCE SERIES (SMALL) WITH LED LIGHT ENGINE AND IMPACT RESISTANT (ACDR) ACRYLIC PRISMATIC GLOBE.

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PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

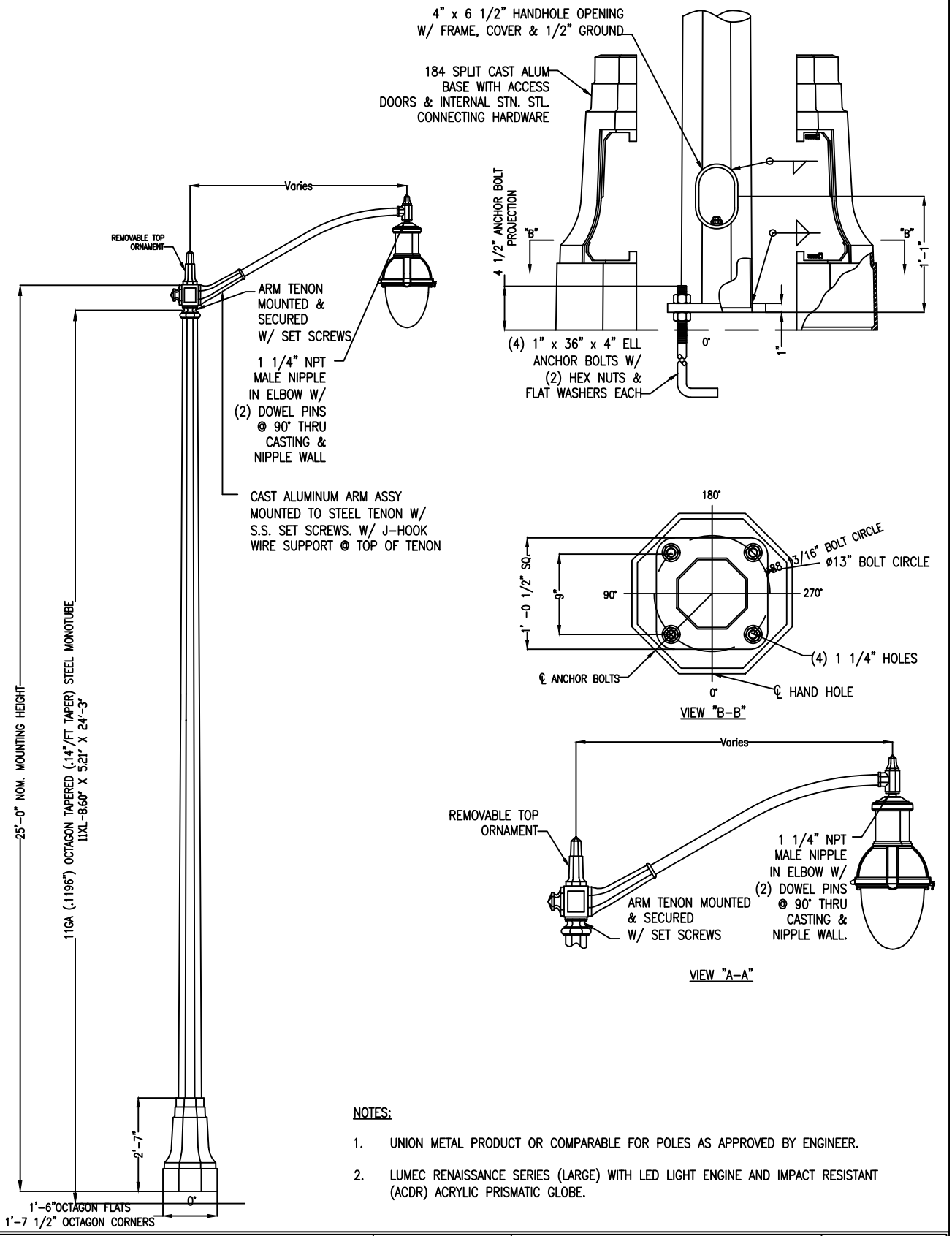
SINGLE HEAD POST TOP

Detail

D311

Revision Date

Dec, 2019



NOTES:

1. UNION METAL PRODUCT OR COMPARABLE FOR POLES AS APPROVED BY ENGINEER.
2. LUMEC RENAISSANCE SERIES (LARGE) WITH LED LIGHT ENGINE AND IMPACT RESISTANT (ACDR) ACRYLIC PRISMATIC GLOBE.

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

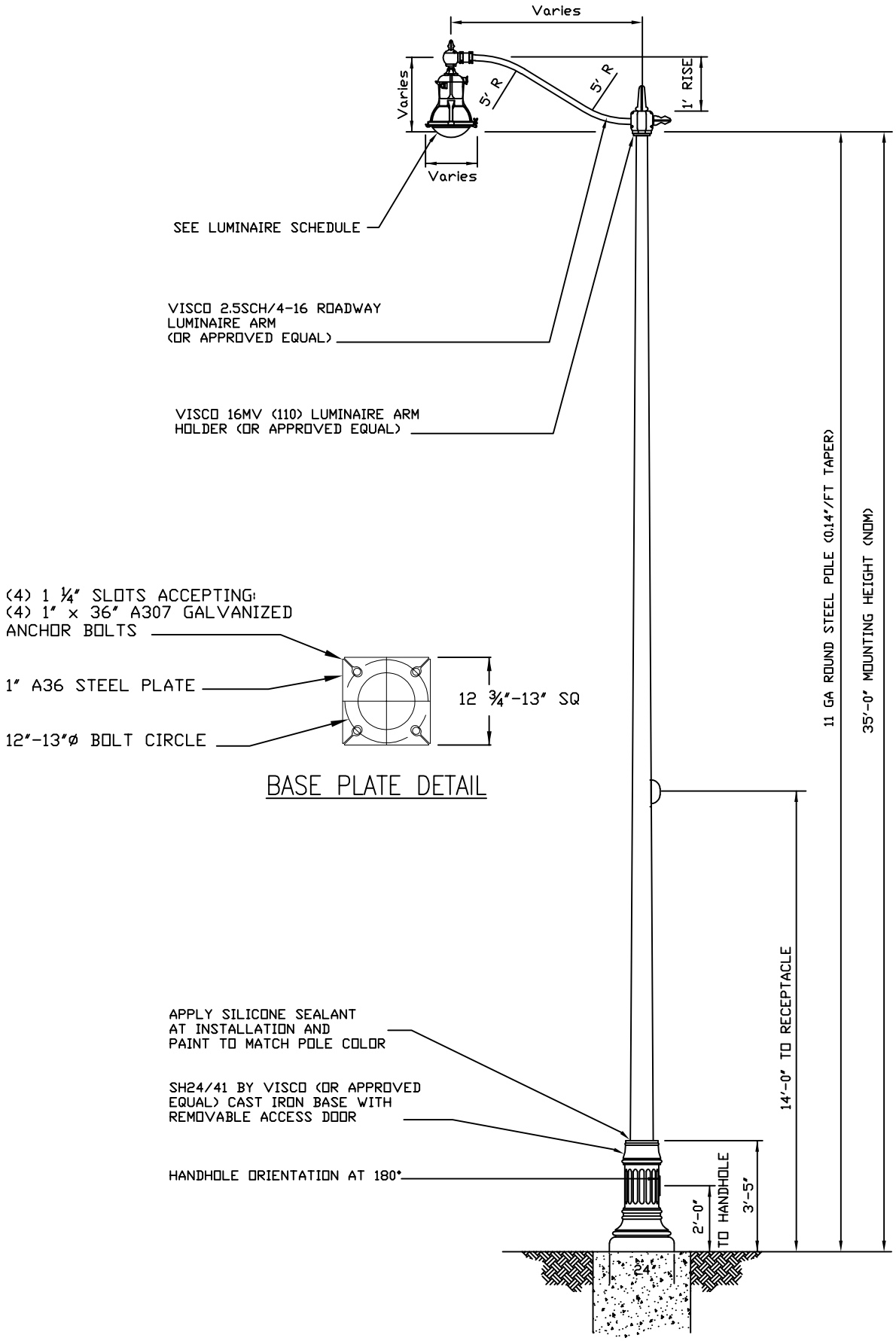
SINGLE ARM PENDANT

Standard Detail

D313

Revision Date

Dec, 2019



BASE PLATE DETAIL

LUMINAIRE SCHEDULE

TYPE	DESCRIPTION	MANUFACTURER / CATALOG #	LAMPING / PHOTOMETRICS	POLE (SEE GENERAL NOTES)	NOTES
A	ARM-MOUNTED DOUBLE HEADED LED STREET LIGHT	LUMEC / RN20-82LED58L4K-ACDR-LE3R-240-MA1-CDLTX/COLOR PER SPEC	90 WATT, 82 WARM WHITE LED, 6300 LUMENS, 70000 HRS RATED LIFE, 4000K, 65 CRI / TYPE III DISTRIBUTION	UNION METAL - OCTAGON STEEL TAPERED POLE, TAPERED 0.14"/FT	ROTATE FIXTURE HEAD OPTICS SUCH THAT PHOTMETRIC DISTRIBUTION IS PARALLEL TO THE STREET
B	ARM MOUNTED SAG GLASS STREET LIGHT	CYCLONE CP2824-RT3-LSC-250HPS-240-S2-COLOR PER SPEC	250 WATT HIGH PRESSURE SODIUM / TYPE III, MEDIUM, CUTOFF	VISCO - ROUND STEEL POLE, TAPERED 0.14"/FT	MATCH EXISTING FIXTURES FOR WAYNE CURVE PROJECT
C	YOKE-MOUNTED SINGLE HEAD LED STREET LIGHT	LUMEC / RNS20-40W30LED4K-ACDR-LE5R-240-YM-SCITX/COLOR PER SPEC	40 WATT, 30 WARM WHITE LED, 2975 LUMENS, 70000 HRS RATED LIFE, 4000K, 65 CRI / TYPE V DISTRIBUTION	UNION METAL - ROUND STEEL TAPERED POLE, TAPERED 0.14"/FT	

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PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

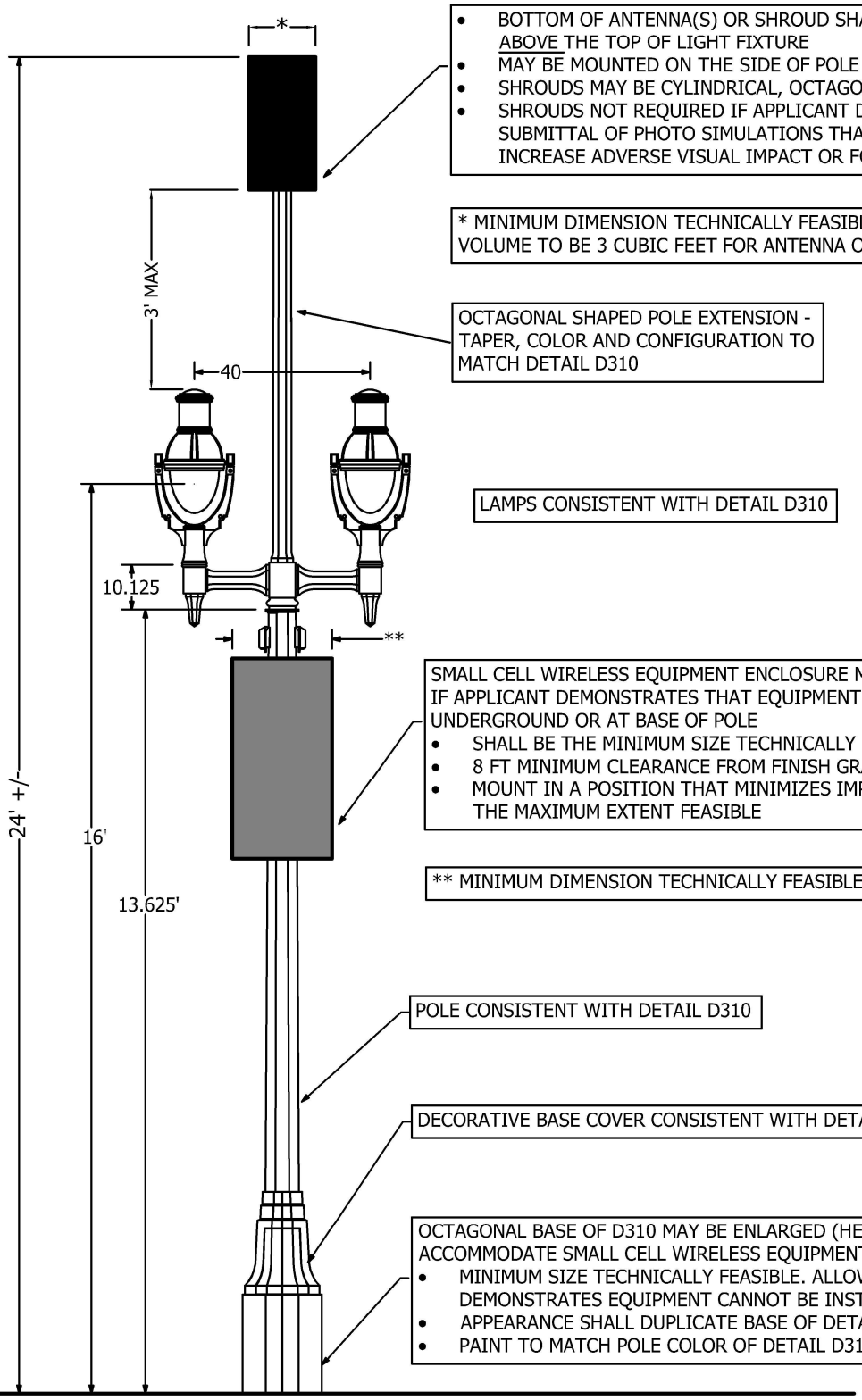
VICTORIAN SINGLE ARM PENDANT

Standard Detail

D314

Revision Date

Nov, 2018



- BOTTOM OF ANTENNA(S) OR SHROUD SHALL BE A MAXIMUM OF 3 FT ABOVE THE TOP OF LIGHT FIXTURE
- MAY BE MOUNTED ON THE SIDE OF POLE EXTENSION
- SHROUDS MAY BE CYLINDRICAL, OCTAGONAL, OR RECTANGULAR
- SHROUDS NOT REQUIRED IF APPLICANT DEMONSTRATES THROUGH SUBMITTAL OF PHOTO SIMULATIONS THAT THE SHROUD WOULD INCREASE ADVERSE VISUAL IMPACT OR FOR 5G ANTENNAS

* MINIMUM DIMENSION TECHNICALLY FEASIBLE, MAX VOLUME TO BE 3 CUBIC FEET FOR ANTENNA OR SHROUD

OCTAGONAL SHAPED POLE EXTENSION - TAPER, COLOR AND CONFIGURATION TO MATCH DETAIL D310

LAMPS CONSISTENT WITH DETAIL D310

SMALL CELL WIRELESS EQUIPMENT ENCLOSURE MOUNTED TO THE POLE ONLY IF APPLICANT DEMONSTRATES THAT EQUIPMENT CANNOT BE INSTALLED UNDERGROUND OR AT BASE OF POLE

- SHALL BE THE MINIMUM SIZE TECHNICALLY FEASIBLE
- 8 FT MINIMUM CLEARANCE FROM FINISH GRADE
- MOUNT IN A POSITION THAT MINIMIZES IMPACT UPON ILLUMINATION TO THE MAXIMUM EXTENT FEASIBLE

** MINIMUM DIMENSION TECHNICALLY FEASIBLE

POLE CONSISTENT WITH DETAIL D310

DECORATIVE BASE COVER CONSISTENT WITH DETAIL D310

OCTAGONAL BASE OF D310 MAY BE ENLARGED (HEIGHTENED) TO ACCOMMODATE SMALL CELL WIRELESS EQUIPMENT

- MINIMUM SIZE TECHNICALLY FEASIBLE. ALLOWED ONLY IF APPLICANT DEMONSTRATES EQUIPMENT CANNOT BE INSTALLED UNDERGROUND
- APPEARANCE SHALL DUPLICATE BASE OF DETAIL D310
- PAINT TO MATCH POLE COLOR OF DETAIL D310

UNDERGROUND SMALL CELL EQUIPMENT TO THE MAXIMUM EXTENT TECHNICALLY FEASIBLE - PLACE AS DIRECTED BY CITY

NOTE:
TOTAL VOLUME OF SMALL CELL ANTENNA AND EQUIPMENT ENCLOSURES SHALL BE NO MORE THAN 28 CUBIC FEET.

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

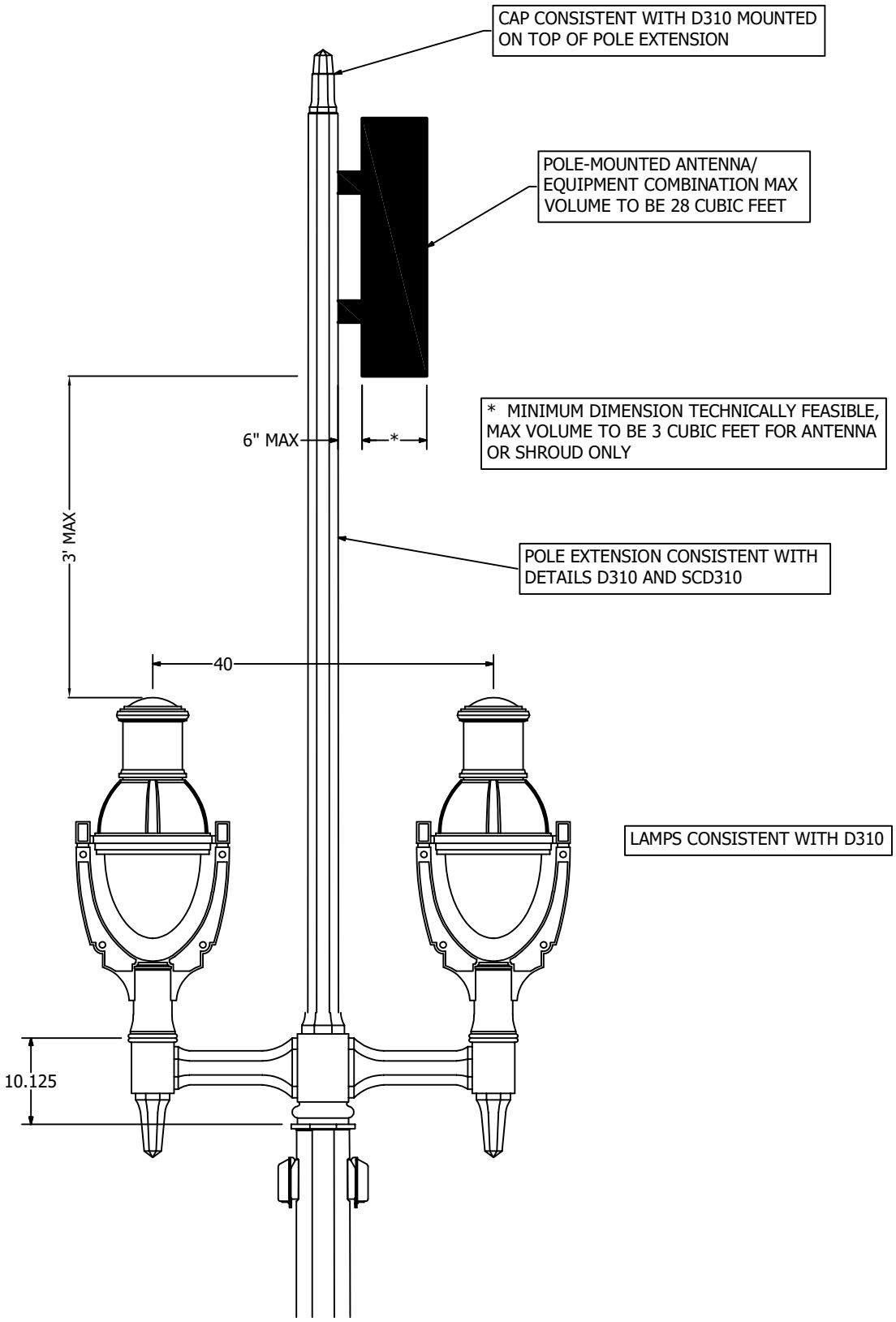
SMALL CELL WIRELESS FACILITY: TWIN-HEAD POST COMPLETE ASSEMBLY

Detail

SCD310

Revision Date

April, 2019



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PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

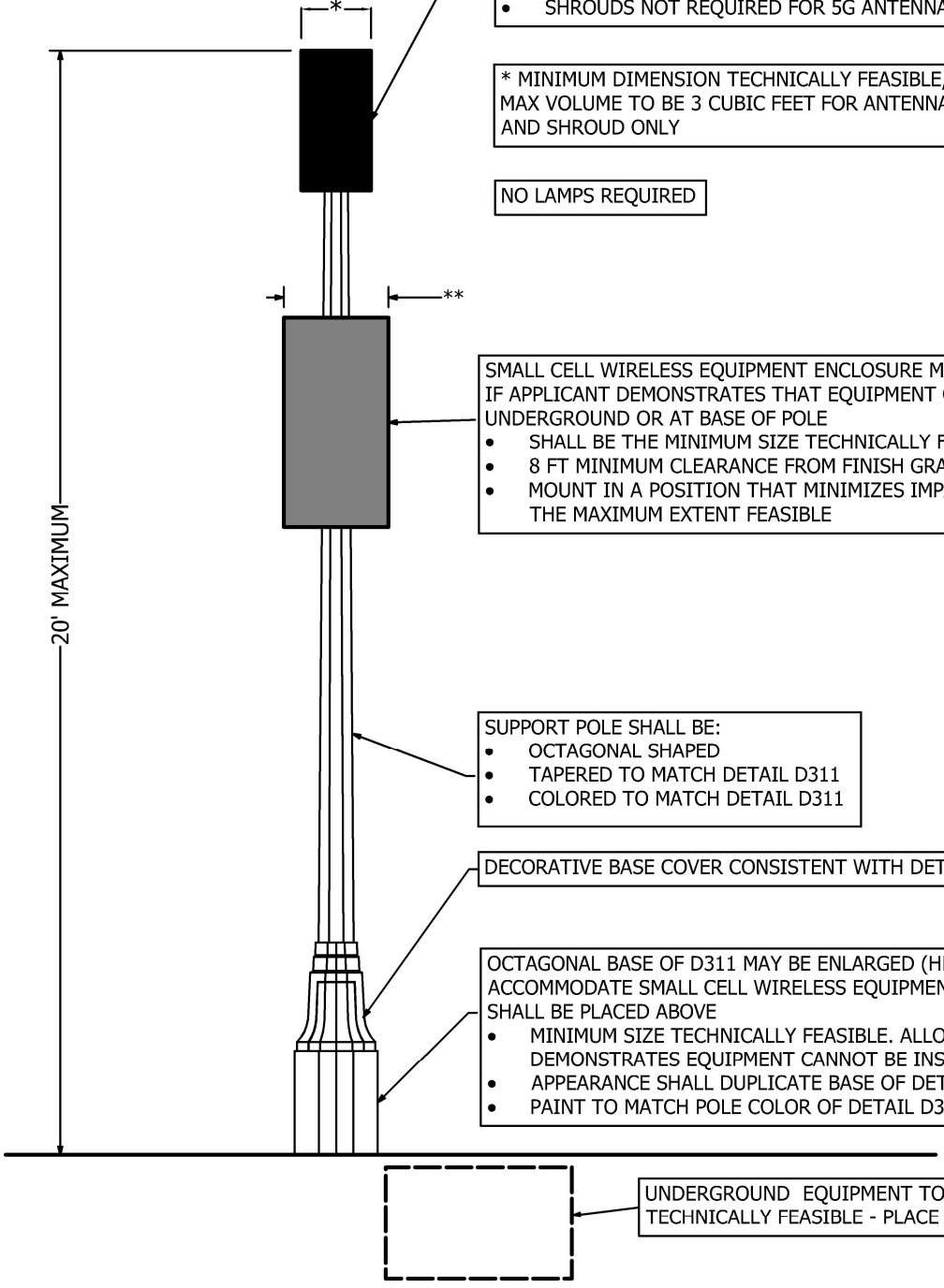
SMALL CELL WIRELESS FACILITY: TWIN-HEAD POST TOP

Detail

SCD310A

Revision Date

April, 2019



- TOP OF ANTENNA(S) OR SHROUD SHALL BE 20 FT ABOVE FINISH GRADE
- MAY BE MOUNTED ON THE SIDE OF POLE EXTENSION
- SHROUDS MAY BE CYLINDRICAL, OCTAGONAL, OR RECTANGULAR
- SHROUDS NOT REQUIRED IF APPLICANT DEMONSTRATES THROUGH SUBMITTAL OF PHOTO SIMULATIONS THAT THE SHROUD WOULD INCREASE ADVERSE VISUAL IMPACT OR FOR 5G ANTENNAS
- SHROUDS NOT REQUIRED FOR 5G ANTENNAS

* MINIMUM DIMENSION TECHNICALLY FEASIBLE, MAX VOLUME TO BE 3 CUBIC FEET FOR ANTENNA AND SHROUD ONLY

NO LAMPS REQUIRED

SMALL CELL WIRELESS EQUIPMENT ENCLOSURE MOUNTED TO THE POLE ONLY IF APPLICANT DEMONSTRATES THAT EQUIPMENT CANNOT BE INSTALLED UNDERGROUND OR AT BASE OF POLE

- SHALL BE THE MINIMUM SIZE TECHNICALLY FEASIBLE
- 8 FT MINIMUM CLEARANCE FROM FINISH GRADE
- MOUNT IN A POSITION THAT MINIMIZES IMPACT UPON ILLUMINATION TO THE MAXIMUM EXTENT FEASIBLE

SUPPORT POLE SHALL BE:

- OCTAGONAL SHAPED
- TAPERED TO MATCH DETAIL D311
- COLORED TO MATCH DETAIL D311

DECORATIVE BASE COVER CONSISTENT WITH DETAIL D311

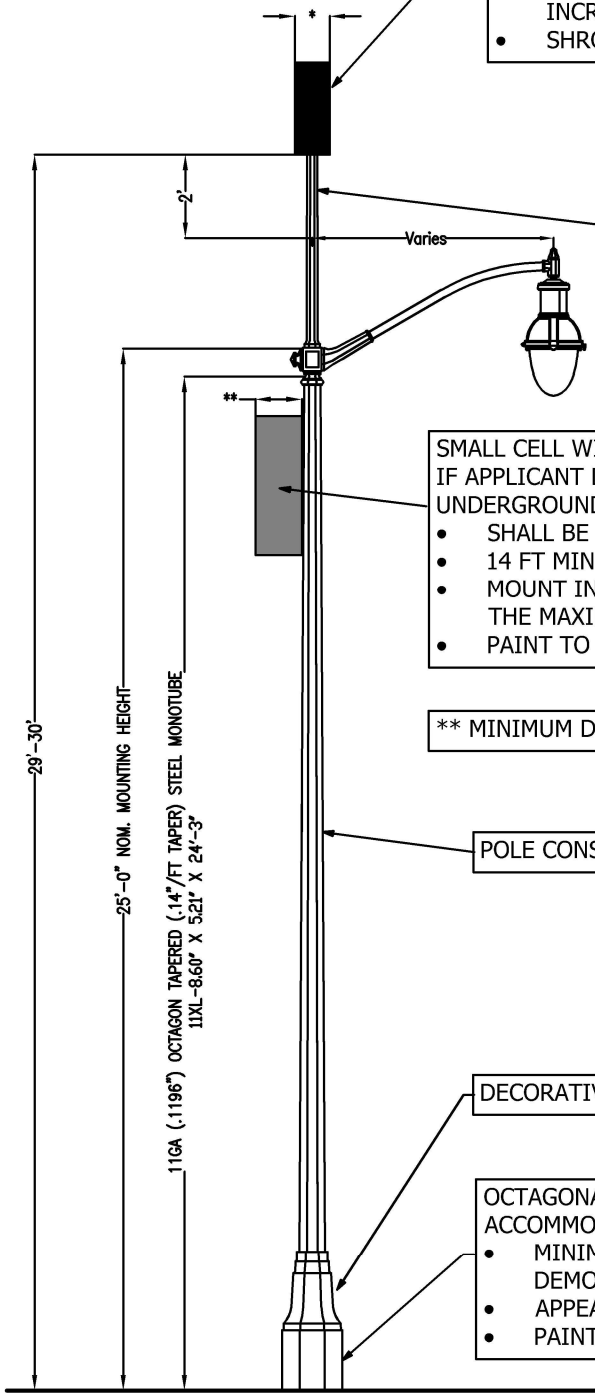
OCTAGONAL BASE OF D311 MAY BE ENLARGED (HEIGHTENED) TO ACCOMMODATE SMALL CELL WIRELESS EQUIPMENT. STANDARD BASE SHALL BE PLACED ABOVE

- MINIMUM SIZE TECHNICALLY FEASIBLE. ALLOWED ONLY IF APPLICANT DEMONSTRATES EQUIPMENT CANNOT BE INSTALLED UNDERGROUND
- APPEARANCE SHALL DUPLICATE BASE OF DETAIL D311
- PAINT TO MATCH POLE COLOR OF DETAIL D311

UNDERGROUND EQUIPMENT TO THE MAXIMUM EXTENT TECHNICALLY FEASIBLE - PLACE AS DIRECTED BY CITY

NOTE:
TOTAL VOLUME OF SMALL CELL ANTENNA AND EQUIPMENT ENCLOSURES SHALL BE NO MORE THAN 28 CUBIC FEET.

City of Bothell™	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	SMALL CELL WIRELESS FACILITY: TWIN-HEAD POST COMPLETE ASSEMBLY	Detail **SCD311** Revision Date April, 2019



ANTENNA OR SHROUD
- MAY BE MOUNTED ON THE SIDE OF POLE EXTENSION
- SHROUDS MAY BE CYLINDRICAL, OCTAGONAL, OR RECTANGULAR
- SHROUDS NOT REQUIRED IF APPLICANT DEMONSTRATES THROUGH SUBMITTAL OF PHOTO SIMULATIONS THAT THE SHROUD WOULD INCREASE ADVERSE VISUAL IMPACT OR FOR 5G ANTENNAS
- SHROUDS NOT REQUIRED FOR 5G ANTENNAS

* MINIMUM DIMENSION TECHNICALLY FEASIBLE, MAX VOLUME TO BE 3 CUBIC FEET FOR ANTENNA OR SHROUD ONLY

OCTAGONAL SHAPED POLE EXTENSION - TAPER, COLOR AND CONFIGURATION TO MATCH DETAIL D313

LAMPS CONSISTENT WITH DETAIL D313

SMALL CELL WIRELESS EQUIPMENT ENCLOSURE MOUNTED TO THE POLE ONLY IF APPLICANT DEMONSTRATES THAT EQUIPMENT CANNOT BE INSTALLED UNDERGROUND OR AT BASE OF POLE
- SHALL BE THE MINIMUM SIZE TECHNICALLY FEASIBLE
- 14 FT MINIMUM CLEARANCE FROM FINISH GRADE
- MOUNT IN A POSITION THAT MINIMIZES IMPACT UPON ILLUMINATION TO THE MAXIMUM EXTENT TECHNICALLY FEASIBLE
- PAINT TO MATCH POLE COLOR OF DETAIL D313

** MINIMUM DIMENSION TECHNICALLY FEASIBLE

POLE CONSISTENT WITH DETAIL D313

DECORATIVE BASE COVER CONSISTENT WITH DETAIL D313

OCTAGONAL BASE OF D313 MAY BE ENLARGED (HEIGHTENED) TO ACCOMMODATE SMALL CELL WIRELESS EQUIPMENT
- MINIMUM SIZE TECHNICALLY FEASIBLE. ALLOWED ONLY IF APPLICANT DEMONSTRATES EQUIPMENT CANNOT BE INSTALLED UNDERGROUND
- APPEARANCE SHALL DUPLICATE DETAIL D313
- PAINT TO MATCH POLE COLOR OF DETAIL D313

UNDERGROUND SMALL CELL EQUIPMENT TO THE MAXIMUM EXTENT TECHNICALLY FEASIBLE - PLACE AS DIRECTED BY CITY

NOTE:
TOTAL VOLUME OF SMALL CELL ANTENNA AND EQUIPMENT ENCLOSURES SHALL BE NO MORE THAN 28 CUBIC FEET.

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

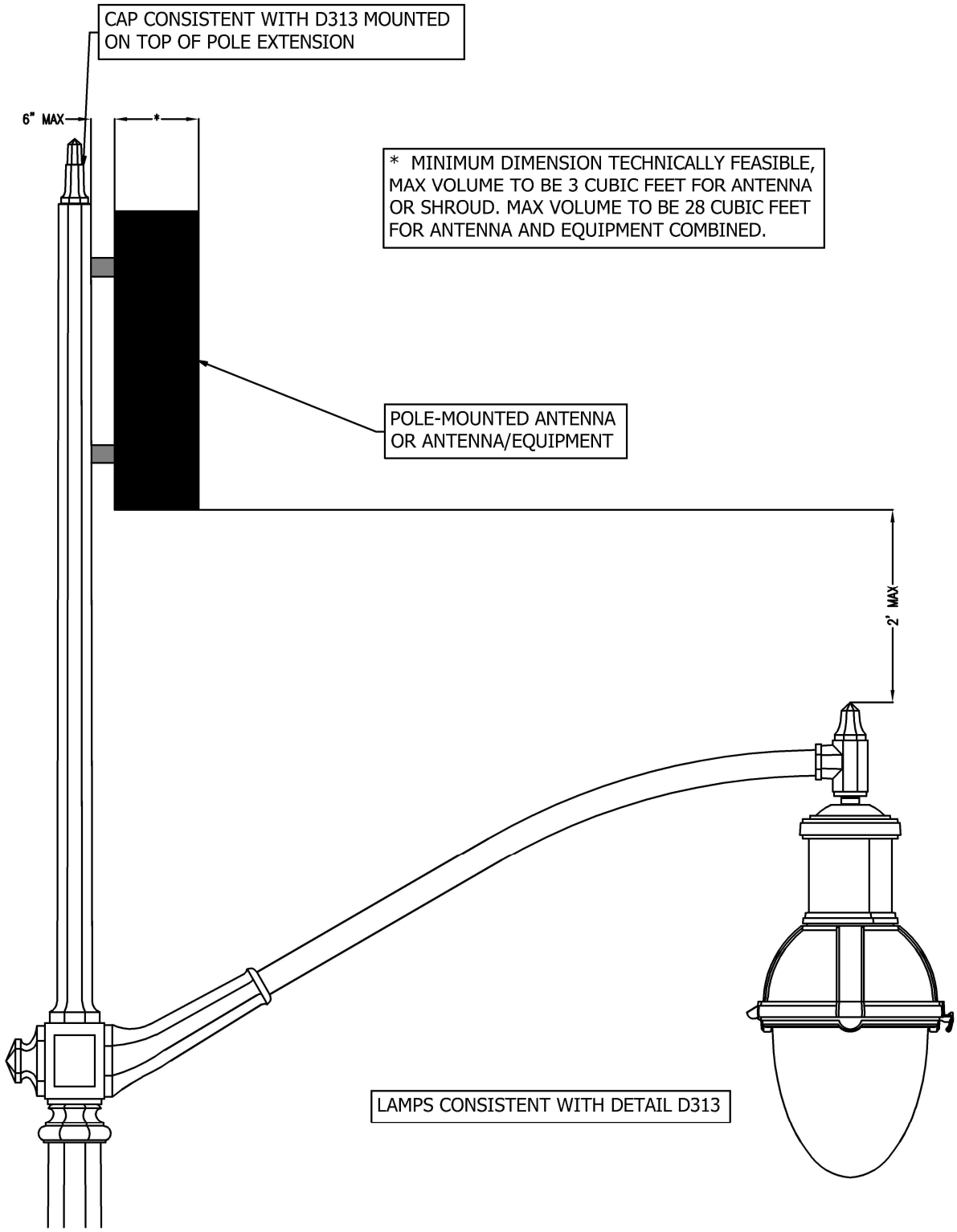
SMALL CELL WIRELESS FACILITY: SINGLE ARM PENDANT COMPLETE ASSEMBLY

Standard Detail

SCD313

Revision Date

April, 2019



City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

SMALL CELL WIRELESS FACILITY: SINGLE ARM PENDANT

Standard Detail

SCD313A

Revision Date

Mar, 2019

ANTENNA OR SHROUD
- MAY BE MOUNTED ON THE SIDE OF POLE EXTENSION
- SHROUDS MAY BE CYLINDRICAL, OCTAGONAL, OR RECTANGULAR
- SHROUDS NOT REQUIRED IF APPLICANT DEMONSTRATES THROUGH SUBMITTAL OF PHOTO SIMULATIONS THAT THE SHROUD WOULD INCREASE ADVERSE VISUAL IMPACT OR FOR 5G ANTENNAS
- SHROUDS NOT REQUIRED FOR 5G ANTENNAS

* MINIMUM DIMENSION TECHNICALLY FEASIBLE, MAX VOLUME TO BE 3 CUBIC FEET FOR ANTENNA OR SHROUD

CYLINDRICAL SHAPED POLE EXTENSION - TAPER, COLOR AND CONFIGURATION TO MATCH DETAIL D314

LAMPS CONSISTENT WITH DETAIL D314

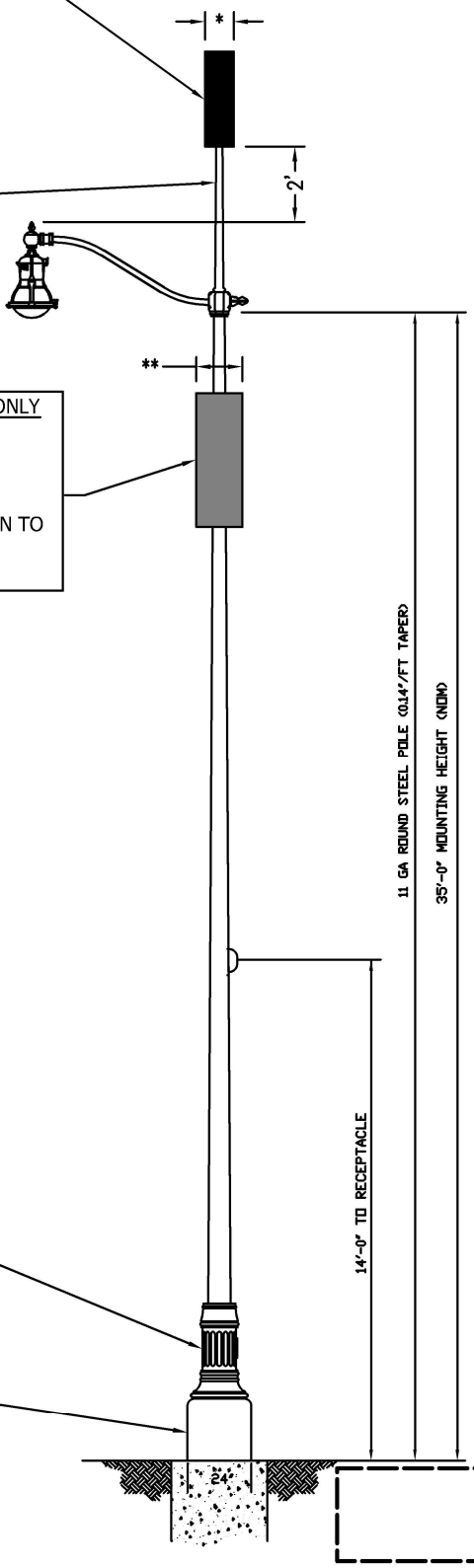
SMALL CELL WIRELESS EQUIPMENT ENCLOSURE MOUNTED TO THE POLE ONLY IF APPLICANT DEMONSTRATES THAT EQUIPMENT CANNOT BE INSTALLED UNDERGROUND OR AT BASE OF POLE
- SHALL BE THE MINIMUM SIZE TECHNICALLY FEASIBLE
- 14 FT MINIMUM CLEARANCE FROM FINISH GRADE
- MOUNT IN A POSITION THAT MINIMIZES IMPACT UPON ILLUMINATION TO THE MAXIMUM EXTENT TECHNICALLY FEASIBLE
- PAINT TO MATCH POLE COLOR OF DETAIL D314

** MINIMUM DIMENSION TECHNICALLY FEASIBLE

DECORATIVE BASE COVER CONSISTENT WITH DETAIL D310

CYLINDRICAL BASE OF D314 MAY BE ENLARGED (HEIGHTENED) TO ACCOMMODATE SMALL CELL WIRELESS EQUIPMENT
- MINIMUM SIZE TECHNICALLY FEASIBLE. ALLOWED ONLY IF APPLICANT DEMONSTRATES EQUIPMENT CANNOT BE INSTALLED UNDERGROUND
- APPEARANCE SHALL DUPLICATE DETAIL D314
- PAINT TO MATCH POLE COLOR OF DETAIL D314

NOTE:
TOTAL VOLUME OF SMALL CELL ANTENNA AND EQUIPMENT ENCLOSURES SHALL BE NO MORE THAN 28 CUBIC FEET.



UNDERGROUND SMALL CELL EQUIPMENT TO THE MAXIMUM EXTENT TECHNICALLY FEASIBLE - PLACE AS DIRECTED BY CITY

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

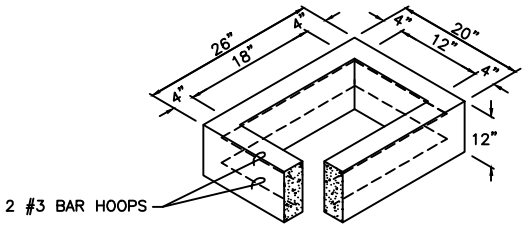
City Engineer

SMALL CELL WIRELESS FACILITY: VICTORIAN SINGLE ARM PENDANT COMPLETE ASSEMBLY

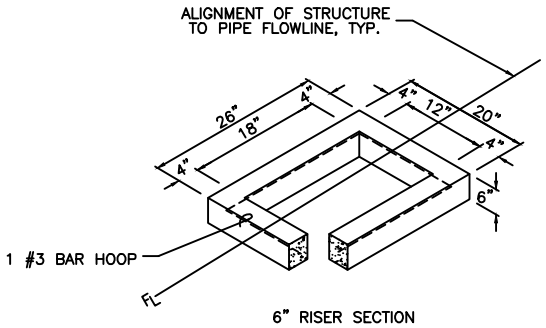
Standard Detail

SCD314

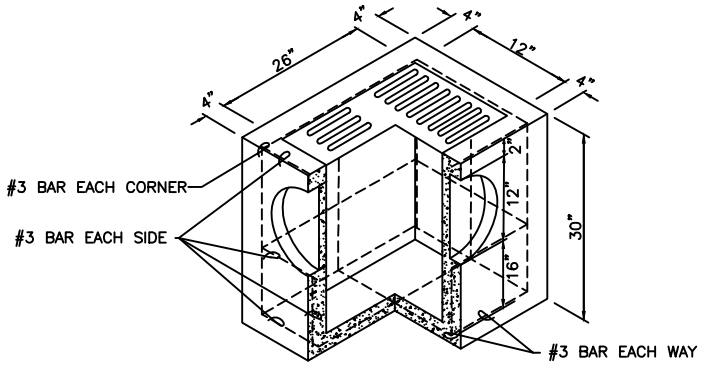
Revision Date
April, 2019



12" RISER SECTION



6" RISER SECTION



PRECAST BASE SECTION
(MEASUREMENT AT THE TOP
OF THE BASE)

NOT TO SCALE

NOTES:

1. ALL REINFORCED CAST-IN-PLACE CONCRETE SHALL BE CLASS 4000.
2. PRECAST BASES SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MIN. ALL PIPE SHALL BE INSTALLED IN FACTORY PROVIDED KNOCKOUTS. UNUSED KNOCKOUTS NEED NOT BE GROUTED IF WALL IS LEFT INTACT.
3. KNOCKOUT OR CUTOUT HOLE SIZE IS EQUAL TO PIPE OUTER DIAM. PLUS CATCH BASIN WALL THICKNESS.
4. THE MAX. DEPTH FROM THE FINISHED GRADE TO THE PIPE INVERT IS 5'-0".
5. CATCH BASIN FRAME AND GRATE SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS. MATING SURFACES SHALL BE FINISHED TO ASSURE NON-ROCKING FIT WITH ANY COVER POSITION.
6. CHANNELLING OF ON-SITE CATCH BASINS MAY BE REQUIRED FOR PRIVATE STORM DRAINAGE CONVEYANCE SYSTEMS.

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

YARD DRAIN

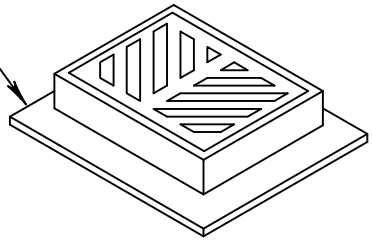
Standard Detail

410

Revision Date

Dec, 2019

FRAME AND GRATE,
PER STD DETAILS, 422 OR 425
OR FRAME W/SOLID COVER.



NOTES:

1. AS AN ACCEPTABLE ALTERNATE TO REBAR, WIRE MESH HAVING A MINIMUM AREA OF 0.12 SQUARE INCHES PER FOOT MAY BE USED. WIRE MESH SHALL NOT BE PLACED IN KNOCKOUTS.

2. THE KNOCKOUT DIAMETER SHALL NOT BE GREATER THAN 20". KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MINIMUM TO 2 1/2" MAXIMUM.

3. THE MAXIMUM DEPTH FROM THE FINISHED GRADE TO THE PIPE INVERT SHALL BE 5'.

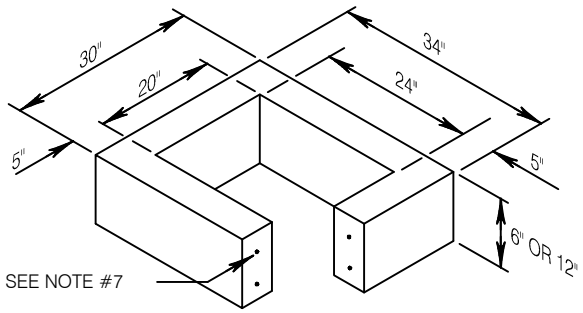
4. FRAME AND GRATE MAY BE INSTALLED WITH FLANGE DOWN OR CAST INTO ADJUSTMENT SECTION.

5. THE PRECAST BASE SECTION MAY HAVE A ROUNDED FLOOR AND THE WALLS MAY BE SLOPED AT A RATE OF 1:24 OR STEEPER.

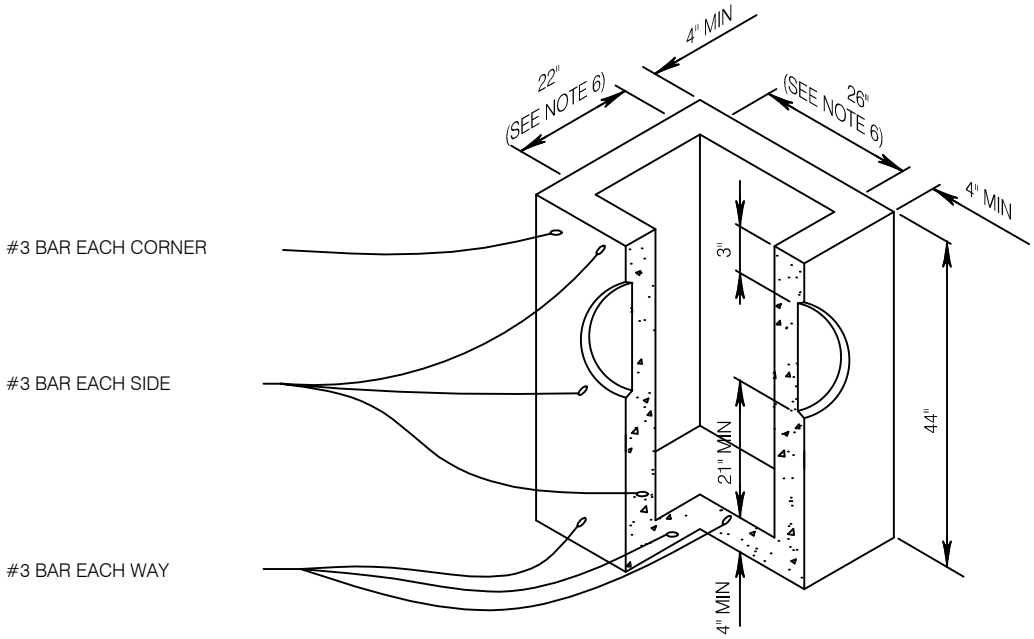
6. OPENING SHALL BE MEASURED AT THE TOP OF THE PRECAST BASE UNIT.

7. THE 6" ADJUSTMENT SECTION SHALL HAVE ONE #3 BAR CENTERED. THE 12" ADJUSTMENT SECTION SHALL HAVE TWO #3 BARS EQUALY SPACED.

8. GROUT ALL JOINTS INSIDE AND OUTSIDE.



RECTANGULAR ADJUSTMENT SECTION



PRECAST BASE SECTION

CATCH BASIN AND ALL REINFORCING STEEL
TO CONFORM TO WSDOT STANDARD PLAN B-5.20-01

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

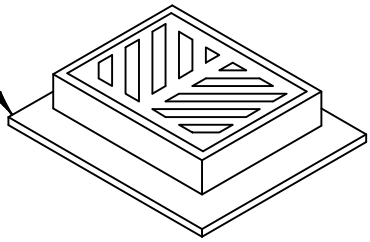
CATCH BASIN
TYPE 1

Standard Detail

412

Revision Date
Feb, 2012

FRAME AND GRATE,
OR FRAME &
SOLID COVER.



NOTES:

1. AS AN ACCEPTABLE ALTERNATE TO REBAR, WIRE MESH HAVING A MINIMUM AREA OF 0.12 SQUARE INCHES PER FOOT MAY BE USED. WIRE MESH SHALL NOT BE PLACED IN KNOCKOUTS.

2. THE KNOCKOUT DIAMETER SHALL NOT BE GREATER THAN 20". KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MINIMUM TO 2 1/2" MAXIMUM.

3. THE MAXIMUM DEPTH FROM THE FINISHED GRADE TO THE PIPE INVERT SHALL BE 5'.

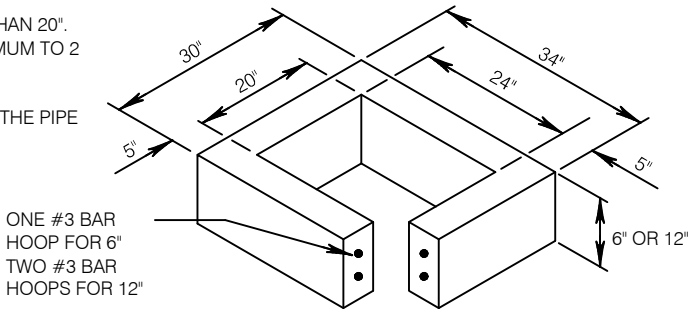
4. FRAME AND GRATE MAY BE INSTALLED WITH FLANGE DOWN OR CAST INTO ADJUSTMENT SECTION.

5. THE PRECAST BASE SECTION MAY HAVE A ROUNDED FLOOR AND THE WALLS MAY BE SLOPED AT A RATE OF 1:24 OR STEEPER.

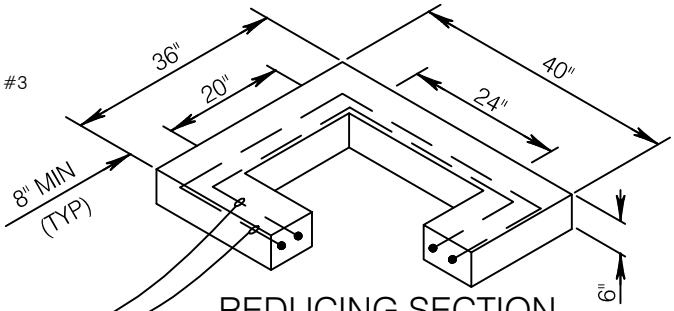
6. OPENING SHALL BE MEASURED AT THE TOP OF THE PRECAST BASE UNIT.

7. THE 6" ADJUSTMENT SECTION SHALL HAVE ONE #3 BAR CENTERED. THE 12" ADJUSTMENT SECTION SHALL HAVE TWO #3 BAR EQUALY SPACED.

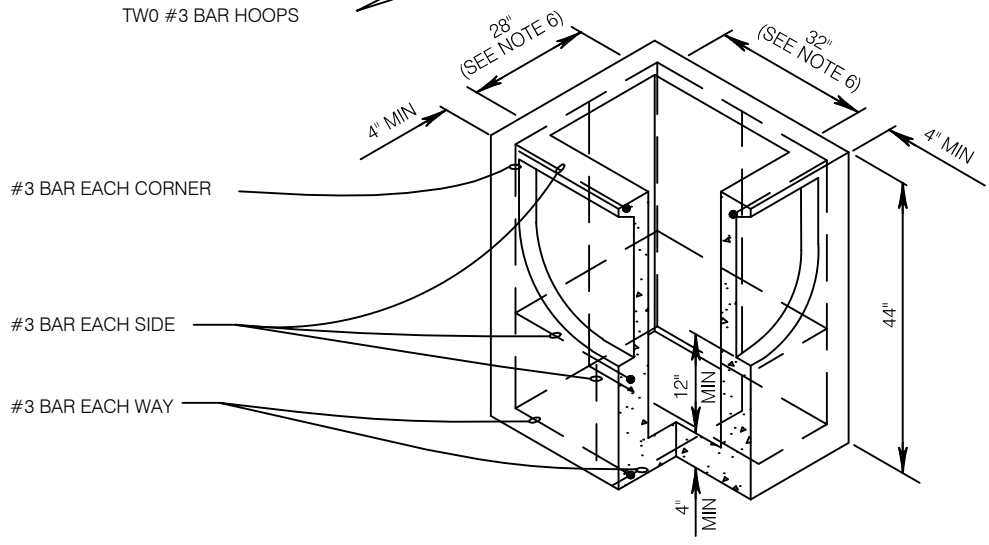
8. GROUT ALL JOINTS INSIDE AND OUTSIDE.



RECTANGULAR ADJUSTMENT SECTION



REDUCING SECTION



PRECAST BASE SECTION

CATCH BASIN AND ALL REINFORCING STEEL TO CONFORM TO WSDOT STANDARD PLAN B-5.40-01

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

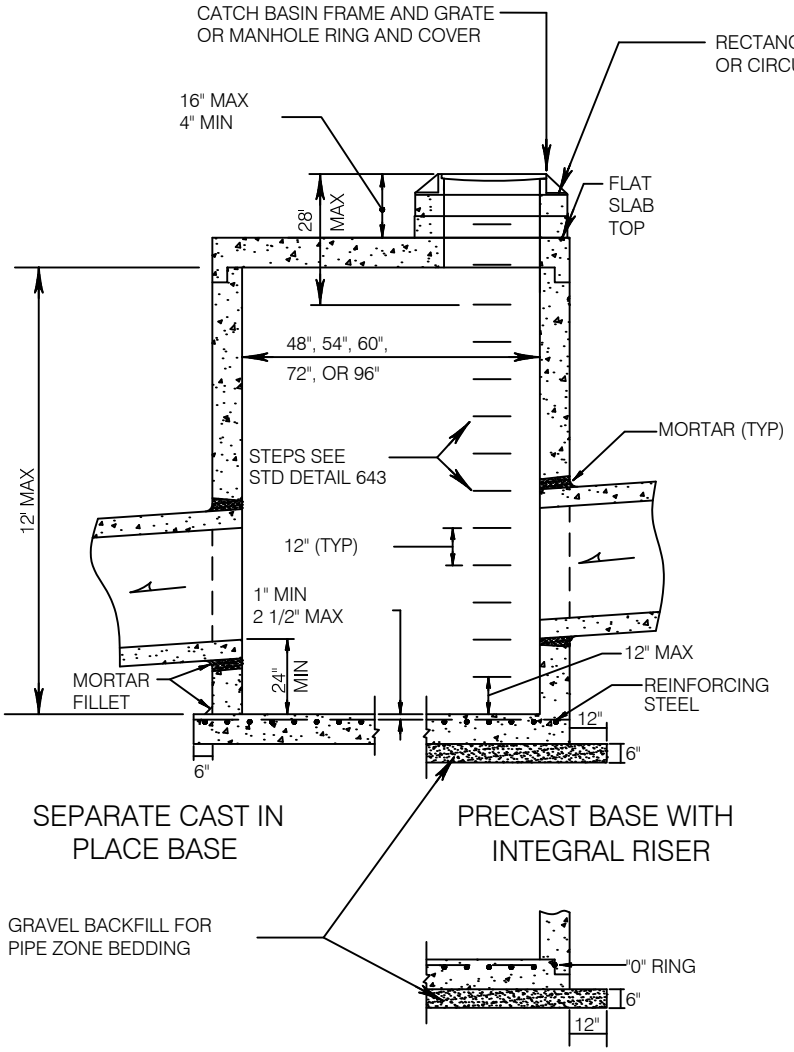
City Engineer

CATCH BASIN
TYPE 1L

Standard Detail

413

Revision Date
Feb, 2012



SEPARATE CAST IN PLACE BASE

PRECAST BASE WITH INTEGRAL RISER

SEPARATE PRECAST BASE

NOTES:

1. NO STEPS ARE REQUIRED WHEN HEIGHT IS 4' OR LESS.
2. THE BOTTOM OF THE PRECAST CATCH BASIN MAY BE ROUNDED.
3. FRAME AND GRATE MAY BE INSTALLED WITH FLANGE DOWN OR CAST INTO ADJUSTMENT SECTION.
4. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MINIMUM TO 2 1/2" MAXIMUM.
5. GROUT ALL JOINTS INSIDE AND OUTSIDE.
6. THE BOTTOM OF THE LADDER MUST BE BOLTED.

CATCH BASIN DIMENSION TABLE

DIA	WALL THICKNESS	BASE THICKNESS	BASE THICKNESS SIZE	MINIMUM DISTANCE BETWEEN KNOCKOUTS	BASE REINFORCING STEEL IN^2 /FT IN EACH DIRECTION	
					INTEGRAL BASE	SEPARATE BASE
48"	4"	6"	36"	8"	0.15	0.23
54"	4 1/2"	8"	42"	8"	0.19	0.19
60"	5"	8"	48"	8"	0.25	0.25
72"	6"	8"	60"	12"	0.24	0.35
96"	8"	12"	84"	12"	0.29	0.39

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

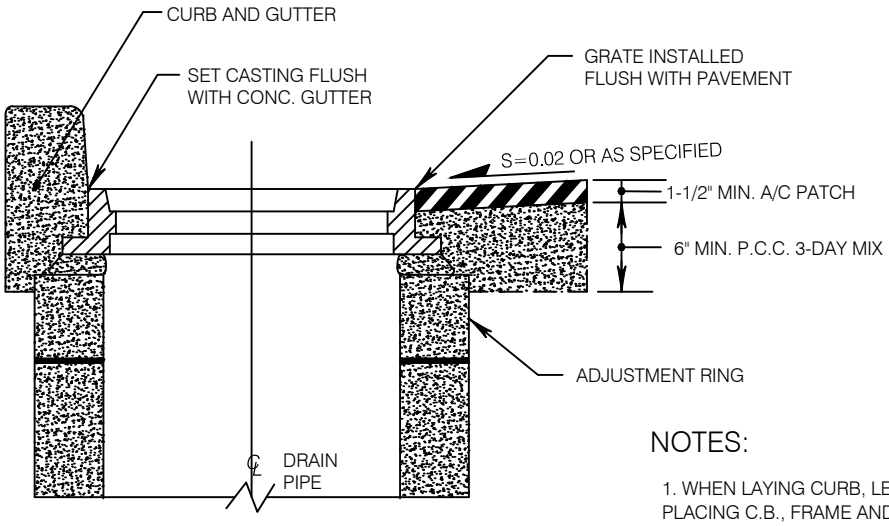
CATCH BASIN TYPE 2

Standard Detail

414

Revision Date

Dec, 2019



SECTION A-A

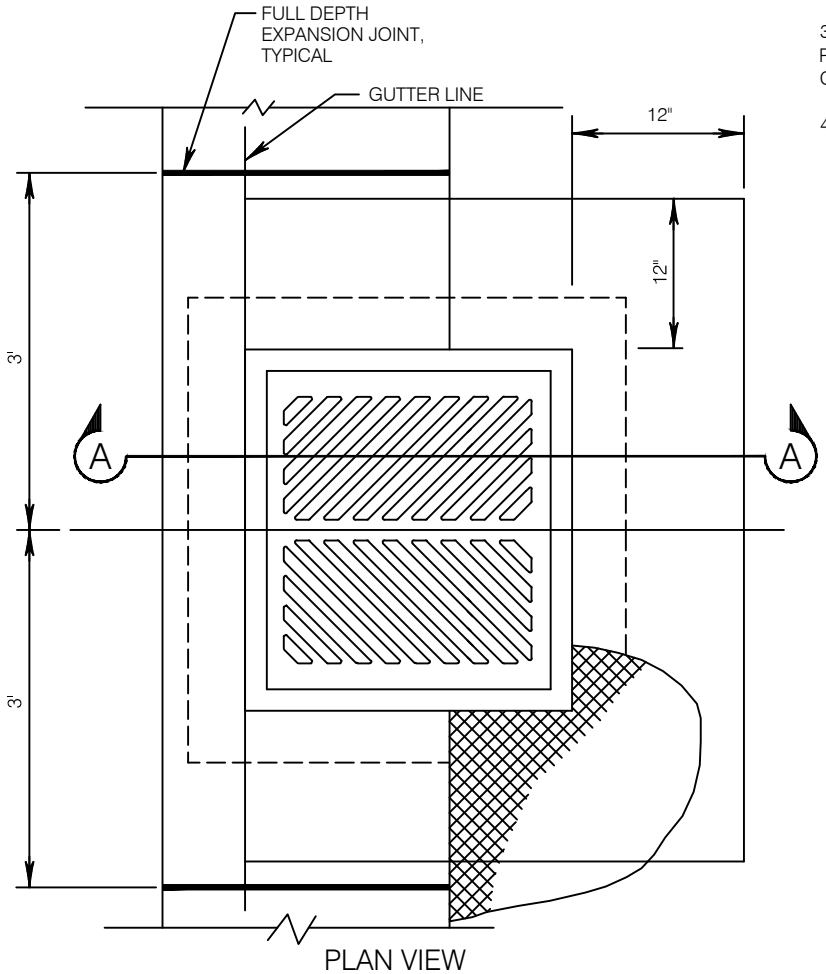
NOTES:

1. WHEN LAYING CURB, LEAVE 6' OUT FOR PLACING C.B., FRAME AND GRATE.

2. PLACE CURB AROUND C.B. USING CEMENT CONCRETE 3-DAY MIX.

3. AN APPROVED MATERIAL WHICH WILL PREVENT BONDING OF THE CURB TO FRAME, GRATE OR C.B. SHALL BE USED.

4. GROUT ALL JOINTS INSIDE AND OUTSIDE.



PLAN VIEW

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

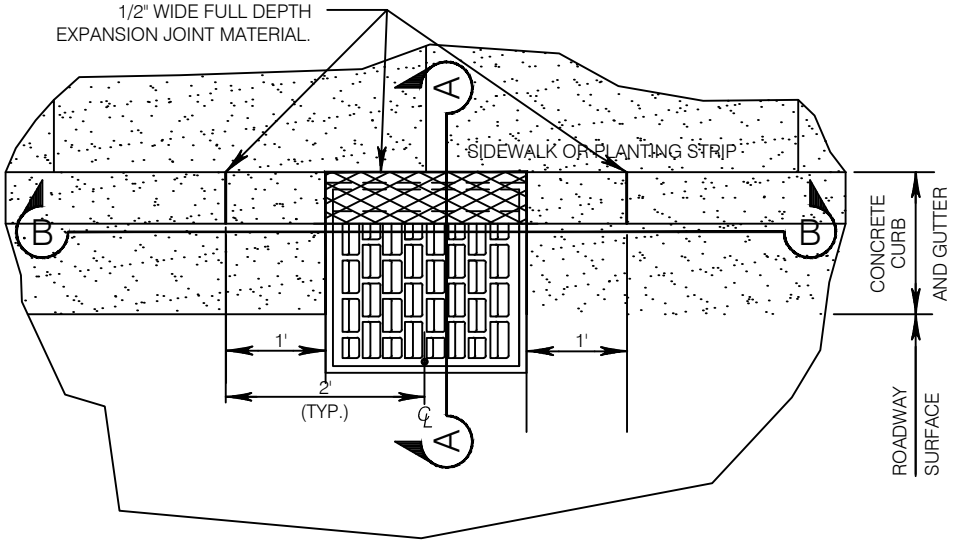
CATCH BASIN INSTALLATION

Standard Detail

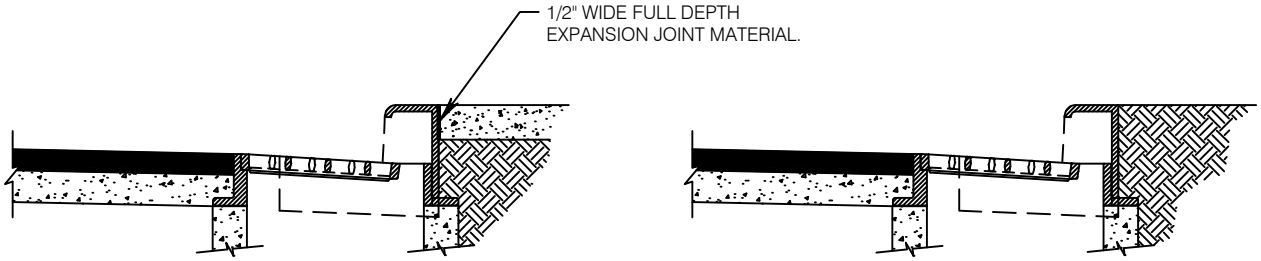
420

Revision Date

Feb, 2012



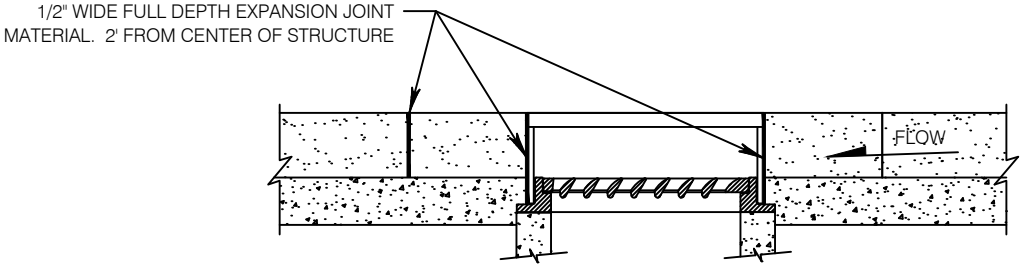
PARTIAL PLAN VIEW



INLET WITH SIDEWALK

INLET WITH PLANTER

SECTION A-A



SECTION B-B

NOTE:

1. SET TO GRADE AND CONSTRUCT ROAD AND GUTTER TO BE FLUSH WITH FRAME.

2. SEE STD DRAWINGS 422, 423, AND 424 FOR TYPES OF GRATE USE.

3. SEE STD DWG 425 FOR FRAME DETAIL.

4. TYPE II STRUCTURE EXPANSION JOINT. THE WIDTH OF STRUCTURE PLUS 2' SQUARE IF IN SIDEWALK.

City of Bothell™

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Approved By:

City Engineer

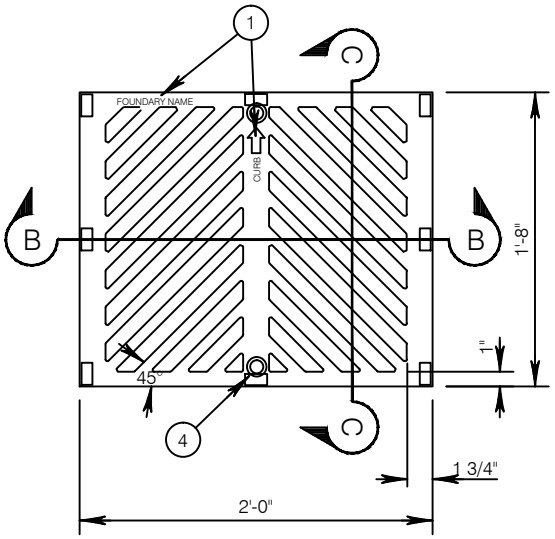
THRU-CURB INLET FRAME AND GRATE WITH VERTICAL CURB INSTALLATION

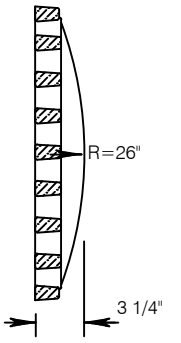
Standard Detail

421

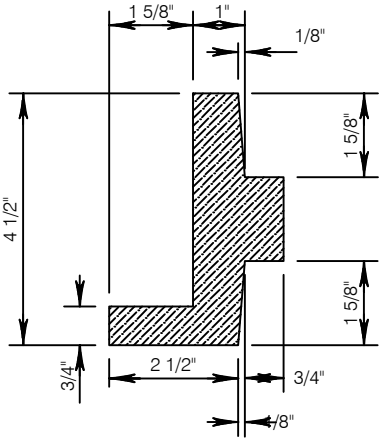
Revision Date

Feb, 2012

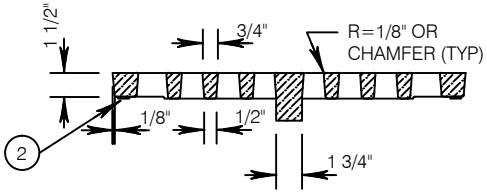




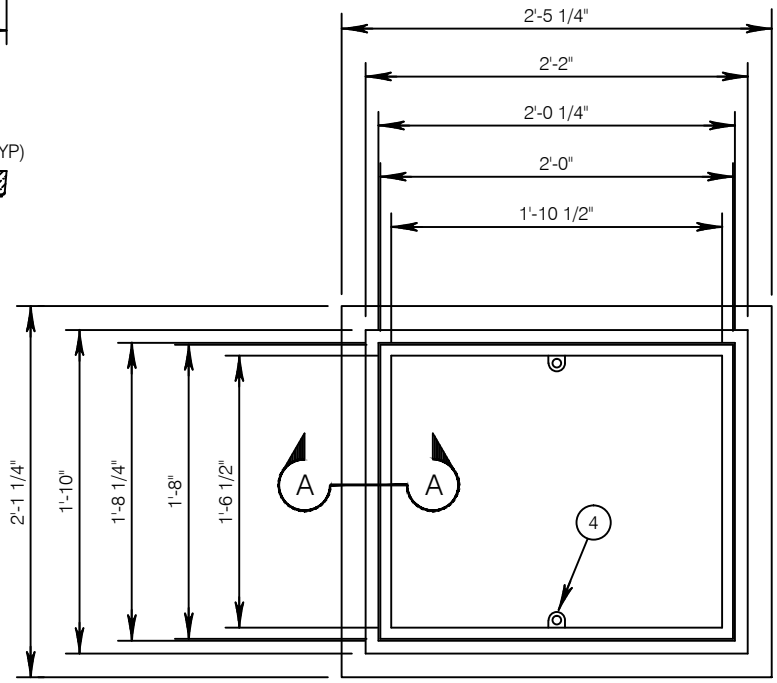
SECTION C-C



SECTION A-A



SECTION B-B



DETAIL NOTES:

1. FOUNDARY NAME, THIS SIDE TO CURB W/ARROW AND CITY OF BOTHELL (DI) FOR DUCTILE IRON SHALL BE EMBOSSED ON TOP OF THE GRATE WITH 1/16" RECESSED LETTERS.
2. SEATING OF GRATE SHALL BE ACCOMPLISHED BY ONE OF THE FOLLOWING:
   A. 8 INTEGRALLY CAST PADS (1-1/2"X 3/4" X 1/8").
   B. MACHINE BOTTOM SURFACE OUTSIDE A 17" DIA.
3. MATERIAL USED SHALL BE DUCTILE IRON PER ASTM-A536 GRADE 80-55-06. ALL CASTINGS SHALL HAVE A BITUMINOUS COATING.
4. WHEN LOCKING GRATE IS REQUIRED, HOLES WILL BE PROVIDED IN THE CASTING TO ALLOW FOR TWO 5/8" DIA. STAINLESS STEEL SOCKET HEAD CAP SCREWS SO THAT NO PART OF HEAD PROTRUDES ABOVE TOP OF CASTING.

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

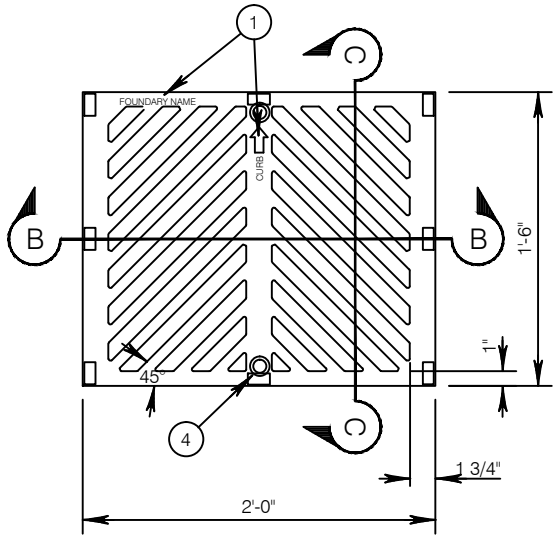
City Engineer

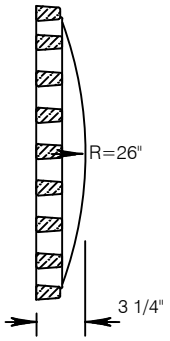
FRAME AND GRATE
20"X24"

Standard Detail

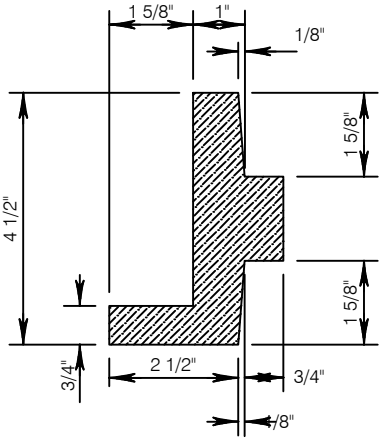
422

Revision Date
Feb, 2012

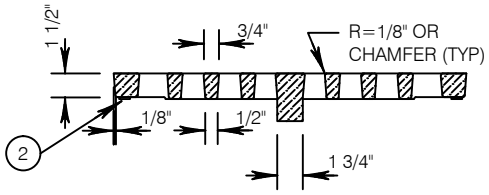




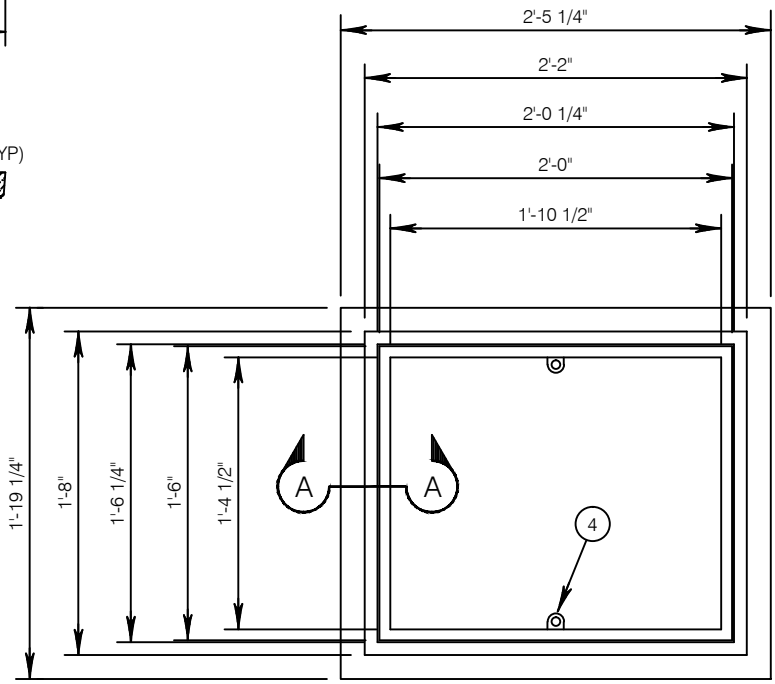
SECTION C-C



SECTION A-A



SECTION B-B



DETAIL NOTES:

1. FOUNDARY NAME, THIS SIDE TO CURB W/ARROW AND CITY OF BOTHELL (DI) FOR DUCTILE IRON SHALL BE EMBOSSED ON TOP OF THE GRATE WITH 1/16" RECESSED LETTERS.
2. SEATING OF GRATE SHALL BE ACCOMPLISHED BY ONE OF THE FOLLOWING:
   A. 8 INTEGRALLY CAST PADS (1-1/2"X 3/4" X 1/8").
   B. MACHINE BOTTOM SURFACE OUTSIDE A 17" DIA.
3. MATERIAL USED SHALL BE DUCTILE IRON PER ASTM-A536 GRADE 80-55-06. ALL CASTINGS SHALL HAVE A BITUMINOUS COATING.
4. WHEN LOCKING GRATE IS REQUIRED, HOLES WILL BE PROVIDED IN THE CASTING TO ALLOW FOR TWO 5/8" DIA. STAINLESS STEEL SOCKET HEAD CAP SCREWS SO THAT NO PART OF HEAD PROTRUDES ABOVE TOP OF CASTING.

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

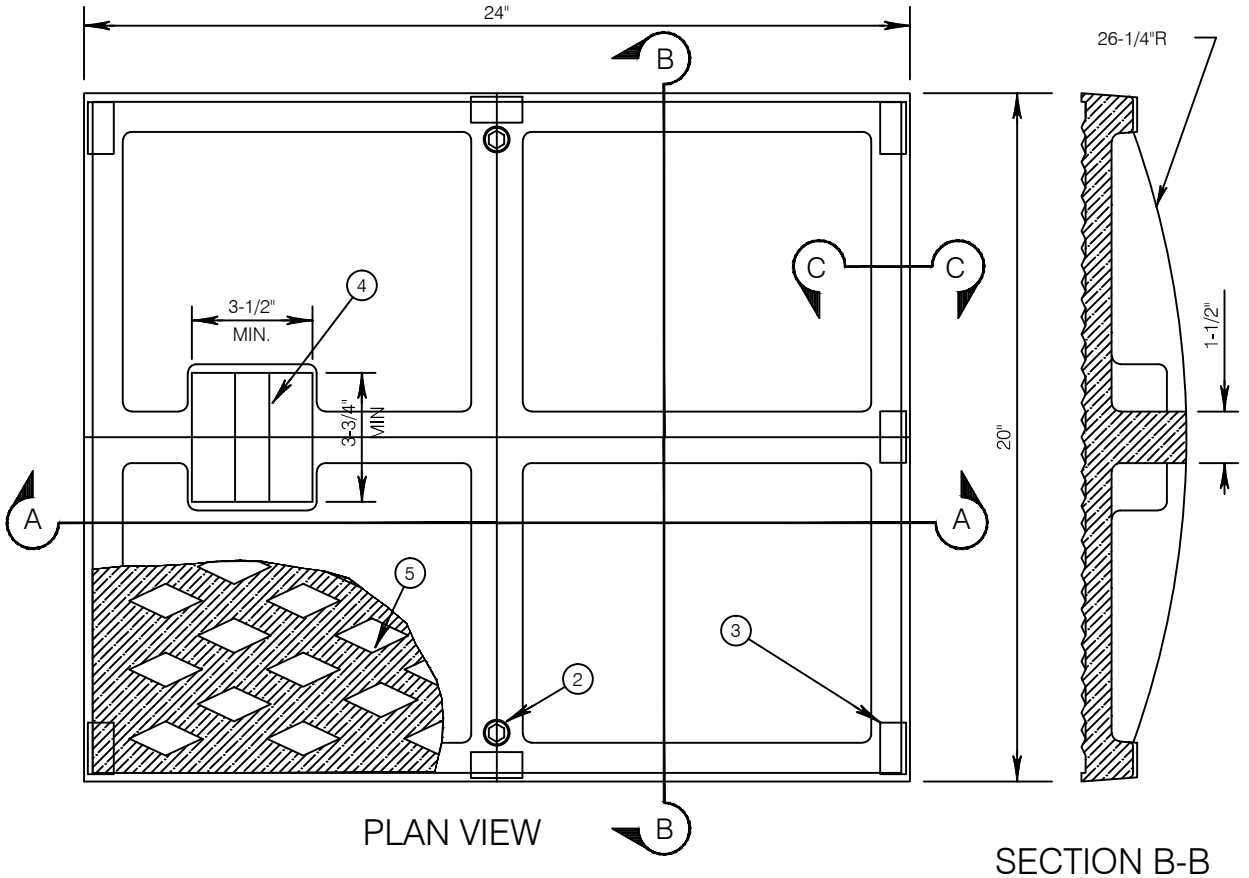
City Engineer

FRAME AND GRATE
18"X24"

Standard Detail

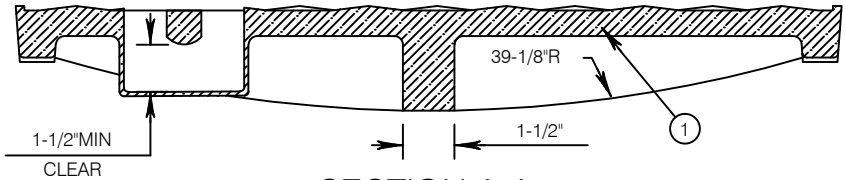
422A

Revision Date
Feb, 2012

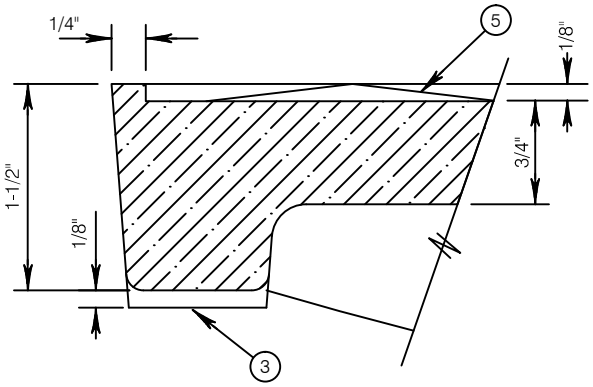


PLAN VIEW

SECTION B-B



SECTION A-A



SECTION C-C

DETAIL NOTES:

1. MATERIALS USED SHALL BE DUCTILE IRON PER ASTM-A536, GRADE 80-55-06, WITH BITUMINOUS COATING.
2. WHEN LOCKING GRATE REQUIRED HOLES WILL BE PROVIDED IN CASTING TO ALLOW FOR TWO ⅝" DIA. STAINLESS STEEL, SOCKET HEAD CAP SCREWS, NO PART OF SCREW WILL PROTRUDE ABOVE GRATE.
3. GRATE SEATING: 8 INTEGRALLY CAST PADS.
4. CAST POCKET LIFT HANDLE
5. NONSKID DIAMOND PATTERN APPROX. 2-½" x 1" x ⅛" HIGH

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

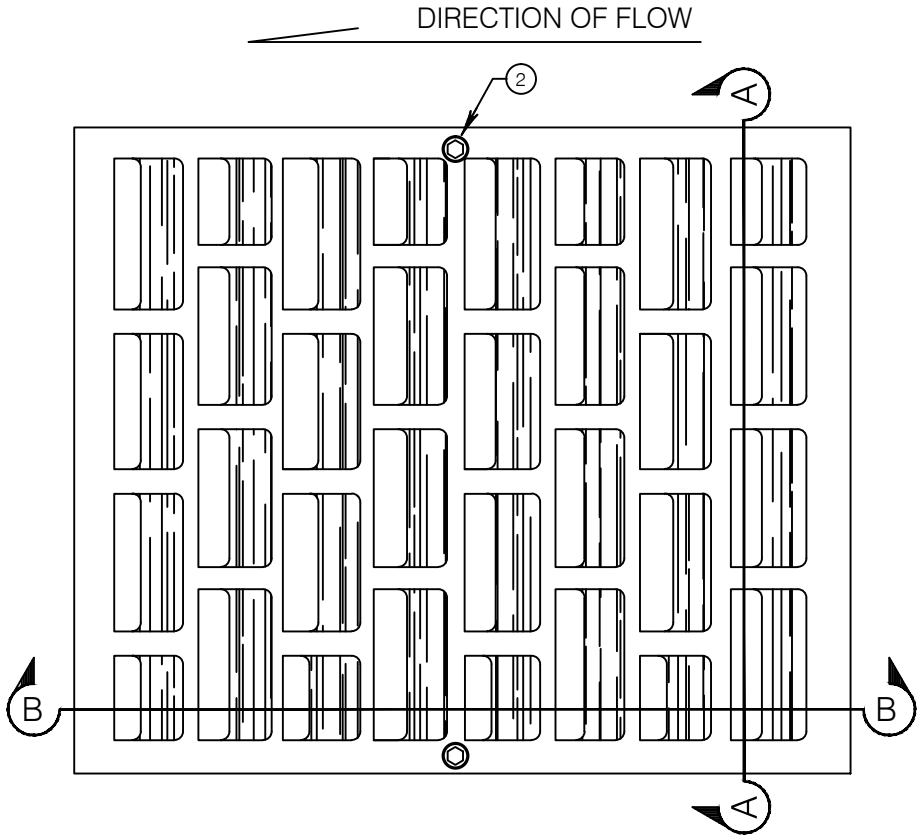
City Engineer

SOLID COVER
RECTANGLE

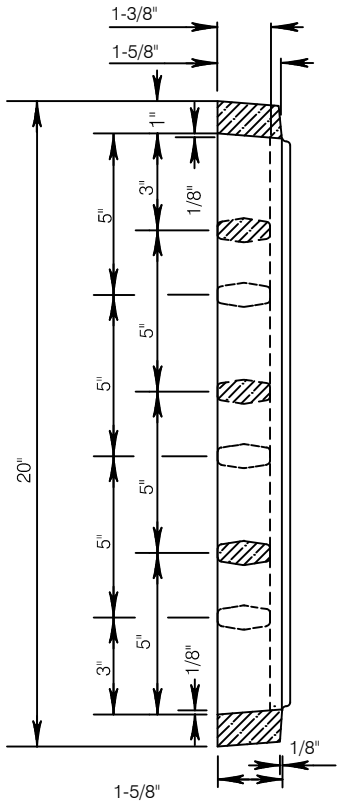
Standard Detail

423

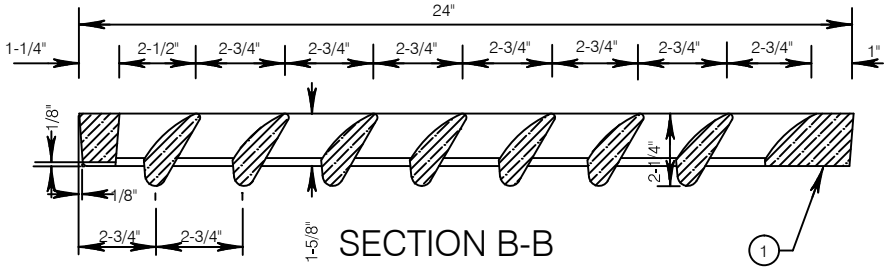
Revision Date
Feb, 2012



PLAN VIEW



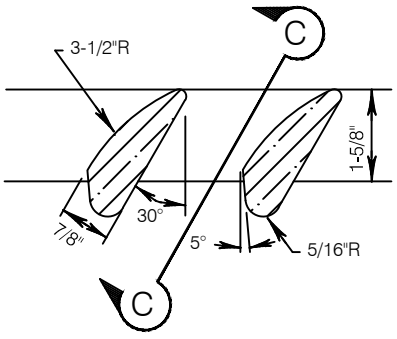
SECTION A-A



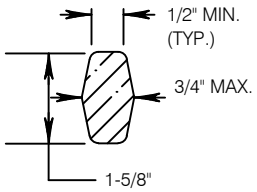
SECTION B-B

DETAIL NOTES:

1. MATERIAL USED SHALL BE DUCTILE IRON PER ASTM-A536, GRADE 80-55-06, WITH BITUMINOUS COATING.
2. WHEN LOCKING GRATE REQUIRED HOLES WILL BE PROVIDED IN CASTING TO ALLOW FOR TWO 5/8" DIA STAINLESS STEEL, SOCKET HEAD CAP SCREWS. NO PART OF SCREW WILL PROTRUDE ABOVE GRATE.
3. USE ON SLOPES GREATER THAN 6%.

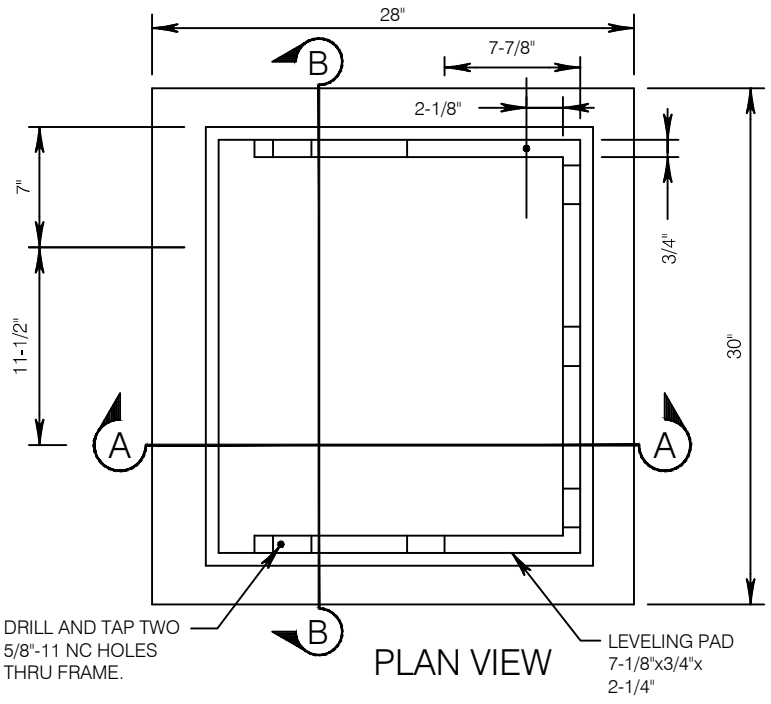


VANE

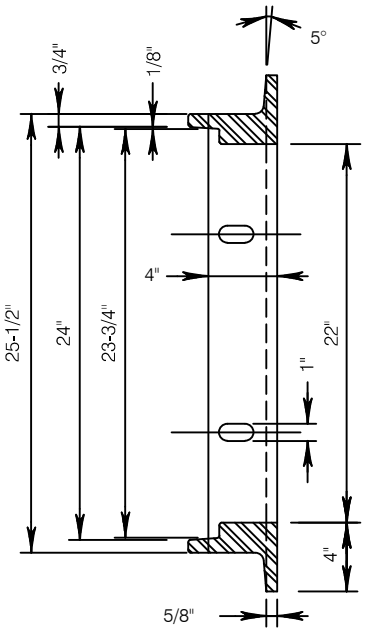


SECTION C-C

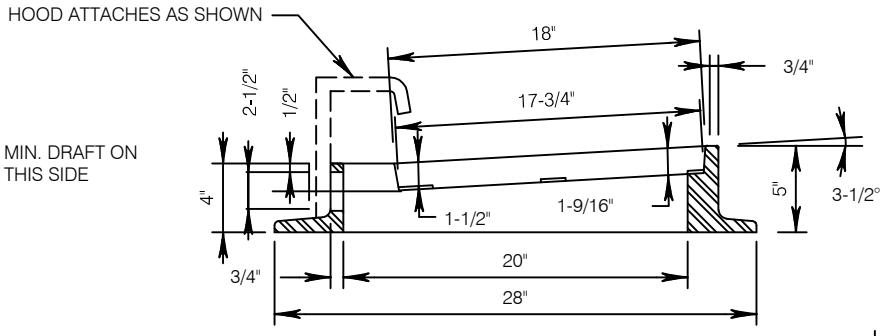
City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	VANED-GRATE RECTANGLE	Standard Detail **424** Revision Date Feb, 2012



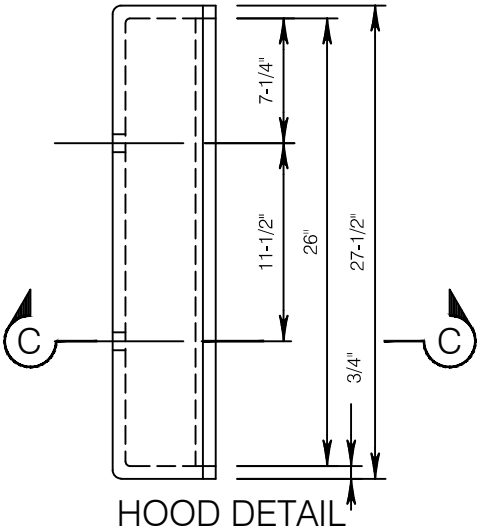
PLAN VIEW



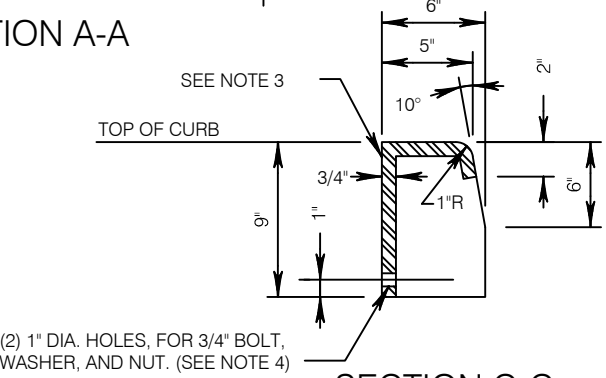
SECTION B-B



SECTION A-A



HOOD DETAIL



SECTION C-C

NOTES:

1. EST. 365# USE CAST GRATE IRON ASTM A 48 CL.30.
2. USE VANED GRATE IN DUCTILE IRON AS SHOWN ON STD DETAIL 424.
3. MAKE 3/16" NON-SKID DIAMOND PATTERN ON TOP SURFACE.
4. BOLT, WASHER, AND NUT SHALL BE GALV. OR CORROSION RESISTANT.

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

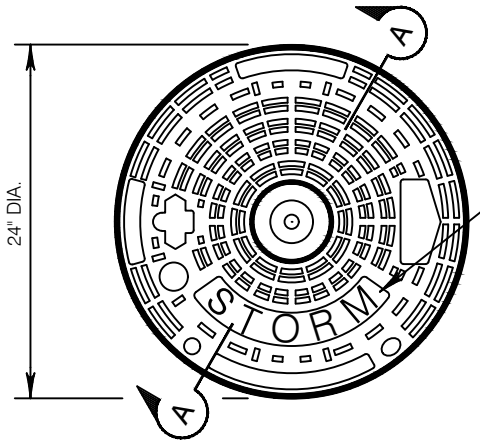
OPEN CURB FACE FRAME AND GRATE DETAIL

Standard Detail

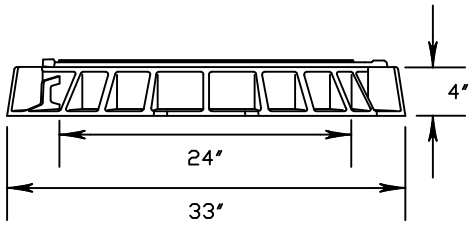
425

Revision Date

Feb, 2012



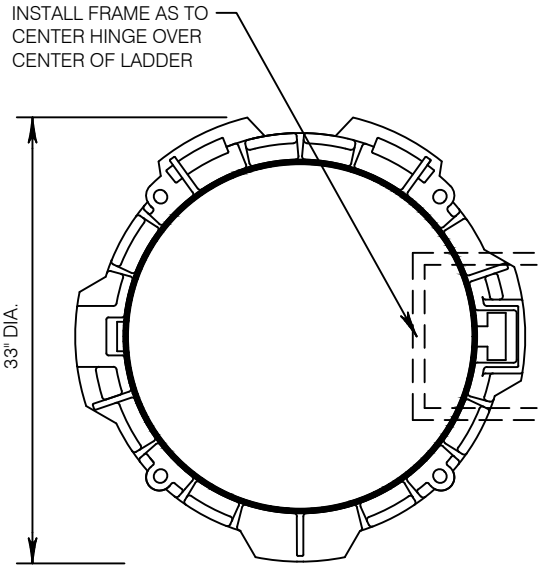
TOP OF COVER



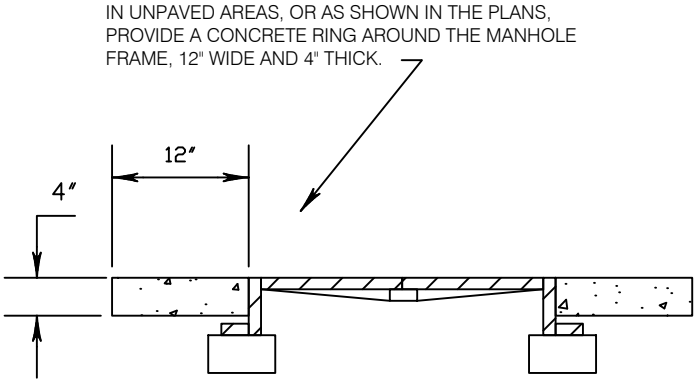
SECTION A-A

NOTES:

1. OLYMPIC FOUNDARY MH38 OR EAST JORDAN ERGO 001043L01 FRAME AND HINGED COVER.
2. COVER AND FRAME SHALL BE MANUFACTURED FROM DUCTILE IRON MEETS AASHTO H20 OR APPROVED EQUAL.
3. LID MUST BE COVERED WITH TAR PAPER BEFORE OVERLAY.
4. GASKET CAN BE REPLACED; USED ONLY ORIGINAL PAMREX GASKET, AVAILABLE THROUGH AUTHORIZED DEALERS.
5. VERIFY SLOTTED FRAMES ARE THOROUGHLY FILLED WITH MORTAR FOR EFFICIENT INTERACTION WITH IRON AND STRUCTURE.
6. VERIFY GASKET IS PROPERLY CLAMPED ON ITS FRAME GROOVE ALONG ITS ENTIRE LENGTH.



FRAME PLAN



City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

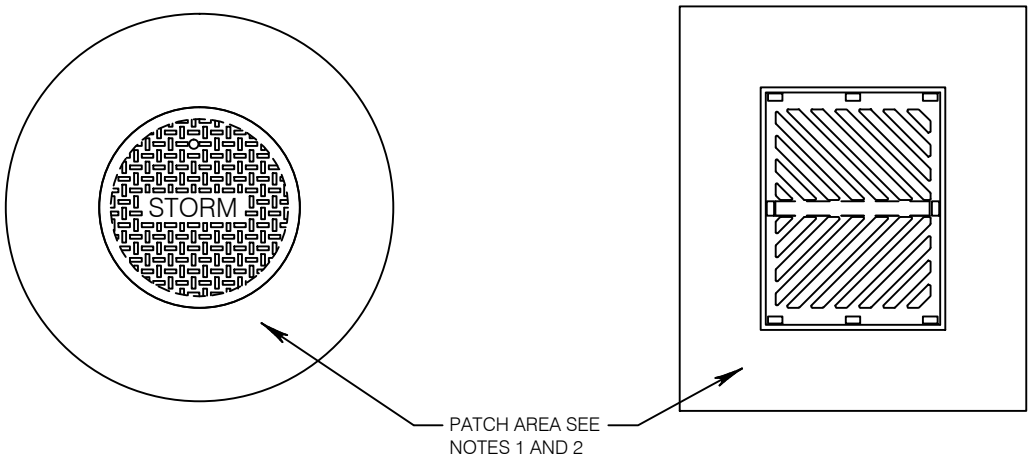
STORM DRAIN LOCKING MANHOLE FRAME AND COVER

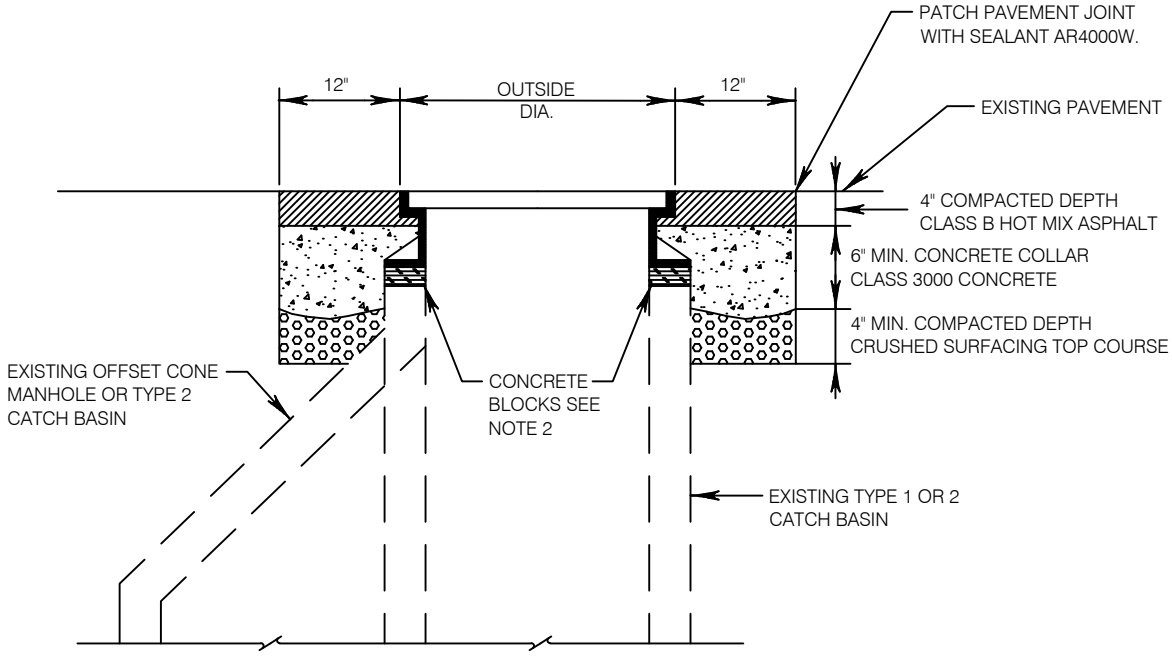
Standard Detail

426

Revision Date

Dec, 2017





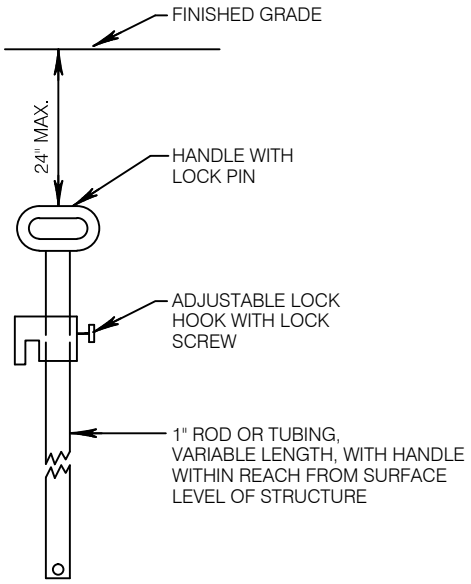
SECTION

NOTES:

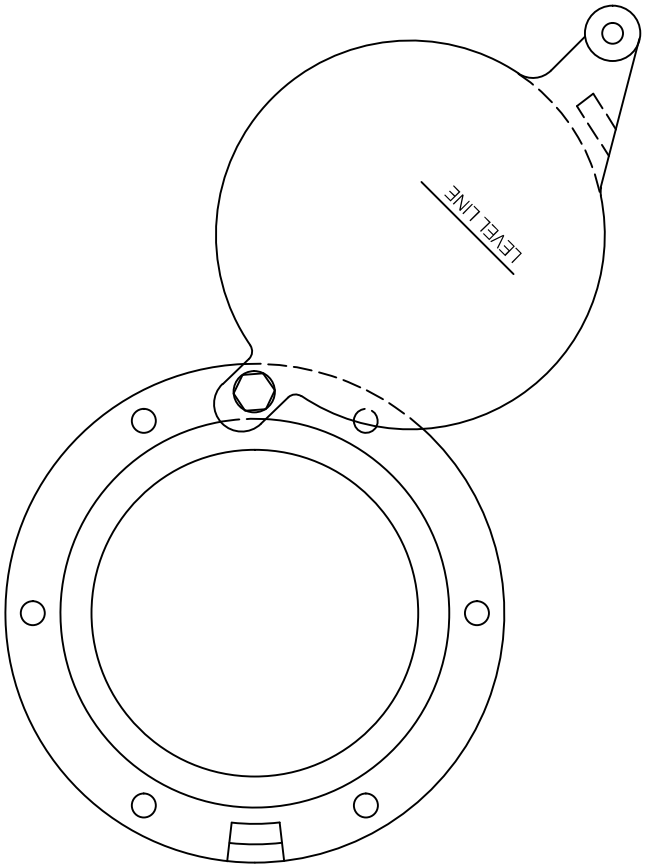
1. REMOVE PAVEMENT AND BASE MATERIALS FOR A DISTANCE WHICH IS EQUAL TO THE DIAMETER OF THE FRAME PLUS TWO FEET. ADJUST CASTING FRAME TO NEW PAVEMENT SURFACE USING CONCRETE BLOCKS.

2. 2"x4"x8" SOLID BRICK USED FOR FINAL ADJUSTMENT TO GRADE. 6" HIGH MAX.

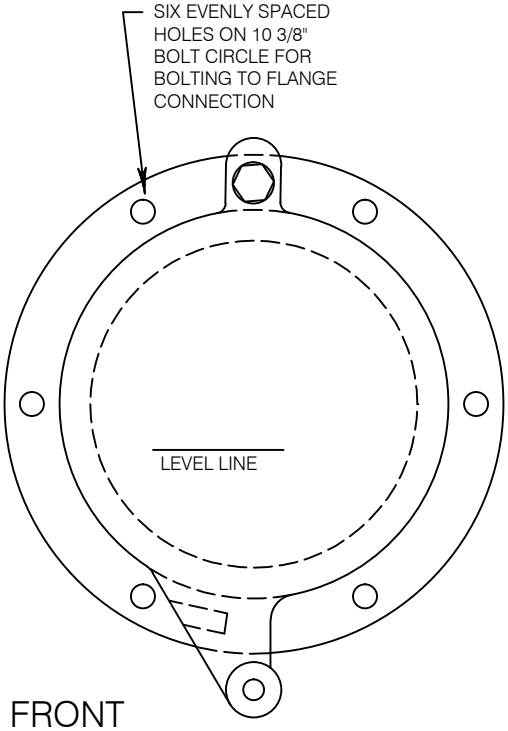
City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	FRAME AND COVER ADJUSTMENT	Standard Detail **427** Revision Date Feb, 2012



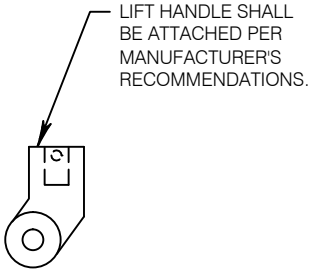
LIFT HANDLE

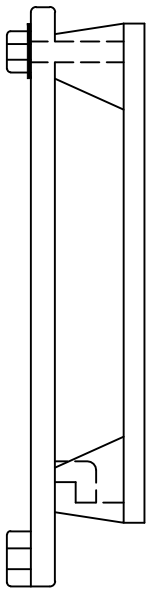


MAXIMUM OPENING OF GATE



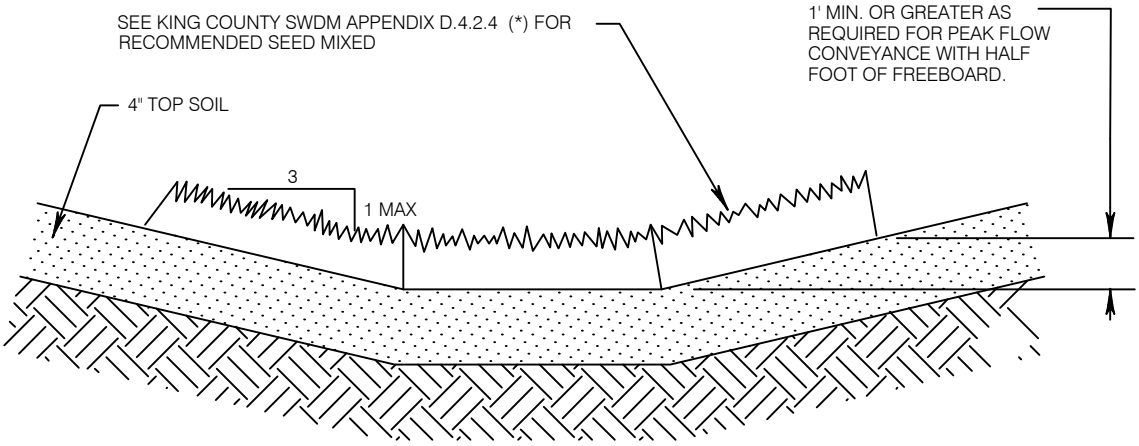
FRONT





SIDE

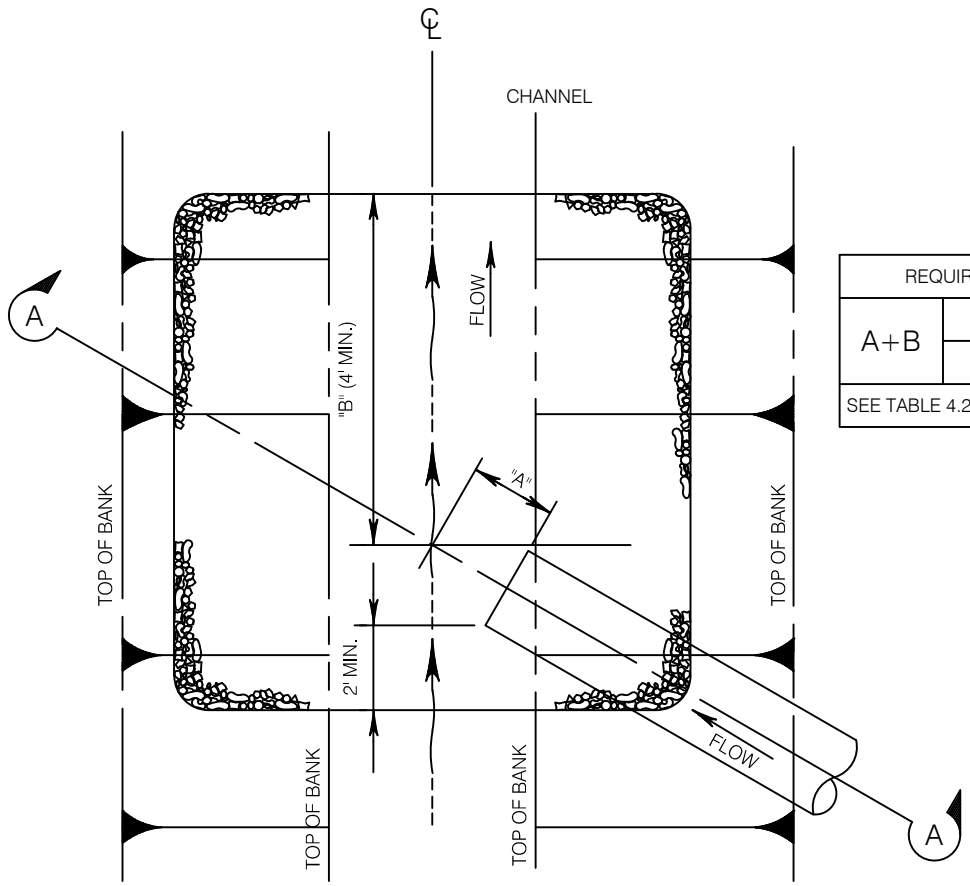
City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	SHEAR GATE	Standard Detail **444** Revision Date Feb, 2012



SWALE CROSS SECTION

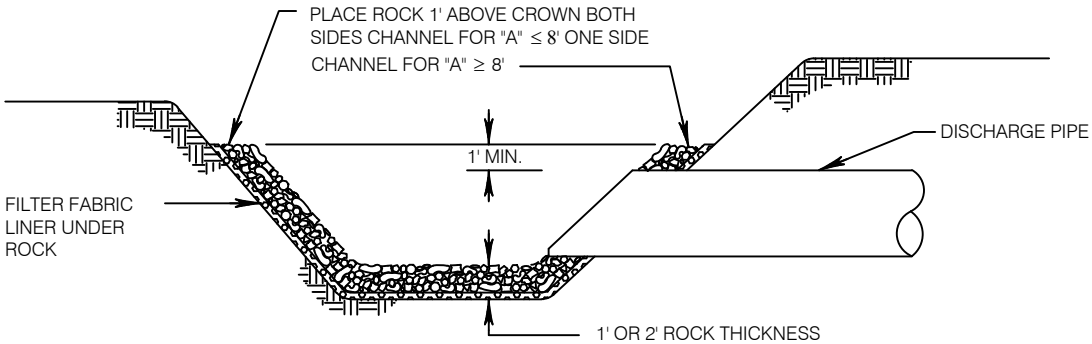
* KING COUNTY SURFACE WATER DESIGN MANUAL

City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	SWALE BIOFILTRATION TYPICAL SECTION	Standard Detail **460** Revision Date Feb, 2012



REQUIRED DIMENSIONS	
A+B	8' FOR ROCK LINING
	12' FOR RIP RAP
SEE TABLE 4.2.2.A IN KING COUNTY SWDM	

PLAN VIEW



SECTION A-A

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

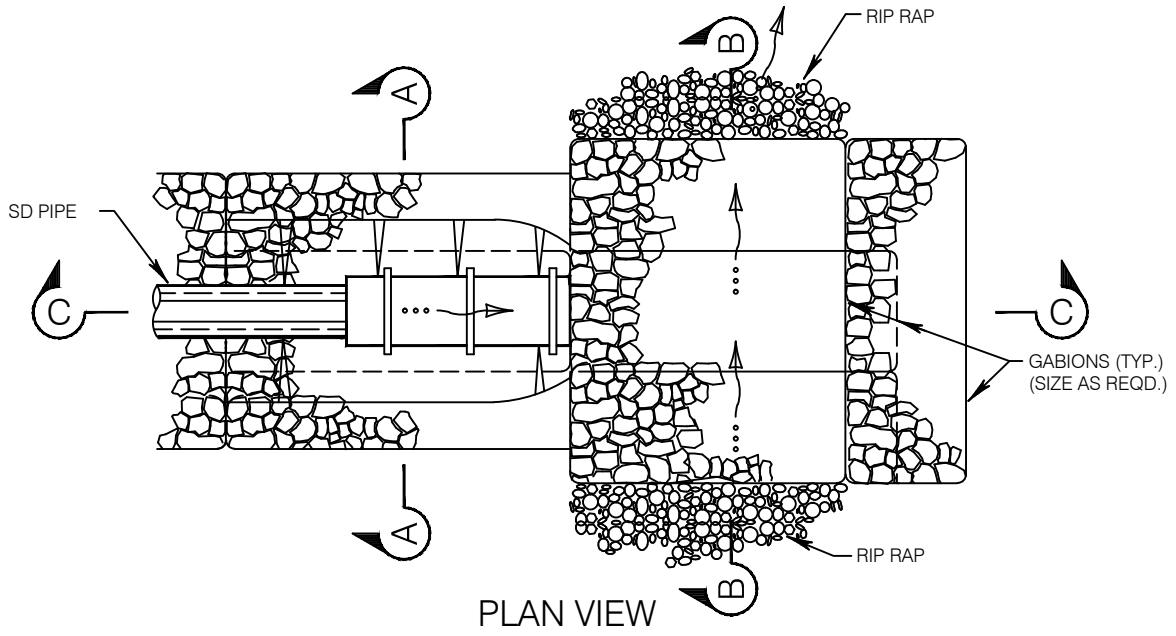
City Engineer

PIPE OUTFALL
QUARRY SPALLS

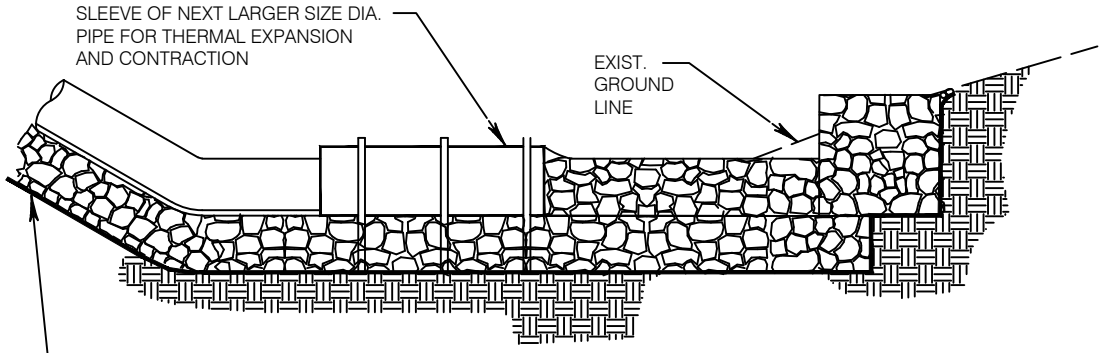
Standard Detail

461

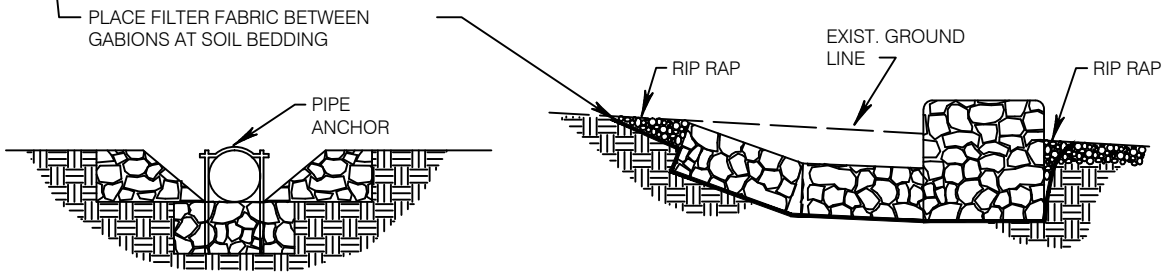
Revision Date
Feb, 2012



PLAN VIEW



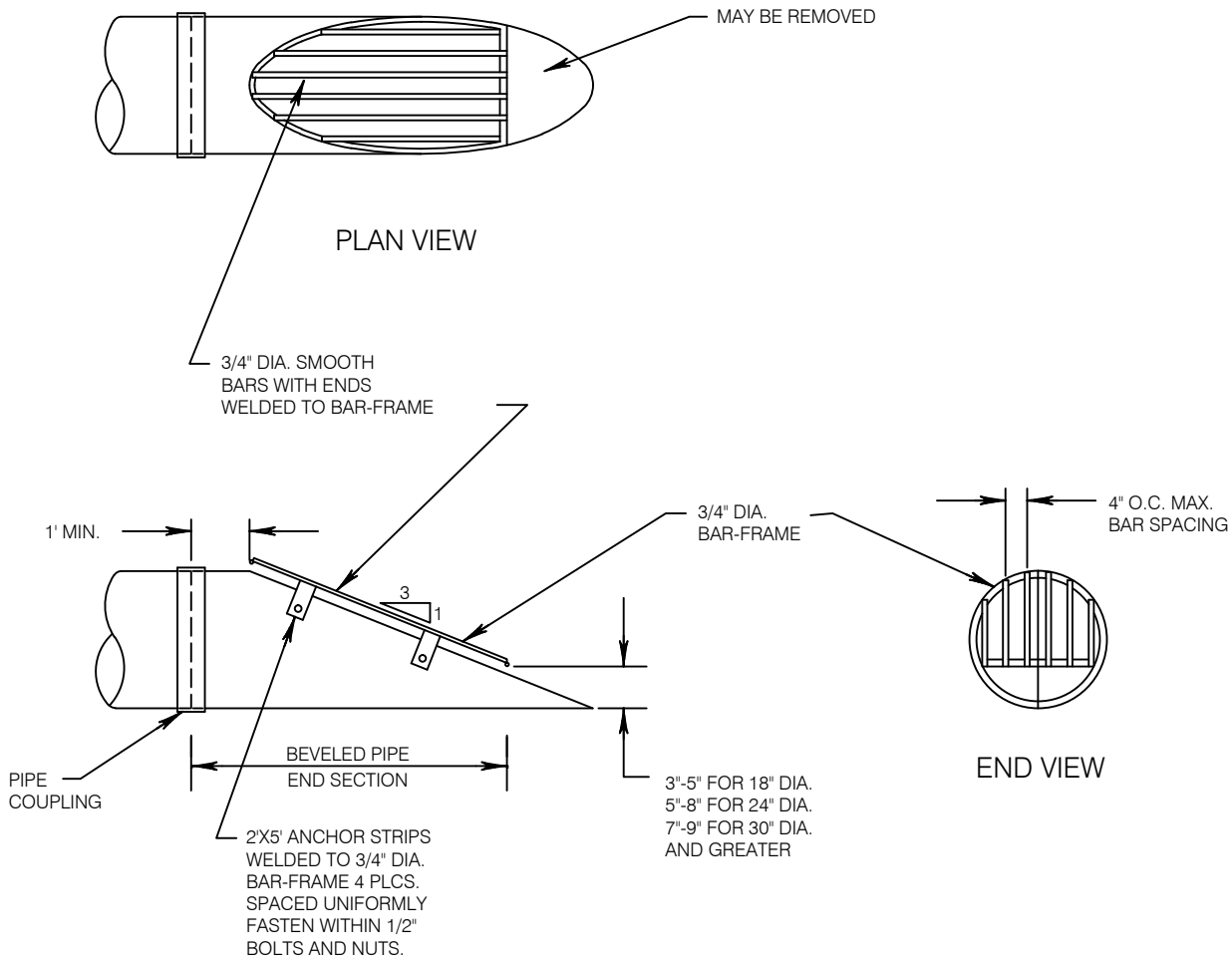
SECTION C-C



SECTION A-A

SECTION B-B

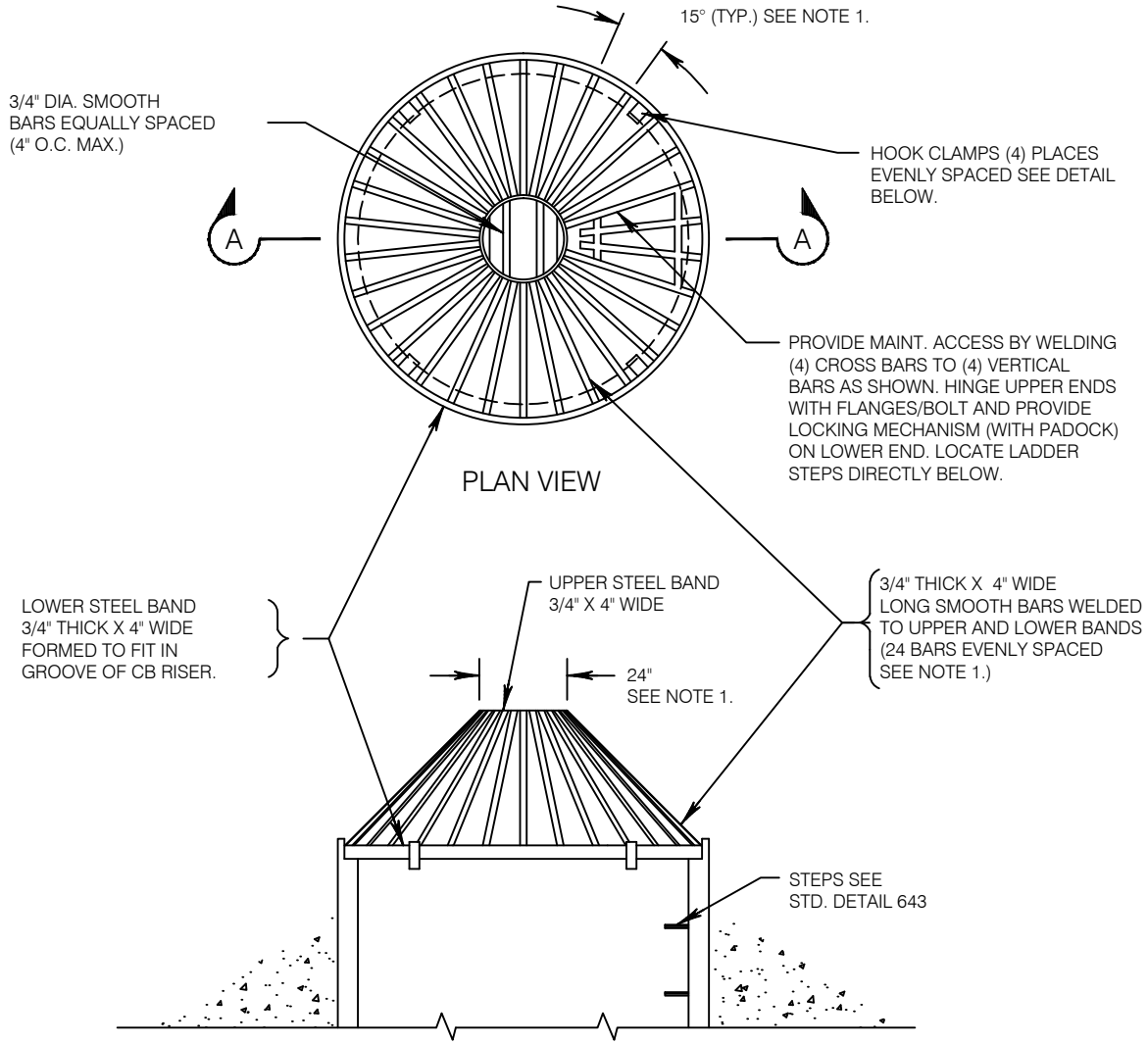
City of Bothell **City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	PIPE OUTFALL GABION TYPE	Standard Detail **462** Revision Date Feb, 2012

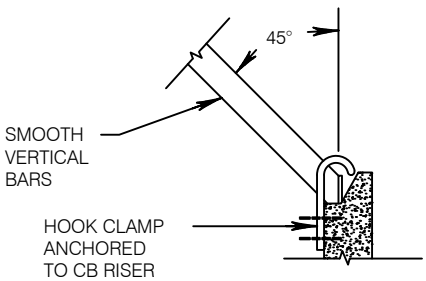


NOTES:

1. CMP END-SECTION SHOWN. FOR CONCRETE PIPE BEVELED END-SECTION, SEE KING COUNTY ROAD STANDARDS FIG. 7-001.
2. ALL PARTS MUST BE ALUMINUM OR STAINLESS STEEL.

City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	PIPE AND SECTION TRASH RACK	Standard Detail **465** Revision Date Feb, 2012





DETAIL HOOK CLAMP

NOTES:

1. DIMENSIONS ARE FOR INSTALLATION ON 54" DIA. CB FOR DIFFERENT DIA. CB'S ADJUST DIMENSIONS TO MAINTAIN 45° ANGLE ON "VERTICAL" BARS AND 7" O.C. MAX. SPACING OF BARS AROUND LOWER STEEL BAND.
2. METAL PARTS CORROSION RESISTANT, STEEL PARTS GALVANIZED.
3. THIS DEBRIS BARRIER IS ALSO RECOMMENDED FOR USE ON THE INLET TO ROADWAY CROSS-CULVERTS WITH HIGH POTENTIAL FOR DEBRIS COLLECTION (EXCEPT ON TYPE 2 STREAMS).

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

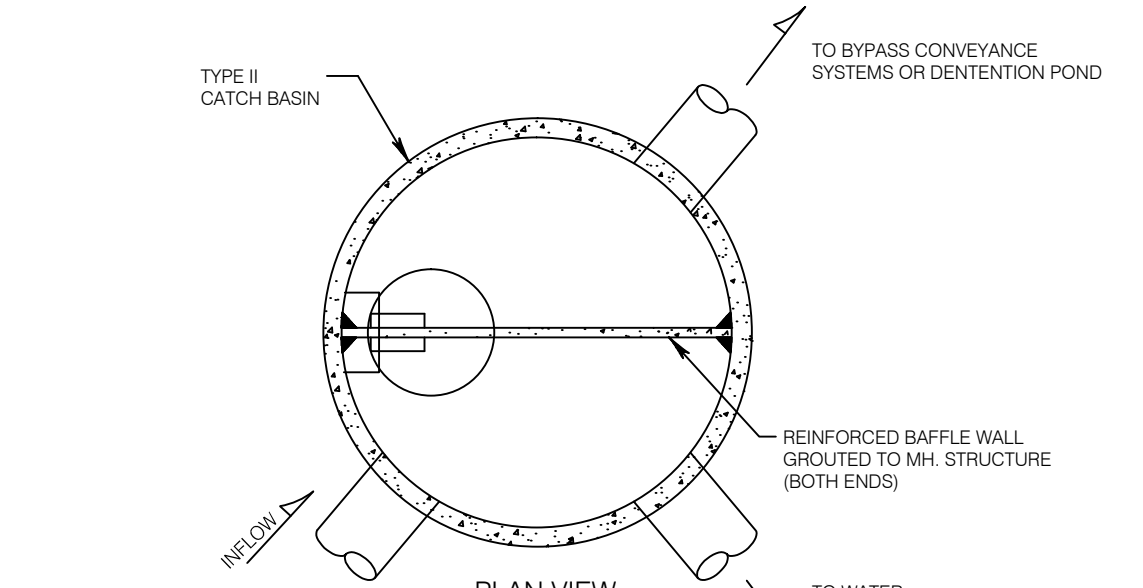
CONE TRASH RACK

Standard Detail

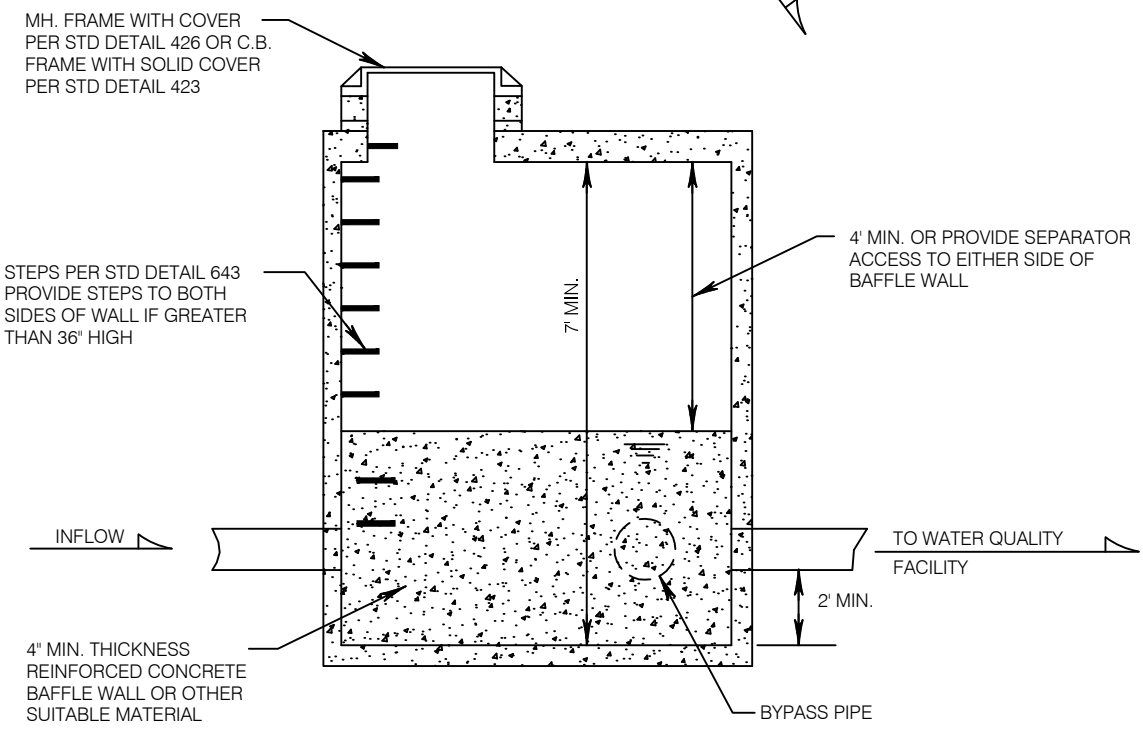
466

Revision Date

Feb, 2012



PLAN VIEW



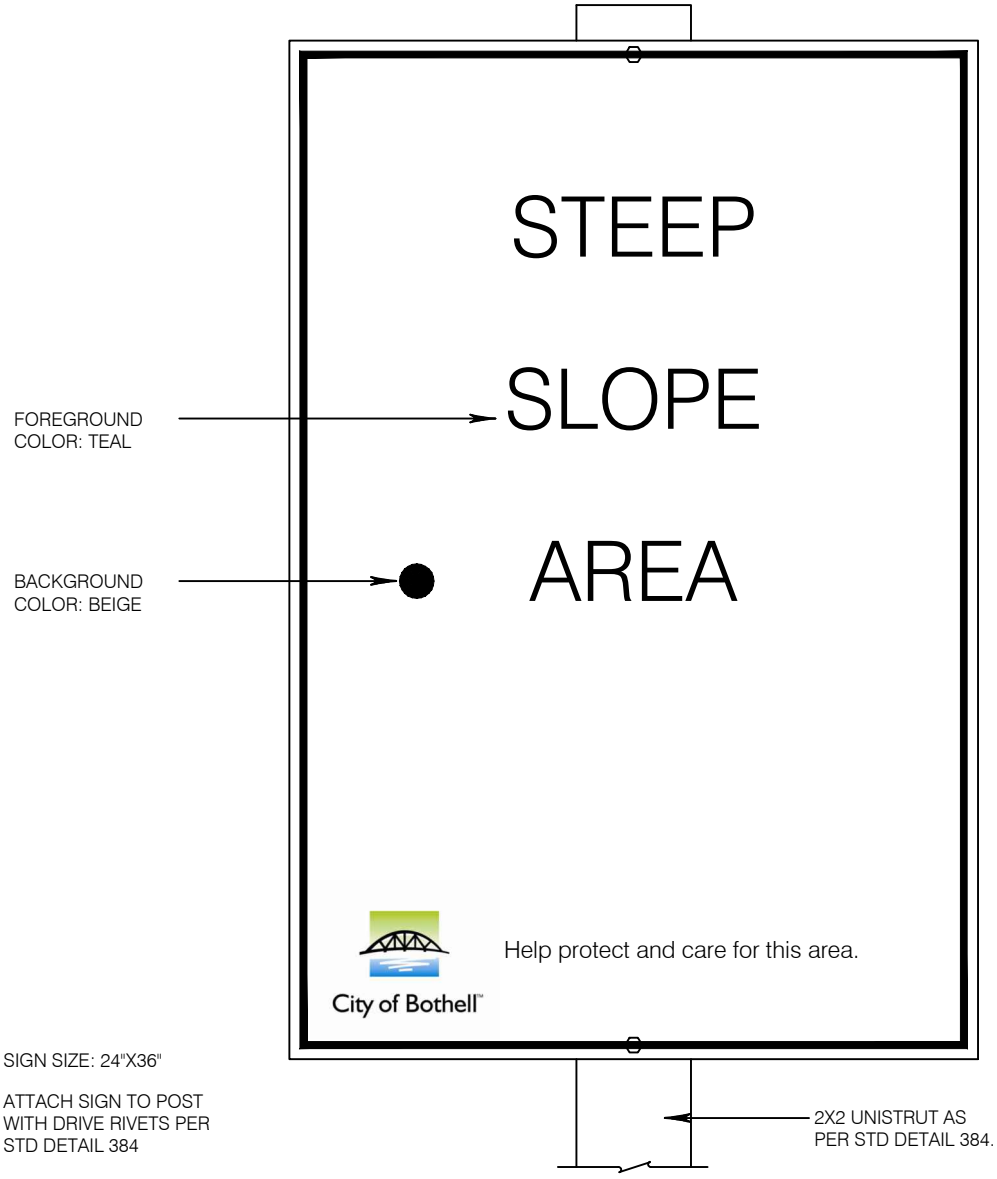
ELEVATION

NOTES:

1. THE WATER QUALITY DISCHARGE PIPE MAY REQUIRE AN ORIFICE PLATE BE INSTALLED ON THE OUTLET TO CONTROL THE HEIGHT OF THE DESIGN WATER SURFACE (WEIR HEIGHT). THE DESIGN WATER SURFACE SHOULD BE SET TO PROVIDE A MINIMUM HEADWATER/DIAMETER RATIO OF 2.0 ON THE OUTLET PIPE.

2. GROUT ALL JOINTS INSIDE AND OUTSIDE.

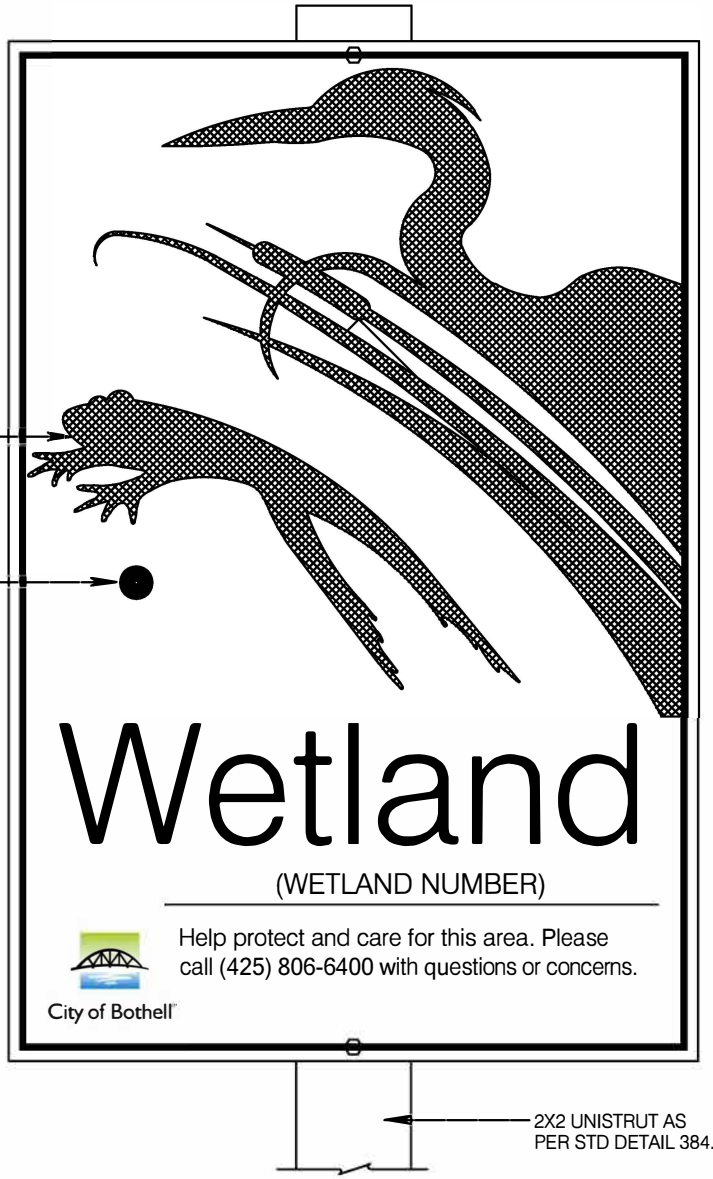
City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	FLOW SPLITTER TYPE A	Standard Detail **468** Revision Date Feb, 2012



NOTES:

1. THE SIGN SHALL BE POSTED AT THE BOUNDARY BETWEEN THE SENSITIVE AREA BUFFER, SETBACK AREA OR SETBACK TRACT AND THE BUILDING SETBACK AREA.
2. SIGN SHALL BE STATIONED IN A PROMINENT LOCATION, i.e., AT THE CLOSEST POINT TO THE PROPOSED DEVELOPMENT. SIGN MAY ALSO BE ATTACHED TO FENCES.

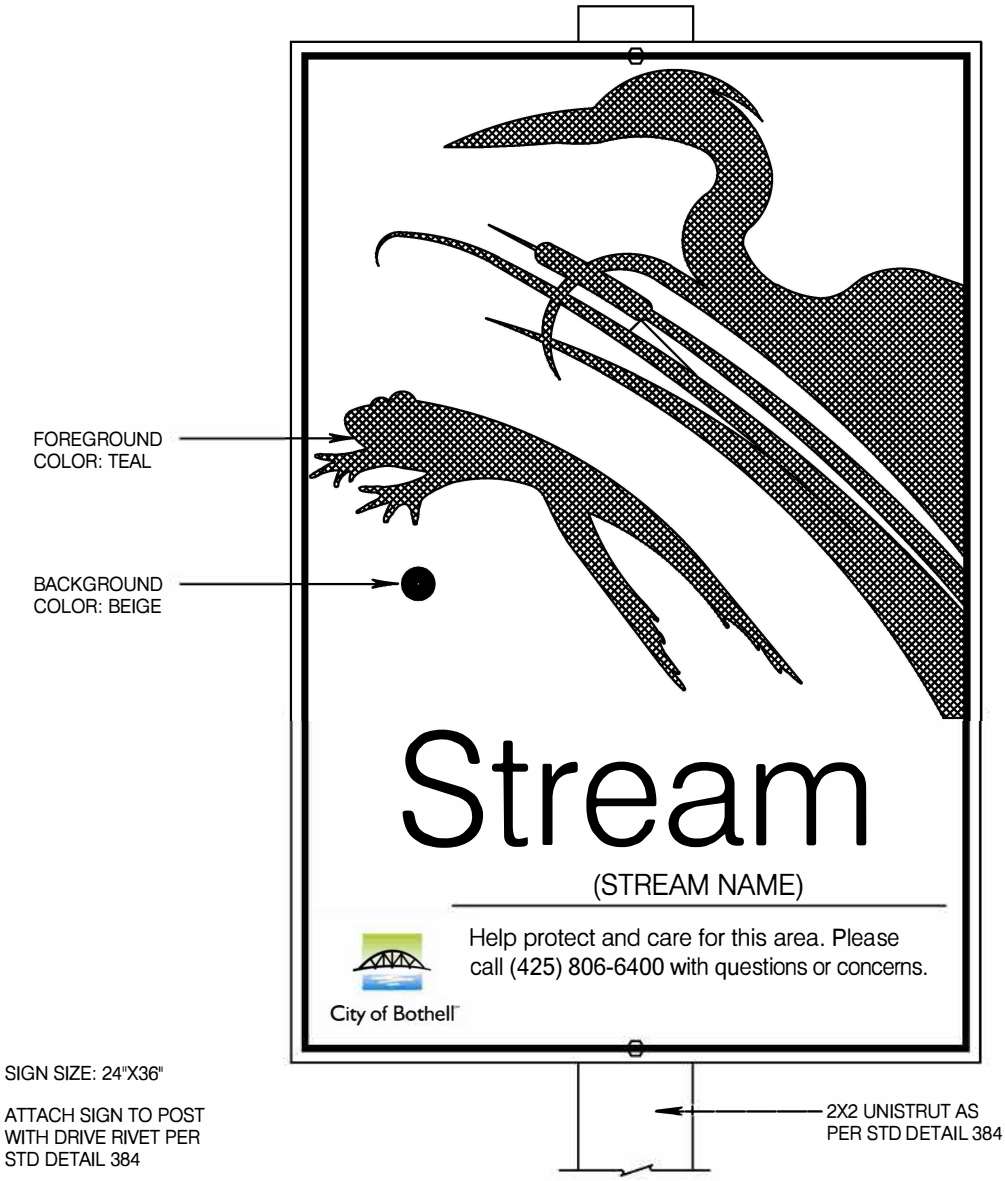
City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	STEEP SLOPE SIGN INSTALLATION	Standard Detail **480** Revision Date Feb, 2012



NOTES:

1. THE WETLAND SIGN SHALL BE POSTED AT THE BOUNDARY BETWEEN THE SENSITIVE AREA BUFFER, SETBACK AREA OR SETBACK TRACT AND THE BUILDING SETBACK AREA.
2. SIGN SHALL BE STATIONED IN A PROMINENT LOCATION, i.e., AT THE CLOSEST POINT TO THE PROPOSED DEVELOPMENT. SIGN MAY ALSO BE ATTACHED TO FENCES.

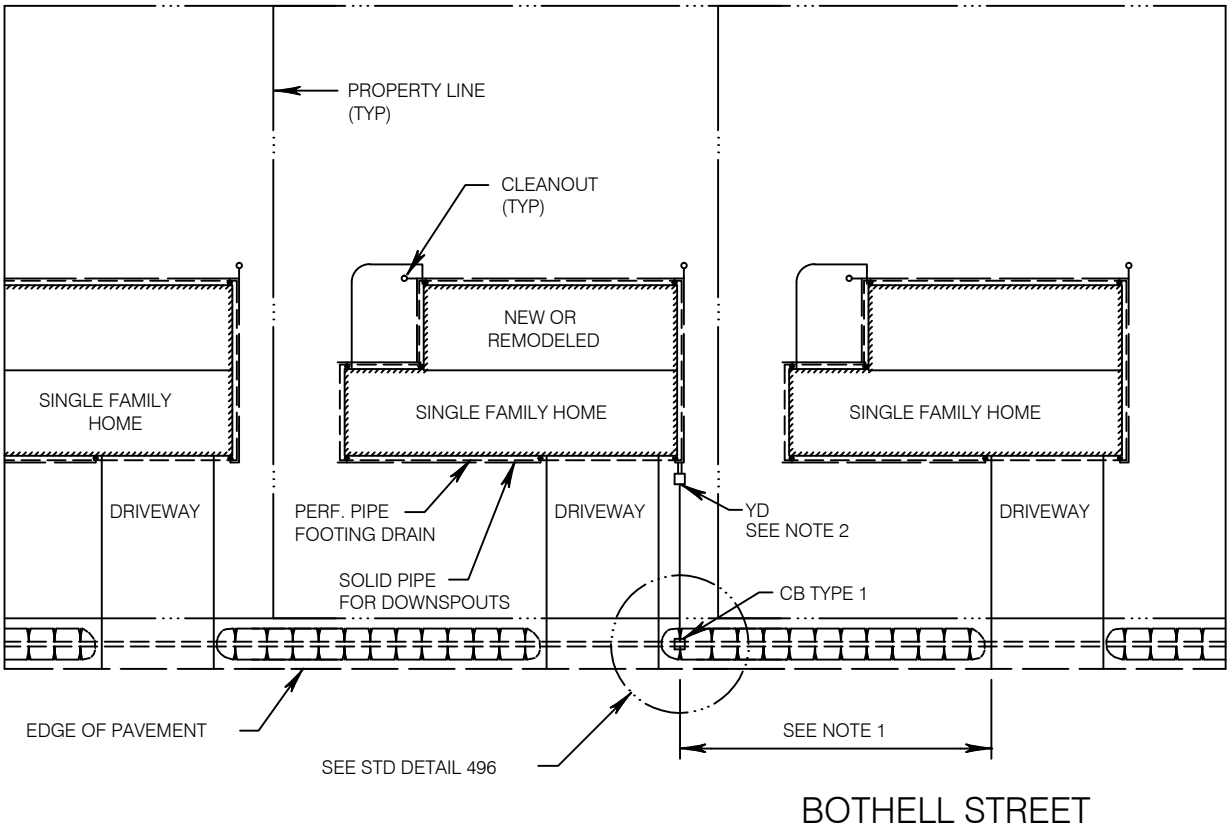
City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	WETLAND SIGN INSTALLATION	Standard Detail **481** Revision Date Feb, 2012



NOTES:

1. THE STREAM SIGN SHALL BE POSTED AT THE BOUNDARY BETWEEN THE SENSITIVE AREA BUFFER, SETBACK AREA OR SETBACK TRACT AND THE BUILDING SETBACK AREA.
2. SIGN SHALL BE STATIONED IN A PROMINENT LOCATION, i.e., AT THE CLOSEST POINT TO THE PROPOSED DEVELOPMENT. SIGN MAY ALSO BE ATTACHED TO FENCES.

City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	STREAM SIGN INSTALLATION	Standard Detail **482** Revision Date Feb, 2012



NOTES:

1. IF THIS DISTANCE IS 50' OR LESS, THE DITCH MUST BE TIGHT LINED. ADDITIONAL CATCH BASINS MAY BE REQUIRED BASED ON SITE CONDITIONS.
2. INSTALL YARD DRAIN PER STD DETAIL 410 AT CONNECTION POINT OF FOOTING DRAIN AND DOWN SPOUT PIPES.

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

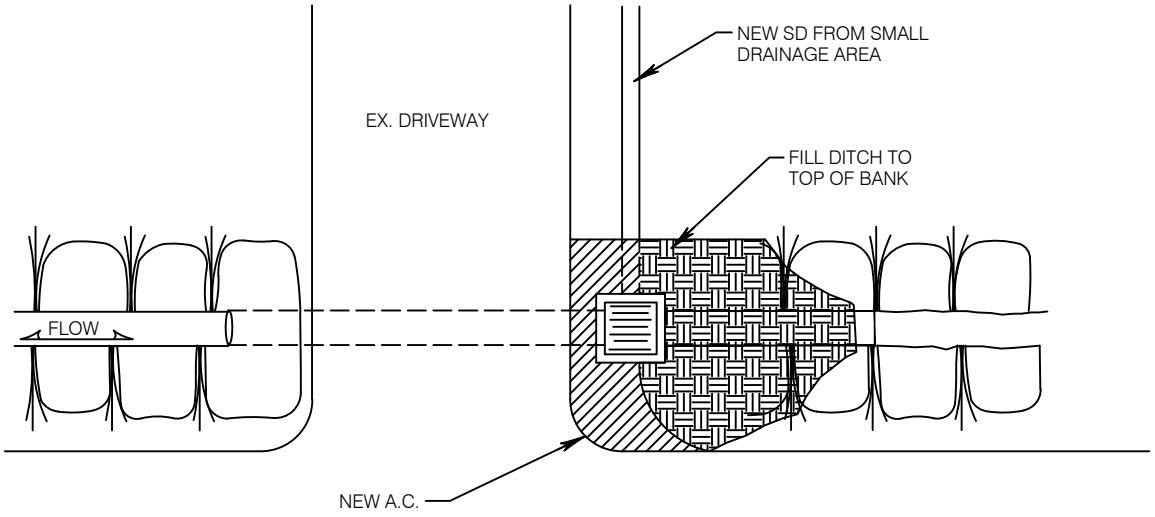
City Engineer

OUTFALL TO DITCH
LAYOUT
SMALL PROJECTS

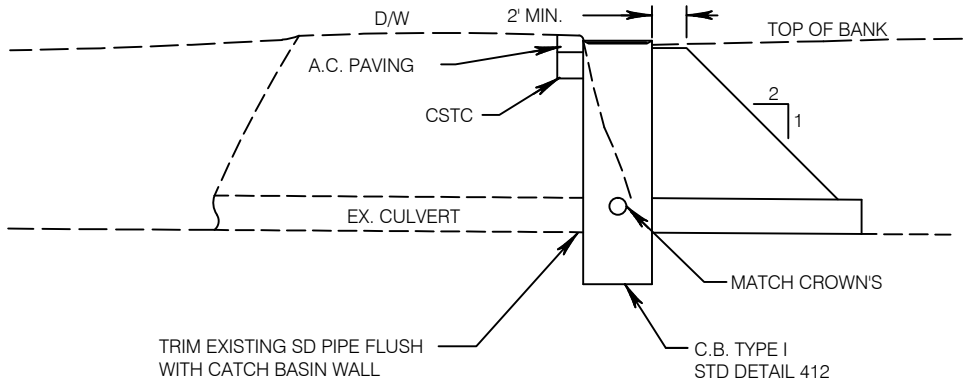
Standard Detail

495

Revision Date
Feb, 2012



PLAN VIEW



PROFILE

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

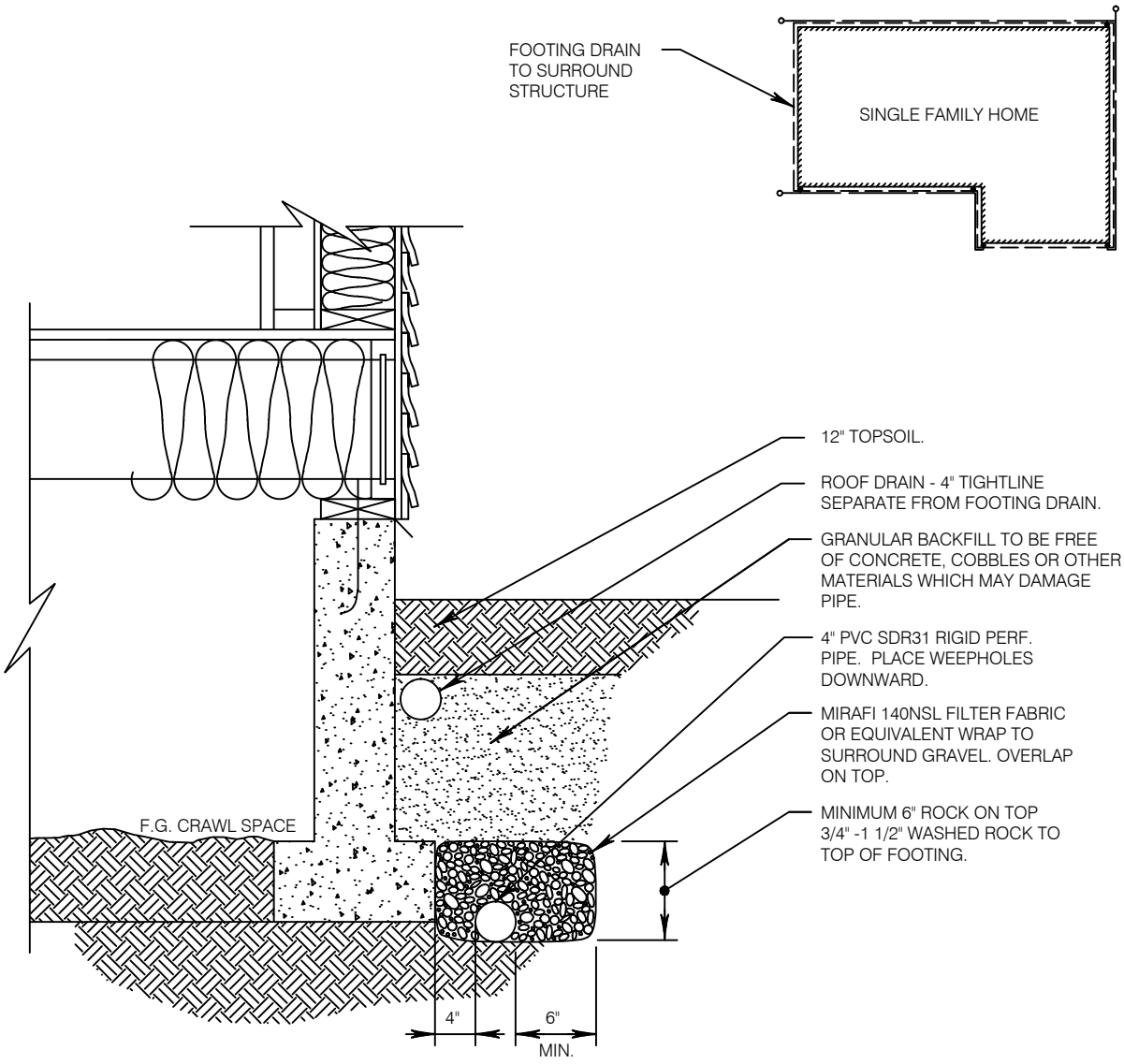
City Engineer

OUTFALL TO DITCH
SMALL PROJECTS

Standard Detail

496

Revision Date
Feb, 2012



NOTES

1. FOOTING DRAIN MUST TIE INTO SITE STORM SYSTEM BY GRAVITY FLOW.

2. ROOF DRAIN SHALL RUN INDEPENDENT OF FOOTING DRAIN UNTIL POINT OF CONNECTION TO CITY STORM WATER FACILITY OR ON SITE DETENTION FACILITY.

3. FOOTING DRAIN MUST PROVIDE AT LEAST 6" OF CLEARANCE BETWEEN CRAWLSPACE FINISHED GRADE OR BOTTOM OF SLAB-ON-GRADE, AND TOP OF FOOTING DRAIN.

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

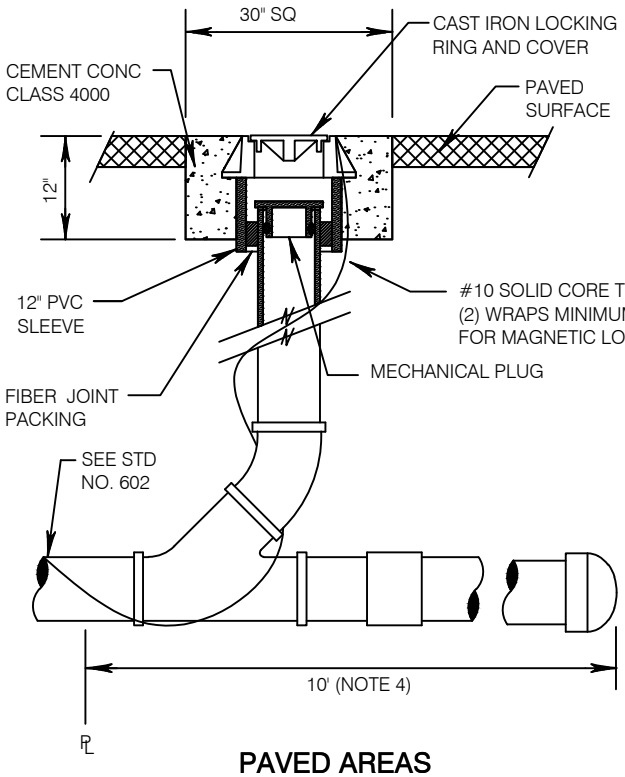
FOOTING DRAIN

Standard Detail

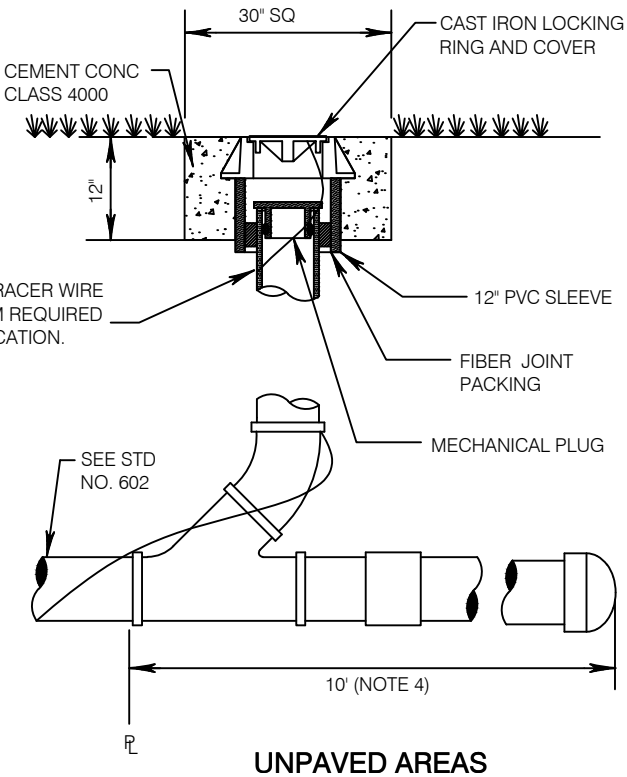
497

Revision Date

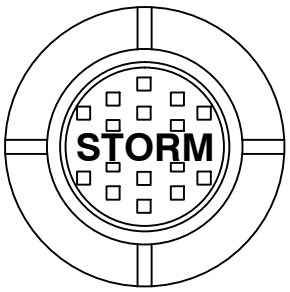
Feb, 2012



PAVED AREAS



UNPAVED AREAS



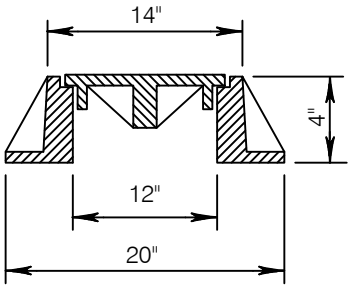
NOTE:

1. CLEANOUT PIPE AND FITTINGS SHALL BE PVC.

2. A SANITARY TEE OR SWEEP MAY BE INSTALLED IN LIEU OF A WYE AS SHOWN. STRAIGHT TEES ARE NOT ACCEPTABLE.

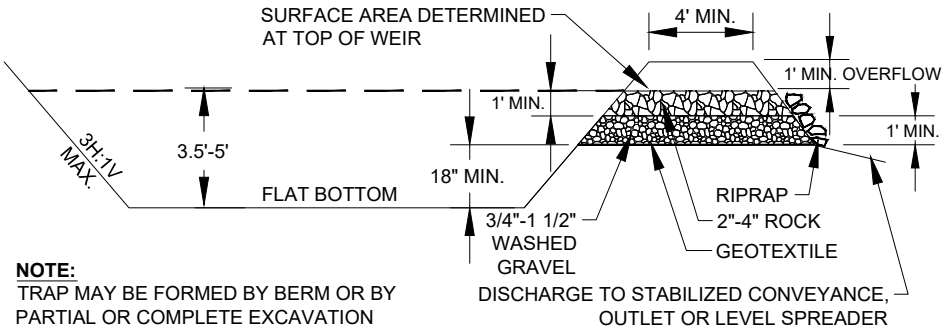
3. FOR NEW PLATS THE VERTICAL RISER PORTION OF THE CLEANOUT WILL BE CONSTRUCTED AT TIME OF CONNECTION TO BUILDING TO MINIMIZE DAMAGE, THE 6" WYE AND 6' PVC PIPE WITH MECHANICAL PLUG WILL BE INSTALLED PRIOR TO BUILDING CONNECTION.

4. STORM PIPE STUB WILL BE EXTENDED 10' BEYOND PROPERTY LINE TO PREVENT DAMAGE TO CLEANOUT AND MINIMIZE CONFLICTS WITH OTHER UTILITIES WHEN SERVICE TO BUILDING IS ACCOMPLISHED.

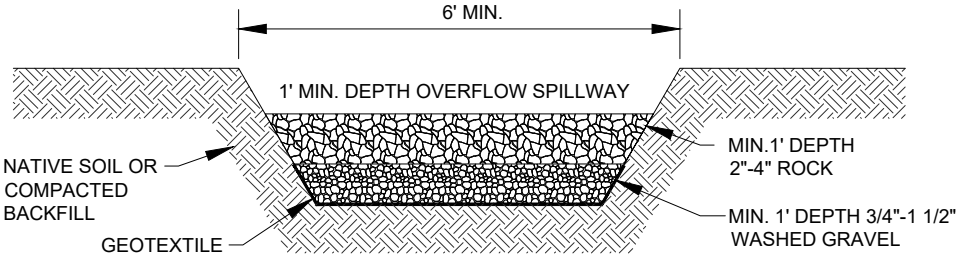


12" CASTING FORCE LOCKING RING AND COVER

City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	STORM PIPE CLEANOUT	Standard Detail **498** Revision Date Jun, 2015



CROSS SECTION



TRAP OUTLET

NOTES:

1. SHAPE OF SEDIMENTATION POND MAY VARY TO FIT DRAINAGE AREA AND TERRAIN. MODIFY AS NECESSARY TO ENSURE SATISFACTORY TRAPPING OF SEDIMENT.

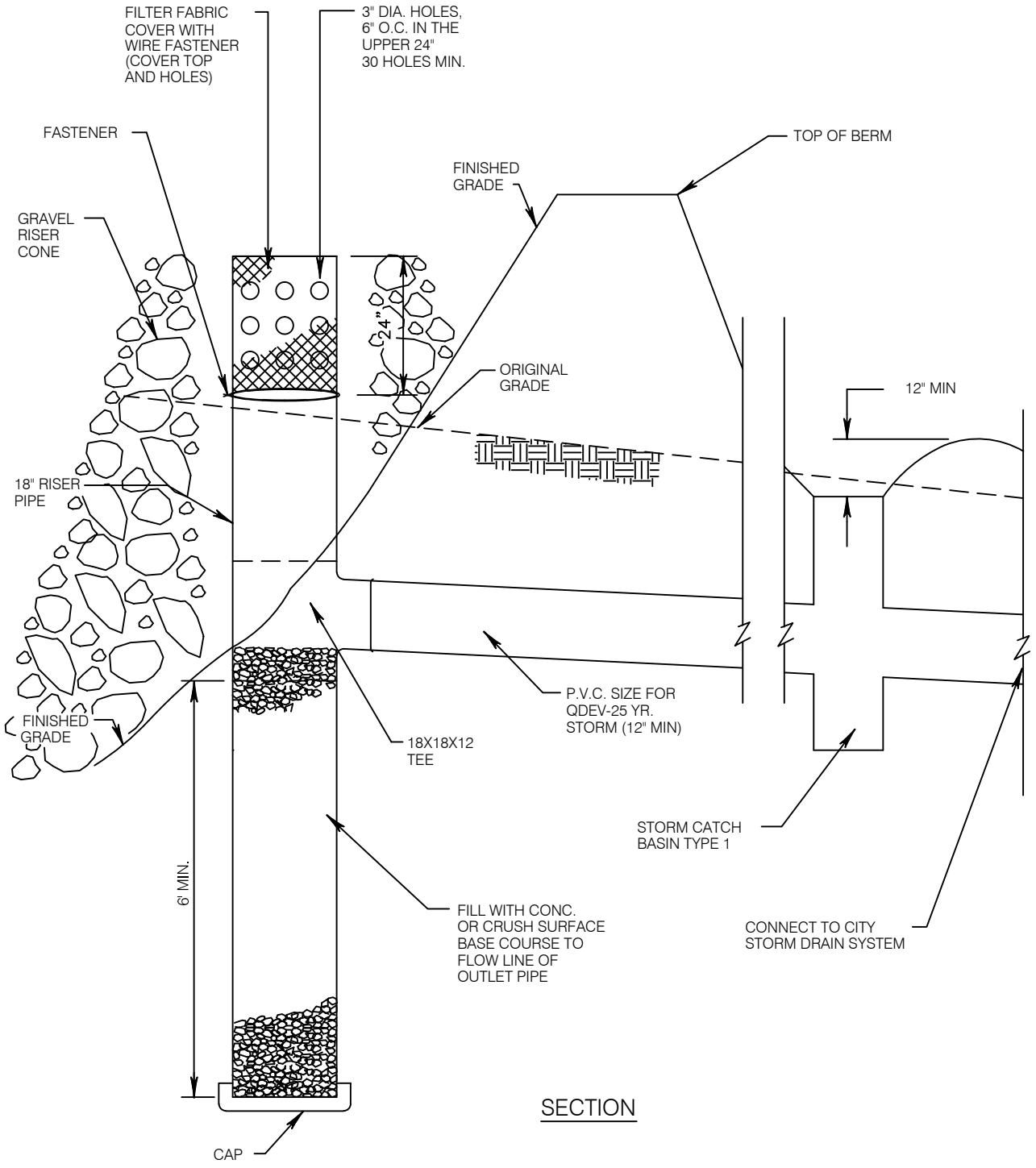
2. USE THE KING COUNTY SWDM TO DETERMINE THE TRAP GEOMETRY - SEE SEC. D.2.1.5.1

3. TO AID IN DETERMINING SEDIMENT DEPTH, ALL TRAPS SHALL HAVE A STAFF GAUGE WITH A PROMINENT MARK 1 FOOT ABOVE THE BOTTOM OF THE TRAP. CONTRACTOR SHALL RESTORE THE TRAP BACK TO ORIGINAL DEPTH AND SIZE WHEN THE SEDIMENT REACHES THIS LEVEL.

4. FOR USE ON SITES LESS THAN 3 ACRES IN SIZE.

5. TRAP MAY BE BERM OR BY PARTIAL OR COMPLETE EXCAVATION.

City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	SEDIMENT TRAP EARTH BERM	Standard Detail **T401** Revision Date Dec, 2019



SECTION

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

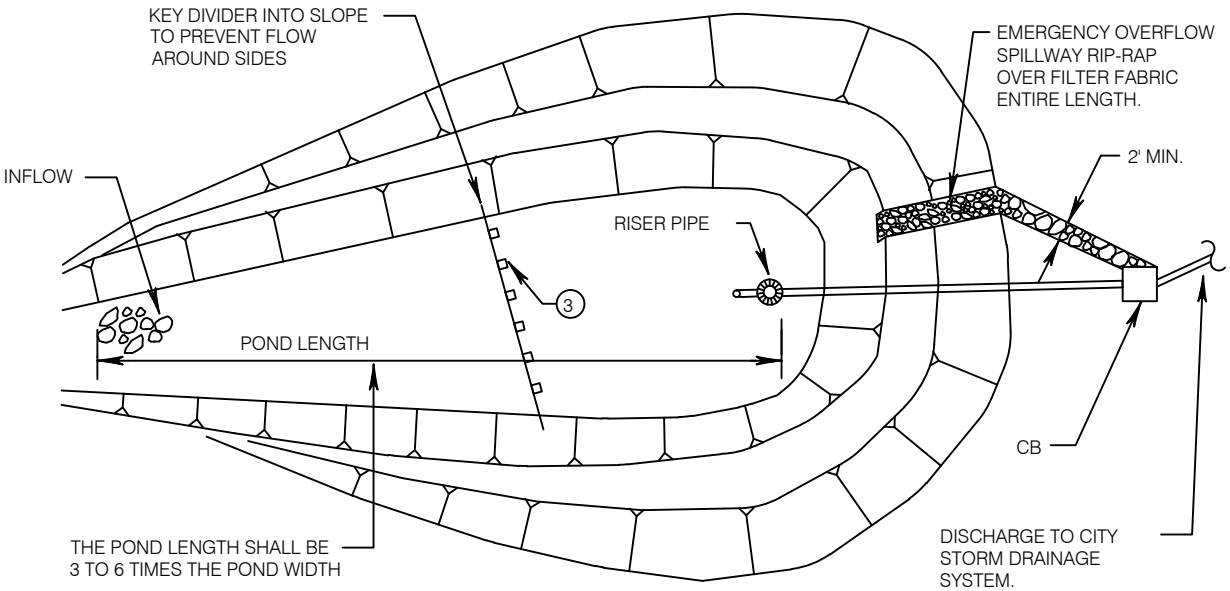
RISER PIPING ELEMENT

Standard Detail

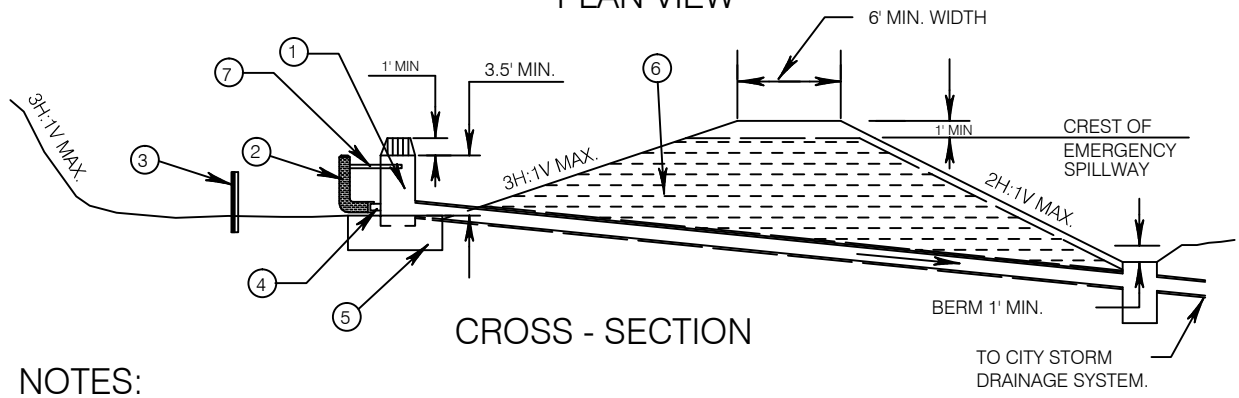
T402

Revision Date

Feb, 2012



PLAN VIEW



CROSS - SECTION

NOTES:

1. TO AIDE IN DETERMINING SEDIMENT DEPTH, ONE-FOOT INTERVALS SHALL BE PROMINENTLY MARKED ON THE RISER. THE CONTRACTOR SHALL REMOVE THE SEDIMENT WHEN IT REACHES 1 FOOT IN DEPTH.

2. ANY DAMAGE TO THE POND EMBANKMENTS OR SLOPES SHALL BE REPAIRED.

3. DESIGN PER SECTION 5.3.1 OF THE KING COUNTY SWDM.

DETAIL NOTES:

(1) CORRUGATED METAL RISER (PRINCIPAL SPILLWAY) OPEN AT TOP WITH CONE TRASH RACK.

(2) DEWATERING DEVICE - PERFORATED POLYETHYLENE DRAINAGE TUBING, DIAMETER MINIMUM 2" LARGER THAN DEWATERING ORIFICE. TUBING SHALL COMPLY WITH ASTM F667 AND AASHTO M294. CONNECTION TO DEWATERING ORIFICE WATER TIGHT COUPLING.

(3) WIRE BACKED SILT FENCE, STAKED HAYBALES WRAPPED WITH FILTER FABRIC, OR EQUIVALENT DIVIDER.

(4) DEWATERING ORIFICE - SCHEDULE 40 STEEL STUB MIN. TACK WELDED TO THE RISER PIPE, DIAMETER AS PER CALCULATIONS.

(5) CONCRETE BASE - 18" HIGH (MIN.) BY 2X RISER DIA. (MIN.) WIDE ALTERNATIVELY, METAL STAKES AND WIRE MAY BE USED TO PREVENT FLOTATION.

(6) EMBANKMENT COMPACTED 95%. PERVIOUS MATERIALS SUCH AS GRAVEL OR CLEAN SAND SHALL NOT BE USED.

(7) PROVIDE ADEQUATE STRAPPING.

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

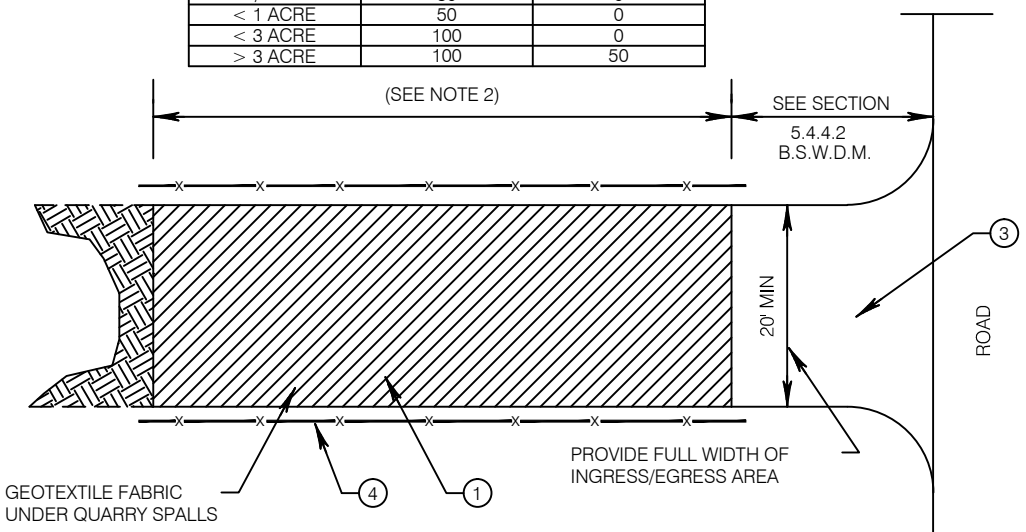
SEDIMENT POND
WITH RISER ELEMENT

Standard Detail

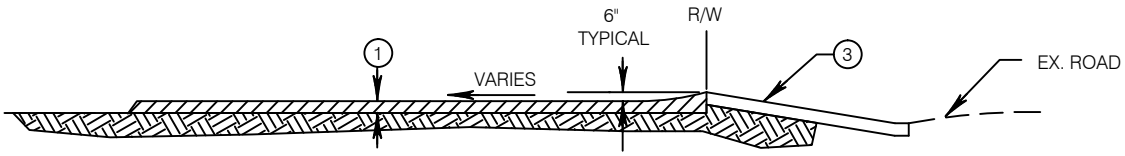
T403

Revision Date
Feb, 2012

PROJECT SIZE	LENGTH OF	
	QUARRY SPALLS	ATB
< 1/4 ACRE	30	0
< 1 ACRE	50	0
< 3 ACRE	100	0
> 3 ACRE	100	50



PLAN VIEW



SECTION

DETAIL NOTES:

(1) 4" TO 8" QUARRY SPALLS AS SPECIFIED IN SECTION 9-13.6 OF THE WSDOT/APWA STANDARD SPECIFICATIONS.

(2) THE MINIMUM LENGTH SHALL BE LENGTHENED AS NECESSARY TO ENSURE MATERIAL IS NOT TRACKED INTO THE PUBLIC RIGHT-OF-WAY. ALTERNATE CONSTRUCTION ENTRANCES WILL BE ALLOWED WITH APPROVAL OF THE DIRECTOR ON A CASE BY CASE BASIS, WHERE PHYSICAL SITE CONDITIONS AND SIZE DICTATE

(3) ATB DRIVEWAY RAMP, OR SITE ACCESS ROAD 20' WIDE MIN. SEE TABLE ABOVE FOR REQUIRED LENGTH.

(4) INSTALL ORANGE BARRIER FENCE TO DIRECT TRAFFIC ONTO CONSTRUCTION ENTRANCE

NOTES:

1. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.

2. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF-WAY MUST BE REMOVED IMMEDIATELY.

3. WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY. WHEN WASHING IS USED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.

4. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

5. TRUCK TIRE WASH REQUIRED

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PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

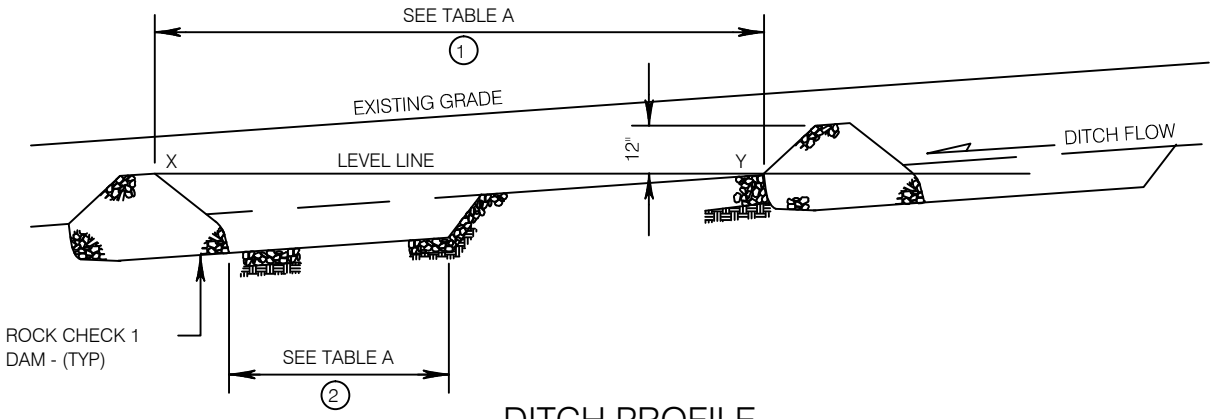
STABILIZED CONSTRUCTION ENTRANCE

Standard Detail

T404

Revision Date

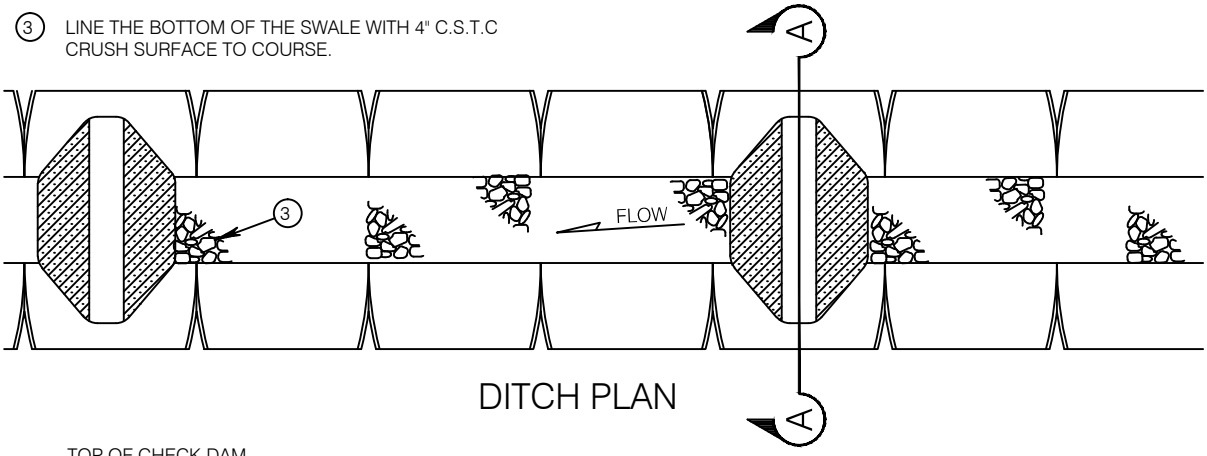
Feb, 2012



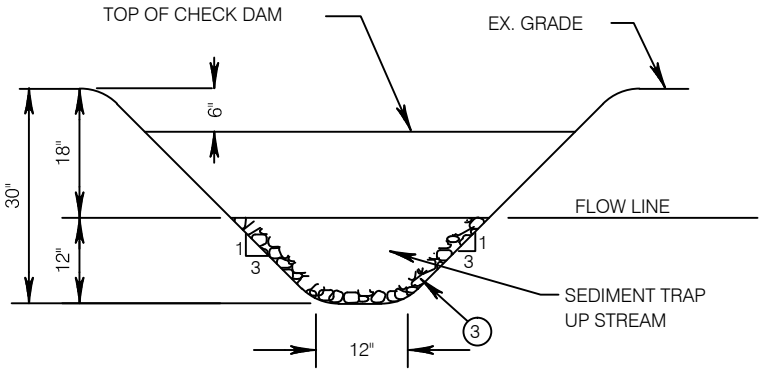
DITCH PROFILE

DETAIL NOTES:

1. DAM SPACING
2. SEDIMENT TRAP LENGTH
3. LINE THE BOTTOM OF THE SWALE WITH 4" C.S.T.C CRUSH SURFACE TO COURSE.



DITCH PLAN



SECTION A-A

TABLE A

SLOPE FT/FT	1	2
1:100	100	10
1:50	50	10
1:25	25	5
1:20	20	4
1:15	15	3
1:10	10	2
1:5	5	0

NOTE:

1. SUMP BEHIND ROCK CHECK DAM SHALL BE INSPECTED DAILY, AND CLEANED WHEN COLLECTED DEBRIS EXCEEDS 1/2 OF ITS DEPTH.

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

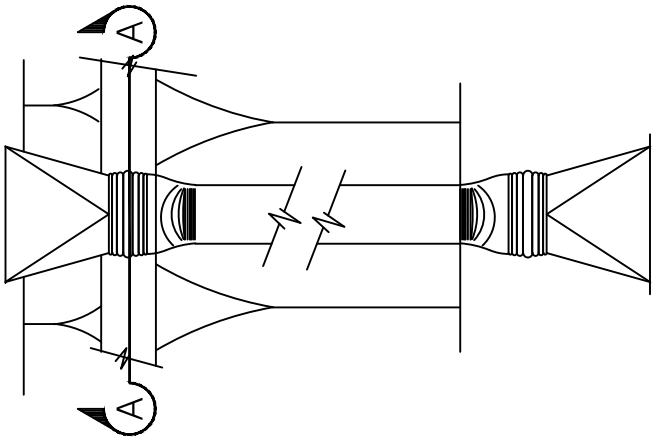
INTERCEPTOR DITCH WITH ROCK CHECK DAMS

Standard Detail

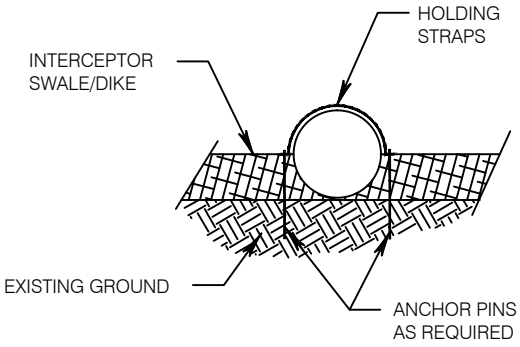
T405

Revision Date

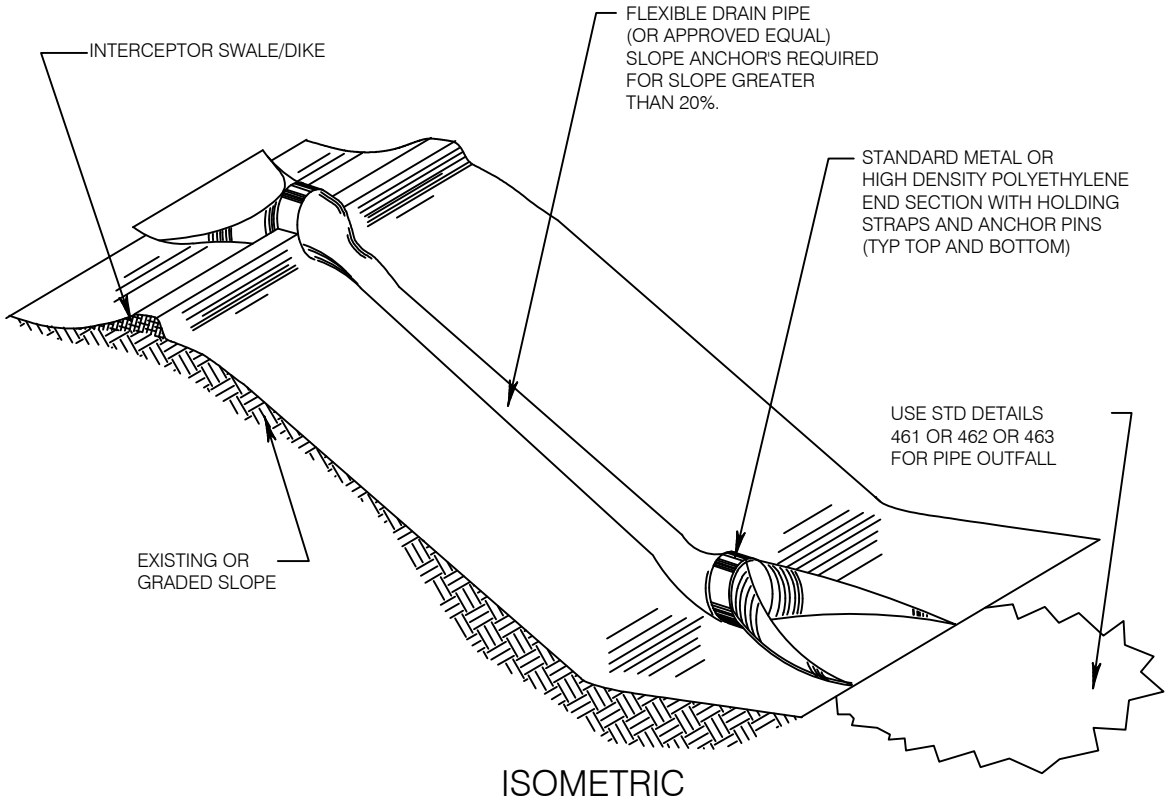
Feb, 2012



PLAN VIEW

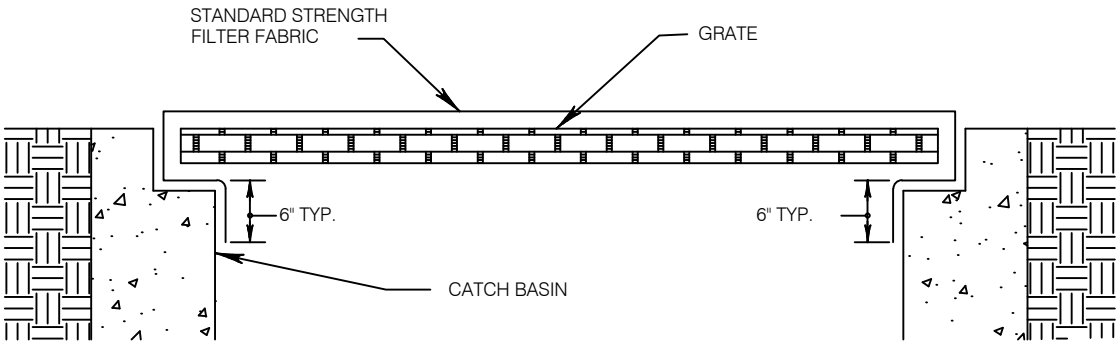


SECTION A-A



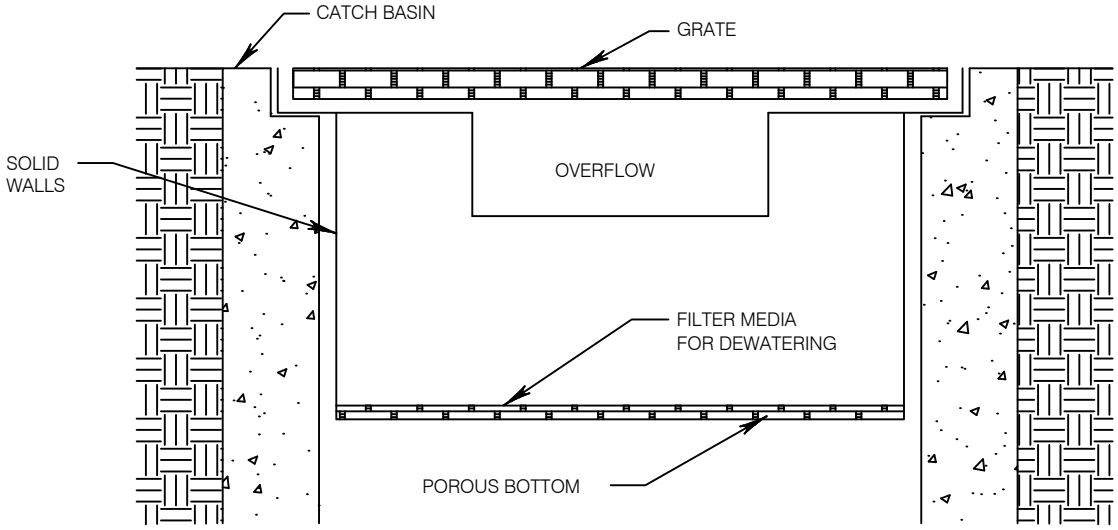
ISOMETRIC

City of Bothell **City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	PIPE SLOPE DRAIN	Standard Detail **T406** Revision Date Feb, 2012



NOTE: ONLY TO BE USED WHERE PONDING OF WATER ABOVE THE CATCH BASIN WILL NOT CAUSE TRAFFIC PROBLEMS AND WHERE OVERFLOW WILL NOT RESULT IN EROSION OF SLOPES.

FILTER FABRIC PROTECTION



NOTE: THIS DETAIL IS ONLY SCHEMATIC. ANY INSERT IS ALLOWED THAT HAS A MIN. 0.5 C.F. OF STORAGE. THE MEANS TO DEWATER THE STORED SEDIMENT, AN OVERFLOW, AND CAN BE EASILY MAINTAINED.

CATCH BASIN INSERT

NOTES:

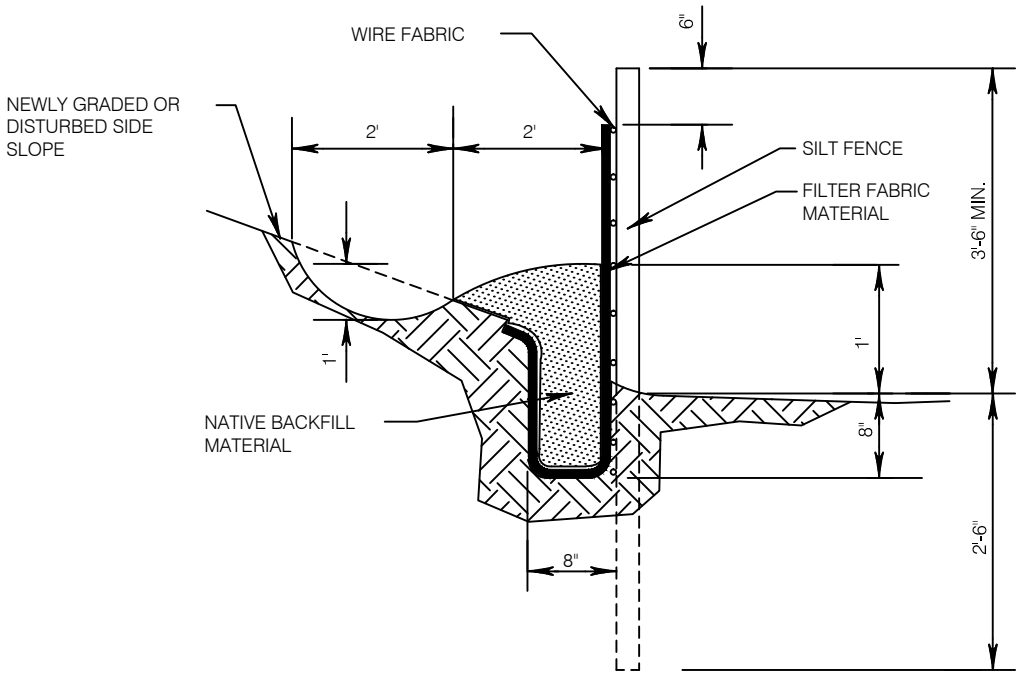
1. ANY ACCUMULATED SEDIMENT ON OR AROUND THE FILTER FABRIC PROTECTION SHALL BE REMOVED IMMEDIATELY. SEDIMENT SHALL NOT BE REMOVED WITH WATER, AND ALL SEDIMENT MUST BE DISPOSED OF AS FILL ON-SITE OR HAULED OFF-SITE.

2. ANY SEDIMENT IN THE CATCH BASIN INSERT SHALL BE REMOVED WHEN THE SEDIMENT HAS FILLED ONE-THIRD OF THE AVAILABLE STORAGE. THE FILTER MEDIA FOR THE INSERT SHALL BE CLEANED OR REPLACED AT LEAST MONTHLY.

3. REGULAR MAINTENANCE IS CRITICAL FOR BOTH FORMS OF CATCH BASIN PROTECTION. UNLIKE MANY FORMS OF PROTECTION THAT FAIL GRADUALLY, CATCH BASIN PROTECTION WILL FAIL SUDDENLY AND COMPLETELY IF NOT MAINTAINED PROPERLY.

4. ALL CATCH BASIN PROTECTION SHALL BE REMOVED WHEN WORK IS COMPLETE.

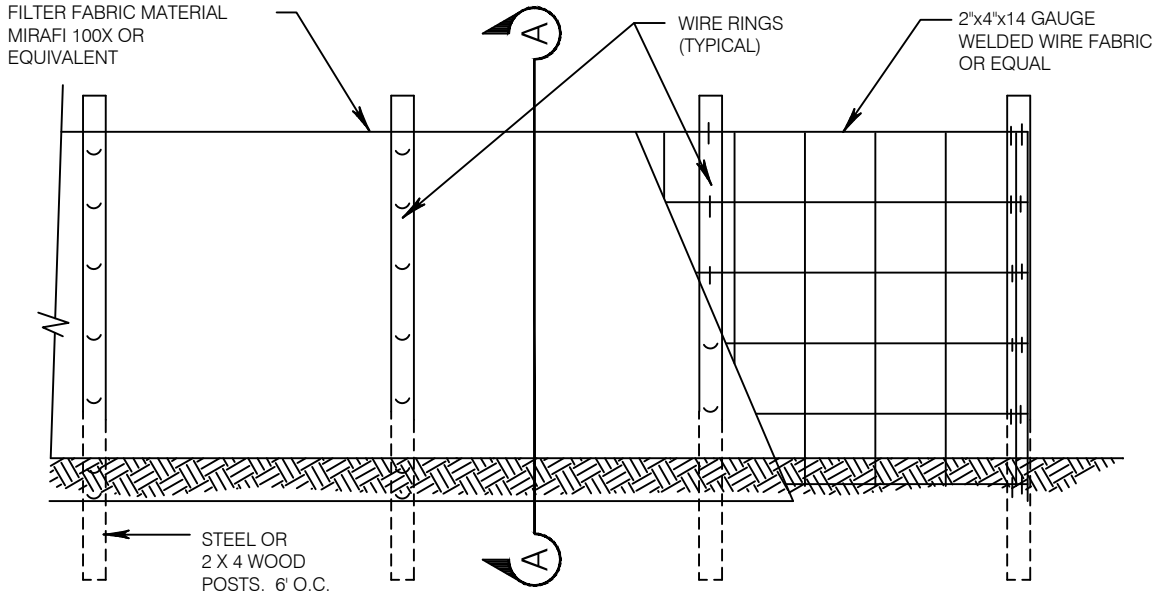
City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	STORM INLET PROTECTION	Standard Detail **T408** Revision Date Feb, 2012



SECTION A-A

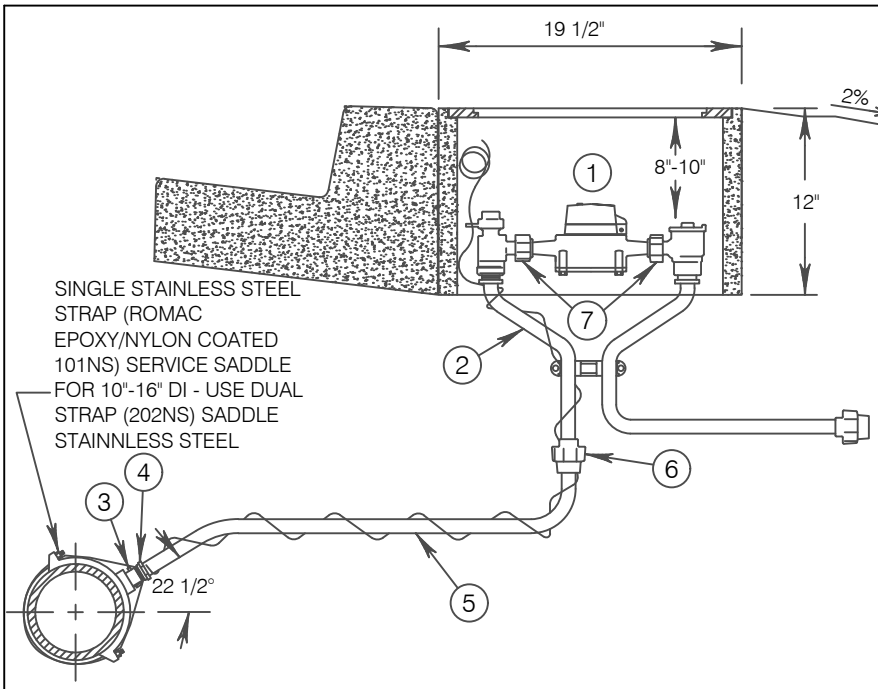
NOTE:

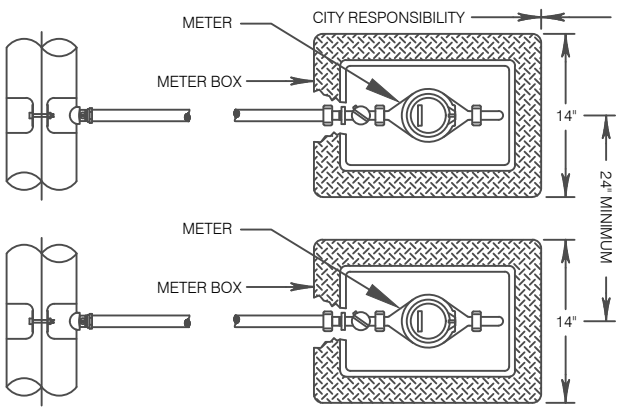
INSTALL THE SILT FENCE FIRST. AFTER THE SILT FENCE HAS BEEN INSTALLED, CONSTRUCT BERM AND TRENCH.



ELEVATION

City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	SILT FENCE	Standard Detail **T409** Revision Date Feb, 2012





SPACING BETWEEN MULTIPLE METER SETTERS

NOTES:

1. WATER METER SUPPLIED AND INSTALLED BY THE CITY.

2. ALL SERVICE SADDLES SHALL HAVE RUBBER GASKET AND I.P. THREADS.

3. A 24" HORIZONTAL WAVE SHALL BE AT THE CONNECTION TO THE NEW MAIN.

4. NO SPLICES OR CRIMPING OF SERVICE LINE SHALL BE MADE.

5. SERVICE LINE SHALL BE PERPENDICULAR TO THE MAIN AND 30" MIN. COVER UNLESS OTHERWISE APPROVED BY THE ENGINEER.

6. METER BOX SHALL BE CENTERED IN LANDSCAPE STRIP SET SQUARE TO THE BACK OF CURB WITH WATER METER CENTERED IN BOX. FOR INSTALLATION WITH NO LANDSCAPE STRIP SET METER 6" BEHIND SIDEWALK.

7. STAINLESS STEEL INSERTS REQUIRED FOR ALL TIGHTEN TO STOP COMPRESSION FITTINGS. IF USING ULTRATITE/INSTATITE, DO NOT USE STAINLESS STEEL INSERTS.

8. GROUND LEVEL INSIDE METER BOX SHOULD BE UP TO BOTTOM OF METER STOP.

9. TAPS ON NON-METAL PIPE SHALL BE STAGGERED WITH 12" MINIMUM SEPARATION.

10. ALL WATER METERS UP TO 2" ARE TO BE BACKFILLED WITH 5/8" MINUS CRUSHED ROCK UP TO THE BOTTOM OF THE METER AND THE REMAINING AREA UP TO THE TOP OF THE REGISTER WITH ACCEPTED INSULATING MATERIAL, CLEAN CEDAR WOOD SHAVINGS.

11. PROVIDE A 3' UNOBSTRUCTED CLEAR AREA AROUND THE METER.

12. CONTRACTOR WILL BE RESPONSIBLE TO PROTECT WATER SERVICES FROM FREEZING DURING CONSTRUCTION.

13. USE DIFFERENT COLOR TRACER WIRE ON CUSTOMER SIDE IF IN COMMON TRENCH.

14. IF 5/8" X 3/4" METER IS USED INSTEAD OF 1" METER, THE METER ADAPTORS ARE REQUIRED.

15. NO LEAD ON ALL BRASS FITTINGS

16. METER SPACER SHALL BE PROVIDED BY CITY INSPECTOR PRIOR TO METER SETTER INSTALLATION

17. A BALL VALVE IS REQUIRED TO BE INSTALLED ON CUSTOMER SIDE OF METER SETTER POLY LINE (TYPICALLY IN GARAGE) IN THE OFF POSITION FOR THE CITY STAFF SO THAT WATER METER CAN BE TESTED FOR LEAKS. THIS IS REQUIRED BEFORE THE CITY CAN INSTALL A WATER METER AS A PART OF THE METER ASSEMBLY INSPECTION.

18. NO PACK JOINTS

* (OR APPROVED EQUAL)

DETAIL NOTES:

(1) METER BOX: DFW1324C4-12-BODY (GRAY) AND DFW1324C-4CA-LID (GRAY) (PREFERRED), OR ARMORCAST 13" X 24" X 12" POLYMER CONCRETE BOX WITH 13" X 24" X 2" POLYMER CONCRETE COVER*.

(2) 1" SETTER: A.Y. McDONALD WITH FULL PORT BALL VALVE AND CHECK VALVE #762P415WCDD44x15 OR FORD VBH94-15W-11-44-NL-FP OR MUELLAR #391B25104-2A01N.

(3) 1" BALL VALVE: A.Y. McDONALD CORP-STOP #73131B* OR FORD FB 500-4-NL MIPT X MIPT

(4) 1" ADAPTER IPS PE X FIPT:
A.Y. McDONALD #747543Q*, MUELLER H-15454N*, FORD C16-44-NL-Q*, FORD ULTRATITE C16-44-NL-U*, MUELLER INSTATITE H-15456N*

(5) 1" IPS SERVICE LINE: 200 PSI GRADE PE 3408 POLYETHYLENE WRAPPED WITH SOLID CORE 10 GAUGE COATED COPPER WIRE EXTENDING 12" OUT OF BOX.

(6) 1" ADAPTER IPS PE X MIPT:
A.Y. McDONALD #747533Q*, MUELLER H-15429N*, FORD C86-44-NL-Q*, FORD ULTRATITE C86-44-NL-U*, MUELLER INSTATITE H-15426N*

(7) 5/8" X 3/4" TO 1" METER ADAPTORS. FORD #A-24NL OR AY MCDONALD 710 J24*

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

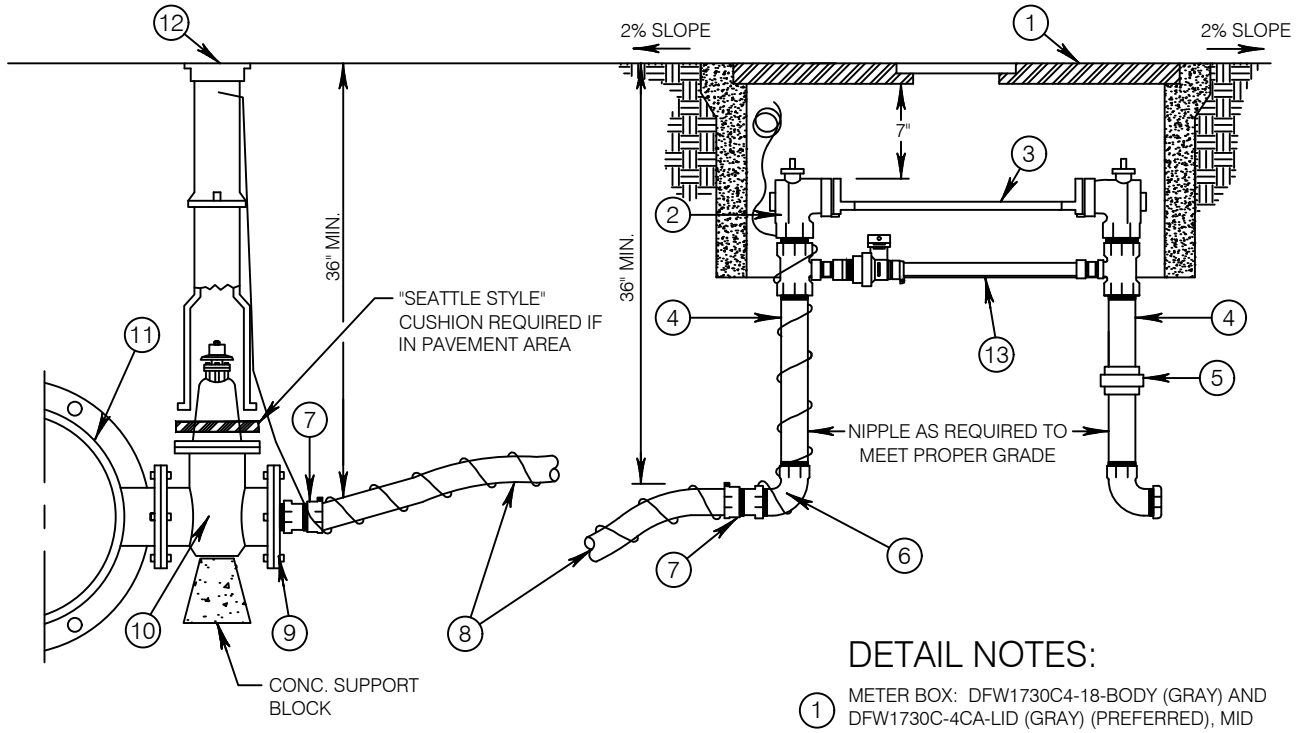
1" WATER SERVICE ASSEMBLY

Standard Detail

510

Revision Date

Dec, 2019



NOTES:

1. WATER METER SUPPLIED AND INSTALLED BY THE CITY.

2. A 24" HORIZONTAL WAVE SHALL BE AT THE CONNECTION TO THE NEW MAIN.

3. NO SPLICES OR CRIMPING OF SERVICE LINE SHALL BE MADE.

4. SERVICE LINE SHALL BE PERPENDICULAR TO THE MAIN AND 30" MIN. COVER UNLESS OTHERWISE APPROVED BY THE ENGINEER.

5. METER BOX SHALL BE SET SQUARE TO THE BACK OF CURB WITH WATER METER CENTERED IN THE BOX. FOR INSTALLATION IN SIDEWALK, PLACE EXPANSION JOINTS A MIN. OF 6" BETWEEN BOX AND JOINT.

6. SETTER INSTALLATION SHALL PROVIDE ADEQUATE CLEARANCE BETWEEN BYPASS AND METER BOX WALL FOR OPERATING AND LOCKING BYPASS VALVE

7. STAINLESS STEEL INSERTS REQUIRED FOR ALL PACK JOINTS (COMPRESSION TYPE) FITTINGS.

8. GROUND LEVEL INSIDE METER BOX SHOULD BE UP TO BOTTOM OF METER STOP.

9. ALL WATER METERS UP TO 2" ARE TO BE BACKFILLED WITH ⅝" MINUS CRUSHED ROCK UP TO THE BOTTOM OF THE METER AND THE REMAINING AREA UP TO THE TOP OF THE REGISTER WITH ACCEPTED INSULATING MATERIAL, MEDIUM BARK OR SAW DUST.

10. PROVIDE A 3 FEET UNOBSTRUCTED CLEAR AREA AROUND THE METER.

11. CONTRACTOR WILL BE REPONSIBLE TO PROTECT WATER SERVICES FROM FREEZING DURING CONSTRUCTION.

12. USE DIFFERENT COLOR TRACER WIRE ON CUSTOMER SIDE IF IN COMMON TRENCH.

* (OR APPROVED EQUAL)

DETAIL NOTES:

(1) METER BOX: DFW1730C4-18-BODY (GRAY) AND DFW1730C-4CA-LID (GRAY) (PREFERRED), MID STATES #MSBCF1730-18 w/#1730 DI RDR LID OR ARMORCAST 17" X 30" X 18" POLYMER CONCRETE BOX WITH 17" X 30" X 2" RPM COVER W/READ LID*.

(2) 1 ½" SETTER: FORD #VBB86-C11290-01-NL OR AY MCDONALD 730F608WWFF 666 OR MUELLER 695B2427----25N.

(3) RIDGE METER SPREADER: SUPPLIED BY CONTRACTOR.

(4) 1 ½" NIPPLE: BRASS, 4" LONG MIPT x MIPT.

(5) 1 ½" UNION: BRASS.

(6) 1 ½" 90° ELBOW: BRASS.

(7) 1 ½" COUPLING: MIPT x PACK JOINT COMPRESSION AY MCDONALD FITTING #74753-33*

(8) 1 ½" IPS SERVICE LINE: 200 PSI GRADE 3408 POLYETHLENE WRAPPED WITH 10 GAUGE COATED SOLID CORE COPPER WIRE 12" OUT OF THE BOX.

(9) 4" REDUCER: COMPANION FLANGE WITH 1 ½" TAP.

(10) 4" GATE VALVE: FL x FL (SEE SECTION 5-10.6)

(11) WATER MAIN TEE: DUCTILE IRON WITH 4" BRANCH, MJ x FL (ON NEW MAINS) TAPPING TEE WITH 4" BRANCH, FL (ON EXISTING MAINS).

(12) VALVE BOX: EAST JORDAN 8555* (SEE STD DETAIL 527)
NO LEAD ON ALL BRASS FITTINGS

(13) BYPASS MUST BE 1.5 INCH DIAMETER

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

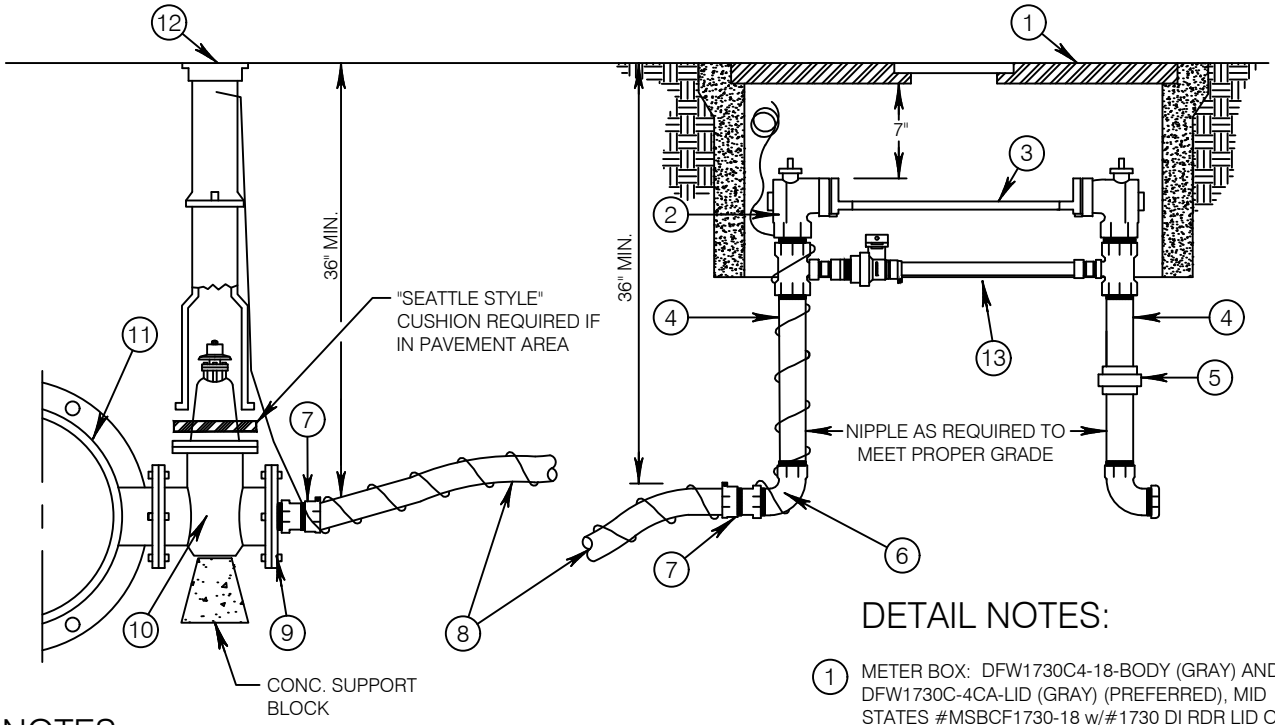
1 1/2" WATER SERVICE ASSEMBLY

Detail

514

Revision Date

Dec, 2017



NOTES:

1.WATER METER SUPPLIED AND INSTALLED BY THE CITY.

2. A 24" HORIZONTAL WAVE SHALL BE AT THE CONNECTION TO THE NEW MAIN.

3. NO SPLICES OR CRIMPING OF SERVICE LINE SHALL BE MADE.

4. SERVICE LINE SHALL BE PERPENDICULAR TO THE MAIN AND 30" MIN. COVER UNLESS OTHERWISE APPROVED BY THE ENGINEER.

5. METER BOX SHALL BE SET SQUARE TO THE BACK OF CURB WITH THE WATER METER CENTERED IN THE BOX. FOR INSTALLATION IN SIDEWALK, PLACE EXPANSION JOINTS A MIN. OF 6" BETWEEN BOX AND JOINT.

6. SETTER INSTALLATION SHALL PROVIDE ADEQUATE CLEARANCE BETWEEN BYPASS AND METER BOX WALL FOR OPERATING AND LOCKING BYPASS VALVE.

7. STAINLESS STEEL INSERTS REQUIRED FOR ALL PACK JOINTS (COMPRESSION TYPE) FITTINGS.

8. GROUND LEVEL INSIDE METER BOX SHOULD BE UP TO BOTTOM OF METER STOP.

9. ALL WATER METERS UP TO 2" ARE TO BE BACKFILLED WITH $\frac{5}{8}$" MINUS CRUSHED ROCK UP TO THE BOTTOM OF THE METER AND THE REMAINING AREA UP TO THE TOP OF THE REGISTER WITH ACCEPTED INSULATING MATERIAL, MEDIUM BARK OR SAW DUST.

10. PROVIDE A 3" UNOBSTRUCTED CLEAR AREA AROUND THE METER.

11. CONTRACTOR WILL BE REPONSIBLE TO PROTECT WATER SERVICES FROM FREEZING DURING CONSTRUCTION.

12. USE DIFFERENT COLOR TRACER WIRE ON CUSTOMER SIDE IF IN COMMON TRENCH.

13. IF METER BEING USED IS SMALLER THAN 2" THEN APPROPRIATE SIZED METER ADAPTORS ARE TO BE SUPPLIED BY THE CONTRACTOR.

DETAIL NOTES:

(1) METER BOX: DFW1730C4-18-BODY (GRAY) AND DFW1730C-4CA-LID (GRAY) (PREFERRED), MID STATES #MSBCF1730-18 w/#1730 DI RDR LID OR ARMORCAST 17" X 30" X 18" POLYMER CONCRETE BOX WITH 17" X 30" X 2" RPM COVER W/READ LID*.

(2) 2" SETTER: FORD #VBB87-C11291-01-NL OR AY MCDONALD 730F708WWFF776 OR MUELLER 105B2427----25N.

(3) RIDGE METER SPREADER: SUPPLIED BY CONTRACTOR.

(4) 2" NIPPLE: BRASS, 4" LONG MIPT x MIPT.

(5) 2" UNION: BRASS.

(6) 2" 90° ELBOW: BRASS.

(7) 2" COUPLING: MIPT x PACK JOINT COMPRESSION AY MCDONALD FITTING #74753-33*

(8) 2" IPS SERVICE LINE: 200 PSI GRADE 3408 POLYETHLENE WRAPPED WITH 10 GAUGE COATED SOLID CORE COPPER WIRE 12" OUT OF THE BOX.

(9) 4" REDUCER: COMPANION FLANGE WITH 2" TAP.

(10) 4" GATE VALVE: FL x FL (SEE SECTION 5-10.6)

(11) WATER MAIN TEE: DUCTILE IRON WITH 4" BRANCH, MJ x FL (ON NEW MAINS) TAPPING TEE WITH 4" BRANCH, FL (ON EXISTING MAINS).

(12) VALVE BOX: EAST JORDAN 8555* (SEE STD DETAIL 527)

(13) BYPASS MUST BE 2" DIAMETER

NO LEAD ON ALL BRASS FITTINGS

* (OR APPROVED EQUAL)

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

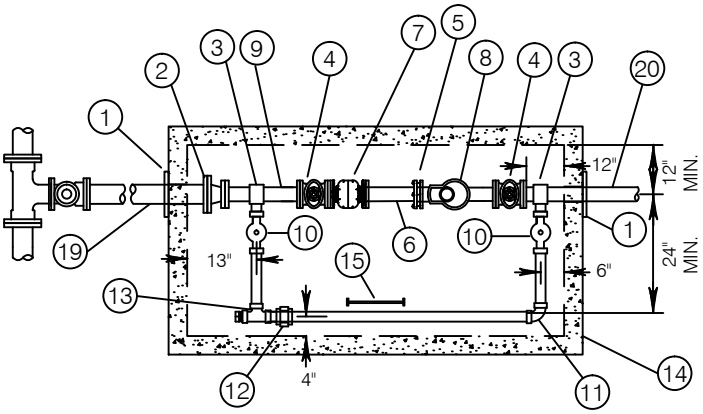
2" WATER SERVICE ASSEMBLY

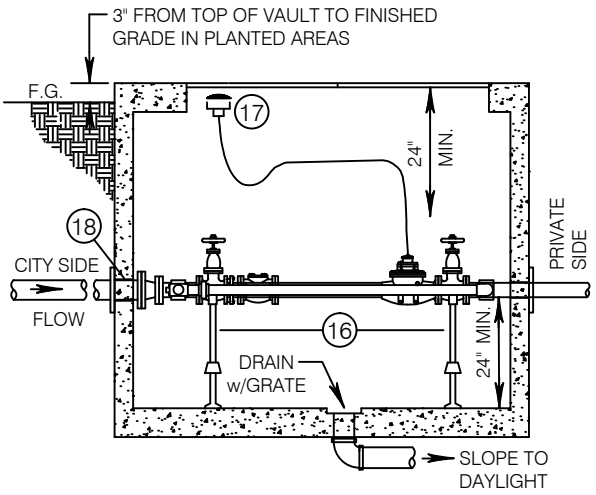
Standard Detail

515

Revision Date

Dec, 2017





MATERIALS LIST:

1. SET SCREW RETAINER GLAND.
2. 4" x 3" REDUCER: DUCTILE IRON FL x FL.
3. EPOXY COATED SERVICE SADDLE: STAINLESS STEEL DOUBLE STRAP WITH 2" IPS TAP.
4. 3" GATE VALVE: FL x FL (SEE SECTION 5-9.6).
5. 3" FLANGE ADAPTOR: DUCTILE IRON. SET SCREW RETAINER GLAND
6. 3" PIPE SPOOL: CL52 DI, FL x PE, LENGTH TO FIT (15" MIN).
7. 3" METER BADGER STRAINER: #BAD STRAINER-3-NSF61
8. 3" METER: BADGER COMPOUND w/CROSSOVER: #BADGER COMP3-R-1C61-F-40-2550-BOTHELL 3"
9. 3" PIPE SPOOL CL 52 DI FL x FL 12" LENGTH
10. 2" BALL VALVE: BRASS, FORD #B11-666W-NL OR B11-777W-NL w/PADLOCK WING OR LOCK CAP*..
11. 2" 90° ELBOW: BRASS.
12. 2" UNION: BRASS, THREADED
13. 2" TEE: BRASS, THREADED w/PLUG.
14. VAULT: UTILITY VAULT CO. #4484, PRE CAST CONCRETE w/TOP SECTION #4484-TL-2-332P (TWO 3'x 3' DIAMOND PLATE DOORS RATED FOR H-20 LOADING).
15. LADDER: GALV WITH PULL-UP EXTENDER, BOLTED TO VAULT FLOOR AND WALL IN ALIGNMENT WITH VAULT OPENING. (SEE DETAIL 590).
16. ADJUSTABLE PIPE STANCHIONS: 2 EACH ON MAINLINE AND BY-PASS ASSEMBLY.
17. METER SENSOR: ORION REMOTE DATA PROFILE TRANSMITTER (MOUNT TO VAULT WALL).
18. LINK SEALOR APPROVED EQUAL.
19. 4" PIPE SPOOL CL 52 DI FLxPE LENGTH TO FIT MINIMUM 24"
20. 3" PIPE SPOOL CL 52 DI FL x PE MINIMUM 30"

NO LEAD ON ALL BRASS FITTINGS

NOTES:

1 ALL MATERIALS, INCLUDING METER SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR.

2. NEW CONSTRUCTION- DI TEE WITH 4" BRANCH, MJ x FL, 4" GATE VALVE, FL x FL EXISTING CONNECTION USE DETAIL 545 TO FLEX. CPLG OR RED.

3. ALL METERS TO READ IN CUBIC FEET.

4. PROVIDE 24" - 36" CLEARANCE BETWEEN VAULT FLOOR AND BOTTOM OF COMPOUND METER. WHERE ELEVATION OF VAULT FLOOR IS TOO LOW TO DRAIN TO DAYLIGHT OR STORM SYSTEM, THIS CLEARANCE CAN BE REDUCED TO A MINIMUM OF 12", IF SUBSTITUTION OF A SHORTER VAULT ALLOWS FLOOR TO DRAIN TO DAYLIGHT OR STORM SYSTEM (APPROVED BY THE CITY ENGINEER ON A CASE BY CASE BASIS ONLY).

5. VAULT COVER SHALL INCLUDE 2 LOCKING STEEL DOORS (GALVANIZED DIAMOND PLATE). DOORS SHALL BE CAST IN COVER WITH 8" SPECIAL OFFSET FROM VAULT WALL, AS SHOWN.

6. VAULTS SHALL NOT BE INSTALLED IN AREAS WITH VEHICULAR TRAFFIC.

7. ALL PIPE THROUGH VAULT SHALL BE CORE DRILLED AND HAVE A "LINK SEAL"*.

8. VAULT DRAINAGE PROCEDENCE SHALL BE AS FOLLOWS:
A) VAULT DRAIN TO DAYLIGHT.
B) VAULT DRAIN TO STORM DRAIN SYSTEM (IF POSSIBLE).
C) IF NO POSSIBLE MENAS OF GRAVITY DRAIN, (SEE STD DETAIL 593) FOR SUMP PUMP INSTALLATION.

* (OR APPROVED EQUAL)

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

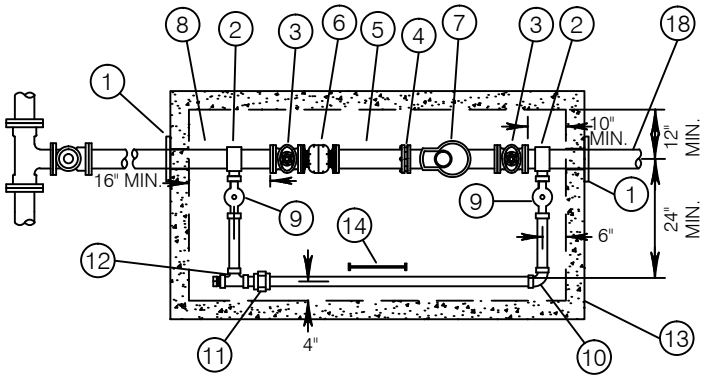
3" DOMESTIC WATER SERVICE

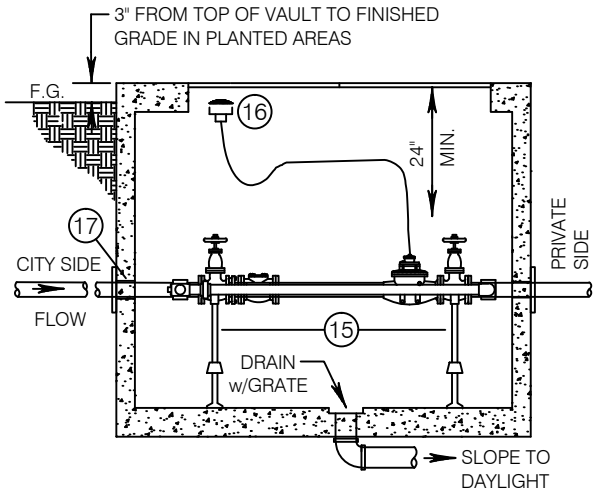
Standard Detail

516

Revision Date

Jun, 2015





MATERIALS LIST:

1. SET SCREW RETAINER GLAND.
2. EPOXY COATED SERVICE SADDLE (4") : STAINLESS STEEL DOUBLE STRAP WITH 2" IPS TAP.
3. 4" GATE VALVE: FL x FL (SEE SECTION 5-9.6).
4. 4" FLANGE ADAPTOR: DUCTILE IRON. RESTRAINED FLANGE COUPLING ADAPTOR (RFCA)
5. 4" PIPE SPOOL: CL52 DI, FL x PE, LENGTH TO FIT (20" MIN).
6. 4" METER BADGER STRAINER: BAD STRAINER-4-NSF61
7. 4" METER: BADGER COMPOUND w/CROSSOVER:
   #BADGER COMP4-R-1C61-F-40-2550-BOTHELL 4"
8. 4" PIPE SPOOL: CL52 DI, FL x PE, MIN 36".
9. 2" BALL VALVE: BRASS, FORD #B11-666W-NL OR B11-777W-NL w/PADLOCK WING OR LOCK CAP*..
10. 2" 90° ELBOW: BRASS.
11. 2" UNION: BRASS, THREADED
12. 2" TEE: BRASS, THREADED w/PLUG.
13. VAULT: UTILITY VAULT CO. #4484, PRE CAST CONCRETE w/TOP SECTION #4484-TL-2-332P (TWO 3'x 3' DIAMOND PLATE DOORS RATED FOR H-20 LOADING).
14. LADDER: GALV WITH PULL-UP EXTENDER, BOLTED TO VAULT FLOOR AND WALL IN ALIGNMENT WITH VAULT OPENING. (SEE STD DETAIL 590).
15. ADJUSTABLE PIPE STANCHIONS: 2 EACH ON MAINLINE AND BY-PASS ASSEMBLY.
16. METER SENSOR: ORION REMOTE DATA PROFILE TRANSMITTER (MOUNT TO VAULT WALL).
17. LINK SEAL OR APPROVED EQUAL.
18. 4" PIPE SPOOL CL52 DI FL x PE MIN 30"
    NO LEAD ON ALL BRASS FITTINGS

NOTES:

1. ALL MATERIALS, INCLUDING METER SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR.

2. NEW CONSTRUCTION- DI TEE WITH 4" BRANCH, MJ x FL, 4" GATE VALVE, FL x FL EXISTING CONNECTION USE DETAIL 545 TO FLEX. CPLG OR RED.

3. ALL METERS TO READ IN CUBIC FEET.

4. PROVIDE 24" - 36" CLEARANCE BETWEEN VAULT FLOOR AND BOTTOM OF COMPOUND METER. WHERE ELEVATION OF VAULT FLOOR IS TOO LOW TO DRAIN TO DAYLIGHT OR STORM SYSTEM, THIS CLEARANCE CAN BE REDUCED TO A MINIMUM OF 12", IF SUBSTITUTION OF A SHORTER VAULT ALLOWS FLOOR TO DRAIN TO DAYLIGHT OR STORM SYSTEM (APPROVED BY THE CITY ENGINEER ON A CASE BY CASE BASIS ONLY).

5. VAULT COVER SHALL INCLUDE 2 LOCKING STEEL DOORS (GALVANIZED DIAMOND PLATE). DOORS SHALL BE CAST IN COVER WITH 8" SPECIAL OFFSET FROM VAULT WALL, AS SHOWN.

6. VAULTS SHALL NOT BE INSTALLED IN AREAS WITH VEHICULAR TRAFFIC.

7. ALL PIPE THROUGH VAULT SHALL BE CORE DRILLED AND HAVE A "LINK SEAL"*.

8.VAULT DRAINAGE PROCEDENCE SHALL BE AS FOLLOWS:
A) VAULT DRAIN TO DAYLIGHT.
B) VAULT DRAIN TO STORM DRAIN SYSTEM (IF POSSIBLE).
C) IF NO POSSIBLE MEANS OF GRAVITY DRAIN, (SEE STD DETAIL 593) FOR SUMP PUMP INSTALLATION.

* (OR APPROVED EQUAL)

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

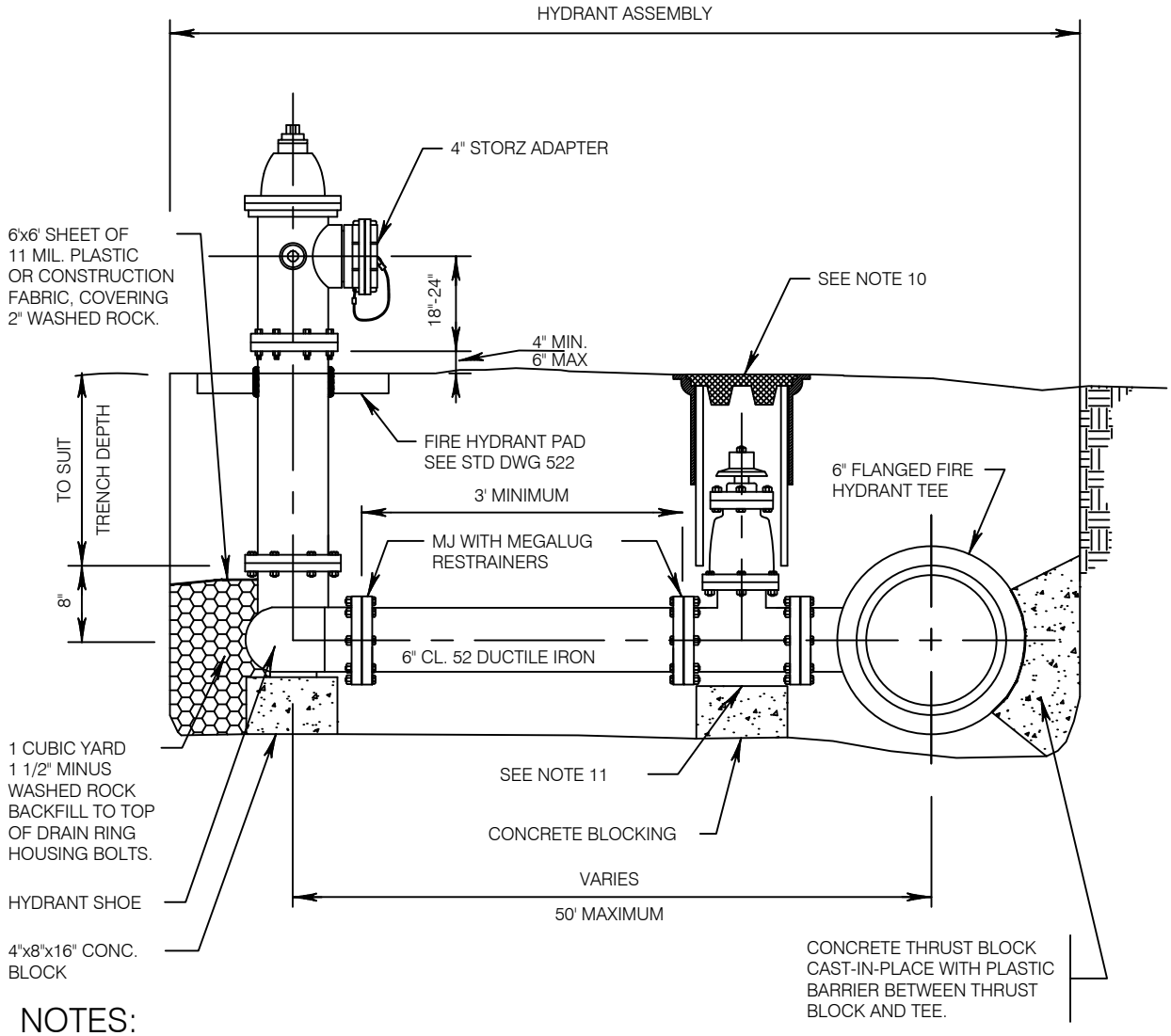
4" DOMESTIC WATER SERVICE

Standard Detail

517

Revision Date

Jun, 2015



NOTES:

1. HYDRANTS AND ALL MATERIALS AS SPECIFIED.
2. ACCEPTABLE HYDRANTS:
   CLOW MEDALLION, M AND H STYLE 929, MUELLER SUPER CENTURION 200, AVK, AND AMERICAN DARLING B-62-B, EAST JORDAN 5CD250 WATERMASTER #71614D.
3. PAINT HYDRANT: TWO BRUSHED (NO SPRAY PAINT) COATS OF RUSTOLEUM HIGH GLOSS WHITE. (EXCEPT STORZ ADAPTER)
4. CONTRACTOR TO STENCIL IN 3" BLACK PAINT NUMBERS ON THE BARREL OF THE HYDRANT, FACING THE HYDRANT VALVE, LISTING THE DISTANCE FROM THE CENTER OF THE HYDRANT TO THE HYDRANT VALVE.
5. KING CO. F.H. ASSEMBLY:
   (2)-2 1/2" HOSE PORTS WITH N.S.T. (1)-4" PUMPER WITH S.S.T. AND 4" STORZ ADAPTER ASSEMBLY.

   SNOHOMISH CO. F.H. ASSEMBLY:
   (2)-2 1/2" HOSE PORTS WITH N.S.T. (1)-4 1/2" PUMPER WITH N.S.T. AND 4" STORZ ADAPTER ASSEMBLY.

   PUMPER OUTLET TO BE FACING THE STREET.
6. IF HYDRANT IS LOCATED IN CONCRETE, USE EXPANSION MATERIAL AROUND THE BARREL AND PROVIDE A 5' CLEARANCE FOR HANDICAP MANEUVERABILITY.
7. HYDRANTS SUBJECT TO TRAFFIC INTERFERENCE SHALL HAVE GUARD POSTS PER STD DETAILS 524.
8. CLEAR ZONE PER STD DETAIL 524
9. ALL PIPING TO BE RESTRAINED
10. VALVE BOX PER STD DETAIL 527.
11. 6" RESILIENT WEDGE GATE VALVE.
    (SEE BOTHELL DESIGN AND CONSTRUCTION STANDARDS DECTION 5-10.6).
12. SEE STD DETAIL 523 FOR PAVEMENT MARKING.

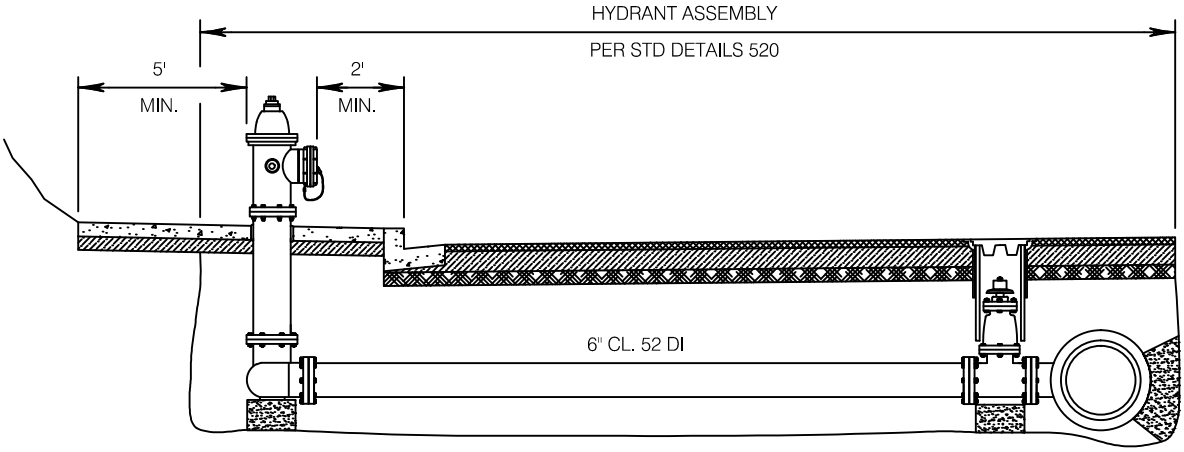
City of Bothell

City of Bothell
PUBLIC WORKS DEPARTMENT

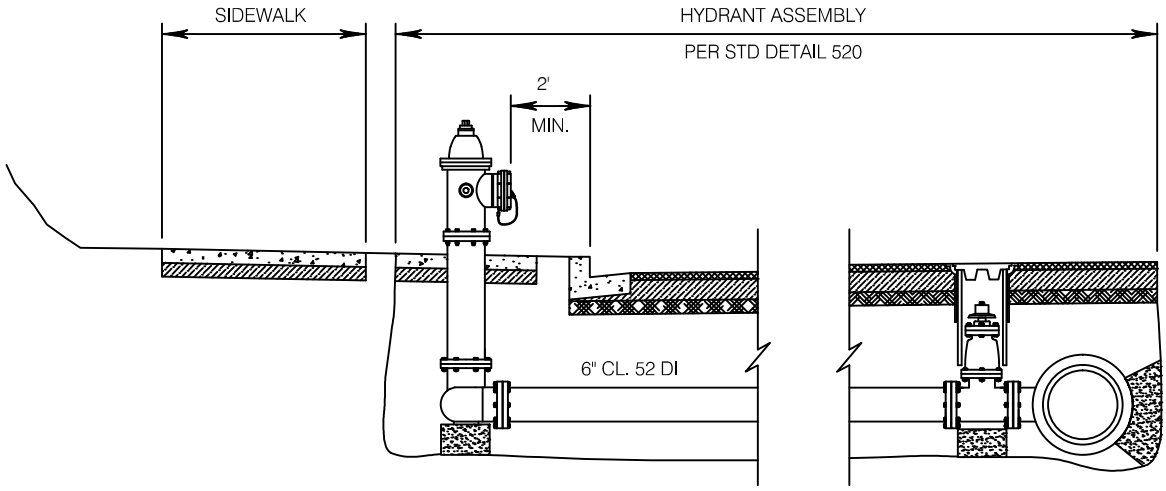
Approved By:
City Engineer

FIRE HYDRANT ASSEMBLY

Standard Detail
520
Revision Date
Dec, 2016



TYPICAL SECTION
IN SIDEWALK



TYPICAL SECTION
IN PLANTER

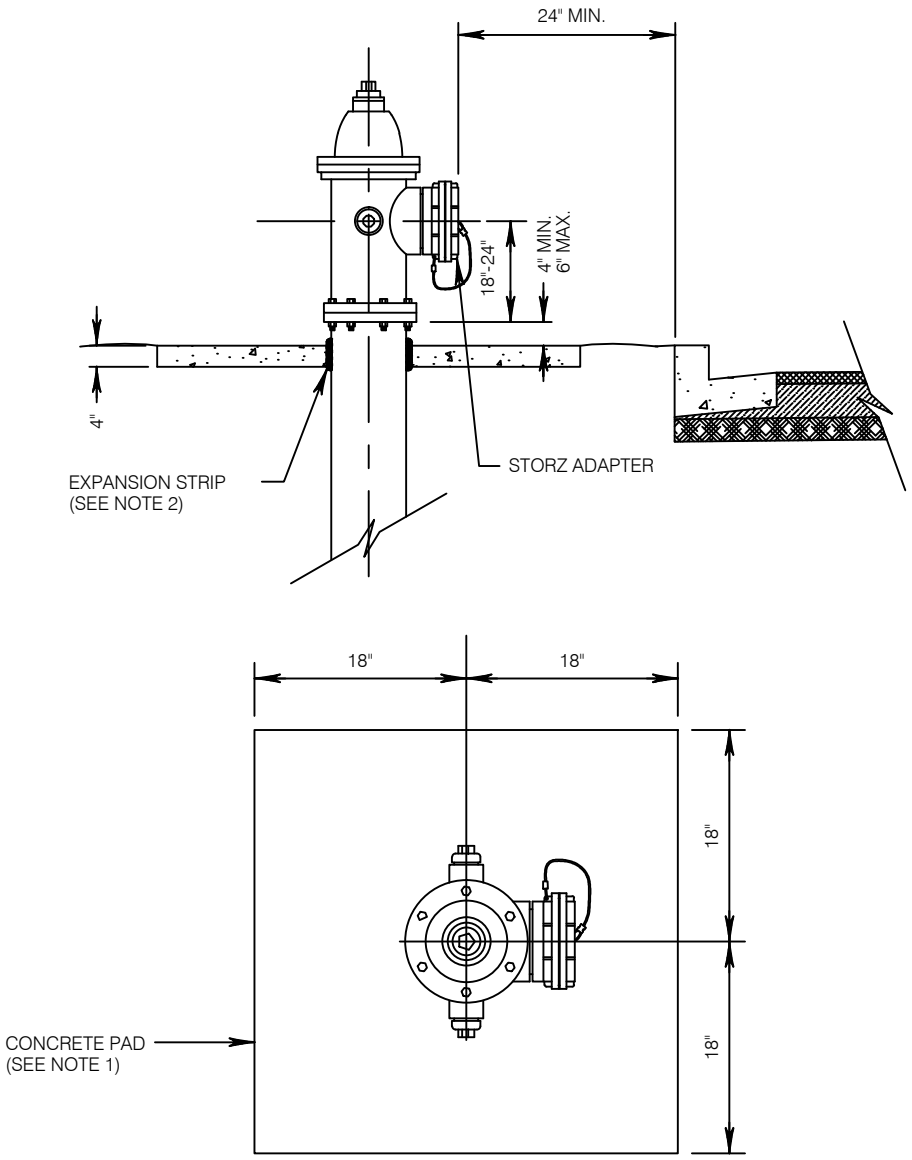
NOTES:

1. WHERE 8' SIDEWALK IS NOT POSSIBLE, REDUCE 2' MIN. CURB SETBACK TO 6" AND ADD GUARD POSTS.

2. FOR FIRE HYDRANT GENERAL CONSTRUCTION, SEE NOTES ON STD DETAIL 520.

3. HYDRANT PAD TO BE CONSTRUCTED AT GRADE. NO SOIL CUT AROUND HYDRANT TO MEET MINIMUM HEIGHT STANDARD.

City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	FIRE HYDRANT PLACEMENT	Standard Detail **521** Revision Date Feb, 2012



NOTES:

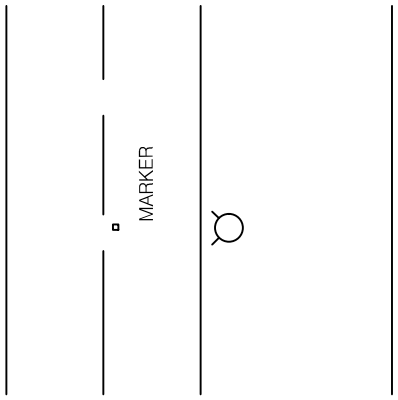
1. CONCRETE SHALL BE CLASS 3000.

2. INSTALL 1/2" WIDE FULL DEPTH EXPANSION STRIP AROUND HYDRANT.

3. FIRE HYDRANT SHALL BE INSTALLED A MIN. OF 24" FROM BACK OF CURB/SIDEWALK TO FACE OF PUMPER.

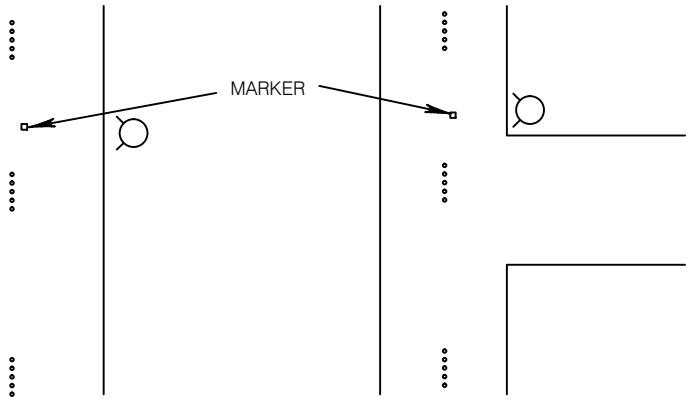
4. CONCRETE PAD TO BE CONSTRUCTED AT GRADE. NO SOIL CUT AROUND HYDRANT TO MEET MINIMUM HEIGHT STANDARD.

City of Bothell **City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer Date:	FIRE HYDRANT PAD DETAILS	Standard Detail **522** Revision Date Feb, 2012



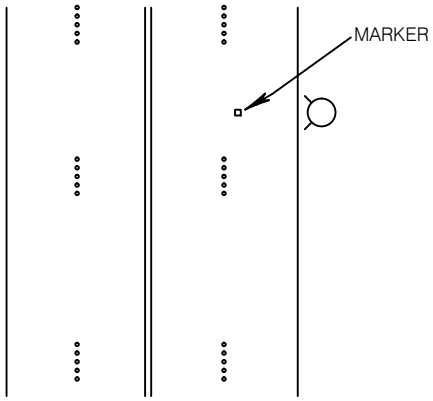
TWO LANE ROAD

OFFSET MARKER TO INDICATE WHICH SIDE OF STREET HYDRANT IS ON. MARKER TO BE PLACED 4" TO 6" OFF OF CENTERLINE



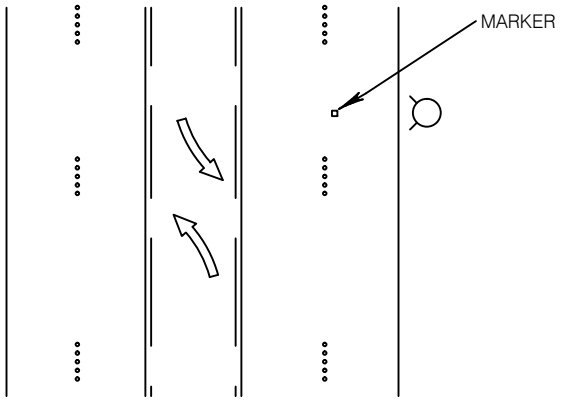
ON SIDE STREETS

WHERE THE HYDRANT IS WITHIN 20' OF THE MAIN TRAVELED STREET, THE MARKER IS TO BE INSTALLED ON THAT MAIN STREET AND 4" TO 6" OFF THE CENTERLINE.



FOUR LANE ROAD

OFFSET MARKER TO INDICATE WHICH SIDE OF STREET HYDRANT IS ON. MARKER TO BE PLACED 4" TO 6" OFF OF DOTS OR PAINTED LANE DIVIDER.



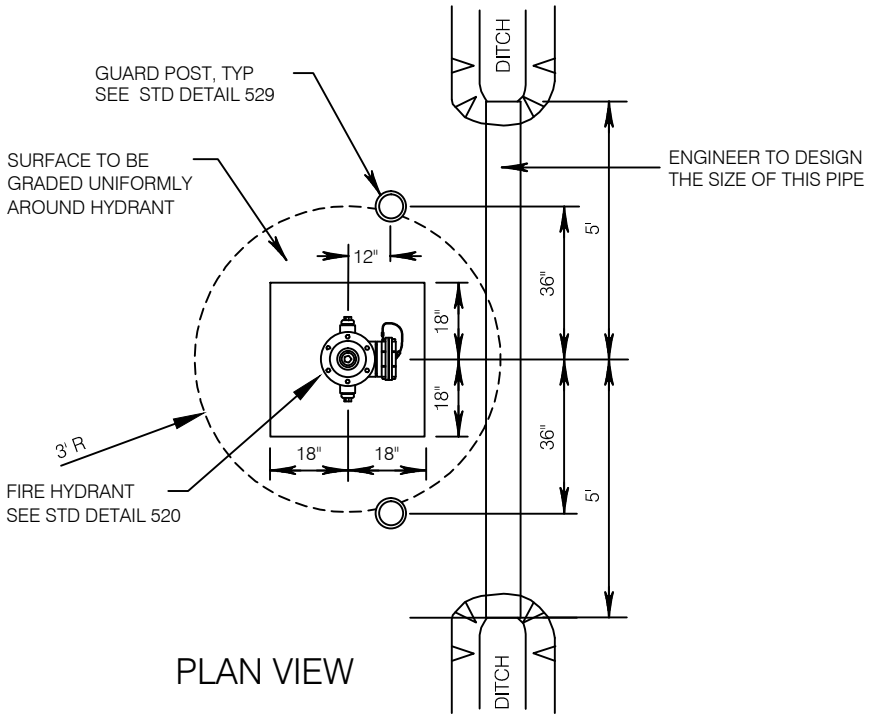
FIVE LANE ROAD

OFFSET MARKER TO INDICATE WHICH SIDE OF STREET HYDRANT IS ON. MARKER TO BE PLACED 4" TO 6" OFF OF DOTS OR PAINTED LANE DIVIDER.

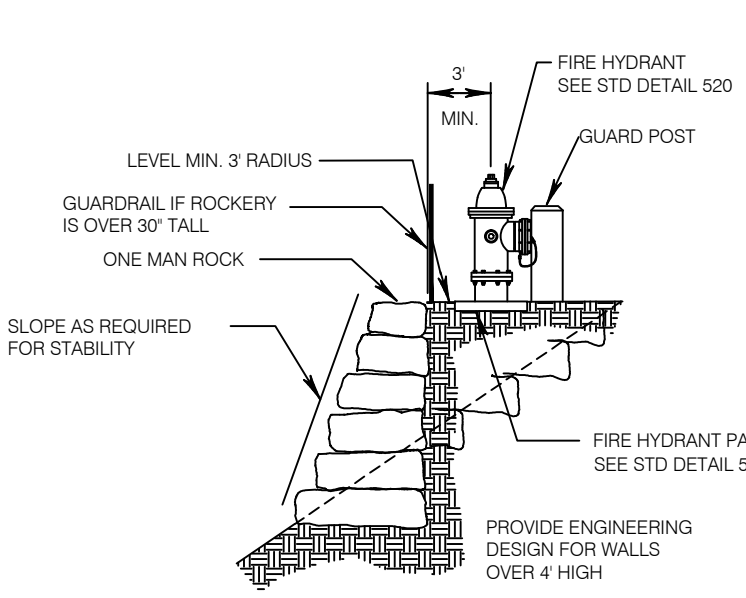
NOTE:

MARKER: Type 88 AB Stimsonite two-way (blue)

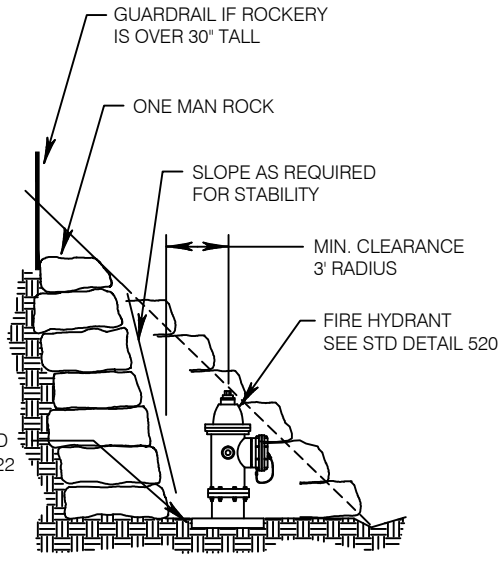
City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	FIRE HYDRANT MARKERS	Standard Detail **523** Revision Date Feb, 2012



FIRE HYDRANT GUARD POSTS



FIRE HYDRANT IN FILL

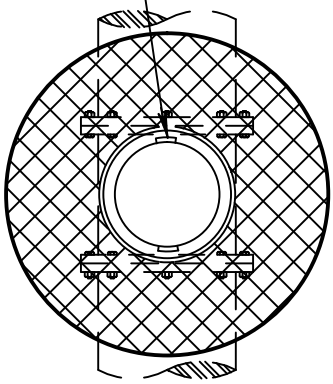


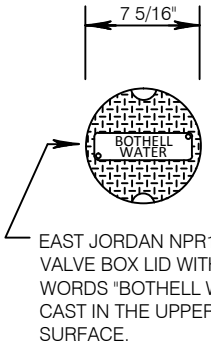
FIRE HYDRANT IN CUT

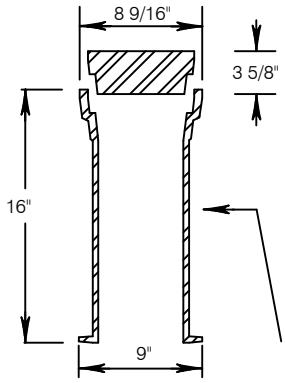
City of Bothell™	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	FIRE HYDRANT PLACEMENT/GUARD POSTS	Standard Detail **524** Revision Date Feb, 2012

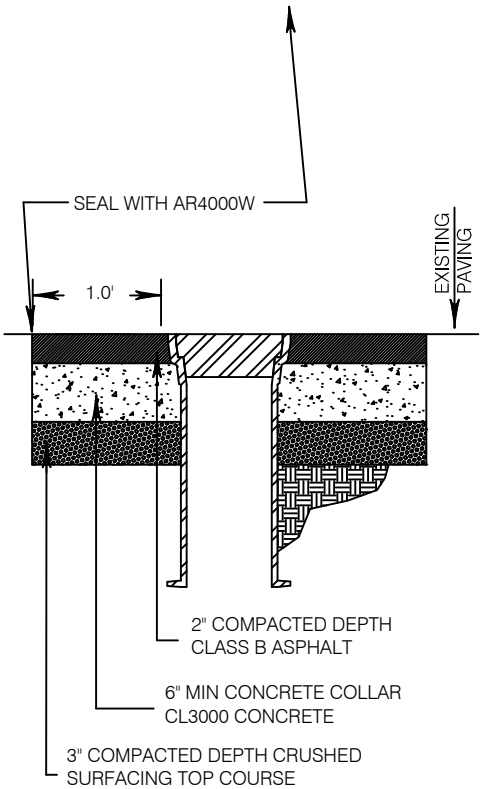
NOTES:

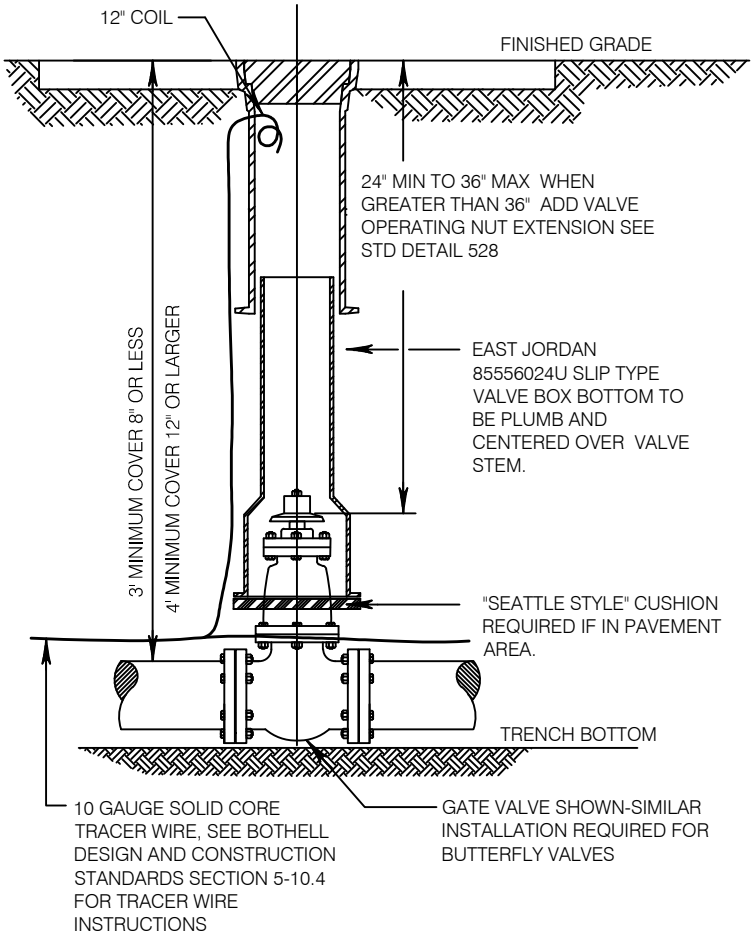
1. IF VALVE IS OUTSIDE OF THE PAVED AREA REFER TO DETAIL 527A.
2. NO 2" RISERS ALLOWED.











City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

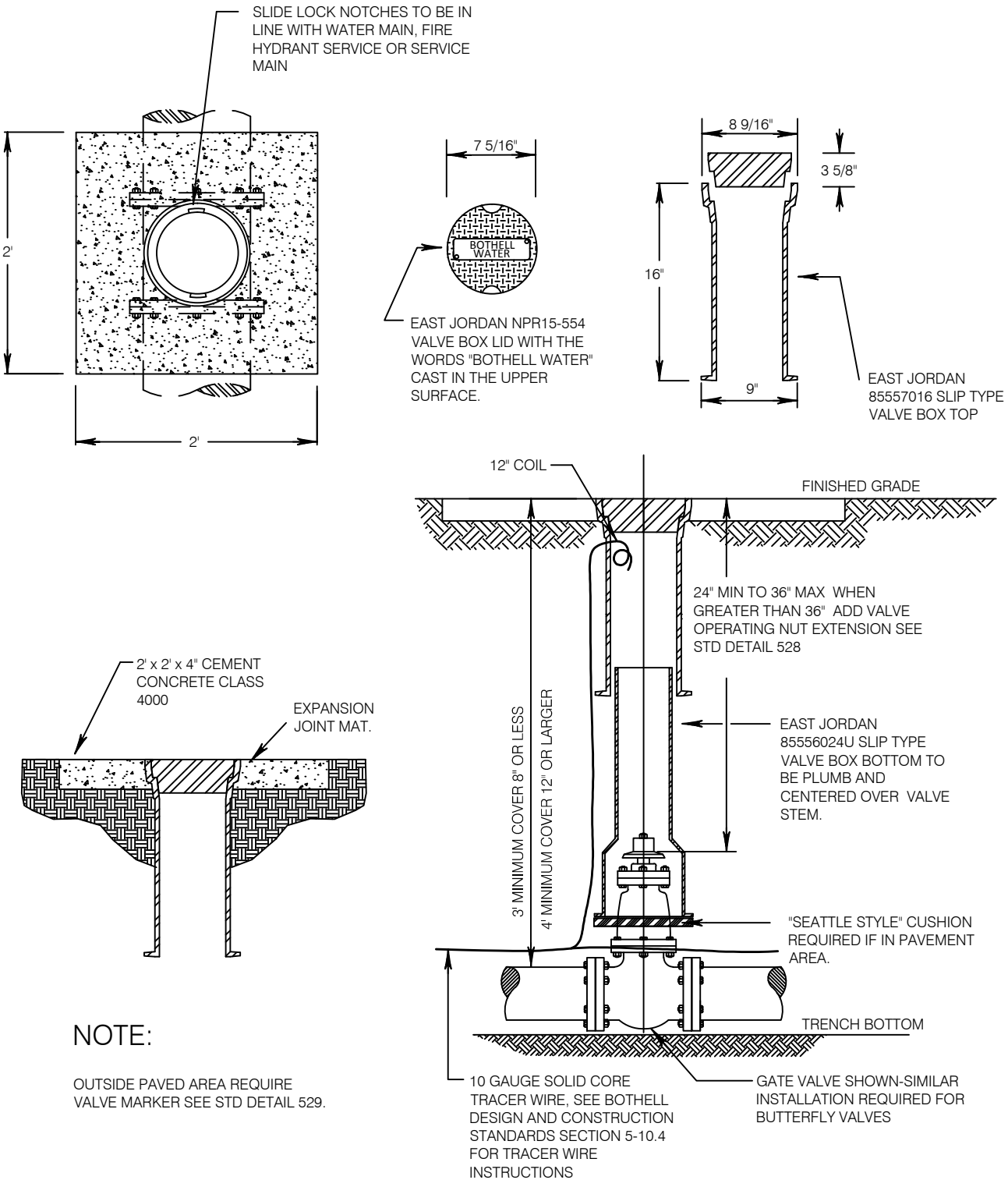
VALVE BOX INSIDE PAVED ROADWAY

Standard Detail

527

Revision Date

Jun, 2015



NOTE:

OUTSIDE PAVED AREA REQUIRE VALVE MARKER SEE STD DETAIL 529.

City of Bothell

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PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

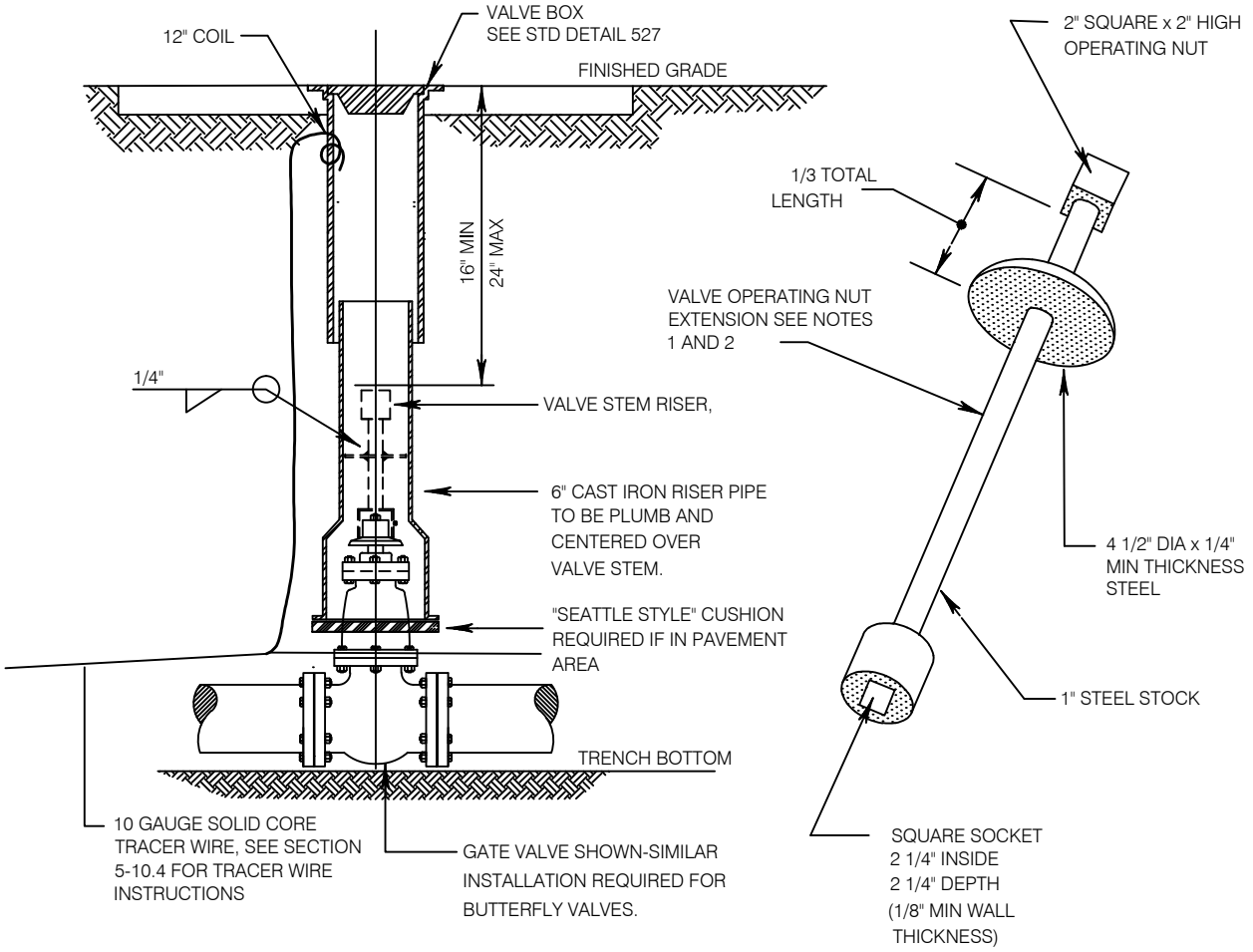
VALVE BOX OUTSIDE PAVED AREA

Standard Detail

527A

Revision Date

Jun, 2015



NOTES:

1. VALVE OPERATING NUT EXTENSIONS ARE REQUIRED WHEN THE VALVE NUT IS MORE THAN THREE (3) FEET BELOW FINISHED GRADE. EXTENSIONS ARE TO BE A MINIMUM OF ONE (1) FOOT LONG.

2. ONLY ONE EXTENSION WILL BE ALLOWED PER VALVE.

3. ALL VALVE OPERATING NUT EXTENSIONS ARE TO BE MADE OF STEEL, SIZED AS NOTED, AND PAINTED WITH TWO (2) COATS OF METAL PAINT.

City of Bothell™

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PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

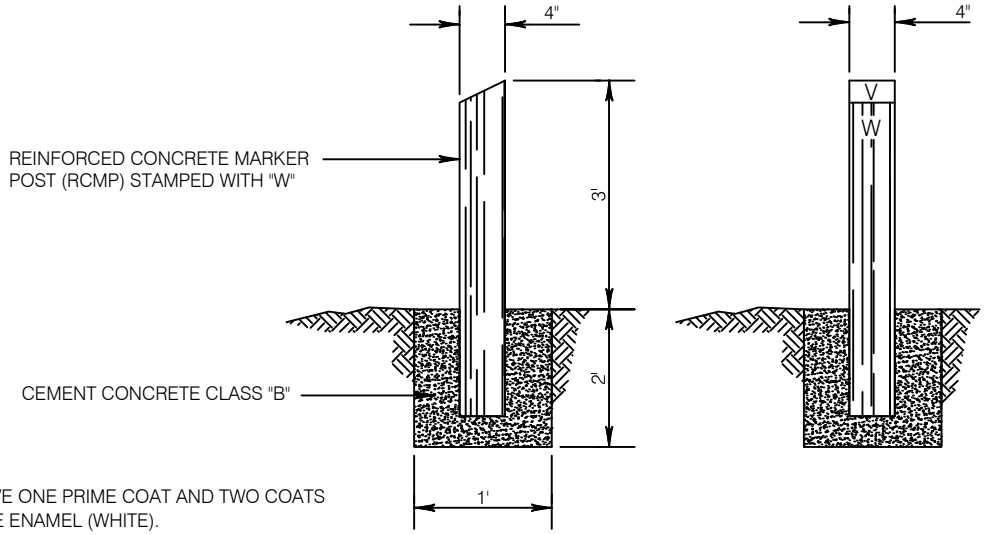
VALVE OPERATING NUT EXTENSION

Standard Detail

528

Revision Date

Feb, 2012



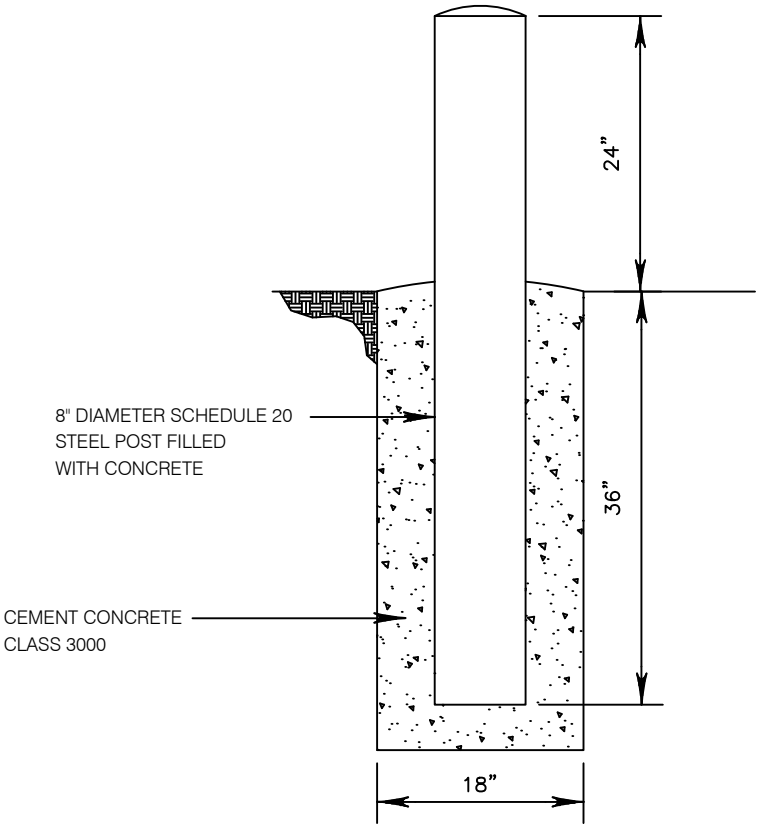
VALVE MARKER POST

NOTES:

1. RCMP TO RECEIVE ONE PRIME COAT AND TWO COATS OUTDOOR OIL BASE ENAMEL (WHITE).

2. RCMP IS TO FACE THE VALVE.

3. THE CONTRACTOR IS TO STENCIL ON THE FACE OF THE RCMP IN 3" IN BLACK PAINTED LETTERS THE DISTANCE FROM THE RCMP TO THE VALVE AND TYPE OF VALVE.



HYDRANT BOLLARD

NOTES:

1. LOCATE POSTS 3' FROM HYDRANT. DON'T BLOCK HYDRANT PORTS

2. PIPE TO RECEIVE ONE PRIME COAT AND TWO COATS OUTDOOR OIL BASE ENAMEL (SAME COLOR AS HYDRANT-SEE STD DETAIL 520).

3. FOR REMOTE LOCATIONS.

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

VALVE MARKER AND GUARD POST

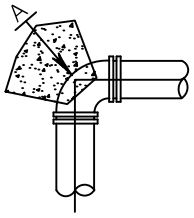
Standard Detail

529

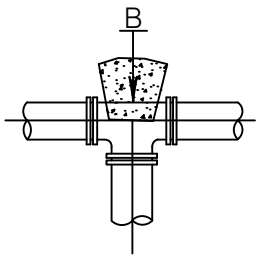
Revision Date

Feb, 2012

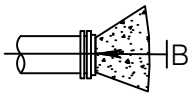
THRUST BLOCK - TABLE							
		MINIMUM BEARING AREA AGAINST UNDISTURBED SOIL SQUARE FEET					
PIPE SIZE	PRESSURE PSI	A	B	C	D	E	X (100 PSI)
4"	200 300	2/(1) 3/(2)	1/(NONE) 2/(2)	1/(NONE) 2/(1)	NONE 1/(1)	NONE NONE	NONE
6"	200 300	4/(3) 6/(4)	3/(2) 4/(3)	3/(1) 3/(2)	1/(1) 2/(1)	1/(NONE) 1/(NONE)	NONE
8"	200 300	7/(5) 11/(8)	5/(3) 8/(5)	4/(3) 6/(4)	2/(2) 3/(2)	1/(1) 2/(1)	3/(2)
10"	200 275	11/(8) 16/(11)	8/(6) 11/(7)	6/(4) 9/(6)	3/(2) 5/(3)	2/(1) 3/(2)	4/(3)
12"	200 250	16/(11) 24/(16)	11/(8) 17/(11)	9/(6) 13/(9)	5/(3) 7/(5)	3/(2) 4/(3)	5/(4)
14"	200 250	22/(13) 33/(22)	16/(11) 23/(16)	12/(8) 18/(12)	6/(4) 9/(6)	3/(2) 5/(3)	7/(6)
16"	200 225	29/(19) 23/(16)	21/(14) 23/(16)	16/(11) 17/(12)	8/(6) 9/(6)	5/(3) 5/(3)	10/(7)
18"	200	36/(24)	26/(17)	20/(13)	10/(7)	5/(4)	13/(9)
20"	200	45/(29)	32/(21)	24/(16)	13/(8)	7/(4)	16/(11)
24"	200	64/(43)	46/(30)	35/(23)	18/(12)	9/(6)	23/(16)



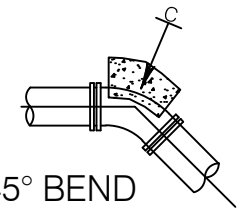
90° BEND



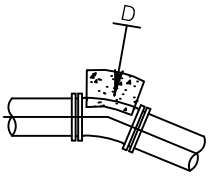
TEE



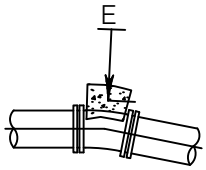
CAP



45° BEND



22 1/2° BEND



11 1/4° BEND

NOTES:

1. SQUARE FEET OF CONCRETE THRUSTS - BLOCK AREA BASED ON SAFE BEARING LOAD OF 2000/(3000) POUNDS PER SQUARE FOOT.

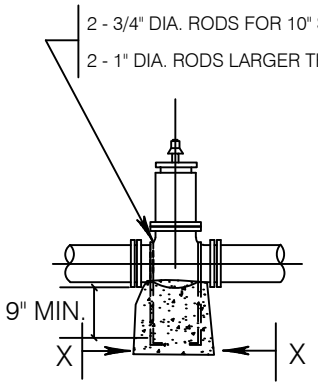
2. AREAS MUST BE ADJUSTED FOR OTHER SIZE PIPE, PRESSURES & SOIL CONDITIONS.

3. CONCRETE BLOCKING SHALL BE CAST IN PLACE AND HAVE MINIMUM OF 1/4 SQ. FT. BEARING AGAINST THE FITTING.

4. BLOCK SHALL BEAR AGAINST FITTINGS ONLY AND SHALL BE CLEAR OF JOINTS TO PERMIT TAKING UP OR DISMANTLING JOINT.

5. CONTRACTOR SHALL INSTALL BLOCKING ADEQUATE TO WITHSTAND FULL TEST PRESSURE AS WELL AS TO CONTINUOUSLY WITHSTAND OPERATING PRESSURE UNDER ALL CONDITIONS OF SERVICE.

6. 8 MIL PLASTIC OR CONSTRUCTION FABRIC WILL BE WRAPPED AROUND PIPE AND FITTINGS BEFORE THRUST BLOCKS ARE POURED.



GATE VALVE

NOTE: ADDITIONAL BLOCKING MUST BE PROVIDED IF GATE VALVE IS AT END OF LINE DURING TESTING.

SAFE BEARING LOADS IN LB./SQ. FT.
THE SAFE BEARING LOADS GIVEN IN THE TABLE BELOW ARE FOR HORIZONTAL THRUSTS WHEN THE DEPTH OF COVER OVER THE PIPE EXCEEDS 2'.

SOIL	SAFE BEARING LOAD LB. PER SQ. FT.
* MUCK, PEAT, ETC.	0
SOFT CLAY	1,000
SAND	2,000
SAND & GRAVEL	3,000
SAND, GRAVEL AND CEMENTED WITH CLAY	4,000
HARD SHALE	10,000

* IN MUCK OR PEAT, ALL THRUSTS SHALL BE RESTRAINED BY PILES OR TIE RODS TO SOLID FOUNDATIONS OR BY REMOVAL OF MUCK OR PEAT AND REPLACEMENT WITH BALLAST OF SUFFICIENT STABILITY TO RESIST THRUST.

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

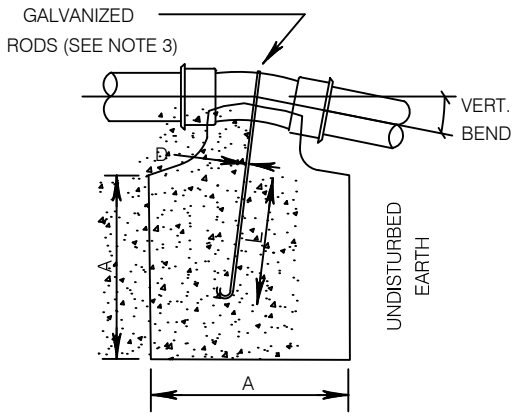
City Engineer

WATER MAIN
THRUST BLOCKING

Standard Detail

530

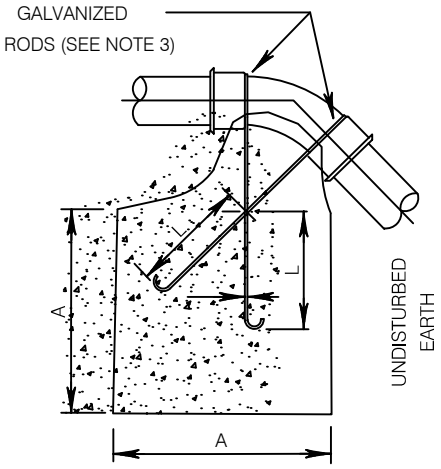
Revision Date
Feb, 2012



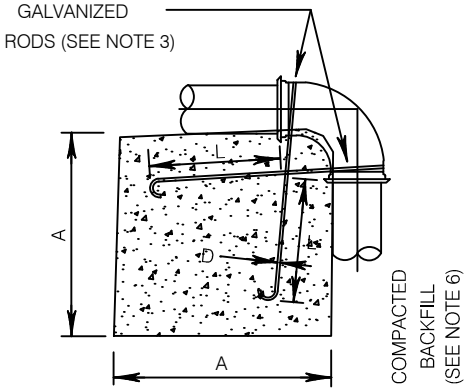
VERTICAL BLOCKING 11 1/4°, 22 1/2° BENDS

VERTICAL BLOCKING SIZE W/RESTRAINED JOINTS SOIL TYPE = COHESIVE GRANULAR [GC+SC] SAND, GRAVEL, CLAY MIXTURE					
PIPE SIZE	V B	CU FT	A	D	L
4"	11 1/4°	*			
	22 1/2°	*			
	45°	*			
	90°	16	2.5'	3/4"	2.0'
6"	11 1/4°	*			
	22 1/2°	*			
	45°	13	2.3'	3/4"	2.0'
	90°	43	3.5'	3/4"	2.0'
8"	11 1/4°	*			
	22 1/2°	*			
	45°	33	3.2'	3/4"	2.0'
	90°	86	4.4'	3/4"	2.0'
10"	11 1/4°	*			
	22 1/2°	13	2.3'	3/4"	2.0'
	45°	64	4.0'	3/4"	2.0'
	90°	141	5.2'	1"	3.5'
12"	11 1/4°	*			
	22 1/2°	20	2.7'	3/4"	2.0'
	45°	111	4.8'	3/4"	2.0'
	90°	206	5.9'	1 1/8"	4.0'

* BLOCKING NOT REQUIRED IF 36' OF PIPE IS RESTRAINED ON EACH SIDE OF BEND.



VERTICAL BLOCKING FOR 45° BENDS



VERTICAL BLOCKING FOR 90° BENDS

NOTES:

1. CONCRETE BLOCKING SIZES BASED ON:
- 36' OF PIPE RESTRAINED EACH SIDE OF BEND.
- THRUST BLOCK AREAS BASED ON SAFE BEARING LOAD. OF 1,000 PSF.
- 2,500 PSI CONCRETE.
- MINIMUM 3' OF COVER.
- PIPE THRUST BASED ON 200 PSI PRESSURE.
- PIPE ENCASED IN 8 MIL POLYETHYLENE.
- VERTICAL BLOCK SIZE BASED ON CONCRETE WEIGHT OF 150 PCF.
- TRENCH CONDITIONS BASED ON TYPE 2, FLAT BOTTOM TRENCH WITH LIGHTLY CONSOLIDATED BACKFILL, PER ANSI/AWWA C150/A21.50.
- FACTOR OF SAFETY IS 1.5.
- SOIL FRICTIONAL RESISTANCE BASED ON COHESIVE GRANULAR SOIL TYPE (GC+SC). SAND, GRAVEL, CLAY MIXTURE.

2. BLOCKING DESIGN MUST BE ADJUSTED FOR OTHER SIZE PIPE, PRESSURES AND SOIL CONDITIONS.

3. DEFORMED REINFORCEMENT BARS SHALL BE IN ACCORDANCE WITH ASTM A 615. BARS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A 767.

4. LINE SHALL NOT BE PRESSURIZED UNTIL ALL TRENCHING WITHIN 100 FEET OF VERTICAL BEND IS BACKFILLED AND COMPACTED TO MINIMUM COVER OF 3 FEET OVER PIPE.

5. 90% VERTICAL BENDS SHALL ONLY BE INSTALLED WHERE GIVEN PRIOR APPROVAL BY THE UTILITY.

6. BACKFILL TRENCH BEYOND 90° VERTICAL BLOCK WITH CRUSHED SURFACING TOP COURSE MATERIAL COMPACTED TO 95% MAXIMUM DENSITY. CRUSHED BACKFILL SHALL EXTEND 20' BEYOND BLOCK OR TO FIRM BEARING TRENCH WALL, WHICHEVER IS LESS.

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

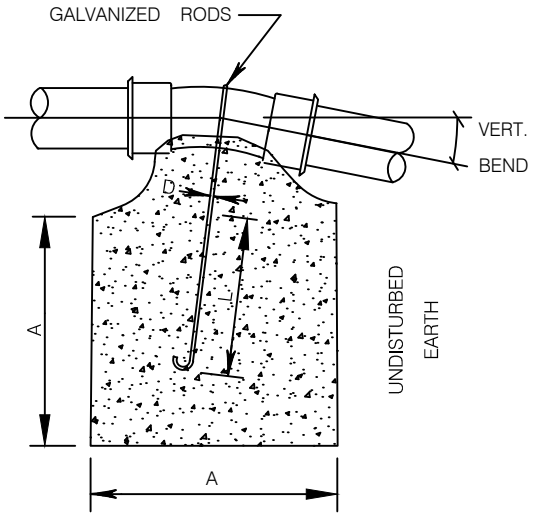
WATER MAIN
VERTICAL
THRUST BLOCKING

Standard Detail

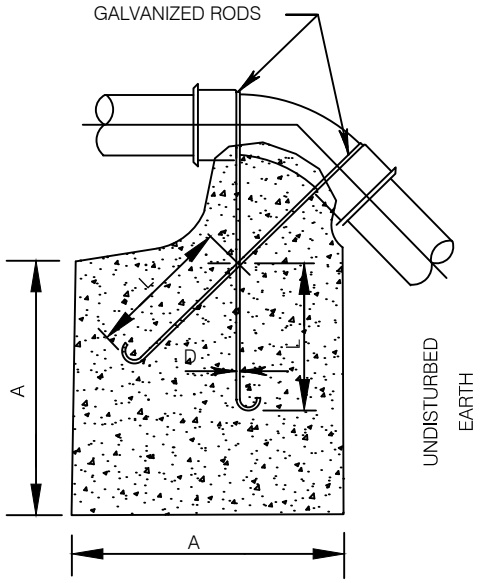
531

Revision Date
Feb, 2012

VERTICAL BLOCKING FOR 11 1/4° - 22 1/2° BENDS					
PIPE SIZE	V B	CU FT	A	D	L
4"	11 1/4°	8	2.0'	3/4"	1' 6"
	22 1/2°	11	2.2'		2.0'
6"	11 1/4°	11	2.2'	3/4"	2.0'
	22 1/2°	25	2.9'		
8"	11 1/4°	16	2.5'	3/4"	2.0'
	22 1/2°	47	3.6'		
12"	11 1/4°	32	3.2'	3/4"	2.0'
	22 1/2°	88	4.5'	7/8"	3.0'
16"	11 1/4°	70	4.1'	7/8"	3.0'
	22 1/2°	184	5.7'	1 1/8"	4.0'
20"	11 1/4°	91	4.5'	7/8"	3.0'
	22 1/2°	225	6.1'	1 1/4"	4.0'
24"	11 1/4°	128	5.0'	1"	3' 6"
	22 1/2°	320	6.8'	1 3/8"	4' 6"
VERTICAL BLOCKING FOR 45° BENDS					
4"	45°	30	3.1'	3/4"	2.0'
6"		68	4.1'		
8"		123	5.0'		
12"		232	6.1'	3/4"	2' 6"
16"		478	7.8'	1 1/8"	4.0'
20"		560	8.2'	1 1/4"	
24"		820	9.4'	1 3/8"	4' 6"



VERTICAL BLOCKING FOR
11 1/4°, 22 1/2° BENDS



VERTICAL BLOCKING FOR
45° BENDS

NOTE:

CONCRETE BLOCKING BASED ON 200 PSI PRESSURE AND 2500 PSI CONCRETE.

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

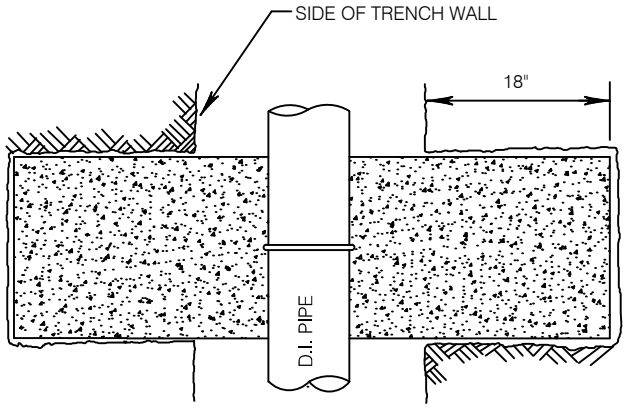
City Engineer

EXISTING WATER MAIN
VERTICAL
THRUST BLOCKING

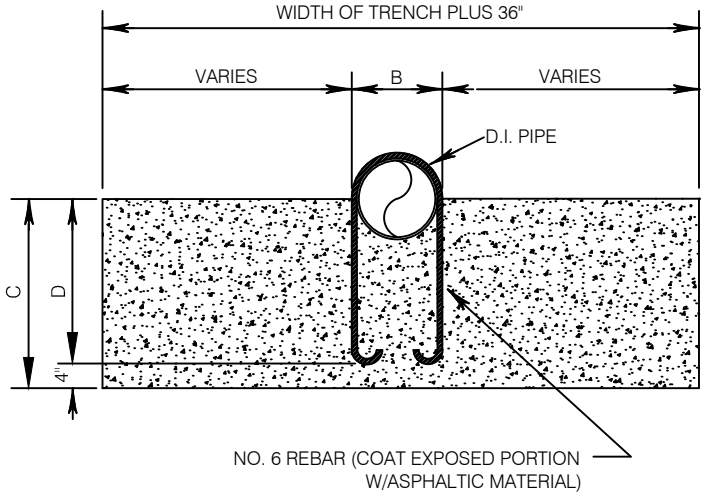
Standard Detail

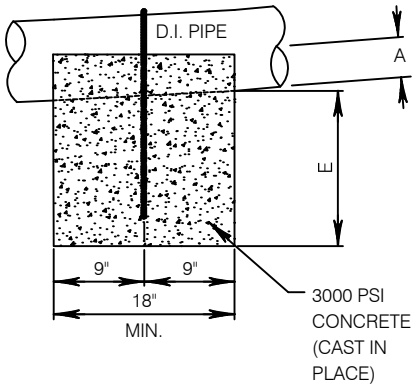
532

Revision Date
Feb, 2012



PIPE SIZE	DIMENSIONS (INCHES)				
	A	B	C	D	E
4"	2 3/8"	4 3/4"	17	13	14 1/2"
6"	3 1/2"	6 7/8"	18	14	14 1/2"
8"	4 1/2"	9 1/8"	19	15	14 1/2"
10"	5 5/8"	11 1/8"	20	16	14 3/8"
12"	6 5/8"	13 1/4"	21	17	14 3/8"
14"	7 3/4"	15 1/4"	22	18	14 1/4"
16"	8 3/4"	17 1/4"	23	19	14 1/4"
18"	9 3/4"	19 1/4"	24	20	14 1/4"





SLOPES > 20% - PROVIDE CONCRETE SLOPE ANCHORS (20' TO 25' ON CENTER.)

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

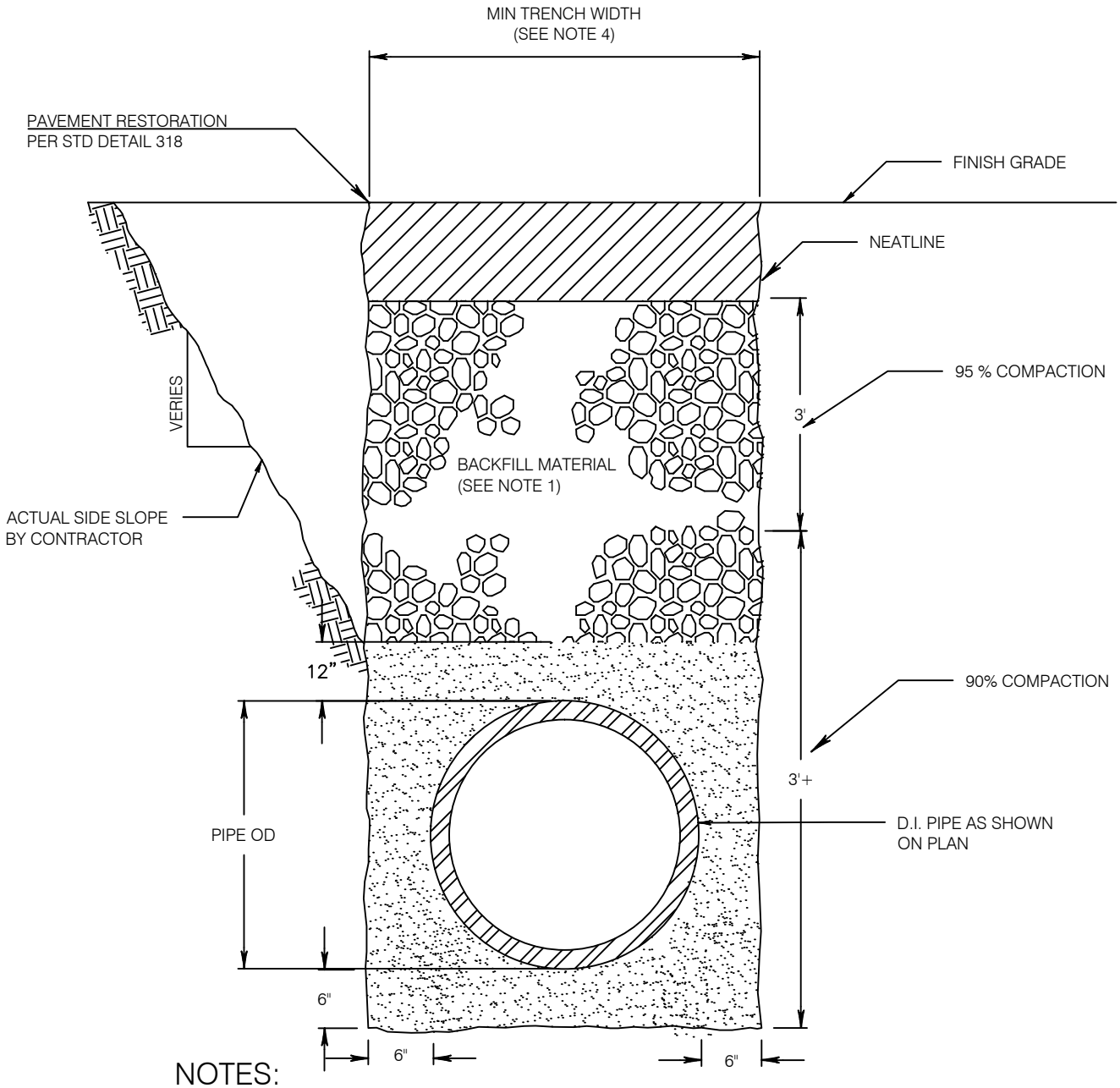
WATER MAIN SLOPE ANCHORS

Standard Detail

533

Revision Date

Feb, 2012



NOTES:

1. ALL TRENCH BACKFILL MATERIAL SHALL CONSIST OF SUITABLE NATIVE EXCAVATED MATERIAL OR IMPORTED BACKFILL MATERIAL AS AUTHORIZED BY THE CITY ENGINEER. ALL TRENCH MATERIAL SHALL BE COMPACTED TO 95% MDD.

2. FOUNDATION GRAVEL SHALL BE REQUIRED TO PROVIDE A SOLID FOUNDATION FOR THE WATER MAIN IN THOSE AREAS OF THE TRENCH WHICH HAVE UNSUITABLE MATERIAL OR SOFT SPOTS.

3. PLACE AND COMPACT BACKFILL IN A MINIMUM 4" LIFT TO PIPE SPRINGLINE TO ASSURE NO VOIDS UNDER PIPE.

4. MINIMUM TRENCH WIDTH FOR THE PIPE DIAM. 15" AND UNDER IS I.D. + 30", FOR PIPE DIAM. 16" AND OVER IS (1.5 X I.D.) + 18".

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

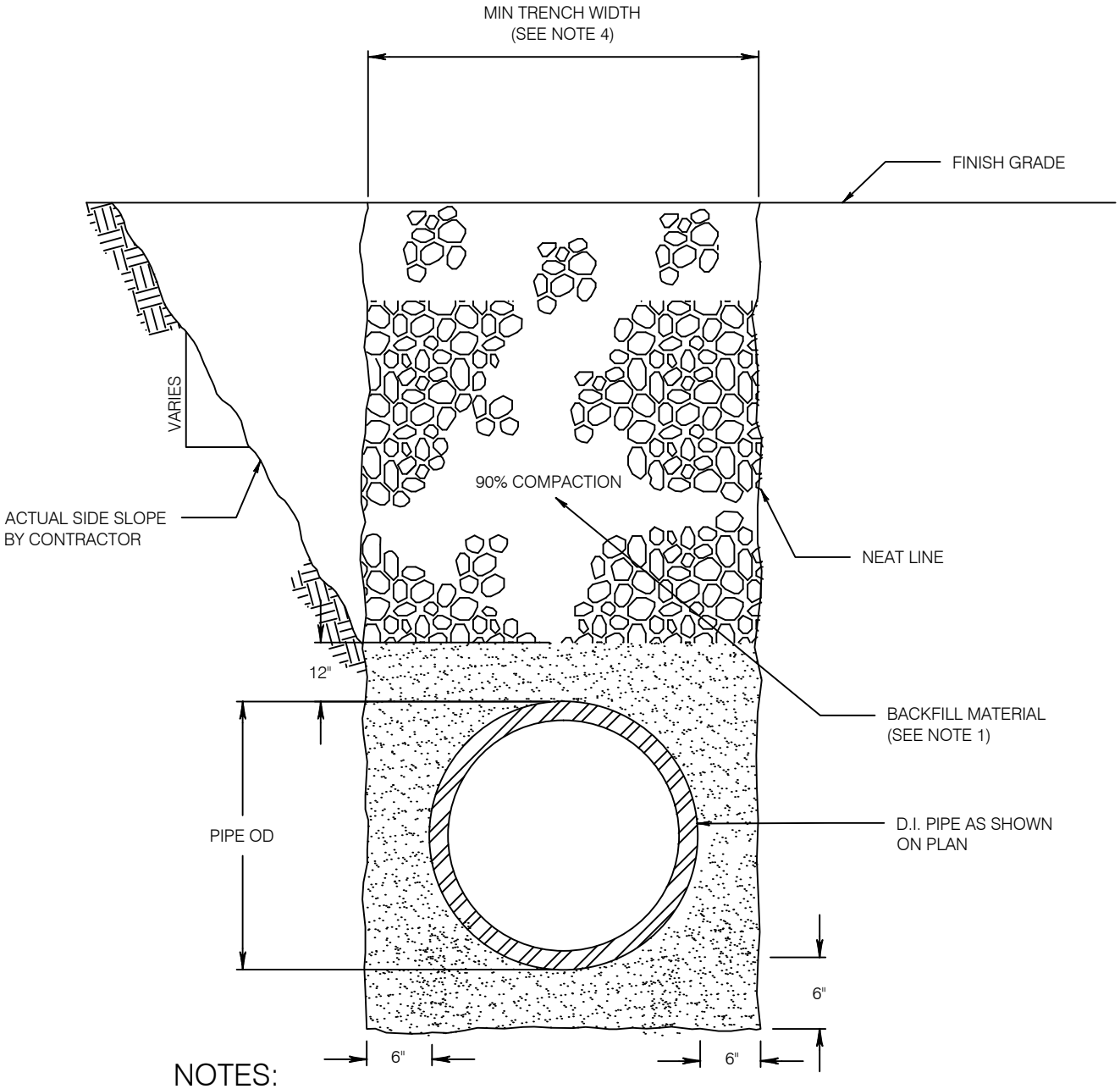
WATER MAIN TRENCH IN PAVED AREAS AND WITHIN THE RIGHT-OF-WAY

Standard Detail

534

Revision Date

Feb, 2012



NOTES:

1. ALL TRENCH BACKFILL MATERIAL SHALL CONSIST OF SUITABLE NATIVE EXCAVATED MATERIAL OR IMPORTED BACKFILL MATERIAL AS AUTHORIZED BY THE CITY ENGINEER. ALL TRENCH MATERIAL SHALL BE COMPACTED TO 90% MDD.

2. FOUNDATION GRAVEL SHALL BE REQUIRED TO PROVIDE A SOLID FOUNDATION FOR THE WATER MAIN IN THOSE AREAS OF THE TRENCH WHICH HAVE UNSUITABLE MATERIAL OR SOFT SPOTS.

3. PLACE AND COMPACT BACKFILL IN A MINIMUM 4" LIFT TO PIPE SPRINGLINE TO ASSURE NO VOIDS UNDER PIPE.

4. MINIMUM TRENCH WIDTH FOR THE PIPE DIAM. 15" AND UNDER IS I.D. + 30", FOR PIPE DIAM. 16" AND OVER IS (1.5 X I.D.) + 18".

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

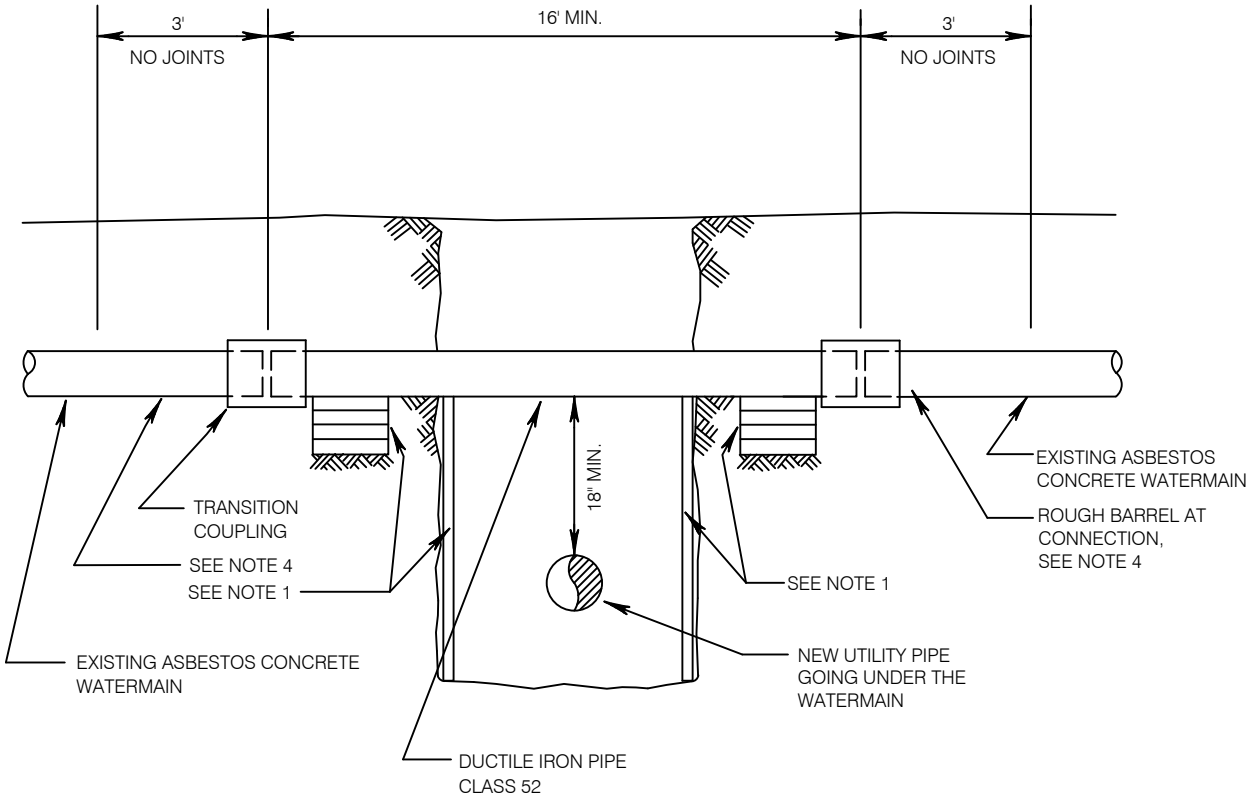
WATER MAIN TRENCH IN UNPAVED AREAS AND OUTSIDE THE RIGHT-OF-WAY

Standard Detail

535

Revision Date

Feb, 2012



NOTES:

1. DUCTILE IRON PIPE SHALL REST ON FIRM BEARING EARTH: SHORE TRENCH WALL UNDER WATER MAIN AS SHOWN, OR SUPPORT PIPE WITH PATIO BLOCKS (8"x16"X2"). STACK BLOCKS AS REQUIRED TO REST ON FIRM BEARING SOIL.

2. WRAP DUCTILE IRON PIPE AND TRANSITION COUPLINGS WITH 8 MIL POLYETHYLENE CONFORMING TO AWWA C-105.

3. THE CONTRACTOR SHALL PROVIDE PROTECTIVE CLOTHING AND EQUIPMENT (COVERALLS, GLOVES, BOOTS, HEAD COVERING, GOGGLES, RESPIRATOR) TO CREWS WORKING WITH ASBESTOS CEMENT PIPE IN ORDER TO ASSURE THE WORKERS' EXPOSURE TO ASBESTOS MATERIAL BE AT OR BELOW THE LIMIT PRESCRIBED IN WAC 296-62-07705.

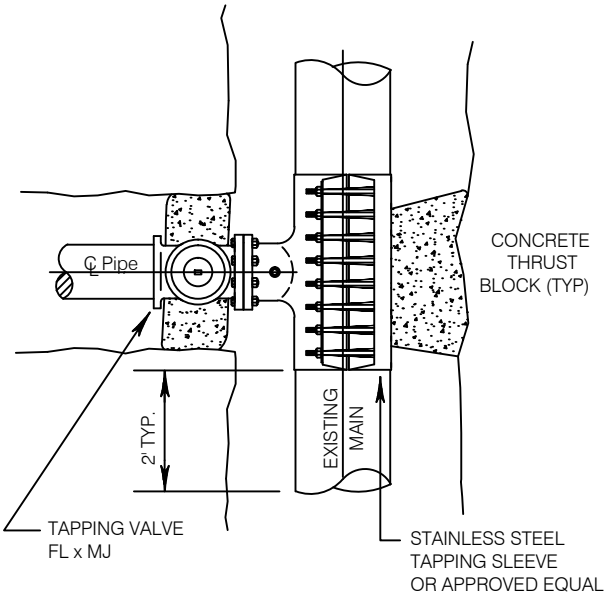
4. ASBESTOS CEMENT PIPE SHALL BE CUT WITH A REED WHEEL CUTTER WITH CONTROLLED FLOWING WATER. CONNECTIONS SHALL BE MADE ON ROUGH BARRELS OF PIPE CONNECTIONS. NO CONNECTIONS SHALL BE MADE WITHIN 3' OF EXISTING ASBESTOS CONCRETE COUPLING JOINTS.

5. CONTAMINATED CLOTHING SHALL BE TRANSPORTED IN SEALED IMPERMEABLE BAGS AND LABELED IN ACCORDANCE WITH WAC 296-62-07721. ASBESTOS CEMENT PIPE SHALL BE LEFT AND BURIED IN TRENCH.

6. WHERE NEW UTILITY PIPE CROSSES UNDER ASBESTOS CONCRETE PIPE, A SECTION OR SECTIONS OF ASBESTOS CONCRETE PIPE MUST BE REPLACED WITH DUCTILE IRON PIPE, CEMENT LINED, CLASS 52. DUCTILE IRON PIPE TO BE PLACED WITH PE. x PE. WITH TRANSITION COUPLINGS ON EACH END.

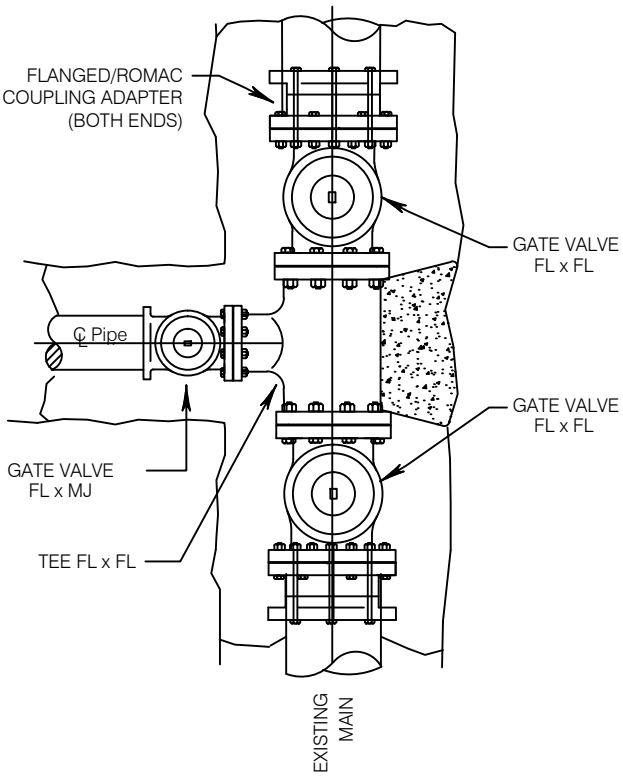
City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	UNDERCROSSING EXISTING ASBESTOS CONCRETE MAINS	Standard Detail **540** Revision Date Feb, 2012

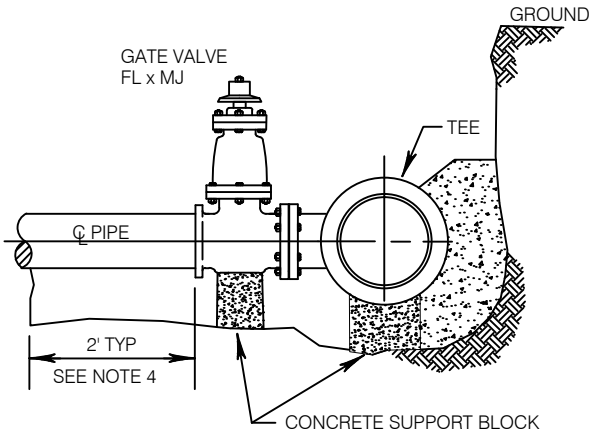
LIVE TAP



VALVE AND SLEEVE SHALL BE SUPPORTED AND BACKFILLED AS SHOWN BELOW-RIGHT.

CUT-IN-TEE





NOTES:

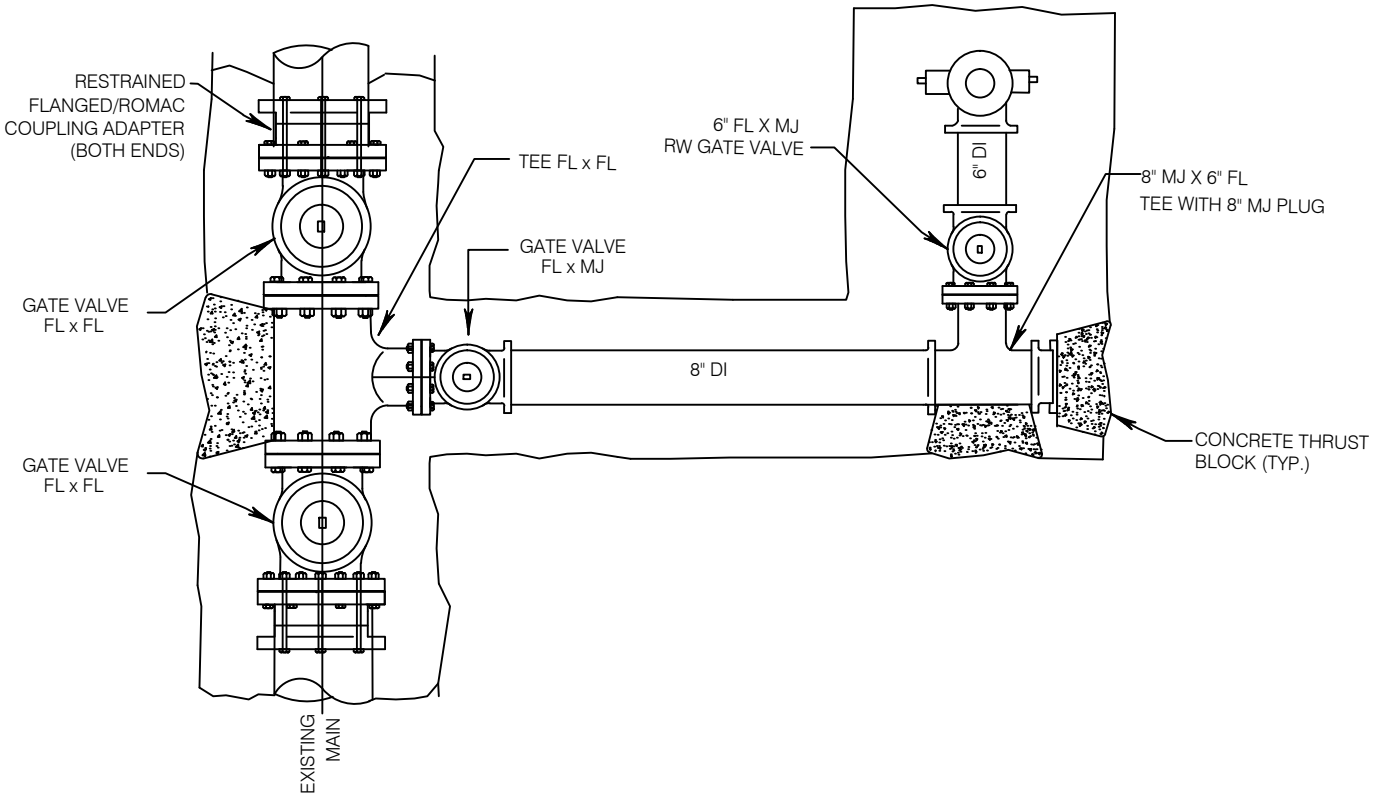
1. 8 MIL PLASTIC OR CONSTRUCTION FABRIC SHALL BE WRAPPED AROUND PIPE AND FITTINGS BEFORE THRUST BLOCKS ARE POURED.

2. SUPPORT VALVE AND SLEEVE CONTINUOUSLY THROUGH INSTALLATION.

3. STAINLESS STEEL TAPPING TEES SHALL HAVE A FULL CIRCLE SEAL.

4. NO CONNECTIONS WITHIN THIS AREA.

City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	CONNECTION TO EXISTING MAIN	Standard Detail **545** Revision Date Nov, 2013



NOTES:

1. 8 MIL PLASTIC OR CONSTRUCTION FABRIC SHALL BE WRAPPED AROUND PIPE AND FITTINGS BEFORE THRUST BLOCKS ARE POURED.

2. SUPPORT VALVE AND SLEEVE CONTINUOUSLY THROUGH INSTALLATION.

3. ALL PIPING TO BE RESTRAINED.

4. REFER TO DETAILS 520,521,522,523,524

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

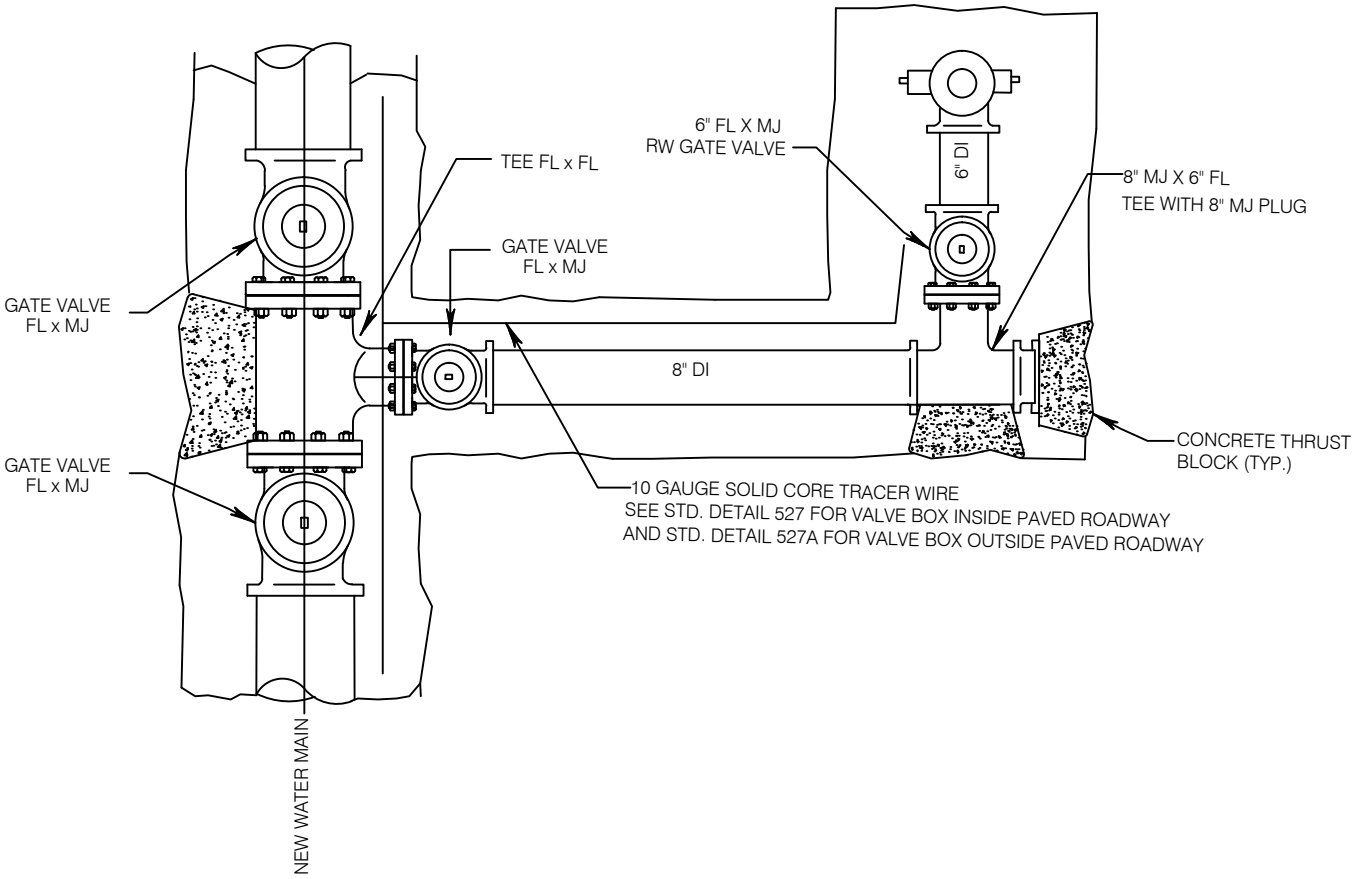
City Engineer

HYDRANT RUN OVER
50' LENGTH
EX. MAIN

Standard Detail

546

Revision Date
Nov, 2013



NOTES:

1. 8 MIL PLASTIC OR CONSTRUCTION FABRIC SHALL BE WRAPPED AROUND PIPE AND FITTINGS BEFORE THRUST BLOCKS ARE POURED.

2. SUPPORT VALVE CONTINUOUSLY THROUGH INSTALLATION.

3. ALL PIPING TO BE RESTRAINED

4. REFER TO DETAILS 520,521,522,523,524

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

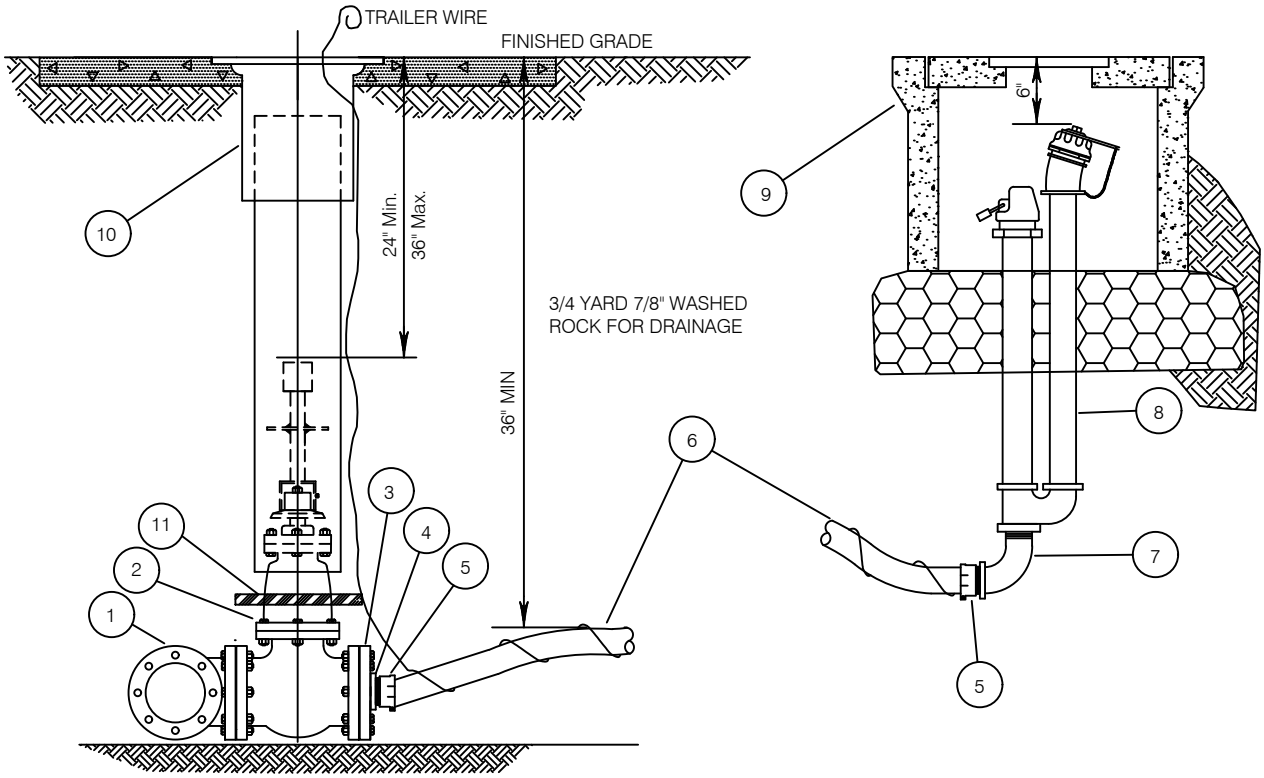
HYDRANT RUN OVER 50' LENGTH NEW INSTALLATION

Standard Detail

547

Revision Date

Nov, 2013



DETAIL NOTES:

1. DUCTILE IRON TEE WITH 4" BRANCH, MJxFL (ON NEW MAINS). TAPPING TEE W/4" RANCH, FL (ON EXISTING MAINS).
2. 4" GATE VALVE, FL x FL (SEE SECTION 5-10.6)
3. 4" REDUCING COMPANION FLANGE WITH 2" TAP.
4. 2" POLYETHYLENE SERVICE LINE W/10 GAGE SOLID CORE COATED COPPER WIRE WRAPPED AROUND THE PIPE AND EXTENDING 12" OUT OF VALVE BOX, SEE DETAIL 527.
5. COUPLING, 2" MALE IRON PIPE THREAD BY 2" PACK JOINT (COMPRESSION FITTING) WITH STAINLESS STEEL INSERTS. AY MCDONALD #74753-33 OR APPROVED EQUAL.
6. 2" P.E. 200 PSI. WITH NO SPLICES.
7. 2" STREET ELL, BRASS, MALE IRON PIPE THREAD BY FEMALE IRON PIPE THREAD.
8. BLOWOFF HYDRANT, KUPFFERLE FOUNDRY NO 78 OR EQUAL BRONZE TO BRONZE DESIGN, SERVICEABLE FROM ABOVE WITH OUTLET EXPOSED, 2-1/2" NST OUTLET, LOCKING CAP ON OPERATOR NUT.
9. METER BOX: DFW1730C4-18-BODY (GRAY) AND DFW1730C-4CA-LID (GRAY) (PREFERRED), MID STATES #MSBCF1730-18 w/#1730 DI RDR LID OR APPROVED EQUAL.
10. SEE STD DETAIL 527
11. SEATTLE STYLE VALVE CUSHION IF IN ROADWAY, SEE STD DETAIL 528.

NO LEAD ON ALL BRASS FITTINGS.

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

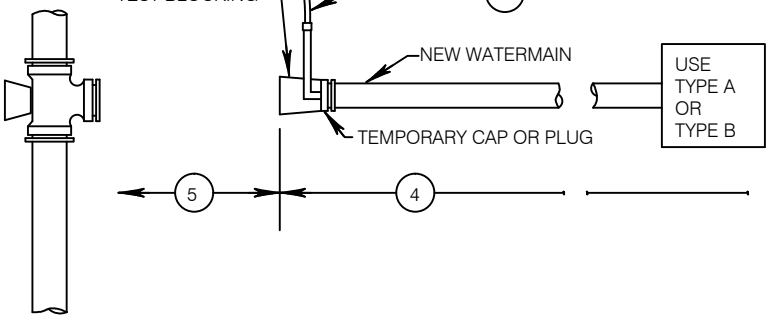
2" BLOWOFF ASSEMBLY

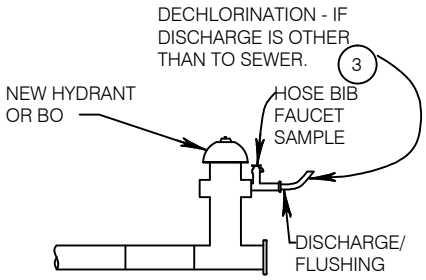
Standard Detail

550

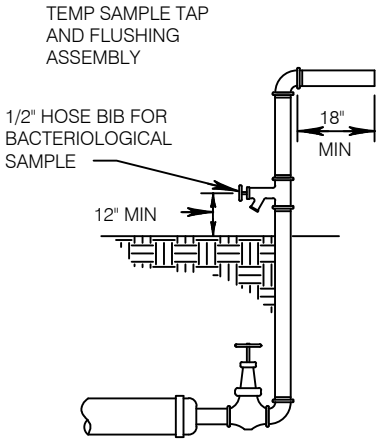
Revision Date

Dec, 2017





TYPE A



TYPE B

DETAIL NOTES:

1. CLEAN POTABLE WATER HOSE ONLY.
2. HYDRANT PERMIT REQUIRED. REFER TO STD DETAIL 592.
3. CHECK WITH SEWER UTILITY BEFORE DISCHARGE TO SEWERS.
4. INSTALLED BY CONTRACTOR.
5. CONTRACTOR FURNISHED.

NOTES:

1. ALL EXCAVATION SHALL PROVIDE A MINIMUM OF 1' CLEAR AROUND PIPE AND FITTINGS. THESE PLAN FOR DUCTILE IRON PIPE AND CAST IRON PIPE WATERMAINS 12 INCH OR SMALLER DIA. OTHER SIZES AND TYPES SEE PROJECT DRAWINGS.

2. CONTRACTOR TO DETERMINE ALIGNMENT AND GRADE OF EXISTING FACILITY PRIOR TO INSTALLING NEW WATERMAIN.

3. ALL EXCAVATION, PIPE, FITTINGS (EXCEPT AS NOTED BELOW), OTHER MATERIAL, BACKFILL, COMPACTION, AND STREET RESTORATION BY CONTRACTOR. ALL MATERIALS TO BE ON JOB SITE PRIOR TO SHUTDOWN OF EXISTING MAIN.

4. WATERMAIN WITH PLAIN ENDS.

5. MECHANICAL JOINT SLEEVE, WITH SPACER CUT TO FIT GAP - FURNISHED AND INSERTED AT TIME OF CONNECTION.

6. TAPPING SLEEVE AND TAPPING VALVE FURNISHED AND INSTALLED BY THE CONTRACTOR.

7. APPLIES TO PIPES 4" THROUGH 12". ALL LARGER SIZES TO BE DETERMINED ON A CASE BY CASE BASIS.

8. MECHANICAL JOINT SLEEVE FURNISHED AND INSTALLED BY CONTRACTOR.

City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	TEMPORARY CONNECTION FLUSHING/TESTING	Standard Detail **552** Revision Date Feb, 2012

REQUIRED OPENINGS TO FLUSH PIPELINES*

(40-PSI RESIDUAL PRESSURE)

PIPE SIZE INCHES	FLOW REQUIRED TO PRODUCE 2.5-FPS VELOCITY GPM	ORIFICE SIZE INCHES	HYDRANT OUTLET NOZZLES	
			NUMBER	SIZE INCHES
4	100	15/16	1	2 1/2
6	220	1 3/8	1	2 1/2
8	390	1 7/8	1	2 1/2
10	610	2 5/16	1	2 1/2
12	880	2 13/16	1	2 1/2
14	1,200	3 1/4	2	2 1/2
16	1,565	3 5/8	2	2 1/2
18	1,980	4 3/16	2	2 1/2

*With 40 psi residual pressure, a 2 1/2 inches hydrant outlet nozzle will discharge approximately 1,000 gpm and a 4 1/2 inches hydrant nozzle will discharge approximately 2,500 gpm.
As an alternative to 2 1/2 fps flushing, section of 16 inches or larger diameter may be prepared for disinfection by mechanical cleaning methods approved by the City Engineer.

REFER TO BOTHELL DESIGN AND CONSTRUCTION STANDARDS SECTION 5-19.9 FLUSHING AND TESTING.

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

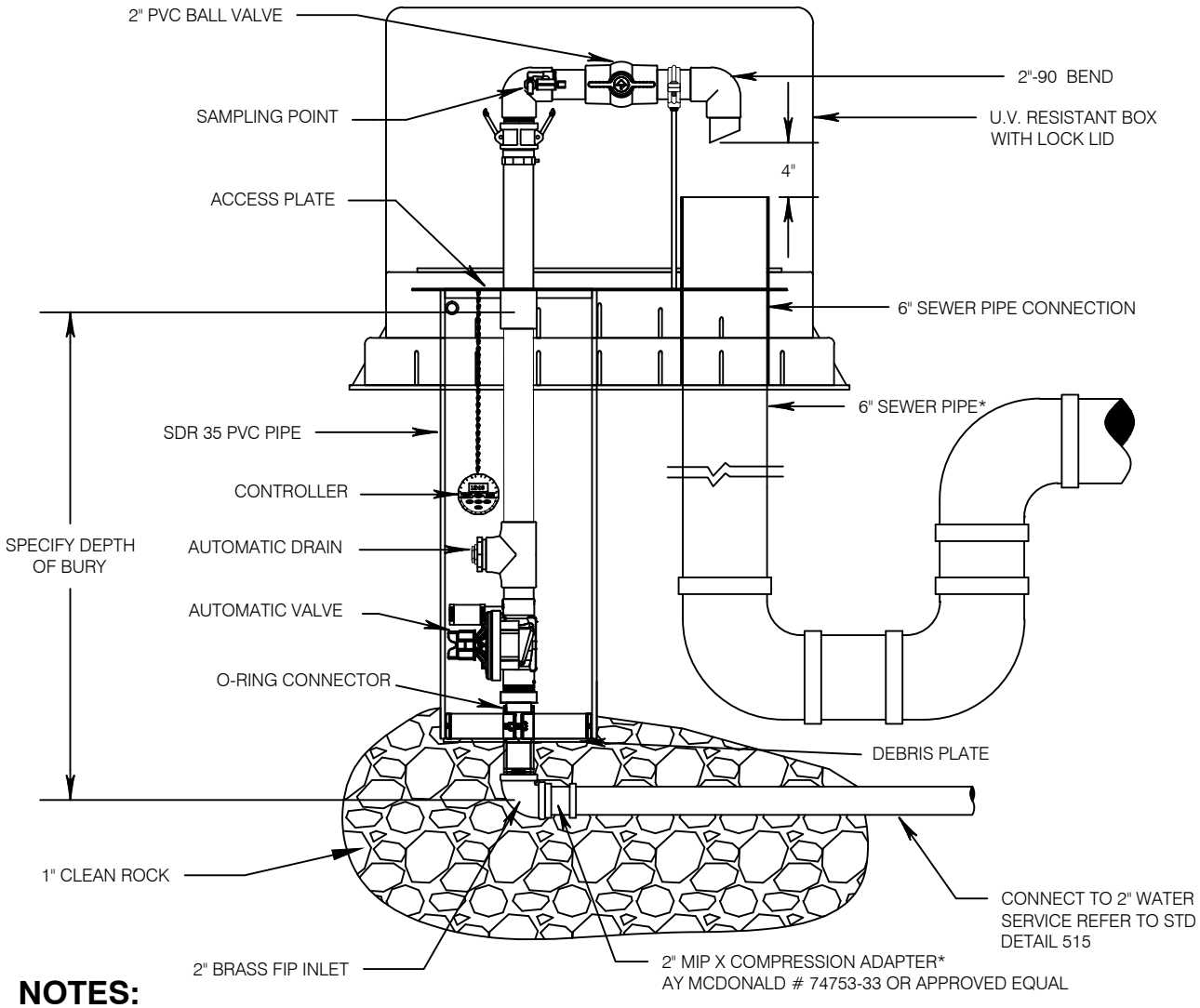
FLUSHING TABLE

Standard Detail

553

Revision Date

Feb, 2012



NOTES:

1. AUTOMATIC FLUSHING DEVICE SHALL HAVE A 2" BRASS FIP INLET, LEADING VERTICALLY INTO A 2" AUTOMATIC SOLENOID VALVE.

2. AUTOMATIC SOLENOID VALVE SHALL HAVE AN INTERNAL, SELF-CLEANING DEBRIS SCREEN, AND HAVE A 220 PSI RATING.

3. EACH UNIT SHALL BE FURNISHED WITH A STAND-ALONE VALVE CONTROLLER. VALVE CONTROLLER WILL NOT REQUIRE A SECOND HAND-HELD DEVICE FOR PROGRAMMING.

4. CONTROLLER MUST HAVE MINIMUM OF 9 POSSIBLE FLUSHING CYCLES PER DAY. SHALL BE SUBMERSIBLE TO 12 FEET, OPERATE WITH 9 VOLT BATTERY AND HAVE RESIN-SEALED ELECTRICAL COMPONENTS.

5. SOLENOID HALL HAVE NO LOOSE PARTS WHEN REMOVED FROM VALVE. EACH UNIT SHALL HAVE A SINGLE-VALVE, ALL BRASS, SAMPLING POINT.

6. REMOVAL OF 2" SOLENOID VALVE SHALL BE POSSIBLE VIA AN O-RING CONNECTOR LOCATED UNDER THE VALVE. AFTER REMOVAL OF STAINLESS STEEL ACCESS PLATE.

7. VALVE ASSEMBLY SHALL BE HOUSED IN A PVC ENCLOSURE AND EACH UNIT SHALL BE SELF-DRAINING, NON-FREEZING, ALL ABOVE-GROUND COMPONENTS SHALL BE CONTAINED WITHIN A UV-RESISTANT LOCKING COVER, AS MANUFACTURED BY KUPFERLE FOUNDRY COMPANY MODEL#9800-A ST... LOUIS, MO. 1-800-231-3990, OR APPROVED EQUAL.

8. REFER TO DETAIL 602 FOR SIDE SEWER CONNECTION

9. NO LEAD ON ALL BRASS FITTINGS

* = BY OTHERS

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

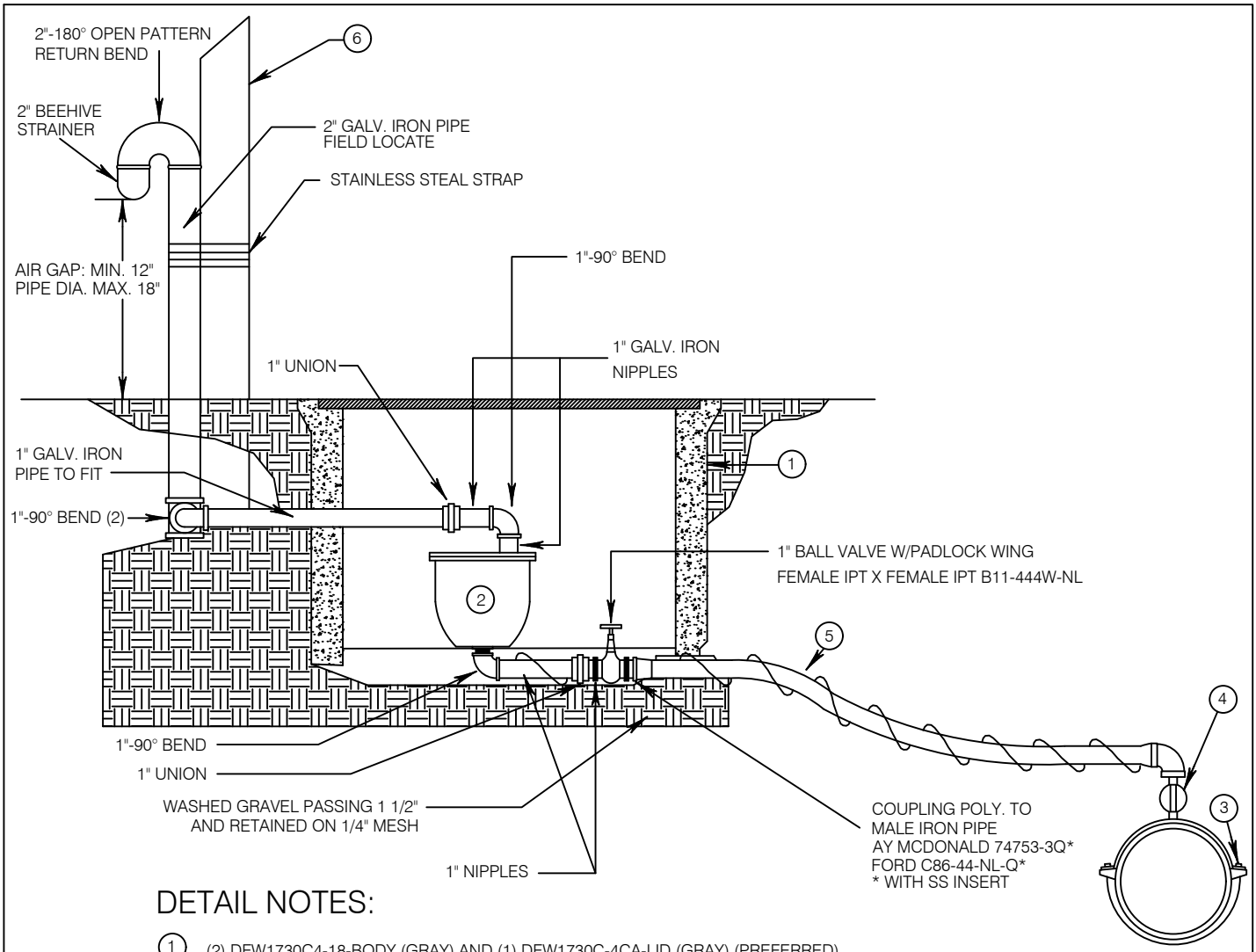
AUTOMATIC FLUSHING UNIT

Standard Detail

554

Revision Date

Jun, 2015



DETAIL NOTES:

1. (2) DFW1730C4-18-BODY (GRAY) AND (1) DFW1730C-4CA-LID (GRAY) (PREFERRED), (2) MID STATES #MSBCF1730-18 AND (1) 1730 DI RDR LID OR APPROVED EQUAL.
2. AIR AND VACUUM VALVE ASSEMBLY APCO No.143-C OR VAL-MATIC No.201-C OR CRISPIN U-10.
3. ROMAC EPOXY/NYLON COATED SADDLE 101NS FOR SINGLE STAINLESS STEEL STRAP AND 202NS WITH 1" IPT UP TO 8" PIPE USE SINGLE STAINLESS STEEL STRAP, 10" AND ABOVE USE DUAL STAINLESS STEEL STRAP SADDLE.
4. 1" CORPORATION STOP, I.P. x I.P. FORD FB 500-4 -NL MIPT X MIPT OR A.Y. McDONALD CORP-STOP #73131B OR APPROVED EQUAL.
5. 1" POLYETHYLENE SERVICE LINE W/NO SPLICES (USE 200 PSI GRADE PE 3408) W/10 GAGE COATED COPPER WIRE WRAPPED AROUND THE PIPE
6. CONCRETE VALVE MARKING POST (REFER TO STD DETAIL 529)

NOTES:

1. ALL FITTINGS TO BE BRASS - NO LEAD UNLESS OTHERWISE NOTED.
2. 2" GALVANIZED PIPE ABOVE GRADE TO BE PAINTED WITH TWO COATS OF RUSTOLEUM HIGH GLOSS WHITE PAINT.
3. AIR & VACUUM RELEASE VALVE ASSEMBLY MUST BE INSTALLED AT HIGHEST POINT OF LINE. IF HIGH POINT FALLS IN A LOCATION WHERE ASSEMBLY CANNOT BE INSTALLED, PROVIDE ADDITIONAL DEPTH OF LINE TO CREATE HIGH POINT AT A LOCATION WHERE ASSEMBLY CAN BE INSTALLED.
4. SUPPLY MARKING POST IN ACCORDANCE STD DETAIL 529.

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

1" AIR AND VACUUM RELEASE VALVE ASSEMBLY

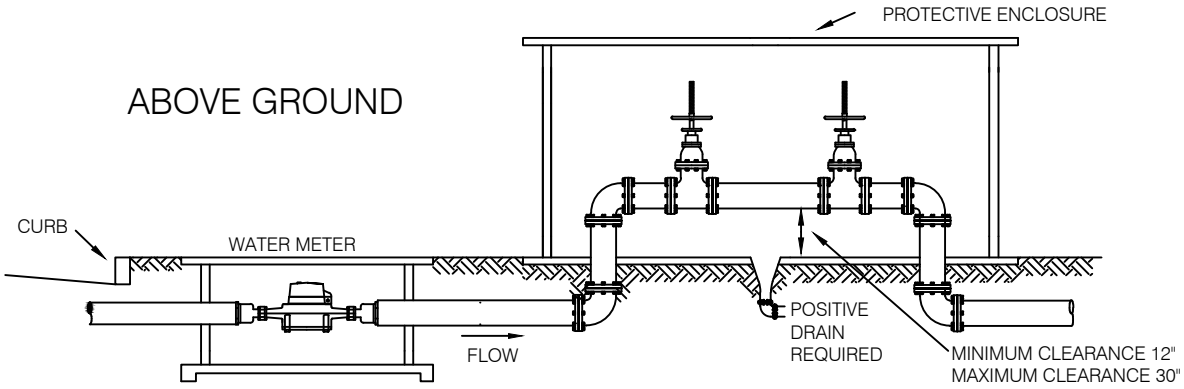
Standard Detail

564

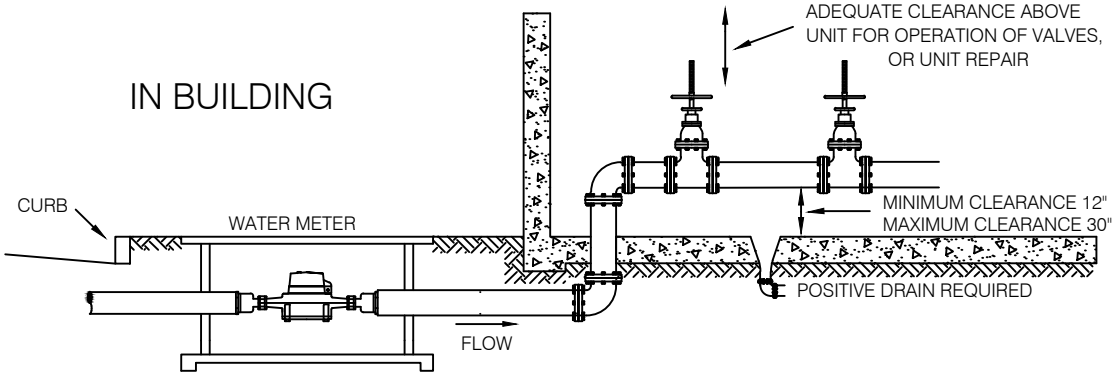
Revision Date

Dec, 2019

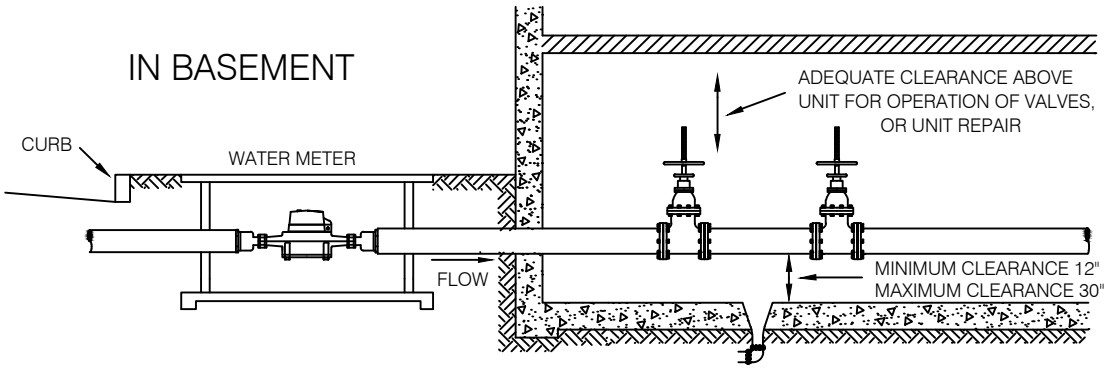
ABOVE GROUND



IN BUILDING

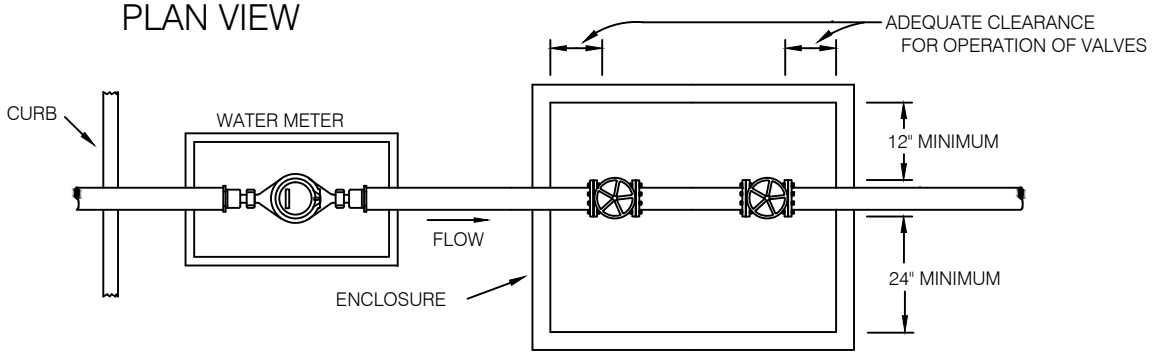


IN BASEMENT



POSITIVE DRAIN REQUIRED. IF THERE IS NO POSITIVE DRAIN. SEE SUMP PUMP DETAILS 593.
SUMP PUMP MUST APPROVED BY CITY ENGINEER CASE BY CASE.

PLAN VIEW



City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

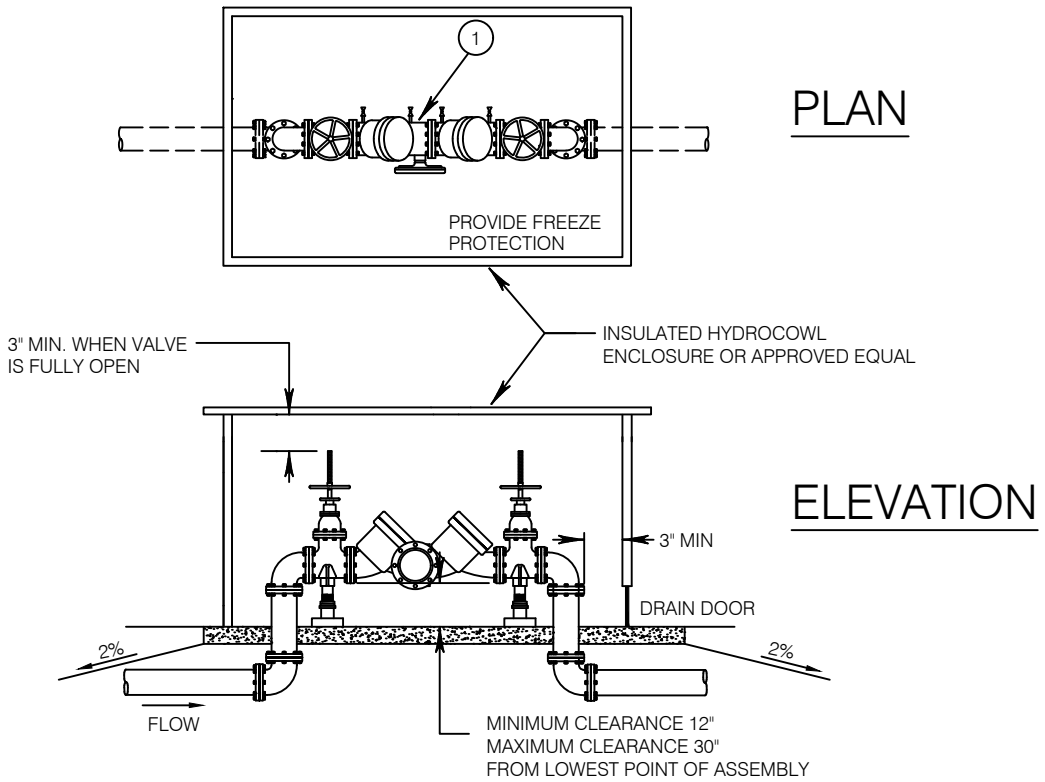
TYPICAL INSTALLATION WITH MINIMUM CLEARANCES

Standard Detail

570

Revision Date

Feb, 2012



DETAIL NOTE:

(1) STATE APPROVED REDUCED PRESSURE PRINCIPLE BACK FLOW ASSEMBLY.

NOTES :

1. BASE PENETRATIONS TO BE SEALED WITH A WATERTIGHT GROUT, WATERPROOF MASTIC, OR FLEXIBLE SEALANT.

2. ACCESS TO BE CENTERED OVER ASSEMBLY.

3. EACH ASSEMBLY SHALL BE EQUIPPED WITH FOUR RESILIENT SEATED TEST COCKS WITH PLUGS INSTALLED, (FINGER TIGHT).

4. ENCLOSED RP DEVICES ARE REQUIRED TO MEET SPECIFIC CRITERIA - REVIEWED ON A CASE BY CASE BASIS.

5. PRESSURE RELIEF PORTS MUST BE KEPT CLEAN AND IN GOOD WORKING ORDER, AND BE ABLE TO FREELY DISCHARGE TO THE ATMOSPHERE.

6. A MINIMUM OF A 12" CLEARANCE IS REQUIRED BETWEEN THE LOWEST POINT OF THE ASSEMBLY AND THE BOTTOM OF THE ENCLOSURE (MAXIMUM 30")

7. TEE AND A GATE VALVE REQUIRED ON CONNECTION TO MAINLINE.

8. THE R.P.B.A. CHOSEN MUST BE ON THE MOST RECENT WA. STATE APPROVAL LISTING. THE R.P.B.A. MUST BE TESTED BY A WA. STATE CERTIFIED BACK FLOW ASSEMBLY TESTER AT THE TIME OF INSTALLATION, ANNUALLY, AND WHEN MOVED OR REPAIRED.

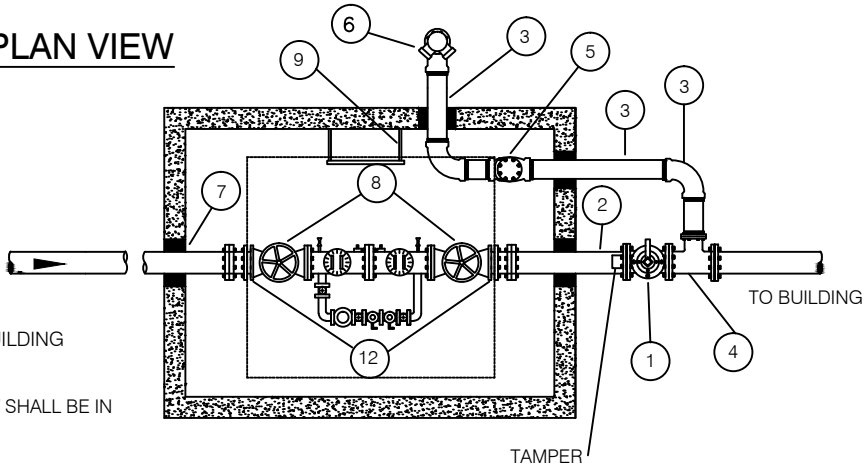
9. ALL INSTALLATIONS MUST MEET MANUFACTURER'S SPECIFICATIONS AND MEET THE MINIMUM STANDARDS OF THE UNIFORM PLUMBING CODE AND MUST CONFORM TO THE REQUIREMENTS AND GUIDELINES OUTLINED BY THE NATIONAL FIRE PROTECTION ASSOCIATION.

10. BACKFLOW PREVENTER MUST BE SET 12 TO 24 INCHES BEHIND CUSTOMER SIDE OF METER.

City of Bothell **City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	RP BACKFLOW ASSEMBLY ≥ 3" DOMESTIC AND IRRIGATION	Standard Detail **571** Revision Date Dec, 2017

SIZE	UTILITY VAULT CO. MODEL	COVER
2 1/2"	644	64-2-332P
3"	644	64-2-332P
4"	575	57TL-2-332P
6"	577	57TL-2-332P
8"	4484	4484-TL2-332P
10"	5106	5106-TL3-332

PLAN VIEW

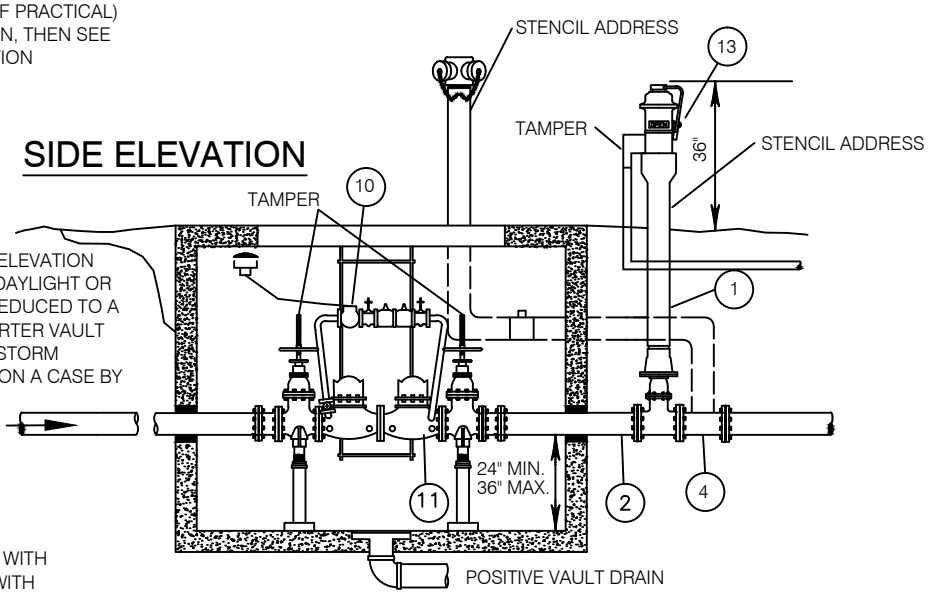


NOTES:

1. FIRE SERVICE PIPINGS FROM MAIN TO BUILDING SHALL BE RESTRAINED.

2. PROVISIONS FOR DRAINAGE OF THE VAULT SHALL BE IN THE FOLLOWING ORDER OF PRECEDENCE:
A) VAULT DRAIN TO DAYLIGHT
B) VAULT DRAIN TO STORM DRAIN SYSTEM (IF PRACTICAL)
C) IF NO POSSIBLE MEANS OF GRAVITY DRAIN, THEN SEE STD DETAIL 593 FOR SUMP PUMP INSTALLATION

SIDE ELEVATION

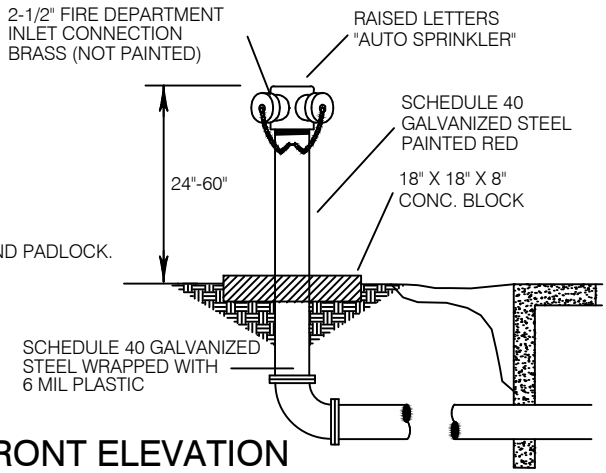


PROVIDE 24" MINIMUM AND 36" MAXIMUM CLEARANCE BETWEEN VAULT FLOOR AND BOTTOM OF BACKFLOW ASSEMBLY. WHERE ELEVATION OF VAULT FLOOR IS TOO LOW TO DRAIN TO DAYLIGHT OR STORM SYSTEM, THIS CLEARANCE CAN BE REDUCED TO A MINIMUM OF 12", IF SUBSTITUTION OF A SHORTER VAULT ALLOWS FLOOR TO DRAIN TO DAYLIGHT OR STORM SYSTEM (APPROVED BY THE CITY ENGINEER ON A CASE BY CASE BASIS ONLY).

MATERIALS LIST:

1. POST INDICATOR VALVE PAINTED RED WITH TAMPER TO FIRE ALARM PANEL AND WITH STENCILED ADDRESS
2. CLASS 52 DI WALL PIPE FL X PE
3. SCHEDULE 40 GALV. STEEL WRAPPED W/6MIL PLASTIC
4. CLASS 52 DI TEE FL X FL
5. SWING CHECK VALVE W/BALL DRIP ASSEMBLY
6. FIRE DEPARTMENT CONNECTION (BRASS) LOCATED WITHIN 50' OF A FIRE HYDRANT. PROVIDE KNOX LOCKING CAPS. EXPOSED GALVANIZED STEEL PIPE TO BE PAINTED RED. STENCIL ADDRESS ON PAINTED PIPE.
7. ALL PIPE THROUGH VAULT WALL SHALL BE CORE DRILLED AND HAVE A "LINK SEAL" (OR APPROVED EQUAL)
8. OS & Y VALVES WITH TEMPER SWITCH TO ALARM PANEL OR CHAIN AND PADLOCK.
9. 1-GALV. LADDER WITH PULL- UP LADDER EXTENSION TO BE BOLTED TO VAULT FLOOR AND TO VAULT WALL, MOUNTED SUCH THAT LADDER IS DIRECTLY ABOVE THE EDGE OF ACCESS OPENING FOR EASE OF ACCESS. SEE STD DETAIL 590
10. 5/8 X 3/4" BADGER METER MODEL M25 (CUBIC FT. READING) ORION RADIO REMOTE DATA PROFILE TRANSMITTER FOR METAL LID. PIT MODULE MOUNTED 3" - 6" BELOW LID.
11. STATE APPROVED DOUBLE CHECK DETECTOR ASSEMBLY
12. RFCA (RESTRAINED FLANGE COUPLING ADAPTER).
13. CUTTABLE PADLOCK WITH KEY IN KNOX BOX

6 FIRE DEPARTMENT CONNECTION



FRONT ELEVATION

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

FIRE SPRINKLER DOUBLE CHECK DETECTOR ASSEMBLY W/FDC

Standard Detail

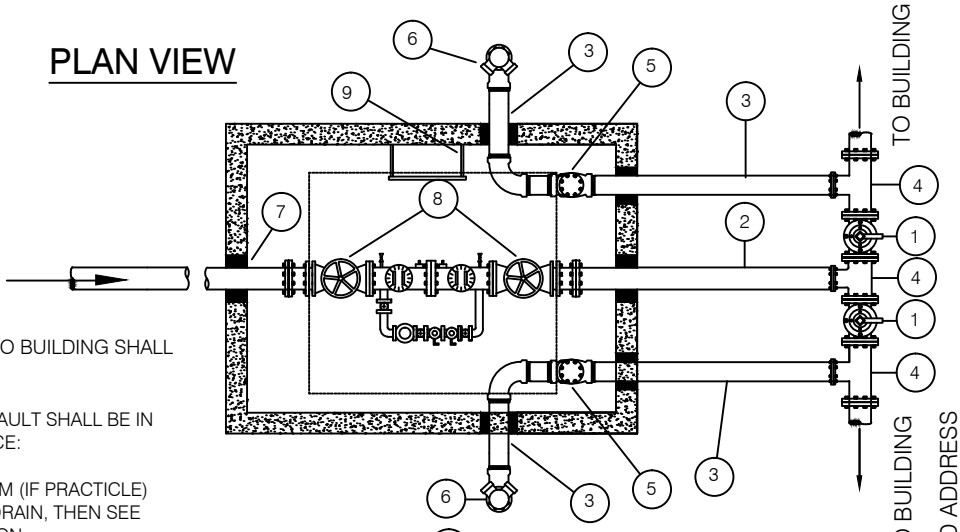
573

Revision Date

Nov, 2013

SIZE	UTILITY VAULT CO. MODEL	COVER
2 1/2"	644	64-2-332P
3"	644	64-2-332P
4"	575	57TL-2-332P
6"	577	57TL-2-332P
8"	4484	4484-TL2-332P
10"	5106	5106-TL3-332

PLAN VIEW

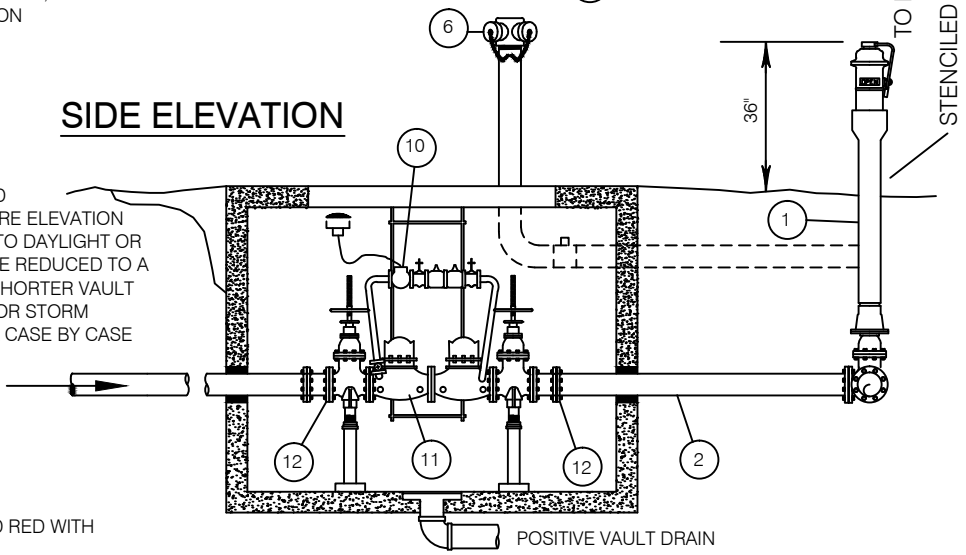


NOTES:

1. FIRE SERVICE PIPINGS FROM MAIN TO BUILDING SHALL BE RESTRAINED.

2. PROVISIONS FOR DRAINAGE OF THE VAULT SHALL BE IN THE FOLLOWING ORDER OF PRECEDENCE:
A) VAULT DRAIN TO DAYLIGHT
B) VAULT DRAIN TO STORM DRAIN SYSTEM (IF PRACTICLE)
C) IF NO POSSIBLE MEANS OF GRAVITY DRAIN, THEN SEE DETAIL 593 FOR SUMP PUMP INSTALLATION

SIDE ELEVATION

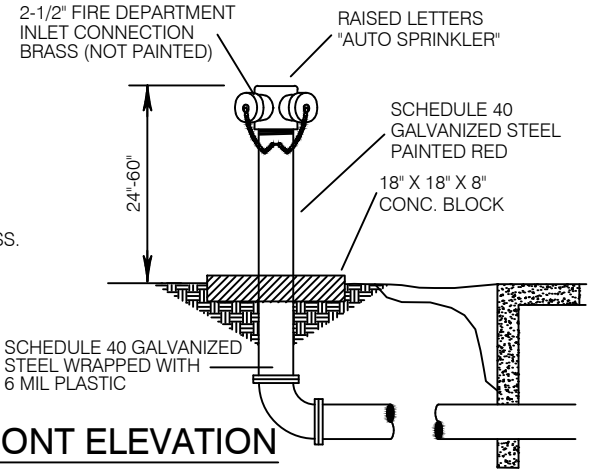


PROVIDE 24" MINIMUM AND 36" MAXIMUM CLEARANCE BETWEEN VAULT FLOOR AND BOTTOM OF BACKFLOW ASSEMBLY. WHERE ELEVATION OF VAULT FLOOR IS TOO LOW TO DRAIN TO DAYLIGHT OR STORM SYSTEM, THIS CLEARANCE CAN BE REDUCED TO A MINIMUM OF 12", IF SUBSTITUTION OF A SHORTER VAULT ALLOWS FLOOR TO DRAIN TO DAYLIGHT OR STORM SYSTEM (APPROVED BY THE UTILITY ON A CASE BY CASE BASIS ONLY).

MATERIALS LIST:

1. POST INDICATOR VALVE PAINTED RED WITH STENCILED ADDRESS
2. CLASS 52 DI WALL PIPE FL X PE
3. SCHEDULE 40 GALV. STEEL WRAPPED W/6MIL PLASTIC
4. CLASS 52 DI TEE FL X FL
5. SWING CHECK VALVE W/BALL DRIP ASSEMBLY
6. FIRE DEPARTMENT CONNECTION
7. ALL PIPE THROUGH VAULT WALL SHALL BE CORE DRILLED AND HAVE A "LINK SEAL" (OR APPROVED EQUAL)
8. OS & Y VALVES
9. 1-GALV. LADDER WTIH PULL-UP LADDER EXTENSION TO BE BOLTED TO VAULT FLOOR AND TO VAULT WALL, MOUNTED SUCH THAT LADDER IS DIRECTLY ABOVE THE EDGE OF ACCESS OPENING FOR EASE OF ACCESS. SEE DETAIL 590
10. 5/8" X 3/4" BADGER METER MODEL M25 (CUBIC FT. READING) ORION RADIO REMOTE DATA PROFILE TRANSMITTER FOR METAL LID. PIT MODULE MOUNTED 3" - 6" BELOW LID.
11. STATE APPROVED DOUBLE CHECK DETECTOR ASSEMBLY
12. RFCA (RESTRAINED FLANGE COUPLING ADAPTER).

6 FIRE DEPARTMENT CONNECTION



FRONT ELEVATION

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

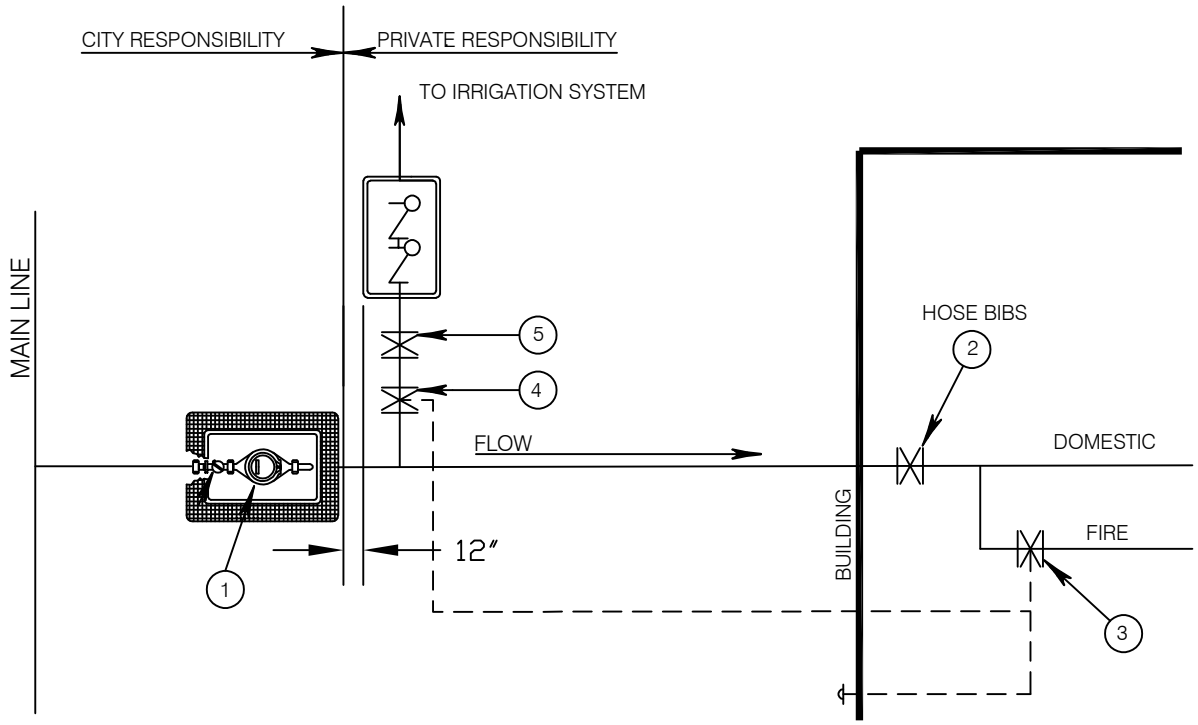
City Engineer

FIRE SPRINKLER-DUEL SERVICE DOUBLE CHECK DETECTOR ASSEMBLY W/FDC

Standard Detail

574

Revision Date
Nov, 2013



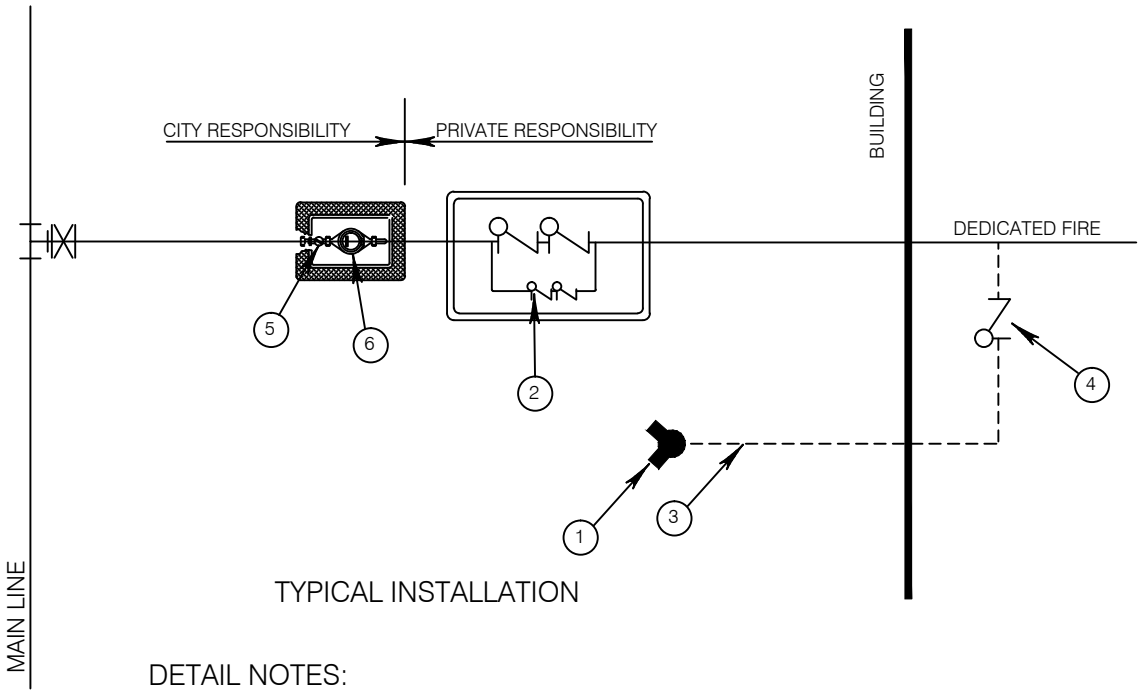
TYPICAL INSTALLATION

DETAIL NOTES:

1. MINIMUM 1" WATER METER REQUIRED.
2. FIRE SPRINKLER RISER.
3. ELECTRIC SOLENOID TO SHUT OFF IRRIGATION SYSTEM WHEN FIRE SPRINKLER SYSTEM IS ACTIVATED.
4. FIRE SPRINKLER FLOW SWITCH ELECTRIC CIRCUIT.
5. WA STATE APPROVED DOUBLE CHECK VALVE ASSEMBLY TO BE INSTALLED PER CITY OF BOTHELL STD DETAILS 579/580.

ONLY 13D MULTI-PURPOSE PIPING, NETWORK AND PASSIVE SPRINKLER DESIGNS ARE ALLOWED BY THE CITY OF BOTHELL

City of Bothell™	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	1" SINGLE FAMILY FIRE SPRINKLER SERVICE CONNECTION NFPA 13D	Standard Detail **575A** Revision Date Nov, 2018



TYPICAL INSTALLATION

DETAIL NOTES:

1. KNOX LOCKING FIRE DEPARTMENT CONNECTION (FDC) CAPS REQUIRED.
2. DEDICATED FIRE LINE METER WITH WA. STATE APPROVED DOUBLE CHECK VALVE ASSEMBLIES (STD DETAIL 579).
3. ORIENTATION AND LOCATION OF FDC TO BE INSTALLED AS DIRECTED BY THE CITY OF BOTHELL FIRE CODE OFFICIAL. FDC LOCATED WIHTIN 50' OF FIRE HYDRANT.
4. WA. STATE APPROVED SINGLE CHECK.
5. REFER TO DETAILS 514,515 FOR WATER SERVICE ASSEMBLY.
6. METER SHALL BE SUPPLIED BY CITY OF BOTHELL.

MULTI-FAMILY RESIDENTIAL

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

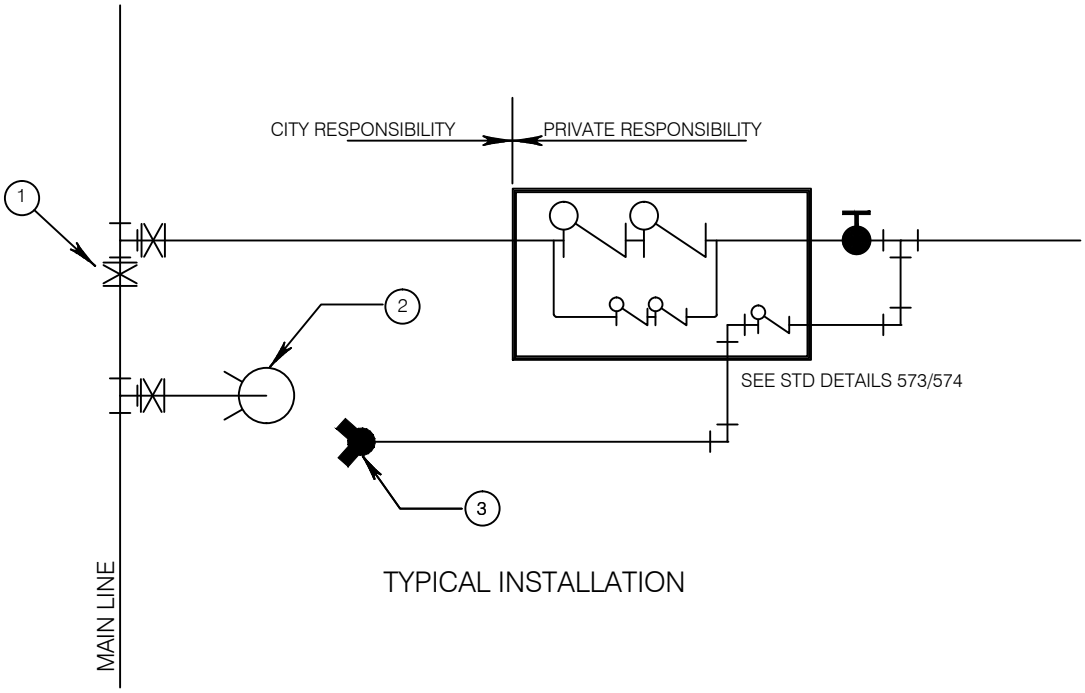
1 1/2" TO 2" NFPA 13R SPRINKLER DEDICATED SERVICE CONNECTION

Standard Detail

576

Revision Date

Jun, 2015

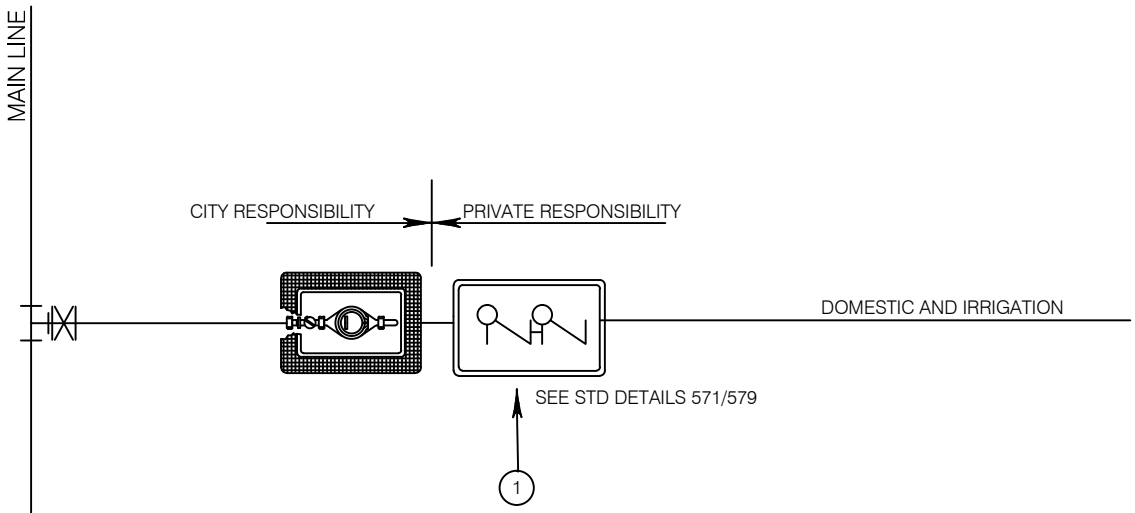


TYPICAL INSTALLATION

DETAIL NOTES:

1. MAIN LINE VALVE REQUIRED BETWEEN FIRE SPRINKLER SERVICE CONNECTION AND THE HYDRANT SERVING THE FIRE DEPARTMENT CONNECTION (FDC).
2. FIRE HYDRANT
3. FDC LOCATED WITHIN 50' OF FIRE HYDRANT.

City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	3" TO 10" NFPA 13D FIRE SPRINKLER SERVICE CONNECTION	Standard Detail **577** Revision Date Feb, 2012



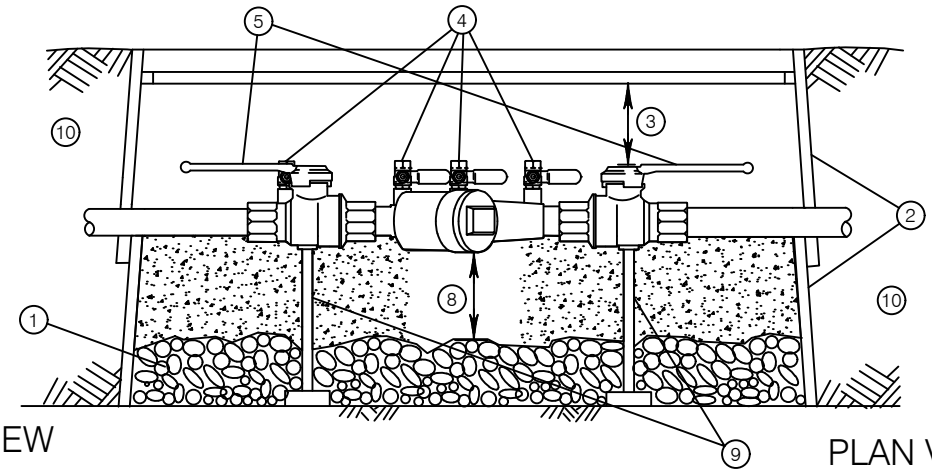
TYPICAL INSTALLATION

NOTES:

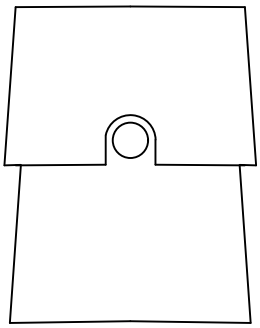
1. WA STATE DOUBLE CHECK VALVE ASSEMBLY OR REDUCED PRESSURE BACKLFOW ASSEMBLY, WHICH EVER IS MOST APPROPRIATE, TO BE INSTALLED BEHIND METER SET.
2. WA. STATE REDUCED PRESSURE BACKFLOW ASSEMBLY INSTALLED PRIOR TO ALL PROCESSES AND WHERE PLUMBING SYSTEM ENTERS THE BUILDING. ASSEMBLY MUST BE ACCESSIBLE.
3. NO CONNECTIONS ARE ALLOWED BETWEEN METER AND INTERNAL ASSEMBLY.

City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	PREMISE ISOLATION DOMESTIC AND IRRIGATION SERVICE CONNECTION	Standard Detail **578** Revision Date Feb, 2012

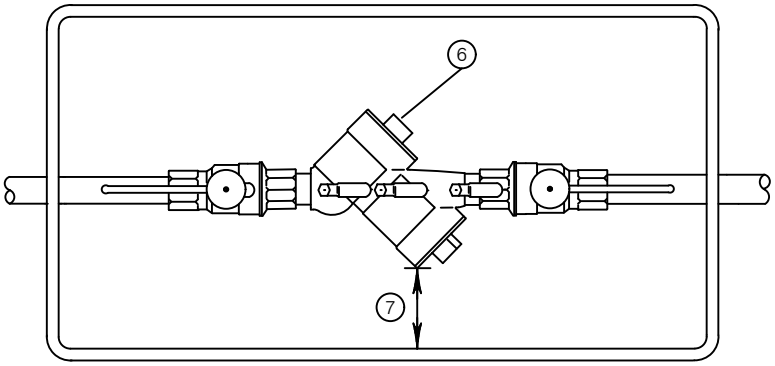
SECTION



END VIEW



PLAN VIEW



DETAIL NOTES:

1. IF DAYLIGHT DRAIN SYSTEM CANNOT BE PROVIDED, THEN INSTALL A 6" MINIMUM LAYER OF 1" ROUND WASHED GRAVEL AT THE BOTTOM OF THE BOX.
2. FOR 3/4" - 1" USE (2) DFW1324C4-12-BODY (GRAY) AND DFW1324C-4CA-LID (GRAY)(PREFERRED) OR APPROVED EQUAL.
   FOR 1 1/2" - 2 1/2" USE (2) DFW1730C4-18-BODY (GRAY) AND (1) DFW1730C-4CA-LID (GRAY) (PREFERRED) OR APPROVED EQUAL.
3. A MINIMUM DISTANCE OF 12" BETWEEN THE UNDERSIDE OF THE LID AND THE HIGHEST POINT OF THE DEVICE IS REQUIRED.
4. THE DEVICE MUST BE EQUIPPED WITH FOUR RESILIENT SEATED TEST COCKS WITH PLUGS INSTALLED. THE ASSEMBLY MUST ALSO BE INSTALLED WITH THE TEST COCKS FACING UP OR TO ONE SIDE.
5. THE DEVICE MUST ALSO BE EQUIPPED WITH TWO RESILIENT SEATED SHUT OFF VALVES.
6. THE DEVICE MUST BE INSTALLED HORIZONTALLY.
7. A MINIMUM DISTANCE OF 6" BETWEEN THE SIDE OF THE BOX AND THE TEST COCKS WHEN THEY ARE INSTALLED SIDE WAYS.
8. A MINIMUM DISTANCE OF 1 FOOT BETWEEN THE LOWEST POINT OF THE ASSEMBLY AND THE DRAIN ROCK, FILLED WITH FINE BARK OR SAWDUST TO PROVIDE FREEZE PROTECTION.
9. SUPPORTS WILL BE REQUIRED ON 2" AND LARGER DEVICES AS SHOWN.
10. COMPACTED STRUCTURAL FILL

NOTES:

1.THE D.C.V.A. CHOSEN MUST BE ON THE MOST RECENT WASHINGTON STATE APPROVAL LISTING.

2.THE D.C.V.A. MUST BE TESTED BY A WASHINGTON STATE CERTIFIED BACKFLOW ASSEMBLY TESTER AT THE TIME OF INSTALLATION, ANNUALLY, AND WHEN MOVED OR REPAIRED.

3.ALL INSTALLATION MUST MEET MANUFACTURER'S SPECIFICATIONS AND THE MINIMUM STANDARDS OF THE U.P.C.

4. THE D.C.V.A. MUST BE SET 12 TO 24 INCHES BEHIND CUSTOMER SIDE OF METER

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

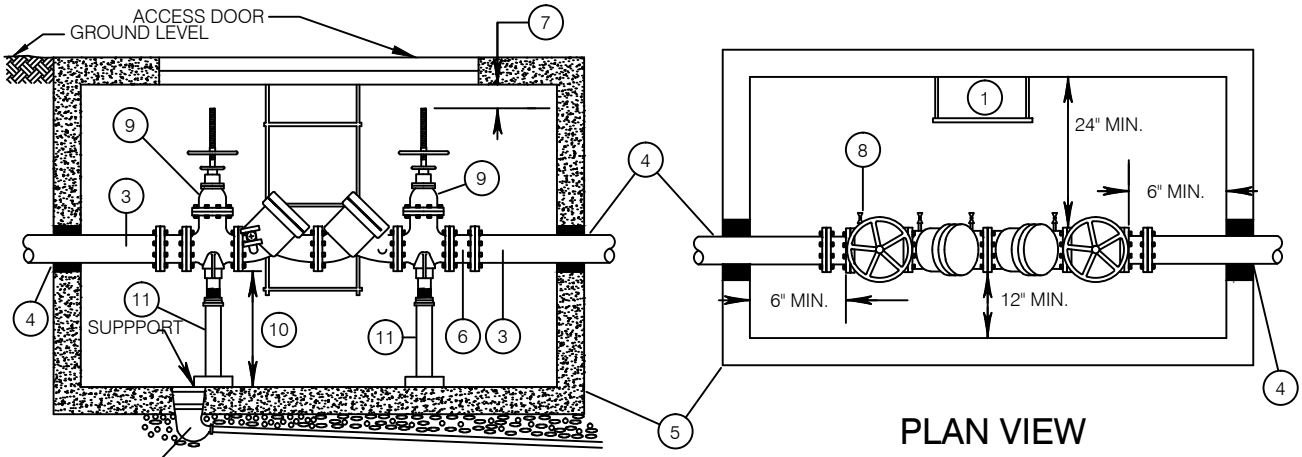
DOUBLE CHECK VALVE ASSEMBLY IRRIGATION, DOMESTIC or FIRE NFPA 13 R 3/4" TO 2 1/2"

Standard Detail

579

Revision Date

Dec, 2017



ELEVATION

PLAN VIEW

SIZE	UTIL. VAULT CO. MODEL	UTIL. VAULT CO. COVER
3"	644	64-2-332P
4"	575	57TL-2-332P
6"	577	57TL-2-332P
8"	4484	4484-TL2-332P
10"	5106	5106-TL3-332

DETAIL NOTES:

1. ONE GALVANIZED STEEL LADDER TO BE SECURED TO VAULT. SEE STD DETAIL 590
2. DRAIN SLOPE TO DAYLIGHT, WHEN POSSIBLE - (SUMP PUMP MAY BE REQUIRED).
3. CLASS 52 DUCTILE IRON PIPE REQUIRED (SIZED AS REQUIRED)
4. ALL PIPE THROUGH VAULT WALL SHALL BE CORE DRILLED AND HAVE A "LINK SEAL" (OR APPROVED EQUAL)
5. PRECAST CONCRETE VAULT WITH A MINIMUM OF TWO 3' X 3' DIAMOND PLATE DOORS RATED FOR H2O LOADING, MARKED "WATER". VAULT SHALL BE EQUAL TO UTILITY VAULT CO. MODEL LISTED IN TABLE PROVIDED.
6. RFCA (RESTRAINED FLANGE COUPLING ADAPTER).
7. A MINIMUM OF 3" BETWEEN THE UNDERSIDE OF THE LID, OR VAULT, AND THE HIGHEST POINT OF VALVING AND ASSEMBLY IS REQUIRED.
8. THE ASSEMBLY MUST BE EQUIPPED WITH FOUR RESILIENT SEATED TEST COCKS WITH PLUGS INSTALLED.
9. THE ASSEMBLY MUST ALSO BE EQUIPPED WITH TWO RESILIENT WEDGE O.S.& Y. SHUT-OFF VALVES, WHICH SHALL BE COATED WITH A MINIMUM OF 4 MILS. OF EPOXY OR EQUIVALENT POLYMERIZED COATING (SEE SECT. 5-10.6)
10. A MINIMUM OF A 12" CLEARANCE IS REQUIRED BETWEEN THE LOWEST POINT OF THE ASSEMBLY AND THE BOTTOM OF THE VAULT.
11. TWO ADJUSTABLE PIPE STANCHIONS REQUIRED AND SIZED APPROPRIATELY.

PROVISIONS FOR DRAINAGE OF THE VAULT SHALL BE IN THE FOLLOWING ORDER OF PRECEDENCE:
A. VAULT DRAIN TO DAYLIGHT
B. VAULT DRAIN TO STORM DRAIN SYSTEM (IF PRACTICABLE)
C. IF NO POSSIBLE MEANS OF GRAVITY DRAIN, THEN SEE STD DETAIL 593 FOR SUMP PUMP INSTALLATION APPROVED BY CITY ENGINEER ON CASE BY CASE ONLY

NOTES:

1. ASSEMBLY TO BE CENTERED IN VAULT. TEE AND GATE VALVE REQUIRED ON CONNECTION TO MAINLINE

2.THE D.C.V.A. CHOSEN MUST BE ON THE MOST RECENT WA. STATE APPROVAL LISTING.

3.THE D.C.V.A. MUST BE TESTED BY A WA. STATE CERTIFIED BACKFLOW ASSEMBLY TESTER AT TIME OF INSTALLATION, ANNUALLY, AND WHEN MOVED OR REPAIRED.

4.ALL INSTALLATIONS MUST MEET MANUFACTURER'S SPECIFICATIONS AND MEET THE MINIMUM STANDARDS OF THE UNIFORM PLUMBING CODE.

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

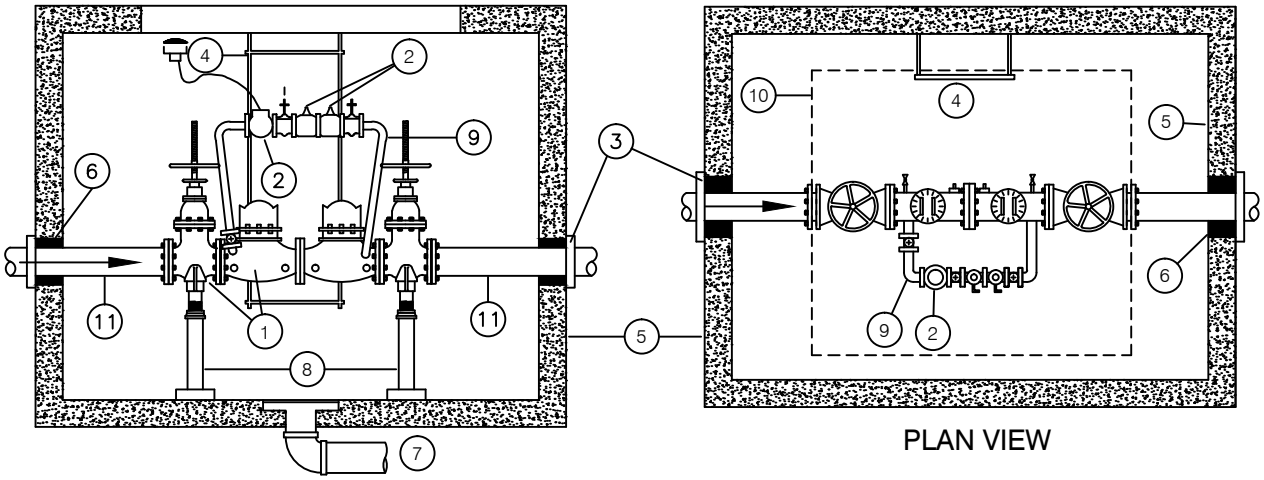
DOUBLE CHECK VALVE ASSEMBLY FOR IRRIGATION & DOMESTIC 3" TO 4"

Standard Detail

581

Revision Date

Feb, 2012



ELEVATION

PLAN VIEW

SIZE	UTIL. VAULT CO. MODEL	UTIL. VAULT CO. COVER
2-1/2"	644	64-2-332P
3"	644	64-2-332P
4"	575	57TL-2-332P
6"	577	57TL-2-332P
8"	4484	4484-TL2-332P
10"	5106	5106-TL3-332

MATERIALS LIST:

1. STATE APPROVED DOUBLE CHECK DETECTOR ASSEMBLY
2. 5/8 X 3/4" BADGER METER MODEL M25 (CUBIC METER READING) (ORION REMOTE DATA PROFILE TRANSMITTER)
3. SET SCREW RETAINER GLANDS
4. ONE GALVANIZED STEEL LADDER TO BE SECURED TO VAULT. SEE STD DETAIL 590
5. CONCRETE VAULT WITH A MINIMUM OF (2) 3'x3' DIAMOND PLATE DOORS RATED FOR H20 LOADING, MARKED "WATER". VAULT SHALL BE EQUAL TO UTILITY VAULT CO. MODEL LISTED IN TABLE
6. ALL PIPE THROUGH VAULT SHALL BE CORE DRILLED AND HAVE A "LINK-SEAL" (OR APPROVED EQUAL)
7. DRAIN, SLOPE TO DAYLIGHT WHERE APPLICABLE
8. TWO ADJUSTABLE PIPE STANCHIONS
9. ALL PLUMBING FOR BY-PASS TO BE COPPER AND BRASS.
10. ACCESS TO BE CENTERED OVER ASSEMBLY
11. CL. 52 D.I., M.J.

NOTES:

1. PROVISIONS FOR DRAINAGE OF THE VAULT SHALL BE IN THE FOLLOWING ORDER OF PRECEDENCE:
   A. VAULT DRAIN TO DAYLIGHT
   B. VAULT DRAIN TO STORM DRAIN SYSTEM (IF PRACTICABLE)
   C. IF NO POSSIBLE MEANS OF GRAVITY DRAIN, THEN SEE STD DETAIL 593 FOR SUMP PUMP INSTALLATION APPROVED BY THE CITY ENGINEER ON CASE BY CASE ONLY.

2. PROVIDE 24" MINIMUM AND 36" MAXIMUM CLEARANCE BETWEEN VAULT FLOOR AND BOTTOM OF COMPOUND METER. WHERE ELEVATION OF VAULT FLOOR IS TOO LOW TO DRAIN TO DAYLIGHT OR STORM SYSTEM, THIS CLEARANCE CAN BE REDUCED TO A MINIMUM OF 12", IF SUBSTITUTION OF A SHORTER VAULT ALLOWS FLOOR TO DRAIN TO DAYLIGHT OR STORM SYSTEM (APPROVED BY THE CITY ENGINNER ON A CASE BY CASE BASIS).

3. EACH ASSEMBLY SHALL BE EQUIPPED WITH FOUR RESILIENT SEATED TEST COCKS WITH PLUGS INSTALLED, (FINGER TIGHT) ON THE MAINLINE DEVICE AND ON THE METERED BY-PASS DEVICE.

4. A MINIMUM OF A 12" CLEARANCE IS REQUIRED BETWEEN THE DEVICE AND THE BOTTOM OF THE ENCLOSURE.

5. TEE AND A GATE VALVE REQUIRED ON CONNECTION TO MAINLINE.

6. THE D.C.D.A. CHOSEN MUST BE ON THE MOST RECENT WA. STATE APPROVAL LISTING.

7. THE D.C.D.A. MUST BE TESTED BY A WA. STATE CERTIFIED BACK FLOW ASSEMBLY TESTER AT THE TIME OF INSTALLATION, ANNUALLY, AND WHEN MOVED OR REPAIRED.

8. ALL INSTALLATIONS MUST MEET MANUFACTURER'S SPECIFICATIONS AND MEET THE MINIMUM STANDARDS OF THE UNIFORM PLUMBING CODE AND MUST CONFORM TO THE REQUIREMENTS AND GUIDELINES OUTLINED BY THE NATIONAL FIRE PROTECTION ASSOCIATION.

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

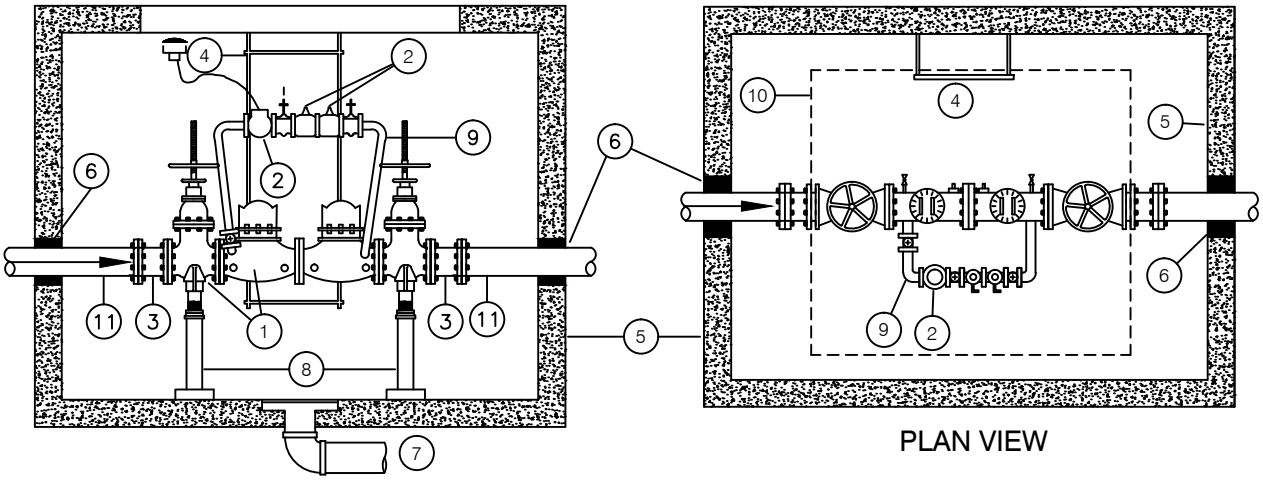
DOUBLE CHECK DETECTOR ASSEMBLY FIRE LINE 2"

Standard Detail

585

Revision Date

Feb, 2012



ELEVATION

PLAN VIEW

SIZE	UTIL. VAULT CO. MODEL	UTIL. VAULT CO. COVER
2-1/2"	644	64-2-332P
3"	644	64-2-332P
4"	575	57TL-2-332P
6"	577	57TL-2-332P
8"	4484	4484-TL2-332P
10"	5106	5106-TL3-332

MATERIALS LIST:

1. STATE APPROVED DOUBLE CHECK DETECTOR ASSEMBLY
2. 5/8" X 3/4" BADGER METER MODEL M25 (CUBIC METER READING) (ORION REMOTE DATA PROFILE TRANSMITTER)
3. RFCA (RESTRAINED FLANGE COUPLING ADAPTER).
4. ONE GALVANIZED STEEL LADDER TO BE SECURED TO VAULT. SEE STD DETAIL 590
5. CONCRETE VAULT WITH A MINIMUM OF TWO 3'x3' DIAMOND PLATE DOORS RATED FOR H20 LOADING, MARKED "WATER". VAULT SHALL BE EQUAL TO UTILITY VAULT CO. MODEL LISTED IN TABLE
6. ALL PIPE THROUGH VAULT SHALL BE CORE DRILLED AND HAVE A "LINK-SEAL" (OR APPROVED EQUAL)
7. DRAIN, SLOPE TO DAYLIGHT WHERE APPLICABLE
8. TWO ADJUSTABLE PIPE STANCHIONS
9. ALL PLUMBING FOR BY PASS TO BE COPPER AND BRASS.
10. ACCESS TO BE CENTERED OVER ASSEMBLY
11. CL. 52 D.I., M.J.

NOTES:

1. PROVISIONS FOR DRAINAGE OF THE VAULT SHALL BE IN THE FOLLOWING ORDER OF PRECEDENCE:
   A. VAULT DRAIN TO DAYLIGHT
   B. VAULT DRAIN TO STORM DRAIN SYSTEM (IF PRACTICABLE)
   C. IF NO POSSIBLE MEANS OF GRAVITY DRAIN, THEN SEE STD DETAIL 593 FOR SUMP PUMP INSTALLATION APPROVED BY THE CITY ENGINEER ON CASE BY CASE ONLY.

2. PROVIDE 24" MINIMUM AND 36" MAXIMUM CLEARANCE BETWEEN VAULT FLOOR AND BOTTOM OF COMPOUND METER. WHERE ELEVATION OF VAULT FLOOR IS TOO LOW TO DRAIN TO DAYLIGHT OR STORM SYSTEM, THIS CLEARANCE CAN BE REDUCED TO A MINIMUM OF 12", IF SUBSTITUTION OF A SHORTER VAULT ALLOWS FLOOR TO DRAIN TO DAYLIGHT OR STORM SYSTEM (APPROVED BY THE UTILITY ON A CASE BY CASE BASIS ONLY).

3. EACH ASSEMBLY SHALL BE EQUIPPED WITH FOUR RESILIENT SEATED TEST COCKS WITH PLUGS INSTALLED, (FINGER TIGHT) ON THE MAINLINE DEVICE AND ON THE METERED BY-PASS DEVICE.

4. A MINIMUM OF A 12" CLEARANCE IS REQUIRED BETWEEN THE DEVICE AND THE BOTTOM OF THE ENCLOSURE.

5. TEE AND A GATE VALVE REQUIRED ON CONNECTION TO MAINLINE.

6. THE D.C.D.A. CHOSEN MUST BE ON THE MOST RECENT WA. STATE APPROVAL LISTING.

7. THE D.C.D.A. MUST BE TESTED BY A WA. STATE CERTIFIED BACK FLOW ASSEMBLY TESTER AT THE TIME OF INSTALLATION, ANNUALLY, AND WHEN MOVED OR REPAIRED.

8. ALL INSTALLATIONS MUST MEET MANUFACTURER'S SPECIFICATIONS AND MEET THE MINIMUM STANDARDS OF THE UNIFORM PLUMBING CODE AND MUST CONFORM TO THE REQUIREMENTS AND GUIDELINES OUTLINED BY THE NATIONAL FIRE PROTECTION ASSOCIATION.

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

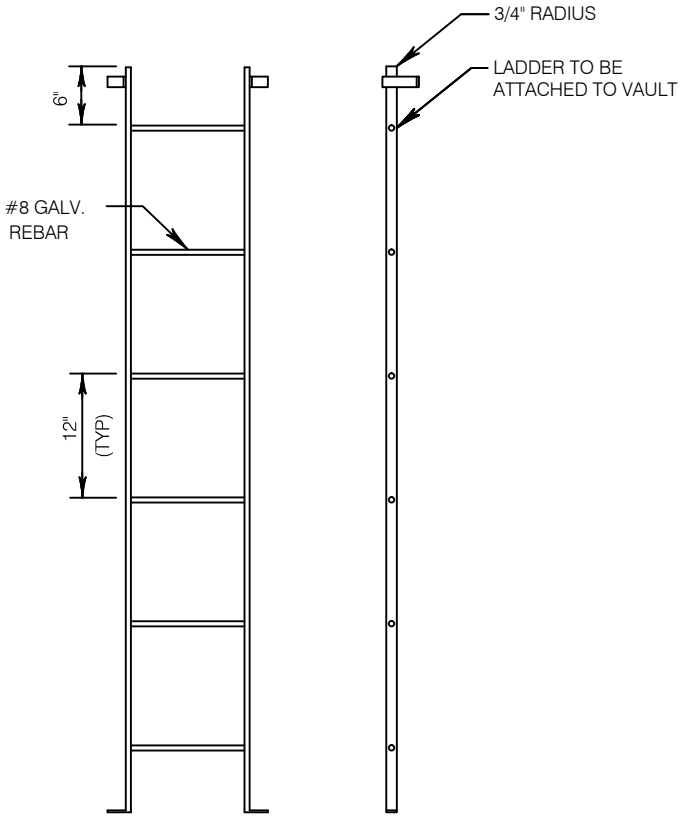
DOUBLE CHECK DETECTOR ASSEMBLY FIRE LINES 2 1/2" TO 10"

Standard Detail

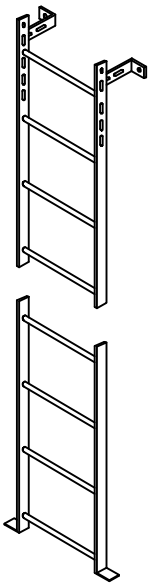
586

Revision Date

Feb, 2012

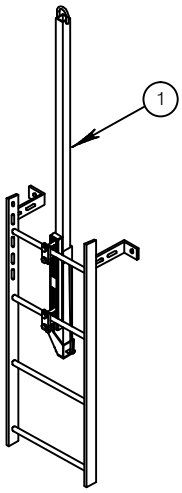


LADDER



BOLT-ON LADDER

3/4" DIA. (36 REBAR) RUNGS ON 12" CENTER
SIDE RAILS ARE 2"x5/16" FLATBAR 2 MOUNTING
BRACKETS FURNISHED HOT DIPPED GALVANIZED.



PULL-UP EXTENDER

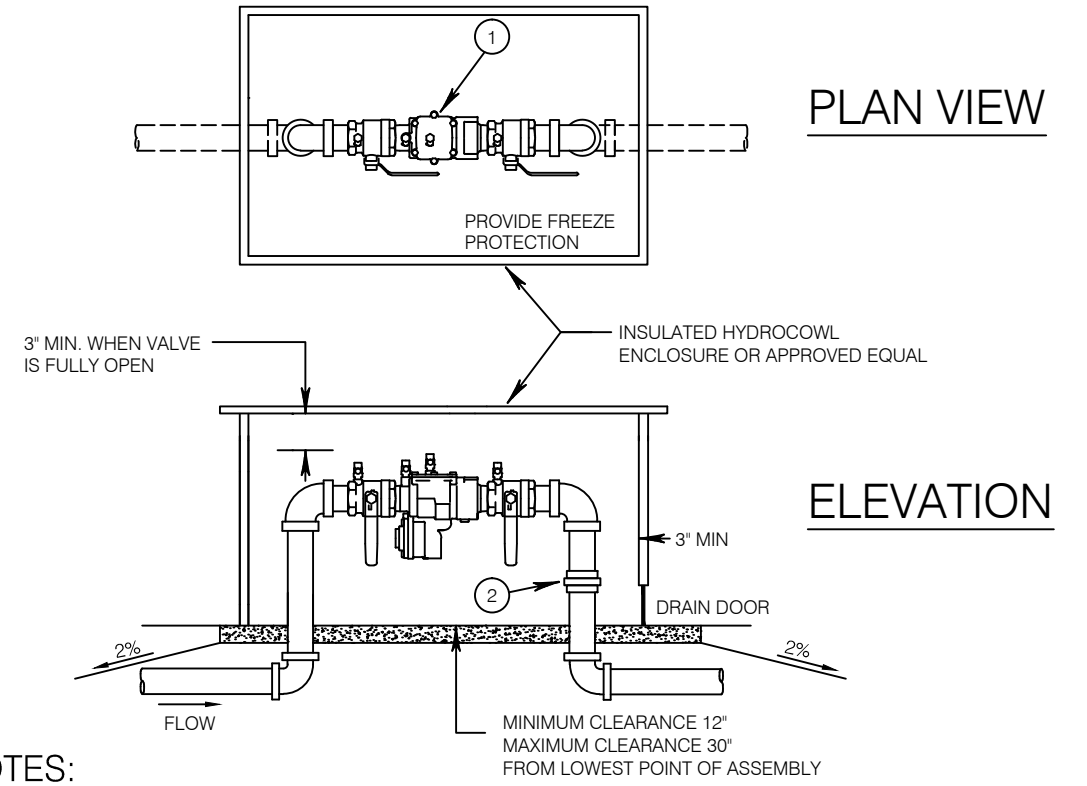
DETAIL NOTE:

(1) PULL-UP LADDER EXTENSION, BILCO LU4 LADDER UP (OR APPROVED EQUAL)

NOTES:

1. LEGS MAY BE PARALLEL OR APPROXIMATELY RADIAL AT OPTION OF MANUFACTURER, EXCEPT THAT ALL STEPS IN ANY VAULT SHALL BE SIMILAR.
2. PENETRATION OF OUTER WALL BY A LEG IS PROHIBITED

City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	LADDER DETAIL WITH PULL-UP EXTENDER	Standard Detail **590** Revision Date Feb, 2012



DETAIL NOTES:

(1) STATE APPROVED REDUCED PRESSURE PRINCIPLE BACK FLOW ASSEMBLY.

(2) UNION FITTING.

NOTES :

1. BASE PENETRATIONS TO BE SEALED WITH A WATERTIGHT GROUT, WATERPROOF MASTIC, OR FLEXIBLE SEALANT.

2. ACCESS TO BE CENTERED OVER ASSEMBLY.

3. EACH ASSEMBLY SHALL BE EQUIPPED WITH FOUR RESILIENT SEATED TEST COCKS WITH PLUGS INSTALLED, (FINGER TIGHT).

4. ENCLOSED RP DEVICES ARE REQUIRED TO MEET SPECIFIC CRITERIA - REVIEWED ON A CASE BY CASE BASIS.

5. PRESSURE RELIEF PORTS MUST BE KEPT CLEAN AND IN GOOD WORKING ORDER, AND BE ABLE TO FREELY DISCHARGE TO THE ATMOSPHERE.

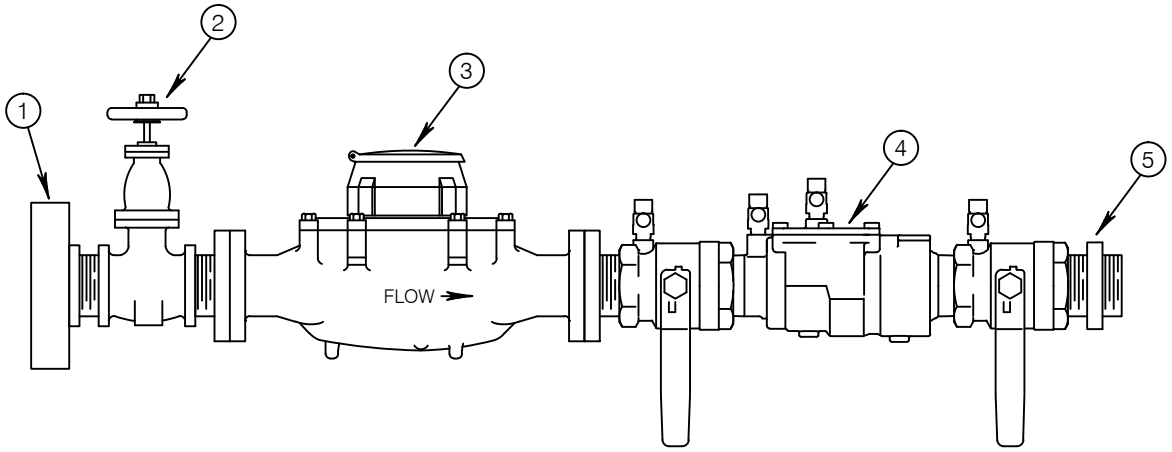
6. A MINIMUM OF A 12" CLEARANCE IS REQUIRED BETWEEN THE LOWEST POINT OF THE ASSEMBLY AND THE BOTTOM OF THE ENCLOSURE (MAXIMUM 30")

7. TEE AND A GATE VALVE REQUIRED ON CONNECTION TO MAINLINE.

8. THE R.P.B.A. CHOSEN MUST BE ON THE MOST RECENT WA. STATE APPROVAL LISTING. THE R.P.B.A. MUST BE TESTED BY A WA. STATE CERTIFIED BACK FLOW ASSEMBLY TESTER AT THE TIME OF INSTALLATION, ANNUALLY, AND WHEN MOVED OR REPAIRED.

ALL INSTALLATIONS MUST MEET MANUFACTURER'S SPECIFICATIONS AND MEET THE MINIMUM STANDARDS OF THE 9. UNIFORM PLUMBING CODE AND MUST CONFORM TO THE REQUIREMENTS AND GUIDELINES OUTLINED BY THE NATIONAL FIRE PROTECTION ASSOCIATION.

City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	RP BACKFLOW ASSEMBLY (UP TO 2") DOMESTIC & IRRIGATION	Standard Detail **591** Revision Date Feb, 2012



DETAIL NOTES:

METER SIZE	MODEL NUMBER
¾"	= M25
1"	= M70
1½"	= M120
2"	= M170

1. 2½" HYDRANT SWIVEL CONNECTION.
2. 2" GATE VALVE: BRASS.
3. METER: BADGER: SEE TABLE FOR MODEL NUMBER INFORMATION*.
4. DOUBLE CHECK VAVLE ASSEMBLY (DCVA): FEBCO MODEL 850 MASTER SERIES*
5. 2" ADAPTER: IPS x HOSE, BRASS.

* (OR APPROVED EQUAL)

NOTES :

1.MUST HAVE CURRENT TEST REPORT ON DCVA.

2. ALL FITTINGS TO BE CONSTRUCTED OF BRASS.

3. VALVE HANDLES ON DCVA TO BE REMOVED PRIOR TO INSTALLATION.

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

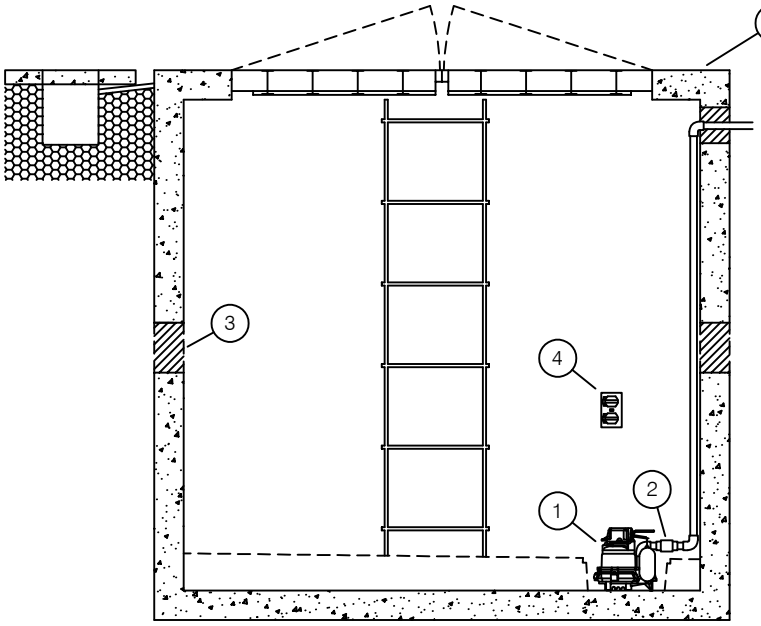
HYDRANT METER
WATER MAKE-UP

Standard Detail

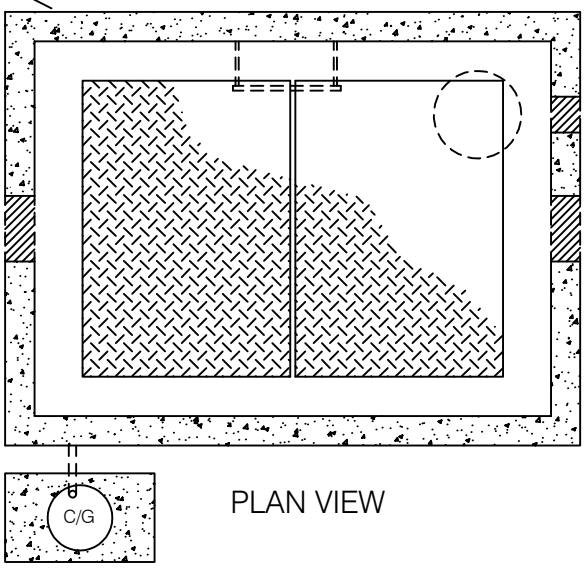
592

Revision Date
Feb, 2012

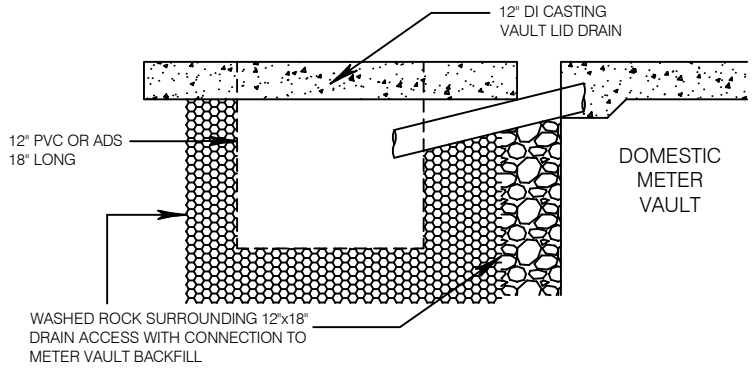
DRAINAGE FOR VAULT LID EITHER TO ON SITE DRAINAGE OR PER
THIS ALTERNATIVE METHOD IF NO AVAILABLE DRAINAGE SYSTEM



ELEVATION



PLAN VIEW



SIZE	UTILITY VAULT CO. MODEL	UTILITY VAULT CO. "LW" COVER
2½"	644	64-2-332P
3"	644	64-2-332P
4"	575	57TL-2-332P
6"	577	57TL-2-332P
8"	4484	4484-TL2-332P
10"	5106	5106-TL3-332

MATERIALS LIST:

1. 1½" SUMP PUMP: ZOELLER MODEL #M53 SYMPLEX (OR APPROVED EQUAL).
2. 1½" CHECK VALVE: ZOELLER MODEL #30-0164 (OR APPROVED EQUAL UNLESS FREEZING IS A PROBLEM).
3. "LINK SEAL": MODULAR SEAL (OR APPROVED EQUAL).
4. GFCI PROTECTED OUTLET FOR SUMP PUMP.
5. UTILITY VAULT: SEE TABLE FOR APPROVED SIZES AND MODELS.

NOTES:

1. ALL MATERIALS SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR.
2. IF NOT ABLE TO POSITIVELY DRAIN, USE VAULT WITH A 5" MINIMUM DEPTH SUMP AND DOUBLE LEAF "LW" LIGHTWEIGHT ALUMINUM HATCH COVER.ALUMINIUM LID TO COME FROM FACTORY SHALL BE SET IN CONCRETE.
3. VAULT SHALL BE SOLID-WALL CONSTRUCTED WITH NO KNOCKOUTS.
4. VAULT FLOOR TO SLOPE FROM 6" TO 5" WITH A MINIMUM SUMP DEPTH OF 5".
5. SUMP PUMP TO BE INSTALLED IN VAULT SUMP AND PIPING TO BE INSTALLED IN A DIRECT PATH TO THE POINT OF DISCHARGE WITH CHECK VALVE PLUMBED IN-LINE.
6. PIPING FOR SUMP PUMP TO BE ANCHORED TO VAULT WITH 1½" CONDUIT CLAMPS.
7. ALL PIPE THROUGH VAULT SHALL BE CORE DRILLED AND HAVE A LINK-SEAL MODULAR SEAL (OR APPROVED EQUAL).
8. WIRE FOR SUMP PUMP SECURED TO VAULT WALL.

City of Bothell™

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PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

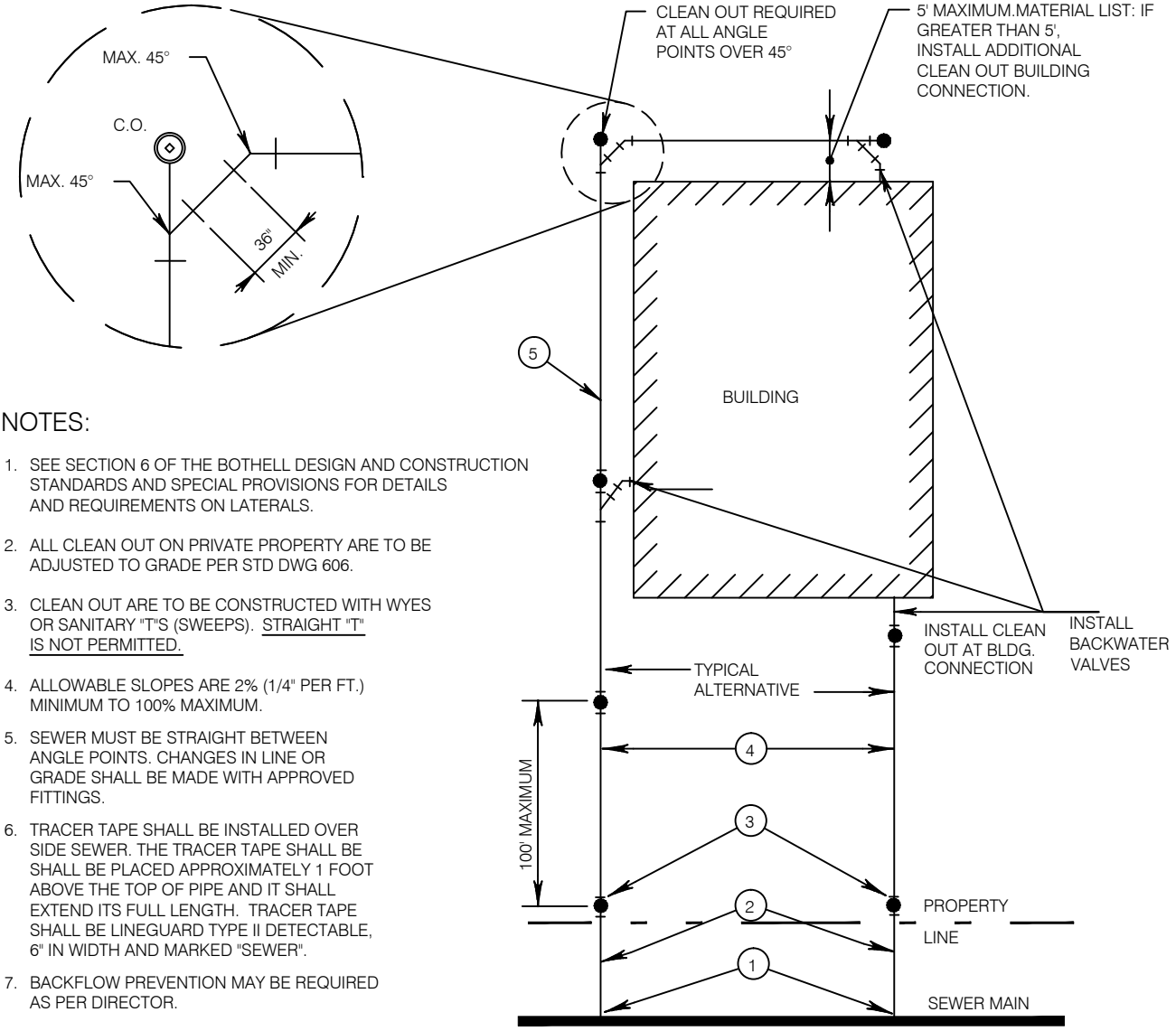
SUMP PUMP

Standard Detail

593

Revision Date

Nov, 2018



NOTES:

1. SEE SECTION 6 OF THE BOTHELL DESIGN AND CONSTRUCTION STANDARDS AND SPECIAL PROVISIONS FOR DETAILS AND REQUIREMENTS ON LATERALS.
2. ALL CLEAN OUT ON PRIVATE PROPERTY ARE TO BE ADJUSTED TO GRADE PER STD DWG 606.
3. CLEAN OUT ARE TO BE CONSTRUCTED WITH WYES OR SANITARY "T"S (SWEEPS). STRAIGHT "T" IS NOT PERMITTED.
4. ALLOWABLE SLOPES ARE 2% (1/4" PER FT.) MINIMUM TO 100% MAXIMUM.
5. SEWER MUST BE STRAIGHT BETWEEN ANGLE POINTS. CHANGES IN LINE OR GRADE SHALL BE MADE WITH APPROVED FITTINGS.
6. TRACER TAPE SHALL BE INSTALLED OVER SIDE SEWER. THE TRACER TAPE SHALL BE SHALL BE PLACED APPROXIMATELY 1 FOOT ABOVE THE TOP OF PIPE AND IT SHALL EXTEND ITS FULL LENGTH. TRACER TAPE SHALL BE LINEGUARD TYPE II DETECTABLE, 6" IN WIDTH AND MARKED "SEWER".
7. BACKFLOW PREVENTION MAY BE REQUIRED AS PER DIRECTOR.

TYPICALLY ONLY ONE (1) CONNECTION FOR SIDE SEWER PER BUILDING IS ALLOWED. THIS DETAIL SHOWS TWO DIFFERENT LAYOUTS FOR CLARITY.

DETAIL NOTES:

(1) CONNECTION TO SEWER MAIN PER SEC. 6 OF BOTHELL DESIGN AND CONSTRUCTION STANDARDS AND SPECIAL PROVISIONS AND STD DWG 602.

(2) INSTALL 6" MINIMUM PIPE SIZE IN R.O.W.

(3) INSTALL 6" CLEANOUT PER STD DETAIL 606.

(4) PRIVATE SIDE SEWER
4" MINIMUM FOR SINGLE FAMILY
6" MINIMUM FOR ALL OTHER USES.

(5) PVC PIPE SHALL CONFORM TO TEE REQUIREMENTS OF ASTM D-3034 SDR-35.

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

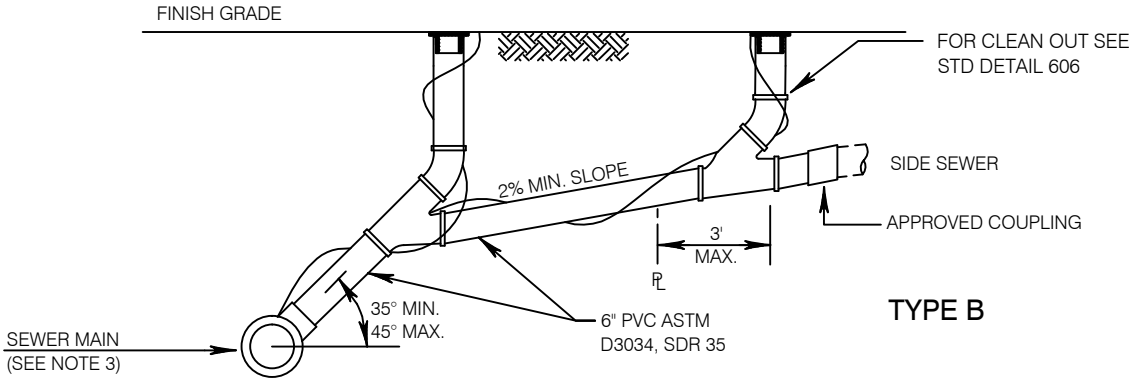
SIDE SEWER LAYOUTS

Standard Detail

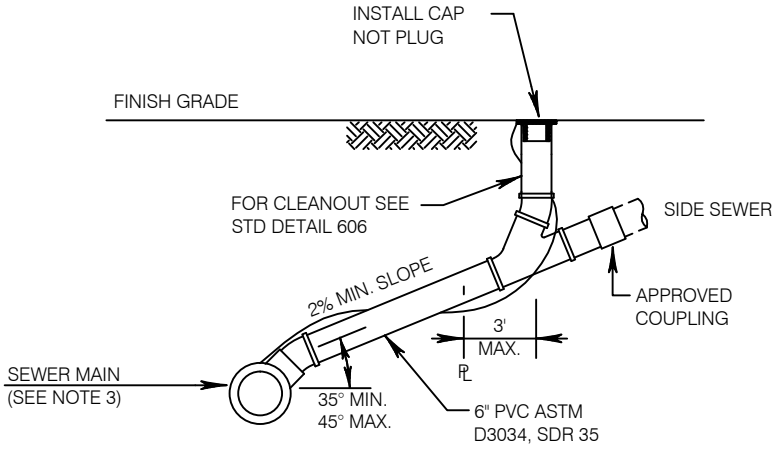
601

Revision Date

Feb, 2012



TYPE B



TYPE C

NOTES:

1. SIDE SEWER CONNECTIONS TO NEW MAINS SHALL BE FACTORY TEES.

2. CONNECTIONS TO SEWER MAINS SHALL BE MADE PER STD DETAILS 666 AND 667 OR BY APPROVED MANUFACTURED CONCRETE TEE.

3. #10 SOLID CORE TRACER WIRE TWO WRAPS MINIMUM REQUIRED FOR MAGNETIC LOCATION.

4. IF AN AUTOMATIC FLUSHING UNIT IS BEING ADDED REFER TO DETAIL 554.

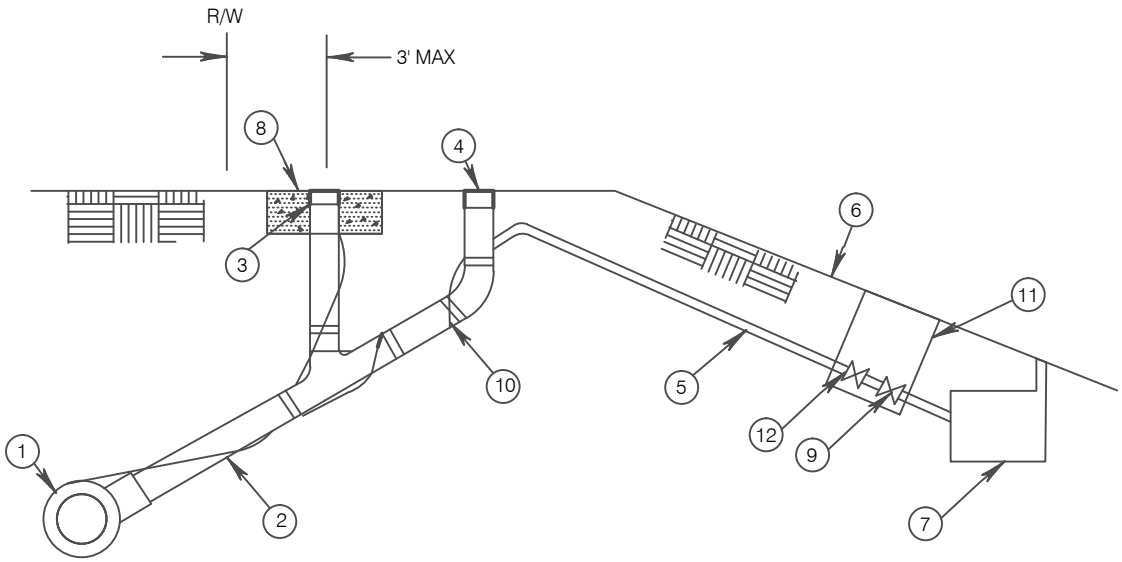
City of Bothell™	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	SIDE SEWER CONNECTIONS

Standard Detail

602

Revision Date
Nov, 2013

TYPICAL FORCE MAIN INSTALLATION



DETAIL NOTES:

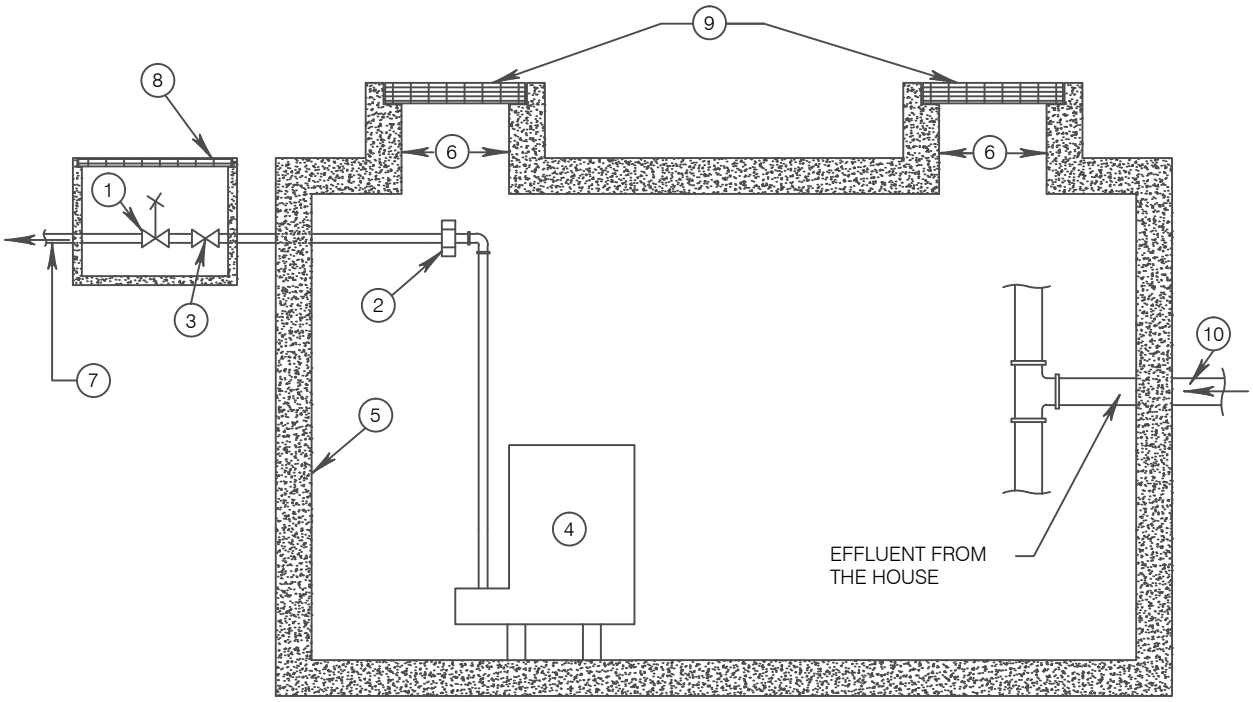
1. 8" SEWER MAIN IN THE STREET
2. 6" SIDE SEWER
3. 6" CLEANOUT AT PROPERTY LINE. SEE STD DETAIL 606 "SEWER CLEANOUT"
4. 6" CLEANOUT AT JUNCTION OF GRAVITY ANF FORCE MAIN. SEE STD DETAIL 606. THE 2" FORCEMAIN SHALL ENTER THE 6" VERTICAL PIPE THROUGH A 6" X 6" X 2" WYE
5. 2" FORCE MAIN. INSTALL WITH A MINIMUM OF 24" OF COVER, SEE STD DETAIL 605, NOTE 9
6. EXISTING GRADE
7. PUMP AND WET WELL/SEPTIC TANK, SEE STD DETAIL 604
8. 30"L X 30"W X 12"D CONCRETE PAD
9. BACK WATER VALVE
10. #10 SOLID CORE TRACER WIRE (2) WRAPES MINIUM REQUIRED FOR MAGNETIC LOCATION
11. WEATHER TIGHT UTILITY BOX
12. BRASS BALL VALVE OR BRASS GATE VALVE (BRASS BALL VALVE PREFERRED)

NOTE:

SEE STD DETAIL 605 FOR GENERAL NOTES.

City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	SEWER PUMP SYSTEM PRIVATE	Standard Detail **603** Revision Date Jun, 2015

DETAIL OF PUMP
INSTALLATION IN AN EXISTING
SEPTIC TANK



DETAIL NOTES:

1. BRASS BALL VALVE OR BRASS GATE VALVE (BRASS BALL VALVE PREFERRED)
2. THREADED UNION
3. BACK WATER VALVE
4. SUBMERSIBLE EJECTOR SEWAGE PUMP
5. STORAGE TANK
6. ACCESS OPENING
7. 2" FORCE MAIN CONNECTS TO SIDE SEWER LATERAL.
8. WEATHER TIGHT UTILITY BOX.
9. ACCESS LID AT GRADE. SEE STD DWG 645 FOR RECOMMENDED FRAME AND LID.
10. THE PUMP VAULT SHALL BE VENTED PER THE STATE PLUMBING CODE

NOTE:

SEE STD DETAIL 605 FOR GENERAL NOTES.

City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	PUMP SYSTEM PUMP AND WET WELL	Standard Detail **604** Revision Date Jun, 2015

PRIVATE SEWAGE PUMP SYSTEMS

MINIMUM REQUIREMENTS:

1. ONLY PLUMBING UNITS UNABLE TO BE SERVICED BY GRAVITY FLOW SHALL BE ROUTED TO THE PUMP SYSTEM.

2. PLANS FOR SYSTEM SHALL BE SUBMITTED FOR APPROVAL BEFORE CONSTRUCTION, INCLUDING PUMP SPECIFICATION.

3. CONTROL SYSTEM SHALL INCLUDE A HIGH WET WELL ALARM.

4. PUMP SHALL BE A 2" SUBMERSIBLE SEWAGE EJECTOR PUMP.

5. THE PUMP VAULT SHALL BE VENTED ACCORDING TO THE STATE PLUMBING CODE.

6. THE PUMP VAULT REVERSE CAPACITY SHALL BE MINIMUM OF 300 GALLONS ABOVE HIGH WET WELL ALARM.

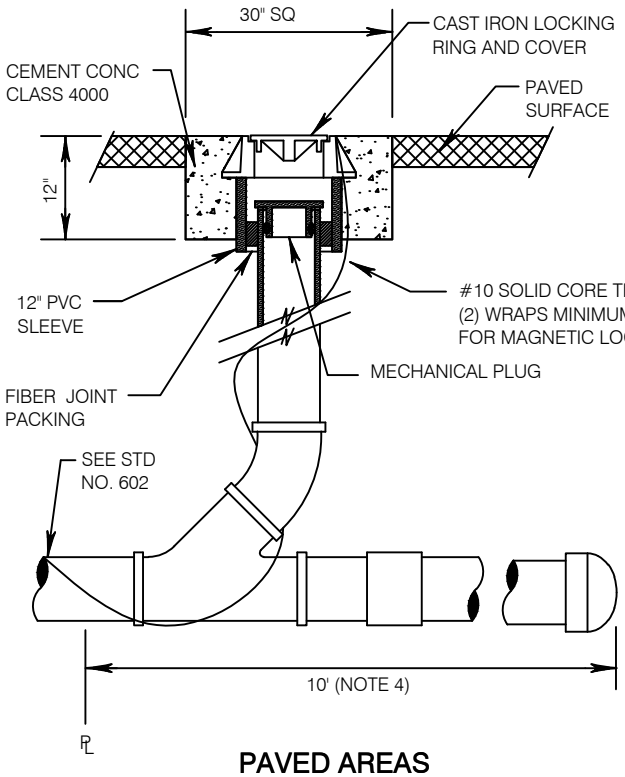
7. A SEPTIC TANK MAY BE APPROVED FOR USE AS THE PUMP VAULT PROVIDED:
   A) THE PUMP SHALL BE PLACED DIRECTLY ON THE BOTTOM OF THE TANK.
   B) THE "OFF " SETTING SHALL BE ADJUSTED AS LOW AS POSSIBLE (APPROXIMATELY 6" FROM BOTTOM OF TANK).
   C) THE "ON" SETTING SHALL BE WITHIN 8" OF THE "OFF" SETTING.
   D) THE TANK MUST BE STRUCTURALLY SOUND AND WITHOUT LEAKS OR CRACKS.
   E) THE DIVIDER WALL SHALL BE REMOVED FROM THE SEPTIC TANK.

8. THE DISCHARGE LINE SHALL INCLUDE A BRASS BALL VALVE OR BRASS GATE VALVE (BRASS BALL VALVE PREFERRED), A BACK WATER VALVE, AND A THREADED UNION UPSTREAM FROM THE BACK WATER VALVE. THE GATE VALVE AND UNION MUST BE ACCESSIBLE WITHOUT ENTERING THE VAULT. NEITHER THE VALVE NOR UNION SHALL OBSTRUCT THE ACCESS OPENING.

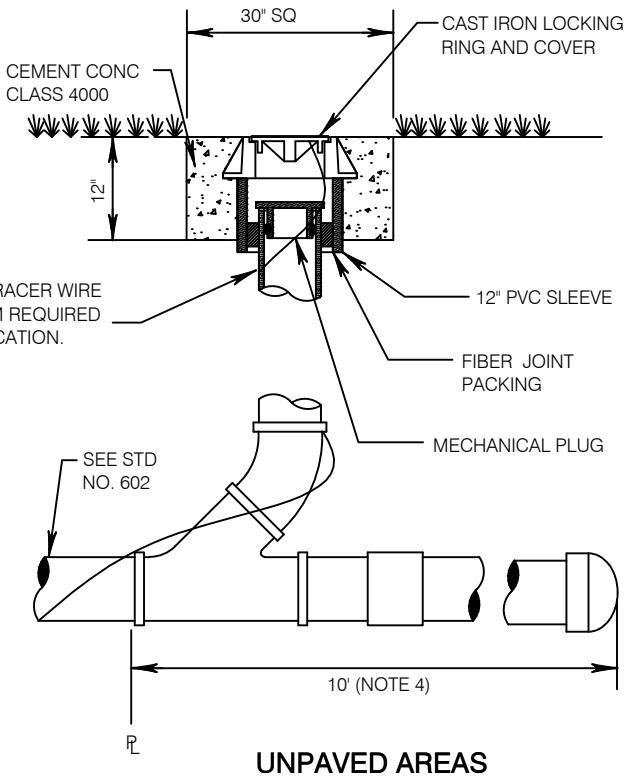
9. THE DISCHARGE LINE SHALL BE A MINIMUM OF 2" DIAMETER SCHEDULE 40 PVC PIPE.

10. DISCHARGE TO GRAVITY SYSTEM WILL BE AT A SURFACE CLEANOUT WITH A WYE CONNECTION.

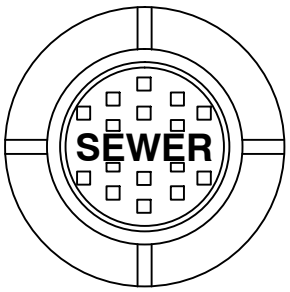
City of Bothell™	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	PUMP SYSTEM NOTES	Standard Detail **605** Revision Date Jun, 2015

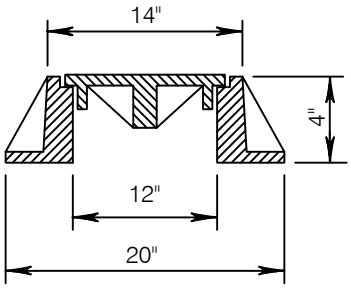


PAVED AREAS



UNPAVED AREAS





12" CASTING FORCE LOCKING RING AND COVER

NOTE:

1. CLEANOUT PIPE AND FITTINGS SHALL BE PVC.

2. A SANITARY TEE OR SWEEP MAY BE INSTALLED IN LIEU OF A WYE AS SHOWN. STRAIGHT TEES ARE NOT ACCEPTABLE.

3. FOR NEW PLATS THE VERTICAL RISER PORTION OF THE CLEANOUT WILL BE CONSTRUCTED AT TIME OF CONNECTION TO BUILDING TO MINIMIZE DAMAGE, THE 6" WYE AND 6' PVC PIPE WITH MECHANICAL PLUG WILL BE INSTALLED PRIOR TO BUILDING CONNECTION.

4. SEWER STUB WILL BE EXTENDED 10' BEYOND PROPERTY LINE TO PREVENT DAMAGE TO CLEANOUT AND MINIMIZE CONFLICTS WITH OTHER UTILITIES WHEN SERVICE TO BUILDING IS ACCOMPLISHED.

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

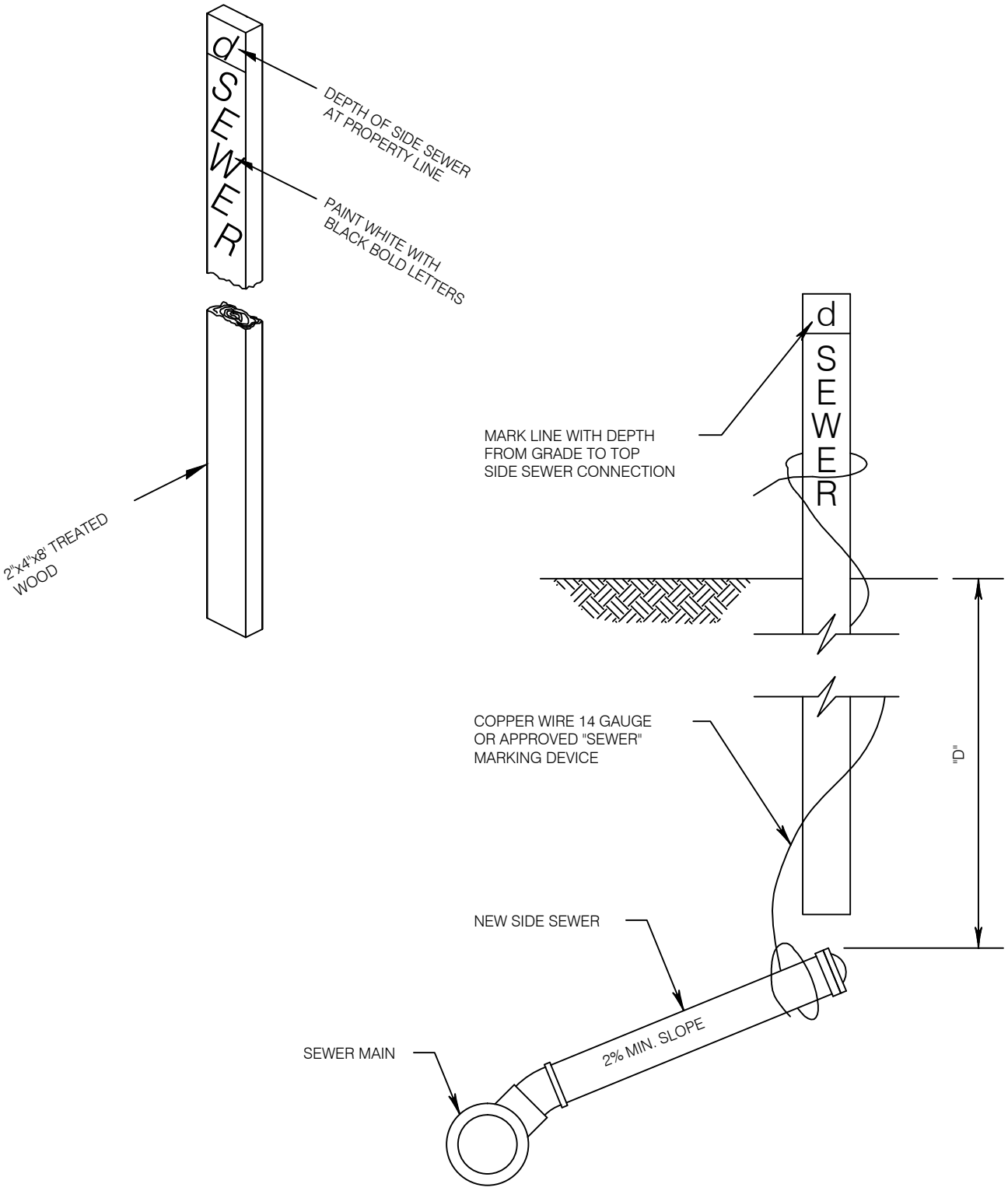
SEWER CLEANOUT

Standard Detail

606

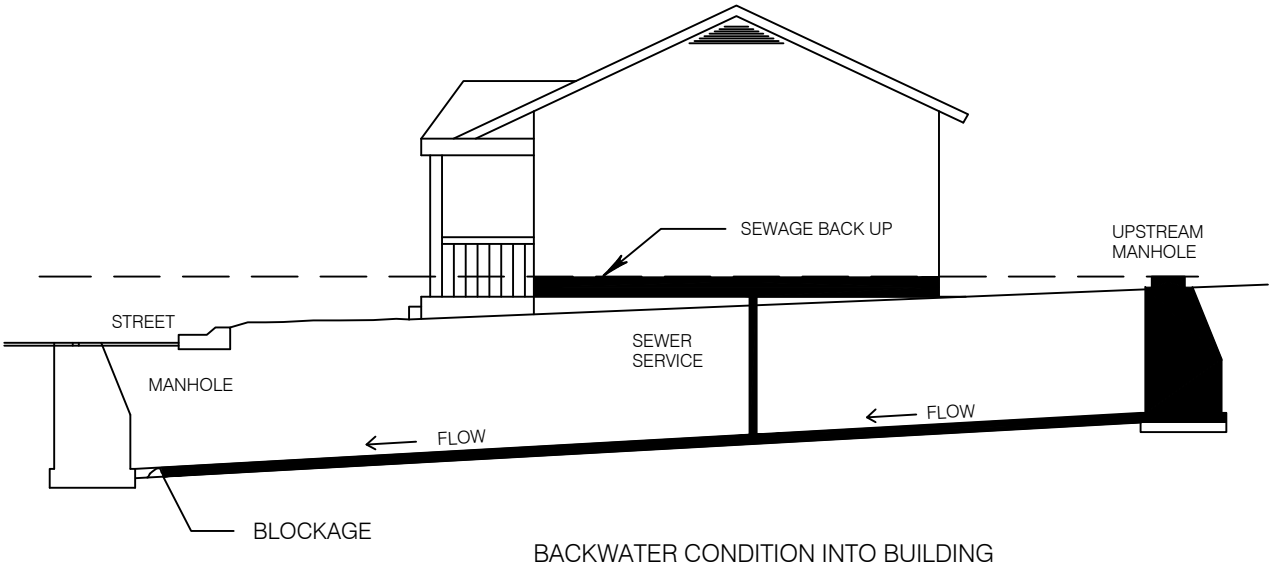
Revision Date

Nov, 2013

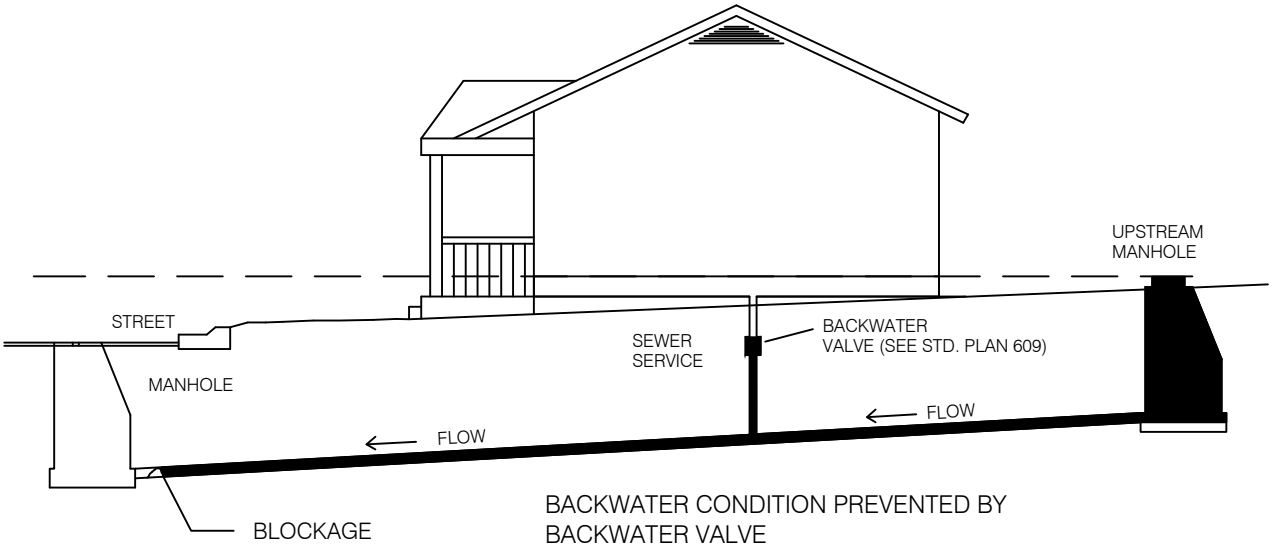


City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	SIDE SEWER MARKER POST	Standard Detail **607** Revision Date Feb, 2012

BUILDING WITH NEXT UPSTREAM MANHOLE HIGHER THAN THE LOWEST DRAIN AND BLOCKAGE IN SEWER MAIN

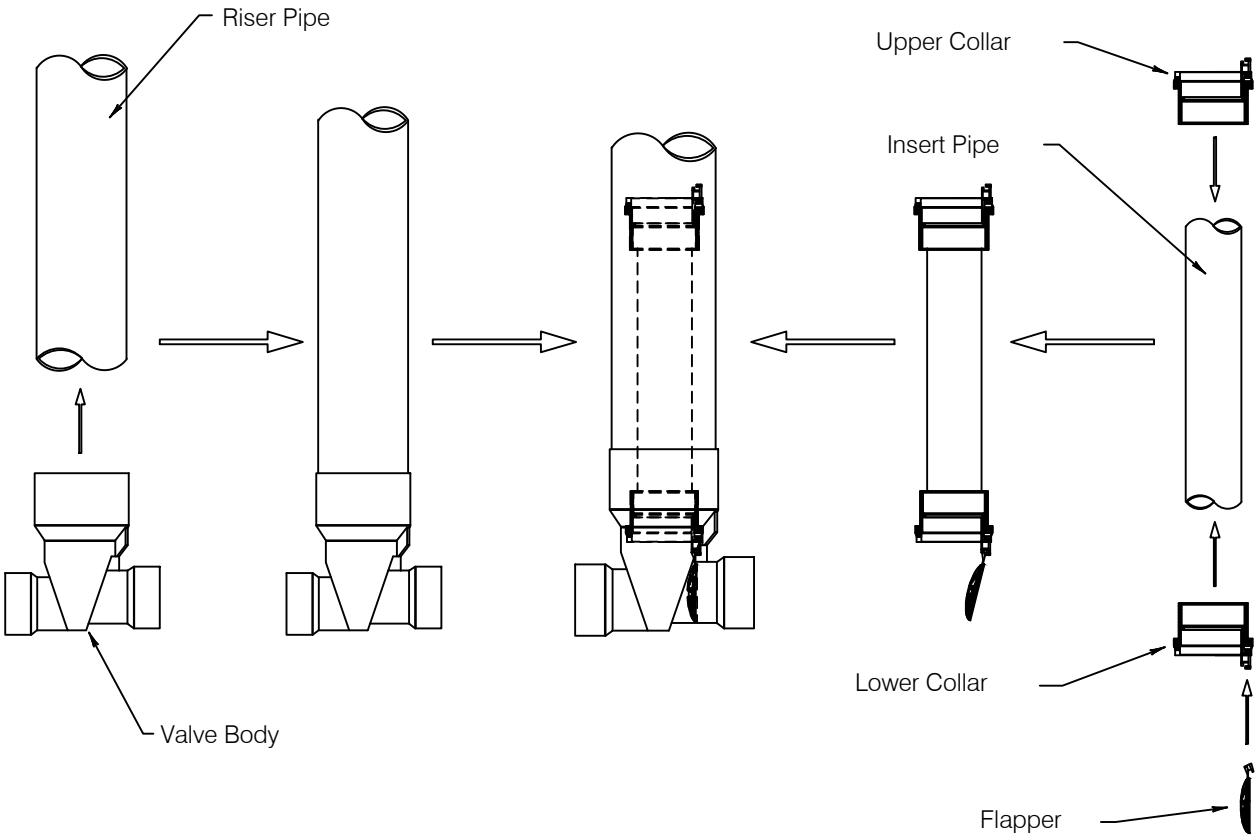


BACKWATER CONDITION INTO BUILDING WITHOUT BACKWATER VALVE



BACKWATER CONDITION PREVENTED BY BACKWATER VALVE

City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	TYPICAL SEWER SERVICE REQUIRING BACKWATER VALVE	Standard Detail **608** Revision Date Feb, 2012



NOTES:

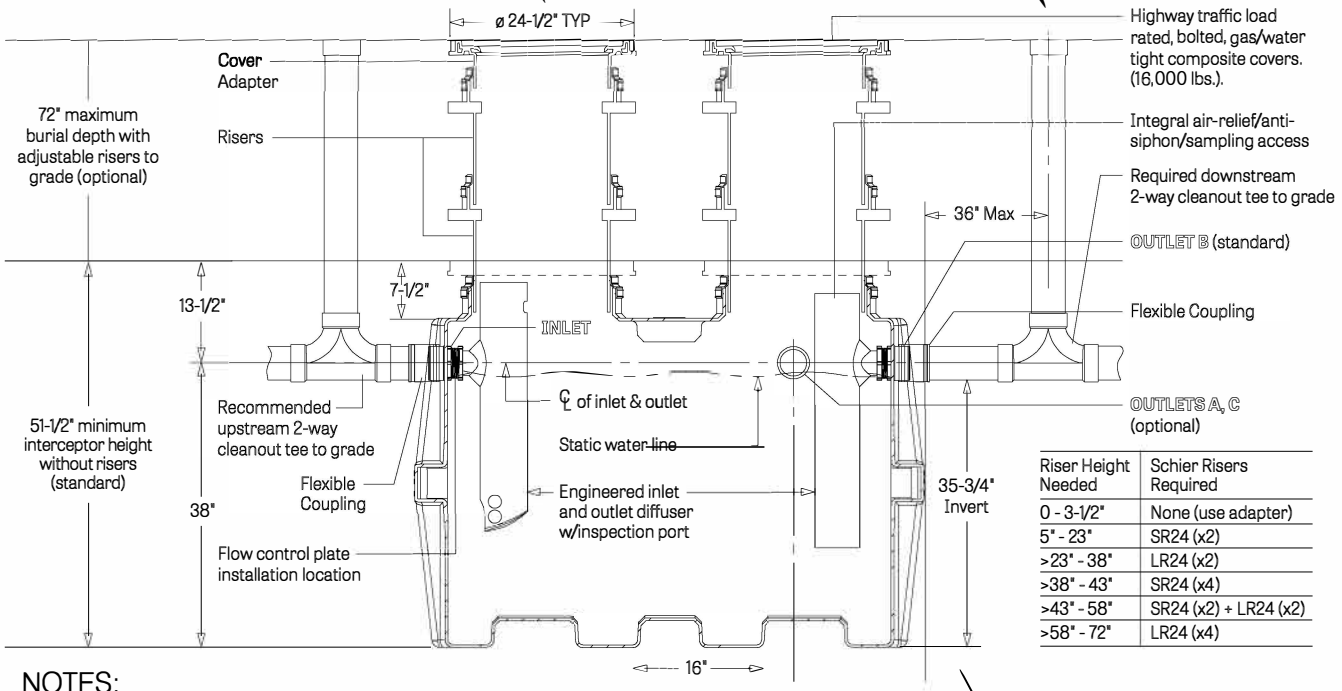
1. RECTORSEAL BACKWATER VALVE OR APPROVED EQUAL.
2. VALVES MUST BE INSTALLED IN A LOCATION AT WHICH THEY CAN BE CLEANED AND SERVICED REGULARLY.
3. RISER PIPE AND INSERT PIPE FIELD CUT TO LENGTH.
4. BACKWATER VALVE ACCESS SHALL BE AT THE FINISHED GRADE PER STD. DETAIL NO 606.

City of Bothell™	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	BACKWATER VALVE	Standard Detail **609** Revision Date Nov, 2013

FRAME AND COVER TO BE LOCATED OUTSIDE OF SIDEWALK UNLESS OTHERWISE APPROVED AND WITH SLIP RESISTANT ADA COMPLIANT LID.

24" DIA LOCKING FRAME & COVER AIR & GAS TIGHT. 3 PLCS. LOCATE AS SHOWN, AT VAULT CENTERLINE. COVERS SHALL READ "SEWER".

INSTALL SURFACE CLEAN-OUT PER STD DETEAL 606



Riser Height Needed	Schier Risers Required
0 - 3-1/2"	None (use adapter)
5" - 23"	SR24 (x2)
>23" - 38"	LR24 (x2)
>38" - 43"	SR24 (x4)
>43" - 58"	SR24 (x2) + LR24 (x2)
>58" - 72"	LR24 (x4)

SCHIER GB-250 OR EQUIVALENT PREFERRED, SEE MANUFACTURER'S WEBSITE FOR SIZING AND INSTALLATION METHODS. PRECAST CONCRETE VAULT, UTILITY VAULT CO., INC., OR EQUAL (SEE NOTE 2) ACCEPTABLE, SEE CHART BELOW FOR DIMENSIONS REQUIRED FOR EACH GALLON CAPACITY, VAULT OUTSIDE WIDTH IS DIMENSION "B".

NOTES:

1. IF VAULT IS NOT SLOTTED TO ACCEPT PRECAST CONC. BAFFLE THEN PRECAST CONC. BAFFLE SHALL BE HELD IN PLACE BY (2) 3"x3"x3/8" ANGLE (4FT. LONG) ATTACHED TO VAULT WALL WITH (4 EA.) 1/2" BOLTS AND NUTS (WITH WASHERS) SPACED 14"O.C. ANGLE AND FASTENERS SHALL BE STAINLESS STEEL OR GALVANIZED AND ASPHALT COATED.
2. ALL PIPE THROUGH VAULT SHALL BE CORE DRILLED AND HAVE A "LINK-SEAL" OR APPROVED EQUAL. PIPE OPENINGS SHALL BE 2" LARGER THAN PIPE DIAMETER.
3. POSITION RISERS BELOW ACCESS OPENINGS TO ALLOW CLEAR ACCESS TO RISER AND VAULT CHAMBER.
4. LOCATE INTERCEPTOR WITHIN 20' OF DRIVE FOR ACCESS BY MAINT. VEHICLE.
5. CONNECTIONS TO CONCRETE WALLS WITH P.V.C. PIPE REQUIRE KOR-N-SEAL CONNECTOR. SEAL ALL PIPE CONNECTIONS WITH NONSHRINK GROUT.
6. LINE-SIZED P.V.C. PIPE SHALL BE USED THROUGHOUT WHERE LINE IS 6"DIA. OR GREATER. SIX INCH P.V.C. SHALL BE USED THROUGHOUT WHERE LINE IS LESS THAN 6"DIA.
7. GRAY-WATER ONLY. BLACK-WATER SHALL BE CARRIED BY SEPARATE SIDE SEWER.
8. CLEAN-OUT REQUIRED 3' MAX. DOWNSTREAM OF INTERCEPTOR.
9. FILL WITH CLEAN WATER PRIOR TO START UP OF SYSTEM.
10. FOR CAPACITIES LESS THAN 1500 GALLONS, SUBSTITUTE 12" DIA. CAST IRON COVER AND FRAME FOR "CENTER" MANHOLE. LOCATE DIRECTLY ABOVE TEE. OLYMPIC FOUNDRY 5931 OR EQUAL.
11. ALL RINGS AND COVERS SHALL BE BOLT-LOCKING TYPE, RATED FOR H20 LOADING MINIMUM.
12. INTERIOR GREASE INTERCEPTOR SHALL HAVE VENTING PER 2006 UNIFORM PLUMBING CODE REQUIREMENTS.
13. PRIOR TO START UP, GREASE INTERCEPTOR SHALL PASS 1% PER DAY LEAK TEST WHERE ONLY A MAXIMUM OF 1% OF DEAD STORAGE REDUCTION IS ALLOWED WITHIN A 24 HOUR PERIOD PER THE UNIFORM PLUMBING CODE.

GALLON CAPACITY		600	750	1000	1500	2000	2500	3000	4000	5000	6000
UV CO. MODEL No.		577-GA	577-GA	4484-GA	5106-GA	612-GA	612-GA	814-GA	814-GA	818-GA	818-GA
LENGTH	DIM "A"	7'-0"	7'-0"	9'-0"	11'-2"	12'-8"	12'-8"	15'-7"	15'-7"	19'-11"	19'-11"
WIDTH	DIM "B"	4'-8"	4'-8"	5'-0"	5'-8"	6'-8"	6'-8"	9'-7"	9'-7"	9'-11"	9'-11"
HEIGHT	DIM "C"	7'-0"	7'-0"	7'-2"	7'-2"	8'-0"	8'-0"	8'-6 1/2"	8'-6 1/2"	8'-11"	10'-5"
	DIM "D"	3'-6"	4'-3"	4'-2"	4'-4"	4'-7"	5'-6"	5'-0"	6'-3"	6'-2"	7'-2"
WATER DEPTH	DIM "E"	3'-2"	3'-11"	3'-10"	4'-0"	3'-10"	4'-9"	3'-9"	5'-0"	4'-9"	5'-9"

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

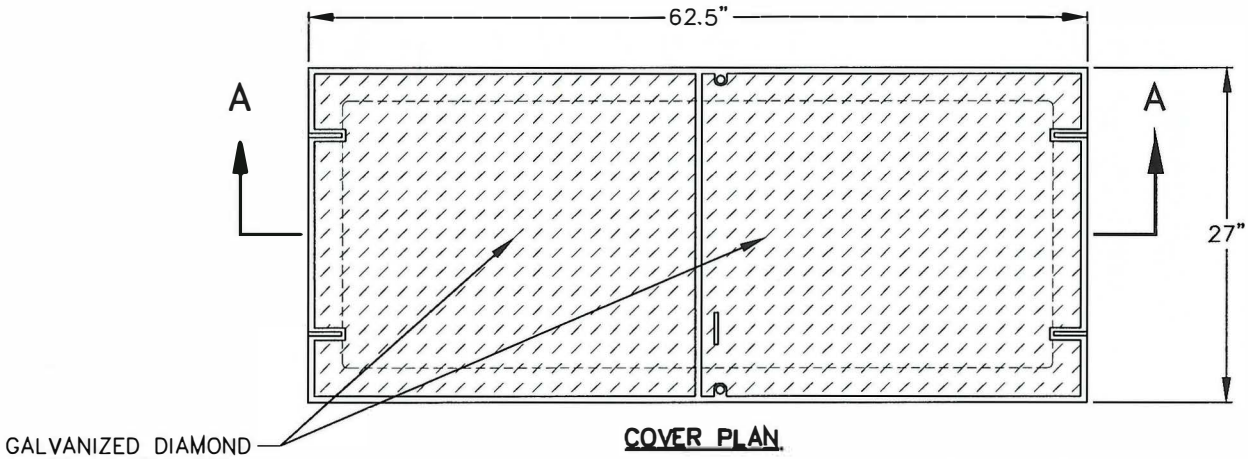
GREASE INTERCEPTOR

Standard Detail

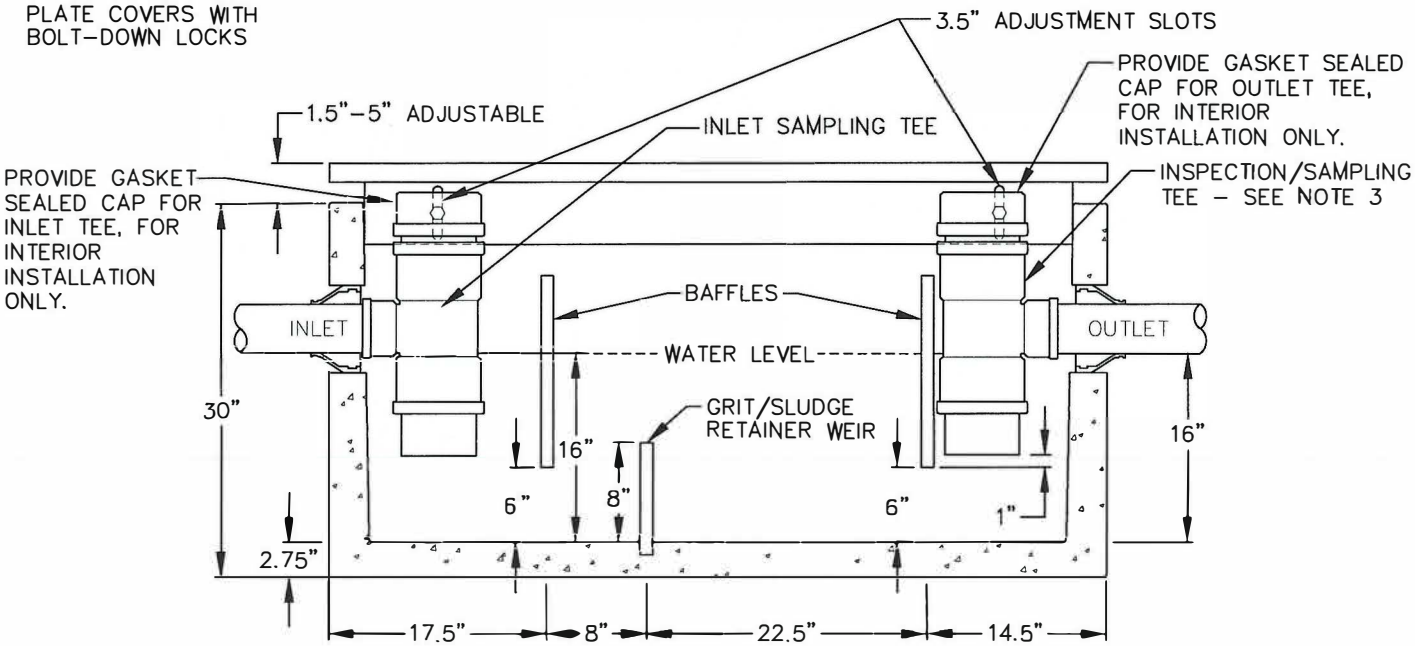
610

Revision Date

Dec, 2018



COVER PLAN



SECTION AA

NOTES:

1. USE OLDCASTLE PRECAST MODEL #25-SA OR EQUAL. PRECAST VAULT SHALL HAVE KNOCKOUTS AT ALL PIPE OPENINGS. IF KNOCKOUTS ARE NOT PRESENT, THEN PIPE OPENINGS SHALL BE CORE-DRILLED. PIPE OPENINGS SHALL BE 2" LARGER THAN THE PIPE DIAMETER.
2. LOCATE VAULT WITHIN 20' OF DRIVE FOR ACCESS BY MAINTENANCE VEHICLES.
3. P.V.C INSPECTION AND SAMPLING TEE SHALL BE THE SAME SIZE AS THE OUTLET PIPE FOR 6" OUTLET OR GREATER. USE 6" BY OUTLET-SIZE TEE WHERE OUTLET PIPE SIZE IS LESS THAN 6". INSTALL GASKETED CAP ON TOP OF THE SAMPLING TEE, FOR INTERIOR INSTALLATION ONLY.
4. FILL WITH CLEAN WATER PRIOR TO START-UP OF THE SYSTEM.
5. GRAY AND BLACK WATER SHALL BE CARRIED BY SEPARATE SIDE SEWER.
6. PIPE CONNECTION TO VAULT: KOR-N-SEAL OR EQUAL FOR CORE-DRILLED OPENINGS, OR SAND COLLAR FOR KNOCKOUT OPENING. SEAL ALL PIPE CONNECTIONS WITH NONSHRINK GROUT.
7. INTERIOR OIL/WATER SEPARATORS SHALL HAVE VENTING PER 2012 UNIFORM PLUMBING CODE REQUIREMENTS.
8. PRIOR TO STARTUP, OIL/WATER SEPARATOR SHALL PASS 1% PER DAY LEAK TEST WHERE ONLY A MAXIMUM OF 1% OF DEAD STORAGE REDUCTION IS ALLOWED WITHIN A 24 HOUR PERIOD PER THE 2012 UNIFORM PLUMBING CODE 712.2
9. ACCESS LID SHALL HAVE SLIP RESISTANT TREATMENT PER SECTION S4-19 OF THE ENGINEERING STANDARDS.

City of Bothell

City of Bothell: Public Works Department

SEWER UTILITIES

TITLE

100 GALLON BAFFLE TYPE OIL/WATER SEPARATOR

November 2018

NO SCALE

Detail 611

NOTES:

1. 24" PAMREX OR EAST JORDAN ERGO 001043L01 FRAME AND HINGED COVER (OR APPROVED EQUAL). WORDING ON COVER SHALL BE "SEWER" IN 2" RAISED LETTERS.

2. MANHOLE SHOWN IS 48" INSIDE DIAMETER, 5" WALL THICKNESS. MAX. PIPE SIZE FOR THE 48" MANHOLE IS 21".

3. ALL HOLES FOR INLET AND OUTLET PIPE SHALL BE BLOCKED OUT WITHIN SECTIONS.

4. ALL MANHOLE JOINTS SHALL USE A CONFINED RUBBER GASKET MEETING ASTM C-443 SPECIFICATIONS.

5. ALL PIPE THROUGH MANHOLE WALL SHALL HAVE A "KOR-N-SEAL" BOOT OR EQUAL.

6. MANHOLE STEPS SHALL BE POLYPROPLENE ENCAPSULATED EQUAL TO STD DETAIL 643 AND PLACEDABOVE THE BENCH.

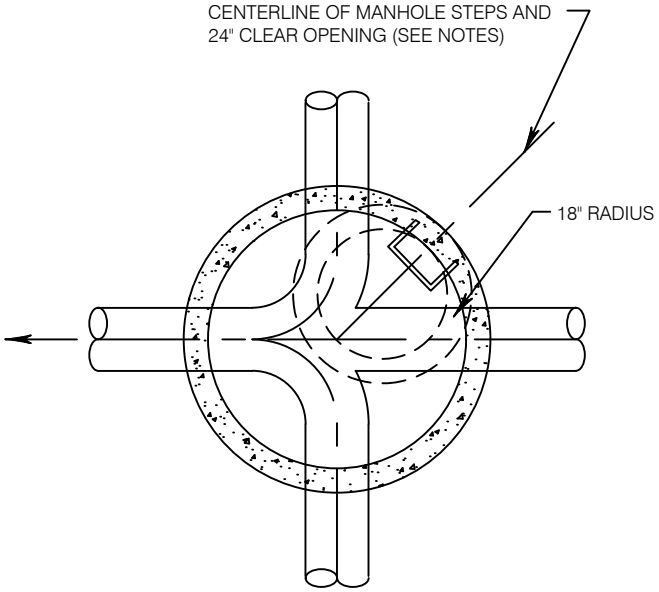
7. BEDDING AND FOUNDATION MATERIAL REQ'D AS SHOWN ON DETAIL AND AS NOTED IN THE SPECIFICATIONS. WORDING ON COVER MAY BE USED IF APPROVED BY ENGINEER.

8. LOCATION OF MANHOLE STEPS SHALL NOT BE OVER FLOW LINES AND SHALL BE APPROVED BY THE PUBLIC WORKS DIRECTOR.

9. ALL RINGS AND SECTIONS TO BE GROUTED INSIDE AND OUT.

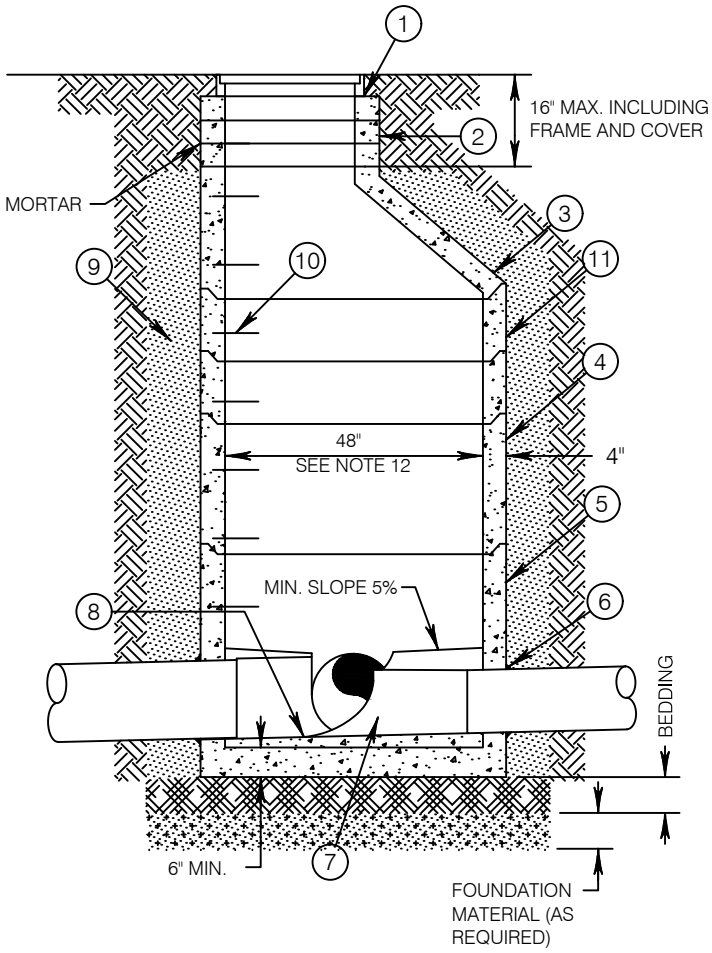
10. NO BRICKS OR WOOD ALLOWED TO RAISE MANHOLE.

11. LADDER MUST NOT BE LOCATED OVER CHANNEL.



DETAIL NOTES:

1. 24" PAMREX OR EAST JORDAN ERGO 001043L01 FRAME AND HINGED COVER (OR APPROVED EQUAL).
2. 4" MIN. TO 12" MAX. PRECAST CONCRETE RINGS. CAST WITH GROOVE SO THAT SAFETY STEP CAN BE FIELD INSTALLED.
3. PRECAST ECCENTRIC CONE 48" TO 24" FOR SHALLOW APPLICATIONS SEE DETAIL 625.
4. PRECAST SECTION 1', 2', 3' OR 4'.
5. PRECAST BASE 2', 3' OR 4'.
6. KOR-N-SEAL BOOT OR EQUAL.
7. FORM CHANNEL WITH CLASS "D" CONCRETE.
8. MIN. 0.10' TO MAX. 1.00' DROP BETWEEN INVERTS IN AND INVERTS OUT.
9. GRAVEL BORROW OR NATIVE MATERIAL SUBJECT TO ENGINEER APPROVAL.
10. POLYPROPLENE PLASTIC STEP SEE STD DETAIL 643.
11. 1' PRECAST SECTION REQUIRED BELOW CONE OR FLAT TOP.
12. MANHOLES BIGGER THAN 48" DIAMETER NEED SPECIAL APPROVAL



City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

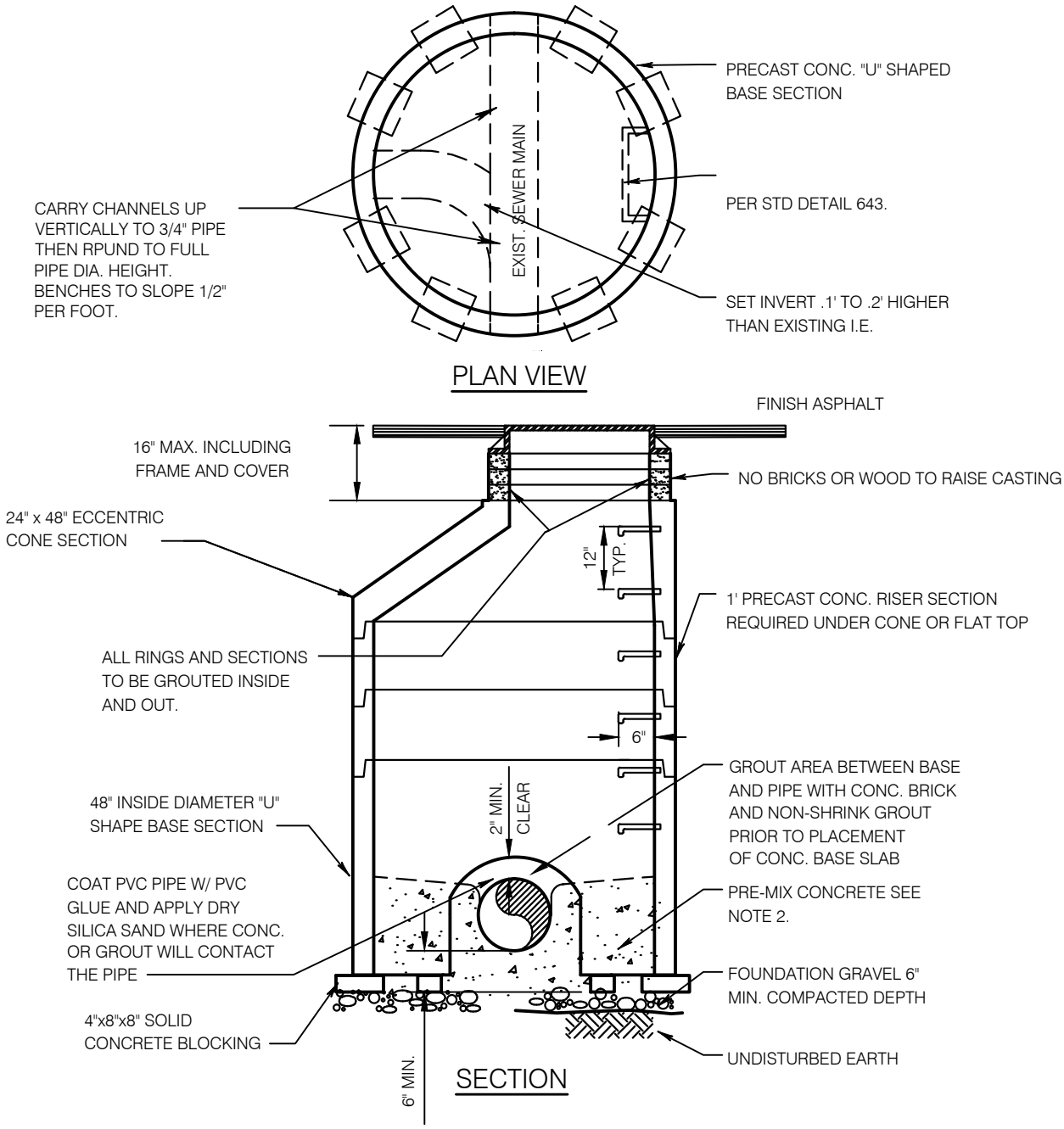
City Engineer

STANDARD
48" SANITARY
SEWER MANHOLE

Standard Detail

621

Revision Date
Dec, 2019



NOTES:

1. ALL APPLICABLE DETAILS AND NOTES FROM STD DETAIL 621 (STANDARD PRECAST MH) APPLY TO SADDLE MH.
2. 3000 PSI PRE-MIX CONCRETE WITH AIR ENTRAINMENT SHALL BE PLACED FROM 6" (MIN.) UNDER SEWER MAIN TO FINISHED BENCH HEIGHT. CHANNELING SHALL BE COMPLETED AT TIME OF PLACEMENT. THIN OVERLAYED OF GROUT IN CHANNELS NOT ALLOWED.
3. TOP OF PIPE NOT TO BE CUT OUT UNTIL AUTHORIZED BY THE CITY ENGINEER.

City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	SADDLE MANHOLE	Standard Detail **622** Revision Date Jun, 2015

1. THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING PRIOR TO COMMENCEMENT OF WORK.

2. WORK WITHIN CITY, COUNTY OR STATE R.O.W. REQUIRES A PERMIT. ONCE THE PERMIT HAS BEEN ISSUED THE CONTRACTOR SHALL GIVE THREE WORKING DAYS NOTICE PRIOR TO BEGINNING OF WORK.

3. THE CITY SHALL BE NOTIFIED SEVEN DAYS IN ADVANCE OF CONNECTION TO THE EXISTING SYSTEM.

4. ALL REQUESTS FOR INSPECTIONS AND FOR WITNESSING TESTS SHALL BE SCHEDULED WITH THE CITY INSPECTOR A MINIMUM OF 24 HOURS IN ADVANCE.

5. CONTRACTOR SHALL EXCAVATE AROUND EXISTING MH'S TO PREVENT UNEQUAL SOIL LOADING DURING CONSTRUCTION.

6. EXISTING SEWER FLOWS SHALL BE MAINTAINED AT ALL TIMES. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE TO PROVIDE EQUIPMENT AND LABOR NECESSARY.

7. CONNECTIONS TO EXISTING MH'S SHALL BE CORED AND CONNECTION MADE WITH A KOR-N-SEAL BOOT OR APPROVED EQUAL.

8. CONTRACTOR SHALL INSTALL AN APPROVED MECHANICAL "T" HANDLE PLUG TO SEPARATE THE NEW CONSTRUCTION FROM THE EXISTING SEWER. PLUG EACH PIPE IF SEPARATION PLUG CANNOT BE INSTALLED IMMEDIATELY. ISOLATION PLUG SHALL BE SECURED TO THE LADDER.

9. ON EXISTING MH CONNECTIONS, THE CONE AND LADDER SHALL BE ROTATED TO THE CENTER OF THE WIDEST BENCH IF THE EXISTING LADDER IS WITHIN SIX INCHES OF THE PROPOSED INLET (AS DIRECTED BY THE CITY INSPECTOR). EXISTING LADDER RUNGS SHALL BE REMOVED. NEW RUNGS SHALL BE INSTALLED PER THE STD DETAIL 643.

10. MANHOLES SET IN PAVED STREET OR OTHER PAVED AREAS SHALL BE SET TO FINISH GRADE OR THE PAVING AND WHEN REQUIRED. THE MANHOLE FRAME SHALL BE TILTED TO CONFORM TO THE GRADE OF THE PAVED SURFACE. REMOVE ASPHALT FROM COVER AFTER PAVING. REPLACED THE BITIMINOUS COATING ON THE COVER, IF REMOVED, PER MANUFACTURES RECOMMENDATIONS.

11. MANHOLES SHALL BE WATERTIGHT. IN AREAS OF HIGH GROUND WATER, RISER SEAMS, PICK HOLES AND ADJUSTMENT RINGS SHALL BE SEALED WITH "WRAPID SEAL" by CANUSA-CPS OR APPROVED EQUAL.

12. PVC SEWER MAINS SHALL NOT HAVE A JOINT OR FITTING WITHIN 10' OF THE MANHOLE.

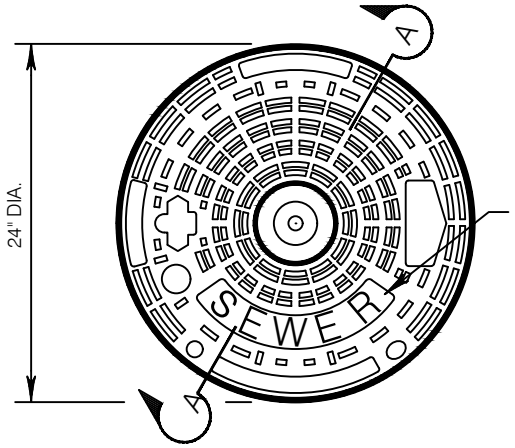
13. INSTALL TWO FOOT CONE ON MANHOLES EIGHT FEET AND UNDER IN HEIGHT. REDUCING SLAB ON SHALLOW MANHOLE TO BE REVIEWED BY CITY ENGINEER PRIOR TO ACCEPTANCE.

14. PIPE PENETRATIONS IN MH'S SHALL BE CORED. MIN. REQUIRED FALL FROM INLET TO OUTLET IS 0.1' ($\frac{5}{16}$"/FT.). PROVIDE ADDITIONAL FALL FOR STEEPER RUNS. MATCH CROWN ELEV. OF SIDE SEWERS TO THE HIGHEST MAINLINE PENETRATION (AS A MINIMUM).

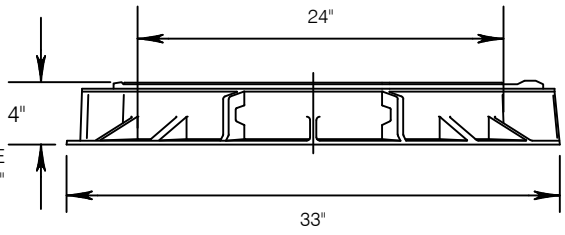
15. THE CITY EXPECTS A HIGH DEGREE OF QUALITY IN MH CHANNELING. CHANNEL WORK SHALL INITIALLY BE QUALIFIED IF DONE BY THE CONTRACTOR OR SUBCONTRACTOR THE CITY IS NOT FAMILIAR WITH.

16. IN SHALLOW MANHOLE APPLICATION IF REDUCING SLAB IS USED THEN THE TOP OPENING AND LADDER SHOULD BE CENTERED OVER THE INLET OR OUTLET PIPE.

City of Bothell™	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	MH INSTALLATION AND CONNECTION NOTES	Standard Detail **623** Revision Date Jun, 2015



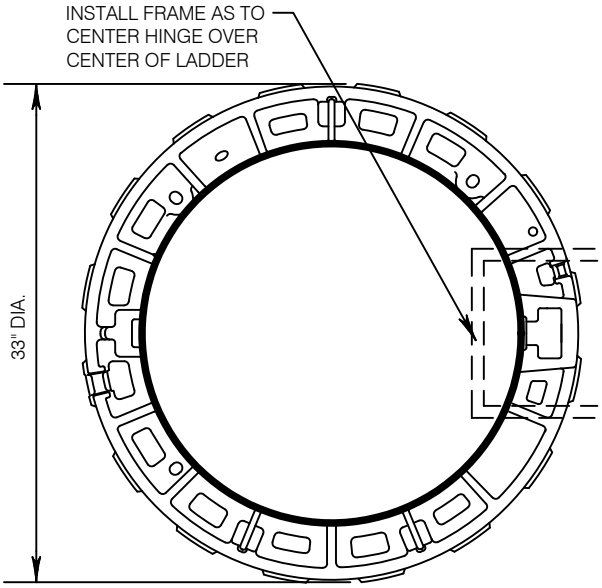
TOP OF COVER



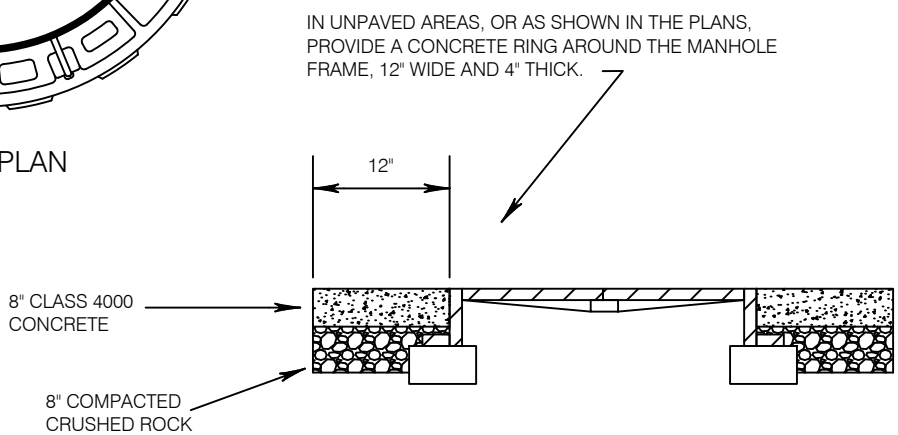
SECTION A-A

NOTES:

1. OLYMPIC FOUNDARY MH38 FRAME AND HINGED COVER.
2. COVER AND FRAME SHALL BE MANUFACTURED FROM DUCTILE IRON MEETS AASHTO H20 OR APPROVED EQUAL.
3. CITY OF BOTHELL LOGO NOT REQUIRED.
4. LID MUST BE COVERED WITH TAR PAPER BEFORE OVERLAY.
5. GASKET CAN BE REPLACED; USED ONLY ORIGINAL PAMREX GASKET, AVAILABLE THROUGH AUTHORIZED DEALERS.
6. VERIFY SLOTTED FRAMES ARE THOROUGHLY FILLED WITH MORTAR FOR EFFICIENT INTERACTION WITH IRON AND STRUCTURE.
7. VERIFY GASKET IS PROPERLY CLAMPED ON ITS FRAME GROOVE ALONG ITS ENTIRE LENGTH.
8. IF THE FRAME IS IN THE TRAVEL LANE, THE HINGE SIDE SHOULD OPEN UP TOWARDS TRAFFIC.



FRAME PLAN



City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

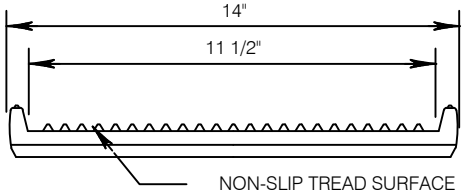
LOCKING SEWER MANHOLE COVER AND FRAME

Standard Detail

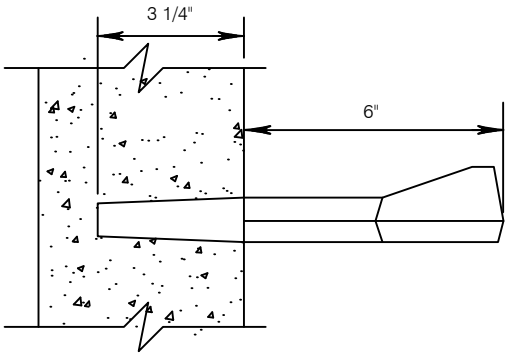
624

Revision Date

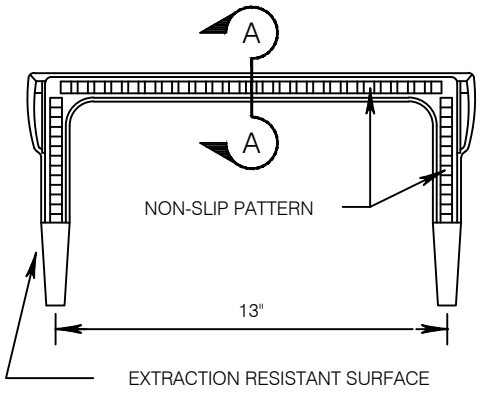
Dec, 2019



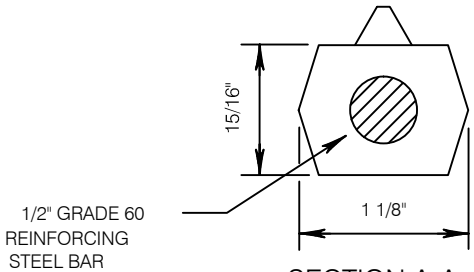
ELEVATION



SIDE ELEVATION



PLAN



SECTION A-A

NOTES:

1. STEPS SHALL BE STEEL REINFORCED COPOLYMER POLYPROPYLENE PLASTIC CONFORMING TO:
   A) ASTM D 478 AND AASHTO M-199, EXCEPT THAT THE MINIMUM HORIZONTAL PULLOUT LOAD SHALL BE 1500 LBS.
   B) ASTM A 615 GRADE 60 (DEFORMED REINFORCING STEEL BAR).
2. ONLY STEPS APPROVED BY THE ENGINEER SHALL BE USED.
3. ALL FABRICATION DIMENSIONS INDICATED ARE MINIMUM.
4. THE MINIMUM TOTAL CROSS-SECTIONAL AREA OF THE EXPOSED PORTION OF THE STEP, INCLUDING THE 1/2-INCH DEFORMED REINFORCING STEEL BAR, AND EXCLUDING THE NON-SLIP TREAD SURFACE, SHALL BE ONE SQUARE INCH.
5. THE ENTIRE POLYPROPYLENE PLASTIC MATERIAL SURROUNDING THE REINFORCING STEEL BAR SHALL BE CAST MONOLITHICALLY. MINIMUM COVER SHALL BE 3/16-INCH.
6. THE FOLLOWING DIMENSIONS SHALL APPLY UNLESS OTHERWISE NOTED ON THE DRAWINGS OR STANDARD PLANS FOR SPECIFIC STRUCTURES:
   D= 6" ± 1/4", E= 3 1/4" ± 1/4"
7. STEPS SHALL BE SPACED AT A MAXIMUM OF 12-INCHES.
8. STEPS SHALL BE INSTALLED IN ACCORDANCE WITH THE APPROVED MANUFACTURER'S RECOMMENDED PROCEDURE.

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

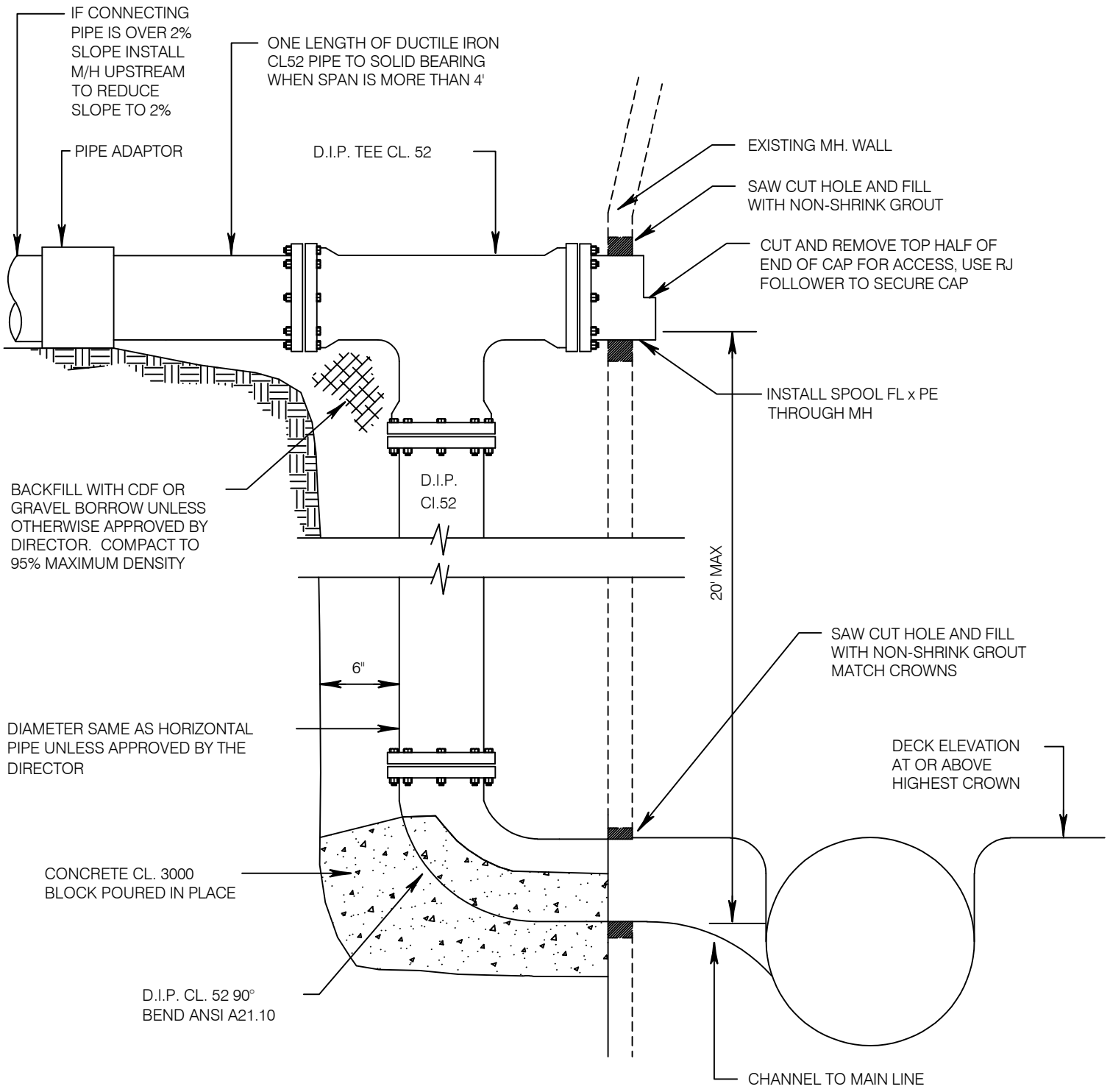
POLYPROPYLENE PLASTIC STEPS

Standard Detail

643

Revision Date

Feb, 2012



DUCTILE IRON
DROP CONNECTION

NOTE:

DROP MANHOLE WILL ONLY BE ALLOWED IF APPROVED BY DIRECTOR.

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

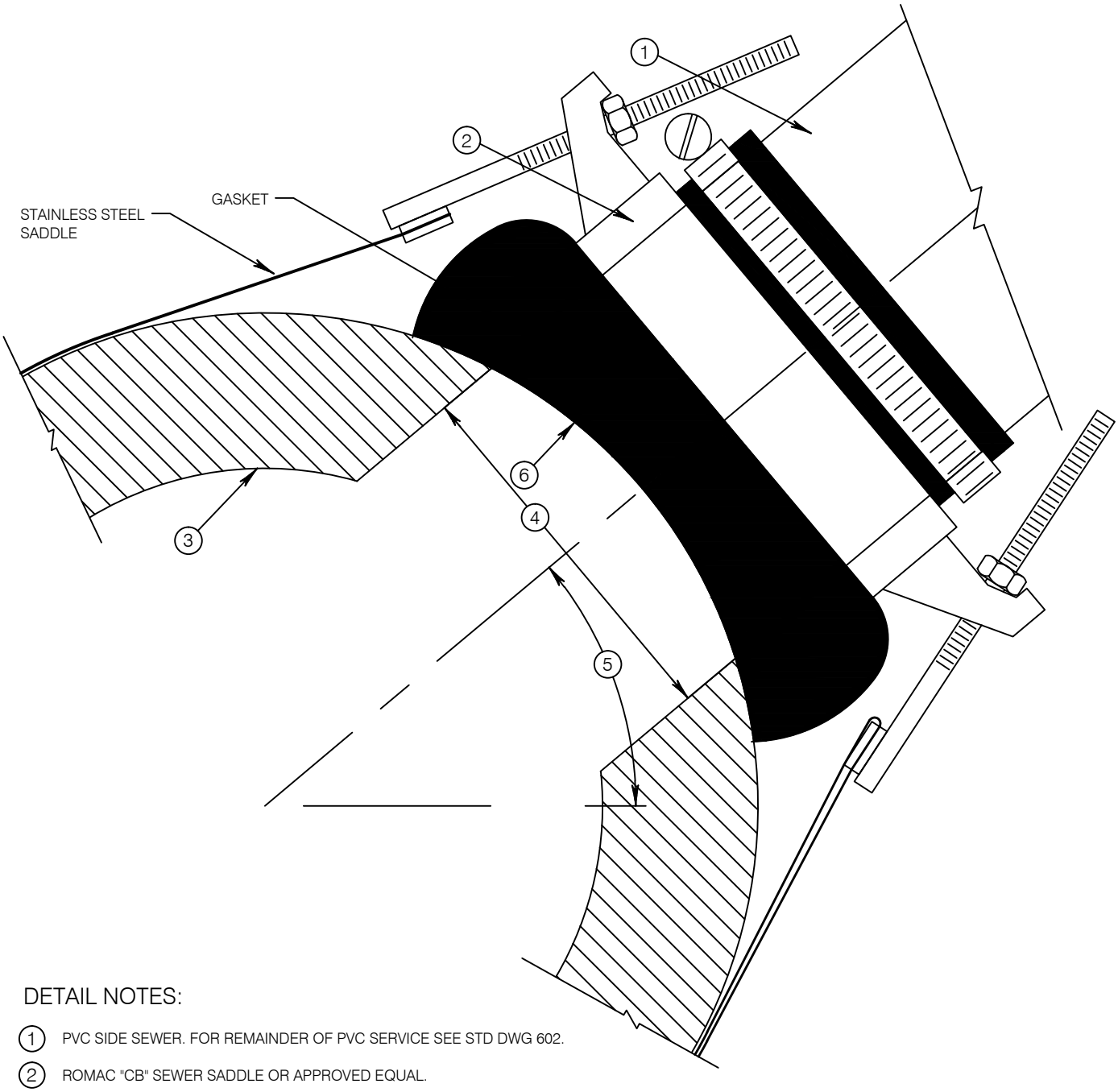
OUTSIDE DROP MANHOLE CONNECTION

Standard Detail

647

Revision Date

Nov, 2018



DETAIL NOTES:

1. PVC SIDE SEWER. FOR REMAINDER OF PVC SERVICE SEE STD DWG 602.
2. ROMAC "CB" SEWER SADDLE OR APPROVED EQUAL.
3. EXISTING SANITARY SEWER MAIN.
4. CORE DRILL EXISTING MAINLINE PIPE PER MANUFACTURE'S SPECIFICATIONS.
5. 35° MIN., 45° MAX.
6. SIDE SEWER PIPE SHALL NOT ENTER (PROTRUDE) INTO SEWER MAIN.

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

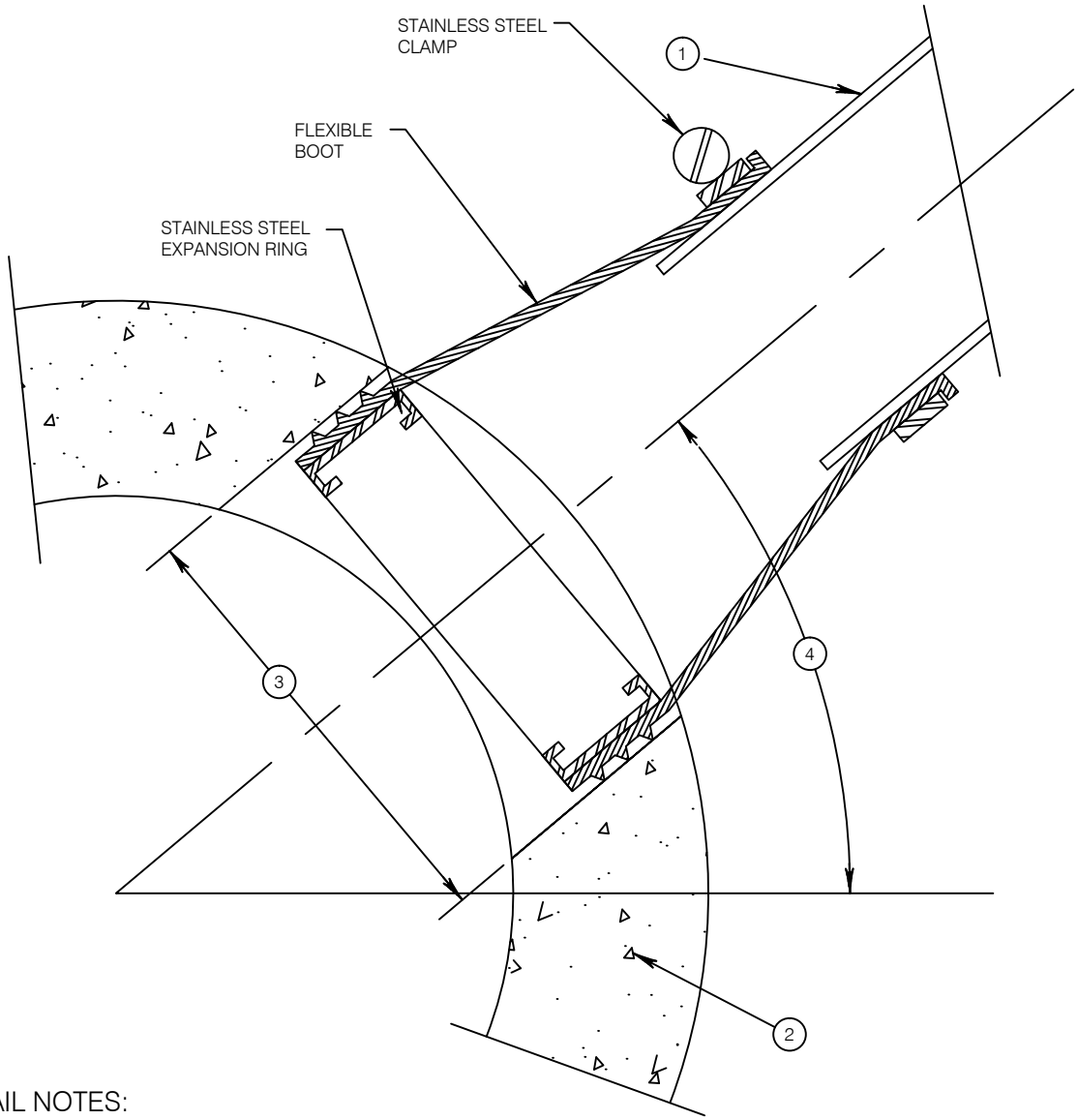
SEWER CONNECTION TO EXISTING SEWER MAINS

Standard Detail

666

Revision Date

Feb, 2012



DETAIL NOTES:

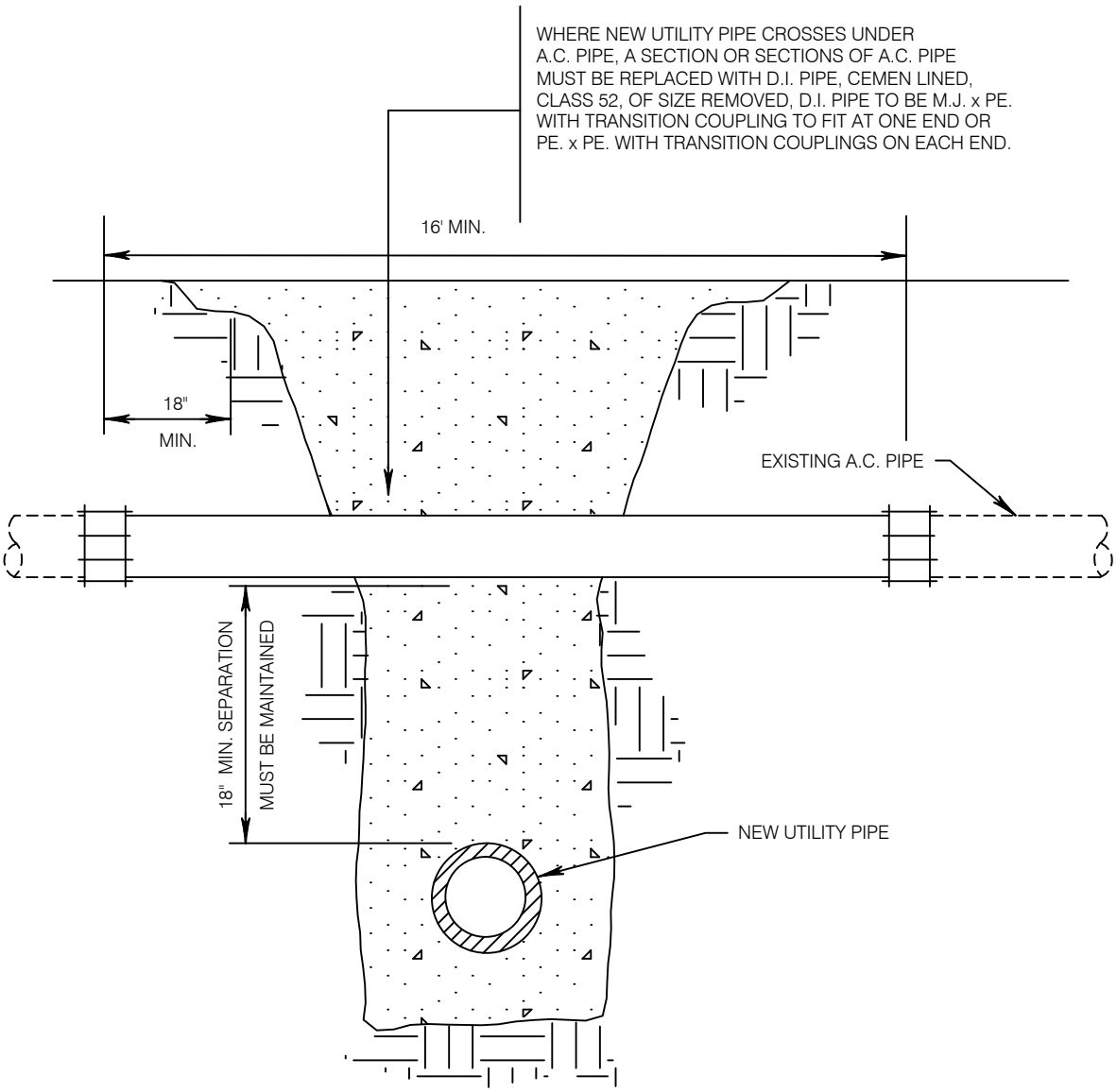
1. PVC SIDE SEWER. FOR REMAINDER OF PVC SERVICE SEE STD DWG 602.
2. EXISTING OR NEW CONCRETE SANITARY SEWER MAIN.
3. CORE DRILL EXISTING MAINLINE PIPE PER MANUFACTURER'S SPECIFICATIONS.
4. 35° MIN, 45° MAX.

NOTES:

1. USE OF THIS SEWER CONNECTION ALTERNATE MUST HAVE APPROVAL OF THE DIRECTOR ON A CASE BY CASE BASIS.

2. HATCHED AREA: INSERTA-TEE OR APPROVED EQUAL.

City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	ALTERNATE CONNECTION TO EXISTING/NEW SEWER MAINS	Standard Detail **667** Revision Date Feb, 2012

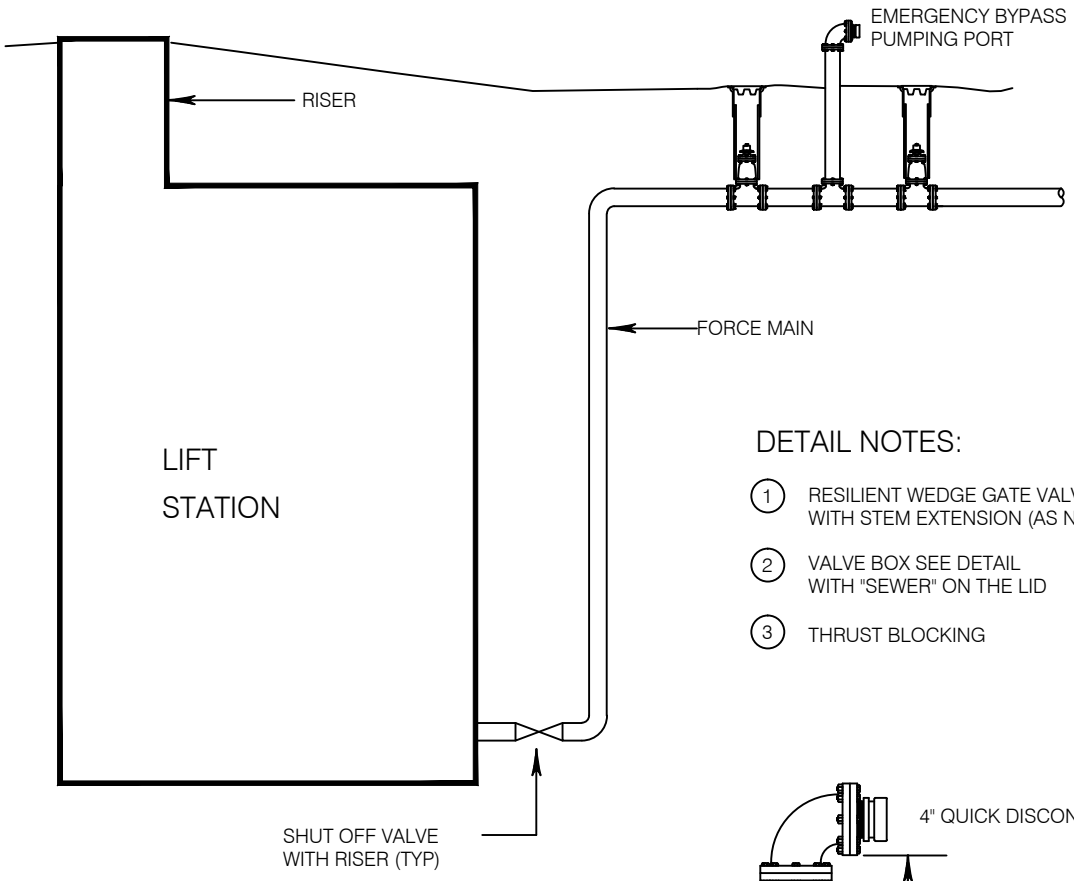


CROSSING A.C. PIPE

NOTE:

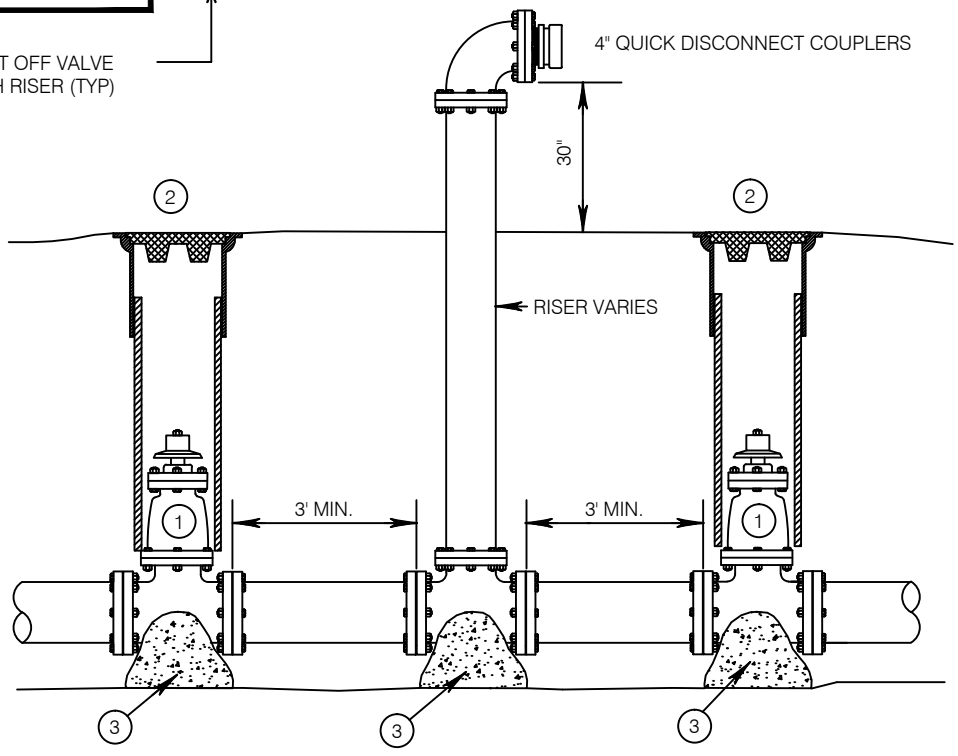
IF ASBESTOS CONCRETE (A.C.) PIPE IS TO BE SAWCUT OR IF THE A.C. PIPE IS TO REMOVED, ALL ENVIRONMENTAL PROTECTION AGENCY RULES, PUGET SOUND CLEAN AIR AGENCY REGULATIONS, AND LABOR AND INDUSTRY REQUIREMENTS MUST BE MET.

City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	CROSSING ASBESTOS CONCRETE PIPE	Standard Detail **672** Revision Date Feb, 2012



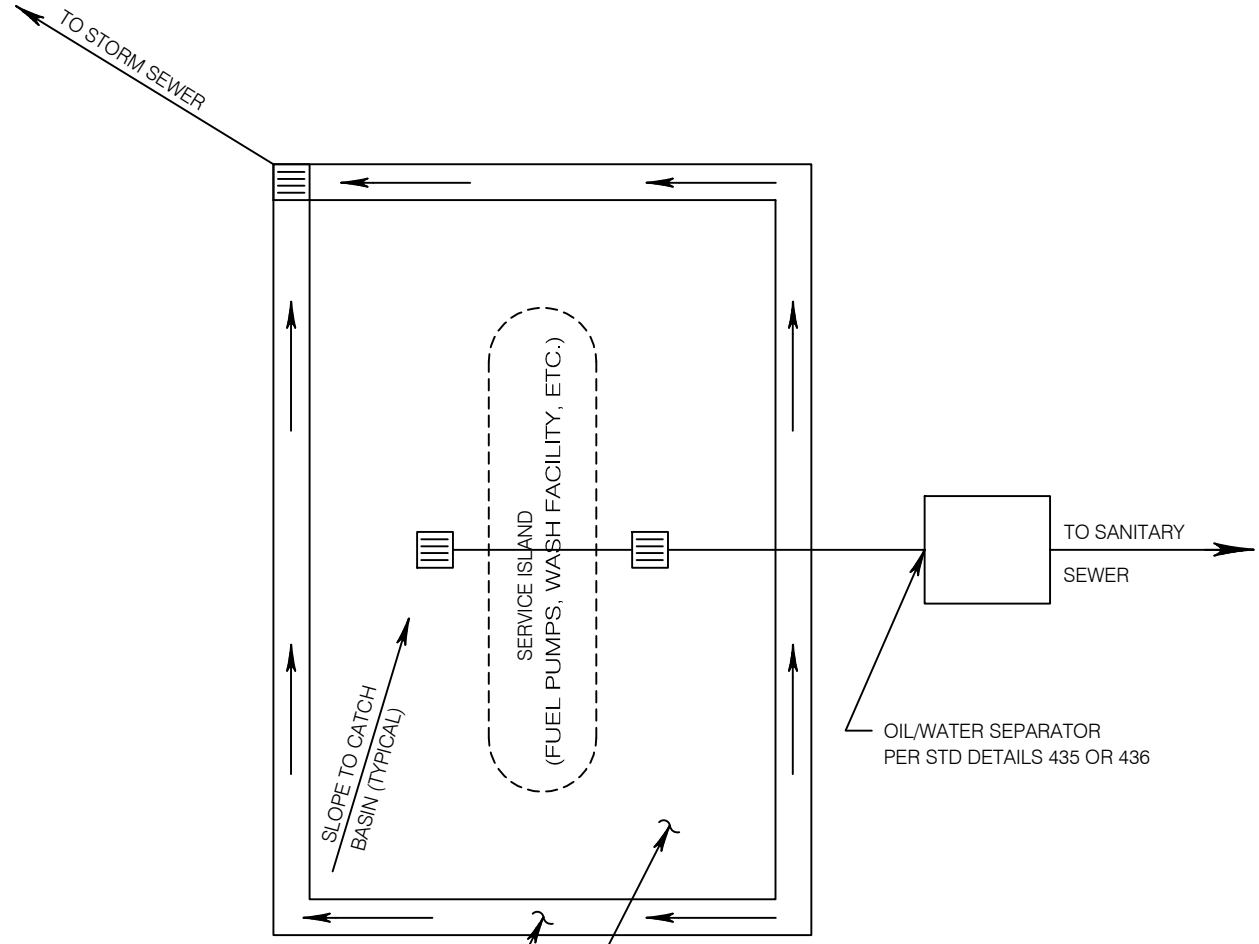
DETAIL NOTES:

1. RESILIENT WEDGE GATE VALVE WITH STEM EXTENSION (AS NEEDED)
2. VALVE BOX SEE DETAIL WITH "SEWER" ON THE LID
3. THRUST BLOCKING



ENLARGEMENT

City of Bothell	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	LIFT STATION EMERGENCY BYPASS PUMP PORT	Standard Detail **676** Revision Date Feb, 2012



PAVED GUTTER. SLOPE TO STORM SEWER INLET. GUTTER NOT REQUIRED WHERE SUROUNDING GRADE DRAINS AWAY FROM SERVICE AREA.

UNCOVERED PAVED VEHICLE SERVICE AREA. UNCOVERED AREA GRADED TO DRAIN TO SANITARY SEWER SHALL NOT EXCEED 200 SQ. FT. AREAS OVER 200 SQ. FT. REQUIRE ROOF, WITH ROOF DRAINING TO STORM SYSTEM.

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

UNCOVERED PAVED VEHICLE SERVICE AREA DRAINAGE

Standard Detail

690

Revision Date

Feb, 2012

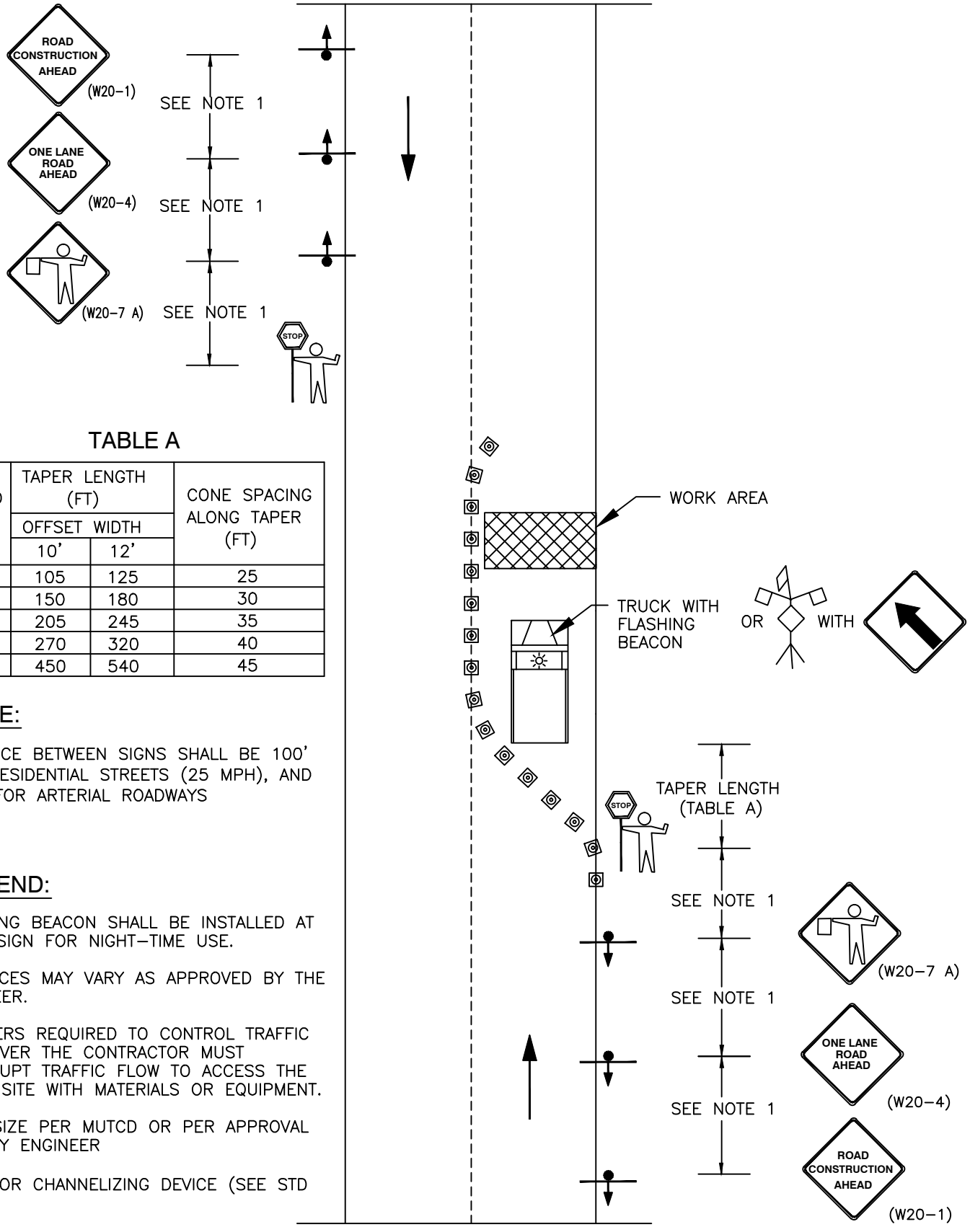


TABLE A

SPEED (MPH)	TAPER LENGTH (FT)		CONE SPACING ALONG TAPER (FT)
	OFFSET WIDTH		
	10'	12'	
25	105	125	25
30	150	180	30
35	205	245	35
40	270	320	40
45	450	540	45

NOTE:

1 DISTANCE BETWEEN SIGNS SHALL BE 100' FOR RESIDENTIAL STREETS (25 MPH), AND 200' FOR ARTERIAL ROADWAYS

LEGEND:

- FLASHING BEACON SHALL BE INSTALLED AT EACH SIGN FOR NIGHT–TIME USE.
- DISTANCES MAY VARY AS APPROVED BY THE ENGINEER.
- FLAGGERS REQUIRED TO CONTROL TRAFFIC WHENEVER THE CONTRACTOR MUST INTERRUPT TRAFFIC FLOW TO ACCESS THE WORK SITE WITH MATERIALS OR EQUIPMENT.
- SIGN SIZE PER MUTCD OR PER APPROVAL OF CITY ENGINEER

◎ CONE OR CHANNELIZING DEVICE (SEE STD 713)

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

TRAFFIC CONTROL PLAN 2 LANE ROADWAY WITH ONE LANE CLOSED

Standard Detail

701

Revision Date

Nov, 2013

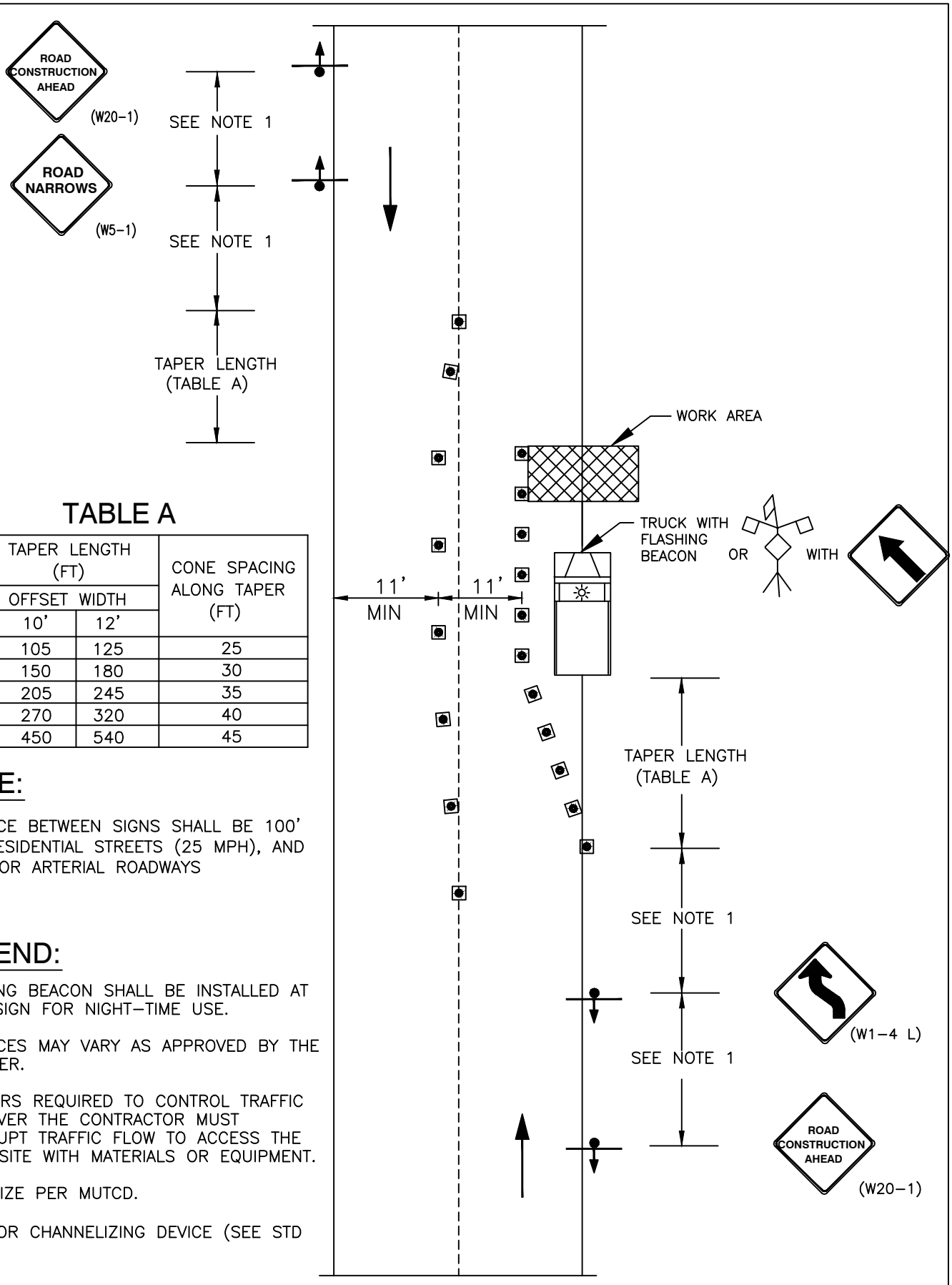


TABLE A

SPEET (MPH)	TAPER LENGTH (FT) OFFSET WIDTH		CONE SPACING ALONG TAPER (FT)
	10'	12'	
25	105	125	25
30	150	180	30
35	205	245	35
40	270	320	40
45	450	540	45

NOTE:

1 DISTANCE BETWEEN SIGNS SHALL BE 100' FOR RESIDENTIAL STREETS (25 MPH), AND 200' FOR ARTERIAL ROADWAYS

LEGEND:

- FLASHING BEACON SHALL BE INSTALLED AT EACH SIGN FOR NIGHT–TIME USE.
- DISTANCES MAY VARY AS APPROVED BY THE ENGINEER.
- FLAGGERS REQUIRED TO CONTROL TRAFFIC WHENEVER THE CONTRACTOR MUST INTERRUPT TRAFFIC FLOW TO ACCESS THE WORK SITE WITH MATERIALS OR EQUIPMENT.
- SIGN SIZE PER MUTCD.
- ◎ CONE OR CHANNELIZING DEVICE (SEE STD 713)

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

TRAFFIC CONTROL PLAN 2 LANE ROADWAY PARTIAL LANE CLOSURE

Standard Detail

702

Revision Date

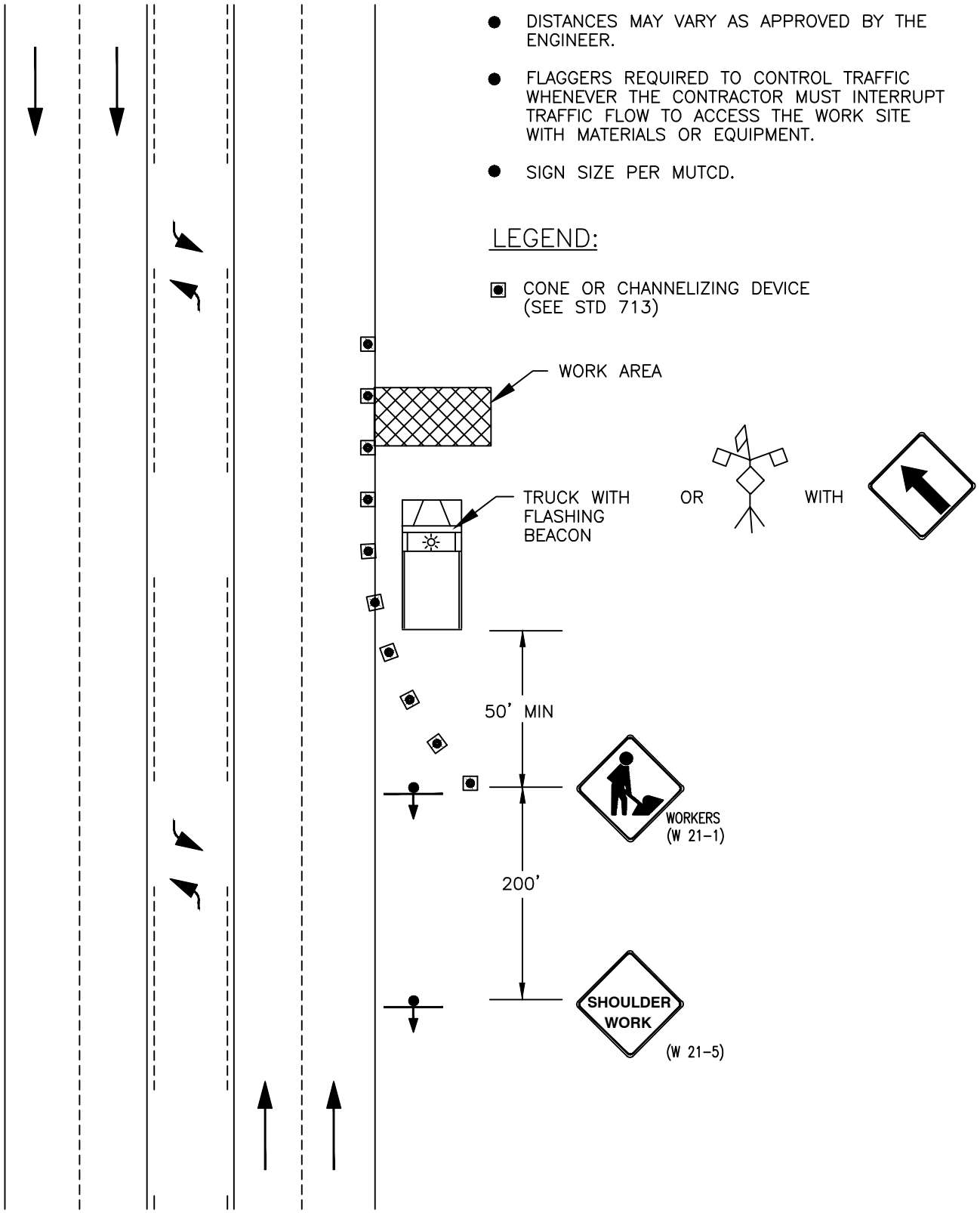
Nov, 2013

NOTE:

- FLASHING BEACON SHALL BE INSTALLED AT EACH SIGN FOR NIGHT–TIME USE.
- DISTANCES MAY VARY AS APPROVED BY THE ENGINEER.
- FLAGGERS REQUIRED TO CONTROL TRAFFIC WHENEVER THE CONTRACTOR MUST INTERRUPT TRAFFIC FLOW TO ACCESS THE WORK SITE WITH MATERIALS OR EQUIPMENT.
- SIGN SIZE PER MUTCD.

LEGEND:

▣ CONE OR CHANNELIZING DEVICE (SEE STD 713)



City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

TRAFFIC CONTROL PLAN SHOULDER WORK

Standard Detail

703

Revision Date

Nov, 2013

LEGEND:

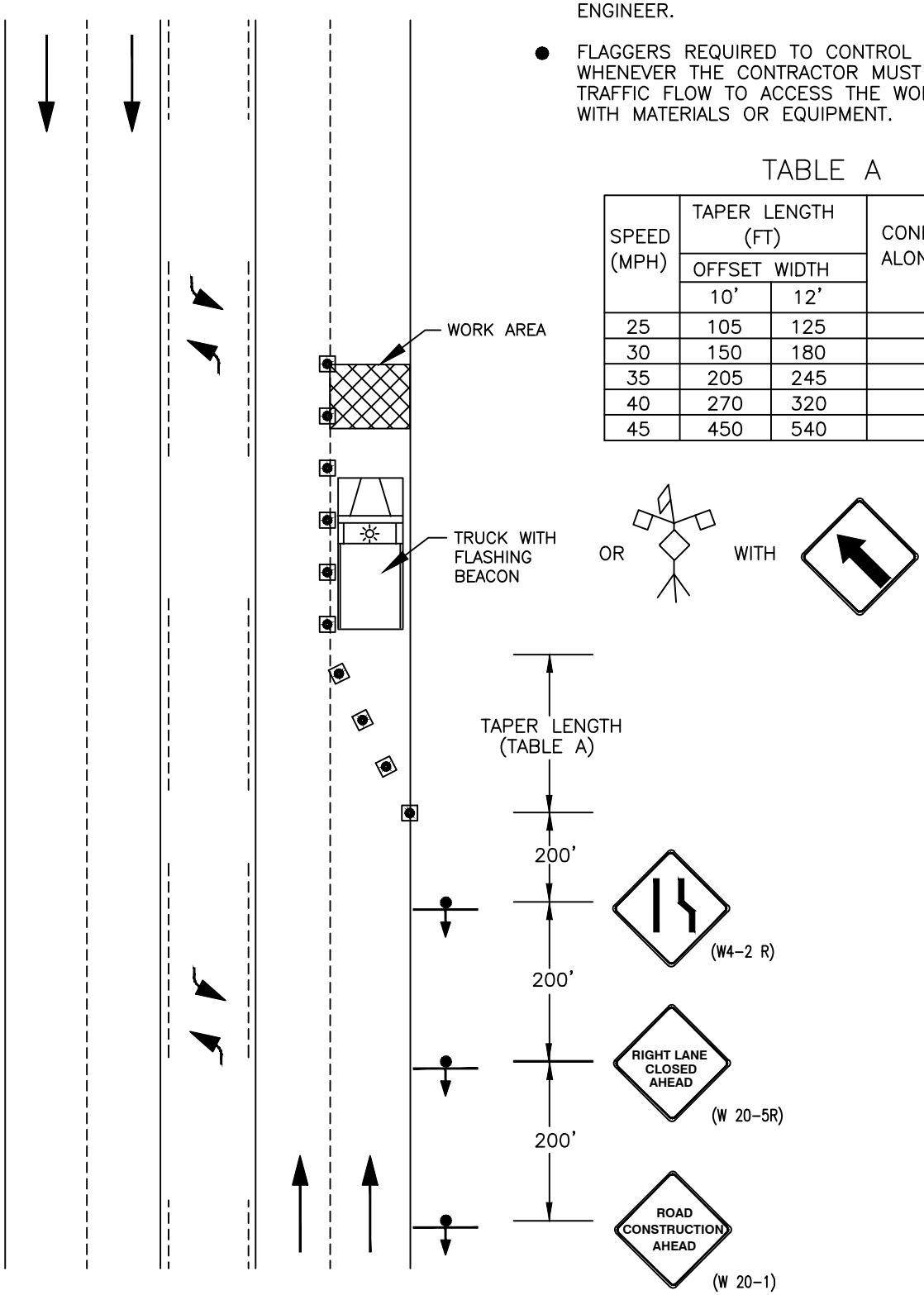
CONE OR CHANNELIZING DEVICE (SEE STD 713)

NOTE:

- FLASHING BEACON SHALL BE INSTALLED AT EACH SIGN FOR NIGHT–TIME USE.
- DISTANCES MAY VARY AS APPROVED BY THE ENGINEER.
- FLAGGERS REQUIRED TO CONTROL TRAFFIC WHENEVER THE CONTRACTOR MUST INTERRUPT TRAFFIC FLOW TO ACCESS THE WORK SITE WITH MATERIALS OR EQUIPMENT.

TABLE A

SPEED (MPH)	TAPER LENGTH (FT) OFFSET WIDTH 10'	TAPER LENGTH (FT) OFFSET WIDTH 12'	CONE SPACING ALONG TAPER (FT)
25	105	125	25
30	150	180	30
35	205	245	35
40	270	320	40
45	450	540	45



City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

TRAFFIC CONTROL PLAN - 5 LANE RIGHT LANE CLOSED

Standard Detail

704

Revision Date

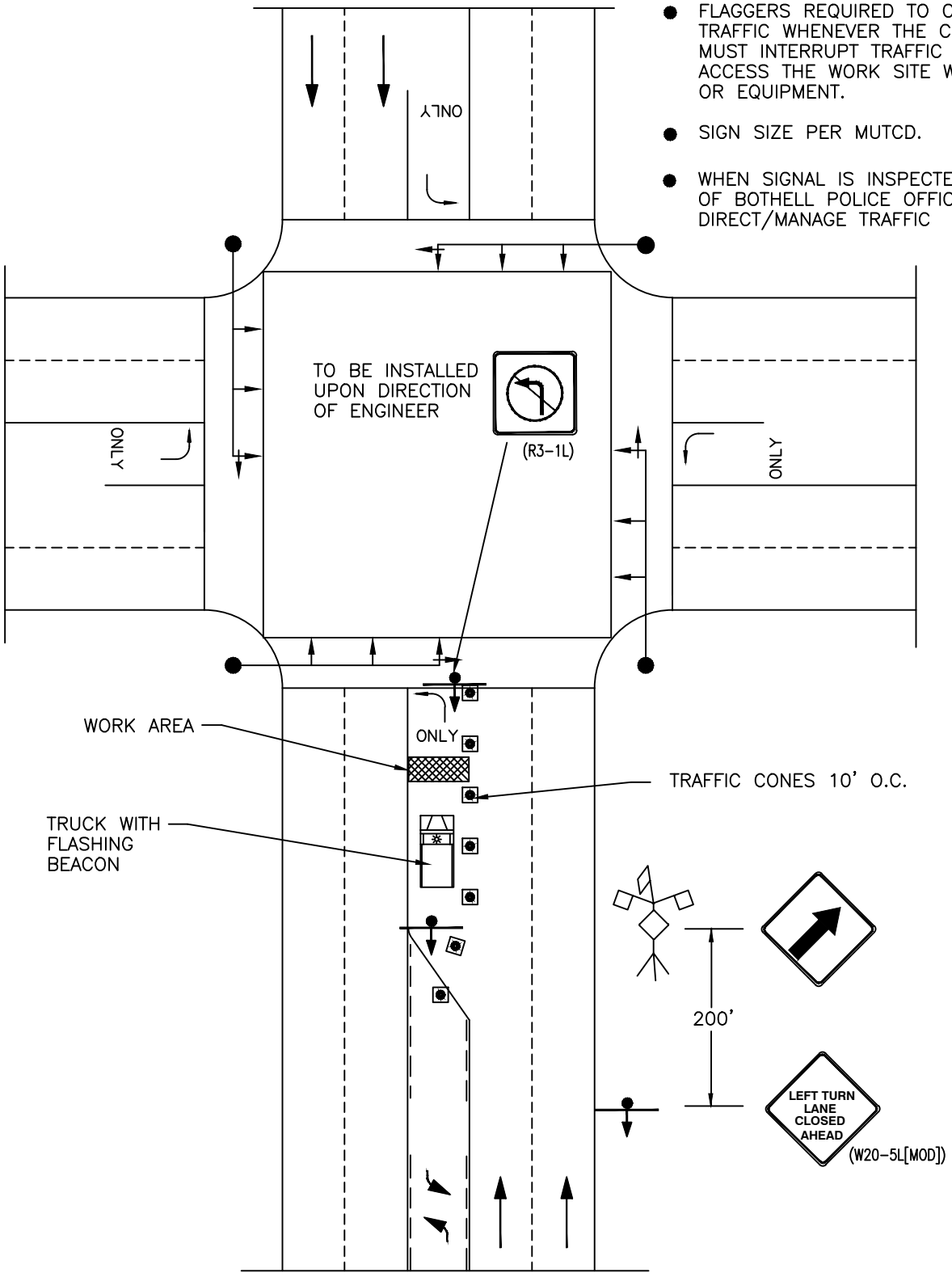
Nov, 2013

LEGEND:

▣ CONE OR CHANNELIZING DEVICE (SEE STD 713)

NOTE:

- FLASHING BEACON SHALL BE INSTALLED AT EACH SIGN FOR NIGHT–TIME USE.
- DISTANCES MAY VARY AS APPROVED BY THE ENGINEER.
- FLAGGERS REQUIRED TO CONTROL TRAFFIC WHENEVER THE CONTRACTOR MUST INTERRUPT TRAFFIC FLOW TO ACCESS THE WORK SITE WITH MATERIALS OR EQUIPMENT.
- SIGN SIZE PER MUTCD.
- WHEN SIGNAL IS INSPECTED, A CITY OF BOTHELL POLICE OFFICER SHALL DIRECT/MANAGE TRAFFIC



City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

TRAFFIC CONTROL PLAN - 5 LANE - LEFT TURN LANE CLOSED

Standard Detail

705

Revision Date

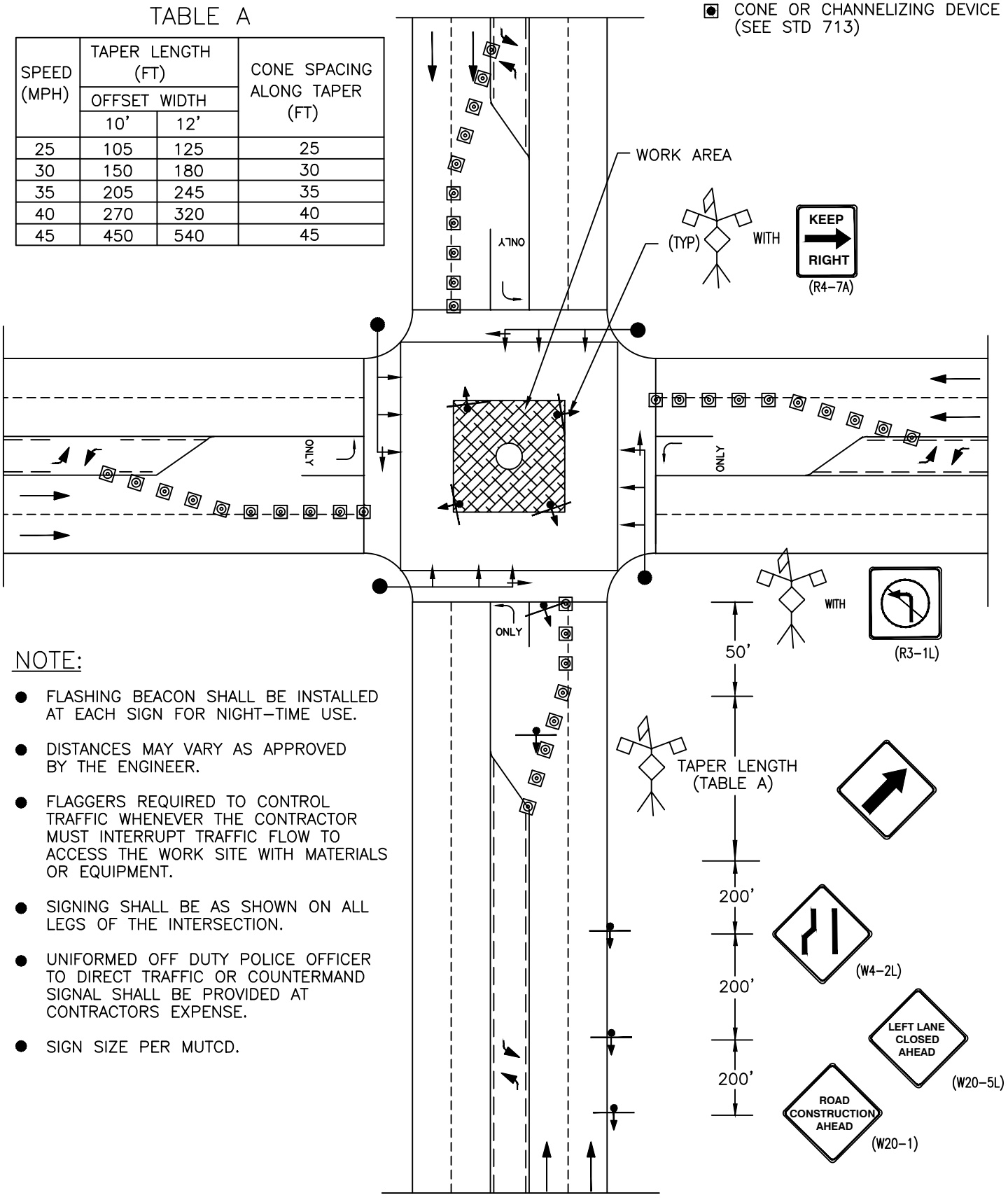
Nov, 2013

LEGEND:

CONE OR CHANNELIZING DEVICE (SEE STD 713)

TABLE A

SPEED (MPH)	TAPER LENGTH (FT)		CONE SPACING ALONG TAPER (FT)
	OFFSET WIDTH		
	10'	12'	
25	105	125	25
30	150	180	30
35	205	245	35
40	270	320	40
45	450	540	45



NOTE:

- FLASHING BEACON SHALL BE INSTALLED AT EACH SIGN FOR NIGHT–TIME USE.
- DISTANCES MAY VARY AS APPROVED BY THE ENGINEER.
- FLAGGERS REQUIRED TO CONTROL TRAFFIC WHENEVER THE CONTRACTOR MUST INTERRUPT TRAFFIC FLOW TO ACCESS THE WORK SITE WITH MATERIALS OR EQUIPMENT.
- SIGNING SHALL BE AS SHOWN ON ALL LEGS OF THE INTERSECTION.
- UNIFORMED OFF DUTY POLICE OFFICER TO DIRECT TRAFFIC OR COUNTERMAND SIGNAL SHALL BE PROVIDED AT CONTRACTORS EXPENSE.
- SIGN SIZE PER MUTCD.

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

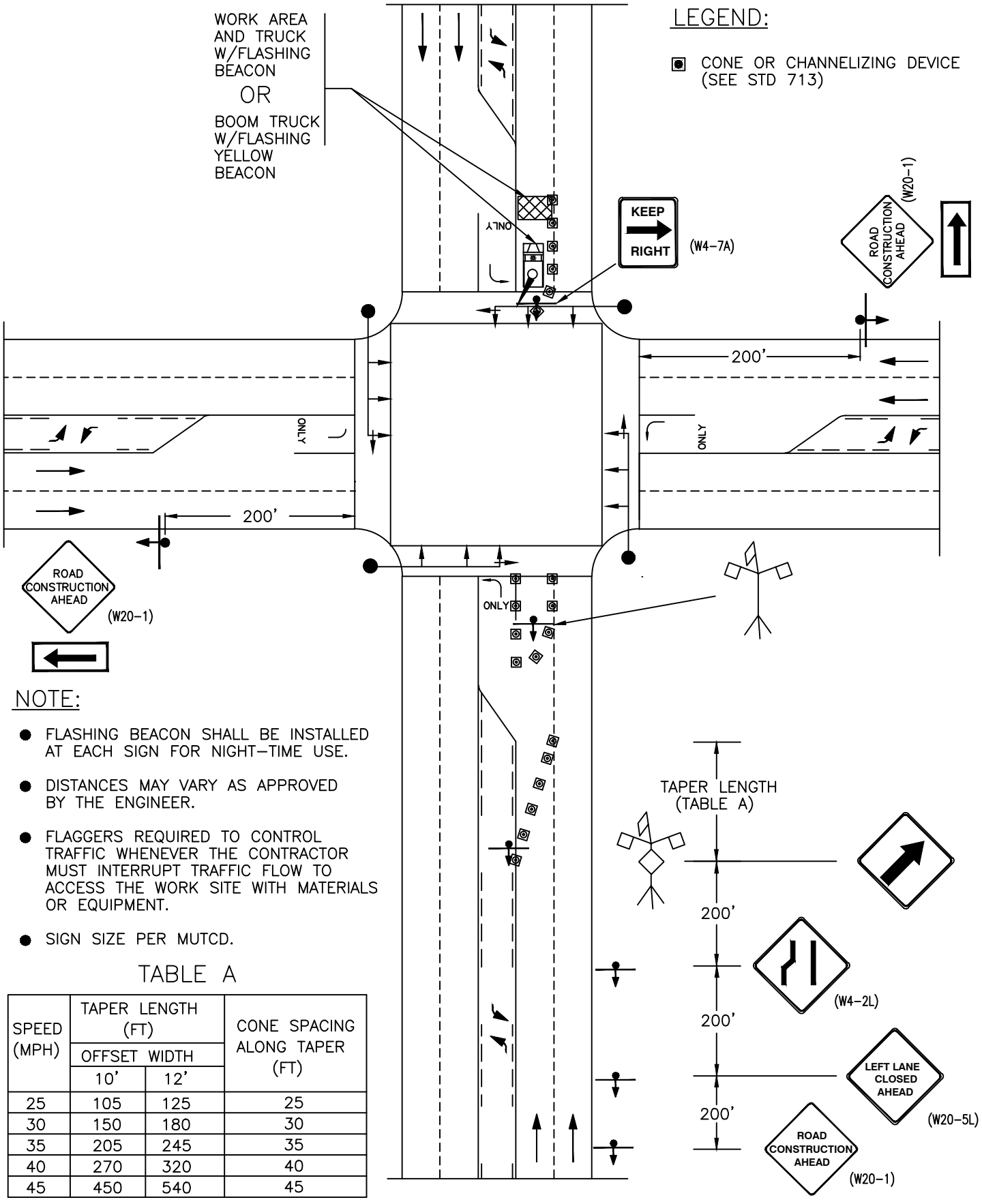
TRAFFIC CONTROL PLAN - CENTER OF INTERSECTION WORK

Standard Detail

706

Revision Date

Nov, 2013



NOTE:

- FLASHING BEACON SHALL BE INSTALLED AT EACH SIGN FOR NIGHT–TIME USE.
- DISTANCES MAY VARY AS APPROVED BY THE ENGINEER.
- FLAGGERS REQUIRED TO CONTROL TRAFFIC WHENEVER THE CONTRACTOR MUST INTERRUPT TRAFFIC FLOW TO ACCESS THE WORK SITE WITH MATERIALS OR EQUIPMENT.
- SIGN SIZE PER MUTCD.

TABLE A

SPEED (MPH)	TAPER LENGTH (FT)		CONE SPACING ALONG TAPER (FT)
	OFFSET WIDTH		
	10'	12'	
25	105	125	25
30	150	180	30
35	205	245	35
40	270	320	40
45	450	540	45

City of Bothell

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

TRAFFIC CONTROL PLAN - 5 LANE ROADWAY LEFT LANE CLOSED

Standard Detail

707

Revision Date

Nov, 2013

NOTE:

- FLASHING BEACON SHALL BE INSTALLED AT EACH SIGN FOR NIGHT–TIME USE.
- DISTANCES MAY VARY AS APPROVED BY THE ENGINEER.
- FLAGGERS REQUIRED TO CONTROL TRAFFIC WHENEVER THE CONTRACTOR MUST INTERRUPT TRAFFIC FLOW TO ACCESS THE WORK SITE WITH MATERIALS OR EQUIPMENT.
- SIGN SIZE PER MUTCD.

LEGEND:

- CONE OR CHANNELIZING DEVICE (SEE STD 713)

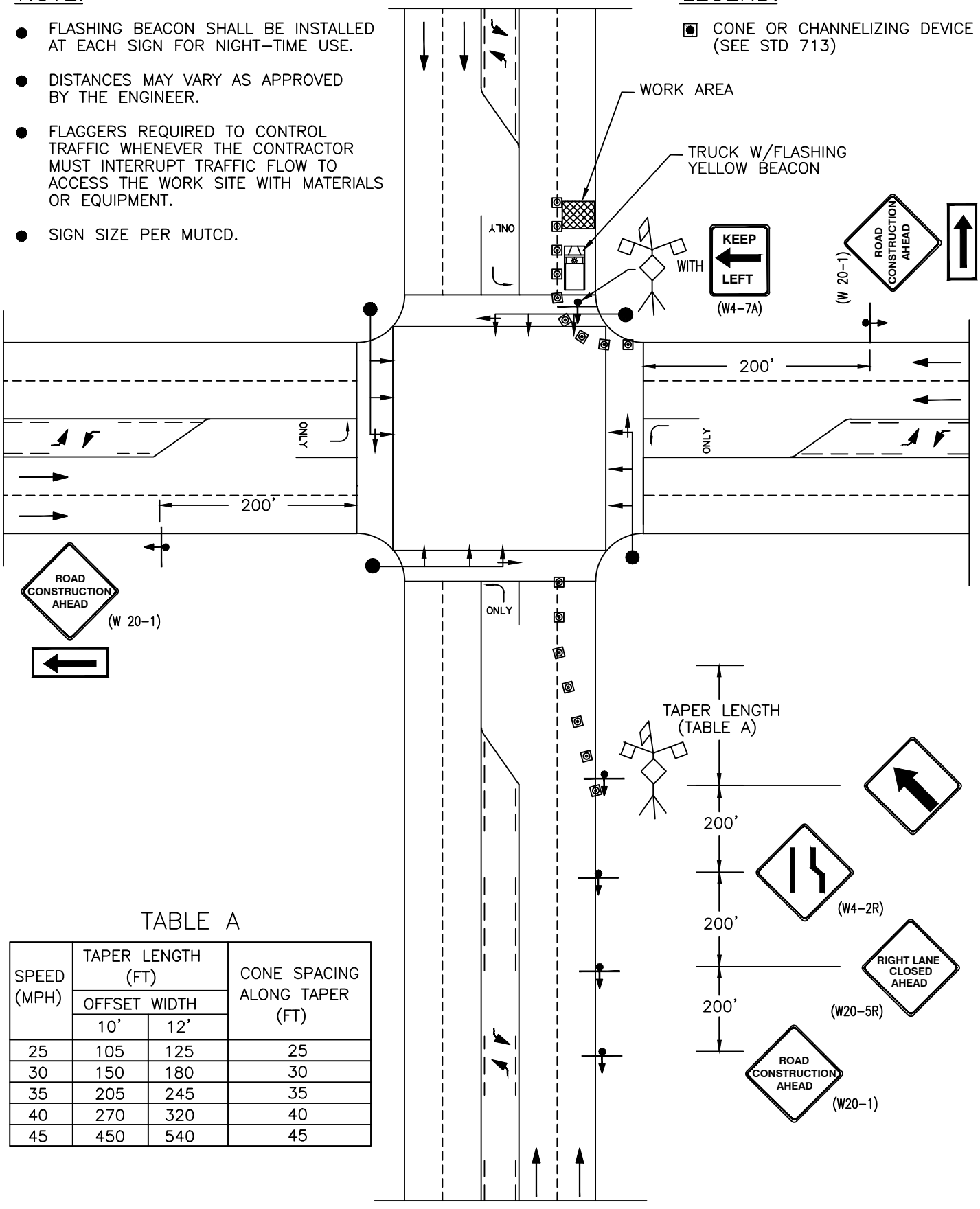


TABLE A

SPEED (MPH)	TAPER LENGTH (FT)		CONE SPACING ALONG TAPER (FT)
	OFFSET WIDTH		
	10'	12'	
25	105	125	25
30	150	180	30
35	205	245	35
40	270	320	40
45	450	540	45

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

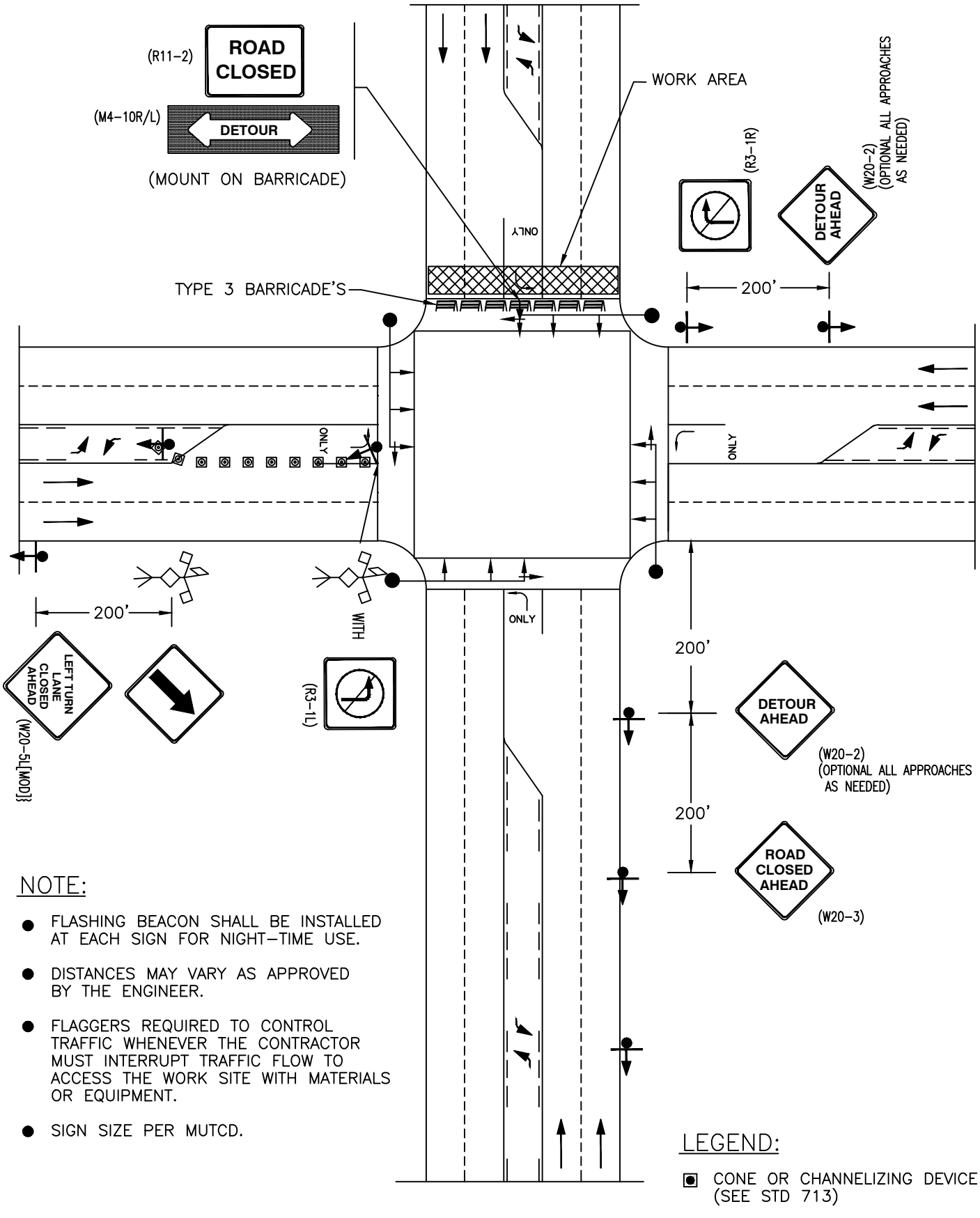
TRAFFIC CONTROL PLAN - 5 LANE AT INTERSECTION RIGHT LANE CLOSED

Standard Detail

708

Revision Date

Nov, 2013



NOTE:

- FLASHING BEACON SHALL BE INSTALLED AT EACH SIGN FOR NIGHT-TIME USE.
- DISTANCES MAY VARY AS APPROVED BY THE ENGINEER.
- FLAGGERS REQUIRED TO CONTROL TRAFFIC WHENEVER THE CONTRACTOR MUST INTERRUPT TRAFFIC FLOW TO ACCESS THE WORK SITE WITH MATERIALS OR EQUIPMENT.
- SIGN SIZE PER MUTCD.

LEGEND:

◙ CONE OR CHANNELIZING DEVICE (SEE STD 713)

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

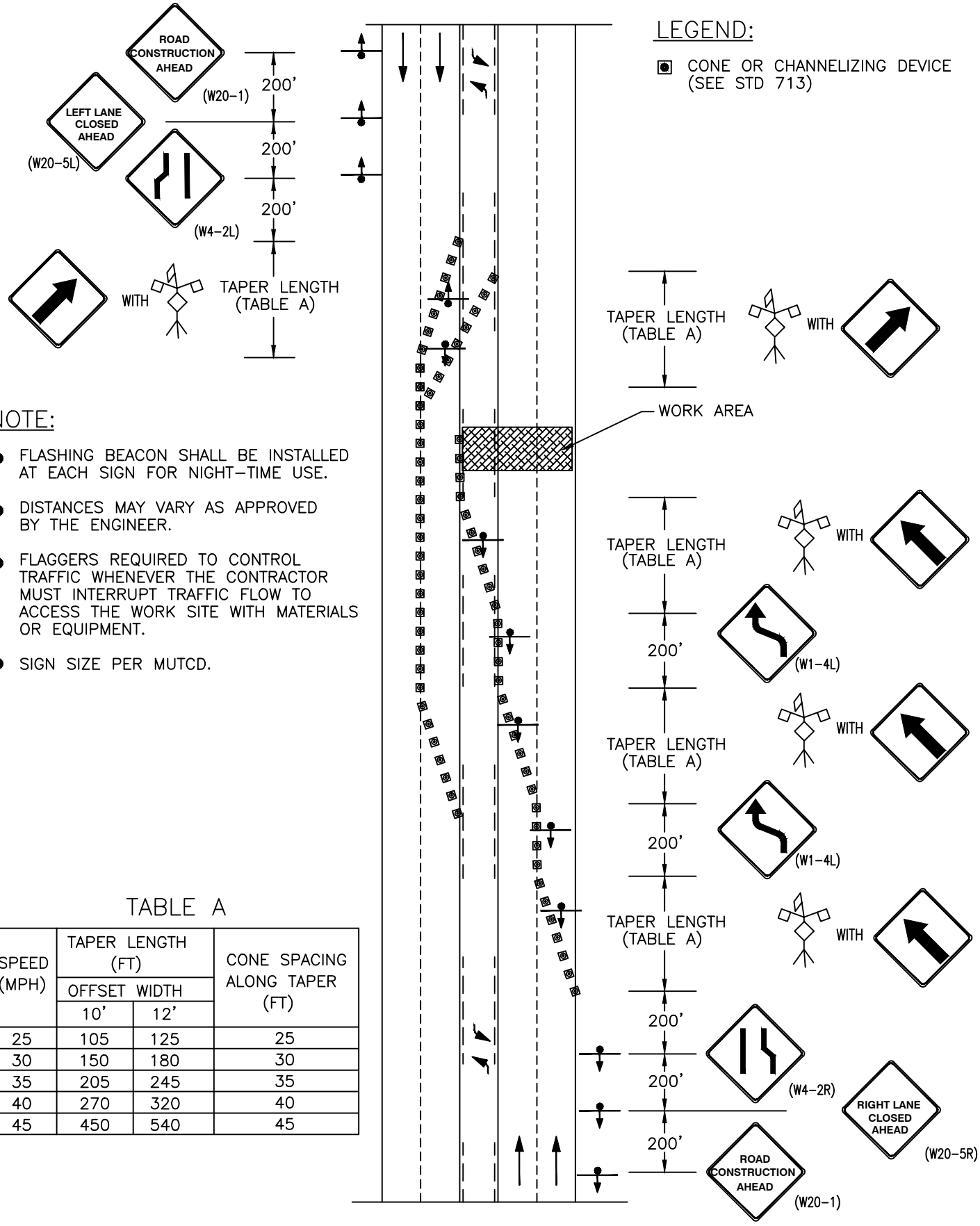
TRAFFIC CONTROL PLAN FULL STREET CLOSURE

Standard Detail

709

Revision Date

Nov, 2013



NOTE:

- FLASHING BEACON SHALL BE INSTALLED AT EACH SIGN FOR NIGHT–TIME USE.
- DISTANCES MAY VARY AS APPROVED BY THE ENGINEER.
- FLAGGERS REQUIRED TO CONTROL TRAFFIC WHENEVER THE CONTRACTOR MUST INTERRUPT TRAFFIC FLOW TO ACCESS THE WORK SITE WITH MATERIALS OR EQUIPMENT.
- SIGN SIZE PER MUTCD.

TABLE A

SPEED (MPH)	TAPER LENGTH (FT)		CONE SPACING ALONG TAPER (FT)
	OFFSET WIDTH		
	10'	12'	
25	105	125	25
30	150	180	30
35	205	245	35
40	270	320	40
45	450	540	45

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

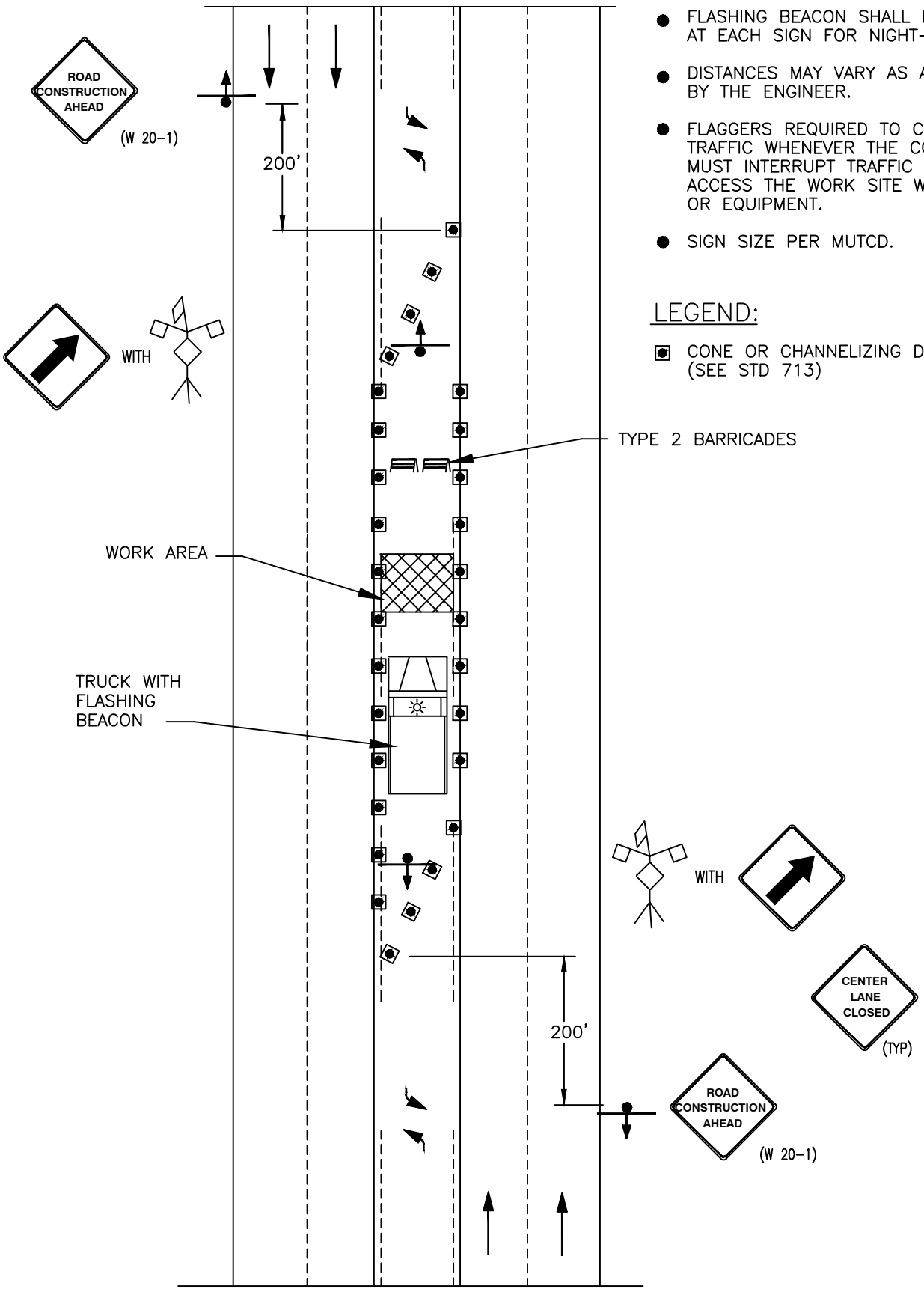
TRAFFIC CONTROL PLAN - 5 LANE - MULTILANE CLOSURE

Standard Detail

710

Revision Date

Nov, 2013



NOTE:

- FLASHING BEACON SHALL BE INSTALLED AT EACH SIGN FOR NIGHT–TIME USE.
- DISTANCES MAY VARY AS APPROVED BY THE ENGINEER.
- FLAGGERS REQUIRED TO CONTROL TRAFFIC WHENEVER THE CONTRACTOR MUST INTERRUPT TRAFFIC FLOW TO ACCESS THE WORK SITE WITH MATERIALS OR EQUIPMENT.
- SIGN SIZE PER MUTCD.

LEGEND:

- CONE OR CHANNELIZING DEVICE (SEE STD 713)

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

TRAFFIC CONTROL PLAN - TWO WAY LEFT TURN LANE CLOSURE

Standard Detail

711

Revision Date

Nov, 2013

NOTE:

- FLASHING BEACON SHALL BE INSTALLED AT EACH SIGN FOR NIGHT–TIME USE.
- DISTANCES MAY VARY AS APPROVED BY THE ENGINEER.
- FLAGGERS REQUIRED TO CONTROL TRAFFIC WHENEVER THE CONTRACTOR MUST INTERRUPT TRAFFIC FLOW TO ACCESS THE WORK SITE WITH MATERIALS OR EQUIPMENT.
- SIGN SIZE PER MUTCD.

LEGEND:

CONE OR CHANNELIZING DEVICE (SEE STD 713)

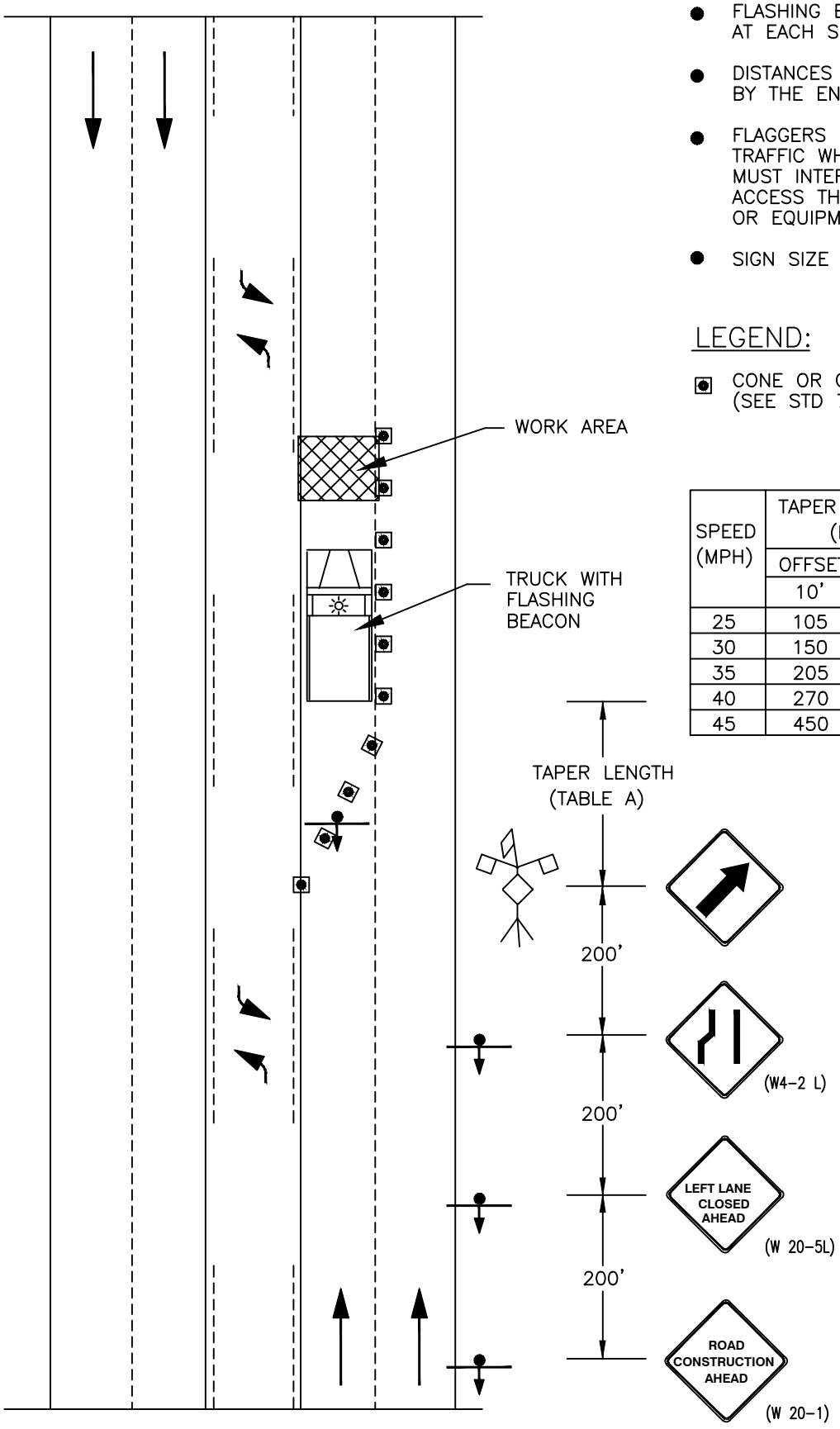


TABLE A

SPEED (MPH)	TAPER LENGTH (FT)		CONE SPACING ALONG TAPER (FT)
	OFFSET WIDTH		
	10'	12'	
25	105	125	25
30	150	180	30
35	205	245	35
40	270	320	40
45	450	540	45

City of Bothell™

City of Bothell

PUBLIC WORKS DEPARTMENT

Approved By:

City Engineer

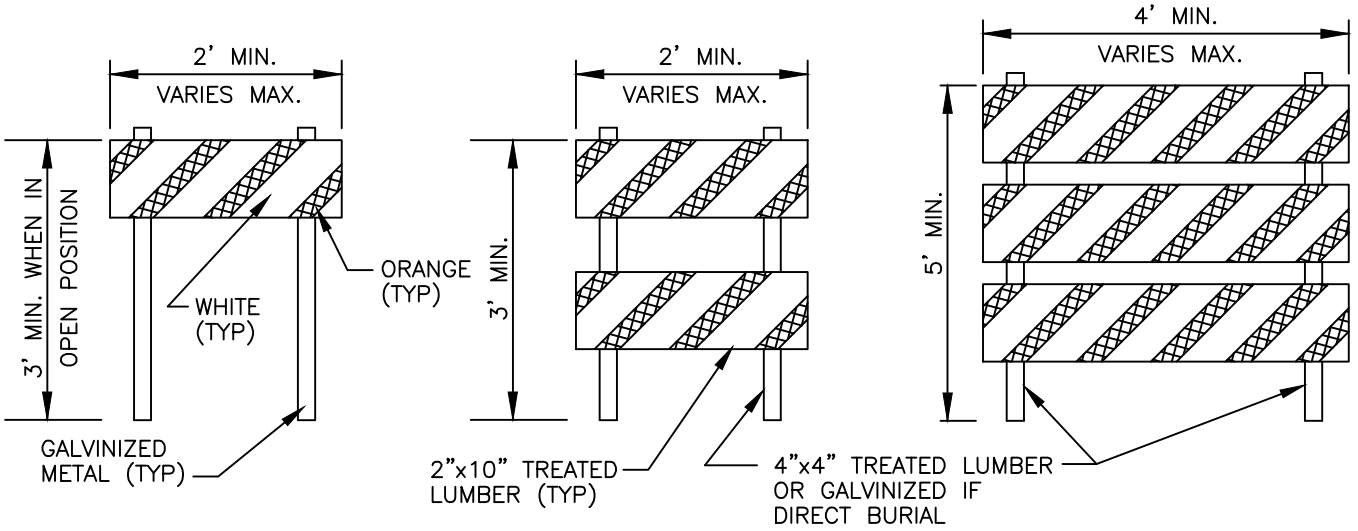
TRAFFIC CONTROL PLAN - 5 LANE - LEFT LANE CLOSURE

Standard Detail

712

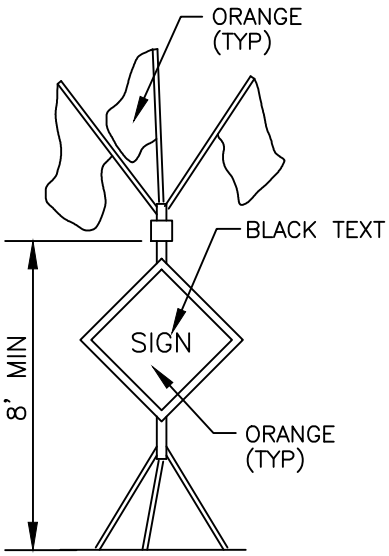
Revision Date

Nov, 2013

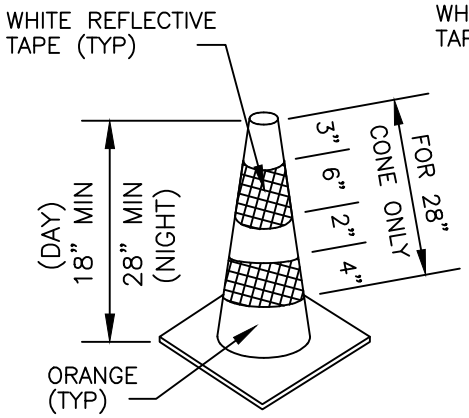


TYPE 1 TYPE 2 TYPE 3

BARRICADE



HIGH RISE WARNING



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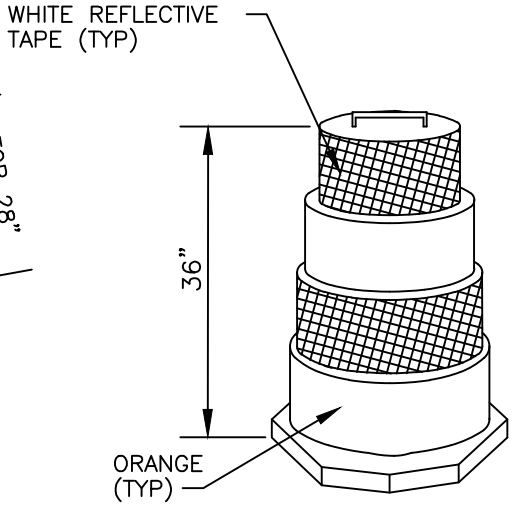
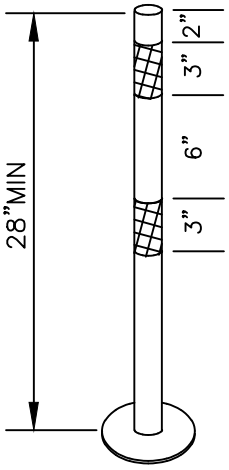
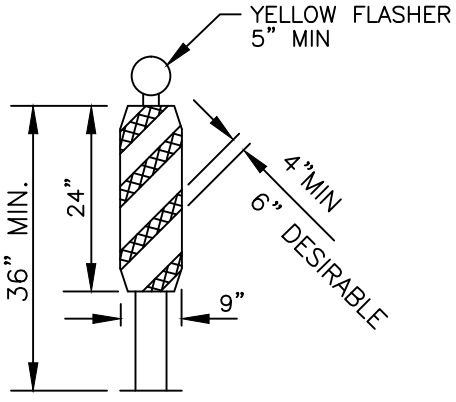


CHANNELIZING DRUM

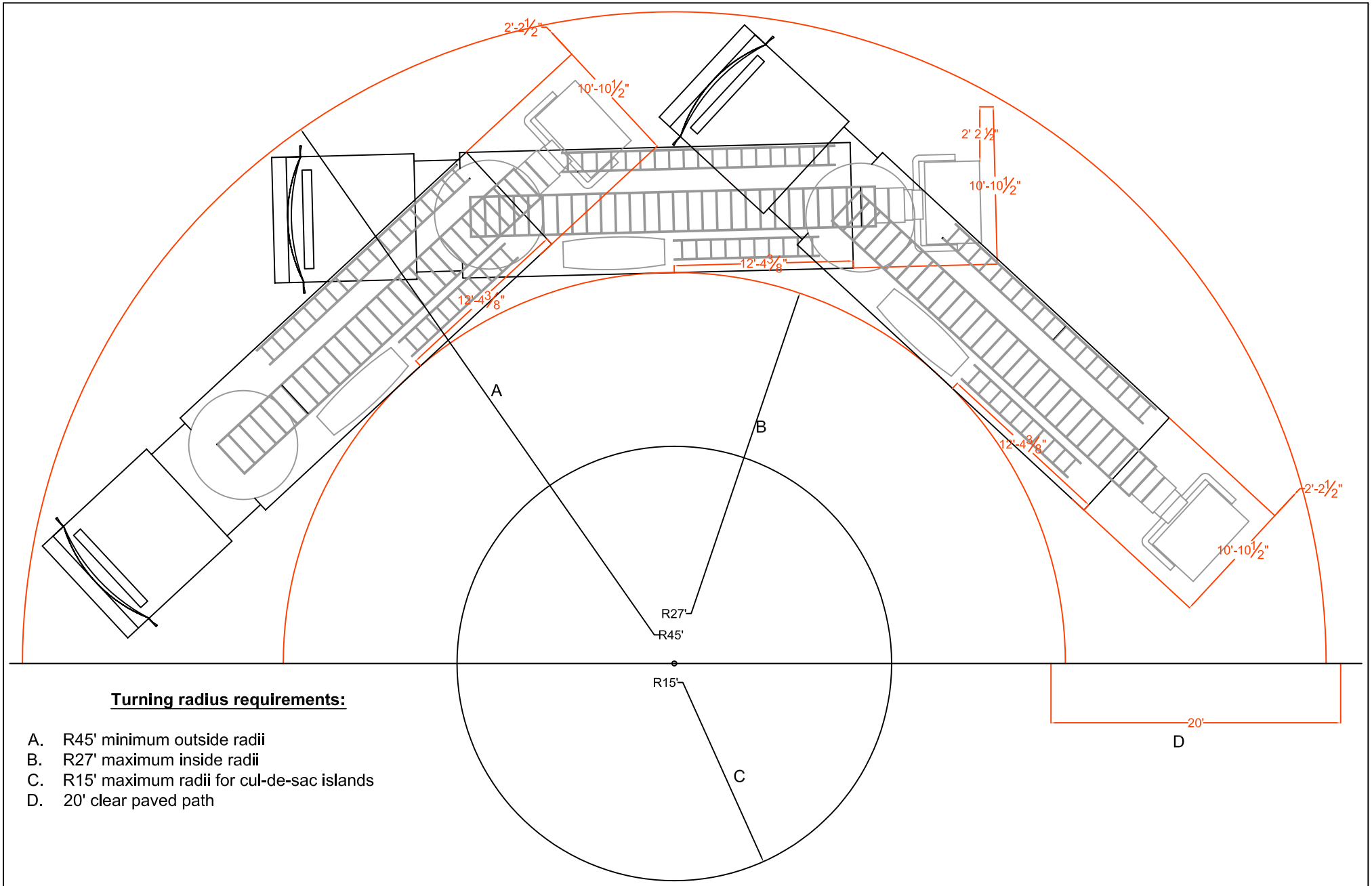


GUIDE POST



VERTICAL PANEL

City of Bothell™	**City of Bothell** **PUBLIC WORKS DEPARTMENT**	Approved By: City Engineer	TRAFFIC CONTROL DEVICES	Standard Detail **713** Revision Date Nov, 2013



Turning radius requirements:

A. R45' minimum outside radii
B. R27' maximum inside radii
C. R15' maximum radii for cul-de-sac islands
D. 20' clear paved path

City of Bothell

City of Bothell

Community Risk Reduction

Approved By:

Fire Marshal

Date:

July 25, 2012

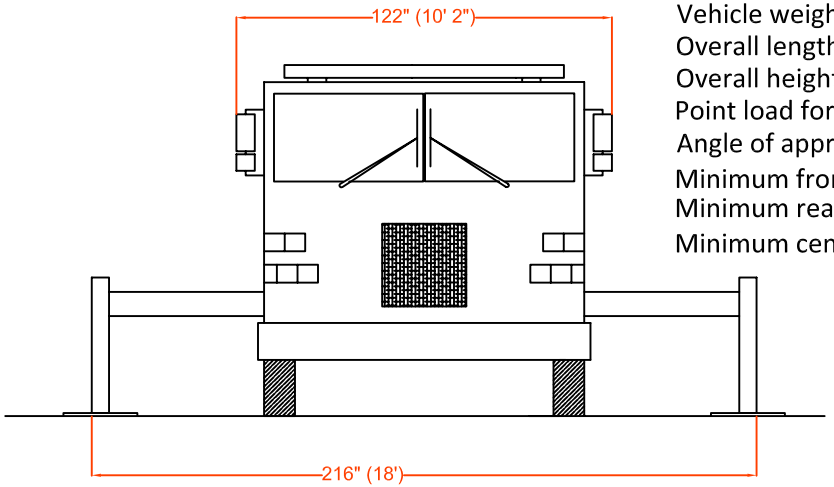
Aerial Apparatus Auto Turn Detail

Standard Detail

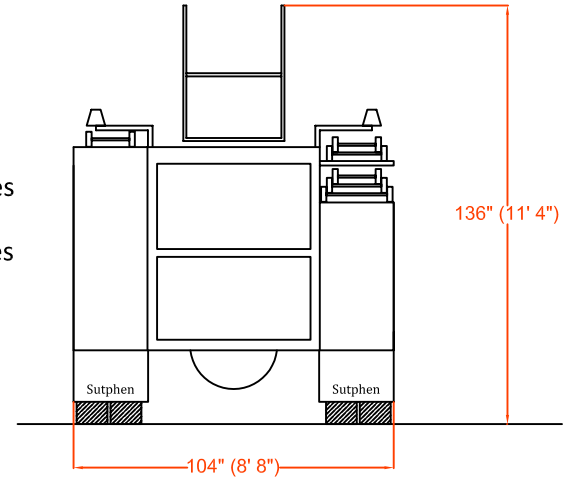
901

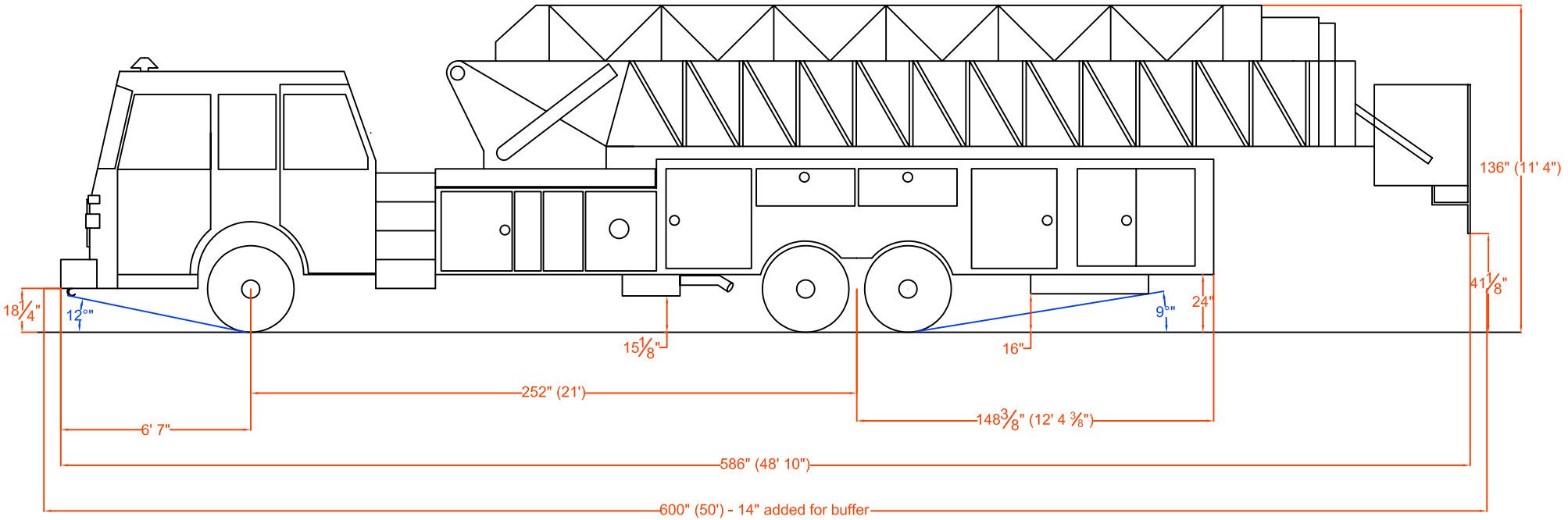
Revision Date

July 2012



Vehicle weight: 70,000 lbs gross vehicle weight
Overall length: 48 feet 10 inches
Overall height: 11 feet 4 inches
Point load for outriggers: 75 psi or 43.2 kips
Angle of approach/departure minimum: 9 degrees
Minimum front clearance from ground: 18 ¼ inches
Minimum rear clearance from ground: 16 inches
Minimum center of vehicle clearance: 15 ⅛ inches





City of Bothell

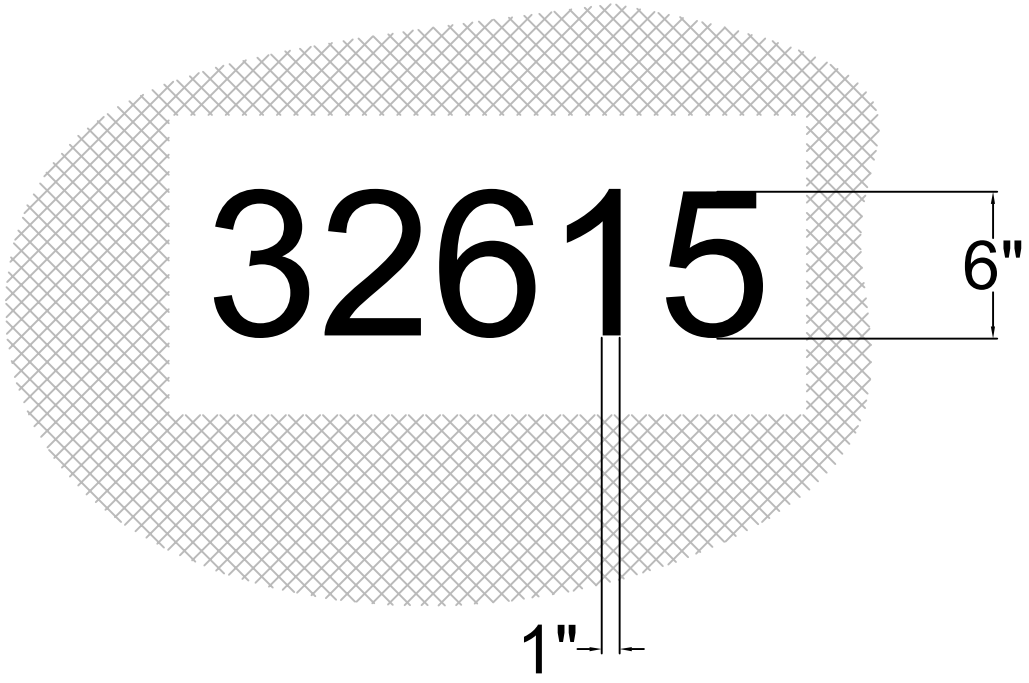
City of Bothell

Community Risk Reduction

Approved By:
Fire Marshal
Date:
July 25, 2012

Aerial design specifications

Standard Detail
902
Revision Date
July 2012



The example shown above reflects the minimum size of address numbers. The size of numbers will vary on the distance of the set back.

- Distance shall be measured from the face of the building to the face of the curb on the addressed side of the building (sum of the horizontal and vertical distances).
- Number shall be in contrast color to the background.
- Additional sizing information is outlined in the chart below.

Distance	Height of Numbers	Width of Stroke
0 - 50 feet	6"	1"
51 - 100 feet	8"	1"
101 - 150 feet	10"	1"
151 - 200 feet	12"	1 $\frac{1}{2}$"
Over 200 feet	14"	1 $\frac{1}{2}$"

City of Bothell™

City of Bothell

Community Risk Reduction

Approved By:

Fire Marshal

Date: Dec, 2018

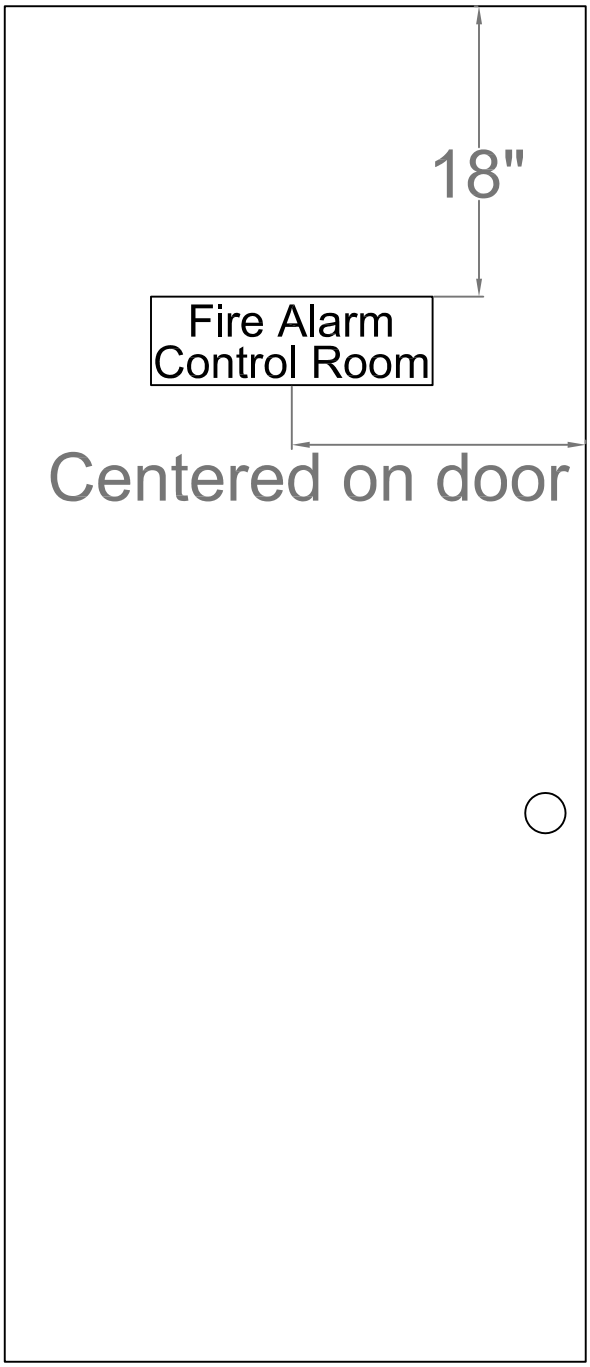
Commercial & Multi-family Building Address Standard

Standard Detail

903

Revision Date Dec, 2018

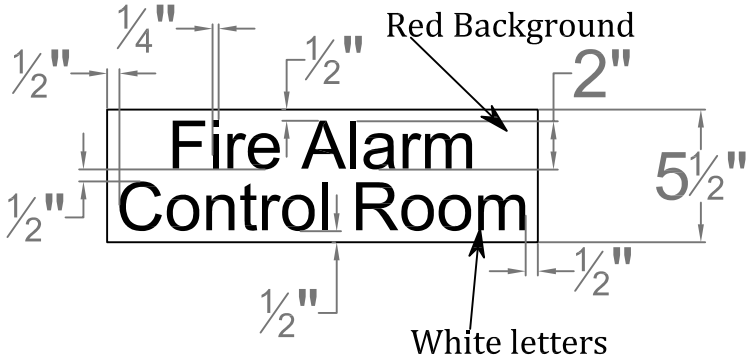
This sign is to be mounted on the door outside of the Fire Alarm Control room door as shown.



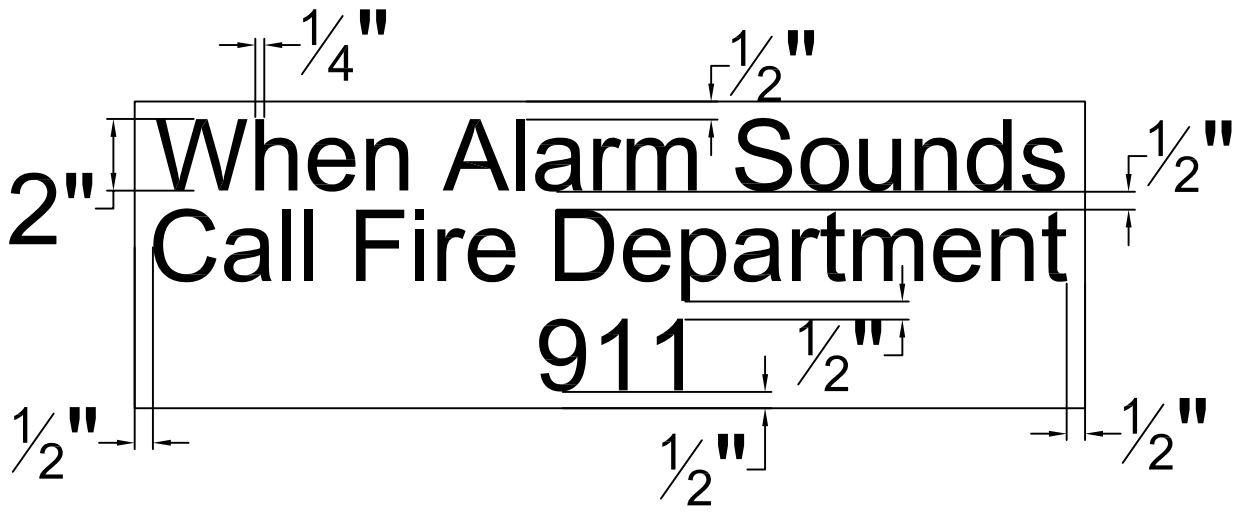
Sign material shall be constructed of a durable, weather resistant material.

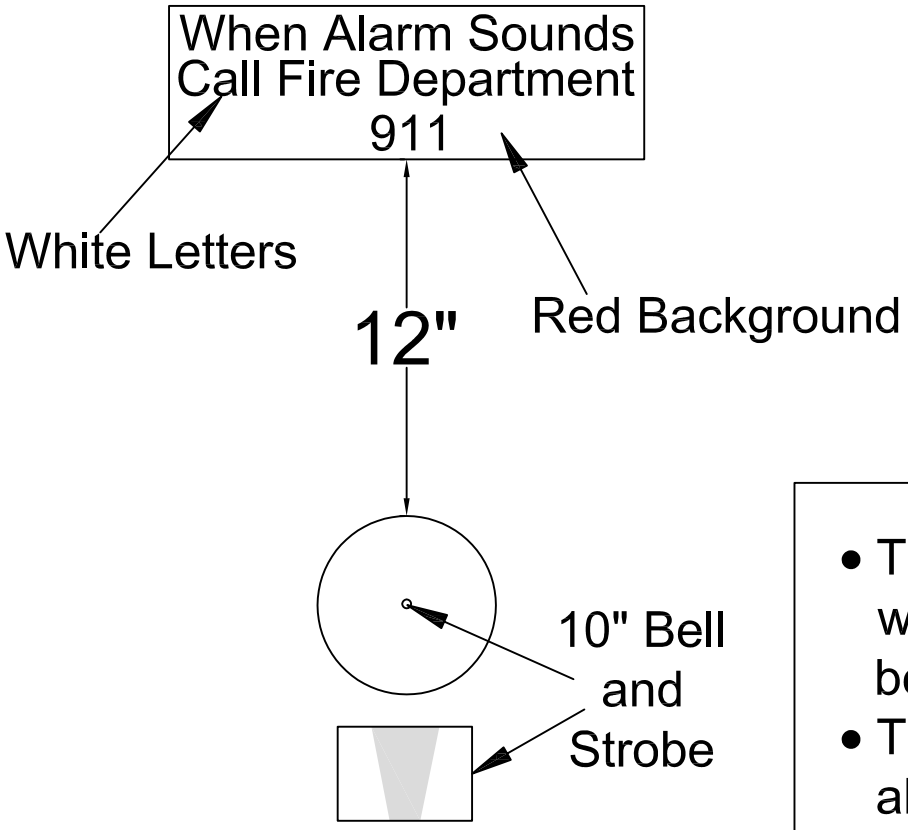
- Letters are 2" in height
- Letters have ¼" wide brush strokes.
- ½" space between rows
- ½" space between edge of sign and words.

Sign Detail



City of Bothell	**City of Bothell** Community Risk Reduction	Approved By: Fire Marshal Date: July 25, 2012	Fire Alarm Control Room Door Signage	Standard Detail **904** Revision Date July 2012

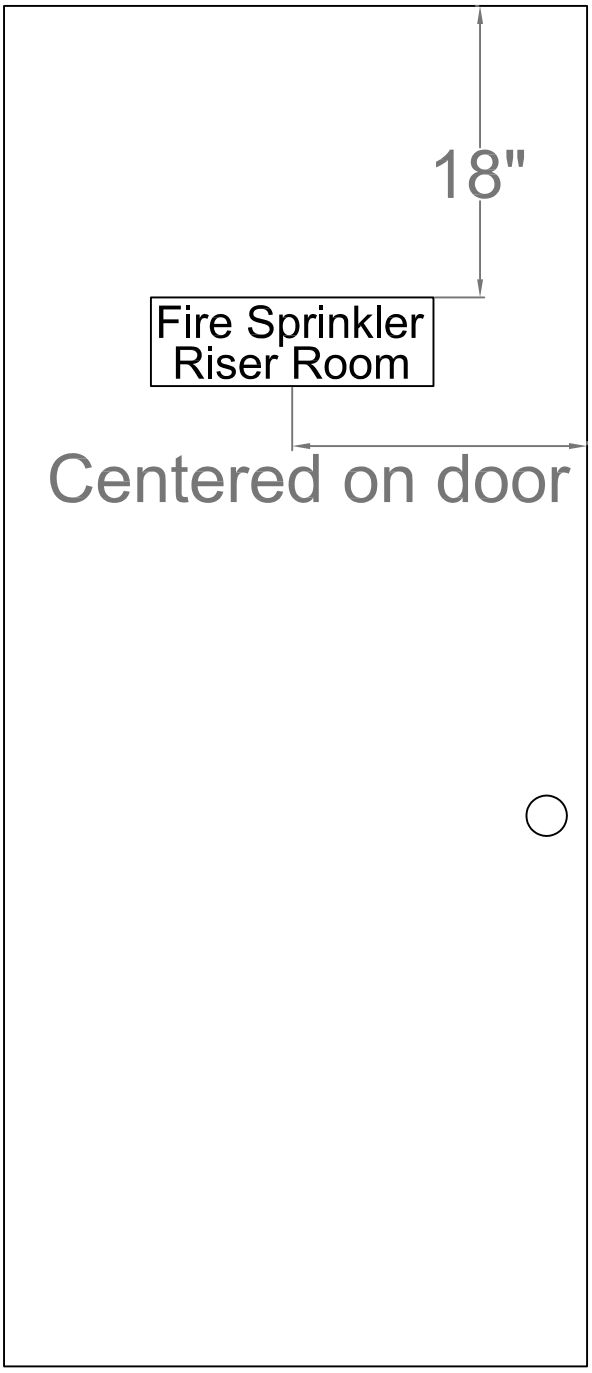




- The sign will be located within 12" of the 10" bell/strobe.
- The sign shall be either above or below the bell/strobe.
- Location is to be approved by the Fire Marshal.

City of Bothell	**City of Bothell** **Community Risk Reduction**	Approved By: Fire Marshal Date: July 25, 2012	Fire Alarm Notification Sign	Standard Detail **905** Revision Date July 2012

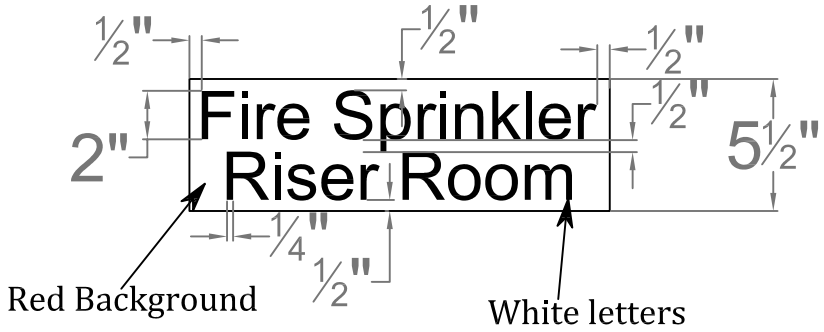
This sign is to be mounted on the door outside of the Fire Sprinkler Riser room door as shown.



Sign material shall be constructed of a durable, weather resistant material.

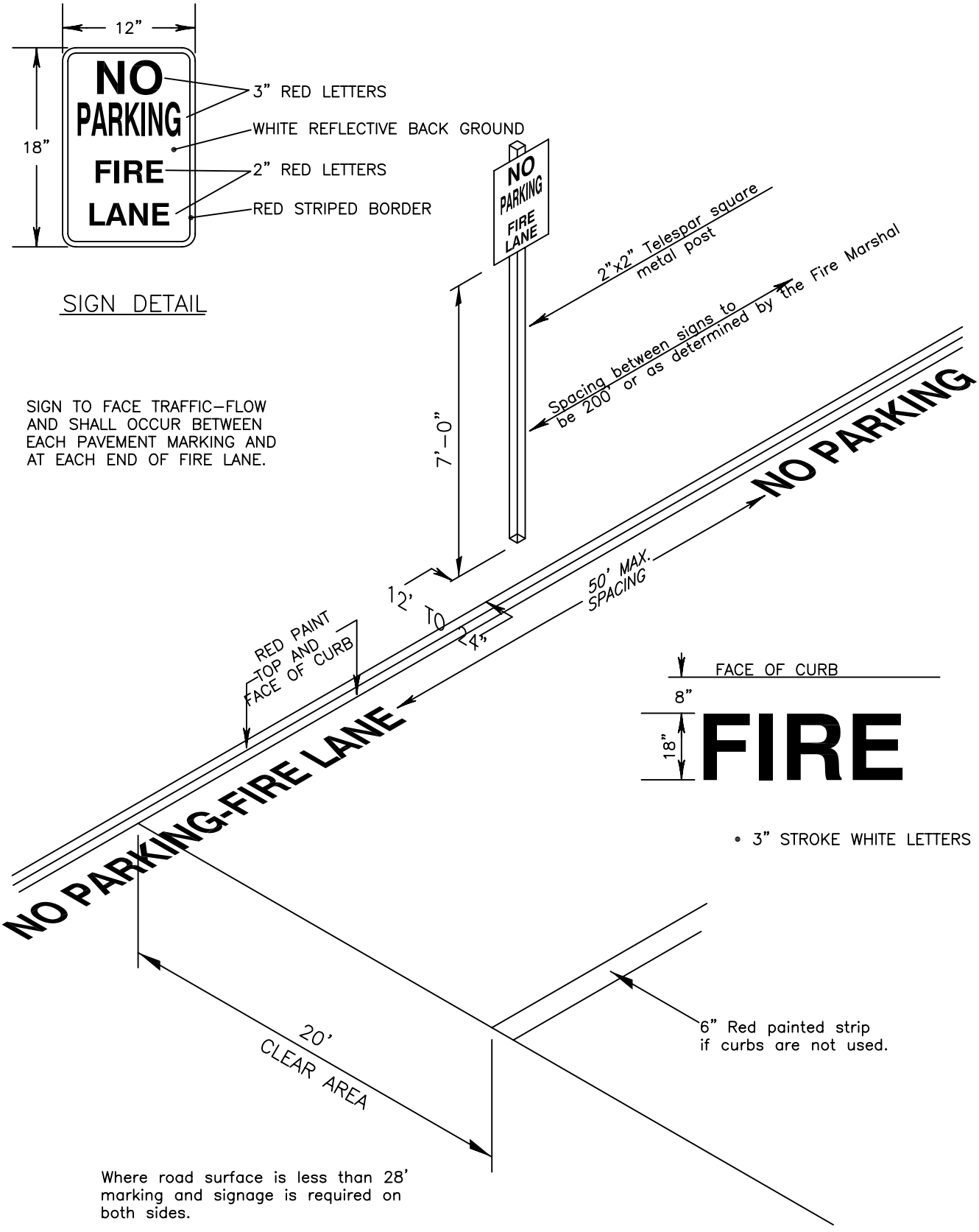
- Letters are 2" in height
- Letters have ¼" wide brush strokes.
- ½" space between rows
- ½" space between edge of sign and words.

Sign Detail



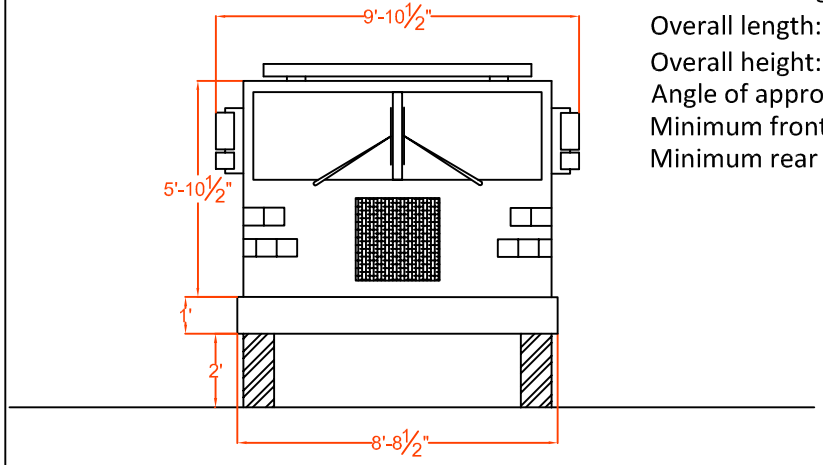
City of Bothell	**City of Bothell** Community Risk Reduction	Approved By: Fire Marshal Date: July 25, 2012	Riser Room Door Signage	Standard Detail **906** Revision Date July 2012

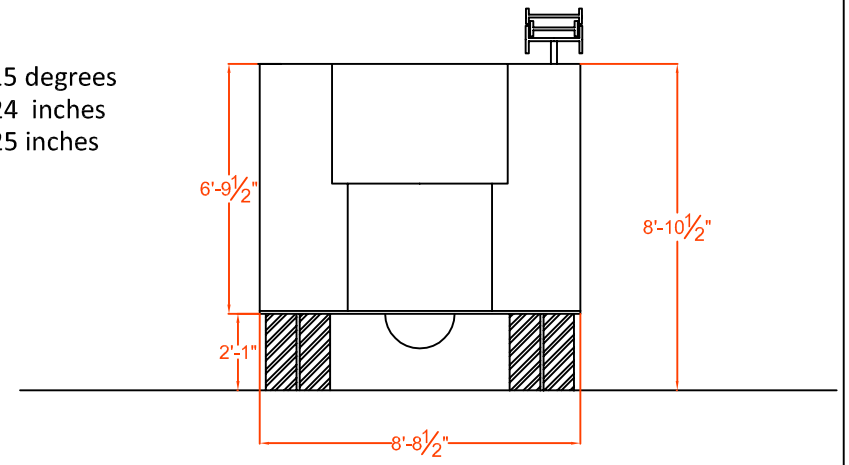
Sign or pavement lettering required, not both.

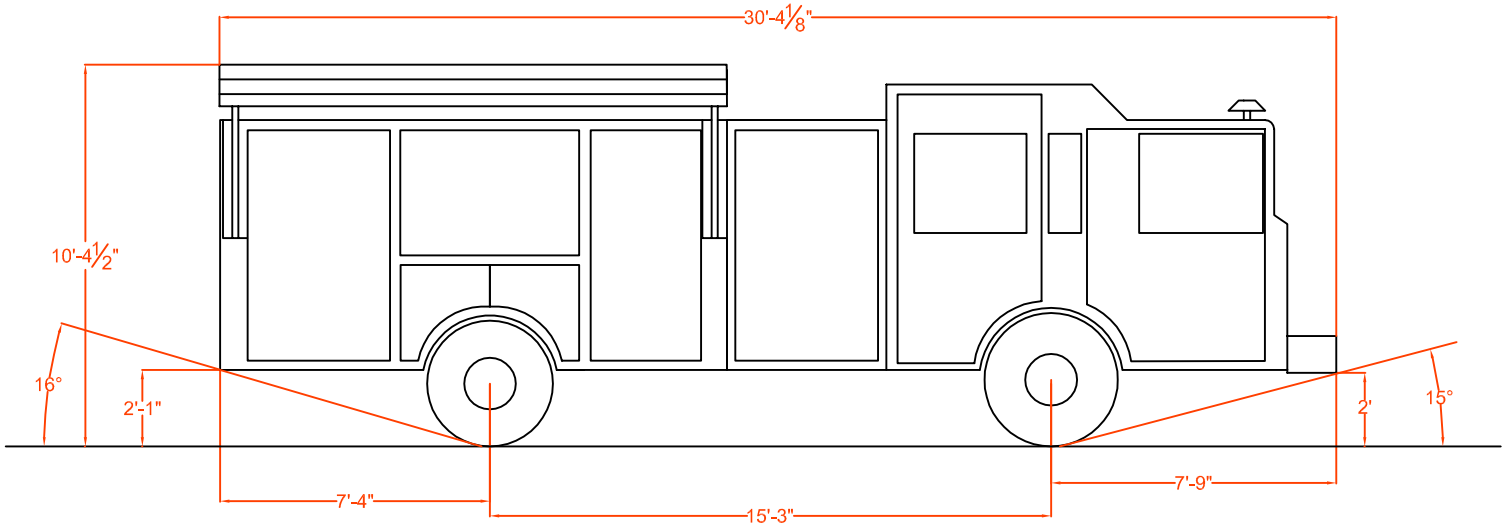


City of Bothell	**City of Bothell** **Community Risk Reduction**	Date: June 12th 2013	Fire Lane Marking and Signage (Private Access)	Standard Detail **908** Revision Date June 2013

Vehicle weight: 45,500 lbs gross vehicle weight
Front axle weight: 21,500 lbs
Rear axles weight: 24,000 lbs
Overall length: 30 feet 4 1/8 inches
Overall height: 10 feet 4 1/2 inches
Angle of approach/departure minimum: 15 degrees
Minimum front clearance from ground: 24 inches
Minimum rear clearance from ground: 25 inches







City of Bothell

City of Bothell

Community Risk Reduction

Approved By:

Fire Marshal

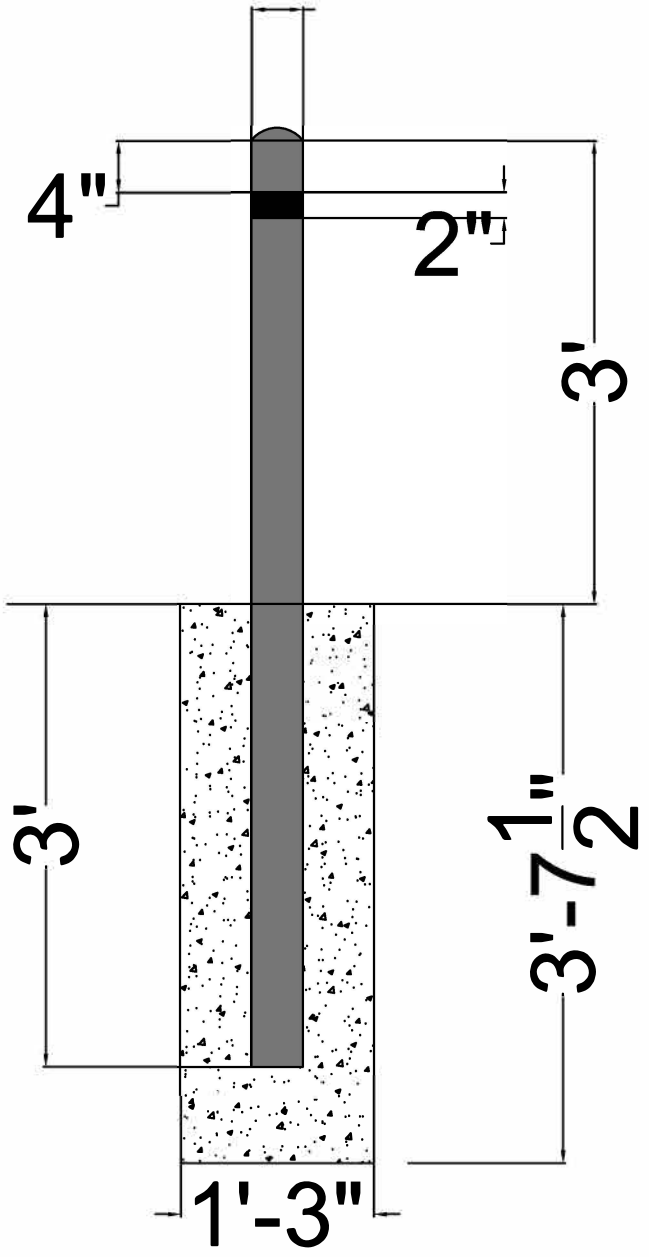
Date:
July 30th, 2013

Engine design specifications

Standard Detail

909

Revision Date
July 2013



1. Constructed of Schedule 80 steel pipe not less than 4" in diameter. Filled with concrete.
2. Spaced not more than 4' between posts on center.
3. Set not less than 3' in a concrete footing of not less than a 15" diameter.
4. Set with the top of the post(s) not less than 3' above the ground.
5. Located not less than 3' from the protected object.
6. Marked with reflective tape or paint 4" below the top of the post and completely around the post.

City of Bothell	**City of Bothell** **Community Risk Reduction**	Approved By: Fire Marshal Date: Dec 2018	Vehicle Impact Protection	Standard Detail **910** Revision Date Nov, 2018