

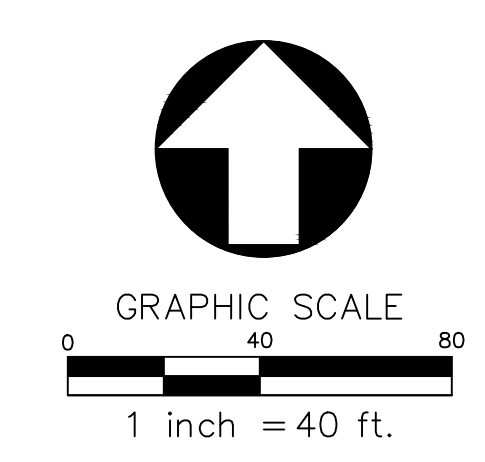
| SHEET LEGEND  |                                 |
|---|---------------------------------|
|   | FILTER FABRIC INLET PROTECTION  |
|   | TEMPORARY CONSTRUCTION ENTRANCE |
|   | DEMOLISH ASPHALT AND CONCRETE   |
|   | EXISTING CONTOUR                |
|   | SAWCUT                          |
|   | SEDIMENT FENCE/STRAW WATTLES    |
|   | REMOVE EXISTING UTILITY         |
|   | REMOVE EXISTING TREE            |
| SHEET NOTES   |                                 |
| 1. INSTALL FILTER FABRIC INLET PROTECTION AT ALL EXISTING AREA DRAIN. |                                 |

LANDSCAPE ARCHITECTS PC  
**lango . hansen**  
 1100 NW GILMAN #3B PORTLAND OR 97209 T 503.295.2437

REGISTERED PROFESSIONAL ENGINEER  
 89258  
 OREGON  
 SEPT. 12, 2011  
**HALLEN SCHMITZ**  
 RENEWAL DATE 6/30/24

**SANDY COMMUNITY CAMPUS PARK**  
 CITY OF SANDY PARKS AND RECREATION  
 CITY OF SANDY  
 17225 SMITH AVE  
 SANDY, OR 97055

**DEMO AND EROSION CONTROL PLAN**  
 SCALE: 1"=40'



LAND USE

REVISIONS

SCALE AS NOTED  
 DRAWN BY MCS  
 DATE 07.17.23  
 PROJECT NO. 2239

**H** Humber Design Group, Inc.  
 Civil Engineering • 503.946.6690 • hdgdx.com

**DEMO AND EROSION CONTROL PLAN**  
**C1.00**

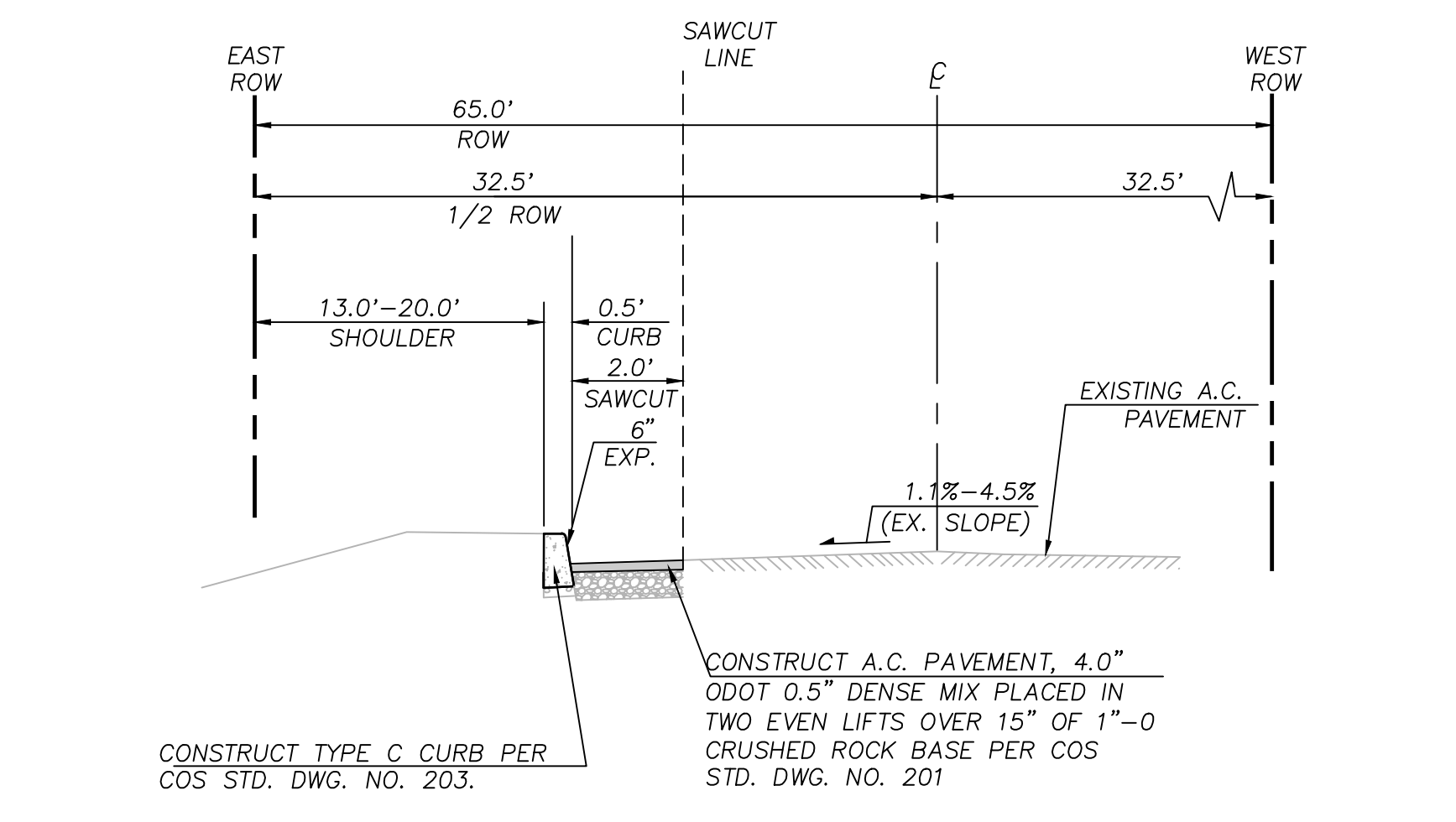
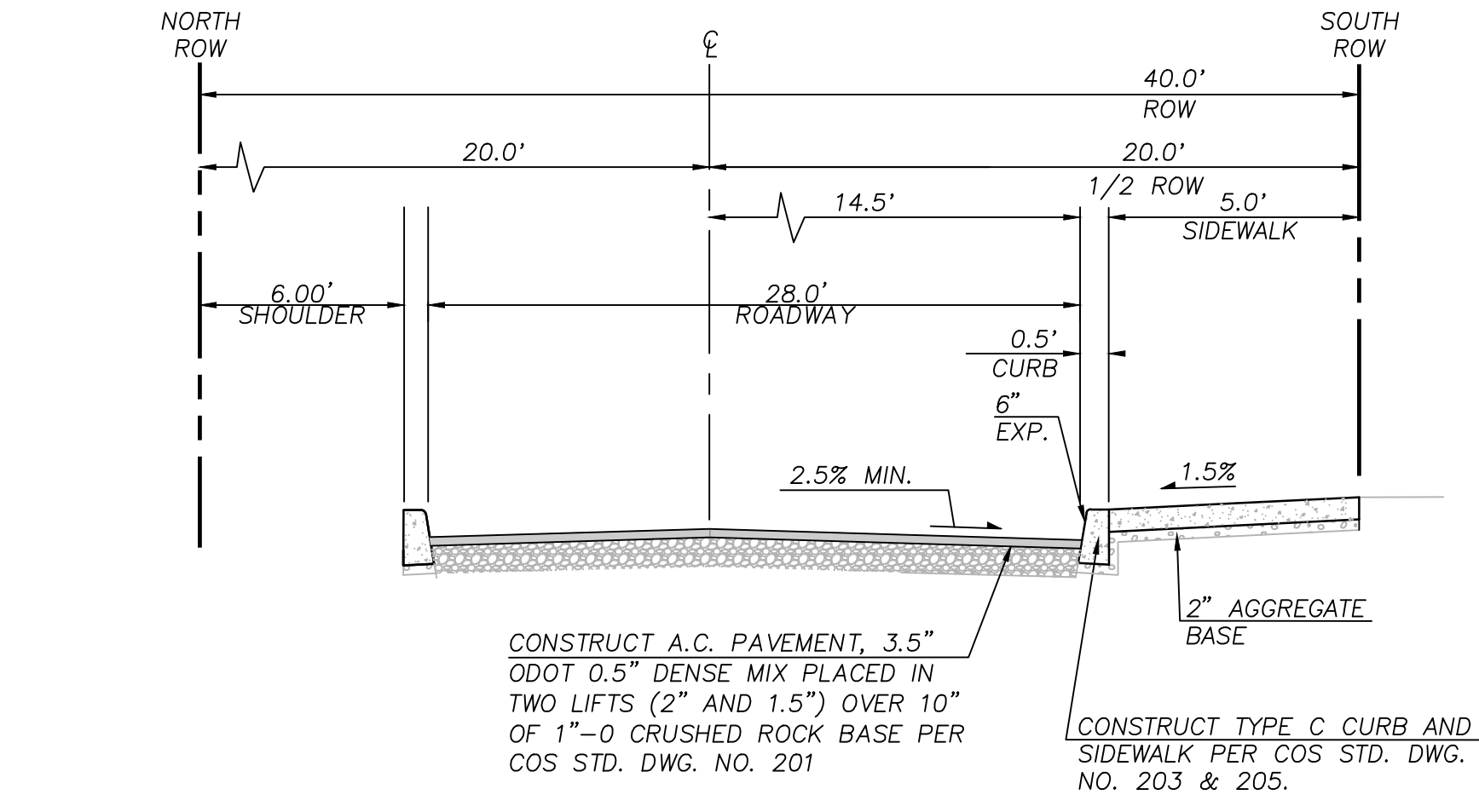


# EXHIBIT C

LANDSCAPE ARCHITECTS PC  
**lango . hansen**  
 1100 NW GILMAN #3B, PORTLAND OR 97209 T 503.295.2437



| SHEET LEGEND |                           |            |
|--------------|---------------------------|------------|
|              | PRIVATE ASPHALT PAVING    | 9<br>C4.00 |
|              | PRIVATE CONCRETE SIDEWALK | 7<br>C4.00 |
|              | PUBLIC CONCRETE SIDEWALK  |            |
|              | PUBLIC ASPHALT PAVING     |            |
|              | PUBLIC CONCRETE DRIVEWAY  |            |
|              | LANDSCAPING               | SEE L-SHTS |
|              | STANDARD CONCRETE CURB    | 6<br>C4.00 |
|              | SAWCUT                    |            |

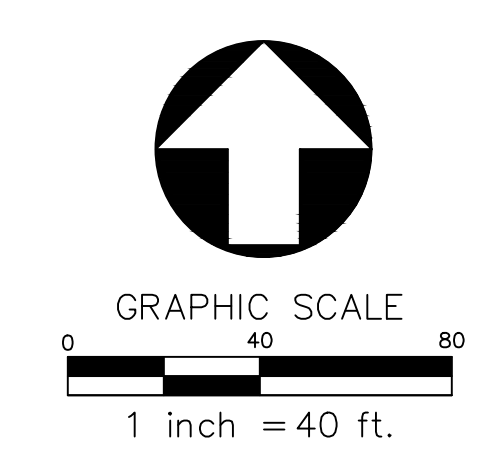


**SANDY COMMUNITY CAMPUS PARK**  
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 CITY OF SANDY  
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LAND USE

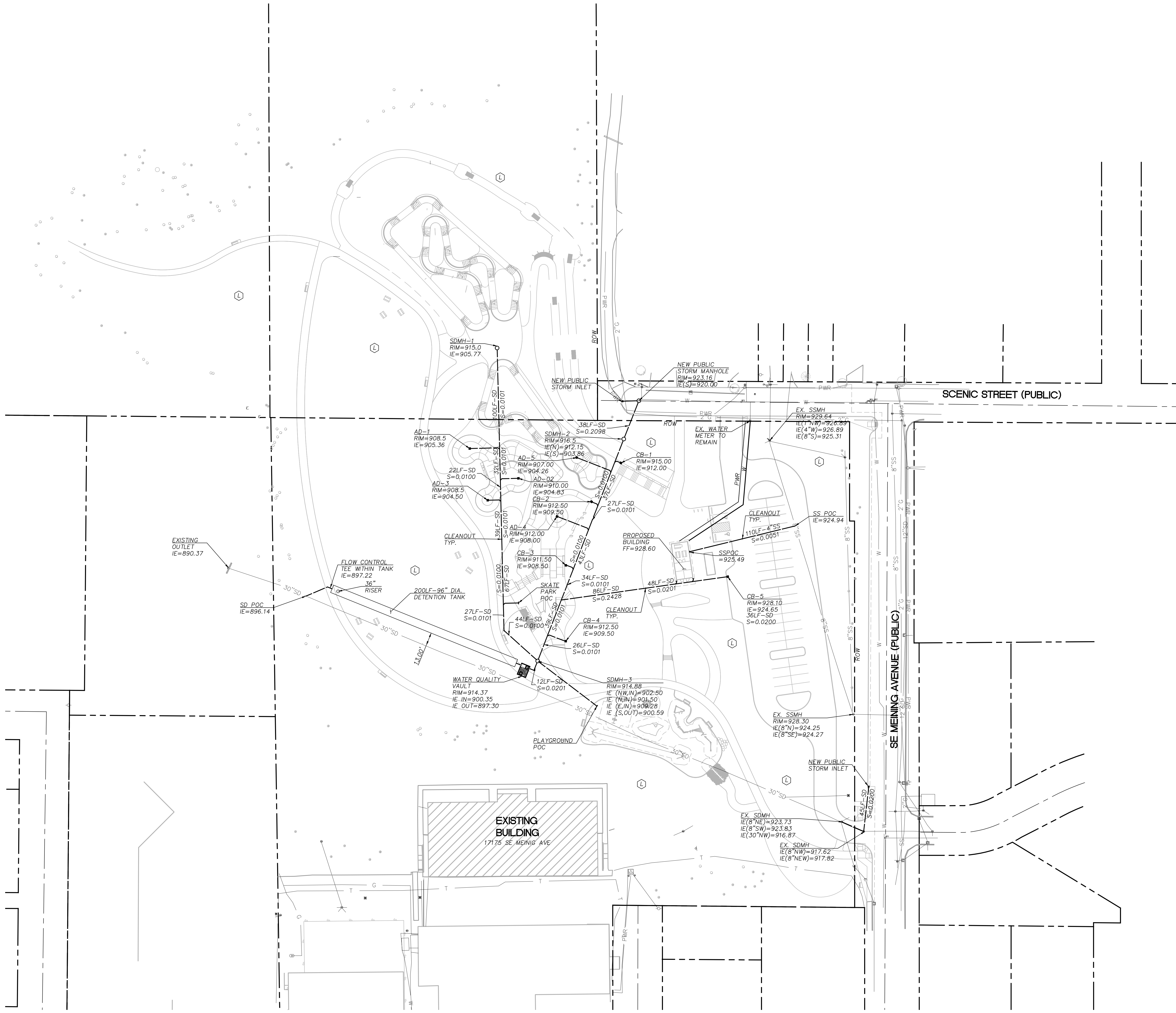
REVISIONS

SCALE AS NOTED  
 DRAWN BY MCS  
 DATE 08.07.23  
 PROJECT NO. 2239



LAYOUT AND PAVING PLAN  
**C2.00**





**UTILITY PLAN**  
SCALE: 1"=40'

| SHEET LEGEND |                |
|--------------|----------------|
| SD           | STORM          |
| SS           | SANITARY       |
| W            | WATER          |
| PWR          | POWER          |
| ■            | CATCH BASIN    |
| ●            | CLEANOUT       |
| ○            | MANHOLE        |
| ▭            | DETENTION PIPE |

LANDSCAPE ARCHITECTS PC  
**lango . hansen**  
1100 nw glisan #3B portland OR 97209 T 503.295.2437

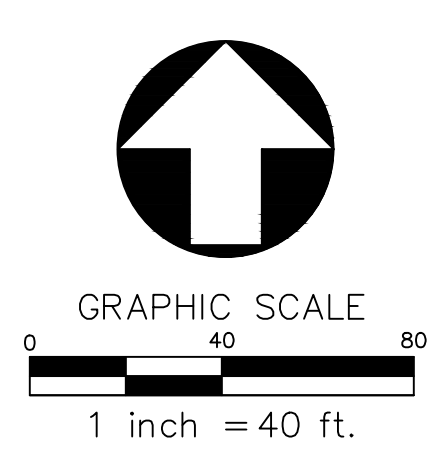
REGISTERED PROFESSIONAL  
ENGINEER  
89358  
OREGON  
SEPT. 12, 2011  
**BRADLEY H. SCHMITZ**  
RENEWAL DATE 6/30/24

**SANDY COMMUNITY CAMPUS PARK**  
CITY OF SANDY PARKS AND RECREATION  
CITY OF SANDY  
17225 SMITH AVE  
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LAND USE

REVISIONS

SCALE AS NOTED  
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DATE 07.17.23  
PROJECT NO. 2239



**H** Humber  
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**C3.00**



**NOTES**

- ALL RISER AND STUB DIMENSIONS ARE TO CENTERLINE.
- ALL ELEVATIONS, DIMENSIONS, AND LOCATIONS OF RISERS AND INLETS SHALL BE VERIFIED BY THE ENGINEER OF RECORD PRIOR TO RELEASING FOR FABRICATION.
- ALL FITTINGS AND REINFORCEMENT COMPLY WITH ASTM A36.
- ALL RISERS AND STUBS ARE 24" x 12" CORRUGATION AND 16 GAGE UNLESS OTHERWISE NOTED.
- RISERS TO BE FIELD TRIMMED TO GRADE.
- QUANTITY OF PIPE SHOWN DOES NOT PROVIDE EXTRA PIPE FOR CONNECTING THE SYSTEM TO EXISTING PIPE OR DRAINAGE STRUCTURES. OUR SYSTEM AS DETAILED PROVIDES MANUAL INLET AND OUTLET PIPES STRIP FOR CONNECTION TO EXISTING DRAINAGE FACILITIES. IF ADDITIONAL PIPES IS NEEDED IT IS THE RESPONSIBILITY OF THE CONTRACTOR.

**ASSEMBLY**  
 SCALE: 1" = 10'  
 VOLUME: 25,082 C.F.  
 LOADING: H20/H25  
 SYSTEM INV = 91.0

**CONTECH ENGINEERED SOLUTIONS LLC**  
 5025 Center Parkway Dr., Suite 400, West Chester, OH 45390  
 937-338-1122 937-445-7000 937-445-7993 FAX

**CONTECH CMP DETENTION SYSTEMS**  
 CONTRACT

Ø96" UNDERGROUND DETENTION SYSTEM - 000000-001  
 SAMPLE PROJECT  
 ANYTOWN, USA  
 SITE DESIGNATION: UDS

|             |          |          |     |          |           |
|-------------|----------|----------|-----|----------|-----------|
| PROJECT NO. | XXXXX    | REV. NO. | 001 | DATE     | 5/13/2014 |
| DRAWN BY    | JXC      | DESIGN   | RTF | APPROVED |           |
| CHECKED     | APPROVED |          |     |          |           |
| SHEET NO.   | C1       | OF       | 4   |          |           |

**FOUNDATION BEDDING PREPARATION**  
 PRIOR TO PLACING THE BEDDING, THE FOUNDATION MUST BE CONSTRUCTED TO A UNIFORM AND STABLE GRADE. IN THE EVENT THAT UNSUITABLE FOUNDATION MATERIALS ARE ENCOUNTERED DURING EXCAVATION, THEY SHALL BE REMOVED AND BROUGHT BACK TO THE GRADE WITH A FILL MATERIAL AS APPROVED BY THE ENGINEER. ONCE THE FOUNDATION PREPARATIONS COMPLETE, 4" OF A WELL-GRADED GRANULAR MATERIAL SHALL BE PLACED AS THE BEDDING.

**BACKFILL**  
 THE BACKFILL SHALL BE AN A1, A2 OR A3 GRANULAR FILL PER AASHTO M145, OR A WELL-GRADED GRANULAR FILL AS APPROVED BY THE SITE ENGINEER (SEE INSTALLATION GUIDELINES). THE MATERIAL SHALL BE PLACED IN 6" COARSE LIFTS AND COMPACTED TO 90% AASHTO STANDARD DENSITY. WHEN PLACING THE FIRST LIFTS OF BACKFILL IT IS IMPORTANT TO MAKE SURE THAT THE BACKFILL IS PROPERLY COMPACTED UNDER AND AROUND THE PIPE HAUNCHES. BACKFILL SHALL BE PLACED SUCH THAT THERE IS NO MORE THAN A TWO (2) FT DIFFERENTIAL BETWEEN ANY OF THE PIPES AT ANY TIME DURING THE BACKFILL PROCESS. THE BACKFILL SHALL BE ADVANCED ALONG THE LENGTH OF THE DETENTION SYSTEM AT THE SAME RATE TO AVOID DIFFERENTIAL LOADING ON THE PIPES.

OTHER ALTERNATE BACKFILL MATERIAL MAY BE ALLOWED DEPENDING ON SITE SPECIFIC CONDITIONS, AS APPROVED BY SITE ENGINEER.

**1 BACKFILL DETAIL**  
 SCALE: N.T.S.

**2 H-12 HUGGER BAND DETAIL**  
 SCALE: N.T.S.

**CONNECTION DETAIL**  
 SINGLE BOLT, BAR AND STRAP

**GENERAL NOTES**

- BANDS ARE NORMALLY FURNISHED AS FOLLOWS:  
 12" THRU 48" LPIECE  
 54" THRU 96" 3PIECE  
 192" THRU 144" 3PIECE
- BAND FASTENERS ARE ATTACHED WITH SPOT WELDS, RIVETS OR HAND WELDS
- REROLLED ANNULAR END CORRUGATIONS ARE NORMALLY 25" x 25" DIMENSIONS ARE SUBJECT TO MANUFACTURING TOLERANCES

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 CONTRACT

Ø96" UNDERGROUND DETENTION SYSTEM - 000000-001  
 SAMPLE PROJECT  
 ANYTOWN, USA  
 SITE DESIGNATION: UDS

|             |          |          |     |          |           |
|-------------|----------|----------|-----|----------|-----------|
| PROJECT NO. | XXXXX    | REV. NO. | 001 | DATE     | 5/13/2014 |
| DRAWN BY    | JXC      | DESIGN   | RTF | APPROVED |           |
| CHECKED     | APPROVED |          |     |          |           |
| SHEET NO.   | C3       | OF       | 4   |          |           |

**TYPICAL SECTION VIEW**  
 SCALE: N.T.S.

**FRONT TYPICAL MANWAY DETAIL**  
 SCALE: N.T.S.

**FABRICATION BoM**

| FITTING        | TYPE       | QTY | Ø | CORRUGATION        | GAGE | FINISH | WALL TYPE | LENGTH | TOTAL |
|----------------|------------|-----|---|--------------------|------|--------|-----------|--------|-------|
| BAND FASTENERS | 12" HUGGER | 96  |   | w/BAR BOLT & STRAP | 16   | ALT2   |           |        |       |
| GASKETS        | FLAT       | 96  |   | 12" WIDE           |      |        |           |        |       |

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**CONTECH CMP DETENTION SYSTEMS**  
 CONTRACT

Ø96" UNDERGROUND DETENTION SYSTEM - 000000-001  
 SAMPLE PROJECT  
 ANYTOWN, USA  
 SITE DESIGNATION: UDS

|             |          |          |     |          |           |
|-------------|----------|----------|-----|----------|-----------|
| PROJECT NO. | XXXXX    | REV. NO. | 001 | DATE     | 5/13/2014 |
| DRAWN BY    | JXC      | DESIGN   | RTF | APPROVED |           |
| CHECKED     | APPROVED |          |     |          |           |
| SHEET NO.   | C2       | OF       | 4   |          |           |

**3 CONSTRUCTION LOADING DIAGRAM**  
 SCALE: N.T.S.

**REINFORCING TABLE**

| Ø CMP RISER | A           | Ø B | REINFORCING    | **BEARING PRESSURE (PSF) |
|-------------|-------------|-----|----------------|--------------------------|
| 24"         | Ø 4"        | 20" | #5 @ 12" OC EW | 2,410                    |
|             | Ø 4"        |     | #5 @ 12" OC EW | 1,790                    |
| 30"         | Ø 4"        | 32" | #5 @ 12" OC EW | 2,130                    |
|             | 4.4" x 4.4" |     | #5 @ 12" OC EW | 1,930                    |
| 36"         | Ø 5"        | 30" | #5 @ 10" OC EW | 1,890                    |
|             | 5" x 5"     |     | #5 @ 10" OC EW | 1,350                    |
| 42"         | Ø 5.4"      | 44" | #5 @ 10" OC EW | 1,720                    |
|             | 5.4" x 5.4" |     | #5 @ 10" OC EW | 1,210                    |
| 48"         | Ø 6"        | 50" | #5 @ 10" OC EW | 1,600                    |
|             | 6" x 6"     |     | #5 @ 10" OC EW | 1,100                    |

**CONSTRUCTION LOADING**  
 FOR TEMPORARY CONSTRUCTION VEHICLE LOADS, AN EXTRA AMOUNT OF COMPACTED COVER MAY BE REQUIRED OVER THE TOP OF THE PIPE. THE HEIGHT-OF-COVER SHALL MEET THE MINIMUM REQUIREMENTS SHOWN IN THE TABLE BELOW. THE USE OF HEAVY CONSTRUCTION EQUIPMENT REQUIRES GREATER PROTECTION FOR THE PIPE THAN FINISHED GRADE COVER MINIMUMS FOR NORMAL HIGHWAY TRAFFIC.

**PIPE SPAN, INCHES**

| PIPE SPAN, INCHES | 16-50 | 50-75 | 75-110 | 110-150 |
|-------------------|-------|-------|--------|---------|
| 12-42             | 2.0   | 2.5   | 3.0    | 3.0     |
| 42-72             | 3.0   | 3.0   | 3.5    | 4.0     |
| 75-120            | 3.0   | 3.5   | 4.0    | 4.0     |
| 125-144           | 3.5   | 4.0   | 4.5    | 4.5     |

**MINIMUM COVER (FT)**

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 CONTRACT

Ø96" UNDERGROUND DETENTION SYSTEM - 000000-001  
 SAMPLE PROJECT  
 ANYTOWN, USA  
 SITE DESIGNATION: UDS

|             |          |          |     |          |           |
|-------------|----------|----------|-----|----------|-----------|
| PROJECT NO. | XXXXX    | REV. NO. | 001 | DATE     | 5/13/2014 |
| DRAWN BY    | JXC      | DESIGN   | RTF | APPROVED |           |
| CHECKED     | APPROVED |          |     |          |           |
| SHEET NO.   | C4       | OF       | 4   |          |           |





**SANDY COMMUNITY CAMPUS PARK**  
 CITY OF SANDY PARKS AND RECREATION

CITY OF SANDY  
 17225 SMITH AVE  
 SANDY, OR 97055

SCALE AS NOTED  
 DRAWN BY MCS  
 DATE 07.17.23  
 PROJECT NO. 2239

CIVIL DETAILS

**C4.01**



### CITY OF SANDY

#### TYPE G-1 G-2 CATCH BASIN WITH SUMP

**INLET TYPE**

|     | W         | W <sub>1</sub> | X         |
|-----|-----------|----------------|-----------|
| G-1 | 2'-8 7/8" | 1'-8 7/8"      | 10' 9/16" |
| G-2 | 3'-3 3/8" | 2' 3 3/8"      | 16' 9/16" |

NOTE: G-2 CATCH BASIN IS STANDARD. USE G-1 WITH ENGINEER'S APPROVAL ONLY.

**NOTES**

- 6'-0" MAX. DISTANCE FROM RIM TO SUMP
- CONCRETE STRENGTH SHALL BE 3000 PSI.
- PRECAST BASE WALLS SHALL BE MIN. 4" THICK. CAST-IN-PLACE BASE WALLS SHALL BE 6" THICK.

FILENAME: SANDY05.DWG

### CITY OF SANDY

#### SIDEWALK

**TYPICAL CURB-TIGHT CROSS SECTION**

**TYPICAL SETBACK TYPE CROSS SECTION**

**TYPICAL PLAN VIEW**

**NOTES**

- SIDEWALK WIDTH DIMENSION DOES NOT INCLUDE CURB FOR CURB-TIGHT SIDEWALKS.
- SIDEWALKS 8 FEET AND WIDER SHALL HAVE A LONGITUDINAL CONTRACTION JOINT AT THE MIDPOINT.
- CONCRETE THICKNESS FOR STANDARD SIDEWALKS SHALL BE NOMINAL 4" MIN.; THICKNESS IN DRIVEWAY SHALL BE 6"
- INSTALL 3" ABS WEEPHOLE PIPES IN SIDEWALKS IN LOCATIONS DIRECTED BY THE ENGINEER. PLACE CONTRACTION JOINT OVER THE TOP OF THE PIPE.

FILENAME: SANDY05.DWG

### STORMFILTER DESIGN NOTES

• THE 8' x 11' PEAK DIVERSION STORMFILTER TREATMENT CAPACITY VARIES BY CARTRIDGE COUNT AND LOCALLY APPROVED SURFACE AREA SPECIFIC FLOW RATE. PEAK CONVEYANCE CAPACITY TO BE DETERMINED BY ENGINEER OF RECORD.

• THE PEAK DIVERSION STORMFILTER IS AVAILABLE IN A LEFT INLET (AS SHOWN) OR RIGHT INLET CONFIGURATION.

• ALL PARTS AND INTERNAL ASSEMBLY PROVIDED BY CONTECH UNLESS OTHERWISE NOTED.

| CARTRIDGE SELECTION              | 27"                           | 18"                           | LOW DROP                      |
|----------------------------------|-------------------------------|-------------------------------|-------------------------------|
| CARTRIDGE HEIGHT                 | 27"                           | 18"                           | LOW DROP                      |
| RECOMMENDED HYDRAULIC DROP (H)   | 3.00'                         | 2.5'                          | 1.5'                          |
| HEIGHT OF WEIR (H <sub>W</sub> ) | 2.00'                         | 2.00'                         | 2.00'                         |
| SPECIFIC FLOW RATE (gpm/sq ft)   | 2 gpm/sq ft (1.67' gpm/sq ft) | 1 gpm/sq ft (0.83' gpm/sq ft) | 2 gpm/sq ft (1.67' gpm/sq ft) |
| CARTRIDGE FLOW RATE (gpm)        | 22.5                          | 18.75                         | 11.25                         |
|                                  | 15                            | 12.5                          | 7.5                           |
|                                  | 10                            | 7.5                           | 5                             |

\* 1.67 gpm/sq ft SPECIFIC FLOW RATE IS APPROVED WITH PHOSPHORUS (P) (PSORB) MEDIA ONLY.

**PERFORMANCE SPECIFICATION**

FILTER CARTRIDGES SHALL BE MEDIA-FILLED, PASSIVE, SIPHON-ACTUATED, RADIAL FLOW, AND SELF-CLEANING. RADIAL MEDIA DEPTH SHALL BE 6 INCHES. FILTER MEDIA CONTACT TIME SHALL BE AT LEAST 30 SECONDS.

SPECIFIC FLOW RATE SHALL BE 2 GPM/SQ FT (MAXIMUM). SPECIFIC FLOW RATE IS THE MEASURE OF THE FLOW (GPM) DIVIDED BY THE MEDIA SURFACE CONTACT AREA (SQ. FT. MEDIA VOLUMETRIC FLOW RATE SHALL BE 6 GPM/SQ FT MEDIA (MAXIMUM).

**GENERAL NOTES**

- CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
- DIMENSIONS MARKED WITH L AND R ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
- FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH REPRESENTATIVE. WWW.CONTECHSOLUTIONS.COM
- STORMFILTER WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFORM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
- STRUCTURE SHALL MEET ASHTO HS20 LOAD RATING, ASSUMING EARTH COVER OF 7'-0" AND GROUNDWATER ELEVATION AT OR BELOW THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET ASHTO M305 AND BE CAST WITH THE CONTECH LOGO.

**INSTALLATION NOTES**

- ANY SURFACE BACKFILL DEPTH AND/OR ANTI-FLOTTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
- CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STORMFILTER STRUCTURE (LIFTING CLUTCHES PROVIDED).
- CONTRACTOR TO INSTALL JUMP SEALS BETWEEN ALL SECTIONS AND ASSEMBLY STRUCTURES.
- CONTRACTOR TO PROVIDE INSTALL AND GROUT PIPES. MATCH OUTLET PIPE INVERT WITH OUTLET BAY FLOOR.
- CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CARTRIDGES FROM STRUCTURE-RELATED EROSION RUNOFF.
- CONTRACTOR TO REMOVE THE TRANSFER HOLE COVER WHEN THE SYSTEM IS BROUGHT ONLINE.

**CONTECH**  
 ENGINEERED SOLUTIONS LLC  
 www.contechsolutions.com  
 3025 Centre Parkway Dr., Suite 200, West Chester, OH 45380  
 937.636.1100 937.636.1100 937.636.1100 FAX

THE STORMWATER MANAGEMENT STORMFILTER  
 8' x 11' PEAK DIVERSION STORMFILTER  
 STANDARD DETAIL

### CITY OF SANDY

#### URBAN STREET SECTION

**PLAN**

**ELEVATION**

**FRAME AND COVER**  
 (DIAMETER VARIES)  
 N.T.S.

FILENAME: SANDY03.DWG

### CITY OF SANDY

#### SHALLOW TRENCH SERVICE CONNECTION AND MARKERS

FILENAME: SANDY03.DWG

### CITY OF SANDY

#### DRIVEWAY AND ALLEY APPROACHES WITH DEPRESSED CURBLINE SIDEWALK

| W  | B  | H          |
|----|----|------------|
| 5' | 2' | 0.08' (1") |
| 6' | 2' | 0.08' (1") |
| 8' | 4' | 0.08' (1") |

**NOTES**

- RESIDENTIAL DRIVEWAYS AND SIDEWALK SECTIONS THROUGH DRIVEWAYS SHALL HAVE A MINIMUM NOMINAL THICKNESS OF 4". CONCRETE STRENGTH SHALL BE 3300 PSI.
- CONCRETE FOR COMMERCIAL USE AND ALLEY APPROACHES SHALL HAVE A MINIMUM NOMINAL THICKNESS OF 6". CONCRETE STRENGTH SHALL BE 3300 PSI.
- CURB TRANSITIONS FOR COMMERCIAL USE AND ALLEY APPROACHES SHALL BE 5 FEET.
- CONSTRUCT CONTRACTION JOINT IN CENTER OF DRIVEWAY WHEN DRIVEWAY WIDTH EXCEEDS 15'.
- NO LIP AT GUTTER LINE IF USED AS SIDEWALK ACCESS RAMP.
- SEE SIDEWALK DETAILS FOR RESTRICTIONS AND SPECIFICATIONS NOT SHOWN.
- THE 50:1 CROSS-SLOPE OF SIDEWALK IS MEASURED FROM HORIZONTAL. THE 12:1 SLOPE OF SIDEWALK TRANSITION TO DRIVEWAY/ALLEY IS RELATIVE TO THE RUNNING SLOPE OF THE SIDEWALK. THE SLOPE OF THE APRON IS MEASURED RELATIVE TO HORIZONTAL.

FILENAME: SANDY03.DWG

### CITY OF SANDY

#### CURB AND WEEPHOLE

FILENAME: SANDY03.DWG

### CITY OF SANDY

#### URBAN STREET SECTION

FILENAME: SANDY03.DWG