SUSAN & HENRY SAMUELI COLLEGE OF HEALTH SCIENCES

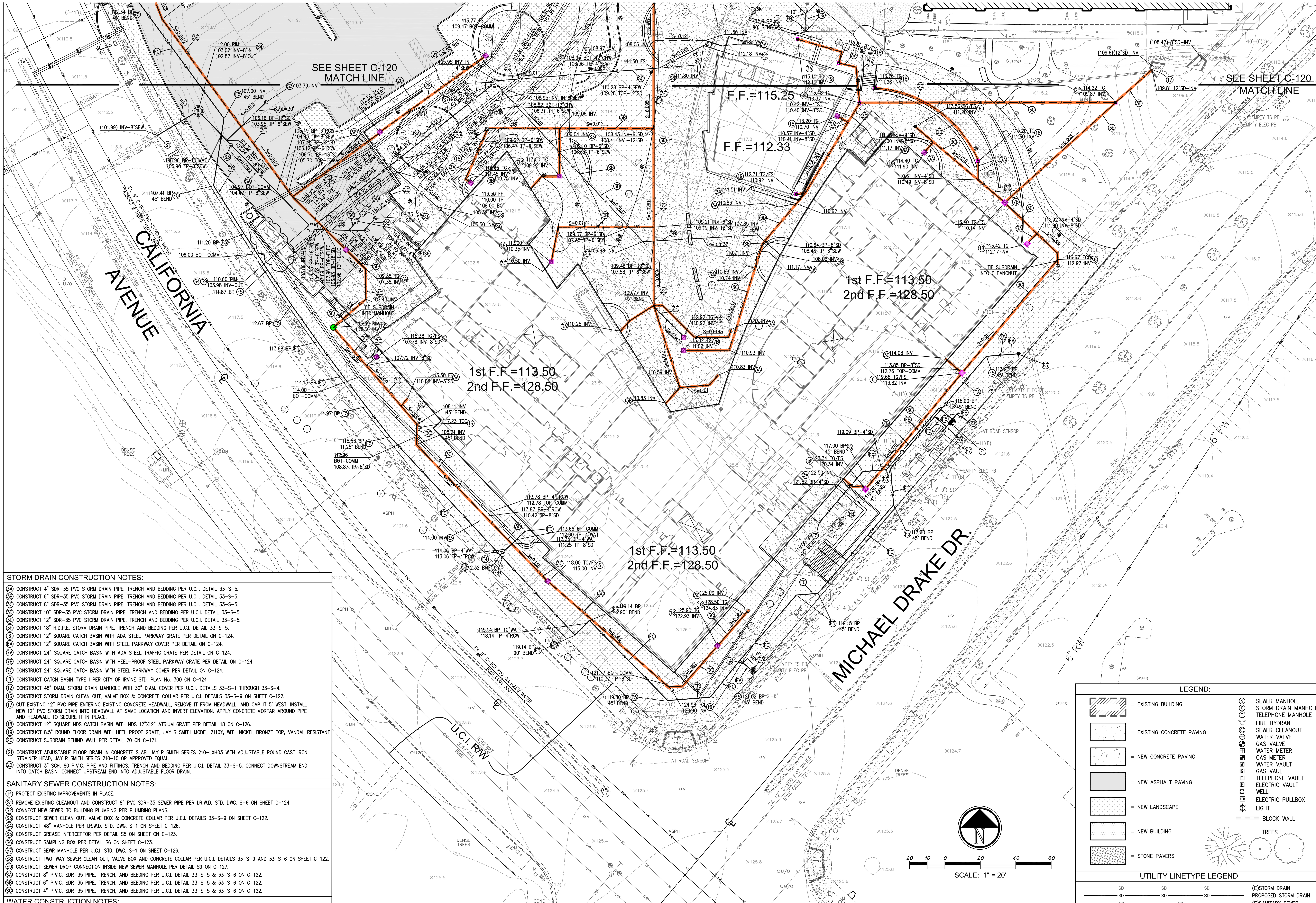
Sue & Bill Gross Nursing & Health Sciences Hall

Post Construction BMP Long Term Maintenance Plan

TABLE OF CONTENTS

Inspection and Maintenance Plan for Stormwater Management Structures (BMPs)

Component	Inspection Schedule	Corrective Actions
Contech System	Annually in Spring or as required	Follow Contech O&M Manual.
Catch Basins	Annually in Spring or as required	Inspect grate for serviceability
		Remove any trash or debris for around the catch basin and inlet grates.
		Clear any trash or sediment from within the catch basin.
		Remove any hydrocarbons from within the catch basin using absorptive pads from any structure.
		Replace or stabilize rock around catch basin if located within the planter areas.
Drain Inlets	Annually in Spring or as required	Inspect grate for serviceability.
		Remove any trash or debris for around the catch basin and inlet grates manually or by vacuum truck.
		Clear any trash or sediment from within the catch basin manually or by vacuum truck.
		Remove any hydrocarbons from within the catch basin using absorptive pads from any structure.
Landscape Areas	Annually in Fall or a required after severe rainfall	Maintain shrubs as normally required, replace any dead or dying shrubs.
		Inspect all slopes and embankments and replant areas with bare soil or sparse growth. Replace mulch as necessary
		Inspect all gravel areas at the perimeter maintenance strip. Reinstall gravel if it has been disturbed or eroded away.
Roadways / Parking Lots	Annually or as required	Clear parking lots of trash and debris as required.
		Use street sweeper to remove any fine sediment or sand after heavy rains or as required.
		Visually inspect roads and curbs for damage that may impede water flow to the storm drain system



STORM DRAIN CONSTRUCTION NOTES:

- (3A) CONSTRUCT 4" SDR-35 PVC STORM DRAIN PIPE. TRENCH AND BEDDING PER U.C.I. DETAIL 33-S-5.
- (3B) CONSTRUCT 6" SDR-35 PVC STORM DRAIN PIPE. TRENCH AND BEDDING PER U.C.I. DETAIL 33-S-5.
- (3C) CONSTRUCT 8" SDR-35 PVC STORM DRAIN PIPE. TRENCH AND BEDDING PER U.C.I. DETAIL 33-S-5.
- (3D) CONSTRUCT 10" SDR-35 PVC STORM DRAIN PIPE. TRENCH AND BEDDING PER U.C.I. DETAIL 33-S-5.
- (3E) CONSTRUCT 12" SDR-35 PVC STORM DRAIN PIPE. TRENCH AND BEDDING PER U.C.I. DETAIL 33-S-5.
- (3F) CONSTRUCT 18" H.D.P.E. STORM DRAIN PIPE. TRENCH AND BEDDING PER U.C.I. DETAIL 33-S-5.
- (6) CONSTRUCT 12" SQUARE CATCH BASIN WITH ADA STEEL PARKWAY GRATE PER DETAIL ON C-124.
- (6A) CONSTRUCT 12" SQUARE CATCH BASIN WITH STEEL PARKWAY COVER PER DETAIL ON C-124.
- (7A) CONSTRUCT 24" SQUARE CATCH BASIN WITH ADA STEEL TRAFFIC GRATE PER DETAIL ON C-124.
- (7B) CONSTRUCT 24" SQUARE CATCH BASIN WITH HEEL-PROOF STEEL PARKWAY GRATE PER DETAIL ON C-124.
- (7C) CONSTRUCT 24" SQUARE CATCH BASIN WITH STEEL PARKWAY COVER PER DETAIL ON C-124.
- (8) CONSTRUCT CATCH BASIN TYPE I PER CITY OF IRVINE STD. PLAN No. 300 ON C-124
- (12) CONSTRUCT 48" DIAM. STORM DRAIN MANHOLE WITH 30" DIAM. COVER PER U.C.I. DETAILS 33-S-1 THROUGH 33-S-4.
- (16) CONSTRUCT STORM DRAIN CLEAN OUT, VALVE BOX & CONCRETE COLLAR PER U.C.I. DETAILS 33-S-9 ON SHEET C-122.
- (17) CUT EXISTING 12" PVC PIPE ENTERING EXISTING CONCRETE HEADWALL, REMOVE IT FROM HEADWALL, AND CAP IT 5' WEST. INSTALL NEW 12" PVC STORM DRAIN INTO HEADWALL AT SAME LOCATION AND INVERT ELEVATION. APPLY CONCRETE MORTAR AROUND PIPE AND HEADWALL TO SECURE IT IN PLACE.
- (18) CONSTRUCT 12" SQUARE NDS CATCH BASIN WITH NDS 12"X12" ATRIUM GRATE PER DETAIL 18 ON C-126.
- (19) CONSTRUCT 8.5" ROUND FLOOR DRAIN WITH HEEL PROOF GRATE, JAY R SMITH MODEL 2110Y, WITH NICKEL BRONZE TOP, VANDAL RESISTANT
- (20) CONSTRUCT SUBDRAIN BEHIND WALL PER DETAIL 20 ON C-121.
- (21) CONSTRUCT ADJUSTABLE FLOOR DRAIN IN CONCRETE SLAB. JAY R SMITH SERIES 210-LXH03 WITH ADJUSTABLE ROUND CAST IRON STRAINER HEAD, JAY R SMITH SERIES 210-10 OR APPROVED EQUAL.
- (22) CONSTRUCT 3" SCH. 80 P.V.C. PIPE AND FITTINGS. TRENCH AND BEDDING PER U.C.I. DETAIL 33-S-5. CONNECT DOWNSTREAM END INTO CATCH BASIN. CONNECT UPSTREAM END INTO ADJUSTABLE FLOOR DRAIN.

SANITARY SEWER CONSTRUCTION NOTES:

- (P) PROTECT EXISTING IMPROVEMENTS IN PLACE.
- (S1) REMOVE EXISTING CLEANOUT AND CONSTRUCT 8" PVC SDR-35 SEWER PIPE PER I.R.W.D. STD. DWG. S-6 ON SHEET C-124.
- (S2) CONNECT NEW SEWER TO BUILDING PLUMBING PER PLUMBING PLANS.
- (S3) CONSTRUCT SEWER CLEAN OUT, VALVE BOX & CONCRETE COLLAR PER U.C.I. DETAILS 33-S-9 ON SHEET C-122.
- (S4) CONSTRUCT 48" MANHOLE PER I.R.W.D. STD. DWG. S-1 ON SHEET C-126.
- (S5) CONSTRUCT GREASE INTERCEPTOR PER DETAIL S5 ON SHEET ON C-123.
- (S6) CONSTRUCT SAMPLING BOX PER DETAIL S6 ON SHEET C-123.
- (S7) CONSTRUCT SEWR MANHOLE PER U.C.I. STD. DWG. S-1 ON SHEET C-126.
- (S8) CONSTRUCT TWO-WAY SEWER CLEAN OUT, VALVE BOX AND CONCRETE COLLAR PER U.C.I. DETAILS 33-S-9 AND 33-S-6 ON SHEET C-122.
- (S9) CONSTRUCT SEWER DROP CONNECTION INSIDE NEW SEWER MANHOLE PER DETAIL S9 ON C-127.
- (SA) CONSTRUCT 8" P.V.C. SDR-35 PIPE, TRENCH, AND BEEDING PER U.C.I. DETAIL 33-S-5 & 33-S-6 ON C-122.
- (SB) CONSTRUCT 6" P.V.C. SDR-35 PIPE, TRENCH, AND BEEDING PER U.C.I. DETAIL 33-S-5 & 33-S-6 ON C-122.
- (SC) CONSTRUCT 4" P.V.C. SDR-35 PIPE, TRENCH, AND BEEDING PER U.C.I. DETAIL 33-S-5 & 33-S-6 ON C-122.

WATER CONSTRUCTION NOTES:

- (P) PROTECT EXISTING IMPROVEMENTS IN PLACE.
- (F1) CONSTRUCT 8" COMPACT DOUBLE CHECK BACKFLOW ASSEMBLY WITH PRESSURE RELIEF VALVE PER "MODIFIED" U.C.I. DETAIL 33-W-16A ON C-123.
- (F2) CONSTRUCT SIX WAY FIRE DEPARTMENT CONNECTION PER "MODIFIED" U.C.I. DETAIL 33-W-16A ON C-123.
- (F3) CONSTRUCT FIRE HYDRANT PER U.C.I. DETAIL 33-W-6 ON C-123. HYDRANT SHALL BE JAMES JONES MODEL J-3775 OR CLOW MODEL 2065 WITH BREAK-OFF CHECK VALVE.
- (F4) CONSTRUCT EPOXY COATED GATE VALVE, SIZE TO MATCH WATER LINE, PER U.C.I. DETAIL 33-W-7A & 33-W-7B ON C-122.
- (F5) CONSTRUCT THRUST BLOCK PER U.C.I. DETAIL 33-W-12A & 33-W-12B ON SHEET C-123.
- (F6) RELOCATE EXISTING FIRE HYDRANT & HYDRANT BURY.
- (F7) CONNECT NEW 10" WATER LINE TO EXISTING 10" GATE VALVE.
- (FA) CONSTRUCT 6" A.W.W.A. C-900, CLASS 235 WATER LINE PER U.C.I. TRENCH SECTION AND BEDDING DETAIL 33-W-11 ON SHEET C-123.
- (FB) CONSTRUCT 8" A.W.W.A. C-900, CLASS 235 WATER LINE PER U.C.I. TRENCH SECTION AND BEDDING DETAIL 33-W-11 ON SHEET C-123.
- (FC) CONSTRUCT 10" A.W.W.A. C-900, CLASS 235 WATER LINE PER U.C.I. TRENCH SECTION AND BEDDING DETAIL 33-W-11 ON SHEET C-123.
- (FD) CONSTRUCT 4" A.W.W.A. C-900, CLASS 235 WATER LINE PER U.C.I. TRENCH SECTION AND BEDDING DETAIL 33-W-11 ON SHEET C-123.

Plot Date: 5/4/2022 1:06:17 PM Last Save By: ron.canedy Login: Colin Tsui S:\Jobs\M2469 - UCI DB Project\Civil\CP-3\UCI N&HS CP3A - C-119 Site Utility Plan.dwg

UNDERGROUND UTILITY NOTE

DEPTH FROM SURFACE — 6"

DEPTHS SHOWN ON THIS PLAN ARE APPROXIMATE AND ARE PROVIDED BY GROUND PENETRATING RADAR. ESTIMATED DEPTHS ARE FROM THE GROUND SURFACE TO THE CENTER OF THE FACILITY, INVERT OF WASTE LINES, OR TO THE FACILITY TRACER WIRE. DEPTH ESTIMATES SHOULD BE USED WITH CAUTION AND MAY VARY ALONG THE LENGTH OF THE FACILITY.

SURVEYOR CONTROL NOTE

HORIZONTAL CONTROL AND BENCH MARK IS BASED ON UCI CAMPUS CONTROL WHICH UTILIZES THE ORANGE COUNTY SURVEYOR'S CONTROL NETWORK. THE HORIZONTAL DATUM IS NAD83 (1991.35 EPOCH) AND THE VERTICAL DATUM IS NGVD29 (1995 ADJUSTMENT). THIS IS THE SAME BENCH MARK USED FOR THE GAVIN HERBERT EYE CENTER PROJECT IN 2011.

LEGEND:

- = EXISTING BUILDING
- = EXISTING CONCRETE PAVING
- = NEW CONCRETE PAVING
- = NEW ASPHALT PAVING
- = NEW LANDSCAPE
- = NEW BUILDING
- = STONE PAVERS
- SEWER MANHOLE
- STORM DRAIN MANHOLE
- TELEPHONE MANHOLE
- FIRE HYDRANT
- SEWER CLEANOUT
- WATER VALVE
- GAS VALVE
- WATER METER
- GAS METER
- WATER VAULT
- GAS VAULT
- TELEPHONE VAULT
- ELECTRIC VAULT
- WELL
- ELECTRIC PULLBOX
- LIGHT
- BLOCK WALL
- TREES

UTILITY LINETYPE LEGEND

Line	Description
SD	(E)STORM DRAIN
SD	PROPOSED STORM DRAIN
SS	(E)SANITARY SEWER
SS	PROPOSED SANITARY SEWER
DW	(E)WATER
DW	PROPOSED WATER
FW	PROPOSED FIRE WATER
RW	(E)RECLAIMED WATER
RW	PROPOSED RECLAIMED WATER
E	(E)ELECTRICAL
E	PROPOSED ELECTRICAL SEE E SHEETS
C	(E)COMMUNICATIONS
C	PROPOSED COMMUNICATIONS SEE E SHEETS
CHW	(E)CHILLED WATER
CHW	PROPOSED CHILLED WATER SEE M SHEETS
G	(E)GAS

CAMPUS BLDG. DEPTT.

QUALITY ASSURANCE

FIRE MARSHAL

DESIGN/BUILD TEAM

Hathaway Dinwiddie Constr. Co.
811 Wilshire Blvd, Suite 1500
Los Angeles, CA 90017
213-236-0500 — DESIGN BUILDER

HED
601 South Figueroa Street
Suite 500
Los Angeles, CA 90017
213-542-4500 — ARCHITECT

CONSULTANT

SLAM
250 Summet Street
4th Floor
Boston, MA 02210
617-357-1800 — PLANNER / ARCHITECT

FPL & Associates, Inc.
30 Corporate Park
Suite 401
Irvine, CA 92606
949-252-1688 — CIVIL

Spurlock
2122 Hancock Street
San Diego, CA 92110
619-681-0090 — LANDSCAPE

Saiful Bouquet
155 N. Lake Ave., 6th Floor
Pasadena, CA 91101
626-304-2616 — STRUCTURAL

Alvine Engineering
1201 Cass Street
Omaha, NE 68102
402-346-7007 — MECHANICAL/ ELECTRICAL/ PLUMBING

Jensen Hughes
2099 S. State College Blvd
Suite 540
Anaheim, CA 92806 — LIFE SAFETY

STAMP

REGISTERED PROFESSIONAL ENGINEER ALAN WING-CHI LEE No. C 34971 Exp. 09-30-23 CIVIL STATE OF CALIFORNIA

UCI University of California, Irvine

Design & Construction Services

Design & Construction Services
101 Academy, Suite 200
Irvine, CA 92697-2450

Susan & Henry Samueli College of Health Sciences
Project No. 990058
+
Sue & Bill Gross Nursing and Health Sciences Hall
Project No. 994275

Date	Issued For
1 10/28/2020	SI-001
2 12/07/2020	SI-003
3 01/08/2021	SI-004
02/01/2021	DSA Access Compliance Review
4 03/05/2021	SI-006
5 05/21/2021	SI-007
6 11/05/2021	SI-013
7 05/06/2022	SI-019

SITE UTILITY PLAN

C-119

STORM DRAIN CONSTRUCTION NOTES:

(5A) CONSTRUCT 4" SDR-35 PVC STORM DRAIN PIPE. TRENCH AND BEDDING PER U.C.I. DETAIL 33-S-5.
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(9) CONSTRUCT HYDRODYNAMIC SEPARATOR PER DETAIL ON C-126.
(10) CONSTRUCT UNDERGROUND STORM WATER RETENTION CHAMBERS PER DETAILS ON C-125.
(11) CONSTRUCT CONTECH ACCESS MANHOLE RISER WITH 36-INCH MANHOLE FRAME AND COVER.
(12) CONSTRUCT 48" DIAM. STORM DRAIN MANHOLE WITH 30" DIAM. COVER PER U.C.I. DETAILS 33-S-1 THROUGH 33-S-4.
(14) CONSTRUCT CONCRETE WING HEADWALL PER DETAIL 14 ON C-127.
(15) CONSTRUCT RIP RAP PAD PER DETAIL 15 ON C-121.
(16) CONSTRUCT STORM DRAIN CLEAN OUT, VALVE BOX & CONCRETE COLLAR PER U.C.I. DETAILS 33-S-9 ON SHEET C-122.
(18) CONSTRUCT 12" SQUARE NDS CATCH BASIN WITH NDS 12"X12" ATRIUM GRATE PER DETAIL 18 ON C-126.
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(F4) CONSTRUCT EPOXY COATED GATE VALVE, SIZE TO MATCH WATER LINE, PER U.C.I. DETAIL 33-W-7A & 33-W-7B ON C-122.
(F5) CONSTRUCT THRUST BLOCK PER U.C.I. DETAIL 33-W-12A & 33-W-12B ON SHEET C-123.
(F6) RELOCATE EXISTING FIRE HYDRANT & HYDRANT BURY.
(F7) CONNECT NEW 10" WATER LINE TO EXISTING 10" GATE VALVE.
(F8) RELOCATE EXISTING FIRE HYDRANT & HYDRANT BURY. CONSTRUCT FIRE HYDRANT, CASE 2, PER U.C.I. DETAIL 33-W-6 ON C-123.
(F9) REMOVE EXISTING 8"x8"x6" D.I. TEE AND CONSTRUCT 8"-90° D.I. BEND. SALVAGE AND RETURN EXISTING 6" GATE VALVE TO UCI.
(FA) CONSTRUCT 6" A.W.W.A. C-900, CLASS 235 WATER LINE PER U.C.I. TRENCH SECTION AND BEDDING DETAIL 33-W-11 ON SHEET C-123.
(FB) CONSTRUCT 8" A.W.W.A. C-900, CLASS 235 WATER LINE PER U.C.I. TRENCH SECTION AND BEDDING DETAIL 33-W-11 ON SHEET C-123.
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(FD) CONSTRUCT 4" A.W.W.A. C-900, CLASS 235 WATER LINE PER U.C.I. TRENCH SECTION AND BEDDING DETAIL 33-W-11 ON SHEET C-123.
(W) CONSTRUCT 8" X 2" BRONZE SERVICE SADDLE WITH STAINLESS STEEL STRAPS AND 2" BALL CORPORATION STOP.
(W2) CONSTRUCT 2" COPPER SERVICE PIPE TYPE "K" SOFT PER U.C.I. TRENCH SECTION AND BEDDING DETAILS 33-W-11. MAINTAIN A MINIMUM OF 36" OF COVER OVER PIPE AT ALL TIMES.
(W3) CONSTRUCT 2" BACKFLOW DEVICE PER DETAIL W3 ON SHEET C-103.

LEGEND:

= EXISTING BUILDING
= EXISTING CONCRETE PAVING
= NEW CONCRETE PAVING
= NEW ASPHALT PAVING
= NEW LANDSCAPE
= NEW BUILDING
= STONE PAVERS

SEWER MANHOLE
STORM DRAIN MANHOLE
TELEPHONE MANHOLE
FIRE HYDRANT
SEWER CLEANOUT
WATER VALVE
GAS VALVE
WATER METER
GAS METER
WATER VAULT
GAS VAULT
TELEPHONE VAULT
ELECTRIC VAULT
WELL
ELECTRIC PULLBOX
LIGHT
BLOCK WALL
TREES

UTILITY LINETYPE LEGEND

(E)STORM DRAIN
PROPOSED STORM DRAIN
(E)SANITARY SEWER
PROPOSED SANITARY SEWER
(E)WATER
PROPOSED WATER
(E)RECLAIMED WATER
PROPOSED RECLAIMED WATER
(E)ELECTRICAL
PROPOSED ELECTRICAL SEE E SHEETS
(E)COMMUNICATIONS
PROPOSED COMMUNICATIONS SEE E SHEETS
(E)CHILLED WATER
PROPOSED CHILLED WATER SEE M SHEETS
(E)GAS

SCALE: 1" = 20'

TEMPORARY PARKING LOT PER CP-2

See Attached Contech Maintenance Manual

Contech Hydrodynamic Separator

MATCH LINE SEE SHEET C-121

MATCH LINE SEE SHEET C-119

GAVIN HERBERT EYE INSTITUTE

F.F.=115.25

CALIFORNIA AVENUE
CITY OF IRVINE R/W
U.C.I. R/W

UNDERGROUND UTILITY NOTE

DEPTH FROM SURFACE 1'-6"

DEPTHS SHOWN ON THIS PLAN ARE APPROXIMATE AND ARE PROVIDED BY GROUND PENETRATING RADAR. ESTIMATED DEPTHS ARE FROM THE GROUND SURFACE TO THE CENTER OF THE FACILITY, INVERT OF WASTE LINES, OR TO THE FACILITY TRACER WIRE. DEPTH ESTIMATES SHOULD BE USED WITH CAUTION AND MAY VARY ALONG THE LENGTH OF THE FACILITY.

CAMPUS BLDG. DEPT.

QUALITY ASSURANCE

FIRE MARSHAL

DESIGN/BUILD TEAM

Hathaway Dinwiddie Constr. Co.
811 Wilshire Blvd, Suite 1500
Los Angeles, CA 90017
213-236-0500
DESIGN BUILDER

HED
601 South Figueroa Street
Suite 500
Los Angeles, CA 90017
213-542-4500
ARCHITECT

CONSULTANT

SLAM
250 Summet Street
4th Floor
Boston, MA 02210
617-357-1800
PLANNER / ARCHITECT

FPL & Associates, Inc.
30 Corporate Park
Suite 401
Irvine, CA 92606
949-252-1688
CIVIL

Spurlock
2122 Hancock Street
San Diego, CA 92110
619-681-0090
LANDSCAPE

Saiful Bouquet
155 N. Lake Ave., 6th Floor
Pasadena, CA 91101
626-304-2616
STRUCTURAL

Alvine Engineering
1201 Cass Street
Omaha, NE 68102
402-346-7007
MECHANICAL/ ELECTRICAL/ PLUMBING

Jensen Hughes
2099 S. State College Blvd
Suite 540
Anaheim, CA 92806
LIFE SAFETY

STAMP

REGISTERED PROFESSIONAL ENGINEER
No. 6 34971
Exp. 06-30-22
STATE OF CALIFORNIA

University of California, Irvine

Design & Construction Services

Design & Construction Services
101 Academy, Suite 200
Irvine, CA 92697-2450

Susan & Henry Samueli College of Health Sciences
Project No. 990058
+
Sue & Bill Gross Nursing and Health Sciences Hall
Project No. 994275

Date	Issued For
10/28/2020	SI-001
12/4/2020	SI-003
02/01/2021	DSA Access Compliance Review
11/05/2021	SI-013

SITE UTILITY PLAN

C-120

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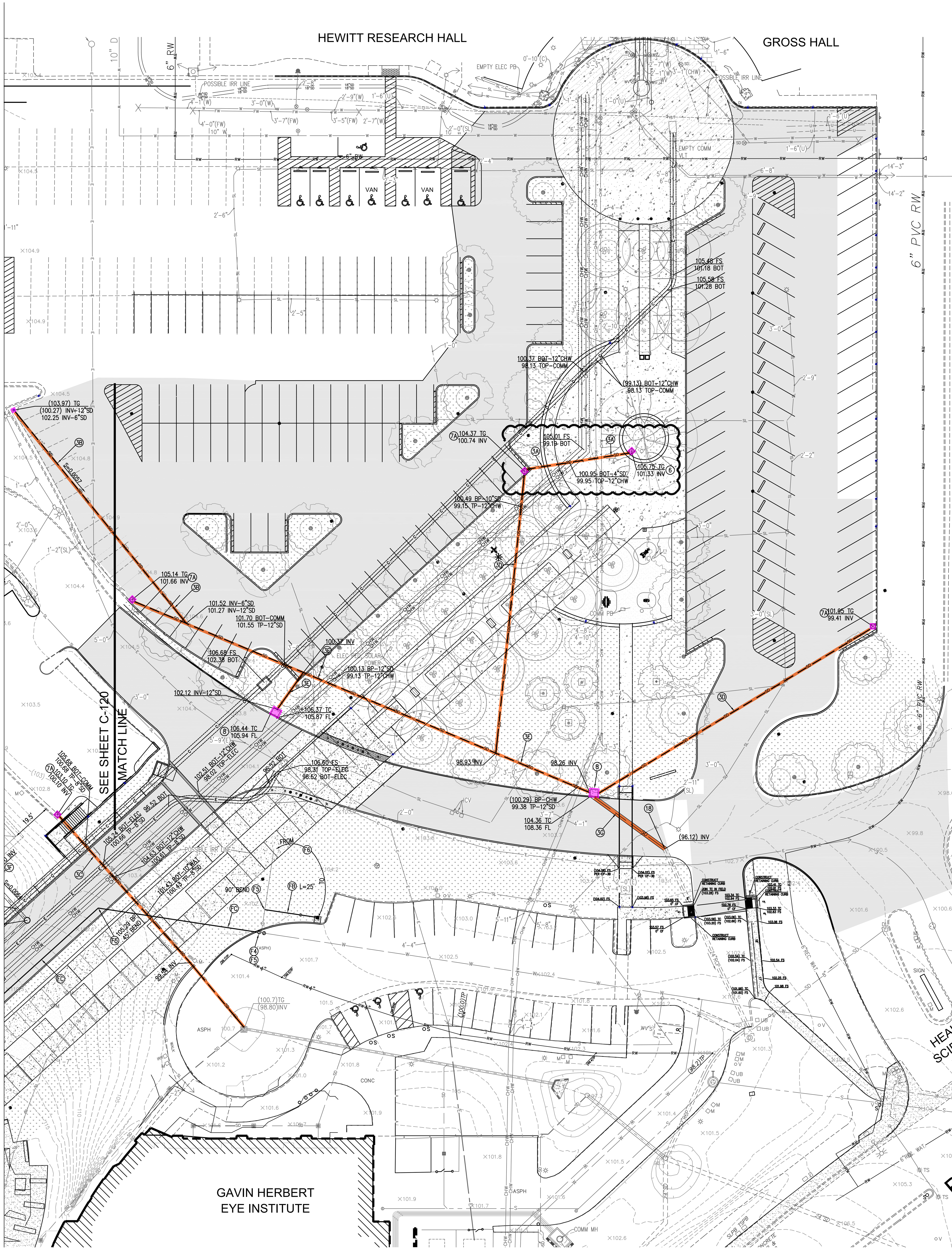


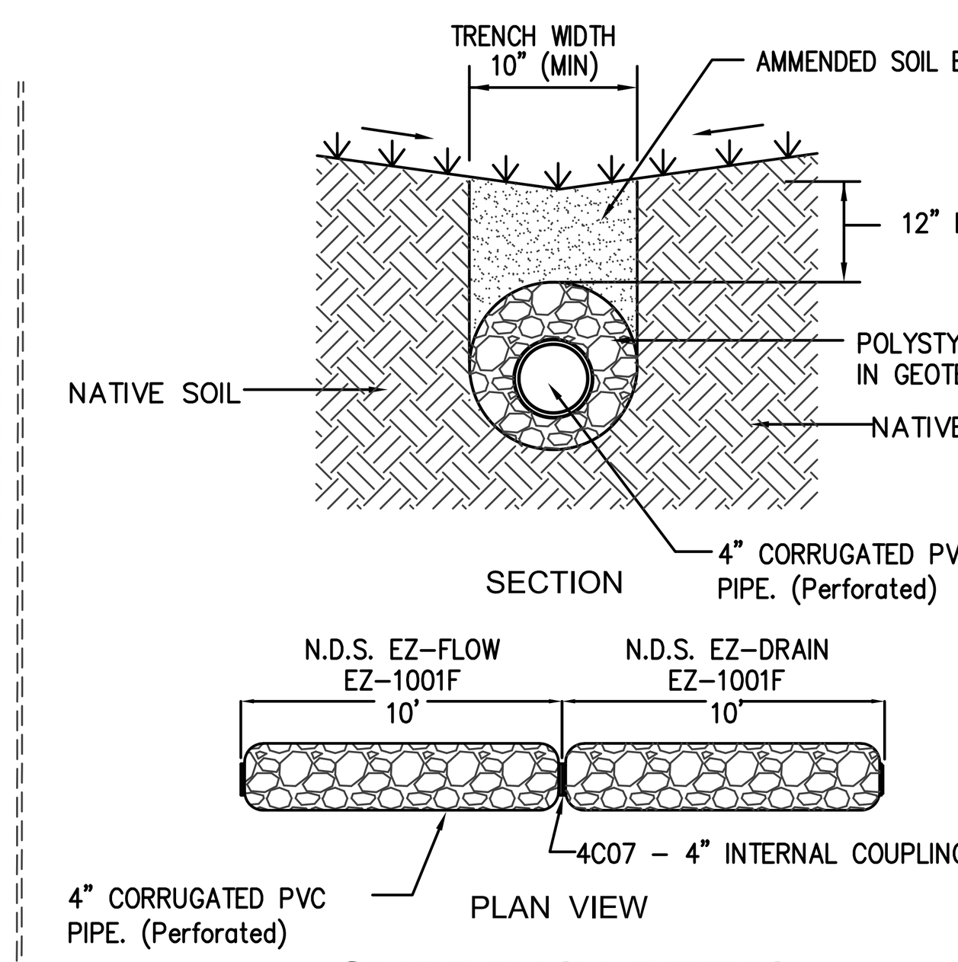
LEGEND:

- = EXISTING BUILDING
- = EXISTING CONCRETE PAVING
- = NEW CONCRETE PAVING
- = NEW ASPHALT PAVING
- = NEW LANDSCAPE
- = NEW BUILDING
- = STONE PAVERS

- SEWER MANHOLE
- STORM DRAIN MANHOLE
- TELEPHONE MANHOLE
- FIRE HYDRANT
- SEWER CLEANOUT
- WATER VALVE
- GAS VALVE
- WATER METER
- GAS METER
- WATER VAULT
- GAS VAULT
- TELEPHONE VAULT
- ELECTRIC VAULT
- WELL
- ELECTRIC PULLBOX
- LIGHT
- BLOCK WALL
- TREES

UTILITY LINETYPE LEGEND

- (E)STORM DRAIN
- PROPOSED STORM DRAIN
- (E)SANITARY SEWER
- PROPOSED SANITARY SEWER
- (E)WATER
- PROPOSED WATER
- (E)RECLAIMED WATER
- PROPOSED RECLAIMED WATER
- (E)ELECTRICAL
- PROPOSED ELECTRICAL SEE E SHEETS
- (E)COMMUNICATIONS
- PROPOSED COMMUNICATIONS SEE E SHEETS
- (E)CHILLED WATER
- PROPOSED CHILLED WATER SEE M SHEETS
- (E)GAS



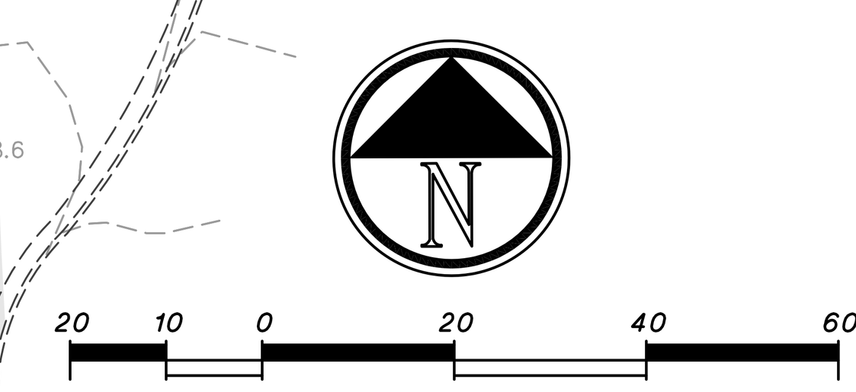
(20) SUBDRAIN DETAIL
N.D.S. PRODUCTS EZ-FLOW
(NOT TO SCALE)

STORM DRAIN CONSTRUCTION NOTES:

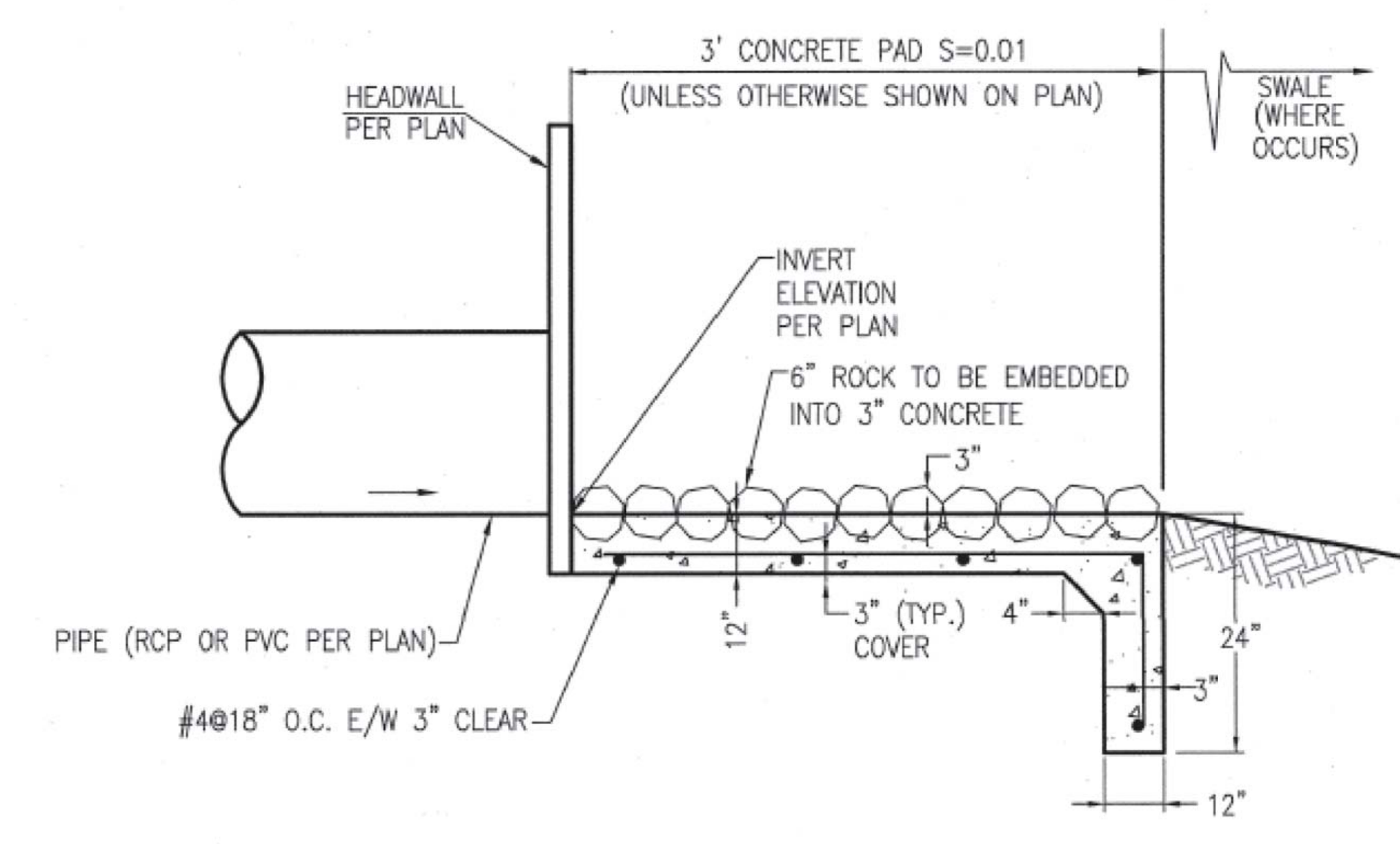
- (3A) CONSTRUCT 4" SDR–35 PVC STORM DRAIN PIPE. TRENCH AND BEDDING PER U.C.I. DETAIL 33–S–5.
- (3B) CONSTRUCT 6" SDR–35 PVC STORM DRAIN PIPE. TRENCH AND BEDDING PER U.C.I. DETAIL 33–S–5.
- (3C) CONSTRUCT 8" SDR–35 PVC STORM DRAIN PIPE. TRENCH AND BEDDING PER U.C.I. DETAIL 33–S–5.
- (3D) CONSTRUCT 10" SDR–35 PVC STORM DRAIN PIPE. TRENCH AND BEDDING PER U.C.I. DETAIL 33–S–5.
- (3E) CONSTRUCT 12" SDR–35 PVC STORM DRAIN PIPE. TRENCH AND BEDDING PER U.C.I. DETAIL 33–S–5.
- (3F) CONSTRUCT 18" H.D.P.E. STORM DRAIN PIPE. TRENCH AND BEDDING PER U.C.I. DETAIL 33–S–5.
- (3G) 24"HDPE STORM DRAIN PIPE
- (6) CONSTRUCT 12" SQUARE NDS CATCH BASIN WITH NDS 12"X12" ATRIUM GRATE PER DETAIL 18 ON C–126.
- (7A) CONSTRUCT 24" SQUARE CATCH BASIN WITH ADA STEEL TRAFFIC GRATE PER DETAIL ON C–124.
- (7B) CONSTRUCT 24" SQUARE CATCH BASIN WITH HEEL–PROOF STEEL PARKWAY GRATE PER DETAIL ON C–124.
- (8) CONSTRUCT CATCH BASIN TYPE I PER CITY OF IRVINE STD. PLAN No. 300 ON C–124
- (17) CUT EXISTING 12" PVC PIPE ENTERING EXISTING CONCRETE HEADWALL, REMOVE IT FROM HEADWALL, AND CAP IT 5' WEST. INSTALL NEW 12" PVC STORM DRAIN INTO HEADWALL AT SAME LOCATION AND INVERT ELEVATION. APPLY CONCRETE MORTAR AROUND PIPE AND HEADWALL TO SECURE IT IN PLACE.
- (18) CONSTRUCT CONCRETE COLLAR PER CITY OF IRVINE STD. PLAN 310 PER DETAIL ON C–124.

WATER CONSTRUCTION NOTES:

- (P) PROTECT EXISTING IMPROVEMENTS IN PLACE.
- (F1) CONSTRUCT 8" COMPACT DOUBLE CHECK BACKFLOW ASSEMBLY WITH PRESSURE RELIEF VALVE PER "MODIFIED" U.C.I. DETAIL 33–W–16A ON C–123.
- (F2) CONSTRUCT SIX WAY FIRE DEPARTMENT CONNECTION PER "MODIFIED" U.C.I. DETAIL 33–W–16A ON C–123.
- (F3) CONSTRUCT FIRE HYDRANT PER U.C.I. DETAIL 33–W–6 ON C–123. HYDRANT SHALL BE JAMES JONES MODEL J–3775 OR CLOW MODEL 2065 WITH BREAK–OFF CHECK VALVE.
- (F4) CONSTRUCT EPOXY COATED GATE VALVE, SIZE TO MATCH WATER LINE, PER U.C.I. DETAIL 33–W–7A & 33–W–7B ON C–122.
- (F5) CONSTRUCT THRUST BLOCK PER U.C.I. DETAIL 33–W–12A & 33–W–12B ON SHEET C–123.
- (F6) RELOCATE EXISTING FIRE HYDRANT & HYDRANT BURY AND INSTALL PER 33–W–6 ON SHEET C–123.
- (F7) CONNECT NEW 10" WATER LINE TO EXISTING 10" GATE VALVE.
- (FA) CONSTRUCT 6" A.W.W.A. C–900, CLASS 235 WATER LINE PER U.C.I. TRENCH SECTION AND BEDDING DETAIL 33–W–11 ON SHEET C–123.
- (FB) CONSTRUCT 8" A.W.W.A. C–900, CLASS 235 WATER LINE PER U.C.I. TRENCH SECTION AND BEDDING DETAIL 33–W–11 ON SHEET C–123.
- (FC) CONSTRUCT 10" A.W.W.A. C–900, CLASS 235 WATER LINE PER U.C.I. TRENCH SECTION AND BEDDING DETAIL 33–W–11 ON SHEET C–123.
- (FD) CONSTRUCT 4" A.W.W.A. C–900, CLASS 235 WATER LINE PER U.C.I. TRENCH SECTION AND BEDDING DETAIL 33–W–11 ON SHEET C–123.



SCALE: 1" = 20'



(15) CONCRETE RIP RAP PAD
NOT TO SCALE

UNDERGROUND UTILITY NOTE

DEPTH FROM SURFACE 1'–6"

DEPTHS SHOWN ON THIS PLAN ARE APPROXIMATE AND ARE PROVIDED BY GROUND PENETRATING RADAR. ESTIMATED DEPTHS ARE FROM THE GROUND SURFACE TO THE CENTER OF THE FACILITY, INVERT OF WASTE LINES, OR TO THE FACILITY TRACER WIRE. DEPTH ESTIMATES SHOULD BE USED WITH CAUTION AND MAY VARY ALONG THE LENGTH OF THE FACILITY.

SURVEYOR CONTROL NOTE

HORIZONTAL CONTROL AND BENCH MARK IS BASED ON UCI CAMPUS CONTROL WHICH UTILIZES THE ORANGE COUNTY SURVEYOR'S CONTROL NETWORK. THE HORIZONTAL DATUM IS NAD83 (1991.35 EPOCH) AND THE VERTICAL DATUM IS NGVD29 (1995 ADJUSTMENT). THIS IS THE SAME BENCH MARK USED FOR THE GAVIN HERBERT EYE CENTER PROJECT IN 2011.

CAMPUS BLDG. DEPTT.
CAMPUS BUILDING DEPARTMENT
Reviewed For Code Compliance
Approval of this plan does not authorize or approve any omission or deviation of any of the provisions of current adopted code or of any other ordinance of the jurisdiction. Final approval is subject to field inspection.
Reviewed By: John Scharf (DocuSigned) — Building Official — Date Signed: 7/23/2021
UC Irvine Design & Construction Services

QUALITY ASSURANCE
REVIEWED FOR CONFORMANCE
(Per General Conditions, Article 3, Section 3.11.1)
Review does not authorize or grant any waiver, deviation, or omission from the Contract Documents. Final approval is subject to field inspections. Any subsequent revisions to these documents shall be submitted for review.
Reviewed By: James Wahlmeier (DocuSigned) — Quality Assurance — Date Signed: 7/23/2021
UC Irvine Design & Construction Services

FIRE MARSHAL
OFFICE OF THE STATE FIRE MARSHAL
APPROVED FIRE AND PANIC ONLY
Jul 20, 2021
College of Health Sc/School of Nursing
Project # 990058
Approval of this plan does not authorize or approve any omission or deviation from applicable regulations. Final approval is subject to field inspection. One set of approved plans shall be available on the project site at all times.

DESIGN/BUILD TEAM

Hathaway Dinwiddie Constr. Co. 811 Wilshire Blvd, Suite 1500 Los Angeles, CA 90017 213-236-0500	DESIGN BUILDER
HED 601 South Figueroa Street Suite 500 Los Angeles, CA 90017 213-542-4500	ARCHITECT

CONSULTANT

SLAM 250 Summet Street 4th Floor Boston, MA 02210 617-357-1800	PLANNER / ARCHITECT
FPL & Associates, Inc. 30 Corporate Park Suite 401 Irvine, CA 92606 949-252-1688	CIVIL
Spurlock 2122 Hancock Street San Diego, CA 92110 619-681-0090	LANDSCAPE
Saiful Bouquet 155 N. Lake Ave., 6th Floor Pasadena, CA 91101 626-304-2616	STRUCTURAL
Alvine Engineering 1201 Cass Street Omaha, NE 68102 402-346-7007	MECHANICAL/ ELECTRICAL/ PLUMBING
Jensen Hughes 2099 S. State College Blvd Suite 540 Anaheim, CA 92806	LIFE SAFETY

STAMP

REGISTERED PROFESSIONAL ENGINEER — No. C 54971 — Exp. 09-30-21 — CIVIL — STATE OF CALIFORNIA

UCI
University of California, Irvine

Design & Construction Services

Design & Construction Services
101 Academy, Suite 200
Irvine, CA 92697-2450

Susan & Henry Samueli College of Health Sciences

Project No. 990058

+

Sue & Bill Gross Nursing and Health Sciences Hall

Project No. 994275

Date	Issued For
5/29/2020	CP-03A Site Utilities at Gavin Dropoff
⚠1 01/22/2021	RFI 41
02/01/2021	DSA Access Compliance Review
05/21/2021	SI 07

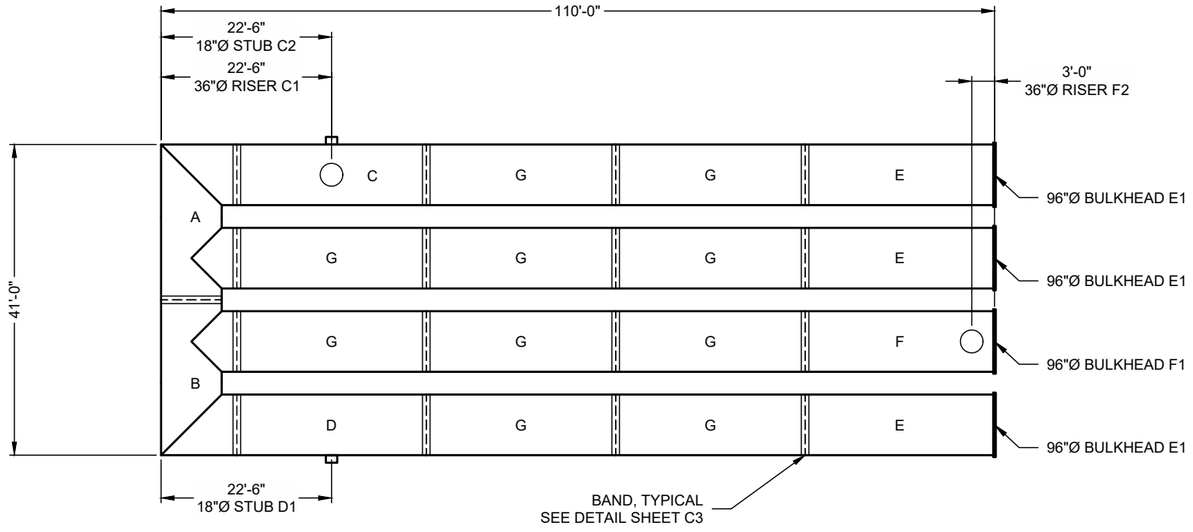
BUILDING PERMIT # 01-2021-1003

SITE UTILITY PLAN

C-121

STUB INFORMATION		
PIECE	STUB INVERT	SYSTEM INVERT
18"Ø STUB C2	100.70	95.20
18"Ø STUB D1	100.65	95.20

RISER INFORMATION		
PIECE	RIM ELEV.	SYSTEM INVERT
36"Ø RISER C1	112.68	95.20
36"Ø RISER F2	116.11	95.20



THE UNDERSIGNED HEREBY APPROVES THE ATTACHED (4) PAGES INCLUDING THE FOLLOWING:

- **PIPE STORAGE = 22,570 CF**
- **MAINLINE PIPE GAGE = 16**
- **WALL TYPE = PERFORATED**
- **DIAMETER = 96"**
- **FINISH = ALT2**
- **CORRUGATION = 5x1**

CUSTOMER _____ DATE _____

ASSEMBLY

SCALE: 1" = 20'
PIPE STORAGE: 22,570 CF
STRUCTURAL BACKFILL STORAGE: 10,156 CF
TOTAL STORAGE PROVIDED: 31,720 CF
LOADING: H20
PIPE INV. = 95.2'±

NOTES

- THE PIPE SHOULD BE FULLY PERFORATED IN ACCORDANCE WITH AASHTO M 36, SECTION 8.3.2.2, AND USING CLASS 2 PERFORATIONS. THE TOTAL OPEN AREA OF THE PERFORATIONS WILL BE A MINIMUM OF 2.3% OF THE PIPE SURFACE AREA.
- BULKHEADS SHALL BE 12-GAGE OR HEAVIER STEEL AND THE COATING WILL MATCH THE SPECIFIED CMP COATING. BULKHEAD PLATES SHALL BE FULLY WELDED ONTO THE CMP WITH STEEL REINFORCEMENT AS REQUIRED. THE STEEL REINFORCEMENT SHALL BE POST COATED WITH ZINC RICH PAINT PER AASHTO M 36. BULKHEAD DESIGNS SHALL SATISFY THE REQUIREMENTS SHOWN IN CHAPTER 8 OF THE NCSPA CSP DESIGN MANUAL AND CALCULATIONS SHALL BE PROVIDED TO THE ENGINEER OF RECORD (EOR) FOR APPROVAL UPON REQUEST.
- ALL FITTINGS SHALL BE STRUCTURALLY CHECKED FOR REINFORCEMENTS PER ASTM A998 AND PROVIDED TO THE EOR FOR APPROVAL UPON REQUEST.
- CONNECTING BANDS FOR INFILTRATION SYSTEMS SHALL BE ANY TYPE, BUT MUST BE AT LEAST 12" WIDE. BANDS SHALL MATCH THE SPECIFIED CMP COATING AND MEET THE REQUIREMENTS OF AASHTO M 36.
- ALL METALLIC COATINGS AFFECTED BY MANUFACTURING FABRICATION SHALL BE REPAIRED PER AASHTO M 36 SECTION 11 REQUIREMENTS (E.G. ZINC-RICH PAINT ON ALL WELDS). IF POLYMER COATINGS ARE USED THE REPAIR OF DAMAGED COATINGS WILL BE IN CONFORMANCE WITH AASHTO M 245 SECTION 11 REQUIREMENTS.
- ACCESS LADDERS SHALL BE ATTACHED BY THE MANUFACTURER PRIOR TO DELIVERY, NOT INSTALLED ON THE JOBSITE.

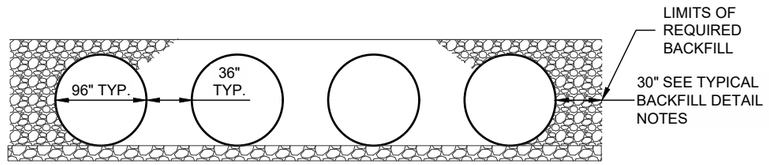
MARK	DATE	REVISION DESCRIPTION	BY

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
11815 NE Glenn Widing Drive, Portland, OR 97220
800-548-4667 503-240-3393 800-561-1271 FAX

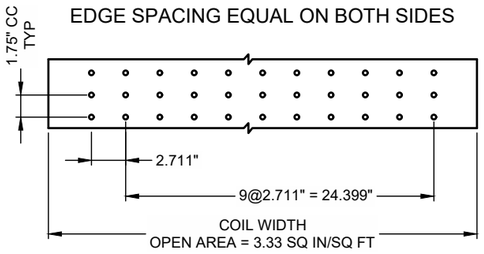
CONTECH CMP DETENTION SYSTEMS
CONTECH **CONTRACT** DRAWING

96"Ø PERFORATED UNDERGROUND RETENTION SYSTEM - 633277-010
UC IRVINE PROJECT
IRVINE, CA
SITE DESIGNATION:

PROJECT No.:	SEQ. No.:	DATE:
633277	010	1/8/2020
DESIGNED: RLH	DRAWN: RLH	
CHECKED:	APPROVED:	
SHEET NO.: C1 OF 4		



TYPICAL SECTION VIEW
NOT TO SCALE



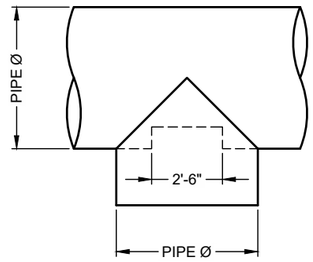
NOTES:
1. PERFORATIONS MEET AASHTO AND ASTM SPECIFICATIONS.
2. PERFORATION OPEN AREA PER SQUARE FOOT OF PIPE IS BASED ON THE NOMINAL DIAMETER AND LENGTH OF PIPE.
3. DIMENSIONS SUBJECT TO MANUFACTURER'S TOLERANCES.
4. ALL HOLES 3/8"Ø.

EXFILTRATION AREA
STANDARD PERFORATION PATTERNS

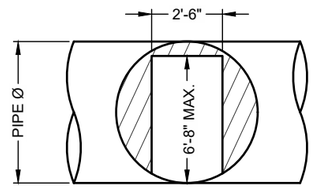
APPROXIMATE AREA PER LINEAR FOOT OF PIPE				
PIPE	CORRUGATION PATTERN			
	2 2/3" x 1/2"	3" x 1"	5" x 1"	ULTRA FLO
96"Ø	97.7 SQ. IN.	103.2 SQ. IN.	100.4 SQ. IN.	

NOTES:
- GAGE AND COATING LIMITATIONS APPLY. 5" x 1" IS NOT AVAILABLE IN ALUMINUM.
- DIMENSIONS SUBJECT TO MANUFACTURER'S TOLERANCES.

TYPICAL PERFORATION DETAIL
NOT TO SCALE



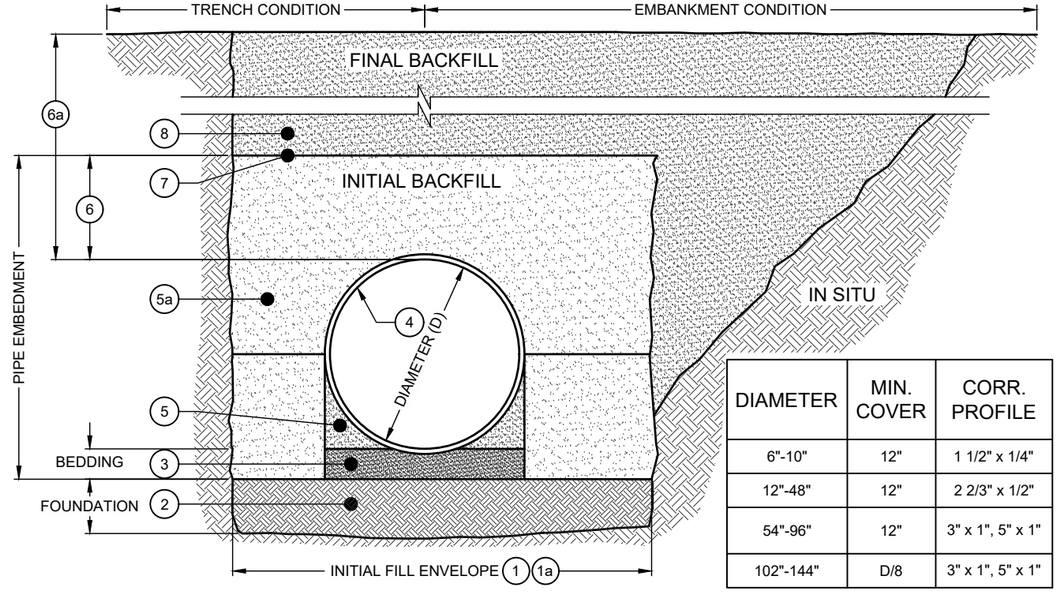
PLAN



FRONT

96"Ø to 144"Ø FITTING REINFORCEMENT MAY BE REQUIRED BASED ON HEIGHT OF COVER AND LIVE LOAD CONDITION

TYPICAL MANWAY DETAIL
NOT TO SCALE



DIAMETER	MIN. COVER	CORR. PROFILE
6"-10"	12"	1 1/2" x 1/4"
12"-48"	12"	2 2/3" x 1/2"
54"-96"	12"	3" x 1", 5" x 1"
102"-144"	D/8	3" x 1", 5" x 1"

BACKFILL REQUIREMENTS FOLLOW THE GUIDELINES OF AASHTO LRFD BRIDGE DESIGN (SEC 12) AND CONSTRUCTION (SEC 26)

1 MINIMUM TRENCH WIDTH MUST ALLOW ROOM FOR PROPER COMPACTION OF HAUNCH MATERIALS UNDER THE PIPE. THE MINIMUM TRENCH WIDTH (12.6.6.1):
PIPE ≤ 12": D + 16"
PIPE > 12": 1.5D + 12"

1a MINIMUM EMBANKMENT WIDTH (IN FEET) FOR INITIAL FILL ENVELOPE (12.6.6.2):
PIPE < 24": 3.0D
PIPE 24" - 144": D + 4'0"
PIPE > 144": D + 10'0"

2 THE FOUNDATION UNDER THE PIPE AND SIDE BACKFILL SHALL BE ADEQUATE TO SUPPORT THE LOADS ACTING UPON IT (26.5.2).

3 BEDDING MATERIAL SHALL BE A RELATIVELY LOOSE GRANULAR MATERIAL THAT IS ROUGHLY SHAPED TO FIT THE BOTTOM OF THE PIPE, AND A MINIMUM OF TWICE THE CORRUGATION DEPTH IN THICKNESS, WITH THE MAXIMUM PARTICLE SIZE OF ONE-HALF OF THE CORRUGATION DEPTH (26.3.8.1, 26.5.3).

4 PERFORATED CORRUGATED STEEL PIPE (CSP / HEL-COR).

5 HAUNCH ZONE MATERIAL SHALL BE HAND SHOVELED OR SHOVEL SLICED INTO PLACE TO ALLOW FOR PROPER COMPACTION (26.5.4).

5a BACKFILL MATERIAL SHALL BE A CLEAN, CRUSHED STONE MEETING SIZE NO. 3 OR 4, PER AASHTO M 43. IT IS RECOMMENDED THAT LIFTS NOT EXCEED AN 8" UNCOMPACTED LIFT HEIGHT TO PREVENT UNEVEN LOADING, AND THE LESSER OF 1/3 THE DIAMETER OR 24" AS THE MAXIMUM DIFFERENTIAL SIDE-TO-SIDE. COMPACTION OF ALL PLACED FILL MATERIAL IS NECESSARY AND SHALL BE CONSIDERED ADEQUATE WHEN NO FURTHER YIELDING OF THE MATERIAL IS OBSERVED UNDER THE COMPACTOR, OR UNDER FOOT, AND THE PROJECT ENGINEER, OR THEIR REPRESENTATIVE, IS SATISFIED WITH THE LEVEL OF COMPACTION (26.5.4).

6 INITIAL BACKFILL ABOVE PIPE MAY INCLUDE ROAD BASE MATERIAL (AND RIGID PAVEMENT IF APPLICABLE). SEE TABLE ABOVE.

6a TOTAL HEIGHT OF COMPACTED COVER FOR CONVENTIONAL HIGHWAY LOADS IS MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TOP OF RIGID PAVEMENT (12.6.6.3).

7 GEOTEXTILE SHALL BE USED TO WRAP TRENCH SIDES AND TOP ONLY TO PREVENT SOIL MIGRATION INTO VARYING SOIL TYPES (PROJECT ENGINEER).

8 FINAL BACKFILL MATERIAL SELECTION AND COMPACTION REQUIREMENTS SHALL FOLLOW THE PROJECT PLANS AND SPECIFICATIONS PER THE ENGINEER OF RECORD (26.5.4.1).

NOTES:
- FOR MULTIPLE BARREL INSTALLATIONS THE RECOMMENDED STANDARD SPACING BETWEEN PARALLEL PIPE RUNS SHALL BE PIPE DIA./2 BUT NO LESS THAN 12", OR 36" FOR PIPE DIAMETERS 72" AND LARGER. CONTACT YOUR CONTECH REPRESENTATIVE FOR NONSTANDARD SPACING (TABLE C12.6.7-1).

TYPICAL BACKFILL DETAIL
NOT TO SCALE

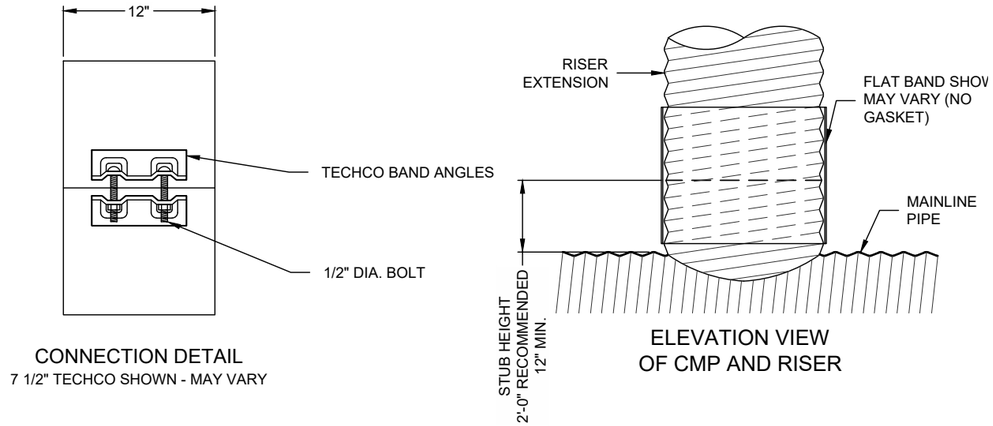
MARK	DATE	REVISION DESCRIPTION	BY

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
11815 NE Glenn Widing Drive, Portland, OR 97220
800-548-4667 503-240-3393 800-561-1271 FAX

CONTECH CMP DETENTION SYSTEMS
CONTECH CONTRACT DRAWING

96"Ø PERFORATED UNDERGROUND RETENTION SYSTEM - 633277-010
UC IRVINE PROJECT
IRVINE, CA
SITE DESIGNATION:

PROJECT No.:	SEQ. No.:	DATE:
633277	010	1/8/2020
DESIGNED: RLH	DRAWN: RLH	
CHECKED:	APPROVED:	
SHEET NO.: C2	OF 4	



CONNECTION DETAIL
7 1/2" TECHCO SHOWN - MAY VARY

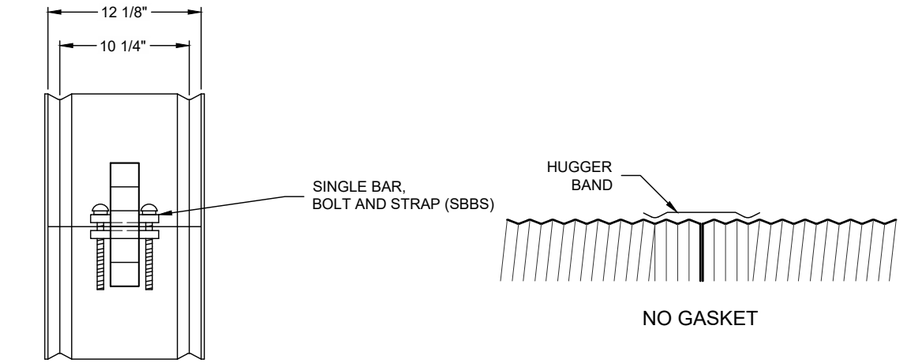
ELEVATION VIEW
OF CMP AND RISER

PLAIN END CMP RISER PIPE

GENERAL NOTES:

1. **DELIVERED BAND STYLE AND FASTENER TYPE MAY VARY BY FABRICATION PLANT.**
2. JOINT IS TO BE ASSEMBLED PER AASHTO BRIDGE CONSTRUCTION SPECIFICATION SEC 26.4.2.4.
3. BAND MATERIAL AND GAGE TO BE SAME AS RISER MATERIAL.
4. IF RISER HAS A HEIGHT OF COVER OF 10' OR MORE, USE A SLIP JOINT.
5. BANDS ARE NORMALLY FURNISHED AS FOLLOWS:
   - 12" THRU 48" 1-PIECE
   - 54" 2-PIECES
6. ALL RISER JOINT COMPONENTS WILL BE FIELD ASSEMBLED.
7. MANHOLE RISERS IN APPLICATIONS WHERE TRAFFIC LOADS ARE IMPOSED REQUIRE SPECIAL DESIGN CONSIDERATIONS.
8. DIMENSIONS SUBJECT TO MANUFACTURING TOLERANCES.

12" RISER BAND DETAIL
NOT TO SCALE



CONNECTION DETAIL
(SBBS)

NO GASKET

2 2/3"x1/2" RE-ROLLED END HEL-COR PIPE

GENERAL NOTES:

1. JOINT IS TO BE ASSEMBLED PER AASHTO BRIDGE CONSTRUCTION SPECIFICATION SEC 26.4.2.4.
2. BAND MATERIALS AND/OR COATING CAN VARY BY LOCATION. CONTACT YOUR CONTECH REPRESENTATIVE FOR AVAILABILITY.
3. BANDS ARE SHAPED TO MATCH THE PIPE-ARCH WHEN APPLICABLE.
4. BANDS ARE NORMALLY FURNISHED AS FOLLOWS:
   - 12" THRU 48" 1-PIECE
   - 54" THRU 96" 2-PIECES
   - 102" THRU 144" 3-PIECES
5. BAND FASTENERS ARE ATTACHED WITH SPOT WELDS, RIVETS OR HAND WELDS.
6. ALL CMP IS REROLLED TO HAVE ANNULAR END CORRUGATIONS OF 2 2/3"x1/2"
7. DIMENSIONS ARE SUBJECT TO MANUFACTURING TOLERANCES.
8. ORDER SHALL DESIGNATE GASKET OPTION, IF REQUIRED (SEE DETAILS ABOVE).

H-12 HUGGER BAND DETAIL
NOT TO SCALE

MARK	DATE	REVISION DESCRIPTION	BY

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
11815 NE Glenn Widing Drive, Portland, OR 97220
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CONTECH CMP DETENTION SYSTEMS
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UC IRVINE PROJECT
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SITE DESIGNATION:

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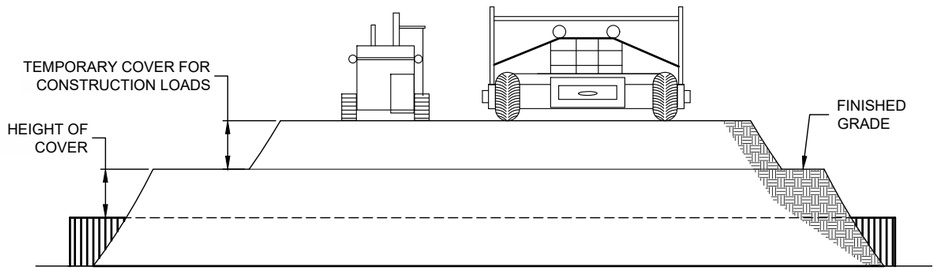
633277	010	1/8/2020
DESIGNED: RLH	DRAWN: RLH	
CHECKED:	APPROVED:	
SHEET NO.: C3 OF 4		



CONSTRUCTION LOADS

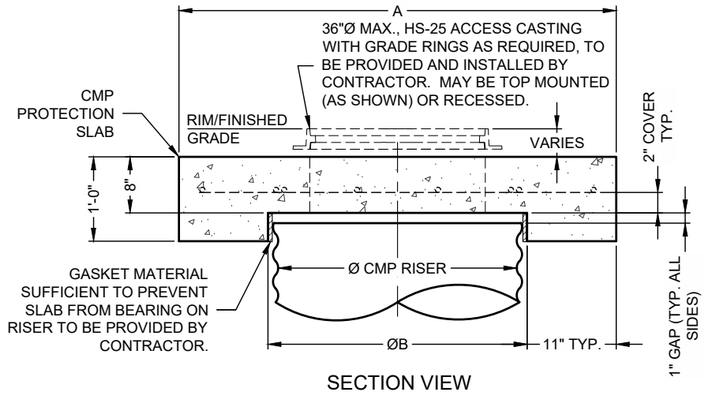
FOR TEMPORARY CONSTRUCTION VEHICLE LOADS, AN EXTRA AMOUNT OF COMPACTED COVER MAY BE REQUIRED OVER THE TOP OF THE PIPE. THE HEIGHT-OF-COVER SHALL MEET THE MINIMUM REQUIREMENTS SHOWN IN THE TABLE BELOW. THE USE OF HEAVY CONSTRUCTION EQUIPMENT NECESSITATES GREATER PROTECTION FOR THE PIPE THAN FINISHED GRADE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

PIPE SPAN, INCHES	AXLE LOADS (kips)			
	18-50	50-75	75-110	110-150
	MINIMUM COVER (FT)			
12-42	2.0	2.5	3.0	3.0
48-72	3.0	3.0	3.5	4.0
78-120	3.0	3.5	4.0	4.0
126-144	3.5	4.0	4.5	4.5

*MINIMUM COVER MAY VARY, DEPENDING ON LOCAL CONDITIONS. THE CONTRACTOR MUST PROVIDE THE ADDITIONAL COVER REQUIRED TO AVOID DAMAGE TO THE PIPE. MINIMUM COVER IS MEASURED FROM THE TOP OF THE PIPE TO THE TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE.

CONSTRUCTION LOADING DIAGRAM

NOT TO SCALE

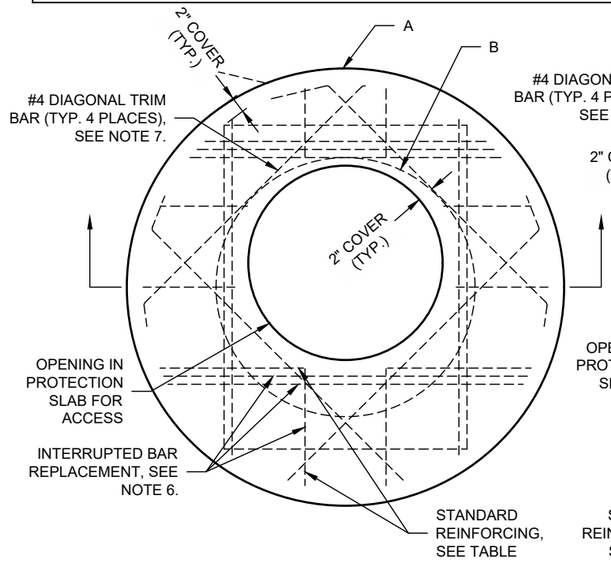


SECTION VIEW

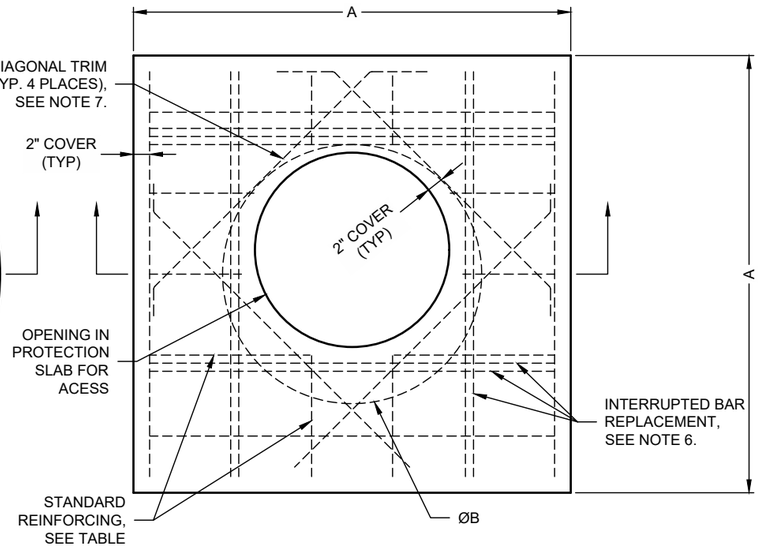
REINFORCING TABLE				
Ø CMP RISER	A	B Ø	REINFORCING	**BEARING PRESSURE (PSF)
24"	4'Ø 4'x4'	26"	#5 @ 10" OCEW #5 @ 10" OCEW	2,540 1,900
30"	4'-6"Ø 4'-6" x 4'-6"	32"	#5 @ 10" OCEW #5 @ 9" OCEW	2,260 1,670
36"	5'Ø 5' x 5'	38"	#5 @ 9" OCEW #5 @ 8" OCEW	2,060 1,500
42"	5'-6"Ø 5'-6" x 5'-6"	44"	#5 @ 8" OCEW #5 @ 8" OCEW	1,490 1,370
48"	6'Ø 6' x 6'	50"	#5 @ 7" OCEW #5 @ 7" OCEW	1,210 1,270

** ASSUMED SOIL BEARING CAPACITY

ACCESS CASTING NOT SUPPLIED BY CONTECH



ROUND OPTION PLAN VIEW



SQUARE OPTION PLAN VIEW

NOTES:

1. DESIGN IN ACCORDANCE WITH AASHTO, 17th EDITION AND ACI 350.
2. DESIGN LOAD HS25.
3. EARTH COVER = 1' MAX.
4. CONCRETE STRENGTH = 4,000 psi
5. REINFORCING STEEL = ASTM A615, GRADE 60.
6. PROVIDE ADDITIONAL REINFORCING AROUND OPENINGS EQUAL TO THE BARS INTERRUPTED, HALF EACH SIDE. ADDITIONAL BARS TO BE IN THE SAME PLANE.
7. TRIM OPENING WITH DIAGONAL #4 BARS, EXTEND BARS A MINIMUM OF 12" BEYOND OPENING, BEND BARS AS REQUIRED TO MAINTAIN BAR COVER.
8. PROTECTION SLAB AND ALL MATERIALS TO BE PROVIDED AND INSTALLED BY CONTRACTOR.
9. DETAIL DESIGN BY DELTA ENGINEERS, ARCHITECTS AND LAND SURVEYORS, ENDWELL, NY.

MATERIAL SPECIFICATION

NOT TO SCALE

SPECIFICATION FOR CORRUGATED STEEL PIPE-ALUMINIZED TYPE 2 STEEL

SCOPE

THIS SPECIFICATION COVERS THE MANUFACTURE AND INSTALLATION OF THE CORRUGATED STEEL PIPE (CSP) DETAILED IN THE PROJECT PLANS.

MATERIAL

THE ALUMINIZED TYPE 2 STEEL COILS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M274 OR ASTM A929.

PIPE

THE CSP SHALL BE MANUFACTURED IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF AASHTO M36 OR ASTM A760. THE PIPE SIZES, GAGES AND CORRUGATIONS SHALL BE AS SHOWN ON THE PROJECT PLANS.

ALL FABRICATION OF THE PRODUCT SHALL OCCUR WITHIN THE UNITED STATES.

HANDLING AND ASSEMBLY

SHALL BE IN ACCORDANCE WITH RECOMMENDATIONS OF THE NATIONAL CORRUGATED STEEL PIPE ASSOCIATION (NCSPA)

INSTALLATION

SHALL BE IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SECTION 26, DIVISION II OR ASTM A798 AND IN CONFORMANCE WITH THE PROJECT PLANS AND SPECIFICATIONS. IF THERE ARE ANY INCONSISTENCIES OR CONFLICTS THE CONTRACTOR SHOULD DISCUSS AND RESOLVE WITH THE SITE ENGINEER.

IT IS ALWAYS THE RESPONSIBILITY OF THE CONTRACTOR TO FOLLOW OSHA GUIDELINES FOR SAFE PRACTICES.

MANHOLE CAP DETAIL

NOT TO SCALE

MARK	DATE	REVISION DESCRIPTION	BY

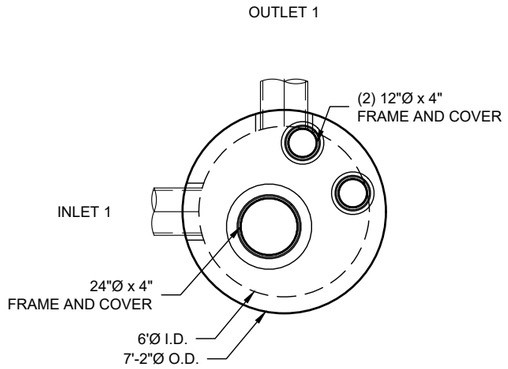
CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
11815 NE Glenn Widing Drive, Portland, OR 97220
800-548-4667 503-240-3393 800-561-1271 FAX

CONTECH CMP DETENTION SYSTEMS

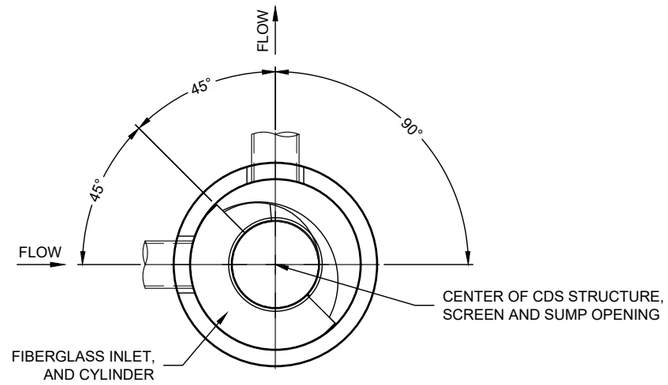
CONTECH **CONTRACT** DRAWING

96"Ø PERFORATED UNDERGROUND RETENTION SYSTEM - 633277-010
UC IRVINE PROJECT
IRVINE, CA
SITE DESIGNATION:

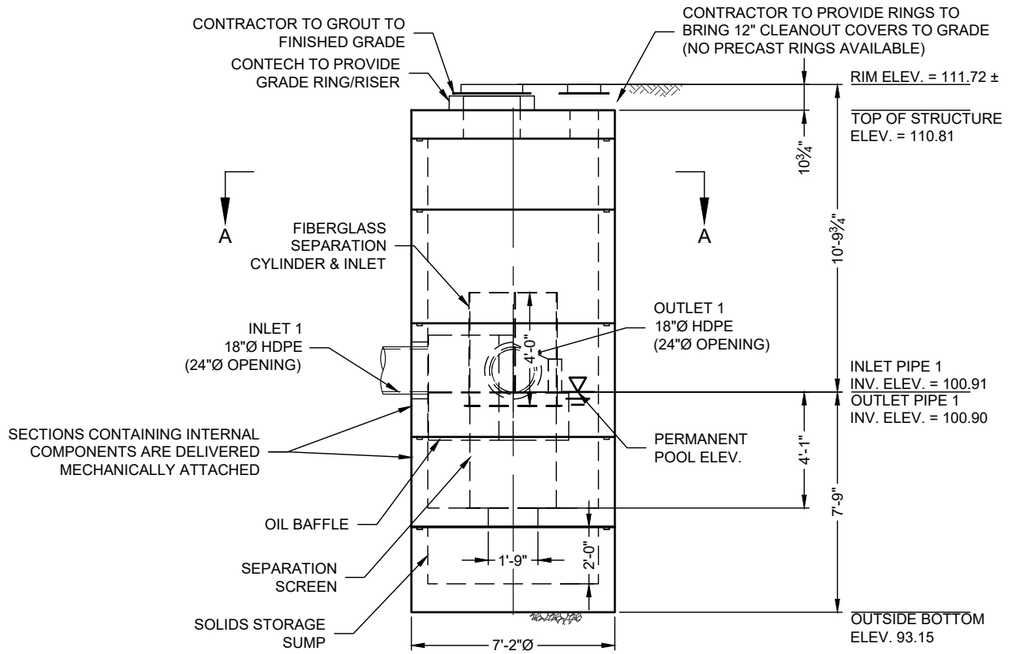
PROJECT No.:	SEQ. No.:	DATE:
633277	010	1/8/2020
DESIGNED: RLH	DRAWN: RLH	
CHECKED:	APPROVED:	
SHEET NO.: C4 OF 4		



PLAN VIEW



SECTION A-A



ELEVATION VIEW

MATERIAL LIST (PROVIDED BY CONTECH)

COUNT	DESCRIPTION	INSTALLED BY
1	FIBERGLASS INLET AND CYLINDER	CONTECH
1	4700 micron, 3' O.D. x 3.58' SEP. SCREEN	CONTECH
1	SEALANT FOR JOINTS	CONTRACTOR
1 PLC	GRADE RINGS/RISERS	CONTRACTOR
1	24"Ø x 4" FRAME & COVER, EJ#41600389, OR EQUIV.	CONTRACTOR
2	12"Ø x 4" FRAME & COVER, EJ#41610201, OR EQUIV.	CONTRACTOR

SITE DESIGN DATA

WATER QUALITY FLOW RATE	3.2 CFS
PEAK FLOW RATE	13.5 CFS

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
3. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS-20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 2', AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.
5. IF REQUIRED, PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.
6. CDS STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 AND AASHTO LOAD FACTOR DESIGN METHOD.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE.
C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET AND OUTLET PIPE(S). MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

STRUCTURE WEIGHT
APPROXIMATE HEAVIEST PICK = 16000 LBS.
STRUCTURE IS DELIVERED IN 5 PIECES

MAX FOOTPRINT = Ø7'-2"

CONTECH
CONTRACT
DRAWING

PRECS
LAYOUT 4A
3035-6-FGIS
5850 / 453627

MARK	DATE	REVISION DESCRIPTION	BY

CDS3035-6-C - 633277-20
UC IRVINE PROJECT (DINWIDDIE - SUSAN BLDG)
IRVINE, CA
###

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
2201 W. Royal Lane, Suite 250, Irving, TX 75063
972-590-2000 / 972-590-2039 FAX

DATE:	SCALE:
09/17/20	3/16" = 1'-0"
DESIGNED: RLH	DRAWN: RLH
CHECKED: ###	APPROVED: ###
PROJECT No.: 633277	SEQUENCE No.: 20
SHEET: 1 OF 1	

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Contech® CMP Detention Inspection and Maintenance Guide

Underground stormwater detention and infiltration systems must be inspected and maintained at regular intervals for purposes of performance and longevity.

Inspection

Inspection is the key to effective maintenance of CMP detention systems and is easily performed. Contech recommends ongoing, annual inspections. Sites with high trash load or small outlet control orifices may need more frequent inspections. The rate at which the system collects pollutants will depend more on-site specific activities rather than the size or configuration of the system.

Inspections should be performed more often in equipment washdown areas, in climates where sanding and/or salting operations take place, and in other various instances in which one would expect higher accumulations of sediment or abrasive/corrosive conditions. A record of each inspection is to be maintained for the life of the system.

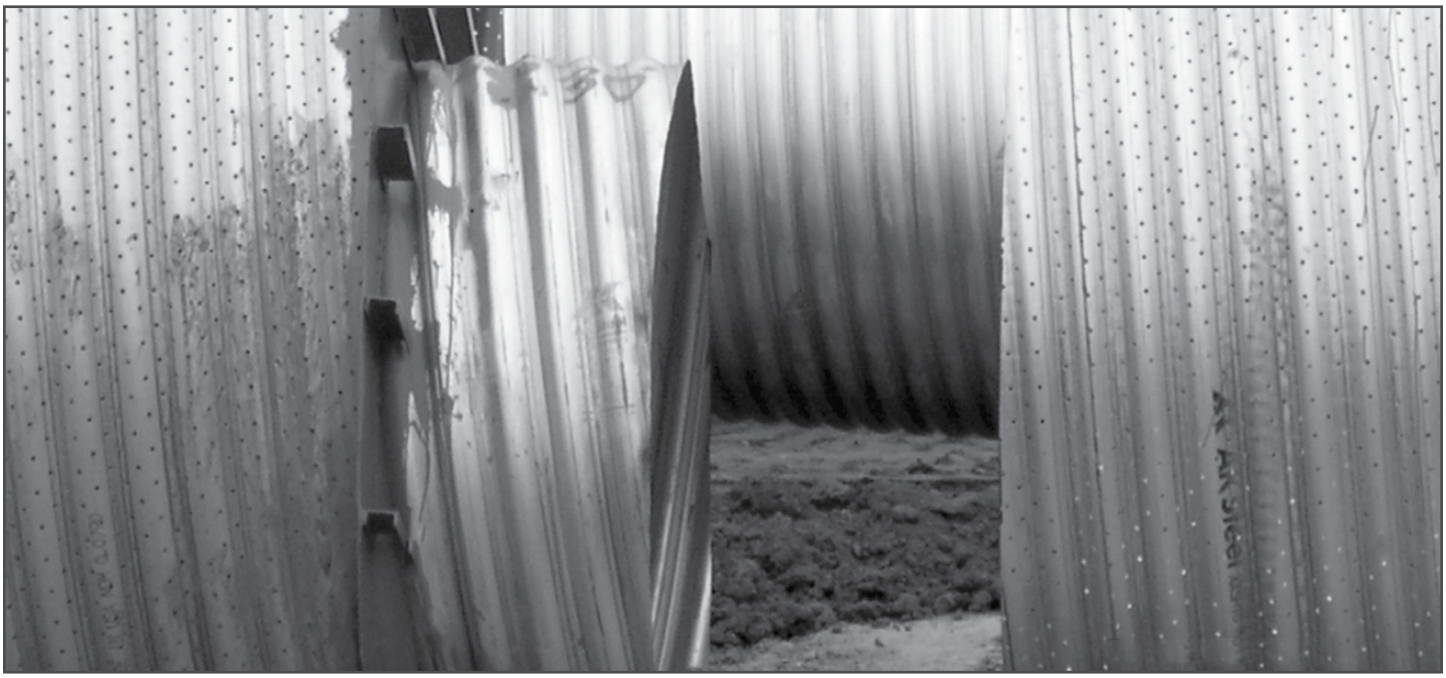
Maintenance

CMP detention systems should be cleaned when an inspection reveals accumulated sediment or trash is clogging the discharge orifice. Accumulated sediment and trash can typically be evacuated through the manhole over the outlet orifice. If maintenance is not performed as recommended, sediment and trash may accumulate in front of the outlet orifice. Manhole covers should be securely seated following cleaning activities. Contech suggests that all systems be designed with an access/inspection manhole situated at or near the inlet and the outlet orifice. Should it be necessary to get inside the system to perform maintenance activities, all appropriate precautions regarding confined space entry and OSHA regulations should be followed.

Annual inspections are best practice for all underground systems. During this inspection if evidence of salting/de-icing agents is observed within the system, it is best practice for the system to be rinsed, including above the spring line soon after the spring thaw as part of the maintenance program for the system.

Maintaining an underground detention or infiltration system is easiest when there is no flow entering the system. For this reason, it is a good idea to schedule the cleanout during dry weather.

The foregoing inspection and maintenance efforts help ensure underground pipe systems used for stormwater storage continue to function as intended by identifying recommended regular inspection and maintenance practices. Inspection and maintenance related to the structural integrity of the pipe or the soundness of pipe joint connections is beyond the scope of this guide.



CONTECH®
CMP DETENTION SYSTEMS

CONTECH®
ENGINEERED SOLUTIONS

CONTECH®
ENGINEERED SOLUTIONS

CDS® Inspection and Maintenance Guide

CDS TECHNOLOGIES

Maintenance

The CDS system should be inspected at regular intervals and maintained when necessary to ensure optimum performance. The rate at which the system collects pollutants will depend more heavily on site activities than the size of the unit. For example, unstable soils or heavy winter sanding will cause the grit chamber to fill more quickly but regular sweeping of paved surfaces will slow accumulation.

Inspection

Inspection is the key to effective maintenance and is easily performed. Pollutant transport and deposition may vary from year to year and regular inspections will help ensure that the system is cleaned out at the appropriate time. At a minimum, inspections should be performed twice per year (e.g. spring and fall) however more frequent inspections may be necessary in climates where winter sanding operations may lead to rapid accumulations, or in equipment washdown areas. Installations should also be inspected more frequently where excessive amounts of trash are expected.

The visual inspection should ascertain that the system components are in working order and that there are no blockages or obstructions in the inlet and separation screen. The inspection should also quantify the accumulation of hydrocarbons, trash, and sediment in the system. Measuring pollutant accumulation can be done with a calibrated dipstick, tape measure or other measuring instrument. If absorbent material is used for enhanced removal of hydrocarbons, the level of discoloration of the sorbent material should also be identified during inspection. It is useful and often required as part of an operating permit to keep a record of each inspection. A simple form for doing so is provided.

Access to the CDS unit is typically achieved through two manhole access covers. One opening allows for inspection and cleanout of the separation chamber (cylinder and screen) and isolated sump. The other allows for inspection and cleanout of sediment captured and retained outside the screen. For deep units, a single manhole access point would allows both sump cleanout and access outside the screen.

The CDS system should be cleaned when the level of sediment has reached 75% of capacity in the isolated sump or when an appreciable level of hydrocarbons and trash has accumulated. If absorbent material is used, it should be replaced when significant discoloration has occurred. Performance will not be impacted until 100% of the sump capacity is exceeded however it is recommended that the system be cleaned prior to that for easier removal of sediment. The level of sediment is easily determined by measuring from finished grade down to the top of the sediment pile. To avoid underestimating the level of sediment in the chamber, the measuring device must be lowered to the top of the sediment pile carefully. Particles at the top of the pile typically offer less resistance to the end of the rod than consolidated particles toward the bottom of the pile. Once this measurement is recorded, it should be compared to the as-built drawing for the unit to determine weather the height of the sediment pile off the bottom of the sump floor exceeds 75% of the total height of isolated sump.

Cleaning

Cleaning of a CDS systems should be done during dry weather conditions when no flow is entering the system. The use of a vacuum truck is generally the most effective and convenient method of removing pollutants from the system. Simply remove the manhole covers and insert the vacuum hose into the sump. The system should be completely drained down and the sump fully evacuated of sediment. The area outside the screen should also be cleaned out if pollutant build-up exists in this area.

In installations where the risk of petroleum spills is small, liquid contaminants may not accumulate as quickly as sediment. However, the system should be cleaned out immediately in the event of an oil or gasoline spill should be cleaned out immediately. Motor oil and other hydrocarbons that accumulate on a more routine basis should be removed when an appreciable layer has been captured. To remove these pollutants, it may be preferable to use absorbent pads since they are usually less expensive to dispose than the oil/water emulsion that may be created by vacuuming the oily layer. Trash and debris can be netted out to separate it from the other pollutants. The screen should be power washed to ensure it is free of trash and debris.

Manhole covers should be securely seated following cleaning activities to prevent leakage of runoff into the system from above and also to ensure that proper safety precautions have been followed. Confined space entry procedures need to be followed if physical access is required. Disposal of all material removed from the CDS system should be done in accordance with local regulations. In many jurisdictions, disposal of the sediments may be handled in the same manner as the disposal of sediments removed from catch basins or deep sump manholes.

CDS Model	Diameter		Distance from Water Surface to Top of Sediment Pile		Sediment Storage Capacity	
	ft	m	ft	m	y^3	m^3
CDS1515	3	0.9	3.0	0.9	0.5	0.4
CDS2015	4	1.2	3.0	0.9	0.9	0.7
CDS2015	5	1.3	3.0	0.9	1.3	1.0
CDS2020	5	1.3	3.5	1.1	1.3	1.0
CDS2025	5	1.3	4.0	1.2	1.3	1.0
CDS3020	6	1.8	4.0	1.2	2.1	1.6
CDS3025	6	1.8	4.0	1.2	2.1	1.6
CDS3030	6	1.8	4.6	1.4	2.1	1.6
CDS3035	6	1.8	5.0	1.5	2.1	1.6
CDS4030	8	2.4	4.6	1.4	5.6	4.3
CDS4040	8	2.4	5.7	1.7	5.6	4.3
CDS4045	8	2.4	6.2	1.9	5.6	4.3
CDS5640	10	3.0	6.3	1.9	8.7	6.7
CDS5653	10	3.0	7.7	2.3	8.7	6.7
CDS5668	10	3.0	9.3	2.8	8.7	6.7
CDS5678	10	3.0	10.3	3.1	8.7	6.7

Table 1: CDS Maintenance Indicators and Sediment Storage Capacities

Support

- Drawings and specifications are available at www.contechstormwater.com.
- Site-specific design support is available from our engineers.

Contech Engineered Solutions LLC provides site solutions for the civil engineering industry. Contech's portfolio includes bridges, drainage, sanitary sewer, stormwater, earth stabilization and wastewater treament products. For information, visit www.ContechES.com or call 800.338.1122

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CDS Inspection & Maintenance Log

CDS Model: _____ Location: _____

Date	Water depth to sediment[1]	Floatable Layer Thickness[2]	Describe Maintenance Performed	Maintenance Personnel	Comments

1. The water depth to sediment is determined by taking two measurements with a stadia rod: one measurement from the manhole opening to the top of the sediment pile and the other from the manhole opening to the water surface. If the difference between these measurements is less than the values listed in table 1 the system should be cleaned out. **Note: to avoid underestimating the volume of sediment in the chamber, the measuring device must be carefully lowered to the top of the sediment pile.**

2. For optimum performance, the system should be cleaned out when the floating hydrocarbon layer accumulates to an appreciable thickness. In the event of an oil spill, the system should be cleaned immediately.