WSU VANCOUVER
CAMPUS INFRASTRUCTURE 2003

INDEX TO DRAWINGS

COVER SHEETS

1.0: INDEX TO DRAWINGS ,CONSULTANTS , VICINITY MAP ,ABBREVIATIONS ,AND LEGEND

CIVIL

CIVIL DRAWING SUBSET "A"

CA1.0: COVER SHEET
CA1.1: OVERALL CIVIL ELEMENTS PLAN
CA2.0: OVERALL GRADING AND EROSION CONTROL PLAN
CA2.1: 36TH AVENUE PATHWAY GRADING AND EROSION CONTROL PLAN
CA2.2: OPEN SPACE / PATHWAY GRADING AND EROSION CONTROL PLAN
CA2.3: PHYSICAL PLANT GRADING, DRAINAGE AND EROSION CONTROL PLAN
CA2.4: ANNEX PATHWAY GRADING AND EROSION CONTROL PLAN
CA2.5: SOUTHWEST FIELD GRADING AND EROSION CONTROL PLAN
CA2.6: STD. EROSION CONTROL NOTES AND DETAILS
CA2.7: GRADING AND EROSION CONTROL NOTES AND DETAILS
CA3.0: OVERALL UTILITY PLAN
CA3.1: OPEN SPACE / PATHWAY UTILITY PLAN
CA3.2: STORM SYSTEM PLAN AND PROFILE (NEAR POND E)
CA3.3: PHYSICAL PLANT WATERLINE PLAN
CA3.4: PHYSICAL PLANT STORM AND SANITARY PLAN
CA3.5: PHYSICAL PLANT SANITARY PLAN AND PROFILE
CA3.6: ANNEX WATERLINE PLAN
CA3.7: ANNEX SANITARY PLAN AND PROFILE
CA3.8: SPORT COURT WATER PLAN
CA3.9: STORMWATER DETAILS
CA3.10: STORMWATER DETAILS
CA3.11: STD. WATERLINE NOTES AND DETAILS
CA3.12: WATERLINE NOTES AND DETAILS
CA3.13: STD. SANITARY SEWER NOTES AND DETAILS

KIOSK & PATH
CIVIL DRAWING SUBSET "B"

CB1.0: COVER SHEET
CB2.0: KIOSK AND COVERED STORAGE GRADING, DRAINAGE AND EROSION CONTROL PLAN
CB2.1: PATHWAY GRADING, DRAINAGE AND EROSION CONTROL PLAN
CB2.2: STD. EROSION CONTROL NOTES AND DETAILS
CB2.3: EROSION CONTROL GRADING AND STORMWATER DETAILS
CB2.4: STORMWATER DETAILS

CIVIL

POND "E" EXPANSION
CIVIL DRAWING SUBSET "C"

CC1.0: COVER SHEET
CC2.0: POND E GRADING, DRAINAGE AND EROSION CONTROL
CC2.1: STD. EROSION CONTROL NOTES AND DETAILS
CC2.2: STORMWATER DETAILS
CC2.3: STORMWATER DETAILS

POND "E" OUTFALL
CIVIL DRAWING SUBSET "H"

CH1.0: STORM DRAINAGE AND EROSION CONTROL PLAN
CH2.0: CLARK COUNTY EROSION CONTROL DETAILS
CH3.0: OUTLET PROTECTION DETAILS
CH4.0: STORM PROFILE AND DETAILS

LANDSCAPE

L1.1: INFORMATION KIOSK PLANTING PLAN
L1.2: INFORMATION KIOSK IRRIGATION PLAN
L2.1: PHYSICAL PLANT BUILDING PLANTING PLAN
L2.2: PHYSICAL PLANT BUILDING IRRIGATION PLAN
L3.1: OPEN SPACE ENHANCEMENT PLANTING PLAN
L3.2: OPEN SPACE ENHANCEMENT IRRIGATION PLAN
L4.1: PLANTING AND IRRIGATION DETAILS

ARCHITECTURAL

2.0: SITE PLAN OVERALL
2.1: SITE PLAN – SECTOR A
2.2: SITE PLAN – SECTOR B
2.3: SITE PLAN – SECTOR C
2.4: SITE PLAN ENLARGED – OPERATIONS
2.5: SITE PLAN ENLARGED – OPEN SPACE ENHANCEMENTS
2.6: SITE PLAN ENLARGED – KIOSK
2.7: EXTERIOR DETAILS
3.0: COOLING PLANT PLAN, DETAILS AND DOOR SCHEDULE
3.1: COVERED STORAGE PLAN, SECTION AND DETAILS
3.2: KIOSK PLAN AND DETAILS
4.0: EXTERIOR ELEVATIONS
6.1: EXTERIOR DETAILS

STRUCTURAL

S1.0: STRUCTURAL NOTES
S3.0: FOUNDATION PLAN
S3.1: ROOF FRAMING AND FOUNDATION PLAN
S4.1: FOUNDATION DETAILS
S4.2: FOUNDATION DETAILS
S4.3: FRAMING DETAILS
S5.1: FRAMING DETAILS
S6.1: ELEVATIONS AND DETAILS

MECHANICAL

M0.1: MECHANICAL TITLE SHEET
M1.1: MECHANICAL SCHEDULES
M2.0: MECHANICAL OVERALL SITE PLAN
M2.1: MECHANICAL SITE PLAN / SECTION
M2.2: MECHANICAL SITE PLAN ENLARGED
M3.1: MECHANICAL ROOM PLAN
M3.2: TOWER YARD PLAN
M4.1: MECHANICAL ELEVATIONS
M4.2: TOWER YARD ELEVATIONS
M8.1: MECHANICAL DETAILS
M8.2: MECHANICAL DETAILS
M8.3: MECHANICAL DETAILS
M9.1: P&I DIAGRAM CHILLER CH–1
M9.2: P&I DIAGRAM COOLING TOWER SYSTEM
M9.3: P&I DIAGRAMS VENTILATION / FILTRATION
P3.1: MECHANICAL ROOM PLAN PLUMBING
P8.1: PLUMBING DETAILS

ELECTRICAL

E1.0: ELECTRICAL COVER SHEET
E2.1: ELECTRICAL SITE PLAN ENLARGED
E2.2: ELECTRICAL SITE PLAN SECTOR B
E2.3: ELECTRICAL SITE PLAN
E2.4: ELECTRICAL SITE PLAN
E3.1: ELECTRICAL FLOOR PLANS COOLING PLANT
E3.2: ELECTRICAL FLOOR PLAN – COVERED STORAGE
E3.3: PICNIC SHELTER POWER AND LIGHTING PLAN
E4.1: ELECTRICAL ONE–LINE DIAGRAM (COOLING TOWER)
E4.2: EXISTING ONE–LINE DIAGRAMS
E4.3: ELECTRICAL ONE–LINE DIAGRAM MULTIMEDIA BUILDING
E4.4: ELECTRICAL PANEL SCHEDULES
E4.5: ELECTRICAL PANEL SCHEDULES
E5.1: ELECTRICAL DETAILS
E5.2: ELECTRICAL DETAILS
E5.3: ELECTRICAL DETAILS
E5.4: ELECTRICAL DETAILS

GENERAL NOTE:
FOR PURPOSES OF PERMITTING ONLY CIVIL DRAWINGS FOR THIS PROJECT HAVE BEEN SUBDIVIDED INTO SETS A B C AND H. TAKEN TOGETHER? THESE SUBSETS AND RELATED SPECIFICATION SECTIONS IDENTIFY THE COMPLETE SCOPE OF CIVIL DESIGN WORK FOR THE PROJECT. THE OTHER DESIGN DISCIPLINES ARE NOT SIMILARLY SUBDIVIDED. SEE CIVIL FOR ADDITIONAL INFORMATION.

CONSULTANTS

CIVIL ENGINEERING
HARPER HOUF PETERSON RIGHELLIS
1104 MAIN STREET SUITE 100
VANCOUVER WA 98660
PHONE: (360) 750–1131
FAX: (360) 750–1141

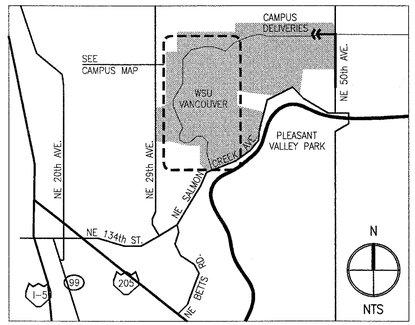
LANDSCAPE ARCHITECT
THE JD WHITE COMPANY INC.
1111 Main Street Suite 300
VANCOUVER, WA 98660
PHONE: (360) 696–1338
FAX: (360) 696–9317

STRUCTURAL ENGINEERING
KRAMER GEHLEN AND ASSOC. INC.
400 COLUMBIA STREET, SUITE 240
VANCOUVER, WA 98660
PHONE: (360) 693–1621
FAX: (360) 696–1572

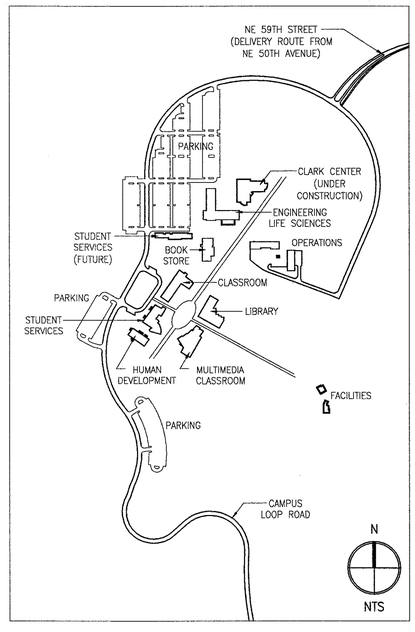
MECHANICAL ENGINEERING
MKE & ASSOCIATES, INC.
6915 SW MACADAM AVENUE, SUITE 200
PORTLAND, OR 97219
PHONE: (503) 892–1188
FAX: (503) 892–1190

ELECTRICAL ENGINEERING
MKE & ASSOCIATES, INC.
6915 SW MACADAM AVENUE, SUITE 200
PORTLAND, OR 97219
PHONE: (503) 892–1188

VICINITY MAP



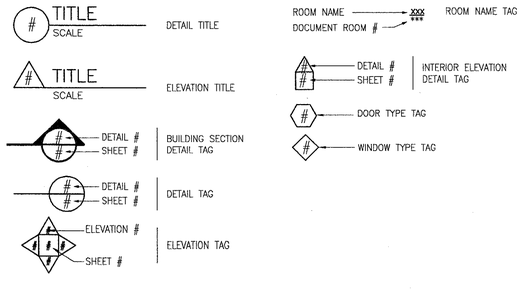
CAMPUS MAP



ABBREVIATION LIST

A.B.	ANCHOR BOLT	EA.	EACH	H.M.	HOLLOW METAL	R.O.	ROUGH OPENING
A.C.T.	ACOUSTICAL CEILING TILE	E.J.	EXPANSION JOINT	HORIZ.	HORIZONTAL	S.C.D.	SEAT COVER DISPENSER
AL.	ALUMINUM	ELEC.	ELECTRICAL	INSUL.	INSULATION	S.D.	SOAP DISPENSER
B.C.S.	BABY CHANGING STATION	ELEV.	ELEVATION	LAV.	LAVATORY (SINK)	SHT.	SHEET
BD.	BOARD	EQ.	EQUAL	M.	MIRROR	SHWR.	SHOWER
BLDG.	BUILDING	EXIST.	EXISTING	MAX.	MAXIMUM	SIM.	SIMILAR
BLKG.	BLOCKING	EXT.	EXTERIOR	MECH.	MECHANICAL	S.N.D.	SANITARY NAPKIN DISPENSER
BM.	BEAM	F.D.	FLOOR DRAIN	MFR.	MANUFACTURER	S.N.R.	SANITARY NAPKIN RECEPTACLE
BRG.	BEARING	FDN.	FOUNDATION	MIN.	MINIMUM	SQ.	SQUARE
C.B.	CATCH BASIN	F.E.	FIRE EXTINGUISHER	M.O.	MASONRY OPENING	STD.	STANDARD
C.L.	CENTER LINE	F.E.C.	FIRE EXTINGUISHER CABINET	MTL.	METAL	STL.	STEEL
C.J.	CONTROL JOINT	F.F.	FINISHED FLOOR	N.I.C.	NOT IN CONTRACT	SUSP.	SUSPENDED
CLR.	CLEAR	FIN.	FINISH	NO.	NUMBER	T.B.	TACK BOARD
C.M.U.	CONCRETE MASONRY UNIT	FLR.	FLOOR	NOM.	NOMINAL	T&B	TOP AND BOTTOM
COL.	COLUMN	F.O.C.	FACE OF CONCRETE	N.T.S.	NOT TO SCALE	T.D.	TOWEL DISPENSER
CONC.	CONCRETE	F.O.M.	FACE OF MASONRY	O.C.	ON CENTER	T.O.	TOP OF
CONT.	CONTINUOUS	F.O.S.	FACE OF STUD	OPP.	OPPOSITE	T.P.	TOILET PAPER DISPENSER
CPT.	CARPET	F.O.W.	FACE OF WALL	PL.	PLATE	T.S.	TUBE STEEL
d	PENNY	F.R.P.	FIBERGLASS REINFORCED PANEL	P–LAM	PLASTIC LAMINATE	TYP.	TYPICAL
DBL.	DOUBLE	FTG.	FOOTING	PREFIN.	PRE FINISHED	V.C.T.	VINYL COMPOSITION TILE
D.F.	DRINKING FOUNTAIN	GA.	GAUGE	P.S.I.	POUNDS PER SQUARE INCH	VERT.	VERTICAL
DIA.	DIAMETER	GALV.	GALVANIZED	P.T.	PRESSURE TREATED	W/	WITH
DN.	DOWN	G.B.	GRAB BAR	PLYWD.	PLYWOOD	W.B.	WHITE BOARD
D.S.	DOWN SPOUT	GLU–LAM	GLU–LAMINATED	REINF.	REINFORCED	W.C.	WATER CLOSET (TOILET)
DTL.	DETAIL	G.W.B.	GYPSUM WALLBOARD	REQD.	REQUIRED	WD.	WOOD
DWG.	DRAWING	H.C.	HANDICAPPED / ACCESSIBLE	R.H.	ROBE HOOK		

SYMBOL LEGEND AND NOTES



lsw architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

RECORD DRAWINGS

drawn by CMS
checked by TRB
lsw job number 03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
06.07.06
Record Drawings

revisions

AS-BUILT SET

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

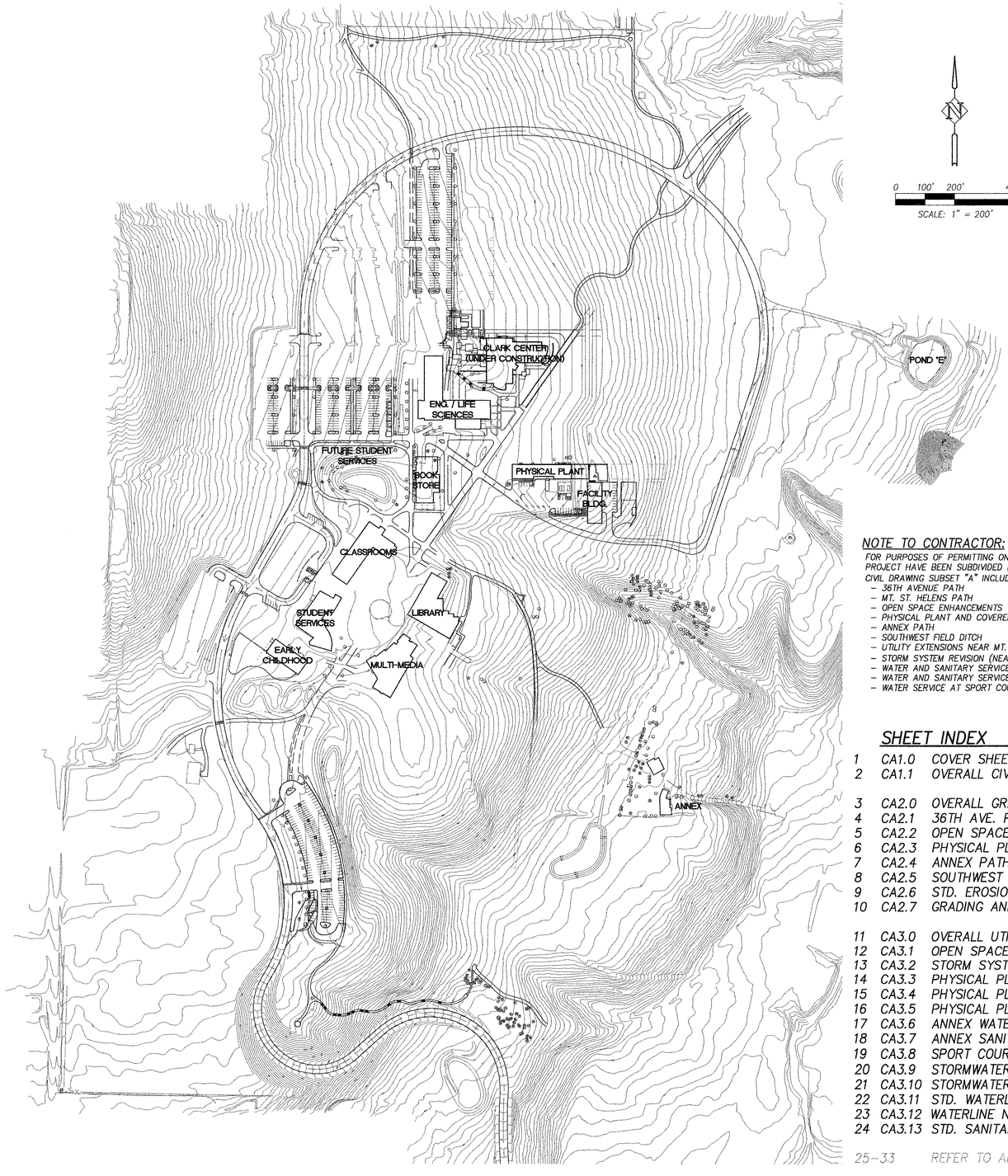
COVER SHEET

1.0

File.....03285–010cs.dwg
Plot Scale.....1–28–05
Plot Time.....5:15 PM

CAMPUS INFRASTRUCTURE 2003

CIVIL DRAWING SUBSET "A"



0 100' 200' 400'

SCALE: 1" = 200'

RECORD DRAWINGS
DECEMBER 2005

AS-BUILT INFORMATION PROVIDED BY 2KG CONTRACTORS

PROPERTY OWNER:
WASHINGTON STATE UNIVERSITY
14204 N.E. SALMON CREEK AVENUE
VANCOUVER, WA 98686
CONTACT: DAVID SMITH
PH: (360) 546-9576

BENCHMARK
CLARK COUNTY GEODETIC CONTROL POINT #37.
A 3-1/2" BRASS DISK SET IN CONCRETE WITH CASE AND COVER AT THE INTERSECTION OF N.E. 159TH ST. AND N.E. 50TH AVE.
ELEVATION = 212.838 CLARK COUNTY DATUM (NGVD 1929-47)

REFER TO ARCHITECTURAL PLANS FOR SITE INFORMATION AND DETAILS.

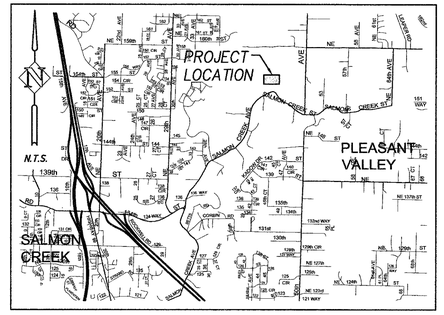
NOTE TO CONTRACTOR:
FOR PURPOSES OF PERMITTING ONLY, CIVIL DRAWINGS FOR THIS PROJECT HAVE BEEN SUBDIVIDED INTO SETS A, B, C AND H.
CIVIL DRAWING SUBSET "A" INCLUDES:
- *36TH AVENUE PATH*
- *MT. ST. HELENS PATH*
- *OPEN SPACE ENHANCEMENTS*
- *PHYSICAL PLANT AND COVERED STORAGE*
- *ANNEX PATH*
- *SOUTHWEST FIELD DITCH*
- *UTILITY EXTENSIONS NEAR MT. ST. HELENS PATH*
- *STORM SYSTEM REVISION (NEAR POND "E")*
- *WATER AND SANITARY SERVICE TO PHYSICAL PLANT*
- *WATER AND SANITARY SERVICE TO ANNEX*
- *WATER SERVICE AT SPORT COURT*

SHEET INDEX

1	CA1.0	COVER SHEET
2	CA1.1	OVERALL CIVIL ELEMENTS PLAN
3	CA2.0	OVERALL GRADING AND EROSION CONTROL PLAN
4	CA2.1	36TH AVE. PATH GRADING & EROSION CONTROL PLAN (ALTERNATE #6)
5	CA2.2	OPEN SPACE/PATHWAY GRADING & EROSION CONTROL PLAN (ALTS. #3 & #4)
6	CA2.3	PHYSICAL PLANT GRADING, DRAINAGE & EROSION CONTROL PLAN
7	CA2.4	ANNEX PATH GRADING & EROSION CONTROL PLAN (ALTERNATE #9)
8	CA2.5	SOUTHWEST FIELD GRADING AND EROSION CONTROL PLAN
9	CA2.6	STD. EROSION CONTROL NOTES AND DETAILS
10	CA2.7	GRADING AND EROSION CONTROL NOTES AND DETAILS
11	CA3.0	OVERALL UTILITY PLAN
12	CA3.1	OPEN SPACE/PATHWAY UTILITY PLAN
13	CA3.2	STORM SYSTEM PLAN AND PROFILE (NEAR POND "E")
14	CA3.3	PHYSICAL PLANT WATERLINE PLAN
15	CA3.4	PHYSICAL PLANT STORM AND SANITARY PLAN
16	CA3.5	PHYSICAL PLANT SANITARY PLAN AND PROFILE (ALTERNATE #8)
17	CA3.6	ANNEX WATERLINE PLAN (ALTERNATE #2)
18	CA3.7	ANNEX SANITARY PLAN AND PROFILE (ALTERNATE #1)
19	CA3.8	SPORT COURT WATERLINE PLAN (ALTERNATE #7)
20	CA3.9	STORMWATER DETAILS
21	CA3.10	STORMWATER DETAILS
22	CA3.11	STD. WATERLINE NOTES AND DETAILS
23	CA3.12	WATERLINE NOTES AND DETAILS
24	CA3.13	STD. SANITARY SEWER NOTES AND DETAILS
25-33		REFER TO ARCHITECTURAL AND LANDSCAPING PLANS

AS-BUILTS FOR CIVIL PLANS ONLY

HHPR Harper Houf Peterson Righellis Inc.
ENGINEERS • PLANNERS
1104 MAIN STREET, SUITE 100, VANCOUVER, WA 98660
TEL 360.750.1131 www.hrcivil.com FAX 360.750.1141



VICINITY MAP

CLARK PUBLIC UTILITIES
APPROVED FOR CONSTRUCTION
RIO – 233157
Clark Public Utilities
DISTRICT MANAGER: 2/18/05 DATE:

HAZEL DELL SEWER DISTRICT
SANITARY SEWER SYSTEM
Approved for construction: 2/9/05 Date

CLARK COUNTY
DEPARTMENT OF COMMUNITY DEVELOPMENT
ENGINEERING SERVICES
PLANNING LAND USE# FSR2004-00051
ENGINEERING# ENG2004-00157
INSPECTION#

CLARK COUNTY WASHINGTON — proud past, promising future

Recommended For Approval

Signature	Clark County Fire Marshal — Date 2/16/05
N/A	
Signature	Clark County Wetlands Biologist Case# — Date
Signature	Clark County Habitat Biologist Case# — Date 3/2/05
Signature	Clark County Grading Review — Date 3/1/05
Signature	Clark County Erosion Control Review — Date 3/1/05
Signature	Clark County Storm Water Plan Review — Date 3/1/05
Signature	Clark County Transportation Review — Date

A	N/A	
X		Stormwater & Erosion Control Ordinance CCC 13.29
	X	Transportation Standards Ordinance CCC 12.05A
	X	Transportation Landscaping Review
X		Utility Review CCC 13.12A & 12.20A
	X	Clark County Signing & Striping
	X	Road Modification CCC 12.05A.660
	X	CARA CCC 13.70
	X	Geological Hazard Areas Reg. CCC 13.60
	X	Flood Plain Combining District CCC 18.327
X		Sewer and Water on Plan
	X	Clark County M & O Pavement Defl. Testing
X		Private Stormwater Covenant
X		Record Drawing Guarantee
X		UBC Chapter 33

RECOMMENDED for APPROVAL
Engineering Team Leader — Date 3/02/2005

APPROVED for CONSTRUCTION
Clark County Engineer — Date 4/8/2005

Plans Approved for Construction by the County does not in any way relieve the engineer of responsibility to meet all requirements of the County or obligation to protect life, health, and property of the public. The plan for any project shall be revised or supplemented at any time it is determined that the full requirements of the County have not been met.
Rev. 11/12/03

lsw architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

KELLY D. BACHELDER — STATE OF WASHINGTON — 40581 — REGISTERED PROFESSIONAL ENGINEER
EXPIRES: 10/31/06

drawn by KDB
checked by CER
lsw job number 03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.04.05
SPR

revisions
12/2005 RECORD DRAWINGS

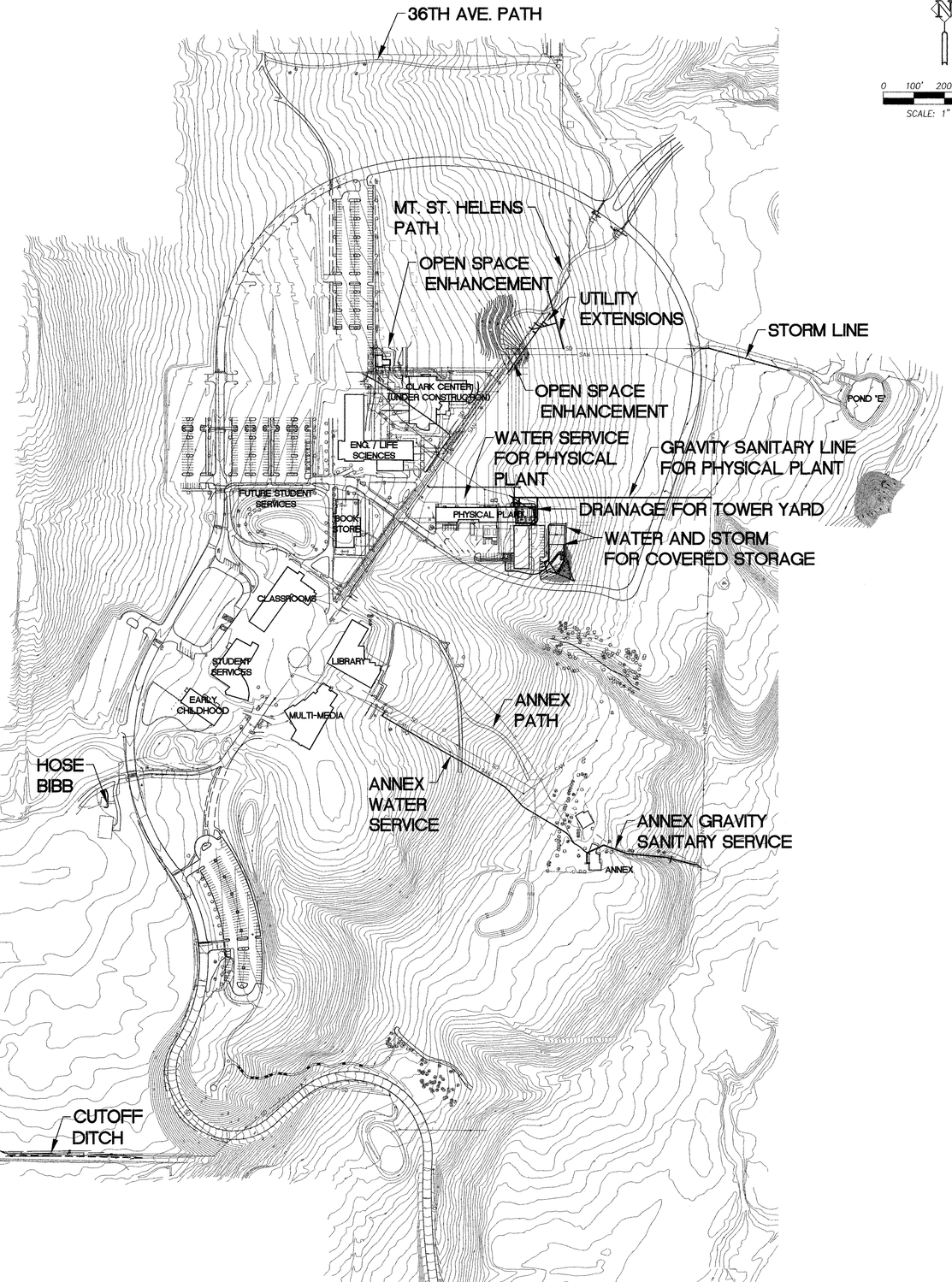
ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

COVER SHEET

CA1.0
SHEET 1 OF 33

LSW-04

OVERALL CIVIL ELEMENTS PLAN



HHPR Harper Houf Peterson Righellis Inc.
ENGINEERS • PLANNERS
1104 Main Street, Suite 100, Vancouver, WA 98660
tel 360.750.1131 www.hrcivil.com fax 360.750.1141

LSW architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

KELLY D. BACHELDER STATE OF WASHINGTON 40581 REGISTERED PROFESSIONAL ENGINEER 12/14/05

EXPIRES: 10/31/06

drawn by
KDB
checked by
CER
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.04.05
SPR

revisions
12/2005 RECORD DRAWINGS

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

OVERALL CIVIL ELEMENTS PLAN

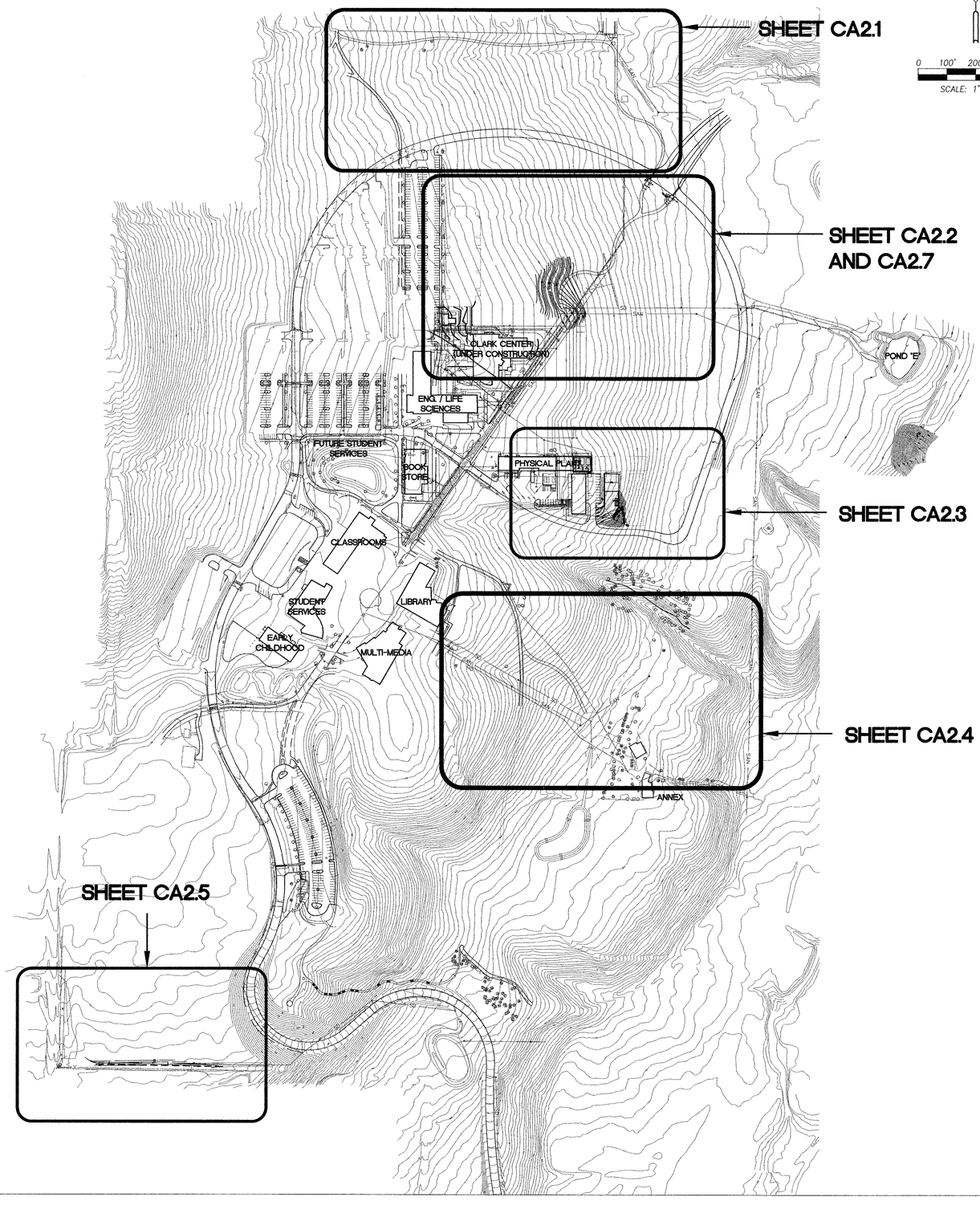
RECORD DRAWINGS
DECEMBER 2005

AS-BUILT INFORMATION PROVIDED BY 2KG CONTRACTORS

CA1.1

LSW-04

OVERALL GRADING AND EROSION CONTROL PLAN



N

0 100' 200' 400'

SCALE: 1" = 200'

HHPR Harper Houf Peterson Righellis Inc.
ENGINEERS • PLANNERS
1104 Main Street, Suite 100, Vancouver, WA 98660
tel 360.750.1131 www.hrcivil.com fax 360.750.1141

GRADING NOTES

GRADING WORK SHALL CONFORM TO THE CONCLUSIONS AND RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL REPORT BY GRI GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS, DATED AUGUST 23, 2004.

PRIOR TO BEGINNING CONSTRUCTION, ALL AREAS OF THE SITE THAT WILL RECEIVE FOUNDATIONS, STRUCTURAL FILL, FLOOR SLABS, OR PAVEMENT SHALL BE STRIPPED OF TOP SOIL, ROOTS, UNSUITABLE FILLS, I.E. EXCAVATED TO NON-ORGANIC, NATIVE UNDISTURBED SOIL OR COMPACTED STRUCTURAL FILL.

STRUCTURAL FILLS SHALL BE INSTALLED IN HORIZONTAL LIFTS NOT EXCEEDING EIGHT INCHES IN THICKNESS AND SHALL BE COMPACTED TO THE FOLLOWING SPECIFICATIONS:
GRANULAR FILL = 95% MIN. (ASTM D 1557)
NATIVE SILT AND CLAY SOILS = 92% MIN. (ASTM D 1557)
TOP EIGHT INCHES OF PAVEMENT/FLOOR SLAB SUB GRADE = 95% MIN. (ASTM D 1557)
ASPHALT CONCRETE = 91% MIN. (ASTM D 2041)
LANDSCAPING/PLANTER AREAS = 90%

ALL WORK PERFORMED SHALL MEET THE REQUIREMENTS OF THE LATEST INTERNATIONAL BUILDING CODE (IBC) AND THE LATEST UNIFORM PLUMBING CODE (UPC).

SEE ARCHITECTURAL PLANS FOR HANDRAIL LOCATIONS AND DETAILS.

EXISTING UTILITIES AS SHOWN ON THE PLANS ARE A BEST EFFORT COMPILATION OF A "UTILITIES LOCATE", SURFACE LOCATIONS AND AS-BUILT DRAWINGS. THE CONTRACTOR SHALL VERIFY LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

SEE GEOTECHNICAL REPORT FOR ADDITIONAL REQUIREMENTS FOR "WET-WEATHER" CONSTRUCTION.

PARKING / DRIVES / PLAZA

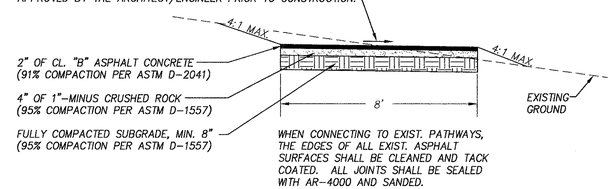
REFER TO ARCHITECTURAL PLANS FOR SITE DETAILS (CURB, SIDEWALK, SIDEWALK RAMP, ETC.)

EROSION CONTROL

SIGNIFICANT VARIATION AND DEGREE OF EROSION CONTROL EFFORT WILL BE DICTATED BY WEATHER CONDITIONS. THE DEVELOPER AND CONTRACTOR SHOULD BE PREPARED TO PROVIDE EXTRA EROSION CONTROL PROVISIONS AND EFFORT DURING WINTER AND WET WEATHER CONDITIONS BEYOND THAT NORMALLY REQUIRED DURING SUMMER AND DRY WEATHER CONDITIONS. REFER TO SHEETS CA2.6 AND CA2.7 FOR ADDITIONAL INFORMATION. FINE GRAINED AND UNCONSOLIDATED SOILS ON SLOPING SITES MAY BECOME UNSTABLE WHEN SUBJECT TO EXCESSIVE MOISTURE.

THE PROJECT CONSTRUCTION ENTRANCE(S) SHALL BE LOCATED AT THE CONTRACTOR'S CONVENIENCE. CONTRACTOR SHALL COORDINATE WITH COUNTY INSPECTOR AND OWNER.

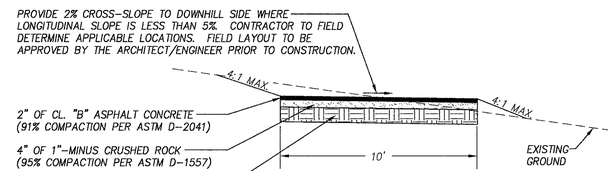
PROVIDE 2% CROSS-SLOPE TO DOWNHILL SIDE WHERE LONGITUDINAL SLOPE IS LESS THAN 5%. CONTRACTOR TO FIELD DETERMINE APPLICABLE LOCATIONS. FIELD LAYOUT TO BE APPROVED BY THE ARCHITECT/ENGINEER PRIOR TO CONSTRUCTION.



SECTION A-A

N.T.S.

PROVIDE 2% CROSS-SLOPE TO DOWNHILL SIDE WHERE LONGITUDINAL SLOPE IS LESS THAN 5%. CONTRACTOR TO FIELD DETERMINE APPLICABLE LOCATIONS. FIELD LAYOUT TO BE APPROVED BY THE ARCHITECT/ENGINEER PRIOR TO CONSTRUCTION.



SECTION B-B

N.T.S.

RECORD DRAWINGS
DECEMBER 2005

AS-BUILT INFORMATION PROVIDED BY
2KG CONTRACTORS

lsw architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

KELLY D. BACHELDER — STATE OF WASHINGTON — 40581 — REGISTERED PROFESSIONAL ENGINEER — 12/14/05

EXPIRES: 10/31/06

drawn by
KDB
checked by
CER
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.04.05
SPR

revisions
12/2005 RECORD DRAWINGS

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

OVERALL GRADING AND EROSION CONTROL PLAN

CA2.0

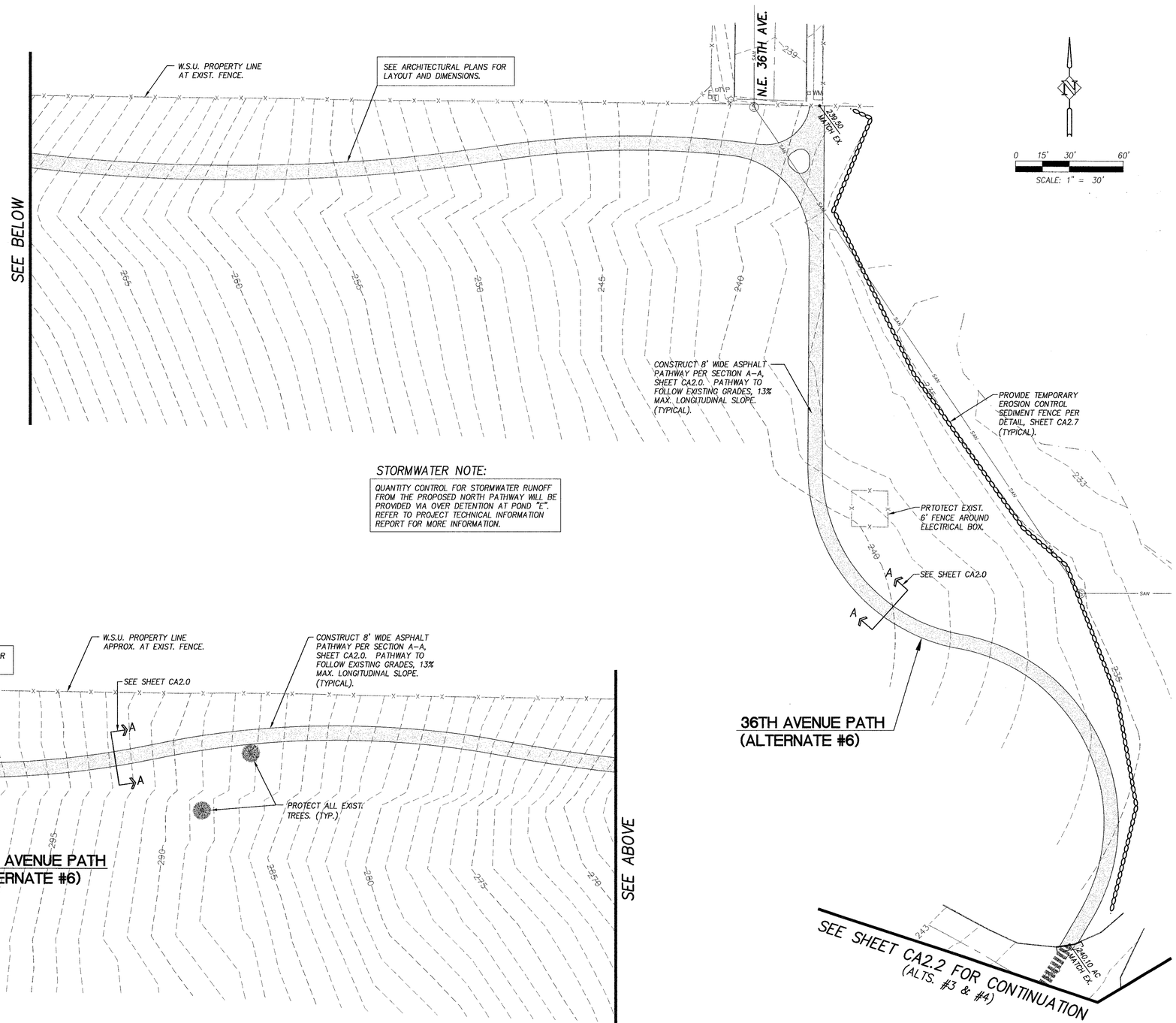
LSW-84

LEGEND

EXISTING		PROPOSED	
5' CONTOUR	245	5' CONTOUR	275
1' CONTOUR		1' CONTOUR	276
SANITARY	SAN	SPOT ELEVATION AT FLOWLINE	302.63
WATER	W	SPOT ELEVATION AT TOP AND BOTTOM OF WALL	302.00 TW / 299.00 BW
STORM	SD	SANITARY	
ELECTRICAL	E	WATER	
TELEPHONE	T	STORM PIPE	8"SDP 12"SDP 30"SDP
GAS	G	STORM M.H.	
STORM M.H.	ST	SANITARY M.H.	S
CATCH BASIN	CB	FIRE HYDRANT	
		BLOW-OFF	
		CAP	
		THRUST BLOCK	
		VALVE	
		WATER METER	
		CATCH BASIN	
		CHECK DAM	
		SANITARY C.O.	
		BIO-BAG PROTECTION	
		SEDIMENT FENCE	

RECORD DRAWINGS
DECEMBER 2005

AS-BUILT INFORMATION PROVIDED BY 2KG CONTRACTORS



STORMWATER NOTE:

QUANTITY CONTROL FOR STORMWATER RUNOFF FROM THE PROPOSED NORTH PATHWAY WILL BE PROVIDED VIA OVER DETENTION AT POND "E". REFER TO PROJECT TECHNICAL INFORMATION REPORT FOR MORE INFORMATION.

HHPR Harper Houf Peterson Righellis Inc.
ENGINEERS • PLANNERS
1104 Main Street, Suite 100, Vancouver, WA 98660
tel 360.750.1131 www.hrcivil.com fax 360.750.1141

lsw architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

KELLY D. BACHELDER, STATE OF WASHINGTON, 40581, REGISTERED PROFESSIONAL ENGINEER, 12/10/05

EXPIRES: 10/31/06

drawn by
KDB
checked by
CER
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

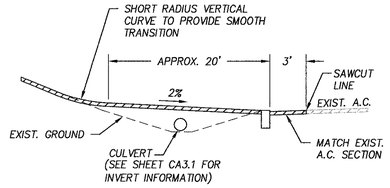
issue date
2.04.05
SPR

revisions
12/2005 RECORD DRAWINGS

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

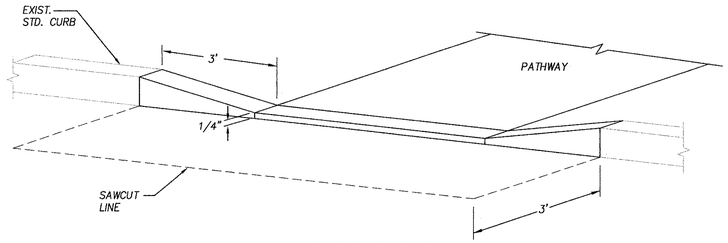
36TH AVE. PATH GRADING & EROSION CONTROL PLAN (ALTERNATE #6)

CA2.1



SECTION C–C

N.T.S.



CURB TAPER

N.T.S.

LEGEND

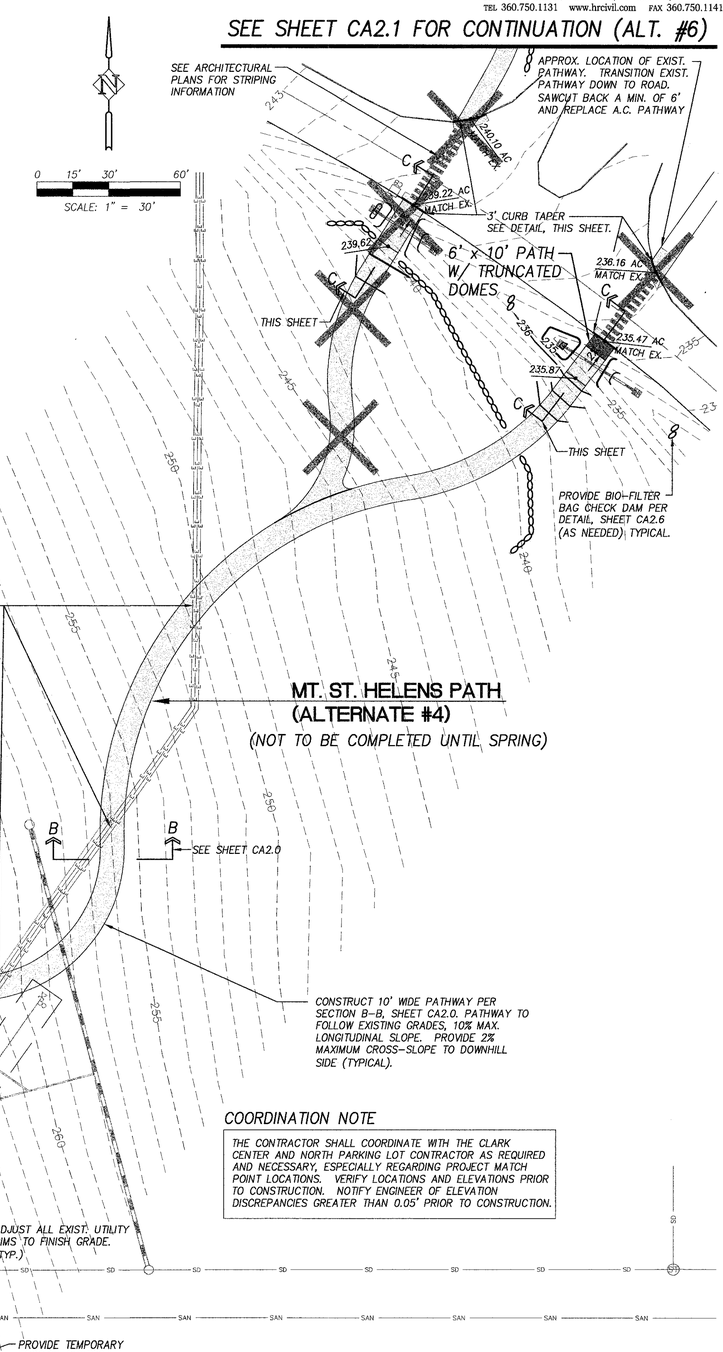
EXISTING		PROPOSED	
5' CONTOUR	245	5' CONTOUR	275
1' CONTOUR		1' CONTOUR	276
SANITARY	SAN	SPOT ELEVATION AT FLOWLINE	302.63
WATER	W	SPOT ELEVATION AT TOP AND BOTTOM OF WALL	302.00 TW 299.00 BW
STORM	SD	SANITARY	
ELECTRICAL	E	WATER	
TELEPHONE	T	STORM PIPE	
GAS	G	STORM M.H.	
STORM M.H.	ST	SANITARY M.H.	
CATCH BASIN	CB	FIRE HYDRANT	
		BLOW-OFF	
		CAP	
		THRUST BLOCK	
		VALVE	
		WATER METER	
		CATCH BASIN	
		CHECK DAM	
		SANITARY C.O.	
		BIO-BAG PROTECTION	
		SEDIMENT FENCE	

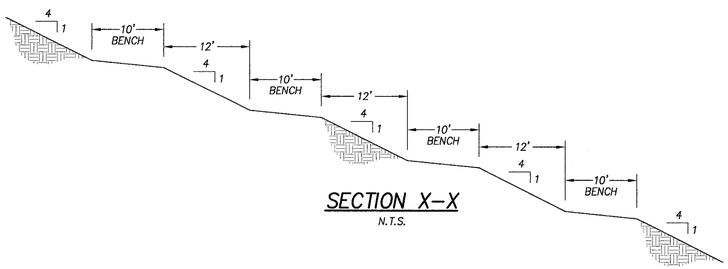
STORMWATER NOTE:

QUANTITY CONTROL FOR STORMWATER RUNOFF FROM THE PROPOSED PATHWAY WILL BE PROVIDED AT POND "E". REFER TO PROJECT TECHNICAL INFORMATION REPORT FOR MORE INFORMATION.

HHPR Harper Houf Peterson Righellis Inc.
ENGINEERS • PLANNERS
1104 Main Street, Suite 100, Vancouver, WA 98660
tel 360.750.1131 www.hrcivil.com fax 360.750.1141

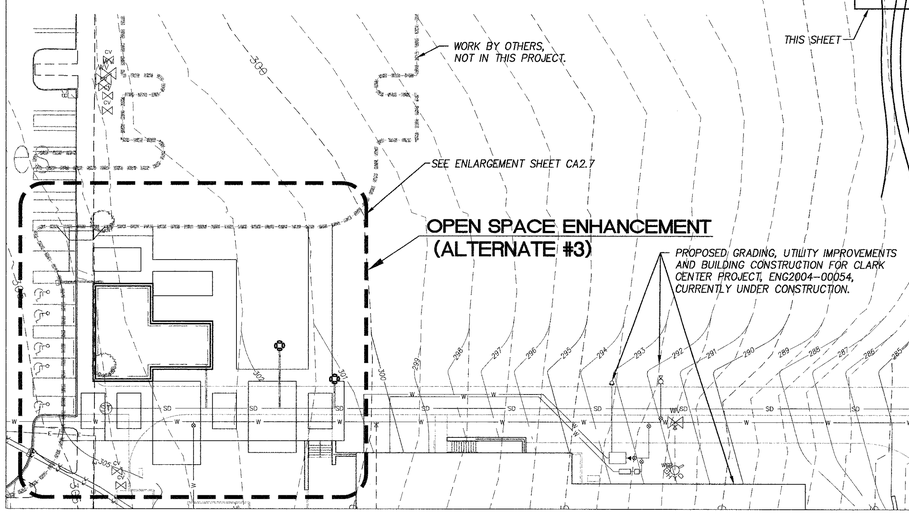
SEE SHEET CA2.1 FOR CONTINUATION (ALT. #6)





SECTION X–X

N.T.S.



COORDINATION NOTE

THE CONTRACTOR SHALL COORDINATE WITH THE CLARK CENTER AND NORTH PARKING LOT CONTRACTOR AS REQUIRED AND NECESSARY, ESPECIALLY REGARDING PROJECT MATCH POINT LOCATIONS. VERIFY LOCATIONS AND ELEVATIONS PRIOR TO CONSTRUCTION. NOTIFY ENGINEER OF ELEVATION DISCREPANCIES GREATER THAN 0.05' PRIOR TO CONSTRUCTION.

RECORD DRAWINGS
DECEMBER 2005
AS-BUILT INFORMATION PROVIDED BY 2KG CONTRACTORS

LSW architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

KELLY D. BACHELDER — STATE OF WASHINGTON — 40581 — REGISTERED PROFESSIONAL ENGINEER

EXPIRES: 10/31/06

drawn by
KDB
checked by
CER
lsw job number
03285

issue date
2.04.05
SPR

revisions
12/2005 RECORD DRAWINGS

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

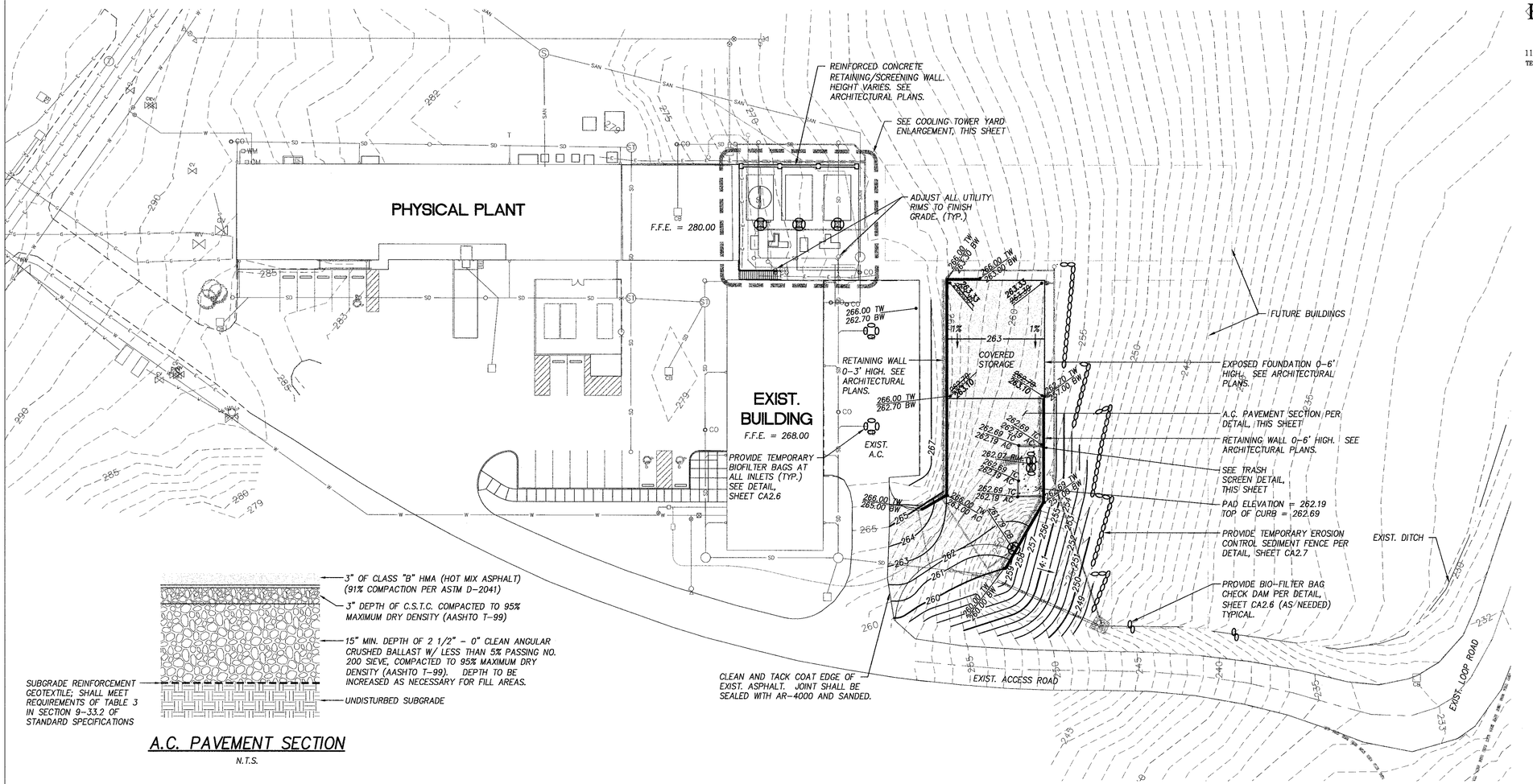
CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

OPEN SPACE/PATHWAY GRADING & EROSION CONTROL PLAN (ALTS. #3 & #4)

CA2.2
SHEET 5 OF 33

LSW-94

HHPR
Harper Houf Peterson Righellis Inc.
ENGINEERS • PLANNERS
1104 Main Street, Suite 100, Vancouver, WA 98660
tel 360.750.1131 www.hrcivil.com fax 360.750.1141

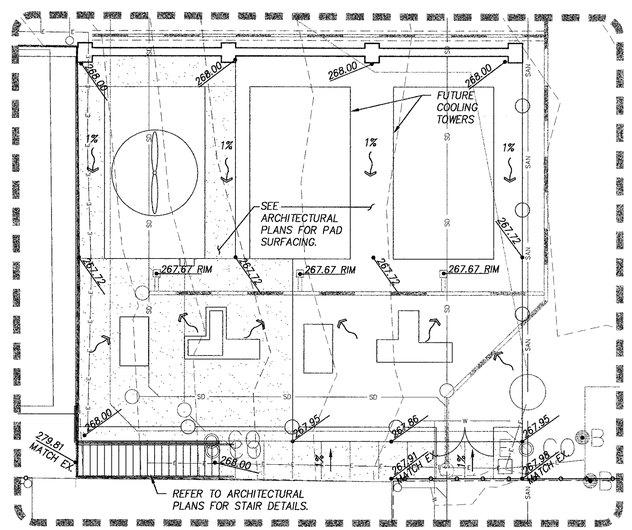


0 15' 30' 60'
SCALE: 1" = 30'

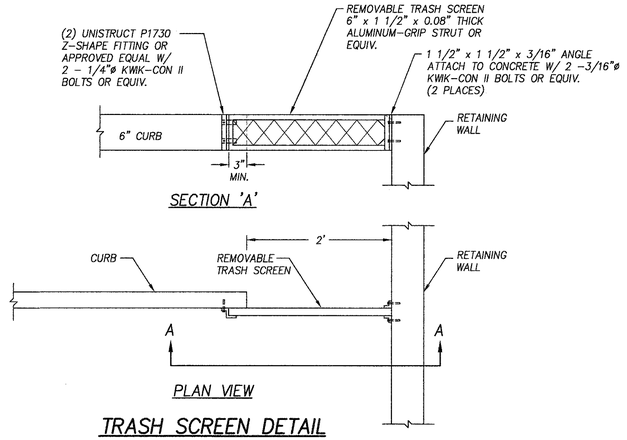
A.C. PAVEMENT SECTION
N.T.S.

LEGEND

EXISTING		PROPOSED	
5' CONTOUR	245	5' CONTOUR	275
1' CONTOUR		1' CONTOUR	276
SANITARY	SAN	SPOT ELEVATION AT FLOWLINE	302.63
WATER	W	SPOT ELEVATION AT TOP AND BOTTOM OF WALL	302.00 TW / 299.00 BW
STORM	SD	SANITARY	
ELECTRICAL	E	WATER	
TELEPHONE	T	STORM PIPE	
GAS	G	STORM M.H.	
STORM M.H.	ST	SANITARY M.H.	
CATCH BASIN	CB	FIRE HYDRANT	
		BLOW-OFF	
		CAP	
		THRUST BLOCK	
		VALVE	
		WATER METER	
		CATCH BASIN	
		CHECK DAM	
		SANITARY C.O.	
		BIO-BAG PROTECTION	
		SEDIMENT FENCE	



COOLING TOWER YARD
SCALE: 1" = 10'



TRASH SCREEN DETAIL
N.T.S.

RECORD DRAWINGS
DECEMBER 2005
AS-BUILT INFORMATION PROVIDED BY 2KG CONTRACTORS

LSW architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

KELLY D. BACHELDER
STATE OF WASHINGTON
40581
REGISTERED PROFESSIONAL ENGINEER
12/19/05
EXPIRES: 10/31/06

drawn by
KDB
checked by
CER
lsw job number
03285

issue date
2.04.05
SPR
revisions
12/2005 RECORD DRAWINGS

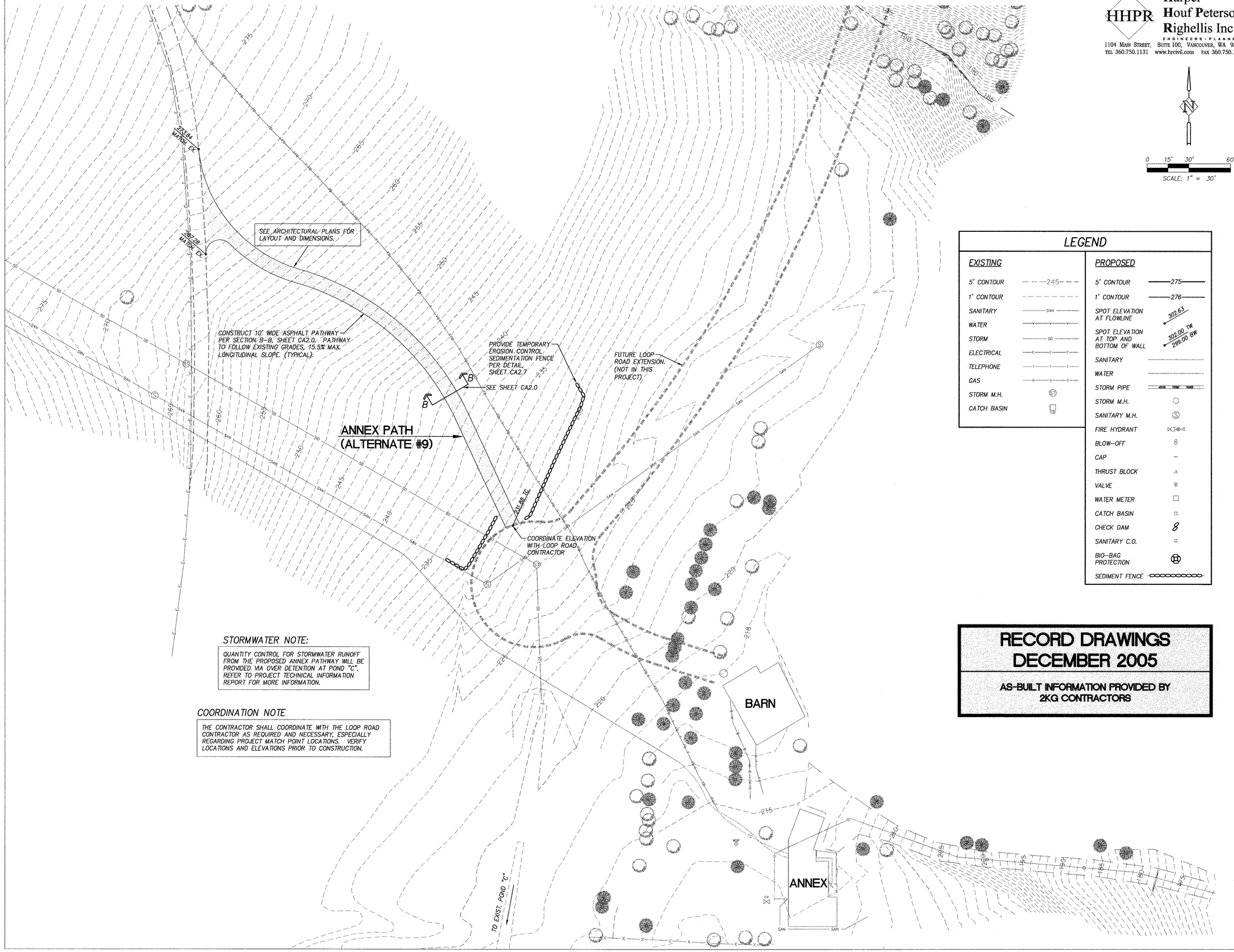
ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

PHYSICAL PLANT GRADING, DRAINAGE, & EROSION CONTROL PLAN

CA2.3

LSW-94



LEGEND

EXISTING		PROPOSED	
5' CONTOUR	245	5' CONTOUR	275
1' CONTOUR		1' CONTOUR	276
SANITARY	SAN	SPOT ELEVATION AT FLOWLINE	302.63
WATER	W	SPOT ELEVATION AT TOP AND BOTTOM OF WALL	302.00 TW 299.00 BW
STORM	SD	SANITARY	
ELECTRICAL	E	WATER	
TELEPHONE	T	STORM PIPE	12" 10" 6"
GAS	G	STORM M.H.	
STORM M.H.	ST	SANITARY M.H.	S
CATCH BASIN	CB	FIRE HYDRANT	
		BLOW-OFF	
		CAP	
		THRUST BLOCK	
		VALVE	
		WATER METER	
		CATCH BASIN	
		CHECK DAM	
		SANITARY C.O.	
		BIO-BAG PROTECTION	
		SEDIMENT FENCE	

RECORD DRAWINGS
DECEMBER 2005

AS-BUILT INFORMATION PROVIDED BY 2KG CONTRACTORS

HHPR Harper Houf Peterson Righellis Inc.
ENGINEERS + PLANNERS
1104 Main Street, Suite 100, Vancouver, WA 98660
tel 360.750.1131 www.hrcivil.com fax 360.750.1141

LSW architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

KELLY D BACHELDER — STATE OF WASHINGTON — 40581 — REGISTERED PROFESSIONAL ENGINEER

EXPIRES: 10/31/06

drawn by
KDB
checked by
CER
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.04.05
SPR

revisions
12/2005 RECORD DRAWINGS

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

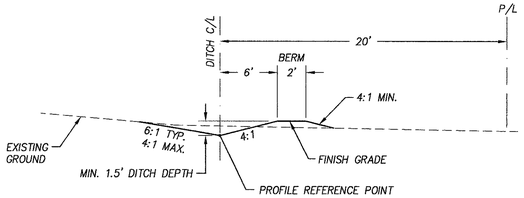
ANNEX PATH GRADING & EROSION CONTROL PLAN (ALTERNATE #9)

CA2.4

HHPR
Harper Houf Peterson Righellis Inc.
ENGINEERS + PLANNERS
1104 Main Street, Suite 100, Vancouver, WA 98660
tel 360.750.1131 www.hrcivil.com fax 360.750.1141

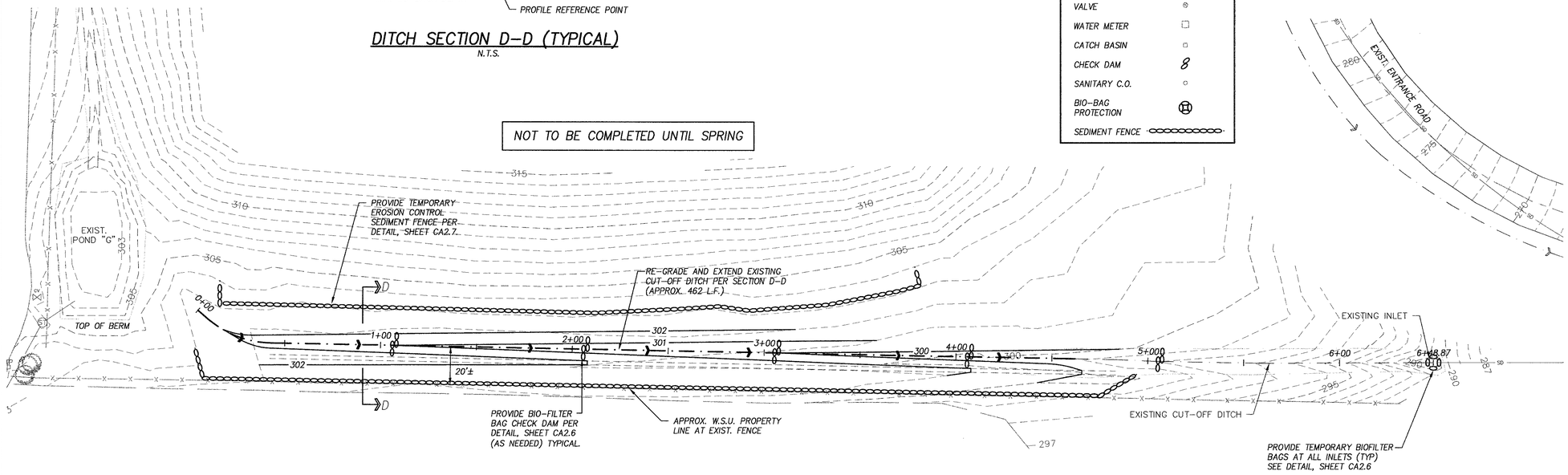
LEGEND

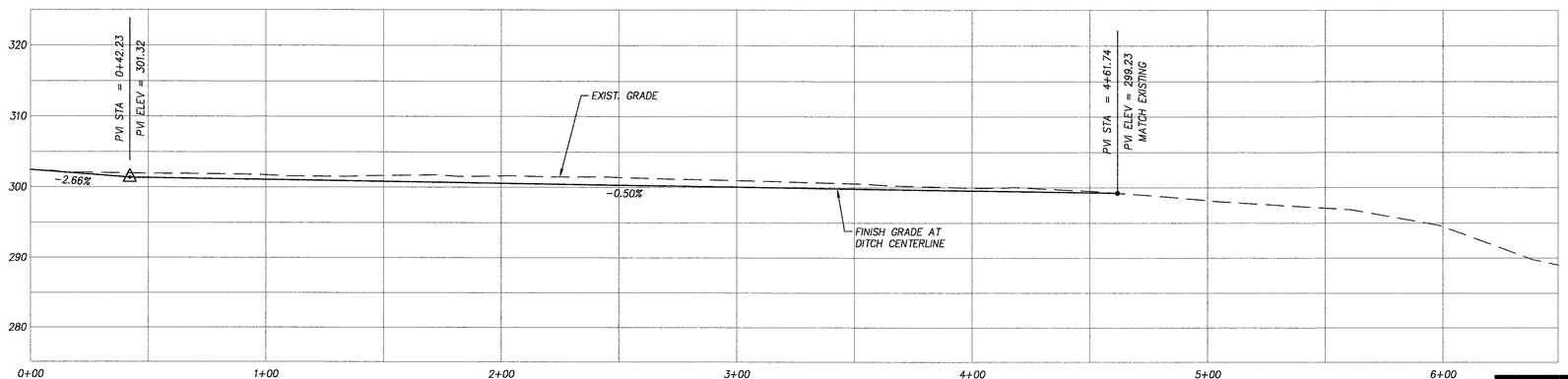
EXISTING		PROPOSED	
5' CONTOUR	245	5' CONTOUR	275
1' CONTOUR		1' CONTOUR	276
SANITARY	SAN	SPOT ELEVATION AT FLOWLINE	302.63
WATER	W	SPOT ELEVATION AT TOP AND BOTTOM OF WALL	302.00 TW / 298.00 BW
STORM	SD	SANITARY	
ELECTRICAL	E	WATER	
TELEPHONE	T	STORM PIPE	12" CMP 302
GAS	G	STORM M.H.	
STORM M.H.	ST	SANITARY M.H.	S
CATCH BASIN	CB	FIRE HYDRANT	
		BLOW-OFF	
		CAP	
		THRUST BLOCK	
		VALVE	
		WATER METER	
		CATCH BASIN	
		CHECK DAM	
		SANITARY C.O.	
		BIO-BAG PROTECTION	
		SEDIMENT FENCE	



DITCH SECTION D–D (TYPICAL)
N.T.S.

NOT TO BE COMPLETED UNTIL SPRING





DITCH PROFILE
SCALE: 1" = 30' (H)
1" = 10' (V)

RECORD DRAWINGS
DECEMBER 2005

AS-BUILT INFORMATION PROVIDED BY 2KG CONTRACTORS

0 15' 30' 60'
SCALE: 1" = 30'

LSW architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

KELLY D BACHMEIER
STATE OF WASHINGTON
Kelly Bachmeier
40581
REGISTERED
PROFESSIONAL ENGINEER
12/11/05
EXPIRES: 10/31/06

drawn by
CER
checked by
CER
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.04.05
SPR

revisions
12/2005 RECORD DRAWINGS

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

SOUTHWEST FIELD GRADING AND EROSION CONTROL PLAN

CA2.5
SHEET 8 OF 33
LSW-04

RECORD DRAWINGS
DECEMBER 2005
AS-BUILT INFORMATION PROVIDED BY 2KG CONTRACTORS

HHPR Harper Houf Peterson Righellis Inc.
ENGINEERS • PLANNERS
1104 Main Street, Suite 100, Vancouver, WA 98660
tel 360.750.1131 www.hrcivil.com fax 360.750.1141

STANDARD NOTES FOR EROSION CONTROL PLAN

1. The Contractor shall install and maintain BMP's as shown and perform all actions necessary to prevent erosion, and control sediment from leaving the construction site. Site Contractor shall comply with Clark County Code Chapter 40.380.050.

2. All erosion control measures shall be in–place and in working condition prior to disturbing and exposing any soil surfaces (i.e. silt fence, construction entrance, sedimentation barriers, sedimentation traps).

3. All erosion prevention and control BMP's shall be maintained and repaired as needed to insure continued performance of their intended function. Needed repairs shall be made as soon as practicable. They are to remain in place and operational during all phases of construction. Construction activities shall not continue or resume until repairs to erosion control facilities are made and the facilities are functional. Any sediment leaving the site or discharging to a sensitive area shall be stopped and controlled immediately. Contaminated areas shall be cleaned and restored.

4. Clearing limits and work area limits shall be delineated and marked. Do not disturb more area than needed for construction requirements.

5. All sensitive or critical areas (wetlands, steep slopes, natural waterways), and buffers shall all be clearly delineated and clearly marked, and protected from sediment deposition.
6. Sediment laden runoff shall be prevented from entering all existing storm water catch basins and inlets affected by construction.

7. No exposed, bare soils shall remain unstabilized for more than two days during the period October 1 thru April 30 or for more than seven days during the period of May 1 through September 30. All disturbed soil surfaces shall be stabilized by a suitable application of "Best Management Practices".

8. Where feasible, no more than 500 feet of trench shall be open at one time. Excavated material shall be placed on the up–hill side of trenches provided it does not conflict with safety requirements.

9. Dewatering devices shall discharge into a sediment trap or sediment pond. No discharge shall be made to a paved street or stormwater collection system without first removing sediment.

10. Cut and fill slopes shall be constructed in a manner that will minimize erosion. Erosion shall be controlled and prevented by such measures as roughening the surface, installation of interceptor ditches, terracing, covering with matting, mulch or plastic sheeting. Runoff shall be prevented from entering a slope and from undercutting the base of slopes.

11. Any soil or debris transported onto roadways and sidewalks shall be removed. Deposits shall be completely removed by shoveling and/or sweeping. Washing shall not be utilized unless specifically approved in writing by the County.

12. All permanent infiltration systems shall be isolated and protected from sediment laden runoff entering to avoid risk of reducing the ability of the systems to infiltrate. Isolation and protection shall not be removed until the drainage area tributary to the system is completely stabilized.

CONTINUED ON SHEET 2

DWG: ECN1.DWG

NO.	REVISIONS	DATE	BY

Department of Public Works — CLARK COUNTY WASHINGTON — proud past, promising future
STANDARD NOTES FOR EROSION CONTOL PLAN — APPROVED — Peter Capell, COUNTY ENGINEER — 01/01/04 DATE
STANDARD ECN1 — PLAN No. — DESIGNED SCH — DRAWN SCH — DATE 08/02/02

STANDARD NOTES FOR EROSION CONTROL PLAN (CONTINUED)

13. All conveyance channels, both temporary and permanent shall be stabilized to prevent erosion of the channel. Stabilization shall extend to areas at outlets and downstream reaches vulnerable to erosion resulting from flow discharging from the channel.

14. If BMP's shown are utilized but are insufficient to prevent sediment from reaching water bodies, adjacent properties, or public rights–of–way; additional BMP's shall be implemented immediately to prevent further encroachment of sediment.

15. Stabilized areas shall be provided for employee parking and storage of construction materials. Erodeable stockpiles of earthen materials, such as topsoil, silty and clayey soils; and landscape materials, shall be covered when not being incorporated in the work. Erosion control BMP's shall be utilized as necessary to prevent sediment laden runoff from leaving or sediment being transported from these areas from vehicle activity.

16. All pollutants other than sediment that occur during construction shall be handled and disposed of in a manner that does not cause contamination of storm water.

17. The Contractor shall keep an inspection log of the condition of the erosion control facilities. Erosion control facilities shall be inspected at least weekly and after each rainfall. The inspection log shall be kept at the project site at a designated location and shall be available for review by the County. An individual that has successfully completed the County's Erosion Control Certification course shall perform inspections and maintain the log.

18. All temporary BMP's shall be removed within 30 days after final site stabilization is achieved. Trapped sediment shall be deposited and stabilized on site. Areas disturbed resulting from removal shall be permanently stabilized.

19. Construction shall not be considered complete and acceptable until all disturbed soil surfaces have been protected from erosion with permanent landscaping, covering with impervious surfaces, restored to original undisturbed condition or permanently stabilized.

20. Vegetated stabilization and landscaping shall be fertilized, watered and maintained to insure that growth of vegetation is established and sustained.

21. During dry weather construction periods the contractor shall provide project–specific dust control measures that may include: Seeding, Mulching, Matting, Water, Tackifier, or Chemical Soil Stabilizers. The contractor shall maintain the dust control measures through dry weather periods until all disturbed areas have been stabilized. Immediately re–stabilize areas disturbed by contractor's operations or other activities (wind, water, vandalism, etc.).

22. Entry onto the construction site shall be restricted to a single approved entrance as shown on the plan.

23. Maintenance and repair of heavy equipment and vehicles which involve potential contaminants (oil,solvents,hydraulic fluid, etc.) must be conducted in a manner which prevents contamination of soils, surface water and ground water. Tarps, drip pans, or other appropriate measures shall be used as necessary.

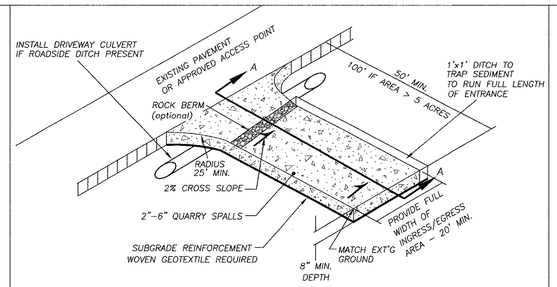
24. Stripping, topsoil, and unsuitable material stockpiles shall be hydroseeded with "regreen wheat x wheat grass hybrid" by Hobbs and Hobkins (or approved equal). Maintenance of stockpile areas and reapplication of hydroseed covering shall be required if bare soil is present. During winter and wet weather conditions, stockpiles shall be covered with plastic sheeting per detail E–16.

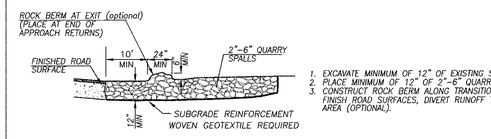
SHEET 2 OF 2

DWG: ECN.DWG

NO.	REVISIONS	DATE	BY

Department of Public Works — CLARK COUNTY WASHINGTON — proud past, promising future
STANDARD NOTES (CONTINUED) FOR EROSION CONTOL PLAN — APPROVED — Peter Capell, COUNTY ENGINEER — 01/01/04 DATE
STANDARD ECN2 — PLAN No. — DESIGNED SCH — DRAWN SCH — DATE 02/23/03





SECTION A–A

1. EXCAVATE MINIMUM OF 12" OF EXISTING SOILS.
2. PLACE MINIMUM OF 12" OF 2"–6" QUARRY SPALLS
3. CONSTRUCT ROCK BERM ALONG TRANSITION POINT TO FINISH ROAD SURFACES, DIVERT RUNOFF TO ONSITE AREA (OPTIONAL).

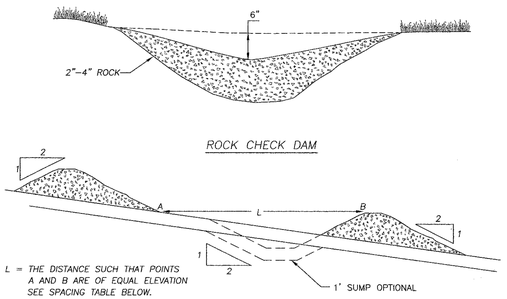
NOTES:

1. FOR DEVELOPMENT PROJECTS REVIEWED BY ENGINEERING SERVICES. NOT FOR USE WITH SINGLE FAMILY OR DUPLEX RESIDENTIAL BUILDING PERMITS. SEE BUILDING DEPT. FOR GRAVEL CONSTRUCTION ENTRANCE PLAN.
2. INSTALL WOVEN GEOTEXTILE FABRIC TO PREVENT SUB–SOIL PUMPING.
3. VEHICLE WASHDOWN AREA, IF REQUIRED, IS TO BE INSTALLED AND USED TO REMOVE SEDIMENT FROM VEHICLES THAT ARE ABOUT TO ENTER AN ESTABLISHED ROAD.
4. WASHDOWN AREA TO BE MADE UP OF CLEAN 2"– 6" QUARRY SPALLS, 1" DEEP (MIN) OVER WOVEN GEOTEXTILE FABRIC. WASHDOWN AREA TO BE FULL WIDTH OF ENTRANCE AND 50' (MIN.), AND 100' IF EXPOSED SOIL IS OVER 5 ACRES.
5. AT TIME OF PRECONSTRUCTION MEETING, THE COUNTY INSPECTOR MAY REQUIRE THE ENTRANCE TO BE PAVED TO THE EDGE OF THE RIGHT–OF–WAY PRIOR TO THE INSTALLATION OF A WASHDOWN ENTRANCE TO AVOID DAMAGE TO THE EXISTING ROADWAY.
6. THE RESPONSIBLE EROSION CONTROL INDIVIDUAL IS TO ENSURE THAT ALL VEHICLES USE THIS ENTRANCE AND ARE TO BE INSPECTED AND CLEANED OF SOILS BEFORE LEAVING PROJECT, AND THAT THE ENTRANCE IS TO BE KEPT CLEAN AT ALL TIMES.

DWG: E–1.DWG

NO.	REVISIONS	DATE	BY

Department of Public Works — CLARK COUNTY WASHINGTON — proud past, promising future
STANDARD CONSTRUCTION ENTRANCE — APPROVED — Peter Capell, COUNTY ENGINEER — 01/01/04 DATE
STANDARD E–1 — PLAN No. — DESIGNED SCH — DRAWN SCH — DATE 09/07/03



ROCK CHECK DAM

L = THE DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATION SEE SPACING TABLE BELOW.

SPACING BETWEEN CHECK DAMS

CHECK DAM NOTES:

1. CHECK DAMS ARE CONSTRUCTED ACROSS A SWALE OR DITCH TO REDUCE VELOCITIES OF CONCENTRATED FLOWS, THEREBY REDUCING EROSION AND ALLOWING A SIGNIFICANT AMOUNT OF SUSPENDED SEDIMENT TO SETTLE OUT.

2. CHECK DAMS SHALL BE USED IN TEMPORARY OR PERMANENT CHANNELS THAT DRAIN 10 ACRES OR LESS, ARE NOT YET VEGETATED, AND WHEN INSTALLING CHANNEL LINING IS NOT FEASIBLE.

3. USE TYPICAL ROCK SIZE OF 2–4 INCH. PLACE ROCK BY HAND OR BY MECHANICAL MEANS RATHER THAN DUMPING THE ROCK. BRIDGE ENTIRE DITCH OR SWALE WIDTH AND ENSURE THE CENTER OF THE DAM IS 6" LOWER THAN THE OUTER ENDS. FOR HIGHER VELOCITY FLOWS: ±5 FPS USE 6"–12" RIPRAP, AND HAND PLACE LARGER ROCK ON UPSTREAM SIDE OF DAM.

4. REMOVE CHECK DAMS FROM GRASS–LINED DITCHES AND SWALES ONCE THE GRASS IS ESTABLISHED. SEED, MULCH OR MAT THE AREA WHERE THE CHECK DAMS WERE, IMMEDIATELY FOLLOWING REMOVAL.

5. INSPECT ONCE PER WEEK ON ACTIVE SITES, ONCE EVERY TWO WEEKS ON INACTIVE SITES, AND WITHIN 24 HOURS FOLLOWING A 0.5 INCH RAIN EVENT. REMOVE SEDIMENT ONCE IT REACHES ONE–THIRD THE DEPTH OF THE ROCK WEIR. REPLACE ROCK WEIR WHEN FILTERING CAPACITY IS REDUCED BY ONE–HALF.

6. SPACING TABLE FOR CHECK DAMS:

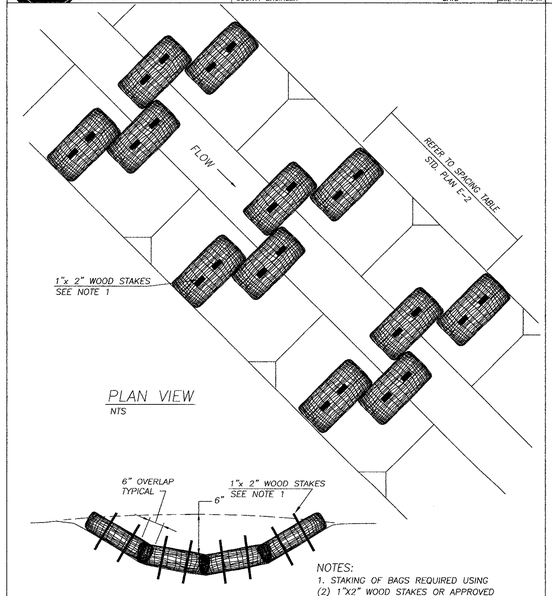
DITCH GRADE	MINIMUM WEIR DEPTH		
	6 INCH	12 INCH	18 INCH
6%	**	L=16 ft O.C.	L=26 ft O.C.
5%	**	L= 20 ft	L= 30 ft
4%	**	L= 26 ft	L= 40 ft
3%	15 ft	L= 33 ft	L= 50 ft
2%	25 ft	L= 50 ft	L= 80 ft

**NOT ALLOWED

DWG: E–2

NO.	REVISIONS	DATE	BY

Department of Public Works — CLARK COUNTY WASHINGTON — proud past, promising future
ROCK CHECK DAM — APPROVED — Peter Capell, COUNTY ENGINEER — 01/01/04 DATE
STANDARD E–2 — PLAN No. — DESIGNED SCH — DRAWN SCH — DATE 08/07/02



PLAN VIEW
NTS

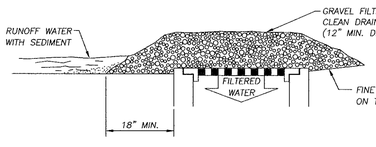
PROFILE
NTS

NOTES:
1. STAKING OF BAGS REQUIRED USING (2) 1"X2" WOOD STAKES OR APPROVED EQUAL PER BAG.
2. SURFACE MUST BE SMOOTH BEFORE APPLICATION.
3. SEE CHECK DAM NOTES STD. PLAN E–2

DWG: E–2a

NO.	REVISIONS	DATE	BY

Department of Public Works — CLARK COUNTY WASHINGTON — proud past, promising future
BIO–FILTER BAG CHECK DAM — APPROVED — Peter Capell, COUNTY ENGINEER — 01/01/04 DATE
STANDARD E–2a — PLAN No. — DESIGNED SCH — DRAWN SCH — DATE 08/07/02



GRAVEL & WIRE MESH

NOT TO BE USED IN TRAVELED WAY IF IT MAY RESULT IN A TRAFFIC HAZARD

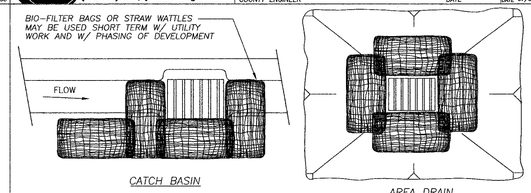
INLET PROTECTION NOTES:

1. INLET PROTECTION IS INTENDED TO PREVENT COARSE SEDIMENT FROM ENTERING STORM DRAINAGE SYSTEMS BY FILTERING RUNOFF AND RETAINING SEDIMENT BEFORE IT REACHES A DRAINAGE OR STORM SEWER SYSTEM.
2. PLACE INLET PROTECTION IN AREAS WHERE WATER CAN POND, AND WHERE PONDING WILL NOT HAVE ADVERSE IMPACTS.
3. INLET PROTECTION MUST ALLOW FOR OVERFLOW IN A SEVERE STORM EVENT.
4. INLET PROTECTION TYPES INCLUDE:
   TYPE 1 – GRAVEL AND WIRE MESH
   TYPE 2 – MASONRY AND ROCK
   TYPE 3 – SEDIMENT FENCE
   TYPE 4 – BIOFILTER BAGS
   TYPE 5 – CATCH BASIN INSERT
5. INSPECT ONCE PER WEEK ON ACTIVE SITES, ONCE EVERY TWO WEEKS ON INACTIVE SITES, AND WITHIN 24 HOURS FOLLOWING A 0.5 INCH RAIN EVENT.
6. CLEAN INLET PROTECTION DURING AND AFTER EACH SIGNIFICANT STORM AND REMOVE SEDIMENT FROM BEHIND STRUCTURE AFTER EVERY STORM.
7. IF ROCK BECOMES CLOGGED WITH SEDIMENT, IT MUST BE CAREFULLY REMOVED FROM THE INLET AND EITHER CLEANED OR REPLACED.
8. ASSESS THE IMPACT OF ALLOWING WATER TO POND AT THE INLET AND PROVIDE AN OVERFLOW WEIR OR SOME OTHER TYPE OF RELIEF AS NEEDED.
9. CONSIDER THE EFFECT OF PLACING OBSTRUCTIONS AT INLETS ON GRADE MAY HAVE ON THEIR EFFICIENCY.
10. USE MECHANICAL MEANS TO REMOVE SEDIMENT DEPOSITS (SHOVEL, BROOM, SWEEPER/VACTOR UNIT).
11. REMOVE SEDIMENT ACCUMULATED ON OR AROUND THE PROTECTION AS NEEDED TO MAINTAIN INTENDED FUNCTION.
12. REPAIR OR REPLACE MATERIALS AS NEEDED TO ENSURE PROPER FUNCTION.

DWG: E–3.DWG

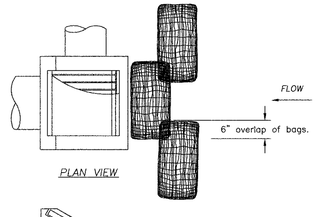
NO.	REVISIONS	DATE	BY

Department of Public Works — CLARK COUNTY WASHINGTON — proud past, promising future
INLET PROTECTION TYPE 1 GRAVEL AND WIRE MESH — APPROVED — Peter Capell, COUNTY ENGINEER — 01/01/04 DATE
STANDARD E–3 — PLAN No. — DESIGNED SCH — DRAWN SCH — DATE 08/07/02

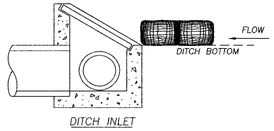


CATCH BASIN

AREA DRAIN



PLAN VIEW



DITCH INLET

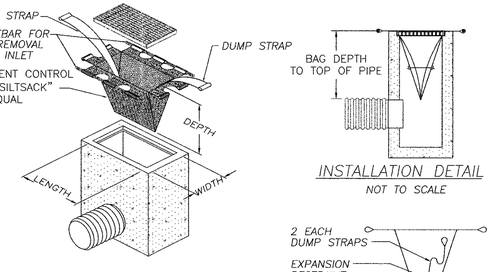
NOTES:

1. ADDITIONAL MEASURES MUST BE CONSIDERED DEPENDING ON SOIL TYPE.
2. BIO–FILTER BAGS SHOULD BE STAKED WHERE APPLICABLE USING (2) 1"x2" WOODEN STAKES OR APPROVED EQUAL PER BAG.
3. STRAW WATTLES MUST BE STABILIZED BY ATTACHING WIRE CLIPS TO THE CATCH BASIN PER MANUFACTURES SPECIFICATIONS.
4. INLET PROTECTION MUST BE REGULARLY INSPECTED BY THE EROSION CONTROL INDIVIDUAL TO INSURE PROPER PLACEMENT/FUNCTION AND MAINTENANCE.
5. SEE INLET PROTECTION NOTES STD. PLAN E–3

DWG: E–3c.DWG

NO.	REVISIONS	DATE	BY

Department of Public Works — CLARK COUNTY WASHINGTON — proud past, promising future
INLET PROTECTION TYPE 4 BIOFILTER BAGS — APPROVED — Peter Capell, COUNTY ENGINEER — 01/01/04 DATE
STANDARD E–3c — PLAN No. — DESIGNED SCH — DRAWN SCH — DATE 08/07/02



INSTALLATION DETAIL
NOT TO SCALE

BAG DETAIL
NOT TO SCALE

CB STYLE	LENGTH	WIDTH	DEPTH
Type 1 CB	24"	20"	Varies
Type 1 CCI	29.5"	24"	Varies
USA G2	32.5"	27.5"	Varies

INLET SEDIMENT CONTROL DEVICE – SILT SACK
NTS

NOTES:
1. THE DIMENSION CHART ABOVE IS FOR STANDARD CATCH BASINS AND INLETS ONLY. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE CORRECT SIZE DEVICE FOR EACH INLET.
2. FOR NON–STANDARD CATCH BASINS AND INLETS, THE CONTRACTOR SHALL MEASURE DIMENSIONS IN THE FIELD AND ORDER THE APPROPRIATE SIZE(S).
3. THE INLET SEDIMENT CONTROL DEVICE SHALL BE OF HIGH FLOW DESIGN (200 GAL/MIN/FT), AS PER THE MANUFACTURER'S SPECS.
4. THE SEDIMENT CONTROL DEVICE SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND MAINTAINED A MINIMUM ONCE PER MONTH OR WITHIN THE 48 HOURS FOLLOWING A STORM EVENT. FILTER SHALL BE CLEANED IN A MANNER WHICH ENSURES THAT ALL SEDIMENT REMAINS ON SITE.
5. SUBSTITUTION OF A SHEET OF FILTER FABRIC PLACED OVER THE OPENING OF THE INLET IS NOT APPROVED.
6. RECESSED CURB INLET CATCH BASINS MUST BE BLOCKED WHEN USING FILTER FABRIC INLET SACKS, SIZE OF FILTER INLET SACK TO BE DETERMINED BY MANUFACTURER.
7. THE FILTER SHALL BE REPLACED OR CLEANED WHEN THE BAG BECOMES HALF FULL.
8. SEE INLET PROTECTION NOTES STD. PLAN E–3

DWG: E–3d.DWG

NO.	REVISIONS	DATE	BY
1	REVISE VERSION	11/10/03	SCH

Department of Public Works — CLARK COUNTY WASHINGTON — proud past, promising future
INLET PROTECTION TYPE 5 SILT SACK — APPROVED — Peter Capell, COUNTY ENGINEER — 01/01/04 DATE
STANDARD E–3d — PLAN No. — DESIGNED SCH — DRAWN SCH — DATE 08/07/02

LSW architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

KELLY D. BACHELDER — STATE OF WASHINGTON — 40581 — REGISTERED PROFESSIONAL ENGINEER — 12/16/05
EXPIRES: 10/31/06

drawn by KDB
checked by CER
lsw job number 03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

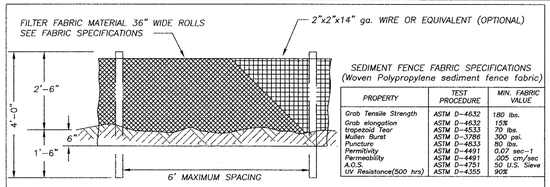
issue date 2.04.05 SPR

revisions 12/2005 RECORD DRAWINGS

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

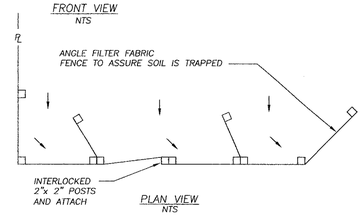
STD. EROSION CONTROL NOTES AND DETAILS

CA2.6
SHEET 9 OF 33
LSW-04

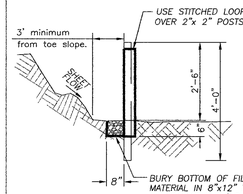


SEDIMENT FENCE FABRIC SPECIFICATIONS
(Woven Polypropylene sediment fence fabric)

PROPERTY	TEST PROCEDURE	MIN. FABRIC VALUE
Grab Tensile Strength	ASTM D-4632	180 lbs.
Grab elongation	ASTM D-4632	15%
Trapezoid Tear	ASTM D-4533	70 lbs.
Mullen Burst	ASTM D-3786	300 psi.
Puncture	ASTM D-4533	80 lbs.
Permittivity	ASTM D-4491	0.07 sec-1
Permeability	ASTM D-4491	.005 cm/sec
A.O.S.	ASTM D-4751	50 U.S. Sieve
UV Resistance(500 hrs)	ASTM D-4355	90%



NOTES
1. THIS SEDIMENT BARRIER UTILIZES STANDARD STRENGTH OR EXTRA STRENGTH SYNTHETIC FILTER FABRICS, IT IS DESIGNED FOR SITUATIONS IN WHICH ONLY SHEET OR OVERLAND FLOWS ARE EXPECTED. (SEE FABRIC SPECIFICATIONS ABOVE)
2. BURY BOTTOM OF FILTER FABRIC 6" VERTICALLY BELOW FINISHED GRADE.
3. POST ARE TO BE 2"x2" FIR, PINE OR STEEL FENCE POSTS.
4. POST TO BE INSTALLED ON UPHILL SIDE OF SLOPE.
5. COMPACT BOTH SIDES OF FILTER FABRIC TRENCH.
6. SEDIMENT FENCE TO BE SPACED ON SLOPES PER TABLE BELOW.



INSTALL PARALLEL ALONG CONTOURS AS FOLLOWS		
% SLOPE	SLOPE	MAX. SPACING ON SLOPE
10% FLATTER	10:1 OR FLATTER	300 ft.
10>%<15	10:1>x<7.5:1	150 ft.
15>%<20	7.5:1>x<5:1	100 ft.
20>%<30	5:1>x<3.5:1	50 ft.
30>%<50	3.5:1>x<2:1	25 ft.

NO.	REVISIONS	DATE	BY

DWG: E-4.DWG

Department of Public Works
CLARK COUNTY
WASHINGTON
proud past, promising future

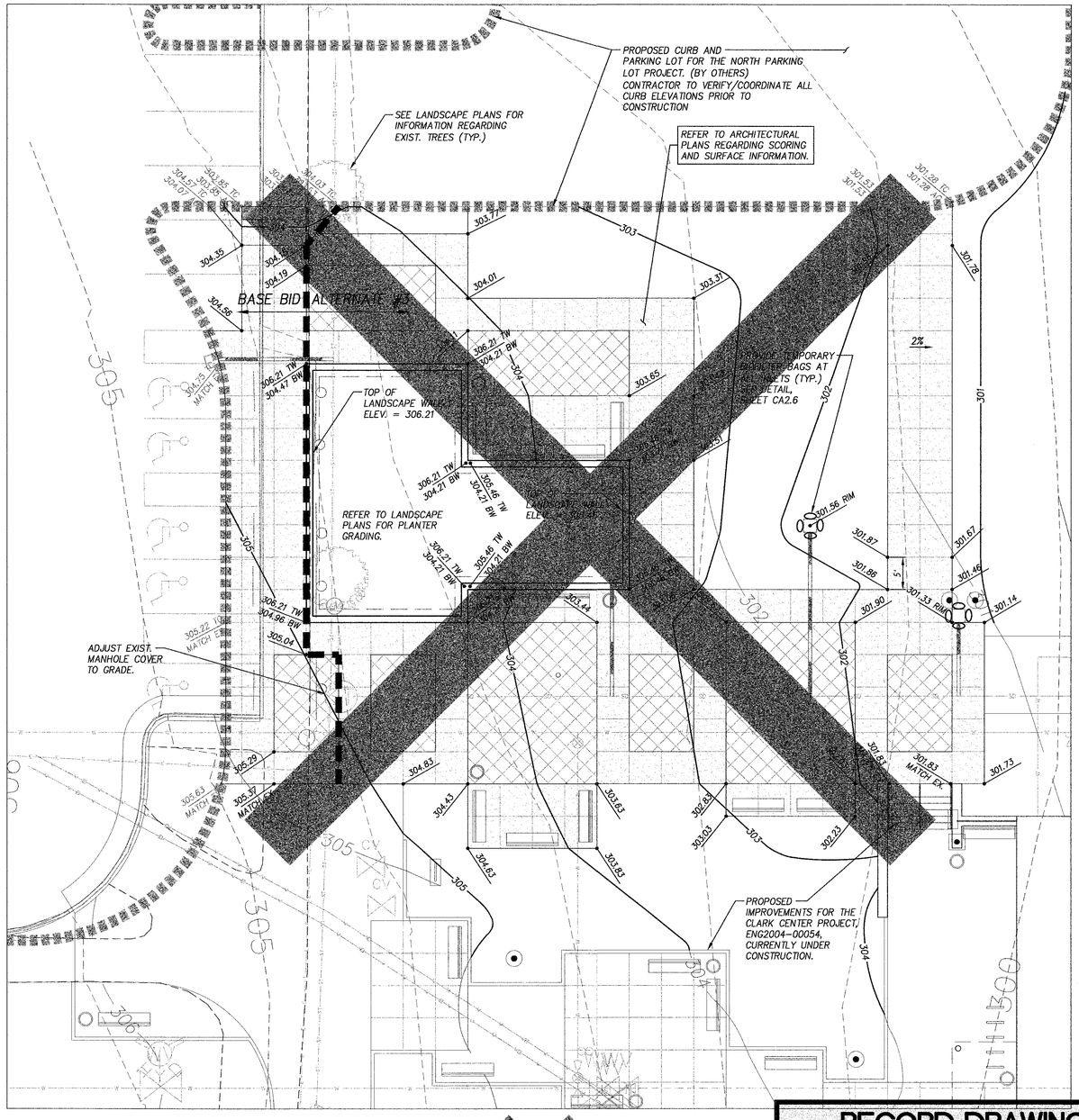
STANDARD SEDIMENT FENCE

APPROVED
Peter Capell
COUNTY ENGINEER
01/01/04
DATE

STANDARD
E-4
PLAN No.
DESIGNED SCH
DRAWN SCH
DATE 07/07/03

COORDINATION NOTE

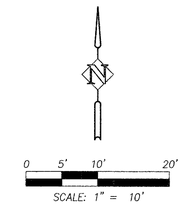
THE CONTRACTOR SHALL COORDINATE WITH THE CLARK CENTER AND NORTH PARKING LOT CONTRACTOR AS REQUIRED AND NECESSARY, ESPECIALLY REGARDING PROJECT MATCH POINT LOCATIONS. VERIFY LOCATIONS AND ELEVATIONS PRIOR TO CONSTRUCTION. NOTIFY ENGINEER OF ELEVATION DISCREPANCIES GREATER THAN 0.05' PRIOR TO CONSTRUCTION.



OPEN SPACE ENLARGEMENT
(ALTERNATE #3)

RECORD DRAWINGS
DECEMBER 2005

AS-BUILT INFORMATION PROVIDED BY
2KG CONTRACTORS



HHPR
Harper Houf Peterson Righellis Inc.
ENGINEERS • PLANNERS
1104 MAIN STREET, SUITE 100, VANCOUVER, WA 98660
TEL 360.750.1131 www.hrcivil.com FAX 360.750.1141

LSW architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

KELLY D. BACHMEIER
STATE OF WASHINGTON
40581
REGISTERED
PROFESSIONAL ENGINEER
EXPIRES: 10/31/06

drawn by
TLH/KDB
checked by
CER
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.04.05
SPR

revisions
12/2005 RECORD DRAWINGS

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

GRADING AND EROSION CONTROL NOTES AND DETAILS

CA2.7

LSW-04

OVERALL UTILITY PLAN

HHPR Harper Houf Peterson Righellis Inc.
ENGINEERS • PLANNERS
1104 Main Street, Suite 100, Vancouver, WA 98660
tel 360.750.1131 www.hrcivil.com fax 360.750.1141

STORM DRAINAGE

REFER TO PLUMBING DRAWINGS FOR WORK IN AND AROUND BUILDINGS

CONTRACTOR SHALL VERIFY EXISTING STORM SYSTEM ELEVATIONS PRIOR TO CONSTRUCTION.

ON-SITE STORM SEWER IMPROVEMENTS SHALL CONFORM TO THE LATEST VERSION OF THE I.B.C. AND THE U.P.C. CONFORM TO W.S.D.O.T. SPECIFICATIONS WHERE NOTED. PUBLIC STORM SEWER IMPROVEMENTS SHALL CONFORM TO CLARK COUNTY REQUIREMENTS AND SPECIFICATIONS.

UNLESS OTHERWISE NOTED, STORM DRAIN PIPE, BENDS, AND FITTINGS SHALL BE SMOOTH INTERIOR, HIGH DENSITY POLYETHYLENE CORRUGATED PIPE AS PRODUCED AND SPECIFIED BY ADS, PRODUCT NAME N-12, OR APPROVED EQUAL. WHEN NOTED, PIPE SHALL BE C-900 PVC FOR PIPES WITH COVER LESS THAN 2 FEET. ALL STORM SEWER FITTINGS SHALL BE GASKETED.

PROVIDE LOCATE WIRE FOR ALL STORM SEWER PIPING. LOCATE WIRE SHALL BE NON-COATED, NO. 14 GA. SOFT DRAWN SOLID COPPER.

ALL PROPOSED STORM SYSTEM INLETS INCLUDING CATCH BASINS, AREA DRAINS AND DITCH INLETS SHALL HAVE TRAP OR SIPHON MECHANISM - "LYNCH" OR TYPE 60A TRAP OR EQUAL.

ADJUST ALL MANHOLE AND CLEANOUT RIMS TO FINISH GRADE, UNLESS OTHERWISE NOTED.

BEVEL PIPE END TO MATCH SLOPE ANGLE AS SHOWN ON PLANS.

INSTALL CLEANOUTS AS REQUIRED BY THE U.P.C.

ROOF DRAINS FROM BUILDING SHALL CONNECT TO SITE STORM DRAINS IN LOCATIONS SHOWN ON THE PLANS. COORDINATE EXACT SIZE AND LOCATION WITH ARCHITECTURAL AND PLUMBING PLANS PRIOR TO CONSTRUCTION.

DRAINAGE STRUCTURES SHALL BE LABELED AS FOLLOWS:
A. ALL CATCH BASINS, CURB INLETS, DITCH INLETS, AND MANHOLES SHALL BE STENCILED: "PLEASE PROTECT - DRAINS TO STREAM"

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROTECT AND MAINTAIN ANY STORM SYSTEM PIPING TO EXISTING DRAINAGE APPURTENANCES TO REMAIN.

UPON COMPLETION OF CONSTRUCTION, ALL STORM WATER QUALITY/QUANTITY FACILITIES SHALL BE PRIVATELY MAINTAINED BY WSU-VANCOUVER.

WATER NOTES

SEE ADDITIONAL WATER NOTES, SHEET CA3.11 & CA3.12.

ABBREVIATION M.L.R.G. = MEGALUG RETAINER GLAND

ALL PUBLIC WATER SYSTEM IMPROVEMENTS SHALL CONFORM TO CLARK PUBLIC UTILITIES REQUIREMENTS AND STANDARD SPECIFICATIONS.

ALL PRIVATE WATER SYSTEM IMPROVEMENTS SHALL CONFORM TO THE UNIFORM PLUMBING CODE.

DESIGN AND INSTALLATION OF ALL PRIVATE FIRE LINES BETWEEN THE VAULT AND BUILDINGS SHALL BE PERFORMED BY AN APPROVED FIRE SPRINKLER CONTRACTOR. A SEPARATE PERMIT MAY BE REQUIRED.

CONTRACTOR SHALL PLAN PUBLIC WATERMAIN INSTALLATION SO THAT NO JOINTS ARE PLACED WITHIN NINE (9) LINEAL FEET OF ANY TEE.

ADJUST ALL VALVE BOXES TO FINISH GRADE.

SANITARY SEWER

SEE ADDITIONAL SANITARY SEWER NOTES, SHEET CA3.13.

ALL SANITARY SEWER IMPROVEMENTS ARE UNDER HAZEL DELL SEWER DISTRICT (H.D.S.D.) JURISDICTION AND SHALL CONFORM TO H.D.S.D. STANDARD SPECIFICATIONS AND 2000 WSDOT/APWA JOINT SPECIFICATIONS.

4" GRAVITY SANITARY SEWER PIPE SHALL BE SCHEDULE 40 ABS OR PVC. 6" OR GREATER GRAVITY SANITARY SEWER PIPE SHALL BE PVC ASTM D3034, SDR 35 OR CLASS 52 DIP.

ADJUST MANHOLE AND CLEAN OUT RIMS TO FINISH GRADE.

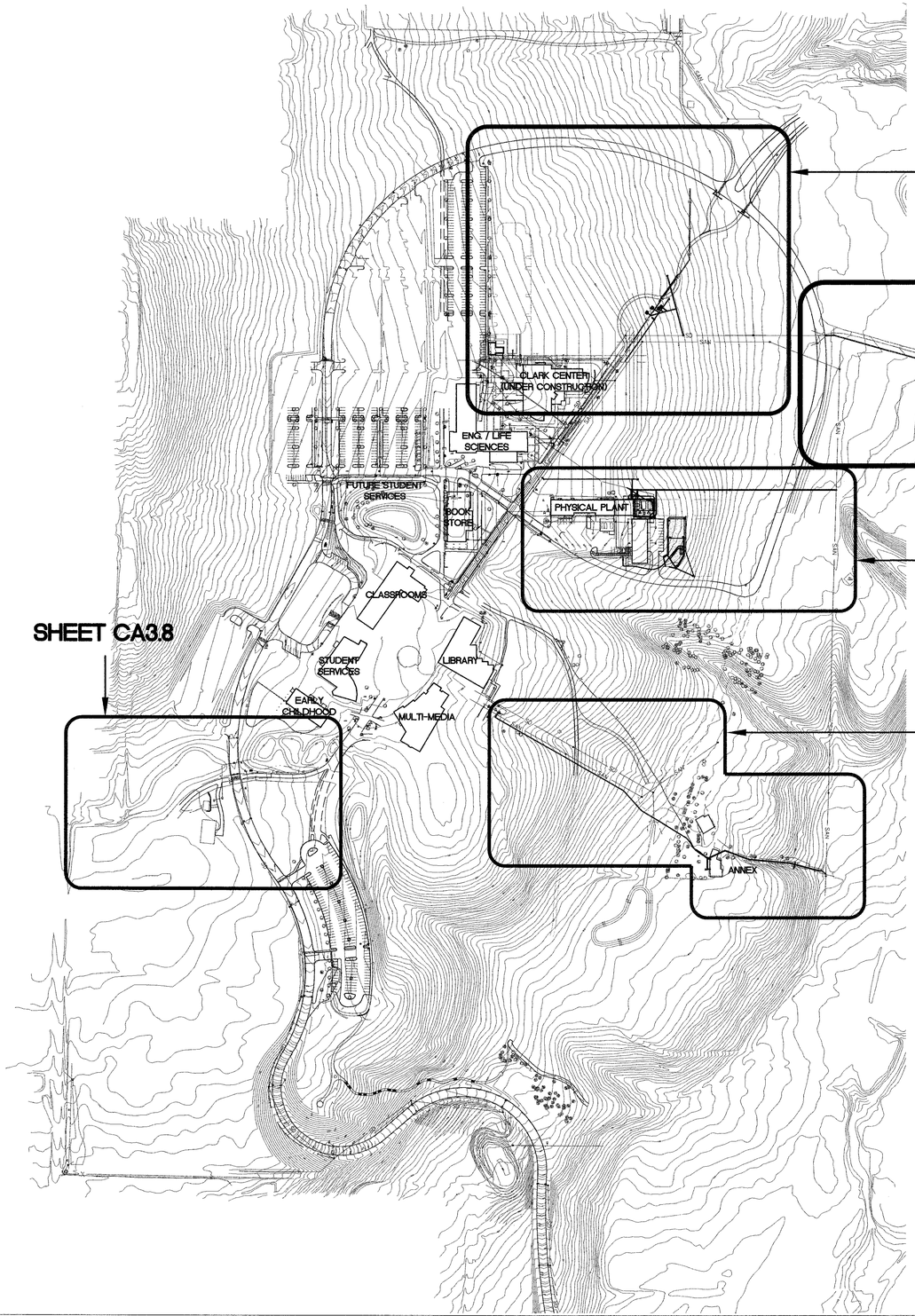
ALL CONNECTIONS TO EXISTING OR DISSIMILAR PIPE SHALL BE MADE WITH FULL CIRCLE STAINLESS STEEL CLAMPS WITH S.S. BOLTS USING RUBBER SPACER TO MATCH OUTSIDE DIAMETERS. BELL ADAPTERS CAN BE USED.

CONTRACTOR SHALL COORDINATE ALL BUILDING SANITARY CONNECTIONS WITH MECHANICAL AND/OR PLUMBING PLAN PRIOR TO CONSTRUCTION.

ALL SANITARY MANHOLES AND GREASE INTERCEPTOR SHALL BE EXTERNALLY SEALED WITH "WRAPID SEAL" OR APPROVED EQUAL.

AS-BUILTS

REFER TO PROJECT SPECIFICATIONS FOR ALL AS-BUILT REQUIREMENTS.



RECORD DRAWINGS
DECEMBER 2005

AS-BUILT INFORMATION PROVIDED BY
2KG CONTRACTORS

LSW architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

KELLY D BACHELDER STATE OF WASHINGTON 20581 REGISTERED PROFESSIONAL ENGINEER 12/10/05
EXPIRES: 10/31/06

drawn by
KDB
checked by
CER
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.04.05
SPR

revisions
12/2005 RECORD DRAWINGS

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

OVERALL UTILITY PLAN

CA3.0
SHEET 11 OF 33

LSW-94

LEGEND

EXISTING		PROPOSED	
5' CONTOUR	245	5' CONTOUR	275
1' CONTOUR		1' CONTOUR	276
SANITARY	SAN	SANITARY	
WATER	W	WATER	
STORM	SD	STORM PIPE	
ELECTRICAL	E	STORM M.H.	
TELEPHONE	T	SANITARY M.H.	S
GAS	G	FIRE HYDRANT	
STORM M.H.	ST	BLOW-OFF	8
CATCH BASIN	CB	CAP	
		THRUST BLOCK	
		VALVE	
		WATER METER	
		CATCH BASIN	
		SANITARY C.O.	

N

0 15' 30' 60'

SCALE: 1" = 30'

INSTALL CULVERTS ONLY WITH MT. ST. HELENS PATH ALTERNATE #4.

CONNECT NEW STORM LINE FROM EXIST. CATCH BASIN PER DETAIL, SHEET CA3.10
I.E. = 238.14
8.5 L.F. 8" STORM
S = 0.0224

REMOVE EXIST. STORM PIPE

INSTALL CULVERT W/ STORM OUTFALL EACH END PER DETAIL, SHEET CA3.10
29 L.F. 10" C-900 PVC STORM
S = 0.0155
I.E. IN = 237.95
I.E. OUT = 237.50

INSTALL CULVERT W/ STORM OUTFALL EACH END PER DETAIL, SHEET CA3.10
18 L.F. 10" C-900 PVC STORM
S = 0.0125
I.E. IN = 233.95
I.E. OUT = 233.50

48" STORM MANHOLE TYPE 1 PER DETAIL, SHEET CA3.9
RIM EL. = ~~259.11~~ 259.13
I.E. OUT = 251.69 (18", SE)

APPROXIMATE LOCATION OF PROPOSED UNDERGROUND UTILITY VAULTS. SEE ELECTRICAL AND MECHANICAL PLANS FOR INFORMATION REGARDING DRAIN PIPE FROM VAULTS.

FIRE HYDRANT ASSEMBLY INCL:
1 - 10" x 6" FLG. TEE
2 - 6" G.V., FLG. x M.J. W/ M.L.R.G.
1 - 10" FLG. x M.J. ADAPTER W/ M.L.R.G.
2 - THRUST BLOCKS
BRANCH LENGTH = 6 L.F. 6" D.I.

WORK BY OTHERS, NOT IN THIS PROJECT.

INSTALL STORM IN OPEN SPACE ENHANCEMENT ONLY WITH ALTERNATE #3.

INSTALL 6" PERF. PIPE AT WALL FOOTING. SEE ARCHITECTURAL PLANS FOR WALL SECTION.

15" AREA DRAIN PER DETAIL, SHEET CA3.10
RIM = 301.56
I.E. = 300.06
27 L.F. 6" STORM
S = 0.4980

18" x 6" STORM TAP PER DETAIL, SHEET CA3.10
6" I.E. = 286.61
18" I.E. = 286.11

18 L.F. 6" STORM
S = 0.0100 (MIN.)

STD. CATCH BASIN PER DETAIL, SHEET CA3.10
RIM = 301.33
I.E. = 299.83
12 L.F. 6" STORM
INSTALL 45° VERTICAL BEND AS NECESSARY

18" x 6" STORM TAP PER DETAIL, SHEET CA3.10
6" I.E. = 285.99
18" I.E. = 285.49

18" x 6" STORM TAP PER DETAIL, SHEET CA3.10
6" I.E. = 287.55
18" I.E. = 287.05

ADJUST EXIST. WATER VALVE BOX TO FINISH GRADE

EXIST. STORM MANHOLE ADJUST RIM TO FINISH GRADE
EXIST. RIM EL. = 304.10
PROP. RIM EL. = 304.18

EXIST. STORM MANHOLE ADJUST RIM AND CONE TO FINISH GRADE
EXIST. RIM EL. = 276.10
PROP. RIM EL. = 277.0±
I.E. IN = 267.50 (EXIST. 18", SW)
I.E. OUT = 267.40 (EXIST. 18", E)

PROTECT EXIST. SANITARY STUB
I.E. = 268.0±

EXIST. 18" ADS STORM

EXIST. 8" PVC SANITARY

EXIST. 8" PVC C-900 WATERLINE

160 L.F. 10" C-900 PVC

EXIST. 8" PVC SANITARY

183 L.F. 18" STORM
S = 0.0052

UTILITY CROSSINGS

CONTRACTOR TO VERIFY ALL EXIST. UTILITIES AT CROSSINGS PRIOR TO CONSTRUCTION. (TYP.)

1 - STD. BLOW-OFF ASSEMBLY
1 - 10" CAP
1 - PRE-CAST THRUST BLOCK

CAUTION!
WATER/STORM CROSSING
F.G. = 262.0±
WATER F.L. = 258.17 (10")
CONTRACTOR TO COORDINATE 6" STORM

18" x 6" STORM TAP PER DETAIL, SHEET CA3.10
6" I.E. = 251.42
18" I.E. = 250.92

INSTALL 6" STORM FOR UTILITY VAULT DRAINS. SEE ELECTRICAL AND MECHANICAL PLANS FOR INFORMATION. CONTRACTOR TO CONNECT 6" STORM DRAIN (S = 0.0100 MIN.) TO 18" STORM MAIN WITH NECESSARY PIPE AND FITTINGS.

80 L.F. 10" C-900 PVC

CAUTION!
WATER/STORM CROSSING
F.G. = 271.3±
WATER F.L. = 267.47 (10")
STORM I.E. = 262.00 (EXIST. 18")

EXIST. STORM MANHOLE
RIM EL. = 236.71
I.E. IN = 230.51 (EXIST. 12", N)
I.E. IN = 230.11 (EXIST. 18", W)
I.E. OUT = 229.11 (EXIST. 24", E)

15' PUBLIC WATERLINE EASEMENT TO CLARK PUBLIC UTILITIES.

EXIST. SANITARY MANHOLE ADJUST RIM AND CONE TO FINISH GRADE
PER DETAIL, SHEET CA3.13
EXIST. RIM EL. = 271.83
PROP. RIM EL. = 273.3±

48" STORM MANHOLE TYPE 1 PER DETAIL, SHEET CA3.9.
CONNECT TO EXIST. 18" STM.
PER DETAIL, SHEET CA3.10.
RIM EL. = 258.0±
I.E. IN = ~~250.73~~ (18", NW) **250.30**
I.E. IN = ~~250.53~~ (EXIST. 18", W) **250.00**
I.E. OUT = ~~250.53~~ (EXIST. 18", E) **250.00**

CAUTION!
WATER/SAN. CROSSING
F.G. = 275.0±
WATER F.L. = 271.17 (10")
SAN. I.E. = 264.55 (8")

REMOVE EXIST. END CAP AND THRUST BLOCK AND CONNECT TO EXIST. WATERLINE W/ 1-LONG PATTERN SLEEVE CONTRACTOR TO VERIFY EXIST. FITTINGS PRIOR TO CONSTRUCTION

RECORD DRAWINGS
DECEMBER 2005

AS-BUILT INFORMATION PROVIDED BY 2KG CONTRACTORS

HHPR Harper Houf Peterson Righellis Inc.
ENGINEERS • PLANNERS
1104 MAIN STREET, SUITE 100, VANCOUVER, WA 98660
TEL 360.750.1131 www.hrcivil.com FAX 360.750.1141

LSW architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

KELLY D. BACHLER — STATE OF WASHINGTON — 40581 — REGISTERED PROFESSIONAL ENGINEER — 12/16/05

EXPIRES: 10/31/06

drawn by
KDB
checked by
CER
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.04.05
SPR

revisions
12/2005 RECORD DRAWINGS

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

OPEN SPACE/PATHWAY UTILITY PLAN

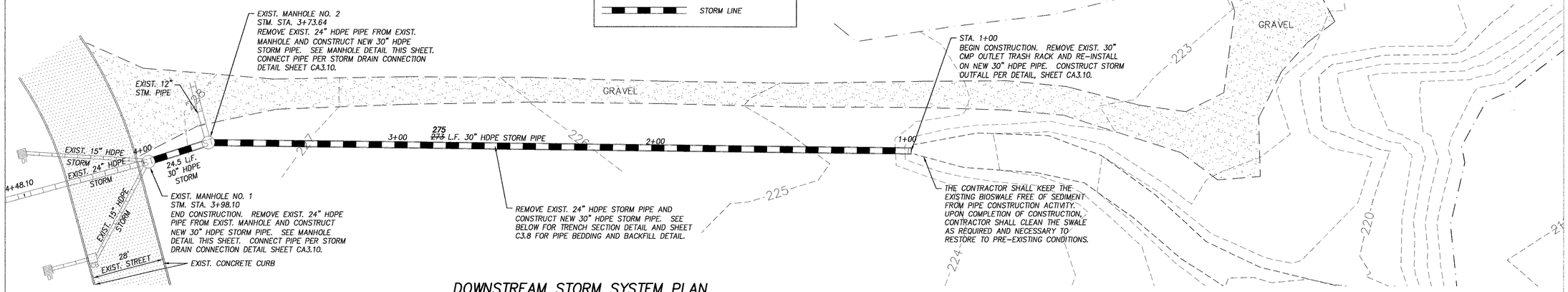
CA3.1
SHEET 12 OF 33
LSW-84

LEGEND	
EXISTING	
220	5' CONTOUR
218	1' CONTOUR
	EDGE OF GRAVEL
ST ST ST	STORM LINE
ST	STORM MANHOLE
CB	CATCH BASIN
DI	DITCH INLET
PROPOSED	
	STORM LINE

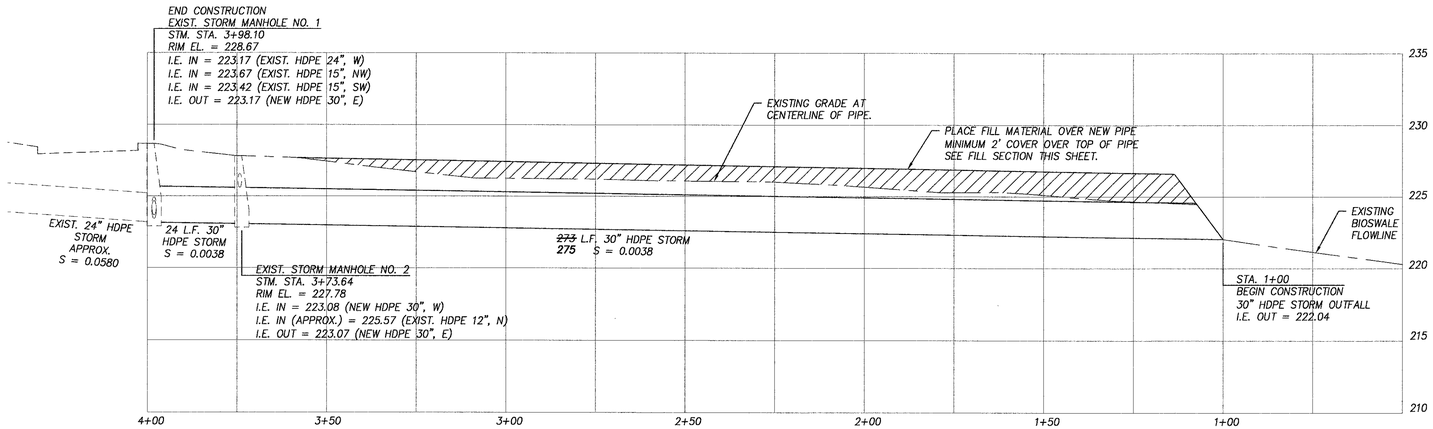
RECORD DRAWINGS
DECEMBER 2005

AS-BUILT INFORMATION PROVIDED BY 2KG CONTRACTORS

HHPR Harper Houf Peterson Righellis Inc.
ENGINEERS • PLANNERS
1104 Main Street, Suite 100, Vancouver, WA 98660
tel 360.750.1131 www.hrcivil.com fax 360.750.1141



DOWNSTREAM STORM SYSTEM PLAN

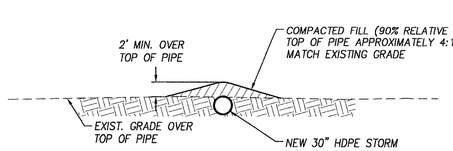


DOWNSTREAM STORM SYSTEM PROFILE

SCALE: 1" = 20' (HORIZ.)
1" = 5' (VERT.)

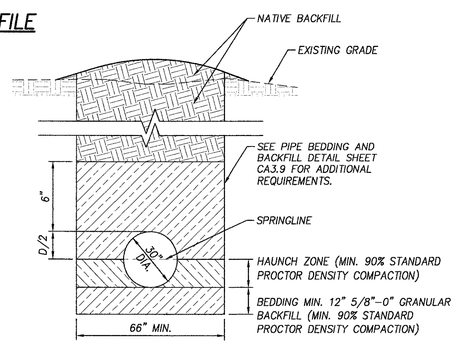
STORM DRAINAGE NOTES:

1. DURING CONSTRUCTION, THE CONTRACTOR SHALL MAINTAIN THE EXISTING STORM DRAIN SYSTEM OR PROVIDE TEMPORARY CONVEYANCE AS NECESSARY TO ALLOW STORM WATER TO FLOW TO THE EXISTING BIOSWALE.
2. THE CONTRACTOR SHALL RE-GROUT THE EXISTING MANHOLE AT THE NEW AND EXISTING PIPE CONNECTIONS. THE EXISTING MANHOLE CHANNELS IN BOTH MANHOLES SHALL BE REFORMED TO ALLOW STORMWATER TO FLOW SMOOTHLY TO THE DOWNSTREAM PIPE.
3. SEE ADDITIONAL STORM DRAIN NOTES ON SHEET CA3.0.



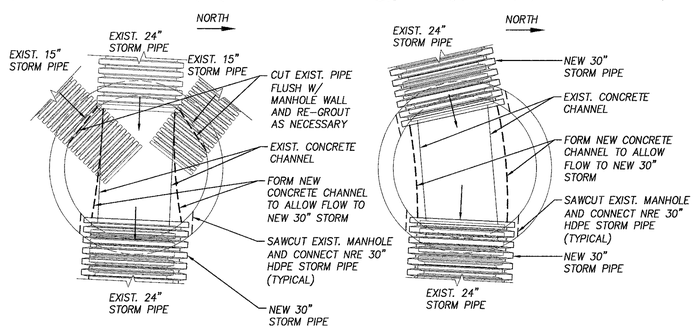
TYPICAL FILL SECTION

N.T.S.



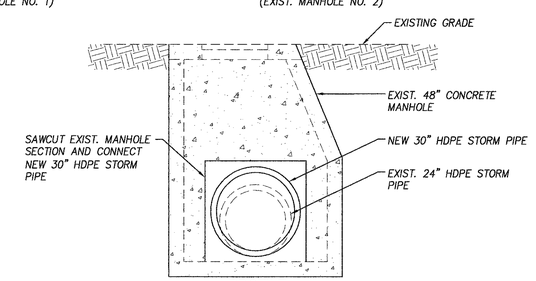
TRENCH SECTION DETAIL

N.T.S.



PLAN
(EXIST. MANHOLE NO. 1)

PLAN
(EXIST. MANHOLE NO. 2)



PROFILE

MANHOLE RECONNECTION DETAIL

N.T.S.

THIS SHEET HAS BEEN APPROVED WITH THE CLARK CENTER PROJECT ENG 2004-00054. IT IS INCLUDED FOR BID PURPOSES ONLY, NOT FOR REVIEW.

lsw architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

KELLY D. BACHER
STATE OF WASHINGTON
40581
REGISTERED PROFESSIONAL ENGINEER
12/19/05
EXPIRES: 10/31/06

drawn by
TLH/ALC
checked by
CER
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.04.05
SPR

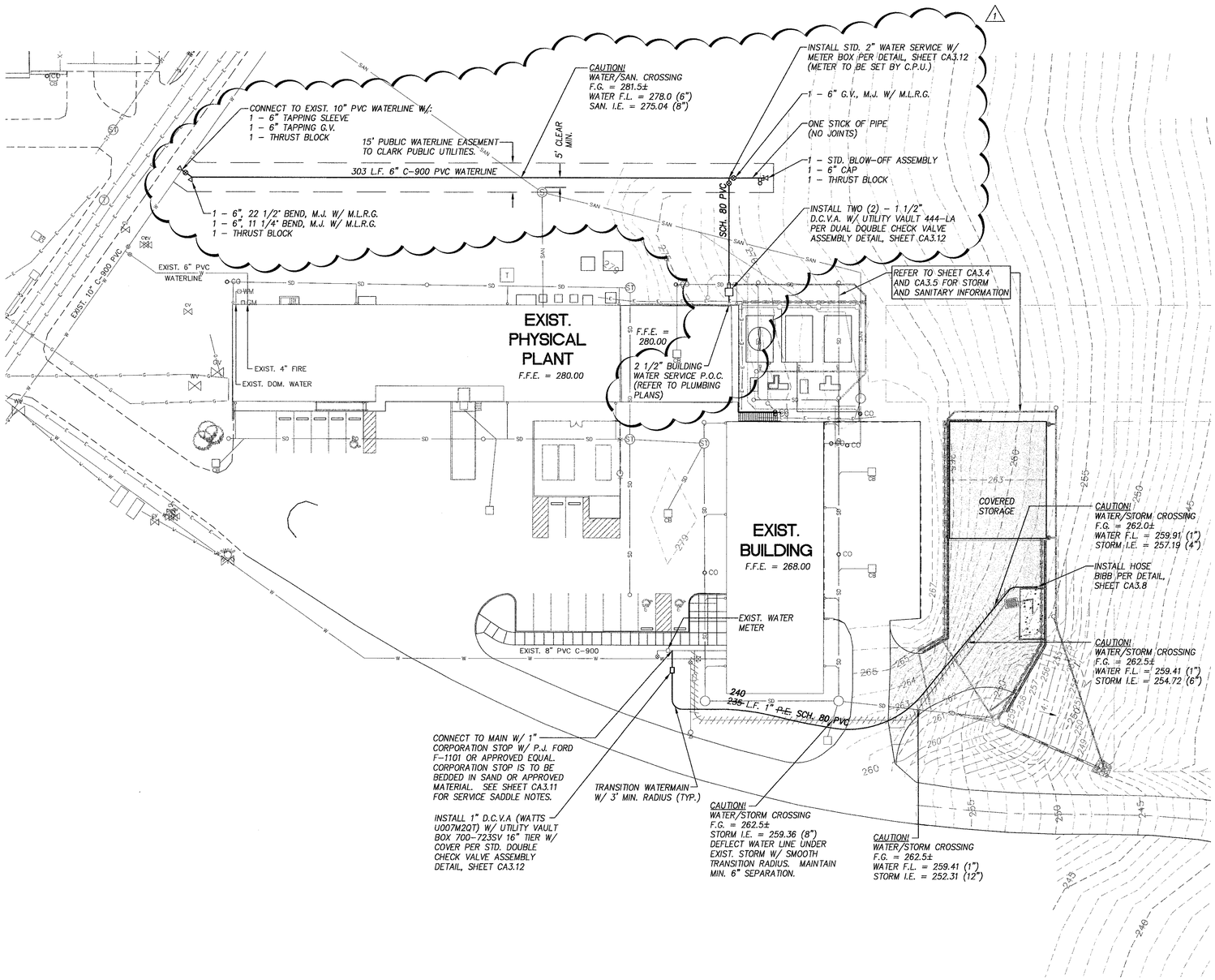
revisions
12/2005 RECORD DRAWINGS

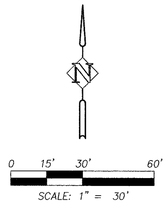
ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

STORM SYSTEM PLAN AND PROFILE (NEAR POND "E")

CA3.2
SHEET 13 OF 33
LSW-04

HHPR
Harper Houf Peterson Righellis Inc.
ENGINEERS + PLANNERS
1104 Main Street, Suite 100, Vancouver, WA 98660
tel 360.750.1131 www.hrcivil.com fax 360.750.1141





LEGEND

EXISTING

- 5' CONTOUR
- 1' CONTOUR
- SANITARY
- WATER
- STORM
- ELECTRICAL
- TELEPHONE
- GAS
- STORM M.H.
- CATCH BASIN

PROPOSED

- 5' CONTOUR
- 1' CONTOUR
- SANITARY
- WATER
- STORM PIPE
- STORM M.H.
- SANITARY M.H.
- FIRE HYDRANT
- BLOW-OFF
- CAP
- THRUST BLOCK
- VALVE
- WATER METER
- CATCH BASIN
- ROOF DRAIN PIPING
- SANITARY C.O.

RECORD DRAWINGS
DECEMBER 2005

AS-BUILT INFORMATION PROVIDED BY 2KG CONTRACTORS

lsw architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

KELLY D BACHELDER — STATE OF WASHINGTON — 40581 — REGISTERED PROFESSIONAL ENGINEER
EXPIRES: 10/31/06

drawn by
KDB
checked by
CER
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

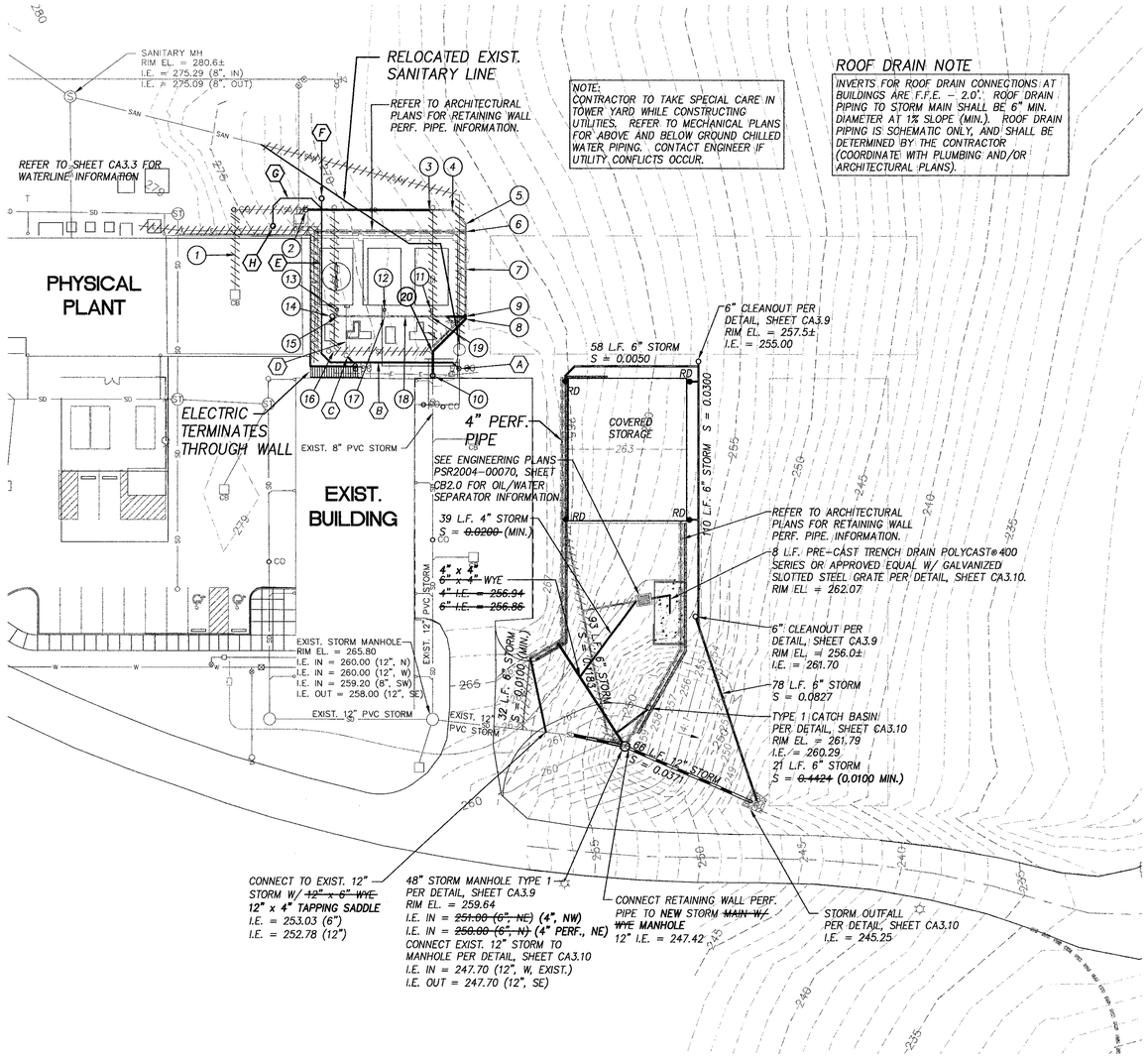
issue date
2.04.05
SPR

revisions
1 7/7/05 - WATERLINE REVISIONS
12/2005 RECORD DRAWINGS

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

PHYSICAL PLANT WATERLINE PLAN

CA3.3
SHEET 14 OF 33
LSW-8/4



STORM SEWER CONSTRUCTION NOTES:

1. REMOVE STORM PIPING AND AREA DRAIN.
2. INSTALL STORM CLEANOUT PER DETAIL, SHEET CA3.9 RIM EL. = 272.0± I.E. = 269.00
3. REMOVE EXIST. BEND AND CLEANOUT AND CONNECT TO EXIST. 8" STORM LINE. I.E. = 265.00
4. 1 – 8", 45° BEND I.E. = ~~264.87~~ **264.78**
5. 1 – 8", 45° BEND I.E. = ~~264.77~~ **264.75**
6. CONNECT RETAINING WALL PERF. PIPE TO NEW STORM LINE. REFER TO ARCHITECTURAL PLANS FOR PERF. PIPE INFORMATION.
7. 75 L.F. 8" STORM S = ~~0.0133~~ **0.0145**
8. 1 – 8", 45° BEND I.E. = ~~264.26~~ **264.17**
9. 1 – 8" x 6" STORM WYE. I.E. = 264.26 (6") I.E. = 264.18 (8")
10. CONNECT TO EXIST. 8" ~~CLEANOUT~~ **W/ NEW CLEANOUT** I.E. = ~~264.00~~ **263.93**
11. 15" AREA DRAIN PER DETAIL, SHEET CA3.10 RIM EL. = 267.67 I.E. = 266.17 3 L.F. 6" STORM INSTALL 45° VERTICAL BEND TO CONNECT TO MAIN
12. 15" AREA DRAIN PER DETAIL, SHEET CA3.10 RIM EL. = 267.72 I.E. = 266.22 3 L.F. 6" STORM INSTALL 45° VERTICAL BEND TO CONNECT TO MAIN
13. 15" AREA DRAIN PER DETAIL, SHEET CA3.10 RIM EL. = 267.67 I.E. = 266.17 3 L.F. 6" STORM S = 0.0382
14. INSTALL STORM CLEANOUT PER DETAIL, SHEET CA3.9 RIM EL. = 267.73 I.E. = 266.09
15. 6" WYE I.E. = 266.06
16. ABANDON/REMOVE EXIST. STORM LINE. PRIOR TO ABANDONMENT CONTRACTOR TO VERIFY ALL EXIST. CONNECTIONS TO STORM LINE (INCLUDING ROOF DRAINS, FOUNDATION DRAINS, ETC.) NOTIFY ENGINEER OF CONNECTIONS AND MAINTAIN SERVICE TO CONNECTION.
17. 6" WYE I.E. = 265.29
18. 48 L.F. 6" STORM S = 0.0382
19. 6" WYE I.E. = 264.52
20. **1 – 8", 45° BEND I.E. = 264.03**

SANITARY CONSTRUCTION NOTES:

- (A) CONNECT TO EXIST. SANITARY SERVICE (PRIOR TO PUMP) AT EXIST. CLEANOUT. CONTRACTOR SHALL VERIFY EXIST. SANITARY INVERT ELEVATION PRIOR TO CONSTRUCTION. **TOP OF SEPTIC TANK LID = 262.42** **I.E. = 263.30**
- (B) ~~50~~ **55** L.F. 4" SAN. S = ~~0.0200 (MIN.)~~ **0.0110**
- (C) COOLING TOWER SANITARY SERVICE P.O.C. (REFER TO MECHANICAL PLANS) 4" I.E. = 264.58
- (D) SEE MECHANICAL PLANS FOR SANITARY SERVICE INFORMATION.
- (E) **70 L.F. 4" SAN. S = 0.0110**
- (F) **SANITARY CLEANOUT INSTALLED I.E. = 264.60**
- (G) **33 L.F. 4" SAN. S = 0.1636**
- (H) **2-WAY SANITARY CLEANOUT INSTALLED I.E. = 270.00**

LEGEND

EXISTING

5' CONTOUR	245
1' CONTOUR	
SANITARY	SAN
WATER	W
STORM	SD
ELECTRICAL	E
TELEPHONE	T
GAS	G
STORM M.H.	ST
CATCH BASIN	CB

PROPOSED

5' CONTOUR	275
1' CONTOUR	276
SANITARY	
WATER	
STORM PIPE	SD
STORM M.H.	
SANITARY M.H.	S
FIRE HYDRANT	
BLOW-OFF	
CAP	
THRUST BLOCK	
VALVE	
WATER METER	
CATCH BASIN	
ROOF DRAIN PIPING	RD
SANITARY C.O.	

RECORD DRAWINGS
DECEMBER 2005

AS-BUILT INFORMATION PROVIDED BY 2KG CONTRACTORS

HHPR Harper Houf Peterson Righellis Inc.
ENGINEERS • PLANNERS
1104 Main Street, Suite 100, Vancouver, WA 98660
tel 360.750.1131 www.hrcivil.com fax 360.750.1141

SCALE: 1" = 30'

LSW architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

KELLY D. BACHELDER, STATE OF WASHINGTON, 40581, REGISTERED PROFESSIONAL ENGINEER, 12/14/05, EXPIRES: 10/31/06

drawn by **KDB**
checked by **CER**
lsw job number **03285**

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date **2.04.05 SPR**

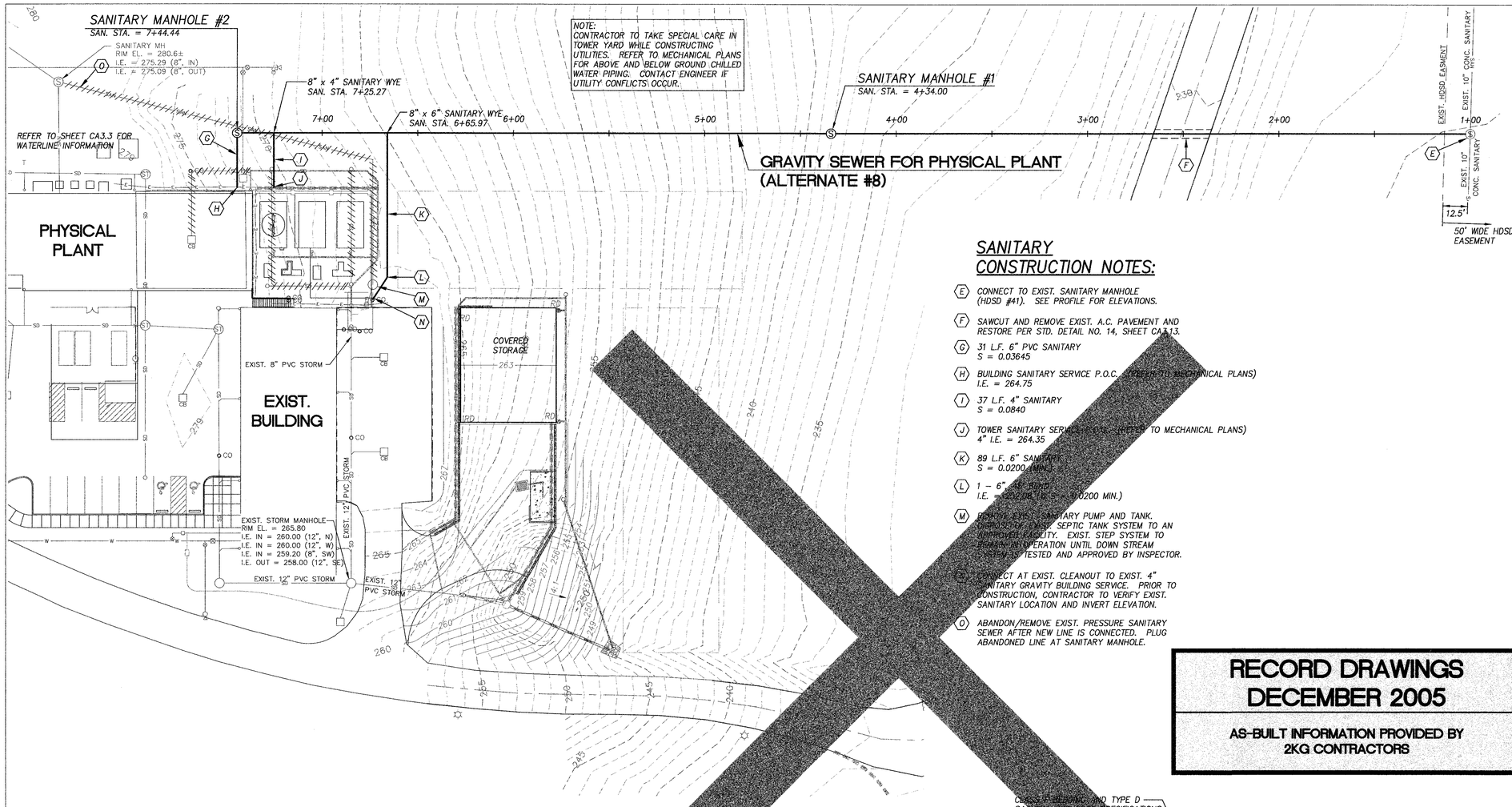
revisions **12/2005 RECORD DRAWINGS**

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

PHYSICAL PLANT STORM AND SANITARY PLAN

CA3.4

LSW-84



SANITARY CONSTRUCTION NOTES:

(E) CONNECT TO EXIST. SANITARY MANHOLE (HDSD #41). SEE PROFILE FOR ELEVATIONS.

(F) SAWCUT AND REMOVE EXIST. A.C. PAVEMENT AND RESTORE PER STD. DETAIL NO. 14, SHEET CA3.13.

(G) 31 L.F. 6" PVC SANITARY
S = 0.03645

(H) BUILDING SANITARY SERVICE P.O.C. (REFER TO MECHANICAL PLANS)
I.E. = 264.75

(I) 37 L.F. 4" SANITARY
S = 0.0840

(J) TOWER SANITARY SERVICE P.O.C. (REFER TO MECHANICAL PLANS)
4" I.E. = 264.35

(K) 89 L.F. 6" SANITARY
S = 0.0200 MIN.

(L) 1 – 6" 45° BEND
I.E. = [illegible] (S = 0.0200 MIN.)

(M) REMOVE EXIST. SANITARY PUMP AND TANK. CONNECT OUTLET TO EXIST. SEPTIC TANK SYSTEM TO AN APPROVED FACILITY. EXIST. STEP SYSTEM TO REMAIN IN OPERATION UNTIL DOWN STREAM SYSTEM IS TESTED AND APPROVED BY INSPECTOR.

(N) CONNECT AT EXIST. CLEANOUT TO EXIST. 4" SANITARY GRAVITY BUILDING SERVICE. PRIOR TO CONSTRUCTION, CONTRACTOR TO VERIFY EXIST. SANITARY LOCATION AND INVERT ELEVATION.

(O) ABANDON/REMOVE EXIST. PRESSURE SANITARY SEWER AFTER NEW LINE IS CONNECTED. PLUG ABANDONED LINE AT SANITARY MANHOLE.

RECORD DRAWINGS
DECEMBER 2005
AS-BUILT INFORMATION PROVIDED BY 2KG CONTRACTORS

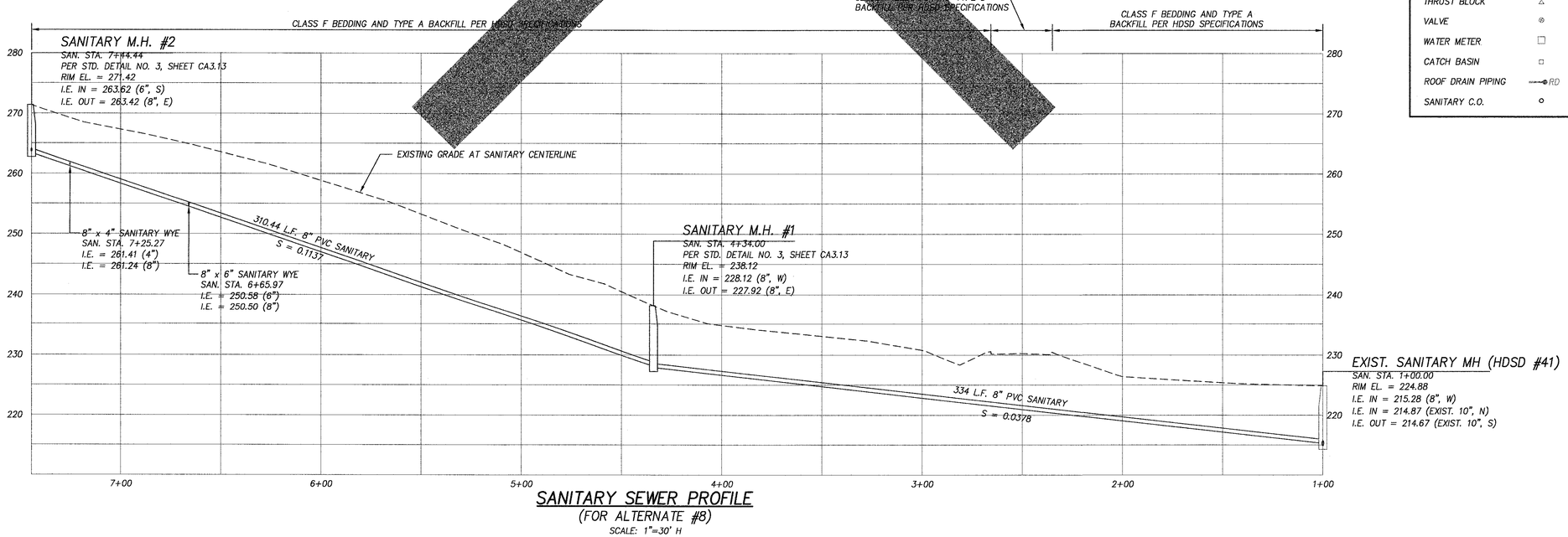
LEGEND

EXISTING

5' CONTOUR	245
1' CONTOUR	
SANITARY	SAN
WATER	W
STORM	SD
ELECTRICAL	E
TELEPHONE	T
GAS	G
STORM M.H.	ST
CATCH BASIN	CB

PROPOSED

5' CONTOUR	275
1' CONTOUR	276
SANITARY	
WATER	
STORM PIPE	
STORM M.H.	
SANITARY M.H.	S
FIRE HYDRANT	
BLOW-OFF	8
CAP	
THRUST BLOCK	
VALVE	
WATER METER	
CATCH BASIN	
ROOF DRAIN PIPING	RD
SANITARY C.O.	



SANITARY SEWER PROFILE
(FOR ALTERNATE #8)
SCALE: 1"=30' H
1"=10' V

Harper Houf Peterson Righellis Inc.
ENGINEERS • PLANNERS
1104 MAIN STREET, SUITE 100, VANCOUVER, WA 98660
TEL 360.750.1131 www.hrcivil.com FAX 360.750.1141

lsw architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

KELLY D. BACHLER — STATE OF WASHINGTON — 40581 — REGISTERED PROFESSIONAL ENGINEER
EXPIRES: 10/31/06

drawn by
KDB
checked by
CER
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.04.05
SPR

revisions
12/2005 RECORD DRAWINGS

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

PHYSICAL PLANT SANITARY PLAN AND PROFILE (ALTERNATE #8)

HHPR
Harper Houf Peterson Righellis Inc.
ENGINEERS • PLANNERS
1104 Main Street, Suite 100, Vancouver, WA 98660
tel 360.750.1131 www.hrcivil.com fax 360.750.1141

LIBRARY

EXIST. 8" C-900 WATERLINE

EXIST. FIRE HYDRANT

INSTALL STD. 1 1/2" WATER SERVICE (FOR 3/4" METER) PER DETAIL, SHEET CA3.12. (METER TO BE SET BY C.P.U.) PROTECT EXIST. END CAP AND BLOW-OFF ASSEMBLY.

CAUTION! WATER/SAN. CROSSING EXIST. GROUND = 295.6± WATER F.L. = 292.47 (1 1/2") SAN. I.E. = 281.09 (8")

TRANSITION WATERMAIN W/ 4.5' MIN. RADIUS

INSTALL 3/4" PRESSURE REDUCING VALVE (WATTS SERIES 25AUB-Z3 OR APPROVED EQUAL) IN METER BOX DIRECTLY DOWNSTREAM OF WATER METER BOX.

INSTALL 3/4" D.C.V.A. (WATTS U007M2QT) W/ UTILITY VAULT BOX 700-723SV PER STD. DOUBLE CHECK VALVE ASSEMBLY DETAIL, SHEET CA3.12.

DEFLECT SERVICE LINE AS NECESSARY TO AVOID EXIST. TREES AND ROOT SYSTEM. MAINTAIN MIN. 8' HORIZONTAL SEPARATION FROM EXIST. SANITARY SEWER.

MAINTAIN MIN. 10' HORIZONTAL SEPARATION UNLESS OTHERWISE NOTED.

CAUTION! WATER/ELECTRICAL CROSSING EXIST. GROUND = 261.6± CROSS UNDER EXIST. ELECTRICAL LINE, MIN. 6" SEPARATION. IF VERTICAL DEFLECTION IS REQUIRED, PROVIDE SMOOTH RADIUS TRANSITION W/ NO LOW POINT IN SERVICE LINE.

SAWCUT EXIST. A.C. A MINIMUM OF 12" BEYOND TRENCH WIDTH (EACH SIDE) FOR UTILITY INSTALLATION. RESTORE EXIST. PATHWAY WITH 2" A.C. OVER 6" CRUSHED ROCK OR MATCH EXISTING SECTION, WHICHEVER IS GREATER. TACK COAT EXIST. SURFACES PRIOR TO PAVING, SEAL W/ AR-4000 AND SAND FOLLOWING PAVING.

EXIST. TELEPHONE AND FIBER OPTIC LINES

EXIST. 12" PVC STORM

EXIST. 8" PVC SANITARY

817 L.F. 1 1/2" P.E. WATERLINE

EXIST. UNDERGROUND ELECTRICAL

ANNEX WATER (ALTERNATE #2)

EXIST. SANITARY MANHOLE RIM EL. = 231.69 I.E. IN = 222.24 I.E. OUT = 222.24

SEE SHEET CA2.4 FOR PATHWAY INFORMATION

FUTURE LOOP ROAD EXTENSION. (NOT IN THIS PROJECT)

EXIST. STORM MANHOLE RIM EL. = 228.33 I.E. IN = 222.13 (12", NW) I.E. OUT = 221.13 (12", SE)

MAINTAIN MIN. 10' HORIZONTAL SEPARATION FROM FUTURE ROAD.

EXIST. WELL. REMOVE SURFACE STRUCTURE AND CASING TO 24" BELOW GRADE. WELD STEEL CAP TO CASING (FULL SEAL) AND ABANDON PER CLARK COUNTY HEALTH DEPARTMENT REQUIREMENTS.

BARN

ABANDON/REMOVE EXIST. WATERLINE

CAUTION! WATER/STORM CROSSING EXIST. GROUND = 222.4± STORM I.E. = 219.78 (12") CROSS UNDER EXIST. STORM LINE, MIN. 6" SEPARATION. IF VERTICAL DEFLECTION IS REQUIRED, PROVIDE SMOOTH RADIUS TRANSITION W/ NO LOW POINT IN SERVICE LINE.

CAUTION! WATER/TELEPHONE CROSSING EXIST. GROUND = 215.7± CROSS UNDER EXIST. TELEPHONE LINE, MIN. 6" SEPARATION. IF VERTICAL DEFLECTION IS REQUIRED, PROVIDE SMOOTH RADIUS TRANSITION W/ NO LOW POINT IN SERVICE LINE.

CAUTION! WATER/ELECTRICAL CROSSING EXIST. GROUND = 215.2± CROSS UNDER EXIST. ELECTRICAL LINE, MIN. 6" SEPARATION. IF VERTICAL DEFLECTION IS REQUIRED, PROVIDE SMOOTH RADIUS TRANSITION W/ NO LOW POINT IN SERVICE LINE. COORDINATE WITH MECHANICAL PLANS REGARDING ELECTRICAL LINE ABANDONMENT.

ANNEX

LOCATE EXISTING ANNEX WATER SERVICE FROM WELL. CUT EXISTING LINE AND CONNECT TO NEW SERVICE LINE W/ NECESSARY FITTING. CAP AND ABANDON EXISTING SERVICE FROM WELL. MAINTAIN MIN. 18" VERTICAL SEPARATION BETWEEN NEW WATER SERVICE AND NEW SANITARY SEWER. VERIFY EXACT SIZE, LOCATION AND MATERIAL TYPE OF EXIST. LINE PRIOR TO CONSTRUCTION. COORDINATE TEMP. SHUT DOWN OF WATER SERVICE W/ WSU STAFF.

REFER TO SHEET CA3.7 FOR SANITARY SEWER INFORMATION

0 15' 30' 60'
SCALE: 1" = 30'

LEGEND

EXISTING

5' CONTOUR	245
1' CONTOUR	
SANITARY	SAN
WATER	W
STORM	SD
ELECTRICAL	E
TELEPHONE	T
GAS	G
STORM M.H.	ST
CATCH BASIN	CB

PROPOSED

5' CONTOUR	275
1' CONTOUR	276
SANITARY	
WATER	
STORM PIPE	
STORM M.H.	
SANITARY M.H.	S
FIRE HYDRANT	
BLOW-OFF	8
CAP	
THRUST BLOCK	
VALVE	
WATER METER	
CATCH BASIN	
ROOF DRAIN PIPING	RD
SANITARY C.O.	

RECORD DRAWINGS
DECEMBER 2005
AS-BUILT INFORMATION PROVIDED BY 2KG CONTRACTORS

lsw architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

KELLY D. BACHELDER STATE OF WASHINGTON 40581 REGISTERED PROFESSIONAL ENGINEER 12/14/05
EXPIRES: 10/31/06

drawn by KDB
checked by CER
lsw job number 03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

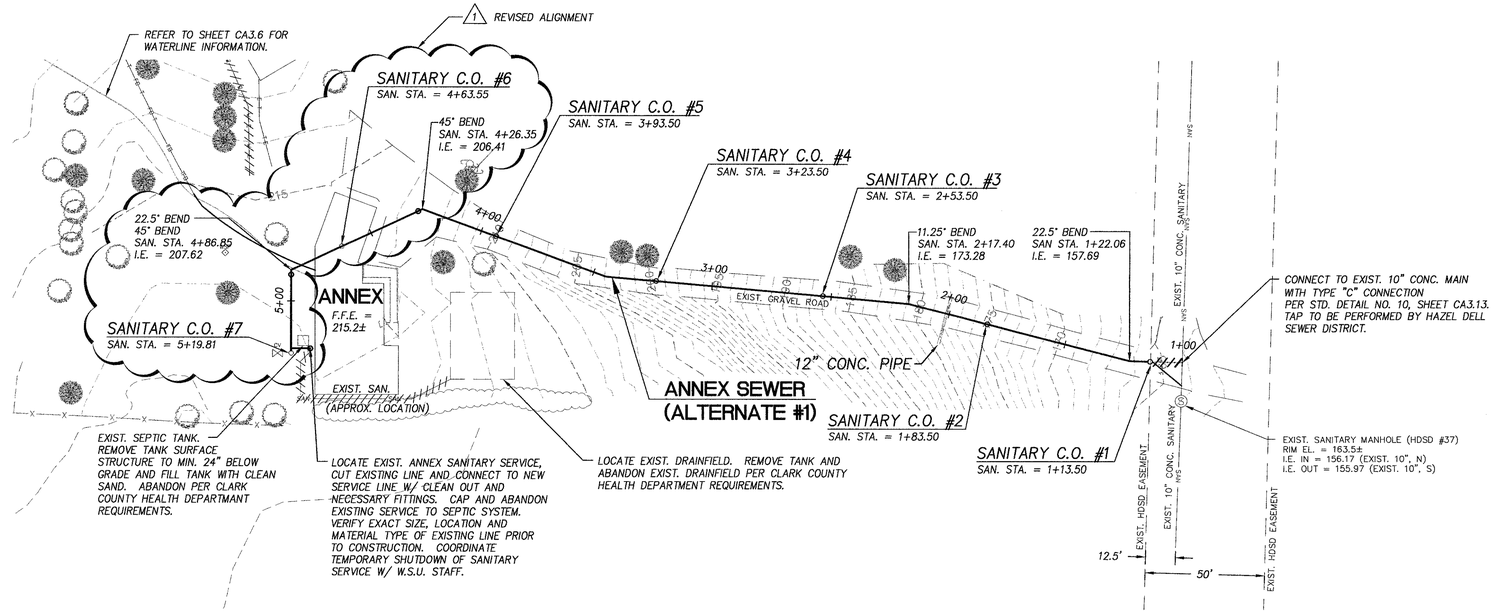
issue date 2.04.05 SPR

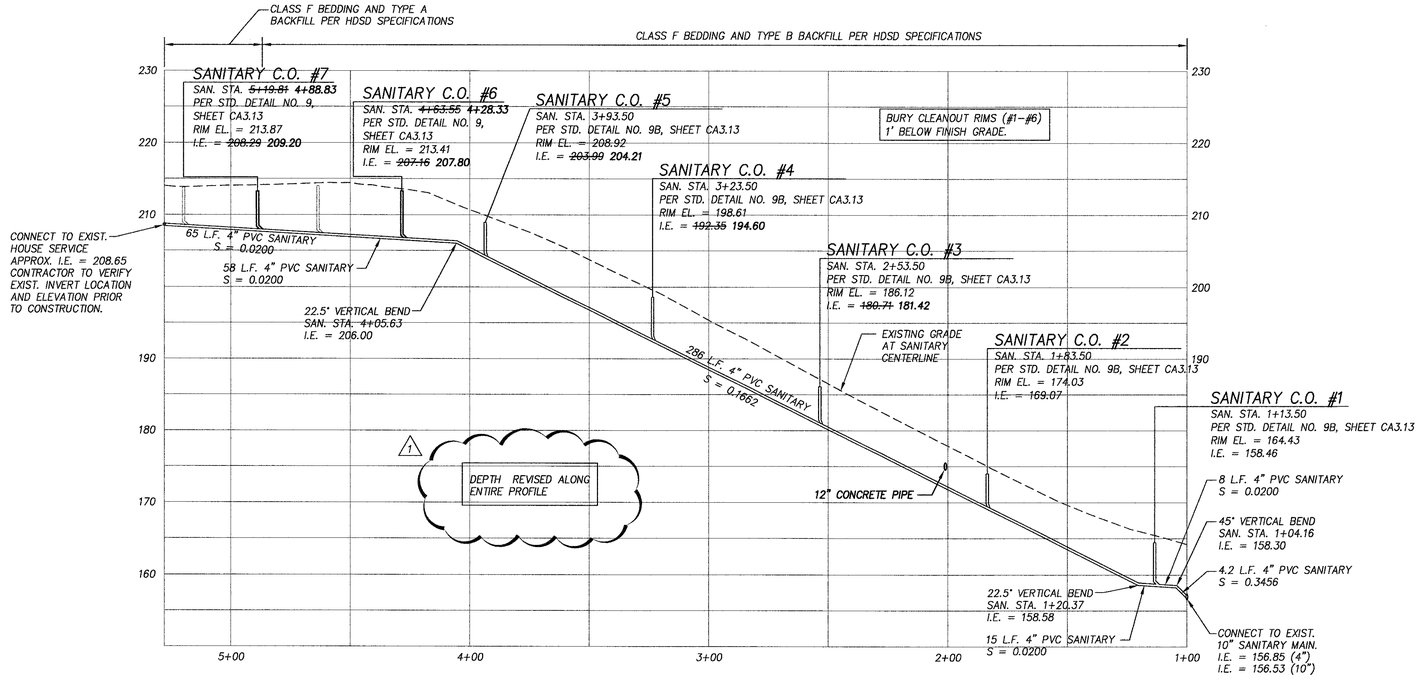
revisions 12/2005 RECORD DRAWINGS

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

ANNEX WATERLINE PLAN (ALTERNATE #2)

CA3.6
SHEET 17 OF 33
LSW-04





PRIVATE SANITARY SEWER PROFILE

(ALTERNATE #1)

SCALE: 1"=30' H
1"=10' V

LEGEND

EXISTING		PROPOSED	
5' CONTOUR	245	5' CONTOUR	275
1' CONTOUR		1' CONTOUR	276
SANITARY	SAN	SANITARY	
WATER	W	WATER	
STORM	SD	STORM PIPE	
ELECTRICAL	E	STORM M.H.	
TELEPHONE	T	SANITARY M.H.	S
GAS	G	FIRE HYDRANT	
STORM M.H.	SD	BLOW-OFF	8
CATCH BASIN	CB	CAP	
		THRUST BLOCK	
		VALVE	
		WATER METER	
		CATCH BASIN	
		SANITARY C.O.	

RECORD DRAWINGS
DECEMBER 2005

AS-BUILT INFORMATION PROVIDED BY 2KG CONTRACTORS

HHPR Harper Houf Peterson Righellis Inc.
ENGINEERS + PLANNERS
1104 Main Street, Suite 100, Vancouver, WA 98660
tel 360.750.1131 www.hrcivil.com fax 360.750.1141

N

0 15' 30' 60'

SCALE: 1" = 30'

lsw architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

KELLY D. BACHELDER — STATE OF WASHINGTON — 40581 — REGISTERED PROFESSIONAL ENGINEER

EXPIRES: 10/31/06

drawn by KDB
checked by CER
lsw job number 03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.04.05
SPR

revisions
1 7/7/05 - SANITARY REVISIONS
12/2005 RECORD DRAWINGS

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

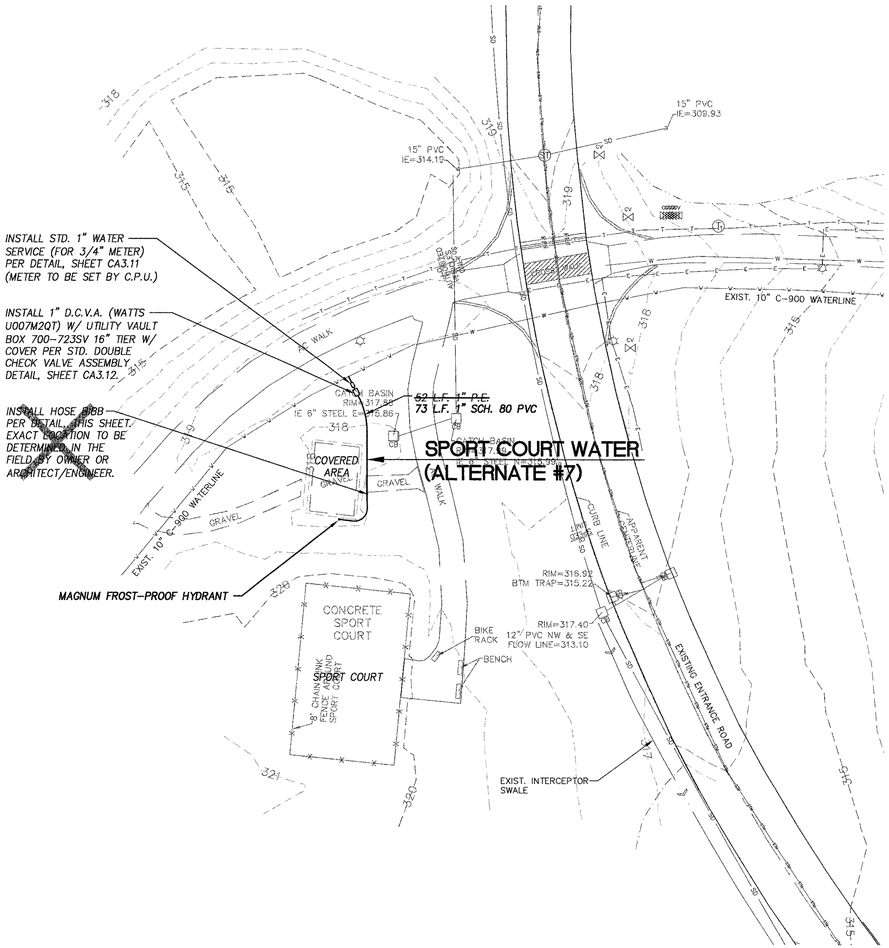
ANNEX SANITARY PLAN AND PROFILE (ALTERNATE #1)

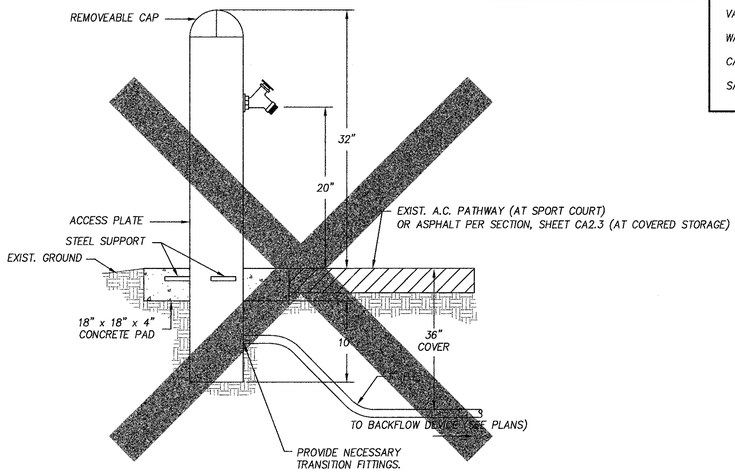
CA3.7

SHEET 18 OF 33

LSW-94

HHPR
Harper Houf Peterson Righellis Inc.
ENGINEERS • PLANNERS
1104 MAIN STREET, SUITE 100, VANCOUVER, WA 98660
TEL 360.750.1131 www.hrcivil.com FAX 360.750.1141





HOSE BIBB SHALL BE MODEL NUMBER 7100-32-FPS, COLOR BLACK, AS MANUFACTURED BY STERN WILLIAMS OR APPROVED EQUAL.

HOSE BIBB DETAIL

N.T.S.

LEGEND

EXISTING		PROPOSED	
5' CONTOUR	245	5' CONTOUR	275
1' CONTOUR		1' CONTOUR	276
SANITARY	SAN	SANITARY	
WATER	W	WATER	
STORM	SD	STORM PIPE	
ELECTRICAL	E	STORM M.H.	○
TELEPHONE	T	SANITARY M.H.	Ⓢ
GAS	G	FIRE HYDRANT	
STORM M.H.	ST	BLOW-OFF	8
CATCH BASIN	CB	CAP	⌐
		THRUST BLOCK	△
		VALVE	⊗
		WATER METER	□
		CATCH BASIN	▫
		SANITARY C.O.	○

RECORD DRAWINGS
DECEMBER 2005

AS-BUILT INFORMATION PROVIDED BY 2KG CONTRACTORS

LSW architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

KELLY D. BACHELDER — STATE OF WASHINGTON — 40581 — REGISTERED PROFESSIONAL ENGINEER
EXPIRES: 10/31/06

drawn by
KDB
checked by
CER
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

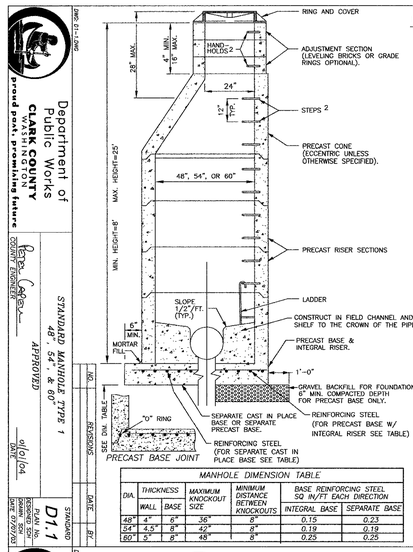
issue date
2.04.05
SPR

revisions
12/2005 RECORD DRAWINGS

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

SPORT COURT WATER PLAN (ALTERNATE #7)

CA3.8
SHEET 19 OF 33
LSW-94



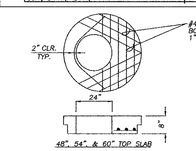
NOTES:

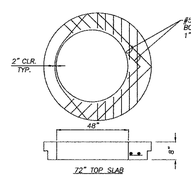
1. MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH AASHTO M199 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE WSDOT/APWA STANDARD SPECIFICATIONS.
2. HANDHOLDS IN ADJUSTMENT SECTION SHALL HAVE 3" MIN. CLEARANCE. STEPS IN MANHOLE SHALL HAVE 6" MIN. CLEARANCE. SEE PLAN NO. D1.5, "MANHOLE DETAILS." HANDHOLDS SHALL BE PLACED IN ALTERNATING GRADE RINGS OR LEVELING BRICK COURSE WITH A MIN. OF ONE HAND HOLD BETWEEN THE LAST STEP AND THE TOP OF THE MANHOLE.
3. ALL REINFORCED CAST-IN-PLACE CONCRETE SHALL BE CLASS 4000. ALL PRECAST CONCRETE SHALL BE CLASS 4000. NON-REINFORCED CONCRETE IN CHANNEL AND SHELF SHALL BE CLASS 3000.
4. PRECAST BASES SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE WALL THICKNESS OF 2" MIN. UNUSED KNOCKOUTS NEED NOT BE GROUTED IF WALL IS LEFT INTACT. PIPES SHALL BE INSTALLED ONLY IN FACTORY KNOCKOUTS UNLESS OTHERWISE APPROVED BY THE ENGINEER.
5. KNOCKOUT OR CUTOUT HOLE SIZE SHALL EQUAL PIPE OUTER DIAM. PLUS MANHOLE WALL THICKNESS. SEE MANHOLE DIMENSION TABLE BELOW.
6. MANHOLE RINGS AND COVERS SHALL BE IN ACCORDANCE WITH SEC. 7.05 AND MEET THE STRENGTH REQUIREMENTS OF FEDERAL SPECIFICATION RR-F-621D. MATING SURFACES SHALL BE FINISHED TO ASSURE NON-ROCKING FIT WITH ANY COVER POSITION.
7. ALL BASE REINFORCING STEEL SHALL HAVE A MIN. YIELD STRENGTH OF 60,000 PSI AND BE PLACED IN THE UPPER HALF OF THE BASE WITH 1" MIN. CLEARANCE.
8. FOR HEIGHTS OF 12' OR LESS, MIN. SOIL BEARING VALUE SHALL EQUAL 3,300 POUNDS PER SQUARE FOOT. FOR HEIGHTS OVER 12', MIN. SOIL BEARING VALUE SHALL EQUAL 3,800 POUNDS PER SQUARE FOOT.
9. FOR DETAILS SHOWING GRADE RING, LADDER, STEPS, HANDHOLDS, AND TOP SLABS, SEE PLAN NO. D1.5, "MANHOLE DETAILS."
10. INSIDE DROP MAXIMUM TO BE 4' VERTICAL DISTANCE I.E. TO I.E.
11. KNOCKOUTS TO BE USED WHEN STUB OUT PIPE IS 3' OR LESS.
12. MINIMUM 0.20' FALL BETWEEN INLET AND OUTLET, ANY REDUCTION IN THIS DESIGN REQUIREMENT MUST BE APPROVED BY REVIEWING AUTHORITY.
13. SEE THE WSDOT/APWA STANDARD SPECIFICATIONS SEC. 7-05.3 FOR JOINT REQUIREMENTS.

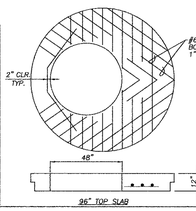
MANHOLE DIMENSION TABLE

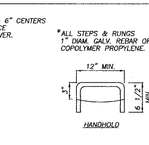
DIA.	THICKNESS WALL	THICKNESS BASE	MAXIMUM KNOCKOUT SIZE	MINIMUM DISTANCE BETWEEN KNOCKOUTS	BASE REINFORCING STEEL SQ IN/FT EACH DIRECTION: INTEGRAL BASE	BASE REINFORCING STEEL SQ IN/FT EACH DIRECTION: SEPARATE BASE
48"	4"	6"	36"	8"	0.15	0.23
54"	4.5"	8"	42"	8"	0.19	0.19
60"	5"	8"	48"	8"	0.25	0.25

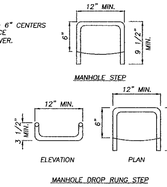
Department of Public Works, CLARK COUNTY, WASHINGTON, proud past, promising future
STANDARD MANHOLE 48", 54" & 60" TYPE 1
APPROVED — COUNTY ENGINEER — 01/01/04 DATE
STANDARD D11 — PLAN No. — DESIGNED SCH — DRAWN SCH — DATE 09/04/02

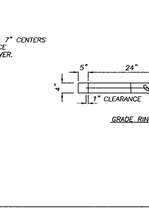


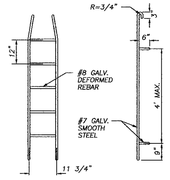








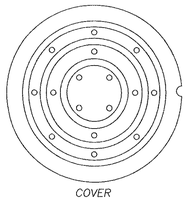


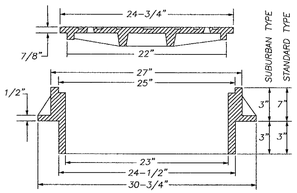


NOTES:

1. *PROPRIETARY MANHOLE HANDHOLDS AND STEPS ARE ACCEPTABLE, PROVIDED THAT THEY CONFORM TO SEC. R, ASTM C478, AASHTO M199 AND MEET ALL WSDOT/APWA REQUIREMENTS.*
2. *MANHOLE STEP/HANDHOLD LEGS SHALL BE PARALLEL OR APPROXIMATELY RADIAL AT THE OPTION OF THE MANUFACTURER, EXCEPT THAT ALL STEPS IN ANY MANHOLE SHALL BE SIMILAR. PENETRATION OF OUTER WALL BY A LEG IS PROHIBITED.*
3. *HANDHOLDS AND STOPS SHALL HAVE "DROP" RUNGS OR PROTUBERANCES TO PREVENT SIDEWAYS SLIP.*
4. *LADDERS OR STEPS SHALL EXTEND TO WITHIN 16" OF BOTTOM OF MANHOLE.*
5. *HANGING LADDERS SHALL BE PERMANENTLY FASTENED AT TOP BY HANGING ON STEP OR BY BOLTING OR EMBEDDING IN CONCRETE. EACH SHALL BE EMBEDDED AT BOTTOM IN BASE.*
6. *ADDITIONAL SAFETY FEATURES MAY BE REQUIRED IN VERY DEEP OR UNUSUAL STRUCTURES.*

Department of Public Works, CLARK COUNTY, WASHINGTON, proud past, promising future
MANHOLE DETAILS
APPROVED — COUNTY ENGINEER — 01/01/04 DATE
STANDARD D15 — PLAN No. — DESIGNED — DRAWN — DATE 10/03/02



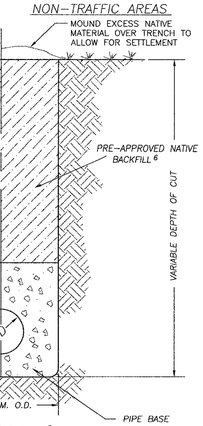


NOTES:

1. USE SUBURBAN TYPE ONLY IN NON-TRAFFIC AREAS, AND ONLY WITH APPROVAL BY COUNTY.
2. COVER MATERIAL TO BE DUCTILE IRON ASTM A536 GRADE 80-55-06
3. FRAME MATERIAL TO BE GRAY CAST IRON ASTM A-48 CLASS 30.
4. SEE WSDOT STANDARD SPECIFICATIONS SEC. 7.05
5. COVER AND FRAME TO BE MACHINED TO A TRUE BEARING ALL AROUND.
6. NOTCH LID FOR LIFTING HOOK.

NO.	REVISIONS	DATE	BY

DWG: D1-6.DWG
Department of Public Works, CLARK COUNTY, WASHINGTON, proud past, promising future
STANDARD MANHOLE FRAME AND COVER
APPROVED — COUNTY ENGINEER — 01/01/04 DATE
STANDARD D1.6 — PLAN No. — DESIGNED SCH — DRAWN SCH — DATE 09/04/02



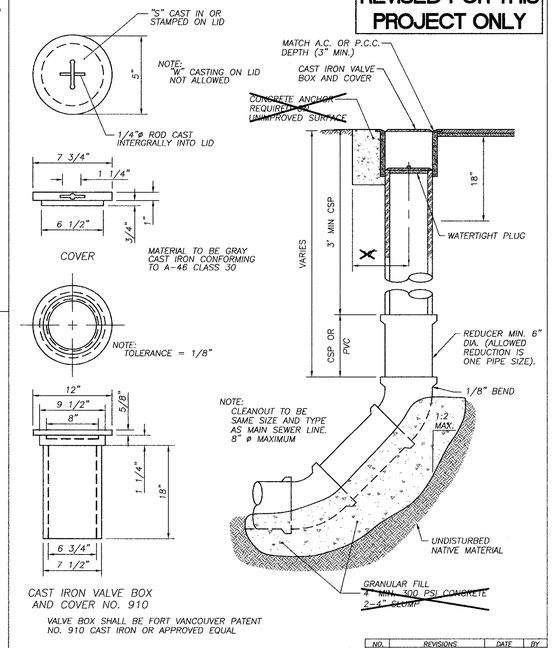
NOTES

1. FOR INSTALLATION OF DRAINAGE PIPE IN NEW DEVELOPMENT.
2. GENERAL PIPE INSTALLATION REQUIREMENTS SHALL BE PER SECTION 7-08 WSDOT SPECS.
3. TRENCH BACK FILL SHALL CONFORM TO CCC 40.350.030(C)(4)(e).
4. PIPE ZONE AND BEDDING MATERIAL SHALL CONFORM TO SECTION 9-03.12(3) WSDOT SPECS.
5. GRAVEL BACKFILL PER WSDOT SPECIFICATION SECTION 9-03.19, AND COMPACTED TO 95% MAX. DENSITY (AASHTO T-99). NATIVE SOILS MAY BE USED UPON APPROVAL BY REVIEWING AUTHORITY IF TESTING SHOWS MATERIAL IS CLASSIFIED AS A-1 OR A-3 BY AASHTO.
6. OUTSIDE THE ROADWAY PRISM, SUITABLE NATIVE BACKFILL SHALL BE COMPACTED TO 90% MAX. DENSITY (AASHTO T-99).
7. ALL COMPACTION SHALL BE IN ACCORDANCE WITH THE COMPACTION CONTROL TEST OF SECTION 2-03.3(14)D.

NO.	REVISIONS	DATE	BY

DWG: D14.DWG
Department of Public Works, CLARK COUNTY, WASHINGTON, proud past, promising future
PIPE BEDDING AND BACKFILL DETAIL
APPROVED — COUNTY ENGINEER — 01/01/04 DATE
STANDARD D14 — PLAN No. — DESIGNED SCH — DRAWN SCH — DATE 6/14/03

REVISED FOR THIS PROJECT ONLY

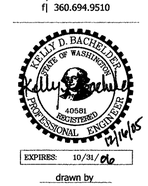


NO.	REVISIONS	DATE	BY

DWG: D15.DWG
Department of Public Works, CLARK COUNTY, WASHINGTON, proud past, promising future
STANDARD CLEANOUT
APPROVED — COUNTY ENGINEER — 01/01/04 DATE
STANDARD D15 — PLAN No. — DESIGNED — DRAWN — DATE 10/03/02

HHPR Harper Houf Peterson Righellis Inc.
ENGINEERS • PLANNERS
1104 Main Street, Suite 100, Vancouver, WA 98660
tel 360.750.1131 www.hrcivil.com fax 360.750.1141

lsw architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510



EXPIRES: 10/31/06

drawn by
JRT
checked by
KDB/CER
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.04.05
SPR

revisions
12/2005 RECORD DRAWINGS

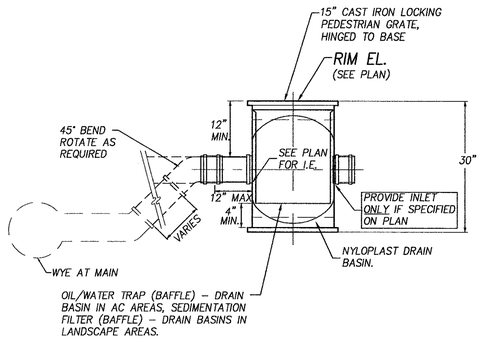
ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

STORMWATER DETAILS

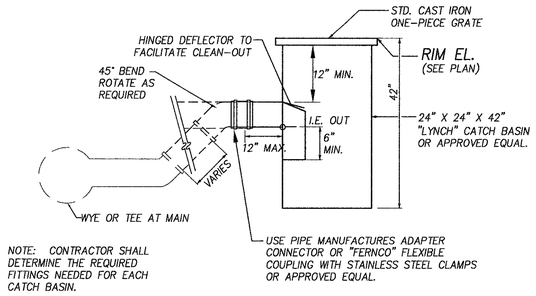
RECORD DRAWINGS
DECEMBER 2005
AS-BUILT INFORMATION PROVIDED BY 2KG CONTRACTORS

CA3.9
SHEET 20 OF 33
LSW-04

HHPR Harper Houf Peterson Righellis Inc.
ENGINEERS • PLANNERS
1104 Main Street, Suite 100, Vancouver, WA 98660
tel 360.750.1131 www.hrcivil.com fax 360.750.1141

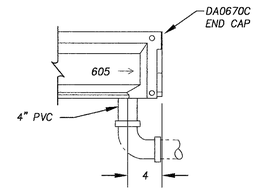


15" AREA DRAIN DETAIL
N.T.S.



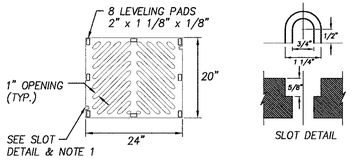
NOTE: CONTRACTOR SHALL DETERMINE THE REQUIRED FITTINGS NEEDED FOR EACH CATCH BASIN.

STD. CATCH BASIN DETAIL
N.T.S.



4" PVC BOTTOM EVACUATION

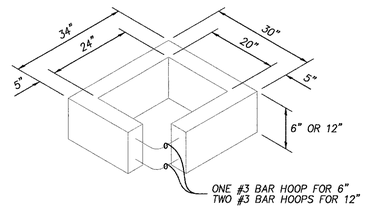
CHANNEL EVACUATION DETAIL
(ALL END CAPS ARE TO BE SECURED WITH AN ADHESIVE)
N.T.S.



HERRINGBONE GRATE

GRATE NOTES:

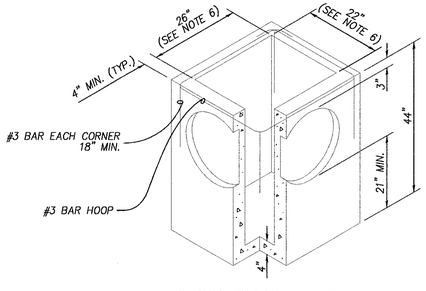
1. WHEN BOLT DOWN GRATES ARE SPECIFIED IN THE CONTRACT, PROVIDE TWO SLOTS IN THE GRATE THAT ARE VERTICALLY ALIGNED WITH THE HOLES IN THE FRAME. LOCATION OF BOLT DOWN SLOTS VARIES AMONG DIFFERENT MANUFACTURERS.
2. REFER TO STANDARD SPECIFICATION 9-05.15(2) FOR ADDITIONAL REQUIREMENTS.
3. FOR FRAME DETAILS, SEE STANDARD PLAN B-2A.
4. THE THICKNESS OF THE GRATE SHALL NOT EXCEED 1 5/8".



RECTANGULAR ADJUSTMENT SECTION

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 2.5" MAXIMUM. PROVIDE A 1.5" MINIMUM GAP BETWEEN THE KNOCKOUT WALL AND THE OUTSIDE OF THE PIPE. AFTER THE PIPE IS INSTALLED, FILL THE GAP WITH JOINT MORTAR IN ACCORDANCE WITH STANDARD SPECIFICATION 9-04.3.
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 SECTION.

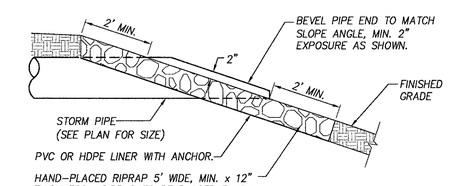


PRECAST BASE SECTION

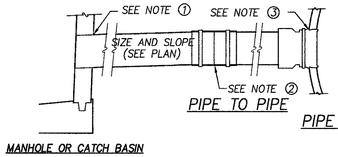
PIPE ALLOWANCES	
PIPE MATERIAL	MAXIMUM INSIDE DIAMETER
REINFORCED OR PLAIN CONCRETE	12"
ALL METAL PIPE	15"
CPSSP * (STD. SPEC. 9-05.20)	12"
SOLID WALL PVC (STD. SPEC. 9-05.12(1))	15"
PROFILE WALL PVC (STD. SPEC. 9-05.12(2))	15"

*CORRUGATED POLYETHYLENE STORM SEWER PIPE

TYPE 1 PRE-CAST CATCH BASIN
N.T.S.



STORM OUTFALL DETAIL
N.T.S.

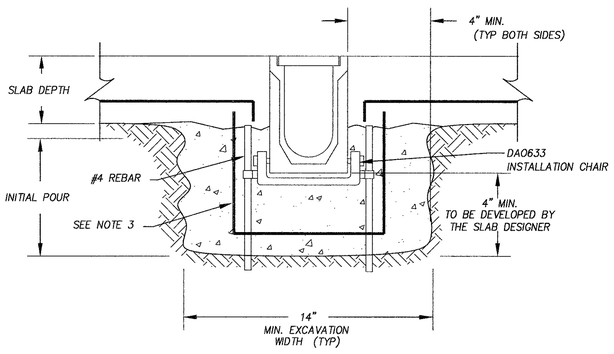


① BREAK OUT WALL 2" MIN., 4" MAX. CLEAR OF PIPE WALL. GROUT SPACE WITH NON-SHRINK GROUT.

② USE "FERNCO" FLEXIBLE COUPLING WITH STAINLESS STEEL CLAMPS OR APPROVED EQUAL. FOR PIPES OVER 24" A CONCRETE FIELD COUPLING CAN BE USED IN LIEU OF A FLEXIBLE COUPLING.

③ CUT HOLE INTO PIPE AND INSTALL "FOWLER" SEWER BOOT TAP OR APPROVED EQUAL.

STORM DRAINAGE CONNECTIONS
N.T.S.



STANDARD CHAIR INSTALLATION
(SECURE CHAIR IN BOTTOM DIMPLES ON THE CHANNELS)
N.T.S.

NOTES:

1. THE GRATES MUST BE SECURED WITH THE LOCK DOWN MECHANISM WHEN THE SYSTEM IS IN USE.
2. SPACERS MUST BE INSTALLED BETWEEN THE GRATE AND THE POLYCAST® CHANNEL ON ONE SIDE PRIOR TO POURING CONCRETE, TO ALLEVIATE TIGHT FITTING GRATES.
3. ALL REINFORCEMENT BAR DETAILS AND EXPANSION JOINTS ARE TO BE DEVELOPED BY THE SLAB DESIGNER. PARALLEL EXPANSION JOINTS SHOULD BE NO CLOSER THAN 6" FROM SIDE OF DRAIN CHANNEL.
4. THE AVERAGE SLOPE OF EACH SLOPED CHANNEL IS 0.64%.
5. IN THE EVENT THAT ANY NON-PNUEMATIC TIRE TRAFFIC OR TRAFFIC WHICH EXCEEDS 20 MPH IS TO OCCUR ON ANY PART OF THE DRAIN SURFACE OR GRATE, 700 SERIES HARDNOSE™ CHANNELS MUST BE USED FOR THESE AREAS.
6. WHEN THE FLUID IS EXPECTED TO BE ABOVE 120° F, A POLYESTER CHANNEL IS NOT RECOMMENDED, VINYL ESTER SHOULD BE CONSIDERED.
7. FOR SPECIFIC CHEMICAL AND TEMPERATURE REQUIREMENTS REFER TO THE POLYCAST® CHEMICAL GUIDE.
8. MITER CUTS SHOWN ARE TO BE FIELD CUT BY OTHERS.

TRENCH DRAIN DETAILS
N.T.S.

RECORD DRAWINGS
DECEMBER 2005
AS-BUILT INFORMATION PROVIDED BY 2KG CONTRACTORS

LSW architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

KELLY D. BACHELDER — STATE OF WASHINGTON — 40581 — REGISTERED PROFESSIONAL ENGINEER — 12/14/05
EXPIRES: 10/31/06

drawn by
TLH/JRT
checked by
KDB/CER
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.04.05
SPR
revisions
12/2005 RECORD DRAWINGS

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

STORMWATER DETAILS

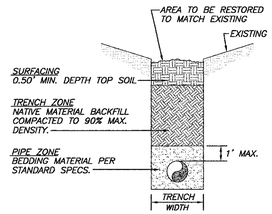
CA3.10

LSW-84

RECORD DRAWINGS
DECEMBER 2005

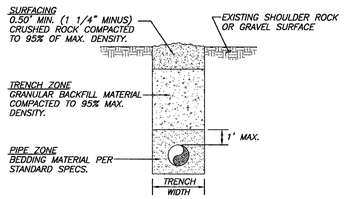
AS-BUILT INFORMATION PROVIDED BY 2KG CONTRACTORS

HHPR
Harper Houf Peterson Righellis Inc.
ENGINEERS • PLANNERS
1104 Main Street, Suite 100, Vancouver, WA 98660
tel 360.750.1131 www.hrcivil.com fax 360.750.1141



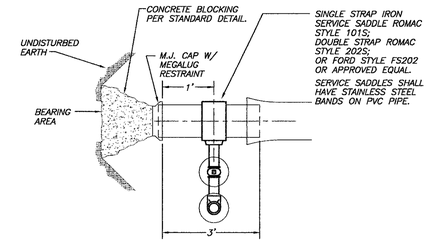
NATIVE BACKFILL –OUTSIDE ROADWAY PRISM–

(TYPE 'A' RESTORATION)



ROADWAY SHOULDERS, GRAVEL SURFACE

(TYPE 'B' RESTORATION)



SERVICE SADDLES:

PROVIDE IRON SERVICE SADDLES WITH NEOPRENE GASKETS CEMENTED IN PLACE AND I.P.S. TAP AS SPECIFIED ON THE CONTRACT DRAWINGS. SADDLES SHALL BE SPECIFICALLY DESIGNED FOR THE TYPE OF PIPE TO WHICH THEY ARE BEING INSTALLED. SERVICE SADDLES ON PVC PIPE SHALL HAVE STAINLESS STEEL BANDS.

1. SADDLES FOR 1" AND 2" SERVICE LINES ON WATER MAINS 8" AND SMALLER SHALL BE "ROMAC 101S" OR APPROVED EQUAL.

2. SADDLES FOR 1" AND 2" SERVICE LINES ON WATER MAINS 10" AND LARGER SHALL BE "ROMAC 202S" OR APPROVED EQUAL.

GENERAL NOTES:

1. ALL CONSTRUCTION MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE CLARK PUBLIC UTILITIES (CPU) WATER CONSTRUCTION SPECIFICATIONS, STANDARD DETAILS AND THE 2002 EDITION OF THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" PUBLISHED BY WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT).

2. A CPU WATER UTILITY INSPECTOR SHALL BE AT THE JOB SITE DURING CONSTRUCTION OF ALL WATER FACILITIES. CONTACT 360-992-8019 TWO WORKING DAYS PRIOR TO COMMENCING WORK.

3. WORK WITHIN COUNTY RIGHT-OF-WAY SHALL CONFORM WITH CLARK COUNTY PUBLIC WORKS UTILITY PERMIT REQUIREMENTS AND DETAILS. WORK WITHIN STATE RIGHT-OF-WAY SHALL CONFORM TO WSDOT UTILITY PERMIT REQUIREMENTS AND DETAILS.

4. WATER MAIN SHALL BE PVC C-900 P.C. 150 OR AS SPECIFIED ON PLANS.

5. VALVE SHALL BE 2" SQUARE OPERATING NUT OR AS SPECIFIED ON PLANS.

6. INSTALL WATER MAIN WITH 3.0 FEET OF MINIMUM COVER UNLESS OTHERWISE NOTED. DEPTH MAY INCREASE AT UTILITY AND CULVERT CROSSINGS. REFER TO NOTE 13.

7. THE LOCATION OF THE UTILITIES SHALL BE VERIFIED IN ADVANCE TO ALLOW FOR ALIGNMENT ADJUSTMENTS. CALL UTILITY LOCATES TWO (2) WORKING DAYS PRIOR TO CONSTRUCTION (1-800-553-4344).

8. A TAPPING COMPANY APPROVED BY CLARK PUBLIC UTILITIES SHALL BE USED TO MAKE ALL TAPS.

9. LOCATE WIRE SHALL BE NON-COATED, NO. 14 GA. SOFT DRAWN SOLID COPPER.

10. DRY CALCIUM HYPO CHLORIDE IN TABLET FORM, FAST DISSOLVING, WITH 65% MIN. AVAILABLE CHLORINE SHALL BE USED TO CHLORINATE ALL NEW MAINS. THE NUMBER OF TABLETS TO BE APPLIED PER 20 FOOT LENGTH OF PIPE SHALL BE AS FOLLOWS:

PIPE SIZE	NUMBER OF TABLETS
4"	2
6"	3
8"	4
10"	6
12"	8

11. ACTUAL ROAD ALIGNMENTS MAY VARY FROM RIGHT-OF-WAY INDICATED. THE CONTRACTOR SHALL VERIFY THE PROPOSED PIPE ALIGNMENT AND REPORT DIFFERENCES TO THE CPU INSPECTOR. ALL ALIGNMENT CHANGES MUST BE APPROVED BY THE CPU INSPECTOR PRIOR TO INSTALLATION.

12. DRIVEWAYS DISTURBED BY CONSTRUCTION SHALL BE RESTORED BY THE CONTRACTOR TO "LIKE" OR BETTER CONDITION. REFER TO PLAN FOR APPROXIMATE LOCATIONS AND TYPES.

13. CONTRACTOR SHALL VERIFY EXISTING UTILITY CULVERTS, CONDUITS AND LINE LOCATION PRIOR TO CONSTRUCTION. DUE TO FIELD CONDITIONS, THE CONTRACTOR SHALL FIELD ADJUST THE VERTICAL AND HORIZONTAL ALIGNMENT OF THE WATER MAIN TO CLEAR THE UTILITY IN CONFLICT AND PROVIDE THE MIN. 3.0 FEET OF COVER AS APPROVED BY THE CPU INSPECTOR. ALL CULVERTS WHICH ARE DISTURBED BY CONSTRUCTION SHALL BE RESTORED BY THE CONTRACTOR IN ACCORDANCE WITH THE SPECIFICATIONS.

14. FENCES DISTURBED BY CONSTRUCTION SHALL BE RESTORED BY THE CONTRACTOR TO "LIKE" OR BETTER CONDITION.

15. CONTRACTOR SHALL VERIFY EXISTING SIGN AND MAILBOX LOCATIONS PRIOR TO CONSTRUCTION. SIGNS & MAILBOXES THAT ARE DISTURBED BY CONSTRUCTION SHALL BE RELOCATED BACK FROM EDGE OF PAVEMENT, 1.0 FEET CLEAR OF WATER MAIN. ANY SIGNS OR MAILBOXES DAMAGED SHALL BE REPAIRED OR REPLACED AS PER THE SPECIFICATIONS.

16. WHENEVER A PIPE IS CUT AND NOT RECONNECTED, THE CUT ENDS SHALL BE CAPPED OR PLUGGED, AS DIRECTED BY THE CPU INSPECTOR.

17. ALL WATER SERVICES, BLOW-OFF ASSEMBLIES, AIR RELEASE VALVES, FIRE HYDRANT ASSEMBLIES, VALVE BOXES AND THRUST BLOCKING SHALL BE INSTALLED PER THE STANDARD SPECIFICATIONS AND DETAILS.

18. THE LOCATIONS OF ALL EXISTING UTILITIES ARE FOR INFORMATIONAL PURPOSES ONLY. MANY LOCATIONS ARE PER SCHEMATIC RECORD DRAWINGS. THE CURRENT AND EXACT LOCATIONS OF FACILITIES MUST BE VERIFIED PRIOR TO CONSTRUCTION. THE CONTRACTOR PERFORMING THE WORK SHALL COMPLY WITH THE PROVISIONS OF FACILITIES AT LEAST 48 BUSINESS DAY HOURS PRIOR TO EXCAVATION. CALL 1-800-553-4344 FOR UTILITY LOCATE SERVICE.

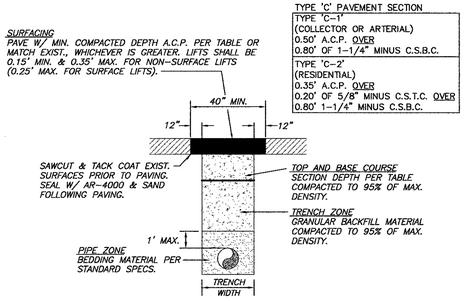
19. WATER MAINS BEING INSTALLED NEAR TELEPHONE/CABLE COMMUNICATIONS SHALL HAVE A MINIMUM 12" HORIZONTAL AND 6" VERTICAL CLEARANCE.

20. WATER MAINS BEING INSTALLED NEAR UNDERGROUND POWERLINES SHALL HAVE A MINIMUM 12" HORIZONTAL AND 8" VERTICAL CLEARANCE.

21. REQUIRED SEPARATION BETWEEN WATER LINES AND SANITARY SEWER LINES SHALL BE AS FOLLOWS:

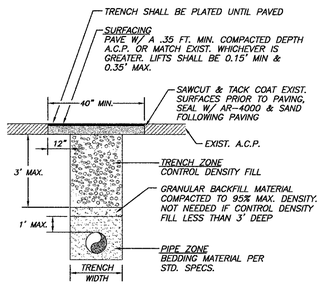
HORIZONTAL SEPARATIONS (PARALLEL)
A MINIMUM SEPARATION OF TEN (10) FEET (MEASURED EDGE TO EDGE) BETWEEN SANITARY SEWER LINES AND WATER LINES SHALL BE MAINTAINED WHENEVER POSSIBLE. WHEN CONDITIONS PREVENT THE MINIMUM TEN (10) FOOT HORIZONTAL SEPARATION THE ENGINEER SHALL BE NOTIFIED.

VERTICAL SEPARATION (PERPENDICULAR)
WATER LINES CROSSING SANITARY SEWER LINES SHALL BE LAID ABOVE THE SEWER LINES TO PROVIDE A SEPARATION OF AT LEAST 18" BETWEEN THE INVERT OF THE WATER PIPE AND THE CROWN OF THE SANITARY SEWER PIPE. A LENGTH OF WATER PIPE SHALL BE CENTERED AT THE POINT OF CROSSING AND SHALL BE THE LONGEST STANDARD LENGTH AVAILABLE FROM THE MANUFACTURER.



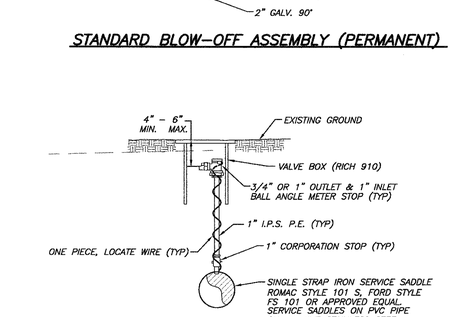
ASPHALT CONCRETE PAVEMENT

(TYPE 'C-1' & 'C-2' RESTORATION)



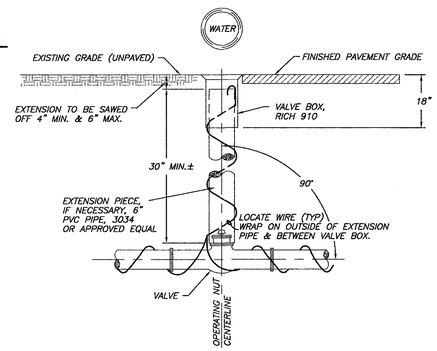
CONTROL DENSITY FILL – A.C.P.

(TYPE 'D' RESTORATION)

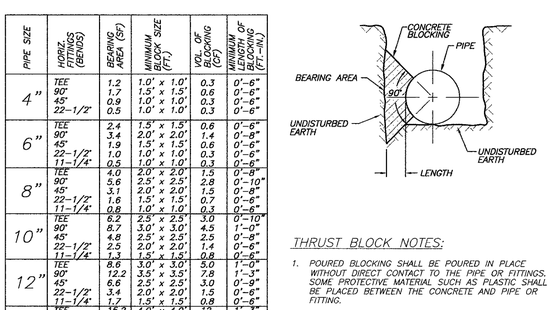


STANDARD BLOW-OFF ASSEMBLY (PERMANENT)

STANDARD MANUAL AIR RELEASE VALVE



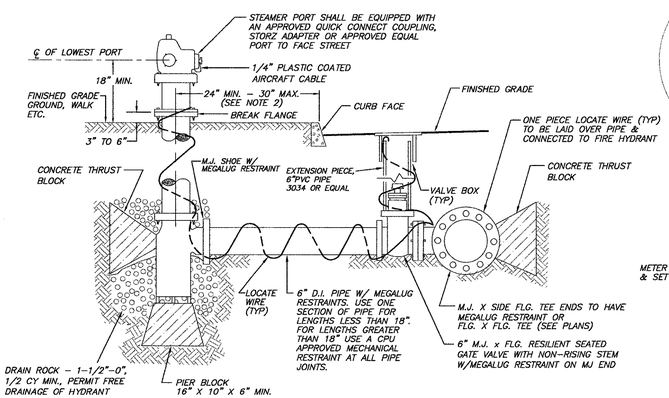
STANDARD VALVE BOX ASSEMBLY



STANDARD THRUST BLOCK

THRUST BLOCK NOTES:

1. POURED BLOCKING SHALL BE POURED IN PLACE WITHOUT DIRECT CONTACT TO THE PIPE OR FITTINGS. SOME PROTECTIVE MATERIAL SUCH AS PLASTIC SHALL BE PLACED BETWEEN THE CONCRETE AND PIPE OR FITTING.
2. POURED BLOCKING SHALL BE POURED AGAINST FIRM UNDISTURBED SOIL.
3. CONCRETE FOR ALL BLOCKING SHALL HAVE A 28-DAY MINIMUM COMPRESSIVE STRENGTH OF 2,500 PSI
4. CONCRETE BLOCKING FOR VERTICAL BENDS SHALL BE PER APWA STD. PLAN NO. 6-22.
5. LAYOUT TO BE APPROVED BY THE CPU INSPECTOR PRIOR TO AND AFTER CONCRETE POUR.

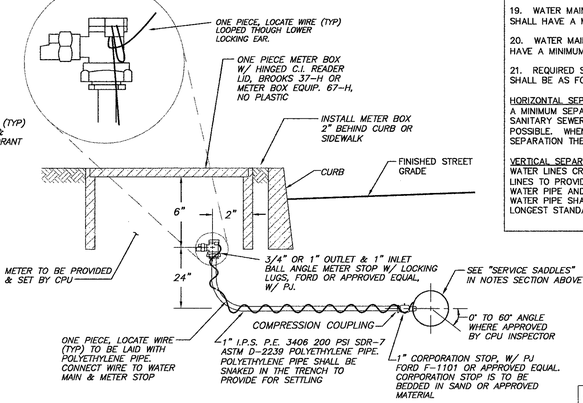


FIRE HYDRANT NOTES:

1. FIRE HYDRANT INSTALLATIONS SHALL BE INSPECTED PRIOR TO BACKFILLING.
2. WHERE HYDRANTS ARE SET BEHIND SIDEWALK, DISTANCE FROM BACK OF SIDEWALK TO HYDRANT C/L SHALL BE 18" MIN., 24" MAX.
3. FIRE HYDRANTS SHALL BE SHOP PAINTED PRIOR TO INSTALLATION W/STANDARD A.W.W.A. GLOSS B, YELLOW

APPROVED HYDRANTS
WATEROUS — WB67-90 AND/OR -250
MUELLER — CENTURION
CLOW — MEDALLION
M&H — 929
KENNEDY — K 81 D

STANDARD FIRE HYDRANT ASSEMBLY



WATER SERVICE & MANUAL AIR RELEASE NOTES:

1. NO CONNECTIONS WILL BE ALLOWED TO AN EXISTING SERVICE PRIOR TO AN APPROVED PURITY TEST. PURITY TEST SHALL PRECEDE PRESSURE TEST.
2. STUB SERVICES SHALL BE PRESSURE TESTED WITH THE MAIN LINE AND BE CAPABLE OF WITH-STANDING THE MAINS TEST PRESSURE.
3. ALL COMPRESSION FITTINGS TO HAVE STAINLESS STEEL INSERTS.

STANDARD 3/4" & 1" WATER SERVICE

DETAIL SHEET INFO: JEFF SIMONS 360.992.8543

CLARK PUBLIC UTILITIES
WATER MAIN INSTALLATION STANDARD DETAILS

DESIGN BY:	SCALE: N.T.S.
APR'D BY: E.B.	CAD FILE: Std-det20040517
DRAWN BY: J.SIMONS	REVISED: 05/17/2004
DATE: 1-19-00	W.O. #

JSW architects, pc
architecture / planning / interiors
Isw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

KELLY D. BACHELDER — STATE OF WASHINGTON — 40581 REGISTERED PROFESSIONAL ENGINEER — 12/16/05
EXPIRES: 10/31/06

drawn by
JRT
checked by
KDB/CER
Isw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.04.05
SPR

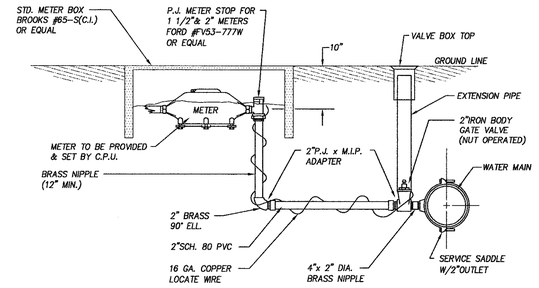
revisions
12/2005 RECORD DRAWINGS

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

STD. WATERLINE NOTES AND DETAILS

CA3.11
SHEET 22 OF 33
LSW-84

HHPR
Harper Houf Peterson Righellis Inc.
ENGINEERS • PLANNERS
1104 Main Street, Suite 100, Vancouver, WA 98660
tel 360.750.1131 www.hrcivil.com fax 360.750.1141

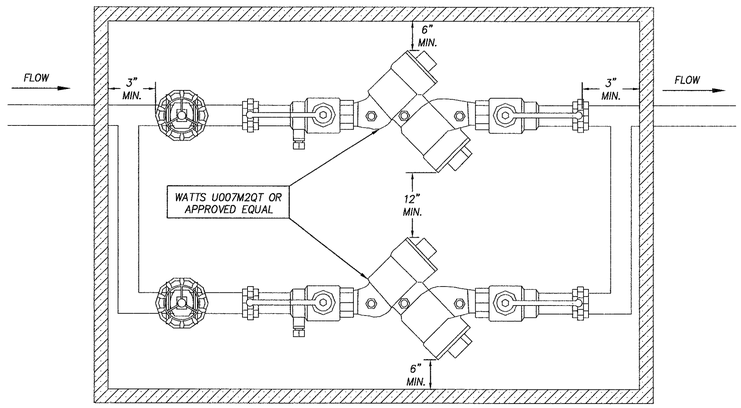


COMPACT AROUND ELBOW TO 95% MAXIMUM RELATIVE DEMSITY

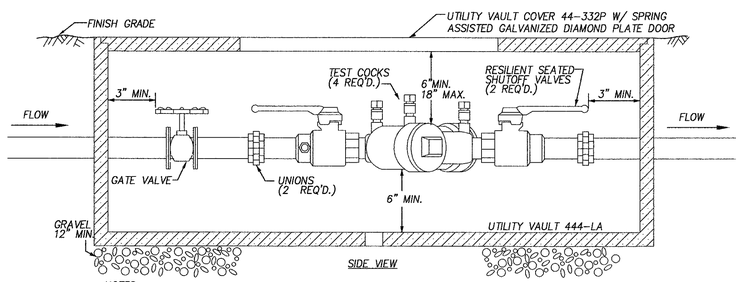
NOTES:

1. CONTRACTOR SHALL CONTACT P.U.D. CONSTRUCTION MANAGER'S OFFICE (944-8020) 48 HRS. PRIOR TO INSTALLING ANY STUBS.
2. CONTRACTOR IS HELD RESPONSIBLE TO AVOID CONFLICT WITH OTHER UTILITIES BY CO-ORDINATION OF LOCATION. "ONE-CALL" 696-4848.
3. NO CONNECTIONS WILL BE ALLOWED TO AN EXISTING SERVICE PRIOR TO AN APPROVED PURITY TEST. PURITY TEST SHALL PRECEDE PRESSURE TEST.
4. STUB SERVICES SHALL BE PRESSURE TESTED WITH THE MAIN LINE AND BE CAPABLE OF WITH-STANDING THE MAINS TEST PRESSURE.
5. APPROVED EQUAL APPLIES ON ALL MATERIAL CALL OUTS.
6. ALL COMPRESSION FITTINGS TO HAVE STAINLESS STEEL INSERTS.

STANDARD 1 1/2" & 2" WATER SERVICE



TOP VIEW

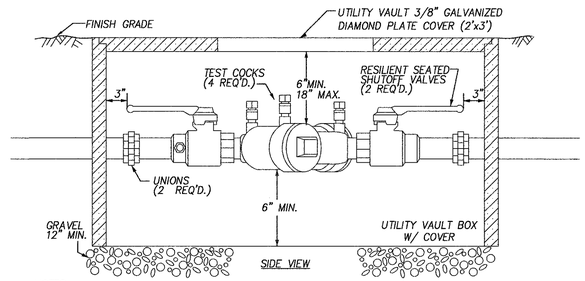


SIDE VIEW

NOTES:

1. APPROVED DOUBLE CHECK VALVE ASSEMBLY (DCVA) TO LAY HORIZONTAL WITH GROUND.
2. DCVA MAY BE INSTALLED ABOVE OR BELOW GROUND PROVIDED ALL CLEARANCES ARE MET.
3. DESIGN FOR BACK SIPHONAGE AND BACK PRESSURE.
4. TEST COCKS TO EITHER FACE OUTWARDS OR UPWARDS FROM ASSEMBLY.
5. THOROUGHLY FLUSH LINES PRIOR TO INSTALLATION OF BACKFLOW PREVENTER.
6. DO NOT INSTALL IN AN AREA SUBJECT TO FLOODING.
7. DCVA MUST BE ACCESSIBLE.
8. PROTECT DCVA FROM FREEZING.
9. A PLUMBING PERMIT IS REQUIRED-CONTACT C.P.U. PERMITS COUNTER
10. DCVA MUST BE TESTED AFTER INSTALLATION, THEN ANNUALLY BY A WA. STATE CERTIFIED BACKFLOW TESTER. RESULTS SHALL BE SENT TO C.P.U. WATER QUALITY SERVICES.

DUAL DOUBLE CHECK VALVE ASSEMBLY 2" & SMALLER



SIDE VIEW

NOTES:

1. APPROVED DOUBLE CHECK VALVE ASSEMBLY (DCVA) TO LAY HORIZONTAL WITH GROUND.
2. DCVA MAY BE INSTALLED ABOVE OR BELOW GROUND PROVIDED ALL CLEARANCES ARE MET.
3. DESIGN FOR BACK SIPHONAGE AND BACK PRESSURE.
4. TEST COCKS TO EITHER FACE OUTWARDS OR UPWARDS FROM ASSEMBLY.
5. THOROUGHLY FLUSH LINES PRIOR TO INSTALLATION OF BACKFLOW PREVENTER.
6. DO NOT INSTALL IN AN AREA SUBJECT TO FLOODING.
7. DCVA MUST BE ACCESSIBLE.
8. PROTECT DCVA FROM FREEZING.
9. A PLUMBING PERMIT IS REQUIRED-CONTACT C.P.U. PERMITS COUNTER
10. DCVA MUST BE TESTED AFTER INSTALLATION, THEN ANNUALLY BY A WA. STATE CERTIFIED BACKFLOW TESTER. RESULTS SHALL BE SENT TO C.P.U. WATER QUALITY SERVICES.

STANDARD DOUBLE CHECK VALVE ASSEMBLY 2" & SMALLER

RECORD DRAWINGS
DECEMBER 2003

AS-BUILT INFORMATION PROVIDED BY 2KG CONTRACTORS

LSW architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

KELLY D. BACHELDER — STATE OF WASHINGTON — 40581 — REGISTERED PROFESSIONAL ENGINEER — 12/16/05

EXPIRES: 10/31/06

drawn by
JRT
checked by
KDB/CER
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.04.05
SPR

revisions
12/2005 RECORD DRAWINGS

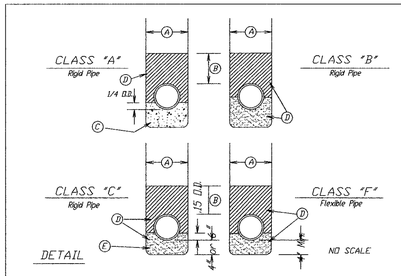
ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

WATERLINE NOTES AND DETAILS

CA3.12

LSW-84

HHPR
Harper Houf Peterson Righellis Inc.
ENGINEERS - PLANNERS
1104 MAIN STREET, SUITE 100, VANCOUVER, WA 98660
TEL 360.750.1131 www.hrcivil.com FAX 360.750.1141



(A) Width of trench shall conform with WSDOT Standard Specifications Section 2-09.4 Measurement, Clark County or WSDOT utility permit (Franchise) requirements, whichever is greater.

(B) Pre-cover by hand with selected material and compact to 90% of maximum density by T-99 method to a minimum depth of 12" above top of pipe.

(C) 2,000 PSI concrete. Depth below pipe to be 1/4 I.D. height of pipe width (4" minimum and 12" maximum). To be used only with written approval of the District. See design criteria, C-103.04 Specialty Designs for requirements.

(D) For depths of cover from 5' to 13', pipe zone material shall conform to WSDOT Standard Specification, Section 9-03.16 bedding material for thermoplastic pipe or WSDOT Standard Specification, Section 9-03.9(3) crushed surfacing base course.

For depths of cover from 13' to 20', pipezone material shall conform to WSDOT Standard Specification, Section 9-03.9(3) crushed surfacing base course.

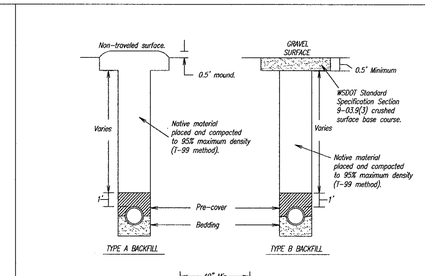
(E) Depth of 4"±0.15 O.D. for pipe 8" in diameter and smaller.
Depth of 6"±0.15 O.D. for pipe 10" in diameter and larger.

NOTE: Over excavation shall be backfilled with WSDOT Standard Specification, Section 9-03.9(2) shoulder ballast.

Approved For Project Use
Revised 6/27/2000

PIPE BEDDING

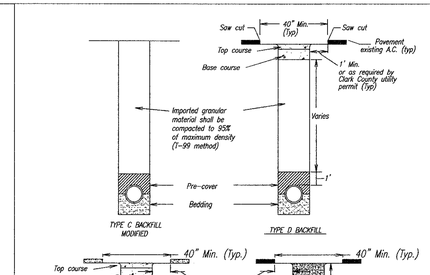
HAZEL DELL SEWER DISTRICT
STANDARD CONSTRUCTION DRAWINGS 1



Approved For Project Use
Revised 6/27/2000

BACKFILL DETAILS

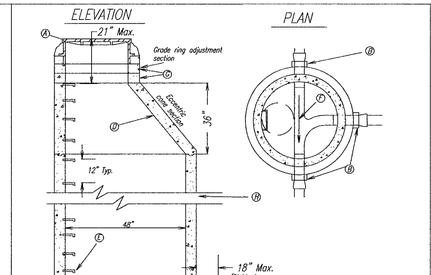
HAZEL DELL SEWER DISTRICT
STANDARD CONSTRUCTION DRAWINGS 2



Approved For Project Use
Revised 6/27/2000

BACKFILL DETAILS

HAZEL DELL SEWER DISTRICT
STANDARD CONSTRUCTION DRAWINGS 2A



NOTE: Metal grade ring adjusters not allowed.

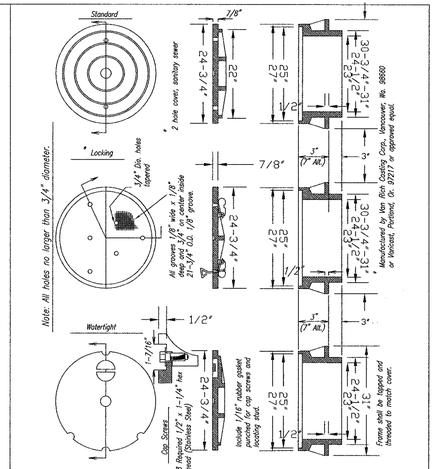
Note: Manufacturer shall supply a letter of certification verifying manhole sections meet HDSD specifications.

(A) See standard drawing #7, (standard manhole frames and covers) for details.
(B) All manhole installations shall be cored and booted.
(C) Wall section to be integral part of base and completely water tight.
(D) Base & cone shall be constructed in accordance with AASHTO M-199 (ASTM C478)
(E) Use steps per standard drawing #8.
(F) Slope to be a minimum of 2%.
(G) Steps not allowed in riser ring.
(H) May require sealant.

Approved For Project Use
Revised 5/18/01

PRECAST MANHOLE

HAZEL DELL SEWER DISTRICT
STANDARD CONSTRUCTION DRAWINGS 3

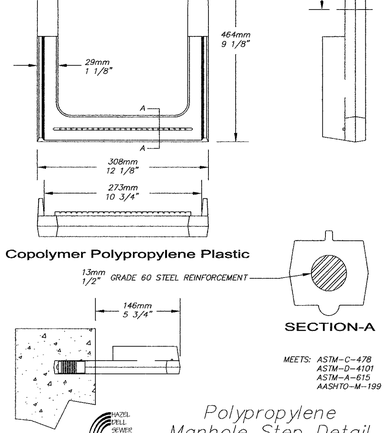


NO SCALE

Approved For Project Use
Revised 6/27/2000

STANDARD MANHOLE FRAMES AND COVERS

HAZEL DELL SEWER DISTRICT
STANDARD CONSTRUCTION DRAWINGS 7



Polypropylene Manhole Step Detail

Revised 10/30/2000

HAZEL DELL SEWER DISTRICT
STANDARD CONSTRUCTION DRAWINGS 8

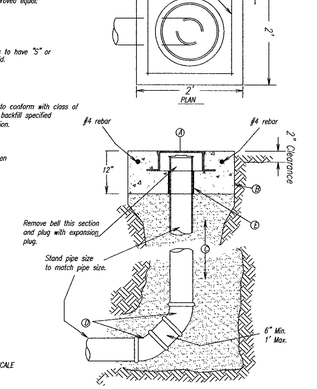
(A) Standard cast iron frame and cover. Use the following Sioux Chief Mfg. Co., Inc. Toupee plus adjustable cleanout item numbers or approved equal:
851-44i (4" PVC)
851-46i (6" PVC)
851-34i (4" ABS)
Commercial cleanouts to have "S" or "SAN" embossed in lid.

(B) Concrete shall be 3,000 P.S.I.

(C) Bedding and backfill to conform with class of bedding and type of backfill specified for sewer line extension.

(D) 2-45° bends.

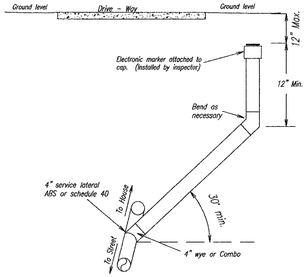
(E) Install 50# felt between pipe and concrete.



Approved For Project Use
Revised 3/16/01

CLEANOUT DETAIL

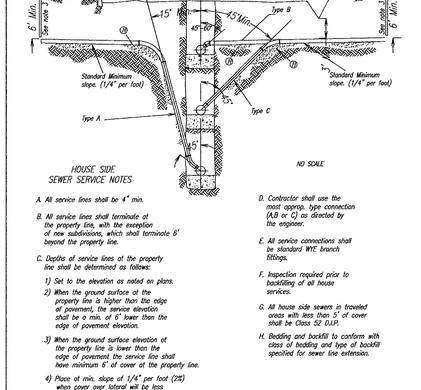
HAZEL DELL SEWER DISTRICT
STANDARD CONSTRUCTION DRAWINGS 9



Approved For Project Use
Revised 6/27/2000

ALTERNATE TO RESIDENTIAL CLEAN OUT IN DRIVEWAY

HAZEL DELL SEWER DISTRICT
STANDARD CONSTRUCTION DRAWINGS 9B



A. All service lines shall be 4" min.

B. All service lines shall terminate at the property line, with the exception of new subdivisions, which shall terminate 6' beyond the property line.

C. Depths of service lines at the property line shall be determined as follows:
1) Set to the elevation as noted on plans.
2) When the ground surface at the property line is higher than the edge of pavement, the service elevation shall be a min. of 6' lower than the edge of pavement elevation.
3) When the ground surface elevation at the property line is lower than the edge of pavement the service line shall have minimum 6' of cover at the property line.
4) Place at min. slope of 1/4" per foot (2%) when cover over lateral will be less than 5' (Type B).

D. Contractor shall use the most approp. type connection (A,B or C) as directed by the engineer.

E. All service connections shall be standard WYE branch fittings.

F. Inspection required prior to backfilling of all house services.

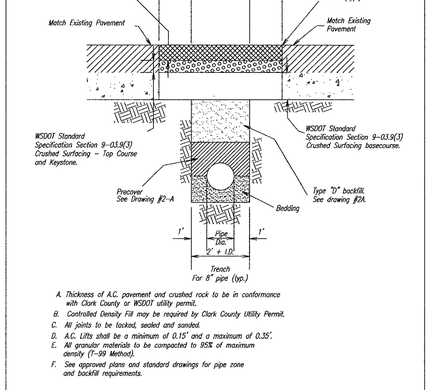
G. All house side sewers in traveled areas with less than 5' of cover shall be Class 52 D.I.P.

H. Bedding and backfill to conform with class of bedding and type of backfill specified for sewer line extension.

Approved For Project Use
Revised 3/16/01

TYPICAL HOUSE SIDE SEWER

HAZEL DELL SEWER DISTRICT
STANDARD CONSTRUCTION DRAWINGS 10



A. Thickness of A.C. pavement and crushed rock to be in conformance with Clark County or WSDOT utility permit.
B. Controlled Density Fill may be required by Clark County Utility Permit.
C. All joints to be locked, sealed and sanded.
D. A.C. Lifts shall be a minimum of 0.15' and a maximum of 0.35'.
E. All granular materials to be compacted to 95% of maximum density (T-99 Method).
F. See approved plans and standard drawings for pipe zone and backfill requirements.

Approved For Project Use
Revised 6/27/2000

PAVEMENT RESTORATION

HAZEL DELL SEWER DISTRICT
STANDARD CONSTRUCTION DRAWINGS 14

SANITARY NOTES:

1. All sanitary sewer construction will conform to the current adopted Standard Specifications of the District.
2. All Work in Clark County right-of-way will conform to the requirements of the Clark County utility permit or District requirements, whichever is more restrictive.
3. Contractor shall contact the NW Utility Notification Center at 1-800-553-4344 at least two (2) working days before but not more than (10) ten working days before the start of construction of the Work.
4. A preconstruction conference shall be held prior to the start of construction of the Work.
5. Gravity sanitary sewer pipe materials for lines six (6) inches inside diameter and larger shall be:
   a. Class 52 ductile iron pipe at depths of cover from three (3) feet to less than five (5) feet in a vehicle-traveled area; or
   b. ASTM D 3034 SDR 35 PVC pipe at depths of cover of five (5.0) feet to depths of to twenty (20.0) feet; or
   c. AWWA C-900 or C-905, Class 165 PVC or Class 52 ductile iron pipe at depths greater than 20.0'.
   d. Gravity sanitary sewer pipe materials for lines four (4) inches inside diameter and smaller shall be:
   e. Class 52 ductile iron pipe at depths of cover from three (3) feet to less than five (5) feet in a vehicle traveled area; or
   f. Schedule 40 ABS or Schedule 40 Solvent Joint PVC at depths of cover from three (3) feet to less than five (5) feet in non-vehicle traveled areas; or
   g. Schedule 40 ABS or Schedule 40 Solvent Joint PVC at depths of cover of five (5) feet or more.
6. Backfill for all sanitary sewer pipe and side sewers shall be as required by the Clark County utility permit, WSDOT Utility franchise or the District which ever is more restrictive.
7. Bedding for all sanitary sewer pipe and side sewers in the pipe zone shall be:
   a. Standard Specification, Section 9-03.15 Bedding Material for Rigid Pipe for Class 52 ductile iron pipe.
   b. Either Standard Specification, Section 9-03.16 Bedding Material for Thermoplastic Pipe or Standard Specification, Section 9-03.9(3), Crushed Surfacing Base Course, when depth is five (5) feet and less than thirteen (13) feet for PVC pipe.
   c. Standard Specifications, Section 9-03.9(3), Crushed Surfacing Base Course, when depth is more than thirteen (13) feet for PVC pipe.
8. Connections for side sewers (laterals) shall be:
   a. Wyes for new sanitary sewers.
   b. Taps on existing lines installed by the District. Note: A "Request for Tap" form must be completed by the Contractor, fees paid, and a two (2) working day notice be given to the District Superintendent to allow the tap to be scheduled.
9. The ends of side sewers (laterals) shall be:
   a. Back-filled only after District inspection and approval and Owner's Engineer or Surveyor has obtained record drawing information.
   b. Marked with a 2"x4"x10' with a 14 gauge insulated copper wire at a 90 angle from the end of the lateral. The marker will extend at least three (3) feet above the finished ground surface. Two (2) feet of each end of the 2"x4"x10' shall be painted green. If the 2"x4" is not ten (10) feet long, the Contractor will mark the actual length on the 2"x4".
10. Manholes shall have all joints sealed with Wrapid-Seal, Easi-Wrap [eight (8) inch nominal width], NPC External-Seal [eight (8) inch nominal width], or approved equal, if required on the Plans.
11. All testing shall be in accordance with the District Amendments to the Standard Specifications.
   a. At the preconstruction conference, the Contractor must state if they intend to use a private television inspection Subcontractor or the District.
   b. The District must approve all private television inspection Subcontractors in writing.
   c. After approval of the construction by the District Inspector, the District Superintendent requires a two (2) working day notice to schedule staff to observe television inspection Subcontractor's work.
12. Owner's Engineer or Surveyor will submit pre-paving record drawings prior to testing and inspection.
13. All existing septic tanks will be decommissioned in accordance with SW Washington Health District, Uniform Plumbing Code and District requirements.
14. Record Drawings will be submitted to the District prior to approval of sewer permits.
15. Engineering Drawings - Record Drawing Plans and Profiles. Record drawings for Plan and Profile sheets for sanitary sewer lines shall:
   a. The record drawings shall be complete Plans including all road, storm drainage, water supply and grading plans for the Work.
   b. Be completed by the Owner's Engineer and submitted to the District prior to project acceptance by the District.
   c. Be on 4 mil electrostatic or electrostatic photo reproducible Mylar.
   d. Be submitted in electronic form as a "TIF" file on a compact disk or diskette.
   e. Be placed on the approved Plans and Profiles with the design date marked out and the Record Drawing date shown adjacent to design date.
   f. Show all final elevations and stations of manholes, cleanouts, stubouts and laterals.
   g. Show all changes made to pipe material, slope, length of pipe, finished grade, etc.
   h. Show the distance from the back of curb to the end of the side sewer, depth, station and distance to the end of the lateral from the sanitary sewer line.
   i. Be clearly marked record drawings, dated with the Owner's Engineer's Professional Civil Engineer's State of Washington signed seal.
   j. Become the permanent property of the District.

RECORD DRAWINGS
DECEMBER 2005

AS-BUILT INFORMATION PROVIDED BY 2KG CONTRACTORS

LSW architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

KELLY D. BACHELDER — STATE OF WASHINGTON — 40581 — REGISTERED PROFESSIONAL ENGINEER
EXPIRES: 10/31/05

drawn by
JRT
checked by
KDB/CER
lsw job number
03285

issue date
2.04.05
SPR

revisions
12/2005 RECORD DRAWINGS

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

STD. SANITARY SEWER NOTES AND DETAILS

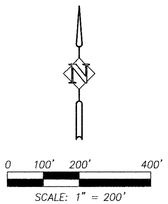
CA3.13
SHEET 24 OF 33
LSW-04

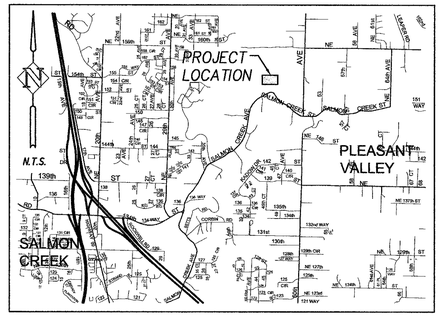
CAMPUS INFRASTRUCTURE 2003 - KIOSK AND PATH

CIVIL DRAWING SUBSET "B"

HHPR Harper Houf Peterson Righellis Inc.
ENGINEERS • PLANNERS
1104 Main Street, Suite 100, Vancouver, WA 98660
tel 360.750.1131 www.hrcivil.com fax 360.750.1141







VICINITY MAP

PROPERTY OWNER:
WASHINGTON STATE UNIVERSITY
14204 N.E. SALMON CREEK AVENUE
VANCOUVER, WA 98686
CONTACT: DAVID SMITH
PH: (360) 546-9576

BENCHMARK
CLARK COUNTY GEODETIC CONTROL POINT #37.
A 3-1/2" BRASS DISK SET IN CONCRETE WITH CASE AND COVER AT THE INTERSECTION OF N.E. 159TH ST. AND N.E. 50TH AVE.
ELEVATION = 212.838 CLARK COUNTY DATUM (NGVD 1929-47)

REFER TO ARCHITECTURAL PLANS FOR SITE INFORMATION AND DETAILS.

NOTE TO CONTRACTOR:
FOR PURPOSES OF PERMITTING ONLY, CIVIL DRAWINGS FOR THIS PROJECT HAVE BEEN SUBDIVIDED INTO SETS A, B, C AND H. CIVIL DRAWING SUBSET "B" INCLUDES:
- *KIOSK*
- *SOUTH RED LOT PATHWAY*
- *REVISION TO FLOW CONTROL STRUCTURE AT POND "D"*

SHEET INDEX

AS-BUILTS FOR CIVIL PLANS ONLY	1	CB1.0	COVER SHEET
	2	CB2.0	KIOSK & COVERED STORAGE GRADING, DRAINAGE & EROSION CONTROL PLAN
	3	CB2.1	PATHWAY GRADING, DRAINAGE & EROSION CONTROL PLAN
	4	CB2.2	STD. EROSION CONTROL NOTES AND DETAILS
	5	CB2.3	EROSION CONTROL, GRADING AND STORMWATER DETAILS
	6	CB2.4	STORMWATER DETAILS
	7-11		REFER TO ARCHITECTURAL AND LANDSCAPE PLANS

RECORD DRAWINGS
DECEMBER 2005
AS-BUILT INFORMATION PROVIDED BY 2KG CONTRACTORS

CLARK COUNTY
DEPARTMENT OF COMMUNITY DEVELOPMENT
ENGINEERING SERVICES

PLANNING LAND USE# PSR2005-00006
ENGINEERING# ENG2005-00046
INSPECTION#

CLARK COUNTY WASHINGTON — proud past, promising future

Recommended For Approval

Signature	Clark County Fire Marshal	Date 6/30/05
N/A		
Signature	Clark County Wetlands Biologist Case#	Date
N/A		
Signature	Clark County Habitat Biologist Case#	Date
Signature	Clark County Grading Review	Date 6/23/05
Signature	Clark County Erosion Control Review	Date 6/23/05
Signature	Clark County Storm Water Plan Review	Date 6/23/05
N/A		
Signature	Clark County Transportation Review	Date

A	N/A	
☒	☐	Stormwater & Erosion Control Ordinance CCC 13.29
☐	☒	Transportation Standards Ordinance CCC 12.05A
☐	☒	Transportation Landscaping Review
☐	☒	Utility Review CCC 13.12A & 12.20A
☐	☒	Clark County Signing & Striping
☐	☒	Road Modification CCC 12.05A.660
☐	☒	CARA CCC 13.70
☐	☒	Geological Hazard Areas Reg. CCC 13.60
☐	☒	Flood Plain Combining District CCC 18.327
☒	☐	Sewer and Water on Plan
☐	☒	Clark County M & O Pavement Defl. Testing
☒	☐	Private Stormwater Covenant
☒	☐	Record Drawing Guarantee
☒	☐	UBC Chapter 33

RECOMMENDED for APPROVAL
Engineering Team Leader — Date 6/24/2005

APPROVED for CONSTRUCTION
Clark County Engineer — Date 7/06/2005

Plans Approved for Construction by the County does not in any way relieve the engineer of responsibility to meet all requirements of the County or obligation to protect life, health, and property of the public. The plan for any project shall be revised or supplemented at any time it is determined that the full requirements of the County have not been met.
Rev. 11/12/03

JSW architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

KELLY D. BACHELDER — STATE OF WASHINGTON — 40581 — REGISTERED PROFESSIONAL ENGINEER — 6/16/05
EXPIRES: 10/31/06

drawn by
KDB
checked by
CER
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.04.05
SPR

revisions
6/6/05 - PER COMMENTS

12/2005 RECORD DRAWINGS

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

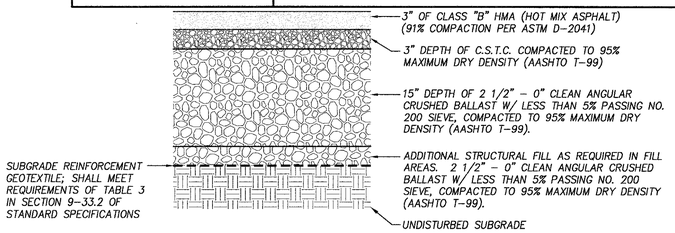
COVER SHEET

CB1.0

LSW-84

LEGEND

EXISTING		PROPOSED			
5' CONTOUR	245	5' CONTOUR	275	CATCH BASIN	
1' CONTOUR		1' CONTOUR	276	ROOF DRAIN	RD
SANITARY	SAN	SPOT ELEVATION AT FLOWLINE	302.63	FIRE HYDRANT	
WATER	W	SPOT ELEVATION AT TOP AND BOTTOM OF CURB	307.71 TC / 307.21 AC	BLOW-OFF	
STORM	SD	SANITARY		CAP	
ELECTRICAL	E	WATER		THRUST BLOCK	
TELEPHONE	T	STORM PIPE		VALVE	
GAS	G	SANITARY M.H.	S	WATER METER	
SANITARY C.O.	CO	CLEAN OUT		CHECK DAM	
STORM M.H.	ST	STORM M.H.		BIO-BAG PROTECTION	
CATCH BASIN	CB			SEDIMENT FENCE	



A.C. PARKING LOT PAVEMENT SECTION

N.T.S.

GRADING NOTES

GRADING WORK SHALL CONFORM TO THE CONCLUSIONS AND RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL REPORT BY GRI GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS, DATED AUGUST 23, 2004.

PRIOR TO BEGINNING CONSTRUCTION, ALL AREAS OF THE SITE THAT WILL RECEIVE FOUNDATIONS, STRUCTURAL FILL, FLOOR SLABS, OR PAVEMENT SHALL BE STRIPPED OF TOP SOIL, ROOTS, UNSUITABLE FILLS, I.E. EXCAVATED TO NON-ORGANIC, NATIVE UNDISTURBED SOIL OR COMPACTED STRUCTURAL FILL.

STRUCTURAL FILLS SHALL BE INSTALLED IN HORIZONTAL LIFTS NOT EXCEEDING EIGHT INCHES IN THICKNESS AND SHALL BE COMPACTED TO THE FOLLOWING SPECIFICATIONS:
GRANULAR FILL = 95% MIN. (ASTM D 1557)
NATIVE SILT AND CLAY SOILS = 92% MIN. (ASTM D 1557)
TOP EIGHT INCHES OF PAVEMENT/FLOOR SLAB SUB GRADE = 95% MIN. (ASTM D 1557)
ASPHALT CONCRETE = 91% MIN. (ASTM D 2041)
LANDSCAPING/PLANTER AREAS = 90%

ALL WORK PERFORMED SHALL MEET THE REQUIREMENTS OF THE LATEST INTERNATIONAL BUILDING CODE (IBC) AND THE LATEST UNIFORM PLUMBING CODE (UPC).

SEE ARCHITECTURAL PLANS FOR HANDRAIL LOCATIONS AND DETAILS.

EXISTING UTILITIES AS SHOWN ON THE PLANS ARE A BEST EFFORT COMPILATION OF A "UTILITIES LOCATE", SURFACE LOCATIONS AND AS-BUILT DRAWINGS. THE CONTRACTOR SHALL VERIFY LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

SEE GEOTECHNICAL REPORT FOR ADDITIONAL REQUIREMENTS FOR "WET-WEATHER" CONSTRUCTION.

PARKING / DRIVES / PLAZA

REFER TO ARCHITECTURAL PLANS FOR SITE DETAILS (CURB, SIDEWALK, SIDEWALK RAMP, ETC.)

EROSION CONTROL

SIGNIFICANT VARIATION AND DEGREE OF EROSION CONTROL EFFORT WILL BE DICTATED BY WEATHER CONDITIONS. THE DEVELOPER AND CONTRACTOR SHOULD BE PREPARED TO PROVIDE EXTRA EROSION CONTROL PROVISIONS AND EFFORT DURING WINTER AND WET WEATHER CONDITIONS BEYOND THAT NORMALLY REQUIRED DURING SUMMER AND DRY WEATHER CONDITIONS. REFER TO SHEET CB2.2 FOR ADDITIONAL INFORMATION. FINE GRAINED AND UNCONSOLIDATED SOILS ON SLOPING SITES MAY BECOME UNSTABLE WHEN SUBJECT TO EXCESSIVE MOISTURE.

THE PROJECT CONSTRUCTION ENTRANCE(S) SHALL BE LOCATED AT THE CONTRACTOR'S CONVENIENCE. CONTRACTOR SHALL COORDINATE WITH COUNTY INSPECTOR AND OWNER.

STORM DRAINAGE

CONTRACTOR SHALL VERIFY EXISTING STORM SYSTEM ELEVATIONS PRIOR TO CONSTRUCTION.

ON-SITE STORM SEWER IMPROVEMENTS SHALL CONFORM TO THE LATEST VERSION OF THE I.B.C. AND THE U.P.C. CONFORM TO W.S.D.O.T. SPECIFICATIONS WHERE NOTED. PUBLIC STORM SEWER IMPROVEMENTS SHALL CONFORM TO CLARK COUNTY REQUIREMENTS AND SPECIFICATIONS.

UNLESS OTHERWISE NOTED, STORM DRAIN PIPE, BENDS, AND FITTINGS SHALL BE SMOOTH INTERIOR, HIGH DENSITY POLYETHYLENE CORRUGATED PIPE AS PRODUCED AND SPECIFIED BY ADS, PRODUCT NAME N-12, OR APPROVED EQUAL. WHEN NOTED, PIPE SHALL BE C-900 PVC FOR PIPES WITH COVER LESS THAN 2 FEET. ALL STORM SEWER FITTINGS SHALL BE GASKETED.

PROVIDE LOCATE WIRE FOR ALL STORM SEWER PIPING. LOCATE WIRE SHALL BE NON-COATED, NO. 14 GA. SOFT DRAWN SOLID COPPER.

ALL PROPOSED STORM SYSTEM INLETS INCLUDING CATCH BASINS, AREA DRAINS AND DITCH INLETS SHALL HAVE TRAP OR SIPHON MECHANISM - "LYNCH" OR TYPE 60A TRAP OR EQUAL.

ADJUST ALL MANHOLE AND CLEANOUT RIMS TO FINISH GRADE, UNLESS OTHERWISE NOTED.

BEVEL PIPE END TO MATCH SLOPE ANGLE AS SHOWN ON PLANS.

INSTALL CLEANOUTS AS REQUIRED BY THE U.P.C.

ROOF DRAINS FROM BUILDING SHALL CONNECT TO SITE STORM DRAINS IN LOCATIONS SHOWN ON THE PLANS. COORDINATE EXACT SIZE AND LOCATION WITH ARCHITECTURAL AND PLUMBING PLANS PRIOR TO CONSTRUCTION.

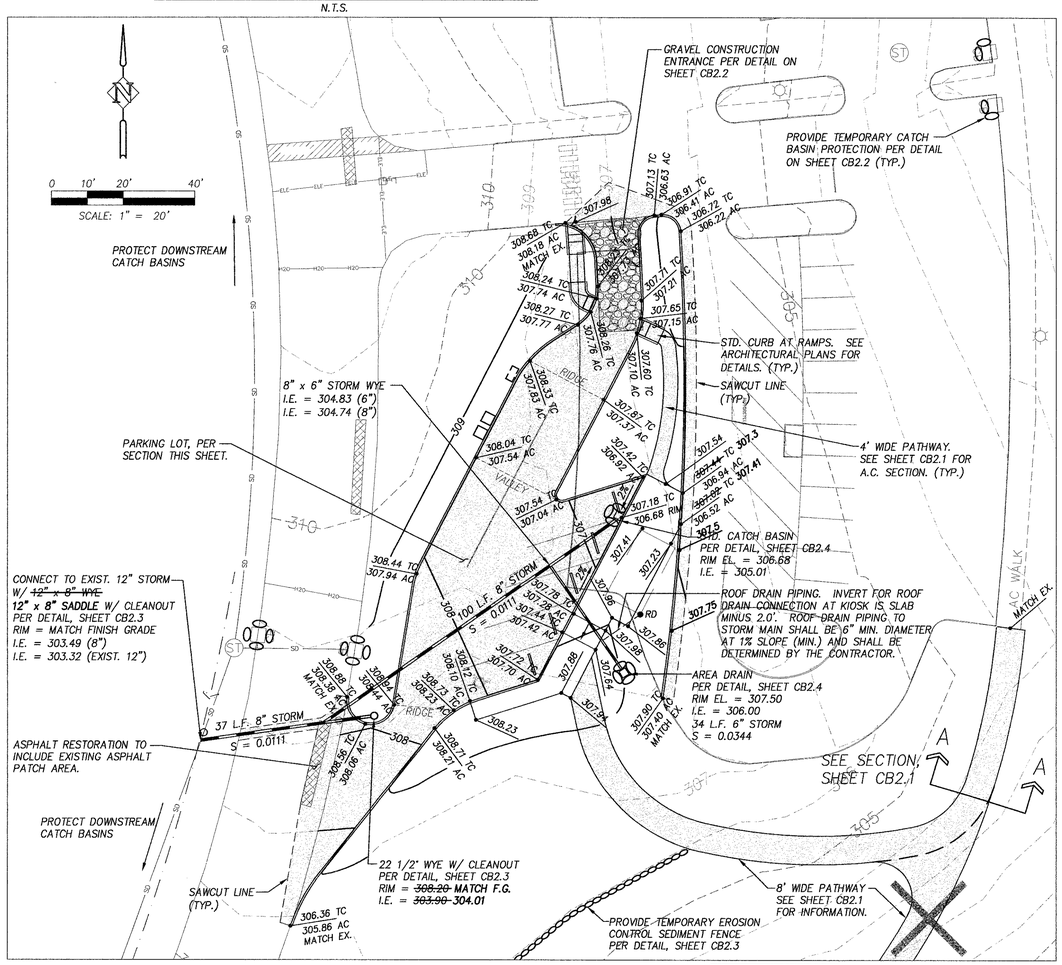
DRAINAGE STRUCTURES SHALL BE LABELED AS FOLLOWS:
A. ALL CATCH BASINS, CURB INLETS, DITCH INLETS, AND MANHOLES SHALL BE STENCILED: "PLEASE PROTECT - DRAINS TO STREAM"

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROTECT AND MAINTAIN ANY STORM SYSTEM PIPING TO EXISTING DRAINAGE APPURTENANCES TO REMAIN.

UPON COMPLETION OF CONSTRUCTION, ALL STORMWATER QUALITY/QUANTITY FACILITIES SHALL BE PRIVATELY MAINTAINED BY WSU-VANCOUVER.

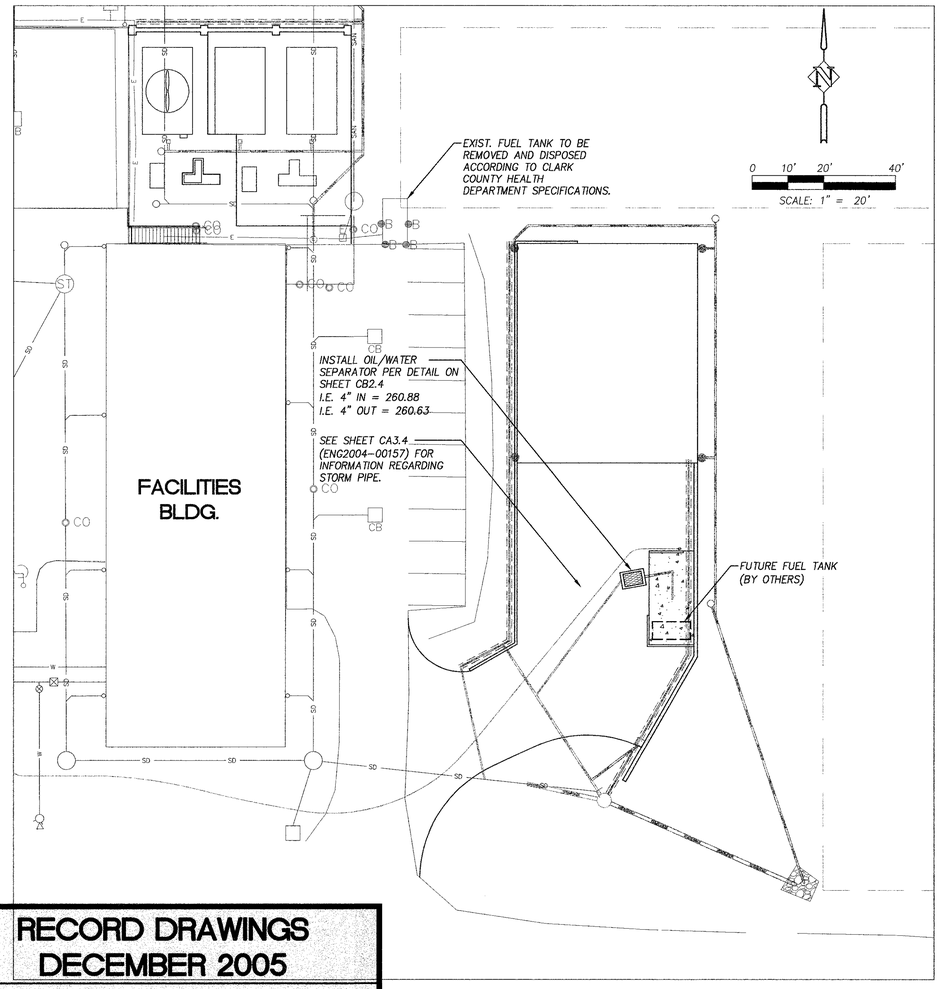
AS-BUILTS

REFER TO PROJECT SPECIFICATIONS FOR ALL AS-BUILT REQUIREMENTS.



KIOSK PARKING LOT

ESTIMATED QUANTITIES
CUT = 435 CY
FILL = 42 CY



COVERED STORAGE

RECORD DRAWINGS
DECEMBER 2005

AS-BUILT INFORMATION PROVIDED BY 2KG CONTRACTORS

HHPR Harper Houf Peterson Righellis Inc.
ENGINEERS • PLANNERS
1104 Main Street, Suite 100, Vancouver, WA 98660
tel 360.750.1131 www.hrcivil.com fax 360.750.1141

LSW architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

KELLY D. BACHELDER — STATE OF WASHINGTON — 40581 — REGISTERED PROFESSIONAL ENGINEER — 12/14/05

EXPIRES: 10/31/06

drawn by
KDB/TLH
checked by
CER
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.04.05
SPR

revisions
6/6/05 - PER COMMENTS

12/2005 RECORD DRAWINGS

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

KIOSK & COVERED STORAGE GRADING, DRAINAGE & EROSION CONTROL PLAN

CB2.0
SHEET 2 OF 11
LSW-84

RECORD DRAWINGS
DECEMBER 2005

AS-BUILT INFORMATION PROVIDED BY 2KG CONTRACTORS

LEGEND

EXISTING		PROPOSED	
5' CONTOUR	245	5' CONTOUR	275
1' CONTOUR		1' CONTOUR	276
SANITARY	SAN	SPOT ELEVATION AT FLOWLINE	302.63
WATER	W	SANITARY	
STORM	SD	WATER	
ELECTRICAL	E	STORM PIPE	
TELEPHONE	T	STORM M.H.	
GAS	G	SANITARY M.H.	
STORM M.H.	ST	FIRE HYDRANT	
CATCH BASIN	CB	BLOW-OFF	
		CAP	
		THRUST BLOCK	
		VALVE	
		WATER METER	
		CATCH BASIN	
		CHECK DAM	
		SANITARY C.O.	
		BIO-BAG PROTECTION	
		SEDIMENT FENCE	

STORMWATER NOTE:

QUANTITY CONTROL FOR STORMWATER RUNOFF FROM THE PROPOSED PATHWAY WILL BE PROVIDED VIA OVER DETENTION AT POND "D".

SEE ARCHITECTURAL PLANS FOR LAYOUT AND DIMENSIONS.

ALTERNATE #5 NOT ACCEPTED AND WILL NOT BE CONSTRUCTED.

BASE BID
ALTERNATE #5

5' WIDE ASPHALT PATHWAY PER SECTION A-A.

SEE SECTION A THIS SHEET

NEW PATHWAY TO FOLLOW EXISTING GRADES. 8% MAX. LONGITUDINAL SLOPE. PROVIDE 2% CROSS-SLOPE TO DOWNHILL SIDE (TYPICAL)

SEE SHARP CURVE DETAIL THIS SHEET (TYPICAL)

SOUTH RED LOT PATH
(ALTERNATE #5)

PROTECT EXIST. TREES. (TYP. ALL TREES)

PERVIOUS PATHWAY TO FOLLOW EXIST. GRADES. SEE ARCHITECTURAL PLANS FOR PATHWAY SECTION.

EXISTING ENTRANCE ROAD

PROTECT EXIST. STORM MANHOLE AND OUTLET PIPE.

PROVIDE TEMPORARY BIOFILTER BAGS AT ALL INLETS (TYP.) SEE DETAIL, SHEET CB2.2

INSTALL SEDIMENTATION BASIN PER DETAIL, SHEET CB2.3

PROVIDE TEMPORARY EROSION CONTROL SEDIMENT FENCE PER DETAIL, SHEET CB2.3 (TYP.)

INSTALL LEVEL SPREADER EVERY 25' PER DETAIL, SHEET CB2.3 (TYP.)

EXISTING BIO-SWALE:
LENGTH = 305'
WIDTH = 6.0'
S = 0.0200

INSTALL TEMPORARY BIOFILTER BAG CHECK DAMS PER DETAIL, SHEET CB2.2 (TYP.)

CUT EXISTING SWALE GRASS AS LOW AS POSSIBLE AND HYDROSEED WITH EMERGENT HERBACEOUS WETLAND PLANTINGS PER WET BIOSWALE MIX, SHEET CB2.4

PROTECT EXIST. POND

EXISTING POND "D"

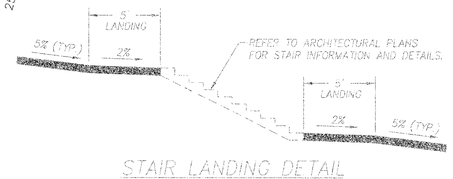
EXIST. 12" STORM

PROTECT EXIST. STORM MANHOLE. INSTALL FLOW CONTROL STRUCTURE PER DETAIL, SHEET CB2.4
(1) - 7.25" ORIFICE @ 206.28
15" RISER PIPE @ 207.90
RIM EL. = 210.98
I.E. IN = 206.03 (EXIST. 12", W)
I.E. OUT = 206.28 (EXIST. 12", E)

BRIDGE

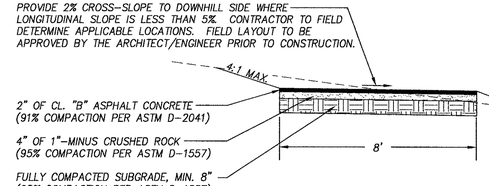
AC WALK

REFER TO ARCHITECTURAL PLANS FOR STAIR INFORMATION AND DETAILS.



STAIR LANDING DETAIL
N.T.S.

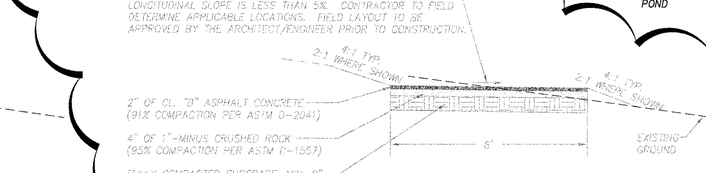
PROVIDE 2% CROSS-SLOPE TO DOWNHILL SIDE WHERE LONGITUDINAL SLOPE IS LESS THAN 5%. CONTRACTOR TO FIELD DETERMINE APPLICABLE LOCATIONS. FIELD LAYOUT TO BE APPROVED BY THE ARCHITECT/ENGINEER PRIOR TO CONSTRUCTION.



2" OF CL. "B" ASPHALT CONCRETE (91% COMPACTION PER ASTM D-2041)
4" OF 1"-MINUS CRUSHED ROCK (95% COMPACTION PER ASTM D-1557)
FULLY COMPACTED SUBGRADE, MIN. 8" (95% COMPACTION PER ASTM D-1557)

SECTION A-A
N.T.S.

PROVIDE 2% CROSS-SLOPE TO DOWNHILL SIDE WHERE LONGITUDINAL SLOPE IS LESS THAN 5%. CONTRACTOR TO FIELD DETERMINE APPLICABLE LOCATIONS. FIELD LAYOUT TO BE APPROVED BY THE ARCHITECT/ENGINEER PRIOR TO CONSTRUCTION.



2" OF CL. "B" ASPHALT CONCRETE (91% COMPACTION PER ASTM D-2041)
4" OF 1"-MINUS CRUSHED ROCK (95% COMPACTION PER ASTM D-1557)
FULLY COMPACTED SUBGRADE, MIN. 8" (95% COMPACTION PER ASTM D-1557)

SECTION B-B
N.T.S.

HHPR Harper Houf Peterson Righellis Inc.
ENGINEERS - PLANNERS
1104 Main Street, Suite 100, Vancouver, WA 98660
tel 360.750.1131 www.hrcivil.com fax 360.750.1141

0 15' 30' 60'
SCALE: 1" = 30'

LSW architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

KELLY D. BACHELDER — STATE OF WASHINGTON — 40581 — REGISTERED PROFESSIONAL ENGINEER
EXPIRES: 10/31/06

drawn by
KDB/TLH
checked by
CER
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.04.05
SPR

revisions
6/6/05 - PER COMMENTS

12/2005 RECORD DRAWINGS

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

PATHWAY GRADING, DRAINAGE, & EROSION CONTROL PLAN

CB2.1
SHEET 3 OF 11

LSW-04

RECORD DRAWINGS
DECEMBER 2005
AS-BUILT INFORMATION PROVIDED BY 2KG CONTRACTORS

HHPR Harper Houf Peterson Righellis Inc.
ENGINEERS • PLANNERS
1104 Main Street, Suite 100, Vancouver, WA 98660
tel 360.750.1131 www.hrcivil.com fax 360.750.1141

LSW architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510



drawn by
KDB
checked by
CER
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.04.05
SPR

revisions
6/6/05 - PER COMMENTS
12/2005 RECORD DRAWINGS

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

STD. EROSION CONTROL NOTES AND DETAILS

CB2.2
SHEET 4 OF 11

LSW-04

STANDARD NOTES FOR EROSION CONTROL PLAN

1. The Contractor shall install and maintain BMP's as shown and perform all actions necessary to prevent erosion, and control sediment from leaving the construction site. Site Contractor shall comply with Clark County Code Chapter 40.380.050.

2. All erosion control measures shall be in-place and in working condition prior to disturbing and exposing any soil surfaces (i.e. silt fence, construction entrance, sedimentation barriers, sedimentation traps).

3. All erosion prevention and control BMP's shall be maintained and repaired as needed to insure continued performance of their intended function. Needed repairs shall be made as soon as practicable. They are to remain in place and operational during all phases of construction. Construction activities shall not continue or resume until repairs to erosion control facilities are made and the facilities are functional. Any sediment leaving the site or discharging to a sensitive area shall be stopped and controlled immediately. Contaminated areas shall be cleaned and restored.

4. Clearing limits and work area limits shall be delineated and marked. Do not disturb more area than needed for construction requirements.

5. All sensitive or critical areas (wetlands, steep slopes, natural waterways), and buffers shall all be clearly delineated and clearly marked, and protected from sediment deposition.
6. Sediment laden runoff shall be prevented from entering all existing storm water catch basins and inlets affected by construction.

7. No exposed, bare soils shall remain unstabilized for more than two days during the period October 1 thru April 30 or for more than seven days during the period of May 1 through September 30. All disturbed soil surfaces shall be stabilized by a suitable application of "Best Management Practices".

8. Where feasible, no more than 500 feet of trench shall be open at one time. Excavated material shall be placed on the up-hill side of trenches provided it does not conflict with safety requirements.

9. Dewatering devices shall discharge into a sediment trap or sediment pond. No discharge shall be made to a paved street or stormwater collection system without first removing sediment.

10. Cut and fill slopes shall be constructed in a manner that will minimize erosion. Erosion shall be controlled and prevented by such measures as roughening the surface, installation of interceptor ditches, terracing, covering with matting, mulch or plastic sheeting. Runoff shall be prevented from entering a slope and from undercutting the base of slopes.

11. Any soil or debris transported onto roadways and sidewalks shall be removed. Deposits shall be completely removed by shoveling and/or sweeping. Washing shall not be utilized unless specifically approved in writing by the County.

12. All permanent infiltration systems shall be isolated and protected from sediment laden runoff entering to avoid risk of reducing the ability of the systems to infiltrate. Isolation and protection shall not be removed until the drainage area tributary to the system is completely stabilized.

CONTINUED ON SHEET 2

NO.	REVISIONS	DATE	BY

DWG: ECN1.DWG

Department of Public Works
CLARK COUNTY WASHINGTON
proud past, promising future

STANDARD NOTES FOR EROSION CONTOL PLAN
APPROVED
Peter Capell, COUNTY ENGINEER — 01/01/04 DATE

STANDARD ECN1
PLAN No.
DESIGNED SCH
DRAWN SCH
DATE 08/02/02

STANDARD NOTES FOR EROSION CONTROL PLAN (CONTINUED)

13. All conveyance channels, both temporary and permanent shall be stabilized to prevent erosion of the channel. Stabilization shall extend to areas at outlets and downstream reaches vulnerable to erosion resulting from flow discharging from the channel.

14. If BMP's shown are utilized but are insufficient to prevent sediment from reaching water bodies, adjacent properties, or public rights-of-way; additional BMP's shall be implemented immediately to prevent further encroachment of sediment.

15. Stabilized areas shall be provided for employee parking and storage of construction materials. Erodeable stockpiles of earthen materials, such as topsoil, silty and clayey soils; and landscape materials, shall be covered when not being incorporated in the work. Erosion control BMP's shall be utilized as necessary to prevent sediment laden runoff from leaving or sediment being transported from these areas from vehicle activity.

16. All pollutants other than sediment that occur during construction shall be handled and disposed of in a manner that does not cause contamination of storm water.

17. The Contractor shall keep an inspection log of the condition of the erosion control facilities. Erosion control facilities shall be inspected at least weekly and after each rainfall. The inspection log shall be kept at the project site at a designated location and shall be available for review by the County. An individual that has successfully completed the County's Erosion Control Certification course shall perform inspections and maintain the log.

18. All temporary BMP's shall be removed within 30 days after final site stabilization is achieved. Trapped sediment shall be deposited and stabilized on site. Areas disturbed resulting from removal shall be permanently stabilized.

19. Construction shall not be considered complete and acceptable until all disturbed soil surfaces have been protected from erosion with permanent landscaping, covering with impervious surfaces, restored to original undisturbed condition or permanently stabilized.

20. Vegetated stabilization and landscaping shall be fertilized, watered and maintained to insure that growth of vegetation is established and sustained.

21. During dry weather construction periods the contractor shall provide project-specific dust control measures that may include: Seeding, Mulching, Matting, Water, Tackifier, or Chemical Soil Stabilizers. The contractor shall maintain the dust control measures through dry weather periods until all disturbed areas have been stabilized. Immediately re-stabilize areas disturbed by contractor's operations or other activities (wind, water, vandalism, etc.).

22. Entry onto the construction site shall be restricted to a single approved entrance as shown on the plan.

23. Maintenance and repair of heavy equipment and vehicles which involve potential contaminants (oil,solvents,hydraulic fluid, etc.) must be conducted in a manner which prevents contamination of soils, surface water and ground water. Tarps, drip pans, or other appropriate measures shall be used as necessary.

24. Stripping, topsoil, and unsuitable material stockpiles shall be hydroseeded with "regreen wheat x wheat grass hybrid" by Hobbs and Hobkins (or approved equal). Maintenance of stockpile areas and reapplication of hydroseed covering shall be required if bare soil is present. During winter and wet weather conditions, stockpiles shall be covered with plastic sheeting per detail E-16.

SHEET 2 OF 2

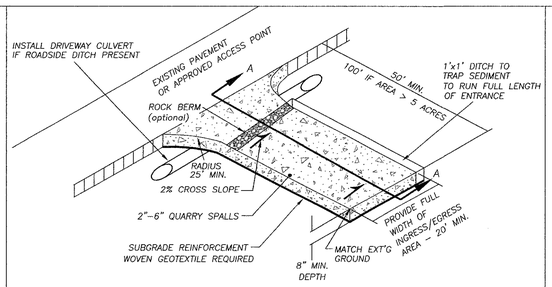
NO.	REVISIONS	DATE	BY

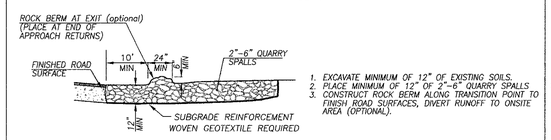
DWG: ECN2.DWG

Department of Public Works
CLARK COUNTY WASHINGTON
proud past, promising future

STANDARD NOTES (CONTINUED) FOR EROSION CONTOL PLAN
APPROVED
Peter Capell, COUNTY ENGINEER — 01/01/04 DATE

STANDARD ECN2
PLAN No.
DESIGNED SCH
DRAWN SCH
DATE 07/22/03





SECTION A-A

1. EXCAVATE MINIMUM OF 12" OF EXISTING SOILS.
2. PLACE MINIMUM OF 12" OF 2"-6" QUARRY SPALLS
3. CONSTRUCT ROCK BERM ALONG TRANSITION POINT TO FINISH ROAD SURFACES, DIVERT RUNOFF TO ONSITE AREA (OPTIONAL).

NOTES:

1. FOR DEVELOPMENT PROJECTS REVIEWED BY ENGINEERING SERVICES. NOT FOR USE WITH SINGLE FAMILY OR DUPLEX RESIDENTIAL BUILDING PERMITS. SEE BUILDING DEPT. FOR GRAVEL CONSTRUCTION ENTRANCE PLAN.
2. INSTALL WOVEN GEOTEXTILE FABRIC TO PREVENT SUB-SOIL PUMPING.
3. VEHICLE WASHDOWN AREA, IF REQUIRED, IS TO BE INSTALLED AND USED TO REMOVE SEDIMENT FROM VEHICLES THAT ARE ABOUT TO ENTER AN ESTABLISHED ROAD.
4. WASHDOWN AREA TO BE MADE UP OF CLEAN 2"- 6" QUARRY SPALLS, 1" DEEP (MIN) OVER WOVEN GEOTEXTILE FABRIC. WASHDOWN AREA TO BE FULL WIDTH OF ENTRANCE AND 50' (MIN.), AND 100' IF EXPOSED SOIL IS OVER 5 ACRES.
5. AT TIME OF PRECONSTRUCTION MEETING, THE COUNTY INSPECTOR MAY REQUIRE THE ENTRANCE TO BE PAVED TO THE EDGE OF THE RIGHT-OF-WAY PRIOR TO THE INSTALLATION OF A WASHDOWN ENTRANCE TO AVOID DAMAGE TO THE EXISTING ROADWAY.
6. THE RESPONSIBLE EROSION CONTROL INDIVIDUAL IS TO ENSURE THAT ALL VEHICLES USE THIS ENTRANCE AND ARE TO BE INSPECTED AND CLEANED OF SOILS BEFORE LEAVING PROJECT, AND THAT THE ENTRANCE IS TO BE KEPT CLEAN AT ALL TIMES.

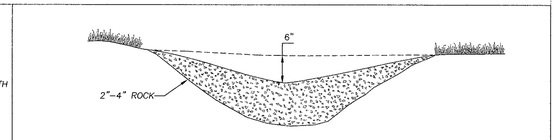
NO.	REVISIONS	DATE	BY

DWG: E-1.DWG

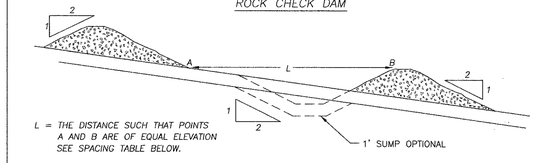
Department of Public Works
CLARK COUNTY WASHINGTON
proud past, promising future

STANDARD CONSTRUCTION ENTRANCE
APPROVED
Peter Capell, COUNTY ENGINEER — 01/01/04 DATE

STANDARD E-1
PLAN No.
DESIGNED SCH
DRAWN SCH
DATE 07/07/03



ROCK CHECK DAM



L = THE DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATION SEE SPACING TABLE BELOW.

SPACING BETWEEN CHECK DAMS

CHECK DAM NOTES:

1. CHECK DAMS ARE CONSTRUCTED ACROSS A SWALE OR DITCH TO REDUCE VELOCITIES OF CONCENTRATED FLOWS, THEREBY REDUCING EROSION AND ALLOWING A SIGNIFICANT AMOUNT OF SUSPENDED SEDIMENT TO SETTLE OUT.

2. CHECK DAMS SHALL BE USED IN TEMPORARY OR PERMANENT CHANNELS THAT DRAIN 10 ACRES OR LESS, ARE NOT YET VEGETATED, AND WHEN INSTALLING CHANNEL LINING IS NOT FEASIBLE.

3. USE TYPICAL ROCK SIZE OF 2-4 INCH. PLACE ROCK BY HAND OR BY MECHANICAL MEANS RATHER THAN DUMPING THE ROCK. BRIDGE ENTIRE DITCH OR SWALE WIDTH AND ENSURE THE CENTER OF THE DAM IS 6" LOWER THAN THE OUTER ENDS. FOR HIGHER VELOCITY FLOWS: ±5 FPS USE 6"-12" RIPRAP, AND HAND PLACE LARGER ROCK ON UPSTREAM SIDE OF DAM.

4. REMOVE CHECK DAMS FROM GRASS-LINED DITCHES AND SWALES ONCE THE GRASS IS ESTABLISHED. SEED, MULCH OR MAT THE AREA WHERE THE CHECK DAMS WERE, IMMEDIATELY FOLLOWING REMOVAL.

5. INSPECT ONCE PER WEEK ON ACTIVE SITES, ONCE EVERY TWO WEEKS ON INACTIVE SITES, AND WITHIN 24 HOURS FOLLOWING A 0.5 INCH RAIN EVENT. REMOVE SEDIMENT ONCE IT REACHES ONE-THIRD THE DEPTH OF THE ROCK WEIR. REPLACE ROCK WEIR WHEN FILTERING CAPACITY IS REDUCED BY ONE-HALF.

6. SPACING TABLE FOR CHECK DAMS:

DITCH GRADE	MINIMUM WEIR DEPTH		
	6 INCH	12 INCH	18 INCH
6%	**	L=16 ft O.C.	L=26 ft O.C.
5%	**	L= 20 ft	L= 30 ft
4%	**	L= 26 ft	L= 40 ft
3%	15 ft	L= 33 ft	L= 50 ft
2%	25 ft	L= 50 ft	L= 80 ft

**NOT ALLOWED

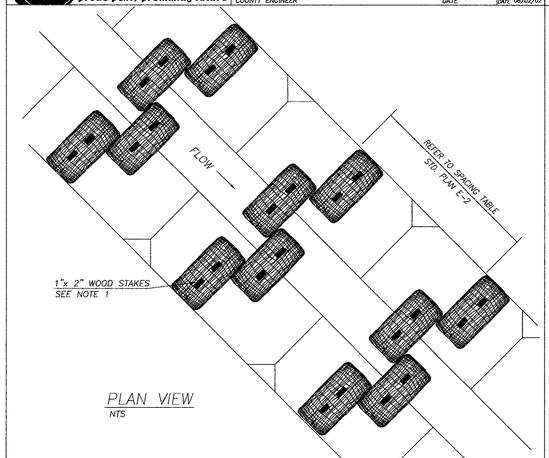
NO.	REVISIONS	DATE	BY

DWG: E-2.DWG

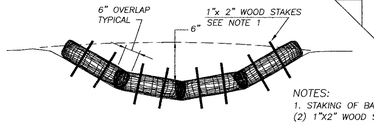
Department of Public Works
CLARK COUNTY WASHINGTON
proud past, promising future

ROCK CHECK DAM
APPROVED
Peter Capell, COUNTY ENGINEER — 01/01/04 DATE

STANDARD E-2
PLAN No.
DESIGNED SCH
DRAWN SCH
DATE 08/02/02



PLAN VIEW
NTS



PROFILE
NTS

NOTES:
1. STAKING OF BAGS REQUIRED USING (2) 1"x2" WOOD STAKES OR APPROVED EQUAL PER BAG.
2. SURFACE MUST BE SMOOTH BEFORE APPLICATION.
3. SEE CHECK DAM NOTES STD. PLAN E-2

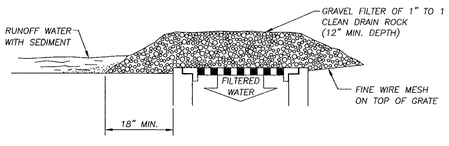
NO.	REVISIONS	DATE	BY

DWG: E-2a

Department of Public Works
CLARK COUNTY WASHINGTON
proud past, promising future

BIO-FILTER BAG CHECK DAM
APPROVED
Peter Capell, COUNTY ENGINEER — 01/01/04 DATE

STANDARD E-2a
PLAN No.
DESIGNED SCH
DRAWN SCH
DATE 08/07/02



GRAVEL & WIRE MESH

NOT TO BE USED IN TRAVELED WAY IF IT MAY RESULT IN A TRAFFIC HAZARD

INLET PROTECTION NOTES:

1. INLET PROTECTION IS INTENDED TO PREVENT COARSE SEDIMENT FROM ENTERING STORM DRAINAGE SYSTEMS BY FILTERING RUNOFF AND RETAINING SEDIMENT BEFORE IT REACHES A DRAINAGE OR STORM SEWER SYSTEM.
2. PLACE INLET PROTECTION IN AREAS WHERE WATER CAN POND, AND WHERE PONDING WILL NOT HAVE ADVERSE IMPACTS.
3. INLET PROTECTION MUST ALLOW FOR OVERFLOW IN A SEVERE STORM EVENT.
4. INLET PROTECTION TYPES INCLUDE: TYPE 1 - GRAVEL AND WIRE MESH
TYPE 2 - MASONRY AND ROCK
TYPE 3 - SEDIMENT FENCE
TYPE 4 - BIOFILTER BAGS
TYPE 5 - CATCH BASIN INSERT
5. INSPECT ONCE PER WEEK ON ACTIVE SITES, ONCE EVERY TWO WEEKS ON INACTIVE SITES, AND WITHIN 24 HOURS FOLLOWING A 0.5 INCH RAIN EVENT.
6. CLEAN INLET PROTECTION DURING AND AFTER EACH SIGNIFICANT STORM AND REMOVE SEDIMENT FROM BEHIND STRUCTURE AFTER EVERY STORM.
7. IF ROCK BECOMES CLOGGED WITH SEDIMENT, IT MUST BE CAREFULLY REMOVED FROM THE INLET AND EITHER CLEANED OR REPLACED.
8. ASSESS THE IMPACT OF ALLOWING WATER TO POND AT THE INLET AND PROVIDE AN OVERFLOW WEIR OR SOME OTHER TYPE OF RELIEF AS NEEDED.
9. CONSIDER THE EFFECT OF PLACING OBSTRUCTIONS AT INLETS ON GRADE MAY HAVE ON THEIR EFFICIENCY.
10. USE MECHANICAL MEANS TO REMOVE SEDIMENT DEPOSITS (SHOVEL, BROOM, SWEEPER/VACTOR UNIT).
11. REMOVE SEDIMENT ACCUMULATED ON OR AROUND THE PROTECTION AS NEEDED TO MAINTAIN INTENDED FUNCTION.
12. REPAIR OR REPLACE MATERIALS AS NEEDED TO ENSURE PROPER FUNCTION.

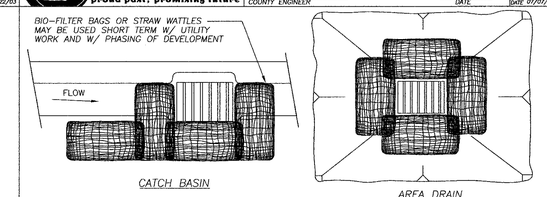
NO.	REVISIONS	DATE	BY

DWG: E-3.DWG

Department of Public Works
CLARK COUNTY WASHINGTON
proud past, promising future

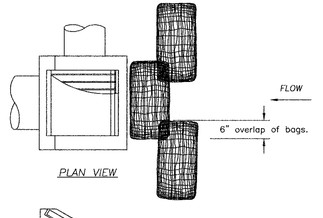
INLET PROTECTION TYPE 1 GRAVEL AND WIRE MESH
APPROVED
Peter Capell, COUNTY ENGINEER — 01/01/04 DATE

STANDARD E-3
PLAN No.
DESIGNED SCH
DRAWN SCH
DATE 08/07/02

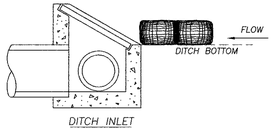


CATCH BASIN

AREA DRAIN



PLAN VIEW



DITCH INLET

NOTES:

1. ADDITIONAL MEASURES MUST BE CONSIDERED DEPENDING ON SOIL TYPE.
2. BIO-FILTER BAGS SHOULD BE STAKED WHERE APPLICABLE USING (2) 1"x2" WOODEN STAKES OR APPROVED EQUAL PER BAG.
3. STRAW WATTLES MUST BE STABILIZED BY ATTACHING WIRE CLIPS TO THE CATCH BASIN PER MANUFACTURES SPECIFICATIONS.
4. INLET PROTECTION MUST BE REGULARLY INSPECTED BY THE EROSION CONTROL INDIVIDUAL TO INSURE PROPER PLACEMENT/FUNCTION AND MAINTENANCE.
5. SEE INLET PROTECTION NOTES STD. PLAN E-3

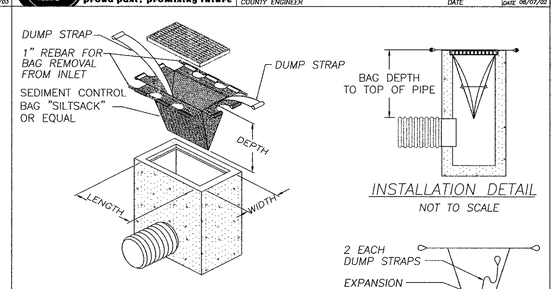
NO.	REVISIONS	DATE	BY

DWG: E-3c.DWG

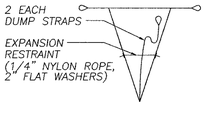
Department of Public Works
CLARK COUNTY WASHINGTON
proud past, promising future

INLET PROTECTION TYPE 4 BIOFILTER BAGS
APPROVED
Peter Capell, COUNTY ENGINEER — 01/01/04 DATE

STANDARD E-3c
PLAN No.
DESIGNED SCH
DRAWN SCH
DATE 08/07/02



INSTALLATION DETAIL
NOT TO SCALE



BAG DETAIL
NOT TO SCALE

CB STYLE	LENGTH	WIDTH	DEPTH
Type 1 CB	24"	20"	Varies
Type 1 CCI	29.5"	24"	Varies
USA G2	32.5"	27.5"	Varies

INLET SEDIMENT CONTROL DEVICE - SILT SACK
NTS

NOTES:
1. THE DIMENSION CHART ABOVE IS FOR STANDARD CATCH BASINS AND INLETS ONLY. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE CORRECT SIZE DEVICE FOR EACH INLET.
2. FOR NON-STANDARD CATCH BASINS AND INLETS, THE CONTRACTOR SHALL MEASURE DIMENSIONS IN THE FIELD AND ORDER THE APPROPRIATE SIZE(S).
3. THE INLET SEDIMENT CONTROL DEVICE SHALL BE OF HIGH FLOW DESIGN (200 GAL/MIN/FT), AS PER THE MANUFACTURER'S SPECS.
4. THE SEDIMENT CONTROL DEVICE SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND MAINTAINED A MINIMUM ONCE PER MONTH OR WITHIN THE 48 HOURS FOLLOWING A STORM EVENT. FILTER SHALL BE CLEANED IN A MANNER WHICH ENSURES THAT ALL SEDIMENT REMAINS ON SITE.
5. SUBSTITUTION OF A SHEET OF FILTER FABRIC PLACED OVER THE OPENING OF THE INLET IS NOT APPROVED.
6. RECESSED CURB INLET CATCH BASINS MUST BE BLOCKED WHEN USING FILTER FABRIC INLET SACKS, SIZE OF FILTER INLET SACK TO BE DETERMINED BY MANUFACTURER.
7. THE FILTER SHALL BE REPLACED OR CLEANED WHEN THE BAG BECOMES HALF FULL.
8. SEE INLET PROTECTION NOTES STD. PLAN E-3

NO.	REVISIONS	DATE	BY
1	REVISE VERSION	11/10/03	SCH

DWG: E-3d.DWG

Department of Public Works
CLARK COUNTY WASHINGTON
proud past, promising future

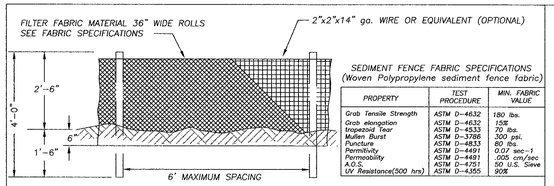
INLET PROTECTION TYPE 5 SILT SACK
APPROVED
Peter Capell, COUNTY ENGINEER — 01/01/04 DATE

STANDARD E-3d
PLAN No.
DESIGNED SCH
DRAWN SCH
DATE 08/07/02

RECORD DRAWINGS
DECEMBER 2005

AS-BUILT INFORMATION PROVIDED BY 2KG CONTRACTORS

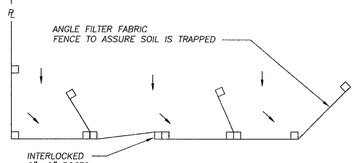
HHPR Harper Houf Peterson Righellis Inc.
ENGINEERS • PLANNERS
1104 Main Street, Suite 100, Vancouver, WA 98660
tel 360.750.1131 www.hrcivil.com fax 360.750.1141



SEDIMENT FENCE FABRIC SPECIFICATIONS
(Woven Polypropylene sediment fence fabric)

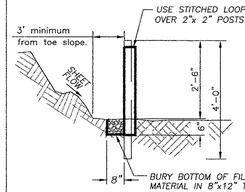
PROPERTY	TEST PROCEDURE	MIN. FABRIC VALUE
Grab Tensile Strength	ASTM D-4632	180 lbs.
Grab elongation	ASTM D-4632	15%
Trapezoid Tear	ASTM D-4533	70 lbs.
Mullen Burst	ASTM D-3786	300 psi.
Puncture	ASTM D-4833	80 lbs.
Permitivity	ASTM D-4491	0.07 sec-1
Permeability	ASTM D-4491	.005 cm/sec
A.O.S.	ASTM D-4751	50 U.S. Sieve
UV Resistance(500 hrs)	ASTM D-4355	90%

FRONT VIEW
NTS



PLAN VIEW
NTS

NOTES
1. THIS SEDIMENT BARRIER UTILIZES STANDARD STRENGTH OR EXTRA STRENGTH SYNTHETIC FILTER FABRICS, IT IS DESIGNED FOR SITUATIONS IN WHICH ONLY SHEET OR OVERLAND FLOWS ARE EXPECTED. (SEE FABRIC SPECIFICATIONS ABOVE)
2. BURY BOTTOM OF FILTER FABRIC 6" VERTICALLY BELOW FINISHED GRADE.
3. POST ARE TO BE 2"x2" FIR, PINE OR STEEL FENCE POSTS.
4. POST TO BE INSTALLED ON UPHILL SIDE OF SLOPE.
5. COMPACT BOTH SIDES OF FILTER FABRIC TRENCH.
6. SEDIMENT FENCE TO BE SPACED ON SLOPES PER TABLE BELOW.



PROFILE
NTS

INSTALL PARALLEL ALONG CONTOURS AS FOLLOWS

% SLOPE	SLOPE	MAX. SPACING ON SLOPE
10% FLATTER	10:1 OR FLATTER	300 ft.
10>%<15	10:1>x<7.5:1	150 ft.
15>%<20	7.5:1>x<5:1	100 ft.
20>%<30	5:1>x<3.5:1	50 ft.
30>%<50	3.5:1>x<2:1	25 ft.

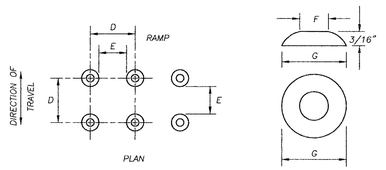
DWG: E-4.DWG

NO.	REVISIONS	DATE	BY

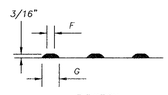
Department of Public Works
CLARK COUNTY WASHINGTON
proud past, promising future

STANDARD SEDIMENT FENCE
APPROVED
Peter Capell, COUNTY ENGINEER — 01/01/04 DATE

STANDARD E-4 | PLAN No. | DESIGNED SCH | DRAWN SCH | DATE 01/01/03



	MIN.	MAX.
D	1 5/8"	2 3/8"
E	5/8"	1 1/2"
F	7/16"	3/4"
G	7/8"	1 7/16"



TRUNCATED DOMES (SEE NOTE 2)
DETECTABLE WARNING
PATTERN DETAIL

NOTES
1. AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREA.
2. THE DETECTABLE WARNING PATTERNS CAN BE CREATED BY ACCEPTABLE MEANS THAT WILL ACHIEVE THE TRUNCATED DOME DIMENSIONS AND SPACING SHOWN.
3. PLACE TRUNCATED DOME DETECTABLE WARNING TEXTURE IN THE LOWER 24" OF THE THROAT OF THE RAMP ONLY. ARRANGE DOMES USING IN-LINE PATTERN ONLY AS SHOWN. COLOR OF TEXTURE (COATING) SHALL BE SAFETY YELLOW IN COMPLIANCE WITH WSDOT STD. SPEC. OR AS INSTRUCTED BY COUNTY INSPECTOR.
4. FOR CONSTRUCTION OF SIDEWALK RAMPS OUTSIDE OF PUBLIC RIGHT-OF-WAY, CHECK WITH STATE BUILDING CODES.

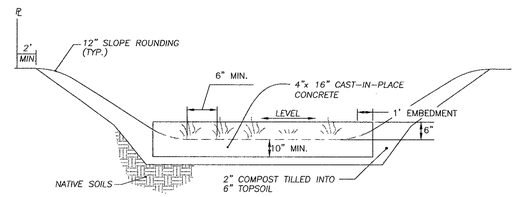
DWG: F10.DWG

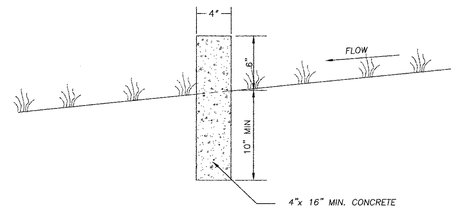
NO.	REVISIONS	DATE	BY

Department of Public Works
CLARK COUNTY WASHINGTON
proud past, promising future

TRUNCATED DOME
DETECTABLE WARNING PATTERN
APPROVED
Peter Capell, COUNTY ENGINEER — 01/01/04 DATE

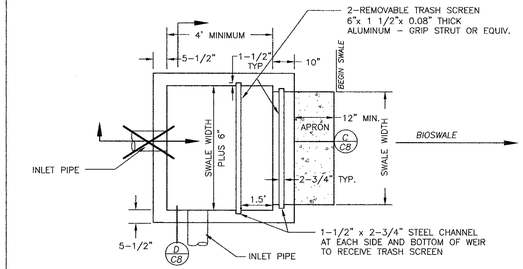
STANDARD F10 | PLAN No. | DESIGNED SCH | DRAWN SCH | DATE 6/15/03





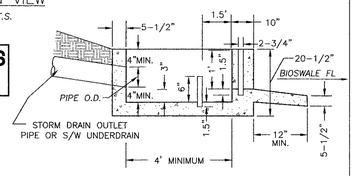
NOTES
1. LEVEL SPREADERS SHALL BE INSTALLED AT AN INTERVAL OF 25'. THE SPREADER SHALL BE INSTALLED LEVEL AND ON CONTOUR.
2. CONCRETE SPREADER SHALL BE CAST-IN-PLACE. TOP OF SPREADER SHALL BE BROOM FINISHED IN THE DIRECTION OF FLOW.

LEVEL SPREADER
N.T.S.

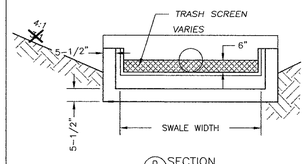


PLAN VIEW
N.T.S.

REVISED FOR THIS PROJECT ONLY



C8 SECTION
N.T.S.



D C8 SECTION
N.T.S.

NOTE:
1. ALL CONCRETE SHALL BE 3000 PSI.
2. STRUCTURE CAN BE USED AS AN EFFECTIVE TEMPORARY EROSION CONTROL SEDIMENTATION TRAP DURING SITE GRADING.
3. TRASH SCREEN CAN BE LINED WITH FILTER FABRIC FOR SEDIMENT REMOVAL.
4. BIOSWALE SEDIMENTATION TRAP IS REQUIRED WITH ALL BIOSWALES, UNLESS OMISSION APPROVED BY REVIEWING AUTHORITY.

DWG: D11.5.DWG

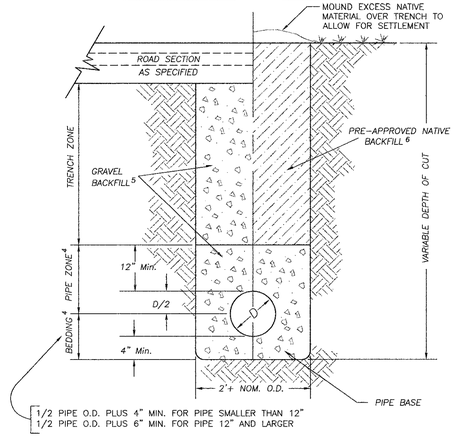
NO.	REVISIONS	DATE	BY

Department of Public Works
CLARK COUNTY WASHINGTON
proud past, promising future

BIOSWALE SEDIMENTATION TRAP
APPROVED
Peter Capell, COUNTY ENGINEER — 01/01/04 DATE

STANDARD D11.5 | PLAN No. | DESIGNED SCH | DRAWN SCH | DATE 01/01/03

TRAFFIC AREAS NON-TRAFFIC AREAS



NOTES
1. FOR INSTALLATION OF DRAINAGE PIPE IN NEW DEVELOPMENT.
2. GENERAL PIPE INSTALLATION REQUIREMENTS SHALL BE PER SECTION 7-08 WSDOT SPECS.
3. TRENCH BACK FILL SHALL CONFORM TO CCC 40.350.030(C)(4)(e).
4. PIPE ZONE AND BEDDING MATERIAL SHALL CONFORM TO SECTION 9-03.12(3) WSDOT SPECS.
5. GRAVEL BACKFILL PER WSDOT SPECIFICATION SECTION 9-03.19, AND COMPACTED TO 95% MAX. DENSITY (AASHTO T-99). NATIVE SOILS MAY BE USED UPON APPROVAL BY REVIEWING AUTHORITY IF TESTING SHOWS MATERIAL IS CLASSIFIED AS A-1 OR A-3 BY AASHTO.
6. OUTSIDE THE ROADWAY PRISM, SUITABLE NATIVE BACKFILL SHALL BE COMPACTED TO 90% MAX. DENSITY (AASHTO T-99).
7. ALL COMPACTION SHALL BE IN ACCORDANCE WITH THE COMPACTION CONTROL TEST OF SECTION 2-03.3(14)D.

DWG: D14.DWG

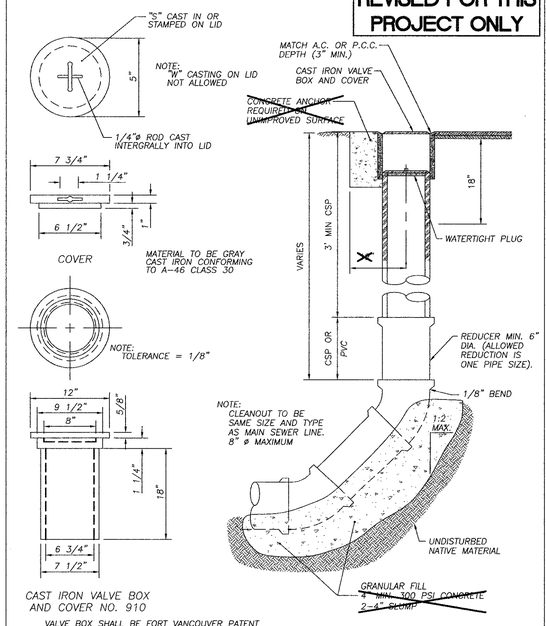
NO.	REVISIONS	DATE	BY

Department of Public Works
CLARK COUNTY WASHINGTON
proud past, promising future

PIPE BEDDING AND BACKFILL DETAIL
APPROVED
Peter Capell, COUNTY ENGINEER — 01/01/04 DATE

STANDARD D14 | PLAN No. | DESIGNED SCH | DRAWN SCH | DATE 6/14/03

REVISED FOR THIS PROJECT ONLY



CAST IRON VALVE BOX
AND COVER NO. 910

VALVE BOX SHALL BE FORT VANCOUVER PATENT NO. 910 CAST IRON OR APPROVED EQUAL

DWG: D15.DWG

NO.	REVISIONS	DATE	BY

Department of Public Works
CLARK COUNTY WASHINGTON
proud past, promising future

STANDARD CLEANOUT
APPROVED
Peter Capell, COUNTY ENGINEER — 01/01/04 DATE

STANDARD D15 | PLAN No. | DESIGNED | DRAWN | DATE 10/03/02

LSW architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

KELLY D. BACHELDER — STATE OF WASHINGTON — 40581 — REGISTERED PROFESSIONAL ENGINEER — 12/16/05

EXPIRES: 10/31/06

drawn by
JRT
checked by
KDB/CER
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.04.05
SPR

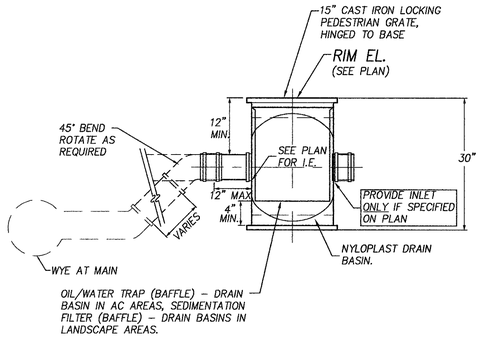
revisions
6/6/05 - PER COMMENTS
12/2005 RECORD DRAWINGS

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC.

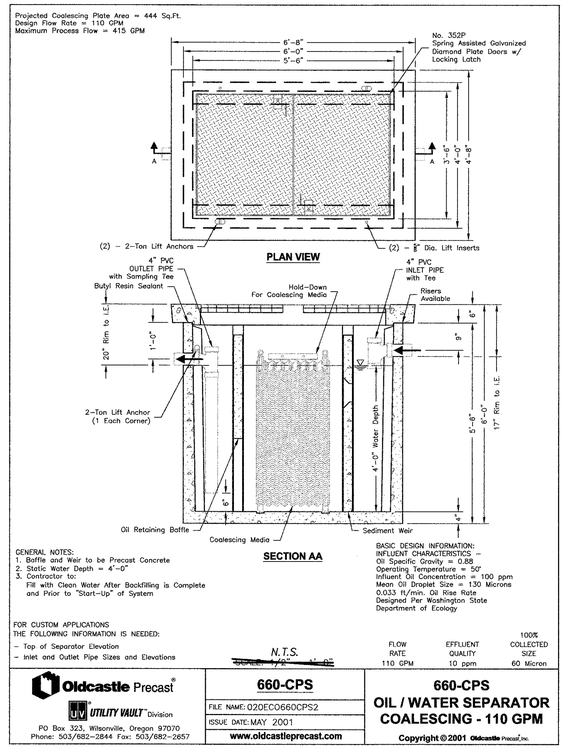
EROSTION CONTROL, GRADING, AND STORMWATER DETAILS

CB2.3

LSW-04



15" AREA DRAIN DETAIL
N.T.S.



HHPR
Harper Houf Peterson Righellis Inc.
ENGINEERS - PLANNERS
1104 Main Street, Suite 100, Vancouver, WA 98660
tel 360.750.1131 www.hrcivil.com fax 360.750.1141

SWALE PLANTINGS (WETLAND RATE: 0.5 lb./1000 S.F.)

EMERGENT HERBACEOUS WETLAND PLANTINGS MIX

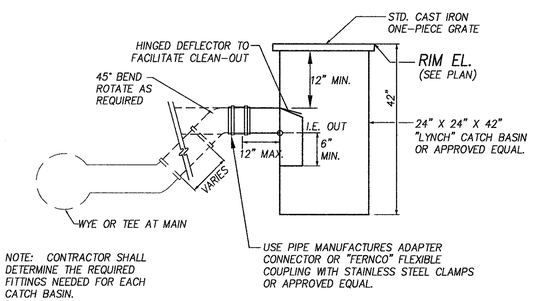
SMALL FRUITED BULLRUSH (SCIRPUS MICROCARPUS)	25%
SLOUGH SEDGE (CAREX OBNUPTA)	15%
CAMAS (CAMASSIA QUAMMISH)	15%
SPREADING RUSH (JUNCUS SUPINIFORMIS)	13%
DAGGER LEAF RUSH (JUNCUS ENSILFOLIUS)	12%
CREEPING SPIKE RUSH (ELEOCHARIS PALUSTRIS)	12%
SLENDER RUSH (JUNCUS TENNIS)	8%

IN ADDITION TO WETLAND PLANTINGS, SWALE AREA TO BE INITIALLY SEEDED WITH REGREEN (TM) TEMPORARY COVER CROP PER MANUFACTURER'S SPECIFICATIONS (HOBBS & HOPKINS LTD.) REGREEN SEEDING RATE SHALL BE 10 LBS/ACRE OR APPROX. 0.25 LB/1000 S.F.

NOTES
SWALE TO HAVE VIABLE STAND OF VEGETATION INSPECTED AND APPROVED BY CLARK COUNTY PRIOR TO PAVING.

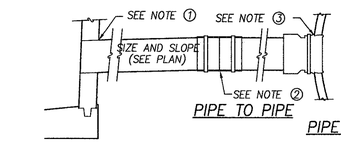
HYDROSEEDING SHALL BE AN ACCEPTABLE METHOD OF APPLICATION.

WET BIOSWALE MIX
N.T.S



NOTE: CONTRACTOR SHALL DETERMINE THE REQUIRED FITTINGS NEEDED FOR EACH CATCH BASIN.

STD. CATCH BASIN DETAIL
N.T.S.



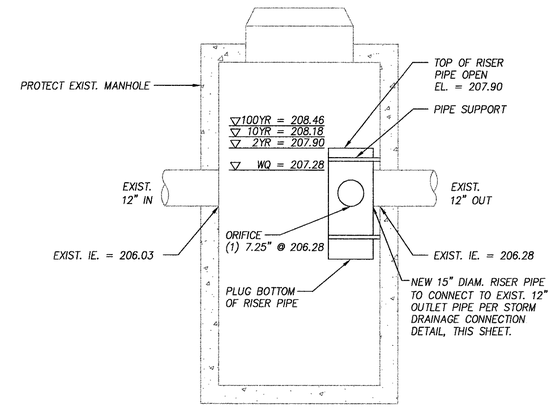
MANHOLE OR CATCH BASIN

① BREAK OUT WALL 2" MIN., 4" MAX. CLEAR OF PIPE WALL. GROUT SPACE WITH NON-SHRINK GROUT.

② USE "FERNCO" FLEXIBLE COUPLING WITH STAINLESS STEEL CLAMPS OR APPROVED EQUAL. FOR PIPES OVER 24" A CONCRETE FIELD COUPLING CAN BE USED IN LIEU OF A FLEXIBLE COUPLING.

③ CUT HOLE INTO PIPE AND INSTALL "FOWLER" SEWER BOOT TAP OR APPROVED EQUAL.

STORM DRAINAGE CONNECTIONS
N.T.S.



FLOW CONTROL STRUCTURE
N.T.S.

RECORD DRAWINGS
DECEMBER 2005
AS-BUILT INFORMATION PROVIDED BY 2KG CONTRACTORS

LSW architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

KELLY D. BACHELDER
STATE OF WASHINGTON
40581
REGISTERED PROFESSIONAL ENGINEER
12/14/05
EXPIRES: 10/31/06

drawn by
JRT
checked by
KDB/CER
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.04.05
SPR

revisions
6/6/05 - PER COMMENTS
12/2005 RECORD DRAWINGS

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

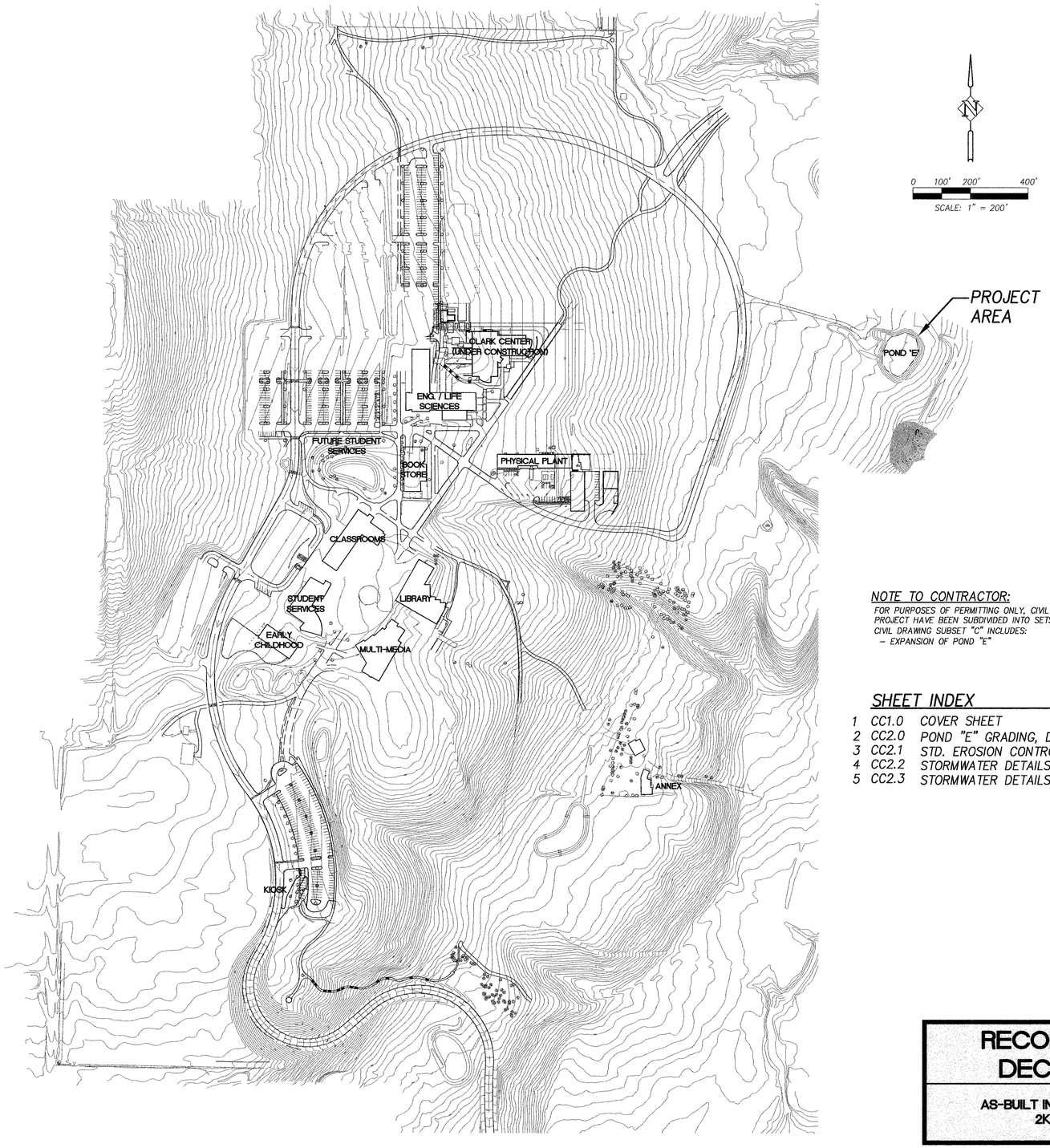
STORMWATER DETAILS

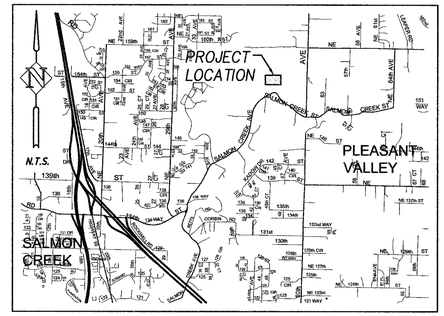
CB2.4
SHEET 6 OF 11
LSW-84

CAMPUS INFRASTRUCTURE 2003 - POND "E" EXPANSION

CIVIL DRAWING SUBSET "C"

HHPR Harper Houf Peterson Righellis Inc.
ENGINEERS • PLANNERS
1104 MAIN STREET, SUITE 100, VANCOUVER, WA 98660
TEL 360.750.1131 www.hrcivil.com FAX 360.750.1141





VICINITY MAP

PROPERTY OWNER:
WASHINGTON STATE UNIVERSITY
14204 N.E. SALMON CREEK AVENUE
VANCOUVER, WA 98686
CONTACT: DAVID SMITH
PH: (360) 546-9576

BENCHMARK
CLARK COUNTY GEODETIC CONTROL POINT #37.
A 3-1/2" BRASS DISK SET IN CONCRETE WITH CASE AND COVER AT THE INTERSECTION OF N.E. 159TH ST. AND N.E. 50TH AVE.
ELEVATION = 212.838 CLARK COUNTY DATUM (NGVD 1929-47)

NOTE TO CONTRACTOR:
FOR PURPOSES OF PERMITTING ONLY, CIVIL DRAWINGS FOR THIS PROJECT HAVE BEEN SUBDIVIDED INTO SETS A, B, C AND H.
CIVIL DRAWING SUBSET "C" INCLUDES:
- EXPANSION OF POND "E"

SHEET INDEX

1 CC1.0 COVER SHEET
2 CC2.0 POND "E" GRADING, DRAINAGE AND EROSION CONTROL
3 CC2.1 STD. EROSION CONTROL NOTES AND DETAILS
4 CC2.2 STORMWATER DETAILS
5 CC2.3 STORMWATER DETAILS

RECORD DRAWINGS
DECEMBER 2005
AS-BUILT INFORMATION PROVIDED BY 2KG CONTRACTORS

CLARK COUNTY
DEPARTMENT OF COMMUNITY DEVELOPMENT
ENGINEERING SERVICES

PLANNING LAND USE#
ENGINEERING# ENG2005-00021
INSPECTION#

CLARK COUNTY WASHINGTON — proud past, promising future

Recommended For Approval

Signature		Date
Jim Scott	Clark County Fire Marshal	3/7/05
N/A	Clark County Wetlands Biologist Case#	
David L. Howe		3/2/05
	Clark County Habitat Biologist Case#	
Mark R. Barrett		3/1/05
	Clark County Grading Review	
Mark R. Barrett		3/1/05
	Clark County Erosion Control Review	
Mark R. Barrett		3/1/05
	Clark County Storm Water Plan Review	
Mark R. Barrett		3/1/05
	Clark County Transportation Review	

A	N/A	
☒	☐	Stormwater & Erosion Control Ordinance CCC 13.29
☐	☒	Transportation Standards Ordinance CCC 12.05A
☐	☒	Transportation Landscaping Review
☐	☒	Utility Review CCC 13.12A & 12.20A
☐	☒	Clark County Signing & Striping
☐	☒	Road Modification CCC 12.05A.660
☐	☒	CARA CCC 13.70
☒	☐	Geological Hazard Areas Reg. CCC 13.60
☐	☒	Flood Plain Combining District CCC 18.327
☒	☐	Sewer and Water on Plan
☐	☒	Clark County M & O Pavement Defl. Testing
☒	☐	Private Stormwater Covenant
☒	☐	Record Drawing Guarantee
☒	☐	UBC Chapter 33

RECOMMENDED for APPROVAL
Engineering Team Leader — Date: 3/02/2005

APPROVED for CONSTRUCTION
Clark County Engineer — Date: 3/15/2005

Plans Approved for Construction by the County does not in any way relieve the engineer of responsibility to meet all requirements of the County or obligation to protect life, health, and property of the public. The plan for any project shall be revised or supplemented at any time it is determined that the full requirements of the County have not been met.
Rev. 11/12/03

LSW architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t 360.694.8571
f 360.694.9510

KELLY D. BACHELDER — STATE OF WASHINGTON — 40581 — REGISTERED PROFESSIONAL ENGINEER
EXPIRES: 10/31/06

drawn by
KDB
checked by
CER
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.04.05
SPR

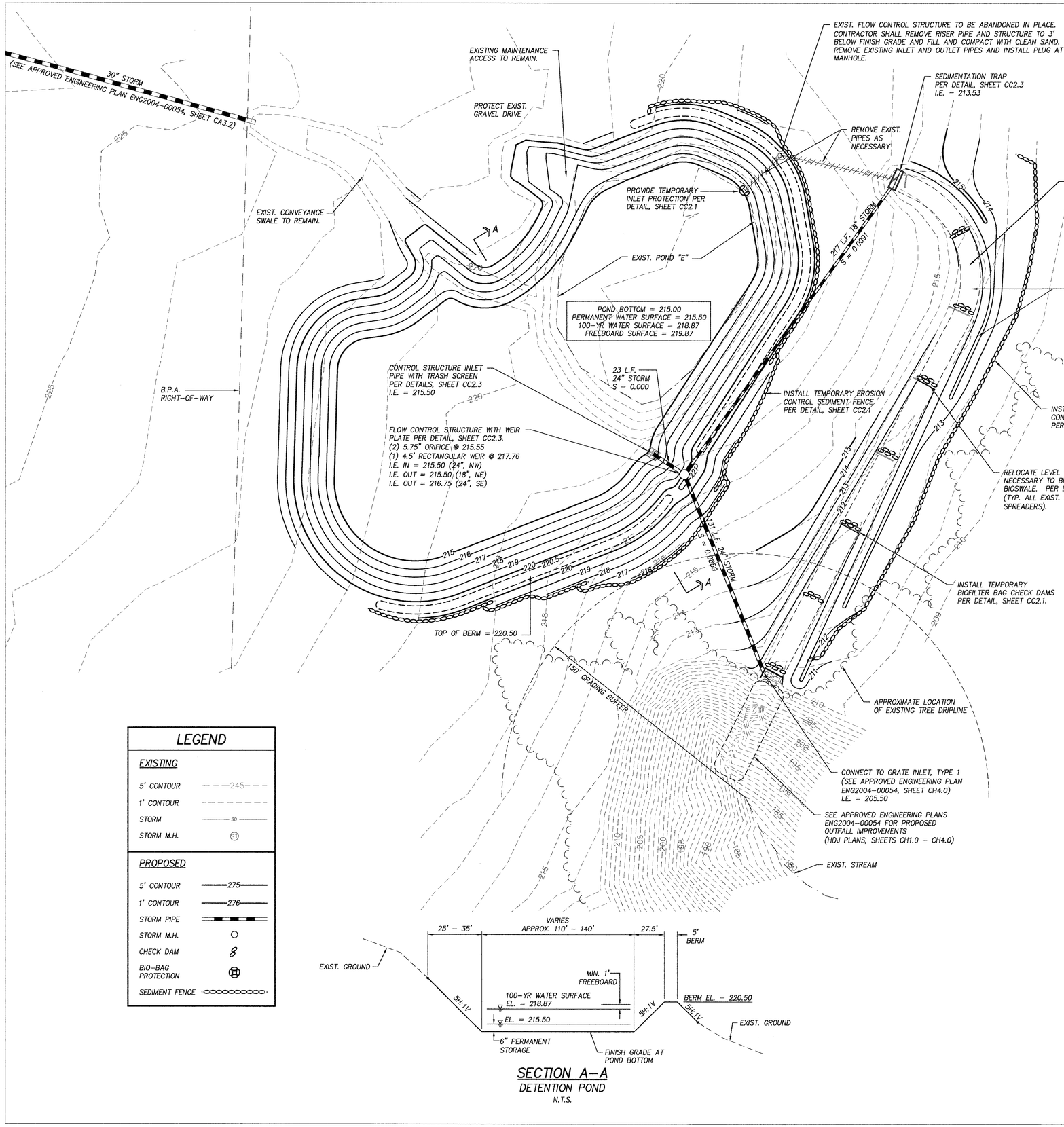
revisions
12/2005 RECORD DRAWINGS

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

COVER SHEET

CC1.0
SHEET 1 OF 5

LSV-94



LEGEND

EXISTING

- 5' CONTOUR — 245 —
- 1' CONTOUR
- STORM — SD —
- STORM M.H. SD

PROPOSED

- 5' CONTOUR — 275 —
- 1' CONTOUR — 276 —
- STORM PIPE
- STORM M.H.
- CHECK DAM
- BIO-BAG PROTECTION
- SEDIMENT FENCE

SECTION A-A
DETENTION POND
N.T.S.

GRADING NOTES

GRADING WORK SHALL CONFORM TO THE CONCLUSIONS AND RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL REPORT BY GRI GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS, DATED AUGUST 23, 2004.

ALL WORK PERFORMED SHALL MEET THE REQUIREMENTS OF THE LATEST INTERNATIONAL BUILDING CODE (IBC) AND THE LATEST UNIFORM PLUMBING CODE (UPC).

EXISTING UTILITIES AS SHOWN ON THE PLANS ARE A BEST EFFORT COMPILATION OF A "UTILITIES LOCATE", SURFACE LOCATIONS AND AS-BUILT DRAWINGS. THE CONTRACTOR SHALL VERIFY LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

SEE GEOTECHNICAL REPORT FOR ADDITIONAL REQUIREMENTS FOR "WET-WEATHER" CONSTRUCTION.

EROSION CONTROL

SIGNIFICANT VARIATION AND DEGREE OF EROSION CONTROL EFFORT WILL BE DICTATED BY WEATHER CONDITIONS. THE DEVELOPER AND CONTRACTOR SHOULD BE PREPARED TO PROVIDE EXTRA EROSION CONTROL PROVISIONS AND EFFORT DURING WINTER AND WET WEATHER CONDITIONS BEYOND THAT NORMALLY REQUIRED DURING SUMMER AND DRY WEATHER CONDITIONS. REFER TO SHEET CC2.1 FOR ADDITIONAL INFORMATION. FINE GRAINED AND UNCONSOLIDATED SOILS ON SLOPING SITES MAY BECOME UNSTABLE WHEN SUBJECT TO EXCESSIVE MOISTURE.

THE PROJECT CONSTRUCTION ENTRANCE(S) SHALL BE LOCATED AT THE CONTRACTOR'S CONVENIENCE. CONTRACTOR SHALL COORDINATE WITH COUNTY INSPECTOR AND OWNER. SEE DETAIL, SHEET CC2.1.

STORM DRAINAGE

CONTRACTOR SHALL VERIFY EXISTING STORM SYSTEM ELEVATIONS PRIOR TO CONSTRUCTION.

ON-SITE STORM SEWER IMPROVEMENTS SHALL CONFORM TO THE LATEST VERSION OF THE I.B.C. AND THE U.P.C. CONFORM TO W.S.D.O.T. SPECIFICATIONS WHERE NOTED. PUBLIC STORM SEWER IMPROVEMENTS SHALL CONFORM TO CLARK COUNTY REQUIREMENTS AND SPECIFICATIONS.

UNLESS OTHERWISE NOTED, STORM DRAIN PIPE, BENDS, AND FITTINGS SHALL BE SMOOTH INTERIOR, HIGH DENSITY POLYETHYLENE CORRUGATED PIPE AS PRODUCED AND SPECIFIED BY ADS, PRODUCT NAME N-12, OR APPROVED EQUAL. WHEN NOTED, PIPE SHALL BE C-900 PVC FOR PIPES WITH COVER LESS THAN 2 FEET. ALL STORM SEWER FITTINGS SHALL BE GASKETED.

PROVIDE LOCATE WIRE FOR ALL STORM SEWER PIPING. LOCATE WIRE SHALL BE NON-COATED, NO. 14 GA. SOFT DRAWN SOLID COPPER.

ALL PROPOSED STORM SYSTEM INLETS INCLUDING CATCH BASINS, AREA DRAINS AND DITCH INLETS SHALL HAVE TRAP OR SIPHON MECHANISM - "LYNCH" OR TYPE 60A TRAP OR EQUAL.

ADJUST ALL MANHOLE AND CLEANOUT RIMS TO FINISH GRADE, UNLESS OTHERWISE NOTED.

BEVEL PIPE END TO MATCH SLOPE ANGLE AS SHOWN ON PLANS.

INSTALL CLEANOUTS AS REQUIRED BY THE U.P.C.

DRAINAGE STRUCTURES SHALL BE LABELED AS FOLLOWS:
A. ALL CATCH BASINS, CURB INLETS, DITCH INLETS, AND MANHOLES SHALL BE STENCILED: "PLEASE PROTECT - DRAINS TO STREAM"

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROTECT AND MAINTAIN ANY STORM SYSTEM PIPING TO EXISTING DRAINAGE APPURTENANCES TO REMAIN.

UPON COMPLETION OF CONSTRUCTION, ALL STORMWATER QUALITY/QUANTITY FACILITIES SHALL BE PRIVATELY MAINTAINED BY WSU-VANCOUVER.

AS-BUILTS

REFER TO PROJECT SPECIFICATIONS FOR ALL AS-BUILT REQUIREMENTS.

RECORD DRAWINGS
DECEMBER 2005

AS-BUILT INFORMATION PROVIDED BY 2KG CONTRACTORS

HHPR
Harper Houf Peterson Righellis Inc.
ENGINEERS - PLANNERS
1104 Main Street, Suite 100, Vancouver, WA 98660
tel 360.750.1131 www.hrcivil.com fax 360.750.1141

lsw architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

KELLY D. BACHELDER, STATE OF WASHINGTON, 40581, REGISTERED PROFESSIONAL ENGINEER
EXPIRES: 10/31/06

drawn by
KDB
checked by
CER
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.04.05
SPR

revisions
12/2005 RECORD DRAWINGS

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

POND "E" GRADING, DRAINAGE AND EROSION CONTROL

CC2.0

LSW-84

RECORD DRAWINGS
DECEMBER 2005
AS-BUILT INFORMATION PROVIDED BY 2KG CONTRACTORS

HHPR Harper Houf Peterson Righellis Inc.
ENGINEERS • PLANNERS
1104 Main Street, Suite 100, Vancouver, WA 98660
tel 360.750.1131 www.hrcivil.com fax 360.750.1141

LSW architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

KELLY D. BACHLADER STATE OF WASHINGTON 40581 REGISTERED PROFESSIONAL ENGINEER
EXPIRES: 10/31/06

drawn by KDB
checked by CER
lsw job number 03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date 2.04.05 SPR
revisions 12/2005 RECORD DRAWINGS

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

STD. EROSION CONTROL NOTES AND DETAILS

CC2.1
SHEET 3 OF 5
LSW-04

STANDARD NOTES FOR EROSION CONTROL PLAN

1. The Contractor shall install and maintain BMP's as shown and perform all actions necessary to prevent erosion, and control sediment from leaving the construction site. Site Contractor shall comply with Clark County Code Chapter 40.380.050.

2. All erosion control measures shall be in-place and in working condition prior to disturbing and exposing any soil surfaces (i.e. silt fence, construction entrance, sedimentation barriers, sedimentation traps).

3. All erosion prevention and control BMP's shall be maintained and repaired as needed to insure continued performance of their intended function. Needed repairs shall be made as soon as practicable. They are to remain in place and operational during all phases of construction. Construction activities shall not continue or resume until repairs to erosion control facilities are made and the facilities are functional. Any sediment leaving the site or discharging to a sensitive area shall be stopped and controlled immediately. Contaminated areas shall be cleaned and restored.

4. Clearing limits and work area limits shall be delineated and marked. Do not disturb more area than needed for construction requirements.

5. All sensitive or critical areas (wetlands, steep slopes, natural waterways), and buffers shall all be clearly delineated and clearly marked, and protected from sediment deposition.
6. Sediment laden runoff shall be prevented from entering all existing storm water catch basins and inlets affected by construction.

7. No exposed, bare soils shall remain unstabilized for more than two days during the period October 1 thru April 30 or for more than seven days during the period of May 1 through September 30. All disturbed soil surfaces shall be stabilized by a suitable application of "Best Management Practices".

8. Where feasible, no more than 500 feet of trench shall be open at one time. Excavated material shall be placed on the up-hill side of trenches provided it does not conflict with safety requirements.

9. Dewatering devices shall discharge into a sediment trap or sediment pond. No discharge shall be made to a paved street or stormwater collection system without first removing sediment.

10. Cut and fill slopes shall be constructed in a manner that will minimize erosion. Erosion shall be controlled and prevented by such measures as roughening the surface, installation of interceptor ditches, terracing, covering with matting, mulch or plastic sheeting. Runoff shall be prevented from entering a slope and from undercutting the base of slopes.

11. Any soil or debris transported onto roadways and sidewalks shall be removed. Deposits shall be completely removed by shoveling and/or sweeping. Washing shall not be utilized unless specifically approved in writing by the County.

12. All permanent infiltration systems shall be isolated and protected from sediment laden runoff entering to avoid risk of reducing the ability of the systems to infiltrate. Isolation and protection shall not be removed until the drainage area tributary to the system is completely stabilized.

CONTINUED ON SHEET 2

DWG: ECN1.DWG

NO.	REVISIONS	DATE	BY

Department of Public Works CLARK COUNTY WASHINGTON proud past, promising future
STANDARD NOTES FOR EROSION CONTOL PLAN — APPROVED — Peter Capen, COUNTY ENGINEER — 01/01/04 DATE
STANDARD ECN1 PLAN No. DESIGNED SCH DRAWN SCH DATE 08/02/02

STANDARD NOTES FOR EROSION CONTROL PLAN (CONTINUED)

13. All conveyance channels, both temporary and permanent shall be stabilized to prevent erosion of the channel. Stabilization shall extend to areas at outlets and downstream reaches vulnerable to erosion resulting from flow discharging from the channel.

14. If BMP's shown are utilized but are insufficient to prevent sediment from reaching water bodies, adjacent properties, or public rights-of-way; additional BMP's shall be implemented immediately to prevent further encroachment of sediment.

15. Stabilized areas shall be provided for employee parking and storage of construction materials. Erodeable stockpiles of earthen materials, such as topsoil, silty and clayey soils; and landscape materials, shall be covered when not being incorporated in the work. Erosion control BMP's shall be utilized as necessary to prevent sediment laden runoff from leaving or sediment being transported from these areas from vehicle activity.

16. All pollutants other than sediment that occur during construction shall be handled and disposed of in a manner that does not cause contamination of storm water.

17. The Contractor shall keep an inspection log of the condition of the erosion control facilities. Erosion control facilities shall be inspected at least weekly and after each rainfall. The inspection log shall be kept at the project site at a designated location and shall be available for review by the County. An individual that has successfully completed the County's Erosion Control Certification course shall perform inspections and maintain the log.

18. All temporary BMP's shall be removed within 30 days after final site stabilization is achieved. Trapped sediment shall be deposited and stabilized on site. Areas disturbed resulting from removal shall be permanently stabilized.

19. Construction shall not be considered complete and acceptable until all disturbed soil surfaces have been protected from erosion with permanent landscaping, covering with impervious surfaces, restored to original undisturbed condition or permanently stabilized.

20. Vegetated stabilization and landscaping shall be fertilized, watered and maintained to insure that growth of vegetation is established and sustained.

21. During dry weather construction periods the contractor shall provide project-specific dust control measures that may include: Seeding, Mulching, Matting, Water, Tackifier, or Chemical Soil Stabilizers. The contractor shall maintain the dust control measures through dry weather periods until all disturbed areas have been stabilized. Immediately re-stabilize areas disturbed by contractor's operations or other activities (wind, water, vandalism, etc.).

22. Entry onto the construction site shall be restricted to a single approved entrance as shown on the plan.

23. Maintenance and repair of heavy equipment and vehicles which involve potential contaminants (oil,solvents,hydraulic fluid, etc.) must be conducted in a manner which prevents contamination of soils, surface water and ground water. Tarps, drip pans, or other appropriate measures shall be used as necessary.

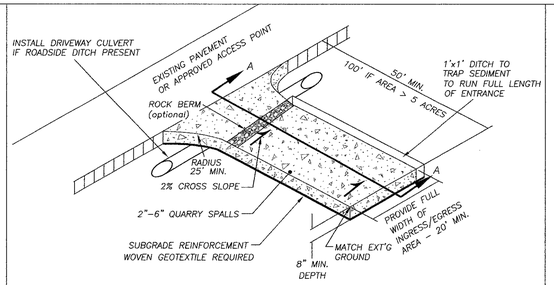
24. Stripping, topsoil, and unsuitable material stockpiles shall be hydroseeded with "regreen wheat x wheat grass hybrid" by Hobbs and Hobkins (or approved equal). Maintenance of stockpile areas and reapplication of hydroseed covering shall be required if bare soil is present. During winter and wet weather conditions, stockpiles shall be covered with plastic sheeting per detail E-16.

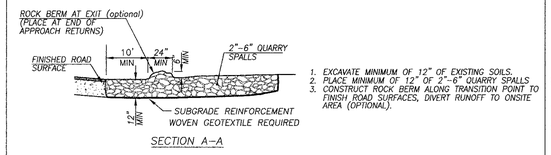
SHEET 2 OF 2

DWG: ECN2.DWG

NO.	REVISIONS	DATE	BY

Department of Public Works CLARK COUNTY WASHINGTON proud past, promising future
STANDARD NOTES (CONTINUED) FOR EROSION CONTOL PLAN — APPROVED — Peter Capen, COUNTY ENGINEER — 01/01/04 DATE
STANDARD ECN2 PLAN No. DESIGNED SCH DRAWN SCH DATE 07/02/03





SECTION A-A

1. EXCAVATE MINIMUM OF 12" OF EXISTING SOILS.
2. PLACE MINIMUM OF 12" OF 2"-6" QUARRY SPALLS
3. CONSTRUCT ROCK BERM ALONG TRANSITION POINT TO FINISH ROAD SURFACES, DIVERT RUNOFF TO ONSITE AREA (OPTIONAL).

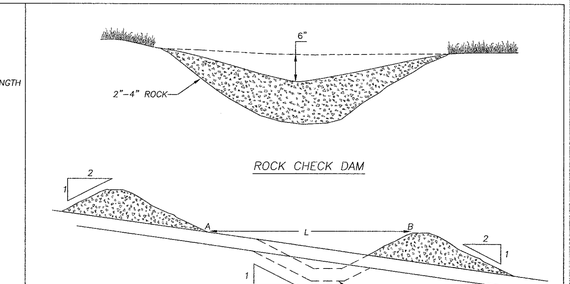
NOTES:

1. FOR DEVELOPMENT PROJECTS REVIEWED BY ENGINEERING SERVICES. NOT FOR USE WITH SINGLE FAMILY OR DUPLEX RESIDENTIAL BUILDING PERMITS. SEE BUILDING DEPT. FOR GRAVEL CONSTRUCTION ENTRANCE PLAN.
2. INSTALL WOVEN GEOTEXTILE FABRIC TO PREVENT SUB-SOIL PUMPING.
3. VEHICLE WASHDOWN AREA, IF REQUIRED, IS TO BE INSTALLED AND USED TO REMOVE SEDIMENT FROM VEHICLES THAT ARE ABOUT TO ENTER AN ESTABLISHED ROAD.
4. WASHDOWN AREA TO BE MADE UP OF CLEAN 2"- 6" QUARRY SPALLS, 1" DEEP (MIN) OVER WOVEN GEOTEXTILE FABRIC. WASHDOWN AREA TO BE FULL WIDTH OF ENTRANCE AND 50' (MIN.), AND 100' IF EXPOSED SOIL IS OVER 5 ACRES.
5. AT TIME OF PRECONSTRUCTION MEETING, THE COUNTY INSPECTOR MAY REQUIRE THE ENTRANCE TO BE PAVED TO THE EDGE OF THE RIGHT-OF-WAY PRIOR TO THE INSTALLATION OF A WASHDOWN ENTRANCE TO AVOID DAMAGE TO THE EXISTING ROADWAY.
6. THE RESPONSIBLE EROSION CONTROL INDIVIDUAL IS TO ENSURE THAT ALL VEHICLES USE THIS ENTRANCE AND ARE TO BE INSPECTED AND CLEANED OF SOILS BEFORE LEAVING PROJECT, AND THAT THE ENTRANCE IS TO BE KEPT CLEAN AT ALL TIMES.

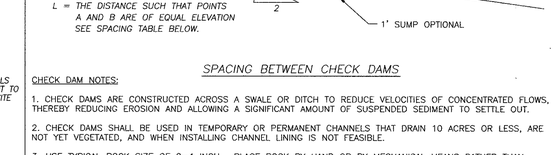
DWG: E-1.DWG

NO.	REVISIONS	DATE	BY

Department of Public Works CLARK COUNTY WASHINGTON proud past, promising future
STANDARD CONSTRUCTION ENTRANCE — APPROVED — Peter Capen, COUNTY ENGINEER — 01/01/04 DATE
STANDARD E-1 PLAN No. DESIGNED SCH DRAWN SCH DATE 07/07/03



ROCK CHECK DAM



SPACING BETWEEN CHECK DAMS

CHECK DAM NOTES:

1. CHECK DAMS ARE CONSTRUCTED ACROSS A SWALE OR DITCH TO REDUCE VELOCITIES OF CONCENTRATED FLOWS, THEREBY REDUCING EROSION AND ALLOWING A SIGNIFICANT AMOUNT OF SUSPENDED SEDIMENT TO SETTLE OUT.
2. CHECK DAMS SHALL BE USED IN TEMPORARY OR PERMANENT CHANNELS THAT DRAIN 10 ACRES OR LESS, ARE NOT YET VEGETATED, AND WHEN INSTALLING CHANNEL LINING IS NOT FEASIBLE.
3. USE TYPICAL ROCK SIZE OF 2-4 INCH. PLACE ROCK BY HAND OR BY MECHANICAL MEANS RATHER THAN DUMPING THE ROCK. BRIDGE ENTIRE DITCH OR SWALE WIDTH AND ENSURE THE CENTER OF THE DAM IS 6" LOWER THAN THE OUTER ENDS. FOR HIGHER VELOCITY FLOWS: ±5 FPS USE 6"-12" RIPRAP, AND HAND PLACE LARGER ROCK ON UPSTREAM SIDE OF DAM.
4. REMOVE CHECK DAMS FROM GRASS-LINED DITCHES AND SWALES ONCE THE GRASS IS ESTABLISHED. SEED, MULCH OR MAT THE AREA WHERE THE CHECK DAMS WERE, IMMEDIATELY FOLLOWING REMOVAL.
5. INSPECT ONCE PER WEEK ON ACTIVE SITES, ONCE EVERY TWO WEEKS ON INACTIVE SITES, AND WITHIN 24 HOURS FOLLOWING A 0.5 INCH RAIN EVENT. REMOVE SEDIMENT ONCE IT REACHES ONE-THIRD THE DEPTH OF THE ROCK WEIR. REPLACE ROCK WEIR WHEN FILTERING CAPACITY IS REDUCED BY ONE-HALF.
6. SPACING TABLE FOR CHECK DAMS:

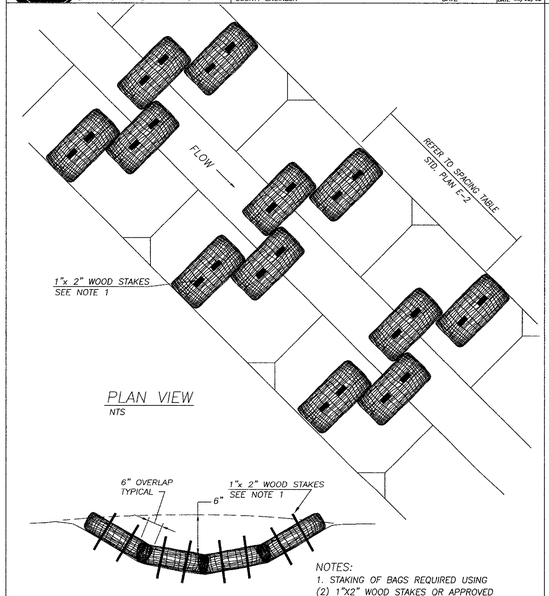
DITCH GRADE	MINIMUM WEIR DEPTH 6 INCH	12 INCH	18 INCH
6%	**	L=16 ft O.C.	L=26 ft O.C.
5%	**	L= 20 ft	L= 30 ft
4%	**	L= 26 ft	L= 40 ft
3%	15 ft	L= 33 ft	L= 50 ft
2%	25 ft	L= 50 ft	L= 80 ft

**NOT ALLOWED

DWG: E-2

NO.	REVISIONS	DATE	BY

Department of Public Works CLARK COUNTY WASHINGTON proud past, promising future
ROCK CHECK DAM — APPROVED — Peter Capen, COUNTY ENGINEER — 01/01/04 DATE
STANDARD E-2 PLAN No. DESIGNED SCH DRAWN SCH DATE 08/01/02



PLAN VIEW
NTS

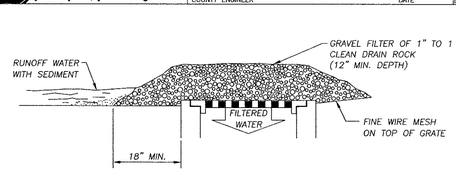
PROFILE
NTS

NOTES:
1. STAKING OF BAGS REQUIRED USING (2) 1"X2" WOOD STAKES OR APPROVED EQUAL PER BAG.
2. SURFACE MUST BE SMOOTH BEFORE APPLICATION.
3. SEE CHECK DAM NOTES STD. PLAN E-2

DWG: E-2a

NO.	REVISIONS	DATE	BY

Department of Public Works CLARK COUNTY WASHINGTON proud past, promising future
BIO-FILTER BAG CHECK DAM — APPROVED — Peter Capen, COUNTY ENGINEER — 01/01/04 DATE
STANDARD E-2a PLAN No. DESIGNED SCH DRAWN SCH DATE 08/01/02



GRAVEL & WIRE MESH

NOT TO BE USED IN TRAVELED WAY IF IT MAY RESULT IN A TRAFFIC HAZARD

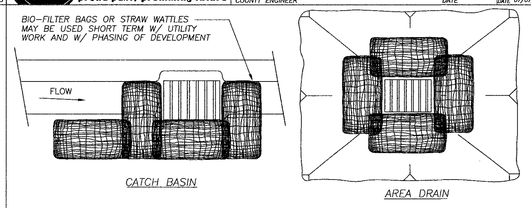
INLET PROTECTION NOTES:

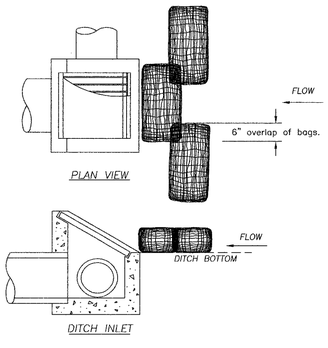
1. INLET PROTECTION IS INTENDED TO PREVENT COARSE SEDIMENT FROM ENTERING STORM DRAINAGE SYSTEMS BY FILTERING RUNOFF AND RETAINING SEDIMENT BEFORE IT REACHES A DRAINAGE OR STORM SEWER SYSTEM.
2. PLACE INLET PROTECTION IN AREAS WHERE WATER CAN POND, AND WHERE PONDING WILL NOT HAVE ADVERSE IMPACTS.
3. INLET PROTECTION MUST ALLOW FOR OVERFLOW IN A SEVERE STORM EVENT.
4. INLET PROTECTION TYPES INCLUDE:
   TYPE 1 - GRAVEL AND WIRE MESH
   TYPE 2 - MASONRY AND ROCK
   TYPE 3 - SEDIMENT FENCE
   TYPE 4 - BIOFILTER BAGS
   TYPE 5 - CATCH BASIN INSERT
5. INSPECT ONCE PER WEEK ON ACTIVE SITES, ONCE EVERY TWO WEEKS ON INACTIVE SITES, AND WITHIN 24 HOURS FOLLOWING A 0.5 INCH RAIN EVENT.
6. CLEAN INLET PROTECTION DURING AND AFTER EACH SIGNIFICANT STORM AND REMOVE SEDIMENT FROM BEHIND STRUCTURE AFTER EVERY STORM.
7. IF ROCK BECOMES CLOGGED WITH SEDIMENT, IT MUST BE CAREFULLY REMOVED FROM THE INLET AND EITHER CLEANED OR REPLACED.
8. ASSESS THE IMPACT OF ALLOWING WATER TO POND AT THE INLET AND PROVIDE AN OVERFLOW WEIR OR SOME OTHER TYPE OF RELIEF AS NEEDED.
9. CONSIDER THE EFFECT OF PLACING OBSTRUCTIONS AT INLETS ON GRADE MAY HAVE ON THEIR EFFICIENCY.
10. USE MECHANICAL MEANS TO REMOVE SEDIMENT DEPOSITS (SHOVEL, BROOM, SWEEPER/VACTOR UNIT).
11. REMOVE SEDIMENT ACCUMULATED ON OR AROUND THE PROTECTION AS NEEDED TO MAINTAIN INTENDED FUNCTION.
12. REPAIR OR REPLACE MATERIALS AS NEEDED TO ENSURE PROPER FUNCTION.

DWG: E-3.DWG

NO.	REVISIONS	DATE	BY

Department of Public Works CLARK COUNTY WASHINGTON proud past, promising future
INLET PROTECTION TYPE 1 GRAVEL AND WIRE MESH — APPROVED — Peter Capen, COUNTY ENGINEER — 01/01/04 DATE
STANDARD E-3 PLAN No. DESIGNED SCH DRAWN SCH DATE 08/01/02





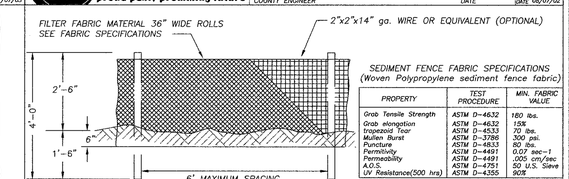
NOTES:

1. ADDITIONAL MEASURES MUST BE CONSIDERED DEPENDING ON SOIL TYPE.
2. BIO-FILTER BAGS SHOULD BE STAKED WHERE APPLICABLE USING (2) 1"x2" WOODEN STAKES OR APPROVED EQUAL PER BAG.
3. STRAW WATTLES MUST BE STABILIZED BY ATTACHING WIRE CLIPS TO THE CATCH BASIN PER MANUFACTURES SPECIFICATIONS.
4. INLET PROTECTION MUST BE REGULARLY INSPECTED BY THE EROSION CONTROL INDIVIDUAL TO INSURE PROPER PLACEMENT/FUNCTION AND MAINTENANCE.
5. SEE INLET PROTECTION NOTES STD. PLAN E-3

DWG: E-3c.DWG

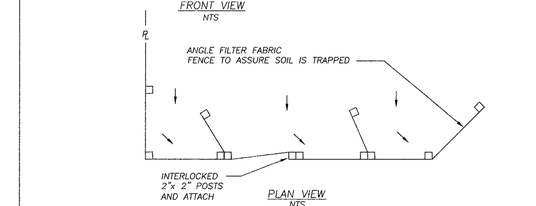
NO.	REVISIONS	DATE	BY

Department of Public Works CLARK COUNTY WASHINGTON proud past, promising future
INLET PROTECTION TYPE 4 BIOFILTER BAGS — APPROVED — Peter Capen, COUNTY ENGINEER — 01/01/04 DATE
STANDARD E-3c PLAN No. DESIGNED SCH DRAWN SCH DATE 08/07/03



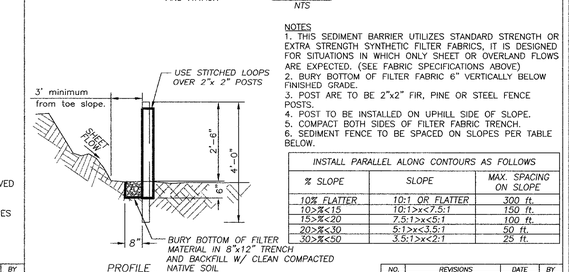
SEDIMENT FENCE FABRIC SPECIFICATIONS (Woven Polypropylene sediment fence fabric)

PROPERTY	TEST PROCEDURE	MIN. FABRIC VALUE
Grab Tensile Strength	ASTM D-4632	180 lbs.
Grab elongation	ASTM D-4632	15%
trapezoid Tear	ASTM D-4533	70 lbs.
Mullen Burst	ASTM D-3786	300 psi.
Puncture	ASTM D-4833	80 lbs.
Permitivity	ASTM D-4491	0.07 sec-1
Permeability	ASTM D-4491	.005 cm/sec
A.O.S.	ASTM D-4751	50 U.S. Sieve
UV Resistance(500 hrs)	ASTM D-4355	90%



NOTES
1. THIS SEDIMENT BARRIER UTILIZES STANDARD STRENGTH OR EXTRA STRENGTH SYNTHETIC FILTER FABRICS, IT IS DESIGNED FOR SITUATIONS IN WHICH ONLY SHEET OR OVERLAND FLOWS ARE EXPECTED. (SEE FABRIC SPECIFICATIONS ABOVE)
2. BURY BOTTOM OF FILTER FABRIC 6" VERTICALLY BELOW FINISHED GRADE.
3. POST ARE TO BE 2"x2" FIR, PINE OR STEEL FENCE POSTS.
4. POST TO BE INSTALLED ON UPHILL SIDE OF SLOPE.
5. COMPACT BOTH SIDES OF FILTER FABRIC TRENCH.
6. SEDIMENT FENCE TO BE SPACED ON SLOPES PER TABLE BELOW.

INSTALL PARALLEL ALONG CONTOURS AS FOLLOWS % SLOPE	SLOPE	MAX. SPACING ON SLOPE
10% FLATTER	10:1 OR FLATTER	300 ft.
10>%<15	10:1>x<7.5:1	150 ft.
15>%<20	7.5:1>x<5:1	100 ft.
20>%<30	5:1>x<3.5:1	50 ft.
30>%<50	3.5:1>x<2:1	25 ft.



PROFILE
NTS

DWG: E-4.DWG

NO.	REVISIONS	DATE	BY

Department of Public Works CLARK COUNTY WASHINGTON proud past, promising future
STANDARD SEDIMENT FENCE — APPROVED — Peter Capen, COUNTY ENGINEER — 01/01/04 DATE
STANDARD E-4 PLAN No. DESIGNED SCH DRAWN SCH DATE 07/07/03

HHPR
Harper Houf Peterson Righellis Inc.
ENGINEERS • PLANNERS
1104 Main Street, Suite 100, Vancouver, WA 98660
tel 360.750.1131 www.hrcivil.com fax 360.750.1141

lsw architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

KELLY D. BACHELDER — STATE OF WASHINGTON — 40581 — REGISTERED PROFESSIONAL ENGINEER — 12/16/05

EXPIRES: 10/31/06

drawn by JRT
checked by KDB/CER
lsw job number 03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date 2.04.05 SPR

revisions 12/2005 RECORD DRAWINGS

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

STORMWATER DETAILS

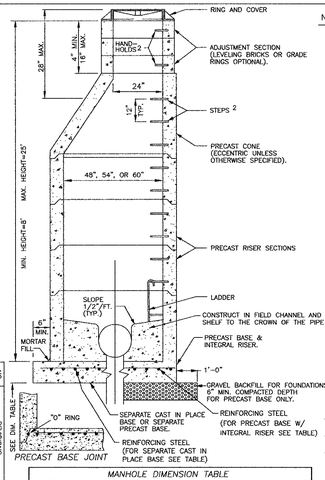
CC2.2
SHEET 4 OF 5
LSW-04

Department of Public Works
CLARK COUNTY WASHINGTON
proud past, promising future

STANDARD MANHOLE 48" TYPE 1
APPROVED — Peter Capell, COUNTY ENGINEER — 01/01/04 DATE
STANDARD D11
PLAN No.
DESIGNED SCH
DRAWN SCH
DATE 09/04/03

DWG: D11-04.DWG

NO.	REVISIONS	DATE	BY
10	REVISIONS		
9	REVISIONS		
8	REVISIONS		



NOTES:

1. MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH AASHTO M199 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE WSDOT/APWA STANDARD SPECIFICATIONS.
2. HANDHOLDS IN ADJUSTMENT SECTION SHALL HAVE 3" MIN. CLEARANCE. STEPS IN MANHOLE SHALL HAVE 6" MIN. CLEARANCE. SEE PLAN NO. D1.5, "MANHOLE DETAILS." HANDHOLDS SHALL BE PLACED IN ALTERNATING GRADE RINGS OR LEVELING BRICK COURSE WITH A MIN. OF ONE HAND HOLD BETWEEN THE LAST STEP AND THE TOP OF THE MANHOLE.
3. ALL REINFORCED CAST-IN-PLACE CONCRETE SHALL BE CLASS 4000. ALL PRECAST CONCRETE SHALL BE CLASS 4000. NON-REINFORCED CONCRETE IN CHANNEL AND SHELF SHALL BE CLASS 3000.
4. PRECAST BASES SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE WALL THICKNESS OF 2" MIN. UNUSED KNOCKOUTS NEED NOT BE GROUTED IF WALL IS LEFT INTACT. PIPES SHALL BE INSTALLED ONLY IN FACTORY KNOCKOUTS UNLESS OTHERWISE APPROVED BY THE ENGINEER.
5. KNOCKOUT OR CUTOUT HOLE SIZE SHALL EQUAL PIPE OUTER DIAM. PLUS MANHOLE WALL THICKNESS. SEE MANHOLE DIMENSION TABLE BELOW.
6. MANHOLE RINGS AND COVERS SHALL BE IN ACCORDANCE WITH SEC. 7.05 AND MEET THE STRENGTH REQUIREMENTS OF FEDERAL SPECIFICATION RR-F-621D. MATING SURFACES SHALL BE FINISHED TO ASSURE NON-ROCKING FIT WITH ANY COVER POSITION.
7. ALL BASE REINFORCING STEEL SHALL HAVE A MIN. YIELD STRENGTH OF 60,000 PSI AND BE PLACED IN THE UPPER HALF OF THE BASE WITH 1" MIN. CLEARANCE.
8. FOR HEIGHTS OF 12' OR LESS, MIN. SOIL BEARING VALUE SHALL EQUAL 3,300 POUNDS PER SQUARE FOOT. FOR HEIGHTS OVER 12', MIN. SOIL BEARING VALUE SHALL EQUAL 3,800 POUNDS PER SQUARE FOOT.
9. FOR DETAILS SHOWING GRADE RING, LADDER, STEPS, HANDHOLDS, AND TOP SLABS, SEE PLAN NO. D1.5, "MANHOLE DETAILS."
10. INSIDE DROP MAXIMUM TO BE 4' VERTICAL DISTANCE I.E. TO I.E.
11. KNOCKOUTS TO BE USED WHEN STUB OUT PIPE IS 3' OR LESS.
12. MINIMUM 0.20' FALL BETWEEN INLET AND OUTLET, ANY REDUCTION IN THIS DESIGN REQUIREMENT MUST BE APPROVED BY REVIEWING AUTHORITY.
13. SEE THE WSDOT/APWA STANDARD SPECIFICATIONS SEC. 7-05.3 FOR JOINT REQUIREMENTS.

MANHOLE DIMENSION TABLE

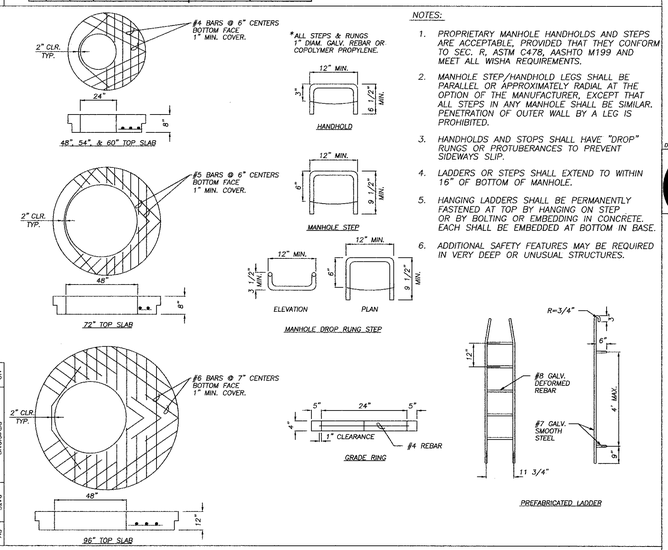
DIA.	THICKNESS WALL	THICKNESS BASE	MAXIMUM KNOCKOUT SIZE	MINIMUM DISTANCE BETWEEN KNOCKOUTS	BASE REINFORCING STEEL SQ IN/FT EACH DIRECTION: INTEGRAL BASE	BASE REINFORCING STEEL SQ IN/FT EACH DIRECTION: SEPARATE BASE
48"	4"	6"	36"	8"	0.19	0.31
54"	4.5"	8"	42"	8"	0.19	0.19
60"	5"	8"	48"	8"	0.25	0.25

Department of Public Works
CLARK COUNTY WASHINGTON
proud past, promising future

MANHOLE DETAILS
APPROVED — Peter Capell, COUNTY ENGINEER — 01/01/04 DATE
STANDARD D15
PLAN No.
DESIGNED SCH
DRAWN SCH
DATE 6/6/03

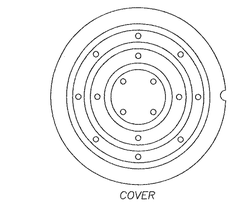
DWG: D15-04.DWG

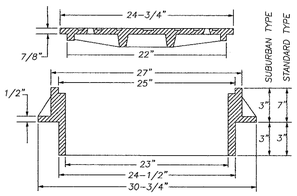
NO.	REVISIONS	DATE	BY
10	REVISIONS		
9	REVISIONS		
8	REVISIONS		



NOTES:

1. *PROPRIETARY MANHOLE HANDHOLDS AND STEPS ARE ACCEPTABLE, PROVIDED THAT THEY CONFORM TO SEC. R, ASTM C478, AASHTO M199 AND MEET ALL WISHA REQUIREMENTS.*
2. *MANHOLE STEP/HANDHOLD LEGS SHALL BE PARALLEL OR APPROXIMATELY RADIAL AT THE OPTION OF THE MANUFACTURER, EXCEPT THAT ALL STEPS IN ANY MANHOLE SHALL BE SIMILAR. PENETRATION OF OUTER WALL BY A LEG IS PROHIBITED.*
3. *HANDHOLDS AND STOPS SHALL HAVE "DROP" RUNGS OR PROTUBERANCES TO PREVENT SIDEWAYS SLIP.*
4. *LADDERS OR STEPS SHALL EXTEND TO WITHIN 16" OF BOTTOM OF MANHOLE.*
5. *HANGING LADDERS SHALL BE PERMANENTLY FASTENED AT TOP BY HANGING ON STEP OR BY BOLTING OR EMBEDDING IN CONCRETE. EACH SHALL BE EMBEDDED AT BOTTOM IN BASE.*
6. *ADDITIONAL SAFETY FEATURES MAY BE REQUIRED IN VERY DEEP OR UNUSUAL STRUCTURES.*





NOTES:

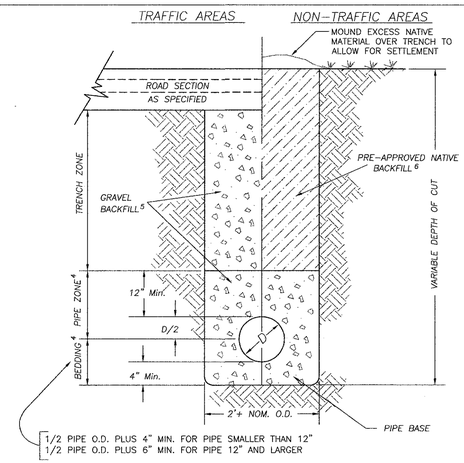
1. USE SUBURBAN TYPE ONLY IN NON-TRAFFIC AREAS, AND ONLY WITH APPROVAL BY COUNTY.
2. COVER MATERIAL TO BE DUCTILE IRON ASTM A536 GRADE 80-55-06
3. FRAME MATERIAL TO BE GRAY CAST IRON ASTM A-48 CLASS 30.
4. SEE WSDOT STANDARD SPECIFICATIONS SEC. 7.05
5. COVER AND FRAME TO BE MACHINED TO A TRUE BEARING ALL AROUND.
6. NOTCH LID FOR LIFTING HOOK.

Department of Public Works
CLARK COUNTY WASHINGTON
proud past, promising future

STANDARD MANHOLE FRAME AND COVER
APPROVED — Peter Capell, COUNTY ENGINEER — 01/01/04 DATE
STANDARD D1.6
PLAN No.
DESIGNED SCH
DRAWN SCH
DATE 09/04/03

DWG: D1-6.DWG

NO.	REVISIONS	DATE	BY
10	REVISIONS		
9	REVISIONS		
8	REVISIONS		



NOTES

1. FOR INSTALLATION OF DRAINAGE PIPE IN NEW DEVELOPMENT.
2. GENERAL PIPE INSTALLATION REQUIREMENTS SHALL BE PER SECTION 7-08 WSDOT SPECS.
3. TRENCH BACK FILL SHALL CONFORM TO CCC 40.350.030(C)(4)(e).
4. PIPE ZONE AND BEDDING MATERIAL SHALL CONFORM TO SECTION 9-03.12(3) WSDOT SPECS.
5. GRAVEL BACKFILL PER WSDOT SPECIFICATION SECTION 9-03.19, AND COMPACTED TO 95% MAX. DENSITY (AASHTO T-99). NATIVE SOILS MAY BE USED UPON APPROVAL BY REVIEWING AUTHORITY IF TESTING SHOWS MATERIAL IS CLASSIFIED AS A-1 OR A-3 BY AASHTO.
6. OUTSIDE THE ROADWAY PRISM, SUITABLE NATIVE BACKFILL SHALL BE COMPACTED TO 90% MAX. DENSITY (AASHTO T-99).
7. ALL COMPACTION SHALL BE IN ACCORDANCE WITH THE COMPACTION CONTROL TEST OF SECTION 2-03.3(14)D.

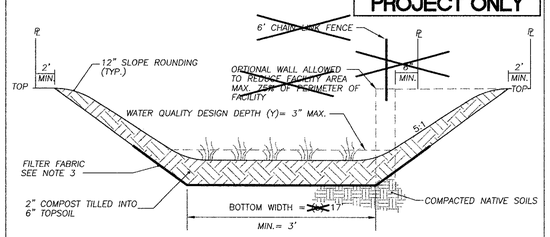
Department of Public Works
CLARK COUNTY WASHINGTON
proud past, promising future

PIPE BEDDING AND BACKFILL DETAIL
APPROVED — Peter Capell, COUNTY ENGINEER — 01/01/04 DATE
STANDARD D14
PLAN No.
DESIGNED SCH
DRAWN SCH
DATE 6/14/03

DWG: D14.DWG

NO.	REVISIONS	DATE	BY
10	REVISIONS		
9	REVISIONS		
8	REVISIONS		

REVISED FOR THIS PROJECT ONLY



WET/TREATMENT AREA SEED MIX

SCIENTIFIC NAME	COMMON NAME	*%
Festuca arundinacea	Tall Fescue	30
Elymus glaucus	Blue Wildrye	25
Festuca rubra	Native Red Fescue	10
Juncus tenuis	Slender Rush	10
Scirpus microcarpus	Small-fruited Bulrush	25

*% MIXTURE BY PURE LIVE SEED (PLS)
Hydroseed application rate: 4.5 lbs/Ac.
Broadcast application rate: 6 lbs/Ac.

DRY/UPPER SIDE SLOPE AREA SEED MIX

SCIENTIFIC NAME	COMMON NAME	*%
Bromus carinatus	California Brome	20
Elymus glaucus	Blue Wildrye	20
Festuca rubra	Native Red Fescue	50
Lupinus polyphyllus	Large-leaf Lupine	10

*% MIXTURE BY PURE LIVE SEED (PLS)
Hydroseed application rate: 32 lbs/Ac.
Broadcast application rate: 40 lbs/Ac.

NOTE: IF BIOSWALE IS INSTALLED DURING A PERIOD OF WET WEATHER, IT CAN BE ESTABLISHED BY SODDING. SINCE SOD IS NOT AVAILABLE IN RECOMMENDED GRASSES, IT SHOULD BE OVER SOWN WITH A RECOMMENDED MIX AT THE BEGINNING OF THE GROWING SEASON. IT IS RECOMMENDED TO INSTALL A SOD THAT IS A MIX OF CREEPING FESCUE AND HARD & SHEEP FESCUES.

NOTES

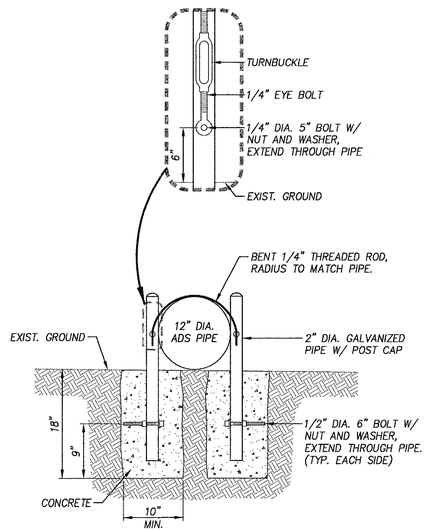
1. THE DESIGN OF WATER QUALITY FACILITIES SHALL MEET THE STANDARD AS SET FORTH IN CCC13.29.
2. SOD SHALL BE LAID PERPENDICULAR TO SLOPE FROM BOTTOM TO TOP, WITH JOINTS STAGGERED.
3. FOR NATIVE SOILS WITH CLASSIFICATIONS A-1-a, A-1-b, A-3, A-2-4, AND A-2-5 AS DEFINED IN AASHTO SPEC. M145, INSTALL LINO TYPAR-3401 FILTER FABRIC OR EQUIVALENT WITH PERMEABILITY RATE OF 0.5 TO 2.4 INCHES/HOUR.
4. SWALE LONGITUDINAL SLOPE: 1%-4% MAX. UNDERDRAINS REQUIRED FOR SLOPES LESS THAN 1%, SEE STANDARD PLAN D11.3
5. SWALE SHALL HAVE A VIABLE STAND OF GRASS APPROVED BY THE COUNTY INSPECTOR PRIOR TO PAVING.

Department of Public Works
CLARK COUNTY WASHINGTON
proud past, promising future

TYPICAL BIOSWALE SECTION
APPROVED — Peter Capell, COUNTY ENGINEER — 01/01/04 DATE
STANDARD D11.2
PLAN No.
DESIGNED SCH
DRAWN SCH
DATE 07/07/03

DWG: D11-2.DWG

NO.	REVISIONS	DATE	BY
10	REVISIONS		
9	REVISIONS		
8	REVISIONS		



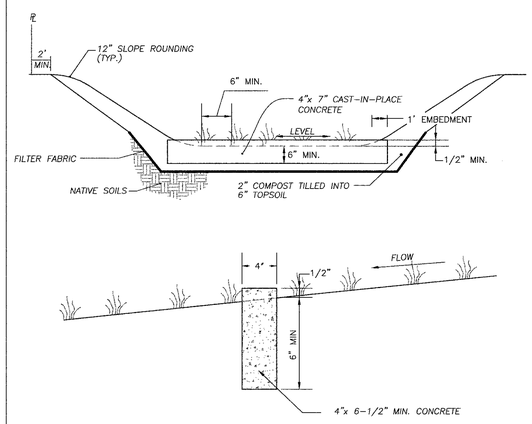
NOTES:

1. *CONTRACTOR TO EXERCISE CAUTION TO AVOID DAMAGING PIPE WHEN TIGHTENING TURNBUCKLE.*
2. *CONTRACTOR SHALL PROVIDE A MIN. OF 2" OF UNBENT THREADED ROD AT EACH END FOR CONNECTION TO TURNBUCKLE.*

PIPE ANCHOR DETAIL
N.T.S.

RECORD DRAWINGS
DECEMBER 2005

AS-BUILT INFORMATION PROVIDED BY 2KG CONTRACTORS



NOTES

1. LEVEL SPREADERS SHALL BE INSTALLED AT SWALE MIDPOINT FOR SHORT SWALE LENGTHS OF ±100, AND AT A MINIMUM INTERVAL OF 50', TO KEEP THE FLOWS FROM CONCENTRATING. THE SPREADER SHALL BE INSTALLED LEVEL AND ON CONTOUR.

2. CONCRETE SPREADER SHALL BE CAST-IN-PLACE. TOP OF SPREADER SHALL BE BROOM FINISHED IN THE DIRECTION OF FLOW.

DWG: D11-4.DWG

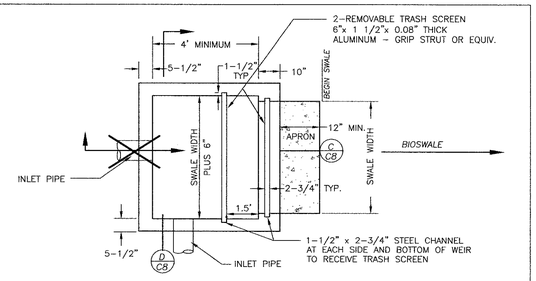
NO.	REVISIONS	DATE	BY

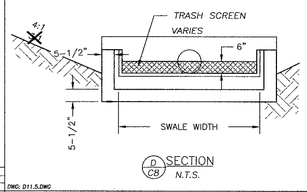
Department of Public Works
CLARK COUNTY
WASHINGTON
proud past, promising future

TYPICAL BIOSWALE LEVEL SPREADER

APPROVED
Peter Capell 01/01/04
COUNTY ENGINEER DATE

STANDARD D11.4
PLAN No.
DESIGNED SCH
DRAWN SCH
DATE 07/07/03





NOTE:

1. ALL CONCRETE SHALL BE 3000 PSI.

2. STRUCTURE CAN BE USED AS AN EFFECTIVE TEMPORARY EROSION CONTROL SEDIMENTATION TRAP DURING SITE GRADING.

3. TRASH SCREEN CAN BE LINED WITH FILTER FABRIC FOR SEDIMENT REMOVAL.

4. BIOSWALE SEDIMENTATION TRAP IS REQUIRED WITH ALL BIOSWALES, UNLESS OMISSION APPROVED BY REVIEWING AUTHORITY.

DWG: D11.5.DWG

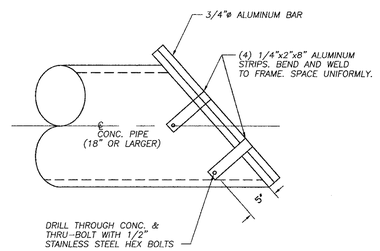
NO.	REVISIONS	DATE	BY

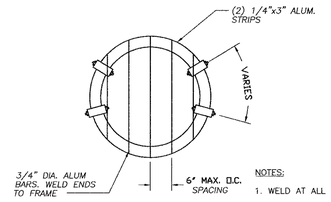
Department of Public Works
CLARK COUNTY
WASHINGTON
proud past, promising future

BIOSWALE SEDIMENTATION TRAP

APPROVED
Peter Capell 01/01/04
COUNTY ENGINEER DATE

STANDARD D11.5
PLAN No.
DESIGNED SCH
DRAWN SCH
DATE 07/07/03





NOTES:

1. WELD AT ALL JOINTS.

2. SHOP DRAWING REQUIRED.

3. USE WITH PLASTIC PIPE REQUIRES MODIFICATION TO BE REVIEWED AND APPROVED BY COUNTY ENGINEER.

DWG: D25.DWG

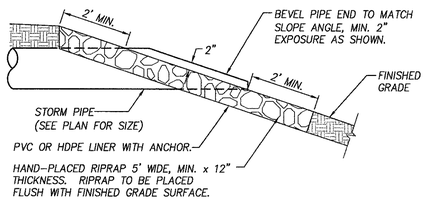
NO.	REVISIONS	DATE	BY

Department of Public Works
CLARK COUNTY
WASHINGTON
proud past, promising future

TRASH SCREEN

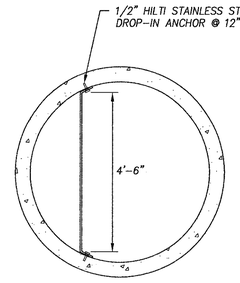
APPROVED
Peter Capell 01/01/04
COUNTY ENGINEER DATE

STANDARD D25
PLAN No.
DESIGNED
DRAWN
DATE 10/04/02



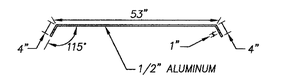
STORM INLET/OUTFALL DETAIL

N.T.S.

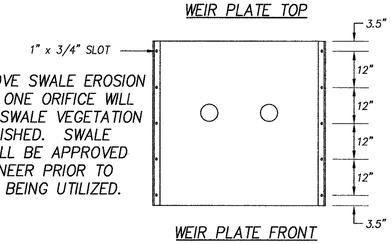


TOP VIEW W/O GRATE

NOTE: TO IMPROVE SWALE EROSION CONDITIONS, (1) ONE ORIFICE WILL BE USED UNTIL SWALE VEGETATION IS WELL-ESTABLISHED. SWALE CONDITIONS SHALL BE APPROVED BY OWNER/ENGINEER PRIOR TO SECOND ORIFICE BEING UTILIZED.



WEIR PLATE TOP



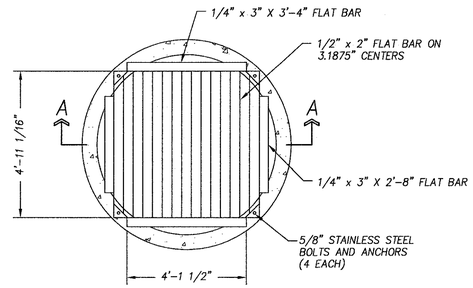
WEIR PLATE FRONT

NOTES:

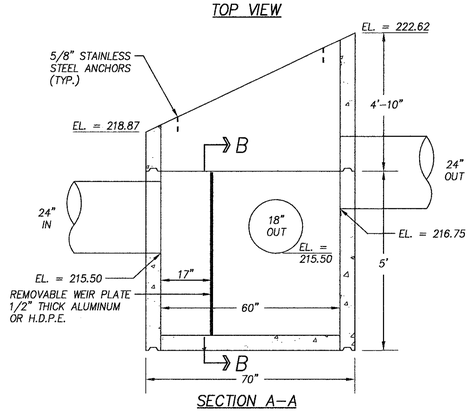
- INSTALL HILTI DROP-IN ANCHOR BY DRILLING 5/8"ø HOLE, SO THAT ANCHOR WILL BE FLUSH. CLEAN OUT HOLE AND INSTALL ANCHOR WITH SETTING TOOL.

- ATTACH TO MANHOLE USING 1/2"ø STAINLESS STEEL BOLT AND 1"ø STAINLESS STEEL WASHER 12" O.C.

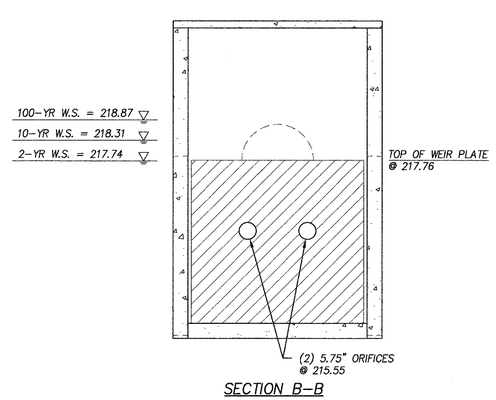
- USE MASTIC TO SEAL ANCHOR BOLTS AND SPACE BETWEEN WEIR PLATE AND MANHOLE.



TOP VIEW



SECTION A-A



SECTION B-B

FLOW CONTROL STRUCTURE W/ WEIR PLATE

N.T.S.

RECORD DRAWINGS
DECEMBER 2005

AS-BUILT INFORMATION PROVIDED BY 2KG CONTRACTORS

HHPR Harper Houf Peterson Righellis Inc.
ENGINEERS • PLANNERS
1104 Main Street, Suite 100, Vancouver, WA 98660
tel 360.750.1131 www.hrcivil.com fax 360.750.1141

LSW architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510



EXPIRES: 10/31/06

drawn by
JRT
checked by
KDB/CER
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

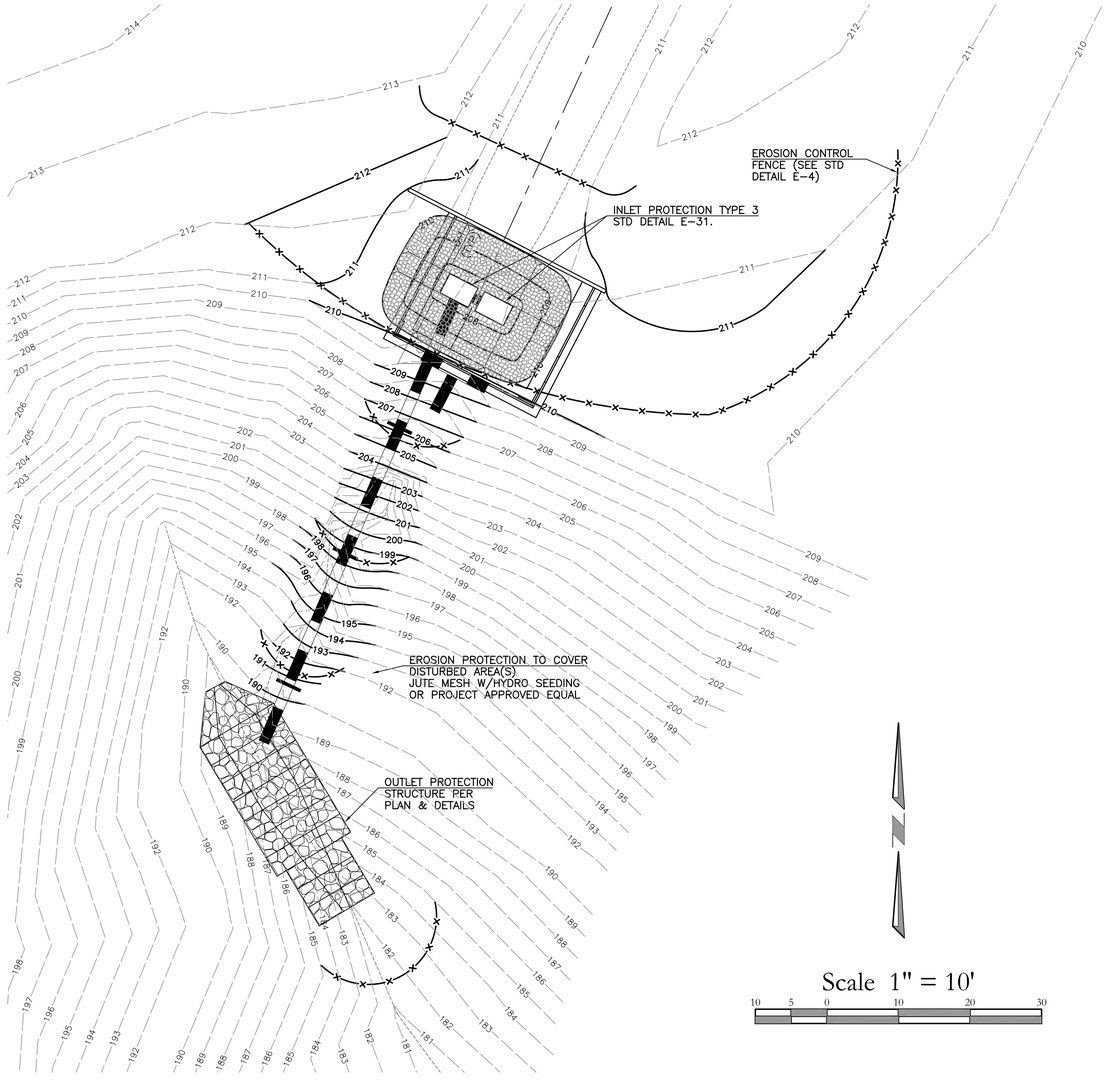
issue date
2.04.05
SPR

revisions
2.21.05
PER C.C. COMMENTS
12/2005 RECORD DRAWINGS

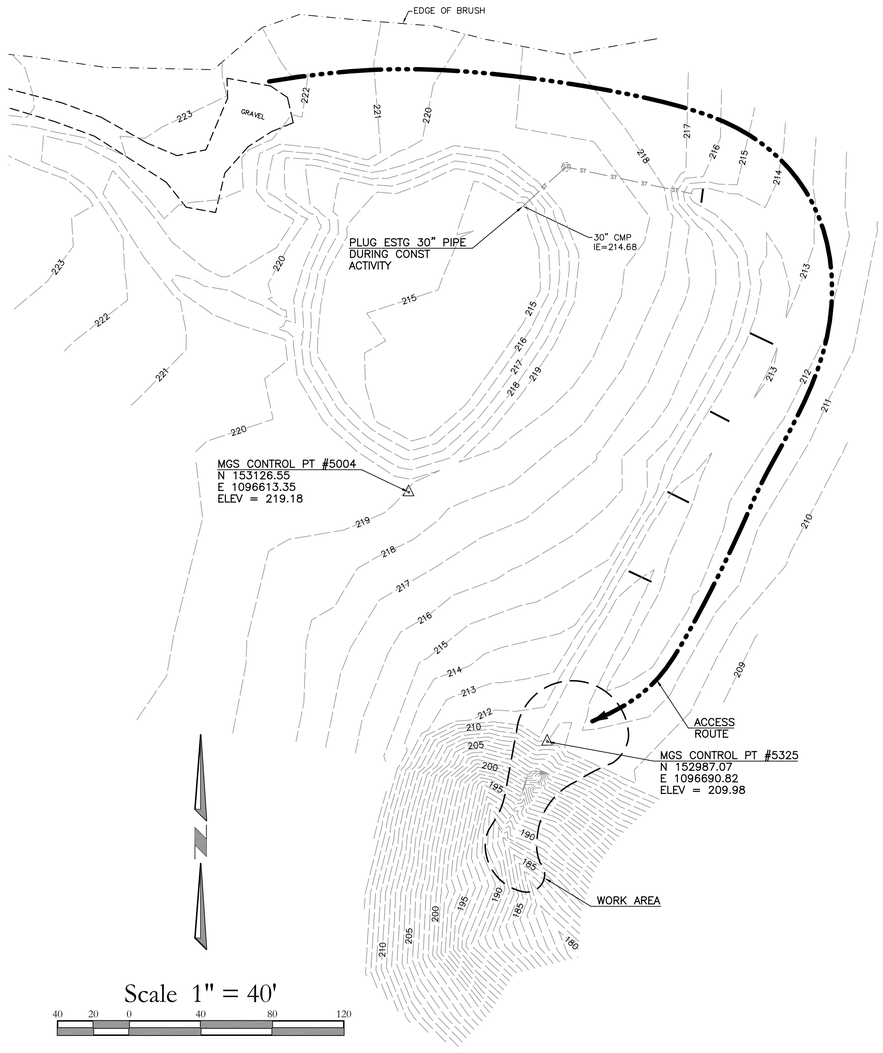
ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

STORMWATER DETAILS

CC2.3
SHEET 5 OF 5
LSW-B4



Scale 1" = 10'



Scale 1" = 40'

GENERAL NOTES

Boundary and topographic information provided by Minister-Glaeser Surveying, Inc., 2003.

Benchmark: Clark County geodetic control point #37 3-1/2" brass disk set in concrete with case and cover at intersection of NE 159th street and NE 50th avenue. Elevation = 212.838' Clark County datum (NGVD 1924-47).

STORM SEWERS

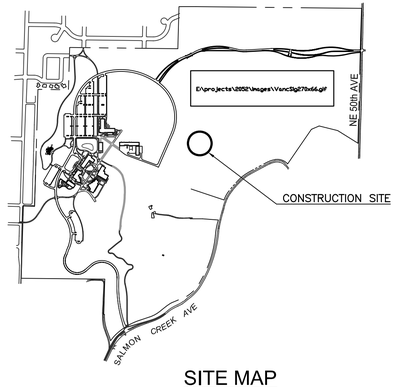
Materials for storm sewer pipe shall be smooth bore high density polyethylene pipe meeting the requirements of AASHTO M-252 OR M-294 (ADS, M-12 or project approved equal), solid wall PVC meeting the requirements of ASTM D3034 SDR 35 for 15" and smaller, ASTM F 679 Type 1 only for sizes 18" and larger, or plain concrete sewer pipe meeting the requirements of AASHTO M86, Class 2 with rubber gaskets meeting AASHTO M198. The outfall pipe placed on the slope shall be watertight HDPE pipe meeting the requirements of AASHTO M-294. The HDPE pipe may be butt welded or flanged field connections.

No jointing of dissimilar materials shall be allowed.

Storm sewer pipe bedding and backfill shall meet the requirements of Section 7-08.3(1)C and 7-08.3(3), and Standard Plan B-11, Design A. Trench backfill shall be imported granular material unless select native material types A-1 to A-3 are tested by a certified soil test lab and approved by the County. Backfill material shall be compacted to 95% of the maximum relative density.

Trench excavation shall meet the requirements of Section 7-08.3(1).

Trench backfill shall meet the requirements of Section 7-08.3(3).



SITE MAP

HOPPER DENNIS JELLISON P.L.L.C.
ENGINEERS & PLANNERS
314 W. 15th Street
Vancouver, WA 98660-2927
(360) 695-3488
(503) 924-4005
FAX (360) 695-8767
Internet: www.hdjengineers.com

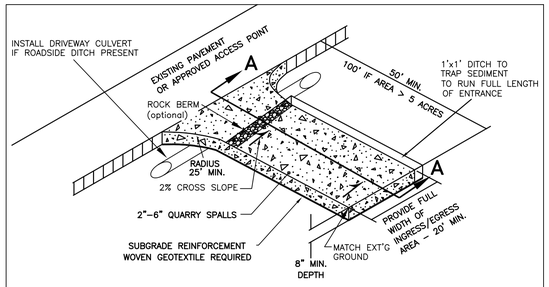
STORM DRAINAGE & EROSION CONTROL PLAN FOR:

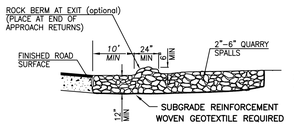
WASHINGTON STATE UNIVERSITY VANCOUVER CAMPUS POND E OUTFALL RESTORATION

A SITE IN VANCOUVER, WASHINGTON

DESIGNED:	GME
DRAWN:	LRC
CHECKED:	SGM
SCALE:	H: N/A V: N/A
JUL 2004	2226
SHEET	13 29

E:\Projects\2226\Cad\Final\Drawings\Prod\2226c13.dwg, 1/12/2009 4:13:31 PM, brr





SECTION A-A

1. EXCAVATE MINIMUM OF 12" OF EXISTING SOILS.
2. PLACE MINIMUM OF 12" OF 2"-6" QUARRY SPALLS
3. CONSTRUCT ROCK BERM ALONG TRANSITION POINT TO FINISH ROAD SURFACES, DIVERT RUNOFF TO ONSITE AREA (OPTIONAL).

NOTES:

1. FOR DEVELOPMENT PROJECTS REVIEWED BY ENGINEERING SERVICES. NOT FOR USE WITH SINGLE FAMILY OR DUPLEX RESIDENTIAL BUILDING PERMITS. SEE BUILDING DEPT. FOR GRAVEL CONSTRUCTION ENTRANCE PLAN.
2. INSTALL WOVEN GEOTEXTILE FABRIC TO PREVENT SUB-SOIL PUMPING.
3. VEHICLE WASHDOWN AREA, IF REQUIRED, IS TO BE INSTALLED AND USED TO REMOVE SEDIMENT FROM VEHICLES THAT ARE ABOUT TO ENTER AN ESTABLISHED ROAD.
4. WASHDOWN AREA TO BE MADE UP OF CLEAN 2"- 6" QUARRY SPALLS, 1" DEEP (MIN) OVER WOVEN GEOTEXTILE FABRIC. WASHDOWN AREA TO BE FULL WIDTH OF ENTRANCE AND 50' (MIN.), AND 100' IF EXPOSED SOIL IS OVER 5 ACRES.
5. AT TIME OF PRECONSTRUCTION MEETING, THE COUNTY INSPECTOR MAY REQUIRE THE ENTRANCE TO BE PAVED TO THE EDGE OF THE RIGHT-OF-WAY PRIOR TO THE INSTALLATION OF A WASHDOWN ENTRANCE TO AVOID DAMAGE TO THE EXISTING ROADWAY.
6. THE RESPONSIBLE EROSION CONTROL INDIVIDUAL IS TO ENSURE THAT ALL VEHICLES USE THIS ENTRANCE AND ARE TO BE INSPECTED AND CLEANED OF SOILS BEFORE LEAVING PROJECT, AND THAT THE ENTRANCE IS TO BE KEPT CLEAN AT ALL TIMES.

NO.	REVISIONS	DATE	BY

DWG: E-1.DWG

Department of Public Works
CLARK COUNTY WASHINGTON
proud past, promising future

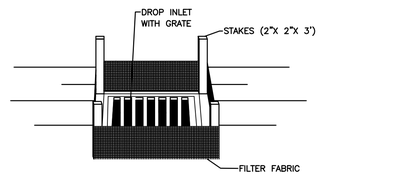
STANDARD CONSTRUCTION ENTRANCE

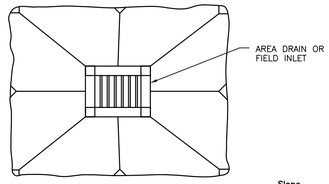
APPROVED

Peter Capell — COUNTY ENGINEER — 01/01/04 DATE

STANDARD E-1

PLAN No.
DESIGNED SCH
DRAWN SCH
DATE 07/07/03

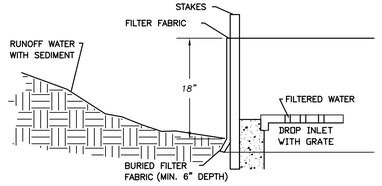




PLAN VIEW

Slope 4:1

Slope 1 / 4



PROFILE

NOTE:

1. SEE INLET PROTECTION NOTES STD. PLAN E-3

NO.	REVISIONS	DATE	BY

DWG: E-3b.DWG

Department of Public Works
CLARK COUNTY WASHINGTON
proud past, promising future

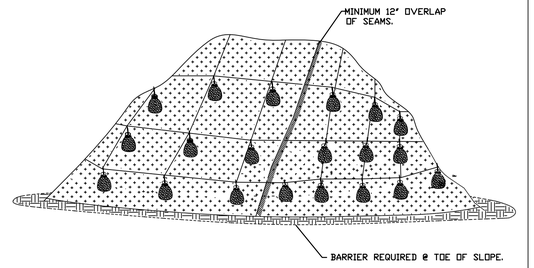
INLET PROTECTION TYPE 3 SEDIMENT FENCE

APPROVED

Peter Capell — COUNTY ENGINEER — 01/01/04 DATE

STANDARD E-3b

PLAN No.
DESIGNED SCH
DRAWN SCH
DATE 08/07/02



PLASTIC SHEETING

NOTES:

1. PLASTIC SHEETING IS USED TO PROVIDE IMMEDIATE PROTECTION TO SLOPES AND STOCKPILES.

2. DO NOT USE PLASTIC COVERING UPSLOPE OF AREAS SUCH AS STEEP AND/OR UNSTABLE SLOPES THAT MIGHT BE ADVERSELY AFFECTED BY CONCENTRATED RUNOFF.

3. WHEN POSSIBLE, INSTALL AN INTERCEPTER DIKE AT THE TOP OF THE PLASTIC TO DIVERT FLOWS AWAY FROM THE PLASTIC.

4. TOE-IN THE TOP OF THE SHEETING IN A 6"x6" TRENCH BACKFILLED WITH COMPACTED NATIVE MATERIAL.

5. INSTALL A GRAVEL BERM, RIPRAP, OR OTHER SUITABLE PROTECTION AT THE TOP OF THE SLOPE IN ORDER TO DISSIPATE RUNOFF VELOCITY.

6. ANCHOR THE PLASTIC USING SANDBAGS OR OTHER SUITABLE TETHERED ANCHOR SYSTEM SPACED ON A 10' GRID SPACING IN ALL DIRECTIONS.

7. OVERLAP SEAMS 1-2', TAPE, ROLL AND STAKE THE SEAMS AND THEN WEIGH DOWN THE ENTIRE LENGTH.

8. BARRIER IS REQUIRED @ TOE OF STOCK PILE.

9. REPLACE TORN SHEETS AND REPAIR OPEN SEAMS. COMPLETELY REMOVE AND REPLACE PLASTIC WHEN IT BEGINS TO DETERIORATE.

NO.	REVISIONS	DATE	BY

DWG: E-16.DWG

Department of Public Works
CLARK COUNTY WASHINGTON
proud past, promising future

PLASTIC SHEETING

APPROVED

Peter Capell — COUNTY ENGINEER — 01/01/04 DATE

STANDARD E-16

PLAN No.
DESIGNED SCH
DRAWN SCH
DATE 08/12/02

MATTING NOTES:

1. THERE ARE A WIDE RANGE OF MATERIALS AND COMBINATION OF MATERIALS USED TO PRODUCE MATTING INCLUDING, BUT NOT LIMITED TO: STRAW, JUTE, WOOD FIBER, COIR (COCONUT FIBER), PLASTIC NETTING, AND BONDED FIBER MATRIX. THE SELECTION OF MATTING MATERIAL FOR A SITE CAN MAKE A SIGNIFICANT DIFFERENCE IN THE EFFECTIVENESS OF THE BMP.

2. GENERALLY, MATTING IS USED ON SLOPES 2:1 AND STEEPER.

3. SURFACE MUST BE GRADED SMOOTH TO REMOVE ALL DEBRIS AND UNDULATIONS LARGER THAN 2" IN ANY DIRECTION.

4. APPLY SEED AND FERTILIZER PRIOR TO MATTING. INSTALL SO THAT MATTING IS IN COMPLETE CONTACT WITH SOIL SURFACE.

5. STAPLES ARE TO BE INSTALLED PER MANUFACTURES SPECIFICATIONS.

6. ORGANIC MATTING MATERIALS (EXCELSIOR, JUTE, AND COIR) BIODEGRADE AND ARE USEFUL FOR APPLICATIONS REQUIRING STABILIZATION FOR UP TO THREE MONTHS. USE ORGANIC BLANKETS, WHICH RETAIN MOISTURE AND PROVIDE ORGANIC MATTER TO THE SOIL, FOR SLOPE PROTECTION AND SHORT-TERM WATERWAY PROTECTION AND TO IMPROVE THE SPEED AND SUCCESS OF REVEGETATION.

- *EXCELSIOR BRAND (ASPEN WOOD FIBER), WOVEN STRAW, AND COIR BLANKETS MAY BE INSTALLED WITHOUT MULCH BECAUSE THEY PROVIDE COMPLETE SURFACE PROTECTION.*

7. SYNTHETIC MATS ARE MADE FROM NON-BIODEGRADABLE MATERIALS AND WILL REMAIN IN PLACE FOR YEARS (SOME PHOTODEGRADATION DOES OCCUR). USE PURELY SYNTHETIC BLANKETS FOR LONG-TERM STABILIZATION OF WATERWAYS.

- *TURF REINFORCEMENT MATS (TRM) ARE MADE FROM POLYMER NETTING OR MONOFILAMENTS FORMED INTO A SYNTHETIC 3-D MAT. TRMs PROTECT SEED AND INCREASE GERMINATION AND ALSO ACTS AS PART OF THE ROOT STRUCTURE; GIVING THE TURF HIGHER STRENGTH.*
- *EROSION CONTROL AND REVEGETATION MATS (ECRM), COMPOSED OF HEAT-FUSED MONOFILAMENTS AND MONOFILAMENTS STITCHED BETWEEN NETTING ACT AS PERMANENT MULCH. ECRM ALLOW GROWTH THROUGH THE MAT.*

8. CHANNEL OR SWALE APPLICATIONS: LENGTHWISE OVERLAP MATTING A MINIMUM OF 12"; CROSSWISE OVERLAP A MINIMUM OF 6", AND AVOID JOINING MATERIAL IN CENTER OF DITCH OR SWALE.

9. SLOPE APPLICATION: LENGTHWISE OVERLAP MATTING A MINIMUM OF 6"; CROSSWISE OVERLAP A MINIMUM OF 6", AT TOP OF SLOPE, ENTRENCH MATERIAL IN A 6"x6" TRENCH AND STAPLE AT 12" INTERVAL; AT BOTTOM OF SLOPE, EXTEND MAT 2 FEET BEYOND THE TOE OF THE SLOPE, TURN MATERIAL UNDER 4" AND STAPLE AT 12" INTERVAL; ON 4:1 SLOPES, ROLLS CAN BE PLACED IN HORIZONTAL STRIPS; MATS MUST BE STAPLED IN PLACE AS THEY ARE INSTALLED DOWN THE SLOPE FACE EVERY 4' UNTIL YOU REACH THE BOTTOM. THIS KEEPS BLANKET IN A RELAXED POSITION, ELIMINATING THE POTENTIAL FOR UNDER-RILLING.

10. INSPECT ONCE PER WEEK ON ACTIVE SITE

NO.	REVISIONS	DATE	BY

DWG: E-17

Department of Public Works
CLARK COUNTY WASHINGTON
proud past, promising future

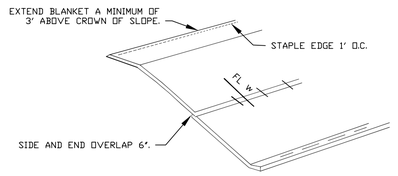
MATTING GENERAL NOTES

APPROVED

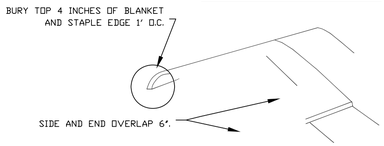
Peter Capell — COUNTY ENGINEER — 01/01/04 DATE

STANDARD E-17

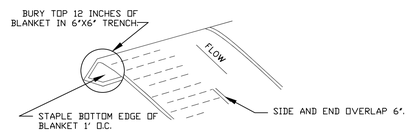
PLAN No.
DESIGNED SCH
DRAWN SCH
DATE 10/24/02



SHALLOW SLOPES 4:1 OR LESS



MODERATE SLOPES 3:1



STEEP SLOPES 2:1 OR GREATER

NOTES:

1. ON 4:1 OR LESS SLOPES BLANKETS MAY BE APPLIED ACROSS THE SLOPE.
2. ALL BLANKET INSTALLED AND STAPLED PER MANUFACTURERS SPECIFICATIONS.
3. SEE MATTING NOTES STD. PLAN E-17

NO.	REVISIONS	DATE	BY

DWG: E-17a

Department of Public Works
CLARK COUNTY WASHINGTON
proud past, promising future

MATTING SLOPE INSTALLATION DETAIL

APPROVED

Peter Capell — COUNTY ENGINEER — 01/01/04 DATE

STANDARD E-17a

PLAN No.
DESIGNED SCH
DRAWN SCH
DATE 10/24/02

NOTE:
SIGNIFICANT VARIATION AND DEGREE OF EROSION CONTROL EFFORT WILL BE DICTATED BY WEATHER CONDITIONS. THE DEVELOPER AND CONTRACTOR SHOULD BE PREPARED TO PROVIDE EXTRA EROSION CONTROL PROVISIONS AND EFFORT DURING WINTER AND WET WEATHER CONDITIONS BEYOND THAT NORMALLY REQUIRED DURING SUMMER AND DRY WEATHER CONDITIONS. FINE GRAINED AND UNCONSOLIDATED SOILS ON SLOPING SITES MAY BECOME UNSTABLE WHEN SUBJECT TO EXCESSIVE MOISTURE.

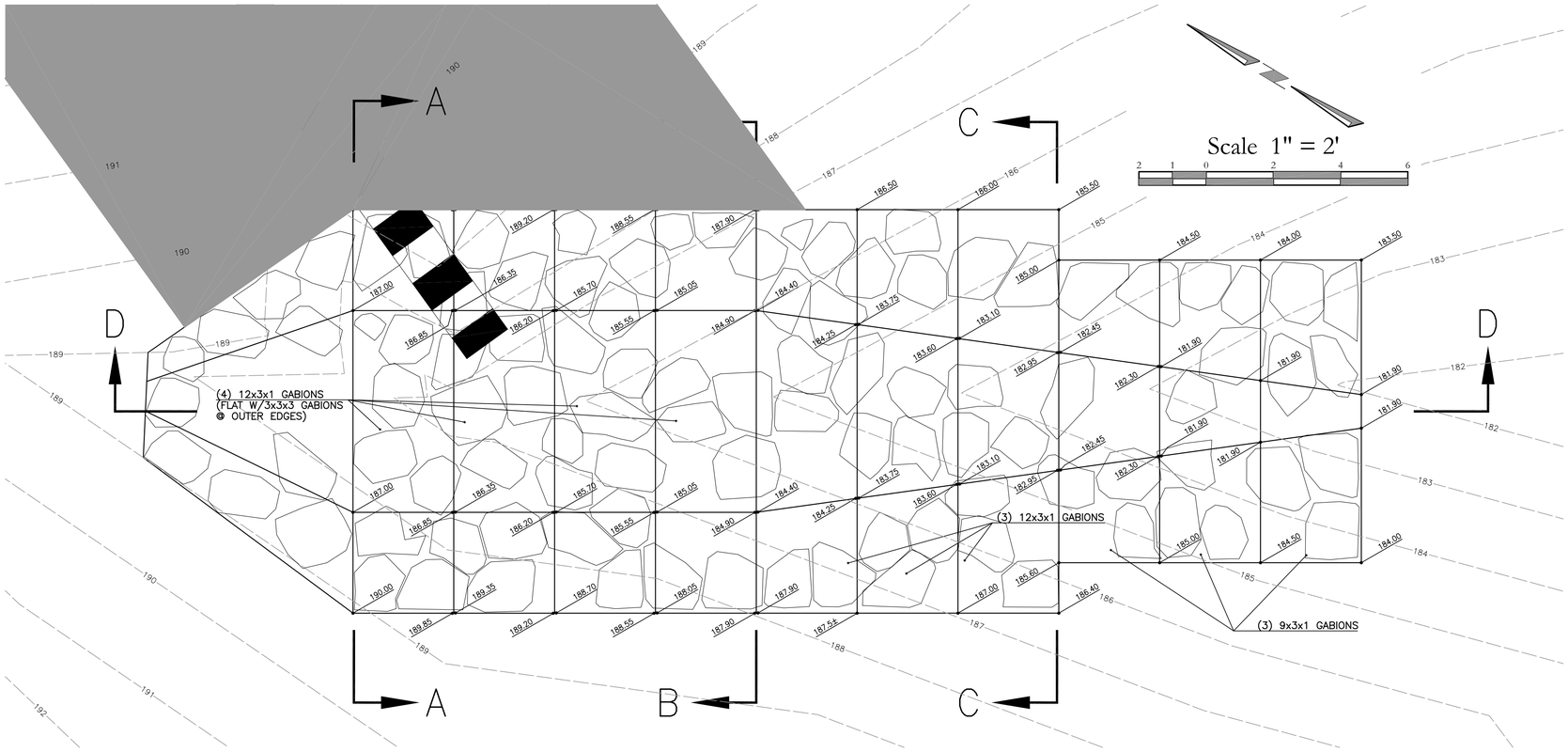
HOPPER DENNIS JELLISON P.L.L.C.
ENGINEERS & PLANNERS
314 W. 15th Street
Vancouver, WA 98660-2927
(360) 695-3411
(503) 924-4005
FAX (360) 695-8767
Internet: www.hdjengineers.com

CLARK COUNTY EROSION CONTROL DETAILS FOR:
WASHINGTON STATE UNIVERSITY VANCOUVER CAMPUS POND E OUTFALL RESTORATION
A SITE IN VANCOUVER, WASHINGTON

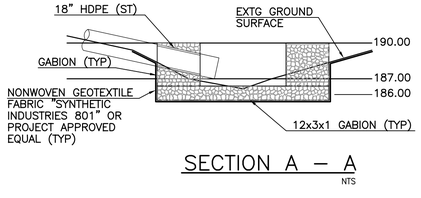
DESIGNED: N/A
DRAWN: N/A
CHECKED: N/A
SCALE: H: N/A V: N/A
JUL 2004
2226

SHEET 14 / 29

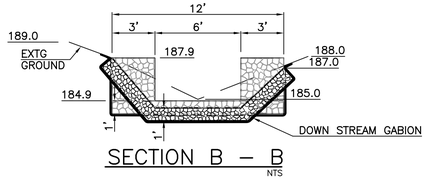
E:\Projects\2226\Cad\Final\Drawings\Prod\2226c14.dwg, 1/12/2009 4:14:13 PM, bnr



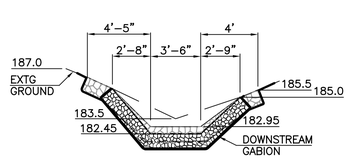
OUTLET PROTECTION STRUCTURE



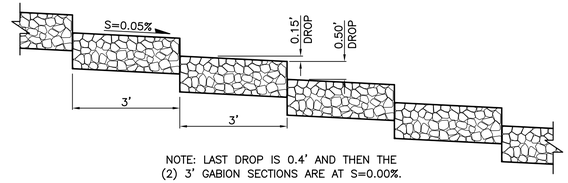
SECTION A – A
NTS



SECTION B – B
NTS



SECTION C – C
NTS



NOTE: LAST DROP IS 0.4' AND THEN THE (2) 3' GABION SECTIONS ARE AT S=0.00%.

SECTION D – D
NTS

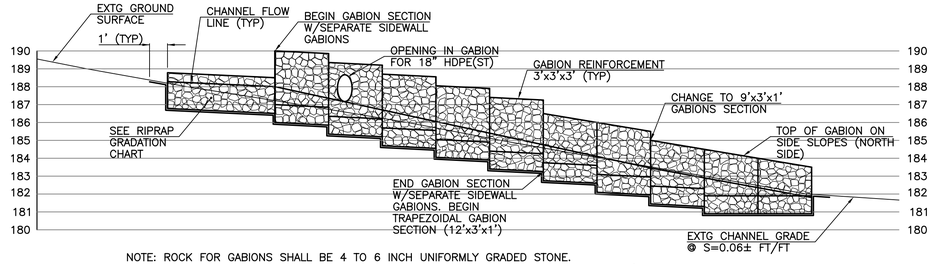
HOPPER DENNIS JELLISON P.L.L.C.
ENGINEERS & PLANNERS
314 W. 15th Street
Vancouver, WA 98660-2927
(360) 695-3488
(503) 924-4005
FAX (360) 695-8767
Internet: www.hdjengineers.com

OUTLET PROTECTION DETAILS FOR:
WASHINGTON STATE UNIVERSITY VANCOUVER CAMPUS POND E OUTFALL RESTORATION
A SITE IN VANCOUVER, WASHINGTON

DESIGNED:	GME
DRAWN:	LRC
CHECKED:	SGM
SCALE:	H: N/A V: N/A
	JUL 2004 2226
SHEET	15 / 29

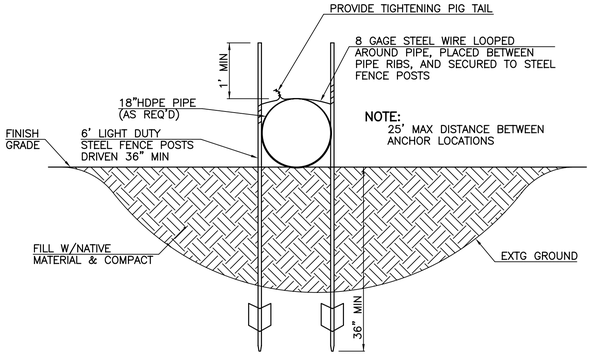
E:\Projects\2226\Cad\Final\Drawings\Prod\2226c15.dwg, 1/12/2009 4:15:45 PM, brr

RIPRAP GRADATION	
% PASSING	SIZE (IN)
100	12
60-85	9
25-50	6
5-20	3
0-5	1.2

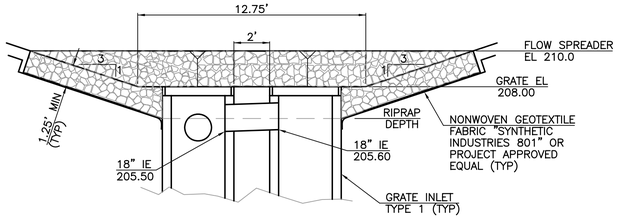


NOTE: ROCK FOR GABIONS SHALL BE 4 TO 6 INCH UNIFORMLY GRADED STONE.

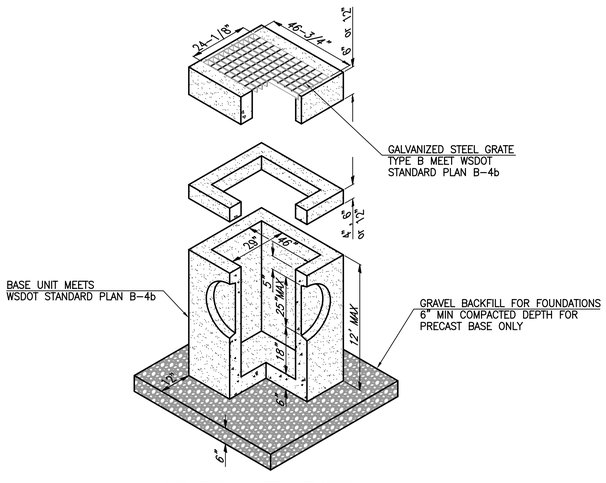
SECTION B – B'
NTS



PIPE ANCHOR DETAIL
NTS



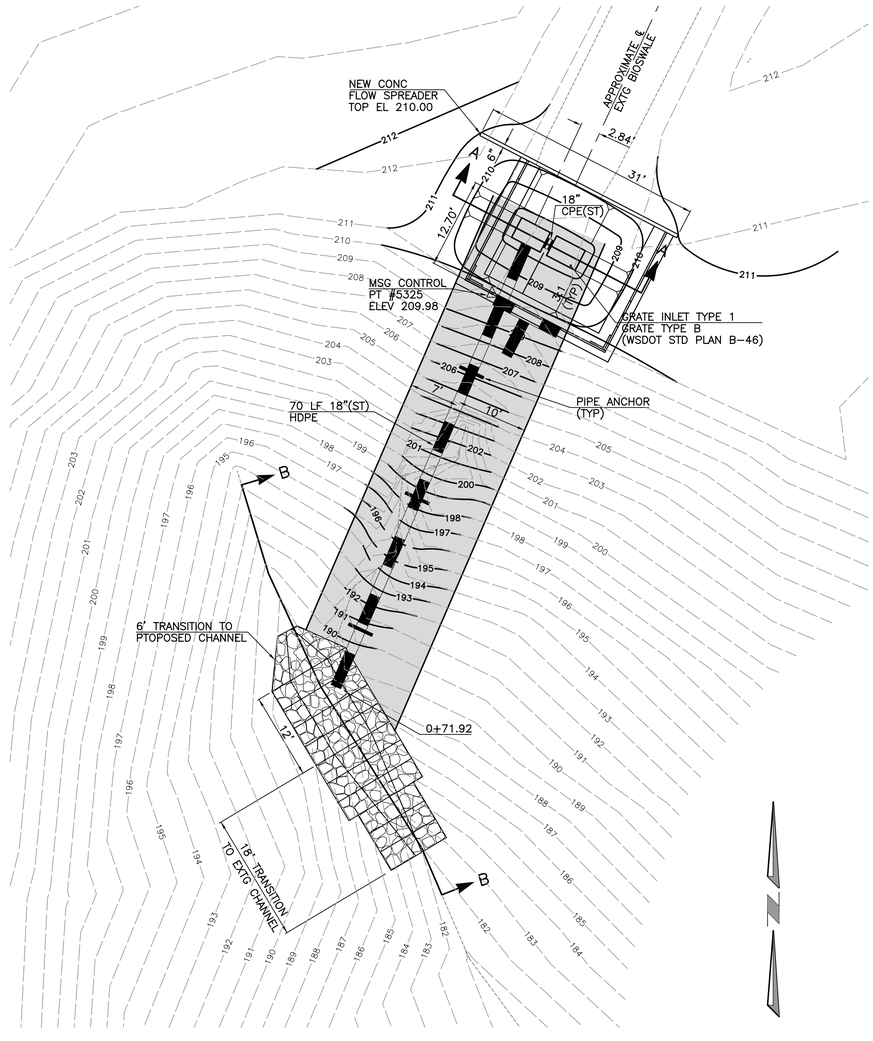
SECTION A – A
NTS



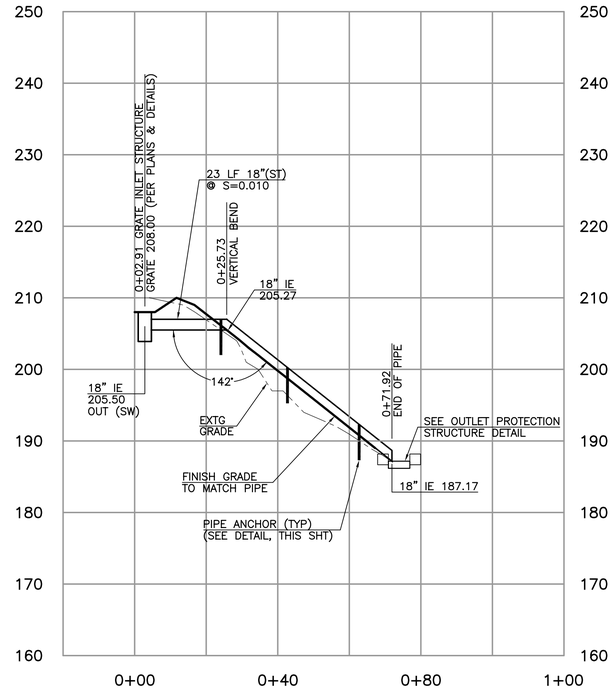
GRATE INLET, TYPE 1
NTS

NOTES:

1. PRECAST CONCRETE INLETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH AASHTO M199 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE WSDOT/APWA STANDARD SPECIFICATIONS.
2. ALL REINFORCED CAST-IN-PLACE CONCRETE SHALL BE CLASS 4000. ALL PRECAST CONCRETE SHALL BE CLASS 4000. NON-REINFORCED CONCRETE IN CHANNEL AND SHELF SHALL BE CLASS 3000.
3. PRECAST BASES SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE WALL THICKNESS OF 2" MIN. UNUSED KNOCKOUTS NEED NOT BE GROUTED IF WALL IS LEFT INTACT. PIPES SHALL BE INSTALLED ONLY IN FACTORY KNOCKOUTS UNLESS OTHERWISE APPROVED BY THE ENGINEER.
4. KNOCKOUT OF CUTOUT HOLE SIZE SHALL EQUAL PIPE OUTER DIAMETER PLUS STRUCTURE WALL THICKNESS.
5. ALL BASE REINFORCING STEEL SHALL HAVE A MIN YIELD STRENGTH OF 60,000 PSI AND BE PLACED IN THE UPPER HALF OF THE BASE WITH 1" MIN CLEARANCE.



OUTLET PROTECTION STRUCTURE
1"=10'



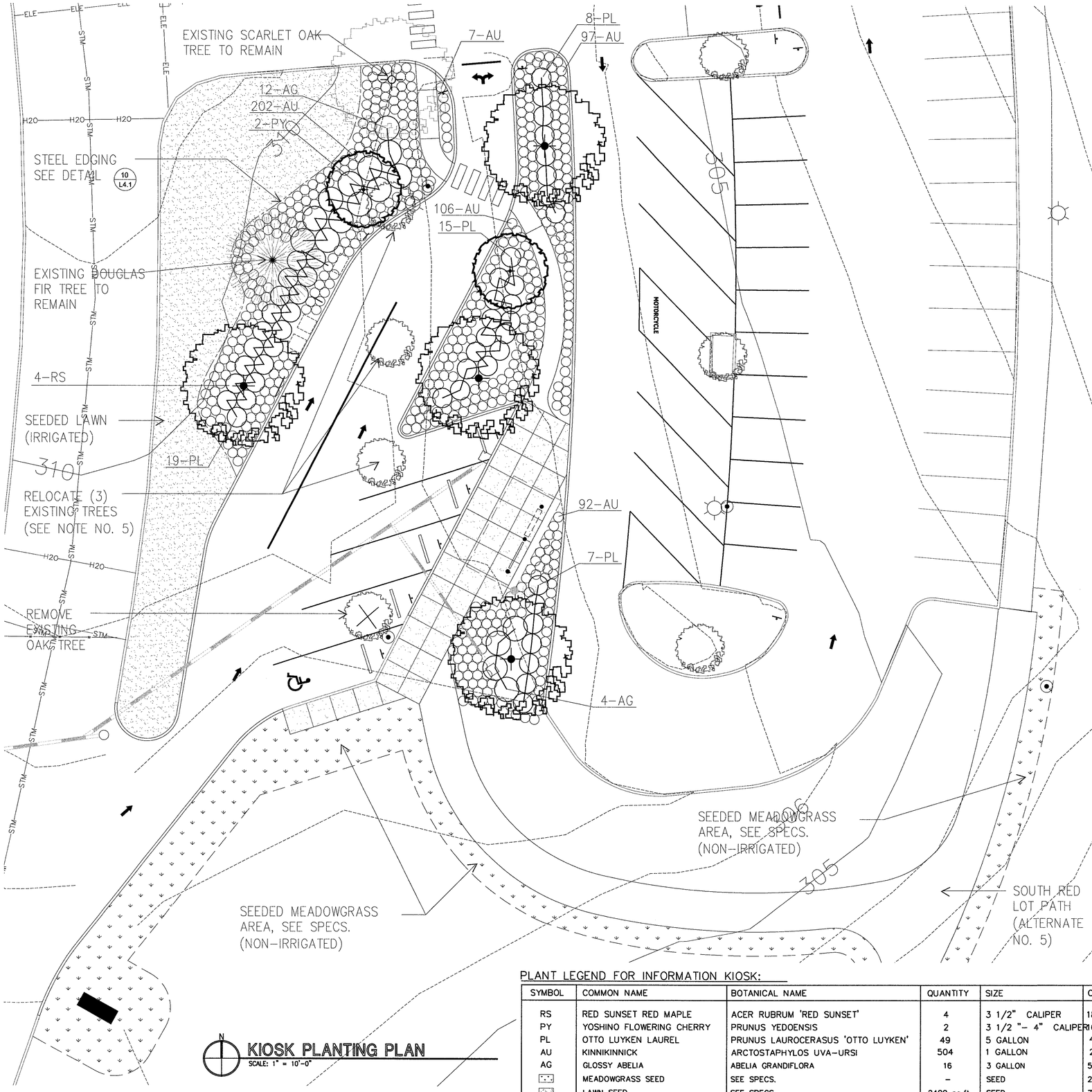
STORM PROFILE

HOPPER DENNIS JELLISON P.L.L.C.
ENGINEERS & PLANNERS
314 W. 15th Street
Vancouver, WA 98660-2927
(360) 695-3488
(503) 924-4005
FAX (360) 695-8767
Internet: www.hdjengineers.com

STORM PROFILE & DETAILS FOR:
WASHINGTON STATE UNIVERSITY VANCOUVER CAMPUS POND E OUTFALL RESTORATION
A SITE IN VANCOUVER, WASHINGTON

DESIGNED: GME	
DRAWN: LRC	
CHECKED: SGM	
SCALE: H: 1"=20' V: 1"=10'	
JUL 2004 2226	
SHEET	16 / 29

E:\Projects\2226\Cad\Final\Drawings\Prod\2226c16.dwg, 1/12/2009 4:17:28 PM, brr



N

KIOSK PLANTING PLAN

SCALE: 1" = 10'-0"

NOTES:

1. THERE ARE THREE TYPES OF PLANTING AREAS WHICH HAVE VARYING TOPSOIL.
   TYPE 1 PLANTING AREAS (PLANTED WITH TREES, SHRUBS AND GROUNDCOVERS.)
   TYPE 2 PLANTING AREAS (PLANTED WITH LAWN SEED)
   TYPE 3 PLANTING AREAS (PLANTED WITH MEADOWGRASS SEED)

2. REGRADE AND SEED STAGING AREAS AND ALL OTHER ADJACENT AREAS DISTURBED DURING CONSTRUCTION WITH MEADOWGRASS SEED. PREPARE SOIL PER TYPE 3 PLANTING AREA, SEE DETAIL 11/L4.1.

3. SOME WORK REQUIRED BY THIS CONTRACT IS OUTSIDE OF CONSTRUCTION LIMITS SHOWN. COORDINATE WITH ADJACENT DEVELOPMENT AS NECESSARY TO COMPLETE ALL LANDSCAPE WORK SHOWN ON DRAWING.

4. COORDINATE WORK SHOWN ON THIS DRAWING WITH OTHER EXISTING OR PROPOSED SITE WORK. SEE CIVIL AND ARCHITECT DRAWINGS.

5. CONTRACTOR SHALL RELOCATE (3) EXISTING TREES AND 37 EXISTING SHRUBS TO ELSEWHERE ON WSU CAMPUS PARKING AREA PER WSU DIRECTION. TRANSPLANT TREES INDICATED ON DRAWING USING TREE SPADE. SATURATE SOIL TWO DAYS PRIOR TO TRANSPLANTING. MULCH TREES PER SPECIFICATIONS AFTER TRANSPLANTING.

6. CONTRACTOR TO FIELD VERIFY LOCATION AND DEPTH OF ALL EXISTING UTILITIES.

7. EXISTING IRRIGATION SYSTEM – CUT & CAP EXISTING IRRIGATION SYSTEM IN THIS AREA PRIOR TO CONSTRUCTION. PROTECT AND MODIFY EXISTING IRRIGATION SYSTEMS.

8. CONTRACTOR TO PROVED TEMPORARY IRRIGATION SYSTEM AS REQUIRED TO ESTABLISH AND MAINTAIN MEADOWGRASS PLANTING AREAS.

9. CONTRACTOR SHALL VERIFY ALL QUANTITIES, MEASUREMENTS AND SITE CONDITIONS.

10. ALL PLANT MATERIALS SHALL BE HEALTHY, WELL FORMED AND TO THE EXTENT POSSIBLE CONFORMED IN SIZE AND GRADE TO THE "AMERICAN STANDARD FOR NURSERY STOCK: CURRENT EDITION, AND SHALL BE INSTALLED AND MAINTAINED AS PER SPECIFICATIONS.

11. PROVIDE WSU REPRESENTATIVE WITH NURSERY 'SHIPPING LIST' TO VERIFY PROPER SPECIES AND QUANTITY AT POST-GRADING, PRE-PLANTING INSPECTION MEETING.

12. A POST-PLANTING FINAL REVIEW MEETING WITH CONTRACTOR AND WSU REPRESENTATIVE WILL BE HELD WHEN CONTRACTOR HAS COMPLETED INSTALLATION.

13. CONTRACTOR SHALL PROVIDE ONE-YEAR PLANT WARRANTY AFTER ACCEPTANCE OF PLANTING. THE CONTRACTOR SHALL REPLACE ALL DEAD OR UNHEALTHY PLANTS FOUND AT THE END OF THE WARRANTY PERIOD.

14. PLANTING PERIOD IS WEATHER DEPENDENT AND PLANTING SEQUENCE SHALL BE ADJUSTED ACCORDING TO SOIL MOISTURE. ALL PLANTINGS SHALL BE COMPLETE BY THE FIFTEENTH OF NOVEMBER UNLESS PLANTING PERIOD IS EXTENDED BY WSU REPRESENTATIVE AS A RESULT OF CONTINUING MILD WEATHER.

PLANT LEGEND FOR INFORMATION KIOSK:

SYMBOL	COMMON NAME	BOTANICAL NAME	QUANTITY	SIZE	COMMENTS
RS	RED SUNSET RED MAPLE	ACER RUBRUM 'RED SUNSET'	4	3 1/2" CALIPER	18'-22' HEIGHT, WELL BRANCHED, B&B
PY	YOSHINO FLOWERING CHERRY	PRUNUS YEDOENSIS	2	3 1/2 "- 4" CALIPER	10'-12' HEIGHT, WELL BRANCHED, B&B
PL	OTTO LUYKEN LAUREL	PRUNUS LAUROCERASUS 'OTTO LUYKEN'	49	5 GALLON	4'-0" O.C. SPACING
AU	KINNIKINNICK	ARCTOSTAPHYLOS UVA-URSI	504	1 GALLON	2'-0" O.C. SPACING
AG	GLOSSY ABELIA	ABELIA GRANDIFLORA	16	3 GALLON	5'-0" O.C. SPACING
	MEADOWGRASS SEED	SEE SPECS.	–	SEED	25 LBS. PER ACRE
	LAWN SEED	SEE SPECS.	2400 sq.ft.	SEED	7 LBS. PER 1000 SF.

TWC logo1_bw.jpg

lsw architects, pc

architecture / planning / interiors

lsw architects, pc
2300 Main Street
Vancouver, Washington 98660

t| 360.694.8571
f| 360.694.9510

STATE OF WASHINGTON REGISTERED LANDSCAPE ARCHITECT

RONALD VAN HAM CERTIFICATE NO. 389

drawn by
JR
checked by
MAH
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.01.05
BID SET

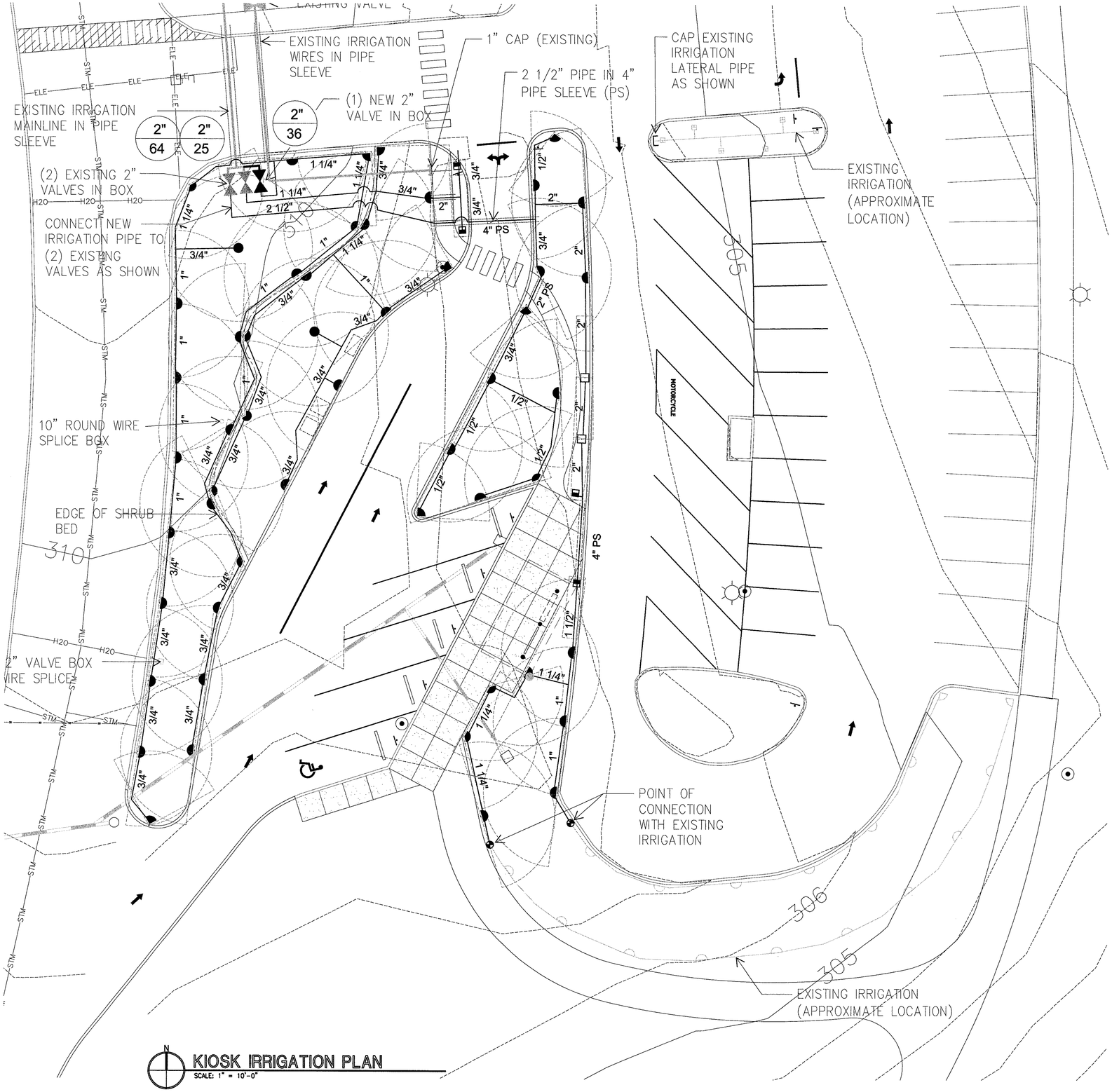
revisions

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

INFORMATION KIOSK PLANTING PLAN

L1.1

File.....Final Capital Facility Plan 123004.dwg
Plot Scale... 1
Plot Date... 12-30-04
Plot Time...



IRRIGATION NOTES:

1. DEMOLITION AND RETRO-FIT: REMOVE EXISTING IRRIGATION PIPE AND SALVAGE IRRIGATION HEADS FOR AREAS DISTURBED BY NEW CONSTRUCTION WORK. RE-INSTALL SALVAGED IRRIGATION HEADS AS PART OF THE NEW IRRIGATION SYSTEM. CONNECT NEW IRRIGATION SYSTEM TO EXISTING IRRIGATION LATERAL PIPES AT SOUTH END OF RED PERMIT PARKING LOT. DO NOT RE-USE REMOVED PIPE, DISPOSE OF OFF-SITE.
2. COORDINATION: IRRIGATION WORK SHALL BE COORDINATED WITH PLANTING PLAN AND OTHER SITE IMPROVEMENTS. IRRIGATION IS GENERALLY DESIGNED TO PROVIDE MINIMUM DOUBLE HEAD-TO-HEAD COVERAGE. DO NOT ALTER HEAD AND PIPE LOCATIONS WITHOUT PRIOR APPROVAL OF THE OWNER'S REPRESENTATIVE EXCEPT FOR MINOR REROUTING AROUND UTILITIES AND OTHER SITE IMPROVEMENTS.
3. IRRIGATION SYSTEM SPECIFICATIONS: SEE SECTION 02810.
4. IRRIGATION INSTALLATION DETAILS: SEE SHEET L4.1.

PLANTING TYPE	HEAD TYPE	RISER SIZE	RISER MODEL #
Lawn	Spray	6"	Rainbird 1806-SAM-PRS
Shrub	Spray	6"	Rainbird 1806-SAM-PRS
Groundcover	Spray	6"	Rainbird 1806-SAM-PRS

IRRIGATION LEGEND:

- Schedule 40 PVC mainline
- Class 200 PVC lateral line
- Schedule 40 PVC pipe sleeve, minimum size (siv)
- Control valve
- Valve Size (X) / GPM (X)
- Controller: Existing at north end of adjacent Red Permit Parking lot (not shown on this plan)

SYMBOL	RAINBIRD NOZZLE #	PSI	RADIUS*	DIST.*	TRAJECT. DEGREES	GPM	PRECIP.
	15F	30	360	15'	30	3.7	1.58"/HR
	15TQ	30	270	15'	30	2.78	1.58"/HR
	15H	30	180	15'	30	1.85	1.58"/HR
	15T	30	120	15'	30	1.23	1.58"/HR
	15Q	30	90	15'	30	.93	1.58"/HR
	15EST	30	STRIP	4X15'	30	.61	1.94"/HR
	15CST	30	STRIP	4X30'	30	1.21	1.94"/HR

*Distances listed above are for nozzle performance only. Intall heads at locations shown on drawings.

TWC logo1_bw.jpg

LSW architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510
STATE OF WASHINGTON REGISTERED LANDSCAPE ARCHITECT
RONALD W. MAH CERTIFICATE NO. 909

drawn by JR
checked by MAH
lsw job number 03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.01.05
BID SET

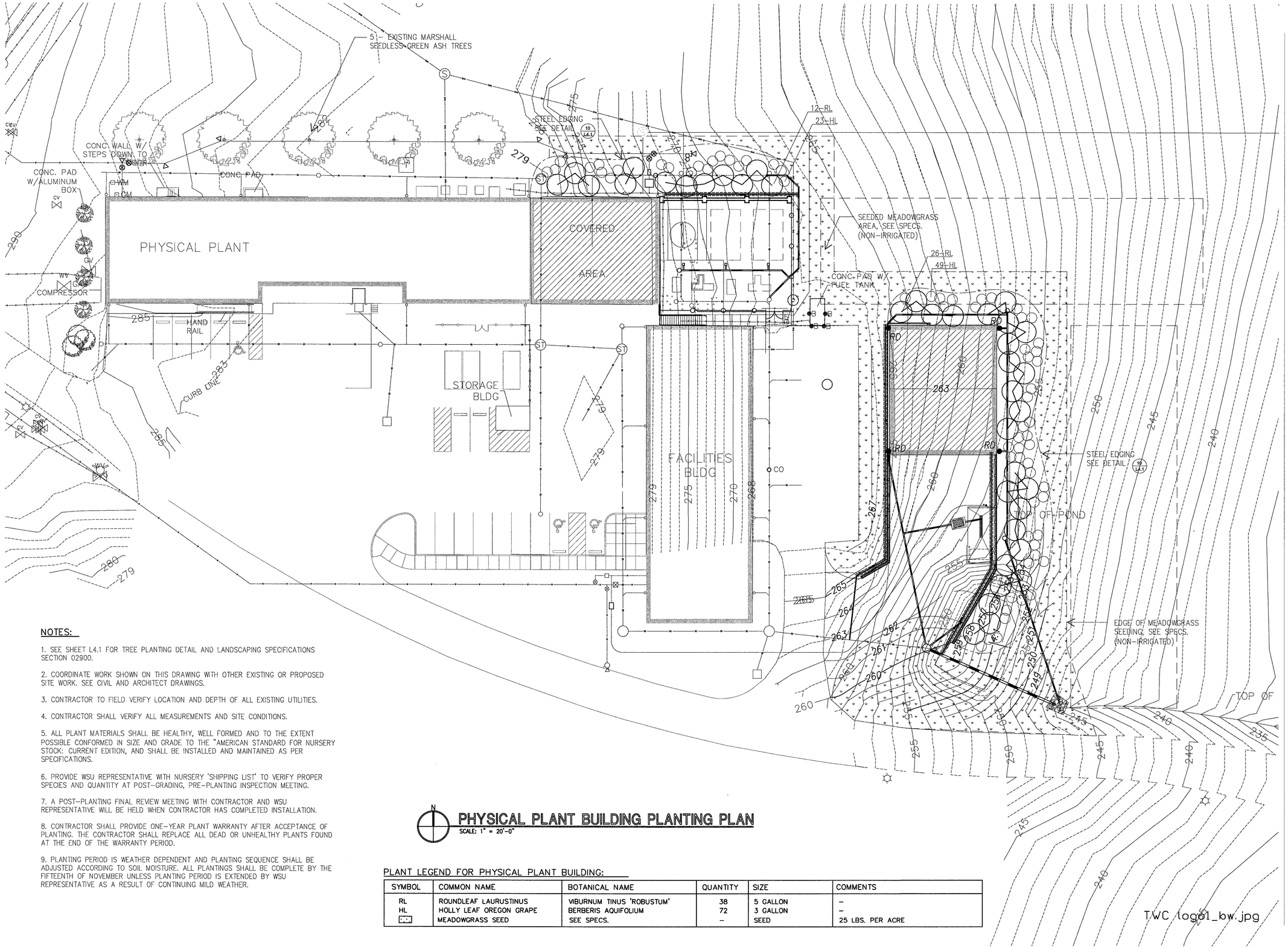
revisions

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

INFORMATION KIOSK IRRIGATION PLAN

L1.2

File.....FINAL Capital Facility Plan 123004.dwg
Plot Scale... 1
Plot Date... 12-30-04
Plot Time...



PHYSICAL PLANT BUILDING PLANTING PLAN

SCALE: 1" = 20'-0"

NOTES:

1. SEE SHEET L4.1 FOR TREE PLANTING DETAIL AND LANDSCAPING SPECIFICATIONS SECTION 02900.

2. COORDINATE WORK SHOWN ON THIS DRAWING WITH OTHER EXISTING OR PROPOSED SITE WORK. SEE CIVIL AND ARCHITECT DRAWINGS.

3. CONTRACTOR TO FIELD VERIFY LOCATION AND DEPTH OF ALL EXISTING UTILITIES.

4. CONTRACTOR SHALL VERIFY ALL MEASUREMENTS AND SITE CONDITIONS.

5. ALL PLANT MATERIALS SHALL BE HEALTHY, WELL FORMED AND TO THE EXTENT POSSIBLE CONFORMED IN SIZE AND GRADE TO THE "AMERICAN STANDARD FOR NURSERY STOCK: CURRENT EDITION, AND SHALL BE INSTALLED AND MAINTAINED AS PER SPECIFICATIONS.

6. PROVIDE WSU REPRESENTATIVE WITH NURSERY 'SHIPPING LIST' TO VERIFY PROPER SPECIES AND QUANTITY AT POST–GRADING, PRE–PLANTING INSPECTION MEETING.

7. A POST–PLANTING FINAL REVIEW MEETING WITH CONTRACTOR AND WSU REPRESENTATIVE WILL BE HELD WHEN CONTRACTOR HAS COMPLETED INSTALLATION.

8. CONTRACTOR SHALL PROVIDE ONE–YEAR PLANT WARRANTY AFTER ACCEPTANCE OF PLANTING. THE CONTRACTOR SHALL REPLACE ALL DEAD OR UNHEALTHY PLANTS FOUND AT THE END OF THE WARRANTY PERIOD.

9. PLANTING PERIOD IS WEATHER DEPENDENT AND PLANTING SEQUENCE SHALL BE ADJUSTED ACCORDING TO SOIL MOISTURE. ALL PLANTINGS SHALL BE COMPLETE BY THE FIFTEENTH OF NOVEMBER UNLESS PLANTING PERIOD IS EXTENDED BY WSU REPRESENTATIVE AS A RESULT OF CONTINUING MILD WEATHER.

PLANT LEGEND FOR PHYSICAL PLANT BUILDING:

SYMBOL	COMMON NAME	BOTANICAL NAME	QUANTITY	SIZE	COMMENTS
RL	ROUNDLEAF LAURUSTINUS	VIBURNUM TINUS 'ROBUSTUM'	38	5 GALLON	–
HL	HOLLY LEAF OREGON GRAPE	BERBERIS AQUIFOLIUM	72	3 GALLON	–
	MEADOWGRASS SEED	SEE SPECS.	–	SEED	25 LBS. PER ACRE

File.....FINAL Capital Facility Plan 123004.dwg
Plot Scale.....1
Plot Date.....12-30-04
Plot Time.....

lsw architects, pc

architecture / planning / interiors

lsw architects, pc
2300 Main Street
Vancouver, Washington 98660

t| 360.694.8571
f| 360.694.9510

STATE OF WASHINGTON REGISTERED LANDSCAPE ARCHITECT
RONALD W.H. MAH
CERTIFICATE NO. 389

drawn by
JR
checked by
MAH
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.01.05
BID SET

revisions

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

PHYSICAL PLANT BUILDING PLANTING PLAN

L2.1

IRRIGATION NOTES:

1. DEMOLITION AND RETRO-FIT: REMOVE EXISTING IRRIGATION PIPE AND SALVAGE IRRIGATION HEADS FOR AREAS DISTURBED BY NEW CONSTRUCTION WORK. RE-INSTALL SALVAGED IRRIGATION HEADS AS PART OF THE NEW IRRIGATION SYSTEM. CONNECT NEW IRRIGATION SYSTEM TO EXISTING IRRIGATION LATERAL PIPES AT SOUTH END OF RED PERMIT PARKING LOT. DO NOT RE-USE REMOVED PIPE, DISPOSE OF OFF-SITE.

2. COORDINATION: IRRIGATION WORK SHALL BE COORDINATED WITH PLANTING PLAN AND OTHER SITE IMPROVEMENTS. IRRIGATION IS GENERALLY DESIGNED TO PROVIDE MINIMUM DOUBLE HEAD-TO-HEAD COVERAGE. DO NOT ALTER HEAD AND PIPE LOCATIONS WITHOUT PRIOR APPROVAL OF THE OWNER'S REPRESENTATIVE EXCEPT FOR MINOR REROUTING AROUND UTILITIES AND OTHER SITE IMPROVEMENTS.

3. IRRIGATION SYSTEM SPECIFICATIONS: SEE SECTION 02810.

4. IRRIGATION INSTALLATION DETAILS: SEE SHEET L4.1.

5. IRRIGATION CONTROLLER: INSTALL IRRIGATION CONTROL WIRING FROM NEW CONTROL VALVES TO EXISTING CONTROLLER LOCATED AT THE NORTHWEST CORNER OF THE EXISTING PHYSICAL PLANT BUILDING. COORDINATE WITH WSU FACILITIES REPRESENTATIVE.

IRRIGATION LEGEND:

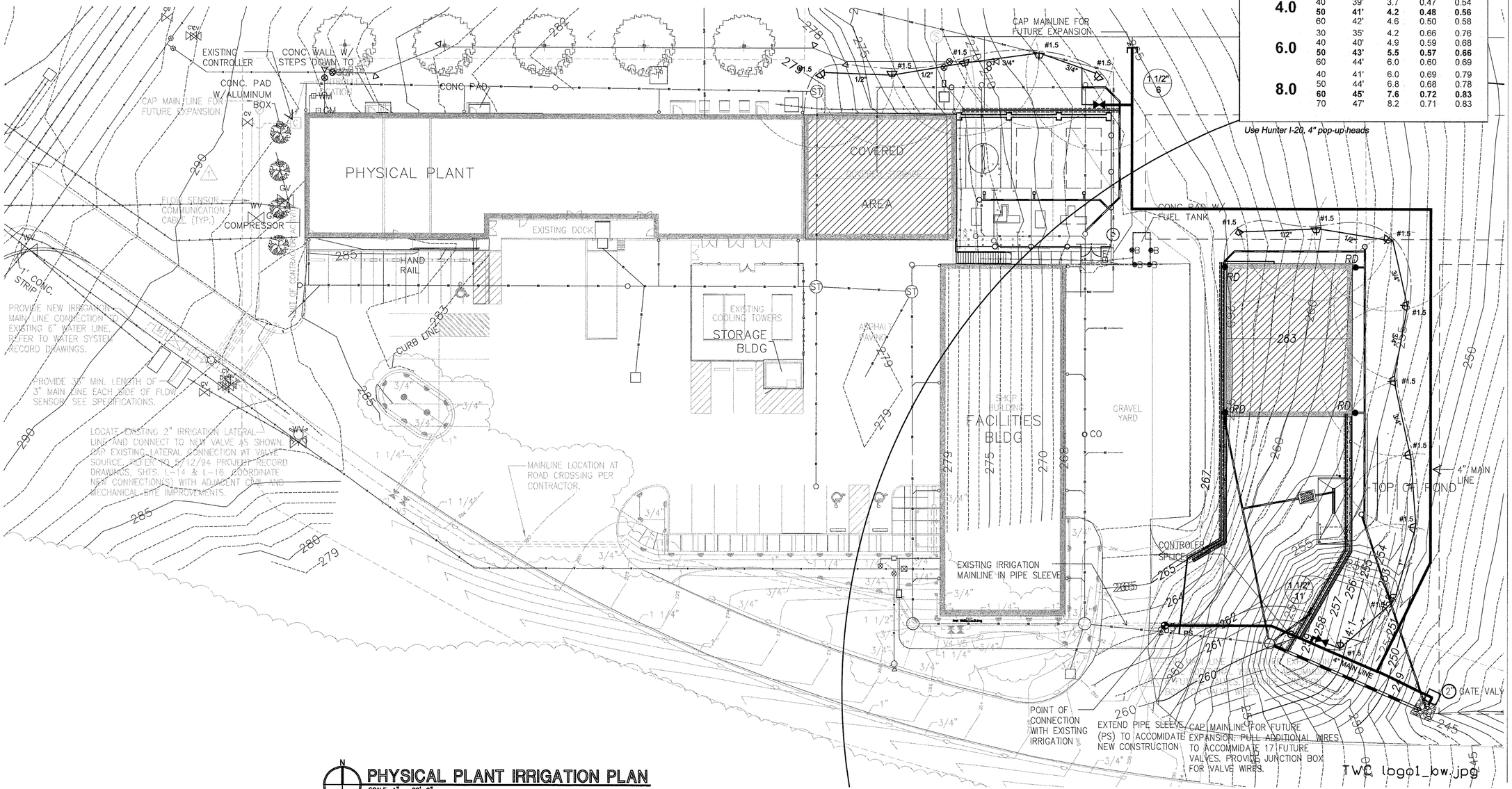
- Schedule 40 PVC mainline
- Class 200 PVC lateral line
- Schedule 40 PVC pipe sleeve, minimum size (s/v)
- Control valve: rainbird, see control valve schedule.
- Valve Size / GPM
- Controller
- QC Quick Coupler

ROTARY HEAD SCHEDULE:

I-10/I-20 *Ultra* Standard Nozzle Performance Data

Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr ■	Precip in/hr ▲
1.0	30	30'	0.9	0.19	0.22
	40	31'	1.0	0.20	0.23
	50	**31'**	**1.2**	**0.24**	**0.28**
	60	32'	1.3	0.24	0.28
1.5	30	32'	1.2	0.23	0.26
	40	33'	1.4	0.25	0.29
	50	**34'**	**1.6**	**0.27**	**0.31**
	60	34'	1.8	0.30	0.35
2.0	30	32'	1.6	0.30	0.35
	40	34'	1.8	0.30	0.35
	50	**36'**	**2.0**	**0.30**	**0.34**
	60	36'	2.2	0.33	0.38
3.0	30	34'	2.0	0.33	0.38
	40	36'	2.4	0.36	0.41
	50	**38'**	**2.7**	**0.36**	**0.42**
	60	38'	2.9	0.39	0.45
3.5	30	34'	2.6	0.43	0.52
	40	38'	3.0	0.40	0.46
	50	**40'**	**3.4**	**0.41**	**0.47**
	60	40'	3.7	0.45	0.51
4.0	30	37'	3.2	0.45	0.52
	40	39'	3.7	0.47	0.54
	50	**41'**	**4.2**	**0.48**	**0.56**
	60	42'	4.6	0.50	0.58
6.0	30	35'	4.2	0.66	0.76
	40	40'	4.9	0.59	0.68
	50	**43'**	**5.5**	**0.57**	**0.66**
	60	44'	6.0	0.60	0.69
8.0	40	41'	6.0	0.69	0.79
	50	44'	6.8	0.68	0.78
	60	**45'**	**7.6**	**0.72**	**0.83**
	70	47'	8.2	0.71	0.83

Use Hunter I-20, 4" pop-up heads



PHYSICAL PLANT IRRIGATION PLAN
SCALE: 1" = 20'-0"

LSW architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

STATE OF WASHINGTON REGISTERED LANDSCAPE ARCHITECT
RONALD VAN MAH CERTIFICATE NO. 389

drawn by JR
checked by MAH
lsw job number 03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.01.05
BID SET

revisions

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

PHYSICAL PLANT BUILDING IRRIGATION PLAN

L2.2

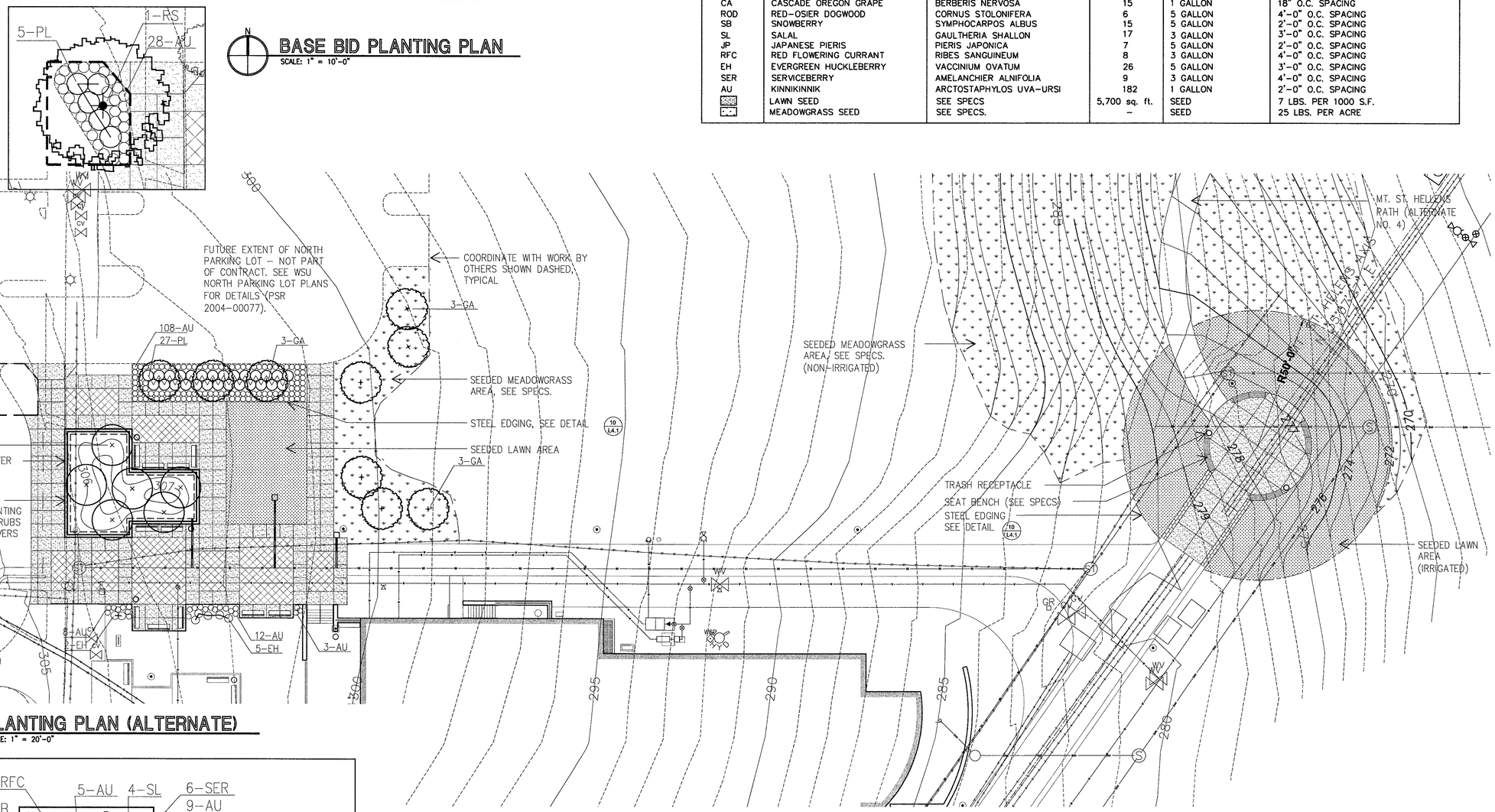
File.....FINAL Capital Facility Plan 123004.dwg
Plot Scale...1
Plot Date...12-30-04
Plot Time.....

BASE BID PLANT LEGEND FOR OPEN SPACE ENHANCEMENT:

SYMBOL	COMMON NAME	BOTANICAL NAME	QUANTITY	SIZE	COMMENTS
RS	RED SUNSET RED MAPLE	ACER RUBRUM 'RED SUNSET'	1	3 1/2" CALIPER	18'–22' HEIGHT, WELL BRANCHED, B&B
PL	OTTO LUYKEN LAUREL	PRUNUS LAUROCERASUS 'OTTO LUYKEN'	5	5 GALLON	4'–0" O.C. SPACING
AU	KINNIKINNIK	ARCTOSTAPHYLOS UVA–URSI	28	1 GALLON	2'–0" O.C. SPACING

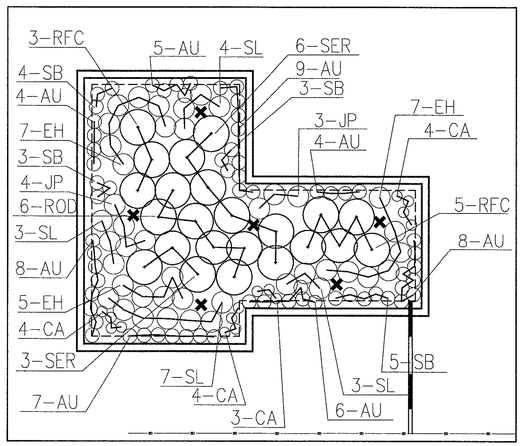
ALTERNATE BID PLANT LEGEND FOR OPEN SPACE ENHANCEMENT:

SYMBOL	COMMON NAME	BOTANICAL NAME	QUANTITY	SIZE	COMMENTS
M	MADRONE	ARBUTUS MENZIESSI	6	3 1/2" – 4" CALIPER	10'–12' HEIGHT, WELL BRANCHED, B&B
GA	MARSHALL SEEDLESS GREEN ASH	FRAXINUS PENNSYLVANICA 'MARSHALL'	9	2–2 1/2" CALIPER	6–8' HEIGHT, WELL BRANCHED
PL	OTTO LUYKEN LAUREL	PRUNUS LAUROCERASUS 'OTTO LUYKEN'	27	5 GALLON	4'–0" O.C. SPACING
CA	CASCADE OREGON GRAPE	BERBERIS NERVOSA	15	1 GALLON	18" O.C. SPACING
ROD	RED–OSIER DOGWOOD	CORNUS STOLONIFERA	6	5 GALLON	4'–0" O.C. SPACING
SB	SNOWBERRY	SYMPHOCARPOS ALBUS	15	5 GALLON	2'–0" O.C. SPACING
SL	SALAL	GAULTHERIA SHALLON	17	3 GALLON	3'–0" O.C. SPACING
JP	JAPANESE PIERIS	PIERIS JAPONICA	7	5 GALLON	2'–0" O.C. SPACING
RFC	RED FLOWERING CURRANT	RIBES SANGUINEUM	8	3 GALLON	4'–0" O.C. SPACING
EH	EVERGREEN HUCKLEBERRY	VACCINIUM OVATUM	26	5 GALLON	3'–0" O.C. SPACING
SER	SERVICEBERRY	AMELANCHIER ALNIFOLIA	9	3 GALLON	4'–0" O.C. SPACING
AU	KINNIKINNIK	ARCTOSTAPHYLOS UVA–URSI	182	1 GALLON	2'–0" O.C. SPACING
	LAWN SEED	SEE SPECS	5,700 sq. ft.	SEED	7 LBS. PER 1000 S.F.
	MEADOWGRASS SEED	SEE SPECS.	–	SEED	25 LBS. PER ACRE



BASE BID PLANTING PLAN
SCALE: 1" = 10'–0"

PLANTING PLAN (ALTERNATE)
SCALE: 1" = 20'–0"



RAISED PLANTER PLANTING PLAN (ALTERNATE)
SCALE: 1" = 10'–0"

NOTES:

1. THERE ARE THREE TYPES OF PLANTING AREAS WHICH HAVE VARYING TOPSOIL.
   TYPE 1 PLANTING AREAS (PLANTED WITH TREES, SHRUBS AND GROUNDCOVERS.)
   TYPE 2 PLANTING AREAS (PLANTED WITH LAWN SEED)
   TYPE 3 PLANTING AREAS (PLANTED WITH MEADOWGRASS SEED)
2. REGRADE AND SEED STAGING AREAS AND ALL OTHER ADJACENT AREAS DISTURBED DURING CONSTRUCTION WITH MEADOWGRASS SEED. PREPARE SOIL PER TYPE 3 PLANTING AREA, SEE DETAIL 11/L4.1.
3. SOME WORK REQUIRED BY THIS CONTRACT IS OUTSIDE OF CONSTRUCTION LIMITS SHOWN. COORDINATE WITH ADJACENT DEVELOPMENT AS NECESSARY TO COMPLETE ALL LANDSCAPE WORK SHOWN ON DRAWING.
4. COORDINATE WORK SHOWN ON THIS DRAWING WITH OTHER EXISTING OR PROPOSED SITE WORK. SEE CIVIL AND ARCHITECT DRAWINGS.
5. CONTRACTOR TO FIELD VERIFY LOCATION AND DEPTH OF ALL EXISTING UTILITIES.
6. EXISTING IRRIGATION SYSTEM – CUT & CAP EXISTING IRRIGATION SYSTEM IN THIS AREA PRIOR TO CONSTRUCTION. PROTECT AND MODIFY EXISTING IRRIGATION SYSTEMS.
7. CONTRACTOR TO PROVIDE TEMPORARY IRRIGATION SYSTEM AS REQUIRED TO ESTABLISH AND MAINTAIN MEADOW GRASS PLANTING AREAS.
8. CONTRACTOR SHALL VERIFY ALL QUANTITIES, MEASUREMENTS AND SITE CONDITIONS.
9. ALL PLANT MATERIALS SHALL BE HEALTHY, WELL FORMED AND TO THE EXTENT POSSIBLE CONFORMED IN SIZE AND GRADE TO THE "AMERICAN STANDARD FOR NURSERY STOCK: CURRENT EDITION, AND SHALL BE INSTALLED AND MAINTAINED AS PER SPECIFICATIONS.
10. PROVIDE WSU REPRESENTATIVE WITH NURSERY 'SHIPPING LIST' TO VERIFY PROPER SPECIES AND QUANTITY AT POST–GRADING, PRE–PLANTING INSPECTION MEETING.
11. A POST–PLANTING FINAL REVIEW MEETING WITH CONTRACTOR AND WSU REPRESENTATIVE WILL BE HELD WHEN CONTRACTOR HAS COMPLETED INSTALLATION.
12. CONTRACTOR SHALL PROVIDE ONE–YEAR PLANT WARRANTY AFTER ACCEPTANCE OF PLANTING. THE CONTRACTOR SHALL REPLACE ALL DEAD OR UNHEALTHY PLANTS FOUND AT THE END OF THE WARRANTY PERIOD.
13. PLANTING PERIOD IS WEATHER DEPENDENT AND PLANTING SEQUENCE SHALL BE ADJUSTED ACCORDING TO SOIL MOISTURE. ALL PLANTINGS SHALL BE COMPLETE BY THE FIFTEENTH OF NOVEMBER UNLESS PLANTING PERIOD IS EXTENDED BY WSU REPRESENTATIVE AS A RESULT OF CONTINUING MILD WEATHER.

NOTE:
ALL WORK ON THIS SHEET IS PART OF ALTERNATIVE BID WORK EXCEPT WHERE NOTED.

TWC logo1_bw.jpg

LSW architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

STATE OF WASHINGTON REGISTERED LANDSCAPE ARCHITECT
RONALD V.H. MAH CERTIFICATE NO. 389

drawn by
JR
checked by
MAH
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.01.05
BID SET

revisions

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

OPEN SPACE ENHANCEMENT PLANTING PLAN (ALTERNATE NO. 3)

L3.1

File.....FINAL Capitol Facility Plan 123004.dwg
Plot Scale...1
Plot Date...12–30–04
Plot Time...

IRRIGATION NOTES:

1. DEMOLITION AND RETRO-FIT: REMOVE EXISTING IRRIGATION PIPE AND SALVAGE IRRIGATION HEADS FOR AREAS DISTURBED BY NEW CONSTRUCTION WORK. RE-INSTALL SALVAGED IRRIGATION HEADS AS PART OF THE NEW IRRIGATION SYSTEM. CONNECT NEW IRRIGATION SYSTEM TO EXISTING IRRIGATION LATERAL PIPES AT SOUTH END OF RED PERMIT PARKING LOT. DO NOT RE-USE REMOVED PIPE, DISPOSE OF OFF-SITE.

2. COORDINATION: IRRIGATION WORK SHALL BE COORDINATED WITH PLANTING PLAN AND OTHER SITE IMPROVEMENTS. IRRIGATION IS GENERALLY DESIGNED TO PROVIDE MINIMUM DOUBLE HEAD-TO-HEAD COVERAGE. DO NOT ALTER HEAD AND PIPE LOCATIONS WITHOUT PRIOR APPROVAL OF THE OWNER'S REPRESENTATIVE EXCEPT FOR MINOR REROUTING AROUND UTILITIES AND OTHER SITE IMPROVEMENTS.

3. IRRIGATION SYSTEM SPECIFICATIONS: SEE SECTION 02810.

4. IRRIGATION INSTALLATION DETAILS: SEE SHEET L4.1.

5. IRRIGATION CONTROLLER: INSTALL IRRIGATION CONTROL WIRING FROM NEW CONTROL VALVES TO EXISTING CONTROLLER LOCATED AT THE NORTHWEST CORNER OF THE EXISTING PHYSICAL PLANT BUILDING. COORDINATE WITH WSU FACILITIES REPRESENTATIVE.

PLANTING TYPE	HEAD TYPE	RISER SIZE	RISER MODEL #
Lawn	Spray	6"	Rainbird 1806-SAM-PRS
Shrub	Spray	6"	Rainbird 1806-SAM-PRS
Groundcover	Spray	6"	Rainbird 1806-SAM-PRS

IRRIGATION LEGEND:

- Schedule 40 PVC mainline
- Class 200 PVC lateral line
- Schedule 40 PVC pipe sleeve, minimum size (slv)
- Control valve: rainbird, see control valve schedule.
- Valve Size / GPM
- Controller
- QC Quick Coupler

SYMBOL	RAINBIRD NOZZLE #	PSI	RADIUS*	DIST.*	TRAJECT. DEGREES	GPM	PRECIP.
	15F	30	360	15'	30	3.7	1.58"/HR
	15H	30	180	15'	30	1.85	1.58"/HR
	15Q	30	90	15'	30	.93	1.58"/HR
	10F	30	360	10'	15	1.57	1.75"/HR
	10H	30	180	10'	15	.79	1.75"/HR
	10Q	30	90	10'	15	.39	1.75"/HR

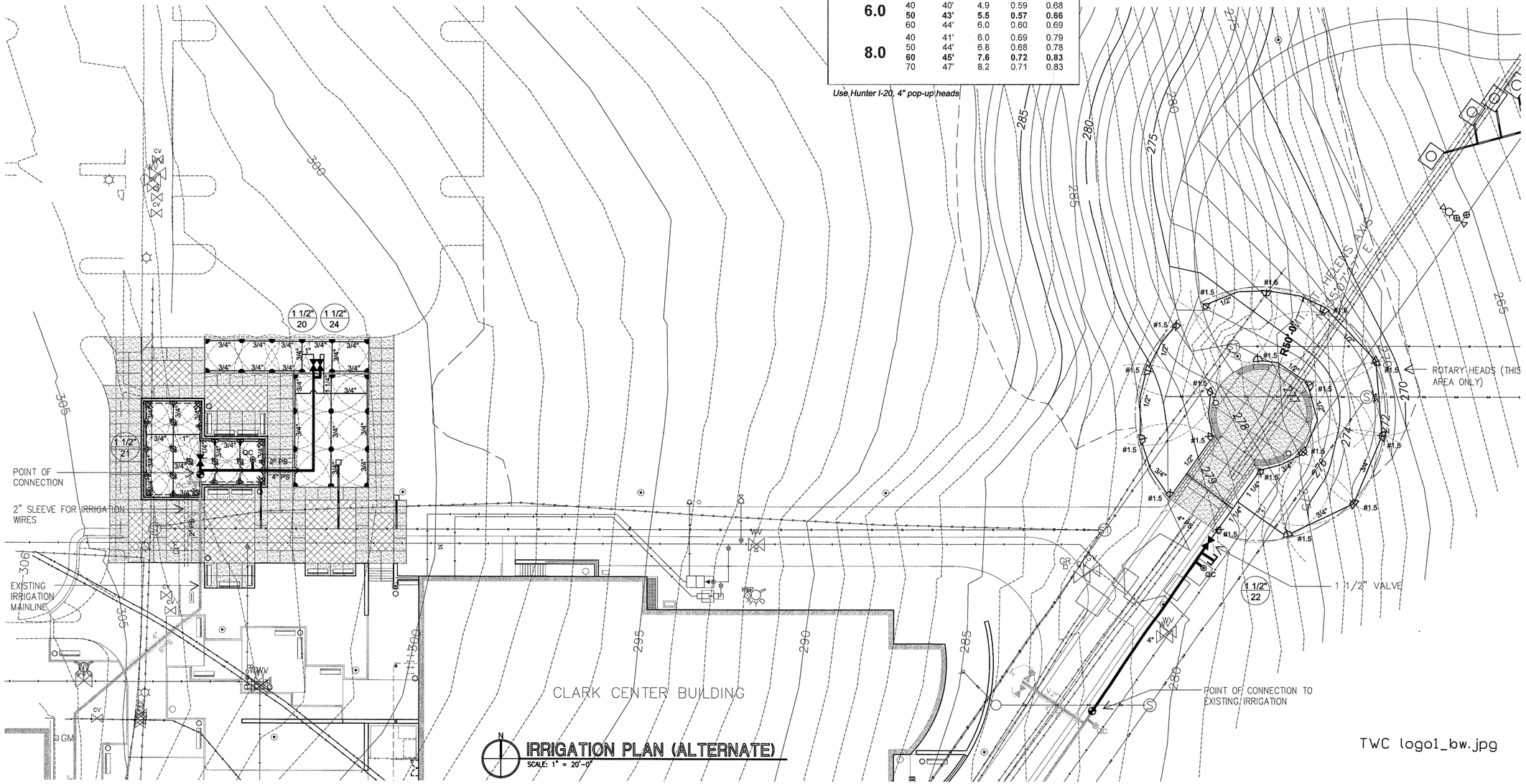
*Distances listed above are for nozzle performance only. Intall heads at locations shown on drawings.

ROTARY HEAD SCHEDULE:

I-10/I-20 *Ultra* Standard Nozzle Performance Data

Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr ■	Precip in/hr ▲
1.0	30	30'	0.9	0.19	0.22
	40	31'	1.0	0.20	0.23
	50	**31'**	**1.2**	**0.24**	**0.28**
	60	32'	1.3	0.24	0.28
1.5	30	32'	1.2	0.23	0.26
	40	33'	1.4	0.25	0.29
	50	**34'**	**1.6**	**0.27**	**0.31**
	60	34'	1.8	0.30	0.35
2.0	30	32'	1.6	0.30	0.35
	40	34'	1.8	0.30	0.35
	50	**36'**	**2.0**	**0.30**	**0.34**
	60	36'	2.2	0.33	0.38
3.0	30	34'	2.0	0.33	0.38
	40	36'	2.4	0.36	0.41
	50	**38'**	**2.7**	**0.36**	**0.42**
	60	38'	2.9	0.39	0.45
3.5	30	34'	2.6	0.43	0.52
	40	38'	3.0	0.40	0.46
	50	**40'**	**3.4**	**0.41**	**0.47**
	60	40'	3.7	0.45	0.51
4.0	30	37'	3.2	0.45	0.52
	40	39'	3.7	0.47	0.54
	50	**41'**	**4.2**	**0.48**	**0.56**
	60	42'	4.6	0.50	0.58
6.0	30	35'	4.2	0.66	0.76
	40	40'	4.9	0.59	0.68
	50	**43'**	**5.5**	**0.57**	**0.66**
	60	44'	6.0	0.60	0.69
8.0	40	41'	6.0	0.69	0.79
	50	44'	6.8	0.68	0.78
	60	**45'**	**7.6**	**0.72**	**0.83**
	70	47'	8.2	0.71	0.83

Use Hunter I-20, 4" pop-up heads



IRRIGATION PLAN (ALTERNATE)
SCALE: 1" = 20'-0"

File.....FINAL Capital Facility Plan 123004.dwg
Plot Scale.... 1
Plot Date.... 12-30-04
Plot Time....

LSW architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

STATE OF WASHINGTON REGISTERED LANDSCAPE ARCHITECT
RONALD W.A. MAH CERTIFICATE NO. 399

drawn by JR
checked by MAH
lsw job number 03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

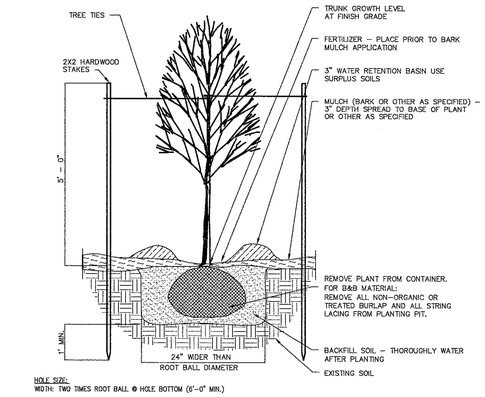
issue date
2.01.05
BID SET

revisions

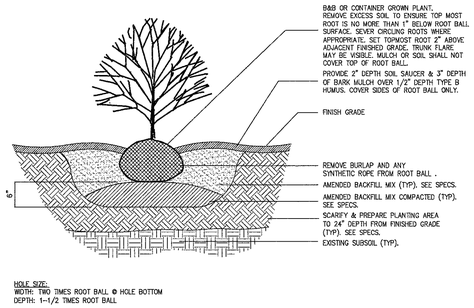
ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

OPEN SPACE ENHANCEMENT IRRIGATION PLAN (ALTERNATE NO. 3)

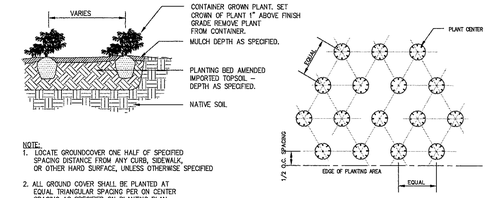
L3.2



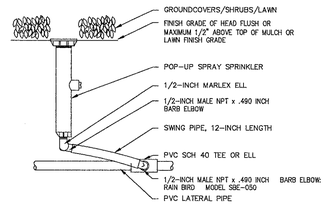
1 DECIDUOUS TREE PLANTING & STAKING
NOT TO SCALE



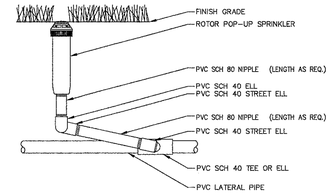
2 SHRUB PLANTING DETAIL
NOT TO SCALE



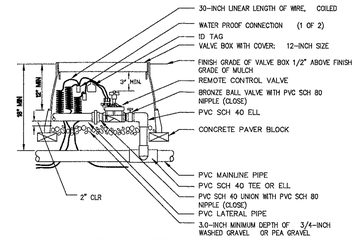
3 GROUNDCOVER DETAIL
NOT TO SCALE



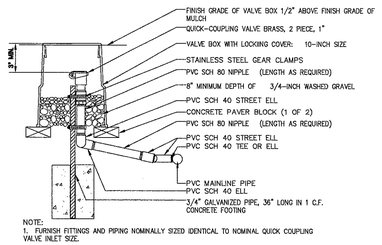
4 POP-UP SPRAY SPRINKLER
NOT TO SCALE



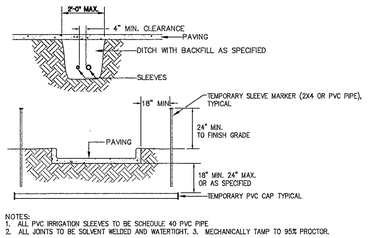
5 ROTOR POP-UP SPRINKLER
NOT TO SCALE



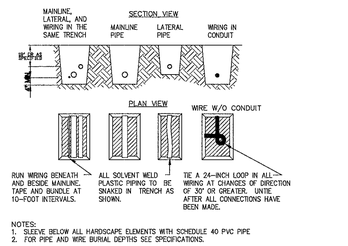
6 REMOTE CONTROL VALVE
NOT TO SCALE



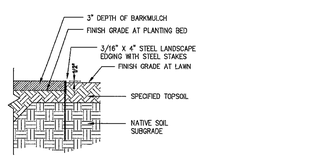
7 QUICK-COUPLING VALVE
NOT TO SCALE



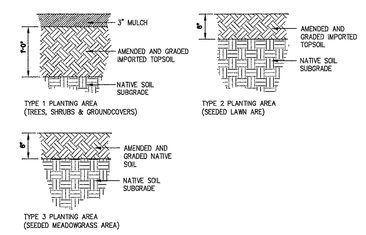
8 SLEEVING
NOT TO SCALE



9 PIPE & WIRE TRENCHING
NOT TO SCALE



10 STEEL EDGING AT PLANTING BED
NOT TO SCALE



11 PLANTING AREA SOIL DEPTHS
NOT TO SCALE

TWC logo1_bw.jpg

File..... FINAL Capital Facility Plan 123004.dwg
Plot Scale.. 1
Plot Date.... 12-30-04
Plot Time....

lsw architects, pc

architecture / planning / interiors

lsw architects, pc
2300 Main Street
Vancouver, Washington 98660

t| 360.694.8571
f| 360.694.9510

STATE OF WASHINGTON REGISTERED LANDSCAPE ARCHITECT
RONALD W.H. MAH CERTIFICATE NO. 309

drawn by
JR

checked by
MAH

lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

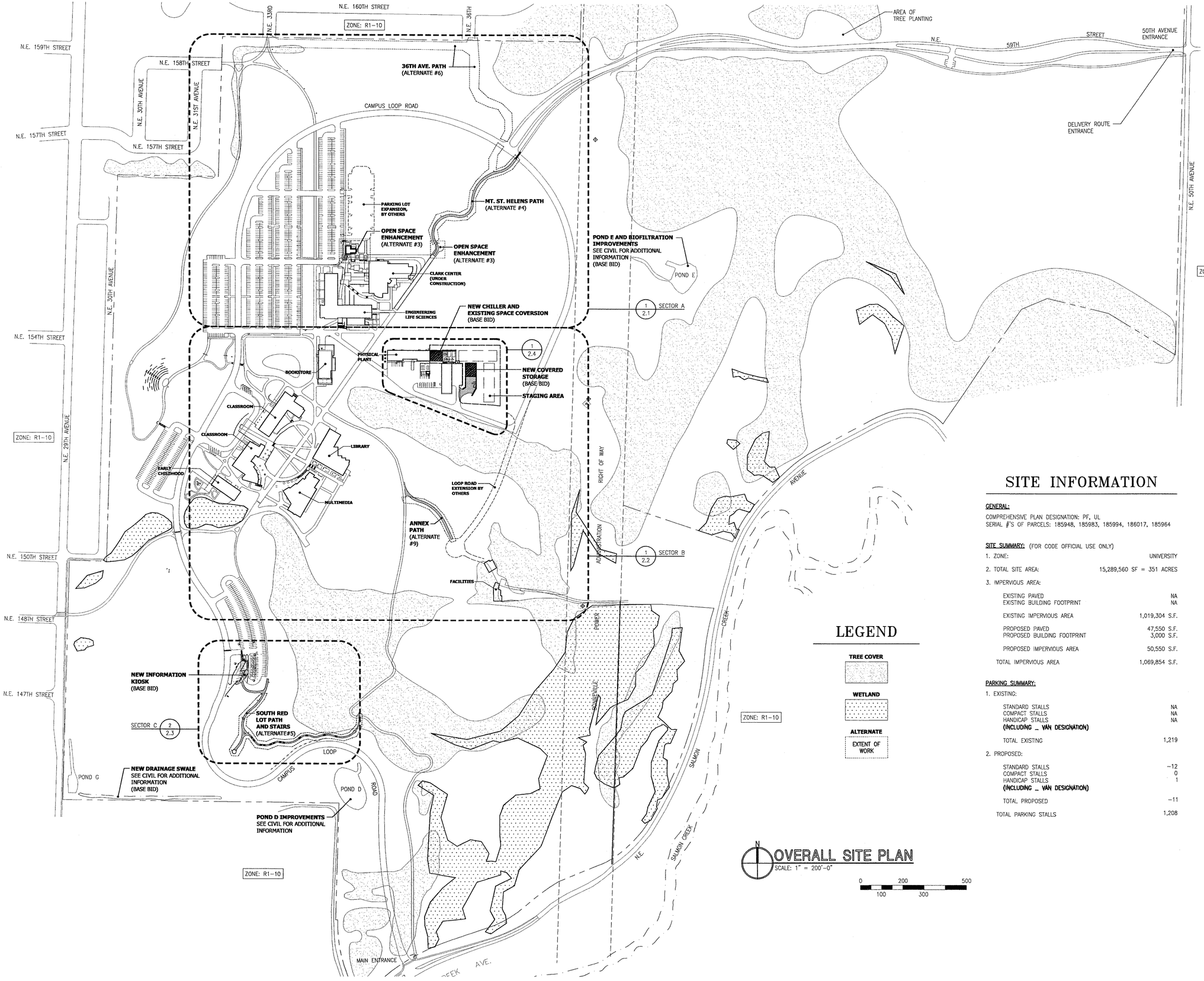
issue date
2.01.05
BID SET

revisions

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

PLANTING & IRRIGATION DETAILS

L4.1



LEGEND

- TREE COVER
- WETLAND
- ALTERNATE: EXTENT OF WORK

OVERALL SITE PLAN

SCALE: 1" = 200'-0"

0 100 200 300 500

SITE INFORMATION

GENERAL:

COMPREHENSIVE PLAN DESIGNATION: PF, UL
SERIAL #'S OF PARCELS: 185948, 185983, 185994, 186017, 185964

SITE SUMMARY: (FOR CODE OFFICIAL USE ONLY)

1. ZONE:	UNIVERSITY
2. TOTAL SITE AREA:	15,289,560 SF = 351 ACRES
3. IMPERVIOUS AREA:	
EXISTING PAVED	NA
EXISTING BUILDING FOOTPRINT	NA
EXISTING IMPERVIOUS AREA	1,019,304 S.F.
PROPOSED PAVED	47,550 S.F.
PROPOSED BUILDING FOOTPRINT	3,000 S.F.
PROPOSED IMPERVIOUS AREA	50,550 S.F.
TOTAL IMPERVIOUS AREA	1,069,854 S.F.

PARKING SUMMARY:

1. EXISTING:	
STANDARD STALLS	NA
COMPACT STALLS	NA
HANDICAP STALLS	NA
(INCLUDING _ VAN DESIGNATION)	
TOTAL EXISTING	1,219
2. PROPOSED:	
STANDARD STALLS	-12
COMPACT STALLS	0
HANDICAP STALLS	1
(INCLUDING _ VAN DESIGNATION)	
TOTAL PROPOSED	-11
TOTAL PARKING STALLS	1,208

lsw architects, pc

architecture / planning / interiors

lsw architects, pc
2300 Main Street
Vancouver, Washington 98660

t| 360.694.8571
f| 360.694.9510

RECORD DRAWINGS

drawn by
CMS
checked by
TRB
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
06.07.06
Record Drawings

revisions

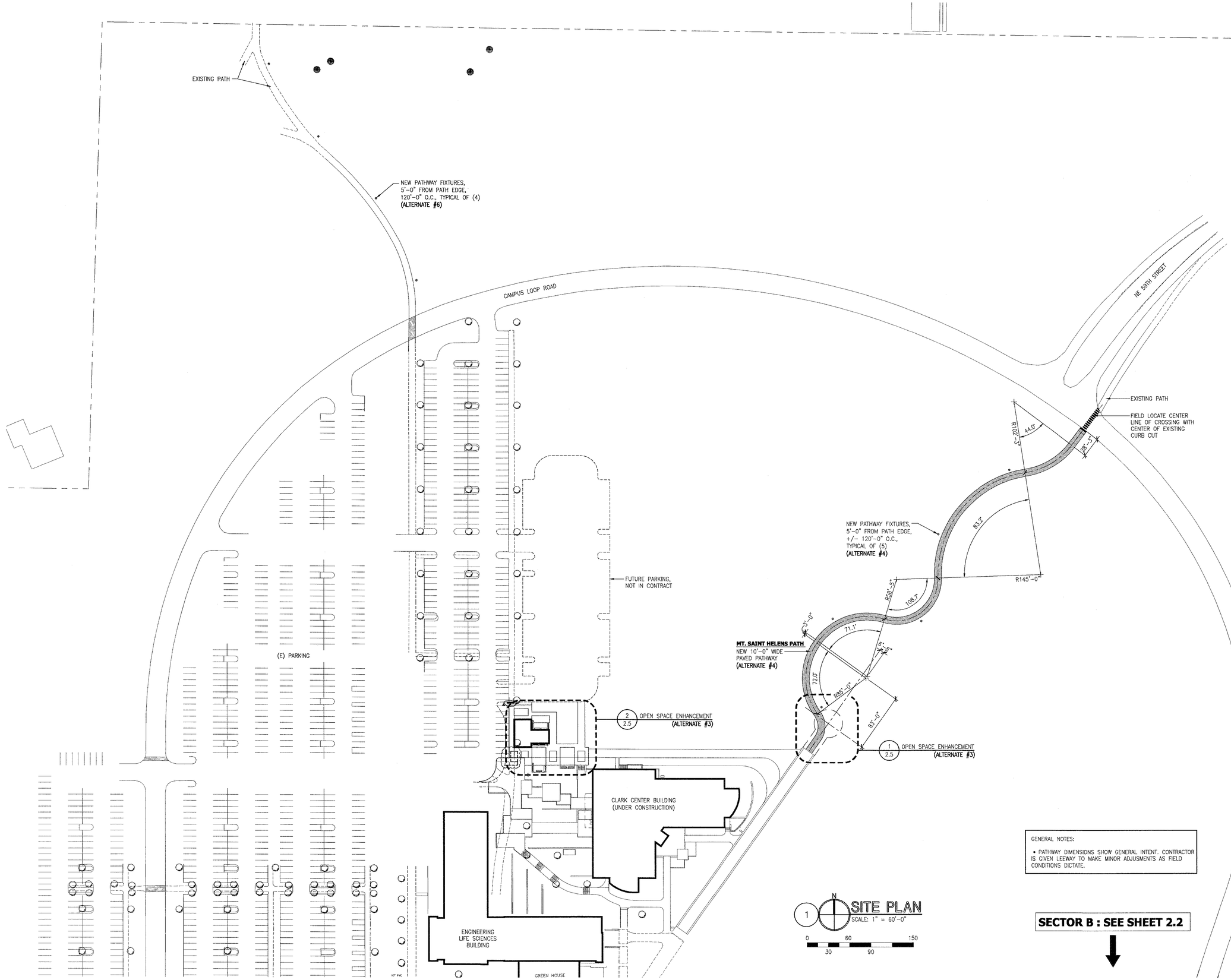
AS-BUILT SET

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

SITE PLAN
OVERALL

2.0

File.....03285-020sp.dwg
Plot Scale... 1
Plot Date.... 01-28-05
Plot Time.... 4:43 PM



1 SITE PLAN
SCALE: 1" = 60'-0"
0 30 60 90 150

GENERAL NOTES:

• PATHWAY DIMENSIONS SHOW GENERAL INTENT. CONTRACTOR IS GIVEN LEEWAY TO MAKE MINOR ADJUSMENTS AS FIELD CONDITIONS DICTATE.

SECTOR B : SEE SHEET 2.2

File.....03285-021sp.dwg
Plot Scale...1
Plot Date....01-28-05
Plot Time....4:13 PM

lsw architects, pc

architecture / planning / interiors

lsw architects, pc
2300 Main Street
Vancouver, Washington 98660

t| 360.694.8571
f| 360.694.9510

RECORD DRAWINGS

drawn by
CMS
checked by
TRB
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003

WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
06.07.06
Record Drawings

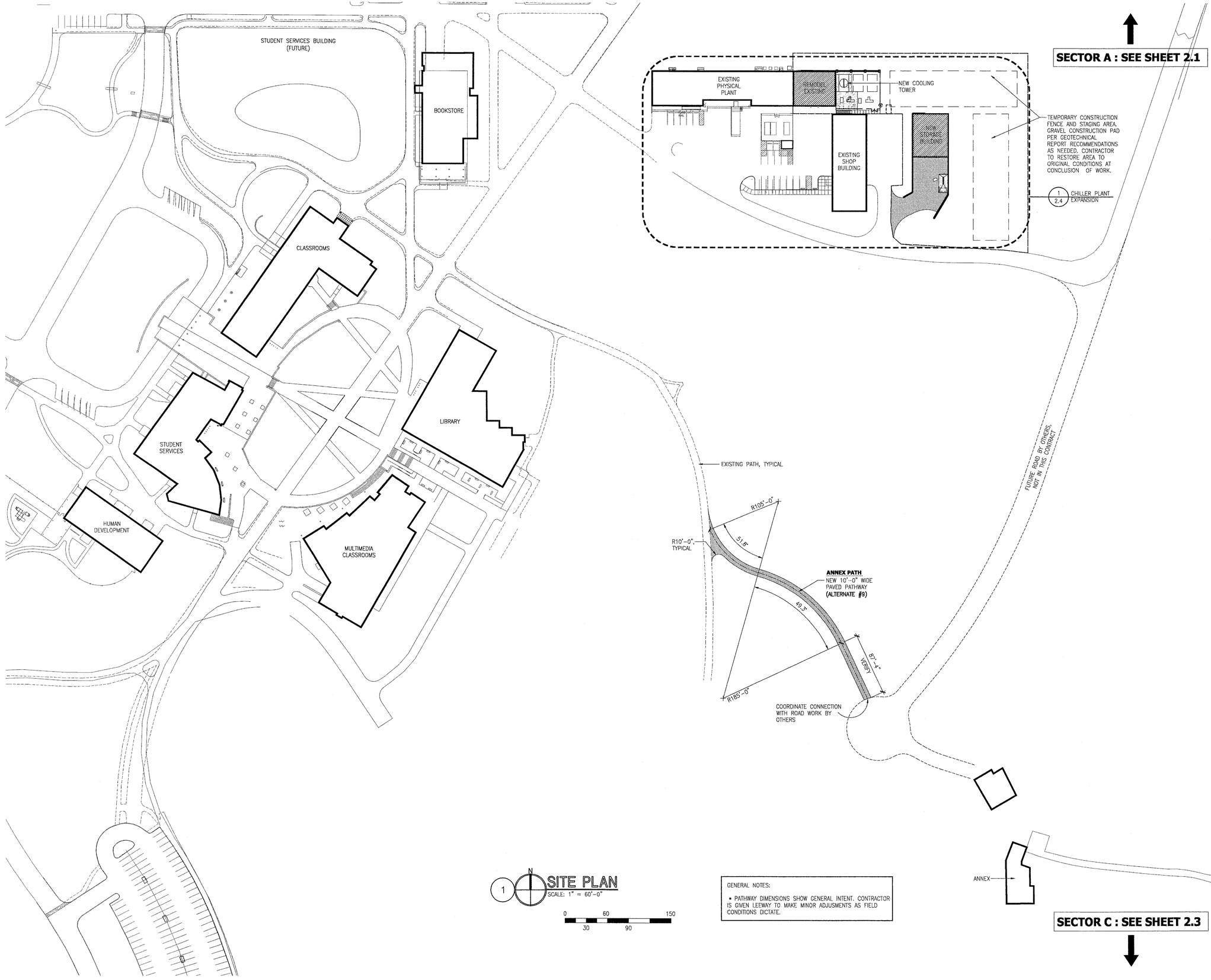
revisions

AS-BUILT SET

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

SITE PLAN
SECTOR A

2.1



GENERAL NOTES:

- PATHWAY DIMENSIONS SHOW GENERAL INTENT. CONTRACTOR IS GIVEN LEEWAY TO MAKE MINOR ADJUSMENTS AS FIELD CONDITIONS DICTATE.

File.....03285-022sp.dwg
Plot Scale....1
Plot Date.....01-28-05
Plot Time.....3:44 PM

LSW architects, pc

architecture / planning / interiors

lsw architects, pc
2300 Main Street
Vancouver, Washington 98660

t| 360.694.8571
f| 360.694.9510

RECORD DRAWINGS

drawn by
CMS
checked by
TRB
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
06.07.06
Record Drawings

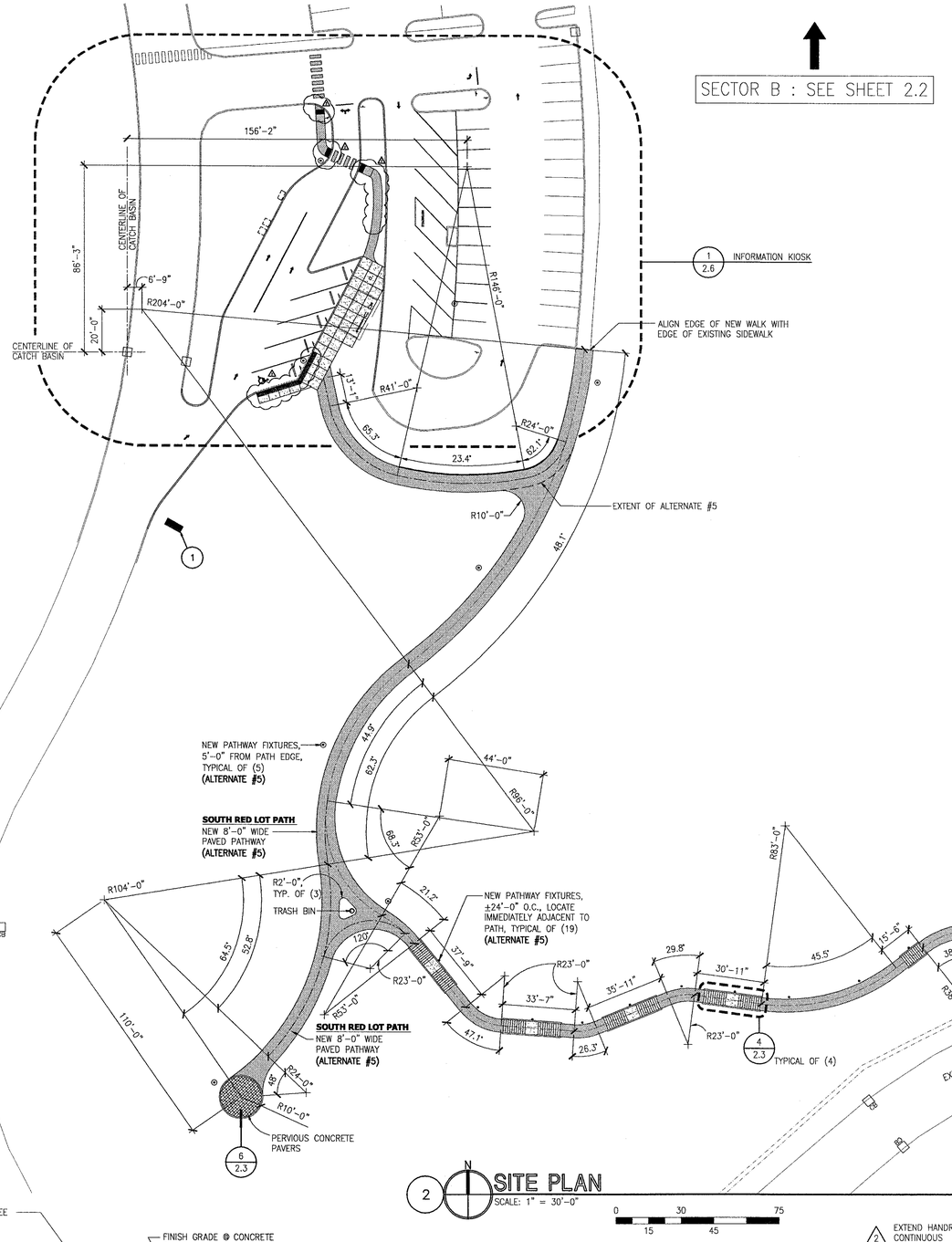
revisions

AS-BUILT SET

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

SITE PLAN
SECTOR B

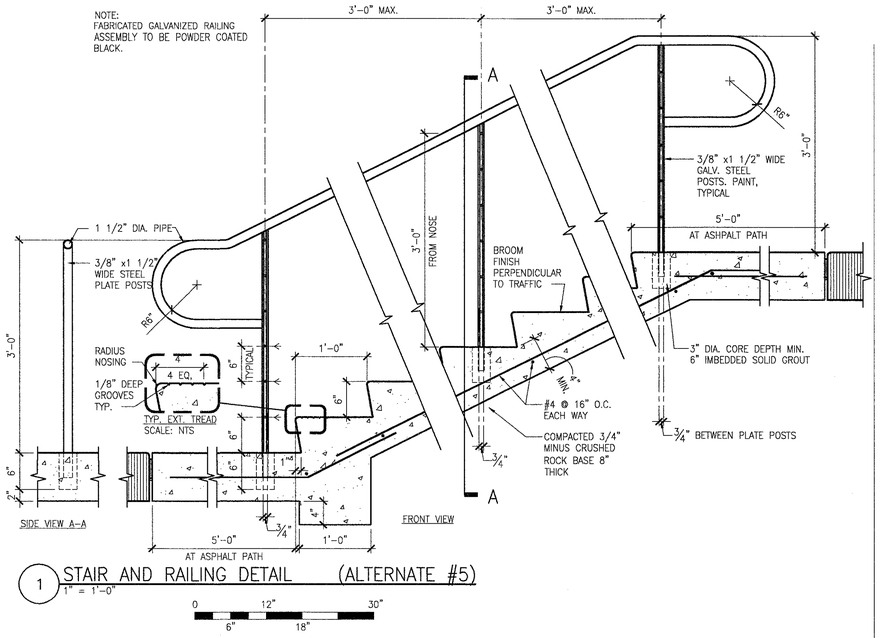
2.2



2 SITE PLAN
SCALE: 1" = 30'-0"

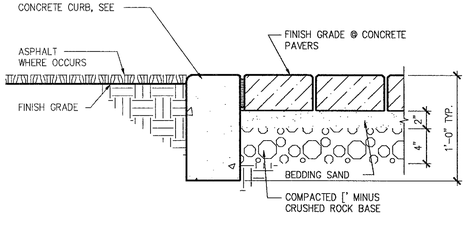
0 30 75
15 45

NOTE:
FABRICATED GALVANIZED RAILING ASSEMBLY TO BE POWDER COATED BLACK.



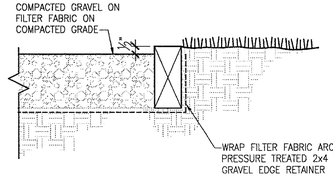
1 STAIR AND RAILING DETAIL (ALTERNATE #5)
1" = 1'-0"

0 12" 30"
6" 18"



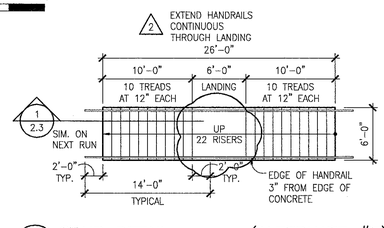
6 CONCRETE PAVER EDGE DETAIL (ALTERNATE #5)
3" = 1'-0"

0 4" 10"
2" 6"



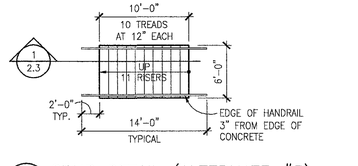
5 GRAVEL EDGE DETAIL
3" = 1'-0"

0 4" 10"
2" 6"



4 STAIR DETAIL (ALTERNATE #5)
1/8" = 1'-0"

0 8 20
4 12



3 STAIR DETAIL (ALTERNATE #5)
1/8" = 1'-0"

0 8 20
4 12

GENERAL NOTES:

- PATHWAY DIMENSIONS SHOW GENERAL INTENT. CONTRACTOR IS GIVEN LEEWAY TO MAKE MINOR ADJUSMENTS AS FIELD CONDITIONS DICTATE.

(#) REFER TO SIGN TYPE SCHEDULE FOR SIGN TYPES

lsw architects, pc

architecture / planning / interiors

lsw architects, pc
2300 Main Street
Vancouver, Washington 98660

t| 360.694.8571
f| 360.694.9510

RECORD DRAWINGS

drawn by
CMS
checked by
TRB
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
06.07.06
Record Drawings

revisions

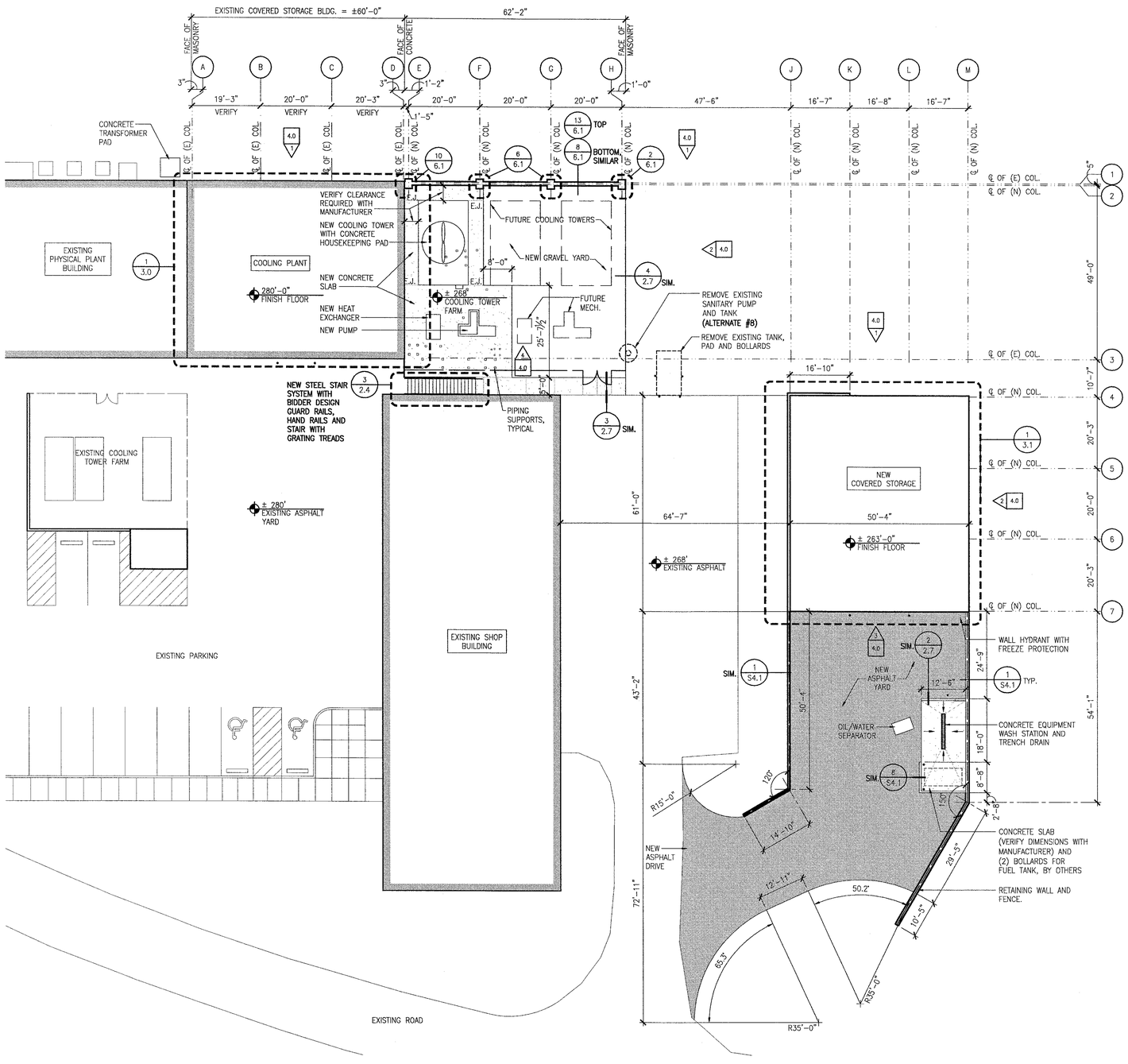
AS-BUILT SET

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

SITE PLAN
SECTOR C

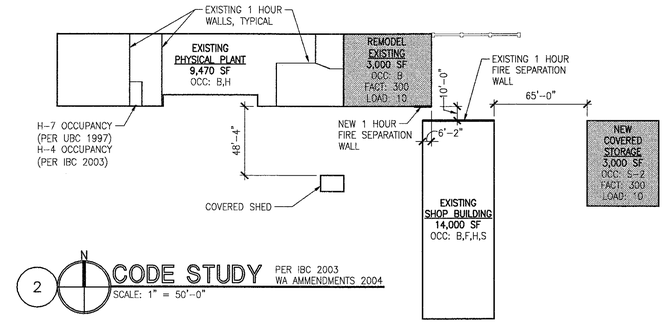
2.3

File.....03285-023sp.dwg
Plot Scale... 1--28--05
Plot Date.... 01--28--05
Plot Time.... 5:30 PM



1 OPERATIONS - ENLARGED SITE PLAN
SCALE: 1/16" = 1'-0"

0 8 16 24 40



2 CODE STUDY PER IBC 2003 WA AMMENDMENTS 2004
SCALE: 1" = 50'-0"

GENERAL CALCULATION NOTES

BUILDING CODE CONFORMANCE BASED UPON THE 2003 INTERNATIONAL BUILDING CODE (IBC) WITH WASHINGTON AMENDMENTS

AREA CALCULATIONS - EXISTING PHYSICAL PLANT

OCCUPANCY GROUP	B
CONSTRUCTION TYPE	V-B
FIRE SPRINKLERS	YES
1HR SUBSTITUTION	NO

	ALLOWABLE	ACTUAL
HEIGHT	40 FT	23 FT
STORIES	2	1
AREA	42,665 S.F.	12,470 S.F.

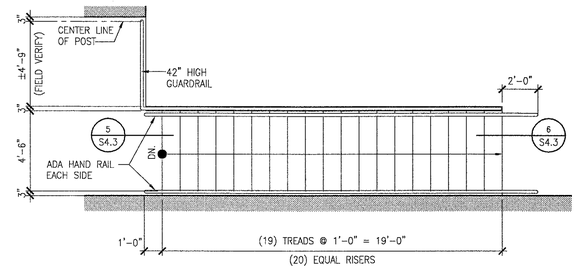
Aσ = Af + (Af x If)/100 + (Af x Is)/100 = 42,665 S.F.
At = 9,000 S.F.
If = 100(F/P-0.25)W/30 = 74%
F = 632'
P = 638'
W = 30'
Is = 300%

AREA CALCULATIONS - NEW COVERED STORAGE

OCCUPANCY GROUP	S-2
CONSTRUCTION TYPE	V-B
FIRE SPRINKLERS	YES
1HR SUBSTITUTION	NO

	ALLOWABLE	ACTUAL
HEIGHT	40 FT	28 FT
STORIES	2	1
AREA	64,125 S.F.	3,000 S.F.

Aσ = Af + (Af x If)/100 + (Af x Is)/100 = 64,125 S.F.
At = 13,500 S.F.
If = 100(F/P-0.25)W/30 = 75%
F = 223'
P = 223'
W = 30'
Is = 300%



3 STAIR DETAIL
1/4" = 1'-0"

0 2 4 6 10

LSW architects, pc

architecture / planning / interiors

lsw architects, pc
2300 Main Street
Vancouver, Washington 98660

t| 360.694.8571
f| 360.694.9510

RECORD DRAWINGS

drawn by
CMS
checked by
TRB
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
06.07.06
Record Drawings

revisions

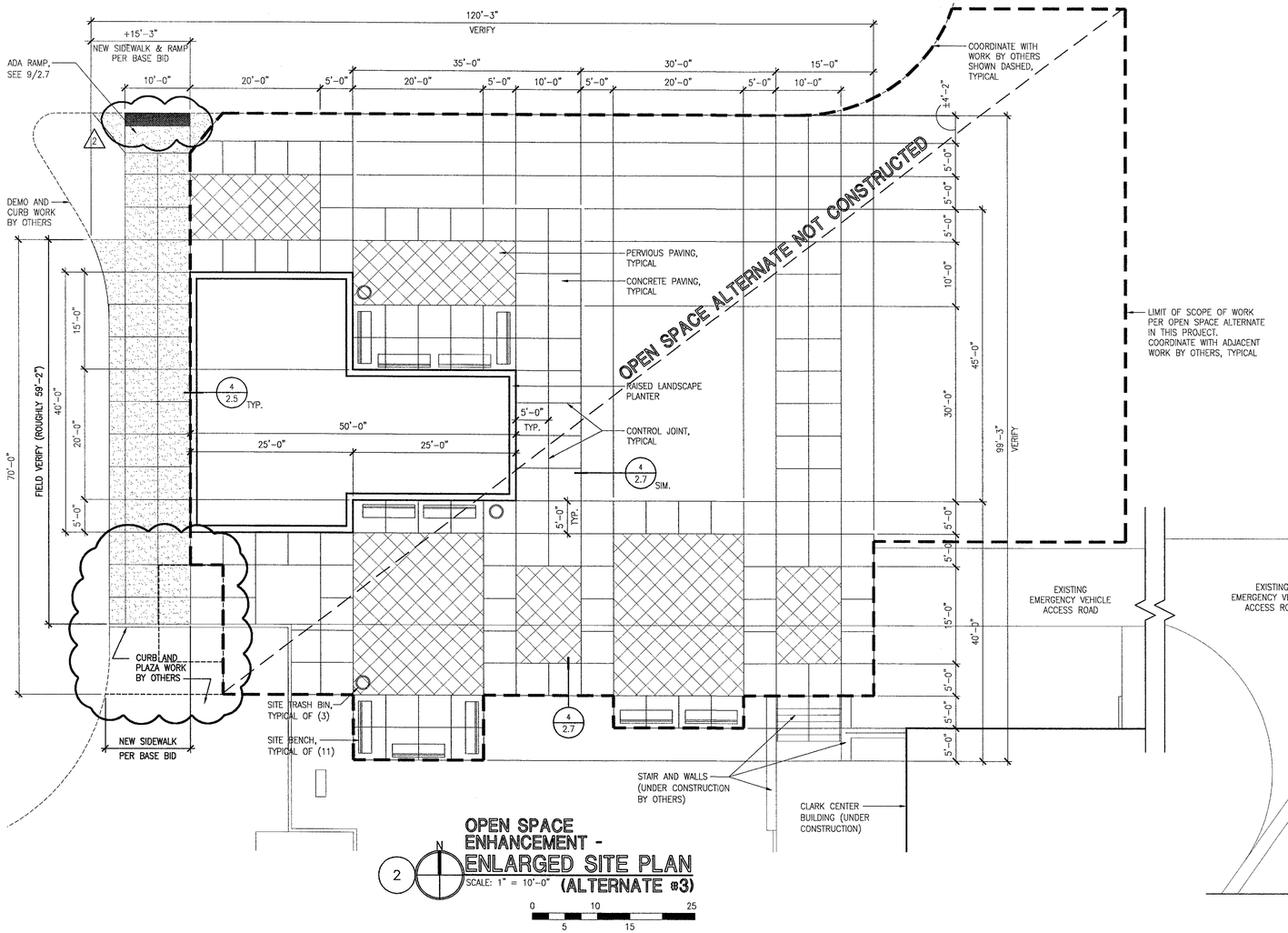
AS-BUILT SET

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

SITE PLAN
ENLARGED

2.4

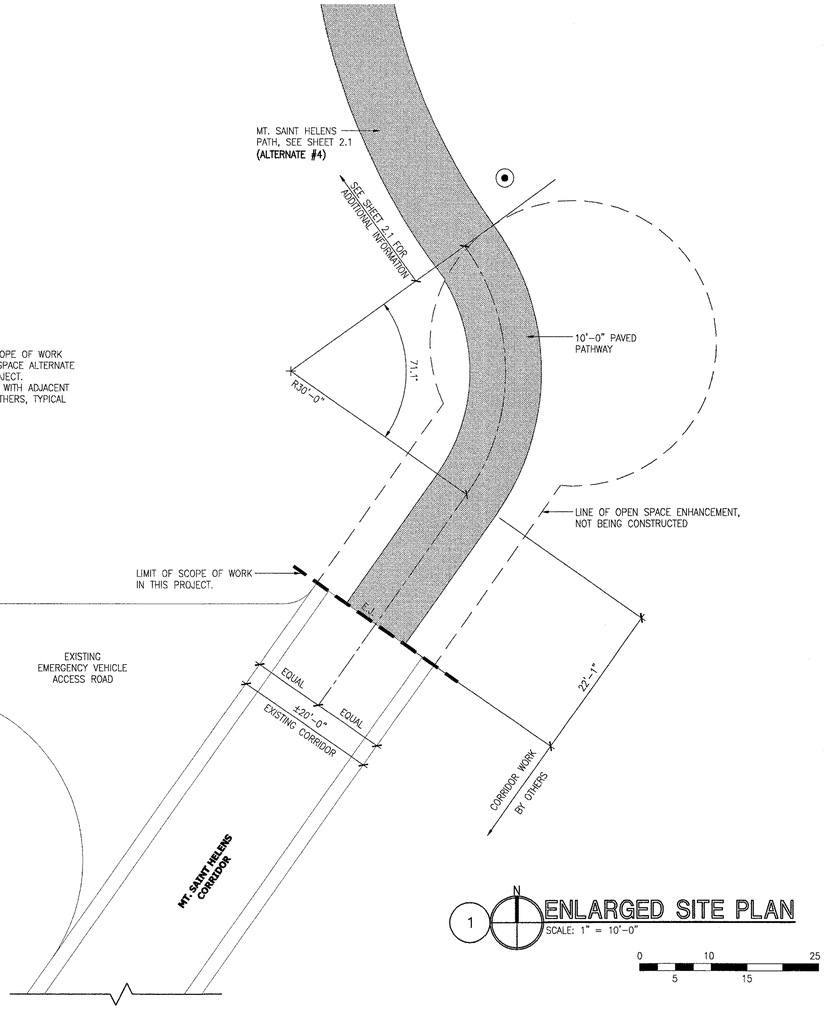
File..... 03285-024sp.dwg
Plot Scale... 1
Plot Date.... 01-28-05
Plot Time.... 3:46 PM



OPEN SPACE ENHANCEMENT - ENLARGED SITE PLAN (ALTERNATE #3)

2 N SCALE: 1" = 10'-0"

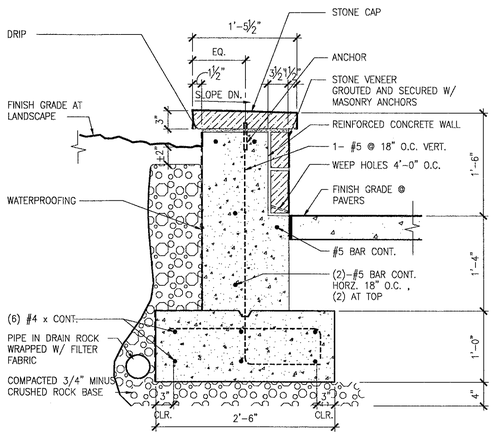
0 5 10 15 25



ENLARGED SITE PLAN

1 N SCALE: 1" = 10'-0"

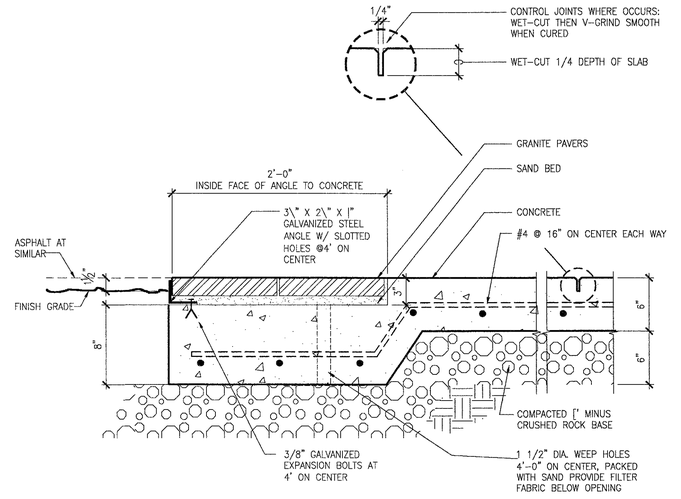
0 5 10 15 25



STONE CLAD PLANTER WALL DETAIL (ALTERNATE #3)

4 SCALE: 1" = 1'-0"

0 6" 12" 18" 30"



MT. ST. HELENS CORRIDOR EDGE (ALTERNATE #3)

3 SCALE: 1\" = 1'-0"

0 4" 8" 12" 20"

LSW architects, pc

architecture / planning / interiors

lsw architects, pc
2300 Main Street
Vancouver, Washington 98660

t| 360.694.8571
f| 360.694.9510

RECORD DRAWINGS

drawn by **CMS**
checked by **TRB**
lsw job number **03285**

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date **06.07.06 Record Drawings**

revisions

AS-BUILT SET

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

SITE PLAN ENLARGED

2.5

File..... 03285-025sp.dwg
Plot Scale... 1 : 1
Plot Date... 06-12-05
Plot Time... 4:20 PM

1'-6" WIDE x 5'-0" CROSSWALK PAINT STRIPING @ 3'-0" O.C., TYPICAL

EXISTING CURB TO REMAIN

REMOVE EXISTING CURB

DIRECTIONAL PAINT STRIPING, SEE DETAIL 8/2.7, TYPICAL

4" WIDE x 8'-0" PAINT STRIPE, TYPICAL OF (3)

EXISTING CURB AND LANDSCAPE

EXISTING STRIPING TO BE REMOVED

PROVIDE CONCRETE PAD AND CURB, VERIFY DIMENSIONS WITH REQUIREMENTS FOR MAILBOX, BOOK DROP AND PARKING PASS DISPENSER, BY OTHERS. VERIFY LOCATIONS WITH OWNER

RELOCATED EXISTING FIXTURE

RAMP DOWN

WHEEL STOP, TYP. OF (6),

MOTORCYCLE

(3) EQUALLY SPACED STALLS @ EACH END = ±104'-2" INSIDE AND ±106'-7" OUTSIDE

EXISTING CURB AND LANDSCAPE

EMERGENCY CALL STATION

4" WIDE x 52' PAINTED CENTERLINE

5'x5' CONTROL JOIN PATTERN, SEE 5/2.7

KIOSK, SEE SHEET 3.2

RELOCATED EXISTING FIXTURE

WHEEL STOP, TYP. OF (5),

WHEEL STOP, TYP. OF (4),

NEW FIXTURE

NOTE:
RADIUS CURB USING BOTH END POINTS AND INTERMEDIATE DIMENSIONS

EXISTING CATCH BASIN, TYPICAL

CENTERLINE OF EXISTING CATCH BASINS

DEMO EXISTING CURB

NOTE:
SEE 2/2.3 FOR CONTINUATION OF CURB LOCATION

NOTE:
SEE 2/2.3 FOR SOUTH RED LOT PATH AND STAIRS (ALTERNATE #5)

KEY

(#) REFER TO SIGN TYPE SCHEDULE FOR SIGN TYPES

1 KIOSK - ENLARGED SITE PLAN

SCALE: 1" = 10'-0"

0 5 10 15 25

File.....03285-026sp.dwg
Plot Scale...1:28-05
Plot Stamp...01-28-06
Plot Time....5:35 PM

lsw architects, pc

architecture / planning / interiors

lsw architects, pc
2300 Main Street
Vancouver, Washington 98660

t| 360.694.8571
f| 360.694.9510

RECORD DRAWINGS

drawn by
CMS
checked by
TRB
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
06.07.06
Record Drawings

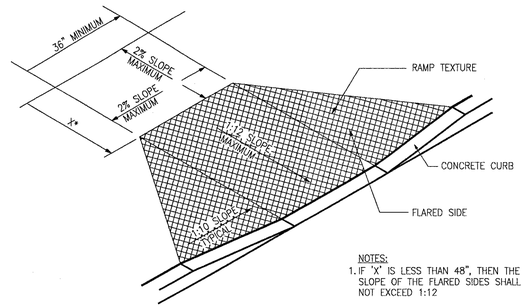
revisions

AS-BUILT SET

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

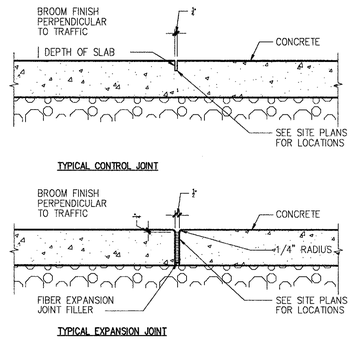
SITE PLAN
ENLARGED

2.6

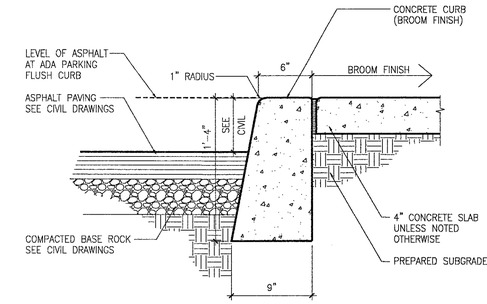


NOTES:
1. IF 'X' IS LESS THAN 48", THEN THE SLOPE OF THE FLARED SIDES SHALL NOT EXCEED 1:12

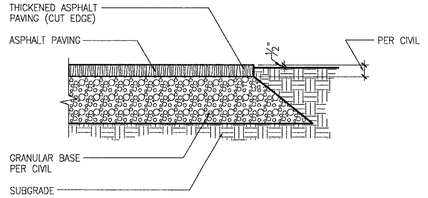
9 RAMP DETAIL
1" = 1'-0"



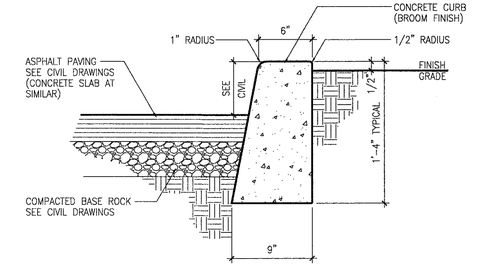
5 TYPICAL EXPANSION AND CONTROL JOINT DETAIL
SCALE: 1 1/2" = 1'-0"



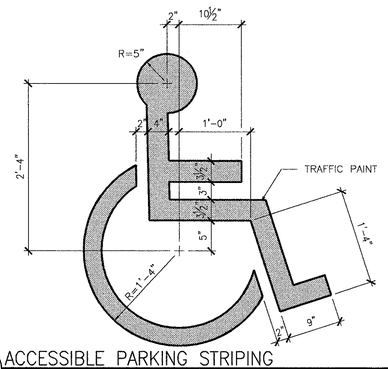
1 CURB AT SIDEWALK
SCALE: 1 1/2" = 1'-0"



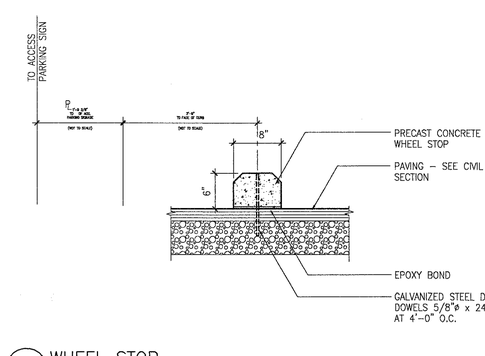
6 EDGE OF PAVEMENT AT GRADE
SCALE: 1" = 1'-0"



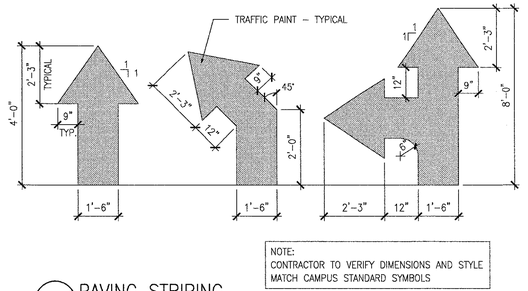
2 CURB AT LANDSCAPE
SCALE: 1 1/2" = 1'-0"



7 ACCESSIBLE PARKING STRIPING
SCALE: 1" = 1'-0"

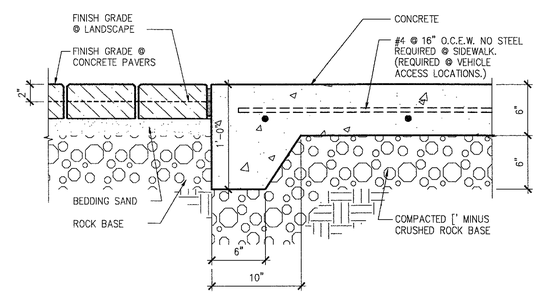


3 WHEEL STOP
SCALE: 1" = 1'-0"



NOTE:
CONTRACTOR TO VERIFY DIMENSIONS AND STYLE MATCH CAMPUS STANDARD SYMBOLS

8 PAVING STRIPING
SCALE: 1" = 1'-0"



4 SIDEWALK DETAIL
SCALE: 1 1/2" = 1'-0"

lsw architects, pc

architecture / planning / interiors

lsw architects, pc
2300 Main Street
Vancouver, Washington 98660

t| 360.694.8571
f| 360.694.9510

RECORD DRAWINGS

drawn by
CMS
checked by
TRB
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
06.07.06
Record Drawings

revisions

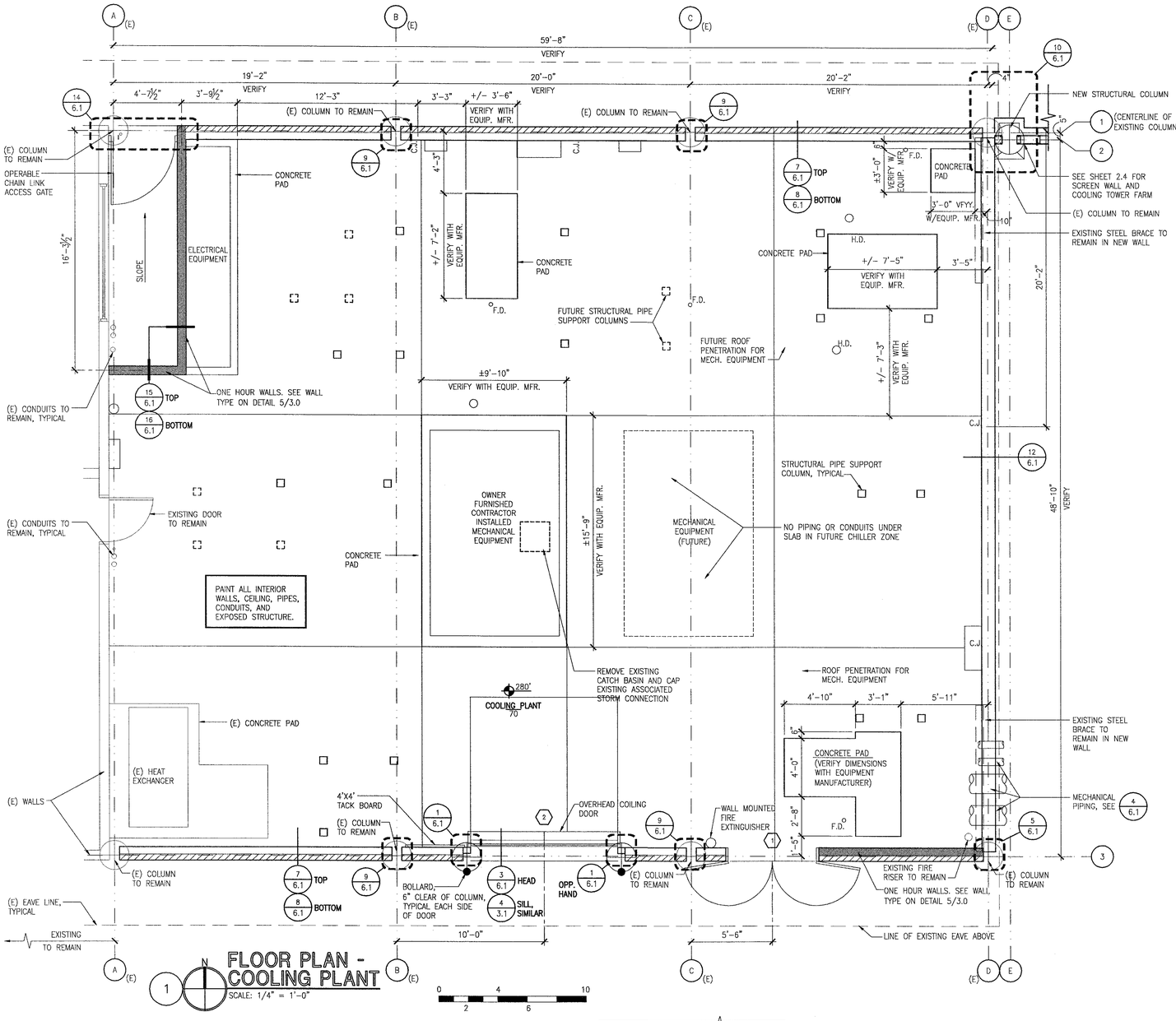
AS-BUILT SET

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

EXTERIOR DETAILS

2.7

File.....03285-027sd.dwg
Plot Scale....1
Plot Date....01-28-05
Plot Time....3:48 PM



FLOOR PLAN - COOLING PLANT

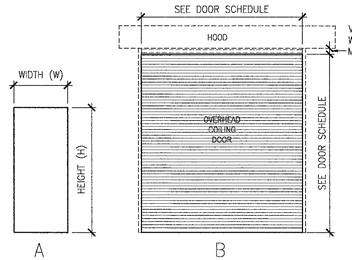
1 SCALE: 1/4" = 1'-0"

COOLING PLANT (EXISTING COVERED STORAGE) DEMOLITION NOTES

1. CONTRACTOR SHALL PROTECT ALL ADJACENT BUILDING AREAS INCLUDING BUILDING SITE FROM CONSTRUCTION DEBRIS AND DAMAGE DURING CONSTRUCTION.
2. EXISTING STRUCTURE TO REMAIN UNLESS OTHERWISE NOTED. SEE CONTRACT DOCUMENTS FOR COORDINATION.
3. DEMOLISH PORTIONS OF BUILDING AS REQUIRED FOR NEW WORK. CONTRACTOR IS RESPONSIBLE FOR VERIFYING AND COORDINATING EXTENT OF REQUIRED DEMOLITION WITH ON-SITE CONDITIONS AND WITH CONTRACT DOCUMENTS. MAINTAIN EXISTING PORTIONS OF BUILDING TO REMAIN. DESCRIPTION OF ALL DEMOLITION WORK IS APPROXIMATE AND FIELD CONDITIONS MAY VARY. CONSULT WITH ARCHITECT SHOULD SIGNIFICANT DISCREPANCIES BE DISCOVERED.
4. AT ALL LOCATIONS WHERE EXISTING FINISHES ARE TO REMAIN, PROVIDE PATCH AND REPAIR AS NECESSARY. AT TRANSITIONS BETWEEN EXISTING AND NEW WORK, PROVIDE FOR A COMPLETE FINISH SYSTEM. WHERE NEW FINISHES ARE NOT SHOWN, PATCH TO MATCH ADJACENT SURFACES.
5. FOR SALVAGE COORDINATION, SEE SPECIFICATION FOR OWNER AND CONTRACTOR COORDINATION REQUIREMENTS.
6. REMOVE AND SALVAGE FOR RELOCATION, EXISTING METAL RIB SIDING AND REINSTALL AT NEW COVERED STORAGE.
7. REMOVE EXISTING ASPHALT AND PREPARE FOR NEW CONCRETE SLAB PER S3.0.
8. REMOVE EXISTING CATCH BASIN AND CAP EXISTING ASSOCIATED STORM CONNECTION, FILL WITH CONCRETE.
9. REMOVE AND SALVAGE FOR RELOCATION, EXISTING LUMINARIES AND REINSTALL AT NEW COVERED STORAGE AS PER E3.1 & E3.2.
10. PATCH AND REPAIR CEILING AT NEW MECHANICAL PENETRATIONS.

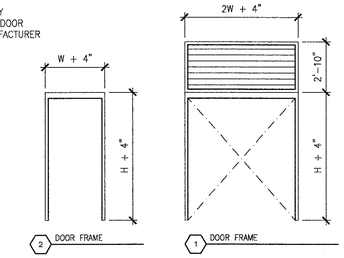
DOOR SCHEDULE

NO.	DOOR SIZE	DOOR TYPE	DOOR MAT.	DOOR FINISH	DOOR HDWR.	FRAME TYPE	FRAME MAT.	FRAME FIN.	DETAILS	RATING	REMARKS
1	PAIR 3'-0" x 7'-0"	A	H.M.	PAINT	HW1	1	H.M.	PAINT		60 MIN.	–
2	O.H. 10'-0" x 10'-0" R.O.	B	STEEL	FACT.	MFR.	MFR.	STEEL	FACT.		–	INSULATED
3	O.H. 16'-0" x 10'-0" R.O.	B	STEEL	FACT.	MFR.	MFR.	STEEL	FACT.		–	NON-INSULATED
4		A	H.M.	PAINT	?	2	H.M.	PAINT		–	–



DOOR TYPES

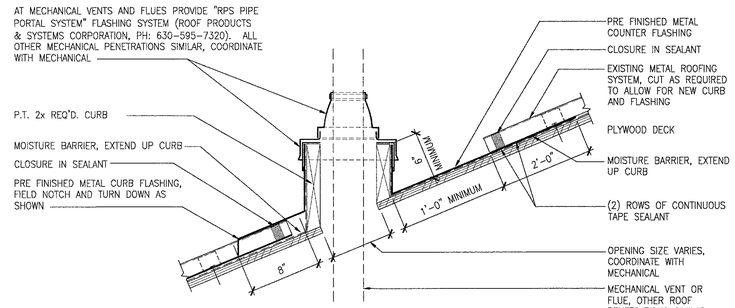
SCALE: 1/4" = 1'-0"
NOTE: REFER TO DOOR SCHEDULE FOR RATING.



DOOR FRAME TYPES

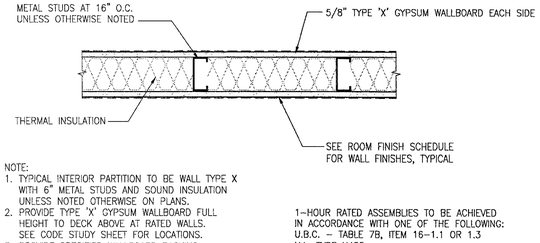
SCALE: 1/4" = 1'-0"
NOTE: COORDINATE RATED OPENINGS LISTED IN THE DOOR SCHEDULE WITH RATED WALL LOCATIONS SHOWN ON THE CODE INFORMATION SHEET. PROVIDE LABELED FRAMES AT RATED OPENINGS.

AT MECHANICAL VENTS AND FLUES PROVIDE "RPS PIPE PORTAL SYSTEM" FLASHING SYSTEM (ROOF PRODUCTS & SYSTEMS CORPORATION, PH: 630-595-7320). ALL OTHER MECHANICAL PENETRATIONS SIMILAR, COORDINATE WITH MECHANICAL



ROOF PENETRATION CURB DETAIL

6 1 1/2" = 1'-0"

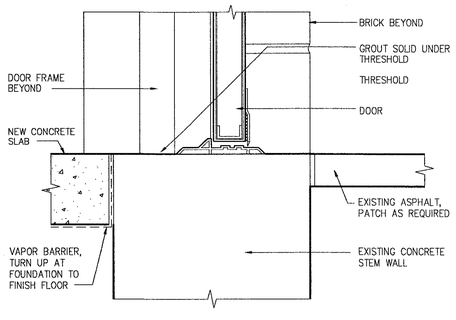


NOTE:
1. TYPICAL INTERIOR PARTITION TO BE WALL TYPE X WITH 6" METAL STUDS AND SOUND INSULATION UNLESS NOTED OTHERWISE ON PLANS.
2. PROVIDE TYPE 'X' GYPSUM WALLBOARD FULL HEIGHT TO DECK ABOVE AT RATED WALLS. SEE CODE STUDY SHEET FOR LOCATIONS.
3. PROVIDE SPECIFIED WALLBOARD BACKING AT CERAMIC TILE LOCATIONS.

1-HOUR RATED ASSEMBLIES TO BE ACHIEVED IN ACCORDANCE WITH ONE OF THE FOLLOWING:
U.B.C. – TABLE 7B, ITEM 16-1.1 OR 1.3
U.L. TYPE U425
I.B.C. – TABLE 720.1(2), ITEM 13-1.1 OR 1.3

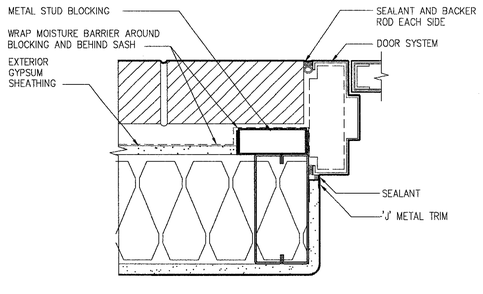
WALL TYPE

5 1 1/2" = 1'-0"



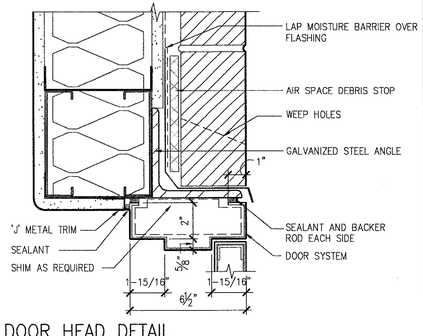
BRICK VENEER THRESHOLD DETAIL

4 3" = 1'-0"



H.M. DOOR JAMB DETAIL

3 3" = 1'-0"



H.M. DOOR HEAD DETAIL

2 3" = 1'-0"

LSW architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

RECORD DRAWINGS

drawn by
CMS
checked by
TRB
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
06.07.06
Record Drawings

revisions

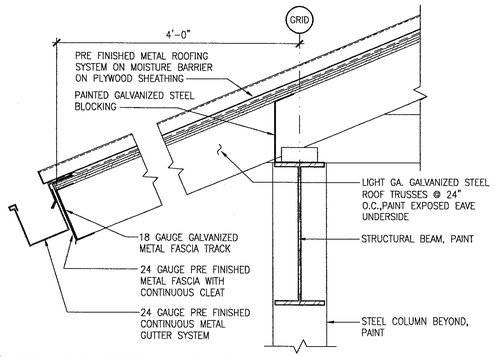
AS-BUILT SET

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

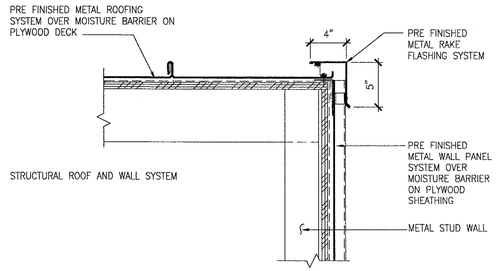
COOLING PLANT PLAN, DETAILS AND DOOR SCHEDULE

3.0

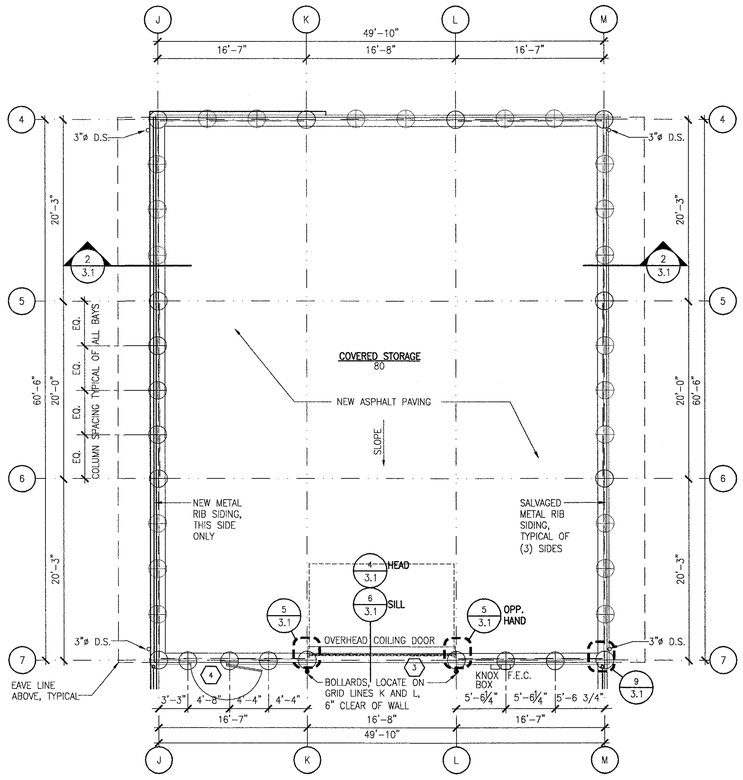
File.....03285-030fp.dwg
Plot Scale...: 1
Plot Date...: 01-28-05
Plot Time...: 3:48 PM



7 COVERED STORAGE EAVE
SCALE: 1 1/2" = 1'-0"

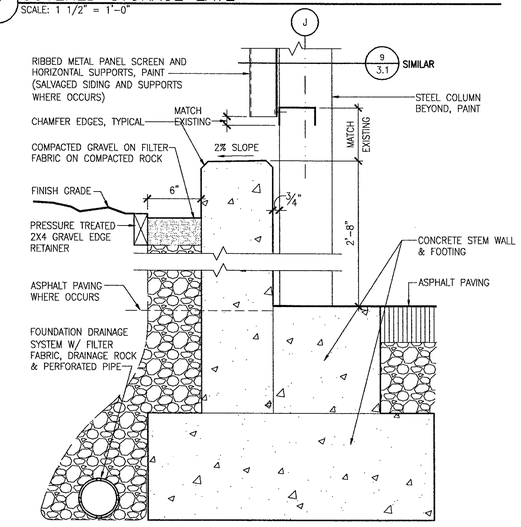


3 RAKE DETAIL
SCALE: 1 1/2" = 1'-0"

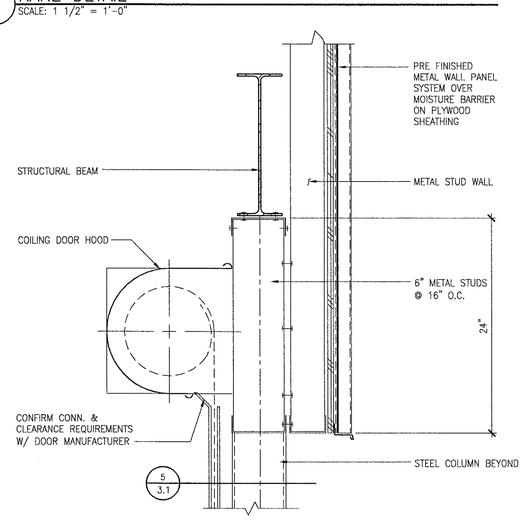


1 FLOOR PLAN
SCALE: 1/8" = 1'-0"

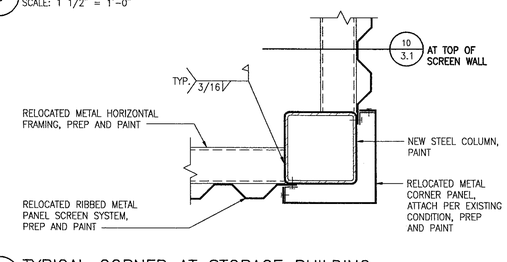
0 4 8 12 20



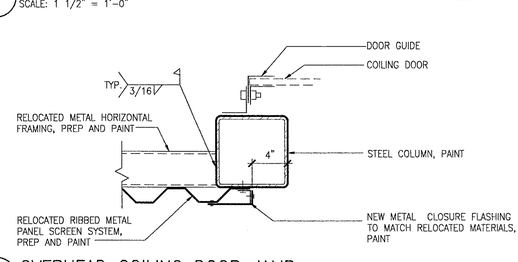
8 PERIMETER FOUNDATION DETAIL
SCALE: 1 1/2" = 1'-0"



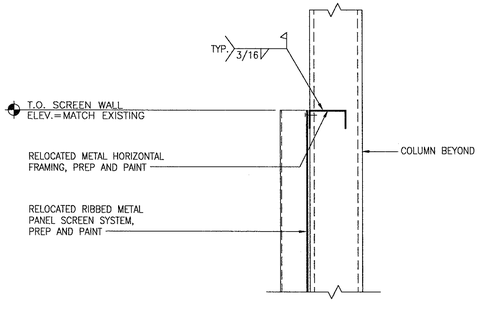
4 COILING DOOR HEAD DETAIL
SCALE: 1 1/2" = 1'-0"



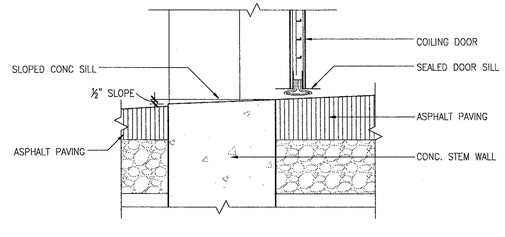
9 TYPICAL CORNER AT STORAGE BUILDING
SCALE: 1 1/2" = 1'-0"



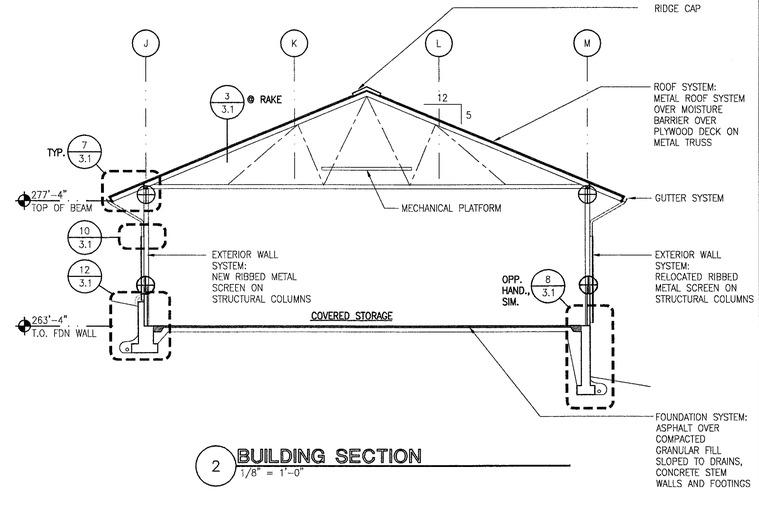
5 OVERHEAD COILING DOOR JAMB
SCALE: 1 1/2" = 1'-0"



10 TOP OF SCREEN WALL AT STORAGE BUILDING
SCALE: 1 1/2" = 1'-0"



6 OVERHEAD COILING DOOR SILL
SCALE: 1 1/2" = 1'-0"



2 BUILDING SECTION
1/8" = 1'-0"

lsw architects, pc

architecture / planning / interiors

lsw architects, pc
2300 Main Street
Vancouver, Washington 98660

t| 360.694.8571
f| 360.694.9510

RECORD DRAWINGS

drawn by
CNS
checked by
TRB
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
06.07.06
Record Drawings

revisions

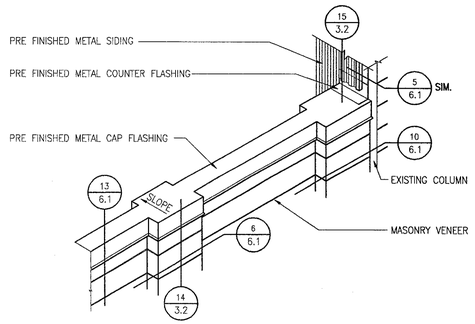
AS-BUILT SET

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

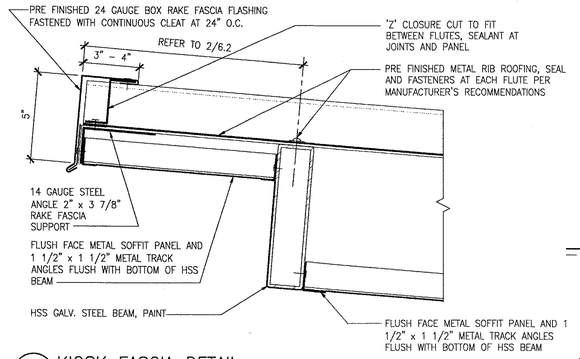
COVERED STORAGE
PLAN, SECTION AND DETAILS

3.1

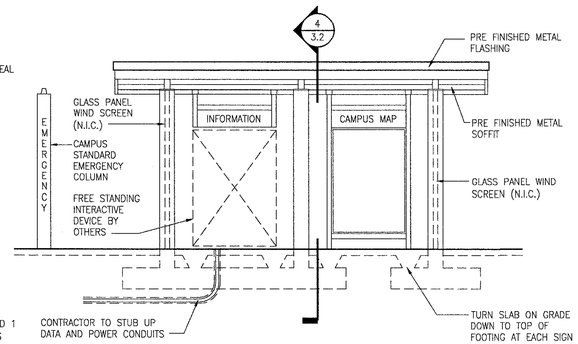
File.....03285-031fp.dwg
Plot Scale...1
Plot Date...01-28-05
Plot Time...3:49 PM



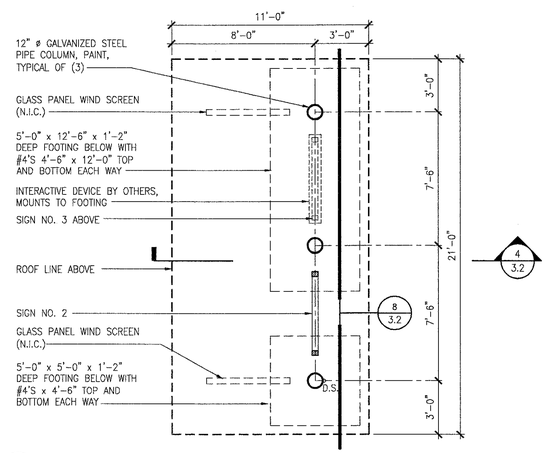
13 ISOMETRIC VIEW OF COLUMN CAP FLASHING
NOT TO SCALE



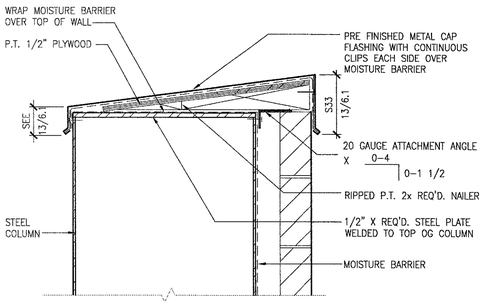
9 KIOSK FASCIA DETAIL
3" = 1'–0"



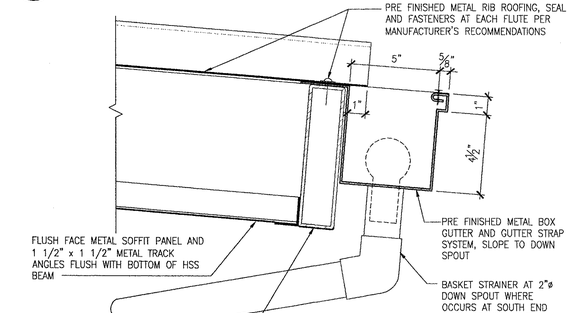
5 KIOSK FRONT ELEVATION
1/4" = 1'–0"



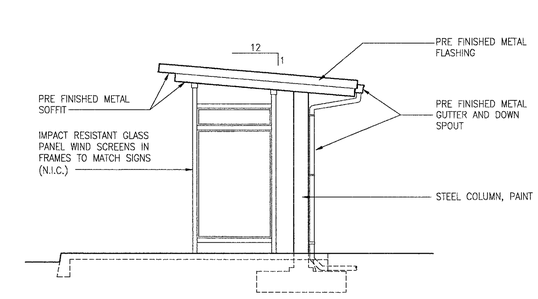
1 KIOSK PLAN
1/4" = 1'–0"



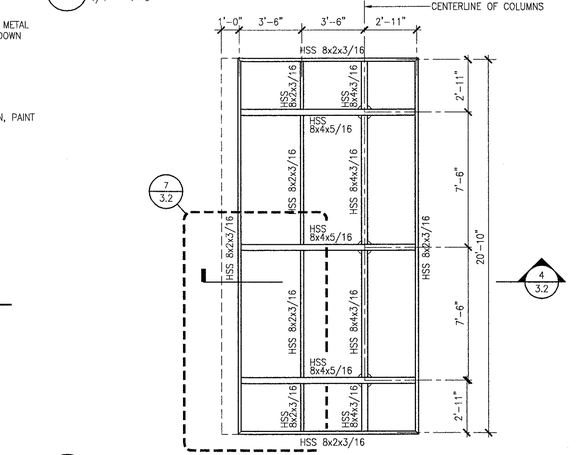
14 COLUMN CAP FLASHING DETAIL
SCALE: 1 1/2" = 1'–0"



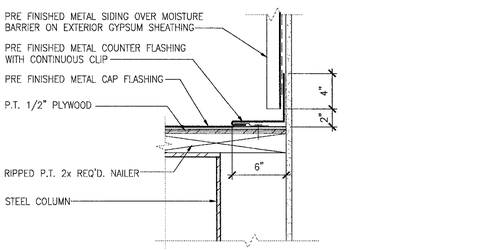
10 KIOSK GUTTER DETAIL
3" = 1'–0"



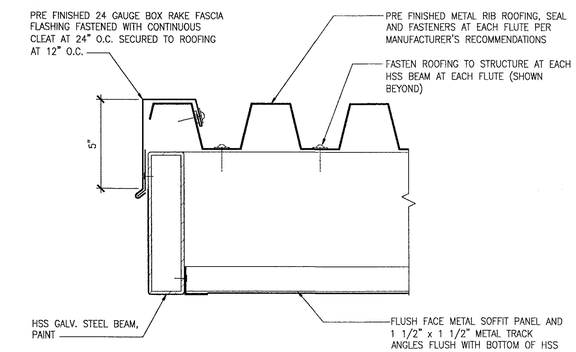
6 KIOSK SIDE ELEVATION
1/4" = 1'–0"



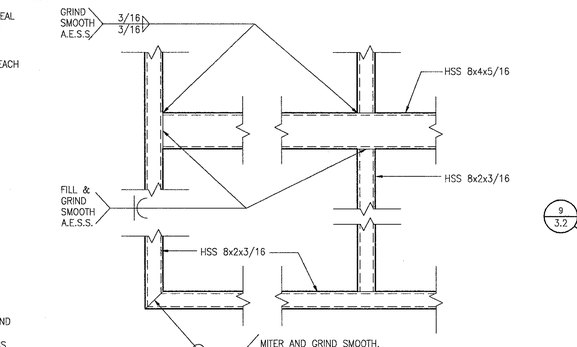
2 KIOSK ROOF FRAMING PLAN
1/4" = 1'–0"



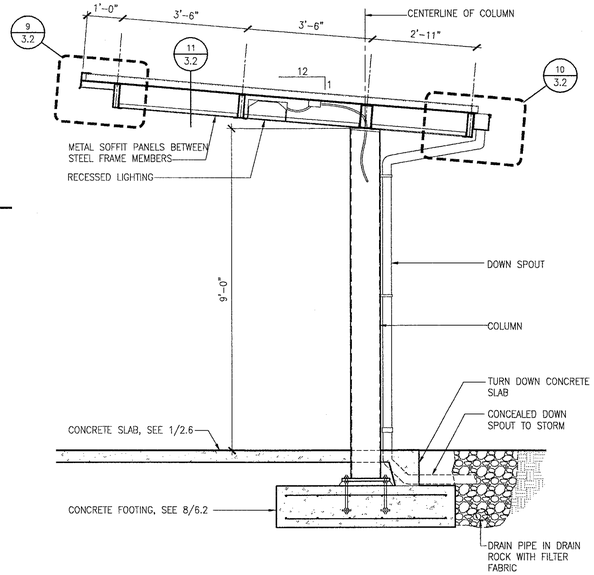
15 COLUMN CAP FLASHING DETAIL AT WALL
SCALE: 1 1/2" = 1'–0"



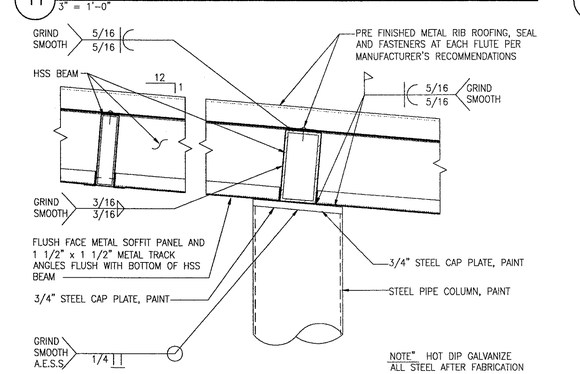
11 KIOSK RAKE DETAIL
3" = 1'–0"



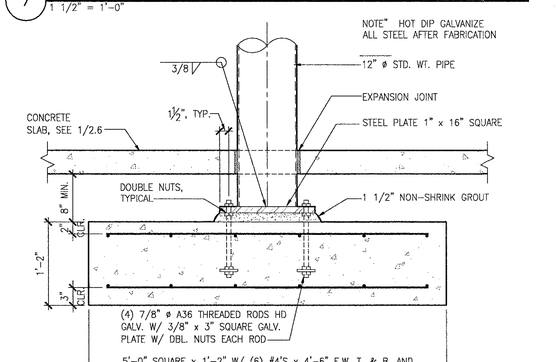
7 TYPICAL @ HSS TO HSS BEAM WELDS
1 1/2" = 1'–0"



4 KIOSK SECTION
1/2" = 1'–0"



12 KIOSK TOP OF COLUMN DETAIL
1 1/2" = 1'–0"



8 FOOTING DETAIL
1" = 1'–0"

LSW architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

RECORD DRAWINGS

drawn by
BOM
checked by
TRB
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
06.07.06
Record Drawings

revisions

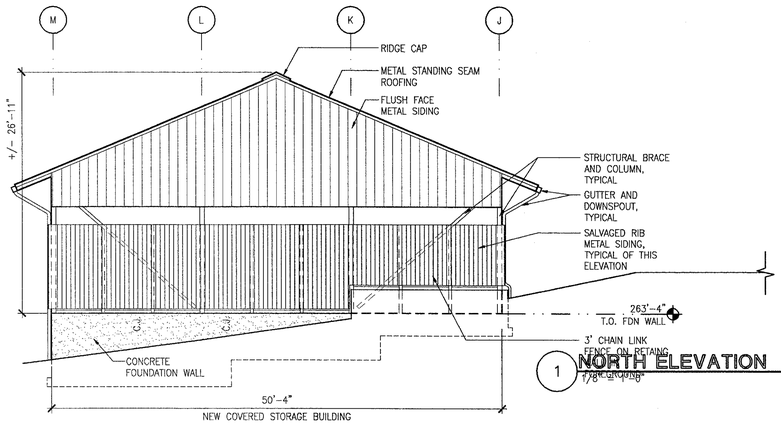
AS-BUILT SET

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

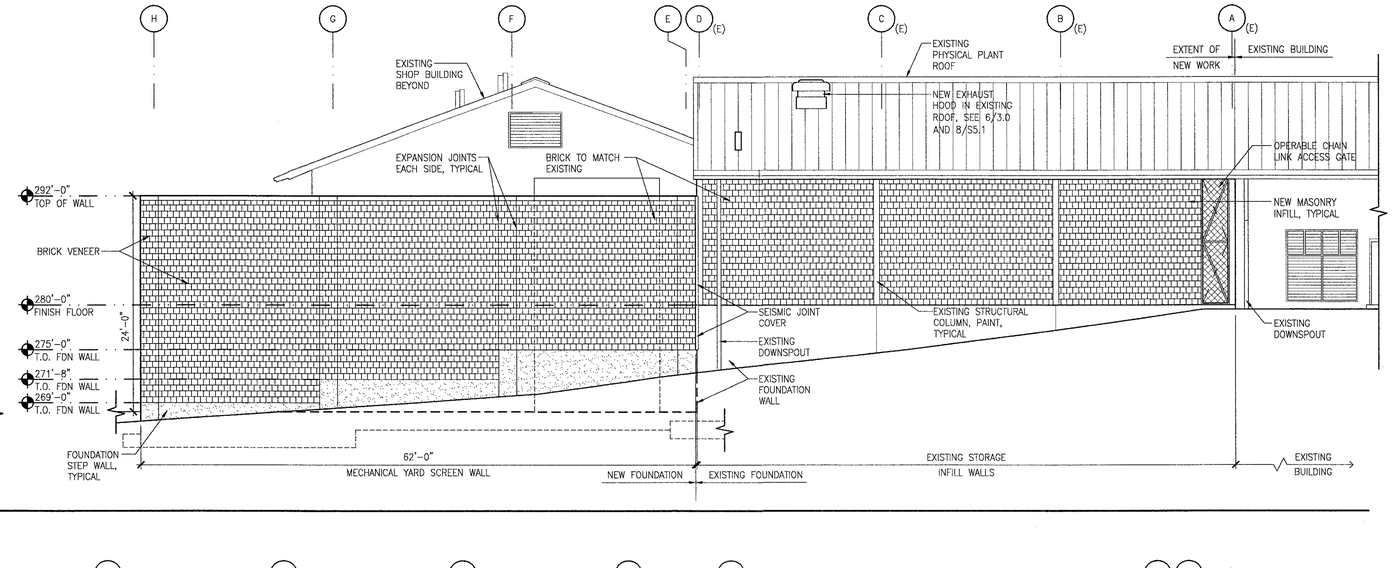
KIOSK PLANS & DETAILS

3.2

File.....03285-032xd.dwg
Plot Scale... 1
Plot Date... 01-28-05
Plot Time... 3:50 PM



1 NORTH ELEVATION
1/8" = 1'-0"



3 SOUTH ELEVATION - STORAGE
1/8" = 1'-0"

2 EAST ELEVATION
1/8" = 1'-0"

4 SOUTH ELEVATION - MECHANICAL YARD
1/8" = 1'-0"

0 4 8 12 20

GENERAL NOTES:

1. ROOF PENETRATIONS ARE NOT LIMITED TO THOSE SHOWN THIS SHEET. COORDINATE WITH MECHANICAL FOR ADDITIONAL INFORMATION.

LSW architects, pc

architecture / planning / interiors

lsw architects, pc
2300 Main Street
Vancouver, Washington 98660

t| 360.694.8571
f| 360.694.9510

RECORD DRAWINGS

drawn by
CNS
checked by
TRB
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
06.07.06
Record Drawings

revisions

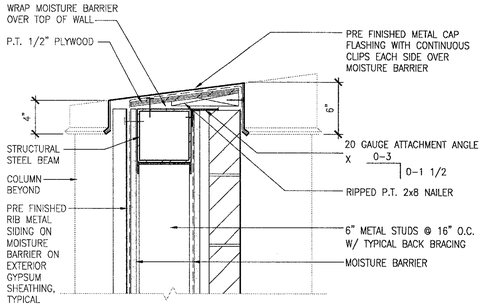
AS-BUILT SET

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

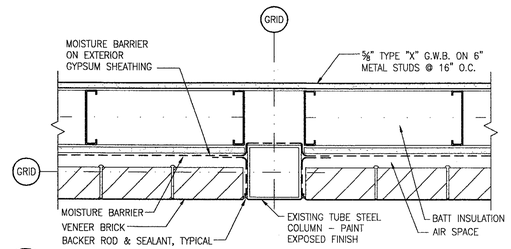
EXTERIOR ELEVATIONS

4.0

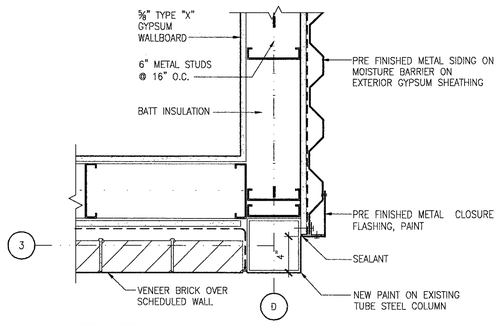
File:.....03285-04exe.dwg
Plot Scale:..1=1
Plot Date:...11-28-05
Plot Time:...3:50 PM



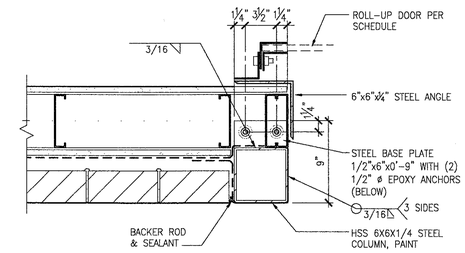
13 TOP OF WALL DETAIL
SCALE: 1 1/2" = 1'-0"



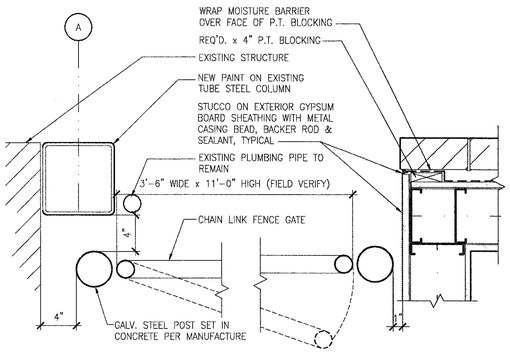
9 COLUMN BRICK DETAIL
SCALE: 1 1/2" = 1'-0"



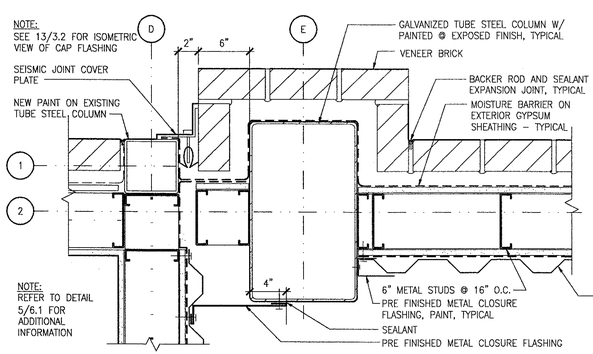
5 WALL CORNER DETAIL
SCALE: 1 1/2" = 1'-0"



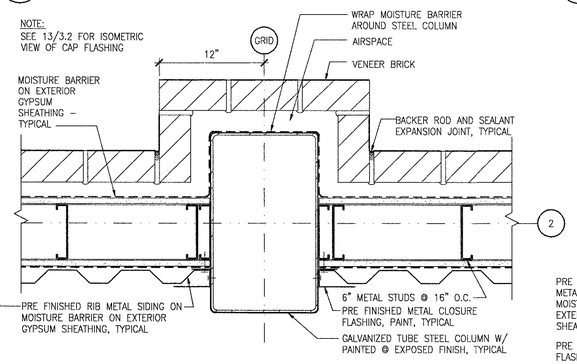
1 ROLL-UP DOOR JAMB
SCALE: 1 1/2" = 1'-0"



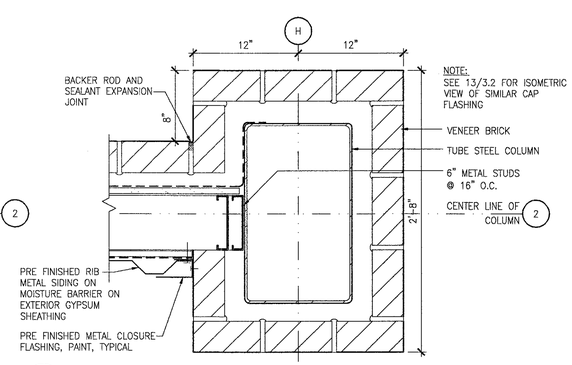
14 CHAIN LINK FENCE GATE DETAIL
1 1/2" = 1'-0"



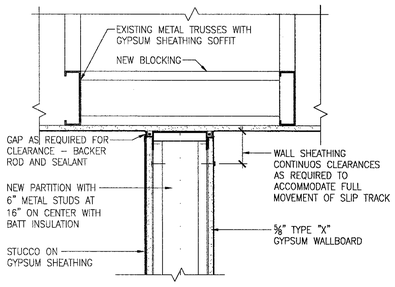
10 WALL TO EXISTING BUILDING DETAIL
SCALE: 1 1/2" = 1'-0"



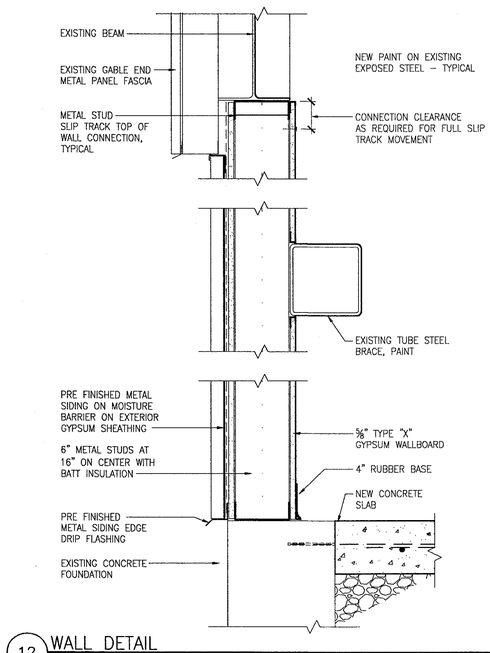
6 COLUMN DETAIL PLAN
SCALE: 1 1/2" = 1'-0"



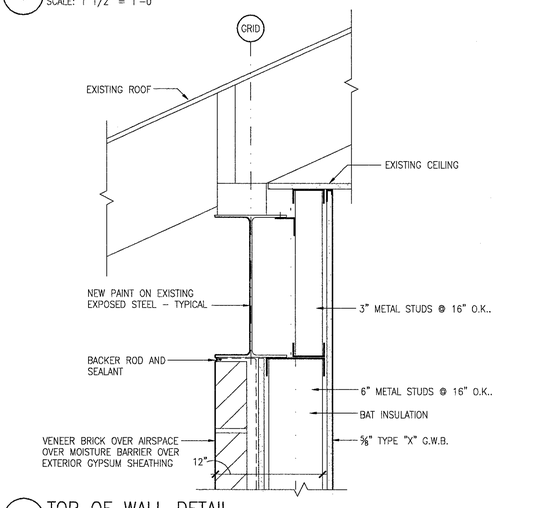
2 END COLUMN PLAN DETAIL
SCALE: 1 1/2" = 1'-0"



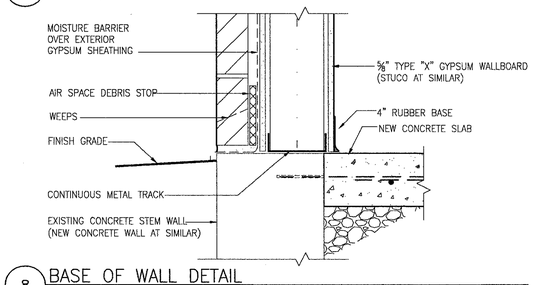
15 TOP OF WALL DETAIL
SCALE: 1 1/2" = 1'-0"



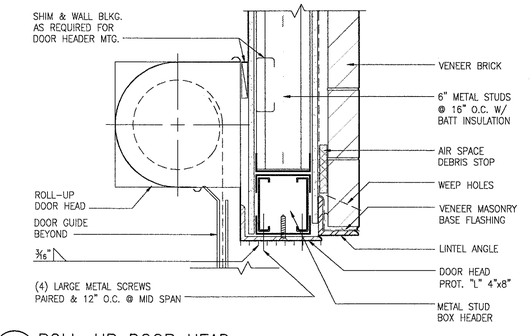
12 WALL DETAIL
SCALE: 1 1/2" = 1'-0"



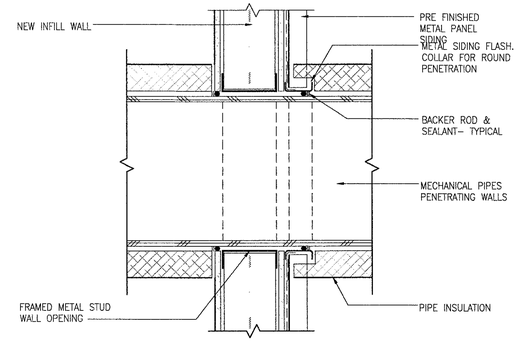
7 TOP OF WALL DETAIL
SCALE: 1 1/2" = 1'-0"



8 BASE OF WALL DETAIL
SCALE: 1 1/2" = 1'-0"



3 ROLL-UP DOOR HEAD
SCALE: 1 1/2" = 1'-0"



4 PIPE PENETRATION @ WALL
SCALE: 1 1/2" = 1'-0"

lsw architects, pc

architecture / planning / interiors

lsw architects, pc
2300 Main Street
Vancouver, Washington 98660

t| 360.694.8571
f| 360.694.9510

RECORD DRAWINGS

drawn by
CMS
checked by
TRB
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

File.....03285-061xd.dwg
Plot Scale....1
Plot Date....01-28-05
Plot Time....3:50 PM

issue date
06.07.06
Record Drawings

revisions

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

EXTERIOR DETAILS

6.1

DESIGN STANDARD 2003 INTERNATIONAL BUILDING CODE
WITH THE 2003 WASHINGTON STATE AMENDMENTS

DESIGN CRITERIA

1. DESIGN SNOW LOADS FOR NEW CONSTRUCTION, UNLESS NOTED OTHERWISE:
   ROOF.....25 PSF MINIMUM ROOF SNOW LOAD
   SNOW BUILD-UP:.....ASCE 7
2. DESIGN LATERAL LOADS FOR NEW CONSTRUCTION, UNLESS NOTED OTHERWISE:
   A. WIND: .....INTERNATIONAL BUILDING CODE OR ASCE 7
   110 MPH EXPOSURE B I_W = 1.0
   B. SEISMIC:
   INTERNATIONAL BUILDING CODE SEISMIC DESIGN CATEGORY D
   SITE CLASSIFICATIOND USE GROUP I
   R = 5 I_E = 1.0
   S_{DI} = 0.38 S_{DS} = 0.74

GENERAL

1. THESE STRUCTURAL NOTES ARE A SUPPLEMENT TO THE SPECIFICATIONS.
2. SPECIFICATIONS AND CODES REFERENCED IN THESE NOTES ARE THE VERSIONS MOST RECENTLY ADOPTED BY THE PERMITTING AUTHORITY.
3. VERIFY DIMENSIONS AND CONDITIONS WITH THE ARCHITECTURAL DRAWINGS. FIELD VERIFY DIMENSIONS AND ELEVATIONS RELATIVE TO THE EXISTING STRUCTURE PRIOR TO FABRICATION OF MATERIALS.
4. FOR FEATURES OF CONSTRUCTION NOT FULLY SHOWN, PROVIDE THE SAME TYPE AND CHARACTER AS SHOWN FOR SIMILAR CONDITIONS, SUBJECT TO REVIEW BY THE ARCHITECT AND STRUCTURAL ENGINEER OF RECORD.
5. APPLY, PLACE, ERECT OR INSTALL ALL PRODUCTS AND MATERIALS IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
6. ADEQUATELY BRACE STRUCTURE AND ALL STRUCTURAL COMPONENTS AGAINST WIND, LATERAL EARTH AND SEISMIC FORCES UNTIL THE PERMANENT LATERAL-FORCE RESISTING SYSTEMS HAVE BEEN INSTALLED.
7. PERMANENTLY ATTACH FLOOR TO WALLS OR SHORE WALLS PRIOR TO BACK-FILLING AGAINST STRUCTURE.
8. PROVIDE BLOCKING BETWEEN STUDS (OR OTHER MEANS OF BRACING) AT BEARING WALLS TO PREVENT STUD BUCKLING PRIOR TO INSTALLATION OF WALL SHEATHING.
9. SUBMITTALS:
   A. SUBMIT SHOP DRAWINGS FOR:
      i. REINFORCING STEEL
      ii. STRUCTURAL STEEL
      iii. METAL DECK
   B. SUBMIT SHOP DRAWINGS, STAMPED BY A REGISTERED STRUCTURAL ENGINEER LICENSED IN THE STATE OF WASHINGTON, FOR:
      i. COLD-FORMED STEEL TRUSSES
      ii. BIDDER-DESIGN STRUCTURAL ITEMS
   C. SUBMIT SHOP DRAWINGS PRIOR TO FABRICATION OF MATERIAL.

SITE PREPARATION

1. REMOVE VEGETATION, RUBBISH AND EXISTING FILL WITHIN BUILDING FOOTPRINT AND 5'-0" (MINIMUM) BEYOND THE FOOTPRINT. STRIP TOP SOIL 4", MINIMUM.
2. EXPOSED SUB-GRADE SHALL BE OBSERVED BY A QUALIFIED SOILS ENGINEER OR ENGINEERING GEOLOGIST.
3. REMOVE TO FIRM UNDISTURBED SOIL AREAS OF SOIL THAT EXHIBIT SOFT AREAS OR OTHERWISE UNSUITABLE SOIL AS DETERMINED BY THE SOILS ENGINEER OR ENGINEERING GEOLOGIST.
4. BACK-FILL EXCAVATED AREAS WITH STRUCTURAL FILL AS DESCRIBED BELOW.
5. CONSULT THE FOUNDATION INVESTIGATION REPORT, AVAILABLE AT ARCHITECT'S OFFICE, FOR ADDITIONAL INFORMATION.

STRUCTURAL FILL OR BACK-FILL

1. STRUCTURAL FILL MATERIAL:
   A. ON SITE, ORGANIC FREE, SOILS APPROVED BY THE GEOTECHNICAL ENGINEER.
   B. SAND AND GRAVEL MIXTURE OR CRUSHED ROCK.
   C. WELL GRADED FROM COARSE-TO-FINE WITH LESS THAN 5% BY WEIGHT OF THE MINUS 3/4" FRACTION PASSING THE NO. 200 SIEVE.
   D. FREE OF ORGANICS, RUBBISH, CLAY BALLS AND ROCKS LARGER THAN 4".
2. PLACE STRUCTURAL FILL IN LOOSE LIFTS, MAXIMUM OF 9" IN THICKNESS.
3. COMPACT STRUCTURAL FILL TO A MINIMUM DENSITY OF 95% OF MAXIMUM DRY DENSITY, AS DETERMINED BY ASTM D 698.
4. VERIFY ADEQUACY OF STRUCTURAL FILL COMPACTION WITH RANDOM FIELD DENSITY TESTS.
5. COMPACT STRUCTURAL FILL WITHIN 5'-0" OF RETAINING OR BASEMENT WALLS WITH LIGHT-WEIGHT, HAND-HELD EQUIPMENT. EXERCISE CARE TO AVOID DAMAGE TO WALLS.
6. CONSULT THE FOUNDATION INVESTIGATION REPORT, AVAILABLE AT THE ARCHITECT'S OFFICE, FOR ADDITIONAL INFORMATION.

FOUNDATIONS

1. FOUNDATION SIZES BASED ON AN ALLOWABLE SOIL BEARING PRESSURE OF 3000 PSF DEAD AND LIVE LOADS WITH AN ALLOWABLE ONE-THIRD INCREASE FOR WIND AND SEISMIC.
2. FOUNDATION ELEVATIONS SHOWN ARE TO TOP OF FOOTINGS.
3. PLACE FOOTINGS ON FIRM, UNDISTURBED ORIGINAL SOIL, OR ON STRUCTURAL FILL. SEE "STRUCTURAL FILL OR BACK-FILL" NOTES FOR STRUCTURAL FILL INFORMATION.
4. PLACE FOOTINGS ON ENGINEERED GRANULAR FILL, 1'-0" IN DEPTH AND FOOTING WIDTH PLUS FT. IN WIDTH.
5. LOCATE BOTTOM OF FOOTINGS AT A MINIMUM OF 1'-6" BELOW FINAL GRADE OR 1'-0" BELOW EXISTING GRADE, WHICHEVER IS LOWER.
6. PRIOR TO PLACEMENT OF CONCRETE, REMOVE ALL DISTURBED SOIL FROM FOOTING EXCAVATION TO NEAT LINES.
7. STEP BOTTOM OF FOOTINGS FROM ELEVATION TO ELEVATION AT A RATIO OF 1 VERTICAL TO 2 HORIZONTAL, WITH A MAXIMUM VERTICAL STEP OF 2'-0".
8. CONSULT THE FOUNDATION INVESTIGATION REPORT, AVAILABLE AT THE ARCHITECT'S OFFICE, FOR ADDITIONAL INFORMATION.

CONCRETE REINFORCING STEEL

1. REINFORCING STEEL (TYPICAL, UNLESS NOTED OTHERWISE): ASTM A 615, GRADE 60
2. WELDED REINFORCEMENT: ASTM A 706, GRADE 60
3. WELDED METAL INSERTS, CONNECTIONS: AWS D1.4
4. DETAIL, FABRICATE AND PLACE REINFORCING ACCORDING TO ACI 315, "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT".
5. TYPICAL REINFORCING (MINIMUM, UNLESS NOTED OTHERWISE ON DRAWINGS):
   A. CORNERS AND INTERSECTIONS OF WALLS AND FOUNDATIONS: CORNER BARS EQUAL IN SIZE AND NUMBER TO HORIZONTAL REINFORCING. LEG LENGTH: 48 BAR DIAMETER (2'-0" MINIMUM).
   B. SLAB OPENINGS:
   (2) NO. 5 x OPENING DIMENSIONS PLUS 4'-0" EACH SIDE
   (2) NO. 5 x 4'-0" DIAGONAL BARS AT EACH CORNER
6. DO NOT FIELD BEND, DISPLACE, WELD, HEAT OR CUT REINFORCING UNLESS INDICATED ON THE DRAWINGS, OR APPROVED BY STRUCTURAL ENGINEER OF RECORD.
7. PLACE ELECTRICAL CONDUIT NEAR CENTER OF SLABS.
8. SPLAY REINFORCING AROUND SLAB OPENINGS WITH 1" IN 10" SPLAY, UNLESS NOTED OTHERWISE.
9. MINIMUM COVER FROM CONCRETE SURFACES TO REINFORCING:
   3" ± 1/2" TO BOTTOM OF FOOTING
   1-1/2" ± 1/4" TO EARTH FACE OF WALL
   1-1/2" ± 1/4" TO INSIDE FACE OF WALL
   2" ± 1/4" MAIN STEEL BEAMS AND COLUMNS
   CENTER OF SLABS-ON-GRADE
10. REINFORCING LAP SPLICES (INCHES): CONFORM WITH ACI 318 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", AS SHOWN BELOW, UNLESS NOTED OTHERWISE ON DRAWINGS:

	3000 PSI		4000 PSI	
BAR SIZE	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS
#3	28	22	24	19
#4	37	29	32	25
#5	47	36	40	31
#6	56	43	48	37
#7	81	63	70	54
#8	93	72	80	62
#9	105	81	91	70
#10	118	91	102	79
#11	131	101	113	87

LAP SPLICE NOTES:
   A. "TOP BARS" ARE DEFINED AS HORIZONTAL BARS PLACED SUCH THAT MORE THAN 12" OF CONCRETE IS PLACED BELOW THE BARS.
   B. SPLICE LENGTH BASIS: CLASS B, CASE 1 SPLICE, WITH CENTER-TO-CENTER BAR SPACING OF GREATER THAN 3 BAR DIAMETERS.

CAST-IN-PLACE CONCRETE

1. PROVIDE CONCRETE MATERIALS, FORM WORK, MIXING, PLACING AND CURING ACCORDING TO ACI 301, "STANDARD SPECIFICATION FOR STRUCTURAL CONCRETE".
2. CONCRETE MIX DESIGNS:
   FOOTINGS 3000 PSI
   SLAB-ON-GRADE..... 4000 PSI
   STEM WALLS .....3000 PSI
   OTHER CONCRETE.....3000 PSI
   NOTE: FOR CONCRETE EXPOSED TO THE ELEMENTS, ADD 5% ± 1% AIR ENTRAINMENT.
3. CONCRETE MIX PROPORTIONS:
   A. PROPORTION ACCORDING TO ACI 318, "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE".
   B. SUBMIT MIX DESIGNS, WITH COMPLETE STATISTICAL BACKUP, FOR REVIEW.
4. SAMPLING AND TESTING OF CONCRETE:
   A. MEASURE COMPRESSIVE STRENGTH ACCORDING TO 28 DAY LABORATORY CURED CYLINDERS.
   B. SAMPLE AND TEST CONCRETE ACCORDING TO APPLICABLE ASTM SPECIFICATIONS.
   C. PROVISIONS OF ACI 318, CHAPTER 5, TO GOVERN ACCEPTANCE OF COMPRESSIVE STRENGTH TEST RESULTS.
   D. TEST A MINIMUM OF THREE (3) CONCRETE TEST CYLINDERS FOR EACH 100 CU. YARDS, OR EACH DAY OF POUR, FOR EACH CONCRETE STRENGTH. TEST (1) CYLINDER AT 7 DAYS AND (2) CYLINDERS AT 28 DAYS.
   E. CAST ADDITIONAL CYLINDER FOR STRENGTH VERIFICATION, IF PROBLEMS HAVE DEVELOPED FROM PREVIOUS TWENTY-EIGHT (28) DAY BREAKS.
5. JOINTS:
   A. CONSTRUCTION JOINTS BETWEEN FOOTINGS AND WALLS, COLUMNS OR PILASTERS AND THE SLABS THEY SUPPORT AND WALL CONSTRUCTION JOINTS: ROUGHEN CONTACT AREA TO A FULL AMPLITUDE OF APPROXIMATELY 1/4", LEAVING THE CONTACT SURFACE CLEAN AND FREE OF LAITANCE
   B. CONSTRUCTION JOINTS KEYWAYS: PROVIDE WHERE SHOWN ON DRAWINGS.
   C. SUBMIT LOCATIONS AND DETAILS OF PROPOSED CONSTRUCTION JOINTS NOT DETAILED ON THE DRAWINGS FOR REVIEW.
6. DEPRESSIONS IN SLABS: PROVIDE SAME DEPTH AS FOR ADJACENT AREAS, UNLESS NOTED OTHERWISE.
7. DO NOT PLACE CONCRETE ON FROZEN GROUND.
8. CHAMFER EXPOSED CORNERS 3/4", UNLESS NOTED OTHERWISE.

ANCHORS IN CONCRETE AND MASONRY

1. INSTALL ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
2. INSTALL WITH IBC SPECIAL INSPECTION ACCORDING TO SPECIAL INSPECTION PROGRAM.
3. EXPANSION ANCHORS (CONCRETE):
   A. ICC-APPROVED; CONFORM WITH FF-S-325, GROUP II, TYPE 4, CLASS 1.
   B. MATERIAL: HOT-DIPPED GALVANIZED ACCORDING TO ASTM A 153
   C. ACCEPTABLE ANCHORS:
      i. "TRUBOLT", BY RAMSET/RED HEAD.
      ii. "POWER-STUD", BY POWERS FASTENING INC
      iii. "KWIK-BOLT II", BY HILTI FASTENING SYSTEMS, INC.
      iv. "WEDGE-ALL" BY SIMPSON STRONG-TIE COMPANY, INC.

NON-SHRINK GROUT

1. CONFORM WITH ASTM C 1107 AND C.R.D.-621, CORPS OF ENGINEERS "SPECIFICATIONS FOR NON-SHRINK GROUT".
2. SPECIFIED 28-DAY COMPRESSIVE STRENGTH: 5000 PSI.
3. DO NOT PRE-GROUT BASE PLATES.

BRICK AND MASONRY ANCHORED VENEER

1. ALL LEDGER ANGLES WHICH SUPPORT BRICK AND MASONRY SHALL BE HOT-DIPPED GALVANIZED, IN ACCORDANCE WITH ASTM A 123.
2. PROVIDE APPROVED VENEER ANCHORS IN COMPLIANCE WITH IBC CHAPTER 14, AT NOT LESS THAN ONE (1) PER EACH TWO (2) SQUARE FEET OF WALL AREA AND AT NOT OVER TWENTY-FOUR INCHES (24") ON CENTER HORIZONTAL SPACING. PROVIDE ADDITIONAL TIES AS REQUIRED, SPACED NOT OVER THREE FEET (3'-0") APART, WITHIN TWELVE INCHES (12") OF THE EDGE AROUND ALL OPENINGS AND AT EACH THIRD COURSE AT JAMBS. INSTALL ANCHORS IN SECOND COURSE ABOVE AND BELOW LEDGER ANGLES.
3. VENEER ANCHORS ARE TO BE HOT-DIPPED GALVANIZED, TWO-PIECE ADJUSTABLE TIE AND ANCHOR SYSTEMS, 3/16" DIAMETER STEEL WIRE AND 14 GAUGE BENT STEEL SHEET. SIZE AS REQUIRED TO EXTEND WITHIN 3/4" OF THE OUTSIDE MASONRY FACE. VENEER ANCHORS SHALL ENGAGE OR ENCLOSE A HORIZONTAL JOINT REINFORCEMENT WIRE IN THE VENEER OF NO. 9 GAUGE, OR EQUIVALENT. THE JOINT REINFORCEMENT SHALL BE CONTINUOUS, WITH BUTT SPLICES BETWEEN THE TIES PERMITTED. WIRE OR PLATE PINTLE SYSTEMS REQUIRE SPECIAL INSPECTION PER THE STRUCTURAL NOTES.
   A. METAL STUD BACKING: DW-10 HS BY HOHMANN AND BARNARD, INC. WITH HOHMANN AND BARNARD, INC.'S BYNA-TIE AND SEISMICLIP. ATTACH TO METAL STUDS WITH TWO (2) #10 X 1-1/2" SELF-DRILLING SHEET METAL (SDSM) SCREWS.
   B. CONCRETE BACKING: NO. 315 FLEXIBLE DOVETAIL BRICK TIE WITH BYNA-TIE AND SEISMICLIP WITH NO. 305 ANCHOR SLOT BY HOHMANN AND BARNARD, INC.
   C. STRUCTURAL STEEL BACKING: 359 WELD-ON TIE BY HOHMANN AND BARNARD, INC. WITH HOHMANN AND BARNARD, INC.'S BYNA-TIE AND SEISMICLIP. ATTACH TO STEEL WITH 1/8" X 1" FILLET WELD TOP AND BOTTOM.
4. ALL HOT-DIPPED GALVANIZING OF VENEER ANCHORS, AND ALL OTHER HARDWARE WHICH SUPPORTS VENEER, SHALL HAVE A MINIMUM COATING OF 1.5 OUNCES OF ZINC PER SQUARE FOOT OF SURFACE AREA, IN ACCORDANCE WITH ASTM A 153, CLASS B2.

STRUCTURAL STEEL

1. FABRICATE, ERECT, IDENTIFY AND PAINT STRUCTURAL STEEL ACCORDING TO AISC SPECIFICATIONS.
2. MATERIAL:
   A. W AND WT SHAPES: ASTM A 992; F_y = 50 KSI
   B. M, MT, S, ST, HP, C, MC AND L SHAPES: ASTM A 36; F_y = 36 KSI.
   C. STEEL PIPE: ASTM A 53, GRADE B; F_y = 35 KSI
   D. STEEL HSS SECTIONS (ROUND, SQUARE, RECTANGULAR):
   COLD ROLLED: ASTM A 500, GRADE B; F_y = 46 KSI
   HOT ROLLED: ASTM A-501
   E. STEEL PLATES: ASTM A 36; F_y = 36 KSI
   F. HEADED STUDS: ASTM A 108, GRADES 1010 THROUGH 1018 INCLUSIVE.
3. CONNECT ALL MEMBERS WITH SEMI-FINISHED MACHINE BOLTS, ASTM A 307, GRADE A, UNLESS NOTED OTHERWISE ON DRAWINGS.
4. HIGH-STRENGTH BOLTS:
   A. BEARING TYPE CONNECTIONS (TYPE N):
      i. PROVIDE ASTM A 325, TYPE N BOLTS AT ALL LOCATIONS NOT NOTED ON DRAWINGS AS TYPE SC.
      ii. PROVIDE HARDENED WASHERS CONFORMING TO ASTM F 436 UNDER ELEMENTS TO BE TIGHTENED. PROVIDE NUTS CONFORMING TO ASTM A 563.
      iii. TIGHTEN TYPE N BEARING BOLTS TO A SNUG TIGHT CONDITION.
   B. INSTALL HIGH-STRENGTH BOLTS ACCORDING TO ASTM STANDARDS.
   C. DO NOT WELD TO HIGH-STRENGTH BOLTS.
5. GALVANIZED BOLTS: HOT-DIPPED GALVANIZED ACCORDING TO ASTM A 153, CLASS C.
6. ANCHOR BOLTS:
   A. ASTM A 307, GRADE A.
   B. PROVIDE WITH STANDARD WASHERS AND NUTS.
   C. GALVANIZE BOLTS ACCORDING TO ASTM A 153, CLASS C. OVER-TAP NUTS TO CLASS 2A FIT BEFORE GALVANIZING, ACCORDING TO ASTM A 563.
7. PROVIDE BEVELED WASHERS AT BOLT HEADS OR NUTS BEARING ON SLOPING SURFACES.
8. WELDING:
   A. CONFORM WITH AWS SPECIFICATIONS.
   B. WELDERS TO BE QUALIFIED UNDER AWS AND WABO SPECIFICATIONS.
   C. WELDS MATERIAL: 70 KSI FILLER METAL, UNLESS NOTED OTHERWISE. PROVIDE LOW-HYDROGEN FILLER METALS AT MOMENT FRAME WELDS.
   D. WELDS TO METAL DECK, METAL STUDS OR OTHER COLD-FORMED METALS: CONFORM TO AWS D1.3.
   E. WELDING OF REINFORCING STEEL: AS NOTED IN "**CONCRETE REINFORCING STEEL**" PORTION OF STRUCTURAL NOTES.
   F. WELDS TO GALVANIZED STEEL AND AREAS DAMAGED BY WELDING, FLAME CUTTING OR HANDLING: CLEAN, DRY AND REMOVE OIL, GREASE, SALT AND CORROSIVE PRODUCTS. APPLY ORGANIC COLD GALVANIZING COMPOUND WITH A MINIMUM OF 94% ZINC DUST IN THE DRY FILM. APPLY IN MULTIPLE COATS TO ACHIEVE AN 8 MIL THICKNESS.
9. CONTRACTOR TO DESIGN AND PROVIDE ERECTION AIDS (BOLTS, CLIPS, SHIMS, SEATS, ETC) REQUIRED TO FACILITATE CONSTRUCTION.
10. INSTALL AND INSPECT HEADED STUDS AND SHEAR CONNECTORS ACCORDING TO CHAPTER 7 OF AWS D1.1 "STRUCTURAL WELDING CODE-STEEL".
11. EMBEDDED STEEL ASSEMBLIES: HOT-DIP GALVANIZE ACCORDING TO ASTM A 123, WHERE NOTED ON DRAWINGS.

COLD FORMED STEEL FRAMING

1. ALL FABRICATION, ERECTION AND IDENTIFICATION OF COLD FORMED STEEL FRAMING SHALL CONFORM WITH IBC SECTIONS 2209, 2210 AND 2211, AND A.I.S.I. "SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS".
2. MATERIAL:
   A. ASTM A 653/653M, GRADE D (FY = 50 KSI) FOR 51 MIL AND THICKER STOCK.
   B. ASTM A 653/653M, GRADE A (FY = 33 KSI) FOR 43 MIL AND THINNER STOCK.
3. FASTENING OF COMPONENTS SHALL BE WITH SELF-DRILLING SHEET METAL (SDSM) SCREWS, UNLESS NOTED OTHERWISE.
   A. SCREW SPACING AND EDGE DISTANCE SHALL BE NOT LESS THAN 3X THE NOMINAL SCREW DIAMETER.
   B. PENETRATIONS OF SCREWS THROUGH JOINED MATERIAL SHOULD NOT BE LESS THAN THREE (3) EXPOSED THREADS.
   C. WHERE FEASIBLE, INSTALL SCREWS FROM THINNER MATERIAL TO THICKER MATERIAL.
   D. SCREWS SHALL BE INSTALLED AND TIGHTENED IN ACCORDANCE WITH SCREW MANUFACTURER'S RECOMMENDATIONS.
4. WHERE INDICATED, FASTENING OF COMPONENTS SHALL BE WITH WELDING.
   A. ALL WELDS SHALL BE OF SUFFICIENT SIZE TO ENSURE THE STRENGTH OF THE CONNECTION.
   B. ALL WELDING SHALL CONFORM WITH AWS SPECIFICATIONS. TOUCH UP WELDS WITH ZINC-RICH PAINT.
   C. WELDERS SHALL BE AWS AND WABO CERTIFIED FOR COLD-FORMED METAL WELDING.
   D. WELDING ELECTRODES SHALL BE E60XX.
   E. WELDING IS ONLY ACCEPTABLE ON MATERIAL 43 MIL AND THICKER.
5. STEEL STUDS OR JOISTS SHALL HAVE STIFFENED LIPS, UNLESS NOTED OTHERWISE, AND MANUFACTURED BY MEMBERS OF THE STEEL STUD MANUFACTURER'S ASSOCIATION. SIZES AND GAUGE ARE AS NOTED ON DRAWINGS.
6. PROVIDE ALL ACCESSORIES INCLUDING, BUT NOT NECESSARILY LIMITED TO, TRACKS, CLIPS, WEB STIFFENERS, ANCHORS, FASTENING DEVICES AND OTHER ACCESSORIES REQUIRED FOR A COMPLETE AND PROPER INSTALLATION.
7. END BLOCKING SHALL BE PROVIDED WHERE JOIST ENDS ARE NOT OTHERWISE RESTRAINED FROM ROTATION.
8. JOISTS SHALL BE LOCATED DIRECTLY OVER BEARING STUDS, UNLESS NOTED OTHERWISE, WITHIN A TOLERANCE OF ± 1/2".
9. SPLICES IN AXIALLY LOADED STUDS SHALL NOT BE PERMITTED.
10. EACH FLANGE OF STUDS SHALL BE SECURELY ATTACHED TO FLANGES OF BOTH UPPER AND LOWER TRACKS.
11. WHEN METAL STUDS ARE USED IN BEARING WALL CONSTRUCTION, STUDS MUST FIT TIGHTLY INTO THE TOP AND BOTTOM TRACKS. END GAPS WILL NOT BE ALLOWED.

COLD-FORMED STEEL CONNECTIONS

1. ALL PLATES AND LEDGERS SHALL BE ANCHORED WITH A MINIMUM OF THREE (3) ANCHORS PER PIECE.
2. PLATES TO CONCRETE: HILTI X-ZF-MX, 0.138" DIAMETER, 3/4" EMBEDMENT AT 24" ON CENTER
3. ALL FRAMING CONNECTORS SHALL BE SIMPSON OR APPROVED. FILL ALL HOLES WITH SCREWS AS SPECIFIED BY THE HANGER MANUFACTURER, UNLESS NOTED OTHERWISE.
4. ALL SCREWS TO BE #10 SELF-DRILLING SHEET METAL (SDSM) SCREWS.

COLD-FORMED STEEL TRUSSES

1. ALL TRUSS AND COMPRESSIVE MEMBER STAY BRACING AND CONNECTIONS SHALL BE MANUFACTURED BY THE TRUSS MANUFACTURER.
2. MEMBERS SHALL NOT EXCEED A LIVE LOAD DEFLECTION OF L/360 FOR ROOFS, OR WORKING STRESSES FOR THE APPROPRIATE MATERIAL UNDER A TOTAL LOAD OF 47 PSF FOR ROOF MEMBERS (SEE 5.S5.1 FOR ADDITIONAL LOADING AT BOTTOM CHORD).
3. SHOP DRAWINGS SHALL CLEARLY SHOW ERECTION PLAN, ALL STAY BRACING FOR TRUSS COMPRESSIVE MEMBERS AND REQUIRED CONNECTIONS. TRUSS DESIGNS SHALL INCLUDE ALL MEMBER FORCES AND COMBINED STRESSES FOR VERIFICATION. SUBMITTAL SHALL ALSO INCLUDE ALL ICC APPROVAL INFORMATION.
4. ALL CONNECTION PLATES SHALL DEVELOP THE FULL STRESS IN A MEMBER WITH A MINIMUM TRANSFER AT ANY MEMBER OF TWO THOUSAND (2,000) LBS.
5. THE TRUSS MANUFACTURER SHALL SUBMIT CERTIFICATES FROM AN INDEPENDENT INSPECTION COMPANY ASSERTING THAT ALL TRUSSES DELIVERED TO PROJECT SITE CONFORM WITH APPROVED SHOP DRAWINGS. COST OF ALL INSPECTION CERTIFICATES SHALL BE BORNE BY THE TRUSS MANUFACTURER AND SHALL BE SUBMITTED PRIOR TO THE START OF ERECTION.
6. DOUBLE TRUSSES UNDER MECHANICAL UNITS, UNLESS NOTED OTHERWISE.
7. TRUSSES TO BE MANUFACTURED FROM COMPONENTS AND DESIGN STANDARDS SET BY ONE OF THE FOLLOWING TWO COMPANIES:
   A. ULTRA-SPAN TRUSS MANUFACTURER
   A DIVISION OF AEGIS METAL FRAMING
   14515 NORTH OUTER 40, SUITE 110
   CHESTERFIELD, MO 63017
   314-851-2200
   B. TRUS STEEL DIVISION OF ALPINE ENGINEERED PRODUCTS, INC.
   P. O. BOX 2225
   PAMPANO BEACH, FL 33061
   888-565-9181

FRAMING LUMBER

1. LUMBER SPECIES: DOUGLAS FIR-LARCH, GRADE LUMBER ACCORDING TO RULES OF WEST COAST LUMBER INSPECTION BUREAU (WCLIB).
2. LUMBER GRADES:

SIZE CLASSIFICATION	GRADE
A. WALL STUDS	NO. 2
B. JOISTS	NO. 2
C. BEAMS	NO. 1
D. POSTS	NO. 1
E. BLOCKING, PLATES, BRIDGING	STANDARD OR BETTER OR STUD GRADE

3. MAXIMUM MOISTURE CONTENT: 19% AT 3x OR LESS (LEAST DIMENSIONS) MEMBERS.
4. PROVIDE SOLID BLOCKING (SAME DEPTH OF MEMBER) AT ALL POINTS OF BEARING (MAXIMUM SPACING OF 8'-0" O.C.) AT JOISTS WITH A 5:1 OR GREATER DEPTH-TO-THICKNESS RATIO OR WHERE 1 EDGE OF JOIST IS NOT ATTACHED TO SHEATHING, WALLBOARD, BRACING, ETC.
5. PRESSURE TREAT PLATES AND LEDGERS IN CONTACT WITH CONCRETE OR MASONRY ACCORDING TO AWPA STANDARD C-2. LABEL PRESSURE-TREATED LUMBER WITH THE AWPB (AMERICAN WOOD PRESERVERS BUREAU) QUALITY MARK.
6. SEE DRAWINGS FOR FASTENING.

PLYWOOD SHEATHING

1. PLYWOOD MATERIAL:
   A. GRADE: C-D, UNLESS NOTED OTHERWISE.
   B. MANUFACTURED WITH EXTERIOR GLUE ACCORDING TO UNITED STATES PRODUCT STANDARD PS 1-83/ANSI A199.1.
   C. SHALL BEAR THE AMERICAN PLYWOOD ASSOCIATION (APA) TRADEMARK.
2. SUBSTITUTION OF ORIENTED STRAND BOARD (OSB) FOR PLYWOOD IS ACCEPTABLE IF THE OSB:
   A. CONFORMS WITH APA PERFORMANCE STANDARDS FOR WOOD BASED STRUCTURAL USE PANELS, GRADE 2-M-W.
   B. IS MANUFACTURED WITH EXTERIOR GLUE.
   C. HAS A LOAD/SPAN RATING INDEX EQUAL TO PLYWOOD.
   D. BEARS THE APA TRADEMARK.
3. PROVIDE PRESSURE-TREATED PLYWOOD WHERE INDICATED ON DRAWINGS. CONFORM WITH AWPA STANDARD C-9. MARK SHEETS WITH AWPB.
4. SHEATHING TYPES:
   A. ROOF SHEATHING 3/4" INDEX 48/24 T&G, PRESSURE TREATED
   B. WALLS 1/2" INDEX 24/0, PRESSURE TREATED
5. PLYWOOD LAYOUT AND INSTALLATION:
   A. LAY OUT PLYWOOD SHEATHING WITH END JOINTS STAGGERED, UNLESS NOTED OTHERWISE.
   B. LAY OUT PLYWOOD TO ELIMINATE WIDTHS LESS THAN 1'-0" AT ROOFS UNLESS ALL EDGES OF UNDERSIZED PIECES ARE SUPPORTED BY BLOCKING.
   C. PROVIDE PANEL SPACINGS ACCORDING TO APA RECOMMENDATIONS.
   D. BLOCK SHEAR WALL SHEATHING WITH 3 x 4 FLAT BLOCKING AT ALL EDGES.
   E. FASTEN ACCORDING TO SCHEDULE AND DRAWINGS.
6. PROTECT ROOF SHEATHING FROM EXTREME WET CONDITIONS.

NAILING AND CONNECTION SCHEDULE

1. MINIMUM NUMBER OF NAILS FOR WOOD MEMBERS, UNLESS NOTED OTHERWISE ON DRAWINGS.
2. NAIL TYPE: BOX OR SINKER, UNLESS NOTED OTHERWISE ON DRAWINGS.

CONNECTION	NAILS
STUDS TO PLATES - END NAIL	(2) 16d COMMON OR (3) 10d
OR STUDS TO PLATES - TOE NAIL	(4) 10d
TOP PLATES & BOTTOM PLATES	
- SPIKE TOGETHER	10d AT 8" OC
- LAP AND INTERSECTIONS	(4) 10d EACH SIDE JOINT
FLOOR, ROOF, CEILING JOISTS	
- TO PLATES OR BEAMS - TOE NAIL	(2) 10d
BLOCKING TO PLATE - TOE NAIL	(2) 10d
BLOCKING TO JOISTS - EACH END	(2) 10d
CORNER STUDS	10d AT 12" OC
2x LAMINATED BEAMS	10d AT 12" 2 ROWS STAGGERED
2 x 6 TONGUE AND GROOVE	
- EACH BOARD TO SUPPORTING MEMBERS	(1) 16d TOE NAIL & (1) 16d FACE NAIL
- TO PARALLEL WALLS AND BEAMS	(1) 16d FACE NAIL AT 6" OC
3 x 6 TONGUE AND GROOVE	
- EACH BOARD TO SUPPORTING MEMBERS	(1) 40d TOE NAIL & (1) 60d FACE NAIL
- TO PARALLEL WALLS AND BEAMS	(1) 60d FACE NAIL AT 8" OC
- TO ADJACENT COURSES	8" SPIKES AT 30" OC

.131" DIAMETER x 3-1/2" P-NAIL EQUIVALENT TO 16d BOX OR SINKER
.131" DIAMETER x 3" P-NAIL EQUIVALENT TO 10d BOX OR SINKER

PLYWOOD SHEATHING CONNECTIONS

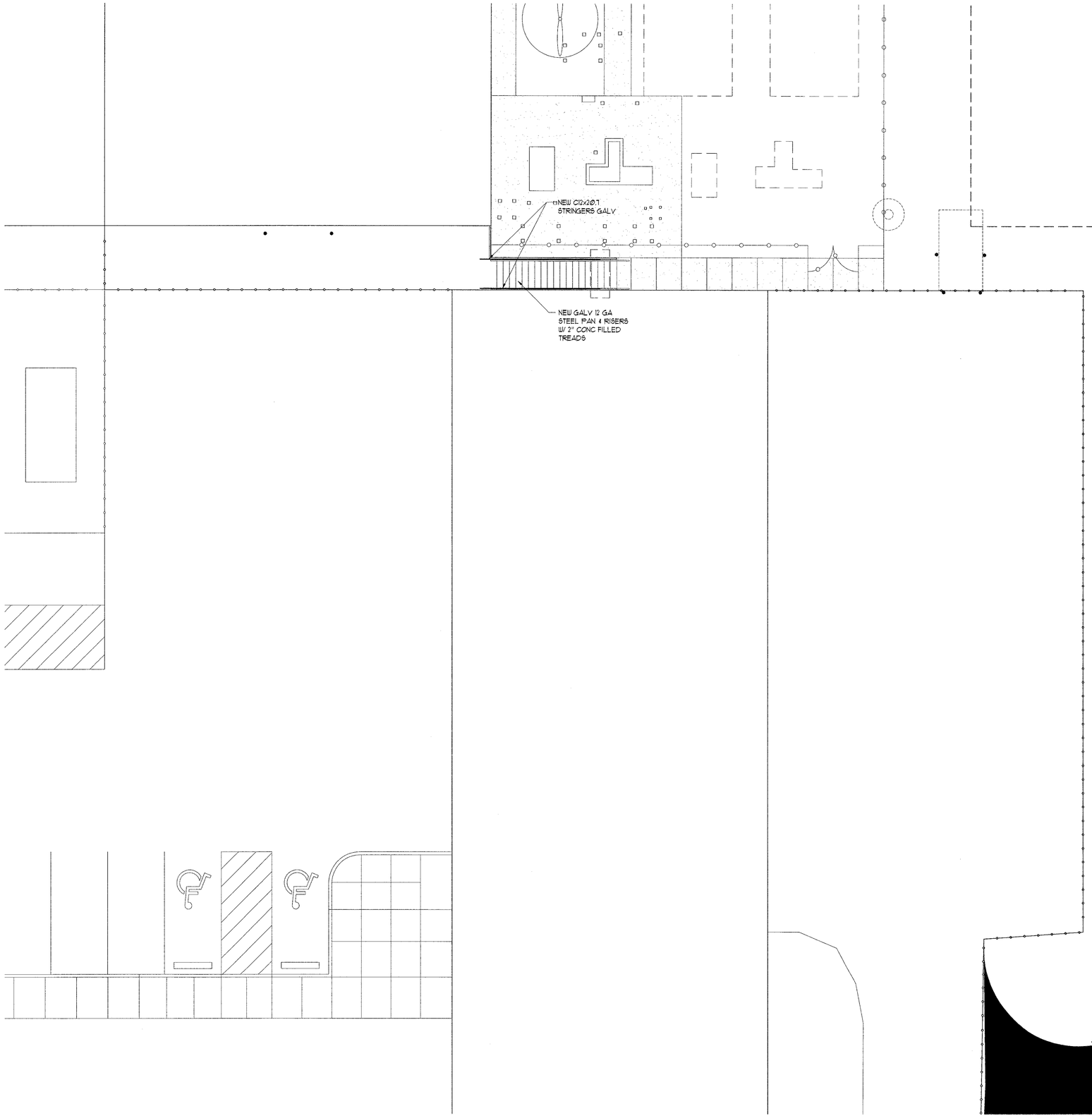
1. ROOF SHEATHING (3/4" INDEX 48/24 T&G, PRESSURE TREATED)
   FASTENING:
   AT EDGES OF EACH SHEET, BLOCKING & WALLS #8 AT 4" OC
   AT INTERIOR OF SHEETS #8 AT 8" OC
   AT BOUNDARIES OF ROOF #8 AT 4" OC
2. WALL SHEATHING (1/2" INDEX 24/0, PRESSURE TREATED)
   A. BLOCK ALL EDGES NOT SUPPORTED BY FRAMING MEMBERS WITH 400T150-43, MIN.
   B. FASTENING:
   AT EDGES OF EACH SHEET TO STUDS, BLOCKING
   & PLATES #8 AT 4" OC
   AT INTERIOR OF EACH SHEET #8 AT 8" OC
   AT BOUNDARIES OF WALL #8 AT 4" OC

SPECIAL INSPECTION PROGRAM

TYPES OF WORK	CONTINUOUS	PERIODIC	COMMENTS
SOILS			
GRADING, EXCAVATION & FILL		■	REF. PROJECT SPECIFICATION
CONCRETE			
PLACEMENT OF REINFORCING STEEL		■	
WELDING OF A706 REINFORCING STEEL FOR EMBEDS - LARGER THAN #5	■		
- #5 & SMALLER		■	
BOLTS CAST IN CONCRETE	■		
PLACING OF REINFORCED CONCRETE	■		
TAKING OF TEST SPECIMENS	■		
STRUCTURAL WELDING			
SINGLE PASS FILLET WELDS NOT EXCEEDING 5/16"		■	
FILLET WELDS EXCEEDING 5/16"	■		
GROOVE WELDS (FULL OR PARTIAL PEN.)		■	
WELDED STUDS		■	
WELDED COLD FORMED FRAMING		■	
WELDED STAIR AND RAILING SYSTEMS		■	
HIGH STRENGTH (HS) BOLT INSTALLATION		■	
TYPE N HS BOLT		■	
WOOD			
WOOD DIAPHRAGM & SHEAR WALL FASTENING		■	
COLD-FORMED STEEL FRAMING			
VERIFY MEMBER SIZES, CONNECTIONS & DEFLECTION HEADS		■	
OTHER			
EXPANSION BOLT INSTALLATION	■		PER ICC EVALUATION REPORT
MASONRY VENEER TIES		■	

SPECIAL INSPECTION PROGRAM FOOTNOTES:

1. PROVIDE SPECIAL INSPECTION, SPECIAL TESTING, REPORTING AND COMPLIANCE PROCEDURES ACCORDING TO CHAPTER 17 OF THE INTERNATIONAL BUILDING CODE WITH THE 2003 WASHINGTON STATE AMENDMENTS.
2. SPECIAL INSPECTOR QUALIFICATIONS: DEMONSTRATE COMPETENCE, TO THE SATISFACTION OF THE BUILDING OFFICIAL, FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION IN QUESTION.
3. PRIOR TO THE BEGINNING OF CONSTRUCTION, REVIEW THE SPECIAL INSPECTION REQUIREMENTS WITH THE ARCHITECT, ENGINEER, BUILDING OFFICIA



N

A
S2.4

SITE PLAN

1/8" = 1'-0"

THE INFORMATION PREPARED IN ELECTRONIC FORM IS SUBMITTED FOR USE ON THIS PROJECT, ONLY. DUE TO THE POTENTIAL THAT THE INFORMATION SET FORTH ON THE COMPUTER DISK MAY BE MODIFIED BY OTHER PARTIES, UNINTENTIONALLY OR OTHERWISE, KRAMER GEHLEN & ASSOCIATES, INC. RESERVES THE RIGHT TO REMOVE ALL INDICATION OF OWNERSHIP AND/OR INVOLVEMENT FROM EACH ELECTRONIC DISPLAY. ANY USE OR RE-USE BY OTHERS, WITHOUT WRITTEN VERIFICATION BY KRAMER GEHLEN & ASSOCIATES, INC. FOR THE SPECIFIC PURPOSE INTENDED, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY LIABILITY OR LEGAL EXPOSURE OF KRAMER GEHLEN & ASSOCIATES, INC. THE USER SHALL, TO THE FULLEST EXTENT PERMITTED BY LAW, INDEMNIFY AND HOLD HARMLESS KRAMER GEHLEN & ASSOCIATES, INC. FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES, INCLUDING ATTORNEY'S FEES ARISING OUT OF OR RESULTING THEREFROM.

KRAMER GEHLEN ASSOCIATES
Consulting Engineers
Structural/Civil
400 COLUMBIA ST.
SUITE 240
VANC, WA.
98660-3117
360-693-1621
503-289-2661

lsw architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

preliminary

drawn by
DG
checked by
DG
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
FEB 1, 2005
BID SET

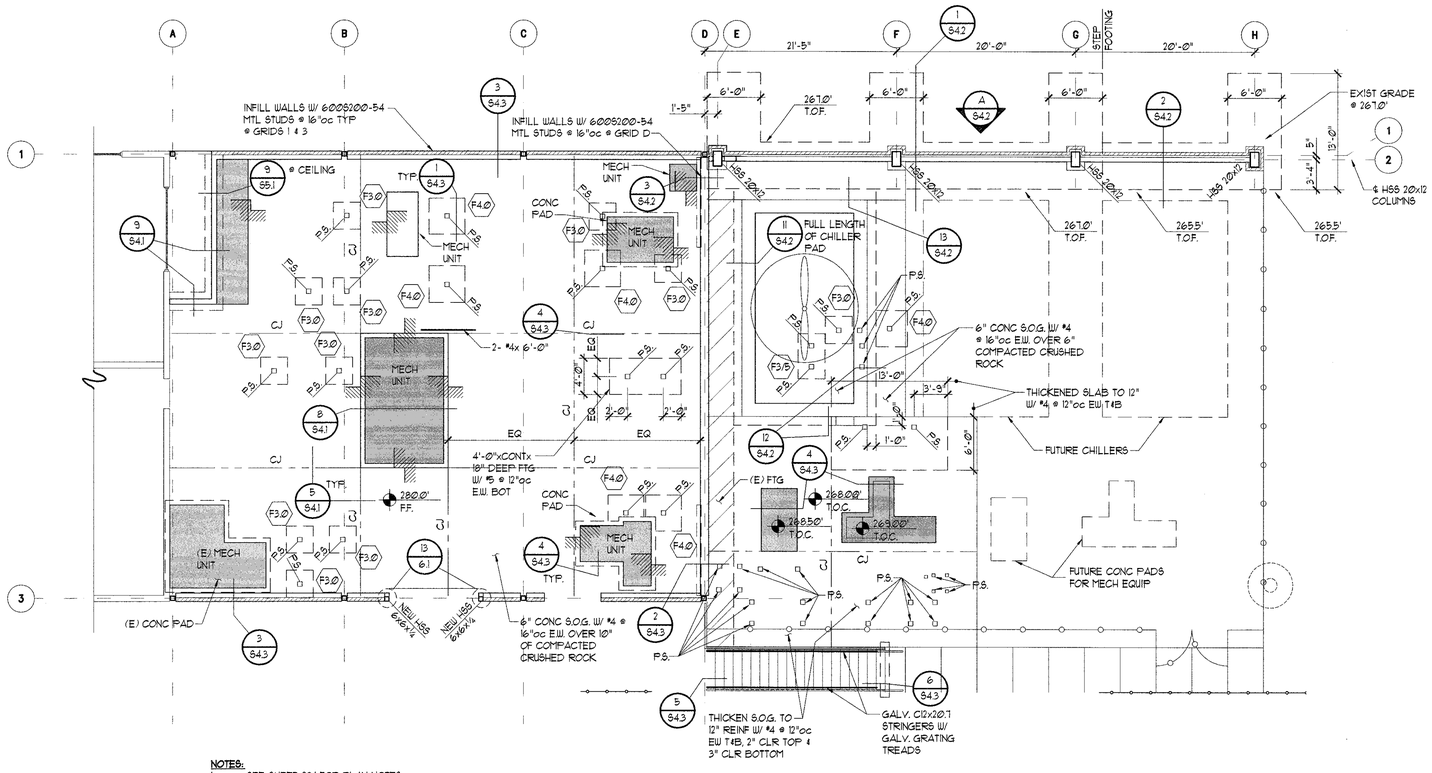
revisions
1 **FEB 15, 2005**
2

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

SITE
PLAN

S2.4

Plotted on Sep 11, 2006 - 4:13pm, Modified 09-11-06
Xrefs: TBLK STAMPS-03 03285-02#sp 24x36x03 003285S 003285su 003285su2



NOTES:

1. SEE SHEET S3.1 FOR PLAN NOTES.
2. FRAME BELOW NEW ROOF TOP HOODS & FANS PER S/S5.1.
3. "P.S." INDICATES MECHANICAL PIPING SUPPORT SYSTEM TO BE BIDDER DESIGNED BY PIPING CONTRACTOR.
4. INDICATES RAISED HOUSEKEEPING PADS, SEE ARCH & MECH DRAWINGS FOR HEIGHT

FOUNDATION PLAN

1/8"=1'-0"

FOOTING SCHEDULE	
MARK	FTG & REINF
F3.0	3'-0" x 3'-0" x 1'-6" W/ 4- #5 x 2'-6" E.W.
F4.0	4'-0" x 4'-0" x 1'-6" W/ 5- #5 x 3'-6" E.W.
F6.5	6'-6" x 6'-6" x 1'-0" W/ 7- #5 x 6'-0" E.W.
F3/5	3'-0" x 5'-0" x 1'-0" W/ #4 @ 12"oc E.W. SEE S/S4.3

THE INFORMATION PREPARED IN ELECTRONIC FORM IS SUBMITTED FOR USE ON THIS PROJECT, ONLY. DUE TO THE POTENTIAL THAT THE INFORMATION SET FORTH ON THE COMPUTER DISK MAY BE MODIFIED BY OTHER PARTIES, UNINTENTIONALLY OR OTHERWISE, KRAMER GEHLEN & ASSOCIATES, INC. RESERVES THE RIGHT TO REMOVE ALL INDICATION OF OWNERSHIP AND/OR INVOLVEMENT FROM EACH ELECTRONIC DISPLAY. ANY USE OR RE-USE BY OTHERS, WITHOUT WRITTEN VERIFICATION BY KRAMER GEHLEN & ASSOCIATES, INC. FOR THE SPECIFIC PURPOSE INTENDED, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY LIABILITY OR LEGAL EXPOSURE OF KRAMER GEHLEN & ASSOCIATES, INC. THE USER SHALL, TO THE FULLEST EXTENT PERMITTED BY LAW, INDEMNIFY AND HOLD HARMLESS KRAMER GEHLEN & ASSOCIATES, INC. FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES, INCLUDING ATTORNEY'S FEES ARISING OUT OF OR RESULTING THEREFROM.

KRAMER GEHLEN ASSOCIATES
Consulting Engineers Structural/Civil
400 COLUMBIA ST. SUITE 240 VANC, WA. 98660-3117
360-693-1621
503-289-2661

lsw architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

drawn by DG
checked by DG
lsw job number 03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
FEB 1, 2005
BID SET

revisions
1
2
FEB 15, 2005

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

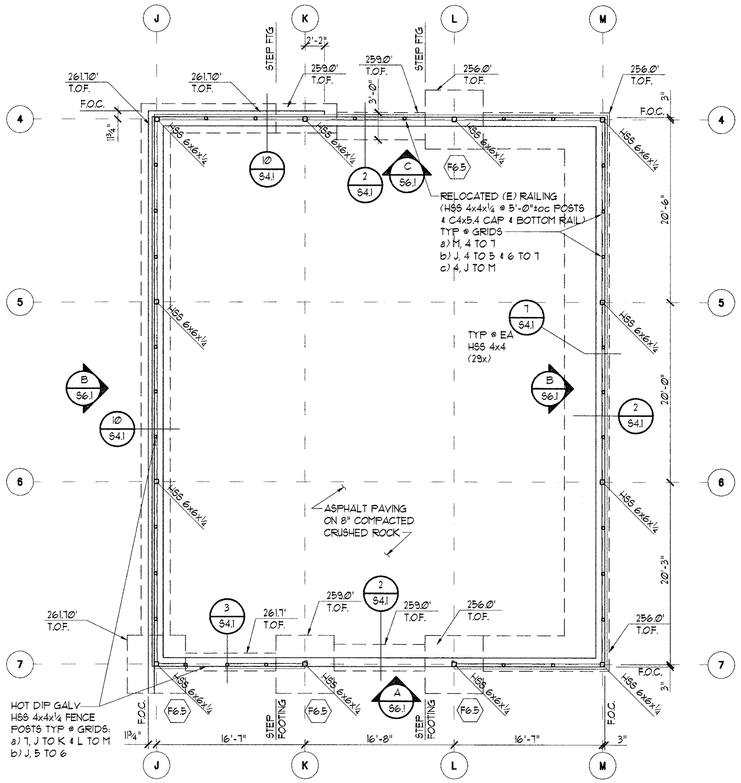
FOUNDATION PLAN

S3.0

Plotted on Sep 11, 2006 - 4:14pm, Modified 09-11-06
Xrefs: TBLK 003285P1 003285S 003285su 003285su2

KRAMER GEHLEN ASSOCIATES
Consulting Engineers
Structural/Civil
400 COLUMBIA ST.
SUITE 240
VANC, WA
98660-3117
360-693-1621
503-289-2661

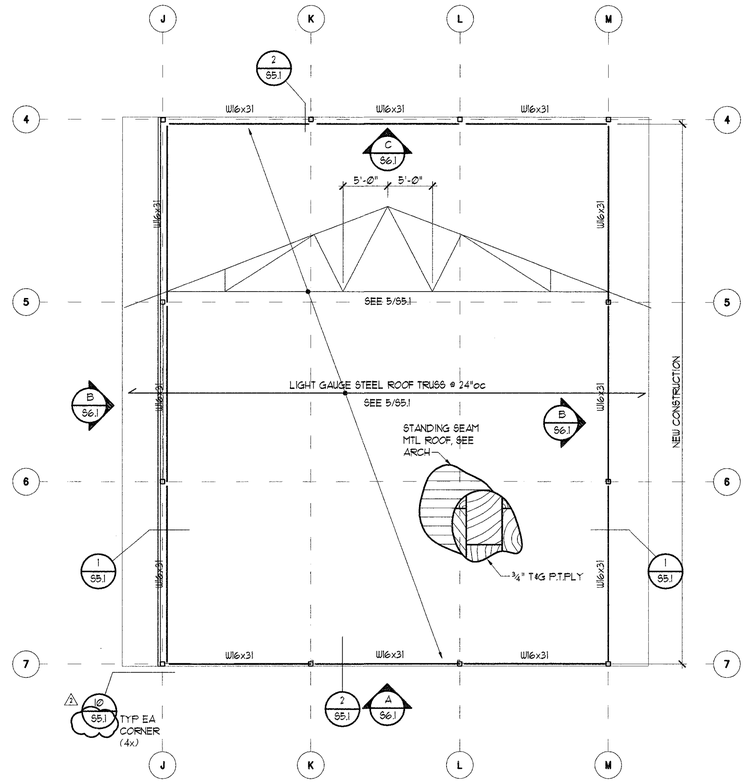
lsw architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510



NOTE:
SEE SHEET 2.4 FOR EXTENT OF SITE RETAINING WALLS

A S3.1 FOUNDATION PLAN

1/8" = 1'-0"



B S3.1 ROOF FRAMING PLAN

1/8" = 1'-0"

FOUNDATION NOTES:

1. F.F. INDICATES FINISH FLOOR ELEVATION.
2. STEP FOOTING PER 6/S4.1
3. SEE SHEET S1.0 FOR STRUCTURAL NOTES.
4. F# INDICATES FOOTING TYPE, SEE SCHEDULE ON SHEET S3.0
5. SEE 4/S4.1 FOR PIPE PENETRATIONS THROUGH FOOTINGS.
6. SEE ARCH DRAWINGS FOR FLOOR SLOPES & DEPRESSIONS.

THE INFORMATION PREPARED IN ELECTRONIC FORM IS SUBMITTED FOR USE ON THIS PROJECT, ONLY. DUE TO THE POTENTIAL THAT THE INFORMATION SET FORTH ON THE COMPUTER DISK MAY BE MODIFIED BY OTHER PARTIES, UNINTENTIONALLY OR OTHERWISE, KRAMER GEHLEN & ASSOCIATES, INC. RESERVES THE RIGHT TO REMOVE ALL INDICATION OF OWNERSHIP AND/OR INVOLVEMENT FROM EACH ELECTRONIC DISPLAY. ANY USE OR RE-USE BY OTHERS, WITHOUT WRITTEN VERIFICATION BY KRAMER GEHLEN & ASSOCIATES, INC. FOR THE SPECIFIC PURPOSE INTENDED, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY LIABILITY OR LEGAL EXPOSURE OF KRAMER GEHLEN & ASSOCIATES, INC. THE USER SHALL, TO THE FULLEST EXTENT PERMITTED BY LAW, INDEMNIFY AND HOLD HARMLESS KRAMER GEHLEN & ASSOCIATES, INC. FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES, INCLUDING ATTORNEY'S FEES ARISING OUT OF OR RESULTING THEREFROM.

drawn by
DG
checked by
DG
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
FEB 1, 2005
BID SET

revisions
1 FEB 15, 2005
2

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

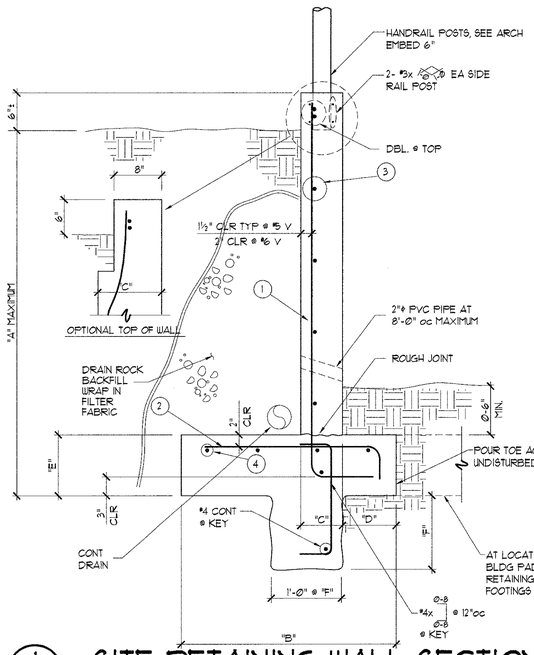
ROOF FRAMING & FOUNDATION PLAN

S3.1

Plotted on Sep 11, 2006 - 4:14pm, Modified 09-11-06
Xrefs: TBLK 003285P1 003285P2

KGA KRAMER GEHLEN & ASSOCIATES
Consulting Engineers Structural/Civil
400 COLUMBIA ST. SUITE 240 VANC. WA. 98660-3117
360-693-1621
503-289-2661

lsw architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

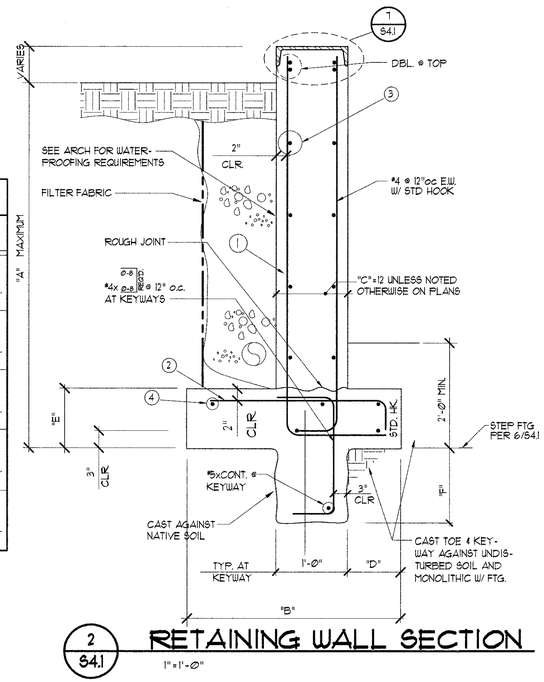


1 S4.1 **SITE RETAINING WALL SECTION**
N.T.S.

RETAINING WALL SCHEDULE

FOR DETAIL 1/S4.1

A	B	C	D	E	F	①	②	③	④
4'-Ø"	2'-3"	8"	6"	1'-Ø"	NOT REQ'D	#5 x FULL HT. Ø-8 @ 15"o.c.	#4 X 1-9 @ 15"o.c.	#4 @ 14"o.c.	3-#4 CONT.
6'-Ø"	3'-10"	8"	6"	1'-Ø"	NOT REQ'D	#5 x FULL HT. Ø-8 @ 15"o.c.	#4 X 3-4 @ 15"o.c.	#4 @ 14"o.c.	5-#4 CONT.
8'-Ø"	5'-4"	8"	6"	1'-1"	NOT REQ'D	#5 x FULL HT. 1-Ø @ 12"o.c.	#5 X 4-10 @ 18"o.c.	#5 @ 15"o.c.	5-#5 CONT.
10'-Ø"	6'-10"	8"	6"	1'-1"	NOT REQ'D	#5 x FULL HT. 1-Ø @ 9"o.c.	#5 X 6-4 @ 12"o.c.	#5 @ 15"o.c.	7-#5 CONT.
12'-Ø"	7'-3"	10"	1'-Ø"	1'-3"	1'-6"	#6 x FULL HT. 1-Ø @ 10"o.c.	#6 X 6-9 @ 10"o.c.	#5 @ 15"o.c.	8-#5 CONT.



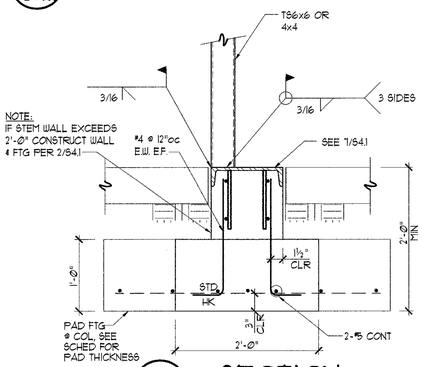
2 S4.1 **RETAINING WALL SECTION**
1" = 1'-Ø"

RETAINING WALL SCHEDULE

FOR DETAIL 2/S4.1

A	B	C	D	E	F	①	②	③	④
4'-Ø"	3'-Ø"	12"	Ø'-8"	1'-Ø"	NOT REQ'D.	#4 x FULL HT. Ø-8 @ 12"o.c.	#4 X 2-6 @ 12"o.c.	#4 @ 12"o.c.	4-#4 CONT.
6'-Ø"	4'-Ø"	12"	Ø'-8"	1'-Ø"	NOT REQ'D.	#4 x FULL HT. Ø-10 @ 12"o.c.	#4 X 3-6 @ 12"o.c. Ø-8	#4 @ 12"o.c.	5-#4 CONT.
8'-Ø"	5'-Ø"	12"	1'-Ø"	1'-Ø"	Ø'-9"	#5 x FULL HT. 1-Ø @ 12"o.c.	#4 X 4-6 @ 12"o.c. Ø-8	#4 @ 12"o.c.	5-#5 CONT.
10'-Ø"	6'-Ø"	12"	1'-6"	1'-6"	1'-6"	#6 x FULL HT. 1-Ø @ 12"o.c.	#5 X 5-6 @ 12"o.c. 1-Ø	#4 @ 12"o.c.	8-#5 CONT.
12'-Ø"	7'-Ø"	12"	2'-Ø"	1'-6"	2'-6"	#7 x FULL HT. 1-Ø @ 12"o.c. LAP 30" W/#5 @ 12" FOR REMAINDER	#5 X 6-6 @ 12"o.c. 1-Ø	#4 @ 12"o.c.	9-#5 CONT.

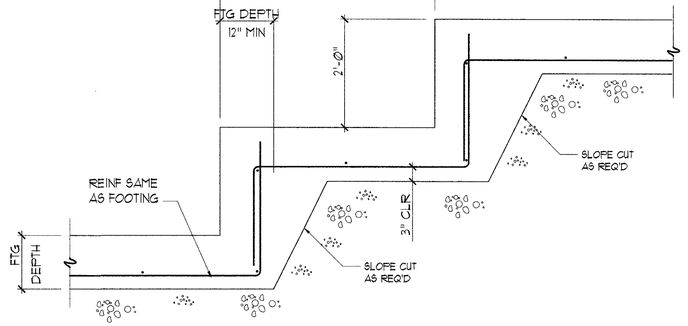
THE INFORMATION PREPARED IN ELECTRONIC FORM IS SUBMITTED FOR USE ON THIS PROJECT, ONLY. DUE TO THE POTENTIAL THAT THE INFORMATION SET FORTH ON THE COMPUTER DISK MAY BE MODIFIED BY OTHER PARTIES, UNINTENTIONALLY OR OTHERWISE, KRAMER GEHLEN & ASSOCIATES, INC. RESERVES THE RIGHT TO REMOVE ALL INDICATION OF OWNERSHIP AND/OR INVOLVEMENT FROM EACH ELECTRONIC DISPLAY. ANY USE OR RE-USE BY OTHERS, WITHOUT WRITTEN VERIFICATION BY KRAMER GEHLEN & ASSOCIATES, INC. FOR THE SPECIFIC PURPOSE INTENDED, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY LIABILITY OR LEGAL EXPOSURE OF KRAMER GEHLEN & ASSOCIATES, INC. THE USER SHALL, TO THE FULLEST EXTENT PERMITTED BY LAW, INDEMNIFY AND HOLD HARMLESS KRAMER GEHLEN & ASSOCIATES, INC. FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES, INCLUDING ATTORNEY'S FEES ARISING OUT OF OR RESULTING THEREFROM.



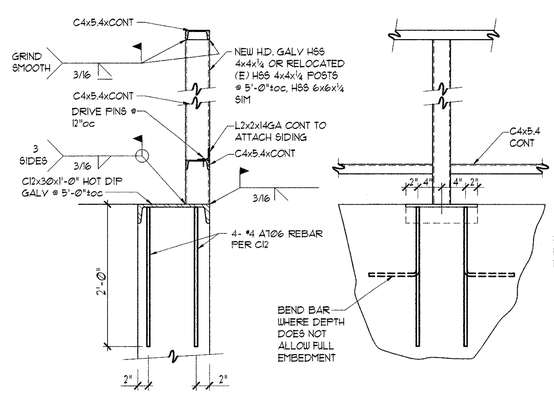
3 S4.1 **SECTION**
1" = 1'-Ø"

4 S4.1 **SECTION**
1" = 1'-Ø"

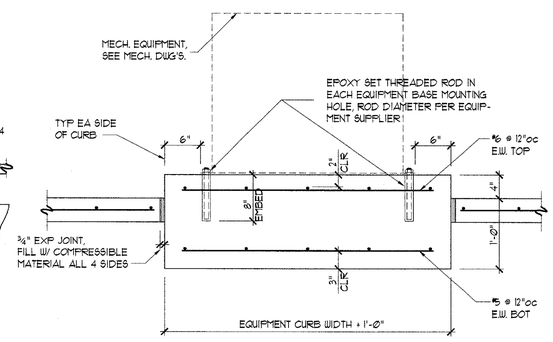
5 S4.1 **SLAB JOINTS**
1" = 1'-Ø"



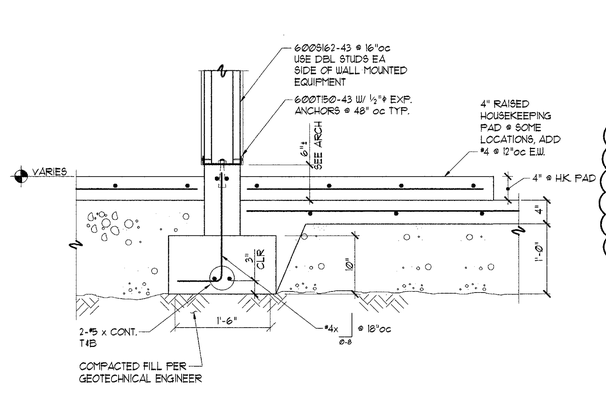
6 S4.1 **TYP FTG STEP**
¾" = 1'-Ø"



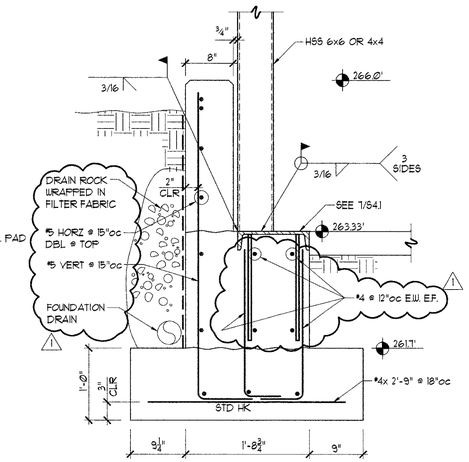
7 S4.1 **SECTION**
1" = 1'-Ø"



8 S4.1 **SECTION**
1" = 1'-Ø"



9 S4.1 **SECTION**
1" = 1'-Ø"



10 S4.1 **SECTION**
1" = 1'-Ø"

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

drawn by
DG
checked by
DG
lsw job number
03285

issue date
FEB 1, 2005
BID SET

revisions
1
2
FEB 15, 2005

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

FOUNDATION
DETAILS

S4.1

Plotted on Sep 11, 2006 – 4:14pm, Modified 09-11-06
Xrefs: TBLK

V:\Project Files\Archive 2004\CAD FILES\04044a WSU\AutoCAD FILES\BURNED CD 9-11-06\ S41

THE INFORMATION PREPARED IN ELECTRONIC FORM IS SUBMITTED FOR USE ON THIS PROJECT, ONLY. DUE TO THE POTENTIAL THAT THE INFORMATION SET FORTH ON THE COMPUTER DISK MAY BE MODIFIED BY OTHER PARTIES, UNINTENTIONALLY OR OTHERWISE, KRAMER GEHLEN & ASSOCIATES, INC. RESERVES THE RIGHT TO REMOVE ALL INDICATION OF OWNERSHIP AND/OR INVOLVEMENT FROM EACH ELECTRONIC DISPLAY. ANY USE OR RE-USE BY OTHERS, WITHOUT WRITTEN VERIFICATION BY KRAMER GEHLEN & ASSOCIATES, INC. FOR THE SPECIFIC PURPOSE INTENDED, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY LIABILITY OR LEGAL EXPOSURE OF KRAMER GEHLEN & ASSOCIATES, INC. THE USER SHALL, TO THE FULLEST EXTENT PERMITTED BY LAW, INDEMNIFY AND HOLD HARMLESS KRAMER GEHLEN & ASSOCIATES, INC. FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES, INCLUDING ATTORNEY'S FEES ARISING OUT OF OR RESULTING THEREFROM.

KGA KRAMER GEHLEN ASSOCIATES
Consulting Engineers Structural/Civil
400 COLUMBIA ST. SUITE 240 VANC. WA. 98660-3117
360-693-1621
503-289-2661

lsw architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

drawn by DG
checked by DG
lsw job number 03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

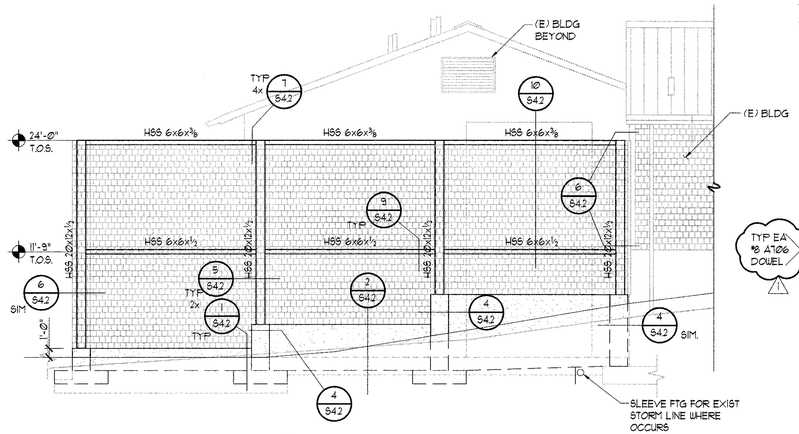
issue date
FEB 1, 2005
BID SET

revisions
1 **FEB 15, 2005**
2

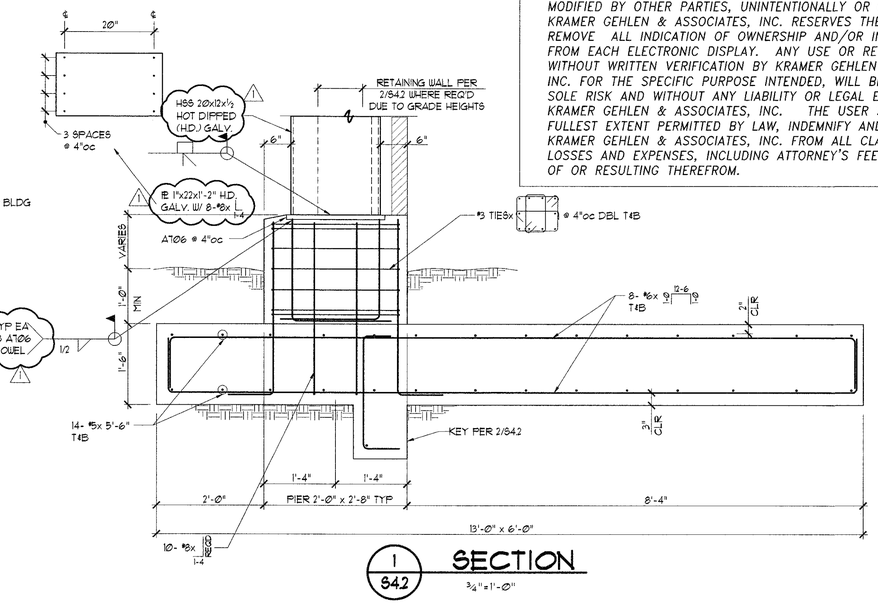
ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

FOUNDATION DETAILS

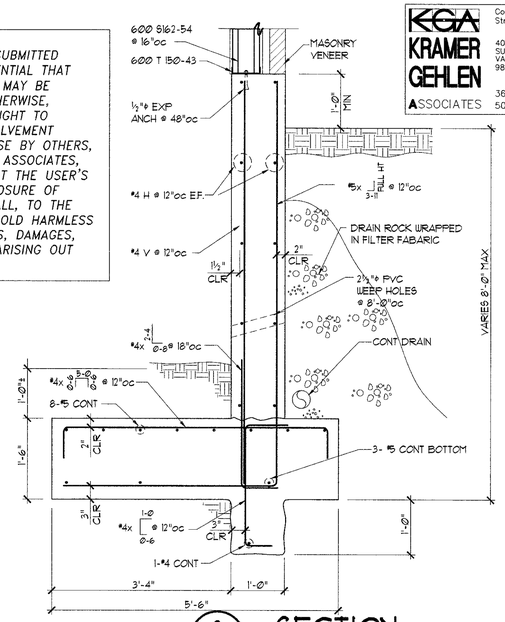
S4.2



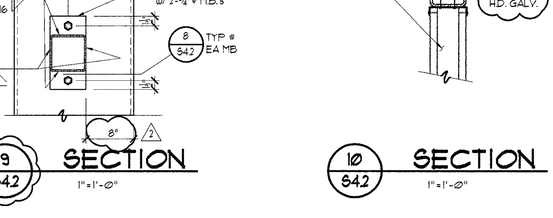
A S4.2 **ELEVATION**
1/8"=1'-Ø"



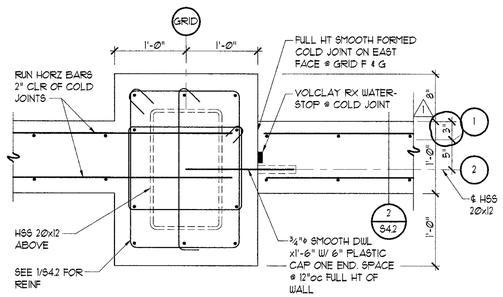
1 S4.2 **SECTION**
3/4"=1'-Ø"



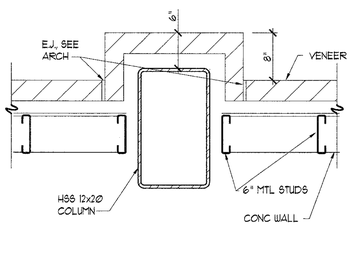
2 S4.2 **SECTION**
3/4"=1'-Ø"



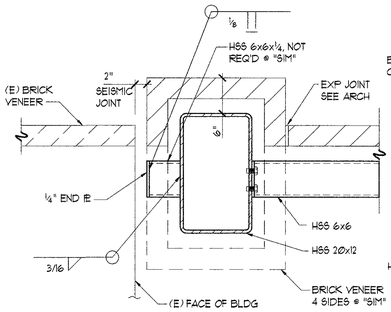
3 S4.2 **SECTION**
3/4"=1'-Ø"



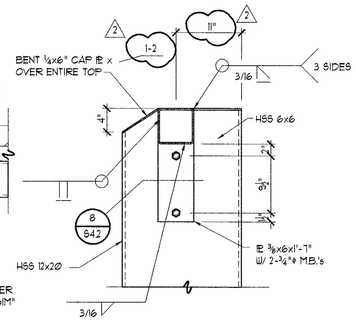
4 S4.2 **PLAN SECTION**
1"=1'-Ø"



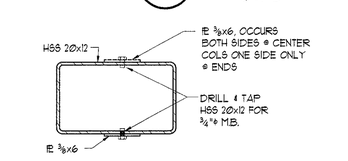
5 S4.2 **PLAN SECTION**
1"=1'-Ø"



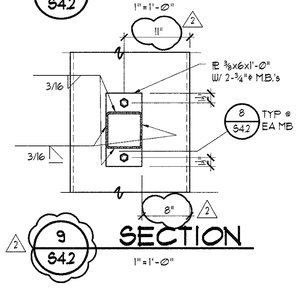
6 S4.2 **PLAN SECTION**
1"=1'-Ø"



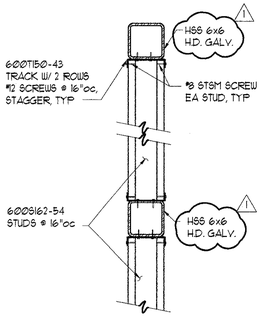
7 S4.2 **SECTION**
1"=1'-Ø"



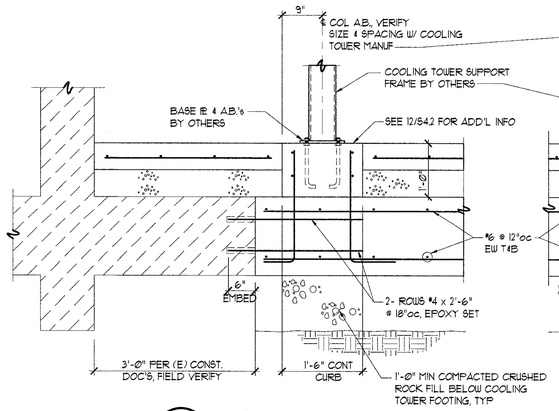
8 S4.2 **PLAN SECTION**
1"=1'-Ø"



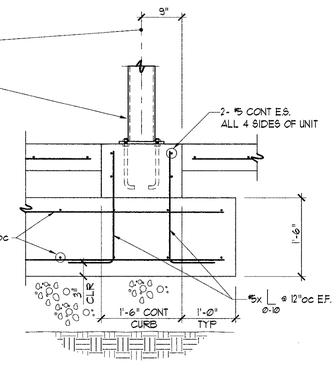
9 S4.2 **SECTION**
1"=1'-Ø"



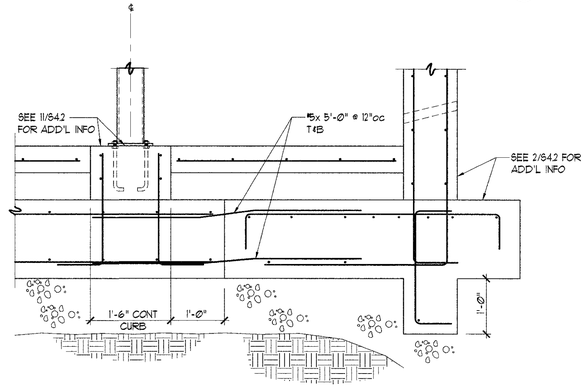
10 S4.2 **SECTION**
1"=1'-Ø"



11 S4.2 **SECTION**
3/4"=1'-Ø"

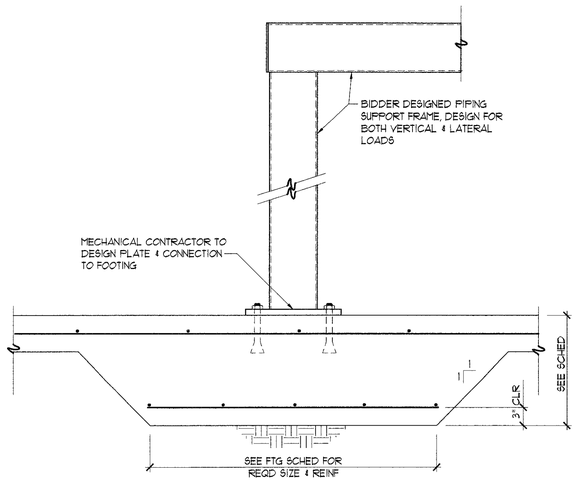


12 S4.2 **SECTION**
3/4"=1'-Ø"

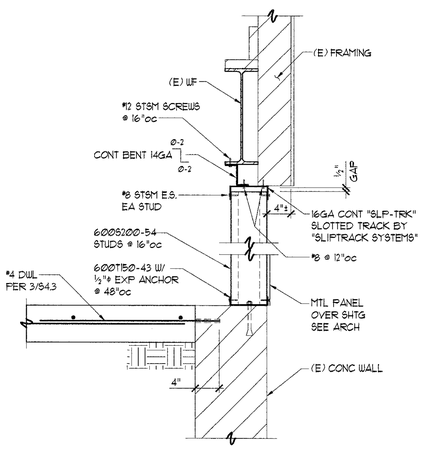


13 S4.2 **SECTION**
3/4"=1'-Ø"

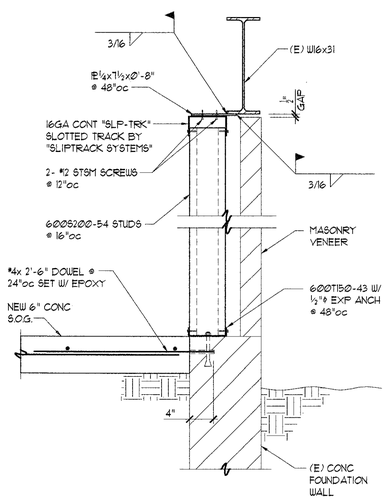
Plotted on Sep 11, 2006 - 4:14pm, Modified 09-11-06
Xrefs: TBLK 003285X



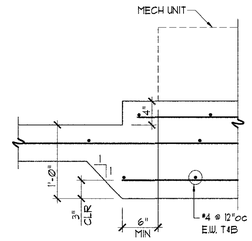
1 / S4.3 PLAN SECTION
1"=1'-0"



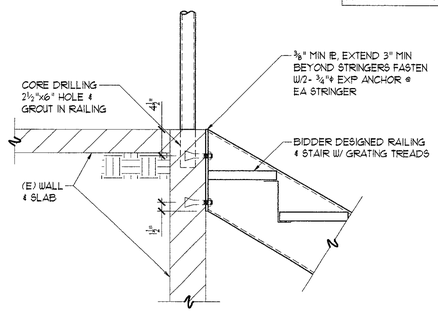
2 / S4.3 SECTION
1"=1'-0"



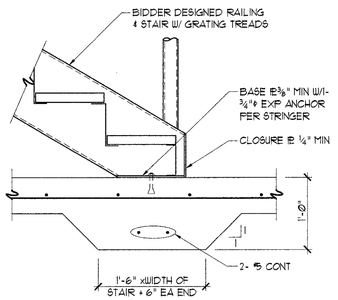
3 / S4.3 SECTION
1"=1'-0"



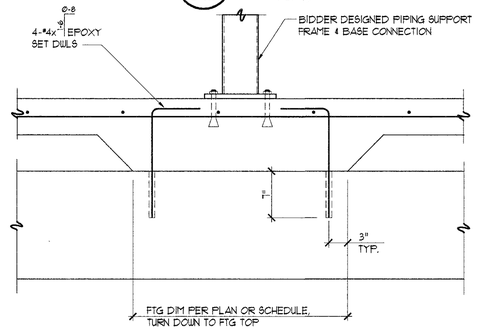
4 / S4.3 SECTION
1"=1'-0"



5 / S4.3 SECTION
1"=1'-0"



6 / S4.3 SECTION
1"=1'-0"



7 / S4.3 SECTION
1"=1'-0"

8 / S4.3 SECTION
1"=1'-0"

9 / S4.3 SECTION
1"=1'-0"

KRAMER GEHLEN ASSOCIATES
Consulting Engineers Structural/Civil
400 COLUMBIA ST. SUITE 240 VANC. WA. 98660-3117
360-693-1621
503-289-2661

lsw architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

drawn by
DG
checked by
DG
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
FEB 1, 2005
BID SET

revisions
1 **FEB 15, 2005**
2

THE INFORMATION PREPARED IN ELECTRONIC FORM IS SUBMITTED FOR USE ON THIS PROJECT, ONLY. DUE TO THE POTENTIAL THAT THE INFORMATION SET FORTH ON THE COMPUTER DISK MAY BE MODIFIED BY OTHER PARTIES, UNINTENTIONALLY OR OTHERWISE, KRAMER GEHLEN & ASSOCIATES, INC. RESERVES THE RIGHT TO REMOVE ALL INDICATION OF OWNERSHIP AND/OR INVOLVEMENT FROM EACH ELECTRONIC DISPLAY. ANY USE OR RE-USE BY OTHERS, WITHOUT WRITTEN VERIFICATION BY KRAMER GEHLEN & ASSOCIATES, INC. FOR THE SPECIFIC PURPOSE INTENDED, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY LIABILITY OR LEGAL EXPOSURE OF KRAMER GEHLEN & ASSOCIATES, INC. THE USER SHALL, TO THE FULLEST EXTENT PERMITTED BY LAW, INDEMNIFY AND HOLD HARMLESS KRAMER GEHLEN & ASSOCIATES, INC. FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES, INCLUDING ATTORNEY'S FEES ARISING OUT OF OR RESULTING THEREFROM.

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

FRAMING
DETAILS

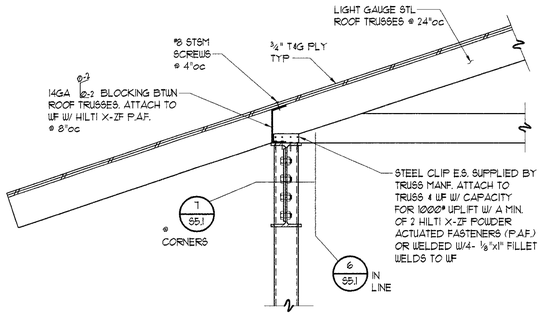
S4.3

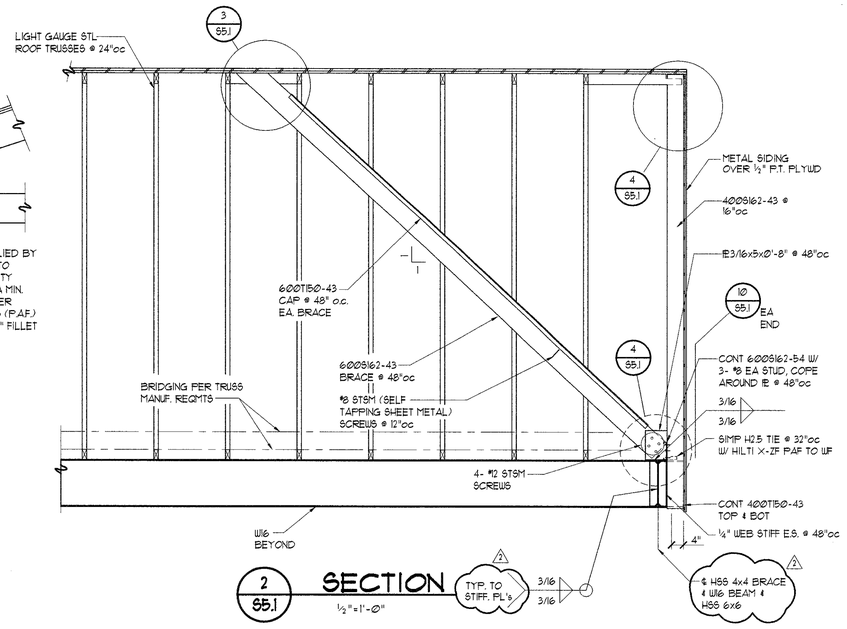
Plotted on Sep 11, 2006 - 4:14pm, Modified 09-11-06
Xrefs: TBLK

V:\Project Files\Archive 2004\CAD FILES\04044a WSU\AutoCAD FILES\BURNED CD 9-11-06\ S43

KRAMER GEHLEN ASSOCIATES
Consulting Engineers
Structural/Civil
400 COLUMBIA ST.
SUITE 240
VANC. WA.
98660-3117
360-693-1621
503-289-2661

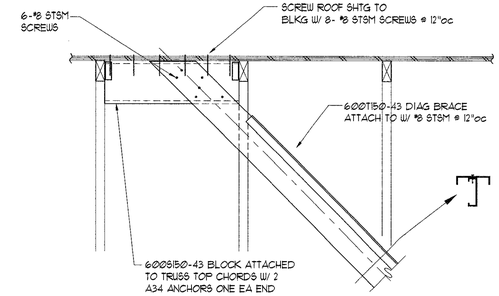
lsw architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510





1 S5.1 **SECTION**
1" = 1'-0"

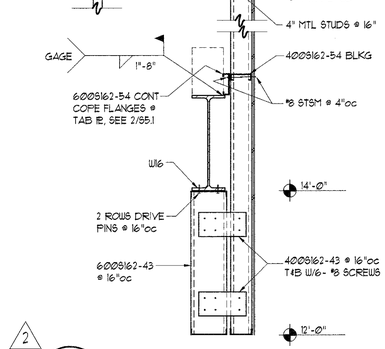
2 S5.1 **SECTION**
1/2" = 1'-0"



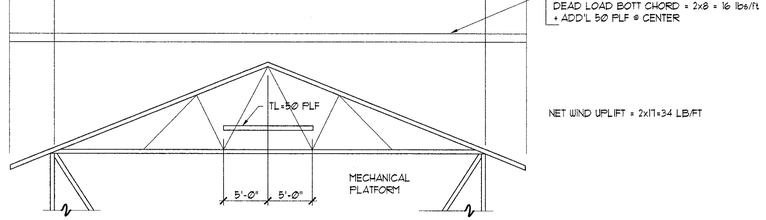
3 S5.1 **SECTION**
1" = 1'-0"

drawn by
DG
checked by
DG
lsw job number
03285

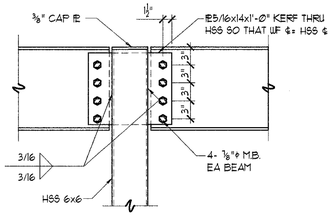
CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686



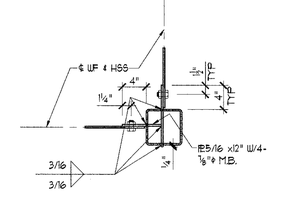
2
4 S5.1 **SECTION**
1" = 1'-0"



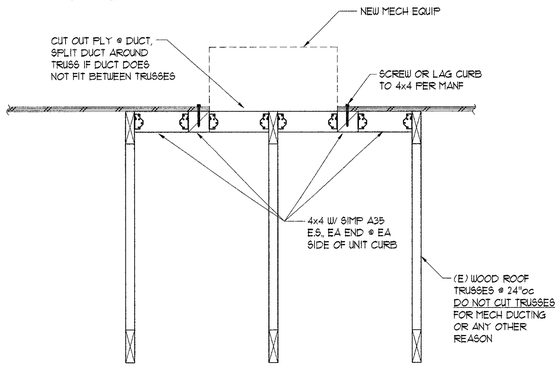
5 S5.1 **DESIGN LOADS - TYPICAL STORAGE BLDG ROOF TRUSS @ 24"oc**
1/8" = 1'-0"



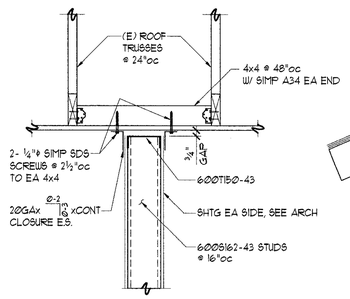
6 S5.1 **SECTION**
1" = 1'-0"



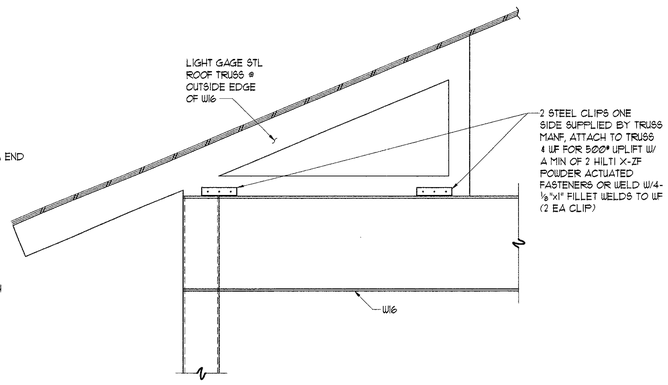
7 S5.1 **PLAN SECTION**
1" = 1'-0"



8 S5.1 **SECTION**
1" = 1'-0"



9 S5.1 **SECTION**
1" = 1'-0"



10 S5.1 **SECTION**
1" = 1'-0"

THE INFORMATION PREPARED IN ELECTRONIC FORM IS SUBMITTED FOR USE ON THIS PROJECT, ONLY. DUE TO THE POTENTIAL THAT THE INFORMATION SET FORTH ON THE COMPUTER DISK MAY BE MODIFIED BY OTHER PARTIES, UNINTENTIONALLY OR OTHERWISE, KRAMER GEHLEN & ASSOCIATES, INC. RESERVES THE RIGHT TO REMOVE ALL INDICATION OF OWNERSHIP AND/OR INVOLVEMENT FROM EACH ELECTRONIC DISPLAY. ANY USE OR RE-USE BY OTHERS, WITHOUT WRITTEN VERIFICATION BY KRAMER GEHLEN & ASSOCIATES, INC. FOR THE SPECIFIC PURPOSE INTENDED, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY LIABILITY OR LEGAL EXPOSURE OF KRAMER GEHLEN & ASSOCIATES, INC. THE USER SHALL, TO THE FULLEST EXTENT PERMITTED BY LAW, INDEMNIFY AND HOLD HARMLESS KRAMER GEHLEN & ASSOCIATES, INC. FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES, INCLUDING ATTORNEY'S FEES ARISING OUT OF OR RESULTING THEREFROM.

issue date
FEB 1, 2005
BID SET

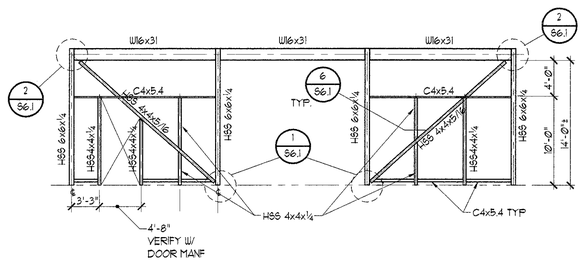
revisions
1
2
FEB 15, 2005

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

FRAMING DETAILS

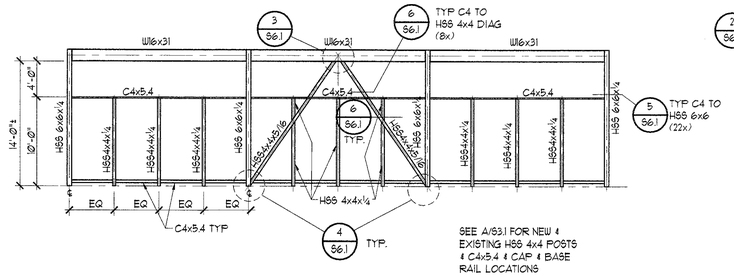
S5.1

Plotted on Sep 11, 2006 - 4:14pm, Modified 09-11-06
Xrefs: TBLK



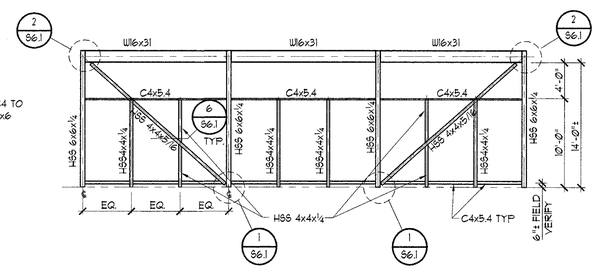
2 A S6.1 ELEVATION

1/8"=1'-0"



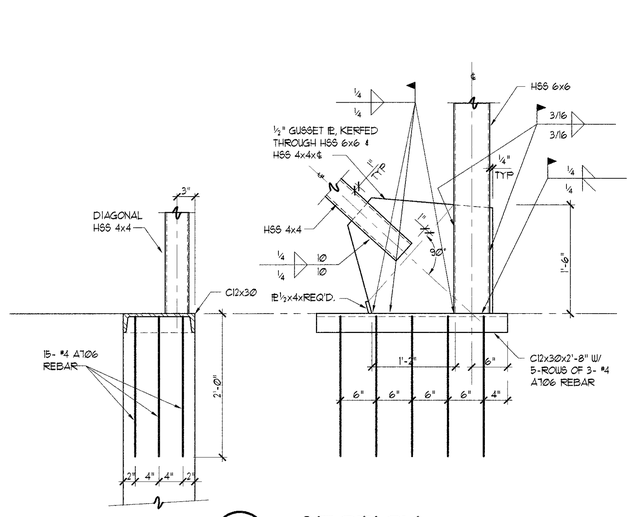
B S6.1 ELEVATION

1/8"=1'-0"



C S6.1 ELEVATION

1/8"=1'-0"

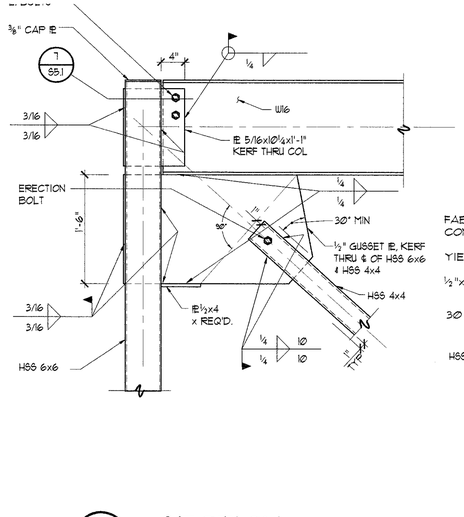


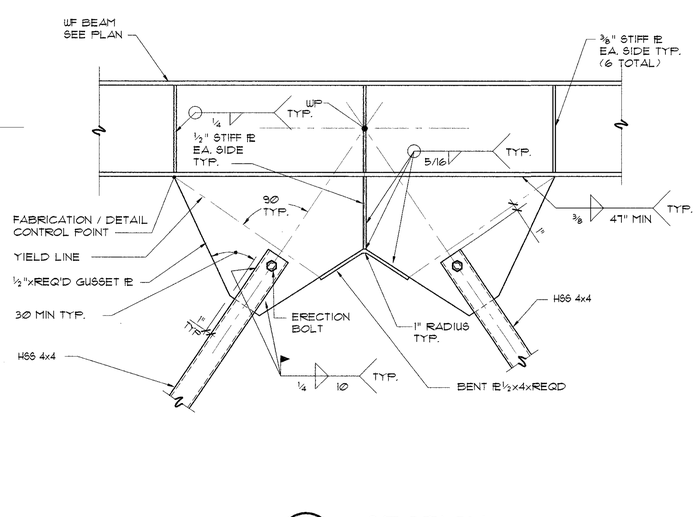
1 S6.1 SECTION

1"=1'-0"

2 S6.1 SECTION

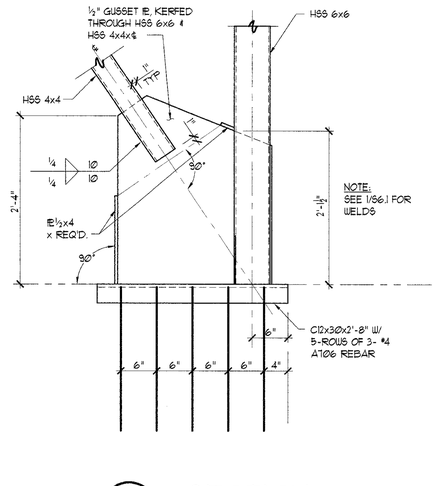
1"=1'-0"





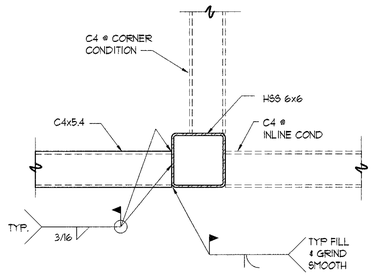
3 S6.1 SECTION

1"=1'-0"



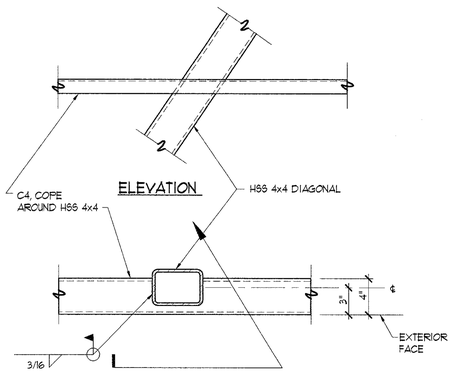
4 S6.1 SECTION

1"=1'-0"



5 S6.1 PLAN SECTION

1½"=1'-0"



6 S6.1 PLAN SECTION

1½"=1'-0"

KGA KRAMER GEHLEN ASSOCIATES
Consulting Engineers
Structural/Civil
400 COLUMBIA ST.
SUITE 240
VANC, WA.
98660-3117
360-693-1621
503-289-2661

lsw architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

drawn by
DG
checked by
DG
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
FEB 1, 2005
BID SET

revisions
1 FEB 15, 2005
2

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

ELEVATIONS &
DETAILS

S6.1

THE INFORMATION PREPARED IN ELECTRONIC FORM IS SUBMITTED FOR USE ON THIS PROJECT, ONLY. DUE TO THE POTENTIAL THAT THE INFORMATION SET FORTH ON THE COMPUTER DISK MAY BE MODIFIED BY OTHER PARTIES, UNINTENTIONALLY OR OTHERWISE, KRAMER GEHLEN & ASSOCIATES, INC. RESERVES THE RIGHT TO REMOVE ALL INDICATION OF OWNERSHIP AND/OR INVOLVEMENT FROM EACH ELECTRONIC DISPLAY. ANY USE OR RE-USE BY OTHERS, WITHOUT WRITTEN VERIFICATION BY KRAMER GEHLEN & ASSOCIATES, INC. FOR THE SPECIFIC PURPOSE INTENDED, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY LIABILITY OR LEGAL EXPOSURE OF KRAMER GEHLEN & ASSOCIATES, INC. THE USER SHALL, TO THE FULLEST EXTENT PERMITTED BY LAW, INDEMNIFY AND HOLD HARMLESS KRAMER GEHLEN & ASSOCIATES, INC. FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES, INCLUDING ATTORNEY'S FEES ARISING OUT OF OR RESULTING THEREFROM.

Plotted on Sep 11, 2006 - 4:15pm, Modified 09-11-06
Xrefs: TBLK

INSTRUMENT IDENTIFICATION LETTERS

FIRST-LETTER			SUCCEEDING-LETTERS		
MEASURED OR INITIATING VARIABLE		MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	USER'S CHOICE			CONTROL	
D	USER'S CHOICE	DIFFERENTIAL			
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)		
F	FLOW RATE	RATIO (FRACTION)			
G	USER'S CHOICE		GLASS, VIEWING DEVICE		
H	HAND				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	USER'S CHOICE	MOMENTARY			MIDDLE, INTERMEDIATE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	
O	USER'S CHOICE		ORIFICE, RESTRICTION		
P	PRESSURE, VACUUM		POINT (TEST) CORRECTION		
Q	QUANTITY	INTEGRATE TOTALIZE			
R	RADIATION		RECORD		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	
V	VIBRATION, MECH. ANALYSIS			VALVE, DAMPER LOUVER	
W	WEIGHT, FORCE		WELL		
X	UNCLASSIFIED	X AXIS	UNCLASSIFICATION	UNCLASSIFIED	
Y	EVENT, STATE OR PRESENCE	Y AXIS		RELAY, COMPUTE, CONVERT	
Z	POSITION, DIMENSION	Z AXIS		DRIVER, ACTUATOR UNCLASSIFIED FINAL CONTROL ELEMENT	

INSTRUMENT LINE SYMBOLS

INSTRUMENT SUPPLY OR CONNECTION TO PROCESS

UNDEFINED SIGNAL

PNEUMATIC SIGNAL

ELECTRIC SIGNAL — OR

HYDRAULIC SIGNAL

CAPILLARY TUBE

ELECTROMAGNETIC OR SONIC SIGNAL (GUIDED)

ELECTROMAGNETIC OR SONIC SIGNAL (NOT GUIDED)

INTERNAL SYSTEM LINK (SOFTWARE OR DATA LINK)

MECHANICAL LINK

OPTIONAL BINARY (ON-OFF) SYMBOLS

PNEUMATIC BINARY SIGNAL

ELECTRIC BINARY SIGNAL — OR

GENERAL INSTRUMENT OR FUNCTION SYMBOLS

	PRIMARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR	FIELD MOUNTED	AUXILIARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR
DISCRETE INSTRUMENTS	1	2	3
SHARED DISPLAY, INSTRUMENTS	4	5	6
COMPUTER FUNCTION	7	8	9
PROGRAMMABLE LOGIC CONTROL	10	11	12

ABBREVIATIONS/SYMBOLS

TOP / BOT — DETAIL NUMBER / DETAIL SYMBOL / DRAWING WHERE DETAIL APPEARS

TOP / BOT — SECTION NUMBER / SECTION SYMBOL / DRAWING WHERE SECTION APPEARS

POINT OF CONNECTION TO (E)

XX — KEYED NOTE

TOP / BOT — NEW EQUIPMENT IDENTIFICATION / NEW EQUIPMENT MARK / NEW EQUIPMENT NUMBER

X-1 — EXISTING EQUIPMENT IDENTIFICATION / EXISTING EQUIPMENT MARK / EXISTING EQUIPMENT NUMBER

/ ### — NECK SIZE (IN) / DIFFUSER / GRILLE MARK / CFM

SUPPLY DIFFUSER / GRILLE

RETURN DIFFUSER / GRILLE

EXHAUST DIFFUSER / GRILLE

LINEAR SLOT DIFFUSER

SIDEWALL DIFFUSER/GRILLE

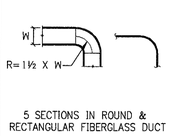
AD — ACCESS DOOR

AP — ACCESS PANEL

A	AMP	EL	ELEVATION
AAV	AUTOMATIC AIR VENT	ELEC	ELECTRIC(AL)
AD	ACCESS DOOR	ENGR	ENGINEER(ING)
ADA	AMERICAN DISABILITIES ACT	ENT	ENTERING
AF	AIR FOIL (FAN)	EQUIP	EQUIPMENT
AFF	ABOVE FINISHED FLOOR	ESP	EXTERNAL STATIC PRESSURE
AG	ABOVE GRADE	EWT	ENTERING WATER TEMPERATURE
AHU	AIR HANDLING UNIT	EXH	EXHAUST (AIR)
AL	ALUMINUM	EXIST	EXISTING
AMB	AMBIENT	EXP	EXPANSION
AP	ACCESS PANEL	EVAP	EVAPORAT - (E, ED, ING, OR)
APD	AIR PRESSURE DROP		
APPROX	APPROXIMATE(LY)	(F)	FUTURE
ARCH	ARCHITECT(URAL)	F	FAHRENHEIT
ATM	ATMOSPHER - (E, IC)	FA	FACE AREA
AVG	AVERAGE	FC	FORWARD CURVED (FAN)
		FCO	FLOOR CLEAN OUT
BAS	BUILDING AUTOMATION SYSTEM (DDC)	FD	FIRE DAMPER / FLOOR DRAIN
BDD	BACK DRAFT DAMPER	FF	FINISHED FLOOR
BFP	BACKFLOW PREVENTER	FLG	FLANGE
BG	BELOW GRADE	FPM	FEET PER MINUTE
BHP	BRAKE HORSEPOWER	FPS	FEET PER SECOND
BI	BACKWARD INCLINED (FAN)	FPT	FEMALE PIPE THREAD
BLDG	BUILDING	FRA	FREE AREA
BMS	BUILDING MANAGEMENT SYSTEM (DDC)	FS	FLOOR SINK
BOD	BOTTOM OF DUCT	FSD	FIRE SMOKE DAMPER
BOP	BOTTOM OF PIPE	FT	FOOT OR FEET
BTU	BRITISH THERMAL UNIT	FT WG	FEET WATER GAUGE
BTUH	BTU PER HOUR	FV	FACE VELOCITY
CB	CATCH BASIN	GA	GAUGE
CFH	CUBIC FEET PER HOUR	GAL	GALLON(S)
CFM	CUBIC FEET PER MINUTE	GALV	GALVANIZED
CI	CAST IRON	GPH	GALLONS PER HOUR
CMPR	COMPRESSOR	GPM	GALLONS PER MINUTE
CO	CLEAN OUT		
COG	CO TO GRADE	HD	HEAD / HUB DRAIN
CONC	CONCRETE	HG	MERCURY
COND	CONDENS - (ER, ING, ATE)	HGT	HEIGHT
CONT	CONTINU - (E, ED, OUS, ATION)	HOR	HORIZONTAL
CSP	CONCRETE SOIL PIPE	HP	HEAT PUMP / HORSEPOWER
CU	COPPER	HR	HOUR
CU FT	CUBIC FEET	HTG	HEATING
		HVAC	HEATING, VENTILATING, AIR CONDITIONING
(D)	DEMO	HZ	HERTZ (FREQUENCY)
DB	DECIBEL / DRY BULB		
DDC	DIRECT DIGITAL CONTROL(S)	ID	INSIDE DIAMETER
DEG	DEGREE	IE	INVERT ELEVATION
DEMO	DEMOLISH(ED)	IN	INCH(ES)
DIA	DIAMETER	IN HG	INCH MERCURY GAUGE
DIFF	DIFFERENCE / DIFFUSER	IN WG	INCH WATER GAUGE
DN	DOWN	IPS	IRON PIPE SIZE
DP	DEW POINT		
DS	DOWNSPOUT	KW	KILOWATT
DSD	DUCT SMOKE DETECTOR	KWH	KILOWATT-HOUR
(E)	EXISTING	LAT	LEAVING AIR TEMPERATURE
EA	EACH	LBS	POUNDS
EAT	ENTERING AIR TEMPERATURE	LF	LINEAR FEET
EFF	EFFICIENCY	LG	LENGTH

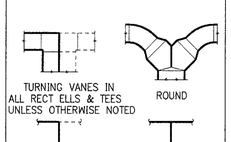
LH	LATENT HEAT	SM	SHEET METAL
LIQ	LIQUID	SP	STATIC PRESSURE
LVG	LEAVING	SPEC	SPECIFICATION(S)
LWT	LEAVING WATER TEMPERATURE	SQ FT	SQUARE FEET
		SS	STAINLESS STEEL
MANF	MANUFACTURER('S)	STD	STANDARD
MAV	MANUAL AIR VENT	STL	STEEL
MAX	MAXIMUM	STRUCT	STRUCTURAL
MBH	BTU PER HOUR (THOUSANDS)	SYS	SYSTEM
MECH	MECHANICAL		
MIN	MINIMUM	TBD	TO BE DETERMINED
MVD	MANUAL VOLUME DAMPER	TEMP	TEMPERATURE
		TDL	TOTAL DEVELOPED LENGTH
N/A	NOT APPLICABLE	TOD	TOP OF DUCT
NC	NOISE CRITERIA / NORMALLY CLOSED	TONS	TONS OF REFRIGERATION
NIC	NOT IN CONTRACT	TOP	TOP OF PIPE
NIM	NOT IN MECHANICAL	TSP	TOTAL STATIC PRESSURE
NO	NORMALLY OPEN / NUMBER	TSTAT	THERMOSTAT
NTS	NOT TO SCALE	TYP	TYPICAL
OBD	OPPOSED BLADE DAMPER	UON	UNLESS OTHERWISE NOTED
OC	ON CENTER		
OD	OUTSIDE DIAMETER / OVERFLOW DRAIN	V	VALVE / VENT / VOLTS
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED	VAC	VACUUM
OFOI	OWNER FURNISHED OWNER INSTALLED	VAV	VARIABLE AIR VOLUME (BOX/UNIT/SYSTEM)
OSA	OUTSIDE AIR	VD	VOLUME DAMPER
OZ	OUNCE	VEL	VELOCITY
		VENT	VENTILATION
PD	PRESSURE DROP/ DIFFERENCE	VERT	VERTICAL
PH	PHASE	VFD	VARIABLE FREQUENCY DRIVE
PLUMB	PLUMBING	VOL	VOLUME
POC	POINT OF CONNECTION	VTR	VENT THROUGH ROOF
PPM	PARTS PER MILLION	VVT	VARIABLE VOLUME AND TEMPERATURE (BOX/SYSTEM)
PRV	PRESSURE REDUCING VALVE		
PSI	POUNDS PER SQUARE INCH	W/	WITH
PSIA	PSI, ABSOLUTE	W	WASTE / WATT
PSIG	PSI, GAUGE	WB	WET BULB
P&T	PRESSURE & TEMPERATURE RELIEF VALVE	WCO	WALL CLEAN OUT
		WHA	WATER HAMMER ARRESTER
(R)	RELOCATE(D)	WPD	WATER PRESSURE DROP
R	RADIUS	WT	WEIGHT
RA	RETURN (AIR)	WTR	WATER
RD	ROOF DRAIN		
RECIRC	RECIRCULAT - (E, ING, OR)	Y	WYE
RECT	RECTANGULAR		
REQ	REQUIRED	Z	ZONE
RH	RELATIVE HUMIDITY	ZD	ZONE DAMPER
RND	ROUND		
RPBP	REDUCED PRESSURE BACKFLOW PREVENTER	/	AND / OR
RPM	REVOLUTIONS PER MINUTE	℄	CENTER LINE
RTU	ROOFTOP AIR HANDLING UNIT		
		⌀	DIAMETER / PHASE
SA	SUPPLY (AIR)	#	NUMBER / POUNDS
SAT	SATURATION		
SCFM	CFM, STANDARD CONDITIONS		
SD	SMOKE DAMPER / STORM DRAIN		
SEC	SECOND		
SF	SQUARE FEET		
SH	SENSIBLE HEAT		
SHR	SENSIBLE HEAT RATIO		

DUCT DETAILS (LOW VELOCITY)

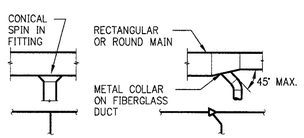


5 SECTIONS IN ROUND & RECTANGULAR FIBERGLASS DUCT

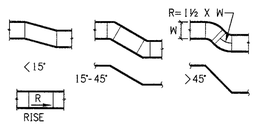
RADIUS ELBOW



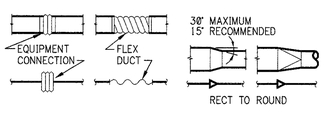
MITER ELBOWS & TEES



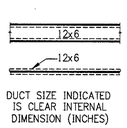
RECTANGULAR TO ROUND FITTINGS



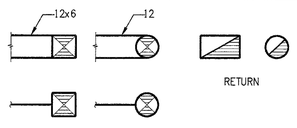
OFFSETS 3 SECTIONS IN ROUND & RECT. FIBERGLASS DUCT

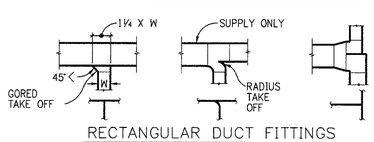


FLEX CONNECTIONS TRANSITIONS

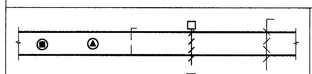


ACOUSTICAL LINER

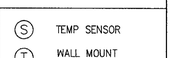




RECTANGULAR DUCT FITTINGS



DAMPERS



TSTAT/SENSOR

MECHANICAL LEGEND

PIPING / DUCTWORK / EQUIPMENT TO BE REMOVED

PIPING / DUCTWORK / EQUIPMENT TO BE PROVIDED

(E) PIPING / DUCTWORK / EQUIPMENT TO REMAIN

(F) PIPING / DUCTWORK / EQUIPMENT

PLUMBING

CONCRETE SOIL PIPE	CSP	CSP
SANITARY DRAIN (ABOVE GRADE DRAIN)	W	
SANITARY DRAIN (BELOW GRADE DRAIN)	W	
SANITARY DRAIN (PUMPED)	W	
STORM DRAIN (ABOVE GRADE DRAIN)	SD	SD
STORM DRAIN (BELOW GRADE DRAIN)	SD	SD
VENT	V	V
ACID DRAIN	ACID	ACID
ACID VENT	AV	AV
COLD WATER	CW	
HOT WATER	HW	
HOT WATER RETURN	HWR	
NATURAL GAS	G	G
DENTAL VACUUM	DV	DV
MEDICAL VACUUM	MV	MV
DENTAL AIR	DA	DA
MEDICAL AIR	MA	MA
COMPRESSED AIR	A	AIR
PROPANE	P	P
OXYGEN	O_2	O_2
FIRE PROTECTION	F	F

HVAC

STEAM (15 PSIG)	S	S
CONDENSATE RETURN	C	C
CONDENSATE RETURN (PUMPED)	PC	PC
HEATING WATER SUPPLY	HWS	HWS
HEATING WATER RETURN	HWR	HWR
REFRIGERANT LIQUID LINE	RL	RL
REFRIGERANT SUCTION LINE	RS	RS
CHILLED WATER SUPPLY	CHS	CHS
CHILLED WATER RETURN	CHR	CHR
CONDENSING WATER SUPPLY	CWS	CWS
CONDENSING WATER RETURN	CWR	CWR
FUEL OIL SUPPLY	FOS	FOS
FUEL OIL RETURN	FOR	FOR
FUEL OIL VENT	FOV	FOV
DRAIN (INDIRECT)	D	D

VALVE SYMBOLS

TRIPLE DUTY

BALL

BUTTERFLY

CHECK, SWING

CHECK, BALL

CHECK, SPRING

BALANCING

FLOW CONTROL

DIAPHRAGM

FLOAT

GATE

GATE

GATE ANGLE

GLOBE

GLOBE ANGLE

HOSE BIBB

PLUG

PRV — PRESSURE REDUCING (NUMBERED AND SPECIFIED)

SAFETY RELIEF

SOLENOID

2-WAY CONTROL

3-WAY CONTROL

PLUMBING SYMBOLS

FLOOR DRAIN, SQUARE

FLOOR DRAIN, ROUND

FLOOR/GRADE CLEANOUT

WALL CLEANOUT

FLOOR SINK, OPEN

FLOOR SINK, 1/2 GRATE

CATCH BASIN, SQUARE

CATCH BASIN, ROUND

HOSE BIBB

PENDANT SPRINKLER

UPRIGHT SPRINKLER

SIDEWALL SPRINKLER

POST INDICATOR VALVE

FIRE HYDRANT

FDC — FIRE DEPARTMENT CONNECTION (SIAMESE)

BACKFLOW PREVENTER

XX — BACKFLOW PREVENTER REDUCED PRESSURE TYPE

WHA — WATER HAMMER ARRESTOR

PIPING SYMBOLS

TEE

OUTLET UP

OUTLET DOWN

TEES

90°, 45°

OUTLET UP

OUTLET DOWN

ELBOWS

3" 2 — BUSHING

CONCENTRIC

ECCENTRIC STRAIGHT INVERT

ECCENTRIC STRAIGHT CROWN

REDUCERS

UNION

CAP

EXPANSION JOINT

FLEXIBLE JOINT

CONNECTORS

Y-PATTERN W/PLUG

Y-PATTERN W/BLOWOFF

Y-PATTERN W/BLOWOFF & CHAINED CAP

DUPLEX STRAINER

FILTER HOUSING

AIR SEPARATOR

STRAINERS/FILTERS

ANCHOR

GUIDE

SUPPORTS

AAV — AUTOMATIC AIR VENT, AAV

MANUAL AIR VENT, MAV

PETE'S PLUG

THERMOMETER

R — RISE

GAUGE COCK

MISC

NOTE:

NOT ALL SYMBOLS AND ABBREVIATIONS MAY BE USED.

8915 SW MACADAM AVE.
SUITE 200
PORTLAND, OREGON 97219
503.892.1188
FAX 503.892.1190
CONTACT KEVIN DUELL
engineering@mke-inc.com

MKE & ASSOCIATES, INC.
CONSULTING ENGINEERS
MECHANICAL AND ELECTRICAL SYSTEMS

lsw architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

RICHARD DUSAIR — STATE OF WASHINGTON — 29373 — REGISTERED PROFESSIONAL ENGINEER

EXPIRES 5-13-05

drawn by MB
checked by KD
lsw job number 03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.01.05
BID SET

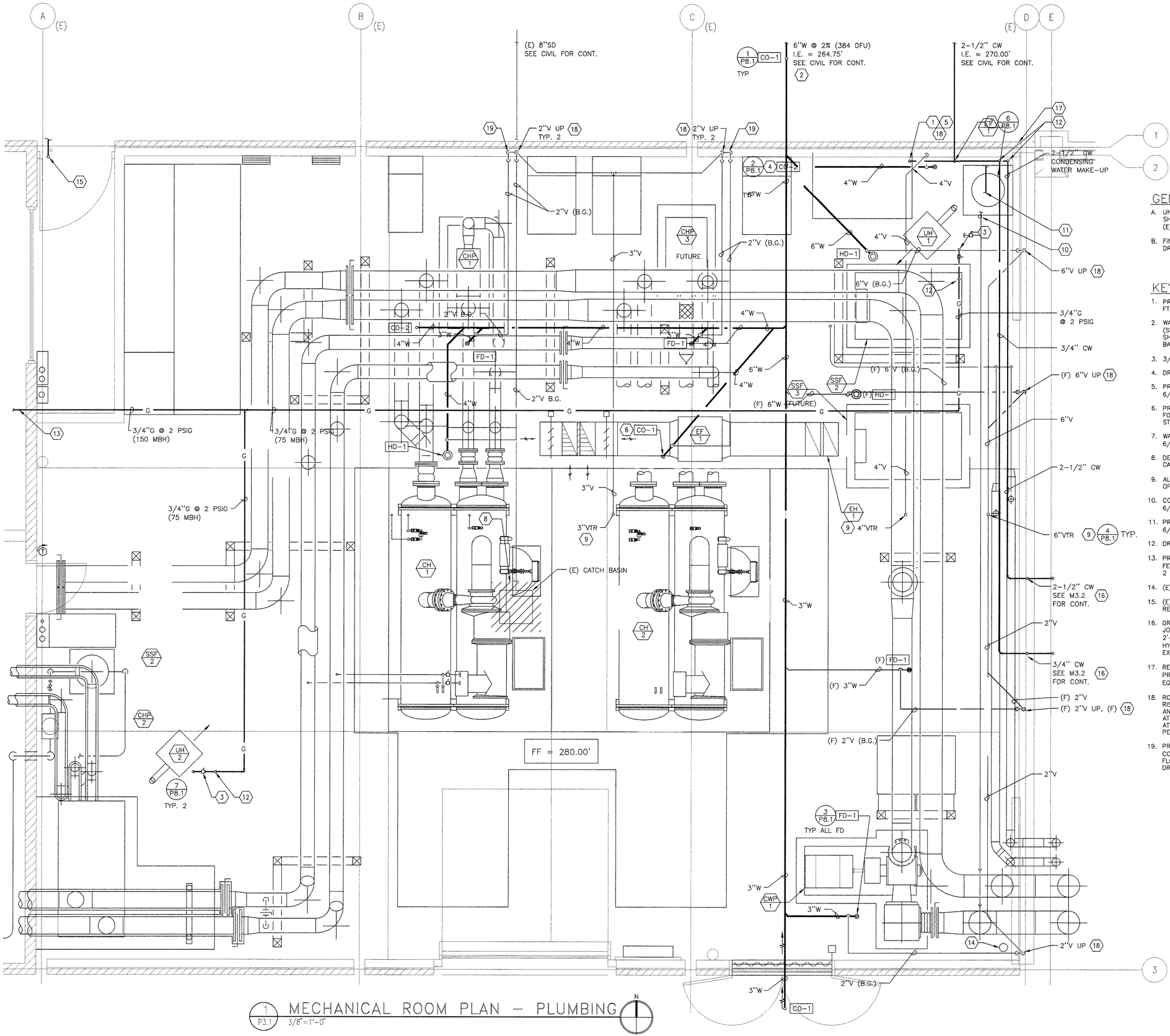
revisions

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

MECHANICAL
TITLE SHEET

M0.1

S1808 - X:\DWG\LS\1808\1808M01.dwg 16 Oct 2006 - 11:15 on MikeB



GENERAL NOTES:

A. UNLESS NOTED OTHERWISE, ALL ABOVE GRADE PIPING SHALL BE ROUTED IN WALLS OR ABOVE (E) CEILING IN ATTIC.

B. FINISHED FLOOR ELEVATIONS BASED ON ARCHITECTURAL DRAWINGS.

KEYED NOTES:

1. PROVIDE 3/4" PIPE AND SHUT OF VALVE APPROX. 4 FT AFF
2. WASTE IS SIZED FOR ONE SIDE-STREAM FILTER (SSF-1) BACKWASH CYCLE AT A TIME. FUTURE SSF SHALL BE CONTROLLED TO PREVENT SIMULTANEOUS BACKWASH FOR BOTH SSF UNITS.
3. 3/4"G TO UNIT HEATER (75 MBH)
4. DROP TO I.E. = 270.00 FT
5. PROVIDE CW TO CHEM. TREATMENT AREA. SEE DETAIL 6/P8.1.
6. PROVIDE CLEANOUT TO SET POSITION AND PIPING FOR FUTURE HUB DRAIN TO SERVE CHILLER PIPING STRAINERS.
7. WATER RISER EXPOSED ON WALL. SEE DETAIL 6/ P8.1.
8. DEMO CATCH BASIN. ABANDON STORM PIPING. CAP PIPE END.
9. ALL ROOF PENETRATIONS SHALL BE 2'-6" NORTH OF ROOF RIDGE.
10. CONNECTION POINT FOR FAST FILL. SEE DETAIL 6/P8.1.
11. PROVIDE CONNECTION FOR MAKE-UP. SEE DETAIL 6/P8.1.
12. DROP BELOW CEILING.
13. PROVIDE 3/4"G AT 2 PSIG FOR APPROXIMATELY 70 FEET WEST IN ATTIC AND CONNECT TO (E) 1"G AT 2 PSIG. COORDINATE SHUTDOWN OF GAS WITH OWNER.
14. (E) 3" DRY PIPE FIRE SPRINKLER RISER TO ATTIC.
15. (E) 1" SPRINKLER DRAIN PIPE FROM ATTIC. RE-ROUTE TO CLEAR PROPOSED DOOR.
16. DROP PIPE IN WALL, IN-BOARD OF INSULATION. JOG EAST, PENETRATE WALL WITH B.O.P. AT 2'-8" APPROXIMATELY (ALIGN WITH B.O.P. OF HYDRONIC PIPING). ROUTE EXPOSED DOWN EXTERIOR WALL, SEE M3.2 FOR CONTINUATION.
17. REPAIR (E) 4ø DOWNSPOUT/STORM DRAIN CONNECTION. PROVIDE DOWNSPOUT BOOT, J.R. SMITH #1787 OR EQUAL. BOLT TO (E) CONCRETE FOUNDATION WALL.
18. ROUTE VENT IN-BOARD OF (E) RETAINING WALL, RISE EXPOSED A.F.F. JOG INTO WALL NEAR FLOOR AND RISE. OFFSET BACK OUT OF WALL TO MISS BEAM AT APPROXIMATELY 14 FEET A.F.F. AND RISE INTO ATTIC. PROVIDE ESCUTCHEONS AT CEILING AND WALL PENETRATIONS. PAINT EXPOSED PIPE.
19. PROVIDE INDIVIDUAL VENT FOR EACH DRAIN TRAP. COMBINE VENTS MINIMUM 6" ABOVE HIGHEST FLOOD RIM OF THE TWO. ASSUME FUTURE HUB DRAIN IS AS HIGH AS PROPOSED HUB.

1 P3.1 MECHANICAL ROOM PLAN - PLUMBING

3/8"=1'-0"

8916 SW MACADAM AVE.
SUITE 200
PORTLAND, OREGON 97219
503.892.1198
FAX 503.892.1190
CONTACT KEVIN DUELL
engineering@mke-inc.com

MKE & ASSOCIATES, INC.
CONSULTING ENGINEERS
MECHANICAL AND ELECTRICAL SYSTEMS

lsw architects, pc

architecture / planning / interiors

lsw architects, pc
2300 Main Street
Vancouver, Washington 98660

t| 360.694.8571
f| 360.694.9510

RICHARD DUSA JR. STATE OF WASHINGTON 29373 REGISTERED PROFESSIONAL ENGINEER

EXPIRES 5-13-05

drawn by
MB
checked by
KD
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.01.05
BID SET

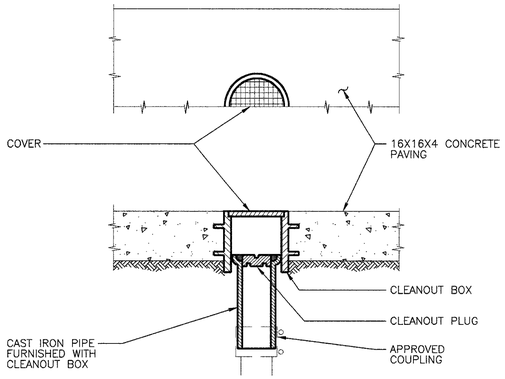
revisions

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

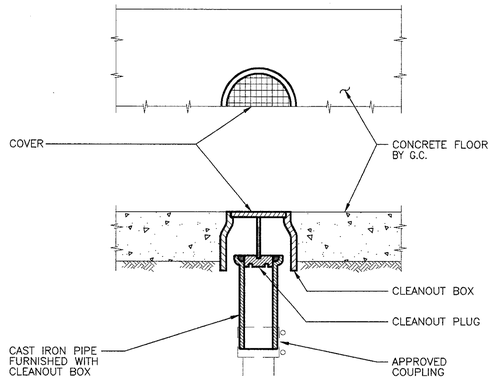
MECHANICAL
ROOM PLAN
PLUMBING

P3.1

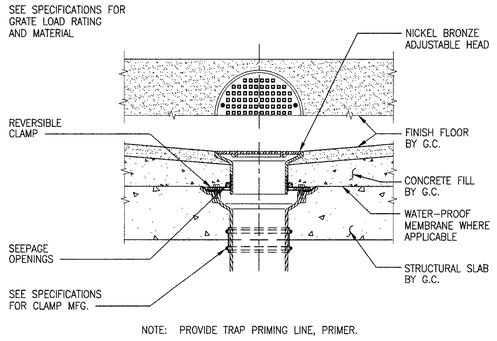
X:\DWG\LS\1808\1808P31.dwg 16 Oct 2006 - 11:19 am MikeB
1808



1 P8.1 DETAIL – EXTERIOR CLEANOUT TO GRADE (CO-1)
SCALE: NTS

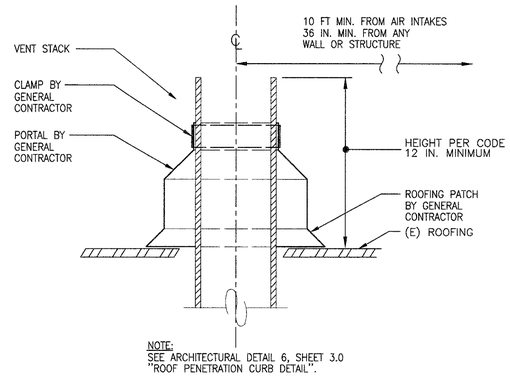


2 P8.1 DETAIL – INTERIOR CLEANOUT (CO-2)
SCALE: NTS



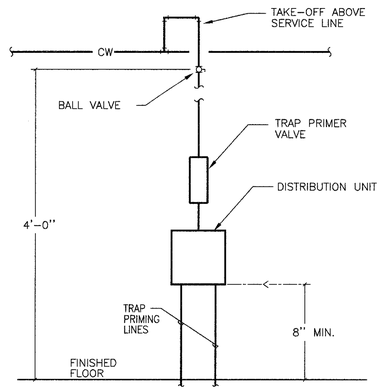
NOTE: PROVIDE TRAP PRIMING LINE, PRIMER.

3 P8.1 DETAIL – FLOOR DRAIN
SCALE: NTS

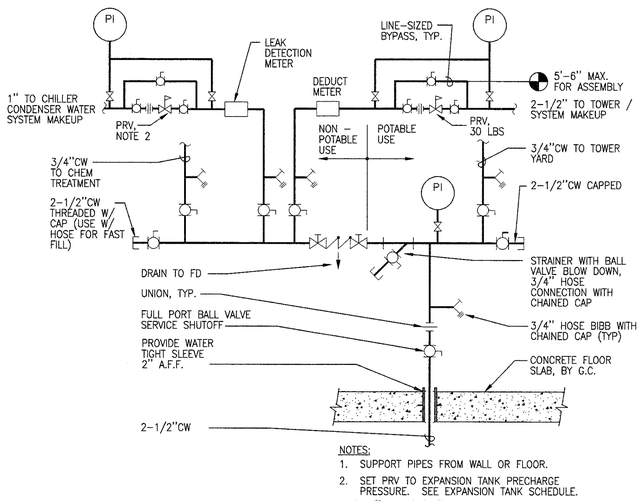


NOTE:
SEE ARCHITECTURAL DETAIL 6, SHEET 3.0 "ROOF PENETRATION CURB DETAIL".

4 P8.1 DETAIL – VENT THROUGH ROOF (VTR)
SCALE: NTS

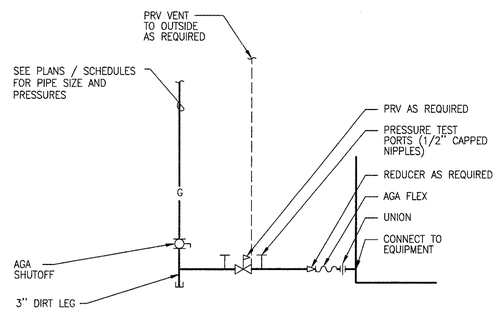


5 P8.1 DETAIL – TRAP PRIMER
SCALE: NTS



NOTES:
1. SUPPORT PIPES FROM WALL OR FLOOR.
2. SET PRV TO EXPANSION TANK PRECHARGE PRESSURE. SEE EXPANSION TANK SCHEDULE.

6 P8.1 DETAIL – COLD WATER SERVICE RISER
SCALE: NTS



7 P8.1 DETAIL – INTERIOR EQUIPMENT GAS PIPING
SCALE: NTS

LSW architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

RICHARD DUSA JR. STATE OF WASHINGTON 29979 REGISTERED PROFESSIONAL ENGINEER
EXPIRES 5-13-05

drawn by MB
checked by KD
lsw job number 03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

Issue date
2.01.05
BID SET

revisions

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

PLUMBING
DETAILS

P8.1

6916 SW MACADAM AVE.
SUITE 200
PORTLAND, OREGON 97219
503.892.1188
FAX 503.892.1190
CONTACT KEVIN DUELL
engineering@mke-inc.com
MKE & ASSOCIATES, INC.
CONSULTING ENGINEERS
MECHANICAL AND ELECTRICAL SYSTEMS

X:\DWG\LS\1808\1808p81.dwg 16 Oct 2006 - 11:08 am MikeB

GAS FIRED UNIT HEATERS

MARK	DESCRIPTION	SERVICE	INPUT (MBH)	OUTPUT (MBH)	AFUE (%)	EAT (°F)	VENT SIZE (IN)	THROW @ 8 FT.	CFM	FAN HP	FAN TYPE	WEIGHT (LBS)	REMARKS
UH 1	SUSPENDED	MACHINE ROOM	75	62.3	83	55	4	–	960	0.06	PROP	80	
UH 2	SUSPENDED	MACHINE ROOM	75	62.3	83	55	4	–	960	0.06	PROP	80	

NOTES: ◯
1.
2.

COOLING TOWER – OPEN SYSTEM

MARK	DESCRIPTION	SERVICE	CAPACITY (TONS)	AMBIENT WB (°F)	EWT / LWT (°F)	GPM	BASIN HEATER (KW)	FAN(S) NO.	FAN(S) HP	FAN(S) RPM	ISOLATION	OPERATING WT. (LBS.)	REMARKS
CT 1	INDUCED DRAFT COUNTER FLOW	CHILLER PLANT	800	70	88/78	2400	(2) 16	1	40	1750	2" SPRING	34590	(1)

NOTES: ◯
1. PROVIDE 12" BOTTOM DRAIN CONNECTION, VIBRATION SWITCH, ALUMINUM LADDER & EXTENSION TO GRADE, 304 STAINLESS STEEL BASIN, INVERTER DUTY, PREMIUM EFFICIENCY FAN MOTOR, VFD IN CONTROL PANEL.

EXHAUST FAN

MARK	DESCRIPTION	SYSTEM	CFM	TSP (IN WG)	HP	DRIVE	RPM	TIP SPEED (FPM)	INTERLOCK	WHEELTYPE	DISCHARGE	SONES	WEIGHT (LBS)	REMARKS
EF 1	INLINE CENTRIFUGAL	REFRIGERANT/ HEAT EXHAUST	4675	0.5	1.5	BELT	996	5574	(1)	BI	IN–LINE	16.3	220	(2) (3)

NOTES: ◯
1. TEMPERATURE SENSOR/REFRIGERATION SENSOR
2. PROVIDE MOTOR STARTER FOR INTERFACE W/DDC CONTROLS.
3. PROVIDE SEISMIC SPRING VIBRATION ISOLATORS.

EXPANSION TANK SCHEDULE

MARK	TYPE	SERVICE	MIN. TANK VOLUME (GAL)	MIN. ACCEPTANCE VOLUME (GAL)	CONNECTION SIZE FILL (IN)	CONNECTION SIZE SYSTEM (IN)	START TEMP. (°F)	MAX. TEMP. (°F)	MAX. SYSTEM OPERATING PRESSURE (PSI)	SYSTEM WATER VOLUME (GAL)	OPERATING WEIGHT (LBS)	REMARKS
ET 101	BLADDER	COND. WATER	106	106	2.5	1	40	95	40	10000	1185	(1)

NOTES: ◯
1. TANK PRECHARGE SHALL BE 12 PSIG.

HEAT EXCHANGER – PLATE AND FRAME

MARK	TYPE	CAPACITY (MBH)	COLD SIDE GPM	COLD SIDE EWT (°F)	COLD SIDE LWT (°F)	COLD SIDE WPD (PSI)	COLD SIDE PIPE (IN)	HOT SIDE GPM	HOT SIDE EWT (°F)	HOT SIDE LWT (°F)	HOT SIDE WPD (PSI)	HOT SIDE PIPE (IN)	OPERATING WEIGHT (LBS)	REMARKS
HX 1	COND. WATER	17880	3600	78	88	9.76	14	3600	92	82	9.76	14	13300	(1) (2)

NOTES: ◯
1. PROVIDE CONCRETE HOUSE KEEPING PAD.
2. PROVIDE SHEET METAL HOUSING WITH PEAKED ROOF TO ENCLOSE UNIT. INSULATE WITH RIGID EXPANDED FOAM TO R–10. PROVIDE OPENINGS FOR PIPING. CONSTRUCT WITH REMOVABLE, DEMOUNTABLE PANELS FOR MAINTENANCE ACCESS.

CHILLER – WATER COOLED

MARK	DESCRIPTION	OUTPUT (TONS)	CONDENSER EWT / LWT (°F)	CONDENSER GPM	CONDENSER WATER PD (FT.)	EVAPORATOR EWT / LWT (°F)	EVAPORATOR GPM	EVAPORATOR WATER PD (FT.)	REFRIGERANT TYPE	INPUT (kW)	EER	OPERATING WEIGHT (LBS.)	REMARKS
CH 1	CENTRIFUGAL	750	82/92	2250	15.0	62/42	900	8.4	R–134a	395	22.78	26630	(1)

NOTES: ◯
1. UNIT IS OWNER–FURNISHED/CONTRACTOR–INSTALLED.

PUMP

MARK	SERVICE	TYPE	DESCRIPTION	GPM	HEAD (FT)	HP	INERTIA BASE	ISOLATION	RPM	OPERATING WEIGHT (LBS)	REMARKS
CWP 1	CONDENSER WATER	CENTRIFUGAL	BASE MOUNT VERTICAL SPLIT–CASE	3600	95	100	12" CONC. FILLED	2" SEISMIC SPRING	1150	2040	(3) (4) (6)
CHP 1	CHILLED WATER/CHILLER	CENTRIFUGAL	BASE MOUNT IN–LINE	900	35	15	6" CONC. FILLED	2" SEISMIC SPRING	1750	505	(2) (4)
CHP 2	CHILLED WATER/SSF–2	CENTRIFUGAL	WALL MOUNT IN–LINE	150	26	2	–	2" SEISMIC SPRING	1750	–	(2)
CTP 1	COOLING TOWER	CENTRIFUGAL	BASE MOUNT HORIZONTAL SPLIT–CASE	3600	65	75	–	NONE	1150	2040	(1) (3) (5) (7)

NOTES: ◯
1. PROVIDE HEAT TRACE FOR PUMP BODY AND PIPING ABOVE–GRADE FOR EXTERIOR INSTALLATION.
2. PROVIDE MOTOR STARTER.
3. PROVIDE VFD.
4. OPERATING WEIGHT DOES NOT INCLUDE BASE.
5. PROVIDE SHEET METAL ENCLOSURE WITH PEAKED ROOF AND R–10 RIGID EXPANDED FOAM. ENCLOSURE SHALL BE REMOVEABLE IN SECTIONS FOR MAINTENANCE ACCESS. PROVIDE OPENINGS FOR PIPING.
6. GPM LISTED IS ULTIMATE CAPACITY. BALANCE TO 2250 GPM.
7. SAME AS NOTE 6, EXCEPT BALANCE TO 2400 GPM.

FILTER, SIDE STREAM

MARK	TYPE	SERVICE	CONNECTION/ VALVE SIZE (IN)	PUMP MOTOR (HP)	FILTER AREA (SQ FT)	FILTRATE SIZE (MICRONS)	FLOW RATE (GPM)	BACKWASH SOURCE	OPERATING WEIGHT (LBS)	REMARKS
SSF 1	GRANULAR MEDIA	COND. WATER	3	5	9.6	10	192	SYSTEM	2970	
SSF 2	MULTI–BAG	CHILLED WATER	4	CHP 2	13.2	SEE SPEC.	150	–	800	

NOTES: ◯
1. –
2.

ROOF TOP EXHAUST HOOD SCHEDULE

MARK	DESCRIPTION	SERVICE	THROAT SIZE (IN)	THROAT VELOCITY (IN)	CFM	REMARKS
EH 1	EXHAUST HOOD	EF 1	30X30	750	4675	(1)

NOTES: ◯
1. PROVIDE PITCHED ROOF CURB, BIRD SCREEN.

LSW architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

RICHARD DUSANTER STATE OF WASHINGTON 23073 REGISTERED PROFESSIONAL ENGINEER
EXPIRES 5–13–05

drawn by MB
checked by KD
lsw job number 03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.01.05
BID SET

revisions

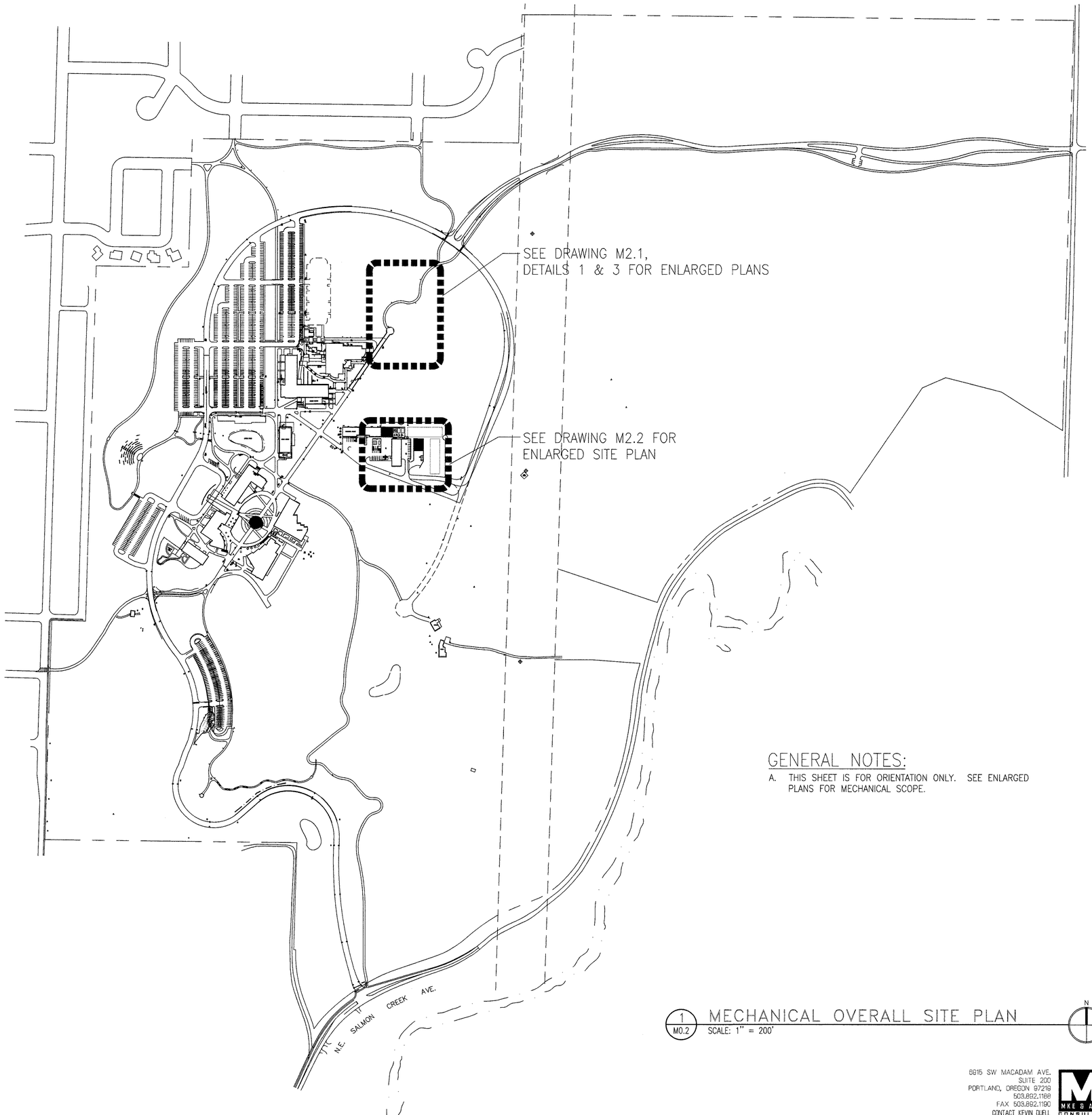
ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

MECHANICAL
SCHEDULES

M1.1

6915 SW MACADAM AVE.
SUITE 200
PORTLAND, OREGON 97219
503.892.1188
FAX 503.892.1190
CONTACT KEVIN DUELL
engineering@mke–inc.com
MKE & ASSOCIATES, INC. CONSULTING ENGINEERS
MECHANICAL AND ELECTRICAL SYSTEMS

X:\DWGS\LS\1808\1808M1.dwg 16 Oct 2006 - 11:15 am MikeB



GENERAL NOTES:

A. THIS SHEET IS FOR ORIENTATION ONLY. SEE ENLARGED PLANS FOR MECHANICAL SCOPE.

1 / M0.2 MECHANICAL OVERALL SITE PLAN
SCALE: 1" = 200'

N

6915 SW MACADAM AVE.
SUITE 200
PORTLAND, OREGON 97219
503.892.1188
FAX 503.892.1190
CONTACT KEVIN DUELL
engineering@mke-inc.com

MKE & ASSOCIATES, INC.
CONSULTING ENGINEERS
MECHANICAL AND ELECTRICAL SYSTEMS

lsw architects, pc

architecture / planning / interiors

lsw architects, pc
2300 Main Street
Vancouver, Washington 98660

t| 360.694.8571
f| 360.694.9510

RICHARD DUSA, JR. STATE OF WASHINGTON 39373 REGISTERED PROFESSIONAL ENGINEER

EXPIRES 5-13-05

drawn by
MB
checked by
KD
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.01.05
BID SET

revisions

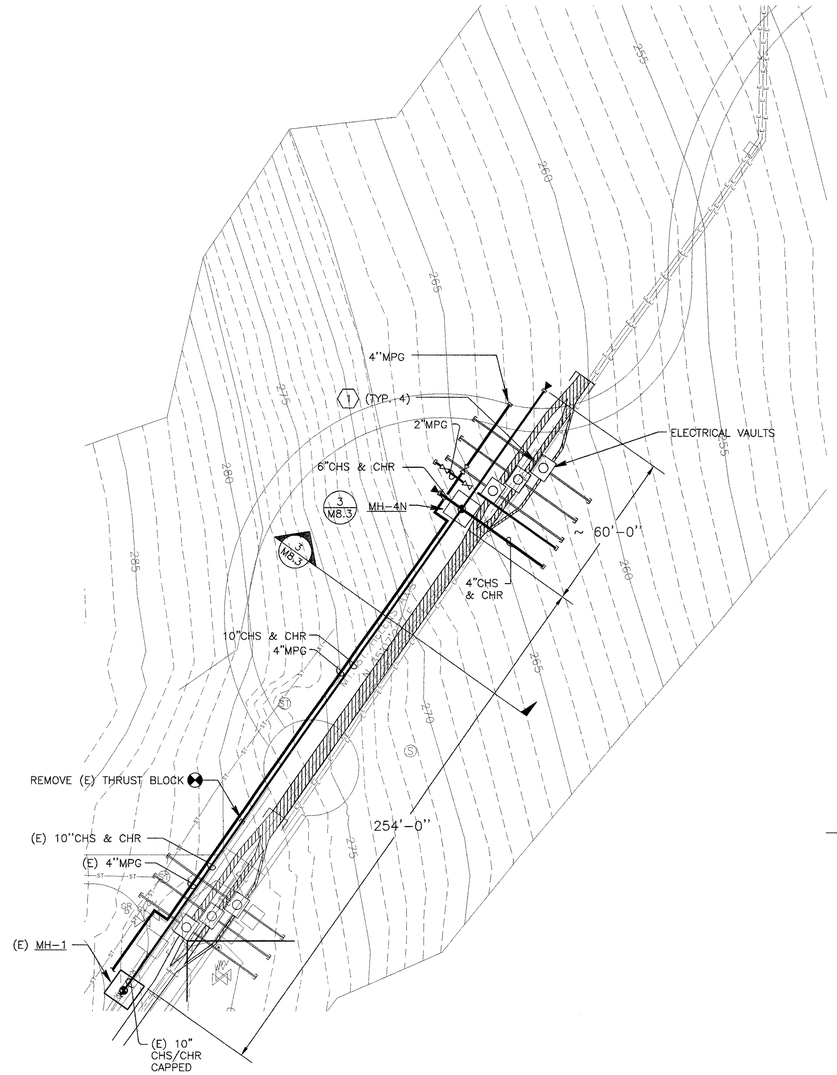
ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

MECHANICAL
OVERALL SITE PLAN

M2.0

X:\DWGS\S\1808\1808M20.dwg 16 Oct 2006 - 11:16 am MikeB

1808



1 VAULT PLAN M2.1

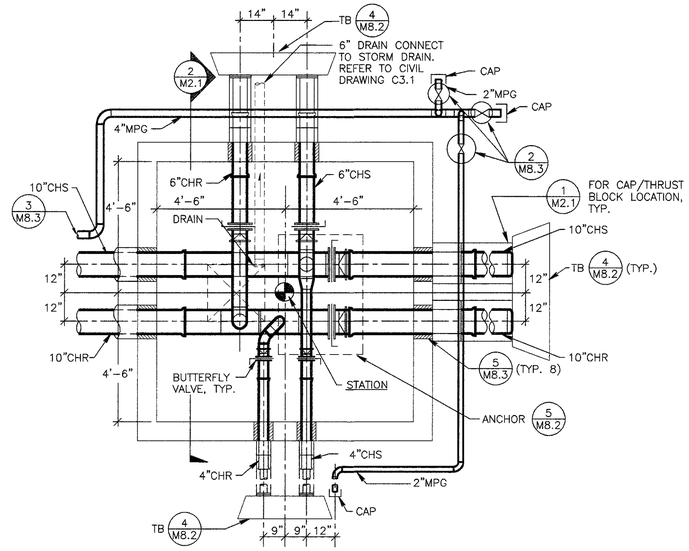
SCALE: 1" = 30'-0"

GENERAL NOTES:

1. CLEAN, RUSTPROOF AND INSULATE CHS AND CHR PIPING IN PROPOSED MANHOLE. WIRE BRUSH AND APPLY TWO COATS OF RUST-INHIBITING PRIMER AND ONE COAT OF GREY EXTERIOR MACHINERY ENAMEL.
2. ALL PIPE PENETRATIONS THROUGH MANHOLES SHALL BE SEALED PER DETAIL 5/M8.3.
3. ALL GAS PIPING MUST BE INSTALLED BY A N.W. NATURAL APPROVED CONTRACTOR.
4. THE CHILLED WATER SYSTEM MUST BE SHUTDOWN AND DEPRESSURIZED PRIOR TO THE DEMOLITION OF THE EXISTING THRUST BLOCK. DO NOT RE-ENERGIZE THE NEW PIPING SYSTEM UNTIL ALL OF IT'S THRUST BLOCKS ARE IN PLACE.

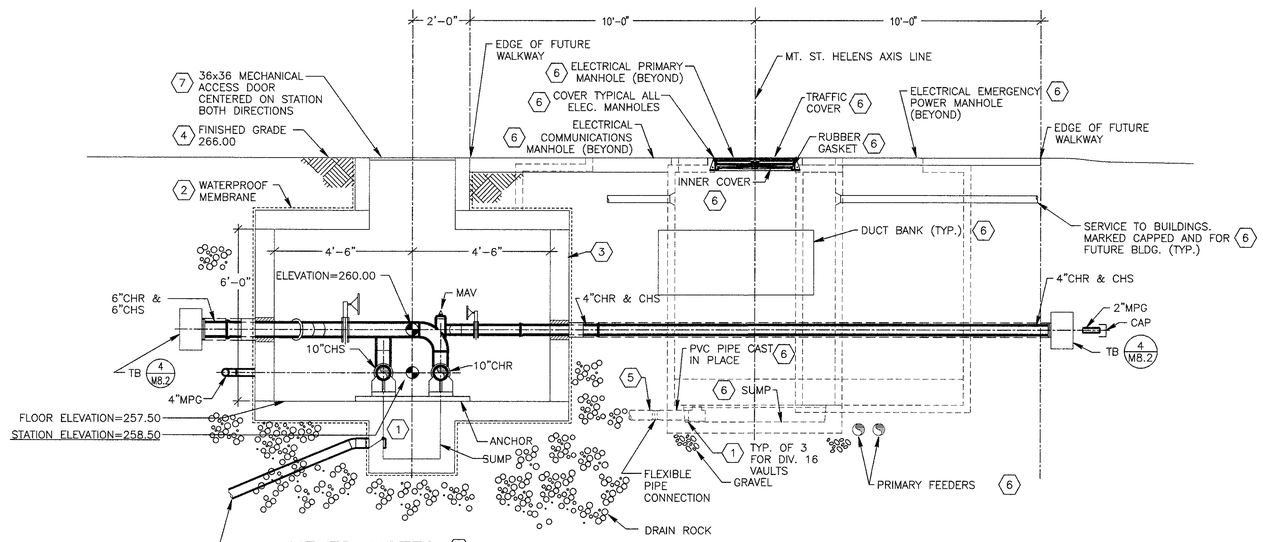
KEYED NOTES:

1. CONNECT DRAIN LINE TO (1) MECHANCAL AND (3) ELECTRICAL MANHOLES, ROUTE TO STORM SEWER BY CIVIL.



3 MH-4N PLAN M2.1

SCALE: 1" = 1'-0"



KEYED NOTES:

1. PIT STYLE BACKWATER VALVE JR SMITH MODEL 7000S04
2. VULKEM 201/222 POLYURETHANE, ELASTOMERIC WATERPROOFING MEMBRANE. REFER TO SPECIFICATION SECTION 07100 – WATERPROOFING.
3. PROVIDE UTILITY VAULT AS DIMENSIONED, MANUFACTURED BY UTILITY VAULT CO.
4. CONTRACTOR TO VERIFY GRADE ELEVATION. ALL OTHER ELEVATIONS BASED ON FINISHED GRADE.
5. PROVIDE 4" DRAIN, CONNECT TO STORM DRAIN. REFER TO CIVIL DRAWING C3.1, TYPICAL EACH ELECTRICAL VAULT, 3 TOTAL.
6. ELECTRICAL ITEM(S) SHOWN FOR COORDINATION ONLY.
7. PROVIDE ACCESS DOOR WITH THE FOLLOWING FEATURES (SIMILAR TO UTILITY VAULT MODEL NO. 332P):
   a. SPRING ASSISTED, SINGLE LEAF, HOT-DIPPED GALVANIZED STEEL
   b. RECESSED LIFT HANDLES
   c. LOCKING LATCHES
   d. LETTERING "CHILLED WATER"
   e. DRAIN CHANNEL WITH THREADED COUPLER FOR PIPE CONNECTION
   f. NON-SLIP SKID RESISTANT FINISH
   f. H-20 WHEEL LOADING

2 SECTION MH-4N M2.1

SCALE: 1/2" = 1'-0"

6916 SW MACADAM AVE.
SUITE 200
PORTLAND, OREGON 97219
503.892.1198
FAX 503.892.1190
CONTACT KEVIN DUELL
englneerlng@mke-Inc.com

MKE & ASSOCIATES, INC.
CONSULTING ENGINEERS
MECHANICAL AND ELECTRICAL SYSTEMS

JSW architects, pc
architecture / planning / interiors
Isw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

RICHARD DUSA JR STATE OF WASHINGTON 29373 REGISTERED PROFESSIONAL ENGINEER

EXPIRES 5-13-05

drawn by **MDB**
checked by **KD**
Isw job number **03285**

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

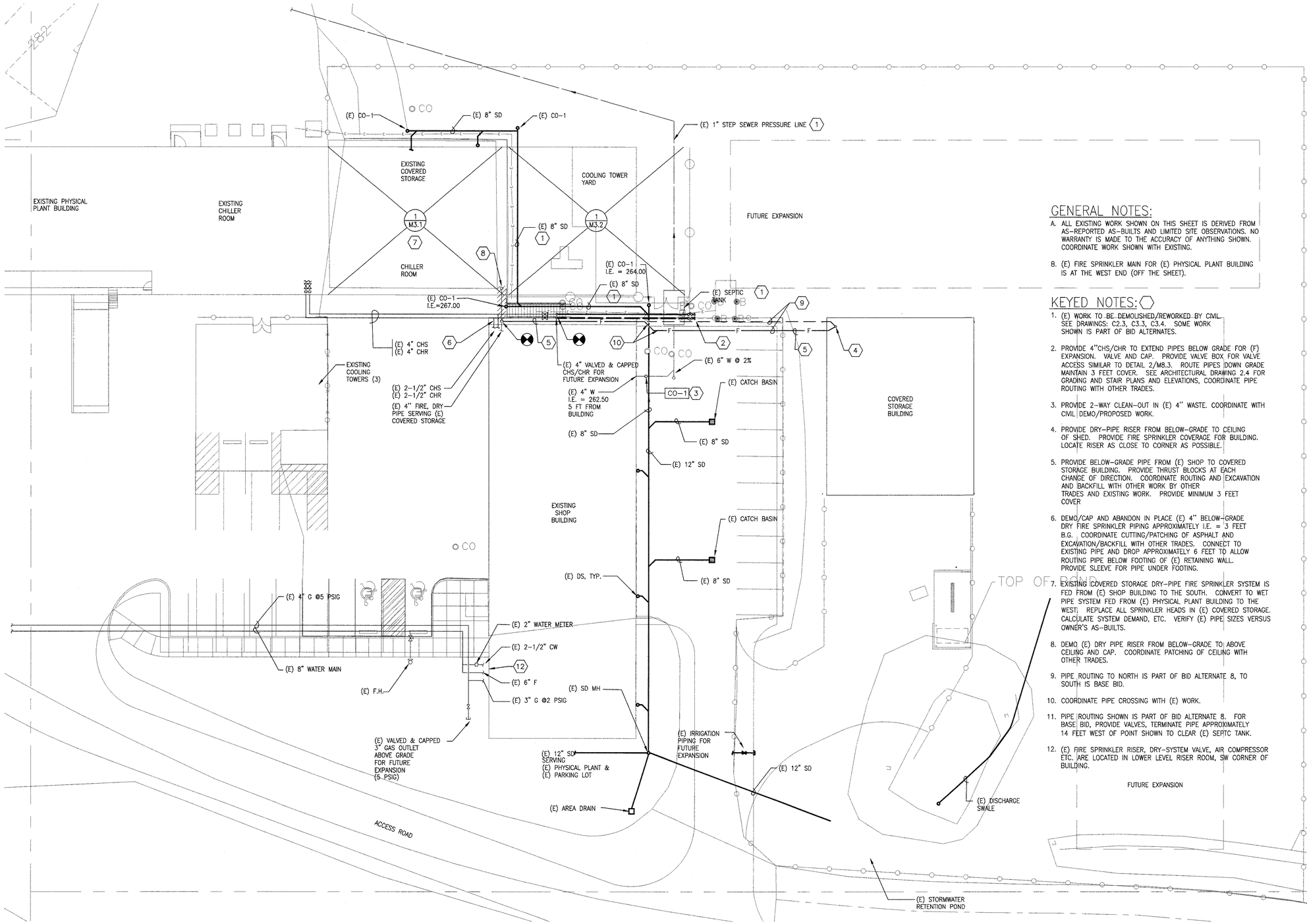
issue date **2.01.05 BID SET**

revisions

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF ISW ARCHITECTS, PC

MECHANICAL
SITE PLANS/
SECTION

M2.1



GENERAL NOTES:

A. ALL EXISTING WORK SHOWN ON THIS SHEET IS DERIVED FROM AS-REPORTED AS-BUILTS AND LIMITED SITE OBSERVATIONS. NO WARRANTY IS MADE TO THE ACCURACY OF ANYTHING SHOWN. COORDINATE WORK SHOWN WITH EXISTING.

B. (E) FIRE SPRINKLER MAIN FOR (E) PHYSICAL PLANT BUILDING IS AT THE WEST END (OFF THE SHEET).

KEYED NOTES:

1. (E) WORK TO BE DEMOLISHED/REWORKED BY CIVIL. SEE DRAWINGS: C2.3, C3.3, C3.4. SOME WORK SHOWN IS PART OF BID ALTERNATES.
2. PROVIDE 4"CHS/CHR TO EXTEND PIPES BELOW GRADE FOR (F) EXPANSION. VALVE AND CAP. PROVIDE VALVE BOX FOR VALVE ACCESS SIMILAR TO DETAIL 2/M8.3. ROUTE PIPES DOWN GRADE MAINTAIN 3 FEET COVER. SEE ARCHITECTURAL DRAWING 2.4 FOR GRADING AND STAIR PLANS AND ELEVATIONS, COORDINATE PIPE ROUTING WITH OTHER TRADES.
3. PROVIDE 2-WAY CLEAN-OUT IN (E) 4" WASTE. COORDINATE WITH CIVIL | DEMO/PROPOSED WORK.
4. PROVIDE DRY-PIPE RISER FROM BELOW-GRADE TO CEILING OF SHED. PROVIDE FIRE SPRINKLER COVERAGE FOR BUILDING. LOCATE RISER AS CLOSE TO CORNER AS POSSIBLE.
5. PROVIDE BELOW-GRADE PIPE FROM (E) SHOP TO COVERED STORAGE BUILDING. PROVIDE THRUST BLOCKS AT EACH CHANGE OF DIRECTION. COORDINATE ROUTING AND EXCAVATION AND BACKFILL WITH OTHER WORK BY OTHER TRADES AND EXISTING WORK. PROVIDE MINIMUM 3 FEET COVER
6. DEMO/CAP AND ABANDON IN PLACE (E) 4" BELOW-GRADE DRY FIRE SPRINKLER PIPING APPROXIMATELY I.E. = 3 FEET B.G. COORDINATE CUTTING/PATCHING OF ASPHALT AND EXCAVATION/BACKFILL WITH OTHER TRADES. CONNECT TO EXISTING PIPE AND DROP APPROXIMATELY 6 FEET TO ALLOW ROUTING PIPE BELOW FOOTING OF (E) RETAINING WALL. PROVIDE SLEEVE FOR PIPE UNDER FOOTING.
7. EXISTING COVERED STORAGE DRY-PIPE FIRE SPRINKLER SYSTEM IS FED FROM (E) SHOP BUILDING TO THE SOUTH. CONVERT TO WET PIPE SYSTEM FED FROM (E) PHYSICAL PLANT BUILDING TO THE WEST; REPLACE ALL SPRINKLER HEADS IN (E) COVERED STORAGE. CALCULATE SYSTEM DEMAND, ETC. VERIFY (E) PIPE SIZES VERSUS OWNER'S AS-BUILTS.
8. DEMO (E) DRY PIPE RISER FROM BELOW-GRADE TO ABOVE CEILING AND CAP. COORDINATE PATCHING OF CEILING WITH OTHER TRADES.
9. PIPE ROUTING TO NORTH IS PART OF BID ALTERNATE 8, TO SOUTH IS BASE BID.
10. COORDINATE PIPE CROSSING WITH (E) WORK.
11. PIPE ROUTING SHOWN IS PART OF BID ALTERNATE 8. FOR BASE BID, PROVIDE VALVES, TERMINATE PIPE APPROXIMATELY 14 FEET WEST OF POINT SHOWN TO CLEAR (E) SEPTC TANK.
12. (E) FIRE SPRINKLER RISER, DRY-SYSTEM VALVE, AIR COMPRESSOR ETC. ARE LOCATED IN LOWER LEVEL RISER ROOM, SW CORNER OF BUILDING.

FUTURE EXPANSION

ENLARGED SITE PLAN

SCALE: 1/16" = 1'-0"

8816 SW MACADAM AVE.
SUITE 200
PORTLAND, OREGON 97219
503.892.1188
FAX 503.892.1190
CONTACT KEVIN DUELL
engineering@mke-inc.com

MKE & ASSOCIATES, INC.
CONSULTING ENGINEERS
MECHANICAL AND ELECTRICAL SYSTEMS

LSW architects, pc

architecture / planning / interiors

lsw architects, pc
2300 Main Street
Vancouver, Washington 98660

t| 360.694.8571
f| 360.694.9510

RICHARD DUSA JR
STATE OF WASHINGTON
29373
REGISTERED
PROFESSIONAL ENGINEER

EXPIRES 5-13-05

drawn by
MB
checked by
KD
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.01.05
BID SET

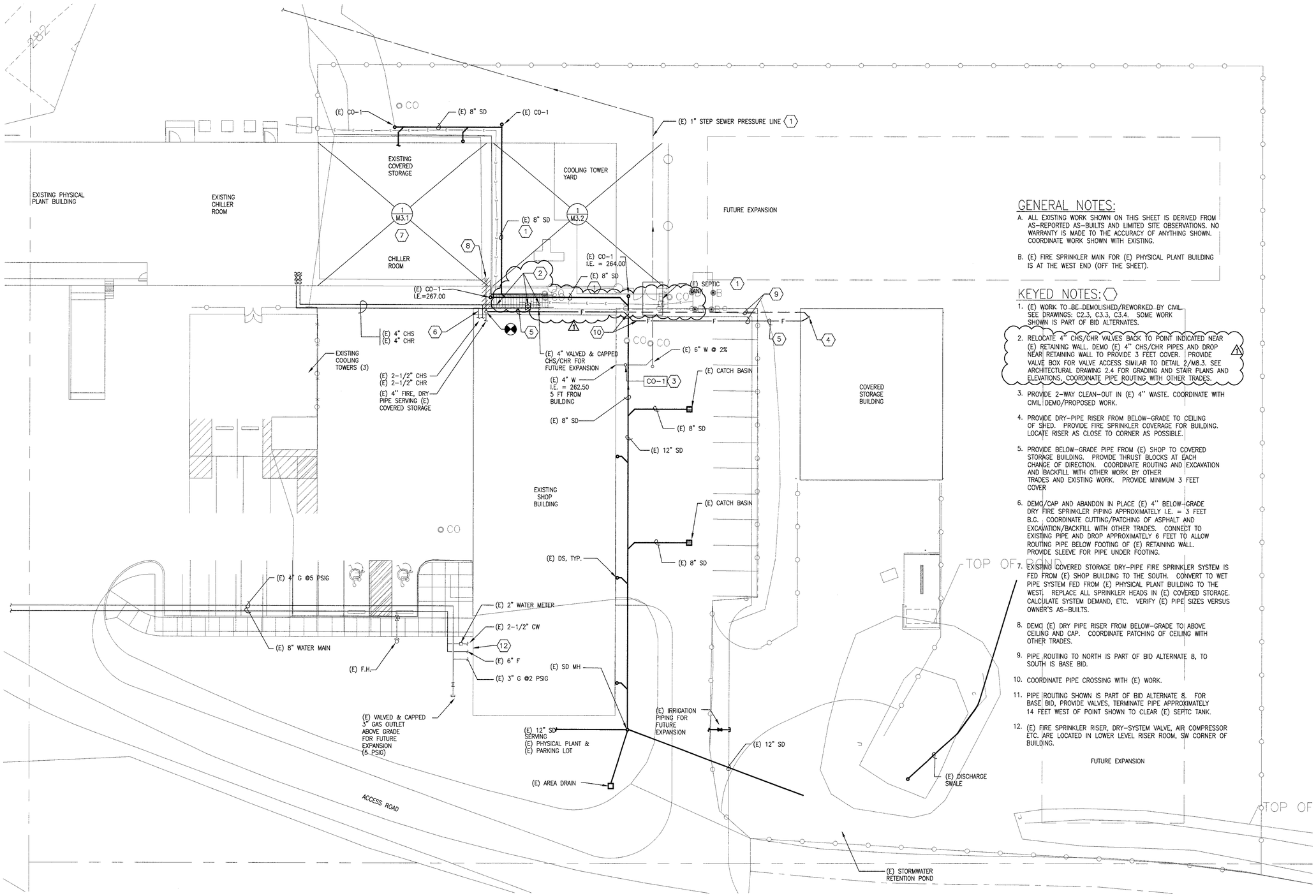
revisions

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

MECHANICAL
SITE PLAN
ENLARGED

M2.2

X:\DWG\LS\1808\1808M22.dwg 16 Oct 2006 - 11:16 am MikeB



GENERAL NOTES:

A. ALL EXISTING WORK SHOWN ON THIS SHEET IS DERIVED FROM AS-REPORTED AS-BUILTS AND LIMITED SITE OBSERVATIONS. NO WARRANTY IS MADE TO THE ACCURACY OF ANYTHING SHOWN. COORDINATE WORK SHOWN WITH EXISTING.

B. (E) FIRE SPRINKLER MAIN FOR (E) PHYSICAL PLANT BUILDING IS AT THE WEST END (OFF THE SHEET).

KEYED NOTES:

1. (E) WORK TO BE DEMOLISHED/REWORKED BY CIVIL. SEE DRAWINGS: C2.3, C3.3, C3.4. SOME WORK SHOWN IS PART OF BID ALTERNATES.
2. RELOCATE 4" CHS/CHR VALVES BACK TO POINT INDICATED NEAR (E) RETAINING WALL. DEMO (E) 4" CHS/CHR PIPES AND DROP NEAR RETAINING WALL TO PROVIDE 3 FEET COVER. PROVIDE VALVE BOX FOR VALVE ACCESS SIMILAR TO DETAIL 2/M8.3. SEE ARCHITECTURAL DRAWING 2.4 FOR GRADING AND STAIR PLANS AND ELEVATIONS. COORDINATE PIPE ROUTING WITH OTHER TRADES. 1
3. PROVIDE 2-WAY CLEAN-OUT IN (E) 4" WASTE. COORDINATE WITH CIVIL DEMO/PROPOSED WORK.
4. PROVIDE DRY-PIPE RISER FROM BELOW-GRADE TO CEILING OF SHED. PROVIDE FIRE SPRINKLER COVERAGE FOR BUILDING. LOCATE RISER AS CLOSE TO CORNER AS POSSIBLE.
5. PROVIDE BELOW-GRADE PIPE FROM (E) SHOP TO COVERED STORAGE BUILDING. PROVIDE THRUST BLOCKS AT EACH CHANGE OF DIRECTION. COORDINATE ROUTING AND EXCAVATION AND BACKFILL WITH OTHER WORK BY OTHER TRADES AND EXISTING WORK. PROVIDE MINIMUM 3 FEET COVER
6. DEMO/CAP AND ABANDON IN PLACE (E) 4" BELOW-GRADE DRY FIRE SPRINKLER PIPING APPROXIMATELY I.E. = 3 FEET B.G. COORDINATE CUTTING/PATCHING OF ASPHALT AND EXCAVATION/BACKFILL WITH OTHER TRADES. CONNECT TO EXISTING PIPE AND DROP APPROXIMATELY 6 FEET TO ALLOW ROUTING PIPE BELOW FOOTING OF (E) RETAINING WALL. PROVIDE SLEEVE FOR PIPE UNDER FOOTING.
7. EXISTING COVERED STORAGE DRY-PIPE FIRE SPRINKLER SYSTEM IS FED FROM (E) SHOP BUILDING TO THE SOUTH. CONVERT TO WET PIPE SYSTEM FED FROM (E) PHYSICAL PLANT BUILDING TO THE WEST. REPLACE ALL SPRINKLER HEADS IN (E) COVERED STORAGE. CALCULATE SYSTEM DEMAND, ETC. VERIFY (E) PIPE SIZES VERSUS OWNER'S AS-BUILTS.
8. DEMO (E) DRY PIPE RISER FROM BELOW-GRADE TO ABOVE CEILING AND CAP. COORDINATE PATCHING OF CEILING WITH OTHER TRADES.
9. PIPE ROUTING TO NORTH IS PART OF BID ALTERNATE 8, TO SOUTH IS BASE BID.
10. COORDINATE PIPE CROSSING WITH (E) WORK.
11. PIPE ROUTING SHOWN IS PART OF BID ALTERNATE 8. FOR BASE BID, PROVIDE VALVES, TERMINATE PIPE APPROXIMATELY 14 FEET WEST OF POINT SHOWN TO CLEAR (E) SEPTIC TANK.
12. (E) FIRE SPRINKLER RISER, DRY-SYSTEM VALVE, AIR COMPRESSOR ETC. ARE LOCATED IN LOWER LEVEL RISER ROOM, SW CORNER OF BUILDING.

ENLARGED SITE PLAN

SCALE: 1/16" = 1'-0"

6815 SW MACADAM AVE.
SUITE 200
PORTLAND, OREGON 97219
503.892.1188
FAX 503.892.1190
CONTACT KEVIN DUELL
engineering@mke-inc.com

MKE & ASSOCIATES, INC.
CONSULTING ENGINEERS
MECHANICAL AND ELECTRICAL SYSTEMS

lsw architects, pc
architecture / planning / interiors

lsw architects, pc
2300 Main Street
Vancouver, Washington 98660

t| 360.694.8571
f| 360.694.9510

RICHARD DUELL JR
STATE OF WASHINGTON
29373
REGISTERED
PROFESSIONAL ENGINEER

EXPIRES 5-13-05

drawn by
MB
checked by
KD
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003

WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.01.05
BID SET

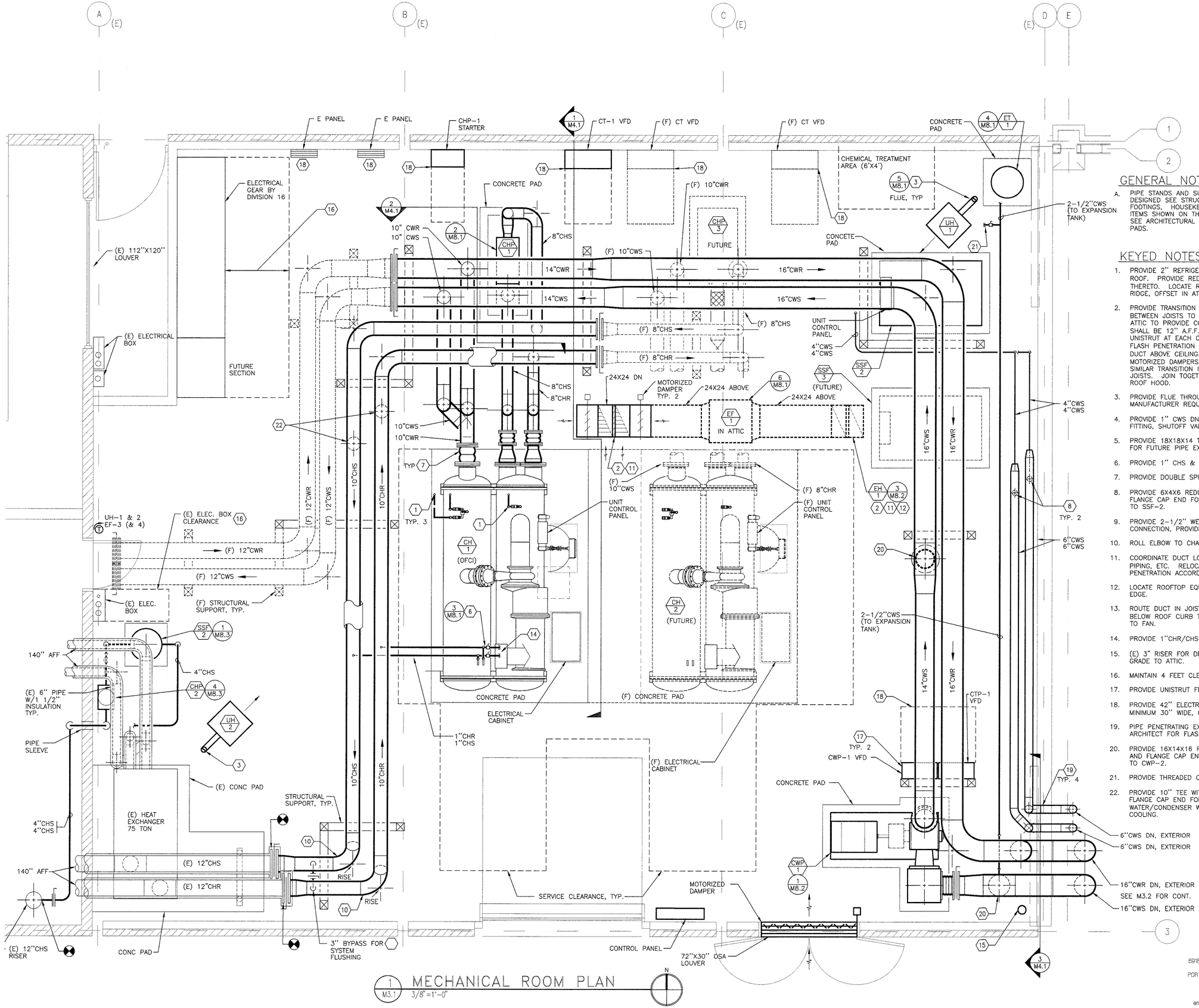
revisions

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

MECHANICAL
SITE PLAN
ENLARGED

M2.2

X:\DWG\LS\1808\1808M22Revised.dwg 16 Oct 2006 - 11:17 am Mike3



1 M3.1 MECHANICAL ROOM PLAN
3/8"=1'-0"

GENERAL NOTES:

A. PIPE STANDS AND SUPPORTS SHALL BE CONTRACTOR DESIGNED SEE STRUCTURAL DRAWINGS FOR DESIGN OF FOOTINGS, HOUSEKEEPING PADS, ETC. STRUCTURAL ITEMS SHOWN ON THIS SHEET FOR REFERNCE ONLY. SEE ARCHITECTURAL FOR LOCATIONS OF HOUSEKEEPING PADS.

KEYED NOTES:

1. PROVIDE 2" REFRIGERANT PRESSURE RELIEF PIPING THROUGH ROOF. PROVIDE REDUCER AT CHILLER FOR 1" CONNECTION THERETO. LOCATE ROOF PENETRATIONS 2'-6" NORTH OF RIDGE, OFFSET IN ATTIC.
2. PROVIDE TRANSITION FROM DUCT SIZE SHOWN. SPLIT DUCT BETWEEN JOISTS TO (2) 16"X24" DUCTS, JOIN TOGETHER IN ATTIC TO PROVIDE CONNECTION TO EXHAUST FAN. DUCT INLET SHALL BE 12" A.F.F. SUPPORT & PROTECT DUCT WITH UNISTRUT AT EACH CORNER, ANCHORED AT FLOOR & CEILING. FLASH PENETRATION THROUGH (E) CEILING. INSULATE ENTIRE DUCT ABOVE CEILING. PROVIDE (2) 24X16 DUCTS WITH MOTORIZED DAMPERS ON INLETS 12" BELOW CEILING. PROVIDE SIMILAR TRANSITION IN ATTIC TO SPLIT DUCT AROUND ROOF JOISTS. JOIN TOGETHER IN ROOF CURB AND CONNECT TO ROOF HOOD.
3. PROVIDE FLUE THROUGH ROOF AND THIMBLE ABOVE. SIZE PER MANUFACTURER REQUIREMENTS.
4. PROVIDE 1" CWS DN TO MAIN PIPING. PROVIDE WELDOLET FITTING, SHUTOFF VALVE @ 4 FT. A.F.F.
5. PROVIDE 18X18X14 TEE WITH BUTTERFLY VALVE AND CAP PLATE FOR FUTURE PIPE EXTENSION.
6. PROVIDE 1" CHS & CHR PIPING TO CHILLER OIL COOLER.
7. PROVIDE DOUBLE SPHERE EXPANSION JOINT.
8. PROVIDE 6X4X6 REDUCING TEE WITH 4" BUTTERFLY VALVE AND FLANGE CAP END FOR FUTURE CONNECTION TO SSF-2.
9. PROVIDE 2-1/2" WELDOLET ON RISER FOR 2-1/2" CWS CONNECTION, PROVIDE BALL VALVE SHUTOFF.
10. ROLL ELBOW TO CHANGE PIPE ELEVATION.
11. COORDINATE DUCT LOCATION WITH (E) STRUCTURE, SPRINKLER PIPING, ETC. RELOCATE/OFFSET/ CONSTRUCT AROUND PENETRATION ACCORDINGLY.
12. LOCATE ROOFTOP EQUIPMENT MINIMUM 10 FEET FROM ROOF EDGE.
13. ROUTE DUCT IN JOIST SPACE ABOVE CEILING. TRANSITION BELOW ROOF CURB TO 18"X18" OR AS REQUIRED TO CONNECT TO FAN.
14. PROVIDE 1"CHR/CHS FOR CONNECTION TO (F) CHILLER.
15. (E) 3" RISER FOR DRY PIPE FIRE SPRINKLER FROM BELOW GRADE TO ATTIC.
16. MAINTAIN 4 FEET CLEAR IN FRONT OF ELECTRICAL GEAR.
17. PROVIDE UNISTRUT FRAME TO SUPPORT VFD.
18. PROVIDE 42" ELECTRICAL CLEARANCE IN FRONT OF PANEL, MINIMUM 30" WIDE, 6'-6" A.F.F.
19. PIPE PENETRATING EXTERIOR WALL. COORDINATE WITH ARCHITECT FOR FLASHING.
20. PROVIDE 16X14X16 REDUCING TEE, WITH 14" BUTTERFLY VALVE AND FLANGE CAP END FOR FUTURE CONNECTION TO CWP-2.
21. PROVIDE THREADED CAPPED NIPPLE FOR FAST FILL CONNECTION.
22. PROVIDE 10" TEE WITH 10" BUTTERFLY VALVE AND FLANGE CAP END FOR FUTURE CONNECTION OF CHILLED WATER/CONDENSER WATER BYPASS PIPING FOR 'FREE' COOLING.

LSW architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

RICHARD DUSA JR. STATE OF WASHINGTON 29373 REGISTERED PROFESSIONAL ENGINEER

EXPIRES 5-13-05

drawn by
MB
checked by
KD
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.01.05
BID SET

revisions

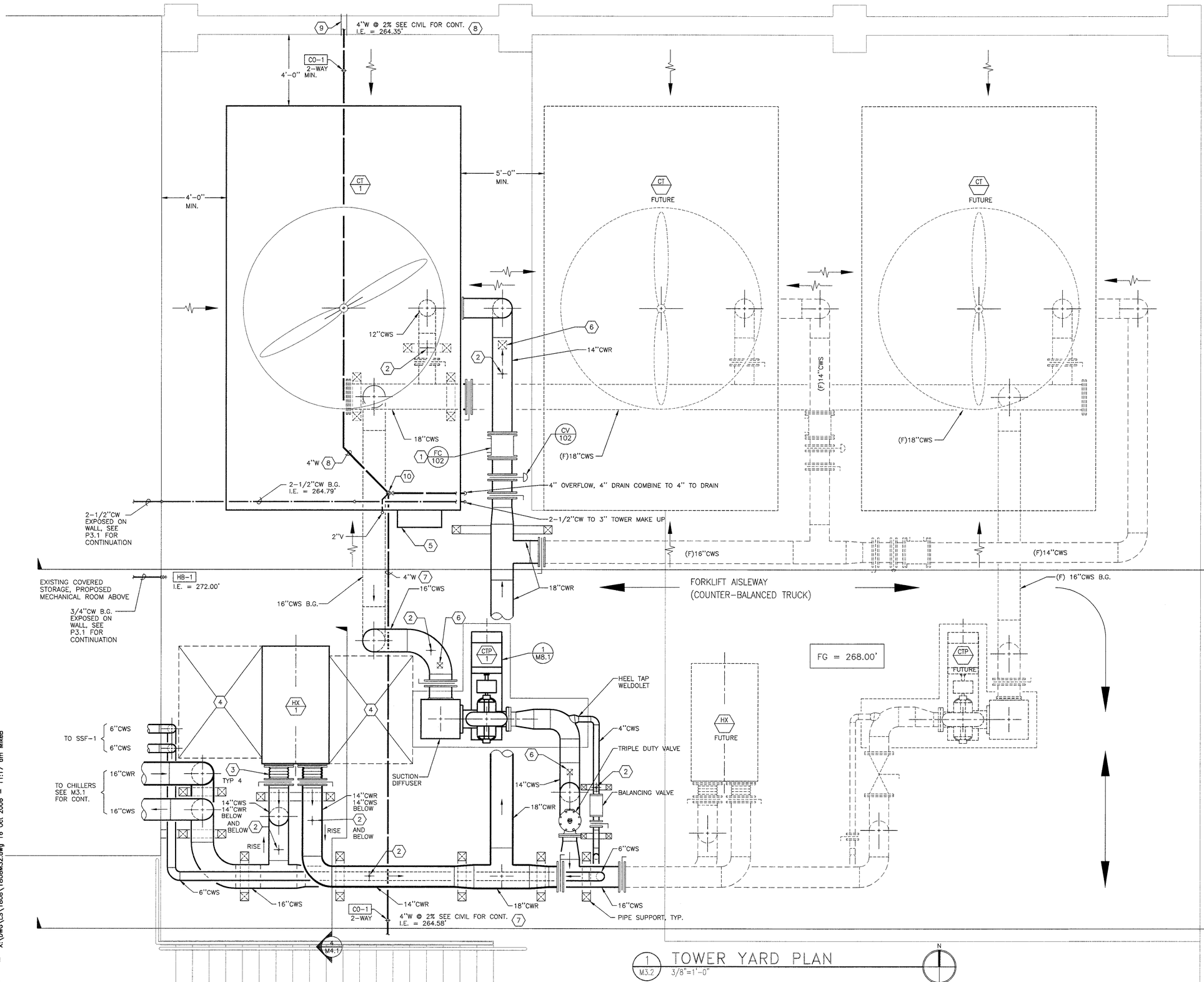
ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

MECHANICAL
ROOM PLAN

M3.1

8915 SW MACADAM AVE.
SUITE 200
PORTLAND, OREGON 97219
503.892.1188
FAX 503.892.1190
CONTACT KEVIN DUELL
engineering@mke-inc.com
MKE & ASSOCIATES, INC.
CONSULTING ENGINEERS
MECHANICAL AND ELECTRICAL SYSTEMS

X:\DWG\LS\1808\1808M31.dwg 16 Oct 2006 - 11:17 am MikeB
1808



GENERAL NOTES:

A. SEE STRUCTURAL FOR DESIGN OF PIPE SUPPORTS, FOOTINGS, HOUSE KEEPING PADS, ETC. STRUCTURAL ITEMS SHOWN ON THIS SHEET FOR REFERENCE ONLY.

B. PROVIDE HEAT TRACING PER SPECIFICATIONS. HEAT TRACE ALL ABOVE GRADE PIPING AND ACCESSORIES, CTP-1 PUMP BODY, HX-1 PLATES, ETC. SEE DETAIL 2/M8.2.

C. FINISHED GRADE ELEVATION SHOWN BASED ON ARCHITECTURAL. VERIFY.

KEYED NOTES:

1. INSTALL FLOW CONTROL VALVE AFTER SYSTEM HAS BEEN FLUSHED CLEAN.
2. PROVIDE THERMOMETER WELL FOR FREEZE PROTECTION TEMPERATURE SENSOR. COORDINATE WITH CONTROLS CONTRACTOR. SEE M4.2 FOR ADDITIONAL LOCATIONS.
3. PROVIDE ALUMINUM FLASHING 360 DEGREES AROUND EXPANSION JOINT TO PROTECT FROM DAYLIGHT. INSTALL TO ALLOW PIPE & JOINT MOVEMENT.
4. HEAT EXCHANGER SERVICE CLEARANCE.
5. PROPOSED LOCATION OF COOLING TOWER CONTROL PANEL. PROVIDE UNISTRUT FRAME TO SUPPORT PANEL OFF TOWER STAND.
6. PROVIDE PIPE STAND BELOW.
7. THIS PIPE ROUTING IS BASE BID.
8. THIS PIPE ROUTING IS PART OF BID ALTERNATE 8. COORDINATE ROUTING WITH STRUCTURAL FOOTING/ SLAB FOR COOLING TOWER.
9. SLEEVE PIPE BELOW FOOTING.
10. PROVIDE 4" HUB DRAIN WITH 4X8 INCREASER, RIM 4" ABOVE FINISHED GRADE/SLAB. PROVIDE 2" TRAP VENT, ROUTE UP ON TOWER FRAME AND EXTEND TO 12" ABOVE TOP OF TOWER. COORDINATE WITH TOWER MANUFACTURER FOR SECURING PIPE TO TOWER. DO NOT DAMAGE OR COMPROMISE TOWER FINISH.

lsw architects, pc

architecture / planning / interiors

lsw architects, pc
2300 Main Street
Vancouver, Washington 98660

t| 360.694.8571
f| 360.694.9510

RICHARD DUSA JR — STATE OF WASHINGTON — 29373 — REGISTERED PROFESSIONAL ENGINEER

EXPIRES 5-13-05

drawn by
MDB
checked by
KD
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.01.05
BID SET

revisions

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

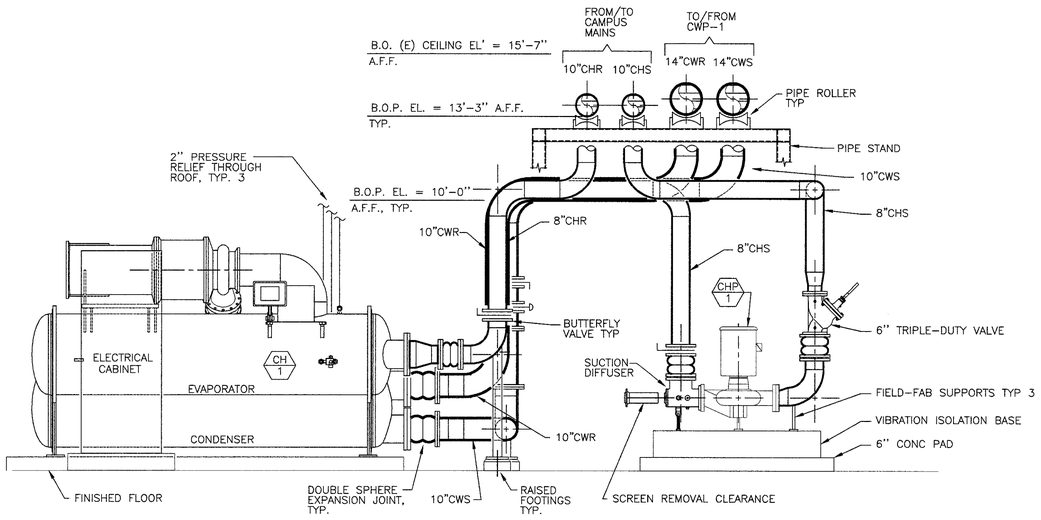
TOWER YARD
PLAN
SCALE: 3/8"=1'-0"

M3.2

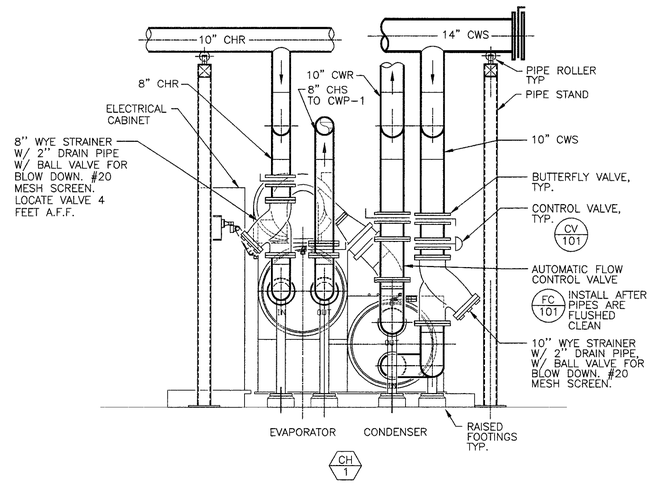
8916 SW MACADAM AVE.
SUITE 200
PORTLAND, OREGON 97219
503.892.1166
FAX 503.892.1160
CONTACT KEVIN DUELL
engineering@mka-inc.com

MKE & ASSOCIATES, INC.
CONSULTING ENGINEERS
MECHANICAL AND ELECTRICAL SYSTEMS

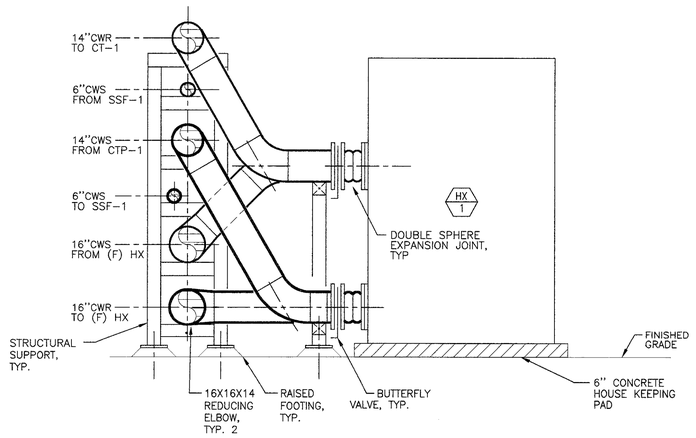
X:\DWG\LSS\1808\1808M32.dwg 16 Oct 2006 - 11:17 am MikeB



1 M4.1 MECHANICAL ROOM ELEVATION
3/8"=1'-0"

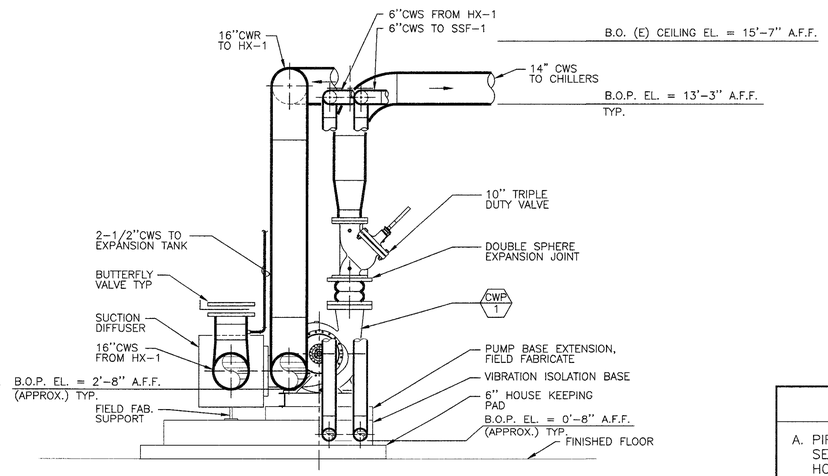


2 M4.1 MECHANICAL ROOM ELEVATION
3/8"=1'-0"



NOTE: PROVIDE SLIDE PLATES TO SUPPORT PIPES, ALLOW EXPANSION.

4 M4.2 TOWER YARD ELEVATION
3/8"=1'-0"



3 M4.1 MECHANICAL ROOM ELEVATION
3/8"=1'-0"

GENERAL NOTE:

A. PIPE STANDS SHALL BE CONTRACTOR DESIGNED. SEE STRUCTURAL FOR DESIGN OF FOOTINGS, HOUSE KEEPING PADS, ETC. STRUCTURAL ITEMS SHOWN ON THIS SHEET FOR REFERENCE ONLY.

6915 SW MACADAM AVE.
SUITE 200
PORTLAND, OREGON 97219
503.892.1199
FAX 503.892.1190
CONTACT: RICK KEMPER, PE
engineering@mke-inc.com

MKE & ASSOCIATES, INC.
CONSULTING ENGINEERS
MECHANICAL AND ELECTRICAL SYSTEMS

JSW architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

STEPHEN M. LUCAS
STATE OF WASHINGTON
20022
REGISTERED
PROFESSIONAL ENGINEER
EXPIRES 07-18-05

drawn by
MB
checked by
KD
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.01.05
BID SET

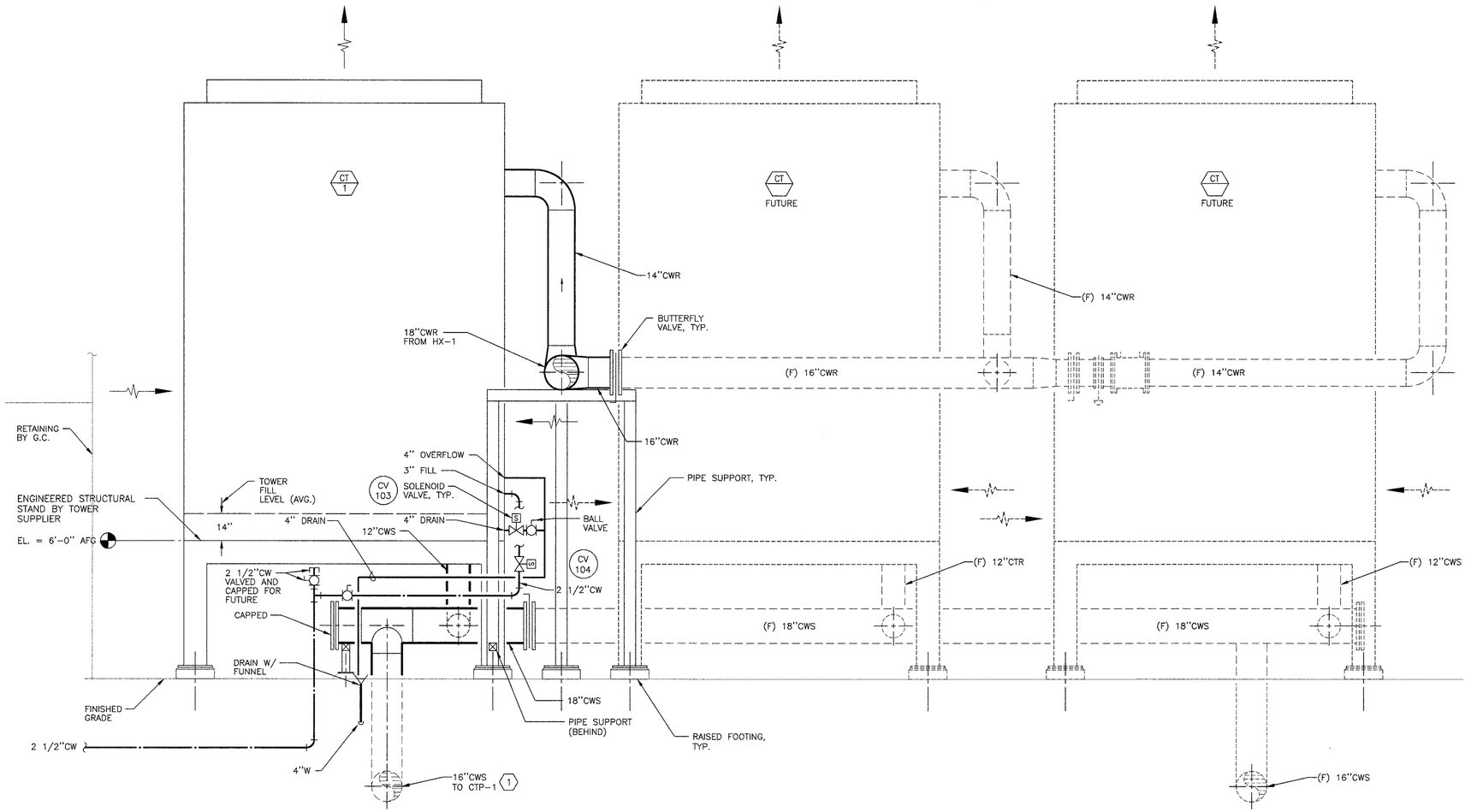
revisions

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

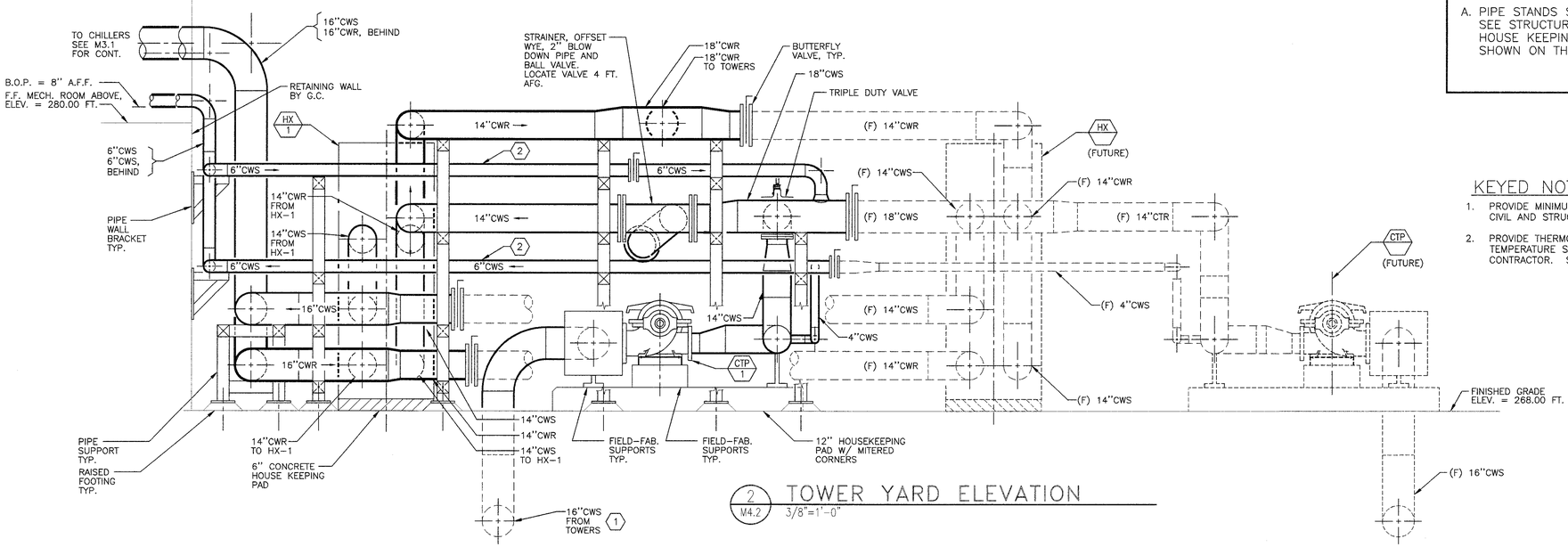
MECHANICAL ELEVATIONS

M4.1

X:\DWG\LS\1808\1808M41.dwg 16 Oct 2006 - 11:17 am MikeB



1 M4.2 TOWER YARD ELEVATION
3/8"=1'-0"



2 M4.2 TOWER YARD ELEVATION
3/8"=1'-0"

GENERAL NOTE:

A. PIPE STANDS SHALL BE CONTRACTOR DESIGNED. SEE STRUCTURAL FOR DESIGN OF FOOTINGS, HOUSE KEEPING PADS, ETC. STRUCTURAL ITEMS SHOWN ON THIS SHEET FOR REFERENCE ONLY.

KEYED NOTES:

1. PROVIDE MINIMUM 4 FEET COVER. COORDINATE WITH CIVIL AND STRUCTURAL.
2. PROVIDE THERMOMETER WELL FOR FREEZE PROTECTION TEMPERATURE SENSOR. COORDINATE WITH CONTROLS CONTRACTOR. SEE M3.2 FOR ADDITIONAL LOCATIONS.

LSW architects, pc

architecture / planning / interiors

lsw architects, pc
2300 Main Street
Vancouver, Washington 98660

t| 360.694.8571
f| 360.694.9510

RICHARD DUSA, JR. STATE OF WASHINGTON 29373 REGISTERED PROFESSIONAL ENGINEER

EXPIRES 5-13-05

drawn by
MB
checked by
KD
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.01.05
BID SET

revisions

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

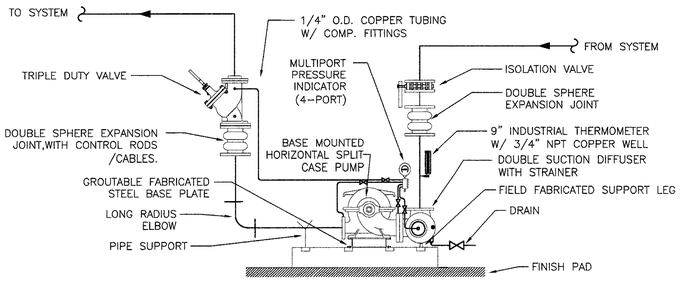
TOWER YARD ELEVATIONS

M4.2

6915 SW MACADAM AVE.
SUITE 200
PORTLAND, OREGON 97219
503.892.1188
FAX 503.892.1190
CONTACT KEVIN DUELL
engineering@mke-inc.com

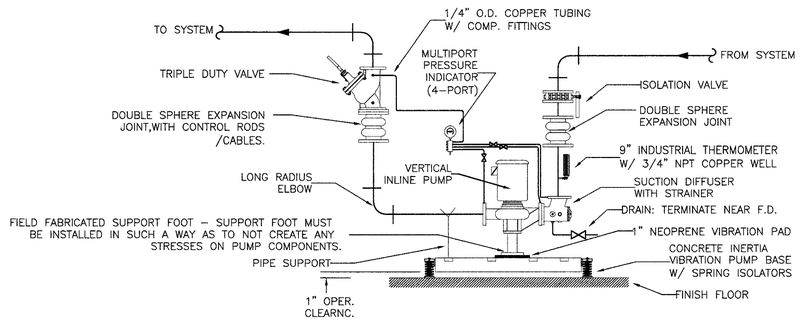
MKE & ASSOCIATES, INC.
CONSULTING ENGINEERS
MECHANICAL AND ELECTRICAL SYSTEMS

I - X:\DWG\LS\1808\1808M42.dwg 16 Oct 2006 - 11:17 am MikeB



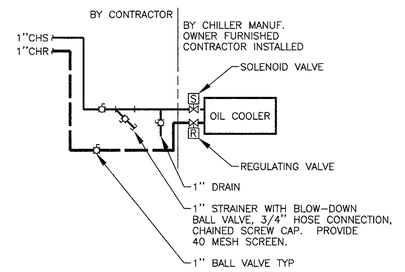
1 M8.1 DETAIL – HORIZONTAL SPLIT CASE PUMP (BASE MOUNTED ON CONCRETE PAD)

SCALE: NTS



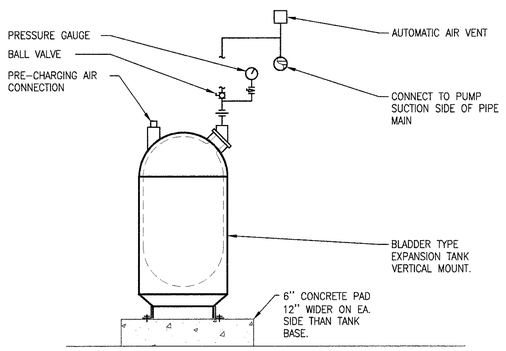
2 M8.1 DETAIL – VERTICAL IN-LINE PUMP (BASE MOUNTED ON A CONCRETE INERTIA PAD)

SCALE: NTS



3 M8.1 DETAIL – CHILLER OIL COOLER PIPING

SCALE: NTS

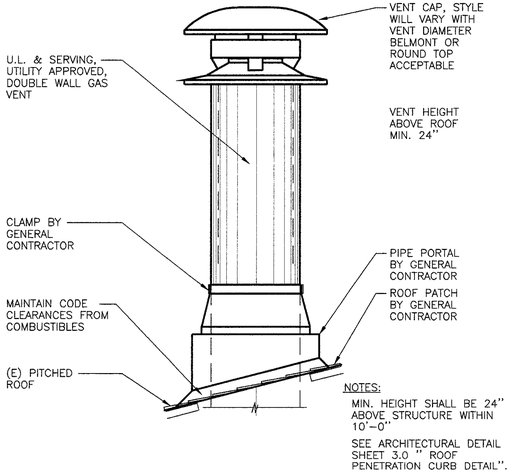


NOTES:

1. SEISMICALLY ANCHOR PER SPECIFICATIONS.

4 M8.1 DETAIL – PRESSURIZED EXPANSION TANK

SCALE: NTS



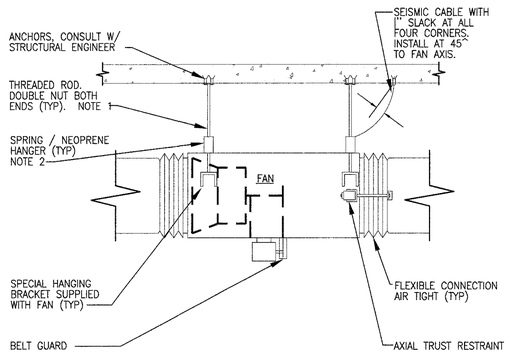
NOTES:

MIN. HEIGHT SHALL BE 24" ABOVE STRUCTURE WITHIN 10'-0"

SEE ARCHITECTURAL DETAIL SHEET 3.0 " ROOF PENETRATION CURB DETAIL".

5 M8.1 DETAIL – CLASS 'B' GAS VENT

SCALE: NTS



NOTES:

1. SIZE OF THREADED ROD TO BE DETERMINED IN CONSULTATION WITH STRUCTURAL ENGINEER.
2. ISOLATORS DEFLECTION SHALL BE MINIMUM 2", SEE SPECIFICATIONS OR DRAWINGS TO DETERMINE IF GREATER DEFLECTION IS REQUIRED.

6 M8.1 DETAIL – AXIAL FAN

SCALE: NTS

lsw architects, pc

architecture / planning / interiors

lsw architects, pc
2300 Main Street
Vancouver, Washington 98660

t| 360.694.8571
f| 360.694.9510

RICHARD DUSA JR — STATE OF WASHINGTON — 29373 — REGISTERED PROFESSIONAL ENGINEER

EXPIRES 5-13-05

drawn by
MB
checked by
KD
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.01.05
BID SET

revisions

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

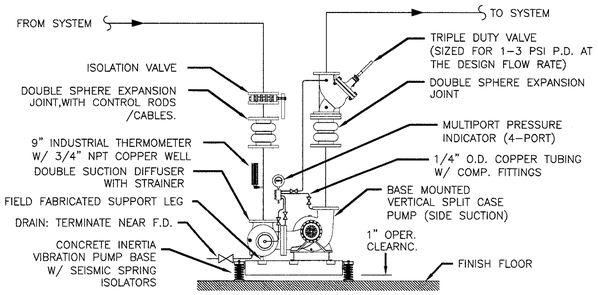
MECHANICAL
DETAILS

M8.1

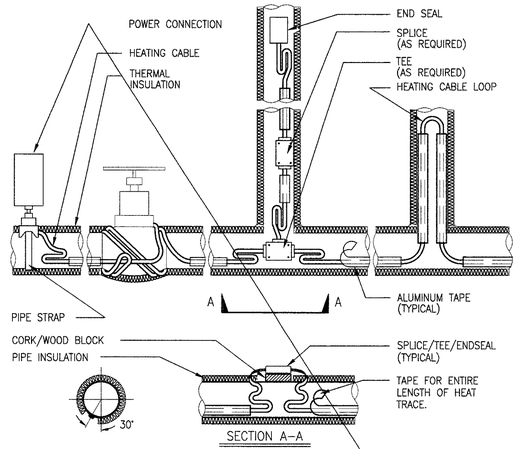
6916 SW MACADAM AVE.
SUITE 200
PORTLAND, OREGON 97219
503.892.1188
FAX 503.892.1190
CONTACT KEVIN DUELL
engineering@mke-inc.com

MKE & ASSOCIATES, INC.
CONSULTING ENGINEERS
MECHANICAL AND ELECTRICAL SYSTEMS

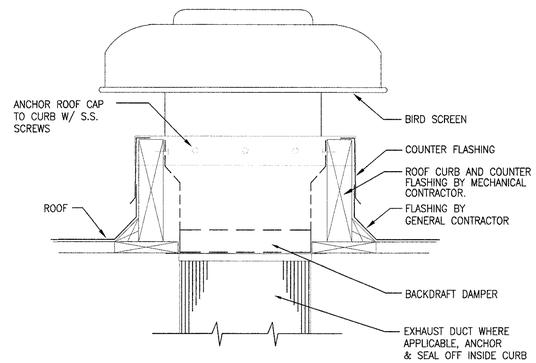
I - X:\DWG\LS\1808\1808M81.dwg 16 Oct 2006 - 11:18 am MikeB



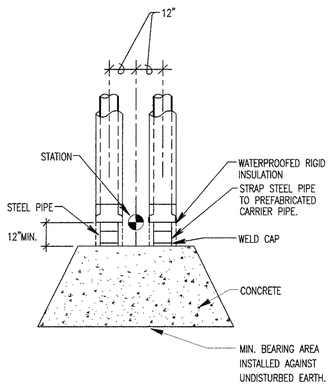
1 M8.2 DETAIL – VERTICAL SPLIT CASE (SIDE SUCTION) PUMP (BASE MOUNTED ON A CONCRETE INERTIA PAD)
SCALE: NTS



2 M8.2 DETAIL – PIPE HEAT TRACE
SCALE: NTS

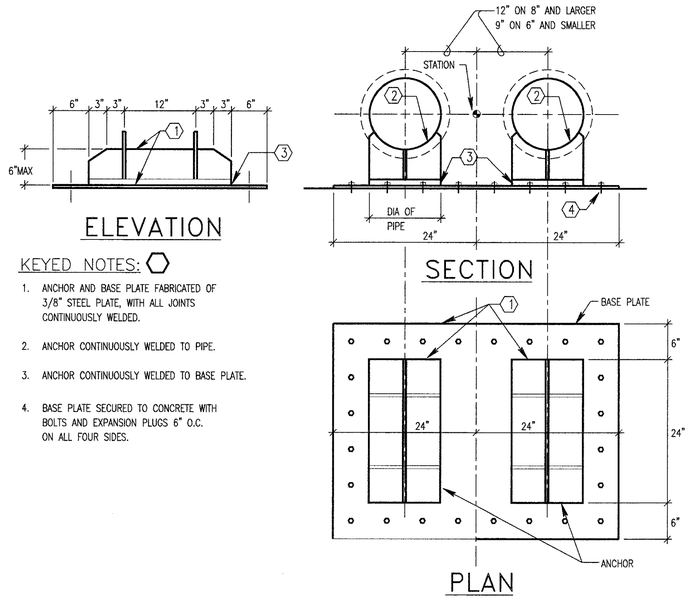


3 M8.2 DETAIL – ROOF HOOD
SCALE: NTS



THRUST BLOCK MIN. BEARING AREAS			
PIPE	END	45° ANGLE	90° ANGLE
4"	5 SQ. FT.	5 SQ. FT.	7.5 SQ. FT.
6"	10 SQ. FT.	7.5 SQ. FT.	15 SQ. FT.
8"	15 SQ. FT.	12 SQ. FT.	22.5 SQ. FT.
10"	25 SQ. FT.	18 SQ. FT.	37.5 SQ. FT.
12"	35 SQ. FT.	27 SQ. FT.	42.5 SQ. FT.

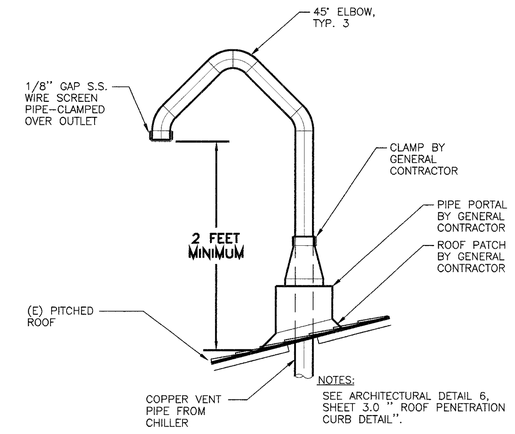
4 M8.2 DETAIL – END THRUST BLOCK
SCALE: NTS



KEYED NOTES:

1. ANCHOR AND BASE PLATE FABRICATED OF 3/8" STEEL PLATE, WITH ALL JOINTS CONTINUOUSLY WELDED.
2. ANCHOR CONTINUOUSLY WELDED TO PIPE.
3. ANCHOR CONTINUOUSLY WELDED TO BASE PLATE.
4. BASE PLATE SECURED TO CONCRETE WITH BOLTS AND EXPANSION PLUGS 6" O.C. ON ALL FOUR SIDES.

5 M8.2 DETAIL – FLOOR MOUNTED PIPE ANCHOR
SCALE: NTS



6 M8.2 DETAIL – REFRIGERANT PRESSURE RELIEF VENT THRU ROOF
SCALE: NTS

6815 SW MACADAM AVE.
SUITE 200
PORTLAND, OREGON 97219
503.892.1188
FAX 503.892.1190
CONTACT KEVIN DUELL
engineering@mke-inc.com

MKE & ASSOCIATES, INC.
CONSULTING ENGINEERS
MECHANICAL AND ELECTRICAL SYSTEMS

lsw architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

RICHARD DISSA JR
STATE OF WASHINGTON
29373
REGISTERED
PROFESSIONAL ENGINEER

EXPIRES 5-13-05

drawn by
MB
checked by
KD
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.01.05
BID SET

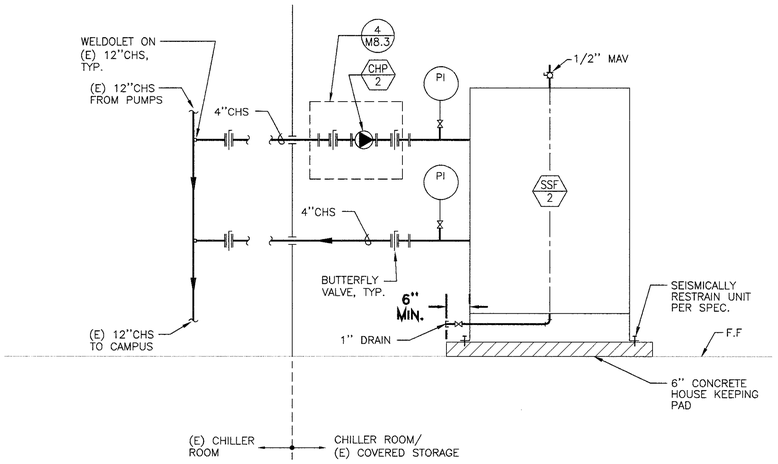
revisions

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

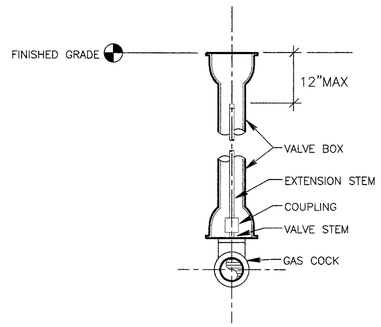
MECHANICAL
DETAILS

M8.2

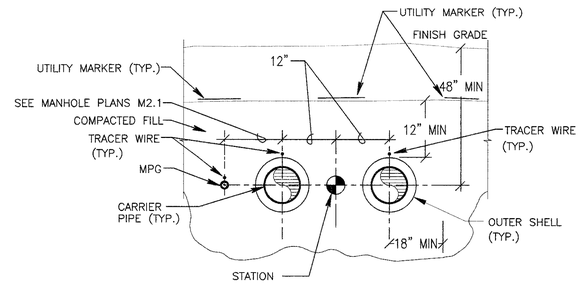
X:\DWG\LS\1808\1808M82.dwg 16 Oct 2006 – 11:18 am MikeB
– X:\DWG\LS\1808\1808M82.dwg 16 Oct 2006 – 11:18 am MikeB



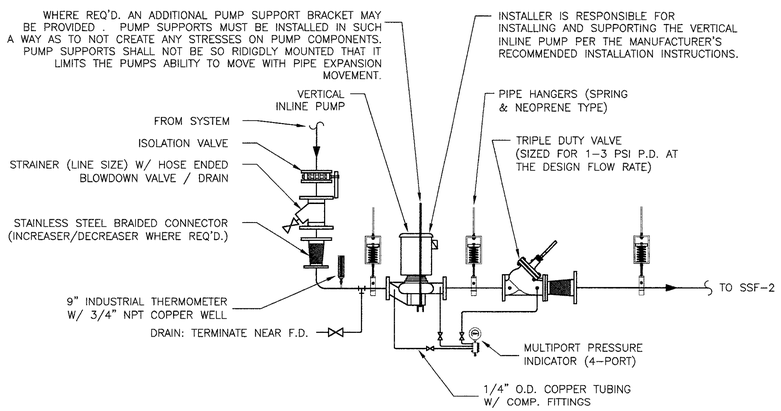
1 M8.3 DETAIL – SIDE STREAM FILTER (SSF–2)
SCALE: NTS



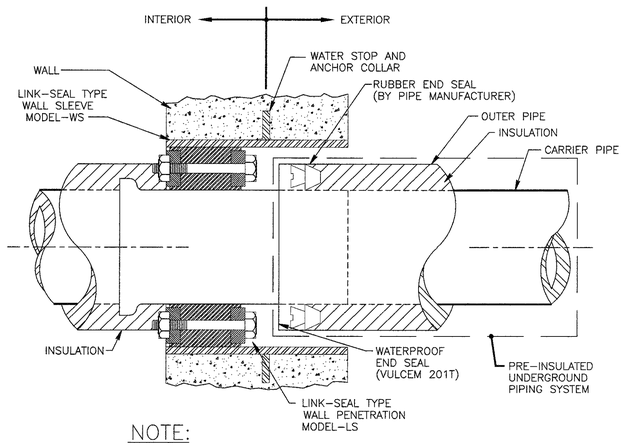
2 M8.3 DETAIL – UNDERGROUND GAS VALVE
SCALE: NTS



3 M8.3 DETAIL – TRENCH CROSS SECTON
SCALE: NTS

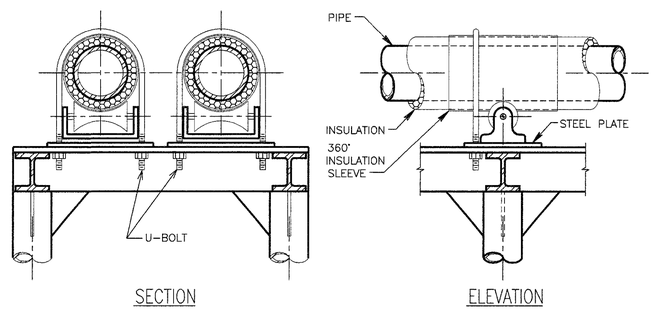


4 M8.3 DETAIL – VERTICAL IN–LINE PUMP (PIPING MOUNTED)
SCALE: NTS



NOTE:
1. PROVIDE LINK–SEAL BETWEEN WALL SLEEVE & CARRIER PIPE. (NOT WALL SLEEVE & OUTER PIPE THAT COVERS THE INSULATION.)
2. TIGHTEN LINK SEAL TO PREVENT ANY WATER PENETRATION – DO NOT OVERTIGHTEN.
3. PIPING MUST BE CENTERED IN WALL OPENING FOR PROPER LINK SEAL OPERATION.

5 M8.3 DETAIL – LINK SEAL
SCALE: NTS



NOTE:
1. ROLLERS SIMILAR TO GRINNELL FIG. 274 ADJUSTABLE PIPE ROLLER STAND.
2. FASTEN U–BOLTS SNUG, NOT TIGHT.

6 M8.3 DETAIL – PIPE ROLLERS
SCALE: NTS

6916 SW MACADAM AVE.
SUITE 200
PORTLAND, OREGON 97219
503.892.1188
FAX 503.892.1190
CONTACT KEVIN DUELL
engineering@mke-inc.com

MKE & ASSOCIATES, INC.
CONSULTING ENGINEERS
MECHANICAL AND ELECTRICAL SYSTEMS

LSW architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

RICHARD DUSA JR. STATE OF WASHINGTON 29373 REGISTERED PROFESSIONAL ENGINEER
EXPIRES 5–13–05

drawn by
MB
checked by
KD
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.01.05
BID SET

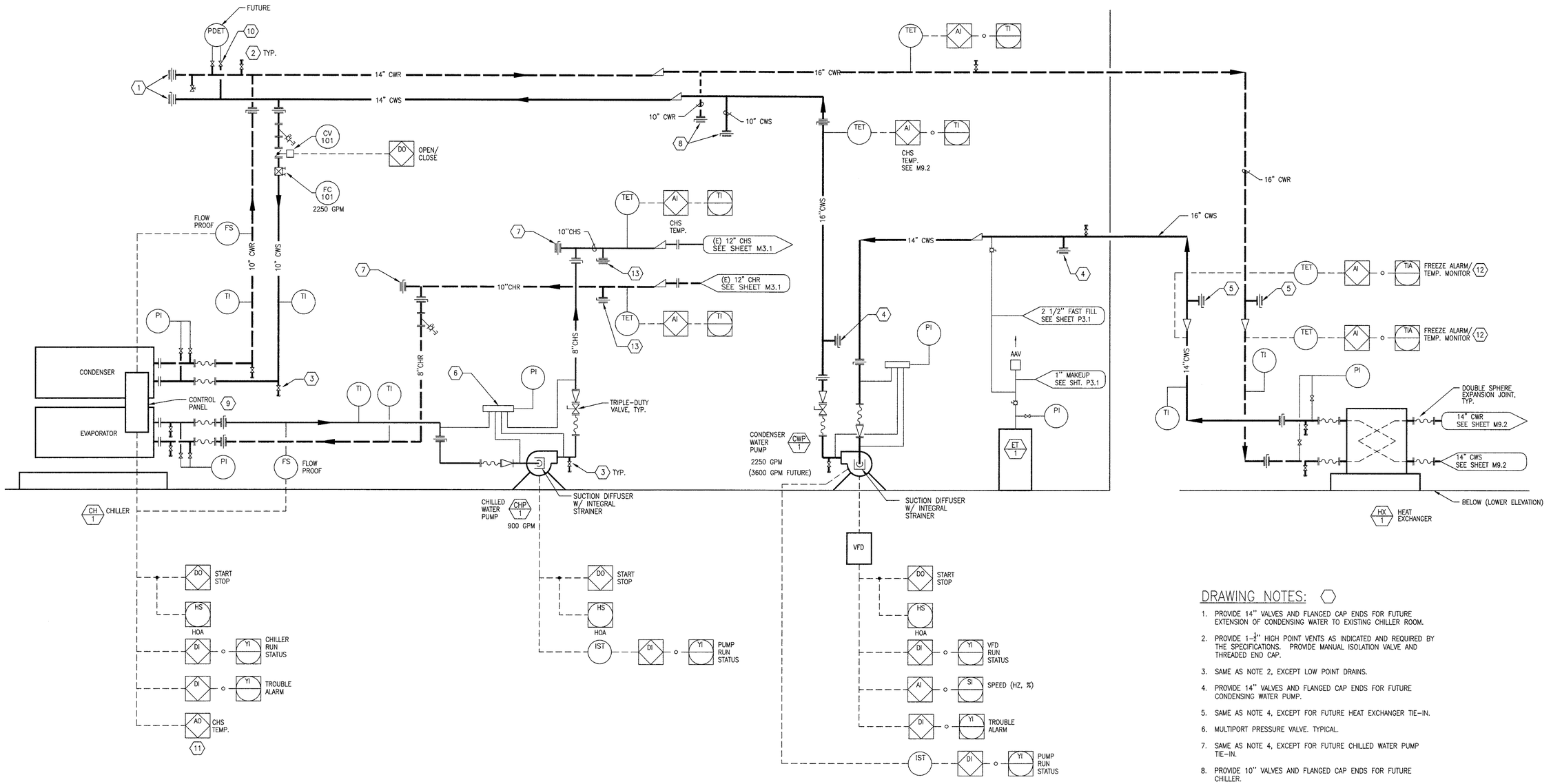
revisions

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

MECHANICAL
DETAILS

M8.3

I – X:\DWG\LS\1808\1808M83.dwg 16 Oct 2006 – 11:18 am MikeB



DRAWING NOTES:

1. PROVIDE 14" VALVES AND FLANGED CAP ENDS FOR FUTURE EXTENSION OF CONDENSING WATER TO EXISTING CHILLER ROOM.
2. PROVIDE 1-½" HIGH POINT VENTS AS INDICATED AND REQUIRED BY THE SPECIFICATIONS. PROVIDE MANUAL ISOLATION VALVE AND THREADED END CAP.
3. SAME AS NOTE 2, EXCEPT LOW POINT DRAINS.
4. PROVIDE 14" VALVES AND FLANGED CAP ENDS FOR FUTURE CONDENSING WATER PUMP.
5. SAME AS NOTE 4, EXCEPT FOR FUTURE HEAT EXCHANGER TIE-IN.
6. MULTIPORT PRESSURE VALVE. TYPICAL.
7. SAME AS NOTE 4, EXCEPT FOR FUTURE CHILLED WATER PUMP TIE-IN.
8. PROVIDE 10" VALVES AND FLANGED CAP ENDS FOR FUTURE CHILLER.
9. CONTROL PANEL BY EQUIPMENT MANUFACTURER,
10. PROVIDE PORTS FOR FUTURE PRESSURE DIFFERENTIAL SENSOR.
11. SEE SPECIFICATIONS FOR ADDTIONAL POINTS.
12. SEE SHEETS M3.2 AND M4.2 FOR LOCATIONS.
13. SAME AS NOTE 4, EXCEPT 10" FOR FUTURE CHILLED WATER/ CONDENSER WATER BYPASS FOR 'FREE' COOLING.

1 M9.1 P&I DIAGRAM – CHILLER
SCALE: NTS

LSW architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

RICHARD DUSAK JR. STATE OF WASHINGTON 993773 REGISTERED PROFESSIONAL ENGINEER
EXPIRES 5-13-05

drawn by
MB
checked by
KD
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

Issue date
2.01.05
BID SET

revisions

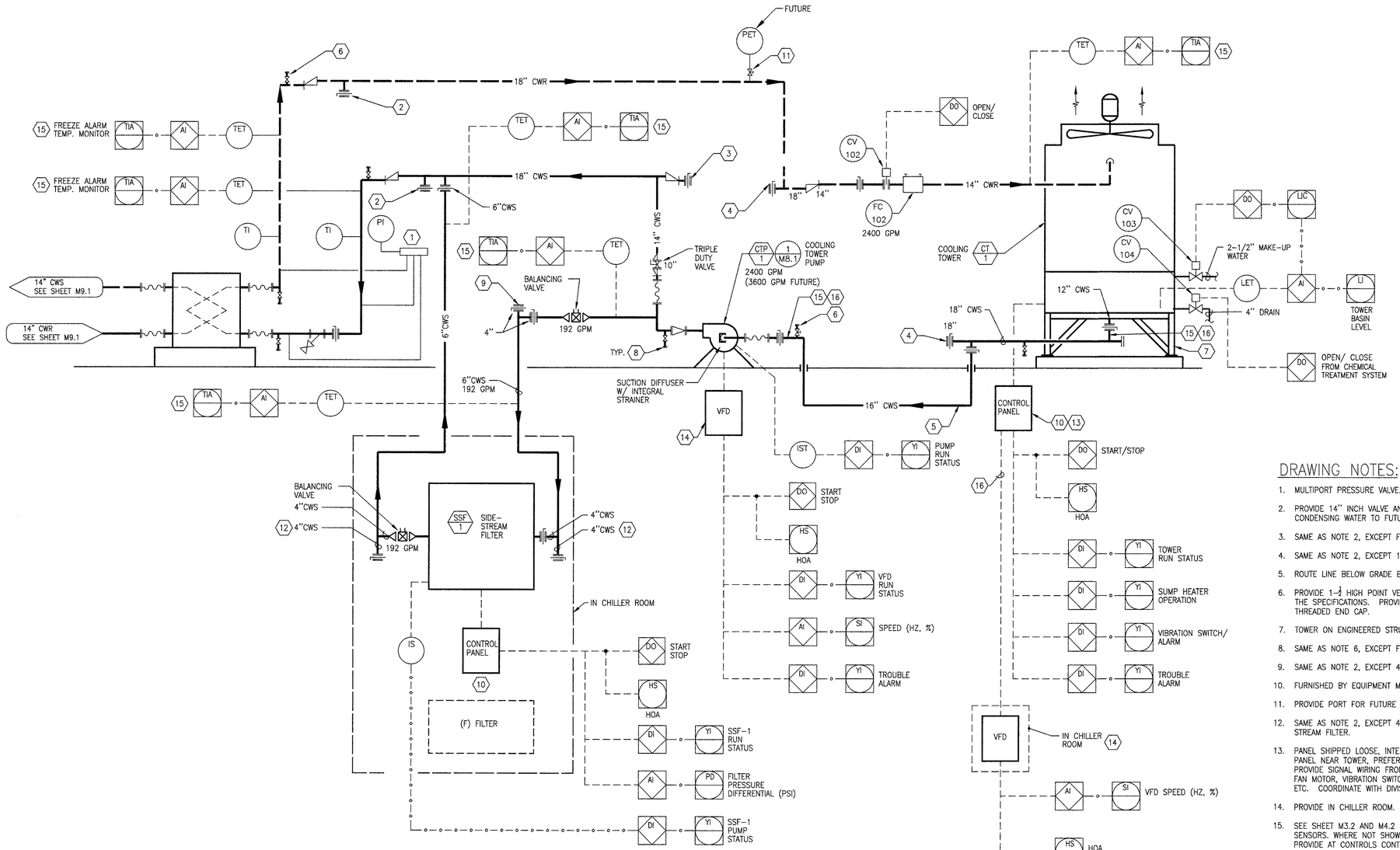
ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

P&I DIAGRAM
CHILLER CH-1

M9.1

6915 SW MACADAM AVE.
SUITE 200
PORTLAND, OREGON 97219
503.892.1188
FAX 503.892.1190
CONTACT KEVIN DUELL
engineering@mka-inc.com
MKE & ASSOCIATES, INC.
CONSULTING ENGINEERS
MECHANICAL AND ELECTRICAL SYSTEMS

X:\DWG\LSV\1808\1808M9L.dwg 16 Oct 2006 - 11:18 am Mike3



1 M9.2 P&I DIAGRAM — COOLING TOWER SYSTEM

SCALE: NTS

DRAWING NOTES:

1. MULTIPORT PRESSURE VALVE. TYPICAL.
2. PROVIDE 14" INCH VALVE AND FLANGE CAP END FOR EXTENSION OF CONDENSING WATER TO FUTURE HEAT EXCHANGER.
3. SAME AS NOTE 2, EXCEPT FOR FUTURE CONDENSING WATER PUMP.
4. SAME AS NOTE 2, EXCEPT 18" FOR FUTURE COOLING TOWERS.
5. ROUTE LINE BELOW GRADE BETWEEN TOWER AND PUMP.
6. PROVIDE 1-½ HIGH POINT VENTS AS INDICATED AND REQUIRED BY THE SPECIFICATIONS. PROVIDE MANUAL ISOLATION VALVE AND THREADED END CAP.
7. TOWER ON ENGINEERED STRUCTURAL BASE BY TOWER SUPPLIER.
8. SAME AS NOTE 6, EXCEPT FOR LOW POINT DRAIN.
9. SAME AS NOTE 2, EXCEPT 4" FOR FUTURE PUMP.
10. FURNISHED BY EQUIPMENT MANUFACTURER.
11. PROVIDE PORT FOR FUTURE PRESSURE SENSOR.
12. SAME AS NOTE 2, EXCEPT 4" INCH VALVE FOR FUTURE SIDE STREAM FILTER.
13. PANEL SHIPPED LOOSE, INTERNALLY FACTORY WIRED. MOUNT PANEL NEAR TOWER, PREFERABLY ON STRUCTURAL BASE. PROVIDE SIGNAL WIRING FROM PANEL TO TOWER DEVICES SUCH AS FAN MOTOR, VIBRATION SWITCH, IMMERSION HEATERS AND SENSORS, ETC. COORDINATE WITH DIVISION 16.
14. PROVIDE IN CHILLER ROOM.
15. SEE SHEET M3.2 AND M4.2 FOR LOCATIONS OF PIPE-FREEZE ALARM SENSORS. WHERE NOT SHOWN ON THESE SHEETS, PROVIDE AT CONTROLS CONTRACTOR SELECTED LOCATIONS.
16. CONTROL WIRING BETWEEN CT-1 VFD AND CONTROL PANEL. COORDINATE WITH DIVISION 16 FOR CONDUIT BY DIVISION 16.

lsw architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

RICHARD D. SAAR — STATE OF WASHINGTON — 29373 — REGISTERED PROFESSIONAL ENGINEER

EXPIRES 5-13-05

drawn by MB
checked by KD
lsw job number 03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.01.05
BID SET

revisions

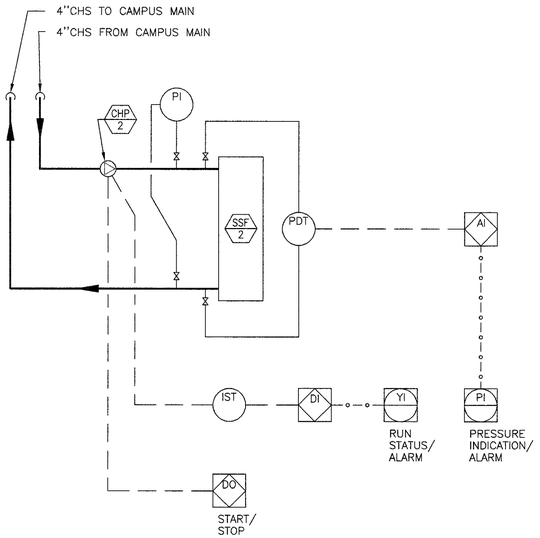
ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

P&I DIAGRAM
COOLING TOWER SYSTEM

M9.2

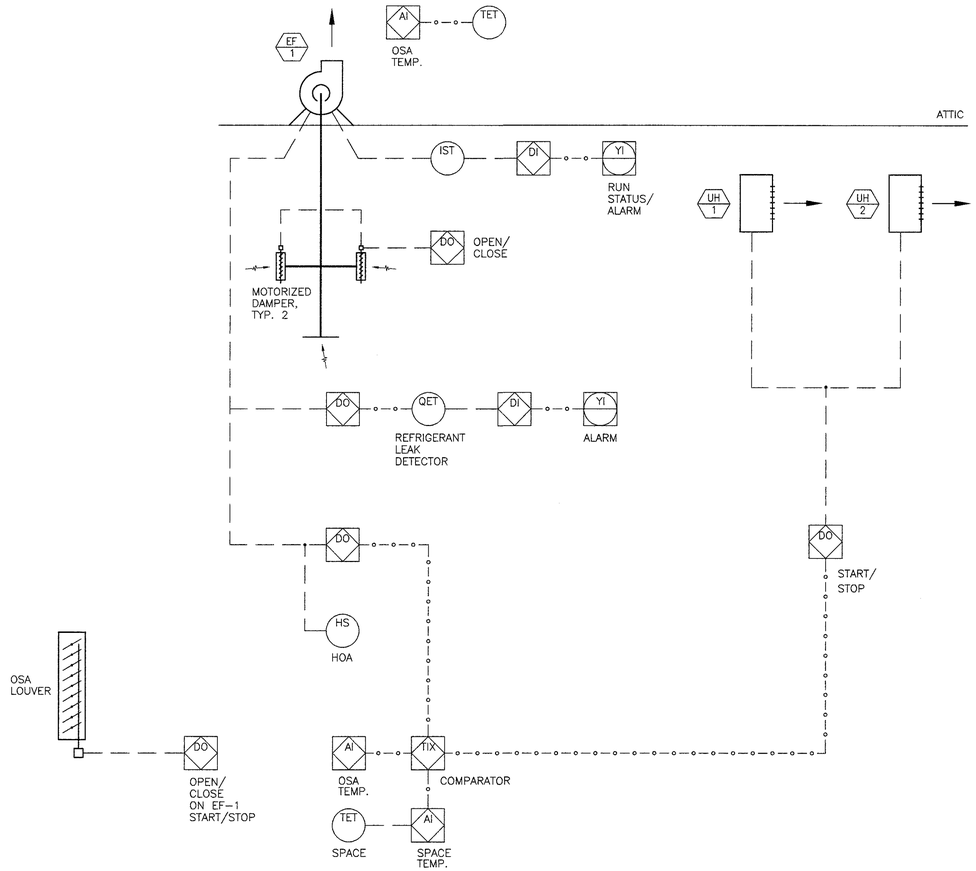
6815 SW MACADAM AVE.
SUITE 200
PORTLAND, OREGON 97219
503.892.1188
FAX 503.892.1190
CONTACT KEVIN DUELL
engineering@mke-inc.com
MKE & ASSOCIATES, INC. CONSULTING ENGINEERS
MECHANICAL AND ELECTRICAL SYSTEMS

X:\DWG\LS\1808\1808M92.dwg 16 Oct 2006 - 11:18 am MikeB
1808



NOTE:
SEE DETAILS 1/M8.3 AND 4/M8.3 FOR FITTINGS, VALVES, ETC.

1 / M9.3 P&I DIAGRAM – SSF-2/CHP-2
SCALE: NTS



2 / M9.3 P&I DIAGRAM – VENTILATION
SCALE: NTS

lsw architects, pc
architecture / planning / interiors
lsw architects, pc
2300 Main Street
Vancouver, Washington 98660
t| 360.694.8571
f| 360.694.9510

RICHARD DESAIR STATE OF WASHINGTON 29373 REGISTERED PROFESSIONAL ENGINEER
EXPIRES 5-13-05

drawn by
MB
checked by
KD
lsw job number
03285

CAMPUS INFRASTRUCTURE 2003
WASHINGTON STATE UNIVERSITY - VANCOUVER
14204 NE Salmon Creek Avenue
Vancouver WA 98686

issue date
2.01.05
BID SET

revisions

ANY REPRODUCTION AND/OR MODIFICATION IN ANY FORM OF THIS DOCUMENT IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF LSW ARCHITECTS, PC

P&I DIAGRAMS
VENTILATION/ FILTRATION

M9.3

6915 SW MACADAM AVE.
SUITE 200
PORTLAND, OREGON 97219
503.892.1188
FAX 503.892.1190
CONTACT KEVIN DUELL
engineering@mke-inc.com
MKE & ASSOCIATES, INC.
CONSULTING ENGINEERS
MECHANICAL AND ELECTRICAL SYSTEMS

X:\DWG\LS\1808\1808M93.dwg 16 Oct 2006 - 11:19 am MikeB
1808