

**GENERAL NOTES**

- EXISTING MAPPING MAY NOT BE COMPLETE OR ACCURATE. EXISTING CONDITIONS HAVE NOT BEEN SURVEYED. CONTRACTOR TO VERIFY EXISTING SITE CONDITIONS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL BRING ANY DISCREPANCIES TO THE ATTENTION OF THE ENGINEER PRIOR TO BEGINNING CONSTRUCTION.
- ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THESE PLANS, THE PROJECT SPECIFICATIONS AND THE APPLICABLE REQUIREMENTS OF THE 2008 OREGON PLUMBING SPECIALTY CODE AND REQUIREMENTS OF THE CITY OF EUGENE.
- THE COMPLETED INSTALLATION SHALL CONFORM TO ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES, ORDINANCES AND REGULATIONS. ALL PERMITS, LICENSES AND INSPECTIONS REQUIRED BY THE GOVERNING AUTHORITIES FOR THE EXECUTION AND COMPLETION OF WORK SHALL BE SECURED BY THE CONTRACTOR PRIOR TO COMMENCING CONSTRUCTION.
- ATTENTION: OREGON LAW REQUIRES YOU TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH OAR 952-001-0090. YOU MAY OBTAIN COPIES OF THE RULES BY CALLING THE CENTER. (NOTE: THE TELEPHONE NUMBER FOR THE OREGON UTILITY NOTIFICATION CENTER IS (503) 232-1987). EXCAVATORS MUST NOTIFY ALL PERTINENT COMPANIES OR AGENCIES WITH UNDERGROUND UTILITIES IN THE PROJECT AREA AT LEAST 48 BUSINESS-DAY HOURS, BUT NOT MORE THAN 10 BUSINESS DAYS PRIOR TO COMMENCING AN EXCAVATION, SO UTILITIES MAY BE ACCURATELY LOCATED.
- CONTACT ERIC GRAPE WITH CAMPUS FACILITIES A WEEK PRIOR TO CONSTRUCTION FOR UTILITY LOCATES BY THE UNIVERSITY.
- THE LOCATION OF EXISTING UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE FOR INFORMATION ONLY AND ARE NOT GUARANTEED TO BE COMPLETE OR ACCURATE. CONTRACTOR SHALL VERIFY ELEVATIONS, PIPE SIZE, AND MATERIAL TYPES OF ALL UNDERGROUND UTILITIES PRIOR TO COMMENCING WITH CONSTRUCTION AND SHALL BRING ANY DISCREPANCIES TO THE ATTENTION OF KPFF CONSULTING ENGINEERS, 72 HOURS PRIOR TO START OF CONSTRUCTION TO PREVENT GRADE AND ALIGNMENT CONFLICTS.
- THE ENGINEER OR OWNER IS NOT RESPONSIBLE FOR THE SAFETY OF THE CONTRACTOR OR HIS CREW. ALL O.S.H.A. REGULATIONS SHALL BE STRICTLY ADHERED TO IN THE PERFORMANCE OF THE WORK.
- TEMPORARY AND PERMANENT EROSION CONTROL MEASURES SHALL BE IMPLEMENTED. THE CONTRACTOR SHALL ADHERE TO THE CITY OF EUGENE EROSION CONTROL PERMIT, FOR MINIMUM EROSION CONTROL MEASURES. THE ESC FACILITIES SHOWN IN THESE PLANS ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DO NOT LEAVE THE SITE.
- THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL ROADWAYS, KEEPING THEM CLEAN AND FREE OF CONSTRUCTION MATERIALS AND DEBRIS, AND PROVIDING DUST CONTROL AS REQUIRED.
- TRAFFIC CONTROL AND PEDESTRIAN SAFETY SHALL BE PROVIDED BY THE CONTRACTOR THROUGHOUT CONSTRUCTION. CONTRACTOR SHALL PROVIDE A PLAN TO UNIVERSITY OF OREGON FOR REVIEW AND APPROVAL PRIOR TO COMMENCING CONSTRUCTION.
- CONTRACTOR SHALL MAINTAIN ALL UTILITIES TO BUILDINGS AT ALL TIMES DURING CONSTRUCTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND SCHEDULING ALL WORK WITH THE UNIVERSITY OF OREGON.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING AND COORDINATING WITH EWEB. EWEB WORK TO INCLUDE TAPS TO THE PUBLIC MAIN.
- NOTIFY ENGINEER 72 HOURS BEFORE STARTING WORK. A PRECONSTRUCTION MEETING WITH THE UNIVERSITY OF OREGON'S ENGINEER AND CONTRACTOR IS REQUIRED.

**CONSTRUCTION NOTES**

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEMOLITION AND DISPOSAL OF EXISTING A.C., CURBS, SIDEWALKS AND OTHER SITE ELEMENTS WITHIN THE SITE AREA IDENTIFIED IN THE PLANS.
- EXCEPT FOR MATERIALS INDICATED TO BE STOCKPILED OR TO REMAIN ON UNIVERSITY'S PROPERTY, CLEARED MATERIALS SHALL BECOME CONTRACTOR'S PROPERTY, REMOVED FROM THE SITE, AND DISPOSED OF PROPERLY.
- ITEMS INDICATED TO BE SALVAGED SHALL BE CAREFULLY REMOVED, DELIVERED AND STORED AT THE PROJECT SITE AS DIRECTED BY THE UNIVERSITY.
- ALL LANDSCAPING, PAVEMENT, CURBS AND SIDEWALKS, BEYOND THE IDENTIFIED SITE AREA, DAMAGED DURING THE CONSTRUCTION SHALL BE REPLACED TO THEIR ORIGINAL CONDITION OR BETTER.
- CONCRETE SIDEWALKS AND PAVEMENTS SHOWN FOR DEMOLITION SHALL BE REMOVED TO THE NEAREST EXISTING CONSTRUCTION JOINT.
- SAWCUT STRAIGHT MATCHLINES TO CREATE A BUTT JOINT BETWEEN THE EXISTING AND NEW PAVEMENT.

**SEPARATION STATEMENT**

ALL WATER MAIN CROSSINGS SHALL CONFORM TO THE OREGON STATE HEALTH DEPARTMENT, CHAPTER 333. WATER MAINS SHALL CROSS OVER SANITARY SEWERS WITH A 18" MINIMUM CLEARANCE BETWEEN OUTSIDE DIAMETERS OF PIPE WITH ALL PIPE JOINTS EQUIDISTANT FROM CROSSING. HORIZONTAL SEPARATION BETWEEN WATER MAINS AND SANITARY SEWERS IN PARALLEL INSTALLATIONS SHALL BE 10'. MAINTAIN 12" MINIMUM VERTICAL DISTANCE FOR ALL OTHER UTILITY CROSSINGS AND 12" HORIZONTAL PARALLEL DISTANCE. IN CASES WHERE IT IS NOT POSSIBLE TO MAINTAIN THE MINIMUM 10' HORIZONTAL SEPARATION, THE WATER MAIN SHALL BE LAID ON A SEPARATE SHELF IN THE TRENCH 18" ABOVE THE SEWER.

**WATER DISTRIBUTION PIPING SPECIFICATIONS**

**1.1 SUMMARY**

- THIS SECTION INCLUDES ON-SITE WATER-DISTRIBUTION PIPING AND RELATED COMPONENTS OUTSIDE THE BUILDING FOR WATER SERVICE AND FIRE-SERVICE MAINS.
- THIS SECTION DOES NOT INCLUDE PUBLIC WATER SYSTEM CONSTRUCTION. ALL PUBLIC WATER SYSTEM PIPING AND RELATED COMPONENTS ARE TO BE CONSTRUCTED BY EUGENE WATER AND ELECTRIC BOARD (EWEB). CONTRACTOR IS TO COORDINATE AND ARRANGE FOR INSTALLATION OF PUBLIC WATER IMPROVEMENTS WITH EWEB. PUBLIC WATER SYSTEM IMPROVEMENTS INCLUDE, BUT ARE NOT LIMITED TO, THE INSTALLATION OF WATER METERS AND VAULTS AND CONNECTION TO THE EXISTING PUBLIC WATER MAIN.

**1.2 SUBMITTALS**

- PRODUCT DATA: FOR THE FOLLOWING:
  - VALVES AND ACCESSORIES.
  - DOMESTIC WATER AND FIRE SERVICE PIPING
- SHOP DRAWINGS: DETAIL PRECAST CONCRETE VAULT ASSEMBLIES AND INDICATE DIMENSIONS, METHOD OF FIELD ASSEMBLY, AND COMPONENTS.
- FIELD QUALITY-CONTROL TEST REPORTS.

**1.3 QUALITY ASSURANCE**

- REGULATORY REQUIREMENTS:
  - COMPLY WITH EWEB REQUIREMENTS. INCLUDE TAPPING OF WATER MAINS AND BACKFLOW PREVENTION.
  - COMPLY WITH STANDARDS OF AUTHORITIES HAVING JURISDICTION FOR POTABLE-WATER-SERVICE PIPING, INCLUDING MATERIALS, INSTALLATION, TESTING, AND DISINFECTION.
  - COMPLY WITH STANDARDS OF AUTHORITIES HAVING JURISDICTION FOR FIRE-SUPPRESSION WATER-SERVICE PIPING, INCLUDING MATERIALS, HOSE THREADS, INSTALLATION, AND TESTING.
- PIPING MATERIALS SHALL BEAR LABEL, STAMP, OR OTHER MARKINGS OF SPECIFIED TESTING AGENCY.
- COMPLY WITH FMG'S "APPROVAL GUIDE" OR UL'S "FIRE PROTECTION EQUIPMENT DIRECTORY" FOR FIRE-SERVICE-MAIN PRODUCTS.
- NFPA COMPLIANCE: COMPLY WITH NFPA 24 FOR MATERIALS, INSTALLATIONS, TESTS, FLUSHING, AND VALVE AND HYDRANT SUPERVISION FOR FIRE-SERVICE-MAIN PIPING FOR FIRE SUPPRESSION.
- NSF COMPLIANCE:
  - COMPLY WITH NSF 61 FOR MATERIALS FOR WATER-SERVICE PIPING AND SPECIALTIES FOR DOMESTIC WATER.

**1.4 PROJECT CONDITIONS**

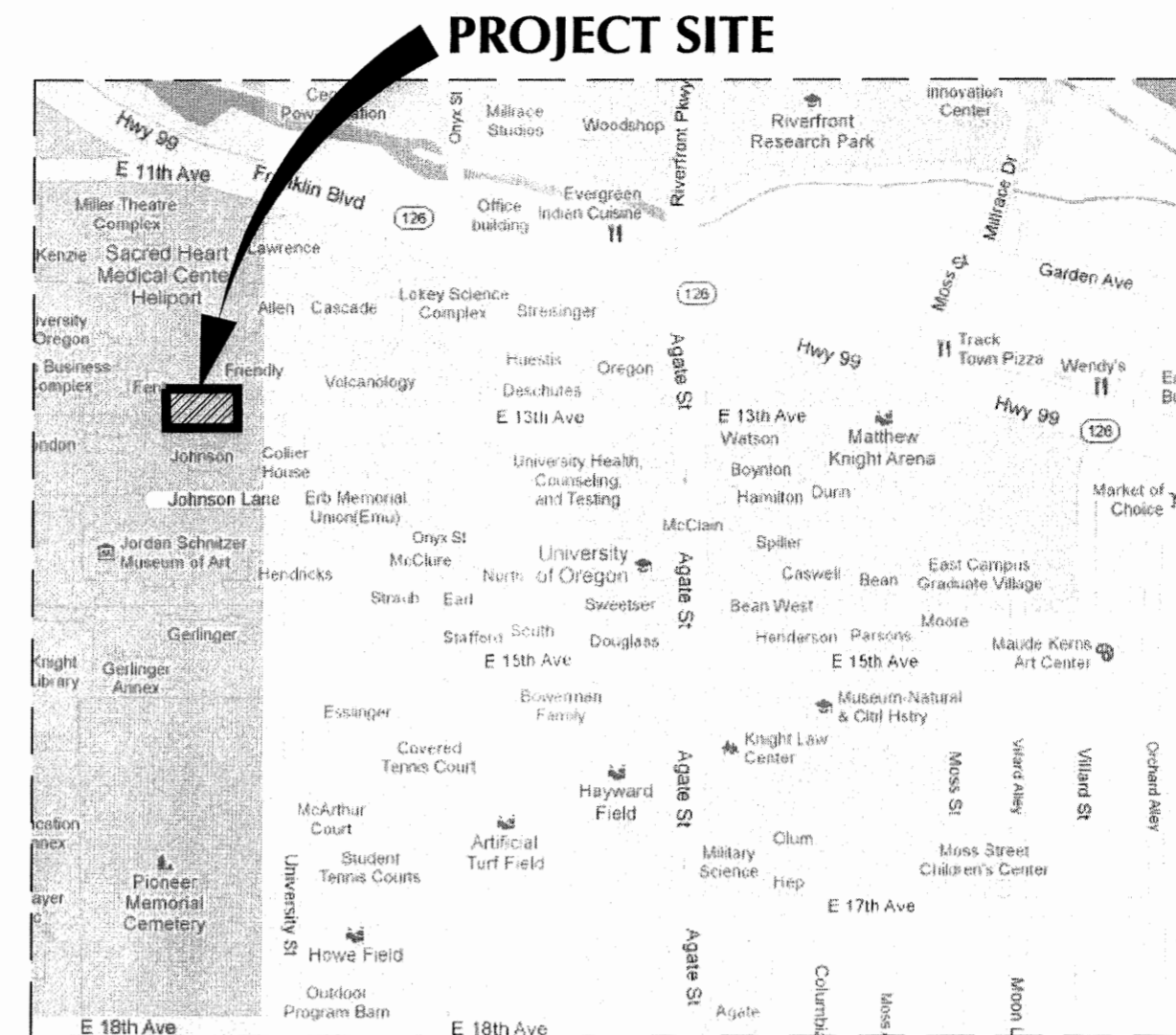
- INTERRUPTION OF EXISTING WATER-DISTRIBUTION SERVICE: DO NOT INTERRUPT SERVICE TO FACILITIES OCCUPIED BY OWNER OR OTHERS UNLESS PERMITTED UNDER THE FOLLOWING CONDITIONS AND THEN ONLY AFTER ARRANGING TO PROVIDE TEMPORARY WATER-DISTRIBUTION SERVICE ACCORDING TO REQUIREMENTS INDICATED:
  - NOTIFY ARCHITECT NO FEWER THAN TWO DAYS IN ADVANCE OF PROPOSED INTERRUPTION OF SERVICE.
  - DO NOT PROCEED WITH INTERRUPTION OF WATER-DISTRIBUTION SERVICE WITHOUT ARCHITECT'S WRITTEN PERMISSION.

**1.5 MATERIALS**

- UNDERGROUND FIRE-SERVICE-MAIN PIPING:
  - DUCTILE-IRON, PUSH-ON-JOINT PIPE AND FITTINGS.
  - DUCTILE-IRON, GROOVED-END PIPE AND DUCTILE-IRON-PIPE APPURTENANCES.
- ABOVEGROUND AND VAULT FIRE-SERVICE MAIN PIPING: DUCTILE-IRON, GROOVED-END PIPE AND DUCTILE-IRON-PIPE APPURTENANCES.

**1.6 MANUFACTURED UNITS**

- GATE VALVES:
  - CAST IRON: NONRISING STEM OR OS&Y, RISING STEM C509, 200 PSIG.
  - UL/FMG, CAST IRON: NONRISING STEM OR OS&Y, RISING STEM.



**VICINITY MAP**

SCALE: NTS  
SOURCE: GOOGLE MAPS

**ABBREVIATIONS**

COE	CITY OF EUGENE
DW	DOMESTIC WATER
EWEB	EUGENE WATER AND ELECTRIC BOARD
EXIST./EX.	EXISTING
FH	FIRE HYDRANT
FP	FIRE PROTECTION
IE	INVERT ELEVATION
LF	LINEAL FEET
MAX	MAXIMUM
MIN	MINIMUM
NTS	NOT TO SCALE
TB	THRUST BLOCK
W	WATER

**PROJECT CONTACTS**

**OWNER:**  
UNIVERSITY OF OREGON  
1276 UNIVERSITY OF OREGON  
EUGENE, OREGON 97403-1276  
TEL: 541-346-2287  
CONTACT: DARIN C. DEHLE

**CIVIL ENGINEER/PROJECT MANAGER:**  
KPFF CONSULTING ENGINEERS  
1201 OAK STREET, SUITE 100  
EUGENE, OREGON 97401  
TEL: 541-684-4902  
CONTACT: MATT KEENAN

**SHEET INDEX**

SHEET NO.	SHEET TITLE	SHEET DESCRIPTION
1	C1.0	COVER SHEET
2	C2.0	UTILITY PLAN
3	C3.0	DETAILS

**NOTICE TO EXCAVATORS:**  
ATTENTION: OREGON LAW REQUIRES YOU TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH OAR 952-001-0090. YOU MAY OBTAIN COPIES OF THE RULES BY CALLING THE CENTER.  
(NOTE: THE TELEPHONE NUMBER FOR THE OREGON UTILITY NOTIFICATION CENTER IS (503)-232-1987).

POTENTIAL UNDERGROUND FACILITY OWNERS

**Dig Safely.**  
Call the Oregon One-Call Center  
1-800-332-2344

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22x34 XREFs: 11840-xb

REVISION	DATE	DESCRIPTION	BY



JOB No.:	311840
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DRAWN BY:	AF
CHECKED BY:	MK
PLOT DATE:	7/26/12 1:49pm
PLOTTED BY:	afisher
DWG NAME:	11840-01WTRep.dwg
TAB NAME:	C1.0

UNIVERSITY OF OREGON  
FENTON HALL FIRE LINE

**C1.0**

CIVIL NOTES, LEGEND, & ABBREVIATIONS

SHEET 1 OF 3  
RECORD NO.

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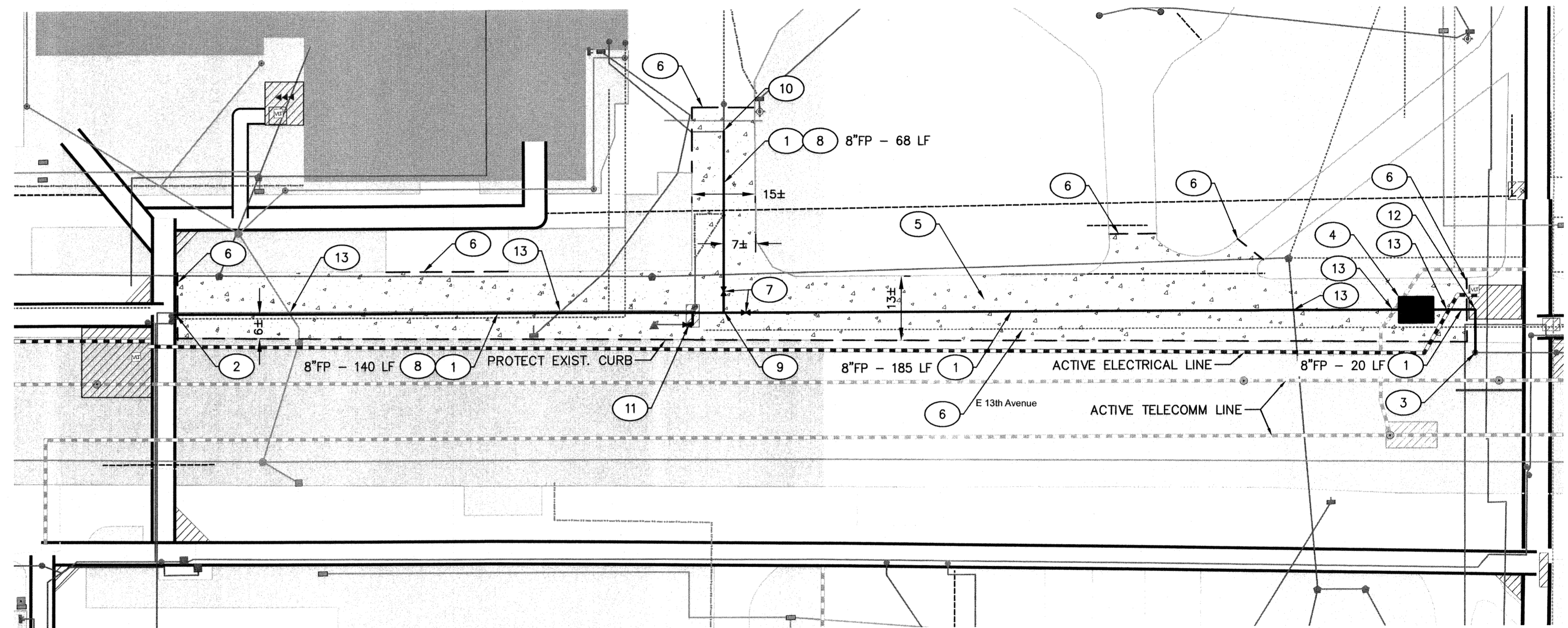
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 Plotted: 7/26/12 at 2:02pm By: dfisher  
 XREFS: 11840-xtb

**SHEET NOTES**

- 1 INSTALL NEW 8-INCH FIRE PROTECTION LINE PER DETAIL 3/C3.0
- 2 CUT EXISTING 8-INCH FP LINE AND CONNECT TO EXISTING FIRE PROTECTION LINE OUTSIDE OF TUNNEL.
- 3 NEW TAP BY EWEB. CONTRACTOR TO COORDINATE WITH EWEB AND THE UNIVERSITY OF OREGON FOR INSTALLATION SCHEDULE AND EXACT LOCATION OF TAP.
- 4 INSTALL 8-INCH DOUBLE DETECTOR CHECK ASSEMBLY AND CONCRETE VAULT, WITH SUMP PUMP DRAINING TO CURB. VALVE AND VAULT TO BE INSTALLED PER EWEB DETAIL AND 5/C3.0.
- 5 REMOVE AND REPLACE EXISTING SIDEWALK WITH HEAVY SIDEWALK SECTION AND THICKENED EDGE PER DETAIL 6/C3.0. PROTECT EXISTING CURB TO REMAIN.
- 6 SAWCUT ALONG CURB AND IN PLACES SHOWN.
- 7 INSTALL GATE 8-INCH VALVE
- 8 REMOVE EXIST. 8" PIPE
- 9 INSTALL 8" TEE WITH THRUST BLOCK PER 1/C3.0
- 10 CONNECT TO EXIST. FIRE PROTECTION SERVICE TO FENTON HALL WITH 90 DEGREE BEND AND REDUCER. MAKE CONNECTION AT LOCATION OF NEW FENTON SERVICE. POTHOLE FOR EXACT SERVICE LOCATION AND SIZE PRIOR TO START OF CONSTRUCTION
- 11 PROTECT EXISTING HYDRANT TO REMAIN. INSTALL NEW 6-INCH HYDRANT LATERAL AND VALVE WITH THRUST BLOCKS, AND CONNECT TO NEW 8-INCH FP WITH 8" TEE AND 6"X8" REDUCER WITH THRUST BLOCK PER DETAIL 2/C3.0
- 12 INSTALL 90 DEGREE 8-INCH BEND WITH THRUST BLOCK PER 1/C3.0
- 13 EXISTING UTILITY CROSSING. PROTECT EXISTING UTILITY AND ADJUST NEW WATER LINE TO CLEAR EXISTING UTILITY.

**GENERAL NOTES**

- 1. EXISTING UTILITIES LOCATIONS ARE BASED ON UNIVERSITY OF OREGON GIS MAPS. CONTRACTOR TO POTHOLE AND VERIFY EXISTING UTILITY LOCATION, SIZE AND ORIENTATION PRIOR TO CONSTRUCTION AND REPORT TO ENGINEER.
- 2. CITY INSPECTION OF FIRE PROTECTION SYSTEM REQUIRED. CONTRACTOR TO COORDINATE WITH FIRE MARSHAL'S OFFICE FOR INSPECTION. INSPECTION TO BE COMPLETED PRIOR TO BACKFILLING.
- 3. SEE CONSTRUCTION NOTES ON SHEET C1.0 FOR DEMOLITION AND REPAIR OF EXISTING IMPROVEMENTS.
- 4. CONTRACTOR TO PROVIDE FIRE PROTECTION CONSTRUCTION SUBMITTAL TO THE FIRE MARSHAL, AS REQUIRED BY THE APPROVED PERMIT.



APPROXIMATE SCALE: 1 INCH = 20 FEET

REVISION	DATE	DESCRIPTION	BY



**kpff**  
 Consulting Engineers  
 1201 Oak Street  
 Suite 100  
 Eugene, Oregon 97401  
 Phone: (541) 684-4902  
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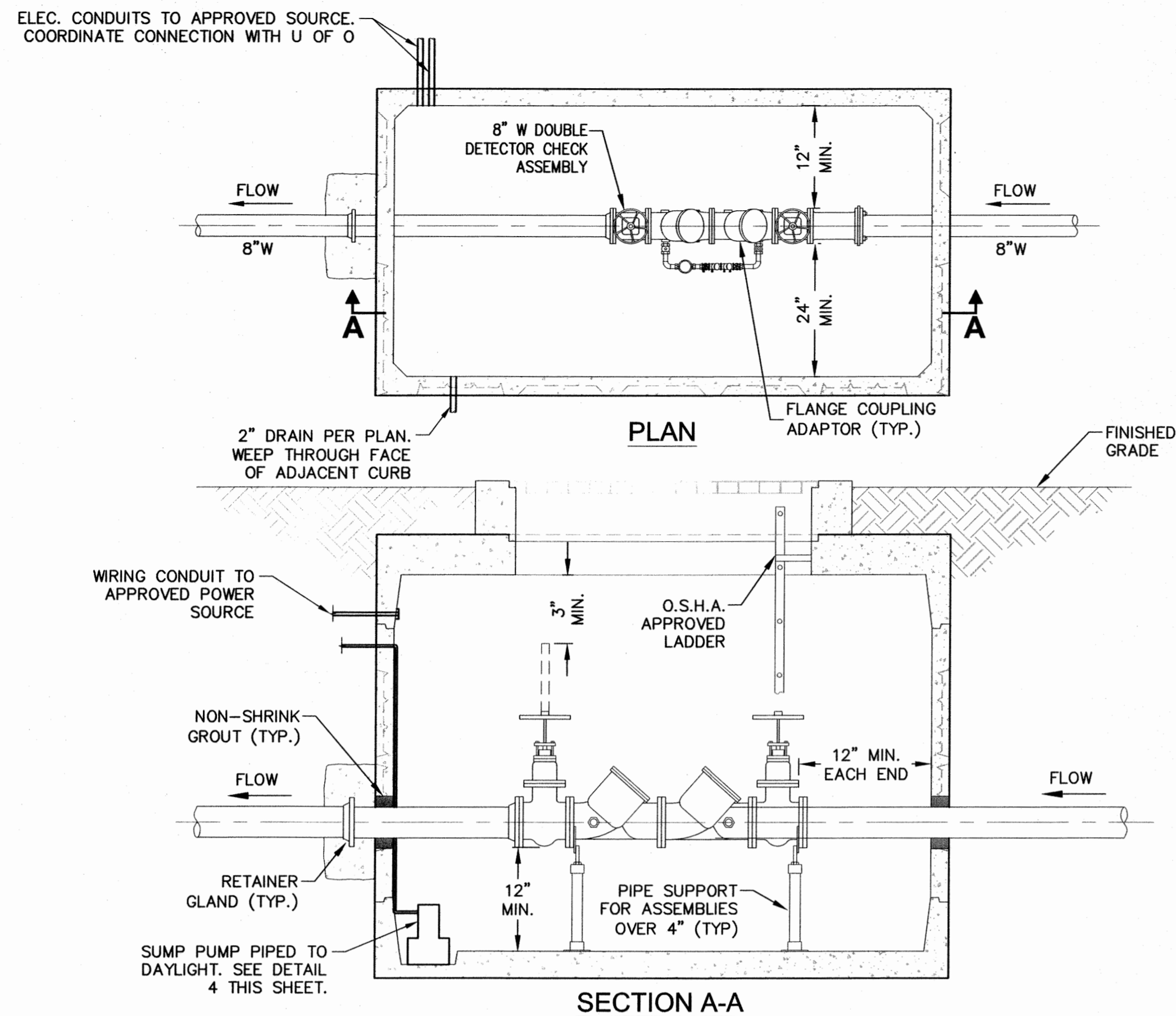


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UNIVERSITY OF OREGON  
 FENTON HALL FIRE LINE  
 FIRE LINE  
 IMPROVEMENT

SHEET NO.  
**C2.0**  
 SHEET 2 OF 3  
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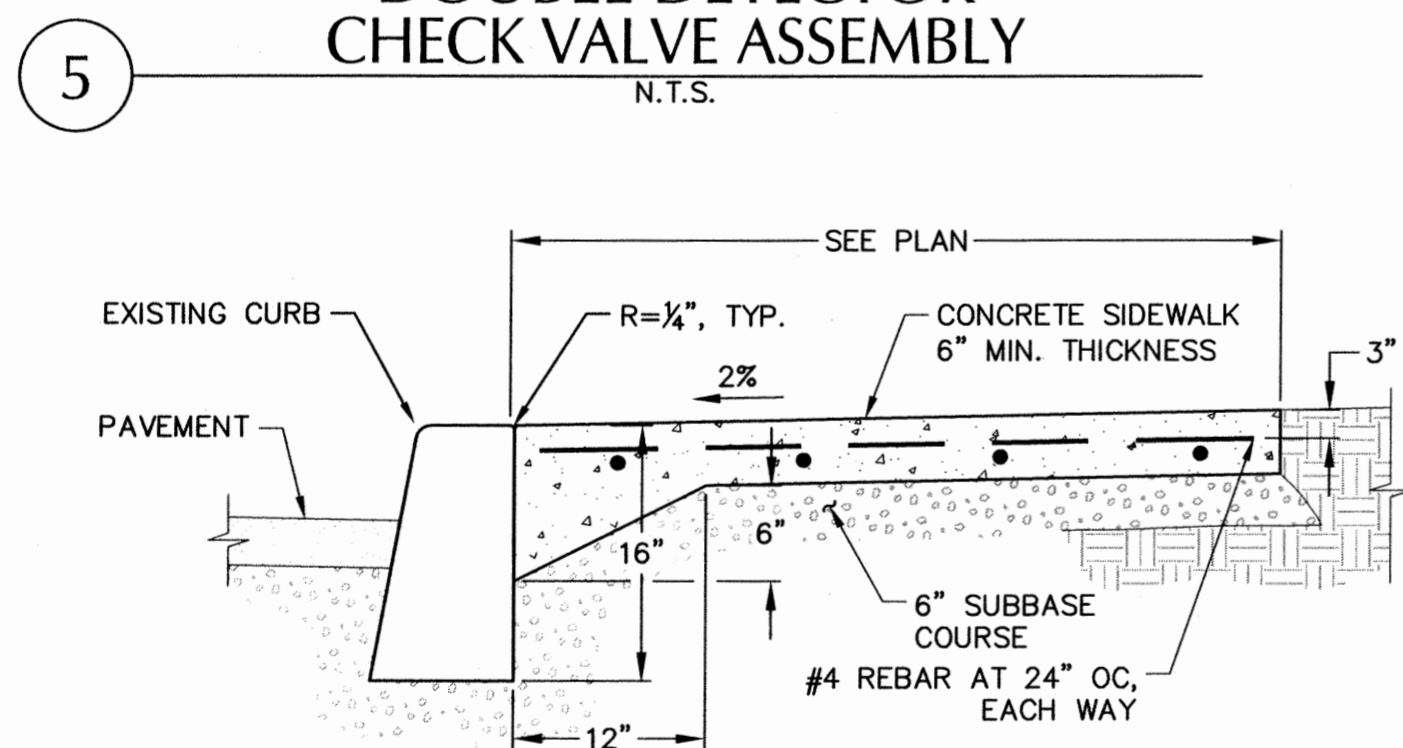
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**NOTES:**

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SIZING OF UTILITY VAULT TO ACCOMMODATE THE VALVE EQUIPMENT THE CONTRACTOR SELECTS AND EWEB REQUIRED CLEARANCES. VAULT SIZE AS NOTED FOR REFERENCE ONLY AND IS NOT GUARANTEED TO MEET REQUIREMENTS.
2. CONTRACTOR TO PROVIDE CONCRETE BALLASTING FOR BUOYANCY OF VAULT, ASSUMING FULLY SATURATED GROUND WATER ELEVATION. CONTRACTOR TO PROVIDE ENGINEER WITH BUOYANCY CALCULATION FOR REVIEW AND APPROVAL.
3. PROVIDE POWER PER NEC FOR SUMP PUMP. PROVIDE TAMPER SWITCH WIRING TO <E> ELECTRICAL ENCLOSURE.

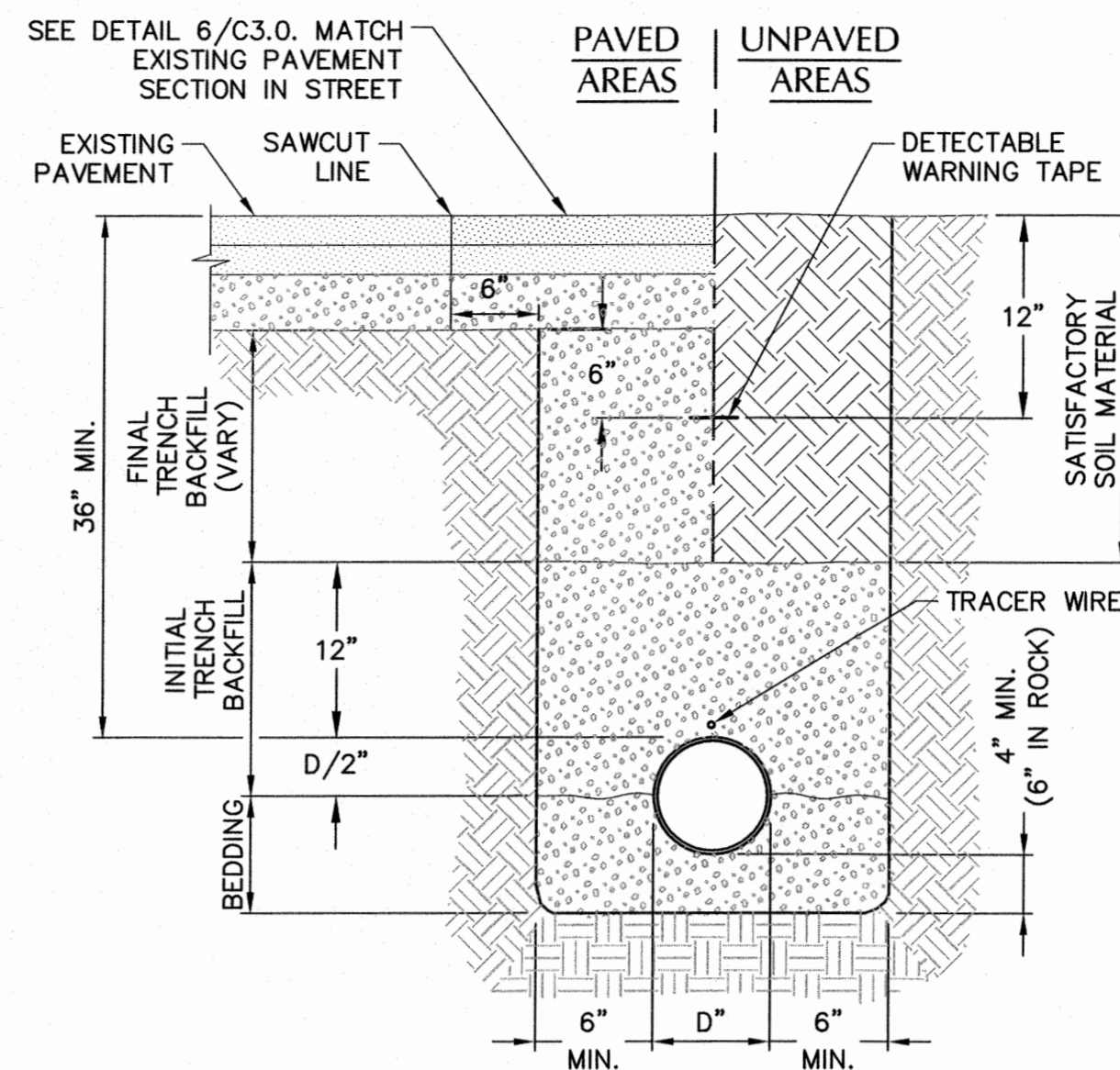
**DOUBLE DETECTOR CHECK VALVE ASSEMBLY**  
N.T.S.



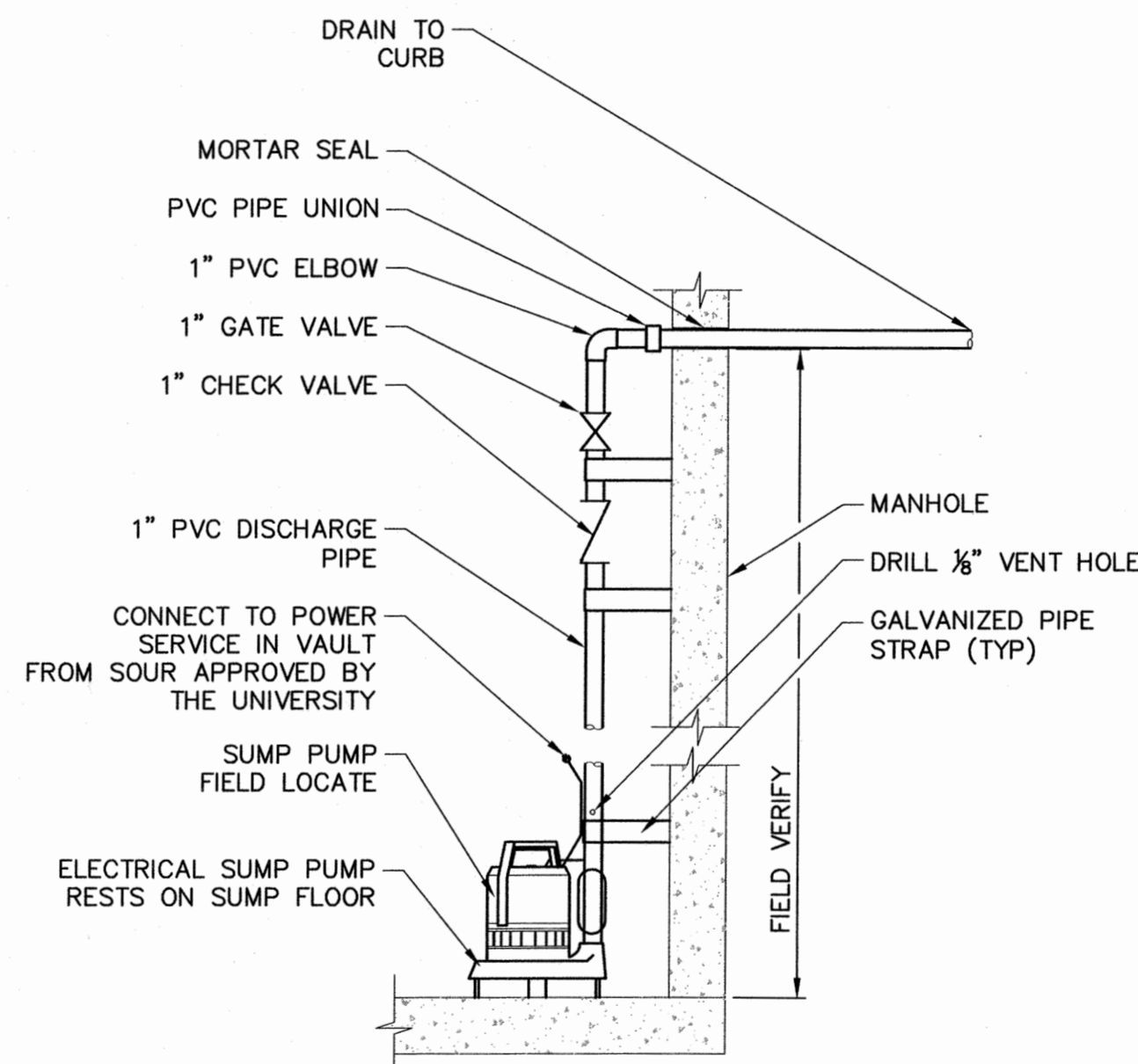
**NOTES:**

1. CONCRETE TO BE 3,500 PSI MINIMUM.
2. CONSTRUCT CONTRACTION JOINTS AT 15' MAX. SPACING AND AT RAMPS. CONSTRUCT EXPANSION JOINTS AT 200' MAX SPACING, AT POINTS OF TANGENCY AND AT ENDS OF EACH DRIVEWAY, UNLESS NOTED OTHERWISE.
3. SCORE JOINTS TO BE HAND TOOLED. JOINT TYPE AND LOCATION TO MATCH EXISTING CONDITION AND APPROVED BY THE UNIVERSITY.

**6 SIDEWALK WITH THICKENED EDGE**  
SCALE: NTS



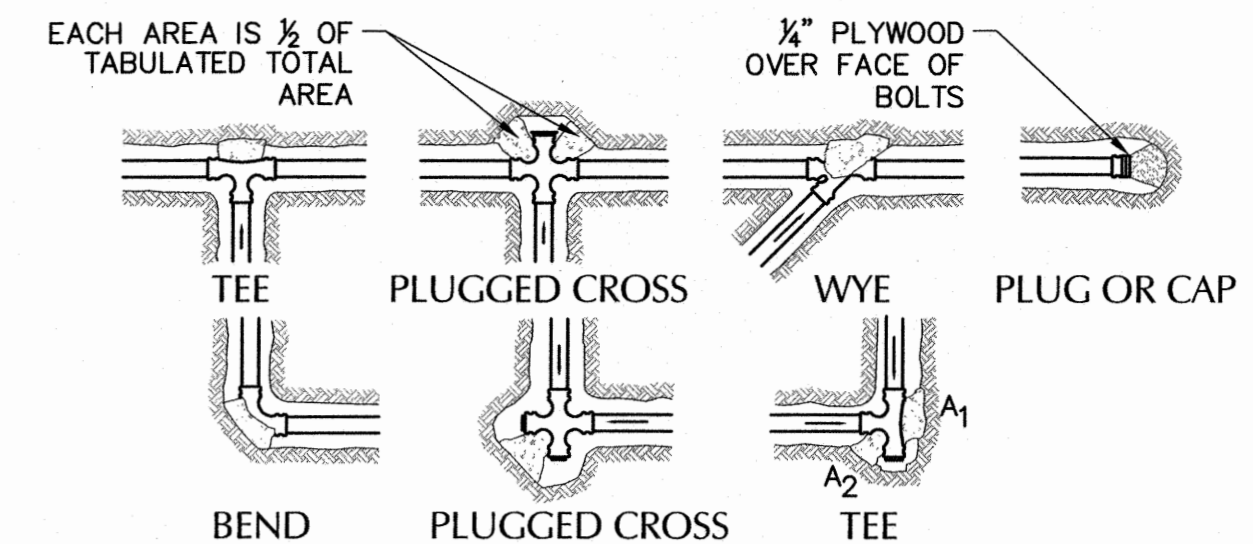
**3 TYPICAL PIPE BEDDING AND BACKFILL**  
SCALE: NTS



**NOTES:**

1. PIPE SUPPORTS SHALL CONNECT TO UNISTRUTS (TO BE INSTALLED BY CONTRACTOR).
2. SUMP PUMP - ZOELLER MODEL 266 OR APPROVED EQUAL
3. PUMP ON LEVEL - 9" FROM SUMP BOTTOM
4. PUMP OFF LEVEL - 1" FROM SUMP BOTTOM
5. CONTRACTOR TO PROVIDE POWER TO SUMP FROM A SOURCE APPROVED BY THE UNIVERSITY.
6. ALL PVC ABOVE GRADE SHALL BE PAINTED WITH LIGHT-COLORED LATEX PAINT FOR UV PROTECTION.

**4 SUMP PUMP**  
SCALE: NTS



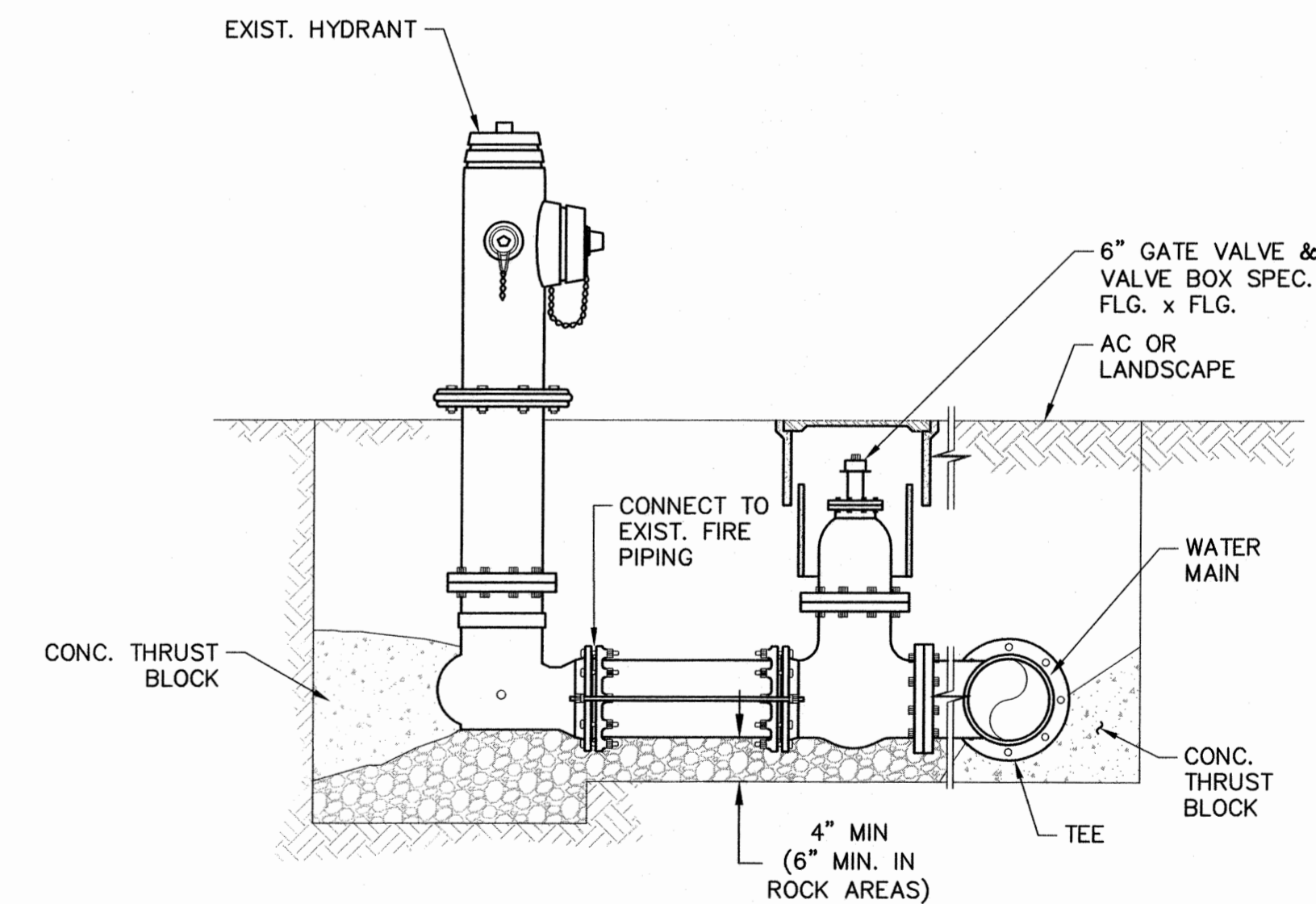
1. CONCRETE THRUST BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH.
2. KEEP CONCRETE CLEAR OF JOINT AND ACCESSORIES.
3. THE REQUIRED THRUST BEARING AREAS FOR SPECIAL CONNECTIONS ARE SHOWN ENCIRCLED ON THE PLAN; e.g. (15) INDICATES 15 SQUARE FEET BEARING AREA REQUIRED.
4. IF NOT SHOWN ON PLANS REQUIRED BEARING AREAS AT FITTING SHALL BE AS INDICATED BELOW, ADJUST IF NECESSARY, TO CONFORM TO THE TEST PRESSURE(S) AND ALLOWABLE SOIL BEARING STRESS (ES) STATED IN THE SPECIAL SPECIFICATIONS.
5. BEARING AREAS AND SPECIAL BLOCKING DETAILS SHOWN ON PLANS TAKE PRECEDENCE OVER BEARING AREAS AND BLOCKING DETAILS SHOWN ON THIS STANDARD DETAIL.

**BEARING AREA OF THRUST BLOCK IN SQUARE FOOT**

FITTING SIZE	TEE, WYE, PLUG, OR CAP	90° BEND PLUGGED CROSS	TEE PLUGGED ON RUN		45° BEND	22 1/2° BEND	11 1/4° BEND
			A1	A2			
4	1.0	1.4	1.9	1.4	1.0		
6	2.1	3.0	4.3	3.0	1.6	1.0	
8	3.8	5.3	7.6	5.4	2.9	1.5	1.0
10	5.9	8.4	11.8	8.4	4.6	2.4	1.2

**NOTE:** ABOVE BEARING AREAS BASED ON TEST PRESSURE OF 150 p.s.i. AND AN ALLOWABLE SOIL BEARING STRESS OF 2000 p.s.i. TO COMPUTE BEARING AREAS FOR DIFFERENT TEST PRESSURE AND SOIL BEARING STRESSES, USE THE FOLLOWING EQUATION: BEARING AREA = (TEST PRESSURE/150)(2000/ SOIL BEARING STRESS)(TABLE VALUE).

**1 THRUST BLOCK**  
SCALE: NTS



**NOTE:**

ALL FIRE HYDRANT ASSEMBLIES INCLUDE A TEE VALVE & BOX GATE VALVE AS SHOWN

**2 FIRE HYDRANT ASSEMBLY - M.J.**  
SCALE: NTS

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UNIVERSITY OF OREGON  
FENTON HALL FIRE LINE

DETAILS

SHEET NO.  
**C3.0**  
SHEET 2 OF 3  
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07/26/12 PERMIT AND BID SET