

November 15, 2016
BOARD OF COUNTY COMMISSIONERS
ORANGE COUNTY, FLORIDA
Y17-715-MM / ADDENDUM # 1
ORANGE COUNTY CONVENTION CENTER
NORTH/SOUTH BUILDING EXTERIOR ELECTRICAL, WATER & PARKING
UPGRADES

Bid Opening Date: November 22, 2016

This addendum is hereby incorporated into the bid documents of the project referenced above. The following items are clarifications, corrections, additions, deletions and/or revisions to and shall take precedence over the original documents. Underlining indicates additions, deletions are indicated by ~~strike through~~.

A. The Bid Opening Date remains as November 22, 2016.

B. The following are questions/responses/clarifications:

1. Question: Please provide the permit number.

Response: The permit number is B16904088.

2. Question: In reviewing the specs I can't see where being a GC is a must. Is this a requirement or are electricians able to bid?

Response: The prime does not have to be a GC. But, since this project is going thru the Building Department review, there must be a GC in the team that could be able to pull the Building Permit.

3. Question: Is Orange County going to pay Duke Energy directly for all costs associated with the new transformers? The Engineer believed that was the case and stated so in the pre-bid.

Response: OCCC in coordination with O.U.C. will provide the new transformers.

4. Question: Is pollution liability insurance required?

Response: Yes

5. Question: Are there blackout dates or potential blackout dates?

Response: Blackout dates are listed in the Invitation for Bids issued October 21, 2016, Part G, 2.4 Work Hours, Page 4 of 5.

6. Question: What are Erosion Control requirements and silt fence limits.

Response: Install silt fence around overflow parking lot construction areas and provide protection for inlets within this work area. Sheet C-2A has been revised to show the erosion control measures and silt fence limits.

7. Question: What are sod and landscape limits and requirements.

Response: Install 18" wide sod strip along the edge of new pavement per typical section. Sod any disturbed areas. No additional landscaping is required. Sheet C-2A has been revised to show the landscape limits and requirements.

8. Question: In the grass parking areas do the existing sub soils need improvement or are we to assume that all we need is to install new sod on existing conditions?

Response: The existing overflow parking lot and any open trenching of islands within the current paved parking lot are presently grass. It is assumed the soil conditions are sufficient for new sod without any additional soil improvements.

9. Question: For the Water Utilities notes W8 (Tee) and W9 (Bend) what type of material are we using?

Response: These bends and tees will be the same material as the water piping.

10. Question: Instead of Class 200 SDR21 PVC for the 1" & 2" Water lines that need to be Directionally Bored can we use DR11 IPS Blue HDPE Pipe?

Response: DR11 IPS Blue HDPE pipes for directional boring, meeting O.U.C. specifications, are an acceptable substitute for Class 200 SDR21 PVC pipes.

11. Question: Instead of Sch40 PVC Conduit for the areas that need to be Directionally Bored can we use DR13.5 Gray HDPE Conduit?

Response: DR13.5 Gray HDPE conduit is acceptable.

12. Question: Please confirm who is paying electric and water meter fees?

Response: The County will be paying for transformers and meter costs.

13. Question: Please confirm who is paying permit fee?

Response: See PART C - INSTRUCTIONS TO BIDDERS, paragraph 31, LICENSES/PERMITS/FEES.

14. Question: Please advise if there are any existing utilities in the work area and if so what are the types/depths of these utilities

Response: Location of existing utilities is unknown. Contractor shall provide sub surface utility locates in any areas of work prior to work to avoid any possible breaks or failures in existing utilities.

C. CHANGES TO DRAWINGS (all attached):

1. **C-2A REVISED: Erosion Control and Landscape notes have been added and clouded with Delta 1.**
2. **C-3A REVISED: Water Utility Keynotes have been revised and Utility Notes have been added and clouded with Delta 1 changing wet tap note to Service Clamp.**
3. **C-3B REVISED: Water Utility Keynotes have been revised and clouded with Delta 1.**
4. **C-3C: NEW DRAWING: O.U.C. utilities details, entire drawing clouded with Delta 1.**

D. All other term and conditions of the IFB remain the same.

E. The Proposer shall acknowledge receipt of this addendum by completing the applicable section in the solicitation or by completion of the acknowledgement information on the addendum. Either form of acknowledgement must be completed and returned not later than the date and time for receipt of the proposal.

Receipt acknowledged by:

Authorized Signature

Date Signed

Title

Name of Firm

Client

Orange County
Convention Center
P.O. Box 691509
Orlando, Florida 32869

Engineer:



Structural Engineer:

Civil Engineer:



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Engineer of Record
FLORIDA ENGINEERING GROUP, INC.
CERTIFICATE NO. EB-0006595

WILLIAM R. HOCKENSMITH, P.E.
LICENSE NO. 35540

Issuance:

0	10-12-2016	Permit Set
1	11-08-2016	Revision 1

SITE GEOMETRY,
PAVING,
GRADING and
DRAINAGE PLAN
(NORTH)

Sheet Title

Job No. 16.0CCC.007
Date 08.11.2016
Drawn HA
Checked WRH
Scale 1"=40'

FEG PROJECT NO. 16-021

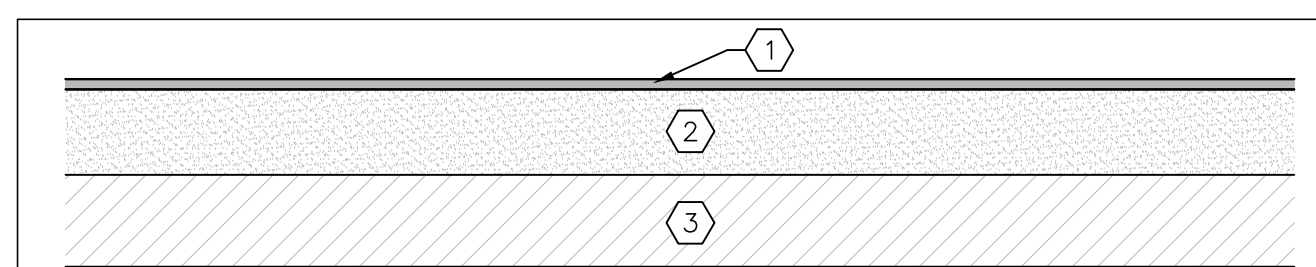
C-2A

Sheet No.

16-021_Plans.dwg

DRAINAGE STRUCTURE LEGEND

SD-EX EXISTING INLET TOP ELEV. 95.34 INV. ELEV. (EX.) 90.84 S INV. ELEV. (NEW) 90.88 SE	SD-EX3 EXISTING INLET TOP ELEV. 95.82 INV. ELEV. (EX.) 90.29 N INV. ELEV. (NEW) 90.11 W INV. ELEV. (NEW) 90.28 E	SD-EX3 EXISTING INLET TOP ELEV. 95.74 INV. ELEV. (EX.) 90.36 W INV. ELEV. (NEW) 90.59 NE
SD-EX4 EXISTING INLET TOP ELEV. 94.95 INV. ELEV. (EX.) 90.04 S INV. ELEV. (NEW) 90.10 N	SD-EX5 EXISTING INLET TOP ELEV. 95.09 INV. ELEV. (EX.) 91.08 E	SD-1 TYPE "C" INLET PER F.D.O.T. INDEX "232" TOP ELEV. 95.65 INV. ELEV. 91.30 NW
SD-2 TYPE "C" INLET PER F.D.O.T. INDEX "232" TOP ELEV. 95.20 INV. ELEV. 91.94 W	SD-3 TYPE "C" INLET PER F.D.O.T. INDEX "232" TOP ELEV. 95.62 INV. ELEV. 91.12 E INV. ELEV. 91.12 S	SD-4 MANHOLE F.D.O.T. TYPE "8" TOP TYPE "TM" STRUCTURE BOTTOM PER F.D.O.T. INDEX "201" TOP ELEV. 96.52 INV. ELEV. 90.79 N INV. ELEV. 90.79 W
SD-5 TYPE "C" INLET PER F.D.O.T. INDEX "232" TOP ELEV. 96.08 INV. ELEV. 92.30 W	SD-6 TYPE "C" INLET PER F.D.O.T. INDEX "232" TOP ELEV. 95.89 INV. ELEV. 91.45 E INV. ELEV. 91.45 N	SD-7 TYPE "C" INLET PER F.D.O.T. INDEX "232" TOP ELEV. 96.09 INV. ELEV. 91.13 S INV. ELEV. 91.13 W
SD-8 TYPE "C" INLET PER F.D.O.T. INDEX "232" TOP ELEV. 95.60 INV. ELEV. 91.70 SW	SD-9 TYPE "C" INLET PER F.D.O.T. INDEX "232" TOP ELEV. 95.81 INV. ELEV. 91.15 N INV. ELEV. 91.15 W	SD-10 TYPE "C" INLET PER F.D.O.T. INDEX "232" TOP ELEV. 96.09 INV. ELEV. 91.15 N INV. ELEV. 91.15 W
SD-11 TYPE "C" INLET PER F.D.O.T. INDEX "232" TOP ELEV. 96.00 INV. ELEV. 90.62 E INV. ELEV. 90.62 S	ALL HDPE PIPE SHALL BE CLASS I WITH LOCATING WIRE.	



#KEYNOTES

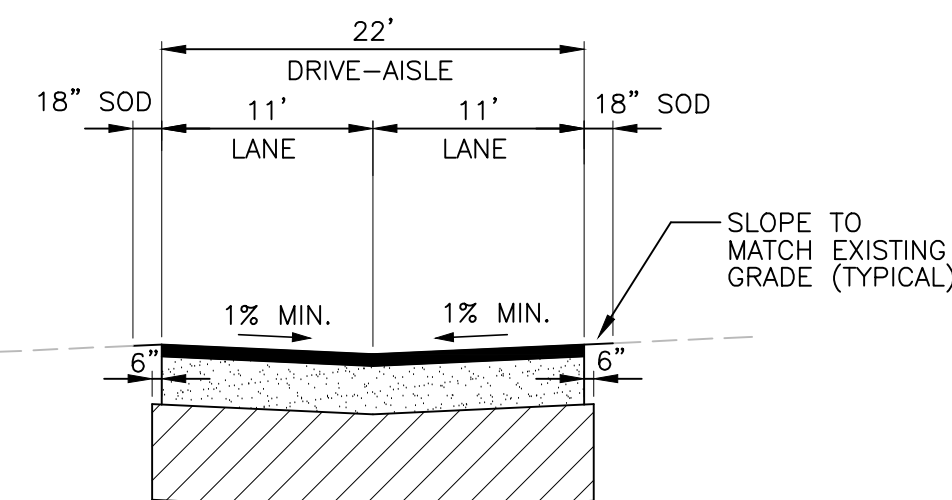
1. 1" MINIMUM, TYPE S-III ASPHALTIC CONCRETE WEARING SURFACE COMPACTED TO 95% OF LAB DENSITY (MINIMUM MARSHALL STABILITY OF 1,500 LBS.).
2. 4" LIMEROCK OR CRUSHED CONCRETE BASE (LBR 100), COMPACTED TO AT LEAST 98% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY VALUE (ASTM D-1557, AASHTO T-180).
3. 6" STABILIZED SUBBASE (LBR = 40) COMPACTED TO AT LEAST 98% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY VALUE (ASTM D-1557, AASHTO T-180).

ALTERNATE - C1

1. 1-1/2" MINIMUM, TYPE S-III ASPHALTIC CONCRETE WEARING SURFACE COMPACTED TO 95% OF LAB DENSITY (MINIMUM MARSHALL STABILITY OF 1,500 LBS.).
2. 4" LIMEROCK OR CRUSHED CONCRETE BASE (LBR 100), COMPACTED TO AT LEAST 98% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY VALUE (ASTM D-1557, AASHTO T-180).
3. 12" STABILIZED SUBBASE (LBR = 40) COMPACTED TO AT LEAST 98% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY VALUE (ASTM D-1557, AASHTO T-180).

1 ASPHALT PAVING SECTION

NOT TO SCALE



2 TYPICAL PARKING AISLE SECTION

NOT TO SCALE

DIMENSIONS REFER TO EDGE OF PAVEMENT OR FACE OF CURB.

PAVEMENT LEGEND

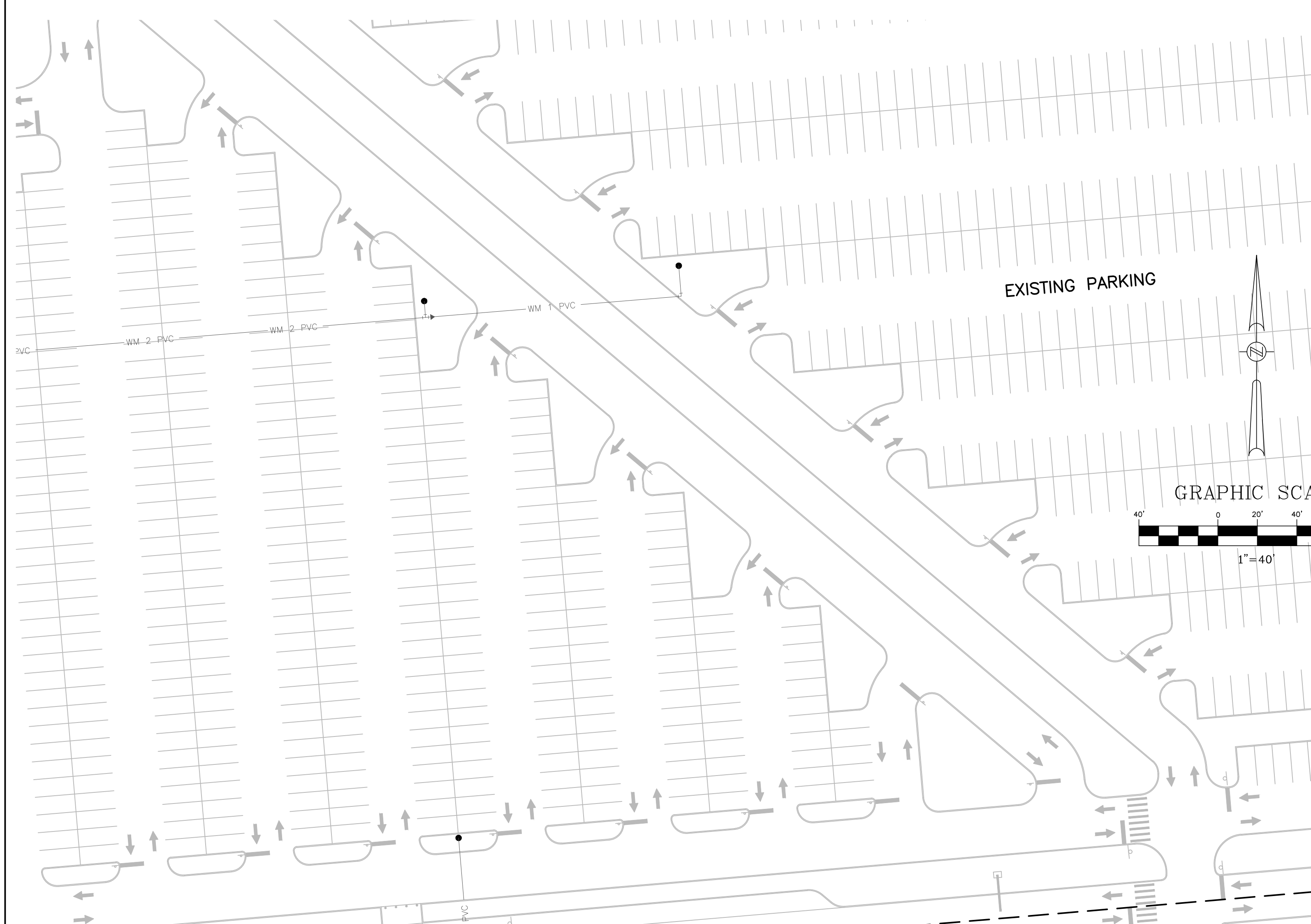
	CONCRETE PAVEMENT
	ASPHALT PAVEMENT
H.P.	HIGH POINT

SITE CONSTRUCTION KEYNOTES

- C1. CONSTRUCT ASPHALT PAVEMENT.
- C2. CONSTRUCT CONCRETE PAVEMENT AT INLETS, (4" THICK TYPICAL).

SITE DRAINAGE KEYNOTES

- D1. TYPE "C" DITCH BOTTOM INLET PER F.D.O.T. INDEX No. 232, TYPICAL.
- D2. EXISTING INLET.
- D3. STORM DRAINAGE MANHOLE PER F.D.O.T. INDEX No. 201, TYPICAL.
- D4. REGRADE BERM ADJACENT TO NEW PAVEMENT AT 3:1 MAX. AND SOD DISTURBED AREAS.



NPDES PERMITTING:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE NPDES PERMIT AND ALL MONITORING/INSPECTION REPORTS.

AS-BUILT SURVEY

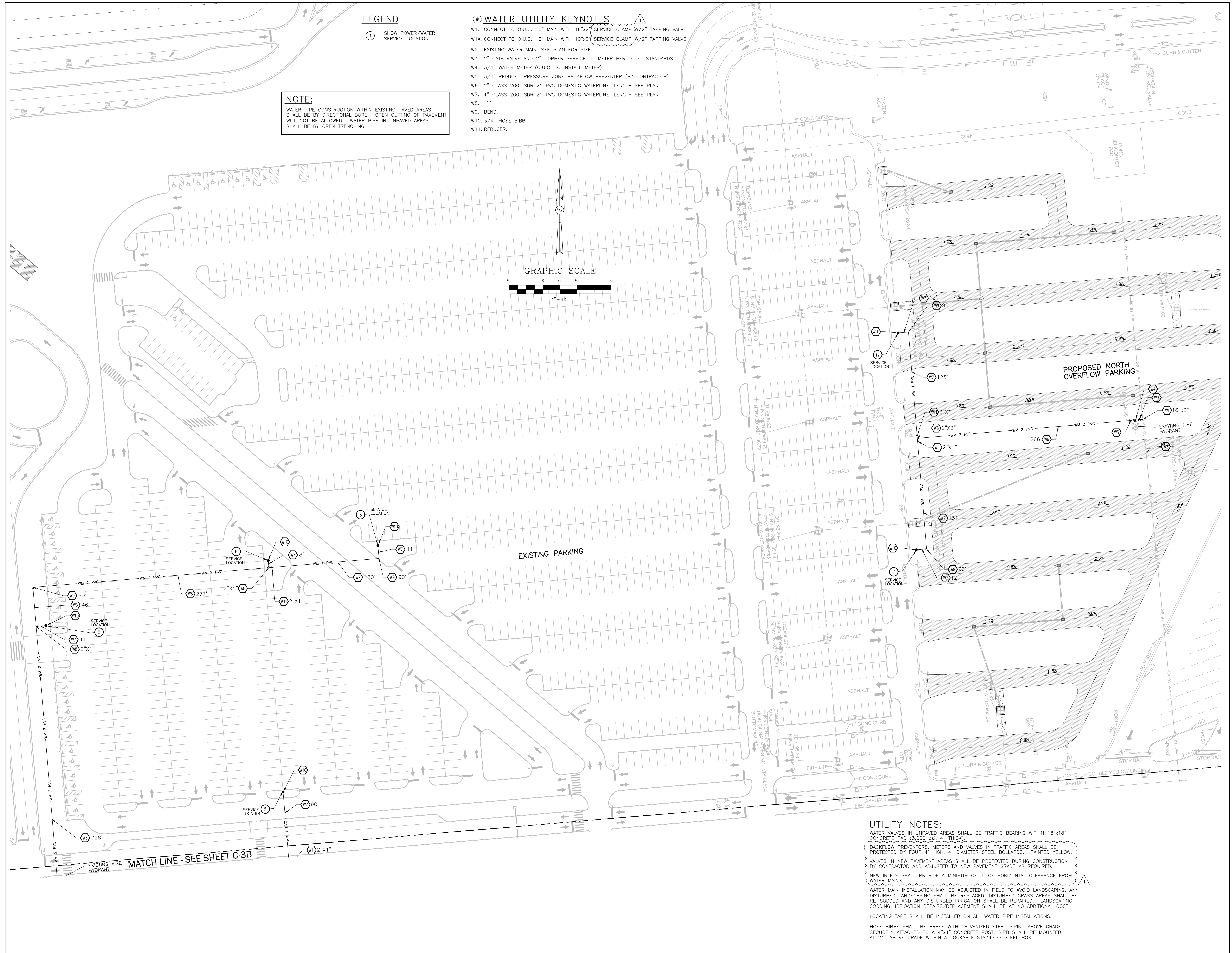
THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE OWNER AN AS-BUILT SURVEY OF ALL NEW SITE, DRAINAGE & UTILITY IMPROVEMENTS.

EROSION CONTROL

THE CONTRACTOR SHALL INSTALL A SILT FENCE AROUND THE PERIMETER OF OVERFLOW PARKING LOT CONSTRUCTION AREA. INLETS WITHIN THE WORK AREA SHALL BE PROTECTED DURING CONSTRUCTION (I.E. FILTER FABRIC UNDER GRATES). ALL EROSION CONTROL MEASURES SHALL BE REMOVED UPON COMPLETION OF THE PROJECT.
THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING ANY MATERIAL TRACKED OUTSIDE THE CONSTRUCTION AREA.

LANDSCAPING

ALL DISTURBED AREAS SHALL BE SODDED. AN 18 INCH WIDE SOD STRIP SHALL ALSO BE PLACED ADJACENT TO ALL NEW PAVEMENT EDGES AS SHOWN ON THE AISLE TYPICAL SECTION.



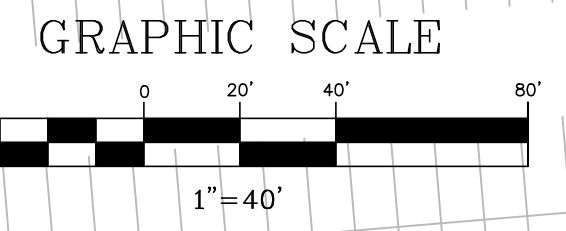
LEGEND

- ① SHOW POWER/WATER SERVICE LOCATION

WATER UTILITY KEYNOTES

- W1. CONNECT TO O.U.C. 16" MAIN WITH 16"x2" SERVICE CLAMP W/2" TAPPING VALVE.
- W1A. CONNECT TO O.U.C. 10" MAIN WITH 10"x2" SERVICE CLAMP W/2" TAPPING VALVE.
- W2. EXISTING WATER MAIN. SEE PLAN FOR SIZE.
- W3. 2" GATE VALVE AND 2" COPPER SERVICE TO METER PER O.U.C. STANDARDS.
- W4. 3/4" WATER METER (O.U.C. TO INSTALL METER).
- W5. 3/4" REDUCED PRESSURE ZONE BACKFLOW PREVENTER (BY CONTRACTOR).
- W6. 2" CLASS 200, SDR 21 PVC DOMESTIC WATERLINE. LENGTH SEE PLAN.
- W7. 1" CLASS 200, SDR 21 PVC DOMESTIC WATERLINE. LENGTH SEE PLAN.
- W8. TEE.
- W9. BEND.
- W10. 3/4" HOSE BIBB.
- W11. REDUCER.

NOTE:
 WATER PIPE CONSTRUCTION WITHIN EXISTING PAVED AREAS SHALL BE BY DIRECTIONAL BORE. OPEN CUTTING OF PAVEMENT WILL NOT BE ALLOWED. WATER PIPE IN UNPAVED AREAS SHALL BE BY OPEN TRENCHING.



UTILITY NOTES:
 WATER VALVES IN UNPAVED AREAS SHALL BE TRAFFIC BEARING WITHIN 18"x18" CONCRETE PAD (3,000 psi, 4" THICK).
 BACKFLOW PREVENTORS, METERS AND VALVES IN TRAFFIC AREAS SHALL BE PROTECTED BY FOUR 4" HIGH, 4" DIAMETER STEEL BOLLARDS, PAINTED YELLOW.
 VALVES IN NEW PAVEMENT AREAS SHALL BE PROTECTED DURING CONSTRUCTION BY CONTRACTOR AND ADJUSTED TO NEW PAVEMENT GRADE AS REQUIRED.
 NEW INLETS SHALL PROVIDE A MINIMUM OF 3' OF HORIZONTAL CLEARANCE FROM WATER MAINS.
 WATER MAIN INSTALLATION MAY BE ADJUSTED IN FIELD TO AVOID LANDSCAPING. ANY DISTURBED LANDSCAPING SHALL BE REPLACED. DISTURBED GRASS AREAS SHALL BE RE-SODDED AND ANY DISTURBED IRRIGATION SHALL BE REPAIRED. LANDSCAPING, SODDING, IRRIGATION REPAIRS/REPLACEMENT SHALL BE AT NO ADDITIONAL COST.
 LOCATING TAPE SHALL BE INSTALLED ON ALL WATER PIPE INSTALLATIONS.
 HOSE BIBBS SHALL BE BRASS WITH GALVANIZED STEEL PIPING ABOVE GRADE SECURELY ATTACHED TO A 4"x4" CONCRETE POST. BIBB SHALL BE MOUNTED AT 24" ABOVE GRADE WITHIN A LOCKABLE STAINLESS STEEL BOX.



**Orange County
 Convention Center
 North/South Building
 Exterior Show Power
 Upgrades**

Client
 Orange County
 Convention Center
 P.O. Box 691509
 Orlando, Florida 32869

Engineer:

 engineering consultants
 400 S. Orange Blvd., Suite 101, Orange, FL 32766
 P: 407.266.2000 F: 407.266.2001
 Certificate of Authorization #12254

Structural Engineer:

Civil Engineer:

 Florida Engineering Group
 Engineering the Future
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 CERTIFICATE NO. EB-0006595

William R. Hockensmith, P.E.
 LICENSE NO. 38540

Issuance:

0	10-12-2016	Permit Set
1	11-08-2016	Revision 1

**SITE UTILITY
 PLAN
 (NORTH)**

Sheet Title
 Job No. 16.0CCC.007
 Date 08.11.2016
 Drawn HA
 Checked WRH
 Scale 1" = 40'

FEG PROJECT NO. 16-021

C-3A

Sheet No. 16-021_Plans.dwg

Orange County Convention Center North/South Building Exterior Show Power Upgrades

Client
Orange County Convention Center
P.O. Box 691509
Orlando, Florida 32869

Engineer:

rtm
engineering consultants
400 S. Orange Blvd., Suite 101, Orlando, FL 32816
P.O. Box 691509, Orlando, FL 32869
Certificate of Authorization #1224

Structural Engineer:

Civil Engineer:

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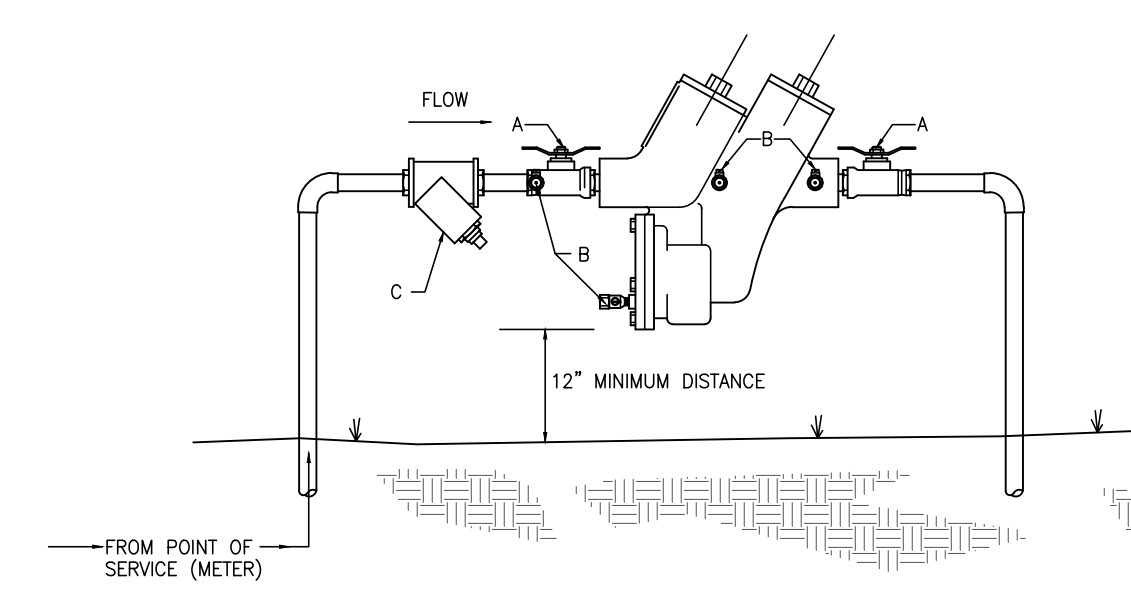
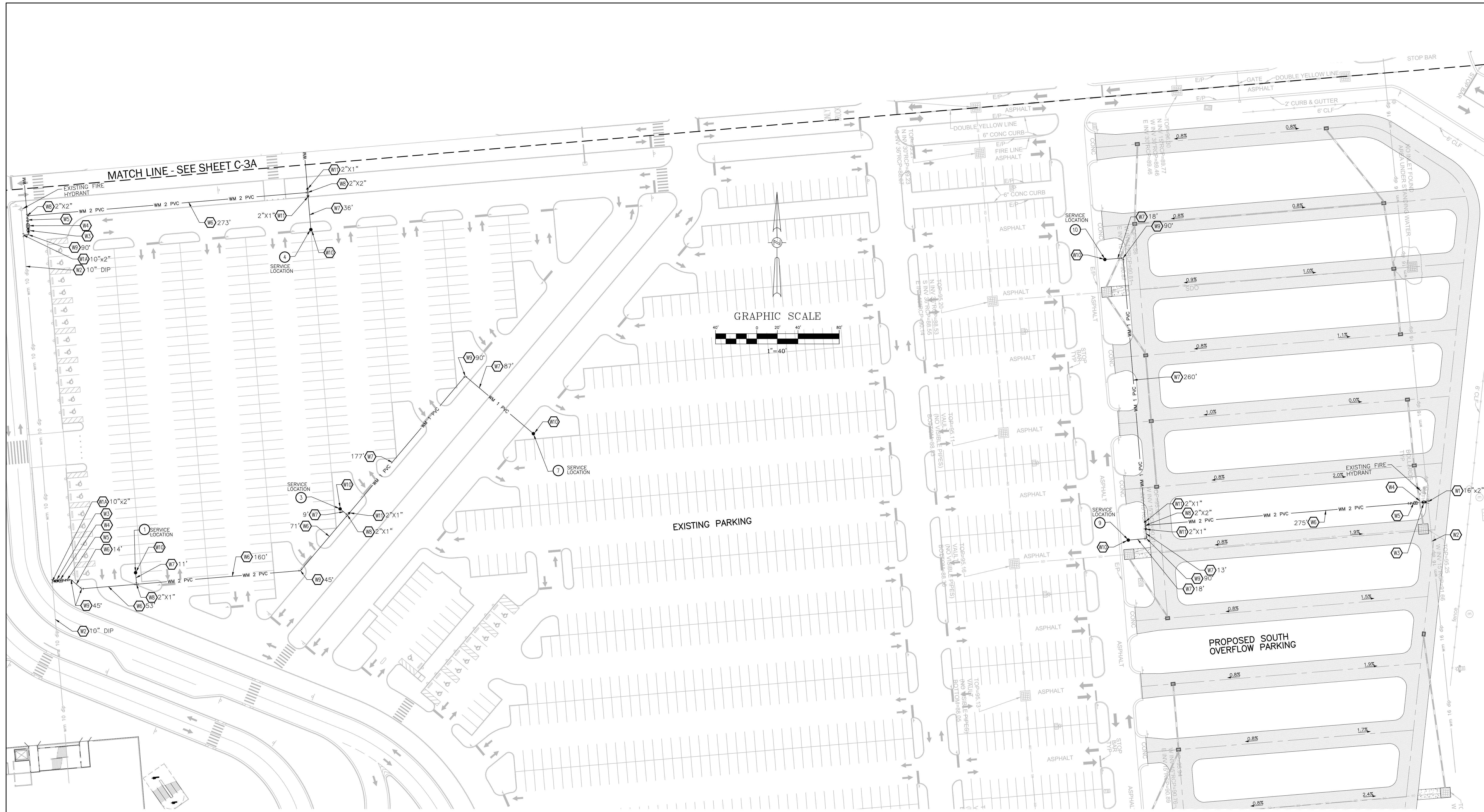
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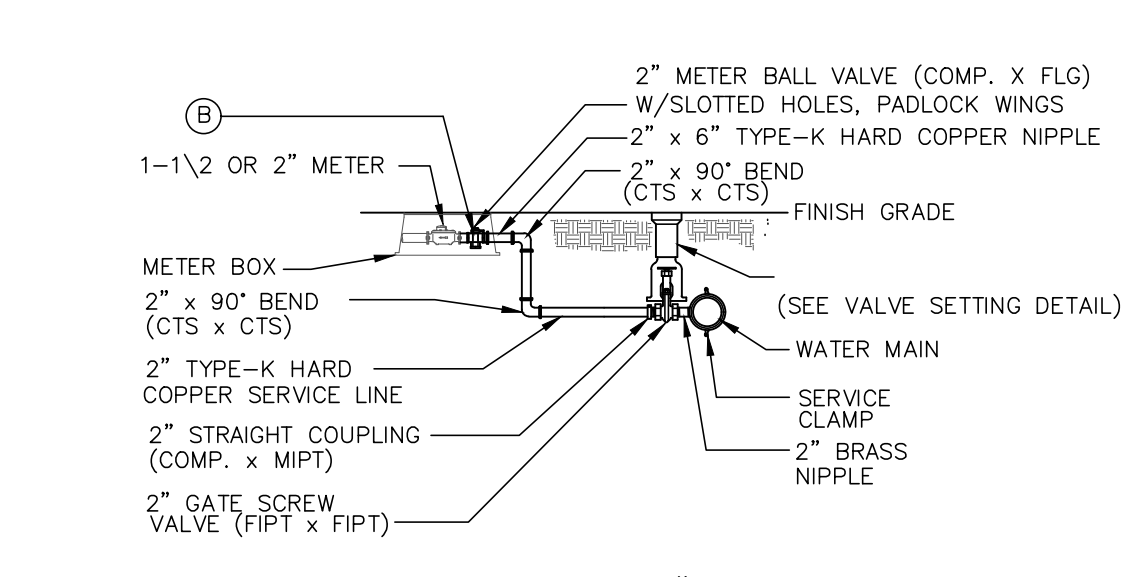
WILLIAM R. HOCKENSMITH, P.E.
LICENSE NO. 35540

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O.U.C. - REDUCED PRESSURE ZONE DETAIL



O.U.C. - TYPICAL 2" NEW SHORT SERVICE

LEGEND

- ① SHOW POWER/WATER SERVICE LOCATION
- Ⓜ WATER UTILITY KEYNOTES
 - W1. CONNECT TO O.U.C. 16" MAIN WITH 16"x2" SERVICE CLAMP W/2" TAPPING VALVE.
 - W1A. CONNECT TO O.U.C. 10" MAIN WITH 10"x2" SERVICE CLAMP W/2" TAPPING VALVE.
 - W2. EXISTING WATER MAIN. SEE PLAN FOR SIZE.
 - W3. 2" GATE VALVE AND 2" COPPER SERVICE TO METER PER O.U.C. STANDARDS.
 - W4. 3/4" WATER METER (O.U.C. TO INSTALL METER)
 - W5. 3/4" REDUCED PRESSURE ZONE BACKFLOW PREVENTER (BY CONTRACTOR).
 - W6. 2" CLASS 200, SDR 21 PVC DOMESTIC WATERLINE. LENGTH SEE PLAN.
 - W7. 1" CLASS 200, SDR 21 PVC DOMESTIC WATERLINE. LENGTH SEE PLAN.
 - W8. TEE.
 - W9. BEND.
 - W10. 3/4" HOSE BIBB.
 - W11. REDUCER.

OU Water Engineering Notes (Rev. 10/30/13):
The developer/customer shall accomplish all water main and service work through the point of service/control valve and water meters and deed to OUC. OUC will own and operate up to and including the OUC point of service/control valve and meters only. The required work shall be performed per current OUC guidelines, OUC Water Distribution Standard Specifications and OUC Water Distribution Material Specifications and water detail sheet under OUC inspection. The developer/customer must contact OUC Inspection at 407-649-4428 to schedule a pre-construction meeting prior to any water construction.
A minimum 4' clearance (including landscaping) must be maintained around meter assembly.
Domestic / fire master meter assembly will be provided by OUC at the developer/customer's expense and shall be installed by the developer/customer. After payment, allow 30 days for receipt of the meter by OUC. The developer/customer shall arrange pickup from the OUC warehouse facility through the OUC inspector.
Contact OUC Inspection department for approved material and construction specifications pertaining to the installation of ductile iron pipe via directional or jack and bore method.
The developer/customer shall field verify the horizontal and vertical location of existing OUC water facilities before commencement of construction.
For water wet taps, use only OUC approved tapping contractors:
Action Industries, Inc. 352-732-6941 or 800-216-4464
Central Florida Tapping and Construction Services, Inc. 407-834-8271
Mac Tapping, Inc. 407-468-0557
Rangeline Tapping Services, Inc. 800-346-5971
TDW Services, Inc. 407-843-2800
T & R Tapping Service, Inc. 407-339-3685
EA Services 407-880-6786
Easements:
All on-site OUC water facilities (mains, services, meters, and fire hydrants) shall be located within a utility easement in accordance with current OUC private property guidelines. The developer is to furnish all necessary information, including legal description(s) to prepare and document this easement. Water meters and fire services will not be activated until the final easement(s) have been received and approved by OUC. Any questions or comments please contact OUC Property and Right of Way department at 407-434-2158.

Connection to Existing valve
Contractor to verify location, condition and pressure test existing valve prior to connection. If valve does not hold required pressure test additional valve will be required at developer's/contractor's expense.
OUC Backflow Prevention Requirements:
Backflow devices will be owned and maintained by customer unless otherwise noted. Any questions contact OUC Backflow Prevention Department at 407-649-4428.
Domestic and Irrigation
The Developer/Customer is responsible for the required Reduced Pressure Backflow Preventer. Residential domestic backflow preventers are required in areas where reclaimed or other water supply, i.e. well, is provided to the site.
Fire Line:
The Developer/Customer is responsible for the required Reduced Pressure Detector Check Assembly w/Monitoring meter for backflow prevention.
As-Built Drawings
The customer/developer shall provide vertical and horizontal as-built information relative to all constructed utilities and structures. The submittal will include a signed and sealed drawing and a CD with the as built information in AutoCAD 2004 format.
State Plane Coordinates, East Florida, NAD 1983-90 is the preferred coordinate system. If a project coordinate system is used, all drawings will be based on this system and existing features i.e. edge of pavement, road intersections, buildings must be referenced to aid in the locating of project infrastructure in OUC's Geographic Information System. If no existing features are shown at least 2 State Plane Coordinate points must be surveyed and bench marked.
As-Built information for the water system shall include, but not be limited to, the following:
1. Location of all valves, fittings, hydrants, and services.
2. Location of the water main tied horizontally to the back of curb or edge of pavement.
3. Certification as to the system meeting the minimum cover requirements.
4. Horizontal and vertical data for any construction which deviates from the approved engineering plans.
The contractor shall cut "W" in the top curb of each water service and a "V" at all valve locations. Cut W's and V's shall be highlighted with blue paint.

SITE UTILITY PLAN (SOUTH)

Sheet Title
Job No. 16.OCCC.007
Date 08.11.2016
Drawn HA
Checked WRH
Scale 1"=40'

FEG PROJECT NO. 16-021
C-3B
Sheet No. 16-021_Plans.dwg

Client
 Orange County Convention Center
 P.O. Box 691509
 Orlando, Florida 32869

Engineer:

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 www.rtm.com

Structural Engineer:

Civil Engineer:

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 LICENSE NO. 35540

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O.U.C. UTILITY DETAILS

Sheet Title
 Job No. 16.0CCC.007
 Date 08.11.2016
 Drawn HA
 Checked WRH
 Scale 1" = 40'

FEG PROJECT NO. 16-021

C-3C

Sheet No. 16-021_Plans.dwg

GENERAL SPECIFICATIONS

- IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER/CONTRACTOR TO ENSURE THAT ALL REQUIRED PERMITS ARE IN-HAND BEFORE BEGINNING ANY CONSTRUCTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND VERIFYING ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION, AND FOR NOTIFYING THE VARIOUS UTILITY COMPANIES TO MAKE THE NECESSARY ARRANGEMENTS FOR ANY RELOCATION, TEMPORARY DISRUPTION OF SERVICE, OR CLARIFICATION OF ACTIVITY REGARDING UNDERGROUND UTILITY, WHETHER SHOWN ON THESE PLANS OR FIELD LOCATED. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING STRUCTURES OR UTILITIES FROM CONSTRUCTION OF WATER FACILITIES. CONTRACTOR SHALL COORDINATE ANY NECESSARY ADJUSTMENTS AND COOPERATE WITH THE OWNER.
- ANY DELAY OR INCONVENIENCE OF THE VARIOUS UTILITIES SHALL BE INCIDENTAL TO THE CONTRACT AND NO EXTRA COMPENSATION WILL BE ALLOWED.
- ALL CONSTRUCTION OF THE WATER DISTRIBUTION SYSTEM SHALL MEET CURRENT ORLANDO UTILITIES COMMISSION SPECIFICATIONS FOR MATERIAL, INSTALLATION, AND DISINFECTION. ALL MATERIAL AND EQUIPMENT SHALL BE STORED, INSTALLED, AND USED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. ALL WATER FACILITIES WILL BE IN COMPLIANCE WITH THE CONDITIONS OF FDEP PERMIT FOR THE PROJECT.
- WATER MAIN SEPARATION FROM SEWER, STORM, AND RECLAIM LINES WILL BE IN COMPLIANCE WITH FDEP GUIDELINES. THE MINIMUM SEPARATION REQUIREMENTS FOR SANITARY FORCE MAINS, MUST BE OBSERVED WITH NO STANDARD MITIGATION ALLOWED.
- THE RECLAIMED WATER MAIN SHALL BE ON THE OPPOSITE SIDE OF THE STREET FROM THE POTABLE WATER MAIN WHERE PRACTICAL. IF IT IS NOT PRACTICAL, THE RECLAIMED WATER MAIN SHALL BE INSTALLED AT A MINIMUM HORIZONTAL DISTANCE OF 3 FEET (EDGE TO EDGE) FROM THE POTABLE WATER MAIN. RECLAIMED WATER MAINS SHALL BE BELOW POTABLE WATER MAINS WITH A MINIMUM VERTICAL SEPARATION OF 12".
- ALL HYDROSTATIC TESTING SHALL BE IN ACCORDANCE WITH ANSI/AWWA C600 FOR D.I. PIPE AND ANSI/AWWA C605 FOR PVC PIPE.
- PROVISIONS ARE REQUIRED TO PROTECT EXISTING ACTIVE WATER MAINS FROM BACKFLOW CONTAMINATION DURING FILLING, FLUSHING, TESTING, AND MAINTAINING A PRESSURE IN THE NEW PIPING UNTIL A FDEP LETTER OF CLEARANCE IS OBTAINED.
- THE DISINFECTION OF WATER MAINS SHALL BE IN COMPLIANCE WITH "RULES OF THE DEPARTMENT OF ENVIRONMENTAL REGULATION - CHAPTER 62-505 PERMITTING AND CONSTRUCTION OF PUBLIC WATER SYSTEMS." THE PROCEDURE WILL MEET AND EXCEED THE REQUIREMENTS SET FORTH IN CHAPTER 62-505. CHLORINATION IS A 5 DAY PROCESS, STARTING ON MONDAYS UNLESS APPROVED BY O.U.C.
- CROSS CONNECTION CONTROL SHALL BE IN ACCORDANCE WITH RULES AND REGULATIONS OF THE DEPARTMENT OF ENVIRONMENTAL REGULATION - CHAPTER 62-505 PERMITTING AND CONSTRUCTION OF PUBLIC WATER SYSTEMS.
- BACKFLOW PREVENTERS SHALL BE LOCATED NO MORE THAN 10 FEET FROM POINT OF SERVICE UNLESS PRIOR APPROVAL HAS BEEN RECEIVED FROM O.U.C. CROSS CONNECTION CONTROL DEPT.
- ALL PIPE WITH DIAMETER OF 12" OR LESS SHALL HAVE A MINIMUM BURIAL DEPTH OF 36" AND NOT TO EXCEED 48" DEEP UNLESS APPROVED BY O.U.C.
- A PRE-CONSTRUCTION MEETING FOR THE INSTALLATION OF WATER FACILITIES IS REQUIRED. CONTRACTOR TO WATER CONSTRUCTION 407-434-2535.
- ON NEWLY INSTALLED PIPE, ONLY ONE (1) REPAIR EVERY EIGHT-HUNDRED (800') FEET WILL BE PERMITTED. IF MORE THAN ONE REPAIR IS NECESSARY, THE PIPE WILL NEED TO BE REINSTALLED PER OUC STANDARDS. REPAIRS ARE TO BE MADE USING A MECHANICALLY RESTRAINED SLEEVE. BELL CLAMPS ARE NOT TO BE USED. ANY OTHER METHODS MUST BE APPROVED BY THE OUC ENGINEER.
- ALL TAPS ON ACTIVE WATER MAINS SHALL BE PERFORMED BY AN OUC APPROVED TAPPING CONTRACTOR.
- ALL OUC OWNED SERVICES ASSEMBLIES SHALL HAVE A MINIMUM OF 10' SEPARATION FROM STRUCTURES AND TREES.
- THE CONNECTION OF GROUNDING SYSTEMS FOR NEW OR RENOVATION CONSTRUCTION TO OUC WATER SYSTEM FACILITIES IS PROHIBITED.

GENERAL MATERIAL SPECIFICATIONS

MATERIAL USED IN THE CONSTRUCTION OF THE WATER DISTRIBUTION SYSTEM SHALL ADHERE TO THE REQUIREMENTS OUTLINED IN THE OUC WATER DISTRIBUTION'S SPECIFICATION STANDARDS MANUAL. THE FOLLOWING INFORMATION IS TO PROVIDE GENERAL GUIDANCE IN THE PREPARATION OF CONSTRUCTION PLANS AND SPECIFICATIONS, AND IN NO WAY LIMITS OUC'S RIGHTS TO APPROVE OR DISAPPROVE PLANS, SPECIFICATIONS OF INSTALLATIONS. MOST CENTRAL FLORIDA UTILITY SUPPLY COMPANIES HAVE A COPY OF OUC'S SPECIFICATION STANDARDS MANUAL.

- THE TYPICAL O.U.C. DISTRIBUTION SYSTEM PIPE SIZES AND MATERIAL USED ARE:
 • TWO INCH (2") WATER MAINS SHALL BE ASTM 2241 CLASS 200 SDR17 POLYVINYL CHLORIDE (PVC) PIPE.
 • TWO INCH (2") WATER MAIN UNDER ROADWAY REQUIRES 2" RESTRAINT JOINT SDR 17/CLASS 250 PIPE.
 • FOUR INCH (4") WATER MAINS SHALL BE EITHER PRESSURE CLASS 350 DUCTILE IRON (D.I.) IN ACCORDANCE WITH ANSI/AWWA C150/A21.50-96 AND ANSI/AWWA C151/A21.51 OR, AS CONDITIONS WARRANT, C900 SDR18 CLASS 150 PVC PIPE.
 • SIX INCH (6") THROUGH TWENTY FOUR INCH (24") WATER MAINS SHALL BE PRESSURE CLASS 350 D.I. PIPE IN ACCORDANCE WITH ANSI/AWWA C150/A21.50 AND ANSI/AWWA C151/A21.51.
 • THIRTY INCH (30") AND LARGER WATER MAINS SHALL BE PRESSURE CLASS 250 D.I. PIPE IN ACCORDANCE WITH ANSI/AWWA C150/A21.50 AND ANSI/AWWA C151/A21.51.


- NOTE:
 1. THE USE OF 2" AND/OR 4" PVC PIPE MUST BE APPROVED BY O.U.C. WATER ENGINEERING.
 2. PVC PIPE MUST BE BLUE IN COLOR OR HAVING CONTINUOUS BLUE MARKINGS TO CONFORM TO AWWA COLORS WITH NSF LOGO FOR POTABLE WATER USE.
 3. DUCTILE IRON POTABLE WATER MAINS REQUIRE SPECIAL IDENTIFICATION. SUCH IDENTIFICATION SHALL INCLUDE A MINIMUM OF 4 CONTINUOUS STRIPES SPACED AT NO MORE THAN 90" AND INCLUDING THE PIPE. THE MINIMUM TWO INCHES IN WIDTH FOR PIPE 4"-12" IN DIAMETER AND FOUR (4) INCHES IN WIDTH FOR LARGER PIPE, AND SHALL BE BLUE IN COLOR. BACKFILL SHALL NOT BE PLACED FOR AT LEAST 30 MINUTES FOLLOWING PAINT APPLICATION.

- ALL PIPE FITTINGS 4" UP TO 30" SHALL BE CEMENT OR EPOXY LINED (CLASS 350) AWWA C153 "COMPACT" DUCTILE IRON, WITH MECHANICAL JOINT ENDS. ALL PIPE FITTINGS 30" OR LARGER SHALL BE CEMENT LINED (CLASS 250) DUCTILE IRON, WITH MECHANICAL JOINT ENDS.
- A SERVICE MATERIAL FOR AND 1" SHALL INCLUDE SOFT ANNEALED TYPE-K COPPER TUBING.
 B SERVICE MATERIAL FOR 2" SHORT SIDE SERVICES SHALL INCLUDE 2" CTS TYPE-K HARD COPPER PIPE.
 C SERVICE MATERIAL FOR 2" LONG SIDE SERVICES SHALL INCLUDE 2" RESTRAINED JOINT (SDR 17/CLASS 250) PVC PIPE (IPS-O.D.).

- SERVICE MATERIAL (CORP. STOPS, CURB STOPS, ETC.) FOR 1" AND 2" SERVICES SHALL BE BRASS COMPRESSION FITTINGS IN ACCORDANCE WITH AWWA C800. FLARED FITTINGS ARE ACCEPTABLE UNDER CONTROLLED CONDITIONS. AN AWWA (CC) THREADING IS REQUIRED ON ALL 1" CORPORATION STOPS USED WITH DIRECT PIPE TAPPING ON DUCTILE IRON PIPE OR WITH SERVICE CLAMPS ON PVC PIPE. INSTALLATION OF 2" SERVICES REQUIRE SERVICE CLAMPS AND TO ACCOMMODATE 1 1/2" OR 2" METERS, 2" BALL ANGLE METER VALVES (CTS X FLANGE) WITH SLOTTED HOLES ON THE FLANGE FACE ARE REQUIRED. PADLOCK WINGS MUST BE INCLUDED ON EACH CURB STOP OR BALL METER VALVE.
- FIRE HYDRANTS SHALL BE TRAFFIC DRY BARREL TYPE AND MEET OUC SPECIFICATIONS.
- ALL VALVES 4" THROUGH 12" SHALL BE RESILIENT SEAT/WEDGE GATE VALVES WITH EPOXY COATING INTERNALLY/EXTERNALLY AND CONFORM TO ANSI/AWWA STANDARD C509 OR LATEST REVISION. ALL VALVES 16" AND LARGER SHALL BE BUTTERFLY, HAVE EPOXY COATING AND CONFORM TO ANSI/AWWA C504 OR LATEST REVISION.
- ALL VALVE BOXES SHALL BE CAST IRON SLIDING TYPE ONLY.
- FOR VALVES OVER 5' DEEP A PIECE OF 6" SCH 40 BLUE PVC PIPE SHALL BE INSTALLED BETWEEN THE VALVE BOX TOP AND BOTTOM.

SPECIAL NOTICE:

OUC'S SPECIFICATIONS OFTEN ADD TO THE MANUFACTURER'S SPECIFICATIONS. IF YOU HAVE ANY QUESTIONS REGARDING MATERIAL SPECIFICATIONS OR CONSTRUCTION STANDARD SPECIFICATIONS, PLEASE CONTACT OUC'S WATER DELIVERY DEPARTMENT AT 407-434-2535 OR VISIT OUR WEB SITE AT: http://www.ouc.com/enr/commercial/water/manuals_reports.aspx

 ORLANDO UTILITIES COMMISSION
 WATER BUSINESS UNIT
 3800 Granada Ave., Orlando, FL 32809
 DRAWN: WRH
 DATE: 12/08/2015 S.S.
 BY: WRH
 CHECKED: WRH
 SCALE: N.T.S.
 FILE: W000101.dwg
 IMP. SEC. N/A
 WATER DETAIL SHEET
 INSTALLATION INSTRUCTIONS

2" PVC - PIPE RESTRAINT (LF)

FITTING SIZE	TEE "A"	REDUCER "B"
2" x 2"	11	
4" x 2"	8	USE LARGE PIPE DEAD-END/PLUG/CAP FOOTAGE
6" x 2"	3	
8" x 2"	3	
10" x 2"	0	

D.I. PIPE RESTRAINT - (LF)

FITTING SIZE	TEE "A"	REDUCER "B"
4" x 4"	39	0
6" x 4"	36	32
8" x 4"	56	0
10" x 4"	34	58
12" x 4"	55	34
16" x 4"	75	0
20" x 4"	25	78
24" x 4"	74	32
10" x 10"	91	0
12" x 4"	29	98
12" x 6"	51	82
12" x 8"	73	60
12" x 10"	90	33
12" x 12"	108	0
16" x 4"	14	104
16" x 6"	34	95
16" x 8"	51	82
16" x 10"	66	67
16" x 12"	81	48
16" x 16"	107	0
20" x 4"	30	122
20" x 6"	49	112
20" x 10"	64	100
20" x 12"	79	85
20" x 16"	106	48
24" x 4"	21	130
24" x 6"	28	148
24" x 8"	45	140
24" x 10"	61	130
24" x 12"	76	117
24" x 16"	104	67
24" x 20"	130	48
24" x 24"	154	0

MINIMUM FOOTAGE OF PIPE TO BE RESTRAINED.

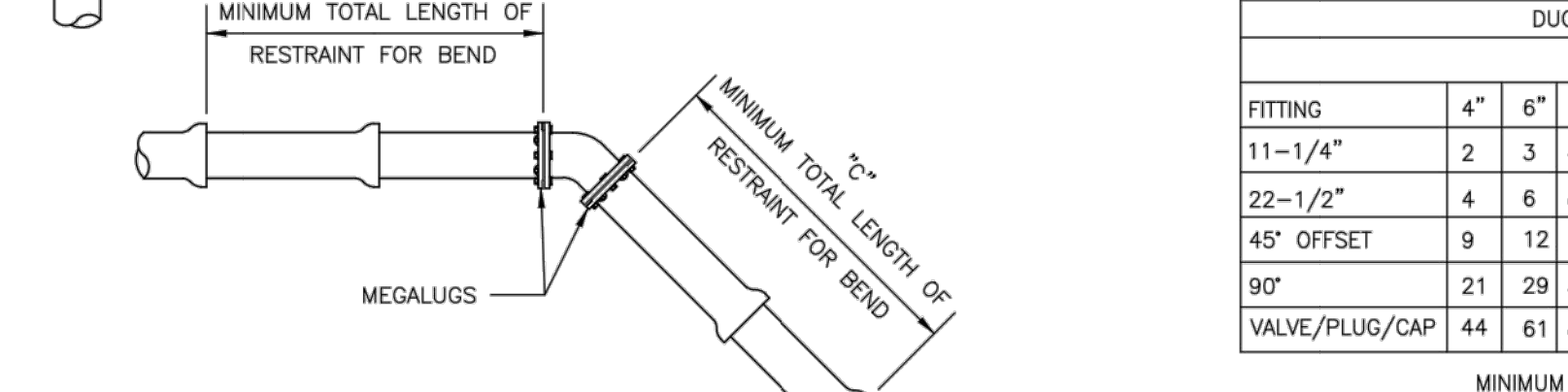
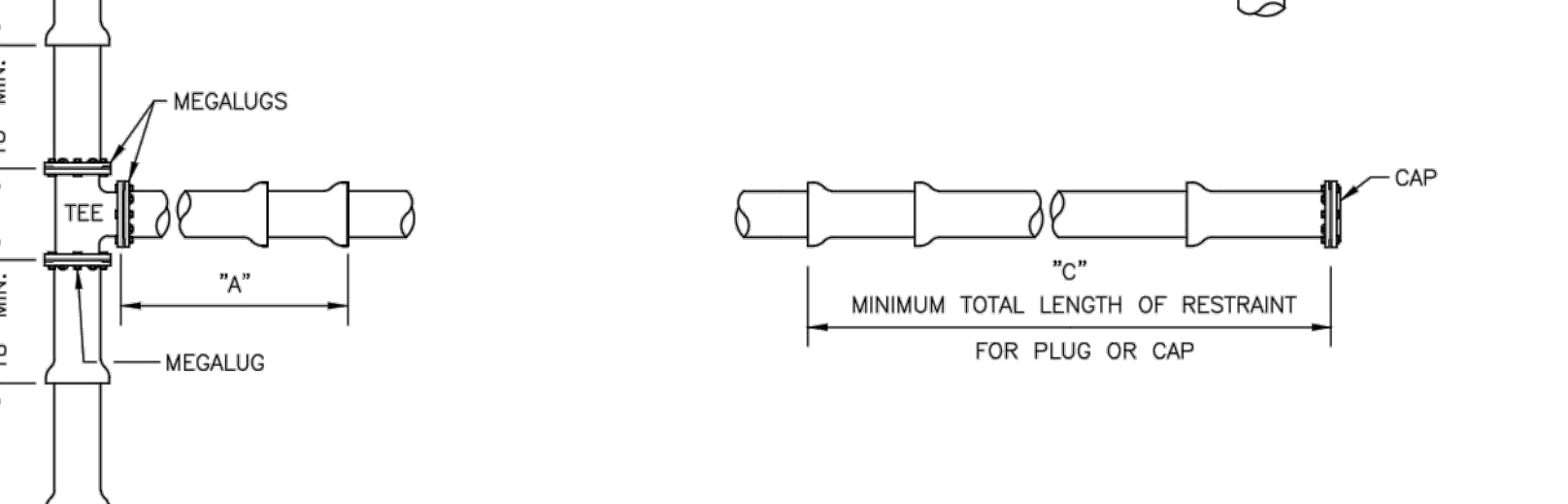
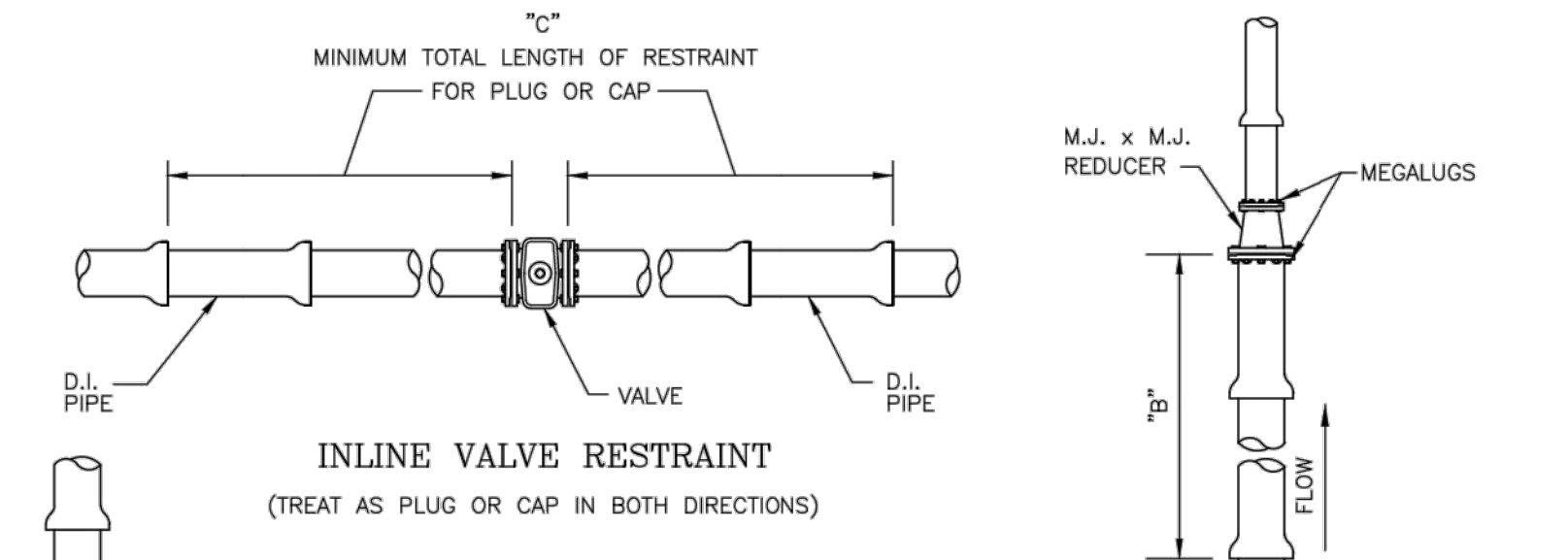
DUCTILE IRON PIPE (LF)

FITTING	4"	6"	8"	10"	12"	16"	20"	24"	30"	36"	2"
11-1/4"	2	3	4	4	5	5	6	7	9	10'	1
22-1/2"	4	6	8	9	11	11	13	15	18	20'	1
45' OFFSET	9	12	16	19	22	22	26	31	36	42'	3
90'	21	29	38	46	53	53	64	74	88	101'	6
VALVE/PLUG/CAP	44	61	80	96	113	112	136	159	191	221'	13

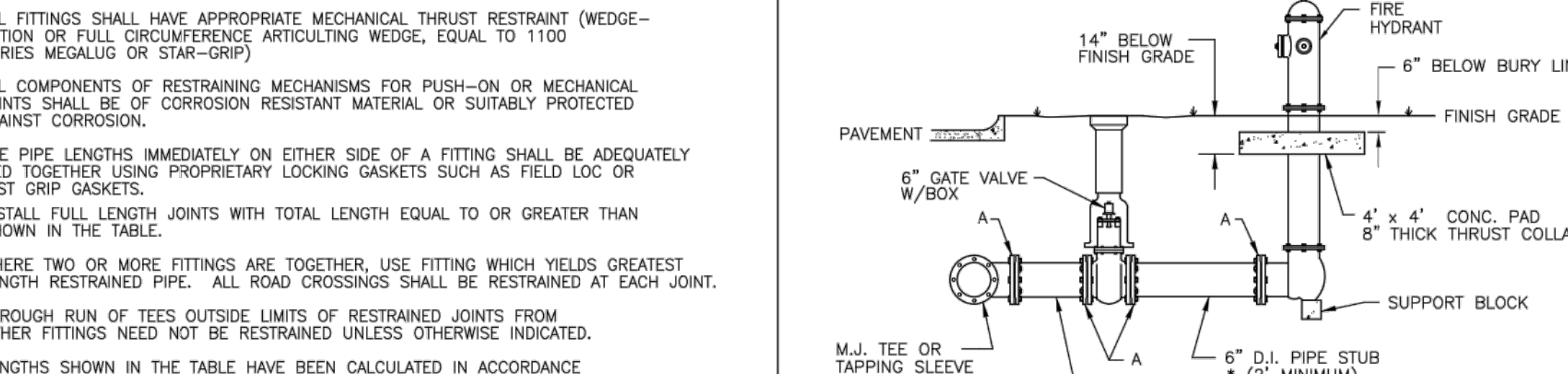
MINIMUM FOOTAGE OF PIPE TO BE RESTRAINED.

RESTRAINED JOINT STANDARDS

CONTACT O.U.C. FOR SPECIAL RESTRAINT DETAILS FOR WORK ON EXISTING PIPING.



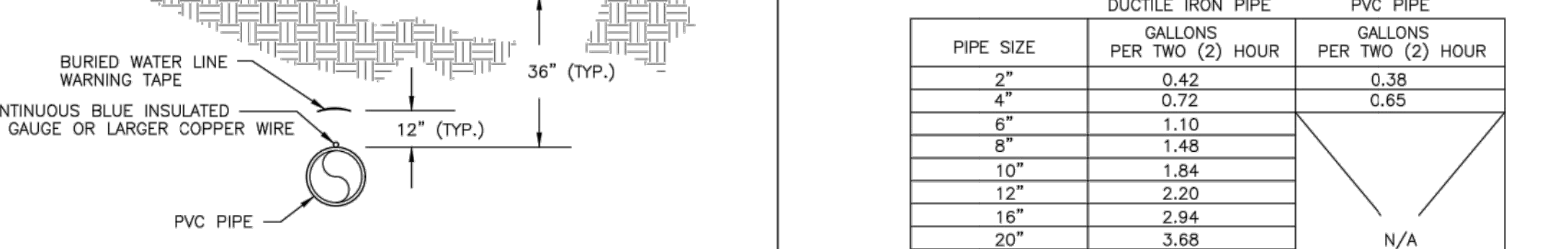
FIRE HYDRANT ASSEMBLY



- NOTE:
 1. ALL FITTINGS SHALL HAVE APPROPRIATE MECHANICAL THRUST RESTRAINT (WEDGE-ACTION OR FULL CIRCUMFERENCE ARTICULATING WEDGE, EQUAL TO 1100 SERIES MEGALUG OR STAR-DRIP)
 2. ALL COMPONENTS OF RESTRAINING MECHANISMS FOR PUSH-ON OR MECHANICAL JOINTS SHALL BE OF CORROSION RESISTANT MATERIAL OR SUITABLY PROTECTED AGAINST CORROSION.
 3. THE PIPE LENGTHS IMMEDIATELY ON EITHER SIDE OF A FITTING SHALL BE ADEQUATELY TIED TOGETHER USING PROPRIETARY LOCKING GASKETS SUCH AS FIELD LOC OR FAST GRIP GASKETS.
 4. INSTALL FULL LENGTH JOINTS WITH TOTAL LENGTH EQUAL TO OR GREATER THAN SHOWN IN THE TABLE.
 5. WHERE TWO OR MORE FITTINGS ARE TOGETHER, USE FITTING WHICH YIELDS GREATEST LENGTH RESTRAINED PIPE. ALL ROAD CROSSINGS SHALL BE RESTRAINED AT EACH JOINT.
 6. THROUGH RUN OF TEES OUTSIDE LIMITS OF RESTRAINED JOINTS FROM OTHER FITTINGS NEED NOT BE RESTRAINED UNLESS OTHERWISE INDICATED.
 7. LENGTHS SHOWN IN THE TABLE HAVE BEEN CALCULATED IN ACCORDANCE WITH THE PROCEDURE OUTLINED IN "THRUST RESTRAINT DESIGN FOR DUCTILE IRON PIPE" SIXTH EDITION 2008 AS PUBLISHED BY DIPRA, WITH THE FOLLOWING ASSUMPTIONS:
 DUCTILE IRON PIPE: SIXTH EDITION 2008 AS PUBLISHED BY DIPRA.
 THE LAYING CONDITION IS TYPE 4 (BACKFILL COMPACTED TO TOP OF PIPE)
 ALL BENDS ARE INSTALLED HORIZONTALLY.
 THE PIPE IS DUCTILE IRON PIPE.
 DEPTH OF COVER IS ASSUMED TO BE 3 FEET FOR 12" AND SMALLER WATER MAINS DEPTH OF COVER IS ASSUMED TO BE 4 FEET FOR 16" AND LARGER WATER MAINS NONE OF THE PIPE IS POLYWRAPPED.
 8. FOR PVC PIPE (4") MULTIPLY THE DUCTILE IRON FOOTAGE BY 1.1.
 9. ALL EXISTING PIPE SHALL BE RESTRAINED AS NEEDED AT EACH NEW CONNECTION.

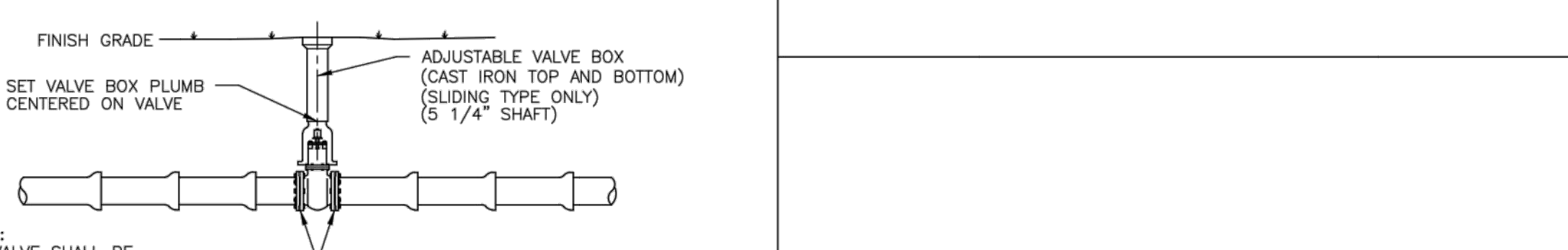
PVC PIPE DETAIL

(REFER TO GENERAL MATERIAL SPECIFICATIONS FOR LIMITATIONS ON USE)



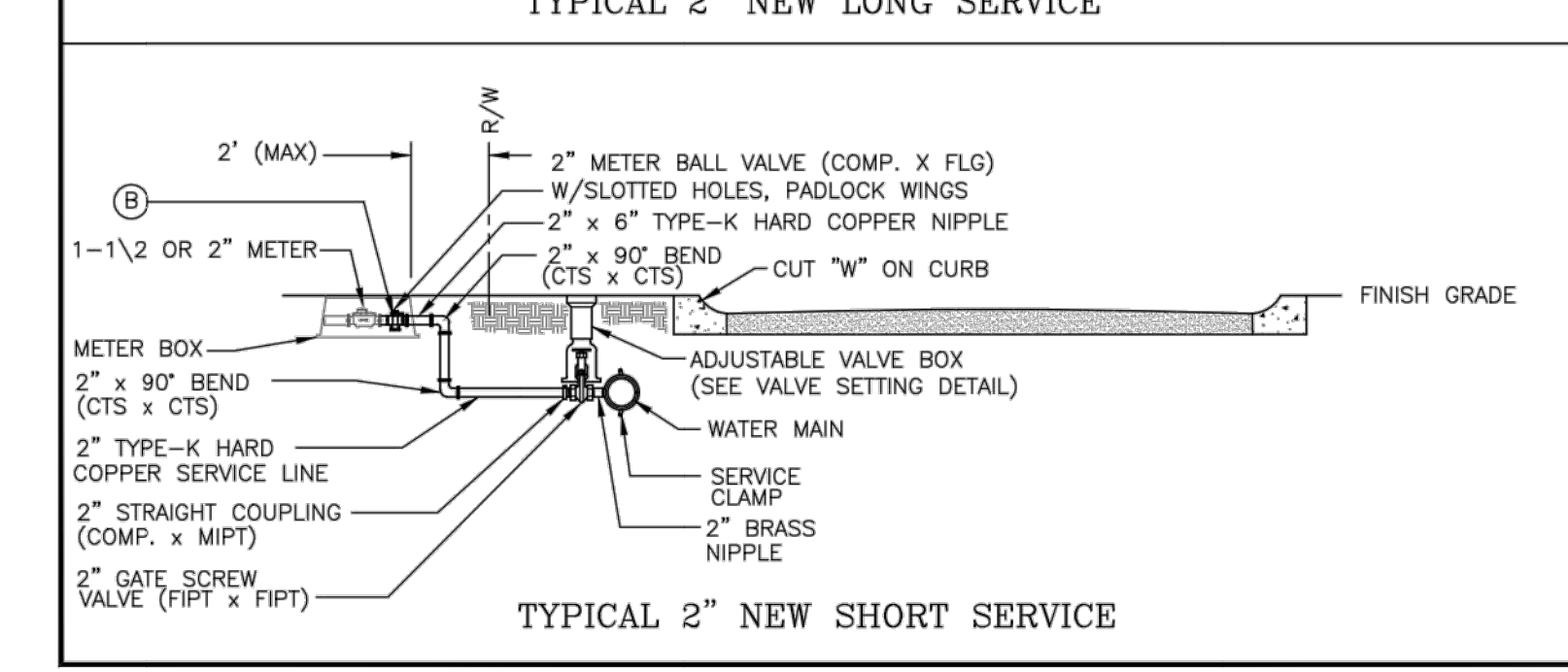
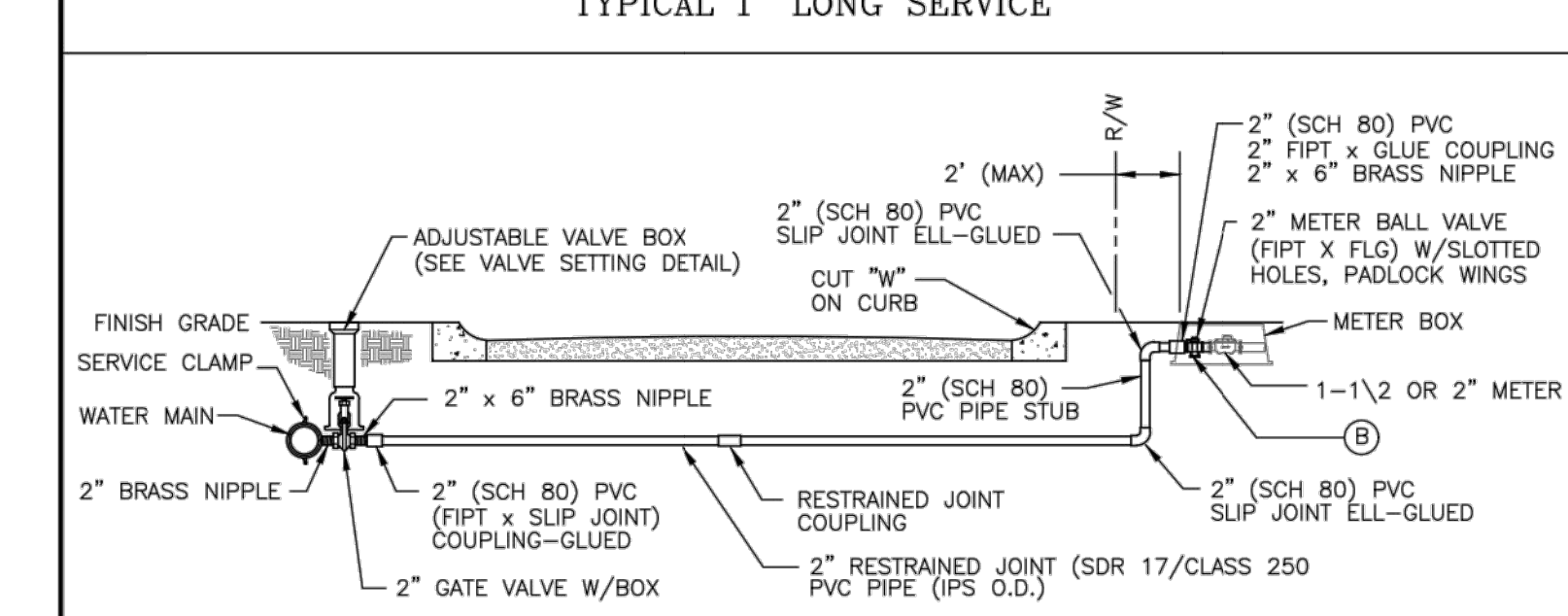
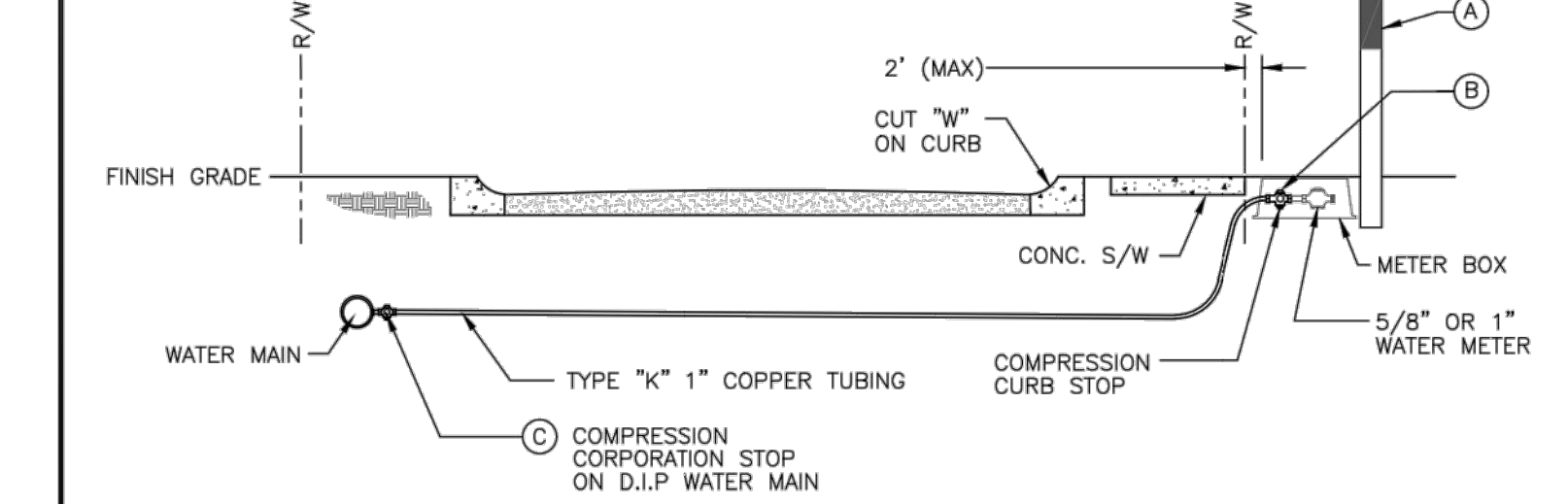
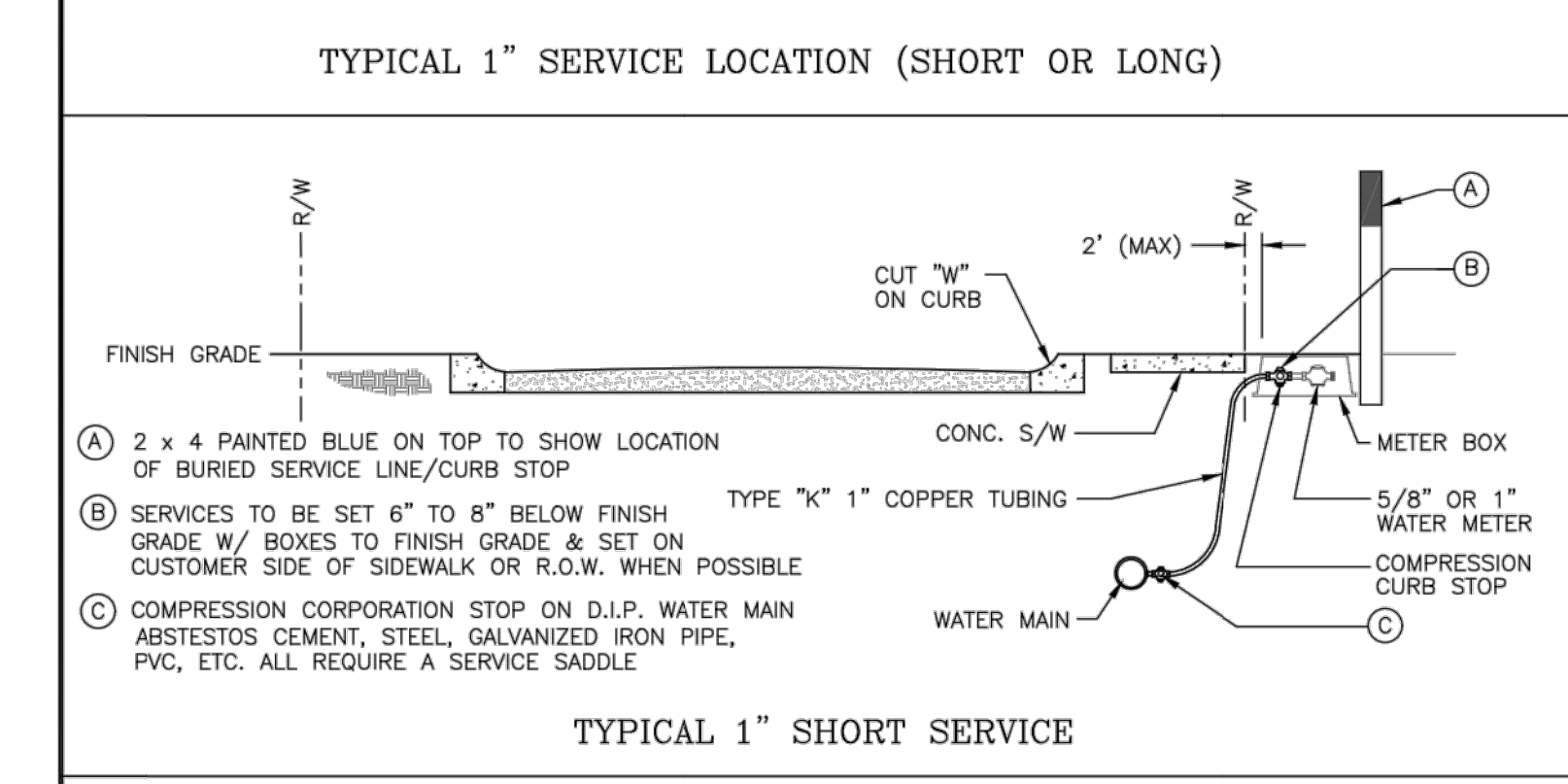
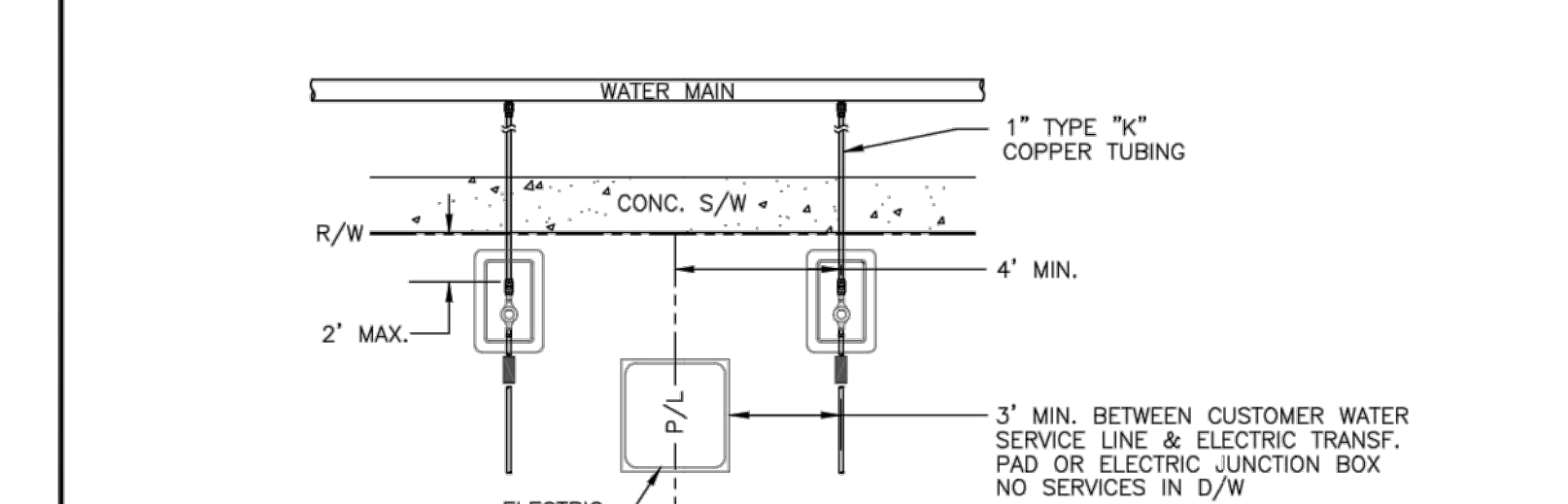
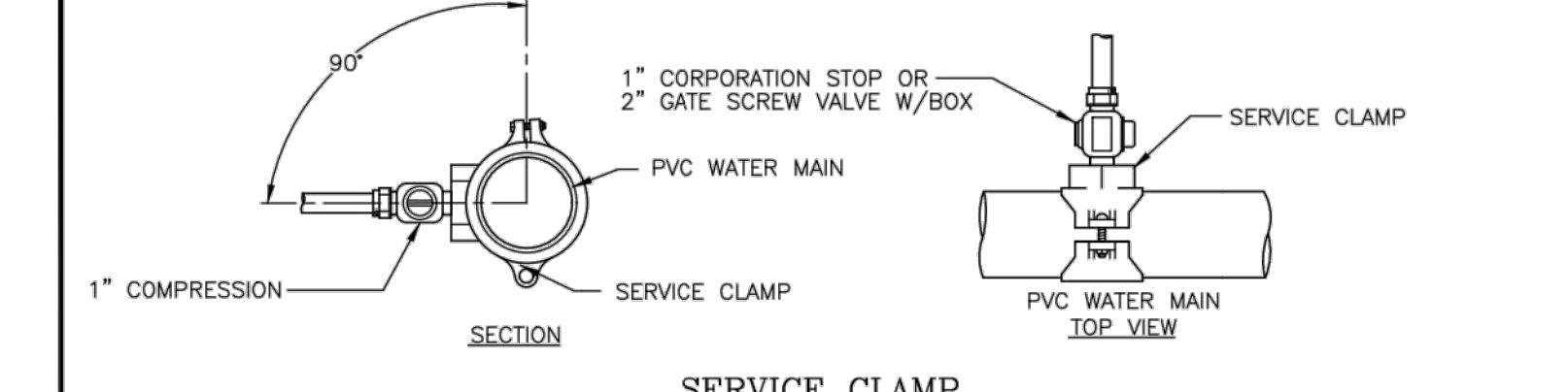
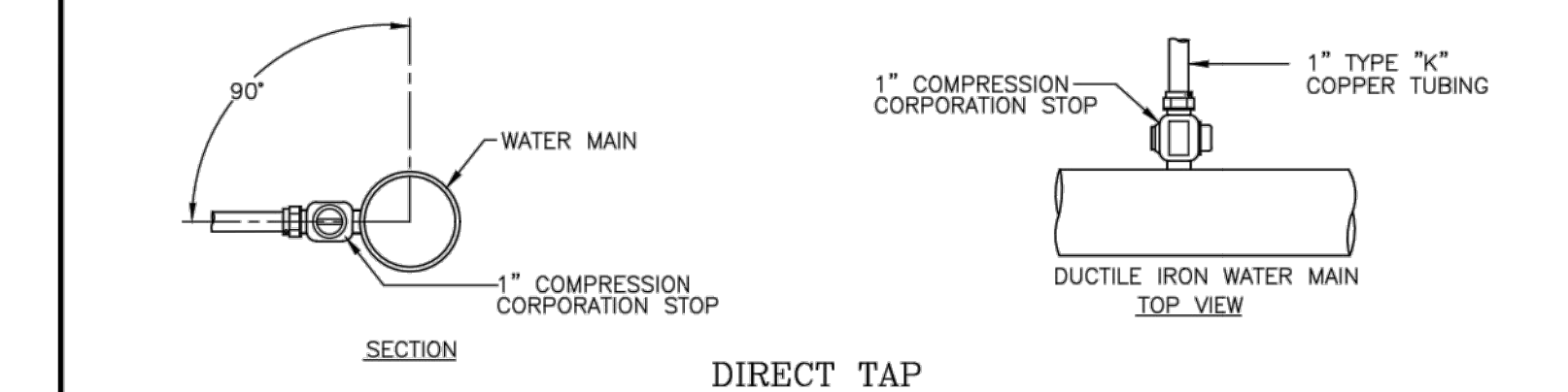
VALVE SETTING

RESTRAINT REQUIRED FOR NINE VALVES (SEE RESTRAINED JOINT STANDARDS)



NOTE:
 NO VALVE SHALL BE SET WITHIN CURB

SERVICE LINE DETAILS



SERVICE LINE NOTES

- NOTE:
 1. O.U.C. SHALL FURNISH/INSTALL ALL WATER METERS.
 2. O.U.C. SHALL FURNISH METER BOXES, DEVELOPER'S CONTRACTOR TO INSTALL.
 3. METER SHOULD BE ON THE CUSTOMER SIDE OF THE RIGHT-OF-WAY NO FURTHER THAN 2' BEYOND RIGHT-OF-WAY LINE AND ALWAYS ALONG THE BACK SIDE OF CONC. SIDEWALK.

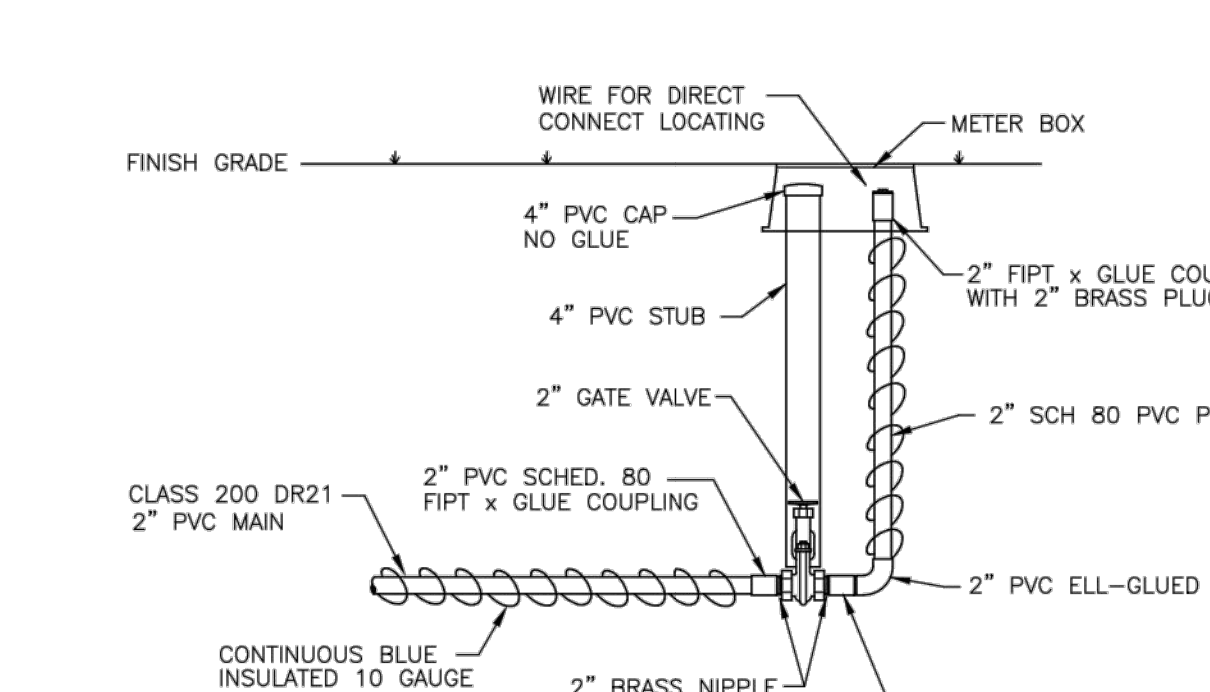
LEGEND

PIPE	SIZE	CORPORATION TAP SIZE
D.I.	12"	DT SC
	10"	DT SC
	8"	DT SC
	6"	DT SC
	4"	DT SC
PVC	4" C-800	SC SC
	2" SDR21	SC NA

TAPPING FOR 1" CORP. STOP, & 2" GATE VALVE

SPECIAL NOTICE:
 PROCEDURES FOR AN O.U.C. SINGLE FAMILY HOME HAVING RECLAIM WATER SERVICE.
 WHERE RECLAIM WATER IS PROVIDED TO A PROPERTY, O.U.C.'S POTABLE WATER SYSTEM MUST BE PROTECTED BY AN APPROVED DOUBLE CHECK VALVE ASSEMBLY BACKFLOW PREVENTER WITH TOP ACCESS (FOR TESTING AND MAINTENANCE), INSTALLED, OWNED AND MAINTAINED BY OUC.
 NO CONNECTIONS ARE ALLOWED BETWEEN THE METER AND THE BACKFLOW PREVENTER.
 PRIOR TO ANY RECLAIM WATER SERVICE INSTALLATION, INSPECTION AND TESTING WILL BE CONDUCTED BY A REPRESENTATIVE OF THE RECLAIM WATER PROVIDER TO MAKE CERTAIN THAT THE APPROPRIATE BACKFLOW DEVICE HAS BEEN INSTALLED ON THE DOMESTIC WATER SERVICE.

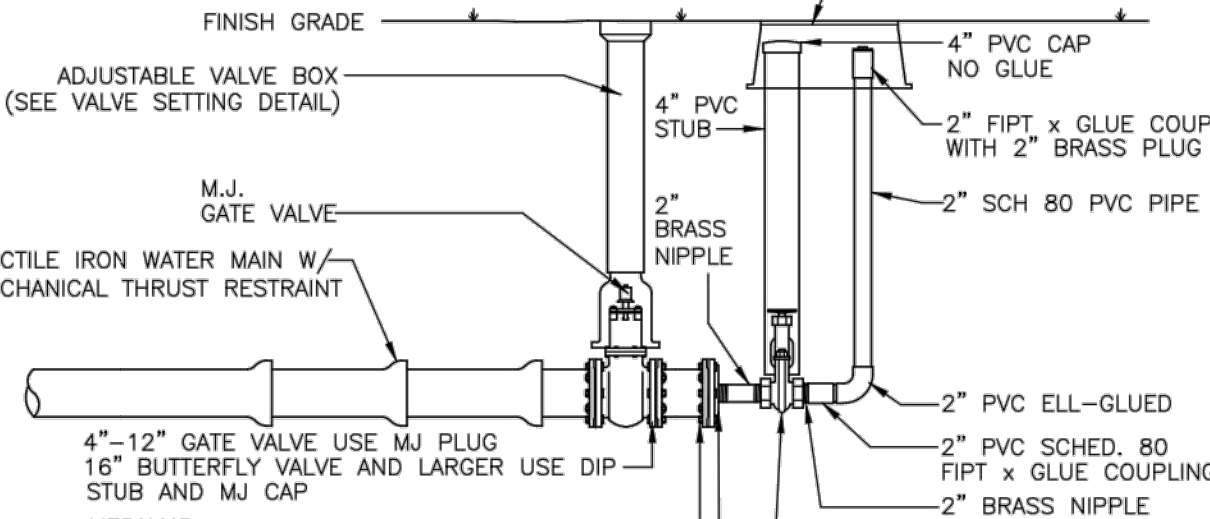
BLOW OFF DETAILS



NOTE: ALL FITTINGS ARE SCHEDULE 80 PVC. GLUE LAST 3 JOINTS OR ALL IF SHORTER.

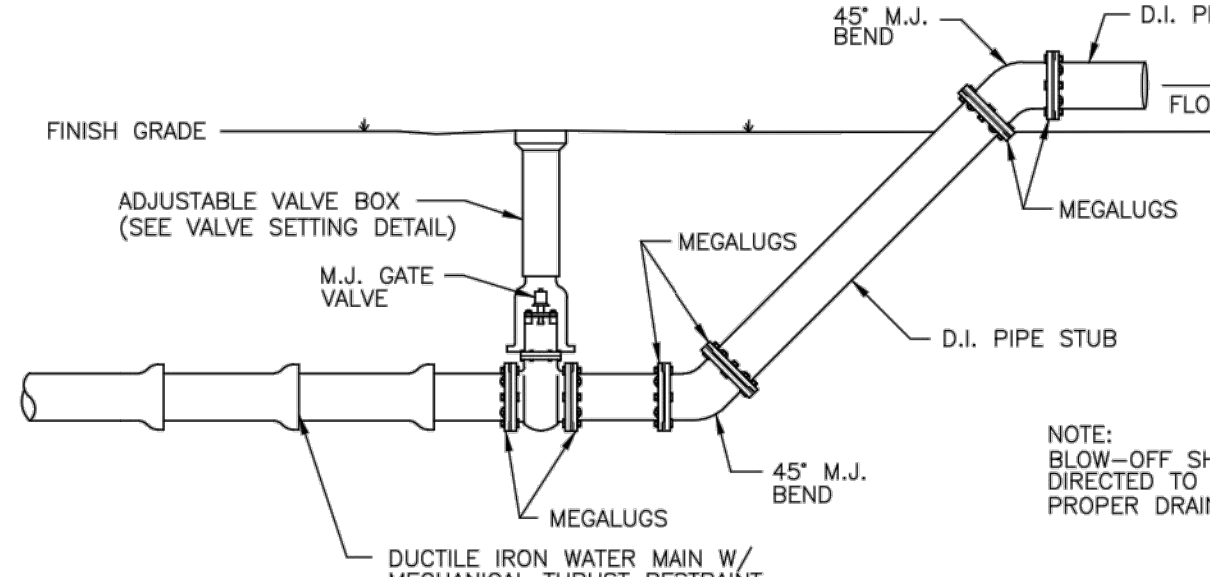
PERMANENT BLOW OFF (4" AND LARGER)

INSTALL ON ALL DEAD ENDS UNLESS OTHERWISE NOTED.



NOTE: THIS IS A DEAD END BLOW-OFF, NOT A "DISINFECTION/CHLORINATION" BLOW-OFF.

TEMPORARY BLOW OFF (4" THROUGH 12") FOR CONSTRUCTION PURPOSE



- NOTE:
 1. TEMPORARY BLOW-OFFS WILL BE INSTALLED SIZE FOR SIZE OF THE NEWLY INSTALLED MAIN UP TO 12".
 2. M.J. PLUG/CAP SHALL BE INSTALLED WHERE APPLICABLE.