

# ORANGE COUNTY FIRE AUTHORITY



<INSERT LOCATION MAP THAT INCLUDES MAJOR CROSS STREETS PROVIDING SITE ACCESS>

## VICINITY MAP

## OCFA STAMP

REVISIONS

## UNDERGROUND PIPING FOR PRIVATE HYDRANTS & SPRINKLER SUPPLY LINE

### PROJECT INFORMATION REQUIREMENTS

PROJECT LOCATION (NOTE - ALL UNDERGROUND PROJECTS IN THE CITY OF SANTA ANA MUST BE REVIEWED AND APPROVED BY CITY PLANNING PRIOR TO OCFA REVIEW):

NEW INSTALLATION  EMERGENCY REPAIR

DETAILED SCOPE OF WORK  
NOTE: OCFA WILL ONLY REVIEW WORK OUTLINED IN SCOPE OF WORK

FIRE FLOW REQUIREMENT\_PFR OCFA GUIDELINE B-01 ATTACHMENT 23  
FLOW (IN GPM @ 20 PSI): DURATION:  RECLAIMED WATER

NUMBER OF RISER CONNECTIONS

NUMBER OF HYDRANTS

NUMBER OF POST INDICATOR VALVES

PIPE SIZE AND MATERIAL

OCCUPANCY TYPE (CHECK ALL THAT APPLY)

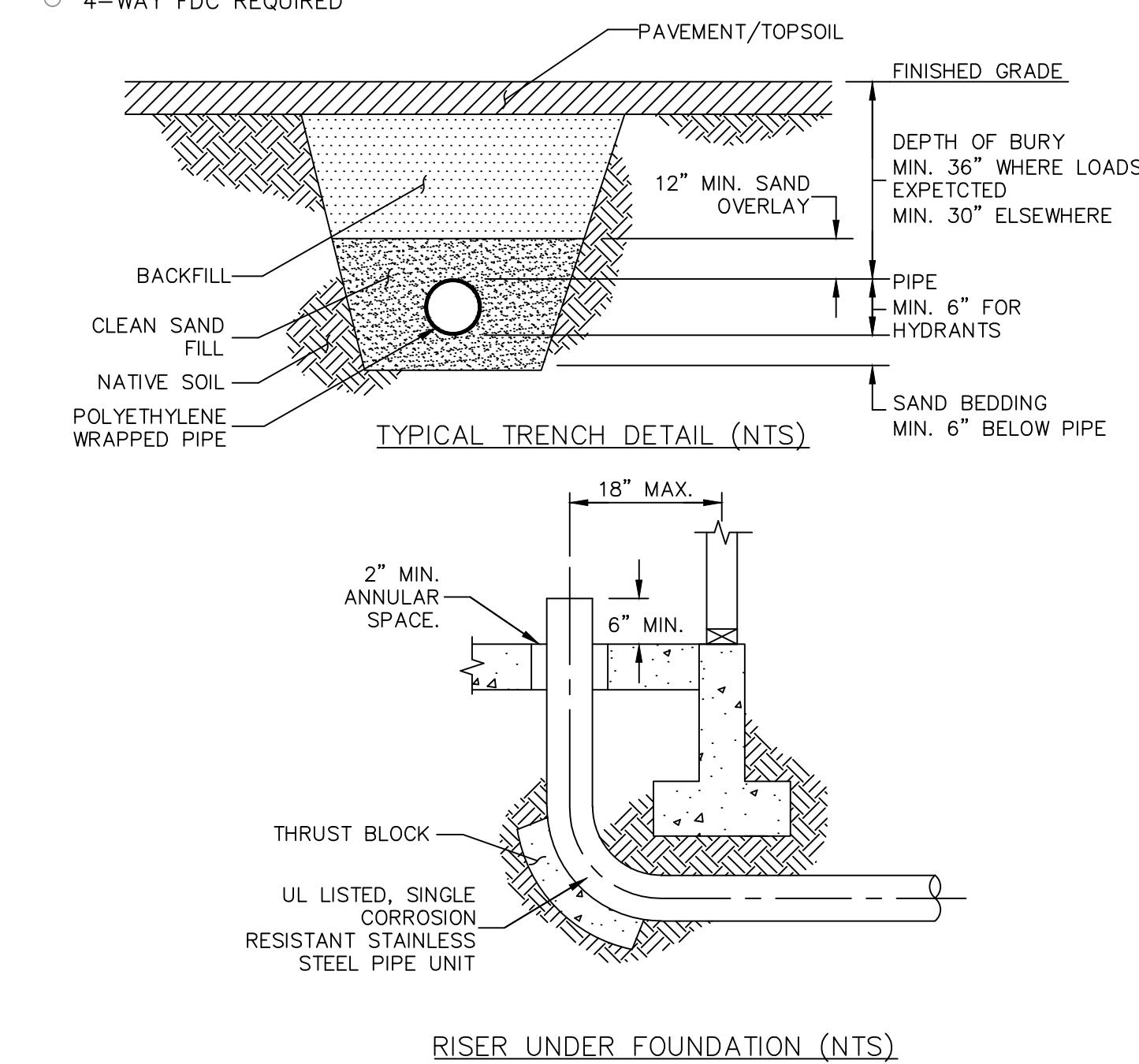
- \* INDICATES SFM REGULATED OCCUPANCY. OCFA PLAN SUBMITTAL REQUIRED
- # GROUP S MOTOR VEHICLE REPAIR AND AIRCRAFT REPAIR REQUIRE OCFA PLAN SUBMITTAL
- GROUP A1\*  GROUP A2\*  GROUP A3\*  GROUP A4\*  GROUP A5\*
- GROUP B  GROUP E\*  GROUP F1  GROUP F2  GROUP H1\*
- GROUP H2\*  GROUP H3\*  GROUP H4\*  GROUP HS\*  GROUP I1\*
- GROUP I2\*  GROUP I3\*  GROUP I4\*  GROUP M  GROUP R1\*
- GROUP R2\*  GROUP R2.1  GROUP R2.2  GROUP R3  GROUP R3.1
- GROUP R4\*  GROUP S1#  GROUP S2#  GROUP U

TYPE OF CONSTRUCTION

- TYPE IA  TYPE IB
- TYPE IA  TYPE IIIB
- TYPE IIIA  TYPE IIIB
- TYPE IV  A  B  C  DHT
- TYPE VA  TYPE VB

SPRINKLERS  
 NEW  MANDATORY  VOLUNTARY  
TYPE

- NFPA 13
- NFPA 13D
- NFPA 13R
- FIRE PUMP
- STANDPIPE
- 4-WAY FDC REQUIRED



### OCFA STANDARD UNDERGROUND NOTES

#### INSPECTION REQUIREMENTS

1. A MINIMUM OF THREE OCFA INSPECTIONS ARE REQUIRED FOR UNDERGROUND PIPING SERVING SPRINKLER SYSTEMS AND/OR PRIVATE HYDRANTS: 1) PRE-POUR INSPECTION; 2) HYDROSTATIC TESTING; 3) FLUSH INSPECTION. PLEASE SCHEDULE ALL INSPECTIONS AT LEAST 48 HOURS IN ADVANCE. INSPECTIONS CANCELED AFTER 1 P.M. ON THE DAY BEFORE THE SCHEDULED DATE ARE SUBJECT TO A RE-INSPECTION FEE. CALL OCFA INSPECTION SCHEDULING AT (714) 573-6150.
2. PRE-POUR INSPECTION: THRUST BLOCK EXCAVATION SHALL BE COMPLETED, BUT THRUST BLOCKS SHALL NOT BE Poured. ALL PIPE SHALL BE IN PLACE AND EXPOSED FOR VISUAL INSPECTION. PIPE SHALL BE LAID ON A MINIMUM 6 INCH BED OF CLEAN SAND. TRENCHES SHALL BE OF A SUFFICIENT DEPTH TO ALLOW THE REQUIRED COVER ABOVE PIPE. FERROUS PIPE AND FITTINGS SHALL BE ENCASED IN POLYETHYLENE TUBING (NOT WRAPPED) AND TIGHTLY TAPE TO INHIBIT WATER INFILTRATION. FERROUS JOINTS (WITH THE EXCEPTION OF STAINLESS STEEL 316) SHALL BE COATED WITH ASPHALTIC SEALANT OR OTHER CORROSION RETARDING MATERIAL. SEE ITEMS 11 - 19, 21 AND 22 BELOW FOR DETAILED REQUIREMENTS.
3. HYDRO TESTING: THRUST BLOCKS SHALL BE IN PLACE. PIPE SHALL BE CENTER-LOADED WITH CLEAN SAND TO PREVENT UPLIFT, BUT ALL JOINTS SHALL REMAIN EXPOSED. THE SYSTEM SHALL BE HYDROSTATICALLY TESTED AT 200 PSI (OR 50 PSI OVER MAXIMUM STATIC PRESSURE, WHICHEVER IS GREATER) FOR A DURATION OF AT LEAST 2 HOURS PRIOR TO THE ARRIVAL OF THE OCFA INSPECTOR. SEE ITEM 16 FOR DETAILED REQUIREMENTS.
4. FLUSH INSPECTION: ALL PORTIONS OF THE UNDERGROUND SYSTEM SHALL BE FLUSHED TO REMOVE DEBRIS PRIOR TO CONNECTION TO OVERHEAD PIPING. FLOW SHALL BE THROUGH A MINIMUM OF A 4 INCH HOSE OR PIPE, UNLESS OTHERWISE APPROVED BY THE OCFA INSPECTOR. PRIOR TO SCHEDULING THE FLUSH, HOSE OR PIPE SHALL BE RESTRAINED TO PREVENT INJURY AND DAMAGE. DISCHARGED WATER SHALL BE COLLECTED OR DIVERTED IN ACCORDANCE WITH APPLICABLE SWPPP/NPDES PROVISIONS. THE LOCAL PUBLIC WORKS DEPARTMENT, WATER DISTRICT, AND/OR OTHER APPLICABLE AGENCY SHALL BE NOTIFIED OF THE SCHEDULED FLUSH BY THE CONTRACTOR. THE OCFA FLUSH AND HYDRO INSPECTIONS MAY BE SCHEDULED CONCURRENTLY. SEE ITEMS 11, 18, AND 20 - 23 BELOW FOR DETAILED REQUIREMENTS.
5. UPON FLUSH INSPECTION OR PRIOR TO FINAL SPRINKLER OR SITE INSPECTION, ALL DETECTOR CHECK ASSEMBLIES, CONTROL VALVES, AND FIRE DEPARTMENT CONNECTIONS (FDC) SHALL BE CLEARLY LABELED WITH THE ADDRESS(ES) SERVED BY THE DEVICE. ADDRESS SIGNS SHALL BE SECURELY ATTACHED TO THE DEVICE AND BE OF A DURABLE, FADE-RESISTANT MATERIAL WHICH IS VISIBLE AND LEGIBLE FROM THE FIRE LANE. FDC AND 4 INCH HYDRANT OUTLETS SHALL BE UNOBSTRUCTED AND ORIENTED TOWARD THE FIRE LANE. VALVES SHALL BE LOCKED IN THE OPEN POSITION WITH BREAKAWAY LOCKS. ALL PIV VALVES AND PRIVATE HYDRANTS SHALL BE PAINTED OSHA SAFETY RED. THE CLOSEST UPSTREAM INDICATING VALVE TO THE RISER SHALL BE PAINTED OSHA SAFETY RED. HYDRANT AND FDC CAPS SHALL BE IN PLACE. SEE ITEMS 6 - 9, 18, AND 20 - 23 FOR DETAILED REQUIREMENTS.

#### GENERAL REQUIREMENTS

6. INSTALLATION, INSPECTION, AND TESTING SHALL CONFORM TO 2025 EDITIONS OF NFPA 13 AND NFPA 24. OCFA JURISDICTION BEGINS AT THE DOWNSTREAM SIDE OF THE LAST VALVE ON THE DETECTOR CHECK ASSEMBLY. VERIFY DESIGN AND INSTALLATION REQUIREMENTS FOR THE PORTION OF THE SYSTEM PRECEDING THIS POINT WITH THE LOCAL WATER DISTRICT.
7. VEGETATION SHALL BE SELECTED AND MAINTAINED IN SUCH A MANNER AS TO ALLOW IMMEDIATE LOCATION OF, AND UNOBSTRUCTED ACCESS TO, ALL HYDRANTS, CONTROL VALVES, FIRE DEPARTMENT CONNECTIONS, AND OTHER DEVICES OR AREAS USED FOR FIREFIGHTING PURPOSES.
8. A MINIMUM 3 FOOT CLEARANCE SHALL BE PROVIDED AROUND ALL HYDRANTS AND POST INDICATING VALVES. A MINIMUM 3 FOOT CLEARANCE SHALL BE PROVIDED ON AT LEAST ONE SIDE OF A DETECTOR CHECK ASSEMBLY TO ALLOW PROPER OPERATION OF THE DEVICE. THE FRONT OF THE FDC AND THE ADJACENT FIRE ACCESS ROADWAY SHALL BE FREE OF ANY OBSTRUCTIONS.
9. ANY FUTURE MODIFICATION TO THE APPROVED PRIVATE UNDERGROUND PIPING SYSTEM IS SUBJECT TO REVIEW, INSPECTION, AND APPROVAL BY THE OCFA.
10. APPROVAL OF THIS PLAN SHALL NOT BE INTERPRETED AS APPROVAL OF ANY INFORMATION OR PROJECT CONDITIONS OTHER THAN THOSE ITEMS AND REQUIREMENTS IDENTIFIED IN OCFA GUIDELINE B-03, AND APPLICABLE SECTIONS OF THE 2025 EDITIONS OF NFPA 13 AND NFPA 24. THIS PROJECT MAY BE SUBJECT TO ADDITIONAL REQUIREMENTS NOT STATED HEREIN UPON EXAMINATION OF ACTUAL SITE AND PROJECT CONDITIONS OR DISCLOSURE OF ADDITIONAL INFORMATION.

#### PIPE AND TRENCH REQUIREMENTS

11. A 6 INCH BED OF CLEAN FILL SAND SHALL BE PROVIDED BELOW THE PIPE AND 12 INCHES ABOVE THE PIPE (TOTAL OF 18 INCHES PLUS OUTER DIAMETER OF THE PIPE).
12. PIPE SHALL BE BURIED AT LEAST 36 INCHES WHERE SUBJECT TO LOADING (E.G., DRIVEWAYS, PARKING LOTS) AND AT LEAST 30 INCHES ELSEWHERE.
13. ALL PIPE SHALL BE APPROVED FOR USE IN FIRE SERVICE SYSTEMS. CLASS 150 PIPE WILL BE USED AT A MINIMUM, AND CLASS 200 PIPE SHALL BE USED WHERE THE WATER PRESSURE EXCEEDS 150 PSI. THE USE OF GALVANIZED PIPE IS PROHIBITED WHEN A PORTION OF THE SYSTEM IS BURIED.
14. ALL FERROUS PIPE AND FITTINGS SHALL BE PROTECTED WITH A LOOSE 8-MIL POLYETHYLENE TUBE OR SHEETING. THE ENDS OF THE TUBE/SHEETING AND ANY SPLICES MADE FOR TEES OR OTHER PIPING COMPONENTS SHALL BE TIGHTLY SEALED WITH 2 INCH TAPE THAT IS APPROVED FOR UNDERGROUND USE.
15. ALL BOLTS USED FOR UNDERGROUND CONNECTIONS, INCLUDING T BOLTS, SHALL BE 316 STAINLESS STEEL. ASPHALTIC SEALANTS (AND OTHER OPAQUE SEALANTS) SHALL NOT BE USED TO COAT BOLTS (THIS IS TO ENSURE BOLTS CAN STILL BE VERIFIED AS 316 STAINLESS STEEL DURING INSPECTION). ALL FERROUS FITTINGS (WITH THE EXCEPTION OF 316 STAINLESS STEEL) SHALL BE CLEANED AND THOROUGHLY COATED WITH ASPHALT OR OTHER CORROSION RETARDING MATERIAL AFTER ASSEMBLY AND PRIOR TO THE INSTALLATION OF POLYETHYLENE TUBE.
16. THRUST BLOCKS, OR ANOTHER APPROVED METHOD OF THRUST RESTRAINT, SHALL BE PROVIDED WHEREVER PIPE CHANGES DIRECTION.

#### APPLICABLE CODES

- 2025 CALIFORNIA FIRE CODE
- 2025 CALIFORNIA BUILDING CODE
- 2025 CALIFORNIA RESIDENTIAL CODE
- 2025 CALIFORNIA WILDLAND URBAN INTERFACE CODE
- 2025 CALIFORNIA GREEN BUILDING STANDARDS CODE
- 2025 CALIFORNIA MECHANICAL CODE
- 2025 CALIFORNIA ELECTRICAL CODE
- 2025 CALIFORNIA PLUMBING CODE
- 2025 CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARDS
- APPLICABLE NFPA STANDARDS:
- LOCALLY ADOPTED ORDINANCES:
- OCFA GUIDELINES
- CONDITIONS OF APPROVAL:

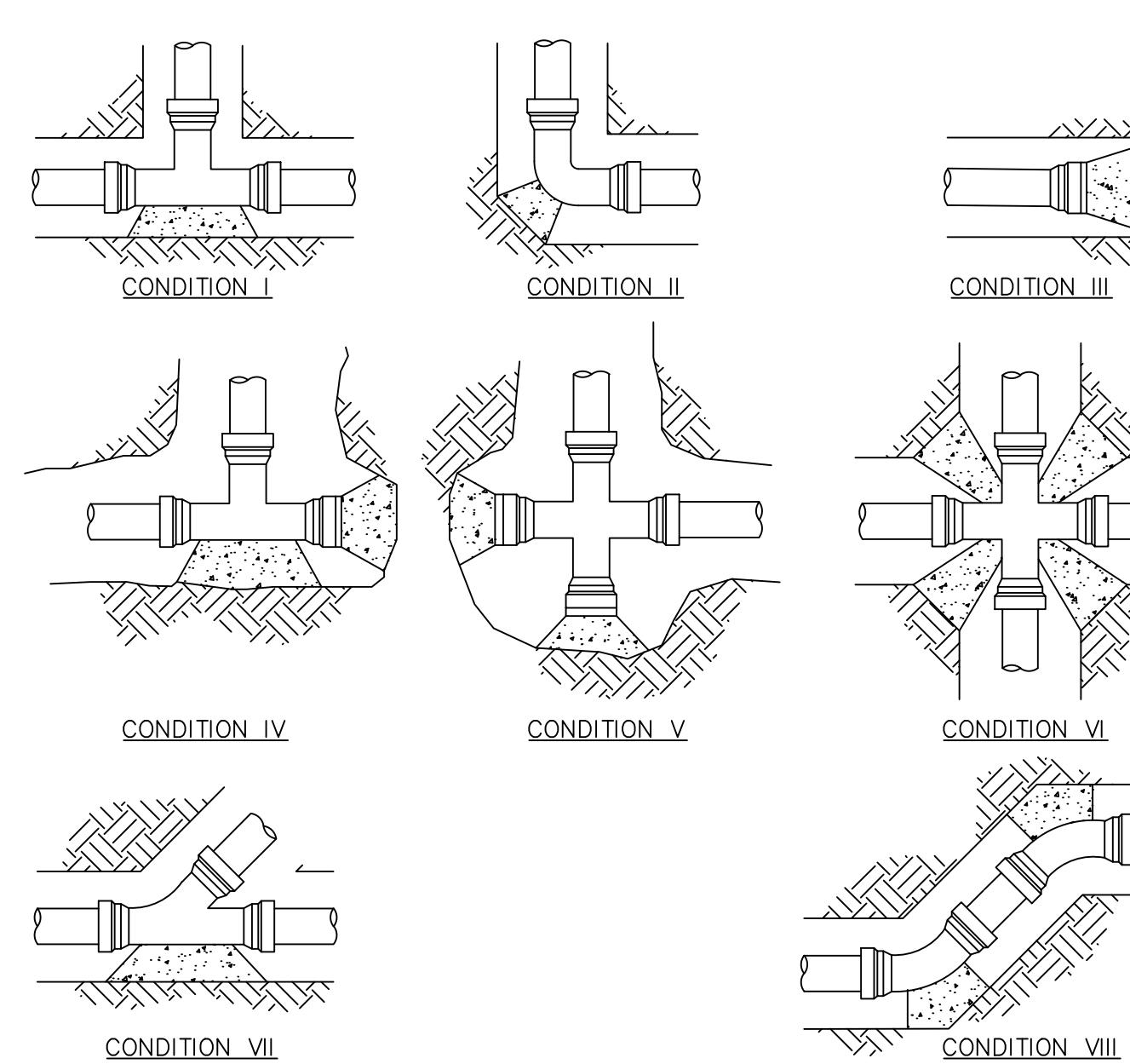
DEFERRED SUBMITTALS (CHECK ALL THAT APPLY)  
THIS PROJECT HAS BEEN PERMITTED WITHOUT REVIEW AND/OR APPROVAL OF THE FOLLOWING DEFERRED SUBMITTALS. PLANS APPROVED BY OCFA SHALL BE OBTAINED FOR EACH DEFERRED ITEM LISTED BELOW PRIOR TO COMMENCING ANY WORK WITHIN THE SCOPE OF SUCH DEFERRAL. DEFERRALS MUST BE REVIEWED AND ACCEPTED BY THE ARCHITECT OR ENGINEER OF RECORD PRIOR TO SUBMITTING FOR REVIEW WITH OCFA. PORTIONS OF THE PROJECT THAT ARE DEFERRED SHALL BE SUBJECT TO THE CODES, STANDARDS, AND OTHER APPLICABLE REQUIREMENTS IN FORCE ON THE DATE THAT THE DEFERRED PLAN IS SUBMITTED TO OCFA.

- SPRINKLER SYSTEM
- STANDPIPE SYSTEM
- FIRE PUMP
- HOOD AND DUCT EXTINGUISHING SYSTEM
- ALARM SYSTEM

RELATED PLANS  
 FIRE MASTER PLAN SR:  
 ARCHITECTURAL PLAN SR:

REVISION  
 ORIGINAL PLAN SR:  
COPY OF ORIGINAL APPROVED PLAN REQUIRED TO BE SUBMITTED WITH ALL REVISED PLANS.

REVISION SCOPE OF WORK



PIPE SIZE	I	II	III	IV	V	VI	VII	VIII
<6"	2.0	2.9	2.0	2 @ 2.0	2 @ 2.0	4 @ 1.6	2.0	2 @ 1.6
6"	4.3	4.0	4.3	2 @ 4.3	2 @ 4.3	4 @ 3.3	4.3	2 @ 3.3
8"	7.4	10.6	7.4	2 @ 7.4	2 @ 7.4	4 @ 5.7	7.4	2 @ 5.7
10"	12.1	17.1	12.1	2 @ 12.1	2 @ 12.1	4 @ 9.3	12.1	2 @ 9.3
12"	17.2	24.1	17.2	2 @ 17.2	2 @ 17.2	4 @ 13.2	17.2	2 @ 13.2

1. THRUST BLOCK AREAS BASED ON 225 PSI AND 2,000 PSF SOIL PRESSURE WITH 2 1/2 FEET OF COVER MINIMUM.
2. THRUST BLOCK FACING SURFACES SHALL BE PLACED AGAINST UNDISTURBED SOIL, APPROVED COMPACTED BACKFILL, OR CLASS 100-E-100 SLURRY.
3. THRUST BLOCKS SHALL BE CLASS 560-C-3250 CONCRETE, UNLESS SPECIFIED OTHERWISE.
4. TO FACILITATE FUTURE REMOVAL OF THRUST BLOCKS AND LINE EXTENSION USE CARDBOARD SEPARATORS BETWEEN BLOCKS, IF NEEDED.

#### THRUST BLOCK DETAILS (NTS)

#### PROJECT DIRECTORY

ENGINEER  
BUSINESS NAME: \_\_\_\_\_  
CONTACT NAME: \_\_\_\_\_  
ADDRESS: \_\_\_\_\_  
CITY: \_\_\_\_\_ STATE: \_\_\_\_\_ ZIP: \_\_\_\_\_  
PHONE: \_\_\_\_\_  
EMAIL: \_\_\_\_\_

PROPERTY OWNER  
BUSINESS NAME: \_\_\_\_\_  
CONTACT NAME: \_\_\_\_\_  
ADDRESS: \_\_\_\_\_  
CITY: \_\_\_\_\_ STATE: \_\_\_\_\_ ZIP: \_\_\_\_\_  
PHONE: \_\_\_\_\_  
EMAIL: \_\_\_\_\_

#### STAKEHOLDERS

WATER DISTRICT: \_\_\_\_\_  
PLANNING: \_\_\_\_\_  
BUILDING: \_\_\_\_\_  
PUBLIC WORKS: \_\_\_\_\_

<PROJECT NAME>  
<PROJECT ADDRESS>

ORANGE COUNTY FIRE AUTHORITY  
COMMUNITY RISK REDUCTION - PLANNING AND DEVELOPMENT SECTION  
SERVICE REQUEST NUMBER  
<INSERT SR #>