LOCATE HYDRANT SO THAT DRIVE IS NOT BLOCKED
WHEN CONNECTED.
CONNECTION IS ON THE SIDE OF THE TRUCK.
SEE SPACING DETAIL,
DWG 3

30' OR MORE
PER TABLE 13-55
TYPICAL TO
PROP. LINES

60'-150'
SEC 13-52(c)(2)

60' MIN, CLR

RADIUS
DWG 10

TURNAROUND WITHIN 150' OF
EACH STRUCTURE,
SEC 13-37(c) OR
HAMMERHEAD/T - DWG 9

4" MIN SUPPLY PIPING,
SEC 13-52(c)(l)

TURNOUT, SEC 13-37(b)
NON COMBUSTIBLE TANK IF
INSIDE MIN SETBACK, 20' VEG
CLEARANCE IF POLY OR SIM.

WATER STORAGE TANK

20' MIN TO PROPERTY LINE
OR TABLE 13-55

ROAD CLEARANCE FROM
VEGETATION, SEC 13-56

DRIVE LENGTH, SEC 13-37

ALL WEATHER SURFACE
SEC 13-30

DRIVEWAY/ROAD GRADE
< 15%, SEC 13-31

BARN
1,000 SF

60'-150'
SEC 13-52(c)(2)

ROAD NAME

GATE, SEC 13-38

ADDRESS SIGN
SEC 13-48(b)

DISTANCE TO PUBLIC HYDRANT
WHERE APPLICABLE
SEC 13-52

WIDTH AS REQUIRED
BY SEC 13-33 TO 13-38

TURNAROUND, SEC 13-37(c)

DWG 8

N

PROPERTY LINE

RADIUS - SECTION 13-32(c)

Santa Rosa, California 95403
Telephone (707) 565-1152  Fax (707) 565-1172
- FOR STORAGE CAPACITY REQUIREMENTS, REFER TO SEC 13-51(b) & 13-52(b)

- WHEN MULTIPLE TANKS ARE UTILIZED TO ACHIEVE THE REQUIRED VOLUME OF WATER, THE CONNECTION BETWEEN THE TANKS SHALL BE BY AN APPROVED 4" DIA. WATER LINE

2500 GALLON MINIMUM
DEDICATED FIRE RESERVE

DOMESTIC CONNECTION
ABOVE FIRE RESERVE

EMERGENCY WATER RESERVE
2500 GALLONS MINIMUM

WATER STORAGE TANK

HYDRANT, SEE DWG #3

4" DIA. FIRE SUPPLY PIPING SEC 13-52(c)(l)

18" - 24"

DOMESTIC CONNECTION
ABOVE FIRE RESERVE

DOMESTIC CONNECTION
ABOVE FIRE RESERVE

2500 GALLON MINIMUM
DEDICATED FIRE RESERVE

DOMESTIC CONNECTION
ABOVE FIRE RESERVE

EMERGENCY WATER RESERVE
2500 GALLONS MINIMUM

WATER STORAGE TANK

HYDRANT, SEE DWG #3

4" DIA. FIRE SUPPLY PIPING SEC 13-52(c)(l)

18" - 24"
GUARD POSTS WHERE SHOWN
3" BLUE REFLECTOR AT BOLLARD AND AT ADDRESS
3" DIA. STEEL PIPE, CONC FILLED FINISHED GRADE

UNREINFORCED CONC ENCASEMENT

2-1/2" GATE VALVE BRASS
2-1/2" DIA MIN 90 DEGREE ELL
2-1/2" DIA GALV STEEL PIPING

COVER SHALL BE 2' MIN.

WATER PIPING AND FITTINGS

4" MIN SCHED 40 PVC WATER PIPING AND FITTINGS

CONCRETE THRUST BLOCK

GUARD POST/BOLLARD SEC. 13-52(e), 13-53

HYDRANT AND POST/BOLLARD TYPICAL SPACING

3'3'

HYDRANT INSTALLATION NOTES
1. HYDRANT SHALL BE INSTALLED AND OPERATING PRIOR TO AND DURING CONSTRUCTION.
2. HYDRANT SHALL BE INSTALLED NO CLOSER THAN 4' AND NO FURTHER THAN 12' FROM EDGE OF ROAD.
3. WHERE HYDRANT IS PROVIDED AT ROAD OR FIRE DEPT. HYDRANT DRIVEWAY LESS THAN 20' IN WIDTH, A TURNOUT SHALL BE PROVIDED AT HYDRANT LOCATION. SEE DRAWING 7.
THRUST BLOCK PROVIDE MIN. OF 6 SF PER THRUST BLOCK W/ #4 TIE & 6" STD HOOK, OR AS OTHERWISE APPROVED BY COUNTY. PLACE CONCRETE AGAINST UNDISTURBED SOIL.

INSTALL GUARD POST/BOLLARD FOR HYDRANT PROTECTION - SEE DRAWING 3
4-1/2" STEAMER HOSE CONNECTION W/ CAP
4-1/2" STEAMER TO 6" IPS NIPPLE
6" ELBOW

2'MIN
4'MIN
12'MAX
2'

6" MIN PIPING
2'MIN

GROUND LINE
WATER LEVEL
2500 GAL MIN ABOVE HYDRANT INLET

POND OR SWIMMING POOL
INSTALL GUARD POST/BOLLARD FOR HYDRANT PROTECTION - SEE DRAWING 3

DRY HYDRANT NOTES
1. PIPING MAY BE IRON, STEEL OR PVC SCHEDULE 40 MIN.
2. USE SIMILAR HYDRANT CONFIGURATION FOR SWIMMING POOL AS WATER SOURCE.
3. SCREEN OR STRAINER PER NFPA APPENDIX B-5.3.1.1(f)
4. SHALL HAVE SIGN STATING POOL OR POND

SEC 13-52(e) DRY OR DRAFT HYDRANT

SONOMA COUNTY
FIRE AND EMERGENCY SERVICES DEPARTMENT
2300 COUNTY CENTER DR
Santa Rosa, California 95403
Telephone (707) 565-1152 Fax (707) 565-1172
ALL BRIDGES

- HS 20 LOADING [SEC 13-33(a)]
- SIGNS INDICATING WEIGHT LIMIT AND VERTICAL CLEARANCE LIMITS [SEC 13-33 (b)]
- COMBINATION VEHICLE/PEDESTRIAN GUARD RAILS BOTH SIDES

ONE LANE BRIDGE

- MINIMUM WIDTH: 12.0’ [SEC 13-33(c)] EXCEPT DRIVEWAYS WITH MAXIMUM LENGTH OF 65’ IN WHICH CASE MINIMUM WIDTH MAY BE 10.0’
- SIGNS INDICATING ONE WAY OR ONE LANE CONDITION [SEC 13-33 (b)]
- UNOBFSTRUCTED VISIBILITY ENTIRE LENGTH [SEC 13-33(c)]
- TURNOUTS AT BOTH ENDS [SEC 13-33(c)]

BRIDGE WIDTH: 12’ MAX.
LOAD: 80,000 LBS
CERT YEAR. XXXX

SIGN EXAMPLE
NOT TO SCALE
TWO WAY ROAD
SEC. 13-34
- MINIMUM RIGHT OF WAY: 25'
- WIDTH AS REQUIRED BY SEC 13-33 TO 13-38

DRIVEWAY
SEC. 13-37
- WIDTH AS REQUIRED BY SEC 13-33 TO 13-38
- DRIVEWAYS SERVE BUILDINGS
- ROADS SERVE PARCELS

PROVIDE CLEARANCE TO VEGETATION PER SEC 13-56, SEE DRAWING #15.
[SEC 13-37(b)] ALL DRIVEWAYS EXCEEDING ONE HUNDRED FIFTY (150) FEET IN LENGTH SHALL HAVE A TURNOUT CONSTRUCTED AT APPROXIMATELY THE MIDPOINT OF THE DRIVEWAY. ANY DRIVEWAY EXCEEDING EIGHT HUNDRED (800) FEET IN LENGTH SHALL HAVE TURNOUTS CONSTRUCTED APPROXIMATELY EVERY FOUR HUNDRED (400) FEET ALONG THE ENTIRE LENGTH OF THE DRIVEWAY.

[SEC 13-35(c)] ALL ONE-WAY ROADS EXCEEDING FIVE HUNDRED (500') IN LENGTH SHALL HAVE A TURNOUT CONSTRUCTED AT APPROXIMATELY THE MIDPOINT OF THE ROAD. ANY ONE-WAY ROAD EXCEEDING ONE THOUSAND FEET (1000') IN LENGTH SHALL ALSO HAVE TURNOUTS CONSTRUCTED APPROXIMATELY EVERY FIVE HUNDRED FEET (500') ALONG THE ENTIRE LENGTH OF THE ROAD.
SLOPE ON TURNAROUNDS SHALL NOT EXCEED 8%

R = 40' MIN

WIDTH AS REQUIRED BY SEC 13-33 TO 13-38

BULB TURNAROUND
Option #1

R = 40' MIN
SLOPE ON TURNAROUNDS SHALL NOT EXCEED 8%

HAMMERHEAD TURNAROUND
Option #2

R = 40' MIN

30' MIN

60' MIN

WIDTH AS REQUIRED
BY SEC 13-33 TO 13-38

SEC 13-37(c) & 13-36(b),(c) HAMMERHEAD/T

SONOMA COUNTY
FIRE AND EMERGENCY SERVICES DEPARTMENT
2300 COUNTY CENTER DR
Santa Rosa, California 95403
Telephone (707) 565-1152 Fax (707) 565-1172

F9

1/16" = 1'-0"

12/10

01/19/17

REVISION DATE
DRAWING NO.

JOINT 3(a)(8)
SLOPE ON TURNAROUNDS SHALL NOT EXCEED 8%

WIDTH AS REQUIRED BY SEC 13-33 TO 13-38

ACCESS TO BUILDINGS

STUB-OUT TURNAROUND
Option #3

WIDTH AS REQUIRED BY SEC 13-33 TO 13-38

R = 40' MIN
HORIZONTAL CURVE TURNING RADIUS, ROAD/DRIVEWAY
SECTION 13-32

- HORIZONTAL INSIDE RADIUS 50' MIN
- ADDITIONAL WIDTHS ARE REQUIRED:
  4' IF RADIUS IS LESS THAN 100' AND A CENTRAL ANGLE > 45 DEGREES
  2' IF RADIUS IS 100' TO 200' AND A CENTRAL ANGLE > 45 DEGREES
- TURNOUTS ARE NOT ALLOWED ON THE INSIDE OF CURVES.
GATED ENTRANCES
SECTION 13-38

- GATE ENTRANCE 2 FEET WIDER THAN WIDTH OF TRAFFIC LANE [SEC 13-28(a)]
- 30 FEET FROM THE ROADWAY, OPEN TO ALLOW A VEHICLE TO STOP WITHOUT OBSTRUCTING TRAFFIC [SEC 13-38(B)]
- PROVIDE FIRE DEPARTMENT APPROVED KEY ACCESS [13-38(D)]
FIRE DEPARTMENT APPROVED KEY ACCESS
CALL 565-1152 FOR ADDITIONAL INFORMATION

NOTE:
GATE WIDTH SHALL BE NO LESS THAN WIDTH
OF ROAD PLUS 1' SHOULDER, EACH SIDE OF ROAD

SEC 13-38 GATE

SONOMA COUNTY
FIRE AND EMERGENCY SERVICES DEPARTMENT
2300 COUNTY CENTER DR
Santa Rosa, California 95403
Telephone (707) 565-1152 Fax (707) 565-1172
GRAVEL SURFACE: 1.00 FEET COMPACTED CLASS 2 AGGREGATE BASE [SEC 13-30(a)]

SEAL COAT SURFACE: DOUBLE SEAL COAT OVER 1.00 FEET COMPACTED CLASS 2 AGGREGATE BASE [SEC 13-30(b)]

ASPHALTIC CONCRETE SURFACE: 0.20 FEET ASPHALTIC CONCRETE OVER 0.50 FEET COMPACTED CLASS 2 AGGREGATE BASE [SEC 13-30(c)]

EXAMPLE OF ALTERNATE GRADE: WITH PRIOR APPROVAL, GRADES MAY BE UP TO 20% FOR DISTANCES NOT EXCEEDING 300' WITHIN ANY 1000' OF ROAD LENGTH.

GRADES & SURFACES
SECTION 13-30 & 13-31
15' VERT CLR

30' MIN CLEARANCE TO FLAMMABLE VEGETATION

15' VERT CLR

PRC 4291
CFC Chapter 5

WIDTH AS REQUIRED BY SEC 13-33 TO 13-38

DRIVEWAY
SEC 13-37

40' MIN CLEARANCE TO FLAMMABLE VEGETATION

15' VERT CLR

PRC 4291
CFC Chapter 5

WIDTH AS REQUIRED BY SEC 13-33 TO 13-38

TWO WAY ROAD
SEC 13-34

NOTE: INCREASE HORIZONTAL CLEARANCE TO FLAMMABLE VEGETATION DOWNSLOPE FROM ROAD EDGE ACCORDING TO THE FOLLOWING TABLE

<table>
<thead>
<tr>
<th>SLOPE</th>
<th>CLEARANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 10%</td>
<td>10'</td>
</tr>
<tr>
<td>11 - 20%</td>
<td>20'</td>
</tr>
<tr>
<td>30% +</td>
<td>30'</td>
</tr>
</tbody>
</table>

SEC 13-34, 37 ROAD & DRIVE, VEGETATION CLEARANCE

FIRE SAFE STANDARDS

SONOMA COUNTY
FIRE AND EMERGENCY SERVICES DEPARTMENT
2300 COUNTY CENTER DR
Santa Rosa, California 95403
Telephone (707) 565-1152 Fax (707) 565-1172

REVOLUTION DATE 01/19/17 DRAWING NO. F15

1/16" = 1'-0" SCALE

FIRE AND EMERGENCY SERVICES DEPARTMENT
SANTA ROSA, CALIFORNIA 95403

Telephone (707) 565-1152 Fax (707) 565-1172

REVOLUTION DATE 01/19/17 DRAWING NO. F15
NOTES
1. PRIOR TO INSTALLING THE EARTH AUGERS, CHECK FOR UNDERGROUND UTILITIES.
2. THE EARTH AUGERS AND STRAPS SHOWN HEREON ARE DESIGNED TO RESIST THE BOUYANCY FORCES FROM AN EMPTY TANK FULLY SUBMERGED, AND THE LATERAL FORCES GENERATED FROM SEISMIC ZONE 4 ACTIVITY.
3. EARTH AUGER TYPES AND LENGTHS REQUIRED ARE DEPENDANT UPON THE EXISTING SOIL CONDITIONS:
   a. ALL CLASS 5 SOILS (CLAY, SANDY CLAY, SILTY CLAY, AND CLAYEY SILT) AND SAND, SILTY SAND AND CLAYEY SAND OF THE CLASS 4 SOILS REQUIRE EARTH AUGERS OF MINIMUM 48 INCHES IN LENGTH AND (1) 6 INCH DIAMETER HELIX.
   b. CLASS 4 AND BETTER SOILS WITH THE EXCEPTION OF SAND, SILTY SAND, AND CLAYEY SAND REQUIRE EARTH AUGERS OF MINIMUM 32 INCHES IN LENGTH AND (2) 4 INCH DIAMETER HELIXES.
   c. EARTH AUGERS SHALL HAVE A TESTED MINIMUM PULL OUT VALUE OF 6000 LBS.
4. STRAPS SHALL BE ONE OF THE FOLLOWING:
   a. 1-1/4"X0.031" STAINLESS STEEL, 301-1/4 HARD, MINIMUM TENSILE STRENGTH OF 4750 LBS
   b. 1-1/4"X0.031" GALVANIZED STEEL, CLASS B, GRADE 1, MINIMUM TENSILE STRENGTH OF 4750 LBS.
5. IN THE EVENT EARTH AUGERS ARE PRECLUDED FROM INSTALLATION, ALTERNATE TETHERING DESIGNS CAN BE SUBMITTED FOR CONSIDERATION.
6. IN ALL CASES, WHEN TANKS UP TO 350 GALLONS ARE PLACED IN AREAS OF SOIL TYPES AS DESCRIBED IN NOTE 3a, 2 STRAPS AND 4 EARTH AUGERS ARE REQUIRED. EARTH AUGER SIZE IS AS NOTED IN 3-a.
7. MINIMUM DISTANCES OF TANKS FROM STRUCTURES AND PROPERTY LINES:
   
8. Earth Augers are required in areas subject to flooding. All others may be bolted or cable tied to a concrete slab seismic only. Per CFC.

CHAPTER 61 CALIFORNIA FIRE CODE
Distance from buildings and property lines based on size of LPG container capacity.
TO SYSTEM

1/2" TEST AND DRAIN

PRESSURE GAUGE

FLOW SWITCH

CHECK VALVE

DOMESTIC SHUT OFF

INDICATING CONTROL VALVE

UNDERGROUND SUPPLY SIZING DETERMINED BY HYDRAULIC CALCULATIONS.

THIS SHALL BE PROVIDED AT TIME OF PLAN REVIEW.

(PUMP & RISER DETAIL)

(E) TANK SIZED PER FIRE SAFE STANDARDS

PUMP

CHECK VALVE

PRESSURE GAUGE

PRESSURE TANK SIZE DETERMINED BY PUMP SUPPLIER

SONOMA COUNTY
FIRE AND EMERGENCY SERVICES DEPARTMENT
2300 COUNTY CENTER DR
Santa Rosa, California 95403
Telephone (707) 565-1152  Fax (707) 565-1172

GUIDELINE FOR 13-D PUMP/TANK ASSEMBLY

FIRE SAFE STANDARDS

NOT TO SCALE

SCALE

01/19/17

REVISION DATE

DRAWING NO