


CITY OF OAKLAND
Oakland Fire Department
Fire Prevention Bureau

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MEMORANDUM

To: Planning and Building Department
Attn: Heather Klein, City Planner
From: Philip Basada, P.E.
Approval: AFM Cesar Avila 
Date: June 9, 2017 – Final
Re: Revised review comments - TTM 8320 - OAK KNOLL MIXED USE COMMUNITY PLAN PROJECT - Fire Apparatus Access and Water Supply Review

Summary. The Fire Prevention Bureau Code Enforcement Unit has revised the review of the tentative tract map for the Oak Knoll Mixed Use Community Plan Project. The following comments are based plans dated 01.30.2017 (City Submittal #2) on issues related to Fire Code Provisions and concerns on water supply, fire apparatus access and mutual response agreements with Fire Departments from other cities.

The applicant proposes to subdivide the large parcel into new residential and commercial lots located in the Wildfire Prevention Assessment District. The proposed development will create access roads greater than 10 per percent and roads with less than 26 feet travel width.

The area had previously been identified for inadequate vegetation controls with existing non-rated buildings having non-rated roof covering. The proposed development will have access road entries Keller Avenue and Mountain Boulevard.

The subject property is located within an area at risk of wildfires. The project conditions set by the Fire Department is not intended to supersede the more restrictive conditions enforced by other city agencies. The applicant shall meet the more restrictive municipal code provisions required by other agencies unless adequate alternatives are accepted as permitted per CFC Appendix D and by the Advisory Agency.

If the project is to be approved by the Advisory Agency, please attach the following conditions of approval:

- A. Site improvements (Fire apparatus access roads, hydrants, power cables, urban wildlife environment, hazardous materials):

1. Utilities and Service Systems, Hydrant Spacing:

- a. 400-foot and 500-foot spacing between hydrants in single family dwelling areas shall be installed with available fire flow of at least 1000 gpm at 20 psi. On-site water supply mains and hydrants shall be provided along all fire apparatus access roads at 400-foot maximum or 500-foot maximum spacing per CFC Appendix C. Ref: 2013 Ordinance 13208 Section 507, 2013 CFC Appendix C.
- b. 300-foot spacing between hydrants in commercial and multi-dwelling areas shall be installed with a minimum available fire flow of at least 1500 gpm at 20 psi. On-site water supply mains and hydrants shall be provided along all fire apparatus access roads at 300-foot maximum spacing between hydrants. Ref: 2013 Ordinance 13208 Section 507.
- c. Provide a copy of the water purveyor's study of available water supply on the proposed water distribution system at the site to meet the 2013 CFC Appendix B.
- d. No overhead power cables or utilities that may interfere with fire truck ladder rescue or fire fighting shall be installed in front of any new building proposed for this development. All utilities shall be undergrounded to eliminate hazards posed to rescue and fire fighting personnel. Ref.: 2013 CFC Section 901.4.3.
- e. Summary of hydrant spacing and minimum required fire flow, notes a to c, above:

| Neighborhood area | Hydrant spacing, ft. | Minimum fire flow, gpm at 20 psi |
|--|----------------------|----------------------------------|
| Single family areas | 500, 400 ft. | 1000 gpm |
| Commercial, Multi-dwelling areas, Others | 300 | 1500 |

2. Fire Apparatus Access Roads, Off-Street Parking, Fire Crew Access to individual lots:

- a. Construction documents. Construction plans for fire access roads and plans for the water supply and distribution systems shall be submitted to Oakland Fire Department for review and approval prior to construction. Ref.: 2013 CFC 501.3, 501.4.
- b. Construction of buildings. Access roads (and on site hydrants) shall be available prior to and during construction unless approved alternative methods of fire protection and fire prevention are provided.
- c. Fire apparatus access road widths shall adopt the fire department's access guidelines as adopted in the amended 2013 CFC Appendix D.

The new Fire Code Appendix D will be adopted by the City of Oakland and may be applied to new and existing roads to allow not only the OFD ladder and engine apparatuses from the City's fire stations but also those from other cities where the city's Fire Department has ~~mutual-response-agreements-with-other-jurisdictions.~~

- d. Fire watch and fire apparatus access shall be provided per 2013 CFC Chapter 5 and Appendix C during all phases of construction, especially upon delivery of combustible construction materials at the site.
- e. All new fire apparatus roads shall not exceed 18 percent slope. The apparatus turnaround shall not exceed 5 percent slope.
- f. Each building on a lot shall be provided with approved steps on grade that leads to the farthest exterior walls on grade when property slopes exceed 10 percent.

2a. Specific Oak Knoll Road Sections:

a. Creekside Parkway

Creekside Parkway street section with a 22' minimum width for vehicular travel lanes is acceptable with the following Conditions. Where fire hydrants are located, pursuant to the spacing requirements above, the parking lanes shall be red curbed for a maximum of 30' and parking restricted in this area to maintain a 26' clear area for fire apparatus purposes. Furthermore, no building shall front directly onto or be accessed off Creekside Parkway.

b. All Townhome Parcels

Townhome parcels with building heights greater than 30' will have minimum width of 20' clear (no parking) on internal driveways/alleys. In the area in front of the buildings on the driveways/alleys, there will be a minimum width of 26' clear. Furthermore, there will be internal hydrants on these driveways/alleys. This condition will be subject to the fire review of the building permits on townhome building permit applications.

c. Creekside Loop

This street has both townhomes and garden court parcels fronting it. The street section with a 26' minimum width, when courtyard housing and townhomes are across the street from each other, is acceptable assuming parking on one side and cross striping on the other side. In situations, where fire hydrants are located on the street, pursuant to the spacing requirements above, the parking lanes shall be red curbed for a maximum of 30' and parking restricted in this area in order to maintain a 26' clear area for fire apparatus purposes. In addition, the parcel containing Club Knoll will include hydrants close to the building and contain a minimum of 26' clear area on Creekside Loop adjacent to the fire hydrants, or a minimum of 20' driveway width and in the area in front of the buildings, to be 26' clear with no parking and with clear access to an on-street fire hydrant for this building.

d. Upland Primary

The homes in this area will have building heights less than 30'. This street section with a 20' minimum width is acceptable with the following conditions. ~~Where fire hydrants are located, pursuant to the spacing requirements above, the parking lanes shall be red curbed for a maximum of 30' and parking restricted in this area in order to maintain a 26' clear area for fire apparatus purposes. This condition will be subject to the fire review of the Upland Primary building permit applications to confirm building heights.~~

e. Upland Secondary

The homes in this area will have building heights less than 30'. This street section with a 20' minimum width is acceptable with the following conditions. Where fire hydrants are located, pursuant to the spacing requirements above, the parking lanes shall be red curbed for a maximum of 30' and parking restricted in this area in order to maintain a 26' clear area for fire apparatus purposes. This condition will be subject to the fire review of the building permits in the Upland Secondary building permit applications to confirm heights.

f. Village Primary

The homes in this area will have building heights less than 30'. This street section with a 20' minimum width is acceptable with the following conditions. Where fire hydrants are located, pursuant to the spacing requirements above, the parking lanes shall be red curbed for a maximum of 30' and parking restricted in this area in order to maintain a 26' clear area for fire apparatus purposes. This condition will be subject to the fire review of the building permits in the Village Primary area to confirm building heights.

g. Garden Courts

The homes in this area will have building heights less than 30'. The proposed driveways will have a minimum of 20' width and not be striped/used as formal fire lanes. However, no parking will be permitted to allow for truck access. This access will allow a hose length not to exceed 150' from the furthest point of the structure to a pump truck or a hydrant. This condition will be subject to the fire review of the building permits in the Garden Courts to confirm building heights.

h. Emergency Vehicle Access Roads (EVA)

Emergency vehicle access roads will be 20' clear with no parking. Bollards or gates will be placed at each end of the EVA and will have knock-boxes or some other method to allow emergency fire vehicle access.

i. Cul-de-sacs and Hammerhead

The cul-de-sacs will be at least 70' in diameter per Fire Code Appendix D.

Hammerhead turnarounds shall have 20' minimum roadway width, a minimum of 25' foot legs and the turning radius shall be a minimum of 25' per Fire Code Appendix D.

j. Building Heights

~~Building height is measured from road grade near the midpoint of the residential home's lot frontage, up to the bottom of eave or parapet of the primary structure. For building height, habitable space above the eave measurement is not included in building height measurement. If the building height is less than 30', the public road fronting the home must have a 20' minimum width (not including the parallel parking stall widths on both sides). If the building height is more than 30' in height, then the road will have 26' minimum width possibly including parallel parking stall width.~~

3. Vegetation Management

- a. The Vegetation Management Unit enforces the rules applicable to the Wildfire Assessment District boundaries. However, certain trees may be regulated as noted below.
- b. The trees selected shall be maintained to allow fire apparatus access: 20 feet of unobstructed road width and 13'6" clear height.
- c. Please contact the Fire Prevention Bureau's Vegetation Management Unit at (510) 238-7391 and ask for Haz Mat supervisor Vincent Crudele.

4. Hazardous Materials

- a. Please refer to the review and conditions of approval of handling hazardous materials and soil contamination per Ms. Sheryl Skillern – Supervising Inspector of Hazardous Materials, OFD (510.238.7253, sskillern@oaklandnet.com).
- b. "An extensive clean-up of this property was completed after the Oak Knoll Hospital was demolished. Therefore, there are no known hazardous chemical contamination issues that would prevent future development of this site. However, if suspected contaminated soil and/or underground storage tanks are discovered during construction, we would need to be notified." ... - Sincerely, Sheryl Skillern - Hazardous Materials Inspector, City of Oakland Fire Department, (510) 238-7253

B. Site Improvements (Structures or buildings within each private property):

1. Building Permits (subject to approval of AMMR application):

- a. Each new building proposed in this development shall comply as required per City Ordinance 13208 or adopted code for new construction in the fire hazard areas of the Oakland Hills at the time of permit application.
- b. All new buildings shall be equipped with an approved sprinkler system. Residential sprinklers shall be sized to deliver an amount of flow

equivalent to the four most hydraulically demanding heads on single-family dwellings.

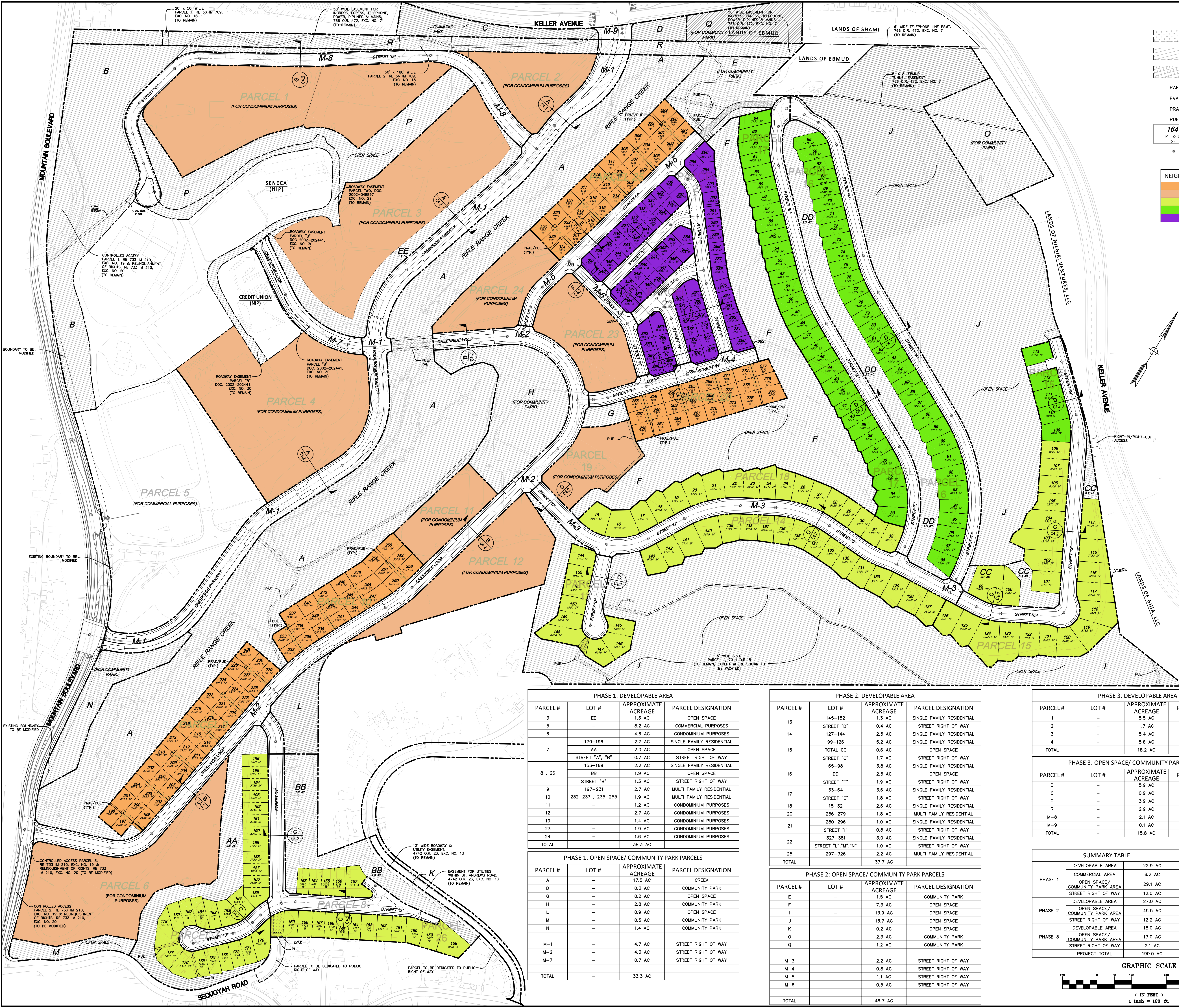
- c. Only UL-certified fire alarm service providers (per NFPA 72 standards) shall monitor each residential sprinkler system.
- d. ~~Access roads and water supply availability shall meet or exceed the~~ provisions of 2013 CFC Appendices C and D, as amended per City Ordinance 13208 and per this review to mitigate excessive slopes and/o available water supply.

LEGEND:

- = PROPOSED EASEMENT
- = OPEN SPACE RESERVATION
- = OPEN SPACE
- = PAE = PUBLIC ACCESS EASEMENT
- = EVAE = EMERGENCY VEHICLE ACCESS EASEMENT
- = PRAE = PRIVATE ACCESS EASEMENT
- = PUE = PUBLIC UTILITY EASEMENT
- = 164 LOT NUMBER
- = LOT SIZE
- = TENTATIVE LOCATION OF MONUMENTS, (EXACT LOCATION TO BE SHOWN ON FINAL MAP.)

NEIGHBORHOOD DESIGNATION LEGEND

| | |
|--|-------------------|
| | GARDEN COURTS |
| | TOWNHOME PARCEL |
| | UPLANDS PRIMARY |
| | UPLANDS SECONDARY |
| | VILLAGE PRIMARY |



PHASE 1: DEVELOPABLE AREA

| PARCEL # | LOT # | APPROXIMATE ACREAGE | PARCEL DESIGNATION |
|----------|------------------|---------------------|---------------------------|
| 3 | EE | 1.3 AC | OPEN SPACE |
| 5 | - | 8.2 AC | COMMERCIAL PURPOSES |
| 6 | - | 4.6 AC | CONDOMINIUM PURPOSES |
| 7 | 170-196 | 2.7 AC | SINGLE FAMILY RESIDENTIAL |
| | AA | 2.0 AC | OPEN SPACE |
| | STREET "A", "B" | 0.7 AC | STREET RIGHT OF WAY |
| 8, 26 | 153-169 | 2.2 AC | SINGLE FAMILY RESIDENTIAL |
| | BB | 1.9 AC | OPEN SPACE |
| | STREET "B" | 1.3 AC | STREET RIGHT OF WAY |
| 9 | 197-231 | 2.7 AC | MULTI FAMILY RESIDENTIAL |
| 10 | 232-233, 235-255 | 1.9 AC | MULTI FAMILY RESIDENTIAL |
| 11 | - | 1.2 AC | CONDOMINIUM PURPOSES |
| 12 | - | 2.7 AC | CONDOMINIUM PURPOSES |
| 19 | - | 1.4 AC | CONDOMINIUM PURPOSES |
| 23 | - | 1.9 AC | CONDOMINIUM PURPOSES |
| 24 | - | 1.6 AC | CONDOMINIUM PURPOSES |
| TOTAL | - | 38.3 AC | - |

PHASE 1: OPEN SPACE/ COMMUNITY PARK PARCELS

| PARCEL # | LOT # | APPROXIMATE ACREAGE | PARCEL DESIGNATION |
|----------|-------|---------------------|---------------------|
| A | - | 17.5 AC | CREEK |
| D | - | 0.3 AC | COMMUNITY PARK |
| G | - | 0.2 AC | OPEN SPACE |
| H | - | 2.8 AC | COMMUNITY PARK |
| L | - | 0.9 AC | OPEN SPACE |
| M | - | 0.5 AC | COMMUNITY PARK |
| N | - | 1.4 AC | COMMUNITY PARK |
| M-1 | - | 4.7 AC | STREET RIGHT OF WAY |
| M-2 | - | 4.3 AC | STREET RIGHT OF WAY |
| M-7 | - | 0.7 AC | STREET RIGHT OF WAY |
| TOTAL | - | 33.3 AC | - |

PHASE 2: DEVELOPABLE AREA

| PARCEL # | LOT # | APPROXIMATE ACREAGE | PARCEL DESIGNATION |
|----------|------------|---------------------|---------------------------|
| 13 | 145-152 | 1.3 AC | SINGLE FAMILY RESIDENTIAL |
| | STREET "D" | 0.4 AC | STREET RIGHT OF WAY |
| 14 | 127-144 | 2.5 AC | SINGLE FAMILY RESIDENTIAL |
| | 99-126 | 5.2 AC | SINGLE FAMILY RESIDENTIAL |
| 15 | TOTAL CC | 0.6 AC | OPEN SPACE |
| | STREET "C" | 1.7 AC | STREET RIGHT OF WAY |
| | 65-98 | 3.8 AC | SINGLE FAMILY RESIDENTIAL |
| 16 | DD | 2.5 AC | OPEN SPACE |
| | STREET "H" | 1.9 AC | STREET RIGHT OF WAY |
| 17 | 33-64 | 3.6 AC | SINGLE FAMILY RESIDENTIAL |
| | STREET "E" | 1.8 AC | STREET RIGHT OF WAY |
| 18 | 15-32 | 2.6 AC | SINGLE FAMILY RESIDENTIAL |
| 20 | 256-279 | 1.8 AC | MULTI FAMILY RESIDENTIAL |
| 21 | 280-296 | 1.0 AC | SINGLE FAMILY RESIDENTIAL |
| | STREET "I" | 0.8 AC | STREET RIGHT OF WAY |
| 22 | 327-381 | 3.0 AC | SINGLE FAMILY RESIDENTIAL |
| 25 | 297-326 | 2.2 AC | MULTI FAMILY RESIDENTIAL |
| TOTAL | - | 37.7 AC | - |

PHASE 2: OPEN SPACE/ COMMUNITY PARK PARCELS

| PARCEL # | LOT # | APPROXIMATE ACREAGE | PARCEL DESIGNATION |
|----------|-------|---------------------|---------------------|
| E | - | 1.5 AC | COMMUNITY PARK |
| F | - | 7.3 AC | OPEN SPACE |
| I | - | 13.9 AC | OPEN SPACE |
| J | - | 15.7 AC | OPEN SPACE |
| K | - | 0.2 AC | OPEN SPACE |
| Q | - | 2.3 AC | COMMUNITY PARK |
| O | - | 1.2 AC | COMMUNITY PARK |
| M-3 | - | 2.2 AC | STREET RIGHT OF WAY |
| M-4 | - | 0.8 AC | STREET RIGHT OF WAY |
| M-5 | - | 1.1 AC | STREET RIGHT OF WAY |
| M-6 | - | 0.5 AC | STREET RIGHT OF WAY |
| TOTAL | - | 46.7 AC | - |

PHASE 3: DEVELOPABLE AREA

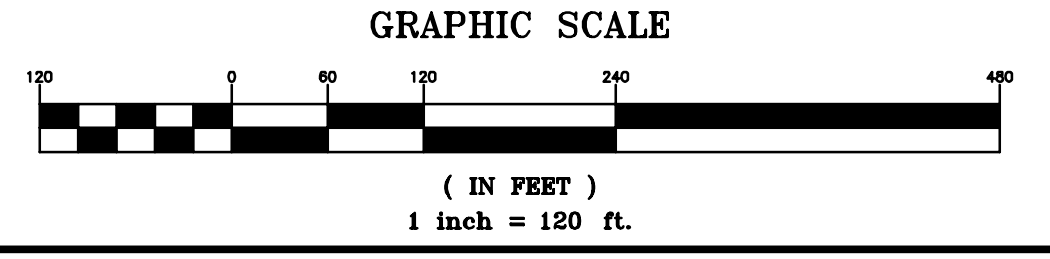
| PARCEL # | LOT # | APPROXIMATE ACREAGE | PARCEL DESIGNATION |
|----------|-------|---------------------|----------------------|
| 1 | - | 5.5 AC | CONDOMINIUM PURPOSES |
| 2 | - | 1.7 AC | CONDOMINIUM PURPOSES |
| 3 | - | 5.4 AC | CONDOMINIUM PURPOSES |
| 4 | - | 5.6 AC | CONDOMINIUM PURPOSES |
| TOTAL | - | 18.2 AC | - |

PHASE 3: OPEN SPACE/ COMMUNITY PARK PARCELS

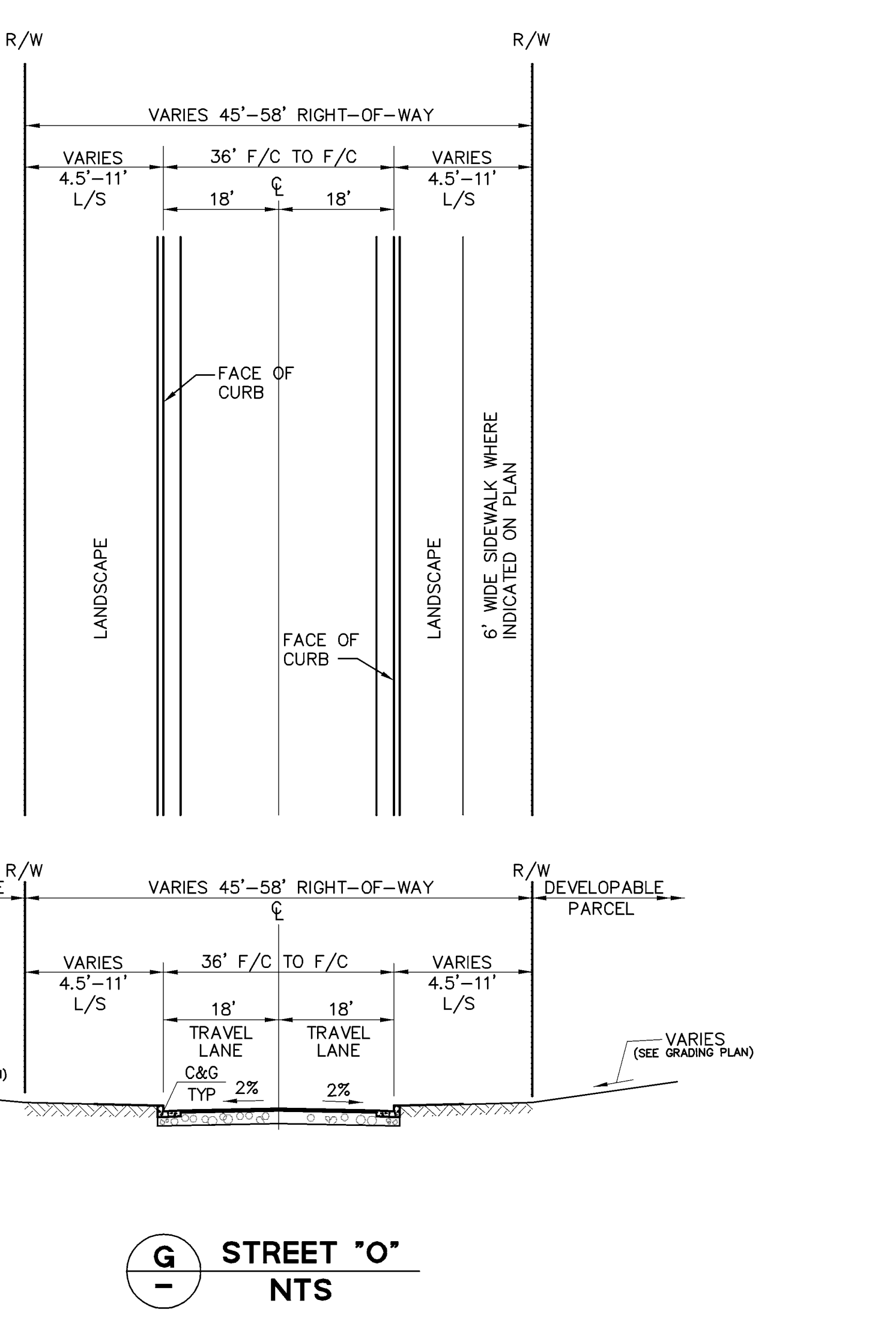
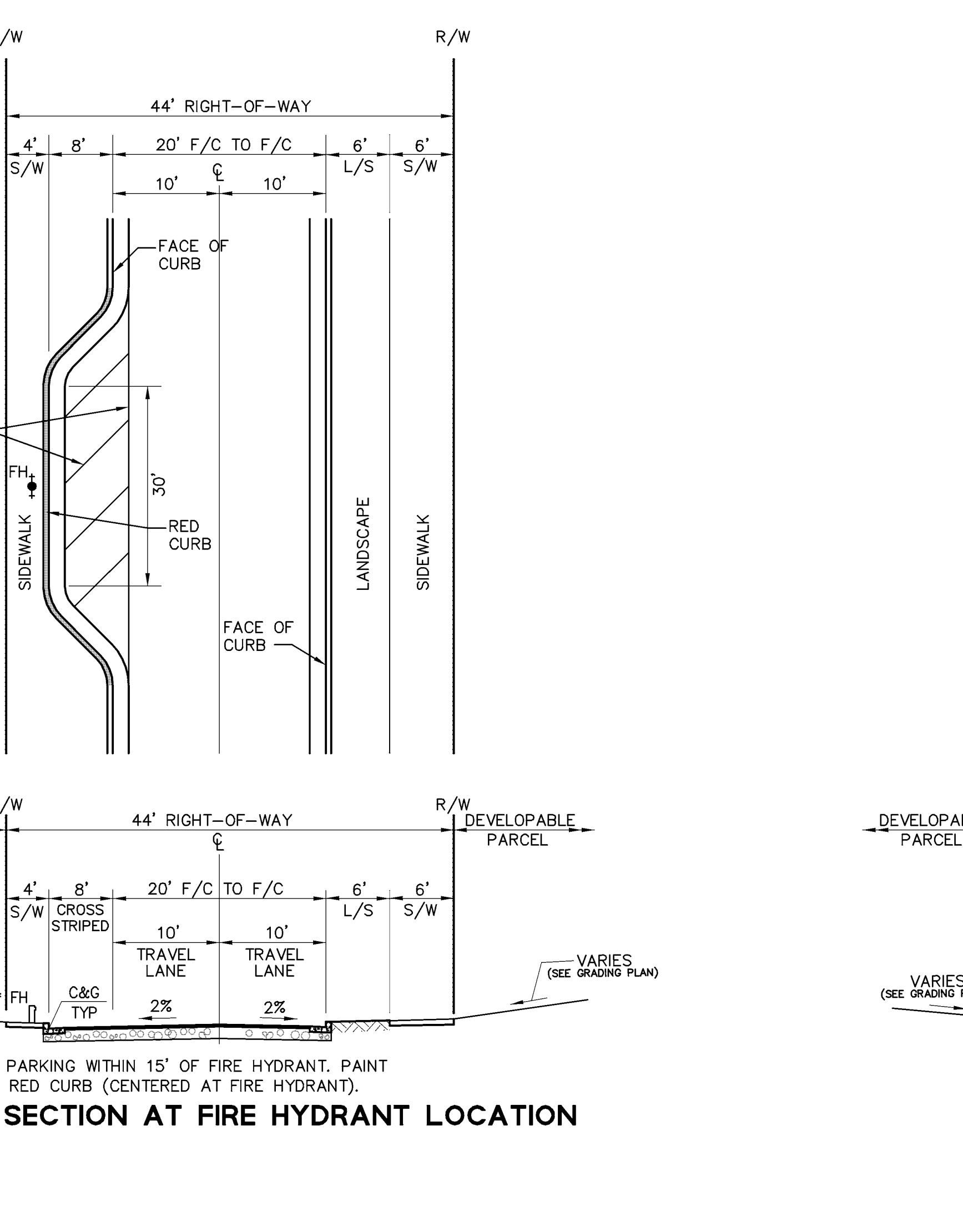
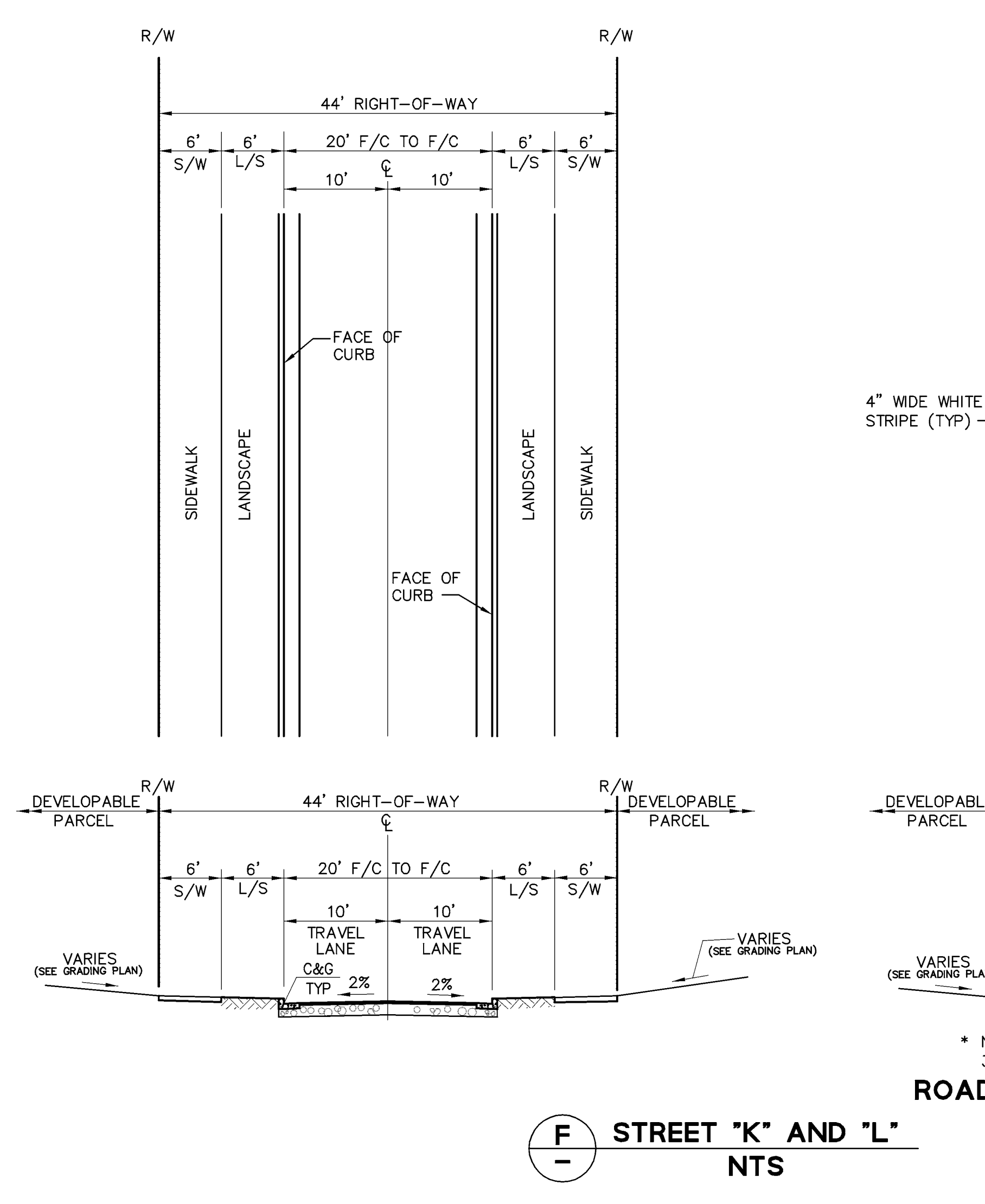
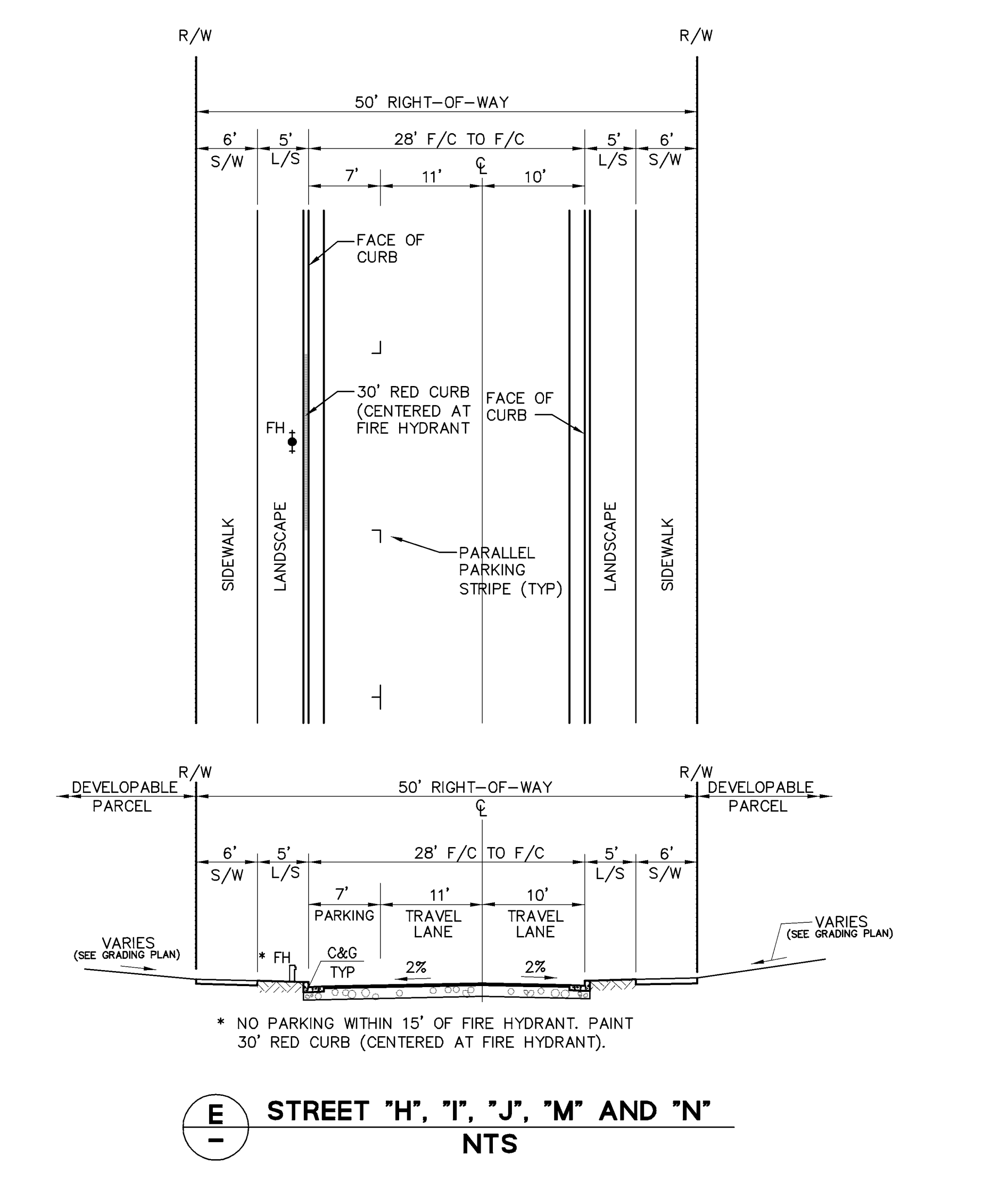
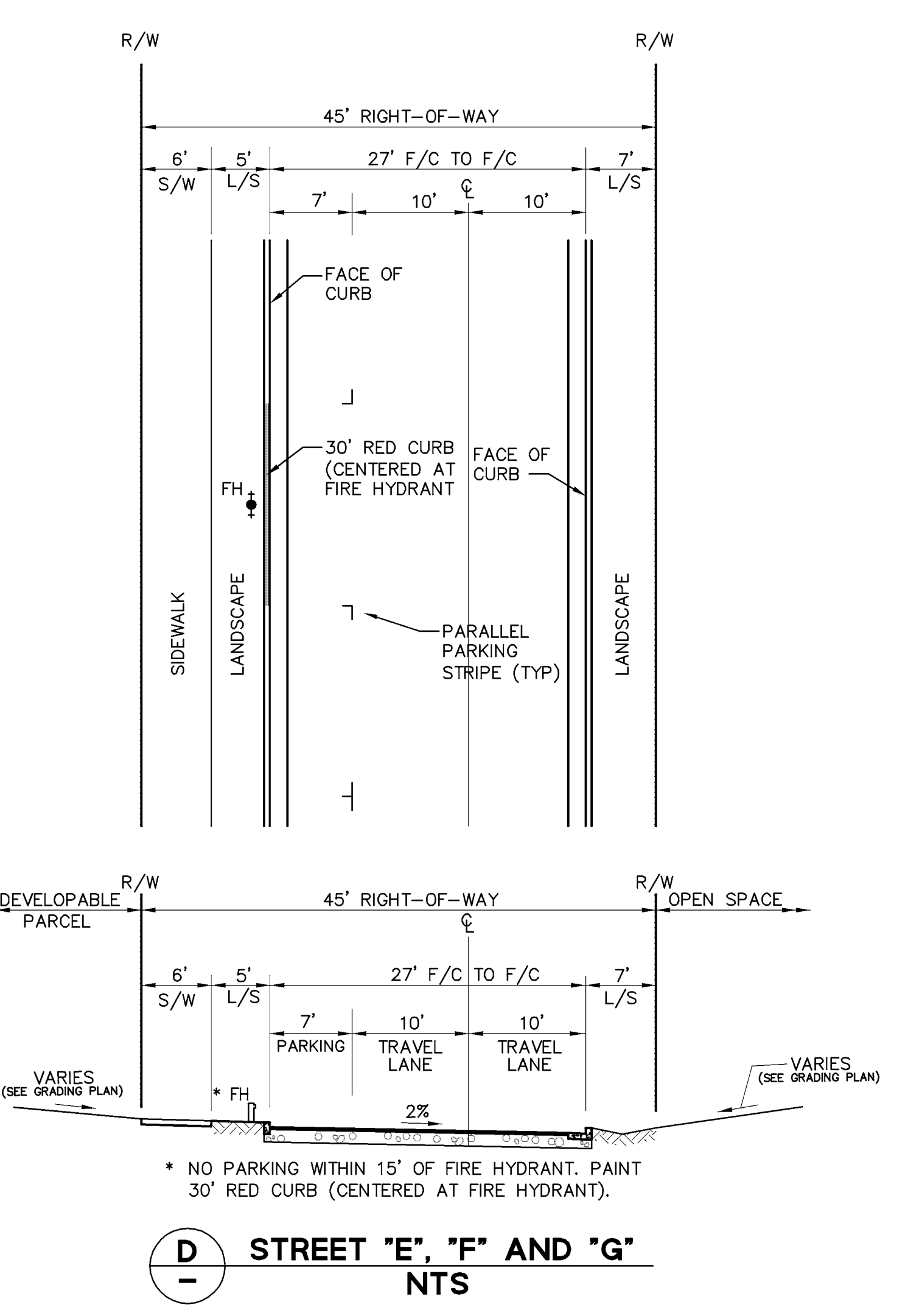
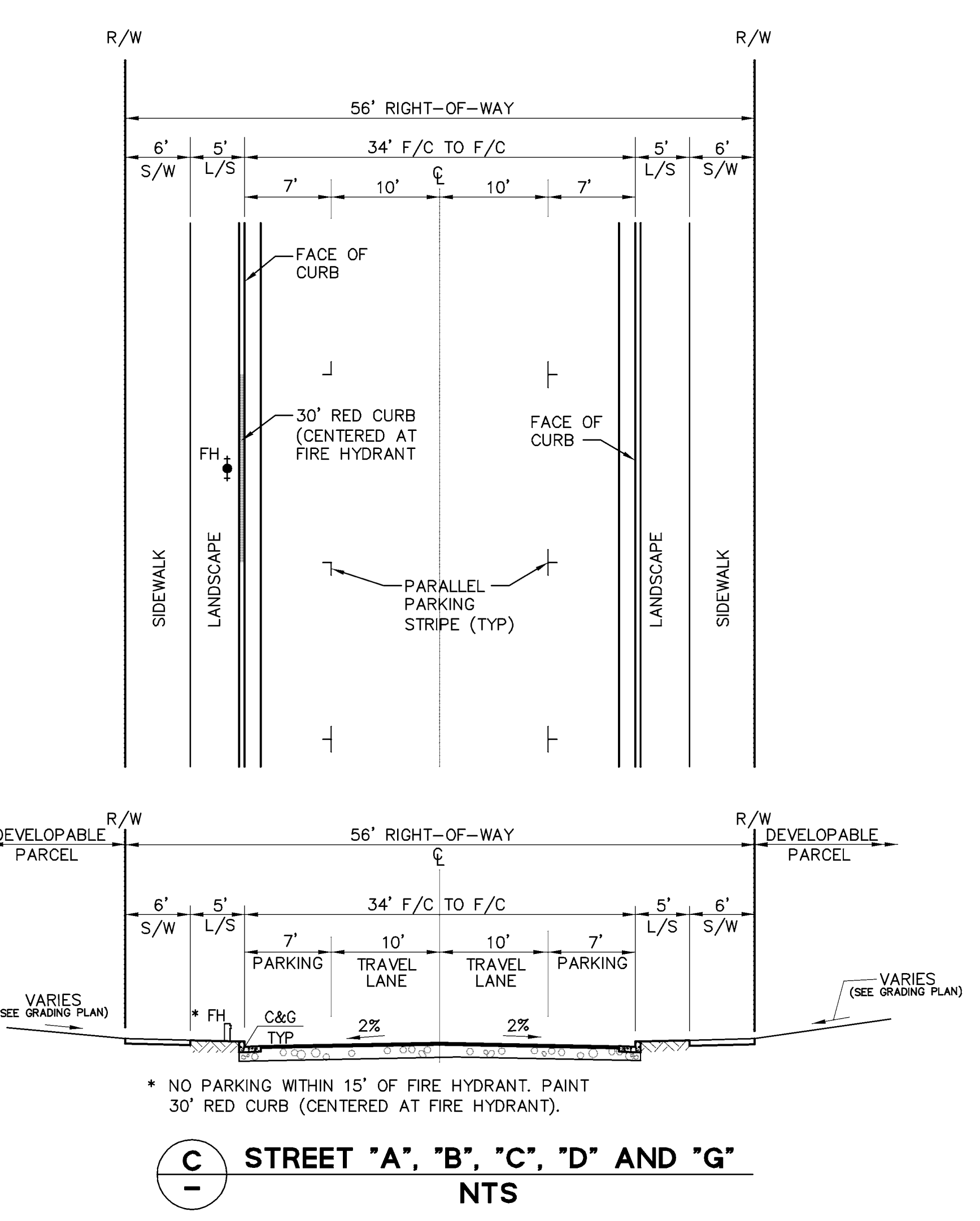
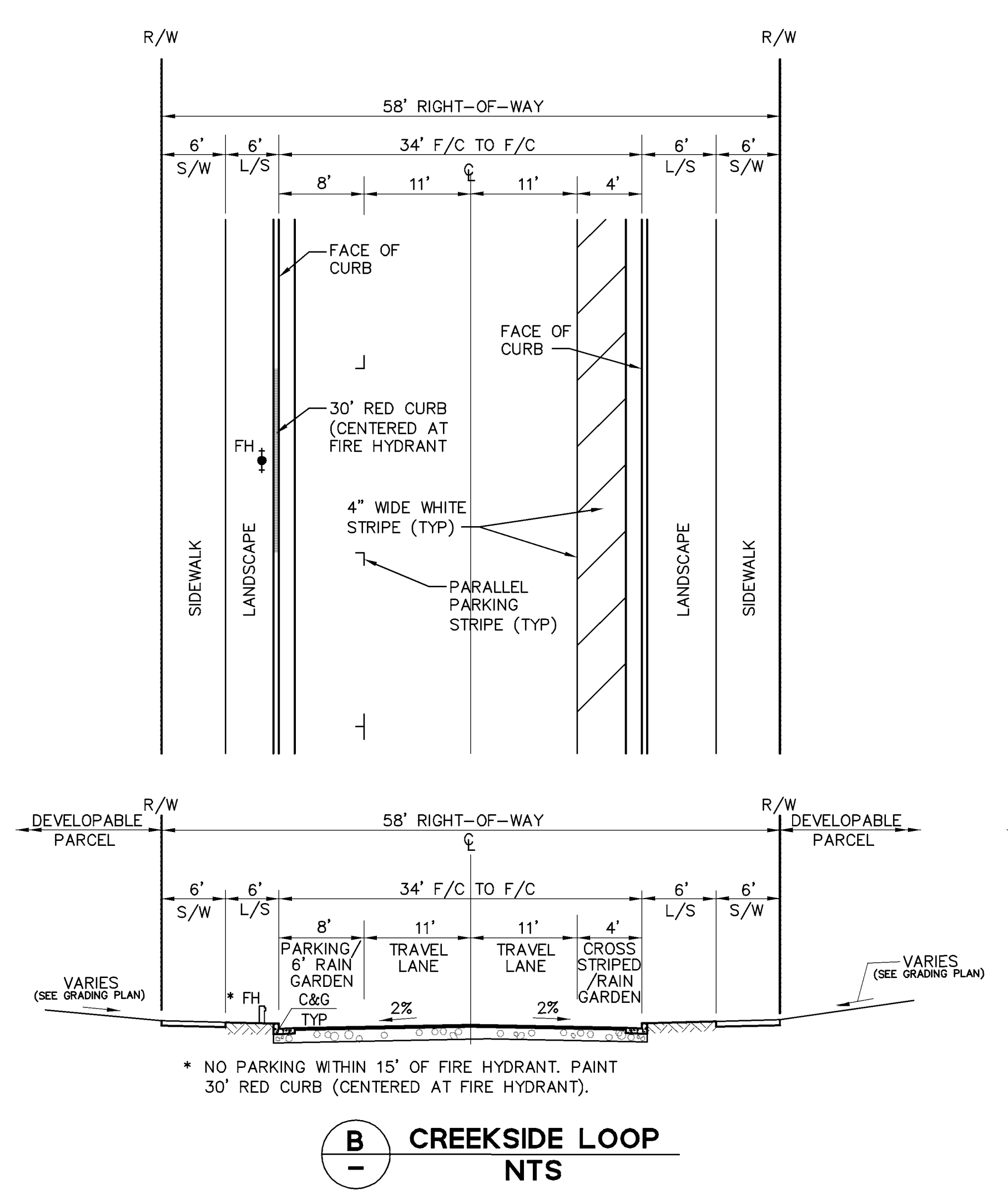
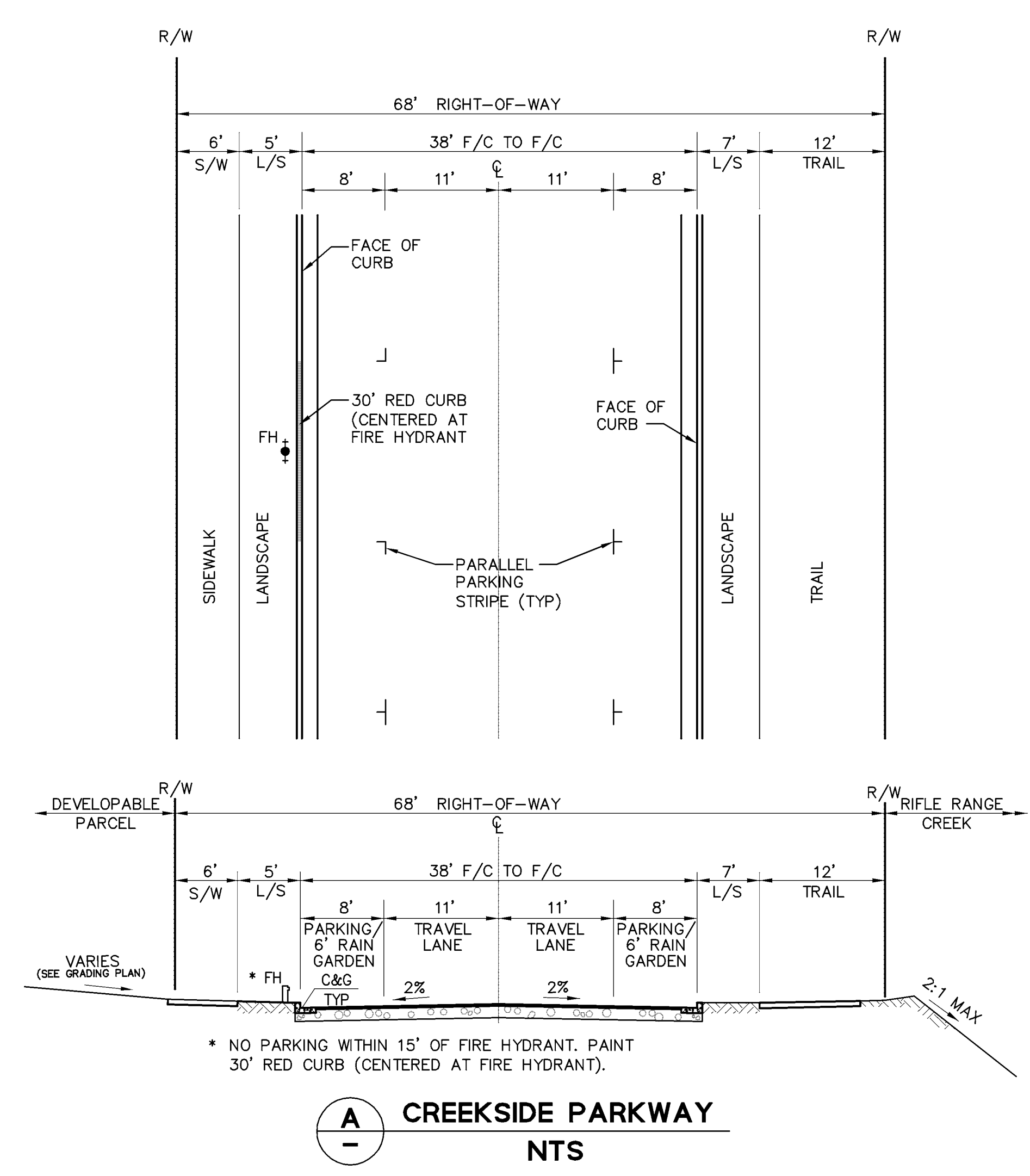
| PARCEL # | LOT # | APPROXIMATE ACREAGE | PARCEL DESIGNATION |
|----------|-------|---------------------|---------------------|
| B | - | 5.9 AC | OPEN SPACE |
| C | - | 0.9 AC | COMMUNITY PARK |
| P | - | 3.9 AC | OPEN SPACE |
| R | - | 2.9 AC | OPEN SPACE |
| M-8 | - | 2.1 AC | STREET RIGHT OF WAY |
| M-9 | - | 0.1 AC | STREET RIGHT OF WAY |
| TOTAL | - | 15.8 AC | - |

SUMMARY TABLE

| PHASE | DEVELOPABLE AREA | APPROXIMATE ACREAGE |
|---------|---------------------------------|---------------------|
| PHASE 1 | DEVELOPABLE AREA | 22.9 AC |
| PHASE 1 | COMMERCIAL AREA | 8.2 AC |
| PHASE 1 | OPEN SPACE/ COMMUNITY PARK AREA | 29.1 AC |
| PHASE 1 | STREET RIGHT OF WAY | 12.0 AC |
| PHASE 1 | DEVELOPABLE AREA | 27.0 AC |
| PHASE 2 | DEVELOPABLE AREA | 45.5 AC |
| PHASE 2 | COMMUNITY PARK AREA | 12.2 AC |
| PHASE 2 | DEVELOPABLE AREA | 18.0 AC |
| PHASE 3 | OPEN SPACE/ COMMUNITY PARK AREA | 13.0 AC |
| PHASE 3 | STREET RIGHT OF WAY | 2.1 AC |
| TOTAL | PROJECT TOTAL | 190.0 AC |



| | | |
|-----------|-------------------------|----|
| Revisions | 05/16/16 City Submittal | #2 |
| No. | 01/30/17 City Submittal | #2 |
| Date | 06/08/17 | |
| Scale | NTS | |
| Design | JN | |
| Drawn | DP/JAN/02/EA | |
| Approved | JN | |
| Job No. | 20050154 | |



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