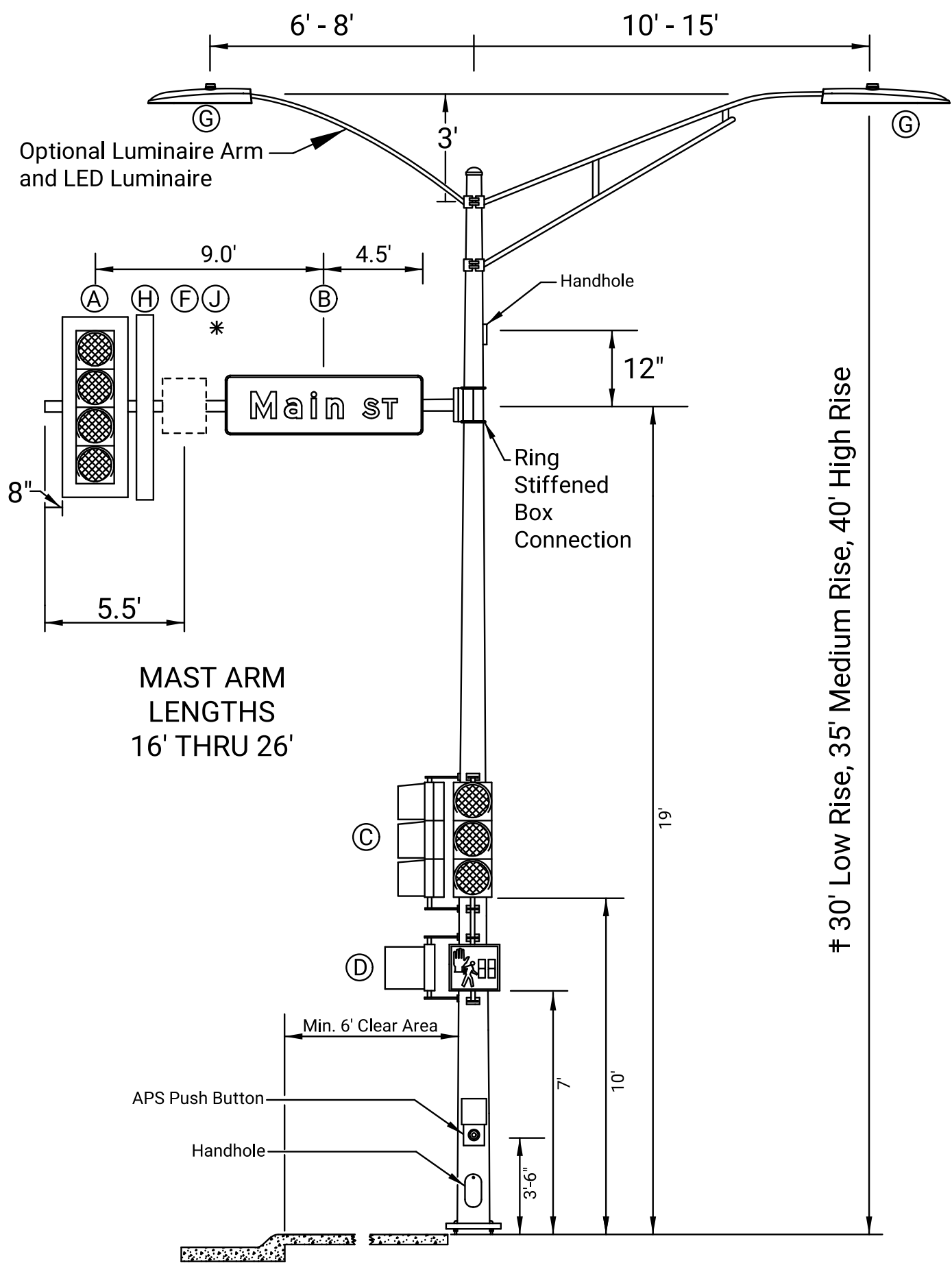


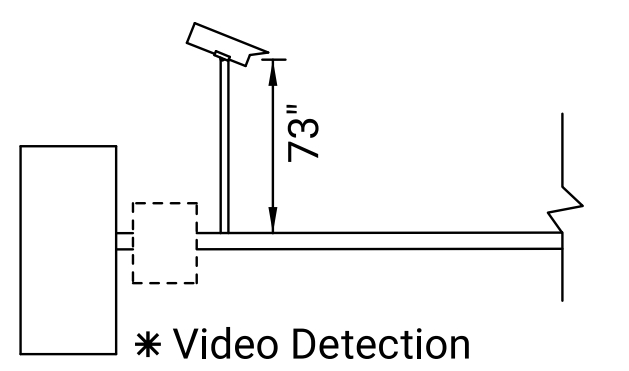
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	0	0	0	0



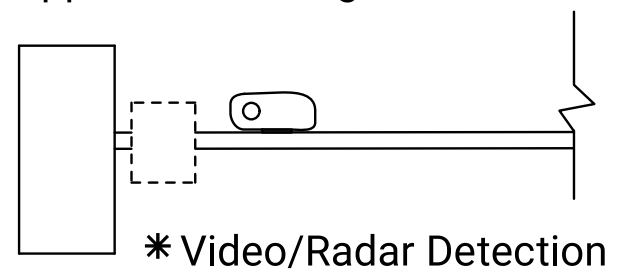
* J Video Detection Bracket and Pole. Mounting Height and Location Will Vary.

Design for either Video/Radar Detection or Video Only but not both.

Approximate Weight is 5-7 lbs



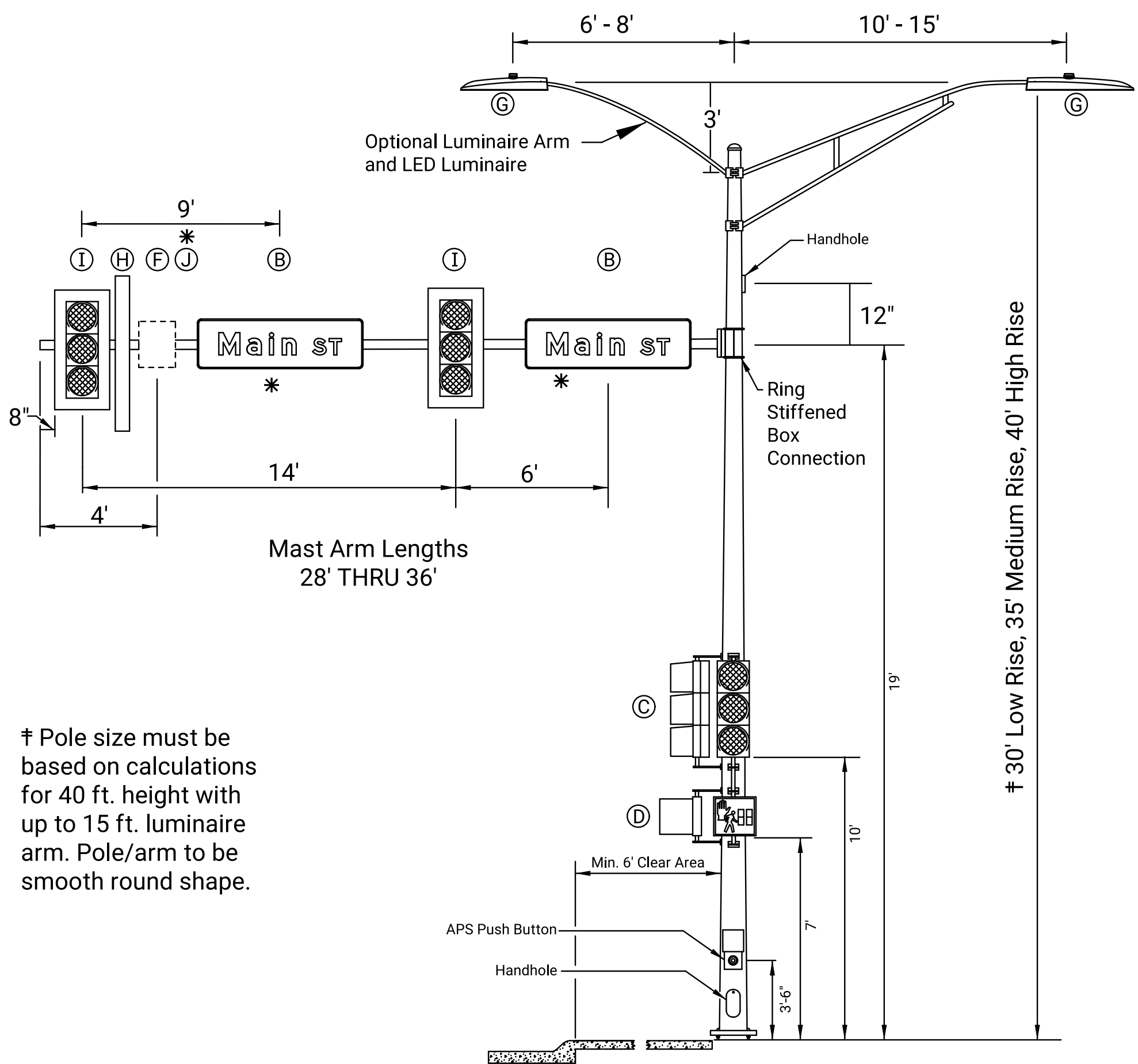
Approximate Size is 14"Hx15"Wx17"D
Approximate Weight is 10-12lbs



	Proj. Area (sq ft)	Weight (lbs)
A 12" - 4 Section Signal w/Backplate	11.00	54.00
B 18" x 108" Street Name Sign	13.50	30.00
C 12" - 3 Sectional Signal No Backplate	8.60	31.00
D Single Section Pedestrian Signal (S)	4.00	20.00
E 30" x 30" Pole Mounted Sign	6.25	13.00
F 30" x 36" Mast Arm Mounted Sign	7.50	16.00
G LED Luminaire	Δ 1.30	35.00
H Valmont Structures Mitigator TR1	Δ 1.50	35.00
I 12" - 3 Section Signal w/Backplate	8.67	40.00
* J Video Detection Camera Bracket & Pole	4.00	35.00

Δ Effective Projected Area (EPA)

† Pole size must be based on calculations for 40 ft. height with up to 15 ft. luminaire arm. Pole/arm to be smooth round shape.



DESIGN SPECIFICATIONS:

AASHTO 2013 Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, and Interims.

Reinforced Concrete Design per AASHTO Standard Specifications for Highway Bridges, 17th Edition.

DESIGN LOADING:

DEAD LOAD - Loads as shown in this drawing and supporting structure.
ICE - 3 psf to one face of signs and around surface of all signals, luminaires and traffic signals.

WIND - 90 MPH wind speed.

FATIGUE CATEGORY 1 including Natural Wind and Truck-Induced Gusts.

$K_z = 1.0$ for $Z < 33'$, otherwise

$K_z = 2.01 \left(\frac{Z}{Z_g} \right)^{2.5}$ for $Z \geq 33'$

UNIT STRESSES:

Concrete (Grade 4.0)
Reinforcing Steel (Grade 60)
Structural Steel - Bars and Plates (A709 Grade 36)
Luminaire Arm Connection Clamp (A572)
Mast Arm and Pole (ASTM A595 grade A, and A572)
Luminaire Arms (ASTM A53, A513, or A500)
High Strength Bolts (ASTM F3125 grade A325)
Thru Bolt (ASTM A193-B7)
Anchor Rod (ASTM F1554 Grade 55)

$f'_c = 4,000$ psi
 $F_y = 60,000$ psi
 $F_y = 36,000$ psi
 $F_y = 55,000$ psi
 $F_y = 55,000$ psi
 $F_y = 36,000$ psi¹
 $F_y = 92,000$ psi
 $F_y = 55,000$ psi
 $F_y = 55,000$ psi

¹ Minimum requirement, ASTM A595, A572, and higher-grade material is optional.

GENERAL NOTES:

Pole shall be designed with minimum of six (6) anchor rods.

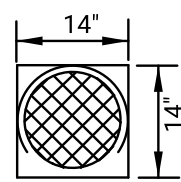
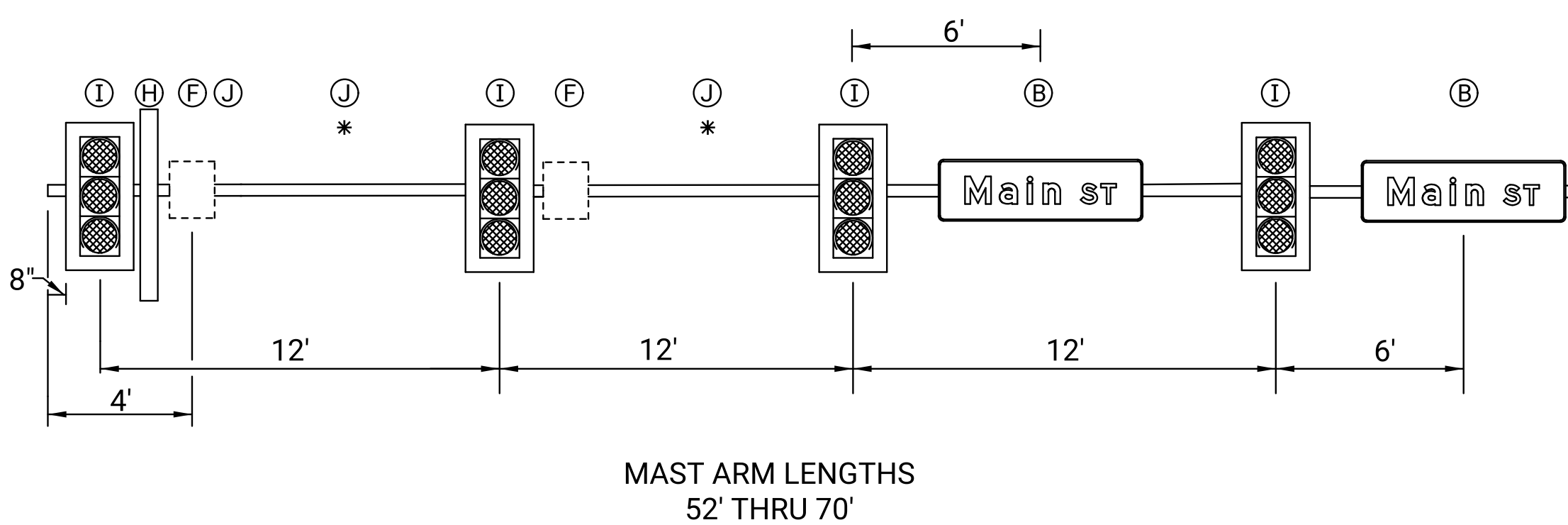
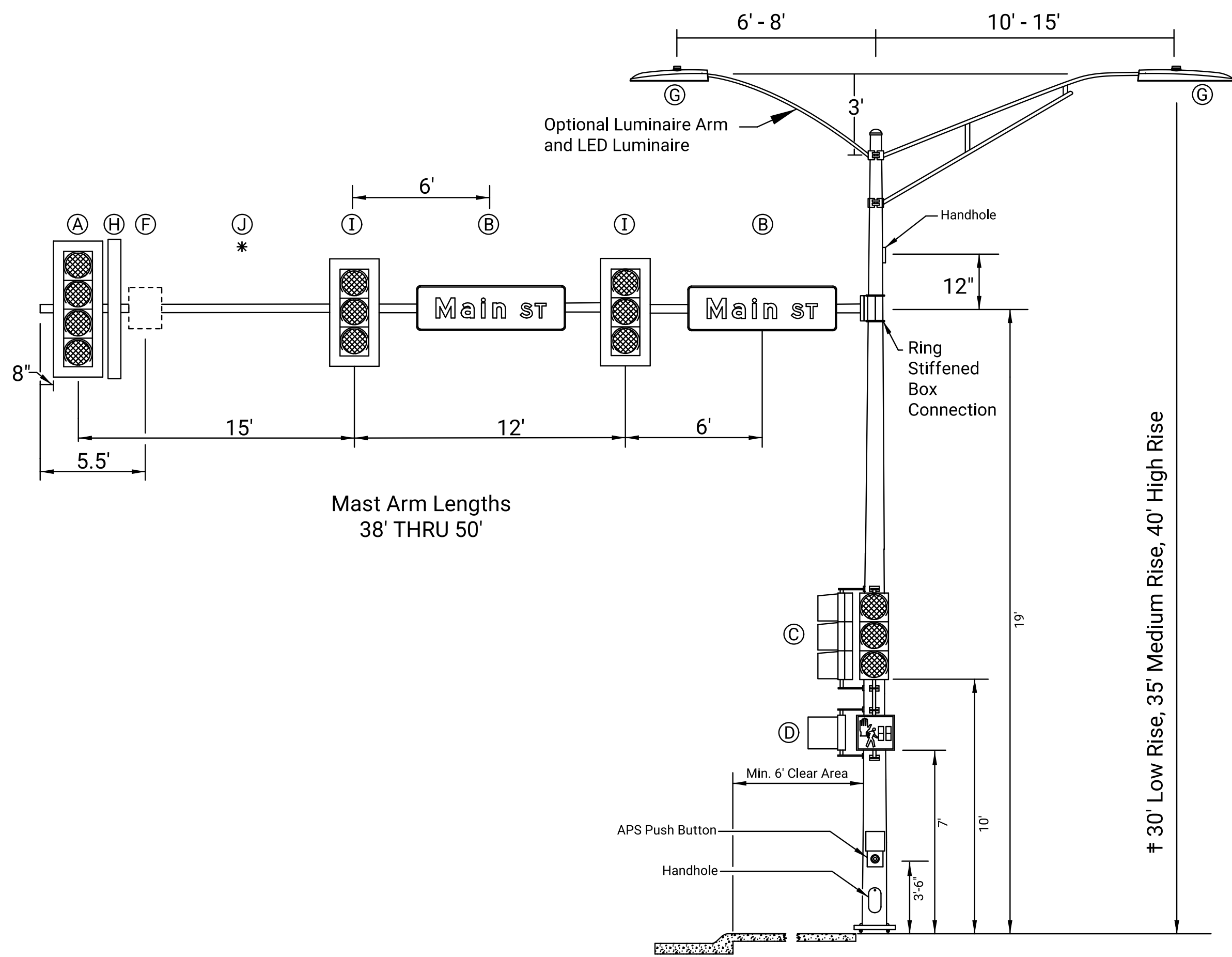
Installation of flat washers in faying surfaces is not allowed.

Construction shall conform to the Standard Specifications for State Road & Bridge Construction 2015.

High strength bolt hardware shall conform to ASTM A563 nuts, ASTM F436 hardened washers, and F959 type 325 Direct Tension Indicator washers. All hardware shall be galvanized.

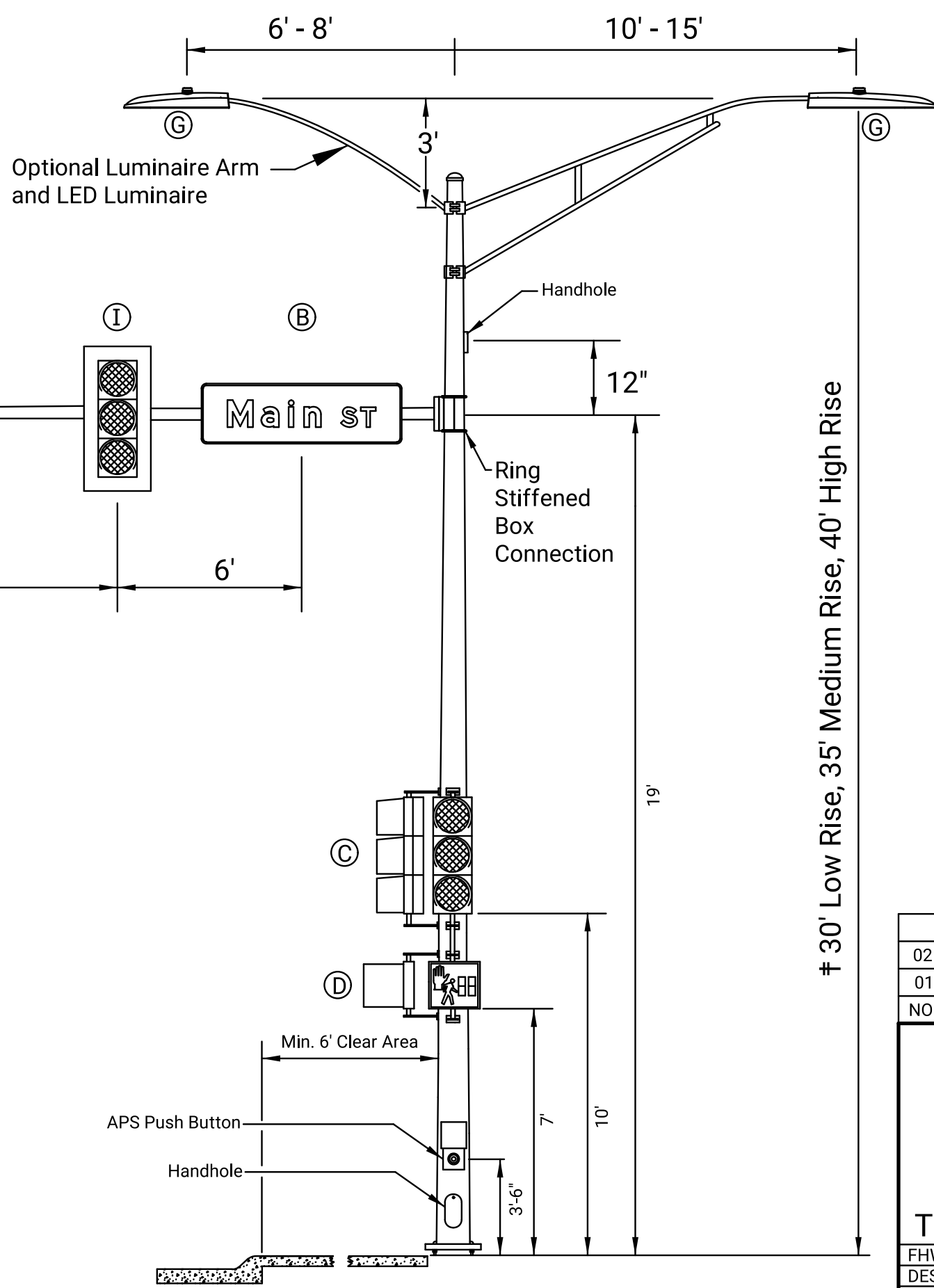
Anchor rod hardware shall conform to ASTM A563 heavy hex nuts, ASTM A709 grade 50 plate washers, ASTM F436 flat washers, and ASTM F2437 DTI washers. All hardware shall be galvanized.

Arms and pole members shall be hot dip galvanized according to ASTM A123 after fabrication. Field damages to the coating shall be repaired after installation.



Signal Assembly Weights for Design:

3 Head Signal Assembly 40 lbs
4 Head Signal Assembly 54 lbs
5 Head Signal Assembly 67 lbs



02	09-30-22	Added Medium Rise to Luminaire Arm			J.A.P. S.M.P.
01	06-23-22	Added Valmont Mitigator TR1			J.A.P. S.M.P.
NO.	DATE	REVISIONS			BY APP'D
KANSAS DEPARTMENT OF TRANSPORTATION					
TRAFFIC SIGNAL MAST ARM LOADINGS					
TE114					
FHWA APPROVAL		10-06-22		APP'D. Sara M. Peters	
DESIGNED	J.A.P.	DETAILED	J.A.P.	QUANTITIES	TRACED
DESIGN CK.	S.M.P.	DETAIL CK.	S.M.P.	QUAN.CK.	TRACE CK.