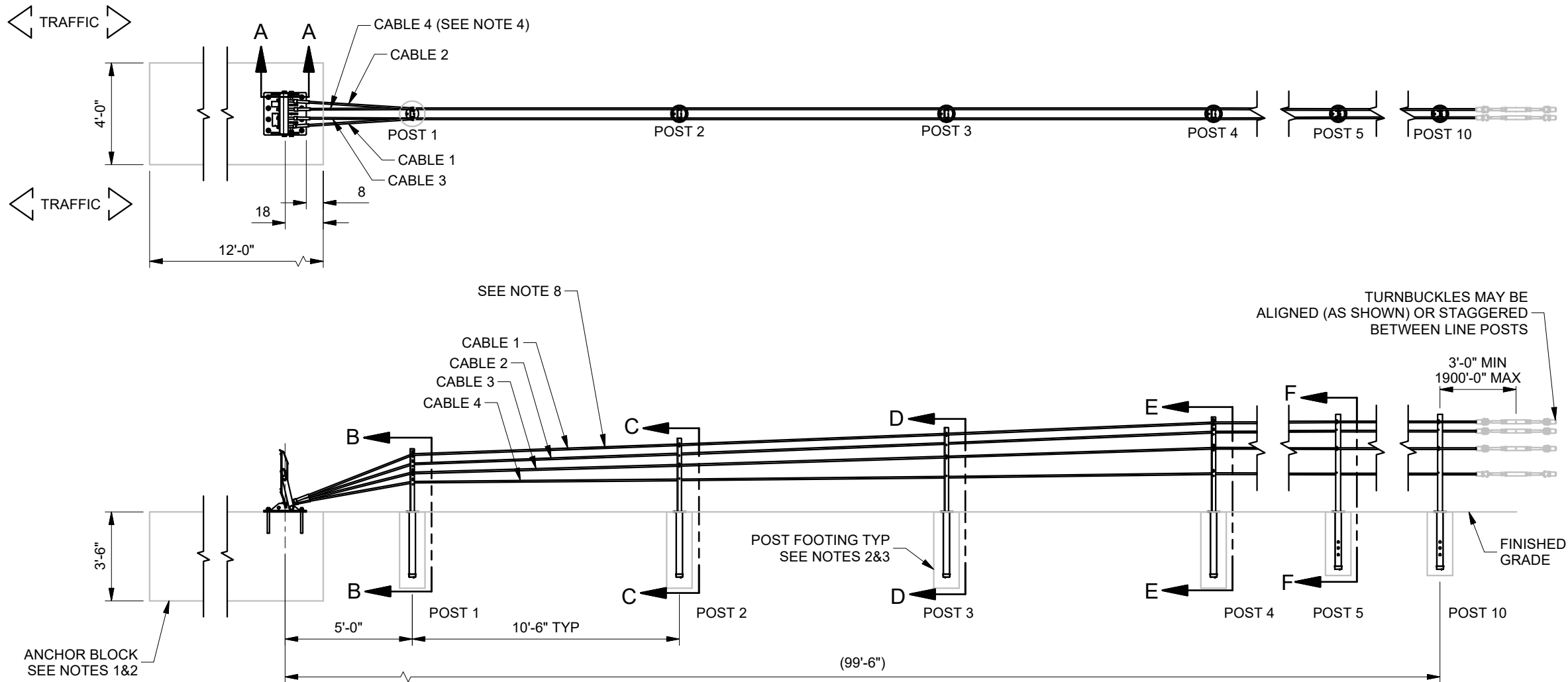


OPTIONAL COMPONENTS - PER PROJECT SPECIFICATION		
PART NO.	DESCRIPTION	QTY
005633G	CASS TRNBCKL STUD ASSY 1"	4
005836B	CASS #3 REBAR 8" OD	10
005910G	CASS STUD CBL ASSY 1" RT	4
119672G	CET CBL 105', R.H.T.,ASSY	4

DELINEATION OPTIONS - UPPER ANCHOR		
PART NO.	DESCRIPTION	QTY
003177B	REFL SHT,18X18,Y/B	1
211297B	TAPE,REFL,DG3,12,YLW	3
211299B	TAPE,REFL.,DG3,24,YELLOW	2

DELINEATION OPTIONS - POSTS 2, 4, 6, 8, & 10		
PART NO.	DESCRIPTION	QTY
005589B	REFL SHT,1 7/8X3 1/4,WHITE	5
005590B	REFL SHT,1 7/8X3 1/4,YELLOW	5

CET COMPONENTS LIST		
PART NO.	DESCRIPTION	QTY.
033588G	CASS SLV-STD 30.75 11GA.	4
034038G	CASS SLV S3X2'3 11GA	6
131665B	CET ANCHOR,LOWER,W/DECAL	1
131670G	CET ANCHOR,UPPER	1
131671G	CET U-SHAPED POST 1,60 1/2	1
131672G	CET U-SHAPED POST 2,65 1/2	1
131673G	CET U-SHAPED POST 3,70 1/2	1
131674G	CET U-SHAPED POST 4,75 1/2	1
131675G	CET POST 5-10,S3X5.7,SYT	6
131677B	CET REFL SHT PNL,18X18	1
131678G	CET ANCHOR LINK	2
CET HARDWARE BUCKET 119831B		
003240G	WASHER,FLAT,5/16 W,TY A,G	4
003245G	NUT,HX,5/16,A563,G	40
003914G	BOLT,HX,1X3 1/2,F3125,G	2
004225G	CABLE HOOK,SHLDR,5/16,A307,G	32
004486G	BOLT,HX,1X5,F3125,G	2
004902G	WASHER,FLAT,1X2,F436,G	10
004903G	NUT,HX,1,A194 2H,G	20
005823B	CASS,SLEEVE COVER,C POST	4
005825G	CABLE HOOK,LOCK,5/16,A307,G	8
005833B	CASS,SLV CVRBTM,5X3,C	4
005837B	CASS,SLEEVE COVER,BOTTOM,4X3	6
005839B	CASS,SLEEVE COVER,S3 POST	6
006401G	NUT,HX,1/4,A563	2
116884G	SCREW,HWH,#12X1,SELF TAPPING,P	8
118352G	ROD,THREADED,1X12,B7,G	8
118710B	ADHESIVE,HY200,330,HILTI	6
119824G	BOLT,HX,1/4X2,AT,A307	2
119836B	CET/S3 ASSEMBLY MANUAL	1
131676G	CET CABLE WASHER	4



APPROACH INSTALLATION: LENGTH OF NEED: 36'-6" (AT POST #4)
DEPARTURE INSTALLATION: LENGTH OF NEED: 120'-6" (21' PAST POST #10)

- NOTES:
- ANCHOR BLOCK SHALL BE 3000 psi MIN CONCRETE REINFORCED WITH SPECIFIED MACRO SYNTHETIC FIBER DOSED AT 4 lb/yd³. IF MACRO SYNTHETIC FIBERS ARE NOT UTILIZED, SEE MANUAL (119836B) FOR OTHER OPTIONS.
 - REMOVE AIR POCKETS FROM CONCRETE, CONCRETE MUST BE CONSOLIDATED. THE USE OF A VIBRATORY DEVICE SUCH AS A "STINGER" IS RECOMMENDED.
 - POST SOCKET FOOTING SHALL BE 3000 psi MIN CONCRETE REINFORCED WITH MACRO SYNTHETIC FIBER DOSED AT 4 lb/yd³. IF MACRO SYNTHETIC FIBERS ARE NOT UTILIZED, A Ø8" #3 REBAR RING (005836B) SHALL BE PLACED 3" (+1",-0") FROM THE TOP OF THE POST SOCKET FOOTING.
 - CABLE 4 (BOTTOM CABLE) SHALL BE INSTALLED ON THE DOWN SLOPE SIDE.
 - CET™ ANCHOR ASSEMBLY SHALL UTILIZE 1" CABLE FITTINGS ONLY.
 - CABLE HEIGHT TOLERANCE IS ±1" FROM FINISHED GRADE.
 - SEE MANUAL (119836B) FOR ADDITIONAL DETAILS, TO INCLUDE MACRO SYNTHETIC FIBER SPECIFICATION, TENSIONING, OTHER FOUNDATION OPTIONS AND GRADING.
 - Ø3/4, 3X7, AASHTO M30 OR ASTM A741, TYPE 1, CLASS A, PRE-STRETCHED WIRE ROPE REQUIRED.

DRAWN: M. LOBERG	DATE: 5/16/2025	UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN FEET-INCHES ACCORDING TO ASME Y14.5-2018 AND QMS-SE-003				
CHECKED: A. BASSI	DATE: 6/5/2025	DO NOT SCALE DRAWING				
REVISION DESCRIPTION		ECO	DATE	REV	BY	CHK
INITIAL RELEASE		9907	-	-	-	-

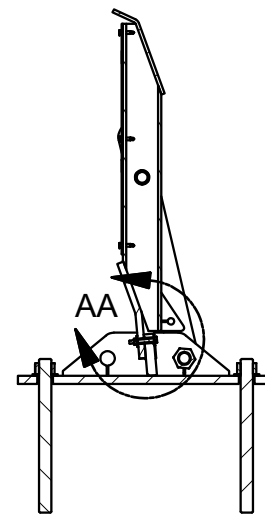
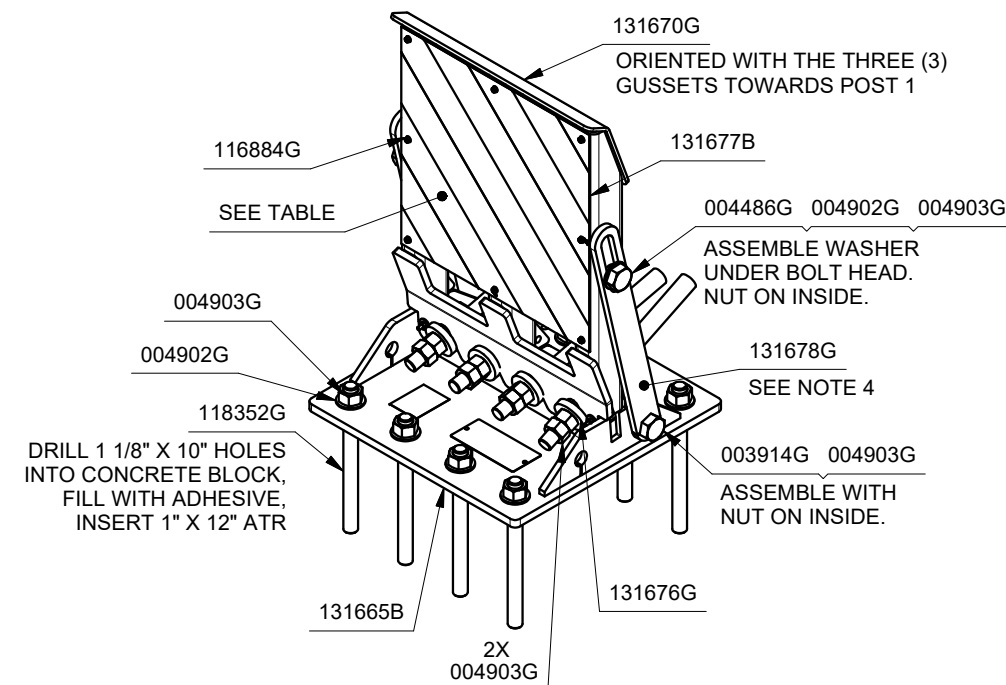
CASS® S3 4:1
WITH CASS® END TERMINAL (CET™)

DRAWING:
SS 2383

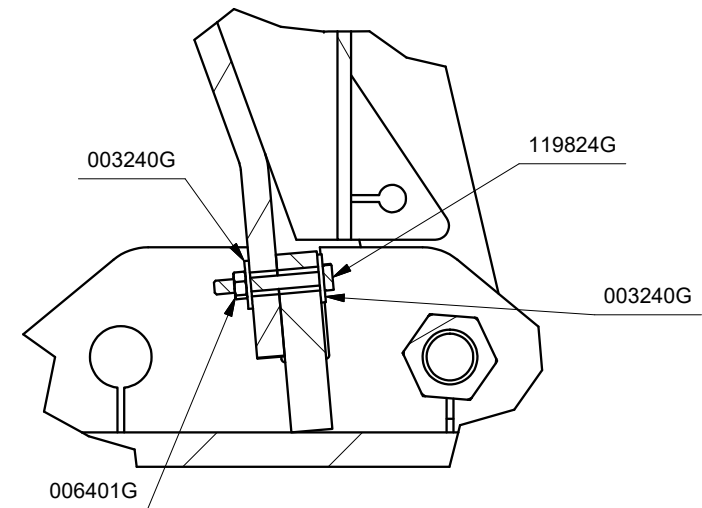
REV:
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SHEET:
1 of 6

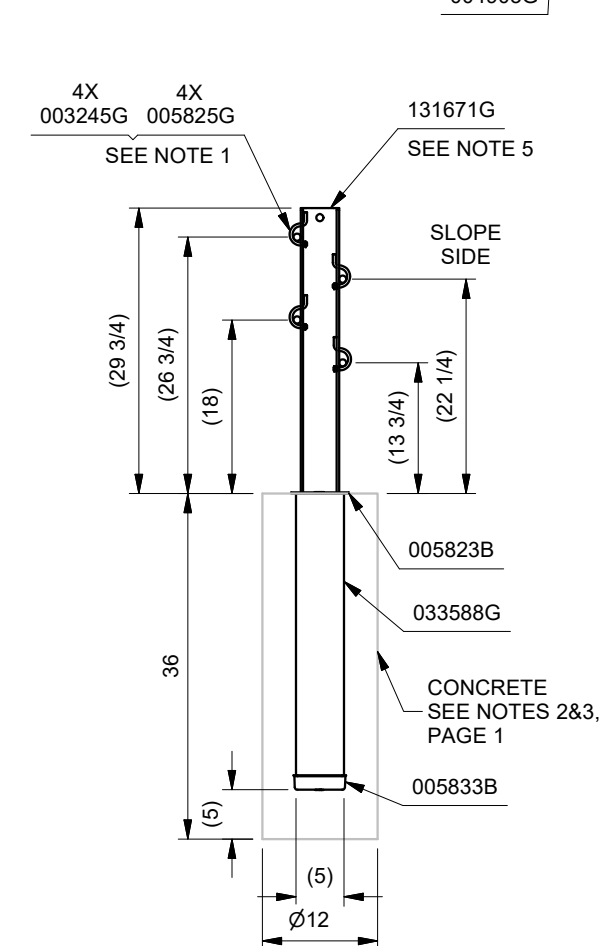




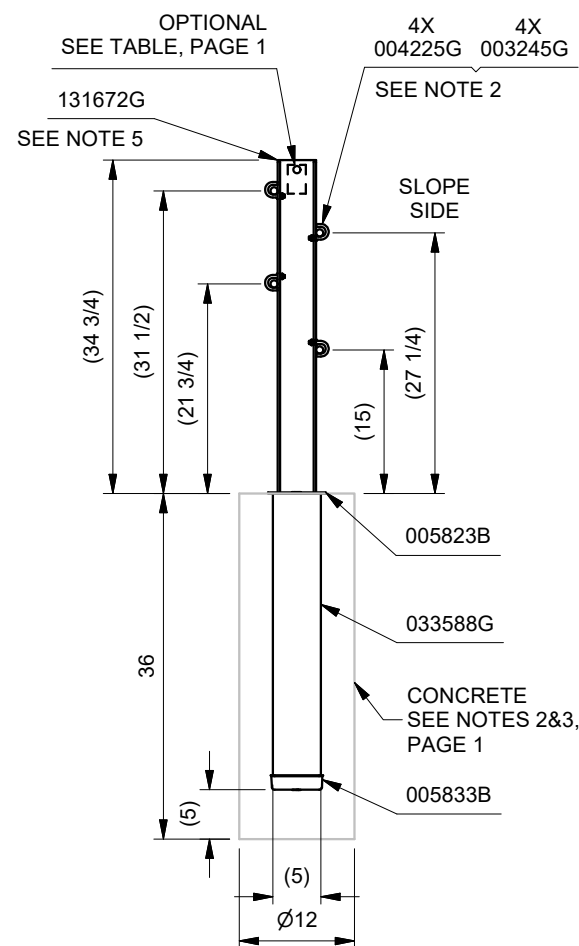
SECTION A-A



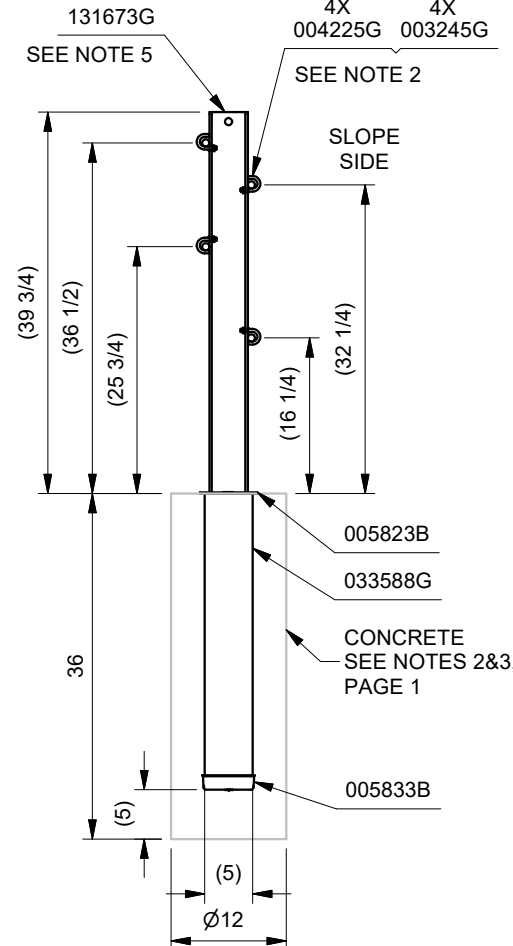
DETAIL AA
BOTH SIDES



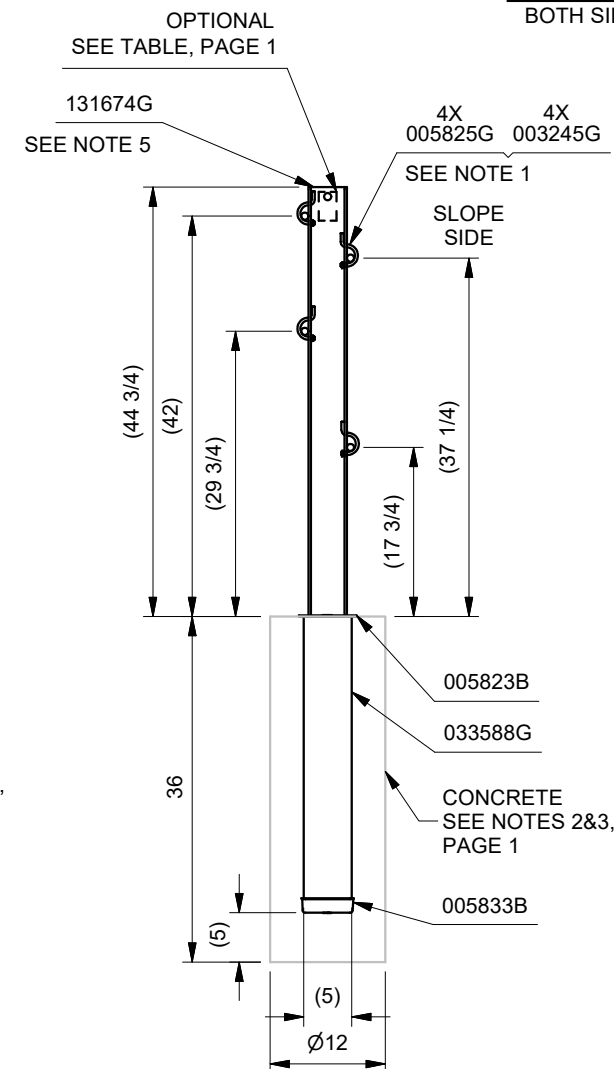
SECTION B-B
POST 1



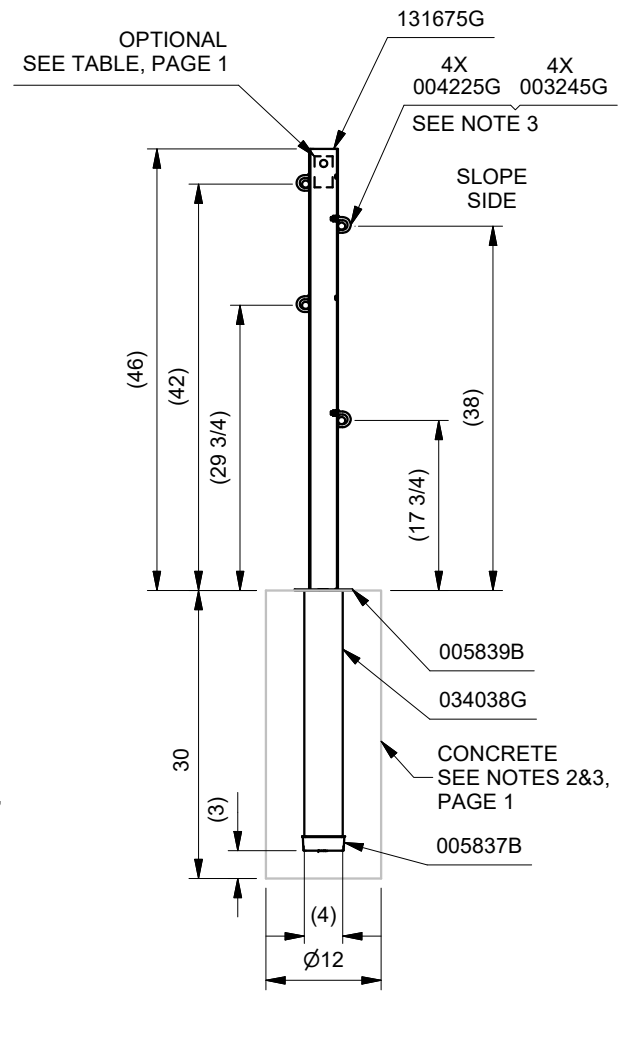
SECTION C-C
POST 2



SECTION D-D
POST 3



SECTION E-E
POST 4



SECTION F-F
POST 5-10

- NOTES:
1. POSTS 1 & 4, ASSEMBLE WITH THREADS IN HOLE, LEG IN SLOT.
 2. POSTS 2 & 3, ASSEMBLE TOP TWO CABLE HOOKS SHORT LEG UP. BOTTOM TWO CABLES HOOKS SHORT LEG DOWN.
 3. POSTS 5-10, ASSEMBLE CABLE HOOK. SHORT LEG DOWN.
 4. THE SLIT IN THE BOTTOM HOLE OF CET™ ANCHOR LINK MAY BE ORIENTATED IN EITHER UPSTREAM OR DOWNSTREAM DIRECTION.
 5. ALL CET™ U-SHAPED POSTS (POST 1-4), FLAT FACE MUST BE ORIENTATED TOWARD THE CET™ ANCHOR ASSEMBLY

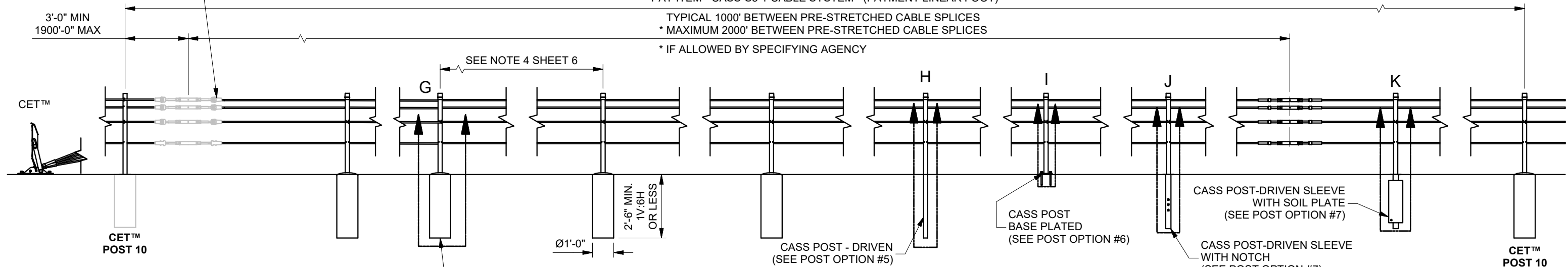
DRAWN: M. LOBERG	DATE: 5/16/2025	UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN FEET-INCHES ACCORDING TO ASME Y14.5-2018 AND QMS-SE-003				
CHECKED: A. BASSI	DATE: 6/5/2025	DO NOT SCALE DRAWING				
REVISION DESCRIPTION		ECO	DATE	REV	BY	CHK
INITIAL RELEASE		9907	-	-	-	-

CASS® S3 4:1 WITH CASS® END TERMINAL (CET™)			DRAWING: SS 2383		REV: -	SHEET: 2 of 6
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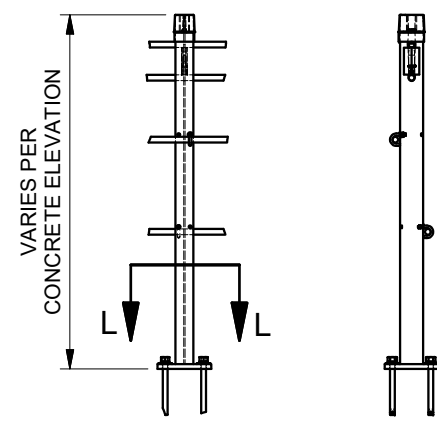
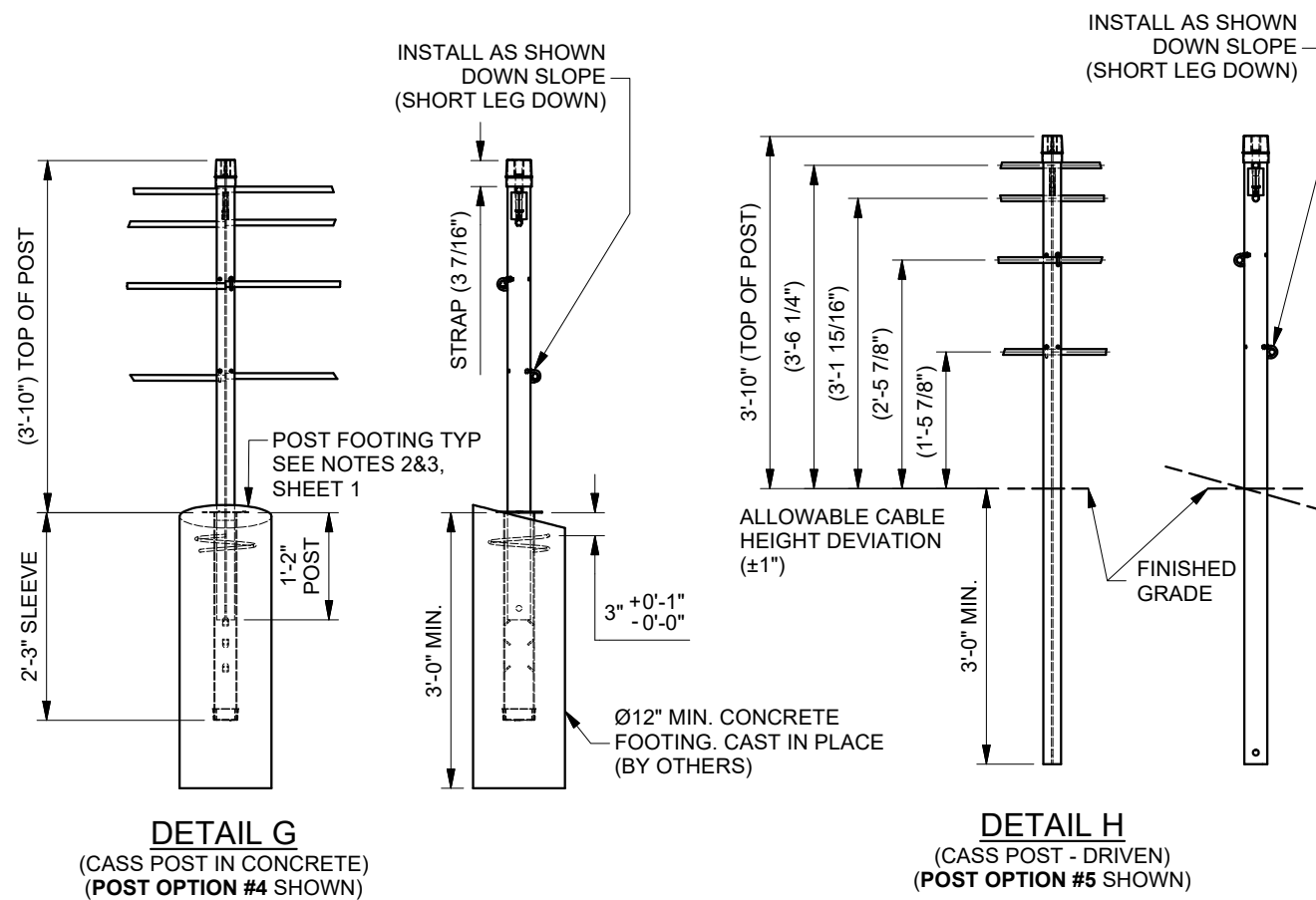
PAY ITEM - CASS-S3 4-CABLE SYSTEM - (PAYMENT LINEAR FOOT)

3'-0" MIN
1900'-0" MAX

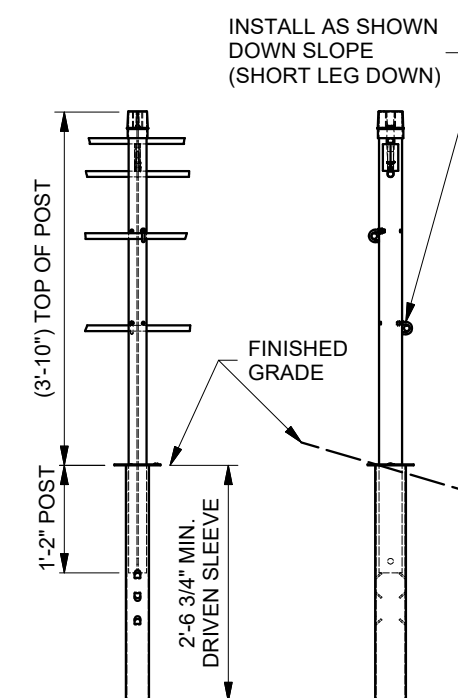


CASS S3 POST OPTIONS	
4	SYSTEM POST - IN CONCRETE
5	SYSTEM POST - DRIVEN
6	SYSTEM POST - BASE-PLATED
7	SYSTEM POST - DRIVEN SLEEVE

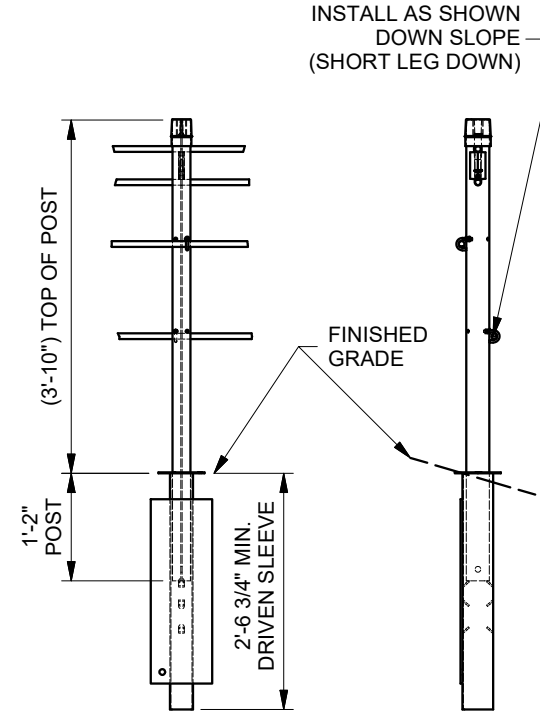
CASS POST-IN CONCRETE
(SEE **POST OPTION #4**)



DETAIL I
(CASS POST - BASE-PLATED)
(**POST OPTION #6** SHOWN)



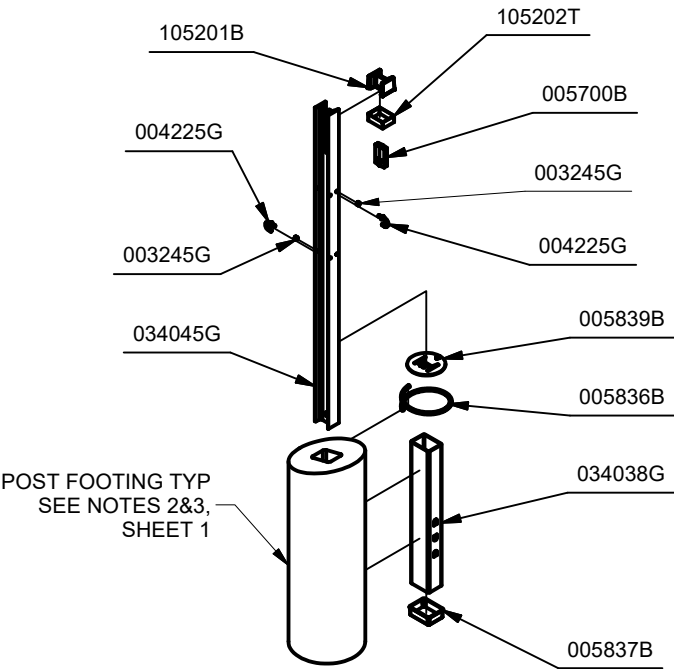
DETAIL J
(CASS POST - DRIVEN SLEEVE)
(**POST OPTION #7** SHOWN)



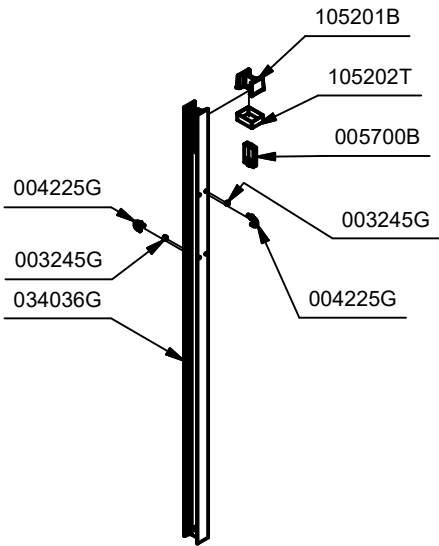
DETAIL K
(CASS POST DRIVEN SLEEVE - SOIL PLATE)
(POST OPTION #7 SHOWN)
INSTALL WITH SOIL PLATE ON OPPOSITE SIDE
OF NEAREST TRAFFIC

DRAWN: M. LOBERG		DATE: 5/16/2025		UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN FEET-INCHES ACCORDING TO ASME Y14.5-2018 AND QMS-SE-003			 CASS® S3 4:1 WITH CASS® END TERMINAL (CET™)	
CHECKED: A. BASSI		DATE: 6/5/2025						
DO NOT SCALE DRAWING								
REVISION DESCRIPTION		ECO	DATE	REV	BY	CHK		
INITIAL RELEASE		9907	-	-	-	-	 DRAWING: SS 2383 REV: - SHEET: 3 of 6	

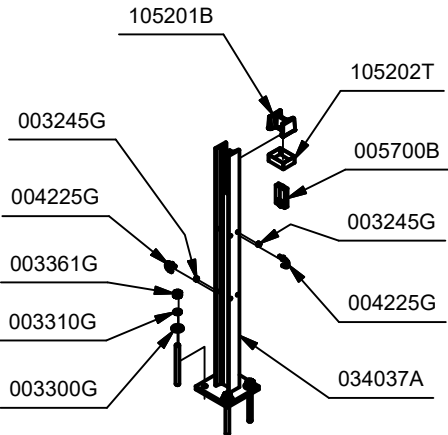
PARTS LIST - PRE-STRETCHED CABLE ASSEMBLIES				
PART NO.	TITLE	LENGTH	TERM-1	TERM-2
005829G	CASS CABLE PRE-STRETCH REEL	2000'	NONE	NONE
007016G	CABLE ASSEMBLY-INTERIOR	2000'	R.H.T.	L.H.T.
000216G	CABLE REEL - 2 X 1000' - 005816	2X1000'	R.H.T.	L.H.T.
000316G	CABLE REEL - 3 X 1000' - 005816	3X1000'	R.H.T.	L.H.T.
005816G	CABLE ASSEMBLY-INTERIOR	1000'	R.H.T.	L.H.T.
005753G	CABLE FIELD SPLICE SECTION	1025'	R.H.T.	NONE
005752G	CABLE FIELD SPLICE SECTION	1000'	R.H.T.	NONE
005798G	CABLE FIELD SPLICE SECTION	975'	R.H.T.	NONE
005797G	CABLE FIELD SPLICE SECTION	950'	R.H.T.	NONE
005796G	CABLE FIELD SPLICE SECTION	925'	R.H.T.	NONE
005795G	CABLE FIELD SPLICE SECTION	900'	R.H.T.	NONE
005794G	CABLE FIELD SPLICE SECTION	875'	R.H.T.	NONE
005793G	CABLE FIELD SPLICE SECTION	850'	R.H.T.	NONE
005792G	CABLE FIELD SPLICE SECTION	825'	R.H.T.	NONE
005791G	CABLE FIELD SPLICE SECTION	800'	R.H.T.	NONE
005790G	CABLE FIELD SPLICE SECTION	775'	R.H.T.	NONE
005789G	CABLE FIELD SPLICE SECTION	750'	R.H.T.	NONE
005788G	CABLE FIELD SPLICE SECTION	725'	R.H.T.	NONE
005787G	CABLE FIELD SPLICE SECTION	700'	R.H.T.	NONE
005786G	CABLE FIELD SPLICE SECTION	675'	R.H.T.	NONE
005785G	CABLE FIELD SPLICE SECTION	650'	R.H.T.	NONE
005784G	CABLE FIELD SPLICE SECTION	625'	R.H.T.	NONE
005783G	CABLE FIELD SPLICE SECTION	600'	R.H.T.	NONE
005782G	CABLE FIELD SPLICE SECTION	575'	R.H.T.	NONE
005781G	CABLE FIELD SPLICE SECTION	550'	R.H.T.	NONE
005780G	CABLE FIELD SPLICE SECTION	525'	R.H.T.	NONE
005779G	CABLE FIELD SPLICE SECTION	500'	R.H.T.	NONE
005778G	CABLE FIELD SPLICE SECTION	475'	R.H.T.	NONE
005776G	CABLE FIELD SPLICE SECTION	450'	R.H.T.	NONE
005775G	CABLE FIELD SPLICE SECTION	425'	R.H.T.	NONE
005769G	CABLE FIELD SPLICE SECTION	400'	R.H.T.	NONE
005768G	CABLE FIELD SPLICE SECTION	375'	R.H.T.	NONE
005767G	CABLE FIELD SPLICE SECTION	350'	R.H.T.	NONE
005766G	CABLE FIELD SPLICE SECTION	325'	R.H.T.	NONE
005765G	CABLE FIELD SPLICE SECTION	300'	R.H.T.	NONE
005764G	CABLE FIELD SPLICE SECTION	275'	R.H.T.	NONE
005763G	CABLE FIELD SPLICE SECTION	250'	R.H.T.	NONE
005762G	CABLE FIELD SPLICE SECTION	225'	R.H.T.	NONE
005761G	CABLE FIELD SPLICE SECTION	200'	R.H.T.	NONE
005760G	CABLE FIELD SPLICE SECTION	175'	R.H.T.	NONE
005759G	CABLE FIELD SPLICE SECTION	150'	R.H.T.	NONE
005758G	CABLE FIELD SPLICE SECTION	125'	R.H.T.	NONE
005757G	CABLE FIELD SPLICE SECTION	100'	R.H.T.	NONE
005756G	CABLE FIELD SPLICE SECTION	75'	R.H.T.	NONE
005755G	CABLE FIELD SPLICE SECTION	50'	R.H.T.	NONE
005754G	CABLE FIELD SPLICE SECTION	25'	R.H.T.	NONE
005840G	CABLE FIELD REPAIR SECTION	5'	R.H.T.	L.H.T.
119672G	CET CBL 105', R.H.T.,ASSY	105'	R.H.T.	NONE



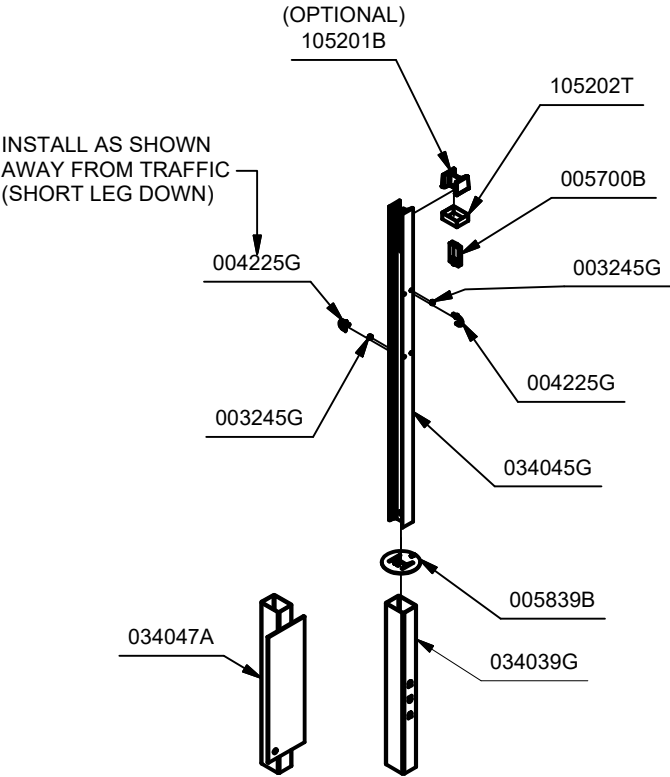
CASS-S3 POST - IN CONCRETE
(POST OPTION #4 - CAST IN PLACE & PRE-CAST)



CASS-S3 POST - DRIVEN
(POST OPTION #5 - DRIVEN)



CASS-S3 POST - BASE-PLATED
(POST OPTION #6 - BASE-PLATED)



CASS-S3 POST - DRIVEN SLEEVE
(POST OPTION #7 - DRIVEN SLEEVE - NOTCH & SOIL PLATE)
INSTALL WITH SOIL PLATE ON OPPOSITE SIDE OF NEAREST TRAFFIC

CASS S3 COMPONENTS LIST	
PART NO.	DESCRIPTION
003245G	NUT,HX,5/16,A563,G
003300G	5/8" WASHER F844 A/W
003310G	5/8" LOCK WASHER
003361G	NUT,HX,5/8,A563,DH,G
004225G	CABLE HOOK,SHLDR,5/16,A307,G
005225G	TRACC 5/8"X7.5 HAS ROD ZP
005700B	CASS CABLE SPACER TL3
005836B	CASS #3 REBAR 8" OD
005837B	CASS,SLEEVE COVER,BOTTOM,4X3
005839B	CASS,SLEEVE COVER,S3 POST
034036G	CASS-S3 PST DRVN X 6'-10"
034037A	CASS-S3 PST CONC X 3'-10"
034038G	CASS SLV S3 X 2'3 11GA
034039G	CASS SLV S3 DRVN X 2' 6 3/4"
034045G	CASS-TL3 (4T1) S3 POST
034047A	CASS-S3 SLV DRVN X 2'6.75
105201B	CASS,POST CAP,S3X5.7
105202T	CASS POST STRAP S3 TL3/4
118710B	ADHESIVE,HY200,330,HILTI

NOTES:

- CABLE MOUNTED OR POST SPACER DELINEATORS MAY BE SUPPLIED DEPENDENT ON SPECIFICATIONS AND AVAILABILITY:

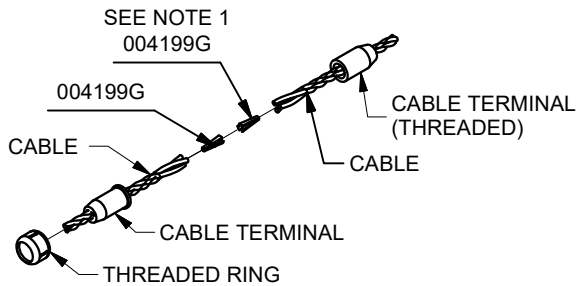
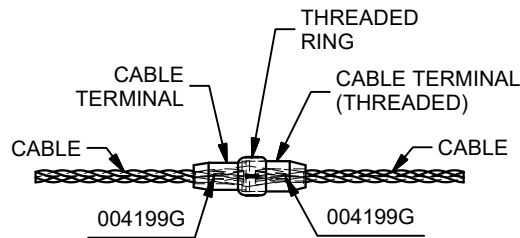
COLOR:	CABLE MOUNTED:	POST SPACER:
YELLOW	119495B	005701B
WHITE	119494B	005702B
BLUE	119496B	N/A
- IF INTERFERENCE OCCURS BETWEEN THE CABLE SPLICE AND CASS SYSTEM POST, SUPPLY A SPLICE INTERFERENCE POST.
 - LONG SPLICE POST 034061G IN LIEU OF LONG CASS-S3 POST 034036G.
 - SHORT SPLICE POST 034049G IN LIEU OF SHORT CASS-S3 POST 034045G.
- IF REQUIRED PER PROJECT PLANS SUPPLY:
CABLE PULLING TOOL 005850B.
CABLE TENSION METER 005878B.
CABLE THERMOMETER 005709B.
- PI-LIT IMPACT DETECTION DEVICE:

PART:	DESCRIPTION:
119750B	PI-LIT IDS GATEWAY IMPACT
119751B	PI-LIT IDS CABLE BRACKET

DRAWN: M. LOBERG	DATE: 5/16/2025	UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN FEET-INCHES ACCORDING TO ASME Y14.5-2018 AND QMS-SE-003				
CHECKED: A. BASSI	DATE: 6/5/2025	DO NOT SCALE DRAWING				
REVISION DESCRIPTION		ECO	DATE	REV	BY	CHK
INITIAL RELEASE		9907	-	-	-	-

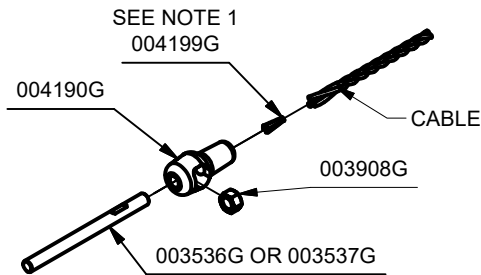
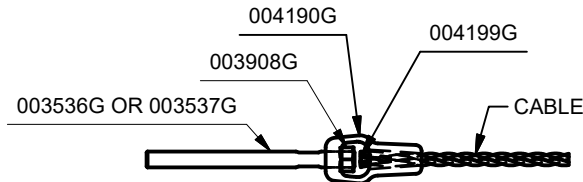
CASS® S3 4:1 WITH CASS® END TERMINAL (CET™)		DRAWING: SS 2383		REV: -	SHEET: 4 of 6
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TORPEDO CABLE SPLICE - 4099G

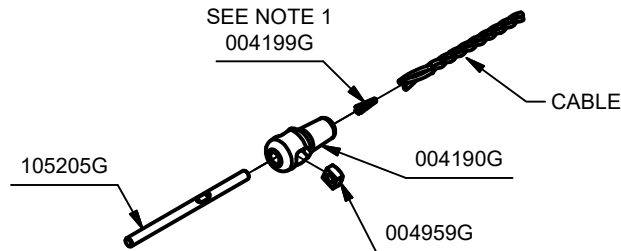
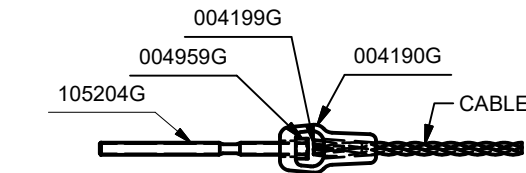
PARTS LIST - 004099G		
PART NO.	DESCRIPTION	QTY.
004199G	3/4" CABLE WEDGE (3 x 7)	2



1" CABLE FIELD SPLICE 5909G (LEFT) & 5910G (RIGHT)

PARTS LIST - 005909G		
PART NO.	DESCRIPTION	QTY.
003537G*	1" STUD FLATTENED - L.H.T.	1
003908G	1" HVY HEX NUT A563 DH	1
004190G	CBL 3/4 X 5.75 CAST, C-1622	1
004199G	3/4" CABLE WEDGE (3 x 7)	1

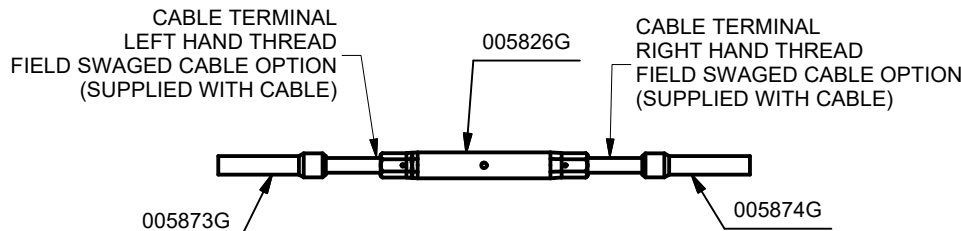
*R.H.T. PART NO. 003536G



3/4" CABLE FIELD SPLICE 5634G (LEFT) & 5635G (RIGHT) (MAY NOT BE USED TO ANCHOR THE CET)

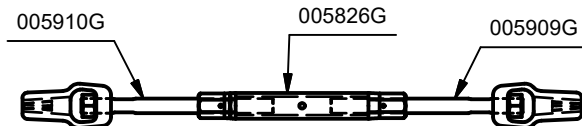
PARTS LIST - 005634G		
PART NO.	DESCRIPTION	QTY.
004190G	CBL 3/4 X 5.75 CAST, C-1622	1
004199G	3/4" CABLE WEDGE (3 x 7)	1
004959G	3/4" HEAVY SQUARE NUT	1
105204G*	ROD,THREADED,3/4X13,LHT	1

*R.H.T. PART NO. 105205G



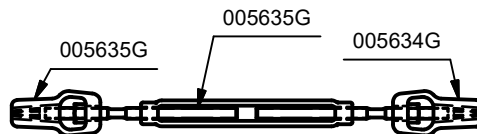
SWAGED SPLICE - 5872G (CLOSED BODY STYLE)

PARTS LIST - 005874G		
PART NO.	DESCRIPTION	QTY.
005874G	CASS CBL SWAGED END RHT	1
005873G	CASS CBL SWAGED END LHT	1
005826G	CASS TURNBUCKLE 1" X 14"	1



1" CABLE SPLICE - 5633G (CLOSED BODY STYLE)

PARTS LIST - 005633G		
PART NO.	DESCRIPTION	QTY.
005826G	CASS TURNBUCKLE 1" X 14"	1
005909G	1" STUD ASSEMBLY L.H.T.	1
005910G	1" STUD ASSEMBLY R.H.T.	1



3/4" CABLE SPLICE - 5698G (OPEN BODY STYLE)

PARTS LIST - 005698G		
PART NO.	DESCRIPTION	QTY.
005634G	STUD ASSY,CABLE,CASS,3/4,LHT	1
005635G	STUD ASSY,CABLE,CASS,3/4,RHT	1
005711G	3/4-12 TURNBUCKLE BODY - OPEN	1

CASS S3 & CET TEMPERATURE & TENSION CHART			
°F	Tension (lbf) *	°C	kN
-15	7500	-26	33.4
-10	7300	-23	32.5
-5	7100	-21	31.6
0	7000	-18	31.1
5	6800	-15	30.2
10	6600	-12	29.4
15	6500	-9	28.9
20	6300	-7	28.0
25	6100	-4	27.1
30	6000	-1	26.7
35	5800	2	25.8
40	5600	4	24.9
45	5500	7	24.5
50	5300	10	23.6
55	5100	13	22.7
60	5000	16	22.2
65	4800	18	21.4
70	4600	21	20.5
75	4500	24	20.0
80	4300	27	19.1
85	4100	29	18.2
90	4000	32	17.8
95	3800	35	16.9
100	3600	38	16.0
105	3500	41	15.6
110	3300	43	14.7
115	3100	46	13.8
120	3000	49	13.3
125	2800	52	12.5
130	2700	54	12.0
135	2600	57	11.6
140	2500	60	11.1
145	2400	63	10.7
150	2300	66	10.2
160	2100	71	9.3
170	1900	77	8.5
180	1700	82	7.6
190	1500	88	6.7
200	1300	93	5.8

1. ALLOWABLE DEVIATION FROM CHART IN TANGENT SECTIONS: +800, -200 POUNDS/FORCE.
2. TAKE CABLE TENSION MEASUREMENTS IN **TANGENT SECTIONS**. READINGS ARE TYPICALLY HIGHER IN CURVED CABLE SECTIONS.
3. IF UTILIZING STANDARD (NOT PRE-STRETCHED) CABLES, THE TENSION IS HIGHER - CONSULT WITH VALTIR.

- NOTES:
1. INSERT WEDGE PAST CABLE END (3/8"-5/8"). FOLD (1) CABLE WIRE OVER WEDGE. SEAT WEDGE & CABLE BEFORE CLOSING THE SPLICE.
 2. TURNBUCKLES SHALL BE INSTALLED WITH A MINIMUM OF 1-1/2" THREAD ENGAGEMENT. TO ALLOW FOR MAINTENANCE ADJUSTMENTS AT A LATER DATE, VALTIR SUGGESTS INSTALLER UTILIZE NO MORE THAN THREE (3") THREAD ENGAGEMENT.
 3. WHEN CUTTING CABLE LENGTHS IN THE FIELD FROM CABLE REELS, IT MAY BE PERMISSIBLE TO UTILIZE A CABLE TORPEDO SPLICE (PN#004099G) BETWEEN TURNBUCKLES. **DO NOT USE TORPEDO SPLICE(S) FOR CABLE LENGTHS SHORTER THAN 100', IE: A TORPEDO SPLICE SHALL NOT BE INSTALLED CLOSER THAN 100' FROM ANY OTHER FITTING ON SAME CABLE.**

PLEASE CONTACT VALTIR, CONSULT VALTIR'S MANUAL OR SPECIFYING AGENCY TO DETERMINE IF APPROPRIATE FOR SPECIFIC APPLICATION.

DRAWN: M. LOBERG	DATE: 5/16/2025	UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN FEET-INCHES ACCORDING TO ASME Y14.5-2018 AND QMS-SE-003				
CHECKED: A. BASSI	DATE: 6/5/2025	DO NOT SCALE DRAWING				
REVISION DESCRIPTION		ECO	DATE	REV	BY	CHK
INITIAL RELEASE		9907	-	-	-	-

CASS® S3 4:1 WITH CASS® END TERMINAL (CET™)		DRAWING: SS 2383		REV: -	SHEET: 5 of 6
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CABLE SAFETY SYSTEM S3 4:1 ("CASS® S3") HAS BEEN TESTED TO:

- NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM (“NCHRP”) REPORT 350 CRITERIA.
- AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (“AASHTO”) MANUAL FOR ASSESSING SAFETY HARDWARE (“MASH”) CRITERIA.

CASS® S3 HAS BEEN DEEMED ELIGIBLE FOR FEDERAL-AID REIMBURSEMENT ON THE NATIONAL HIGHWAY SYSTEM ("NHS") BY THE FEDERAL HIGHWAY ADMINISTRATION ("FHWA").

- SEE FHWA ELIGIBILITY LETTERS B-232, B-232A, B-234B, B-232C AND B-141F.

NCHRP REPORT 350 CASS® S3

TL-3 APPLICATIONS

- CAN BE INSTALLED ANYWHERE ON SLOPES 1V:10H OR FLATTER.
- PER AASHTO ROADSIDE DESIGN GUIDE ("RDG"), FOR SLOPES BETWEEN 1V:6H TO STEEPER THAN 1V:10H THE SYSTEM CANNOT BE PLACED WITHIN 1' TO 8' [0.3 m TO 2.4 m] FROM THE DITCH LINE.
- PER FHWA ELIGIBILITY LETTER, FOR 1V:4H TO STEEPER THAN 1V:6H SLOPES, IT MUST BE INSTALLED 0' TO 4' FROM THE BREAK POINT.
- PER FHWA ELIGIBILITY LETTER, FOR BACK SLOPE APPLICATIONS, FOR SLOPES 1V:4H TO STEEPER THAN 1V:6H, THE INSTALLATION MUST BE A MINIMUM OF 11' [3.3 m] FROM THE V-DITCH CENTER.
- MINIMUM POST SPACING IS 10'-6" [3.15 m]; MAXIMUM POST SPACING IS 21' [6.3 m].

NCHRP REPORT 350 CASS® S3

TL-4 APPLICATIONS

- CAN BE INSTALLED ANYWHERE ON SLOPES 1V:10H OR FLATTER.
- PER AASHTO ROADSIDE DESIGN GUIDE ("RDG"), FOR SLOPES BETWEEN 1V:6H TO STEEPER THAN 1V:10H THE SYSTEM CAN NOT BE PLACED WITHIN 1' TO 8' [0.3 m TO 2.4 m] FROM THE DITCH LINE.
- HAS NOT BEEN TESTED ON SLOPES STEEPER THAN 1V:10H.
- MINIMUM POST SPACING IS 10'-6" [3.15 m]. MAXIMUM POST SPACING IS 21' [6.3 m].

MASH CASS® S3

TL-3 APPLICATIONS

- CAN BE INSTALLED ANYWHERE ON SLOPES 1V:10H OR FLATTER.
- PER THE FHWA ELIGIBILITY LETTER, FOR SLOPES 1V:4H TO STEEPER THAN 1V:10H, IT MUST BE INSTALLED 0' TO 4' [0 m TO 1.2 m] FROM THE BREAK POINT.
- PER THE FHWA ELIGIBILITY LETTER, FOR BACK SLOPE APPLICATIONS, FOR SLOPES 1V:4H TO STEEPER THAN 1V:10H, THE INSTALLATION MUST BE A MINIMUM OF 11' [3.3 m] FROM THE V-DITCH CENTER.
- TESTED POST SPACING IS 10'-6" [3.2 m].

MASH CASS® S3

TL-4 APPLICATIONS

- HAS NOT BEEN TESTED ON SLOPES STEEPER THAN 1V:10H.
- TESTED POST SPACING IS 10'-6" [3.2 m].

CASS® S3 TL-3/TL-4 LATERAL TRANSFER DETAILS

- MAY BE LATERALLY TRANSFERRED ACROSS A MEDIAN AT A MAXIMUM FLARE RATE OF 30:1 ($\geq 30:1$ IS ACCEPTABLE, 29:1 IS NOT ACCEPTABLE)

NCHRP REPORT 350 CASS® S3

- CAN BE Laterally Transferred ON 1V:10H OR flatter slopes with NO restrictions.
- Slopes steeper than 1V:10H to 1V:6H within 1 to 8 feet from the ditch line, the slopes must be contoured to 1V:10H OR flatter in this area.
- Slopes 1V:4H to steeper than 1V:6H, the system can be laterally transferred only on 1V:10H or flatter slopes.

MASH CASS® S3

- MAY ONLY BE LATERALLY TRANSFERRED ON 1V:10H OR FLATTER SLOPES.

MASH CET™ TL-3 APPLICATIONS

- HAS BEEN TESTED ON SLOPES 1V:10H OR FLATTER.
- TESTED POST SPACING BETWEEN POST 1 AND POST 10 IS 10'-6" [3.2 m]

1. IT IS RECOMMENDED A CASS® END TERMINAL ("CET™") BE USED ON APPROACH AND DEPARTURE TERMINATIONS WHEN CASS® S3 IS INSTALLED ON THE NHS OR WHEN IT CAN BE IMPACTED IN EITHER DIRECTION. OTHER NON-CRASHWORTHY OPTIONS ARE AVAILABLE.

CET™ HAS BEEN SUCCESSFULLY TESTED ON 1V:10H OR FLATTER SLOPES AND HAS BEEN SUBMITTED TO THE FHWA FOR A ELIGIBILITY LETTER AS A MASH TL3 DEVICE.

2. CASS® S3 SHALL BE PLACED ON A MEDIAN OR ROADSIDE WITHOUT OBSTRUCTIONS, DEPRESSIONS, ETC. THAT MAY SIGNIFICANTLY AFFECT THE STABILITY OF THE ERRANT VEHICLE. GRADING OF THE SITE AND/OR APPROPRIATE FILL MATERIALS MAY BE REQUIRED. THE ASSEMBLER SHALL "FLATTEN" OR "ROUND" VARIOUS TOPOGRAPHICAL INCONSISTENCIES THAT COULD INTERFERE WITH THE ABILITY TO CONSISTENTLY MAINTAIN THE DESIGN HEIGHT (IN RELATION TO THE TERRAIN) OF THE CABLES.

3. CASS® S3 POST SPACING MAY BE MODIFIED TO AVOID OBSTACLES THAT CONFLICT WITH THE INSTALLATION OF THE CABLE LINE POSTS. NO POST SPACING MAY EXCEED THE MAXIMUM/MINIMUM POST SPACING ALLOWED BY THE PROJECT ENGINEER. REDUCING OR INCREASING POST SPACING AFFECTS DEFLECTION.

4. POST FOUNDATIONS MAY BE PLACED IN EXISTING PAVEMENT. THE USE OF ALTERNATE LINE POST FOOTINGS MAY BE ALLOWED IF THE SYSTEM IS INSTALLED WITH AN ACCEPTABLE MOWSTRIP APPLICATION - PLEASE CONTACT VALTIR.

5. FOR AESTHETIC PURPOSES, IT IS RECOMMENDED ALL SLEEVES, AND DRIVEN POSTS, BE INSTALLED REASONABLY PLUMB (APPROXIMATELY 1/8" PER FOOT).

6. PRIOR TO TENSIONING THE SYSTEM, ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 psi OR GREATER TO MEET THE AGENCY'S SPECIFICATIONS. VALTIR RECOMMENDS THE CONCRETE TO BE VIBRATED IN ACCORDANCE WITH THE LATEST APPLICABLE AGENCY SPECIFICATION.

7. IF SOLID ROCK/CONCRETE IS ENCOUNTERED BELOW GRADE OR IF SOIL IS SUSCEPTIBLE TO SEVERE FREEZE/THAW CYCLES, PLEASE CONTACT VALTIR ABOUT ALTERNATE FOOTING DESIGN(S). THE USE OF "MOW STRIPS" FOR EROSION PREVENTION AND EASE OF MAINTENANCE/INSTALLATION ARE ENCOURAGED.

8. CASS® S3 SHALL BE INSTALLED IN WELL-DRAINED, COMPACTED, STANDARD SOIL, COMPLYING WITH NCHRP REPORT 350 AND/OR MASH SPECIFICATIONS, AS APPLICABLE. IF THE SOILS DO NOT MEET SPECIFICATIONS, THE FOOTING SHALL BE DESIGNED BASED ON SOIL REPORT(S) FROM PROJECT SOIL BORINGS AND THEN ANALYZED BY A SOILS ENGINEER. ANY STATE/SPECIFYING AGENCY REQUIREMENT, WHICH INCREASES THE FOOTING SIZE RECOMMENDATION, MUST BE FOLLOWED.

9. DESIGNER AND INSTALLER SHALL ENSURE THE INSTALLATION COMPLIES WITH THE SPECIFYING AGENCY (AND/OR MUTCD) DELINEATION SPECIFICATIONS.

10. DO NOT UTILIZE OR OTHERWISE COMMINGLE PARTS FROM OTHER SYSTEMS, EVEN IF THOSE SYSTEMS ARE OTHER VALTIR SYSTEMS.

11. CONSULT CABLE SAFETY SYSTEM S3 4:1 ("CASS@ S3") WITH CASS@ END TERMINAL ASSEMBLY MANUAL 119836B, (CURRENT VERSION) FOR ADDITIONAL INFORMATION.

VALTIR, LLC.
15601 Dallas Parkway, Suite 525
Addison, Texas 75001

PHONE: (888) 356-2363
CONTACT LINK: VALTIR.com/product-category/barriers/

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									DRAWING: SS 2383	
									REV: -	
									SHEET: 6 of 6	