

## HILTI HIS-N

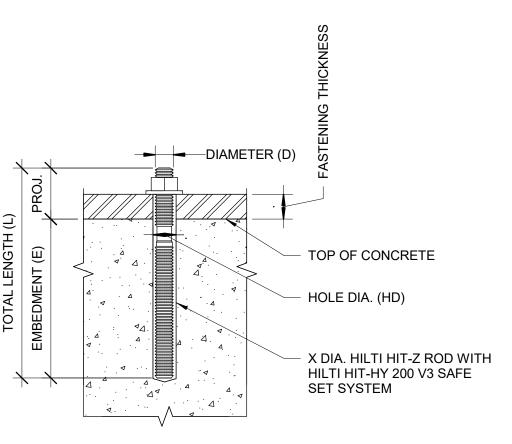
N.T.S.

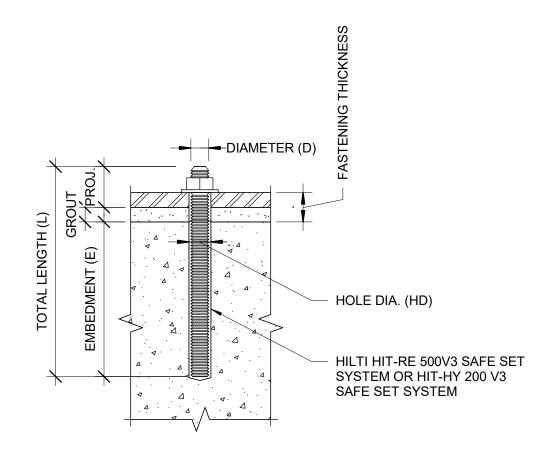
### HILTI HAS ROD

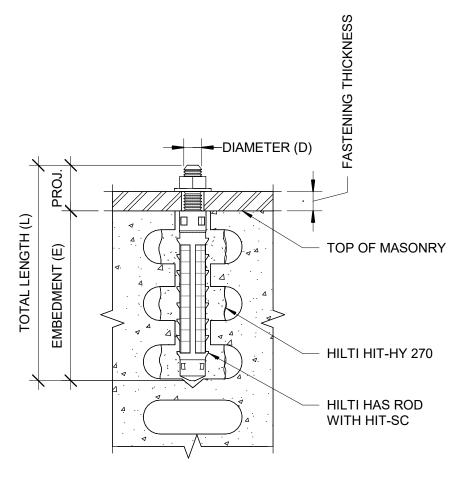
N.T.S.

#### DOWEL BAR

N.T.S.







#### HILTI HIT-Z ROD

N.T.S.

HILTI HIT-V ROD N.T.S.

HILTI HAS ROD W/ HIT-SC N.T.S.

# —DIAMETER (D) TOP OF CONCRETE HOLE DIA. (HD) X DIA x LENGTH HILTI KWIK-X DUAL ACTION ANCHOR W/ X DIA KH-EZ AND KHC CAPSULE

## **KWIK-X DUAL ACTION ANCHOR** N.T.S.

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REFERENCE DRAWINGS											DRAWN:
DWG NO	TITLE	DWG NO	TITLE								CHECKED:
											APPROVED:
											APPROVED:
			NO	REVISION	BY CHK	APP DATE	NO	REVISION BY	HK APP	DATE	

DWG TITLE

#### **GENERAL NOTES FOR POST-INSTALLED ANCHORS**

- EXCEPT WHERE INDICATED ON THE DRAWINGS, POST-INSTALLED ANCHORS SHALL CONSIST OF THE FOLLOWING ANCHOR TYPES AS PROVIDED BY HILTI INC. CONTACT HILTI AT (800) 879-8000 FOR PRODUCT RELATED QUESTIONS.
  - ANCHORAGE TO CONCRETE
  - ADHESIVE ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE: ADHESIVES FOR USE:
    - HILTI HIT-HY 200 V3 SAFE SET SYSTEM WITH HILTI HIT-Z ROD PER ICC-ES ESR-4868 HILTI HIT-HY 200 V3 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT AND VACUUM WITH HAS THREADED ROD PER ICC-ES
    - HILTI HIT-RE 500 V3 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT AND VACUUM WITH HAS THREADED ROD PER ICC-ES
    - HILTI HIT-RE 500 V3 SAFE SET SYSTEM WITH HILTI ROUGHENING TOOL (HIT RT) WITH HAS THREADED ROD PER ICC-ES
      - ESR-3814 FOR DIAMOND CORED HOLES
    - HILTI HIT-HY 200 V3 SAFE SET SYSTEM WITH HILTI ROUGHENING TOOL (TE-YRT) WITH HAS THREADED ROD PER ICC-ES ESR-4868 FOR DIAMOND CORED HOLES
    - HILTI KWIK-X DUAL ACTION ANCHOR SAFESET SYSTEM WITH KHC CAPSULE ADHESIVE AND KWIK-HUS EZ PER ICC-ES
    - STEEL ELEMENTS FOR USE WITH ADHESIVE:
    - HILTI HAS-V-36 GRADE 36 CARBON STEEL ROD
    - HILTI HAS-E-55 GRADE 55 CARBON STEEL ROD
    - HILTI HAS-B-105 GRADE 105 CARBON STEEL ROD HILTI HAS-R-304 STAINLESS STEEL ROD
    - HILTI HAS-R-316 STAINLESS STEEL ROD

  - BASIS OF DESIGN INCLUDES THE FOLLOWING DESIGN PARAMETERS
  - CRACKED CONCRETE
    - WATER-SATURATED CONCRETE
    - BASE MATERIAL TEMPERATURE OF 23 TO 104 DEGREES FAHRENHEIT
    - ALLOWABLE WITH HAMMER-DRILL, HOLLOW DRILL BIT SYSTEM, AND CORE DRILLING METHODS
  - COLD-WEATHER ADHESIVE ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:

HILTI HIT-Z OR HIT-Z-R ROD (WITH HY 200 V3 ONLY)

- HILTI HIT-ICE SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT AND VACUUM
- HILTI KWIK-X DUAL ACTION ANCHOR SAFESET SYSTEM WITH KHC CAPSULE ADHESIVE AND KWIK-HUS EZ ICC-ES ESR 5035
- REBAR DOWELING INTO CONCRETE
- ADHESIVE ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
- HILTI HIT-HY 200 V3 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT AND VACUUM WITH CONTINUOUSLY DEFORMED REBAR PER
- HILTI HIT-500 V3 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT AND VACUUM WITH CONTINUOUSLY
- DEFORMED REBAR PER ICC-ES ESR-3814 HILTI HIT-RE 500 V3 SAFE SET SYSTEM WITH HILTI ROUGHENING TOOL (HIT RT) WITH CONTINUOUSLY DEFORMED REBAR PER ICC-
- ES ESR-3814 IN DIAMOND CORED HOLES HILTI HIT-HY 200 V3 SAFE SET SYSTEM WITH HILTI ROUGHENING TOOL (TE-YRT) WITH CONTINUOUSLY DEFORMED REBAR PER ICC-
- ES ESR-4868 FOR DIAMOND CORED HOLES
- HILTI HIT-FP700 R SAFESET SYSTEM WITH HILTI HOLLOW DRILL BIT (TE-CD OR TE-YD), AND HILTI VACUUM OR OTHER APPROVED DRILLING METHOD WITH POST-INSTALLED STEEL REINFORCING BARS
- BASIS OF DESIGN INCLUDES THE FOLLOWING DESIGN PARAMETERS:

CONTINUOUSLY DEFORMED STEEL REBAR

- CRACKED CONCRETE
- WATER-SATURATED CONCRETE
- BASE MATERIAL TEMPERATURE OF 23 TO 104 DEGREES FAHRENHEIT
- ALLOWABLE WITH HAMMER-DRILL, HOLLOW DRILL BIT SYSTEM, AND CORE DRILLING METHODS
- CURRENT ICC-ES REPORT WITH APPROVAL FOR DEVELOPMENT OF BAR USING ACI PROVISIONS FOR EMBEDMENT DEPTHS GREATER THAN 20 BAR DIAMETERS
- c) ANCHORAGE TO SOLID GROUTED MASONRY
- ADHESIVE ANCHORS USE:
- - HILTI HIT-HY 270 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT AND VACUUM PER ICC-ES ESR-4143 HILTI HIT-HY 200 V3 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT AND VACUUM PER ICC ESR-4878
    - STEEL ANCHOR ELEMENT SHALL BE HILTI HAS-B, HAS-E, HAS-R, HAS-V, HIS-N, HIS-RN CONTINUOUSLY THREADED ROD OR
- ANCHORAGE TO HOLLOW / MULTI-WYTHE MASONRY

MOISTURE CONDITION OF CONCRETE, AND DRILLING METHODS.

- ADHESIVE ANCHORS FOR CRACKED AND UNCRACKED HOLLOW/ MULTI-WYTHE MASONRY USE:
  - HILTI HIT-HY 270 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT AND VACUUM PER ICC-ES ESR-4143.
  - STEEL ANCHOR ELEMENT SHALL BE HILTI HAS CONTINUOUSLY THREADED ROD OR CONTINUOUSLY DEFORMED STEEL REBAR THE APPROPRIATE SIZE SCREEN TUBE SHALL BE USED PER ADHESIVE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS
- ANCHOR CAPACITY USED IN DESIGN SHALL BE BASED ON THE TECHNICAL DATA PUBLISHED BY HILTI OR OTHER SUCH METHOD AS APPROVED BY THE STRUCTURAL ENGINEER OF RECORD. SUBSTITUTION REQUESTS FOR ALTERNATE PRODUCTS MUST BE APPROVED IN WRITING BY THE STRUCTURAL ENGINEER OF RECORD PRIOR TO USE. CONTRACTOR SHALL PROVIDE CALCULATIONS THAT HAVE BEEN SEALED BY ANOTHER LICENSED ENGINEER DEMONSTRATING THAT THE SUBSTITUTED PRODUCT IS CAPABLE OF MEETING THE PERFORMANCE OF THE SPECIFIED PRODUCT. SUBSTITUTIONS WILL BE EVALUATED BY THEIR HAVING AN ICC-ES ESR SHOWING COMPLIANCE WITH THE RELEVANT BUILDING CODE FOR SEISMIC USES, LOAD RESISTANCE, INSTALLATION CATEGORY, AND AVAILABILITY OF COMPREHENSIVE INSTALLATION INSTRUCTIONS. ADHESIVE ANCHOR EVALUATION WILL ALSO CONSIDER CREEP, IN-SERVICE TEMPERATURE, INSTALLATION TEMPERATURE,
- USE OF DIAMOND CORE BIT WITH ROUGHENING TOOL FOR ANCHOR HOLES REQUIRES APPROVAL FROM ENGINEER OF RECORD PRIOR TO DRILLING. UNLESS OTHERWISE SHOWN IN THE DRAWINGS, ALL HOLES SHALL BE DRILLED PERPENDICULAR TO THE CONCRETE SURFACE.
- INSTALL ANCHORS PER THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS, AS INCLUDED IN THE ANCHOR PACKAGING.
- OVERHEAD ADHESIVE ANCHORS MUST BE INSTALLED USING THE HILTI HIT-SZ PISTON PLUG SYSTEM.
- ANCHOR INSTALLER CERTIFICATION IS REQUIRED FOR ALL INSTALLERS OF ADHESIVE ANCHORS IN HORIZONTAL OR UPWARDLY INCLINED ORIENTATION. THE HILTI ADHESIVE ANCHOR INSTALLER CERTIFICATION PROGRAM (HAAICP) SHALL BE CONSIDERED AN ACCEPTABLE TRAINING TO MEET THIS REQUIREMENT. FOR ALTERNATE TRAINING PROCEDURES. THE CONTRACTOR SHALL SUBMIT THE TRAINING CONTENT AND TRAINER QUALIFICATION TO THE STRUCTURAL ENGINEER OF RECORD FOR APPROVAL PRIOR TO COMMENCEMENT WITH THE ADHESIVE ANCHOR INSTALLER TRAINING.
- THE CONTRACTOR SHALL ARRANGE AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ONSITE INSTALLATION TRAINING FOR ALL ANCHOR PRODUCTS SPECIFIED. THE STRUCTURAL ENGINEER OF RECORD MUST RECEIVE DOCUMENTED CONFIRMATION THAT ALL PERSONNEL WHO INSTALL ANCHORS ARE TRAINED PRIOR TO THE COMMENCEMENT OF ANCHOR INSTALLATION.
- ANCHOR CAPACITY IS DEPENDENT UPON SPACING BETWEEN ADJACENT ANCHORS AND PROXIMITY OF ANCHORS TO EDGE OF CONCRETE. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS.
- EXISTING REINFORCING BARS IN THE CONCRETE STRUCTURE MAY CONFLICT WITH SPECIFIC ANCHOR LOCATIONS. UNLESS NOTED ON THE DRAWINGS THAT THE BARS CAN BE CUT, THE CONTRACTOR SHALL REVIEW THE EXISTING STRUCTURAL DRAWINGS AND SHALL UNDERTAKE TO LOCATE THE POSITION OF THE REINFORCING BARS AT THE LOCATIONS OF THE CONCRETE ANCHORS BY HILTI PS 1000 OR OTHER GPR, X-RAY, CHIPPING OR OTHER APPROVED MEANS.

NTRACT NO	DWG NO	REV.	SCALE: