



THRUST RESTRAINER PLAN

DETAIL 2

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Drilling and Setting Soldier Piles (in Soil)	CU FT	1358
Furnishing Soldier Piles (HP Section)	FOOT	212

- NOTES:**
1. Permanent Thrust Restraint Structure shown is designed to resist a maximum 47kip horizontal thrust load in pipe longitudinal direction.
 2. Steel Pile and Beams shall be ASTM A-36.
 3. Welds shall be in compliance with AWS D1.1 "Structural Welding Code - Steel", latest edition.

See proposed watermain alignment, Sheet No. 87, for additional information

FILE PATH = C:\Users\will.mor-deuss\Desktop\Riser_Shaft\160W25-Sht-RS05-ThrustRestrainer.dgn

HBM
ENGINEERING GROUP, LLC.
CONSULTING & DESIGN
INSPECTION & RATING
RESEARCH & TESTING

4415 WEST HARRISON ST.
SUITE 231
HILLSIDE, IL 60162
PHONE: (708) 236-0900
FAX: (708) 236-0901

D160W25-Sht-RS05-ThrustRestrainer.dgn	DESIGNED - MI, WM	REVISED -
USER NAME = will.mor-deuss	DRAWN - WM	REVISED -
PLOT SCALE = 36x0.0000 "/math>1" / math>in.	CHECKED - MAI, MI, JJS	REVISED -
PLOT DATE = 6/14/2013	DATE - 6/17/2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PERMANENT THRUST RESTRAINERS PLAN, SECTIONS AND DETAILS
RISER SHAFT AND BRACED EXCAVATION

SCALE: SHEET S4-05 OF 8 SHEETS STA. TO STA.

F.A.I. RTE. 90/94/290	SECTION 2013-007R	COUNTY COOK	TOTAL SHEETS 317	SHEET NO. 229
CONTRACT NO. 60W25			ILLINOIS FED. AID PROJECT	