

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

THRUST RESTRAINER PLAN

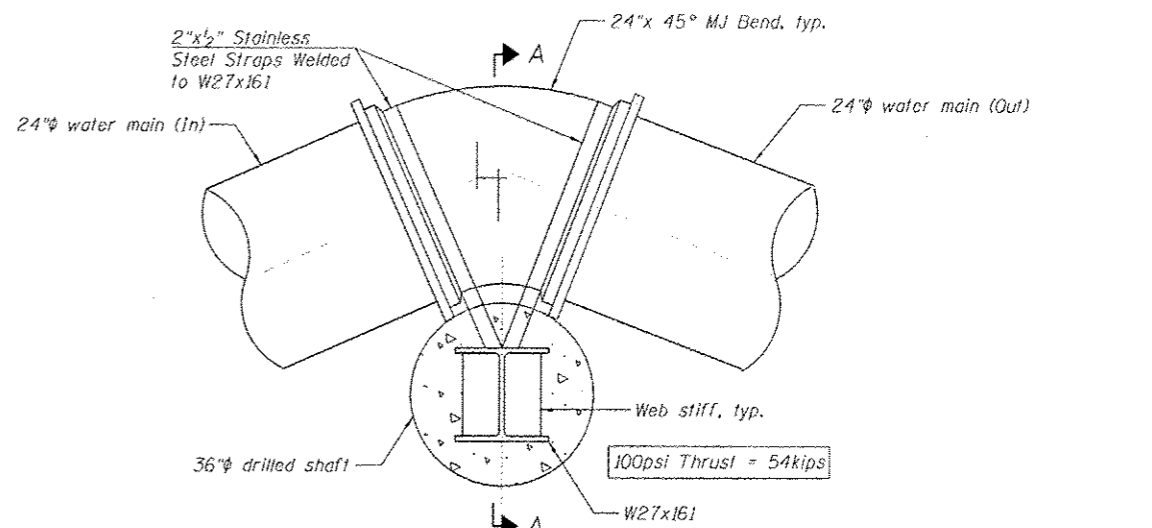
NOTES:

1. For General Notes, see Sheet S2-02.
2. All water main pipe joints are to be restrained.
3. Permanent thrust restraint structure shown is designed to resist a maximum 54kip horizontal thrust load in pipe longitudinal direction.
4. Steel pile shall be ASTM A-36.
5. Stainless steel strap shall be ASTM Grade 304L.
6. Welds shall be in compliance with AWS D1.1 "Structural Welding Code - Steel", latest edition.
7. The steel pile shall be paid under "Furnishing and Erecting Structural Steel".
8. After drilling the bore, install the steel pile and pour the concrete.

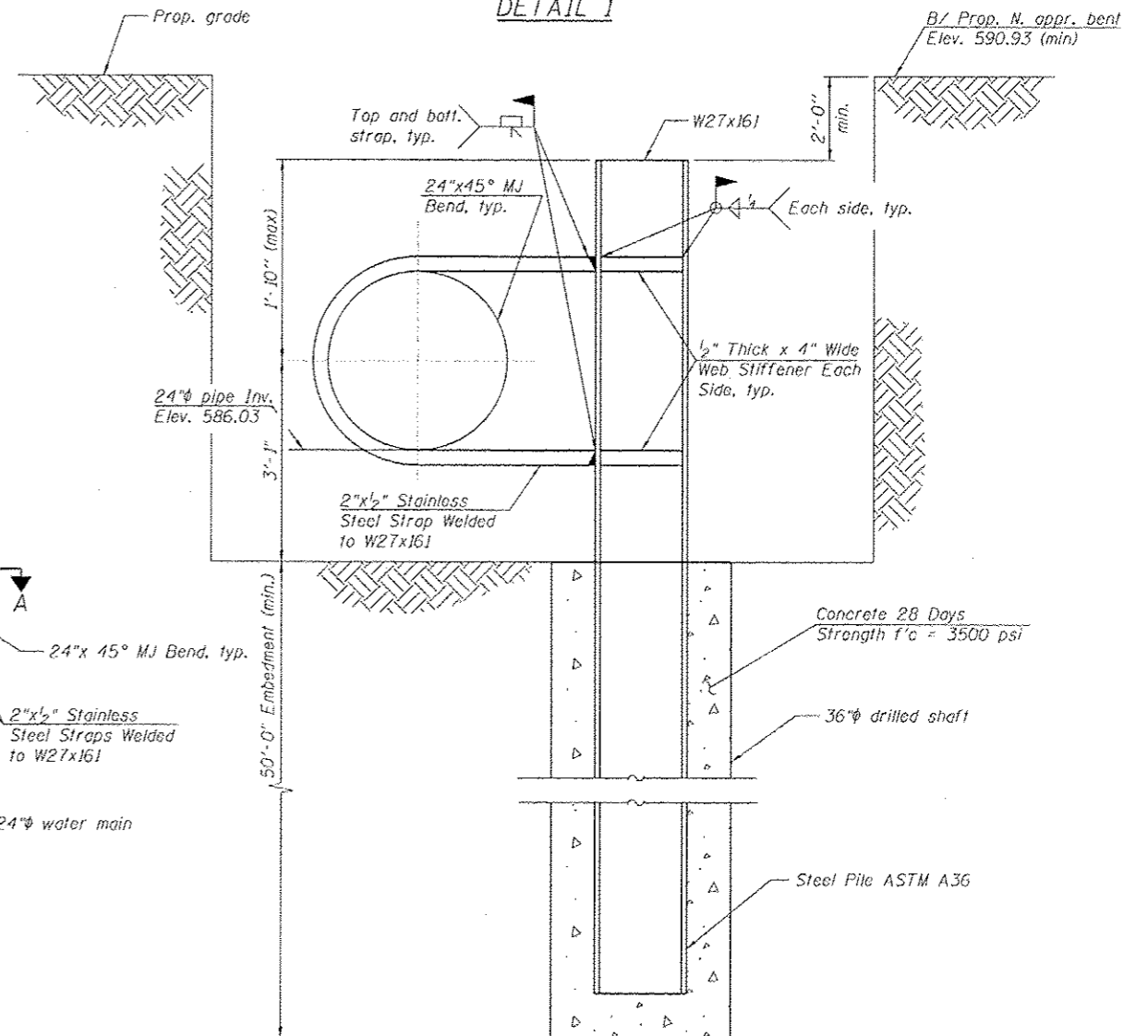
BILL OF MATERIAL

ITEM	UNIT	TOTAL
Furnishing and Erecting Structural Steel	POUND	35,370
Drilled Shaft in Soil	CU YD	53

Added sheet



DETAIL 1



SECTION A-A

DETAIL 2

HBM
 CONSULTING & DESIGN
 INSPECTION & TESTING
 RESEARCH & TESTING
 4415 WEST HARRISON ST.
 SUITE 231
 HILLSDALE, IL 60122
 PHONE: (708) 236-0900
 FAX: (708) 236-0901

0161724-60W25-S11-ThrustRestrainer.dgn
 USER NAME: ohoedjasa
 PLOT SCALE: 3/8" = 1'-0"
 PLOT DATE: 7/15/2013

DESIGNED - MI, WM
 DRAWN - WM
 CHECKED - MAI, MI, JJS
 DATE - 6/17/2013
 REVISED - 07/19/2013 MI, WM

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**PERMANENT THRUST RESTRAINERS PLAN, SECTIONS AND DETAILS
 RETAINING WALL (STRUCTURE NO. 016-1724) AND RISER SHAFT**

SCALE: SHEET S2-11 OF 12 SHEETS STA. TO STA.

F.A.I. SITE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-007R	COOK	317	206
CONTRACT NO. 60W25				
ILLINOIS FED. AID PROJECT				