

TRENCH SHIELD TABULATED DATA

Shield Model 6 x 20 x 4" Wall, Serial Number 620.1, Max Pressure = 740 psf

6' High x 20' Long x 15' Max Width Shield

<u>Design/Review Engineer:</u> Woodcrest Engineering 15790 Rancho Viejo Drive Riverside, CA 92506 (951) 780-2843	<u>Manufacturer / Owner:</u> McBratney Company P.O. Box 1102 Murrieta, CA 92564 Bus: (951) 677-0263	<u>Drawing</u> No. MB6x20x4" <u>Date</u> 6/30/2014
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GUIDELINES FOR TRENCH SHIELD USAGE

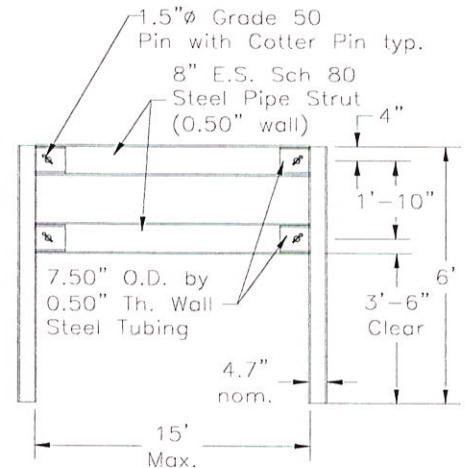
1. This shield and tabulated data shall only be implemented by a competent person as defined by Title 8, Chapter 4, Section 1504(a) of the State of California Safety Orders adopted 9/25/91.
2. This tabulated data has been prepared by a registered professional engineer in accordance with the provisions of Title 8, Chapter 4, Section 1541.1(c)(2) of the State of California Safety Orders adopted 9/25/91 and Federal OSHA Safety and Health Standard 29 CFR Part 1926, Subpart P.
3. This shield shall be used in accordance with the State of California Administrative Code, Title 8, Chapter 4, Section 1541.1(g) at all times.
4. The soil types "A", "B", and "C" are as defined in Appendix A of the OSHA Standard, Section 1541.1 "Soil Classification". Type "C" soils include soils which are saturated, wet, or submerged in water. For soils which are not saturated, wet, or submerged in water but would otherwise be classified as a Type "C" soil, use the soil classification of "C-60" or consult a registered professional engineer.
5. This shield is designed to withstand a uniform horizontal pressure on the side walls as indicated above. This shield tabulated data is for a shield installed in a continuous trench condition only. Lateral pressure loads from end sheeting or steel plates installed against the spreaders is not permitted without further analysis by a licensed professional engineer.
6. The surcharge load included in this tabulated data is a normal traffic and construction surcharge of 72 psf. Spoil piles, large heavy equipment or other factors may produce higher surcharge pressures. Actual pressure surcharges should be investigated prior to use to ensure that the maximum capacity of the shield is not exceeded.
7. Trench shields may not provide stability to adjacent buildings or other structures susceptible to lateral movement of supporting soils.
8. No modifications shall be made to this shield design without written approval of the Design Engineer.
9. The maximum rated pressure for this shield is based upon the shield in structurally sound condition. The shield shall be inspected prior to use for damage or deterioration and repairs made if necessary.
10. When the shield(s) is used as part of a combined sloping and vertical excavation, the shield must extend a minimum of 18" above the toe of the slope (per OSHA regulations).
11. No workman shall be in the trench unless protected within the confines of shields extending the full vertical height of the trench.
12. The shield base unit may be used alone or stacked with other shields and/or extensions. Shields shall be connected using the manufacturer supplied bolts as required to prevent relative movement between shields.
13. Shield design allowable stresses are per the "AISC Manual of Steel Construction" increased 33% for temporary loading. For installations that do not include an increase for temporary loading, the pressure rating shall be taken as 75% of the above value and the depths adjusted accordingly.

Tabulated Data Calculation:

13. Without a site specific shoring plan prepared by a professional engineer, the active pressures given in the OSHA Construction Safety Orders provide a guideline for calculating the shoring pressure at a given depth. The total allowable depth is calculated as:

$Ht = (Capacity - Surcharge) / Pa$, For example, with a surcharge of 72 psf and OSHA Type "A" soil with Pa of 25 pcf, the allowable depth is:

$$Ht = (740 \text{ psf} - 72 \text{ psf}) / 25 \text{ pcf} = 26.7 \text{ ft.}$$



SECTION

ALLOWABLE DEPTHS

OSHA Soil Type	Pa pcf	Maximum Depth**
Type "A"	25	26 ft.*
Type "B"	45	14 ft.
Type "C60"	60	11 ft.
Type "C"	80	8 ft.

* Note: Depths over 20 feet require a site specific design by a registered professional engineer.

** Note: Maximum depth is total depth including adjacent slopes above, if any.