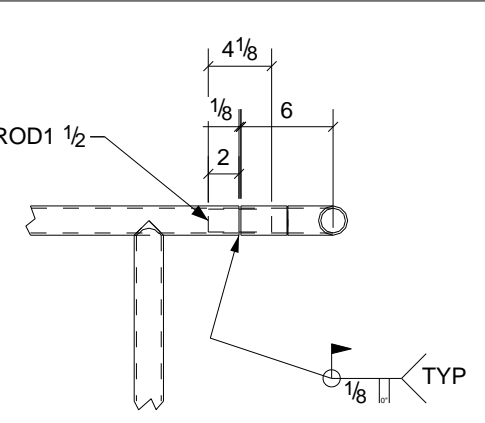
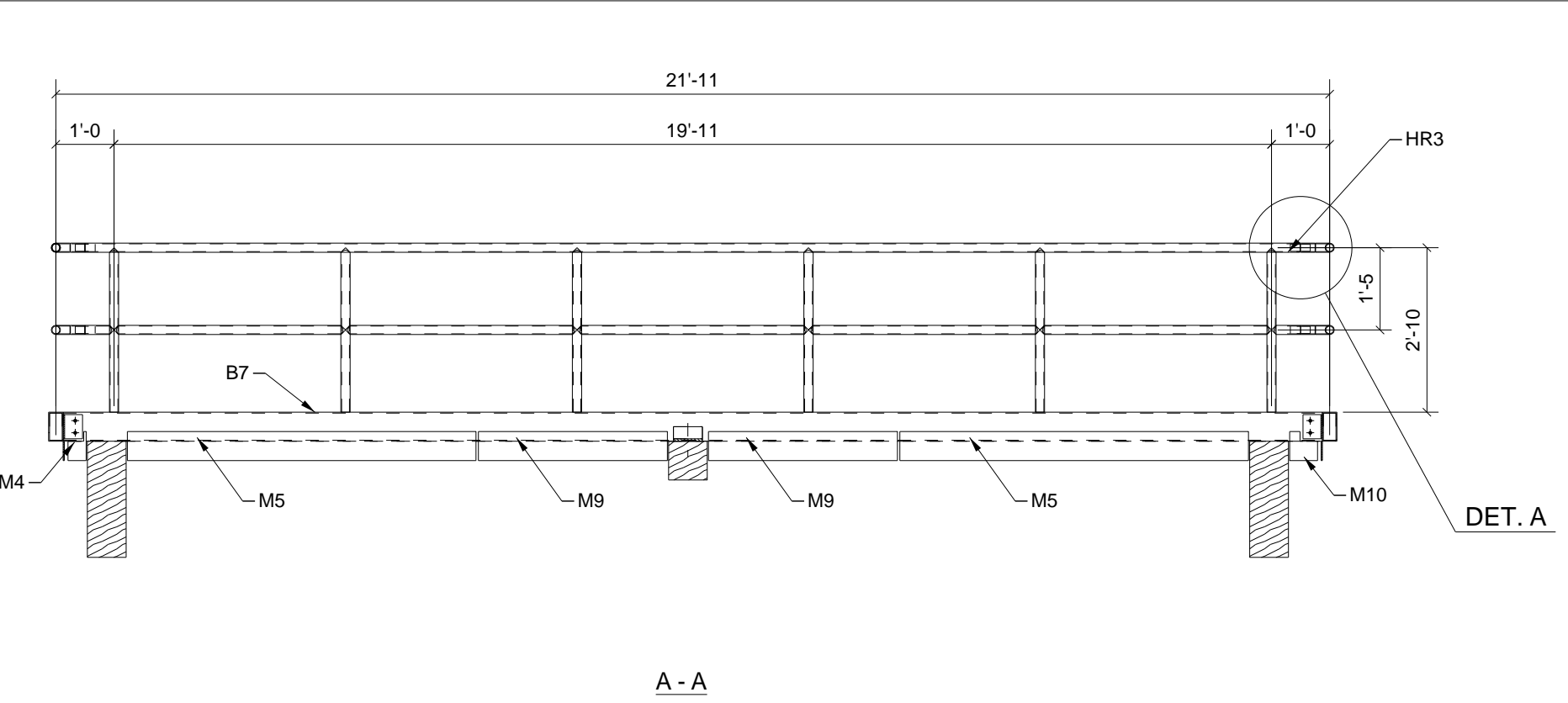
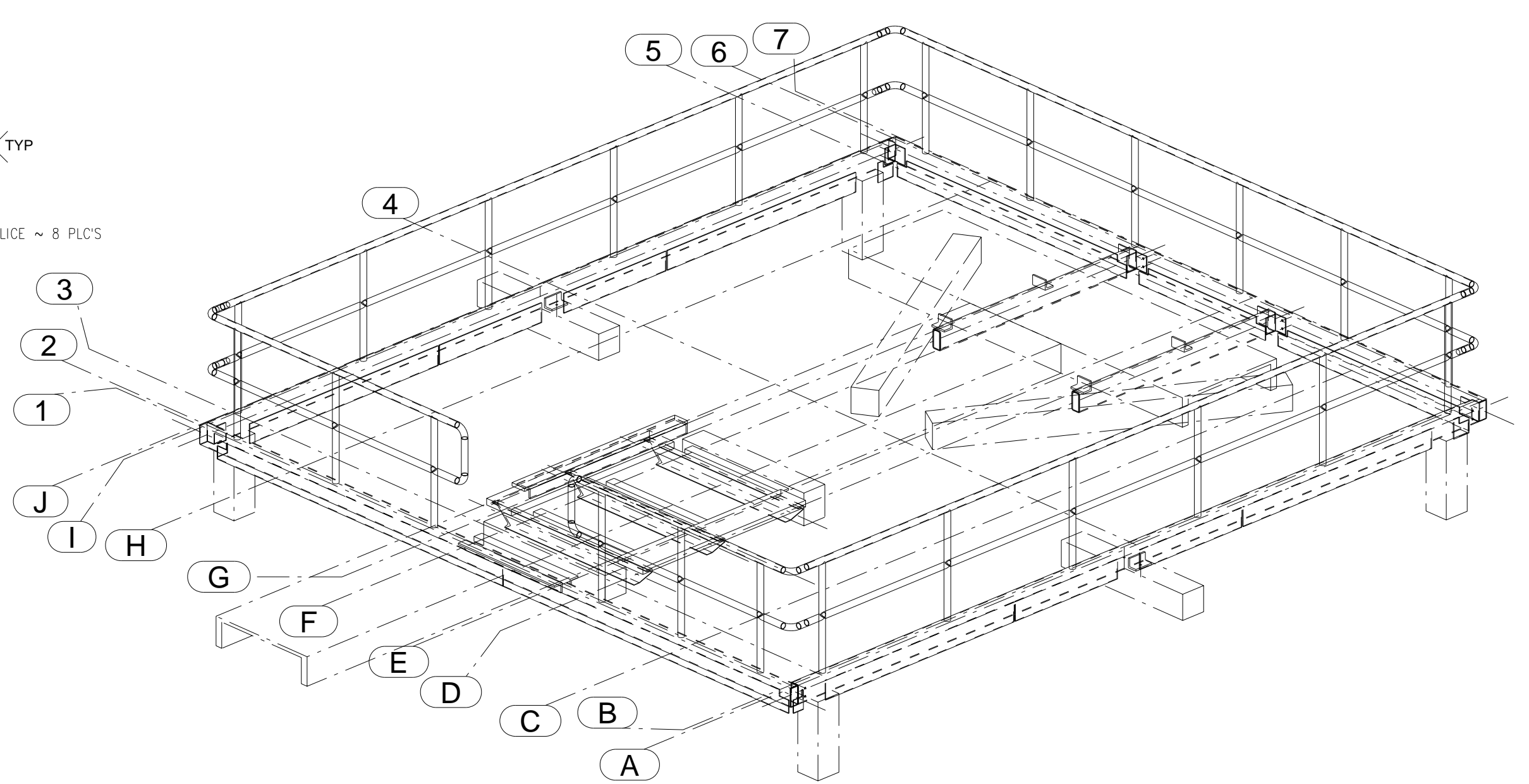


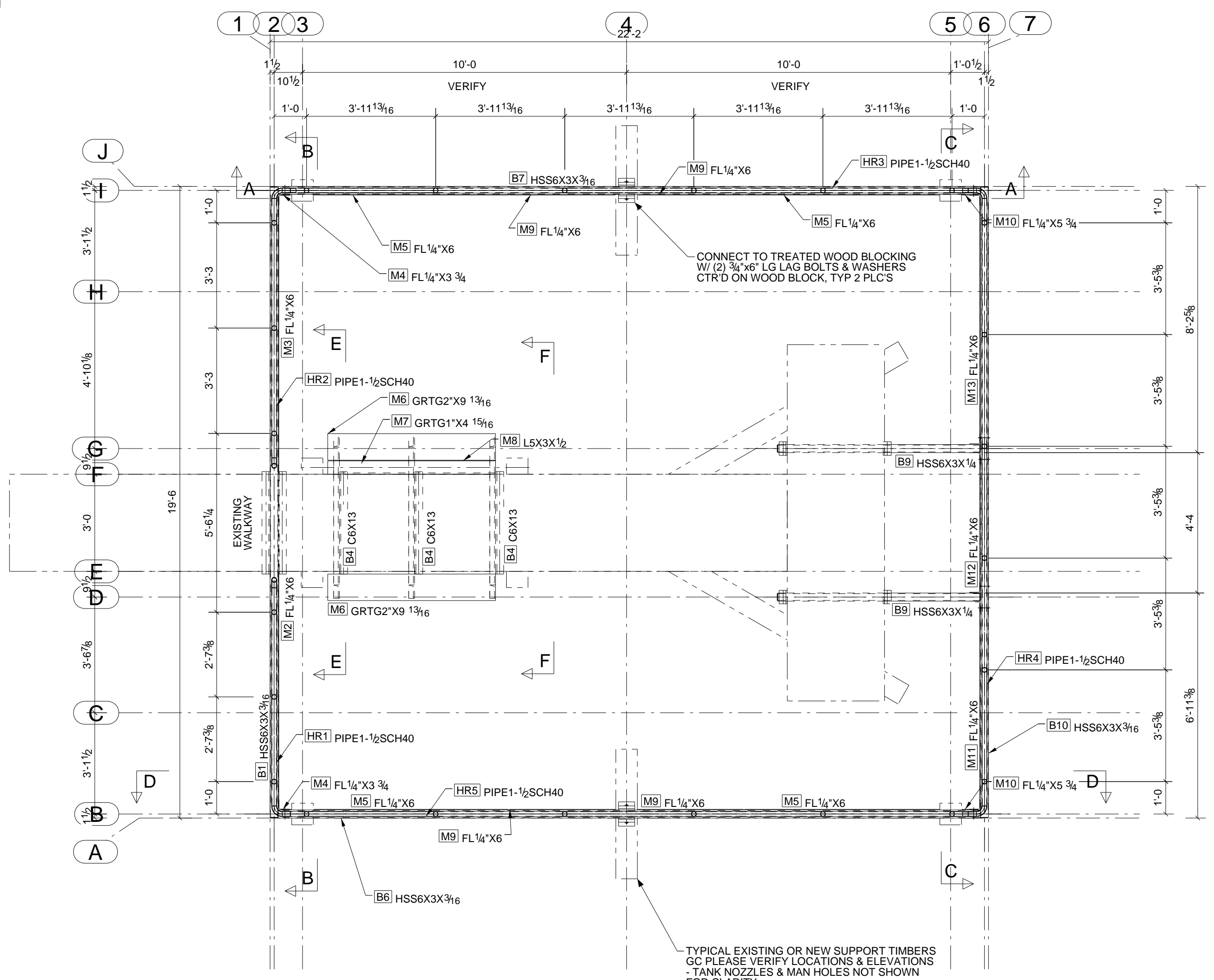
APPROVER NOTE:
USE GR. 8" 1/2-20 NC S. STL. THREAD, CUTTING TEK SCREWS, 24" O.C. AS A PROPOSED ALTERNATE FOR KICK PLATE WELDS. PROPOSED CONNECTION TO MINIMIZE PAINT TOUCH UP - PLEASE ADVISE



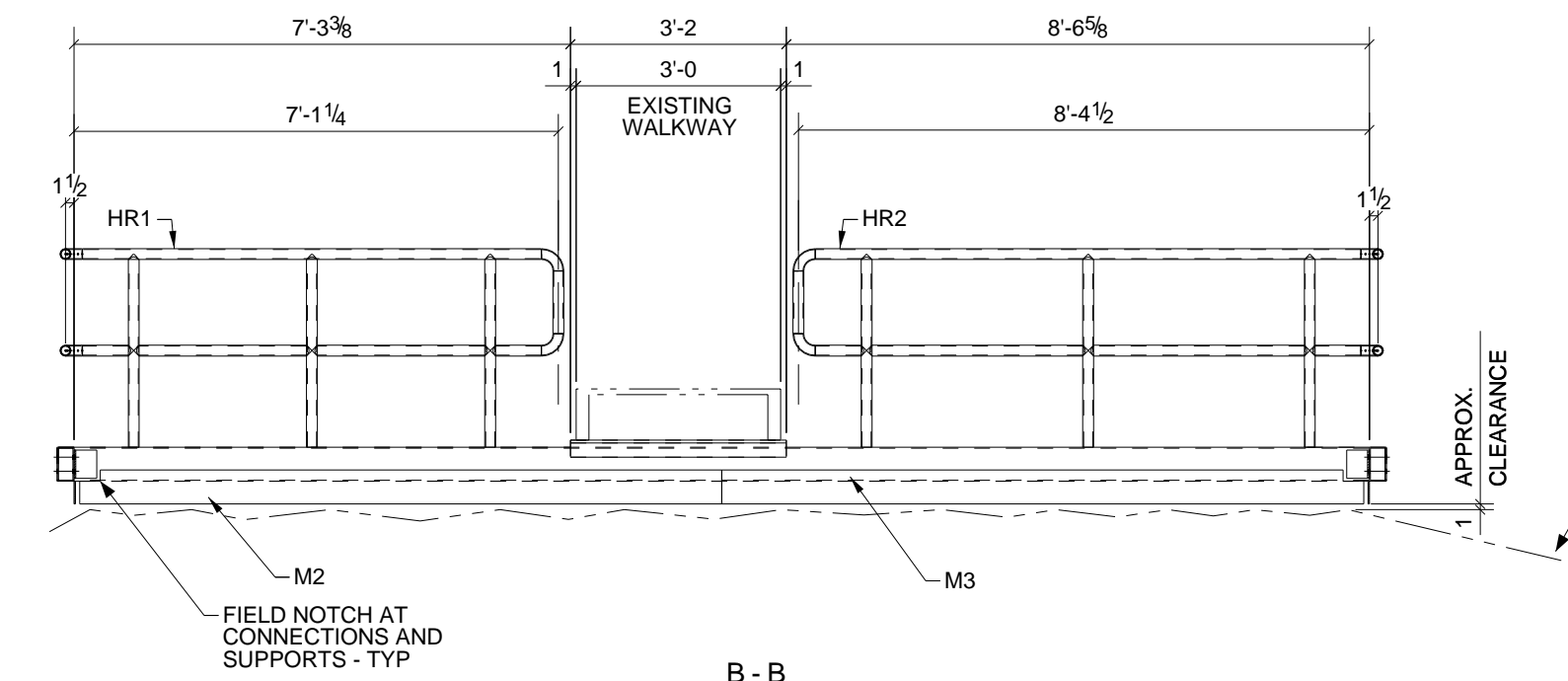
DETAIL A
TYPICAL RAIL FIELD SPLICE ~ 8 PLC'S



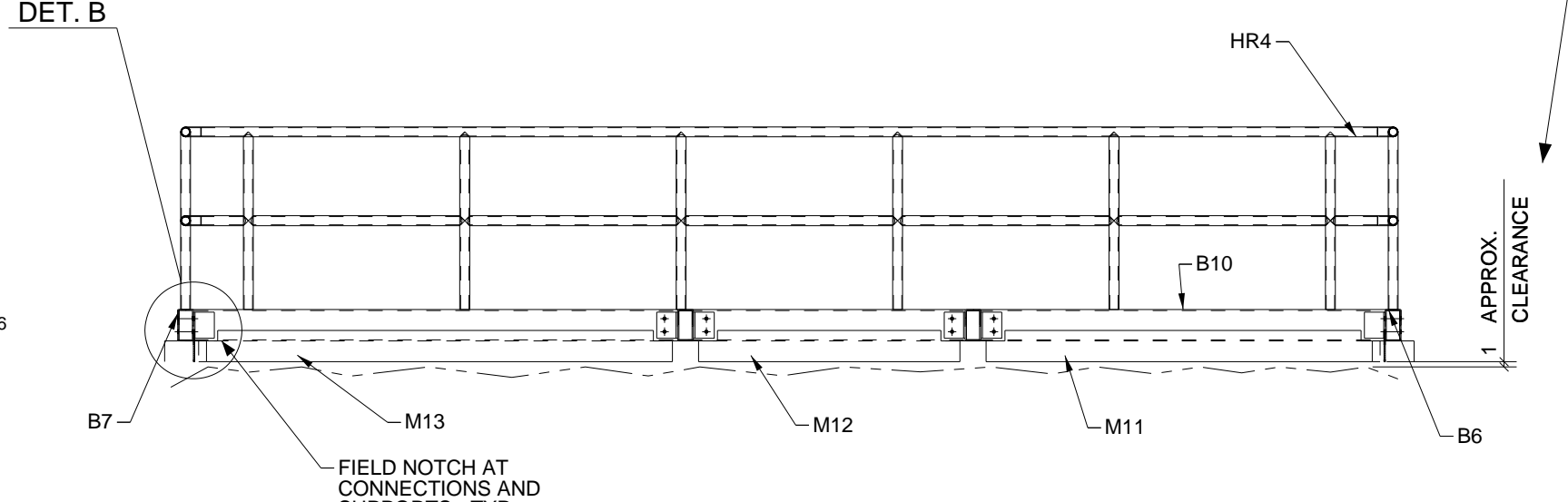
PERSPECTIVE VIEW



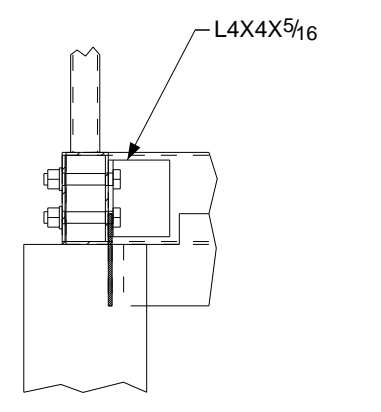
PLAN



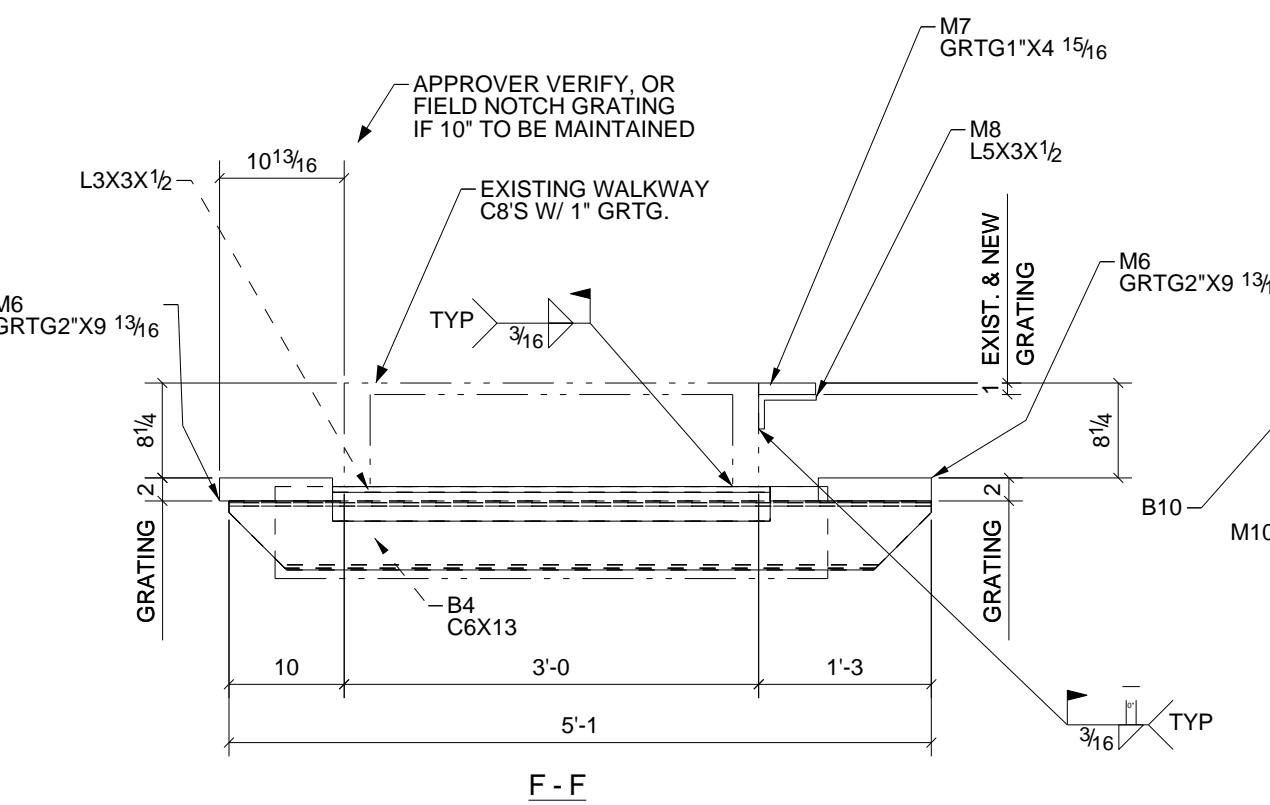
B - B



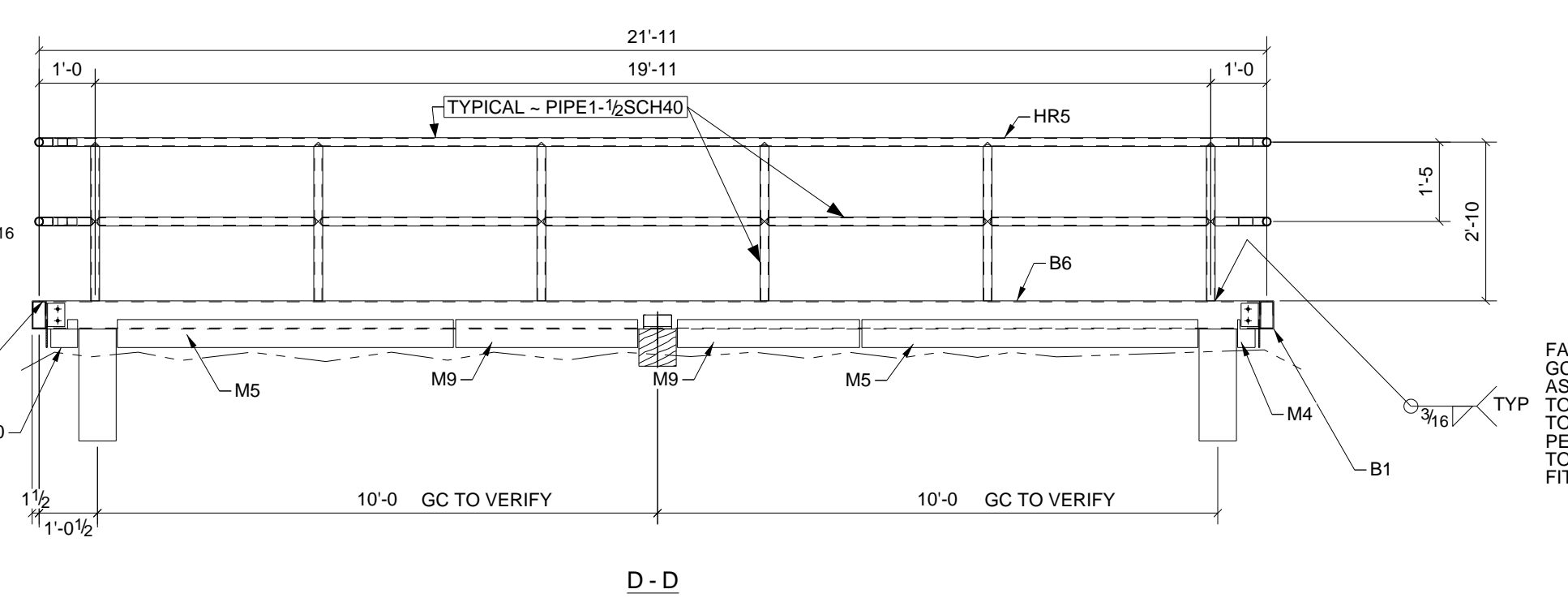
C - C



DETAIL B
TYPICAL CORNER FRAME CONNECTION ~ (4) PLC'S



F - F



D - D

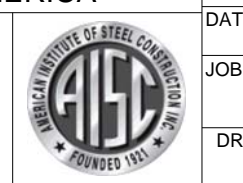
FABRICATOR NOTE:
GC DESIRES EACH RAIL ASSEMBLY SHOP WELDED TO SUPPORT TUBE TO MINIMIZE TOUCH UP PAINTING. ALIGN RAILS PER PLAN & SHOP FABRICATE TO VERIFY ASSEMBLY FIELD FIT-UP

This project shall be erected in accordance with Section 7 of the AISC Code of Standard Practice, which includes 134 Considerations of Erection, that state the following:
The connection of member shafts by means of nesting, grinding, welding or cutting, and the drawing of elements into line with drill pins, shall be prohibited to be normal erection operations. Stress that cannot be corrected using the foregoing means, or that require repair through a number of successive connections, shall be promptly reported to the owner's representative for design and construction, and the fabricator shall be required to make the required repairs to allow correction of the error or approval of the most efficient and economical method of correction to be used by others.
All fasteners shall be made with E-70 or higher hydrogen electrodes.

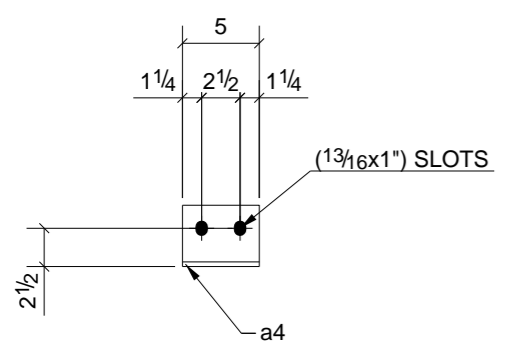
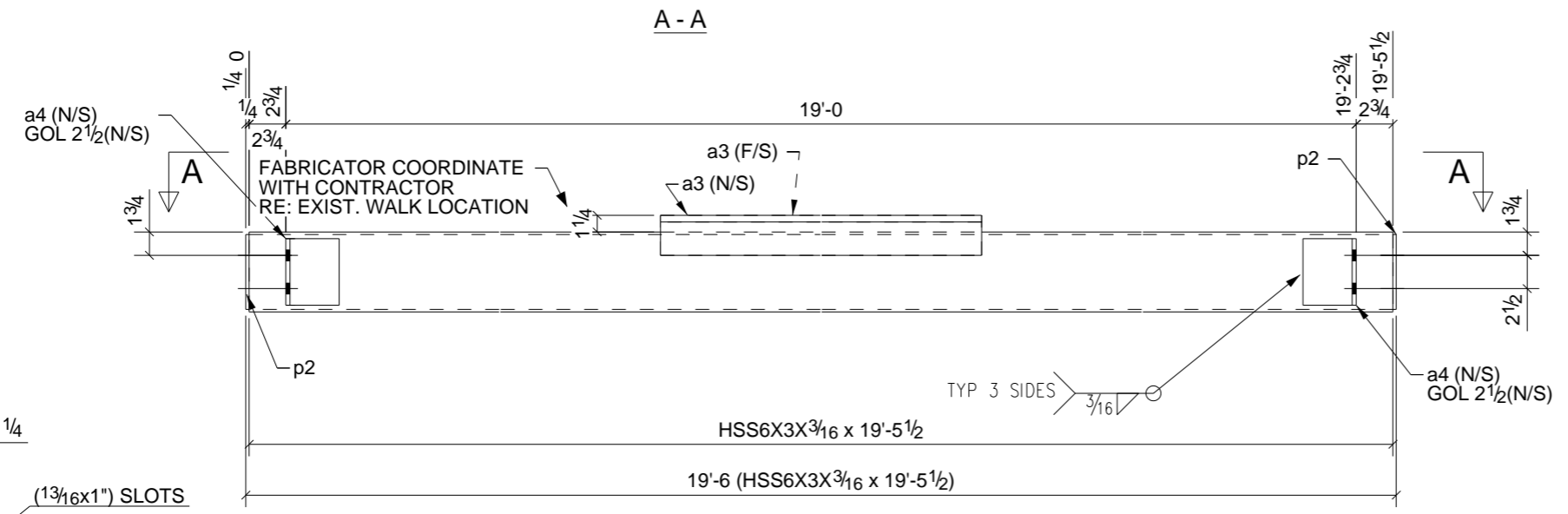
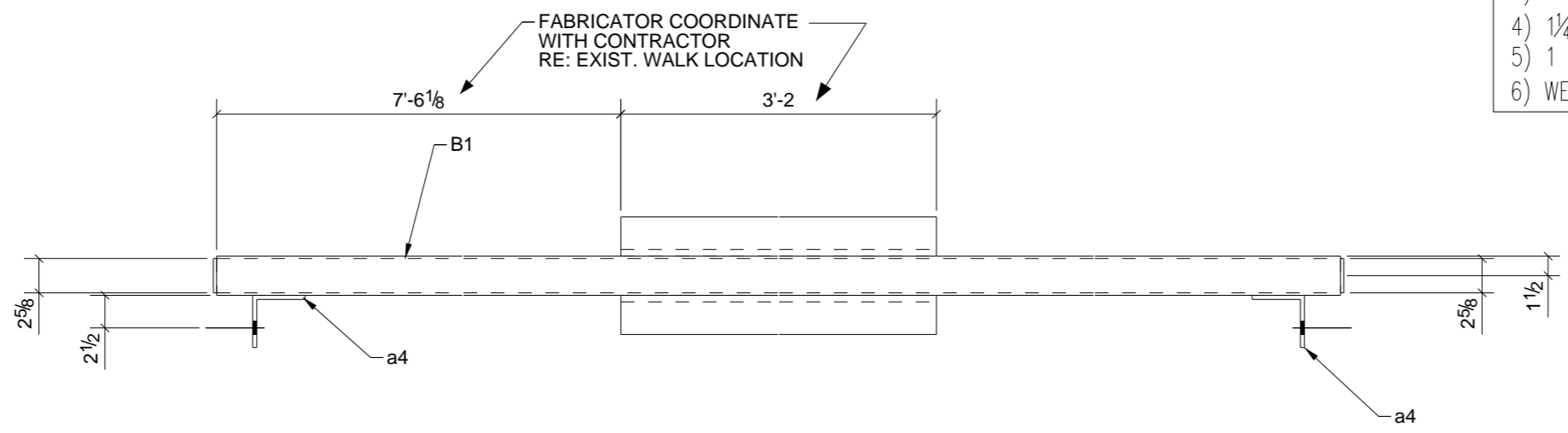
DRAWINGS PREPARED BY DETAILER FROM INFORMATION CONTAINED IN THE PROJECT DOCUMENTS WITH INSTRUCTIONS FROM THE FABRICATOR. DETAILER IS NOT RESPONSIBLE FOR ANY DESIGN, ENGINEERING OR CODE ISSUES WHICH MAY ARISE FROM THE USE OF THESE DRAWINGS. APPROVALS SHOULD BE OBTAINED FROM THE OWNER, ARCHITECT, ENGINEER, CONTRACTOR, WHICH EVER IS APPLICABLE. THE FABRICATOR SHOULD CHECK THE DETAIL DOCUMENTS FOR CORRECTNESS BEFORE RELEASING FOR FABRICATION. THE USE OF THE DETAILED DRAWINGS FOR FABRICATION CONSTITUTES ACCEPTANCE AND APPROVAL OF THE DRAWINGS, MATERIAL LIST OR CUT LIST, WHICH EVER APPLIES.

| REV. | DESCRIPTION | DATE | DWN | CHK |
|--|-------------------------|---------|-------------------|-----------|
| A | For Approval & Comments | 9/20/10 | | |
| GENERAL NOTES | | | | |
| MATERIAL: A992/A36 | | UN | ELECTRODES: E70xx | REF. DRG. |
| HOLES: 13/16 DIA. UN | | CONN'S: | A325 N | |
| SURFACE PREP. AND PAINT: | | | | |
| PER SPECS PROJ. PAINT | | | | |
| DESCRIPTION: PLAN-NEW STEEL AT EXISTING WALKWAY | | | | |
| PROJ. NAME: ETHER TANK SAFETY RAIL | | | | |
| LOCATION: PITTSBURGH, PA | | | | |
| CONTRACTOR: S.P. McCarl & Company ARCH./ENG. SNC LAVALIN AMERICA | | | | |
| DRAWN BY: TMC | | | | |
| DATE: 09/20/2010 | | | | |
| CHKD. BY: TMAC | | | | |
| APPROVAL: | | | | |
| DATE: | | | | |
| JOB No. AP-3270 | | | | |
| DRG. No. E1 | | | | |
| REV. A | | | | |

M&D Industries
Rr 1
Clarendon, PA 16313
(814) 723-2381



STANDARD SHOP NOTES:
 1) ALL WELDS 3/16" FILLETS OR BUTT WELDS, UNLESS NOTED.
 2) GRIND ALL ROUGH EDGES SMOOTH.
 3) FIELD VERIFY ALL DIMENSIONS & ELEVATIONS PRIOR TO FABRICATION.
 4) 1/4" EDGE DISTANCE U.N..
 5) 1 S/C STD. SHOP PRIMER U.N., PAINT PER SPECS.
 6) WELDING: E70XX OR E7XT-X; IN ACCORDANCE W/ A.W.S. D1.1



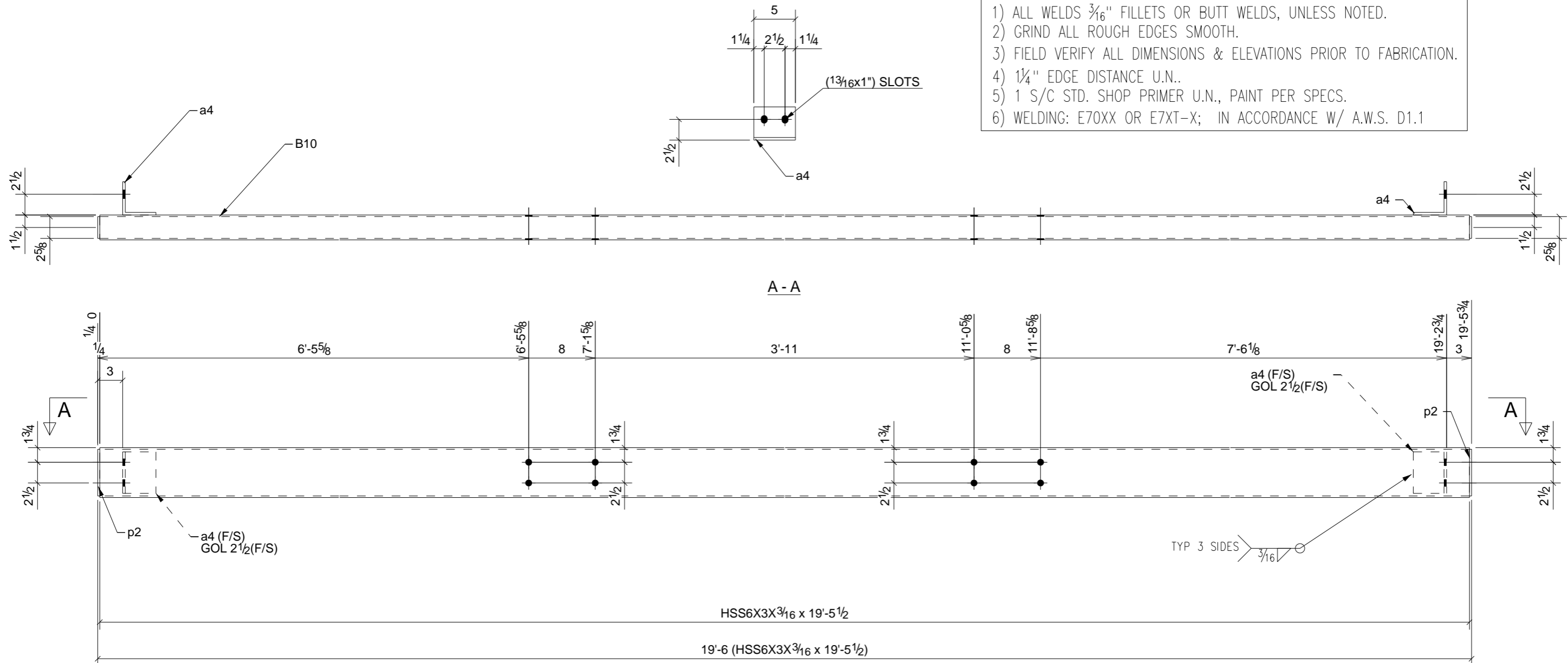
ONE - HSS BEAM - B1

| | | | | |
|--|-------------------------|--------------------------|------------|-----|
| A | For Approval & Comments | 9/20/10 | | |
| REV. | DESCRIPTION | DATE | DWN | CHK |
| GENERAL NOTES | | JOB USE | | |
| MATERIAL: A992/A36 | ELECTRODES: E70xx | REF. DRG. | | |
| HOLES: 13/16 DIA. U/N | CONN'S.: A325 N | SHOP | | |
| SURFACE PREP. PER SPECS AND PAINT: PROJ. PAINT | | APPROVAL | | |
| DESCRIPTION: BEAM | | | | |
| PROJECT NAME: ETHER TANK SAFETY RAIL | | LOCATION: PITTSBURGH, PA | | |
| CONTRACTOR: S.P. McCarl & Company | | | | |
| M&D Industries Rr 1 Clarendon, PA 16313 (814) 723-2381 | | DRAWN BY | DATE | |
| | | TMc | 09/19/2010 | |
| | | CHKD. BY | DATE | |
| TMAC | | | | |
| JOB No. | DRG. No. | REV. | | |
| AP-3270 | B1 | 1 | | |

BILL OF MATERIAL

| SHIP | MARK | NO PCS | DESCRIPTION | LENGTH | PIECE MARK | REMARKS |
|------|------|--------|---------------|------------|------------|------------------------------------|
| 1 | B1 | 1 | HSS6X3X3/16 | 19'-5 1/2" | | SQ-2 A500-GR.B YELLOW SAFETY PAINT |
| | | 2 | L3X3X1/2 | 3'-2" | a3 | A36 YELLOW SAFETY PAINT |
| | | 2 | L4X4X5/16 | 0'-5" | a4 | A36 |
| | | 2 | PL1/4"X2 5/8" | 0'-5 5/8" | p2 | A36 |

STANDARD SHOP NOTES:
 1) ALL WELDS $\frac{3}{16}$ " FILLETS OR BUTT WELDS, UNLESS NOTED.
 2) GRIND ALL ROUGH EDGES SMOOTH.
 3) FIELD VERIFY ALL DIMENSIONS & ELEVATIONS PRIOR TO FABRICATION.
 4) $\frac{1}{4}$ " EDGE DISTANCE U.N..
 5) 1 S/C STD. SHOP PRIMER U.N., PAINT PER SPECS.
 6) WELDING: E70XX OR E7XT-X; IN ACCORDANCE W/ A.W.S. D1.1

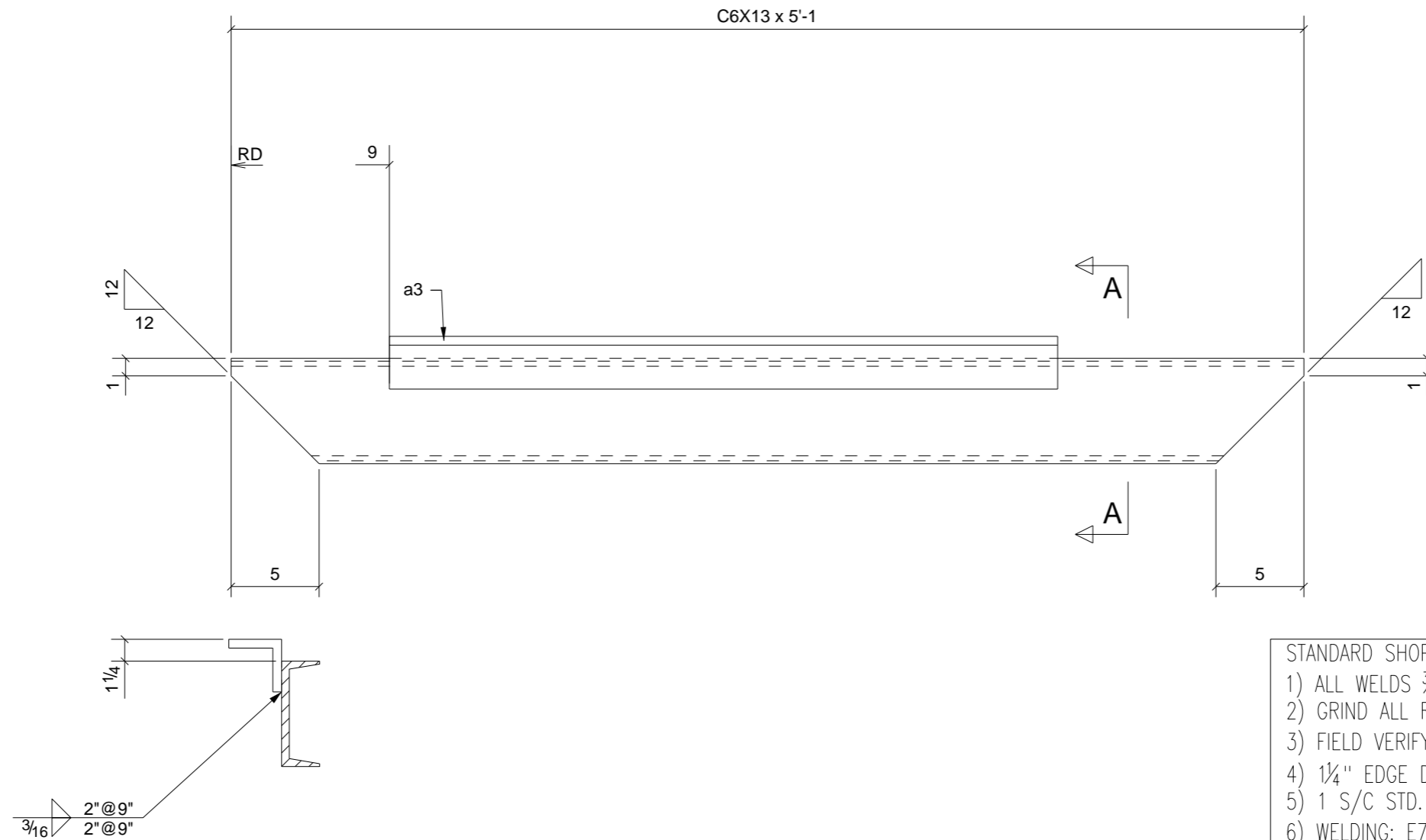


ONE - HSS BEAM - B10

| | | | | |
|--|-------------------------|-----------|------------|-----|
| A | For Approval & Comments | 9/20/10 | | |
| REV. | DESCRIPTION | DATE | DWN | CHK |
| GENERAL NOTES | | JOB USE | | |
| MATERIAL: A992/A36 | ELECTRODES: E70xx | REF. DRG. | | |
| HOLES: 13/16 DIA. U/N | CONN'S.: A325 N | SHOP | | |
| SURFACE PREP. PER SPECS AND PAINT: PROJ.PAINT | | APPROVAL | | |
| DESCRIPTION: BEAM | | | | |
| PROJECT NAME: ETHER TANK SAFETY RAIL | | | | |
| LOCATION: PITTSBURGH, PA | | | | |
| CONTRACTOR: S.P.McCarl & Company | | | | |
| M&D Industries Rr 1 Clarendon, PA 16313 (814) 723-2381 | | DRAWN BY | DATE | |
| | | TMc | 09/19/2010 | |
| | | CHKD. BY | DATE | |
| TMAC | | | | |
| JOB No. | DRG. No. | REV. | | |
| AP-3270 | B10 | 1 | | |

BILL OF MATERIAL

| SHIP | MARK | NO PCS | DESCRIPTION | LENGTH | PIECE MARK | REMARKS |
|------|------|--------|---------------|------------|------------|------------------------------------|
| 1 | B10 | 1 | HSS6X3X3/16 | 19'-5 1/2" | | SQ-2 A500-GR.B YELLOW SAFETY PAINT |
| | | 2 | L4X4X5/16 | 0'-5" | a4 | A36 |
| | | 2 | PL1/4"X2 5/8" | 0'-5 5/8" | p2 | A36 |



- STANDARD SHOP NOTES:
- 1) ALL WELDS $\frac{3}{16}$ " FILLETS OR BUTT WELDS, UNLESS NOTED.
 - 2) GRIND ALL ROUGH EDGES SMOOTH.
 - 3) FIELD VERIFY ALL DIMENSIONS & ELEVATIONS PRIOR TO FABRICATION.
 - 4) $\frac{1}{4}$ " EDGE DISTANCE U.N..
 - 5) 1 S/C STD. SHOP PRIMER U.N., PAINT PER SPECS.
 - 6) WELDING: E70XX OR E7XT-X; IN ACCORDANCE W/ A.W.S. D1.1

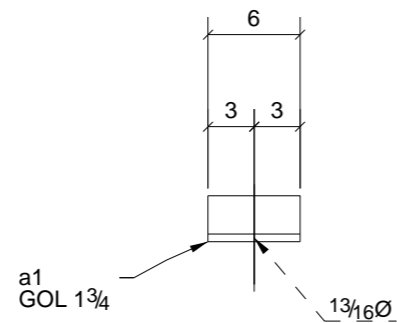
A - A

3 - CHANNELS - B4

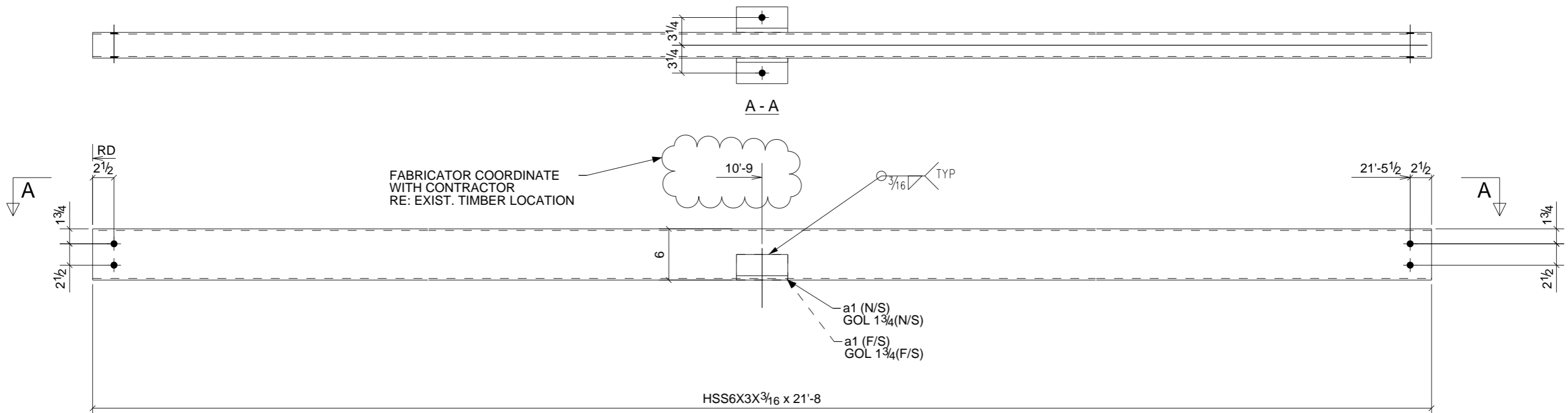
| | | | | |
|--|-------------------------|--------------------|--------------------|-----------|
| A | For Approval & Comments | 9/20/10 | | |
| REV. | DESCRIPTION | DATE | DWN | CHK |
| GENERAL NOTES | | JOB USE | | |
| MATERIAL: A992/A36 | ELECTRODES: E70xx | REF. DRG. | | |
| HOLES: 13/16 DIA. U/N | CONN'S.: A325 N | SHOP | | |
| SURFACE PREP. PER SPECS AND PAINT: PROJ.PAINT | | APPROVAL | | |
| DESCRIPTION: CHANNEL | | | | |
| PROJECT NAME: ETHER TANK SAFETY RAIL | | | | |
| LOCATION: PITTSBURGH, PA | | | | |
| CONTRACTOR: S.P.McCarl & Company | | | | |
| M&D Industries Rr 1 Clarendon, PA 16313 (814) 723-2381 | | DRAWN BY TMc | DATE 09/20/2010 | |
| | | CHKD. BY TMAC | DATE | |
| | | JOB No. AP-3270 | DRG. No. B4 | REV. 1 |

BILL OF MATERIAL

| SHIP | MARK | NO PCS | DESCRIPTION | LENGTH | PIECE MARK | REMARKS |
|------|------|--------|-------------|--------|------------|-------------------------------|
| 3 | B4 | 3 | C6X13 | 5'-1" | | BEV-2 A36 YELLOW SAFETY PAINT |
| | | 3 | L3X3X1/2 | 3'-2" | a3 | A36 YELLOW SAFETY PAINT |



- STANDARD SHOP NOTES:
- 1) ALL WELDS $\frac{3}{16}$ " FILLETS OR BUTT WELDS, UNLESS NOTED.
 - 2) GRIND ALL ROUGH EDGES SMOOTH.
 - 3) FIELD VERIFY ALL DIMENSIONS & ELEVATIONS PRIOR TO FABRICATION.
 - 4) $\frac{1}{4}$ " EDGE DISTANCE U.N..
 - 5) 1 S/C STD. SHOP PRIMER U.N., PAINT PER SPECS.
 - 6) WELDING: E70XX OR E7XT-X; IN ACCORDANCE W/ A.W.S. D1.1

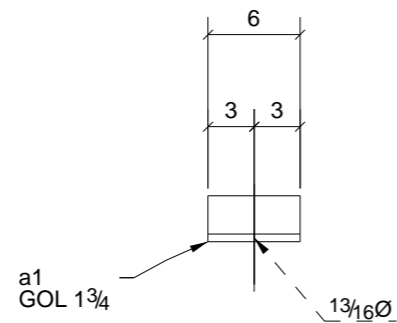


ONE - HSS BEAM - B6

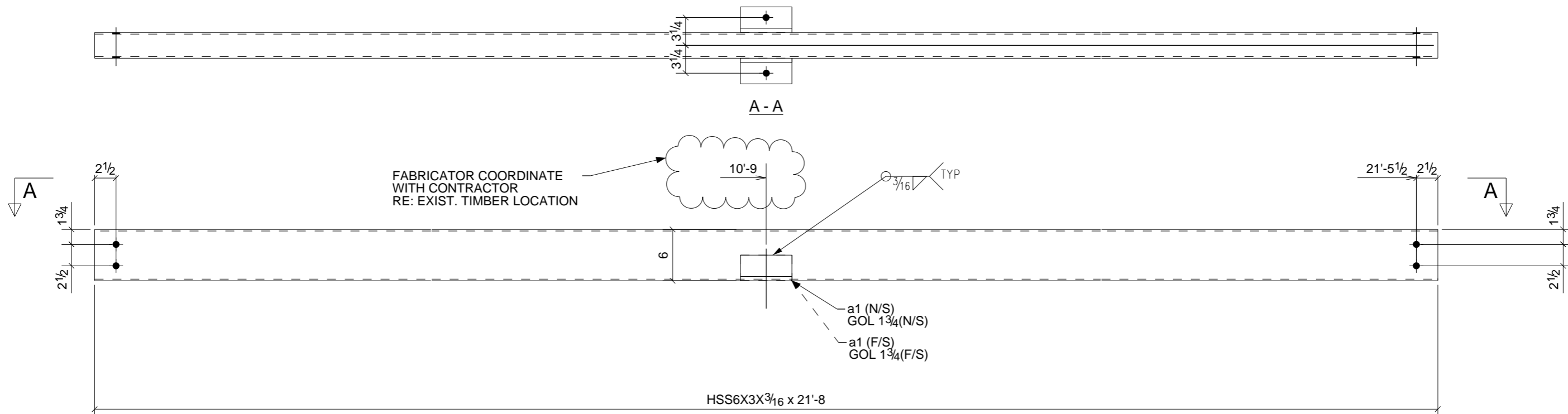
| | | | | |
|--|-------------------------|--------------------|--------------------|-----------|
| A | For Approval & Comments | 9/20/10 | | |
| REV. | DESCRIPTION | DATE | DWN | CHK |
| GENERAL NOTES | | JOB USE | | |
| MATERIAL: A992/A36 | ELECTRODES: E70xx | REF. DRG. | | |
| HOLES: 13/16 DIA. U/N | CONN'S.: A325 N | SHOP | | |
| SURFACE PREP. PER SPECS AND PAINT: PROJ. PAINT | | APPROVAL | | |
| DESCRIPTION: BEAM | | | | |
| PROJECT NAME: ETHER TANK SAFETY RAIL LOCATION: PITTSBURGH, PA | | | | |
| CONTRACTOR: S.P. McCarl & Company | | | | |
| M&D Industries Rr 1 Clarendon, PA 16313 (814) 723-2381 | | DRAWN BY Tmc | DATE 09/19/2010 | |
| | | CHKD. BY TMAC | DATE | |
| | | JOB No. AP-3270 | DRG. No. B6 | REV. 1 |

BILL OF MATERIAL

| SHIP | MARK | NO PCS | DESCRIPTION | LENGTH | PIECE MARK | REMARKS |
|------|------|--------|-------------|--------|------------|------------------------------------|
| 1 | B6 | 1 | HSS6X3X3/16 | 21'-8" | | SQ-2 A500-GR.B YELLOW SAFETY PAINT |
| | | 2 | L3X3X1/2 | 0'-6" | a1 | A36 YELLOW SAFETY PAINT |



- STANDARD SHOP NOTES:
- 1) ALL WELDS $\frac{3}{16}$ " FILLETS OR BUTT WELDS, UNLESS NOTED.
 - 2) GRIND ALL ROUGH EDGES SMOOTH.
 - 3) FIELD VERIFY ALL DIMENSIONS & ELEVATIONS PRIOR TO FABRICATION.
 - 4) $\frac{1}{4}$ " EDGE DISTANCE U.N..
 - 5) 1 S/C STD. SHOP PRIMER U.N., PAINT PER SPECS.
 - 6) WELDING: E70XX OR E7XT-X; IN ACCORDANCE W/ A.W.S. D1.1

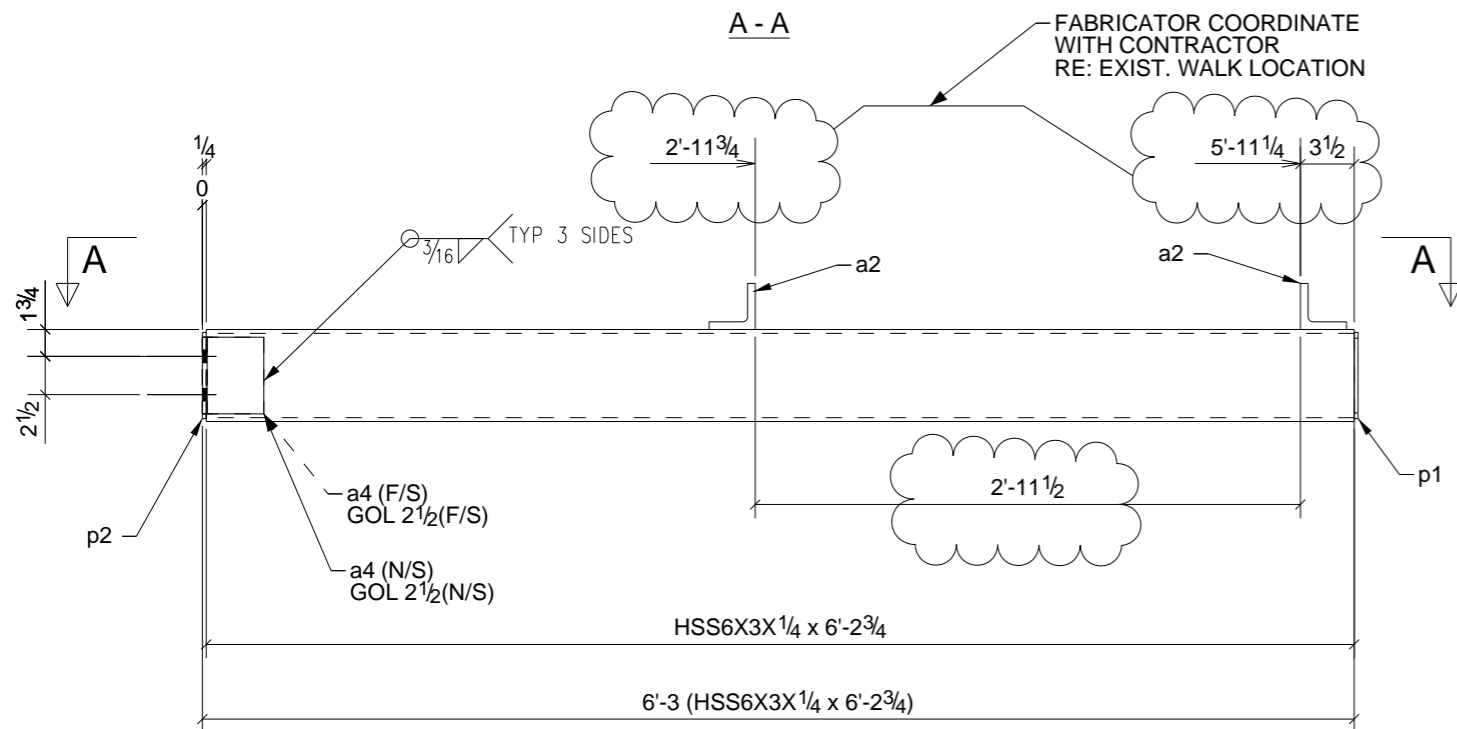
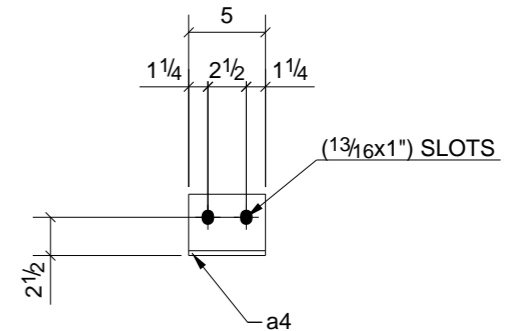
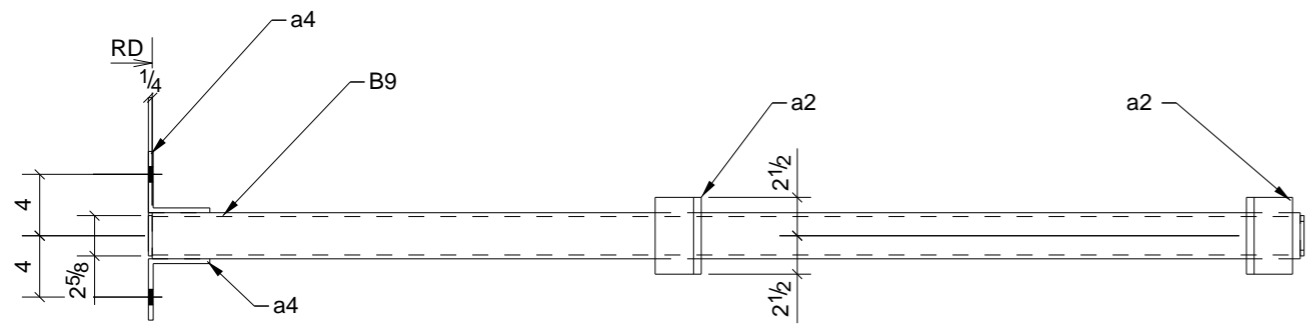


ONE - HSS BEAM - B7

| | | | | |
|--|-------------------------|--------------------|--------------------|-----------|
| A | For Approval & Comments | 9/20/10 | | |
| REV. | DESCRIPTION | DATE | DWN | CHK |
| GENERAL NOTES | | JOB USE | | |
| MATERIAL: A992/A36 | ELECTRODES: E70xx | REF. DRG. | | |
| HOLES: 13/16 DIA. U/N | CONN'S.: A325 N | SHOP | | |
| SURFACE PREP. PER SPECS AND PAINT: PROJ. PAINT | | APPROVAL | | |
| DESCRIPTION: BEAM | | | | |
| PROJECT NAME: ETHER TANK SAFETY RAIL LOCATION: PITTSBURGH, PA | | | | |
| CONTRACTOR: S.P. McCarl & Company | | | | |
| M&D Industries Rr 1 Clarendon, PA 16313 (814) 723-2381 | | DRAWN BY Tmc | DATE 09/19/2010 | |
| | | CHKD. BY TMAC | DATE | |
| | | JOB No. AP-3270 | DRG. No. B7 | REV. 1 |

BILL OF MATERIAL

| SHIP | MARK | NO PCS | DESCRIPTION | LENGTH | PIECE MARK | REMARKS |
|------|------|--------|-------------|--------|------------|------------------------------------|
| 1 | B7 | 1 | HSS6X3X3/16 | 21'-8" | | SQ-2 A500-GR.B YELLOW SAFETY PAINT |
| | | 2 | L3X3X1/2 | 0'-6" | a1 | A36 YELLOW SAFETY PAINT |



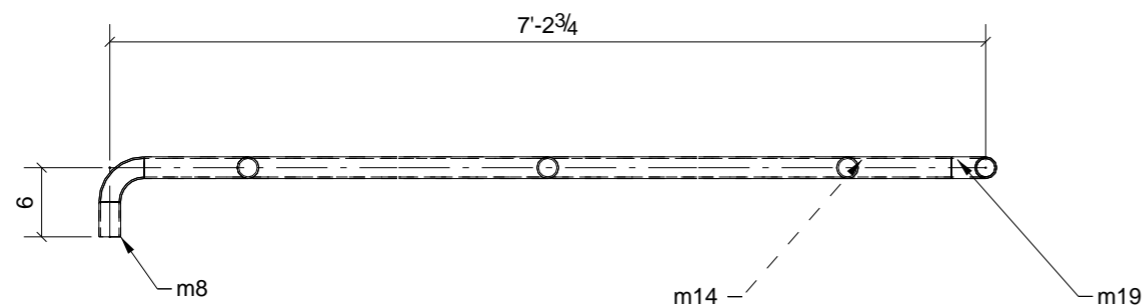
2 - HSS BEAMS - B9

- STANDARD SHOP NOTES:
- 1) ALL WELDS $\frac{3}{16}$ " FILLETS OR BUTT WELDS, UNLESS NOTED.
 - 2) GRIND ALL ROUGH EDGES SMOOTH.
 - 3) FIELD VERIFY ALL DIMENSIONS & ELEVATIONS PRIOR TO FABRICATION.
 - 4) $\frac{1}{4}$ " EDGE DISTANCE U.N..
 - 5) 1 S/C STD. SHOP PRIMER U.N., PAINT PER SPECS.
 - 6) WELDING: E70XX OR E7XT-X; IN ACCORDANCE W/ A.W.S. D1.1

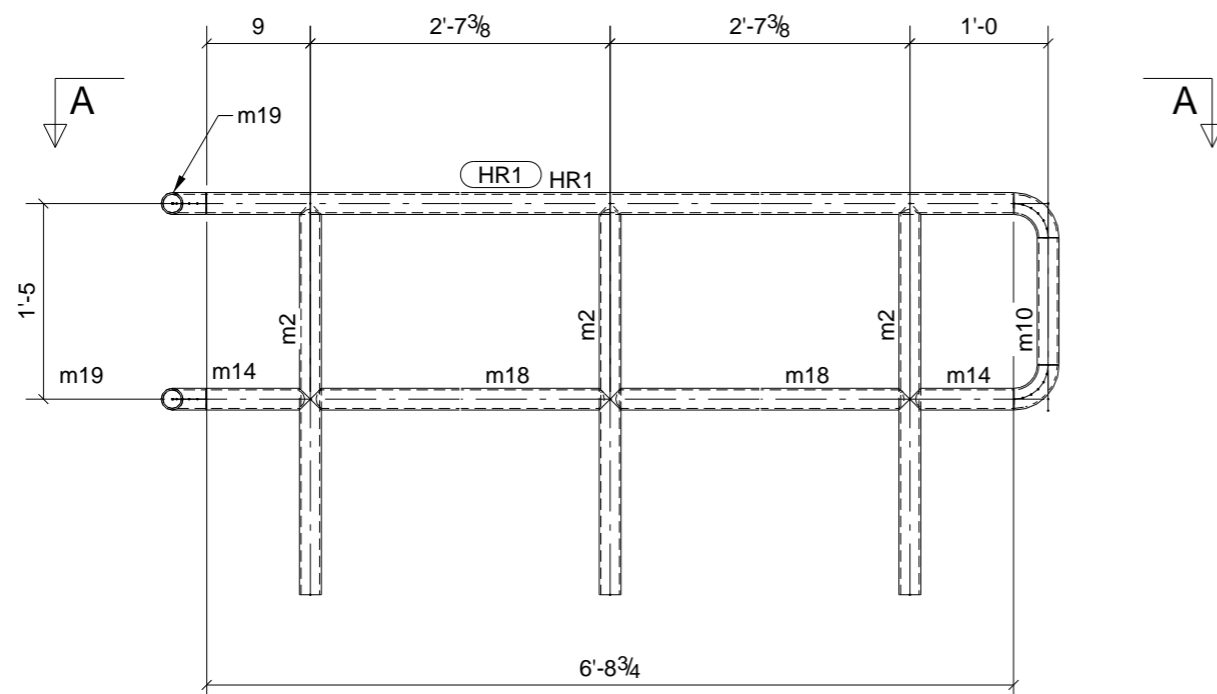
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|--|-------------------------|--------------------|--------------------|-----------|
| A | For Approval & Comments | 9/20/10 | | |
| REV. | DESCRIPTION | DATE | DWN | CHK |
| GENERAL NOTES | | JOB USE | | |
| MATERIAL: A992/A36 | ELECTRODES: E70xx | REF. DRG. | | |
| HOLES: 13/16 DIA. U/N | CONN'S.: A325 N | SHOP | | |
| SURFACE PREP. PER SPECS AND PAINT: PROJ. PAINT | | APPROVAL | | |
| DESCRIPTION: BEAM | | | | |
| PROJECT NAME: ETHER TANK SAFETY RAIL LOCATION: PITTSBURGH, PA | | | | |
| CONTRACTOR: S.P. McCarl & Company | | | | |
| M&D Industries Rr 1 Clarendon, PA 16313 (814) 723-2381 | | DRAWN BY TMC | DATE 09/20/2010 | |
| | | CHKD. BY TMAC | DATE | |
| | | JOB No. AP-3270 | DRG. No. B9 | REV. 1 |

BILL OF MATERIAL

| SHIP | MARK | NO PCS | DESCRIPTION | LENGTH | PIECE MARK | REMARKS |
|------|------|--------|---------------|-----------|------------|------------------------------------|
| 2 | B9 | 2 | HSS6X3X1/4 | 6'-2 3/4" | | SQ-2 A500-GR.B YELLOW SAFETY PAINT |
| | | 4 | L3X3X1/2 | 0'-5" | a2 | A36 YELLOW SAFETY PAINT |
| | | 4 | L4X4X5/16 | 0'-5" | a4 | A36 |
| | | 2 | PL1/4"X2 5/8" | 0'-5 5/8" | p1 | A36 YELLOW SAFETY PAINT |
| | | 2 | PL1/4"X2 5/8" | 0'-5 5/8" | p2 | A36 |



A - A



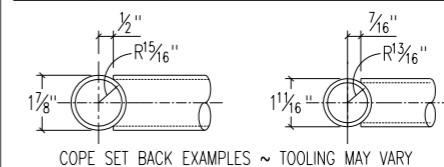
ONE - RAIL - HR1

BILL OF MATERIAL

| MARK | QTY | DESCRIPTION | LENGTH | REMARKS |
|------|-----|----------------|-------------|--------------|
| HR1 | 1 | RAIL | | |
| | | PIPE1-1/2SCH40 | 16'-5 1/16" | Total Length |
| | | PIPE1-1/2STD | 8'-6" | Total Length |

ITEMIZED CUT LIST FOR HR1, LENGTHS ARE FOR MILLED ENDS, DEDUCT FOR COPE AS REQ'D.

| | | | |
|-----|---|----------------------------------|-----------|
| HR1 | 1 | PIPE1-1/2 SCH40 | 6'-8 3/4" |
| m2 | 3 | PIPE1-1/2 STD | 2'-10" |
| m8 | 2 | PIPE1-1/2 SCH40 | 0'-3" |
| m10 | 1 | PIPE1-1/2 SCH40 | 0'-11" |
| m14 | 2 | PIPE1-1/2 SCH40 | 0'-9" |
| m18 | 2 | PIPE1-1/2 SCH40 | 2'-7 3/8" |
| m19 | 4 | R&B WAGNER 90° ELBOW #4464 STEEL | |



STANDARD SHOP NOTES:

- 1) ALL WELDS 3/16" FILLETS OR BUTT WELDS, UNLESS NOTED.
- 2) GRIND ALL ROUGH EDGES SMOOTH.
- 3) FIELD VERIFY ALL DIMENSIONS & ELEVATIONS PRIOR TO FABRICATION.
- 4) 1 1/4" EDGE DISTANCE U.N..
- 5) 1 S/C STD. SHOP PRIMER U.N., PAINT PER SPECS.
- 6) WELDING: E70XX OR E7XT-X; IN ACCORDANCE W/ A.W.S. D1.1

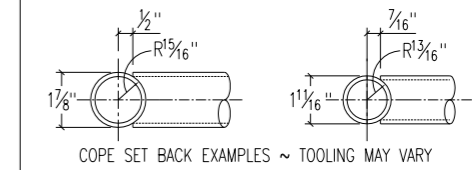
| | | | | |
|---|-------------------------|--------------------|--------------------|-----------|
| A | For Approval & Comments | 9/20/10 | | |
| REV. | DESCRIPTION | DATE | DWN | CHK |
| GENERAL NOTES | | JOB USE | | |
| MATERIAL: A992/A36 | ELECTRODES: E70xx | REF. DRG. | | |
| HOLES: 13/16 DIA. U/N | CONN'S.: A325 N | SHOP | | |
| SURFACE PREP. PER SPECS AND PAINT: PROJ.PAINT | | APPROVAL | | |
| DESCRIPTION: HANDRAIL | | | | |
| PROJECT NAME: ETHER TANK SAFETY RAIL | | | | |
| LOCATION: PITTSBURGH, PA | | | | |
| CONTRACTOR: S.P.McCarl & Company | | | | |
| <p align="center">M&D Industries Rr 1 Clarendon, PA 16313 (814) 723-2381</p> | | DRAWN BY Tmc | DATE 09/20/2010 | |
| | | CHKD. BY TMAC | DATE | |
| | | JOB No. AP-3270 | DRG. No. HR1 | REV. 1 |

BILL OF MATERIAL

| MARK | QTY | DESCRIPTION | LENGTH | REMARKS |
|------|-----|----------------|--------------|--------------|
| HR2 | 1 | RAIL | | |
| | | PIPE1-1/2SCH40 | 18'-11 9/16" | Total Length |
| | | PIPE1-1/2STD | 8'-6" | Total Length |

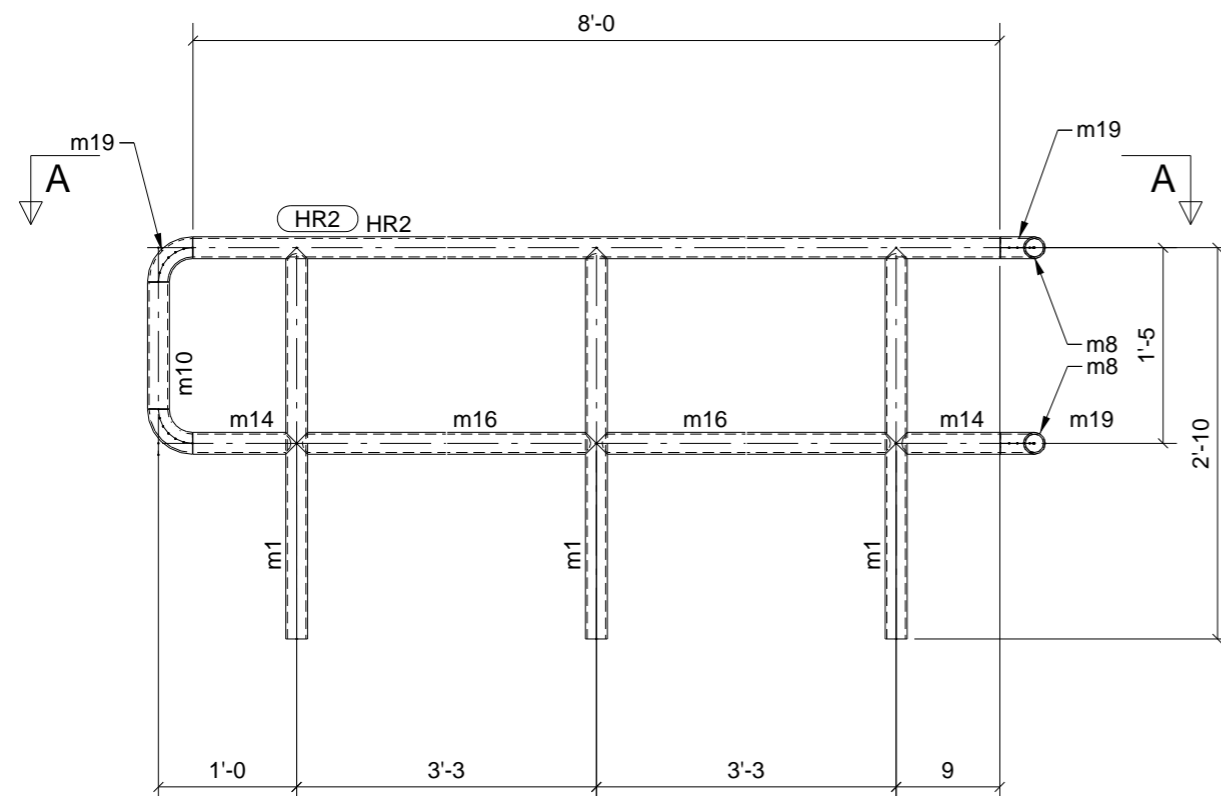
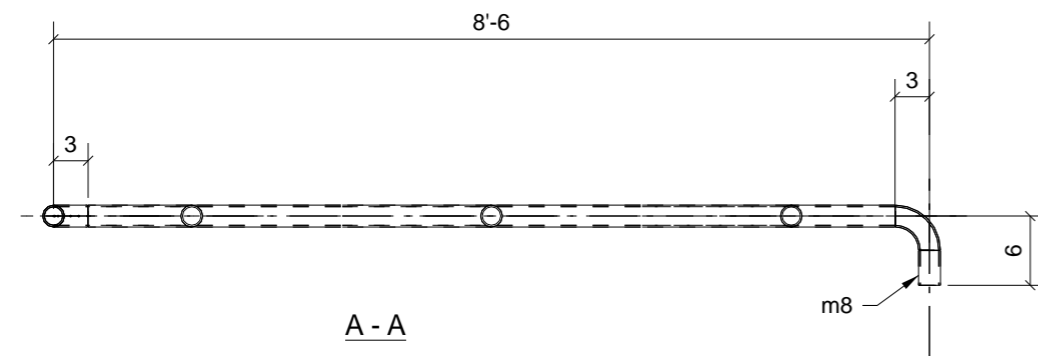
ITEMIZED CUT LIST FOR HR2, LENGTHS ARE FOR MILLED ENDS, DEDUCT FOR COPES AS REQ'D.

| | | | |
|-----|---|----------------------------------|--------|
| HR2 | 1 | PIPE1-1/2 SCH40 | 8'-0" |
| m1 | 3 | PIPE1-1/2 STD | 2'-10" |
| m8 | 2 | PIPE1-1/2 SCH40 | 0'-3" |
| m14 | 2 | PIPE1-1/2 SCH40 | 0'-9" |
| m16 | 2 | PIPE1-1/2 SCH40 | 3'-3" |
| m19 | 4 | R&B WAGNER 90° ELBOW #4464 STEEL | |



STANDARD SHOP NOTES:

- 1) ALL WELDS $\frac{3}{16}$ " FILLETS OR BUTT WELDS, UNLESS NOTED.
- 2) GRIND ALL ROUGH EDGES SMOOTH.
- 3) FIELD VERIFY ALL DIMENSIONS & ELEVATIONS PRIOR TO FABRICATION.
- 4) $\frac{1}{4}$ " EDGE DISTANCE U.N..
- 5) 1 S/C STD. SHOP PRIMER U.N., PAINT PER SPECS.
- 6) WELDING: E70XX OR E7XT-X; IN ACCORDANCE W/ A.W.S. D1.1



ONE - RAIL - HR2

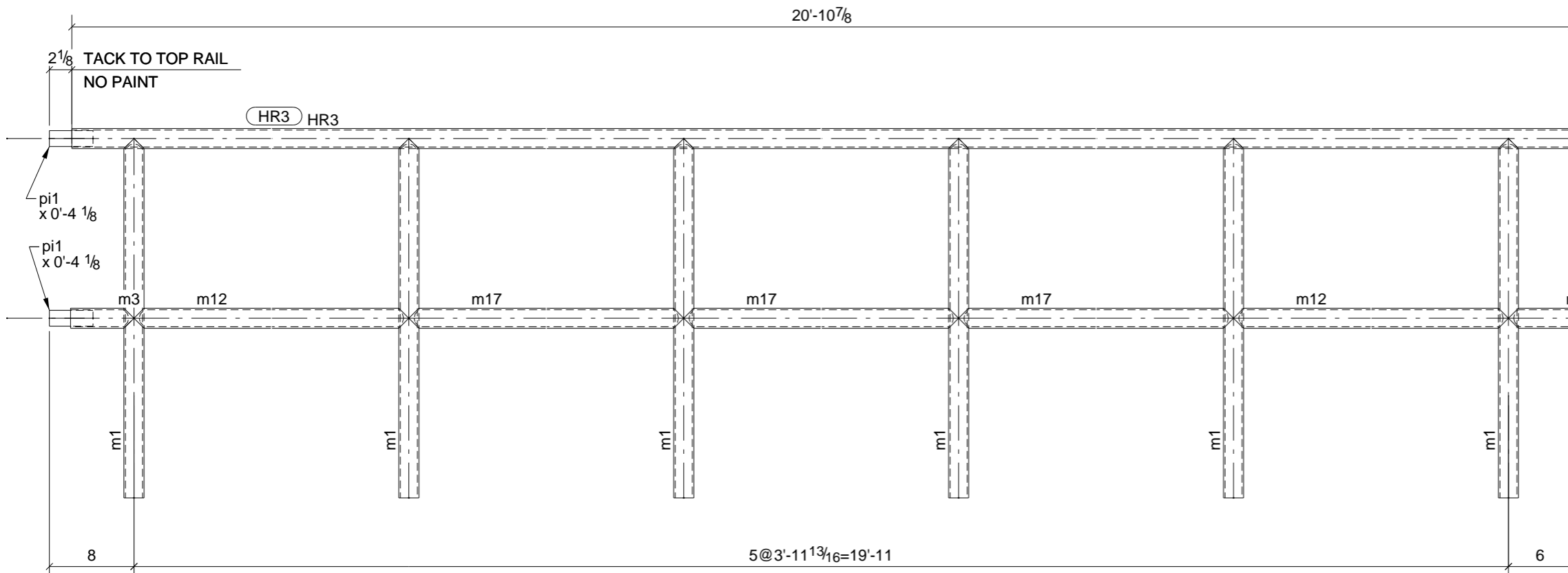
| | | | | |
|---|-------------------------|-----------|------------|-----|
| A | For Approval & Comments | 9/20/10 | | |
| REV. | DESCRIPTION | DATE | DWN | CHK |
| GENERAL NOTES | | JOB USE | | |
| MATERIAL: A992/A36 | ELECTRODES: E70xx | REF. DRG. | | |
| HOLES: 13/16 DIA. U/N | CONN'S.: A325 N | SHOP | | |
| SURFACE PREP. PER SPECS AND PAINT: PROJ.PAINT | | APPROVAL | | |
| DESCRIPTION: HANDRAIL | | | | |
| PROJECT NAME | ETHER TANK SAFETY RAIL | | | |
| LOCATION | PITTSBURGH, PA | | | |
| CONTRACTOR | S.P.McCarl & Company | | | |
| <p align="center">M&D Industries Rr 1 Clarendon, PA 16313 (814) 723-2381</p> | | DRAWN BY | DATE | |
| | | TMc | 09/20/2010 | |
| | | CHKD. BY | DATE | |
| TMAC | | | | |
| JOB No. | DRG. No. | REV. | | |
| AP-3270 | HR2 | 1 | | |

STANDARD SHOP NOTES:

- 1) ALL WELDS $\frac{3}{16}$ " FILLETS OR BUTT WELDS, UNLESS NOTED.
- 2) GRIND ALL ROUGH EDGES SMOOTH.
- 3) FIELD VERIFY ALL DIMENSIONS & ELEVATIONS PRIOR TO FABRICATION.
- 4) $\frac{1}{4}$ " EDGE DISTANCE U.N..
- 5) 1 S/C STD. SHOP PRIMER U.N., PAINT PER SPECS.
- 6) WELDING: E70XX OR E7XT-X; IN ACCORDANCE W/ A.W.S. D1.1

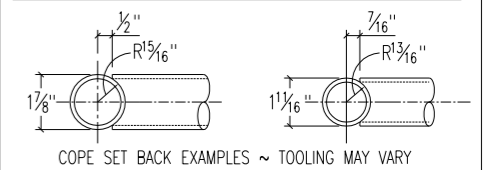
BILL OF MATERIAL

| MARK | QTY | DESCRIPTION | LENGTH | REMARKS |
|------|-----|----------------|------------|--------------|
| HR3 | 1 | RAIL | | |
| | | PIPE1-1/2SCH40 | 41'-9 7/8" | Total Length |
| | | PIPE1-1/2STD | 17'-0" | Total Length |
| | | ROD1 1/2" | 0'-8 1/4" | Total Length |



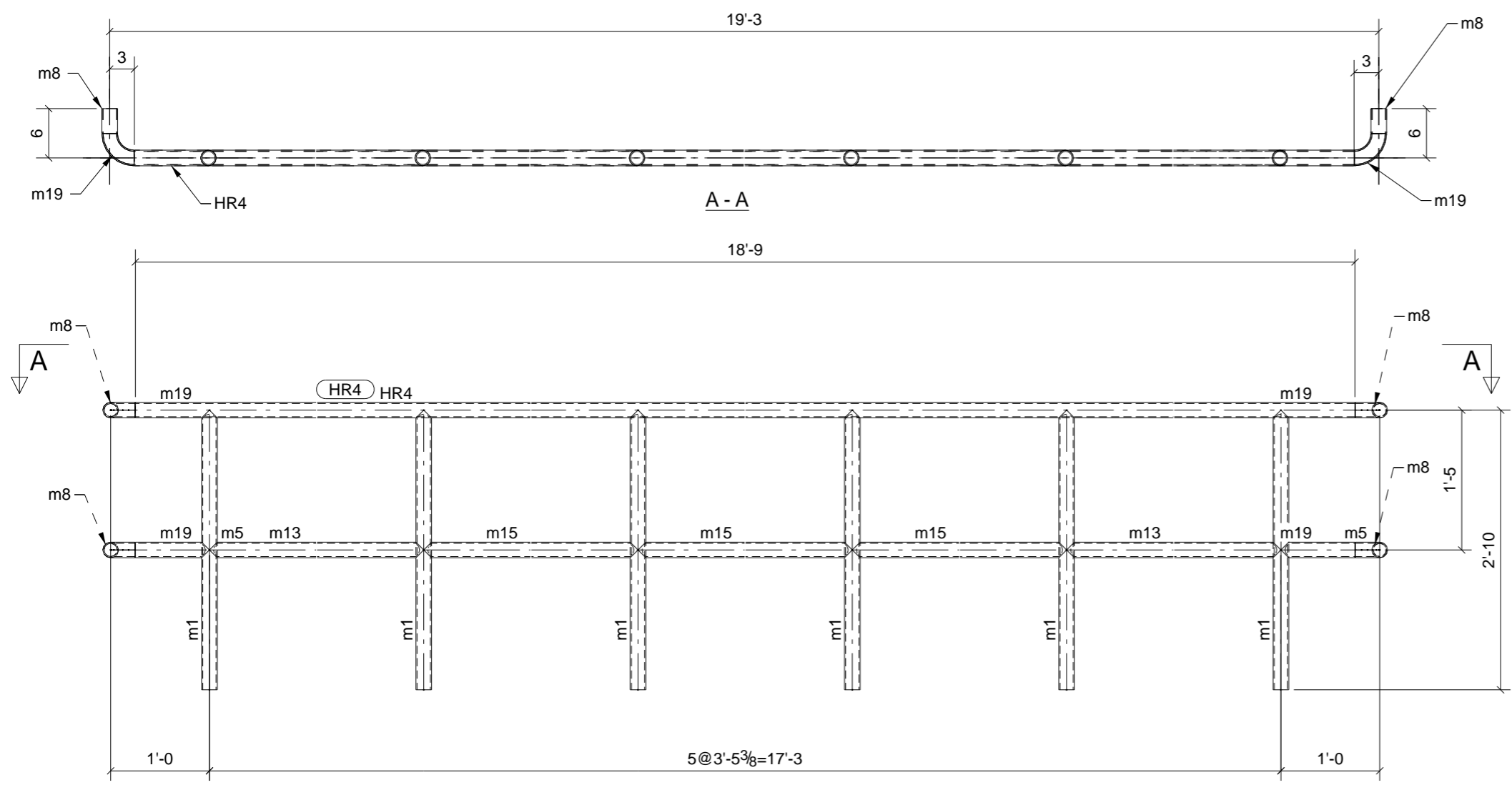
ITEMIZED CUT LIST FOR HR3, LENGTHS ARE FOR MILLED ENDS, DEDUCT FOR COPES AS REQ'D.

| | | | |
|-----|---|-----------------|--------------|
| HR3 | 1 | PIPE1-1/2 SCH40 | 20'-10_7/8" |
| m1 | 6 | PIPE1-1/2 STD | 2'-10" |
| m3 | 1 | PIPE1-1/2 SCH40 | 0'-6" |
| m4 | 1 | PIPE1-1/2 SCH40 | 0'-6" |
| m12 | 2 | PIPE1-1/2 SCH40 | 3'-11_13/16" |
| m17 | 3 | PIPE1-1/2 SCH40 | 3'-11_13/16" |



ONE - RAIL - HR3

| | | | | |
|--|-------------------------|-----------|------------|-----|
| A | For Approval & Comments | 9/20/10 | | |
| REV. | DESCRIPTION | DATE | DWN | CHK |
| GENERAL NOTES | | JOB USE | | |
| MATERIAL: A992/A36 | ELECTRODES: E70xx | REF. DRG. | | |
| HOLES: 13/16 DIA. U/N | CONN'S.: A325 N | SHOP | | |
| SURFACE PREP. PER SPECS AND PAINT: PROJ.PAINT | | APPROVAL | | |
| DESCRIPTION: HANDRAIL | | | | |
| PROJECT NAME | ETHER TANK SAFETY RAIL | | | |
| LOCATION | PITTSBURGH, PA | | | |
| CONTRACTOR | S.P.McCarl & Company | | | |
| M&D Industries Rr 1 Clarendon, PA 16313 (814) 723-2381 | | DRAWN BY | DATE | |
| | | TMc | 09/20/2010 | |
| | | CHKD. BY | DATE | |
| TMAC | | | | |
| JOB No. | DRG. No. | REV. | | |
| AP-3270 | HR3 | 1 | | |



| BILL OF MATERIAL | | | | |
|------------------|-----|----------------|-------------|--------------|
| MARK | QTY | DESCRIPTION | LENGTH | REMARKS |
| HR4 | 1 | RAIL | | |
| | | PIPE1-1/2SCH40 | 40'-0 9/16" | Total Length |
| | | PIPE1-1/2STD | 17'-0" | Total Length |

ITEMIZED CUT LIST FOR HR4, LENGTHS ARE FOR MILLED ENDS, DEDUCT FOR COPEAS AS REQ'D.

| | | | |
|-----|---|----------------------------------|-----------|
| HR4 | 1 | PIPE1-1/2 SCH40 | 18'-9" |
| m1 | 6 | PIPE1-1/2 STD | 2'-10" |
| m5 | 2 | PIPE1-1/2 SCH40 | 0'-9" |
| m8 | 4 | PIPE1-1/2 SCH40 | 0'-3" |
| m13 | 2 | PIPE1-1/2 SCH40 | 3'-5.3/8" |
| m15 | 3 | PIPE1-1/2 SCH40 | 3'-5.3/8" |
| m19 | 4 | R&B WAGNER 90° ELBOW #4464 STEEL | |

COPE SET BACK EXAMPLES ~ TOOLING MAY VARY

- STANDARD SHOP NOTES:
- 1) ALL WELDS $\frac{3}{16}$ " FILLETS OR BUTT WELDS, UNLESS NOTED.
 - 2) GRIND ALL ROUGH EDGES SMOOTH.
 - 3) FIELD VERIFY ALL DIMENSIONS & ELEVATIONS PRIOR TO FABRICATION.
 - 4) $\frac{1}{4}$ " EDGE DISTANCE U.N..
 - 5) 1 S/C STD. SHOP PRIMER U.N., PAINT PER SPECS.
 - 6) WELDING: E70XX OR E7XT-X; IN ACCORDANCE W/ A.W.S. D1.1

ONE - RAIL - HR4

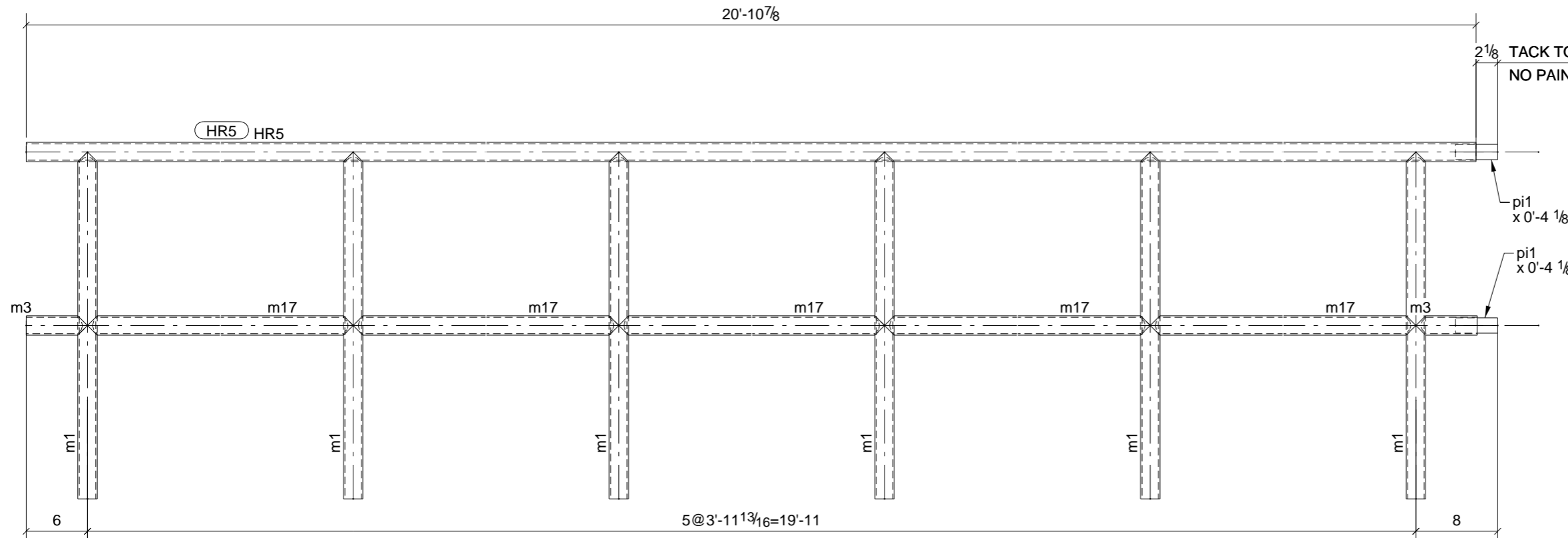
| | | | | |
|--|-------------------------|-----------|------------|-----|
| A | For Approval & Comments | 9/20/10 | | |
| REV. | DESCRIPTION | DATE | DWN | CHK |
| GENERAL NOTES | | JOB USE | | |
| MATERIAL: A992/A36 | ELECTRODES: E70xx | REF. DRG. | | |
| HOLES: 13/16 DIA. U/N | CONN'S.: A325 N | SHOP | | |
| SURFACE PREP. PER SPECS AND PAINT: PROJ.PAINT | | APPROVAL | | |
| DESCRIPTION: HANDRAIL | | | | |
| PROJECT NAME | ETHER TANK SAFETY RAIL | | | |
| LOCATION | PITTSBURGH, PA | | | |
| CONTRACTOR | S.P.McCarl & Company | | | |
| M&D Industries Rr 1 Clarendon, PA 16313 (814) 723-2381 | | DRAWN BY | DATE | |
| | | TMc | 09/19/2010 | |
| | | CHKD. BY | DATE | |
| TMAC | | | | |
| JOB No. | DRG. No. | REV. | | |
| AP-3270 | HR4 | 1 | | |

STANDARD SHOP NOTES:

- 1) ALL WELDS $\frac{3}{16}$ " FILLETS OR BUTT WELDS, UNLESS NOTED.
- 2) GRIND ALL ROUGH EDGES SMOOTH.
- 3) FIELD VERIFY ALL DIMENSIONS & ELEVATIONS PRIOR TO FABRICATION.
- 4) $\frac{1}{4}$ " EDGE DISTANCE U.N..
- 5) 1 S/C STD. SHOP PRIMER U.N., PAINT PER SPECS.
- 6) WELDING: E70XX OR E7XT-X; IN ACCORDANCE W/ A.W.S. D1.1

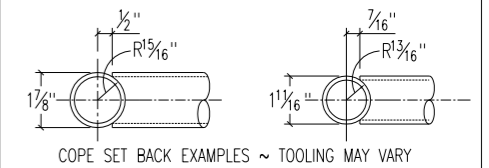
BILL OF MATERIAL

| MARK | QTY | DESCRIPTION | LENGTH | REMARKS |
|------|-----|----------------|------------|--------------|
| HR5 | 1 | RAIL | | |
| | | PIPE1-1/2SCH40 | 41'-9 7/8" | Total Length |
| | | PIPE1-1/2STD | 17'-0" | Total Length |
| | | ROD1 1/2" | 0'-8 1/4" | Total Length |



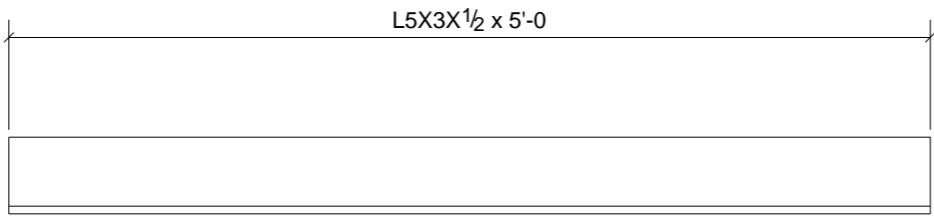
ITEMIZED CUT LIST FOR HR5, LENGTHS ARE FOR MILLED ENDS, DEDUCT FOR COPE AS REQ'D.

| | | | |
|-----|---|-----------------|--------------|
| HR5 | 1 | PIPE1-1/2 SCH40 | 20'-10_7/8" |
| m1 | 6 | PIPE1-1/2 STD | 2'-10" |
| m3 | 1 | PIPE1-1/2 SCH40 | 0'-6" |
| m4 | 1 | PIPE1-1/2 SCH40 | 0'-6" |
| m12 | 2 | PIPE1-1/2 SCH40 | 3'-11_13/16" |
| m17 | 3 | PIPE1-1/2 SCH40 | 3'-11_13/16" |



ONE - RAIL - HR5

| | | | | |
|--|-------------------------|-----------|------------|-----|
| A | For Approval & Comments | 9/20/10 | | |
| REV. | DESCRIPTION | DATE | DWN | CHK |
| GENERAL NOTES | | JOB USE | | |
| MATERIAL: A992/A36 | ELECTRODES: E70xx | REF. DRG. | | |
| HOLES: 13/16 DIA. U/N | CONN'S.: A325 N | SHOP | | |
| SURFACE PREP. PER SPECS AND PAINT: PROJ.PAINT | | APPROVAL | | |
| DESCRIPTION: HANDRAIL | | | | |
| PROJECT NAME | ETHER TANK SAFETY RAIL | | | |
| LOCATION | PITTSBURGH, PA | | | |
| CONTRACTOR | S.P.McCarl & Company | | | |
| M&D Industries Rr 1 Clarendon, PA 16313 (814) 723-2381 | | DRAWN BY | DATE | |
| | | TMc | 09/20/2010 | |
| | | CHKD. BY | DATE | |
| TMAC | | | | |
| JOB No. | DRG. No. | REV. | | |
| AP-3270 | HR5 | 1 | | |



ONE - ANGLE - M8

| | | | | |
|--|-------------------------|--------------------|----------------|--------------------|
| A | For Approval & Comments | 9/20/10 | | |
| REV. | DESCRIPTION | DATE | DWN | CHK |
| GENERAL NOTES | | JOB USE | | |
| MATERIAL: A992/A36 | ELECTRODES: E70xx | REF. DRG. | | |
| HOLES: 13/16 DIA. U/N | CONN'S.: A325 N | SHOP | | |
| SURFACE PREP. PER SPECS AND PAINT: PROJ.PAINT | | APPROVAL | | |
| DESCRIPTION: ANGLE | | | | |
| PROJECT NAME: ETHER TANK SAFETY RAIL | | | | |
| LOCATION: PITTSBURGH, PA | | | | |
| CONTRACTOR: S.P.McCarl & Company | | | | |
| | | DRAWN BY TMc | | DATE 09/20/2010 |
| | | CHKD. BY TMAC | | DATE |
| | | JOB No. AP-3270 | DRG. No. M8 | REV. 1 |

BILL OF MATERIAL

| SHIP | MARK | NO PCS | DESCRIPTION | LENGTH | PIECE MARK | REMARKS |
|------|------|--------|-------------|--------|------------|------------------------------|
| 1 | M8 | 1 | L5X3X1/2 | 5'-0" | | SQ-2 A36 YELLOW SAFETY PAINT |

M&D Industries
Rr 1
Clarendon, PA 16313
(814) 723-2381

