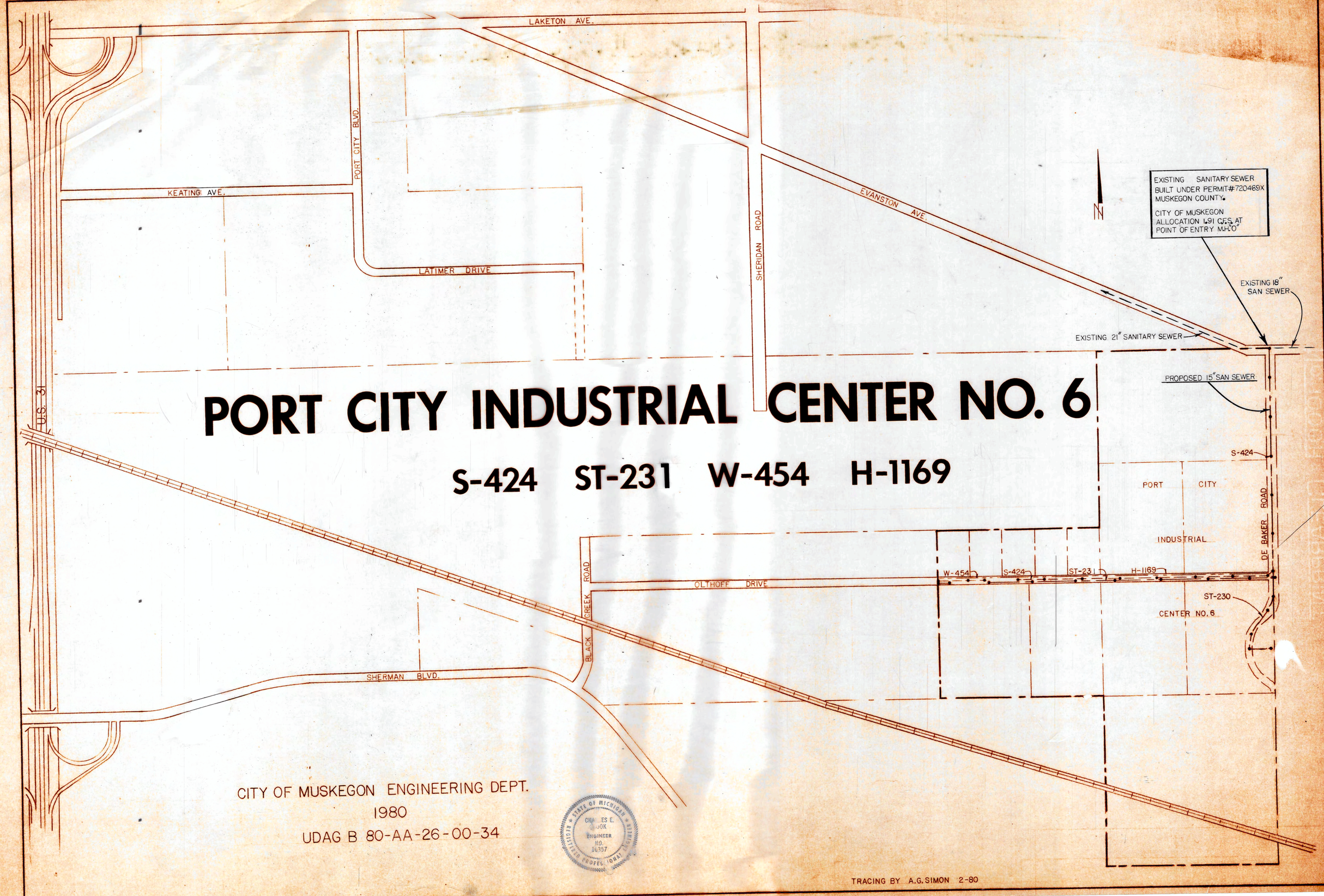
PORT CITY INDUSTRIAL CENTER NO. 6

S-424 ST-231 W-454 H-1169



CITY OF MUSKEGON ENGINEERING DEPT.

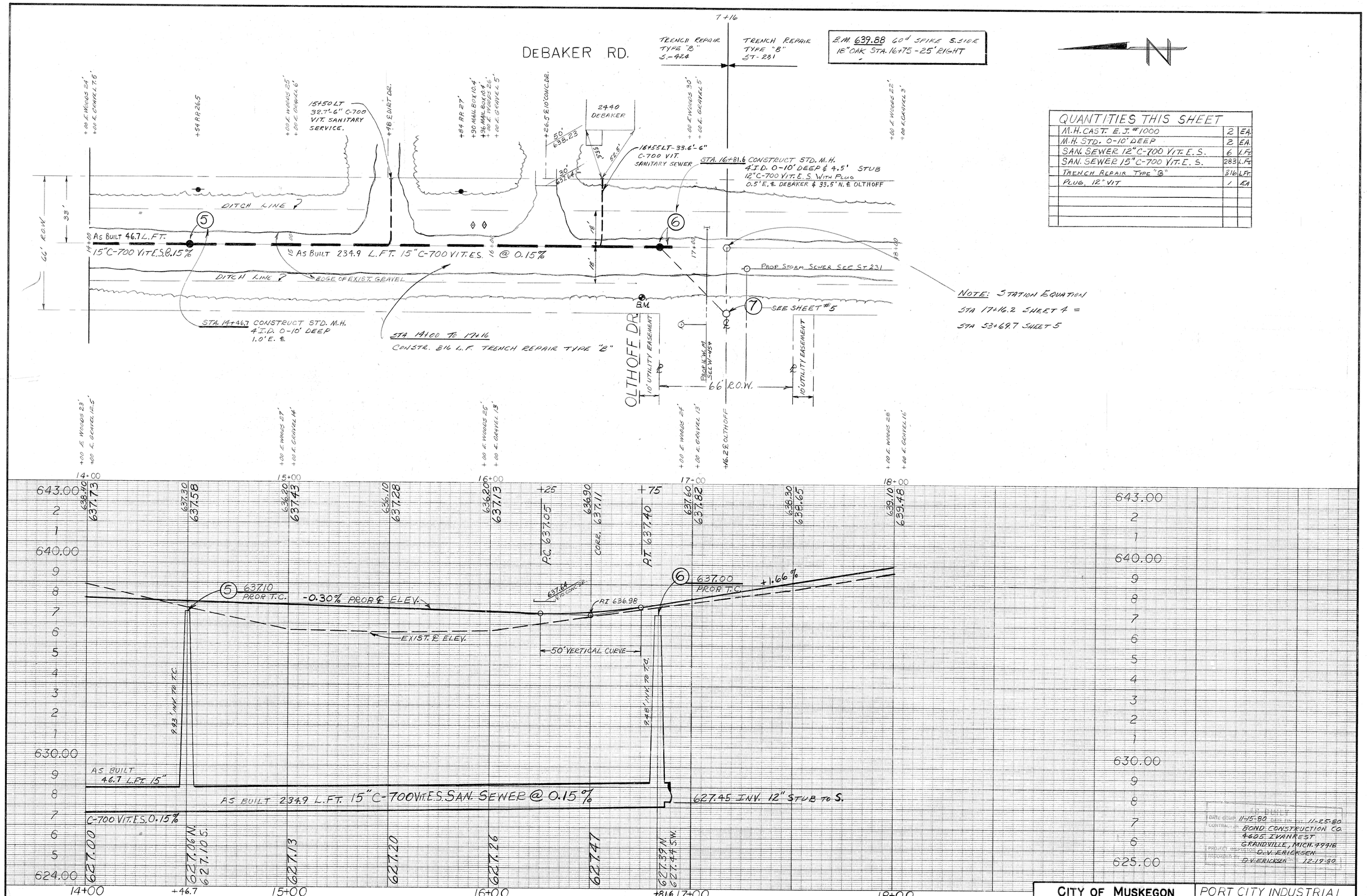
1980

UDAG B 80-AA-26-00-34

STATE OF MICHIGAN REGISTERED PROFESSIONAL ENGINEER
CHARLES E. BOOK
ENGINEER
NO. 16357

TRACING BY A.G. SIMON 2-80

S - 424



QUANTITIES THIS SHEET		
M.H. CAST. E.J. #1000	2	EA.
M.H. STD. 0-10' DEEP	2	EA.
SAN. SEWER 12" C-700 VIT. E.S.	6	L.Ft.
SAN. SEWER 15" C-700 VIT. E.S.	283	L.Ft.
TRENCH REPAIR TYPE "B"	316	L.Ft.
PLUG, 12" VIT	1	EA

AS BUILT
DATE COMP. 11-15-80 DATE FIN. EST. 11-25-80
CONTRACTOR BOND CONSTRUCTION CO.
4605 IVANREST
GRANDVILLE, MICH. 49418
PROJECT INSPECTOR D.V. ERICKSEN
RECORDED BY D.V. ERICKSEN DATE 12-17-80

CITY OF MUSKEGON
OFFICE OF THE CITY ENGINEER

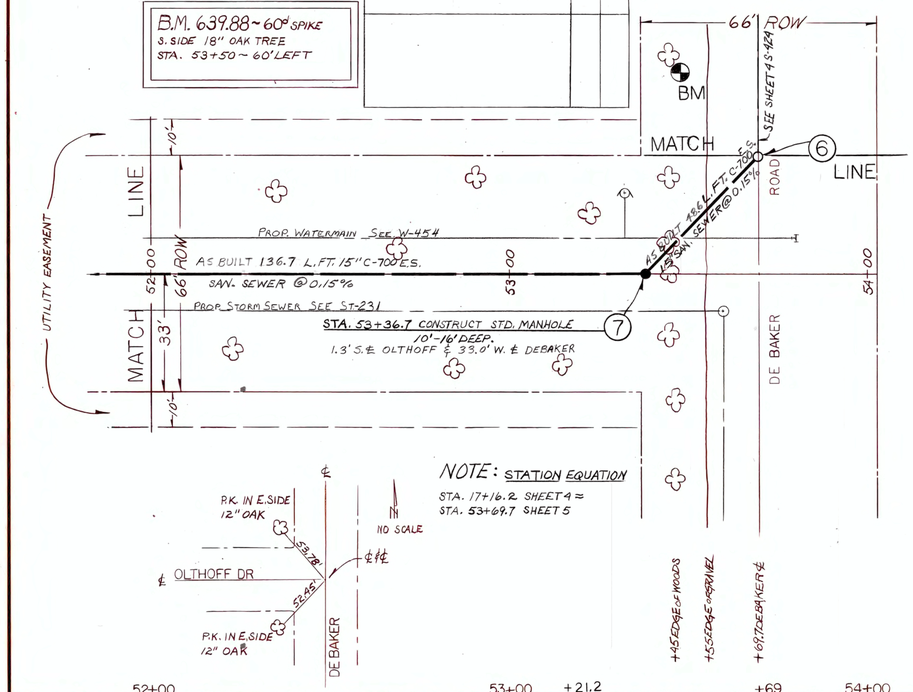
PORT CITY INDUSTRIAL CENTER NO. 6

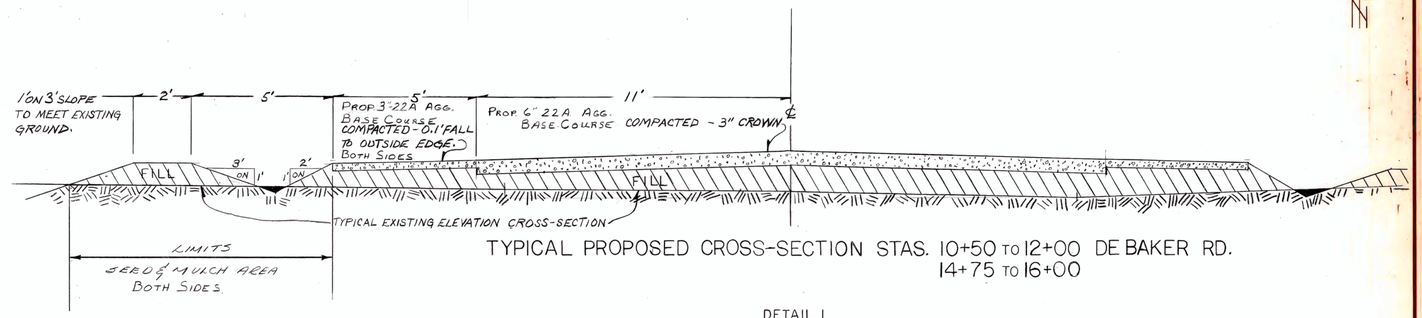
Drawn B.H.	1-80	Revision		Survey SCOTT	12-79	S-424	
Checked Wade	3-14-80	Revision		As-Built D.V.E.	12-80	Project No.	
Approved		Revision		Scale H. 1" = 20' V. 1" = 2'		Sheet No. 4 of 10	

OLTHOFF DRIVE

QUANTITIES THIS SHEET		
DESCRIPTION	AMT.	UNT.
MANHOLE CASTING EJ #1000	1	EA.
MANHOLE STD. 4' I.D. 10'-16' DEEP	1	EA.
SAN. SEWER C-700 15" VIT. E.S.	183	L.FT.

B.M. 639.88 ~ 60d SPIKE
S. SIDE 18" OAK TREE
STA. 53+50 ~ 60' LEFT





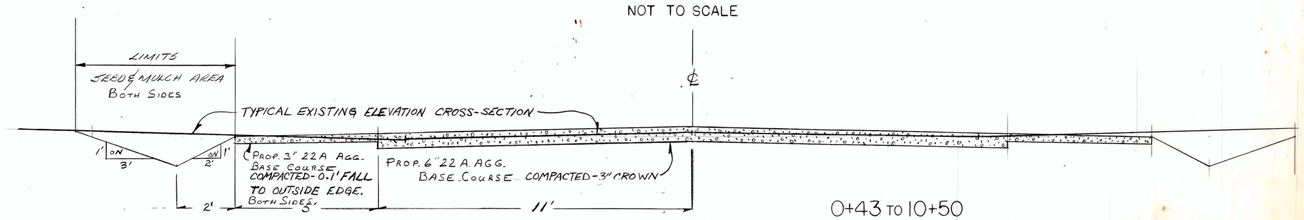
TYPICAL PROPOSED CROSS-SECTION STAS. 10+50 TO 12+00 DE BAKER RD.
14+75 TO 16+00

DETAIL 1

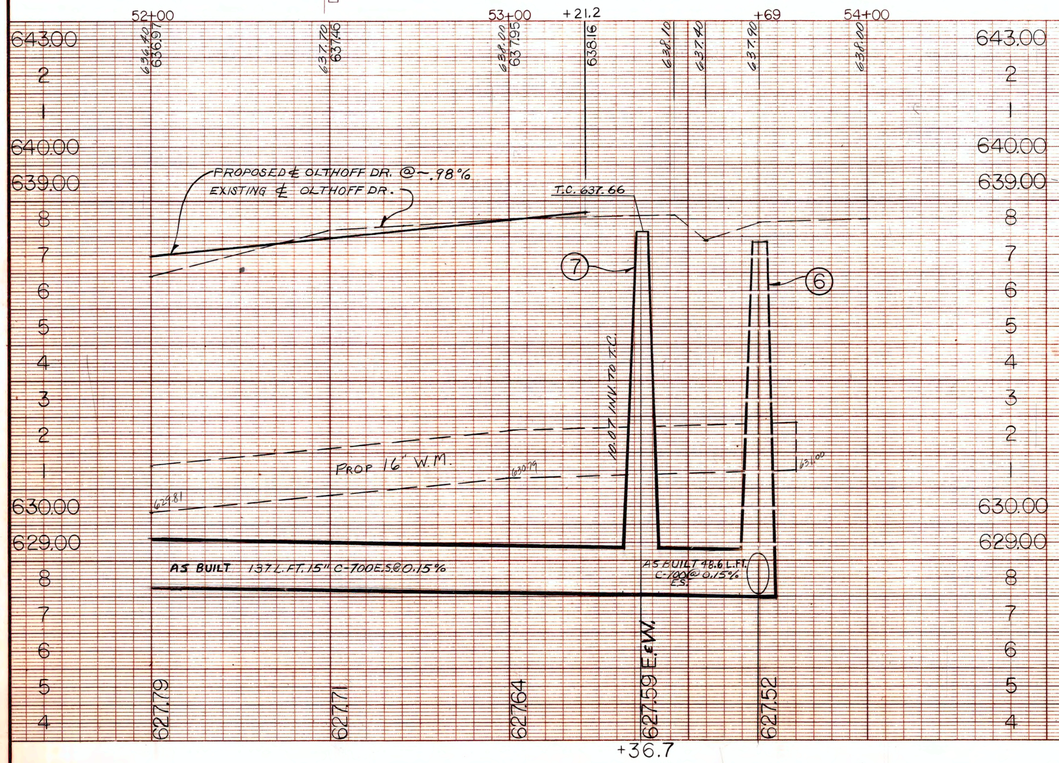
TRENCH REPAIR TYPE "B"

DETAIL 2

NOT TO SCALE



TYPICAL PROPOSED CROSS-SECTION STAS. 0+43 TO 10+50, 12+00 TO 14+75, 16+00 TO 17+16 DE BAKER RD.

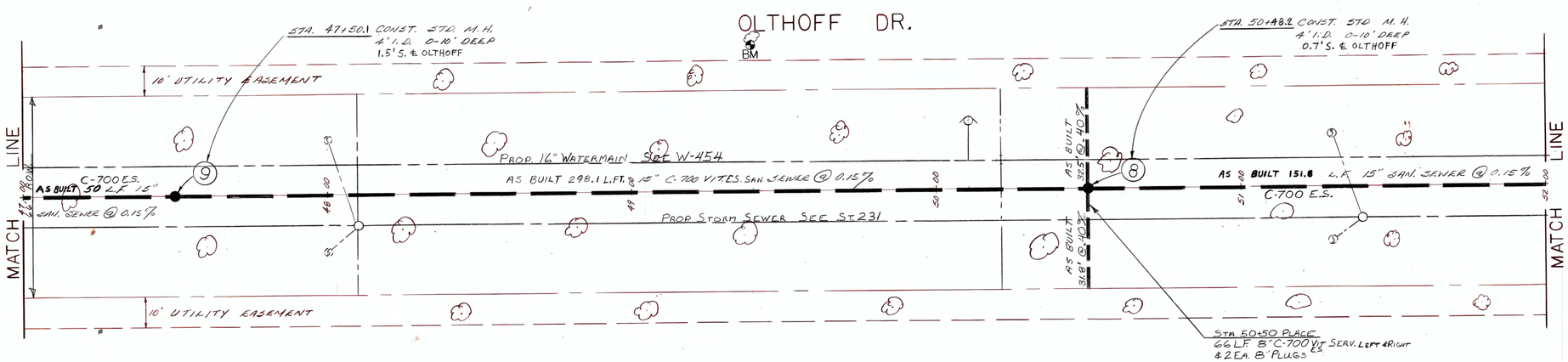


AS BUILT
DATE COMP. 11-15-80 DATE FIN. 11-25-80
CONTRACTOR BAND CONSTRUCTION CO.
9605 IVANREST S.W.
GRANDVILLE, MICH. 49418
PROJECT INSPECTOR D.V. ERICKSEN
RECORDED BY D.V. ERICKSEN DATE 12-19-80

CITY OF MUSKEGON OFFICE OF THE CITY ENGINEER				PORT CITY INDUSTRIAL CENTER NO. 6		
Drawn	1-80	Revision		Survey SCOTT	12-79	S-424
Checked	3-14-80	Revision		As-Built D.V.E.	12-80	Project No.
Approved		Revision		Scale H. 1"=20' V. 1"=2'		Sheet No. 5 of 10

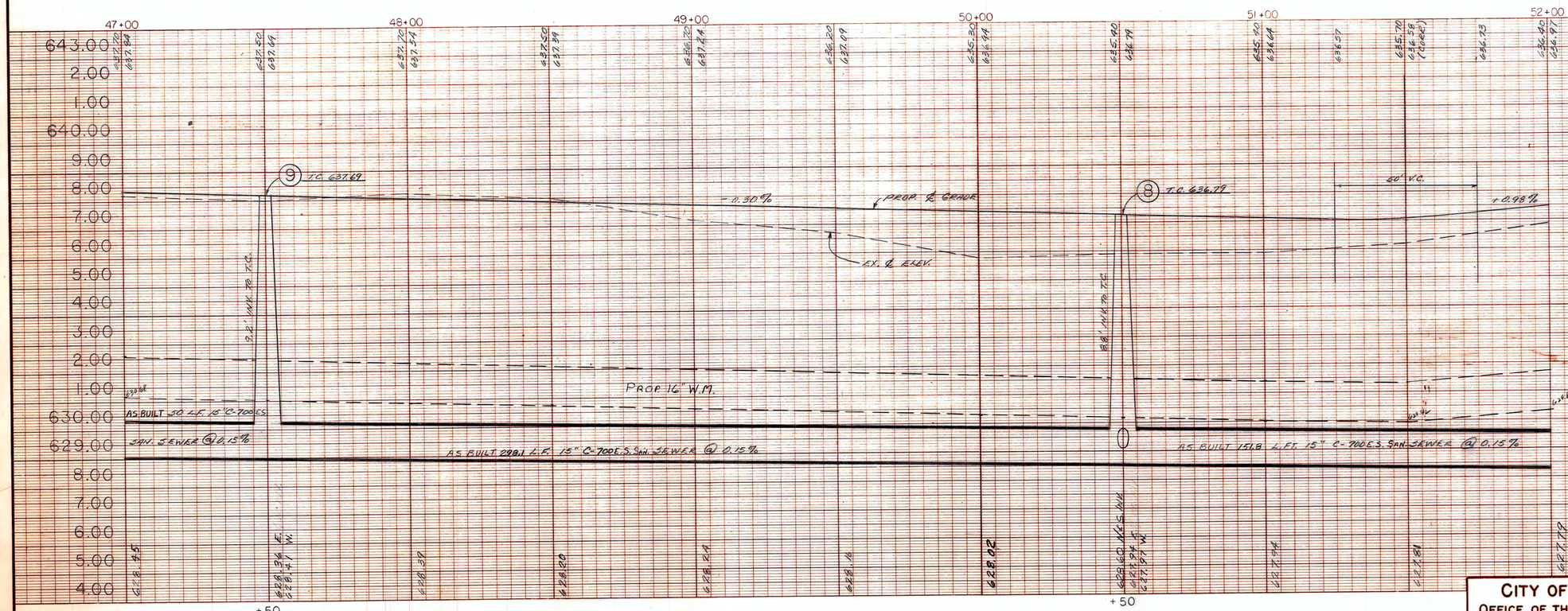
B.M. 638.69 60d SPIKE
S. SIDE 10" OAK STA. 49+40
50' LEFT.

N



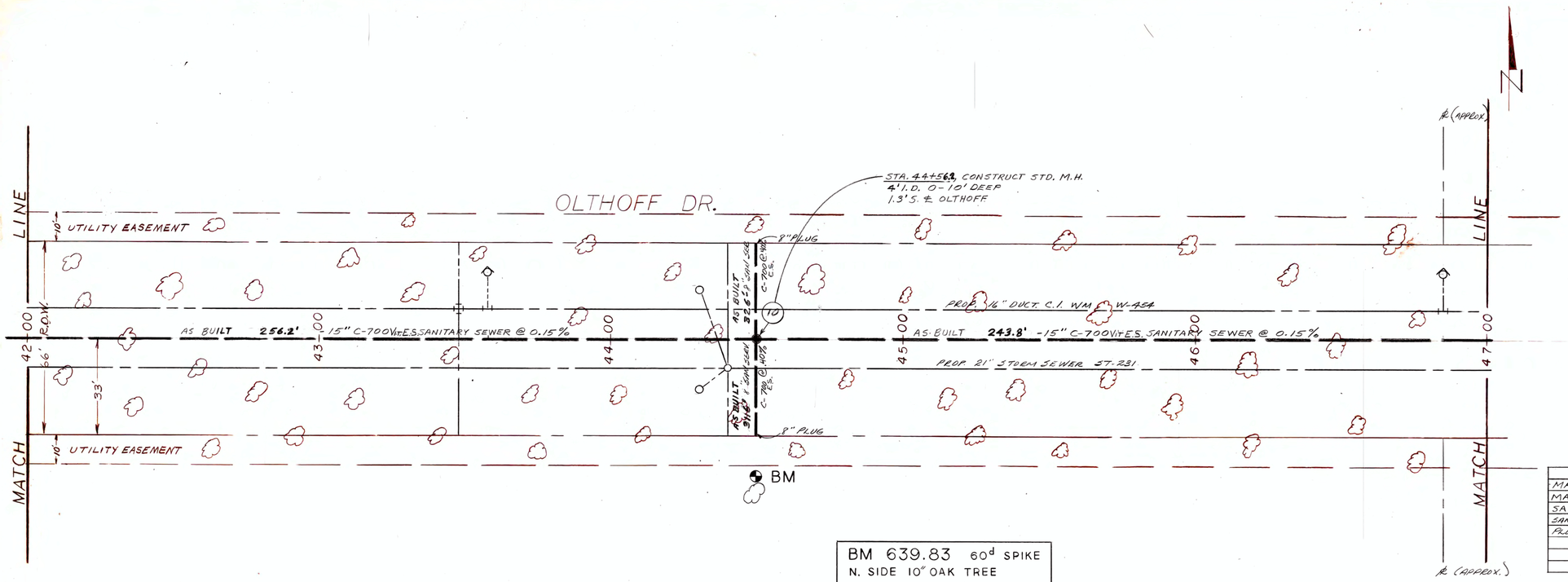
QUANTITIES THIS SHEET

ITEM	QUANT	UNIT
MANHOLE CAST. E.J. #1000	2	EA.
M.H. STD. 0-10' DEEP 4' I.D.	2	EA.
SAN. SEWER - 15" C-700 VIT. E.S.	500	L.F.
SAN. SERV. 8" C-700 VIT. E.S.	66	L.F.
PLUG 8" VIT.	2	EA.



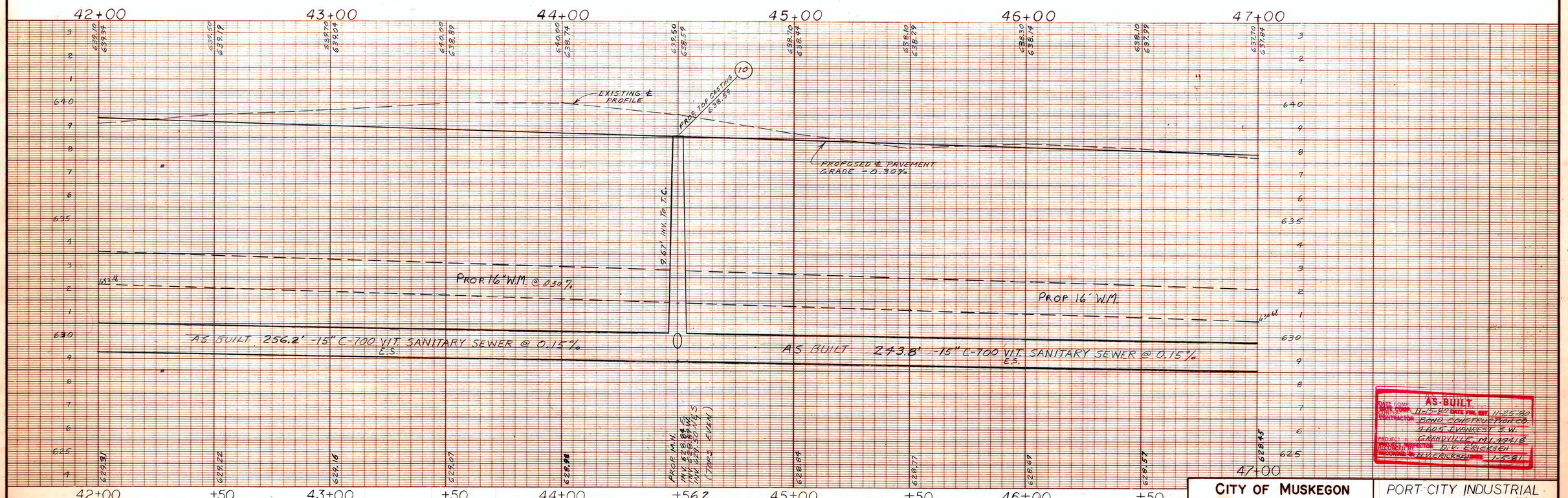
AS BUILT
DATE COMP. 11-15-80 DATE FIN. INSP. 11-25-80
CONTRACTOR BOND CONSTRUCTION CO.
7605 IVANREST S.W.
GRANDVILLE MI. 49418
PROJECT INSPECTOR D.V. ERICKSEN
RECORDED BY D.V. ERICKSON DATE 1-5-81

CITY OF MUSKEGON OFFICE OF THE CITY ENGINEER				PORT CITY INDUSTRIAL CENTER NO. 6	
Drawn W.P.	1-80	Revision	Survey C.A.S.	12-79	S-424
Checked R. Waters	3-14-80	Revision	As-Built D.V.E.	1-81	Project No.
Approved		Revision	Scale H. 1"=20' V. 1"=2'		Sheet No. 6 of 10



BM 639.83 60d SPIKE
N. SIDE 10" OAK TREE
STA 44+50 50' RIGHT

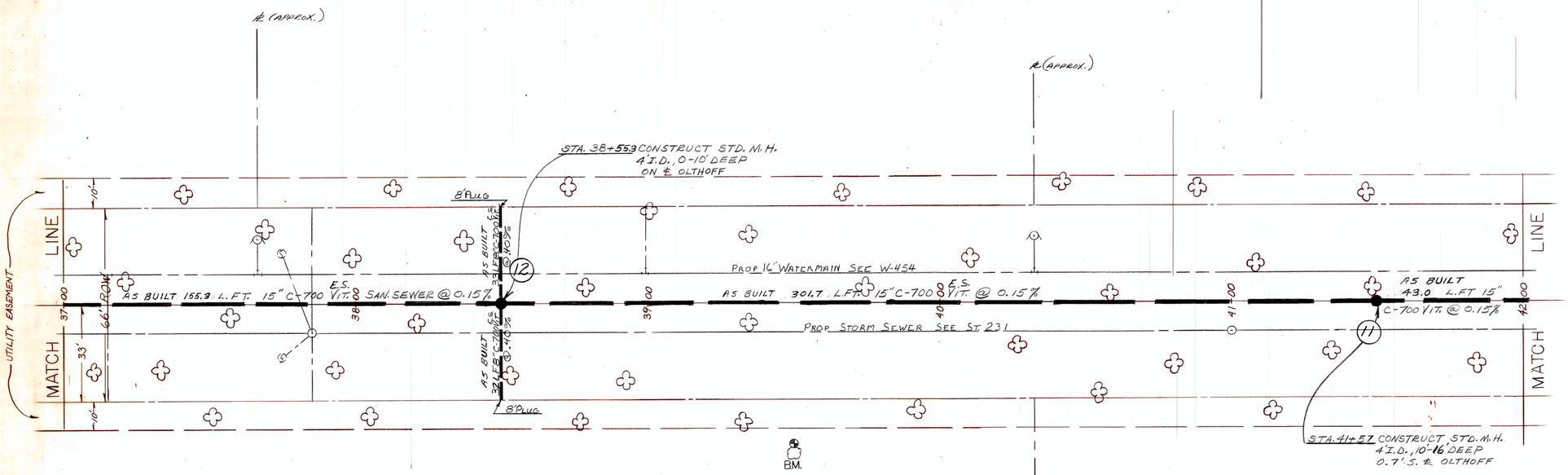
QUANTITIES THIS SHEET		
MANHOLE STD. 4' I.D. 0-10' DEEP	1	EA
MANHOLE CASTING E.J. #1000	1	EA
SANITARY SEWER 15" C-700 VIT. E.S.	500	L.FT.
SAN SERVICE - 8" VIT C-700 VIT. E.S.	66	L.FT
PLUG - 8" VIT.	2	EA.



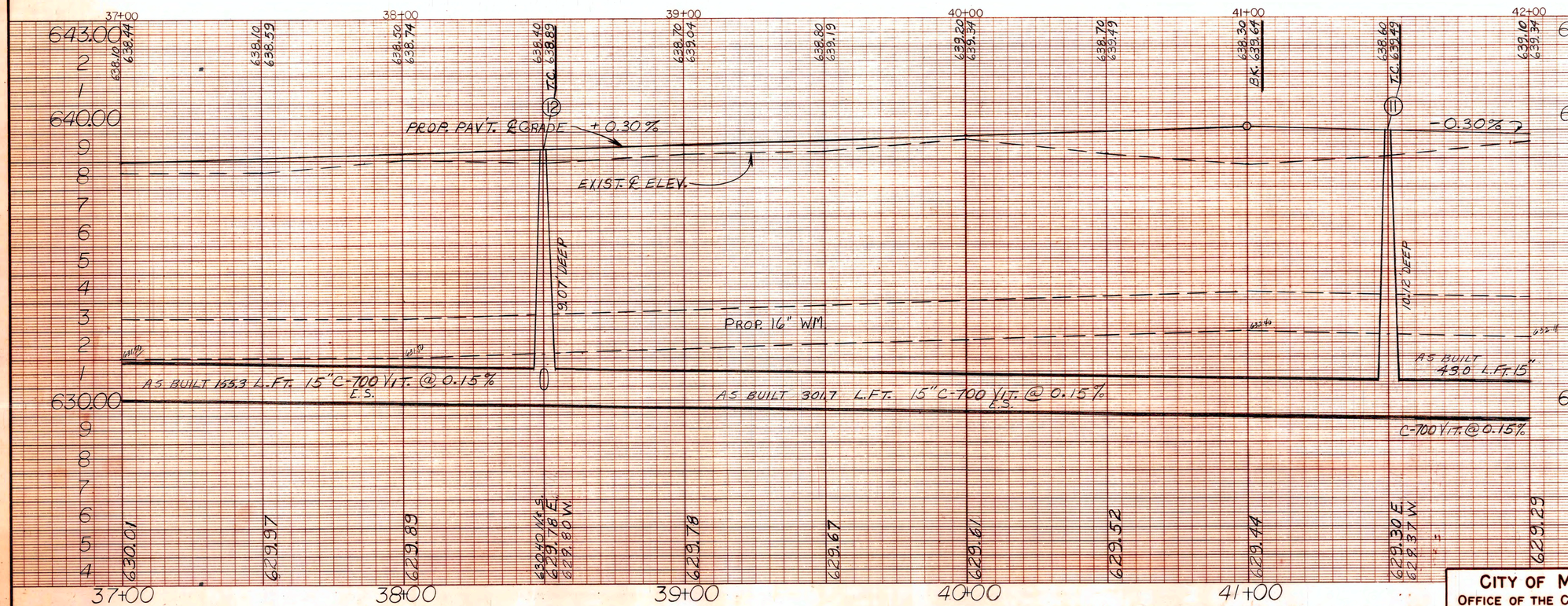
AS-BUILT
DATE COMP. 11-15-80 DATE PUB. 11-25-80
CONTRACTOR BOND CONSTRUCTION CO.
1405 EVANGELINE S.W.
GRANDVILLE, MI. 49418
REVISED BY D.V. ERICKSEN
CHECKED BY D.V. ERICKSEN 1-15-81

CITY OF MUSKEGON OFFICE OF THE CITY ENGINEER					PORT CITY INDUSTRIAL CENTER NO. 6	
Drawn D.V. ERICKSEN 1-80	Revision		Survey C.A.S.	12-79	Project No. S-424	
Checked	3-14-80	Revision		As-Built D.V.E.	1-81	
Approved		Revision		Scale H. 1"=20' V. 1"=2	Sheet No. 7 of 10	

OLTHOFF DRIVE



QUANTITIES THIS SHEET		
M.H. CASTING, EJ #1000	2	EA.
M.H. STD. 4'I.D. 0-10' DEEP	1	EA.
M.H. STD. 4'I.D. 10-16' DEEP	1	EA.
SAN. SEWER 15" C-700 V.I.T. E.S.	500	L.FT.
SAN. SERV. 8" C-700 V.I.T. E.S.	66	L.FT.
PLUG 8" V.I.T.	2	EA.



AS-BUILT
DATE SCHD. 11-15-80 DATE FINISHED 11-25-80
CONTRACTOR: RAND CONSTRUCTION CO. 4405 IVANREST SW. GRANDVILLE, MI. 49418
PROJECT INSPECTOR: ERIC ERICKSON
RECORDED BY: D.V. ERICKSON DATE: 1-5-81

CITY OF MUSKEGON OFFICE OF THE CITY ENGINEER						PORT CITY INDUSTRIAL CENTER NO. 6	
Drawn B.H.	1-80	Revision		Survey Scott	12-79	S-424	
Checked R. Walte	8-14-80	Revision		As-Built D.V.E.	1-81	Project No.	
Approved		Revision		Scale H.1"=20'	V.1"=2'	Sheet No. 8 of 10	

OLTHOFF DRIVE

B.M. ELEV. 638.90
60d SPIKE SOUTH SIDE
8" OAK TREE STA. 32+50
45' LEFT.

BM

℄ (APPROX)

UTILITY EASEMENT

LINE — MATCH — 66' ROW — 33' — 10'

8" PLUG — AS BUILT 325 L.F. 8" C-700 VIT @ 0.40% — 14

8" PLUG — AS BUILT 372 L.F. 8" C-700 VIT @ 0.40% — 13

PROP WATERMAIN W.L. 454

AS BUILT 203.6 L.F. C-700 15" SAN. SEWER @ 0.15%

AS BUILT 143.8 L.F. C-700 15" SAN. SEWER @ 0.15%

PROP STORM SEWER ST-251

STA. 33+52.6 CONSTRUCT STD. M.H. 4' I.D. 0-10' DEEP 0.4' S. ℄

STA. 35+56.2 CONSTRUCT STD. M.H. 4' I.D. 0-10' DEEP 0.7' S. ℄ OLTHOFF

22' TEMP. ASPH. PAVEMENT — 4'

30'R — 22' — 23'R — 18' — 30'R — 22'

+83 RADIUS POINT 69' — +88 RADIUS POINT 61' — +76 RADIUS POINT 69' — +28 END PVT 17' — ℄ +97.57 I.B. 33'

32+00 — +50 — 33+00 — +50 — 34+00 — +50 — 35+00 — +50 — 36+00 — +50 — 37+00

636.20 / 636.23 — 636.20 / 637.08 — 636.20 / 637.23 — 636.70 / 637.38 — 637.30 / 637.53 — 637.20 / 637.68 — 637.60 / 637.83 — 638.10 / 637.98 — 638.10 / 638.13 — 638.20 / 638.28 — 638.10 / 638.39

643.00 — 640.00 — 639.00 — 630.00 — 629.00

PROPOSED ℄ OLTHOFF DR. @ +0.3%

EXISTING ℄ OLTHOFF DR.

PROP. T.C. 637.39 — 14

PROP. T.C. 637.90 — 13

6.82' INV. TO T.C.

7.72' INV. TO T.C.

AS BUILT 203.6 L.F. C-700 15" SAN. SEWER @ 0.15% E.S.

AS BUILT 143.8 L.F. C-700 15" SAN. SEWER @ 0.15% E.S.

631.50 — 631.50

PROP 16" W.M.

630.54 PROP M.H. INV. EAST 629.65 N. (ABOVE) — 630.49 — 630.42 — 630.34 — 630.21 PROP M.H. INV. E. 630.24 W. 629.85 N. (ABOVE) — 630.19 — 630.12 — 630.01

+52.6 — +56.2

QUANTITIES THIS SHEET

DESCRIPTION	AMT.	UNT.
MANHOLE CASTING EJ #1000 OR EQ.	2	EA.
STD. MANHOLE 4' I.D. 0-10' DEEP	2	EA.
SAN. SEWER C-700 15" VIT. E.S.	350	L.FT.
SAN. SERVICE 8" C-700 VIT E.S.	66	L.FT.
PLUG - 8" VIT	2	EA

AS BUILT
DATE COMP. 11-15-80 DATE FOR REC. 1-25-80
CONTRACTOR GONZ CONSTRUCTION CO.
1605 IVANREST S.W.
GRANDVILLE, MI 49418
PROJECT INSPECTOR D.V. ERICKSEN
RECORDED BY D.V. ERICKSEN DATE 1-5-80

CITY OF MUSKEGON
OFFICE OF THE CITY ENGINEER

PORT CITY INDUSTRIAL CENTER NO. 6

Drawn	1-80	Revision		Survey SCOTT	12-79	S-424	
Checked	1-14-81	Revision		As-Built D.V.E.	1-81	Project No.	
Approved		Revision		Scale H 1"= 20' V. 1"=2		Sheet No. 9 of 10	

B.M. 636.85 B. Bolt Under E. in East Jordan on Hyd. Sta. 26+58 Left

N

OLTHOFF DRIVE

℄ (APPROX)

+29.5 10" G. VALVE 5.2'
+41.5 11" G. VALVE 11.2'
+41.5 F. HYD. 25.1'
+51.4 18" BUTT. VALVE 9.0'

+97 CONC. HOW. 33'

10' UTILITY EASEMENT

BM.

66' R.O.W.

EXIST. PAVE. 37.28'

27+00

28+00

29+00

30+00

31+00

32+00

EX. 18" D.I. W.M.

EX. 12" V.T. SAN.

PROP. STORM SEWER SEE ST. 231

22' TEMP. ASP. PAVE.

29+45.1 - EXIST. SAN. M.H.
NOTE: CONNECTION OF PROP. 8" SERV. TO EXIST. M.H. TO BE INCIDENTAL TO SEW.
1.5' N. ℄ OLTHOFF

8" PLUG

4.5' BUILT
32.7' 8" C-900 V.C.P.
@ 10.0%

EXIST. 12" SERV.

EXIST. 8" SERV.

PROP. 16" WATERMAIN SEE W-454

AS BUILT 144.7 L.F. 12" C-700 E.S. SAN. @ 0.22%

15

STA. 30+89.8 CONSTR. STD. M.H. 0-10' DEEP 4' I.D.
1.0' N. ℄ OLTHOFF

PROP. STORM SEWER SEE ST. 231

MATCH LINE

30' R.

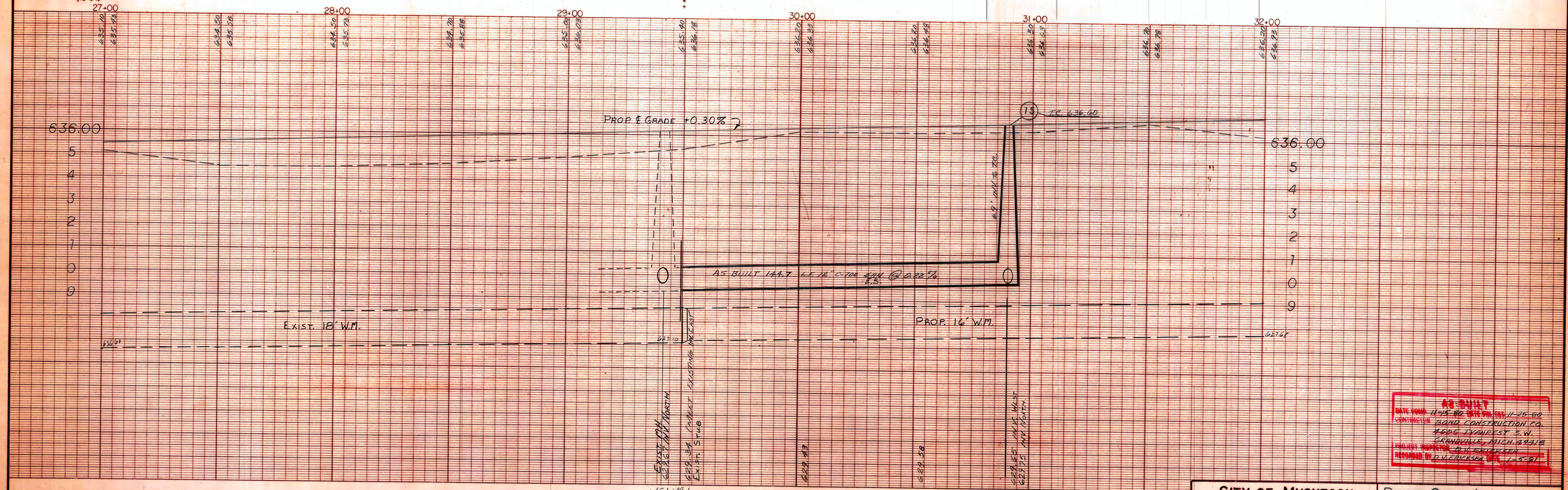
10' UTILITY EASEMENT

NOTE: THE N. UTILITY EASEMENT CONTAINS GAS, PHONE & ELECTRIC LINES WHICH CROSS THE R.O.W. TO THE SOUTH.

+43.1 END OF 12" STUB

QUANTITIES THIS SHEET

ITEM	QUANT	UNIT
MANHOLE CAST EJ #1000	1	EA.
M.H. STD. 0-10' DEEP 4' I.D.	1	EA
SAN. SEWER 12" C-700 V.T. E.S.	141	L.F.
SAN. SERV. 8" C-700 V.T. E.S.	66	L.F.
PLUG 8" V.T.	2	EA.



AS BUILT
DATE COMP. 11-15-80 DATE FIN. EST. 11-25-80
CONTRACTOR BOND CONSTRUCTION CO.
4606 IVANREST S.W.
GRANDVILLE, MICH. 49418
PROJECT INSPECTOR D.V. ERICKSEN
RECORDED BY D.V. ERICKSEN DATE 1-5-81

CITY OF MUSKEGON OFFICE OF THE CITY ENGINEER				PORT CITY INDUSTRIAL CENTER NO. 6	
Drawn W.P.	1-80	Revision		Survey C.A.S. 12-79	S-424
Checked	5-14-80	Revision		As-Built D.V.E. 1-81	Project No.
Approved		Revision		Scale H. 1" = 20' V. 1" = 2'	Sheet No. 10 of 10

St - 231

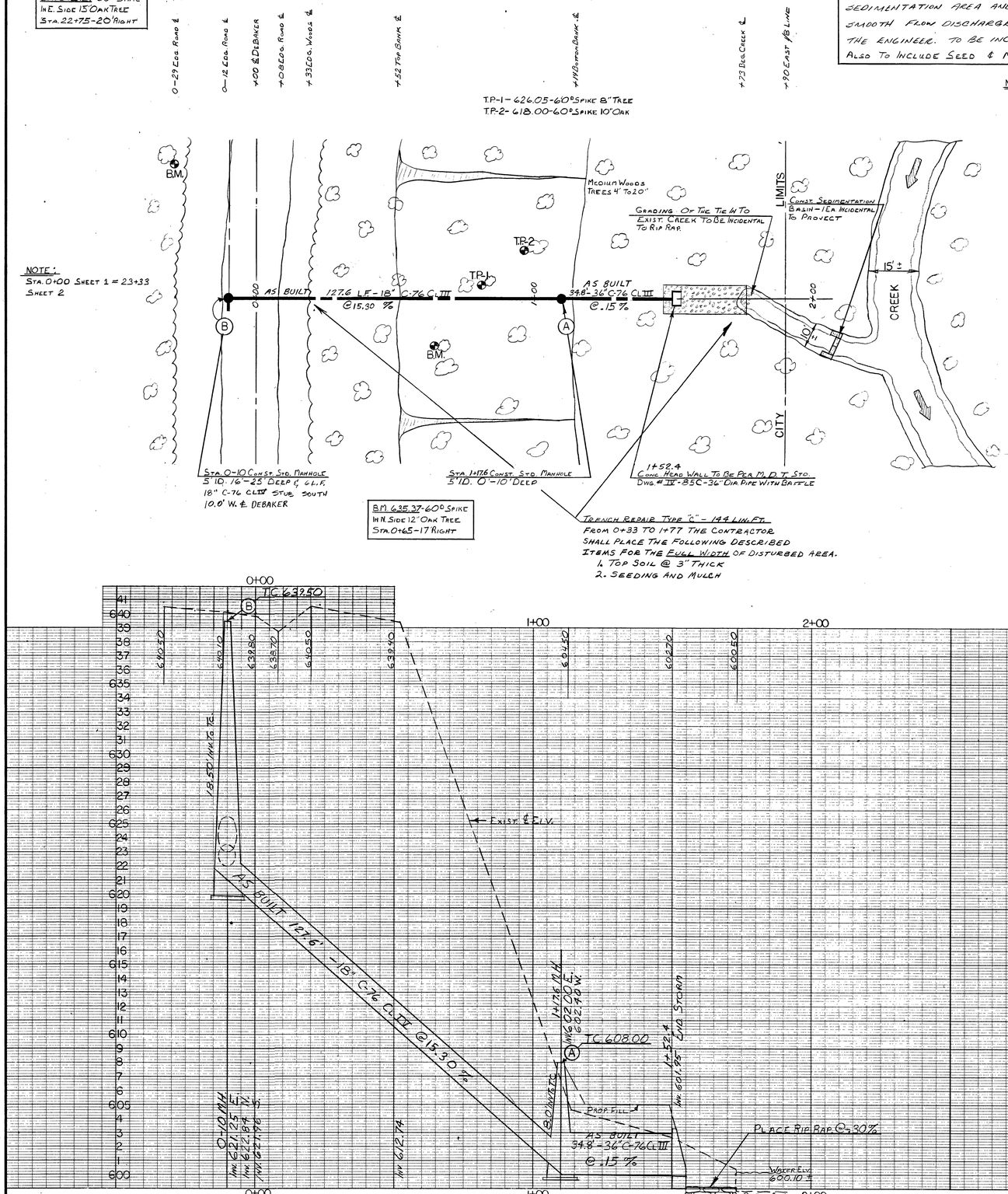
B.M. 642.21-60° Spike
In E. Side 15" Oak Tree
Sta. 22+75-20' Right

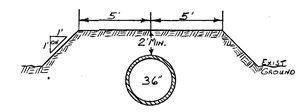
NOTE: THE CONTRACTOR SHALL CLEAN OUT SEDIMENTATION AREA AND CHANNELIZE FOR SMOOTH FLOW DISCHARGE AS DIRECTED BY THE ENGINEER. TO BE INCIDENTAL TO RIP RAP ALSO TO INCLUDE SEED & MULCH AS NECESSARY

NOTE:
TREE REMOVAL SHALL BE HELD TO A MINIMUM FROM STA. 0+33 TO 1+77 AND WILL BE INCIDENTAL TO STORM SEWER.

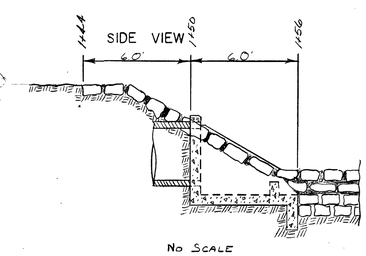
QUANTITIES THIS SHEET		
MANHOLE CASTING EJ #1000 OR EQUAL	2	EA.
MANHOLE STD. 5' I.D. 0'-10' DEEP	1	EA.
MANHOLE STD. 5' I.D. 16'-25' DEEP	1	EA.
STORM SEWER 18" C-76 CL. III	126	L.F.
STORM SEWER 36" C-76 CL. III	40	L.F.
3" OF TOPSOIL IN PLACE	140	L.F.
SEED & MULCH	140	L.F.
CONC. HEADWALL INSTALLED COMPLETE	1	LUMP
RIP RAP IN PLACE	1	LUMP

NOTE: RIP-RAP
THE CONTRACTOR MAY USE BROKEN CONCRETE, 6" MINIMUM THICKNESS OR BOULDERS 8" OR LARGER



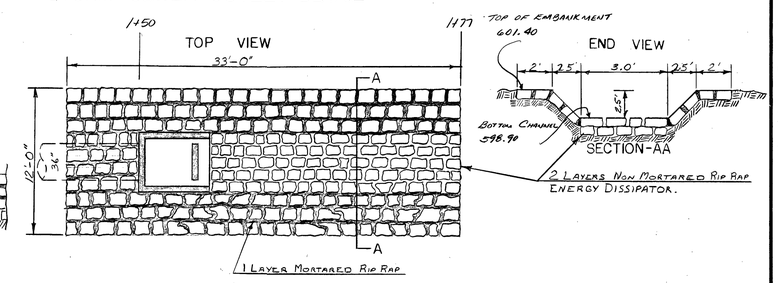


Typical Cross Section Fill From Sta. 1+14 To 1+40 To Be Incidental To Storm Sewer.



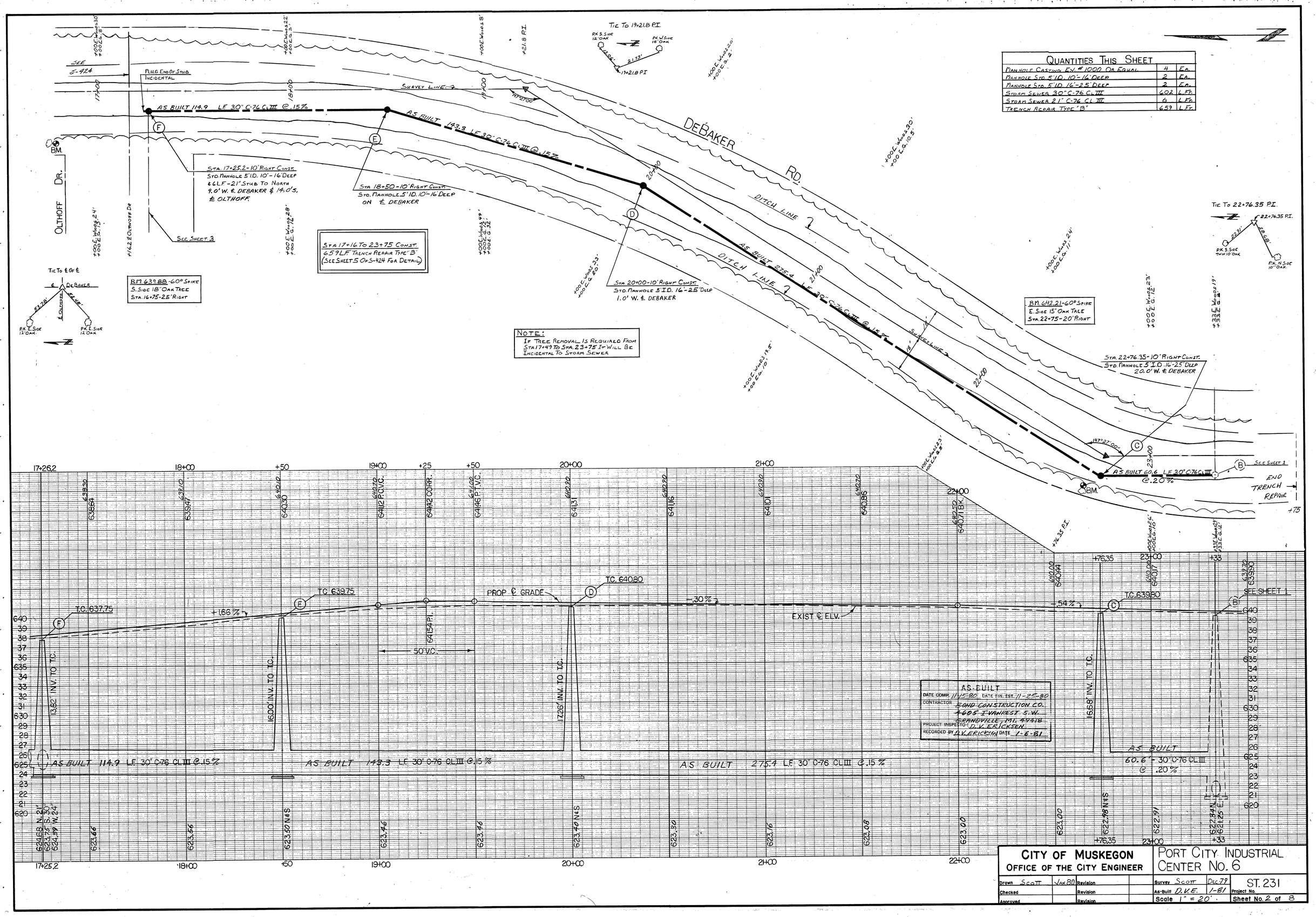
No Scale

RIP RAP AND STORM SEWER OUTLET DETAIL

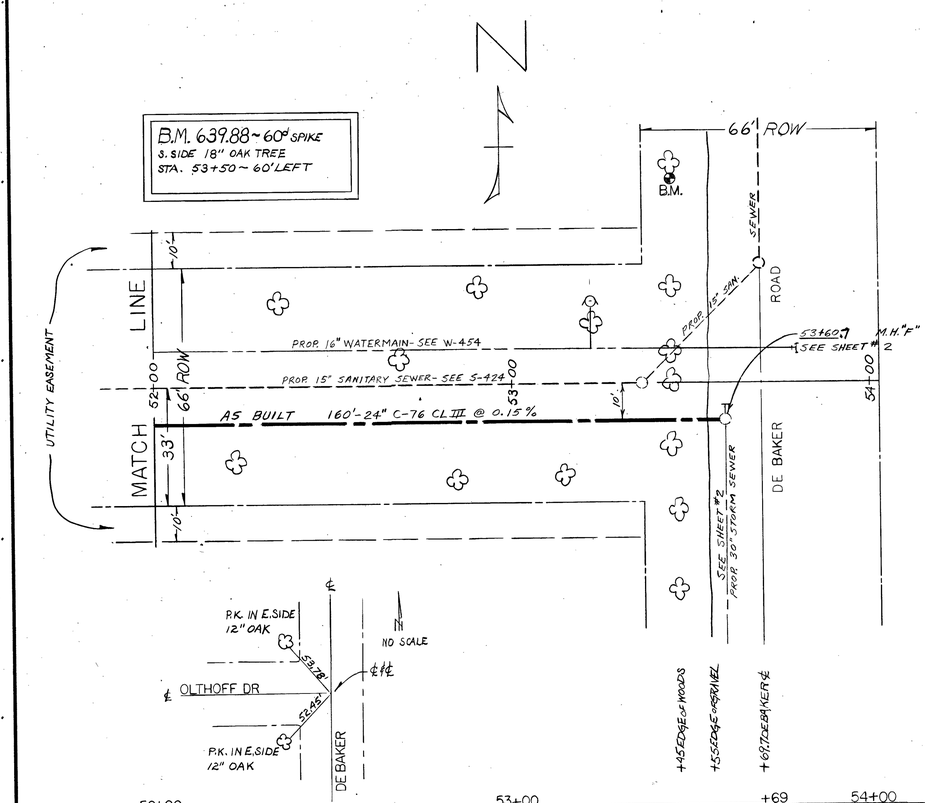


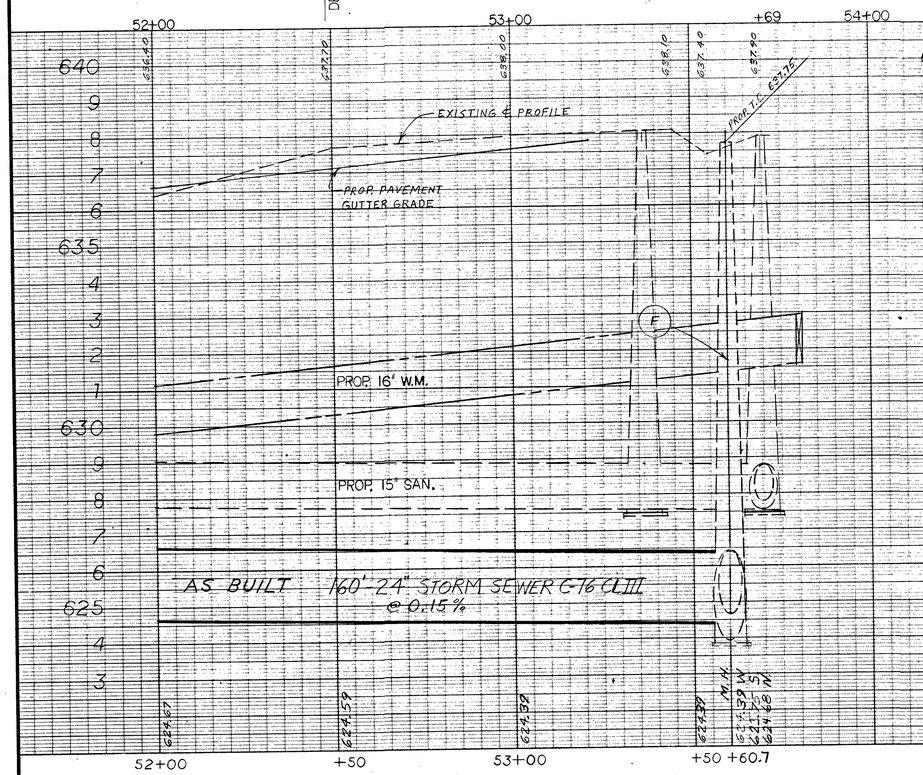
AS-BUILT
DATE COMP. 11-15-80 DATE FIN. EST. 11-25-80
CONTRACTOR BOND CONSTRUCTION CO.
4605 IVANREST S.W.
GRANDVILLE, MI. 49418
PROJECT INSPECTOR D.V. ERICKSEN
RECORDED BY D.V. ERICKSEN DATE 1-5-81

CITY OF MUSKEGON OFFICE OF THE CITY ENGINEER				PORT CITY INDUSTRIAL CENTER NO. 6		
Drawn Scott	Jan.-80	Revision		Survey Scott	Dec-79	ST.-231
Checked		Revision		As-Built D.V.E.	1-81	Project No.
Approved		Revision		Scale 1" = 20'		Sheet No. 1 of 3


QUANTITIES THIS SHEET
MANHOLE CASTING EV. #1000 OR EQUAL 4 EA.
MANHOLE STD. 5' I.D. 10'-16' DEEP 2 EA.
MANHOLE STD. 5' I.D. 16'-25' DEEP 2 EA.
STORM SEWER 30" C-76 CL III 602 L.F.
STORM SEWER 21" C-76 CL III 6 L.F.
TRENCH REPAIR TYPE 'B' 659 L.F.
DEBAKER RD.
OLTHOFF DR.
SEE S-424
PLUG END OF STUB INCIDENTAL
SURVEY LINE
AS BUILT 114.9 LF 30" C-76 CL III @ 15%
AS BUILT 143.3 LF 30" C-76 CL III @ 15%
AS BUILT 275.4 LF 30" C-76 CL III @ 15%
AS BUILT 60.6 LF 30" C-76 CL III @ .20%
DITCH LINE
STA. 17+25.2-10' RIGHT CONST.
STD. MANHOLE 5' I.D. 10'-16' DEEP
& 6 LF-21" STUB TO NORTH
9.0' W. & DEBAKER & 14.0' S. & OLTHOFF
SEE SHEET 3
STA. 18+50-10' RIGHT CONST.
STD. MANHOLE 5' I.D. 10'-16' DEEP
ON ℄ DEBAKER
STA. 17+16 TO 23+75 CONST.
659 LF TRENCH REPAIR TYPE 'B'
(SEE SHEET 5 OF S-424 FOR DETAIL)
STA. 20+00-10' RIGHT CONST.
STD. MANHOLE 5' I.D. 16'-25' DEEP
1.0' W. & DEBAKER
STA. 22+76.35-10' RIGHT CONST.
STD. MANHOLE 5' I.D. 16'-25' DEEP
20.0' W. & DEBAKER
B.M. 639.88-60° SPIKE
S. SIDE 18" OAK TREE
STA. 16+75-25' RIGHT
B.M. 642.21-60° SPIKE
E. SIDE 15" OAK TREE
STA. 22+75-20' RIGHT
NOTE:
IF TREE REMOVAL IS REQUIRED FROM STA. 17+49 TO STA. 23+75 IT WILL BE INCIDENTAL TO STORM SEWER
TIE TO ℄ OF ℄
TIE TO 19+21.8 P.I.
TIE TO 22+76.35 P.I.
END TRENCH REPAIR
SEE SHEET 1
T.C. 637.75
T.C. 639.75
T.C. 640.80
T.C. 639.80
PROP ℄ GRADE
EXIST ℄ ELV.
+1.66%
-.30%
-.54%
50' V.C.
13.82' INV. TO T.C.
16.00' INV. TO T.C.
17.26' INV. TO T.C.
16.68' INV. TO T.C.
AS BUILT
DATE COMP. 11-14-80 DATE FIN. EST. 11-25-80
CONTRACTOR BOND CONSTRUCTION CO.
4605 IVANREST S.W.
GRANDVILLE, MI. 49418
PROJECT INSPECTOR D.V. ERICKSEN
RECORDED BY D.V. ERICKSEN DATE 1-6-81
CITY OF MUSKEGON
OFFICE OF THE CITY ENGINEER
PORT CITY INDUSTRIAL CENTER NO. 6
Drawn SCOTT JAN. 80
Checked
Approved
Revision
Survey SCOTT DEC. 79
As-Built D.V.E. 1-81
Scale 1" = 20'
ST. 231
Project No.
Sheet No. 2 of 8

OLTHOFF DRIVE



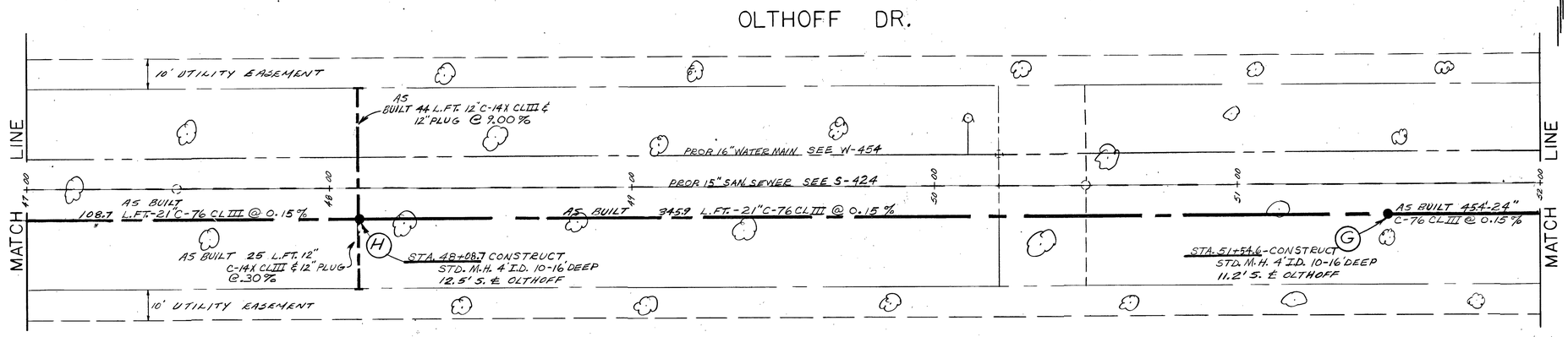


AS BUILT

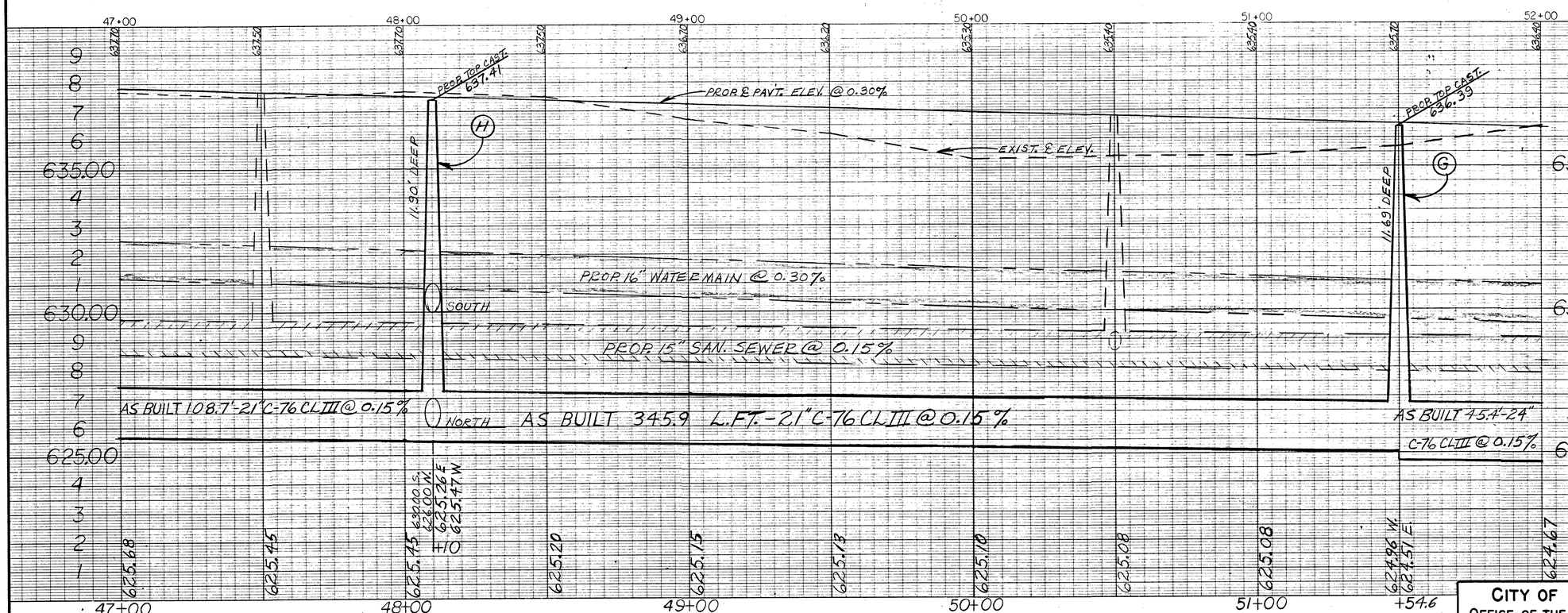
DATE COMP. 11-25-80 FIN. EST. 11-25-80
CONTRACTOR: ROND CONSTRUCTION CO
2602 EVANREST S.W.
GRANDVILLE, MI. 49418
PROJECT INSPECTOR D.V. ERICKSEN
RECORDED BY D.V. ERICKSEN DATE 1-6-81

CITY OF MUSKEGON OFFICE OF THE CITY ENGINEER				PORT CITY INDUSTRIAL CENTER · NO. 6	
Drawn D.V. ERICKSEN 1-80	Revision		Survey C.A.S. 12-79	ST-231	
Checked	Revision		As-Built D.V.E 1-81	Project No.	
Approved	Revision		Scale 1" = 20'	Sheet No. 3 of 8	

B.M. 638.69 60d SPIKE
S. SIDE 10" OAK STA. 49+40
50' LEFT.



QUANTITIES THIS SHEET			
2	M.H., CASTING E.J.# 1000	2	EA.
4	M.H., STD. 4' I.D. 10-16' DEEP	2	EA.
11	ST. SEWER 12" C-14X CL III	66	L.FT.
15	ST. SEWER 21" C-76 CL III	450	L.FT.
16	ST. SEWER 24" C-76 CL III	50	L.FT.
8	PLUG 12"	2	EA.

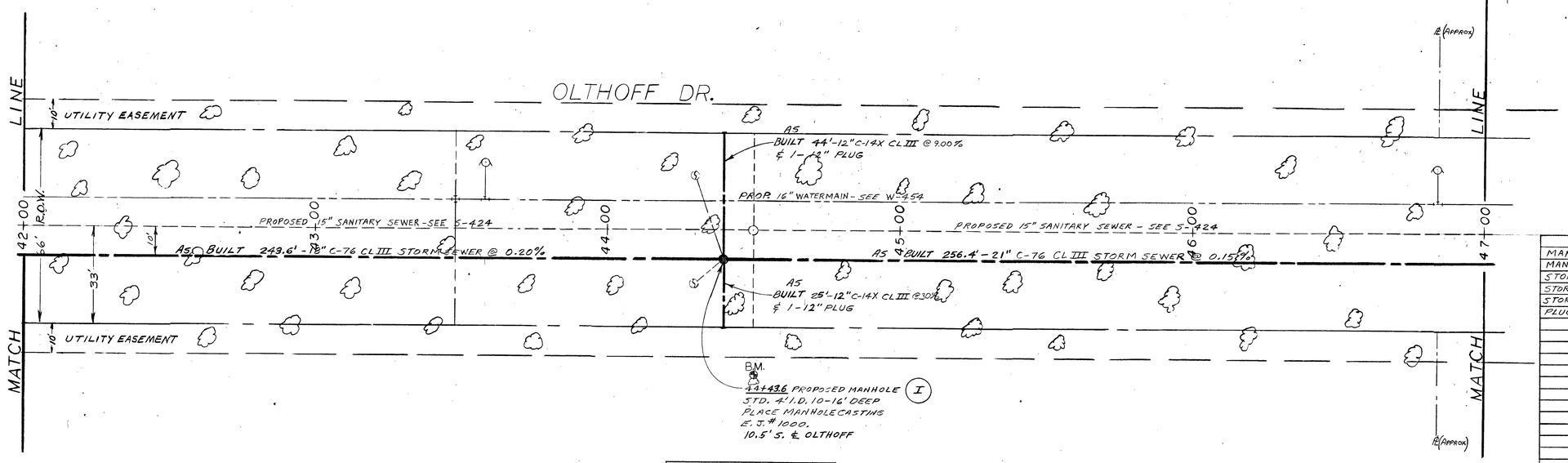


11-15-80	11-25-80	BOND CONSTRUCTION CO. 4605 IVANREST S.W. GRANDVILLE, MI. 49418 B.V. ERICKSEN	
D.V. ERICKSEN	1-6-81		

CITY OF MUSKEGON
OFFICE OF THE CITY ENGINEER

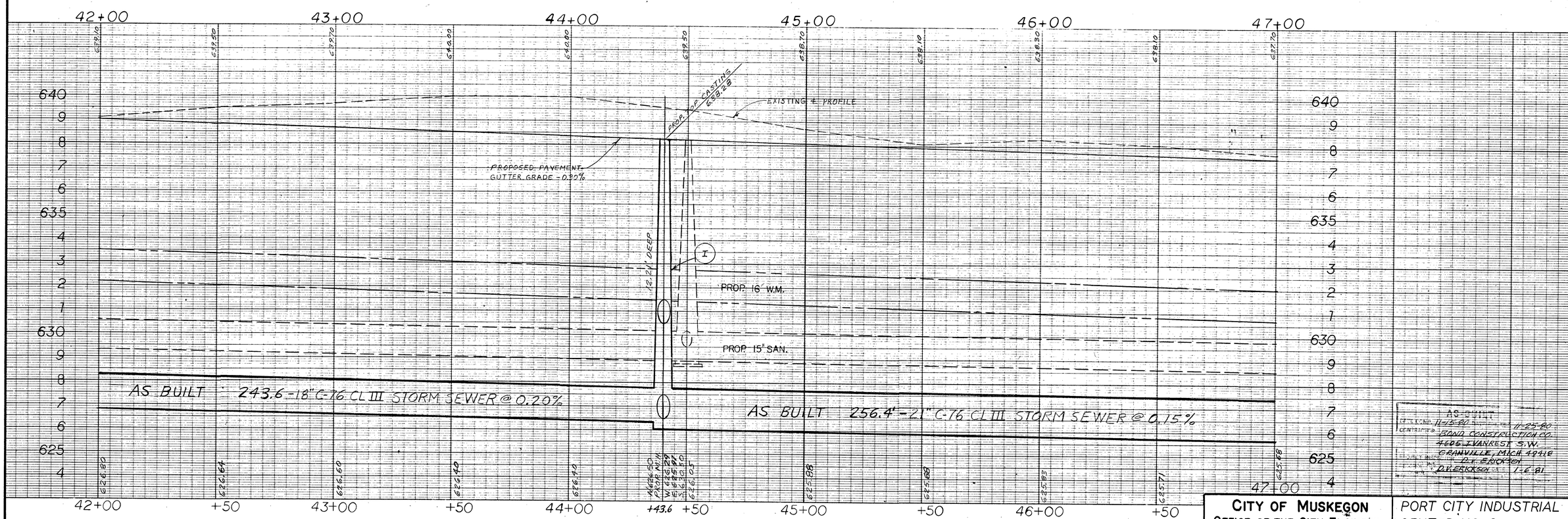
PORT CITY INDUSTRIAL CENTER NO. 6

Drawn BH	2-80	Revision	Survey CAS	12-79	ST-231
Checked		Revision	As-Built D.V.E.	1-81	Project No.
Approved		Revision	Scale 1"=20'		Sheet No. 4 of 8



B.M. 639.23 ON 60° SPIKE
N. SIDE 10" OAK TREE STA.
44+50 - 50' RT.

QUANTITIES THIS SHEET		
MANHOLE, STD. 4' I.D. 10-16' DEEP	1	EA.
MANHOLE CASTING E.J. #1000	1	EA.
STORM SEWER 21" C-76 CL III	260	L.FT.
STORM SEWER 18" C-76 CL III	240	L.FT.
STORM SEWER 12" C-14X CL III	66	L.FT.
PLUG, 12"	2	EA.



AS BUILT
11-15-80 11-25-80
CONTRACTOR BOND CONSTRUCTION CO.
4605 IVANREST S.W.
GRANVILLE, MICH. 49418
D.V. ERICKSON
D.V. ERICKSON 1-6-81

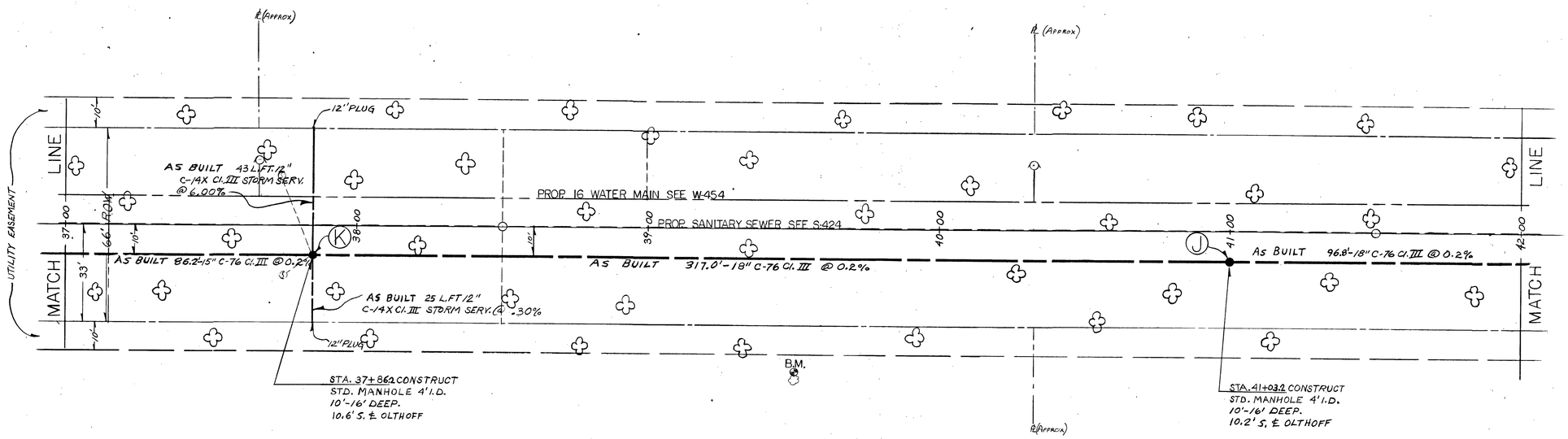
CITY OF MUSKEGON
OFFICE OF THE CITY ENGINEER

PORT CITY INDUSTRIAL CENTER NO. 6

Drawn D.V. ERICKSON	1-80	Revision		Survey C.A.S.	12-79
Checked		Revision		As-Built D.V.E	1-81
Approved		Revision		Scale 1" = 20'	

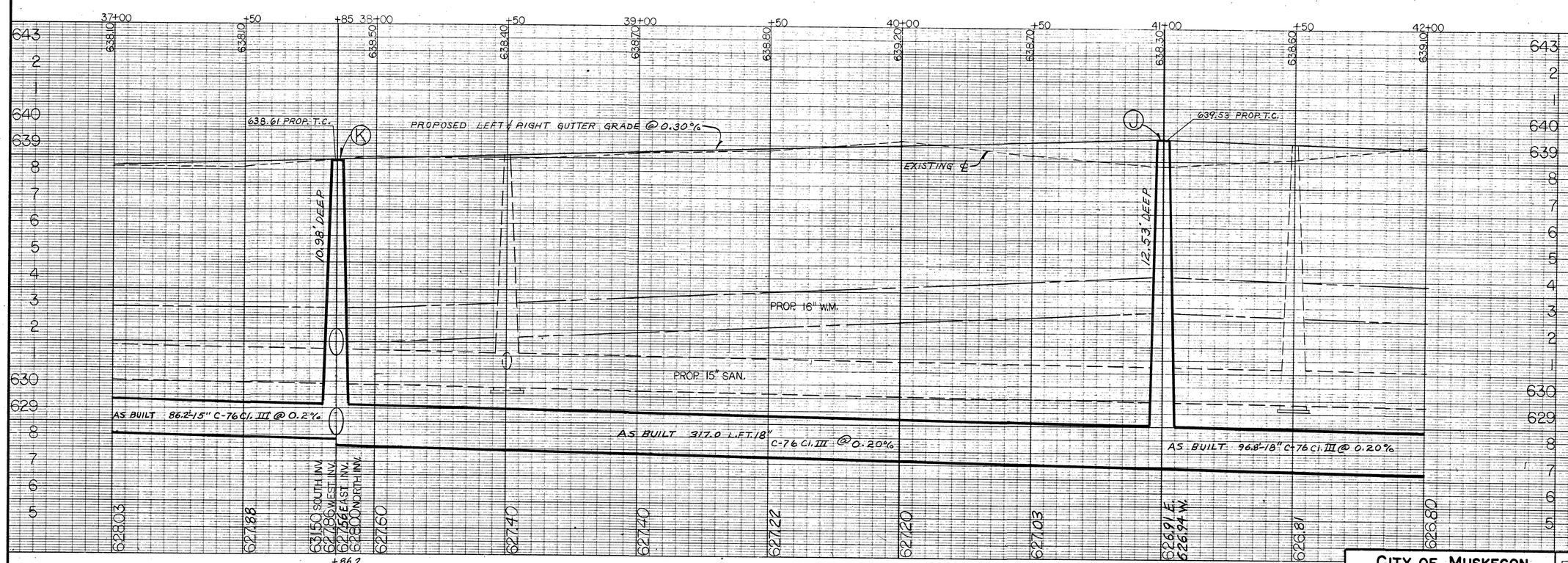
Project No. ST-231
Sheet No. 5 of 8

OLTHOFF DRIVE



B.M. 640.22 ~ 60d
SPIKE N. SIDE 10" OAK TREE STA. 39+50. 50' RIGHT.

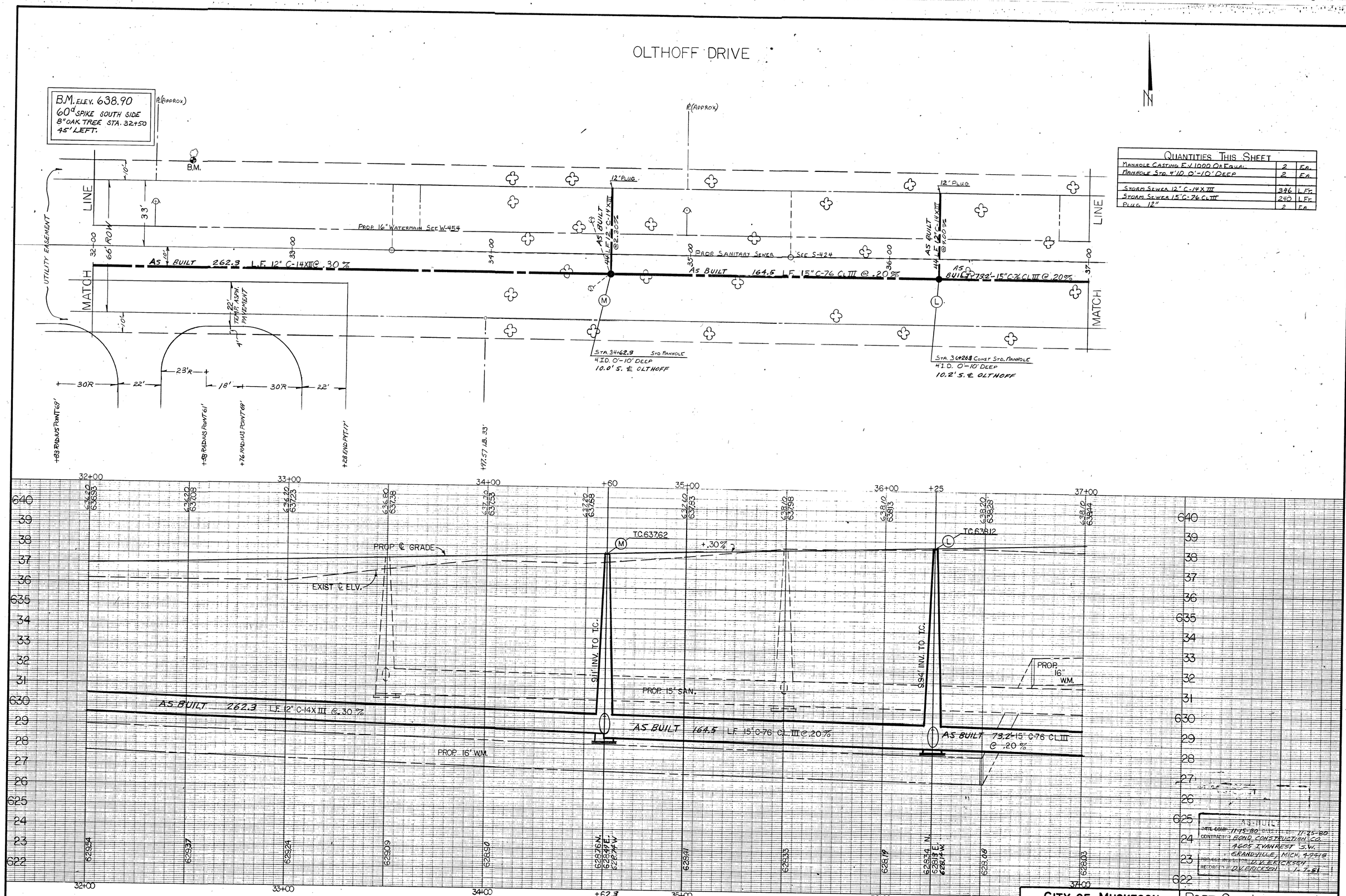
QUANTITIES THIS SHEET		
DESCRIPTION	AMT	UNT
MANHOLE CASTING EJ#1000	2	EA.
MANHOLE STD. 4' I.D. 10'-16' DEEP	2	EA.
STORM SEWER 12" C-14X Cl. III	66	L.FT.
STORM SEWER 15" C-76 Cl. III	85	L.FT.
STORM SEWER 18" C-76 Cl. III	415	L.FT.
PLUG 12"	2	EA.



DATE ECD 11-15-80 DATE 11-25-80
CONTRACTOR BOND CONSTRUCTION CO.
7605 IVANREST S.W.
GRANDVILLE, MICH. 49418
PROJECT INSPECTOR D.K. ERICKSEN
RECORDED BY D.V. ERICKSEN DATE 1-7-81

CITY OF MUSKEGON OFFICE OF THE CITY ENGINEER						PORT CITY INDUSTRIAL CENTER NO. 6	
Drawn	2-80	Revision		Survey SCOTT	12-79	ST-231	
Checked		Revision		As-Built D.V.E.	1-81	Project No.	
Approved		Revision		Scale 1"=20'		Sheet No. 6 of 8	

OLTHOFF DRIVE



QUANTITIES THIS SHEET

MANHOLE CASTING E.V. 1000 OR EQUAL	2	EA.
MANHOLE STD. 4' I.D. 0'-10' DEEP	2	EA.
STORM SEWER 12" C-14 X III	346	L.FT.
STORM SEWER 15" C-76 CL III	240	L.FT.
PLUG 12"	2	EA.

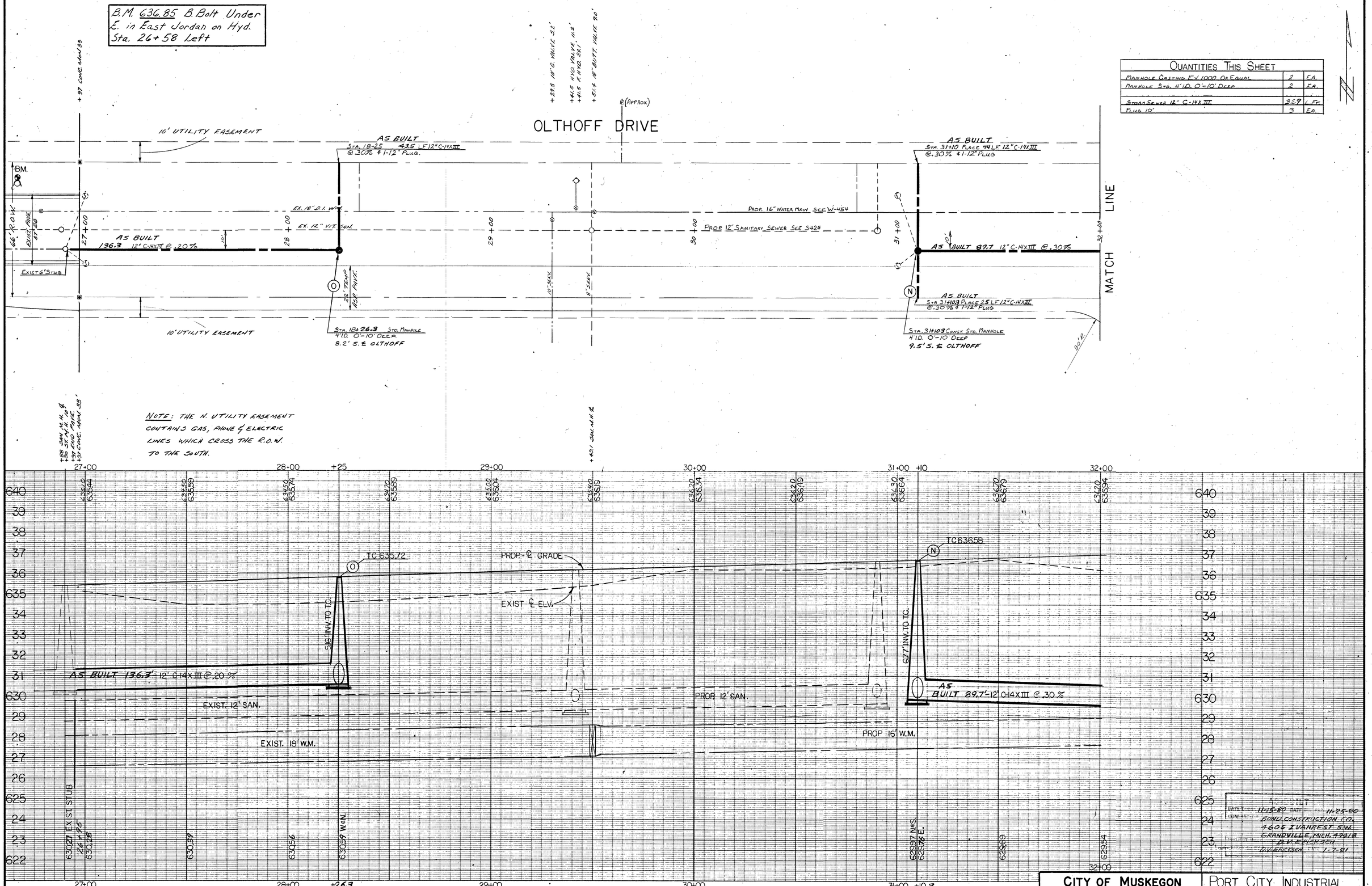
CITY OF MUSKEGON
OFFICE OF THE CITY ENGINEER

PORT CITY INDUSTRIAL CENTER NO. 6

Drawn SCOTT	FEB 80	Revision	Survey SCOTT	DEC 79	ST. 231
Checked		Revision	As-Built D.V.E.	1-81	Project No.
Approved		Revision	Scale 1" = 20'		Sheet No. 7 of 8

B.M. 636.85 B. Bolt Under E. in East Jordan on Hyd. Sta. 26+58 Left

Quantities This Sheet		
Manhole Casting E.J. 1000 Or Equal	2	EA.
Manhole Std. 4' I.D. 0'-10' Deep	2	EA.
Storm Sewer 12" C-14 X III	32.9	L.Ft.
Plug 10'	3	EA.



City of Muskegon Office of the City Engineer							Port City Industrial Center No. 6	
Drawn C.A.S.	FEB.80	Revision		Survey C.A.S.	DEC.79	ST. 231		
Checked		Revision		As-Built D.V.E.	1-81	Project No.		
Approved		Revision		Scale 1" = 20'		Sheet No. 8 of 8		

W - 454

B.M. 636.85 B. Bolt Under E. in East Jordan on Hyd. Sta. 26+58 Left

+97 CONC. MON. 33

10' UTILITY EASEMENT

28+36.2 - PLACE 18"x8" TAPPING SLEEVE & VALVE M.J., 23'-8" DUCT. C.I.M.J. WATERMAIN CL 52, 1-8" C.I.M.J. PLUG WITH 3/4" TAP & 2-45° 8" C.I.M.J. BENDS.

+21.5 10" G. VALVE 5.2'
+41.5 4" WED. VALVE 11.2'
+41.5 4" WED. 5.1'
+51.4 18" BUTT. VALVE 9.0' (ABANDONED)

℄ (APPROX)

OLTHOFF DRIVE

30+80.9 - PLACE 16"x16"x8" C.I. TEE M.J.-M.J.-M.J., 1-8" GATE VALE M.J.-M.J., 23'-8" DUCT. C.I.M.J. CL. 52 WATERMAIN, 1-8" C.I.M.J. PLUG WITH 3/4" TAP & 1-45° BEND 8" C.I.M.J.

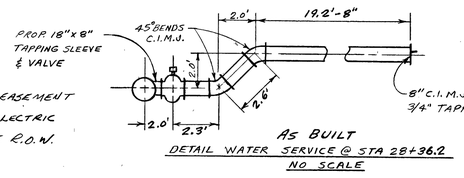
N

66' R.O.W.
33'
EXIST. PAVE. 57'-28'
27+00
28+00
29+00
30+00
31+00
32+00
158.2'-18
EX. 18" D.I. W.M.
EX. 12" V.C.P. SAN.
PROP. 8" STORM SERVICE
12.3'N. ℄ OLTHOFF
91.5'-18"
11.4'N ℄
12.3' VALVE ABANDONED
11.5
PROP. 8" SAN. SERVICE
29+51.5 PLACE 18"x16" REDUCER, PLAIN END-M.J. CLOW F-965 OR EQUAL
A.S. BUILT 129.4'-16"
16" DUCT.
14.7'N. ℄
PROP. 8" SAN. SERVICE
C.I. WATERMAIN CL 52 (PUSH-ON)
PROP. 8" STORM SERVICE
A.S. BUILT 119.10-16"
PROP. 12" SAN. SEE S-424
PROP. 12" STORM SEWER - SEE ST-231
PROP. 12" STORM SEWER - SEE ST-231
28' TEMP. ASP. PAVE.
18" SEW.
8" SEW.
10'
MATCH LINE
10' UTILITY EASEMENT
REMOVE 18" C.I. PLUG AND RETURN TO PUBLIC SERVICE BLD. AS INCIDENTAL AND REMOVE CONCRETE THRUST BLOCK AS INCIDENTAL.
30'R

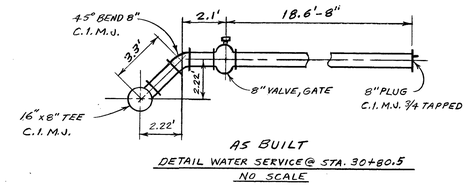
+88 SAN. M.H. ℄
+95 ASP. PAVE.
+97 CONC. MON. 33'

+83 SAN. M.H. ℄

NOTE: THE N. UTILITY EASEMENT CONTAINS GAS, PHONE & ELECTRIC LINES WHICH CROSS THE R.O.W. TO THE SOUTH.



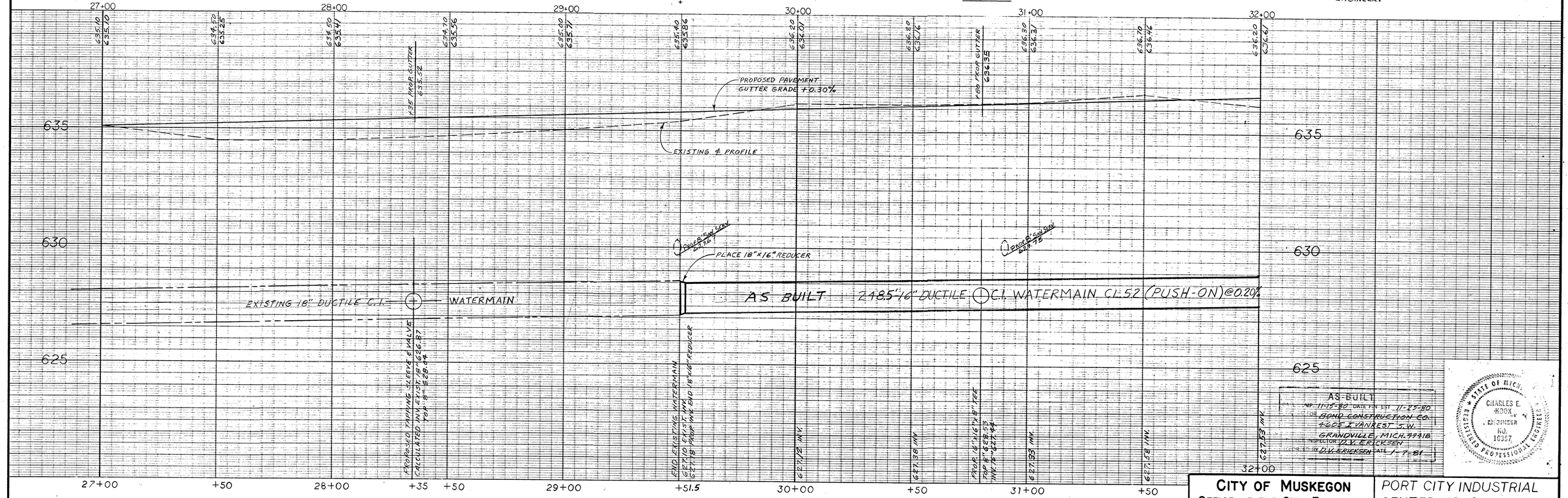
AS BUILT
DETAIL WATER SERVICE @ STA 28+36.2
NO SCALE



AS BUILT
DETAIL WATER SERVICE @ STA. 30+80.5
NO SCALE

QUANTITIES THIS SHEET		
BEND 45°, 8" C.I. M.J.	3	EA.
PLUG 8" C.I.M.J. WITH 3/4" TAP	2	EA.
REDUCER 18"x16" CLOW #F-965 or EQUAL	1	EA.
TAPPING SLEEVE & VALVE 18"x8" M.J.	1	EA.
TEE 16"x16"x8" C.I.M.J.-M.J.-M.J.	1	EA.
VALVE, 8" GATE M.J.	1	EA
WATERMAIN 16" DUCT. C.I. CL 52 (PUSH-ON)	248	L.FT.
WATERMAIN 8" DUCT. C.I.M.J. CL 52	46	L.FT.

NOTES:
1) VALVE BOXES INCIDENTAL TO VALVES.
2) RETAINER GLANDS SHALL BE USED ON ALL MECHANICAL JOINTS AND SHALL BE INCIDENTAL.
3) RETAINER GLANDS SHALL BE M.J. SET SCREW GLANDS AS MANUFACTURED BY ANY OF THE FOLLOWING:
   a) EAST JORDAN # 878254.
   b) TRAVERSE CITY IRON WORKS.
   c) EBBA IRON WORKS.
4) RETAINER GLANDS SHALL BE APPROVED BY THE ENGINEER.

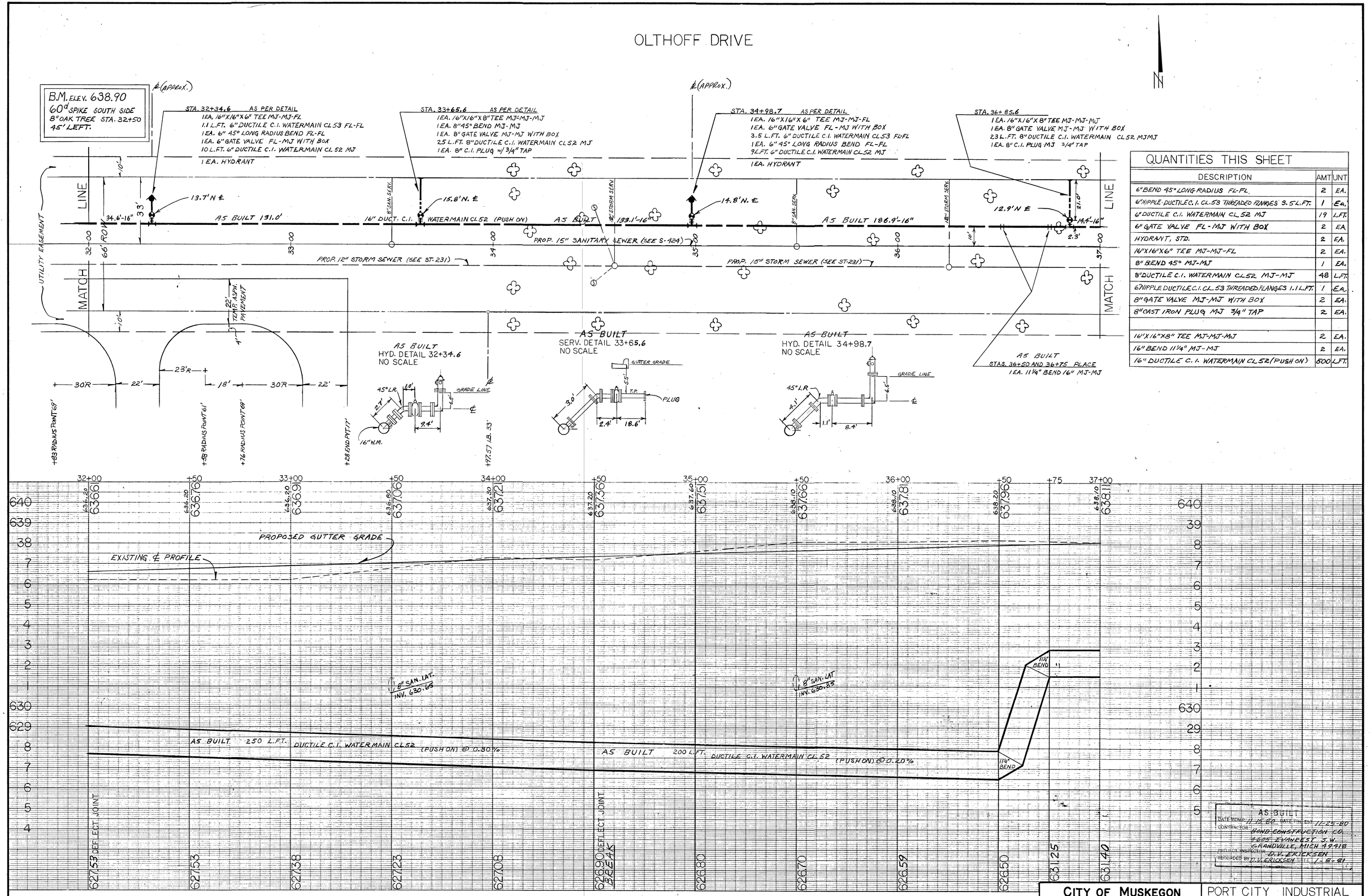


AS-BUILT
MP 11-15-80 DATE FIN EST 11-25-80
FOR BOND CONSTRUCTION CO.
4608 E. VANRIEST S.W.
GRANDVILLE, MICH. 49418
INSPECTOR D.V. ERICKSEN
DRAWN BY D.V. ERICKSEN DATE 1-7-81

STATE OF MICH. CHARLES E. HOOK ENGINEER NO. 10357 REGISTERED PROFESSIONAL ENGINEER

CITY OF MUSKEGON OFFICE OF THE CITY ENGINEER					PORT CITY INDUSTRIAL CENTER NO. 6	
Drawn D.V. ERICKSEN	2-80	Revision		Survey C.A.S.	12-79	W-454
Checked	3-14-80	Revision		As-Built D.V.E	1-81	Project No.
Approved		Revision		Scale H. 1"=20' V 1"=2		Sheet No. 1 of 6

OLTHOFF DRIVE



QUANTITIES THIS SHEET

DESCRIPTION	AMT	UNT
6" BEND 45° LONG RADIUS FL-FL	2	EA.
6" NIPPLE DUCTILE C.I. CL. 53 THREADED FLANGES 3.5' L.FT.	1	EA.
6" DUCTILE C.I. WATERMAIN CL 52 MJ	19	L.FT.
6" GATE VALVE FL-MJ WITH BOX	2	EA.
HYDRANT, STD.	2	EA.
16"X16"X6" TEE MJ-MJ-FL	2	EA.
8" BEND 45° MJ-MJ	1	EA.
8" DUCTILE C.I. WATERMAIN CL 52 MJ-MJ	48	L.FT.
6" NIPPLE DUCTILE C.I. CL. 53 THREADED FLANGES 1.1 L.FT.	1	EA.
8" GATE VALVE MJ-MJ WITH BOX	2	EA.
8" CAST IRON PLUG MJ 3/4" TAP	2	EA.
16"X16"X8" TEE MJ-MJ-MJ	2	EA.
16" BEND 11¼° MJ-MJ	2	EA.
16" DUCTILE C.I. WATERMAIN CL 52 (PUSH ON)	500	L.FT.

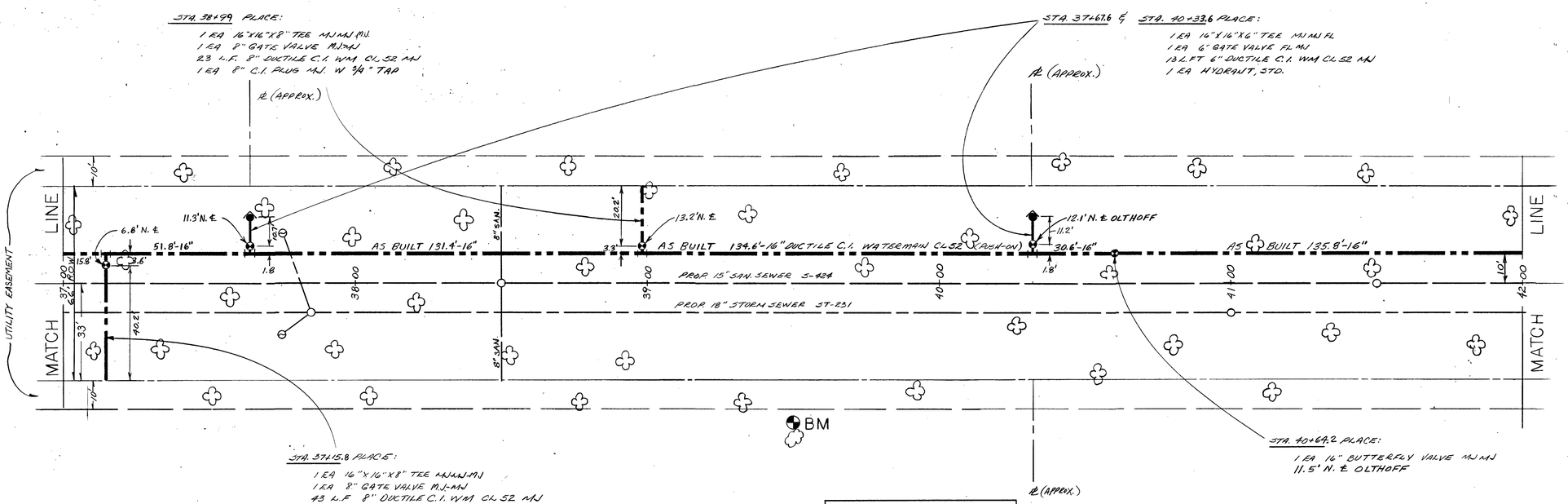
CITY OF MUSKEGON
OFFICE OF THE CITY ENGINEER

PORT CITY INDUSTRIAL CENTER NO. 6

Drawn	2-80	Revision	AGS	3-14-80	Survey	SCOTT	12-79
Checked	3-14-80	Revision			As-Built	D.V.E.	1-81
Approved		Revision			Scale	H-1"-20' V-1"-2'	

Project No. W-454
Sheet No. 2 of 6

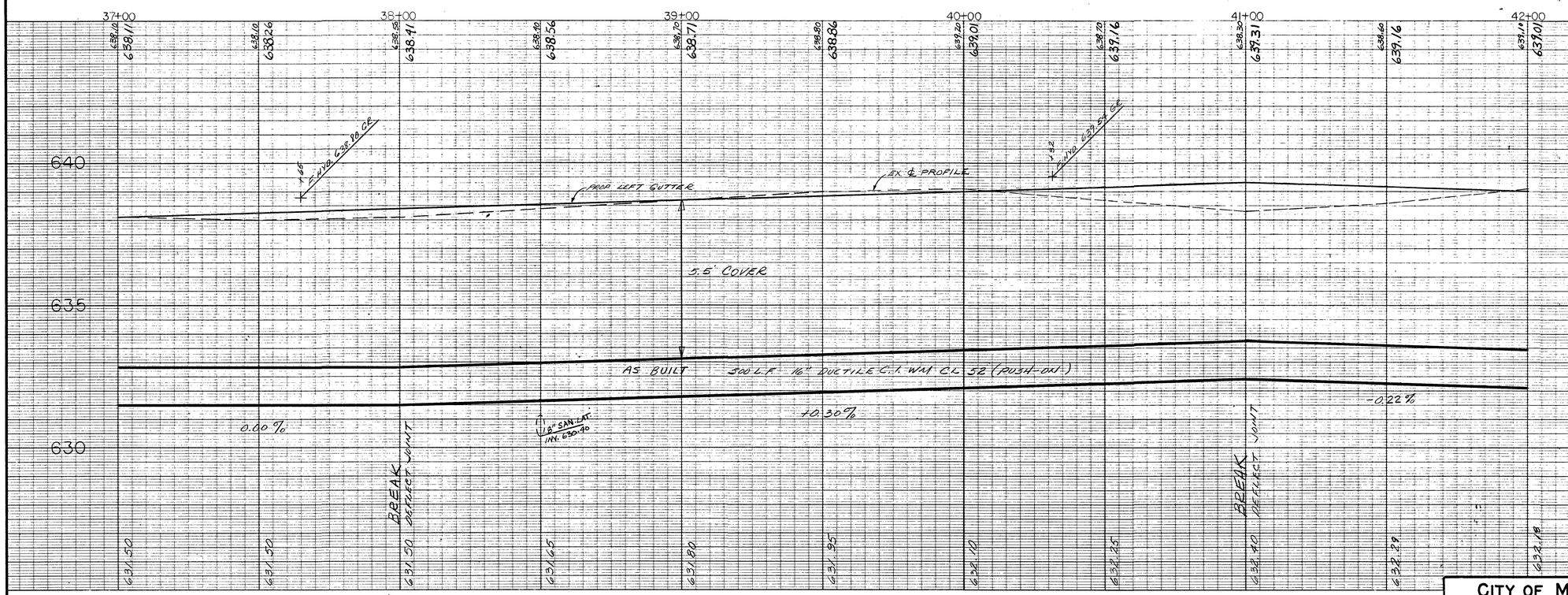
OLTHOFF DRIVE



BM 640.22 60d SPIKE
N. SIDE 10 OAK TREE
STA 39+50 50' RIGHT

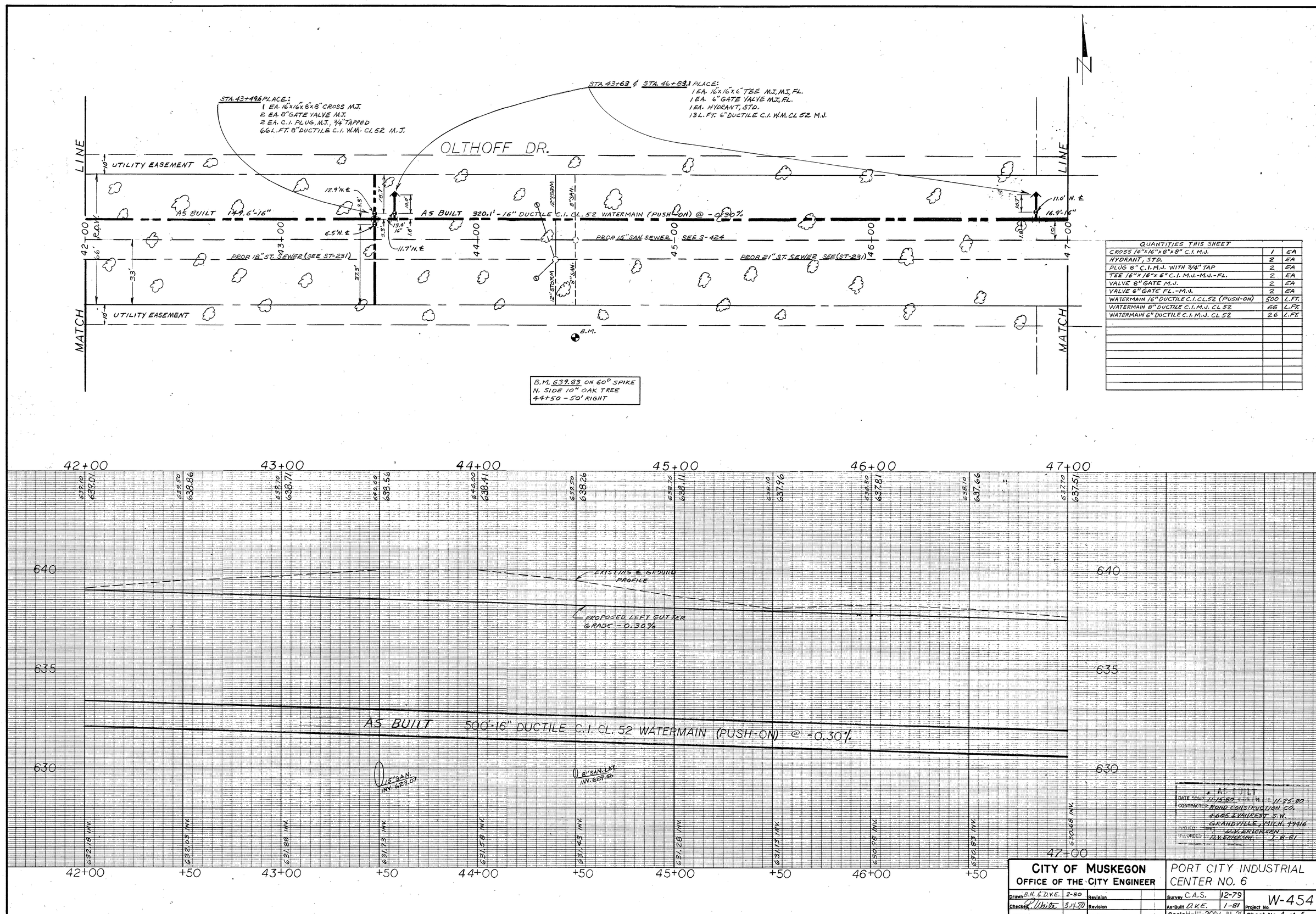
QUANTITIES THIS SHEET

ITEM	QUANT	UNIT
HYDRANT, STD.	2	EA
PLUG, 8" C.I. MJ W 3/4" TAP	2	EA
TEE, 16"X16"X6" MJ MJ FL	2	EA
TEE, 16"X16"X8" MJ MJ MJ	2	EA
VALVE, 6" GATE FL MJ	2	EA
VALVE, 8" GATE MJ-MJ	2	EA
WATERMAIN 6" DUCTILE C.I. CL-52 MJ	26	L.F.
WATERMAIN 8" DUCTILE C.I. CL 52 MJ	66	L.F.
WATERMAIN 16" DUCTILE C.I. CL-52	500	L.F.
VALVE 16" BUTTERFLY VALVE MJ MJ	1	EA



AS-BUILT
DATE COMP. 11-15-80 DATE FIN. INT. 11-25-80
CONTRACTOR GRAND CONSTRUCTION CO.
4205 IVANREST S.W.
GRANDVILLE, MICH. 49418
PROJECT INSPECTOR D.W. ERICKSEN
RECORDED BY D.W. ERICKSEN DATE 1-8-81

CITY OF MUSKEGON OFFICE OF THE CITY ENGINEER							PORT CITY INDUSTRIAL CENTER NO. 6	
Drawn W.P.	2-80	Revision AGS	3-14-80	Survey CAS	12-79		W-454	
Checked	3-4-80	Revision		As-Built D.V.E	1-81		Project No.	
Approved		Revision		Scale 1"=20' V-1"=2'			Sheet No. 3 of 6	



QUANTITIES THIS SHEET		
CROSS 16"x16"x8"x8" C.I. M.J.	1	EA
HYDRANT, STD.	2	EA
PLUG 8" C.I. M.J. WITH 3/4" TAP	2	EA
TEE 16"x16"x6" C.I. M.J.-M.J.-FL.	2	EA
VALVE 8" GATE M.J.	2	EA
VALVE 6" GATE FL.-M.J.	2	EA
WATERMAIN 16" DUCTILE C.I. CL. 52 (PUSH-ON)	500	L.FT.
WATERMAIN 8" DUCTILE C.I. M.J. CL 52	66	L.FT.
WATERMAIN 6" DUCTILE C.I. M.J. CL 52	26	L.FT.

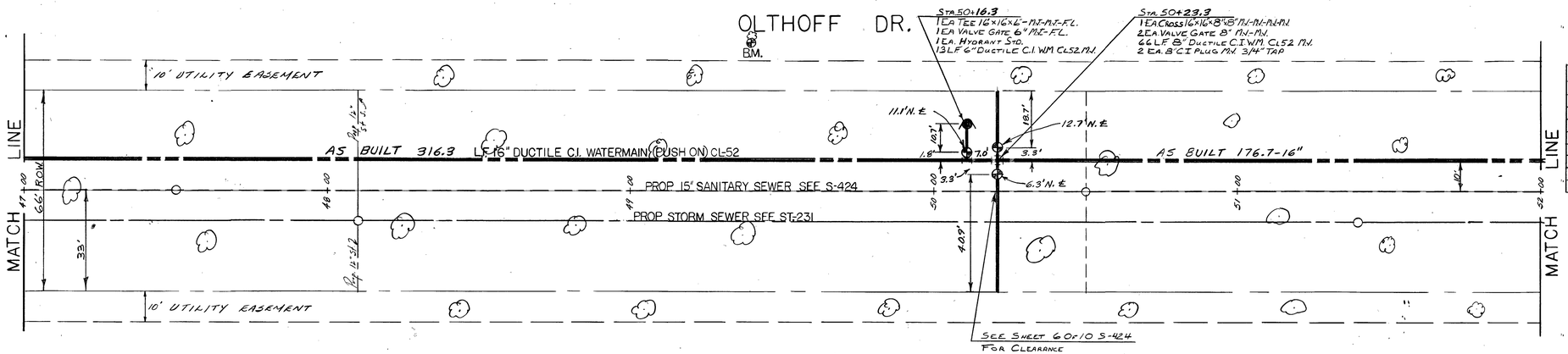
A AS BUILT
DATE COMP. 1-15-80 N. 11-25-80
CONTRACTOR BOND CONSTRUCTION CO.
4605 IVANREST S.W.
GRANDVILLE, MICH. 49416
PROJECT ENGR. D.VIZRIERSEN
RECORDED D.V. EDGERSON 1-8-81

CITY OF MUSKEGON
OFFICE OF THE CITY ENGINEER

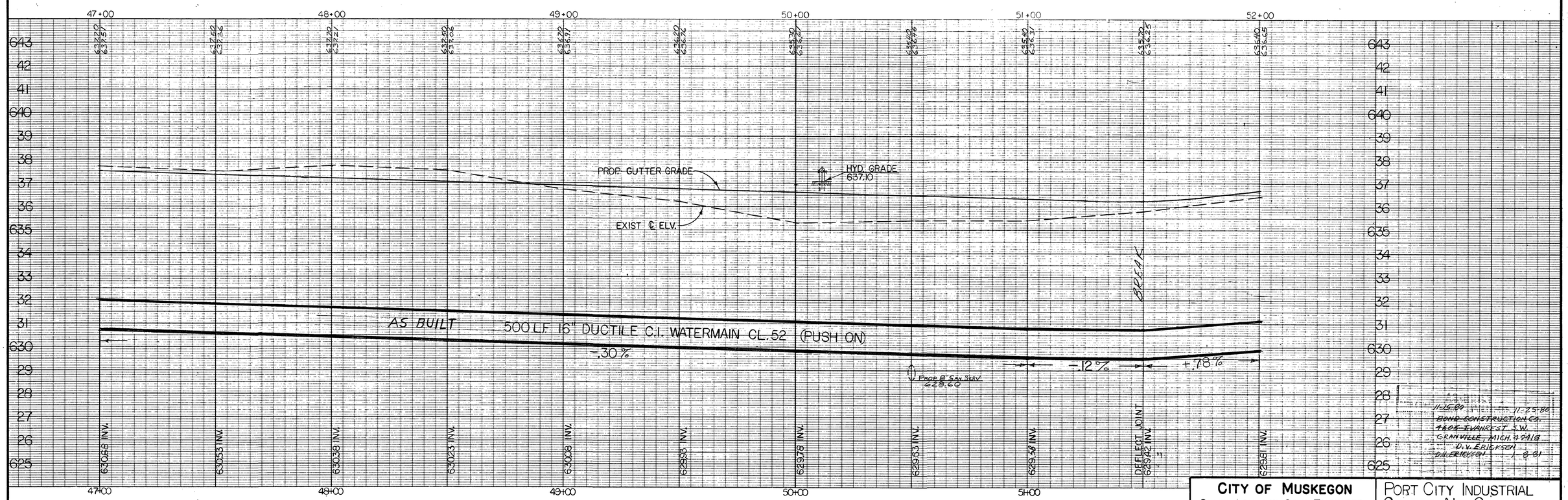
PORT CITY INDUSTRIAL CENTER NO. 6

Drawn B.H. & D.V.E.	2-80	Revision	Survey C.A.S.	12-79	W-454
Checked	3-14-80	Revision	As-Built D.V.E.	1-81	Project No.
Approved		Revision	Scale H-1"=20' V-1"=2'		Sheet No. 4 of 6

B.M. 638.69 60d SPIKE
S.SIDE 10" OAK STA. 49+40
50' LEFT.



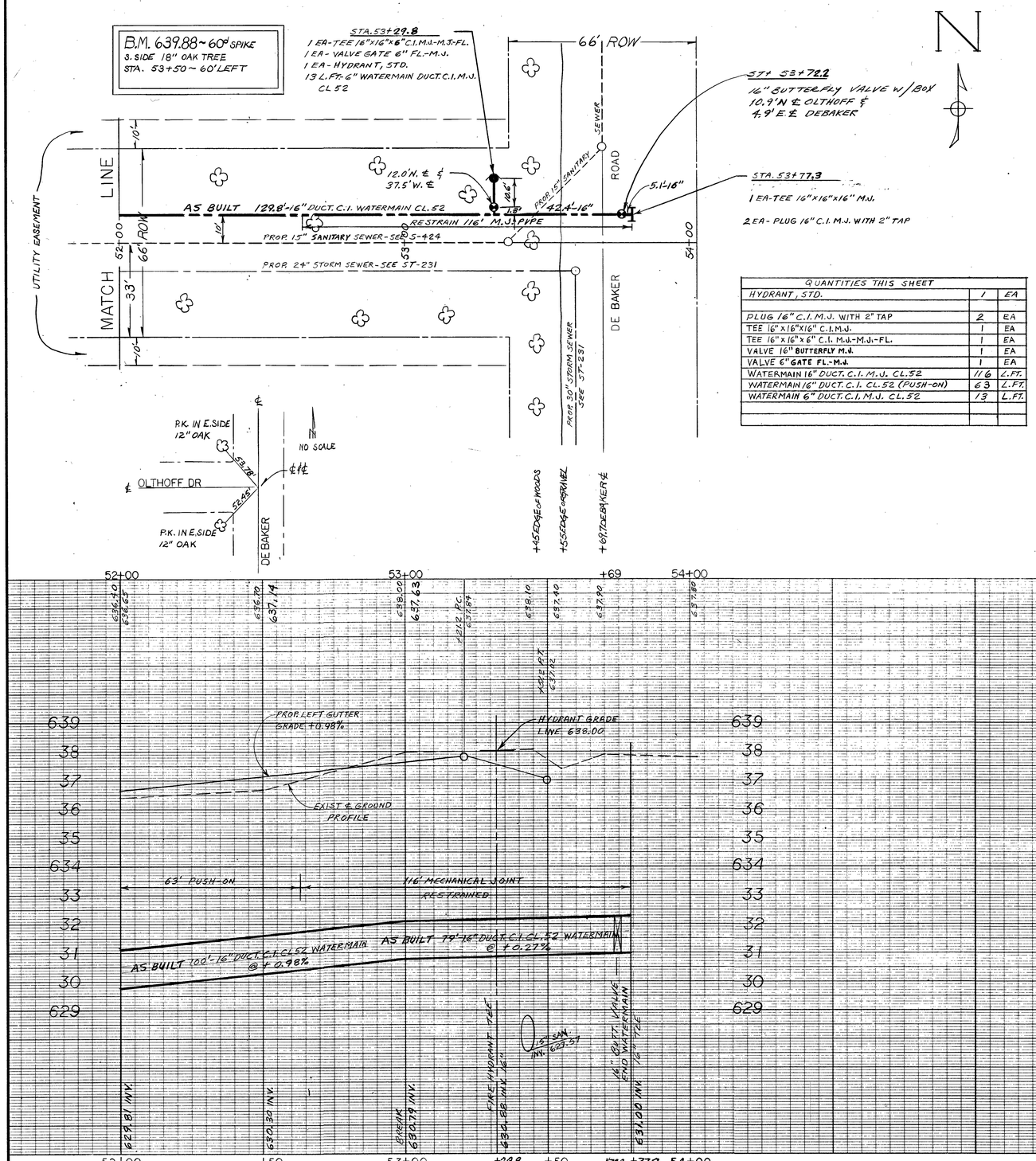
QUANTITIES THIS SHEET		
CROSS 16"x16"x8"x8" M.J.-M.J.-M.J.-M.J.	1	EA.
HYDRANT STD.	1	EA.
PLUG 8" M.J. 3/4" TAP	2	EA.
TEE 16"x16"x6" M.J.-M.J.-F.L.	1	EA.
VALVE GATE 6" M.J.-F.L.	1	EA.
VALVE GATE 8" M.J.-M.J.	2	EA.
WATERMAIN DUCTILE C.I. 6" CL. 52 M.J.	13	L.F.
WATERMAIN DUCTILE C.I. 8" CL-52 M.J.	66	L.F.
WATERMAIN DUCTILE C.I. 16" CL-52 PUSH ON	500	L.F.



11-26-80 11-25-80
BOND CONSTRUCTION CO.
1605 EVANREST S.W.
GRANVILLE, MICH. 49418
D.V. ERICKSEN
D.V. ERICKSON 1-8-81

CITY OF MUSKEGON OFFICE OF THE CITY ENGINEER				PORT CITY INDUSTRIAL CENTER NO. 6		
Drawn C.A.S.	2-80	Revision		Survey C.A.S.	12-79	W-454
Checked	3-14-81	Revision		As-Built D.V.E.	1-81	Project No.
Approved		Revision		Scale H. 1"=20'	V. 1"=2'	Sheet No. 5 of 6

OLTHOFF DRIVE



QUANTITIES THIS SHEET		
HYDRANT, STD.	1	EA
PLUG 16" C.I.M.J. WITH 2" TAP	2	EA
TEE 16"x16"x16" C.I.M.J.	1	EA
TEE 16"x16"x6" C.I. M.J.-M.J.-FL.	1	EA
VALVE 16" BUTTERFLY M.J.	1	EA
VALVE 6" GATE FL.-M.J.	1	EA
WATERMAIN 16" DUCT. C.I. M.J. CL.52	116	L.FT.
WATERMAIN 16" DUCT. C.I. CL.52 (PUSH-ON)	63	L.FT.
WATERMAIN 6" DUCT. C.I. M.J. CL.52	13	L.FT.

11-5-80 11-25-80
DAVID CONSTRUCTION CO.
4605 IVANREST S.W.
GRANDVILLE, MICH 49418
D.V. ERICKSEN
D.V. ERICKSEN 1-8-81

CITY OF MUSKEGON
OFFICE OF THE CITY ENGINEER

PORT CITY INDUSTRIAL CENTER NO. 6

Drawn D.V. ERICKSEN	2-80	Revision		Survey C.A.S.	12-79	Project No.	W-454
Checked	3-14-80	Revision		As-Built D.V.E.	1-81		
Approved		Revision		Scale H-1"=20' V-1"=2'		Sheet No. 6 of 6	

H – 1169

B.M. 636.85 B. Bolt Under E. in East Jordan on Hyd. Sta. 26+58 Left

+97 CONC. MONT 33 (SAVE)

27+00 LT. & RT. - CONSTRUCT STD. CATCH BASINS PLACE C.B. CASTING E.J. #7045.

10' UTILITY EASEMENT

+22.5 10" S. VALVE 52' ADJUST

+41.5 4" O. VALVE 11.2' ADJUST

+41.5 4" H.D. 24.1'

+51.4 18" BUTT. VALVE 90' ADJUST

℄ (APPROX.)

OLTHOFF DRIVE

STA. 30+52 - REMOVE STOCKPILED TOPSOIL AND PLACE BACK OF CURB LINE (AS INCIDENTAL) FROM STA. 29+00 TO 33+00 RT. OR AS ENGINEER MAY DIRECT

31+00 LT. & RT. - CONSTRUCT STD. CATCH BASINS PLACE C.B. CASTING E.J. #7045.

N

REMOVE & REPLACE 9' CURB & GUTTER

AS BUILT 28.8'-10" C-14X CL III

66' R.O.W.

EXIST. PAVE. 31.28'

+88 SAW CUT

27+00

EX. 12" STORM

AS BUILT 12.2'-10" C-14X CL III

PROP. 12" STORM SEWER - SEE ST-231

EX. 18" D.I. W.M.

EX. 12" V.I.T. SAN.

28+00

29+00

PROP. 16" WATERMAIN SEE W-454

PROP. 12" SANITARY SEWER SEE S-424

30+00

31+00

AS BUILT 28.0'-10" C-14X CL III

AS BUILT 11.2'-10" C-14X CL III

PROP. 12" STORM SEWER SEE ST-231

32+00

MATCH LINE

PHASE I BIT. REMOVAL

REMOVE & REPLACE 95 L.F. CURB & GUTTER

10' UTILITY EASEMENT

PHASE II BIT. REMOVAL

EXISTING TEMPORARY BITUMINOUS ROADWAY

REMOVE BITUMINOUS SURFACE 1396 SQ.YD. FROM STA. 26+00 TO 33+28 THE SURFACE SHALL BE REMOVED IN ACCORDANCE WITH PHASE I & II INSTRUCTIONS.

+88 SAN. M.H. 12' ADJUST

+36 ST. M.H. 12' ADJUST

+37 4" O. VALVE

+37 CONC. MONT. 28' (SAVE)

+31 SAN. M.H. 12' ADJUST

KEENE CORP.

KAYDON

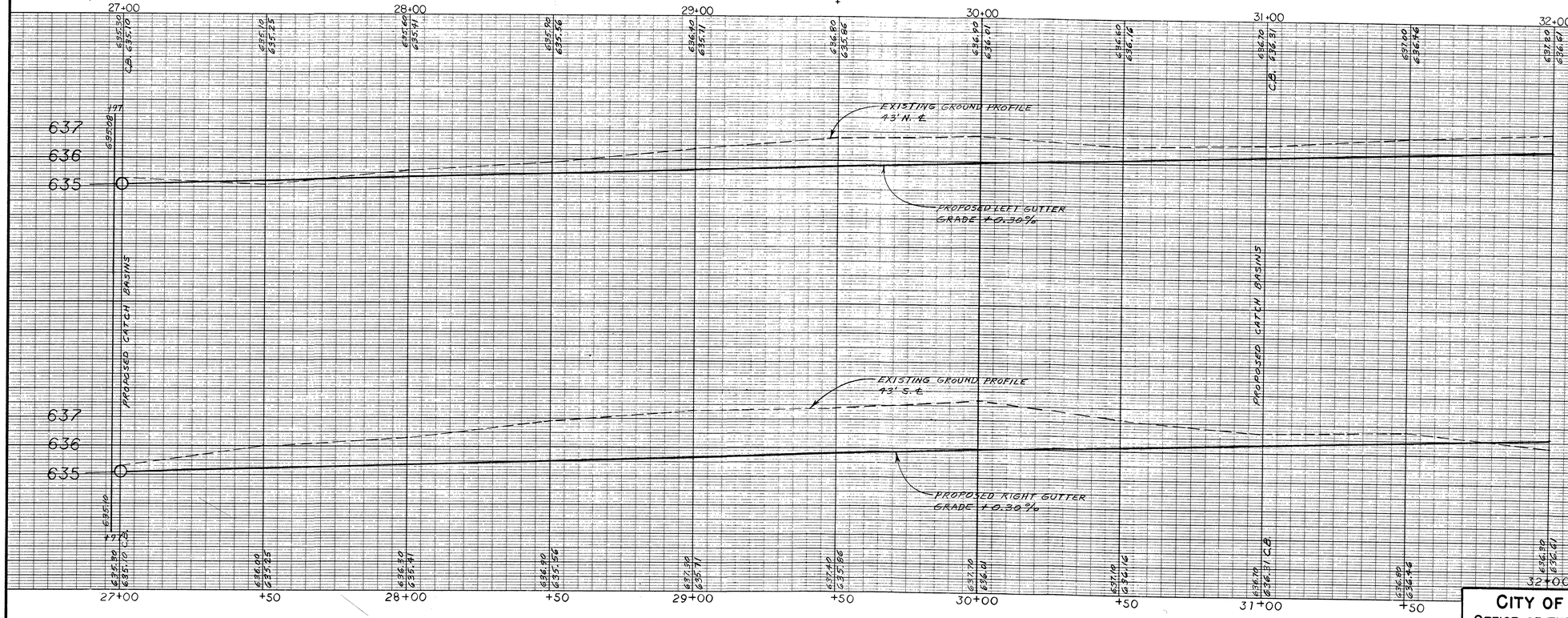
NOTE: THE NORTH UTILITY EASEMENT CONTAINS LIVE UTILITIES. ALL LOCATIONS SHOWN ARE APPROXIMATE. PLEASE CONTACT MISS DIG FOR SPECIFIC LOCATIONS.

NOTES:

1) THE EXISTING 22' TEMPORARY BITUMINOUS SURFACE PAVEMENT SHALL BE REMOVED IN TWO (2) PHASES TO FACILITATE VEHICULAR ACCESS TO THE KEENE CORP. PROPERTY AT ALL TIMES.
2) PHASE I. THE CONTRACTOR SHALL CUT AND REMOVE APPROXIMATELY A 4' WIDE SECTION OF PAVEMENT FROM STATION 26+97 RT. TO 33+28 RT IN ORDER TO CONSTRUCT THE CURB & GUTTER. A MINIMUM OF ONE LANE TRAFFIC SHALL BE MAINTAINED.
3) PHASE II. AFTER THE NEW ROADWAY AND DRIVEWAY APPROACH ARE OPEN TO TRAFFIC, THE REMAINDER OF THE TEMPORARY PAVEMENT MAY BE REMOVED AND THE CURB & GUTTER FROM STATION 26+02 RT TO 26+97 RT MAY BE REMOVED AND REPLACED.

QUANTITIES THIS SHEET		
BIT. BASE COURSE @ 550#/S.YD.	517	TON
BIT. WEARING COURSE 31A @ 110#/S.YD.	108	TON
CATCH BASIN, STD.	4	EA
CATCH BASIN CASTING E.J. #7045	4	EA
CONC. CURB & GUTTER, STD.	1110	L.FT.
EXCAVATION SEE SHEET No. 6		
REMOVE ASPHALT PAVEMENT	1396	S.YD.
REMOVE CURB & GUTTER	104	L.FT.
ADJUST MANHOLE CASTING	2	EA
STORM SEWER 10" C-14X CL III	81	L.FT.
BIT. LEVELING COURSE 25A @ 165#/S.YD.	155	TON

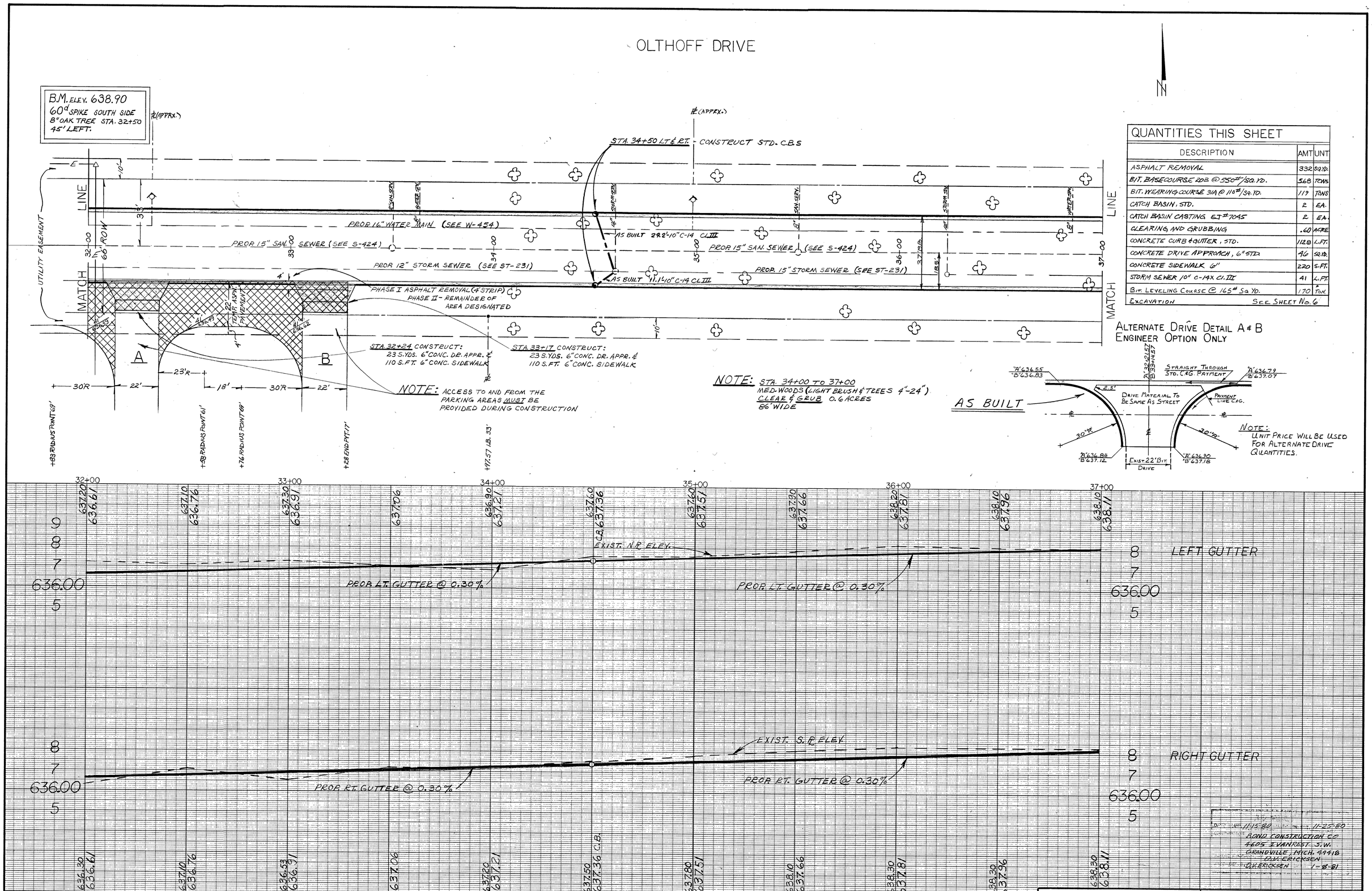
4.) SAWCUTS TO BE CONSIDERED INCIDENTAL.
5.) ADJUSTMENT OF WATER VALVE BOXES TO BE INCIDENTAL.
6.) BOND COAT & PRIME COAT TO BE INCIDENTAL TO THE PAVEMENT.
7.) CONC MONUMENTS AND PROPERTY BARS WILL BE PROTECTED. IF DISTURBED THAY WILL BE REPLACED BY A REGISTERED LAND SURVEYOR AT THE CONTRACTORS COST.



AS-BUILT
11-15-80 DATE 11-25-80
BOND CONSTRUCTION CO.
4605 IVANREST S.W.
GRANDVILLE, MICH 49418
D.V. ERICKSEN
D.V. ERICKSEN 1-8-81

CITY OF MUSKEGON OFFICE OF THE CITY ENGINEER					OLTHOFF DRIVE	
Drawn D.V. ERICKSEN	1-80	Revision		Survey C.A.S.	12-79	Project No. H-1769
Checked		Revision		As-Built D.V.E.	1-81	
Approved		Revision		Scale 1" = 20'		Sheet No. 1 of 6

OLTHOFF DRIVE



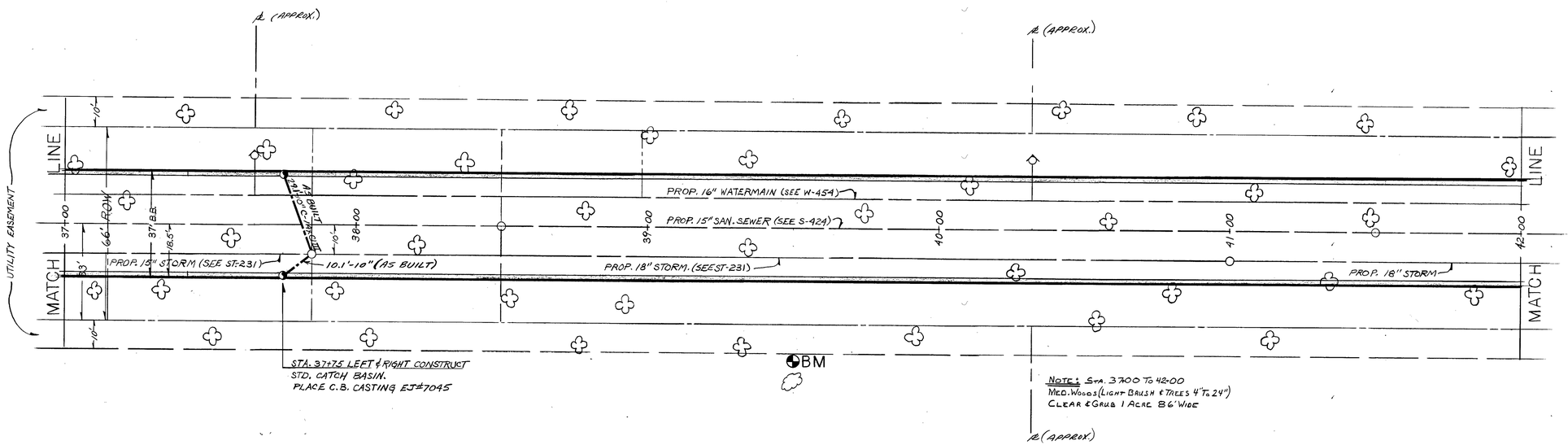
QUANTITIES THIS SHEET

DESCRIPTION	AMT	UNT
ASPHALT REMOVAL	332	SQ.YD.
BIT. BASECOURSE 20B @ 550#/SQ.YD.	568	TONS
BIT. WEARING COURSE 3IA @ 110#/SQ.YD.	117	TONS
CATCH BASIN, STD.	2	EA.
CATCH BASIN CASTING EJ #1045	2	EA.
CLEARING AND GRUBBING	.60	ACRE
CONCRETE CURB & GUTTER, STD.	128	L.FT.
CONCRETE DRIVE APPROACH, 6" STD.	46	SQ.YD.
CONCRETE SIDEWALK 6"	220	S.FT.
STORM SEWER 10" C-14X CL. III	41	L.FT.
BIT. LEVELING COURSE @ 165# SQ YD.	170	TON
EXCAVATION	SEE SHEET No. 6	

11-5-80 11-25-80
BOND CONSTRUCTION CO
4605 IVANREST S.W.
GRANDVILLE, MICH. 49418
D.V. ERICKSEN
D.V. ERICKSEN 1-8-81

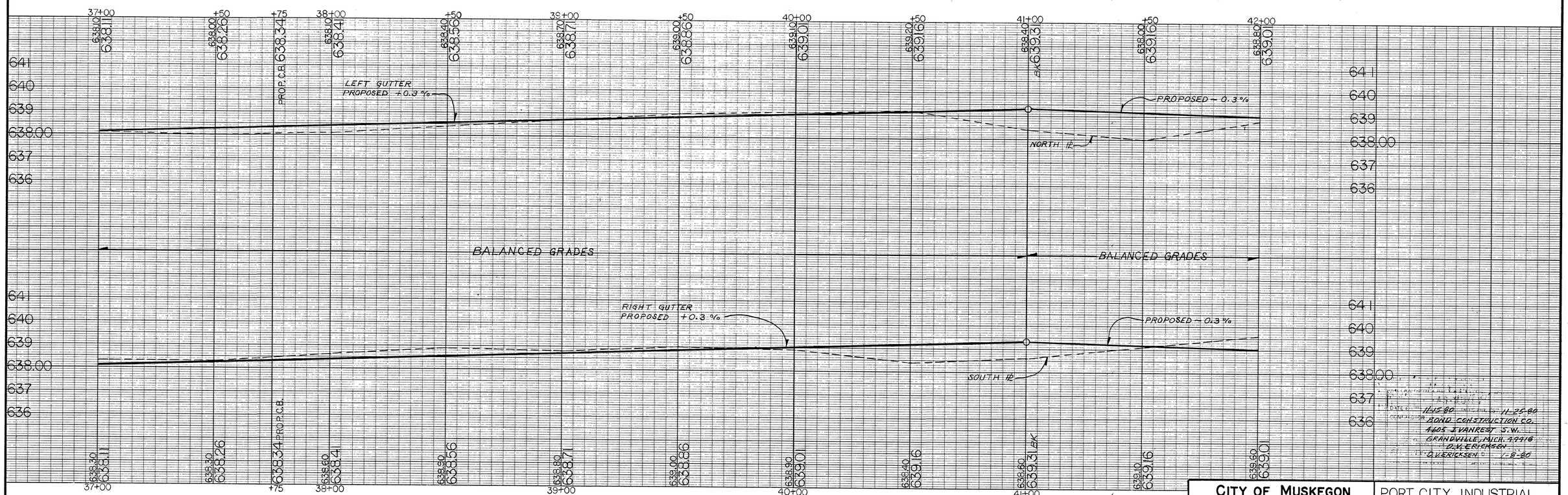
CITY OF MUSKEGON OFFICE OF THE CITY ENGINEER				OLTHOFF DRIVE		
Drawn B.H.	1-80	Revision		Survey SCOTT	12-79	H-1169
Checked		Revision		As-Built D.V.E.	1-81	Project No.
Approved		Revision		Scale 1"= 20'		Sheet No. 2 of 6

OLTHOFF DRIVE



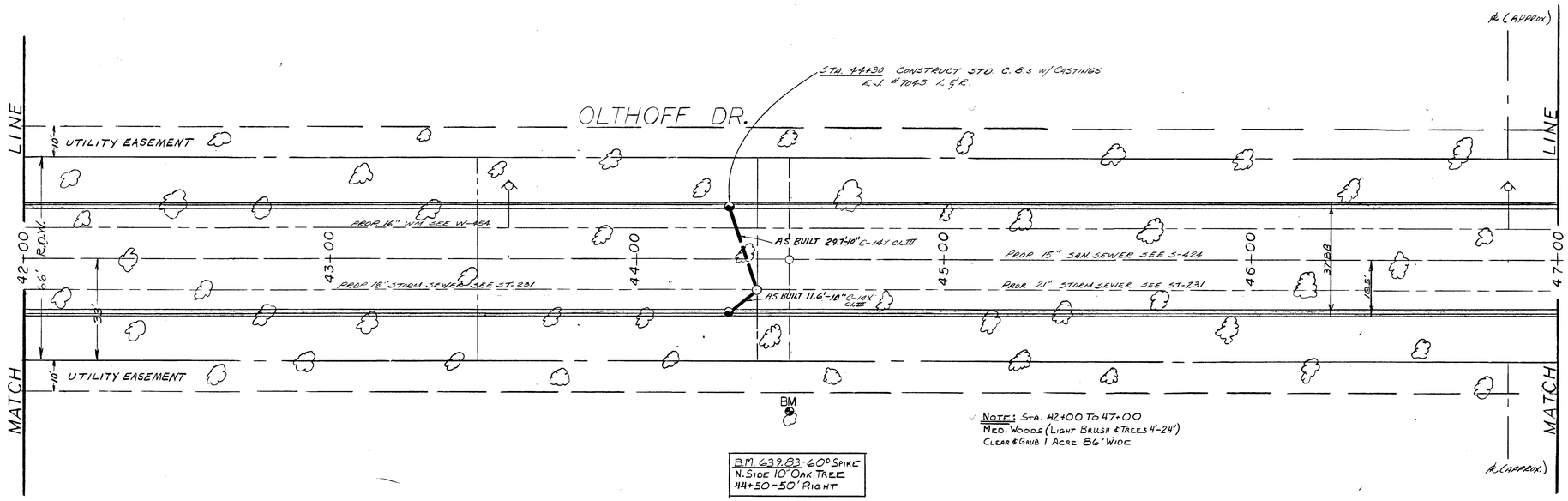
QUANTITIES THIS SHEET		
DESCRIPTION	AMOUNT	
BITUMINOUS BASE COURSE @ 550#/SQ. YD.	504	TONS
BITUMINOUS WEARING COURSE @ 110#/SQ. YD.	106	TONS
CATCH BASIN STD.	2	EA.
CATCH BASIN CASTING EJ#7045	2	EA.
CONCRETE CURB & GUTTER, STD.	1000	L.FT.
CLEARING & GRUBBING	1	ACRE
EXCAVATION SEE SHEET No. 6		
STORM SEWER 10" C-14X CI. III	42	L.FT.
BITUMINOUS LEVELING COURSE @ 165#/SQ. YD.	151	TON

B.M. 640.22 ~ 60°
SPIKE N. SIDE 10" OAK
TREE. STA. 39+50
50' RIGHT



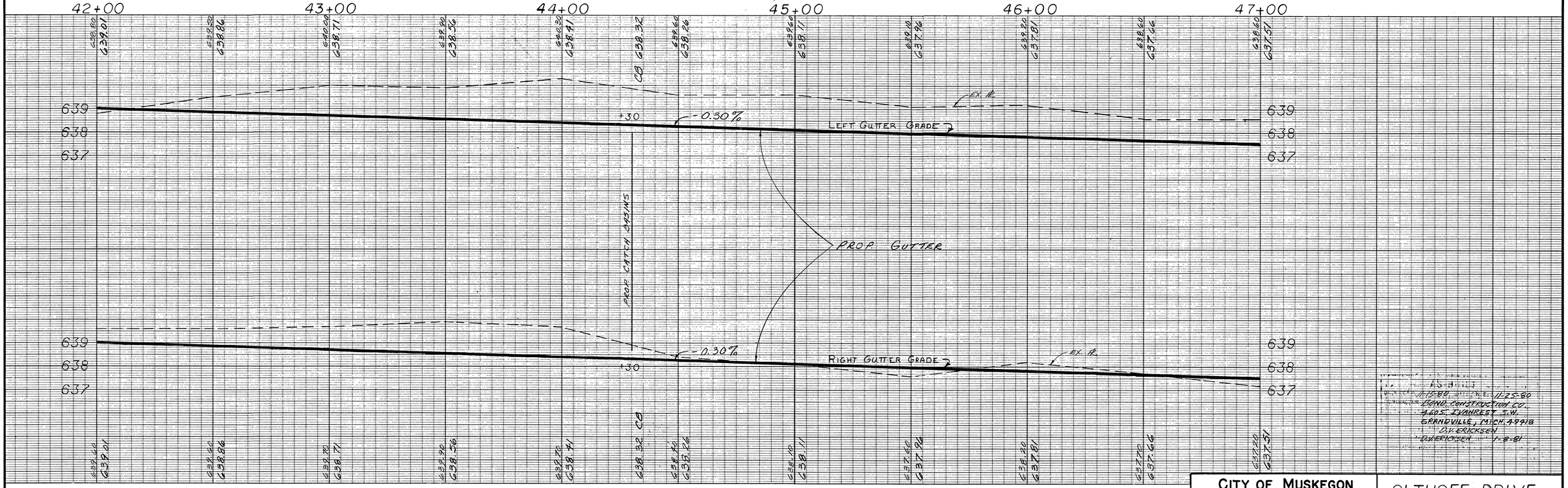
DATE 11-15-80 11-25-80
CONTRACTOR ROND CONSTRUCTION CO.
4605 IVANREST S.W.
GRANDVILLE, MICH. 49418
D.V. ERICKSEN
D.V. ERICKSEN 1-8-80

CITY OF MUSKEGON OFFICE OF THE CITY ENGINEER						PORT CITY INDUSTRIAL CENTER NO. 6	
Drawn	1-80	Revision		Survey SCOTT	12-79	H-1169	
Checked		Revision		As-Built D.V.E.	1-81	Project No.	
Approved		Revision		Scale 1" = 20'		Sheet No. 3 of 6	



QUANTITIES THIS SHEET

ITEM	QUANT	UNIT
BIT. WEARING COURSE-31A @ 110#/S.Y.	106	TONS
BIT. BASE COURSE-20B @ 550#/S.Y.	504	TONS
CATCH BASIN, STD.	2	EA.
CATCH BASIN CASTING E.J. #7045	2	EA.
CLEARING & GRUBBING	1.0	ACRE
CONC. CURB & GUTTER	1000	L.F.
EXCAVATION SEE SHEET No. 6		
STORM SEWER-10" C-14X CL.III	91	L.F.
BIT. LEVELING COURSE @ 165#/S.Y.	151	TONS



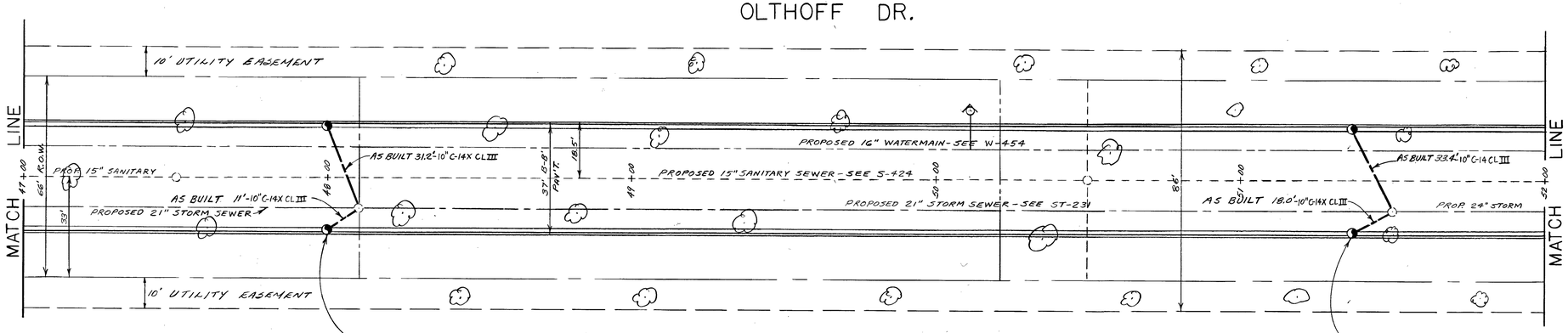
AS BUILT
1-15-80 N.E. 11-25-80
BAND CONSTRUCTION CO.
4605 IVANREST S.W.
GRANDVILLE, MICH. 49418
D.V. ERICKSEN
D.V. ERICKSEN 1-8-81

CITY OF MUSKEGON OFFICE OF THE CITY ENGINEER				OLTHOFF DRIVE	
Drawn W.P.	1-80	Revision		Survey C.A.S. 12-79	H-1769
Checked		Revision		As-Built D.V.E. 1-81	Project No.
Approved		Revision		Scale 1" = 20'	Sheet No. 4 of 6

B.M. 638.69 60d SPIKE
S. SIDE 10" OAK STA. 49+40
50' LEFT.

N

OLTHOFF DR.

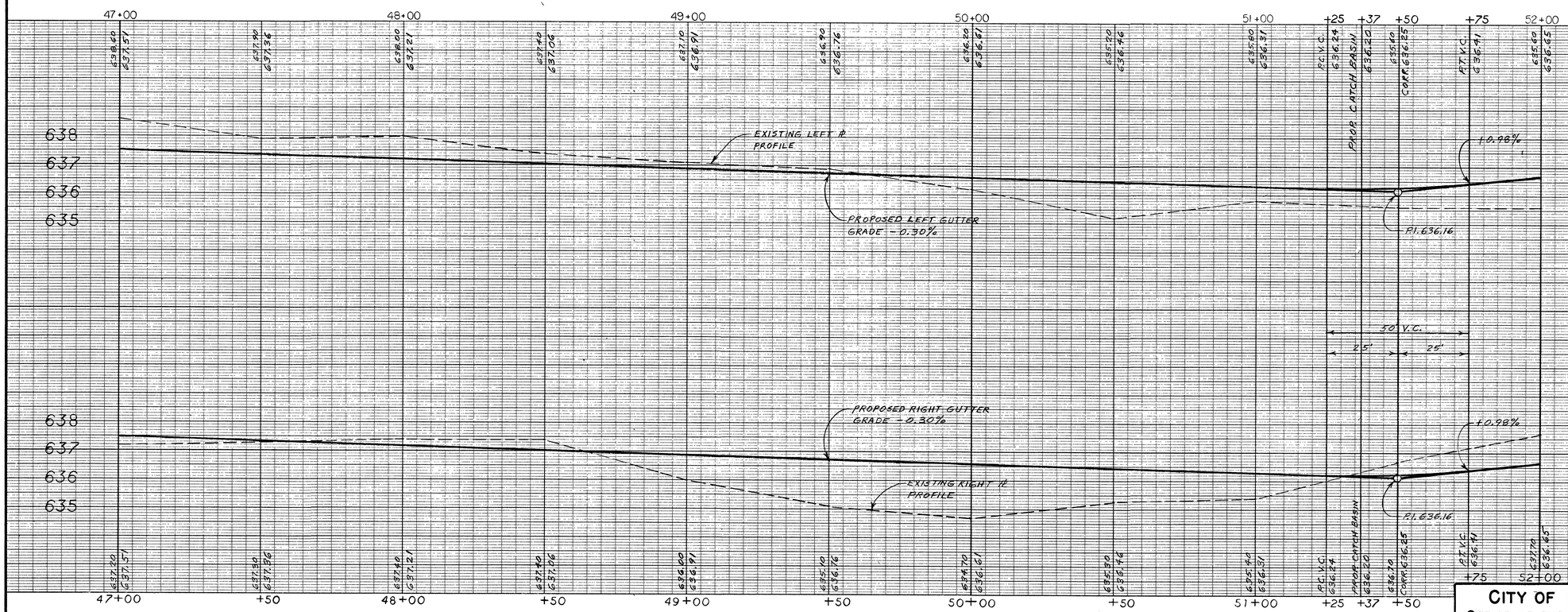


48+00 LT. & RT. - CONSTR. STD. CATCH BASIN. PLACE C.B. CASTING E.J. # 7045.

NOTE: STA. 47+00 TO 52+00
MED. WOODS (LIGHT BRUSH & TREES 4"-24")
CLEAR AND GRUB 1.0 ACRES.
86' WIDE.

51+37 LT. & RT. - CONSTR. STD. CATCH BASIN. PLACE C.B. CASTING E.J. # 7045.

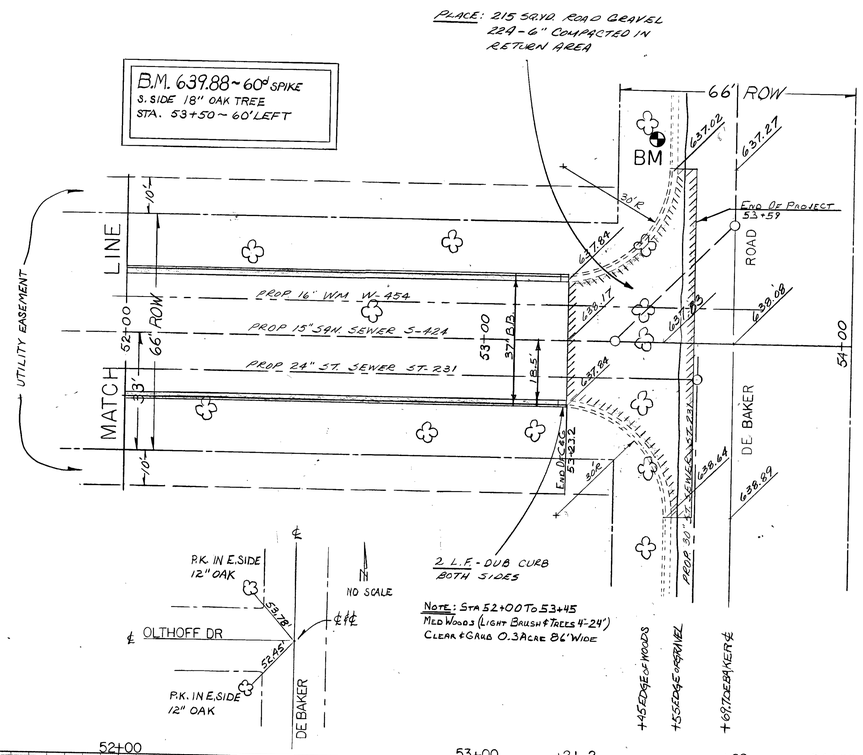
QUANTITIES THIS SHEET		
BIT. BASE COURSE @ 550#/S.YD.	504	TON
BIT. WEARING COURSE 31A @ 110#/S.YD.	106	TON
CATCH BASIN, STD.	4	EA.
CATCH BASIN CASTING E.J.# 7045	4	EA.
CONC. CURB & GUTTER, STD.	1000	L.FT.
EXCAVATION SEE SHEET No. 6		
CLEARING & GRUBBING	1.0	ACRE
STORM SEWER 10" C-14X CL III	87	L.FT.
BIT. LEVELING COURSE @ 165#/S.YD.	151	TON



1-5-80 1-25-80
BAND CONSTRUCTION CO.
1605 IVANREST S.W.
GRANDVILLE, MICH 49418
D.V. ERICKSEN
DVERICKSEN 1-8-81

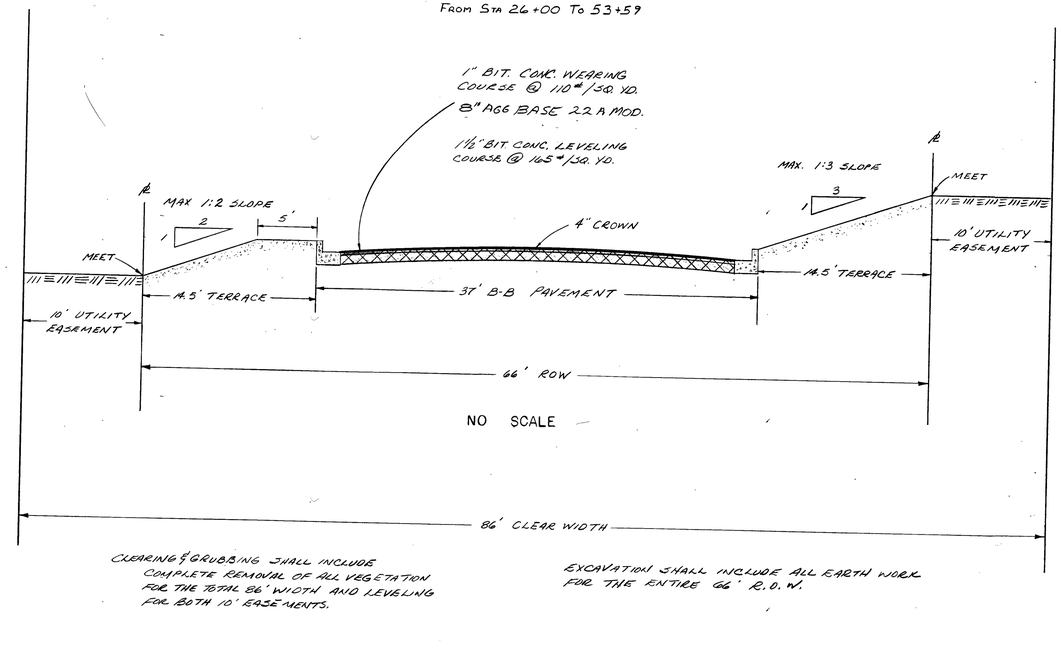
CITY OF MUSKEGON OFFICE OF THE CITY ENGINEER					OLTHOFF DRIVE	
Drawn D.V. ERICKSEN	1-80	Revision		Survey C.A.S.	12-79	Project No. H-1169
Checked		Revision		As-Built D.V.E.	1-81	
Approved		Revision		Scale 1"=20'		Sheet No. 5 of 6

OLTHOFF DRIVE



TYPICAL SECTION

From Sta 26+00 To 53+59

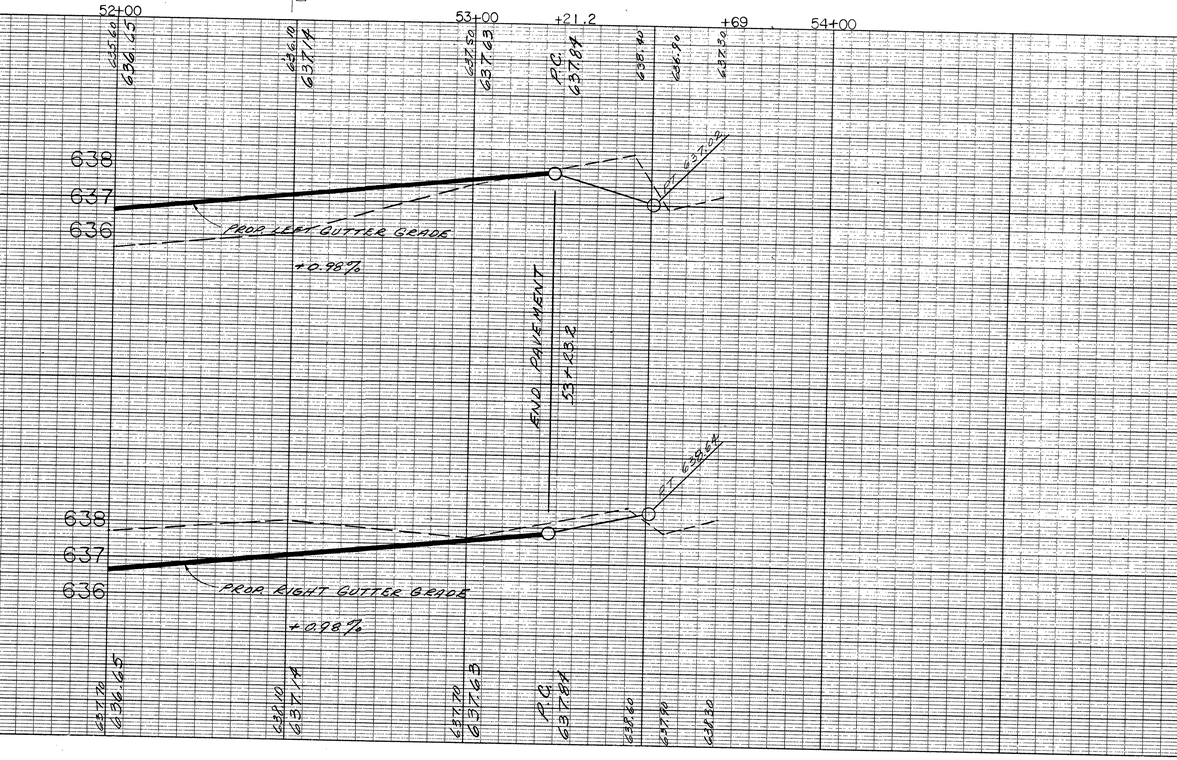


CLEARING & GRUBBING SHALL INCLUDE COMPLETE REMOVAL OF ALL VEGETATION FOR THE TOTAL 86' WIDTH AND LEVELING FOR BOTH 10' EASEMENTS.

EXCAVATION SHALL INCLUDE ALL EARTH WORK FOR THE ENTIRE 66' R.O.W.

QUANTITIES THIS SHEET

ITEM	QUANT	UNIT
BIT. BASE COURSE @ 550#/S.Y.	124	TONS
BIT. WEARING COURSE @ 110#/S.Y.	26	TONS
CONC. CURB & GUTTER, STD.	247	L.F.
EXCAVATION (TOTAL 1-6 SHEETS)	1596	CU.YD. EARTH
CLEARING & GRUBBING	0.3	ACRE
ROAD GRAVEL, 22A-6" COMP.	215	S.Y.
BIT. LEVELING COURSE @ 165#/S.Y.	38	TONS



11-13-80 11-25-80
BOND CONSTRUCTION CO.
4605 IVANREST S.W.
GRANDVILLE, MICH. 49418
D.W. ERICKSEN
D.W. ERICKSEN 1-2-81

CITY OF MUSKEGON
OFFICE OF THE CITY ENGINEER

OLTHOFF DR.

Drawn	W.P.	1-80	Revision	Survey	C.A.S.	12-79	H-1169
Checked			Revision	As-Built	D.W.E.	1-81	Project No.
Approved			Revision	Scale	1"=20'		Sheet No. 6 of 6

PORT CITY INDUSTRIAL CENTER

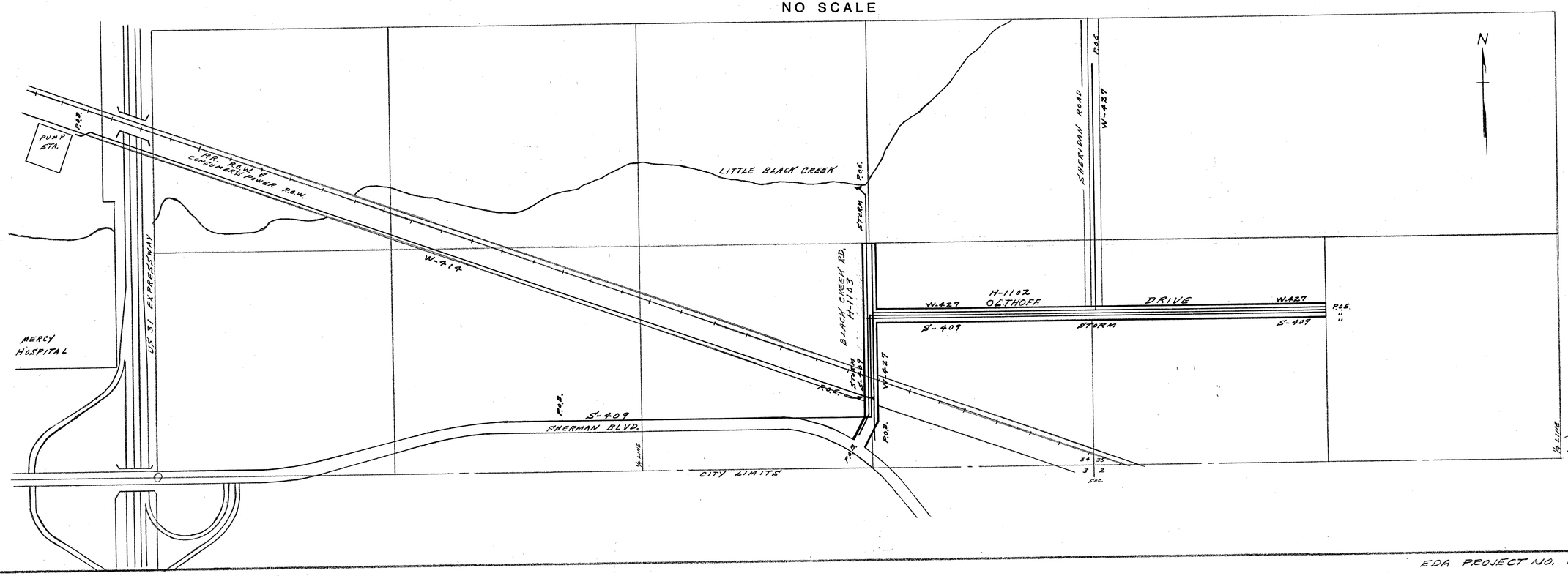
NO. 4 & 5

CITY OF MUSKEGON ENGINEERING DEPT.

MUSKEGON, MICHIGAN

LOCATION MAP

NO SCALE



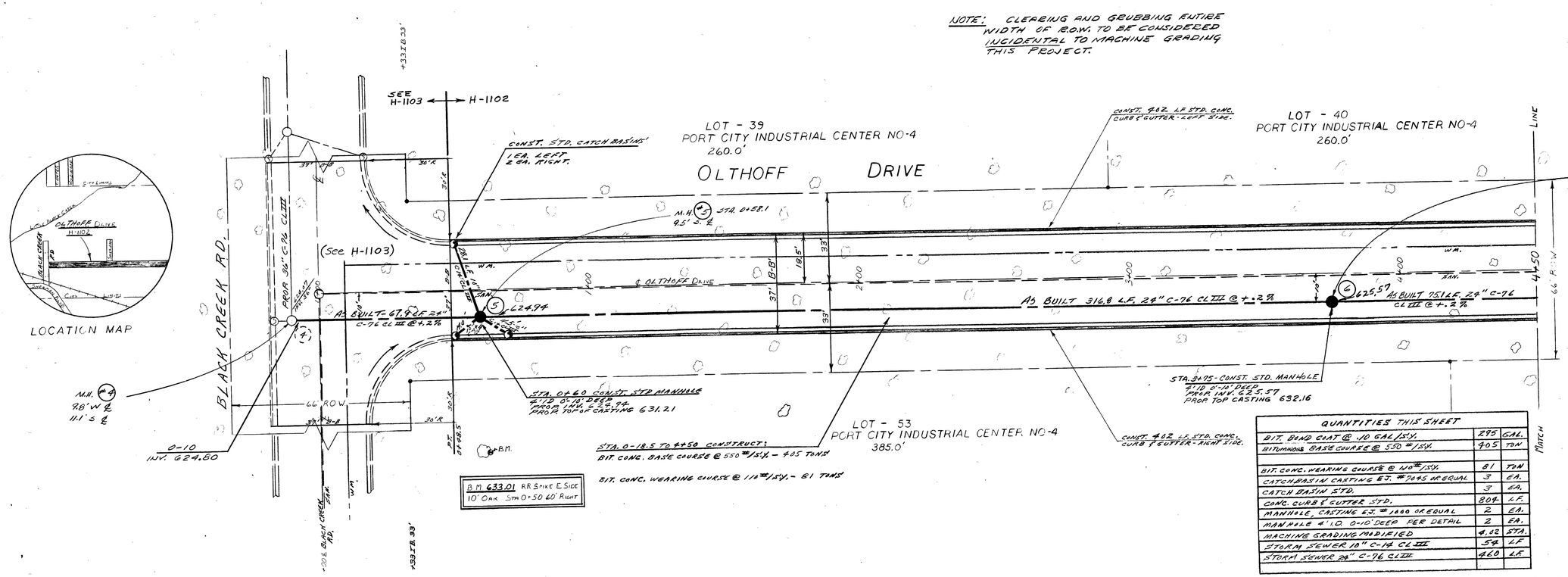
Robert H. Kuhl

STATE OF MICHIGAN
ROBERT H. KUHL
ENGINEER
NO. 25371
REGISTERED PROFESSIONAL ENGINEER

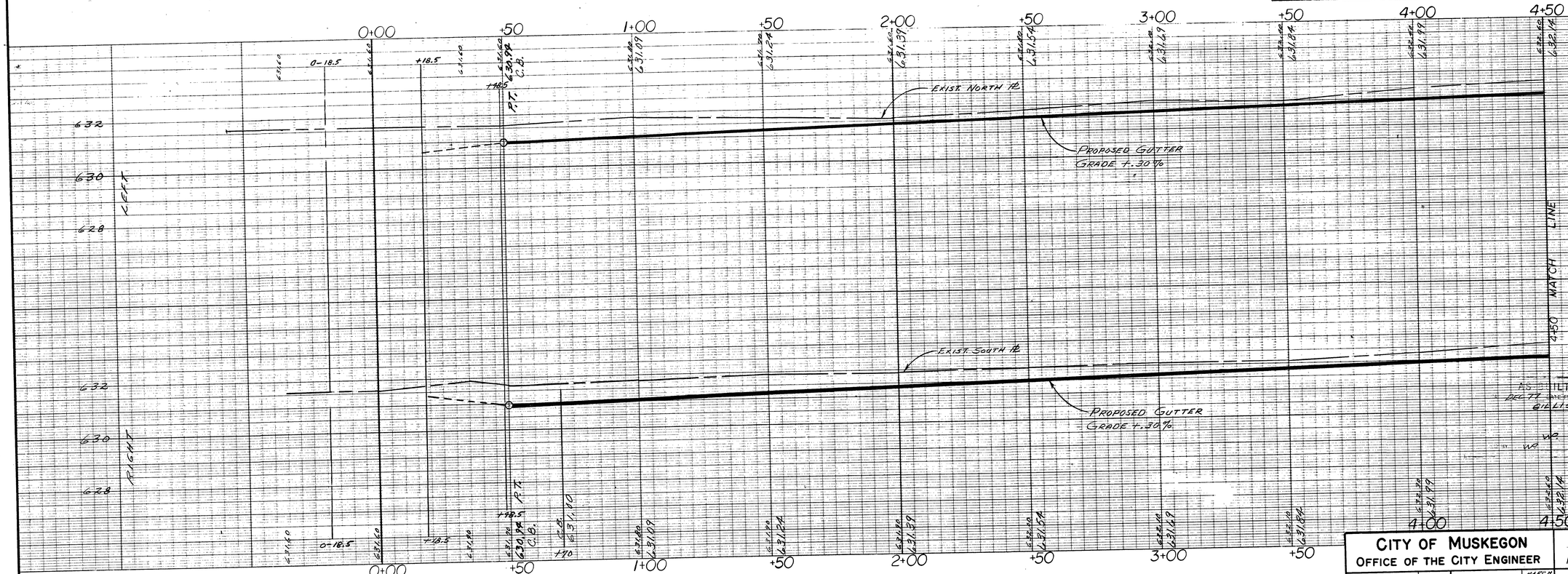
BOLACH

EDA PROJECT NO. 06-01-01240

NOTE: CLEARING AND GRUBBING ENTIRE WIDTH OF R.O.W. TO BE CONSIDERED INCIDENTAL TO MACHINE GRADING THIS PROJECT.

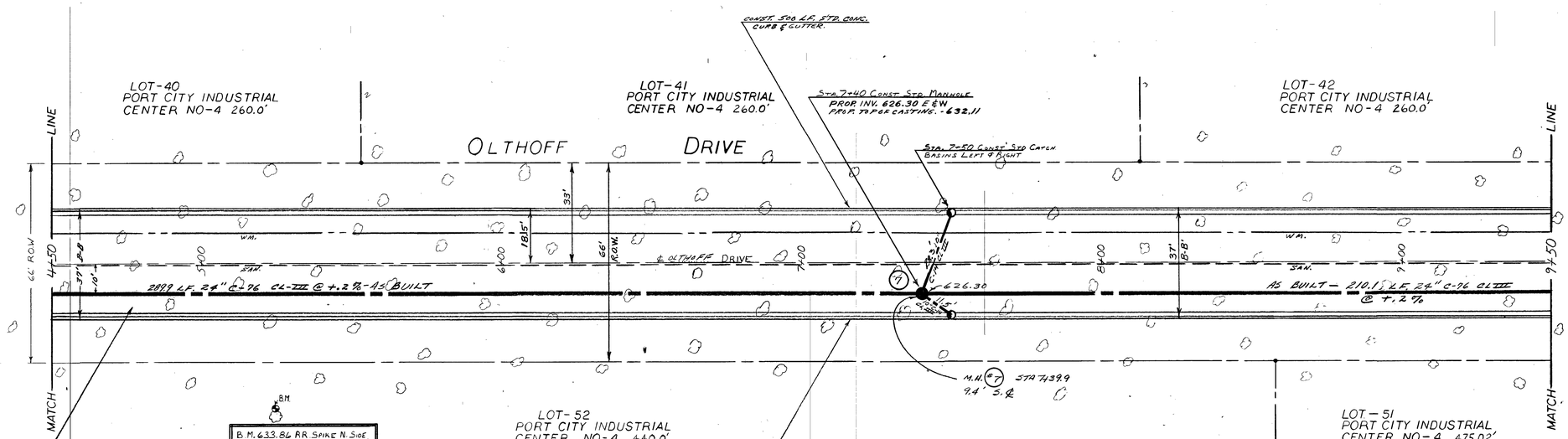


QUANTITIES THIS SHEET		
BIT. BOND COAT @ .10 GAL/S.Y.	295	GAL.
BITUMINOUS BASE COURSE @ 550 #/S.Y.	405	TON
BIT. CONC. WEARING COURSE @ 110 #/S.Y.	81	TON
CATCH BASIN CASTING EJ. #7045 OR EQUAL	3	EA.
CATCH BASIN STD.	3	EA.
CONC. CURB & GUTTER STD.	804	L.F.
MANHOLE, CASTING EJ. #1000 OR EQUAL	2	EA.
MANHOLE 4' I.D. 0-10' DEEP PER DETAIL	2	EA.
MACHINE GRADING MODIFIED	4.02	STA.
STORM SEWER 10" C-14 CL III	54	L.F.
STORM SEWER 24" C-76 CL III	460	L.F.



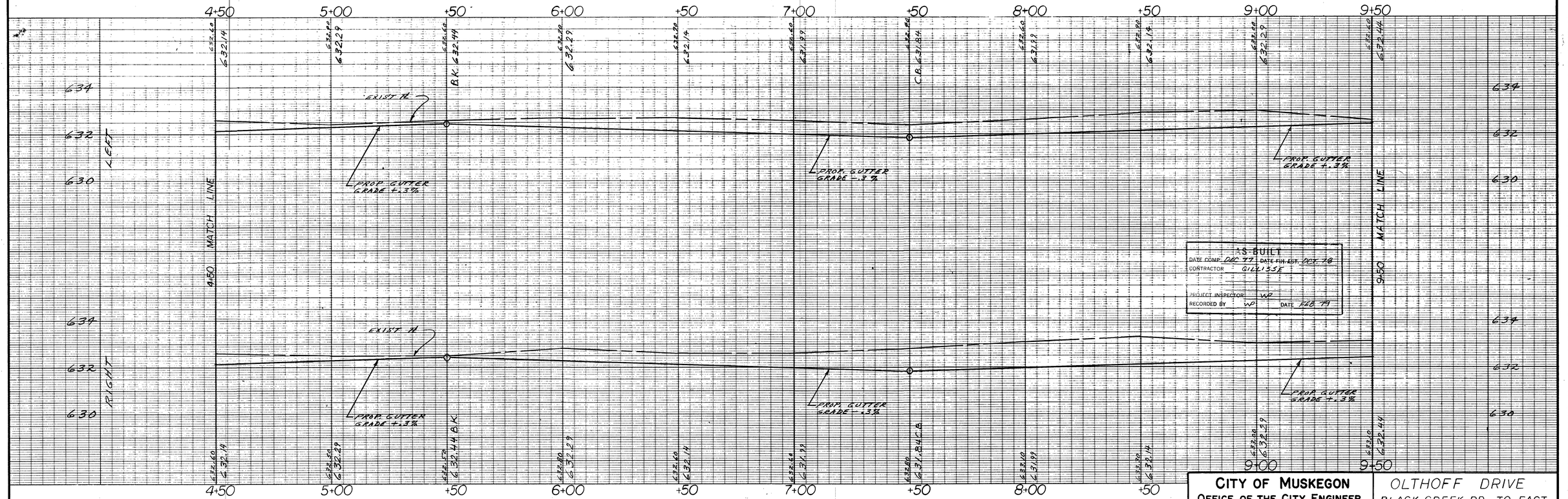
CITY OF MUSKEGON OFFICE OF THE CITY ENGINEER						OLTHOFF DRIVE BLACK CREEK RD. TO EAST	
Drawn SCOTT	FEB. 76	Revision BOLACH	MARCH 1976	Survey SCOTT	JAN 76	H-1102	
Checked		Revision L. BOLOUC	6-12-76	As-Built		Project No.	
Approved		Revision		Scale 1" = 20'		Sheet No. 1 of 7	

EDA PROJECT NO: 06-01-01240



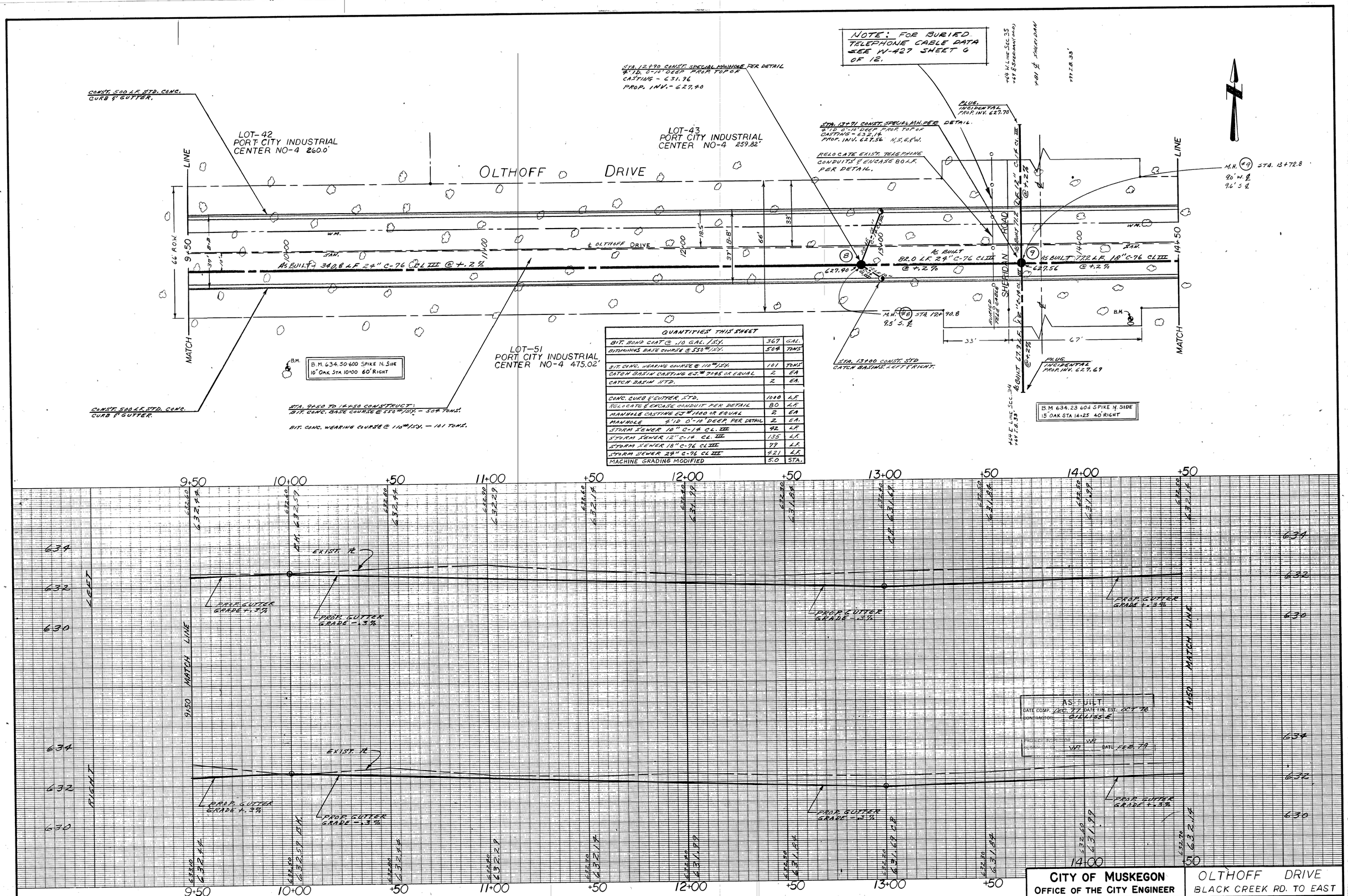
QUANTITIES THIS SHEET		
BIT. BOND COAT @ .10 GAL/SY.	367	GAL.
BIT. MINUS BASE COURSE @ 550#/SY.	304	TON
BIT. CONC. WEARING COURSE @ 110#/SY.	101	TON
CATCH BASIN CASTING EJ. #7045 OR EQUAL	2	EA
CATCH BASIN STD.	2	EA
CONC. CURB & GUTTER STD.	1000	L.F.
MANHOLE CASTING EJ. #1000 OR EQUAL	1	EA

MANHOLE STD. 4'ID 0'-10' DEEP	1	EA.
STORM SEWER 10" C-12 CL III	42	L.F.
STORM SEWER 24" C-76 CL III	500	L.F.
MACHINE GRADING MODIFIED	5.0	STA.



CITY OF MUSKEGON OFFICE OF THE CITY ENGINEER				OLTHOFF DRIVE BLACK CREEK RD. TO EAST	
Drawn SCOTT	FEB76	Revision DOLACH	MARCH 1976	Survey SCOTT JAN76	H-1102
Checked		Revision		As-Built	Project No.
Approved		Revision		Scale 1 = 20'	Sheet No. 2 of 7

EDA PROJECT: 06-01-01240



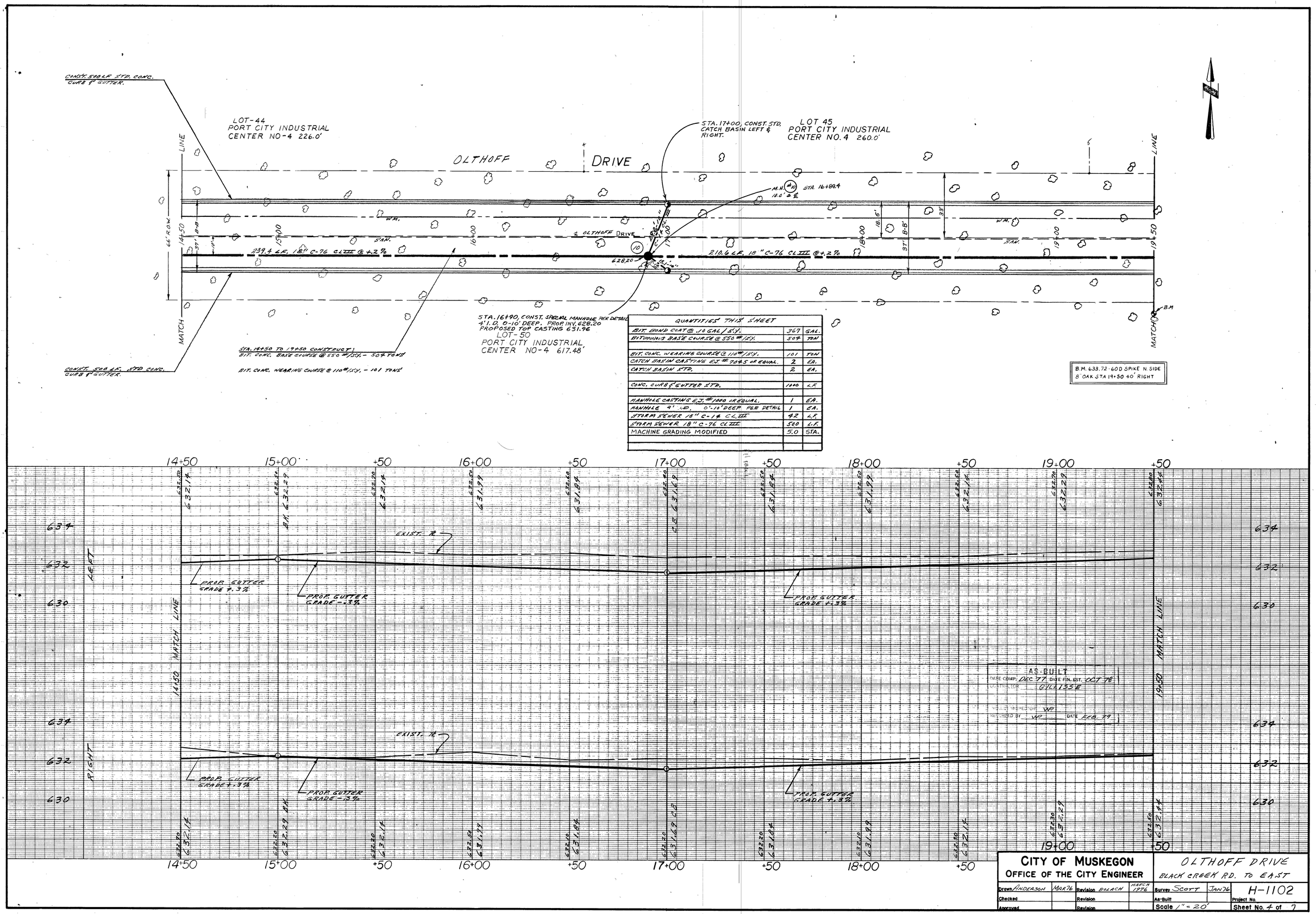
QUANTITIES THIS SHEET		
BIT. BOND COAT @ .10 GAL./S.Y.	367	GAL.
BITUMINOUS BASE COURSE @ 550 #/S.Y.	504	TONS
BIT. CONC. WEARING COURSE @ 110 #/S.Y.	101	TONS
CATCH BASIN CASTING EJ #7085 OR EQUAL	2	EA
CATCH BASIN STD.	2	EA.
CONC. CURB & GUTTER, STD.	1000	L.F.
RELOCATE & ENCASE CONDUIT PER DETAIL	80	L.F.
MANHOLE CASTING EJ #1000 OR EQUAL	2	EA
MANHOLE 4'ID 0'-10' DEEP, PER DETAIL	2	EA.
STORM SEWER 10" C-14 CL. III	42	L.F.
STORM SEWER 12" C-14 CL. III	135	L.F.
STORM SEWER 18" C-76 CL III	77	L.F.
STORM SEWER 24" C-76 CL III	421	L.F.
MACHINE GRADING MODIFIED	5.0	STA.

CITY OF MUSKEGON
OFFICE OF THE CITY ENGINEER

OLTHOFF DRIVE
BLACK CREEK RD. TO EAST

Drawn ANDERSON	MAR 76	Revision B. BLACK	MARCH 1976	Survey SCOTT	JAN 76	Project No.	H-1102
Checked		Revision		As-Built			
Approved		Revision		Scale 1" = 20'		Sheet No. 3 of 7	

EDA PROJECT NO: 06-01-01240



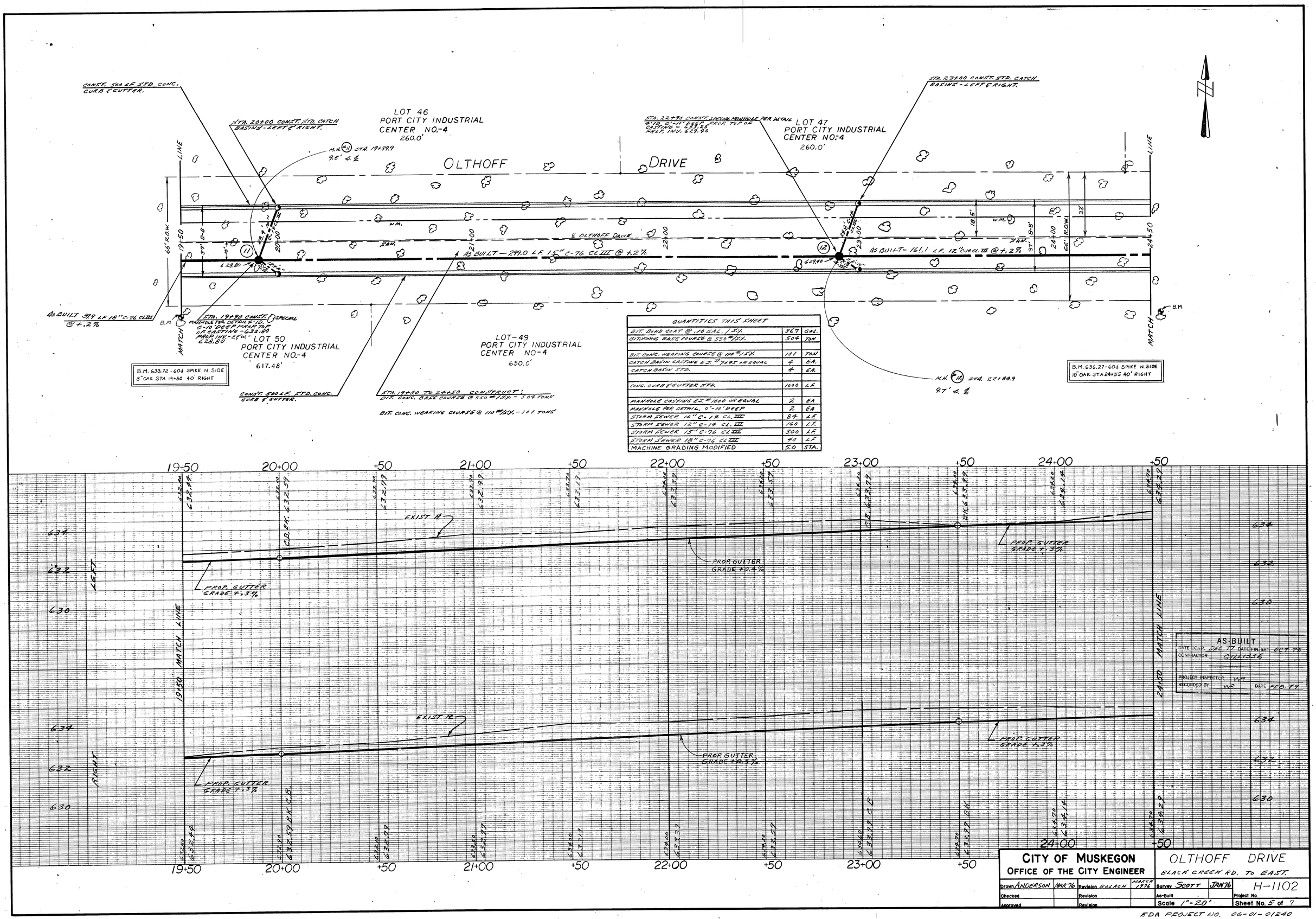
QUANTITIES THIS SHEET		
BIT. PRIME COAT @ .10 GAL/S.Y.	367	GAL.
BITUMINOUS BASE COURSE @ 550 #/S.Y.	504	TON
BIT. CONC. WEARING COURSE @ 110#/S.Y.	101	TON
CATCH BASIN CASTING E.J. #7045 OR EQUAL.	2	EA.
CATCH BASIN STD.	2	EA.
CONC. CURB & GUTTER STD.	1000	L.F.
MANHOLE CASTING E.J. #1000 OR EQUAL.	1	EA.
MANHOLE 4' I.D. 0'-10' DEEP PER DETAIL	1	EA.
STORM SEWER 18" C-1# CL. III	42	L.F.
STORM SEWER 18" C-76 CL III	500	L.F.
MACHINE GRADING MODIFIED	5.0	STA.

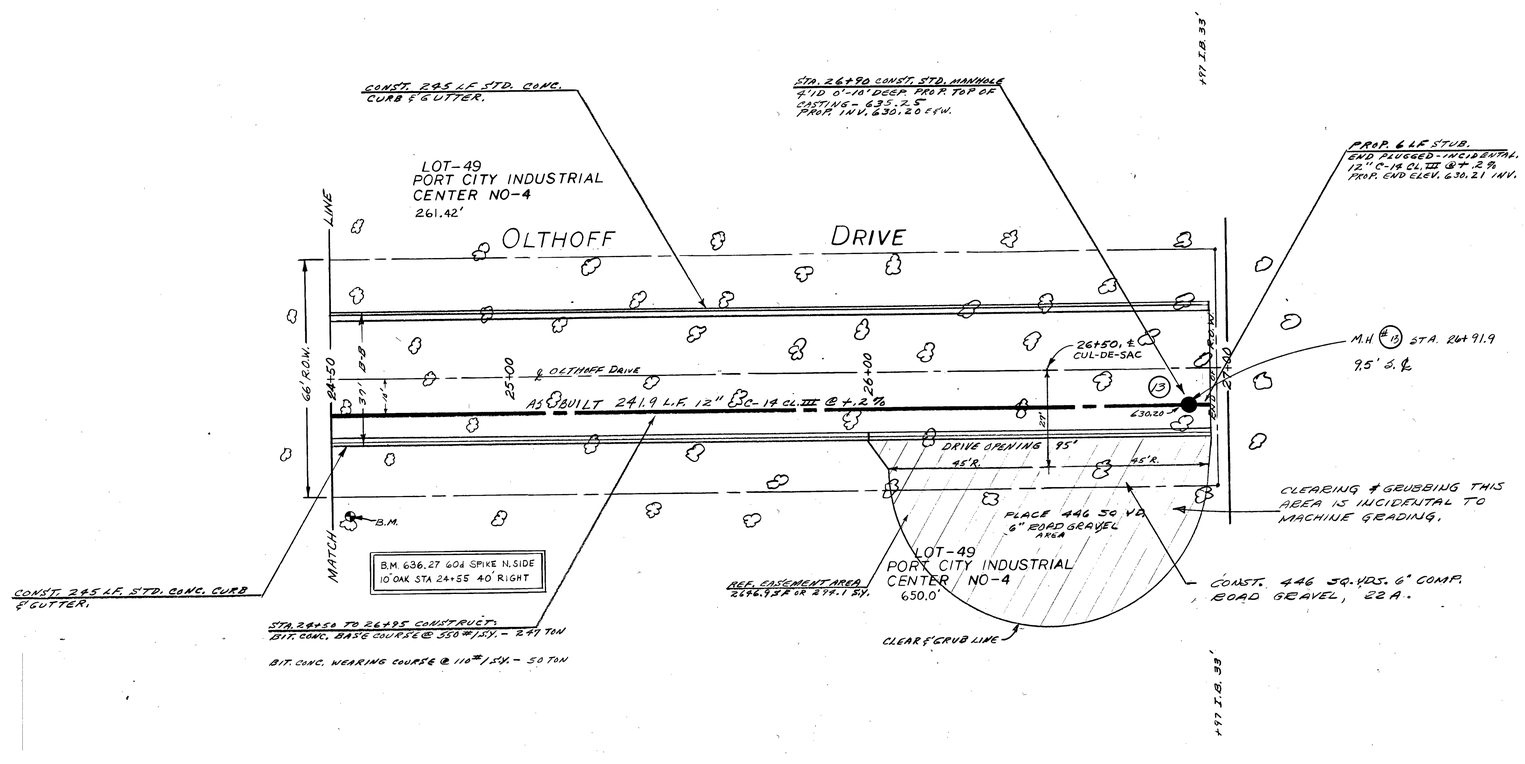
CITY OF MUSKEGON
OFFICE OF THE CITY ENGINEER

OLTHOFF DRIVE
BLACK CREEK RD. TO EAST

Drawn ANDERSON	MAR 76	Revision BLACK	MARCH 1976	Survey SCOTT	JAN 76	H-1102
Checked		Revision		As-Built		Project No.
Approved		Revision		Scale 1" = 20'		Sheet No. 4 of 7

EDA PROJECT NO. 06-01-01240


CONST. 500 LF STD CONC. CURB & GUTTER.
STA. 20+00 CONST. STD. CATCH BASINS - LEFT & RIGHT.
LOT 46
PORT CITY INDUSTRIAL
CENTER NO.-4
260.0'
M.H. #11 STA. 19+89.9
9.5' S. ℄
OLTHOFF
DRIVE
STA. 22+90 CONST. SPECIAL MANHOLE PER DETAIL
BITD 0'-11' DEEP
CASTING - 633.25
PROP. TOP OF
PROP. INV. 629.90
LOT 47
PORT CITY INDUSTRIAL
CENTER NO.-4
260.0'
STA. 23+00 CONST. STD. CATCH BASINS - LEFT & RIGHT.
LINE
66' R.O.W.
19+50
20+00
21+00
22+00
23+00
24+00
24+50
W.M.
SAN.
℄ OLTHOFF DRIVE
AS BUILT — 299.0 L.F. 15" C-76 CL III @ +.2%
AS BUILT - 161.1 L.F. 12" C-14 CL III @ +.2%
628.80
629.90
18.5'
33'
66' ROW
AS BUILT 39.9 L.F. 18" C-76 CL III @ +.2%
B.M.
MATCH
STA. 19+89 CONST. SPECIAL MANHOLE PER DETAIL & TID. 0-10 DEEP PROP. TOP OF CASTING - 632.80 PROP. INV. - 25" W. - 628.80
LOT 50
PORT CITY INDUSTRIAL
CENTER NO.-4
617.48'
LOT-49
PORT CITY INDUSTRIAL
CENTER NO-4
650.0'
M.H. #12 STA. 22+88.9
9.7' S. ℄
B.M. 633.72 - 60d SPIKE N SIDE 8" OAK STA 19+50 40' RIGHT
B.M. 636.27 - 60d SPIKE N. SIDE 10" OAK STA 24+55 40' RIGHT
CONST. 500 L.F. STD. CONC. CURB & GUTTER.
STA. 19+50 TO 24+50 CONSTRUCT:
BIT. CONC. BASE COURSE @ 550 #/S.Y. - 504 TONS
BIT. CONC. WEARING COURSE @ 110 #/S.Y. - 101 TONS
QUANTITIES THIS SHEET
BIT. BIND COAT @ .10 GAL./S.Y. 367 GAL.
BITUMINOUS BASE COURSE @ 550 #/S.Y. 504 TON
BIT. CONC. WEARING COURSE @ 110 #/S.Y. 101 TON
CATCH BASIN CASTING EJ. #7885 OR EQUAL 4 EA.
CATCH BASIN STD. 4 EA.
CONC. CURB & GUTTER STD. 1000 L.F.
MANHOLE CASTING EJ #1100 OR EQUAL 2 EA
MANHOLE PER DETAIL, 0'-10' DEEP 2 EA
STORM SEWER 10" C-14 CL. III 84 L.F.
STORM SEWER 12" C-14 CL. III 160 L.F.
STORM SEWER 15" C-76 CL III 300 L.F.
STORM SEWER 18" C-76 CL III 40 L.F.
MACHINE GRADING MODIFIED 5.0 STA.
19+50
20+00
+50
21+00
22+00
23+00
24+00
634
632
630
LEFT
RIGHT
19+50 MATCH LINE
24+50 MATCH LINE
EXIST ℄
PROP. GUTTER GRADE +.3%
PROP. GUTTER GRADE +0.4%
C.B. EX. 632.59
B.M. 633.72
AS-BUILT
DATE COMP. DEC 77 DATE FIN. BY OCT 78
CONTRACTOR GULLIKSE
PROJECT INSPECTOR WR
RECORDED BY WR DATE FEB. 79
CITY OF MUSKEGON
OFFICE OF THE CITY ENGINEER
OLTHOFF DRIVE
BLACK CREEK RD. TO EAST.
Drawn ANDERSON MAR 76
Checked
Approved
Revision BOLACH MARCH 1976
Revision
Revision
Survey SCOTT JAN 76
As-Built
Scale 1" = 20'
H-1102
Project No.
Sheet No. 5 of 7
EDA PROJECT NO. 06-01-01240

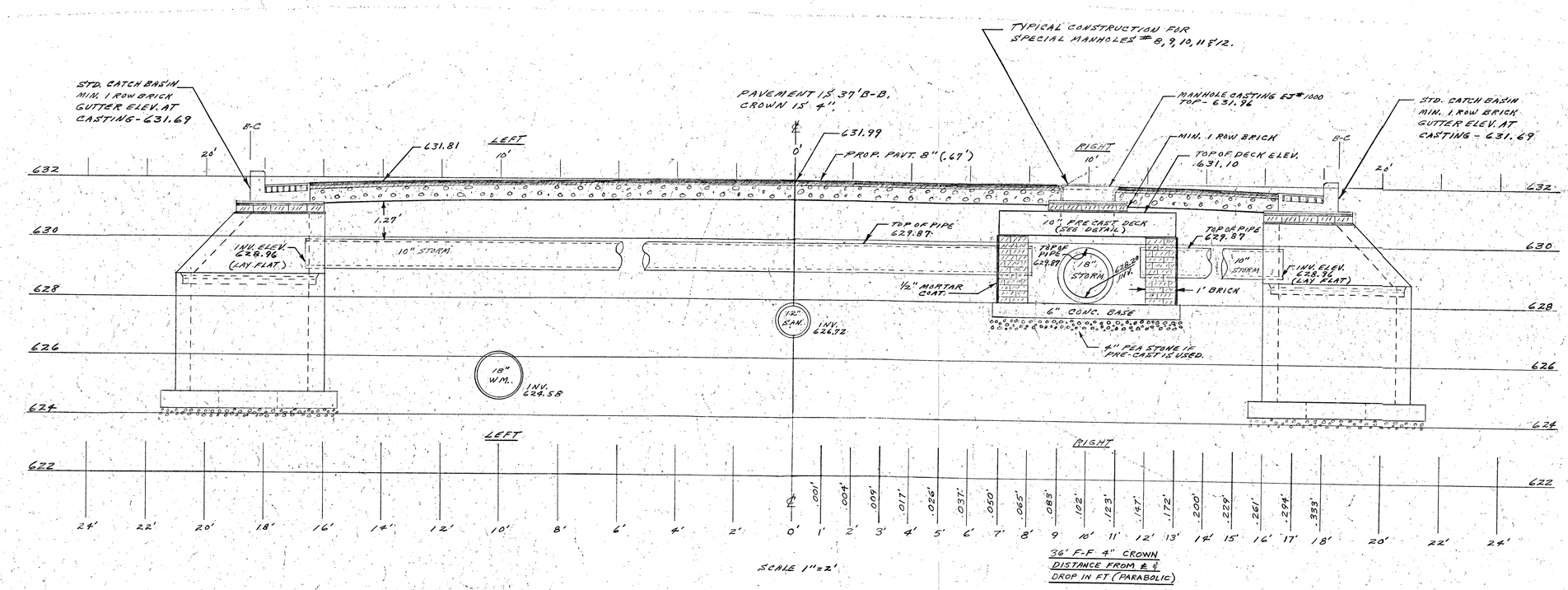


QUANTITIES THIS SHEET		
ROAD GRAVEL 6" 22A	446	S.Y.
BIT. BOND COAT @.10 GAL. /S.Y.	180	GAL.
BITUMINOUS BASE COURSE @ 550 #/S.Y.	247	TON
BIT. CONC. WEARING COURSE @ 110 #/S.Y.	50	TON
CONC. CURB & GUTTER, STD.	590	L.F.
MANHOLE CASTING EJ #1000 OR EQUAL	1	EA
MANHOLE STD 4'ID 0'-10' DEEP	1	EA.
STORM SEWER 12" C-14 CL. III	296	L.F
MACHINE GRADING MODIFIED	2.47	STA.
ALTERNATE - ROAD GRAVEL 22A, 6" COMP.	446	S.Y.

AS BUILT
DATE COMP. DEC 77 DATE FIN. EST. OCT 76
CONTRACTOR GILLESPIE
PROJECT INSPECTOR WB
RECORDED BY WB DATE FEB 79

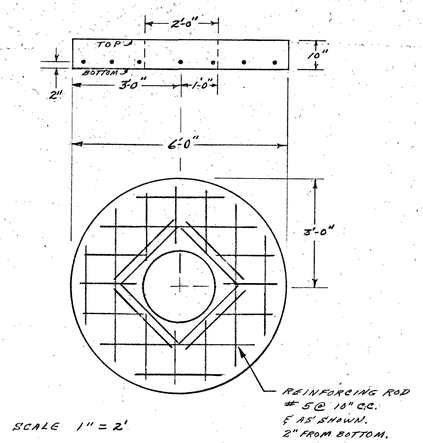
CITY OF MUSKEGON OFFICE OF THE CITY ENGINEER				OLTHOFF DRIVE BLACK CREEK RD. TO EAST		
Drawn ANDERSON	MAR 76	Revision BOLACH	MARCH 1976	Survey SCOTT	JAN 76	H-1102
Checked		Revision		As-Built		Project No.
Approved		Revision		Scale 1" = 20'		Sheet No. 6 of 7

EDA PROJECT NO: 06-01-01240



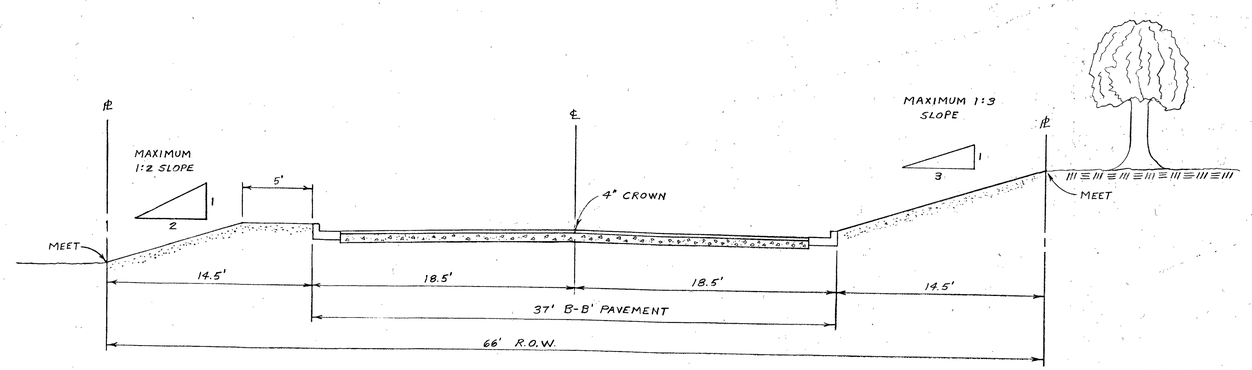
DETAIL

MANHOLE #10 STA. 16+90



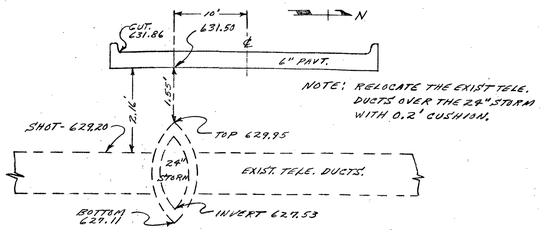
DETAIL

PRE CAST CONCRETE DECK



MACHINE GRADING

MODIFIED DETAIL



DETAIL

EXIST. TELE. DUCTS

H-1102 STA. 13+57

AS-BUILT
DATE COMP. Dec 77 DATE FIN. EST. Oct 78
CONTRACTOR Gillisse
PROJECT INSPECTOR W.P.
RECORDED BY WP DATE FEB 79

CITY OF MUSKEGON OFFICE OF THE CITY ENGINEER			H-1102
DRAWN BY	BALACH	FEB. 1979	OLTHOFF DRIVE BLACK CREEK RD TO EAST
SURVEY BY			
CONSIGRD BY			
REVISED BY	Ericksen	MARCH 1977	SCALE NOTED — SHEET NO. 7 OF 7 SHEETS

EDA PROJECT NO.