

# BIRMINGHAM

A WALKABLE CITY

## ENGINEERING DEPARTMENT

# PIERCE STREET PAVING PROJECT CONTRACT#3-23(P)

### SHEET INDEX

- COVER SHEET  
 C1 PAVING & UTILITY PLAN STA. P.O.B. TO 5+00  
 C2 PAVING & UTILITY PLAN STA. 5+00 TO 10+00  
 C3 PAVING & UTILITY PLAN STA. 10+00 TO 15+00  
 C4 PAVING & UTILITY PLAN STA. 15+00 TO 20+00  
 C5 PAVING & UTILITY PLAN STA. 20+00 TO 25+00  
 C6 PAVING & UTILITY PLAN STA. 25+00 TO P.O.E.  
 C7 HYDRANT LEAD PROFILES  
 C8 STORM SEWER PROFILES  
 C9 GRADING PLAN STA. P.O.B. TO 5+00  
 C10 GRADING PLAN STA. 5+00 TO 10+00  
 C11 GRADING PLAN STA. 10+00 TO 15+00  
 C12 GRADING PLAN STA. 15+00 TO 20+00  
 C13 GRADING PLAN STA. 20+00 TO 25+00  
 C14 GRADING PLAN STA. 25+00 TO P.O.E.  
 C15 INTERSECTION GRADING DETAILS (1 of 2)  
 C16 INTERSECTION GRADING DETAILS (2 of 2)  
 C17 EXISTING & PROPOSED CROSS-SECTIONS  
 C18 ADVANCED WARNING SIGNAGE DIAGRAM - PIERCE STREET  
 C19 NOTES & DETAILS (1 of 3)  
 C20 NOTES & DETAILS (2 of 3)  
 C21 NOTES & DETAILS (3 OF 3)

### Q1 QUANTITIES

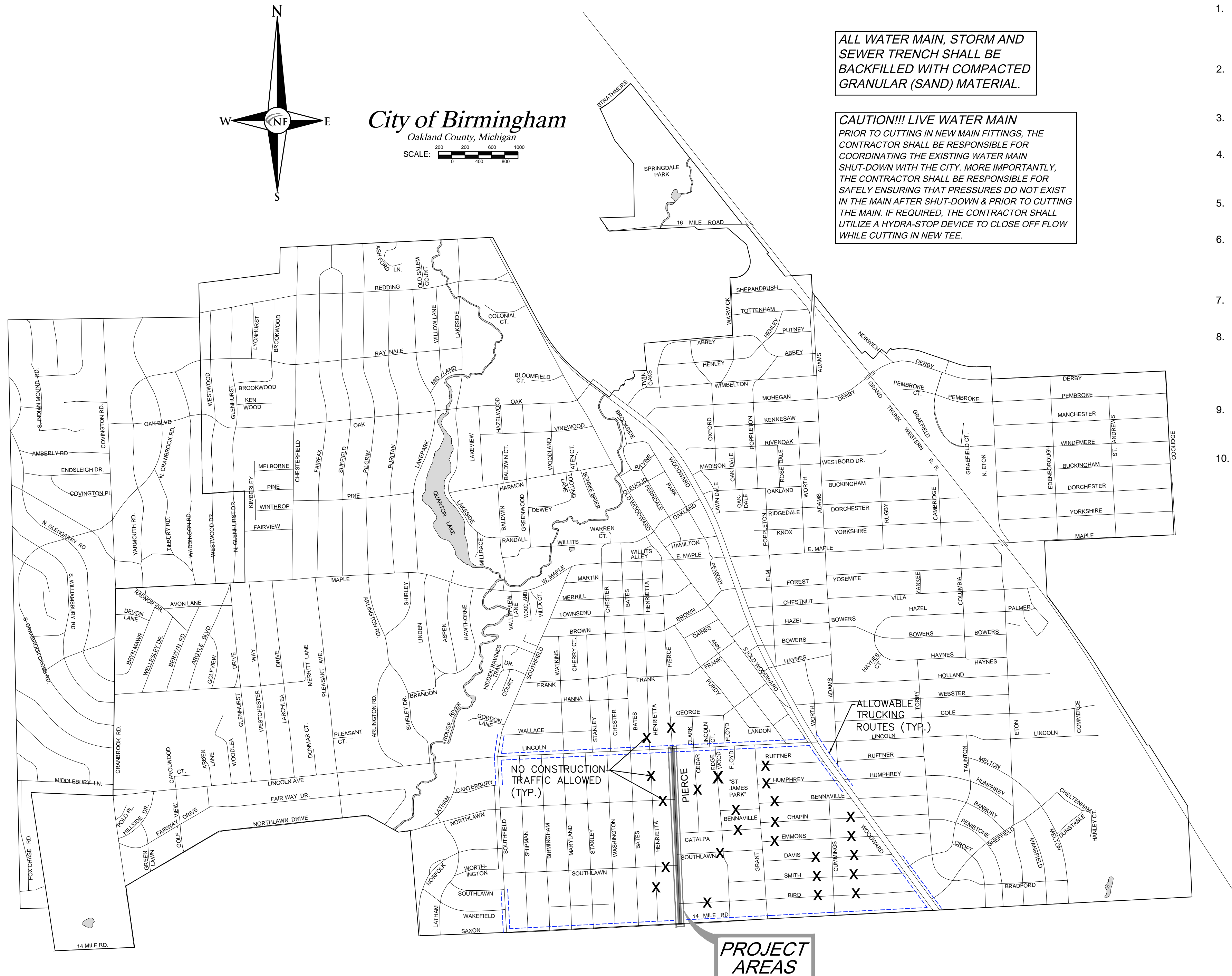
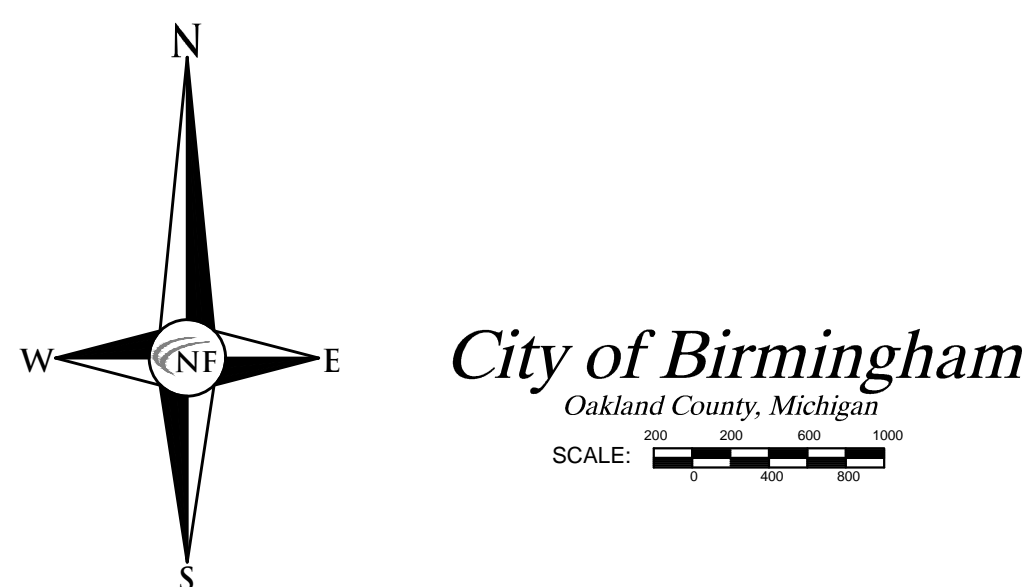
CITY OF BIRMINGHAM - SEWER STANDARD DETAILS  
 CITY OF BIRMINGHAM - WATER MAIN STANDARD DETAILS

### WATER / SEWER SERVICE NOTE

ALL WATER AND SEWER SERVICE LATERAL INFORMATION IS SHOWN PER RECORD, WITHIN THE PUBLIC RIGHT OF WAY. THE CONTRACTOR SHALL COORDINATE WITH CITY FOR ALL PRIVATE-SIDE WATER AND SEWER LATERAL INFORMATION, AS REQUIRED, TO CONSTRUCT THE PROJECT (INC.).

### UTILITY NOTE

THE LOCATIONS AND ELEVATIONS OF SOME OF THE EXISTING UNDERGROUND UTILITIES AS SHOWN ON THE SURVEY DRAWING WERE OBTAINED FROM MUNICIPAL AND UTILITY COMPANY RECORDS AND MAPS. THEREFORE, NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.



ALL WATER MAIN, STORM AND SEWER TRENCH SHALL BE BACKFILLED WITH COMPACTED GRANULAR (SAND) MATERIAL.

CAUTION!!! LIVE WATER MAIN PRIOR TO CUTTING IN NEW MAIN FITTINGS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE EXISTING WATER MAIN SHUT-DOWN WITH THE CITY. MORE IMPORTANTLY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR SAFELY ENSURING THAT PRESSURES DO NOT EXIST IN THE MAIN AFTER SHUT-DOWN & PRIOR TO CUTTING THE MAIN. IF REQUIRED, THE CONTRACTOR SHALL UTILIZE A HYDRA-STOP DEVICE TO CLOSE OFF FLOW WHILE CUTTING IN NEW TEE.

### CONSTRUCTION NOTES

These notes shall apply for all work within this contract:

- The contractor shall notify MISS DIG 1-800-482-7171 at least 3 working days excluding Saturday, Sunday, and Holidays before making any excavations and notify the City of Birmingham Engineering Department a minimum of 24 hours prior to the start of construction (248-530-1850).
- See the City of Birmingham drawings "Sewer Standard Details" and "Water Main Standard Details" for details of manholes, catch basins, inlets, and related sewer and water main work.
- All excavation under or within three feet of pavement, public or private, shall be backfilled and compacted with sand.
- The joints at the edges of all excavations in the pavement shall be sawcut, or pavement will be removed to existing joints, as directed by the Engineer. There is no separate pay item for saw cutting pavements.
- The contractor shall be responsible for damage to existing utilities, pavement, trees, landscaping, gravel, etc., whether located on public or private property.
- Catch basin and inlet castings scheduled for replacement, or new construction shall be EJIW 5000Z4 DI / 5000M4 DI Hinged Assembly unless specified otherwise. Manhole castings shall be EJIW 1040-A cover as noted on the detail sheets and plans, unless otherwise specified.
- Storm, sewer and water main trench shall be backfilled with MDOT Class II sand and properly compacted to 95% of modified proctor density.
- A permit from the Michigan Department of Environment, Great Lakes & Energy (EGLE) is required for all new water main installations. Also, no work shall be allowed on the combined sewer system until appropriate permits have been received by the Michigan Department of Environment, Great Lakes & Energy (EGLE).
- The contractor shall coordinate and cooperate with all other utility companies working in the same area, project related or not, during the same allotted construction period.
- All proposed Public Water Main for this project shall be Pressure Class 52 Ductile Iron Pipe (D.I.P.) in conformance with City of Birmingham specifications, unless otherwise noted.

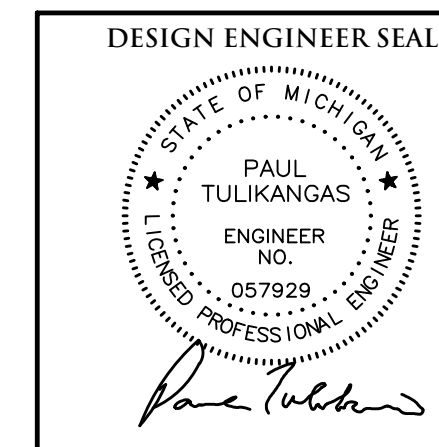
PIERCE STREET PAVING PROJECT  
 CONTRACT 3-23(P)



Know what's below  
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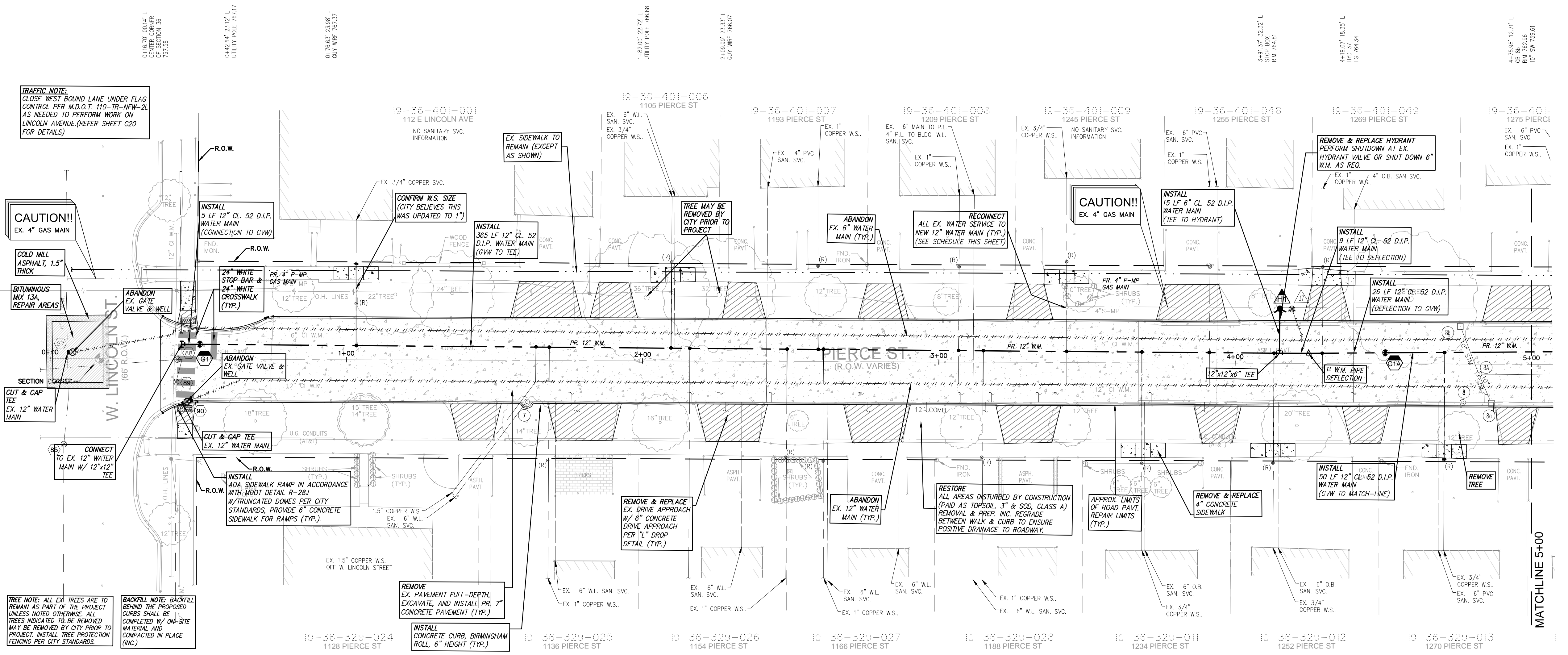
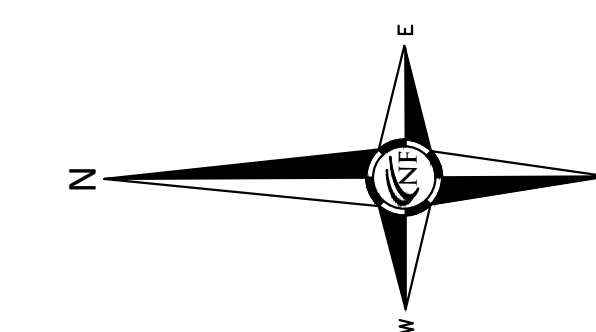
### BENCHMARK NOTE

BENCHMARKS SET AND SHOWN PER SHEET WERE ESTABLISHED OFF OF THE CITY OF BIRMINGHAM BENCHMARK DATUM.



APPROVED \_\_\_\_\_ DATE \_\_\_\_\_





**Public Water Main Quantities - Sheet C1**

12" D.I. Cl. 52 Water Main	455 L.F.
6" D.I. Cl. 52 Water Main	15 L.F.
12" Gate Valve in Well	2 EA.
Hydrant Assembly, Complete	1 EA.
12" Water Main Connection to Ex. 12" Water Main	1 EA.

**SEWER STRUCTURE SCHEDULE**

7	REVIEW STRUCTURE IN FIELD TO DETERMINE IF THE CASTING CAN BE SHIFTED TO THE ROAD. ADJUST & RECONSTRUCT AS NEEDED.	8	REVIEW STRUCTURE IN FIELD TO DETERMINE IF THE CASTING CAN BE SHIFTED TO THE ROAD. ADJUST & RECONSTRUCT AS NEEDED.
7A	ADJUST & RECONSTRUCT AS NEEDED.	8A	ADJUST & RECONSTRUCT AS NEEDED.

**STORM STRUCTURE SCHEDULE**

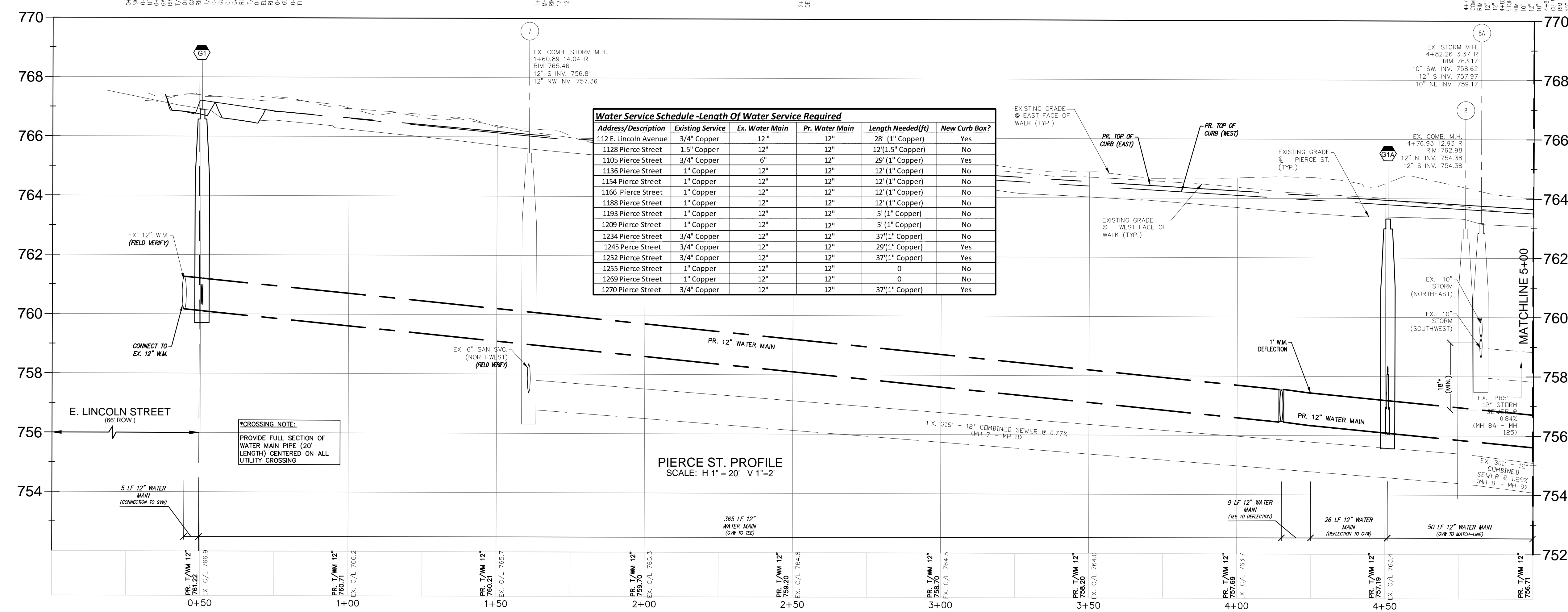
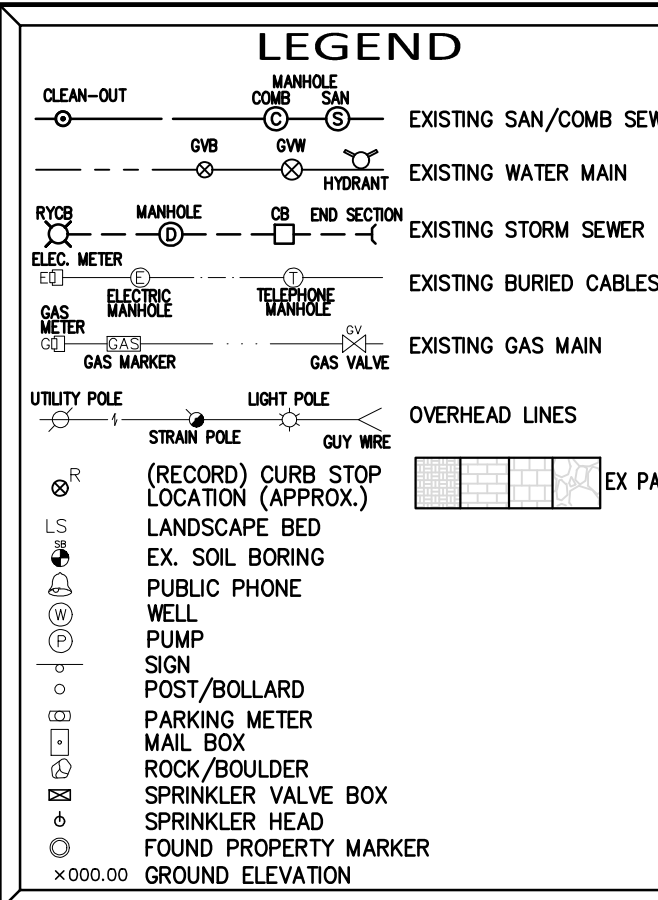
8A	ADJUST & RECONSTRUCT AS NEEDED.	8B	ADJUST & RECONSTRUCT AS NEEDED.
8B	ADJUST & RECONSTRUCT AS NEEDED.		

**WATER MAIN SCHEDULE**

87	ABANDON VALVE AND REMOVE WELL.	89	ABANDON VALVE AND REMOVE WELL.
88	ADJUST.	90	REMOVE.
89	MAINTAIN.	91	INSTALL HYDRANT & ASSEMBLY.
90	INSTALL PR. 12" GATE VALVE IN WELL.		
91	INSTALL PR. 12" GATE VALVE IN WELL.		

**UTILITY NOTE**

THE LOCATIONS AND ELEVATIONS OF SOME OF THE EXISTING UNDERGROUND UTILITIES AS SHOWN ON THE SURVEY DRAWING WERE OBTAINED FROM MUNICIPAL AND UTILITY COMPANY RECORDS AND MAPS. THEREFORE, NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.



**Water Service Schedule - Length of Water Service Required**

Address/Description	Existing Service	Ex. Water Main	Pr. Water Main	Length Needed(ft)	New Curb Box?
112 E. Lincoln Avenue	3/4" Copper	12"	12"	28' (1" Copper)	Yes
1128 Pierce Street	1.5" Copper	12"	12"	12'(1.5" Copper)	No
1105 Pierce Street	3/4" Copper	6"	12"	29' (1" Copper)	Yes
1136 Pierce Street	1" Copper	12"	12"	12' (1" Copper)	No
1154 Pierce Street	1" Copper	12"	12"	12' (1" Copper)	No
1166 Pierce Street	1" Copper	12"	12"	12' (1" Copper)	No
1188 Pierce Street	1" Copper	12"	12"	12' (1" Copper)	No
1193 Pierce Street	1" Copper	12"	12"	5' (1" Copper)	No
1209 Pierce Street	1" Copper	12"	12"	5' (1" Copper)	No
1234 Pierce Street	3/4" Copper	12"	12"	37'(1" Copper)	No
1245 Pierce Street	3/4" Copper	12"	12"	29'(1" Copper)	Yes
1252 Pierce Street	3/4" Copper	12"	12"	37'(1" Copper)	Yes
1255 Pierce Street	1" Copper	12"	12"	0	No
1269 Pierce Street	1" Copper	12"	12"	0	No
1270 Pierce Street	3/4" Copper	12"	12"	37'(1" Copper)	Yes

PROJECT  
Pierce Street Paving  
Project  
Contract#3-23(P)

CLIENT  
**BIRMINGHAM**  
A WALKABLE CITY  
Engineering Department  
151 Martin Street  
Birmingham, MI 48012

PROJECT LOCATION  
Part of the Southeast 1/4  
of Section 36, Town 2 North,  
Range 10 East, City of  
Birmingham, Oakland  
County, Michigan

SHEET  
Pierce Street  
Paving and Utility Plan  
Sta. P.O.B. to 5+00



DATE	ISSUED/REVISED
12-08-21	ISSUED SURVEY
01-06-23	ISSUED SURVEY
02-01-23	ISSUED SURVEY
05-05-23	ISSUED FOR EGLE W.M. PERMIT
05-18-23	REVISED PER CITY REVIEW
05-24-23	BIDS
06-08-23	ADDENDUM 1

DRAWN BY:  
M. Hani  
DESIGNED BY:  
G. Viju  
APPROVED BY:  
B. Buchholz  
DATE:  
12-08-2021  
SCALE: 1" = 20' / 1" = 2'  
NFE JOB NO. SHEET NO.  
**M515 C1**



SEAL

PROJECT  
Pierce Street Paving  
Project  
Contract#3-23(P)

CLIENT



Engineering Department  
151 Martin Street  
Birmingham, MI 48012

PROJECT LOCATION

Part of the Southeast 1/4  
of Section 36, Town 2 North,  
Range 10 East, City of  
Birmingham, Oakland  
County, Michigan

SHEET

Pierce Street  
Paving & Utility Plan  
Sta. 5+00 to 10+00



Know what's below  
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DATE ISSUED/REVISED

12-08-21 ISSUED SURVEY  
01-06-23 ISSUED SURVEY  
02-01-23 ISSUED SURVEY  
05-05-23 ISSUED FOR EGLE W.M. PERMIT  
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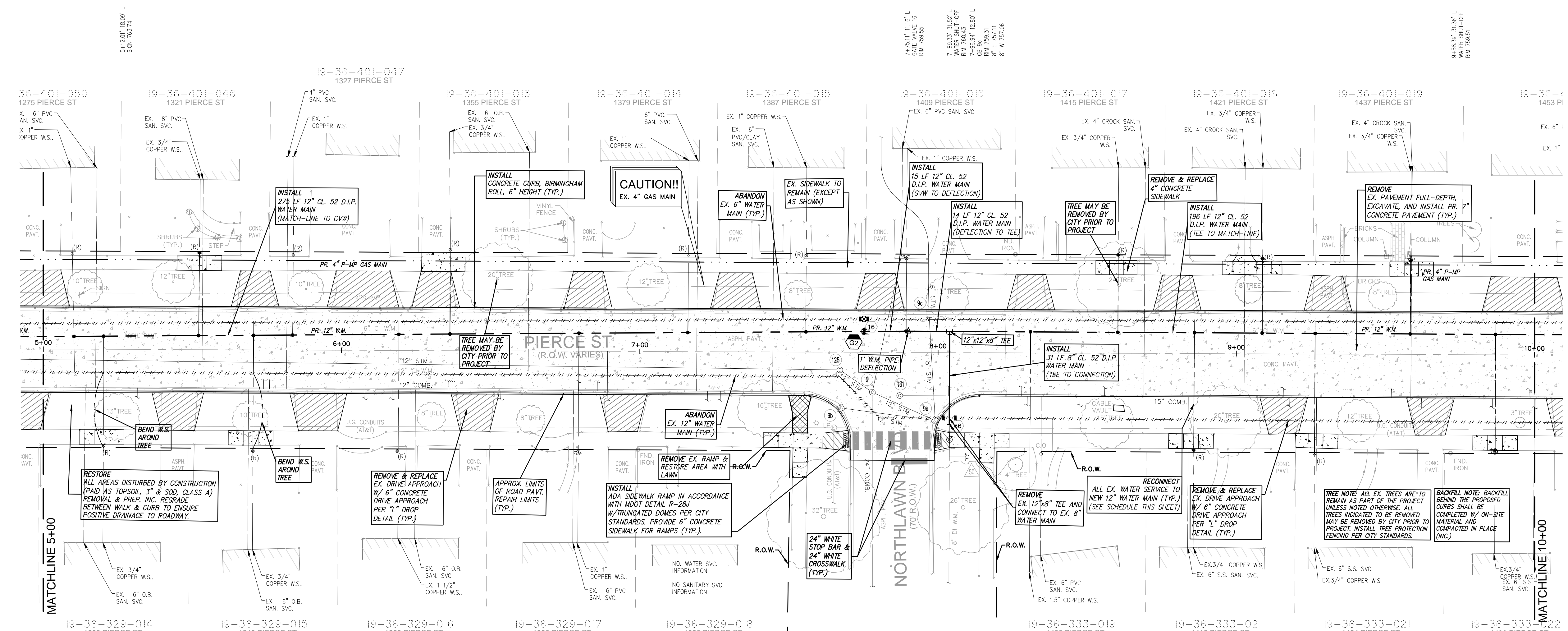
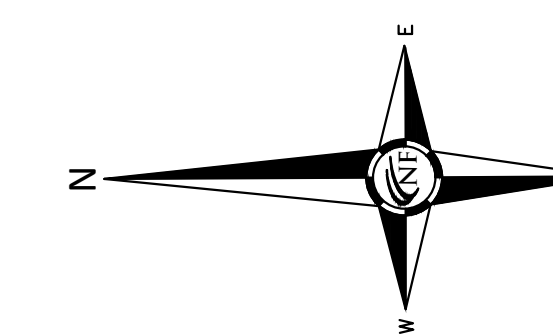
DATE:

12-08-2021

SCALE: 1" = 20' / 1" = 2'

NFE JOB NO. SHEET NO.

M515 C2



Public Water Main Quantities - Sheet C2

12" D.I. Cl. 52 Water Main	500 L.F.
8" D.I. Cl. 52 Water Main	31 L.F.
12" Gate Valve in Well	1 EA.
8" Water Main Connection to Ex. 8" Water Main	1 EA.

### SEWER STRUCTURE SCHEDULE

9	ADJUST & RECONSTRUCT AS REQ.	7+78.01' 13.34' R	7+87.19' 14.46' R
131	ADJUST & RECONSTRUCT AS REQ.	7+87.19' 14.46' R	7+87.19' 14.46' R
		RM 759.60	RM 759.50
		PR. RM 758.49	PR. RM 758.47
		12" N 750.10	12" N 750.50 (V.I.F.)
		12" N 750.50	15' S 751.00
		12" SW 754.70	12" SW 753.80 (V.I.F.)

### STORM STRUCTURE SCHEDULE

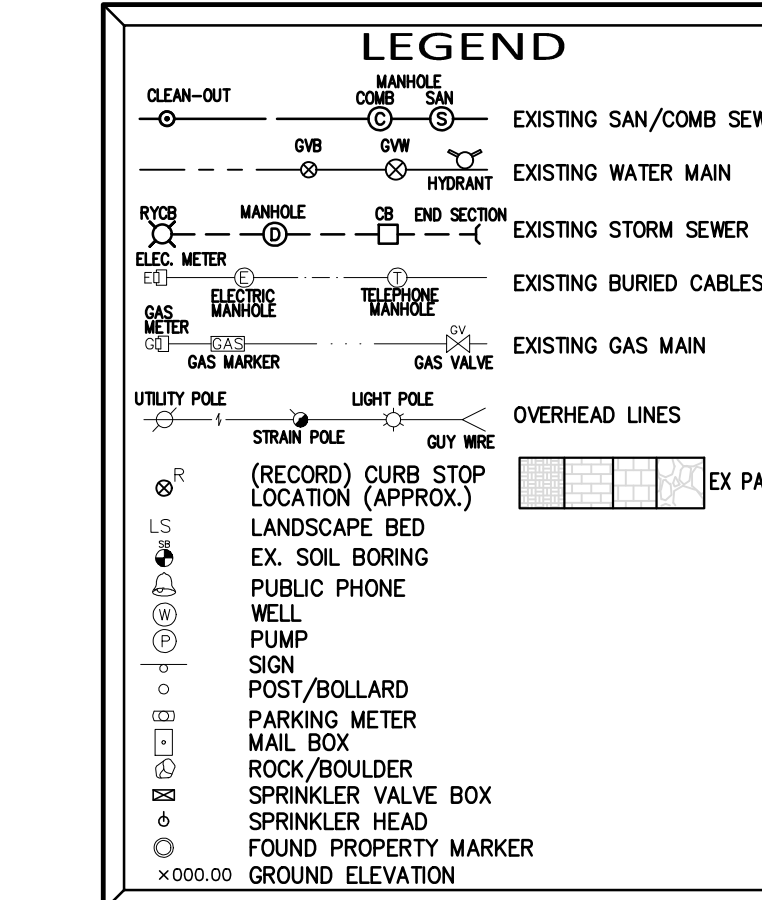
9a	MAINTAIN, REVIEW STM COND. W/ CITY & RECONSTRUCT AS NEEDED.	7+99.16' 22.19' R	7+67.51' 18.69' R
9b	MAINTAIN, REVIEW STM COND. W/ CITY & RECONSTRUCT AS NEEDED.	7+99.16' 22.19' R	7+67.51' 18.69' R
		CB 9c	RM 759.20
		12" NE 755.60 TRAP (WTR.)	12" SE 755.47 TRAP (WTR.)
		8" E 756.60	RM 759.32
		12" N 750.10	12" S 751.00
		12" SW 754.70	12" SW 753.80 (V.I.F.)
9c	ADJUST & RECONSTRUCT AS REQ.	7+96.94' 12.80' L	7+67.09' 5.92' R
125	ADJUST & RECONSTRUCT AS REQ.	7+96.94' 12.80' L	7+67.09' 5.92' R
		CB 9c	RM 759.31
		PR. RM 758.52	PR. RM 758.74
		6" E 757.11	12" N 755.59
		8" W 757.06	12" SW 754.84

### WATER MAIN SCHEDULE

16	ABANDON VALVE AND REMOVE WELL	7+75.11' 11.16' L	8+09.95' 34.92' R
66	ADJUST	8+03.93' 29.16' R	HYD 50
		RM 759.57	FG 759.97
67	INSTALL	PR. STA. 07+75.22' 06.6' L	PR. RM 759.59
		PR. RM 759.59	PR. T/PIPE 754.10

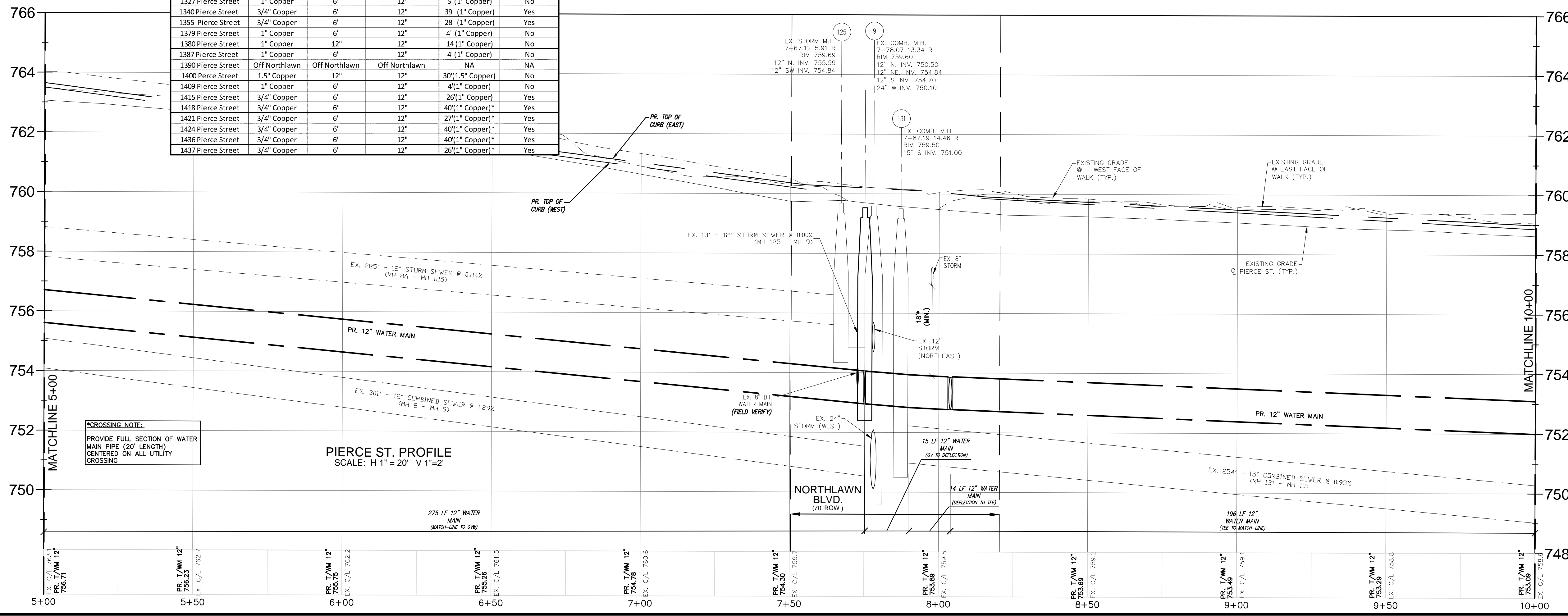
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### Water Service Schedule - Length Of Water Service Required

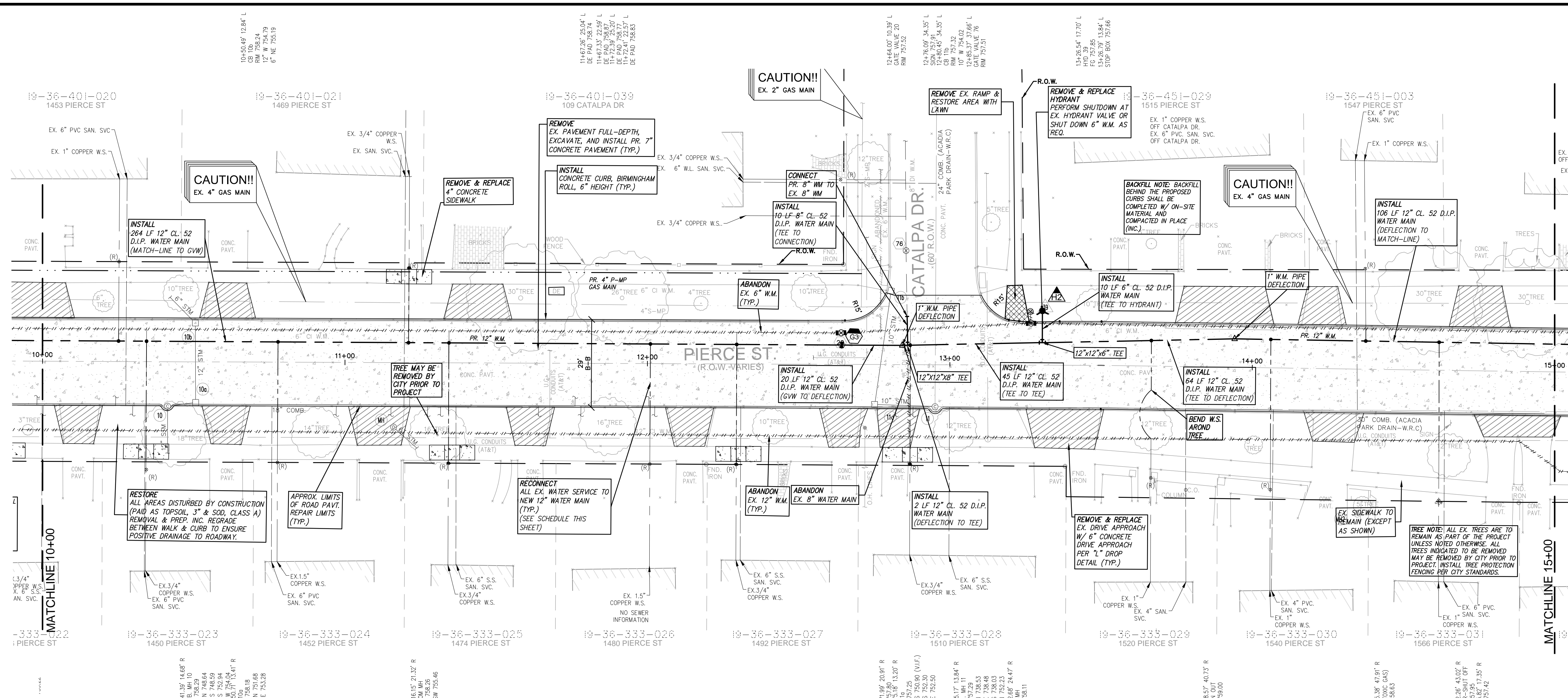
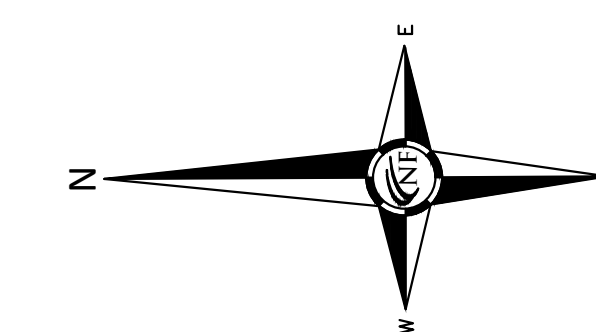
Address/Description	Existing Service	Ex. Water Main	Pr. Water Main	Length Needed(ft)	New Curb Box?
1275 Pierce Street	1" Copper	12"	12"	0	No
1290 Pierce Street	3/4" Copper	12"	12"	39' (1" Copper)	Yes
1321 Pierce Street	3/4" Copper	12"	12"	29' (1" Copper)	Yes
1327 Pierce Street	1" Copper	6"	12"	5' (1" Copper)	No
1340 Pierce Street	3/4" Copper	6"	12"	39' (1" Copper)	Yes
1355 Pierce Street	3/4" Copper	6"	12"	28' (1" Copper)	Yes
1379 Pierce Street	1" Copper	6"	12"	4' (1" Copper)	No
1380 Pierce Street	1" Copper	12"	12"	14' (1" Copper)	No
1387 Pierce Street	1" Copper	6"	12"	4' (1" Copper)	No
1390 Pierce Street	Off Northlawn	Off Northlawn	Off Northlawn	NA	NA
1400 Pierce Street	1.5" Copper	12"	12"	30' (1.5" Copper)	No
1409 Pierce Street	1" Copper	6"	12"	41' (1" Copper)	No
1415 Pierce Street	3/4" Copper	6"	12"	26' (1" Copper)	Yes
1418 Pierce Street	3/4" Copper	6"	12"	40' (1" Copper)*	Yes
1421 Pierce Street	3/4" Copper	6"	12"	27' (1" Copper)*	Yes
1424 Pierce Street	3/4" Copper	6"	12"	40' (1" Copper)*	Yes
1436 Pierce Street	3/4" Copper	6"	12"	40' (1" Copper)*	Yes
1437 Pierce Street	3/4" Copper	6"	12"	26' (1" Copper)*	Yes



CROSSING NOTE:  
PROVIDE FULL SECTION OF WATER MAIN PIPE (20' LENGTH) CENTERED ON ALL UTILITY CROSSING

PIERCE ST. PROFILE  
SCALE: H 1" = 20' V 1" = 2'





**Public Water Main Quantities - Sheet C3**

12" D.I. Cl. 52 Water Main	501 L.F.
8" D.I. Cl. 52 Water Main	10 L.F.
6" D.I. Cl. 52 Water Main	10 L.F.
12" Gate Valve in Well	1 E.A.
Hydrant Assembly, Complete	1 E.A.
8" Water Main Connection to Ex. 8" Water Main	1 E.A.

**SEWER STRUCTURE SCHEDULE**

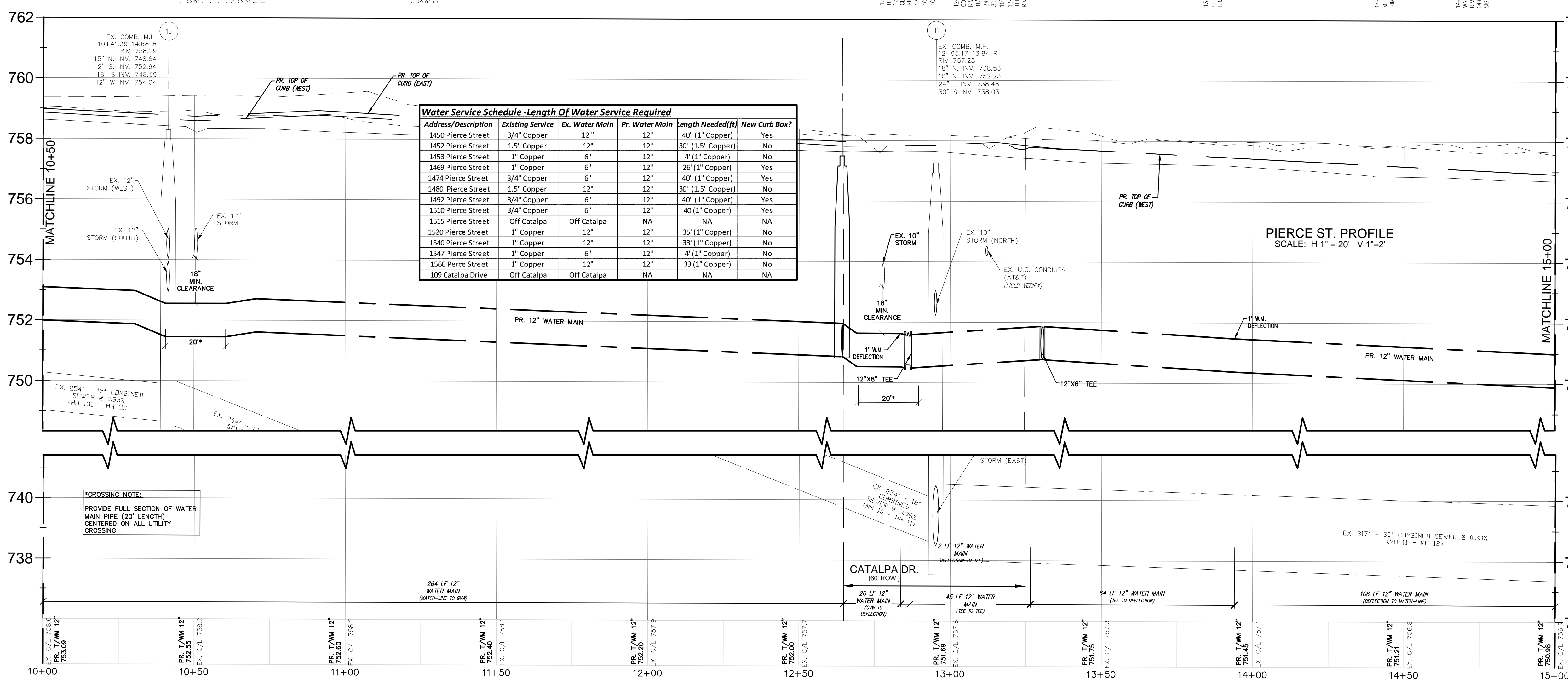
- 10 REVIEW STRUCTURE IN FIELD TO DETERMINE IF THE CASTING CAN BE SHIFTED TO THE ROAD ADJUST & RECONSTRUCT AS REQ.
- 11 REVIEW STRUCTURE IN FIELD TO DETERMINE IF THE CASTING CAN BE SHIFTED TO THE ROAD ADJUST & RECONSTRUCT AS REQ.

**STORM STRUCTURE SCHEDULE**

- 10a ADJUST & RECONSTRUCT AS REQ.
- 10b ADJUST & RECONSTRUCT AS REQ.
- 10c ADJUST & RECONSTRUCT AS REQ.
- 10d MAINTAIN
- 10e MAINTAIN
- 10f MAINTAIN

**WATER MAIN SCHEDULE**

- 20 ABANDON VALVE AND REMOVE WELL
- 21 REMOVE
- 22 INSTALL HYDRANT & ASSEMBLY
- 23 INSTALL PR. 12" GATE VALVE IN WELL



**UTILITY NOTE**  
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**LEGEND**

- CLEAN-OUT
- MANHOLE
- EXISTING SAN/COMB SEWER
- EXISTING WATER MAIN
- EXISTING STORM SEWER
- EXISTING BURIED CABLES
- EXISTING GAS MAIN
- EXISTING GAS VALVE
- EXISTING OVERHEAD LINES
- EXISTING EX PAVERS
- RECORD CURB STOP LOCATION (APPROX.)
- LANDSCAPE BED
- EX. SOIL BORING
- PUBLIC PHONE
- WELL
- PUMP
- SIGN
- POST/BOLLARD
- PARKING METER
- MAIL BOX
- ROCK/BOLLARD
- SPRINKLER VALVE BOX
- SPRINKLER HEAD
- FOUND PROPERTY MARKER
- GROUND ELEVATION

PROJECT  
Pierce Street Paving Project  
Contract #3-23(P)

CLIENT  
BIRMINGHAM A WALKABLE CITY  
Engineering Department  
151 Martin Street  
Birmingham, MI 48012

PROJECT LOCATION  
Part of the Southeast 1/4 of Section 36, Town 2 North, Range 10 East, City of Birmingham, Oakland County, Michigan

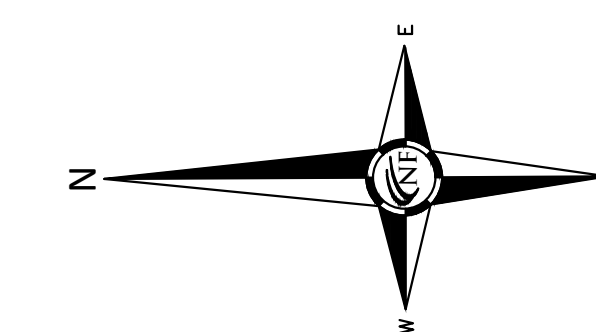
SHEET  
Pierce Street Paving & Utility Plan Sta. 10+00 to 15+00

811 Know what's below Call before you dig.

DATE ISSUED/REVISED  
12-08-21 ISSUED SURVEY  
01-06-23 ISSUED SURVEY  
02-01-23 ISSUED SURVEY  
05-05-23 ISSUED FOR EGLE W.M. PERMIT  
05-18-23 REVISED PER CITY REVIEW  
05-24-23 BIDS  
06-08-23 ADDENDUM 1

DRAWN BY: M. Hani  
DESIGNED BY: G. Viju  
APPROVED BY: B. Buchholz  
DATE: 12-08-2021  
SCALE: 1" = 20' / 1" = 2'  
NFE JOB NO. M515 SHEET NO. C3





Public Water Main Quantities - Sheet C4

12" D.I. Cl. 52 Water Main	500 L.F.
8" D.I. Cl. 52 Water Main	50 L.F.
6" D.I. Cl. 52 Water Main	24 L.F.
12" Gate Valve in Well	2 EA.
8" Gate Valve in Well	1 EA.
Hydrant Assembly, Complete	2 EA.
8" Water Main Connection to Ex. 8" Water Main	2 EA.

**SEWER STRUCTURE SCHEDULE**

12	ADJUST & RECONSTRUCT AS REQ. 16+12.11 12.45' R COMB. MH 13 RM 755.83 PR. RM 755.90 30" N. 736.98 30" S. 736.73 24" E. 741.13 12" N. 751.88	130	MAINTAIN 18+60.48' 39.63' R SAN. MH 130 (R) BURIED RM 755.49 8" S. 746.25
13	ADJUST & RECONSTRUCT AS REQ. 17+81.03 8.69' R COMB. MH 13 RM 755.40 PR. RM 755.32 30" N. 736.45 33" S. 736.20 12" W. 748.40 12" NW 746.45	130a	MAINTAIN 16+26.38' 54.23' L CB 15c RM 755.79 12" N. 752.14 12" E. 752.14

**STORM STRUCTURE SCHEDULE**

12b	ADJUST & RECONSTRUCT AS REQ. 15+98.09 13.66' R CB 12a RM 755.81 PR. RM 755.93 12" S. 752.16 TRAP (WTR.)	130c	MAINTAIN 17+59.14 21.68' R STORM MH 13a RM 755.76 12" SE 751.76 TRAP (WTR.) 12" SE (V.I.F.)
130a	ADJUST & RECONSTRUCT AS REQ. 17+82.20 13.05' L CB 13b RM 755.00 PR. RM 755.00 12" NW 752.07	130b	MAINTAIN 18+15.25' 81.16' R CB RM 756.26 4" DRAIN
130b	ADJUST & RECONSTRUCT AS REQ. 18+03.74 44.33' L STORM CB RM 756.22	130c	MAINTAIN 16+36.63' 23.02' L HID 41 FG 756.60

**WATER MAIN SCHEDULE**

22	ABANDON VALVE AND REMOVE WELL 12+64.00' 10.39' L GATE VALVE RM 757.52	48	RECONNECT 16+36.63' 23.02' L HID 41 FG 756.60
22a	ABANDON VALVE AND REMOVE WELL G.W. 22A RM 756.51	48a	RECONNECT 18+10.87' 20.16' L HID 41 FG 755.34
23	ABANDON VALVE AND REMOVE WELL 16+79.91' 12.97' L G.W. 23 RM 756.97	48b	INSTALL HYDRANT & ASSEMBLY STA. 16+33.73' 24.37L PR. F.G. 756.60 PR. 1/PIPE 750.85
46	ABANDON VALVE AND REMOVE WELL 18+13.49' 14.70' L G.W. 45.22	48c	INSTALL HYDRANT & ASSEMBLY STA. 18+21.61' 19.80L F.G. 755.86 PR. 1/PIPE 749.86
47	INSTALL PR. 12" GATE VALVE IN WELL PR. STA. 15+79.84' 08.99' L PR. RM. 756.15 PR. 1/PIPE 750.60	49	INSTALL PR. 12" GATE VALVE IN WELL PR. STA. 16+13.54' 10.72' L PR. RM. 755.29 PR. 1/PIPE 749.24
47a	INSTALL PR. 8" GATE VALVE IN WELL PR. STA. 16+4.54' 15.84' L PR. RM. 755.95 PR. 1/PIPE 750.55		

**Water Service Schedule - Length of Water Service Required**

Address/Description	Existing Service	Ex. Water Main	Pr. Water Main	Length Needed (ft)	New Curb Box?
1569 Pierce Street	Off S. Lawn Blvd	Off S. Lawn Blvd	NA	NA	NA
1570 Pierce Street	3/4" Copper	6"	12"	52' (1" Copper)	Yes
1584 Pierce Street	3/4" Copper	6"	12"	51' (1" Copper)	Yes
1598 Pierce Street	1" PVC	6"	12"	0	No
1638 Pierce Street	3/4" Copper	6"	12"	51' (1" Copper)	Yes
1682 Pierce Street	3/4" Copper	6"	12"	51' (1" Copper)	Yes
1710 Pierce Street	1" Copper	12"	12"	40' (1" Copper)	No
1736 Pierce Street	1" Copper	12"	12"	40' (1" Copper)	No
1748 Pierce Street	1" Copper	12"	12"	40' (1" Copper)	No
1760 Pierce Street	1" Copper	12"	12"	40' (1" Copper)	No
1829 Pierce Street	6" D.I. Fire Protection Svc.	6"	12"	4' (6" D.I.)	No

**UTILITY NOTE**  
THE LOCATIONS AND ELEVATIONS OF SOME OF THE EXISTING UNDERGROUND UTILITIES AS SHOWN ON THE SURVEY DRAWING WERE OBTAINED FROM MUNICIPAL AND UTILITY COMPANY RECORDS AND MAPS. THEREFORE, NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.

**LEGEND**

CLEAN-OUT	MANHOLE	EXISTING SAN/COMB SEWER
WATER MAIN	END SECTION	EXISTING WATER MAIN
ELEC. METER	TELEPHONE MANHOLE	HYDRANT
ELEC. METER	TELEPHONE MANHOLE	EXISTING BURIED CABLES
GAS MARKER	GAS VALVE	EXISTING GAS MAIN
UTILITY POLE	STRAN POLE	OVERHEAD LINES
	STRAN POLE	GUY WIRE
	(RECORD) CURB STOP LOCATION (APPROX.)	EX PAVERS
	EX. SOIL BORING	
	PUBLIC PHONE	
	WELL	
	PUMP	
	SIGN	
	POST/BOLLARD	
	PARKING METER	
	MAIL BOX	
	ROCK/BOLLARD	
	SPRINKLER VALVE BOX	
	SPRINKLER HEAD	
	FOUND PROPERTY MARKER	
	×000.00	GROUND ELEVATION

SEAL

PROJECT  
Pierce Street Paving Project  
Contract#3-23(P)

CLIENT  
**BIRMINGHAM**  
A VALIABLE CITY  
Engineering Department  
151 Martin Street  
Birmingham, MI 48012

PROJECT LOCATION  
Part of the Southeast 1/4 of Section 36, Town 2 North, Range 10 East, City of Birmingham, Oakland County, Michigan

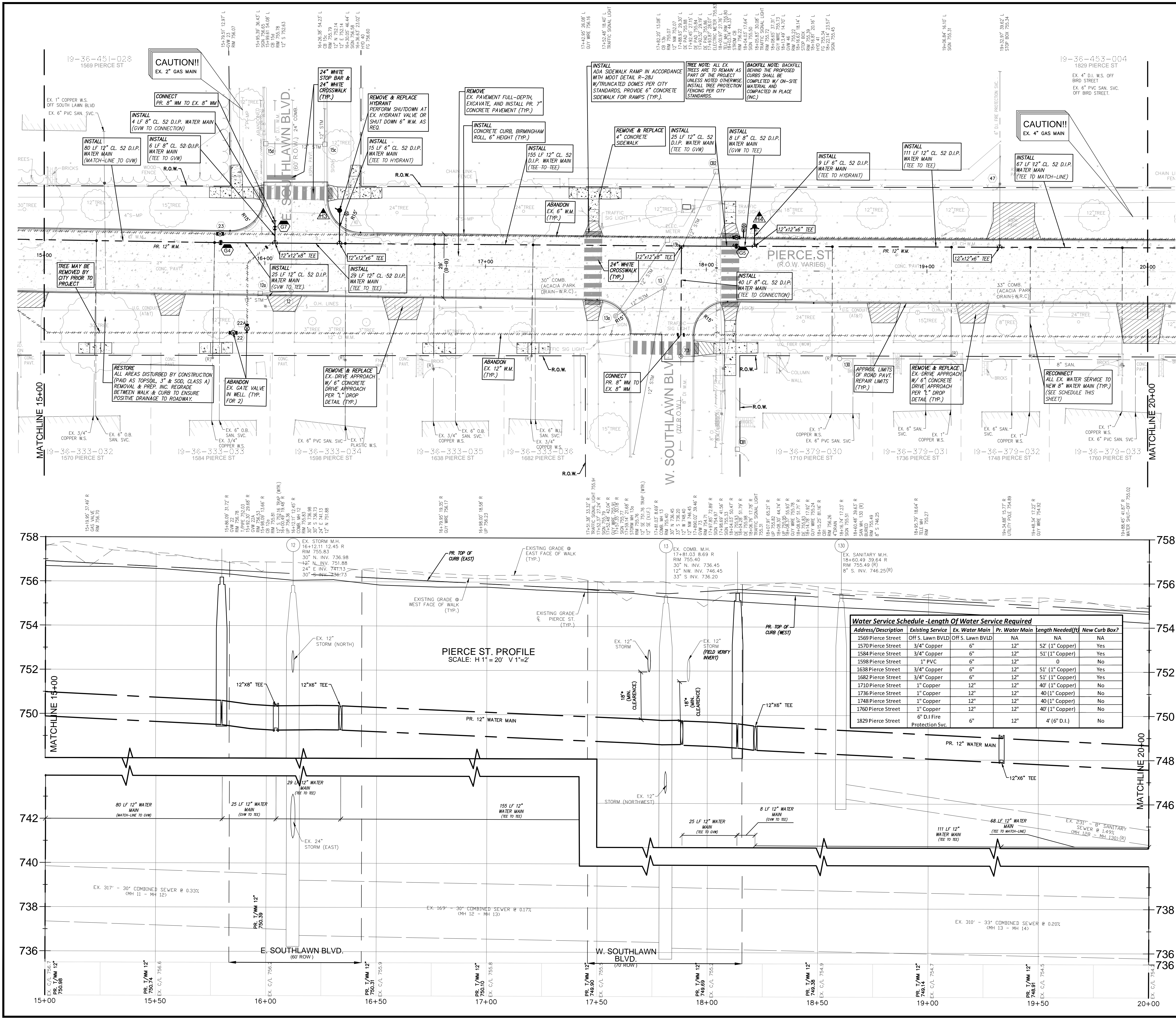
SHEET  
Pierce Street Water Main Plan & Profile Sta. 15+00 to 20+00



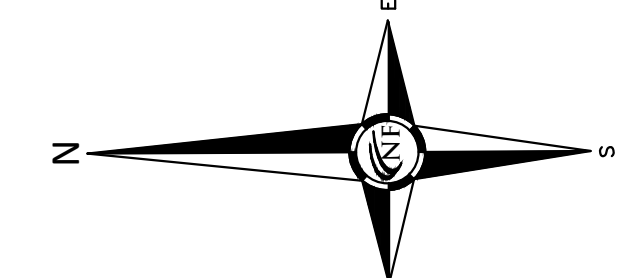
DATE ISSUED/REVISED  
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01-06-23 ISSUED SURVEY  
02-01-23 ISSUED SURVEY  
05-05-23 ISSUED FOR EGLE W.M. PERMIT  
05-18-23 REVISED PER CITY REVIEW  
05-24-23 BIDS  
06-08-23 ADDENDUM 1

DRAWN BY:  
M. Hani  
DESIGNED BY:  
G. Viju  
APPROVED BY:  
B. Buchholz

DATE:  
12-08-2021  
SCALE: 1" = 20' / 1" = 2'  
NFE JOB NO. SHEET NO.  
**M515 C4**







Storm Drainage Structure Schedule		Storm Drainage Structure Schedule	
Structure Name	Structure Details	Structure Name	Structure Details
#14X	PR. 4" DIA. STORM MANHOLE W/ 2' SUMP	#15X	PR. 5" DIA. STORM MANHOLE W/ 2' SUMP
#14Xa	PR. 2" DIA. STORM INLET	#15Xa	PR. 2" DIA. STORM INLET
#14Xb	PR. 2" DIA. STORM INLET	#15Xb	PR. 2" DIA. STORM INLET
#14Y	PR. 4" DIA. STORM MANHOLE W/ 2' SUMP (CONSTRUCT ONLINE, RECONNECT EX. 8" STM EAST (-748.50), FIELD VERIFY INVERT)		

Water Service Schedule - Length Of Water Service Required				
Address/Description	Existing Service	Ex. Water Main	Pr. Water Main	Length Needed (ft) New Curb Box?
1774 Pierce Street	1" Copper	12"	12"	41' (1" Copper) No
1788 Pierce Street	1" Copper	12"	12"	41' (1" Copper) No
1806 Pierce Street	1" Copper	12"	12"	41' (1" Copper) No
1826 Pierce Street	1" Copper	12"	12"	41' (1" Copper) No
1829 Pierce Street	4" Dom. Svc. Off Bird	OFF Bird	NA	NA
1848 Pierce Street	1" Copper	12"	12"	41' (1" Copper) No
1866 Pierce Street	1" Copper	12"	12"	41' (1" Copper) No
1882 Pierce Street	1" Copper	12"	12"	41' (1" Copper) No
1896 Pierce Street	1" Copper	12"	12"	41' (1" Copper) No
1900 Pierce Street	1" Copper	12"	12"	41' (1" Copper) No

Public Water Main Quantities - Sheet C5	
12" D.I. Cl. 52 Water Main	450 L.F.
8" D.I. Cl. 52 Water Main	24 L.F.
6" D.I. Cl. 52 Water Main	12 L.F.
4" D.I. Cl. 52 Water Main	4 L.F.
12" Gate Valve in Well	1 EA.
8" Gate Valve in Well	1 EA.
Hydrant Assembly, Complete	1 EA.
4" Water Main Connection to Ex. 4" Water Main	1 EA.

### SEWER STRUCTURE SCHEDULE

14	ADJUST & RECONSTRUCT AS REQ.	128	MAINTAIN
15	ADJUST & RECONSTRUCT AS REQ.	129	MAINTAIN

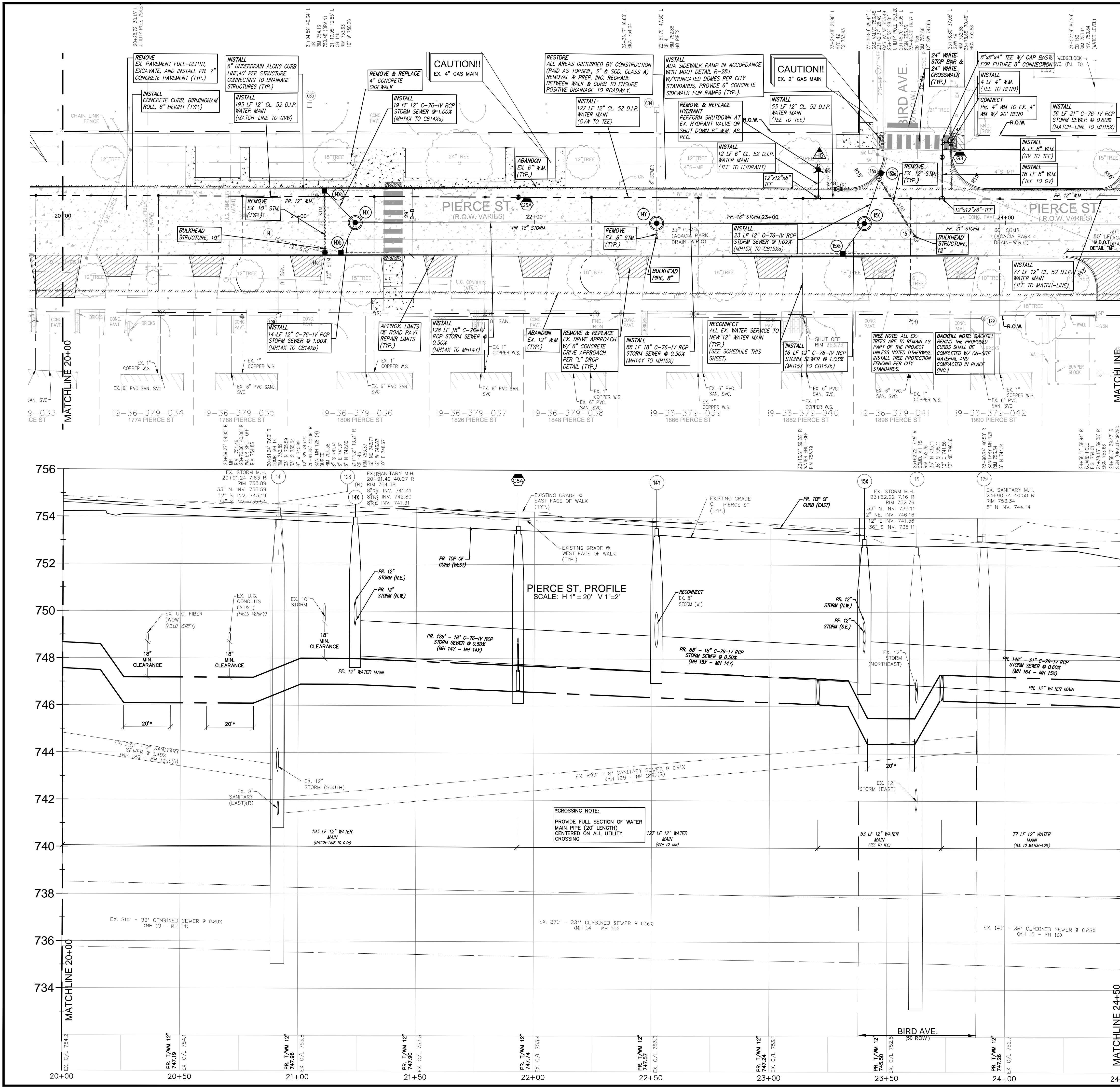
### STORM STRUCTURE SCHEDULE

14c	REMOVE & B.H.	14b	REMOVE & B.H.
15a	REMOVE	15b	REMOVE

### WATER MAIN SCHEDULE

48	ABANDON VALVE AND REMOVE WELL	49	REMOVE
49	INSTALL	50	INSTALL
50	INSTALL		

LEGEND	
CLEAN-OUT	EXISTING SAN/COMB SEWER
MANHOLE	EXISTING WATER MAIN
HYDRANT	EXISTING STORM SEWER
EXISTING BURIED CABLES	
EXISTING GAS MAIN	
EXISTING OVERHEAD LINES	
EX PAVERS	



SEAL

PROJECT  
Pierce Street Paving Project  
Contract #3-23(P)



Engineering Department  
151 Martin Street  
Birmingham, MI 48012

PROJECT LOCATION  
Part of the Southeast 1/4 of Section 36, Town 2 North, Range 10 East, City of Birmingham, Oakland County, Michigan

SHEET  
Pierce Street Paving & Utility Plan Sta. 20+00 to 24+50.



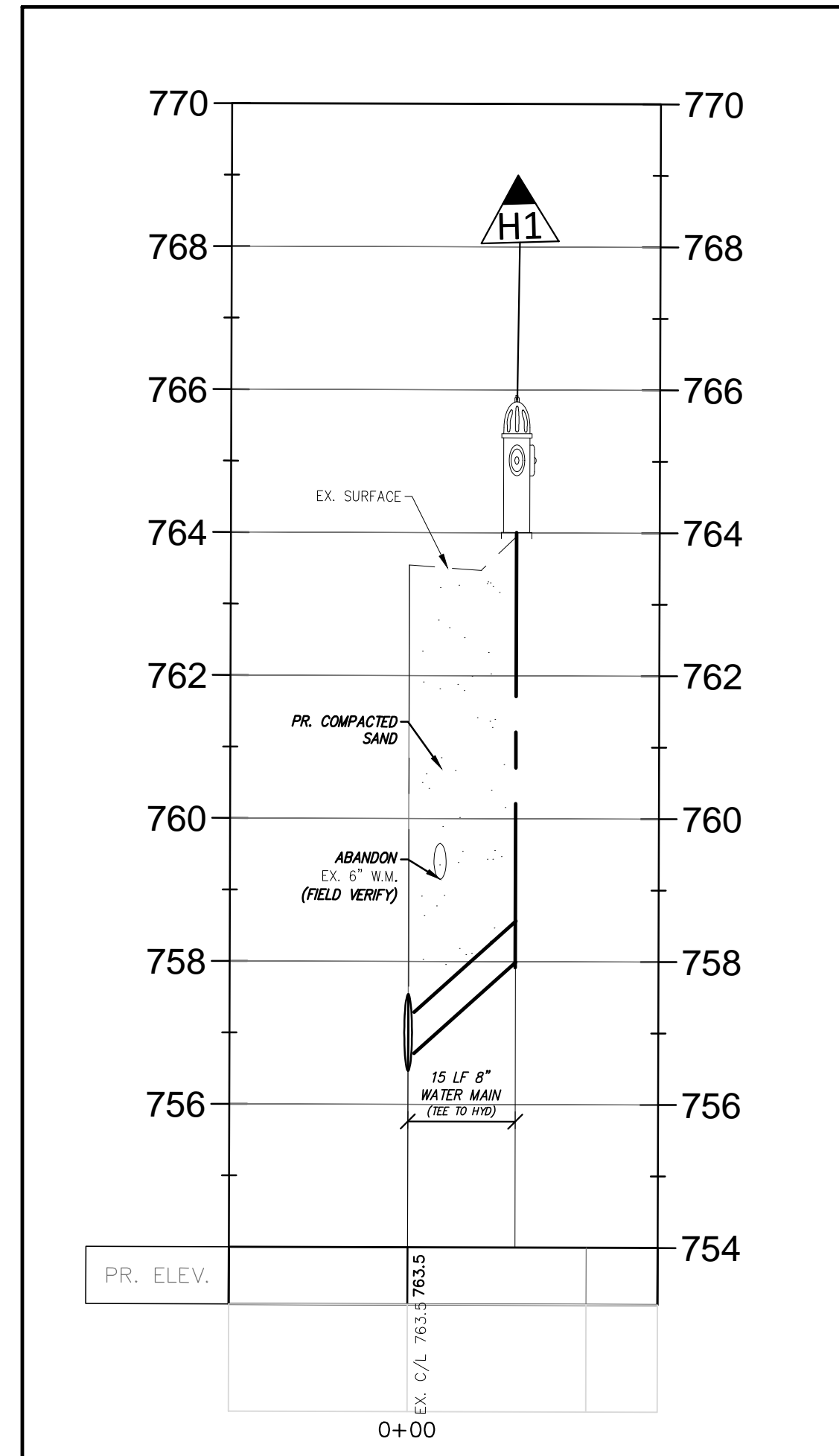
DATE	ISSUED/REVISED
12-08-21	ISSUED SURVEY
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05-05-23	ISSUED FOR EGLE W.M. PERMIT
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05-24-23	BIDS
06-08-23	ADDENDUM 1

DRAWN BY:  
M. Hani  
DESIGNED BY:  
G. Viju  
APPROVED BY:  
B. Buchholz  
DATE:  
12-08-2021  
SCALE: 1" = 20' / 1" = 2'  
NFE JOB NO. M515 SHEET NO. C5



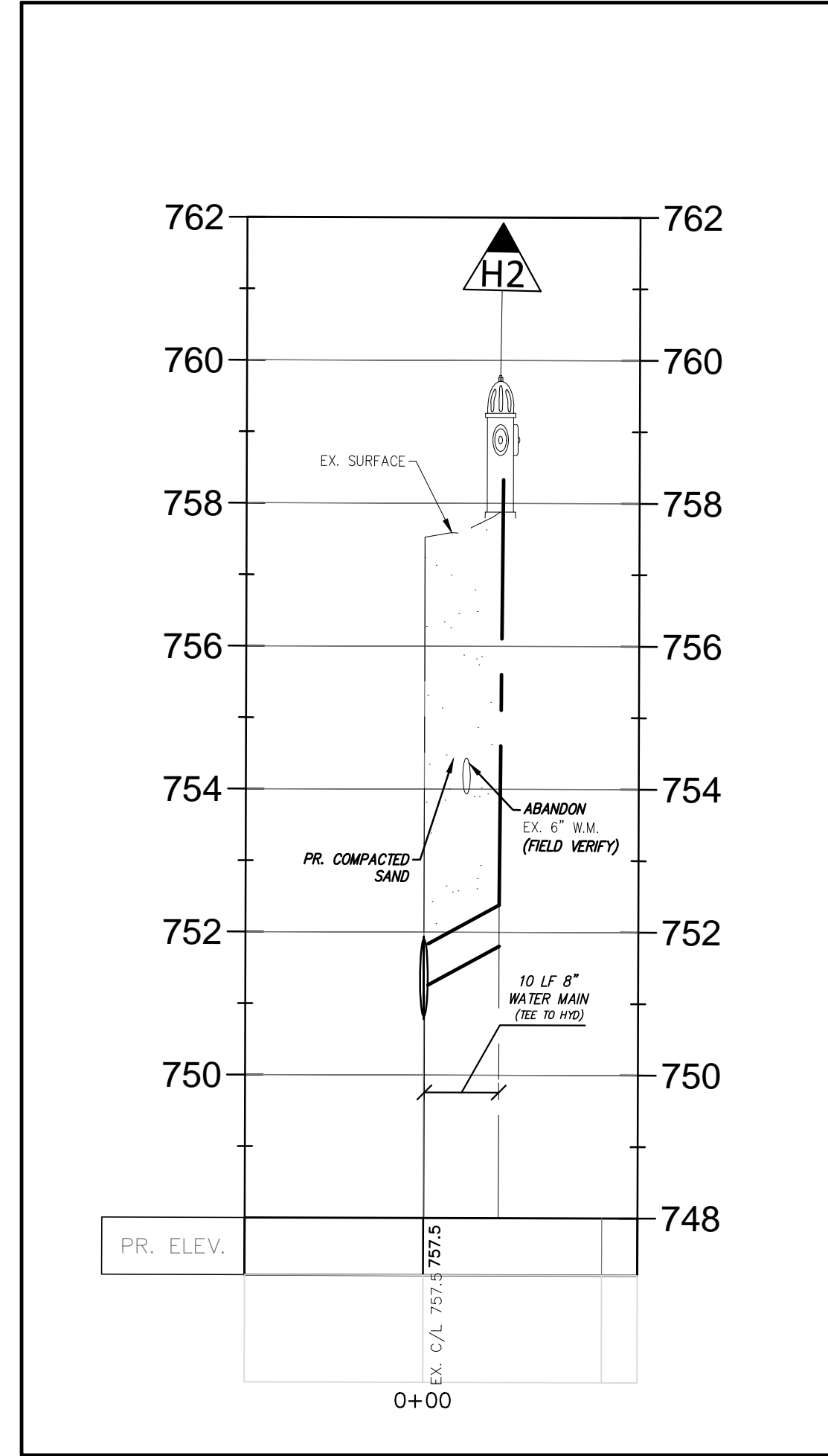






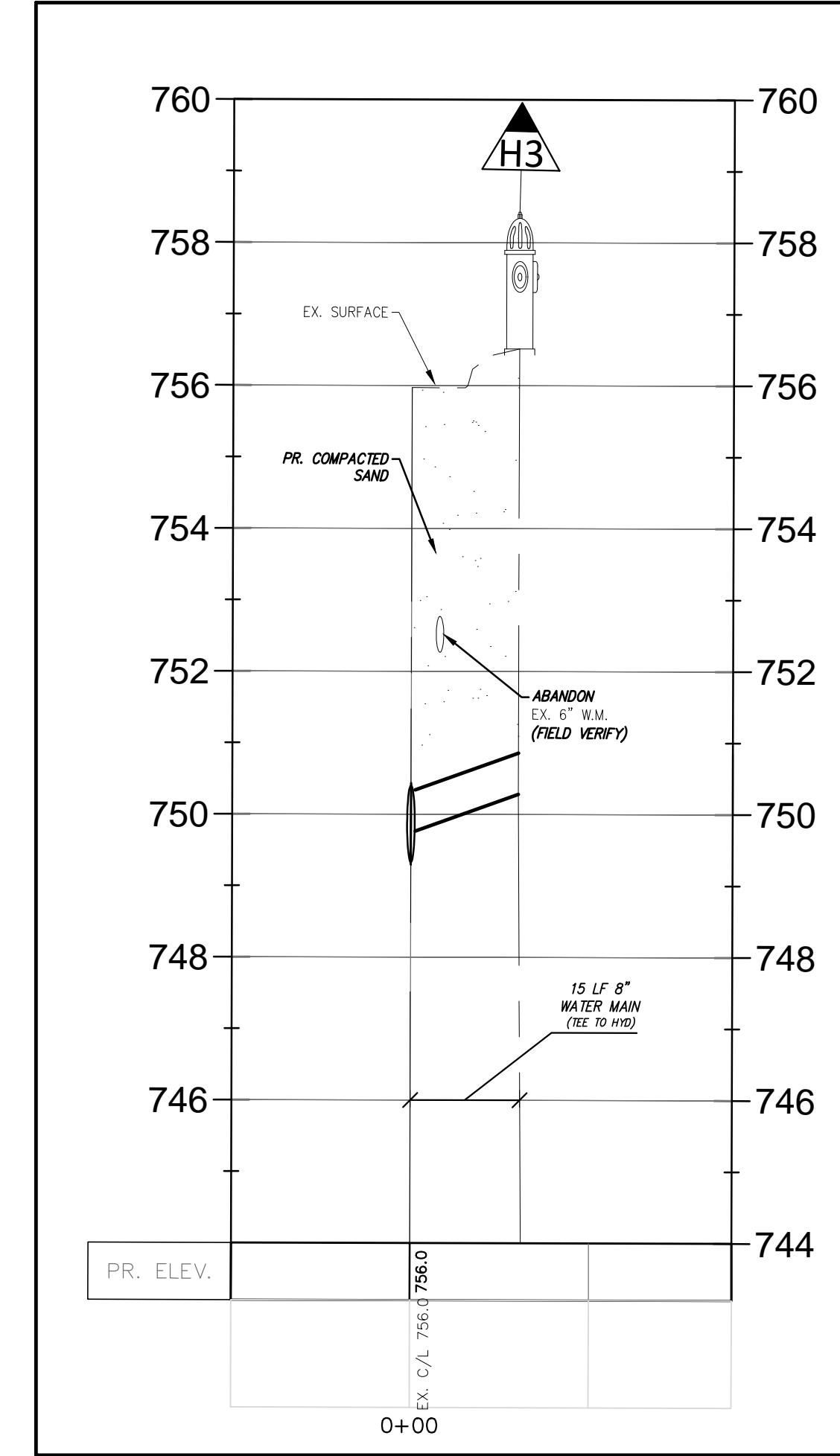
TEE to H1

SCALE: 1"=20'(H)  
1"=2'(V)



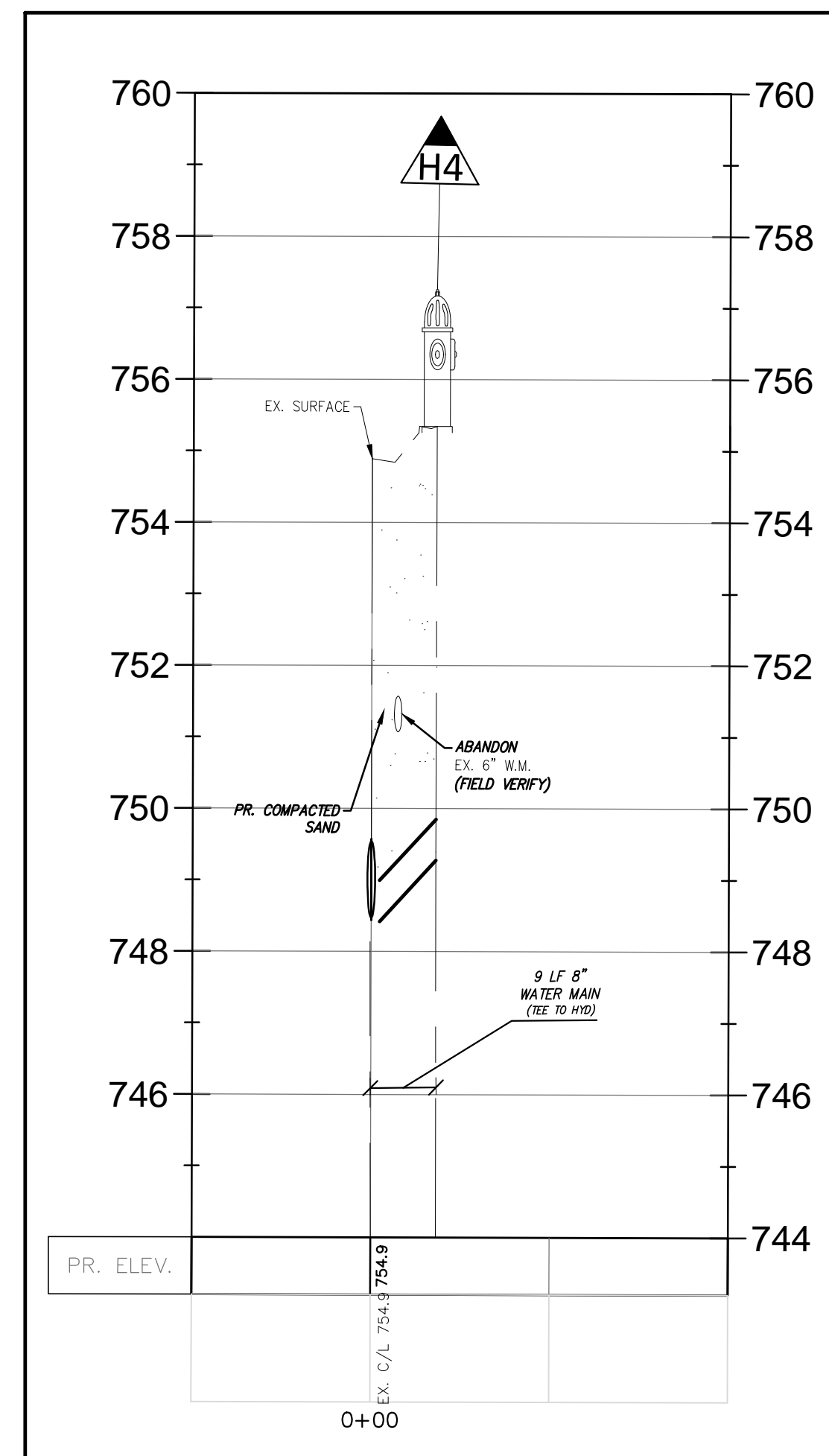
TEE to H2

SCALE: 1"=20'(H)  
1"=2'(V)



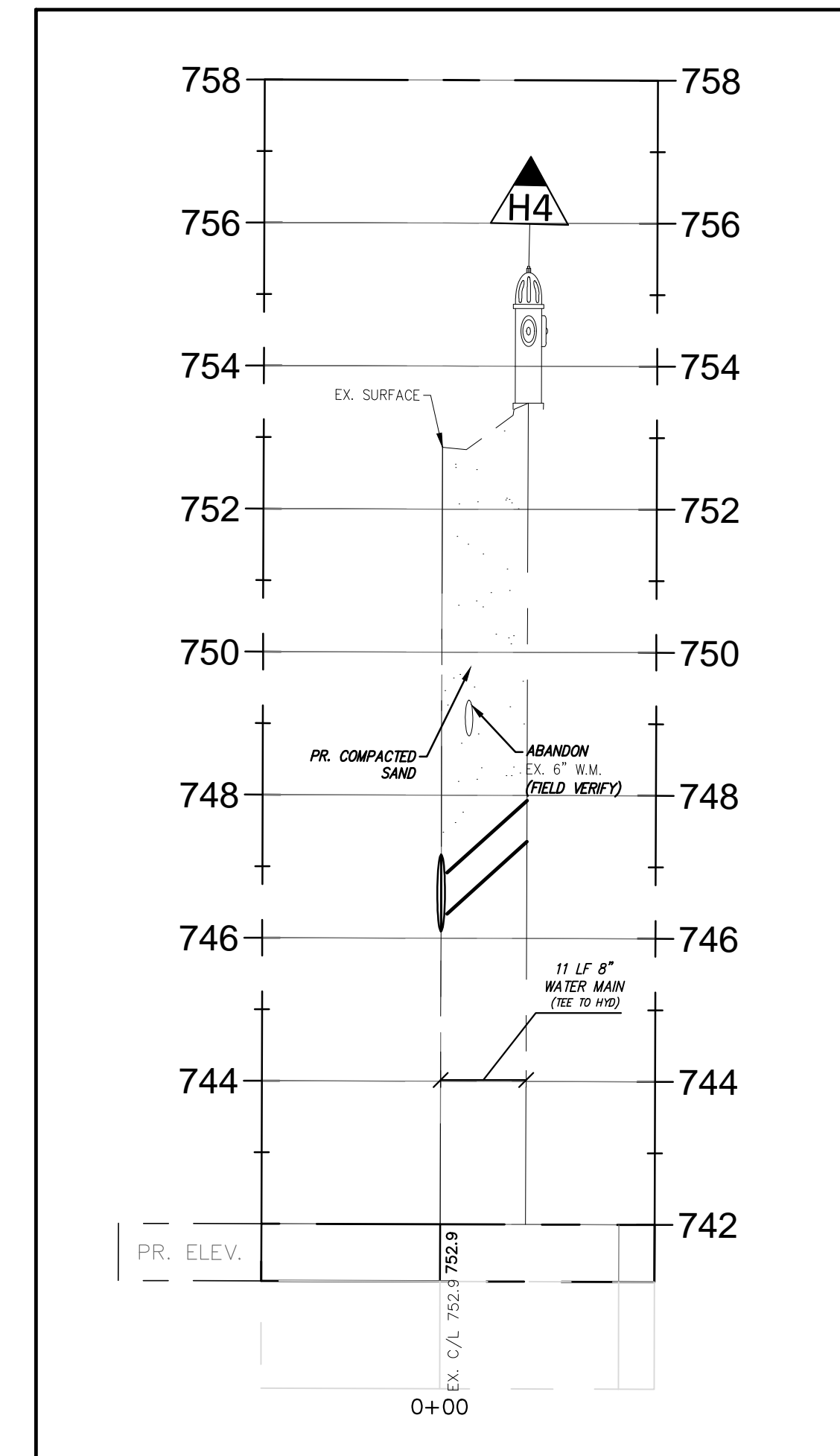
TEE to H3

SCALE: 1"=20'(H)  
1"=2'(V)



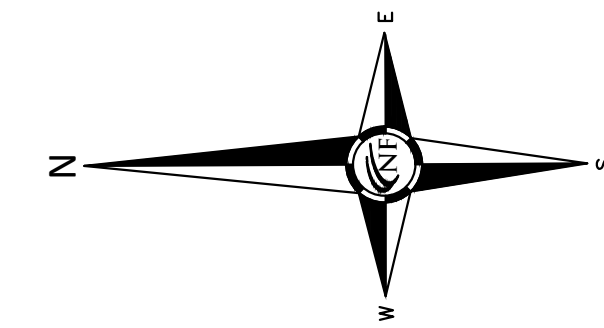
TEE to H4

SCALE: 1"=20'(H)  
1"=2'(V)



TEE to H5

SCALE: 1"=20'(H)  
1"=2'(V)



SEAL

PROJECT  
Pierce Street Paving  
Project  
Contract#3-23(P)

CLIENT



Engineering Department  
151 Martin Street  
Birmingham, MI 48012

PROJECT LOCATION

Part of the Southeast 1/4  
of Section 36, Town 2 North,  
Range 10 East, City of  
Birmingham, Oakland  
County, Michigan

SHEET

Hydrant Lead Profiles



Know what's below  
Call before you dig.

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05-24-23	BIDS
06-08-23	ADDENDUM 1

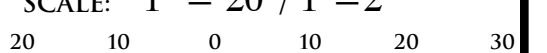
DRAWN BY:  
M. Hani

DESIGNED BY:  
G. Viju

APPROVED BY:  
B. Buchholz

DATE:  
12-08-2021

SCALE: 1" = 20' / 1"=2'



NFE JOB NO. SHEET NO.

M515 C7



SEAL

PROJECT  
Pierce Street Paving  
Project  
Contract#3-23(P)

CLIENT



Engineering Department  
151 Martin Street  
Birmingham, MI 48012

PROJECT LOCATION

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of Section 36, Town 2 North,  
Range 10 East, City of  
Birmingham, Oakland  
County, Michigan

SHEET  
Strom Profiles



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05-18-23	REVISED PER CITY REVIEW
05-24-23	BIDS
06-08-23	ADDENDUM 1

DRAWN BY:

M. Hani

DESIGNED BY:

G. Viju

APPROVED BY:

B. Buchholz

DATE:

12-08-2021

SCALE: 1" = 20' / 1" = 2'

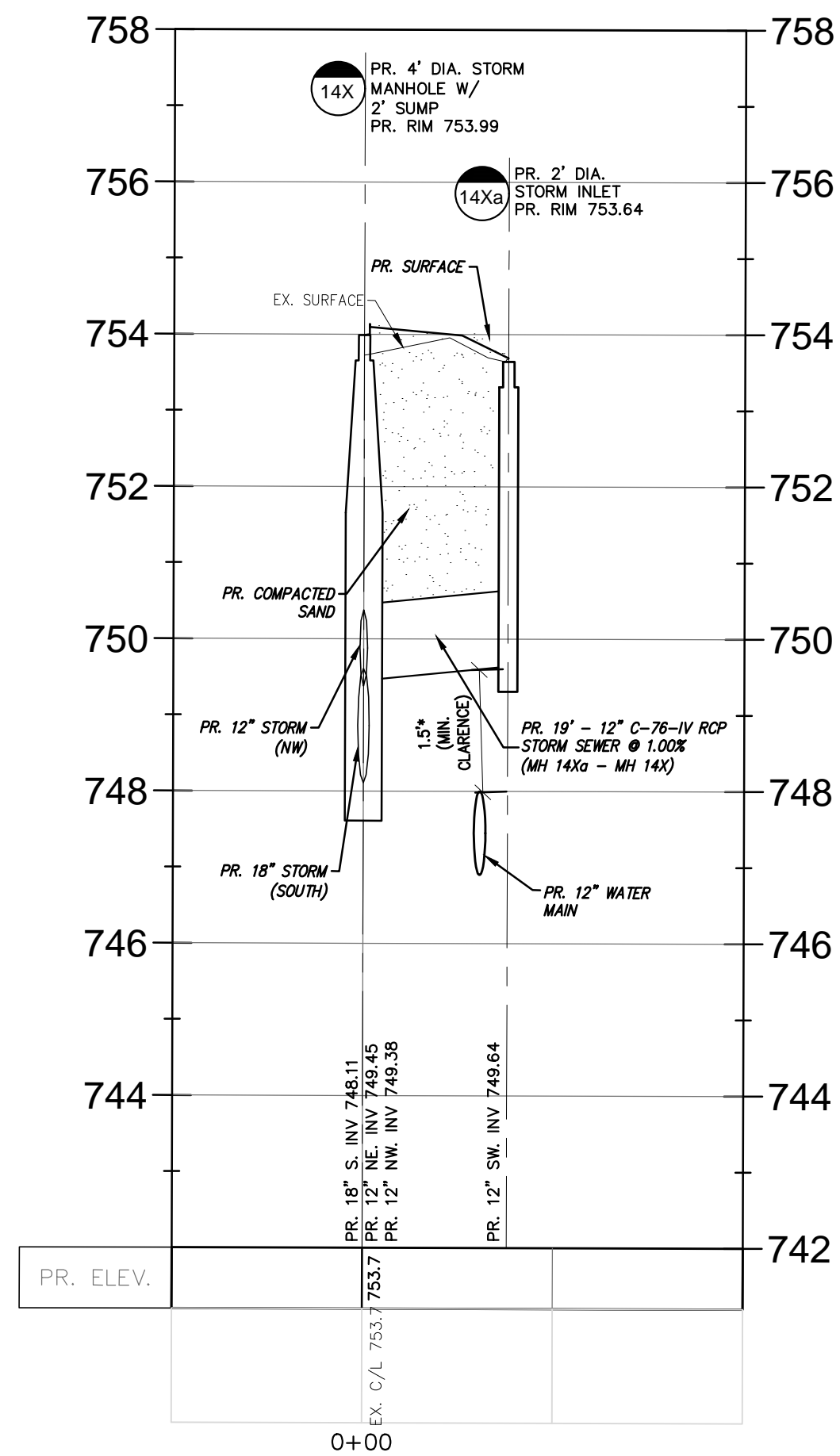
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NFE JOB NO.

M515

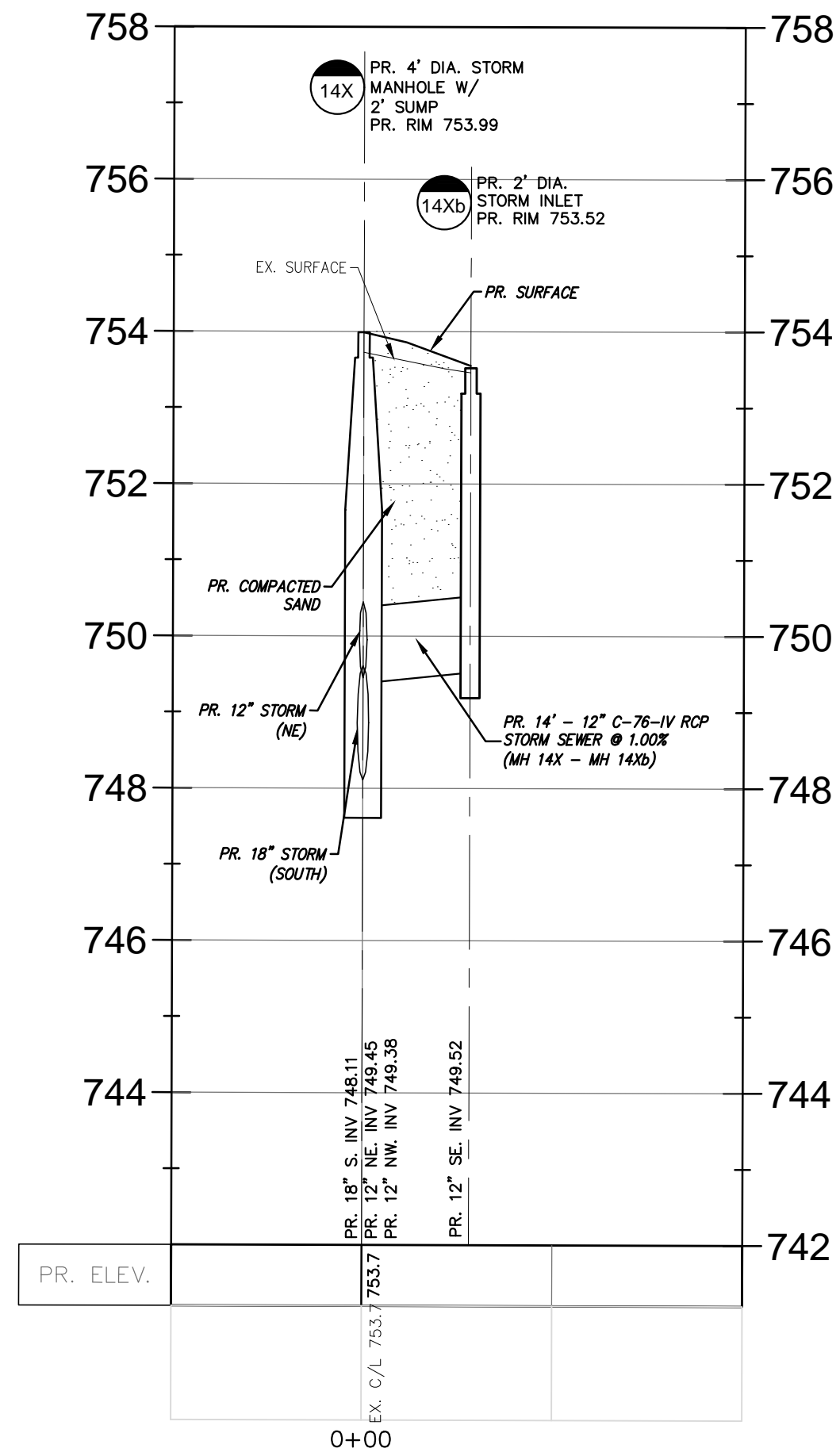
SHEET NO.

C8



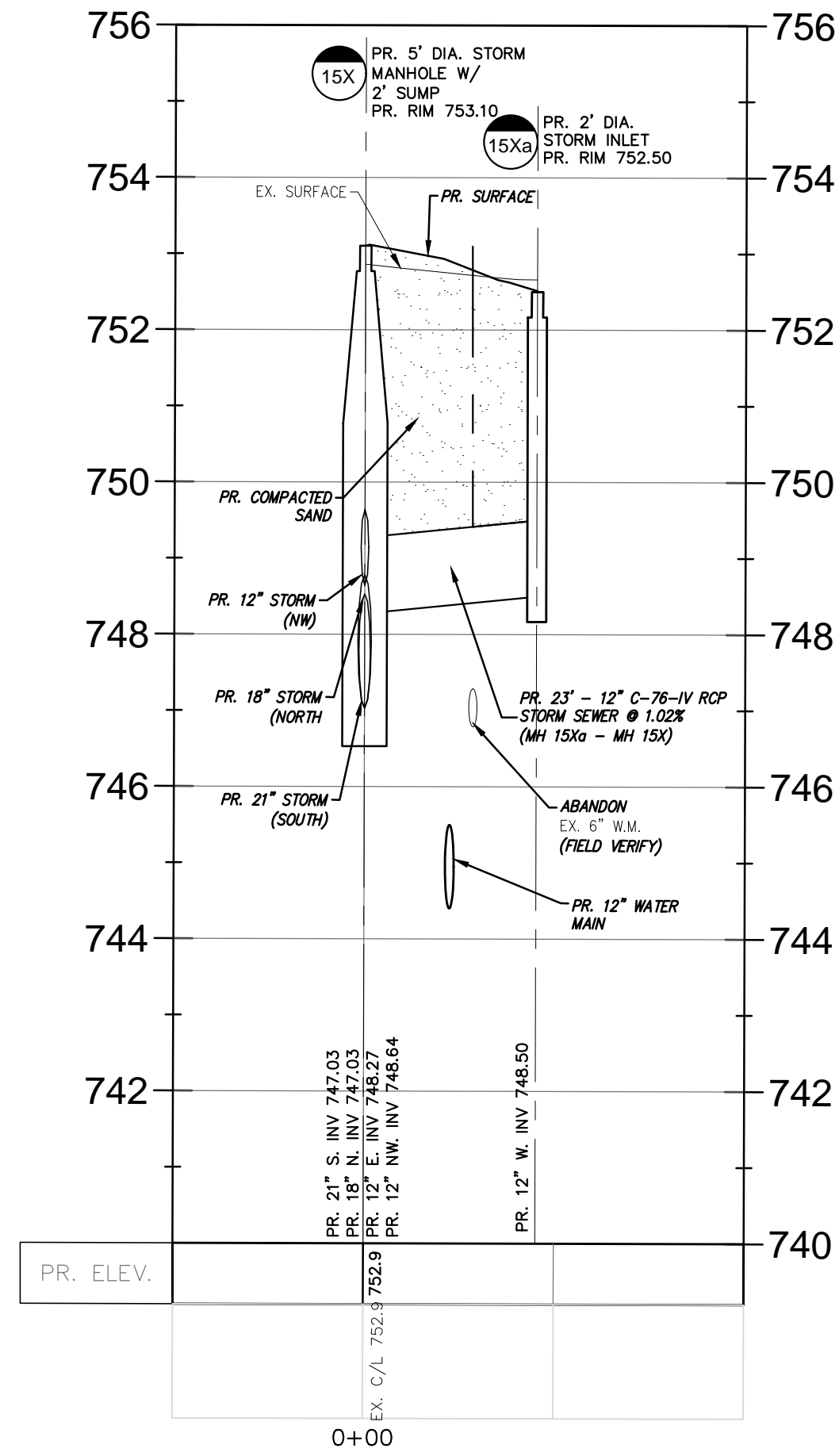
**STORM SEWER (MH 14X- CB14Xa)**

SCALE: 1"=20' (H), 1"=2' (V)



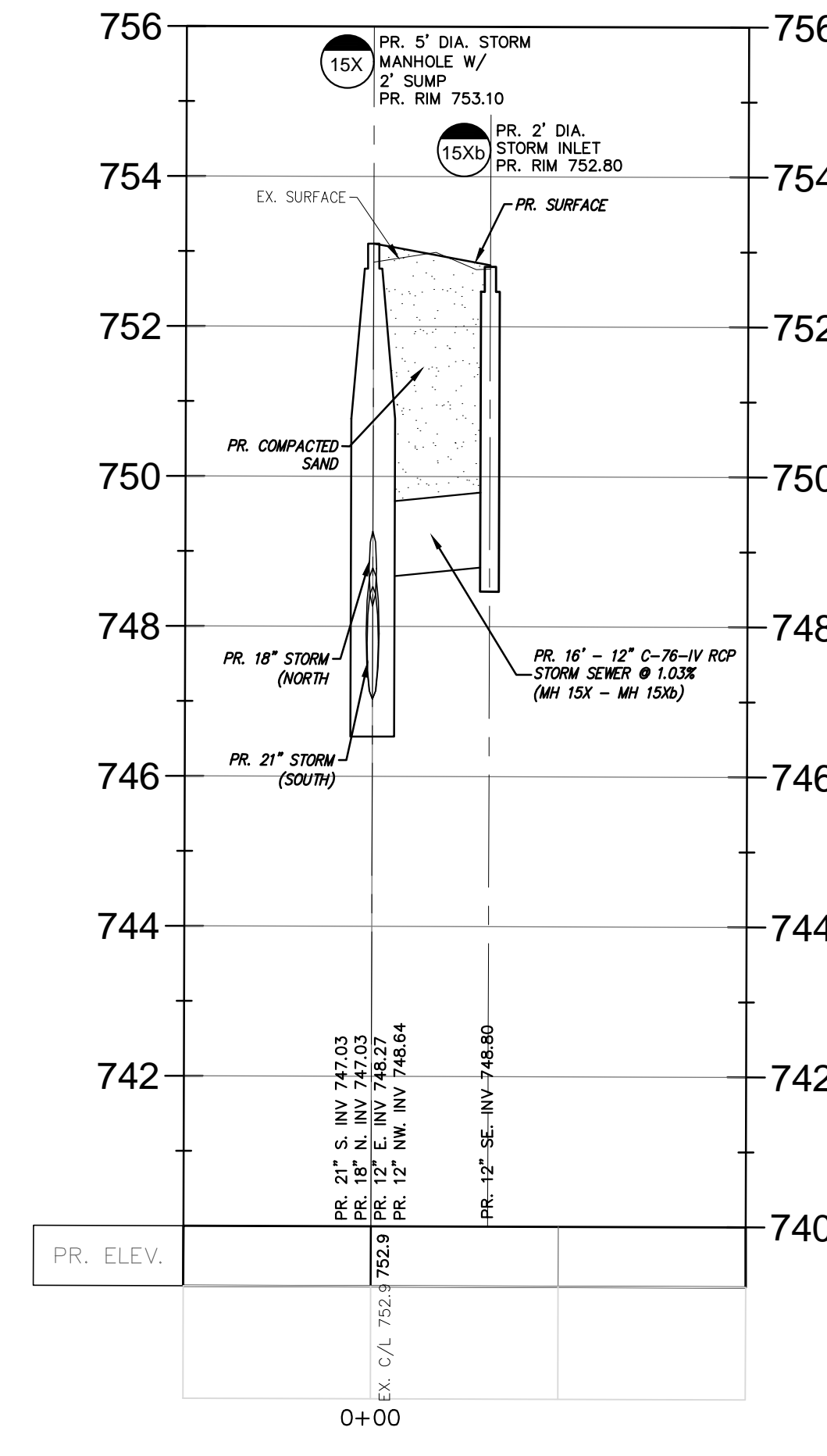
**STORM SEWER (MH 14X- CB14Xb)**

SCALE: 1"=20' (H), 1"=2' (V)



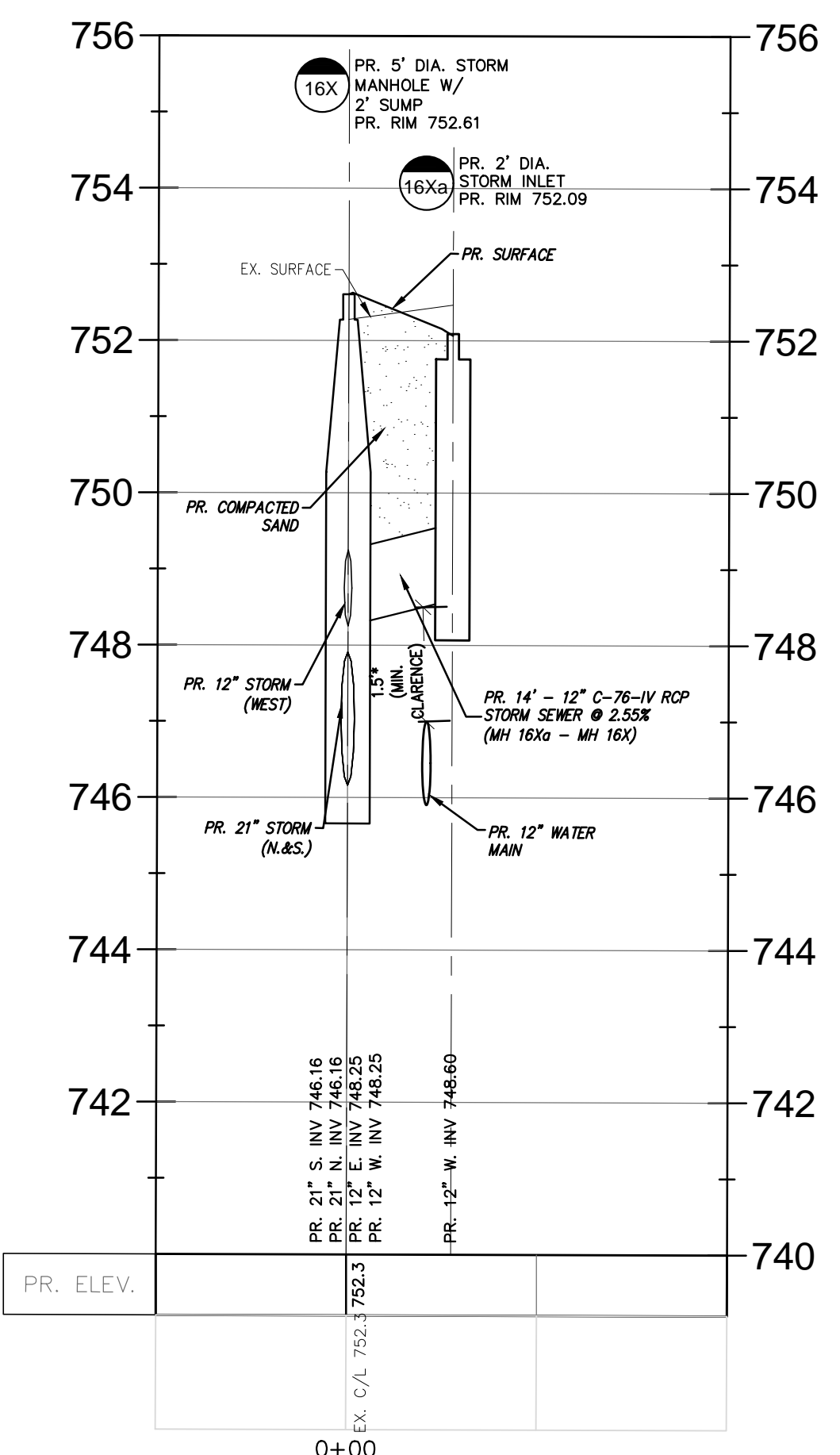
**STORM SEWER (MH 15X- CB15Xa)**

SCALE: 1"=20' (H), 1"=2' (V)



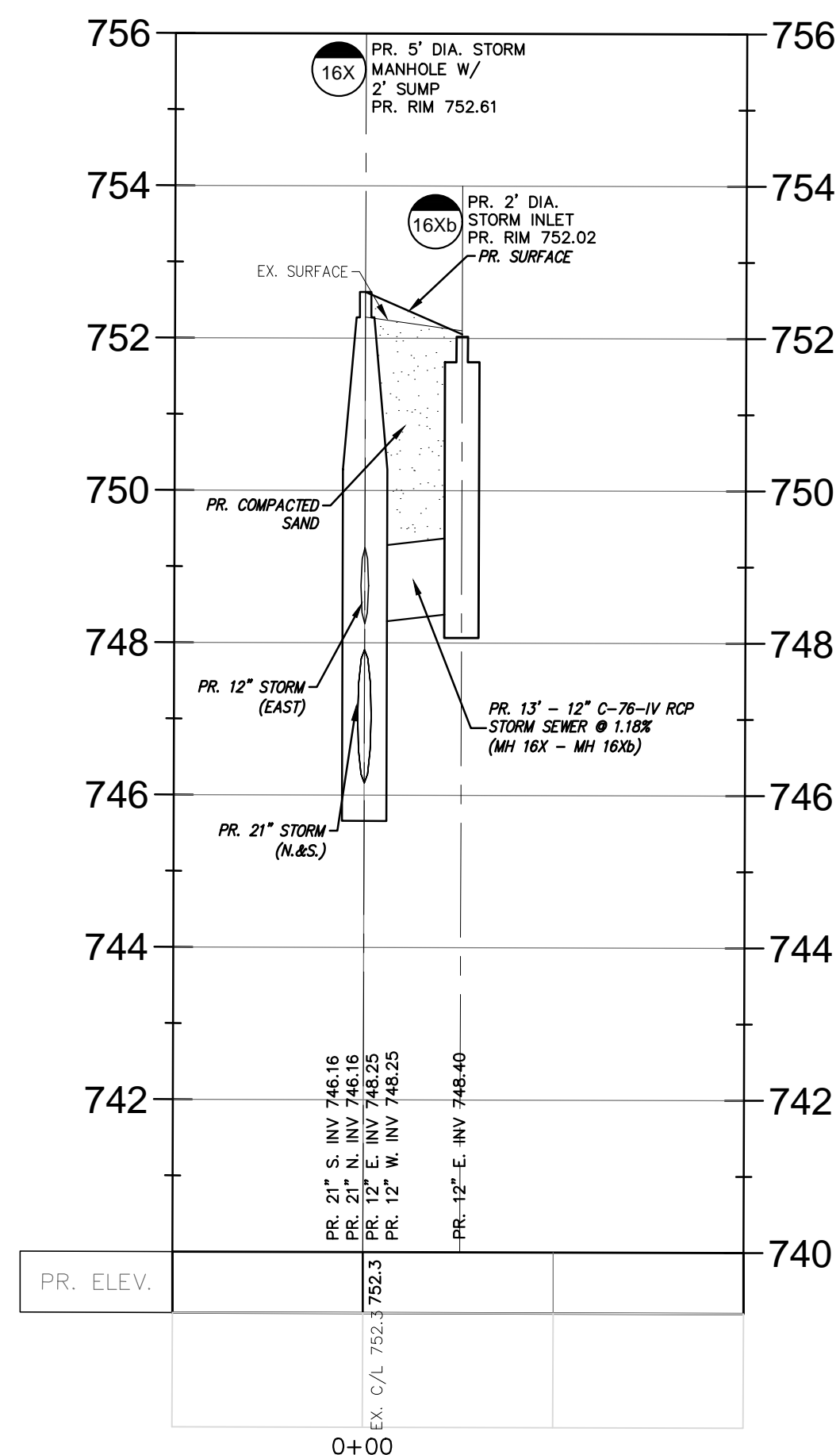
**STORM SEWER (MH 15X- CB15Xb)**

SCALE: 1"=20' (H), 1"=2' (V)



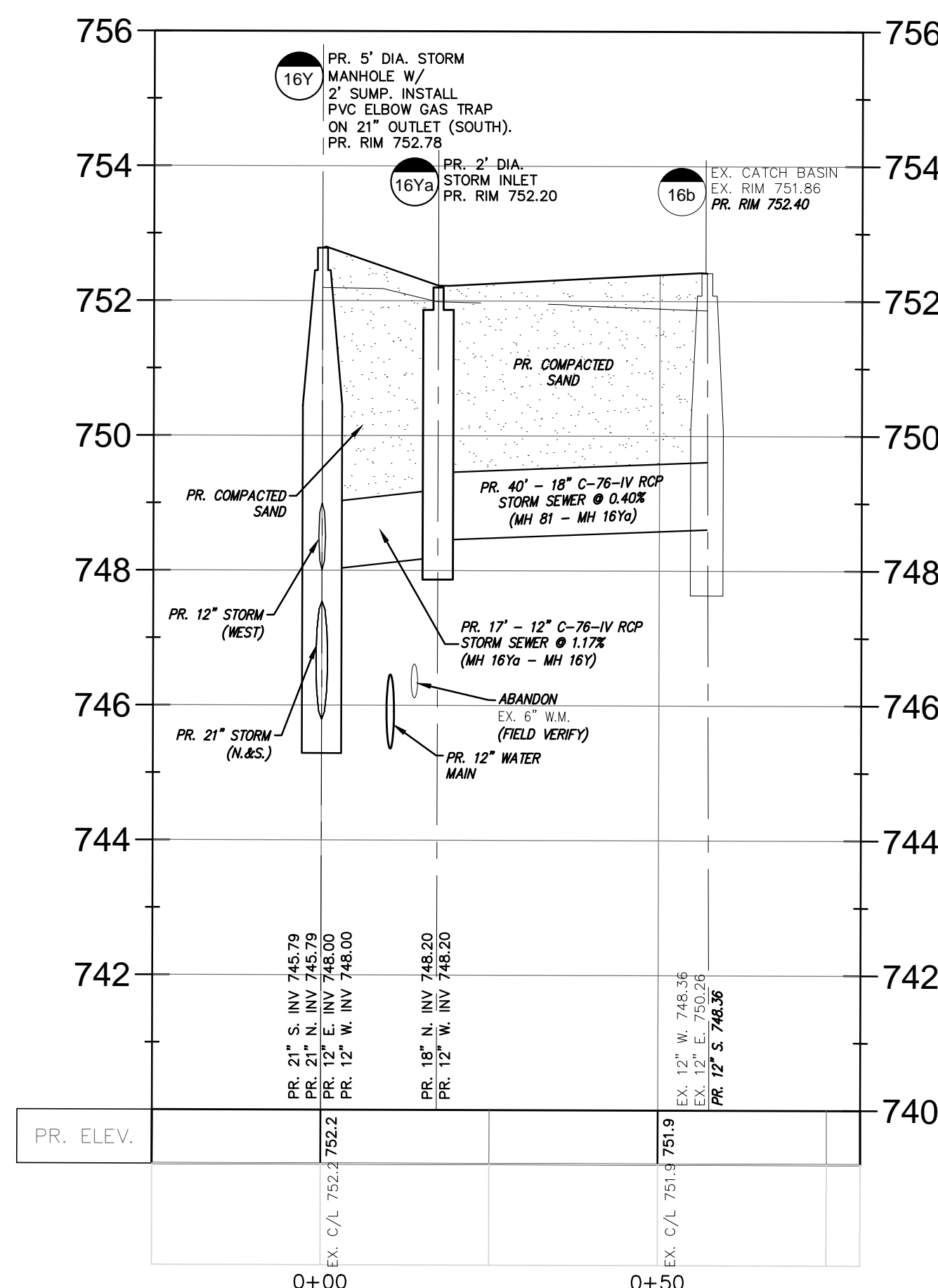
**STORM SEWER (MH 16X- CB16Xa)**

SCALE: 1"=20' (H), 1"=2' (V)



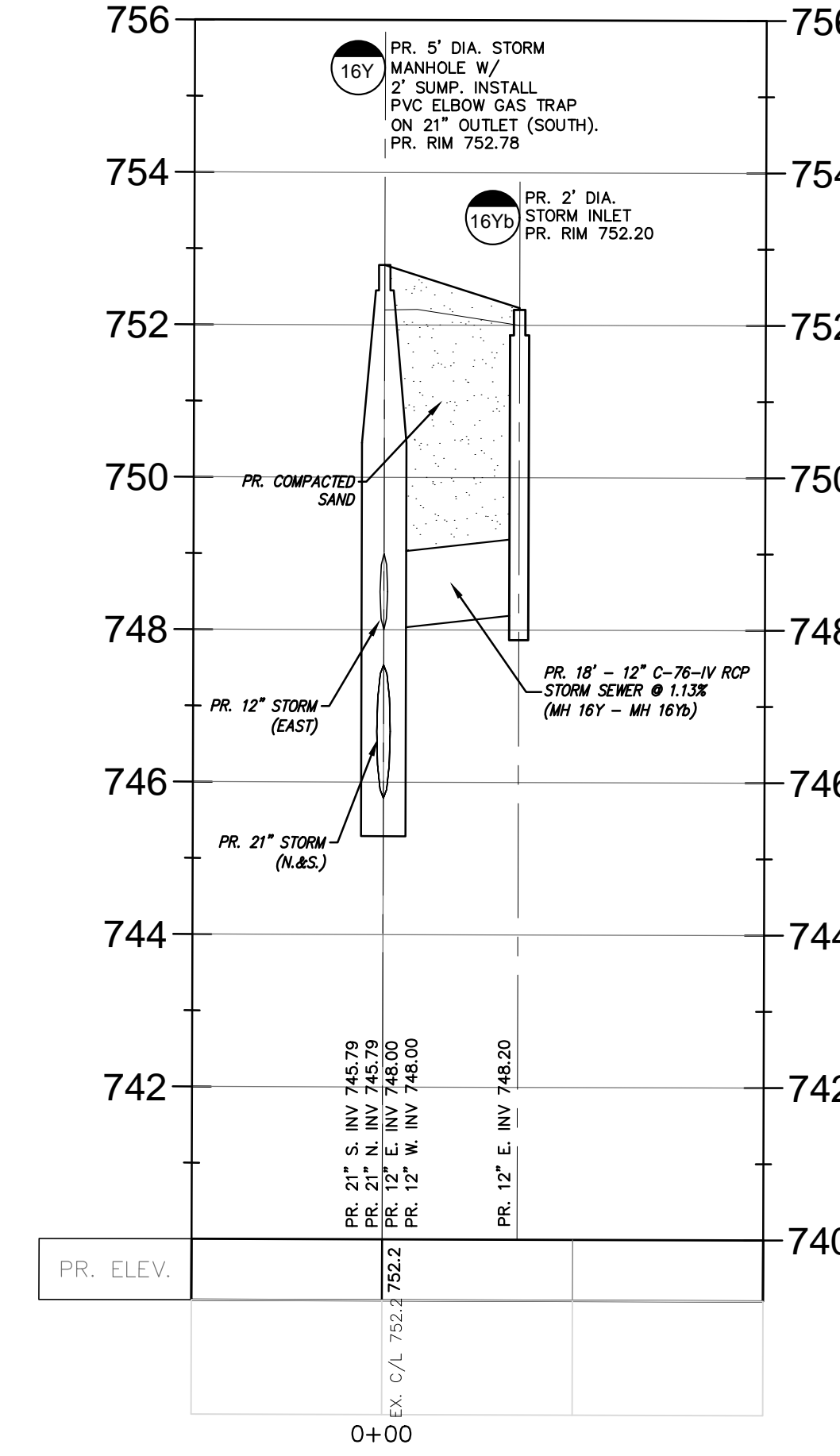
**STORM SEWER (MH 16X- CB16Xb)**

SCALE: 1"=20' (H), 1"=2' (V)



**STORM SEWER (MH 16X- CB16Xc)**

SCALE: 1"=20' (H), 1"=2' (V)



**STORM SEWER (MH 16X- CB16Xd)**

SCALE: 1"=20' (H), 1"=2' (V)



SEAL

PROJECT  
Pierce Street Paving Project  
Contract#3-23(P)

CLIENT

**BIRMINGHAM**  
A WALKABLE CITY

Engineering Department  
151 Martin Street  
Birmingham, MI 48012

PROJECT LOCATION

Part of the Southeast 1/4 of Section 36, Town 2 North, Range 10 East, City of Birmingham, Oakland County, Michigan

SHEET

Pierce Street  
Water Main Plan and Profile  
Sta. P.O.B. to 5+00



DATE ISSUED/REVISED

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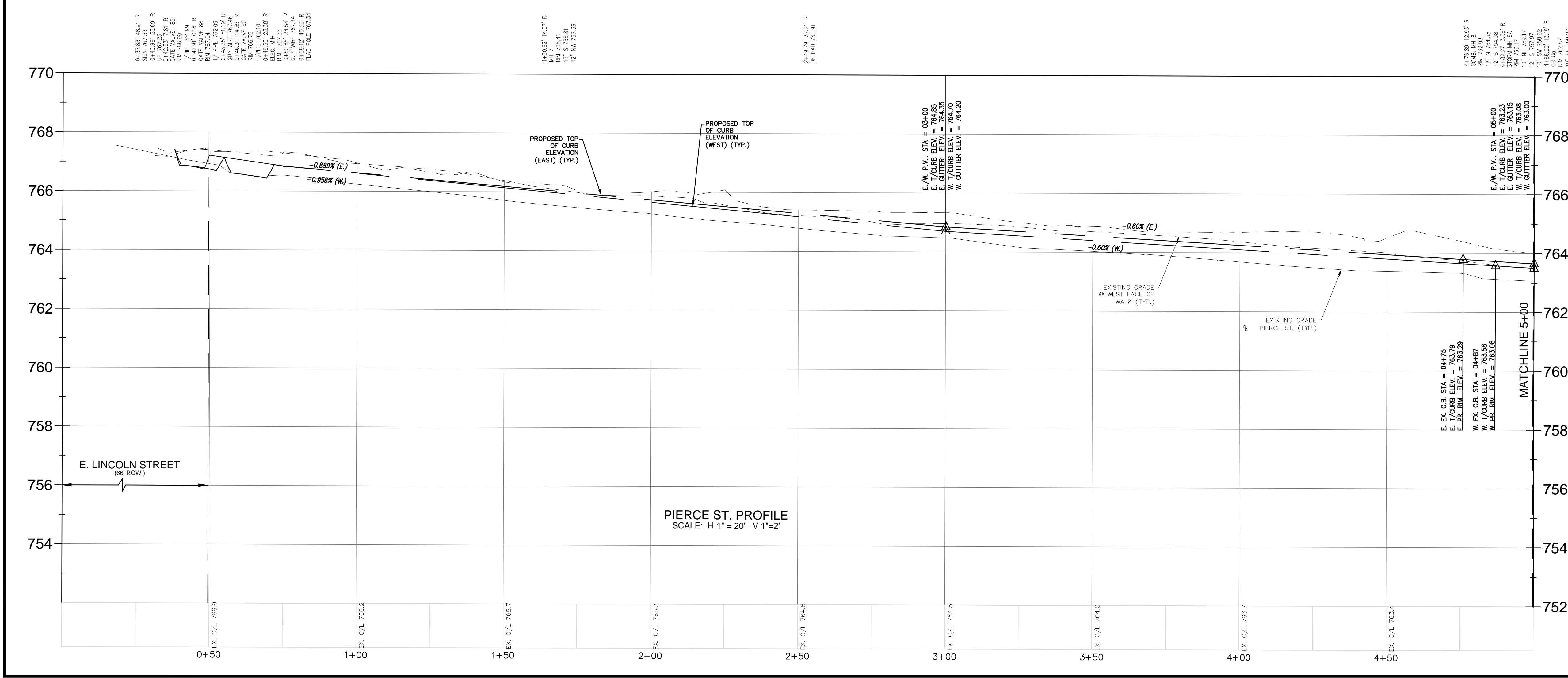
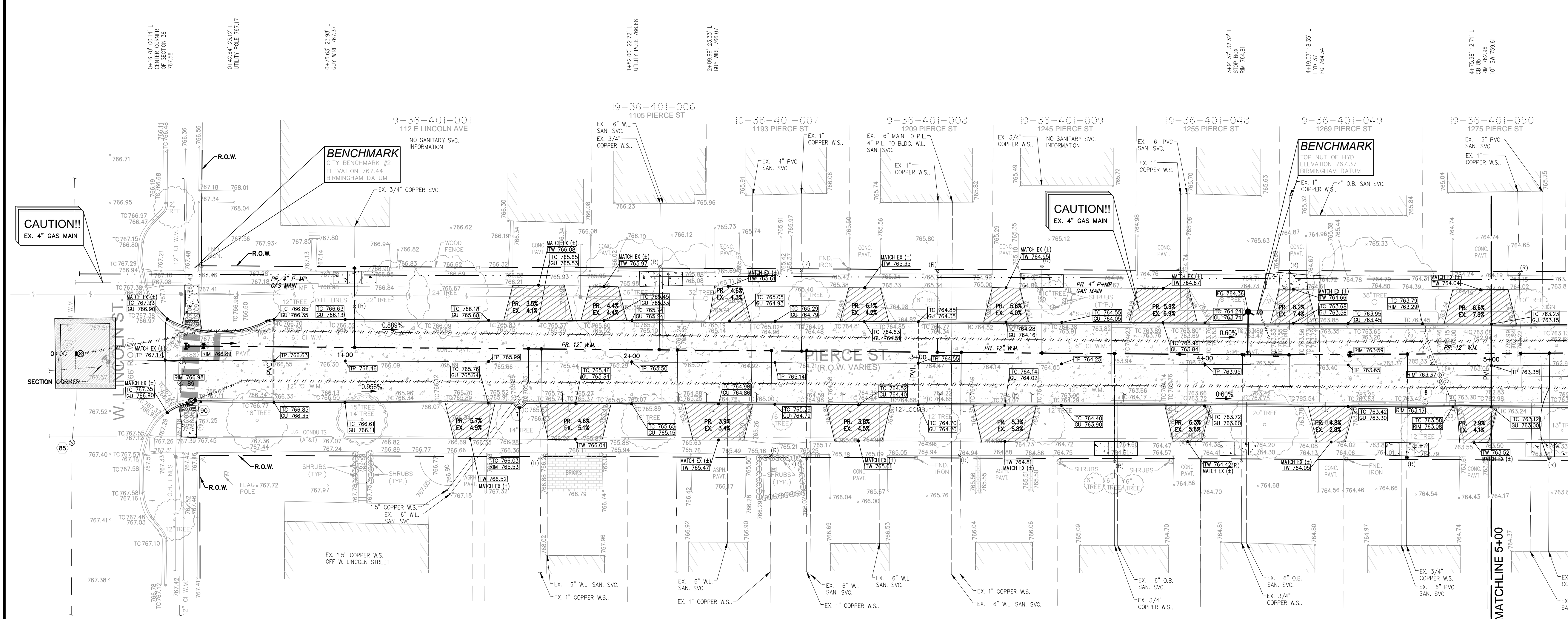
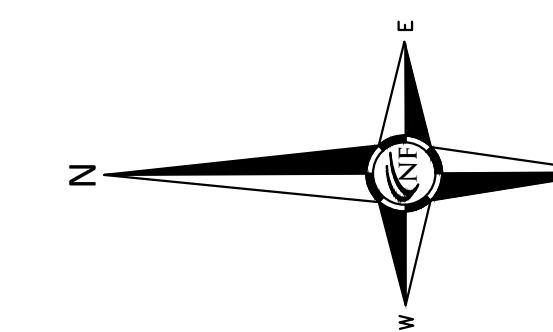
DRAWN BY:  
M. Hani  
DESIGNED BY:  
G. Viju  
APPROVED BY:  
B. Buchholz

DATE:  
12-08-2021

SCALE: 1" = 20' / 1" = 2'

NFE JOB NO. SHEET NO.

M515 C9



DRIVEWAY SCHEDULE					
ADDRESS	WIDTH @ WALK	WIDTH @ CURB	LENGTH OF APRON AREA (ST)	CURB DROP	
112 E LINCOLN	18.0'	24.0'	12.2'	28.5	1.50
1128	11.5	17.5	12.8	19.9	1.50
1105	19.0	16.0	11.9	17.2	1.50
1136	17.25	23.75	12.6	30.3	1.50
1154	16.0	22.5	12.6	29.0	1.50
1166	16.5	22.5	12.6	27.5	1.50
1188	16.0	22.0	12.6	26.8	1.50
1193	9.5	14.5	12.1	16.2	1.50
1209	11.0	17.0	11.8	18.1	1.50
1234	10.0	16.0	12.0	17.4	1.50
1245	9.6	15.6	11.9	16.9	1.50
1254	10.0	16.0	12.4	17.9	1.50
1254	17.9	23.9	11.9	27.9	1.50
1269	10.0	16.0	11.8	17.2	1.50
1270	10.0	14.0	12.9	16.6	1.50

**GRADING NOTE**  
GRADING INFORMATION SHOWN IS TO PROVIDE SUFFICIENT INFORMATION FOR CONTRACTOR BIDDING. MORE DETAILED GRADING INFORMATION WILL BE PROVIDED ON FINAL CONTRACT DRAWINGS.

**UTILITY NOTE**  
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**LEGEND**

- CLEAN-OUT
- MANHOLE
- EXISTING SAN/COMB SEWER
- EXISTING WATER MAIN
- EXISTING STORM SEWER
- EXISTING BURIED CABLES
- EXISTING GAS MAIN
- EXISTING GAS VALVE
- EXISTING OVERHEAD LINES
- EXISTING EX PAVERS
- LANDSCAPE BED
- SOIL BORING
- PUBLIC PHONE
- WELL
- PUMP
- POST/BOLLARD
- PARKING METER
- MAIL BOX
- ROCK/BOLLARD
- SPRINKLER VALVE BOX
- SPRINKLER HEAD
- FOUND PROPERTY MARKER
- GROUND ELEVATION







SEAL

PROJECT  
Pierce Street Paving  
Project  
Contract#3-23(P)

CLIENT



Engineering Department  
151 Martin Street  
Birmingham, MI 48012

PROJECT LOCATION

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of Section 36, Town 2 North,  
Range 10 East, City of  
Birmingham, Oakland  
County, Michigan

SHEET

Grading Plan  
Pierce Street  
Sta. 10+00 to 15+00



Know what's below  
Call before you dig.

DATE ISSUED/REVISED

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05-24-23	BIDS
06-08-23	ADDENDUM 1

DRAWN BY:  
M. Hani

DESIGNED BY:  
G. Viju

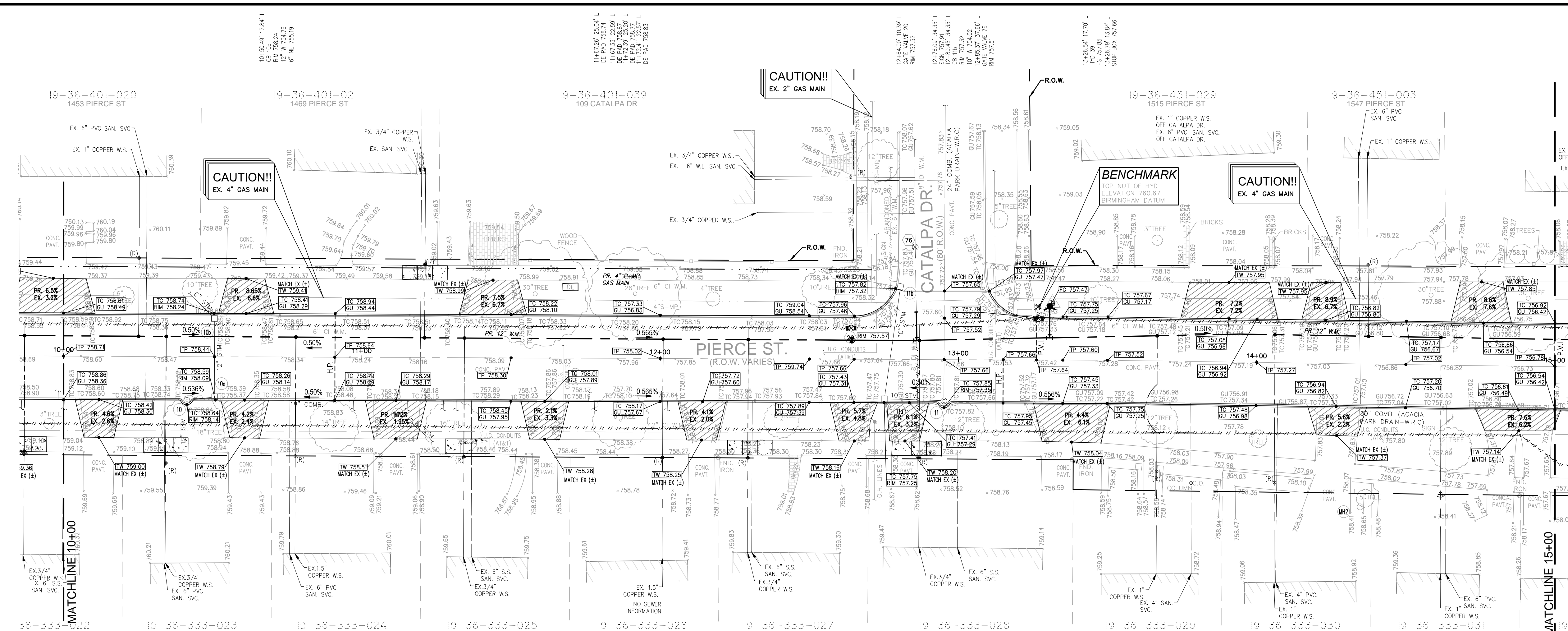
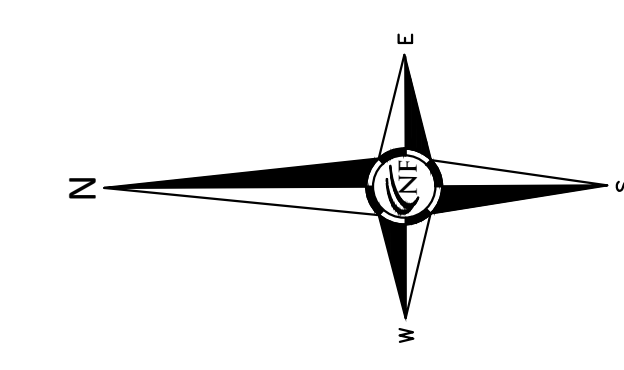
APPROVED BY:  
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DATE:  
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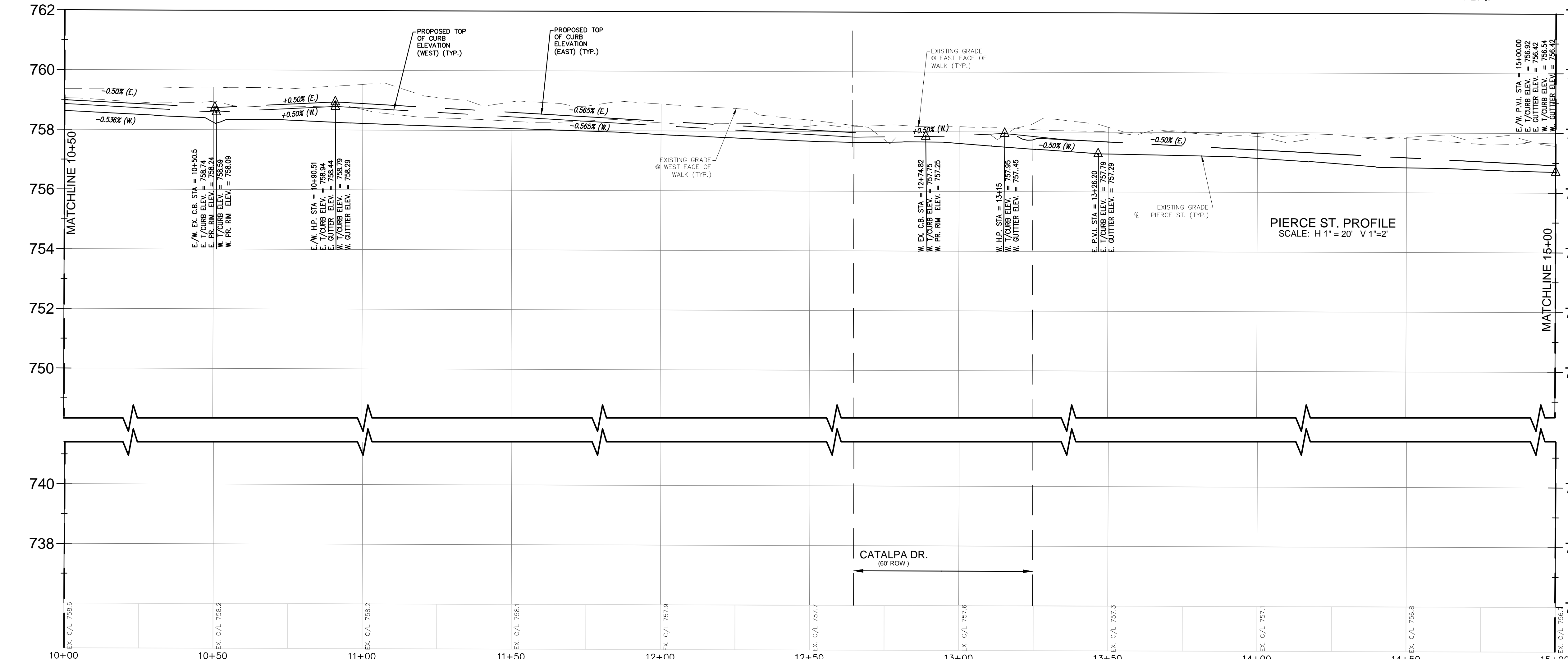
SCALE: 1" = 20' / 1" = 2'

NFE JOB NO. SHEET NO.

M515 C11



DRIVEWAY SCHEDULE						
ADDRESS	WIDTH @ WALK	WIDTH @ CURB	LENGTH OF APRON	AREA (S.F.)	CURB DROP	
1450	10.0'	16.0'	12.5'	12.5'	18.3	1.50
1455	14.5'	20.5'	12.7'	20.5'	26.0	1.50
1453	22.1'	28.1'	11.6'	32.5'	32.5	1.50
1489	12.5'	18.5'	11.6'	20.2	1.50	
1474	10.0'	16.0'	12.7'	18.4	1.50	
1480	10.0'	16.0'	12.7'	18.4	1.50	
1492	10.0'	16.0'	12.8'	17.9	1.50	
1510	10.0'	14.0'	12.8'	17.1	1.50	
1515	26.7'	32.7'	12.2'	40.1	1.50	
1510/1520	19.8'	29.8'	13.0'	32.8	1.50	
1540	13.8'	19.8'	9.7'	17.9	1.50	
1547	16.0'	16.0'	12.5'	18.2	1.50	
1566/1570	22.8'	28.8'	7.2'	20.4	1.50	
1589	14.2'	20.2'	13.6'	26.0	1.50	



UTILITY NOTE	
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LEGEND	
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MANHOLE	EXISTING WATER MAIN
HYDRANT	EXISTING BURIED CABLES
END SECTION	EXISTING GAS MAIN
EXISTING STORM SEWER	EXISTING GAS VALVE
EXISTING BURIED CABLES	OVERHEAD LINES
EXISTING GAS MAIN	EX PAVERS
EXISTING GAS VALVE	
OVERHEAD LINES	
EX PAVERS	
(RECORD) CURB STOP LOCATION (APPROX.)	
LANDSCAPE BED	
EX. SOIL BORING	
PUBLIC PHONE	
WELL	
PUMP	
SIGN	
POST/BOLLARD	
PARKING METER	
MAIL BOX	
ROCK/BOLLARD	
SPRINKLER VALVE BOX	
SPRINKLER HEAD	
FOUND PROPERTY MARKER	
×000.00 GROUND ELEVATION	



SEAL

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Project  
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CLIENT



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151 Martin Street  
Birmingham, MI 48012

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SHEET

Grading Plan  
Pierce Street  
Sta. 15+00 to 20+00



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G. Viju

APPROVED BY:

B. Buchholz

DATE:

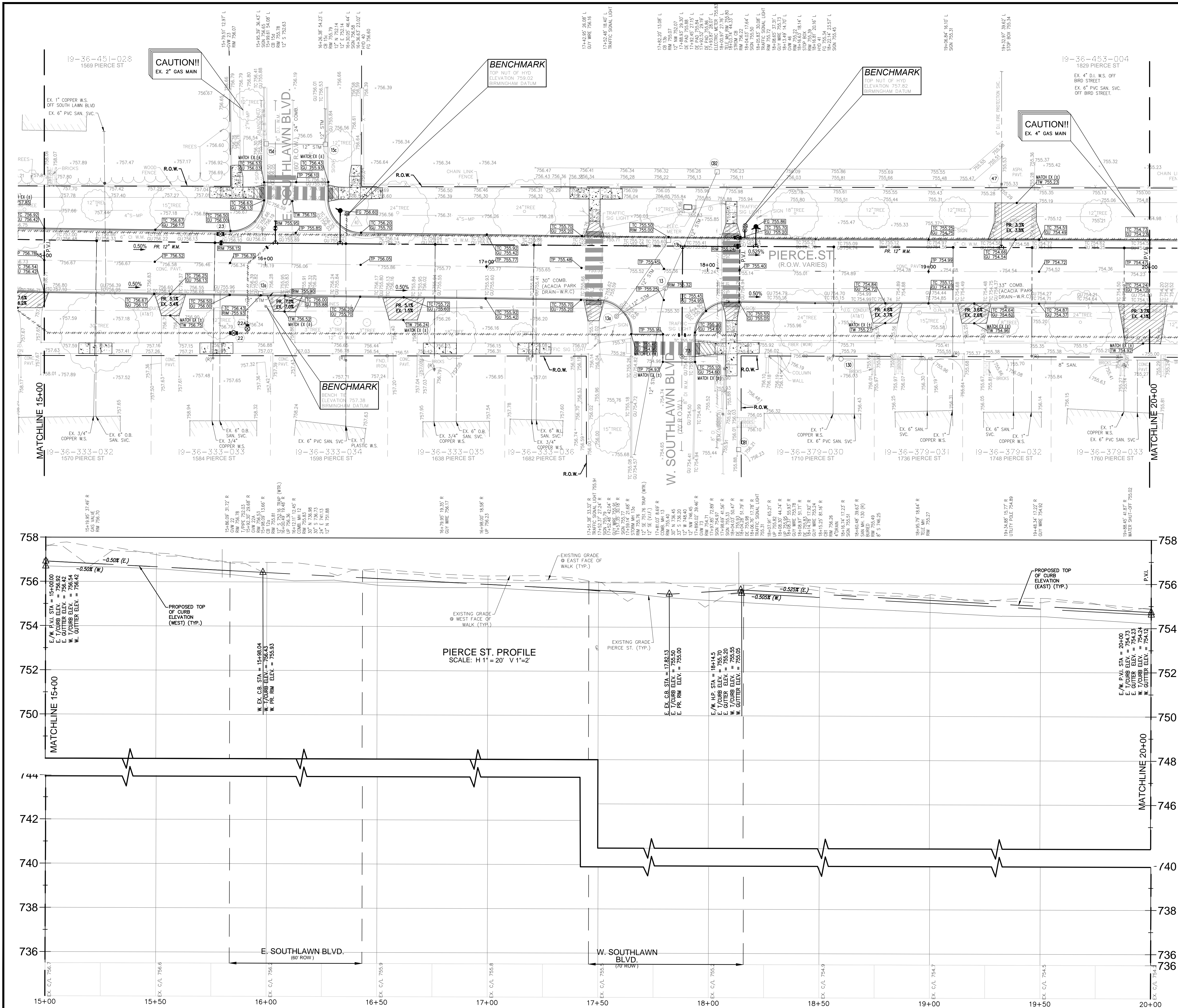
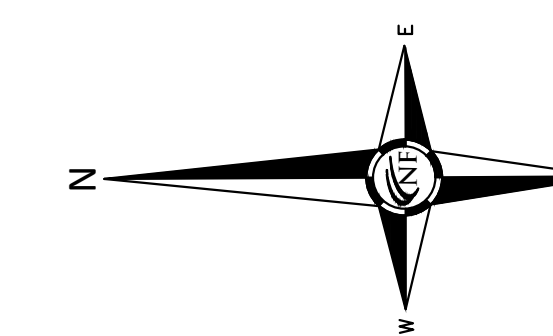
12-08-2021

SCALE: 1" = 20' / 1" = 2'

20 10 0 10 20 30

NFE JOB NO. SHEET NO.

M515 C12



DRIVEWAY SCHEDULE				
ADDRESS	WIDTH @ WALK	WIDTH @ CURB	LENGTH OF APRON AREA (FT)	CURB DROP
1584	8'-0"	14'-0"	9'-7"	11.9
1598	9'-8"	15'-8"	10'-2"	1.50
1638	12'-8"	8'-8"	11'-6"	10.2
1662	OFF SOUTHLAWN	OFF SOUTHLAWN	N.A.	N.A.
1710	OFF SOUTHLAWN	OFF SOUTHLAWN	N.A.	N.A.
1748	11'-1"	15'-1"	8'-9"	17.9
1780	16'-0"	22'-0"	17'-9"	37.8
1828	18'-7"	24'-7"	16'-0"	37.7

**UTILITY NOTE**  
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**LEGEND**

	CLEAN-OUT		MANHOLE		EXISTING SAN/COMB SEWER
	EXISTING WATER MAIN		EXISTING STORM SEWER		EXISTING BURIED CABLES
	EXISTING GAS MAIN		OVERHEAD LINES		EX PAVERS
	(RECORD) CURB STOP LOCATION (APPROX.)		LANDSCAPE BED		FOUND PROPERTY MARKER
	SOIL BORING		PUBLIC PHONE		WELL
	PUMP		POST/BOLLARD		PARKING METER
	MAIL BOX		ROCK/BOLDER		SPRINKLER VALVE BOX
	SPRINKLER HEAD		FOUND PROPERTY MARKER		GROUND ELEVATION



SEAL

PROJECT  
Pierce Street Paving  
Project  
Contract#3-23(P)

CLIENT

**BIRMINGHAM**  
A VALIABLE CITY  
Engineering Department  
151 Martin Street  
Birmingham, MI 48012

PROJECT LOCATION  
Part of the Southeast 1/4  
of Section 36, Town 2 North,  
Range 10 East, City of  
Birmingham, Oakland  
County, Michigan

SHEET  
Pierce Street  
Grading Plan  
Sta. 20+00 to 24+50.



DATE ISSUED/REVISED  
12-08-21 ISSUED SURVEY  
01-06-23 ISSUED SURVEY  
02-01-23 ISSUED SURVEY  
05-05-23 ISSUED FOR EGLE W.M. PERMIT  
05-18-23 REVISED PER CITY REVIEW  
05-24-23 BIDS  
06-08-23 ADDENDUM 1

DRAWN BY:  
M. Hani  
DESIGNED BY:  
G. Viju  
APPROVED BY:  
B. Buchholz

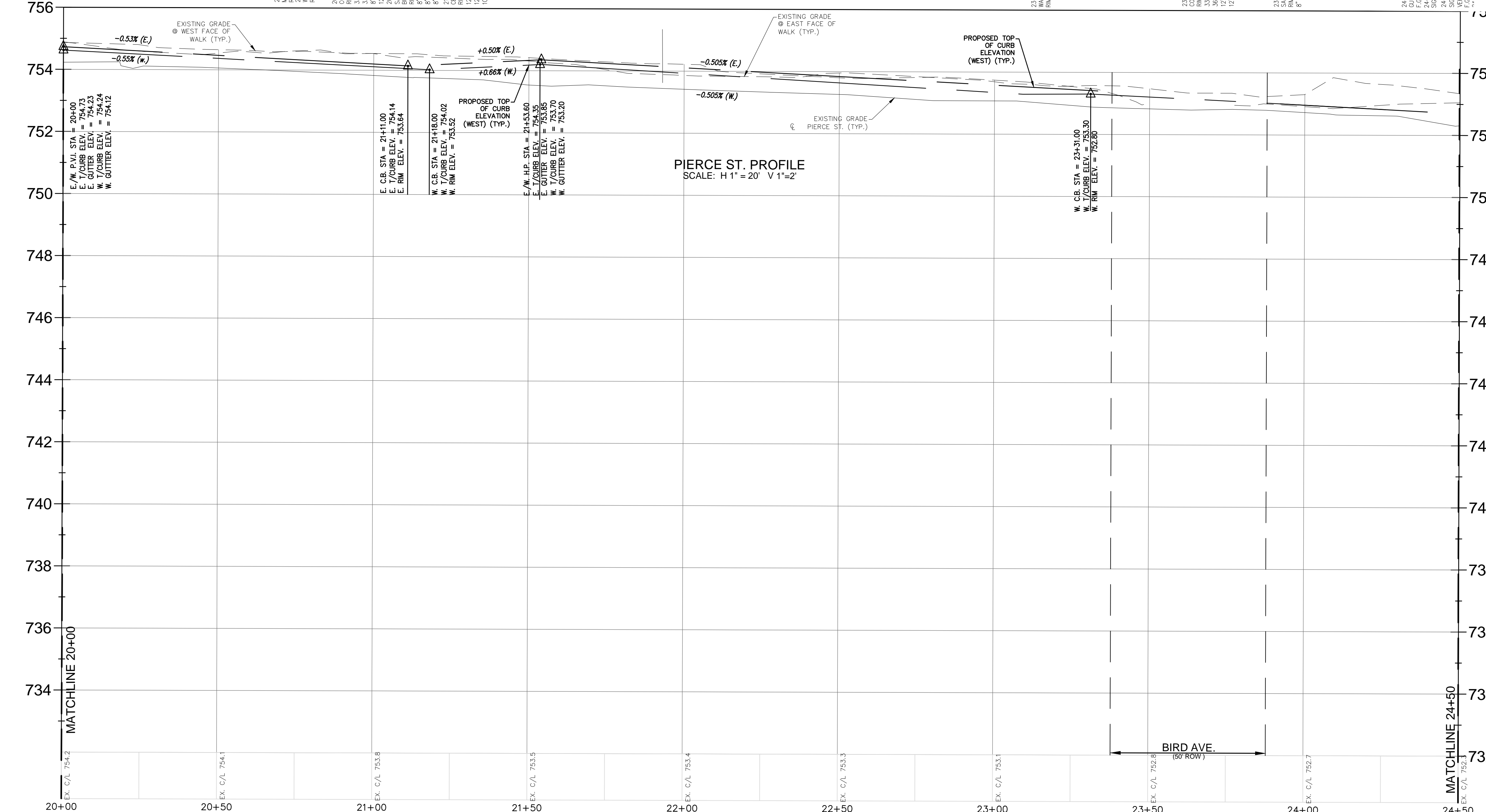
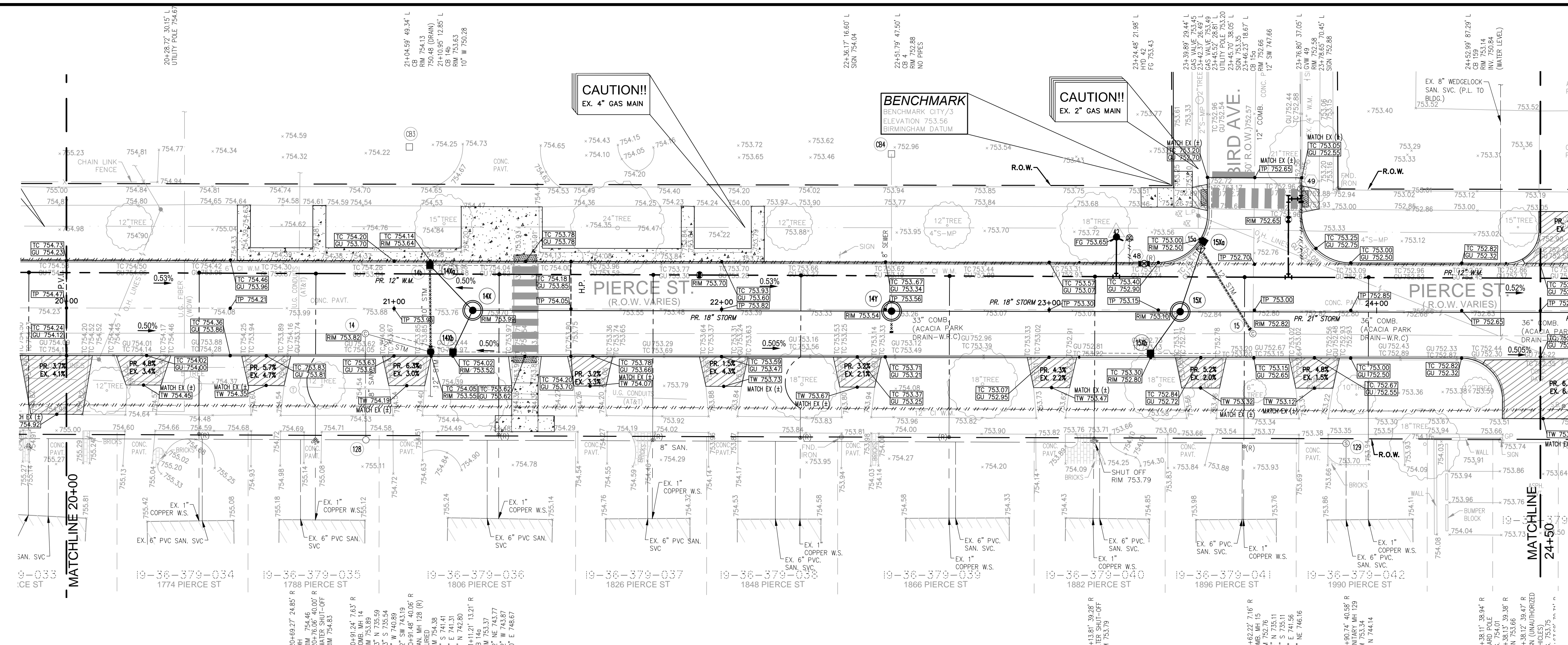
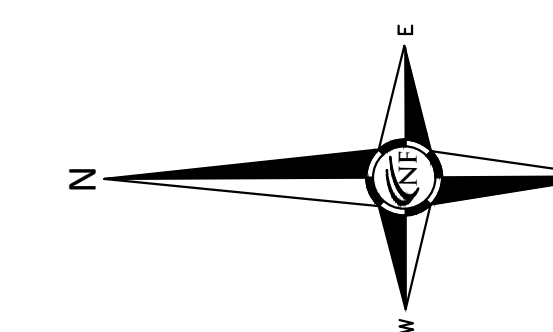
DATE:  
12-08-2021

SCALE: 1" = 20' / 1" = 2'

20 10 0 10 20 30

NFE JOB NO. SHEET NO.

M515 C13



**DRIVEWAY SCHEDULE**

ADDRESS	WIDTH @ WALK	WIDTH @ CURB	LENGTH OF APRON	AREA (SQ Y)	CURB DROP
1774	10.6'	16.6'	8.9'	13.6	1.50
1788	10.9'	14.9'	9.0'	13.0	1.50
1806	10.9'	14.9'	9.0'	12.9	1.50
1826	9.7'	13.7'	9.0'	11.8	1.50
1848	10.9'	14.9'	8.8'	12.9	1.50
1865	10.7'	14.7'	9.2'	12.9	1.50
1882	11.0'	15.0'	9.3'	17.9	1.50
1896	11.6'	15.6'	9.2'	13.9	1.50
1990	11.3'	15.3'	9.3'	13.8	1.50

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**LEGEND**

- CLEAN-OUT
- MANHOLE
- COMB. SAN. EXISTING SAN/COMB SEWER
- HYDRANT
- EXISTING WATER MAIN
- END SECTION
- EXISTING STORM SEWER
- EXISTING BURIED CABLES
- EXISTING GAS MAIN
- EXISTING GAS VALVE
- EXISTING OVERHEAD LINES
- EXISTING EX PAVERS
- RECORD CURB STOP LOCATION (APPROX.)
- LANDSCAPE BED
- EX. SOIL BORING
- PUBLIC PHONE
- WELL
- PUMP
- POST/BOLLARD
- PARKING METER
- MAIL BOX
- ROCK/BOLLARD
- SPRINKLER VALVE BOX
- SPRINKLER HEAD
- FOUND PROPERTY MARKER
- GROUND ELEVATION



SEAL

PROJECT  
 Pierce Street Paving  
 Project  
 Contract#3-23(P)

CLIENT



Engineering Department  
 151 Martin Street  
 Birmingham, MI 48012

PROJECT LOCATION

Part of the Southeast 1/4  
 of Section 36, Town 2 North,  
 Range 10 East, City of  
 Birmingham, Oakland  
 County, Michigan

SHEET

Pierce Street  
 Grading Plan  
 Sta. 24+50 to P.O.E.



DATE ISSUED/REVISED

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05-24-23	BIDS
06-08-23	ADDENDUM 1

DRAWN BY:  
 M. Hani  
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 G. Viju  
 APPROVED BY:  
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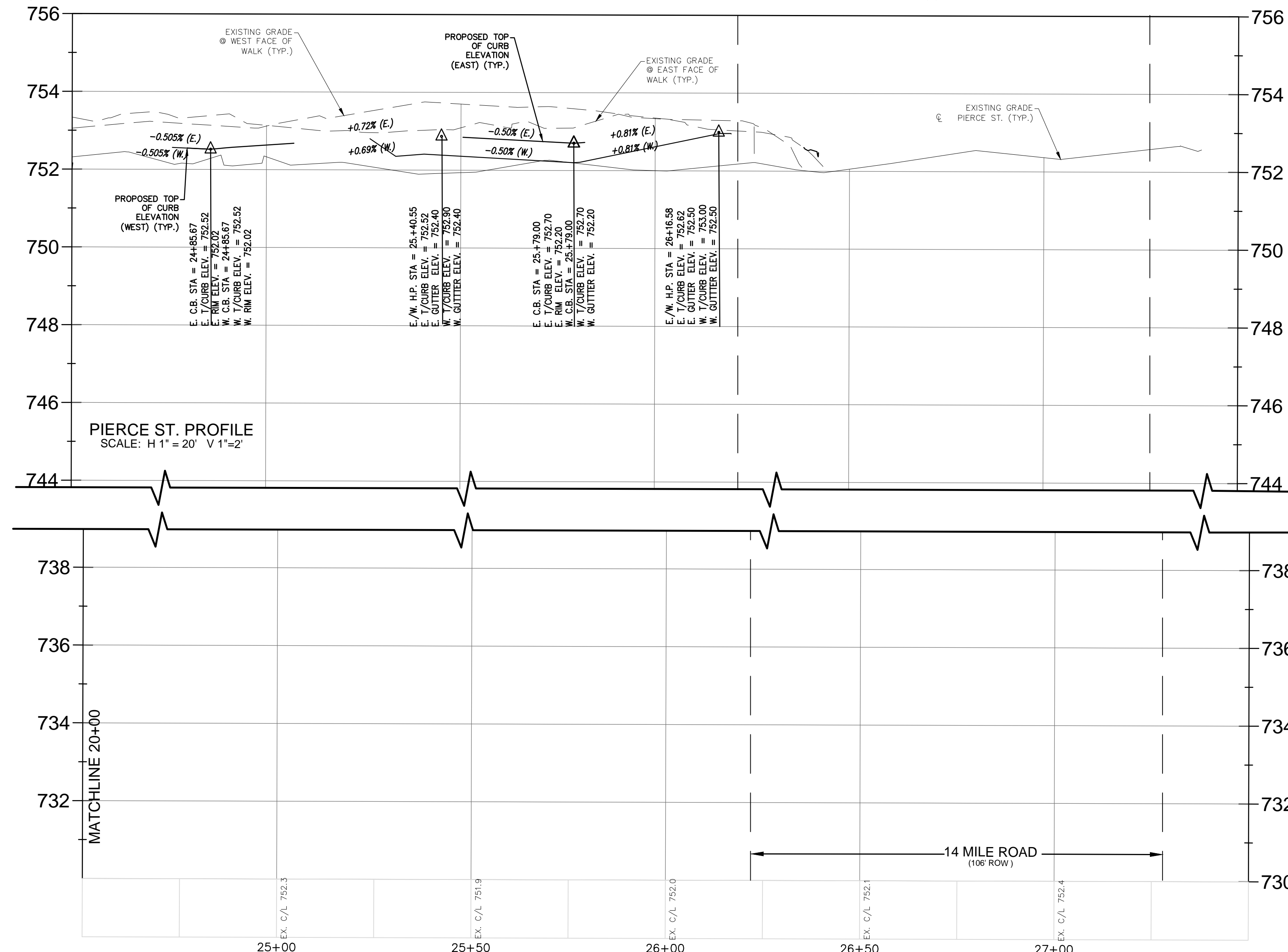
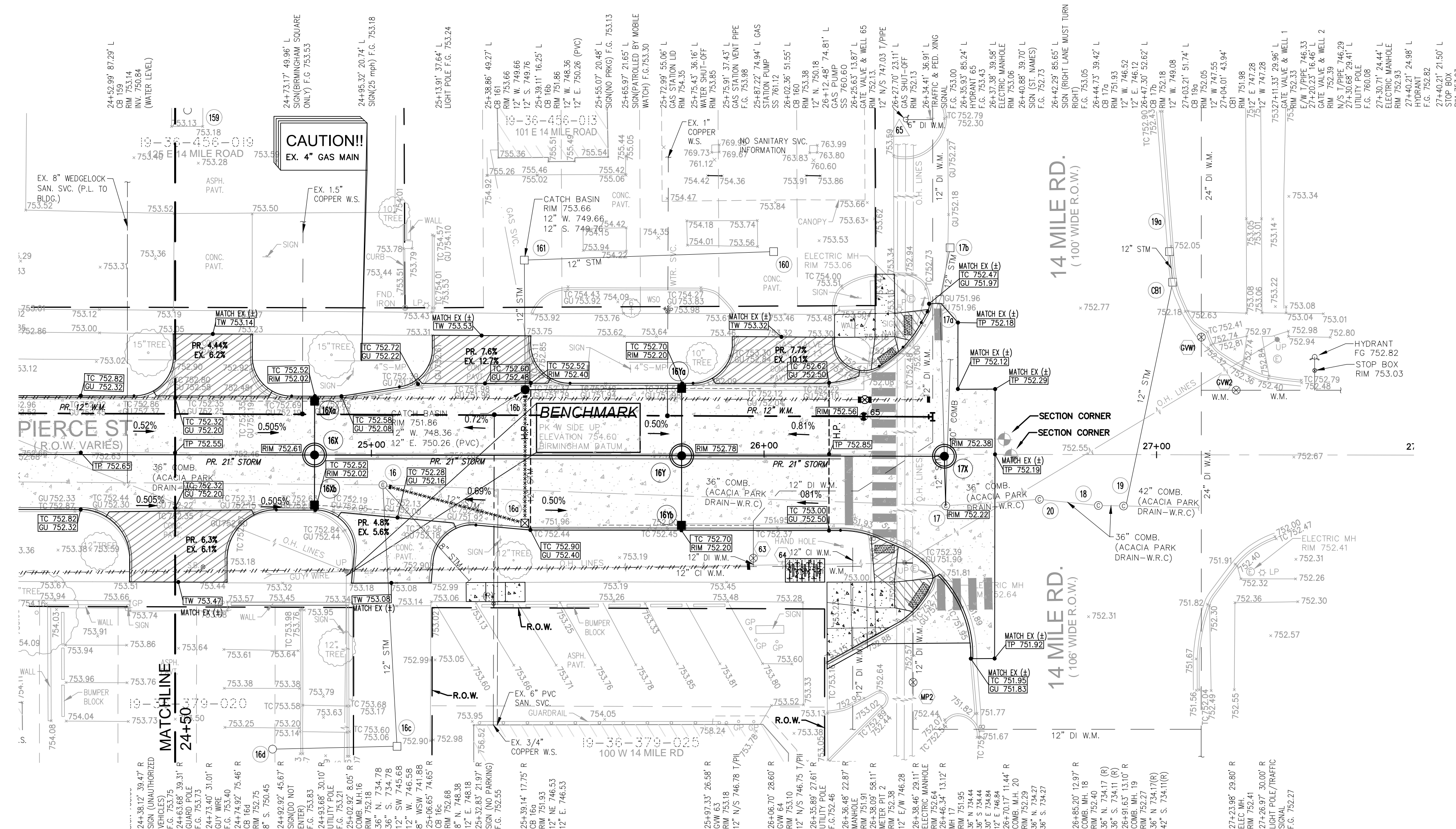
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 12-08-2021

SCALE: 1" = 20' / 1" = 2'

20 10 0 10 20 30

NFE JOB NO. SHEET NO.

M515 C14



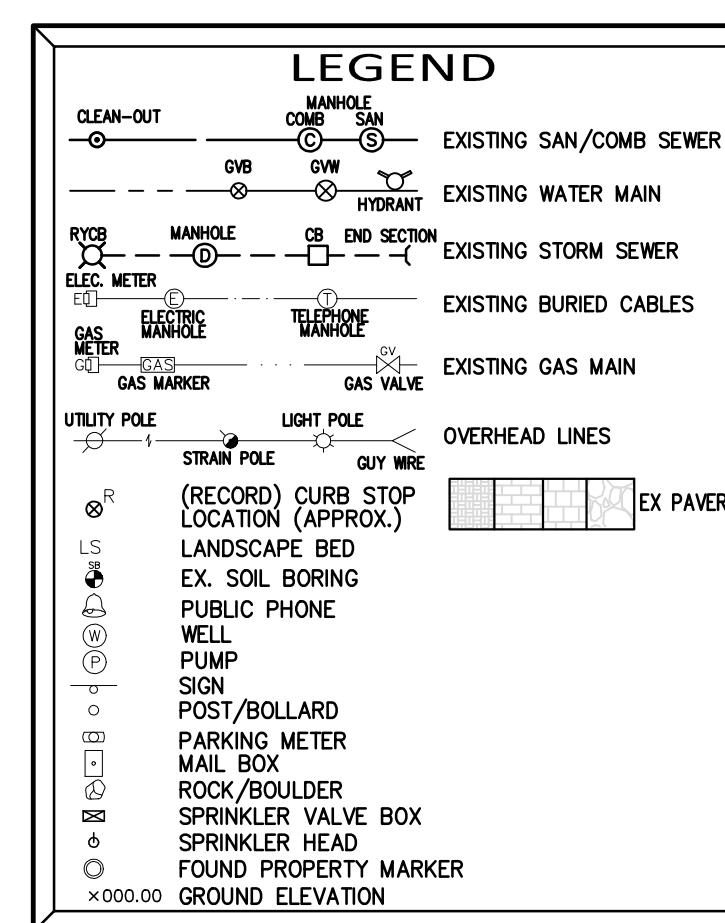
Public Water Main Quantities - Sheet C6

12" D.I. Cl. 52 Water Main	193 L.F.
12" Gate Valve in Well	1 EA.

DRIVEWAY SCHEDULE

ADDRESS	WIDTH @ WALK	WIDTH @ CURB	LENGTH OF APRON AREA (SQ FT)	CURB DROP
155 E. WILSON RD	20.1'	36.6'	15.7'	39.5
160 W. WILSON RD	24.8'	40.5'	18.1'	56.3
165 W. WILSON RD	20.2'	40.6'	16.7'	41.4
170 W. WILSON RD	25.7'	42.9'	12.1'	37.4
175 E. WILSON RD	26.0'	46.0'	11.8'	39.1

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SEAL

PROJECT  
Pierce Street Paving  
Project  
Contract#3-23(P)

CLIENT



Engineering Department  
151 Martin Street  
Birmingham, MI 48012

PROJECT LOCATION  
Part of the Southeast 1/4  
of Section 36, Town 2 North,  
Range 10 East, City of  
Birmingham, Oakland  
County, Michigan

SHEET  
Intersection Grading  
Details  
(1 of 2)



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Call before you dig.

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12-08-21	ISSUED SURVEY
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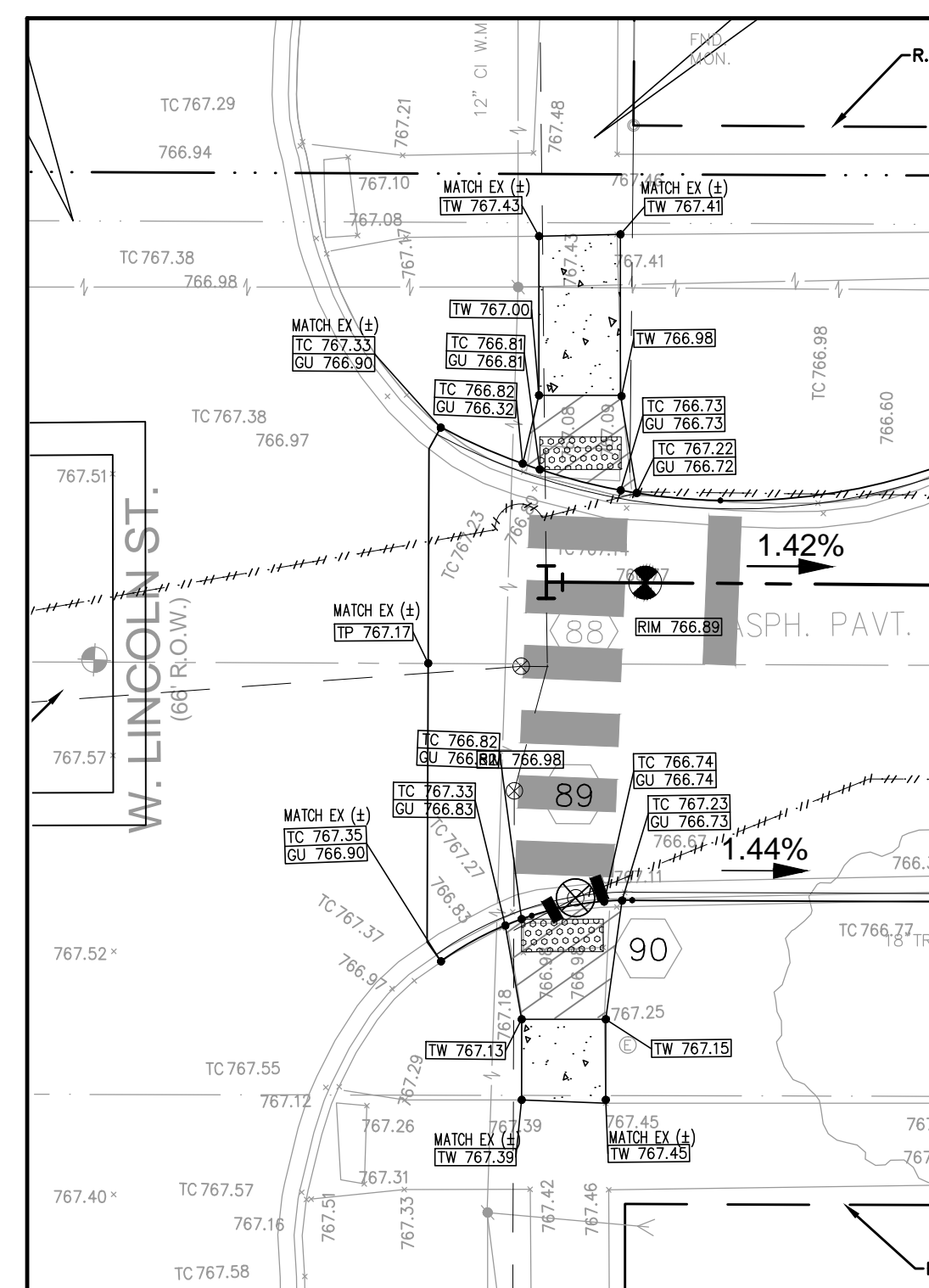
DRAWN BY:  
M. Hani  
DESIGNED BY:  
G. Viju  
APPROVED BY:  
B. Buchholz

DATE:  
12-08-2021

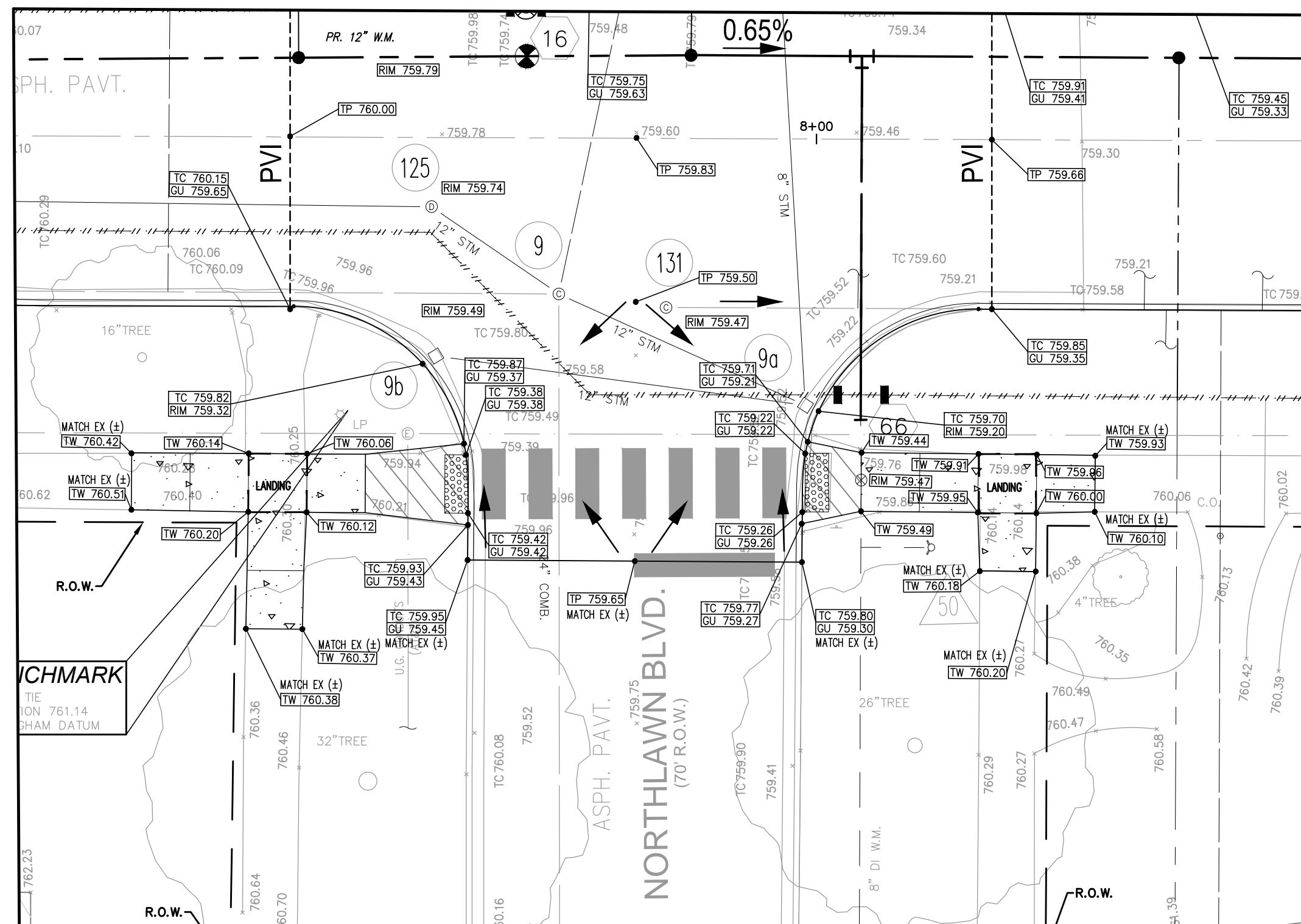
SCALE: 1" = 20' / 1" = 2'

NFE JOB NO. SHEET NO.

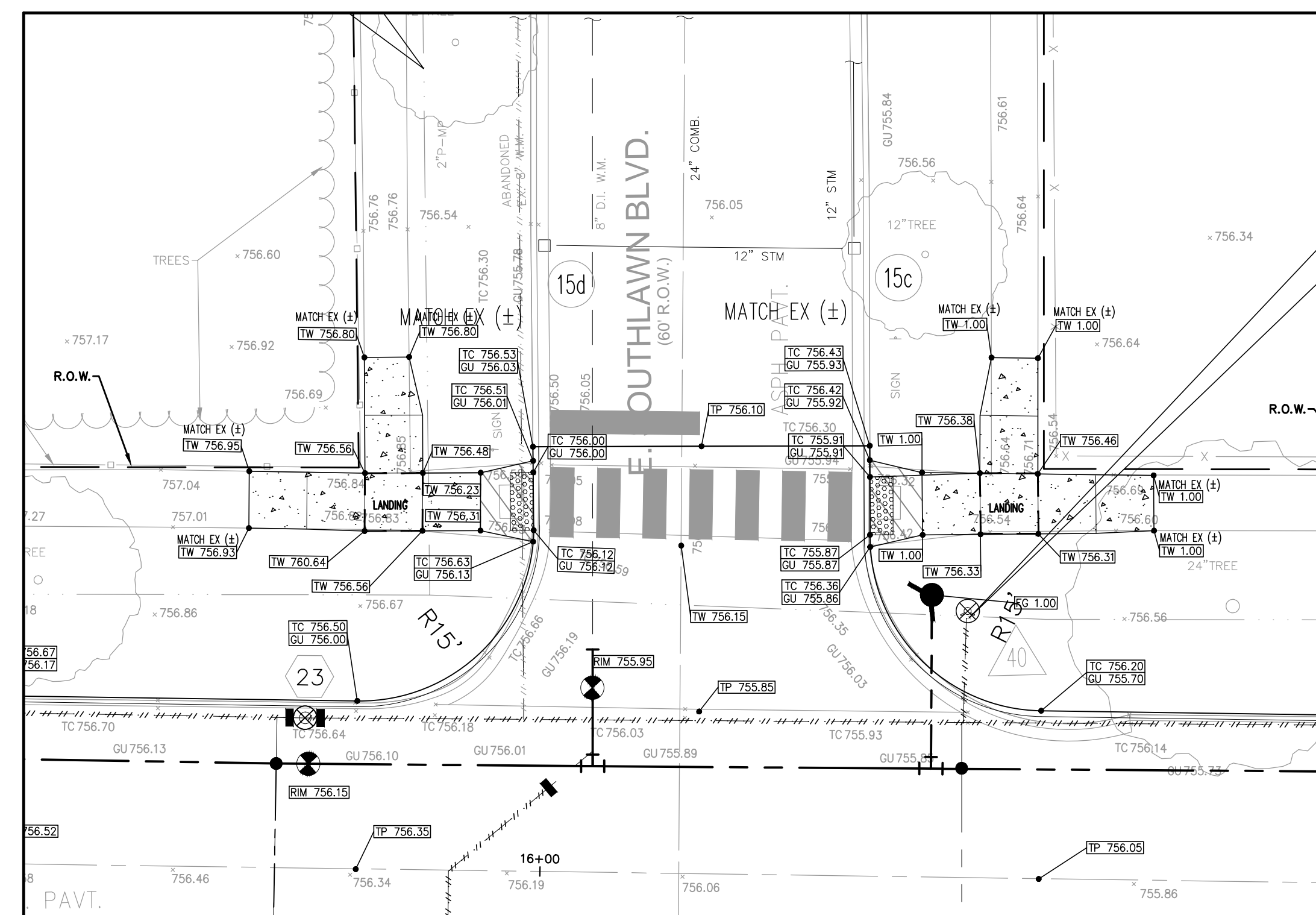
M515 C15



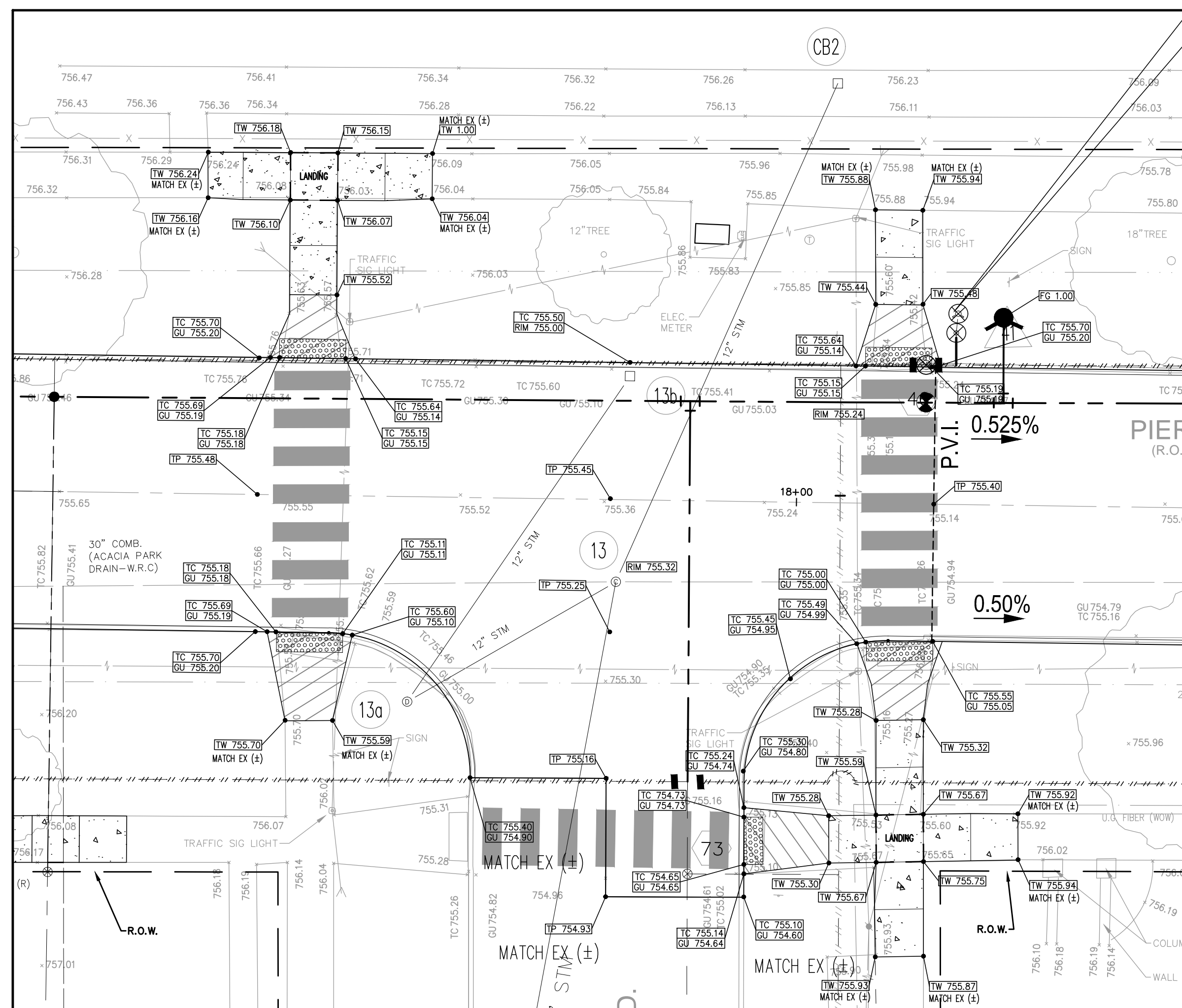
CROSSING AT PIERCE STREET AND W.  
LINCOLN STREET



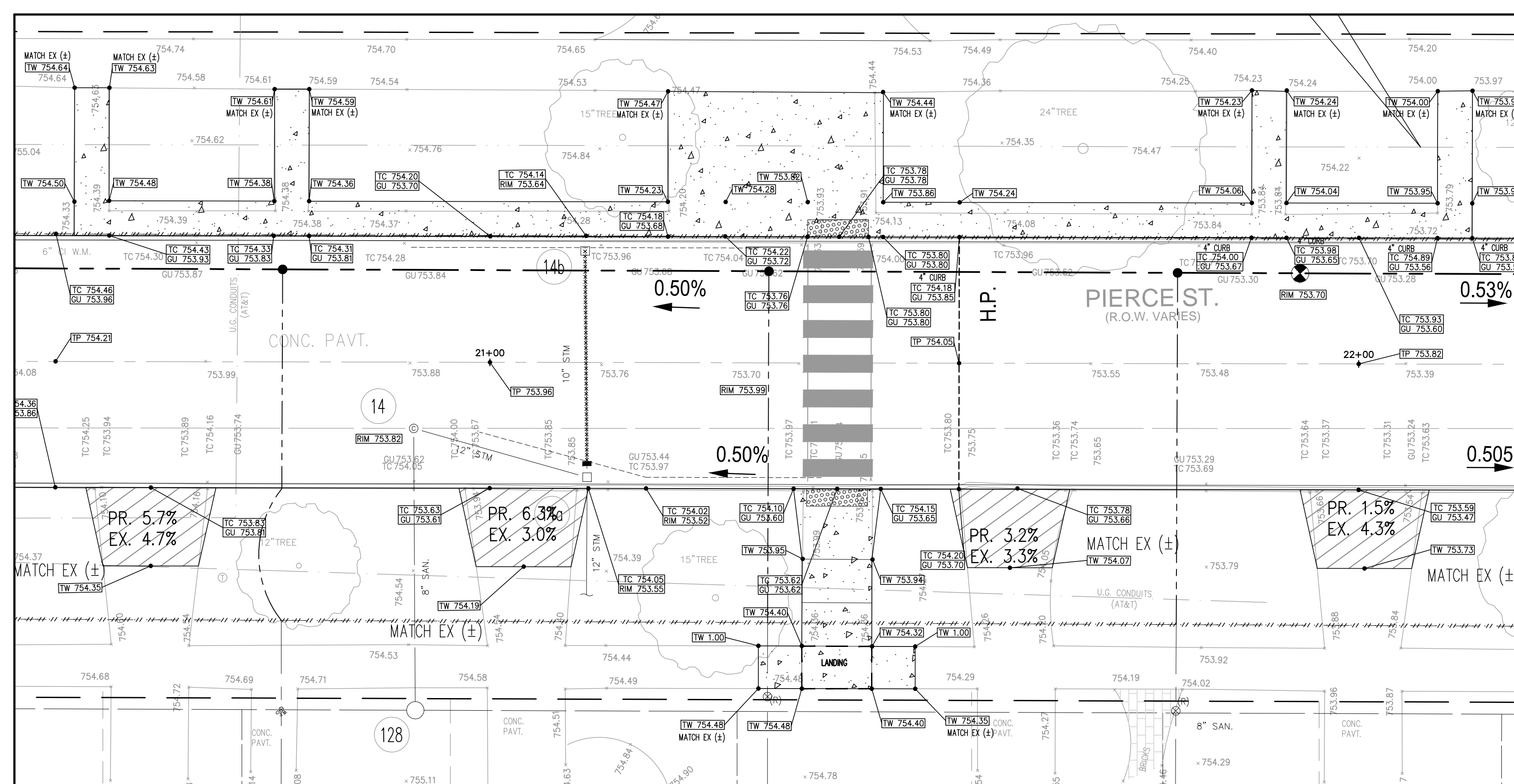
CROSSING AT PIERCE STREET AND  
NORTHLAWN BLVD



CROSSING AT PIERCE STREET AND E.  
SOUTHLAWN BLVD



CROSSING AT PIERCE STREET AND W.  
SOUTHLAWN BLVD



CROSSING AT PIERCE ELEMENTARY  
SCHOOL



SEAL

PROJECT  
Pierce Street Paving  
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Contract#3-23(P)

CLIENT

**BIRMINGHAM**  
A VALIABLE CITY  
Engineering Department  
151 Martin Street  
Birmingham, MI 48012

PROJECT LOCATION

Part of the Southeast 1/4  
of Section 36, Town 2 North,  
Range 10 East, City of  
Birmingham, Oakland  
County, Michigan

SHEET

Intersection Grading  
Details  
(2 of 2)



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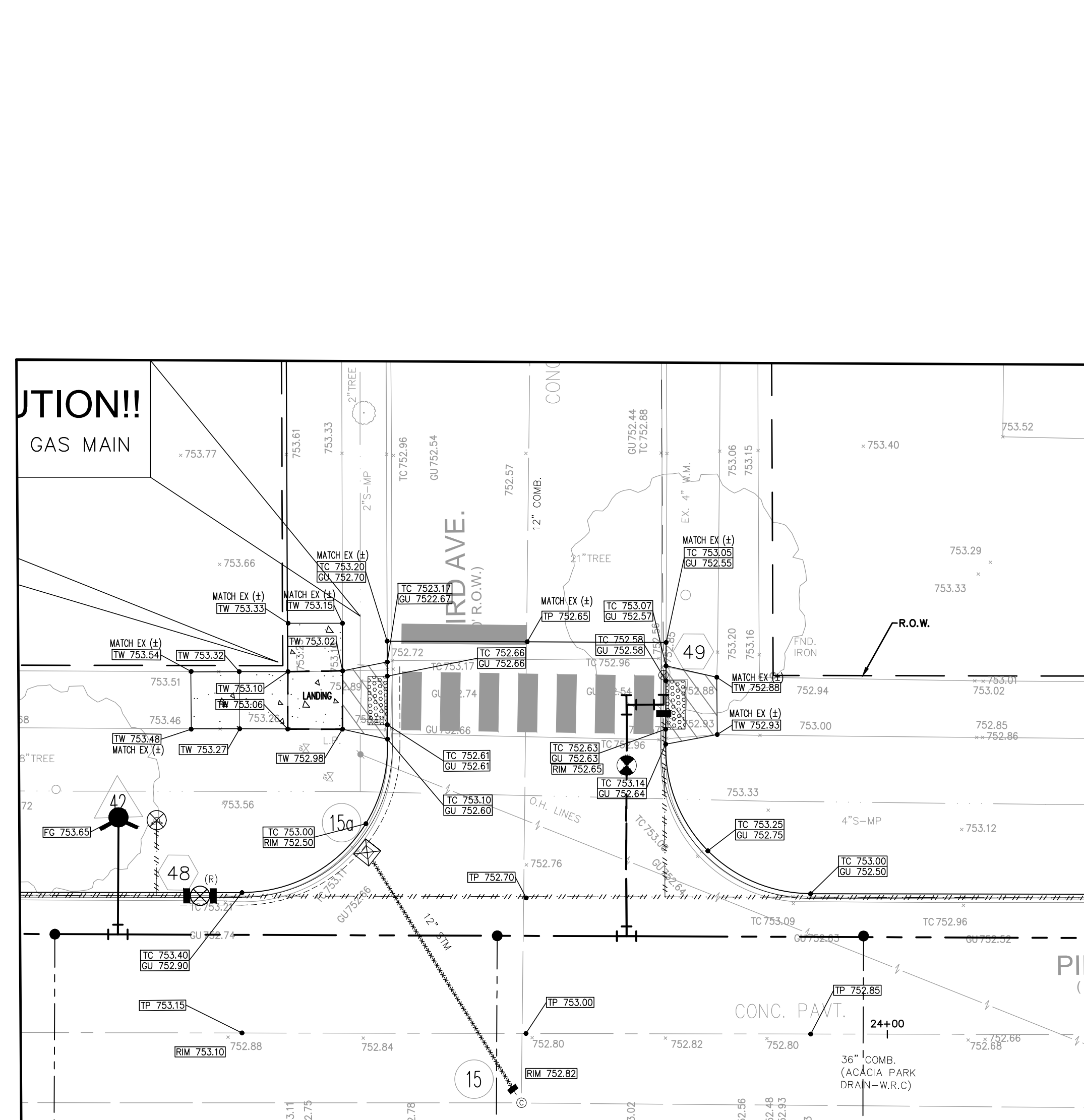
DRAWN BY:  
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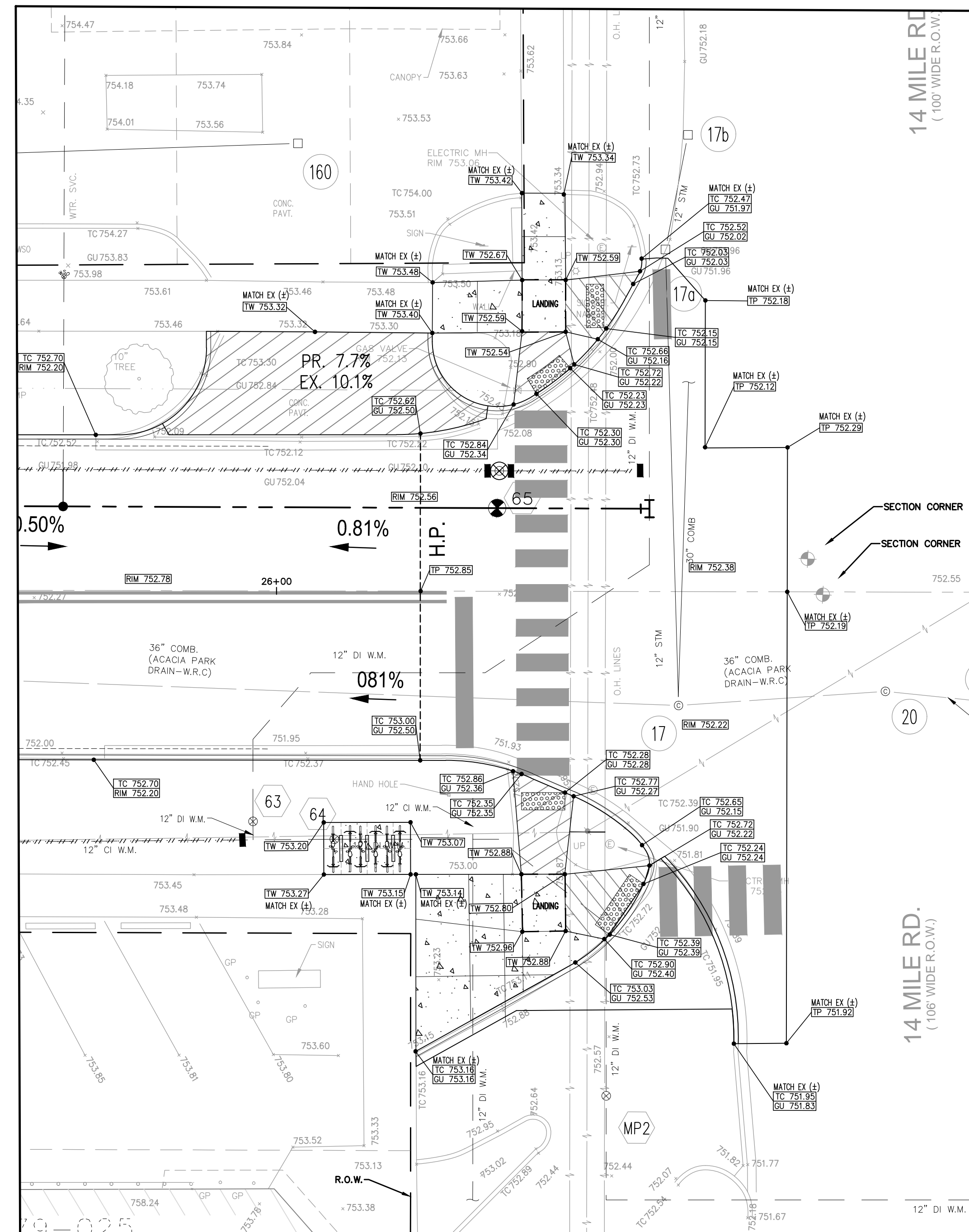
SCALE: 1" = 20' / 1" = 2'

20 10 0 10 20 30

NFE JOB NO. SHEET NO.  
**M515 C16**



CROSSING AT PIERCE STREET AND  
BIRD AVE.



CROSSING AT PIERCE STREET AND  
14 MILE ROAD





**ENGINEERS**

CIVIL ENGINEERS  
LAND SURVEYORS  
LAND PLANNERS

NOWAK & FRAUS ENGINEERS  
46777 WOODWARD AVE.  
PONTIAC, MI 48342-5032  
TEL. (248) 332-7931  
FAX. (248) 332-8257

PROJECT

Pierce Street Paving  
Project  
Contract #3-23(P)

CLIENT



Engineering Department  
151 Martin Street  
Birmingham, MI 48012

PROJECT LOCATION

Part of the Southeast 1/4  
of Section 36, Town 2 North,  
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Birmingham, Oakland  
County, Michigan

SHEET

Existing & Proposed Road  
Cross-Sections



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DRAWN BY:

G. Viju

DESIGNED BY:

P. Tulikangas

APPROVED BY:

B. Buchholz

DATE:

12-08-2021

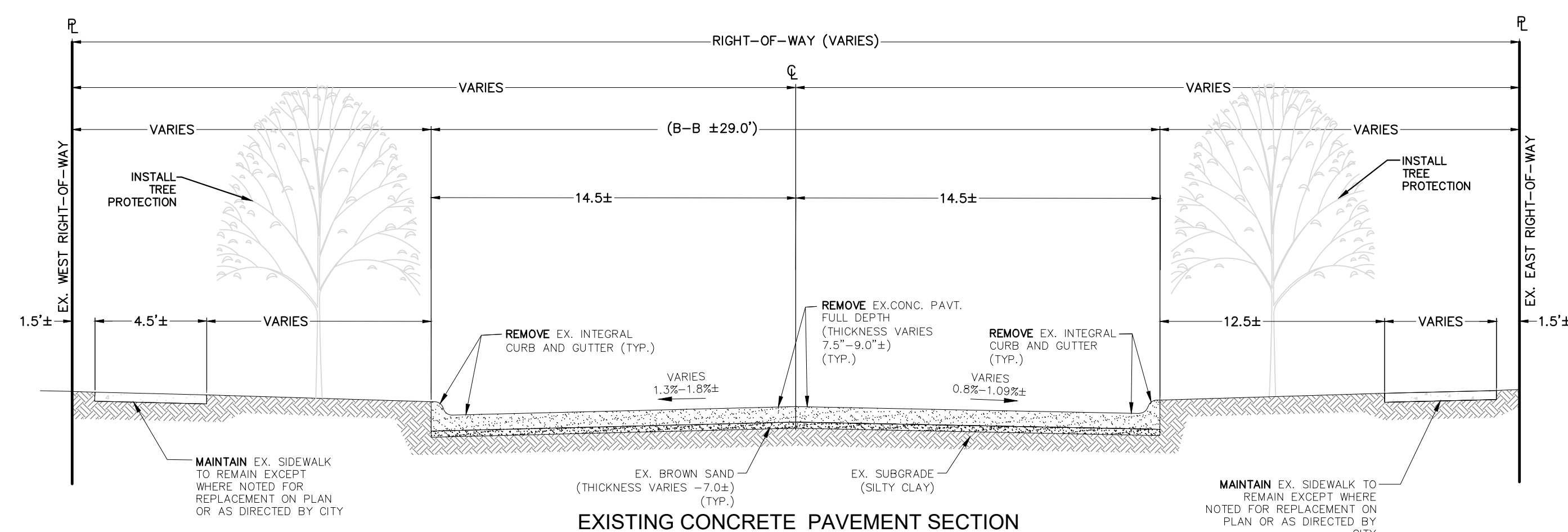
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NFE JOB NO.

M515

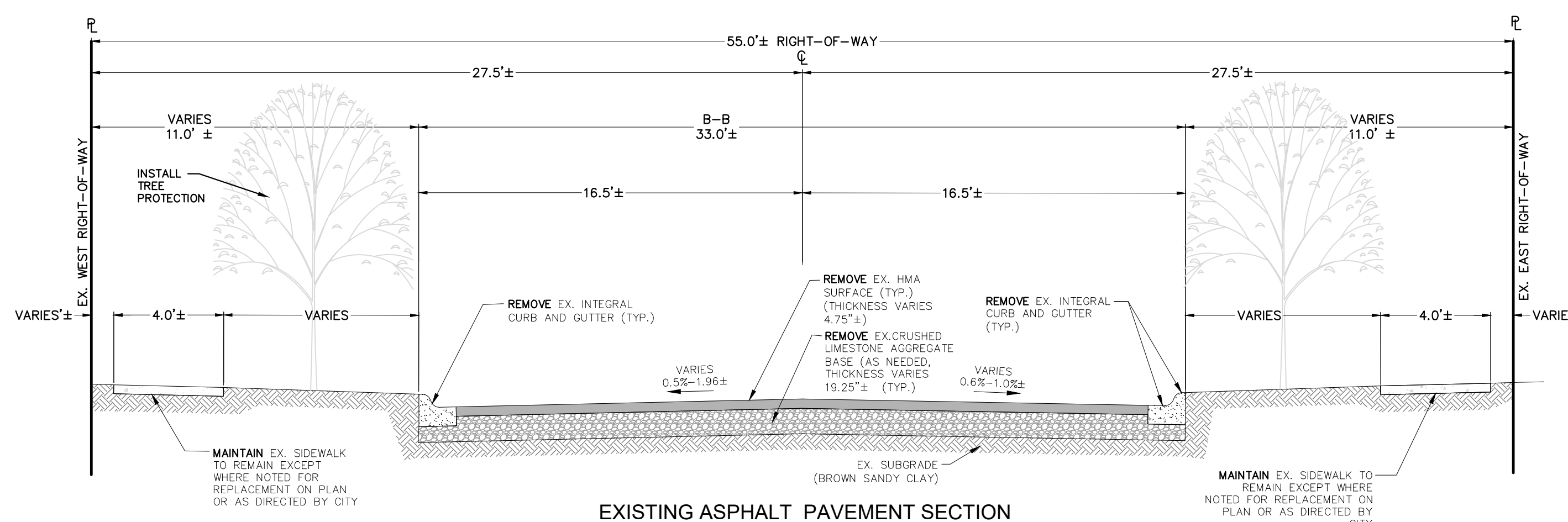
SHEET NO.

C17



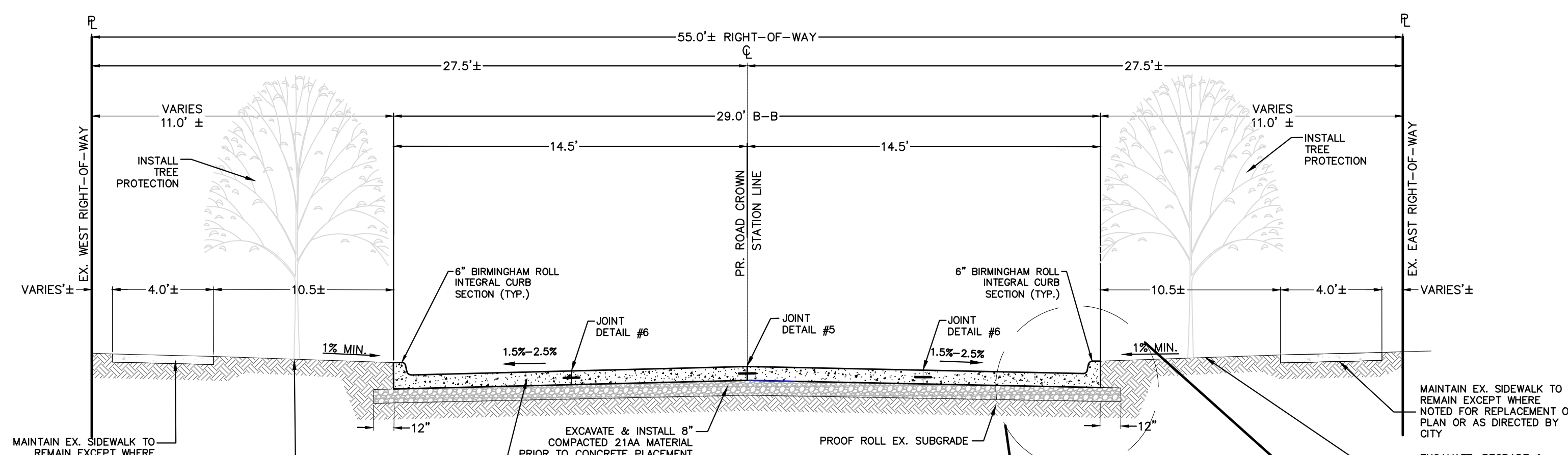
EXISTING CONCRETE PAVEMENT SECTION

N.T.S.  
PIERCE STREET  
APPLIES TO: STA. P.O.B. TO 3+67  
8+22 TO P.O.E.



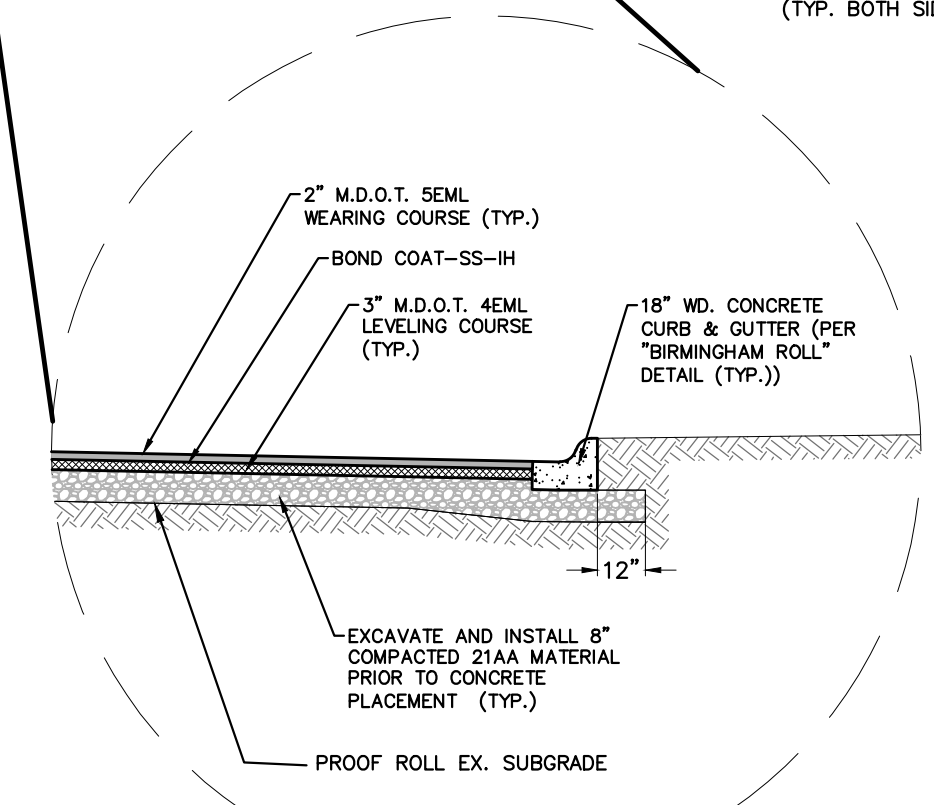
EXISTING ASPHALT PAVEMENT SECTION

N.T.S.  
PIERCE STREET  
APPLIES TO: STA. 3+67 TO 8+22



PROPOSED CONCRETE PAVEMENT SECTION (ALTERNATE #1)

N.T.S.  
PIERCE STREET  
APPLIES TO: STA. P.O.B. TO 24+92  
ROAD TRANSITIONS TO A 33' B-B FROM  
STA. 24+92 TO 25+40  
33' WIDE ROAD APPLIES TO : STA 25+40 TO P.O.E.



PROPOSED ASPHALT PAVEMENT SECTION (ALTERNATE 2)





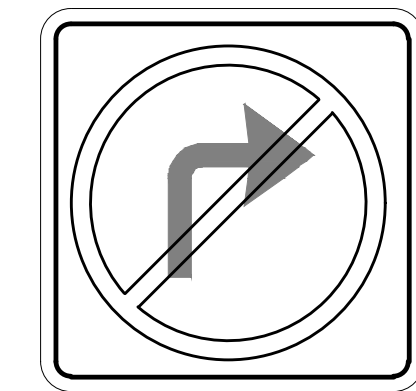
ADVANCED WARNING SIGNAGE & DETOUR PLAN: PIERCE ST.

PIERCE ST CLOSED FROM  
LINCOLN TO 14 MILE  
SEEK ALT ROUTE

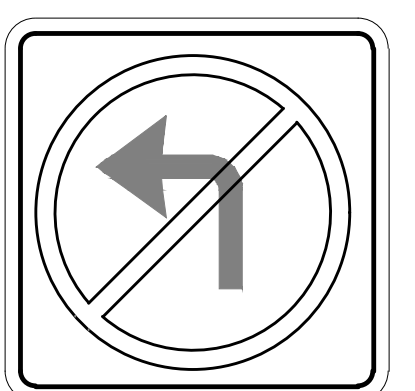
36"x72" ADVANCE WARNING SIGN "A"  
BLACK LEGEND ON ORANGE BACKGROUND



36" x 36"  
ADVANCE WARNING SIGN "R"  
BLACK LEGEND ON ORANGE  
BACKGROUND



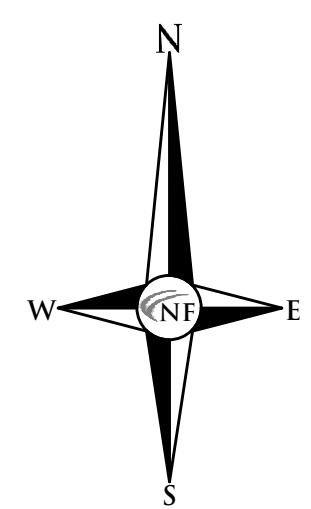
ADVANCED WARNING SIGN "L"  
R3-1



ADVANCED WARNING SIGN "M"  
R3-2

**SYMBOL KEY**

- TYPE III BARRICADES
- ADVANCED WARNING SIGN



SPECIAL ADVANCED WARNING SIGN QUANTITIES			
DESIGNATION	DESCRIPTION	SIZE	QUANTITY
SIGN "A"	N.B. PEABODY CLOSED PRKG. STRUC. ACCESS FROM S.B. PEABODY VIA MAPLE	36"x72"	27
OTHER ADVANCED WARNING SIGN QUANTITIES AS SHOWN			
DESIGNATION	DESCRIPTION	SIZE	QUANTITY
R11-2	ROAD CLOSED	60"x30"	8
R11-4	ROAD CLOSED FOR THRU TRAFFIC	60"x30"	5
R3-1	NO RIGHT TURN	24"x24"	9
R3-2	NO LEFT TURN	24"x24"	8

SEAL

PROJECT  
Pierce Street Paving  
Project  
Contract#3-23(P)

CLIENT



PROJECT LOCATION  
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Birmingham, Oakland  
County, Michigan

SHEET  
Advanced Warning  
Signage & Traffic Detour  
Plan - Pierce Street



DATE	ISSUED/REVISED
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DRAWN BY:  
G. Viju

DESIGNED BY:  
P. Tulikangas

APPROVED BY:  
B. Buchholz

DATE:  
12-08-2021

SCALE: N.T.S.



**PROJECT**

Pierce Street Paving  
Project  
Contract#3-23(P)

**CLIENT**



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151 Martin Street  
Birmingham, MI 48012

**PROJECT LOCATION**

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**SHEET**

Notes & Details (1 of 3)



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**DATE:**

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**SCALE:**

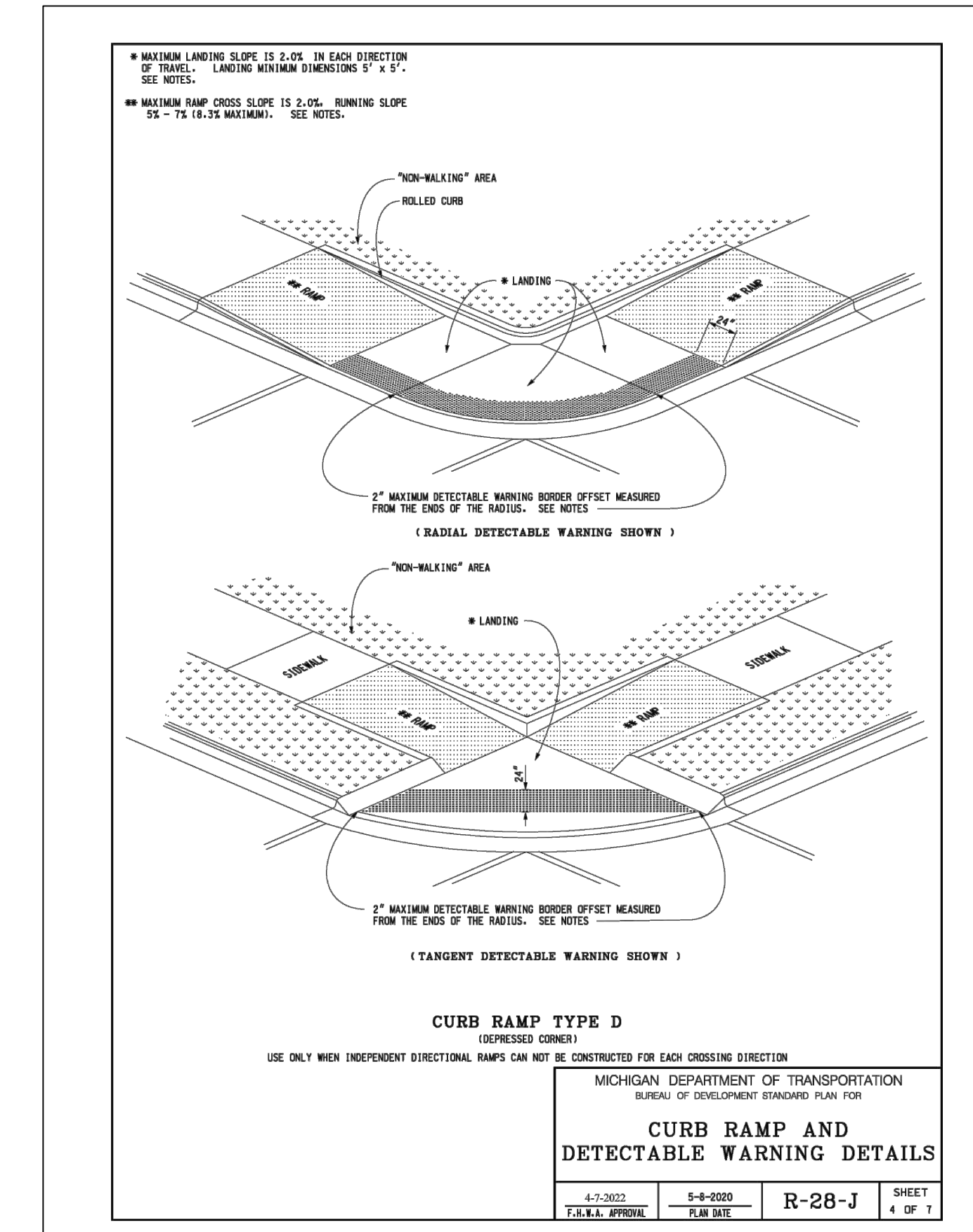
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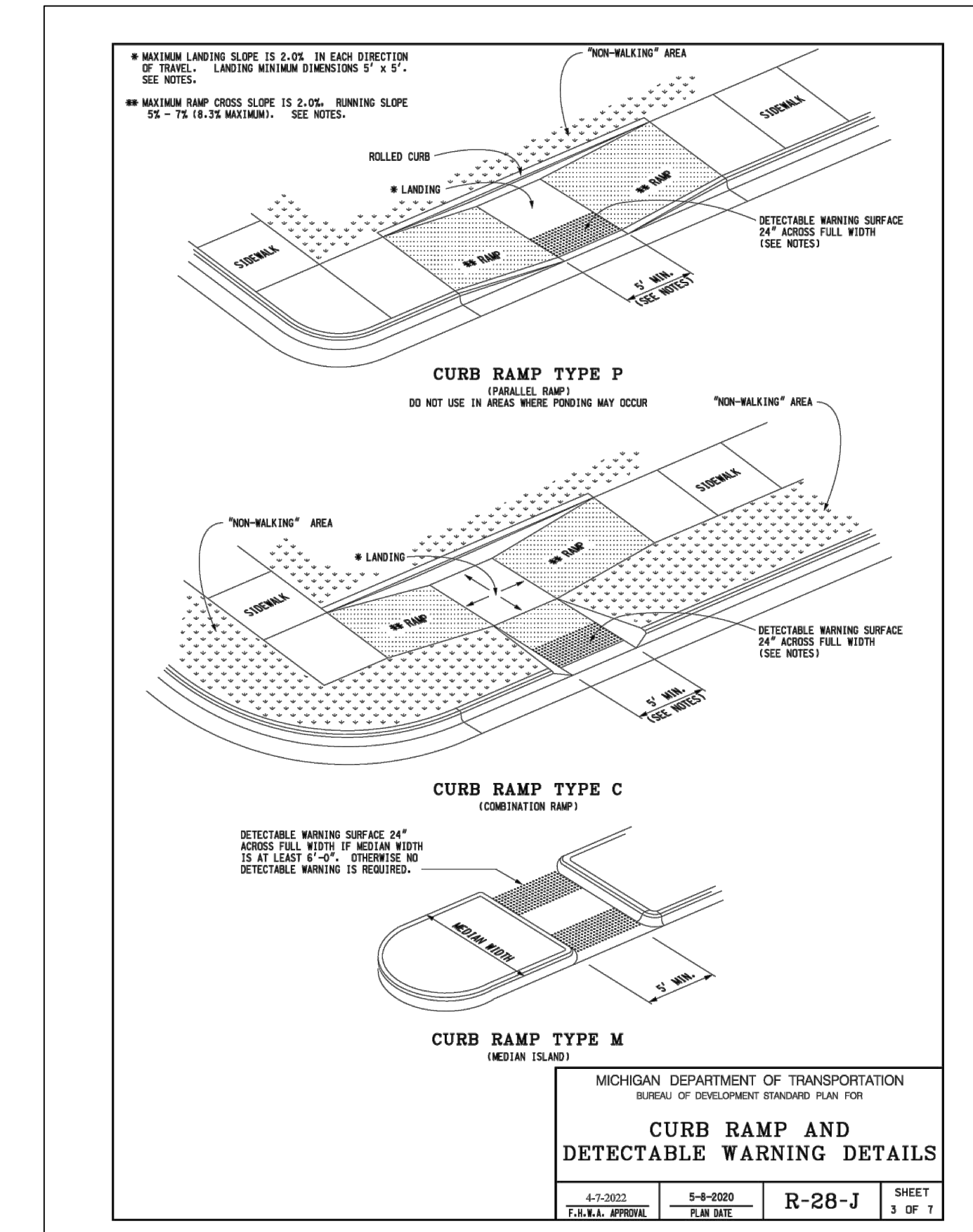
M515

**SHEET NO.**

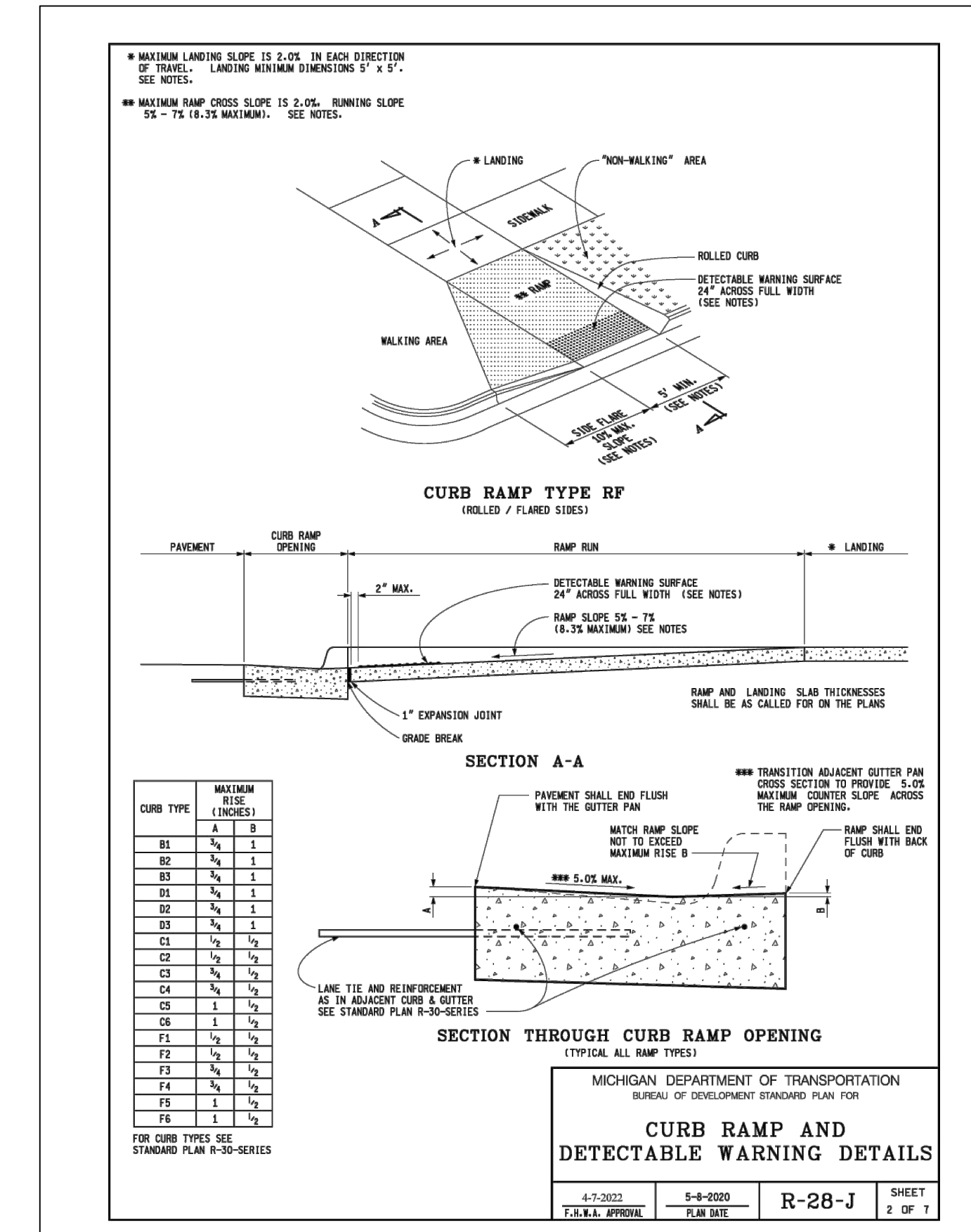
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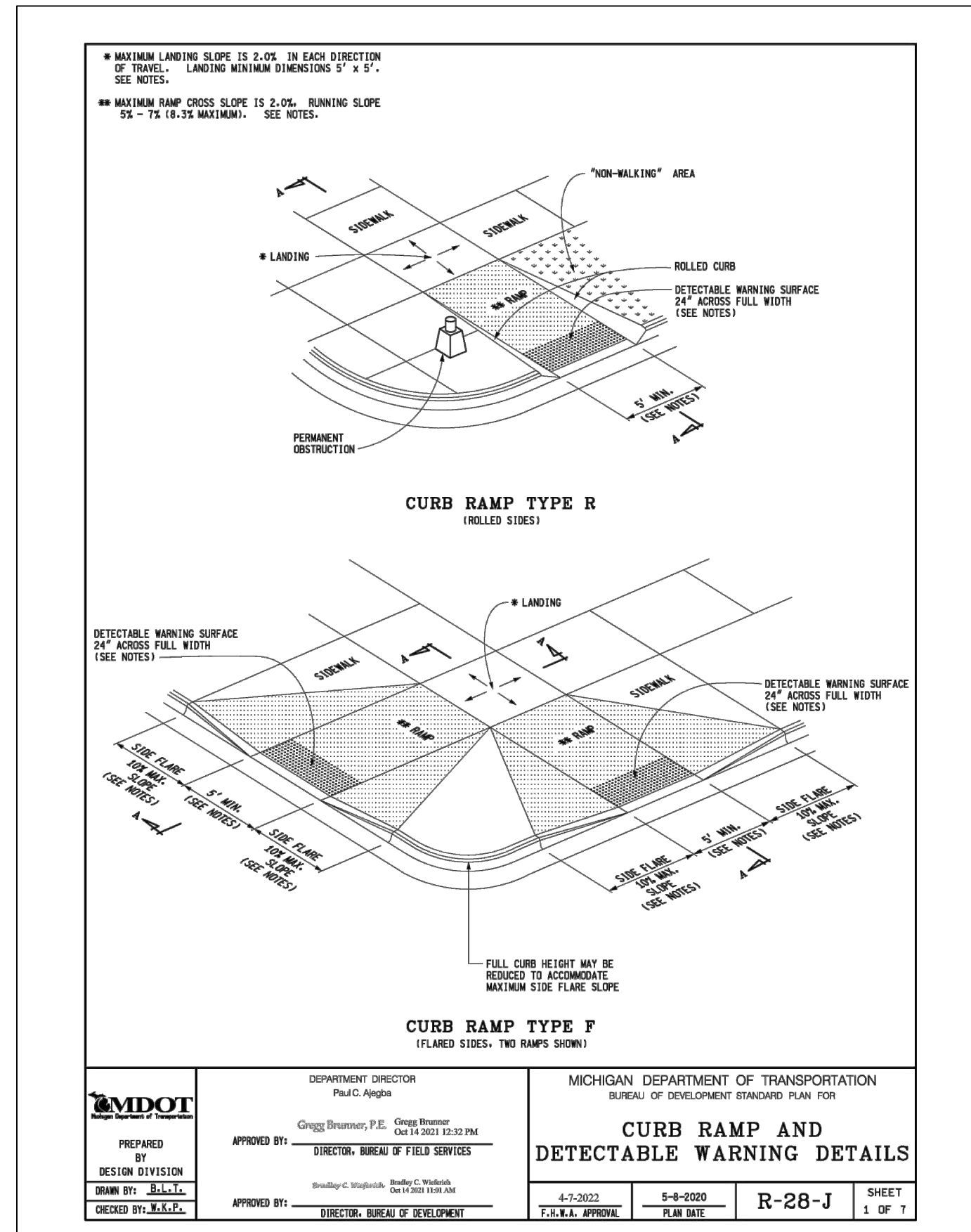
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BUREAU OF DEVELOPMENT STANDARD PLAN FOR  
**CURB RAMP AND  
DETECTABLE WARNING DETAILS**  
4-7-2002 5-8-2020 R-28-J SHEET 4 OF 7  
T.A.B.E.L. APPROVE PLAN DATE



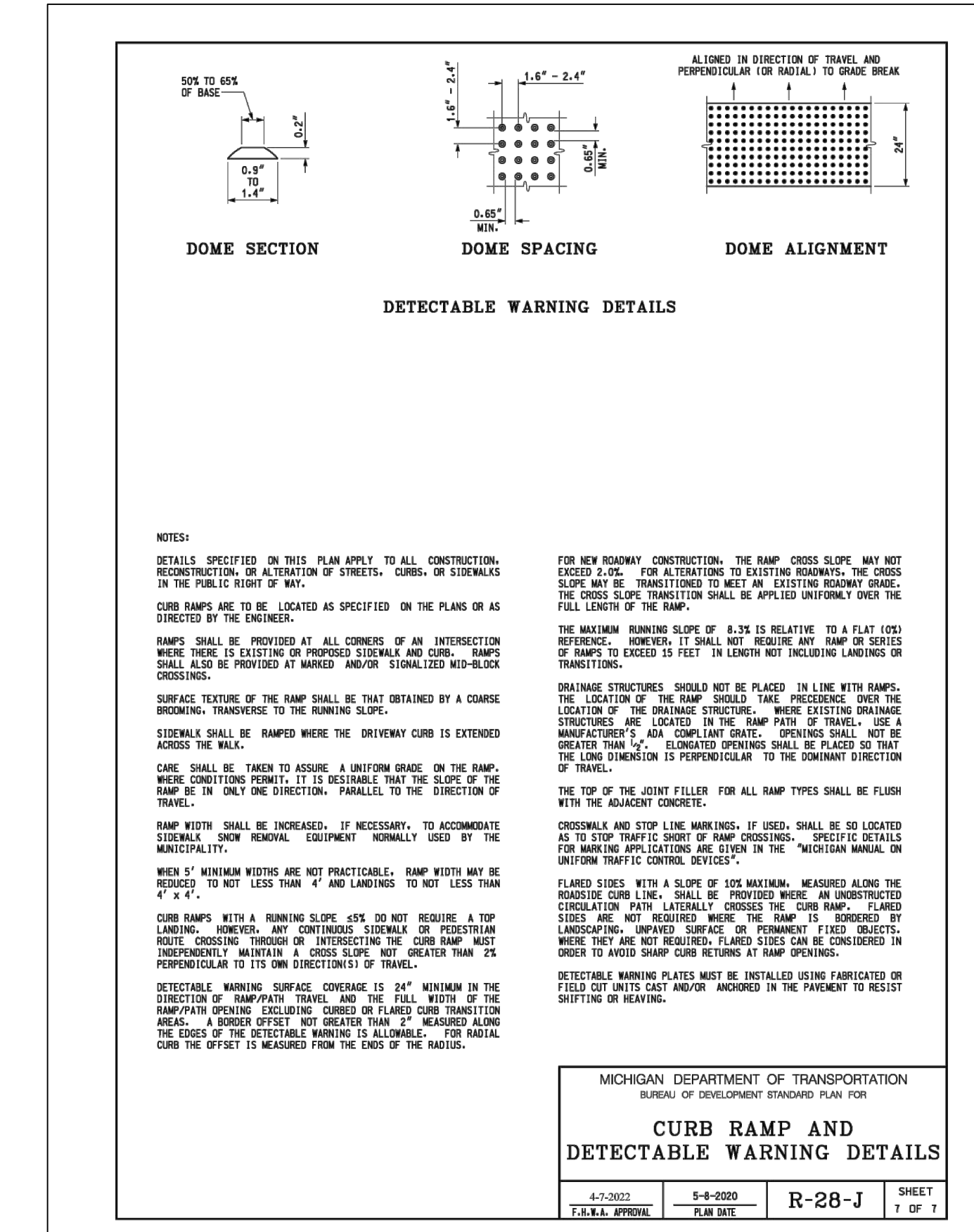
MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF DEVELOPMENT STANDARD PLAN FOR  
**CURB RAMP AND  
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4-7-2002 5-8-2020 R-28-J SHEET 3 OF 7  
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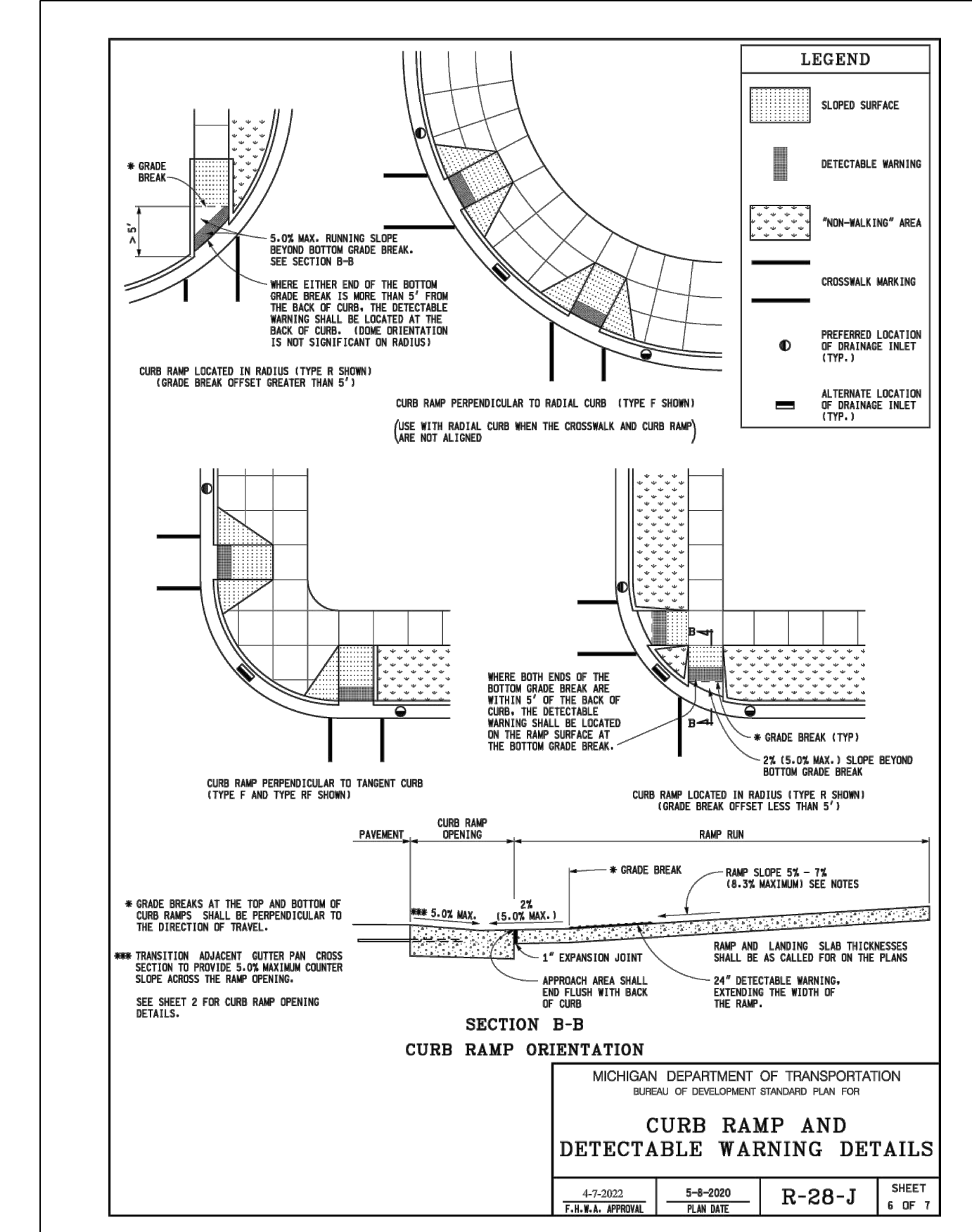
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4-7-2002 5-8-2020 R-28-J SHEET 2 OF 7  
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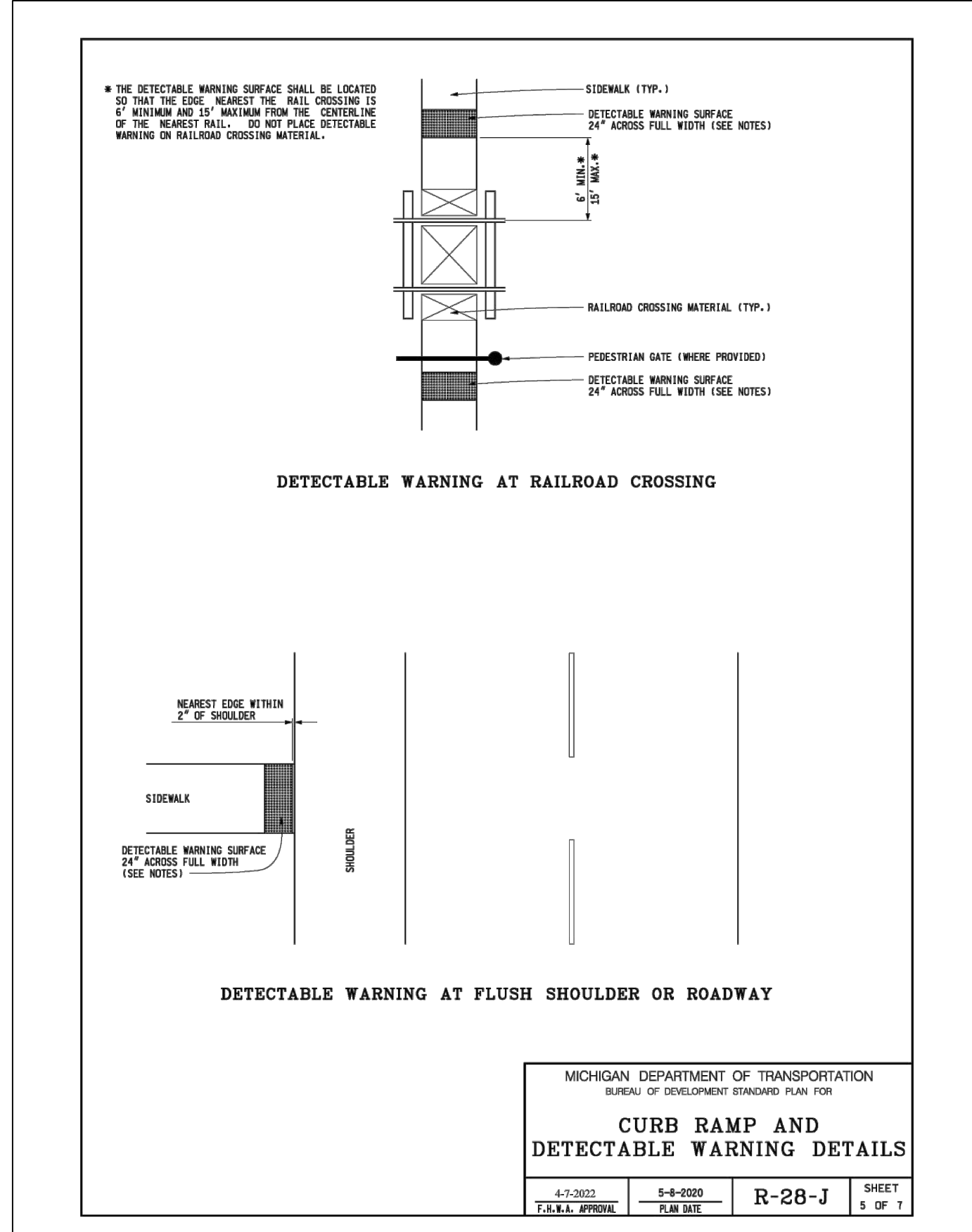
MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF DEVELOPMENT STANDARD PLAN FOR  
**CURB RAMP AND  
DETECTABLE WARNING DETAILS**  
4-7-2002 5-8-2020 R-28-J SHEET 1 OF 7  
T.A.B.E.L. APPROVE PLAN DATE



MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF DEVELOPMENT STANDARD PLAN FOR  
**CURB RAMP AND  
DETECTABLE WARNING DETAILS**  
4-7-2002 5-8-2020 R-28-J SHEET 7 OF 7  
T.A.B.E.L. APPROVE PLAN DATE



MICHIGAN DEPARTMENT OF TRANSPORTATION  
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**CURB RAMP AND  
DETECTABLE WARNING DETAILS**  
4-7-2002 5-8-2020 R-28-J SHEET 6 OF 7  
T.A.B.E.L. APPROVE PLAN DATE



MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF DEVELOPMENT STANDARD PLAN FOR  
**CURB RAMP AND  
DETECTABLE WARNING DETAILS**  
4-7-2002 5-8-2020 R-28-J SHEET 5 OF 7  
T.A.B.E.L. APPROVE PLAN DATE







**GENERAL NOTES**

- BRICK PAVERS SHALL BE REMOVED BY MEANS WHICH CAUSE NO DAMAGE TO THE BRICKS. BRICKS SHALL BE DELIVERED TO CITY OF BIRMINGHAM DEPARTMENT OF SERVICES AS DIRECTED BY THE ENGINEER.
- ALL PAVEMENT TO BE REMOVED SHALL BE SAWCUT FULL DEPTH.
- ANY GRAVEL REPLACEMENT NECESSARY FOR REGRADING DRIVEWAYS SHALL BE CONSIDERED INCLUDED IN THE COST OF CONCRETE DRIVE APPROACH.
- ALL TREES NOT INDICATED FOR REMOVAL SHALL BE PROTECTED DURING CONSTRUCTION. WHERE NECESSARY, TREE ROOTS SHALL BE CUT CLEANLY. AT NO TIME WILL RIPPING OR TEARING OF TREE ROOTS BE ACCEPTABLE.
- ALL DRIVEWAYS (BEHIND THE SIDEWALK) SHALL BE REPAIRED WITH A CROSS SECTION WHICH MATCHES THE EXISTING IN THICKNESS, OR A MINIMUM 4.0" BITUMINOUS MIXTURE No. 13A. IF THE EXISTING DRIVEWAY IS GREATER THAN 4.0" IN DEPTH, THE THICKNESS OF THE BITUMINOUS MIXTURE No. 13A SHALL BE ADJUSTED TO MAKE UP THE DIFFERENCE.
- UNLESS OTHERWISE SHOWN, PROPOSED GRADES IN PROFILE ARE TOP OF CURB GRADES.
- ROCKS, OR OTHER MISS. DEBRIS WHICH ARE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE, UNLESS DIRECTED OTHERWISE FROM THE CITY.
- THE PAY ITEM "ADJUST STRUCTURE COVER" APPLIES ONLY TO PRE-EXISTING STRUCTURES TO BE ADJUSTED TO PROPOSED GRADES AS PART OF CONSTRUCTION.
- IF THE CONTRACTOR HAS MULTIPLE CREWS WORKING THAT REQUIRES MULTIPLE CITY INSPECTORS ON A GIVEN WORK DAY, THE PAY ITEM "INSPECTOR CREW DAYS" SHALL BE MULTIPLIED BY THE CORRESPONDING NUMBER OF INSPECTORS REQUIRED DURING SAID WORK DAY.

**PAVING NOTES**

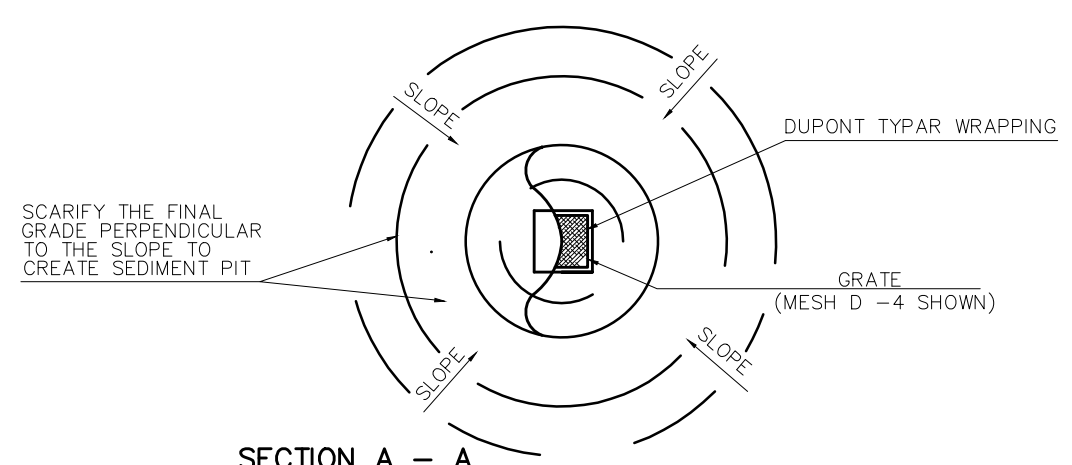
- PAVEMENT SHALL BE OF THE TYPE, THICKNESS AND CROSS SECTION AS INDICATED ON THE PLANS AND AS FOLLOWS:
  - CONCRETE ROAD: BASE COURSE - 21AA CRUSHED LIMESTONE AGGREGATE (8" THICK) MIX - PORTLAND CEMENT TYPE IA (AIR-ENTRAINED), TO COMPLY WITH MDOT 3500HP REQUIREMENTS.
  - CONCRETE FLATWORK: PORTLAND CEMENT TYPE IA (AIR-ENTRAINED), WITH A MINIMUM CEMENT CONTENT OF SIX SACKS PER CUBIC YARD, MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3,500 PSI AND A SLUMP OF 1.5 TO 3 INCHES. COMPLY WITH MDOT 3500 REQUIREMENTS.
  - ALL CONCRETE PAVEMENT AND FLATWORK MIXES USED ON THIS PROJECT SHALL COMPLY WITH A MINIMUM GRIND GRANULATED BLAST-FURNACE SLAG (GGBS) SUBSTITUTION OF TWENTY-FIVE (25) PERCENT SUBJECT TO SEASONAL LIMITATIONS PER THE MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT) STANDARD SPECIFICATIONS FOR CONSTRUCTION, 2020 EDITION.
  - ASPHALT: BASE COURSE - 21AA CRUSHED LIMESTONE AGGREGATE (8" THICK)
  - SURFACE COURSES:
    - ASPHALT ROAD - MDOT HMA MIXTURE NO. 5EML (MAX. APPLICATION RATE 220 POUNDS PER SQUARE YARD)
    - REPAIR AREAS - MDOT HMA MIXTURE NO. 13A (MAX. APPLICATION RATE 220 POUNDS PER SQUARE YARD)
  - LEVELING COURSES:
    - ASPHALT ROAD - MDOT HMA MIXTURE NO. 4EML (MAX. APPLICATION RATE 330 POUNDS PER SQUARE YARD)
    - REPAIR AREAS - MDOT HMA MIXTURE NO. 13A (MAX. APPLICATION RATE 220 POUNDS PER SQUARE YARD)
  - BOND COAT - MDOT SS-1H EMULSION AT 0.10 GALLON PER SQUARE YARD
- PAVEMENT BASE SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY (MODIFIED PROCTOR) PRIOR TO PLACEMENT OF PROPOSED PAVEMENT. EXISTING SUB-BASE SHALL BE PROOF-ROLLED IN THE PRESENCE OF THE ENGINEER TO DETERMINE STABILITY.
- ALL CONCRETE PAVEMENT, DRIVEWAYS, CURB & GUTTER, ETC., SHALL BE SPRAY CURED WITH WHITE MEMBRANE CURING COMPOUND IMMEDIATELY FOLLOWING FINISHING OPERATION.
- ALL CONCRETE PAVEMENT JOINTS SHALL BE FILLED WITH HOT POURED RUBBERIZED ASPHALT JOINT SEALING COMPOUND IMMEDIATELY AFTER SAWCUT OPERATION. FEDERAL SPECIFICATION SS-5164.
- ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS AND SPECIFICATIONS OF THE MUNICIPALITY AND THE MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, 2003 EDITION.
- ALL TOP OF CURB ELEVATIONS, AS SHOWN ON THE PLANS, ARE CALCULATED FOR A 6" CONCRETE CURB UNLESS OTHERWISE NOTED.
- ALL SIDEWALK RAMPS, CONFORMING TO PUBLIC ACT NO. 8, 1993, SHALL BE INSTALLED AS INDICATED ON THE PLANS.
- CONSTRUCTION OF A NEW OR RECONSTRUCTED DRIVE APPROACH CONNECTING TO AN EXISTING STATE OR COUNTY ROADWAY SHALL BE ALLOWED ONLY AFTER AN APPROVED PERMIT HAS BEEN SECURED FROM THE AGENCY HAVING JURISDICTION OVER SAID ROADWAY.
- FOR ANY WORK WITHIN THE PUBLIC RIGHT-OF-WAY, THE CONTRACTOR SHALL PAY FOR AND SECURE ALL NECESSARY PERMITS AND LIKEWISE ARRANGE FOR ALL INSPECTION.
- EXISTING TOPSOIL, VEGETATION AND ORGANIC MATERIALS SHALL BE STRIPPED AND REMOVED FROM PROPOSED PAVEMENT AREA PRIOR TO PLACEMENT OF BASE MATERIALS (INCLUDED IN PAVING WORK).
- EXPANSION JOINTS SHOULD BE INSTALLED AT THE END OF ALL INTERSECTION RADII.
- SIDEWALK RAMPS, CONFORMING TO PUBLIC ACT NO. 8, 1973, SHALL BE INSTALLED AS SHOWN AT ALL STREET INTERSECTIONS AND AT ALL BARRIER FREE PARKING AREAS AS INDICATED ON THE PLANS.
- ALL PAVEMENT AREAS SHALL BE PROOF-ROLLED UNDER THE SUPERVISION OF A GEOTECHNICAL ENGINEER PRIOR TO THE PLACEMENT OF BASE MATERIALS AND PAVING MATERIALS.
- FILL AREAS SHALL BE MACHINE COMPACTED IN UNIFORM LIFTS NOT EXCEEDING 9 INCHES THICK TO 95% OF THE MAXIMUM DENSITY (MODIFIED PROCTOR) PRIOR TO PLACEMENT OF PROPOSED PAVEMENT.
- R.A.P. NOT ALLOWED IN SURFACE / TOP COURSE OF ASPHALT.

**WATER MAIN NOTES**

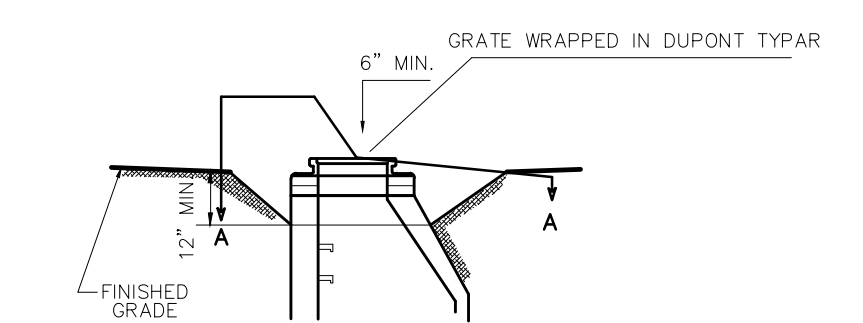
- ALL WATER MAINS 4" AND LARGER SHALL BE DUCTILE IRON PIPE THICKNESS CLASS 52, WITH PUSH ON TYPE JOINTS PER CITY REQUIREMENTS.
- NEW WATER MAINS SHALL BE INSTALLED WITH A MINIMUM 5.5 FEET OF COVER, EXCEPTIONS WILL BE ALLOWED WHEN NECESSARY TO CONNECT TO EXISTING MAIN OR WHEN AUTHORIZED BY THE ENGINEER.
- KNOWN WATER SERVICES BASED ON FIELD INFORMATION OR CITY RECORDS ARE SHOWN ON THE PLANS AS FOLLOWS: "C" = COPPER, "L" = LEAD AND "W.S." = WATER SERVICE TYPE UNKNOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONNECTING ALL EXISTING SERVICES TO THE NEW MAIN AFTER IT HAS BEEN APPROVED FOR USE.
- COAT ALL BOLTS ON MECHANICAL FITTINGS WITH TAR.
- HYDRANT CONNECTION TO CONSIST OF 6" DUCTILE IRON PIPE, 6" GATE VALVE AND BOX, AND HYDRANT. HYDRANT SHALL BE EJM MODEL 58R WITH 6" MECHANICAL JOINT INLET, TWO PUMPER INLETS, ALL OPENING LEFT, 5"-6" TRENCH, PLUGGED DRAIN AND BLOCK BOLTS.
- INSTALL GATE VALVE AS CLOSE TO HYDRANT AS PRACTICABLE.
- GATE VALVES 4" AND LARGER MAY BE MUELLER BRAND SPECIFIED, OR APPROVED EQUIVALENT. ALL MATERIALS RELATIVE TO WATER SERVICE CONNECTIONS SHALL BE MUELLER BRAND.
- IN ABANDONING MAINS, THE FOLLOWING SHALL BE DONE: PLUG ALL OPEN PIPE ENDS WITH MASONRY, DISCONNECT MAINS WHICH ARE TO BE ABANDONED FROM FITTINGS AT LVE MAINS AND PLUG AND BLOCK THOSE FITTINGS. FILL MAIN TO BE ABANDONED WITH GROUT OR HYDRAULIC CEMENT.
- WORK INDICATED BY (A) SHALL BE PERFORMED AFTER THE NEW MAINS ARE PLACED IN SERVICE.
- THE LOCATIONS AND TYPES OF SERVICE LEADS IS BASED ON THE BEST AVAILABLE INFORMATION. THE EXACT LOCATION OF SERVICE LEADS SHALL BE FIELD VERIFIED BY THE CONTRACTOR.
- WHERE APPLICABLE, THE APPROPRIATE SECTIONS OF EXISTING WATERMAIN SHALL BE SHUTDOWN AND DEPRESSURIZED PRIOR TO A) CUTTING AND REMOVING, B) CUTTING AND INSTALLING PROPOSED TEE CONNECTIONS, C) PERFORMING ANY AND ALL OTHER WORK AROUND/ADJACENT TO HYDRANTS AND ALL OTHER CONNECTIONS, WHILE MEETING AND/OR EXCEEDING APPLICABLE INDUSTRY SAFETY PRECAUTIONS AND MISHA STANDARDS.

**STORM SEWER NOTES (where applicable)**

- ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS AND SPECIFICATIONS OF THE MUNICIPALITY. THE MUNICIPALITY STANDARD NOTES, DETAILS AND SPECIFICATIONS SHALL BE INCORPORATED AS PART OF THESE PLANS.
- ALL STORM SEWER TRENCHES UNDER OR WITHIN THREE (3) FEET OF EXISTING OR PROPOSED PAVEMENT SHALL BE BACK FILLED WITH MDOT CLASS II MATERIAL (SAND) AND BE MACHINE COMPACTED TO A MINIMUM OF 95% OF THE MATERIAL'S MAXIMUM DENSITY. PAVEMENT SHALL INCLUDE PARKING LOTS, DRIVE APPROACHES, 95 CURB & GUTTER AND ADJACENT WALKS.
- ALL STORM SEWER PIPE SHALL BE INSTALLED ON CLASS "B" BEDDING OR BETTER UNLESS OTHERWISE INCLUDED ON THE PLANS.
- STORM SEWER SHALL BE OF THE TYPE, SIZE & CLASS DESIGNATION INDICATED ON THE PLANS AND LIKEWISE BE INSTALLED AT THE PROPOSED LINE & GRADE INDICATED.
- ALL STORM SEWER PIPE SHALL BE REINFORCED CONCRETE PIPE CONFORMING TO ASTM SPECIFICATION C-76 CL IV.
- ALL MAN HOLE, CATCH BASIN, INLET, REAR YARD DRAINAGE STRUCTURES AND COVERS SHALL BE AS INDICATED ON THE PLANS AND CONSTRUCTED IN ACCORDANCE WITH MUNICIPALITY STANDARDS.
- INSTALL TRAPS ON THE FIRST CATCH BASIN (TYPICALLY A 4" DIAMETER STRUCTURE WITH 2" SUMP) THAT IS UPSTREAM OF ITS CONNECTION TO A MAINLINE STORM OR SEWER MANHOLE, TO CAPTURE FLOATABLES AND TO MINIMIZE ESCAPE OF ODOR.
- THE CONTRACTOR SHALL NOTIFY MISS DIG (1-800-482-7171) A MINIMUM OF THREE (3) WORKING DAYS PRIOR TO THE START OF CONSTRUCTION.
- EXACT GRADES AND INVERTS OF PROPOSED STORM SEWER ARE TO BE CHECKED WITH THE FIELD ENGINEER PRIOR AND DURING INSTALLATION. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE DESIGN ENGINEER OF ANY PLAN INCONSISTENCY AND/OR UTILITY CONFLICTS.
- ALL STORM SEWER PIPE JOINTS SHALL BE "PREMIUM JOINT" MODIFIED GROOVED TONGUE (M.G.T.) WITH SYNTHETIC RUBBER GASKETS CONFORMING TO ASTM SPECIFICATION C-443 & C-361, UNLESS OTHERWISE INDICATED ON THE PLANS.
- FACILITY MANUFACTURED PRECAST TEE SECTIONS SHALL BE FOR ROOF DRAINS AND/OR SUMP PUMP LEADS AND LATERALS WHERE INDICATED ON THE PLANS. BLIND TOP CONNECTIONS INTO STORM SEWER WILL NOT BE PERMITTED BY BREAKING PIPE WALL.
- THE CONTRACTOR SHALL PAY FOR AND SECURE ALL NECESSARY PERMITS AND LIKEWISE ARRANGE FOR ALL SITE INSPECTIONS.

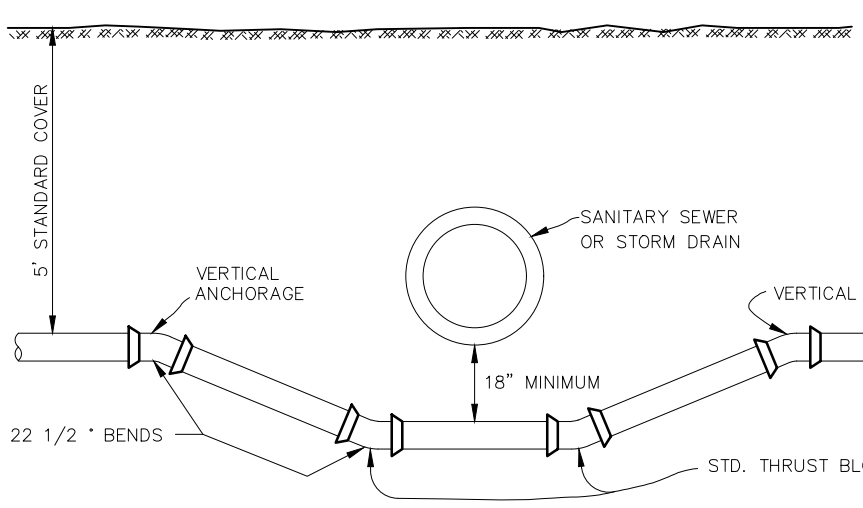


SECTION A - A



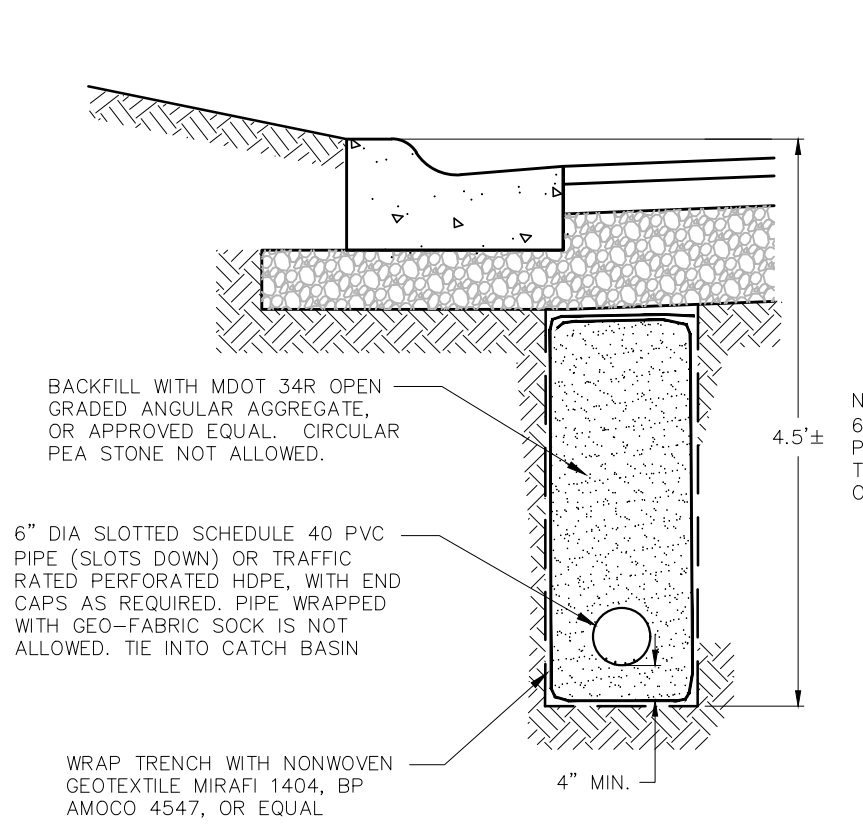
LOW POINT INLET FILTER & SEDIMENT PIT DETAIL

N.T.S.



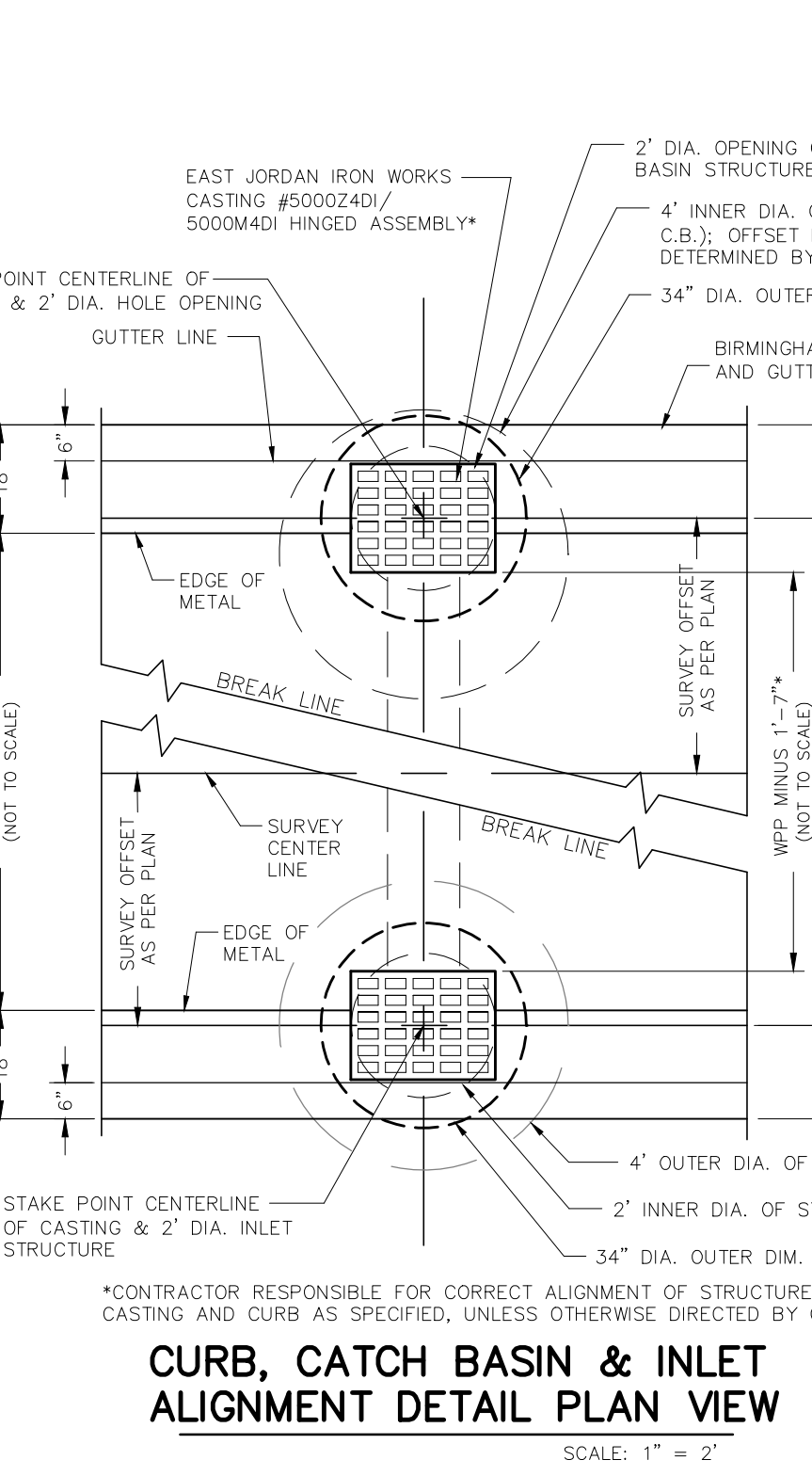
STANDARD SEWER OR STORM CROSSING

N.T.S.



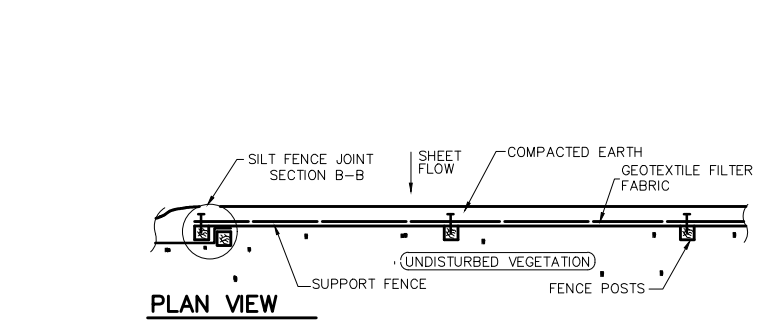
6" PERFORATED PIPE UNDERDRAIN DETAIL

N.T.S.

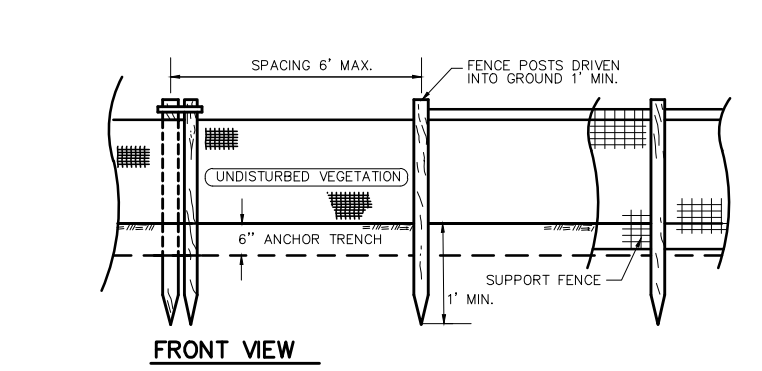


CURB, CATCH BASIN & INLET ALIGNMENT DETAIL PLAN VIEW

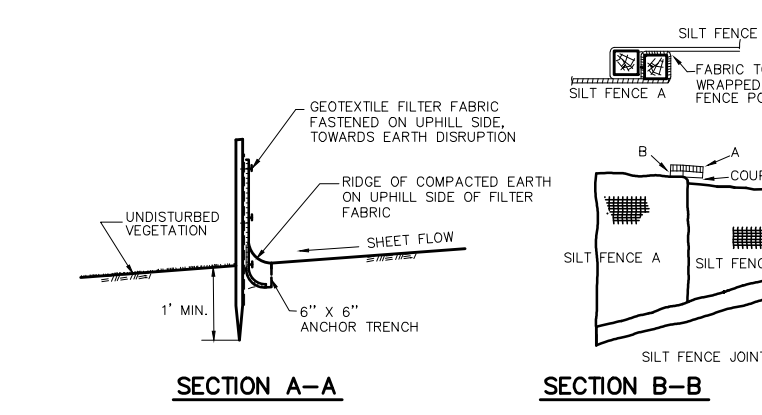
SCALE: 1" = 2'



PLAN VIEW



FRONT VIEW



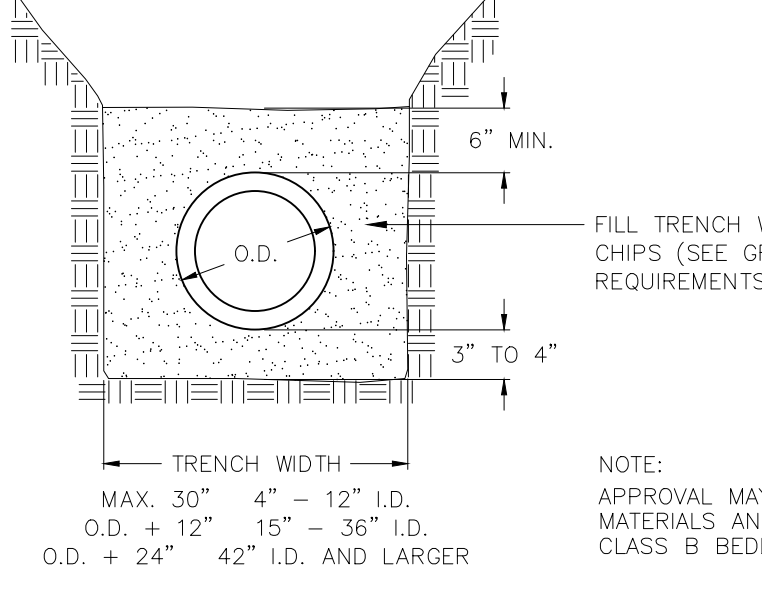
SECTION A-A



SECTION B-B

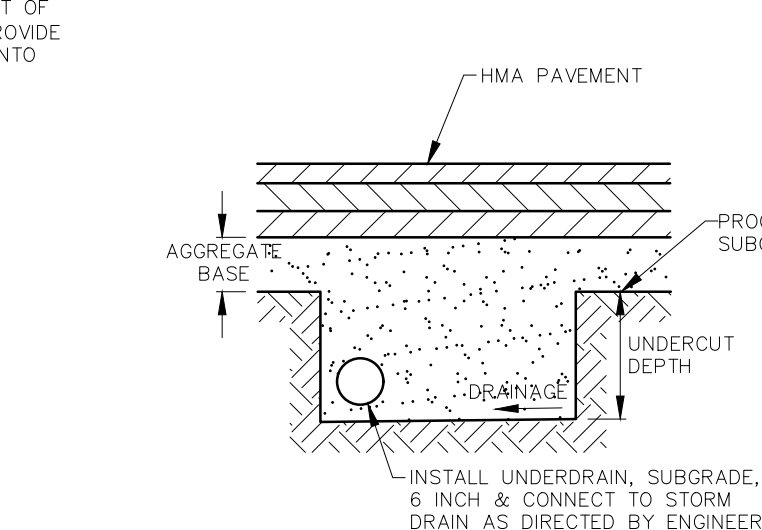
SILT FENCE DETAIL

N.T.S.



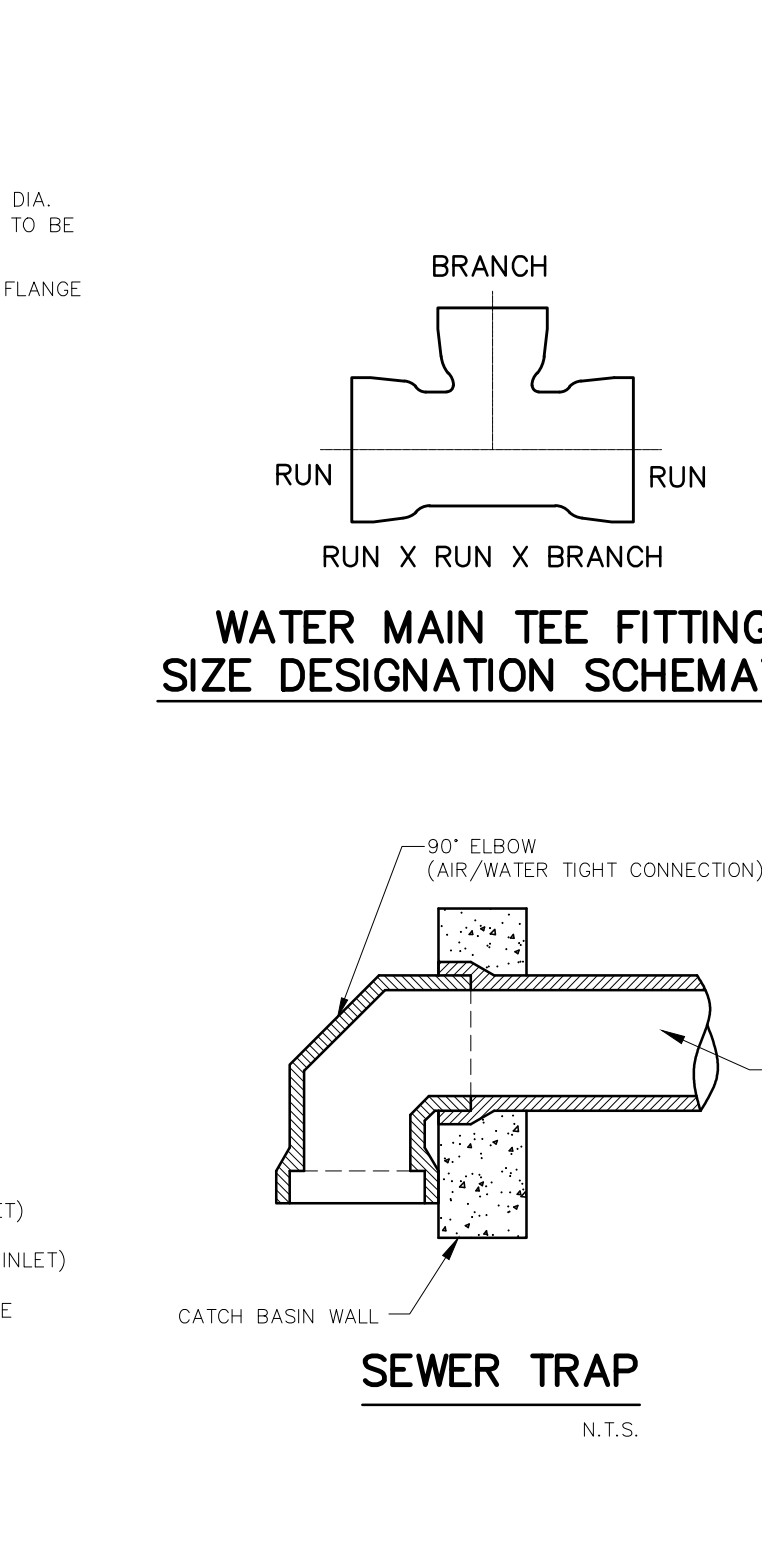
STANDARD PIPE BEDDING

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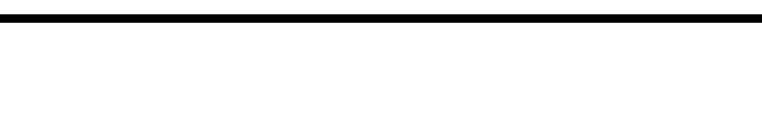
UNDERCUT DETAIL

N.T.S.



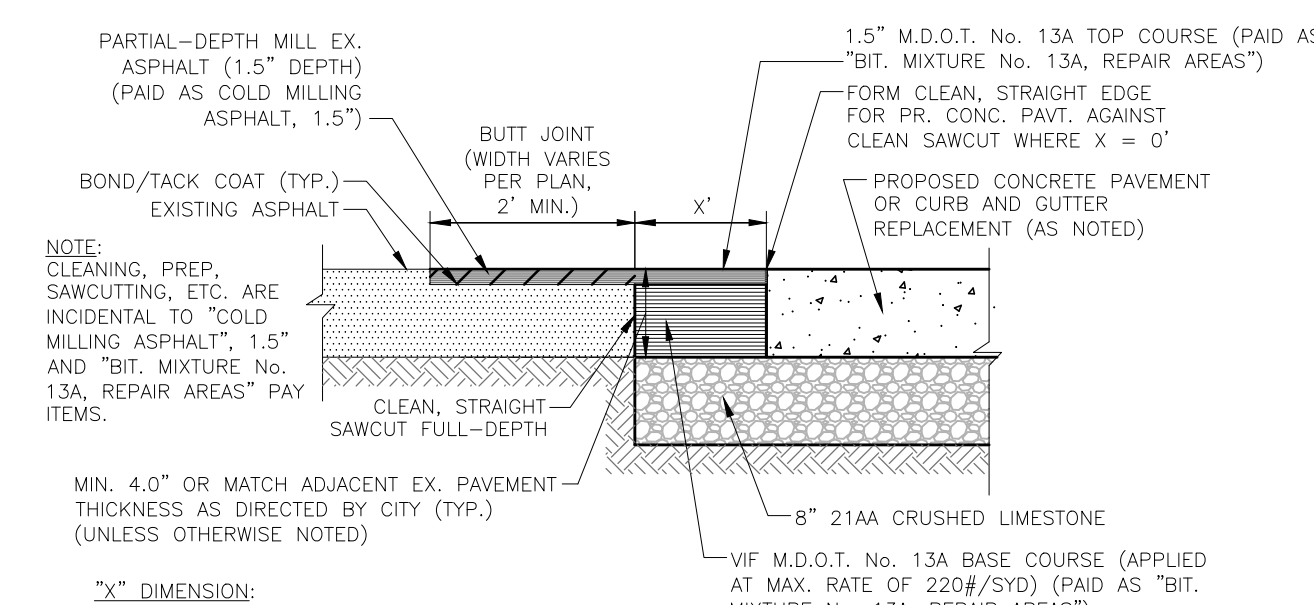
WATER MAIN TEE FITTING SIZE DESIGNATION SCHEMATIC

N.T.S.



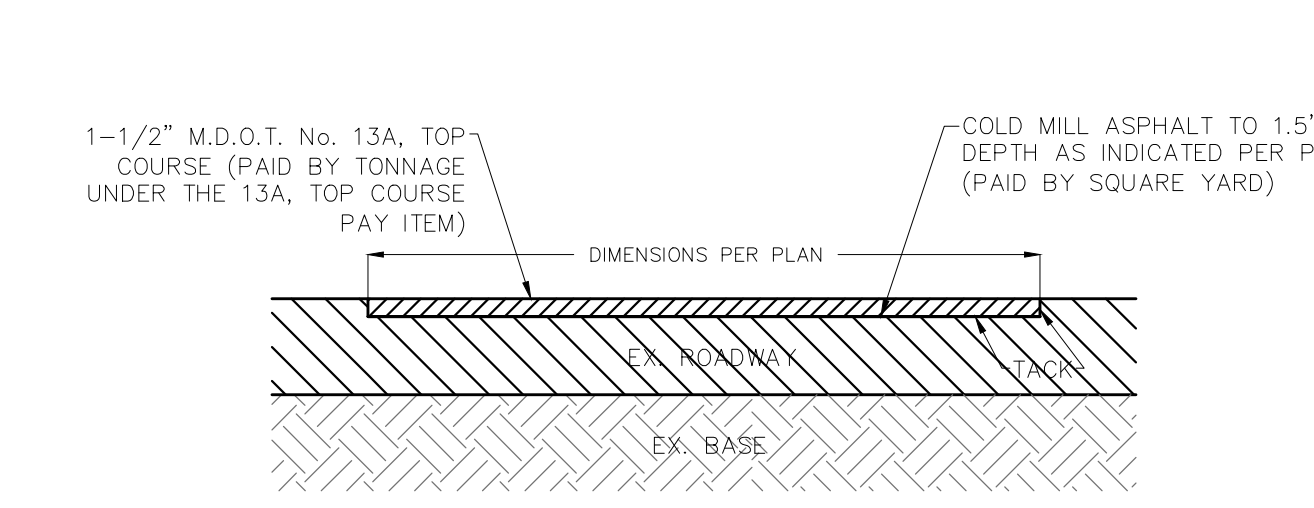
SEWER TRAP

N.T.S.



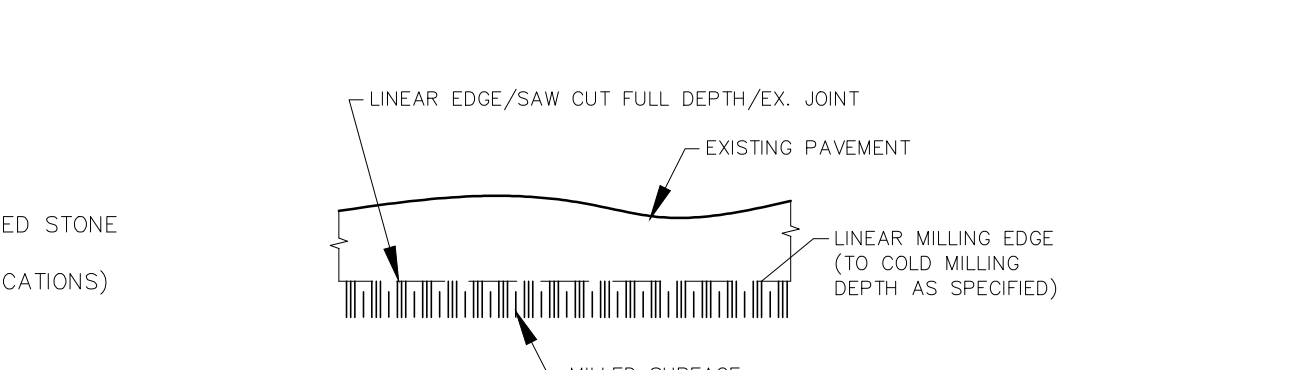
ASPHALT REPAIR DETAIL

N.T.S.



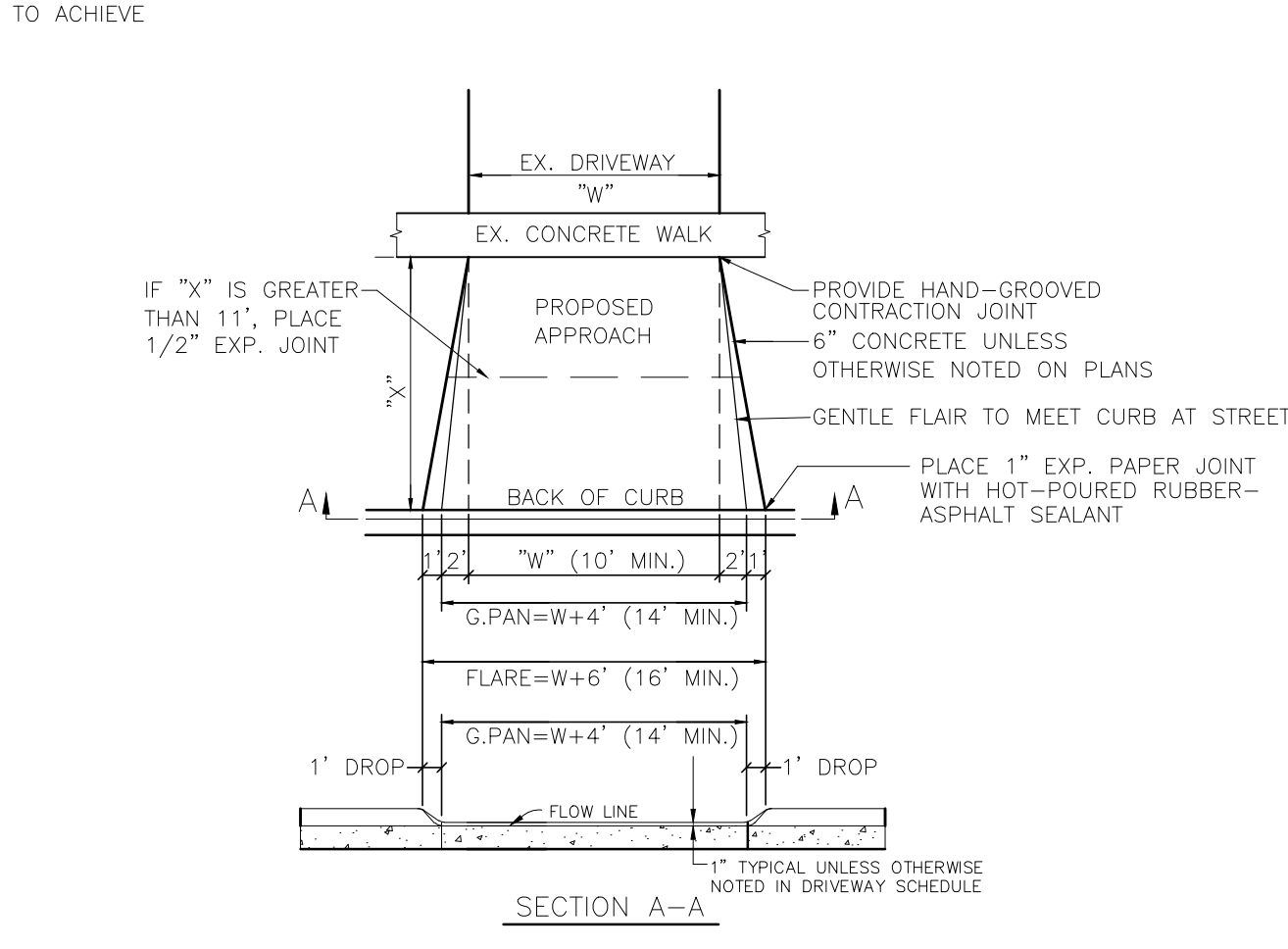
COLD MILL ASPHALT DETAIL

N.T.S.



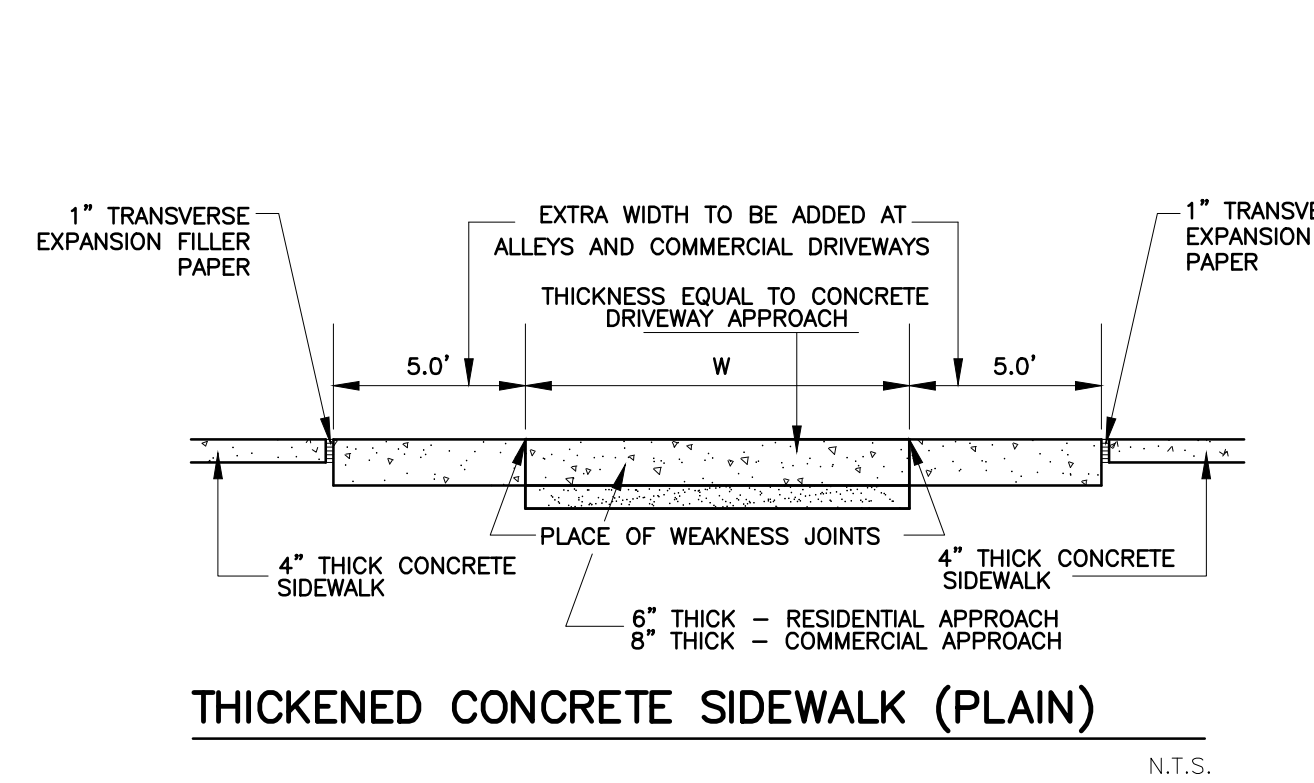
LINEAR MILLING/SAWCUT EDGE DETAIL

N.T.S.



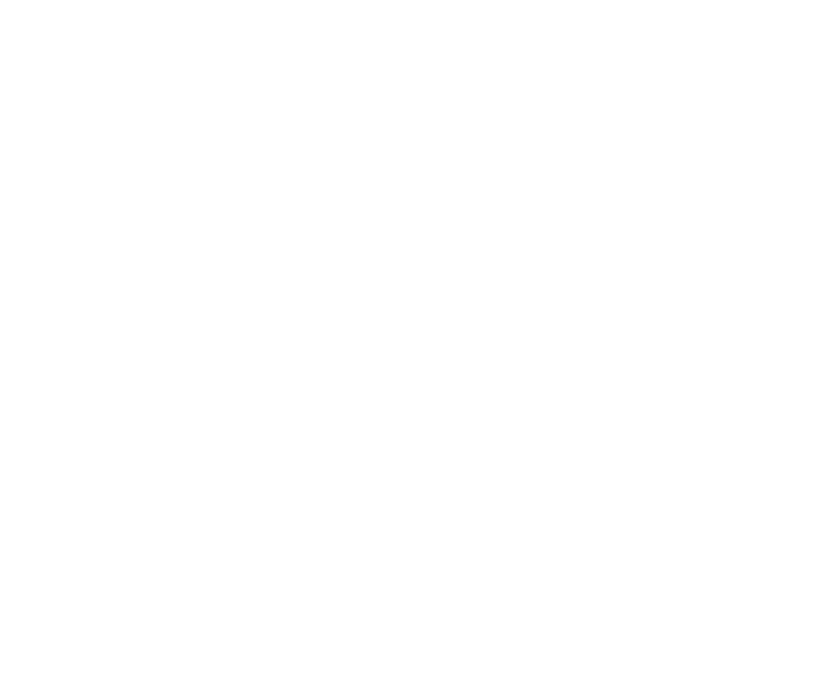
CONCRETE DRIVE APPROACH - DETAIL 'L'

N.T.S.



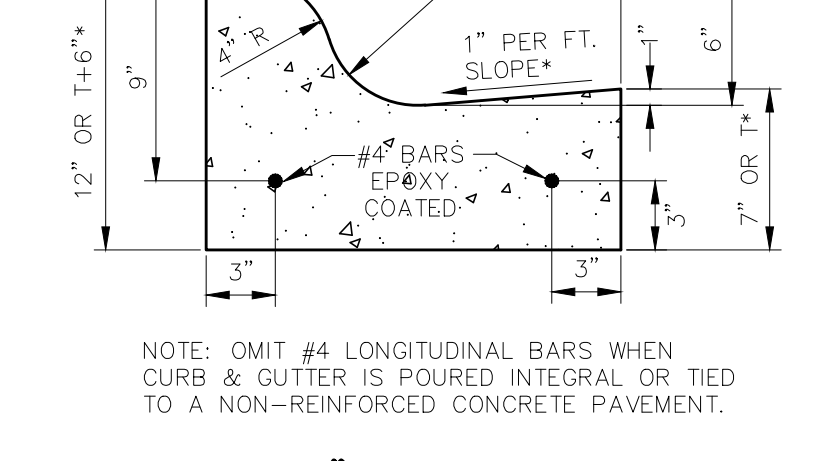
THICKENED CONCRETE SIDEWALK (PLAIN)

N.T.S.



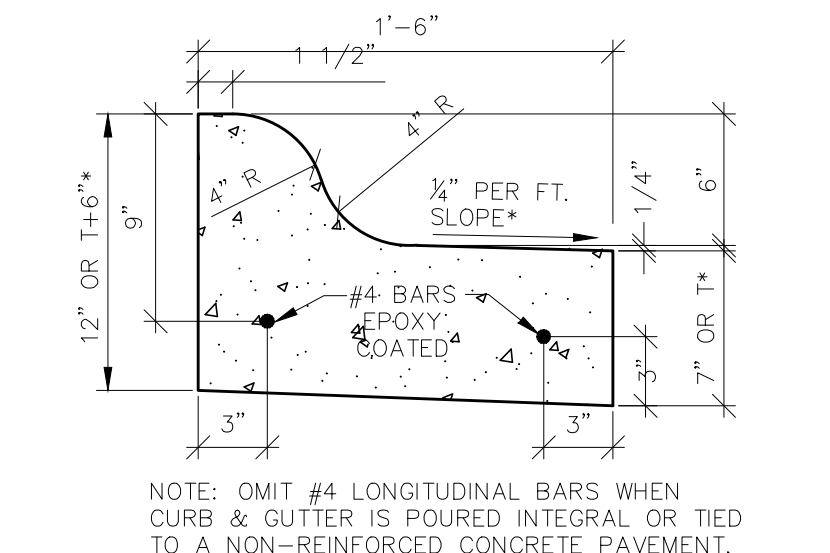
BIRMINGHAM 6" ROLL CURB CONCRETE CURB & STANDARD GUTTER DETAIL

N.T.S.



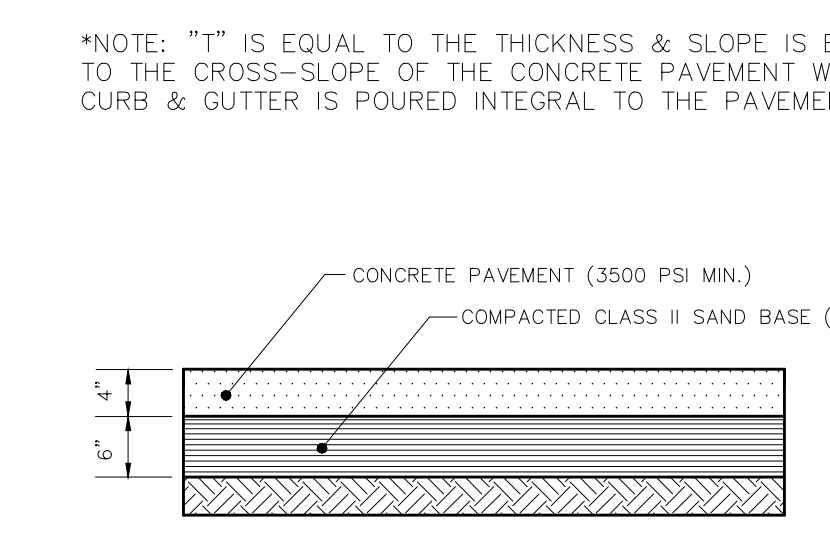
BIRMINGHAM 6" ROLL CURB CONCRETE CURB & REVERSE GUTTER DETAIL

N.T.S.



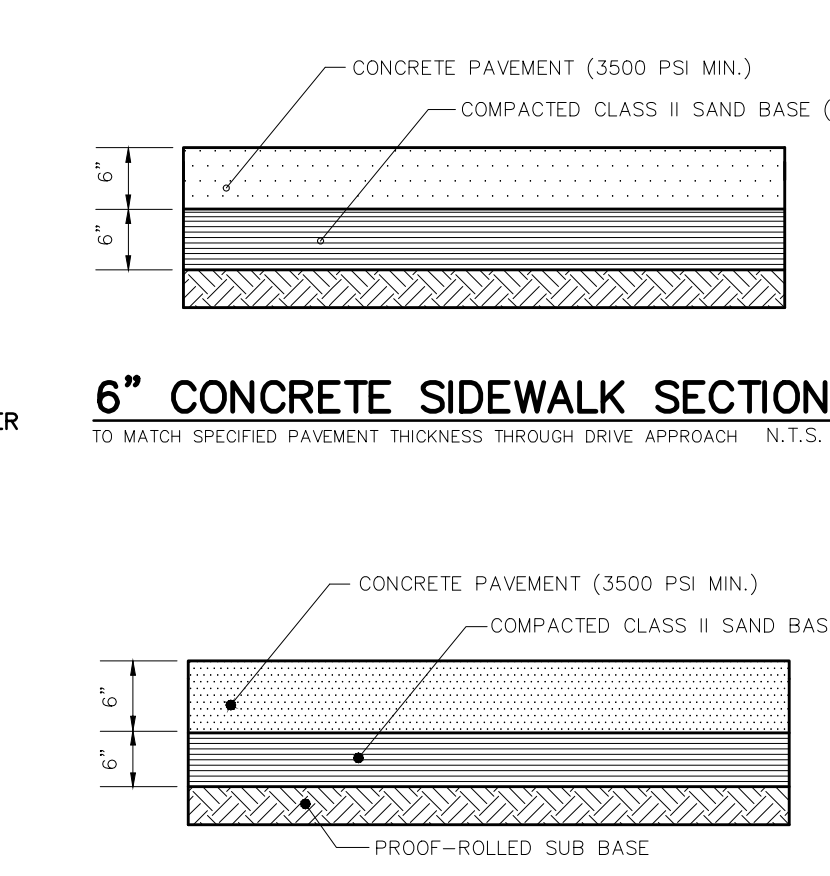
4" CONCRETE SIDEWALK SECTION

N.T.S.



6" CONCRETE SIDEWALK SECTION

N.T.S.



TYPICAL CONCRETE SECTION FOR RESIDENTIAL APPROACH

N.T.S.



CIVIL ENGINEERS  
LAND SURVEYORS  
LAND PLANNERS

NOWAK & FRAUS ENGINEERS  
46777 WOODWARD AVE.  
PONTIAC, MI 48342-5032  
TEL. (248) 332-7931  
FAX. (248) 332-8257

PROJECT

Pierce Street Paving Project  
Contract#3-23(P)

CLIENT



Engineering Department  
151 Martin Street  
Birmingham, MI 48012

PROJECT LOCATION

Part of the Southeast 1/4 of Section 36, Town 2 North, Range 10 East, City of Birmingham, Oakland County, Michigan

SHEET

Notes & Details (3 of 3)

DATE ISSUED/REVISED

12-08-21	ISSUED SURVEY
01-06-23	ISSUED SURVEY
02-01-23	ISSUED SURVEY
05-05-23	ISSUED FOR EGLE W.M. PERMIT
05-18-23	REVISED PER CITY REVIEW
05-24-23	BIDS
06-08-23	ADDENDUM 1

DRAWN BY:

G. Viju

DESIGNED BY:

P. Tulikangas

APPROVED BY:

B. Buchholz

DATE:

12-08-2021

SCALE: N.T.S.

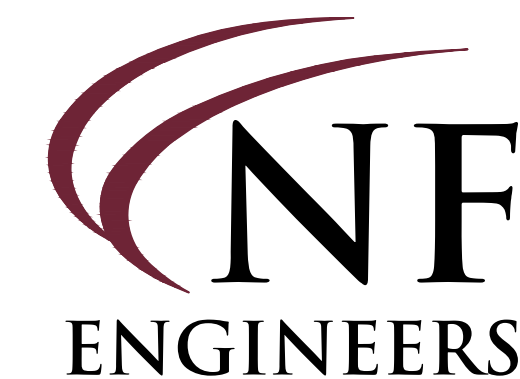
NFE JOB NO.

M515

SHEET NO.

C21





CIVIL ENGINEERS  
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SHEET

Quantities



Know what's below  
Call before you dig.

DATE ISSUED/REVISED

12-08-21 ISSUED SURVEY  
01-06-23 ISSUED SURVEY  
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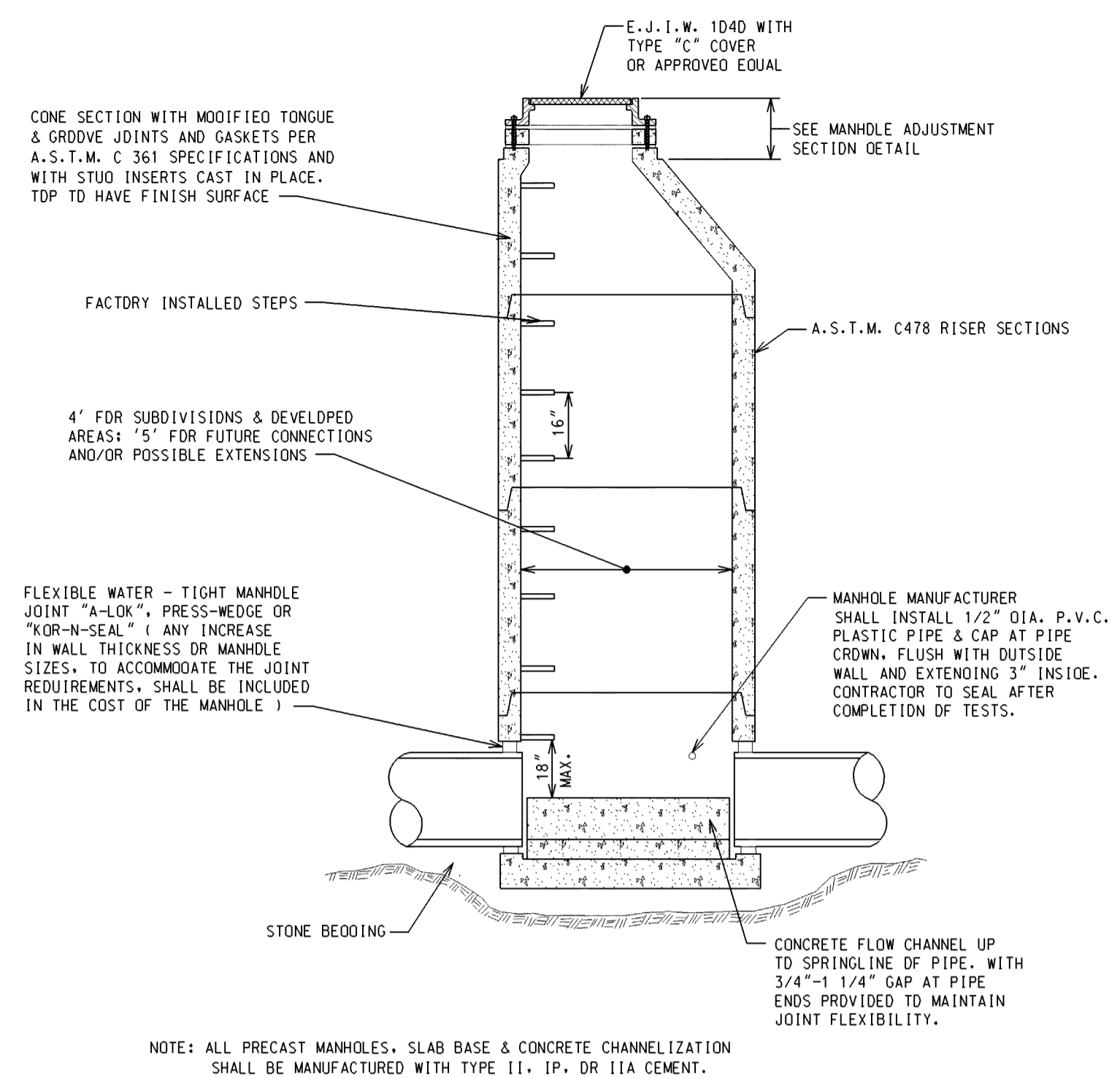
M515

SHEET NO.

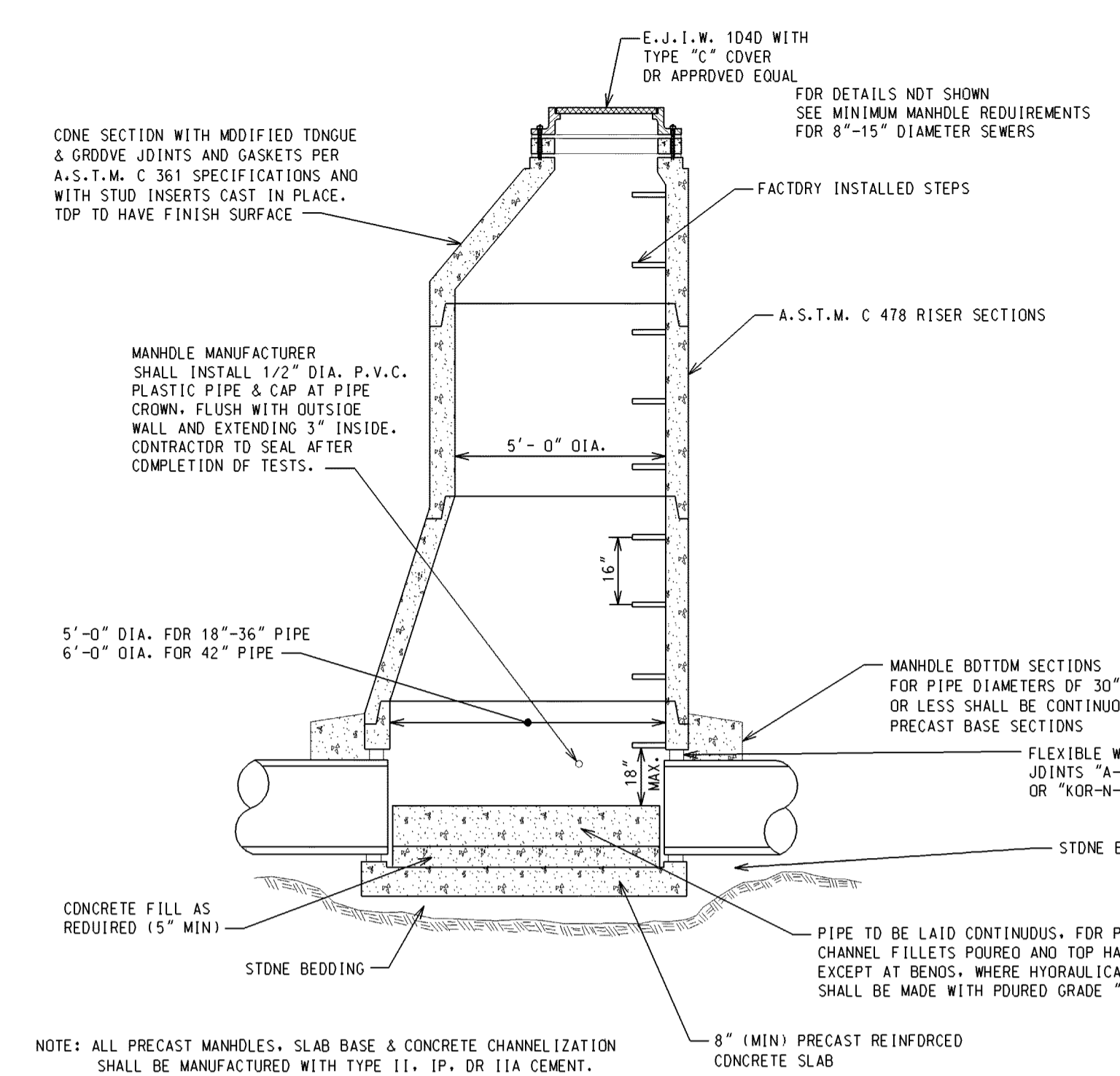
Q1

NO.	ITEM DESCRIPTION	PAY UNIT	SHEET C1	SHEET C2	SHEET C3	SHEET C4	SHEET C5	SHEET C6	TOTAL QUANTITY
<b>SEWER PAY ITEMS</b>									
1	21" Storm Sewer, C76, CL-W, Trench A	LF					110	209	319
2	18" Storm Sewer, C76, CL-W, Trench A	LF					216		216
3	12" Storm Sewer, C76, CL-W, Trench A	LF					72	60	132
4	New 5'-0" Diameter Storm Manhole (Construct Online)	EA						1	1
5	New 5'-0" Diameter Storm Manhole w/ 2' Sump & PVC Gas Trap	EA						1	1
6	New 5'-0" Diameter Storm Manhole w/ 2' Sump	EA					1	1	2
7	New 4'-0" Diameter Storm Manhole w/ 2' Sump (Construct Online)	EA						1	1
8	New 4'-0" Diameter Storm Manhole w/ 2' Sump	EA					1		1
9	New 2'-0" Diameter Inlet	EA					4	4	8
10	6" Perforated Pipe Underdrain (No sock)	LF					160	160	320
11	Sewer Tap, 21"	EA						1	1
12	Sewer Tap, 12"	EA						1	1
13	Reconstruct Manhole (if and where needed)	VF							30
14	Remove & Replace Structure Cover (as directed by City)	LB							2,750
15	Remove Ex. Drainage Structure	EA					2	1	3
16	Remove Ex. 12" Storm Sewer	LF					28	66	94
17	Remove Ex. 10" Storm Sewer	LF					25		25
18	Bulkhead Structure, 12"	EA					1	2	3
19	Bulkhead Structure, 10"	EA					1		1
20	Bulkhead Pipe, 8"	EA					1		1
21	CCTV Sewer Acceptance Inspection	LS							1
<b>SUBTOTAL SEWER PAY ITEMS (EXCLUDES MAINLINE STORM)</b>									
<b>WATER MAIN PAY ITEMS</b>									
22	Remove Hydrant	EA	1		1				2
23	Remove Existing Gate Valve Well	EA	2	1	1			1	5
24	Fis Hydrant Assembly, Complete	EA	1		1	2	1		5
25	12" Gate Valve & Well	EA	2	1	1	2	1	1	8
26	8" Gate Valve & Well	EA				1	1		2
27	12" D.I. CL 52 Water Main w/ Polywrap, Trench A	LF	455	500	501	500	450	193	2,599
28	8" D.I. CL 52 Water Main w/ Polywrap, Trench A	LF		31	10	50	24		115
29	6" D.I. CL 52 Water Main w/ Polywrap, Trench A	LF	15		10	24	12		61
30	4" D.I. CL 52 Water Main w/ Polywrap, Trench A	LF					4		4
31	12" Water Main Connection to Ex. 12" Water Main	EA	1					1	2
32	8" Water Main Connection to Ex. 8" Water Main	EA		1	1	2			4
33	4" Water Main Connection to Ex. 4" Water Main	EA					1		1
34	New Water Service, 6", Trench A, CL 52 D.I.	LF				4			4
35	New Water Service, 1.5", Trench A, Copper	LF	12	30	60			4	106
36	New Water Service, 1", Trench A, Copper	LF	255	365	295	365	369	45	1,694
37	Water Service Connection, 6"	EA				1			1
38	Water Service Connection, 1.5"	EA	1	1	2			1	5
39	Water Service Connection, 1"	EA	14	17	10	9	9	2	61
40	Install Curb Stop & Box (Materials Provided by City), 1"	EA	6	10	4	4			24
41	Hydra-Stop, 12"	EA							4
42	Hydra-Stop, 8"	EA							4
43	Hydra-Stop, 6"	EA							2
44	Hydra-Stop, 4"	EA							1
45	Abandon Existing Water Mains, Entire Project	LS							1
<b>SUBTOTAL WATER MAIN PAY ITEMS</b>									
<b>PAVING PAY ITEMS</b>									
46	<See Alternate #1 and Alternate #2 Below>								
47	Subgrade Undercutting	CY	57	62	60	64	54	24	321
48	Remove and Salvage Brick Pavers	SF		20					20
49	Removing Asphalt Drive Approach	SY		15					15
50	Removing Concrete Drive Approach	SY	355	295	325	140	255		1,370
51	Removing Concrete Sidewalk & Ramp (sawcutting included)	SY	69	130	42	146	206	78	671
52	Removing Pavement Full Depth (Curb & Gutter included)	SY	1485	1695	1650	1775	1570	1230	9,405
53	Cold Milling Asphalt, 1.5"	SY	19						19
54	Bituminous Mixture No. 13A, Repair Areas	TON	20						20
55	Aggregate Base, MDOT 21AA Limestone, 8"	SY	1559	1800	1732	1864	1649	1291	9,895
56	Concrete Pavement, Non-reinforced, 9", Incl. Integral 6" curb	SY						295	295
57	<See Alternate #1 and Alternate #2 Below>								
58	<See Alternate #1 and Alternate #2 Below>								
59	<See Alternate #1 and Alternate #2 Below>								
60	<See Alternate #1 and Alternate #2 Below>								
61	<See Alternate #1 and Alternate #2 Below>								
62	<See Alternate #1 and Alternate #2 Below>								
63	Concrete Drive Approach, 6", Incl. Integral 6" curb	SY						175	175
64	Concrete Drive Approach, 6"	SY	360	315	330	145	260		1,410
65	Concrete Sidewalk, 6" (Includes Ramps)	SF	75	85		320	70	205	755
66	Concrete Sidewalk, 4"	SF	540	1080	375	1015	1530	550	5,090
67	Handicap Ramp Truncated Domes	SF	20	20		86	48	44	218
68	Adjust Structure Cover	EA							25
69	Maintenance Aggregate for Entire Project	LS							1
<b>SUBTOTAL PAVING PAY ITEMS</b>									
<b>GENERAL PAY ITEMS</b>									
70	Mobilization (Max. 5% of Bid)	LS							1
71	Pavement Marking, Polyurea, 24 inch Stop Bar, White	LF	10	12		13	13	17	65
72	Pavement Marking, Polyurea, 24 inch Crosshatching, White	LF	36	42		196	98	106	478
73	Pavement Marking, Polyurea, 4 inch, Yellow	LF						258	258
74	Recessing Pavt Mkg, Longit	LF						258	258
75	Recessing Pavt Mkg, Transv	SF	92	108		418	222	246	1,086
76	Water and Sewer Allowance	LS							1
77	Salvage Existing Signs	LS							1
78	New Signs	SF							50
79	Sign Post, U-Channel	LF							96
80	Tree Protection, 3" Dia. Or Greater	EA							72
81	Furnish & Install Bike Rack Hoops	EA						3	3
82	Mulch, 3"	SY							100
83	Topsoil, 3"	SY							1,750
84	Sod, Class A	SY							1,750
85	Inlet Filter	EA							22
86	Inlet Sediment DN	EA							8
87	<See Alternate #1 and Alternate #2 Below>								
88	<See Alternate #1 and Alternate #2 Below>								
<b>SUBTOTAL GENERAL PAY ITEMS</b>									
<b>ALTERNATE #1 - "CONCRETE PAVEMENT"</b>									
<b>ALTERNATE #1 - PAVING PAY ITEMS</b>									
46	Earth Excavation	CY	572	620	600	640	540	240	3,212
57	Concrete Pavement, Non-reinforced, 7", Incl. Integral 6" curb	SY	1485	1695	1650	1775	1570	760	8,935
58	Bituminous Mixture No. 5EML (2.0" Wearing Course)	TON							0
59	Bituminous Mixture No. 4EML (3.0" Leveling Course)	TON							0
60	Concrete Curb & Gutter (18" Wide, "Birmingham Roll")	LF		20		20			40
61	MDOT "M" Approach Detail, 18" Wd. Curb & Gutter	LF							0
62	MDOT "M" Approach Detail (Formed in Conc. Pavt. w/ int. curb)	LF						217	217
<b>ALTERNATE #1 - GENERAL PAY ITEMS</b>									
87	Traffic Maintenance & Control	LS							1
88	Inspector Crew Days	DAYS							-
<b>SUBTOTAL ALTERNATE #1 PAVING &amp; GENERAL PAY ITEMS</b>									
<b>ALTERNATE #2 - "ASPHALT PAVEMENT"</b>									
<b>ALTERNATE #2 - PAVING PAY ITEMS</b>									
46	Earth Excavation	CY	488	527	510	544	459	204	2,732
57	Concrete Pavement, Non-reinforced, 7", Incl. Integral 6" curb	SY	0	0	0	0	0	0	0
58	Bituminous Mixture No. 5EML (2.0" Wearing Course)	TON	147	168	164	177	144	62	862
59	Bituminous Mixture No. 4EML (3.0" Leveling Course)	TON	221	252	246	266	216	93	1,294
60	Concrete Curb & Gutter (18" Wide, "Birmingham Roll")	LF	928	1007	980	1015	885	115	4,930
61	MDOT "M" Approach Detail, 18" Wd. Curb & Gutter	LF						217	217
62	MDOT "M" Approach Detail (Formed in Conc. Pavt. w/ int. curb)	LF							0
<b>ALTERNATE #2 - GENERAL PAY ITEMS</b>									
87	Traffic Maintenance & Control	LS							1
88	Inspector Crew Days	DAYS							-
<b>SUBTOTAL ALTERNATE #2 PAVING &amp; GENERAL PAY ITEMS</b>									

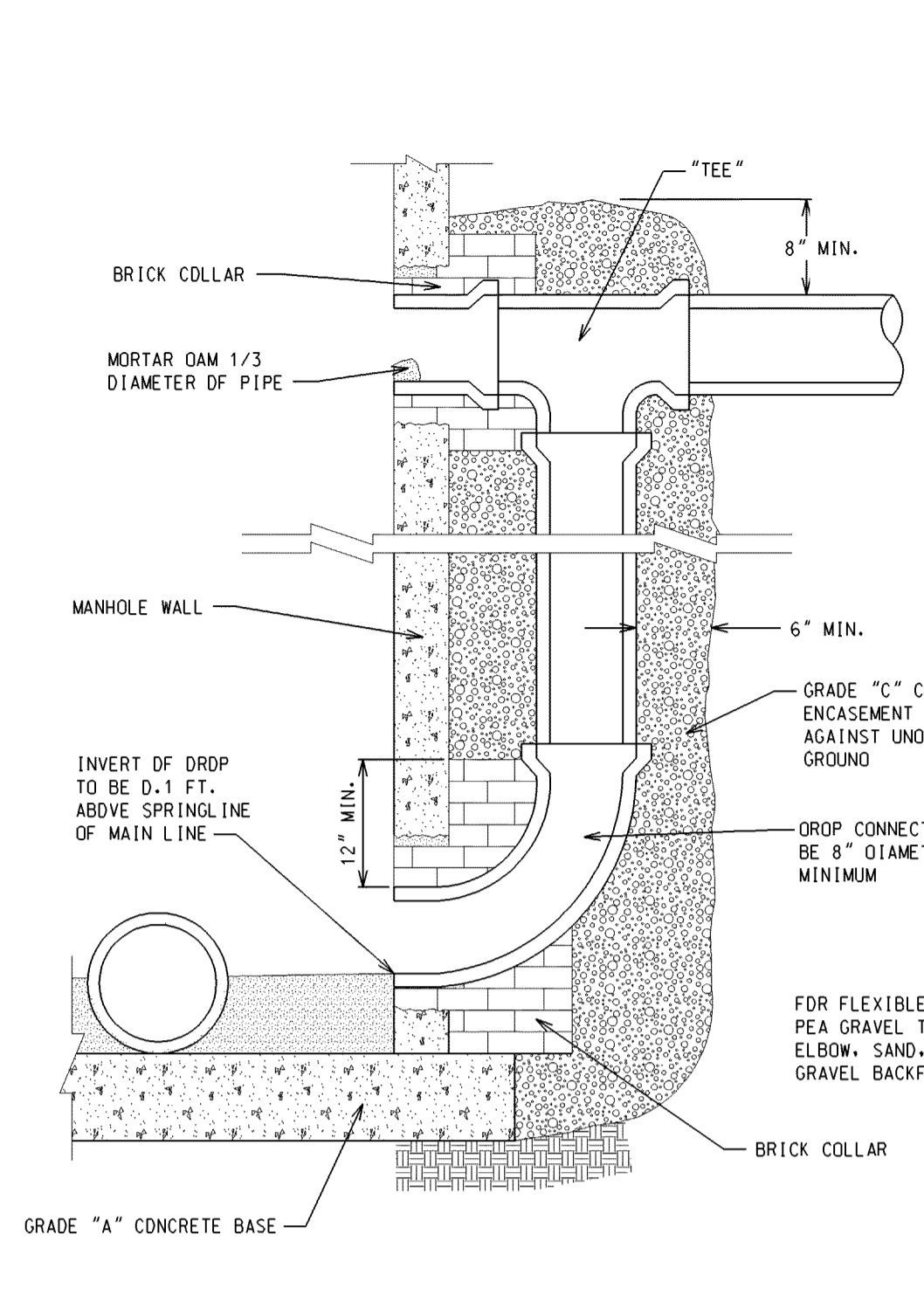




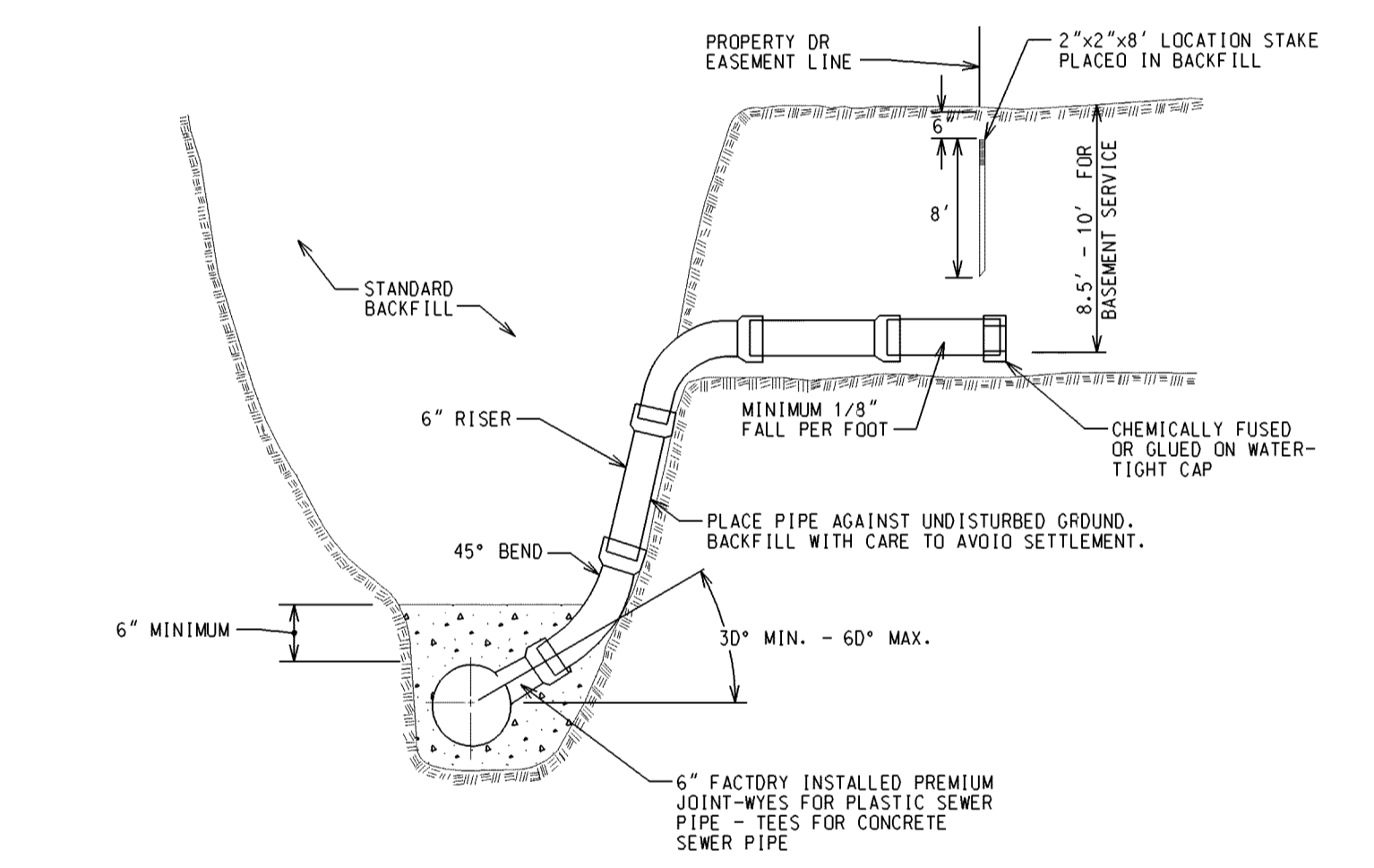
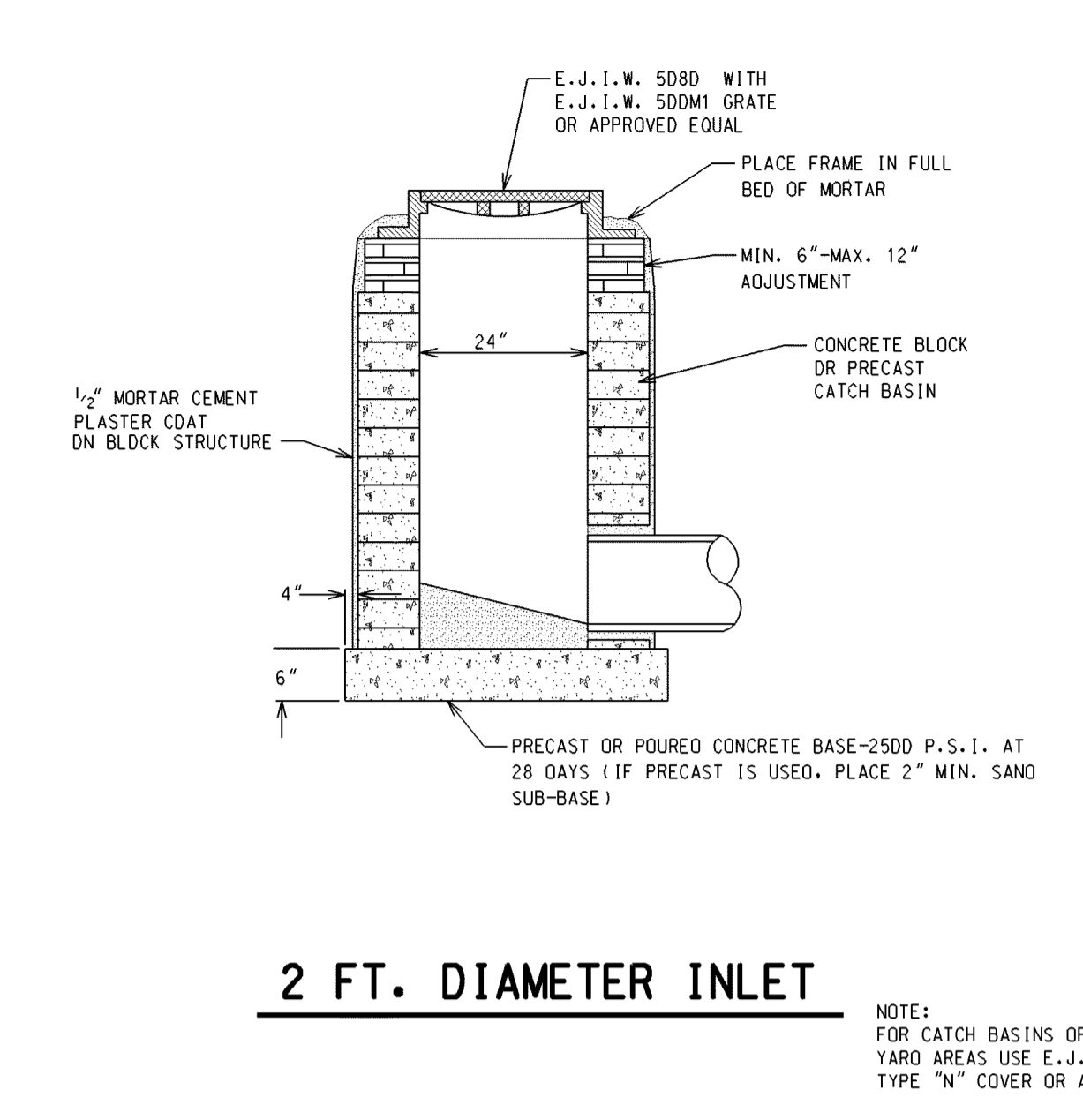
**SEWER MANHOLE**  
( 8" THRU 15" DIA. SEWERS )



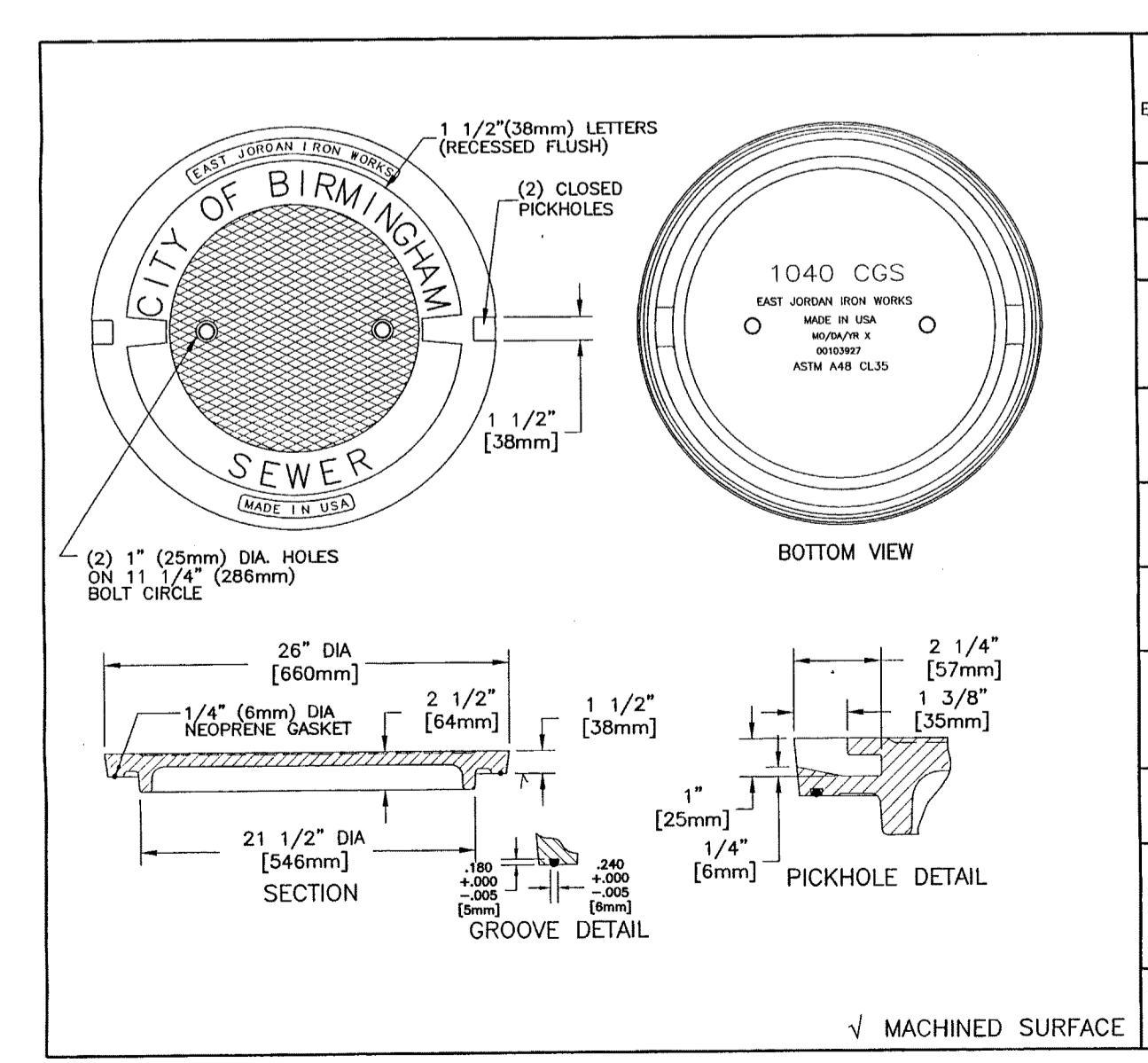
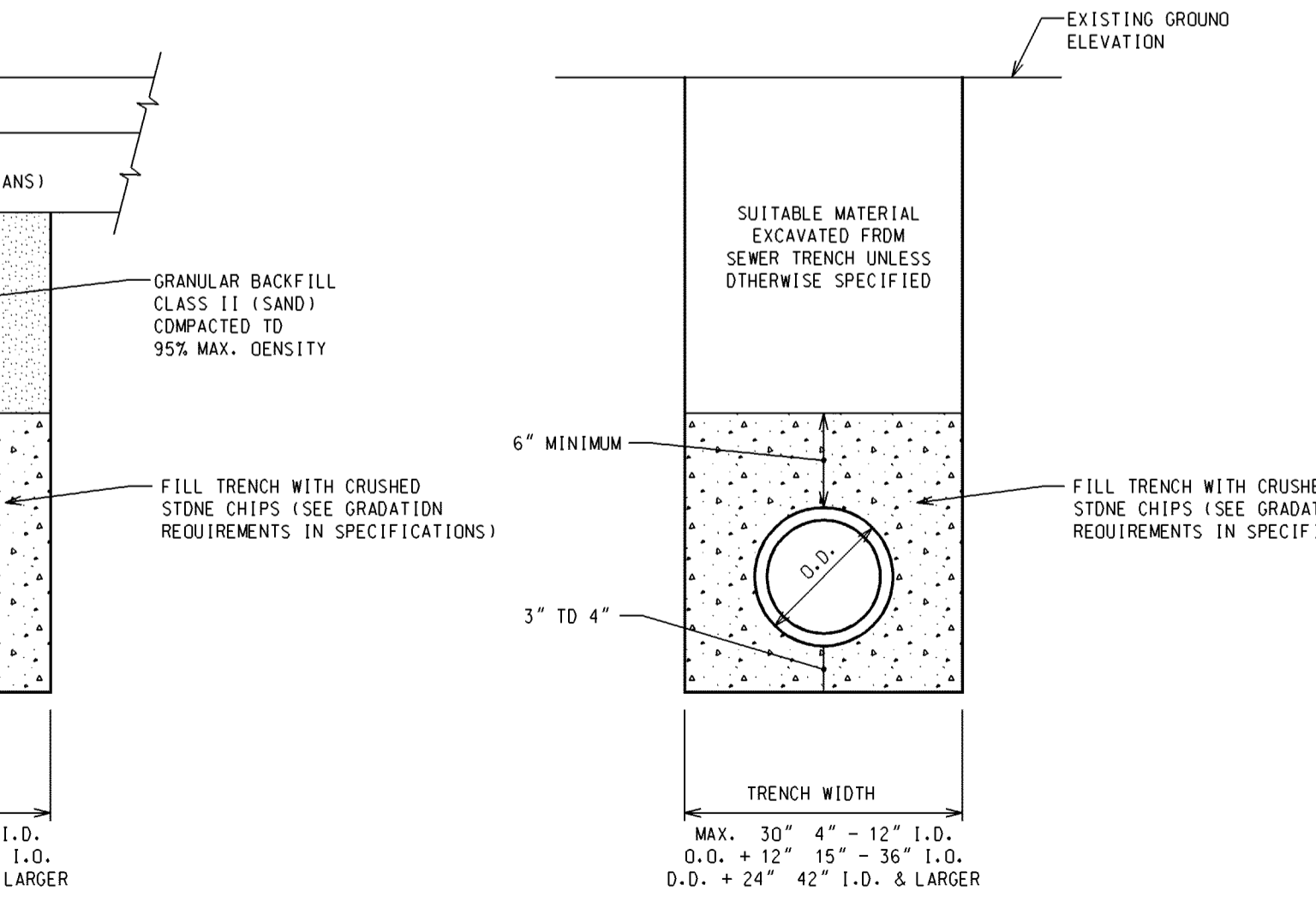
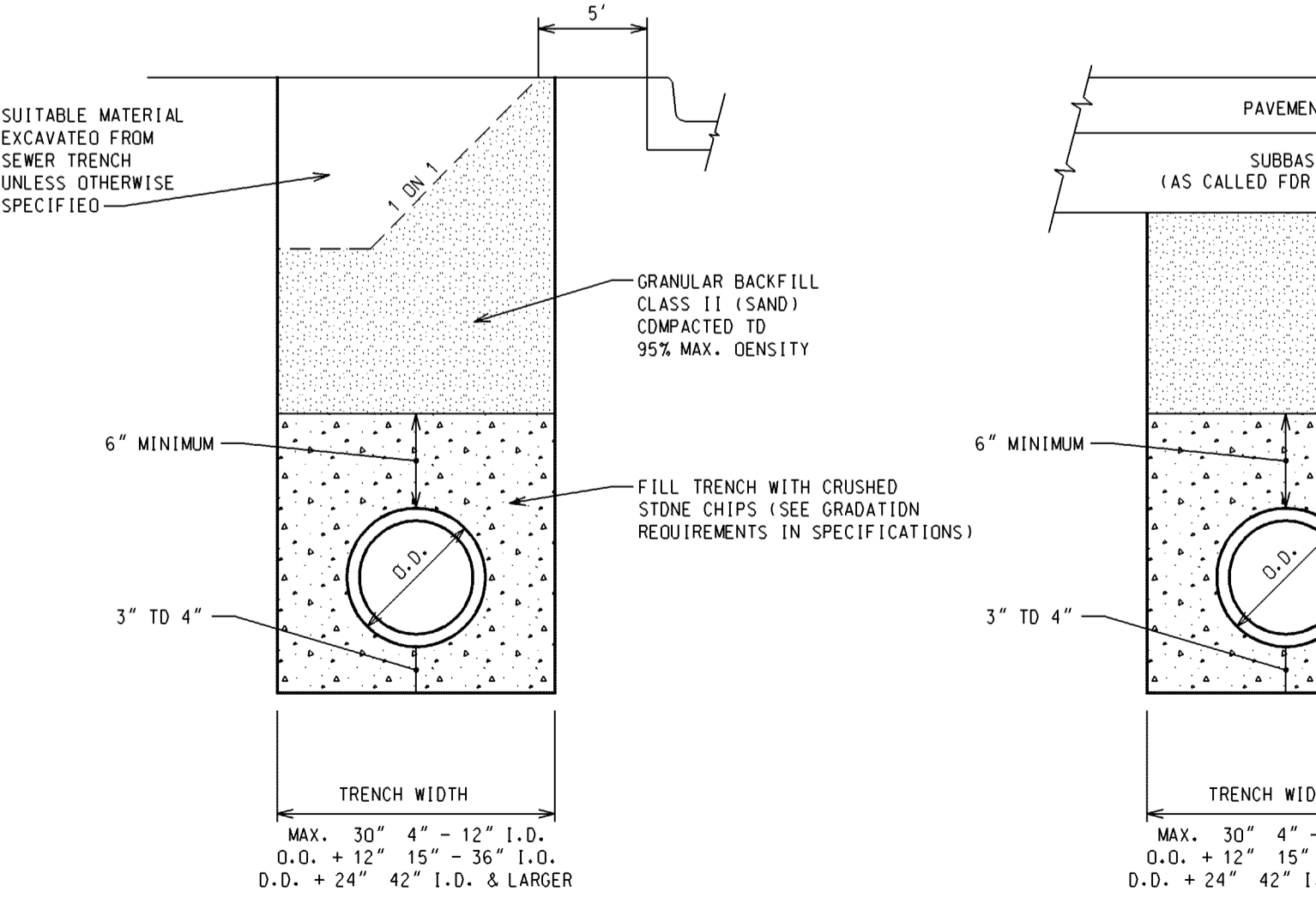
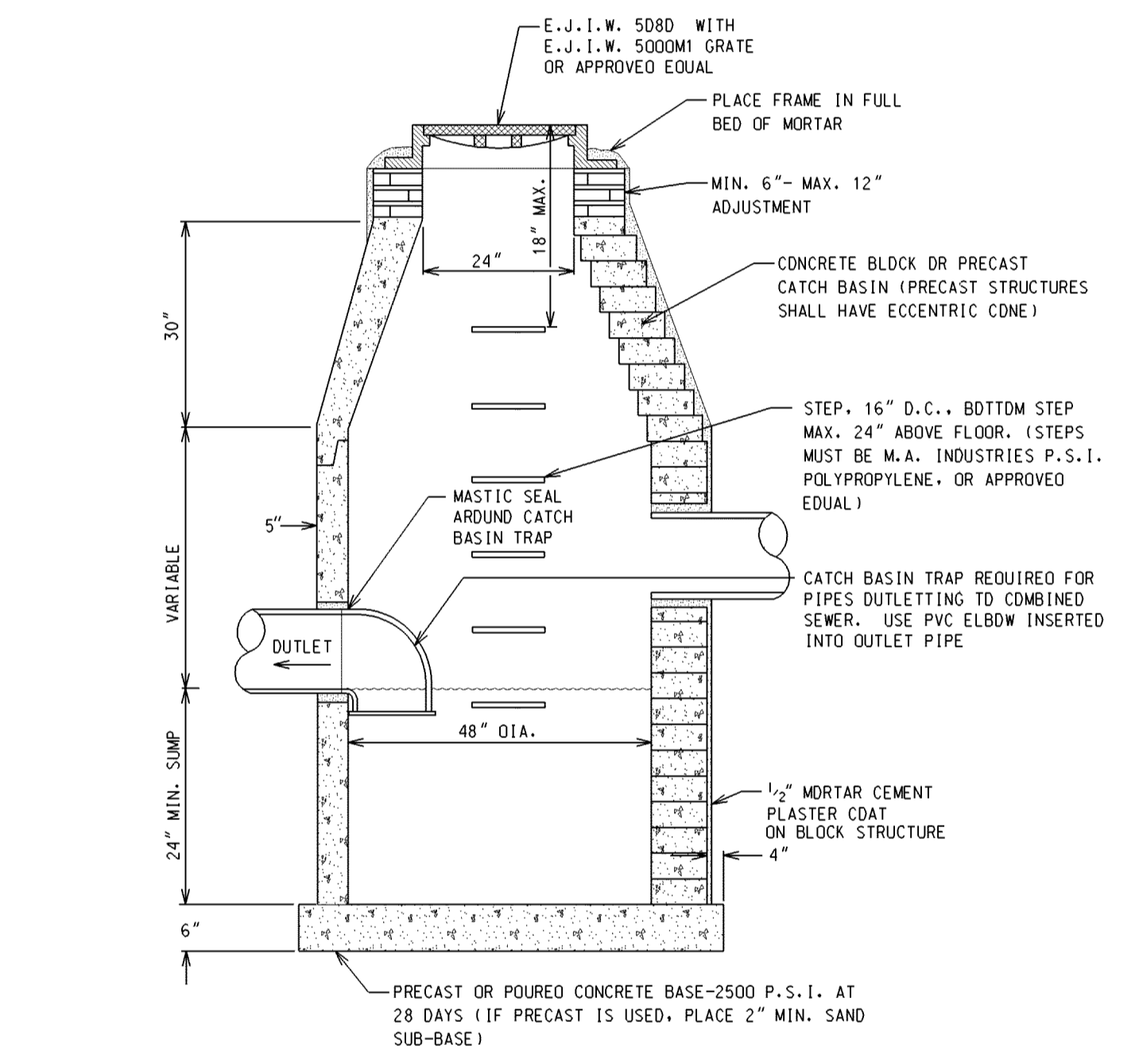
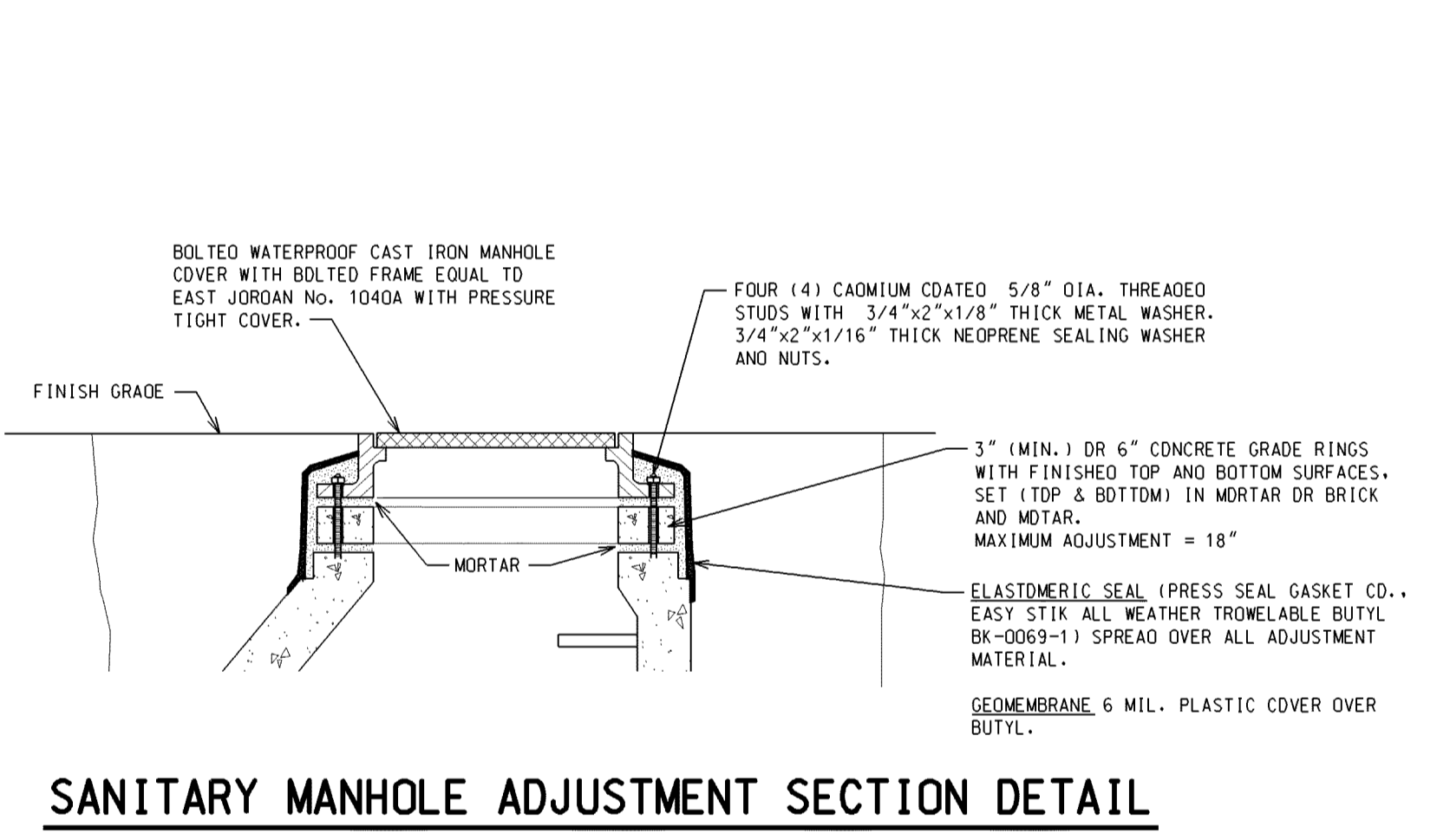
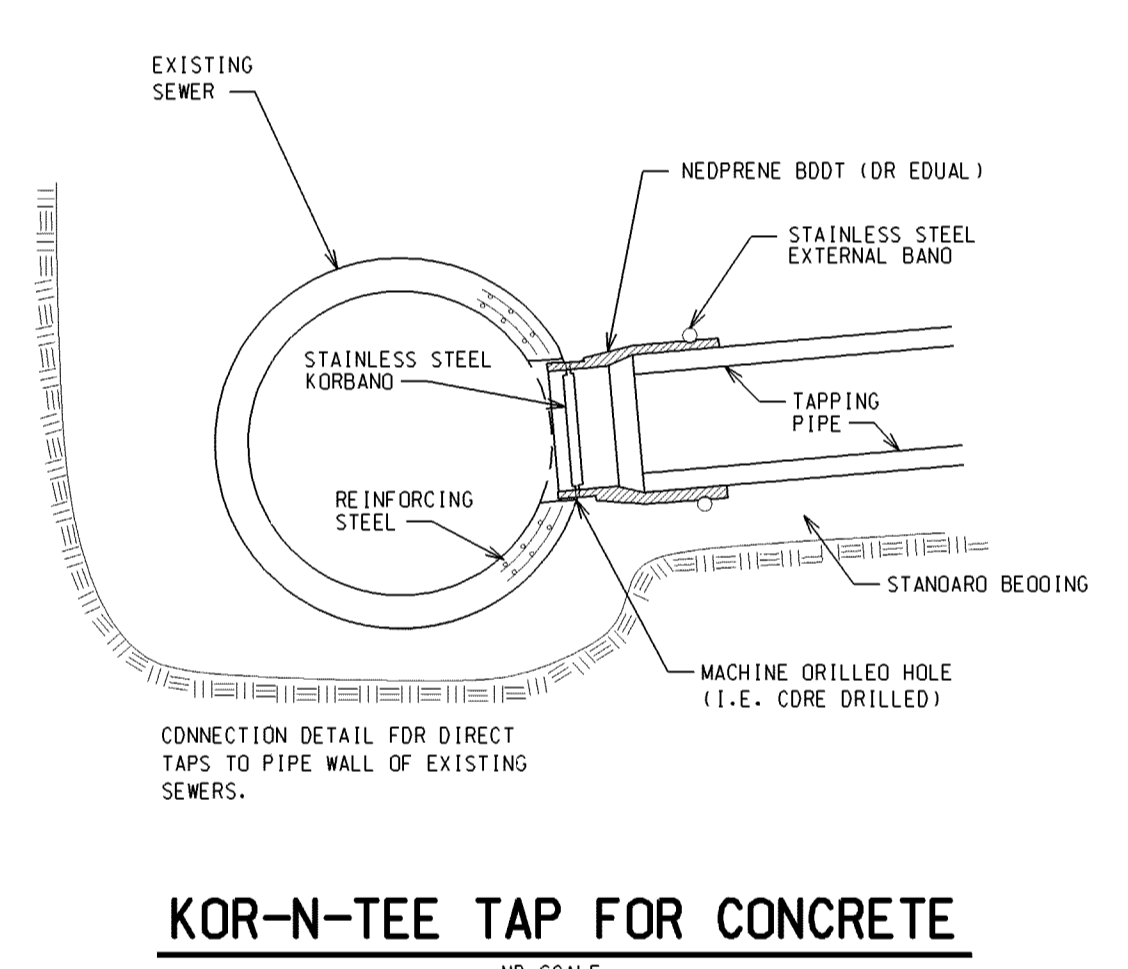
**SEWER MANHOLE**  
( 18" THRU 42" DIA. SEWERS )



**EXTERNAL DROP CONNECTION**



**BUILDING LEAD DETAIL**  
0" - 15" COVER



EAST JORDAN IRON WORKS, INC. P.O. BOX 439 EAST JORDAN, MI 48727 1-800-874-4100 FAX 231-536-4458	
DRAWN	DATE
DEW	04/27/02
APPROVED	DATE
SPECIAL LETTERED 2 HOLE COVER	
PRODUCT NO. 00103927	
CATALOG NO. 1040CGS	
REF. PRODUCT DRAWING 104237	
EST. WT.	COVER: 150 LBS 68kg
OPEN AREA	N/A
MAT'L SPEC.	COVER - GRAY IRON ASTM A48 CL35
LOAD RATING	HEAVY DUTY

**4 FT. DIAMETER CATCH BASIN**

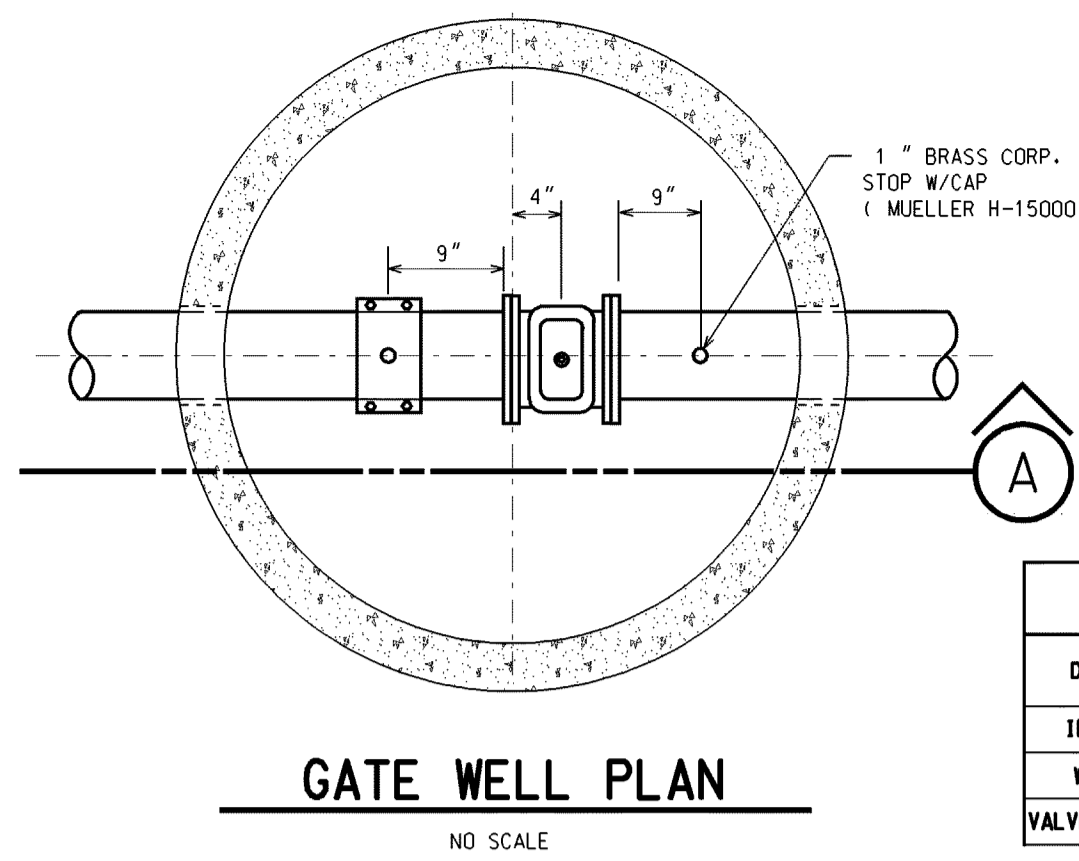
**City of Birmingham**  
A Vibrant Community

151 MARTIN STREET BIRMINGHAM, MICHIGAN 48102

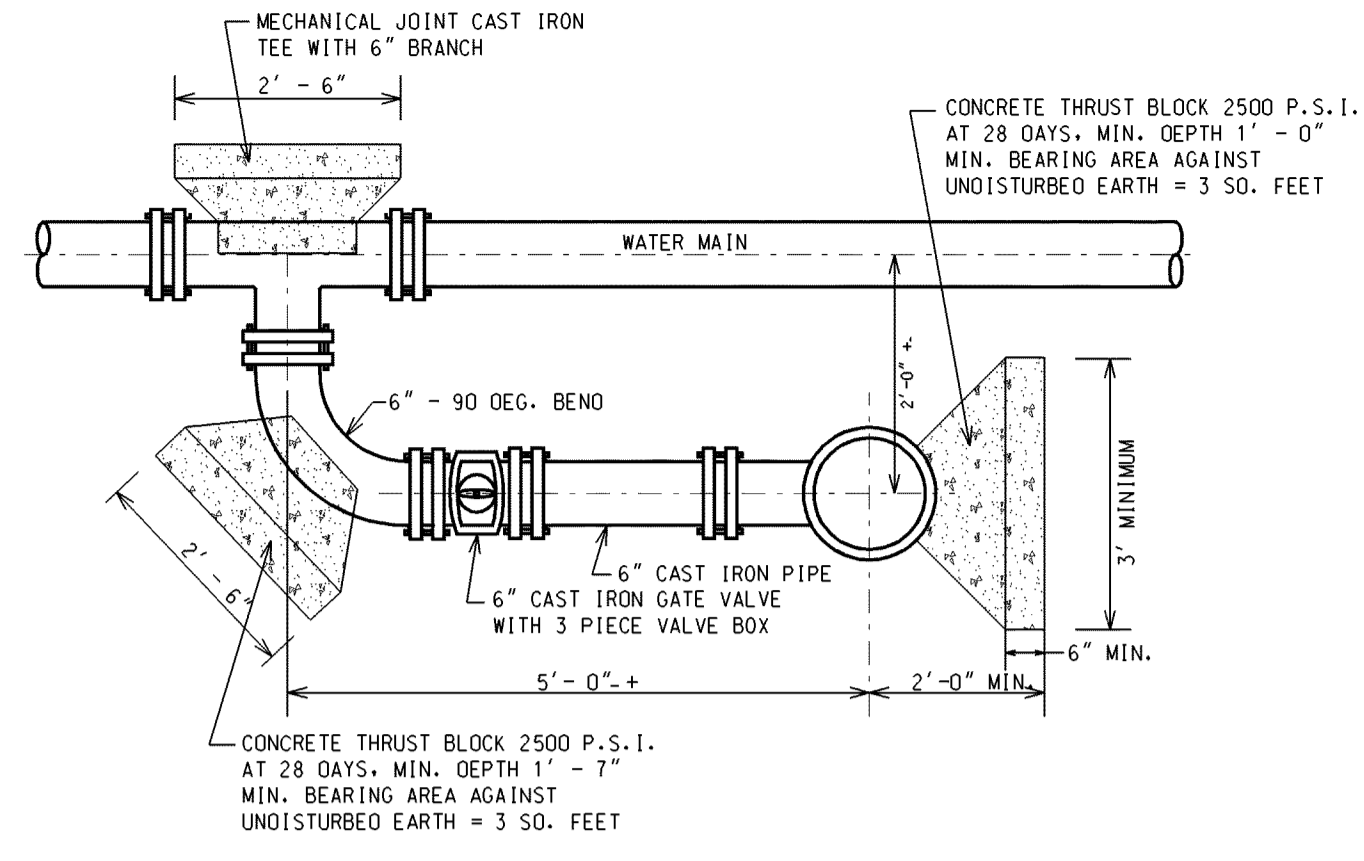
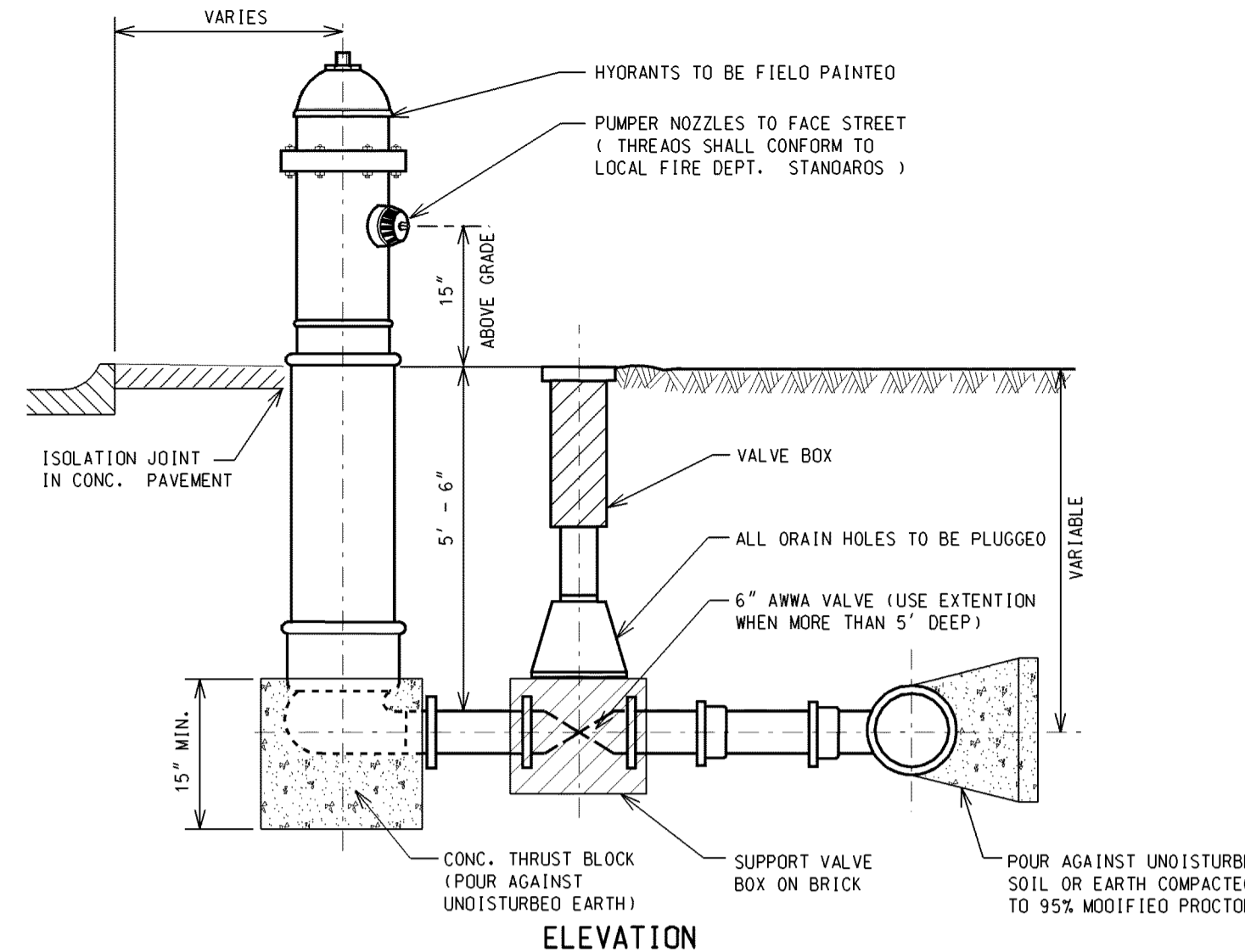
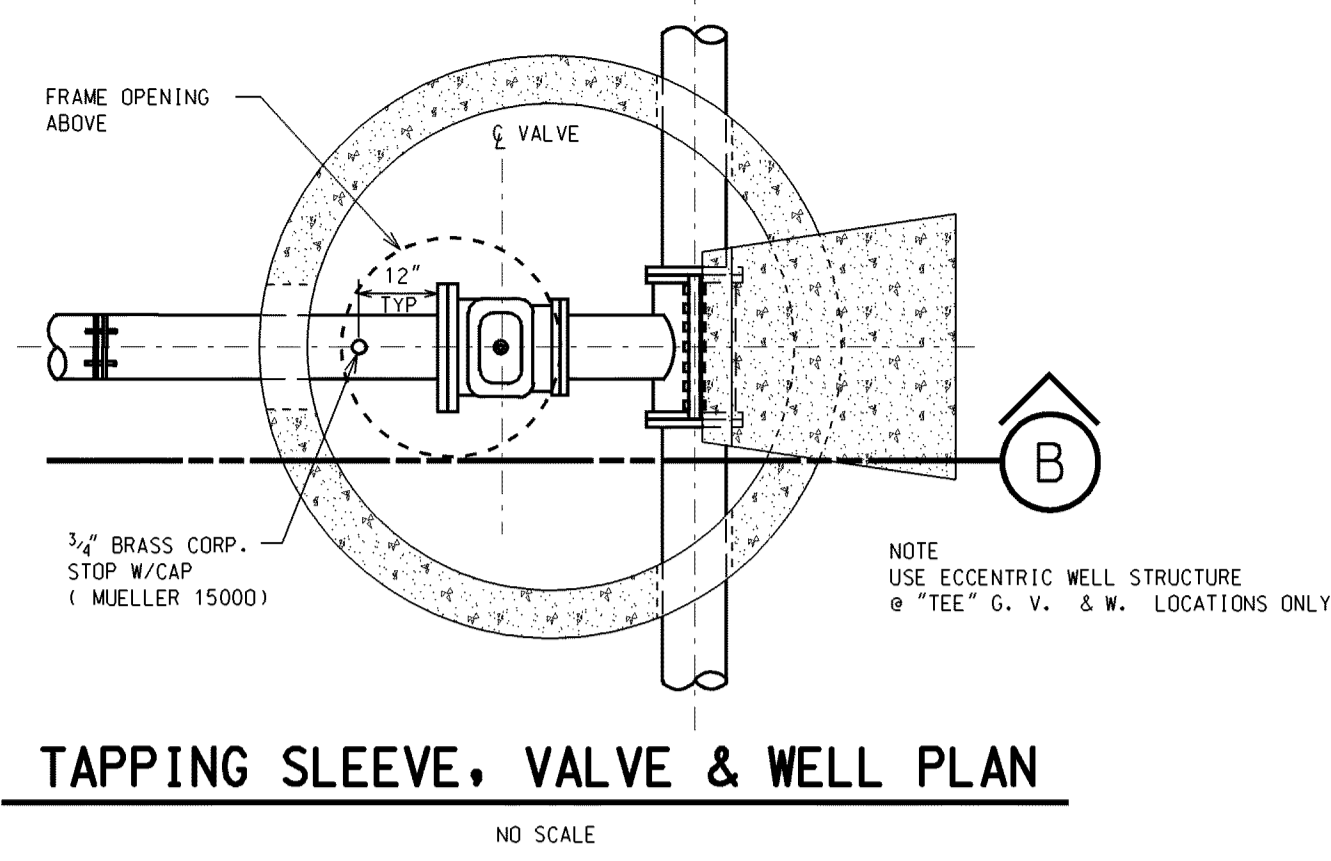
**SEWER STANDARD DETAILS**

DATE:	ADDITION AND/OR REVISION	DRAWN:	PROJECT NO.:	SHEET NO.:
		DESIGNED:	DATE:	JANUARY 2007
		APPROVED:	SCALE:	



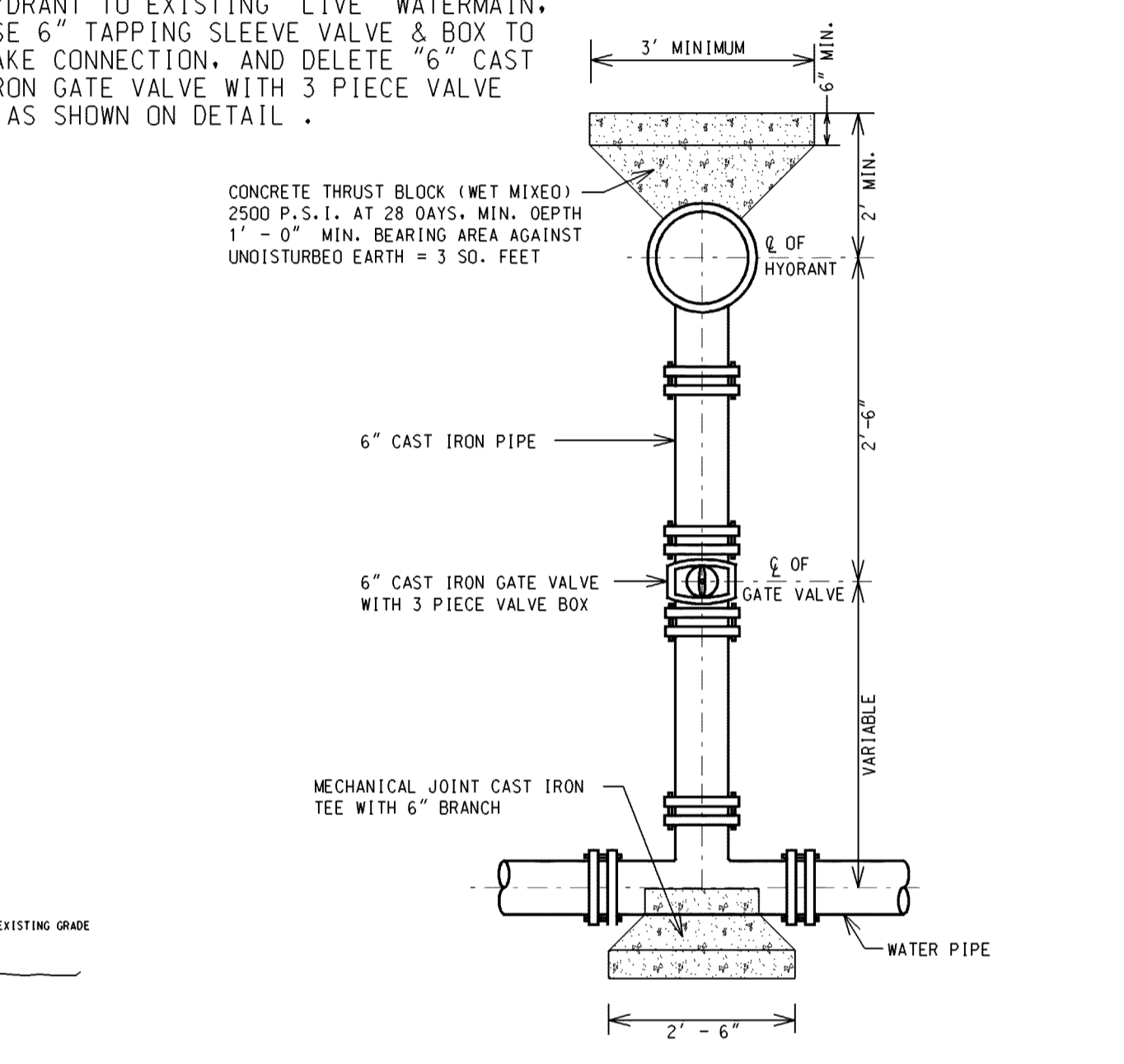
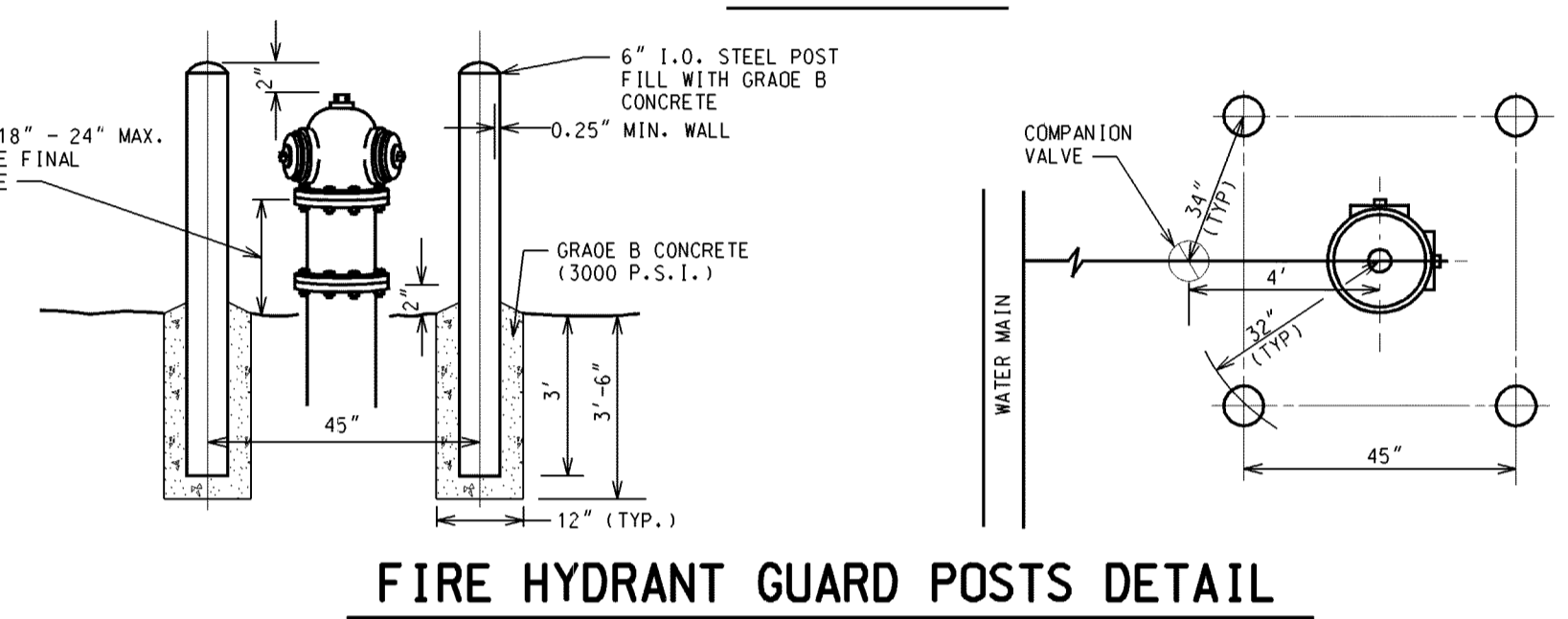
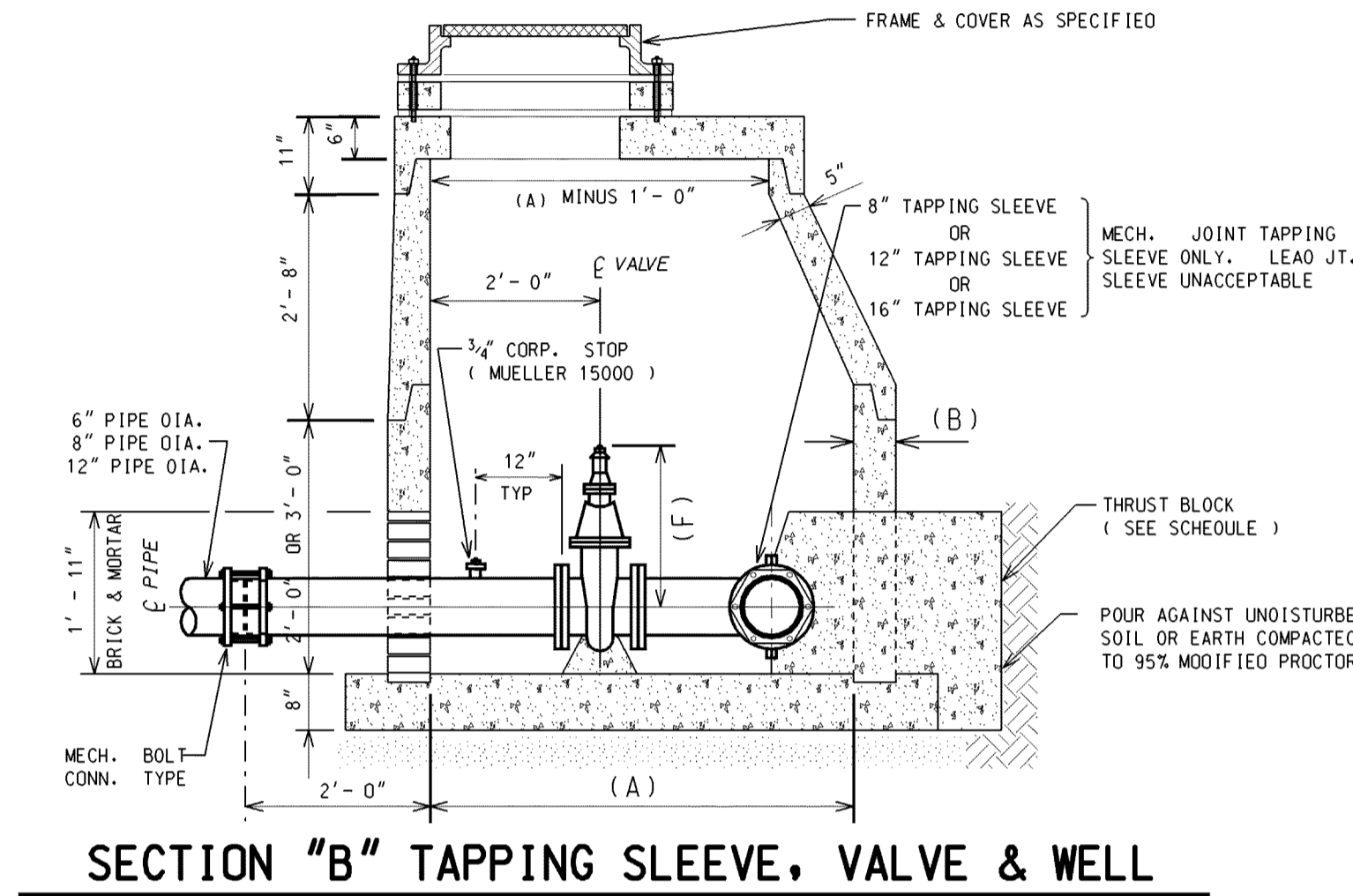
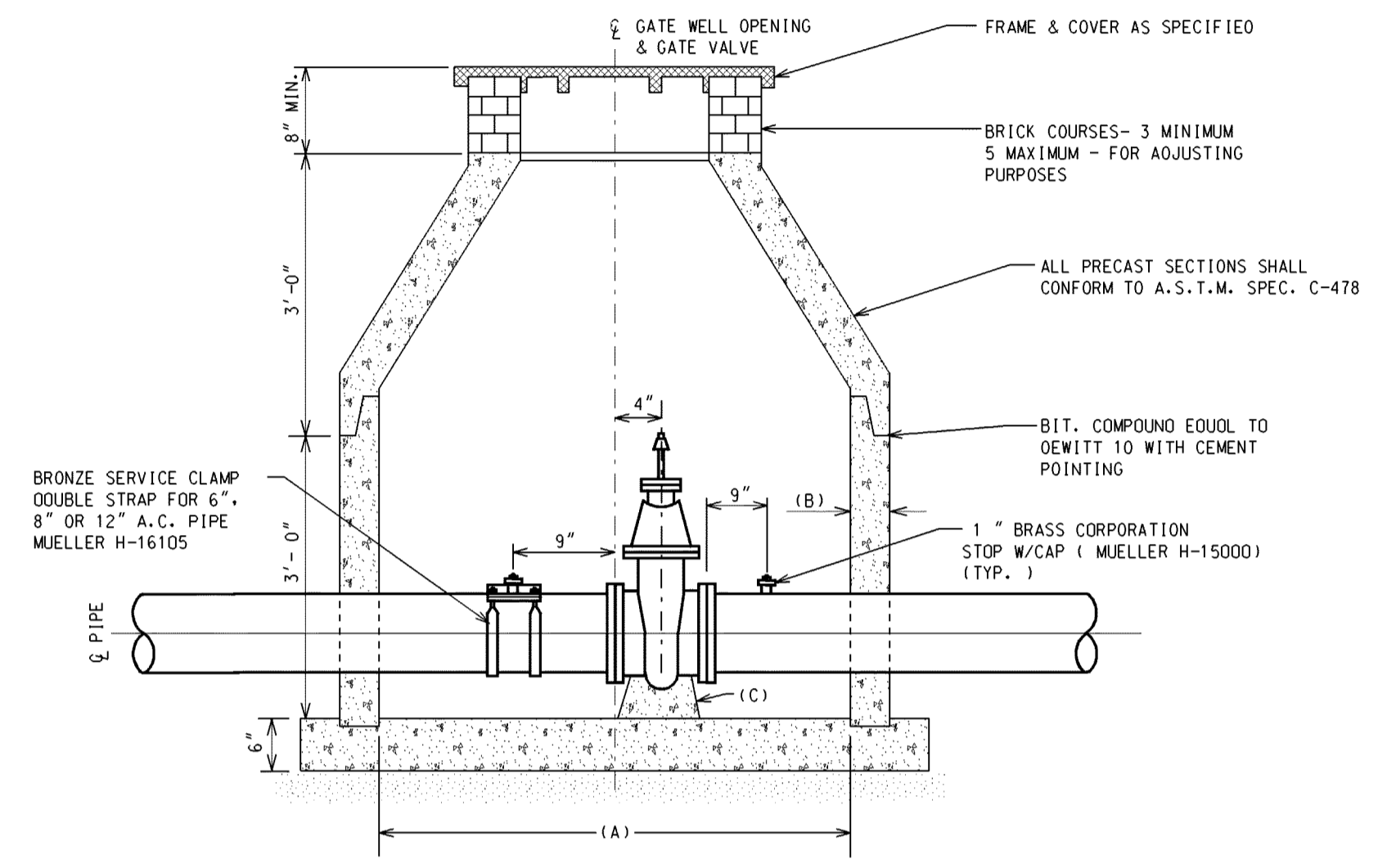


GATE WELL SCHEDULE		
DESCRIPTION	DIM.	PIPE DIA. INCHES
INSIDE DIA.	A	6" & 8" 72" 72"
WALL THICK.	B	5" 7" 7"
VALVE BLOCK THICK.	C	4" 4" 4"

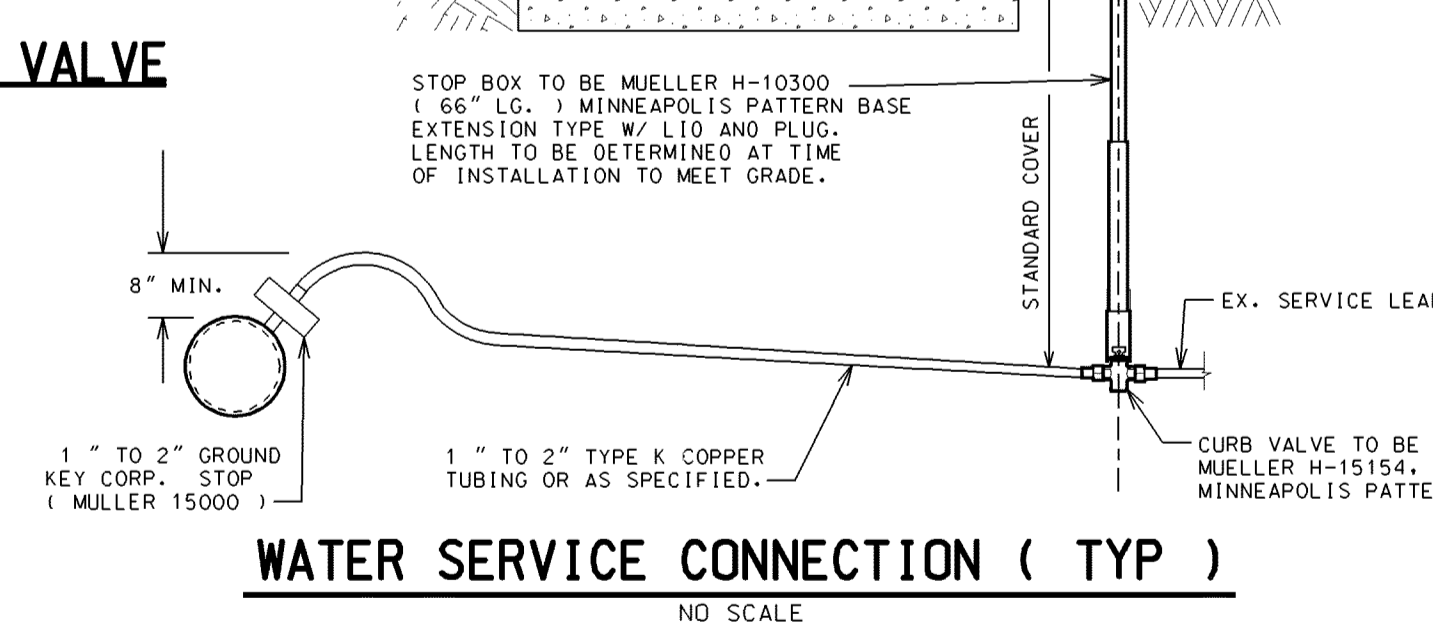
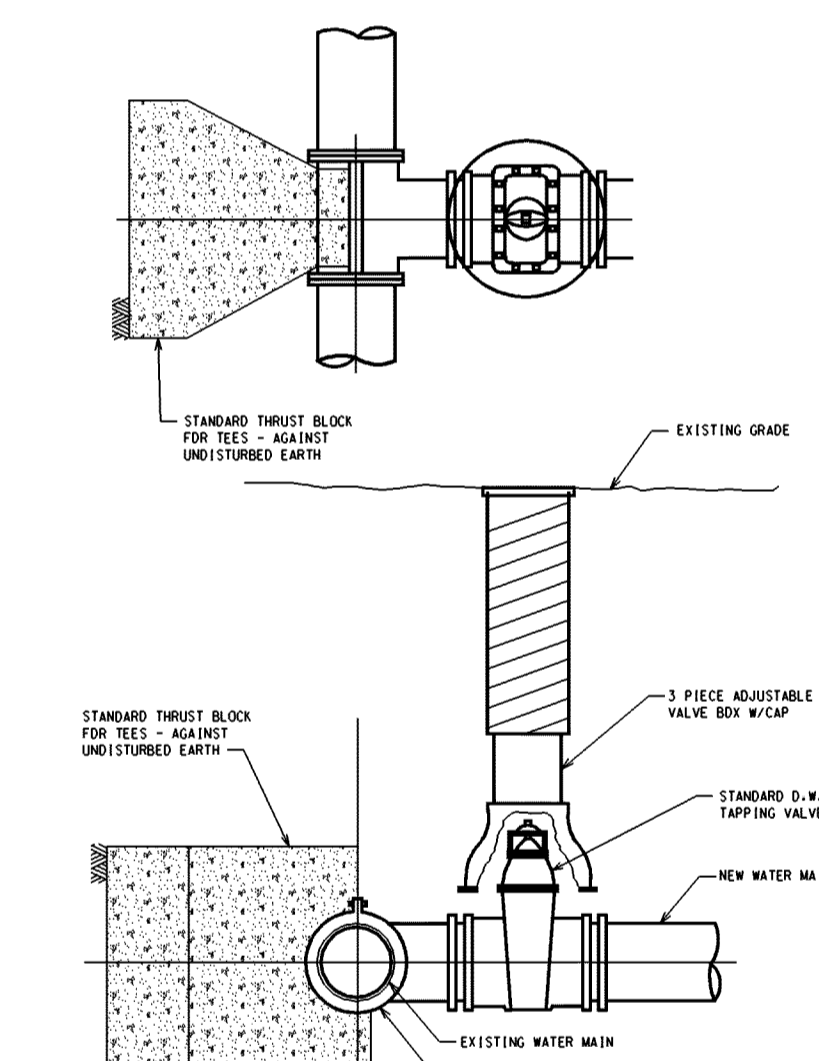
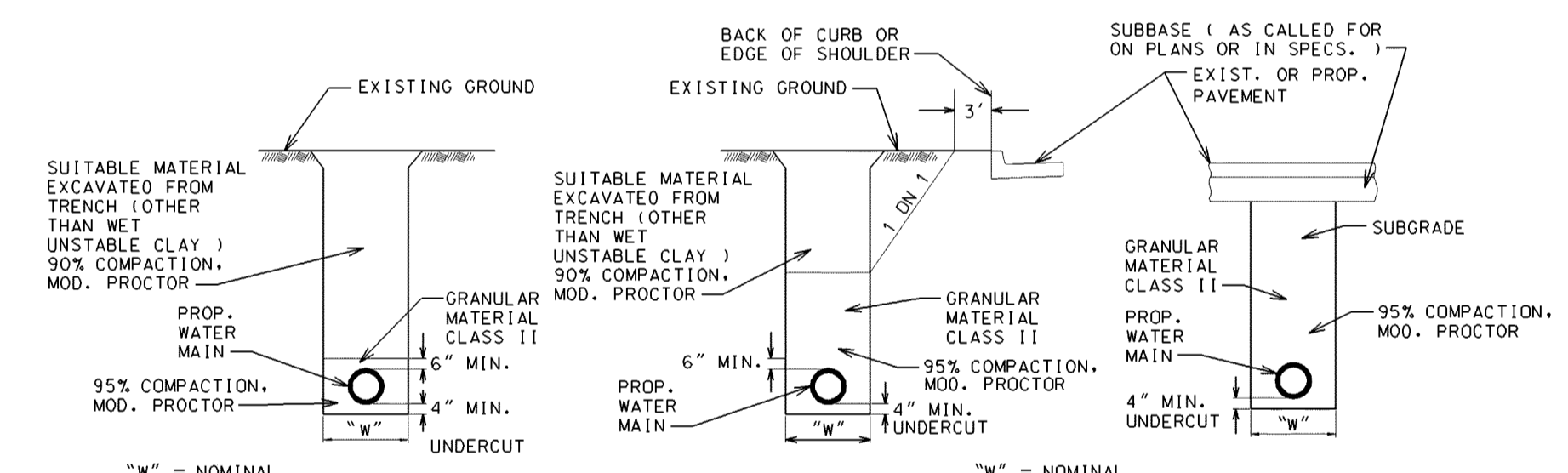
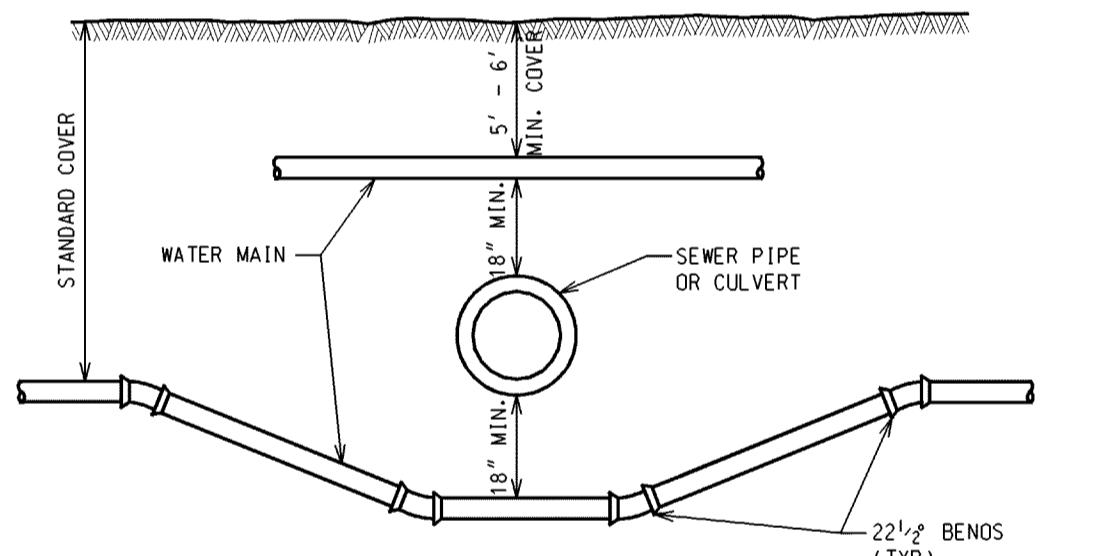
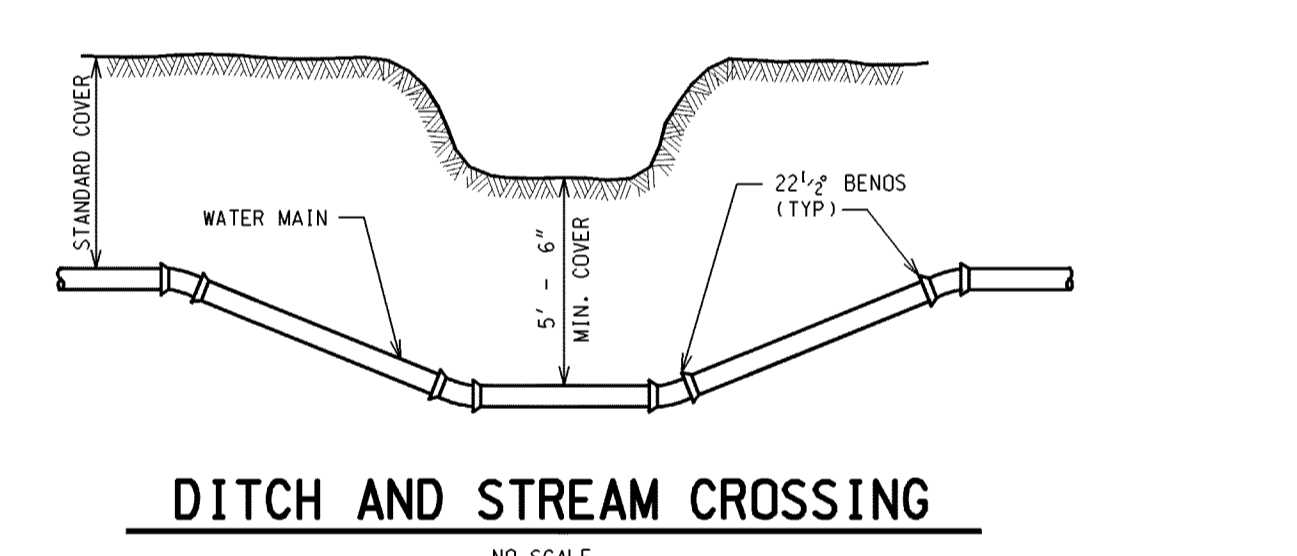


**"L" HYDRANT CONNECTION**  
NO SCALE  
W-9

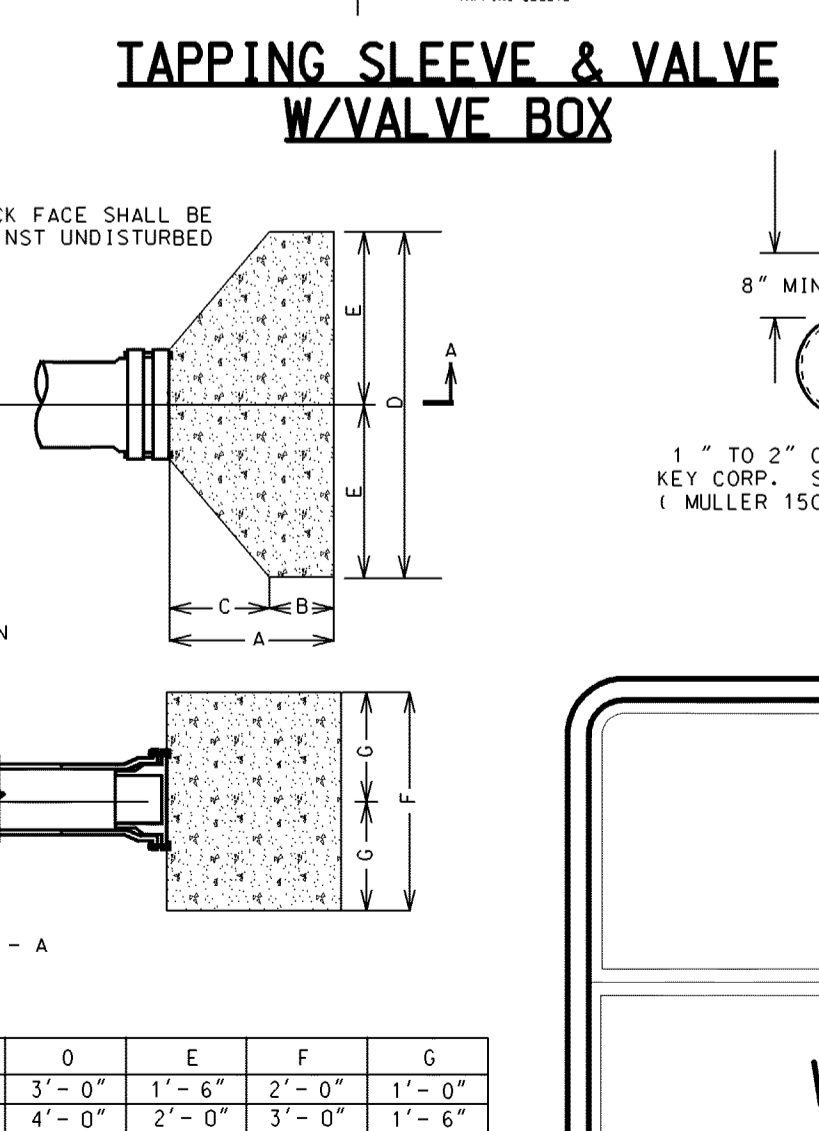
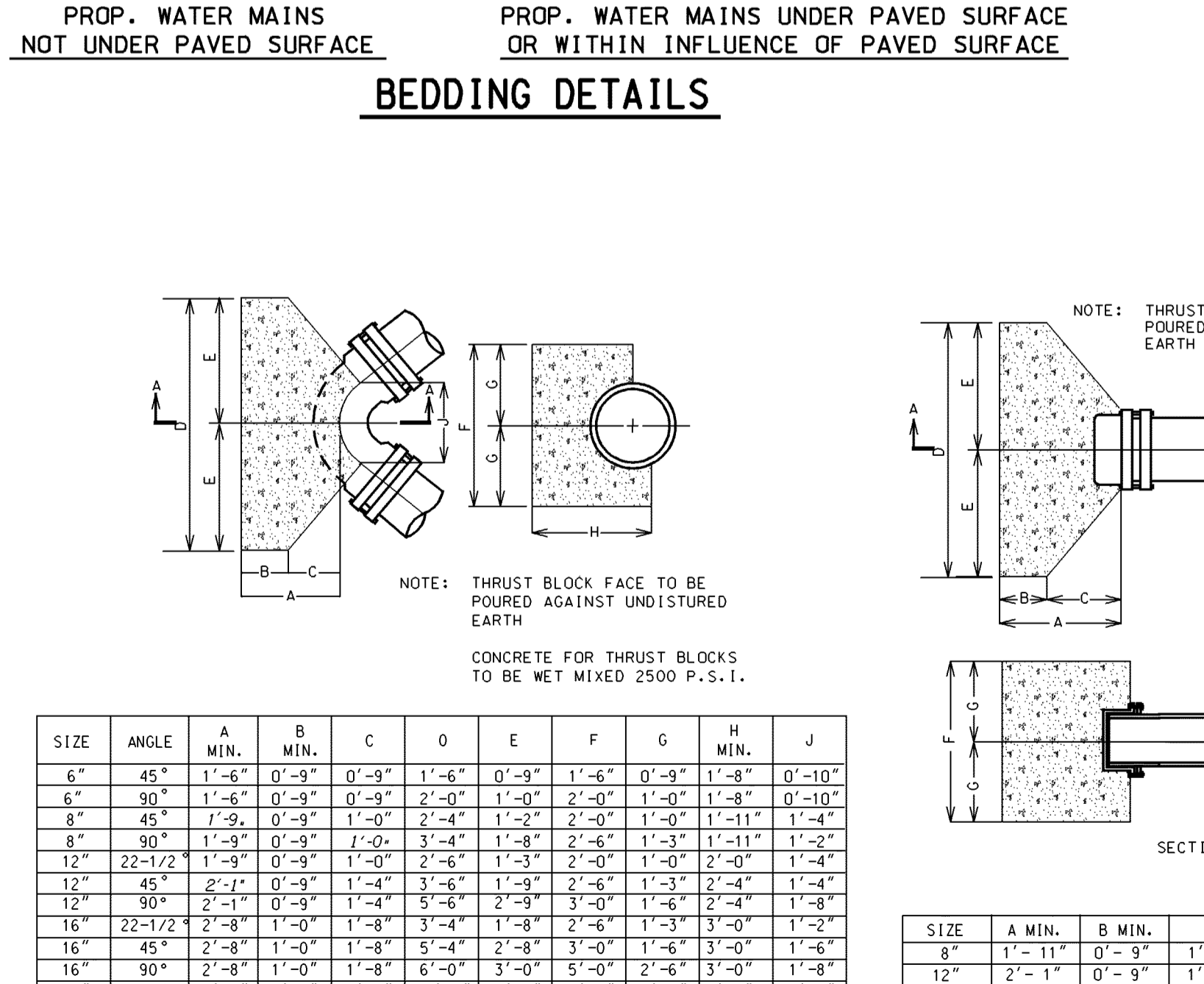
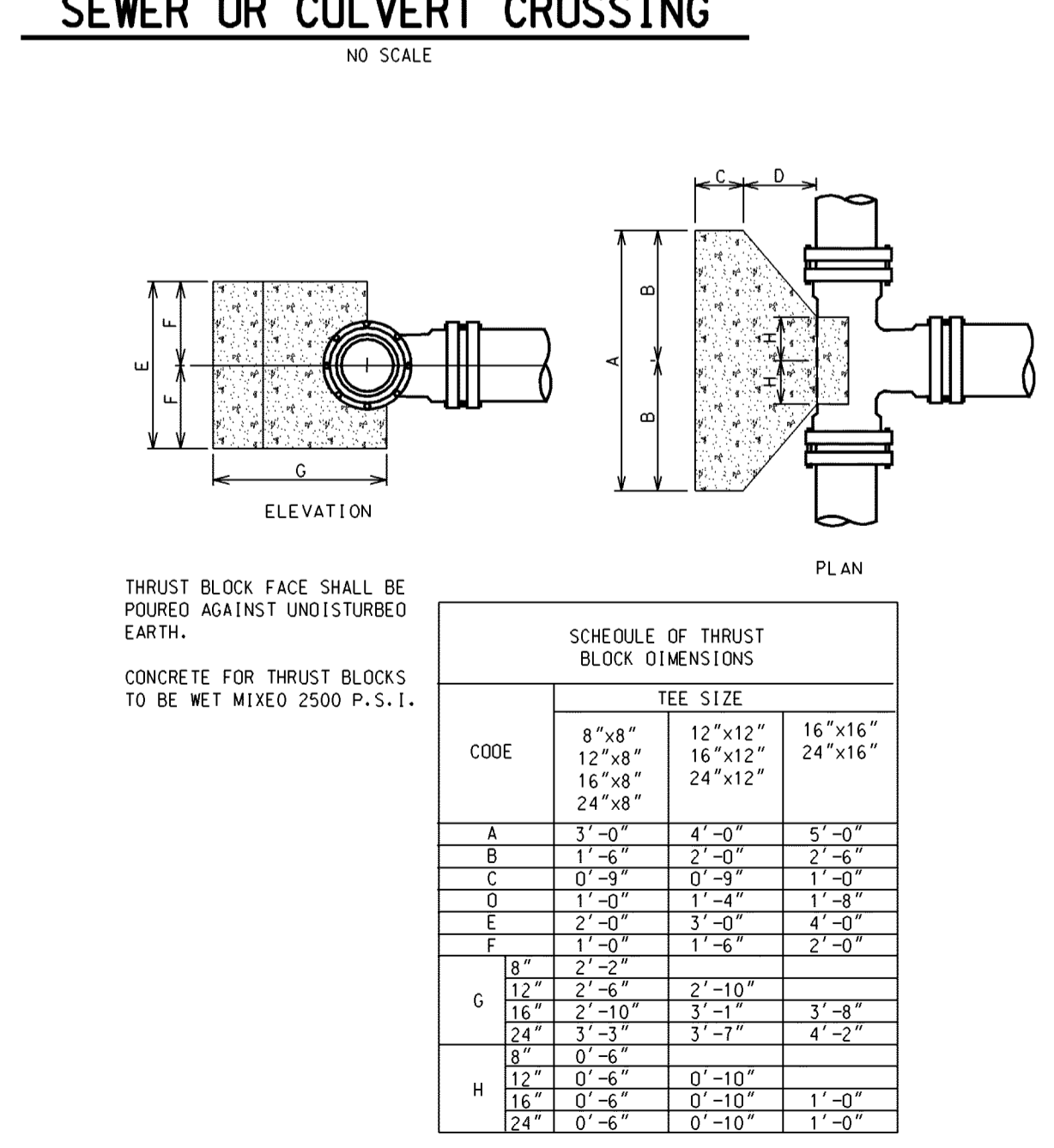
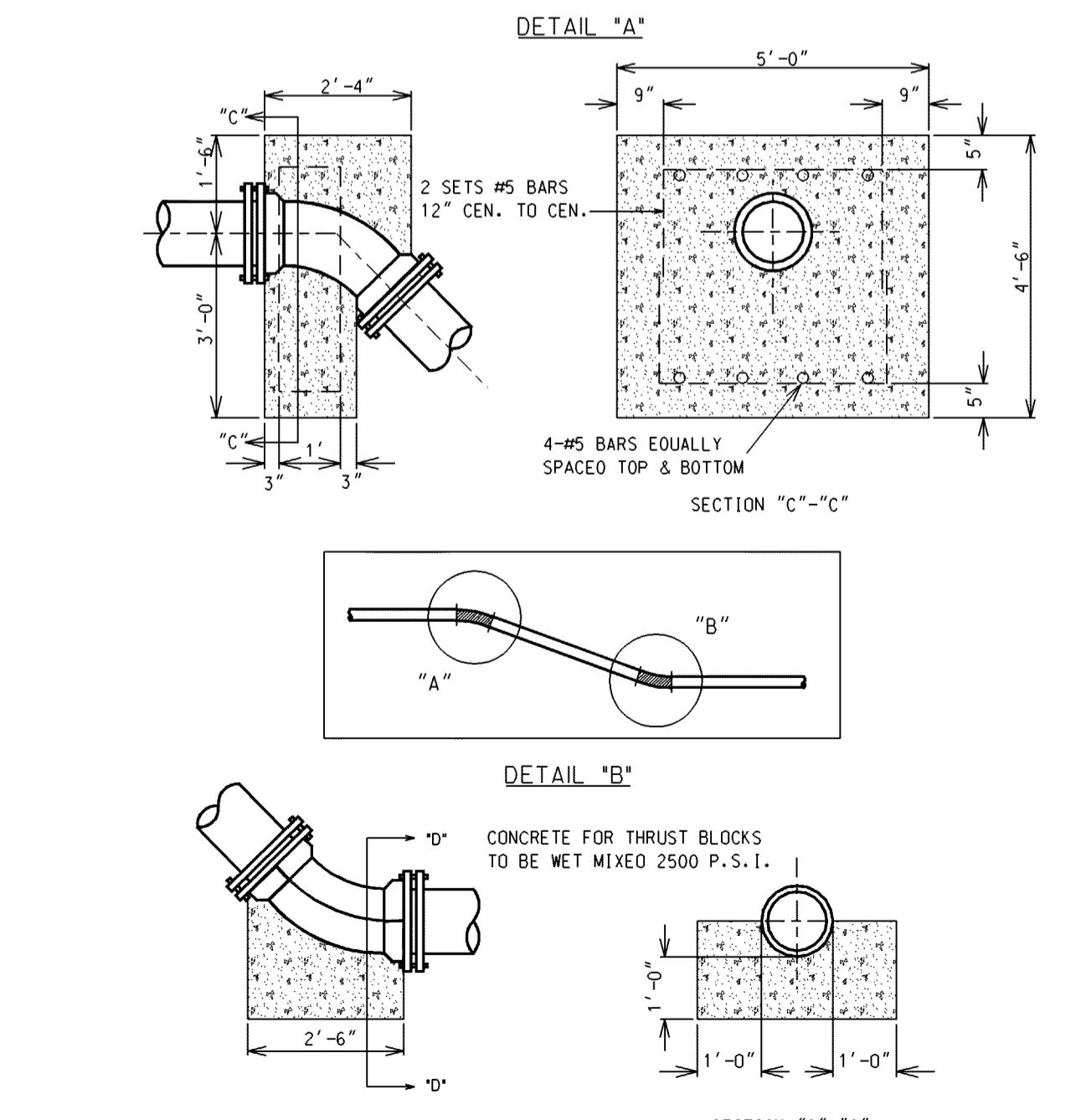
NOTE: FOR CONSTRUCTION OF NEW FIRE HYDRANT TO EXISTING "LIVE" WATERMAIN, USE 6" TAPPING SLEEVE VALVE & BOX TO MAKE CONNECTION, AND DELETE "6" CAST IRON GATE VALVE WITH 3 PIECE VALVE" AS SHOWN ON DETAIL.



**STRAIGHT HYDRANT CONNECTION**  
NO SCALE  
W-10



**WATER SERVICE CONNECTION (TYP)**  
NO SCALE



CODE	TEE SIZE		
	8"x8"	12"x12"	16"x16"
A	3'-0"	4'-0"	5'-0"
B	1'-6"	2'-0"	2'-6"
C	0'-9"	0'-9"	1'-0"
D	1'-0"	1'-4"	1'-8"
E	2'-0"	3'-0"	4'-0"
F	1'-0"	1'-6"	2'-0"
G	2'-2"	2'-10"	3'-8"
H	12"x24"	2'-10"	3'-8"
I	16"x24"	3'-7"	4'-2"
J	0'-6"	0'-10"	1'-0"
K	0'-6"	0'-10"	1'-0"

SIZE	ANGLE	A MIN.	B MIN.	C	D	E	F	G	H	J
6"	45°	1'-6"	0'-9"	0'-9"	1'-6"	0'-9"	1'-6"	0'-9"	1'-8"	0'-10"
8"	90°	1'-6"	0'-9"	2'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-8"	0'-10"
8"	45°	1'-9"	0'-9"	1'-0"	2'-4"	1'-2"	2'-0"	1'-0"	1'-11"	1'-4"
8"	90°	1'-9"	0'-9"	1'-0"	3'-4"	1'-8"	2'-6"	1'-3"	1'-11"	1'-2"
12"	22-1/2°	1'-9"	0'-9"	1'-0"	2'-6"	1'-3"	2'-0"	1'-0"	2'-0"	1'-4"
12"	45°	2'-1"	0'-9"	1'-4"	3'-6"	1'-9"	2'-6"	1'-3"	2'-4"	1'-4"
12"	90°	2'-1"	0'-9"	1'-4"	5'-6"	2'-9"	3'-0"	1'-6"	2'-4"	1'-8"
16"	22-1/2°	2'-8"	1'-0"	1'-8"	3'-4"	1'-8"	2'-6"	1'-3"	3'-0"	1'-2"
16"	45°	2'-8"	1'-0"	1'-8"	5'-4"	3'-0"	3'-0"	1'-6"	3'-0"	1'-6"
16"	90°	2'-8"	1'-0"	1'-8"	6'-0"	3'-0"	5'-0"	2'-6"	3'-0"	1'-8"
24"	90°	4'-7"	1'-0"	3'-7"	10'-0"	5'-0"	7'-0"	3'-6"	5'-4"	2'-4"

**WATER MAIN STANDARD DETAILS**

DATE:	ADDITION AND/OR REVISION	DRAWN	PROJECT NO.	SHEET NO.
		DESIGNED	DATE	WM-1
		APPROVED	SCALE	

City of Birmingham  
A Vibrant Community  
151 MARTIN STREET BIRMINGHAM, MICHIGAN 48102