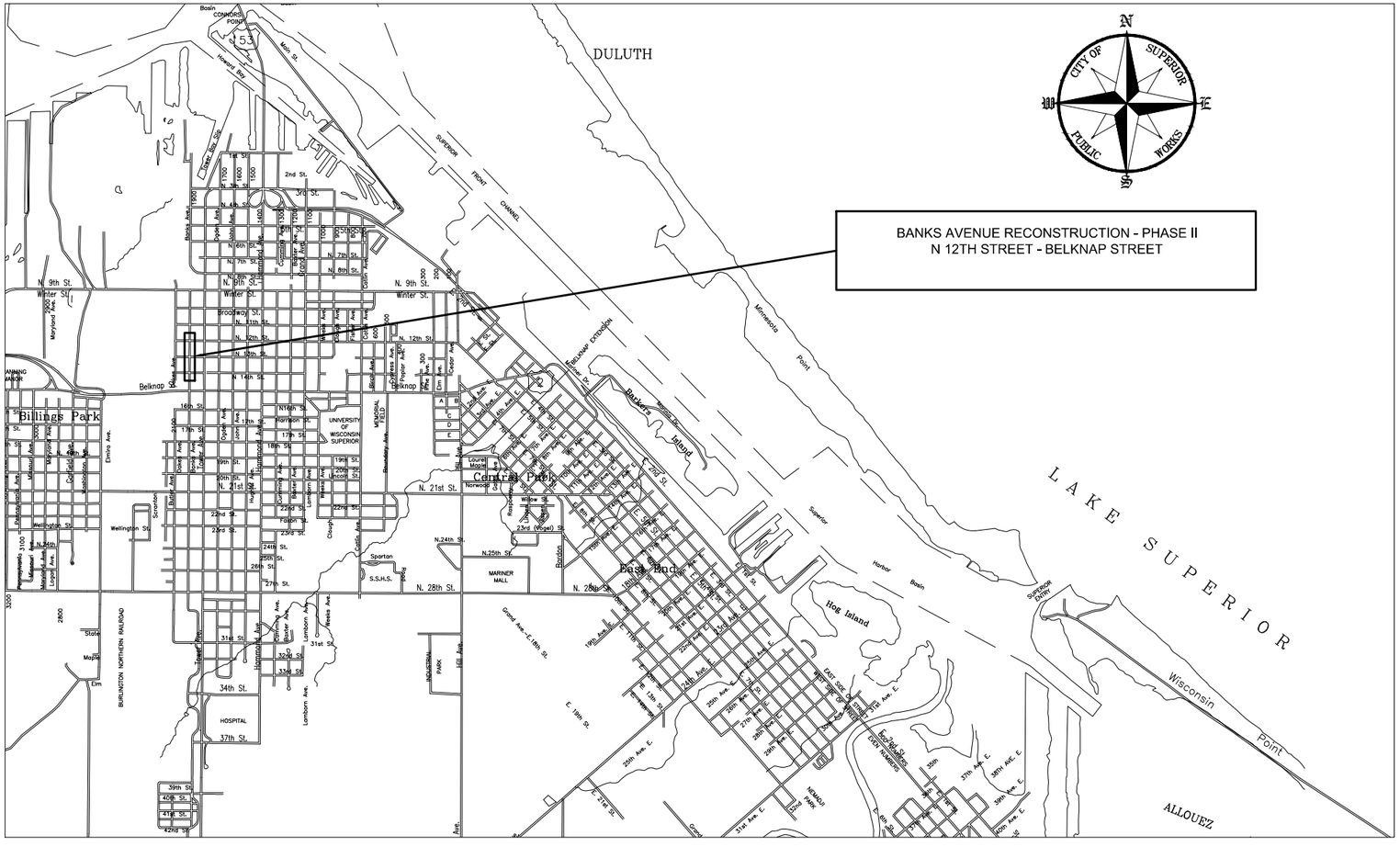
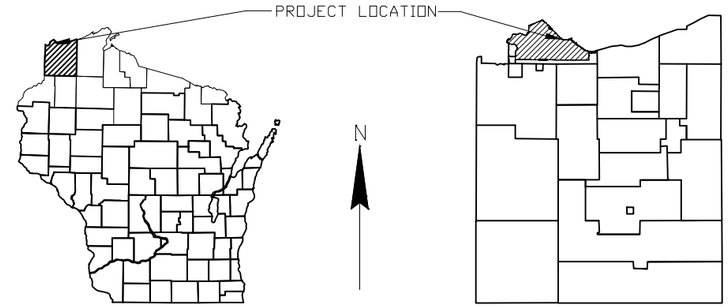
BANKS AVENUE RECONSTRUCTION - PHASE II

NORTH 12TH STREET TO BELKNAP STREET

CONSTRUCTION PLAN FOR: AGGREGATE BASE, PLANT-MIXED BITUMINOUS SURFACE, CONCRETE CURBS, CONCRETE WALKS, STORM SEWER, SANITARY SEWER, AND STREET LIGHTING





INDEX OF SHEETS

CURRENT ADT (2011): 3,762
FUTURE ADT (2031): 4,890
HISTORY: DOT #8999–03–71, 1983
PHASE I – WINTER STREET – N 12TH STREET, 2010

APPROVED:
CITY OF SUPERIOR ENGINEERING DIVISION
DATE: MAY 2011
SIGNATURE:

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTORS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

FOR FIELD LOCATES
CALL: 1.800.242.8511
WWW.DIGGERSHOTLINE.COM

GOVERNING SPECIFICATIONS:
THE WISCONSIN DEPARTMENT OF TRANSPORTATION 2011 SPECIFICATIONS FOR HIGHWAY CONSTRUCTION SHALL GOVERN THIS PROJECT.

DESIGN TEAM: SHANNON GRAYSON, ERIN POTRATZ

BANKS AVENUE RECONSTRUCTION - PHASE II

NORTH 12TH STREET TO BELKNAP STREET

Bid Item	Item Description	Unit	Total Estimated Quantity	Notes
204.0100	Removing Pavement	SY	7379	
204.0150	Removing Curb & Gutter	LF	3184	
204.0155	Removing Concrete Sidewalk	SY	1968	
204.0195	Removing Concrete Bases	Each	9	
204.0215	Removing Catch Basins	Each	5	
204.0245	Removing Storm Sewer (12-Inch)	LF	48	
204.0250	Abandoning Manholes	Each	1	
204.0280	Sealing Pipes	Each	5	
204.0291.S	Abandoning Sewer	CY	4	
204.0960	Removing Lighting Unit	Each	1	
205.0100	Excavation Common (Plan)	CY	8902	
305.0125	Base Aggregate Dense 1 1/4 Inch (Plan)	CY	3603	
311.0115	Breaker Run (Plan)	CY	3191	
415.0070	Concrete Pavement 7-Inch	SY	40	
416.0170	Driveway 7-Inch	SY	377	
465.0105	Asphaltic Surface	Ton	1851	
601.0411	Concrete Curb & Gutter 30-Inch Type D	LF	3258	
602.0405	Sidewalk 4-inch	SF	14768	
602.0415	Sidewalk 7-Inch	SF	4814	
602.0515	Curb Ramp Detectable Warning Field Natural Patina	Each	48	
607.0600.S.01	Storm Sewer Pipe 12-Inch	LF	112	
607.0600.S.02	Storm Sewer Pipe 18-Inch	LF	425	
607.0600.S.03	Storm Sewer Pipe 24-Inch	LF	412	
607.0600.S.04	Storm Sewer Pipe 30-Inch	LF	95	
611.0103	Catch Basins Type 2	Each	4	
611.0201	Manholes Type 1	Each	3	
611.0600	Inlet Covers Type A	Each	7	
611.8110	Adjusting Manhole Covers	Each	3	
611.8115	Adjusting Inlet Covers	Each	4	
612.0104	Pipe Underdrain, 4-inch	LF	3258	
619.1000.S.01	Mobilization (General)	Each	1	
619.1000.S.02	Mobilization (Water)	Each	1	
628.7005	Inlet Protection, Type A	Each	7	
628.7015	Inlet Protection, Type C	Each	9	
631.1000	Sod Lawn	SY	206	
638.2602	Removing Signs Type II	Each	25	
638.3000	Removing Small Sign Supports	Each	25	
643.0100	Traffic Control (Project)	Each	1	
645.0140	Geotextile Fabric Type SAS (Plan)	SY	9414	
646.0106	Pavement Marking Epoxy 4-Inch	LF	2538	
647.0166	Pavement Marking Arrows Epoxy Type 2	Each	1	
647.0356	Pavement Marking Words Epoxy	Each	2	

Bid Item	Item Description	Unit	Total Estimated Quantity	Notes
647.0566	Pavement Marking Stop Line Epoxy 18-Inch	LF	118	
647.0656	Pavement Marking Parking Stall Epoxy	LF	1261	
650.4000	Construction Staking Storm Sewer	Each	7	
650.4500	Construction Staking Subgrade	LF	1903	
650.5000	Construction Staking Base	LF	1903	
650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	3258	
650.8500	Construction Staking Electrical Installations (project)	LS	1	
652.0220	Conduit Rigid Nonmetallic Schedule 40 1 1/2-Inch	LF	1825	
652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	165	
652.0800	Conduit Loop Detector	LF	95	
653.0120	Pull Boxes Steel 18x24-Inch	Each	5	
655.0610	Electrical Wire Lighting 12 AWG	LF	175	
655.0620	Electrical Wire Lighting 8 AWG	LF	2475	
655.0625	Electrical Wire Lighting 6 AWG	LF	4950	
655.0700	Loop Detector Lead In Cable	LF	500	
655.0800	Loop Detector Wire	LF	275	
690.0150	Sawing Asphalt, Full Depth	LF	3871	
690.0250	Sawing Concrete, Full Depth	LF	100	
SPV.0060.01	Salvage Pole & Reinstall with New Luminaire	Each	7	
SPV.0060.02	Salvage & Reinstall Lighting Unit	Each	1	
SPV.0060.03	Lighting Unit Type 1	Each	1	
SPV.0060.04	Gate Valve and Box 6-Inch	Each	8	
SPV.0060.05	Gate Valve and Box 8-Inch	Each	2	
SPV.0060.06	Hydrant	Each	3	
SPV.0060.07	Tapping Tee with Electrofusion Saddle 1-inch	Each	20	
SPV.0060.08	Curb Stop and Box 1-inch	Each	20	
SPV.0060.09	Connect to Existing Water Services	Each	20	
SPV.0060.10	Cut into and Connect to Existing Water Main	Each	4	
SPV.0090.01	Sanitary Manhole, 4-foot diameter	LF	10	
SPV.0090.02	Sanitary Sewer Pipe 10-Inch	LF	10	
SPV.0090.03	Concrete Curb and Gutter Cure and Seal Treatment	LF	3258	
SPV.0090.04	Install 8 AWG Equipment Grounding Conductor	LF	2600	
SPV.0090.05	Water Main 6-inch and Fittings	LF	1516	
SPV.0090.06	Water Main 8-inch and Fittings	LF	171	
SPV.0090.07	Water Service 1-inch	LF	660	
SPV.0090.08	Remove Existing Watermain	LF	1177	
SPV.0105.01	Temporary Water Service	LS	1	
SPV.0165.01	Concrete Sidewalk Protective Surface Treatment	SF	23333	
SPV.0180.01	3" Polystyrene Insulation	SY	10	

CONSTRUCTION NOTES:

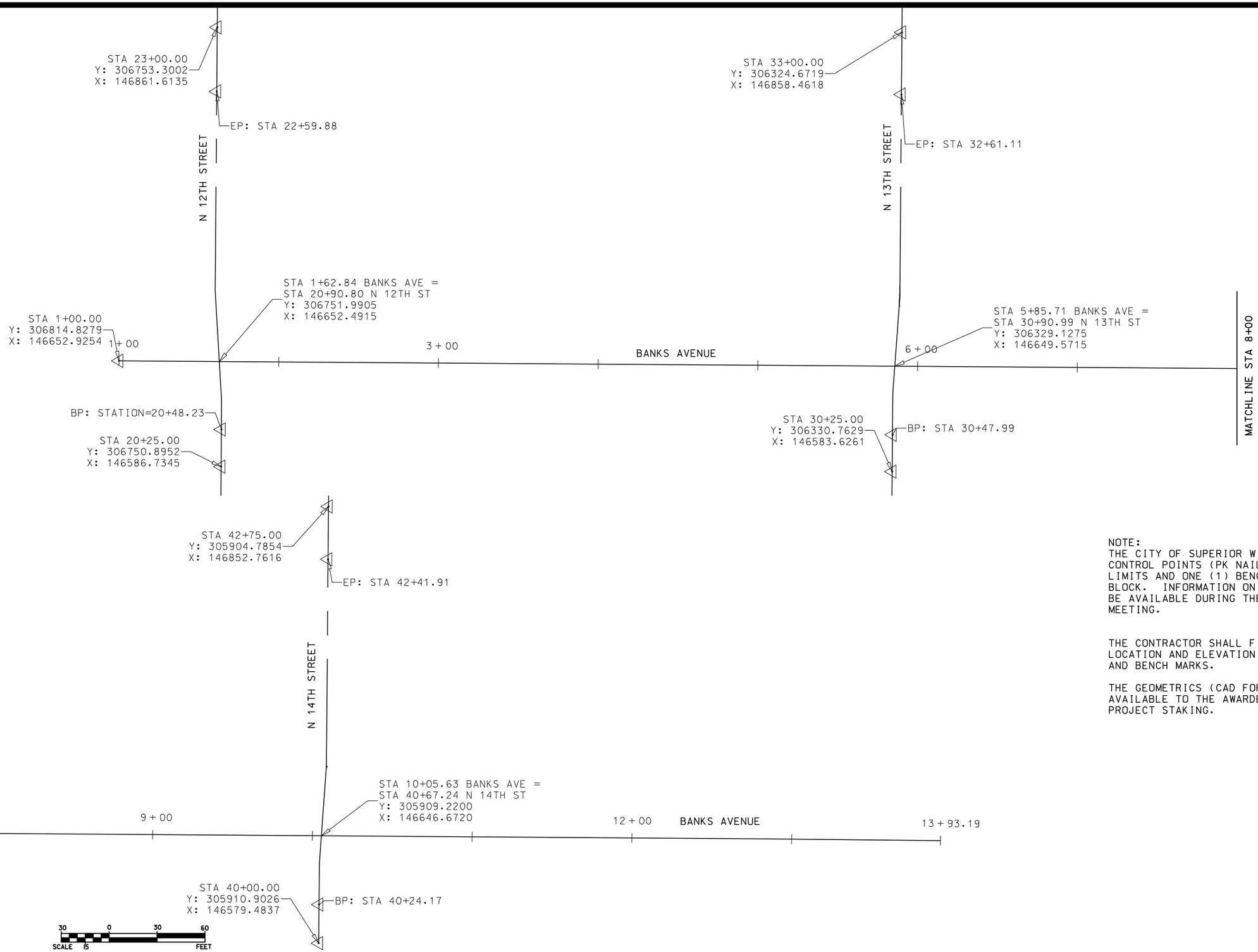
BASIS FOR QUANTITIES:

BITUMINOUS: 112# SY/IN

DRIVEWAY LOCATIONS				
	STA (CENTER)	OFFSET	WIDTH (FT)	NOTES
1	2+41	20.0' L	16	*NEW DRIVEWAY
2	2+62	20.0' R	53	
3	3+79	20.0' L	17	
4	4+43	20.0' L	23	
5	4+63	20.0' R	12	
6	4+86	20.0' L	22	*NEW DRIVEWAY
7	6+61	20.0' L	24.5	
8	6+88	20.0' R	20.5	
9	7+31	20.0' L	26	
10	7+88	20.0' L	23	
11	8+50	20.0' L	67	
12	8+81	20.0' R	26	
13	9+30	20.0' L	22	*NEW DRIVEWAY
~~14~~	~~10+87~~	~~20.0' L~~	~~16~~	
15	11+46	20.0' L	18	
16	12+07	20.0' L	16	
17	12+59	20.0' R	31	
18	12+96	20.0' L	16	
19	13+04	20.0' R	13	
20	20+45	20.0' R	6	
~~21~~	~~21+77~~	~~20.0' L~~	~~34~~	
22	22+49	20.0' L	22	*HALF OF EXISTING DRIVEWAY

KNOWN UTILITY COMPANIES:

Utility	Company	Contact Telephone
Water	Superior Water, Light and Power	(715) 394-2200
Gas	Superior Water, Light and Power	(715) 394-2200
Electric	Superior Water, Light and Power	(715) 394-2200
Sanitary Sewer	City of Superior ESD	(715) 394-0392
Storm Sewer	City of Superior ESD	(715) 394-0392
Lighting	City of Superior PW	(715) 395-7334
Telephone	CenturyLink	(715) 392-0033

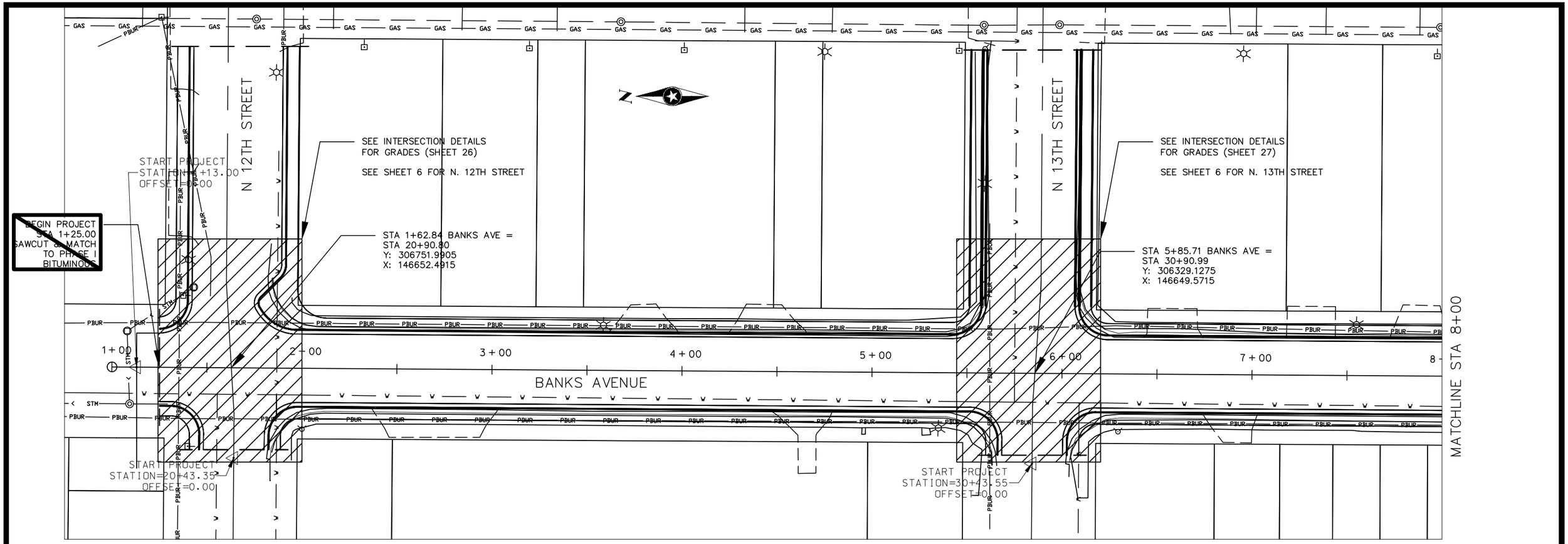


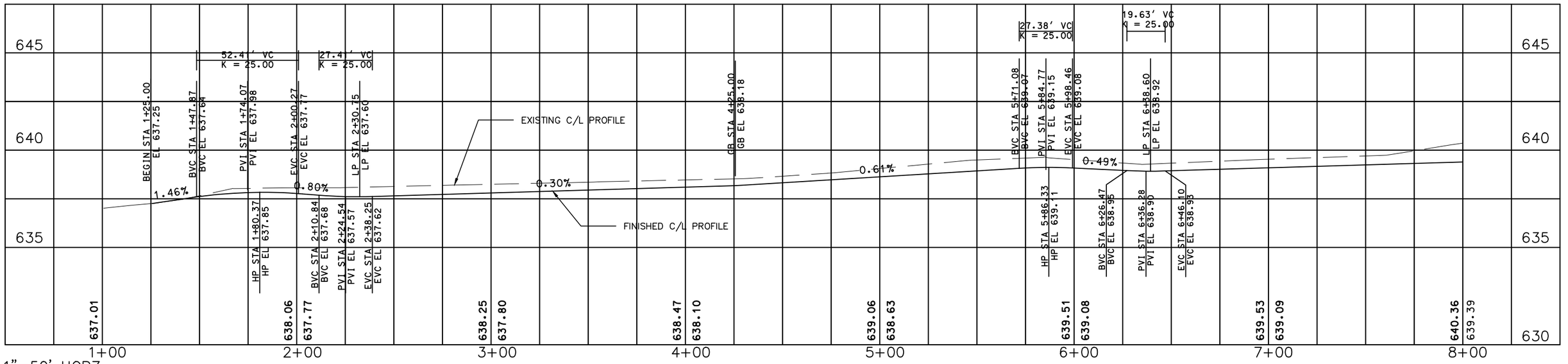
NOTE:
THE CITY OF SUPERIOR WILL PROVIDE SEVEN (7) CONTROL POINTS (PK NAILS) WITHIN THE PROJECT LIMITS AND ONE (1) BENCHMARK LOCATION PER BLOCK. INFORMATION ON THESE LOCATIONS WILL BE AVAILABLE DURING THE PRE-CONSTRUCTION MEETING.

THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND ELEVATION OF ALL CONTROL POINTS AND BENCH MARKS.

THE GEOMETRICS (CAD FORMAT) WILL BE MADE AVAILABLE TO THE AWARDED CONTRACTOR FOR PROJECT STAKING.

SUPERIOR	CITY OF SUPERIOR, WI – PUBLIC WORKS	BANKS AVENUE RECONSTRUCTION PHASE II – PW1101	ALIGNMENT DIAGRAM	MAY 2011 AS-BUILT DWG	DRAWN SLG APPROV'D JSG	SHEET 3 OF 62

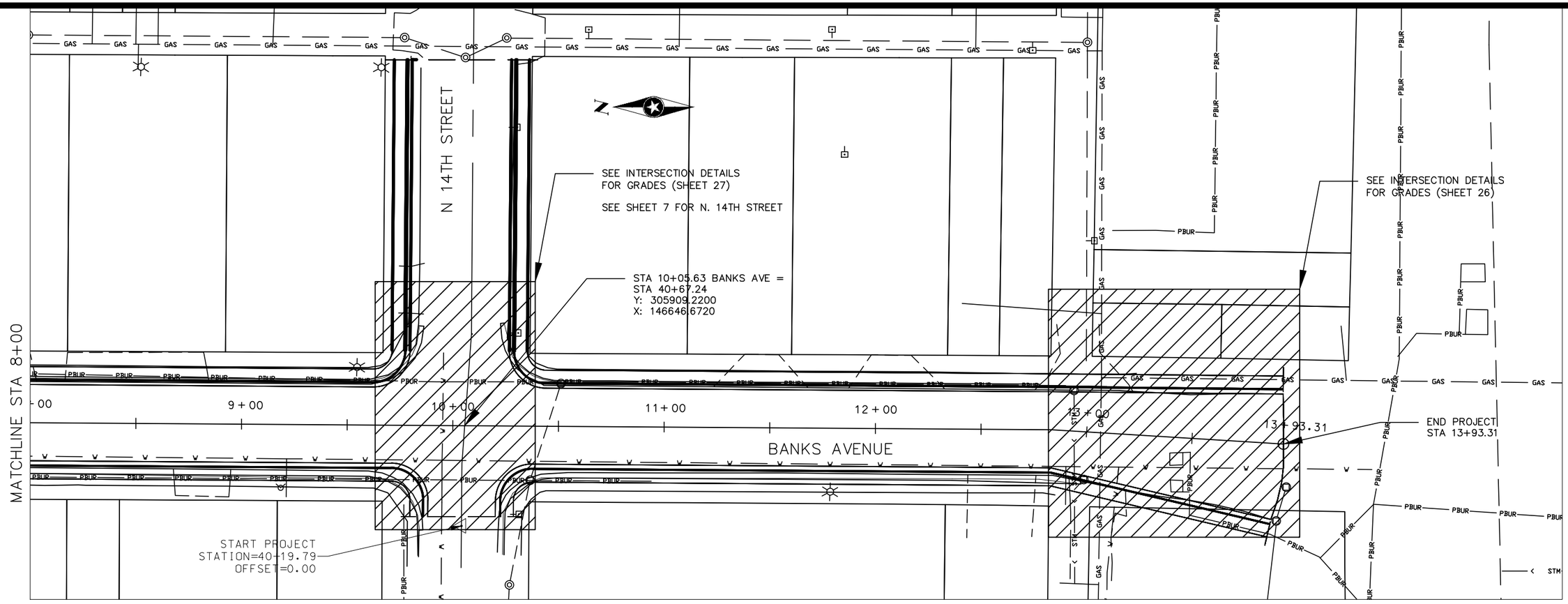


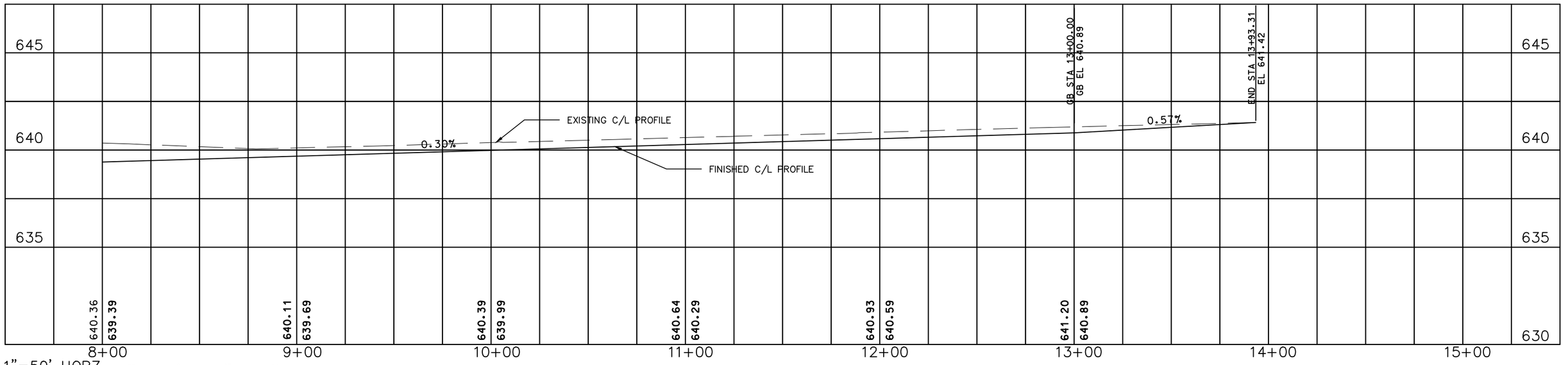


1"=50' HORZ.
1"=5' VERT.

SCALE 12.5 — 25 0 25 50 FEET

SUPERIOR	CITY OF SUPERIOR, WI – PUBLIC WORKS	BANKS AVENUE RECONSTRUCTION PHASE II – PW1101	PLAN AND PROFILE – BANKS AVENUE	MAY 2011 AS-BUILT DWG	DRAWN SLG / APPROV'D JSG	SHEET 4 OF 62

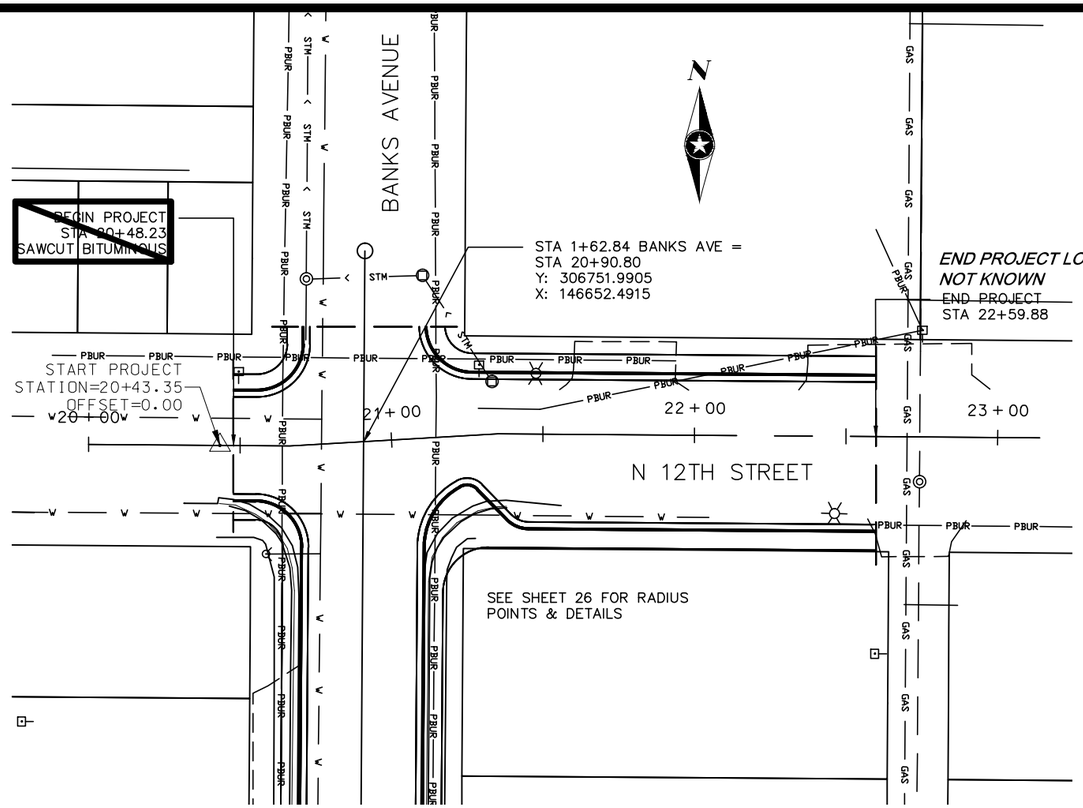


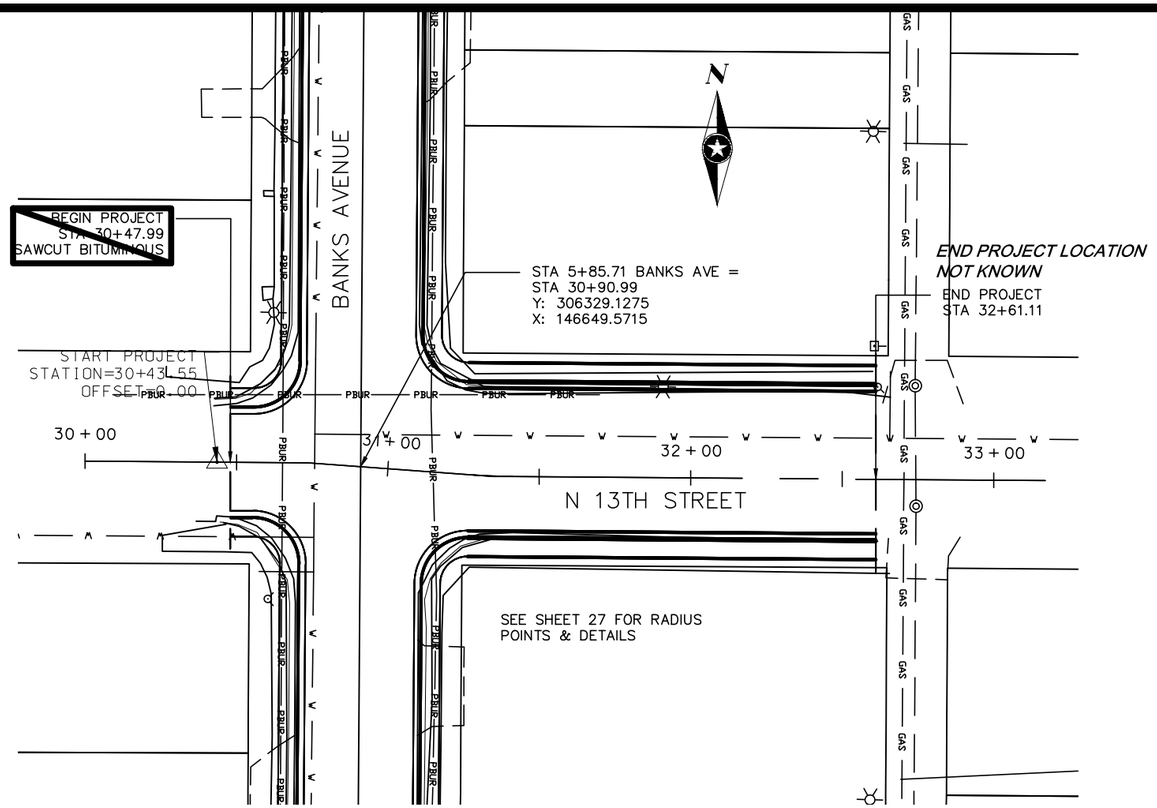


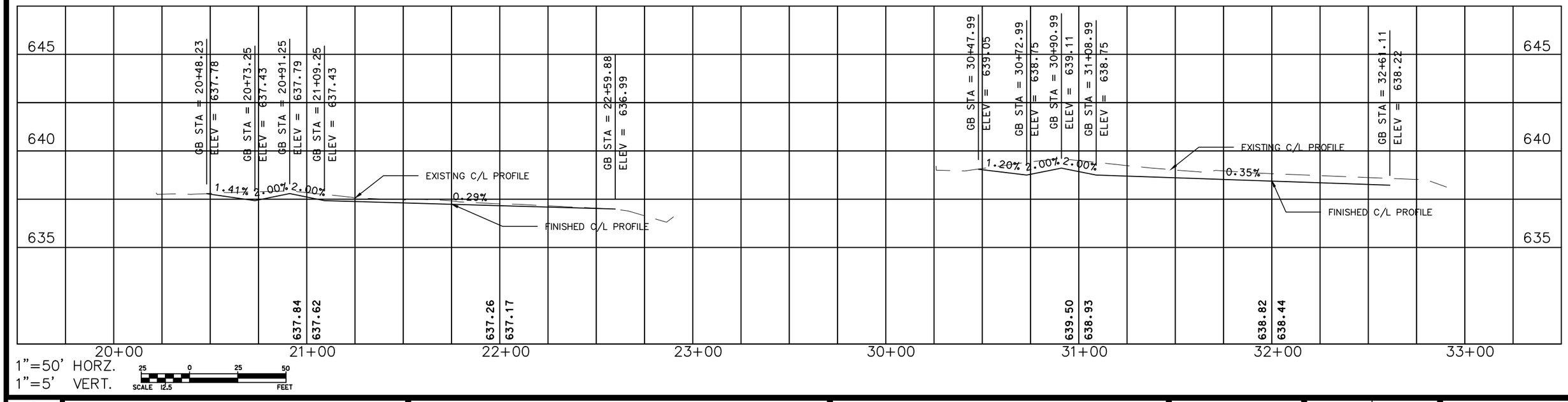
1"=50' HORZ.
1"=5' VERT.

SCALE 12.5 25 0 25 50 FEET

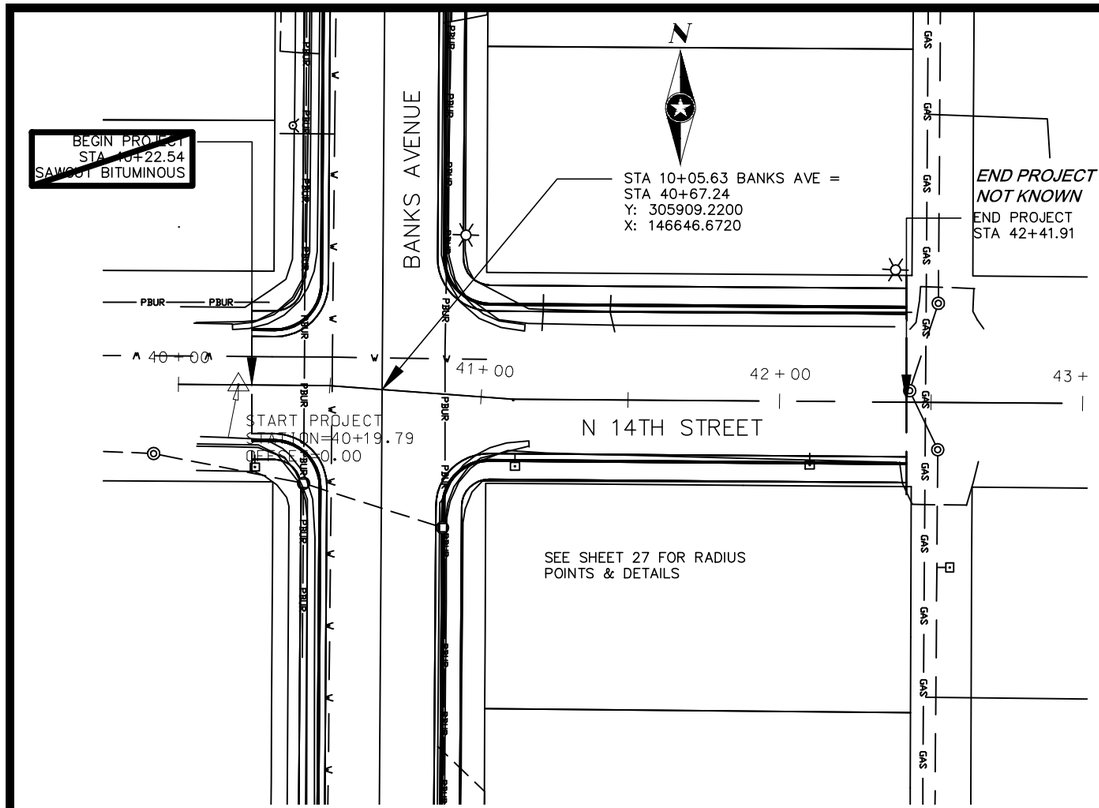
SUPERIOR	CITY OF SUPERIOR, WI – PUBLIC WORKS	BANKS AVENUE RECONSTRUCTION PHASE II – PW1101	PLAN AND PROFILE – BANKS AVENUE	MAY 2011 AS-BUILT DWG	DRAWN SLG / APPROV'D JSG	SHEET 5 OF 62

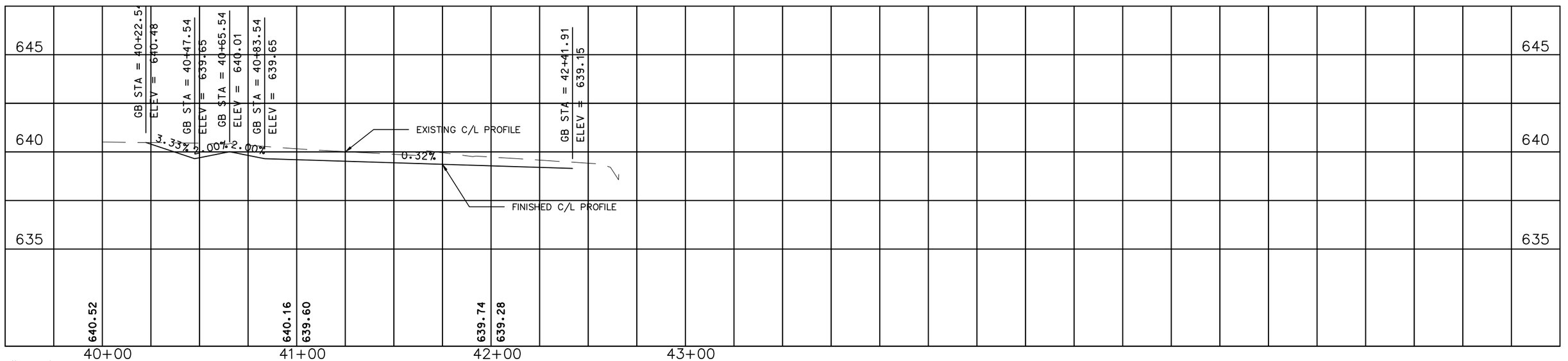






SUPERIOR	CITY OF SUPERIOR, WI – PUBLIC WORKS	BANKS AVENUE RECONSTRUCTION PHASE II – PW1101	PLAN AND PROFILE – 12TH STREET AND 13TH STREET	MAY 2011 AS-BUILT DWG	DRAWN SLG / APPROV'D JSG	SHEET 6 OF 62





1"=50' HORZ.
1"=5' VERT.

SCALE 12.5 — 25 — 0 — 25 — 50 FEET

SUPERIOR	CITY OF SUPERIOR, WI – PUBLIC WORKS	BANKS AVENUE RECONSTRUCTION PHASE II – PW1101	PLAN AND PROFILE – 14TH STREET	MAY 2011 AS-BUILT DWG	DRAWN SLG / APPROV'D JSG	SHEET 7 OF 62

NOTE: ALL STORM STRUCTURE POINTS ARE CALLED OUT AT CENTER OF STRUCTURE/EDGE OF BITUMINOUS.

SEE ATTACHED HAND DRAWN AS-BUILTS FOR DETAILS

REMOVE EXISTING CATCH BASIN & SEAL PIPE

CONNECT TO EXISTING 30" HDPE PIPE FROM PHASE I

N 12TH STREET

N 13TH STREET

BANKS AVENUE

CB01
STA 2+24.50
EL 637.25

ST01
STA 2+24.50
EL 637.25

CB02
STA 6+36.30
EL 638.56

ST02
STA 6+36.30
EL 638.56

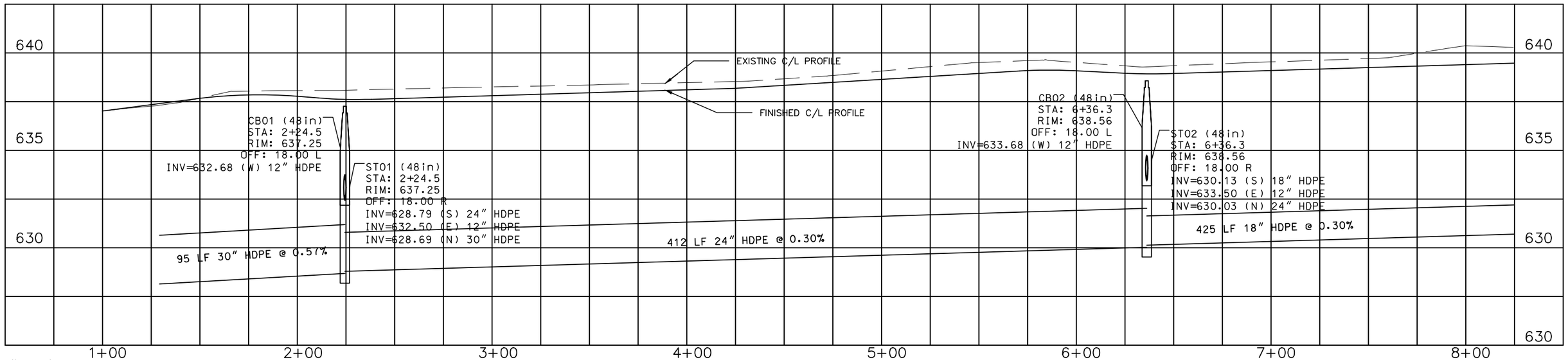
95', 30" HDPE @ 0.57%

412', 24" HDPE @ 0.30%

36" HDPE @ 0.30%

36" HDPE @ 0.30%

1+00 2+00 3+00 4+00 5+00 6+00 7+00 8+00



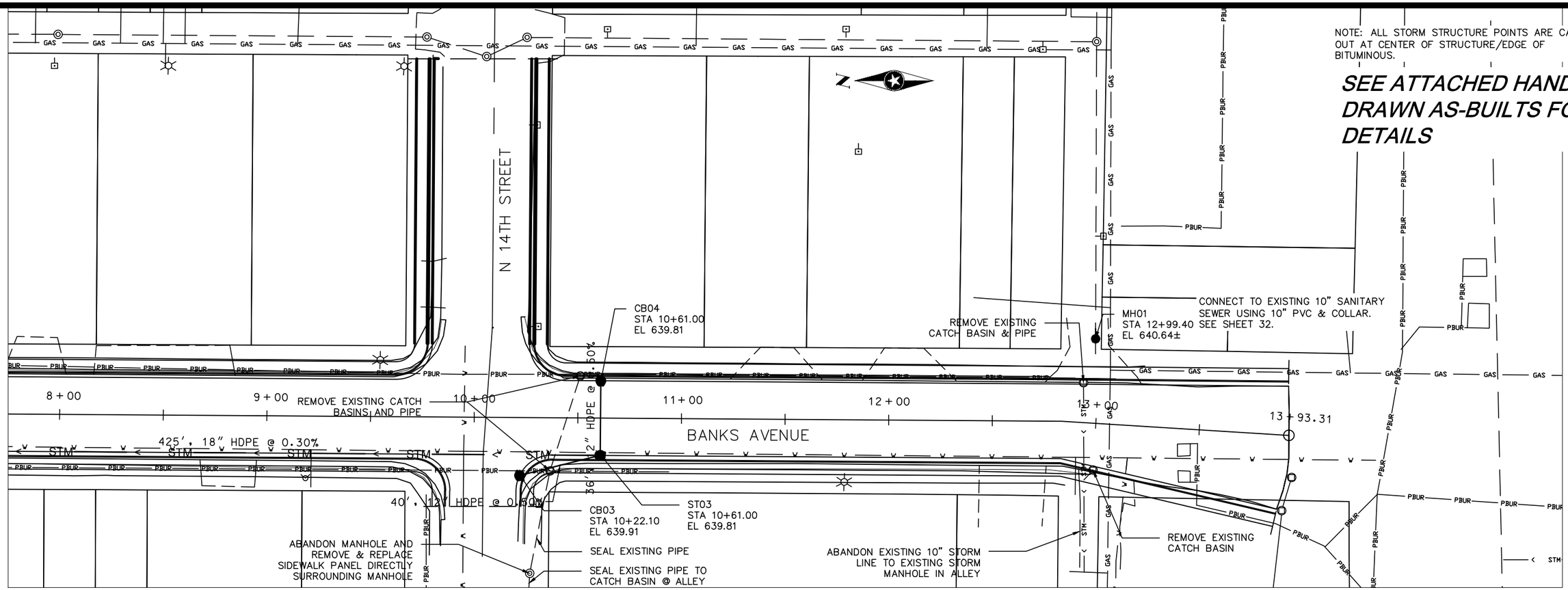
1"=50' HORZ.
1"=5' VERT.

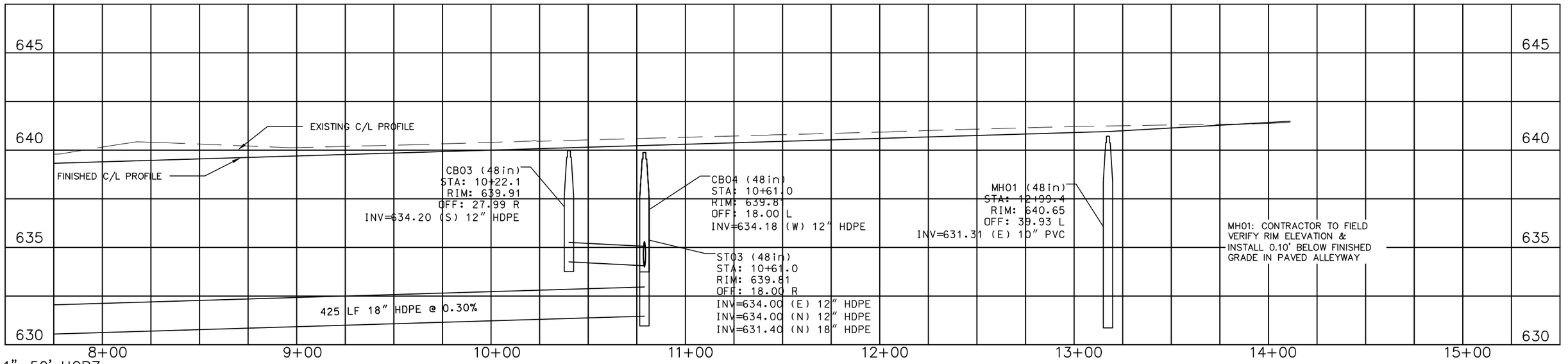
SCALE 12.5 — 25 0 25 50 FEET

SUPERIOR	CITY OF SUPERIOR, WI – PUBLIC WORKS	BANKS AVENUE RECONSTRUCTION PHASE II – PW1101	STORM AND SANITARY SEWER PLAN AND PROFILE	MAY 2011 AS-BUILT DWG	DRAWN SLG / APPROV'D JSG	SHEET 8 OF 62

NOTE: ALL STORM STRUCTURE POINTS ARE CALLED OUT AT CENTER OF STRUCTURE/EDGE OF BITUMINOUS.

SEE ATTACHED HAND DRAWN AS-BUILTS FOR DETAILS





1"=50' HORZ.
1"=5' VERT.

SCALE 12.5 25 0 25 50 FEET

SUPERIOR	CITY OF SUPERIOR, WI – PUBLIC WORKS	BANKS AVENUE RECONSTRUCTION PHASE II – PW1101	STORM AND SANITARY SEWER PLAN AND PROFILE	MAY 2011 AS-BUILT DWG	DRAWN SLG / APPROV'D JSG	SHEET 9 OF 62

8

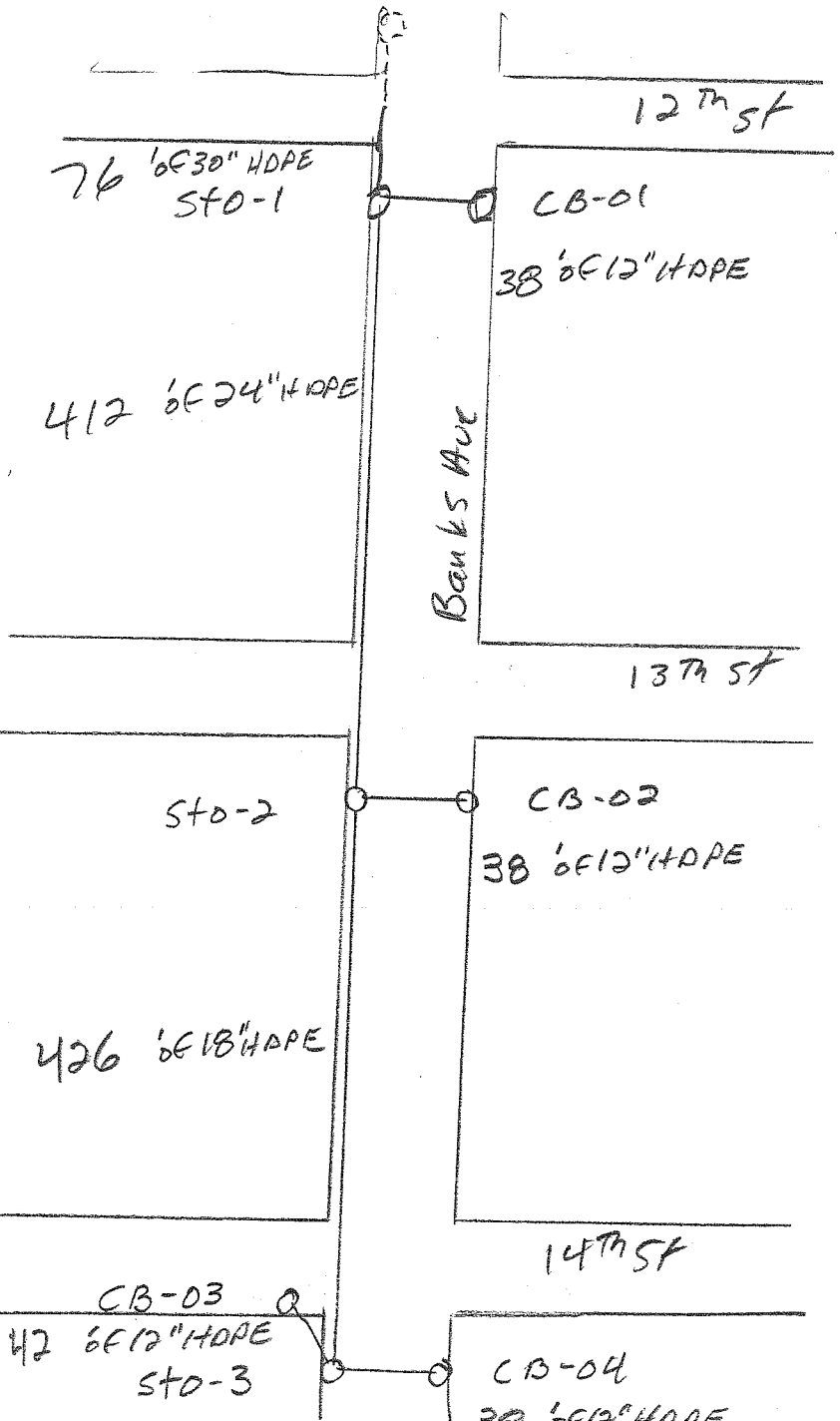
Superior

FROM: _____ TO: _____

CONTRACTOR: A-1 Excavating CONT. NO. _____

FOREMAN: Jeff Leudl

INSPECTOR _____ DATE _____



Removals

9

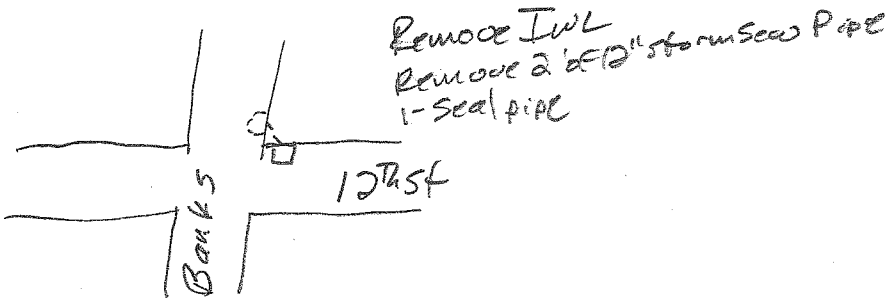
Superior

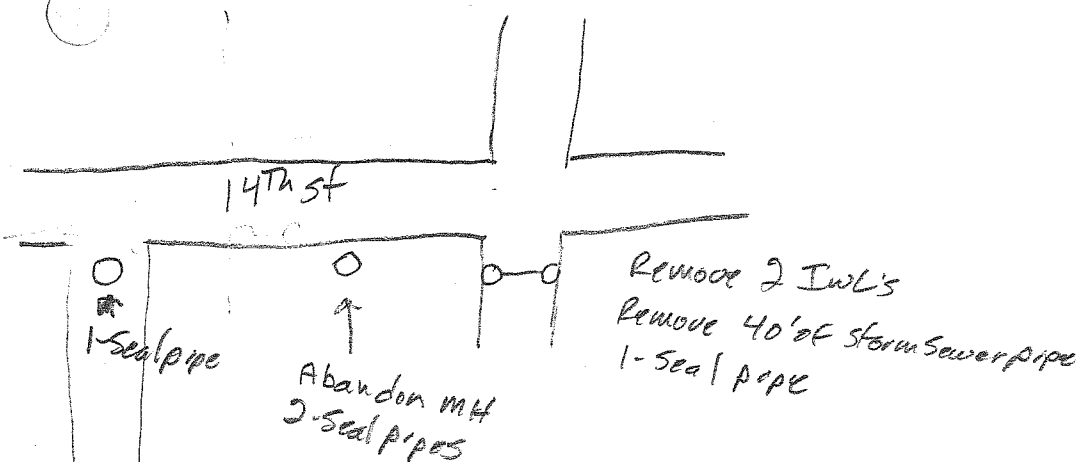
FROM: _____ TO: _____

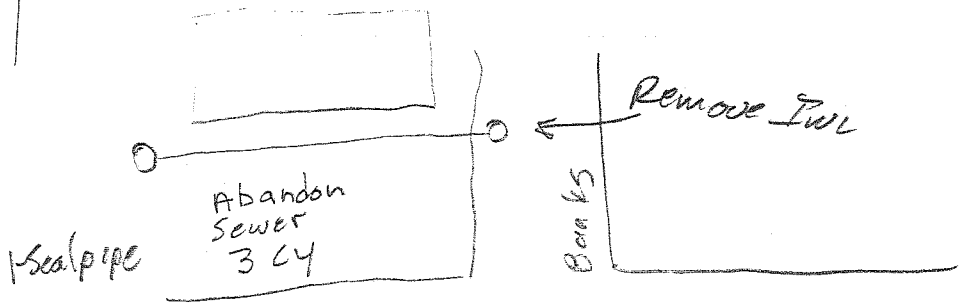
CONTRACTOR: H-L Excavating CONT. NO. _____

FOREMAN: Jeff Lenzl

INSPECTOR _____ DATE _____







Bellknap St

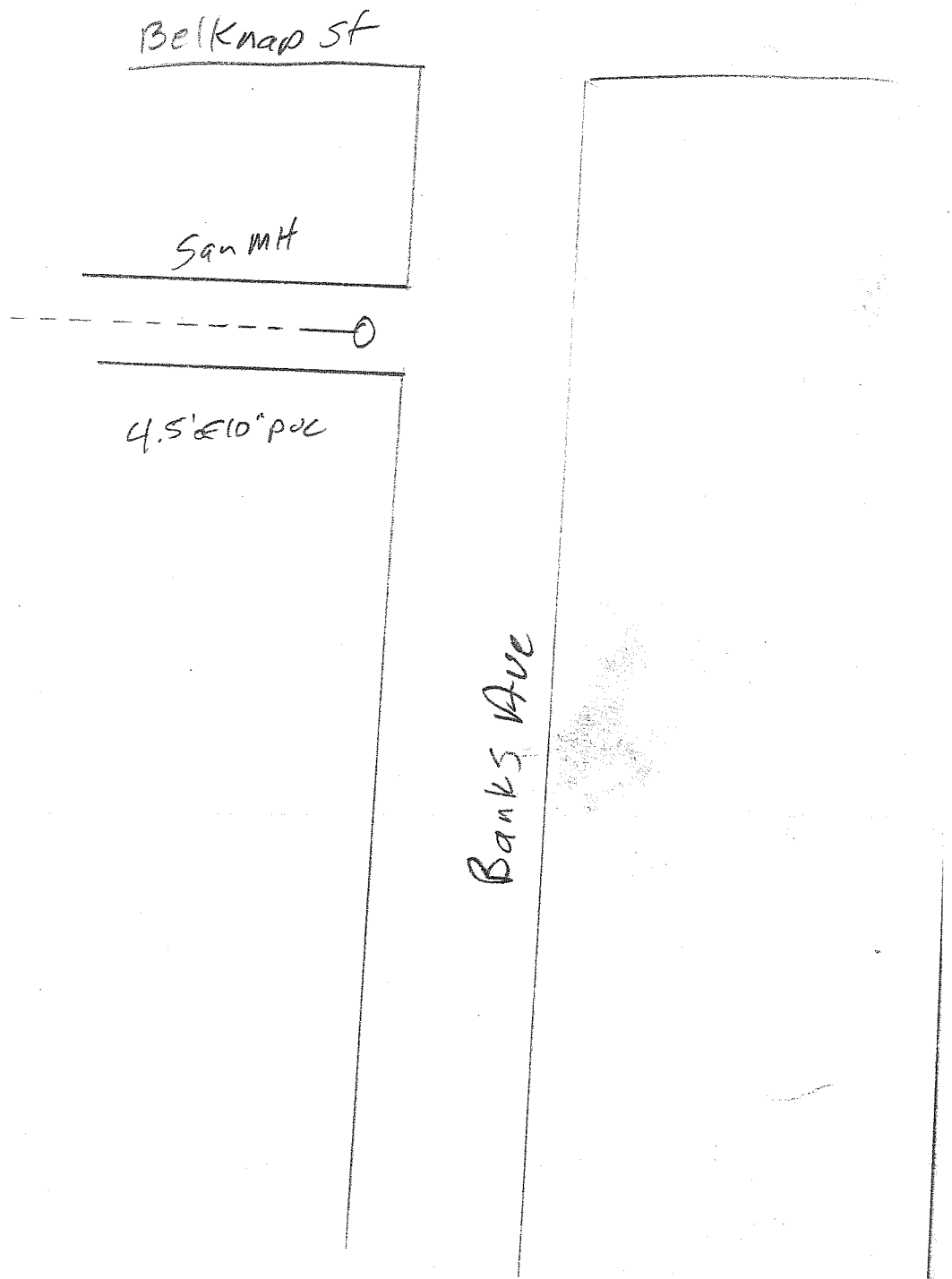
Superior ☐

FROM: _____ TO: _____

CONTRACTOR: A-1 Excavating CONT. NO. _____

FOREMAN: Jeff Lendl

INSPECTOR _____ DATE _____



VALVES & FITTINGS			
Station	Offset		Type
1+86.60	13.89	R	6" CROSS
1+86.66	27.78	R	6" GATE VALVE
5+48.01	6.09	R	6" GATE VALVE
5+75.07	6.09	R	6"x8" TEE
6+09.11	6.09	R	6" TEE
6+09.11	24.55	R	6" GATE VALVE
9+66.84	6.09	R	6" GATE VALVE
9+95.07	6.09	R	6" TEE
9+95.07	36.41	R	6" GATE VALVE
13+15.93	21.32	R	6" GATE VALVE
13+17.61	4.22	R	6" TEE W BEND
14+35.83	9..44	R	6" GATE VALVE

HYDRANT & ASSEMBLY		
Station	Trench LF	Location
2+00.18 R	19	SW 12th/Banks
6+20.51 R	27	SW 13th/Banks
9+21.43 R	28	NW 14th/Banks

SERVICES	
Station	Trench LF
2+51.94 R	31
3+12.32 R	31
3+33.56 L	39
3+38.99 R	31
3+73.00 L	39
3+88.88 R	31
3+98.38 L	39
4+12.66 R	31
5+14.15 R	31
5+26.11 L	40
6+33.09 L	40
6+82.24 R	30

SERVICES	
Station	Trench LF
7+07.01 R	30
7+60.57 R	30
7+67.52 L	40
7+76.62 L	40
7+85.35 R	30
8+16.19 R	30
8+44.23 R	30
8+84.91 R	30
8+91.83 L	40
8+97.56 R	30
9+30.26 L	40
9+35.98 R	30

SERVICES	
Station	Trench LF
11+28.55 R	30
11+33.81 L	41
11+51.66 L	41
11+65.05 L	41
11+92.01 L	41
11+98.40 R	30
12+41.90 L	41
12+79.25 R	30
13+28.96 R	28
13+42.84 L	44
13+53.21 R	27

DIGGERS HOTLINE
"Call 3 Work Days Before You Dig!"
TOLL FREE 1-800-242-8511
MILW. AREA (414) 259-1181
TDD 1-800-542-2289

NOTE: SEE ADDITIONAL SHEETS FOR ROAD, SANITARY, STORM, AND ELECTRICAL WORK.

N

20 0 20 40
scale 10 feet

SEE SHEET 11

12TH STREET

6" HDPE WATER MAIN SEE SHEET 12

CONNECT TO EXISTING 6" VALVE STATION=1+47.82 OFFSET=13.86 R CONTRACTOR TO USE CAUTION NEAR EXISTING STORM SEWER.

6"x6" CROSS

2+00 BANKS AVENUE 3+00 4+00 5+00 6+00 7+00

13.91'

6.09'

6"x8" TEE

6"x6" TEE

8" HDPE WATER MAIN SEE SHEET 12

13TH STREET

19 LF 6" HDPE

6" HDPE WATER MAIN

1" HDPE WATER SERVICE WITH CURB STOP (TYP) SEE DETAIL

6" GATE VALVE

23 LF 6" HDPE

HYDRANT (TYP) SEE DETAIL

CONNECT TO EXISTING SERVICES (2) SEE DETAIL A

CONNECT TO EXISTING SERVICE SEE DETAIL B

NOTE: REMOVE EXISTING WATERMAIN FROM STATION 1+47.82 TO 10+70 AND FROM STATION 14+20 TO STATION 14+35.83. BULKHEAD EXISTING PIPE WITH CONCRETE AT OPEN ENDS OF PIPE WHICH ARE NOT TO BE CONNECTED OR REMOVED AS A PART OF THIS PROJECT.

BANKS AVE

640
635
630
625

EXISTING SURFACE

PROPOSED SURFACE

MAINTAIN 6.5' COVER

CONNECT TO EXISTING 6" GATE VALVE STA: 1+47.82 OFF: 13.86 R

6" GATE VALVE STA: 5+48.01 OFF: 6.09 R

401 LF 6" HDPE @ 0.30%

419 LF 6" HDPE @ 0.30%

NOTE: ELEVATION OF EXISTING WATERMAIN IS UNKNOWN. CONTRACTOR TO VERIFY ELEVATION AND COORINATE WITH ENGINEER AS NECESSARY.

2+00 3+00 4+00 5+00 6+00 7+00

NO.	REVISIONS	DATE	BY
1			
2			
3			
4			

DESIGNED DRH DATE 03/2011
DRAWN DRH DATE 03/2011
CHECKED MB DATE 03/2011

SEH
PHONE: (218)279-3000
418 WEST SUPERIOR STREET
SUITE 200
DULUTH, MN 55802-1512

BANKS AVENUE

PHASE II

WATER PLAN AND PROFILE

SEH PROJECT NO. 115828

DATE ISSUED 3-25-11

SHEET NO. 13

SHEET 13 OF 62

S:\PT\S\SWLP0\115828\5-dsgn\51-cadd\Civil\Plans\Water P&P.dwg

DIGGERS HOTLINE

"Call 3 Work Days Before You Dig!"

TOLL FREE 1-800-242-8511

MILW. AREA (414) 259-1181

TDD 1-800-542-2289

NOTE: REMOVE EXISTING WATERMAIN FROM STATION 1+47.82 TO 10+70 AND FROM STATION 14+20 TO STATION 14+35.83. BULKHEAD EXISTING PIPE WITH CONCRETE AT OPEN ENDS OF PIPE WHICH ARE NOT TO BE CONNECTED OR REMOVED AS A PART OF THIS PROJECT.

SEE SHEET 10

VALVES & FITTINGS			
Station	Offset		Type
1+86.60	13.89	R	6" CROSS
1+86.66	27.78	R	6" GATE VALVE
5+48.01	6.09	R	6" GATE VALVE
5+75.07	6.09	R	6"x8" TEE
6+09.11	6.09	R	6" TEE
6+09.11	24.55	R	6" GATE VALVE
9+66.84	6.09	R	6" GATE VALVE
9+95.07	6.09	R	6" TEE
9+95.07	36.41	R	6" GATE VALVE
13+15.93	21.32	R	6" GATE VALVE
13+17.61	4.22	R	6" TEE W BEND
14+35.83	9.44	R	6" GATE VALVE

HYDRANTS		
Station	Trench LF	Location
2+00.18 R	19	SW 12th/Banks
6+20.51 R	27	SW 13th/Banks
9+21.43 R	28	NW 14th/Banks

SERVICES	
Station	Trench LF
2+51.94 R	31
3+12.32 R	31
3+33.56 L	39
3+38.99 R	31
3+73.00 L	39
3+88.88 R	31
3+98.38 L	39
4+12.66 R	31
5+14.15 R	31
5+26.11 L	40
6+33.09 L	40
6+82.24 R	30

SERVICES	
Station	Trench LF
7+07.01 R	30
7+60.57 R	30
7+67.52 L	40
7+76.62 L	40
7+85.35 R	30
8+16.19 R	30
8+44.23 R	30
8+84.91 R	30
8+91.83 L	40
8+97.56 R	30
9+30.26 L	40
9+35.98 R	30

SERVICES	
Station	Trench LF
11+28.55 R	30
11+33.81 L	41
11+51.66 L	41
11+65.05 L	41
11+92.01 L	41
11+98.40 R	30
12+41.90 L	41
12+79.25 R	30
13+28.96 R	28
13+42.84 L	44
13+53.21 R	27

NOTE: SEE ADDITIONAL SHEETS FOR ROAD, SANITARY, STORM, AND ELECTRICAL WORK.

N

scale 20 0 20 40 feet

14TH STREET

BELKNAP STREET

REMOVE 41 LF EXISTING WATER PIPE ALONG 14TH STREET

6.09'

6" GATE VALVE

BANKS AVENUE

8+00 9+00 10+00 11+00 12+00 13+00 13+93.31

6"x6" TEE WITH 11.25° BEND

SAWCUT 100 LF CONCRETE PAVEMENT REPLACE IN KIND

HYDRANT (TYP) SEE DETAIL

6"x6" TEE

35 LF 6" HDPE

1¼" CU

1" HDPE WATER SERVICE WITH CURB STOP (TYP) SEE DETAIL

13.91'

6" HDPE WATER MAIN

17 LF 6" HDPE

CONNECT TO EXISTING SERVICE SEE DETAIL B

CONNECT TO EXISTING 6" WATERMAIN AT NEW 6" GATE VALVE STATION=13+15.93 OFFSET=21.32 R

CONNECT TO EXISTING 6" WATERMAIN AT NEW 6" GATE VALVE STATION=14+35.83 OFFSET=9.44' R

BANKS AVE

EXISTING SURFACE

PROPOSED SURFACE

640

635

630

625

6" GATE VALVE STA: 9+66.84 OFF: 6.09 R

MAINTAIN 6.5' COVER

469 LF 6" HDPE @ 0.30%

6" GATE VALVE STA: 14+35.83 OFF: 9.44 R

8+00 9+00 10+00 11+00 12+00 13+00 14+00

NOTE: ELEVATION OF EXISTING WATERMAIN IS UNKNOWN. CONTRACTOR TO VERIFY ELEVATION AND COORINATE WITH ENGINEER AS NECESSARY.

NO.	REVISIONS	DATE	BY
1			
2			
3			
4			

DESIGNED DRH DATE 03/2011

DRAWN DRH DATE 03/2011

CHECKED MB DATE 03/2011

SEH

PHONE: (218)279-3000
418 WEST SUPERIOR STREET
SUITE 200
DULUTH, MN 55802-1512

BANKS AVENUE

PHASE II

WATER PLAN AND PROFILE

SEH PROJECT NO. 115828

DATE ISSUED 3-25-11

SHEET NO. 14

SHEET 14 OF 62

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DIGGERS HOTLINE

"Call 3 Work Days Before You Dig!"

TOLL FREE 1-800-242-8511

MILW. AREA (414) 259-1181

TDD 1-800-542-2289

VALVES & FITTINGS		
Station	Offset	Type
21+22.27	26.03 R	6" GATE VALVE

SERVICES	
Station	Trench LF
20+53.41 L	43
20+54.77 R	3
22+05.53 L	60

NOTE: REMOVE ALL EXISTING WATERMAIN WHERE NEW WATERMAIN IS BEING INSTALLED.

NOTE: ELEVATION OF EXISTING WATERMAIN IS UNKNOWN. CONTRACTOR TO VERIFY ELEVATION AND COORINATE WITH ENGINEER AS NECESSARY.

1" HDPE WATER SERVICE WITH CURB STOP (TYP) SEE DETAIL

20+00

21+00

22+00

12TH STREET

6" CAP

6" HDPE WATER MAIN

6" GATE VALVE

BANKS AVENUE

6" HDPE WATER MAIN SEE SHEET 9

12TH STREET

NOTE: SEE ADDITIONAL SHEETS FOR ROAD, SANITARY, STORM, AND ELECTRICAL WORK.

VALVES & FITTINGS		
Station	Offset	Type
31+23.75	12.83 L	8" GATE VALVE
32+55.77	13.58 L	8" GATE VALVE

20 0 20 40

scale 10 feet

BANKS AVENUE

8" HDPE WATER MAIN

8" GATE VALVE

6"x8" TEE

31+00

32+00

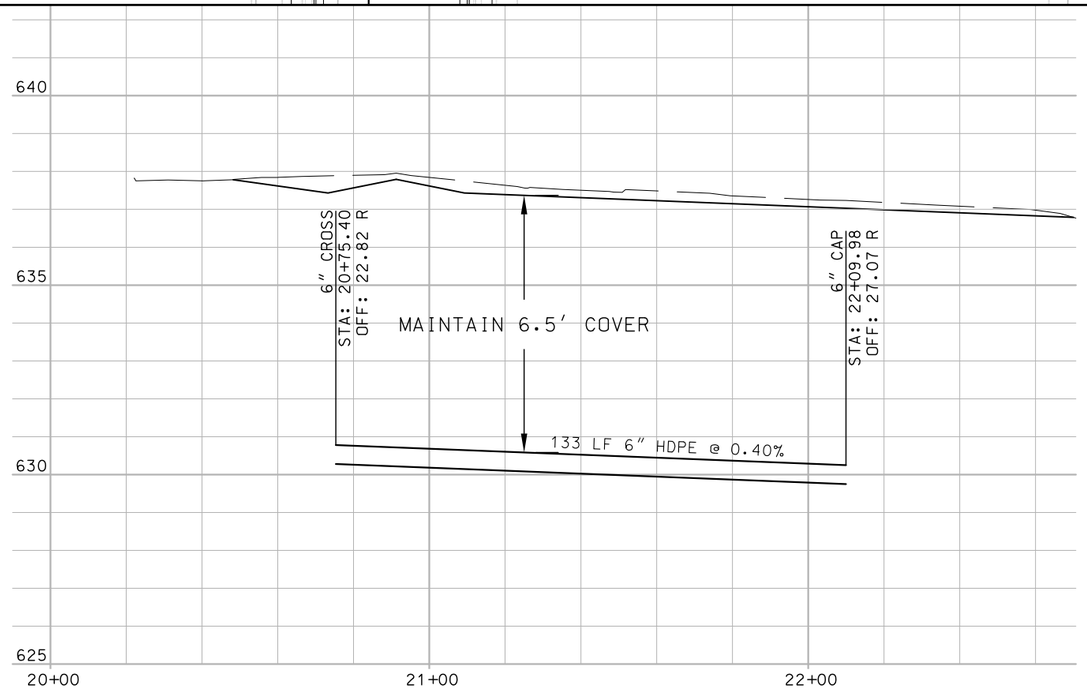
33+00

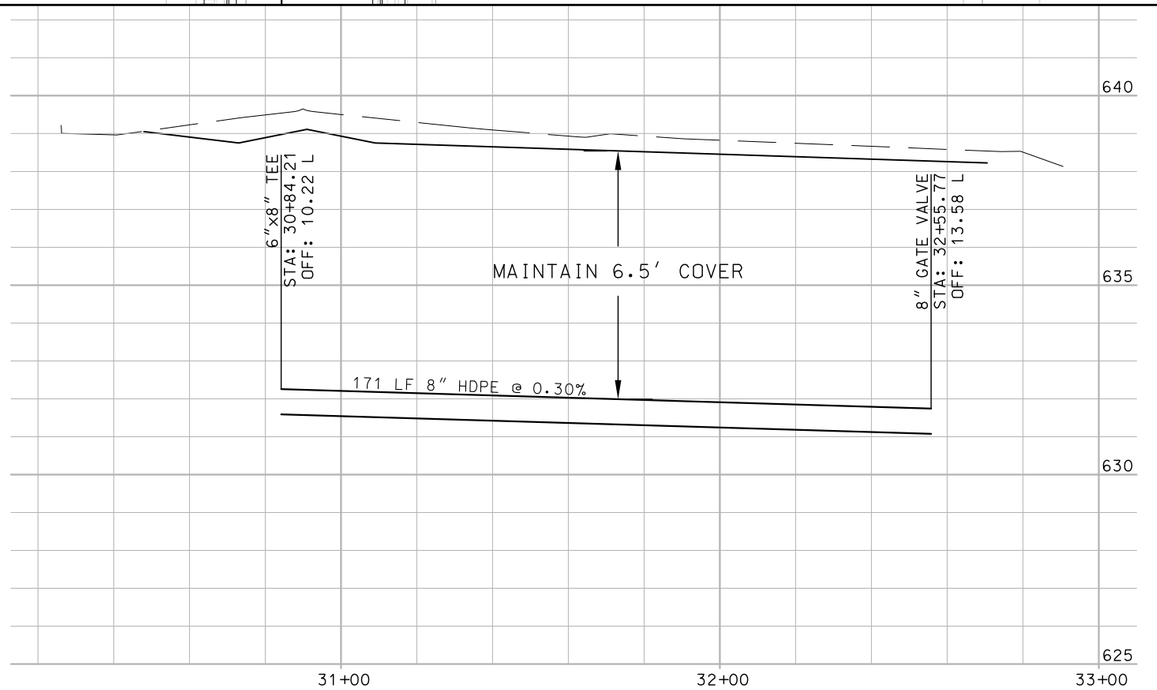
13TH STREET

6" HDPE WATER MAIN SEE SHEET 9

CONNECT TO EXISTING 8" WATERMAIN AT NEW 8" GATE VALVE STATION=32+55.77 OFFSET=13.58 L

13TH STREET





NO.	REVISIONS	DATE	BY
1			
2			
3			
4			

DESIGNED DRH DATE 03/2011

DRAWN DRH DATE 03/2011

CHECKED MB DATE 03/2011

SEH

PHONE: (218)279-3000
418 WEST SUPERIOR STREET
SUITE 200
DULUTH, MN 55802-1512

BANKS AVENUE

PHASE II

WATER PLAN AND PROFILE

SEH PROJECT NO. 115828

DATE ISSUED 3-25-11

SHEET NO. 15

SHEET 15 OF 62

S:\PT\S\SWLP0\115828\5-dsgn\51-cadd\Civil\Plans\Water P&P Side Streets.dwg

3

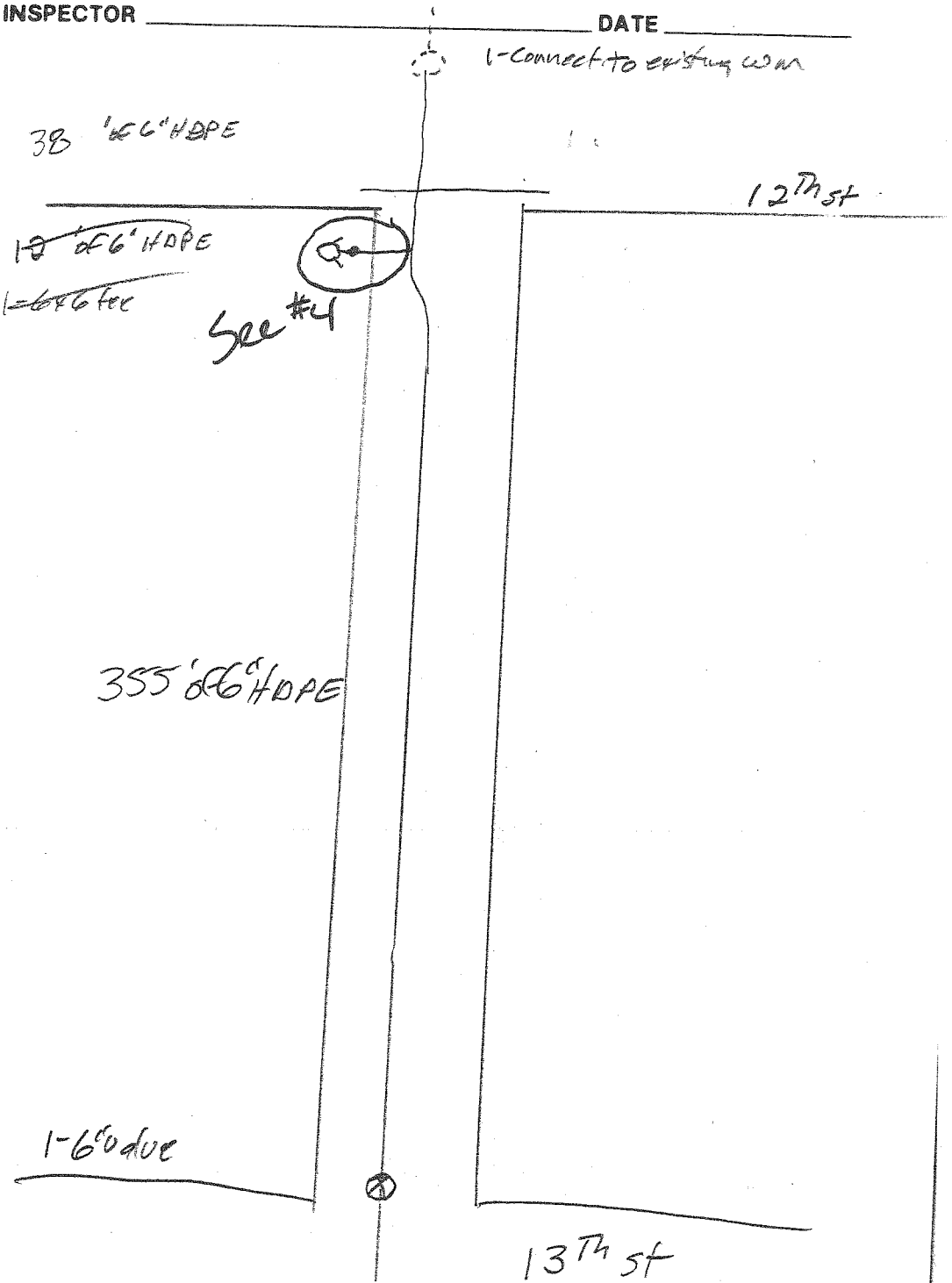
Superior

FROM: _____ TO: _____

CONTRACTOR: A-1 Excavating CONT. NO. _____

FOREMAN: Jeff Lendt

INSPECTOR _____ DATE _____



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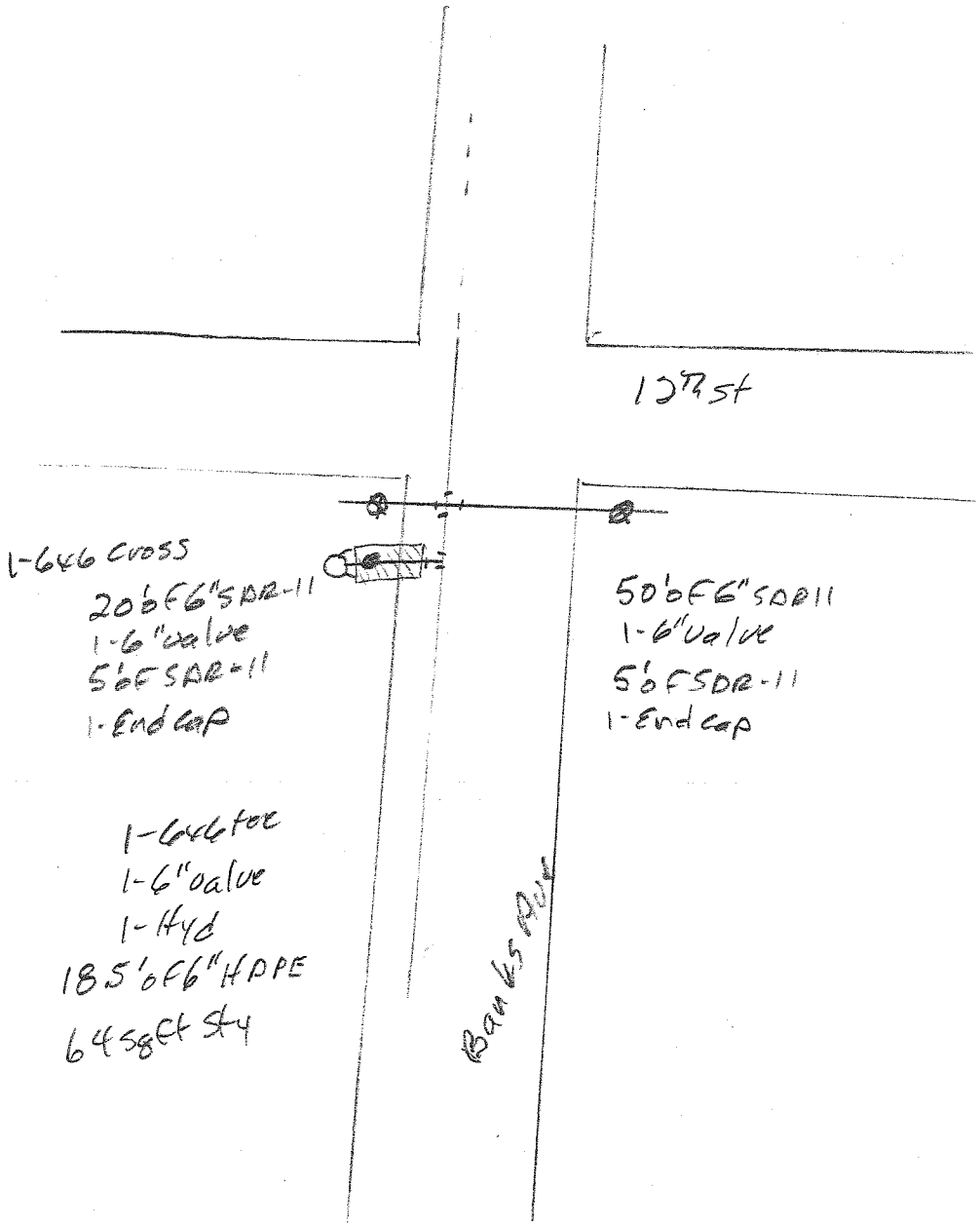
Superior ☐

FROM: _____ TO: _____

CONTRACTOR: A-1 Excavating CONT. NO. _____

FOREMAN: Jeff Lendl

INSPECTOR _____ DATE _____



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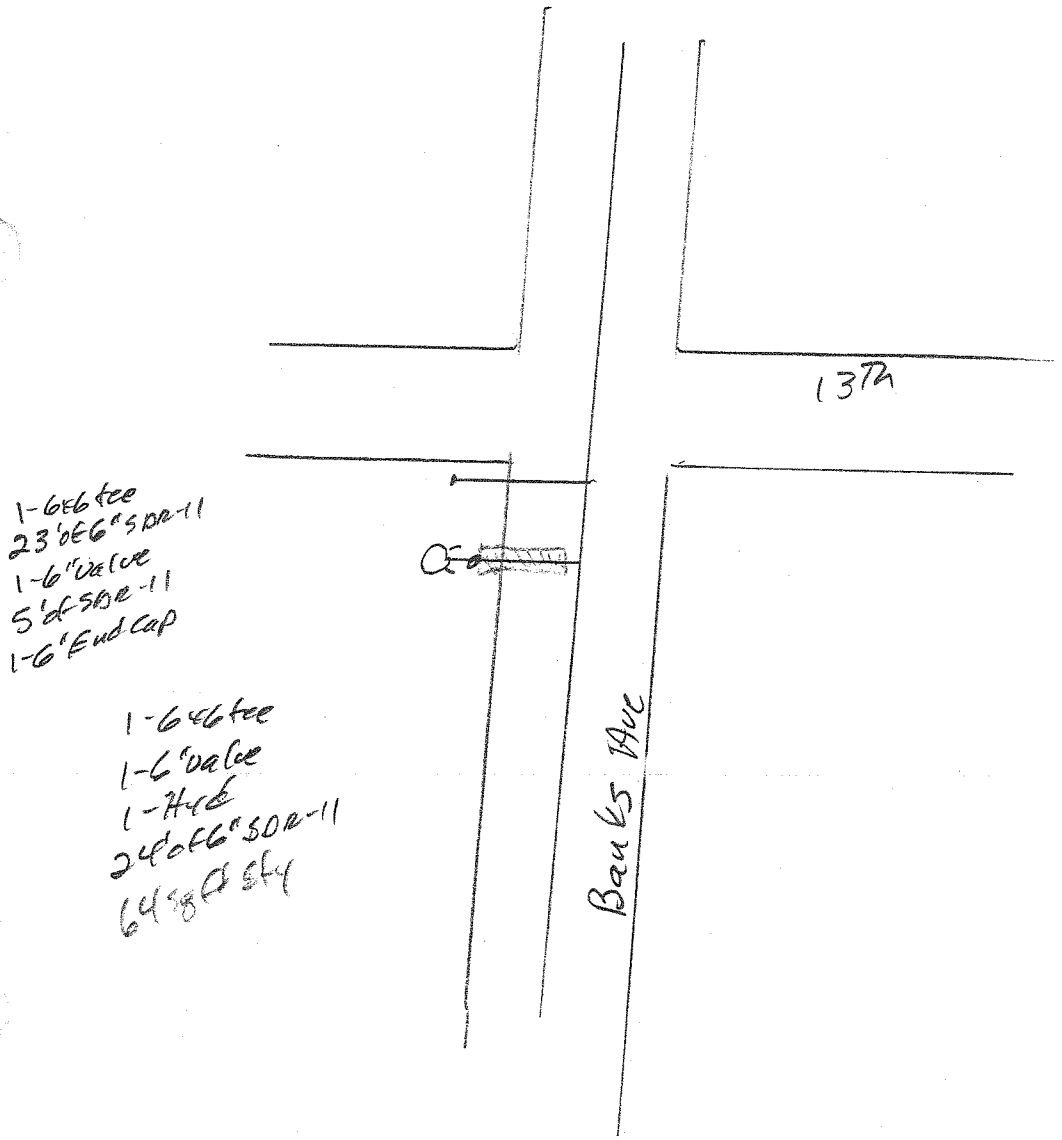
Superior

FROM: _____ TO: _____

CONTRACTOR: IA-1 Excavating CONT. NO. _____

FOREMAN: Jeff Leudl

INSPECTOR _____ DATE _____



1-6x6 tee
23'0E6"SDR-11
1-6" Valve
5'of SDR-11
1-6" End cap

1-6x6 tee
1-6" Valve
1-Hydt
240f6"SDR-11
64'8" Stg

6

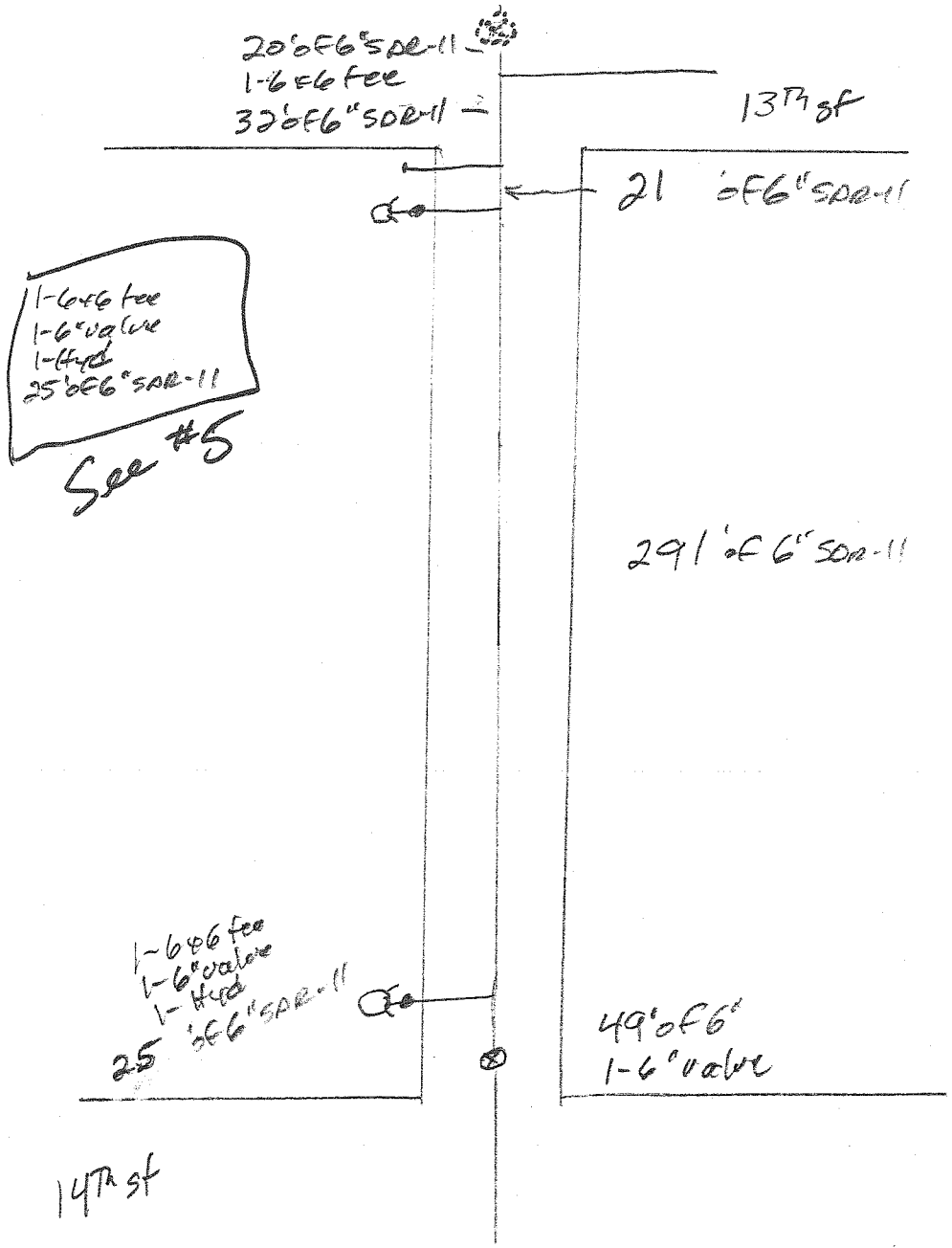
Superior

FROM: _____ TO: _____

CONTRACTOR: A-1 Excavating CONT. NO. _____

FOREMAN: Jeff Landl

INSPECTOR _____ DATE _____



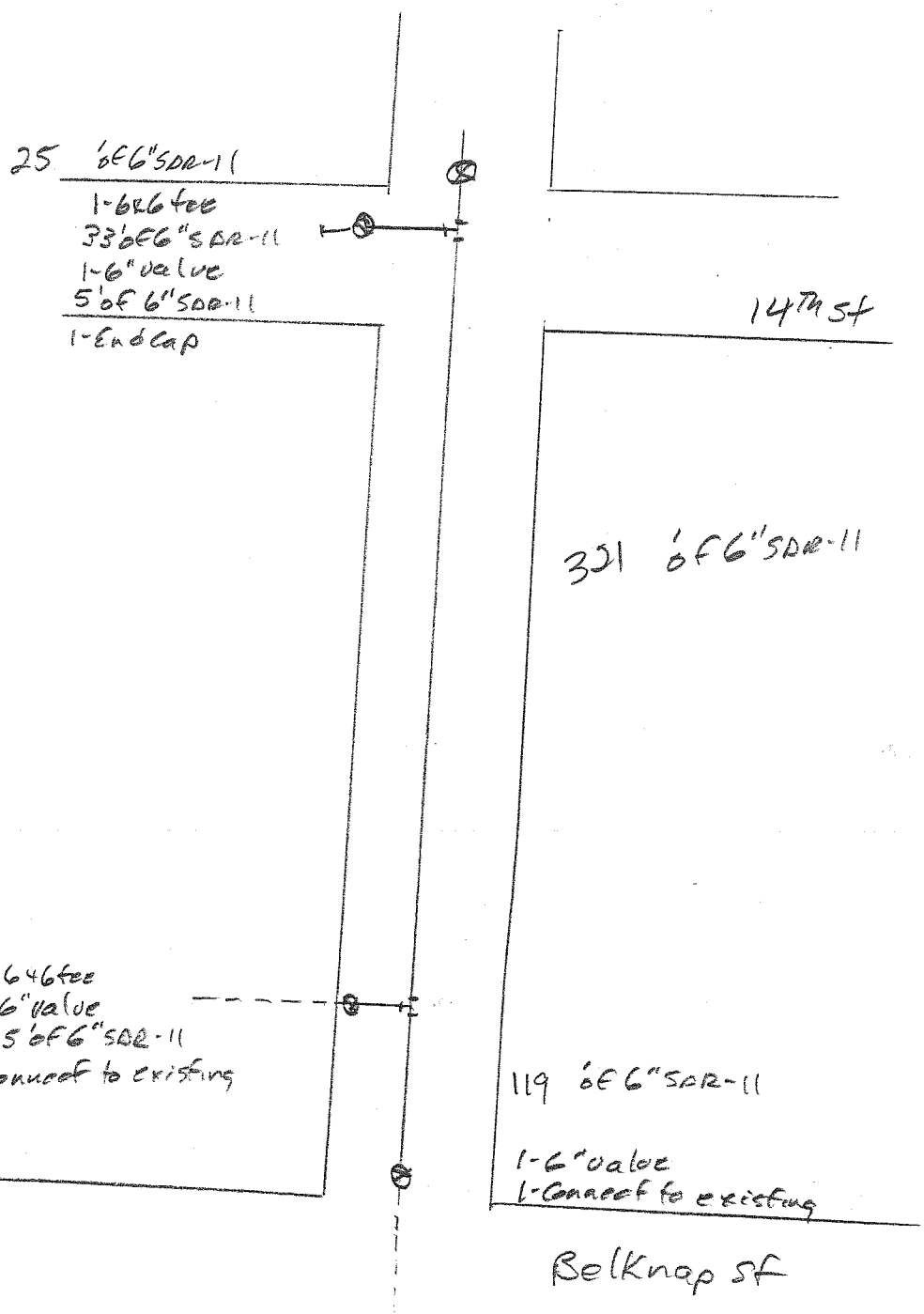
Superior

FROM: _____ TO: _____

CONTRACTOR: A-1 Excavating CONT. NO. _____

FOREMAN: Jeff Lenard

INSPECTOR _____ DATE _____



2

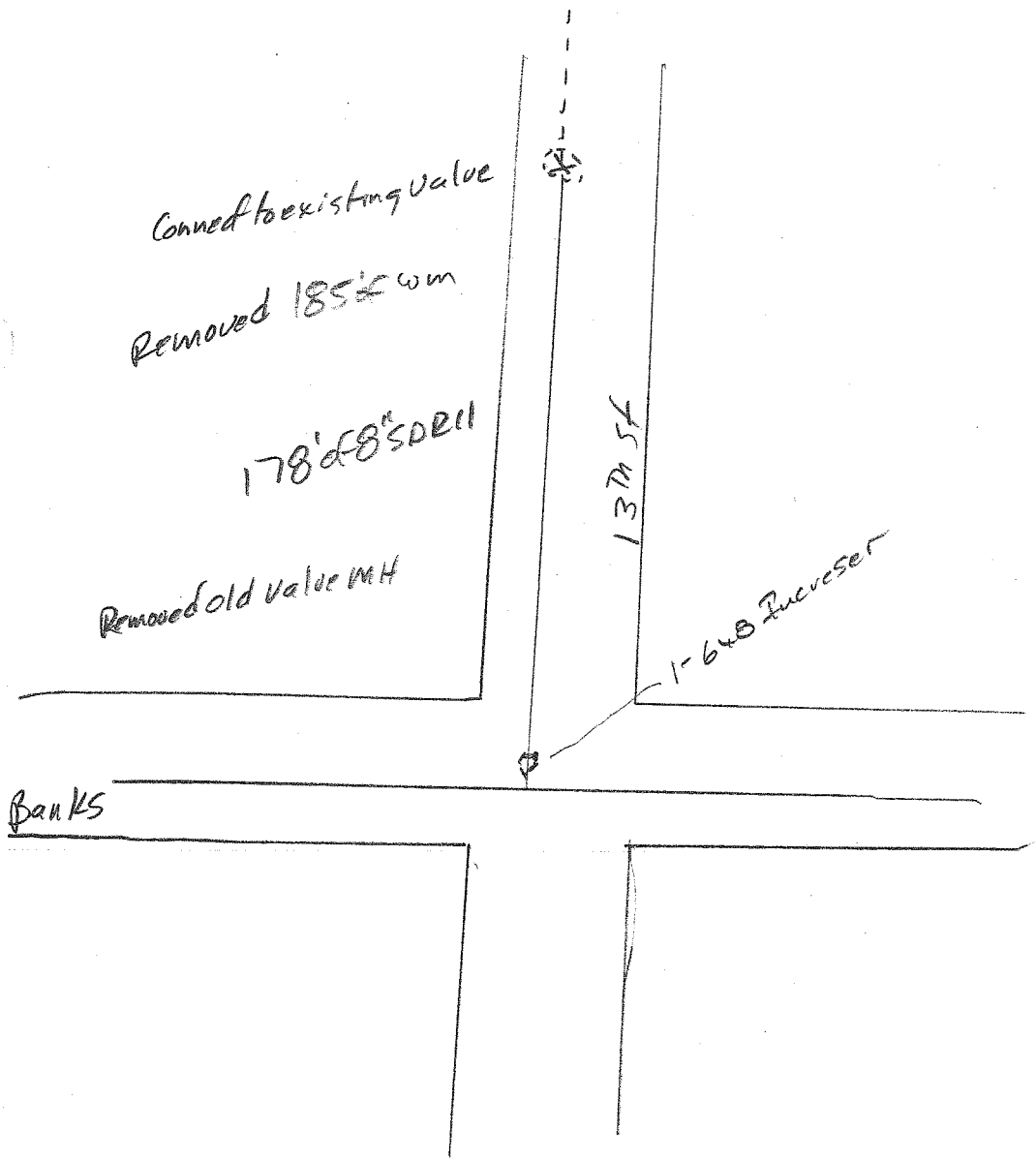
Superior

FROM: _____ TO: _____

CONTRACTOR: A-1 Excavating CONT. NO. _____

FOREMAN: Jeff Lendl

INSPECTOR _____ DATE _____



3.5
2-D
1-D
10

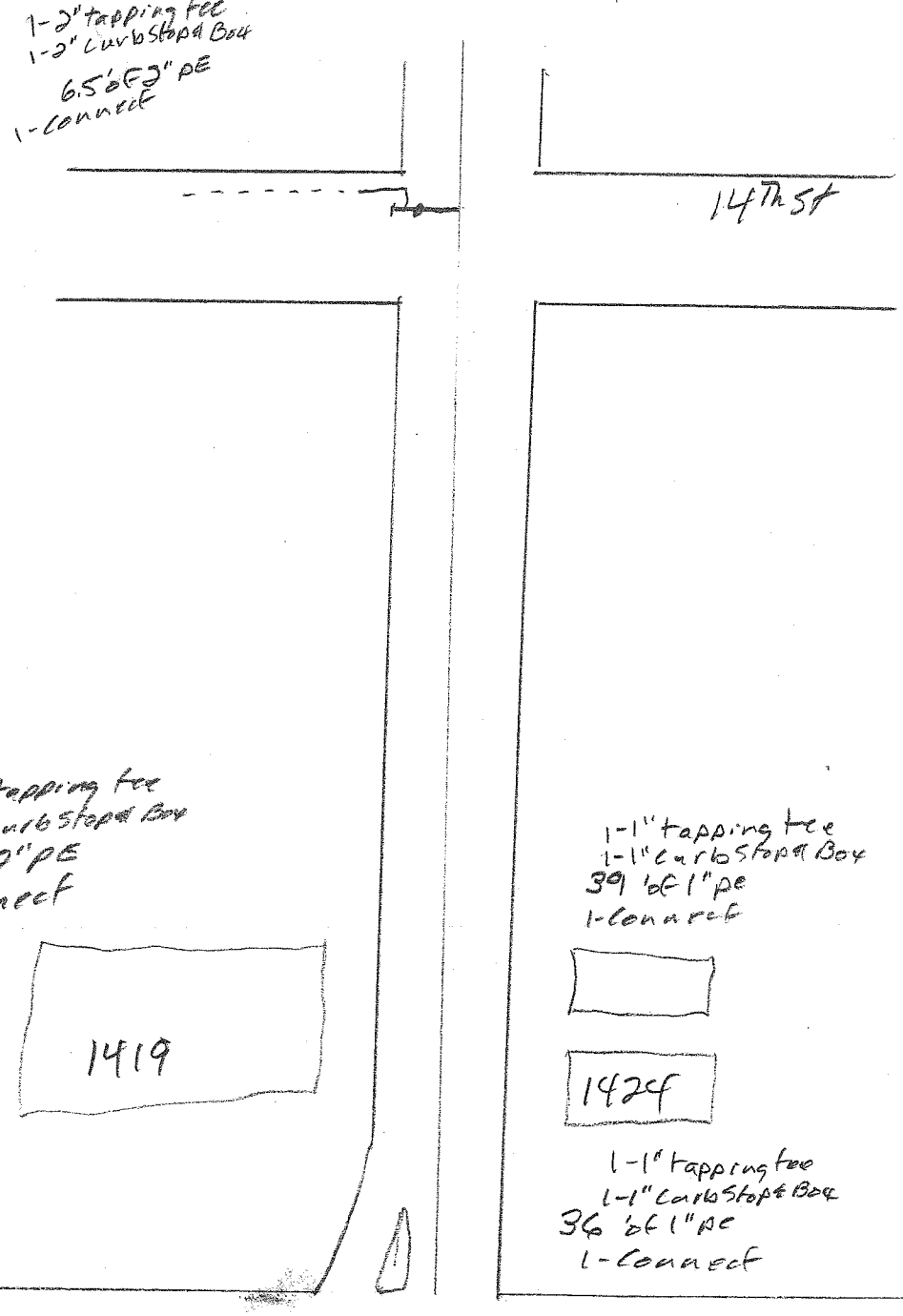
Superior

FROM: _____ TO: _____

CONTRACTOR: A-1 Excavating CONT. NO. _____

FOREMAN: Jeff Lendl

INSPECTOR _____ DATE _____



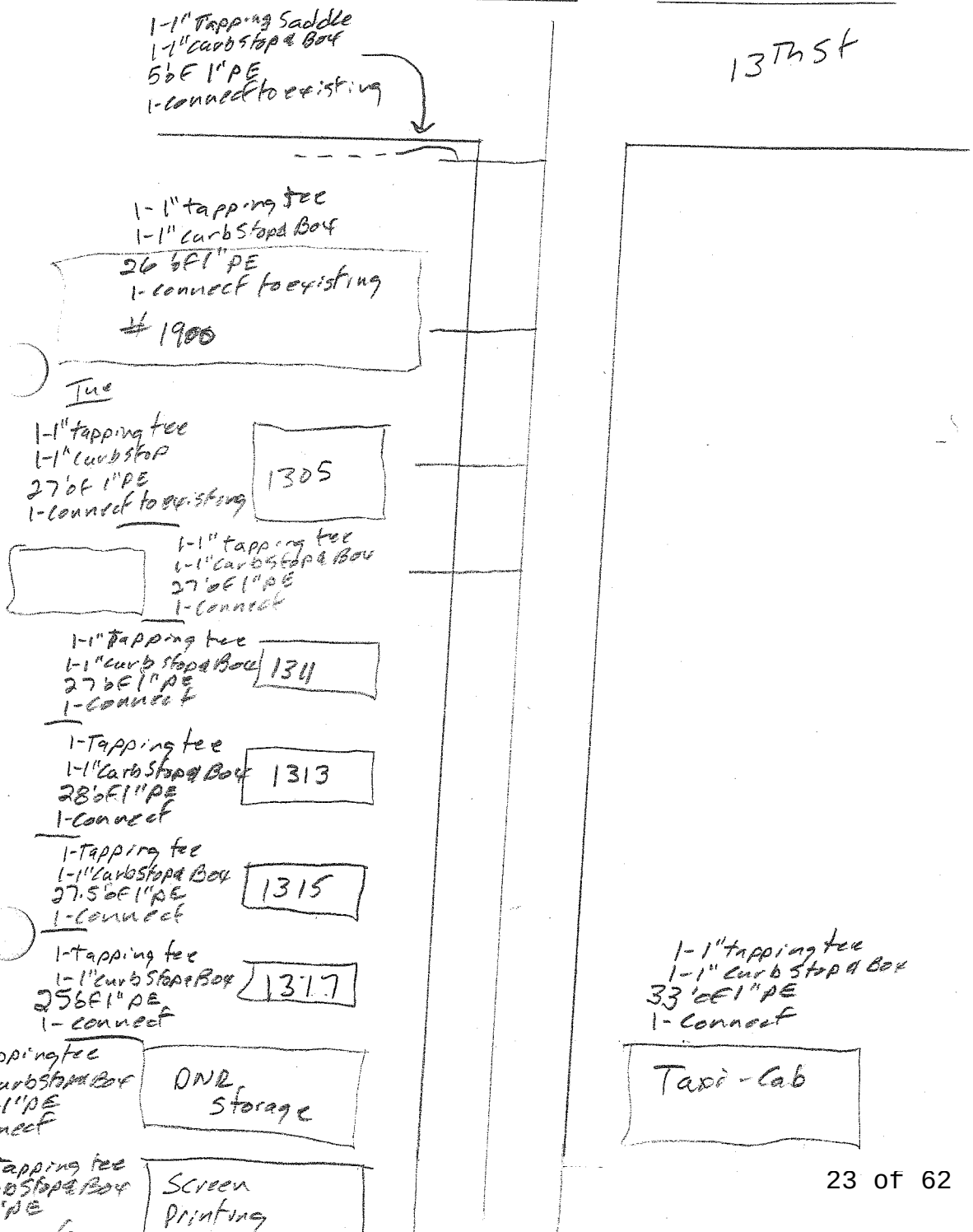
Superior

FROM: _____ TO: _____

CONTRACTOR: A-1 Excavating CONT. NO. _____

FOREMAN: Jeff Landl

INSPECTOR _____ DATE _____



12

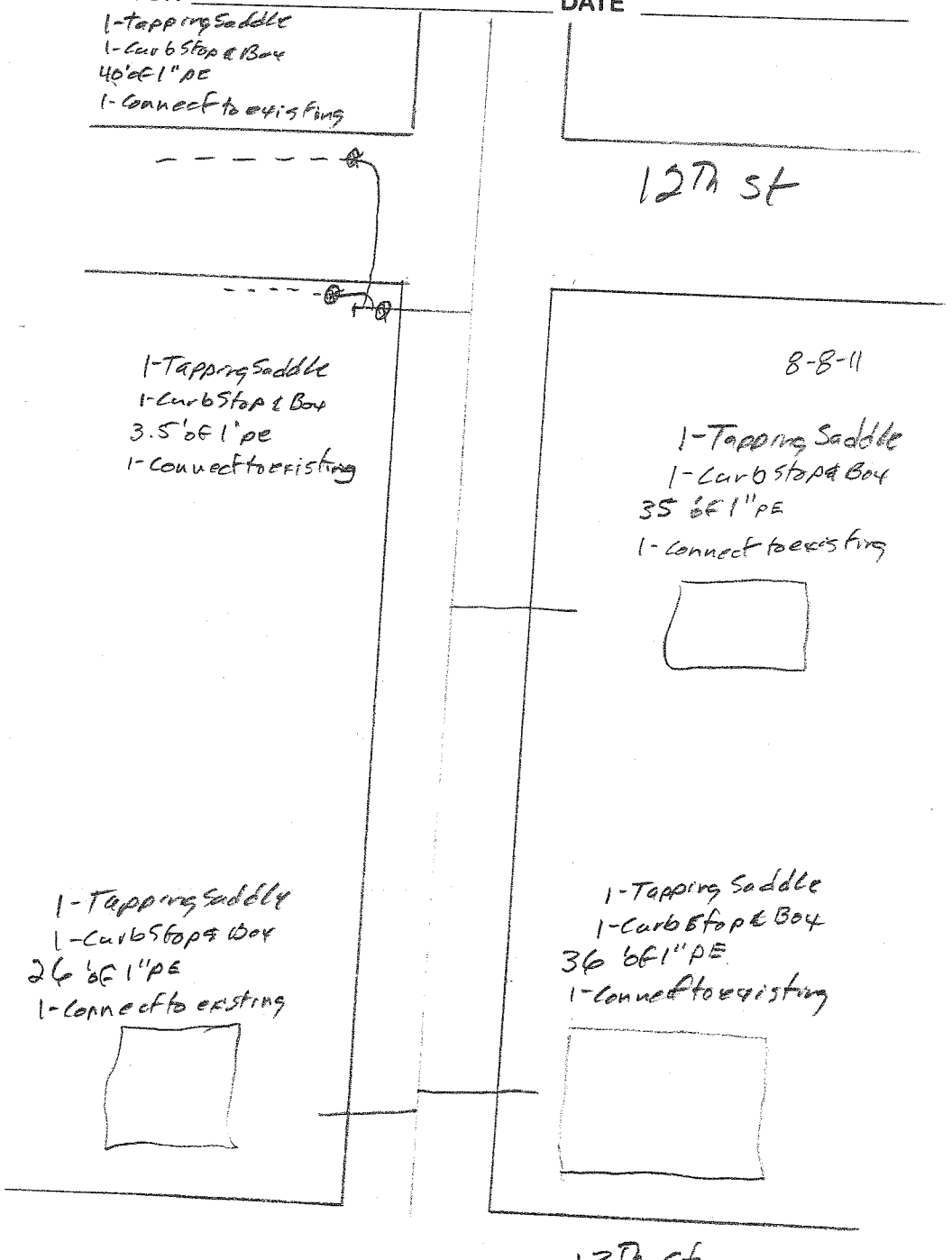
Superior

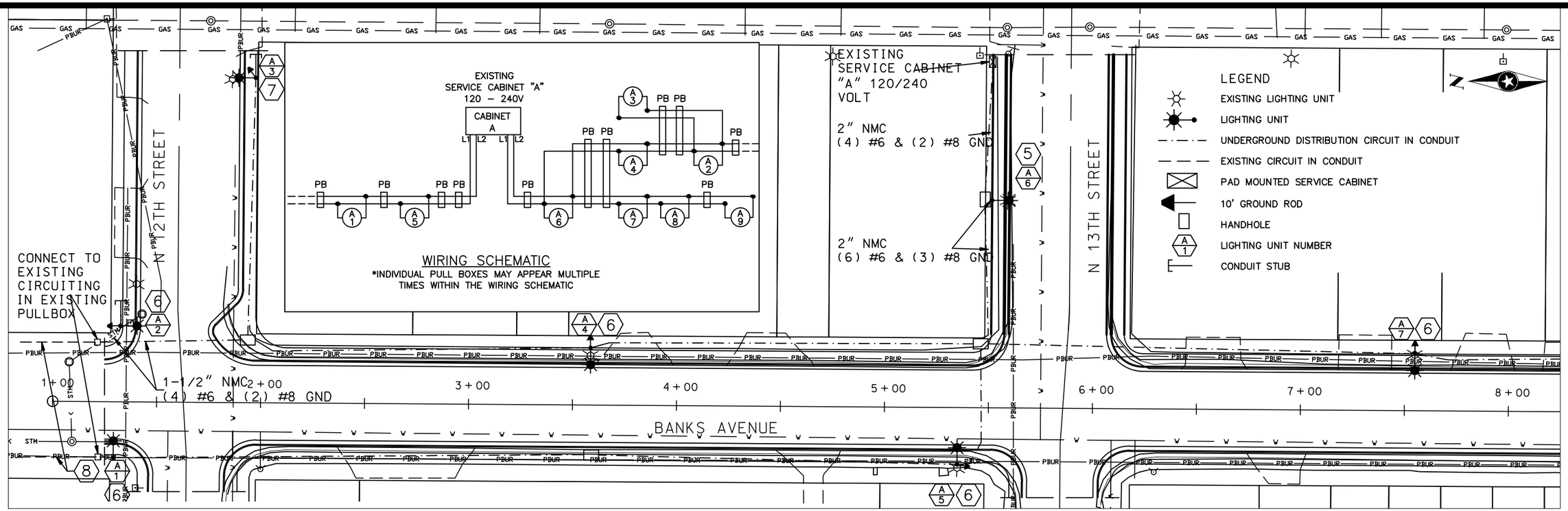
FROM: _____ TO: _____

CONTRACTOR: A-1 Excavating CONT. NO. _____

FOREMAN: Jeff Lendt

INSPECTOR _____ DATE _____





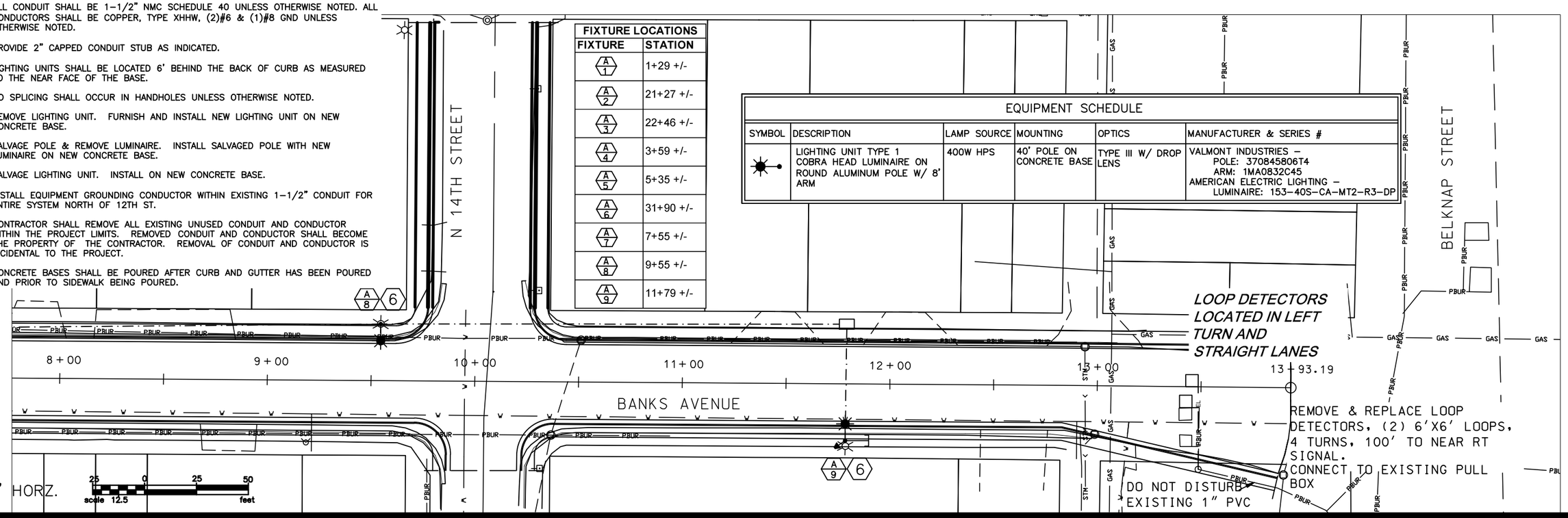
NOTES:

1. ALL CONDUIT SHALL BE 1–1/2" NMC SCHEDULE 40 UNLESS OTHERWISE NOTED. ALL CONDUCTORS SHALL BE COPPER, TYPE XHHW, (2)#6 & (1)#8 GND UNLESS OTHERWISE NOTED.
2. PROVIDE 2" CAPPED CONDUIT STUB AS INDICATED.
3. LIGHTING UNITS SHALL BE LOCATED 6' BEHIND THE BACK OF CURB AS MEASURED TO THE NEAR FACE OF THE BASE.
4. NO SPLICING SHALL OCCUR IN HANDHOLES UNLESS OTHERWISE NOTED.
5. REMOVE LIGHTING UNIT. FURNISH AND INSTALL NEW LIGHTING UNIT ON NEW CONCRETE BASE.
6. SALVAGE POLE & REMOVE LUMINAIRE. INSTALL SALVAGED POLE WITH NEW LUMINAIRE ON NEW CONCRETE BASE.
7. SALVAGE LIGHTING UNIT. INSTALL ON NEW CONCRETE BASE.
8. INSTALL EQUIPMENT GROUNDING CONDUCTOR WITHIN EXISTING 1–1/2" CONDUIT FOR ENTIRE SYSTEM NORTH OF 12TH ST.
9. CONTRACTOR SHALL REMOVE ALL EXISTING UNUSED CONDUIT AND CONDUCTOR WITHIN THE PROJECT LIMITS. REMOVED CONDUIT AND CONDUCTOR SHALL BECOME THE PROPERTY OF THE CONTRACTOR. REMOVAL OF CONDUIT AND CONDUCTOR IS INCIDENTAL TO THE PROJECT.
10. CONCRETE BASES SHALL BE POURED AFTER CURB AND GUTTER HAS BEEN POURED AND PRIOR TO SIDEWALK BEING POURED.

FIXTURE LOCATIONS	
FIXTURE	STATION
A1	1+29 +/-
A2	21+27 +/-
A3	22+46 +/-
A4	3+59 +/-
A5	5+35 +/-
A6	31+90 +/-
A7	7+55 +/-
A8	9+55 +/-
A9	11+79 +/-

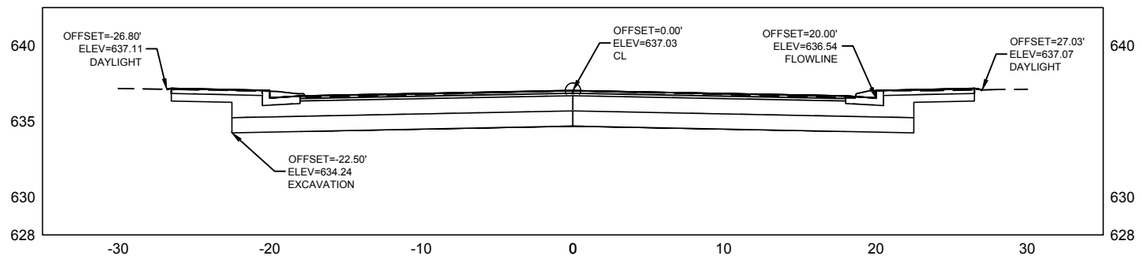
EQUIPMENT SCHEDULE

SYMBOL	DESCRIPTION	LAMP SOURCE	MOUNTING	OPTICS	MANUFACTURER & SERIES #
	LIGHTING UNIT TYPE 1 COBRA HEAD LUMINAIRE ON ROUND ALUMINUM POLE W/ 8' ARM	400W HPS	40' POLE ON CONCRETE BASE	TYPE III W/ DROP LENS	VALMONT INDUSTRIES – POLE: 370845806T4 ARM: 1MA0832C45 AMERICAN ELECTRIC LIGHTING – LUMINAIRE: 153–40S–CA–MT2–R3–DP

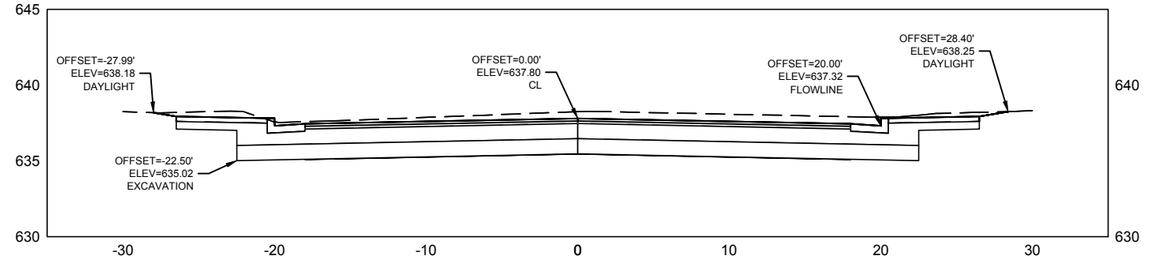


SUPERIOR	CITY OF SUPERIOR, WI – PUBLIC WORKS	BANKS AVENUE RECONSTRUCTION PHASE II – PW1101	ELECTRICAL	MAY 2011 AS–BUILT DWG	DRAWN SLG / APPROV'D JSG

1+01



3+00



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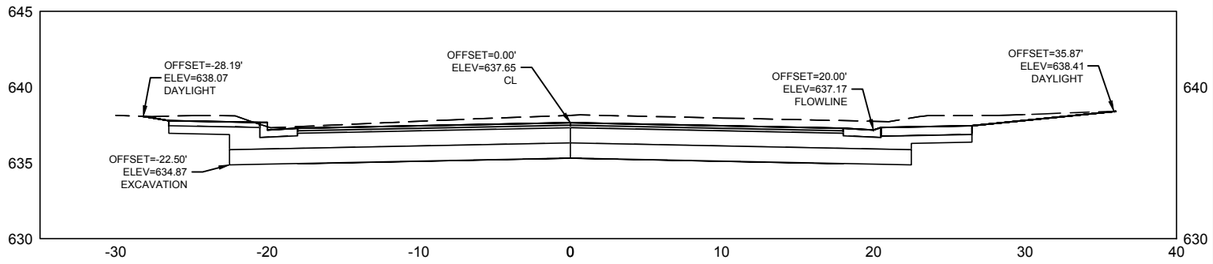

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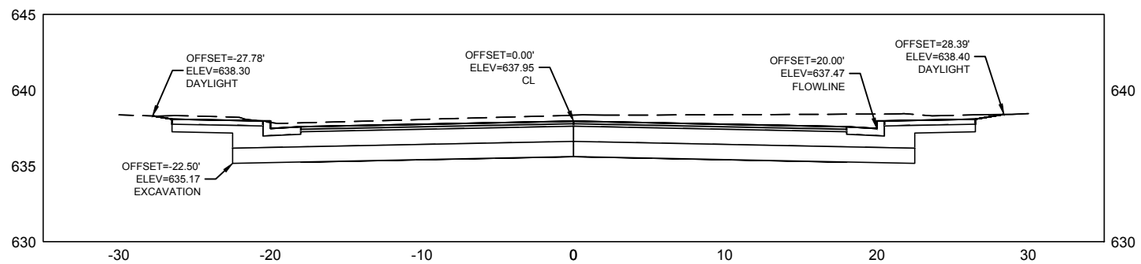

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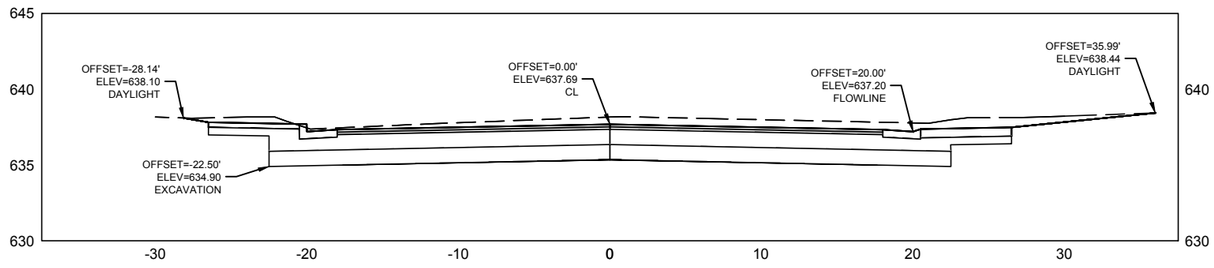
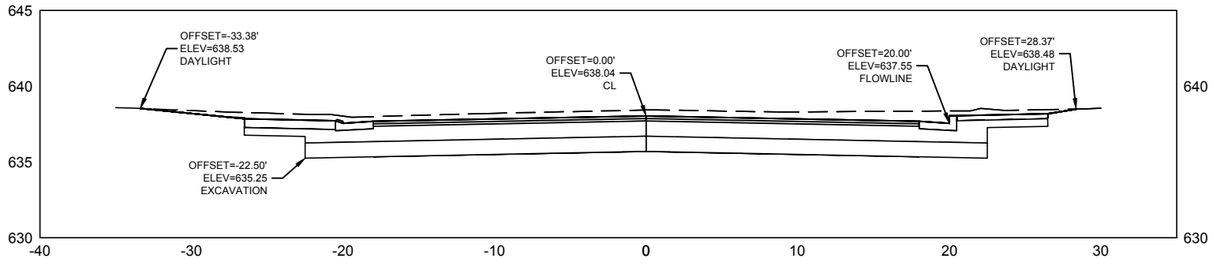
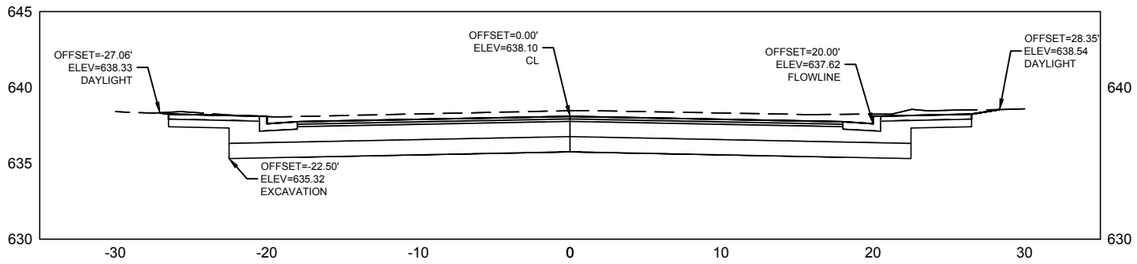


3+79



SUPERIOR	CITY OF SUPERIOR, WI – PUBLIC WORKS	BANKS AVENUE RECONSTRUCTION PHASE II – PW1101	CROSS SECTIONS – BANKS AVENUE	MAY 2011 AS–BUILT DWG	DRAWN SLG / APPROV'D JSG	SHEET 26 OF 62

4+00



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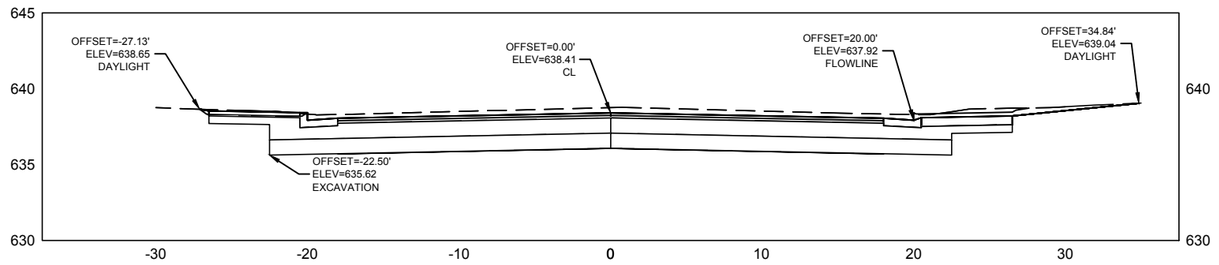

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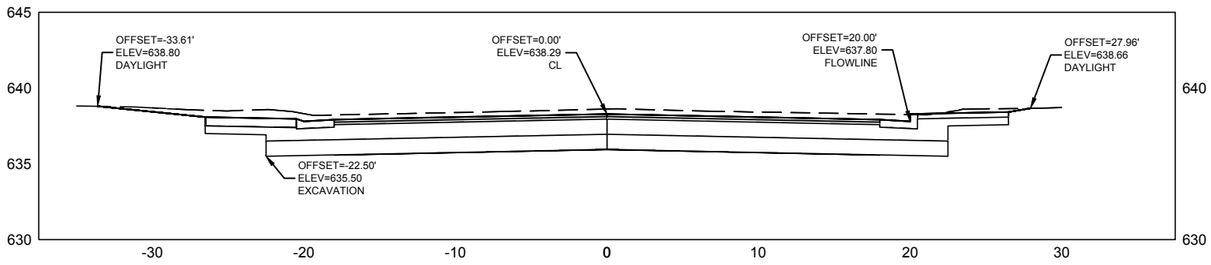
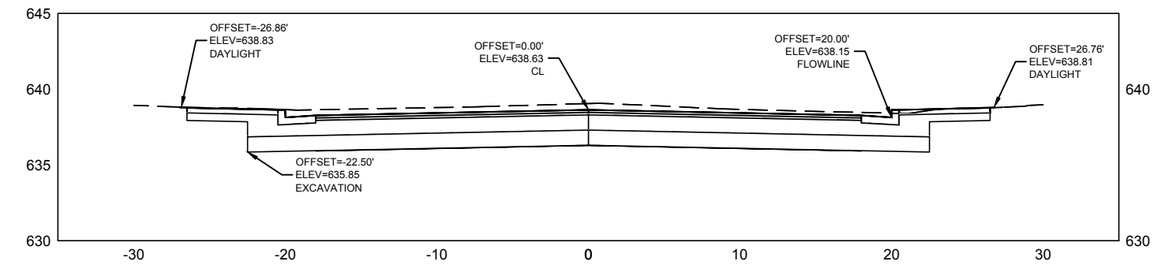


5+00



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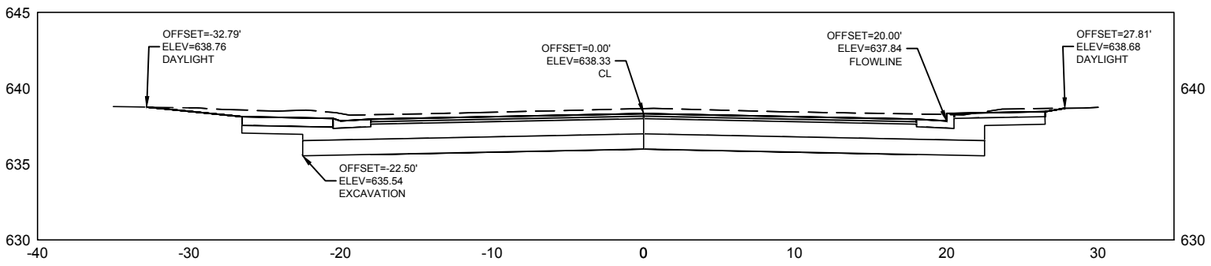

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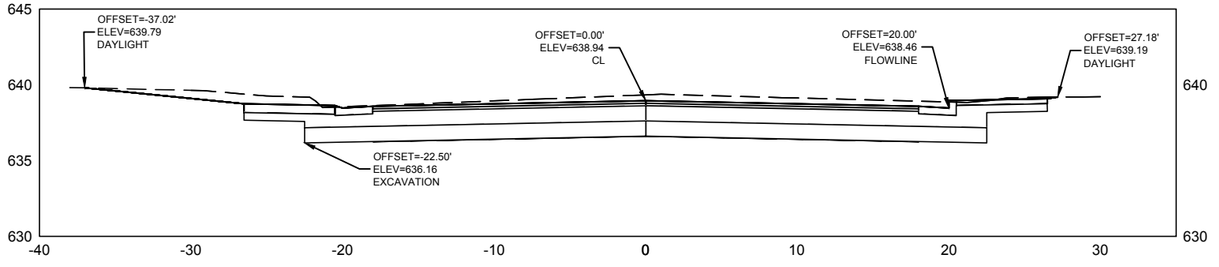

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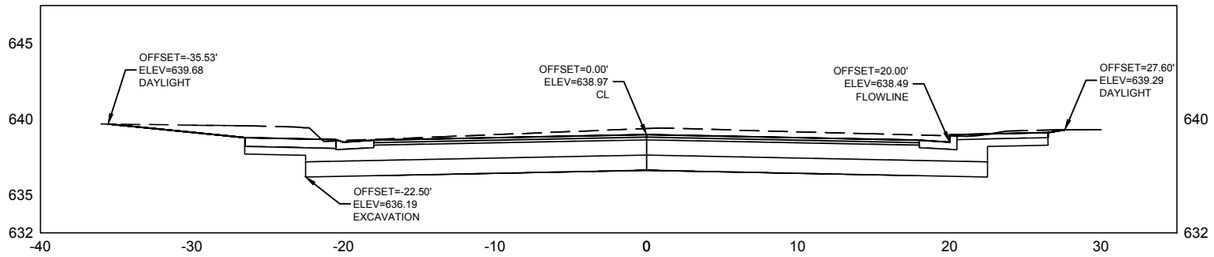

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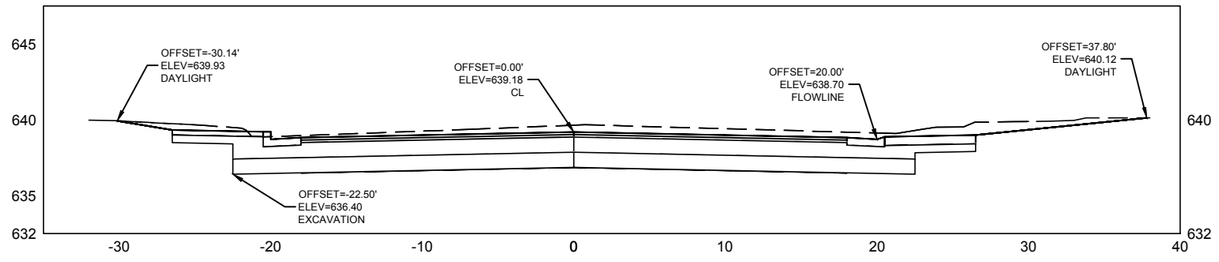

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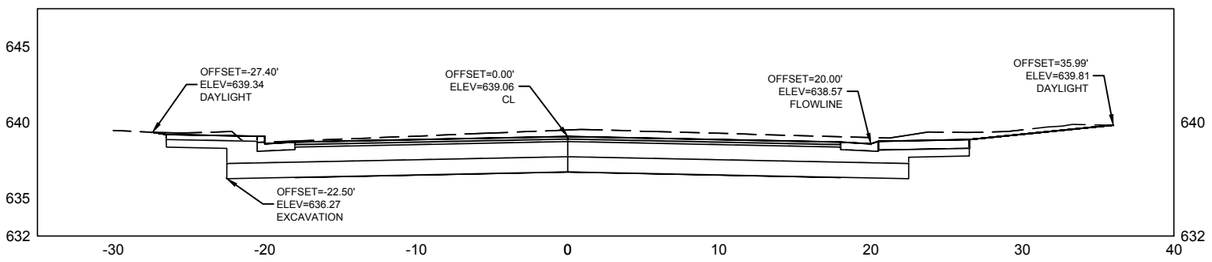

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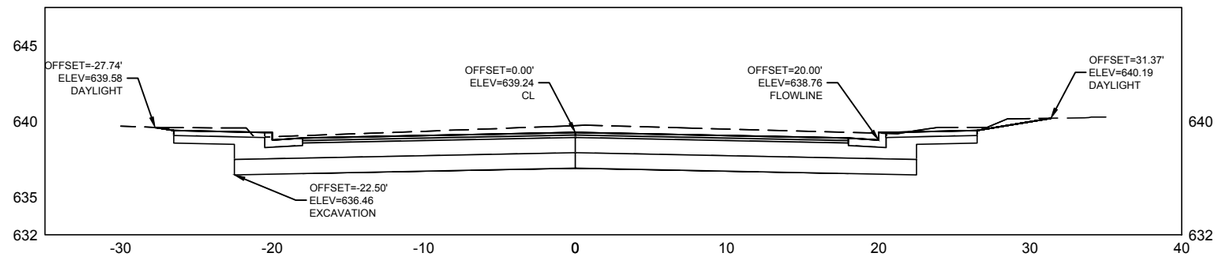

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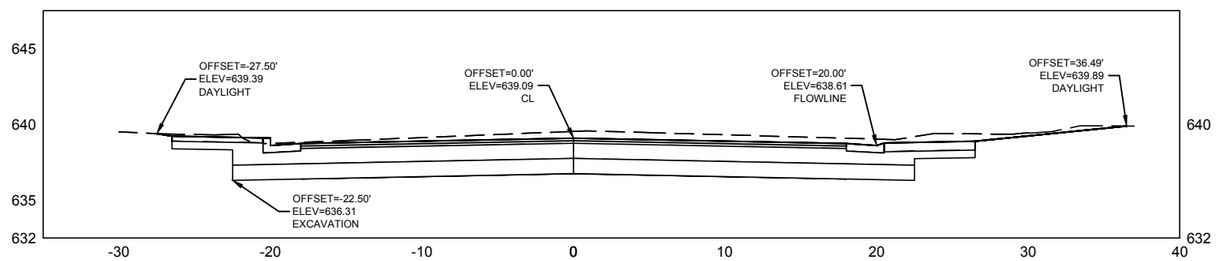

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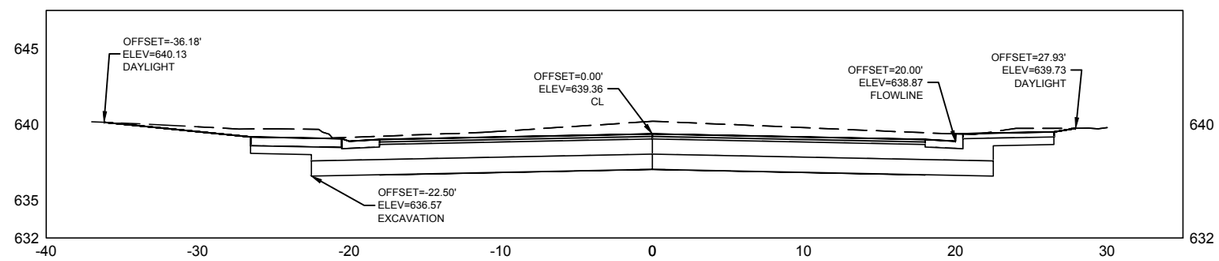


SUPERIOR PRIDE

CITY OF SUPERIOR, WI – PUBLIC WORKS

BANKS AVENUE RECONSTRUCTION PHASE II – PW1101

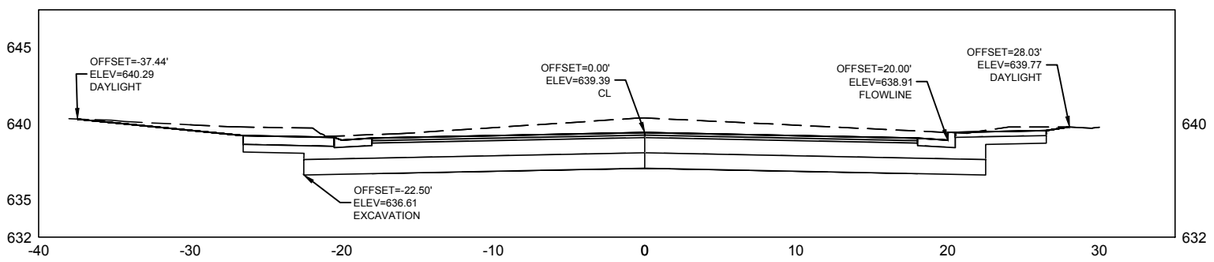
CROSS SECTIONS – BANKS AVENUE

MAY 2011
AS–BUILT DWG

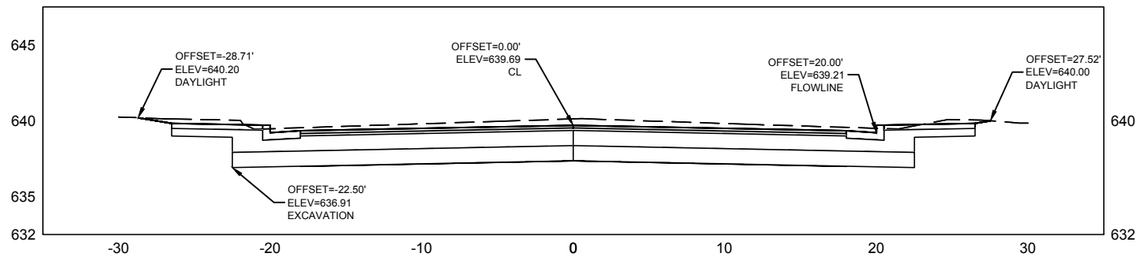
DRAWN	SLG
APPROV'D	JSG

SHEET 28 OF 62

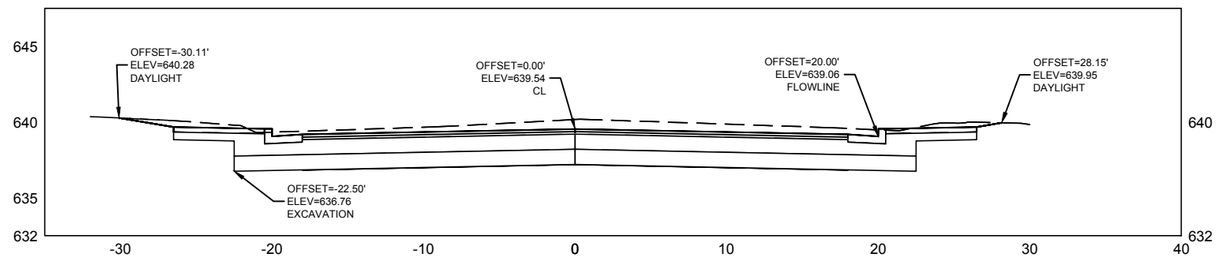
8+00



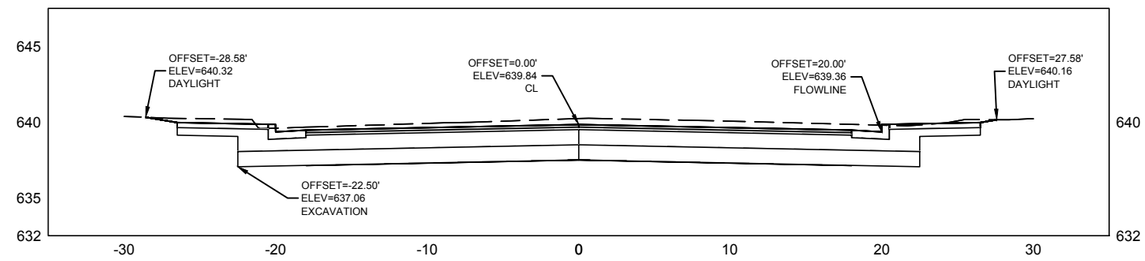
9+00



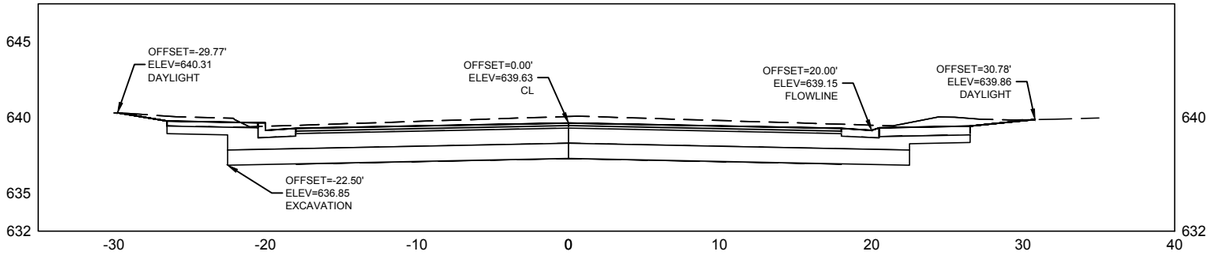
8+50



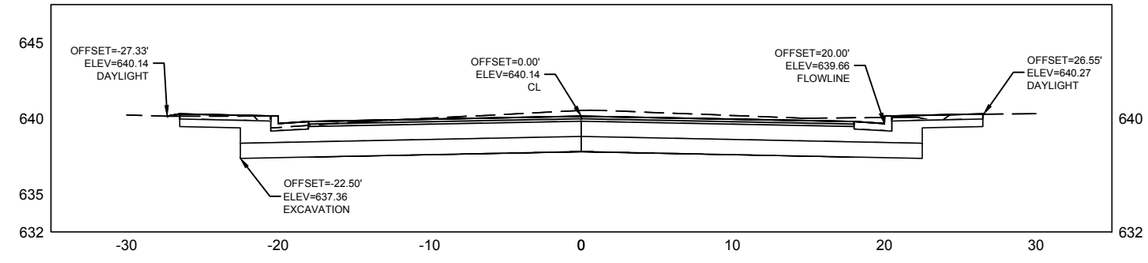
9+50



8+81

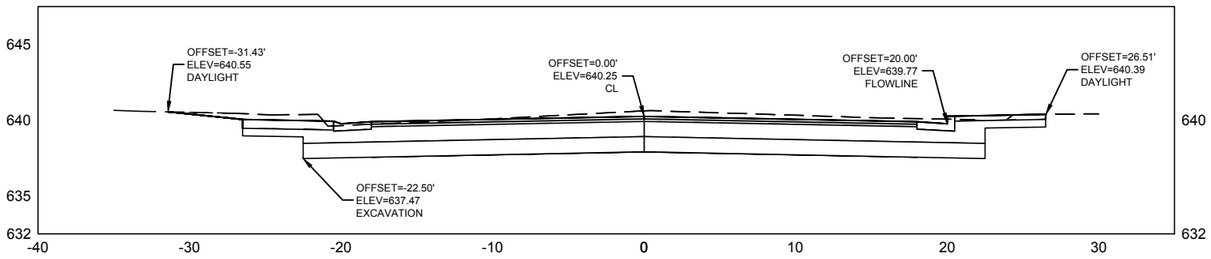


10+50

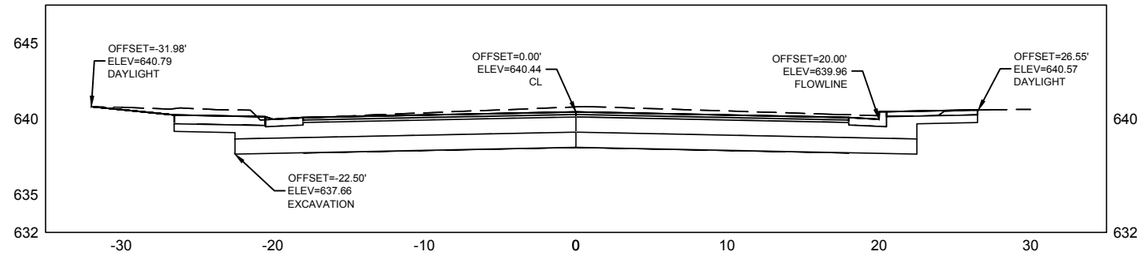


SUPERIOR	CITY OF SUPERIOR, WI – PUBLIC WORKS	BANKS AVENUE RECONSTRUCTION PHASE II – PW1101	CROSS SECTIONS – BANKS AVENUE	MAY 2011 AS-BUILT DWG	DRAWN SLG / APPROV'D JSG	SHEET 29 OF 62

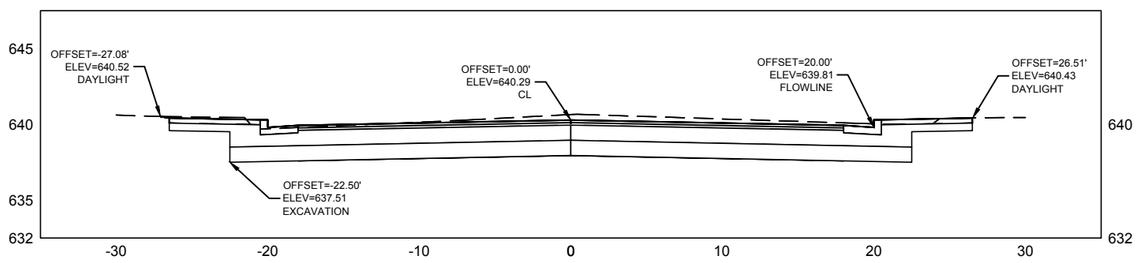
10+87



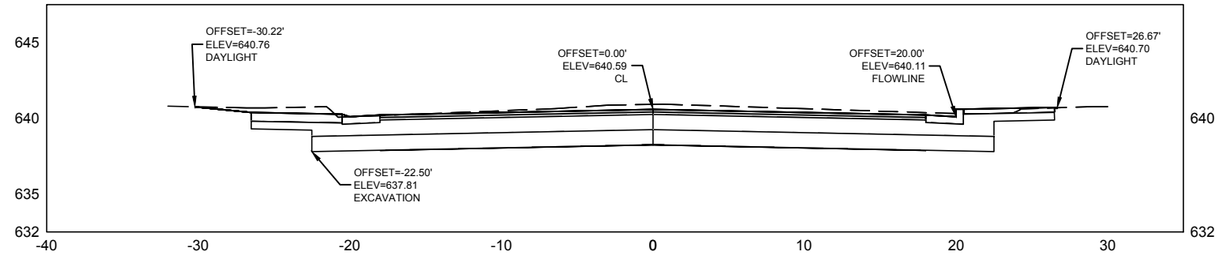
11+50



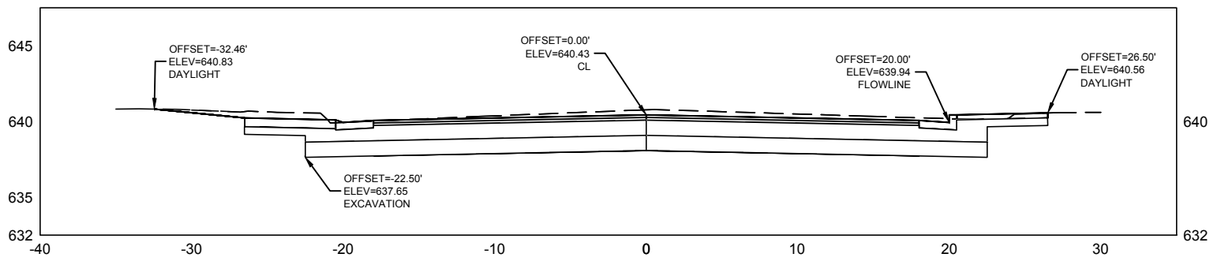
11+00



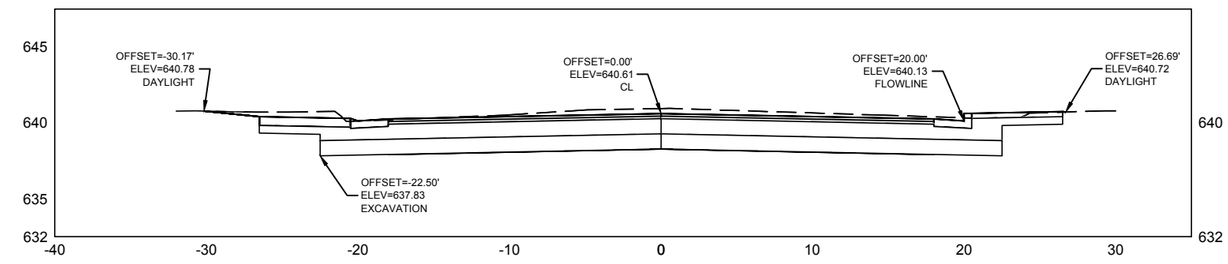
12+00



11+46

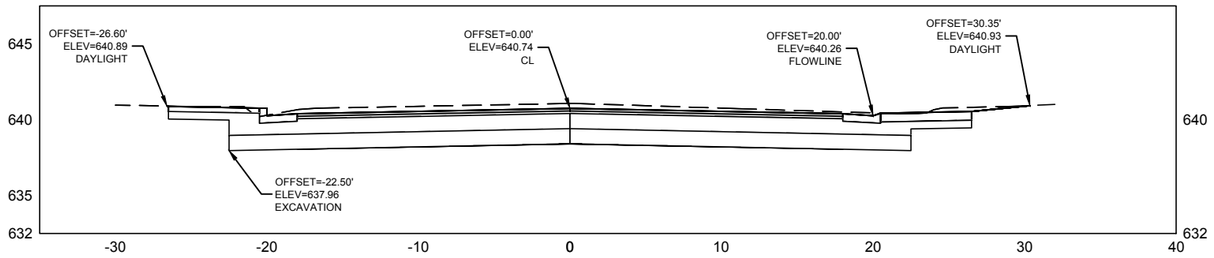


12+07

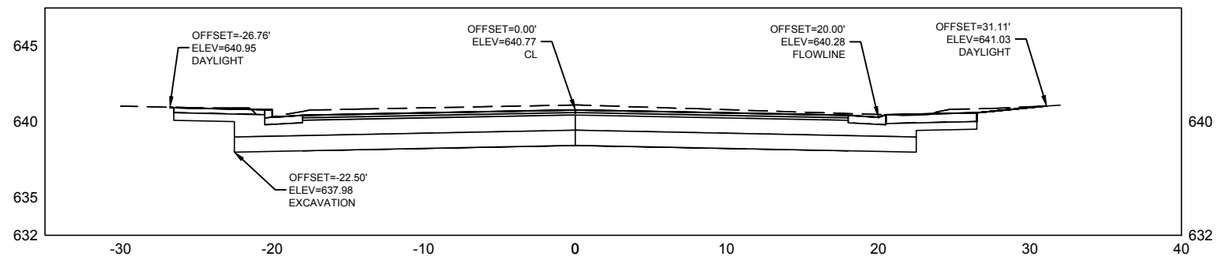


SUPERIOR	CITY OF SUPERIOR, WI – PUBLIC WORKS	BANKS AVENUE RECONSTRUCTION PHASE II – PW1101	CROSS SECTIONS – BANKS AVENUE	MAY 2011 AS–BUILT DWG	DRAWN SLG / APPROV'D JSG	SHEET 30 OF 62

12+50

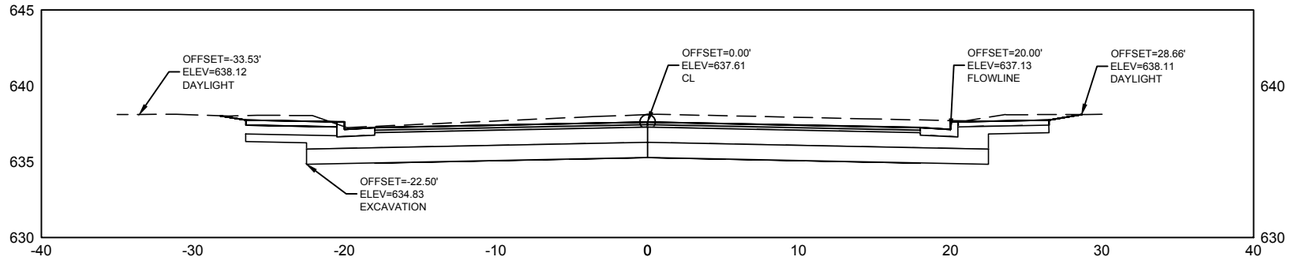


12+59

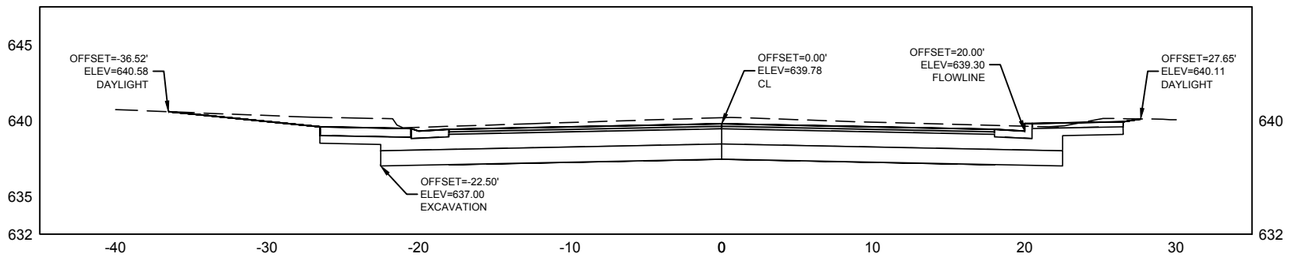


SUPERIOR	CITY OF SUPERIOR, WI – PUBLIC WORKS	BANKS AVENUE RECONSTRUCTION PHASE II – PW1101	CROSS SECTIONS – BANKS AVENUE	MAY 2011 AS-BUILT DWG	DRAWN SLG APPROV'D JSG	SHEET 31 OF 62

2+36

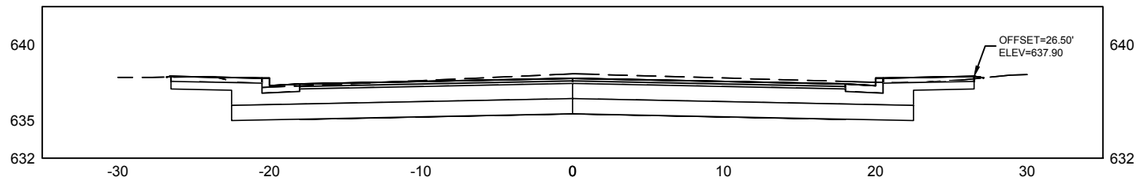


9+30

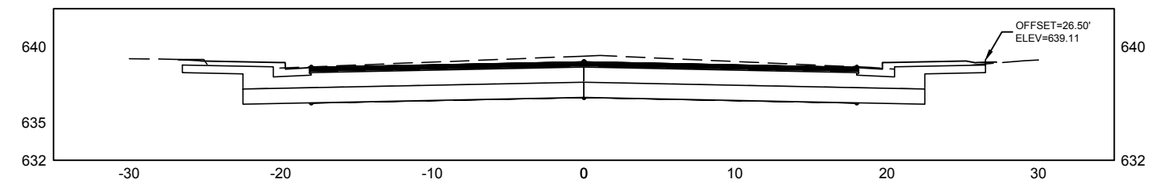


SUPERIOR	CITY OF SUPERIOR, WI – PUBLIC WORKS	BANKS AVENUE RECONSTRUCTION PHASE II – PW1101	CROSS SECTIONS – BANKS AVENUE	MAY 2011 AS–BUILT DWG	DRAWN EJP / APPROV'D JSG	SHEET 32 OF 62

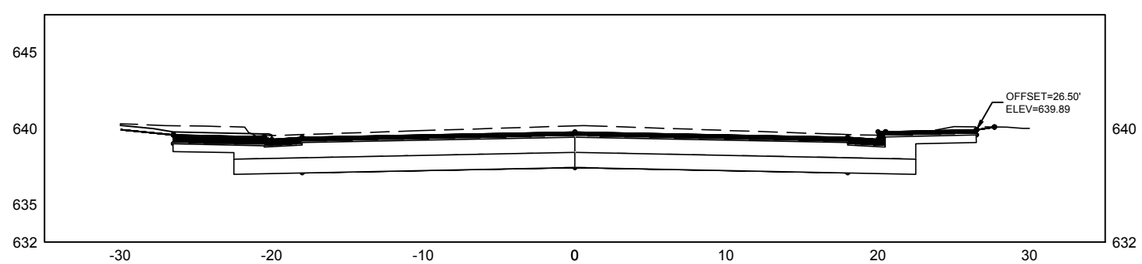
2+00



6+20.50

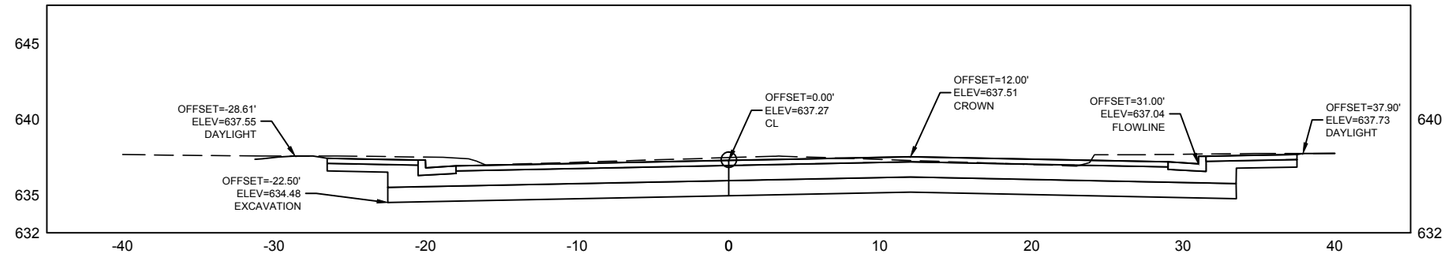


9+21.40

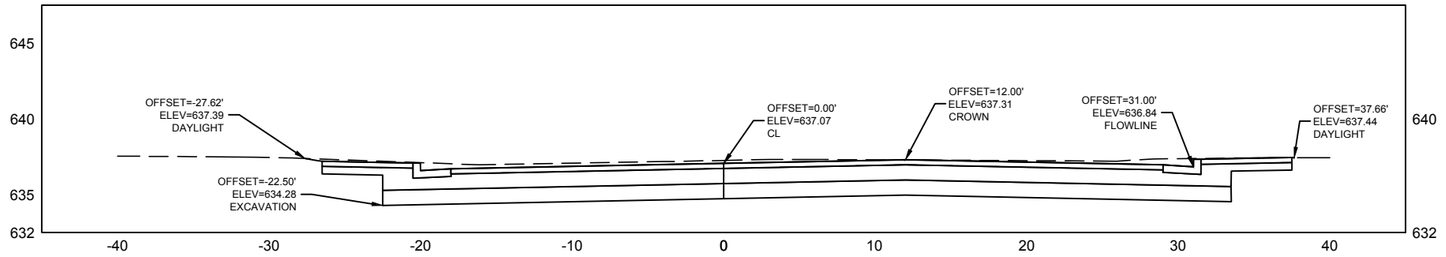


SUPERIOR	CITY OF SUPERIOR, WI – PUBLIC WORKS	BANKS AVENUE RECONSTRUCTION PHASE II – PW1101	CROSS SECTIONS – BANKS AVENUE	MAY 2011 AS–BUILT DWG	DRAWN / APPROV'D	EJP / JSG	SHEET 33 OF 62

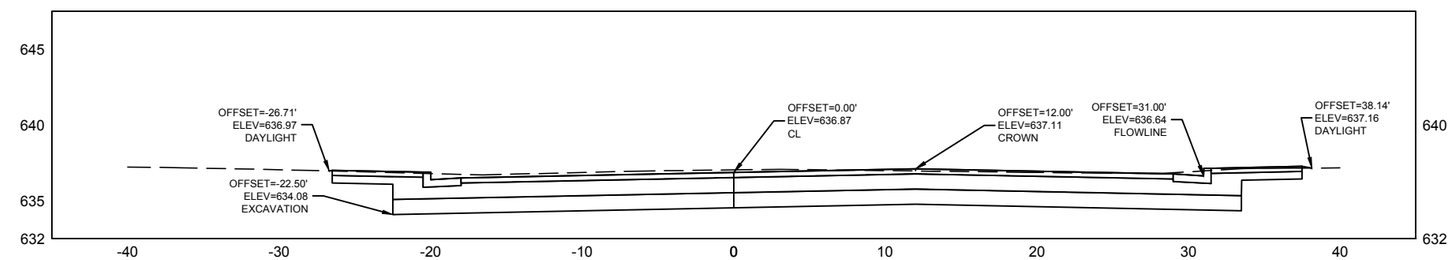
21+50



22+00

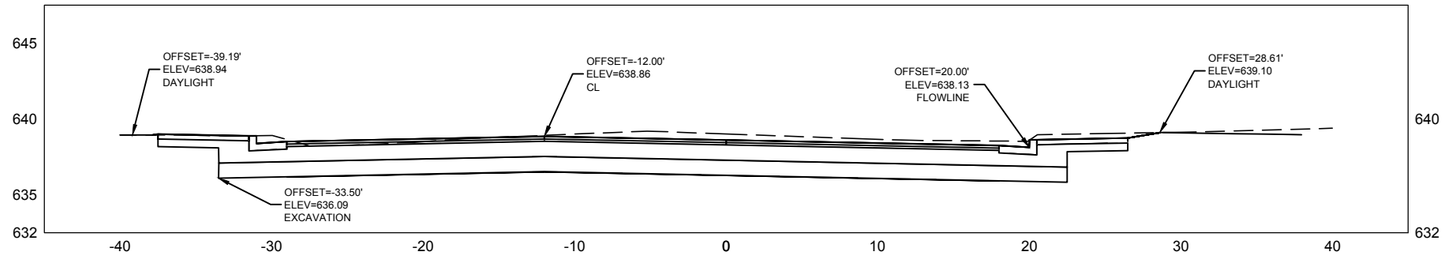


22+50

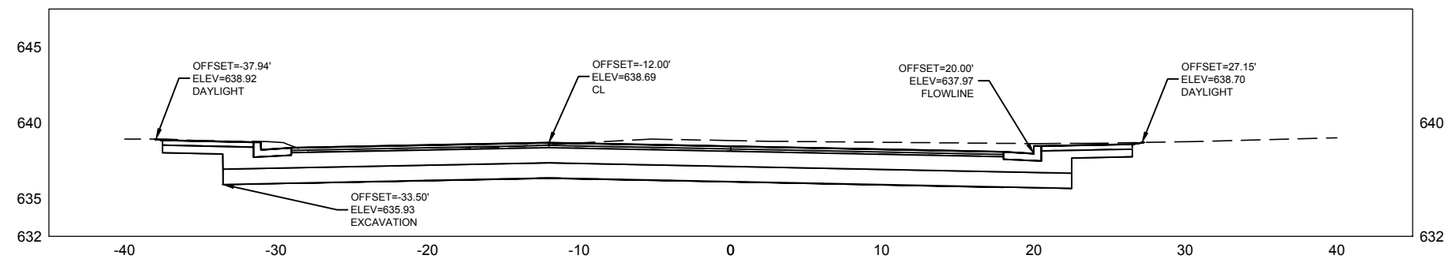


SUPERIOR	CITY OF SUPERIOR, WI – PUBLIC WORKS	BANKS AVENUE RECONSTRUCTION PHASE II – PW1101	CROSS SECTIONS – 12TH STREET	MAY 2011 AS–BUILT DWG	DRAWN SLG APPROV'D JSG	SHEET 34 OF 62

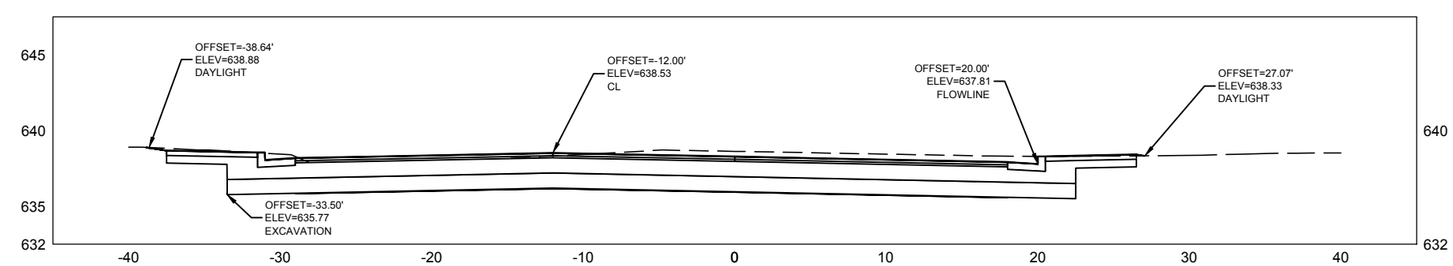
31+50



32+00

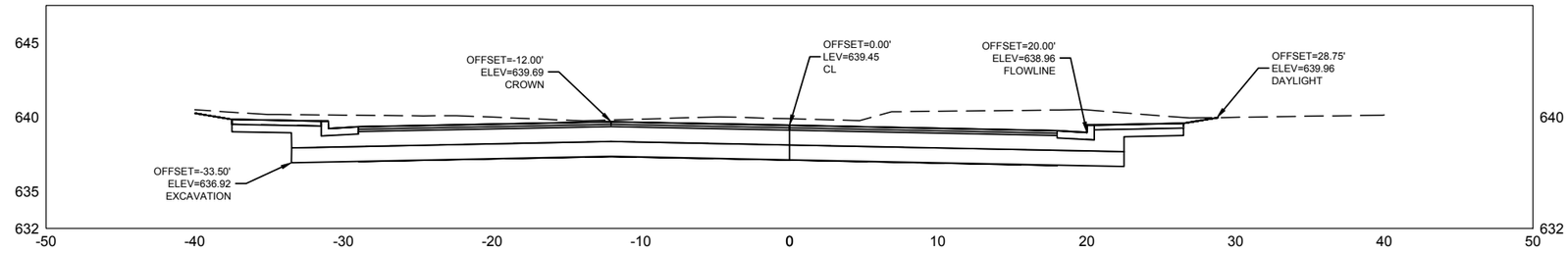


32+50

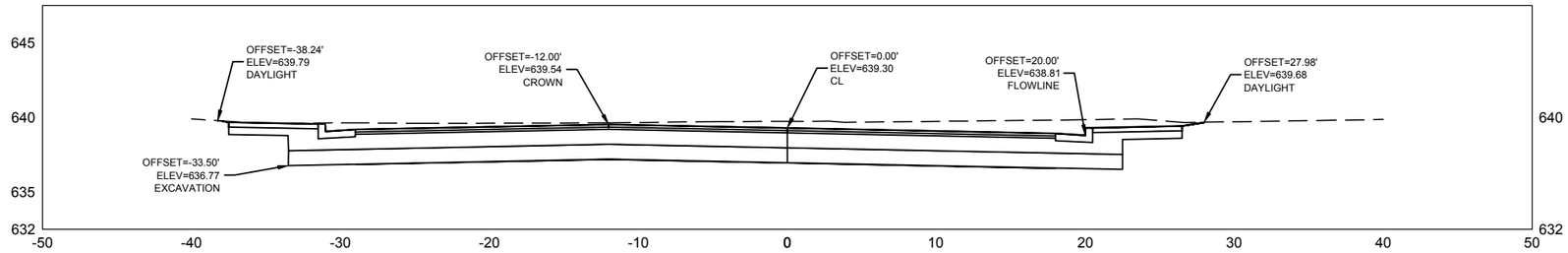


SUPERIOR	CITY OF SUPERIOR, WI – PUBLIC WORKS	BANKS AVENUE RECONSTRUCTION PHASE II – PW1101	CROSS SECTIONS – 13TH STREET	MAY 2011 AS-BUILT DWG	DRAWN SLG / APPROV'D JSG	SHEET 35 OF 62

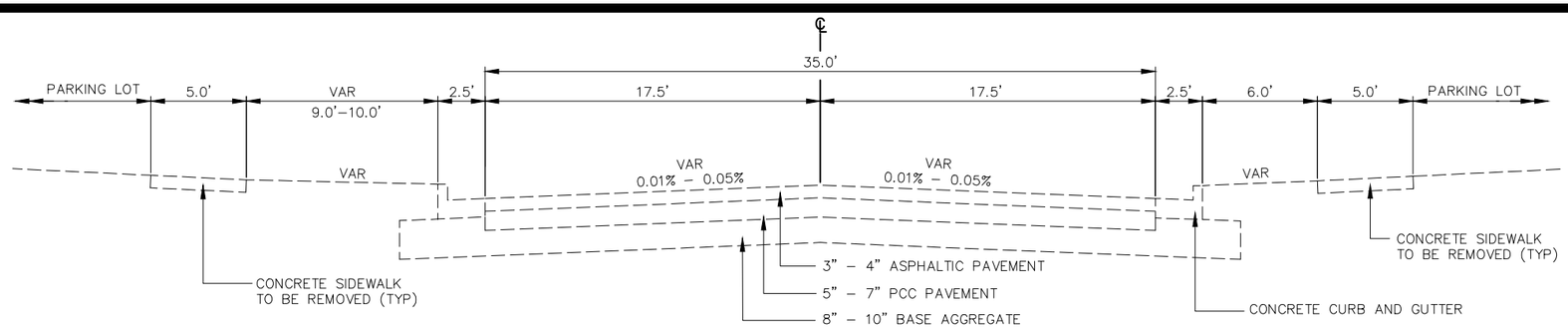
41+50



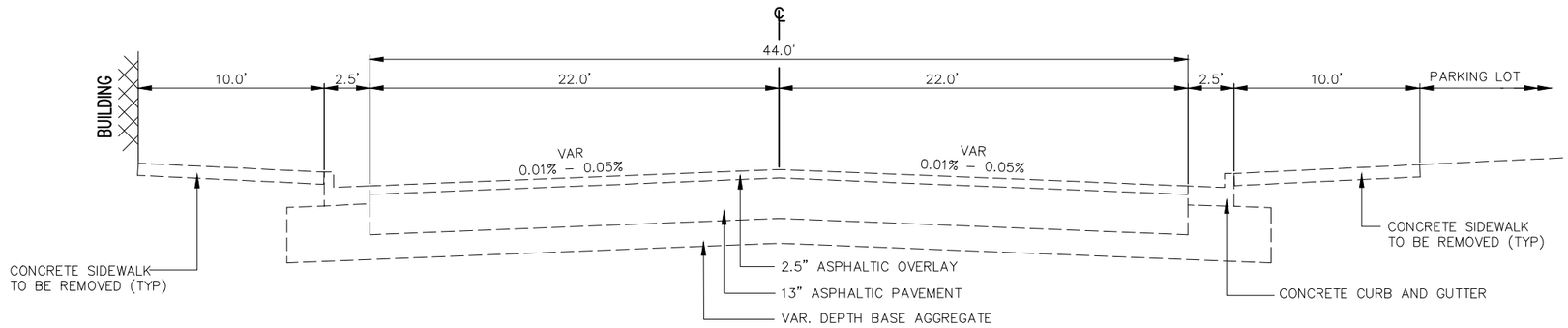
42+00



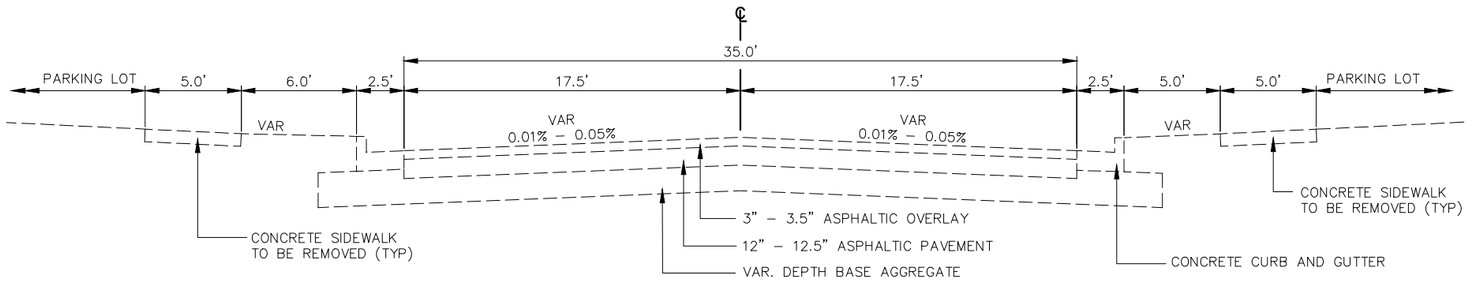
SUPERIOR	CITY OF SUPERIOR, WI – PUBLIC WORKS	BANKS AVENUE RECONSTRUCTION PHASE II – PW1101	CROSS SECTIONS – 14TH STREET	MAY 2011 AS–BUILT DWG	DRAWN SLG APPROV'D JSG	SHEET 36 OF 62



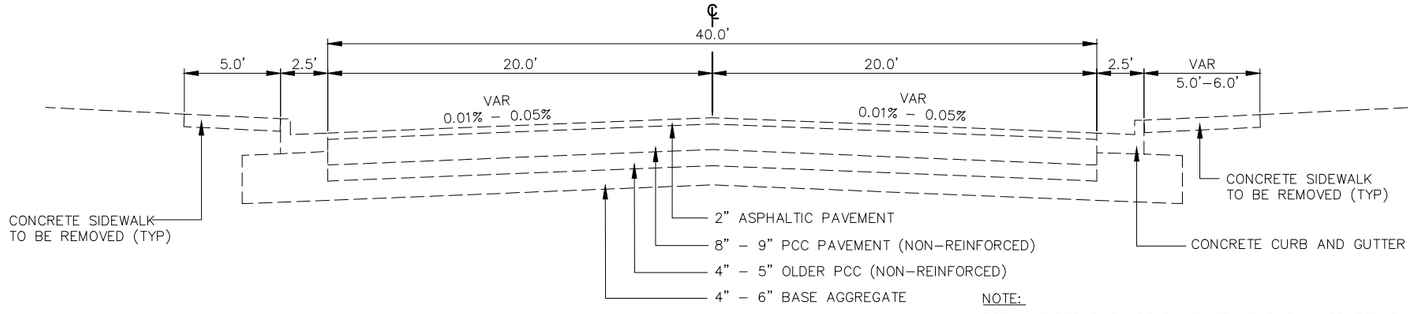
TYPICAL EXISTING SECTION
12TH STREET



TYPICAL EXISTING SECTION
13TH STREET



TYPICAL EXISTING SECTION
14TH STREET



NO SCALE

TYPICAL EXISTING SECTION
BANKS AVENUE

NOTE:
PCC & OLDER PCC ARE COMBINED AS ONE LAYER FOR PAYMENT

SUPERIOR	CITY OF SUPERIOR, WI – PUBLIC WORKS	BANKS AVENUE RECONSTRUCTION PHASE II – PW1101	EXISTING TYPICAL SECTIONS	MAY 2011 AS–BUILT DWG	DRAWN SLG / APPROV'D JSG	SHEET 37 OF 62

NOTES:

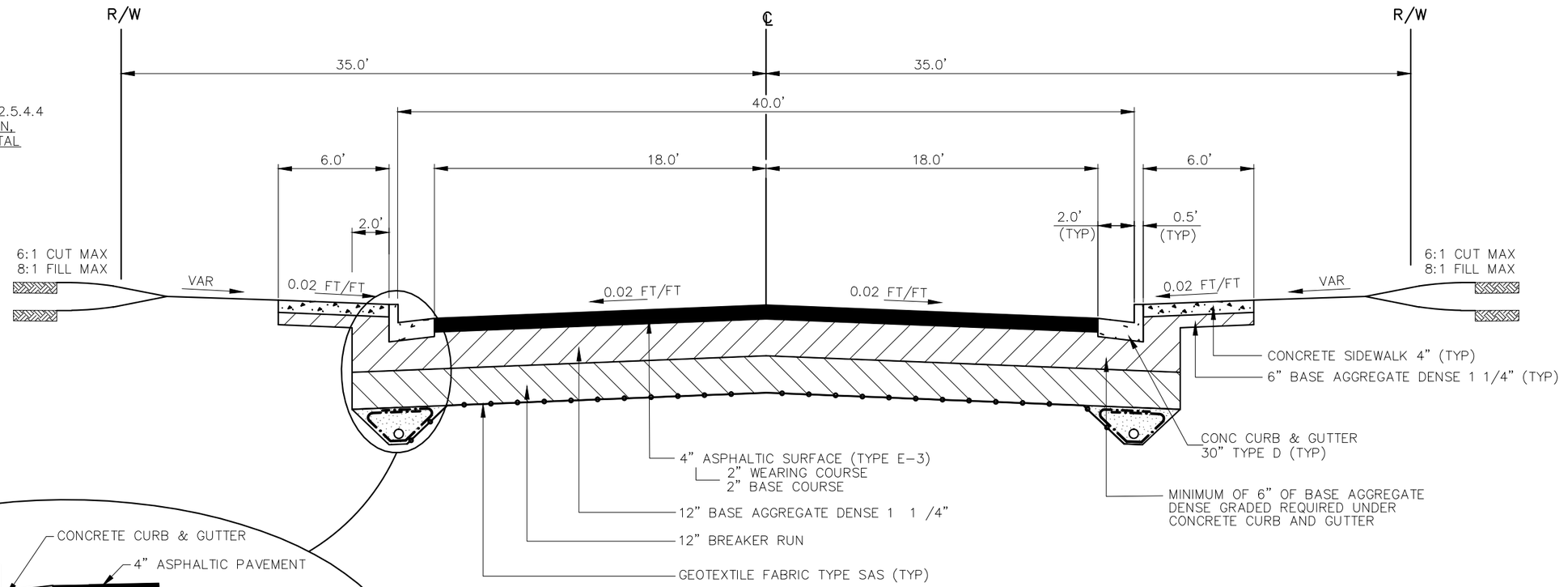
(1) OVERLAP FABRIC AT THE SUBGRADE LAYER. 6–INCH MIN OVERLAP

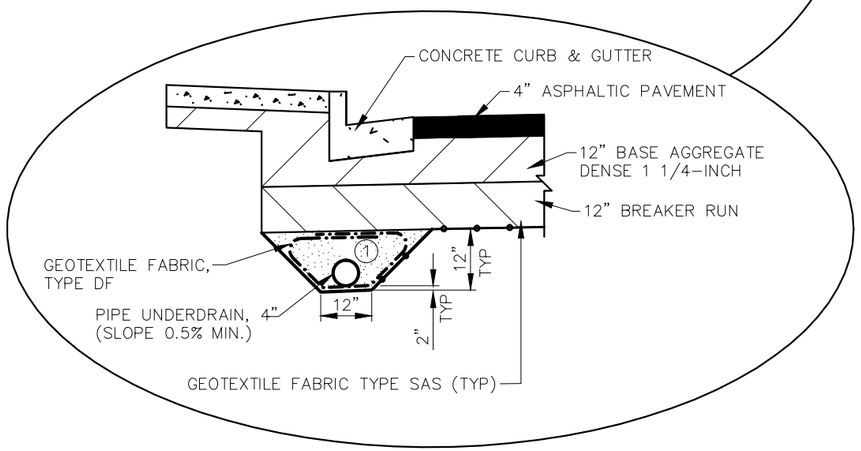
PIPE UNDERDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF THE ROADWAY.

IF THERE IS A CONFLICT WITH THE STORM SEWER, THE PIPE UNDERDRAIN SHALL BE LAID PARALLEL TO THE STORM SEWER TOWARDS THE CENTER OF THE ROAD.

TRENCH BACKFILL WILL BE BASE AGGREGATE OPEN GRADED, OR IN LIEU OF USE WELL GRADED COARSE AGGREGATE SIZE NO 1 OR 2 AS PER SUBSECTION 501.2.5.4.4 OF THE STANDARD SPECIFICATIONS. TRENCH EXCAVATION, DF FABRIC AND BACKFILL MATERIAL SHALL BE INCIDENTAL TO PLACING THE PIPE UNDERDRAIN.

UNDERDRAIN SHALL BE PLACED AFTER THE PLACEMENT OF BREAKER RUN, AND PRIOR TO THE PLACEMENT OF BASE AGGREGATE DENSE GRADED.



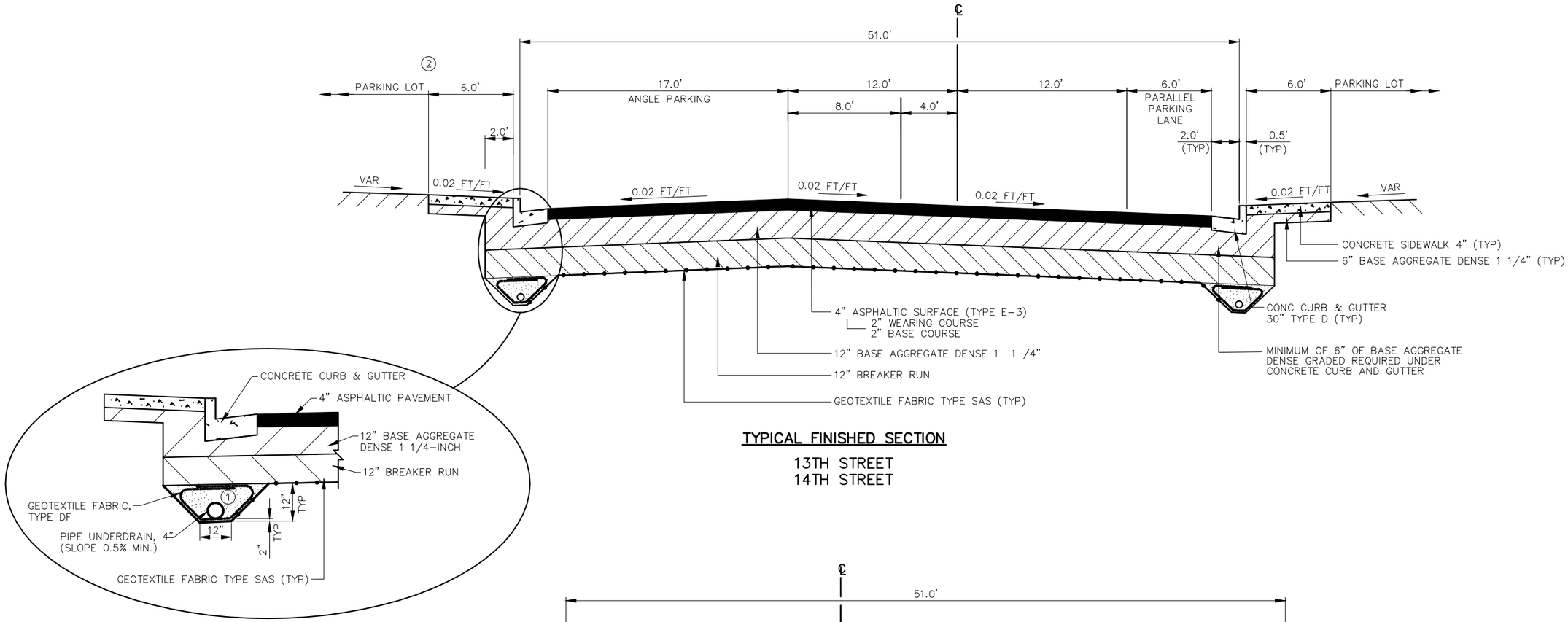


TYPICAL FINISHED SECTION

BANKS AVENUE

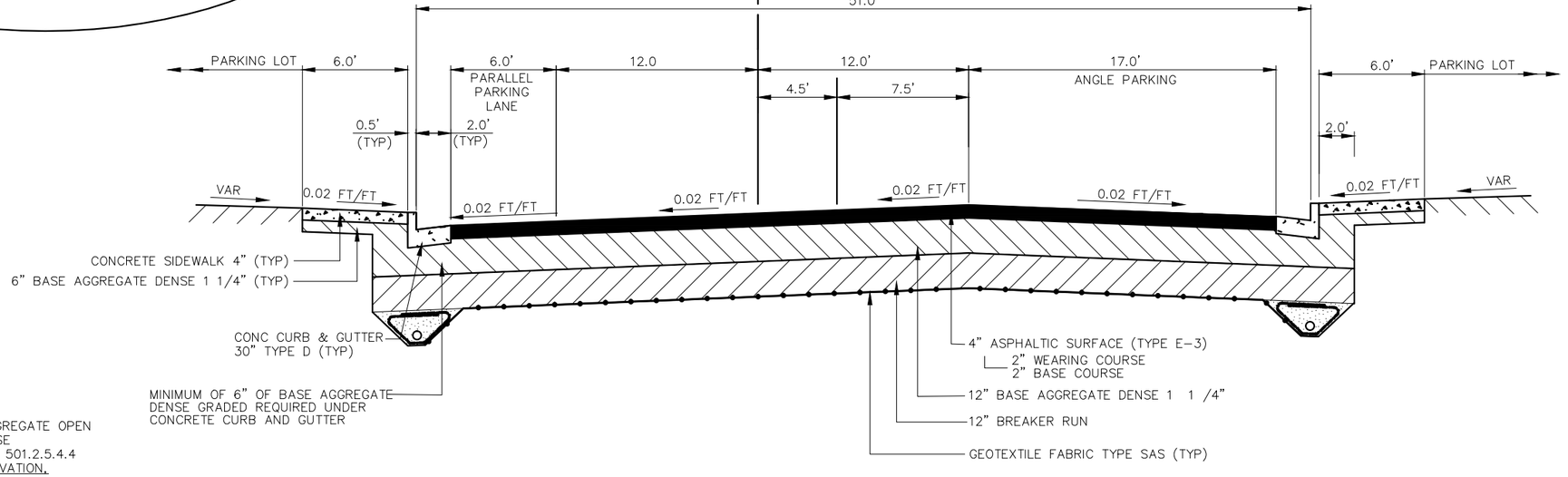
NO SCALE

SUPERIOR	CITY OF SUPERIOR, WI – PUBLIC WORKS	BANKS AVENUE RECONSTRUCTION PHASE II – PW1101	BANKS AVENUE TYPICAL SECTION	MAY 2011 AS–BUILT DWG	DRAWN SLG / APPROV'D JSG	SHEET 38 OF 62



TYPICAL FINISHED SECTION

13TH STREET
14TH STREET



TYPICAL FINISHED SECTION

12TH STREET

NOTES:

① OVERLAP FABRIC AT THE SUBGRADE LAYER. 6-INCH MIN OVERLAP

PIPE UNDERDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF THE ROADWAY.

IF THERE IS A CONFLICT WITH THE STORM SEWER, THE PIPE UNDERDRAIN SHALL BE LAID PARALLEL TO THE STORM SEWER TOWARDS THE CENTER OF THE ROAD.

UNDERDRAIN TRENCH BACKFILL WILL BE BASE AGGREGATE OPEN GRADED, OR IN LIEU OF USE WELL GRADED COARSE AGGREGATE SIZE NO 1 OR 2 AS PER SUBSECTION 501.2.5.4.4 OF THE STANDARD SPECIFICATIONS. TRENCH EXCAVATION, DF FABRIC AND BACKFILL MATERIAL SHALL BE INCIDENTAL TO PLACING THE PIPE UNDERDRAIN.

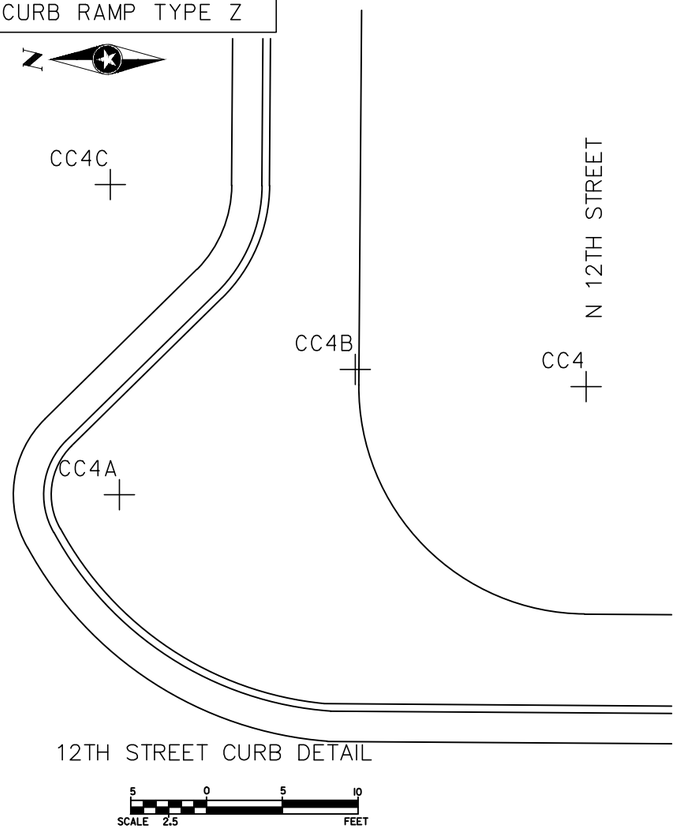
UNDERDRAIN SHALL BE PLACED AFTER THE PLACEMENT OF BREAKER RUN, AND PRIOR TO THE PLACEMENT OF BASE AGGREGATE DENSE GRADED.

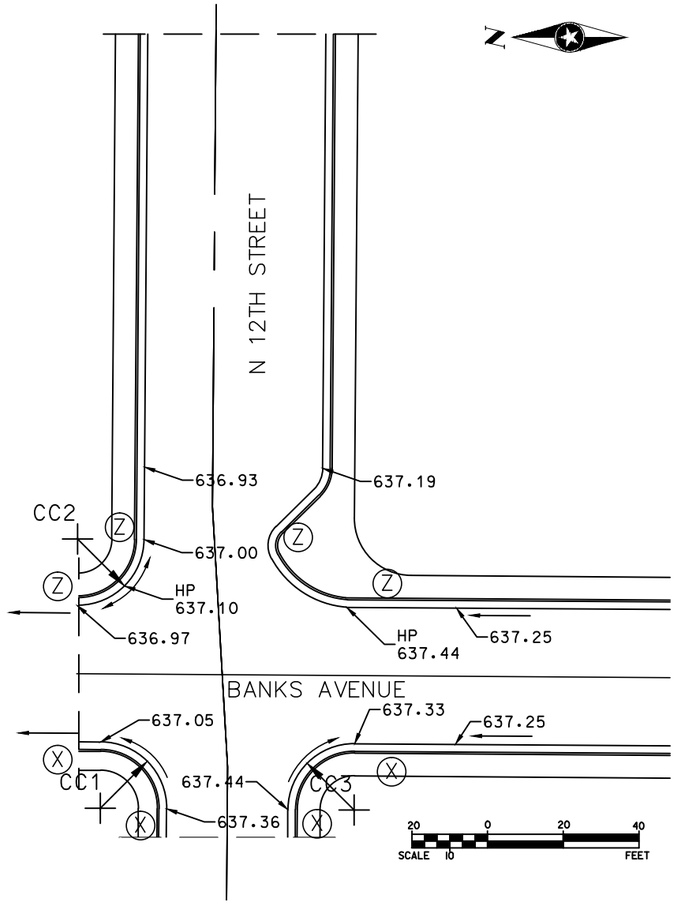
② 7.0' CONCRETE SIDEWALK ON 13TH STREET, MATCH INTO ADJACENT BUILDING.

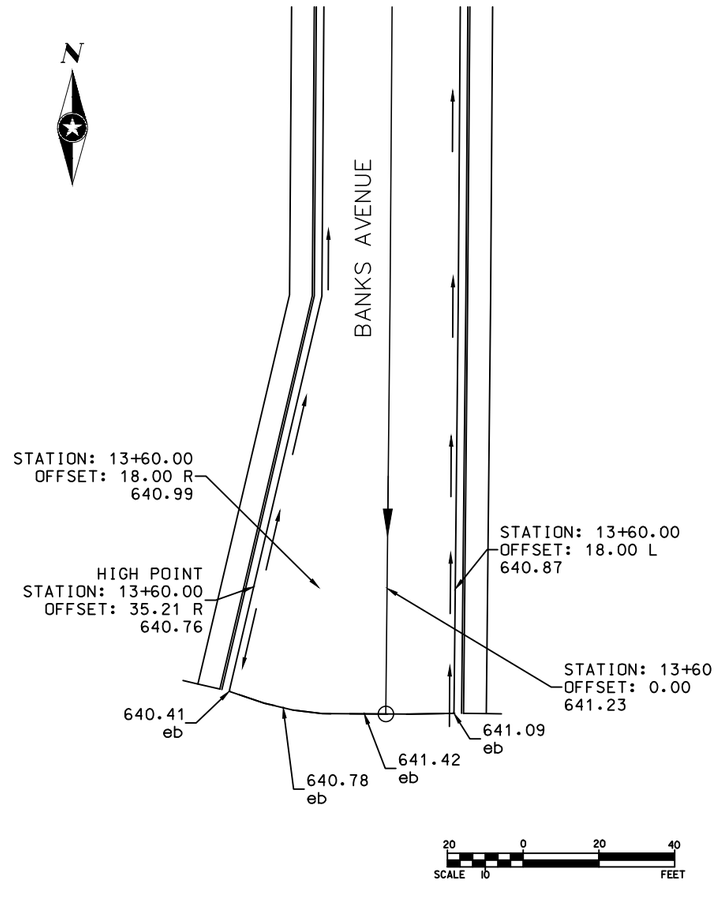
NO SCALE

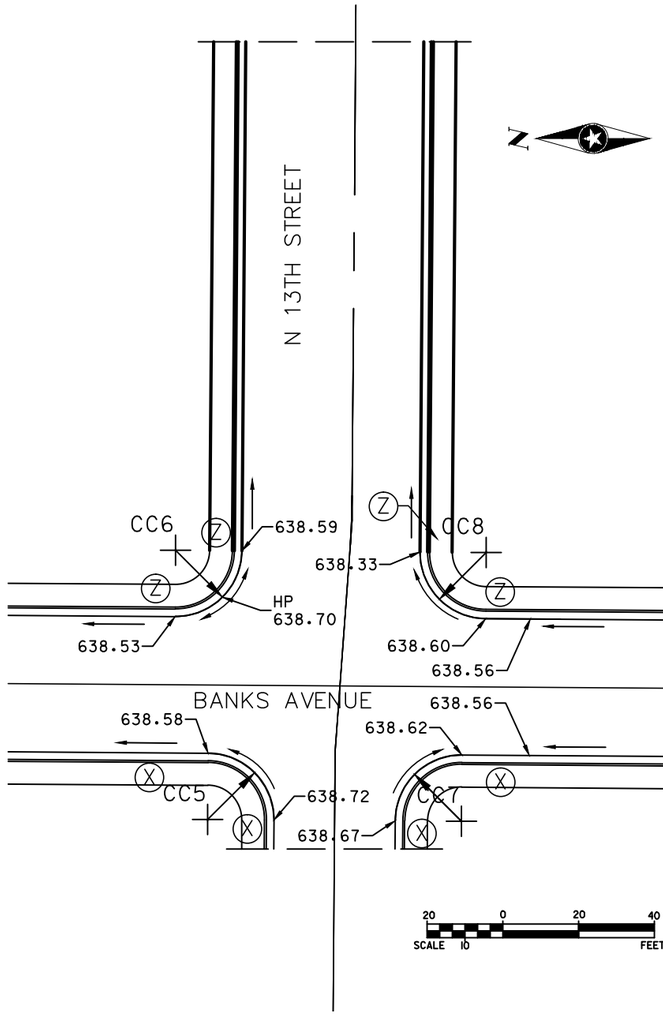
RADIUS POINT TABLE					
POINT	STATION	OFFSET	RADIUS	Y - COORDINATE	X - COORDINATE
CC1	1+30.91 BANKS AVE	35.5' RT	15.0' R	306784.1639	146617.2128
CC2	1+24.51 BANKS AVE	35.5' LF	15.0' R	306790.1226	146688.2557
CC3	1+97.91 BANKS AVE	35.5' RT	15.0' R	306717.1654	146616.7502
CC4	2+12.47 BANKS AVE	41.5' LF	15.0' R	306702.0789	146693.6478
CC4A	1+81.72 BANKS AVE	34.17 LF	7.0' R	306732.8726	146686.5271
CC4B	1+97.22 BANKS AVE	42.53 LF	24.6'R	306717.3128	146694.7800
CC4C	1+80.97 BANKS AVE	54.62 LF	8.0' R	306733.4782	146706.9841
CC5	5+51.05 BANKS AVE	35.5' RT	15.0' R	306364.0338	146614.3117
CC6	5+42.10 BANKS AVE	35.5' LF	15.0' R	306372.4925	146685.3718
CC7	6+18.05 BANKS AVE	35.5' RT	15.0' R	306297.0354	146613.8491
CC8	6+24.10 BANKS AVE	35.5' LF	15.0' R	306290.4944	146684.8056
CC9	9+70.94 BANKS AVE	35.5' RT	15.0' R	305944.1562	146611.4124
CC10	9+62.0 BANKS AVE	35.5' LF	15.0' R	305952.6060	146680.6389
CC11	10+37.94 BANKS AVE	35.5' RT	15.0' R	305877.1578	146610.9497
CC12	10+44.0 BANKS AVE	35.5' LF	15.0' R	305870.6079	146681.9062

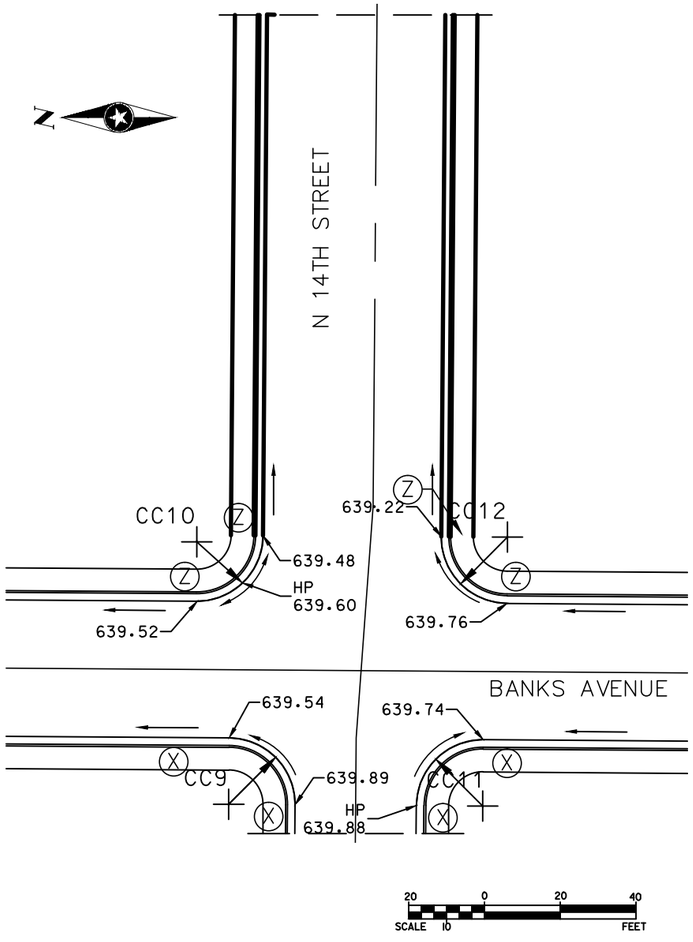
(X) CURB RAMP TYPE X
(Z) CURB RAMP TYPE Z





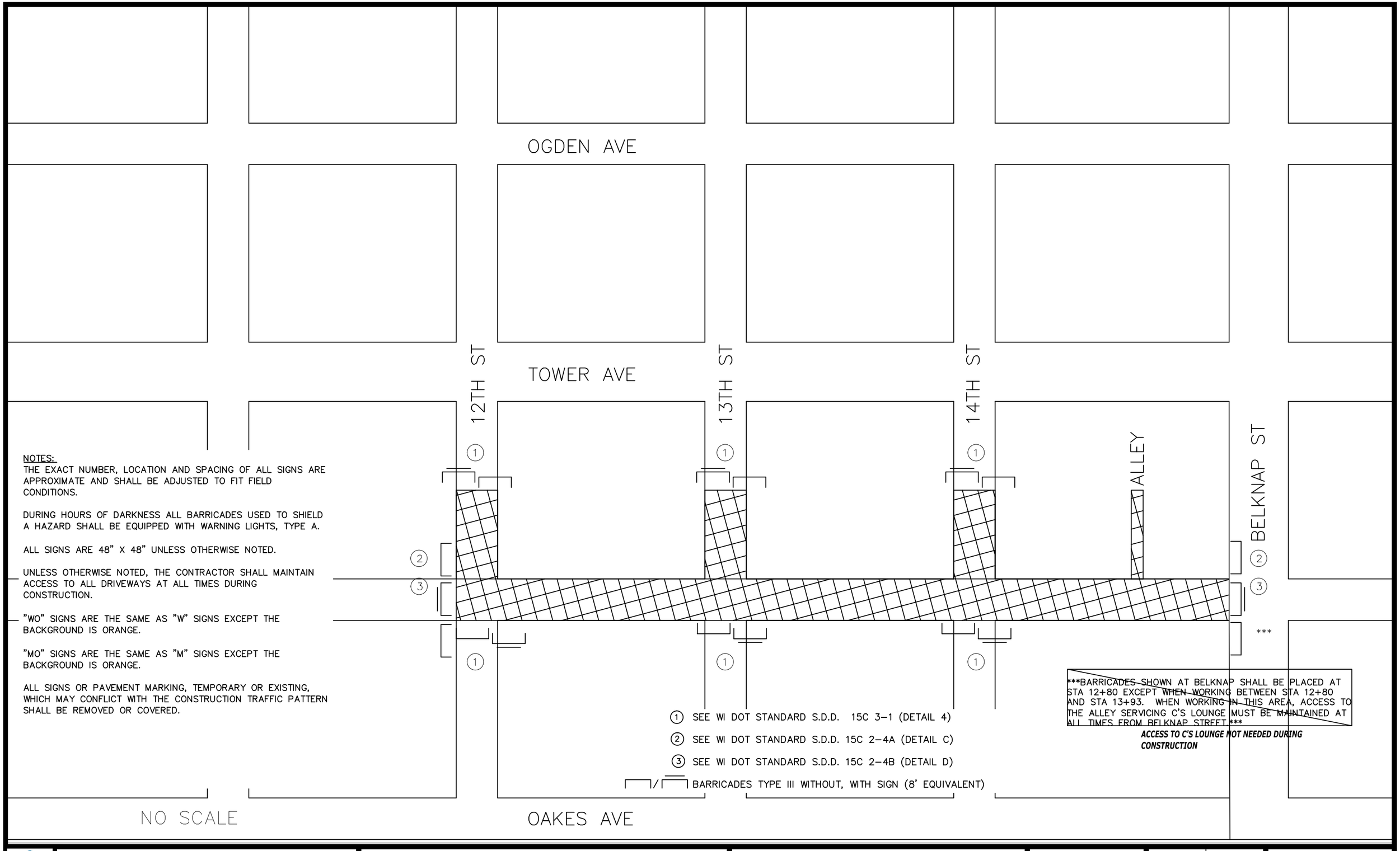






RADIUS POINT TABLE					
POINT	STATION	OFFSET	RADIUS	Y - COORDINATE	X - COORDINATE
CC1	1+30.91 BANKS AVE	35.5' RT	15.0' R	306784.1639	146617.2128
CC2	1+24.51 BANKS AVE	35.5' LF	15.0' R	306790.1226	146688.2557
CC3	1+97.91 BANKS AVE	35.5' RT	15.0' R	306717.1654	146616.7502
CC4	2+12.47 BANKS AVE	41.5' LF	15.0' R	306702.0789	146693.6478
CC4A	1+81.72 BANKS AVE	34.17 LF	7.0' R	306732.8726	146686.5271
CC4B	1+97.22 BANKS AVE	42.53 LF	24.6'R	306717.3128	146694.7800
CC4C	1+80.97 BANKS AVE	54.62 LF	8.0' R	306733.4782	146706.9841
CC5	5+51.05 BANKS AVE	35.5' RT	15.0' R	306364.0338	146614.3117
CC6	5+42.10 BANKS AVE	35.5' LF	15.0' R	306372.4925	146685.3718
CC7	6+18.05 BANKS AVE	35.5' RT	15.0' R	306297.0354	146613.8491
CC8	6+24.10 BANKS AVE	35.5' LF	15.0' R	306290.4944	146684.8056
CC9	9+70.94 BANKS AVE	35.5' RT	15.0' R	305944.1562	146611.4124
CC10	9+62.0 BANKS AVE	35.5' LF	15.0' R	305952.6060	146680.6389
CC11	10+37.94 BANKS AVE	35.5' RT	15.0' R	305877.1578	146610.9497
CC12	10+44.0 BANKS AVE	35.5' LF	15.0' R	305870.6079	146681.9062

(X) CURB RAMP TYPE X
(Z) CURB RAMP TYPE Z



NOTES:

THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS ARE APPROXIMATE AND SHALL BE ADJUSTED TO FIT FIELD CONDITIONS.

DURING HOURS OF DARKNESS ALL BARRICADES USED TO SHIELD A HAZARD SHALL BE EQUIPPED WITH WARNING LIGHTS, TYPE A.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

UNLESS OTHERWISE NOTED, THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL DRIVEWAYS AT ALL TIMES DURING CONSTRUCTION.

"WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

ALL SIGNS OR PAVEMENT MARKING, TEMPORARY OR EXISTING, WHICH MAY CONFLICT WITH THE CONSTRUCTION TRAFFIC PATTERN SHALL BE REMOVED OR COVERED.

(1) SEE WI DOT STANDARD S.D.D. 15C 3–1 (DETAIL 4)

(2) SEE WI DOT STANDARD S.D.D. 15C 2–4A (DETAIL C)

(3) SEE WI DOT STANDARD S.D.D. 15C 2–4B (DETAIL D)

[ ]/[ ] BARRICADES TYPE III WITHOUT, WITH SIGN (8' EQUIVALENT)

BARRICADES SHOWN AT BELKNAP SHALL BE PLACED AT STA 12+80 EXCEPT WHEN WORKING BETWEEN STA 12+80 AND STA 13+93. WHEN WORKING IN THIS AREA, ACCESS TO THE ALLEY SERVICING C'S LOUNGE MUST BE MAINTAINED AT ALL TIMES FROM BELKNAP STREET.

ACCESS TO C'S LOUNGE NOT NEEDED DURING CONSTRUCTION

NO SCALE

SUPERIOR	CITY OF SUPERIOR, WI – PUBLIC WORKS	BANKS AVENUE RECONSTRUCTION PHASE II – PW1101	TRAFFIC CONTROL	MAY 2011 AS–BUILT DWG	DRAWN SLG / APPROV'D JSG	SHEET 42 OF 62

PAVEMENT MARKING LEGEND

Ⓐ PAVEMENT MARKING EPOXY 4" (DOUBLE YELLOW)

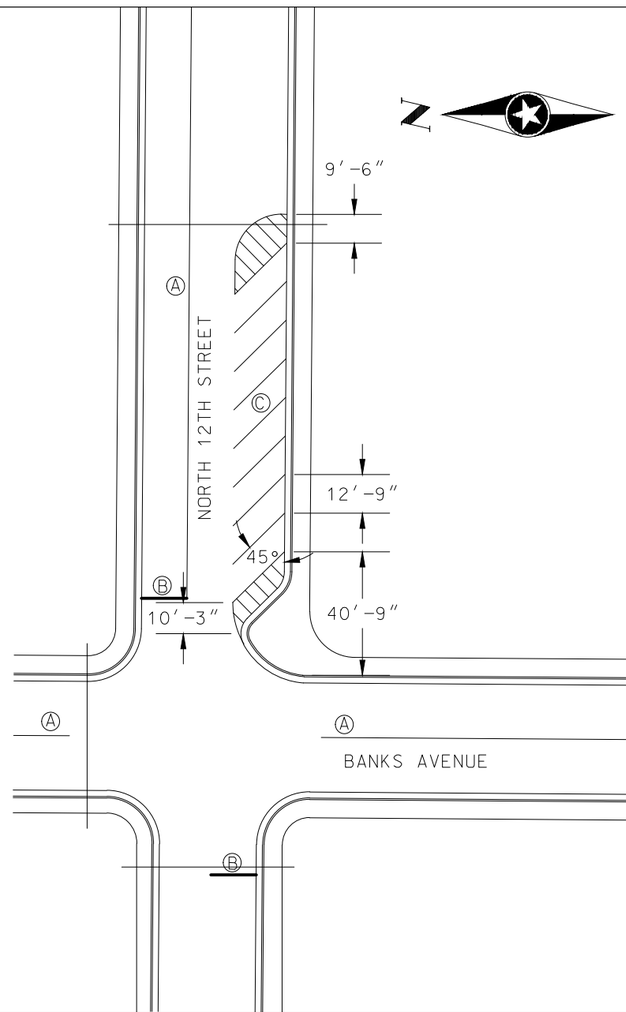
Ⓑ PAVEMENT MARKING STOP LINE EPOXY 18" (WHITE)

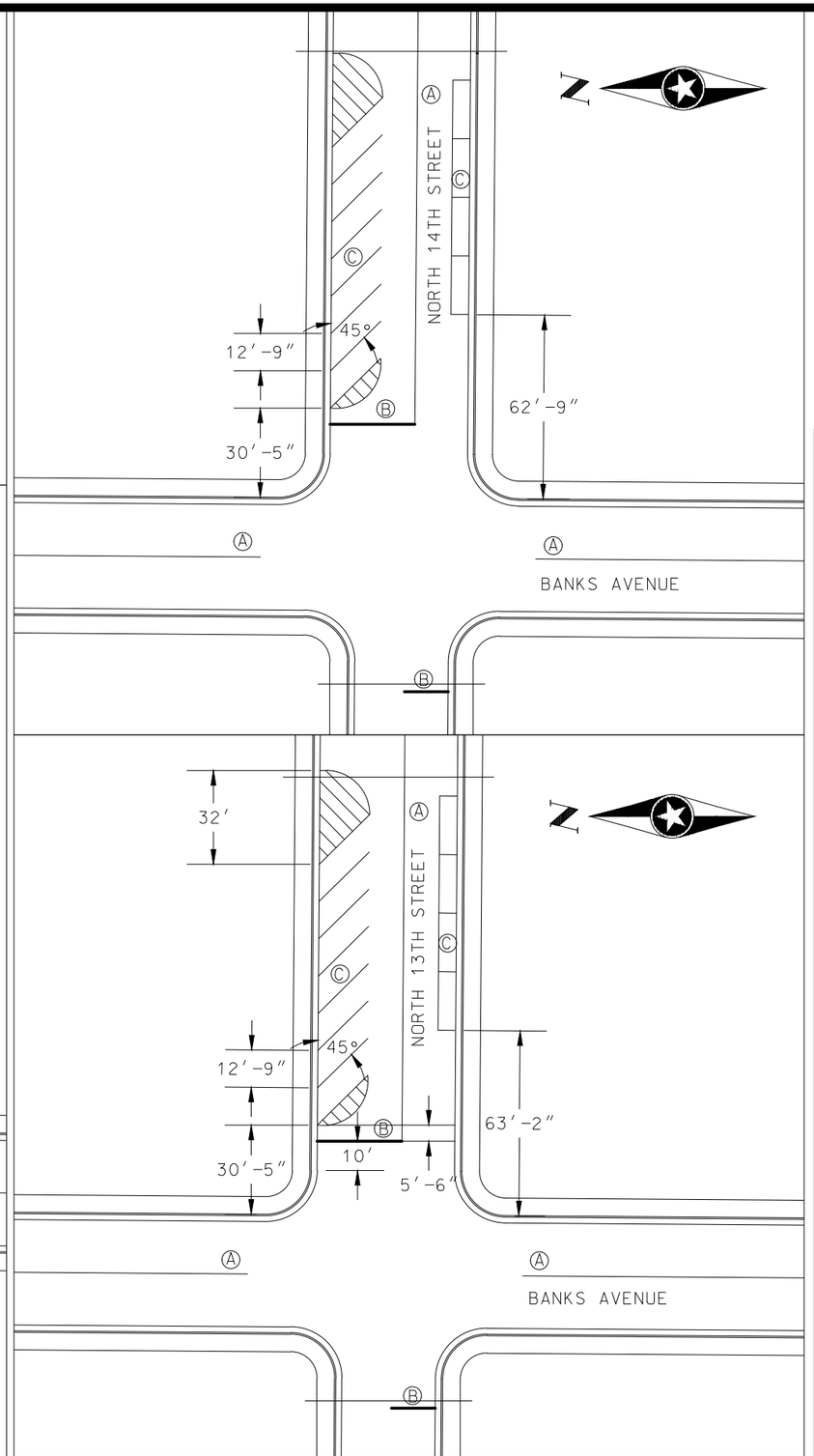
Ⓒ PAVEMENT MARKING PARKING STALL EPOXY (WHITE)

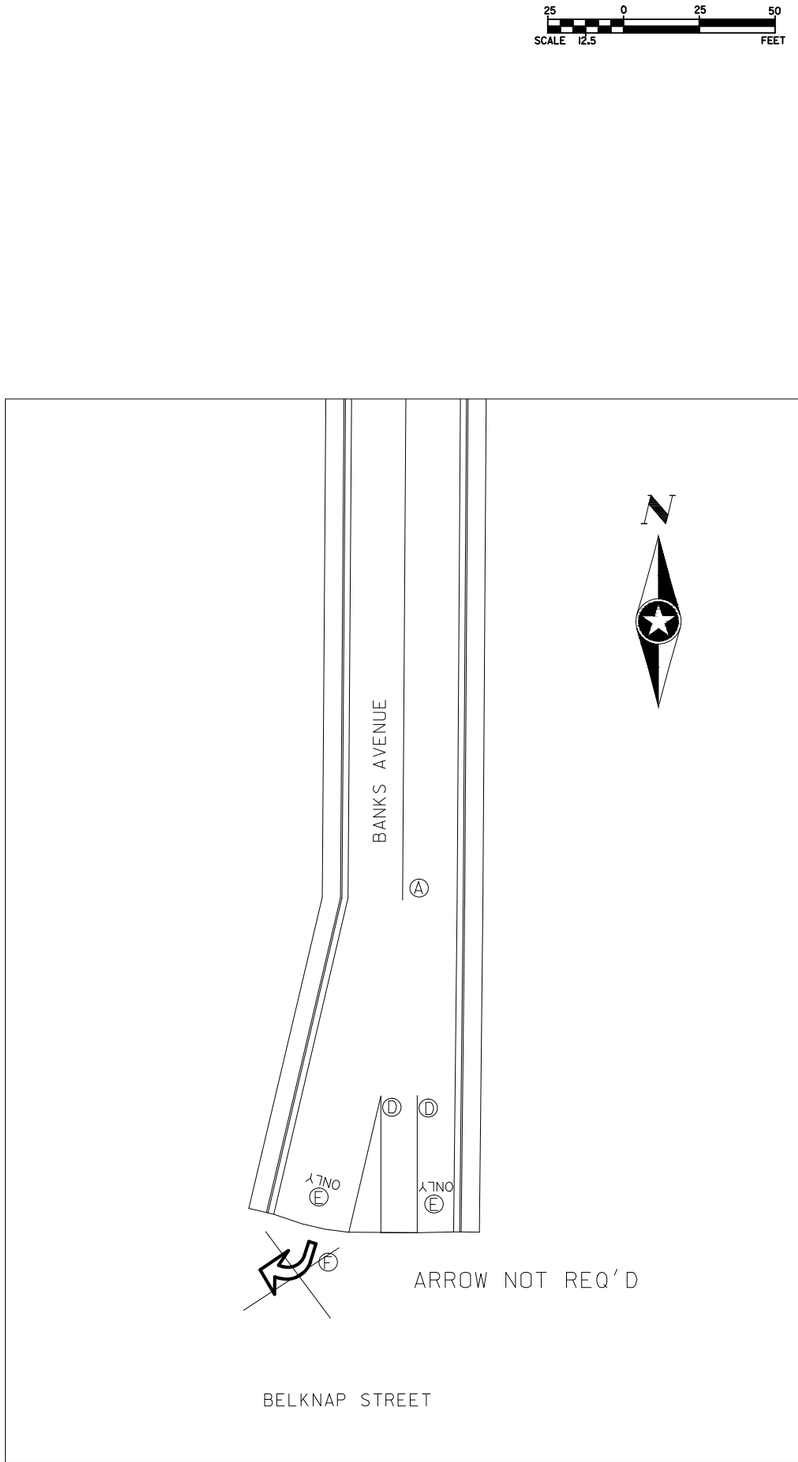
Ⓓ PAVEMENT MARKING EPOXY 4" (WHITE)

Ⓔ PAVEMENT MARKING WORDS EPOXY (WHITE)

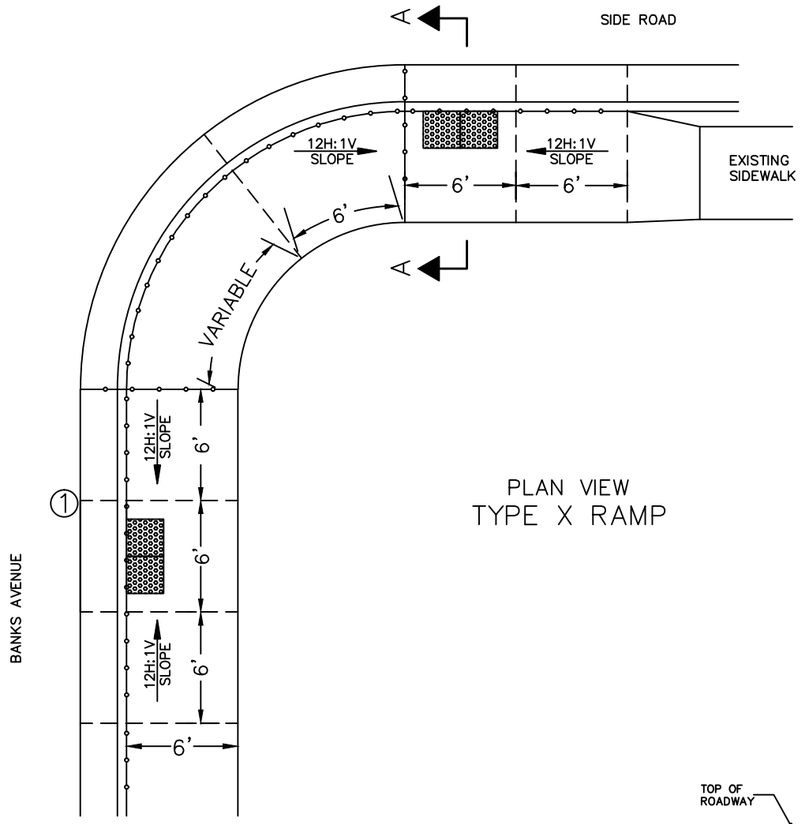
Ⓕ PAVEMENT MARKING ARROWS EPOXY TYPE 2 (WHITE)



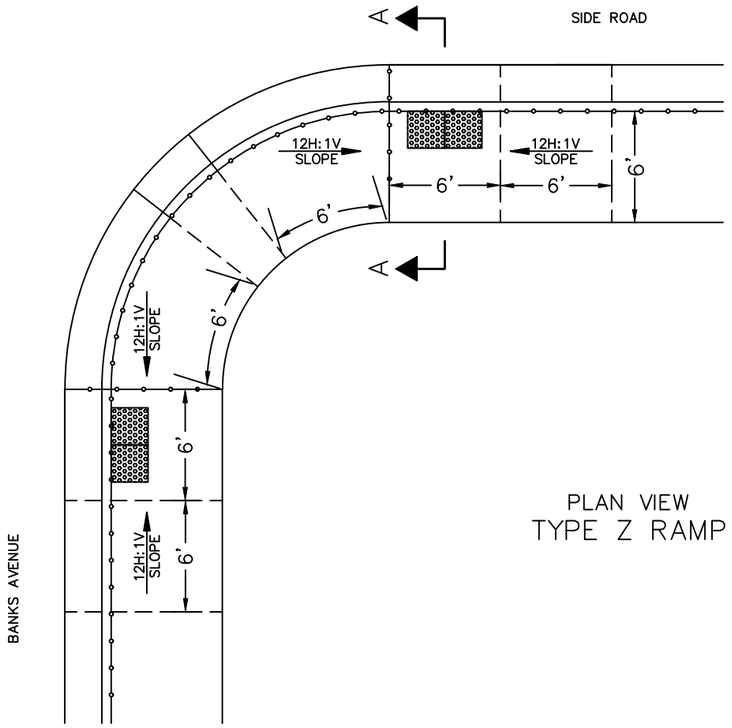




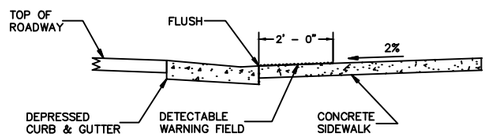
SUPERIOR	CITY OF SUPERIOR, WI – PUBLIC WORKS	BANKS AVENUE RECONSTRUCTION PHASE II – PW1101	PAVEMENT STRIPING – DETAIL	MAY 2011 AS-BUILT DWG	CITY OF SUPERIOR DETAIL	SHEET 43 OF 62



PLAN VIEW
TYPE X RAMP



PLAN VIEW
TYPE Z RAMP



SECTION A–A

NO SCALE

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

SURFACE TEXTURE OF THE RAMP SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP.

TAPER CURB HEAD 12H:1V (TYP) TO MATCH SIDEWALK SLOPE.

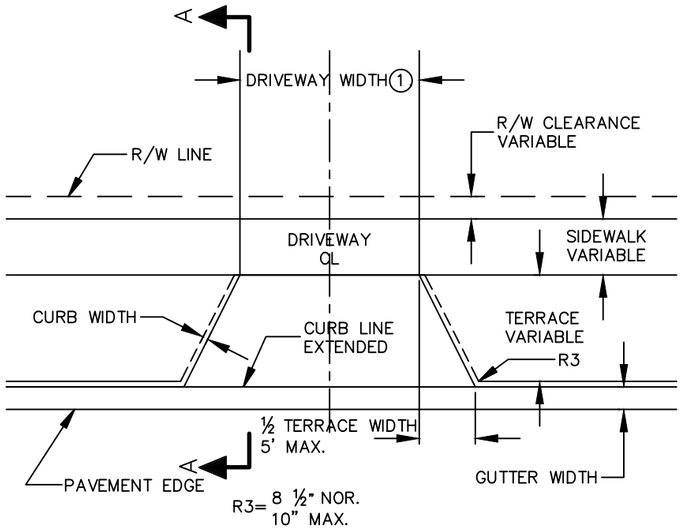
CROSS SLOPE OF SIDEWALK WITHIN CURB RAMP AREA TO BE 0.02 FT/FT

① LOCATE THIS POINT TO MATCH TYPE Z CROSSWALK ACROSS STREET AT RIGHT ANGLE (SEE PLAN SHEETS)

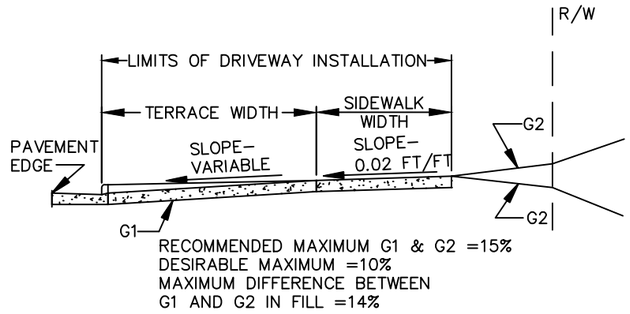
LEGEND

———— ½" EXPANSION JOINT – SIDEWALK

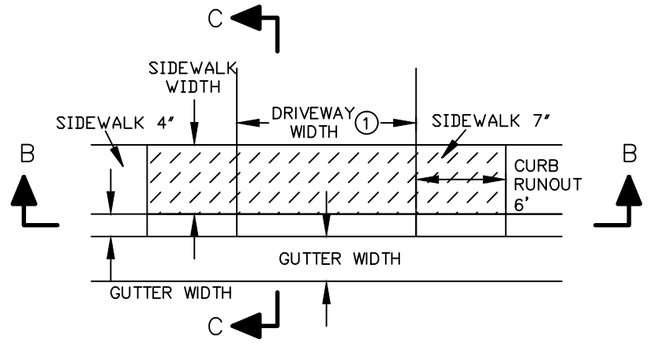
– – – – – – – CONTRACTION JOINT



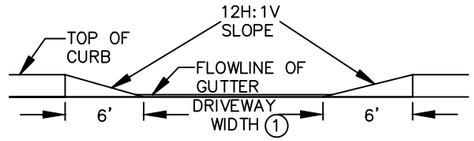
DRIVEWAY (TYP.)



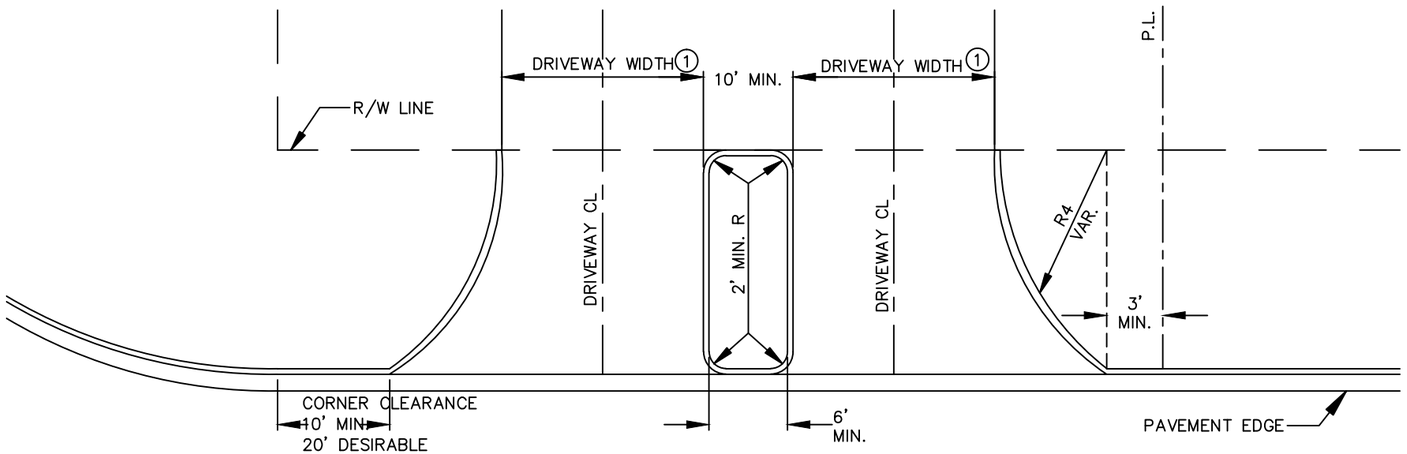
SECTION A–A



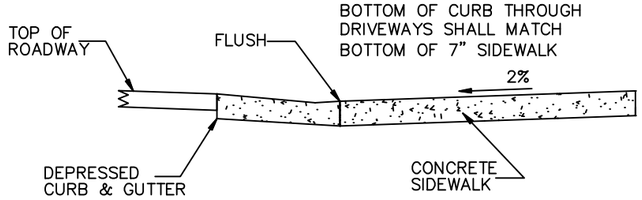
DRIVEWAY (TYP.)



SECTION B–B



DRIVEWAY LOCATION AND SPACING DETAILS



SECTION C–C

(1) DRIVEWAY WIDTHS:
COMMERCIAL – 35' MAX., 12' MIN.
NON–COMMERCIAL – 24' MAX., 12' MIN., 16' DES.

NOTES

A MAXIMUM RADIUS OF 10 FEET SHALL BE USED FOR NON–COMMERCIAL PRIVATE ENTRANCES. RADII FOR COMMERCIAL DRIVEWAYS SHALL BE DETERMINED BY THE ENGINEER BASED ON TRAFFIC AND DRIVEWAY PERMIT RESTRICTIONS.

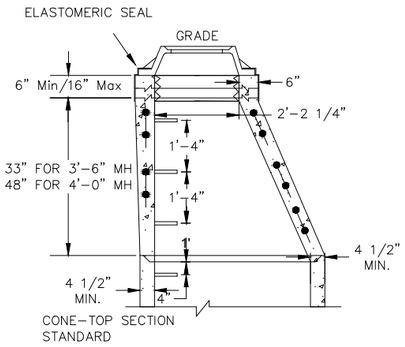
THE MINMUM ANGLE OF INTERSECTION BETWEEN THE DRIVEWAY AND HIGHWAY CENTERLINES SHALL BE 45°.

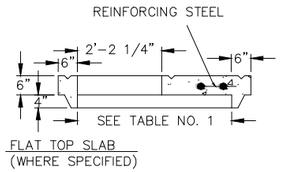
ALL CURVILINEAR PRIVATE ENTRANCE OUTLINES SHALL BE CONTAINED WITHIN THE HIGHWAY R/W.

NO DRIVEWAY SHALL BE BUILT WITHIN 3 FEET OF THE PROPERTY LINE EXCEPT FOR EXISTING JOINT DRIVEWAY SHARED BY TWO OWNERS.

NOT TO SCALE

PRECAST MANHOLE DETAIL





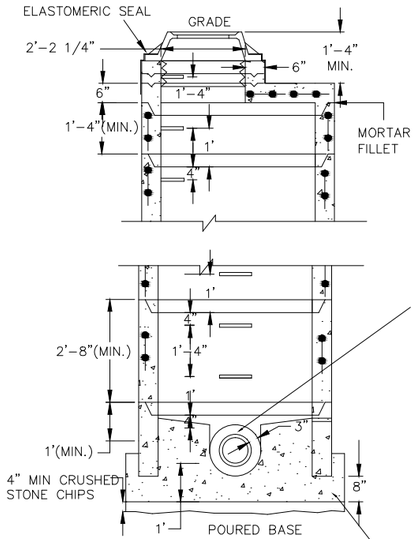
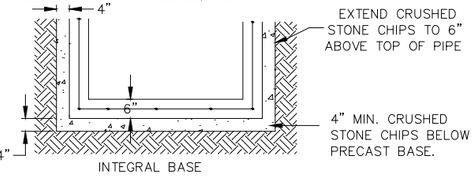


TABLE NO. 1		
PIPE DIA	MANHOLE DIA	WALL THICKNESS
8" - 30"	4'-0"	5"
36"	5'-0"	6"
42"	6'-0"	7"

TYPE I FRAME/CHIMNEY JOINT REQUIRED ON ALL SANITARY MANHOLES UNLESS OTHERWISE SPECIFIED. SONNEBORN HLM-5000-R ELASTOMERIC WATERPROOFING SEALER APPLIED TO EXTERIOR AND CRETEX INTERIOR CHIMNEY SEAL OR APPROVED EQUAL.



FLAT TOP SLAB MAY ONLY BE USED FOR 5'-0" AND 6'0" DIA. MANHOLES AND WITH PERMISSION OF PROJECT ENGINEER OR WHERE SHOWN ON THE PLANS.

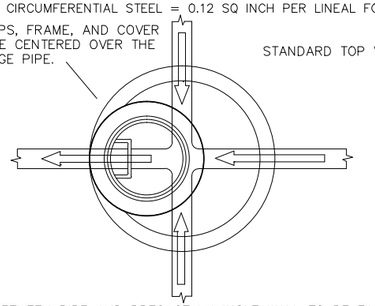
ADJUST FRAME TO GRADE WITH BRICK OR CONCRETE RINGS OF VARIABLE THICKNESS, MAXIMUM RING HEIGHT = 6", MINIMUM RING HEIGHT = 2". CONCRETE RINGS SHALL BE REINFORCED WITH ONE LINE OF STEEL CENTERED WITHIN THE RING. WHERE NECESSARY, RINGS SHALL BE GROOVED TO RECEIVE STEP. THE CHIMNEY SHALL BE CONSTRUCTED SO THAT AS FEW ADJUSTING RINGS AS POSSIBLE SHALL BE USED TO BRING MANHOLE TO GRADE.

CONCRETE AND STEEL REINFORCEMENT SHALL CONFORM TO DESIGNATION C-478 REQUIREMENTS OF ASTM SPECIFICATIONS.

JOINTS SHALL BE WATERTIGHT AND SHALL BE MADE USING BUTYL RUBBER GASKETS. ALL JOINTS SHALL CONFORM TO ASTM-C443 VARIATIONS IN DIAMETER, DEFECTIVE OR DAMAGED ENDS, OR OTHER CONDITIONS WHICH, IN THE OPINION OF THE PROJECT ENGINEER, PREVENT MAKING A SATISFACTORY JOINT SHALL BE CONSIDERED CAUSE FOR REJECTION.

AREA OF CIRCUMFERENTIAL STEEL = 0.12 SQ INCH PER LINEAL FOOT.

THE STEPS, FRAME, AND COVER SHALL BE CENTERED OVER THE DISCHARGE PIPE.



SPACE BETWEEN PIPE AND PRECAST MANHOLE WALL TO BE FILLED WITH BRICK MORTARED IN PLACE EXCEPT THAT AN APPROVED FLEXIBLE WATERTIGHT PIPE TO MANHOLE SEAL IS REQUIRED FOR ALL FLEXIBLE SANITARY SEWER CONNECTIONS. THE ANNULAR SPACE BETWEEN THE PIPE AND MANHOLE WALL SHALL BE FILLED WITH FLEXIBLE BUTYL RUBBER GASKET MATERIAL BELOW SURFACE OF BENCH SPRINGLINE.

4" MIN. CRUSHED STONE CHIPS UNDER CONCRETE BASE.

PRECAST BASE RISER SECTION WITH A SEPERATE PRECAST BASE SLAB SHALL NOT BE CONSIDERED GENERALLY ACCEPTABLE UNDER THIS SPECIFICATION.

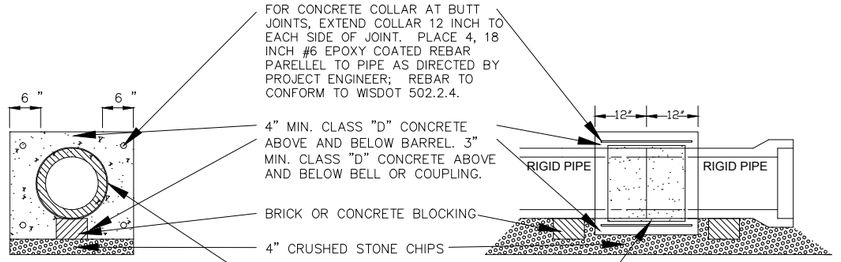
THE FLOW CHANNEL THROUGH MANHOLES SHALL BE MADE TO CONFORM TO THE SHAPE AND SLOPE OF THE SEWERS AND SHALL EXTEND VERTICALLY FROM THE SPRINGLINE TO THE CROWN OF THE DISCHARGE PIPE.

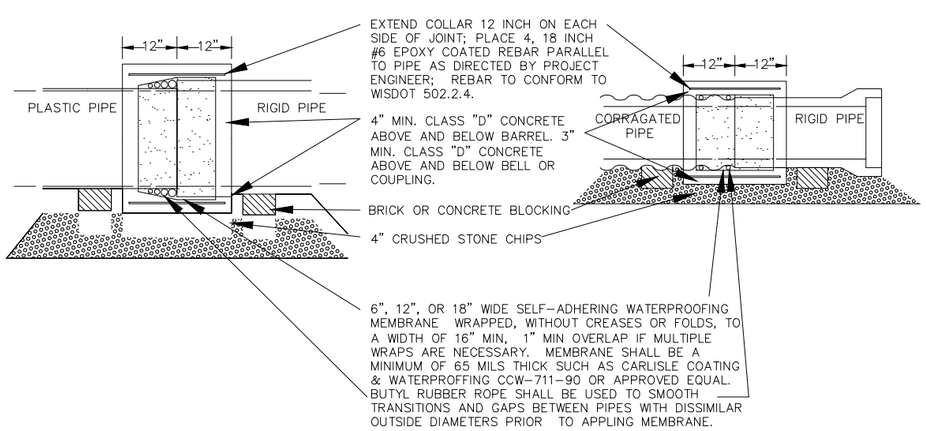
BENCH SLOPE { STORM MANHOLE 1" PER FOOT
SANITARY MANHOLE 2" PER FOOT

CLASS "D" CONCRETE, 12" MIN. BELOW BOTTOM OF PIPE

NO SCALE

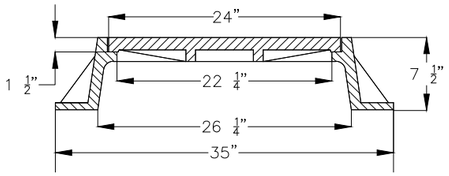
CONCRETE COLLAR DETAIL FOR 8"-42" PIPE



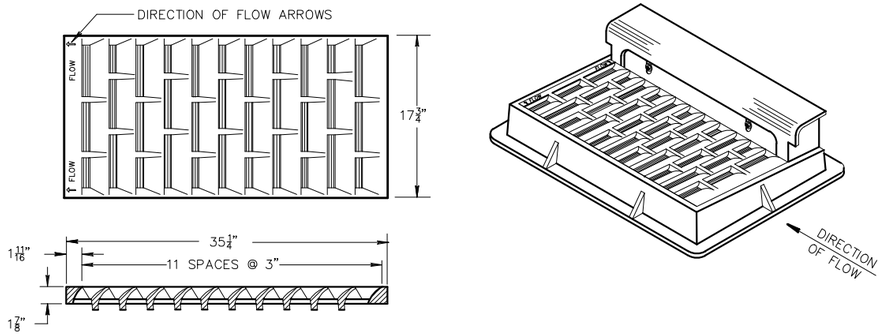


CASTING DIMENSIONS

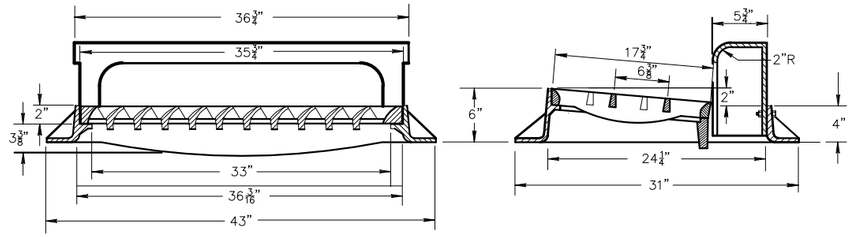
MANHOLE CASTING DIMENSIONS
NEENAH 1670 OR APPROVED EQUAL



NOTE:
GRATE IS REVERSIBLE.



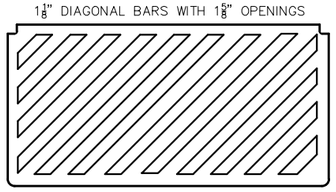
NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"



TYPE "H"

(APPROXIMATE WEIGHT 422 LBS.)
FRAME..... 175 LBS.
GRATE..... 138 LBS.
CURB BOX..... 109 LBS.

1⅛" DIAGONAL BARS WITH 1⅝" OPENINGS



SPECIAL GRATE FOR TYPE "H" COVER

(MEASURES 35¼" X 17¾" X 2")
(APPROXIMATE WEIGHT 172 LBS.)
GRATE..... 172 LBS.

(NOTED AS TYPE H-S ON DRAINAGE TABLE)

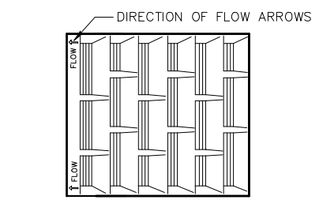
GENERAL NOTES

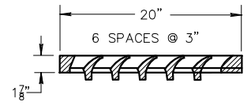
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

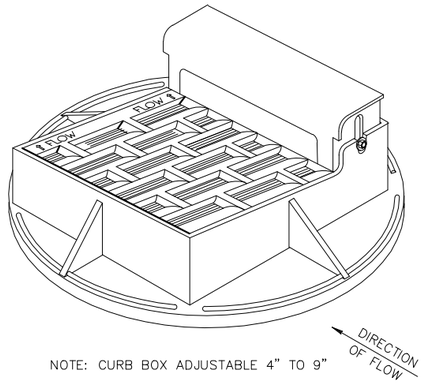
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.

THE ACTUAL WEIGHT OF COVERS MAY VARY WITHIN 5 PERCENT, PLUS OR MINUS, OF THE APPROXIMATE WEIGHT.

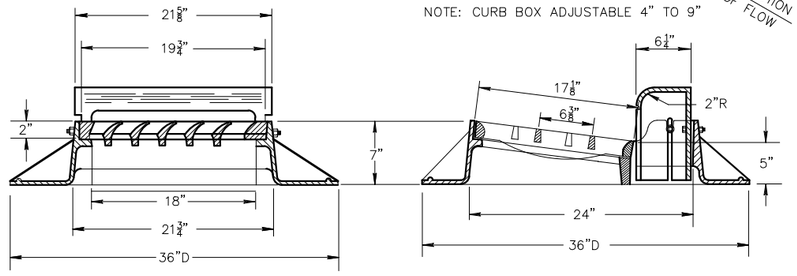






NOTE: CURB BOX ADJUSTABLE 4" TO 9"

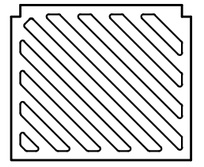
NOTE:
GRATE IS REVERSIBLE.



TYPE "A"

(APPROXIMATE WEIGHT 325 LBS.)
FRAME..... 157 LBS.
GRATE..... 84 LBS.
CURB BOX..... 84 LBS.

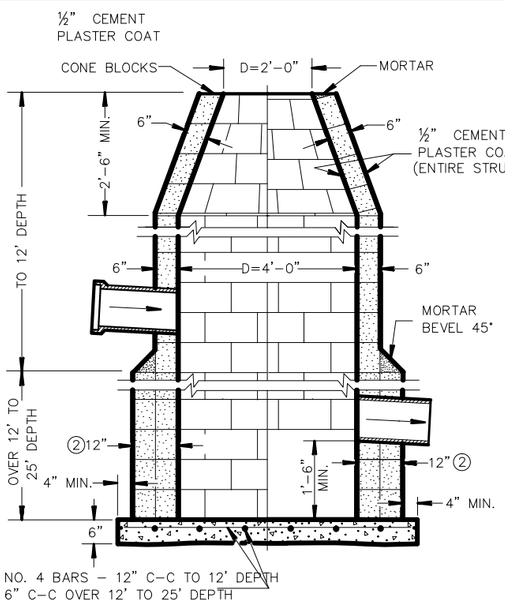
1" DIAGONAL BARS WITH 1½" OPENINGS



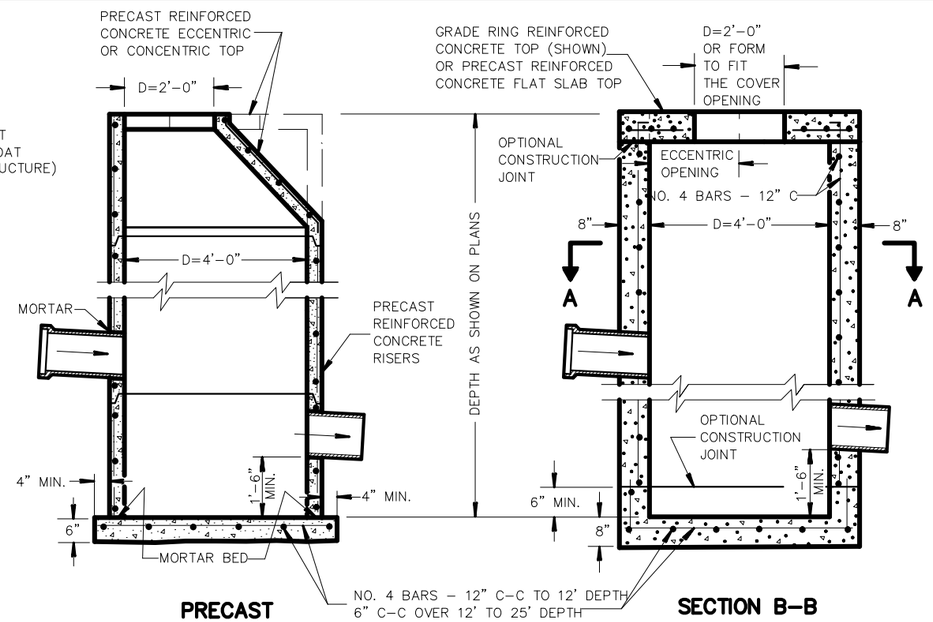
SPECIAL GRATE FOR TYPE "A" COVER

(MEASURES 19¾" X 17" X 1⅞")
GRATE..... 84 LBS.

(NOTED AS TYPE A-S ON DRAINAGE TABLE)



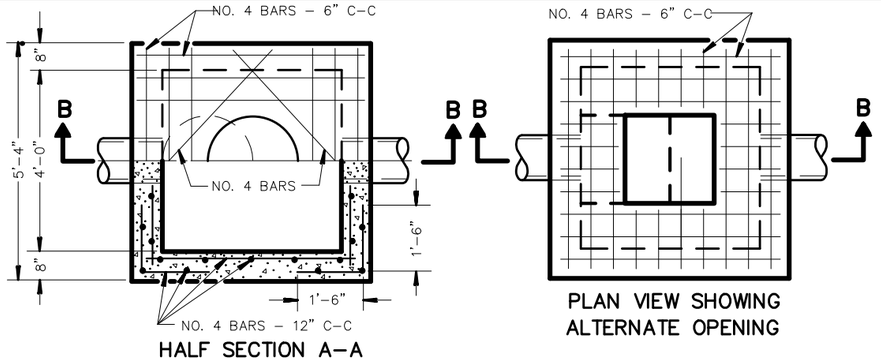
CONCRETE BLOCK



PRECAST REINFORCED CONCRETE

SECTION B–B REINFORCED CONCRETE

CATCH BASINS, TYPE 1



HALF SECTION A–A

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 1–C", "CATCH BASINS 1–B", "INLETS 3–H", ETC. THE FIRST DIGIT DESIGNATES THE MASONRY PORTION OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

PRECAST REINFORCED BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF GRANULAR BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

PRECAST REINFORCED CONCRETE CONE TOPS (ECCENTRIC OR CONCENTRIC) OR PRECAST REINFORCED CONCRETE FLAT SLAB TOPS MAY BE USED ON CONCRETE BLOCK STRUCTURES. THE CONE TOPS SHALL BE INSTALLED ON A BED OF MORTAR.

ECCENTRIC CONE TOPS MAY BE USED ON ALL STRUCTURES, AND CONCENTRIC CONE TOPS SHALL BE USED ONLY ON STRUCTURES 5 FEET OR LESS IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

STEPS MEETING THE FOLLOWING REQUIREMENTS SHALL BE INSTALLED IN ALL STRUCTURES OVER 5 FEET IN DEPTH: 16 INCH C–C MAXIMUM SPACING; PROJECT A MINIMUM CLEAR DISTANCE OF 4 INCHES FROM THE WALL AT THE POINT OF EMBEDMENT; MINIMUM LENGTH OF 10 INCHES; MINIMUM WALL EMBEDMENT OF 3 INCHES. FERROUS METAL STEPS NOT PAINTED OR TREATED TO RESIST CORROSION SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 1 INCH.

STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCEMENT BAR ARE ACCEPTABLE.

CERTIFICATION SHALL BE PROVIDED THAT INSTALLED STEPS WHEN TESTED IN ACCORDANCE WITH SECTION 10 OF AASHTO T280 CAN WITHSTAND A VERTICAL LOAD OF 800 LBS. AND A HORIZONTAL LOAD OF 400 LBS.

ALL BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

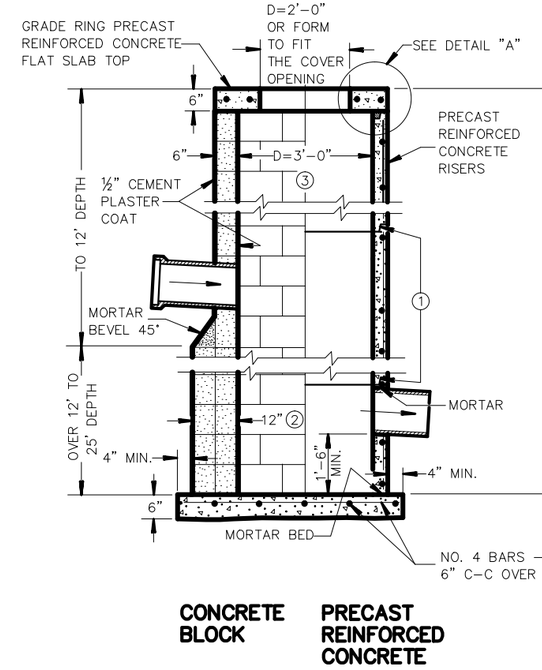
ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M199.

THE "PRECAST REINFORCED CONCRETE FLAT SLAB TOP" OPTION IS REQUIRED ON CATCH BASINS, TYPE 1 WHEN 2' X 3' OPENING INLET COVERS ARE REQUIRED.

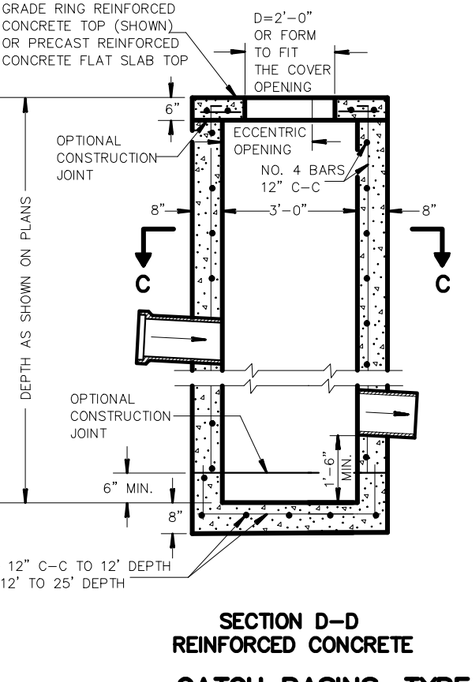
① PRECAST REINFORCED CONCRETE RISERS SHALL BE PLACED WITH THE TONGUE DOWN WHEN GRADE RINGS ARE USED FOR THE SLAB TOP.

② 2 COURSES 6" BLOCK.

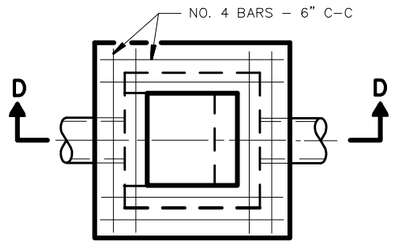
③ WHEN THE CONNECTING PIPES ARE 24" OR LARGER THE PRECAST CATCH BASIN MAY BE INCREASED TO 42" DIA.

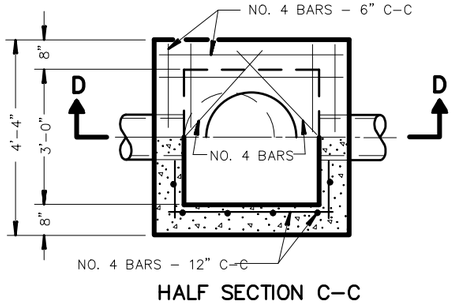


CONCRETE BLOCK **PRECAST REINFORCED CONCRETE**

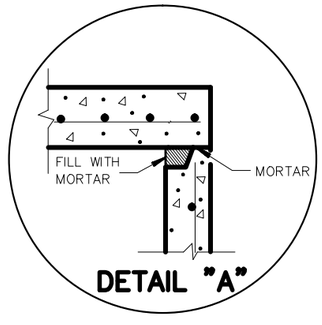


SECTION D–D REINFORCED CONCRETE



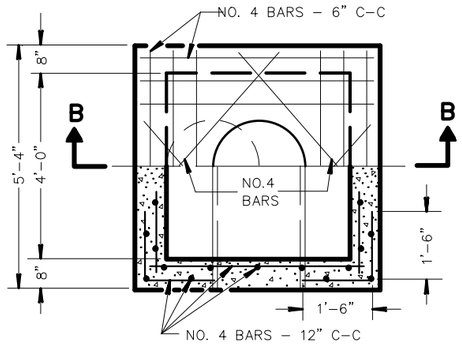


HALF SECTION C–C

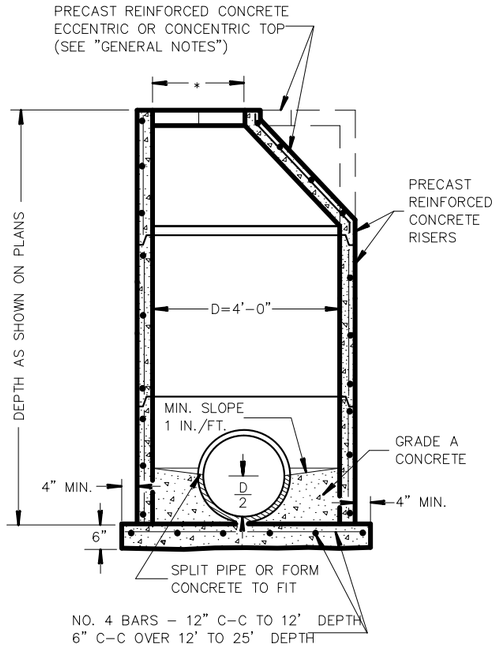


DETAIL "A"

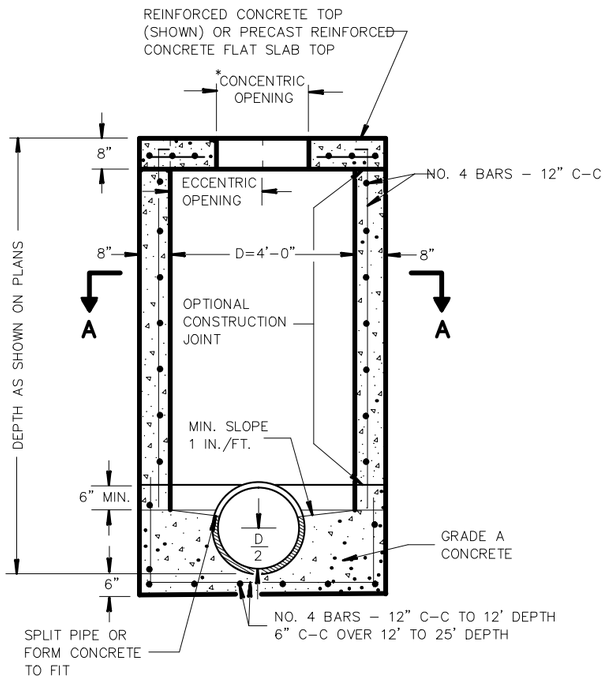
CATCH BASINS, TYPE 2



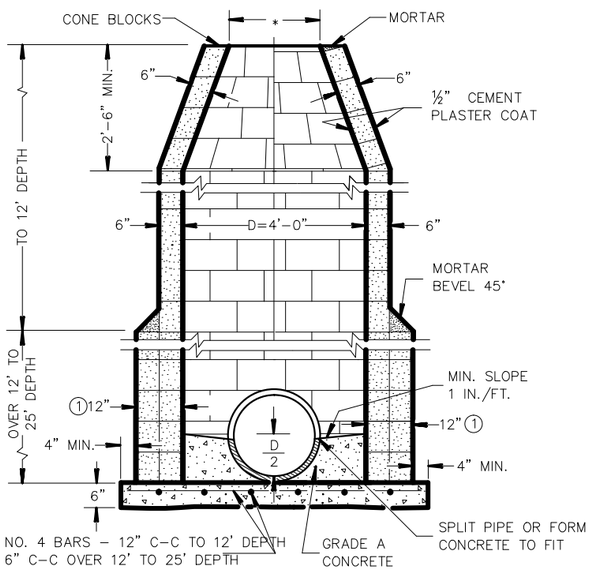
HALF SECTION A–A



PRECAST REINFORCED CONCRETE



SECTION B–B
REINFORCED CONCRETE



CONCRETE BLOCK

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 1–C", "CATCH BASINS 1–B", "INLETS 3–H", ETC. THE FIRST DIGIT DESIGNATES THE MASONRY PORTION OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

PRECAST REINFORCED BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF GRANULAR BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

PRECAST REINFORCED CONE TOPS (ECCENTRIC OR CONCENTRIC) MAY BE USED ON CONCRETE BLOCK STRUCTURES. THE CONE TOPS SHALL BE INSTALLED ON A BED OF MORTAR.

ECCENTRIC CONE TOPS MAY BE USED ON ALL STRUCTURES, AND CONCENTRIC CONE TOPS SHALL BE USED ONLY ON STRUCTURES 5 FEET OR LESS IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

STEPS CONFORMING TO AASHTO M 199 SHALL BE INSTALLED IN ALL STRUCTURES OVER 5 FEET IN DEPTH.

SOLID ALUMINUM STEPS SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 0.75 INCH. ALUMINUM SURFACES TO BE EMBEDDED IN CONCRETE SHALL BE GIVEN ONE COAT OF SUITABLE QUALITY PAINT, SUCH AS ZINC CHROMATE PRIMER CONFORMING TO FEDERAL SPECIFICATION TT–P–645 OR EQUIVALENT.

ALL BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

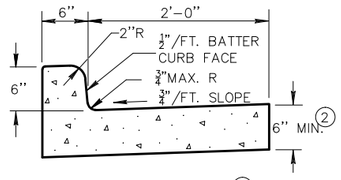
PRECAST REINFORCED CONCRETE RISERS MAY BE PLACED WITH TONGUE UP OR DOWN.

ALL PRECAST INLET UNITS AND MANHOLES SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M 199.

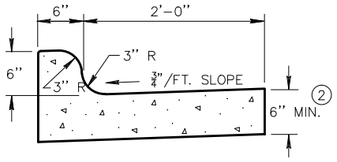
* USE 2'–0" DIAMETER OPENING WITH TYPE "C", "L" AND "J" COVERS, OR 3'–0" DIAMETER WITH TYPE "K" AND "M" COVERS.

① 2 COURSES 6" BLOCK.

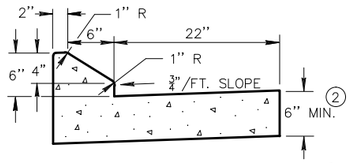
MANHOLES TYPE 1



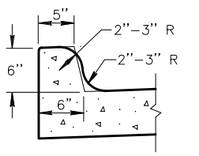
TYPES A & D ①



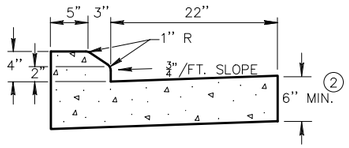
TYPES K & L ①



6" SLOPED CURB TYPES G & J ①

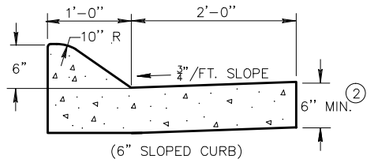


OPTIONAL CURB SHAPE
FOR TYPES K & L ①

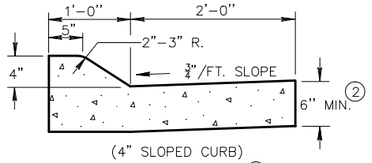


4" SLOPED CURB TYPES G & J ①

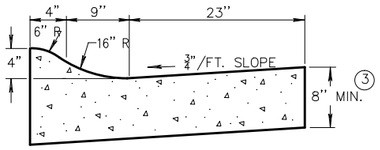
CONCRETE CURB & GUTTER 30"



(6" SLOPED CURB)

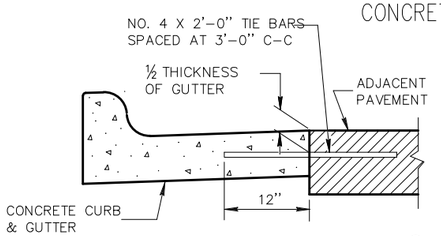


(4" SLOPED CURB)
TYPES A & D ①

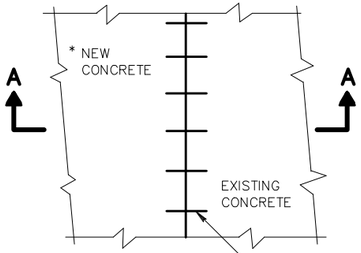


4" SLOPED CURB TYPES R & T ① ④

CONCRETE CURB & GUTTER 36"

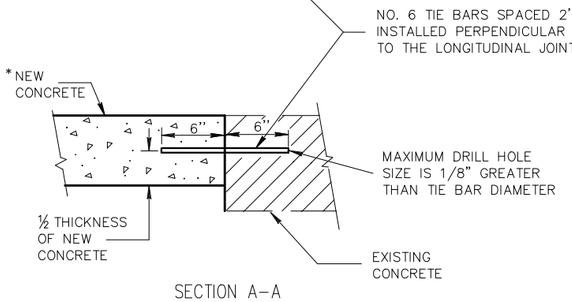


① TYPICAL TIE BAR LOCATION

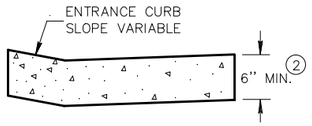


PLAN VIEW

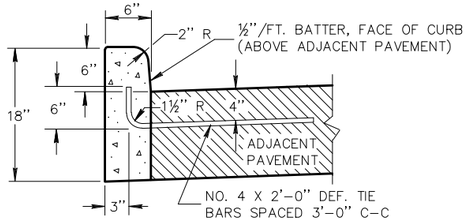
* NEW CURB & GUTTER,
SURFACE DRAINS,
CONCRETE PAVEMENT
OR OTHER NEW CONCRETE.



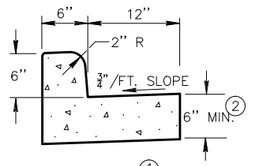
SECTION A–A
TIE BARS DRILLED
INTO EXISTING PAVEMENT



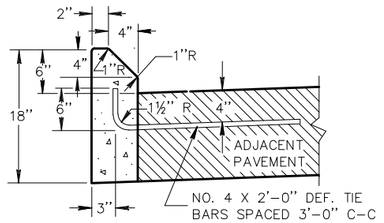
DRIVEWAY ENTRANCE CURB
(WHEN DIRECTED BY THE ENGINEER)



① TYPES A & D



① TYPES A & D
CONCRETE CURB & GUTTER 18"



① TYPES G & J

CONCRETE CURB

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

INTEGRAL CURB & GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB & GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE. A LONGITUDINAL CONSTRUCTION JOINT IS NOT REQUIRED WITH INTEGRAL CURB AND GUTTER.

WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2'–0" BEHIND THE BACK OF CURBS.

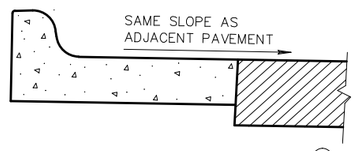
① TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K AND R.

② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.

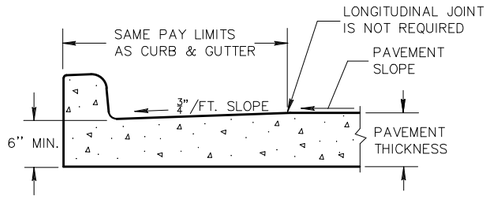
③ THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.

④ THE FACE OF CURB IS 6" FROM THE BACK OF CURB.

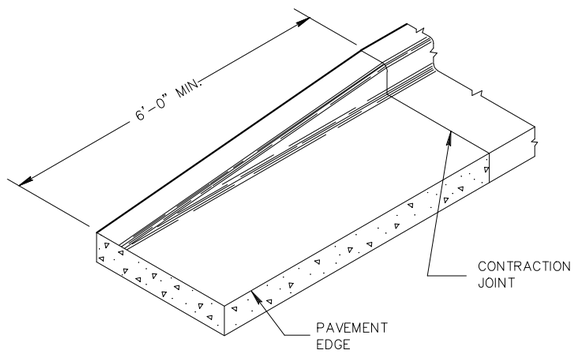
⑤ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.



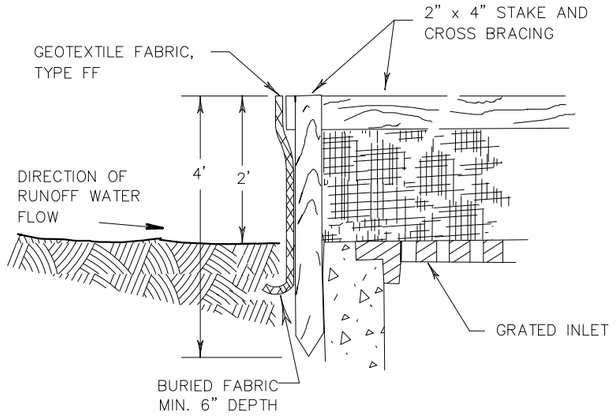
⑤
REVERSE SLOPE GUTTER
(TYPICAL FOR ALL CURB & GUTTER TYPES)

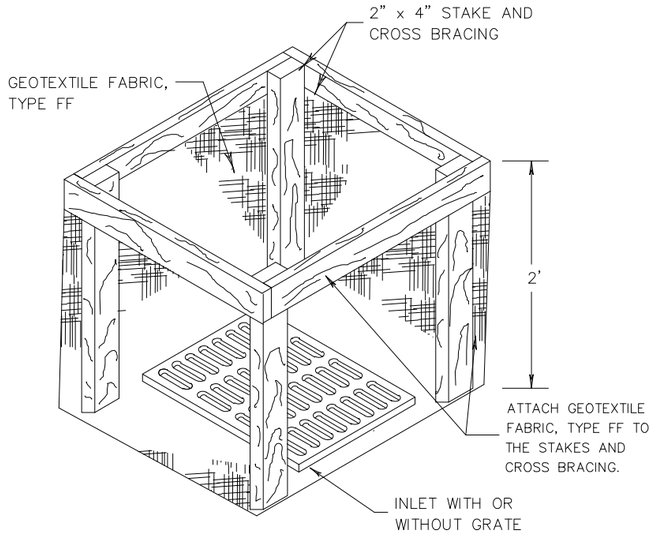


PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB & GUTTER

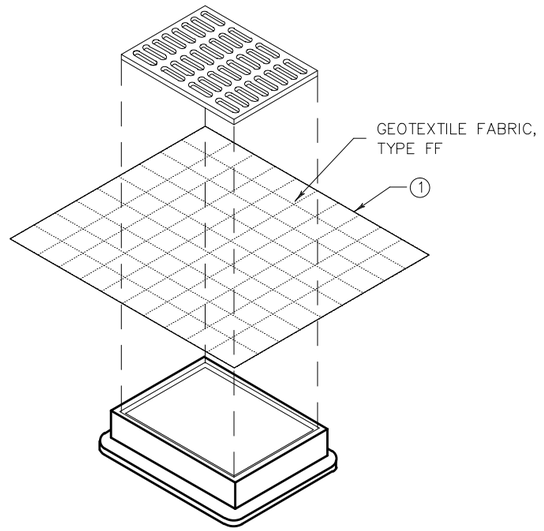


END SECTION CURB & GUTTER



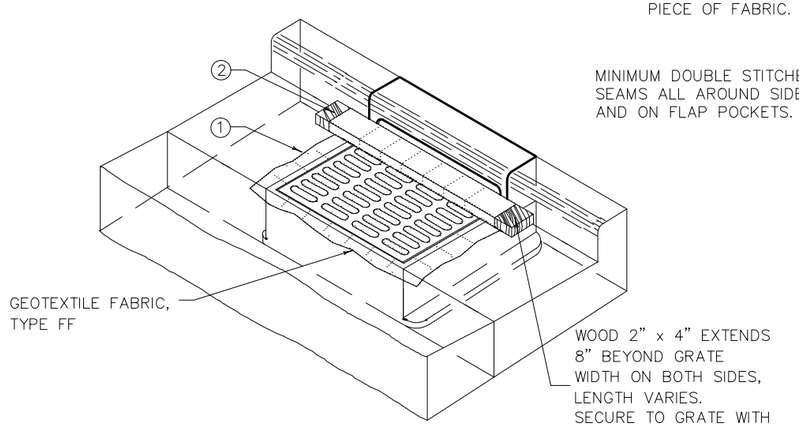


INLET PROTECTION, TYPE A

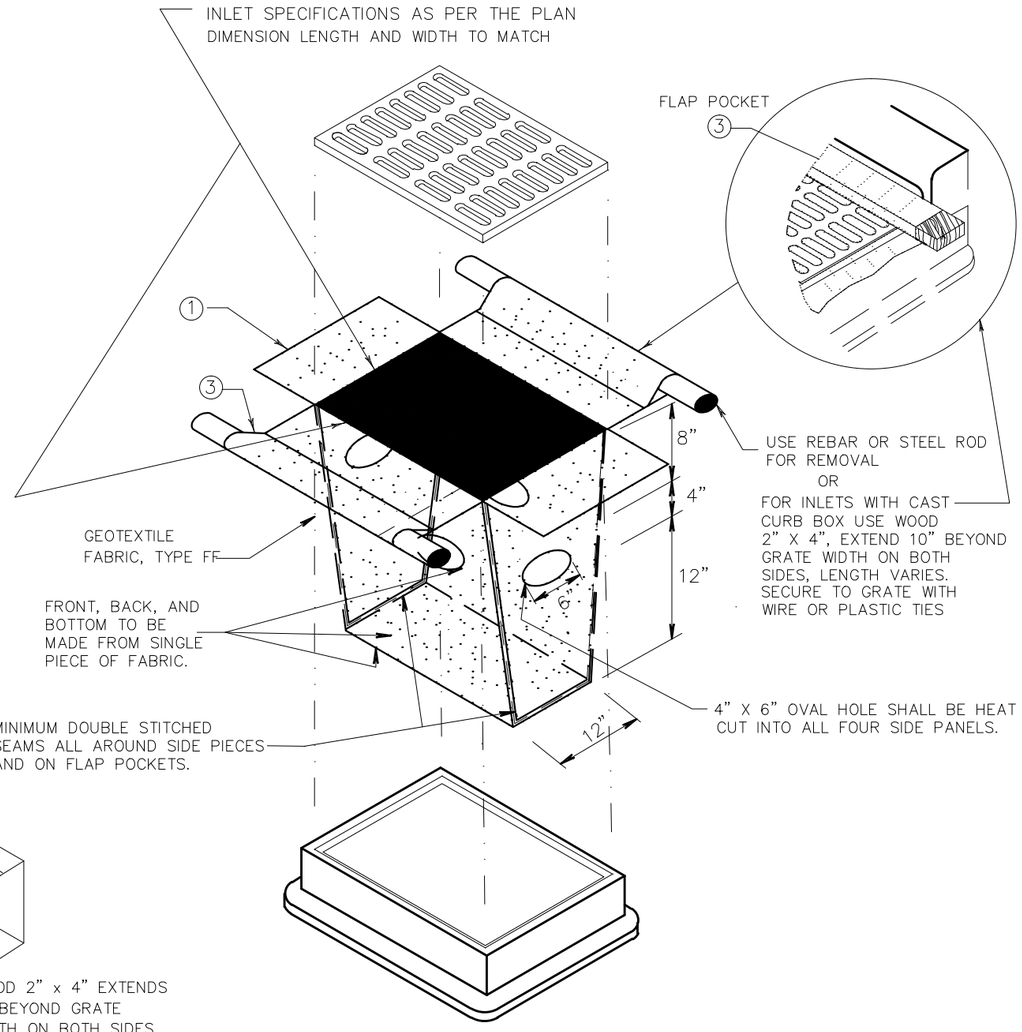


INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)



INLET PROTECTION, TYPE C (WITH CURB BOX)



INLET PROTECTION, TYPE D

(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX AS PER NOTE ②)

GENERAL NOTES

INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER.

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.

WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.

② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.

③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.

INSTALLATION NOTES

TYPE B & C

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

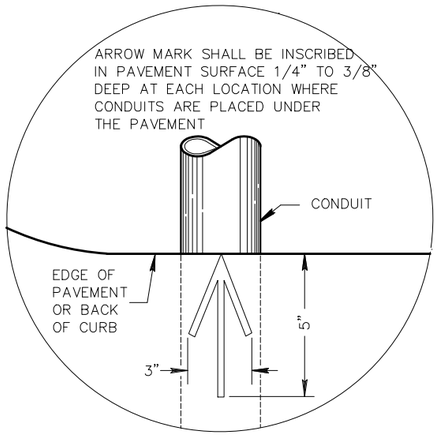
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

DO NOT INSTALL INLET PROTECTION TYPE D IN INLETS SHALLOWER THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.

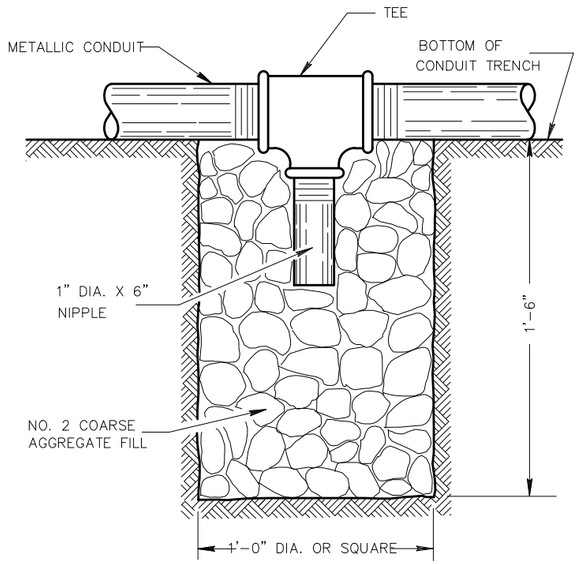
TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.



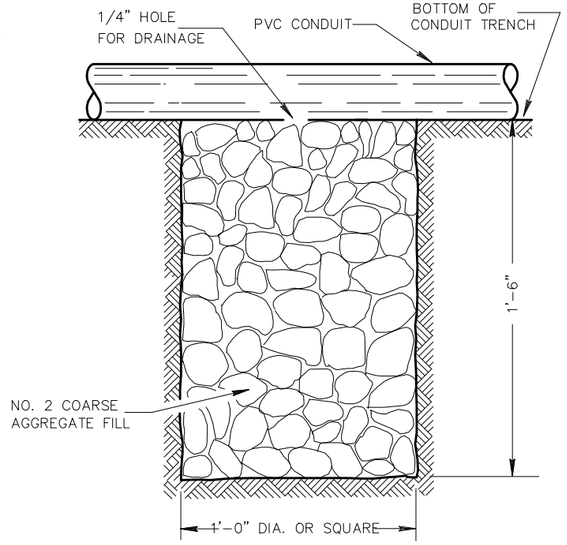
PLAN VIEW

ARROW MARK



NOTE: INSTALL AT LOCATIONS WHERE METALLIC CONDUITS CANNOT BE PITCHED TO DRAIN INTO A PULL BOX.

DRAIN SUMP FOR METALLIC CONDUIT



NOTE: INSTALL AT LOCATIONS WHERE PVC CONDUITS CANNOT BE PITCHED TO DRAIN INTO A PULL BOX.

DRAIN SUMP FOR PVC CONDUIT

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

METALLIC (STANDARD SPECIFICATION 652.2.2) OR NONMETALLIC (STANDARD SPECIFICATION 652.2.3) CONDUIT SHALL BE FURNISHED AND PLACED AS SHOWN.

DEPTH OF CONDUIT INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES MINIMUM AND 36 INCHES MAXIMUM.

DEPTH OF CONDUIT INSTALLED THAT IS NOT BELOW THE TRAVELED WAY SHALL BE 18 INCHES MINIMUM AND 36 INCHES MAXIMUM.

ANY EXCEPTION TO THE MAXIMUM DEPTH SHALL BE ONLY WITH THE WRITTEN APPROVAL OF THE ENGINEER.

THE TRENCH SHALL NOT BE BACKFILLED PRIOR TO INSPECTION OF THE CONDUIT.

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

ALL METALLIC CONDUIT IN WHICH WIRE OR CABLE IS TO BE INSTALLED SHALL BE BUSHED WITH APPROVED THREADED BUSHINGS BEFORE INSTALLATION OF THE WIRE OR CABLE.

ALL METALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT TO BE INSTALLED SHALL BE CAPPED WITH THREADED PROTECTIVE CAPS, AS APPROVED BY THE ENGINEER.

ALL NONMETALLIC CONDUIT SHALL BE CAPPED OR PLUGGED IMMEDIATELY AFTER INSTALLATION AND SHALL REMAIN CAPPED OR PLUGGED UNTIL WIRE/CABLES ARE INSTALLED.

NONMETALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

BENDING OF PVC ELECTRICAL CONDUIT SHALL BE ACCOMPLISHED BY USING A BLANKET OR EMERSION TYPE TANK DESIGNED FOR THE PURPOSE OF BENDING PVC ELECTRICAL CONDUIT.

ALL CUT ENDS SHALL BE TRIMMED INSIDE AND OUTSIDE TO REMOVE ALL ROUGH EDGES ON NONMETALLIC CONDUIT. (SEE NEC 347.5)

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY U.L. LISTED ADAPTER FITTINGS SHALL BE USED.

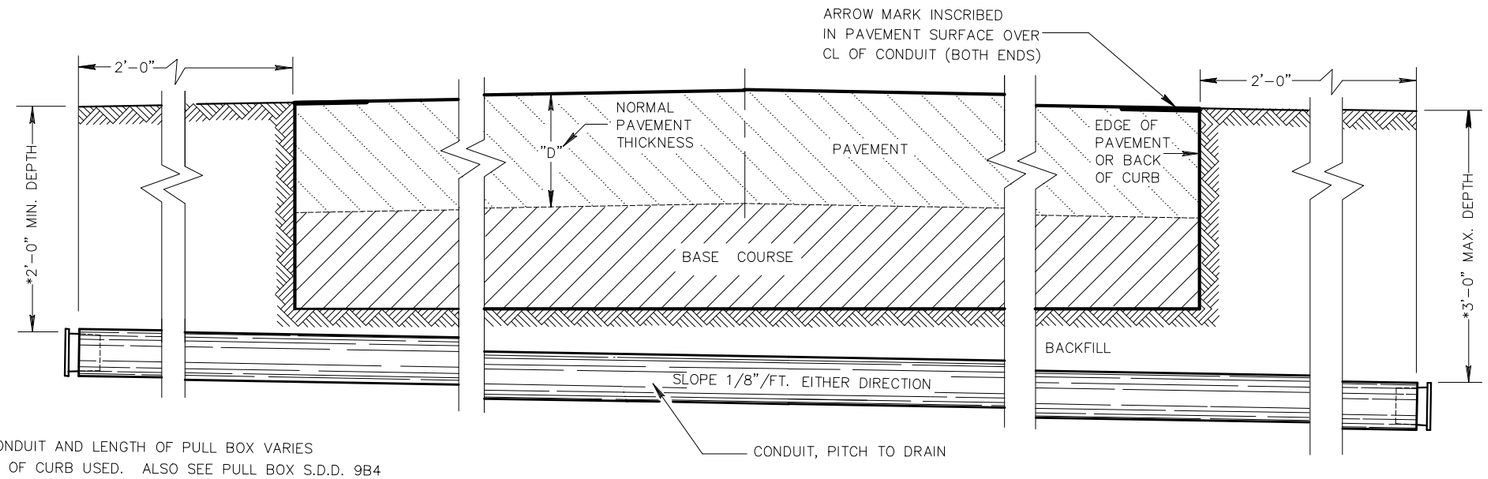
PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

ALL CONDUIT BEING FURNISHED AND INSTALLED SHALL HAVE THE U.L. LABEL FIRMLY ATTACHED.

CONDUIT RUNS SHALL BE THE SAME SIZE OF CONDUIT FROM ONE END TO THE OTHER (FROM PULL BOX TO PULL BOX–OR–JUNCTION BOX TO JUNCTION BOX–OR–BASE TO BASE, ETC.).

POLY ROPE OR A PULL WIRE SHALL BE INSTALLED AS STATED IN THE STANDARD SPECIFICATION, ITEM 652.3.1.1.

ALL CONDUIT RUNS SHALL BE STRAIGHT (WITHOUT BENDS) FROM PULL BOX TO PULL BOX, PULL BOX TO BASE AND BASE TO BASE AS SHOWN ON THE PLANS.



*DEPTH OF CONDUIT AND LENGTH OF PULL BOX VARIES WITH HEIGHT OF CURB USED. ALSO SEE PULL BOX S.D.D. 9B4

SIDE ELEVATION

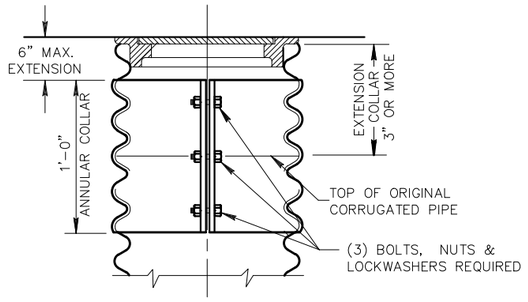
DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

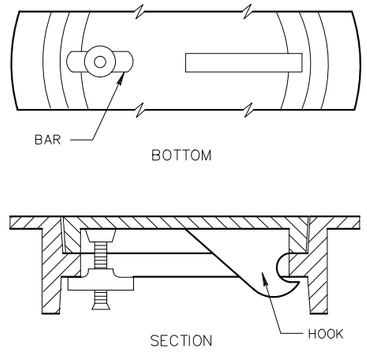
DIMENSION IN INCHES		CORRUGATED STEEL PIPE								
PIPE DIAMETER (INSIDE)	A	12	12	12	18	18	18	24	24	24
PIPE LENGTH **	B	24	30	36	24	30	36	36	42	48
WALL THICKNESS	C	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
COVER	D	10 ¼	10 ¼	10 ¼	16 ¼	16 ¼	16 ¼	22 ¼	22 ¼	22 ¼
FRAME	E	14 ½	14 ½	14 ½	20 ½	20 ½	20 ½	26 ½	26 ½	26 ½
FRAME	F	8 ½	8 ½	8 ½	14 ½	14 ½	14 ½	20 ½	20 ½	20 ½
FRAME	G	11 ½	11 ½	11 ½	17 ½	17 ½	17 ½	23 ½	23 ½	23 ½
WEIGHT IN POUNDS *										
FRAME AND COVER		60	60	60	110	110	110	155	155	155

* THE ACTUAL WEIGHT OF THE MANHOLE FRAME AND COVER MAY VARY WITHIN 5 PERCENT PLUS OR MINUS OF THE WEIGHTS SHOWN.

** NORMALLY USED LENGTHS. THE PROJECT ENGINEER SHALL DETERMINE IF PIPE LENGTHS, OTHER THAN THOSE SPECIFIED, SHALL BE USED, TO A MAXIMUM OF 48" (CONTINUOUS LENGTH, NON-SPLICED). THE ADDITIONAL LENGTH SHALL BE INCIDENTAL TO THE PULL BOX BID PRICE.

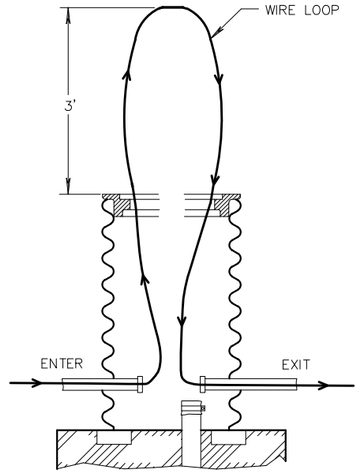


CORRUGATED PIPE EXTENDER



ALTERNATE COVER (LOCKING)

TIGHTENING BAR TYPE



MEASUREMENT DETAIL FOR WIRE/CABLE IN THE PULL BOX

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

ALL FRAMES AND COVERS SHALL BE HEAVY DUTY TYPE, SUITABLE FOR VEHICULAR TRAFFIC LOADS.

PULL BOXES LOCATED IN THE ROADWAYS SHALL HAVE LOCKING COVERS.

ENTRANCE HOLES INTO PULL BOXES SHALL BE CUT WITH A CIRCULAR HOLE SAW OR HYDRAULIC CONDUIT PUNCH. HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE CONDUIT THAT IS TO FIT IN THE OPENING PLUS NO MORE THAN 1/4".

THE CONTRACTOR SHALL NOT INSTALL WIRE IN ANY PULL BOX UNTIL ITS INSTALLATION HAS BEEN INSPECTED AND ACCEPTED BY THE ENGINEER.

GROUNDING LUGS (MECHANICAL CONNECTORS) SHALL BE U.L. LISTED AND APPROVED FOR USE WITH COPPER WIRE. THE MECHANICAL CONNECTION (INSIDE AND OUTSIDE) TO THE PULL BOX, SHALL BE TOTALLY AND PERMANENTLY SEALED WITH A SILICONE OR RUBBERIZED CAULKING COMPOUND AS APPROVED BY THE ENGINEER.

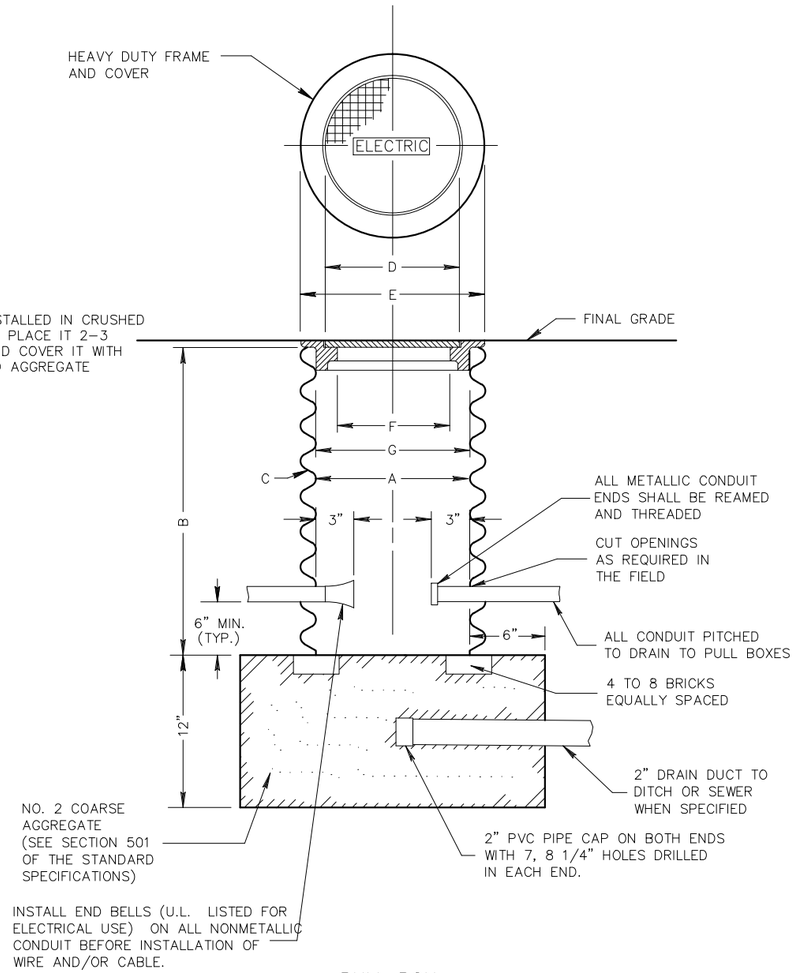
GROUNDING LUGS ARE NOT REQUIRED IN PULL BOXES WHEN VOLTAGES OF LESS THAN 50 VOLTS AC ARE THE ONLY VOLTAGES ENCOUNTERED IN THE BOXES.

ALL METALLIC CONDUIT IN WHICH WIRE AND/OR CABLE IS TO BE INSTALLED, SHALL BE BUSHED BEFORE INSTALLATION OF THE WIRE AND/OR CABLE.

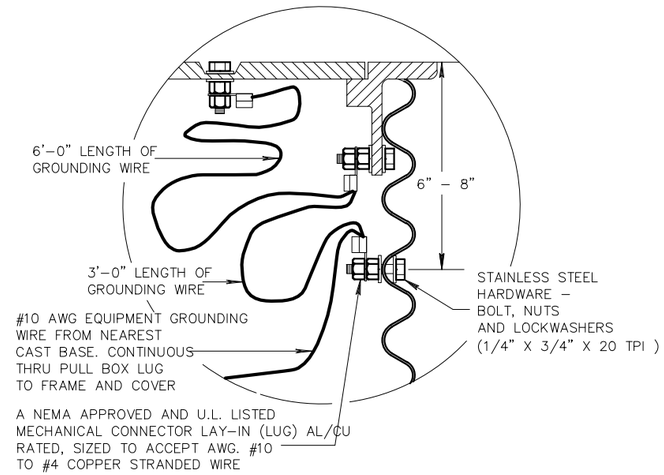
S.D.D. 9B2, "CONDUIT", APPLIES TO THIS DRAWING.

WHEN PULL BOXES ARE INSTALLED FOR FUTURE USE, DO NOT INSTALL THE EQUIPMENT GROUNDING LUG. THE EQUIPMENT GROUNDING LUG, THE EQUIPMENT GROUNDING ELECTRODE AND THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE REQUIRED AND INSTALLED UNDER A FUTURE WIRING CONTRACT.

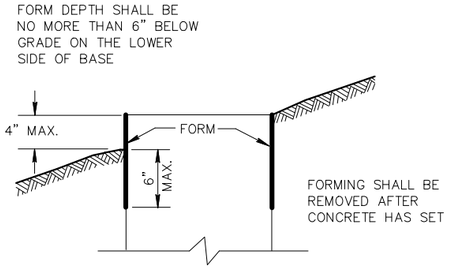
IF PULL BOX EQUIPMENT GROUNDING IS REQUIRED USING AN EQUIPMENT GROUNDING ELECTRODE IN EACH PULL BOX, THE EQUIPMENT GROUNDING ELECTRODE SHALL BE ?" X 8'-0", COPPERCLAD AND BE EXOTHERMICALLY WELDED TO A #4 AWG, COPPER, STRANDED WIRE (BARE OR GREEN INSULATED). THE #4 AWG WIRE SHALL BE 4 FEET IN LENGTH, NEATLY COILED, TAPED AND AVAILABLE FOR USE WHEN REQUIRED.



PULL BOX



EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES



FORMING DETAIL

QUANTITY REQUIREMENTS	CONCRETE BASE TYPE		
	1	2	5
APPROX. CUBIC YARDS OF CONCRETE	0.40	0.57	0.40
LBS. OF HOOP BAR STEEL	NONE	23	16
LBS. OF VERTICAL BAR STEEL	NONE	60	18

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

TOP SURFACES OF CONCRETE BASES SHALL BE TROWEL FINISHED SMOOTH AND LEVEL.

CONDUIT SIZES AND LOCATIONS SHALL BE AS SHOWN ON THE PLANS.

THE FINAL OR TERMINATING CONCRETE BASE IN A CONDUIT RUN SHALL HAVE A 6" EXIT STUB INSTALLED FOR FUTURE CABLING USE. THE EXIT STUB SHALL BE SIZED AS USED THROUGHOUT THE CONDUIT RUN AS SHOWN AT THE ENTRANCE OF THE BASE.

MINIMUM BENDING RADIUS OF CONDUIT IS EQUAL TO 6 X THE DIAMETER.

CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 1 INCH. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

GENERAL NOTES (CONTINUED)

BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF CONCRETE BASES BEFORE INSTALLATION OF CABLE OR WIRE.

ENDS OF CONDUIT INSTALLED BELOW GRADE FOR FUTURE USE SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC.

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTER FITTINGS, U.L. LISTED FOR ELECTRICAL USE, SHALL BE USED.

IF A BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE DIRT OR FILL, THE FORM SHALL BE REMOVED BEFORE BACKFILLING AROUND THE BASE. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BARE CONCRETE BASE IN LAYERS OF 1 FOOT OR LESS.

A NO. 4 AWG, STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD) FOR TYPE 2 AND TYPE 5 BASES.

THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE FURNISHED AND INSTALLED TO ENTER THE BASE OF THE TYPE 2 AND TYPE 5 BASES THROUGH A 1 INCH CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING A 4 FOOT COIL OF WIRE ABOVE THE CONCRETE BASE. THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.

ANCHOR RODS SHALL BE THREADED 12" IN LENGTH ON EACH END OF THE ROD, ANCHOR RODS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 654.2.1 AND 641.2.2 OF THE STANDARD SPECIFICATIONS, ASTM A–449, OR ASTM A–687 (GRADE 105).

WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR RODS.

WHEN ANCHOR RODS USING THE ALTERNATE "L" BEND ARE FURNISHED, THE 4" "L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH. THE "L" BEND END SHALL NOT BE THREADED.

ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1 :40 FROM VERTICAL.

WELDING OF THE ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. TIE WIRES SHALL BE USED.

BAR STEEL REINFORCEMENT SHALL BE COATED WITH POWDERED EPOXY RESIN IN ACCORDANCE WITH SECTION 505 OF THE STANDARD SPECIFICATIONS (LATEST EDITION).

(1) THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES EXCEPT WITH WRITTEN APPROVAL BY THE ENGINEER.

(2) (4) 1" DIA. X 3'–6" ANCHOR RODS.

(3) (4) 1" DIA. X 5'–0" ANCHOR RODS.

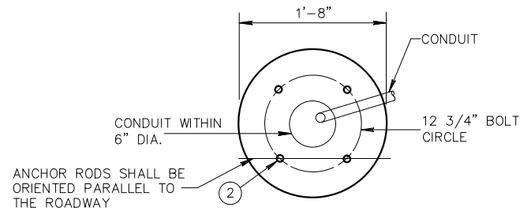
(4) (6) NO. 6 X 6'–8" BAR STEEL REINFORCEMENT.

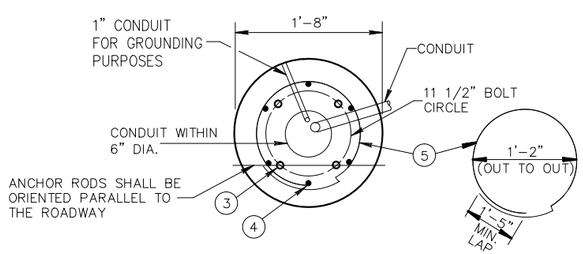
(5) (7) NO. 4 X 5'–1" BAR STEEL REINFORCEMENT @ 1'–0" C–C.

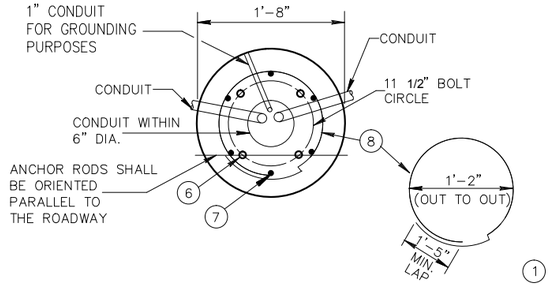
(6) (4) 1" DIA. X 3'–6" ANCHOR RODS.

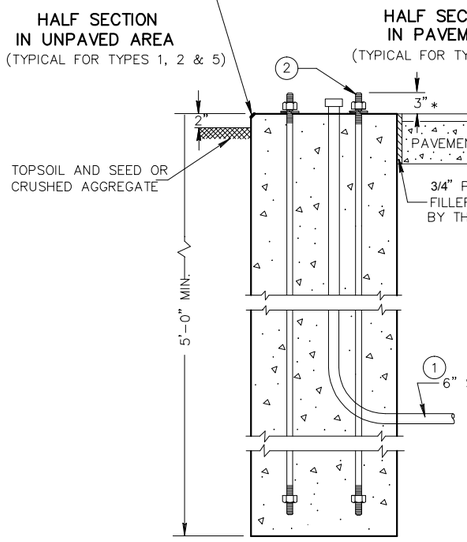
(7) (6) NO.4 X 4'–8" BAR STEEL REINFORCEMENT.

(8) (5) NO. 4 X 5'–1" BAR STEEL REINFORCEMENT @ 1'–0" C–C.

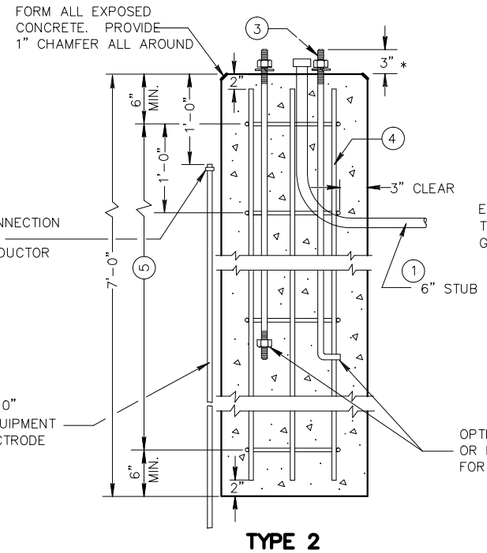




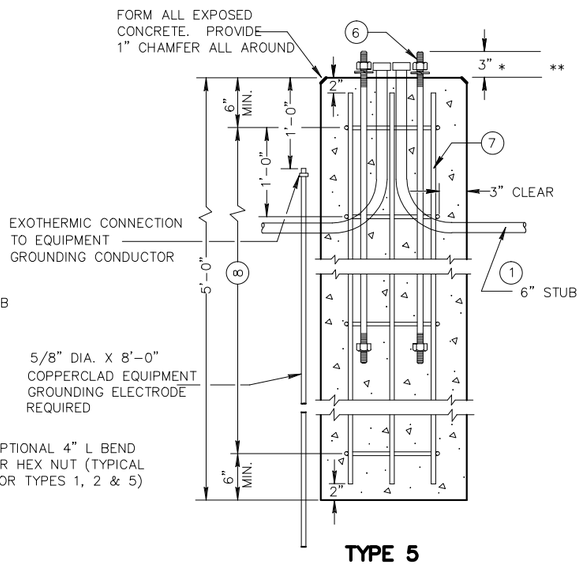




TYPE 1



TYPE 2

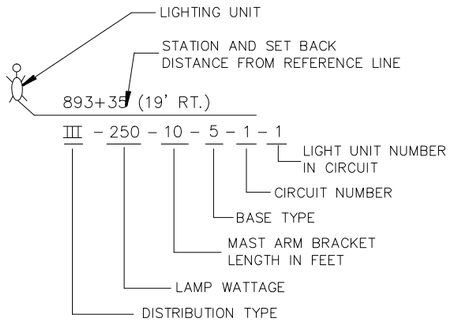


TYPE 5

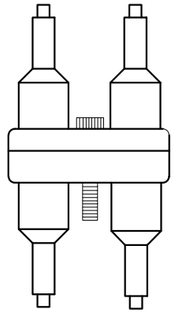
CONCRETE BASES

* ANY ANCHOR ROD PROJECTION SHORTER THAN 2 3/4" OR LONGER THAN 3 1/4" SHALL REQUIRE THE BASE TO BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE.

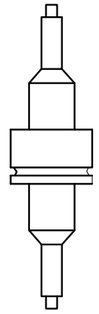
** FOR NONBREAKAWAY INSTALLATIONS, 4 1/2" ± ANCHOR ROD PROJECTION WITH THE USE OF LEVELING NUTS. RODENT SCREEN REQUIRED.



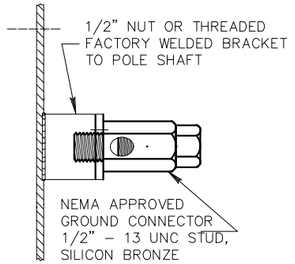
LIGHTING UNIT CODE
(TYPICAL)

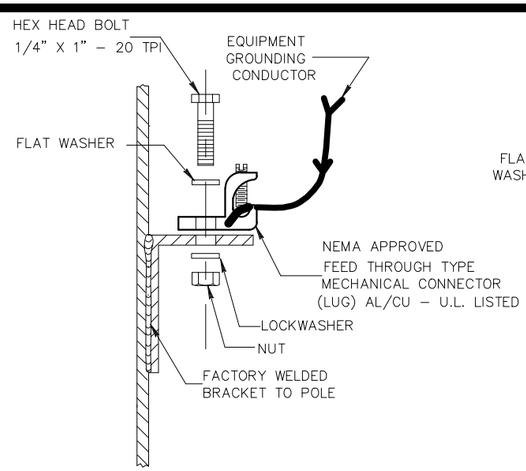


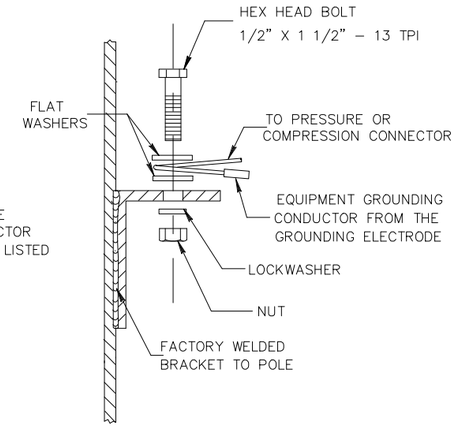
DETAIL "A"
DOUBLE POLE



DETAIL "B"
SINGLE POLE

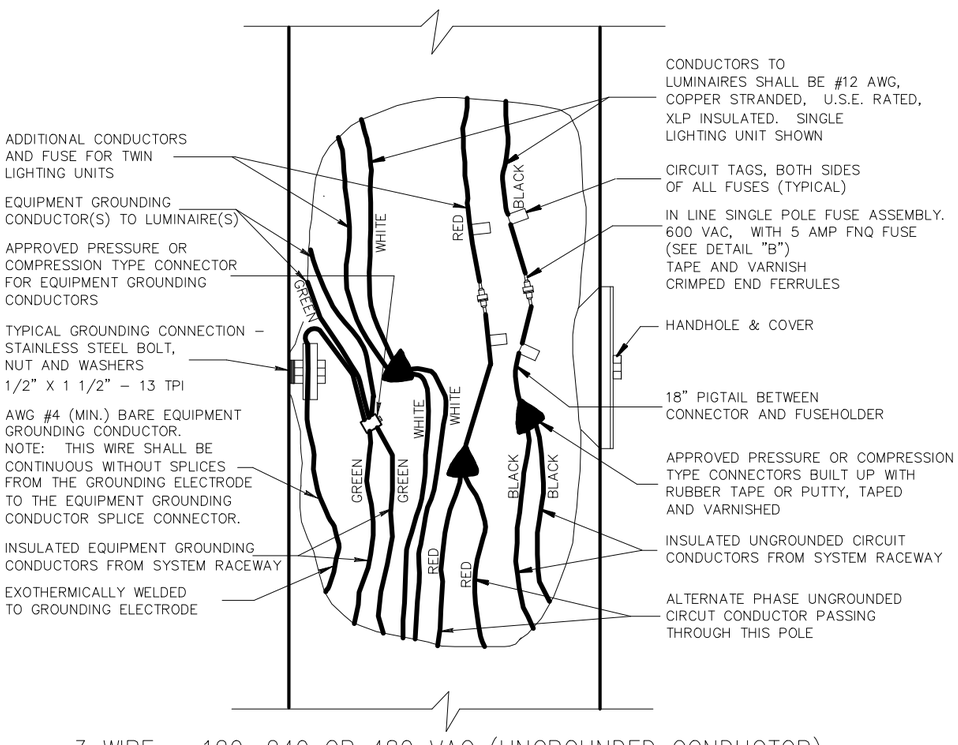




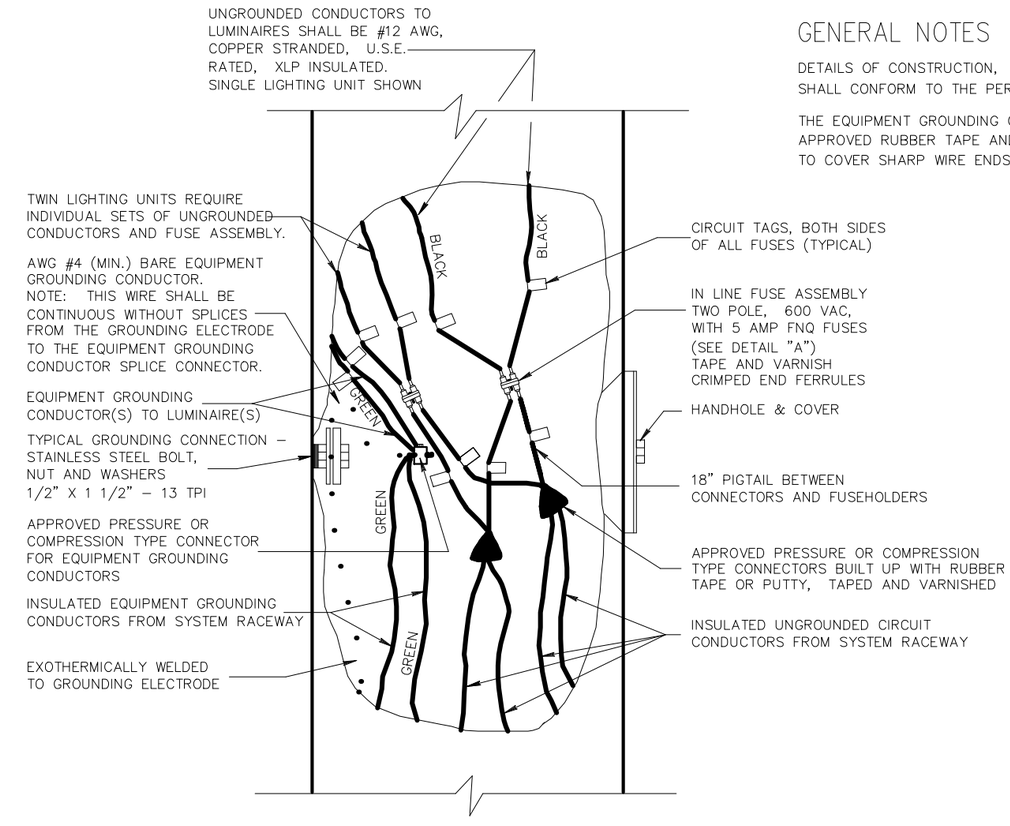


TYPICAL GROUNDING CONNECTIONS

NUT, BOLT, WASHERS AND LOCKWASHERS SHALL BE STAINLESS STEEL



3 WIRE - 120, 240 OR 480 VAC (UNGROUNDED CONDUCTOR)
WITH GROUNDED CONDUCTOR AND
WITH EQUIPMENT GROUNDING CONDUCTOR

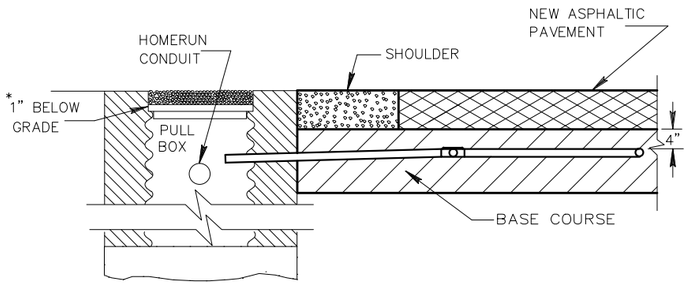


2 WIRE - 240 OR 480 VAC (UNGROUNDED CONDUCTORS)
WITH EQUIPMENT GROUNDING CONDUCTOR

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

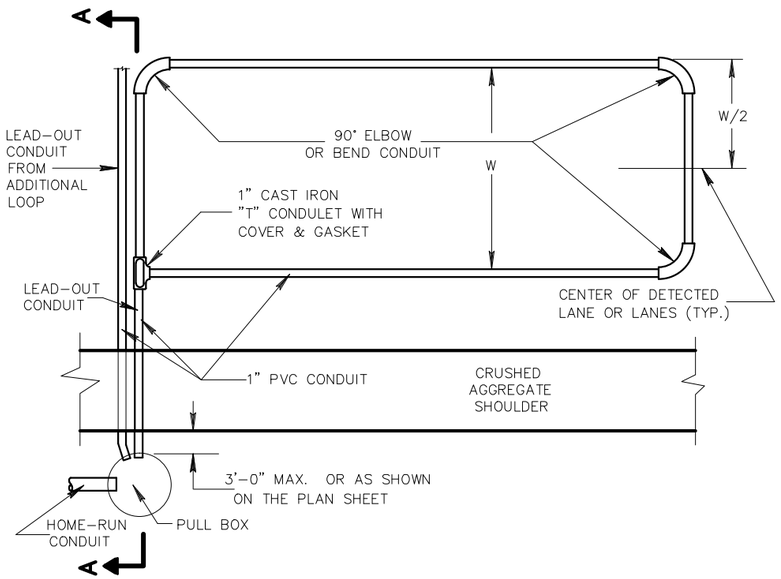
THE EQUIPMENT GROUNDING CONNECTOR SHALL BE TAPED WITH 3 WRAPS (MINIMUM) OF APPROVED RUBBER TAPE AND THEN 3 WRAPS (MINIMUM) OF APPROVED VINYL TAPE TO COVER SHARP WIRE ENDS AFTER THE CONNECTION IS COMPLETED.



SECTION A–A
NO CURB & GUTTER

DETECTOR LOOP INSTALLATION DETAIL

*RECESS PULL BOX SO THAT THE COVER IS 3" BELOW GRADE IN SHOULDER AREAS OF CRUSHED AGGREGATE. BACKFILL OVER COVER WITH THE CRUSHED AGGREGATE TO BRING THE AREA TO GRADE LEVEL.



TYPICAL PLAN OF LOOP DETECTOR

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

LOOP SIZE, LOCATION, NUMBER OF TURNS OF WIRE AND ASSOCIATED SIGNAL PHASE SHALL BE AS SHOWN ON THE PLANS.

PITCH LEAD–OUT CONDUIT TO DRAIN TO ROADSIDE PULL BOX.

SPLICES SHALL BE INSTALLED BY USING CAST IN PLACE SPLICE KITS SUCH AS 3M TYPE 82A1 OR APPROVED EQUAL. NON–INSULATED BUTT SPLICES TO FIT #12 AWG STRANDED WIRE SHALL BE USED. SPLICES SHALL BE SOLDERED AND INSULATED FROM EACH OTHER AS PER INSTRUCTIONS INCLUDED IN THE SPLICE KIT.

MEASURE GROUND RESISTANCE USING A MEGGER. REPLACE LOOP WIRE NOT ATTAINING A READING OF INFINITY TO GROUND.

AFTER SPLICING THE LOOP WIRE TO THE LOOP LEAD–IN CABLE, THE CONTRACTOR SHALL MEASURE INDUCTANCE, GROUND RESISTANCE AND WIRE RESISTANCE AT THE CABINET END OF THE LEAD–IN CABLE AND FURNISH A COPY OF THE READINGS TO THE PROJECT ENGINEER FOR EVALUATION.

ANTI–SIEZE LUBRICATING MATERIAL SHALL BE USED ON ALL THREADS OF THREADED ASSEMBLIES BEFORE INSTALLATION.

LOOP DETECTOR LEADS SHALL BE IDENTIFIED WITH THEIR ASSOCIATED LOOP BY USE OF WATERPROOF TAGS AT BOTH ENDS OF THE CABLE. A LISTING OF THE CABLE IDENTIFICATION PER INDIVIDUAL LOOP LEAD–IN SHALL BE PLACED IN THE CABINET.

THE #12 AWG LOOP WIRE FROM THE LOOP TO THE ROADSIDE PULL BOX, SHALL BE HAND TWISTED AT LEAST 3 TWISTS PER FOOT BEFORE INSTALLATION.

SPLICES OF LOOP WIRE TO LEAD–IN CABLE SHALL BE MADE ONLY IN PULL BOXES AT THE SIDE OF THE ROAD.

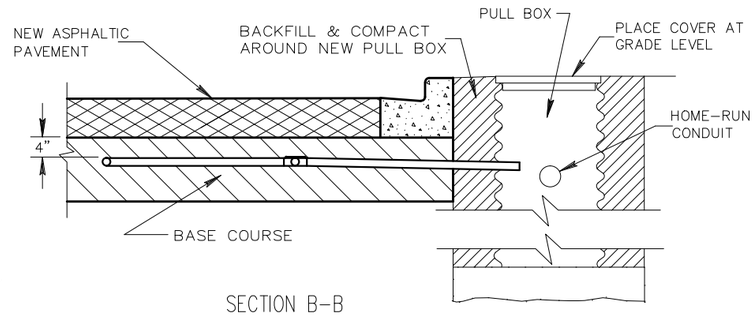
THE #12 AWG LOOP WIRE SHALL BE INSTALLED FROM THE ROADSIDE PULL BOX, THROUGH THE LOOP DUCT, BACK TO THE ROADSIDE PULL BOX, AND BE INSTALLED IN ONE, NON–SPLICED, CONTINUOUS LENGTH.

PROTECTION OF THE CONDUIT AND CONDULET SHALL BE REQUIRED AFTER INSTALLATION AND BEFORE THE ASPHALTIC PAVEMENT IS PLACED.

WHEN MULTIPLE LAYERS OF ASPHALTIC PAVEMENT ARE TO BE PLACED, LOOPS MAY BE INSTALLED BY SAWING A TWO INCH WIDE SLOT IN THE FIRST LAYER, DIG OUT THE ASPHALTIC MATERIAL AND BASE COURSE, PLACE THE LOOP, FILL THE SLOT WITH BASE COURSE MATERIAL AND NEW ASPHALTIC MATERIAL AND TAMP THE ASPHALTIC MATERIAL IN PLACE.

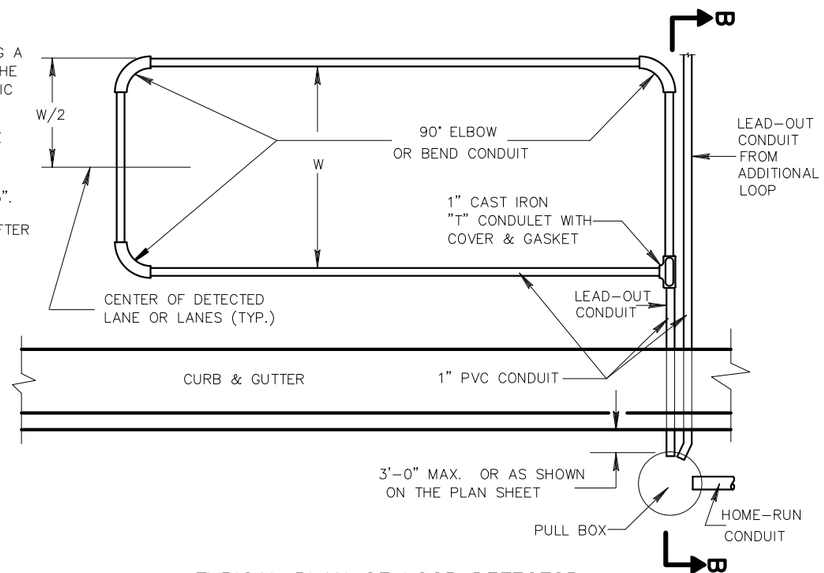
SHOULD TRAFFIC BE ALLOWED TO USE THE AREA OF ROADWAY WITH THE NEWLY INSTALLED LOOP BEFORE THE PLACEMENT OF THE NEXT LAYER OF ASPHALTIC PAVEMENT, THE SLOT/PAVEMENT OPENING SHALL BE SEALED WITH HOT POURED ELASTIC TYPE MATERIAL CONFORMING TO THE REQUIREMENTS OF THE "SPECIFICATION FOR JOINT SEALANTS, HOT POURED, FOR CONCRETE AND ASPHALT PAVEMENTS, ASTM DESIGNATION: D3405".

DRIVE A 1 1/2" MAX. PK NAIL INTO THE NEW ASPHALTIC PAVEMENT AND DIRECTLY ABOVE THE CONDULET AFTER THE FINAL LAYER OF NEW ASPHALTIC PAVEMENT IS COMPLETELY INSTALLED, IF REQUIRED BY THE DISTRICT TRAFFIC SECTION.

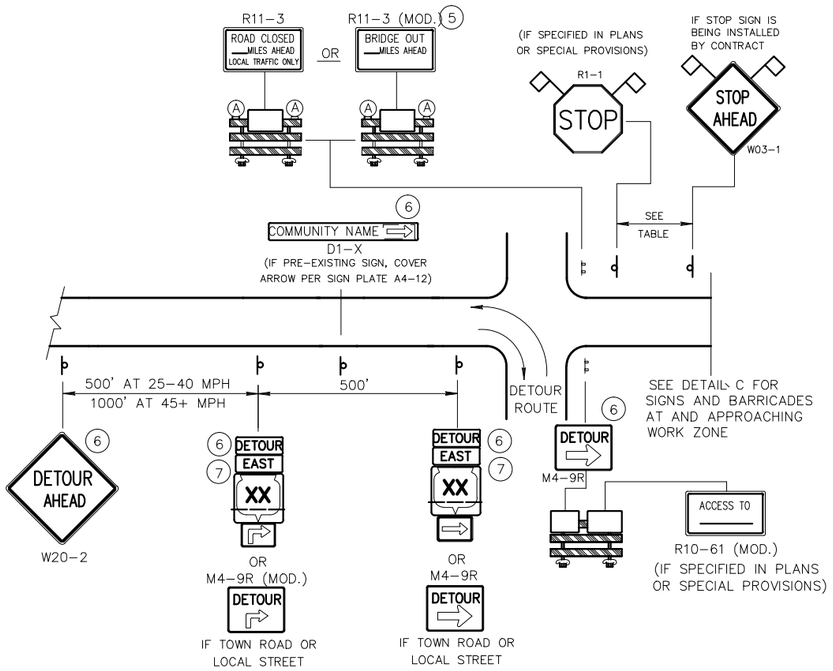


SECTION B–B
CURB & GUTTER

LOOP DETECTOR INSTALLATION DETAIL



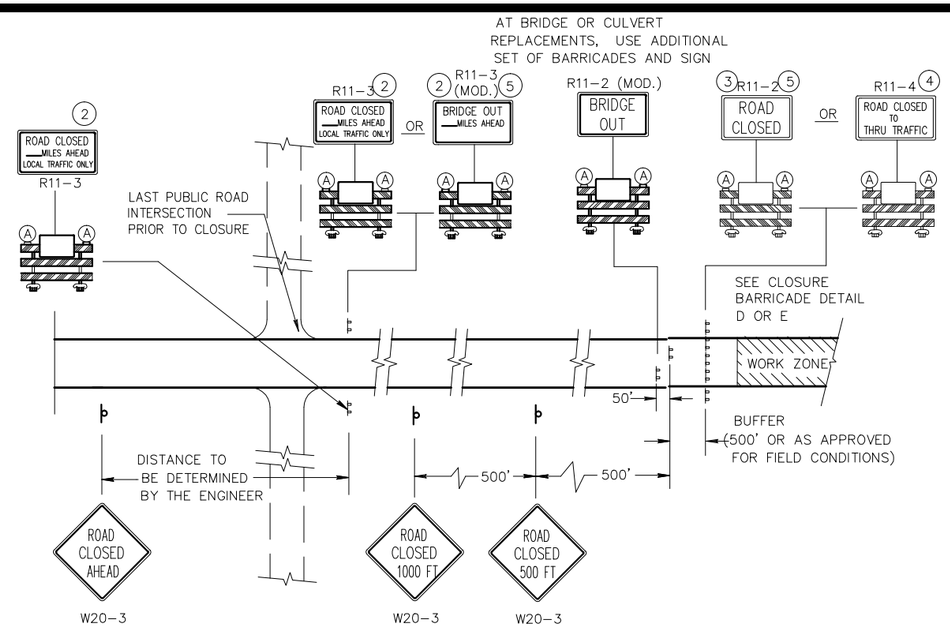
TYPICAL PLAN OF LOOP DETECTOR



DETAIL A

MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)

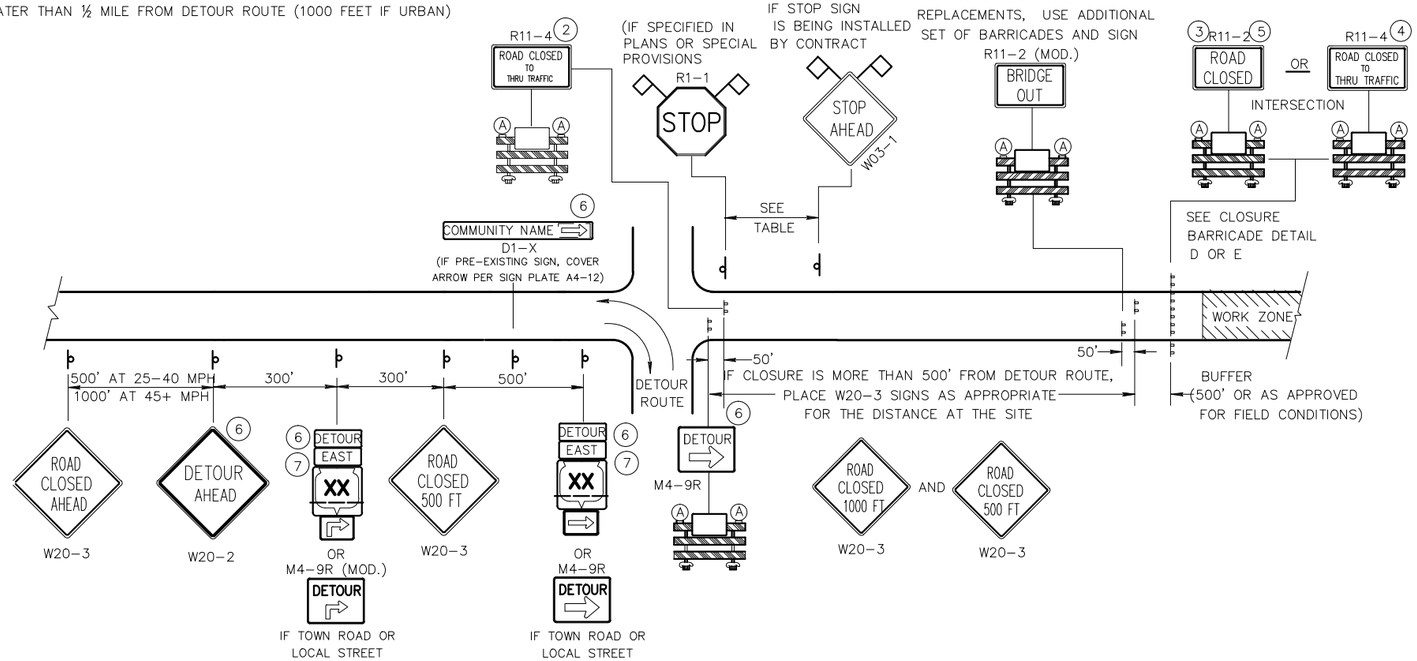


DETAIL C

MAINLINE CLOSURE, NO POSTED DETOUR

SPEED LIMIT (MPH)	"STOP AHEAD" ADVANCE WARNING DISTANCE (FT)
25	200
30	200
35	350
40	350
45	500
50	550
55	750

SEE SDD 15C2-4b
FOR GENERAL NOTES
AND FOOTNOTES ① THROUGH ⑦



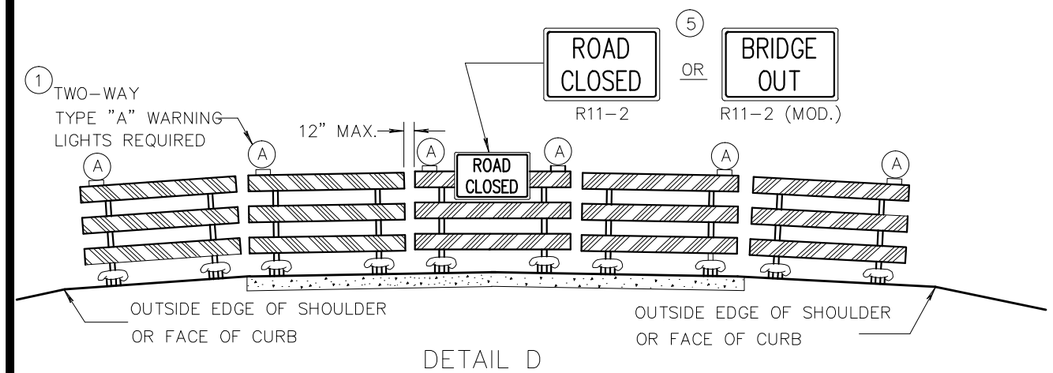
DETAIL B

MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)

LEGEND

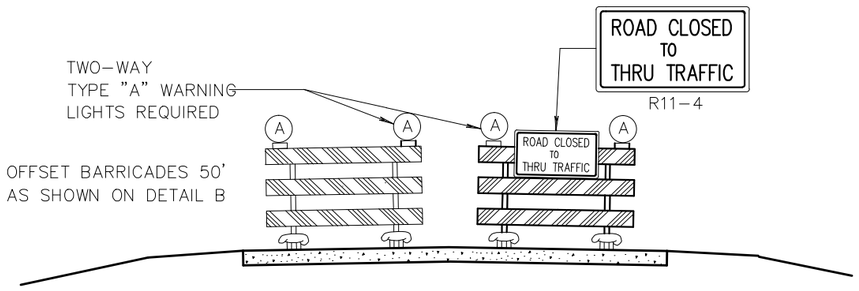
- POST MOUNTED SIGN
- TYPE III BARRICADES
- (A) TYPE "A" LOW INTENSITY FLASHING WARNING LIGHT (FOR NIGHT USE)
- WORK ZONE
- DETOUR / EAST — M4-8 / M3-X
- XX — M1-4; COUNTY XX — M1-5A; XX — M1-6
- M05-1 OR M06-1
- FLAGS, 16" X 16" MIN., (ORANGE)



DETAIL D

ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW



DETAIL E

LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

SEE SDD 15C2–4a FOR LEGEND

GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND BARRICADES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

BARRICADES THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY RE–ESTABLISHED UPON COMPLETION OF THE OPERATION OR, FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

ALL TYPE III BARRICADES SHALL HAVE RAILS REFLECTORIZED ON BOTH FACES. STRIPES SHALL BE PROPERLY SLOPED DOWN TOWARD THE TRAFFIC SIDE OR AS SHOWN IN THE ROAD CLOSURE BARRICADE DETAIL D FOR FULL ROAD CLOSURES.

TYPE "A" LOW–INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.

THE R11–2, R11–3, M4–9, R11–4 AND R10–61 SIGNS PLACED ON BARRICADES SHALL COVER NO MORE THAN THE TOP RAI
THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE OR BOTTOM RAILS.

THE REFLECTIVE SHEETING USED ON R11–2, R11–3, R11–4, R10–61 AND R1–1 SIGNS SHALL COMPLY WITH SUBSECTION 637.2.2.2 OF THE STANDARD SPECIFICATIONS.

"WO" AND "MO" SIGNS ARE THE SAME AS "W" AND "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
R11–2 SHALL BE 48" X 30".
R11–3, R11–4 AND R10–61 SHALL BE 60" X 30".
M4–9 SHALL BE 30" X 24".
M3–X AND M4–8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
M1–4, M1–5A, AND M1–6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
MO5–1 AND MO6–1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
D1–X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
R1–1 SHALL BE 36" X 36".

(1) TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8–FOOT LIGHT SPACING).

(2) THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT INTERSECTION.

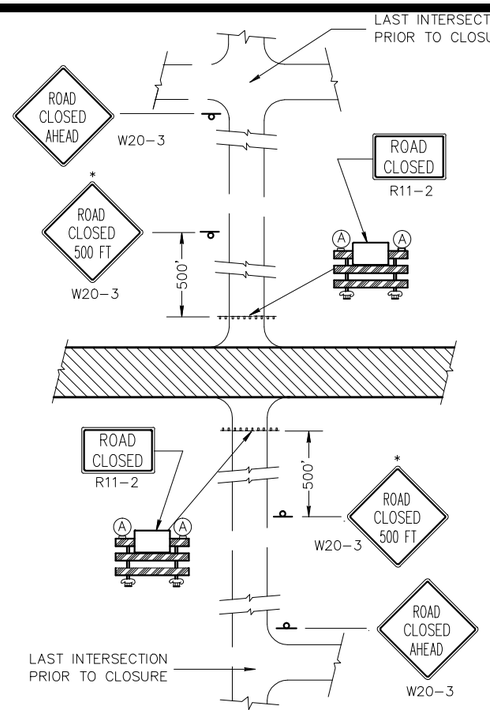
(3) FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL D.

(4) FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE LANE CLOSURE BARRICADE DETAIL E.

(5) FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11–2 AND R11–3 SIGNS.

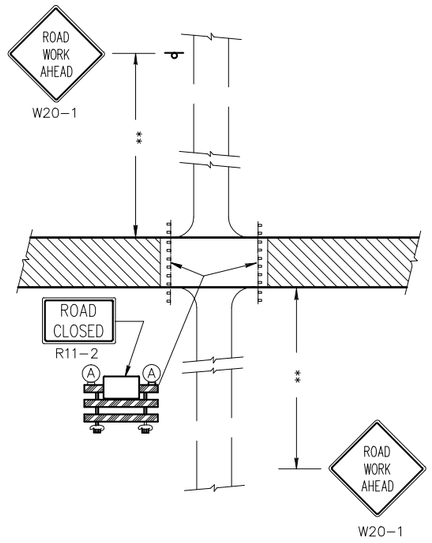
(6) INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.

(7) "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.



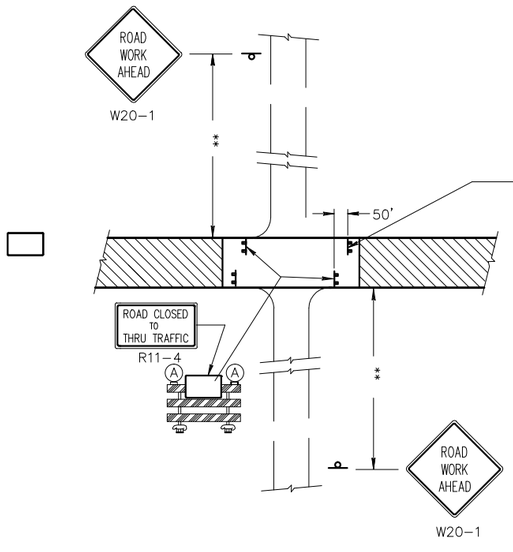
DETAIL 1

(NO ACCESS TO PROJECT)



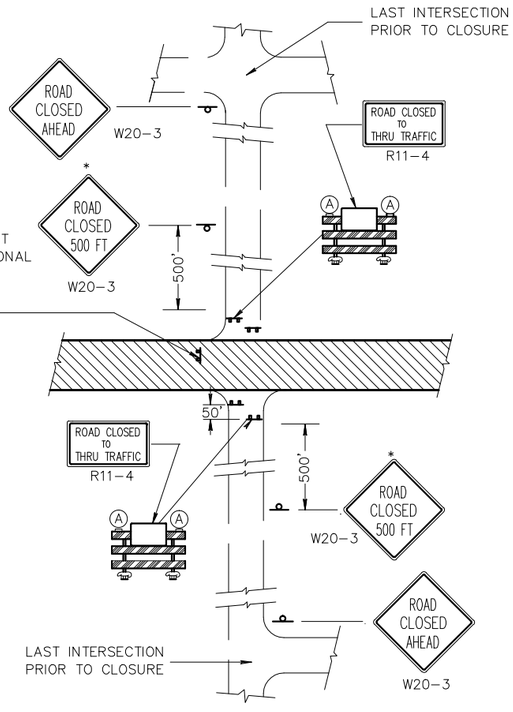
DETAIL 2

(PUBLIC CROSS-TRAFFIC MAINTAINED. NO ACCESS TO PROJECT).



DETAIL 3

(PUBLIC CROSS-TRAFFIC MAINTAINED. CONTRACTOR, LOCAL BUSINESS AND RESIDENT ACCESS).



DETAIL 4

(CONTRACTOR, LOCAL BUSINESS AND RESIDENT ACCESS TO PROJECT)

GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND BARRICADES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS RE-ESTABLISHED.

BARRICADES THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED UPON COMPLETION OF THE OPERATION OR, FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

ALL TYPE III BARRICADES SHALL HAVE RAILS REFLECTORIZED ON BOTH FACES. STRIPES SHALL BE PROPERLY SLOPED DOWN TOWARD THE TRAFFIC SIDE OR AS SHOWN IN THE ROAD CLOSURE BARRICADE DETAIL D FOR FULL ROAD CLOSURES.

TYPE "A" LOW-INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.

THE R11-2, R11-3 AND R11-4 SIGNS PLACED ON BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE OR BOTTOM RAILS.

THE REFLECTIVE SHEETING USED ON R11-2, R11-3 AND R11-4 SIGNS SHALL COMPLY WITH SUBSECTION 637.2.2.2 OF THE STANDARD SPECIFICATIONS.

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
R11-2 SHALL BE 48" X 30".
R11-4 AND R11-3 SHALL BE 60" X 30".

*OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FT. OR LESS FROM THE WORK ZONE.

**500' MAX. OR AT LAST INTERSECTION WHICHEVER IS CLOSER.

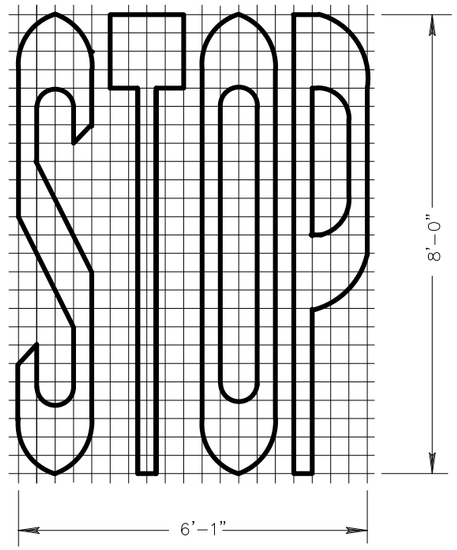
LEGEND

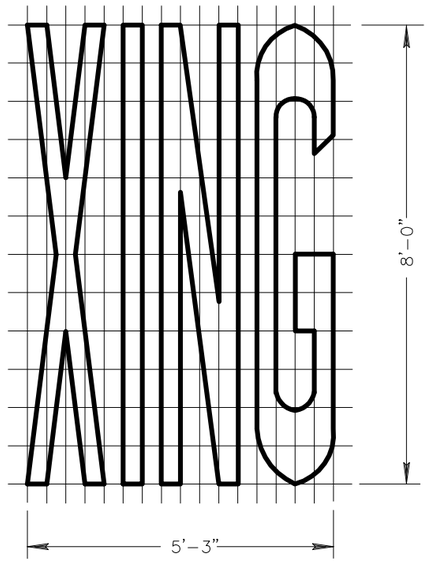
- POST MOUNTED WARNING SIGN
- TYPE III BARRICADES
- (A) TYPE "A" LOW INTENSITY FLASHING WARNING LIGHT (FOR NIGHT USE)
- WORK AREA

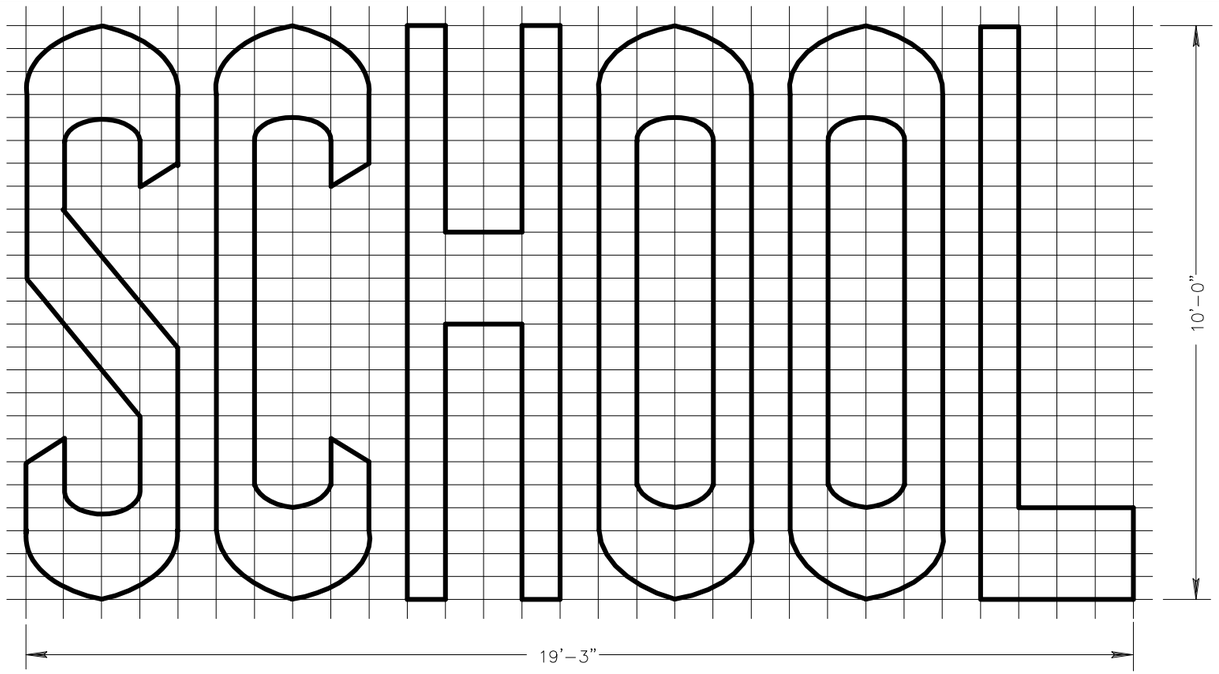
GENERAL NOTES

DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

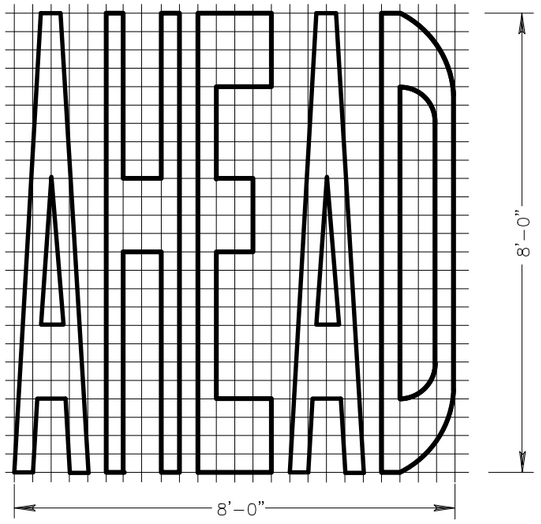
ALL LETTERS, ARROWS AND SYMBOLS SHALL BE IN CONFORMANCE WITH REQUIREMENTS INCLUDED IN "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" BOOK BY THE FEDERAL HIGHWAY ADMINISTRATION. ALL LETTERS, ARROWS AND SYMBOLS SHALL BE WHITE AND REFLECTORIZED. SMALL DIFFERENCES IN DIMENSIONS WITHIN THE TOLERANCES OF THAT BOOK ARE ACCEPTABLE.

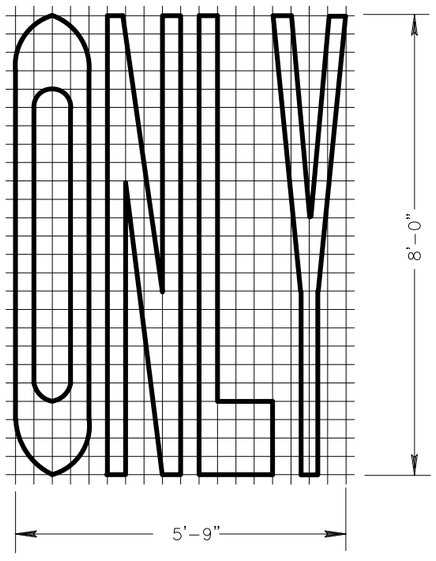


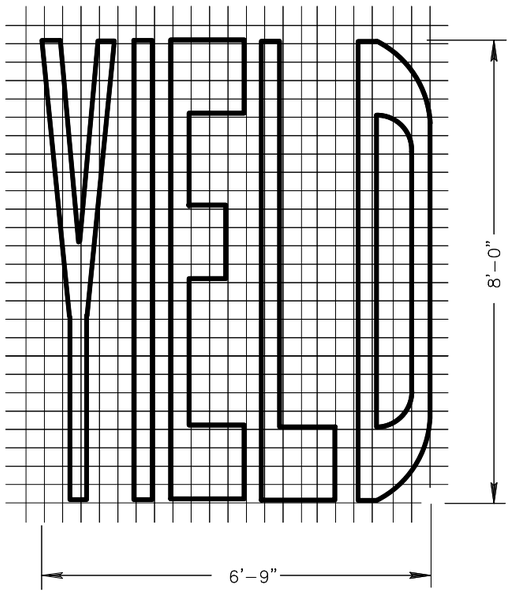


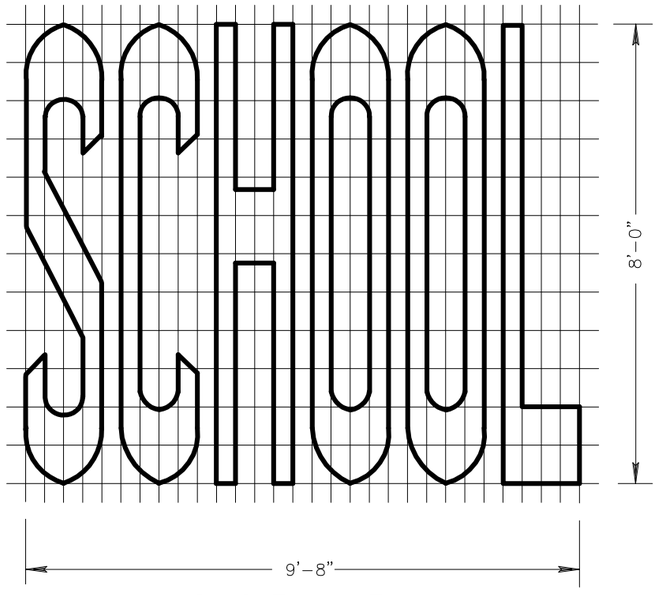


TWO-LANE

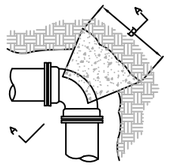




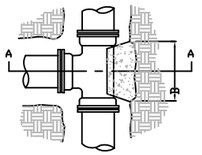




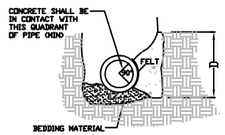
SINGLE-LANE



PLAN - 90° BEND



PLAN - TEE



SECTION A-A

PLAN - 45° BEND

BLOCKING DIMENSIONS

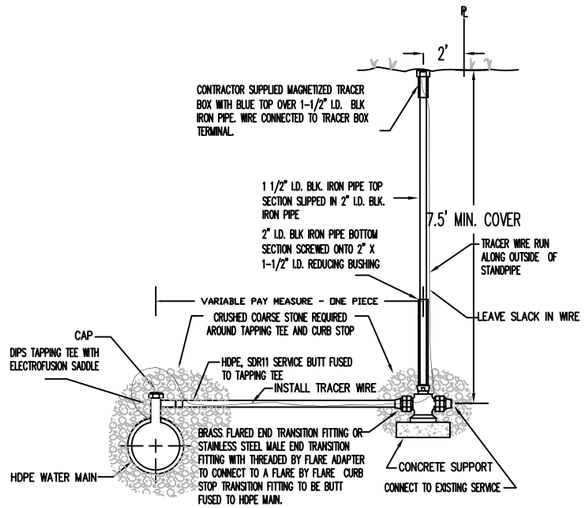
BEND OR BRANCH SIZE	22 1/2° BENDS		45° BENDS		90° BENDS		TEES	
	B	D	B	D	B	D	B	D
6"	1'-0"	1'-0"	1'-0"	1'-0"	1'-4"	1'-2"	1'-3"	1'-0"
8"	1'-0"	1'-0"	1'-4"	1'-2"	1'-10"	1'-6"	1'-6"	1'-4"
12"	1'-4"	1'-4"	1'-10"	1'-10"	2'-8"	2'-3"	2'-3"	2'-0"
16"	1'-10"	1'-8"	2'-6"	2'-4"	3'-10"	2'-10"	3'-2"	2'-4"
20"	2'-4"	2'-0"	3'-3"	2'-10"	5'-0"	3'-4"	4'-0"	3'-0"
24"	2'-10"	2'-4"	4'-0"	3'-3"	6'-4"	3'-10"	5'-3"	3'-4"
30"	3'-6"	3'-0"	5'-4"	3'-10"	8'-0"	4'-8"	6'-3"	4'-3"

- NOTES -

1. DIMENSIONS IN TABLE ARE BASED ON A WATER PRESSURE OF 150 P.S.I. AND AN EARTH RESISTANCE OF 2 TONS PER SQ. FOOT
2. BLOCKING TO BE SET AGAINST UNDISTURBED SOIL.
3. CONCRETE SHALL BE CLASS "1F"
   CONCRETE SHALL NOT INTERFERE WITH MECHANICAL JOINTS.

THRUST BLOCKING FOR WATERMAIN

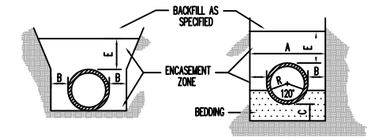
NO SCALE



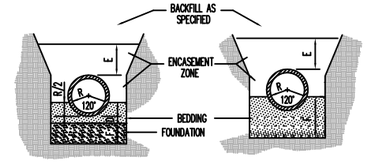
THE TRACER WIRE SHALL REMAIN CONTINUOUS TO THE GREATEST EXTENT POSSIBLE. SPLICES IN THE TRACER WIRE SHOULD BE MADE WITH SPLIT BOLT OR COMPRESSION TYPE CONNECTORS. WIRE NUTS OR CLIP TYPE CONNECTOR SHALL NOT BE USED. A WATER-PROOF CONNECTION IS NECESSARY TO PREVENT CORROSION.

SERVICE DETAIL

NO SCALE



NORMAL TRENCH ROCK TRENCH

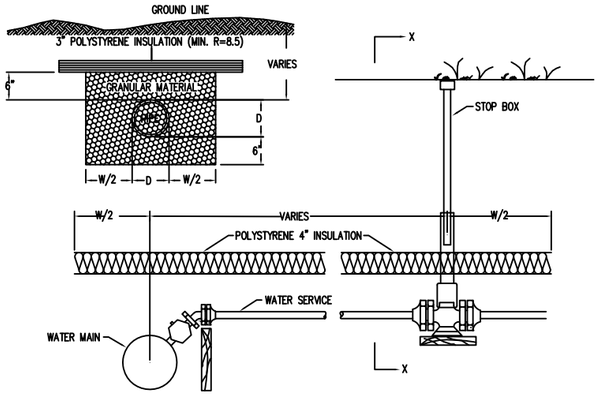


WET TRENCH UNSTABLE TRENCH

1. DIMENSIONS: A. MAXIMUM PAY WIDTH - O.D. PIPE +24"
   B. MINIMUM - 6"
   C. 6" BELOW BARREL
   D. 3" BELOW BARREL
   E. MINIMUM 12"
   F. DETERMINED BY THE ENGINEER
2. ENCASEMENT ZONE SHALL BE EXCAVATED MATERIALS THAT ARE CLASSIFIED SUITABLE, OR GRANULAR BACKFILL MATERIAL.
3. FOUNDATION MATERIAL - 3" CRUSHED STONE FOR WET OR UNSTABLE TRENCH BOTTOM.
4. BEDDING MATERIAL - CRUSHED STONE CHIPS

TRENCH SECTION FOR WATERMAIN

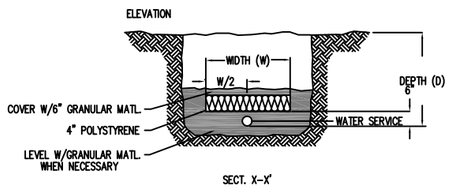
NO SCALE



DEPTH (D)	WIDTH (W)
7.0' OR MORE	NONE
5.2' TO 6.9'	4 FEET
4.3' TO 5.1'	6 FEET
3.0' TO 4.2'	8 FEET

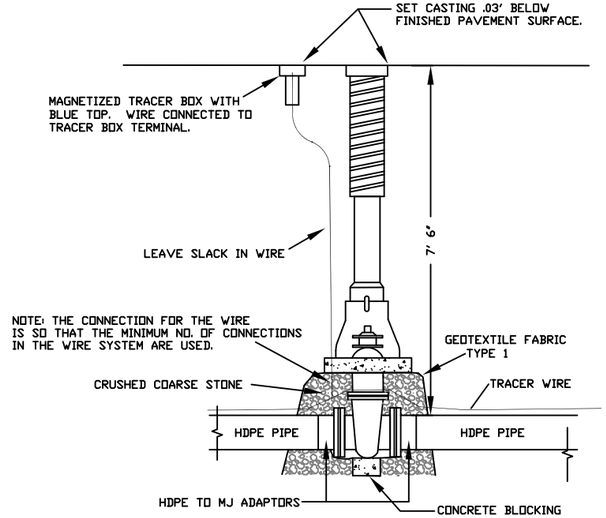
NOTES:

1. LAYERING OF 1", 1 1/2", 2" TO ARRIVE AT 3" IS PERMITTED. OFFSET JOINTS.
2. POLYSTYRENE SHALL BE HI DENSITY DOW HI 40 OR CERTIFOAM 40



WATERMAIN & SERVICE INSULATION DETAIL

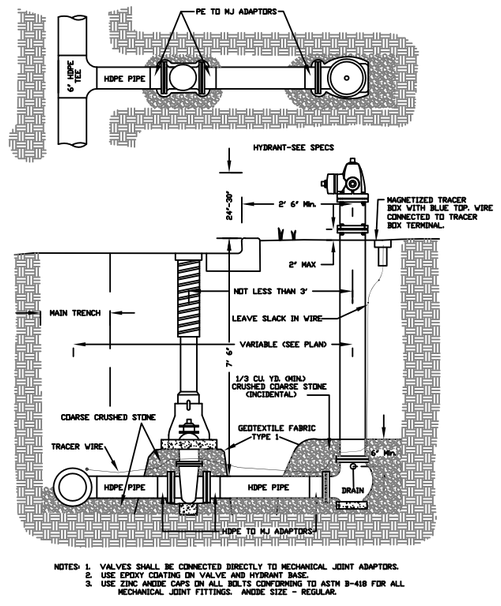
NO SCALE



NOTES: 1. VALVES SHALL BE CONNECTED DIRECTLY TO HDPE WITH HDPE TO MECHANICAL JOINT ADAPTORS.
2. USE EPOXY COATING ON EXTERIOR OF VALVES.
3. USE ZINC ANODE CAPS ON ALL BOLTS CONFORMING TO ASTM B-418 FOR ALL MECHANICAL JOINT FITTINGS. ANODE SIZE - REGULAR.

WATERMAIN VALVE DETAIL

NO SCALE



NOTES: 1. VALVES SHALL BE CONNECTED DIRECTLY TO MECHANICAL JOINT ADAPTORS.
2. USE EPOXY COATING ON VALVE AND HYDRANT BASE.
3. USE ZINC ANODE CAPS ON ALL BOLTS CONFORMING TO ASTM B-418 FOR ALL MECHANICAL JOINT FITTINGS. ANODE SIZE - REGULAR.

FIRE HYDRANT SETTING DETAILS

NO SCALE

S:\PTS\SWLP01\115828\5-dsgn\51-cadd\Civil\Plans\Water Detail.dwg

NO.	REVISIONS	DATE	BY
1			
2			
3			
4			

DESIGNED DRH DATE 03/2011
DRAWN DRH DATE 03/2011
CHECKED MB DATE 03/2011

SEH
PHONE: (218)279-3000
418 WEST SUPERIOR STREET
SUITE 200
DULUTH, MN 55802-1512

BANKS AVENUE

PHASE II

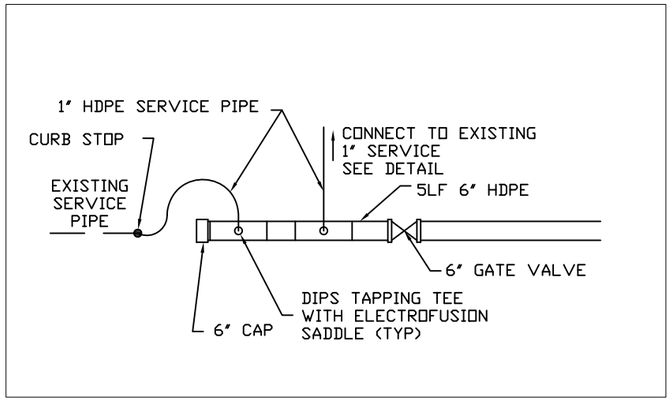
DETAILS - WATER

SEH PROJECT NO. 115828

DATE ISSUED 3-25-11

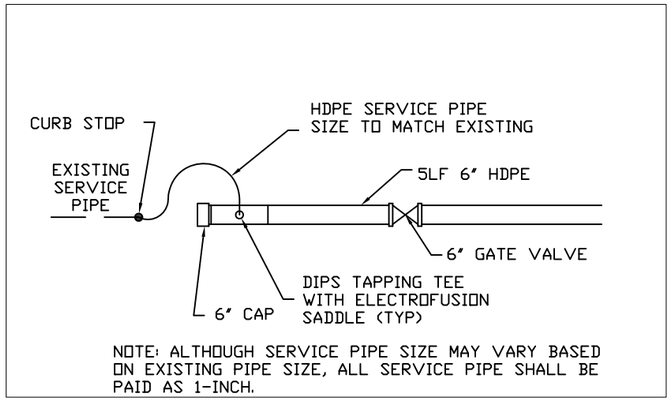
SHEET NO. 61

SHEET 61 OF 62



WATER CONNECTION DETAIL A

NO SCALE



WATER CONNECTION DETAIL B

NO SCALE

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NO.	REVISIONS	DATE	BY
1			
2			
3			
4			

DESIGNED DRH DATE 03/2011
DRAWN DRH DATE 03/2011
CHECKED MB DATE 03/2011

SEH
PHONE: (218)279-3000
418 WEST SUPERIOR STREET
SUITE 200
DULUTH, MN 55802-1512

BANKS AVENUE

PHASE II

DETAILS - WATER

SEH PROJECT NO. 115828

DATE ISSUED 3-25-11

SHEET NO. 62

SHEET 62 OF 62