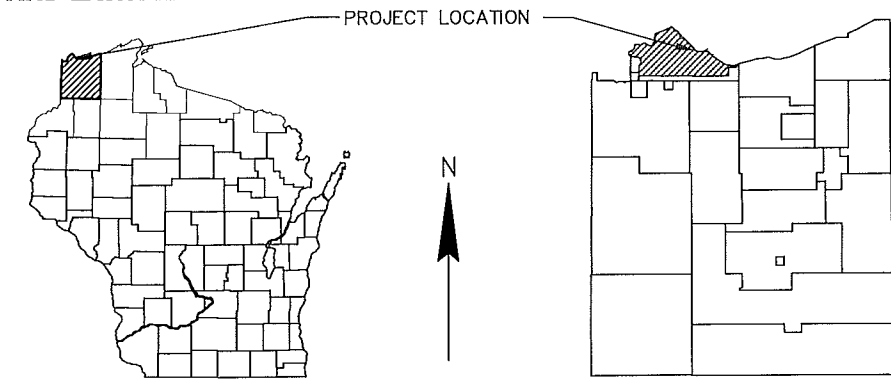
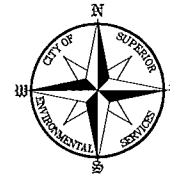
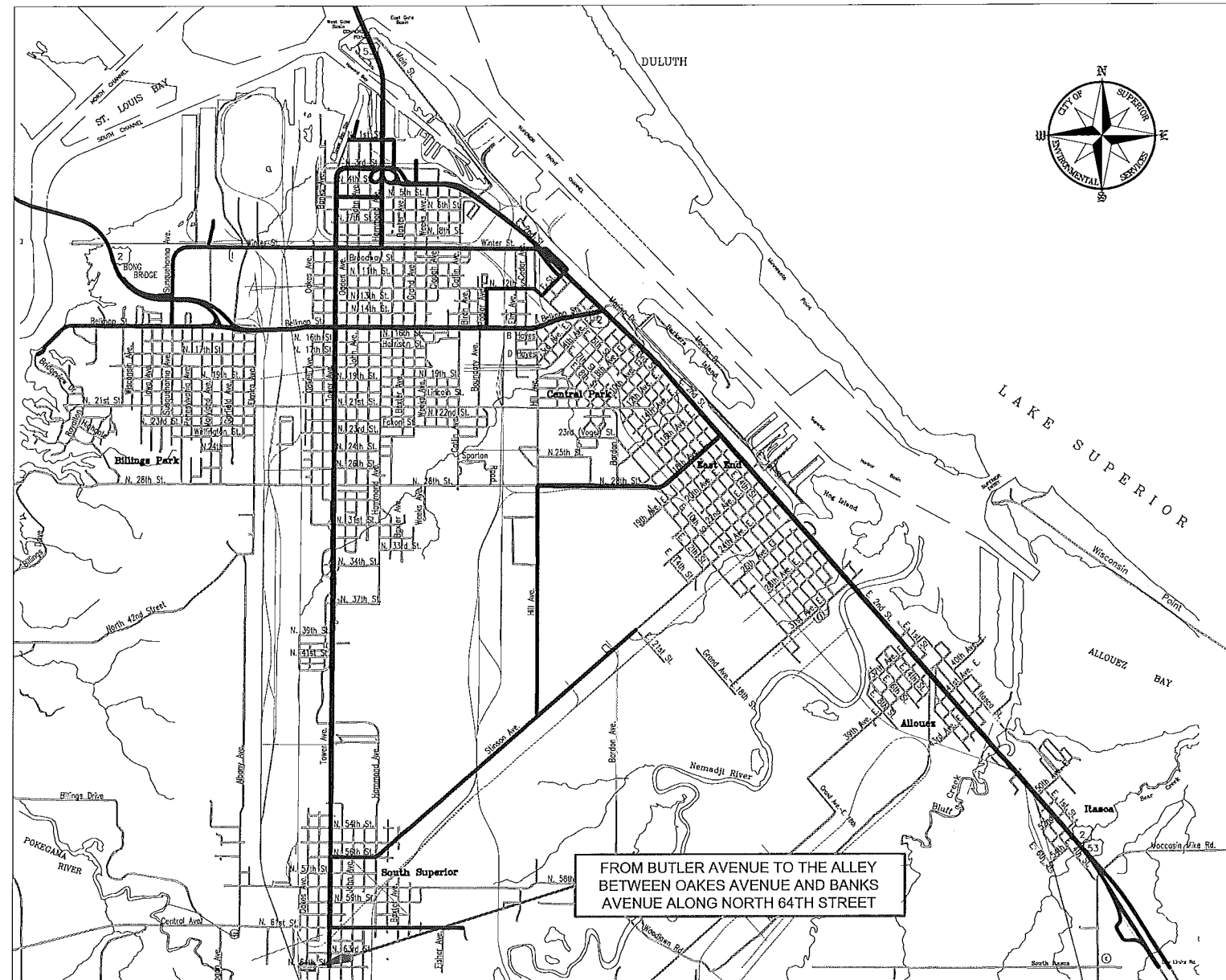


COMBINED SEWER RECONSTRUCTION - OAKES AVENUE AND NORTH 64TH STREET FROM BUTLER AVENUE TO THE ALLEY BETWEEN OAKES AVENUE AND BANKS AVENUE ALONG NORTH 64TH STREET

CONSTRUCTION PLAN FOR: COMBINED SANITARY SEWER RECONSTRUCTION, BITUMINOUS PAVING, AND LAWN RESTORATION



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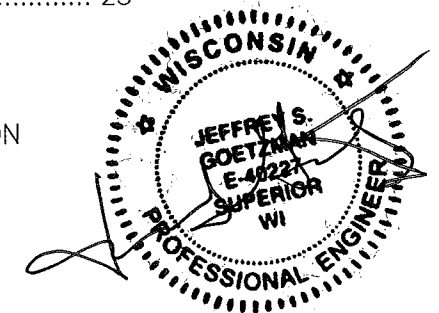
THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S 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 2014 SPECIFICATIONS FOR HIGHWAY CONSTRUCTION SHALL GOVERN THIS PROJECT

APPROVED:
CITY OF SUPERIOR ENGINEERING DIVISION
DATE: 5/23/2014
SIGNATURE:

DESIGN TEAM: STEVE ROBERTS
CHRIS CARLSON
AMY HOMSTAD
ANDREW RAUSCH



COMBINED SEWER RECONSTRUCTION - OAKES AVENUE AND NORTH 64TH STREET FROM BUTLER AVENUE TO THE ALLEY BETWEEN OAKES AVENUE AND BANKS AVENUE ALONG NORTH 64TH STREET

BID ITEM	DESCRIPTION	UNIT	ESTIMATED QUANTITY	NOTE
201.0110	CLEARING	SY	68	8
204.0110	REMOVING ASPHALTIC SURFACE	SY	1,289	
204.0155	REMOVING CONCRETE SIDEWALK	SY	290	
204.0215	REMOVING CATCH BASINS	EACH	2	
205.0100	EXCAVATION COMMON (PLAN)	CY	1,378	2,7
305.0125	BASE AGGREGATE DENSE 1-1/4 INCH (PLAN)	CY	373	2
312.0115	SELECT CRUSHED MATERIAL	CY	543	
455.0110	ASPHALTIC MATERIAL PG58-34	TON	20	
455.0605	TACK COAT	GAL	50	
460.1101	HMA PAVEMENT TYPE E-1	TON	324	4
520.1012	APRON ENDWALLS FOR CULVERT PIPE 12-INCH	EACH	7	
602.0405	CONCRETE SIDEWALK 4-INCH	SF	3,136	7
602.0420	CONCRETE SIDEWALK 7-INCH	SF	89	7
602.0515	CURB RAMP DETECTABLE WARNING PLATE NATURAL PATINA	SF	64	6
611.0101	CATCH BASINS TYPE 1, 48-INCH	EACH	3	
619.1000	MOBILIZATION	EACH	1	
625.0100	TOPSOIL (MIN 4" DEPTH)	SY	777	
627.2000	MULCHING	SY	777	
628.2004	EROSION MAT CLASS I TYPE B	SY	777	
628.7504	TEMPORARY DITCH CHECKS	LF	150	
630.0130	SEEDING MIXTURE NO. 30	LB	14	1
643.0100	TRAFFIC CONTROL (PROJECT)	EACH	1	5
645.0140	GEOTEXTILE FABRIC TYPE SAS (PLAN)	SY	1,631	2
650.4500	CONSTRUCTION STAKING SUBGRADE	LF	620	3
650.5000	CONSTRUCTION STAKING BASE	LF	620	3
690.0150	SAWING ASPHALT, FULL DEPTH	LF	118	

BID ITEM	DESCRIPTION	UNIT	ESTIMATED QUANTITY	NOTE
SPV.0060.01	REMOVE SANITARY MANHOLE	EACH	2	
SPV.0060.02	SEALING SANITARY PIPES	EACH	12	
SPV.0060.03	SANITARY SEWER CASTING	EACH	3	
SPV.0060.04	SANITARY SEWER WYE, 12-INCH X 6-INCH	EACH	5	
SPV.0060.05	SANITARY SEWER WYE, 15-INCH X 6-INCH	EACH	4	
SPV.0060.06	CONNECT TO EXISTING SANITARY SEWER SERVICE, 6-INCH	EACH	10	
SPV.0060.07	CONNECT TO EXISTING SANITARY SEWER, 15-INCH	EACH	1	
SPV.0090.01	SANITARY MANHOLE, 48-INCH	LF	30	
SPV.0090.02	REMOVE SANITARY SEWER, 15-INCH	LF	51	
SPV.0090.03	SANITARY SEWER SERVICE (PVC), 6-INCH	LF	150	
SPV.0090.04	SANITARY SEWER MAIN (PVC), 12-INCH	LF	378	
SPV.0090.05	SANITARY SEWER MAIN (PVC), 15-INCH	LF	86	
SPV.0090.06	STORM SEWER, 12-INCH SMOOTH WALL POLYETHYLENE	LF	241	
SPV.0090.07	CORRUGATED STEEL PIPE, 8-INCH	LF	103	
SPV.0090.08	SEWER FIELD QUALITY CONTROL-TELEVISION	LF	705	
SPV.0165.01	CURE AND SEAL TREATMENT, CONCRETE SIDEWALK	SF	3,225	

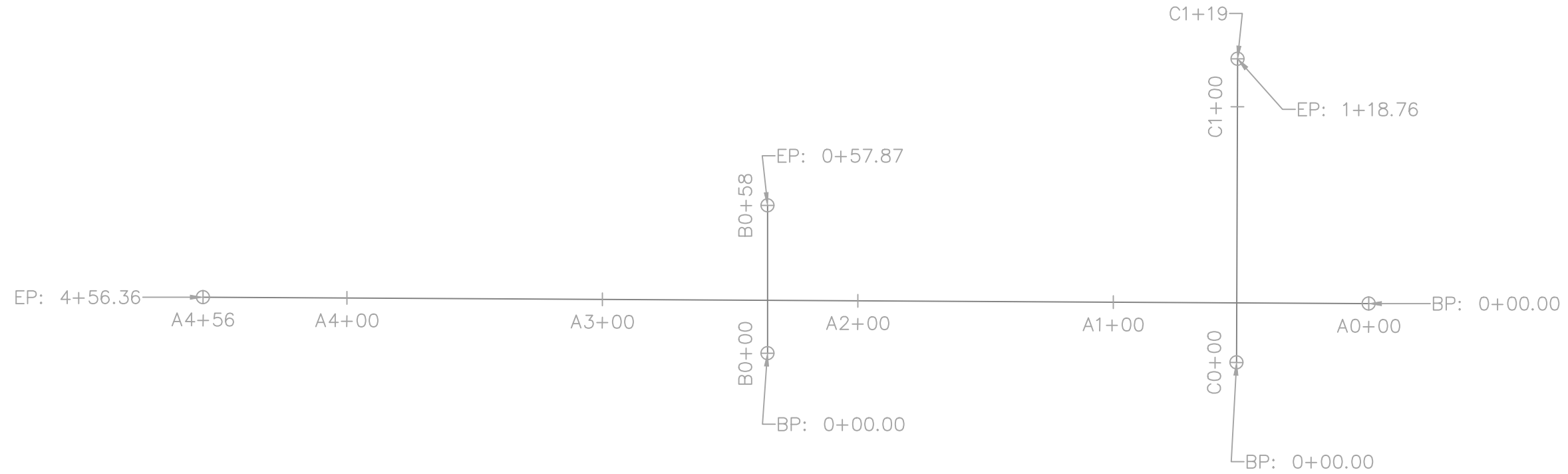
GENERAL CONSTRUCTION NOTE: CONTACT DULUTH LANDFILL SUPERIOR PRIOR TO CONSTRUCTION ACTIVITY TO COORDINATE SHUTTING DOWN THE LEACHATE THROUGH THE SANITARY SEWER AND ALL TREATMENT FOR LEACHATE. CONTACT DARIN SAARI AT 715-392-1889.

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

CONSTRUCTION NOTES:	
1	BASIS FOR QUANTITY: 2#/1000 SQ FT
2	PAYMENT BY PLAN QUANTITY ONLY
3	INCLUDES ALL STAKING IN ORDER TO COMPLETE PROJECT
4	BASIS FOR QUANTITY: 120#/SY INCH
5	CONTRACTOR TO PROVIDE AND MAINTAIN TRAFFIC CONTROL DEVICES IN CONFORMANCE WITH THE MOST CURRENT VERSION OF THE MUTCD
6	QUANTITY (8) 2'-0" X 4'-0" CURB RAMP DETECTABLE WARNING, FIELD NATURAL PATINA, PAL PRODUCTS ARE REQUIRED
7	CONCRETE SIDEWALK EXCAVATION IS INCIDENTAL TO BID ITEM 205.0100; FORMS AND AGGREGATE ARE INCIDENTAL TO CONCRETE SIDEWALK BID ITEMS 602.0405 & 602.0420.
8	PAYMENT WITHIN RIGHT-OF-WAY ONLY





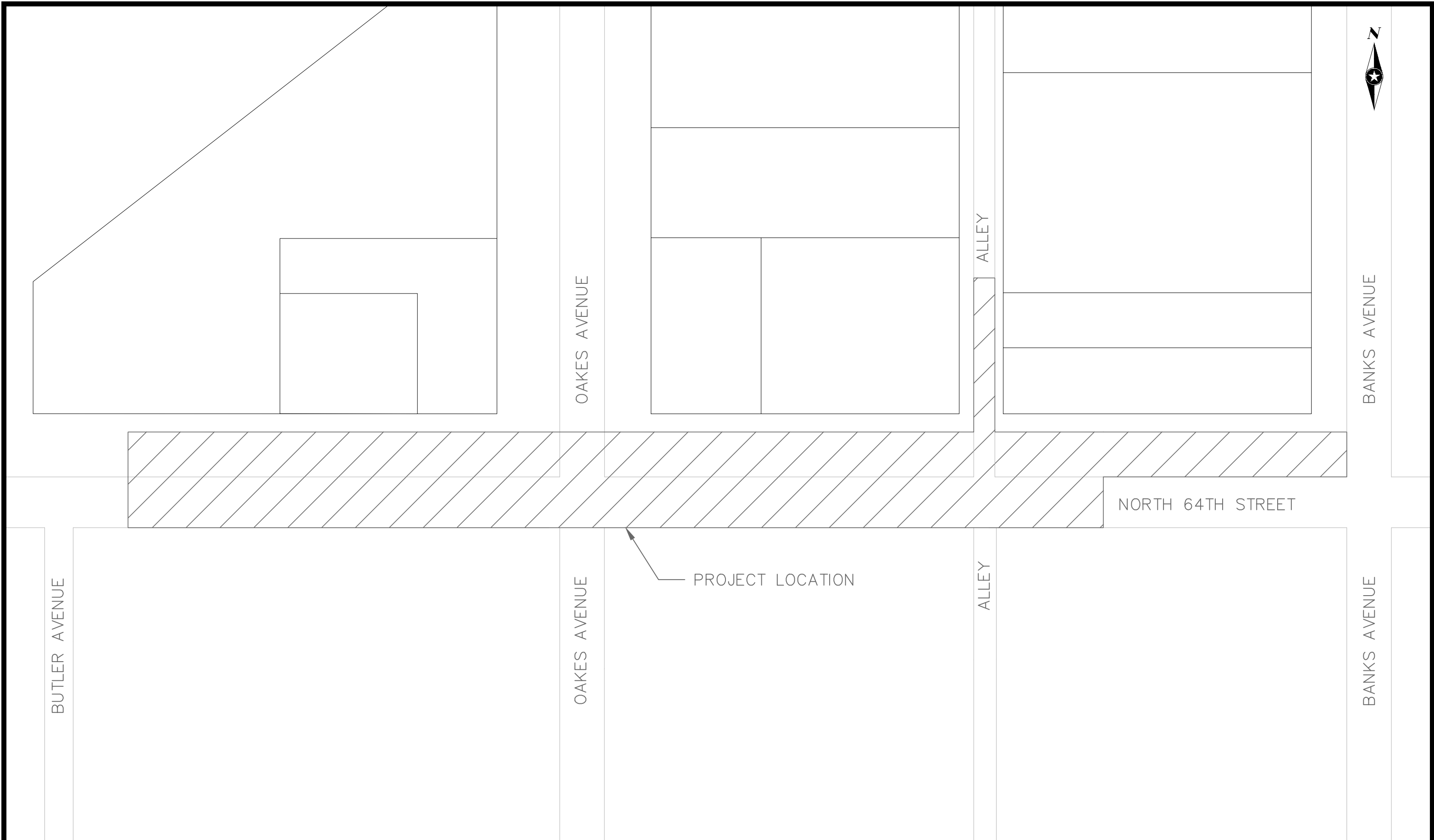
NOTE:

THE CITY OF SUPERIOR WILL PROVIDE TWO (2) CONTROL POINTS (PK NAILS) WITHIN THE PROJECT LIMITS AND ONE (1) BENCHMARK LOCATION. 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 BENCHMARKS.



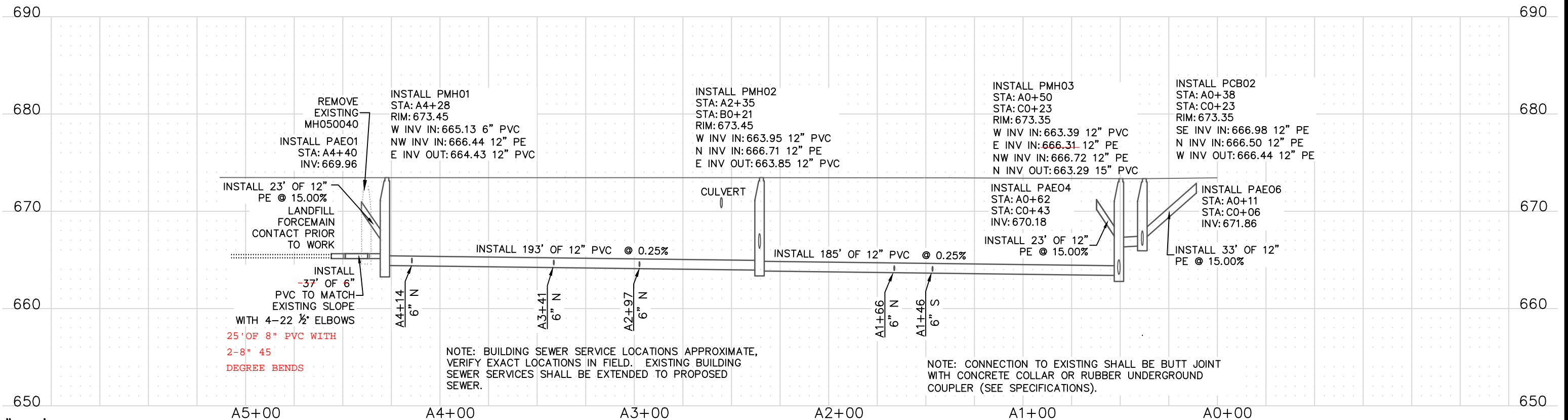
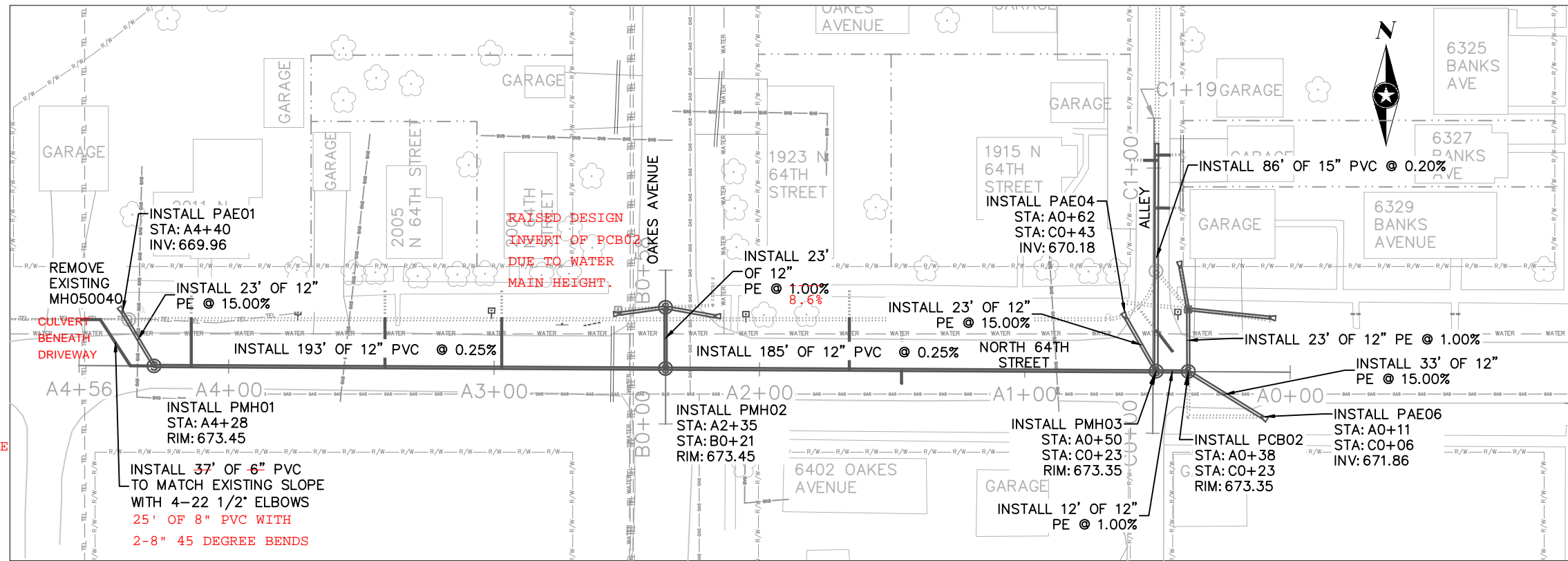
AS-BUILTS



AS-BUILTS

- LATERALS
- STA: A4+14 - 22' OF 6" N
 - STA: A3+41 - 22' OF 6" N
 - STA: A2+97 - 19' OF 6" N
 - STA: A1+66 - 21' OF 6" N
 - STA: A1+46 - 3.5' OF 6" S
 - STA: C0+39 - 14.5' OF 6" SE
 - STA: C0+85 - 4.5' OF 6" E
 - STA: C1+03 - 4.5' OF 6" W
 - STA: C1+05 - 4' OF 6" E

LANDFILL
FORCEMAIN
WAS A 8-INCH
CLAY TILE PIPE



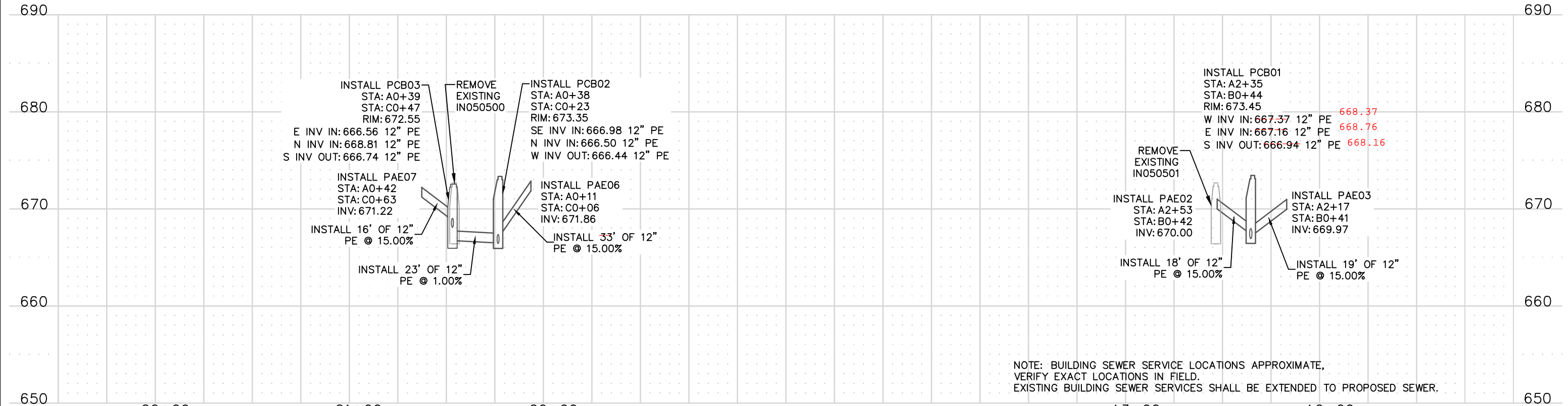
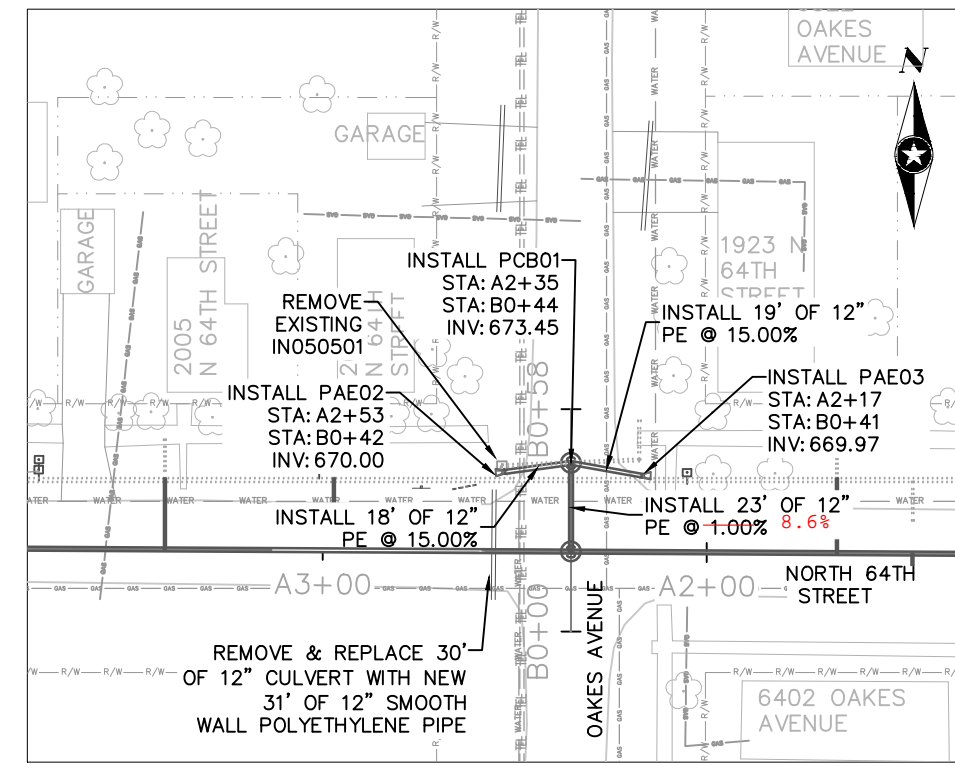
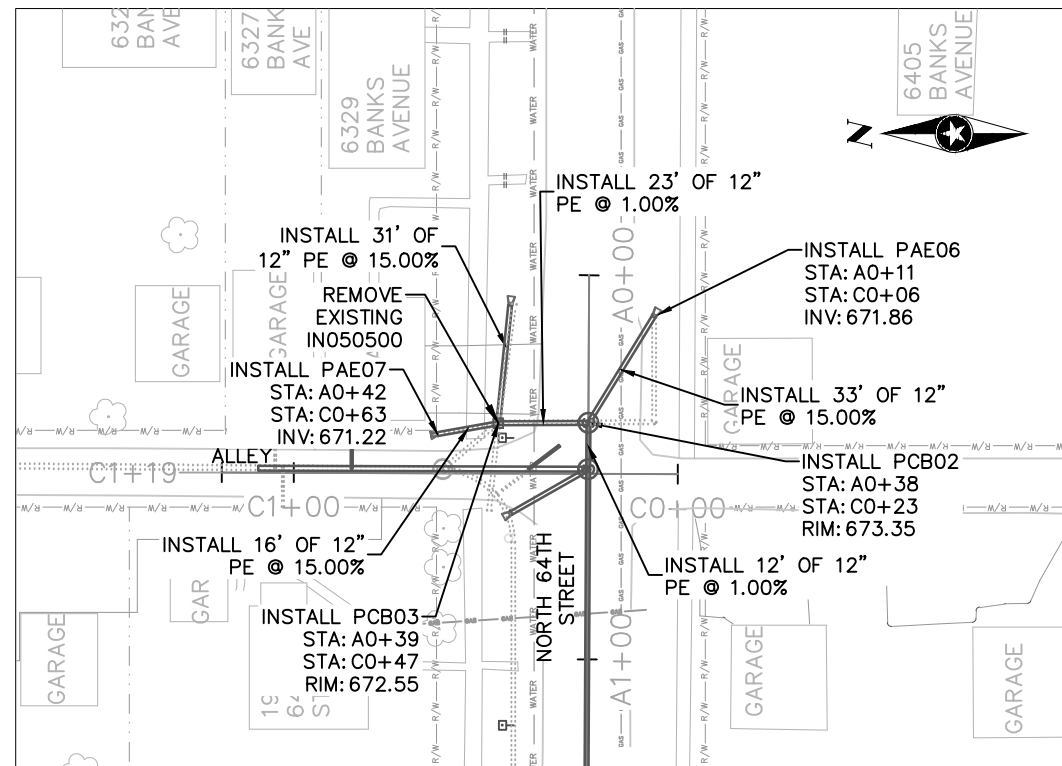
1"=50' HORZ.
1"=10' VERT.
SCALE 12.5 FEET

NOTE: BUILDING SEWER SERVICE LOCATIONS APPROXIMATE, VERIFY EXACT LOCATIONS IN FIELD. EXISTING BUILDING SEWER SERVICES SHALL BE EXTENDED TO PROPOSED SEWER.

NOTE: CONNECTION TO EXISTING SHALL BE BUTT JOINT WITH CONCRETE COLLAR OR RUBBER UNDERGROUND COUPLER (SEE SPECIFICATIONS).

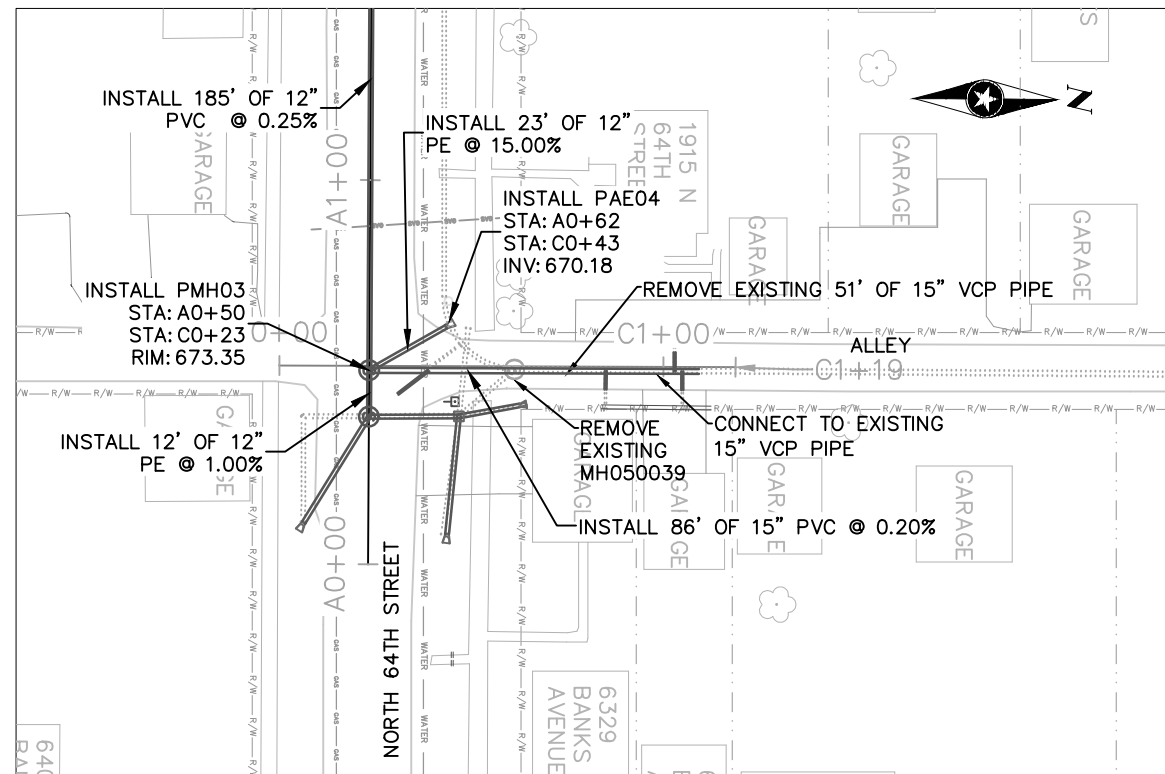
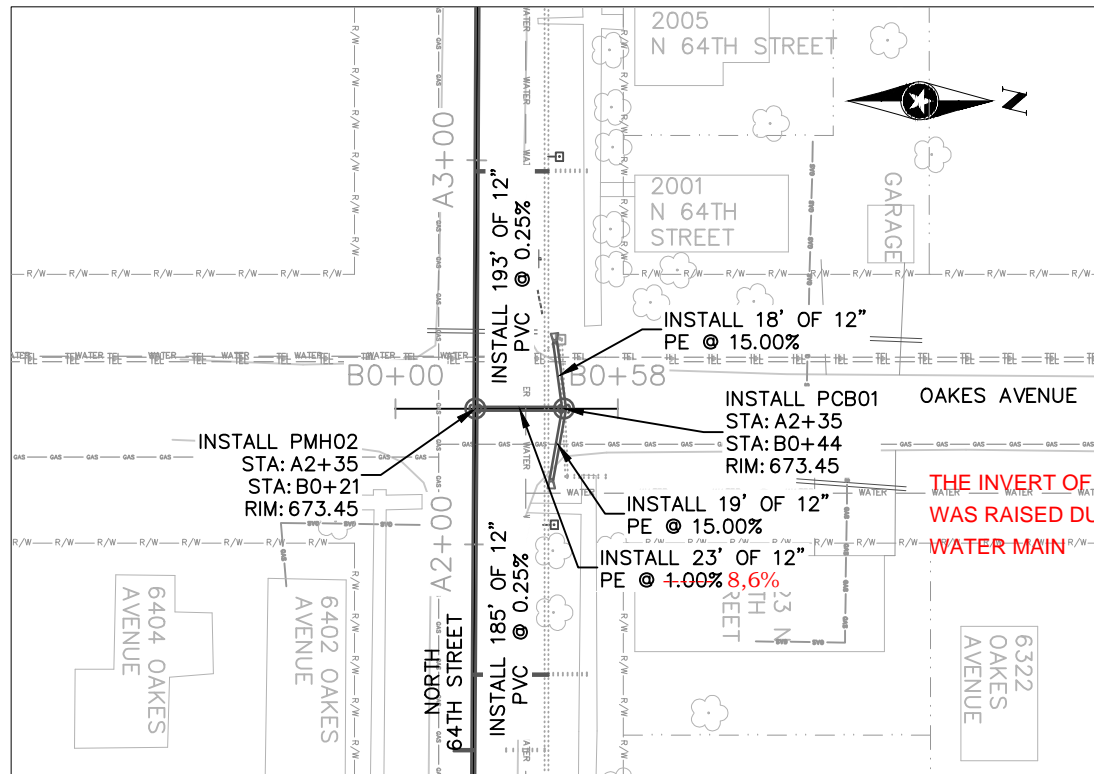


AS-BUILTS



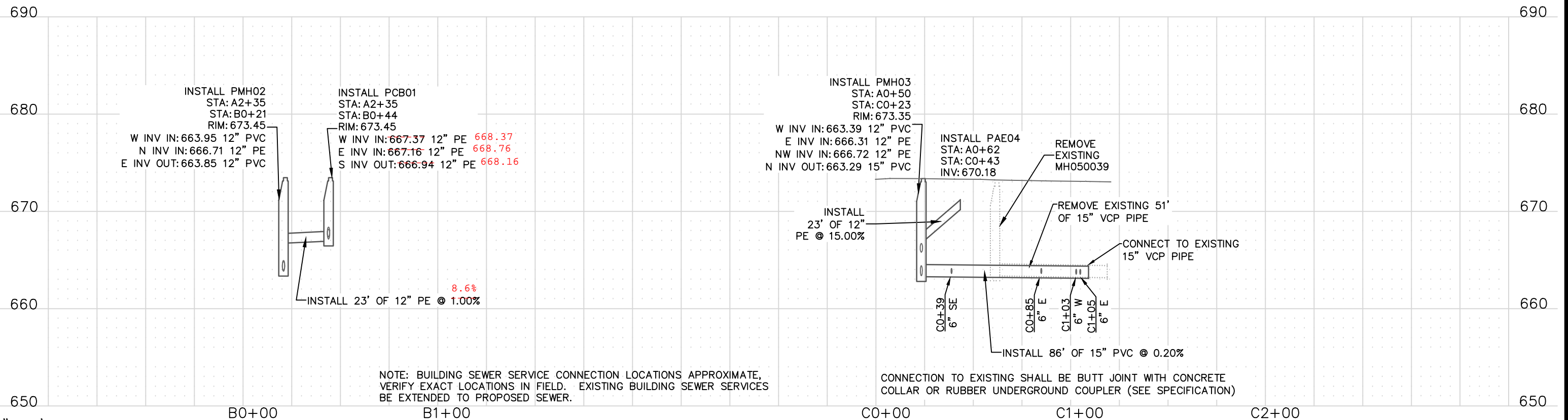
1"=50' HORZ.
1"=10' VERT.
SCALE 12.5 FEET

AS-BUILTS



RUBBER UNDERGROUND
COUPLER CONNECTION
TO EXISTING

SEE SHEET 5 OF 25 FOR LATERAL
DISTANCES AND LOCATIONS



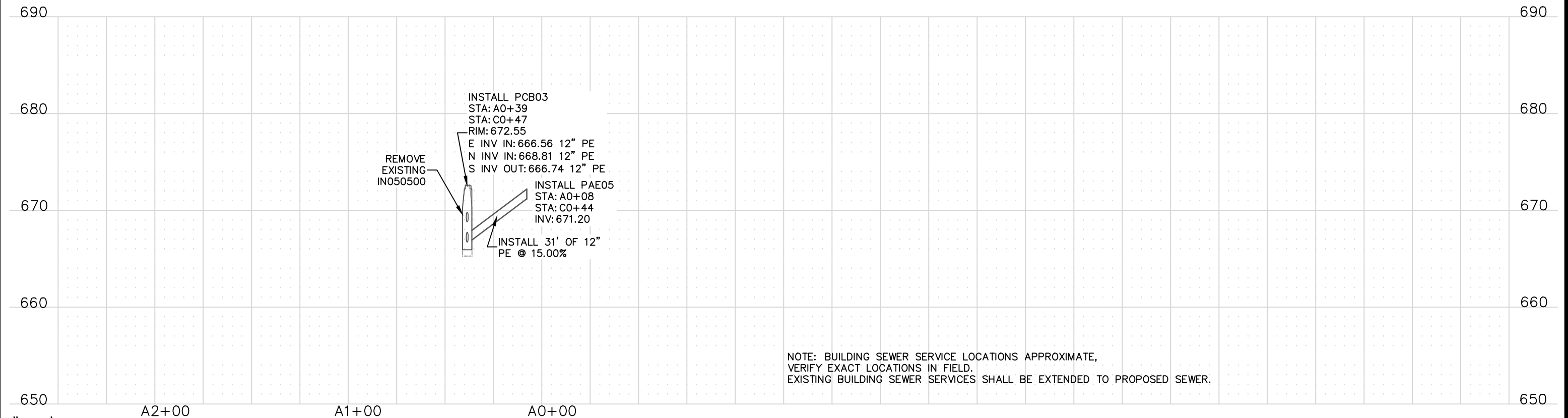
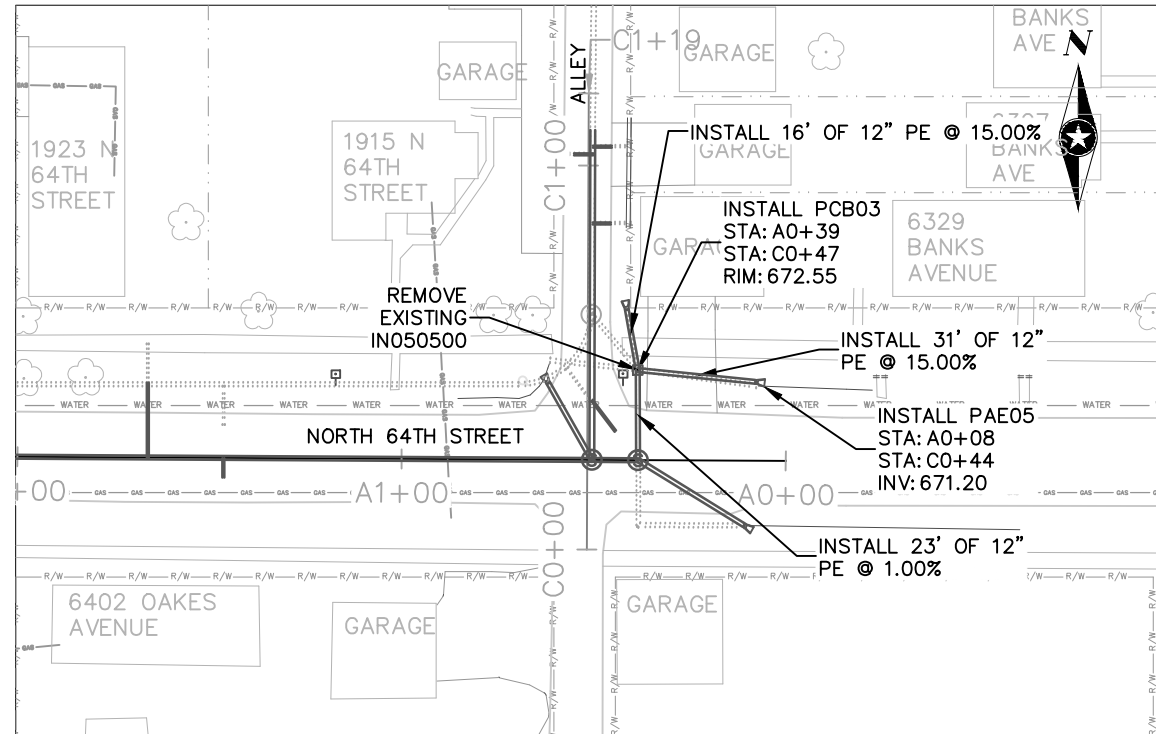
NOTE: BUILDING SEWER SERVICE CONNECTION LOCATIONS APPROXIMATE,
VERIFY EXACT LOCATIONS IN FIELD. EXISTING BUILDING SEWER SERVICES
BE EXTENDED TO PROPOSED SEWER.

CONNECTION TO EXISTING SHALL BE BUTT JOINT WITH CONCRETE
COLLAR OR RUBBER UNDERGROUND COUPLER (SEE SPECIFICATION)

1"=50' HORZ.
1"=10' VERT.
SCALE 12.5 FEET



AS-BUILTS



NOTE: BUILDING SEWER SERVICE LOCATIONS APPROXIMATE, VERIFY EXACT LOCATIONS IN FIELD. EXISTING BUILDING SEWER SERVICES SHALL BE EXTENDED TO PROPOSED SEWER.

1"=50' HORZ.
1"=10' VERT.
SCALE 12.5 FEET



CITY OF SUPERIOR, WI – ENVIRONMENTAL SERVICES DIVISION OF PUBLIC WORKS

COMBINED SEWER RECONSTRUCTION—OAKES AVENUE AND NORTH 64TH STREET

SEWER PLAN & PROFILE D

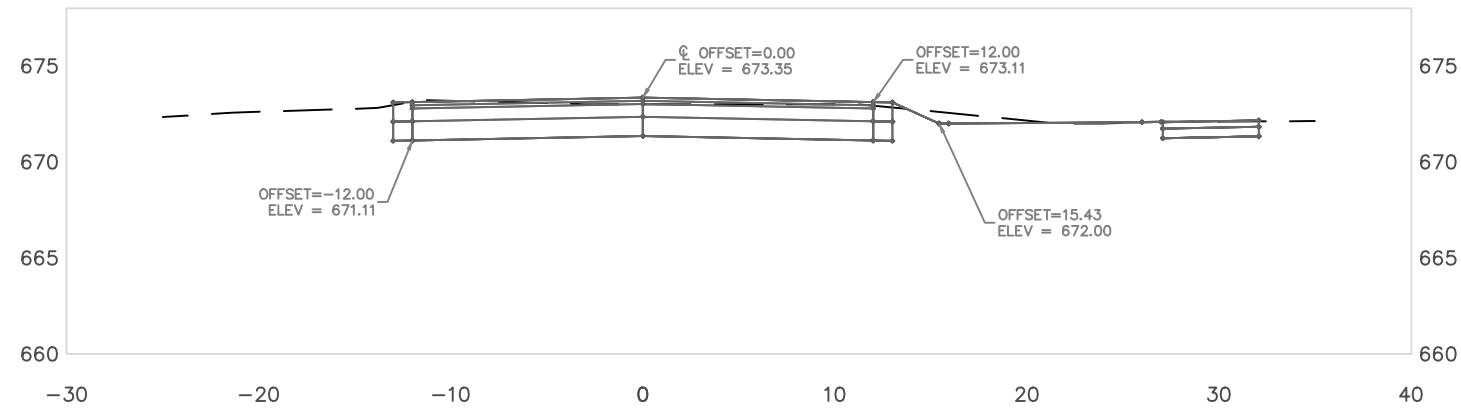
5/23/2014

DRAWN	AMH/AJR
APPROV'D	SGR/CMC

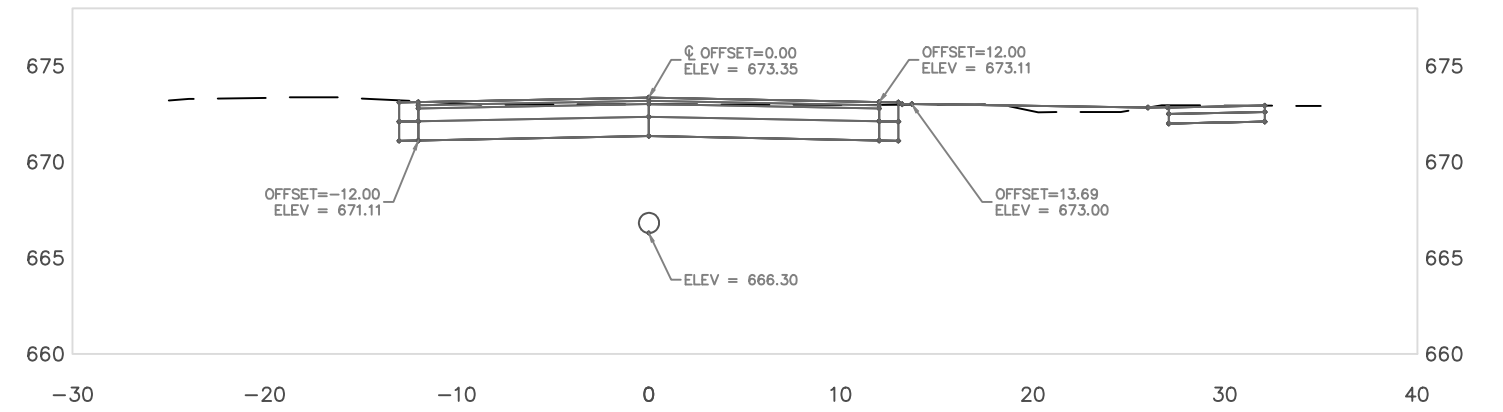
SHEET 8 OF 25

AS-BUILTS

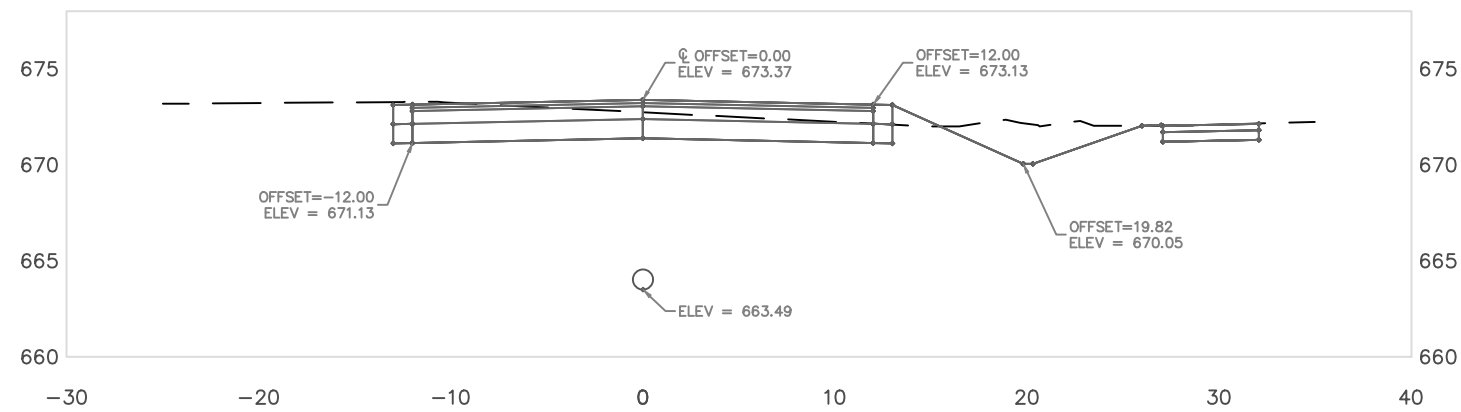
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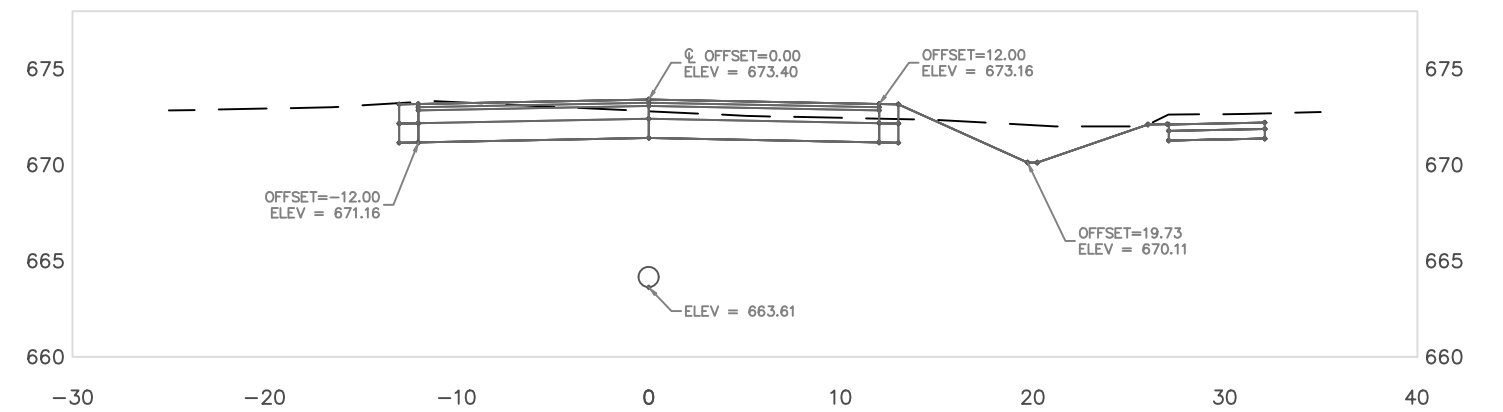
A0+50.00



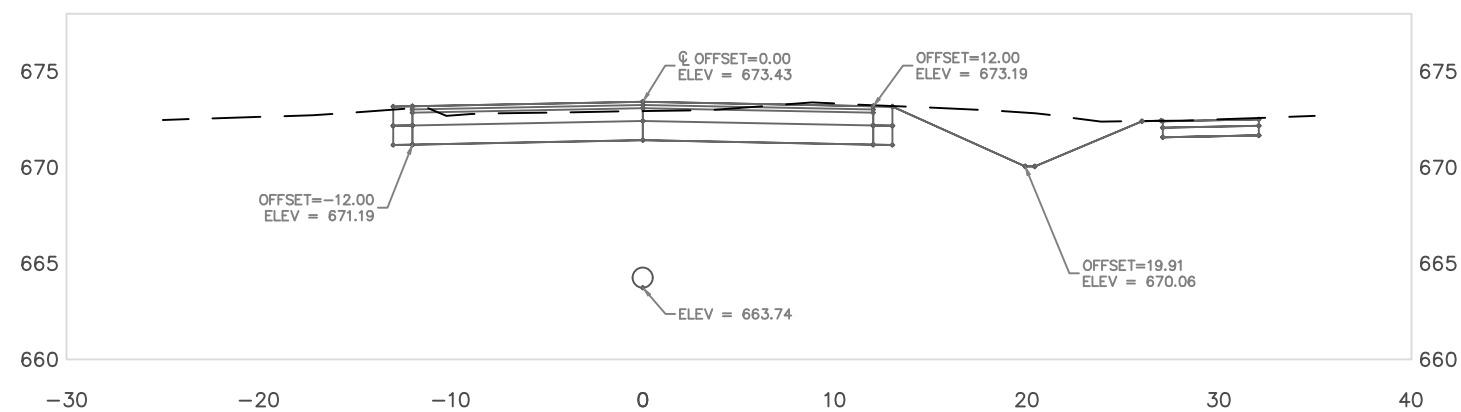
A1+00.00



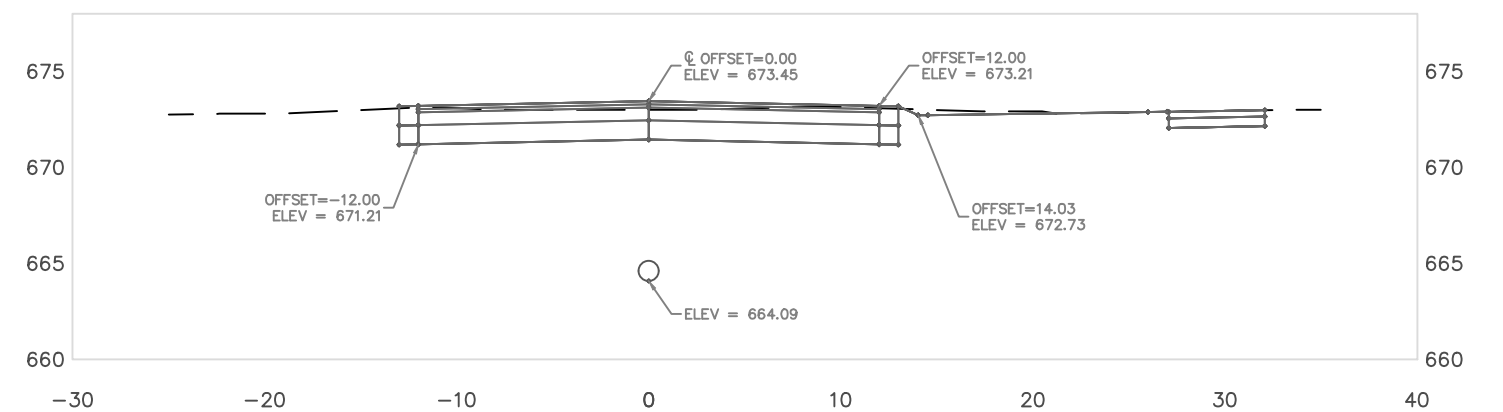
A1+50.00



A2+00.00



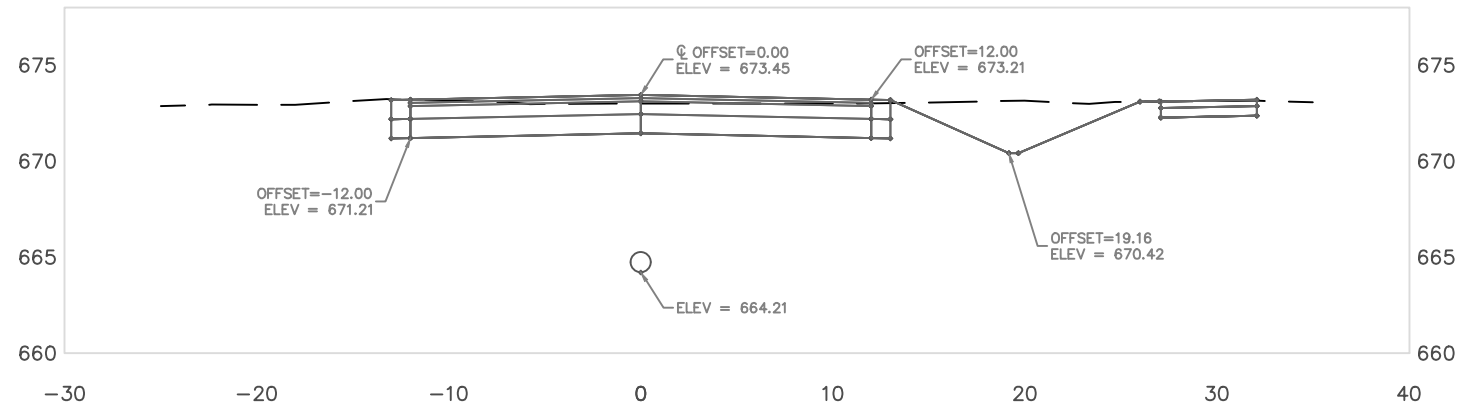
A3+00.00



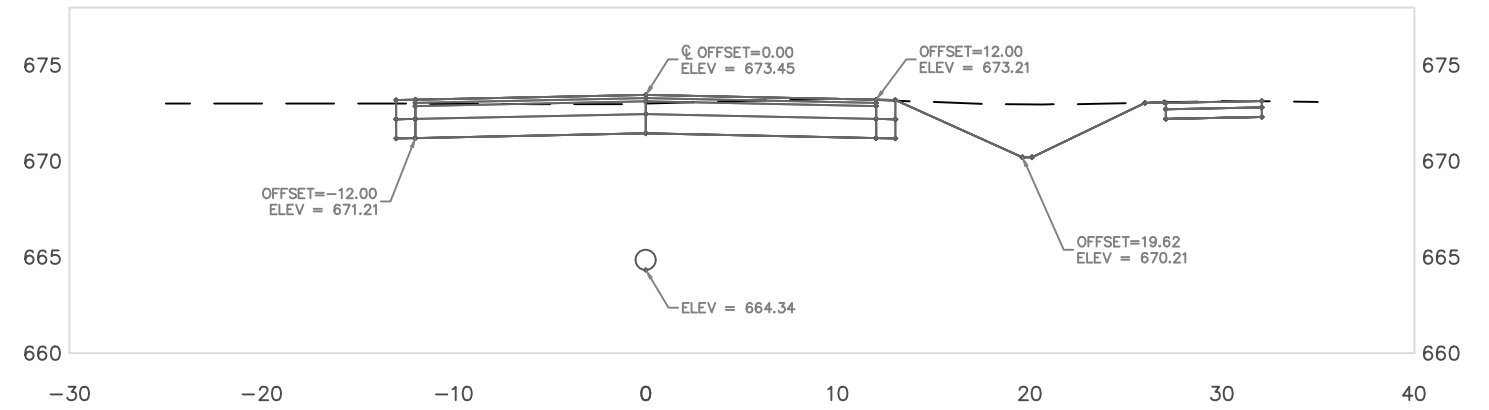
NOTE: ALL PIPE ELEVATIONS ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED



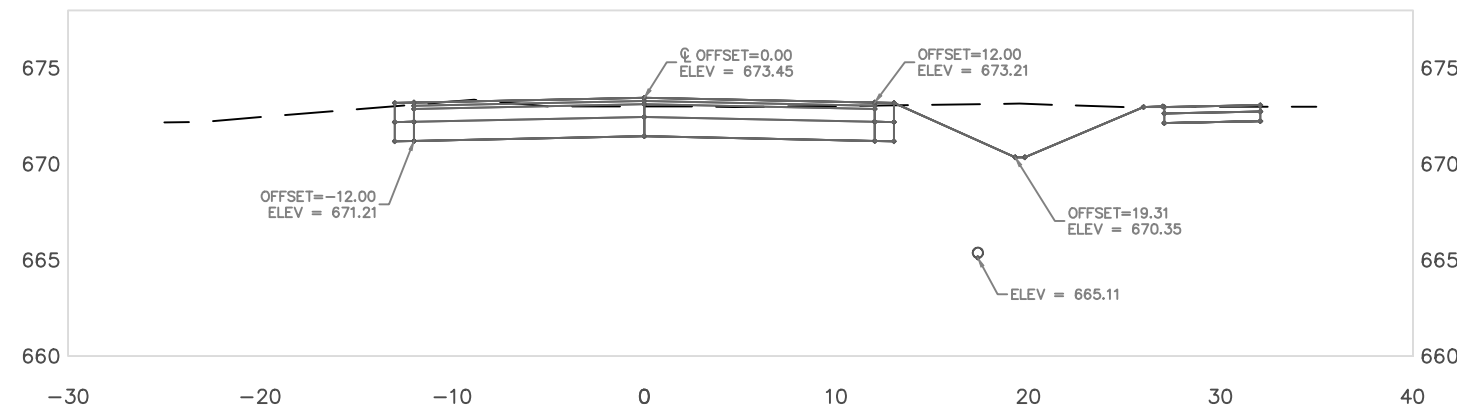
A3+50.00



A4+00.00



A4+50.00



NOTE: ALL PIPE ELEVATIONS ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED

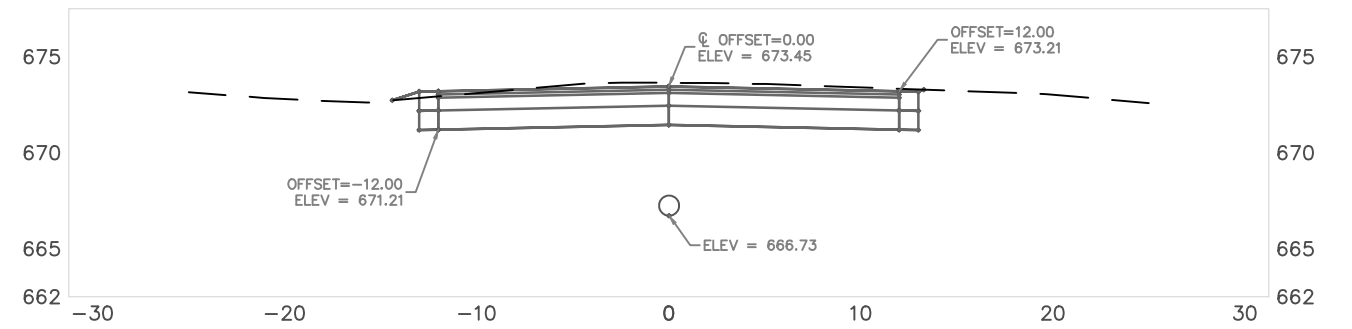


AS-BUILTS

B0+00.00



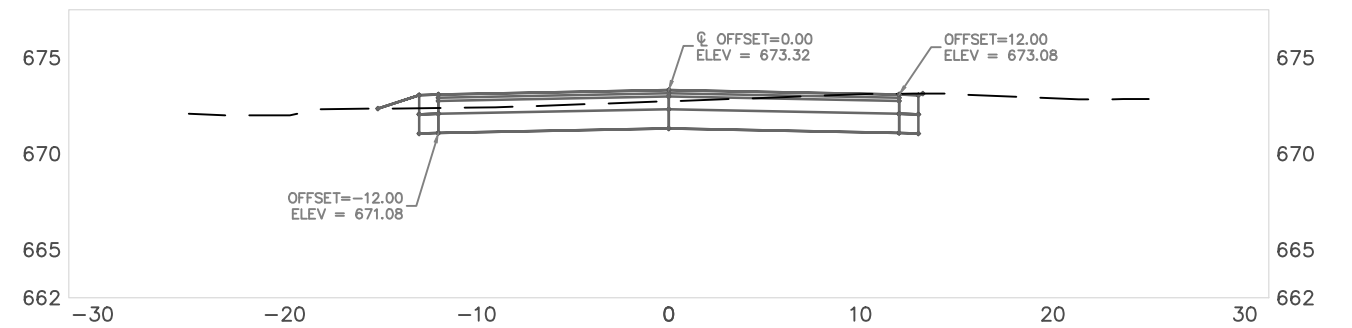
B0+25.00



B0+50.00



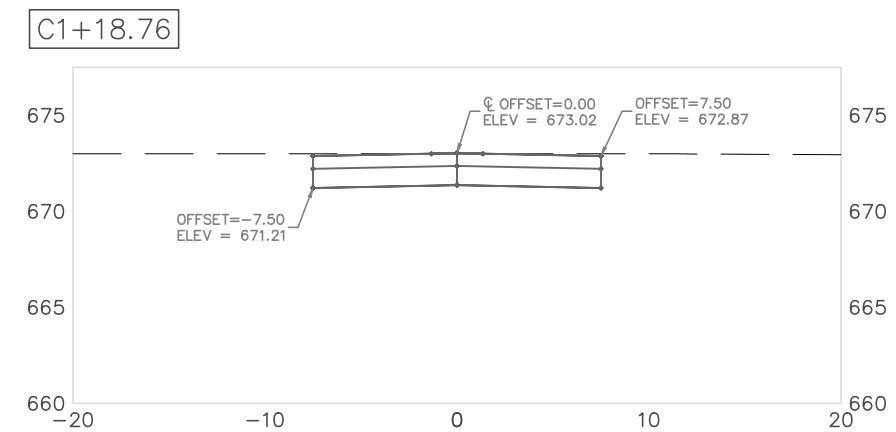
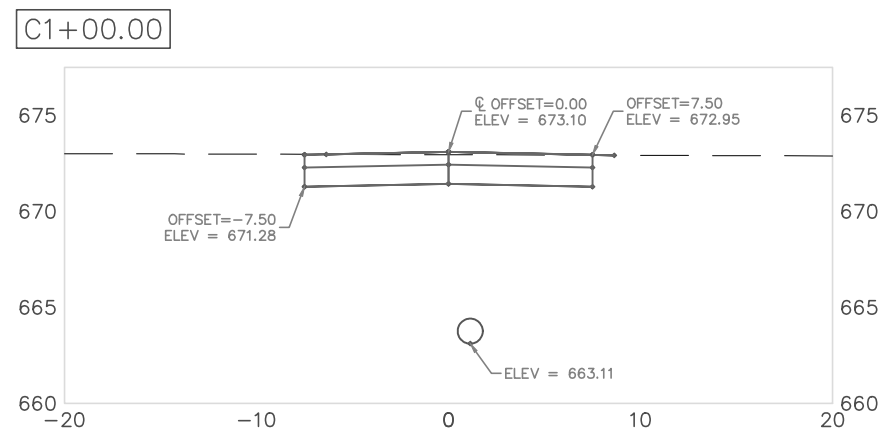
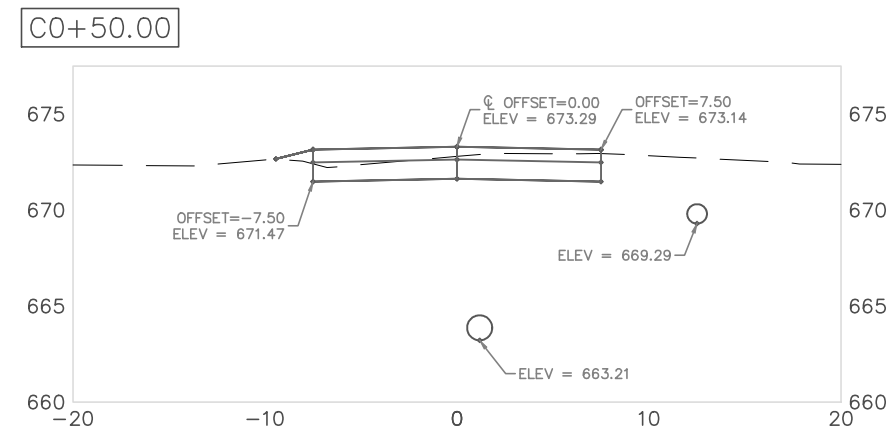
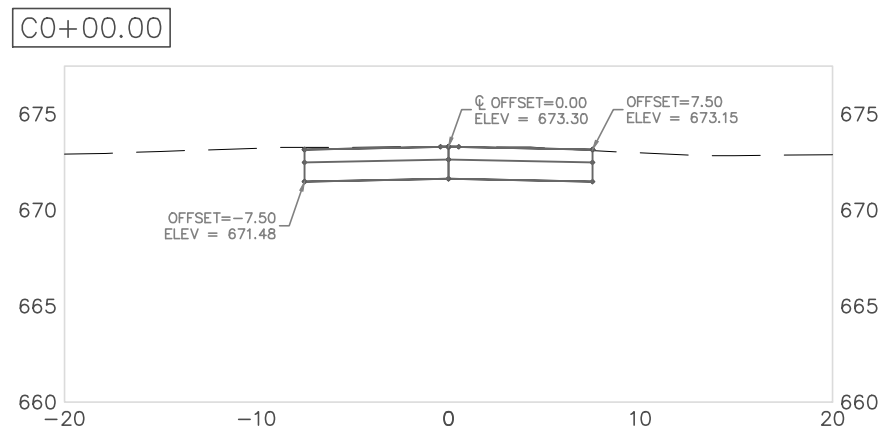
B0+57.87



NOTE: ALL PIPE ELEVATIONS ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED.

DITCHING IS NOT SHOWN ON THIS SHEET. DITCHING WILL BE REQUIRED ALONG THE AREAS THAT CONNECT TO THE APRON ENDWALL AND AREAS WHERE CULVERTS ARE BEING PLACED (SEE SIDEWALK RESTORATION SHEET 13). IF EXISTING DITCHING NEEDS TO BE RESTORED IT SHALL BE DONE AT NO ADDITIONAL COST TO THE OWNER. ENGINEER TO INSTRUCT THE CONTRACTOR IN THE FIELD AT NO ADDITIONAL COST. DITCHING IS INCIDENTAL TO EXCAVATION COMMON BID ITEM 205.0100.

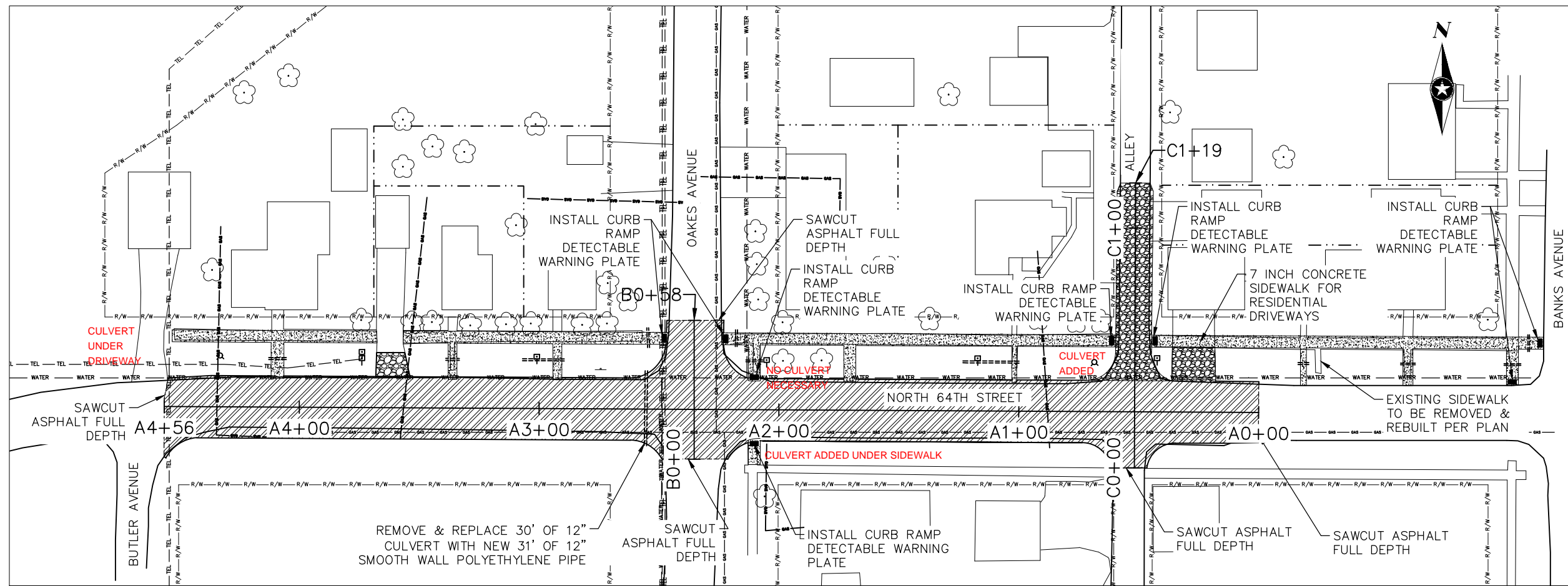




NOTE: ALL PIPE ELEVATIONS ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED.

DITCHING IS NOT SHOWN ON THIS SHEET. DITCHING WILL BE REQUIRED ALONG THE ALLEY TO CONNECT TO THE APRON ENDWALL. THERE IS A LIMITED AMOUNT OF ROOM FOR THIS DITCH. ENGINEER TO INSTRUCT THE CONTRACTOR IN THE FIELD AT NO ADDITIONAL COST. DITCHING IS INCIDENTAL TO EXCAVATION COMMON 205.0100. DITCHING WILL OCCUR FROM STA: C0+63 THROUGH STA: C0+90.





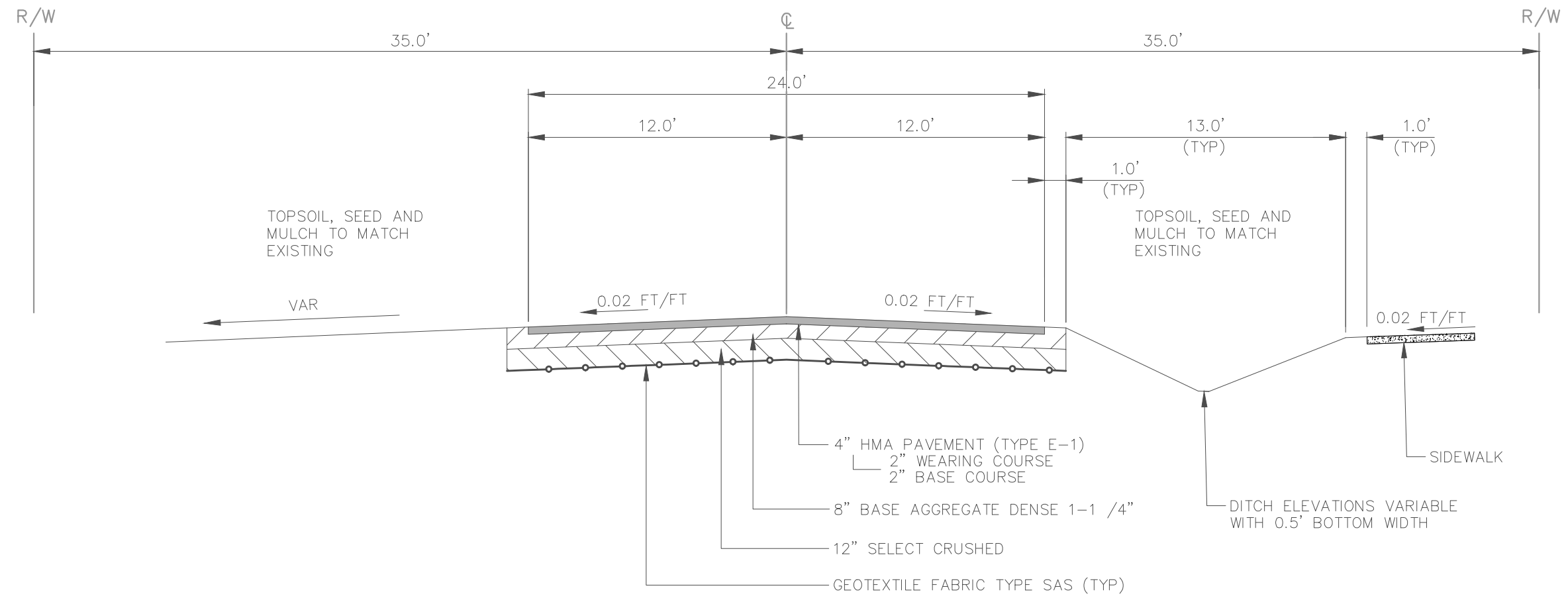
LEGEND

	CONCRETE
	GRAVEL
	ROADWAY
	INSTALL NEW CULVERTS

- NOTE:**
- MATCH FINISHED ROADWAY TO EXISTING ROADWAY
 - PLAN VIEW OF ROADWAY FOR REFERENCE ONLY
 - INCLUDE EXPANSION JOINTS WHERE SIDEWALK ABUTS A PAVED SURFACE
 - INTERSECTION OF NORTH 64TH STREET AND OAKES AVENUE ROAD RADIUS 15'-0". INTERSECTION OF NORTH 64TH STREET AND THE ALLEY ROAD RADIUS IS 12'-0"
 - EXISTING CULVERTS ARE NOT SHOWN ON THIS PAGE.
 - DITCHING MUST BE 6'-0" FROM UTILITY POLES. CULVERTS HAVE BEEN DRAWN TO ADD DRAINAGE WHERE NECESSARY NEAR UTILITY POLES.

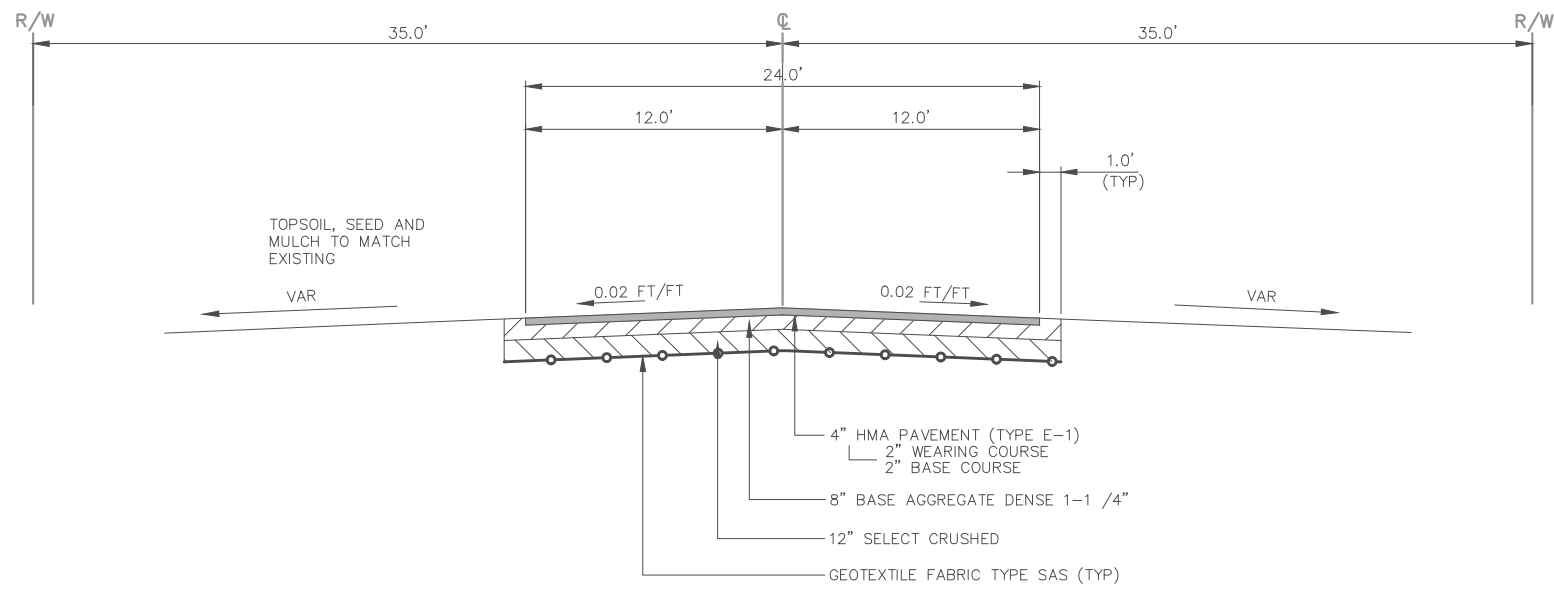


AS-BUILTS

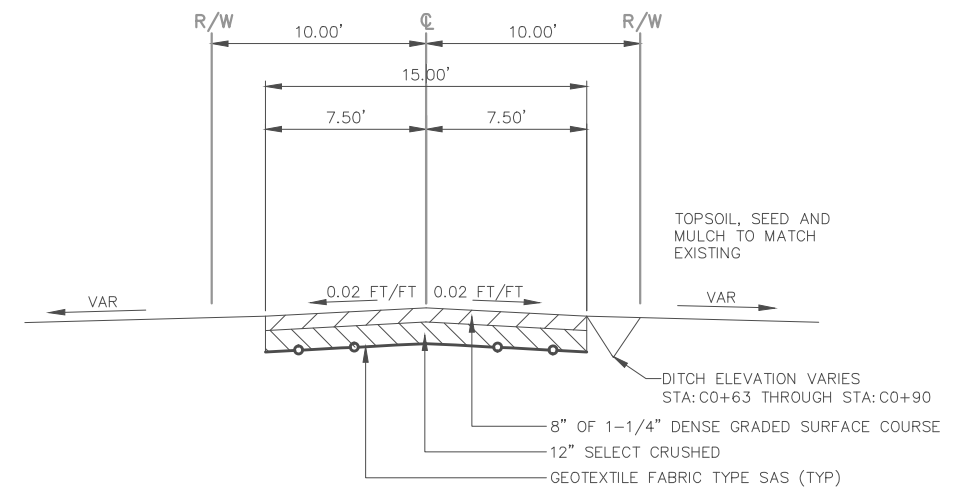


TYPICAL FINISHED SECTION
 NORTH 64TH STREET
 NOT TO SCALE

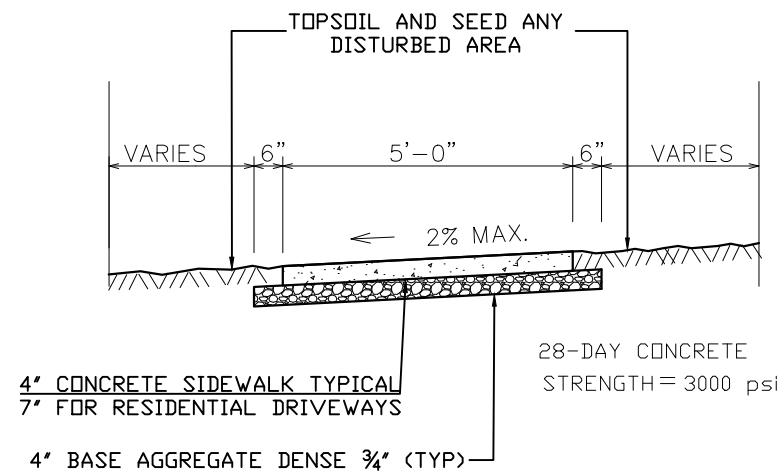
AS-BUILTS



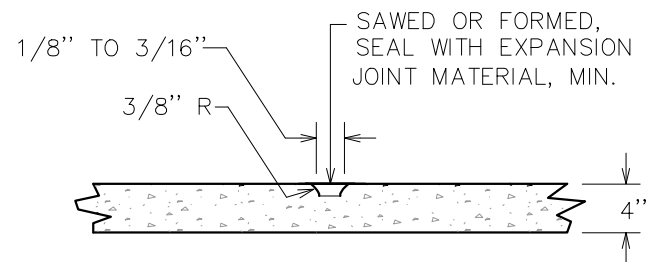
TYPICAL FINISHED SECTION
 OAKES AVENUE
 NOT TO SCALE



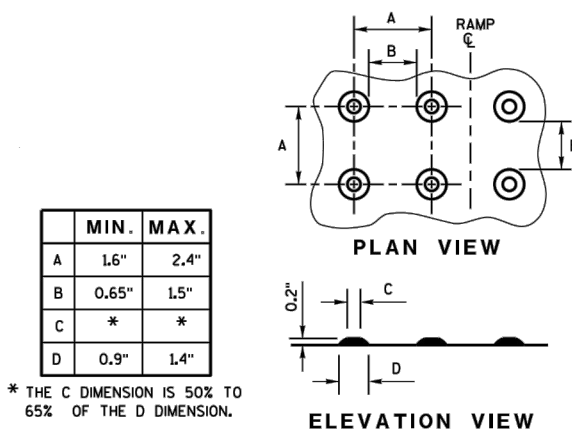
TYPICAL FINISHED SECTION
 ALLEY
 NOT TO SCALE



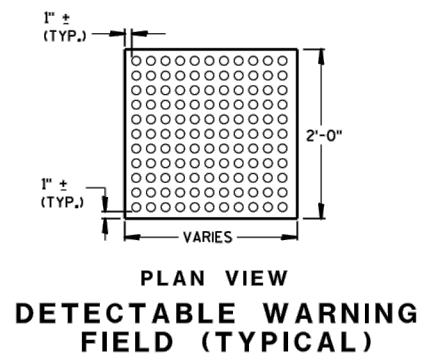
TYPICAL CONCRETE SIDEWALK SECTION



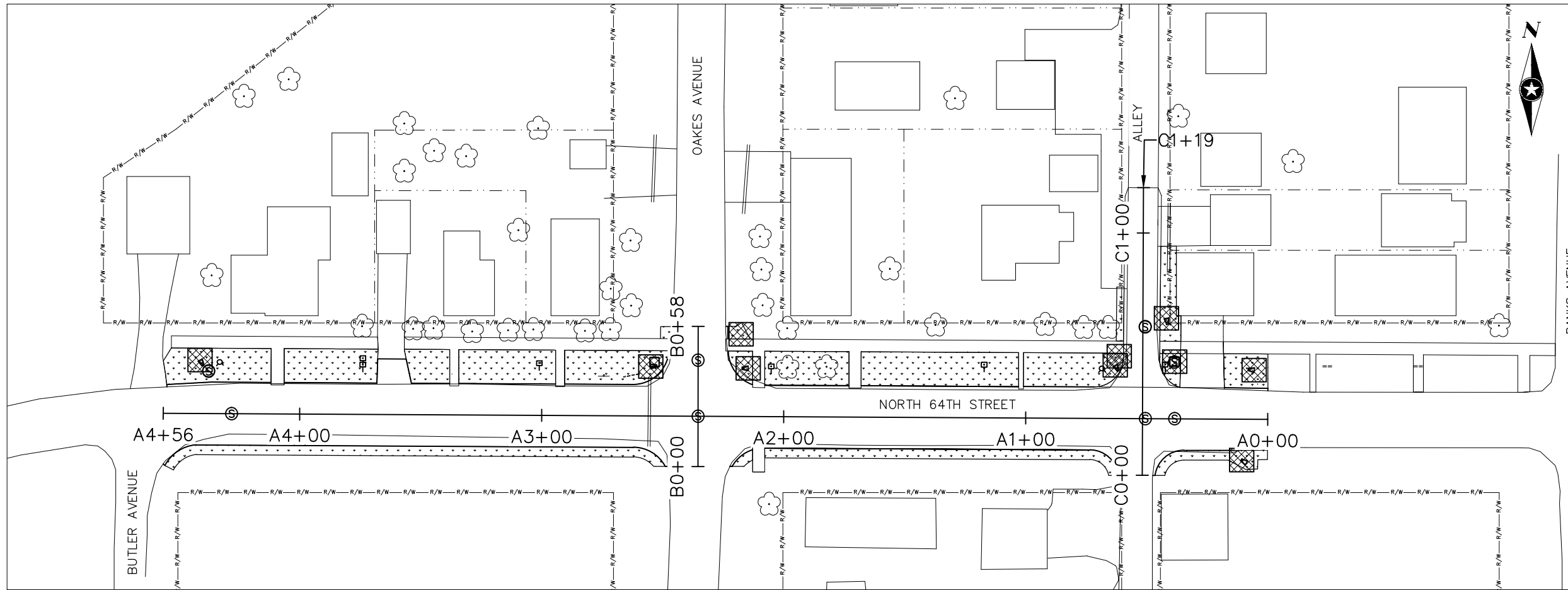
SIDEWALK CONTRACTION JOINT
(NO SCALE)



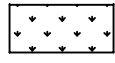

TRUNCATED DOMES
DETECTABLE WARNING PATTERN DETAIL



NOTE: DETAILS FROM WISCONSIN DOT S.D.D. 8D 5-15 e



LEGEND

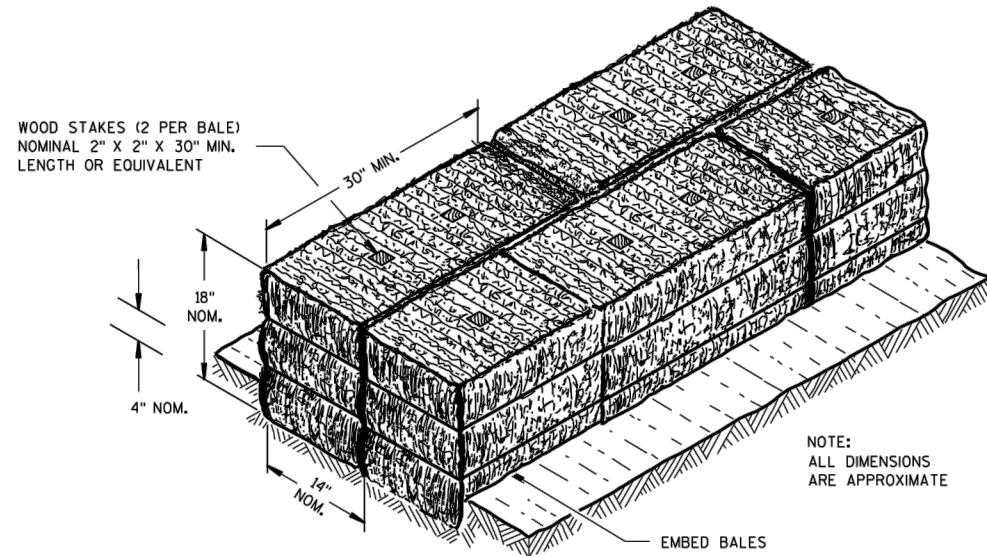
-  EROSION MAT, SEED, TOPSOIL & MULCH
-  TEMPORARY DITCH CHECKS USING EROSION BALES

NOTES:

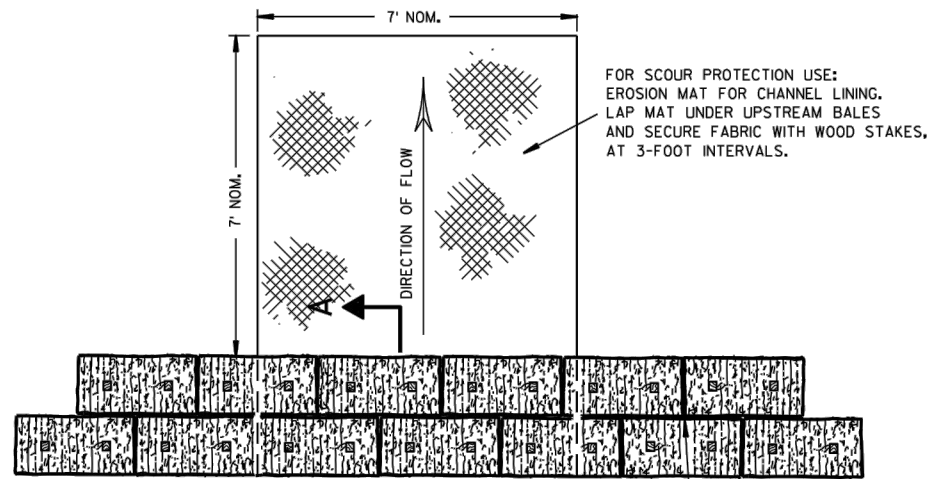
EROSION CONTROL MEASURES SHALL BE INSTALLED, INSPECTED AND MAINTAINED BY THE CONTRACTOR IN ACCORDANCE WITH THE WDNR STORMWATER MANAGEMENT TECHNICAL STANDARDS INCLUDING BUT NOT LIMITED TO 1052, 1058, 1059, AND 1062.



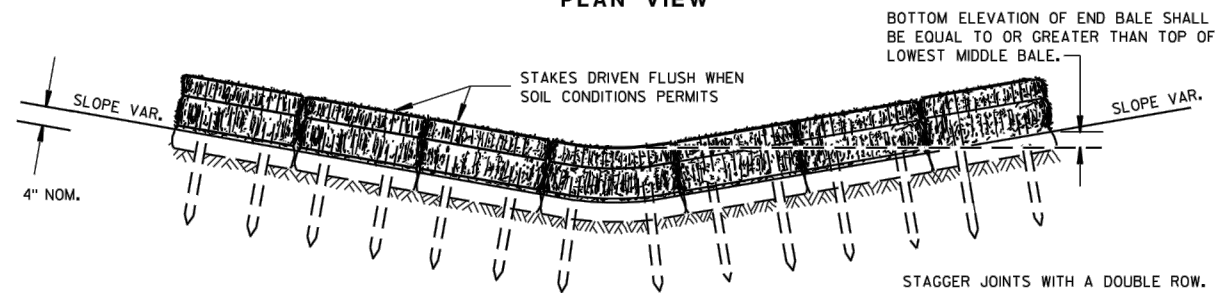
AS-BUILTS



SECTION A-A



PLAN VIEW



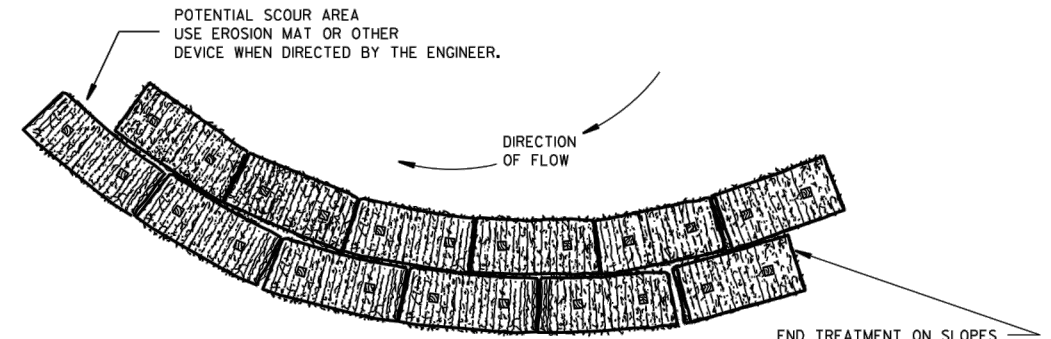
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

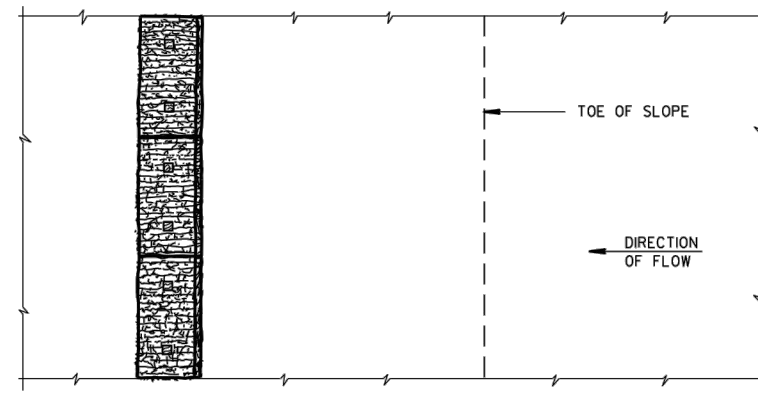
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

- ① TEMPORARY DITCH CHECKS EITHER EROSION BALES OR MANUFACTURED SHALL BE PAID FOR UNDER THE BID ITEM OF TEMPORARY DITCH CHECK. THE DEPARTMENT WILL NOT PAY FOR TEMPORARY DITCH CHECKS CONSTRUCTED OF A SINGLE ROW OF EROSION BALES.

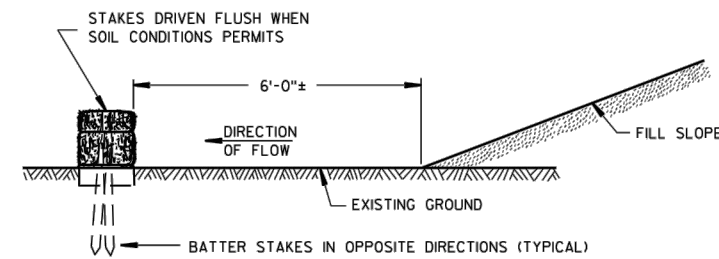


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



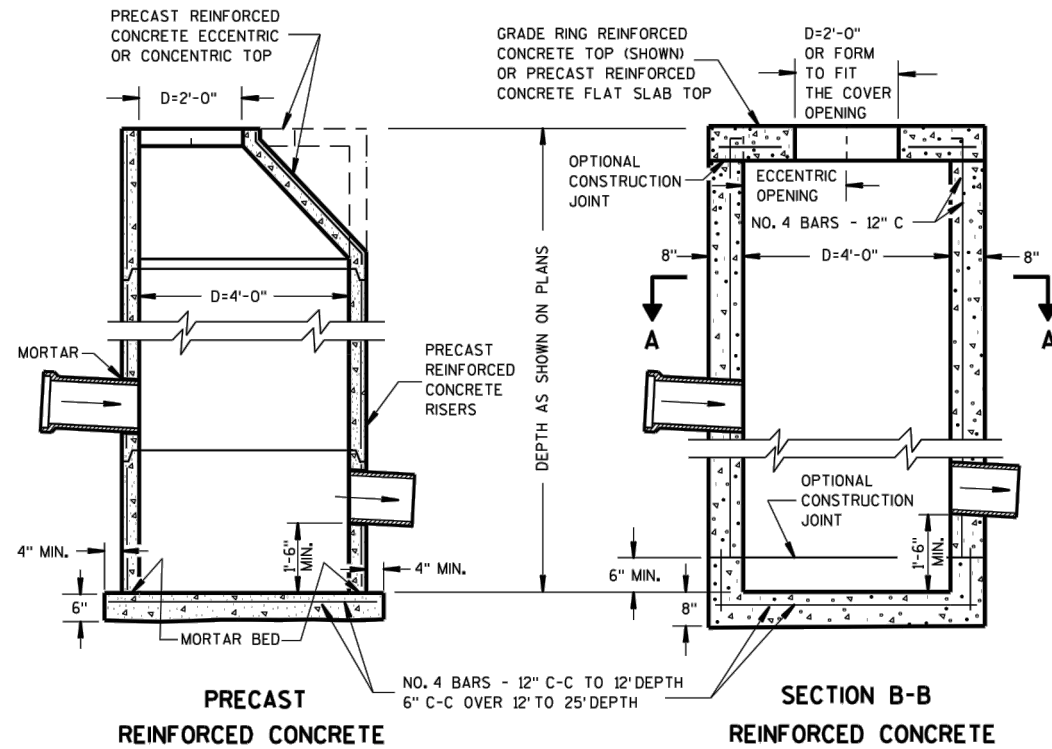
PLAN VIEW



FRONT ELEVATION

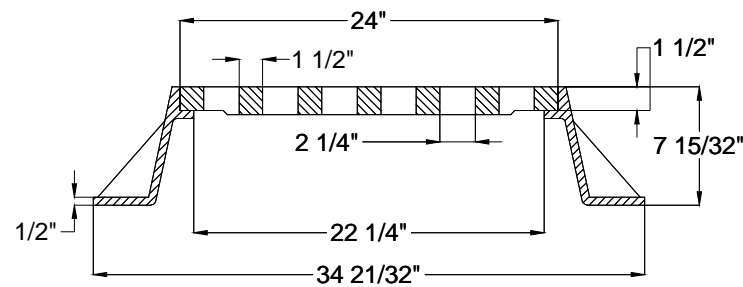
WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

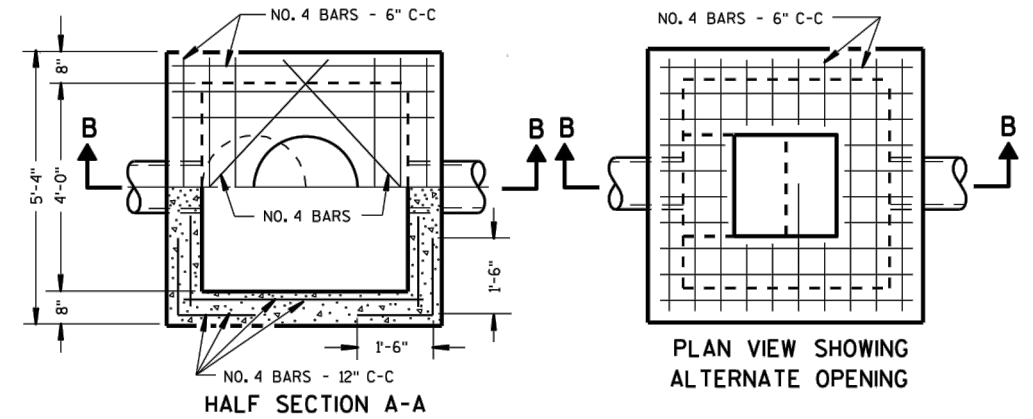


CATCH BASINS, TYPE 1

CASTING DIMENSIONS FOR GRATED MANHOLE COVERS AND CIRCULAR INLETS IN NON-CURB INSTALLATIONS



NOTE: THE STATE OF WISCONSIN DOT STANDARD DRAWING S.D.D. 8 A 6-4 HAS BEEN MODIFIED BY THE CITY OF SUPERIOR TO ELIMINATE CATCH BASIN TYPE 2 FROM THIS DRAWING.



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.

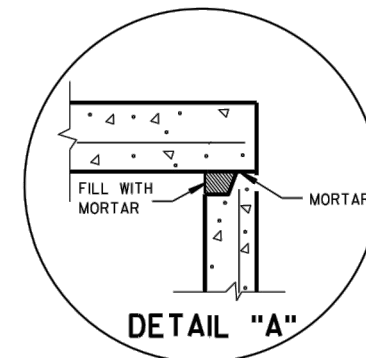
CERTIFICATION SHALL BE PROVIDED THAT INSTALLED STEPS WHEN TESTED IN ACCORDANCE WITH SECTION 10 OF AASHTO T280 CAN WITHSTAND A VERTICAL LOAD OF 800 LBS. AND A HORIZONTAL LOAD OF 400 LBS.

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.

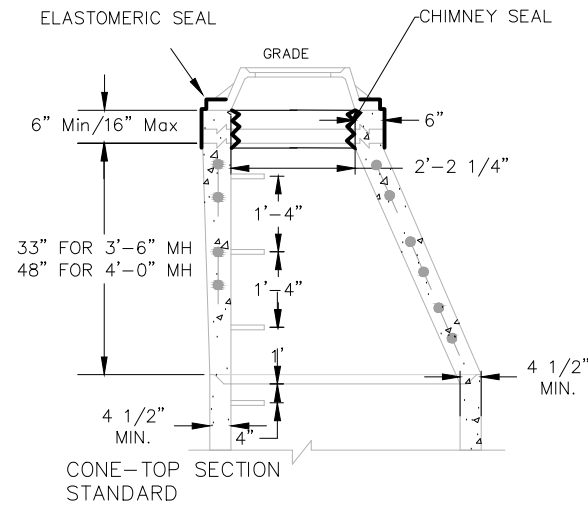
- ① PRECAST REINFORCED CONCRETE RISERS SHALL BE PLACED WITH THE TONGUE DOWN WHEN GRADE RINGS ARE USED FOR THE SLAB TOP.
- ② 2 COURSES 6" BLOCK.
- ③ WHEN THE CONNECTING PIPES ARE 24" OR LARGER THE PRECAST CATCH BASIN MAY BE INCREASED TO 42" DIA.



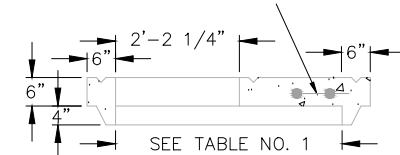
CATCH BASINS TYPE 1 & 2	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 6/9/99 DATE	/S/ Rory L. Rhinesmith CHIEF ROADWAY DEVELOPMENT ENGINEER



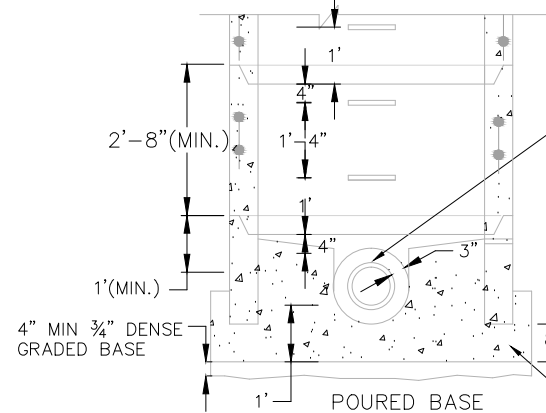
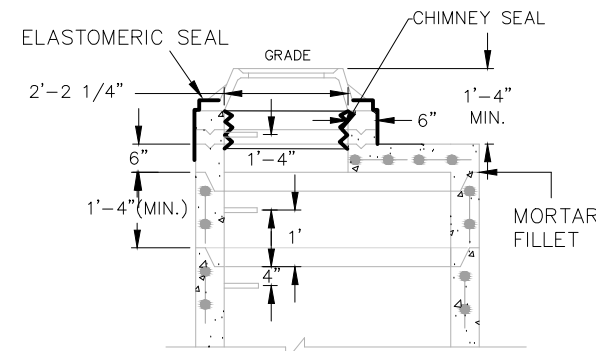
PRECAST MANHOLE DETAIL



REINFORCING STEEL

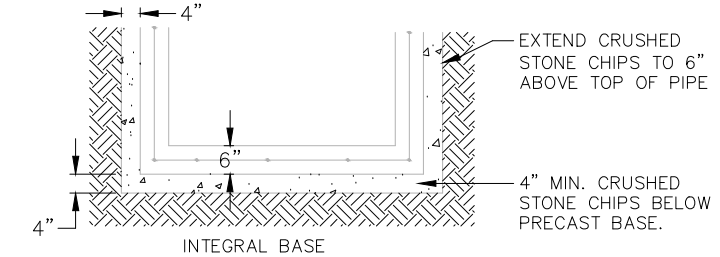


FLAT TOP SLAB
(WHERE SPECIFIED)



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. ELASTOMERIC WATERPROOFING SEALER APPLIED TO EXTERIOR AND INTERIOR CHIMNEY SEAL.



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.

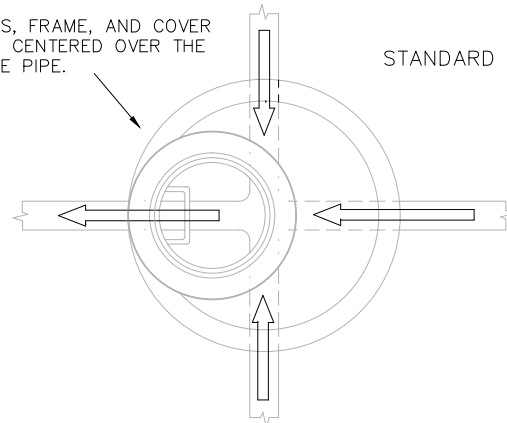
CONCRETE AND STEEL REINFORCEMENT SHALL CONFORM TO DESIGNATION C-478 REQUIREMENTS OF ASTM SPECIFICATIONS.

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.

STANDARD TOP VIEW



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. 3/4" DENSE GRADED BASE UNDER CONCRETE BASE.

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

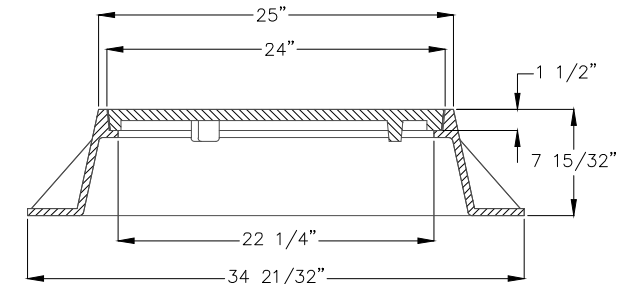
THE FLOW CHANNEL THROUGH MANHOLES SHALL BE MADE TO CONFORM TO THE SHAPE AND SLOPE OF THE SEWERS AND SHALL EXTEND VERTICALLY FROM THE SPRINGLINE TO THE CROWN OF THE DISCHARGE PIPE.

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

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

CASTING DIMENSIONS

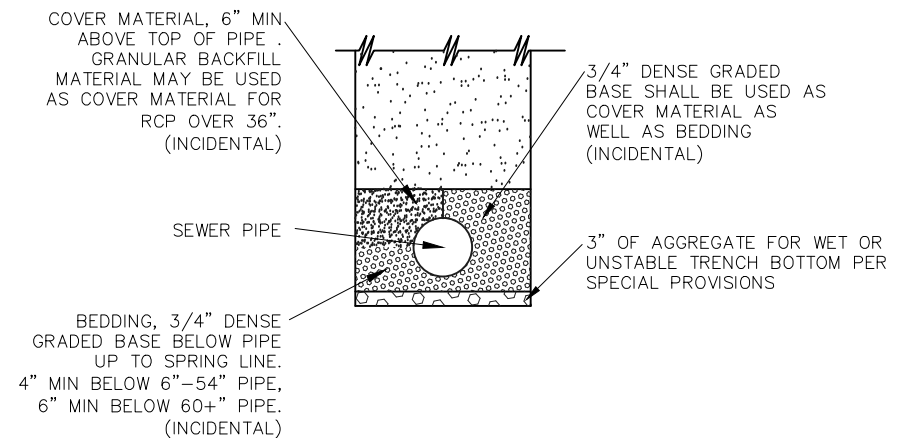
MANHOLE AND CATCH BASIN CASTING DIMENSIONS



ALL MANHOLE CASTINGS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A-48, CLASS NO. 30-B AND SHALL BE FREE FROM CRACKS, HOLES, SWELLS, AND COLD SHUTS.

COVERS SHALL BE "SELF-SEALING", "T-SEAL" OR "GASKET SEALED" COVERS WITH "SANITARY" OR "STORM" LABELS AS APPLICABLE, OR OTHER LABELS APPROVED AS EQUAL.

TYPICAL TRENCH BOTTOM DETAIL FOR SANITARY AND STORM PIPE



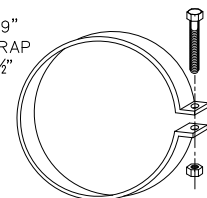
METAL APRON ENDWALLS											
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)						APPROX. SLOPE	BODY	
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1½")	L ₁ ①	L ₂ ①			W (±2")
12	.064	.060	6	6	6	21	12	17½	24	2½ to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21¾	30	2½ to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28¾	36	2½ to 1	1 Pc.
21	.064	.060	9	12	6	36	18	29¾	42	2½ to 1	1 Pc.
24	.064	.075	10	13	6	41	18	37¾	48	2½ to 1	1 Pc.
30	.079	.075	12	16	8	51	18	52¼	60	2½ to 1	1 Pc.
36	.079	.105	14	19	9	60	24	59¾	72	2½ to 1	2 Pc.
42	.109	.105	16	22	11	69	24	75¾	84	2½ to 1	2 Pc.
48	.109	.105	18	27	12	78	24	81	90	2½ to 1	3 Pc.
54	.109	.105	18	30	12	84	30	85½	102	2½ to 1	3 Pc.
60	.109x	.105x	18	33	12	87	—	—	114	2 to 1	3 Pc.
66	.109x	.105x	18	36	12	87	—	—	120	2 to 1	3 Pc.
72	.109x	.105x	18	39	12	87	—	—	126	2 to 1	3 Pc.
78	.109x	.105x	18	42	12	87	—	—	132	1½ to 1	3 Pc.
84	.109x	.105x	18	45	12	87	—	—	138	1½ to 1	3 Pc.
90	.109x	.105x	18	37	12	87	—	—	144	1½ to 1	3 Pc.
96	.109x	.105x	18	35	12	87	—	—	150	1½ to 1	3 Pc.

* EXCEPT CENTER PANEL SEE GENERAL NOTES

REINFORCED CONCRETE APRON ENDWALLS										
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE		
	T	A	B	C	D	E	G			
12	2	4	24	48½	72½	24	2	3 to 1		
15	2½	6	27	46	73	30	2½	3 to 1		
18	2½	9	27	46	73	36	2½	3 to 1		
21	2¾	9	36	37½	73½	42	2¾	3 to 1		
24	3	9½	43½	30	73½	48	3	3 to 1		
27	3¼	10½	49½	24	73½	54	3¼	3 to 1		
30	3½	12	54	19¾	73½	60	3½	3 to 1		
36	4	15	63	34¾	97¾	72	4	3 to 1		
42	4½	21	63	35	98	78	4½	3 to 1		
48	5	24	72	26	98	84	5	3 to 1		
54	5½	27	65	33¼-35	98¼-100	90	5½	2½ to 1		
60	6	30-35	60	39	99	96	5	2 to 1		
66	6½	24-30	72-78	21-27	99	102	5½	2 to 1		
72	7	24-36	78	21	99	108	6	2 to 1		
78	7½	24-36	78	21	99	114	6½	2 to 1		
84	8	36	90½	21	111½	120	6½	1½ to 1		
90	8½	41	87½	24	111½	132	6½	1½ to 1		

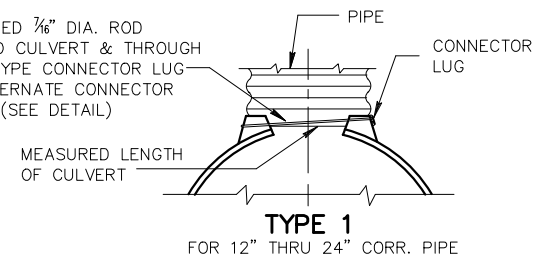
*MINIMUM
**MAXIMUM

1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X ½" BAND BOLT AND NUT

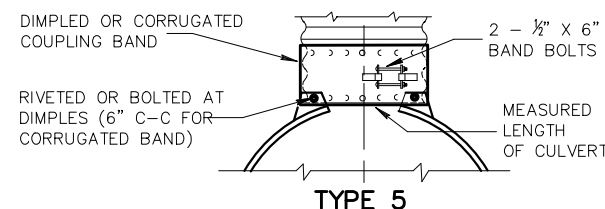
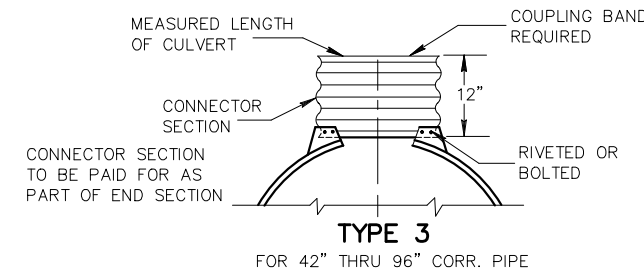
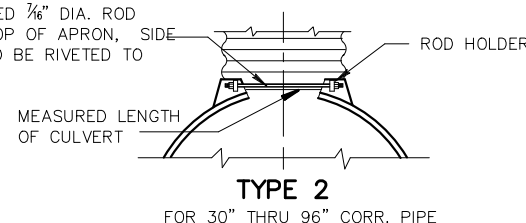


ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP

THREADED 7/16" DIA. ROD AROUND CULVERT & THROUGH TANK TYPE CONNECTOR LUG OR ALTERNATE CONNECTOR STRAP (SEE DETAIL)



THREADED 7/16" DIA. ROD OVER TOP OF APRON, SIDE LUGS TO BE RIVETED TO APRON



ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

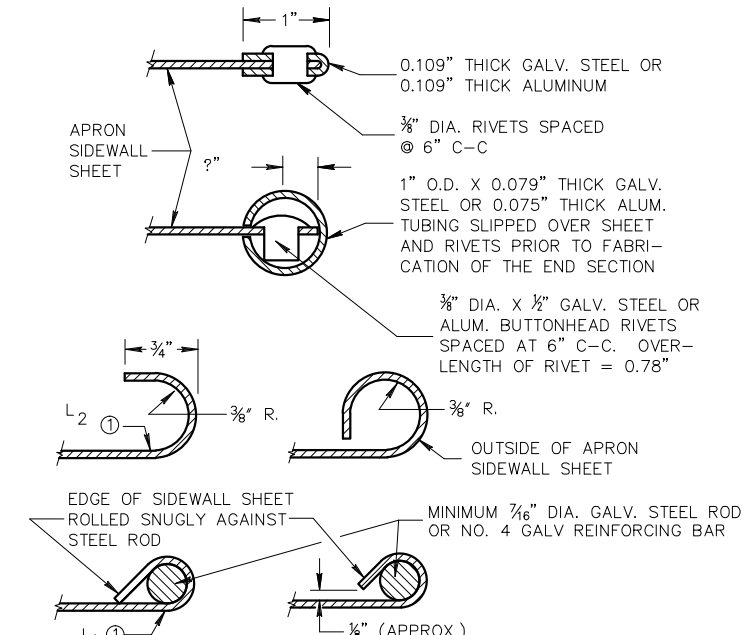
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2, 3 OR 5 AS APPLICABLE.

FOR HELICALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2 OR 5.

FOR HELICALLY CORRUGATED PIPES WITH TWO CIRCUMFERENTIAL CORRUGATIONS AT EACH END USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

CONNECTION DETAILS



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.

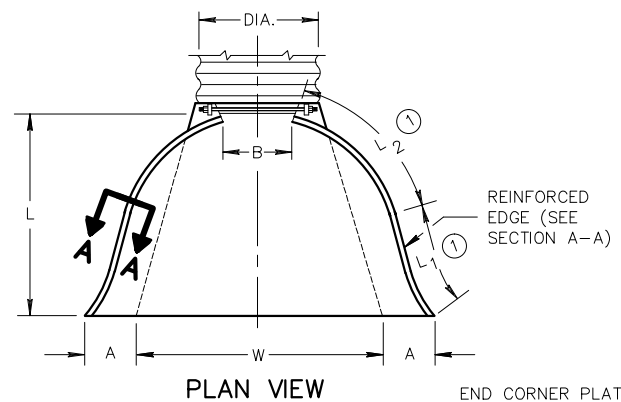
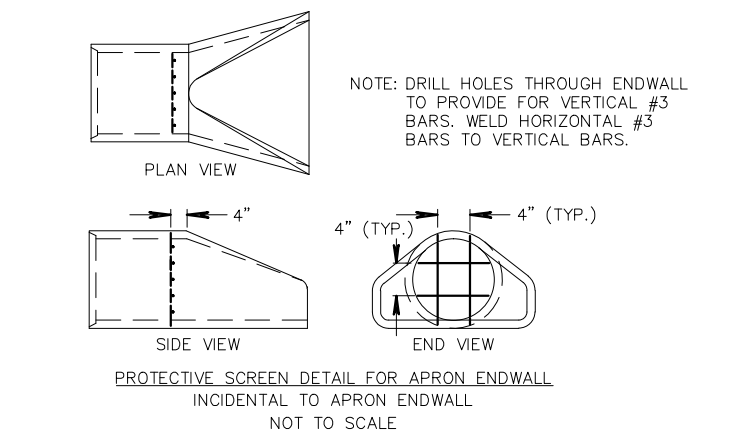
CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VICE VERSA. GALVANIZED STEEL OR ALUMINUM ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

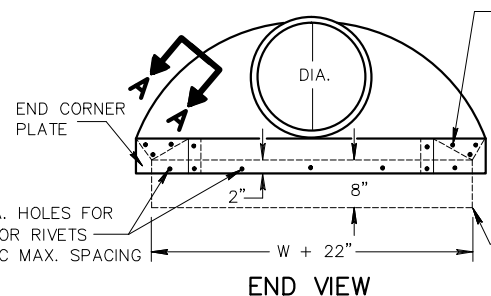
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.



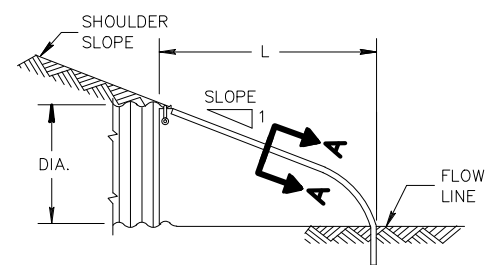
PLAN VIEW

END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER

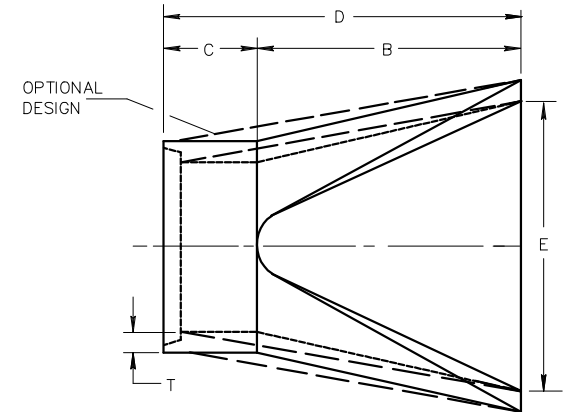
TOE PLATE (SAME THICKNESS AND METAL AS APRON) SHALL BE FURNISHED WHEN CALLED FOR ON THE PLANS



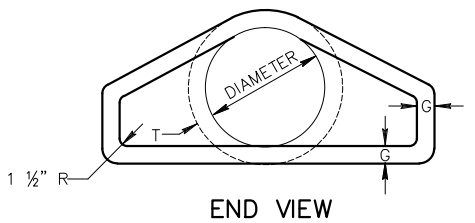
END VIEW



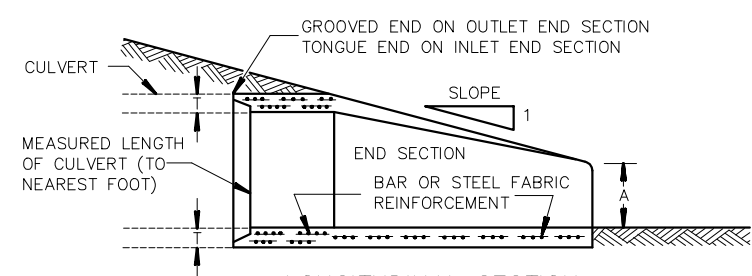
SIDE ELEVATION
METAL ENDWALLS



PLAN



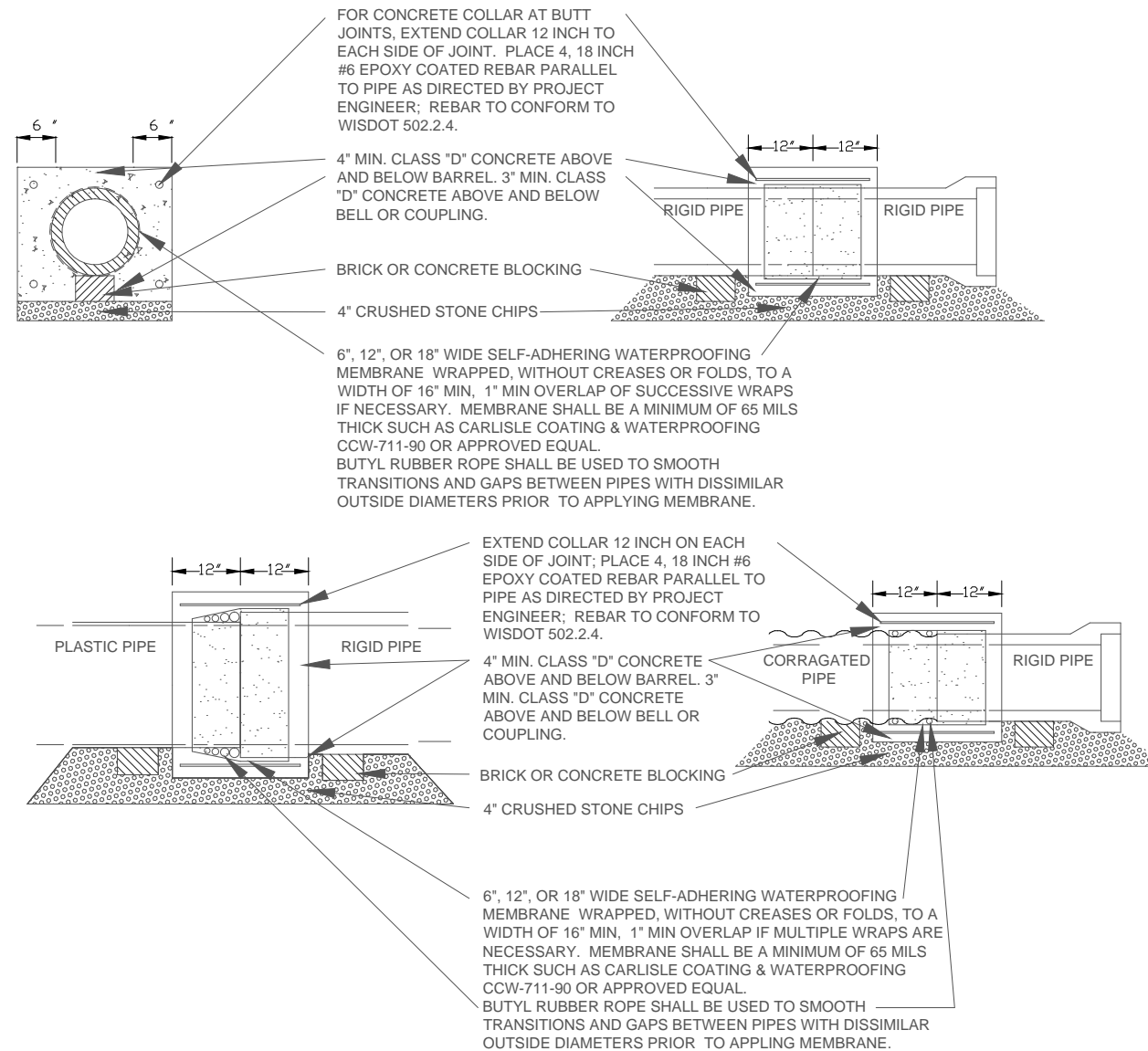
END VIEW



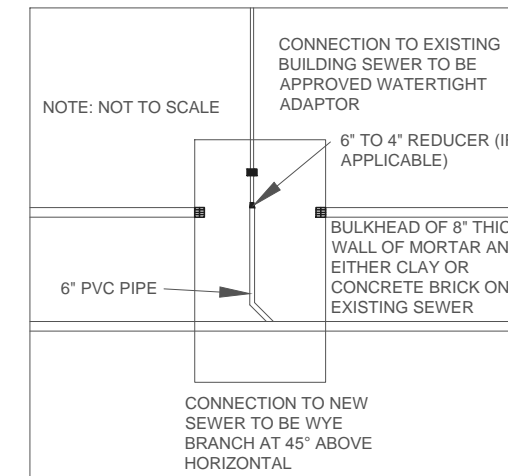
LONGITUDINAL SECTION
CONCRETE ENDWALLS

AS-BUILTS

CONCRETE COLLAR DETAIL FOR 8"-42" PIPE



TYPICAL BUILDING SEWER CONNECTION





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.

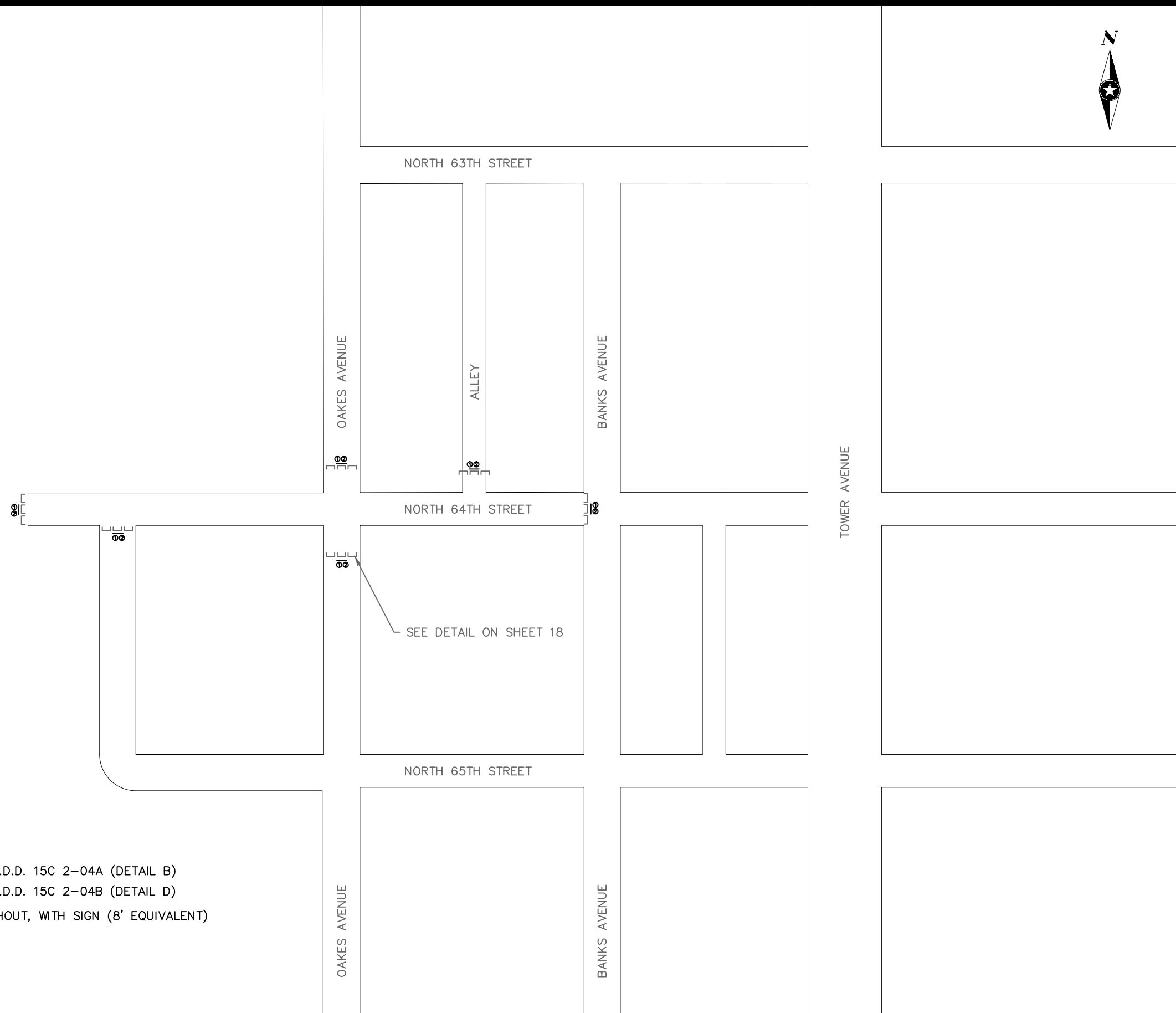
ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

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.

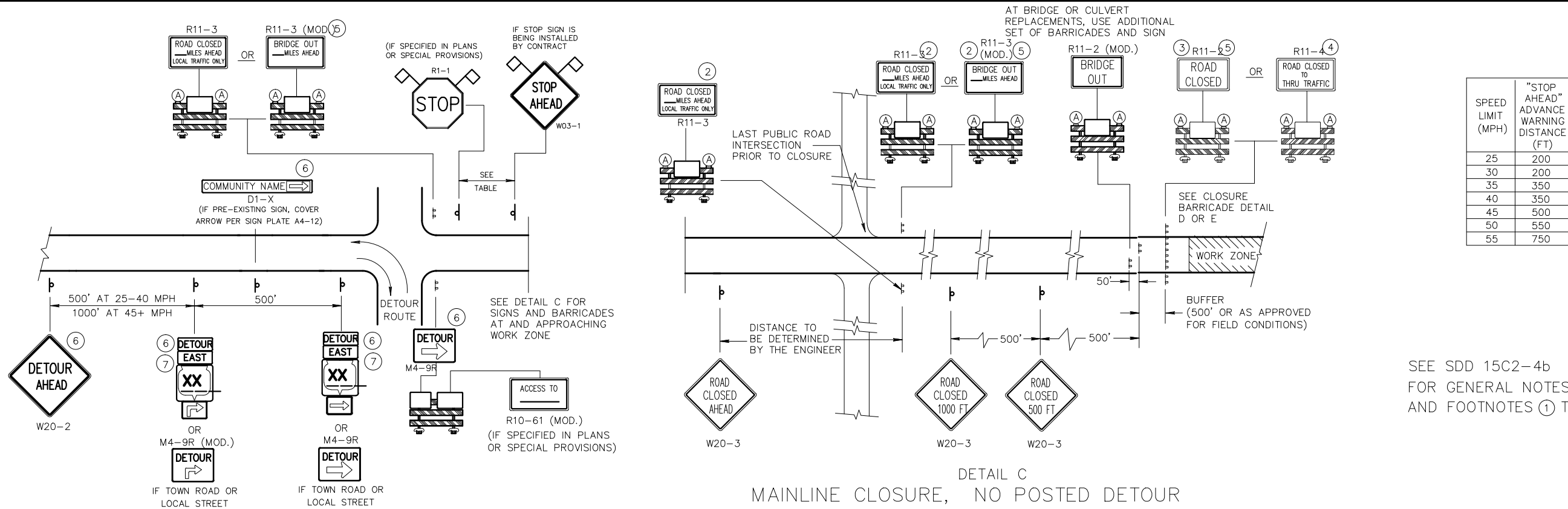


① SEE WI DOT STANDARD S.D.D. 15C 2-04A (DETAIL B)

② SEE WI DOT STANDARD S.D.D. 15C 2-04B (DETAIL D)

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



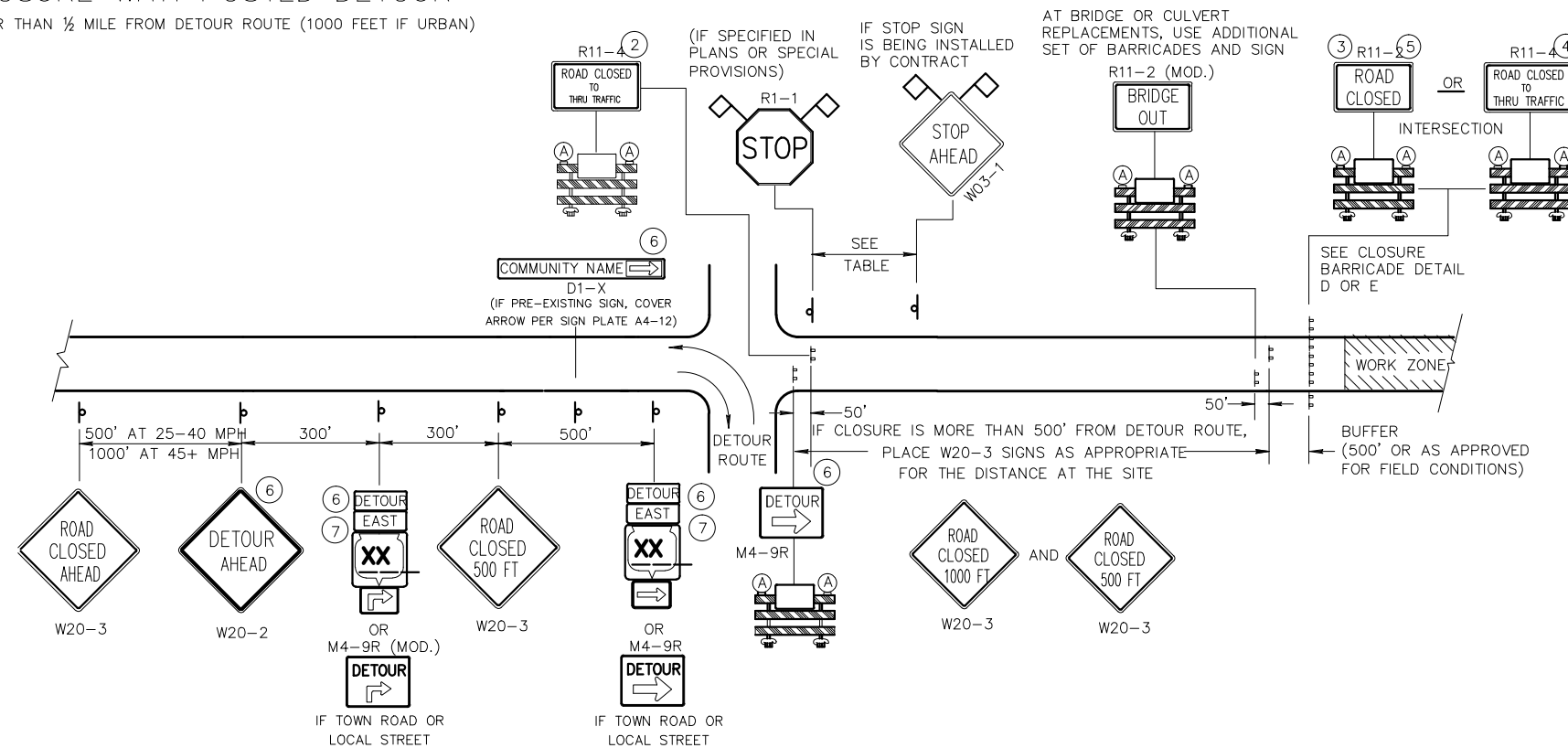


DETAIL A
 MAINLINE CLOSURE WITH POSTED DETOUR
 WORK ZONE GREATER THAN 1/2 MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)

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

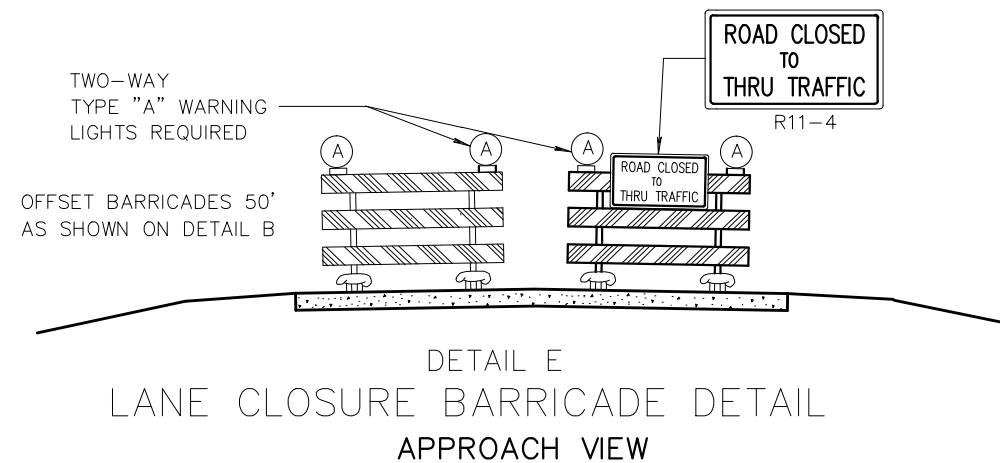
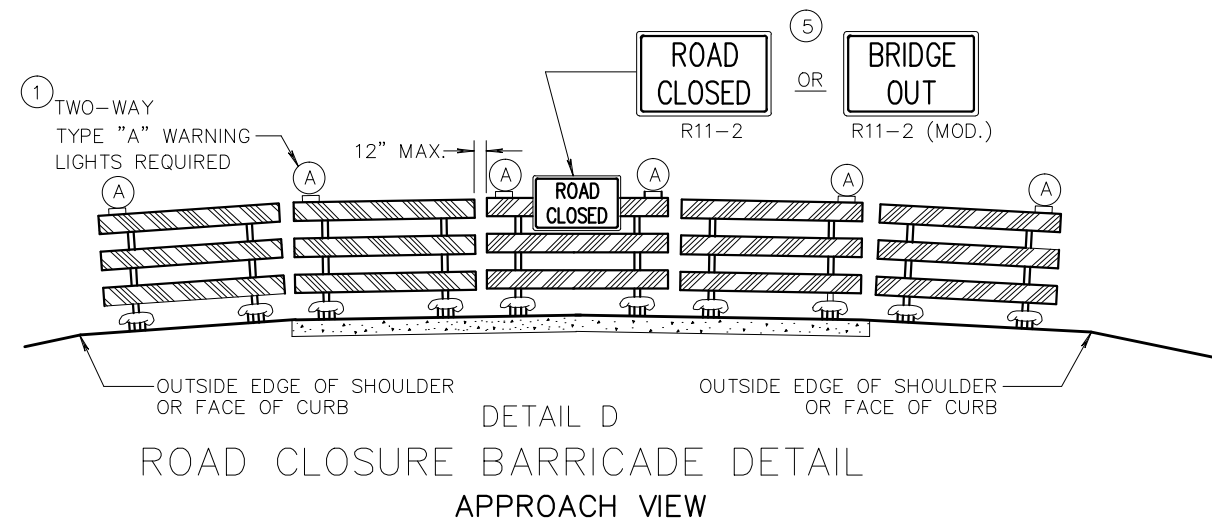
DETAIL C
 MAINLINE CLOSURE, NO POSTED DETOUR



DETAIL B
 MAINLINE CLOSURE WITH POSTED DETOUR
 WORK ZONE LESS THAN 1/2 MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)

LEGEND

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



SEE SDD 15C2-4d 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 RAIL. 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.)

M05-1 AND M06-1 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.

①

Oakes Ave N. 64th Superior

FROM: EXIST 15" clay TO: MH PM HO1

CONTRACTOR: A-1 Exc. CONT. NO. 1434

FOREMAN: Tim Bergeron

INSPECTOR: Amy DATE: 9-5-2014

EXIST 8" clay

Pm HO1

25'-8" PVC
2-8" 45° Bends

STA 4+14

22'-6"

STA 3+41

22'-6"

190'-12" PVC

STA 2+97

19'-6"

Pm HO2

STA 1+66
21'-6"

181'-12" PVC

3.5'-6"

STA 1+46

88'-15" PVC

Pm HO3

STA 0+39 SE
STA 0+85

STA 1+03

STA 1+05

EXIST 15" clay

14.5' 6" PVC

4.5'-6"

4.5'-6"

4'-6"

2

Oak St 64th St Superior

FROM: MH PM Ho I TO: Endwall

CONTRACTOR: A-1 CONT. NO. 1434

FOREMAN: Tim Bergman

INSPECTOR Amy DATE 9-5-2014

25' - 12" HOPE MH PM Ho I

3

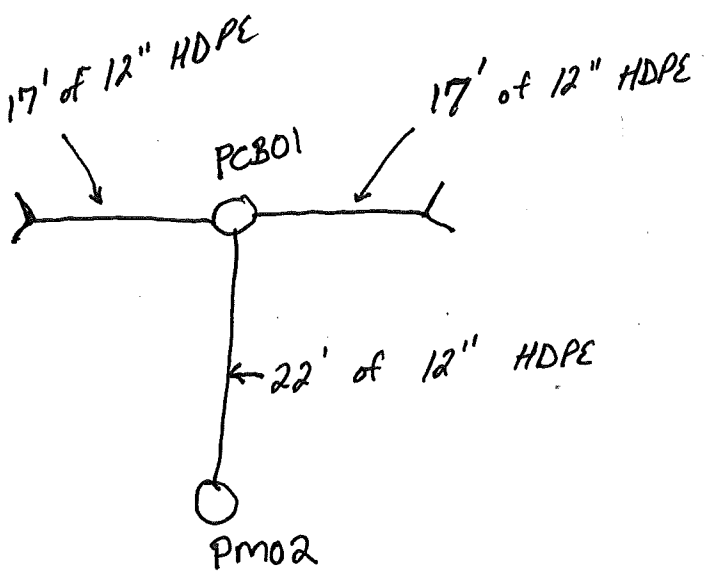
Superior - Oaks #64th

FROM: PMH02 TO: PCB01

CONTRACTOR: A-1 CONT. NO. _____

FOREMAN: Steve Eder

INSPECTOR Army DATE _____



4

Superior - Oaks : 6444



FROM: PMH03 TO: PCB02

CONTRACTOR: A-1 CONT. NO. _____

FOREMAN: Steve Eder

INSPECTOR Amy DATE _____

