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3	DETOUR ROUTE
4-5	GENERAL PLAN OF SITE
6-9	SOIL BORING LOG
10	EX GENERAL PLAN OF STRUCTURE
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14	PILE DETAILS
15-16A	ABUTMENT DETAILS
17	ERECTION DIAGRAM
18	PRESTRESSED CONCRETE BOX BEAM DETAILS
19-21	SUPERSTRUCTURE DETAILS
22	EXPANSION JOINT DETAILS EJ3Y (03/14/2007)
23-29	WATER MAIN DETAILS
30	STEEL REINFORCEMENT DETAILS
31-35	APPROACH DETAILS
36	PERMANENT SIGNING AND PAVEMENT MARKING SHEET
37-45	CITY OF DETROIT STANDARD PLANS

CITY OF DETROIT

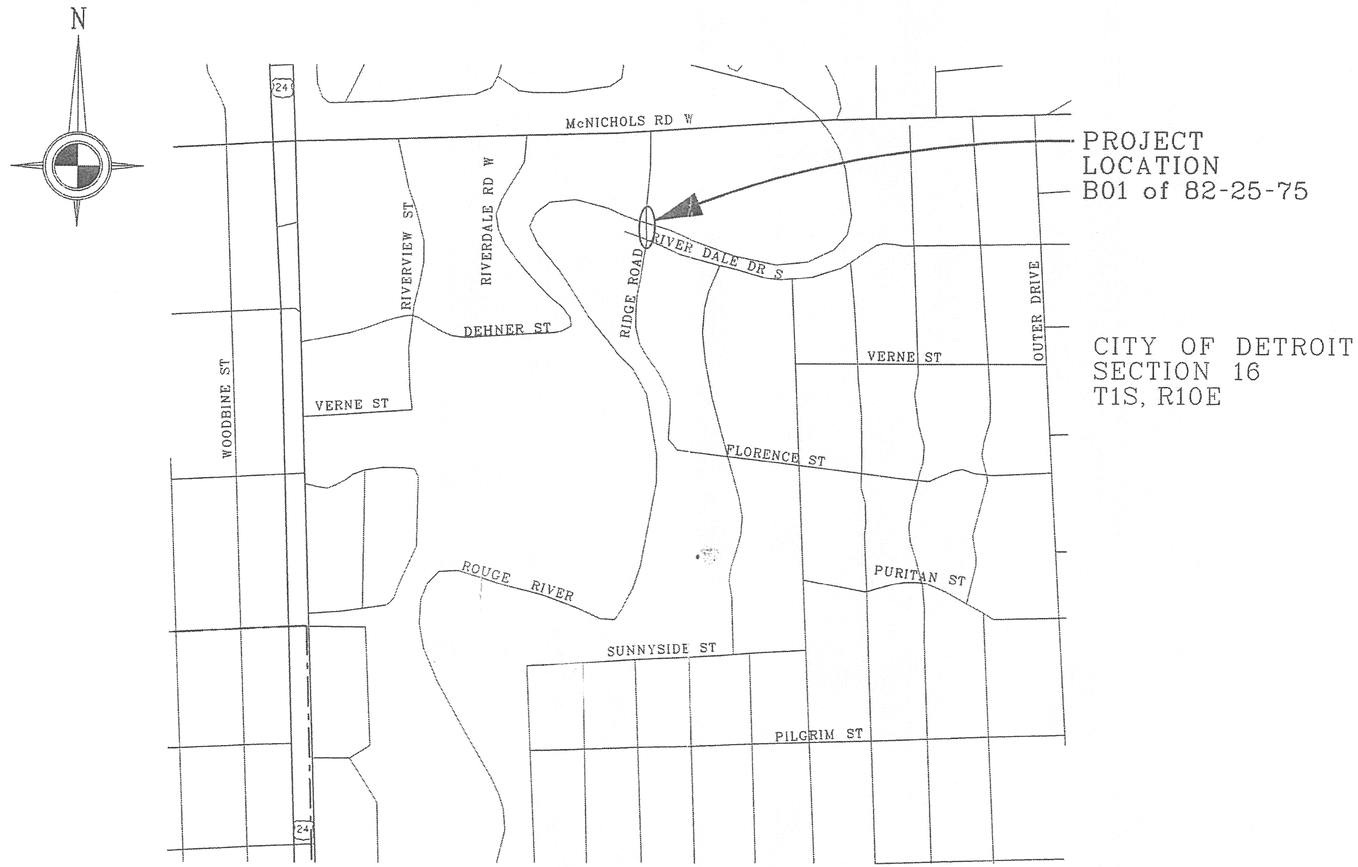
IN COOPERATION WITH

MICHIGAN DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE OF PROPOSED
REPLACEMENT OF THE

RIDGE ROAD BRIDGE
OVER THE
ROUGE RIVER

STATE BRIDGE NO.: B01 of 82-25-75
JOB NO.: 86343A
CONTROL SECTION NO.: MCS 82025



PROJECT LOCATION
B01 of 82-25-75

CITY OF DETROIT
SECTION 16
T1S, R10E

TITLE SHEET LEGEND

- PROPOSED BRIDGE PROJECT
- EXISTING ROADS
  - CITY STREET
  - COUNTY
  - STATE ROUTES
  - FEDERAL DIVIDED ROUTES
  - FEDERAL DIVIDED INTERSTATE ROUTES
- SECTION LINE
- CITY, VILLAGE OR TOWNSHIP LIMITS
- RAILROADS

CONTRACT FOR: STRUCTURE REPLACEMENT AND WIDENING FOR THE RIDGE ROAD BRIDGE OVER THE ROUGE RIVER, ASSOCIATED ROAD WORK, AND WATER MAIN WORK.

BRIDGE PLANS WERE PREPARED FOR THE CITY OF DETROIT BY

STATE OF MICHIGAN
RONALD C. WOOLFE
ENGINEER
NO. 23345
LICENSED PROFESSIONAL ENGINEER

DLZ
1st WEST CONGRESS, SUITE 326
DETROIT, MICHIGAN 48226
(313) 961-4040

Ronald C. Woolfe — 12/3/08
LICENSED PROFESSIONAL ENGINEER — DATE

LOCAL AUTHORITY APPROVAL
CITY OF DETROIT
CITY ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS

APPROVED BY _____ HEAD ENGINEER — DATE

APPROVED BY Jerry Lasko CITY ENGINEER — DATE 1/5/09

PREPARED UNDER THE SUPERVISION OF

Rodolfo Floro — 01/05/09 — 19128
LICENSED PROFESSIONAL ENGINEER — REGISTRATION NO.

CITY OF DETROIT
ORGANIZATION

CITY ENGINEERING DIVISION
900 CADILLAC TOWER
DETROIT, MI 48226
ADDRESS

STATE OF MICHIGAN
RODOLFO L. FLORO
ENGINEER
No. 19128
LICENSED PROFESSIONAL ENGINEER

RECEIVED
MAR 25 2009

MDOT
Michigan Department of Transportation

CONTROL SECTION	JOB NUMBER	FEDERAL NUMBERS PROJECT	FEDERAL NUMBERS ITEM	SHEET NO.
MCS 82025	86343A	NA	NA	1

CONTROL SECTION MCS 82025 | JOB NUMBER 86343A

DATE: 11-6-08
CORRECTED BY: DAF
DATE: 11-6-08
CHECKED BY: TNB
DATE: 1/10/07
DRAWN BY: DAF
FILE NAME: ridge rd title.dgn

PLAN INDEX	
SH. NO.	DESCRIPTION
1A	TITLE SHEET
23-29	WATER MAIN DETAILS

CITY OF DETROIT

IN COOPERATION WITH

MICHIGAN DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE OF PROPOSED
REPLACEMENT OF THE
WATER MAIN

RIDGE ROAD BRIDGE
OVER THE
ROUGE RIVER

STATE BRIDGE NO.: B01 of 82-25-75
JOB NO.: 86343A
CONTROL SECTION NO.: MCS 82025

PROJECT
LOCATION
B01 of 82-25-75

CITY OF DETROIT
SECTION 16
T1S, R10E

N

TITLE SHEET LEGEND

- PROPOSED BRIDGE PROJECT
- EXISTING ROADS
  - CITY STREET
  - COUNTY
  - STATE ROUTES
  - FEDERAL DIVIDED ROUTES
  - FEDERAL DIVIDED INTERSTATE ROUTES
- SECTION LINE
- CITY, VILLAGE OR TOWNSHIP LIMITS
- RAILROADS

WATER MAIN PLANS WERE PREPARED FOR THE CITY OF DETROIT
BY

DLZ
151 WEST CONGRESS, SUITE 328
DETROIT, MICHIGAN 48226
(313) 961-4040

STATE OF MICHIGAN
MARK A. MATTSON
ENGINEER
No. 48114
LICENSED PROFESSIONAL ENGINEER

LICENSED PROFESSIONAL ENGINEER — 11-10-08 DATE

DETROIT
WATER AND SEWERAGE
DEPARTMENT
ENGINEERING DIVISION

APPROVED BY _____ DATE
BHARAT DOSHI, P.E.
HEAD ENGINEER (WATER SYSTEMS)

MDOT
Michigan Department of Transportation

CONTROL SECTION	JOB NUMBER	FEDERAL NUMBERS PROJECT	FEDERAL NUMBERS ITEM	SHEET NO.
MCS 82025	86343A	NA	NA	1A

CONTROL SECTION: MCS 82025
JOB NUMBER: 86343A

DATE: 11/6/08
DRAWN BY: DLW
FILE NAME: ridge rd water main title.dgn

CITY OF DETROIT STANDARD PLANS

WHERE THE FOLLOWING ITEMS ARE CALLED FOR ON THE PLANS THEY ARE TO BE CONSTRUCTED ACCORDING TO THE STANDARD PLAN GIVEN BELOW OPPOSITE EACH ITEM UNLESS OTHERWISE INDICATED.

STANDARD CURB DETAILS	C-4380
STANDARD SEWER AND DROP MANHOLES	C-4387
MANHOLE FRAME AND COVER	C-4391
FLAT TYPE GRATE AND FRAME	C-4392
SIDEWALK JOINTING STANDARD	C-4462
STANDARD CATCH BASINS "A" AND "B" AND FLAT GRATE AND FRAME	C-5028

MDOT STANDARD PLANS

WHERE THE FOLLOWING ITEMS ARE CALLED FOR ON THE PLANS THEY ARE TO BE CONSTRUCTED ACCORDING TO THE STANDARD PLAN GIVEN BELOW OPPOSITE EACH ITEM UNLESS OTHERWISE INDICATED.

SIDEWALK RAMP AND DETECTABLE WARNING DETAILS	R-28-F
DRIVEWAY OPENINGS & APPROACHES AND CONCRETE SIDEWALKS	R-29-E
GUARDRAIL AT BRIDGES AND EMBANKMENTS	R-59-E
GUARDRAIL APPROACH TERMINAL TYPES 1B & 1T	R-61-G
GUARDRAIL ANCHORAGE, BRIDGE DETAILS	R-67-F
GRANULAR BLANKET, UNDERDRAINS, OUTLET ENDINGS FOR UNDERDRAINS, AND SEWER BULKHEADS	R-80-D
UTILITY TRENCHES	R-83-B
SOIL EROSION & SEDIMENTATION CONTROL MEASURES	R-96-D
BRIDGE RAILING, AESTHETIC PARAPET TUBE	B-25-F
MOLDING, BEVEL, LIGHT STANDARD ANCHOR BOLT ASSEMBLY AND NAME PLATE DETAILS	B-103-E

MDOT TRAFFIC AND SAFETY STANDARD PLANS

WHERE THE FOLLOWING ITEMS ARE CALLED FOR ON THE PLANS THEY ARE TO BE CONSTRUCTED ACCORDING TO THE STANDARD PLAN GIVEN BELOW OPPOSITE EACH ITEM UNLESS OTHERWISE INDICATED.

TEMPORARY TRAFFIC CONTROL DEVICES	WZD-125-D

GENERAL NOTES

THE DESIGN OF THIS STRUCTURE IS BASED ON CURRENT AASHTO LRFD BRIDGE SPECIFICATIONS HL-93 LOADING. LIVE LOAD PLUS IMPACT DOES NOT EXCEED 1/1000 OF SPAN LENGTH. THE LOAD AND RESISTANCE FACTOR METHOD OF DESIGN WAS USED FOR THIS STRUCTURE.

EXCEPT WHERE OTHERWISE INDICATED ON THESE PLANS, OR IN THE PROPOSAL AND SUPPLEMENTAL SPECIFICATIONS CONTAINED HEREIN, ALL MATERIALS AND WORKMANSHIP SHALL BE ACCORDING TO THE MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION 2003 EDITION.

ALL EXPOSED CONCRETE CORNERS SHOWN SQUARE ON THE PLANS SHALL BE BEVELED WITH ½" TRIANGULAR MOLDINGS EXCEPT AS OTHERWISE NOTED.

OLD PLANS DO NOT EXIST FOR THIS STRUCTURE.

THE PROPOSED IMPROVEMENTS COVERED BY THESE PLANS ARE IN ACCORDANCE WITH THE AASHTO: A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS, 2004.

THE DESIGN OF THE STRUCTURAL MEMBERS IS BASED ON MATERIAL OF THE FOLLOWING GRADES AND STRESSES:

CONCRETE: GRADE S2	f'c = 3,000 psi
CONCRETE: GRADE D	f'c = 4,000 psi
STEEL REINFORCEMENT	fy = 60,000 psi
STIRRUPS FOR PRESTRESSED BEAMS	fy = 60,000 psi
PRESTRESSED CONCRETE	f'ci = 6,000 psi f'c = 7,000 psi
PRESTRESSING STRANDS	f's = 270,000 psi

THE DESIGN OF THE FOUNDATION PILING IS BASED ON MATERIALS OF THE FOLLOWING GRADES AND STRESSES:

FOUNDATION PILING (STEEL H-PILING) AASHTO M270 GRADE 50	fy = 50,000 psi

UNLESS OTHERWISE SHOWN ON THE PLANS PROVIDE MINIMUM CONCRETE CLEAR COVER FOR REINFORCEMENT ACCORDING TO THE FOLLOWING:

CONCRETE CAST AGAINST EARTH:	3 IN.
PRESTRESSED BEAMS:	1 IN.
ALL OTHER UNLESS SHOWN ON PLANS:	2 IN.

TRAFFIC DATA:

	YEAR 2008	YEAR 2028
ADT	368	546
DHV	34	50
COMM%	0%	0%
DESIGN SPEED		25 MPH
POSTED SPEED		25 MPH

DATE: 11-6-08 CORRECTED BY: DAF
DATE: 11-6-08 CHECKED BY: TNB
DATE: 4/9/08 DRAWN BY: DLW
FILE NAME: ridge rd note sht.dgn

REVISIONS	DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

MDOT JOB NO. 86343A | STRUCTURE NO. B01 of 82-25-75

NOTE SHEET

DATE: 1/13/09

DLZ JOB NO. 0741-6177-00

SHEET NO. 2 OF 45

① STIDEWALK CLOSED — R9-9 (30" X 18") 3.8 SFT TYPE IIIB SIGN

② RIDGE RD / DETOUR ⇦ — D3-1 (30" X 8") 1.67 SFT TYPE IIB SIGN; M4-9L (30" X 24") 5 SFT TYPE IIB SIGN

③ RIDGE RD / DETOUR ⇧ — D3-1 (30" X 8") 1.67 SFT TYPE IIB SIGN; M4-9S (30" X 24") 5 SFT TYPE IIB SIGN

④ RIDGE RD / DETOUR ⇨ — D3-1 (30" X 8") 1.67 SFT TYPE IIB SIGN; M4-9R (30" X 24") 5 SFT TYPE IIB SIGN

⑤ DETOUR ENDS — M4-8a (24" X 18") 3 SFT TYPE IIB SIGN

⑥ DETOUR AHEAD / RIDGE RD — W20-2 (48" X 48") 16 SFT TYPE IIB SIGN; D3-1 (30" X 8") 1.67 SFT TYPE IIB SIGN

⑦ INJURE/KILL A WORKER FINE - $ 7500 JAIL - 15 YRS — R5-18bLA (60" X 42") 17.5 SFT TYPE IIIB SIGN

WORK ZONE BEGINS TRAFFIC FINES DOUBLED — R5-18cLA (60" X 42") 17.5 SFT TYPE IIIB SIGN (450' SPA FROM R5-18bLA)

ROAD CLOSED AHEAD LOCAL TRAFFIC ONLY — R11-3 (60" X 30") 12.5 SFT TYPE IIB SIGN MOUNT ON SEPARATE POSTS ABOVE AND BEHIND BARRICADE

DETOUR — M4-10 (48" X 18") 6 SFT TYPE IIB SIGN MOUNT ON SEPARATE POSTS ABOVE AND BEHIND BARRICADE

⑧ TYPE III LIGHTED BARRICADE

ROAD CLOSED — R11-2 (48" X 30") 10 SFT TYPE IIB SIGN MOUNT ON SEPARATE POSTS BEHIND BARRICADES

⑨ (2) TYPE III LIGHTED BARRICADES

⑩ PLACE TEMPORARY CONCRETE BARRIER ACROSS BRIDGE APPROACHES

MISCELLANEOUS QUANTITIES

	9	Ea	Barricade, Type III, High Intensity, Double Sided, Furn
	9	Ea	Barricade, Type III, High Intensity, Double Sided, Oper
*	20	Ea	Plastic Drum, High Intensity, Lighted, Furn
*	20	Ea	Plastic Drum, High Intensity, Lighted, Oper
	359	Sft	Sign, Type B, Temp, Prismatic, Furn
	359	Sft	Sign, Type B, Temp, Prismatic, Oper
	1	LS	Minor Traf Devices
	48	Ft	Conc Barrier, Temp, Furn
	48	Ft	Conc Barrier, Temp, Oper

* TO BE PLACED FOR ACCESS TO DRIVEWAYS, AS DIRECTED BY THE ENGINEER

REVISIONS	DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

MDOT JOB NO. 86343A | STRUCTURE NO. B01 of 82-25-75

DETOUR ROUTE

DATE: 1/13/09

DLZ JOB NO. 0741-6177-00

SHEET NO. 3 OF 45

DATE: 11-6-08 DATE: 11-6-08 CORRECTED BY:DAF DATE: 04/28/08 CHECKED BY: TNB DRAWN BY: DLW FILE NAME: ridge rd detour.dgn

BENCH MARKS

BM 100 EL 131.476
BENCH TIE INWEST SIDE TELEPHONE POLE ±1.5 FT
ABOVE GROUND ±18 FT EAST OF CENTER LINE
RIDGE ROAD ±390 FT NORTH OF CENTER BRIDGE
OVER ROUGE RIVER.
NORTHING: 335135.24 EASTING: 13419546.42

BM 101 EL 141.396
BENCH TIE IN NORTH SIDE POWER POLE ±0.5 FT
ABOVE GROUND ±18 FT SOUTH OF CENTER LINE
RIVERDALE ROAD ±247 FT EAST OF INTERSECTION
RIVERDALE ROAD AND RIDGE ROAD.
NORTHING: 334603.80 EASTING: 13419656.56

WITNESSES

WITNESSES TO CP1; ½" REROD W/ TRAVERSE CAP

NORTH	BACK OF CURB	11.15 FT
SOUTH	FACE OF WALK	6.82 FT
S 73° W	FENCE CORNER POST	49.06 FT
N 74° W	SOUTH SIDE POWER POLE	34.28 FT

NORTHING: 335194.53 EASTING: 13418922.02

WITNESSES TO CP2; ½" REROD W/ TRAVERSE CAP

NORTH	FENCE LINE	20.44 FT
S 70° E	SW CORNER CATCH BASIN	44.00 FT
SOUTH	BACK OF CURB	6.25 FT
WEST	SOUTH SIDE POWER POLE	47.08 FT

NORTHING: 335302.32 EASTING: 13419522.61

WITNESSES TO CP6; ½" REROD W/ TRAVERSE CAP

N 39° E	CORNER CONC DRIVE	32.60 FT
S 64° E	FACE OF SIDEWALK	2.91 FT
S 18° W	WEST SIDE POWER POLE	3.38 FT
N 34° W	SE SIDE TWIN 15" CALTALDA	35.60 FT

NORTHING: 334443.79 EASTING: 13419476.49

WITNESSES TO CP7; ½" REROD W/ TRAVERSE CAP

NORTH	WEST SIDE SILVER MAPLE	128.14 FT
S 85° E	TOP 2" STEEL POST	196.64 FT
S 50° E	NORTH SIDE POWER POLE	208.22 FT
S 18° E	SE SIDE 15" COTTON WOOD	110.62 FT

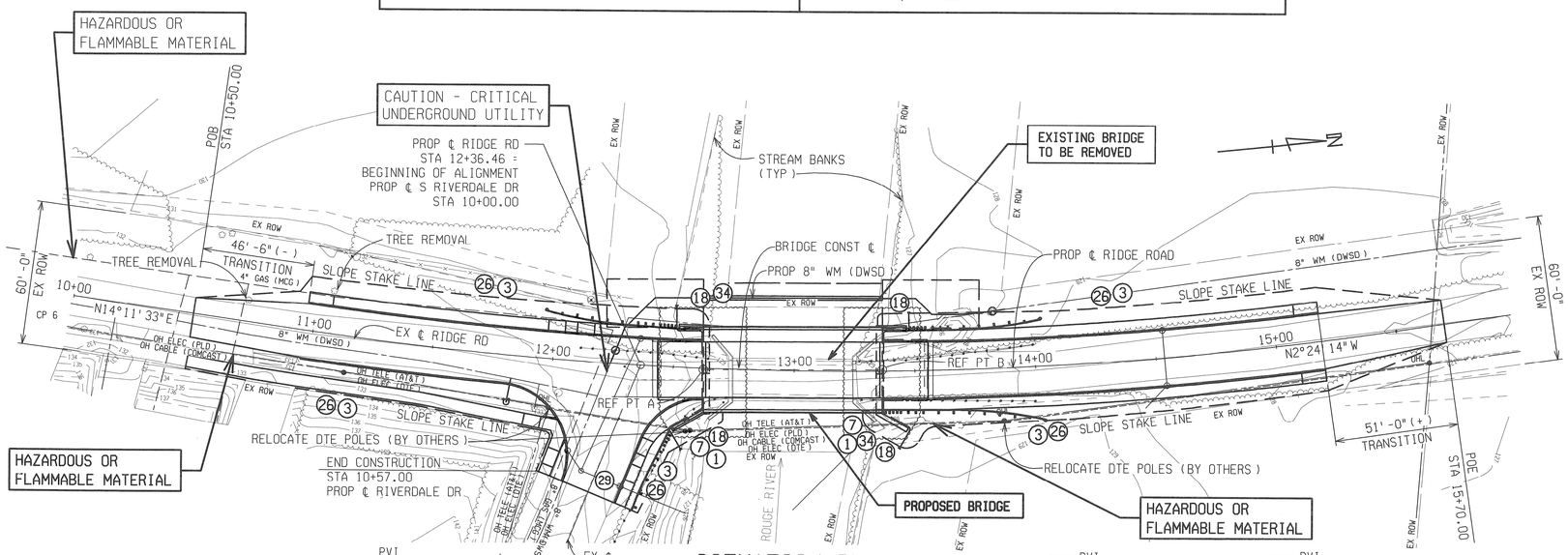
NORTHING: 334570.03 EASTING: 13419264.15
STA 10+54.69, OFF 223.87 FT LT

EXISTING STRUCTURE

THE EXISTING STRUCTURE IS A ONE SPAN BRIDGE WITH A TOTAL LENGTH OF 53'-10". THE EXISTING BEAMS ARE CONCRETE T-BEAMS WITH CONCRETE FASCIA ARCHES. THE SUBSTRUCTURE IS ON SPREAD FOOTINGS. THE BRIDGE WAS BUILT IN 1900.

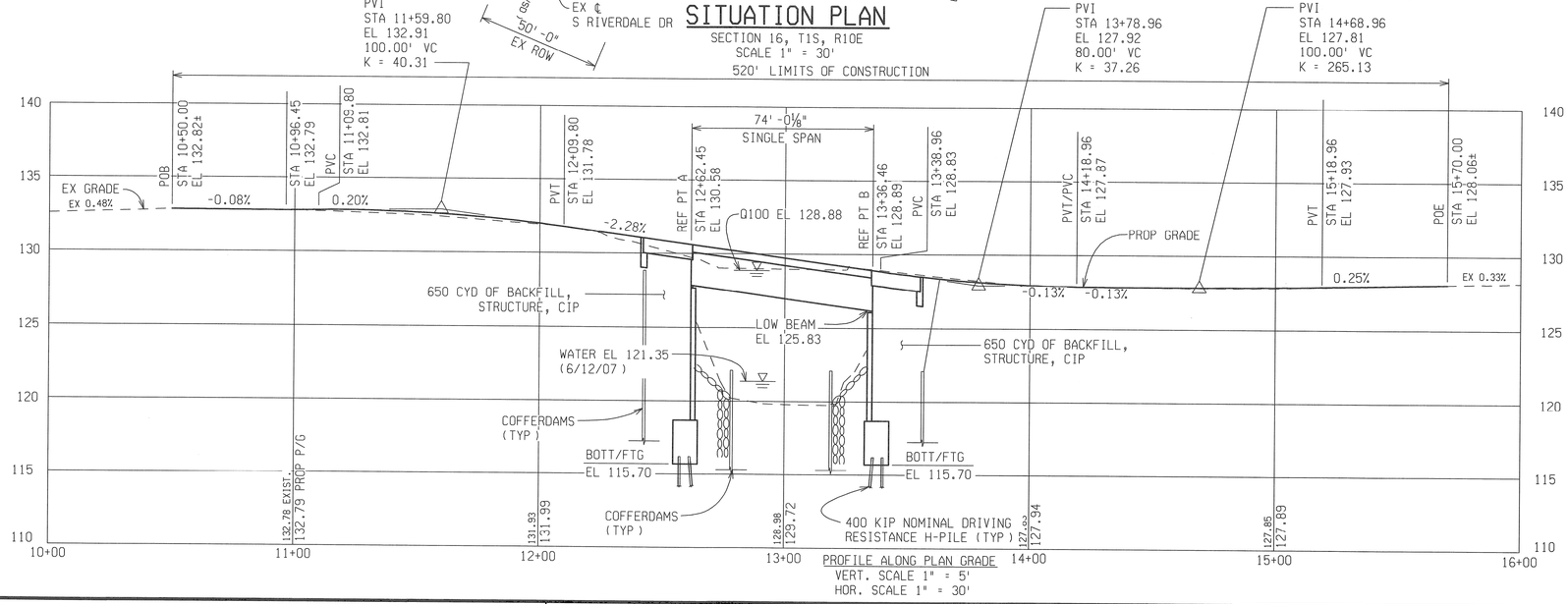
UTILITIES

CITY OF DETROIT, PUBLIC LIGHTING DEPT (PLD) 9449 GRINNELL DETROIT, MI 48213 ATTN.: SATISH SADWAL PHONE NO.: (313) 267-7232	ELECTRIC, LIGHTING
CITY OF DETROIT DETROIT WATER & SEWERAGE DEPT (DWSD) JULIAN MADISON BLDG 1420 WASHINGTON BLVD., SUITE 100 DETROIT, MI 48226 ATTN.: BHARAT DOSHI PHONE NO.: (313) 967-1541	WATER, SEWER
DTE ENERGY MICHIGAN CONSOLIDATED GAS CO. (MCG) DATA INTEGRITY, 2ND FLOOR 3200 HOBSON DETROIT, MI 48201 ATTN.: BARBARA SAUNDERS PHONE NO.: (313) 577-7435	GAS
DTE ENERGY (DTE) DETROIT EDISON 2000 2nd AVE RM 577 SB DETROIT, MI 48226-1279 ATTN: REGINALD BROWN PHONE NO: (313) 577-7066	ELECTRIC
AT&T 31100 PLYMOUTH ROAD, ROOM 301 LIVONIA, MI 48150 ATTN: GARY CLINTON PHONE NO.: (734) 523-6880	TELEPHONE
COMCAST CABLEVISION (COMCAST) 12775 LYNDON ST. DETROIT, MI 48227 ATTN.: BENE CUMMINGS PHONE NO: (313) 646-4247	CABLE



SITUATION PLAN

SECTION 16, T1S, R10E
SCALE 1" = 30'
520' LIMITS OF CONSTRUCTION



EROSION AND SEDIMENTATION CONTROL MEASURES

				KEY NO.
*	1100	Ft	Erosion Control, Silt Fence	26
	4	Ea	Erosion Control, Filter Bag	18
*	1	LS	Cofferdams	34
	535	Syd	Slope Restoration	3
	200	Syd	Riprap, Heavy	7
*	100	Ft	Turbidity Curtain (Shallow)	1

* PLACE AS DIRECTED BY THE ENGINEER

NOTES:

THE WORK COVERED BY THESE PLANS INCLUDES MAINTAINING TRAFFIC, REMOVAL OF THE EXISTING BRIDGE, CONSTRUCTION OF THE PROPOSED BRIDGE AND APPROACHES, AND PLACING RIPRAP TO THE LIMITS SHOWN.

THE CONTRACTOR SHALL LOCATE ALL ACTIVE UNDERGROUND UTILITIES PRIOR TO STARTING WORK AND SHALL CONDUCT HIS OPERATIONS IN SUCH A MANNER AS TO ENSURE THAT THOSE UTILITIES NOT REQUIRING RELOCATION WILL NOT BE DISTURBED.

RIDGE ROAD TRAFFIC IS TO BE DETOURED OVER OTHER EXISTING ROADS.

PLAN ELEVATIONS REFER TO CITY OF DETROIT DATUM.

MEASURES SHALL BE TAKEN TO PREVENT DEBRIS FROM FALLING FROM THE STRUCTURE. IF DEBRIS FALLS INTO THE WATERWAY, IT SHALL BE REMOVED WITHIN 24 HOURS. SINCE DISTURBANCE OF THE WATERWAY BOTTOM MAY BE AS HARMFUL AS THE DEBRIS ITSELF, THE PREVENTIVE MEASURES MUST BE EFFECTIVE.

ARTESIAN GROUNDWATER CONDITIONS WERE ENCOUNTERED IN THE SOIL BORINGS AT APPROXIMATELY ELEVATION 84.0 (SB1) AND 70.0 (SB2). IT IS ESTIMATED THAT THE LEVEL OF THE ARTESIAN WATER DOES NOT EXTEND HIGHER THAN APPROXIMATELY ELEVATION 119.0. THE CONTRACTOR SHALL NOT PERMIT THE GROUNDWATER LEVEL DURING FOUNDATION EXCAVATION, PILE DRIVING OR CONSTRUCTION OF THE PROPOSED ABUTMENT TO EXTEND ABOVE ELEVATION 112.70. PAYMENT FOR THIS WORK SHALL BE PAID FOR AS "Groundwater Drawdown".

IMMEDIATELY AFTER THE CONSTRUCTION OF AN ABUTMENT IS COMPLETE, SLOPE PROTECTION AND SEEDING OR SODDING SHALL BE PLACED ON THE ADJACENT EMBANKMENT SLOPES.

THE CONTRACTOR SHALL COORDINATE WITH DTE ENERGY UPON AWARD OF THE PROJECT TO FINALIZE THE UTILITY POLE RELOCATIONS AS DIRECTED IN THE NOTICE TO BIDDERS UTILITY COORDINATION.

REVISIONS

DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

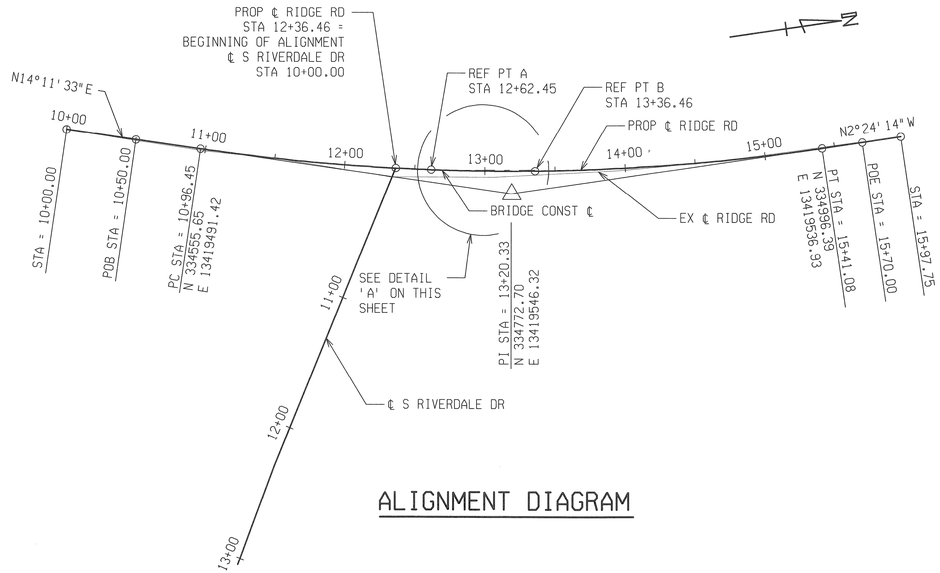
RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

MDOT JOB NO. 86343A | STRUCTURE NO. B01 of 82-25-75

GENERAL PLAN OF SITE

DATE: 1/13/09
DLZ JOB NO. 0741-6177-00
SHEET NO. 4 OF 45

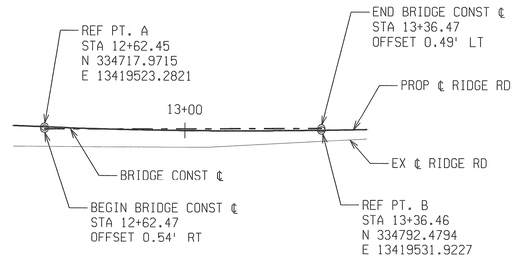
DATE: 11-6-08 DATE: 11-6-08 CORRECTED BY:DAF CHECKED BY: TNB DATE: 8/21/07 DRAWN BY: DLW FILE NAME: ridge rd si.dgn



ALIGNMENT DIAGRAM

CURVE DATA

Δ = 16° 35' 48" LT
R = 1535.00 FT
T = 223.89 FT
L = 444.64 FT
E = 16.24 FT
PC = 10+96.45
PI = 13+20.33
PT = 15+41.08



DETAIL 'A'

DATE: 11-6-08
CORRECTED BY: DAF
DATE: 11-6-08
CHECKED BY: TNB
DATE: 8/12/07
DRAWN BY: DAF
FILE NAME: ridge rd si2.dgn

REVISIONS	DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

MDOT JOB NO. 86343A | STRUCTURE NO. B01 of 82-25-75

GENERAL PLAN OF SITE

DATE: 1/13/09
DLZ JOB NO. 0741-6177-00
SHEET NO. 5 OF 45

PROJECT NO. G07183A DATE 3/6/2008 LOG OF TEST BORING SB-01

ELEVATION ft MSL	Depth	Ground Surface Elevation 128.9 ft
128.4	0.5	6 inches of ASPHALTIC CEMENT CONCRETE
127.4	1.5	FILL – Fine to medium sand, trace to some silt and gravel, gray, moist (SP/SM) (Base Material)
125.9	3.0	FILL – Silty clay, some sand, trace gravel and organics, brown and dark brown (CL)
119.9	9.0	Very loose SILTY FINE SAND, trace to some clay, trace gravel, brown to gray, moist to wet (SM)
		Medium SILTY CLAY, some sand, trace gravel, gray (CL)
115.4	13.5	Loose MEDIUM TO COARSE SAND, trace to some silt, trace gravel, gray, wet (SP/SM)
113.9	15.0	Stiff to very stiff SILTY CLAY, some sand, trace gravel, occasional sand and silt partings and seams, gray (CL)

ABUT B
BOTT/FTG
EL 115.70

DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)
0	SS1	28-4-4	8	2.5	<>		
	SS2	2-1-2	3	5.0			
5	SS3	0-1-3	4	7.5			
	SS4	0-1-1	2	10.0	1500*		
10							
	SS5	4-5-1	6	15.0			
15							
	SS6	2-4-5	9	20.0	3500*	22.8	
20							
	SS7	2-4-5	9	25.0	3500*	22.5	
25							
	SS9	2-4-5	9	30.0	1900	15.5	123
30							

LABORATORY DATA: UNCONFINED COMP. STREN. psf ■ (2000 4000 6000 8000); DRY DENSITY pcf ▲ (100 110 120 130); SPT N VALUE ▼ (10 20 30 40); MOISTURE CONTENT % ● (10 20 30 40)

BORING COORDINATES

GROUNDWATER READINGS
First Encountered: 13.5 feet
Upon Completion: 0 feet
Remarks:
Artesian water conditions encountered at 45 ft.

Drilling Company: DLZ
Drill Rig: CME 75
Engineer on Rig: S. Swaminthan
Drilling Method: 3 1/4 inch HSA/WR
Hammer Type: Automatic
Backfilled With: Grout / Patch
Date Started: 03-06-08
Date Completed: 03-06-08
Checked By: JSS

\# Torvane
* Pocket Penetrometer
<> Disturbed Sample

Somat Engineering
Proposed Bridge Replacement
Ridge Road over Rouge River
Detroit, Michigan

PROJECT NO. G07183A BORING NO. SB-01 PAGE 1 of 2

4/16/08

LOG OF TEST BORING VER2 RIDGE ROAD LOGS.GPJ SOMAT.GDT 4/16/08

PROJECT NO. G07183A DATE 3/6/2008 LOG OF TEST BORING SB-01

ABUT B SCOUR
(500 YEAR)
EL 96.78

ELEVATION ft MSL	Depth	Ground Surface Elevation 128.9 ft
85.4	43.5	Stiff to very stiff SILTY CLAY, some sand, trace gravel, occasional sand and silt partings and seams, gray (CL)
70.2	58.8	Very stiff to hard SILTY SANDY CLAY, trace gravel, rock fragments below 58 ft., gray (CL)
		End of Boring at 58.75 ft. (Boring continued as rock core)

MINIMUM PILE
PENETRATION &
ESTIMATED PILE
TIP EL 70.00

DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)
35	SS10	9-14-14	28	35.0	7500*	11.7	
40	SS11	2-6-8	14	40.0	3000	17.1	121
45	SS12	2-9-10	19	45.0	6000*		
50	SS13	6-9-12	21	50.0	9000*	14.6	
55	SS14	31-58-44	102	55.0	9000+*	8.6	
60	SS15	62/3"	62 +	58.8			

LABORATORY DATA: UNCONFINED COMP. STREN. psf ■ (2000 4000 6000 8000); DRY DENSITY pcf ▲ (100 110 120 130); SPT N VALUE ▼ (10 20 30 40); MOISTURE CONTENT % ● (10 20 30 40)

BORING COORDINATES

GROUNDWATER READINGS
First Encountered: 13.5 feet
Upon Completion: 0 feet
Remarks:
Artesian water conditions encountered at 45 ft.

Drilling Company: DLZ
Drill Rig: CME 75
Engineer on Rig: S. Swaminthan
Drilling Method: 3 1/4 inch HSA/WR
Hammer Type: Automatic
Backfilled With: Grout / Patch
Date Started: 03-06-08
Date Completed: 03-06-08
Checked By: JSS

\# Torvane
* Pocket Penetrometer
<> Disturbed Sample

Somat Engineering
Proposed Bridge Replacement
Ridge Road over Rouge River
Detroit, Michigan

PROJECT NO. G07183A BORING NO. SB-01 PAGE 2 of 2

4/16/08

LOG OF TEST BORING VER2 RIDGE ROAD LOGS.GPJ SOMAT.GDT 4/16/08

REVISIONS	DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

MDOT JOB NO. 86343A STRUCTURE NO. B01 of 82-25-75

SOIL BORING LOG

DATE: 1/13/09
DLZ JOB NO. 0741-6177-00
SHEET NO. 6 OF 45

DATE: 4/28/08 CORRECTED BY: KCK DATE: 11-6-08 CHECKED BY: TNB DATE: 4-18-08 DRAWN BY: DAF FILE NAME: ridge rd sb1.dgn

PROJECT NO..: G07183A

LOG OF TEST BORING NO: SB-01

SUBSURFACE PROFILE				ROCK SAMPLE DATA								
WELL	ELEV. (FT)	FORMATION	ELEV / SURFACE ELEVATION: 128.9 / DEPTH	DEPTH (FT)	CORE NO.	% REC	% RQD	PERM RUN	RUN TIME min./ft.	ROCK MASS HRD	ROCK MASS WEA	LABORATORY/FIELD TEST DATA
			68.9 / 60	60								
	65		Sound to slightly fractured, dark brown amorphous SHALE; bedding extremely thin to laminar 61.3' – Clay seam, 1/2", with broken shale pieces 62.1' – Joint, 30° 62.8' – Bedding Joint, 0°, trace clay coating 65.3' – Joint, 40°	65	RC1	100	70		1.8	MH	FR	
			63.1 / 65.8	65.8	65.8							
	60		End of boring/core at 65.8 feet	70								
	55			75								
	50			80								
	45			85								
	40			90								

Boring Cordinates
N: E:

Total Depth: 65.8 FT
Drilling Date: 3/6/2008 thru 3/6/2008
Inspector: C. Srodawa
Contractor: DLZ
Driller: DLZ
Checked By: JC
Drilling Method:
Diamond-tipped core barrel
Notes:

Plugging Procedure:
Grout

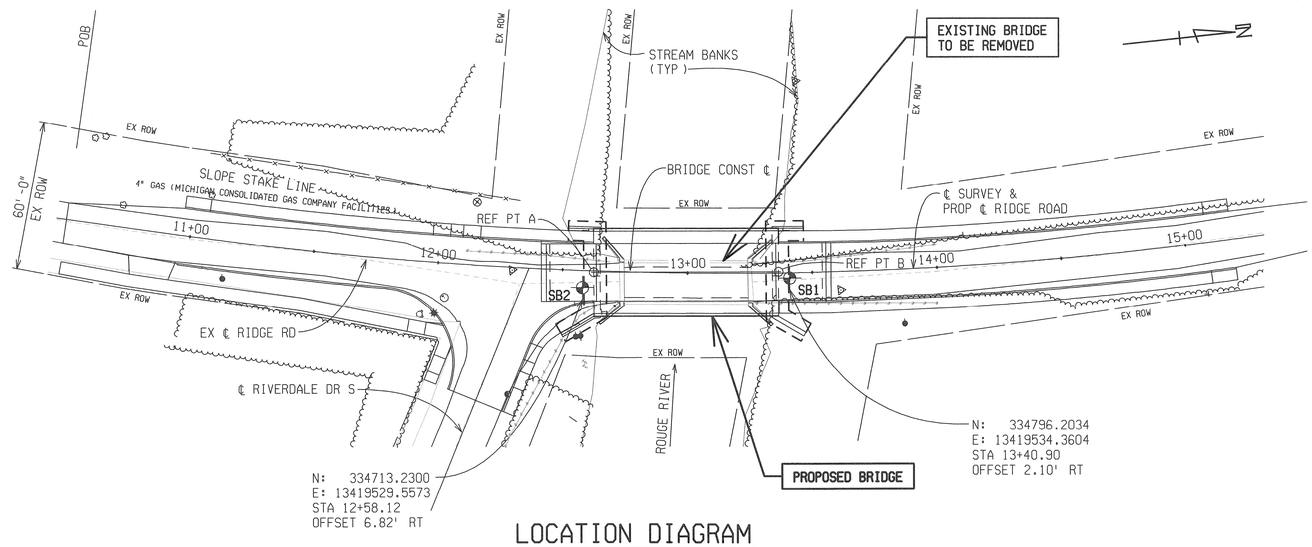
Water Level Observation:
Artesian conditions at 45 feet
Final groundwater level overflowing at surface.
Checked By: JC

Somat Engineering

Proposed Bridge Replacement
Ridge Road over Rouge River
Detroit, Michigan

Page:1 of 1

SOMAT ROCK LOG RIDGE ROAD ROCK LOGS.GPJ SOMAT.GDT 4/16/08



LOCATION DIAGRAM

NOTES:

NUMBERS THE COLUMN TITLED "NO. OF BLOWS FOR 6-inch DRIVE" DENOTE NUMBER OF BLOWS REQUIRED TO DRIVE A 2" O.D. (1½" I.D.) SPLIT SPOON SAMPLER 3 SUCCESSIVE 6" INCREMENTS USING A 140 LB HAMMER FALLING 30".

CONSISTENCY WAS DETERMINED BY INSPECTION OF SAMPLES AND SUBSTANTIATED BY SOILS RESISTANCE TO DRILLING TOOLS.

WATER LEVELS MAY BE INFLUENCED BY RESIDUAL BORING WATER.

THE SOIL BORING LOGS REPRESENT POINT INFORMATION. PRESENTATION OF THIS INFORMATION IN NO WAY IMPLIES THAT SUBSURFACE CONDITIONS ARE THE SAME AT LOCATIONS OTHER THAN THE EXACT LOCATION OF THE BORING.

WHILE NOT ENCOUNTERED DURING THESE SOIL BORINGS, THE PRESENCE OF METHANE GAS AND HYDROGEN SULFIDE SHOULD BE ANTICIPATED. IF ENCOUNTERED DURING CONSTRUCTION OPERATIONS THE CONTRACTOR SHALL STOP ALL ACTIVITIES UNTIL THE POCKET OF GAS ENCOUNTERED HAS BEEN DISSIPATED, OR AS DIRECTED BY THE ENGINEER. PAYMENT FOR DOWNTIME AS A RESULT OF THESE DELAYS SHALL BE PAID FOR AS "Gas Pocket Dissipation".

ARTESIAN GROUNDWATER CONDITIONS WERE ENCOUNTERED IN THE SOIL BORINGS AT APPROXIMATELY ELEVATION 84.0 (SB1) AND 70.0 (SB2). IT IS ESTIMATED THAT THE LEVEL OF THE ARTESIAN WATER DOES NOT EXTEND HIGHER THAN APPROXIMATELY ELEVATION 119.0. THE CONTRACTOR SHALL NOT PERMIT THE GROUNDWATER LEVEL DURING FOUNDATION EXCAVATION, PILE DRIVING OR CONSTRUCTION OF THE PROPOSED ABUTMENT TO EXTEND ABOVE ELEVATION 112.70. PAYMENT FOR THIS WORK SHALL BE PAID FOR AS "Groundwater Drawdown".

REVISIONS	DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

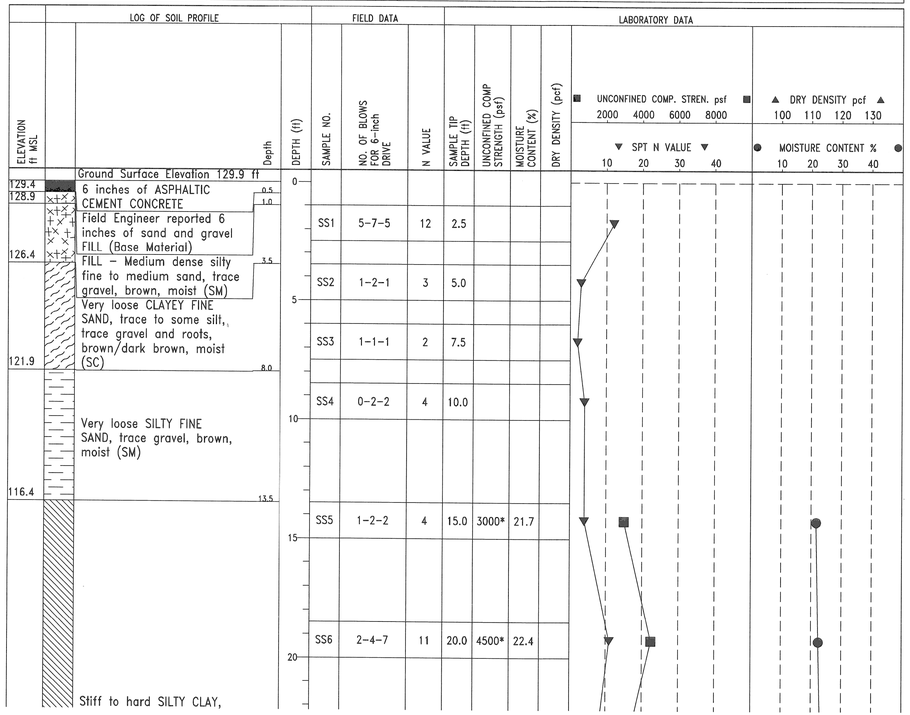
MDOT JOB NO. 86343A | STRUCTURE NO. B01 of 82-25-75

SOIL BORING LOG

DATE: 1/13/09
DLZ JOB NO. 0741-6177-00
SHEET NO. 7 OF 45

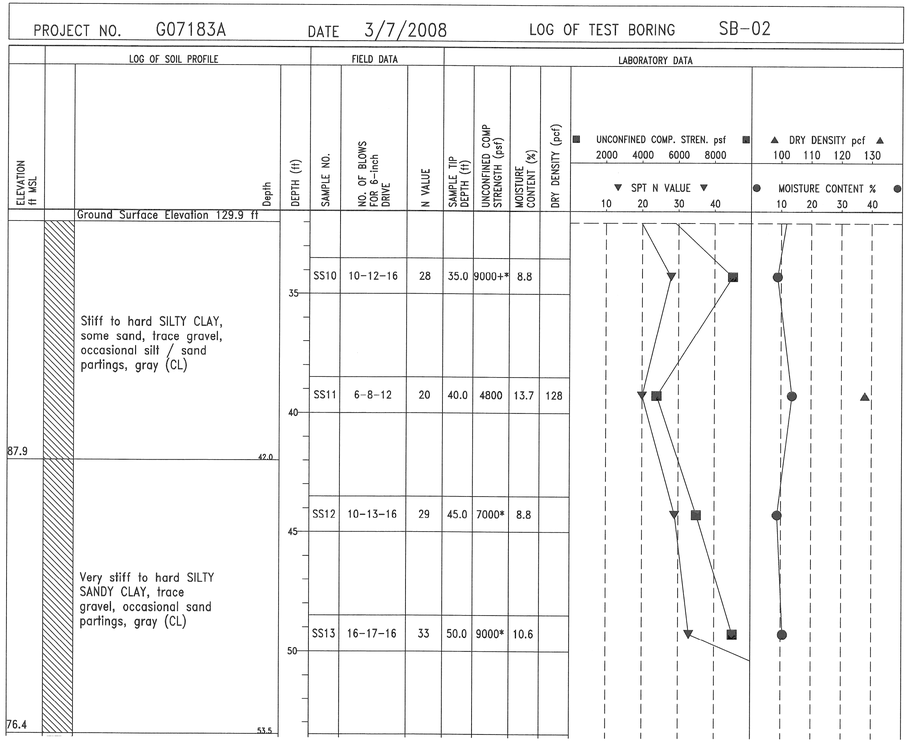
DATE: 11-7-08
CORRECTED BY: DAF
DATE: 11-6-08
CHECKED BY: TNB
DATE: 4-18-08
DRAWN BY: DAF
FILE NAME: ridge rd sb2.dgn

PROJECT NO. G07183A DATE 3/7/2008 LOG OF TEST BORING SB-02



ABUT A
BOTT/FTG
EL 115.70

PROJECT NO. G07183A DATE 3/7/2008 LOG OF TEST BORING SB-02



ABUT. A SCOUR
(500 YEAR)
EL 96.78

DATE: 4/28/08
CORRECTED BY:KCK
DATE: 11-6-08
CHECKED BY: TNB

PROJECT NO. G07183A DATE 3/7/2008 LOG OF TEST BORING SB-02

ABUT A
BOTT/FTG
EL 115.70

ELEVATION ft MSL	Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)
129.4	Ground Surface Elevation 129.9 ft	0							
128.9	6 inches of ASPHALTIC CEMENT CONCRETE 0.5 / 1.0								
126.4	Field Engineer reported 6 inches of sand and gravel FILL (Base Material) / FILL - Medium dense silty fine to medium sand, trace gravel, brown, moist (SM) 3.5								
121.9	Very loose CLAYEY FINE SAND, trace to some silt, trace gravel and roots, brown/dark brown, moist (SC) 8.0	5	SS1	5-7-5	12	2.5			
			SS2	1-2-1	3	5.0			
			SS3	1-1-1	2	7.5			
		10	SS4	0-2-2	4	10.0			
116.4	Very loose SILTY FINE SAND, trace gravel, brown, moist (SM) 13.5		SS5	1-2-2	4	15.0	3000*	21.7	
	Stiff to hard SILTY CLAY, some sand, trace gravel, occasional silt / sand partings, gray (CL)	15	SS6	2-4-7	11	20.0	4500*	22.4	
		20							
		25	SS7	2-2-5	7	25.0	3000*	23.3	
		30	SS9	4-5-5	10	30.0	2000	15.4	126

UNCONFINED COMP. STREN. psf ■ (2000 4000 6000 8000) ▲ DRY DENSITY pcf ▲ (100 110 120 130)
▼ SPT N VALUE ▼ (10 20 30 40) ● MOISTURE CONTENT % ● (10 20 30 40)

BORING COORDINATES

GROUNDWATER READINGS
First Encountered: 48.5 feet
Upon Completion: 0 feet
Remarks:
Artesian water conditions encountered at 60 ft.

Drilling Company: DLZ
Drill Rig: CME 75
Engineer on Rig: S. Swaminthan
Drilling Method: 3 1/4 inch HSA/WR
Hammer Type: Automatic
Backfilled With: Grout / Patch
Date Started: 03-07-08
Date Completed: 03-07-08
Checked By: JSS
Torvane
* Pocket Penetrometer
<> Disturbed Sample

Somat Engineering
Proposed Bridge Replacement
Ridge Road over Rouge River
Detroit, Michigan

PROJECT NO. G07183A BORING NO. SB-02 PAGE 1 of 2

4/16/08

LOG OF TEST BORING VER2 RIDGE ROAD LOGS.GPJ SOMAT.GDT 4/16/08

PROJECT NO. G07183A DATE 3/7/2008 LOG OF TEST BORING SB-02

ABUT. A SCOUR
(500 YEAR)
EL 96.78

MINIMUM PILE
PENETRATION &
ESTIMATED PILE
TIP EL 71.00

ELEVATION ft MSL	Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)
	Ground Surface Elevation 129.9 ft	35	SS10	10-12-16	28	35.0	9000+*	8.8	
	Stiff to hard SILTY CLAY, some sand, trace gravel, occasional silt / sand partings, gray (CL)		SS11	6-8-12	20	40.0	4800	13.7	128
87.9	42.0	40							
	Very stiff to hard SILTY SANDY CLAY, trace gravel, occasional sand partings, gray (CL)	45	SS12	10-13-16	29	45.0	7000*	8.8	
76.4	53.5		SS13	16-17-16	33	50.0	9000*	10.6	
	Extremely dense SILTY FINE TO MEDIUM SAND, trace to some gravel, trace clay, rock fragments below 58 ft., gray/dark gray, wet (SM)	50	SS14	34-60-89/5"	49/11"	54.9			
70.9	59.0	55	SS15	85	85+	59.0			
	End of Boring at 59 ft. (Boring continued as rock core)	60							

UNCONFINED COMP. STREN. psf ■ (2000 4000 6000 8000) ▲ DRY DENSITY pcf ▲ (100 110 120 130)
▼ SPT N VALUE ▼ (10 20 30 40) ● MOISTURE CONTENT % ● (10 20 30 40)

BORING COORDINATES

GROUNDWATER READINGS
First Encountered: 48.5 feet
Upon Completion: 0 feet
Remarks:
Artesian water conditions encountered at 60 ft.

Drilling Company: DLZ
Drill Rig: CME 75
Engineer on Rig: S. Swaminthan
Drilling Method: 3 1/4 inch HSA/WR
Hammer Type: Automatic
Backfilled With: Grout / Patch
Date Started: 03-07-08
Date Completed: 03-07-08
Checked By: JSS
Torvane
* Pocket Penetrometer
<> Disturbed Sample

Somat Engineering
Proposed Bridge Replacement
Ridge Road over Rouge River
Detroit, Michigan

PROJECT NO. G07183A BORING NO. SB-02 PAGE 2 of 2

4/16/08

LOG OF TEST BORING VER2 RIDGE ROAD LOGS.GPJ SOMAT.GDT 4/16/08

DATE: 4/28/08 CORRECTED BY:KCK DATE: 11-6-08 CHECKED BY: TNB DATE: 4-18-08 DRAWN BY: DAF FILE NAME: ridge rd sb3.dgn

REVISIONS

DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

MDOT JOB NO. 86343A STRUCTURE NO. B01 of 82-25-75

SOIL BORING LOG

DATE: 1/13/09
DLZ JOB NO. 0741-6177-00
SHEET NO. 8 OF 45

PROJECT NO..: G07183A

LOG OF TEST BORING NO: SB-02

SUBSURFACE PROFILE

ROCK SAMPLE DATA

WELL	ELEV. (FT)	FORMATION	ELEV	SURFACE ELEVATION: 129.9	DEPTH	DEPTH (FT)	CORE NO.	% REC.	% RQD	PERM DATA	RUN TIME min./ft.	ROCK MASS HRD	ROCK MASS WEA	LABORATORY/FIELD TEST DATA
	70		70.9	Sound to moderately fractured, dark brown amorphous SHALE; bedding extremely thin to laminar (Artesian water conditions encountered at 60')	59	60									
				60.9' – 61.5' – Clay filled joint with broken shale pieces 61.6' – Pyrite nodule, 1/2" 61.7' – 61.8' – Soft, fissile shale 62.7' – 62.8' – Pyrite nodule			RC1	100	50		1.4	MH	FR/SW	
	65		64.9	63.3' – Joint, 40°, trace clay coating 64.3' – Joint, 70°, trace clay and broken shale	65	65	65.0							
				End of boring/core at 65.0 feet										
	60					70								
	55					75								
	50					80								
	45					85								
	40					90								

Boring Cordinates
N: E:

Total Depth: 65.0 FT
Drilling Date: 3/7/2008 thru 3/7/2008
Inspector: S. Swaminathan
Contractor: DLZ
Driller: DLZ
Checked By: JC
Drilling Method:
Diamond-tipped core barrel

Notes:

Plugging Procedure:
Grout

Water Level Observation:
Artesian conditions at 60 feet
Final groundwater level overflowing at surface.

Checked By: JC

Somat Engineering

Proposed Bridge Replacement
Ridge Road over Rouge River
Detroit, Michigan

Page:1 of 1

SOMAT ROCK LOG RIDGE ROAD ROCK LOGS.GPJ SOMAT.GDT 4/16/08

DATE:
DRAWN BY: DAF
DATE: 4-18-08 CHECKED BY: TNB
DATE: 11-6-08 CORRECTED BY:
FILE NAME: ridge rd sb4.dgn

REVISIONS

DESCRIPTION	DATE	BY

DLZ

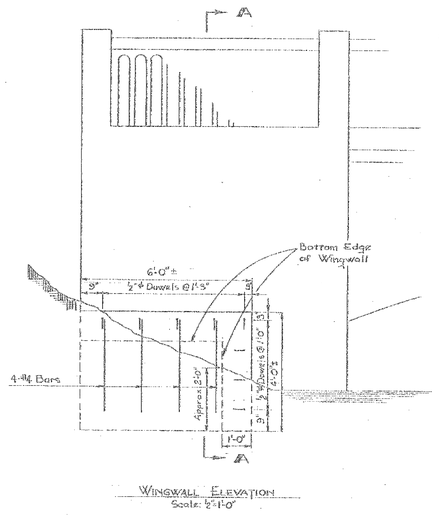
CITY OF DETROIT

RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

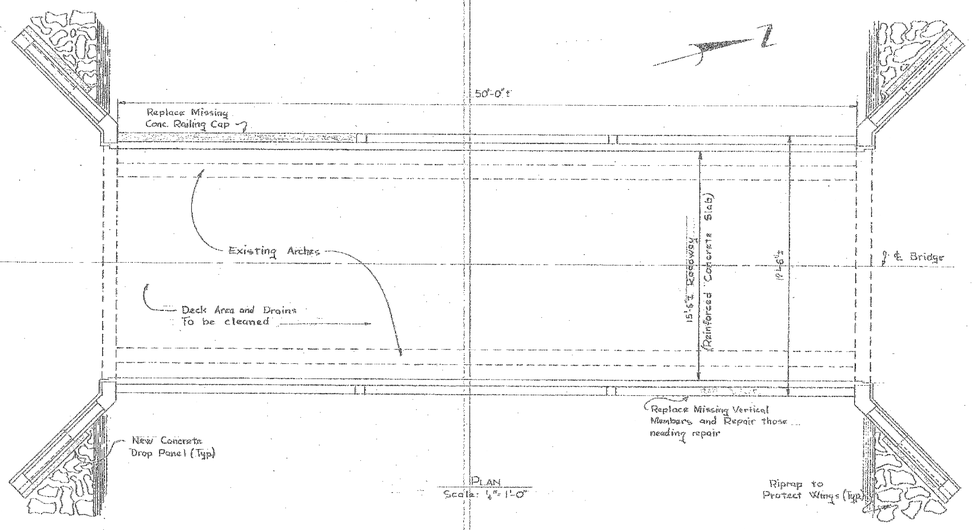
MDOT JOB NO. 86343A | STRUCTURE NO. B01 of 82-25-75

SOIL BORING LOG

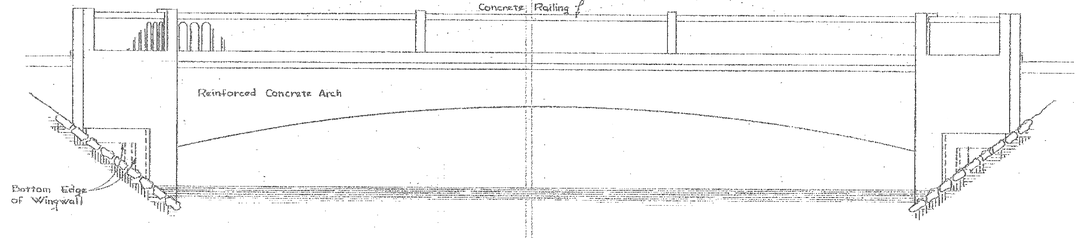
DATE: 1/13/09
DLZ JOB NO. 0741-6177-00
SHEET NO. 9 OF 45



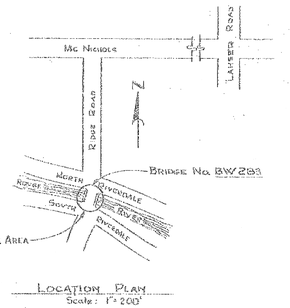
WINGWALL ELEVATION
Scale: ¼"=1'-0"



PLAN
Scale: ¼"=1'-0"



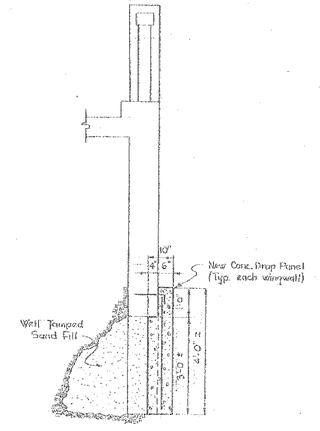
ELEVATION
Scale: ¼"=1'-0"



LOCATION PLAN
Scale: 1"=200'

EXISTING

FOR INFORMATION ONLY
DO NOT WORK FROM THIS SHEET.
THE INFORMATION SHOWN HERE IS FOR REFERENCE ONLY. NO PAY ITEMS ARE SHOWN.



SECTION A-A
Scale: ½"=1'-0"

BILL OF MATERIALS

Concrete	3 Cu. Yd.
Re-Steel 32 Pc. #4 bars 1'-3" dowels, bend in field	70 Lbs.
16 Pc. #4 bar 3'-6"	
Miscellaneous Railing	
Fill	5 Cu. Yd.
Riprap	100 Sq. Ft.

DESIGNED BY		APPROVED	CITY OF DETROIT
DRAWN BY	A. Grasik		DEPARTMENT OF PUBLIC WORKS
TRACED BY			CITY ENGINEERS OFFICE
CHECKED BY	J. Corell / A.C.L.	CITY ENGINEER	BRIDGE MAINTENANCE

RIDGE ROAD BRIDGE - SOUTH OF Mc NICHOLS ROAD
BRIDGE REPAIR PLAN

SHEET 1 OF 1 SHEETS
JOB No. M-BW283
DRWG No. C-40
DATE 6-19-59

REVISIONS	DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

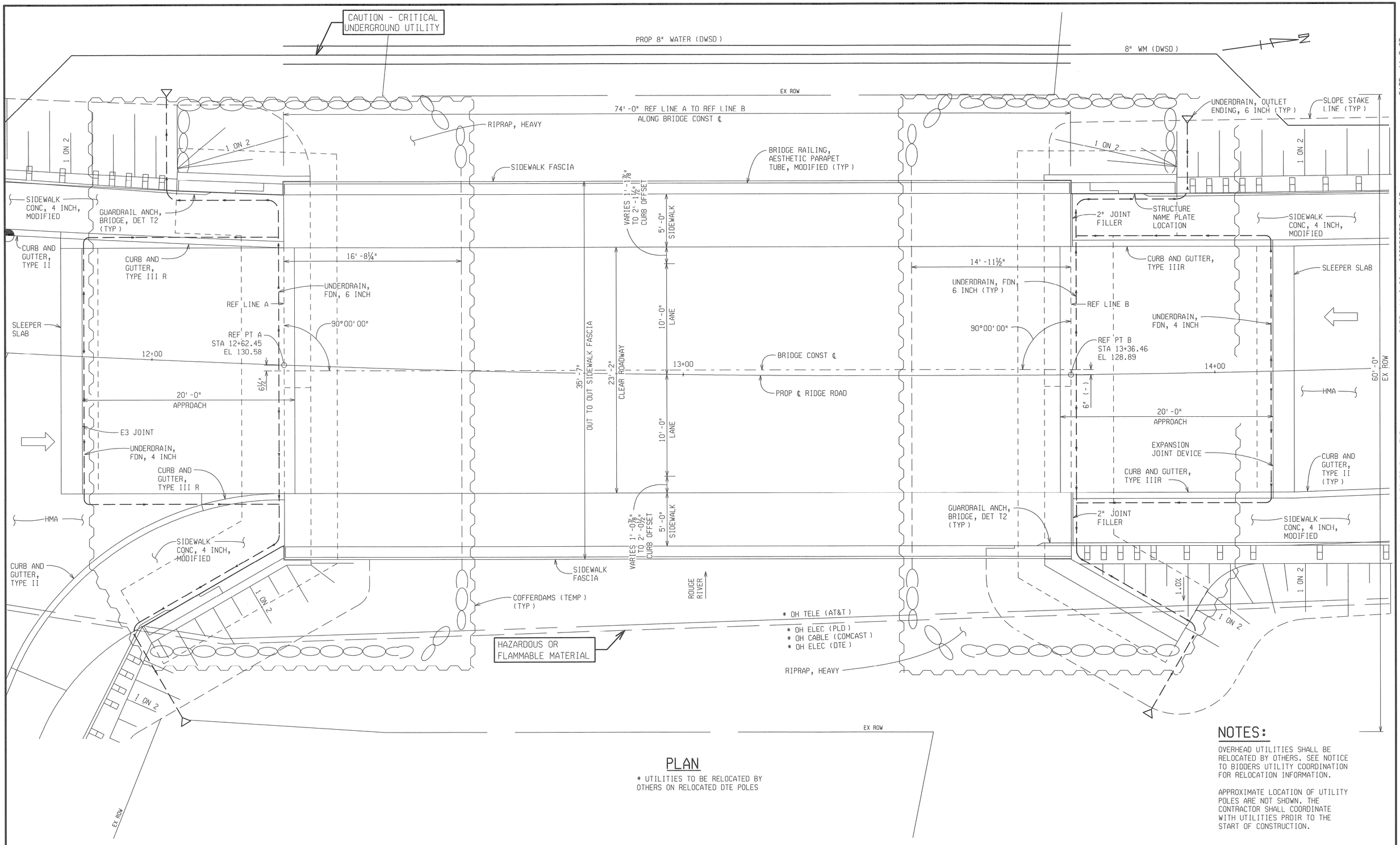
RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

MDOT JOB NO. B6343A | STRUCTURE NO. B01 of 82-25-75

EX GENERAL PLAN OF STRUCTURE

DATE: 1/13/09
DLZ JOB NO. 0741-6177-00
SHEET NO. 10 OF 45

DATE: 11-6-08
DATE: 11-6-08 CORRECTED BY: DAF
DATE: 06/09/08 CHECKED BY: TNB
DRAWN BY: KCK
FILE NAME: ridge rd ex gps.dgn



PLAN

* UTILITIES TO BE RELOCATED BY OTHERS ON RELOCATED DTE POLES

NOTES:

OVERHEAD UTILITIES SHALL BE RELOCATED BY OTHERS. SEE NOTICE TO BIDDERS UTILITY COORDINATION FOR RELOCATION INFORMATION.

APPROXIMATE LOCATION OF UTILITY POLES ARE NOT SHOWN. THE CONTRACTOR SHALL COORDINATE WITH UTILITIES PROIR TO THE START OF CONSTRUCTION.

REVISIONS	DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

MDOT JOB NO. 86343A | STRUCTURE NO. B01 of 82-25-75

GENERAL PLAN OF STRUCTURE

DATE: 1/13/09

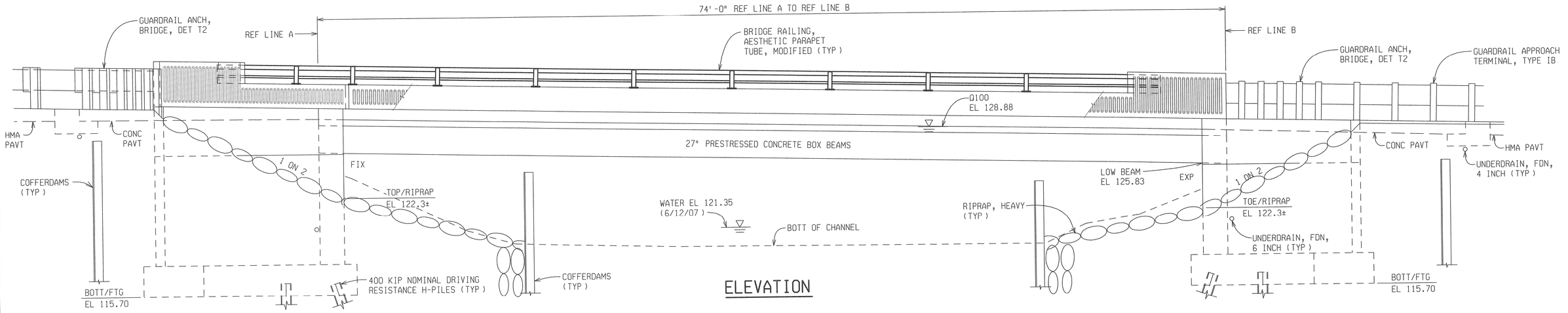
DLZ JOB NO. 0741-6177-00

SHEET NO. 11 OF 45

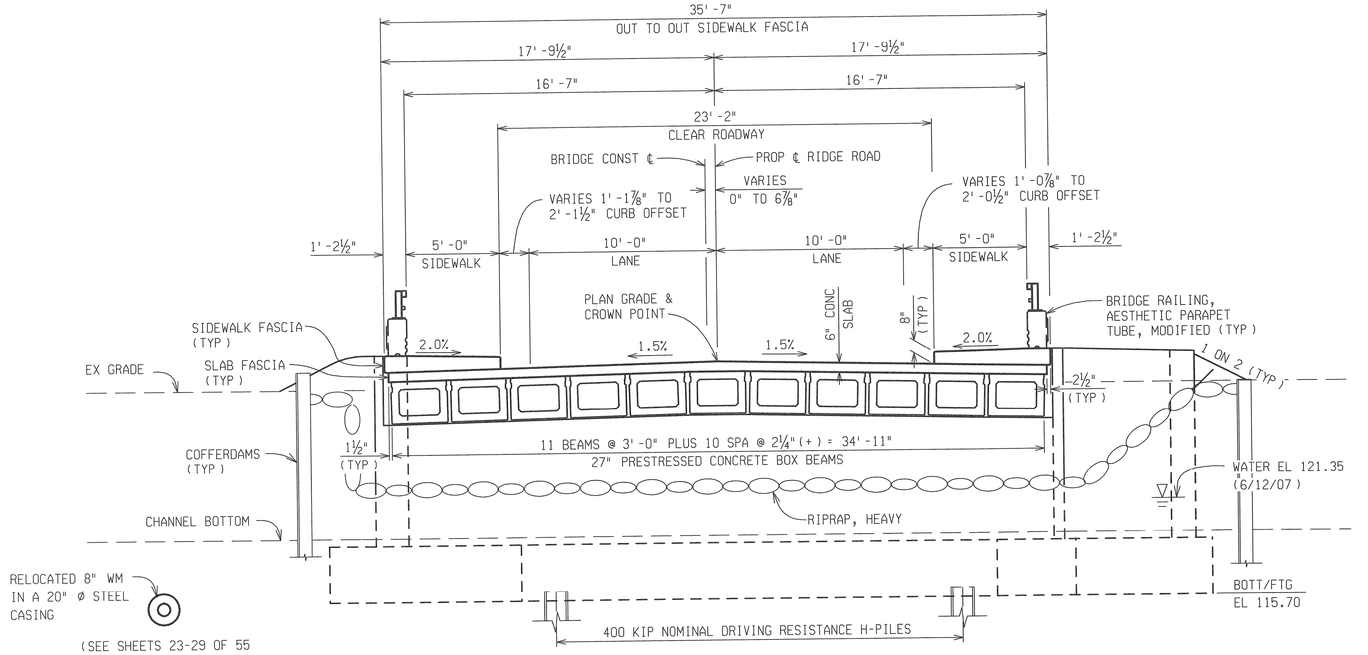
DRAWN BY: DAF | CHECKED BY: TNB | CORRECTED BY: DAF

DATE: 11-7-07 | DATE: 11-6-08 | DATE: 12-10-07

FILE NAME: ridge rd st1.dgn



ELEVATION



(SEE SHEETS 23-29 OF 55 FOR WATER MAIN DETAILS)

TYPICAL BRIDGE SECTION

(LOOKING UPSTATION)

REVISIONS	DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

MDOT JOB NO. 86343A | STRUCTURE NO. B01 of 82-25-75

GENERAL PLAN OF STRUCTURE

DATE: 1/13/09

DLZ JOB NO. 0741-6177-00

SHEET NO. 12 OF 45

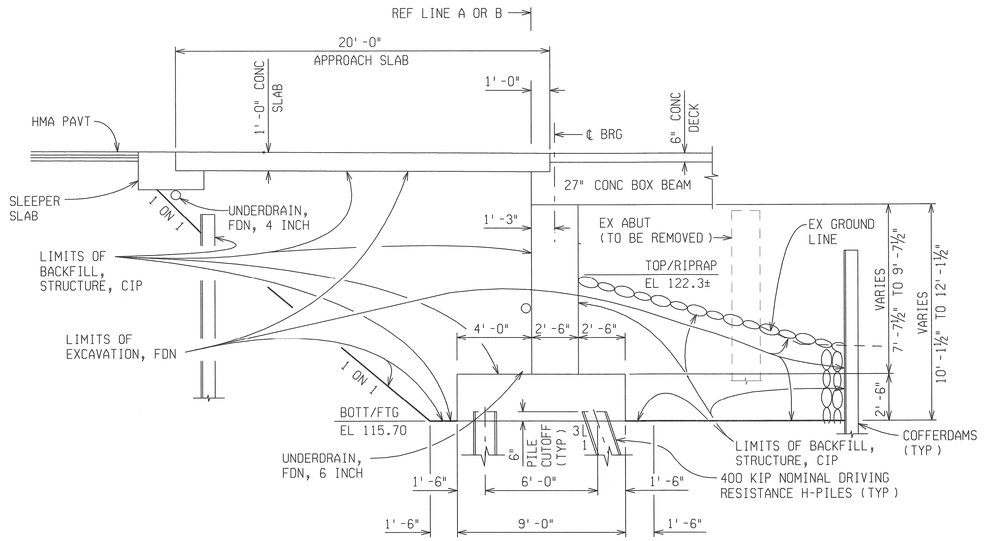
DATE: 11-7-08

DATE: 11-07-08 CORRECTED BY: DAF

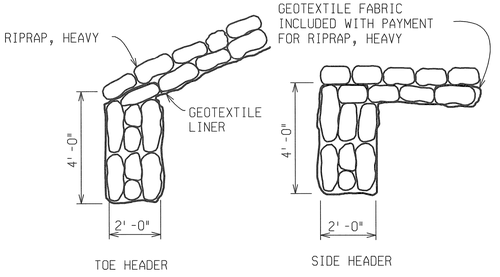
DATE: 12-10-07 CHECKED BY: TNB

DRAWN BY: DAF

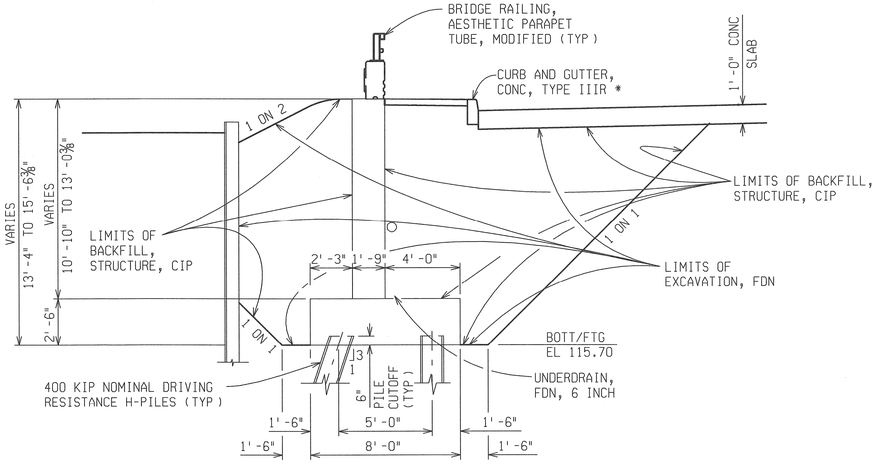
FILE NAME: ridge rd s12.dgn



TYPICAL ABUTMENT SECTION



RIPRAP HEADER DETAILS



TYPICAL RETURNWALL SECTION

(NORTHWEST SHOWN)

* CURB AND GUTTER, TYPE II ON SOUTH APPROACHES

MISCELLANEOUS QUANTITIES

1	LS	Structures, Rem
1400	Cyd	Excavation, Fdn
950	Cyd	Backfill, Structure, CIP
130	Ft	Underdrain, Fdn, 4 inch
165	Ft	Underdrain, Fdn, 6 inch
4	Ea	Underdrain, Outlet Ending, 6 inch
2	Ea	Tree, Rem, 37 inch or larger
875	Sft	False Decking
1	LS	Groundwater Drawdown
16	Hr	Gas Pocket Dissipation
1	LS	Conc Surface Coating

SUMMARY OF HYDRAULIC ANALYSIS

	EXISTING			PROPOSED			
FLOOD DATA	DISCHARGE (CFS)	WATER SURFACE ELEV. AT U/S FACE OF STRUCTURE	VELOCITY AT D/S FACE (FPS)	WATER SURFACE ELEV. AT U/S FACE OF STRUCTURE	VELOCITY AT D/S FACE (FPS)	WATERWAY AREA (SFT) AT D/S FACE	CHANGE IN WS EL 120' U/S OF PROPOSED STRUCTURE
50 YEAR	5000	132.10	13.47	128.24	14.99	333.11	-3.19
100 YEAR	6400	132.85	14.66	128.88	19.19	333.11	-0.97
MAXIMUM BRIDGE AREA BELOW LOW CHORD IS 333 SQUARE FEET							

THE WATER SURFACE AND/OR ENERGY GRADE ELEVATIONS SHOWN ON THE ABOVE HYDRAULIC TABLE ARE TO BE USED FOR COMPARISON PURPOSES ONLY AND ARE NOT TO BE USED FOR ESTABLISHING A REGULATORY FLOODPLAIN. THE ELEVATIONS MAY BE USED PROVIDED THEY ARE VERIFIED WITH THE LAND AND WATER MANAGEMENT DIVISION, MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY.

NOTES:

THE DESIGN OF THIS STRUCTURE IS BASED ON CURRENT AASHTO LRFD BRIDGE DESIGN SPECIFICATION HL-93 LOADING. LIVE LOAD PLUS IMPACT DEFLECTION DOES NOT EXCEED 1/1000 OF SPAN LENGTH. THE LOAD AND RESISTANCE FACTOR METHOD OF DESIGN WAS USED FOR THIS STRUCTURE.

THE DRAINAGE AREA CONTRIBUTORY TO THIS CROSSING IS 105 SQUARE MILES.

THE WATER SURFACE AND/OR ENERGY GRADE ELEVATIONS SHOWN ON THE ABOVE HYDRAULIC TABLE ARE TO BE USED FOR COMPARISON PURPOSES ONLY AND ARE NOT TO BE USED FOR ESTABLISHING A REGULATORY FLOOD PLAIN.

THE EXISTING STRUCTURE PROVIDES A WATERWAY AREA OF 225 SQUARE FEET TO UNDERCLEARANCE ELEVATION 122.28.

WITHOUT THE PREVENTIVE MEASURES SHOWN ON THESE PLANS, THERE IS A POSSIBILITY THAT STREAM BED SCOUR MAY OCCUR. THE ESTIMATE TOTAL SCOUR DEPTH IS CALCULATED TO BE 19(-) FEET AT ABUTMENT A AND B. THESE DEPTHS ARE BASED ON A 500 YEAR RUNOFF EVENT.

GEOTEXTILE LINER SHALL BE PLACED PRIOR TO PLACING RIPRAP. PAYMENT FOR GEOTEXTILE LINER SHALL BE INCLUDED IN THE PAYMENT FOR "Riprap, Heavy".

EXCAVATION REQUIRED TO PLACE RIPRAP WILL NOT BE PAID FOR SEPARATELY, BUT WILL BE INCLUDED IN THE PAYMENT FOR "Riprap, Heavy."

THE RIPRAP QUANTITY IS BASED ON THE LATERAL DIMENSIONS OF THE AREA TO BE PROTECTED, REGARDLESS OF THE NUMBER OF LAYERS REQUIRED. THE ESTIMATED WEIGHT OF RIPRAP IS 203 TONS.

FALSE DECKING SHALL INCLUDE THE AREA BOUNDED BY REFERENCE LINES A & B AND THE CONCRETE ARCH FASCIAS. THE ESTIMATED AREA IS 875 SQUARE FEET DURING REMOVAL.

CONCRETE SURFACE COATING SHALL BE APPLIED TO THE ENTIRE EXPOSED SURFACES OF ABUTMENT A AND B INCLUDING WINGWALLS (358 SFT), THE DECK FASCIA (333 SFT) AND FASCIA CONCRETE BOX BEAM (331 SFT). SEE SPECIAL PROVISION.

REVISIONS	DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

MDOT JOB NO. 86343A | STRUCTURE NO. B01 of 82-25-75

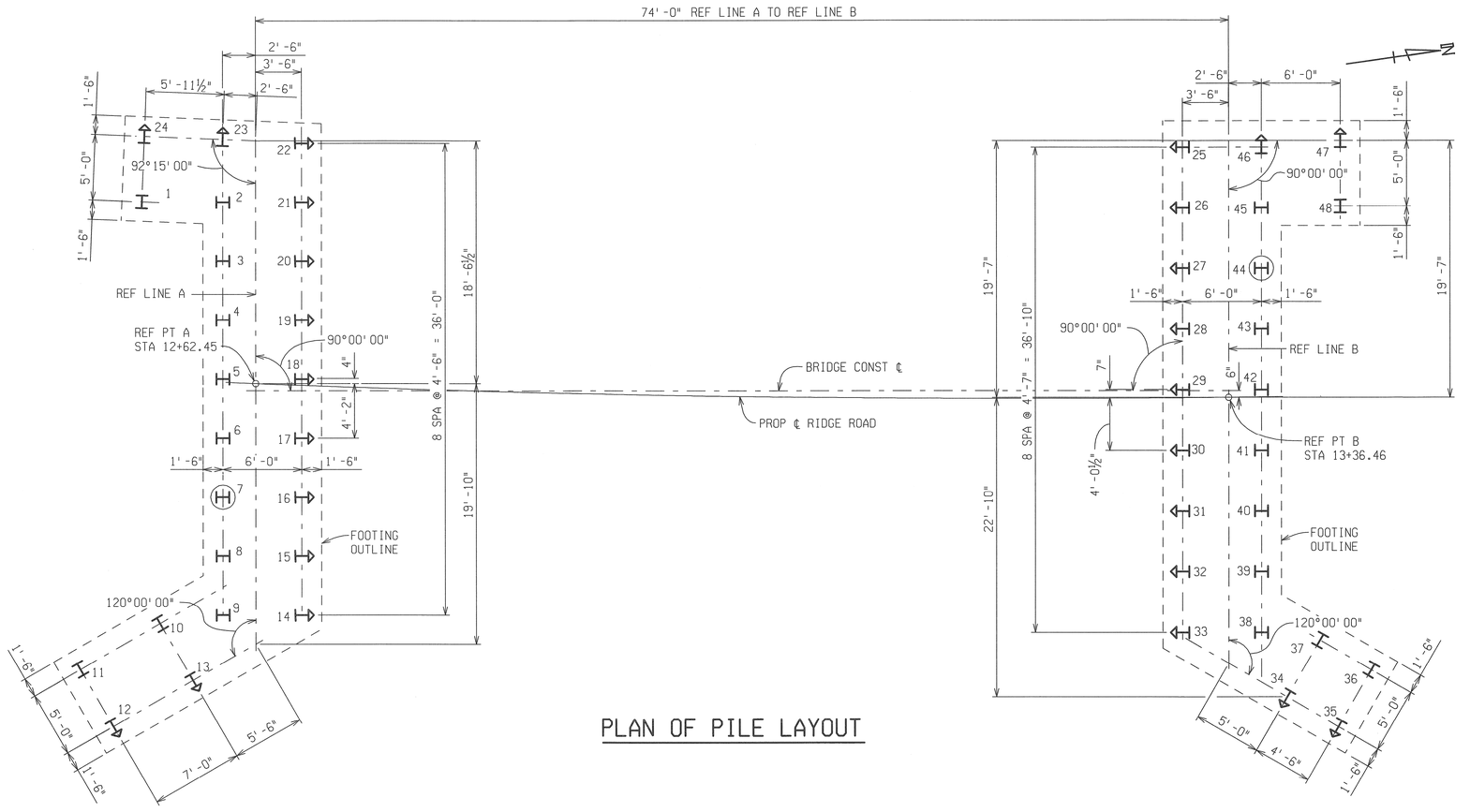
GENERAL PLAN OF STRUCTURE

DATE: 1/13/09

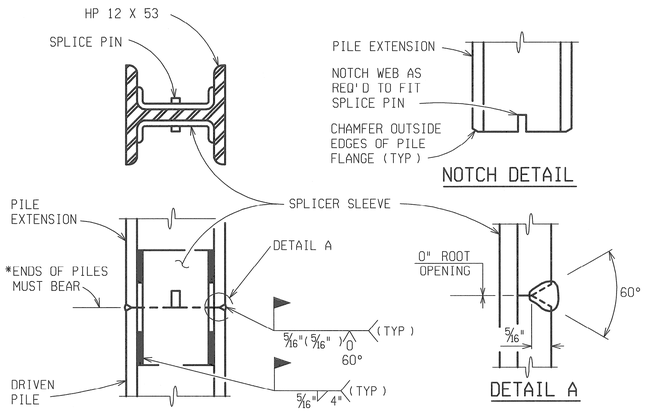
DLZ JOB NO. 0741-6177-00

SHEET NO. 13 OF 45

DATE: 11-7-08 | DATE: 11-6-08 CORRECTED BY: DAF | DATE: 12-10-07 CHECKED BY: TNB | DRAWN BY: DAF | FILE NAME: ridge rd s13.dgn

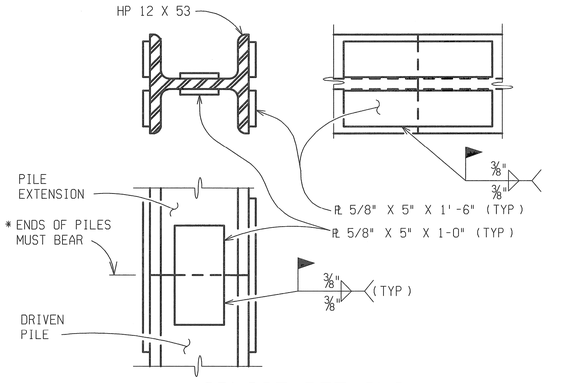


PLAN OF PILE LAYOUT



ALTERNATE SPLICE DETAILS

* SET PILE EXTENSION IN PLACE WITH SPLICE PLATES ATTACHED, TAP SEVERAL TIMES WITH THE HAMMER TO IMPROVE BEARING CONTACT, THEN COMPLETE WELDING OF PLATES TO THE LOWER SECTION.



SPLICE DETAILS

* SET PILE EXTENSION IN PLACE WITH SPLICE PLATES ATTACHED, TAP SEVERAL TIMES WITH THE HAMMER TO IMPROVE BEARING CONTACT, THEN COMPLETE WELDING OF PLATES TO THE LOWER SECTION.

MISCELLANEOUS QUANTITIES

1	LS	Pile Driving Equipment, Furn, LRFD (B01 of 82-25-75)
2400	Ft	Pile, Steel, Furn and Driven, 12 inch, LRFD
2	Ea	Test Pile, Steel, 12 inch, LRFD
48	Ea	Pile, Point, Steel, LRFD

PILES - FURNISHED AND DRIVEN

LOCATION	PILE TYPE	NUMBER OF PILES	ESTIMATED LENGTH FURNISHED & DRIVEN		MIN PILE PENETRATION EL	CUT-OFF EL
			EACH FEET	TOTAL FEET		
ABUT A	TEST	1	50	50	70.00	116.20
	VERTICAL	10	50	500	70.00	116.20
	BATTERED	13	50	650	70.00	116.20
ABUT B	TEST	1	50	50	70.00	116.20
	VERTICAL	10	50	500	70.00	116.20
	BATTERED	13	50	650	70.00	116.20
TOTAL		48		2400		

NOTES:

⊢ --DENOTES VERTICAL PILES.

⊢▷ --DENOTES BATTERED PILES.

Ⓗ --DENOTES VERTICAL TEST PILES.

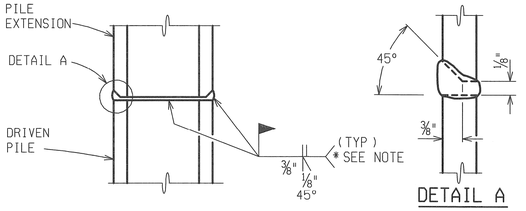
DRIVE ALL PILES TO A NOMINAL PILE DRIVING RESISTANCE NOT LESS THAN 400 KIPS. DETERMINE NOMINAL PILE DRIVING RESISTANCE (Rndr) USING THE FHWA MODIFIED GATES DYNAMIC FORMULA.

THE ESTIMATED PILE LENGTH IS BASED ON THE STATIC FORMULA.

STEEL PILES SHALL BE HP 12 X 53.

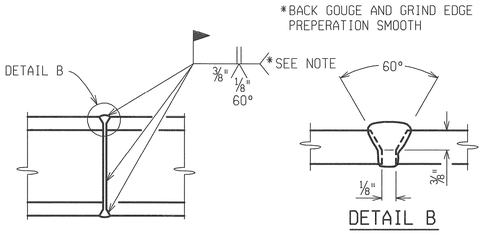
BATTER PILES FOR ABUTMENTS A & B SHALL BE DRIVEN TO A 3V:1H BATTER ANGLE

USE STEEL FOR H-PILES THAT HAVE A YIELD STRENGTH NOT LESS THAN 50,000 PSI.



SPLICE DETAILS

FOR PILES IN PLACE (HORIZONTAL JOINT)



SPLICE DETAILS

FOR PILES IN HORIZONTAL POSITION

REVISIONS	DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

MDOT JOB NO. 86343A | STRUCTURE NO. B01 of 82-25-75

PILE DETAILS

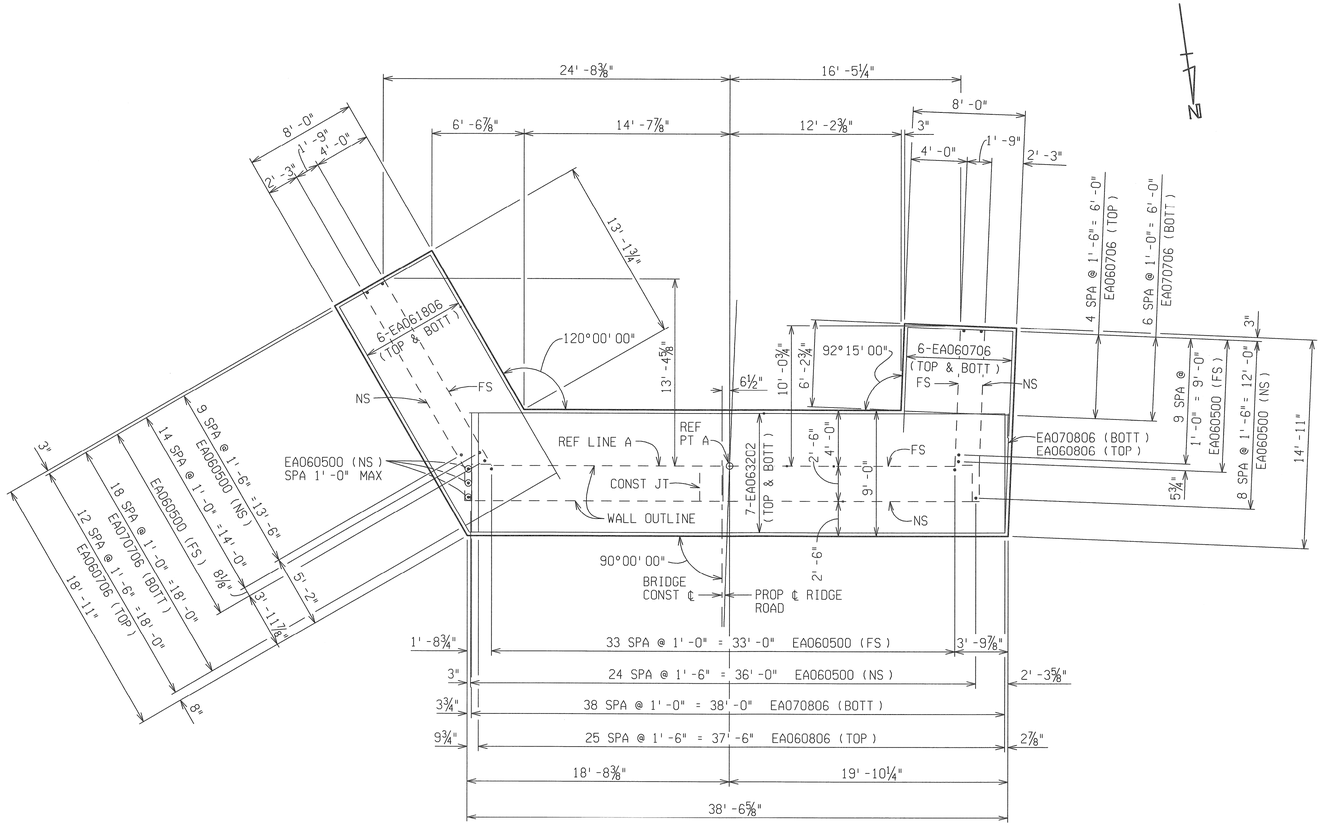
DATE: 1/13/09

DLZ JOB NO. 0741-6177-00

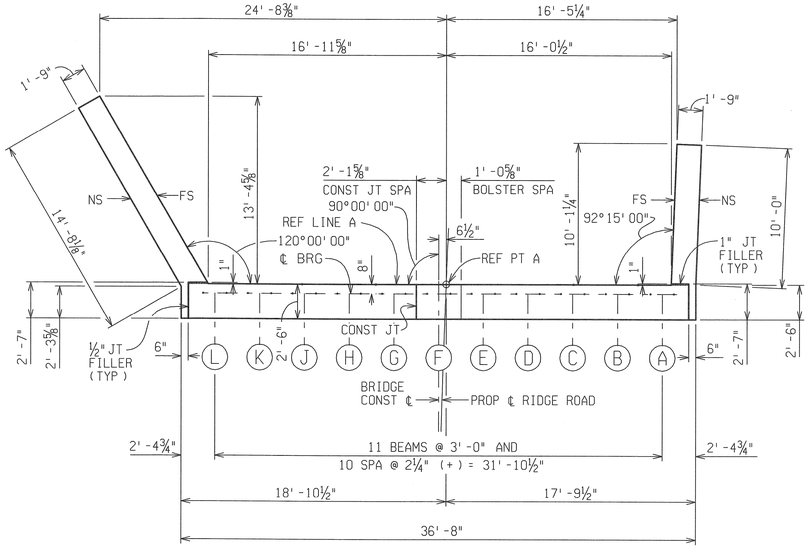
SHEET NO. 14 OF 45

DATE: 11-7-08 | CORRECTED BY: DAF | DATE: 11-6-08 | CHECKED BY: TNB | DATE: 12-10-07 | DRAWN BY: DAF

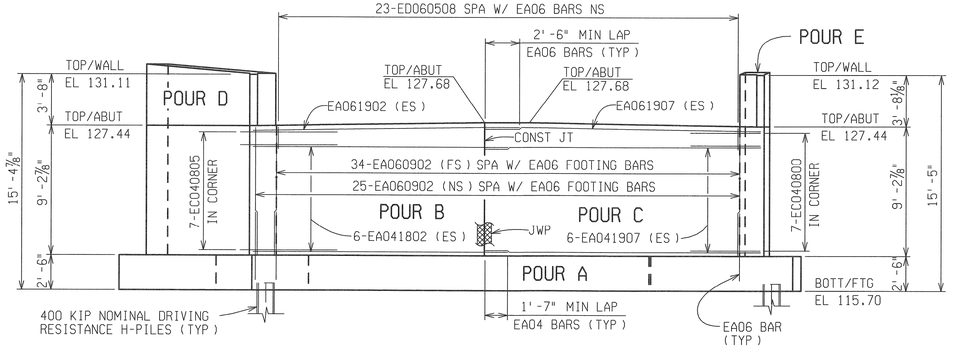
FILE NAME: ridge rd pl.dgn



ABUT A PLAN OF FOOTING



ABUT A PLAN OF WALL



ABUT A ELEVATION

MISCELLANEOUS QUANTITIES

148	Sft	Joint Waterproofing
52	Sft	Joint Waterproofing, Expansion

SUBSTRUCTURE CONC QUANTITIES

POUR	ABUT A	ABUT B
A	47	46
B	15	12
C	17	14
D	11	11
E	9	8
TOTAL	99	91
GR TOTAL	190	CUBIC YARDS

NOTES:

JWP DENOTES JOINT WATERPROOFING.

EJWP DENOTES EXPANSION JOINT WATERPROOFING.

NS DENOTES NEAR SIDE.

FS DENOTES FAR SIDE.

ES DENOTES EACH SIDE.

FOR BEVEL AND MOLDING DETAILS, SEE STANDARD PLAN B-103-SERIES.

LOW TEMPERATURE PROTECTION OF THE CONCRETE SHALL BE APPLIED ACCORDING TO SECTION 706.03J OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION. LOW TEMPERATURE PROTECTION OF CONCRETE WILL NOT BE PAID FOR SEPARATELY, BUT WILL BE INCLUDED IN THE BID ITEM "Substructure Conc".

COAT THE ENTIRE EXTERIOR SURFACES OF THE ABUTMENTS AND WINGWALLS USING CONCRETE SURFACE COATING.

REVISIONS	DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

MDOT JOB NO. B6343A | STRUCTURE NO. B01 of 82-25-75

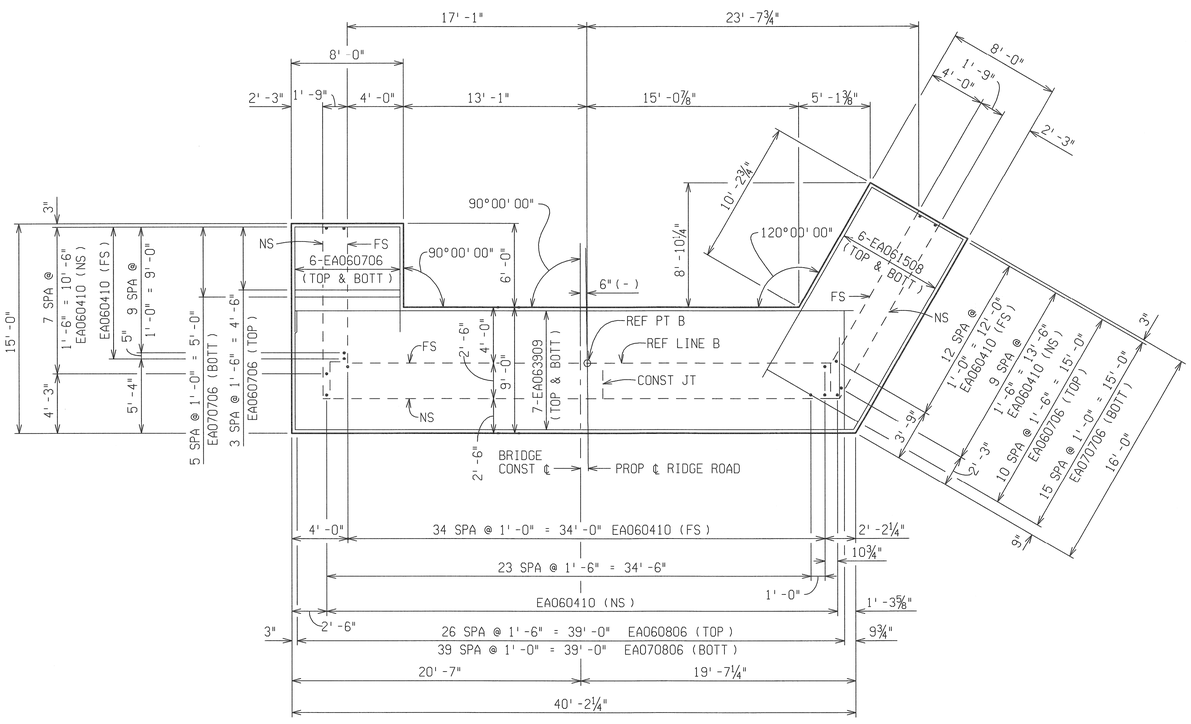
ABUTMENT DETAILS

DATE: 1/13/09

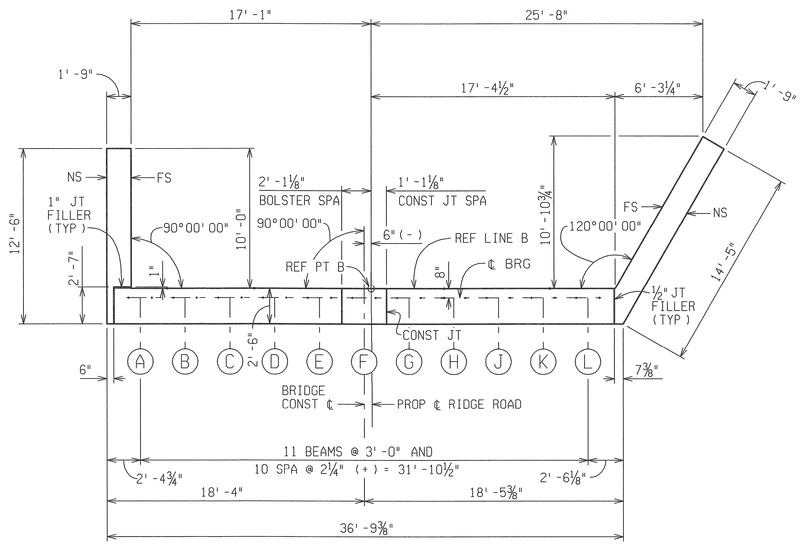
DLZ JOB NO. 0741-6177-00

SHEET NO. 15 OF 45

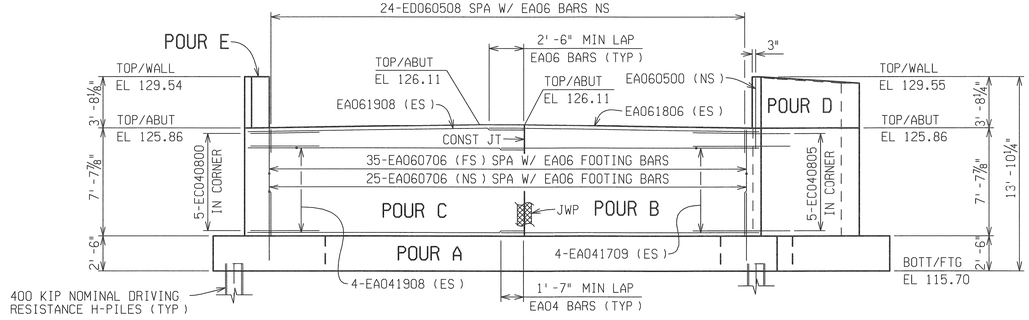
DATE: 11-25-08 DATE: 11-6-08 CORRECTED BY:DAF DATE: 12-10-07 CHECKED BY: TNB DRAWN BY: DAF FILE NAME: ridge rd abb A.dgn



ABUT B PLAN OF FOOTING



ABUT B PLAN OF WALL



ABUT B ELEVATION

REVISIONS	DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

MDOT JOB NO. 86343A | STRUCTURE NO. B01 of 82-25-75

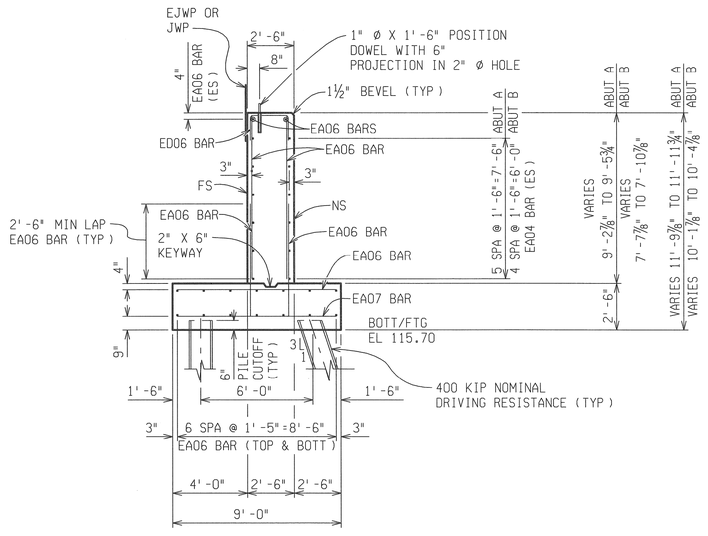
ABUTMENT DETAILS

DATE: 1/13/09

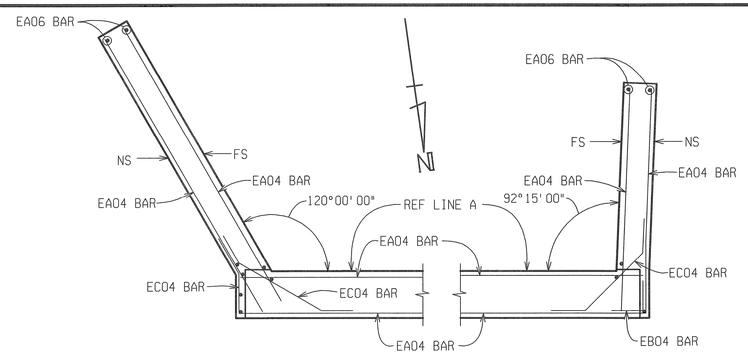
DLZ JOB NO. 0741-6177-00

SHEET NO. 16 OF 45

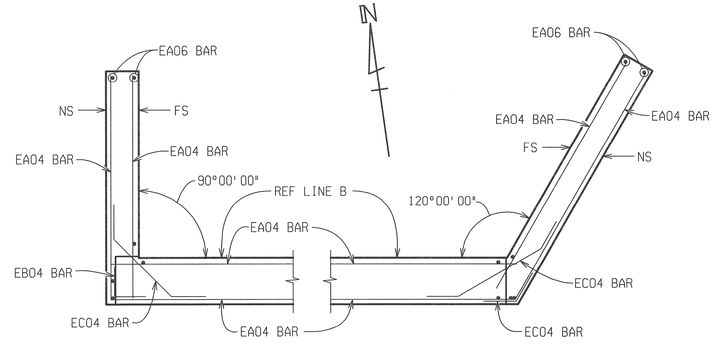
DATE: 11-26-08 | DATE: 11-6-08 CORRECTED BY: DAF | DATE: 12-10-07 CHECKED BY: TNB | DRAWN BY: DAF | FILE NAME: ridge rd abb B.dgn



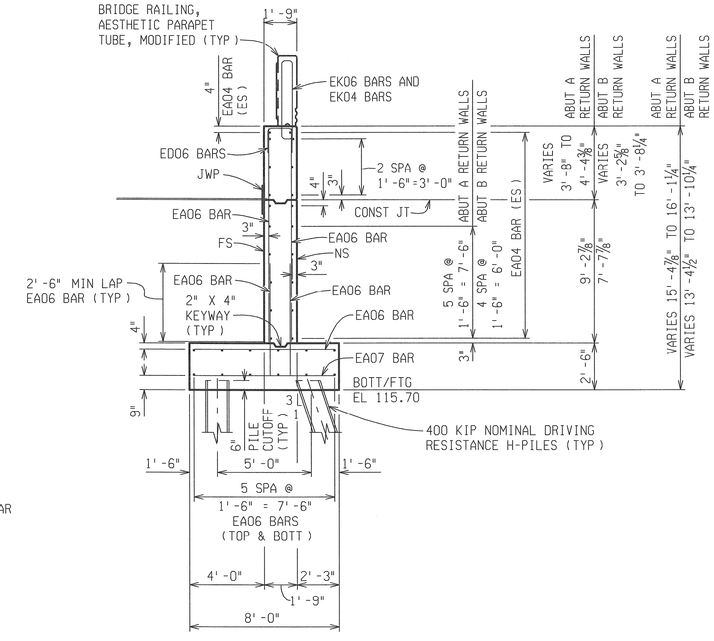
TYPICAL ABUTMENT SECTION



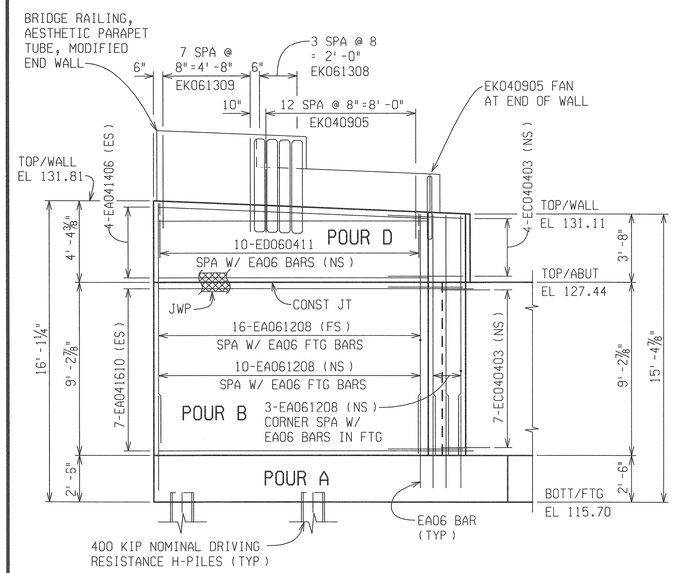
ABUT A CORNER PLAN



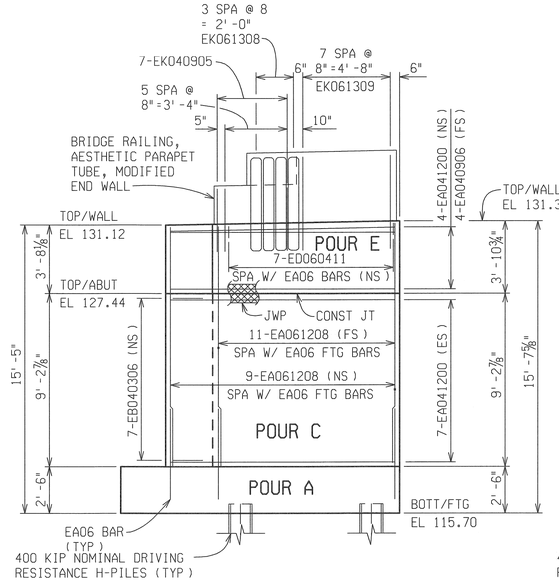
ABUT B CORNER PLAN



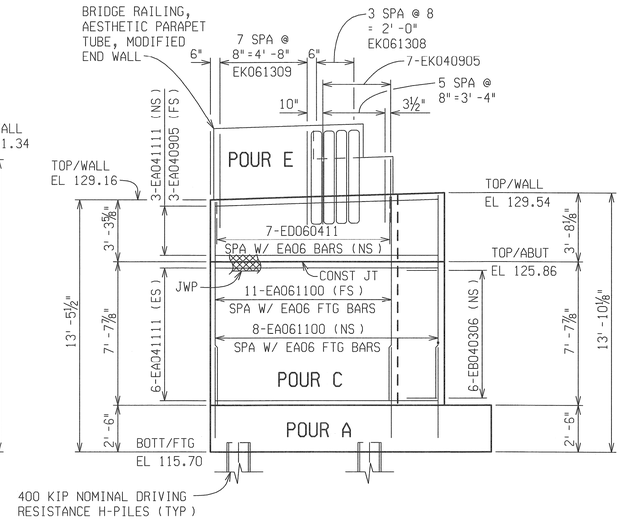
TYPICAL RETURNWALL SECTION



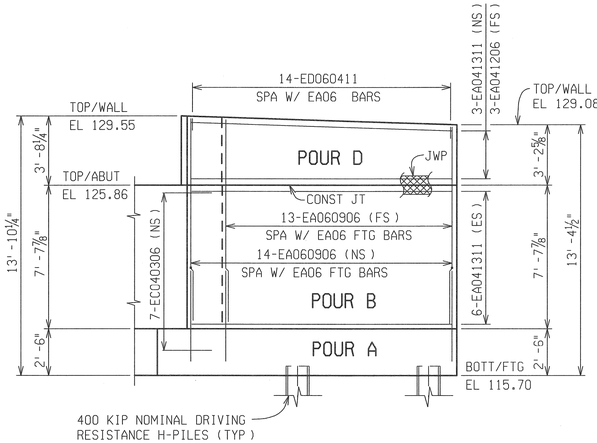
ABUT A EAST WINGWALL ELEVATION



ABUT A WEST WINGWALL ELEVATION



ABUT B WEST WINGWALL ELEVATION



ABUT B EAST WINGWALL ELEVATION

REVISIONS	DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

MDOT JOB NO. 86343A | STRUCTURE NO. B01 of 82-25-75

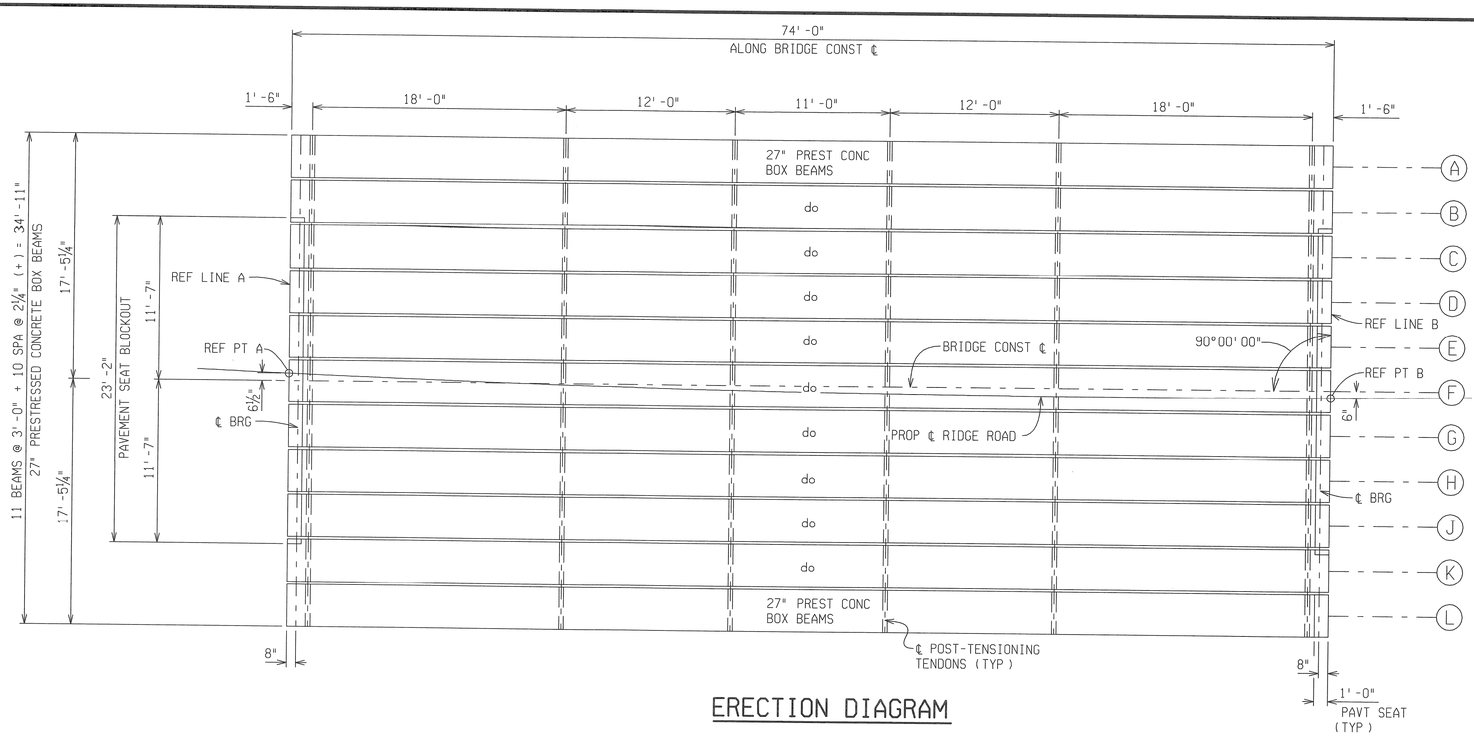
ABUTMENT DETAILS

DATE: 1/13/09

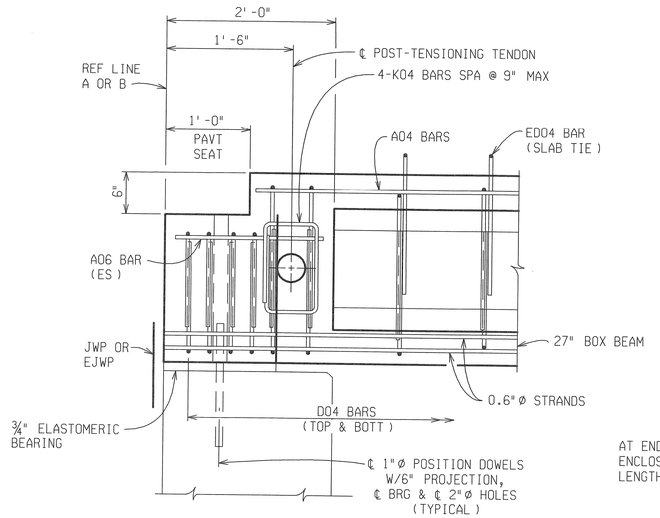
DLZ JOB NO. 0741-6177-00

SHEET NO. 16A OF 45

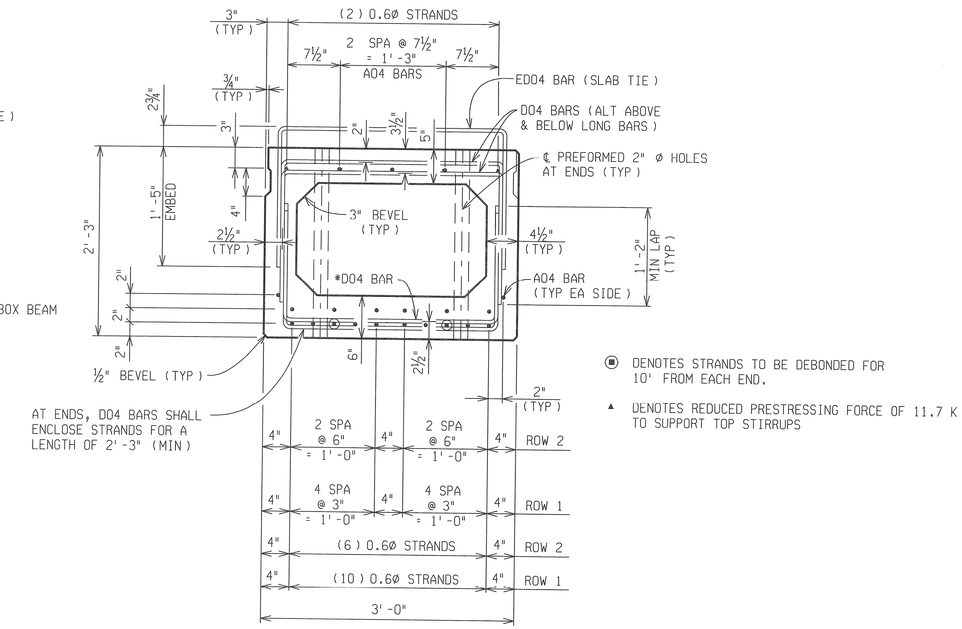
DATE: 11-26-08
CORRECTED BY:DAF
DATE: 11-6-08
CHECKED BY: TNB
DATE: 11-03-08
DRAWN BY: dlw
FILE NAME: ridge rd abb det.dgn



ERECTION DIAGRAM



SECTION THRU END BLOCK



TYPICAL SECTION - 27" BEAMS

* DO4 BARS (MAY BE PLACED UNDER STRANDS IN CENTER OF BEAM)

⊛ DENOTES STRANDS TO BE DEBONDED FOR 10' FROM EACH END.

▲ DENOTES REDUCED PRESTRESSING FORCE OF 11.7 K TO SUPPORT TOP STIRRUPS

DATE: 11-7-08
DATE: 11-6-08 CORRECTED BY: DAF
DATE: 12-19-07 CHECKED BY: TNB
DRAWN BY: DLW
FILE NAME: 9th bbl.dgn

REVISIONS	DESCRIPTION	DATE	BY

DLZ

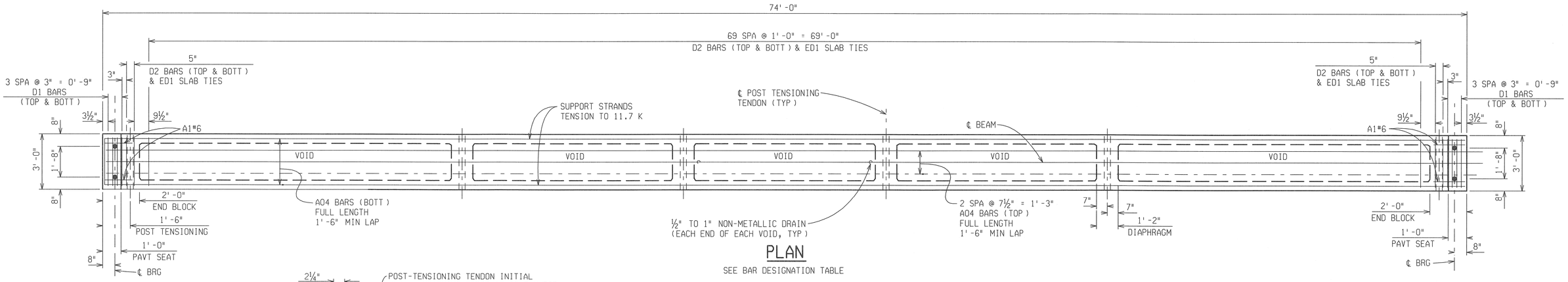
CITY OF DETROIT

RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

MDOT JOB NO. 86343A | STRUCTURE NO. B01 of 82-25-75

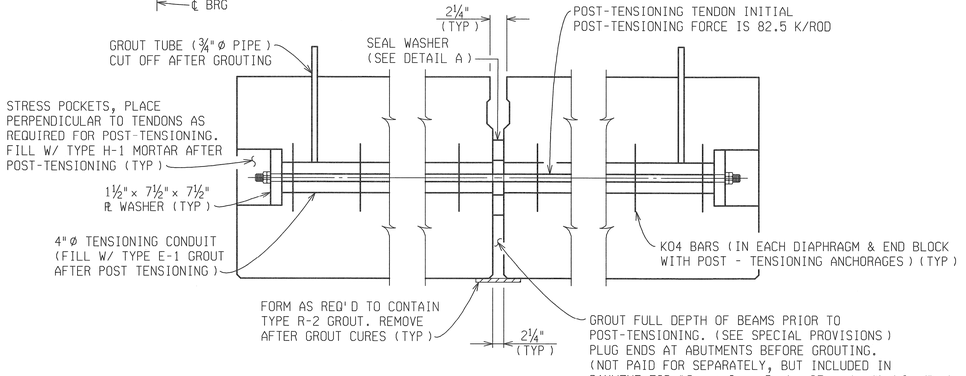
ERECTION DIAGRAM

DATE: 1/13/09
DLZ JOB NO. 0741-6177-00
SHEET NO. 17 OF 45



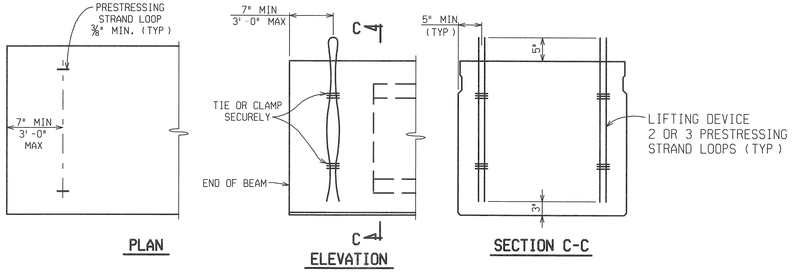
PLAN

SEE BAR DESIGNATION TABLE



POST-TENSIONING DETAIL

NOTE: STRESS POCKETS, ANCHOR PLATES AND TENDON COUPLERS SHALL BE AS REQUIRED FOR THE POST-TENSIONING SYSTEM PROVIDED.



DETAILS OF LIFTING DEVICE

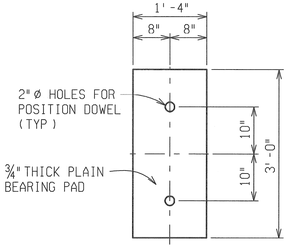
NOTE: LIFTING OF BEAM SHALL BE BY EQUAL LOADS TO EACH PAIR OF LIFTING DEVICES. OTHER TYPES OF LIFTING DEVICES MAY BE USED SUBJECT TO APPROVAL BY THE MICHIGAN DEPARTMENT OF TRANSPORTATION.

LIFTING DEVICES SHALL BE REMOVED. REMOVAL IS INCLUDED IN THE BID ITEM "Prest Conc Deck, 27 inch, Modified".

PRESTRESSING STRAND LIFTING DEVICE		
ALLOWABLE BEAM WT.	STRAND SIZE	NO. OF STRANDS
20 TONS	3/8"	2
27 TONS	7/16"	2
36 TONS	1/2"	2
30 TONS	3/8"	3
40.5 TONS	7/16"	3
54 TONS	1/2"	3

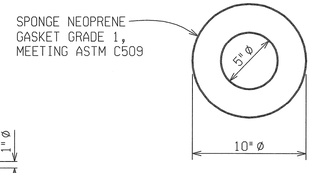
MISCELLANEOUS QUANTITIES

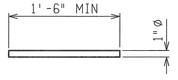
1	LS	Post Tensioning
95	Sft	Bearing, Elastomeric, ¾ inch
2585	Sft	Prest Conc Deck, 27 inch, Modified



ELASTOMERIC BEARING PAD DETAIL

22 REQUIRED



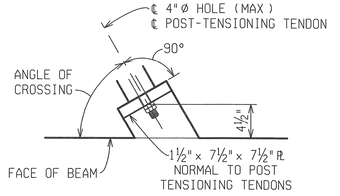


POSITION DOWEL DETAIL

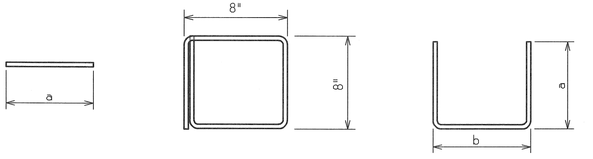
(44 REQUIRED)
NOT PAID FOR SEPARATELY
BUT INCLUDED IN PAYMENT FOR
"Prest Conc Deck, 27 inch, Modified"

2¼" THICK SEAL WASHER DETAIL A

WASHER IS NOT PAID FOR SEPARATELY BUT IS INCLUDED IN PAYMENT FOR "Prest Conc Deck, 27 inch, Modified"



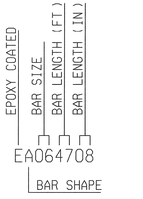
TOP VIEW STRESS POCKET



A BAR — EK040404 — D BAR

BAR DIMENSIONS

BAR	DIMENSION	
	a	b
A1#6	1'-6"	
D1#4	1'-4"	2'-8"
D2#4	1'-8"	2'-8"
ED1#4	1'-9"	2'-8"



BAR LEGEND

NOTES:

PRESTRESSING STRANDS SHALL BE GIVEN AN INITIAL PRESTRESS AS FOLLOWS:
0.6" DIA. - 44,000 LBS PRESTRESS

CONCRETE INSERTS SHALL BE ¾" DIAMETER; DAYTON SUPERIOR, TYPE B-1 HEAVY OR TYPE B-18; WILLIAMS FORM, TYPE C 12 OR TYPE C -19; MEADOW BURKE, TYPE CT-2 OR TYPE CX-4; OR EQUAL. INSERTS SHALL BE CAST WITH THE BEAMS. FIELD INSTALLATION OF INSERTS IS NOT ALLOWED.

TOTAL ESTIMATED CHANGE OF LENGTH OF BOTTOM FLANGE AT TRANSFER OF PRESTRESS FORCE IS 0.191".

THE ESTIMATED BEAM CAMBER AT RELEASE IS 1.083". THIS CAMBER IS DUE TO PRESTRESS AND DEAD LOAD OF THE BEAM ONLY AND IS MEASURED IN THE ERECTED POSITION.

THE INITIAL FORCE IN THE TRANSVERSE POST-TENSIONING TENDONS SHALL BE 82,500 LBS. EACH.

LIFTING DEVICES SHALL BE REMOVED AFTER BEAMS ARE ERECTED. REMOVAL IS INCLUDED IN THE BID ITEM "Prest Conc Deck, 27 inch, Modified".

POSITION DOWELS SHALL BE HOT-DIP GALVANIZED ACCORDING TO AASHTO M 232. POSITION DOWELS ARE INCLUDED IN PAYMENT FOR PRESTRESSED CONCRETE BEAMS.

PRESTRESSING STRAND SHALL BE 0.6" NOMINAL DIAMETER MEETING THE REQUIREMENTS OF AASHTO M203 (ASTM A416), GRADE 270, LOW RELAXATION STRAND.

REVISIONS

DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

MDOT JOB NO. 86343A | STRUCTURE NO. B01 of 82-25-75

PRESTRESSED CONC BOX BEAM DETAILS

DATE: 1/13/09

DLZ JOB NO. 0741-6177-00

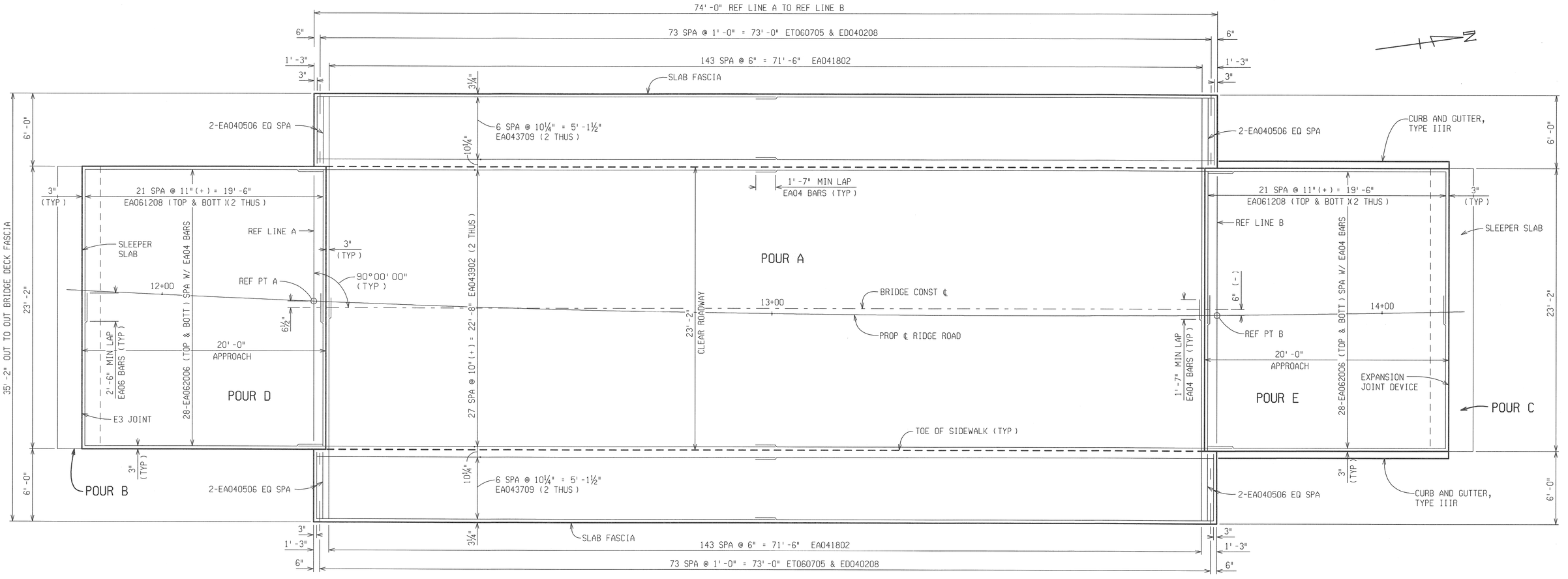
SHEET NO. 18 OF 45

DATE: 11-7-08 CORRECTED BY: DAF

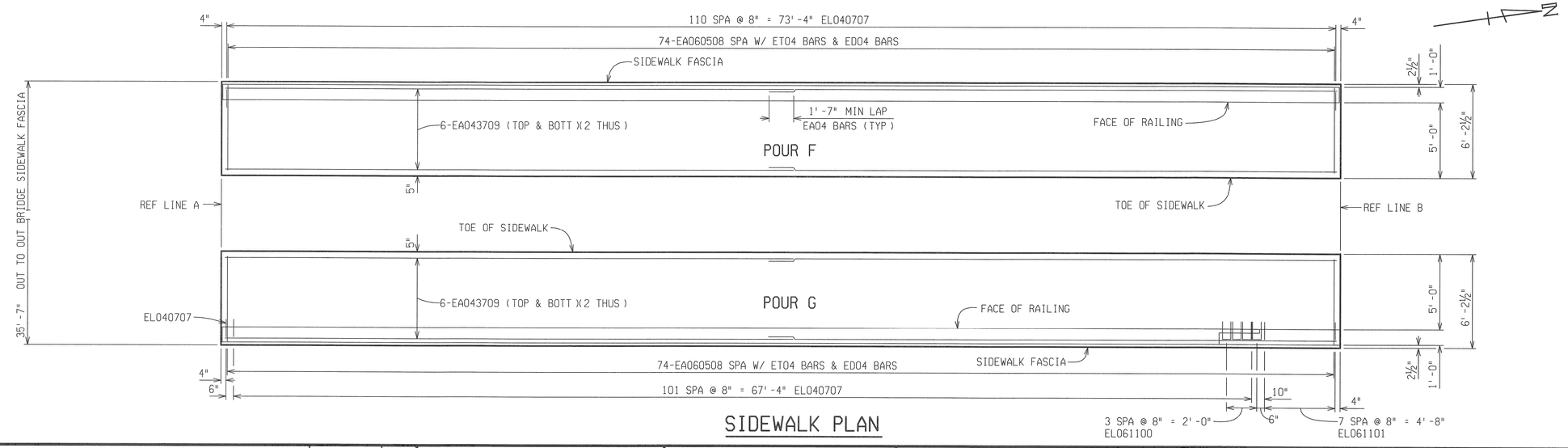
DATE: 11-6-08 CHECKED BY: TNB

DATE: 12-19-07 DRAWN BY: DLW

FILE NAME: ridge bb2.dgn



DECK PLAN



SIDEWALK PLAN

REVISIONS	DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

MDOT JOB NO. B6343A | STRUCTURE NO. B01 of 82-25-75

SUPERSTRUCTURE DETAILS

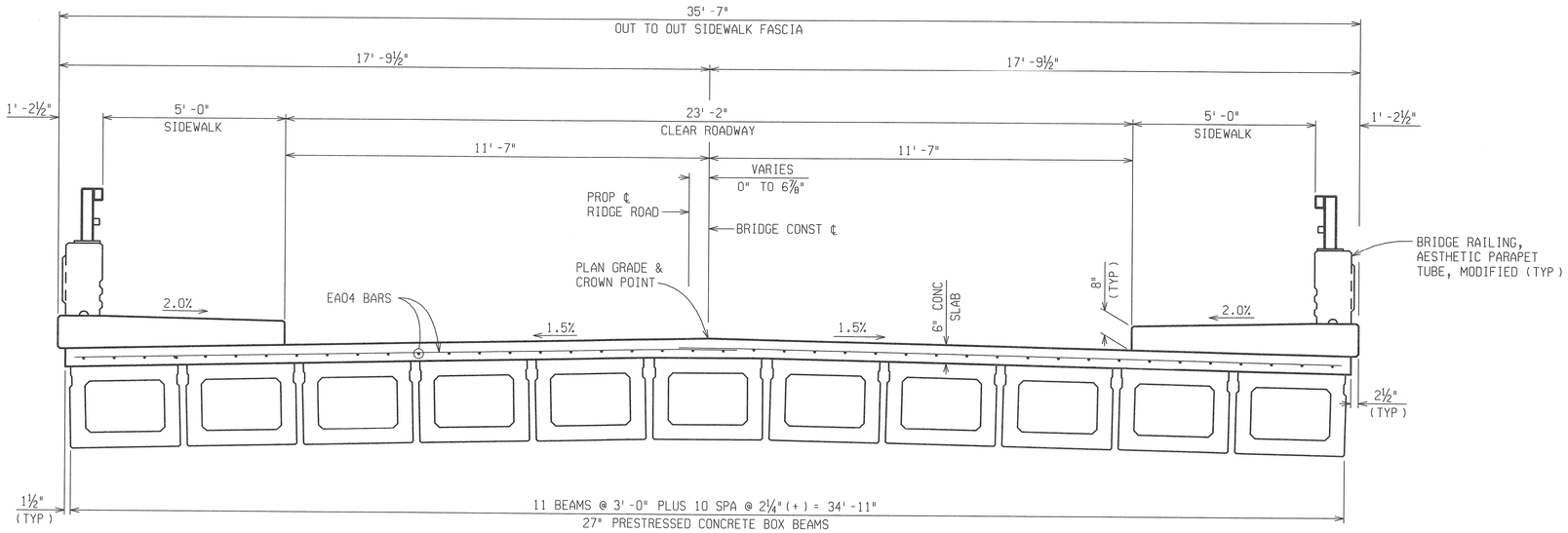
DATE: 1/13/09

DLZ JOB NO. 0741-6177-00

SHEET NO. 19 OF 45

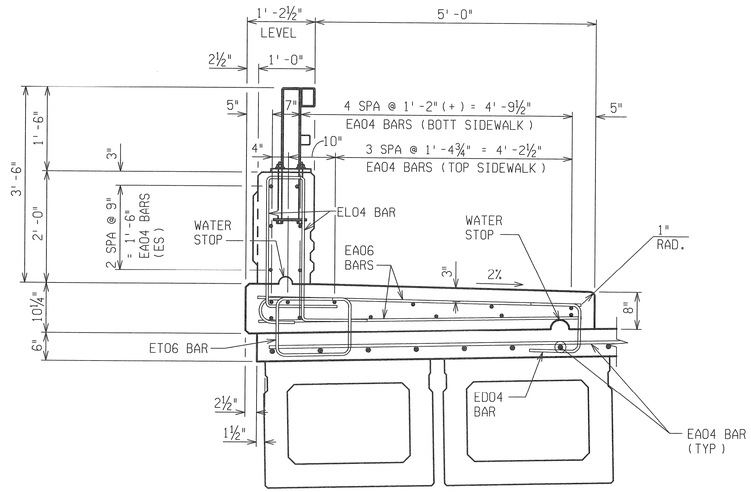
DATE: 11-24-08 | DATE: 11-6-08 CORRECTED BY: DAF | CHECKED BY: TNB | DATE: 7-2-08 | DRAWN BY: DAF

FILE NAME: ridge rd dk1.dgn

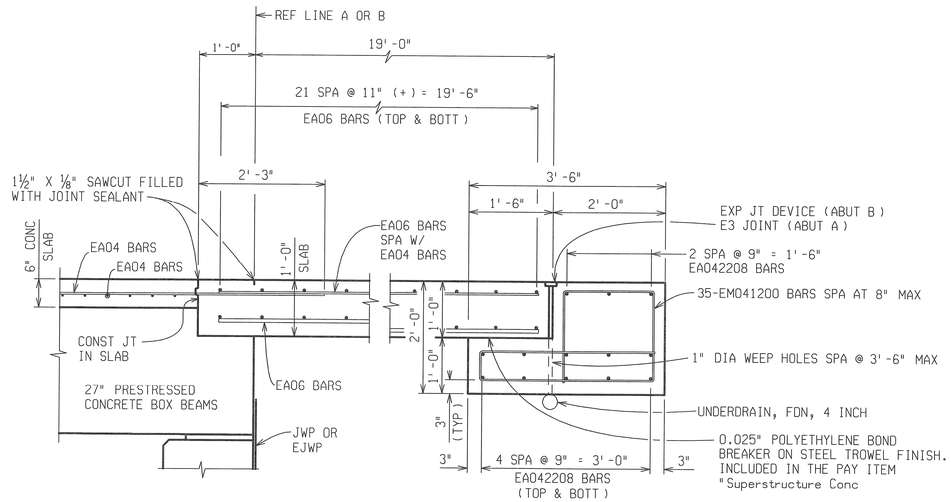


TYPICAL DECK SECTION

SUPERSTRUCTURE CONC QUANTITIES	
POUR	CYD
A	48
B	5
C	5
D	17
E	17
F	14
G	14
TOTAL	120



TYPICAL SIDEWALK SECTION



TYPICAL APPROACH SECTION

MISCELLANEOUS QUANTITIES		
1	LS	Superstructure Conc, Form, Finish, and Cure
25	Ft	Joint, Expansion E3
183	Ft	Bridge Railing, Aesthetic Parapet Tube, Modified
103	Syd	Texturing Conc
5	Cyd	Conc, Grade D

NOTES:

NS DENOTES NEAR SIDE.

FS DENOTES FAR SIDE.

ES DENOTES EACH SIDE.

FOR BEVEL AND MOLDING DETAILS, SEE STANDARD PLAN B-103 SERIES.

FOR BRIDGE RAILING, ANCHORAGE FOR GUARDRAIL, AND NAME PLATE MOUNTING DETAILS, SEE STANDARD PLAN B-25-SERIES.

FOR NAME PLATE LOCATION, SEE GENERAL PLAN OF STRUCTURE SHEET.

ALPHABETICAL DESIGNATION OF DECK POURS IS NOT TO BE CONSTRUED AS A POUR SEQUENCE.

LOW TEMPERATURE PROTECTION OF CONCRETE SHALL BE APPLIED ACCORDING TO SECTION 706.03 J. OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION. LOW TEMPERATURE PROTECTION OF CONCRETE WILL NOT BE PAID FOR SEPARATELY, BUT WILL BE INCLUDED IN THE BID ITEM "Superstructure, Conc".

REVISIONS	DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

MDOT JOB NO. B6343A | STRUCTURE NO. B01 of 82-25-75

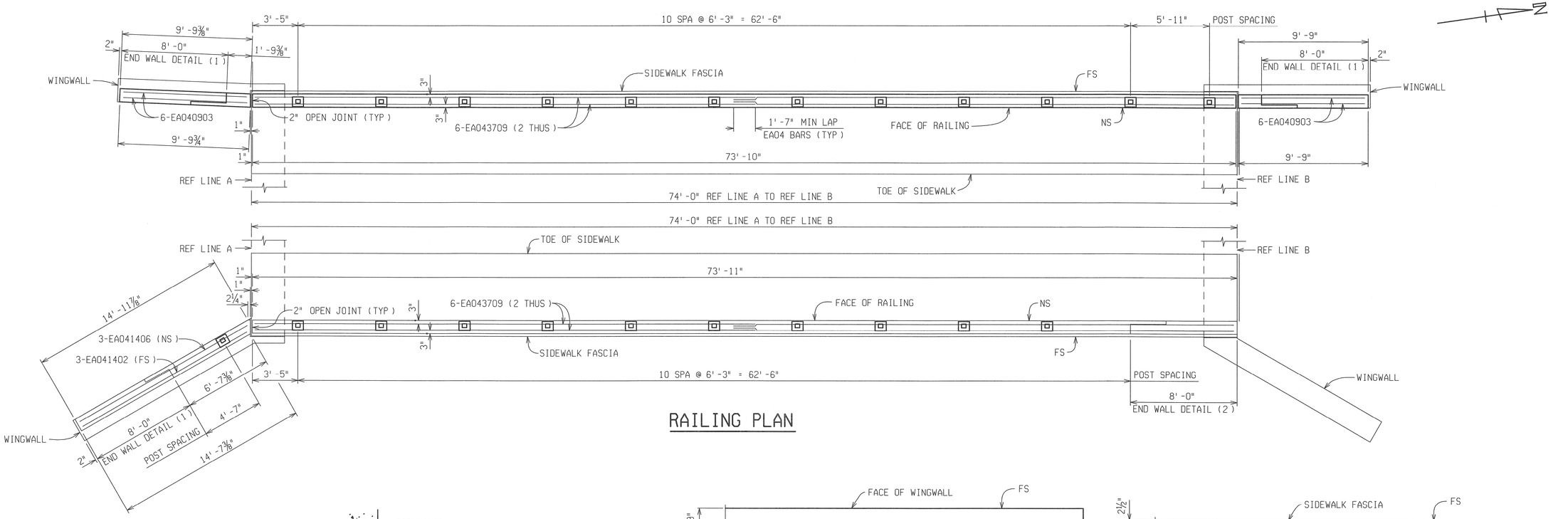
SUPERSTRUCTURE DETAILS

DATE: 1/13/09

DLZ JOB NO. 0741-6177-00

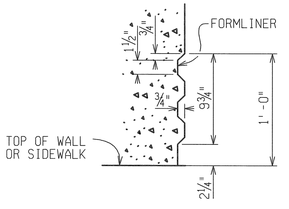
SHEET NO. 20 OF 45

DATE: 11-24-08 DATE: 11-6-08 CORRECTED BY: DAF DATE: 12-20-07 CHECKED BY: TNB DRAWN BY: DAF FILE NAME: ridge rd dk2.dgn



RAILING PLAN

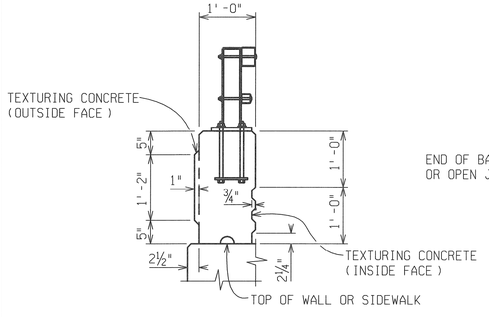
OUTSIDE FACE



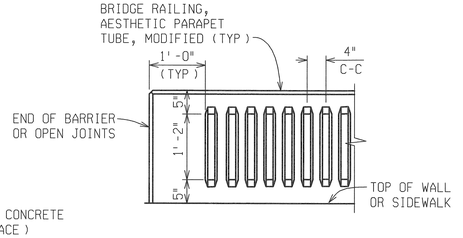
OUTSIDE FACE

TEXTURING CONCRETE DETAIL

THE FORM LINER DETAIL MUST CLOSELY CONFORM TO THE DETAIL SHOWN. THE CONTRACTOR SHALL SUBMIT DETAILS AND CATALOG INFORMATION FOR APPROVAL BY THE ENGINEER.

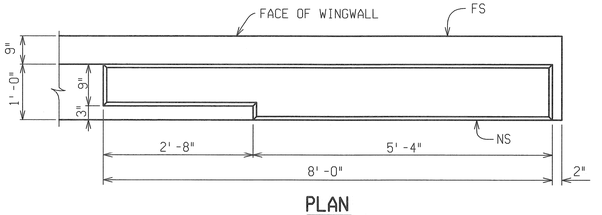


TYPICAL RAILING SECTION

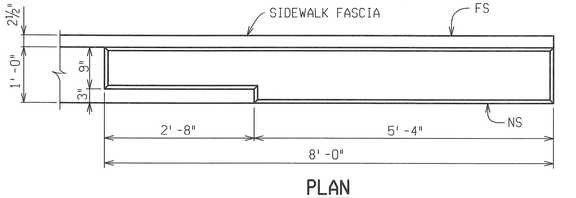


BRIDGE RAILING ELEVATION

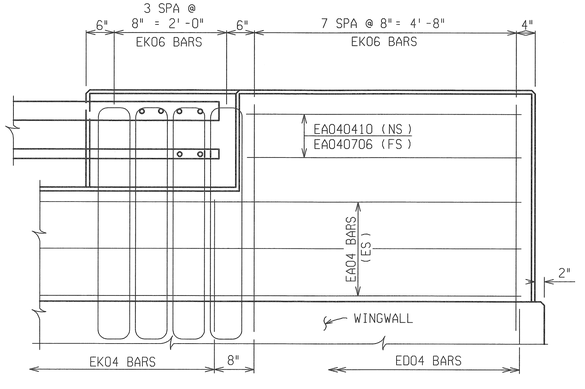
(OUTSIDE FACE)



PLAN



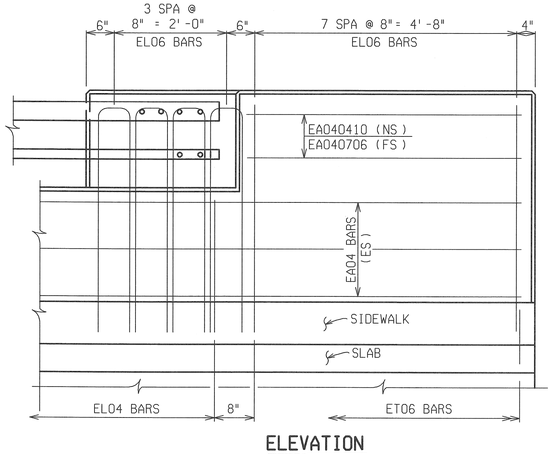
PLAN



ELEVATION

END WALL DETAIL (1)

AESTHETIC PARAPET TUBE



ELEVATION

END WALL DETAIL (2)

AESTHETIC PARAPET TUBE

REVISIONS	DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

MDOT JOB NO. 86343A | STRUCTURE NO. B01 of 82-25-75

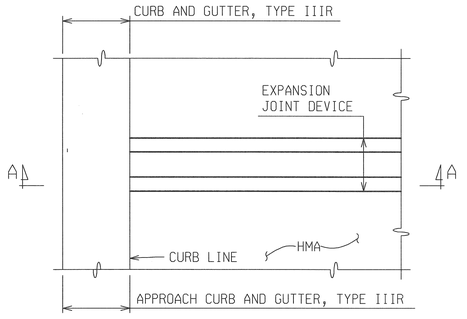
SUPERSTRUCTURE DETAILS

DATE: 1/13/09

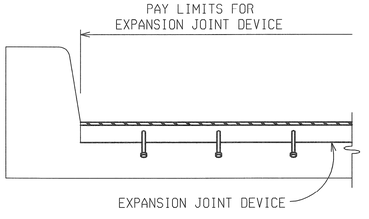
DLZ JOB NO. 0741-6177-00

SHEET NO. 21 OF 45

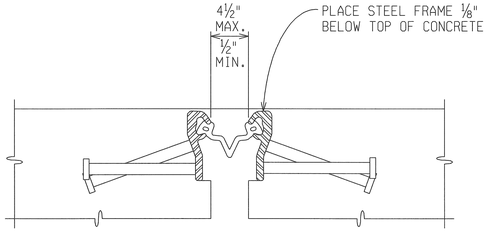
DATE: 12-10-08
DATE: 11-17-08 CORRECTED BY: DAF
CHECKED BY: TNB
DATE: 7-2-08
DRAWN BY: DAF
FILE NAME: ridge rd dk3.dgn



PLAN AT TYPE IIIR CURB



SECTION A - A



SECTION THROUGH EXPANSION JOINT

NOTES:

JOINT TYPES

THE EXPANSION JOINT DEVICE SHALL BE OF A TYPE THAT INCLUDES A CONTINUOUS NEOPRENE (OR EQUIVALENT) SEAL ACROSS THE DECK. UNLESS OTHERWISE NOTED ON THE PLANS, THE CONTRACTOR HAS THE OPTION OF USING ANY OF THE DEVICES LISTED BELOW:

DEVICE	MANUFACTURER
WABO STRIP SEAL - TYPE M	WATSON-BOWMAN & ACME, INC.
WABO STRIP SEAL - TYPE A	WATSON-BOWMAN & ACME, INC.
STEELFLEX-SSA2	D.S. BROWN
STEELFLEX-SSCM	D.S. BROWN
ONFLEX 40 SS	STRUCTURAL RUBBER PRODUCTS CO.

THE MODEL OF THE JOINT TYPE SELECTED SHALL BE SUITABLE TO ACCOMMODATE THE TOTAL MOVEMENT NOTED ON THE PLANS.

COMPLETE WORKING DRAWINGS OF ALL DETAILS OF FABRICATION OF THE EXPANSION JOINT DEVICE SHALL BE SUBMITTED FOR REVIEW IN ACCORDANCE WITH STANDARD SPECIFICATION 104.02. THIS REQUIREMENT IS WAIVED FOR EXPANSION JOINT DEVICES FOR WHICH A SET OF STANDARD INSTALLATION DETAILS HAS BEEN APPROVED. STANDARD INSTALLATION DETAILS CAN BE OBTAINED FROM THE DESIGN SUPPORT AREA.

FABRICATION AND INSTALLATION

THE EXPANSION JOINT SHALL BE SHOP FABRICATED TO CONFORM TO THE CONTOUR OF THE BRIDGE DECK, BARRIERS, ETC. IT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS SUBJECT TO NOTES HEREIN AND THE APPROVAL OF THE ENGINEER.

THE TOP OF THE EXPANSION JOINT DEVICE SHALL BE SET ⅛" - ¼" BELOW THE CONCRETE SLAB (PAVEMENT) WITH A TOLERANCE OF ± ⅛".

THE STEEL ANCHORAGE FOR STRIP SEAL GLANDS SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH SUBSECTION 707.03C.16 OF THE STANDARD SPECIFICATIONS.

THE AREA OF THE STEEL ANCHORAGE AND SEALING GLAND WHICH WILL BE IN CONTACT WITH A SEALANT, OR LUBRICANT-ADHESIVE SHALL BE CLEANED WITH TOLUENE OR OTHER APPROVED SOLVENT.

WHERE THE SEALING GLAND IS LOCKED INTO A STEEL ANCHORAGE, A LUBRICANT-ADHESIVE CONFORMING TO STANDARD SPECIFICATION 914.04D SHALL BE REQUIRED BETWEEN THE SEAL AND STEEL ANCHORAGE.

IN THE EVENT THAT SPLICING IS REQUIRED OF THE SEALING GLAND, IT SHALL BE SPLICED BY AN APPROVED METHOD (SUCH AS COLD VULCANIZATION) BY A TRAINED REPRESENTATIVE OF THE MANUFACTURER.

DETAILS AT CURBS OR BARRIERS

THE DETAILS ON THIS SHEET SHOW AN APPROVED MEANS OF TERMINATING THE EXPANSION JOINT DEVICE AT CURBS OR BARRIERS. VARIATIONS OR ALTERNATIVE SCHEMES WILL BE CONSIDERED AND MAY BE USED IF APPROVED BY THE ENGINEER.

MATERIALS

THE COST OF ALL MATERIALS AND LABOR REQUIRED FOR PROPER INSTALLATION OF THE EXPANSION JOINT AND THE TERMINAL ASSEMBLIES AT THE CURBS, SIDEWALKS, OR BARRIERS IS INCLUDED IN THE PAYMENT FOR THE EXPANSION JOINT DEVICE.

STRUCTURE NUMBER	ANGLE OF CROSSING TO NEAREST 10°	LOCATION OF JOINT	MIN. TOT. TRAVEL ALONG CENTERLINE OF BRIDGE	REQUIRED LENGTH OF EXPANSION JOINT DEVICE
B01	100°	ABUT B	5/8"	35'-7"

QUANTITY		
ITEM	UNIT	AMOUNT
Expansion Joint Device	Ft	25

DATE: 10-2-08
DATE: 10/22/07 CORRECTED BY:DLW/DAF
DATE: 10/19/07 CHECKED BY: TNB
DRAWN BY: DLW
FILE NAME: ridge rd ej.dgn

REVISIONS	DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

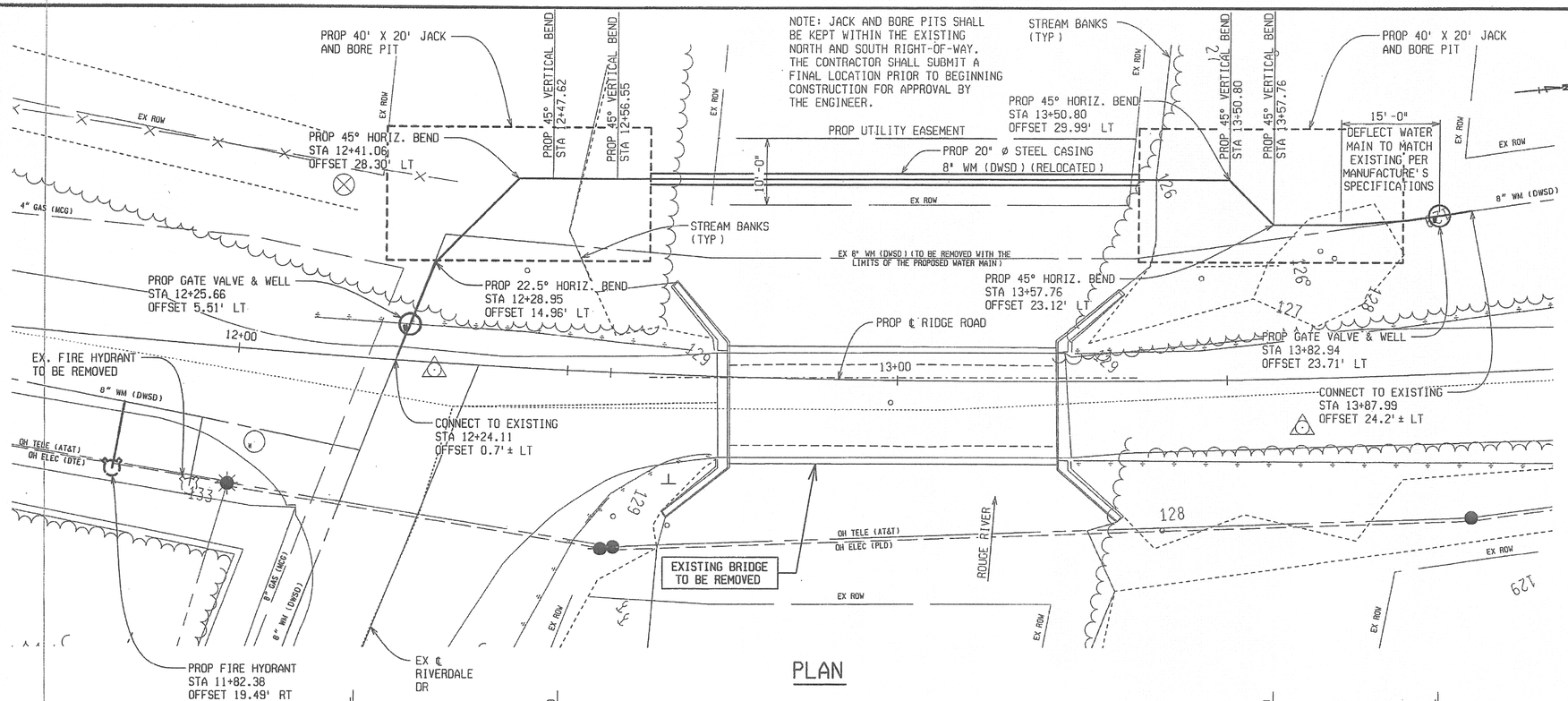
MDOT JOB NO. J6343A | STRUCTURE NO. B01 of 82-25-75

EXPANSION JOINT DETAILS
EJ3Y (03/14/2007)

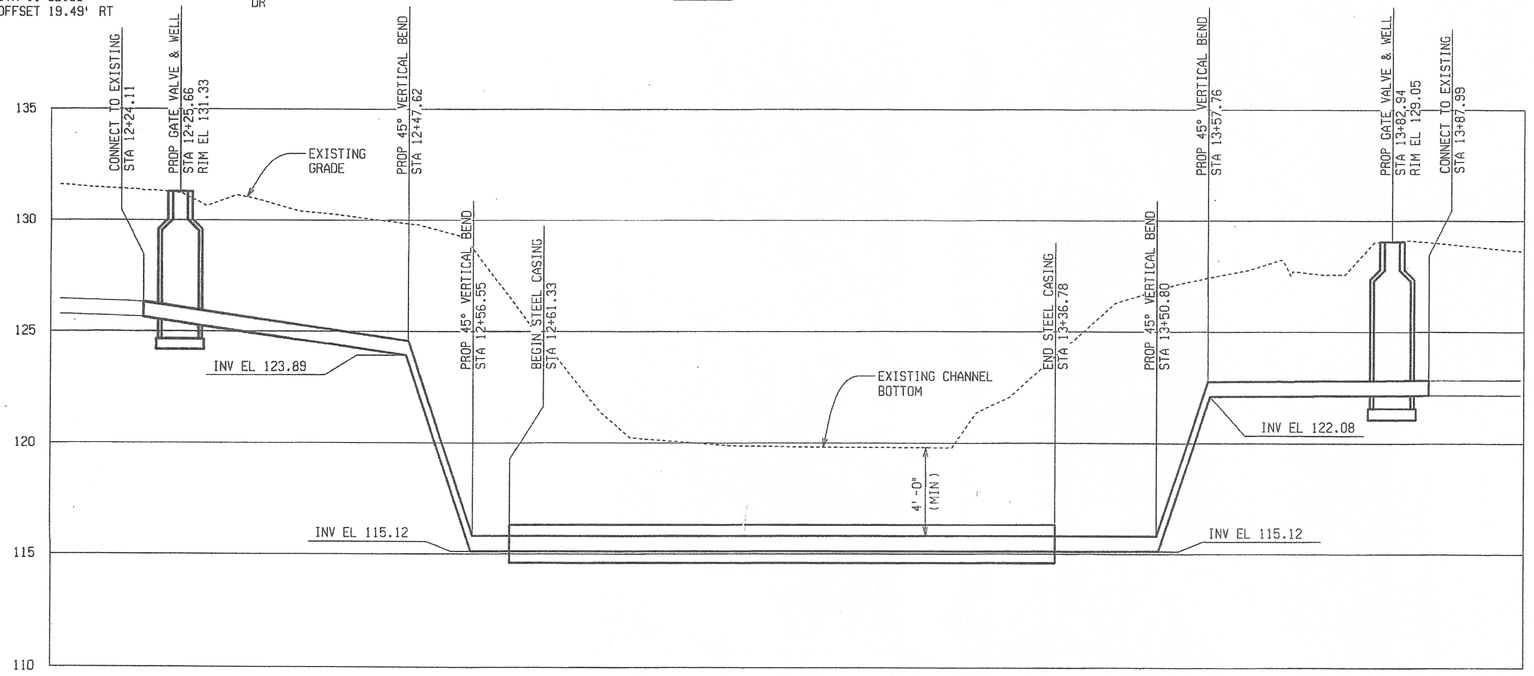
DATE: 1/13/09

DLZ JOB NO. 0741-6177-00

SHEET NO. 22 OF 45



PLAN



ELEVATION

(ALONG CENTERLINE OF WATER MAIN)

WATER MAIN NOTES:

THE CONDITIONS SHOWN ON THIS SHEET REPRESENT THE CONDITIONS AT THE TIME OF WATER MAIN INSTALLATION. A SUGGESTED CONSTRUCTION SEQUENCE HAS BEEN INCLUDED ON SHEET 25 OF 45.

STATIONING AND OFFSETS ARE WITH RESPECT TO THE PROP ℄ RIDGE ROAD.

IN COMPLIANCE WITH PUBLIC ACT 53 OF THE STATE OF MICHIGAN (EFFECTIVE AUGUST 1, 1974), THE CONTRACTOR SHALL NOTIFY IN ADVANCE OF CONSTRUCTION (72 HOURS/3 WORKING DAYS) ALL PUBLIC AND PRIVATE UTILITY OWNERS HAVING EXISTING FACILITIES IN OR NEAR THE IMMEDIATE WORKING AREA FOR CONVENIENCE. THE KNOWN UTILITY OWNERS ARE LISTED ON THE GENERAL PLAN OF SITE SHEET. THIS LISTING DOES NOT, HOWEVER, RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF VERIFYING LOCATIONS AND NOTIFYING ALL UTILITY OWNERS AND MISS DIG (PHONE: 1-800-482-7171).

ALL WATER MAIN WORK IS TO BE DONE IN ACCORDANCE WITH DETROIT WATER AND SEWERAGE DEPARTMENT'S STANDARD SPECIFICATIONS AND DETAILS.

ALL WATER MAIN TO BE DUCTILE IRON CLASS 56 WITH A POLYETHYLENE WRAP IN ACCORDANCE WITH DWSD STANDARDS.

ALL WATER MAINS TO BE INSTALLED WITH A MINIMUM OF 5'-0" OF COVER.

CONCRETE THRUST BLOCKS SHALL BE PLACED ON ALL FITTINGS. BOTH AWWA AND TRADITIONAL DWSD SIZING OF THE CONCRETE THRUST BLOCKS WILL BE PERMITTED.

ALL WATER MAIN SERVICES SHALL BE MAINTAINED UNLESS DIRECTED OTHERWISE BY THE ENGINEER.

THE CONTRACTOR SHALL OBTAIN A PERMIT FROM THE DWSD FOR THE CONSTRUCTION OF THE PROPOSED WATER MAIN. THE PERMIT IS ESTIMATED TO COST $1600.00. THE COST OF THE PERMIT SHALL BE INCLUDED IN THE PRICE OF OTHER ITEMS. THE CONTACT INFORMATION FOR THE DWSD CONSTRUCTION PERMIT IS INCLUDED IN THE PROJECT SPECIFICATIONS.

WATER MAIN FITTINGS SUMMARY

NO.	DESCRIPTION	STATION	OFFSET	DIST. TO NEXT FITTING
1	CONNECT TO EX	12+24.11	0.7'± LT	5.0'
2	8" GATE VALVE	12+25.66	5.51' LT	10.00'
3	22.5° HORIZ. BEND	12+28.95	14.96' LT	17.89'
4	45° HORIZ. BEND	12+41.06	28.30' LT	6.21'
5	45° VERT. BEND	12+47.62	28.60' LT	8.93'
6	45° VERT. BEND	12+56.55	29.00' LT	92.52'
7	45° HORIZ. & VERT. BEND	13+50.80	29.99' LT	9.50'
8	45° HORIZ. & VERT. BEND	13+57.76	23.12' LT	25.11'
9	8" GATE VALVE	13+82.94	23.71' LT	5.0'
10	CONNECT TO EX	13+87.99	24.2'± LT	END

* STATION AND OFFSET ARE WITH RESPECT TO THE PROP ℄ RIDGE ROAD.

** DIST. TO NEXT FITTING IS MEASURED ALONG THE CENTERLINE OF THE PROPOSED WATER MAIN.

*** EXISTING WATER MAIN OFFSETS ARE ESTIMATED. CONTRACTOR SHALL VERIFY OFFSETS AND REPORT ANY DISCREPENCIES TO THE ENGINEER PRIOR TO CONSTRUCTION OF THE WATER MAIN.

DWSD SYSTEM ACCEPTANCE

DESIGN REVIEWED:	DATE 11/19/2008
HEAD ENGR.-DES.	11/19/08
CONSTRUCTION INSPECTED:	
HEAD ENGR.-FLD.	

PERMIT NO.	LS#
MDNR	D JOB#
MDPH	
R/W#	DRWG/REF# SEWER
	WATER

STATE OF MICHIGAN — MARK A. MATTSON — ENGINEER — No. 48114 — PROFESSIONAL ENGINEER

11-10-08

REVISIONS

DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

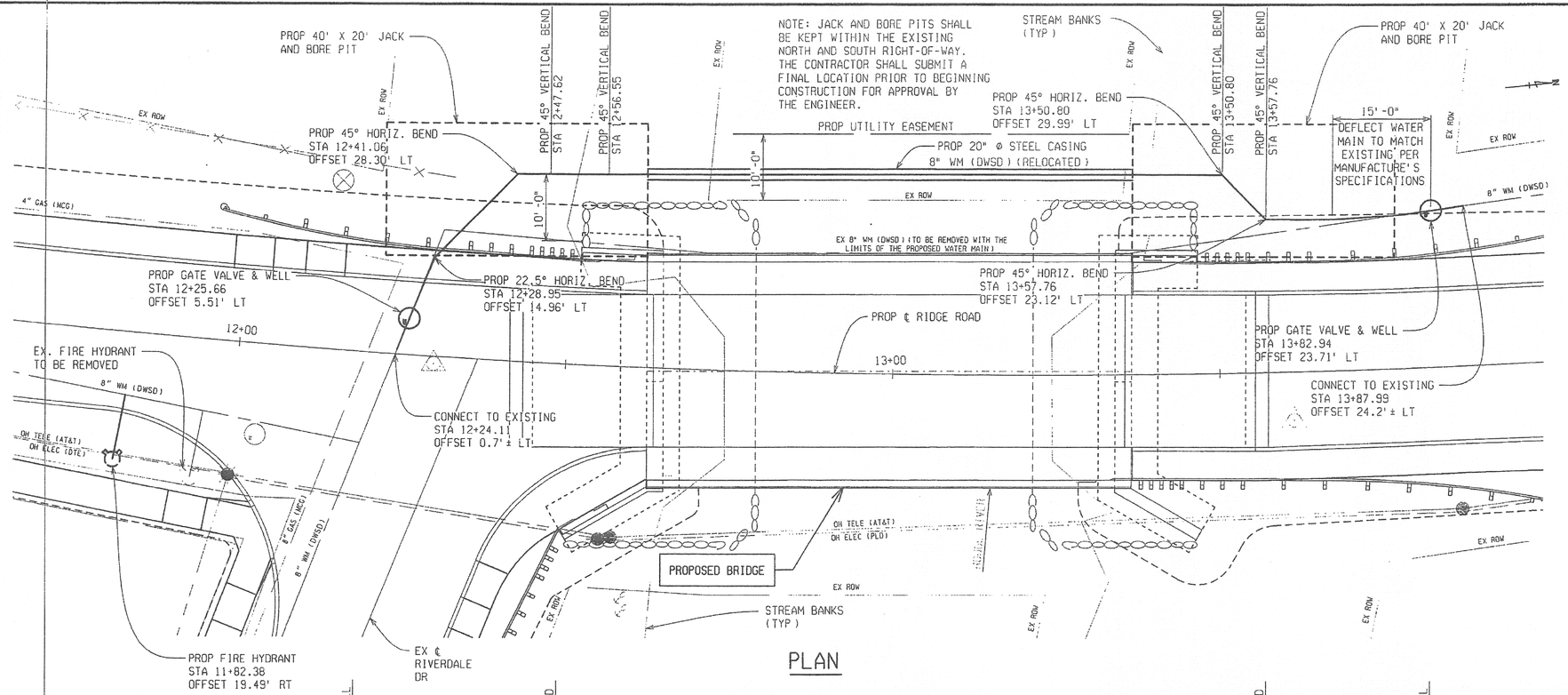
MDOT JOB NO. 86343A | STRUCTURE NO. B01 of 82-25-75

WATER MAIN DETAILS

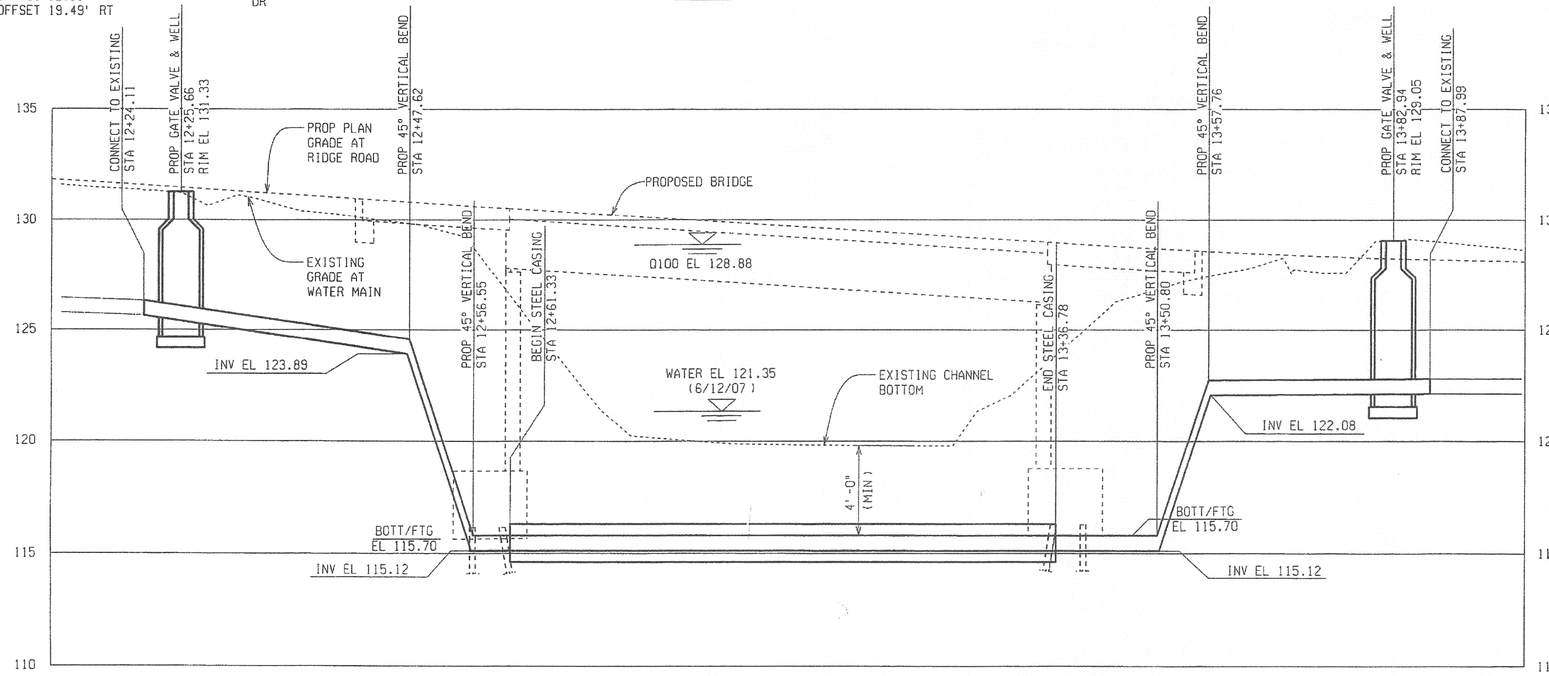
DATE: 11/10/08

DLZ JOB NO. 0741-6177-00

SHEET NO. 23 OF 45



PLAN



ELEVATION

(ALONG CENTERLINE OF WATER MAIN)

WATER MAIN NOTES:

THE CONDITIONS SHOWN ON THIS SHEET REPRESENT THE CONDITIONS AT THE TIME OF WATER MAIN INSTALLATION. A SUGGESTED CONSTRUCTION SEQUENCE HAS BEEN INCLUDED ON SHEET 25 OF 45.

STATIONING AND OFFSETS ARE WITH RESPECT TO THE PROP ℄ RIDGE ROAD.

DWSD SYSTEM ACCEPTANCE

DESIGN REVIEWED:	DATE 11/10/08
HEAD ENGR.-DES.	
CONSTURCTION INSPECTED:	
HEAD ENGR.-FLD.	

PERMIT NO.	LS#
MDNR MDPH	D JOB#
R/W#	DRWG/REF# SEWER
	WATER

STATE OF MICHIGAN MARK A. MATTSON ENGINEER No. 48114 LICENSED PROFESSIONAL ENGINEER
11-10-08

REVISIONS	DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

MDOT JOB NO. 86343A | STRUCTURE NO. B01 of 82-25-75

WATER MAIN DETAILS

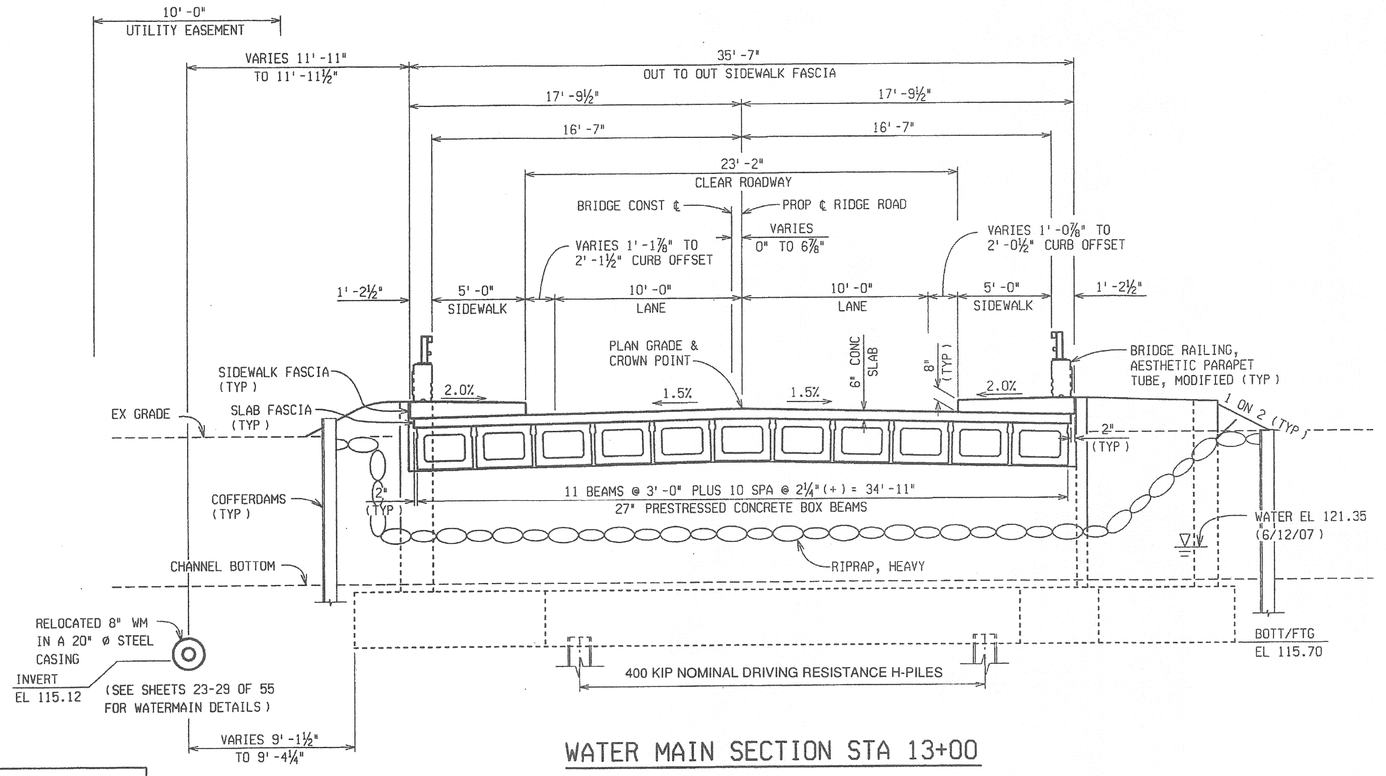
DATE: 11/10/08

DLZ JOB NO. 0741-6177-00

SHEET NO. 24 OF 45

MISCELLANEOUS QUANTITIES

181	Ft	Water Main, DI, Cl 56, 8 inch
74	Ft	Steel Casing Pipe, 20 inch, Tr Det F
2	Ea	Gate Valve and Well, 8 inch
1	Ea	Fire Hydrant
2	Ea	Connection to Existing
176	Ft	Water Main, Rem
1	Ea	Fire Hydrant, Rem



WATER MAIN SECTION STA 13+00

CONSTRUCTION SEQUENCE:

THE FOLLOWING CONSTRUCTION SEQUENCE IS SUGGESTED FOR THE CONSTRUCTION OF THE PROPOSED WATER MAIN. THE CONTRACTOR MAY SUBMIT AN ALTERNATIVE CONSTRUCTION SEQUENCE FOR APPROVAL BY THE ENGINEER.

1. THE CONTRACTOR SHALL ACQUIRE THE REQUIRED CONSTRUCTION PERMIT FROM THE DWSD. THE PERMIT FEE AND CONTACT INFORMATION HAS BEEN PROVIDED IN THE NOTICE TO BIDDERS. THE COST OF THIS PERMIT SHALL BE INCLUDED IN THE PRICE OF OTHER ITEMS. NO WORK ON THE WATER MAIN WILL BE PERMITTED PRIOR TO RECEIVING THE CONSTRUCTION PERMIT.

2. THE CONTRACTOR SHALL SUBMIT A FINAL LOCATION FOR THE PROPOSED JACK AND BORE PITS TO THE ENGINEER FOR APPROVAL A MINIMUM OF FOURTEEN (14) CALENDAR DAYS PRIOR TO BEGINNING THE INSTALLATION OF THE PROPOSED STEEL CASING UNDER THE ROUGE RIVER. THE FINAL LOCATION OF THE PROPOSED JACK AND BORE PITS SHALL BE 100 PERCENT WITHIN THE EXISTING CITY OF DETROIT RIGHT-OF-WAY. THIS WORK SHALL BE INCLUDED IN THE COST OF "Steel Casing Pipe, 20 inch, Tr Det F".

3. THE DWSD WILL IDENTIFY THE EXISTING BUTTERFLY AND/OR GATE VALVES THAT MUST BE EXERCISED TO ISOLATE THE WORK AREA, AND PROVIDE THIS INFORMATION TO THE CONTRACTOR. THE CONTRACTOR SHALL REQUEST THIS INFORMATION FROM THE DWSD A MINIMUM OF FIVE (5) DAYS PRIOR TO EXERCISING THE VALVES.

4. THE CONTRACTOR WILL BE RESPONSIBLE FOR OPERATING THE EXISTING BUTTERFLY AND/OR GATE VALVES REQUIRED TO ISSOLATE THE WORK AREA UNDER THE DIRECTION OF THE DWSD.

5. THE CONTRACTOR SHALL EXERCISE THE SELECTED BUTTERFLY AND/OR GATE VALVES A MINIMUM OF THREE (3) DAYS PRIOR TO BEGINNING WORK ON THE PROPOSED RELOCATION IN ORDER TO ENSURE THE VALVES ARE FUNCTIONING PROPERLY. THIS SHALL BE DONE UNDER THE DIRECTION OF THE DWSD. IF THE VALVES ARE DEEMED TO BE INEFFECTIVE IN ISOLATING THE WORK AREA, THE DWSD WILL DIRECT THE CONTRACTOR TO THE NEXT SET OF BUTTERFLY AND/OR GATE VALVES THAT MUST BE EXERCISED TO ISOLATE THE WORK AREA. THIS WORK SHALL BE PAID FOR AS PART OF "Water Main, Rem".

6. THE CONTRACTOR SHALL ISOLATE THE WORK AREA, UNDER THE DIRECTION OF THE DWSD, BY CLOSING THE EXISTING VALVES, AND DISCONNECT THE EXISTING WATER MAIN. THIS WORK SHALL BE PAID FOR AS PART OF "Water Main, Rem".

7. THE CONTRACTOR SHALL INSTALL THE PROPOSED FIRE HYDRANT LOCATED NORTH OF RIVERDALE DRIVE AND REMOVE THE EXISTING FIRE HYDRANT. THE REMOVAL OF THE EXISTING FIRE HYDRANT AND ALL APPURTENANCES SHALL BE PAID FOR AS PART OF "Fire Hydrant, Rem". FOR THE INSTALLATION OF THE PROPOSED FIRE HYDRANT AND THE REMOVAL OF THE EXISTING FIRE HYDRANT, THE WATER MAIN SHALL BE OUT OF SERVICE FOR NO LONGER THAN ONE CALENDAR DAY, AND THE DATE OF THE SHUT DOWN SHALL BE COORDINATED WITH THE DWSD.

8. THE CONTRACTOR SHALL INSTALL THE PROPOSED GATE VALVES AND WELLS AND CONNECT THE PROPOSED WATER MAIN TO THE EXISTING WATER MAIN. ONCE THE GATE VALVES AND WELLS HAVE BEEN INSTALLED AND TESTED, THE EXISTING BUTTERFLY AND/OR GATE VALVES THAT ARE BEING USED TO ISOLATE THE WORK AREA SHALL BE OPENED AND THE NEW GATE VALVES USED TO ISOLATE THE REMAINDER OF THE WORK AREA. FOR THE INSTALLATION OF THE PROPOSED GATE VALVES AND WELLS, THE WATER MAIN SHALL BE OUT OF SERVICE FOR NO LONGER THAN TWO CALENDAR DAYS, AND THE DATE OF THE SHUT DOWN SHALL BE COORDINATED WITH THE DWSD.

9. THE CONTRACTOR SHALL INSTALL THE PROPOSED STEEL CASING UNDER THE ROUGE RIVER USING THE BORING AND JACKING METHOD IN ACCORDANCE WITH THE DWSD SPECIFICATIONS SECTION 02236. THE CONTRACTOR WILL NOT BE PERMITTED TO BEGIN THIS WORK IF THE ENGINEER HAS NOT APPROVED THE FINAL LOCATION FOR THE PROPOSED JACK AND BORE PITS.

10. THE CONTRACTOR SHALL INSTALL THE PROPOSED WATER MAIN THROUGH THE STEEL CASING UNDER THE ROUGE RIVER IN ACCORANCES WITH DWSD SPECIFICATIONS SECTION 02236 AND 02620, AND IN ACCORDANCE WITH THE DWSD STANDARD DETAIL 02620-05, WHICH HAS BEEN INCLUDED IN THE CONTRACT PLANS.

11. THE CONTRACTOR SHALL INSTALL THE REMAINING PORTIONS OF THE PROPOSED WATER MAIN.

12. THE CONTRACTOR SHALL DISINFECT THE WATER MAIN IN ACCORDANCE WITH THE DWSD SPECIFICATIONS SECTION 02675, AND SHALL TEST THE WATER MAIN IN ACCORDANCE WITH THE DWSD SPECIFICATIONS SECTION 02620. THIS WORK SHALL BE PAID FOR AS PART OF "Water Main, DI, Cl 56, 8 inch".

STATE OF MICHIGAN — MARK A. MATTSON — ENGINEER — No. 48114 — PROFESSIONAL ENGINEER
11-10-08

DWSD SYSTEM ACCEPTANCE

DESIGN REVIEWED:	DATE 11/19/2008
HEAD ENGR.-DES.	11/19/08
CONSTURCTION INSPECTED:	
HEAD ENGR.-FLD.	

PERMIT NO.	LS#
MDNR	D JOB#
MDPH	
R/W#	DRWG/REF# SEWER
	WATER

REVISIONS

DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

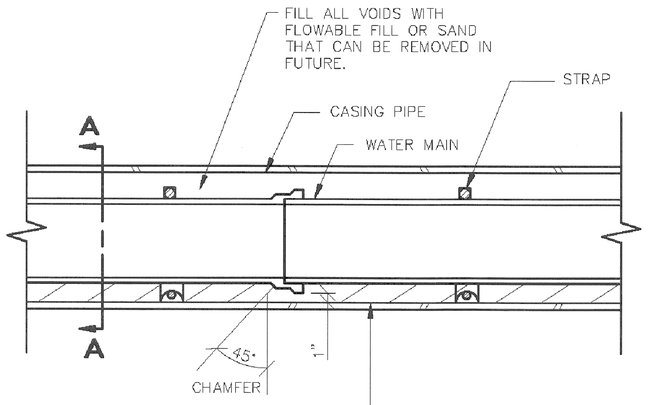
MDOT JOB NO. 86343A | STRUCTURE NO. B01 of 82-25-75

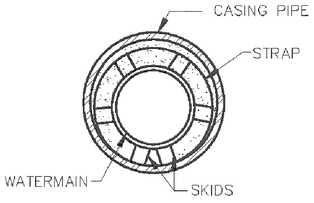
WATER MAIN DETAILS

DATE: 11/10/08

DLZ JOB NO. 0741-6177-00

SHEET NO. 25 OF 45





SECTION A-A

NOTES

THE ENDS OF THE CASING SHALL BE SUITABLY PROTECTED AGAINST THE ENTRANCE OF FOREIGN MATERIAL, BUT SHALL NOT BE TIGHTLY SEALED.

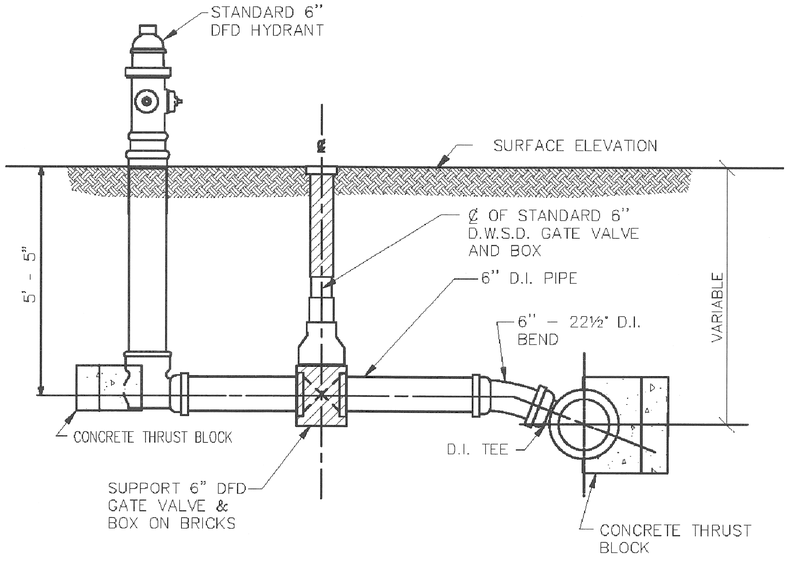
C					
B					
A					
	DESCRIPTION	DRW	CKD	APP	DATE
REVISIONS					

DRAWN BY: S.D.A.
CHECKED BY: S.D.A.
APPROVED:

CASING PIPE SECTION FOR WATERMAIN

SCALE: NONE

CITY OF DETROIT
WATER AND SEWERAGE DEPARTMENT
ENGINEERING DIVISION
SHEET 1 OF 1
DWG No. 02620-05



NOTE

1. HYDRANT TO BE A MINIMUM OF 3 FEET BEHIND CURB.
2. THRUST BLOCKS TO BE SIZED ACCORDING TO THRUST BLOCK STANDARD DETAIL DRAWING NOS. 02620-01, 02, 03, 04, 05 AND 06 AS APPLICABLE.

C					
B					
A					
	DESCRIPTION	DRW	CKD	APP	DATE
REVISIONS					

DRAWN BY: S.D.A.
CHECKED BY: S.D.A.
APPROVED:

HYDRANT, 6 INCH INSTALLATION STRAIGHT AWAY

SCALE: NONE

CITY OF DETROIT
WATER AND SEWERAGE DEPARTMENT
ENGINEERING DIVISION
SHEET 1 OF 1
DWG No. 02620-15

REVISIONS	DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

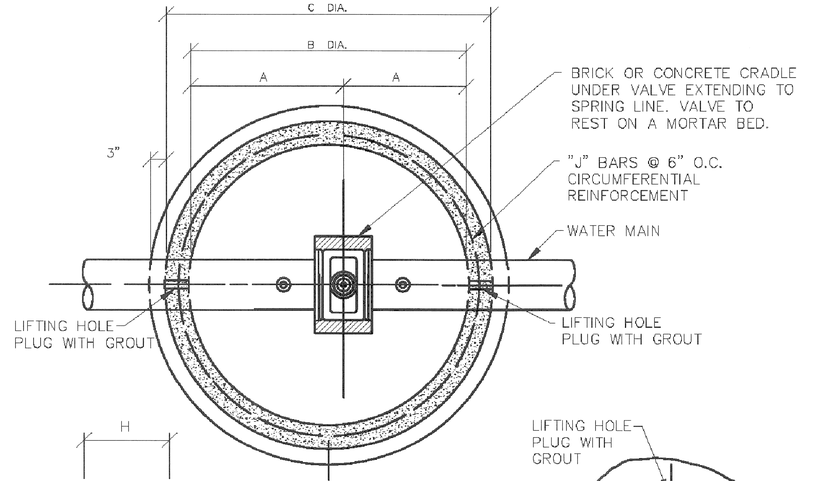
RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

MDOT JOB NO. 86343A | STRUCTURE NO. B01 of 82-25-75

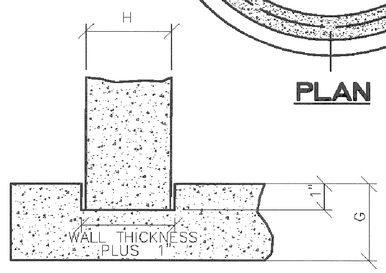
WATER MAIN DETAILS

DATE: 1/13/09
DLZ JOB NO. 0741-6177-00
SHEET NO. 26 OF 45

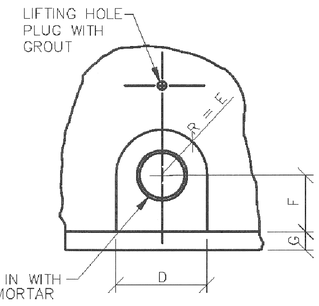
DATE: 07/22/08 DATE: 07/21/08 CORRECTED BY:KCK DATE: 06/09/08 CHECKED BY: RGW DRAWN BY: KCK FILE NAME: ridge wm detail 1.dgn



PLAN



DETAIL KEYWAY AT BASE



SIDE VIEW

NOTES

MANHOLE STEPS SHALL BE INSTALLED IN WELL WALL WHERE HEIGHT FROM TOP OF PIPE TO TOP OF WELL EXCEEDS 5'-0".

PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO ALL THE REQUIREMENTS OF "SPECIFICATIONS FOR PRECAST REINFORCED CONCRETE MANHOLE RISERS AND TOPS" ASTM C-478 WITH MODIFIED GROOVED TONGUE JOINTS AND RUBBER GASKETS.

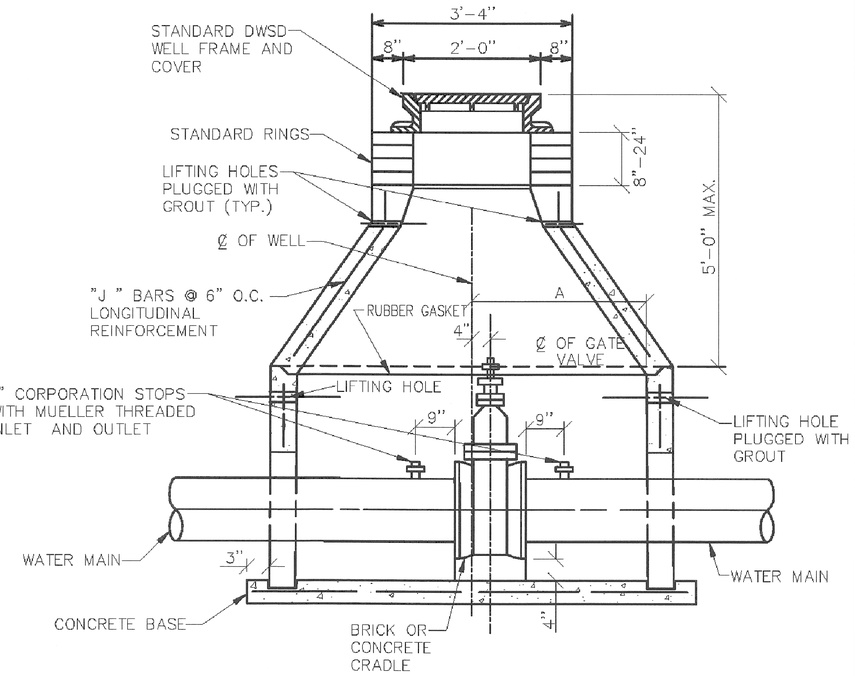
EACH SECTION SHALL HAVE NOT MORE THAN TWO HOLES FOR HANDLING PURPOSES. THESE HOLES SHALL BE SATISFACTORILY PLUGGED WITH GROUT AFTER INSTALLATION.

C					
B					
A					
	DESCRIPTION	DRW	CKD	APP	DATE
REVISIONS					
DRAWN BY: S.D.A.					
CHECKED BY: S.D.A.					
APPROVED:					

GATE WELL, PRECAST

SCALE: NONE

CITY OF DETROIT
WATER AND SEWERAGE DEPARTMENT
ENGINEERING DIVISION
SHEET 1 OF 2
DWG No. 02620-12



SECTION THROUGH GATE WELL

SCHEDULE OF PRECAST GATE WELL DIMENSIONS*

SIZE	A	B	C	D	E	F	G	H	J
6" & 8"	2'-6"	5'-0"	6'-0"	1'-4"	8"	12"	8"	6"	1/2 "
12"	3'-0"	6'-0"	7'-2"	2'-0"	1'-0"	1'-0"	8"	7"	5/8 "
16"	3'-0"	6'-0"	7'-2"	2'-0"	1'-0"	1'-0"	8"	7"	5/8 "

* DIMENSIONS MAY VARY BY MANUFACTURER

C					
B					
A					
	DESCRIPTION	DRW	CKD	APP	DATE
REVISIONS					
DRAWN BY: S.D.A.					
CHECKED BY: S.D.A.					
APPROVED:					

GATE WELL, PRECAST

SCALE: NONE

CITY OF DETROIT
WATER AND SEWERAGE DEPARTMENT
ENGINEERING DIVISION
SHEET 2 OF 2
DWG No. 02620-13

REVISIONS	DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

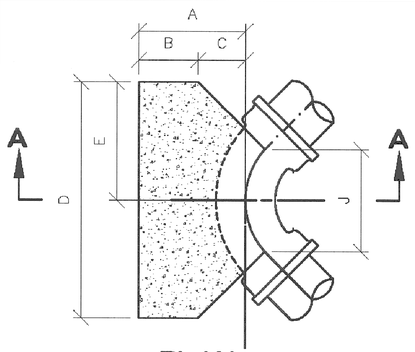
RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

MDOT JOB NO. 86343A | STRUCTURE NO. B01 of 82-25-75

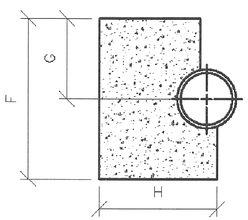
WATER MAIN DETAILS

DATE: 1/13/09
DLZ JOB NO. 0741-6177-00
SHEET NO. 27 OF 45

DATE: 07/22/08 DATE: 07/21/08 CORRECTED BY:KCK DATE: 06/09/08 CHECKED BY: RGW DRAWN BY: KCK FILE NAME: ridge wm detail 2.dgn



PLAN



SECTION A-A

HORIZONTAL BENDS, 22.5, 45 & 90 DEGREE TURNS													
SIZE OF PIPE (IN)	DEGREE OF BEND	AREA (SQ.IN.)	THRUST FORCE (IBS)	MINIMUM BEARING AREA (SQ.FT.)	A (FT)	B MIN (FT)	C (FT)	D (FT)	E (FT)	F (FT)	G (FT)	H MIN (FT)	J (FT)
12	22.5	136.8	8,006.5	7.6	1.75	0.75	1.00	3.00	1.50	2.66	1.33	2.00	1.33
16	22.5	237.7	13,911.9	13.2	2.66	1.00	1.66	4.00	2.00	3.33	1.67	3.00	1.17
6	45	37.3	4,282.2	4.1	1.75	0.75	1.00	2.08	1.04	2.00	1.00	1.92	1.33
8	45	64.3	7,382.0	7.0	1.75	0.75	1.00	2.66	1.33	2.66	1.33	1.92	1.33
12	45	136.8	15,705.3	15.0	2.08	0.75	1.33	4.50	2.25	3.33	1.67	2.33	1.33
16	45	237.7	27,289.2	26.0	1.75	1.00	1.66	6.00	3.00	4.33	2.17	3.00	1.50
6	90	37.3	7,912.5	7.5	1.75	0.75	1.00	3.00	1.50	2.33	1.17	1.92	1.17
8	90	64.3	13,640.1	13.0	1.75	0.75	1.00	4.00	2.00	3.25	1.63	1.92	1.17
12	90	136.8	29,019.7	27.6	2.08	0.75	1.33	6.50	3.25	4.25	2.13	2.33	1.66
16	90	237.7	50,423.8	48.0	1.75	1.00	1.66	8.00	4.00	6.00	3.00	3.00	2.66

NOTE

THE DESIGN ENGINEER IS RESPONSIBLE FOR ENSURING THAT THE THRUST BLOCKS ARE CORRECTLY SIZED FOR EACH APPLICATION. CALCULATIONS FOR THRUST BLOCK TO SUPPORT HORIZONTAL BENDS ARE BASED ON EQUATIONS AND CONSTANTS TAKEN FROM AMERICAN WATER WORKS ASSOCIATION DUCTILE-IRON PIPE AND FITTINGS (AWWA M41). THE ONLY DEVIATION IS TO SUBSTITUTE THE RANKINE PASSIVE PRESSURE FOR THE SOIL BEARING STRENGHT AS SUGGGESTED IN THE MANUAL.

1. D.W.S.D. TEST PRESSURE USED IS 150 POUNDS/SQUARE INCH.
2. SAFETY FACTOR 1.5.
3. WEIGHT OF CONCRETE IS 150 POUNDS/CUBIC FOOT.
4. RANKINE PASSIVE PRESSURE IS 1050 POUNDS/SQUARE FEET (BASED ON SOFT CLAY). THE CALCULATIONS ABOVE ARE FOR A CONSERVATIVE CONDITION. THE SIZE OF THE THRUST BLOCK RCAN BE EDUCED AS THE BEARING CAPACITY OF THE SOIL INCREASES.

C					
B					
A					
	DESCRIPTION	DRW	CKD	APP	DATE
REVISIONS					
DRAWN BY: S.D.A.					
CHECKED BY: S.D.A.					
APPROVED:					

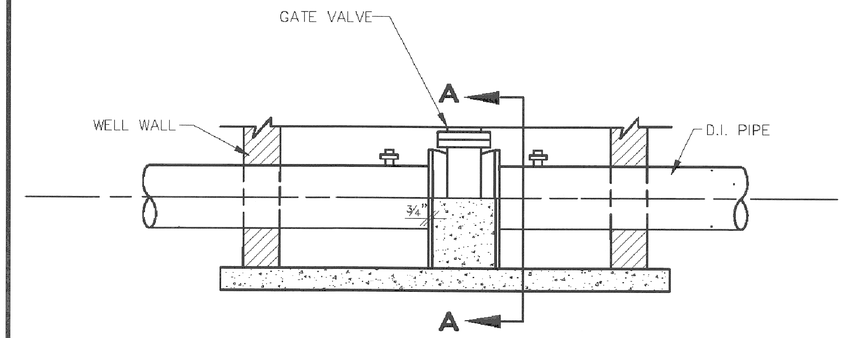
THRUST BLOCK, HORIZONTAL BEND (AWWA SIZING)

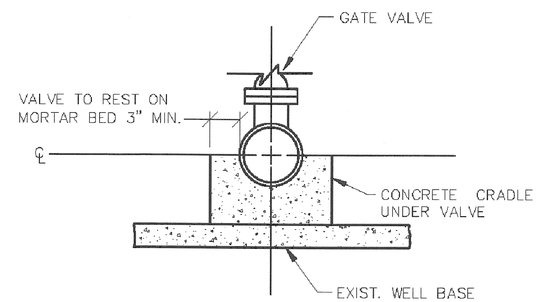
SCALE: NONE

CITY OF DETROIT
WATER AND SEWERAGE DEPARTMENT
ENGINEERING DIVISION

SHEET 1 OF 1

DWG No. 02620-18





SECTION A-A

NOTE

DESIGNER SHALL DETERMINE SIZE AND REINFORCEMENT REQUIREMENTS.

C					
B					
A					
	DESCRIPTION	DRW	CKD	APP	DATE
REVISIONS					
DRAWN BY: S.D.A.					
CHECKED BY: S.D.A.					
APPROVED:					

VALVE, GATE, CRADDLE SUPPORT, CONCRETE

SCALE: NONE

CITY OF DETROIT
WATER AND SEWERAGE DEPARTMENT
ENGINEERING DIVISION

SHEET 1 OF 1

DWG No. 02620-29

REVISIONS	DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

MDOT JOB NO. 86343A | STRUCTURE NO. B01 of 82-25-75

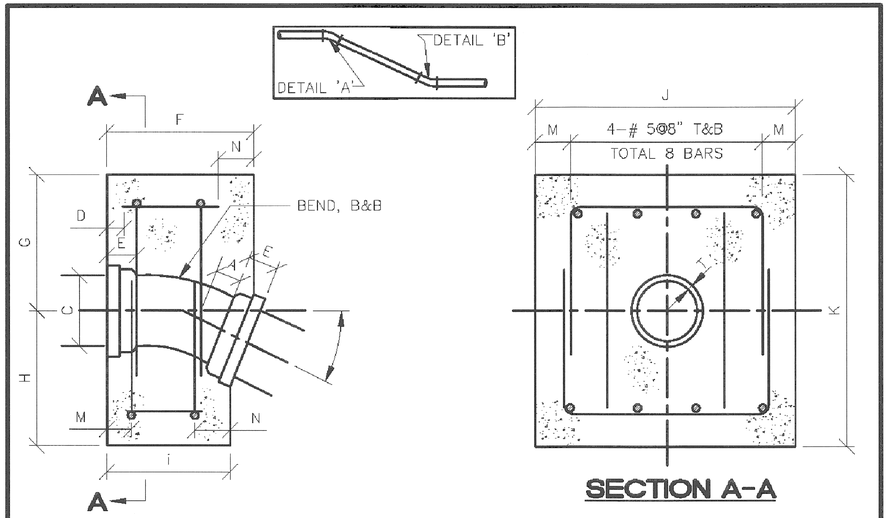
WATER MAIN DETAILS

DATE: 1/13/09

DLZ JOB NO. 0741-6177-00

SHEET NO. 28 OF 45

DATE: 07/22/08 CORRECTED BY:KCK DATE: 07/21/08 CHECKED BY: RGW DATE: 06/09/08 DRAWN BY: KCK FILE NAME: ridge wm detail 3.dgn



SCHEDULE OF THRUST BLOCK DIMENSIONS												DIMENSIONS - INCHES					
SIZE OF PIPE (IN)	BEND IN DEGREE	F (FT)	G (FT)	H (FT)	I (FT)	J (FT)	K (FT)	L (FT)	M (FT)	N (FT)	**	A	C	E	R	D	T
6	22½	1.583	1.33	1.67	1.33	2.67	3.00	0.00	0.33	0.25	3@8"	5.0	10.6	4.0	15.06	1.50	0.55
6	45	1.583	1.33	1.67	1.00	2.67	3.00	0.00	0.33	0.25	3@8"	5.0	10.6	4.0	07.25	1.50	0.55
8	22½	1.583	1.33	1.67	1.33	2.67	3.00	0.33	0.33	0.25	4@8"	5.5	13.0	4.0	17.62	1.50	0.60
8	45	1.67	1.50	2.50	1.00	4.00	4.00	0.50	0.50	0.25	4@12"	5.5	13.0	4.0	08.44	1.50	0.60
10	22½	1.83	1.50	2.50	1.42	3.50	4.00	0.50	0.50	0.25	4@10"	6.5	15.3	4.0	22.62	1.50	0.68
10	45	1.92	1.67	2.83	1.00	4.00	4.50	0.67	0.67	0.25	4@12"	6.5	15.3	4.0	10.88	1.50	0.68
12	22½	2.00	1.50	2.50	1.583	4.00	4.00	0.67	0.50	0.33	4@12"	7.5	17.6	4.0	27.62	1.50	0.75
12	45	2.08	1.50	3.00	1.17	5.00	4.50	0.92	0.75	0.25	4@14"	7.5	17.6	4.0	13.25	1.50	0.75
16	22½	2.17	1.67	2.83	1.583	5.00	4.50	0.83	0.75	0.33	4@14"	8.0	22.2	4.0	27.62	1.75	0.89

NOTE

THE DESIGN ENGINEER IS RESPONSIBLE FOR ENSURING THAT THE THRUST BLOCKS ARE CORRECTLY SIZED FOR EACH APPLICATION.

DETAIL "A"

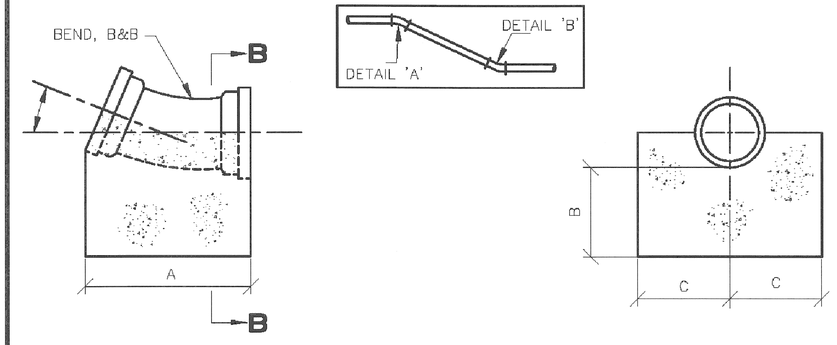
C					
B					
A					
	DESCRIPTION	DRW	CKD	APP	DATE
REVISIONS					

DRAWN BY: S.D.A.
CHECKED BY: S.D.A.
APPROVED:

THRUST BLOCK, VERTICAL BEND (TRADITIONAL DWSD SIZING)

SCALE: NONE

CITY OF DETROIT
WATER AND SEWERAGE DEPARTMENT
ENGINEERING DIVISION
SHEET 1 OF 2
DWG No. 02620-26



SIZE OF PIPE (IN)	BEND IN DEGREE	A (FT)	B (FT)	C (FT)
6	22½	1.67	1.00	1.00
6	45	1.67	1.00	1.00
8	22½	1.75	1.00	1.00
8	45	1.75	1.00	1.00
10	22½	1.92	1.00	1.00
10	45	1.92	1.00	1.00
12	22½	2.17	1.00	1.00
12	45	2.17	1.00	1.00
16	22½	2.25	1.00	1.25
16	45	2.25	1.00	1.25

NOTE

THE DESIGN ENGINEER IS RESPONSIBLE FOR ENSURING THAT THE THRUST BLOCKS ARE CORRECTLY SIZED FOR EACH APPLICATION.

DETAIL "B"

C					
B					
A					
	DESCRIPTION	DRW	CKD	APP	DATE
REVISIONS					

DRAWN BY: S.D.A.
CHECKED BY: S.D.A.
APPROVED:

THRUST BLOCK, VERTICAL BEND (TRADITIONAL DWSD SIZING)

SCALE: NONE

CITY OF DETROIT
WATER AND SEWERAGE DEPARTMENT
ENGINEERING DIVISION
SHEET 2 OF 2
DWG No. 02620-27

REVISIONS	DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

MDOT JOB NO. 86343A | STRUCTURE NO. B01 of 82-25-75

WATER MAIN DETAILS

DATE: 1/13/09
DLZ JOB NO. 0741-6177-00
SHEET NO. 29 OF 45

DATE: 07/22/08 DATE: 07/21/08 CORRECTED BY:KCK DATE: 06/09/08 CHECKED BY: RGW DRAWN BY: KCK FILE NAME: ridge wm detail 4.dgn

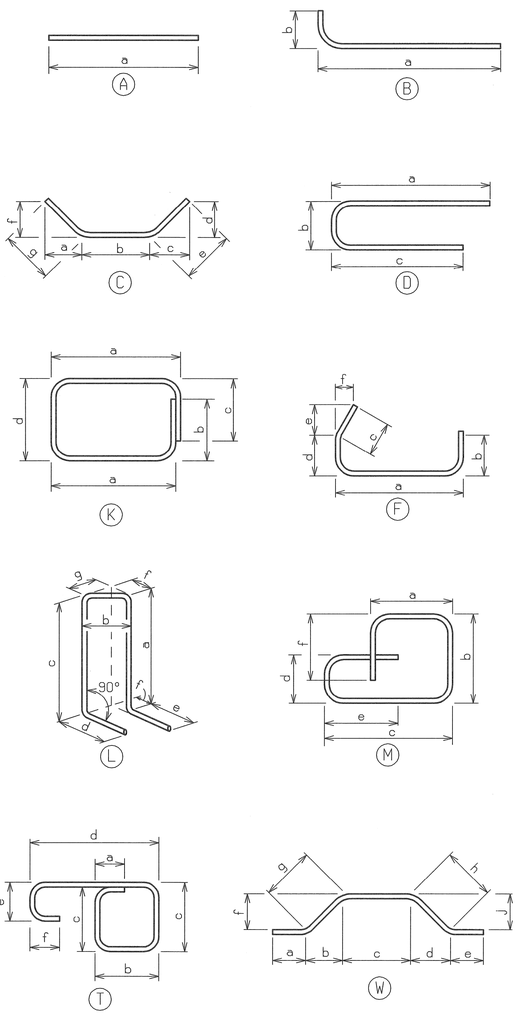
ABUTMENT A

SUPERSTRUCTURE

BAR	DIMENSIONS								NO. REQ'D	TOTAL WT.
	a	b	c	d	e	f	g	h		
EA06D706	7'-6"	·	·	·	·	·	·	·	30	338
EA061806	18'-6"								12	334
EA063202	32'-2"								14	677
EA070706	7'-6"								26	399
EA070806	8'-6"								40	695
EA060806	8'-6"								27	345
EA060500	5'-0"								108	812
EA060902	9'-2"								59	813
EA041802	18'-2"								12	146
EA041907	19'-7"								12	157
EA061902	19'-2"								2	58
EA061907	19'-7"								2	59
EA041406	14'-6"								8	78
EA041610	16'-10"								14	158
EC040805	1'-5"	5'-1"	1'-5"	0'-10"	1'-8"	0'-10"	1'-8"		7	40
EB040306	1'-9"	1'-9"							7	17
EC040800	1'-3"	4'-4"	1'-4"	1'-3"	1'-10"	1'-3"	1'-10"		7	38
EC040403		2'-0"	1'-10"	1'-1"	2'-3"				11	32
ED060508	1'-10"	2'-0"	1'-10"						23	196
EK061309	0'-7¼"	5'-0"	3'-9"	3'-9"					16	330
EK061308	0'-6¾"	5'-0"	3'-9"	3'-9"					8	164
EK040905	0'-7"	3'-3"	2'-6"	2'-6"					21	133
EA061208	12'-8"								49	933
EA041200	12'-0"								18	145
EA040906	9'-6"								4	26
ED060411	1'-10"	1'-3"	1'-10"						17	126
EA043902	39'-2"	·	·	·	·	·	·	·	55	1456
EA041802	18'-2"								288	3495
ET060705	1'-0"	1'-1½"	1'-1½"	1'-8"	0'-7"	0'-8"			148	1621
ED040208	0'-10¾"	1'-1½"	0'-10¾"						148	289
EA043709	37'-9"								124	3127
EA040506	5'-6"								8	30
EA061206	12'-6"								176	3305
EA062006	20'-6"								112	3449
EL040707	2'-2"	0'-7"	2'-6"	1'-2"	1'-2"				213	1079
EA060508	5'-8"								148	1260
EL061100	3'-10½"	0'-6¾"	4'-2½"	1'-2⅛"	1'-2⅛"	0'-0"	0'-6¾"		4	67
EL061101	4'-2½"	0'-7¼"	3'-10½"	1'-2⅞"	1'-2⅞"	0'-7¼"	0'-0"		8	134
EM041200	1'-8"	1'-8"	3'-2"	0'-8"	3'-2"	1'-8"			70	562
EA042208	22'-8"								26	394
EA040903	9'-3"								24	149
EA041406	14'-6"								3	30
EA041402	14'-2"								3	29
EA040410	4'-10"								8	26
EA040706	7'-6"								8	41

ABUTMENT B

BAR	DIMENSIONS								NO. REQ'D	TOTAL WT.
	a	b	c	d	e	f	g	h		
EA061508	15'-8"	·	·	·	·	·	·	·	12	283
EA063909	39'-9"								14	836
EA060806	8'-6"								27	345
EA070806	8'-6"								40	695
ED060508	1'-10"	2'-0"	1'-10"						24	205
EA070706	7'-6"								22	338
EA060706	7'-6"								87	981
EC040805	1'-5"	5'-1"	1'-5"	0'-10"	1'-8"	0'-10"	1'-8"		5	29
EB040306	1'-9"	1'-9"							6	15
EC040800	1'-3"	4'-4"	1'-4"	1'-3"	1'-10"	1'-3"	1'-10"		5	27
EC040306		1'-9"	0'-10½"	1'-9"	1'-6"				6	14
EA060410	4'-10"								103	748
EA041908	19'-8"								8	106
EA041709	17'-9"								8	95
EA061806	18'-6"								2	56
EA061908	19'-8"								2	60
EA060500	5'-0"								1	8
EA041111	11'-11"								15	120
EA040905	9'-5"								3	19
EA061100	11'-0"								19	314
EA060906	9'-6"								27	386
EA041311	13'-11"								15	140
EA041206	12'-6"								3	26
EK061309	0'-7¼"	5'-0"	3'-9"	3'-9"					8	165
EK061308	0'-6¾"	5'-0"	3'-9"	3'-9"					4	82
EK040905	0'-7"	3'-3"	2'-6"	2'-6"					7	45
ED060411	1'-10"	1'-3"	1'-10"						21	156



EPOXY COATED
BAR SIZE
BAR LENGTH (FT)
BAR LENGTH (IN)
EA064700
BAR SHAPE

BAR LEGEND

NOTE:

REINFORCEMENT SHALL BE BUNDLED AND TAGGED AS TO THE LOCATION AS SHOWN ON THIS SHEET.

MISCELLANEOUS QUANTITIES

34,140	Lb	Reinforcement, Steel, Epoxy Coated

DATE: 03/09/07
DATE: 03/08/07 CORRECTED BY:DLW
DATE: 02/20/07 CHECKED BY: TNB
DRAWN BY: DLW
FILE NAME: 9th rs.dgn

REVISIONS

DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

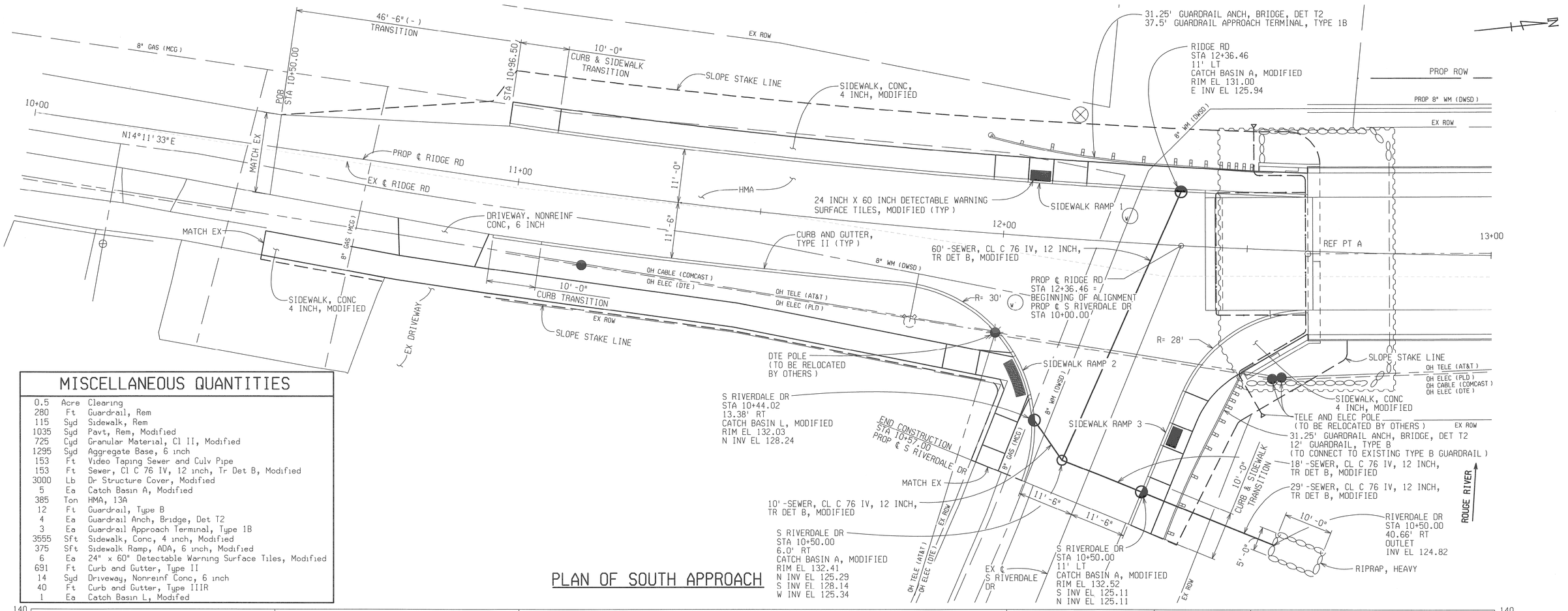
MDOT JOB NO. 86343A | STRUCTURE NO. B01 of 82-25-75

STEEL REINFORCEMENT DETAILS

DATE: 1/13/09

DLZ JOB NO. 0741-6177-00

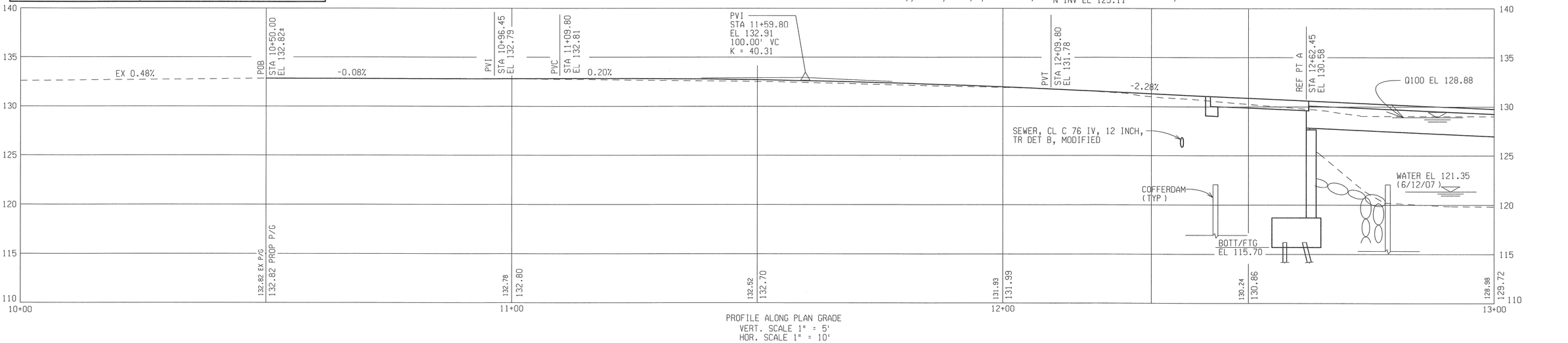
SHEET NO. 30 OF 45



MISCELLANEOUS QUANTITIES

0.5	Acre	Clearing
280	Ft	Guardrail, Rem
115	Syd	Sidewalk, Rem
1035	Syd	Pavt, Rem, Modified
725	Cyd	Granular Material, Cl II, Modified
1295	Syd	Aggregate Base, 6 inch
153	Ft	Video Taping Sewer and Culv Pipe
153	Ft	Sewer, Cl C 76 IV, 12 inch, Tr Det B, Modified
3000	Lb	Dr Structure Cover, Modified
5	Ea	Catch Basin A, Modified
385	Ton	HMA, 13A
12	Ft	Guardrail, Type B
4	Ea	Guardrail Anch, Bridge, Det T2
3	Ea	Guardrail Approach Terminal, Type 1B
3555	Sft	Sidewalk, Conc, 4 inch, Modified
375	Sft	Sidewalk Ramp, ADA, 6 inch, Modified
6	Ea	24" x 60" Detectable Warning Surface Tiles, Modified
691	Ft	Curb and Gutter, Type II
14	Syd	Driveway, Nonreinf Conc, 6 inch
40	Ft	Curb and Gutter, Type IIIR
1	Ea	Catch Basin L, Modified

PLAN OF SOUTH APPROACH



PROFILE ALONG PLAN GRADE
VERT. SCALE 1" = 5'
HOR. SCALE 1" = 10'

REVISIONS	DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

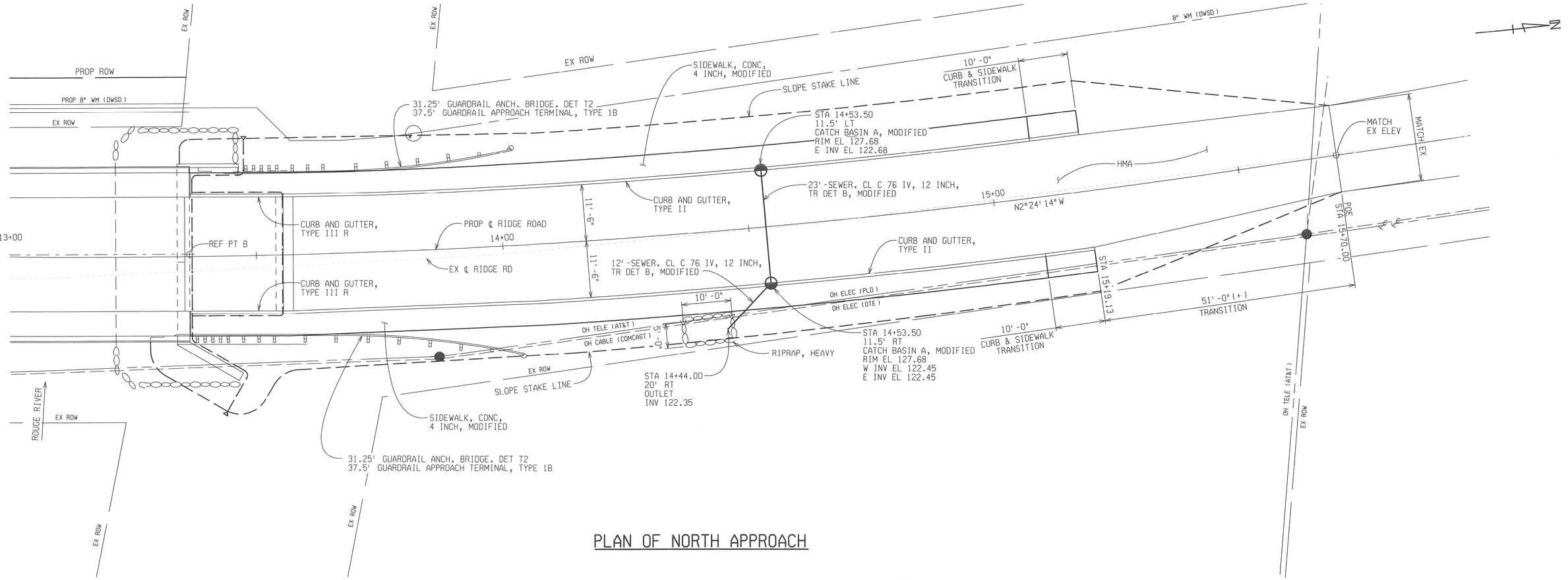
RIDGE ROAD BRIDGE OVER
THE ROUGE RIVER

MDOT JOB NO. 86343A | STRUCTURE NO. B01 of 82-25-75

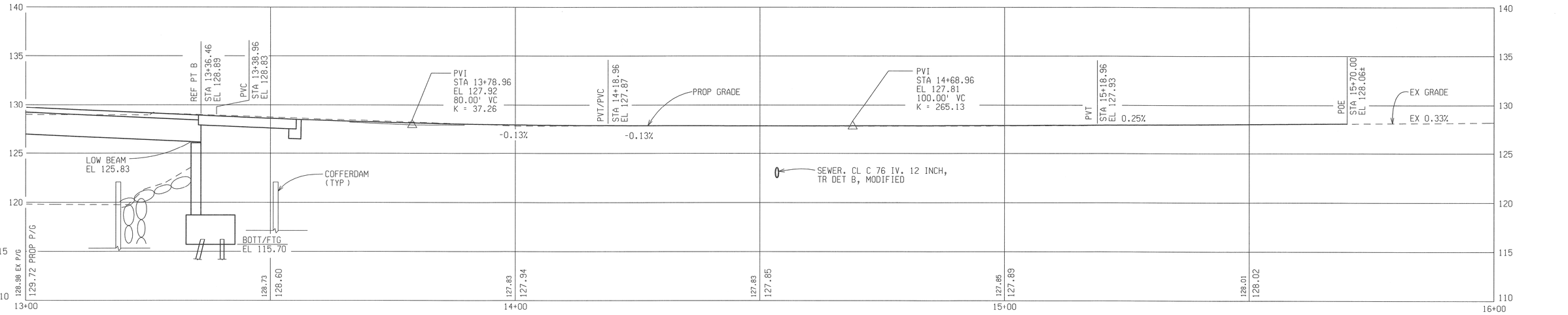
APPROACH DETAILS

DATE: 1/13/09
DLZ JOB NO. 0741-6177-00
SHEET NO. 31 OF 45

DATE: 11-7-08
DATE: 11-6-08 CORRECTED BY: DAF
DATE: 8/21/07 CHECKED BY: TNB
DRAWN BY: DLW
FILE NAME: ridge rd appl.dgn



PLAN OF NORTH APPROACH



PROFILE ALONG PLAN GRADE
VERT. SCALE 1" = 5'
HOR. SCALE 1" = 10'

REVISIONS	DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

MDOT JOB NO. B6343A | STRUCTURE NO. B01 of 82-25-75

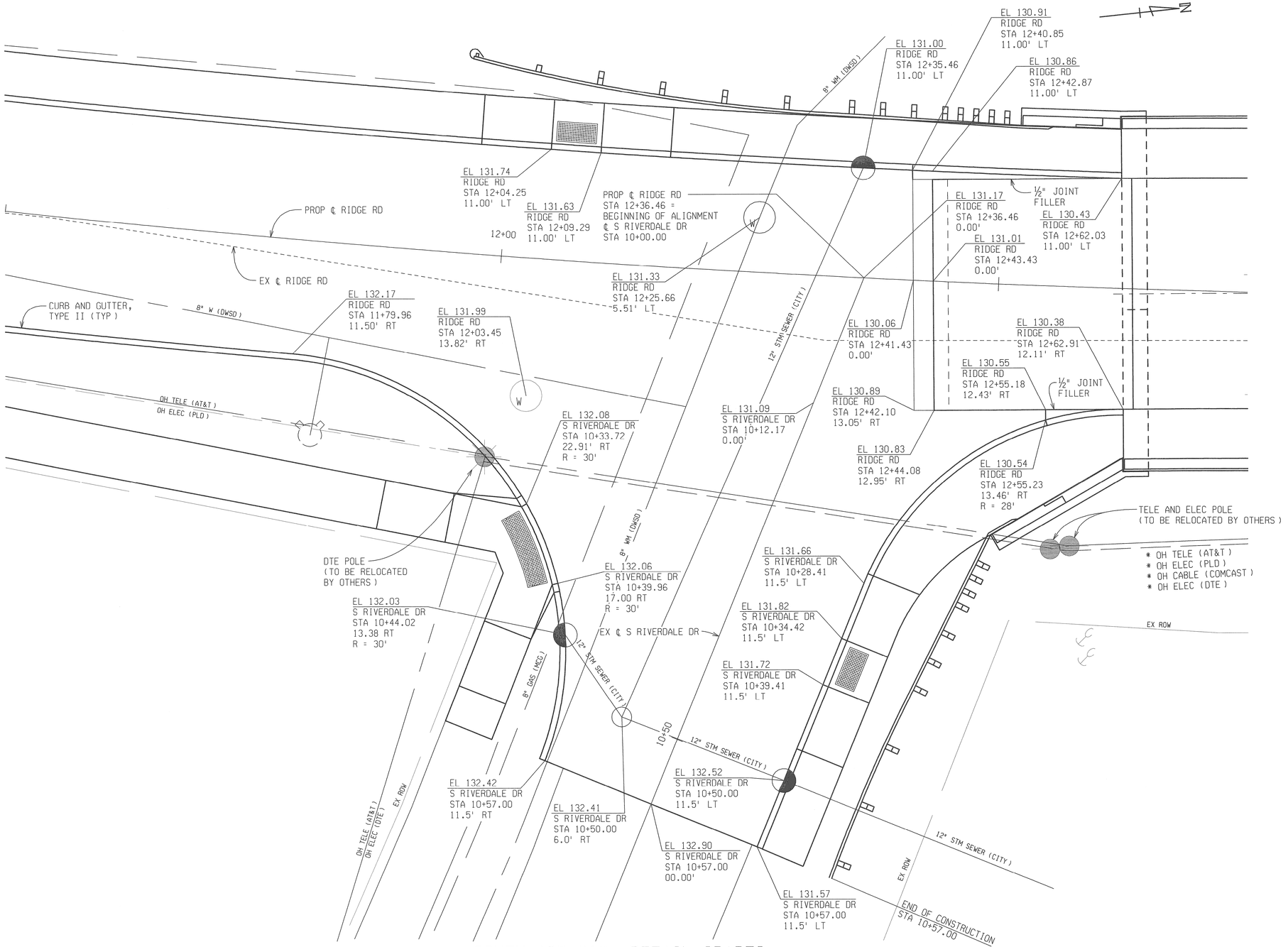
APPROACH DETAILS

DATE: 1/13/09

DLZ JOB NO. 0741-6177-00

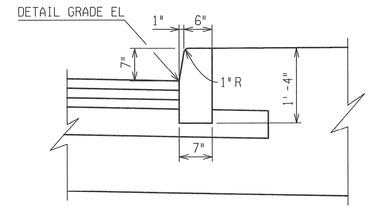
SHEET NO. 32 OF 45

DATE: 11-7-08 | DATE: 11-6-08 CORRECTED BY: DAF | DATE: 8/21/07 CHECKED BY: TNB | DRAWN BY: DLW | FILE NAME: ridge rd app2.dgn



SOUTH APPROACH DETAIL GRADES

* OVERHEAD UTILITIES TO BE RELOCATED BY OTHERS ON RELOCATED DTE POLES



SEPARATE CURB TYPE II

NOTE:

FIELD VERIFY GAS AND WATER MAIN LOCATION PRIOR TO PLACING CATCH BASIN AND STORM SEWER.

REVISIONS	DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

MDOT JOB NO. 86343A | STRUCTURE NO. B01 of 82-25-75

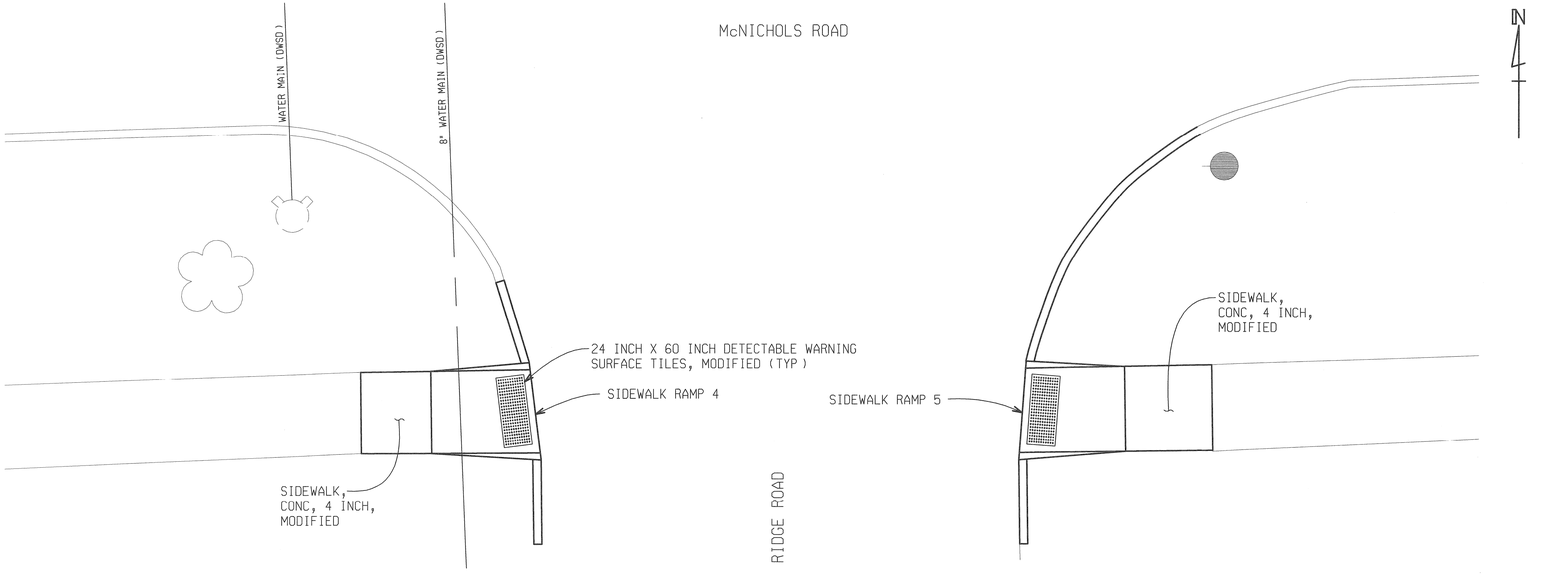
APPROACH DETAILS

DATE: 1/13/09

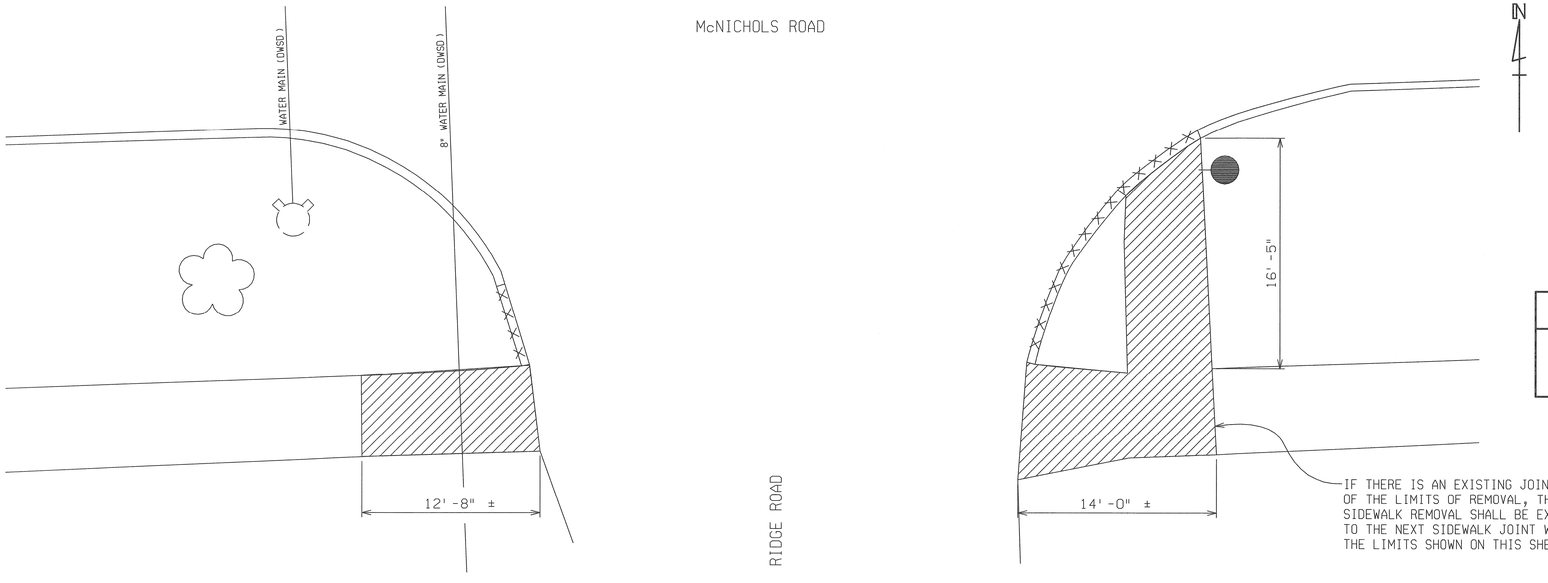
DLZ JOB NO. 0741-6177-00

SHEET NO. 33 OF 45

DATE: 11-24-08
CORRECTED BY: DAF
DATE: 11-6-08
CHECKED BY: TNB
DATE: 8/21/07
DRAWN BY: DLW
FILE NAME: ridge rd app3.dgn



PROP SIDEWALK RAMPS AT McNICHOLS RD



MISCELLANEOUS QUANTITIES		
28	Syd	Sidewalk, Rem
27	Ft	Curb and Gutter, Rem

LEGEND

CURB REMOVAL

SIDEWALK REMOVAL

SIDEWALK REMOVAL AT McNICHOLS RD

REVISIONS	DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

MDOT JOB NO. 86343A | STRUCTURE NO. B01 of 82-25-75

APPROACH DETAILS

DATE: 1/13/09

DLZ JOB NO. 0741-6177-00

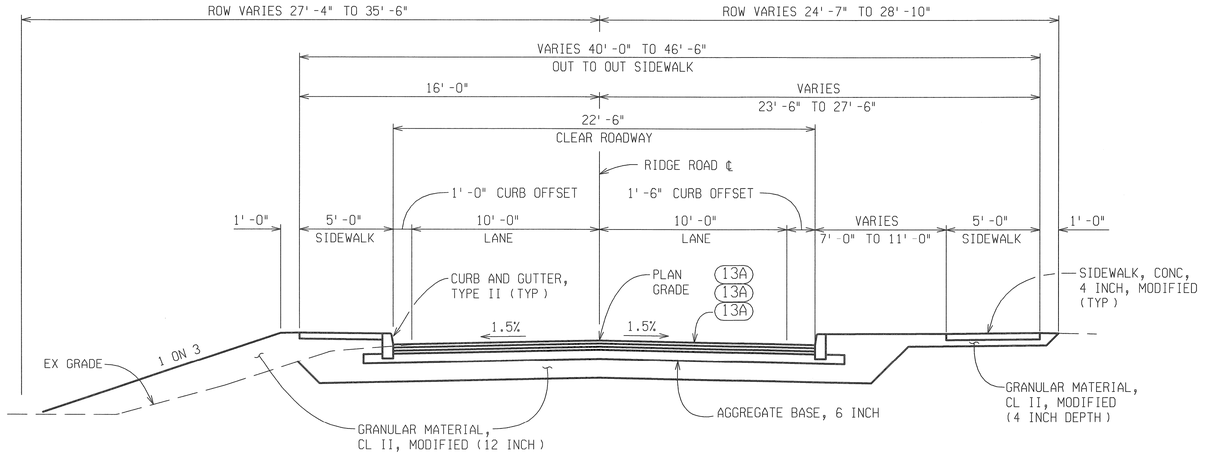
SHEET NO. 34 OF 45

DATE: 11-7-08 CORRECTED BY:DAF

DATE: 11-6-08 CHECKED BY: TNB

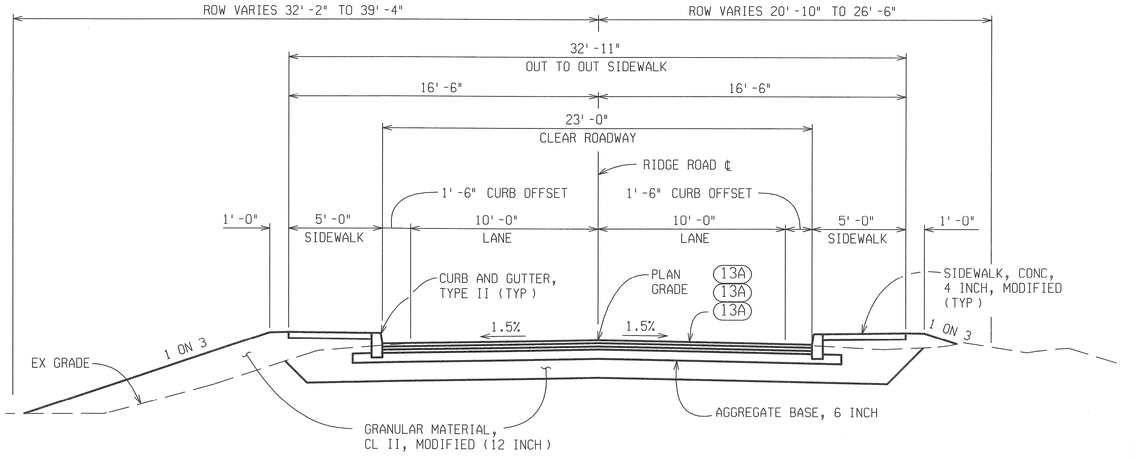
DATE: 8/21/07 DRAWN BY: DLW

FILE NAME: ridge rd app4.dgn



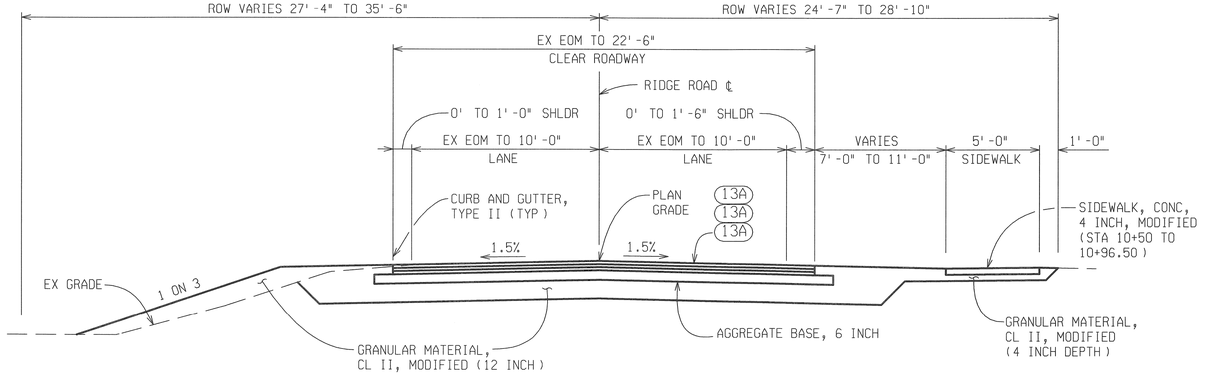
PROPOSED RIDGE ROAD TYPICAL SECTION

TO APPLY: STA 10+96.50 TO STA 12+42.43



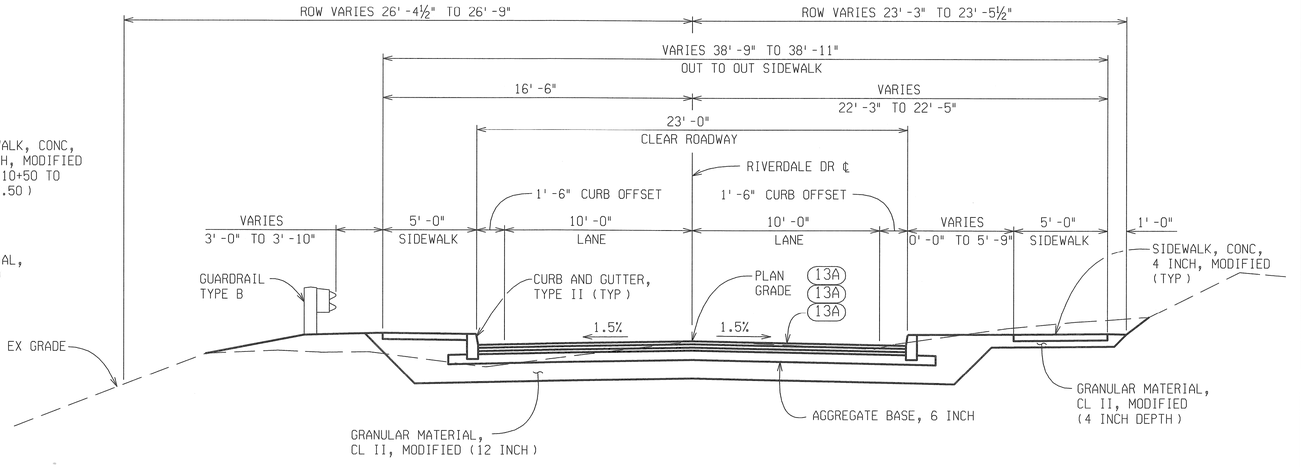
PROPOSED RIDGE ROAD TYPICAL SECTION

TO APPLY: STA 13+56.47 TO STA 15+19.13



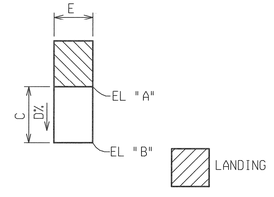
PROPOSED RIDGE ROAD TYPICAL SECTION

TO APPLY: STA 10+50.00 TO STA 10+96.50
STA 15+19.13 TO STA 15+70.00

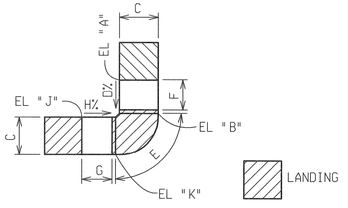


PROPOSED RIVERDALE DR TYPICAL SECTION

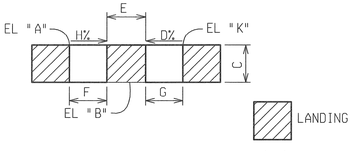
TO APPLY: STA 10+41.00 TO STA 10+57.00



SIDEWALK RAMP TYPE R



SIDEWALK RAMP TYPE D



SIDEWALK RAMP TYPE P

SIDEWALK RAMP, ADA, 6 INCH, MODIFIED*

RAMP	TYPE	A	B	C	D	E	F	G	H	J	K
1	P	132.32	131.68	5'-0"	8.3%	5'-0"	7'-0"	7'-0"	8.3%		132.21
2	D	132.66	132.08	5'-0"	8.3%	8'-6"	7'-0"	7'-0"	8.3%	132.64	132.06
3	P	132.40	131.77	5'-0"	8.3%	5'-0"	7'-0"	7'-0"	8.3%		132.30
4	R	**133.9±	**133.3±	7'-0"	8.3%	5'-0"					
5	R	**133.6±	**133.0±	7'-0"	8.3%	5'-0"					

*SEE SPECIAL PROVISION FOR SIDEWALK RAMP, ADA, MODIFIED AND MDOT STANDARD PLAN R-28-F FOR DETAILS
**TO BE FIELD VERIFIED

HMA APPLICATION ESTIMATE

ITEM	ITEM DESCRIPTION	YIELD (LBS/SYD)	REMARKS
HMA, 13A	HMA, 13A	165	TOP COURSE AWI=260 (MIN)
HMA, 13A	HMA, 13A	250	LEVELING COURSE
HMA, 13A	HMA, 13A	250	BASE COURSE

REVISIONS

DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

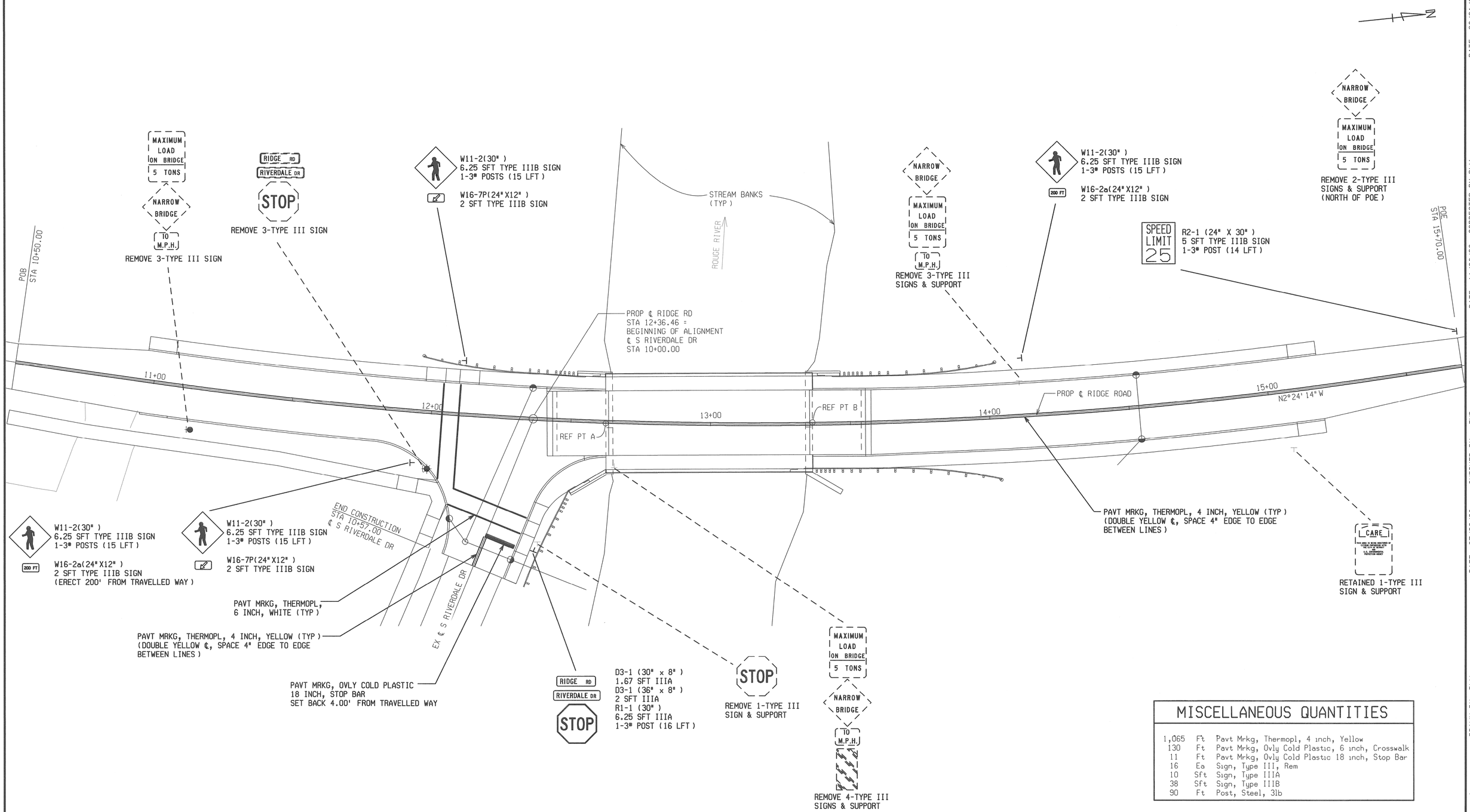
RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

MDOT JOB NO. 86343A | STRUCTURE NO. B01 of 82-25-75

APPROACH DETAILS

DATE: 1/13/09
DLZ JOB NO. 0741-6177-00
SHEET NO. 35 OF 45

DATE: 11-7-08
DATE: 11-06-07 CORRECTED BY: DAF
DATE: 12-10-07 CHECKED BY: TNB
DRAWN BY: DAF
FILE NAME: ridge rd app5.dgn



MISCELLANEOUS QUANTITIES

1,065	Ft	Pavt Mrkg, Thermopl, 4 inch, Yellow
130	Ft	Pavt Mrkg, Ovly Cold Plastic, 6 inch, Crosswalk
11	Ft	Pavt Mrkg, Ovly Cold Plastic 18 inch, Stop Bar
16	Ea	Sign, Type III, Rem
10	Sft	Sign, Type IIIA
38	Sft	Sign, Type IIIB
90	Ft	Post, Steel, 3lb

REVISIONS

DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

MDOT JOB NO. 86343A | STRUCTURE NO. B01 of 82-25-75

PERMANENT SIGNING AND PAVEMENT MARKING SHEET

DATE: 1/13/09

DLZ JOB NO. 0741-6177-00

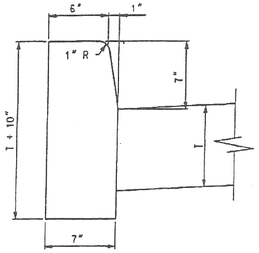
SHEET NO. 36 OF 45

DATE: 08/01/08 CORRECTED BY:DLW

DATE: 11/06/08 CHECKED BY: TNB

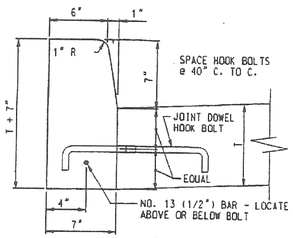
DATE: 07/23/08 DRAWN BY: DLW

FILE NAME: ridge rd sign.dgn



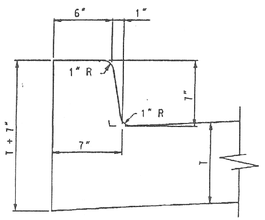
SEPARATE CURB

TYPE III



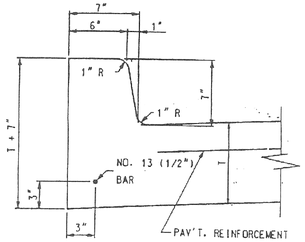
SEPARATE CURB - REINFORCED

TYPE III R



INTEGRAL CURB

TYPE III



INTEGRAL CURB - REINFORCED

TYPE III R

REVISED DATE(METRIC TO ENGLISH UNIT SYSTEM):DEC.2002

PREPARED BY BUREAU OF STREETS AND HIGHWAYS

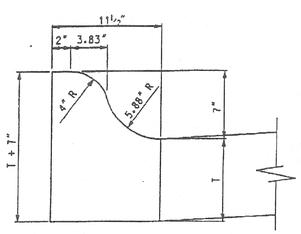
C.D.V. : B. S. M.
DRAWN BY:

M. E. S.
CHECKED BY:

APPROVED
ENGINEER OF STREETS
CITY ENGINEER

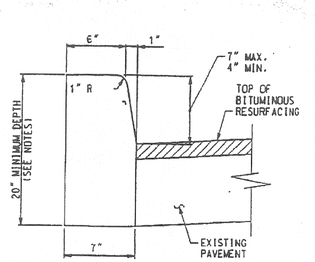
CITY OF DETROIT
CITY ENGINEERING DIVISION. D.P.W.
STANDARD PLAN FOR
STANDARD CURB DETAILS

03/01/98 PLAN DATE	DRAWING NO. 3	DETAIL STANDARD NO. C-4380	SHEET .1 OF 4.



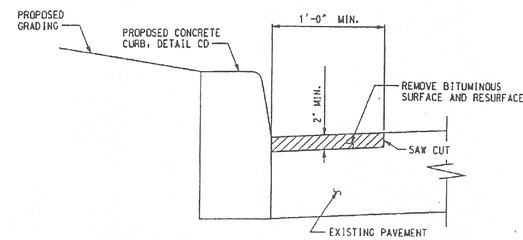
INTEGRAL ROLL CURB

TYPE IV



NOTES:
1. DEPTH OF CURB SHALL BE 20" UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
2. USE WHEN REPLACING CURBS ON EXISTING BITUMINOUS PAVEMENTS TO BE RESURFACED.

CONCRETE CURB, DETAIL CD



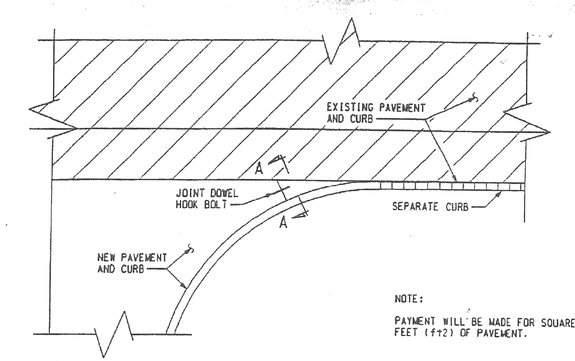
THIS DETAIL SHALL BE USED AT LOCATIONS WHERE PROPOSED CURB IS CONSTRUCTED ADJACENT TO EXISTING BITUMINOUS PAVEMENT NOT TO BE RESURFACED.

BITUMINOUS PATCHING AT PROPOSED CURB EDGE

REVISED DATE(METRIC TO ENGLISH UNIT SYSTEM):DEC.2002

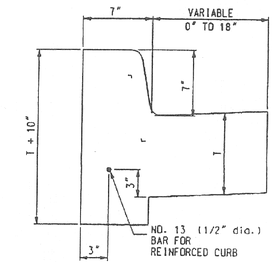
CITY OF DETROIT
CITY ENGINEERING DIVISION. D.P.W.
STANDARD PLAN FOR
STANDARD CURB DETAILS

03/01/98 PLAN DATE	DRAWING NO. 3	DETAIL STANDARD NO. C-4380	SHEET .2 OF 4.



NOTE:
PAYMENT WILL BE MADE FOR SQUARE FEET (ft2) OF PAVEMENT.

PLAN



SECTION A-A

DETAIL SHOWING TREATMENT AT CURB RETURNS

REVISED DATE(METRIC TO ENGLISH UNIT SYSTEM):DEC.2002

CITY OF DETROIT
CITY ENGINEERING DIVISION. D.P.W.
STANDARD PLAN FOR
STANDARD CURB DETAILS

03/01/98 PLAN DATE	DRAWING NO. 3	DETAIL STANDARD NO. C-4380	SHEET .3 OF 4.

REVISIONS	DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

MDOT JOB NO. B6343A | STRUCTURE NO. B01 of 82-25-75

CITY OF DETROIT STANDARD PLANS

DATE: 1/13/09

DLZ JOB NO. 0741-6177-00

SHEET NO. 37 OF 45

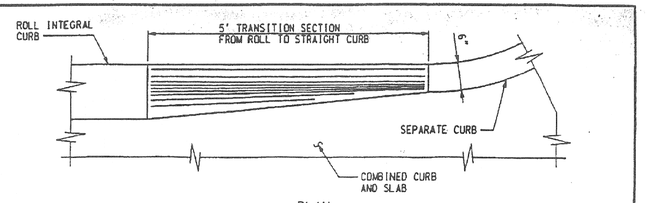
DATE: 10/20/08

DATE: 11/06/08 CORRECTED BY:DAF

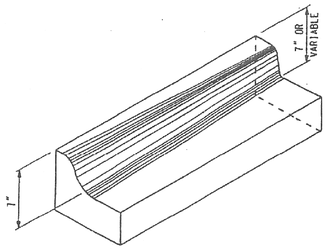
DATE: 10/08/08 CHECKED BY: TNB

DRAWN BY: DLW

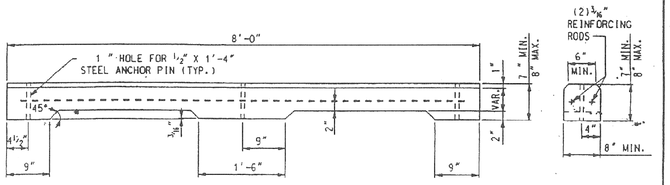
FILE NAME: ridge city std plan.dgn



PLAN



TRANSITION DETAILS



SIDE VIEW

END VIEW

CONCRETE BUMPER CURB

NOTE:
ALL DIMENSIONS ARE IN INCHES(") UNLESS OTHERWISE NOTED.

CITY OF DETROIT
CITY ENGINEERING DIVISION. D.P.W.
STANDARD PLAN FOR
STANDARD CURB DETAILS

03/07/08 PLAN DATE	DRAWING NO. 3	DETAIL STANDARD NO. C-4380	SHEET 4 OF 4

REVISED DATE(METRIC TO ENGLISH UNIT SYSTEM):DEC.2002

REVISIONS	DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

MDOT JOB NO. 86343A | STRUCTURE NO. B01 of 82-25-75

CITY OF DETROIT STANDARD PLANS

DATE: 1/13/09

DLZ JOB NO. 0741-6177-00

SHEET NO. 38 OF 45

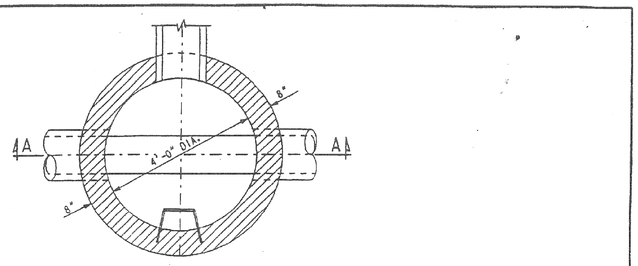
DATE: 10/20/08

DATE: 11/06/08 CORRECTED BY:DAF

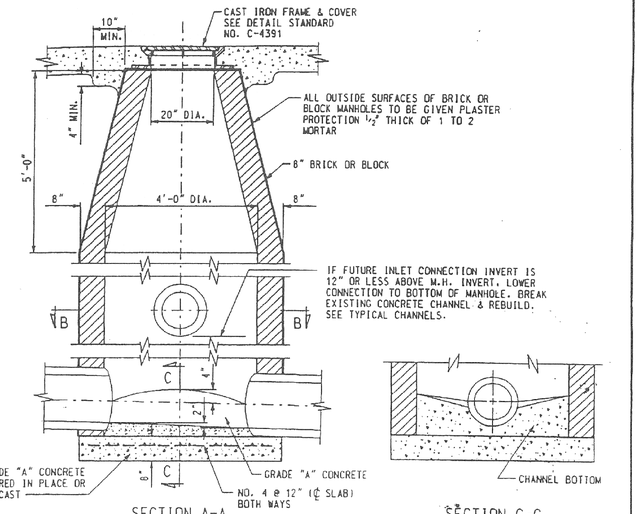
DATE: 10/08/08 CHECKED BY: TNB

DRAWN BY: DLW

FILE NAME: ridge city std plan1.dgn



PLAN VIEW AT B-B



SECTION A-A

SECTION C-C

SEWER MANHOLE

REVISED DATE(METRIC TO ENGLISH UNIT SYSTEM):DEC.2002

PREPARED BY BUREAU OF STREETS AND HIGHWAYS

rev. K.S.M. DRAWN BY:

M.F.S. CHECKED BY:

APPROVED

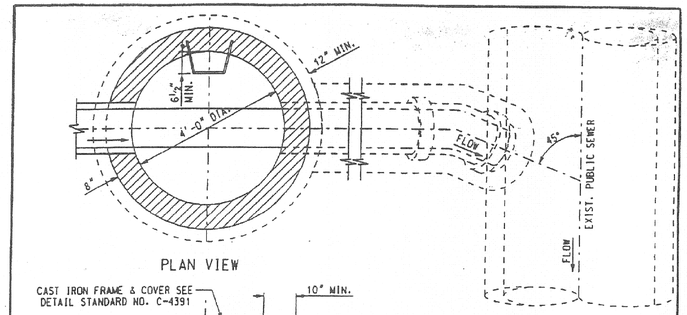
ENGINEER OF STREETS

HEAD ENGINEER

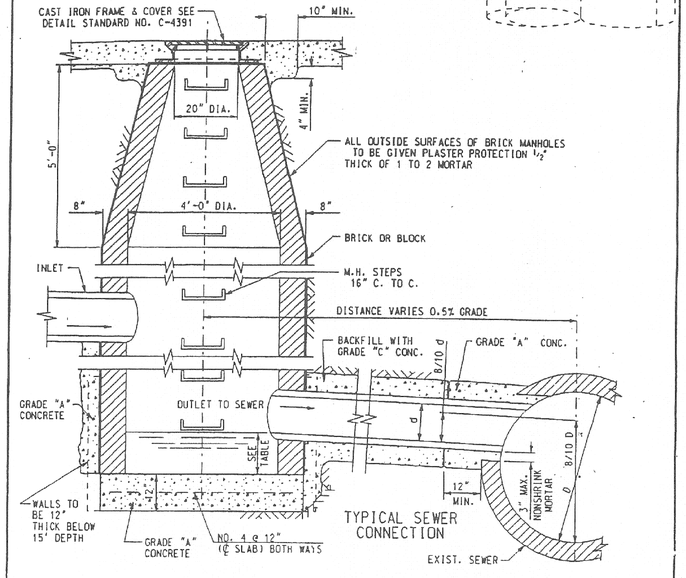
CITY ENGINEER

CITY OF DETROIT
CITY ENGINEERING DIVISION. D.P.W.
STANDARD PLAN FOR
STANDARD SEWER AND DROP MANHOLES

03/07/98 PLAN DATE	DRAWING NO. 10	DETAIL STANDARD NO. C-4387	SHEET 1 OF 3



PLAN VIEW



DROP MANHOLE

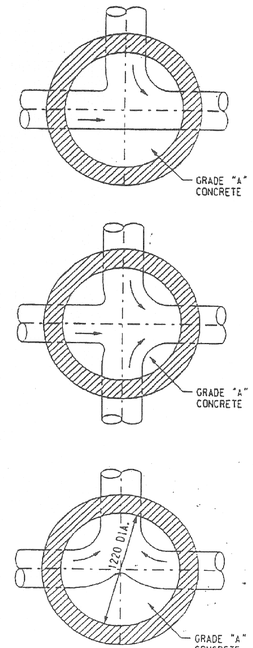
TYPICAL SEWER CONNECTION

REVISED DATE(METRIC TO ENGLISH UNIT SYSTEM):DEC.2002

CITY OF DETROIT
CITY ENGINEERING DIVISION. D.P.W.
STANDARD PLAN FOR
STANDARD SEWER AND DROP MANHOLES

03/07/98 PLAN DATE	DRAWING NO. 10	DETAIL STANDARD NO. C-4387	SHEET 2 OF 3

DEPTH OF WATER CUSHION IN DROP MANHOLES SHALL BE AS FOLLOWS	
DIFFERENCE BETWEEN INLET & OUTLET INVERTS:	DEPTH OF CUSHION:
LESS THAN 3'-0"	NOT REQ'D.
3'-0" TO 4'-0"	12"
4'-0" TO 5'-0"	18"
5'-0" TO 8'-0"	24"
8'-0" TO 10'-0"	30"
OVER 10 FEET	36"



NOTES:

1. FOR ALUMINUM MANHOLE STEP DETAIL SEE DETAIL STANDARDS NO. C-5028.
2. ALL DIMENSIONS ARE IN INCHES(") UNLESS OTHERWISE NOTED.

TYPICAL CHANNELS

CITY OF DETROIT
CITY ENGINEERING DIVISION. D.P.W.
STANDARD PLAN FOR
STANDARD SEWER AND DROP MANHOLES

REVISED DATE(METRIC TO ENGLISH UNIT SYSTEM):DEC.2002

03/07/98 PLAN DATE	DRAWING NO. 10	DETAIL STANDARD NO. C-4387	SHEET 3 OF 3

REVISIONS	DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

MDOT JOB NO. 86343A | STRUCTURE NO. B01 of 82-25-75

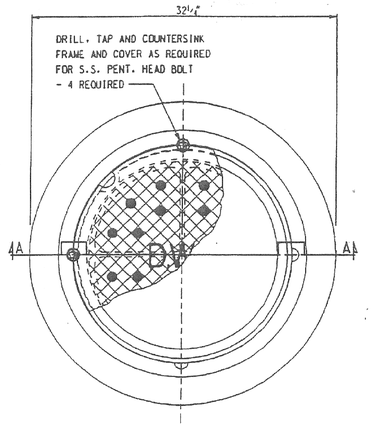
CITY OF DETROIT STANDARD PLANS

DATE: 1/13/09

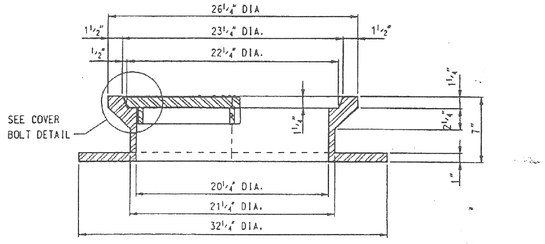
DLZ JOB NO. 0741-6177-00

SHEET NO. 39 OF 45

DATE: 10/20/08 DATE: 11/06/08 CORRECTED BY:DAF DATE: 10/08/08 CHECKED BY: TNB DRAWN BY: DLW FILE NAME: ridge city std plan2.dgn



PLAN VIEW OF FRAME



SECTION A-A

REVISED DATE(METRIC TO ENGLISH UNIT SYSTEM):DEC.2002

PREPARED BY BUREAU OF STREETS AND HIGHWAYS

rev. K.S.M. DRAWN BY:

M.F.S. CHECKED BY:

APPROVED

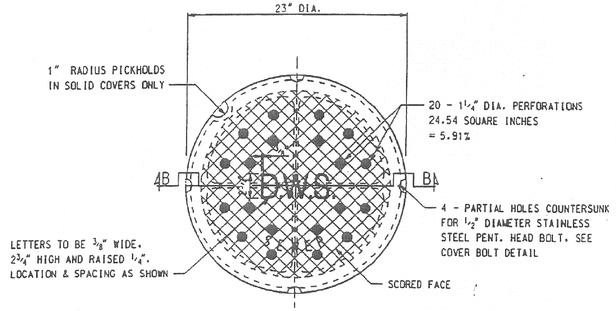
ENGINEER OF STREETS

ROAD ENGINEER

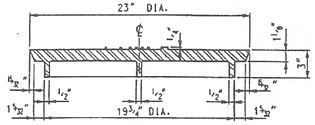
CITY ENGINEER

CITY OF DETROIT
CITY ENGINEERING DIVISION. D.P.W.
STANDARD PLAN FOR
MANHOLE FRAME AND COVER

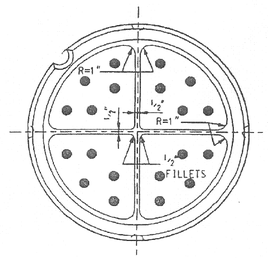
03/07/98 PLAN DATE	DRAWING NO. 14	DETAIL STANDARD NO. C-4391	SHEET 1 OF 3



PLAN VIEW OF COVER



SECTION B-B

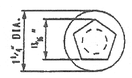


BOTTOM VIEW OF COVER

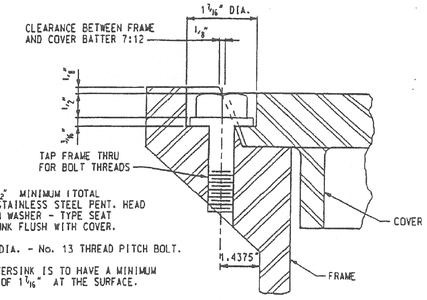
REVISED DATE(METRIC TO ENGLISH UNIT SYSTEM):DEC.2002

CITY OF DETROIT
CITY ENGINEERING DIVISION. D.P.W.
STANDARD PLAN FOR
MANHOLE FRAME AND COVER

03/07/98 PLAN DATE	DRAWING NO. 14	DETAIL STANDARD NO. C-4391	SHEET 2 OF 3



PLAN VIEW OF BOLT



COVER BOLT DETAIL

NOTES:

1. FRAME AND COVER TO BE GRAY IRON CASTING. ASTM A48. CLASS 30B
   TOTAL WT. = 410 lbs. (PERF. COVER)
   MANHOLE FRAME = 262 lbs.
   COVER (PERF.) = 148 lbs.
   COVER (BLANK) = 156 lbs.
2. THE SEATING FACE OF THE COVER AND SEAT FOR SAME ON THE FRAME SHALL BE MACHINE FINISHED OR THE EQUIVALENT THEREOF SO THAT THE COVER SHALL HAVE AN EVEN BEARING ON ITS SEAT AT ALL POINTS WITHOUT ROCKING OR TILTING.
3. ALL DIMENSIONS ARE IN INCHES(") UNLESS OTHERWISE NOTED.

CITY OF DETROIT
CITY ENGINEERING DIVISION. D.P.W.
STANDARD PLAN FOR
MANHOLE FRAME AND COVER

REVISED DATE(METRIC TO ENGLISH UNIT SYSTEM):DEC.2002

03/07/98 PLAN DATE	DRAWING NO. 14	DETAIL STANDARD NO. C-4391	SHEET 3 OF 3

REVISIONS	DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

MDOT JOB NO. 86343A | STRUCTURE NO. B01 of 82-25-75

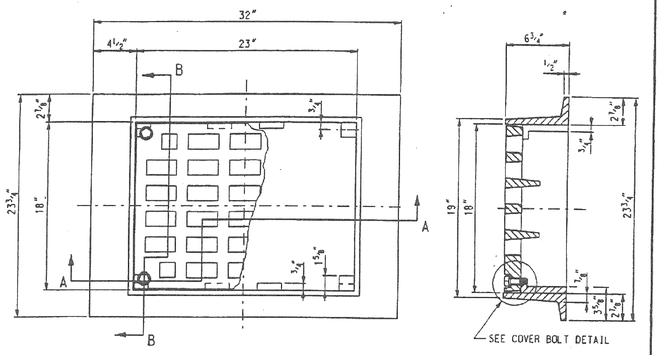
CITY OF DETROIT STANDARD PLANS

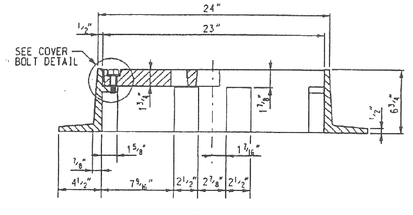
DATE: 1/13/09

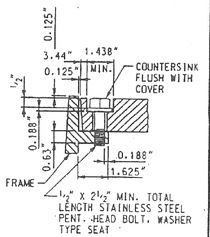
DLZ JOB NO. 0741-6177-00

SHEET NO. 40 OF 45

DATE: 10/20/08
DATE: 11/06/06 CORRECTED BY:DAF
DATE: 10/08/08 CHECKED BY: TNB
DRAWN BY: DLW
FILE NAME: ridge city std plan3.dgn







REVISED DATE(METRIC TO ENGLISH UNIT SYSTEM):DEC.2002

PREPARED BY BUREAU OF STREETS AND HIGHWAYS

rev. K.S.M. DRAWN BY:

M.F.S. CHECKED BY:

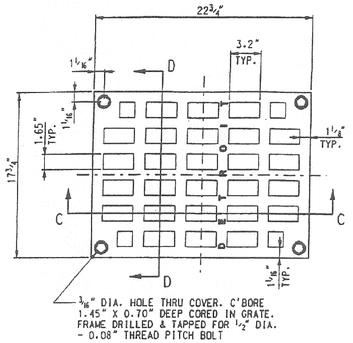
APPROVED

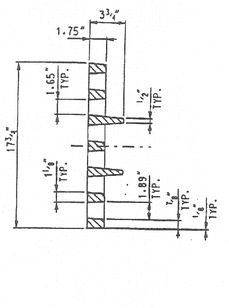
Dadiw Haidar ENGINEER OF STREETS

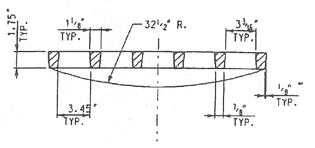
CITY ENGINEER

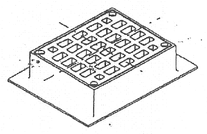
CITY OF DETROIT
CITY ENGINEERING DIVISION. D.P.W.
STANDARD PLAN FOR
FLAT TYPE
GRATE AND FRAME

03/07/98 PLAN DATE	DRAWING NO. 15	DETAIL STANDARD NO. C-4392	SHEET .1 OF 2.









NOTE:

ALL DIMENSIONS ARE IN INCHES(") UNLESS OTHERWISE NOTED.

REVISED DATE(METRIC TO ENGLISH UNIT SYSTEM):DEC.2002

CITY OF DETROIT
CITY ENGINEERING DIVISION. D.P.W.
STANDARD PLAN FOR
FLAT TYPE
GRATE AND FRAME

03/07/98 PLAN DATE	DRAWING NO. 15	DETAIL STANDARD NO. C-4392	SHEET .2 OF 2.

REVISIONS

DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

MDOT JOB NO. 86343A | STRUCTURE NO. B01 of 82-25-75

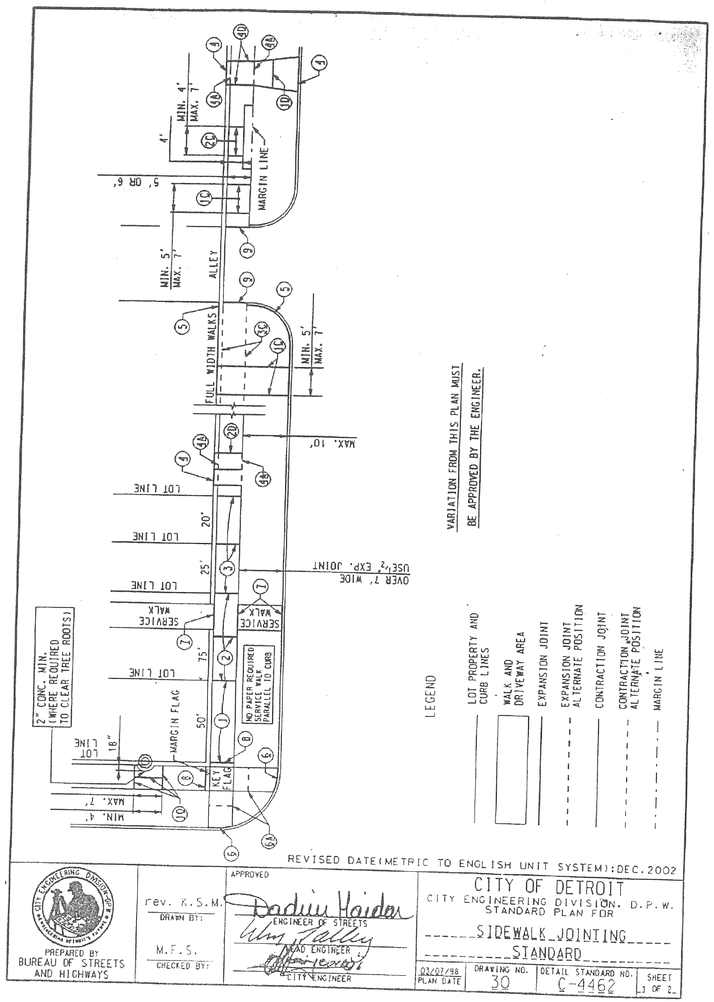
CITY OF DETROIT STANDARD PLANS

DATE: 1/13/09

DLZ JOB NO. 0741-6177-00

SHEET NO. 41 OF 45

DATE: 10/06/08 DATE: 11/06/08 CORRECTED BY:TNB DATE: 10/08/08 CHECKED BY: TNB DRAWN BY: DLW FILE NAME: ridge city std plan4.dgn



EXPANSION JOINTS

ALL EXPANSION JOINT PAPER SHALL EXTEND 1" BELOW THE BOTTOM OF THE THINNER OF ADJOINING PAVEMENT SECTIONS.

(1) PLACE ½" PAPER EXPANSION JOINTS AT LOT LINES WHEN LOT LINES ARE BETWEEN 25' AND 50' APART.

(2) PLACE ADDITIONAL ½" PAPER EXPANSION JOINTS SO THAT THE DISTANCE BETWEEN JOINTS DOES NOT EXCEED 50' WHEN LOT LINES ARE OVER 50' APART.

(3) PLACE ½" PAPER EXPANSION JOINTS AT EVERY SECOND LOT LINE AND CONTRACTION JOINT AT INTERVENING LOT LINE WHEN LOT LINES ARE LESS THAN 25' APART.

(4) PLACE 1" PAPER EXPANSION JOINTS AT CURB AND BUILDING OR PROPERTY LINE OR AT ALTERNATE POSITION (4A) AS SHOWN FOR DRIVEWAY.

(5) PLACE 1" PAPER EXPANSION JOINTS AT CURB AND BUILDING OR PROPERTY LINE FOR FULL WIDTH SIDEWALK EXCEEDING 7' IN WIDTH.

(6) PLACE 1" PAPER EXPANSION JOINTS AT CURB CIRCLES OR AT ALTERNATE POSITION (6A) AS SHOWN.

(7) PLACE 1" PAPER EXPANSION JOINTS AT INTERSECTIONS OF SERVICE WALKS AND SIDEWALKS AND SERVICE WALKS AND CURBS.

(8) PLACE 1" PAPER EXPANSION JOINTS AT MARGIN FLAGS AT CROSSWALKS.

(9) PLACE 1" PAPER EXPANSION JOINTS AT ALLEY APRONS.

(10) PLACE ½" PAPER EXPANSION JOINT BOTH SIDES OF SIDEWALK FLAG ABUTTING TREE AND ON CENTERLINE JOINT.

CONTRACTION JOINTS

(1C) PLACE CONTRACTION JOINTS AT INTERVALS OF NOT LESS THAN 5' NOR MORE THAN 7' ON WALKS 5' WIDE OR WIDER, INCLUDING FULL WIDTH WALKS.

(2C) PLACE CONTRACTION JOINTS AT INTERVALS OF NOT LESS THAN 4' NOR MORE THAN 7' ON WALKS 4' WIDE.

(3C) PLACE CONTRACTION JOINTS AT THE MARGIN LINE ON FULL WIDTH WALKS (OPTIONAL).

DRIVEWAYS

(1D) PLACE CONTRACTION JOINTS IN DRIVEWAYS SO THAT NO SLAB WILL EXCEED THE DIMENSIONS OF 15' BY 15'

(2D) PLACE 1" PAPER EXPANSION JOINTS ON ALL SIDES OF COMMERCIAL DRIVES.

(3D) PLACE CONSTRUCTION OR CONTRACTION JOINT ON CENTERLINE WHEN WIDTH OF DRIVEWAY EXCEEDS 15'

(4D) PLACE ½" PAPER EXPANSION JOINTS ON BOTH SIDES OF RESIDENTIAL DRIVEWAYS. IF DRIVEWAY EDGE IS WITHIN 2 FEET OF LOT LINE, PLACE THIS EXPANSION PAPER AT PROPERTY LINE.

REVISED DATE(METRIC TO ENGLISH UNIT SYSTEM):DEC.2002

CITY OF DETROIT
CITY ENGINEERING DIVISION. D.P.W.
STANDARD PLAN FOR
SIDEWALK JOINTING
STANDARD
02/07/98 PLAN DATE | DRAWING NO. 30 | DETAIL STANDARD NO. C-4462 | SHEET 2 OF 2.

REVISIONS	DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

MDOT JOB NO. 86343A | STRUCTURE NO. B01 of 82-25-75

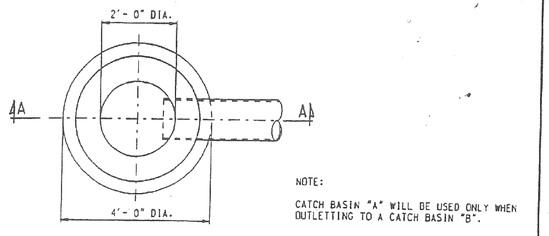
CITY OF DETROIT STANDARD PLANS

DATE: 1/13/09

DLZ JOB NO. 0741-6177-00

SHEET NO. 42 OF 45

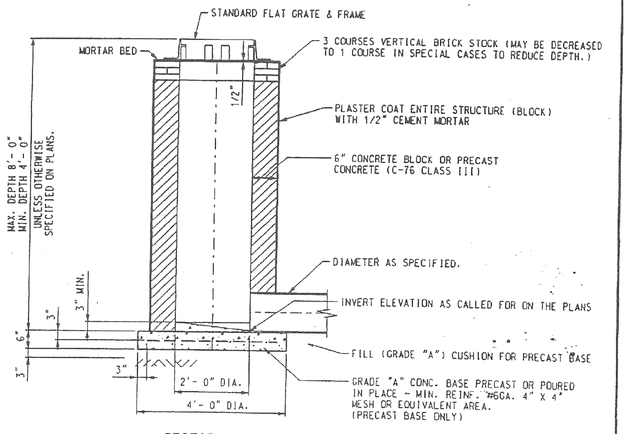
DATE: 10/20/08 DATE: 11/06/08 CORRECTED BY: DAF DATE: 10/08/08 CHECKED BY: TNB DRAWN BY: DLW FILE NAME: ridge city std plan5.dgn



NOTE:

CATCH BASIN "A" WILL BE USED ONLY WHEN OUTLETTING TO A CATCH BASIN "B".

PLAN VIEW



SECTION A-A

CATCH BASIN "A"

REVISED DATE(METRIC TO ENGLISH UNIT SYSTEM):DEC.2002

PREPARED BY BUREAU OF STREETS AND HIGHWAYS

rev. K.S.M. DRAWN BY:

M.F.S. CHECKED BY:

APPROVED

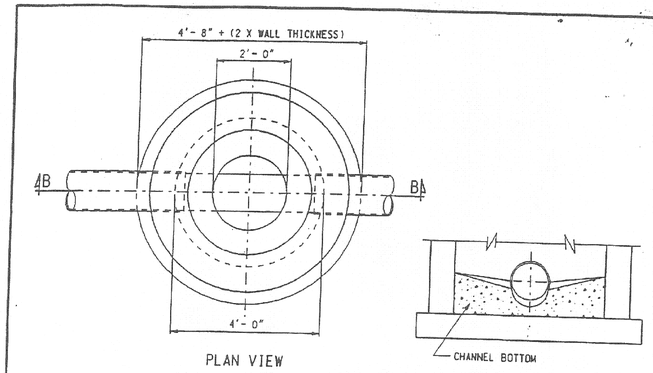
ENGINEER OF STREETS

HEAD ENGINEER

CITY ENGINEER

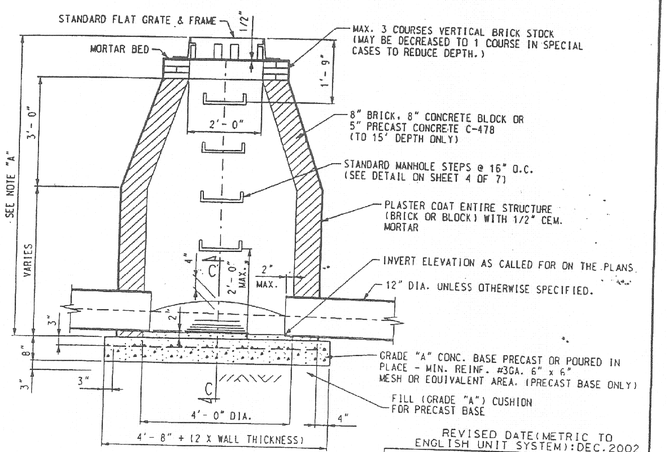
CITY OF DETROIT
CITY ENGINEERING DIVISION. D.P.W.
STANDARD PLAN FOR
CATCH BASINS "A" AND "B"
AND FLAT GRATE AND FRAME

03/01/98 PLAN DATE	DRAWING NO. 35	DETAIL STANDARD NO. C-5028	SHEET 1 OF 7



PLAN VIEW

SECTION C-C



SECTION B-B

CATCH BASIN "B"

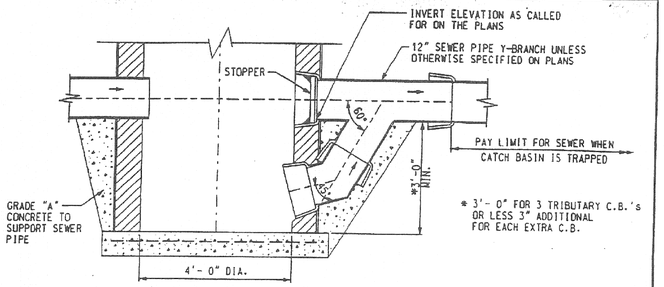
NOTE "A":

WALL THICKNESS SHALL BE 8" FROM THE TOP OF STRUCTURE TO A DEPTH OF 15'. BELOW 15' THE THICKNESS OF THE WALL SHALL BE 12"

REVISED DATE(METRIC TO ENGLISH UNIT SYSTEM):DEC.2002

CITY OF DETROIT
CITY ENGINEERING DIVISION. D.P.W.
STANDARD PLAN FOR
CATCH BASINS "A" AND "B"
AND FLAT GRATE AND FRAME

03/01/98 PLAN DATE	DRAWING NO. 35	DETAIL STANDARD NO. C-5028	SHEET 2 OF 7

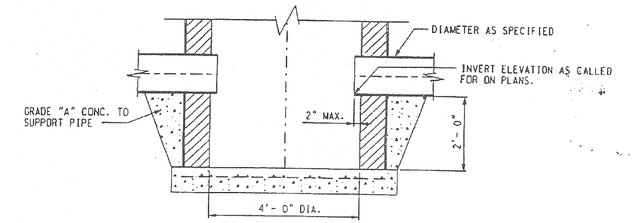


NOTES:

SEWER TRAP TO BE OF THE SAME MAT'L. & STRENGTH AS THE OUTLET SEWER PIPE.

TRAP SHALL BE SUPPORTED BY BLOCKING OR ANY OTHER MEANS UNTIL CATCH BASIN IS COMPLETED AND CONCRETE OR MORTAR AROUND BRICK IS SET. ANY VOIDS BETWEEN THE TRAP AND GROUND UNDERNEATH SHALL BE FILLED WITH GRADE "A" CONCRETE

DETAIL OF TRAP FOR CATCH BASIN "B"



DETAIL OF SUMP FOR CATCH BASIN "B"

CITY OF DETROIT
CITY ENGINEERING DIVISION. D.P.W.
STANDARD PLAN FOR
CATCH BASINS "A" AND "B"
AND FLAT GRATE AND FRAME

REVISED DATE(METRIC TO ENGLISH UNIT SYSTEM):DEC.2002

03/01/98 PLAN DATE	DRAWING NO. 35	DETAIL STANDARD NO. C-5028	SHEET 3 OF 7

REVISIONS	DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

MDOT JOB NO. B6343A | STRUCTURE NO. B01 of 82-25-75

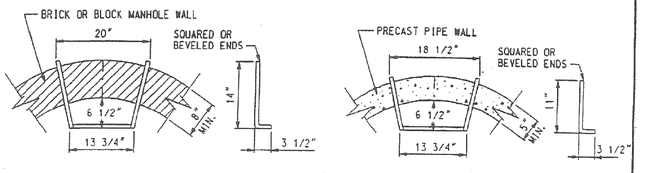
CITY OF DETROIT STANDARD PLANS

DATE: 1/13/09

DLZ JOB NO. 0741-6177-00

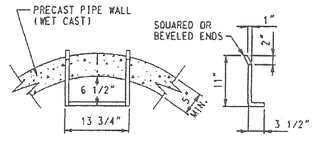
SHEET NO. 43 OF 45

DATE: 10/20/08 DATE: 11/06/08 CORRECTED BY:DAF DATE: 10/08/08 CHECKED BY: TNB DRAWN BY: DLW FILE NAME: ridge city std plan7.dgn

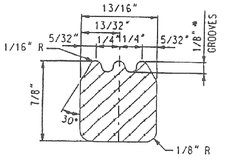


PLAN VIEW
(USE WITH BRICK OR BLOCK M.H.)

PLAN VIEW
(USE WITH PRECAST M.H. UNITS)



PLAN VIEW
(USE WITH WET CAST M.H. UNITS)



CROSS - SECTION

* NOTE:

IN LIEU OF GROOVES, ALTERNATE FOOT HOLD CONFIGURATIONS WILL BE CONSIDERED FOR APPROVAL.

ALUMINUM MANHOLE STEP STANDARD DETAILS

NO SCALE

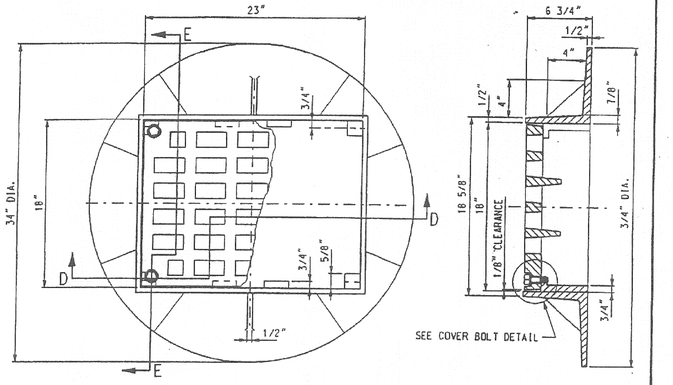
NOTES:

1. MANHOLE STEPS SHALL CONFORM TO THE REQUIREMENTS FOR "ALUMINUM ALLOY EXTRUDED BARS, RODS, SHAPES AND TUBES", A.S.T.M. B221 (CURRENT), ALLOY 6061, TEMPER T-6 OR APPROVED EQUAL.
2. EITHER THE FLARED LEG OR PARALLEL LEG STEP MAY BE USED FOR POURED IN PLACE CONCRETE CONSTRUCTION OR IN WET CAST MANHOLE UNITS.
3. THE PARALLEL LEG STEP SHALL BE USED IN EXISTING STRUCTURES BY PLACING IN DRILLED HOLES AND GROUTING WITH NON-SHRINK GROUT.

REVISED DATE(METRIC TO ENGLISH UNIT SYSTEM):DEC.2002

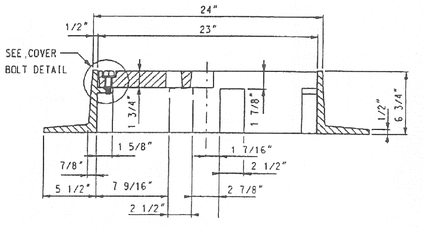
CITY OF DETROIT
CITY ENGINEERING DIVISION. D.P.W.
STANDARD PLAN FOR
CATCH BASINS "A" AND "B"
AND FLAT GRATE AND FRAME

03/07/98 PLAN DATE	DRAWING NO. 35	DETAIL STANDARD NO. C-5028	SHEET 4 OF 7

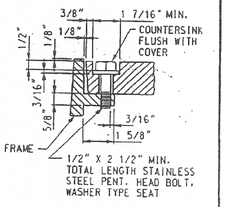


PLAN VIEW OF FRAME

SECTION E-E



SECTION D-D

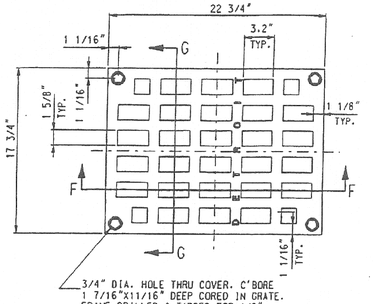


COVER BOLT DETAIL

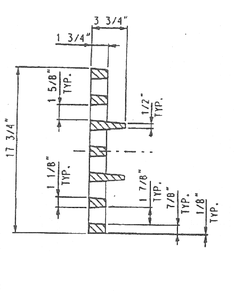
REVISED DATE(METRIC TO ENGLISH UNIT SYSTEM):DEC.2002

CITY OF DETROIT
CITY ENGINEERING DIVISION. D.P.W.
STANDARD PLAN FOR
CATCH BASINS "A" AND "B"
AND FLAT GRATE AND FRAME

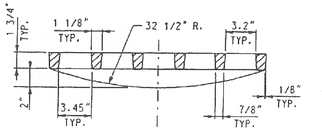
03/07/98 PLAN DATE	DRAWING NO. 35	DETAIL STANDARD NO. C-5028	SHEET 5 OF 7



PLAN VIEW OF GRATE



SECTION G-G



SECTION F-F

CITY OF DETROIT
CITY ENGINEERING DIVISION. D.P.W.
STANDARD PLAN FOR
CATCH BASINS "A" AND "B"
AND FLAT GRATE AND FRAME

REVISED DATE(METRIC TO ENGLISH UNIT SYSTEM):DEC.2002

03/07/98 PLAN DATE	DRAWING NO. 35	DETAIL STANDARD NO. C-5028	SHEET 6 OF 7

REVISIONS	DESCRIPTION	DATE	BY

DLZ

CITY OF DETROIT

RIDGE ROAD BRIDGE OVER THE ROUGE RIVER

MDOT JOB NO. J6343A | STRUCTURE NO. B01 of 82-25-75

CITY OF DETROIT STANDARD PLANS

DATE: 1/13/09

DLZ JOB NO. 0741-6177-00

SHEET NO. 44 OF 45

DATE: 10/20/08

DATE: 11/06/08 CORRECTED BY:DAF

DATE: 10/08/08 CHECKED BY: TNB

DRAWN BY: DLW

FILE NAME: ridge city std plan8.dgn

GENERAL NOTES

1. CENTER OF CATCH BASIN SHALL BE 20 INCHES FROM BACK OF CURB.
2. ALL SIZES AND FLOW LINES OF PIPES, AND ELEVATIONS FOR TOP AND BOTTOM OF STRUCTURES SHALL BE DETERMINED FROM THE PLANS OR CONSTRUCTION REQUIREMENTS.
   THE BELL SHALL BE REMOVED FROM THE FIRST LENGTH OF OUTLET PIPE PROJECTING THROUGH THE WALL OF THE STRUCTURES WHEN ANY STRUCTURE IS CONSTRUCTED OF PRECAST CONCRETE OR CONCRETE BLOCK. THE TOP OF THE MASONRY SHALL BE LEFT SUFFICIENTLY LOW TO PERMIT PROPER ADJUSTMENT OF THE COVER TO GRADE BY THE USE OF MORTAR OR BRICKS AS DIRECTED BY THE ENGINEER.
3. A TRAP, AS DETAILED ON SHEET 3 OF 7, SHALL BE PLACED WHERE CALLED FOR IN THE OUTLET SEWER LINE OF CATCH BASINS "B". THIS TRAP SHALL BE SET INTO THE MASONRY WALL AS SHOWN ON THE DETAIL.
   THE SPACE BETWEEN THE FACES OF THE WALL AND THE TRAP SHALL BE COMPLETELY FILLED WITH CEMENT, MORTAR OR CONCRETE, SO AS TO HOLD TRAP SECURELY IN PLACE.
4. THE MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARD SPECIFICATIONS FOR PAVING AND RELATED CONSTRUCTION EXCEPT AS NOTED ON THIS SHEET AND ON THE PLANS.
5. A PLASTER COAT OF MORTAR 1/2" IN THICKNESS SHALL BE APPLIED TO THE OUTER SURFACE OF THE STRUCTURE AS SHOWN. A 1/2" CEMENT PLASTER COAT SHALL BE PLACED ON THE INSIDE OF ALL SUMPS.
6. CONTRACTOR SHALL VERIFY ELEVATIONS OF EXISTING UTILITIES TO ENABLE CONSTRUCTION TO INDICATED ELEVATIONS SHOWN ON DRAWINGS. IF NECESSARY, INVERT ELEVATIONS SHOWN ON THE DRAWINGS MAY BE ALTERED IN THE FIELD TO CLEAR EXISTING UTILITIES. SUCH ALTERATIONS, UPWARD OR DOWNWARD, SHALL BE AT NO CHANGE IN CONTRACT PRICE.
7. WHEN PRECAST CONCRETE PIPE SECTIONS ARE USED FOR CATCH BASINS, EITHER A SECTION OF THE INLET AND OUTLET PIPES OR AN OPENING OR EYE FOR THE INLET AND OUTLET PIPES SHALL BE CAST INTO THE WALL OF THE CATCH BASIN PIPE WHEN IT IS BEING MANUFACTURED. EYES IN PRECAST PIPE SECTIONS SHALL BE FURNISHED TO ACCOMODATE A FLEXIBLE JOINT CONNECTION SUCH AS PRESS-WEDGE BY PRESS SEAL GASKET CORP. OR RES-SEAL BY SCALES MFG. CORP.
8. PAY LIMIT FOR SEWERS SHALL BE INSIDE FACES OF STRUCTURES UNLESS OTHERWISE NOTED.
9. ALL DIMENSIONS ARE IN INCHES(") UNLESS OTHERWISE NOTED.

CITY OF DETROIT
CITY ENGINEERING DIVISION, D.P.W.
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