MINNESOTA DEPARTMENT OF TRANSPORTATION

THE COUNTY OF OLMSTED

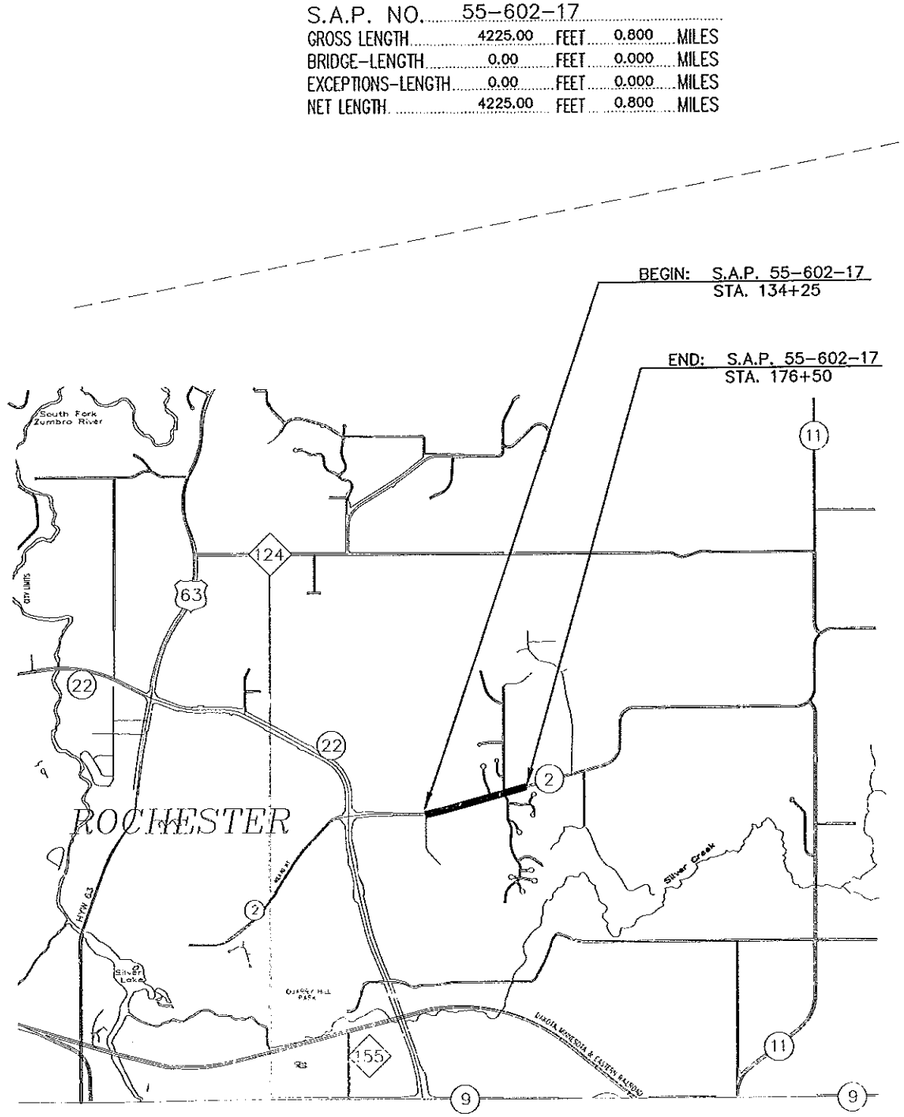
CONSTRUCTION PLAN FOR GRADING, AGG. BASE, STORM SEWER, CONCRETE SURFACING & BIT. PAVING

LOCATED ON CSAH 2 BETWEEN 1/2 MILE EAST OF JCT. CSAH 22 & CSAH 2 AND 2 MILES WEST OF JCT. CSAH 11 & CSAH 2 (GEOGRAPHIC DESCRIPTION)

FROM APPROX. 690 FEET SOUTH NW COR SECTION 29 T 107 N – R 15 W TO APPROX. 100 FEET EAST OF NORTH 1/4 COR SECTION 29 T 107 N – R 15 W (LEGAL DESCRIPTION)

S.A.P. NO. 55–602–17

GROSS LENGTH	4225.00	FEET	0.800	MILES
BRIDGE–LENGTH	0.00	FEET	0.000	MILES
EXCEPTIONS–LENGTH	0.00	FEET	0.000	MILES
NET LENGTH	4225.00	FEET	0.800	MILES



MINN. PROJ. NO. .....

GOVERNING SPECIFICATIONS

THE 2005 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

INDEX

SHEET NO. 1	TITLE SHEET
SHEET NO. 2	ESTIMATE OF QUANTITIES
SHEET NO. 3	TYPICAL SECTIONS
SHEET NO. 4–6	GRADING PLAN & PROFILES
SHEET NO. 7	TABULATED QUANITIES
SHEET NO. 8–10	PAVEMENT PLAN & PROFILES
SHEET NO. 11–13	PAVEMENT & JOINT SHEETS
SHEET NO. 14–16	STORM SEWER PLAN & PROFILE
SHEET NO. 17	STORM SEWER SCHEDULE
SHEET NO. 18–20	EROSION CONTROL SHEETS
SHEET NO. 21–28	EROSION CONTROL DETAILS
SHEET NO. 29–47	CROSS SECTIONS
SHEET NO. 48	TRAFFIC CONTROL SHEET

THIS PLAN CONTAINS 48 SHEETS.

DESIGN DESIGNATION: S.A.P. 55–602–17

ADT (Current Year) = 3362(2008) Design Speed 55 MPH
ADT (Future Year) = 5380(2028) Based on STOPPING Sight Distance
DHV (Design Hr. Vol.) = ... Height of eye 3.5 FT Height of object 2.0 FT
D (Directional Distr.) = ... Design Speed not achieved at: .....
T (Heavy Commercial) = EST 6% STA. ..... TO STA. ..... mph
SOIL FACTOR = 130% STA. ..... TO STA. ..... mph
TON DESIGN 10

"NO PARKING" RESOLUTION REQUIRED STA. 134+25 TO STA. 163+50
NO. OF TRAFFIC LANES 4 NO. OF PARKING LANES NONE
SHOULDER WIDTH 8 FT.
LANE WIDTH 12 FT.
FUNCTIONAL CLASSIFICATION: MAJOR COLLECTOR

DESIGN ENGINEER: I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

DATE 3/10/08 REG NUMBER 19917
PRINTED NAME: KAYE M. BIENIEK
SIGNED NAME: Kaye M Bieniek
APPROVED: COUNTY DESIGN ENGINEER

DESIGNED BY: Holmes

DATE 3/10/08 REG NUMBER 10392
Michael Hudak
APPROVED: OLMSTED COUNTY ENGINEER

APPROVED: ROCHESTER CITY ENGINEER DATE: 3/12/08

STATE AID APPROVALS:

Cindy Salmond DATE: 4-3-08
ASST DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE- AID RULES/POLICY

Cindy Salmond DATE: 4-3-08
APPROVED FOR STATE AID FUNDING:
STATE AID ENGINEER

AS-BUILT
FEB 24 2010
ENGINEERING

PLAN SYMBOLS

STATE LINE
COUNTY LINE
TOWNSHIP OR RANGE LINE
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
RIGHT-OF-WAY LINE
PRESENT RIGHT-OF-WAY LINE
TEMPORARY EASEMENT LINE
CONTROL OF ACCESS LINE
PROPERTY LINE (Except Land Lines)
VACATED PLATTED PROPERTY
CORPORATE OR CITY LIMITS
TRUNK HIGHWAY CENTER LINE
RETAINING WALL
RAILROAD
RAILROAD RIGHT-OF-WAY
RIVER OR CREEK
DRY RUN
DRAINAGE DITCH
DRAIN TILE
CULVERT
DROP INLET
GUARD RAIL
BARBED WIRE FENCE
WOVEN WIRE FENCE
CHAIN LINK FENCE
RAILROAD SNOW FENCE
STONE WALL OR FENCE
HEDGE
RAILROAD CROSSING SIGN
RAILROAD CROSSING BELL
ELECTRIC WARNING SIGN
CROSSING GATE
MEANDER CORNER
SPRINGS
MARSH
TIMBER
ORCHARD
BRUSH
NURSERY
CATCH BASIN
FIRE HYDRANT
CATTLE GUARD
OVERPASS (HIGHWAY OVER)
UNDERPASS (HIGHWAY UNDER)
BRIDGE
BUILDING (ONE STORY FRAME)
F – FRAME C – CONCRETE
S – STONE T – TILE
B – BRICK ST – STUCCO
IRON PIPE OR ROD
MONUMENT (STONE, CONCRETE, OR METAL)
WOODEN HUB
GRAVEL PIT
SAND PIT
BORROW PIT
ROCK QUARRY
SLOPE EASEMENT

UTILITIES SYMBOLS

POWER POLE LINE
TELEPHONE OR TELEGRAPH POLE LINE
JOINT TELEPHONE AND POWER ON POWER POLE
ON TELEPHONE POLES
ANCHOR
STEEL TOWER
STREET LIGHT
PEDESTAL (TELEPHONE CABLE TERMINAL)
GAS MAIN
WATER MAIN
CONDUIT
TELEPHONE CABLE IN CONDUIT
ELECTRICAL CABLE IN CONDUIT
TELEPHONE MANHOLE
ELECTRICAL MANHOLE
BURIED TELEPHONE CABLE
BURIED ELECTRICAL CABLE
AERIAL TELEPHONE CABLE
SEWER (SANITARY OR SEWER)
SEWER MANHOLE

EROSION CONTROL SYMBOLS

TEMPORARY SILT FENCE
RIP RAP DITCH CHECKS

SCALES

PLAN 0 50'
PROFILE 0 50' HORIZ. 0 10' VERT.
CROSS SECTIONS 0 10'
INDEX MAP 0 2640'

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38–02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA.

ESTIMATED QUANTITIES

	SPECIFICATION NO.	ITEM	UNIT	CITY OF ROCHESTER	SAP 55-602-17	TOTAL ESTIMATED QUANTITIES
①	2101.511	CLEARING AND GRUBBING	LUMP SUM		1	1
②	2104.501	REMOVE PERFORATED PIPE	LIN. FT.		25	25
	2104.501	REMOVE CONCRETE CULVERT	LIN. FT.		225	225
	2104.501	REMOVE METAL CULVERT	LIN. FT.		226	226
③	2104.501	REMOVE CURB AND GUTTER	LIN. FT.		200	200
④	2104.501	REMOVE WOOD FENCE	LIN. FT.		44	44
	2104.505	REMOVE BITUMINOUS PAVEMENT	SQ. YD.		21,219	21,219
	2104.509	REMOVE CONCRETE APRON	EACH		2	2
⑤	2104.509	REMOVE CATCH BASIN	EACH	1		1
	2104.509	REMOVE GATE VALVE	EACH	1		1
	2104.509	REMOVE HYDRANT	EACH	1		1
	2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LIN. FT.		190	190
	2104.521	SALVAGE CONCRETE PIPE CULVERT	LIN. FT.		98	98
	2104.523	SALVAGE CONCRETE APRON	EACH		4	4
	2104.525	ABANDON & SEAL WELL SHAFT	EACH		1	1
⑥	2106.607	UNCLASSIFIED EXCAVATION	CU. YD.		46,667	46,667 (P)
⑥	2106.607	COMMON EMBANKMENT (CV)	CU. YD.		13,643	13,643 (P)
	2106.607	SELECT GRANULAR EMBANKMENT (CV)	CU. YD.		13,210	13,210 (P)
⑦	2130.501	WATER	M-GAL		74	74
⑧	2211.501	AGGREGATE BASE CLASS 5 MOD.	TON	2,080	16,366	18,446
	2221.501	AGGREGATE SHOULDERING CLASS 2	TON		1,100	1,100
	2301.502	CONCRETE PAVEMENT STANDARD WIDTH 8.0"	SQ. YD.		~~22,418~~	~~22,418~~ (P) 2224 (P)
	2301.503	CONCRETE PAVEMENT IRREGULAR WIDTH 8.0"	SQ. YD.		~~1,156~~	~~1,156~~ (P) 1103 (P)
⑨	2301.511	STRUCTURAL CONCRETE	CU. YD.		~~5,239~~	~~5,239~~ (P) 5788 (P)
	2301.538	DOWEL BAR	EACH		12,966	12,966
	2301.602	DRILL AND GROUT DOWEL BAR (EPOXY COATED)	EACH		77	77
	2301.602	DRILL AND GROUT REINF BAR (EPOXY COATED)	EACH		44	44
⑩	2360.501	TYPE SP 9.5 WEARING COURSE MIX (3C)	TON	1,197	1,589	2,786
	2360.501	TYPE SP 12.5 WEARING COURSE MIX (3C)	TON		723	723
⑪	2501.511	30" R.C. PIPE CULVERT	LIN. FT.		144	144
	2501.515	15" R.C. PIPE APRON	EACH	1		1
	2501.515	18" R.C. PIPE APRON	EACH	4		4
⑫	2501.515	30" R.C. PIPE APRON	EACH	1	2	3
	2501.571	INSTALL CONCRETE CULVERT	LIN. FT.		98	98
	2501.573	INSTALL CONCRETE APRON	EACH		4	4
⑬	2502.541	4" PERF PE PIPE DRAIN	LIN. FT.		825	825
	2503.541	12" R.C. PIPE SEWER DES 3006 CL. IV	LIN. FT.	199		199
	2503.541	15" R.C. PIPE SEWER DES 3006 CL. III	LIN. FT.	744		744
	2503.541	18" R.C. PIPE SEWER DES 3006 CL. III	LIN. FT.	948		948
	2503.541	21" R.C. PIPE SEWER DES 3006 CL. III	LIN. FT.	305		305
	2503.541	24" R.C. PIPE SEWER DES 3006 CL. III	LIN. FT.	530		530
	2503.541	30" R.C. PIPE SEWER DES 3006 CL. III	LIN. FT.	36		36
	2504.602	HYDRANT	EACH	2		2
	2504.602	ADJUST GATE VALVE & BOX	EACH	9		9
	2504.602	12" x 6" REDUCER	EACH	2		2
	2504.602	6" PIPE BEND 90°	EACH	1		1
	2504.602	12" PIPE BEND 90°	EACH	1		1
	2504.602	6" x 6" TEE	EACH	1		1
	2504.602	12" x 12" TEE	EACH	1		1
	2504.602	6" GATE VALVE & BOX	EACH	2		2
	2504.602	12" GATE VALVE & BOX	EACH	1		1
	2504.603	6" WATERMAIN DUCT IRON CL. 52	LIN. FT.	165		165
	2504.603	12" WATERMAIN DUCT IRON CL. 52	LIN. FT.	520		520
	2506.502	CONSTRUCT DRAINAGE STRUCTURE, DESIGN G	EACH	5		5
	2506.502	CONSTRUCT DRAINAGE STRUCTURE, DESIGN N	EACH	15		15
	2506.502	CONSTRUCT DRAINAGE STRUCTURE, DESIGN 60-4020	EACH	4		4
	2506.602	RECONSTRUCT MANHOLE			7	7
⑭	2511.501	RANDOM RIPRAP CL. III	CU. YD.		50	50
	2521.501	4" CONCRETE WALK	SQ. FT.		21,214	21,214
⑮	2521.501	6" CONCRETE WALK	SQ. FT.	550	240	790

ESTIMATED QUANTITIES

	SPECIFICATION NO.	ITEM	UNIT	CITY OF ROCHESTER	SAP 55-602-17	TOTAL ESTIMATED QUANTITIES
	2531.501	CONCRETE CURB & GUTTER DESIGN B424	LIN. FT.	2,847	4,800	7,647
⑯	2531.618	TRUNCATED DOMES	SQ. FT.	220		220
⑰	2545.523	4" NON METALLIC CONDUIT	LIN. FT.	540		540
	2563.601	TRAFFIC CONTROL	LUMP SUM	0.14	0.86	1
⑱⑲	2573.502	SILT FENCE, TYPE MACHINE SLICED	LIN. FT.		2,000	2,000
⑱	2573.540	FILTER LOG TYPE STRAW BIOROLL	LIN. FT.		784	784
	2575.501	SEEDING	ACRE		5.3	5.3 (P) 6.4(P)
	2575.502	SEED MIXTURE 110	POUND		490	490
	2575.502	SEED MIXTURE 250	POUND		350	350
	2575.502	SEED MIXTURE 310	POUND		40	40
	2575.505	SODDING TYPE SALT RESISTANCE	SQ. YD.		5,521	5,521
	2575.511	MULCH MATERIAL TYPE 1	TON		9.6	9.6
	2575.519	DISC ANCHORING	ACRE		4.8	4.8 (P) 5.9(P)
	2575.523	EROSION CONTROL BLANKET CATEGORY 3	SQ. YD.		2,145	2,145
	2575.532	FERTILIZER TYPE 1	POUND		1,060	1,060
	2582.601	PAVEMENT MESSAGE (LEFT ARROW)-ALL WEATHER	EACH		13	13
	2582.601	PAVEMENT MESSAGE (RIGHT ARROW)-ALL WEATHER	EACH		14	14
	2582.602	4" SOLID LINE WHITE-ALL WEATHER	LIN. FT.		10,600	10,600
	2582.602	4" BROKEN LINE WHITE-ALL WEATHER	LIN. FT.		1,100	1,100
	2582.602	4" SOLID LINE YELLOW-ALL WEATHER	LIN. FT.		5,500	5,500
	2582.602	24" SOLID LINE YELLOW-ALL WEATHER	LIN. FT.		130	130
	2582.602	4" DOUBLE SOLID LINE YELLOW-ALL WEATHER	LIN. FT.		1,700	1,700

QUANTITY NOTES:

① TREES FOR REMOVAL SHALL BE DESIGNATED IN THE FIELD BY THE ENGINEER. SEE SHEET 7 FOR APPROXIMATE LOCATIONS.

② STA 153+15 RT.

③ INCLUDES 150' FOR SCHAEFFER LANE AND 50' FOR LISA LANE

④ STA 154+50 TO 155+00 LT.

⑤ STA 135+92 6.9' RT.

⑥ INCLUDES 2,375 CU. YDS. OF SLOPE DRESSING MATERIAL

⑦ WATER TO BE USED AS A DUST PREVENTATIVE AS DIRECTED BY THE ENGINEER. SPECIFICATION 1903 SHALL NOT APPLY FOR THIS ITEM.

⑧ INCLUDES 1,853 TONS FOR BITUMINOUS PATH, 227 TONS FOR WATER TOWER ENT.

⑨ INCLUDES FURNISHING AND PLACEMENT OF REINFORCEMENT BARS.

⑩ INCLUDES 1,197 TONS FOR BITUMINOUS PATH, 119 TONS FOR WATER TOWER ENT.

⑪ CENTERLINE CULVERT STA 153+25 @ 5° SKEW

⑫ INCLUDES ALL TIME, MATERIAL, AND EQUIPMENT TO INSTALL TIMBER WEIR ON INLET CENTERLINE CULVERT STA 153+25. SEE SHEET 7 FOR DETAILS.

⑬ PLACE AT A 2' DEPTH IN DITCH BOTTOM STA. 151+50 TO 159+50. SHALL INCLUDE 4" TEE AND INTAKE RISER PLACED AT STA 153+15 72' LT.

⑭ PLACE 40 CU. YDS. OUTLET LT STA 153+30 AND 10 CU. YDS. OUTLET RT STA 148+50

⑮ INCLUDES 240 SQ. FT. FOR MEDIAN NOSES AND 550 SQ. FT. FOR PED RAMPS

⑯ 11 PED RAMP LOCATIONS. SEE STANDARD PLATE FOR DETAILS.

⑰ INSTALL 4 CROSSINGS AT A 48" BURY DEPTH FROM 75' LT. TO 60' RT. STA 146+97, STA 150+56, STA 158+68, STA 162+72

⑱ SPECIFICATION 1903 SHALL NOT APPLY FOR THESE ITEMS.

⑲ INCLUDES MAINTENANCE

AS-BUILT

FEB 24 2010

ENGINEERING

UTILITY LOCATIONS
GOPHER STATE ONE CALL 1-800-252-1166
NOTE: CONTRACTOR SHALL VERIFY ALL UNDERGROUND UTILITIES LOCATIONS AND ELEVATIONS PRIOR TO CONSTRUCTION.

STANDARD PLATES

THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION SHALL APPLY ON THIS PROJECT.

PLATE NO.	DESCRIPTION
	NUMERICAL INDEX OF STANDARD PLATES
1070 L	REINFORCED PANELS OVER CULVERTS
1103 J	TYPICAL DOWEL BAR ASSEMBLY
1141 D	PAVEMENT KEYWAY FOR KEYED JOINT CONSTRUCTION
3000 L	REINFORCED CONCRETE PIPE
3006 G	GASKET JOINT FOR R.C. PIPE
3100 G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3133 C	RIPRAP AT RCP OUTLETS
3145 F	CONCRETE PIPE TIES
4003 B	30" PRECAST CATCH BASIN
4006 L	MANHOLE OR CATCH BASIN
4011 E	PRECAST CONCRETE BASE
4020 J	MANHOLE OR CATCH BASIN
4101 D	RING CASTING FOR MANHOLE OR CATCH BASIN
4110 F	COVER CASTING FOR MANHOLE
4125 D	CATCH BASIN FRAME CASTING
4134 A	CURB BOX CASTING FOR CATCH BASIN
4154 B	CATCH BASIN GRATE CASTING
4180 J	MANHOLE OR CATCH BASIN STEP
7036 F	PEDESTRIAN CURB RAMP
7100 H	CONCRETE CURB AND GUTTER
7111 J	INSTALLATION OF CATCH BASIN CASTINGS
7113 A	CONCRETE APPROACH NOSE DETAIL
8000 I	STANDARD BARRICADES
9000 D	APPROACHES AND ENTRANCES
9102 D	TURF ESTABLISHMENT AREAS

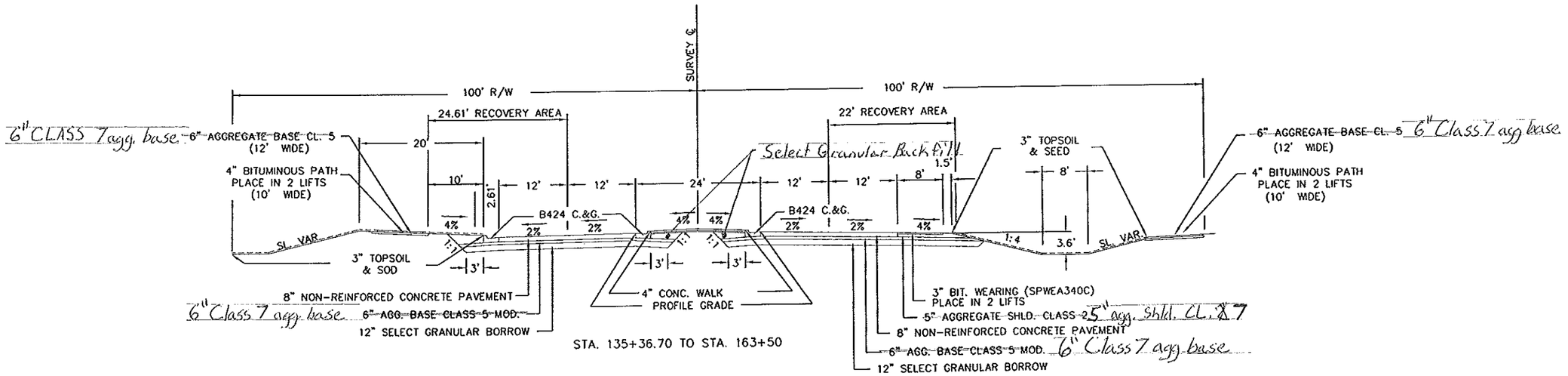
QUANTITY NOTES:

BITUMINOUS MIX - 110LBS./SQ.YD./1 IN. DEPTH
AGGREGATE BASE CLASS 5 MOD.- 140LBS./CU.FT. COMPACTED
AGGREGATE SHOULDERING CLASS 2 - 140LBS./CU.FT. COMPACTED
SEED MIXTURE 110 - 100 LBS/ACRE
SEED MIXTURE 250 - 70 LBS/ACRE
SEED MIXTURE 310 - 82 LBS/ACRE
MULCH MATERIAL - 2 TONS/ACRE
DISK ANCHORING - ALL SEEDING AREAS EXCEPT 1:2 SLOPES
COMMERCIAL FERTILIZER - 200 LBS/ACRE

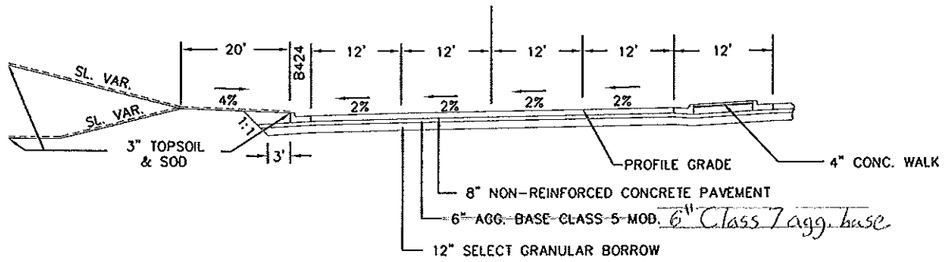
ESTIMATED QUANTITIES

CERTIFIED BY Kaye M Bienieh REG. NO. 19917 4/30 2008
LICENSED PROFESSIONAL ENGINEER

S.A.P. 55-602-17 CSAH 2



STA. 135+36.70 TO STA. 163+50



CONCRETE TURN LANE

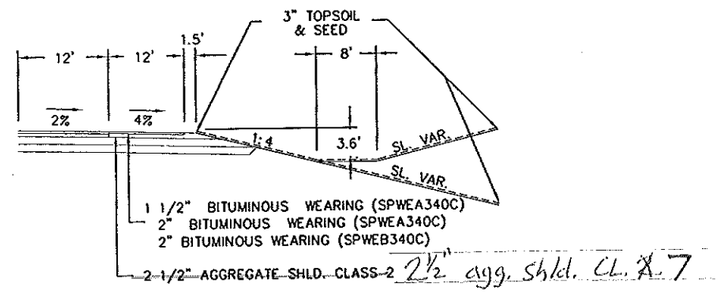
RIGHT TURN LANE LOCATIONS:

STA. 134+25 TO STA. 139+83
STA. 143+73 TO STA. 148+81
STA. 150+98 TO STA. 156+04
STA. 158+16 TO STA. 163+50

LEFT TURN LANE LOCATIONS:

STA. 135+36.7 TO STA. 139+83
STA. 138+89 TO STA. 144+44
STA. 146+16 TO STA. 151+69
STA. 150+69 TO STA. 156+04
STA. 154+39 TO STA. 158+83
STA. 159+27 TO STA. 163+50

AS-BUILT
FEB 24 2010
ENGINEERING



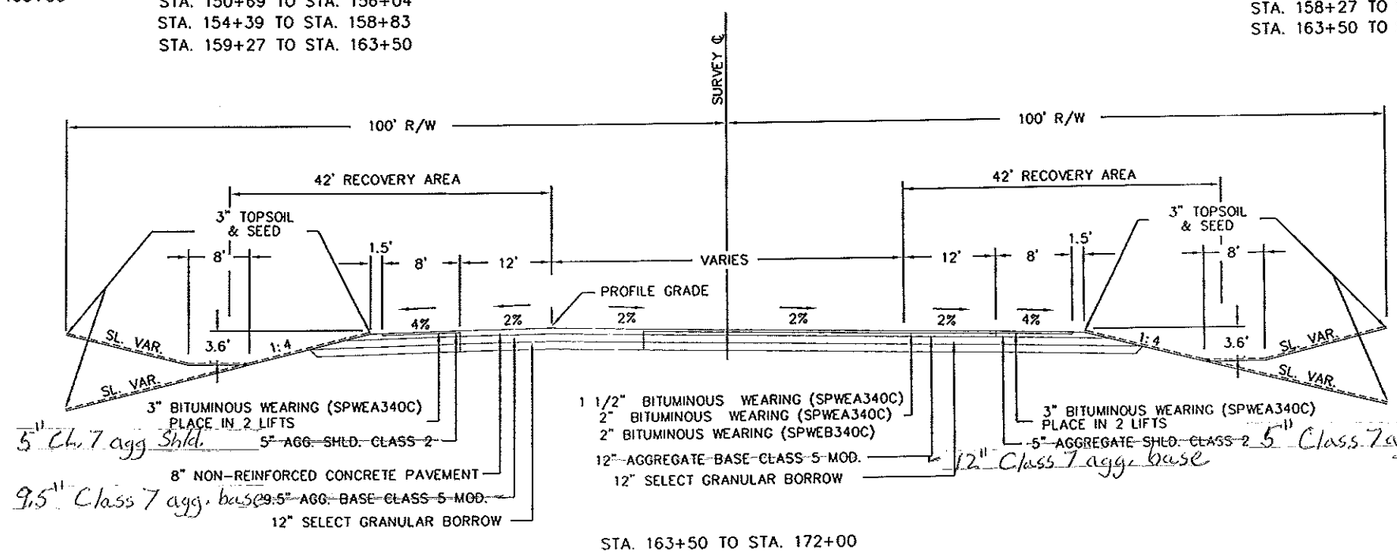
BITUMINOUS TURN LANE

RIGHT TURN LANE LOCATIONS:

STA. 146+02 TO STA. 151+49
STA. 158+27 TO STA. 163+50
STA. 163+50 TO STA. 168+11

LEFT TURN LANE LOCATIONS:

STA. 163+50 TO STA. 168+11



STA. 163+50 TO STA. 172+00

NOTES:

(Class 7) STREET ENTRANCES SHALL INCLUDE 8" OF AGG. BASE AND 6" OF BITUMINOUS PLACED IN 3 LIFTS AS TURNLANES.

(Class 7) WATER TOWER ENTRANCE SHALL INCLUDE 8" OF AGG. BASE AND 4" OF BITUMINOUS PLACED IN 2 LIFTS.

(Class 7) RESIDENTIAL ENTRANCE SHALL INCLUDE 6" AGG. BASE AND 3 1/2" BITUMINOUS

TYPICAL SECTIONS

CERTIFIED BY Kayer M. Bruniek REG NO. 19917 3/26/2008
LICENSED PROFESSIONAL ENGINEER

SAP 55-602-17 CSAH 2 SHEET NO. 3 OF 48 SHEETS

CASSIDY DRIVE LT. STA. 134+91
INPLACE 24" x 82' RCP W/APRONS

EXIST CB 6.9' RT. STA. 135+92
INPLACE 15" x 61' RCP W/APRON

Extend grading limits 240'
Remove + Replace C&G and b.t. surface

Remove (2) Concrete tile head walls

PI Sta = 137+11.83
Δ = 14°37'51"L
D = 02°00'26"
T = 366.43
R = 2854.33
L = 728.88

RATE SUPERELEVATION .04'/FT

SCHAEFFER LANE LT. STA. 143+94
NO CULVERT INPLACE

Breaker run and Fabric
of addinal subcut
Sta. 146+00 to 147+00
35' wide E.B. Only

Remove and Relocate Sign and Base

CONSTRUCTION LIMITS

BEGIN PROJECT:
STA. 134+25

P.C. STA. 133+45.40

BEGIN GRADING:
STA. 135+36.70

100' EX. R/W

100' EX. R/W

P.T. STA 140+74.28

CONSTRUCTION LIMITS

CENTURY HILLS DRIVE RT STA 134+91
INPLACE 24" x 114' CMP

25' T.E.
WATER TOWER ENT RT. STA 143+94

60' T.E.

SCALE IN FEET
0 25 50 100

PROFILE 100' RT.
PROFILE 100' LT.

AS-BUILT
FEB 24 2010
ENGINEERING

PI STA = 132+90
ELEV = 1233.70
600' V.C.

PVT = 135+90
ELEV = 1240.46

PVC = 137+70
ELEV = 1244.51

PI STA = 144+20
ELEV = 1259.15
1300' = V.C.

HIGH PT = 144+89.87
ELEV = 1259.62

-0.22%
2.25%
-1.82%

Additional Subcut

132+00	133+00	134+00	135+00	136+00	137+00	138+00	139+00	140+00	141+00	142+00	143+00	144+00	145+00	146+00	147+00
1235.18	1235.66	1236.24	1236.92	1237.71	1238.60	1239.59	1240.68	1242.93	1245.17	1246.21	1247.17	1248.06	1248.86	1249.59	1250.24	1250.81	1251.30	1251.72	1252.05	1252.31	1252.49	1252.59	1252.62	1252.56	1252.43	1252.22	1251.93
1234.93	1235.47	1236.08	1236.67		1238.36	1239.47	1240.67	1242.59	1243.77	1245.28	1246.46	1247.59	1248.82	1249.78	1250.91	1252.10	1253.38	1254.69	1256.82	1257.69	1258.81	1259.69	1260.15	1260.29	1260.10	1259.63	1258.85

CERTIFIED BY Kevin M Polenick REG. NO. 19917 3/26 20 08
LICENSED PROFESSIONAL ENGINEER

S.A.P. 55-602-17 C.S.A.H. 2

Relocated School Speed Sign

10' T.E.

100' NEW R/W

75' EX. R/W

LISA LANE

LISA LANE LT. STA 151+19
INPLACE 18" x 26' CMP

℄ CULVERT STA 153+17
INPLACE 30" x 66' CMP

T.E. OVER ENTIRE LOT 1 BLOCK 1

120' NEW R/W

RES. DRIVE LT. STA 154+42
INPLACE 18" x 28' CMP

25' T.E.

WELL CASING

CONSTRUCTION LIMITS

100' NEW R/W

OSLO COURT

OSLO COURT LT. STA 158+33
INPLACE 18" x 42' CMP

25' T.E.

75' EX. R/W

147+00 148+00 149+00 150+00 151+00 152+00 153+00 154+00 155+00 156+00 157+00 158+00 159+00 160+00 161+00

100' NEW R/W

CONSTRUCTION LIMITS

WATER VALVE

ELEC BOX

P-BUR

T-BUR

SAN MH

TOWER OVERFLOW OUTLET RT. STA 148+50
INPLACE 12" x 175' RCP W/APRON
Remove 72 Ft.

60' T.E.

SHANNON OAKS BLVD.

LIGHT POLE

FIRE HYD

DRAIN PIPE RT. STA 153+15
INPLACE 8" x 25' PERF. APS Not Located

STORM SEWER OUTLET RT. STA 152+30
INPLACE 15" x 95' RCP W/APRON
Remove 32 Ft.

STORM SEWER OUTLET RT. STA 155+00
INPLACE 18" x 75' RCP W/APRON
Leave Inplace

TEMPORARY ENT.
(TO BE REMOVED)

TEMPORARY ENT. RT. STA 158+33
INPLACE 18" x 72' RCP W/APRONS

SHANNON OAKS BLVD. RT. STA 151+19
INPLACE ~~24"~~ x 110' RCP W/APRONS
18" x 100' RCP W/aprons

0 25 50 100
SCALE IN FEET

PROFILE 100' RT. - - - - -
PROFILE 100' LT. ———

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PVC = 150+70
ELEV = 1247.35
1.82%
PVT = 150+70
ELEV = 1247.35

LOW PT = 153+69.72
ELEV = 1244.63

PI = 154+20
ELEV = 1241.00
700' V. C.

PVT = 157+70
ELEV = 1249.48
2.42%

PVC = 160+10
ELEV = 1255.30

1290 1280 1270 1260 1250 1240 1230 1220 1210 1200

1252.22 1251.93 1251.56 1251.11 1250.59 1249.99 1249.31 1248.55 1247.71 1246.84 1246.09 1245.50 1245.07 1244.78 1244.64 1244.66 1244.83 1245.15 1245.62 1246.24 1247.01 1247.94 1249.01 1250.21 1252.63 1255.06 1256.25 1257.35

1259.63 1258.85 1257.94 1256.80 1253.47 1251.28 1249.00 1244.90 1243.46 1242.52 1242.12 1242.71 1243.56 1244.32 1246.01 1247.26 1248.50 1251.03 1252.38 1257.25

146+00 147+00 148+00 149+00 150+00 151+00 152+00 153+00 154+00 155+00 156+00 157+00 158+00 159+00 160+00 161+00

CERTIFIED BY Lawrence Priemer LICENSED PROFESSIONAL ENGINEER REG. NO. 19917 3/26 20 08

S.A.P. 55-602-17 C.S.A.H. 2 SHEET NO. 5 OF 48 SHEETS

36 AVE NE LT. STA 163+22
INPLACE 18" x 38' CMP

CEMETERY ENT. LT. STA 171+44
INPLACE 15" x 48' CMP
Culvert vacated and plugged

Relocated emergency pole

Extend CL6 and bituminous approx. 25'

36 AVE NE

CONSTRUCTION LIMITS

75' EX. R/W

75' NEW R/W

100' NEW R/W

10' Bike Path

35' NEW R/W

HAVERHILL ROAD

Existing emergency siren pole (moved)

CONSTRUCTION LIMITS

END GRADING:
STA. 172+00

END PROJECT:
STA. 176+50

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0 25 50 100
SCALE IN FEET

HAVERHILL ROAD RT. STA 163+22
NO CULVERT INPLACE

PROFILE 100' RT.
PROFILE 100' LT.

PI = 163+40
ELEV = 1263.30
660' V. C.

2.42%

0.32%

PVC = 160+10
ELEV = 1255.30

PVT = 166+70
ELEV = 1264.34

	160+00	161+00	162+00	163+00	164+00	165+00	166+00	167+00	168+00	169+00	170+00	171+00	172+00	173+00	174+00	175+00
Ground	1256.25	1257.35	1258.38	1259.33	1260.20	1260.99	1261.70	1262.33	1262.87	1263.34	1263.73	1264.04	1264.27	1264.44	1264.75	1265.07	1265.39	1265.70	1266.02			1266.41		
Profile	1255.30	1256.26	1257.25	1258.08	1258.77	1261.30	1262.23	1262.70	1263.16	1263.75	1264.16	1264.47	1264.60	1264.73	1264.80	1265.16	1265.39	1265.44	1265.69	1266.02				

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LICENSED PROFESSIONAL ENGINEER

S.A.P. 55-602-17 C.S.A.H. 2 SHEET NO. 6 OF 48 SHEETS

TREE REMOVAL

STATIONING	LOCATION LT.-RT.	CLEAR & GRUB	REMARKS
147+00 - 150+50	LT.	21	
153+50 - 155+50	LT.	45	
163+50 -- 176+50	RT.	89	
163+50 -- 171+00	LT.	95	
171+00 - 176+50	LT.	48	
TOTALS		298	

SURFACE DRAINAGE REMOVAL

STATIONING	LOCATION	INPLACE	REMOVE			SALVAGE	
			C.M.P (LIN FT)	R.C.P. (LIN FT)	R.C.P. APRONS	R.C.P. (LIN FT)	R.C.P. APRONS
135+30	CASSIDY DRIVE LT.	24" x 82' RCP CULVERT			1		
135+92	STORM OUTLET LT.	15" x 61' RCP CULVERT		55	1		
147+25	WATER TOWER ENT. RT.	15" x 22' CMP CULVERT	22				
148+00	WATER TOWER OVERFLOW	12" x 170' RCP CULVERT		~~68~~ 72			1
151+19	LISA LANE LT.	18" x 26' CMP CULVERT	26				
151+19	SHANNON OAKS BLVD. RT.	24" x 110' RCP CULVERT				~~100~~ 98	2
152+00	STORM OUTLET RT.	15" x 100' RCP CULVERT		30			1
153+17	CENTERLINE	36" x 66' CMP CULVERT	66				
154+42	RES. DRIVE LT.	18" x 28' CMP CULVERT	28				
158+33	OSLO COURT LT.	18" x 42' CMP CULVERT	42				
158+33	TEMPOARY ENT. RT.	24" x 72' RCP CULVERT		72			
163+22	36TH AVE LT.	18" x 38' CMP CULVERT	42				
TOTALS			226	225	2	98	4

SAW BITUMINOUS PAVEMENT

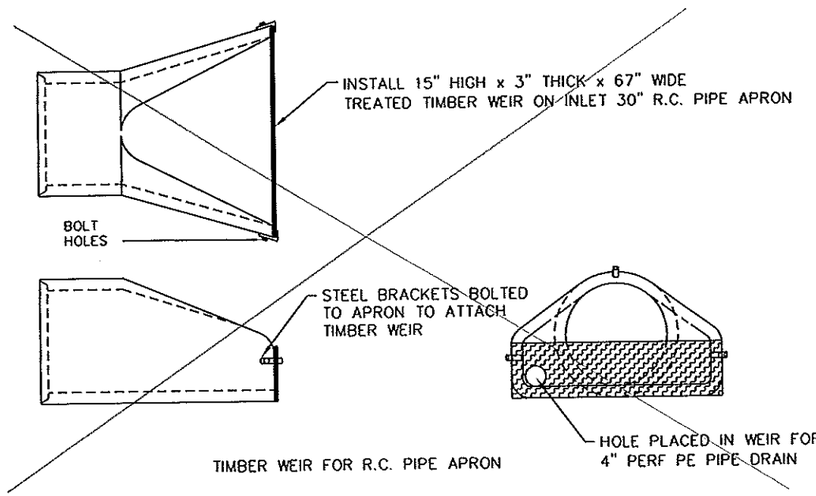
STATIONING	LOCATION	SAW FULL DEPTH (LIN FT)	REMARKS
134+91	CASSIDY DRIVE LT.	87	
135+15	CENTURY HILLS DRIVE RT.	8	
143+94	SCHAEFFER LANE	32	
151+19	LISA LANE LT.	28	
151+19	SHANNON OAKS BLVD. RT.	52	
158+33	OSLO COURT	24	
163+22	36TH AVE LT.	22	
163+22	HAVERHILL ROAD RT.	24	
171+44	CEMETERY LT.	45	
172+00	MAINLINE	36	
TOTALS		358	

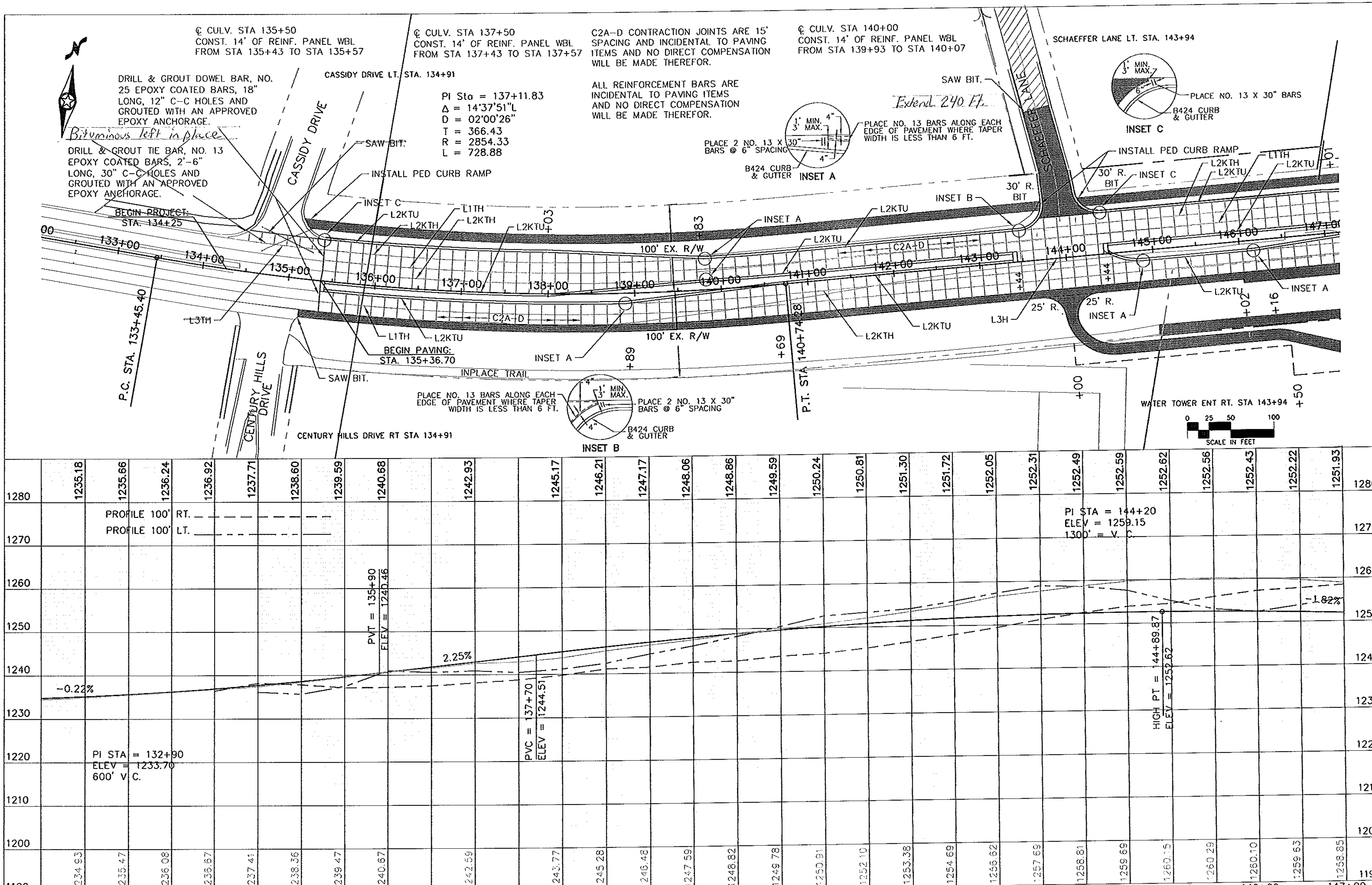
AS-BUILT

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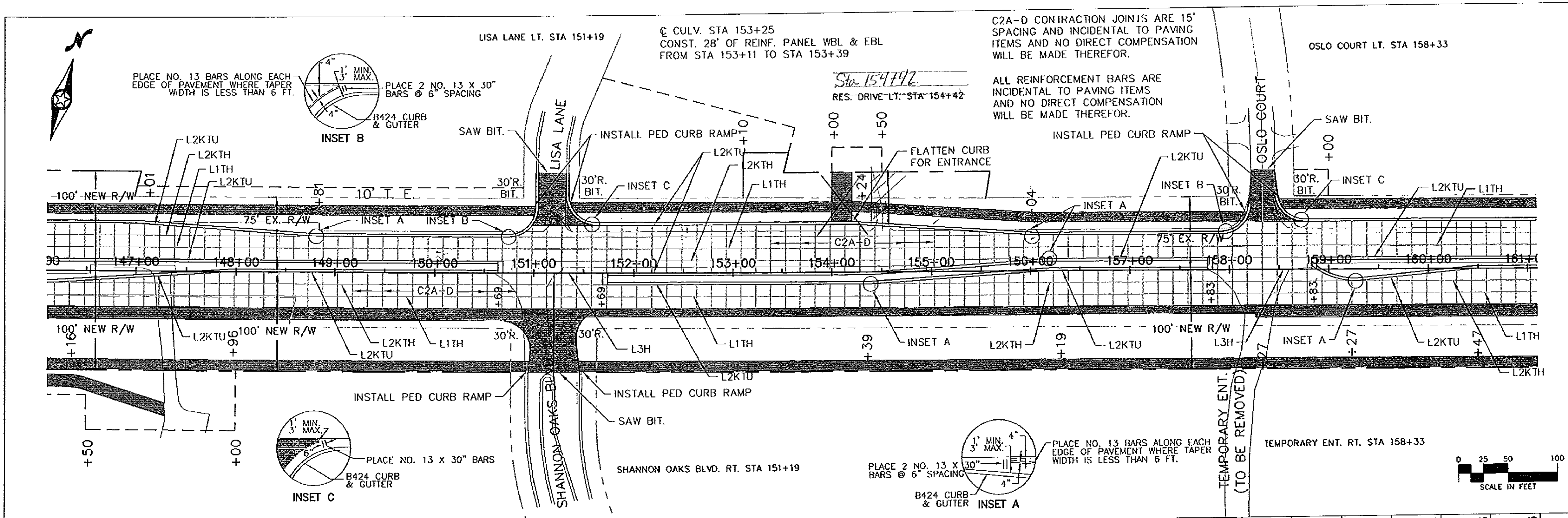
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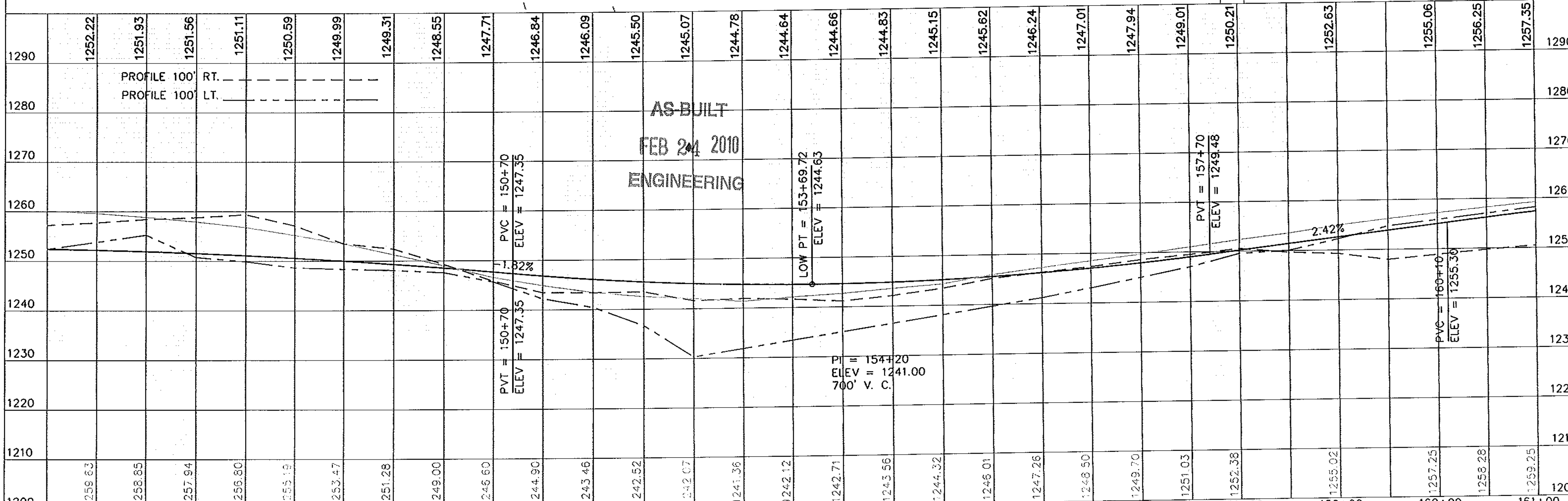




CERTIFIED BY Kaye M Bieniek LICENSED PROFESSIONAL ENGINEER REG. NO. 19917 3/26 20 08

S.A.P. 55-602-17 C.S.A.H. 2





CERTIFIED BY Kaye M Bieniek LICENSED PROFESSIONAL ENGINEER REG. NO. 19917 3/26 20 08

S.A.P. 55-602-17 C.S.A.H. 2

C2A-D CONTRACTION JOINTS ARE 15' SPACING AND INCIDENTAL TO PAVING ITEMS AND NO DIRECT COMPENSATION WILL BE MADE THEREFOR.

ALL REINFORCEMENT BARS ARE INCIDENTAL TO PAVING ITEMS AND NO DIRECT COMPENSATION WILL BE MADE THEREFOR.

36 AVE NE LT. STA 163+22

CEMETERY ENT. LT. STA 171+44

INSTALL PED CURB RAMP
INSET C
30' R.
36 AVE NE
Extend approx 25'
SAW BIT.
L3H
L1TH
L2KTU
30' R. BIT.
30' R.
75' EX. R/W
C2A-D
100' NEW R/W
L1TH
L2KTH
L2KTU
30' R.
10' Bit. to 30' R.
INSTALL PED CURB RAMP
SAW BIT.
HAVERHILL ROAD
HAVERHILL ROAD RT. STA 163+22
SAW BIT.
Bituminous Patch
75' NEW R/W
35' NEW R/W
END PAVING: STA. 172+00
END PROJECT: STA. 176+50
0+11
0+47
161+00
162+00
163+00
164+00
165+00
166+00
167+00
168+00
169+00
170+00
171+00
172+00
173+00
176+00

1' MIN. 3' MAX.
6"
PLACE NO. 13 X 30" BARS
B424 CURB & GUTTER
INSET C

0 25 50 100
SCALE IN FEET

PROFILE 100' RT.
PROFILE 100' LT.
PI = 163+40
ELEV = 1263.30
660' V. C.
PVC = 160+10
ELEV = 1255.36
PVT = 166+70
ELEV = 1264.34
2.42%
0.32%

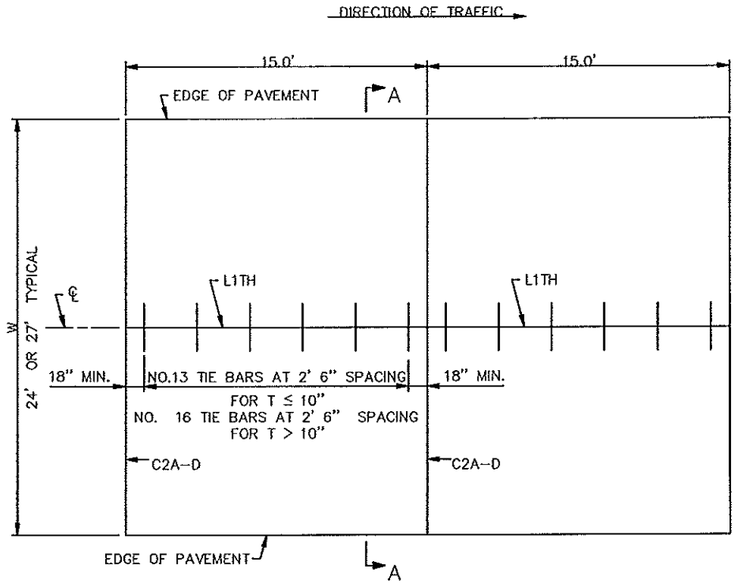
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160+00	161+00	162+00	163+00	164+00	165+00	166+00	167+00	168+00	169+00	170+00	171+00	172+00	173+00	174+00	175+00
1256.25	1257.35	1258.38	1259.33	1260.20	1260.99	1261.70	1262.33	1262.87	1263.34	1263.73	1264.04	1264.27	1264.44	1264.75	1265.07
1255.36	1259.25	1260.08	1260.77	1261.30	1262.23	1262.70	1263.18	1263.75	1264.18	1264.47	1264.60	1264.73	1264.80	1265.16	1265.39

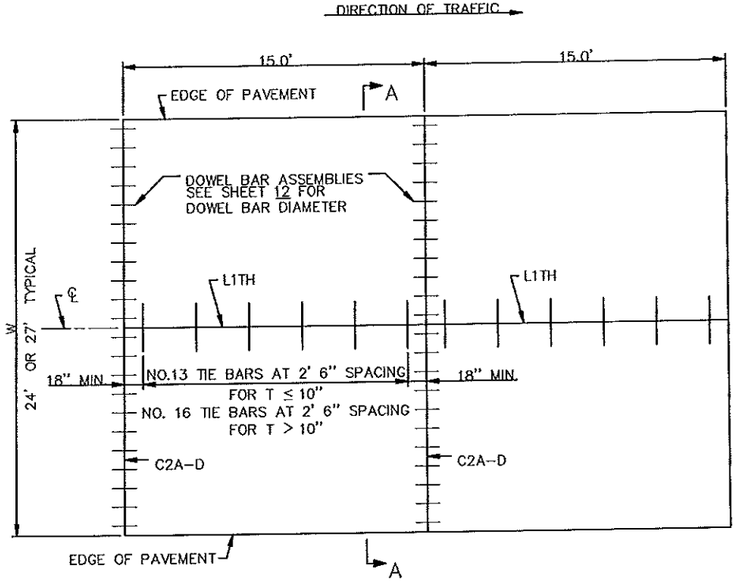
1265.39	1265.70	1266.02				
1265.44	1265.68	1266.02	1266.29	1266.41	1266.39	

CERTIFIED BY Doug M Bremseth REG. NO. 19917 3/26 20 08
LICENSED PROFESSIONAL ENGINEER

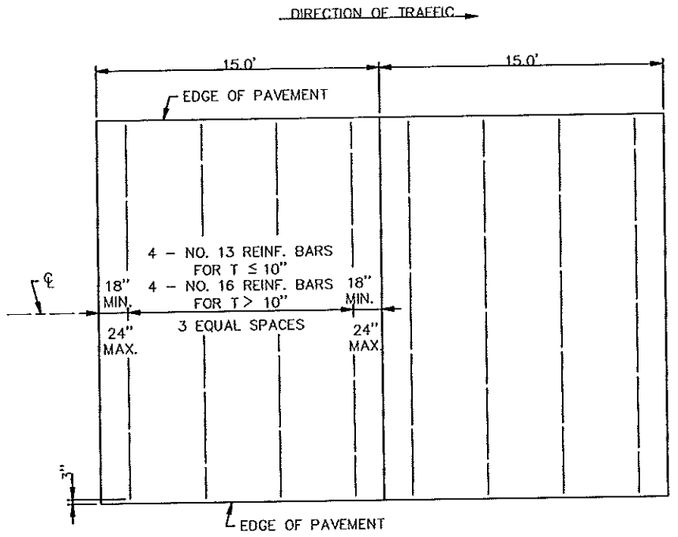
S.A.P. 55-602-17 C.S.A.H. 2 SHEET NO. 10 OF 48 SHEETS



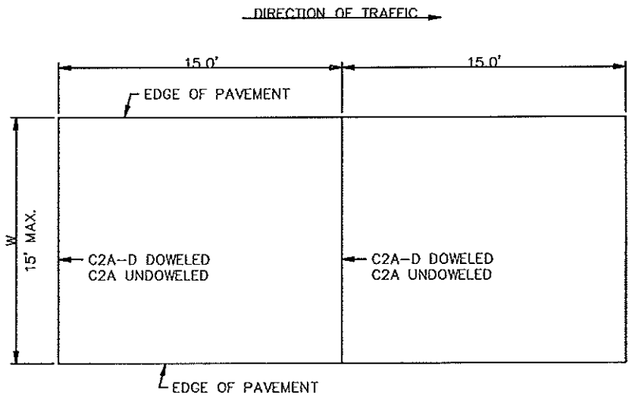
MAINLINE PAVEMENT
UNDOWELED



MAINLINE PAVEMENT
DOWELED



SUPPLEMENTAL PANEL REINFORCEMENT

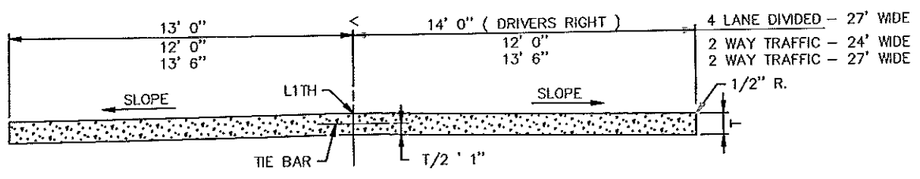


PAVEMENT 2 FT. THRU 15 FT. WIDTH

AS-BUILT

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ENGINEERING



SECTION A–A

GENERAL NOTES:

ALL REBARS ARE IN METRIC DESIGNATIONS

SEE TYPICAL SECTIONS AND PLAN SHEETS FOR CROSS SLOPES AND PAVEMENT THICKNESS, T.

WHEN RIGID PAVEMENT ADJOINS FLEXIBLE PAVEMENT, BRIDGE APPROACHES, R. R. CROSSINGS OR OTHER TYPES OF FREE ENDS, THE FOLLOWING MODIFICATIONS SHALL BE MADE: THE FIRST OR LAST 10 JOINTS SHALL BE DOWELED CONTRACTION JOINTS, C4E–D.

DOWEL BAR ASSEMBLIES, WHEN REQUIRED, SHALL BE SIMILAR TO THOSE SHOWN ON STANDARD PLATE 1103.

ALL REINFORCING BARS SHALL BE EPOXY COATED IN ACCORDANCE WITH SPEC. 3301 AND SHALL MEET THE REQUIREMENTS OF GRADE 60 FOR AASHTO M–31 OR M–53. FOR ADDITIONAL REINFORCEMENT OVER CULVERTS, SEE STANDARD PLATE 1070.

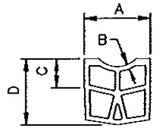
TIE BARS:
USE NO. 13 BARS 2' 6" LONG, AT 2' 6" SPACING. FOR T ≤ 10" USE NO. 16 BARS 3' 0" LONG AT 2' 6" SPACING FOR T > 10".

SUPPLEMENTAL PANEL REINFORCEMENT:
PLACE IN PANELS WHERE PAVEMENT WIDTH EXTEEDS 15.0' WITHOUT A LONGITUDINAL JOINT, AND IN THE MIDDLE LANE(S) WHERE TIED PAVEMENT WIDTH EXCEEDS 4 LANES. USE NO. 13 BARS FOR PAVEMENT THICKNESS 10" OR LESS. USE NO. 16 BARS FOR PAVEMENT THICKNESS GREATER THAN 10". PLACEMENT DEPTH SHALL BE PLANNED T/2 ' 1". NO MORE THAN TWO LANES SHALL BE PAVED AT THE SAME TIME.

STANDARD SHEET NO. 5–297.217	TITLE: CONCRETE MAINLINE PAVEMENT 15.0 FT. PANEL LENGTH
STANDARD APPROVED: OCTOBER 1, 1998	
REVISION DATE 1–21–2000	STATE PROJ. NO. SAP 55–602–17 SHEET NO. 11 OF 48 SHEETS

REQUIRED DIMENSIONS

JOINT TYPE	TRANSVERSE
NOMINAL SEALER SIZE	11/16" USE IN ALL 3/8"JOINTS
A	0.80" +0.14" -0.05"
B	0.08" ± 0.02"
C	0.60" MIN.
D	0.80" MIN.
WEB AND WALL THICKNESS, UNLESS NOTED	0.03" MIN.



SPEC. REFERENCE 3721

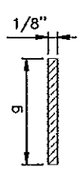
TYPICAL SHAPE FOR SATISFACTORY INSTALLATION IN JOINT (5 CELL MIN.)

NOTES:

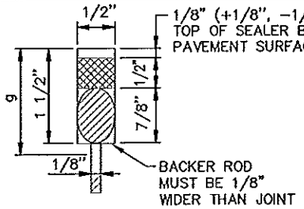
"A" DIMENSION SHALL APPLY AT ANY POINT THROUGHOUT "C" DEPTH. IN ITS FINAL POSITION, THE TOP CORNERS OF THE PREFORMED JOINT SEALER SHALL BE PLACED NOT LESS THAN 1/8 IN., NOR MORE THAN 5/16 IN. BELOW THE PAVEMENT SURFACE.

SHARP INTERNAL CORNERS WILL NOT BE PERMITTED. ALL CORNERS SHALL BE PROVIDED WITH SUITABLE FILLET. CURRENTLY APPROVED CONFIGURATIONS ARE ON FILE IN THE MATERIALS ENGINEERING SECTION, MINNESOTA DEPARTMENT OF TRANSPORTATION.

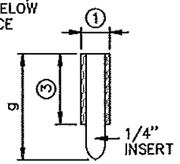
CONTRACTION JOINT SEALER
PREFORMED ELASTIC TYPE



DETAIL A
FORMED & SAWED



DETAIL B②
SAWED



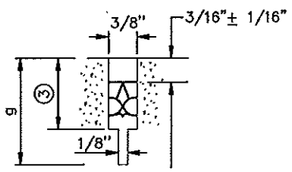
DETAIL C
FORMED
(INSERT TO BE REMOVED)

CONTRACTION JOINT CLASS DESIGNATION, DETAIL & SEALER SPEC. TABLE

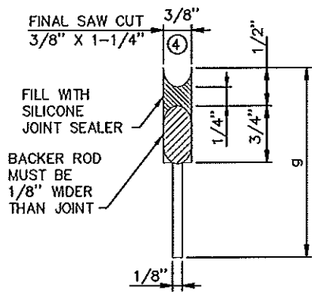
CLASS DESIGNATION		JOINT DETAIL	JOINT SEALER SPEC.
WITHOUT DOWELS	WITH DOWELS		
C1A	C1A-D	A	UNSEALED
C2A	C2A-D	A	3725
C2B	C2B-D	B	3725
C2X	C2X-D	B OR C	3725
C3D	C3D-D	D	3721
C3X	C3X-D	C OR D	3721
C4E	C4E-D	E	3722

DOWEL BAR DIAMETER TABLE

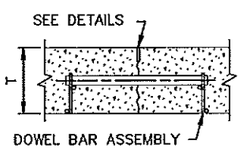
PAVEMENT THICKNESS T	DOWEL BAR DIAMETER
6"- 6-1/4"	1"
6-1/2"-10-1/4"	1-1/4"
10-1/2"-12-1/2"	1-1/2"
13"-14"	1-3/4"



DETAIL D
SAWED



DETAIL E
SAWED



SECTION AT JOINT

LEGEND

C = CONTRACTION JOINT
NO.= SEALANT TYPE
1 = UNSEALED
2 = 3725
3 = 3721
4 = 3722

LETTER= DETAIL
X = MORE THAN 1 DETAIL
-D = DOWEL BARS

EXAMPLE
C2B-D

AS-BUILT
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NOTES:

① DESIGN C3X OR C3X-D -- PRIOR TO INSTALLING PREFORMED JOINT SEALER IN THE FORMED JOINT (DETAIL C), THE JOINT SHALL BE WIDENED TO A NOMINAL WIDTH OF 3/8" BY SAWING ALONG THE FULL LENGTH OF THE FORMED JOINT.

DESIGN C2X OR C2X-D -- PRIOR TO SEALING FORMED JOINT (DETAIL C), WITH HOT POUR SEALER, THE JOINT SHALL BE WIDENED TO A NOMINAL WIDTH OF 1/2". SAW ALONG FULL LENGTH OF THE FORMED JOINT TE DEPTH OF 3/4" (+1/8", - 1/16") THE SEALER SHALL BE FILLED TO THE SAME DEPTH AS SHOWN IN DETAIL B.

② DESIGN C2B OR C2B-D -- PRIOR TO SEALING JOINT (DETAIL B) WITH HOT POUR JOINT SEALER, A 5/8" DIA. CLOSED CELL BACKER ROD SHALL BE PLACED SUCH THAT THE TOP OF THE BACKER ROD IS 5/8" BELOW THE SURFACE OF THE PAVEMENT.

③ WHEN USING PREFORMED JOINT SEALER, THE DEPTH SHALL BE 1/4" MORE THAN THE PREFORMED SEALER, WHEN COMPRESSED, TO FIT THE JOINT DESIGN WIDTH.

④ THE JOINT FACES SHALL BE CLEANED AND DRIED BY SANDBLASTING AND AIR BLASTING. PRIOR TO SEALING THE JOINT, A 1/2" DIA. CLOSED CELL BACKER ROD SHALL BE PLACED SUCH THAT THE TOP OF THE BACKER ROD IS 1/2" BELOW THE SURFACE OF THE PAVEMENT. NON SELF-LEVELING SILICONE SHALL BE TOOLED INTO THE JOINT MAINTAINING A SEALANT BEAD THICKNESS OF 1/4".

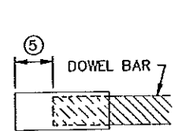
GENERAL NOTES:

SEE STANDARD PLATE 1103, DOWEL BAR ASSEMBLY.
SEE STANDARD PLATE 1150, CONSTRUCTION OF HEADER JOINTS, SEE STANDARD PLANS 5-297.217 AND 5-297.219, CONCRETE MAINLINE/RAMP PAVEMENT.

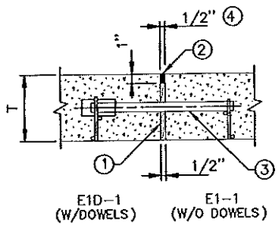
SEE PAVING LAYOUTS IN THE PLANS FOR JOINT CLASS DESIGNATION TO BE USED AND SPECIAL REINFORCEMENT REQUIRED.

FOR UNBONDED OVERLAYS, THE JOINT DEPTH " g" SHALL BE T/3.
FOR CONCRETE PAVEMENT, THE JOINT DEPTH "g" SHALL BE T/4.

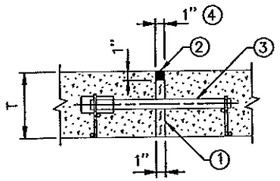
CONTRACTION JOINTS
DESIGN C



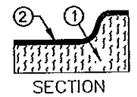
DOWEL BAR SLEEVE DETAIL

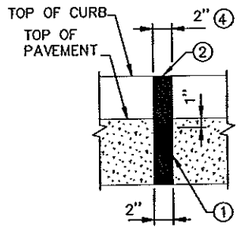


DETAIL A

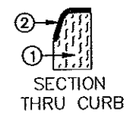


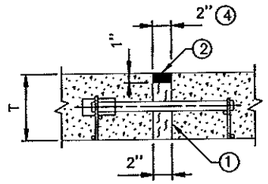
DETAIL C





DETAIL D





DETAIL E

EXPANSION JOINTS

CLASS DESIGNATION		JOINT DETAIL	JOINT SEALER SPEC.
WITH DOWELS	WITHOUT DOWELS		
E1D-1	E1-1	A	3723
E2D-1	E2-1	C	3723
	E4-1	D	3723
E4D-1		E	3723
	E8S-1	⑥	3725

LEGEND

E = EXPANSION JOINT
NO. = JOINT REFERENCE ④
D = DOWEL BARS
S = CONCRETE SILL
-1 = HOT POURED SEAL

EXAMPLE

E1D-1
- 1 = HOT POURED SEAL
- D = DOWEL BARS
- 1 = JOINT REFERENCE
- E = EXPANSION JOINT

NOTES:

① PREFORMED JOINT FILLER MATERIAL, SPEC. 3702.

② JOINT SEALER SPEC. 3723. TOP OF SEALER, FLUSH TO 1/8 IN. BELOW TOP OF PAVEMENT SURFACE. MAKE TOP OF SEALER FOR CURB SECTION E JOINTS FLUSH WITH SURFACE ± 1/8 IN.

③ DOWEL BAR ASSEMBLY, SEE STANDARD PLATE 1103.

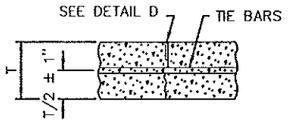
④ THE FIRST NUMBER IN THE JOINT DESIGNATION IS EQUAL TO HALF OF THE JOINT NUMBER IN 1/2" INTERVALS (I.E. E1 = 1/2", E2 = 1", E4 = 2 IN., E8 = 4 IN.).

⑤ SPACE FROM END OF DOWEL BAR TO END OF SLEEVE TO BE EQUAL TO EXPANSION JOINT WIDTH.

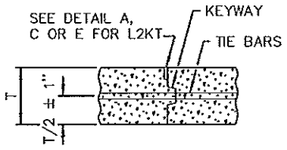
⑥ SEE STANDARD PLAN 5-297.223 FOR E8S JOINT DETAIL.

EXPANSION JOINTS
DESIGN E

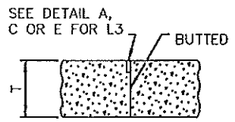
STANDARD SHEET NO. 5-297.221 (1 OF 2)	TITLE: PAVEMENT JOINTS CONTRACTION (DESIGN C) AND EXPANSION (DESIGN E)
STANDARD APPROVED: JUNE 6, 2005	



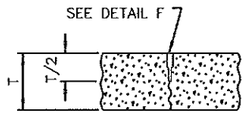
L1 & L1T



L2KT



L3



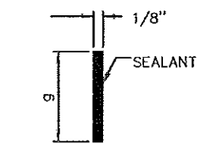
L4

LONGITUDINAL JOINT CLASS DESIGNATION, DETAIL & SEALER SPECIFICATION TABLE

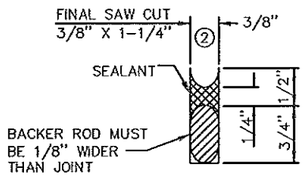
CLASS DESIGNATION				JOINT DETAIL	JOINT SEALER SPECIFICATION
WITHOUT TIE BARS	WITH TIE BARS	WITH KEYWAY & TIE BARS	BUTTED		
L1H	L1TH			B	3723
		L2KTH		D OR E	3723
		L2KTS		C	3722
			L3H	D OR E	3723
			L3S	C	3722
L4S				F	3722

LEGEND
- L = LONGITUDINAL JOINT
- NO. = JOINT REFERENCE
- K = KEYWAY
- T = TIE BARS
- U = UNSEALED
- H = HOT POUR (SEALANT)
- S = SILICONE (SEALANT)

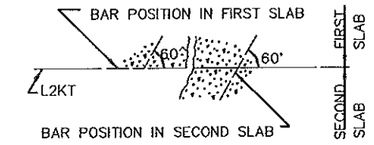
JOINT REFERENCE NUMBERS
1 = SAWED TO A DEPTH OF T/3
2 = KEYED CONSTRUCTION JOINT
3 = BUTTED CONSTRUCTION JOINT
4 = SAWED TO A DEPTH OF T/2



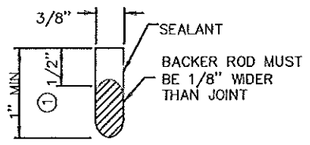
DETAIL B
(SAWED & SEALED WITH SPEC. 3723)



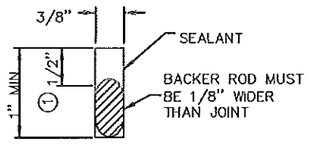
DETAIL C
(SAWED AND SEALED WITH SPEC. 3722)



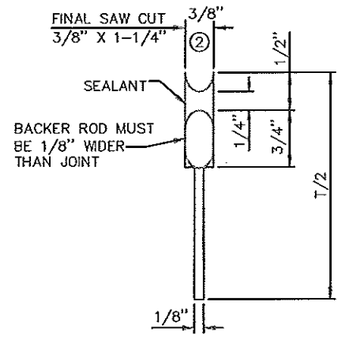
TIE BAR BENDING DETAIL



DETAIL D
(FORMED & SEALED WITH SPEC. 3723)



DETAIL E
(SAWED & SEALED WITH SPEC. 3723)



DETAIL F
(SAWED AND SEALED WITH SPEC. 3722)

AS-BUILT
FEB 24 2010
ENGINEERING

LONGITUDINAL JOINT NOTES:

ALL REBARS ARE IN METRIC DESIGNATIONS

THE TIE BAR SPACING FOR ALL L2KT JOINTS SHALL BE 2' – 6" CENTER TO CENTER AND BENT 60^ AS SHOWN, EXCEPT WHEN NOTED OTHERWISE IN THE PLANS.

TIE BARS IN THE L2KT JOINTS SHALL BE THE SAME SIZE AND LENGTH AS USED FOR THE L1T JOINTS, WHEN TYING PAVEMENT TO PAVEMENT. TIE BARS IN THE L2KT JOINTS SHALL BE NO. 13 X 2' – 6", WHEN TYING CURB & GUTTER TO PAVEMENT.

ALL TIE BARS SHALL MEET THE REQUIREMENTS OF GRADE 60 FOR AASHTO M–31 OR M–53.

NORMALLY, TIED PAVEMENT WIDTHS SHALL NOT EXCEED FOUR LANES, EXCEPT BRIDGE APPROACH PANELS AND PAVEMENT TAPERS.

JOINT WIDTH TOLERANCE IS + 1/16 IN. TO – 1/32 IN.

FOR CONCRETE PAVEMENT THE JOINT DEPTH " g " SHALL BE T/3 INCHES.

SPEC. 3723 SEALER – TOP OF SEALER FLUSH TO – 3/16 IN. BELOW TOP OF PAVEMENT SURFACE.

① THE JOINT FACES SHALL BE CLEANED AND DRIED BY SANDBLASTING AND AIR BLASTING. PRIOR TO SEALING THE JOINT, A CLOSED CELL BACKER ROD CAPABLE OF WITHSTANDING SEALANT TEMPERATURES OF 400 DEGREES F, WITH A DIAMETER 1/8 IN. LARGER THAN THE JOINT OPENING, MAY BE PLACED 1/2 IN. BELOW THE TOP OF THE PAVEMENT.

② THE JOINT FACES SHALL BE CLEANED AND DRIED BY SANDBLASTING AND AIR BLASTING. PRIOR TO SEALING THE JOINT. A 1/2 IN. DIAMETER CLOSED CELL BACKER ROD SHALL BE PLACED SUCH THAT THE TOP OF THE BACKER ROD IS 1/2 IN. BELOW THE SURFACE OF THE PAVEMENT. NON–SELF–LEVELING SILICONE SHALL BE TOOLED INTO THE JOINT MAINTAINING A SEALANT BEAD THICKNESS OF 1/4 IN.

GENERAL NOTES:

SEE STANDARD PLATE 1103, DOWEL BAR ASSEMBLY. SEE STANDARD PLATE 1141, PAVEMENT KEYWAY. SEE STANDARD PLANS 5–297.217 AND 5–297.219 FOR CONCRETE MAINLINE AND RAMP PAVEMENT.

SEE PAVING LAYOUTS IN THE PLANS FOR JOINT CLASS DESIGNATIONS TO BE USED & SPECIAL REINFORCEMENT REQUIRED.

STANDARD SHEET NO. 5–297.221 (2 OF 2)	TITLE: PAVEMENT JOINTS LONGITUDINAL (DESIGN L)
STANDARD APPROVED: JUNE 6, 2005	
STATE PROJ. NO. SAP 55–602–17	SHEET NO. 13 OF 48 SHEETS

CASSIDY DRIVE LT. STA. 134+91

SCHAEFFER LANE LT. STA. 143+94

Omitted

Existing 4" Force Main

PI Sta = 137+11.83
Δ = 14°37'51"L
D = 02°00'26"
T = 366.43
R = 2854.33
L = 728.88

RECONSTRUCT SAN. MH
EX. RING EL. 1241.48
NEW RING EL. 1242.50

RECONSTRUCT SAN. MH
EX. RING EL. 1244.78
NEW RING EL. 1246.00

RECONSTRUCT SAN. MH
EX. RING EL. 1255.74
NEW RING EL. 1254.00

RECONSTRUCT SAN. MH
EX. RING EL. 1258.77
NEW RING EL. 1253.50

RECONSTRUCT SAN. MH
EX. RING EL. 1259.10
NEW RING EL. 1257.50

ADJUST GATE VALVE BOXES
TO FINISHED GRADE

EX. 8" W/M

EX. 8" W/M

CASSIDY DRIVE

SCHAEFFER LANE

MH 1 INLET 1

MH 2

CB 3

CB 2

CB 1

MH 3

CB 6

CB 4

CB 5

MH 4

CB 8

CB 7

CB 9

100' EX. R/W

100' EX. R/W

P.C. STA. 133+45.40

P.T. STA. 140+74.28

CENTURY HILLS DRIVE

CENTURY HILLS DRIVE RT STA 134+91

EX. 12" W/M

7' MIN. COVER OVER W/M

ADJUST GATE VALVE BOX
TO FINISHED GRADE

EX. 16" W/M

WATER TOWER ENT RT. STA. 143+94

133+00 134+00 135+00 136+00 137+00 138+00 139+00 140+00 141+00 142+00 143+00 144+00 145+00 146+00 147+00

+03 +83 +89 +69 +00 +50 +02 +16

0 25 50 100
SCALE IN FEET

PROFILE 100' RT.
PROFILE 100' LT.

AS-BUILT
FEB 24 2010
ENGINEERING

PI STA = 144+20
ELEV = 1259.15
1300' V. C.

PI STA = 132+90
ELEV = 1233.70
600' V. C.

PVT = 135+90
ELEV = 1240.46

PVC = 137+70
ELEV = 1244.51

HIGH PT = 144+89.87
ELEV = 1252.62

-0.22%

2.25%

1.82%

EX. 24" R.C. PIPE

18" R.C. PIPE

21" R.C. PIPE

15" R.C. PIPE

18" R.C. PIPE

33.42
33.75
34.25
34.00
37.25
37.35
42.25
42.50
48.00

1280 1270 1260 1250 1240 1230 1220 1210 1200 1190

1235.18 1235.66 1236.24 1236.92 1237.71 1238.60 1239.59 1240.68 1242.93 1245.17 1246.21 1247.17 1248.06 1248.86 1249.59 1250.24 1250.81 1251.30 1251.72 1252.05 1252.31 1252.49 1252.59 1252.62 1252.56 1252.43 1252.22 1251.93

1234.93 1235.47 1236.08 1236.67 1237.41 1238.36 1239.47 1240.67 1243.77 1245.28 1246.48 1247.59 1248.82 1249.78 1250.91 1252.10 1253.38 1254.69 1256.02 1257.63 1258.81 1259.69 1260.15 1260.29 1260.10 1259.63 1258.35

132+00 133+00 134+00 135+00 136+00 137+00 138+00 139+00 140+00 141+00 142+00 143+00 144+00 145+00 146+00 147+00

STORM SEWER | CERTIFIED BY [signature] REG. NO. 19917 3/10 20 08 | S.A.P. 55-602-17 | C.S.A.H. 2 | SHEET NO. 14 OF 48 SHEETS

LICENSED PROFESSIONAL ENGINEER

LISA LANE LT. STA 151+19

EX. 8" W/M

Existing Force Main 4" Sewer

See details below

RES. DRIVE LT. STA 154+42

OSLO COURT LT. STA 158+33

PROVIDE MIN. 7' COVER OVER ALL INSTALLED W/M

EXISTING SAN. MH.

EXISTING 6" WATER MAIN 15' Rt.

F&I 6" GATE VALVE & BOX-18' RT. OF TEE

F&I HYDRANT-21' RT. OF TEE 12 Rt.

BREAKOFF FLANGE 2" ABOVE GRADE

F&I 6" GATE VALVE & BOX 3' NORTH OF TEE

F&I 12" x 6" REDUCER STA. 159+32-45' LT.

F&I 6" x 6" TEE-11' RT. OF CENTERLINE

1" plastic water service

12" C TO C

F&I 6" BEND-90° STA. 158+45-45' LT.

F&I 12" x 12" TEE STA. 159+35-45' LT.

F&I 12" DIP CL 52 W/M

F&I 6" DIP CL 52 W/M

REMOVE PLUG

EX. 12" W/M

STA. 159+35±

LISA LANE

OSLO COURT

25' T. E.

120' NEW R/W

100' NEW R/W

75' EX R/W

INLET 2

INLET 3

MH 5

MH 6

MH 7

MH 8

CB 10

CB 11

CB 12

CB 13

CB 14

CB 15

147+00 148+00 149+00 150+00 151+00 152+00 153+00 154+00 155+00 156+00 157+00 158+00 159+00 160+00 161+00

F&I 4" PVC-FUTURE ELEC UNDERGROUND

EX. 12" W/M

EX. 16" W/M

ADJUST GATE VALVE BOXES TO FINISHED GRADE

Junction Box Sta. 151+10

F&I 4" PVC-FUTURE ELEC UNDERGROUND

Existing Catch Basin

SHANNON OAKS BLVD.

SHANNON OAKS BLVD. RT. STA 151+19

Drop inlet Sta 153+00 67 Rt.

Storm inlet - 123.46

Top inlet - 123.90

Outlet - 123.50

4" perforated tile (Tee'd) into drop Inlet.

1.3%

RECONSTRUCT SAN. MH
EX. RING EL. 1251.00
NEW RING EL. 1252.15

Jct. Box Sta. 152+00 77.6 Rt.
Inlet - 123.55
outlet - 123.50
Flows to drop inlet

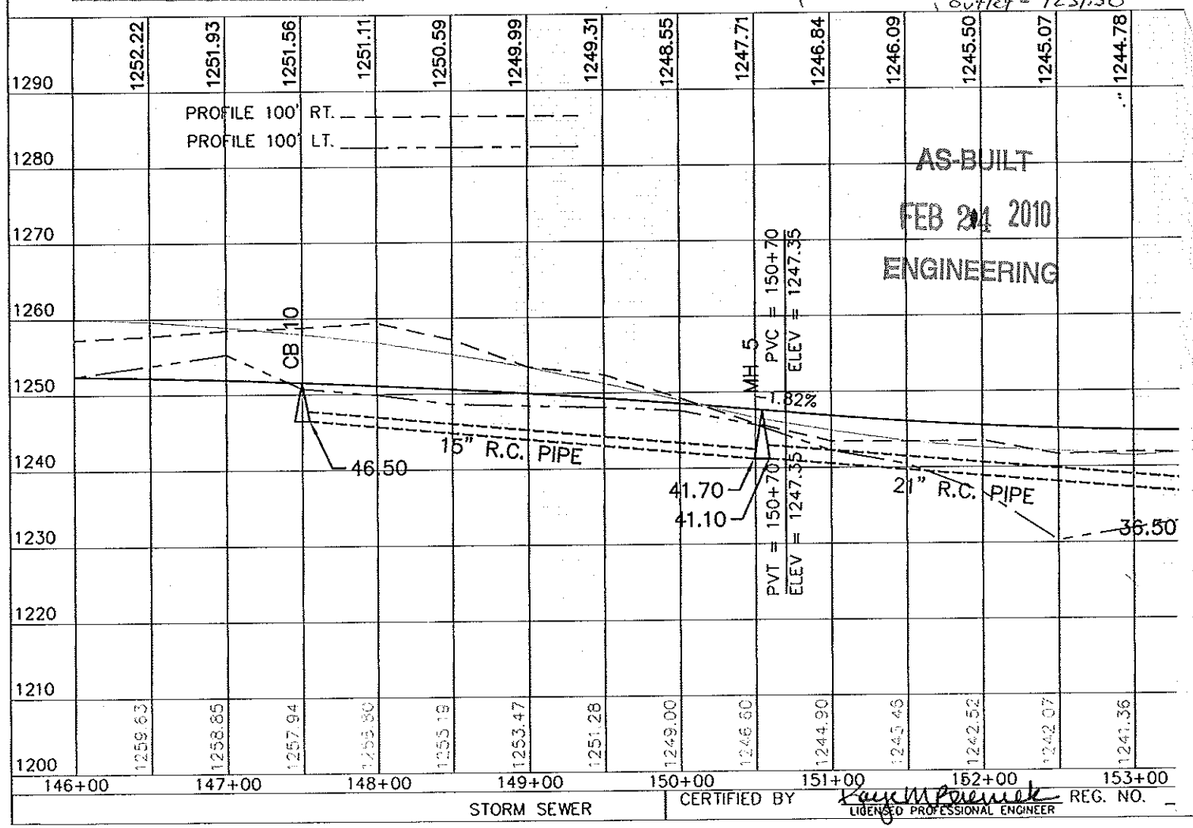
RECONSTRUCT SAN. MH
EX. RING EL. 1247.00
NEW RING EL. 1248.00

TEMPORARY ENT. (TO BE REMOVED)

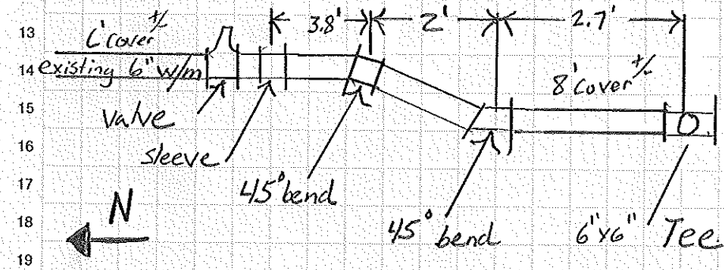
TEMPORARY ENT. RT. STA 158+33

F&I 4" PVC-FUTURE ELEC UNDERGROUND

0 25 50 100
SCALE IN FEET



CERTIFIED BY Kayce M Poremok REG. NO.
LICENSED PROFESSIONAL ENGINEER

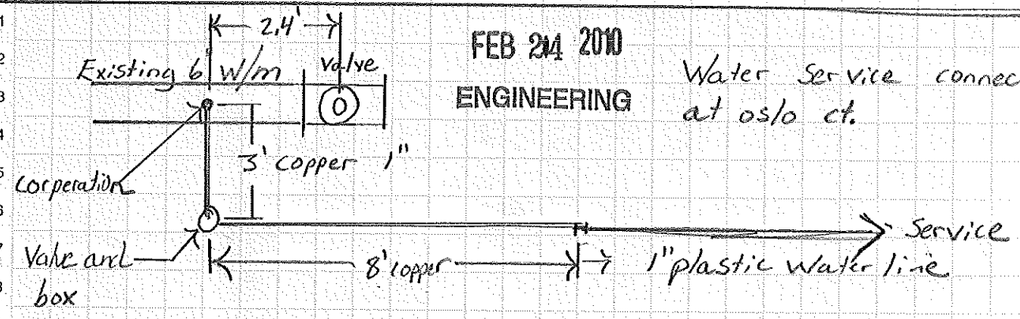


Elevation View
6" Water main connection
Oslo Ct.

AS-BUILT

FEB 24 2010

ENGINEERING



Water Service connection at oslo ct.

F&I HYDRANT–BREAKOFF
FLANGE 2" ABOVE GRADE
STA 163+02–~~105'~~ 111' LT.

F&I 12" x 6" REDUCER
STA. 163+02–~~102'~~ 108' LT.

F&I 12" DIP CL 52 W/M

INLET 4

MH 9

INLET 5

36 AVE NE LT. STA 163+22

36 AVE NE

F&I GATE VALVE & BOX
STA. 163+02–48' LT.

F&I 12" BEND–90°
STA. 163+02–45' LT.

CEMETERY ENT. LT. STA 171+44

75' EX. R/W

75' NEW R/W

35' NEW R/W

100' NEW R/W

+11

+4

0 161+00 162+00 163+00 164+00 165+00 166+00 167+00 168+00 169+00 170+00 171+00 172+00 173+00 176+00

F&I 4" PVC–FUTURE ELEC UNDERGROUND

END PROJECT:
STA. 176+50

PROVIDE MIN. 7' COVER
OVER ALL INSTALLED W/M

HAVERHILL ROAD

HAVERHILL ROAD RT. STA 163+22

0 25 50 100
SCALE IN FEET

PROFILE 100' RT.
PROFILE 100' LT.

PI = 163+40
ELEV = 1263.30
660' V. C.

AS-BUILT
FEB 24 2010
ENGINEERING

2.42%

0.32%

18" R.C. PIPE

56.90

57.00

58.00

18" R.C. PIPE

PVC = 160+10
ELEV = 1255.30

PVT = 166+70
ELEV = 1264.34

1300 1290 1280 1270 1260 1250 1240 1230 1220 1210

1256.25 1257.35 1258.38 1259.33 1260.20 1260.99 1261.70 1262.33 1262.87 1263.34 1263.73 1264.04 1264.27 1264.44 1264.75 1265.07 1265.39 1265.70 1266.02

1256.28 1259.25 1260.08 1260.77 1261.30 1262.23 1262.70 1263.18 1263.75 1264.18 1264.47 1264.60 1264.73 1264.80 1265.16 1265.39 1265.44 1266.02 1266.29 1266.41

160+00 161+00 162+00 163+00 164+00 165+00 166+00 167+00 168+00 169+00 170+00 171+00 172+00 173+00 174+00 175+00

STORM SEWER

CERTIFIED BY Dave M Pierich REG. NO. 19217 3/10 20 08
LICENSED PROFESSIONAL ENGINEER

S.A.P. 55–602–17 C.S.A.H. 2

SHEET NO. 16 OF 48 SHEETS

STORM SEWER

STRUCTURE NO.	STATION	LOCATION	CONSTRUCTION DESIGN M.H.	CONSTRUCTION DESIGN C.B.	CONSTRUCTION QUAN.	TOP CASTING ELEV.	INLET ELEV.	INLET ELEV.	OUTLET ELEV.	FRAME CASTING NO.	GRATE NO.	CURB BOX NO.	12" R.C.PIPE LIN.FT.	15" R.C.PIPE LIN.FT.	18" R.C.PIPE LIN.FT.	21" R.C.PIPE LIN.FT.	24" R.C.PIPE LIN.FT.	30" R.C.PIPE LIN.FT.	FLOWS TO	% GRADE	CLASS
M.H. 1	135+28.2	70.7' LT	60-4020		1	1238.50	1234.00 N	1233.75 S	1233.42 W	700-7	715				~~11~~ 11.5				OUTLET		
INLET 1	135+40	83' LT					1234.50												MH 1	3.0	III
C.B. 1	135+50	10.71' RT		N		1239.51			1235.30 N	806	816	825	~~9~~ 4.5						C.B. 2	1.0	IV
C.B. 2	135+50	1.29' RT		N	1	1239.27	1235.20 S		1235.15 N	806	816	825	~~50~~ 44.5						C.B. 3	1.0	IV
C.B. 3	135+50	49.29' LT		N	1	1238.07	1234.65 S		1234.60 N	806	816	825		~~8~~ 8.5					M.H. 2	1.0	III
M.H. 2	135+50	57.00' LT	G		1	1238.62	1234.25 E	1234.50 S	1234.00 N	700-7	715					~~25~~ 24			M.H. 1	1.0	III
C.B. 4	137+50	10.71' RT		N	1	1243.98			1238.80 W	806	816	825	~~9~~ 4.5						C.B. 5	1.7	IV
C.B. 5	137+50	1.29' RT		N	1	1243.74	1238.65 S		1238.60 N	806	816	825	~~50~~ 51						C.B. 6	1.5	IV
C.B. 6	137+50	49.29' LT		N	1	1242.54	1237.85 S		1234.60 N	806	816	825		8					M.H. 3	1.5	III
M.H. 3	137+50	57' LT	G		1	1243.09	1237.35 E	1237.50 S	1237.25 W	700-7	715				~~196~~ 205.5				M.H. 2	1.5	III
C.B. 7	140+00	3.31' RT		N	1	1248.48			1243.80 N	806	816	825	~~40~~ 39						C.B. 8	2.0	IV
C.B. 8	140+00	37.29' LT		N	1	1247.82	1243.00 S		1242.75 N	806	816	825		~~12~~ 13					M.H. 4	2.0	III
M.H. 4	140+00	50' LT	G		1	1248.57	1242.50 E	1242.50 S	1242.25 W	700-7	715				~~246~~ 239				M.H. 3	2.0	III
C.B. 9	143+68	44.82' RT		N	1	1251.72			1248.00 W	806	816	825		367					M.H. 4	1.5	III
C.B. 10	147+50	47.39' LT		N	1	1250.80			1246.50 E	806	816	825		~~320~~ 332.4					M.H. 5	1.5	III
C.B. 11	150+70	37.29' LT		N	1	1246.80			1241.95 N	806	816	825		~~12~~ 11.5					M.H. 5	1.5	III
M.H. 5	150+70	50' LT	60-4020		1	1247.55	1241.70 W	1241.70 S	1241.10 E	700-7	715					~~280~~ 252			M.H. 6	1.6	III
							1241.50 N														
INLET 2	150+75	83' LT					1244.00								~~11~~ 27				MH 1	3.0	III
M.H. 6	153+50	57' LT	60-4020		1	1244.39	1236.50 W	1236.30 E	1235.80 N	700-7	715							36	OUTLET	6.0	III
							1238.80 S														
C.B. 12	153+50	49.29' LT		N	1	1243.84	1239.50 E		1239.00 N	806	816	825			~~8~~ 37				M.H. 6	2.5	III
C.B. 13	153+75	49.29' LT		N	1	1243.82			1239.75 W	806	816	825	~~25~~ 24.5						C.B. 12	1.0	IV
M.H. 7	156+50	45' LT	G		1	1247.00	1241.60 S	1240.60 E	1240.50 W	700-7	715						~~300~~ 358		M.H. 6	1.4	III
C.B. 14	156+50	37.29' LT		N	1	1246.45			1241.80 N	806	816	825	~~8~~ 7.5						M.H. 7	2.5	IV
INLET 3	158+75	75' LT					1249.00								~~12~~ 17				M.H. 8	6.0	III
C.B. 15	158+80	49.29' LT		N	1	1251.34			1248.00 N	806	816	825	~~8~~ 7						M.H. 8	1.3	IV
M.H. 8	158+80	57' LT	60-4020		1	1252.20	1247.90 S	1247.80 E	1247.30 W	700-7	715						~~230~~ 231		M.H. 7	2.9	III
							1248.00 N														
M.H. 9	162+90	57' LT	G		1	1260.58	1257.60 N	1257.00 E	1256.90 W	700-7	715				~~410~~ 411				M.H. 8	2.2	III
INLET 4	162+90	80' LT					1259.50							~~17~~ 16					M.H. 9	8.0	III
INLET 5	163+50	64' LT					1258.00								~~54~~ 60.5				M.H. 9	1.7	III
Shannen Oaks Storm Outlet	152+00	Rt.												116							
TOTALS													~~199~~ 197.5	~~744~~ 864	~~948~~ 1006.5	~~305~~ 266	~~530~~ 569	~~36~~ Omitted			

AS-BUILT
FEB 24 2010
ENGINEERING

CERTIFIED BY Dave M Pieniech LICENSED PROFESSIONAL ENGINEER REG. NO. 19917 3/10 2008

S.A.P. 55-602-17 CSAH 2