

GOVERNING SPECIFICATIONS

THE 2000 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE MN MUTCD INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2-3	GENERAL LAYOUT
4-10	ESTIMATED QUANTITIES
11-16	QUANTITY TABULATIONS
17	EARTHWORK SUMMARY AND BALANCE
18	STANDARD PLATES
19-24	TYPICAL SECTIONS
25-27	MISCELLANEOUS DETAILS
28-32	STANDARD PLANS
33-33B,34-57	CONSTRUCTION STAGING AND TRAFFIC CONTROL PLANS
58-60	ALIGNMENT PLANS AND TABULATIONS
61-71	RIGHT OF WAY PLANS
72-83	INPLACE TOPOGRAPHY AND REMOVAL PLANS
84-94	CONSTRUCTION PLANS AND PROFILES
95-100	WESTBOUND AND CROSS STREET PROFILES
101-110	INTERSECTION DETAILS
111-118	BIKE TRAIL PLANS AND PROFILES
119-128	DRAINAGE AND SUPERELEVATION PLANS
129-130	MISCELLANEOUS DRAINAGE PROFILES
131-137	DRAINAGE TABULATIONS
138-141G,142,143	DRAINAGE DETAILS
144-147	POND GRADING PLANS
148-160	SANITARY SEWER AND WATERMAIN PLANS
161-171	TURF ESTABLISHMENT AND EROSION CONTROL PLANS
172-176	EROSION CONTROL DETAILS
177-195E,196	SIGNAL PLANS
197	INTERCONNECT PLANS
199-201	SIGNING TABULATION
202-219	SIGNING AND STRIPING PLANS
220-282	CROSS SECTIONS - MAINLINE
283-296	CROSS SECTIONS - CROSS STREET

DELETED SHEET: 198

THIS PLAN CONTAINS 309 SHEETS.

ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND ORDINANCES WILL BE COMPLIED WITH IN THE CONSTRUCTION OF THIS PROJECT.

**TKDA**

ENGINEERS - ARCHITECTS - PLANNERS

SIGNATURE: *Brant D. Paulsen* NAME: Brant D. Paulsen  
 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: 8/15/05 LICENSE NUMBER: 26820

*James E. Studensky* DATE: 8-24-2005  
 APPROVED: CITY OF LINO LAKES ENGINEER  
*James W. ...* DATE: 9-7-05  
 APPROVED: CITY OF HUGO ENGINEER  
*...* DATE: 8-31-05  
 APPROVED: WASHINGTON COUNTY ENGINEER  
*...* DATE: 8/22/05  
 APPROVED: ANOKA COUNTY ENGINEER

STATE AID APPROVALS:  
*...* DATE: 10-17-05  
 METRO DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE AND FEDERAL AID RULES AND POLICY  
*...* DATE: 10-17-05  
 APPROVED FOR STATE AND FEDERAL AID FUNDING: STATE AID ENGINEER

WASHINGTON CO. C.P. 04-200802

S.P. 02-614-23, S.P. 82-608-07  
 S.P. 210-020-02, S.P. 224-020-01

SHEET NO. 1 OF 296 SHEETS

**MINNESOTA DEPARTMENT OF TRANSPORTATION**

**WASHINGTON COUNTY DEPARTMENT OF TRANSPORTATION AND PHYSICAL DEVELOPMENT**

CONSTRUCTION PLAN FOR: GRADING, AGGREGATE BASE, BITUMINOUS PAVING, STORM SEWER, CONCRETE CURB & GUTTER AND WALK, BITUMINOUS PATH, SIGNING & STRIPING, TRAFFIC CONTROL SIGNALS, AND APPURTENANT WORK

LOCATED ON CSAH 14 AND CSAH 8 FROM I-35E IN LINO LAKES TO TH 61 IN HUGO  
 FROM A POINT APPROX. 1320.6' S. OF AND 2447.5' W. OF THE NE CORNER SEC. 24, T31N, R22W,  
 TO A POINT APPROX. 1620.9' N. OF AND 1350.3' E. OF THE SW CORNER OF SEC. 20, T31N, R21W.

S.P. 02-614-23 & S.P. 210-020-02

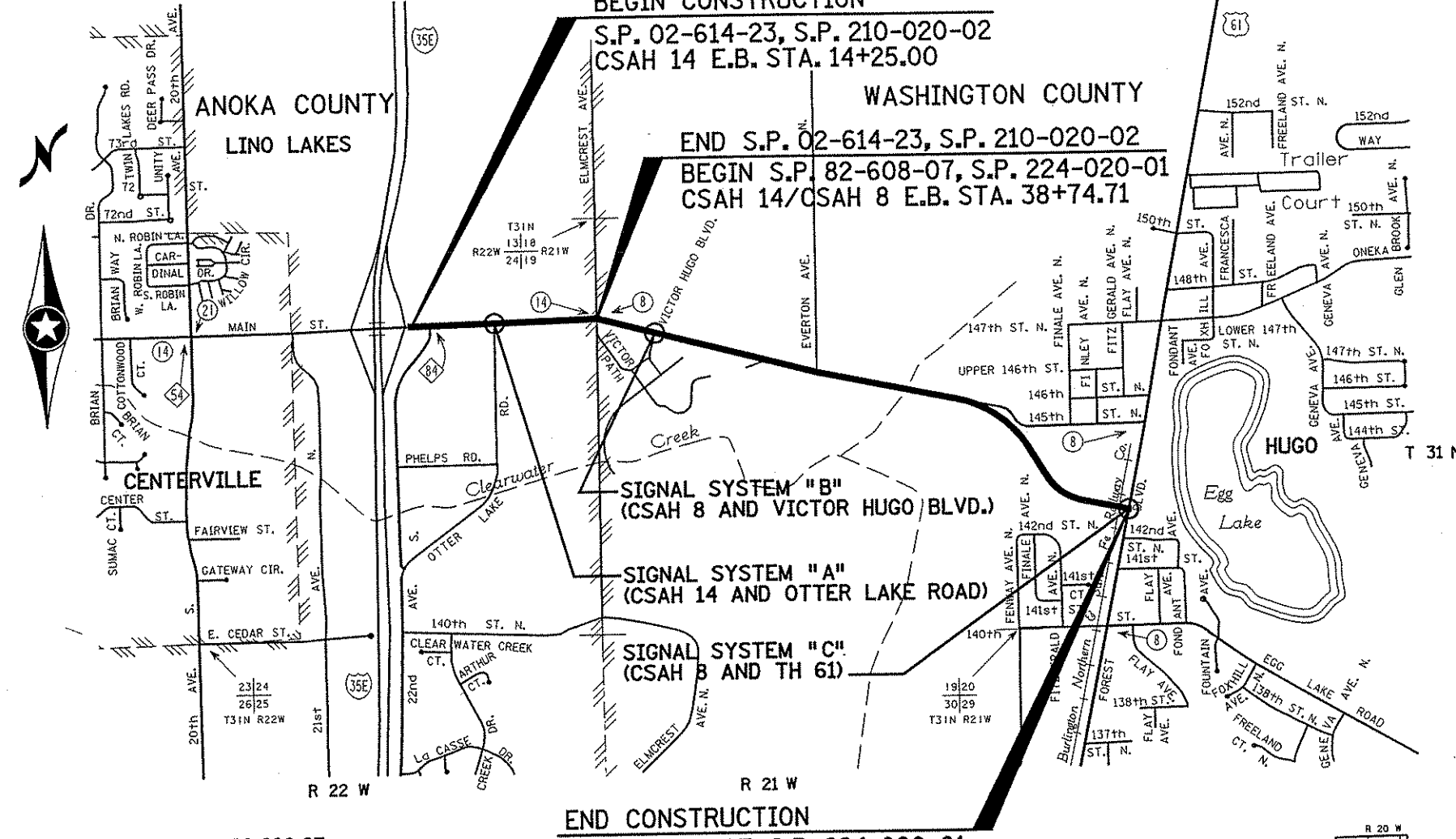
CSAH 14	
GROSS LENGTH	2449.71 FT 0.464 MILES
BRIDGE LENGTH	0.00 FT 0.000 MILES
EXCEPTIONS LENGTH	0.00 FT 0.000 MILES
NET LENGTH	2449.71 FT 0.464 MILES

(LENGTH BASED ON EB STATIONING)

S.P. 82-608-07 & S.P. 224-020-01

CSAH 8	
GROSS LENGTH	7430.36 FT 1.407 MILES
BRIDGE LENGTH	0.00 FT 0.000 MILES
EXCEPTIONS LENGTH	0.00 FT 0.000 MILES
NET LENGTH	7430.36 FT 1.407 MILES

(LENGTH BASED ON EB STATIONING)



S.P. 02-614-23, S.P. 82-608-07  
 S.P. 210-020-02, S.P. 224-020-01  
 CSAH 14 AND CSAH 8

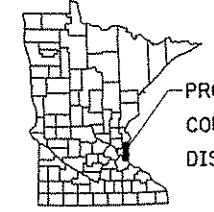
S.P. 82-608-07, S.P. 224-020-01  
 CSAH 8 E.B. STA. 113+05.07

DESIGN DESIGNATION

ADT (2005)	14,500
ADT (2025)	33,400
FUNCTIONAL CLASS	MINOR ARTERIAL
NO OF TRAFFIC LANES	4
NO OF PARKING LANES	0
SHOULDER WIDTH	10
R-VALUE	70
TON DESIGN	10
ESALS	5,100,000

DESIGN SPEED (MPH):  
 CSAH 14 E.B. STA. 14+25.00 TO 38+74.71 50  
 CSAH 8 E.B. STA. 38+74.71 TO 86+58.35 55  
 CSAH 8 E.B. STA. 86+58.35 TO 113+19.76 40  
 BASED ON STOPPING SIGHT DISTANCE  
 3.5 FT HEIGHT OF EYE 2.0 FT HEIGHT OF OBJECT

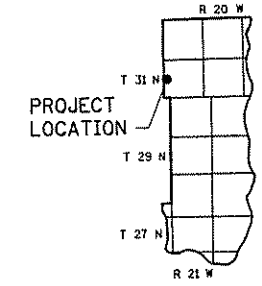
DESIGN DESIGNATION - BIKE PATH  
 DESIGN SPEED (MPH) 20  
 BASED ON:  
 4.5 FT HEIGHT OF EYE 0.0 FT HEIGHT OF OBJECT



PROJECT LOCATION  
 COUNTY: WASHINGTON  
 DISTRICT: METRO

PLAN REVISIONS

DATE	SHEET NO.	APPROVED BY



WASHINGTON COUNTY

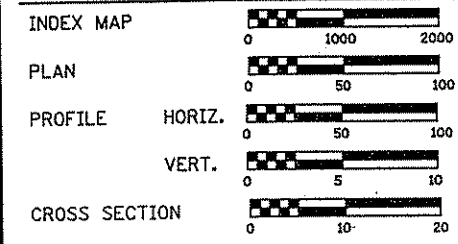
PLAN SYMBOLS

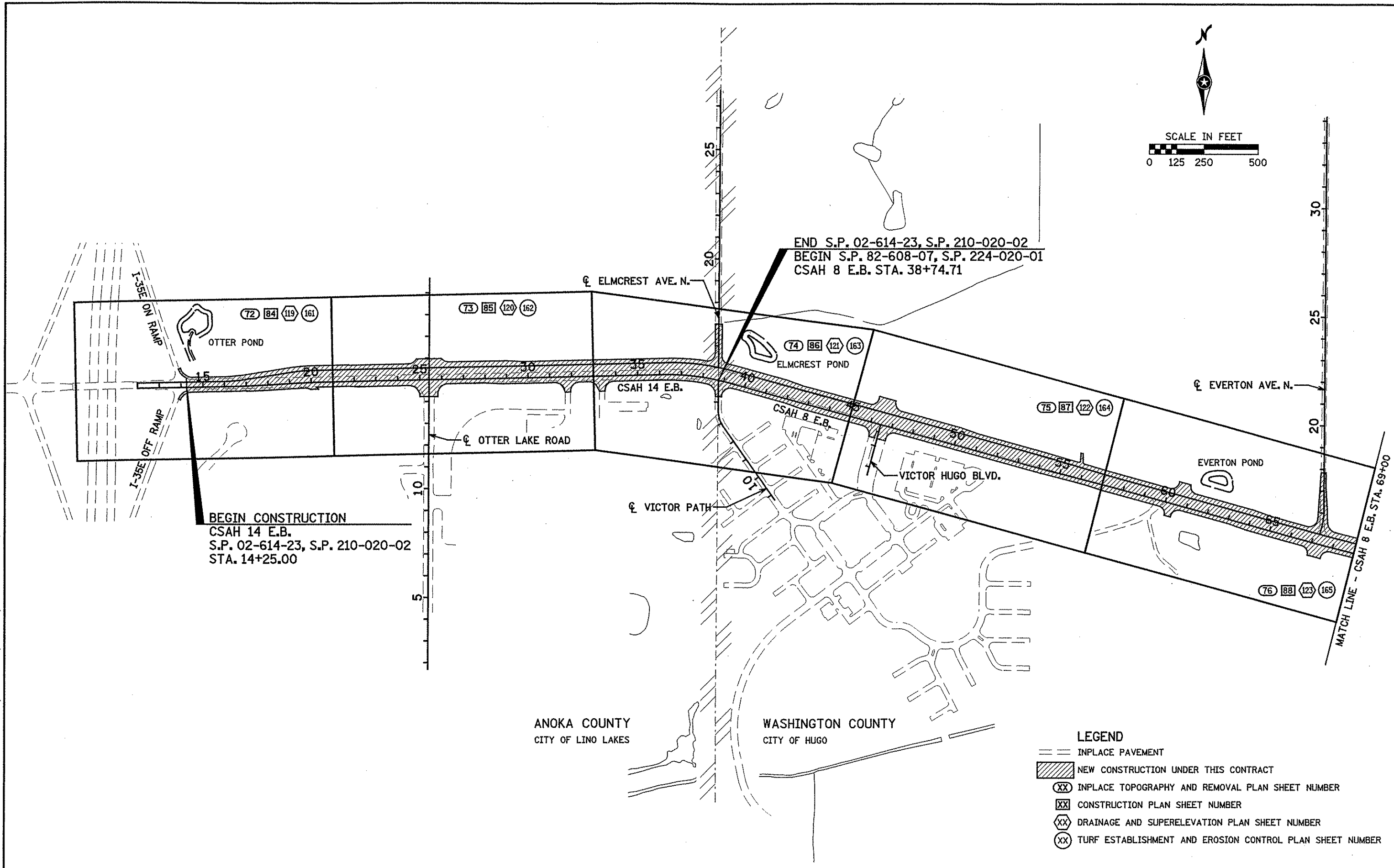
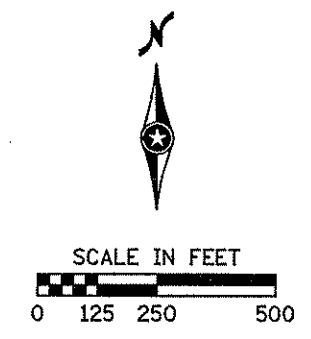
- STATE LINE
- COUNTY LINE
- TOWNSHIP OR RANGE LINE
- SECTION LINE
- QUARTER LINE
- SIXTEENTH LINE
- RIGHT-OF-WAY LINE
- TEMPORARY EASEMENT
- PRESENT RIGHT-OF-WAY
- CONTROL OF ACCESS LINE
- PROPERTY LINES (EXCEPT LAND LINES)
- VACATED PLATTED PROPERTY
- CORPORATE OR CITY LIMITS
- TRUNK HIGHWAY CENTER 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 ROD OR PIPE
- MONUMENT (STONE, CONCRETE, OR METAL)
- WOODEN HUB
- GRAVEL PIT
- SAND PIT
- BORROW PIT
- ROCK QUARRY

UTILITY SYMBOLS

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

SCALES





**BEGIN CONSTRUCTION**  
 CSAH 14 E.B.  
 S.P. 02-614-23, S.P. 210-020-02  
 STA. 14+25.00

**END S.P. 02-614-23, S.P. 210-020-02**  
**BEGIN S.P. 82-608-07, S.P. 224-020-01**  
 CSAH 8 E.B. STA. 38+74.71

- LEGEND**
- INPLACE PAVEMENT
  - NEW CONSTRUCTION UNDER THIS CONTRACT
  - INPLACE TOPOGRAPHY AND REMOVAL PLAN SHEET NUMBER
  - CONSTRUCTION PLAN SHEET NUMBER
  - DRAINAGE AND SUPERELEVATION PLAN SHEET NUMBER
  - TURF ESTABLISHMENT AND EROSION CONTROL PLAN SHEET NUMBER

DATE: 8/5/2005 TIME: 2:53:50 PM  
 FILENAME: K:\r-z\washcty\124390\hwy-brdg\hwy\plr-sta\c200802.glt

DRAWN BY: SFH  
 CHECKED BY: BDP

CERTIFIED BY *Scott D. Paul* LIC. NO. 26330 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

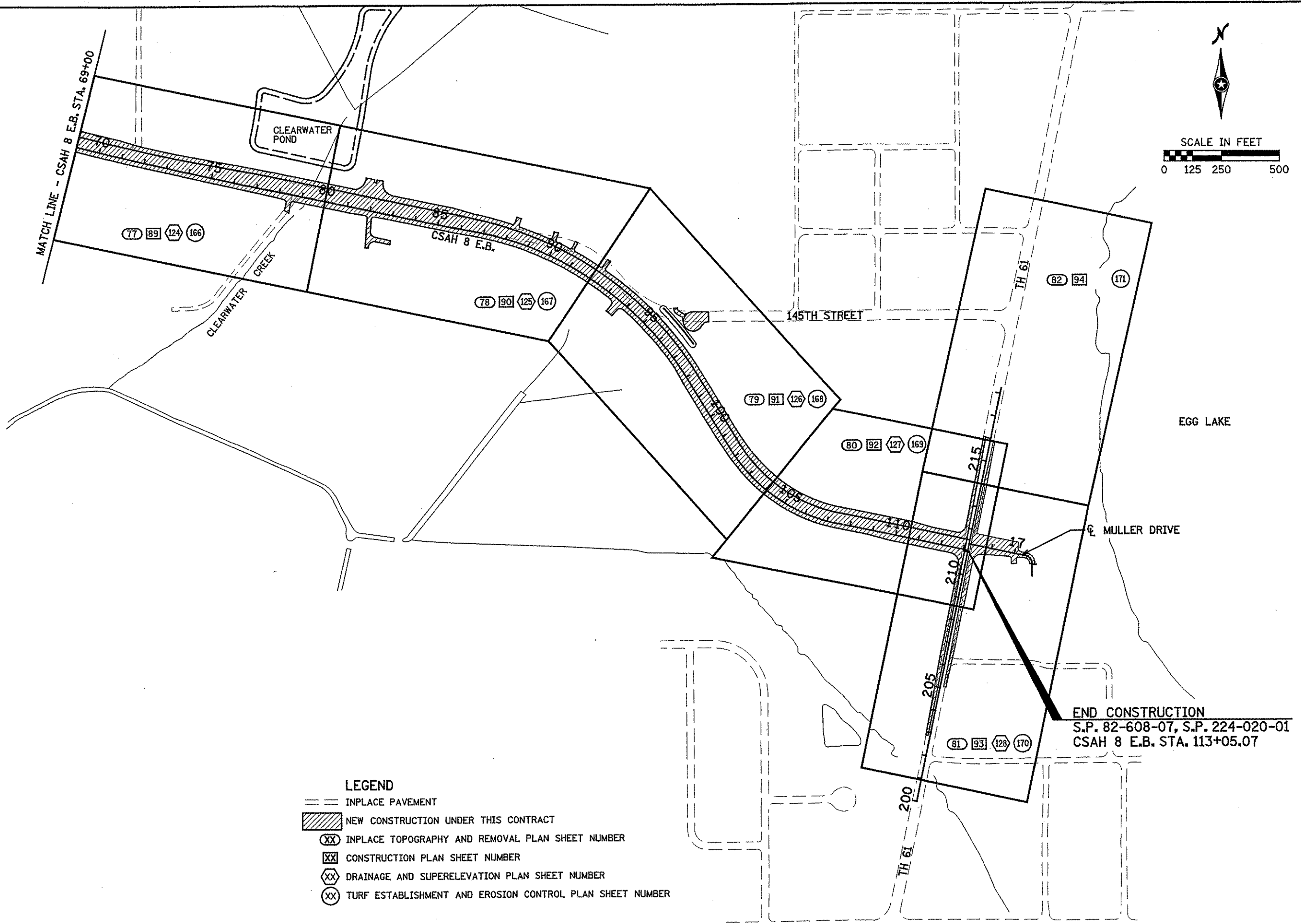
**TKDA**  
 ENGINEERS · ARCHITECTS · PLANNERS

GENERAL LAYOUT  
 STA. 14+25 TO STA. 69+00

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 2 of 296 Sheets



DATE: 8/5/2005 TIME: 3:39:11 PM  
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SCALE IN FEET  
0 125 250 500



- LEGEND**
- INPLACE PAVEMENT
  - NEW CONSTRUCTION UNDER THIS CONTRACT
  - INPLACE TOPOGRAPHY AND REMOVAL PLAN SHEET NUMBER
  - CONSTRUCTION PLAN SHEET NUMBER
  - DRAINAGE AND SUPERELEVATION PLAN SHEET NUMBER
  - TURF ESTABLISHMENT AND EROSION CONTROL PLAN SHEET NUMBER

**END CONSTRUCTION**  
S.P. 82-608-07, S.P. 224-020-01  
CSAH 8 E.B. STA. 113+05.07

DRAWN BY: SFH

CHECKED BY: BDP

CERTIFIED BY *Ant O. Paul*  
LICENSED PROFESSIONAL ENGINEER

LIC. NO. 26880 DATE 8/15/05

**TKDA**  
ENGINEERS · ARCHITECTS · PLANNERS

**GENERAL LAYOUT**  
STA. 69+00 TO STA. 113+05.07

S.P. 02-614-23 S.P. 82-608-07

Sheet No. 3 of 296 Sheets

**ESTIMATED QUANTITIES**

TAB. LETTER	SHEET NUMBER	ITEM NUMBER	ITEM	NOTE NO.	UNIT	TOTAL ESTIMATED QUANTITY	PARTICIPATING					NON-PARTICIPATING			
							ANOKA COUNTY S.P. 02-614-23	WASHINGTON COUNTY S.P. 82-608-07	CITY OF LINO LAKES S.P. 210-020-02	CITY OF HUGO S.P. 224-020-01	92% ANOKA CO. S.P. 02-614-23 8% LINO LAKES S.P. 210-020-02 STORM SEWER	WASHINGTON COUNTY S.P. 82-608-07 STORM SEWER	CITY OF LINO LAKES S.P. 210-020-02 (A)	CITY OF LINO LAKES	CITY OF HUGO
		2021.501	MOBILIZATION		LUMP SUM	1	0.143	0.420	0.016	0.111	0.020	0.164	0.002	0.005	0.119
		2031.501	FIELD OFFICE TYPE D		EACH	1	0.143	0.420	0.016	0.111	0.020	0.164	0.002	0.005	0.119
		2041.610	TRAINEES		HOUR	2400	480	1920							
A	11	2101.501	CLEARING	(1)	ACRE	0.8	0.25	0.55							
A	11	2101.502	CLEARING	(1)	TREE	120	59	61							
A	11	2101.506	GRUBBING	(1)	ACRE	0.8	0.25	0.55							
A	11	2101.507	GRUBBING	(1)	TREE	117	56	61							
		2103.501	BUILDING REMOVAL B	(3) (6)	LUMP SUM	1		0.45		0.55					
		2103.501	BUILDING REMOVAL C	(3) (6)	LUMP SUM	1		0.45		0.55					
		2103.501	BUILDING REMOVAL D	(3) (6)	LUMP SUM	1		0.45		0.55					
		2103.501	BUILDING REMOVAL E	(3) (6)	LUMP SUM	1		0.45		0.55					
		2103.501	BUILDING REMOVAL F	(3) (6)	LUMP SUM	1		0.45		0.55					
		2103.501	BUILDING REMOVAL G	(3) (6)	LUMP SUM	1		0.45		0.55					
		2103.501	BUILDING REMOVAL H	(3) (6)	LUMP SUM	1		0.45		0.55					
		2103.501	BUILDING REMOVAL I	(3) (6)	LUMP SUM	1		0.45		0.55					
		2103.501	BUILDING REMOVAL J	(3) (6)	LUMP SUM	1		0.45		0.55					
B	11	2104.501	REMOVE PIPE DRAIN	(4) (6)	LIN FT	70		70							
D	12	2104.501	REMOVE PIPE CULVERTS	(5) (6)	LIN FT	1564	656	908							
D	12	2104.501	REMOVE SEWER PIPE (STORM)	(5) (6)	LIN FT	761		761							
		2104.501	REMOVE SEWER PIPE (SANITARY)	(5) (6)	LIN FT	1040									1040
B	11	2104.501	REMOVE CURB AND GUTTER	(6)	LIN FT	2244	52	2192							
B	11	2104.501	REMOVE RETAINING WALL	(6)	LIN FT	154	117	37							
B	11	2104.501	REMOVE CHAIN LINK FENCE	(6)	LIN FT	273		273							
B	11	2104.501	REMOVE BARBED WIRE FENCE	(6)	LIN FT	1526	215	1311							
B	11	2104.505	REMOVE CONCRETE WALK	(6)	SQ YD	229	14	215							
B	11	2104.505	REMOVE PAVEMENT	(6) (7)	SQ YD	130		130							
B	11	2104.505	REMOVE CONCRETE DRIVEWAY PAVEMENT	(6)	SQ YD	123	107	16							
B	11	2104.509	REMOVE LIGHT POLE	(6)	EACH	1	1								
D	12	2104.509	REMOVE PIPE APRON	(6)	EACH	19	15	4							
D	12	2104.509	REMOVE DRAINAGE STRUCTURE	(6)	EACH	8		8							
		2104.509	REMOVE ABOVEGROUND FUEL TANK	(3) (6)	EACH	2		0.90		1.10					
		2104.509	REMOVE UNDERGROUND FUEL TANK	(3) (6)	EACH	5		2.25		2.75					
		2104.509	REMOVE MANHOLE (SANITARY)	(6)	EACH	3									3
Q	200	2104.509	REMOVE SIGN TYPE C	(6)	EACH	42	23	19							
U	201	2104.509	REMOVE SIGN TYPE D	(6)	EACH	4		4							
W	201	2104.509	REMOVE SIGN TYPE SPECIAL	(6)	EACH	11	4	7							
Y	27	2104.509	REMOVE MAIL BOX & SUPPORT	(6)	EACH	2		2							
C	11	2104.511	SAWING CONCRETE PAVEMENT (FULL DEPTH)		LIN FT	48	8	40							
C	11	2104.513	SAWING BIT PAVEMENT (FULL DEPTH)		LIN FT	10688	2743	7945							
C	11	2104.513	SAWING PAVEMENT (FULL DEPTH)	(7)	LIN FT	500		500							
B	11	2104.521	SALVAGE CHAIN LINK FENCE		LIN FT	53	33	20							
B	11	2104.521	SALVAGE GUARD RAIL-PLATE BEAM	(8)	LIN FT	391	264	127							

**NOTES:**

- (A) FUNDING IS 8820.3100 SUBPART 10.
- (1) LIMITS OF CLEARING AND GRUBBING SHALL BE STAKED IN THE FIELD.
- (3) SEE SHEET NO. 83 FOR LOCATION AND DESCRIPTION.
- (4) INPLACE DRAIN TILE.
- (5) REMOVAL INCLUDES ALL TYPES OF PIPES AND APRONS.
- (6) ALL REMOVAL ITEMS, INCLUDING CONCRETE AND BITUMINOUS MATERIAL, SHALL BE DISPOSED OF OFF-SITE. NO DISPOSAL SHALL BE ALLOWED WITHIN ROADWAY RIGHT-OF-WAY OR EASEMENTS.
- (7) PAVEMENT CONSISTS OF APPROX. 8" BITUMINOUS OVER APPROX. 8" CONCRETE. FINAL QUANTITIES WILL BE DETERMINED IN THE FIELD WHEN ENCOUNTERED.
- (8) INCLUDES ANCHORAGE ASSEMBLIES AND HARDWARE. REMOVAL OF WOOD POSTS AND ANCHOR BLOCKS IS INCIDENTAL.

DATE: 10/28/2005 TIME: 3:48:28 PM  
FILENAME: K:\r-z\WastCity\24390\Wwy-brdg\Wwy-plr-stf\c200802.eqa

DRAWN BY: SJS  
CHECKED BY: BDP

CERTIFIED BY  LIC. NO. 26880 DATE 11/1/05  
LICENSED PROFESSIONAL ENGINEER

**TKDA**  
ENGINEERS · ARCHITECTS · PLANNERS

ESTIMATED QUANTITIES

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 4 of 296 Sheets

**ESTIMATED QUANTITIES**

TAB. LETTER	SHEET NUMBER	ITEM NUMBER	ITEM	NOTE NO.	UNIT	TOTAL ESTIMATED QUANTITY	PARTICIPATING				NON-PARTICIPATING			
							ANOKA COUNTY S.P. 02-614-23	WASHINGTON COUNTY S.P. 82-608-07	CITY OF LINO LAKES S.P. 210-020-02	CITY OF HUGO S.P. 224-020-01	92% ANOKA CO. S.P. 02-614-23 8% LINO LAKES S.P. 210-020-02 STORM SEWER	WASHINGTON COUNTY S.P. 82-608-07 STORM SEWER	CITY OF LINO LAKES S.P. 210-020-02 (A)	CITY OF LINO LAKES
B	11	2104.523	SALVAGE VEHICULAR GATE		EACH	1		1						
B	11	2104.523	SALVAGE LIGHT POLE		EACH	1		1						
Y	27	2104.523	SALVAGE MAIL BOX	(1)	EACH	5		5						
					EACH	19	3	16						
R	200	2104.523	SALVAGE SIGN TYPE C		EACH	3	3							
T	201	2104.523	SALVAGE SIGN TYPE D		EACH	8	1	7						
X	201	2104.523	SALVAGE SIGN TYPE SPECIAL		EACH									
					EACH	1		1						
D	12	2104.525	ABANDON PIPE SEWER		EACH	2		0.90	1.10					
		2104.525	ABANDON & SEAL WELL SHAFT		EACH									
		2104.601	REMOVE ASBESTOS MATERIAL A		LUMP SUM	1		0.45	0.55					
		2104.601	REMOVE ASBESTOS MATERIAL H		LUMP SUM	1		0.45	0.55					
		2104.601	REMOVE ASBESTOS MATERIAL I		LUMP SUM	1		0.45	0.55					
		2104.601	SALVAGE SIGNAL SYSTEM	(2)	LUMP SUM	1		0.5	0.5					
I	17	2105.501	COMMON EXCAVATION	(P) (3)	CU YD	80321	16829	63492						
I	17	2105.507	SUBGRADE EXCAVATION		CU YD	100094	22709	77385						
I	17	2105.522	SELECT GRANULAR BORROW (CV)		CU YD	157370	33040	124330						1
		2105.601	DEWATERING		LUMP SUM	1								
		2105.604	GEOTEXTILE FABRIC	(4)	SQ YD	69184	27734	41450				332		
		2105.604	PLASTIC LINER	(5)	SQ YD	2479		2147						
I	17	2105.607	EXCAVATION SPECIAL 1	(P) (6)	CU YD	108094			550	6128	101966			
		2105.607	EXCAVATION SPECIAL 2	(7)	CU YD	1000		450						
		2130.501	WATER	(8)	M GALLONS	800	160	640						
		2131.502	CALCIUM CHLORIDE SOLUTION	(8)	GALLON	15000	3000	12000						
				(9)	TON	361		271	90					
E	13	2211.501	AGGREGATE BASE CLASS 2 (DRIVEWAYS)	(9) (10)	TON	350	70	210	70					
		2211.501	AGGREGATE BASE CLASS 5	(9)	TON	732	49	512	171					
E	13	2211.501	AGGREGATE BASE CLASS 5 (DRIVEWAYS & TEMPORARY)	(9)	TON									
				(P)	CU YD	26926	6559	15275	5092					
E	13	2211.503	AGGREGATE BASE (CV) CLASS 5	(P)	CU YD	1535		971	240	324				
E	13	2211.503	AGGREGATE BASE (CV) CLASS 5 (BIKE PATH)	(P)	CU YD	40	40							
E	13	2221.503	AGGREGATE SHOULDERING (CV) CLASS 5	(P) (11)	CU YD									
				(12)	TON	232		174	58					
E	13	2350.501	TYPE MV 3 WEARING COURSE MIXTURE (B)	(12)	TON	681	342	254	85					
E	13	2350.501	TYPE MV 4 WEARING COURSE MIXTURE (F)	(12)	TON	442	27	311	104					
E	13	2350.501	TYPE LV 4 WEARING COURSE MIXTURE (B) (DRIVEWAYS & TEMPORARY)	(12)	TON	1398		884	219	295				
E	13	2350.501	TYPE LV 4 WEARING COURSE MIXTURE (B) (BIKE PATH)	(12)	TON	640	49	443	148					
E	13	2350.502	TYPE MV 3 NON WEARING COURSE MIXTURE (F)	(12)	TON									

**NOTES:**

- (A) FUNDING IS 8820.3100 SUBPART 10.
- (1) REMOVAL AND DISPOSAL OF SUPPORT POST IS INCIDENTAL.
- (2) SIGNAL SYSTEM AT 145TH STREET / T.H. 61.
- (3) INCLUDES INPLACE TOPSOIL AND BITUMINOUS PAVEMENT. TOPSOIL ENCOUNTERED IN THE PROJECT LIMITS WAS 4" TO 36" DEEP. AN AVERAGE DEPTH OF 12" WAS USED FOR QUANTITY PURPOSES. BITUMINOUS PAVEMENT ENCOUNTERED IN THE PROJECT LIMITS WAS 4" TO 8" DEEP. AN AVERAGE DEPTH OF 6" WAS USED FOR QUANTITY PURPOSES. BITUMINOUS PAVEMENT REMOVAL, REGARDLESS OF THICKNESS, SHALL BE INCIDENTAL TO COMMON EXCAVATION. EXCESS MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OUTSIDE THE RIGHT-OF-WAY.
- (4) GEOTEXTILE FABRIC SHALL BE PLACED FROM STA. 14+25 TO STA. 74+00 AND SHALL EXTEND OUT TO SIDE ROAD CURB RETURNS. PAYMENT WILL BE MADE FOR ACTUAL AREA COVERED. OVERLAP AND WASTE SHALL BE INCIDENTAL. SEE DETAILS ON SHEET NO. 25.
- (5) 6 MIL. PLASTIC LINER FOR USE IN LANDSCAPED MEDIAN (ON SIDES ONLY). PAYMENT WILL BE MADE FOR ACTUAL SIDE AREA COVERED. OVERLAP AND WASTE MATERIAL SHALL BE INCIDENTAL. SEE DETAIL ON SHEET NO. 19.
- (6) POND EXCAVATION. NO ATTEMPT HAS BEEN MADE TO DETERMINE THE TYPE OF MATERIAL TO BE EXCAVATED.
- (7) CONTAMINATED SOIL EXCAVATION AT LOCATIONS OF UNDERGROUND TANK REMOVALS. SEE SPECIAL PROVISIONS.
- (8) TO BE USED FOR DUST CONTROL AS DIRECTED BY THE ENGINEER.
- (9) AGGREGATE BASE COMPUTED AT 2 TONS / CU YD.
- (10) TO BE USED FOR TEMPORARY ACCESS AS DIRECTED BY THE ENGINEER.
- (11) CLASS 7(B) OR CLASS (C).
- (12) SPEC. 2350 BITUMINOUS MIXTURES COMPUTED AT 110 POUNDS / SQ YD / INCH.

DATE: 10/25/2005 TIME: 10:56:43 AM FILENAME: K:\r-z\washcity\24390\Nmy-brdg\my-plr-stf-c.200802.eqa

DRAWN BY: SJS  
CHECKED BY: BDP

CERTIFIED BY *Robert J. Paul* LIC. NO. 26880 DATE 10/25/05  
LICENSED PROFESSIONAL ENGINEER



**ESTIMATED QUANTITIES**

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 5 of 296 Sheets

ESTIMATED QUANTITIES

TAB. LETTER	SHEET NUMBER	ITEM NUMBER	ITEM	NOTE NO.	UNIT	TOTAL ESTIMATED QUANTITY	PARTICIPATING				NON-PARTICIPATING			
							ANOKA COUNTY S.P. 02-614-23	WASHINGTON COUNTY S.P. 82-608-07	CITY OF LINO LAKES S.P. 210-020-02	CITY OF HUGO S.P. 224-020-01	92% ANOKA CO. S.P. 02-614-23 8% LINO LAKES S.P. 210-020-02 STORM SEWER	WASHINGTON COUNTY S.P. 82-608-07 STORM SEWER	CITY OF LINO LAKES S.P. 210-020-02 (A)	CITY OF LINO LAKES
E	13	2357.502	BITUMINOUS MATERIAL FOR TACK COAT	(1)	GALLON	8960	2209	5063	1688					
E	13	2360.501	TYPE SP 12.5 WEARING COURSE MIX (4,F)	(2)	TON	21634	5363	12203	4068					
E	13	2360.502	TYPE SP 12.5 NON WEAR COURSE MIX (4,B)	(2)	TON	16917	4214	9527	3176					
G, K	131-137	2451.509	AGGREGATE BEDDING (CV)		CU YD	2654		308			2346			
K	137	2501.511	18" CS PIPE CULVERT		LIN FT	142	142							
K	137	2501.515	18" GS PIPE APRON		EACH	4	4							
					EACH	3								
G	131-136	2501.515	12" RC PIPE APRON		EACH	4				2	1			
G	131-136	2501.515	15" RC PIPE APRON		EACH	5	4			1	3			
G, K	131-137	2501.515	18" RC PIPE APRON		EACH	7		2			1			
G, K	131-137	2501.515	24" RC PIPE APRON		EACH	5								
G	131-136	2501.515	27" RC PIPE APRON		EACH	2								
G	131-136	2501.515	30" RC PIPE APRON		EACH	2		1						
G, K	131-137	2501.515	60" RC PIPE APRON		EACH	91	91							
K	137	2501.561	18" RC PIPE CULVERT DES 3006		LIN FT	165		165						
K	137	2501.561	24" RC PIPE CULVERT DES 3006		LIN FT	233		233						
K	137	2501.561	60" RC PIPE CULVERT DES 3006 CL III		LIN FT	1								
G	131-136	2501.602	TRASH GUARD FOR 12" PIPE APRON		EACH	3								
G	131-136	2501.602	TRASH GUARD FOR 15" PIPE APRON		EACH	1								
G, K	131-137	2501.602	TRASH GUARD FOR 18" PIPE APRON		EACH	7		2						
G, K	131-137	2501.602	TRASH GUARD FOR 24" PIPE APRON		EACH	4								
G	131-136	2501.602	TRASH GUARD FOR 27" PIPE APRON		EACH	2								
G	131-136	2501.602	TRASH GUARD FOR 30" PIPE APRON		EACH	2		1						
G, K	131-137	2501.602	TRASH GUARD FOR 60" PIPE APRON		EACH	480	55	405					20	
J	137	2502.521	4" PE PIPE DRAIN	(3)	LIN FT	14823	1591	12221					1011	
J	137	2502.541	4" PERF PE PIPE DRAIN		LIN FT	40								40
		2503.511	18" DUCTILE IRON PIPE SEWER CL 52		LIN FT	48								
G	131-136	2503.541	12" RC PIPE SEWER DES 3006 CL V		LIN FT	5068				18	30			
G	131-136	2503.541	15" RC PIPE SEWER DES 3006 CL V		LIN FT	1281				1343	3725			
G	131-136	2503.541	18" RC PIPE SEWER DES 3006		LIN FT	1445				409	872			
G	131-136	2503.541	21" RC PIPE SEWER DES 3006		LIN FT	1521				358	1087			
G	131-136	2503.541	24" RC PIPE SEWER DES 3006		LIN FT	44								
G	131-136	2503.541	24" RC PIPE SEWER DES 3006 CL III		LIN FT	1117				327	1194			
G	131-136	2503.541	27" RC PIPE SEWER DES 3006		LIN FT	369					44			
G	131-136	2503.541	27" RC PIPE SEWER DES 3006 CL III		LIN FT	192				369	1117			
G	131-136	2503.541	27" RC PIPE SEWER DES 3006 CL IV		LIN FT	928				192				
G	131-136	2503.541	30" RC PIPE SEWER DES 3006		LIN FT	302					928			
G	131-136	2503.541	33" RC PIPE SEWER DES 3006		LIN FT	297					302			
G	131-136	2503.541	33" RC PIPE SEWER DES 3006 CL III		LIN FT	37					297			
G	131-136	2503.541	36" RC PIPE SEWER DES 3006 CL III		LIN FT	111					37			
G	131-136	2503.541	42" RC PIPE SEWER DES 3006 CL III		LIN FT	585					111			
G	131-136	2503.541	48" RC PIPE SEWER DES 3006 CL III		LIN FT	1096					585			
G	131-136	2503.541	60" RC PIPE SEWER DES 3006 CL II		LIN FT	672					1096			
G	131-136	2503.541	60" RC PIPE SEWER DES 3006 CL III		LIN FT						672			

NOTES:

- (A) FUNDING IS 8820.3100 SUBPART 10.
- (1) BITUMINOUS MATERIAL FOR TACK COAT COMPUTED AT 0.05 GALLONS / SQ YD.
- (2) SPEC. 2380 BITUMINOUS MIXTURES COMPUTED AT 120 POUNDS / SQ YD / INCH.
- (3) INCLUDES GEOTEXTILE FILTER WRAP, WHICH SHALL BE INCIDENTAL.

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DRAWN BY: SJS  
CHECKED BY: BDP

CERTIFIED BY: *[Signature]* LIC. NO. 26800 DATE 11/1/05  
LICENSED PROFESSIONAL ENGINEER

**TKDA**  
ENGINEERS - ARCHITECTS - PLANNERS

ESTIMATED QUANTITIES

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 6 of 296 Sheets

**ESTIMATED QUANTITIES**

TAB. LETTER	SHEET NUMBER	ITEM NUMBER	ITEM	NOTE NO.	UNIT	TOTAL ESTIMATED QUANTITY	PARTICIPATING					NON-PARTICIPATING		
							ANOKA COUNTY S.P. 02-614-23	WASHINGTON COUNTY S.P. 82-608-07	CITY OF LINO LAKES S.P. 210-020-02	CITY OF HUGO S.P. 224-020-01	92% ANOKA CO. S.P. 02-614-23 8% LINO LAKES S.P. 210-020-02 STORM SEWER	WASHINGTON COUNTY S.P. 82-608-07 STORM SEWER	CITY OF LINO LAKES S.P. 210-020-02 (A)	CITY OF LINO LAKES
		2503.602	CONNECT TO EXISTING SANITARY SEWER	(1)	EACH	2							1	1
G	131-136	2503.602	CONNECT TO EXISTING STORM SEWER	(1)	EACH	3					3			
K	137	2503.602	CONNECT TO EXISTING CULVERT	(1)	EACH	2	2							
		2503.602	18"X4" PVC WYE		EACH	2								2
		2503.602	21" PVC PIPE PLUG		EACH	1						1		
G	131-136	2503.603	42" STEEL CASING PIPE JACKED		LIN FT	55					55			
		2503.603	4" PVC PIPE SEWER - SDR 26		LIN FT	266								266
		2503.603	8" PVC PIPE SEWER - SDR 35		LIN FT	145								145
		2503.603	18" PVC PIPE SEWER - SDR 26		LIN FT	2679								2679
		2503.603	18" PVC PIPE SEWER - SDR 35		LIN FT	128								128
		2503.603	21" PVC PIPE SEWER - SDR 26 (0'-26' DEPTH)		LIN FT	100						100		
		2503.603	TELEWISE SANITARY SEWER		LIN FT	2807								2807
		2504.602	4" GATE VALVE AND BOX		EACH	4								4
		2504.602	6" GATE VALVE AND BOX		EACH	2						2		
		2504.602	8" GATE VALVE AND BOX		EACH	3						1		2
		2504.602	12" GATE VALVE AND BOX		EACH	15								15
		2504.602	16" X 8" WET TAP CONNECTION WITH 8" RSGV		EACH	1						1		
		2504.602	CONNECT TO EXISTING WATER MAIN	(1)	EACH	8							2	6
		2504.602	HYDRANT ASSEMBLY		EACH	10							2	10
		2504.602	FIRE HYDRANT (WATEROUS PACER WB-67)		EACH	2							2	
		2504.602	RELOCATE HYDRANT & VALVE		EACH	2			1					1
		2504.602	1" CORPORATION STOP		EACH	4								4
		2504.602	2" CORPORATION STOP		EACH	5							1	4
		2504.602	2" CURB STOP & BOX		EACH	1							1	
		2504.603	1" TYPE K COPPER PIPE		LIN FT	32								32
		2504.603	2" TYPE K COPPER PIPE		LIN FT	52							20	32
		2504.603	4" WATERMAIN DUCTILE IRON CL 52		LIN FT	306								306
		2504.603	6" WATERMAIN DUCTILE IRON CL 52		LIN FT	140						50		90
		2504.603	8" WATERMAIN DUCTILE IRON CL 52		LIN FT	259						249		10
		2504.603	12" WATERMAIN DUCTILE IRON CL 52		LIN FT	5700								5700
		2504.603	16" WATERMAIN DUCTILE IRON CL 52		LIN FT	84						84		
		2504.603	24" WATERMAIN DUCTILE IRON CL 52		LIN FT	20								20
		2504.603	12" STEEL CASING PIPE		LIN FT	198								198
		2504.603	24" STEEL CASING PIPE		LIN FT	745								745
		2504.604	4" POLYSTYRENE INSULATION		SQ YD	100								100
		2504.608	DUCTILE IRON FITTINGS		POUND	14950							950	14000
G	131-136	2506.501	CONST DRAINAGE STRUCTURE DESIGN F		LIN FT	381.4					87.5	293.9		
G	131-136	2506.501	CONST DRAINAGE STRUCTURE DESIGN G		LIN FT	419.8					51.1	368.7		

**NOTES:**  
 (A) FUNDING IS 8820.3100 SUBPART 10.  
 (1) CONNECT TO EXISTING INCLUDES ALL SIZES AND TYPES.

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**ESTIMATED QUANTITIES**

TAB. LETTER	SHEET NUMBER	ITEM NUMBER	ITEM	NOTE NO.	UNIT	TOTAL ESTIMATED QUANTITY	PARTICIPATING					NON-PARTICIPATING		
							ANOKA COUNTY S.P. 02-614-23	WASHINGTON COUNTY S.P. 82-608-07	CITY OF LINO LAKES S.P. 210-020-02	CITY OF HUGO S.P. 224-020-01	92% ANOKA CO. S.P. 02-614-23 8% LINO LAKES S.P. 210-020-02 STORM SEWER	WASHINGTON COUNTY S.P. 82-608-07 STORM SEWER	CITY OF LINO LAKES S.P. 210-020-02 (A)	CITY OF LINO LAKES
G	131-136	2506.501	CONST DRAINAGE STRUCTURE DES 54-4020		LIN FT	48.0					7.4	40.6		
G	131-136	2506.501	CONST DRAINAGE STRUCTURE DES 60-4020		LIN FT	71.1					5.2	65.9		
G	131-136	2506.501	CONST DRAINAGE STRUCTURE DES 66-4020		LIN FT	28.7						28.7		
G	131-136	2506.501	CONST DRAINAGE STRUCTURE DES 72-4020		LIN FT	6.8						6.8		
G	131-136	2506.501	CONST DRAINAGE STRUCTURE DES 90-4020		LIN FT	13.2						13.2		
G	131-136	2506.501	CONST DRAINAGE STRUCTURE DES 96-4020		LIN FT	76.2						76.2		
G	131-136	2506.501	CONST DRAINAGE STRUCTURE DES 102-4020		LIN FT	8.0						8.0		
G	131-136	2506.501	CONST DRAINAGE STRUCTURE DES 120-4020		LIN FT	31.8						31.8		
G	131-136	2506.502	CONST DRAINAGE STRUCTURE DESIGN SPEC 1	(1)	EACH	1					1			
G	131-136	2506.502	CONST DRAINAGE STRUCTURE DESIGN SPEC 2	(2)	EACH	1						1		
G	131-136	2506.502	CONST DRAINAGE STRUCTURE DESIGN SPEC 3	(3)	EACH	1						1		
		2506.502	CONST DRAINAGE STRUCTURE DESIGN SPEC 4	(4)	EACH	1		0.1		0.9				
G	131-136	2506.516	CASTING ASSEMBLY		EACH	200					28	162		10.
L	12	2506.522	ADJUST FRAME & RING CASTING		EACH	4	2							2
		2506.602	ADJUST SANITARY MANHOLE		EACH	3				3				
		2506.602	CONNECT TO EXISTING MANHOLES		EACH	3								3
		2506.602	CONSTRUCT SANITARY MANHOLE (4' DIA. - TYPE 301)		EACH	1							1	
		2506.603	CONSTRUCT 48" DIA SAN MANHOLE		LIN FT	181								181
		2506.603	CONSTRUCT 60" DIA SAN MANHOLE		LIN FT	48								48
		2506.603	CONSTRUCT SANITARY MANHOLE EXTRA DEPTH (4' DIA. - TYPE 301)		LIN FT	17							17	
L	12	2506.603	RECONSTRUCT SANITARY MANHOLES		LIN FT	25	1.8	19.3						3.9
		2506.603	CONSTRUCT 18" OUTSIDE DROP		LIN FT	11								11
H	16	2511.501	RANDOM RIPRAP CLASS I		CU YD	2.4		2.4						
H	16	2511.501	RANDOM RIPRAP CLASS II		CU YD	44.9	3.0	41.9						
G, K, BB	131-137	2511.501	RANDOM RIPRAP CLASS III	(5)	CU YD	258.9	11.8	168.3			12.8	66.0		
G	131-136	2511.501	RANDOM RIPRAP CLASS IV	(5)	CU YD	27.6						27.6		
F	14	2521.501	4" CONCRETE WALK	(6)	SQ FT	42810	11819	15387	217	15387				
F	14	2521.501	6" CONCRETE WALK		SQ FT	417	57	180		180				
F	14	2521.618	SPECIAL SURFACE TREATMENT		SQ FT	32935						5748		27187
F	14	2531.501	CONCRETE CURB & GUTTER DESIGN B424		LIN FT	36283	5566	14544	1629	14544				
F	14	2531.501	CONCRETE CURB & GUTTER DESIGN B612		LIN FT	162		81		81				
F	14	2531.501	CONCRETE CURB & GUTTER DESIGN B618		LIN FT	770	5	380	5	380				
F	14	2531.507	6" CONCRETE DRIVEWAY PAVEMENT		SQ YD	162		81		81				
F	14	2531.618	TRUNCATED DOMES		SQ FT	456		172	112	172				
E	13	2535.501	BITUMINOUS CURB		LIN FT	203	203							
Y	27	2540.602	MAIL BOX SUPPORT	(7)	EACH	4		4						
		2545.603	2" SCHEDULE 40 PVC CONDUIT		LIN FT	400							70	330
		2545.603	4" SCHEDULE 40 PVC CONDUIT		LIN FT	1240								1240
		2554.505	PERMANENT BARRICADES		LIN FT	216	104	112						
G, K	131-137	2554.509	GUIDE POST TYPE B		EACH	28	8	2			3	15		

- NOTES:**
- (A) FUNDING IS 8820.3100 SUBPART 10.
  - (1) SEE SHEET NO. 138 FOR DETAIL.
  - (2) SEE SHEET NO. 139 FOR DETAIL.
  - (3) SEE SHEET NO. 140 FOR DETAIL.
  - (4) SEE SHEET NOS. 141-141G FOR DETAILS.
  - (5) PLACE GEOTEXTILE FABRIC TYPE IV (INCIDENTAL).
  - (6) CONCRETE EXPANSION JOINT SPACING IN MEDIAN SHALL BE 20'.
  - (7) THE CONTRACTOR SHALL INSTALL SALVAGED MAIL BOXES ON MAIL BOX SUPPORT, WHICH SHALL BE INCIDENTAL TO MAIL BOX SUPPORT.

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**ESTIMATED QUANTITIES**

TAB. LETTER	SHEET NUMBER	ITEM NUMBER	ITEM	NOTE NO.	UNIT	TOTAL ESTIMATED QUANTITY	PARTICIPATING					NON-PARTICIPATING			
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Z	14	2557.602	INSTALL VEHICULAR GATE		EACH	1		1							
Z	14	2557.603	INSTALL CHAIN LINK FENCE		LIN FT	53	33	20							
		2563.601	TRAFFIC CONTROL		LUMP SUM	1	0.143	0.420	0.016	0.111	0.020	0.164	0.002	0.005	0.119
M	199	2564.531	SIGN PANELS TYPE C	(1)	SQ FT	865.68	288.01	577.67							
S	201	2564.531	SIGN PANELS TYPE D	(1)	SQ FT	65.25		65.25							
R	200	2564.537	INSTALL SIGN TYPE C	(1)	EACH	19	3	16							
T	201	2564.537	INSTALL SIGN TYPE D	(1)	EACH	3	3								
X	201	2564.537	INSTALL SIGN TYPE SPECIAL	(1)	EACH	8	1	7							
V	201	2564.550	DELINEATOR TYPE CYLINDER STYLE		EACH	3	3								
V	201	2564.552	HAZARD MARKER X4-2		EACH	14	3	11							
V	201	2564.553	CLEARANCE MARKER X4-4		EACH	9		9							
V	201	2564.554	SNOW PLOW MARKER X4-5		EACH	4	2	2							
V	201	2564.555	END OF ROADWAY MARKER X4-11		EACH	5	2	3							
O	57	2564.602	PAVEMENT MESSAGE (LEFT ARROW) PAINT		EACH	4		4							
O	57	2564.602	PAVEMENT MESSAGE (RIGHT ARROW) PAINT		EACH	1		1							
N	15	2564.602	PAVEMENT MESSAGE (LT ARROW) POLY PREFORM		EACH	22	4	18							
N	15	2564.602	PAVEMENT MESSAGE (RT ARROW) POLY PREFORM		EACH	19	4	15							
O, AA	15,57	2564.603	4" SOLID LINE WHITE-PAINT		LIN FT	58052	16457	41595							
AA	15	2564.603	4" BROKEN LINE WHITE-PAINT		LIN FT	3580	740	2840							
AA	15	2564.603	8" DOTTED LINE WHITE-PAINT		LIN FT	171	114	57							
O, AA	15,57	2564.603	4" SOLID LINE YELLOW-PAINT		LIN FT	20396	3940	16455							
O, AA	15,57	2564.603	4" DOUBLE SOLID LINE YELLOW-PAINT		LIN FT	36092	11022	25070							
N, AA	15	2564.603	24" SOLID LINE YELLOW-PAINT		LIN FT	396	396								
N	15	2564.603	4" SOLID LINE WHITE-POLY PREFORMED		LIN FT	839		839							
N	15	2564.603	24" STOP LINE WHITE-POLY PREFORMED		LIN FT	36		36							
N	15	2564.603	4" DBLE SOLID LINE YELLOW-POLY PREF		LIN FT	3340		3340							
N	15	2564.603	24" SOLID LINE YELLOW-POLY PREFORMED		LIN FT	118		118							
N	15	2564.603	4" SOLID LINE WHITE-EPOXY		LIN FT	26605	6451	20154							
N	15	2564.603	24" STOP LINE WHITE-EPOXY		LIN FT	214	184	30							
N	15	2564.603	4" BROKEN LINE WHITE-EPOXY		LIN FT	3580	740	2840							
N	15	2564.603	8" DOTTED LINE WHITE-EPOXY		LIN FT	171	114	57							
N	15	2564.603	4" SOLID LINE YELLOW-EPOXY		LIN FT	18231	3940	14291							
N	15	2564.603	4" DOUBLE SOLID LINE YELLOW-EPOXY		LIN FT	1797	948	849							
N	15	2564.603	24" SOLID LINE YELLOW-EPOXY		LIN FT	78	36	42							
N	15	2564.618	ZEBRA CROSSWALK WHITE-POLY PREFORM		SQ FT	2970	720	2250							
		2565.511	FULL T ACT T CONTROL SIGNAL SYSTEM A	(2)	SIG SYS	1	0.375		0.625						
		2565.511	FULL T ACT T CONTROL SIGNAL SYSTEM B	(3)	SIG SYS	1				0.5					1
		2565.511	FULL T ACT T CONTROL SIGNAL SYSTEM C	(4)	SIG SYS	1		0.5							
		2565.601	TRAFFIC CONTROL INTERCONNECTION	(5)	LUMP SUM	1	0.5	0.5							

- NOTES:**
- (A) FUNDING IS 8820.3100 SUBPART 10.
  - (1) F&I SIGN POSTS SHALL BE INCIDENTAL TO INSTALL SIGN AND SIGN PANELS.
  - (2) SIGNAL SYSTEM AT C.S.A.H. 14 / OTTER LAKE ROAD. SIGNAL CONTROLLER AND CABINET FURNISHED BY ANOKA COUNTY.
  - (3) SIGNAL SYSTEM AT C.S.A.H. 8 / VICTOR HUGO BOULEVARD. SIGNAL CONTROLLER AND CABINET FURNISHED BY WASHINGTON COUNTY AND INSTALLED FOR TEMPORARY SIGNAL SYSTEM.
  - (4) SIGNAL SYSTEM AT C.S.A.H. 8 / T.H. 81. SIGNAL CONTROLLER AND CABINET FURNISHED BY MNDOT.
  - (5) BETWEEN TRAFFIC SIGNALS AT C.S.A.H. 14 / OTTER LAKE ROAD AND C.S.A.H. 8 / VICTOR HUGO BOULEVARD.

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DRAWN BY: SJS  
CHECKED BY: BDP

CERTIFIED BY: *Grant D. Paul* LIC. NO. 26880 DATE 9/2/05  
LICENSED PROFESSIONAL ENGINEER

**TKDA**  
ENGINEERS - ARCHITECTS - PLANNERS

ESTIMATED QUANTITIES

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 9 of 296 Sheets

**ESTIMATED QUANTITIES**

TAB. LETTER	SHEET NUMBER	ITEM NUMBER	ITEM	NOTE NO.	UNIT	TOTAL ESTIMATED QUANTITY	PARTICIPATING						NON-PARTICIPATING		
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		2565.601	EMERGENCY VEHICLE PREEMPTION SYS A	(1)	LUMP SUM	1			1						
		2565.601	EMERGENCY VEHICLE PREEMPTION SYS B	(2)	LUMP SUM	1				1					
		2565.601	EMERGENCY VEHICLE PREEMPTION SYS C	(3)	LUMP SUM	1				1					
P	15	2565.602	NMC LOOP DETECTOR 6'X6'		EACH	40		20		20					
P	15	2565.602	PVC HANDHOLE		EACH	28		14		14					
P	15	2565.603	2" NON-METALLIC CONDUIT		LIN FT	2360		1180		1180					
P	15	2565.603	4" RIGID STEEL CONDUIT		LIN FT	715		358		357					
		2565.616	TEMPORARY SIGNAL SYSTEM	(4)	SYSTEM	1									1
H	16	2573.501	BALE CHECK		EACH	409	193	216							
H	16	2573.502	SILT FENCE, TYPE MACHINE SLICED	(5)	LIN FT	18161	3594	14567							
H	16	2573.502	FLOTATION SILT CURTAIN TYPE MOVING WATER		LIN FT	54		54							
H	16	2573.506	SEDIMENT TRAP EXCAVATION		CU YD	103.4	9.4	94.0							
H	16	2573.512	TEMPORARY DITCH CHECK TYPE 3		LIN FT	258	13	245							
H	16	2573.513	TEMPORARY DITCH CHECK TYPE 7		CU YD	5		5							
H	16	2573.530	INLET PROTECTION TYPE A	(6)	EACH	2		2							
H	16	2573.530	INLET PROTECTION TYPE C	(6)	EACH	183	25	158							
H	16	2575.501	SEEDING		ACRE	21.6	3.5	18.1							
		2575.501	SEEDING (TEMPORARY)		ACRE	4.3	0.7	3.6							
H	16	2575.505	SODDING TYPE SALT RESISTANT		SQ YD	32604	5570	27034							
H	16	2575.511	MULCH MATERIAL TYPE 1		TON	30.0	5.3	24.7							
		2575.511	MULCH MATERIAL TYPE 1 (TEMPORARY)		TON	8.6	1.4	7.2							
H	16	2575.511	MULCH MATERIAL TYPE 3		TON	10.6	0.7	9.9							
H	16	2575.513	MULCH MATERIAL TYPE 9		CU YD	20.8	1.7	19.1							
H	16	2575.519	DISK ANCHORING		ACRE	19.2	3.0	16.2							
		2575.519	DISK ANCHORING (TEMPORARY)		ACRE	4.3	0.7	3.6							
H	16	2575.523	EROSION CONTROL BLANKETS CATEGORY 3	(7)	SQ YD	11372	3123	8249							
H	16	2575.523	EROSION CONTROL BLANKETS CATEGORY 4	(7)	SQ YD	1770	435	1335							
		2575.532	COMMERCIAL FERT ANALYSIS 10-10-20 (TEMPORARY)	(8)	POUND	860	140	720							
H	16	2575.532	COMMERCIAL FERT ANALYSIS 22-5-10		POUND	9162	1554	7608							
		2575.608	SEED MIXTURE 150 (TEMPORARY)	(9)	POUND	172	28	144							
H	16	2575.608	SEED MIXTURE 250		POUND	1028	183	845							
H	16	2575.608	SEED MIXTURE 260		POUND	206	36	170							
H	16	2575.608	SEED MIXTURE 310		POUND	207	48	159							
H	16	2575.608	SEED MIXTURE 350		POUND	270		270							

**NOTES:**

- (A) FUNDING IS 8820.3100 SUBPART 10.
- (1) AT C.S.A.H. 14 / OTTER LAKE ROAD.
- (2) AT C.S.A.H. 8 / VICTOR HUGO BOULEVARD.
- (3) AT C.S.A.H. 8 / T.H. 61.
- (4) SIGNAL SYSTEM AT C.S.A.H. 8 / VICTOR HUGO BOULEVARD. SIGNAL CONTROLLER AND CABINET FURNISHED BY WASHINGTON COUNTY.
- (5) INCLUDES REMOVING SEDIMENT BUILD-UP AND REPAIRING, REPLACING, OR SUPPLEMENTING WHEN NON-FUNCTIONAL.
- (6) SEE SHEET NO. 174 FOR DETAIL.
- (7) INCLUDES MAINTENANCE.
- (8) APPLIED AT A RATE OF 200 POUND/ACRE.
- (9) APPLIED AT A RATE OF 40 POUND/ACRE.

DATE: 8/16/2005 TIME: 8:25:34 AM FILENAME: K:\r-z\wostcy\24390\hwy-brdg\hwy-pln-stf\c200802.dwg

DRAWN BY: SJS

CHECKED BY: BDP

CERTIFIED BY Brent D. Paulk  
LICENSED PROFESSIONAL ENGINEER

LIC. NO. 26880 DATE 8/15/05

**TKDA**  
ENGINEERS - ARCHITECTS - PLANNERS

ESTIMATED QUANTITIES

S.P. 02-614-23 S.P. 82-608-07

Sheet No. 10 of 296 Sheets

DATE: 8/11/2005 TIME: 12:44:44 PM  
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MISCELLANEOUS REMOVALS AND SALVAGES - TAB B															
COST PARTICIPATION	STATION TO STATION	PLAN SHEET NO.	REMOVE PIPE DRAIN	REMOVE CURB AND GUTTER	REMOVE RETAINING WALL	REMOVE CHAIN LINK FENCE	REMOVE BARBED WIRE FENCE	REMOVE CONCRETE WALK	REMOVE PAVEMENT (2)	REMOVE CONCRETE DRIVEWAY PAVEMENT	REMOVE LIGHT POLE	SALVAGE CHAIN LINK FENCE	SALVAGE PLATE BEAM GUARDRAIL (1)	SALVAGE VEHICULAR GATE	SALVAGE LIGHT POLE
			LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	SQ YD	SQ YD	SQ YD	EACH	LIN FT	LIN FT	EACH	EACH
(A)	CSAH 14 EB 12+00 TO 21+00	72										33			
(A)	CSAH 14 EB 21+00 TO 33+00	73		10				14		107					
(A)	CSAH 14 EB 33+00 TO 38+74.71	74		42	117		215				1		264		
(W)	CSAH 8 EB 38+74.71 TO 45+00	74											127		
(W)	CSAH 8 EB 45+00 TO 57+00	75		182											
(W)	CSAH 8 EB 57+00 TO 69+00	76					1311								
(W)	CSAH 8 EB 69+00 TO 80+00	77	70												
(W)	CSAH 8 EB 80+00 TO 92+00	78		528	37							20		1	
(W)	CSAH 8 EB 92+00 TO 104+00	79		1059				28		16					
(W)	TH 61 202+00 TO 214+00	81		238		273		120	65						1
(W)	TH 61 214+00 TO 218+00	82		185				67	65						
ANOKA COUNTY S.P. 02-614-23				52	117		215	14		107	1	33	264		
WASHINGTON COUNTY S.P. 82-608-07			70	2192	37	273	1311	215	130	16		20	127	1	1
<b>PROJECT TOTAL</b>			70	2244	154	273	1526	229	130	123	1	53	391	1	1

SAWCUTS - TAB C					
COST PARTICIPATION	STATION TO STATION	OFFSETS	SAWING CONCRETE PAVEMENT (FULL DEPTH)	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	SAWING PAVEMENT (FULL DEPTH) (2)
			LIN FT	LIN FT	LIN FT
(A)	CSAH 14 EB 13+85 TO 14+25	85' LT TO 53' RT		174	
(A)	CSAH 14 EB 25+07 TO 25+74	51' RT TO 52' RT		67	
(A)	CSAH 14 EB 25+81 TO 25+89	53' RT		8	
(A)	CSAH 14 EB 31+72 TO 31+93	70' RT	4	21	
(A)	CSAH 14 EB 33+26 TO 33+49	70' RT	4	23	
(W)	CSAH 8 EB 38+77 TO 39+06	70' RT TO 76' RT		28	
(W)	CSAH 8 EB 46+10 TO 46+33	66' RT	4	23	
(W)	CSAH 8 EB 46+49 TO 46+85	66' RT	4	35	
(W)	CSAH 8 EB 66+61 TO 66+82	309' LT TO 314' LT		22	
(W)	CSAH 8 EB 81+53 TO 81+93	136' LT		40	
(W)	CSAH 8 EB 82+04 TO 82+32	137' LT		28	
(W)	CSAH 8 EB 83+04 TO 82+25	50' RT		20	
(W)	CSAH 8 EB 95+35 TO 95+44	146' LT TO 158' LT	15		
(W)	CSAH 8 EB 95+68 TO 95+70	163' LT TO 165' LT	4		
(W)	CSAH 8 EB 96+03 TO 96+04	195' LT TO 196' LT	2		
(W)	CSAH 8 EB 96+54 TO 96+81	240' LT TO 265' LT	2	41	
(W)	TH 61 202+88 TO 216+03	9' LT TO 32' LT		1087	250
(W)	TH 61 205+07 TO 215+85	15' RT TO 28' RT		843	250
(W)	TH 61 206+10 TO 206+35	37' RT		25	
(W)	TH 61 207+42 TO 207+85	28' RT		43	
(W)	TH 61 207+52 TO 207+76	58' RT		24	
(W)	TH 61 211+04 TO 211+10	269' RT TO 294' RT		25	
(W)	TH 61 211+86 TO 211+89	36' RT TO 208' RT		194	
(W)	TH 61 213+00 TO 213+34	58' RT		56	
(W)	TH 61 215+12	25' RT TO 30' RT	5		
(W)	TH 61 215+85	17' RT TO 19' RT	2		
(W)	CSAH 8 EB 45+70 TO 48+00	STAGE 1B		275	
(A)	CSAH 14 EB 14+25 TO 38+74.71	STAGE 1C		2450	
(W)	CSAH 8 EB 38+74.71 TO 45+70	STAGE 1C		695	
(W)	CSAH 8 EB 48+00 TO 90+28	STAGE 1C	2	4241	
(W)	CSAH 8 EB 86+00 TO 88+00	STAGE 2		200	
ANOKA COUNTY S.P. 02-614-23			8	2743	
WASHINGTON COUNTY S.P. 82-608-07			40	7945	500
<b>PROJECT TOTAL</b>			48	10688	500

**NOTES:**

- (1) INCLUDES ANCHORAGE ASSEMBLIES AND HARDWARE. REMOVAL OF WOOD POSTS AND ANCHOR BLOCKS IS INCIDENTAL.
- (2) PAVEMENT CONSISTS OF APPROX. 8" BITUMINOUS OVER APPROX. 8" CONCRETE. EXACT LOCATIONS HAVE NOT BEEN IDENTIFIED. FINAL QUANTITIES WILL BE DETERMINED IN THE FIELD WHEN ENCOUNTERED.

CLEARING AND GRUBBING - TAB A						
COST PARTICIPATION	STATION TO STATION	PLAN SHEET NO.	CLEARING		GRUBBING	
			TREE	ACRE	TREE	ACRE
(A)	CSAH 14 EB 12+00 TO 21+00	72	4		2	
(A)	CSAH 14 EB 21+00 TO 33+00	73	39	0.25	38	0.25
(A)	CSAH 14 EB 33+00 TO 38+74.71	74	16		16	
(W)	CSAH 8 EB 38+74.71 TO 45+00	74	4	0.30	4	0.30
(W)	CSAH 8 EB 45+00 TO 57+00	75	9	0.10	9	0.10
(W)	CSAH 8 EB 57+00 TO 69+00	76	9		9	
(W)	CSAH 8 EB 69+00 TO 80+00	77	1		1	
(W)	CSAH 8 EB 80+00 TO 92+00	78	9	0.05	9	0.05
(W)	CSAH 8 EB 92+00 TO 104+00	79	25	0.05	25	0.05
(W)	TH 61 202+00 TO 214+00	81	4	0.05	4	0.05
ANOKA COUNTY S.P. 02-614-23			59	0.25	56	0.25
WASHINGTON COUNTY S.P. 82-608-07			61	0.55	61	0.55
<b>PROJECT TOTAL</b>			120	0.80	117	0.80

**COST PARTICIPATION NOTES:**

- (A) 100% ANOKA COUNTY S.P. 02-614-23 QUANTITY.
- (W) 100% WASHINGTON COUNTY S.P. 82-608-07 QUANTITY.

DRAWN BY: SFH

CHECKED BY: BDP

CERTIFIED BY *Bert D. Paul*  
 LICENSED PROFESSIONAL ENGINEER

LIC. NO. 20880 DATE 8/15/05

**TKDA**  
 ENGINEERS · ARCHITECTS · PLANNERS

TABULATIONS  
 CLEARING AND GRUBBING, MISCELLANEOUS REMOVALS AND SALVAGES, SAWCUTS

S.P. 02-614-23 S.P. 82-608-07

Sheet No. 11 of 296 Sheets

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**INPLACE STORM SEWER AND CULVERTS - TAB D**

COST PARTICIPATION	STATION TO STATION	OFFSETS	INPLACE ITEM	REMOVE PIPE CULVERT	REMOVE PIPE SEWER (STORM)	REMOVE PIPE APRON	ABANDON PIPE SEWER	REMOVE DRAINAGE STRUCTURE
				LIN FT	LIN FT	EACH	EACH	EACH
(A)	CSAH 14 EB 15+02	83' LT TO 59' RT	18" RCP			1		
(A)	CSAH 14 EB 19+84 TO 20+13	33' RT	15" CMP	29		1		
(A)	CSAH 14 EB 23+36 TO 23+83	38' RT	15" CMP	46		2		
(A)	CSAH 14 EB 24+28 TO 24+77	43' RT	15" CMP	49		2		
(A)	CSAH 14 EB 24+84 TO 25+99	42' RT	18" RCP	116				
(A)	CSAH 14 EB 24+98 TO 25+34	44' LT	18" CMP	36		1		
(A)	CSAH 14 EB 28+28 TO 28+71	39' LT	15" CMP	43		2		
(A)	CSAH 14 EB 28+81 TO 29+41	41' LT	15" CMP	58		2		
(A)	CSAH 14 EB 31+58 TO 32+12	60' RT	15" CMP	53		2		
(A)	CSAH 14 EB 33+05 TO 33+72	42' RT	18" CMP	67				
(A)	CSAH 14 EB 35+08 TO 35+75	42' LT	15" CMP	67		2		
(A)	CSAH 14 EB 38+34 TO 38+88	68' LT	18" RCP	59				
(A)	ELMCREST 15+70 TO 16+03	24' LT	15" CMP	33				
(W)	CSAH 8 EB 38+48 TO 39+11	25' RT	18" RCP	63		2		
(W)	CSAH 8 EB 39+19 TO 39+28	78' LT TO 16' RT	42"X27" RCPA	95				
(W)	CSAH 8 EB 39+31 TO 39+45	54' RT TO 72' RT	30" RCP		23	1		
(W)	CSAH 8 EB 40+74 TO 41+14	14' RT	18" CMP	40				
(W)	CSAH 8 EB 52+24 TO 52+47	77' LT	15" CMP	23				
(W)	CSAH 8 EB 54+00 TO 54+41	15' RT	15" CMP	42				
(W)	CSAH 8 EB 55+74 TO 56+05	67' LT	15" CMP	30				
(W)	CSAH 8 EB 56+50 TO 57+05	65' LT	12" CMP	55				
(W)	CSAH 8 EB 59+35 TO 60+01	15' RT	18" RCP	66				
(W)	CSAH 8 EB 60+70 TO 60+96	64' LT	18" CMP	26				
(W)	CSAH 8 EB 63+84	61' LT TO 13' RT	24" RCP	74				
(W)	CSAH 8 EB 74+87 TO 75+28	67' LT	15" CMP	42				
(W)	CSAH 8 EB 78+46 TO 79+08	22' RT	18" CMP	62				
(W)	CSAH 8 EB 78+78 TO 79+01	47' RT TO 84' RT	60" CMP	44				
(W)	CSAH 8 EB 79+13 TO 79+38	75' LT	CMP	25				
(W)	CSAH 8 EB 79+21 TO 79+39	67' LT TO 12' RT	60" CMP	81				
(W)	CSAH 8 EB 79+22 TO 79+51	21' RT	30"X19"CMPA	29		1		
(W)	CSAH 8 EB 79+48 TO 79+72	74' LT	CMP	25				
(W)	CSAH 8 EB 82+97 TO 83+31	20' RT	24" CMP	35				
(W)	CSAH 8 EB 87+73 TO 87+96	54' LT	RCP		32			
(W)	CSAH 8 EB 87+98	52' LT	CATCH BASIN					1
(W)	CSAH 8 EB 90+39 TO 90+99	32' LT TO 44' LT	24" RCP		63			
(W)	CSAH 8 EB 90+99	44' LT	MANHOLE					1
(W)	CSAH 8 EB 90+99 TO 92+30	44' LT TO 59' LT	24" RCP		136			
(W)	CSAH 8 EB 92+30	59' LT	CATCH BASIN					1
(W)	CSAH 8 EB 92+30 TO 92+37	59' LT TO 103' LT	12" RCP		44			
(W)	CSAH 8 EB 92+37	103' LT	CATCH BASIN					1
(W)	CSAH 8 EB 92+30 TO 93+05	49' LT TO 59' LT	24" RCP		79			
(W)	CSAH 8 EB 93+05	49' LT	MANHOLE					1
(W)	CSAH 8 EB 93+05 TO 96+30	49' LT TO 173' LT	24" RCP		384			
(W)	CSAH 8 EB 96+30	173' LT	MANHOLE					1
(W)	CSAH 8 EB 96+35	169' LT	CATCH BASIN					1
(W)	TH 61 211+56 TO 212+05	17' RT TO 28' RT	18" CMP	51				
(W)	TH 61 212+05	31' LT TO 17' RT					1	
(W)	TH 61 212+05	17' RT	CATCH BASIN					1
ANOKA COUNTY S.P. 02-614-23				656		15		
WASHINGTON COUNTY S.P. 82-608-07				908	761	4	1	8
<b>PROJECT TOTAL</b>				1564	761	19	1	8

**INPLACE UTILITIES - TAB L**

TYPE	LOCATION	ADJUST FRAME AND RING CASTING		RECONSTRUCT MANHOLE		
		EACH		LIN FT		
		(A)	(W)	(A)	(W)	
SANITARY SEWER	CSAH 14 E.B. 25+93	RT.	1			
SANITARY SEWER	CSAH 14 E.B. 28+55	RT.	1			
SANITARY SEWER	CSAH 14 E.B. 32+32	RT.			1.8	
SANITARY SEWER	CSAH 8 E.B. 52+25	RT.			3.5	
SANITARY SEWER	CSAH 8 E.B. 56+50	RT.			4.5	
SANITARY SEWER	CSAH 8 E.B. 67+50	RT.			3.8	
SANITARY SEWER	CSAH 8 E.B. 71+90	RT.			1.5	
SANITARY SEWER	CSAH 8 E.B. 78+30	RT.			4.0	
SANITARY SEWER	CSAH 8 E.B. 82+40	RT.			2.0	
<b>PROJECT TOTAL</b>			2		1.8	19.3

**COST PARTICIPATION NOTES:**  
 (A) 100% ANOKA COUNTY S.P. 02-614-23 QUANTITY.  
 (W) 100% WASHINGTON COUNTY S.P. 82-608-07 QUANTITY.

DRAWN BY: SFH

CHECKED BY: BDP

CERTIFIED BY Bent O. Pahr LIC. NO. 26880 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

**TKDA**  
 ENGINEERS · ARCHITECTS · PLANNERS

TABULATIONS  
 INPLACE STORM SEWER AND CULVERTS, INPLACE UTILITIES

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 12 of 296 Sheets



**AGGREGATE AND BITUMINOUS SUMMARY - TAB E**

STATION TO STATION	AGG. BASE CLASS 2 (DWY)	AGG. BASE CLASS 5 (DWY & TEMP.)		AGGREGATE BASE (CV) CLASS 5		AGGREGATE BASE (CV) CLASS 5 (BIKE PATH)		AGG. SHLD. (CV) CLASS 5, CLASS 7(B) OR 7(C)	TYPE MV 4 WEARING COURSE MIXTURE (F) (MVWE45035F)		TYPE MV 3 WEARING COURSE MIXTURE (B) (MVWE35035B)		TYPE LV 4 WEARING COURSE MIXTURE (B) (LVWE45030B) (DWY & TEMP.)		TYPE LV 4 WEARING COURSE MIXTURE (B) (LVWE45030B) (BIKE PATH)		TYPE MV3 NON WEARING COURSE MIXTURE (F) (MVNW35035F)		TACK COAT		TYPE SP 12.5 WEARING COURSE MIXTURE (4,F) (SPWEB440F)		TYPE SP 12.5 NON WEARING COURSE MIXTURE (4,B) (SPNWB430B)		BIT. CURB
	TON (1)	TON (1)		CU YD		CU YD		CU YD	TON (2)		TON (2)		TON (2)		TON (2)		TON (2)		GALLON (3)		TON (4)		TON (4)		LIN FT
	(W2)	(A1)	(W2)	(A1)	(W2)	(A3)	(W2)	(A1)	(A1)	(W2)	(A1)	(W2)	(A1)	(W2)	(A3)	(W2)	(A1)	(W2)	(A1)	(W2)	(A1)	(W2)	(A1)	(W2)	(A1)
CSAH 14 EB 12+00 TO 21+00				1554				35	294									494		1091		857			
CSAH 14 EB 21+00 TO 33+00				3562		139		5	20					127				1246		3131		2460			19
CSAH 14 EB 33+00 TO 38+74.71				1443		101			28					92		49		469		1141		897			
CSAH 8 EB 38+74.71 TO 45+00					1766		116		28						106		48		590		1446		1136		
CSAH 8 EB 45+00 TO 57+00					3091		202								183			1050		2646		2079			
CSAH 8 EB 57+00 TO 69+00					3331		194		86						176		150		1105		2660		2090		
CSAH 8 EB 69+00 TO 80+00	49		23		2621		203						21		184				872		2190		1721		
CSAH 8 EB 80+00 TO 92+00	77		220		3042		203						174		188				1054		2587		2027		
CSAH 8 EB 92+00 TO 104+00	209		85		3028		221		76				35		200		133		989		2370		1862		
CSAH 8 EB 104+00 TO 113+04.20					2098		155								141				700		1765		1387		
TH 61 202+00 TO 214+00	26				1283				149		214							260		360		542		357	
TH 61 214+00 TO 218+00					106						18							30		65		43			
STAGE 1 - ELMCREST AVE. N.			24												13										
STAGE 1 - EVERTON AVE. N.			17												9										
STAGE 1 - BYPASS C			196												99										184
STAGE 2 - 31+82.2 E.B. ENTRANCE			17											9											
STAGE 2 - 33+37.4 E.B. ENTRANCE			32											18											
STAGE 2 - BYPASS E			117											64											
<b>TOTALS</b>	<b>361</b>	<b>49</b>	<b>682</b>	<b>6559</b>	<b>20366</b>	<b>240</b>	<b>1294</b>	<b>40</b>	<b>342</b>	<b>339</b>	<b>232</b>	<b>27</b>	<b>415</b>	<b>219</b>	<b>1178</b>	<b>49</b>	<b>591</b>	<b>2209</b>	<b>6750</b>	<b>5363</b>	<b>16271</b>	<b>4214</b>	<b>12702</b>	<b>203</b>	

SUMMARY																					
ANOKA COUNTY S.P. 02-614-23		49		6559				40	342			27		49	2209		5363		4214	203	
CITY OF LINO LAKES S.P. 210-020-02						240							219								
WASHINGTON COUNTY S.P. 82-608-07	271		512	15275		971			254	174		311	884	443	5063		12203		9527		
CITY OF HUGO S.P. 224-020-01	90		171	5092		324			85	58		104	295	148	1688		4068		3176		
<b>PROJECT TOTAL</b>	<b>361</b>	<b>732</b>	<b>26926</b>	<b>1535</b>	<b>40</b>	<b>681</b>	<b>232</b>	<b>442</b>	<b>1398</b>	<b>640</b>	<b>8960</b>	<b>21634</b>	<b>16917</b>	<b>203</b>							

**BASIS OF QUANTITIES:**

- (1) AGGREGATE BASE COMPUTED AT 2 TONS / CU YD.
- (2) SPEC. 2350 BITUMINOUS MIXTURES COMPUTED AT 110 POUNDS / SQ YD / INCH.
- (3) BITUMINOUS MATERIAL FOR TACK COAT COMPUTED AT 0.05 GALLONS / SQ YD.
- (4) SPEC. 2360 BITUMINOUS MIXTURES COMPUTED AT 120 POUNDS / SQ YD / INCH.

**COST PARTICIPATION NOTES:**

- (A1) 100% ANOKA COUNTY S.P. 02-614-23 QUANTITY.
- (A3) 100% CITY OF LINO LAKES S.P. 210-020-02 QUANTITY.
- (W2) 75% WASHINGTON COUNTY S.P. 82-608-07, 25% CITY OF HUGO S.P. 224-020-01 QUANTITY.

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CHECKED BY: BDP

CERTIFIED BY Durt O. Paulk LIC. NO. 26880 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

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TABULATIONS  
AGGREGATE AND BITUMINOUS SUMMARY

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 13 of 296 Sheets

**CONCRETE SUMMARY - TAB F**

STATION TO STATION	4" CONC. WALK			6" CONC. WALK (MEDIAN NOSE)		SPECIAL SURFACE TREATMENT		B424 CURB AND GUTTER			B612 CURB AND GUTTER	B618 CURB AND GUTTER		6" CONC. DRIVE PVMT	TRUNCATED DOMES		
	SQ FT			SQ FT		SQ FT		LIN FT			LIN FT	LIN FT		SQ YD	SQ FT		
	(A1)	(A3)	(W3)	(A1)	(W3)	(A3)	(1)	(W6)	(A1)	(A2)	(W3)	(W3)	(A2)	(W3)	(W3)	(A3)	(W3)
CSAH 14 EB 12+00 TO 21+00	6332			31		261		657									
CSAH 14 EB 21+00 TO 33+00	3761	182		26		3761		2129	2066						92		
CSAH 14 EB 33+00 TO 38+74.71	1726	35				1726		1151	1192			10			20		
CSAH 8 EB 38+74.71 TO 45+00			2701					2665		2544			13				20
CSAH 8 EB 45+00 TO 57+00			4072		169			3435		4510			124				80
CSAH 8 EB 57+00 TO 69+00			4880		24			4594		4593			73				160
CSAH 8 EB 69+00 TO 80+00			4798					4798		4398							
CSAH 8 EB 80+00 TO 92+00			3887		98			3485		4588			33	39			40
CSAH 8 EB 92+00 TO 104+00			5024		24			4671		4605			250	123			
CSAH 8 EB 104+00 TO 113+04.20			3561		45			3539		3401							20
TH 61 202+00 TO 214+00			1454							264	162		266				24
TH 61 214+00 TO 218+00			396							185							
<b>TOTALS</b>	11819	217	30773	57	360	5748	27187	3937	3258	29098	162	10	726	162	112		304

SUMMARY							
ANOKA COUNTY S.P. 02-614-23	11819	57			5566		5
CITY OF LINO LAKES S.P. 210-020-02	217				1629		5
CITY OF LINO LAKES S.P. 210-020-02 (1)			5748				
WASHINGTON COUNTY S.P. 82-608-07	15387	180			14544	81	380
CITY OF HUGO S.P. 224-020-01	15387	180			14544	81	380
CITY OF HUGO LOCAL FUNDS			27187				
<b>PROJECT TOTAL</b>	42810	417	32935		36283	162	770

**COST PARTICIPATION NOTES:**  
 (A1) 100% ANOKA COUNTY S.P. 02-614-23 QUANTITY.  
 (A2) 50% ANOKA COUNTY S.P. 02-614-23, 50% CITY OF LINO LAKES S.P. 210-020-02 QUANTITY.  
 (A3) 100% CITY OF LINO LAKES S.P. 210-020-02 QUANTITY.  
 (W3) 50% WASHINGTON COUNTY S.P. 82-608-07, 50% CITY OF HUGO S.P. 224-020-01 QUANTITY.  
 (W6) 100% CITY OF HUGO LOCAL FUNDS QUANTITY.  
 (1) FUNDING IS 8820.3100 SUBPART 10.

**FENCING - TAB Z**

COST PARTICIPATION	STATION TO STATION	INSTALL CHAIN LINK FENCE	INSTALL VEHICULAR GATE
		LIN FT	EACH
(A)	CSAH 14 EB 15+12 TO 15+45	33	
(W)	CSAH 8 EB 82+60		1
(W)	CSAH 8 EB 83+05 TO 83+25	20	
	ANOKA COUNTY S.P. 02-614-23	33	
	WASHINGTON COUNTY S.P. 82-608-07	20	1
<b>PROJECT TOTAL</b>		53	1

**COST PARTICIPATION NOTES:**  
 (A) 100% ANOKA COUNTY S.P. 02-614-23 QUANTITY.  
 (W) 100% WASHINGTON COUNTY S.P. 82-608-07 QUANTITY.

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**PAVEMENT MARKINGS - TAB N**

COST PARTICIPATION	STATION TO STATION	LEFT TURN ARROW	RIGHT TURN ARROW	24" SOLID LINE YELLOW PAINT	4" SOLID LINE WHITE POLY PREF.	24" STOP LINE WHITE POLY PREF.	4" DBLE SOLID YELLOW POLY PREF.	24" SOLID LINE YELLOW POLY PREF.	4" SOLID LINE WHITE EPOXY	24" STOP LINE WHITE EPOXY	4" BROKEN LINE WHITE EPOXY	8" DOTTED LINE WHITE EPOXY	4" SOLID LINE YELLOW EPOXY	4" DBLE SOLID YELLOW EPOXY	24" SOLID LINE YELLOW EPOXY	ZEBRA CROSSWALK WHITE POLY PREF.	
		POLY PREF.	POLY PREF.														
		EACH	EACH	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	SQ FT
(A)	CSAH 14 EB 12+00 TO 21+00		2						1950	27	140	36	657	948	36		
(A)	CSAH 14 EB 21+00 TO 33+00	4	2	180					3324	157	360	78	2132			648	
(A)	CSAH 14 EB 33+00 TO 38+74.71								1177		240		1151			72	
(W)	CSAH 8 EB 38+74.71 TO 45+00	2	3						2009	30	260		1268			36	
(W)	CSAH 8 EB 45+00 TO 57+00	6	5						3388		450		2183			1242	
(W)	CSAH 8 EB 57+00 TO 69+00	2	1						2688		450		2222	458		360	
(W)	CSAH 8 EB 69+00 TO 80+00	1	1						2324		450		2107				
(W)	CSAH 8 EB 80+00 TO 92+00	1							2666		500		2145			270	
(W)	CSAH 8 EB 92+00 TO 104+00								2405		490		2404				
(W)	CSAH 8 EB 104+00 TO 113+04.20	2	2						2174		240	57	1720				
(W)	TH 61 202+00 TO 214+00	4	2		798	36	2570	27	2112				242	391	42	342	
(W)	TH 61 214+00 TO 218+00		1		41		770	91	388								
	ANOKA COUNTY S.P. 02-614-23	4	4	180					6451	184	740	114	3940	948	36	720	
	WASHINGTON COUNTY S.P. 82-608-07	18	15		839	36	3340	118	20154	30	2840	57	14291	849	42	2250	
	<b>PROJECT TOTAL</b>	<b>22</b>	<b>19</b>	<b>180</b>	<b>839</b>	<b>36</b>	<b>3340</b>	<b>118</b>	<b>26605</b>	<b>214</b>	<b>3580</b>	<b>171</b>	<b>18231</b>	<b>1797</b>	<b>78</b>	<b>2970</b>	

**COST PARTICIPATION NOTES:**  
 (A) 100% ANOKA COUNTY S.P. 02-614-23 QUANTITY.  
 (W) 100% WASHINGTON COUNTY S.P. 82-608-07

**(1) NON-WEAR STRIPING - TAB AA**

COST PARTICIPATION	STATION TO STATION	4" SOLID LINE WHITE PAINT	4" BROKEN LINE WHITE PAINT	8" DOTTED LINE WHITE PAINT	4" SOLID LINE YELLOW PAINT	4" DBLE SOLID YELLOW PAINT	24" SOLID LINE YELLOW PAINT
		LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT
		(A)	CSAH 14 EB 12+00 TO 21+00	1950	140	36	657
(A)	CSAH 14 EB 21+00 TO 33+00	3324	360	78	2132		180
(A)	CSAH 14 EB 33+00 TO 38+74.71	1177	240		1151		
(W)	CSAH 8 EB 38+74.71 TO 45+00	2009	260		1268		
(W)	CSAH 8 EB 45+00 TO 57+00	3388	450		2183		
(W)	CSAH 8 EB 57+00 TO 69+00	2688	450		2222	458	
(W)	CSAH 8 EB 69+00 TO 80+00	2324	450		2197		
(W)	CSAH 8 EB 80+00 TO 92+00	2420	500		2421		
(W)	CSAH 8 EB 92+00 TO 104+00	2405	490		2404		
(W)	CSAH 8 EB 104+00 TO 113+04.20	2174	240	57	1720		
	ANOKA COUNTY S.P. 02-614-23	6451	740	114	3940	948	216
	WASHINGTON COUNTY S.P. 82-608-07	17408	2840	57	14415	458	
	<b>PROJECT TOTAL</b>	<b>23859</b>	<b>3580</b>	<b>171</b>	<b>18355</b>	<b>1406</b>	<b>216</b>

**COST PARTICIPATION NOTES:**  
 (A) 100% ANOKA COUNTY S.P. 02-614-23 QUANTITY.  
 (W) 100% WASHINGTON COUNTY S.P. 82-608-07

**NOTE:**  
 (1) QUANTITIES ARE BASED ON STRIPING ALL NON-WEAR BITUMINOUS COURSES. PAINT MAY NOT BE NECESSARY IF CONTRACTOR PAVES WEAR COURSE PRIOR TO OPENING TO TRAFFIC.

**FUTURE SIGNAL COMPONENTS - TAB P**

LOCATION	NMC LOOP DETECTOR 6' X 6'	NON-METALLIC 2" CONDUIT	4" RIGID STEEL CONDUIT	PVC HANDHOLE
	EACH	LIN FT	LIN FT	EACH
	CSAH 8 E.B. 62+00 TO 72+50	12	900	360
CSAH 8 E.B. 75+00 TO 87+50	16	880	190	9
CSAH 8 E.B. 98+00 TO 105+00	12	580	165	7
<b>PROJECT TOTAL</b>	<b>40</b>	<b>2360</b>	<b>715</b>	<b>28</b>

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CHECKED BY: BDP

CERTIFIED BY *Scott O. Pugh* LIC. NO. 20880 DATE 9/1/05  
LICENSED PROFESSIONAL ENGINEER

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TABULATIONS  
 PAVEMENT MARKINGS, NON-WEAR STRIPING, FUTURE SIGNAL COMPONENTS

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 15 of 296 Sheets

**TURF ESTABLISHMENT AND EROSION CONTROL - TAB H**

COST PARTICIPATION	STATION TO STATION	RANDOM RIPRAP	RANDOM RIPRAP	BALE CHECK	SILT FENCE TYPE	FLOT-ATION SILT CURTAIN	SEDIMENT TRAP EXCAV.	TEMP. DITCH CHECK TYPE	TEMP. DITCH CHECK TYPE	INLET PROT. TYPE	INLET PROT. TYPE	SEEDING	SEED MIX	SEED MIX	SEED MIX	SEED MIX	SODDING TYPE SALT RESIST.	MULCH MATERIAL TYPE	MULCH MATERIAL TYPE	MULCH MATERIAL TYPE	DISK ANCHOR	EROSION CONTROL BLANKET CAT. 3	EROSION CONTROL BLANKET CAT. 4	COMM. FERT. ANALYSIS 22-5-10 (8)
		CL I (1)	CL II (2)		MACHINE SLICED	(MOVING WATER)	TYPE 3	TYPE 7	TYPE A	TYPE C	ACRE		250 (3)	260 (4)	310 (5)	350 (6)		TYPE 1 (7)	TYPE 3 (7)	TYPE 9 (2)		SQ YD	TON	
(A)	CSAH 14 EB 12+00 TO 21+00		1.6	165	818		4.7				2	1.7	82		48		460	2.3		0.9	1.2	3123	371	559
(A)	CSAH 14 EB 21+00 TO 33+00			28	1575			13			14	0.9	58	5			3786	1.7	0.1		0.9		64	564
(A)	CSAH 14 EB 33+00 TO 38+74.71		1.4		1201		4.7				9	0.9	43	31			1324	1.3	0.6	0.8	0.9			431
(W)	CSAH 8 EB 38+74.71 TO 45+00		3.9		1441		7.1				14	1.4	14	16	25	59	4133	0.4	1.7	2.0	1.1	1616		603
(W)	CSAH 8 EB 45+00 TO 57+00		3.0	112	2270		5.9				18	2.1	120	43			6139	3.3	0.9	1.6	2.1		253	1165
(W)	CSAH 8 EB 57+00 TO 69+00		9.8	79	3171		22.5				27	2.8	138	18	15	38	2250	4.0	1.3	3.9	2.6	974	178	1040
(W)	CSAH 8 EB 69+00 TO 80+00	1.2	25.2		2847	54	43.7	100	5		21	4.4	181	24	97	117	2222	5.3	3.3	11.6	3.6	4245	195	1466
(W)	CSAH 8 EB 80+00 TO 92+00			25	2697						29	2.8	108	34	22	56	3820	3.1	2.0		2.5	1414	56	1115
(W)	CSAH 8 EB 92+00 TO 104+00	1.2			1311		14.8	20		1	25	2.2	140	16			4269	4.6	0.3		2.1		296	1142
(W)	CSAH 8 EB 104+00 TO 113+04.20				653			40			17	1.7	103	19			1707	2.9	0.4		1.6		85	700
(W)	TH 61 202+00 TO 214+00				177			85		1	7	0.6	37				2366	0.9			0.5		272	339
(W)	TH 61 214+00 TO 218+00											0.1	4				128	0.2			0.1			38
	ANOKA COUNTY S.P. 02-614-23		3.0	193	3594		9.4	13			25	3.5	183	36	48		5570	5.3	0.7	1.7	3.0	3123	435	1554
	WASHINGTON COUNTY S.P. 82-608-07	2.4	41.9	216	14567	54	94.0	245	5	2	158	18.1	845	170	159	270	27034	24.7	9.9	19.1	16.2	8249	1335	7608
	<b>PROJECT TOTAL</b>	2.4	44.9	409	18161	54	103.4	258	5	2	183	21.6	1028	206	207	270	32604	30.0	10.6	20.8	19.2	11372	1770	9162

**COST PARTICIPATION NOTES:**

(A) 100% ANOKA COUNTY S.P. 02-614-23 QUANTITY.

(W) 100% WASHINGTON COUNTY S.P. 82-608-07 QUANTITY.

**NOTES:**

- QUANTITIES INCLUDE ADDITIONAL 10' BEYOND CONSTRUCTION LIMITS FOR ROUNDING.

(1) TO BE USED AT THE DOWNSTREAM END OF SEDIMENT TRAPS.

(2) TO BE USED FOR ROCK WEEPER.

(3) APPLIED AT A RATE OF 70 POUND/ACRE.

(4) APPLIED AT A RATE OF 100 POUND/ACRE.

(5) APPLIED AT A RATE OF 82 POUND/ACRE.

(6) APPLIED AT A RATE OF 84.5 POUND/ACRE.

(7) APPLIED AT A RATE OF 2 TON/ACRE.

(8) APPLIED AT A RATE OF 350 POUND/ACRE FOR SEED MIX 250.

APPLIED AT A RATE OF 400 POUND/ACRE FOR SEED MIX 260.

APPLIED AT A RATE OF 200 POUND/ACRE FOR SEED MIX 310.

APPLIED AT A RATE OF 200 POUND/ACRE FOR SEED MIX 350.

APPLIED AT A RATE OF 350 POUND/ACRE FOR SODDING.

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CERTIFIED BY Bent O. Pugh  
LICENSED PROFESSIONAL ENGINEER

LIC. NO. 26880 DATE 8/15/05

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TABULATIONS  
TURF ESTABLISHMENT AND EROSION CONTROL

S.P. 02-614-23 S.P. 82-608-07

Sheet No. 16 of 296 Sheets

**EARTHWORK SUMMARY - TAB I**

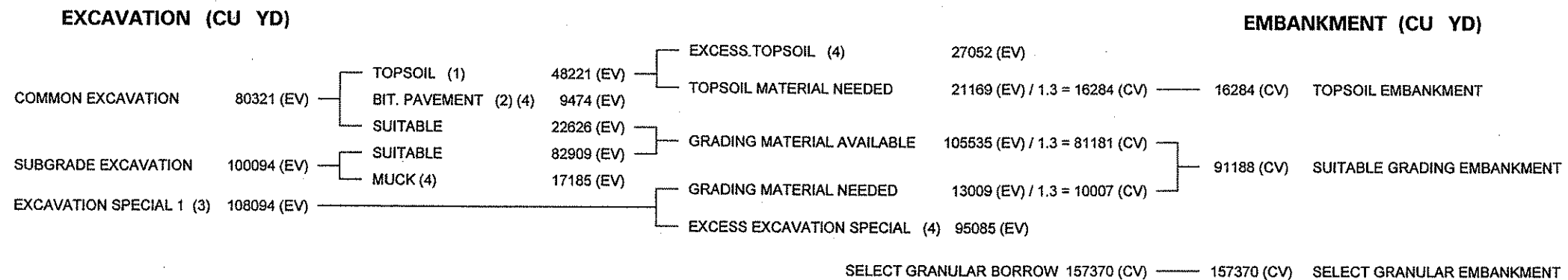
COST PARTICIPATION	STATION TO STATION	EXCAVATION (EV)					EMBANKMENT (CV)			
		COMMON			SUBGRADE		SPECIAL 1 (3)	TOPSOIL	SUITABLE GRADING	SELECT GRANULAR
		TOPSOIL (1)	BITUMINOUS PAVEMENT (2)	SUITABLE	SUITABLE	MUCK				
		CU YD	CU YD	CU YD	CU YD	CU YD				
(A1)	CSAH 14 EB 14+25 TO 38+50	9101	2498	5217	22709		3279	15140	33040	
(W1)	CSAH 8 EB 38+50 TO 112+75	36928	5693	16997	59521	17185	12455	69748	122666	
(W1)	ELMCREST 15+64.30 TO 16+99.45	196		13	228		46	250	360	
(W1)	EVERTON 15+50 TO 17+72.62	298	100	11	295		70	395	546	
(W1)	TH 61 203+00 TO 216+00	1192	982	371			368	2894		
(W1)	CHURCH 15+50 TO 17+94.18	506	96	17	156		66	499	758	
(A2)	OTTER POND					4486		772		
(AW1)	ELMCREST POND					6568		864		
(W2)	EVERTON POND					3372		432		
(W2)	CLEARWATER WEST POND					93668		194		
(A1)	TEMPORARY PAVEMENT REMOVAL		13							
(W1)	TEMPORARY PAVEMENT REMOVAL		92							
<b>TOTALS</b>		48221	9474	22626	82909	17185	108094	16284	91188	157370

SUMMARY					
ANOKA COUNTY S.P. 02-614-23		16829		22709	33040
ANOKA COUNTY S.P. 02-614-23 STORM SEWER				6128	
WASHINGTON COUNTY S.P. 82-608-07		63492		77385	124330
WASHINGTON COUNTY S.P. 82-608-07 STORM SEWER				101966	
<b>PROJECT TOTAL</b>		80321		100094	157370

**COST PARTICIPATION NOTES:**

- (A1) 100% ANOKA COUNTY S.P. 02-614-23 QUANTITY.
- (A2) 100% ANOKA COUNTY S.P. 02-614-23 STORM SEWER QUANTITY.
- (AW1) 25% ANOKA COUNTY S.P. 02-614-23 STORM SEWER, 75% WASHINGTON COUNTY S.P. 82-608-07 STORM SEWER QUANTITY.
- (W1) 100% WASHINGTON COUNTY S.P. 82-608-07 QUANTITY.
- (W2) 100% WASHINGTON COUNTY S.P. 82-608-07 STORM SEWER QUANTITY.

**EARTHWORK BALANCE**



**NOTES:**

- (1) TOPSOIL ENCOUNTERED IN THE PROJECT LIMITS WAS 4" TO 36" DEEP. AN AVERAGE DEPTH OF 12" WAS USED FOR QUANTITY PURPOSES.
- (2) EXISTING BITUMINOUS PAVEMENT ENCOUNTERED IN THE PROJECT LIMITS WAS 4" TO 8" DEEP. AN AVERAGE DEPTH OF 6" WAS USED FOR QUANTITY PURPOSES.
- (3) NO ATTEMPT HAS BEEN MADE TO DETERMINE THE TYPE OF MATERIAL TO BE EXCAVATED.
- (4) EXCESS MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OUTSIDE THE RIGHT-OF-WAY.

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CERTIFIED BY Pant O. Paul LIC. NO. 26880 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

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EARTHWORK SUMMARY AND BALANCE

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 17 of 296 Sheets



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

STANDARD PLATES	
PLATE NO.	DESCRIPTION
3000L	REINFORCED CONCRETE PIPE
3006G	GASKET JOINT FOR R.C. PIPE
3007D	SHEAR REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURES
3040F	CORRUGATED METAL PIPE CULVERT
3100G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3123J	METAL APRON FOR C.S. PIPE
3124B	METAL APRON CONNECTION
3133C	RIPRAP AT RCP OUTLETS
3221C	CORRUGATED STEEL PIPE COUPLING BAND
4005L	MANHOLE OR CATCH BASIN (TYPE A & B CONE SECTIONS, PRECAST) DESIGN F
4006L	MANHOLE OR CATCH BASIN (PRECAST) DESIGNS G AND H
4010H	CONCRETE SHORT CONE & ADJUSTING RING (SECTIONAL CONCRETE)
4011E	PRECAST CONCRETE BASE
4020J	MANHOLE OR CATCH BASIN COVER
4022A	MANHOLE OR CATCH BASIN COVER (3 FT. X 2 FT. OPENING)
4026A	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
4101D	RING CASTING FOR MANHOLE OR CATCH BASIN
4110F	COVER CASTING FOR MANHOLE
4125D	CATCH BASIN FRAME CASTING (GRATE FRAME CASTING NO. 806)
4134A	CATCH BASIN (CURB BOX CASTING NO. 825)
4143E	STOOL GRATE & CONCRETE FRAME (CASTING NO. 731 & FRAME)
4154B	CATCH BASIN GRATE CASTING (GRATE CASTING NO. 816)
4180J	MANHOLE OR CATCH BASIN STEP
7036F	PEDESTRIAN CURB RAMP
7065C	BITUMINOUS CURB
7100H	CONCRETE CURB AND GUTTER
7109C	MADIAN NOSE AND ISLAND
7111J	INSTALLATION OF CATCH BASIN CASTINGS (CONCRETE CURB AND GUTTER)
7112C	INSTALLATION AND REINFORCEMENT OF CATCH BASIN AND MANHOLE CASTINGS (CONCRETE INTEGRANT CURBS)
7113A	CONCRETE APPROACH NOSE DETAIL
8000I	STANDARD BARRICADES
8002G	PERMANENT BARRICADES
8110D	TRAFFIC SIGNAL BRACKETING
8112D	PEDESTAL FOUNDATION
8114A	P.V.C. HANDHOLE/PULLBOX
8115D	PEDESTRIAN PUSH BUTTON INSTALLATION
8120L	POLE FOUNDATION (PA85)
8121D	TRANSFORMER BASE AND POLE BASE PLATE
8122C	PEDESTAL AND PEDESTAL BASE
8123E	POLE AND MAST ARM
8124E	MAST ARM SIGNAL HEAD MOUNTS
8126G	POLE FOUNDATION (PA90 AND PA100)
8150C	INSTALLATION OF CULVERT MARKERS
8337B	TEMPORARY PORTABLE PRECAST CONCRETE BARRIER (TYPE F)
9102D	TURF ESTABLISHMENT AREAS (AT PIPE CULVERT ENDS)
9322J	CHAIN LINK FENCE

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DRAWN BY: TJV

CHECKED BY: BDP

CERTIFIED BY *Brent O. Paulin*

LICENSED PROFESSIONAL ENGINEER

LIC. NO. 26880 DATE 9/1/05

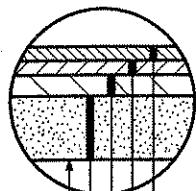
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STANDARD PLATES

S.P. 02-614-23 S.P. 82-608-07

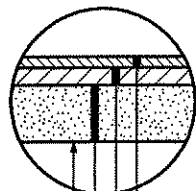
Sheet No. 18 of 296 Sheets



**INSET A**

- CSAH 14/8, OTTER LAKE ROAD, VICTOR PATH, VICTOR HUGO BLVD., AND ONEKA PARKWAY  
 - FUTURE ENT. AT STA. 20+14 E.B., 25+43 W.B., 46+70 W.B., 60+25 E.B., 60+66 W.B., AND 67+26 E.B.,  
 - COMM. DRIVES AT STA. 31+92 AND 33+37

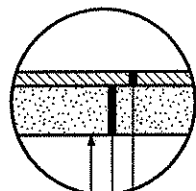
- SPEC 2360 2" TYPE SP 12.5 WEARING COURSE MIXTURE SPWEB440F
- SPEC 2360 2" TYPE SP 12.5 WEARING COURSE MIXTURE SPWEB440F
- SPEC 2360 3" TYPE SP 12.5 NON-WEARING COURSE MIXTURE SPNWB430B
- SPEC 2211 9" AGGREGATE BASE (CV), CLASS 5
- GRADING GRADE



**INSET B**

ELMCREST AVE., EVERTON AVE., MULLER DRIVE, 145TH ST. CUL-DE-SAC, AND 142ND ST.

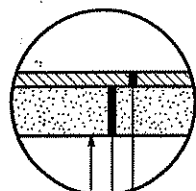
- SPEC 2350 1.5" TYPE MV4 WEARING COURSE MIXTURE MVWE45035F
- SPEC 2350 2.5" TYPE MV3 NON-WEARING COURSE MIXTURE MVNW35035F
- SPEC 2211 8" AGGREGATE BASE (CV), CLASS 5
- GRADING GRADE



**INSET C**

BIKE PATH

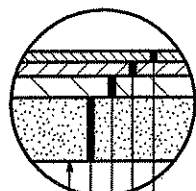
- SPEC 2350 2.5" TYPE LV4 WEARING COURSE MIXTURE LVWE45030B
- SPEC 2211 6" AGGREGATE BASE (CV), CLASS 5
- GRADING GRADE



**INSET D**

CSAH 14 - RURAL SHOULDER

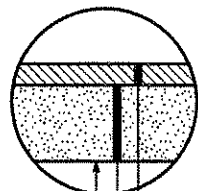
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- SPEC 2211 VAR. DEPTH AGGREGATE BASE (CV), CLASS 5
- GRADING GRADE



**INSET E**

TH 61 WIDENING

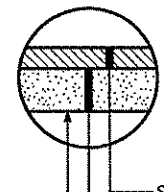
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- SPEC 2360 2" TYPE SP 12.5 WEARING COURSE MIXTURE SPWEB440F
- SPEC 2360 2.5" TYPE SP 12.5 NON-WEARING COURSE MIXTURE SPNWB430B
- SPEC 2211 8" AGGREGATE BASE (CV), CLASS 5
- GRADING GRADE



**INSET F**

TH 61 - SHOULDER

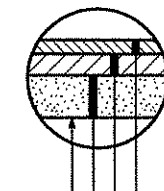
- SPEC 2350 3" TYPE MV3 WEARING COURSE MIXTURE MVWE35035B
- SPEC 2211 11.5" AGGREGATE BASE (CV), CLASS 5
- GRADING GRADE



**3" BITUMINOUS DRIVEWAY & TEMPORARY PAVEMENT FOR STAGING**

STA. 88+47 W.B., 90+13 W.B., 92+59 W.B., AND BYPASSES & TEMPORARY PAVEMENT

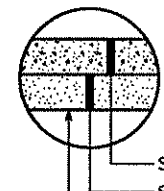
- SPEC 2350 3" TYPE LV4 WEARING COURSE MIXTURE LVWE45030B
- SPEC 2211 6" AGGREGATE BASE, CLASS 5
- GRADING GRADE



**5" BITUMINOUS DRIVEWAY**

STA. 78+56 E.B., 82+03 E.B., AND 94+91 E.B.

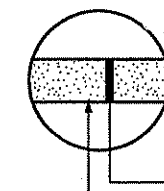
- SPEC 2350 2" TYPE LV4 WEARING COURSE MIXTURE LVWE45030B
- SPEC 2350 3" TYPE LV4 WEARING COURSE MIXTURE LVWE45030B
- SPEC 2211 6" AGGREGATE BASE, CLASS 5
- GRADING GRADE



**CONCRETE DRIVEWAY**

STA. 90+91 W.B., AND CUL-DE-SAC DRIVEWAY

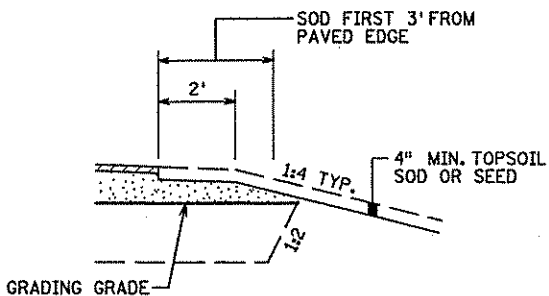
- SPEC 2521 6" CONCRETE PAVEMENT
- SPEC 2211 6" AGGREGATE BASE, CLASS 5
- GRADING GRADE



**GRAVEL DRIVEWAY**

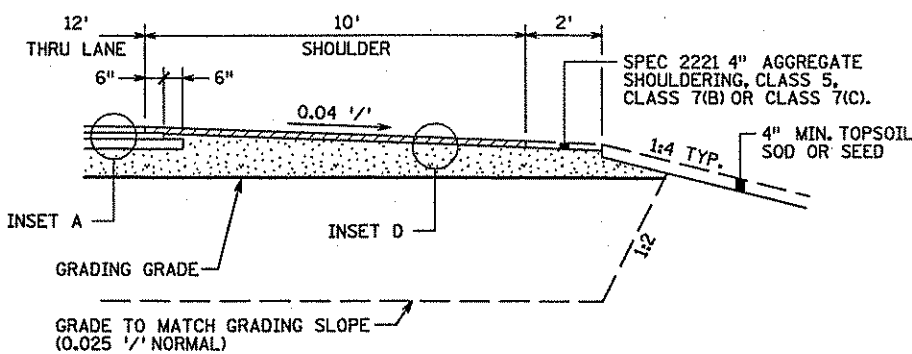
STA. 78+56 E.B., 88+47 W.B., 90+13 W.B., 92+59 W.B., AND 94+91 E.B. (90+94 TO 95+08 E.B.)

- SPEC 2211 6" AGGREGATE BASE, CLASS 2
- GRADING GRADE



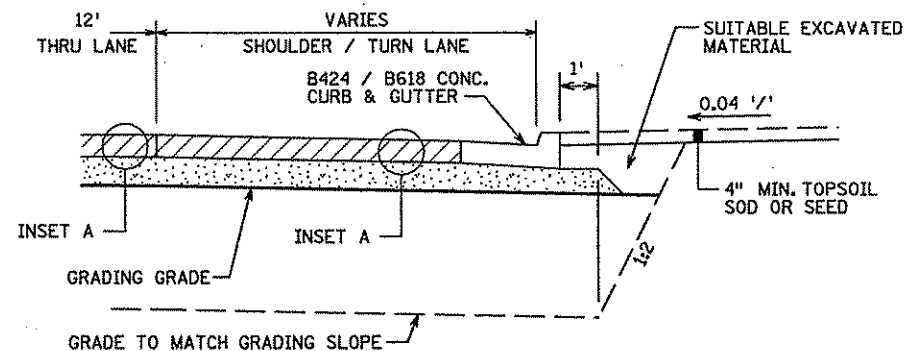
**DETAIL E**

SIDE ROAD - RURAL BITUMINOUS EDGE



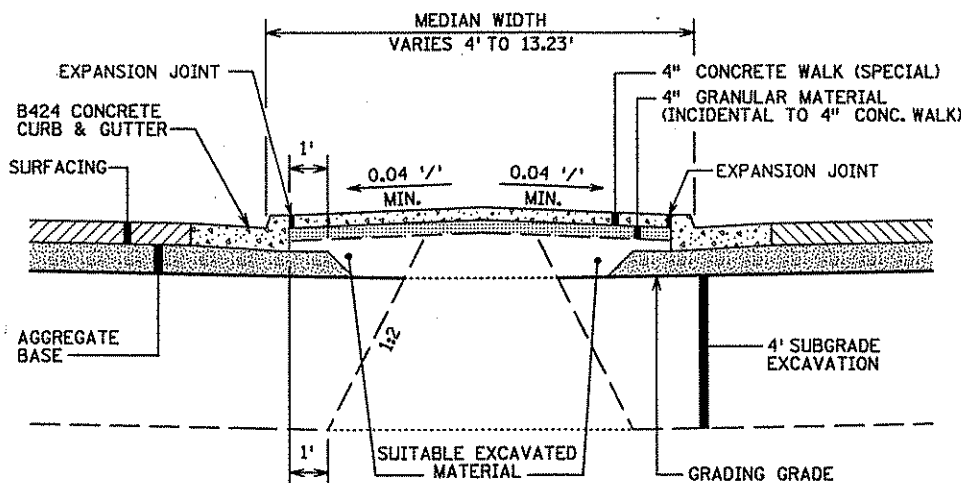
**DETAIL A**

CSAH 14 - RURAL BITUMINOUS EDGE



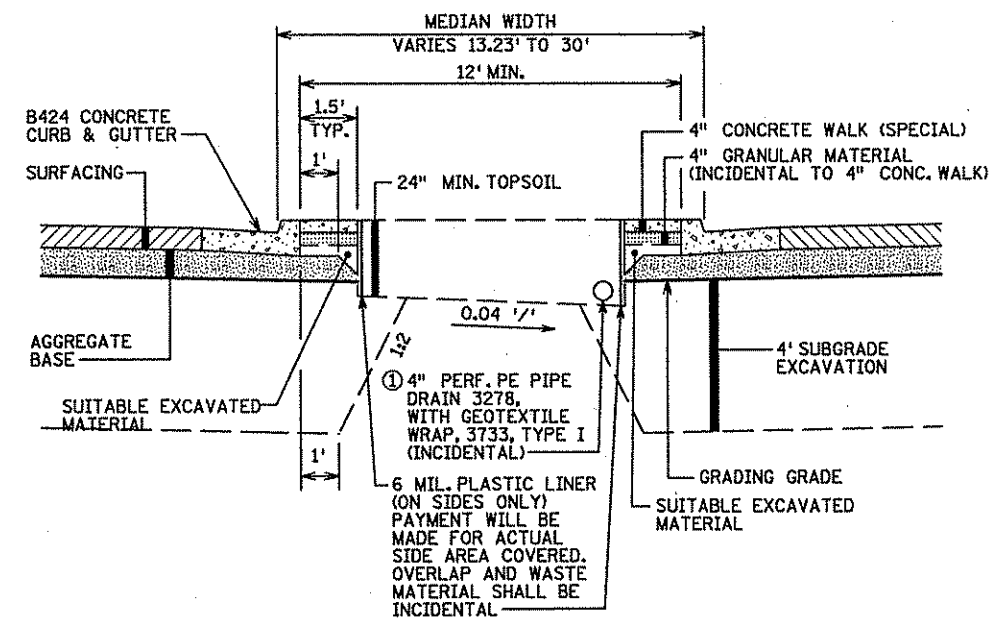
**DETAIL B**

CURB AND GUTTER



**DETAIL C**

CONCRETE MEDIAN



**DETAIL D**

LANDSCAPED MEDIAN

NOTE: SUBGRADE EXCAVATION, GRANULAR BORROW AND AGGREGATE BASE TO BE CARRIED THROUGH ENTIRE WIDTH OF MEDIAN WHEN MEDIAN WIDTH IS LESS THAN 14'.

**NOTE:**

① SEE DRAINAGE AND SUPERELEVATION PLANS FOR LOCATION. SEE DRAINAGE DETAILS FOR CONNECTION TO DRAINAGE STRUCTURE.

DATE: 9/1/2005 TIME: 8:04:30 AM FILENAME: K:\v-z\w\asf\ty\24390\hwy-brdg\hwy\p\tr-sit\c200802.tso

DRAWN BY: TJV

CHECKED BY: BDP

CERTIFIED BY *Scott O. Pauler* LICENSED PROFESSIONAL ENGINEER

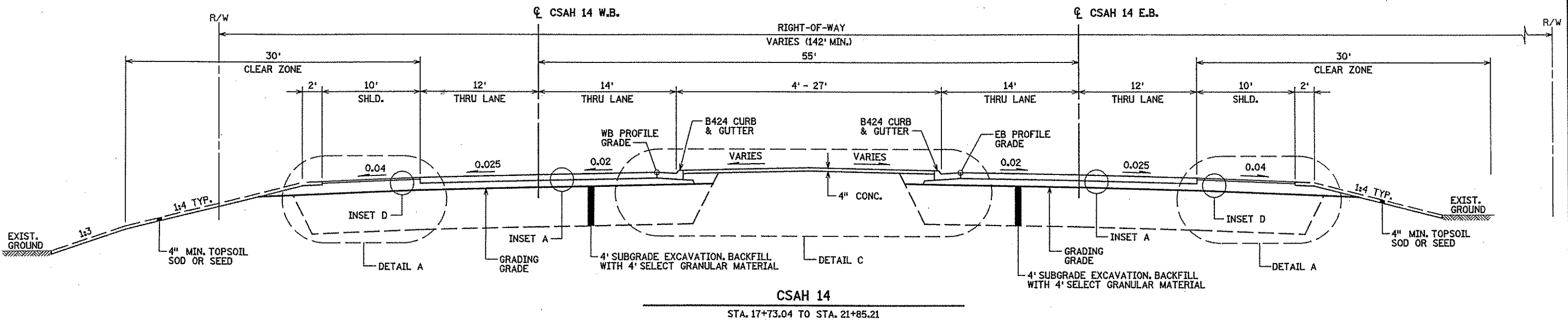
LIC. NO. 26880 DATE 9/2/05

**TKDA**  
ENGINEERS - ARCHITECTS - PLANNERS

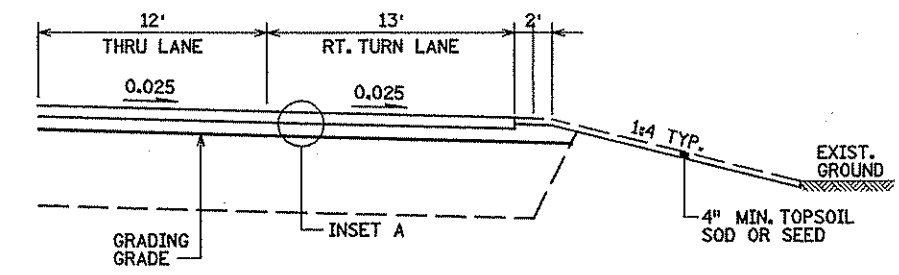
TYPICAL SECTIONS  
PAVEMENT INSETS AND DETAILS

S.P. 02-614-23 S.P. 82-608-07

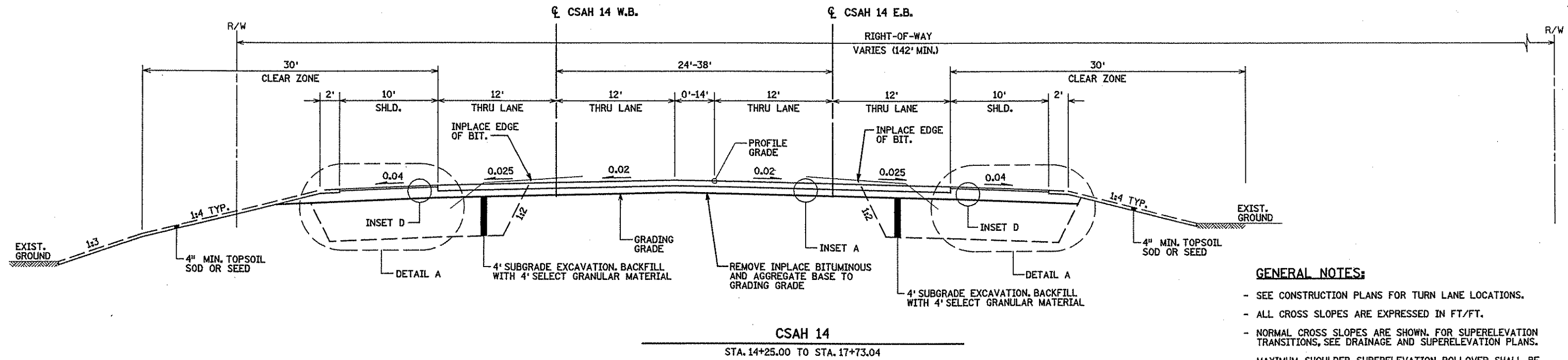
Sheet No. 19 of 296 Sheets



CSAH 14  
STA. 17+73.04 TO STA. 21+85.21



RIGHT TURN LANE DETAIL



CSAH 14  
STA. 14+25.00 TO STA. 17+73.04

**GENERAL NOTES:**

- SEE CONSTRUCTION PLANS FOR TURN LANE LOCATIONS.
- ALL CROSS SLOPES ARE EXPRESSED IN FT/FT.
- NORMAL CROSS SLOPES ARE SHOWN. FOR SUPERELEVATION TRANSITIONS, SEE DRAINAGE AND SUPERELEVATION PLANS.
- MAXIMUM SHOULDER SUPERELEVATION ROLLOVER SHALL BE 0.07 FT/FT.
- UNLESS OTHERWISE SPECIFIED, THE GRADING GRADE CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE OF THE MAINLINE.
- UNLESS OTHERWISE SPECIFIED, CLASS 5 AGGREGATE WILL EXTEND 1' BEYOND BACK OF CURB.
- SUBGRADE EXCAVATION DIMENSIONS SHOWN ARE FROM BACK OF CURB OR EDGE OF PAVEMENT.

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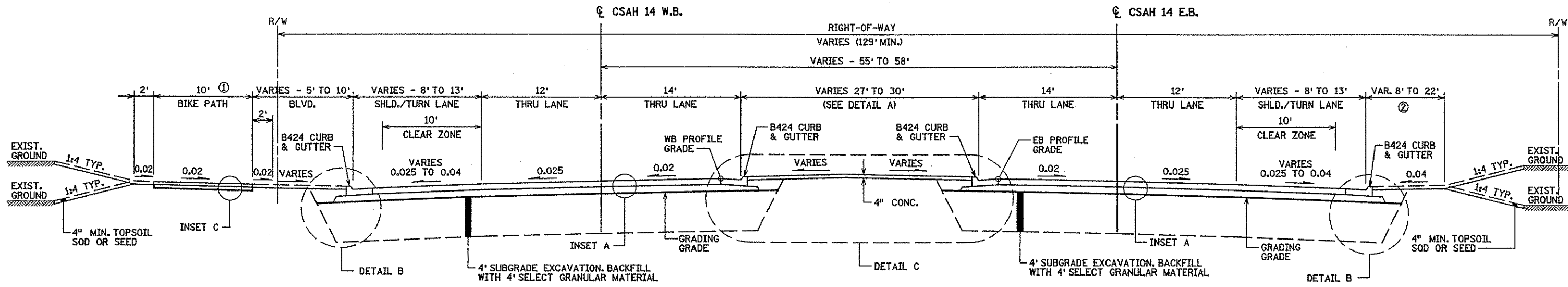
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CHECKED BY: BDP

CERTIFIED BY *Scott O. Paulin* LIC. NO. 26880 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

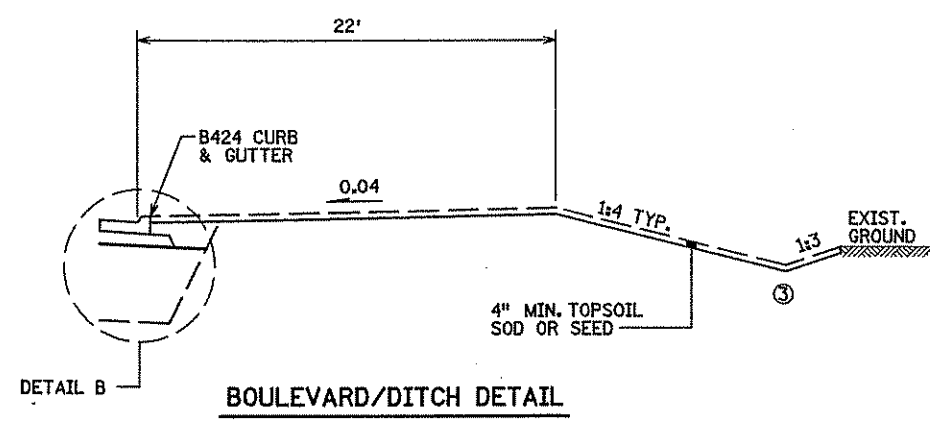
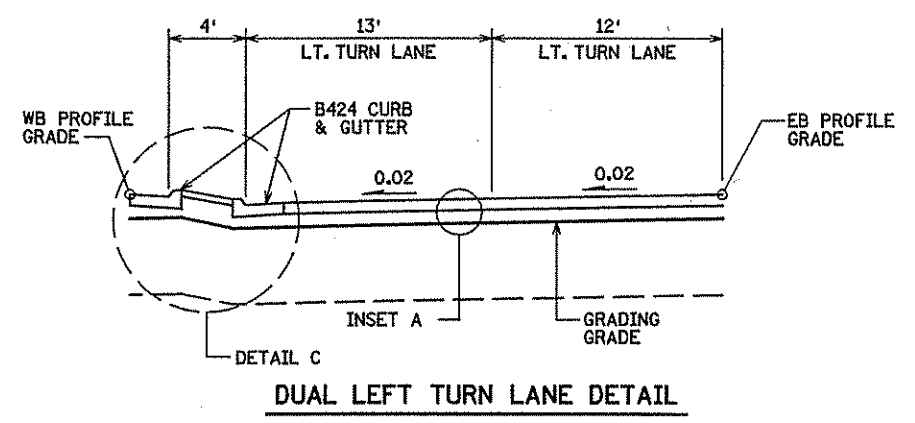
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TYPICAL SECTIONS  
CSAH 14 ANOKA COUNTY

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 20 of 296 Sheets



**CSAH 14**  
 STA. 21+85.21 TO STA. 38+68± (ANOKA/WASHINGTON COUNTY LINE)



**NOTES:**

- ① 22' BOULEVARD (FOR FUTURE TRAIL): EB STA. 21+85 TO 24+50. BITUMINOUS TRAIL: EB STA. 26+00 TO 38+25.
- ② 22' BOULEVARD (FOR FUTURE TRAIL): EB STA. 22+15 TO 24+50 8' BOULEVARD: EB STA. 26+00 TO 38+25.
- ③ SEE CROSS SECTIONS FOR DITCH LOCATIONS.

**GENERAL NOTES:**

- SEE CONSTRUCTION PLANS FOR TURN LANE LOCATIONS.
- ALL CROSS SLOPES ARE EXPRESSED IN FT/FT.
- NORMAL CROSS SLOPES ARE SHOWN. FOR SUPERELEVATION TRANSITIONS, SEE DRAINAGE AND SUPERELEVATION PLANS.
- MAXIMUM SHOULDER SUPERELEVATION ROLLOVER SHALL BE 0.07 FT/FT.
- UNLESS OTHERWISE SPECIFIED, THE GRADING GRADE CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE OF THE MAINLINE.
- UNLESS OTHERWISE SPECIFIED, CLASS 5 AGGREGATE WILL EXTEND 1' BEYOND BACK OF CURB.
- SUBGRADE EXCAVATION DIMENSIONS SHOWN ARE FROM BACK OF CURB OR EDGE OF PAVEMENT.
- SEE MISCELLANEOUS DETAILS (URBAN EARTHWORK DETAIL AND TYPICAL ORGANIC MATERIAL EXCAVATION DETAIL) FOR INSTALLATION OF GEOTEXTILE FABRIC.

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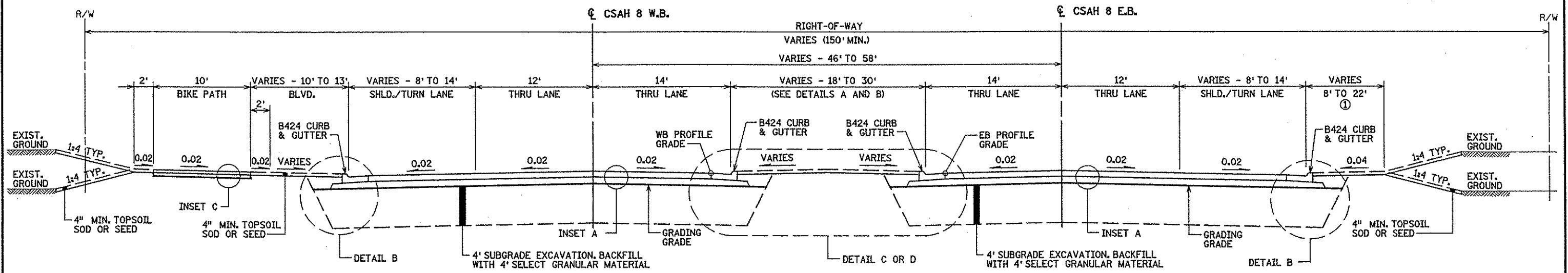
DRAWN BY: TJV  
 CHECKED BY: BDP

CERTIFIED BY Brent J. Paulk LIC. NO. 20880 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

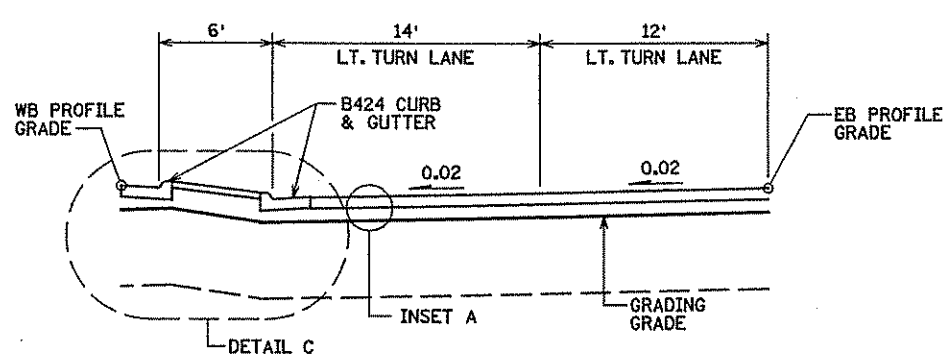
**TKDA**  
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TYPICAL SECTIONS  
 CSAH 14 ANOKA COUNTY

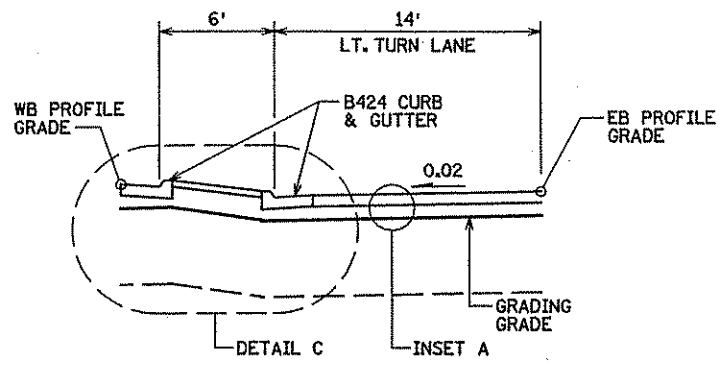
S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 21 of 296 Sheets



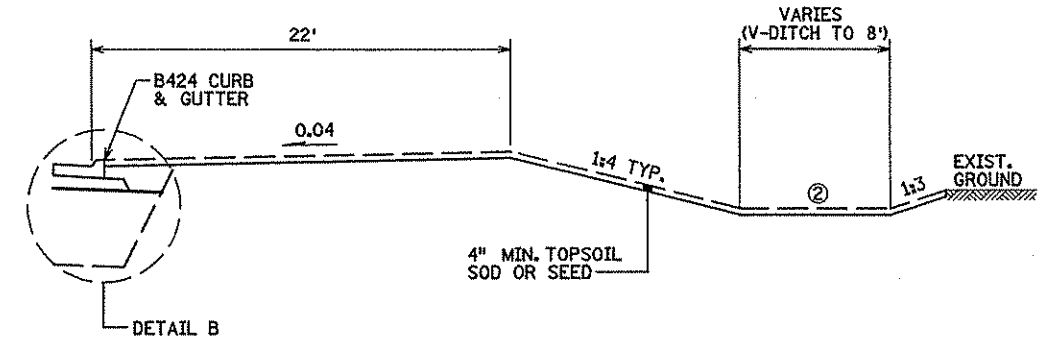
**CSAH 8**  
 STA. 38+68± (ANOKA/WASHINGTON COUNTY LINE) TO STA. 113+05.07



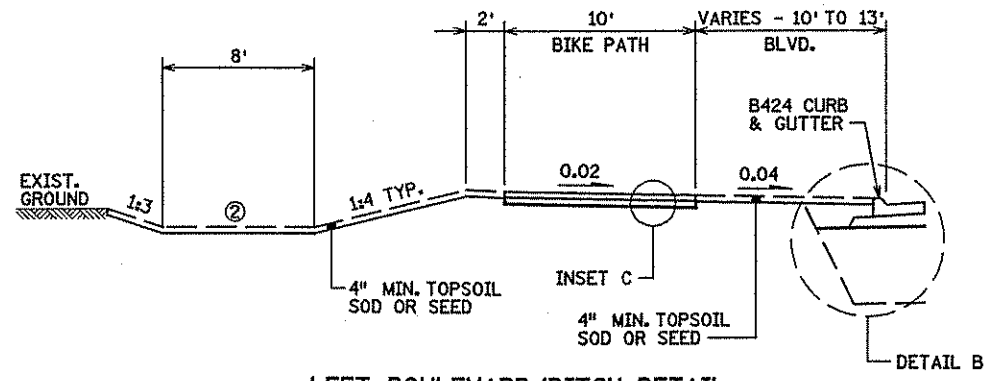
**DUAL LEFT TURN LANE DETAIL**



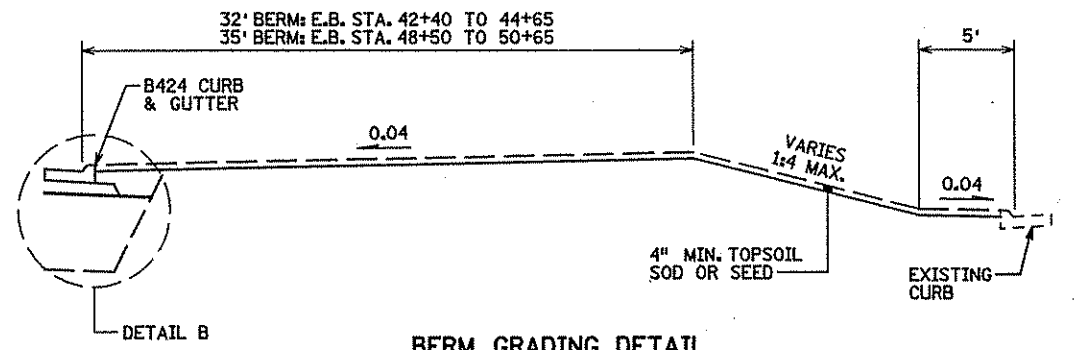
**SINGLE LEFT TURN LANE DETAIL**



**RIGHT BERM/DITCH DETAIL**



**LEFT BOULEVARD/DITCH DETAIL**



**BERM GRADING DETAIL**  
 E.B. STA. 42+40 TO 50+65

**GENERAL NOTES:**

- CLEAR ZONE - 10' FROM EDGE OF THRU LANE OR TURN LANE.
- SEE CONSTRUCTION PLANS FOR TURN LANE LOCATIONS.
- ALL CROSS SLOPES ARE EXPRESSED IN FT/FT.
- NORMAL CROSS SLOPES ARE SHOWN. FOR SUPERELEVATION TRANSITIONS, SEE DRAINAGE AND SUPERELEVATION PLANS.
- MAXIMUM SHOULDER SUPERELEVATION ROLLOVER SHALL BE 0.07 FT/FT.
- UNLESS OTHERWISE SPECIFIED, THE GRADING GRADE CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE OF THE MAINLINE.
- UNLESS OTHERWISE SPECIFIED, CLASS 5 AGGREGATE WILL EXTEND 1' BEYOND BACK OF CURB.
- SUBGRADE EXCAVATION DIMENSIONS SHOWN ARE FROM BACK OF CURB OR EDGE OF PAVEMENT.
- SEE MISCELLANEOUS DETAILS (URBAN EARTHWORK DETAIL AND TYPICAL ORGANIC MATERIAL EXCAVATION DETAIL) FOR INSTALLATION OF GEOTEXTILE FABRIC.

**NOTES:**

- ① SEE CROSS SECTIONS FOR EXACT WIDTH OF BERM.  
 22' BERM: E.B. STA. 39+50 TO 42+00  
 32' BERM: E.B. STA. 42+50 TO 44+50  
 22' BERM: E.B. STA. 45+00 TO 47+50  
 35' BERM: E.B. STA. 48+00 TO 51+00  
 22' BERM: E.B. STA. 51+50 TO 81+00  
 16' TO 22' BERM: E.B. STA. 81+50 TO 85+00  
 22' BERM: E.B. STA. 85+50 TO 112+50
- ② SEE CROSS SECTIONS FOR DITCH LOCATIONS.

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DRAWN BY: TJV  
 CHECKED BY: BDP

CERTIFIED BY Brent J. Pauls LIC. NO. 26880 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

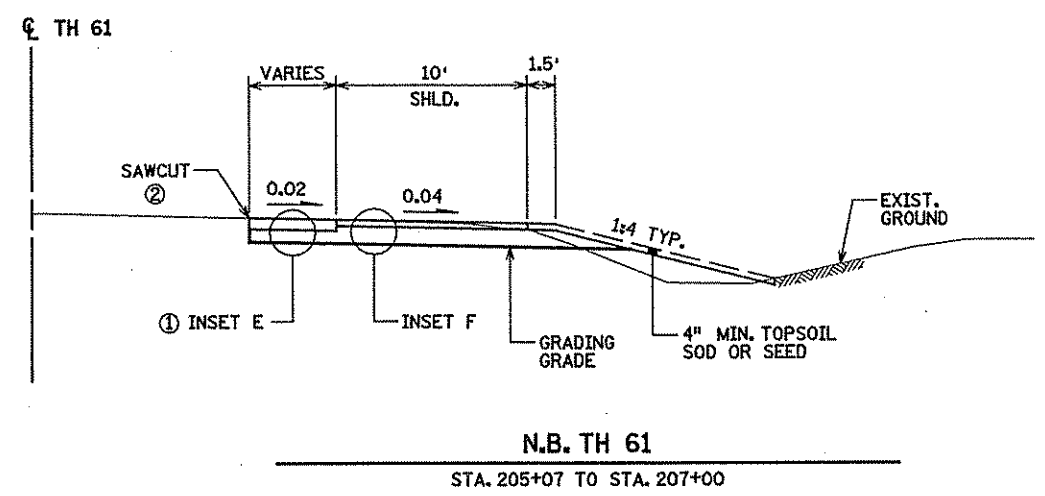
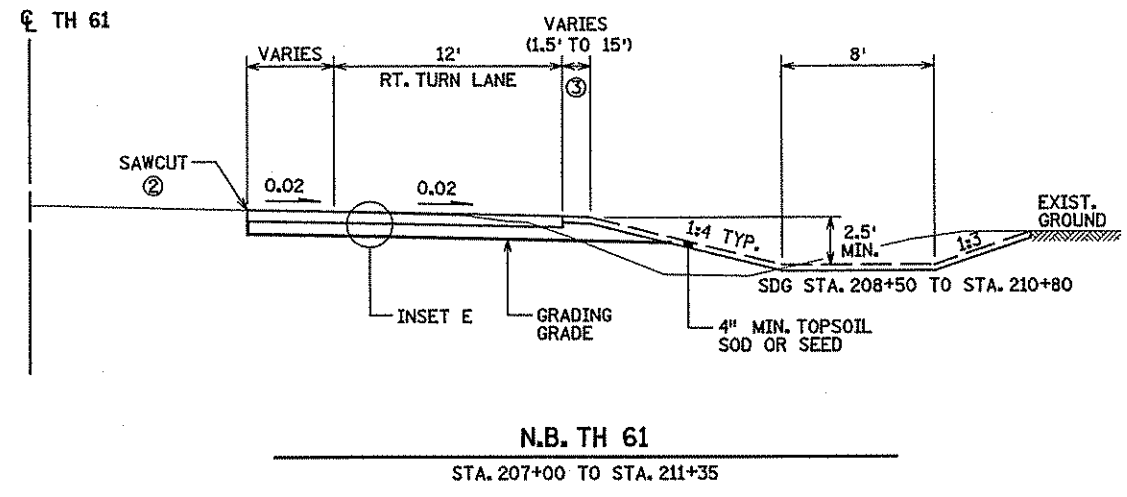
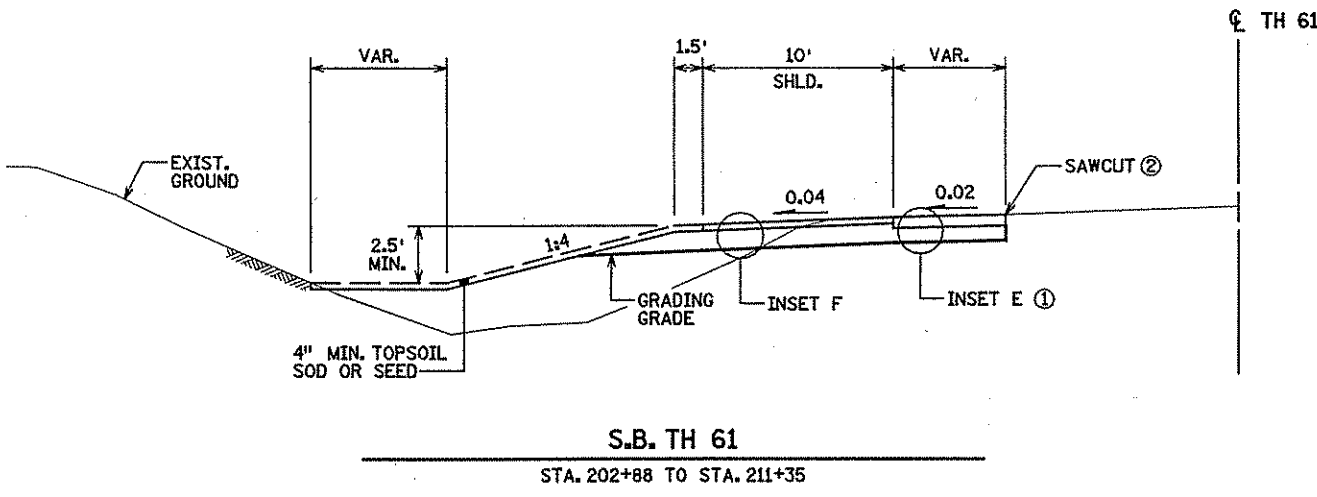
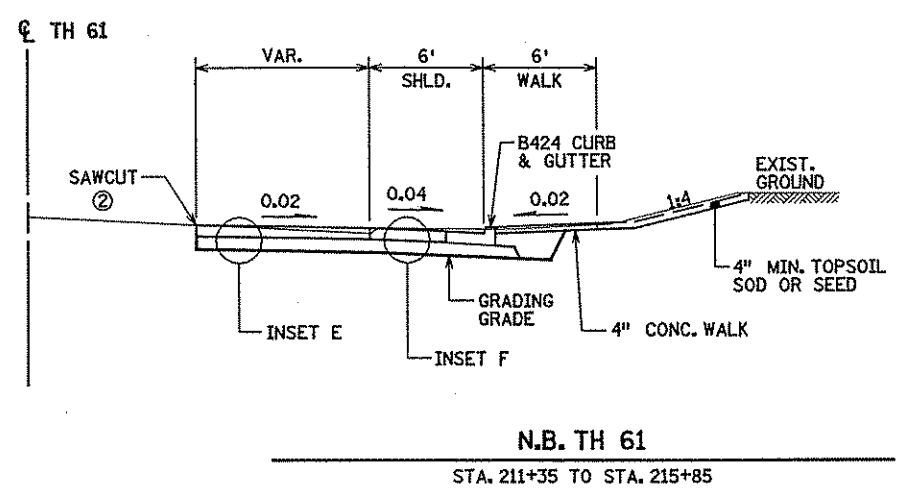
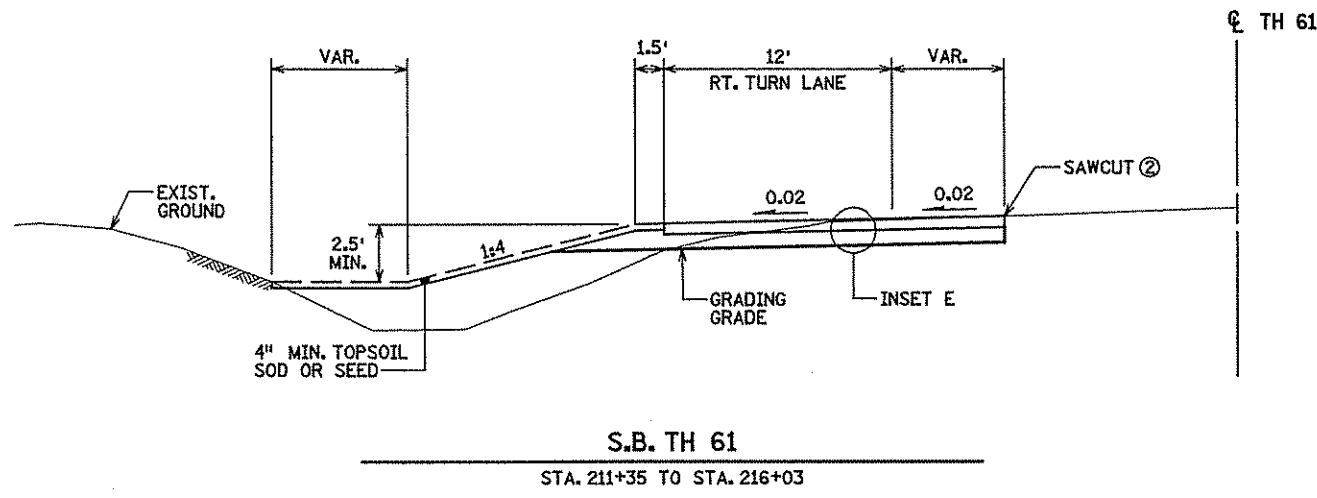
**TKDA**  
 ENGINEERS-ARCHITECTS-PLANNERS

TYPICAL SECTIONS  
 CSAH 8 WASHINGTON COUNTY

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 22 of 296 Sheets



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- NOTES:**
- ① PAVE INSET E A MIN. OF 3' FROM SAWCUT.
  - ② LOCATE SAWCUT AT OUTSIDE OF LANE LINE. REMOVE INPLACE BITUMINOUS SHOULDER.
  - ③ WIDTH VARIES FROM 1.5' TO 15' FROM TH 61 STA. 210+00 TO 210+75.

- GENERAL NOTES:**
- SEE CONSTRUCTION PLANS FOR TURN LANE LOCATIONS.
  - ALL CROSS SLOPES ARE EXPRESSED IN FT/FT.
  - NORMAL CROSS SLOPES ARE SHOWN. FOR SUPERELEVATION TRANSITIONS, SEE DRAINAGE AND SUPERELEVATION PLANS.
  - MAXIMUM SHOULDER SUPERELEVATION ROLLOVER SHALL BE 0.07 FT/FT.
  - UNLESS OTHERWISE SPECIFIED, THE GRADING GRADE CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE OF THE MAINLINE.

DRAWN BY: TJV  
 CHECKED BY: BDP

CERTIFIED BY *Paul J. Paulin* LIC. NO. 20880 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

**TKDA**  
 ENGINEERS · ARCHITECTS · PLANNERS

TYPICAL SECTIONS  
 TH 61

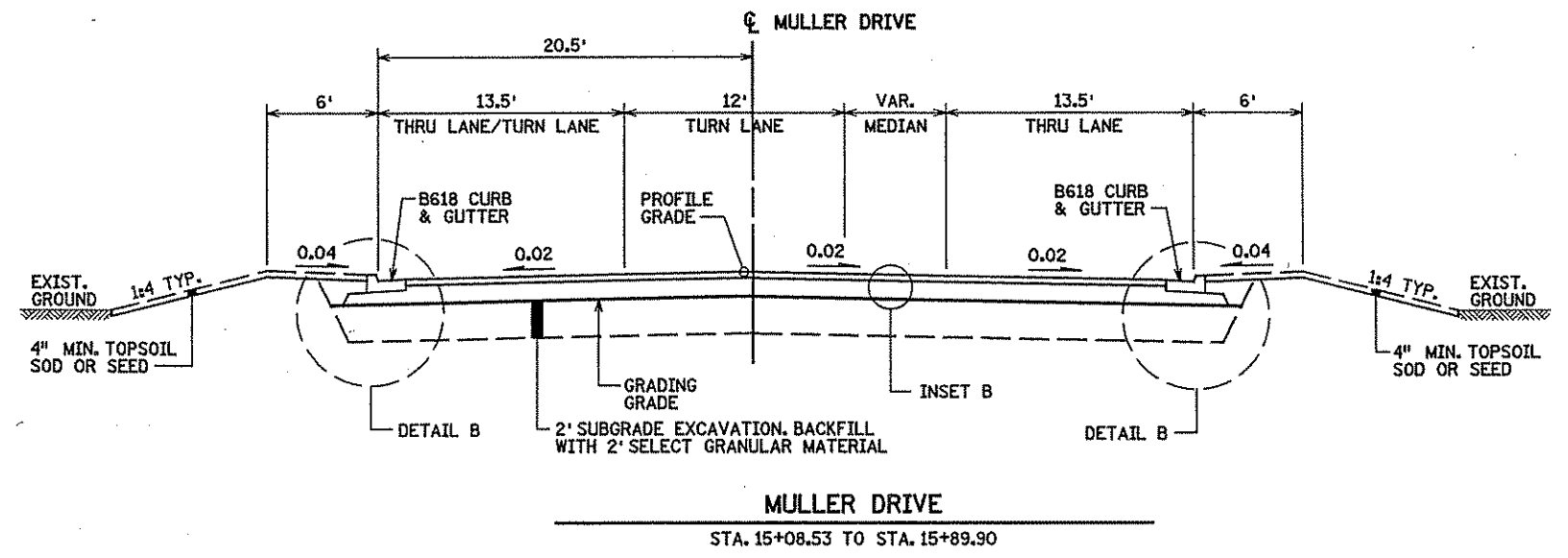
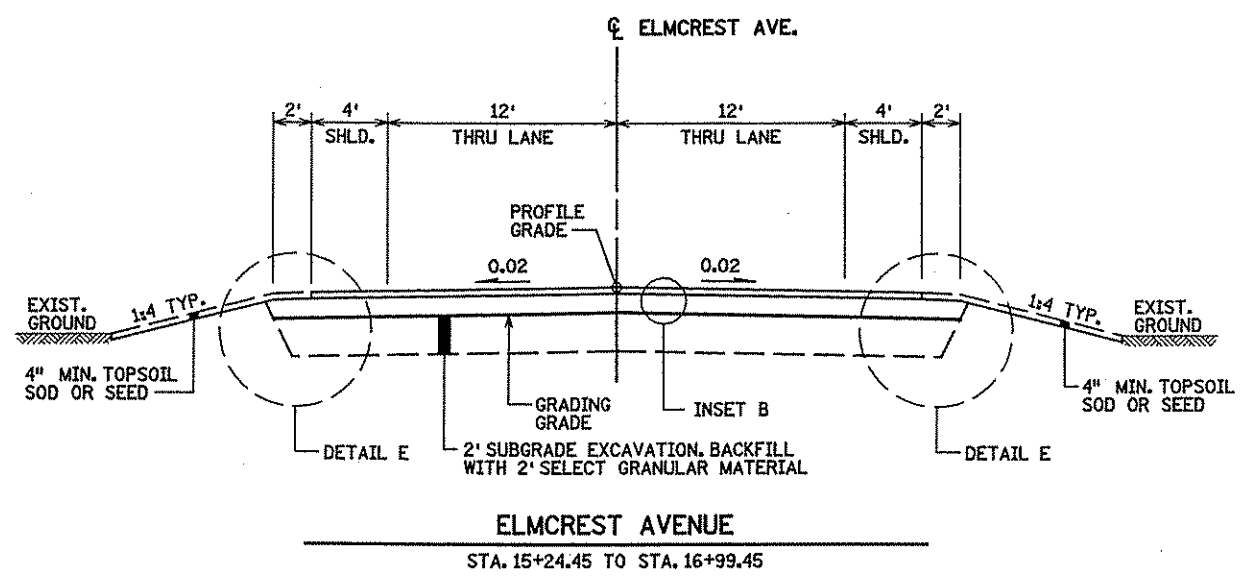
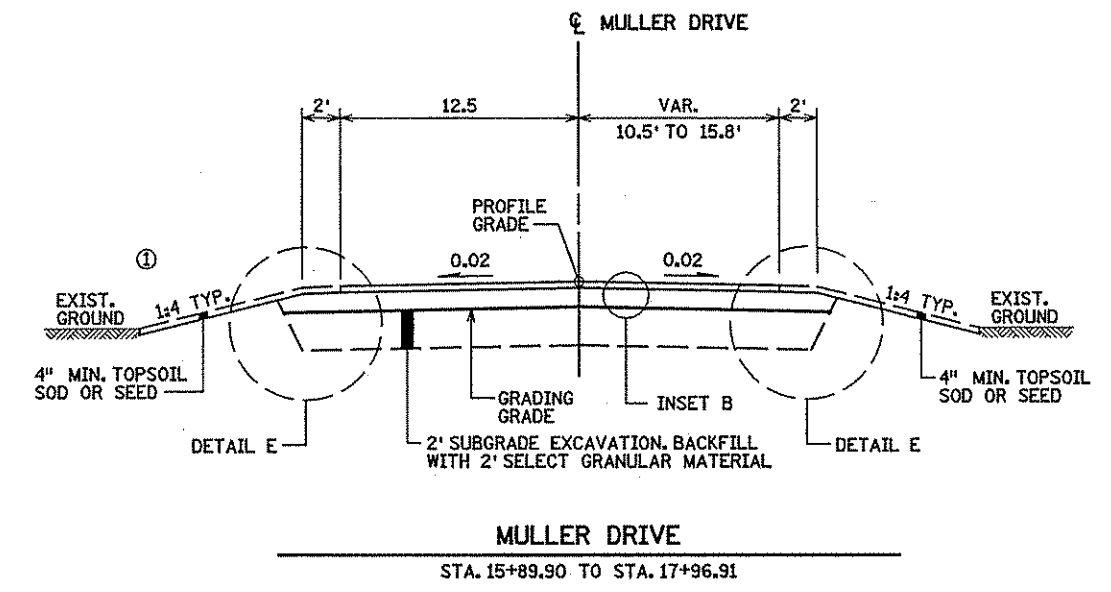
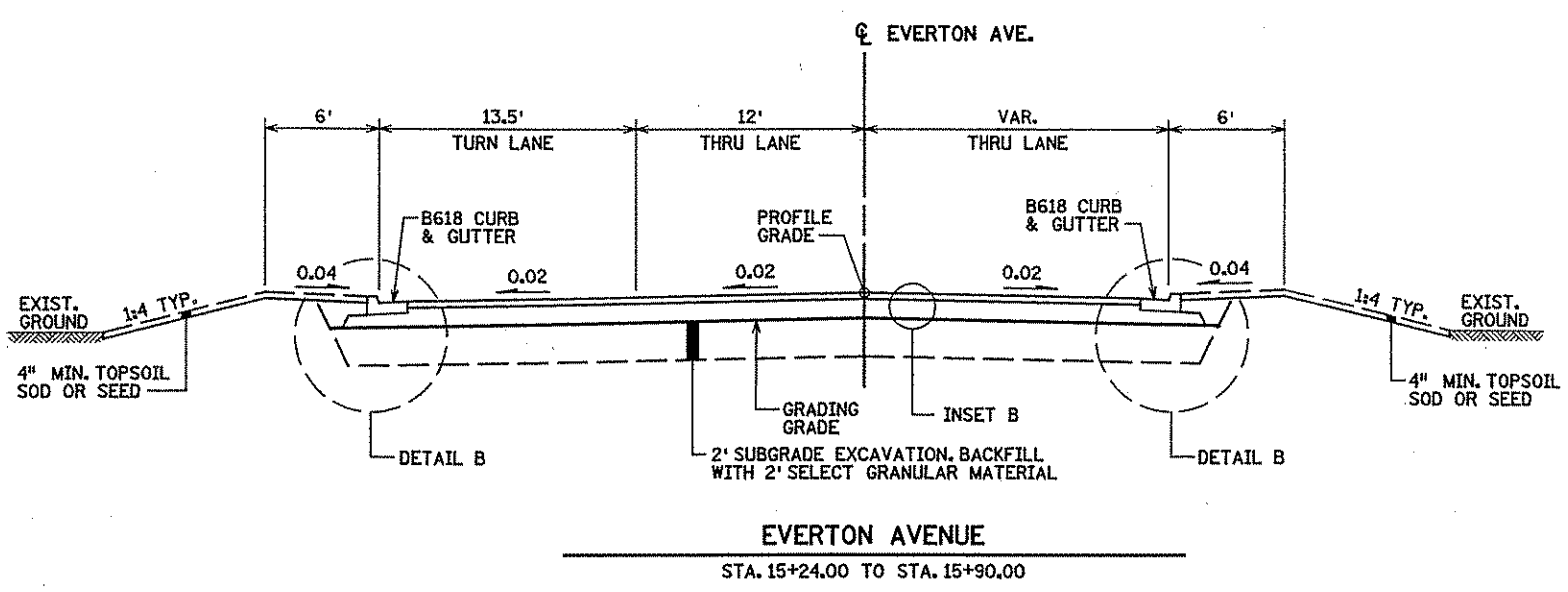
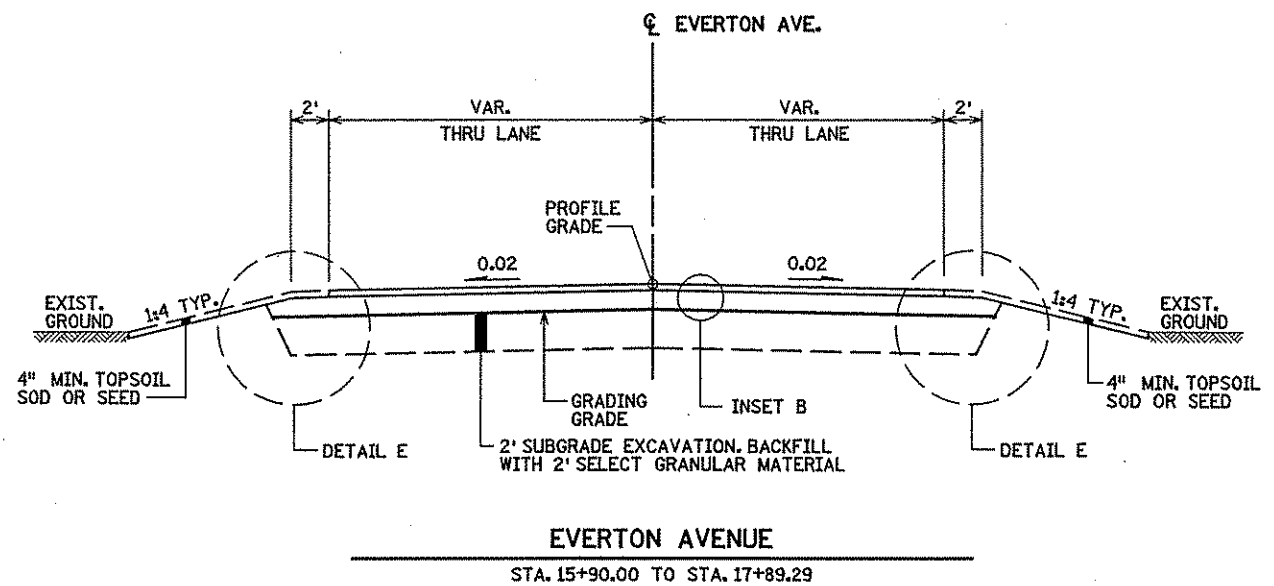
S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 23 of 296 Sheets

**NOTES:**

① SEE CROSS SECTIONS FOR DITCH LOCATIONS.

**GENERAL NOTES:**

- SEE CONSTRUCTION PLANS FOR TURN LANE LOCATIONS.
- ALL CROSS SLOPES ARE EXPRESSED IN FT/FT.
- NORMAL CROSS SLOPES ARE SHOWN. FOR SUPERELEVATION TRANSITIONS, SEE DRAINAGE AND SUPERELEVATION PLANS.
- MAXIMUM SHOULDER SUPERELEVATION ROLLOVER SHALL BE 0.07 FT/FT.
- UNLESS OTHERWISE SPECIFIED, THE GRADING GRADE CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE OF THE MAINLINE.



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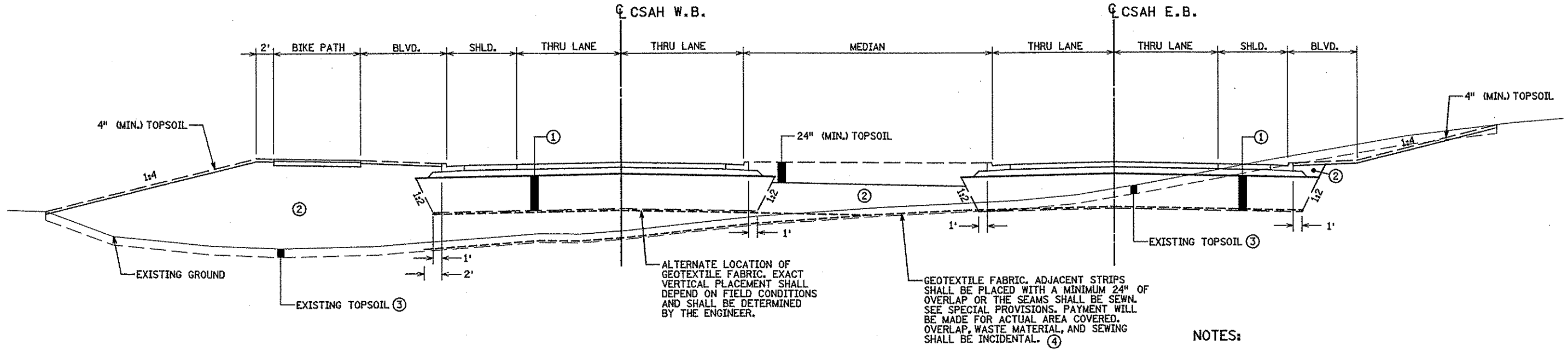
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CHECKED BY: BDP

CERTIFIED BY *Brent J. Pauler* LIC. NO. 76890 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

**TKDA**  
ENGINEERS-ARCHITECTS-PLANNERS

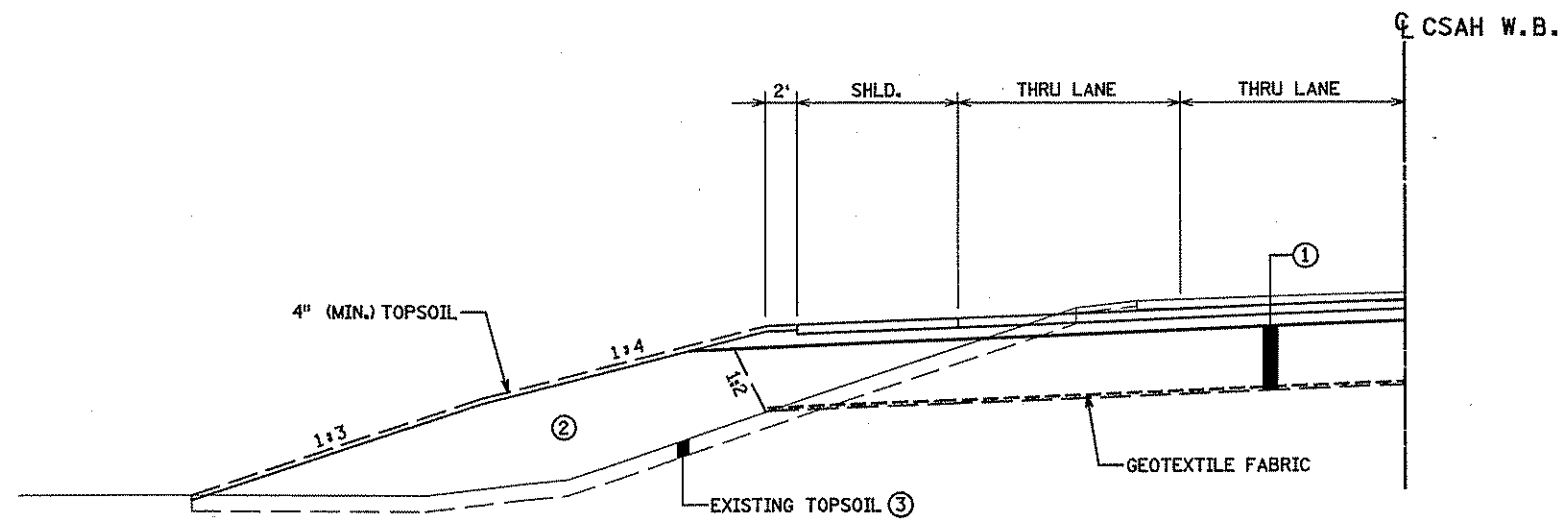
TYPICAL SECTIONS  
ELMCREST AVE., EVERTON AVE., AND MULLER DRIVE

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 24 of 296 Sheets

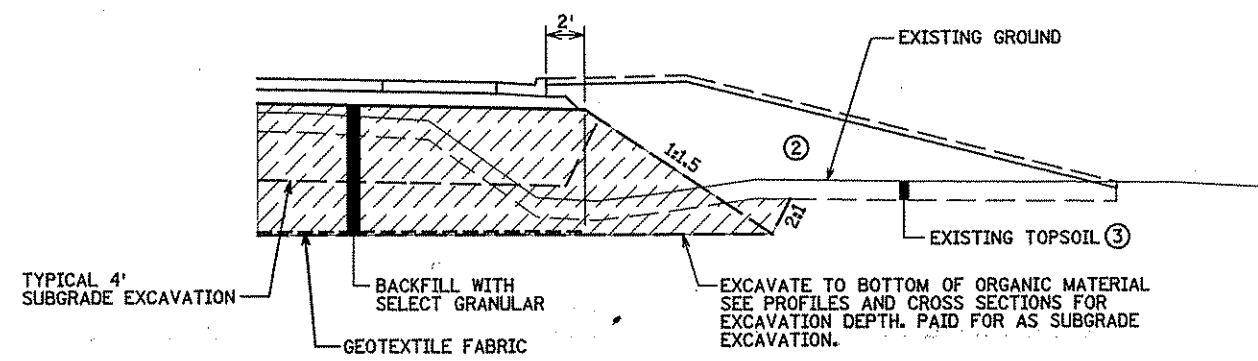


**URBAN EARTHWORK DETAIL**

- NOTES:**
- ① EXCAVATION AREAS:  
- 4' MIN. SUBGRADE EXCAVATION, BACKFILL WITH SELECT GRANULAR. FOR EXCAVATION OF ORGANIC MATERIAL, SEE TYPICAL ORGANIC MATERIAL EXCAVATION DETAIL.
  - EMBANKMENT AREAS:  
- SELECT GRANULAR MATERIAL SHALL BE USED WITHIN 4' OF THE GRADING GRADE.
  - ② BACKFILL WITH SUITABLE EXCAVATED MATERIAL.
  - ③ SALVAGE INPLACE TOPSOIL QUANTITY IS INCLUDED IN COMMON EXCAVATION QUANTITIES. STOCKPILING INPLACE TOPSOIL AND PLACEMENT ON ALL SLOPES DISTURBED BY CONSTRUCTION SHALL BE INCIDENTAL.
  - ④ GEOTEXTILE FABRIC SHALL BE PLACED FROM STA. 14+25 TO STA. 74+00 AND SHALL EXTEND OUT TO SIDE ROAD CURB RETURNS.

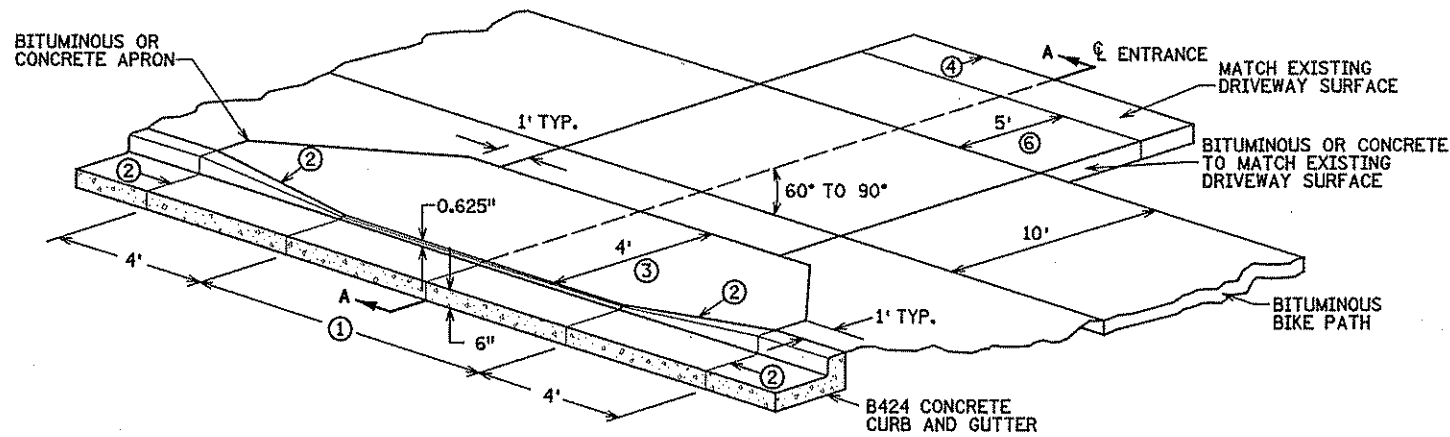


**RURAL EARTHWORK DETAIL**



**TYPICAL ORGANIC MATERIAL EXCAVATION DETAIL**

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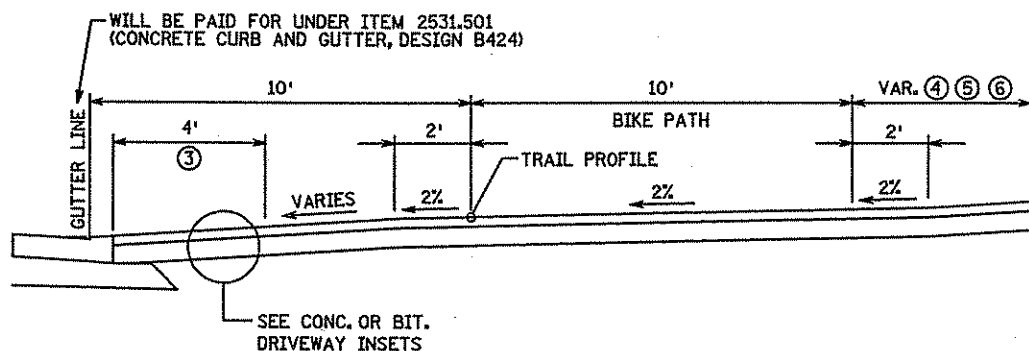


**DRIVEWAY DETAIL**

SEE CONSTRUCTION PLANS FOR LOCATIONS

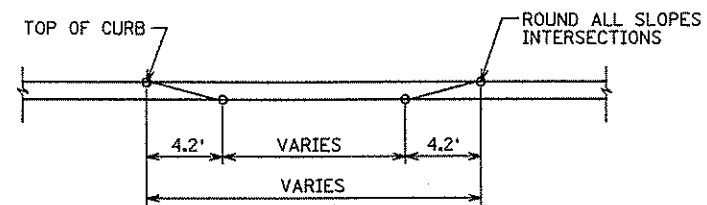
**NOTES:**

- ① EXACT WIDTH OF ENTRANCE SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER (12' MIN.) OR AS SHOWN IN THE PLANS.
- ② 0.5" EXPANSION JOINT IF CONCRETE APRON IS USED.
- ③ 4' FROM BACK OF CURB TO END OF APRON
- ④ REPLACE DISTURBED DRIVEWAYS TO END OF CONSTRUCTION LIMITS. SEE TYPICAL SECTIONS INSETS FOR SURFACING.
- ⑤ SLOPES MAY VARY TO MATCH EXISTING CONDITIONS, SEE PLAN SHEETS AND CROSS SECTIONS FOR CONSTRUCTION LIMITS.
- ⑥ ON INPLACE AGGREGATE DRIVEWAYS, PAVE 5' FROM BACK OF TRAIL, CONSTRUCT REMAINDER WITH AGGREGATE. SEE GRAVEL DRIVEWAY INSET.

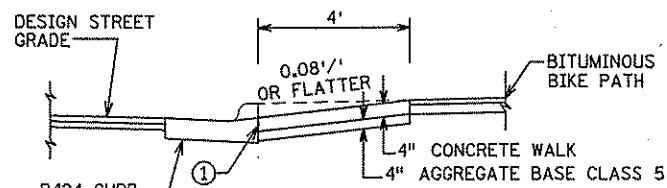


**SECTION A-A**

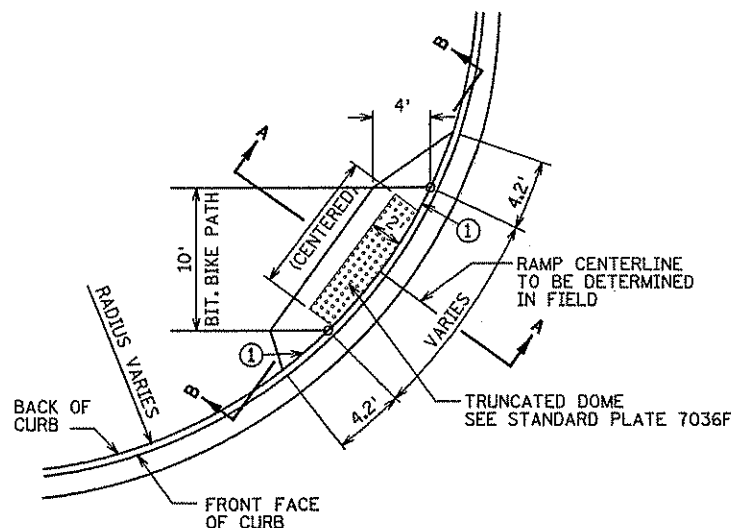
SEE CONSTRUCTION PLANS FOR LOCATIONS



**SECTION B-B**



**SECTION A-A**

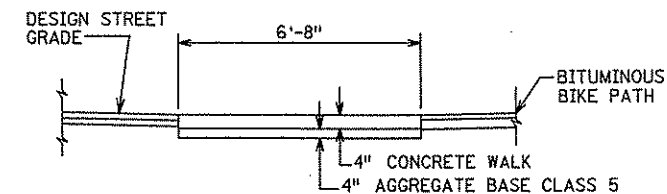


**NOTES:**

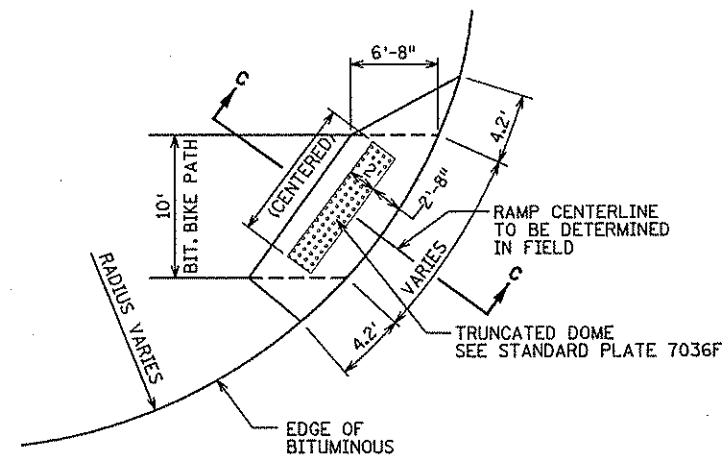
- ① 1/2" PREFORMED JOINT FILLER MATERIAL, AASHTO M 213

**PEDESTRIAN CURB RAMP**

NO SCALE

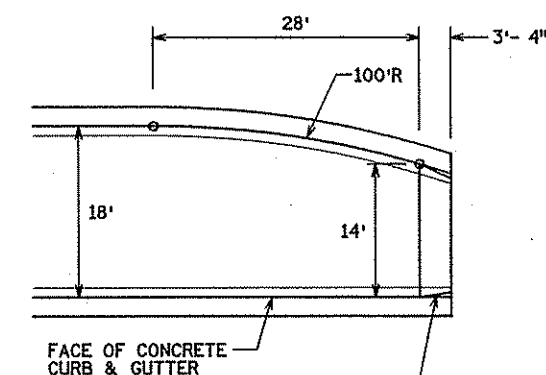


**SECTION C-C**

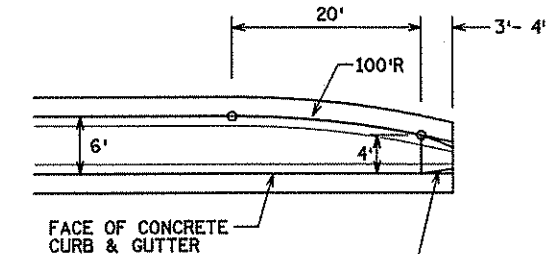


**PEDESTRIAN RAMP WITHOUT CURB**

NO SCALE



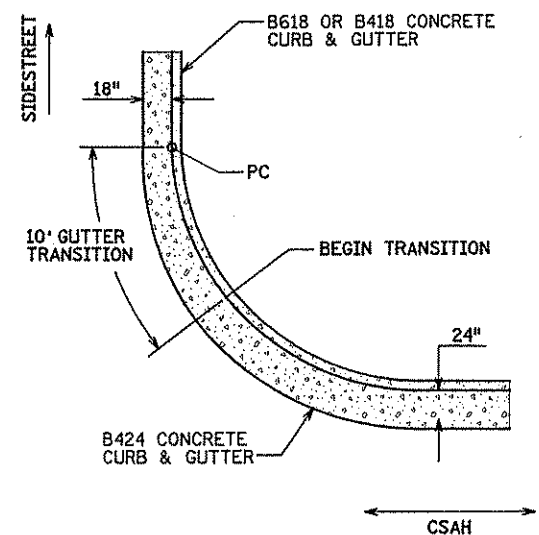
FACE OF CONCRETE CURB & GUTTER  
CONCRETE MEDIAN NOSE DESIGN 7113 (PAID FOR AS 6" CONCRETE WALK)



FACE OF CONCRETE CURB & GUTTER  
CONCRETE MEDIAN NOSE DESIGN 7113 (PAID FOR AS 6" CONCRETE WALK)

**CONCRETE MEDIAN NOSE DETAILS**

NO SCALE



**STANDARD STREET RADII FOR CONCRETE CURB & GUTTER TRANSITION**

NO SCALE

DATE: 8/10/2005 TIME: 3:47:46 PM FILENAME: K:\r-2\wastcy\24390\hwy-brdg\hwy\p/r-sit\c200802.dtl

DRAWN BY: TJV  
CHECKED BY: BDP

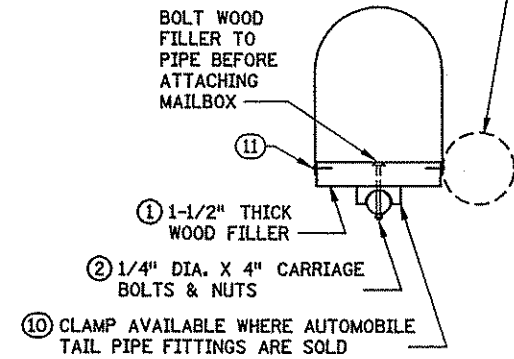
CERTIFIED BY *[Signature]* LIC. NO. 26880 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

**TKDA**  
ENGINEERS - ARCHITECTS - PLANNERS

MISCELLANEOUS DETAILS

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 26 of 296 Sheets

IF NECESSARY, LOCATE NEWSPAPER HOLDER ABOVE HORIZONTAL PIPE TO PREVENT SNOW PLOW DAMAGE.

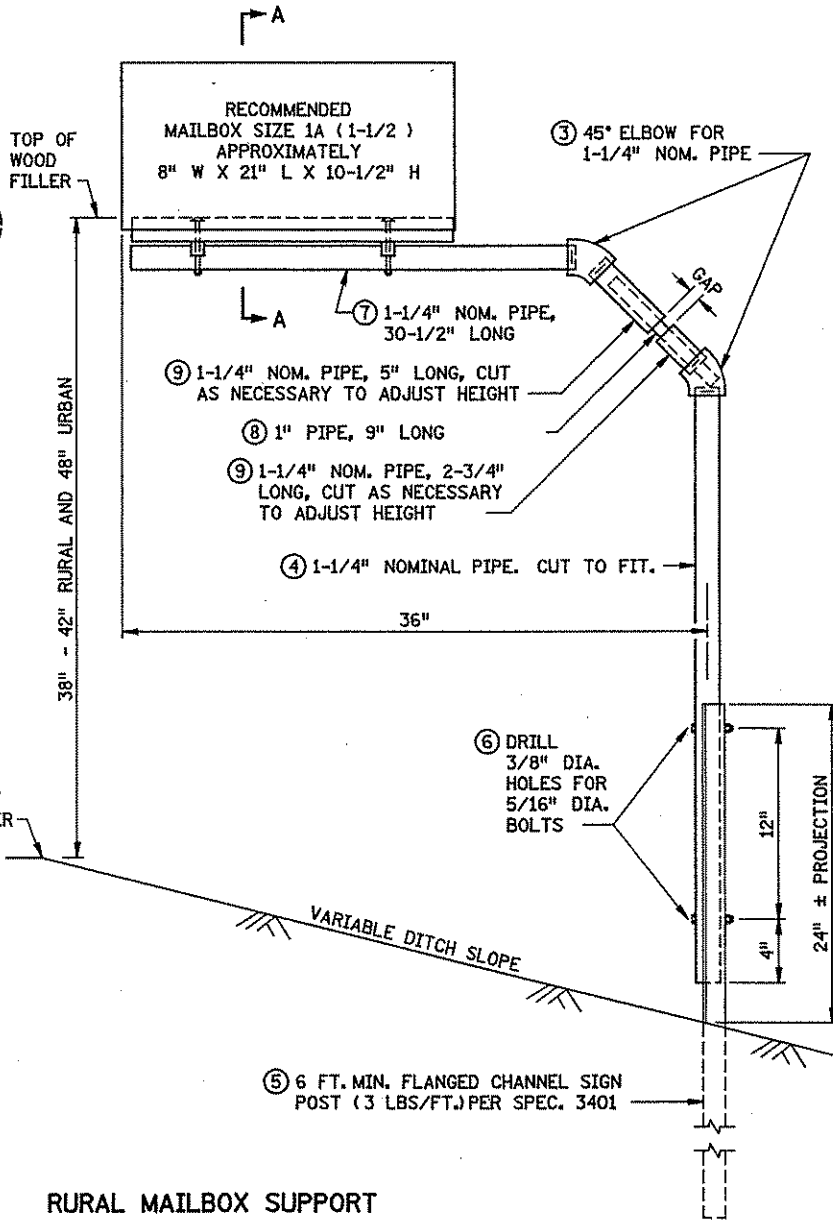
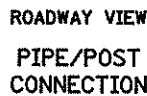


SECTION A-A

DRILL 5/16" DIA. HOLES FOR 1/4" DIA. CARRIAGE BOLTS



TAIL PIPE CLAMP DETAIL



RURAL MAILBOX SUPPORT

STEEL PIPE WITH FITTINGS AND STEEL FENCE POST

LIST OF MATERIALS FOR CONTRACTORS

ITEM NO.	NUMBER REQUIRED	DESCRIPTION
1	1	1-1/2" THICK WOOD FILLER CUT TO FIT SNUG UNDER MAIL BOX
2	2	1/4" DIA. X 4" LONG CARRIAGE BOLTS & NUTS
3	2	45° ELBOW FOR 1-1/4" NOMINAL PIPE
4	1	1-1/4" NOMINAL PIPE, CUT TO FIT
5	1	6 FT. MIN. SIGN POST (3 LBS./FT.)
6	2	5/16" DIA. BOLT, NUT & LOCKWASHER
7	1	1-1/4" NOMINAL PIPE, 30-1/2" LONG
8	1	1" PIPE, 9" LONG
9	1	1-1/4" NOMINAL PIPE, 5" LONG
10	1	1-1/4" NOMINAL PIPE, 2-3/4" LONG
10	2	1-1/2" TAIL PIPE CLAMP
11	9	NO. 10 X 1" SHEET METAL SCREWS

MAILBOXES - TAB Y

STATION	SIDE	REMOVE MAILBOX AND SUPPORT	SALVAGE MAILBOX	F&I SUPPORT
		EACH	EACH	EACH
55+68	LT	1		
56+60	LT	1		
72+01	LT		1	1
88+39	LT		1	1
90+80	LT		1	1
92+35	LT		1	1
95+43	LT		1	1
<b>TOTAL</b>		<b>2</b>	<b>5</b>	<b>4</b>

NOTES:

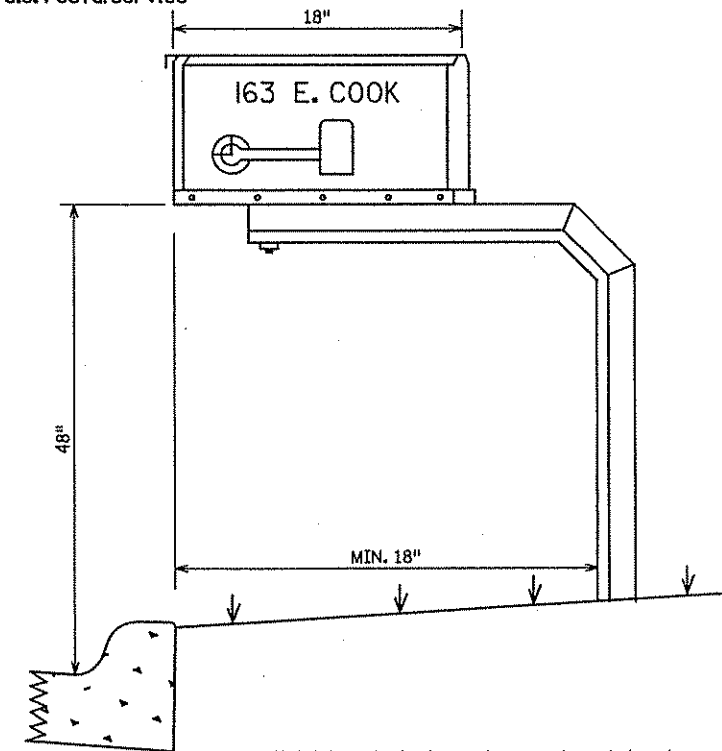
- CSAH 8 REFERENCED FROM E.B.
- REMOVAL AND DISPOSAL OF SUPPORT POST IS INCIDENTAL TO SALVAGE MAILBOX.

MAILBOX SUPPORT NOTES

- ALL PIPE AND PIPE FITTINGS SHALL CONFORM TO SPEC 3362.
- ALL FASTENERS SHALL CONFORM TO SPEC 3391.
- ALL MATERIALS SHALL BE GALVANIZED PER SPEC 3392.
- MAILBOX LOCATIONS SHOULD BE STAKED BEFORE INSTALLATION FOR PROPER HEIGHT AND DISTANCE FROM THE ROADWAY. ONCE STAKED, THE INSTALLER MUST NOTIFY THE ENGINEER AND THE POST OFFICE. THE ENGINEER AND POSTMASTER/MAILCARRIER WILL BE ALLOWED 48 HOURS TO REVIEW AND MODIFY THE STAKED LOCATIONS PRIOR TO FINAL INSTALLATION.
- OTHER MN/DOT APPROVED MAILBOX SUPPORTS MAY BE USED. THESE INCLUDE THE DESIGNS DEVELOPED BY MARSHALL COUNTY, THE ROCHESTER MN/DOT DISTRICT, FRIEND INNOVATIONS AND MINNOCOR INDUSTRIES.
- DESIGN MODIFICATIONS TO PREVIOUSLY APPROVED SUPPORTS SHALL BE DOCUMENTED AND SENT TO THE DESIGN STANDARDS ENGINEER, OFFICE OF TECHNICAL SUPPORT.
- THE MAILBOX TO BE 8 INCHES TO 12 INCHES OUTSIDE THE EDGE OF SHOULDER OR 6 INCHES TO 12 INCHES FROM FACE OF CURB.
- NO MORE THAN THREE MAILBOXES SPACED 30 INCHES CENTER TO CENTER ARE TO BE USED IN ONE LOCATION.
- THE CONTRACTOR SHALL INSTALL SALVAGED MAILBOXES ON MAILBOX SUPPORTS, WHICH SHALL BE INCIDENTAL TO MAILBOX SUPPORTS.

NOTES:

Mailbox should not extend beyond back of curb.  
 All posts to be a minimum of 18" behind back of curb.  
 Dimensions as per U.S. Postal Service



Height - 48 inches above street level

Have Box extend as far in front of support post as possible. (This prevents possible snow plow damage).

Box must be located so carrier can serve without leaving vehicle.

URBAN MAILBOX SUPPORT

STEEL PIPE WITH FITTINGS AND STEEL FENCE POST

DRAWN BY: TJV

CHECKED BY: BDP

CERTIFIED BY

*Paul D. Paul*  
 LICENSED PROFESSIONAL ENGINEER

LIC. NO. 20820

DATE 8/15/05

**TKDA**

ENGINEERS - ARCHITECTS - PLANNERS

MISCELLANEOUS DETAILS

S.P. 02-614-23 S.P. 82-608-07

Sheet No. 27 of 296 Sheets

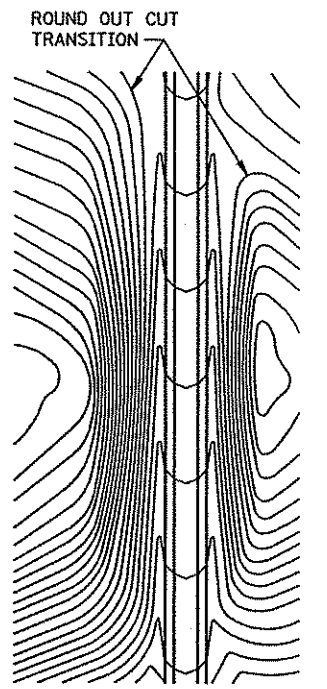
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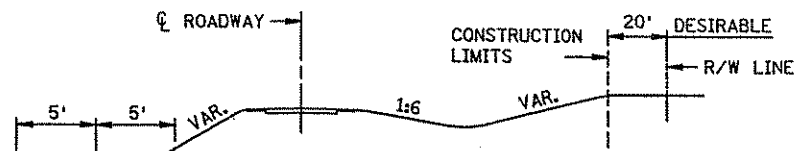
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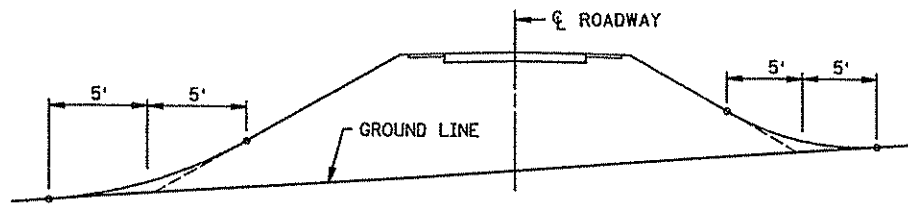
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FILE NAME S404K02.SPN



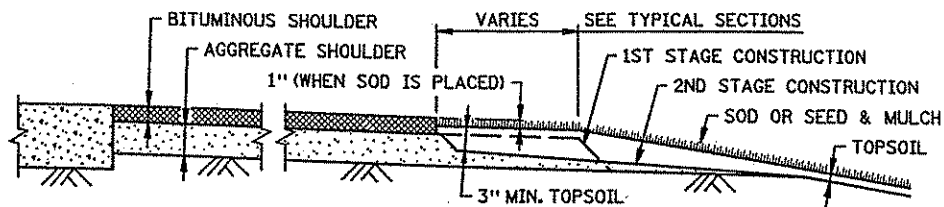
CONTOURING ROAD CUTS



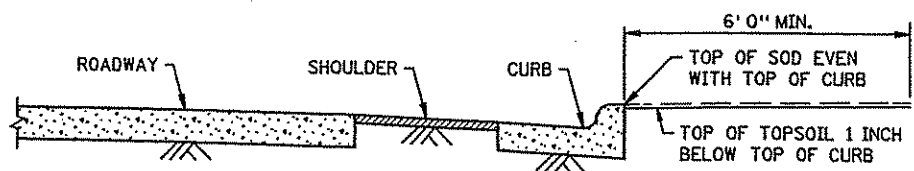
ROUNDING SHOULDERS AND BACKSLOPES



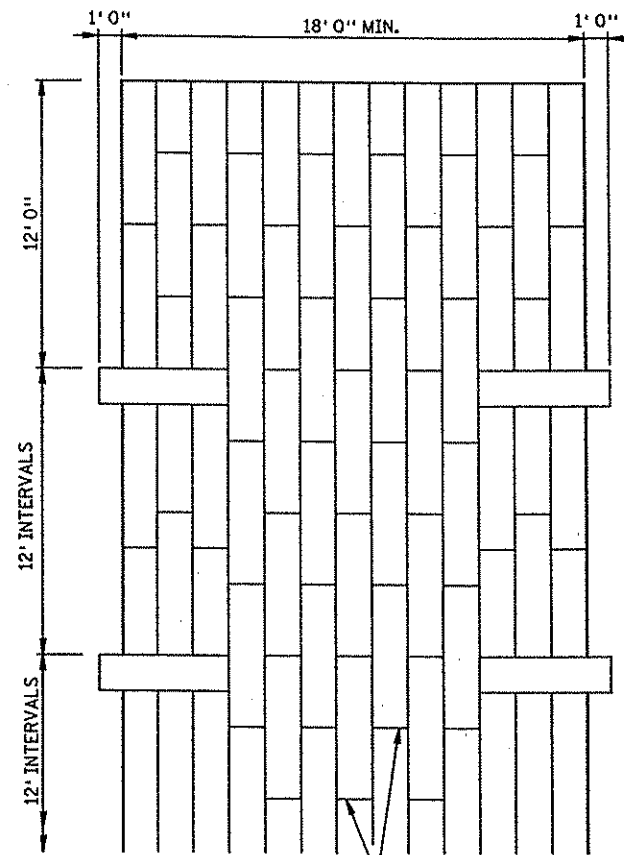
SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES



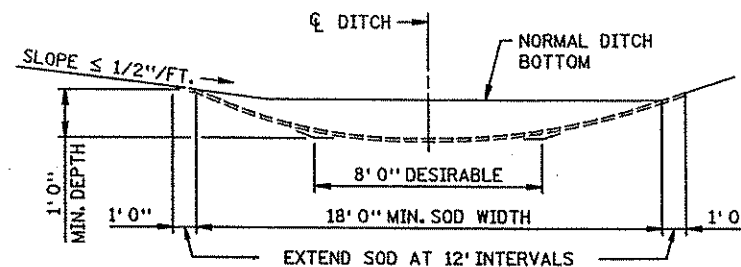
SHAPING AND TOPSOILING INSLOPES



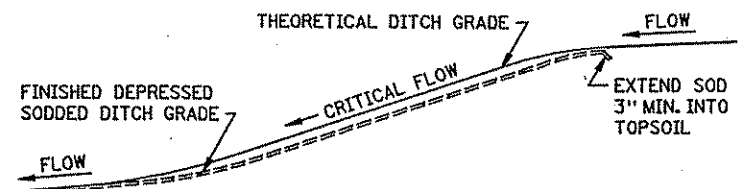
SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED



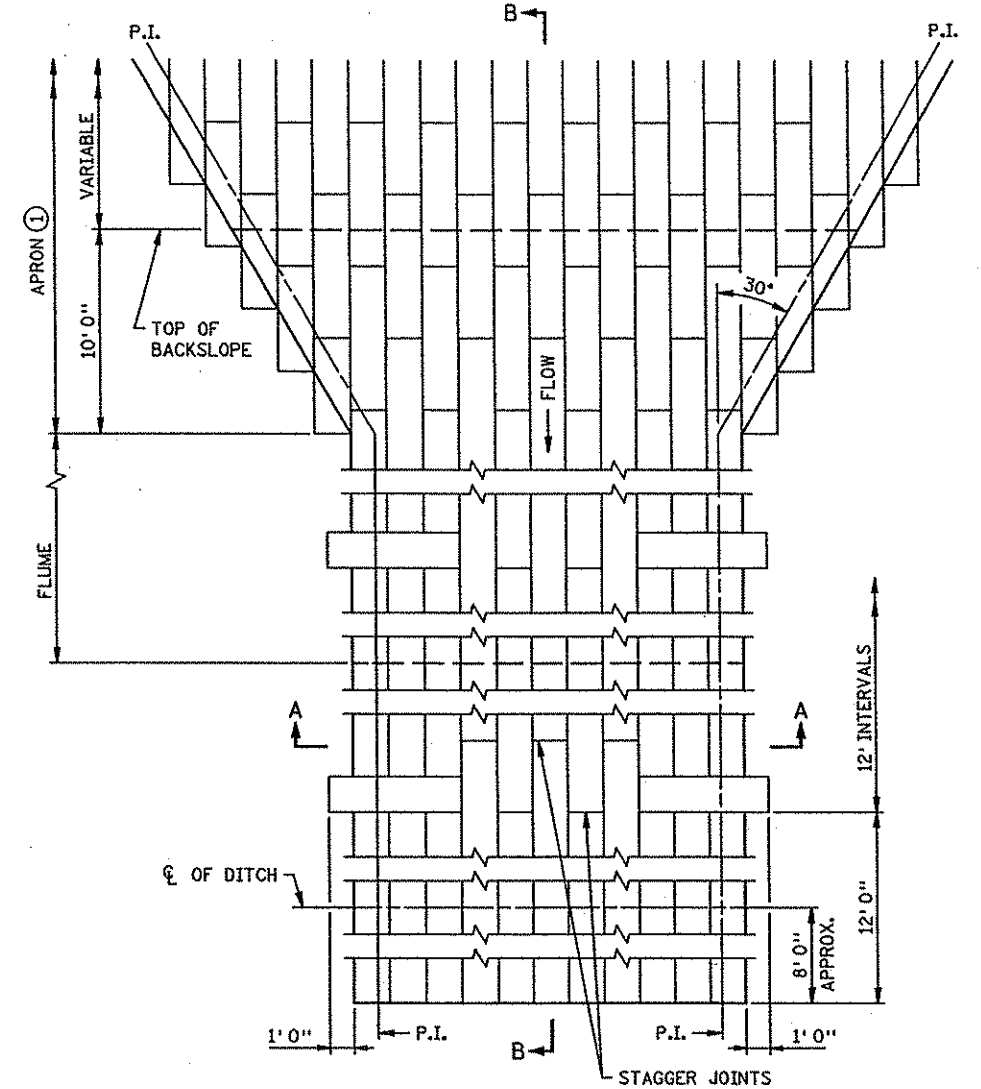
STAGGER JOINTS  
PLAN VIEW



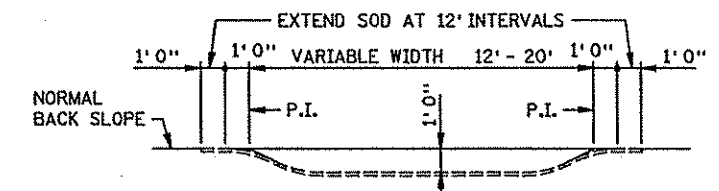
SODDED DITCH CROSS SECTION  
WHERE FRONT OR BACK SLOPE IS FLAT (LESS THAN 1/2"/FT.),  
FIRST NOTCH DITCH AND THEN PROVIDE ROUNDING.



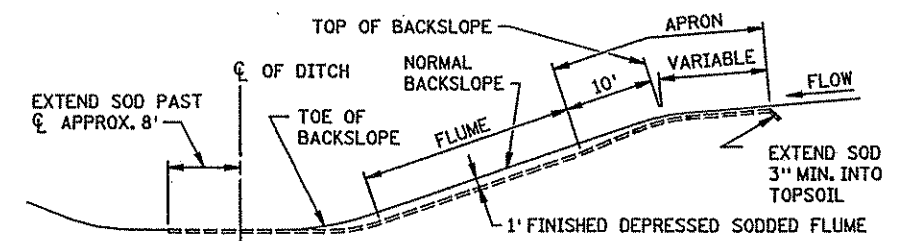
DITCH PROFILE  
SODDED DITCH DETAILS



PLAN VIEW



SECTION A-A



SECTION B-B  
SODDED FLUME DETAILS

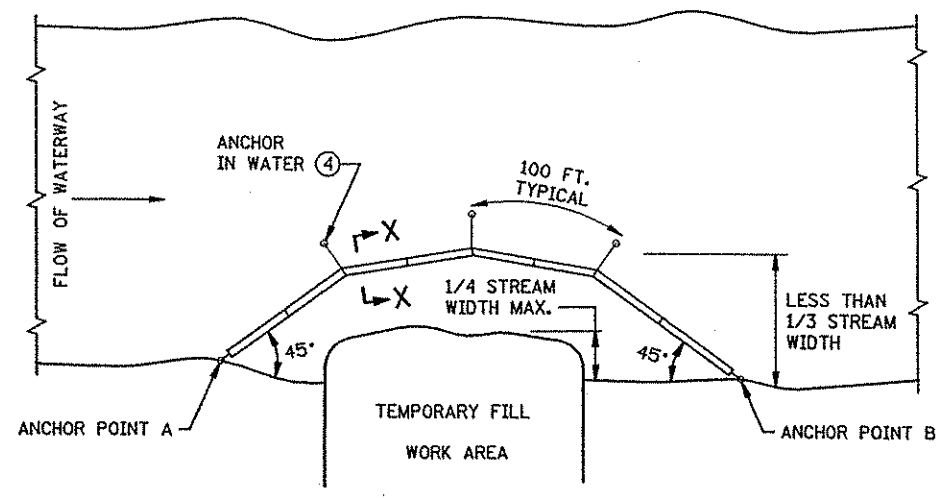
NOTES:  
SEE SPEC. 2575.3 FOR ADDITIONAL INFORMATION.  
① CONSTRUCT TAPER AS DIRECTED BY THE ENGINEER.

STANDARD SHEET NO. 5-297.404	TITLE: PERMANENT EROSION CONTROL ALONG ROADWAYS, DITCHES AND FLUMES
STANDARD APPROVED: NOVEMBER 20, 2002	
S.P. 02-614-23, S.P. 82-608-07	SHEET NO. 28 OF 296 SHEETS

PLOTTED/REVISED: \$\$\$@DATE@\$\$\$\$

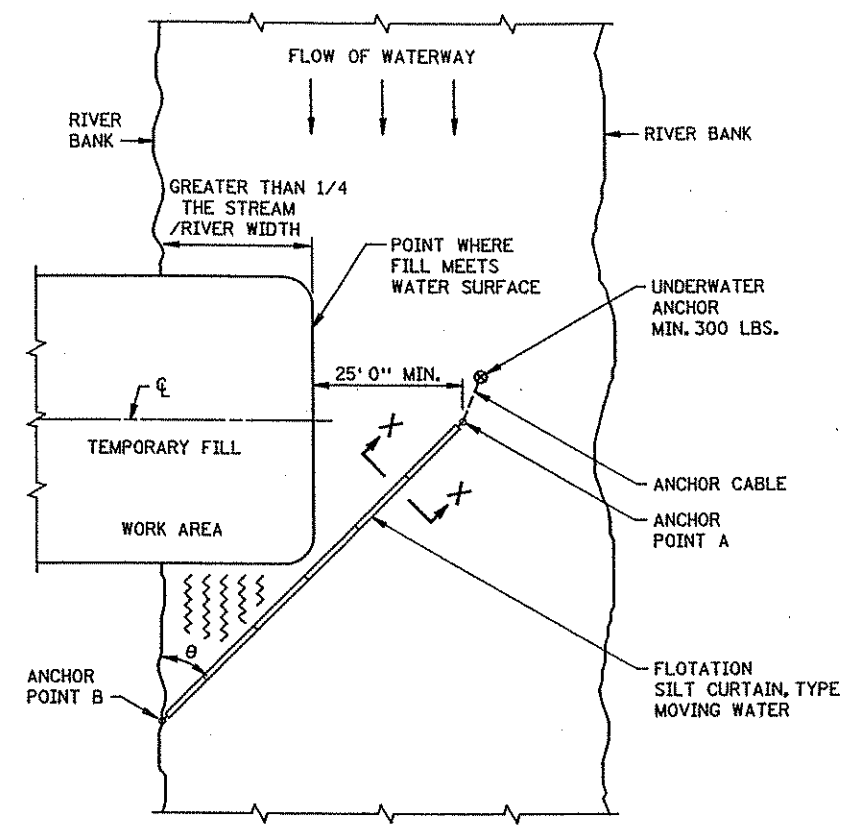
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I PLOT NAME: \$\$\$@PLOT@NAME@\$\$\$  
FILE NAME S4051G01.SPN



**PLAN VIEW**  
**FLOTATION SILT CURTAIN - TYPE WORK AREA**  
(SPEC. 3887)  
FOR CONTAINING OVERFLOWS FROM WEIRS, STANDPIPES, SETTLING PONDS

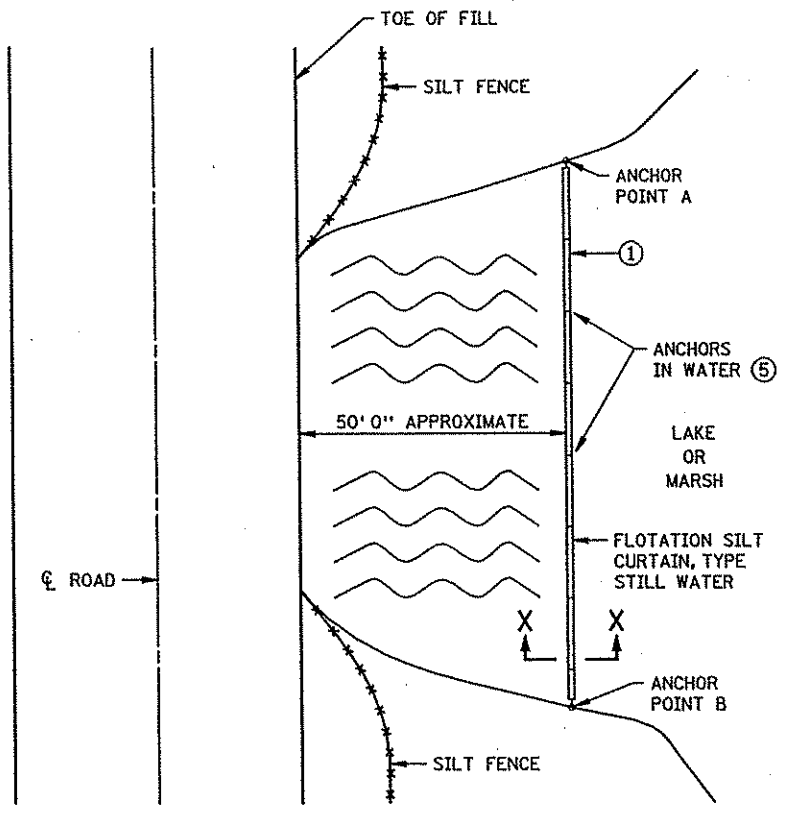
**DESIGN GUIDELINES:**  
WHEN TEMPORARY FILL ENCREACHES LESS THAN 1/4 OF THE WIDTH OF STREAM.  
MAXIMUM WATER VELOCITY: 5 FT./SEC.  
MAXIMUM WATER DEPTH: 11 FT.



$\angle \theta$	RIVER VELOCITY
45°	SLOW, LESS THAN 3 FT./SEC.
35°	MODERATE, 3 - 5 FT./SEC.

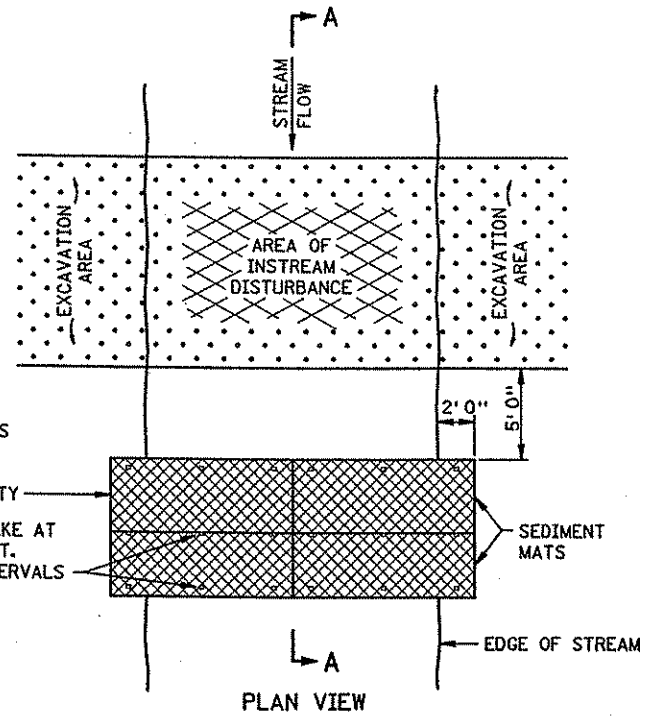
**PLAN VIEW**  
**FLOTATION SILT CURTAIN - TYPE MOVING WATER**  
(SPEC. 3887)

**DESIGN GUIDELINES:**  
WHEN TEMPORARY FILL ENCREACHES MORE THAN 1/4 BUT LESS THAN 1/3 WIDTH OF THE STREAM.  
MAXIMUM WATER DEPTH: 11 FT. ①  
MINIMUM WATER DEPTH: 3 FT.  
MAXIMUM WATER VELOCITY: 5 FT./SEC.

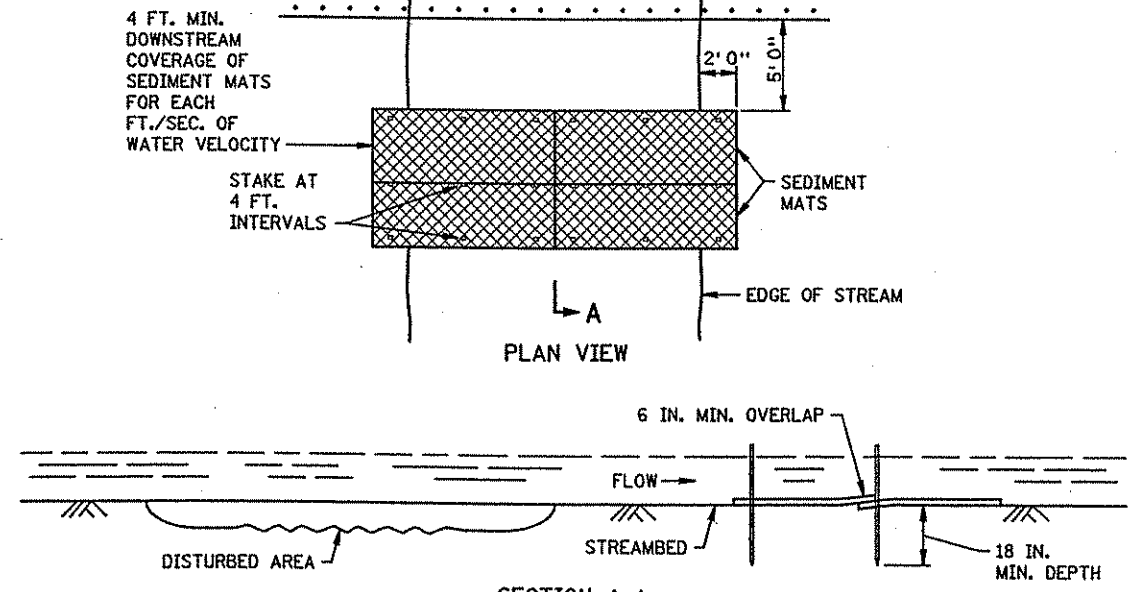


**PLAN VIEW**  
**FLOTATION SILT CURTAIN - TYPE STILL WATER**  
(SPEC. 3887)

**DESIGN GUIDELINES:**  
MAXIMUM WATER DEPTH: 11 FT. ①  
MINIMUM WATER DEPTH: 3 FT.

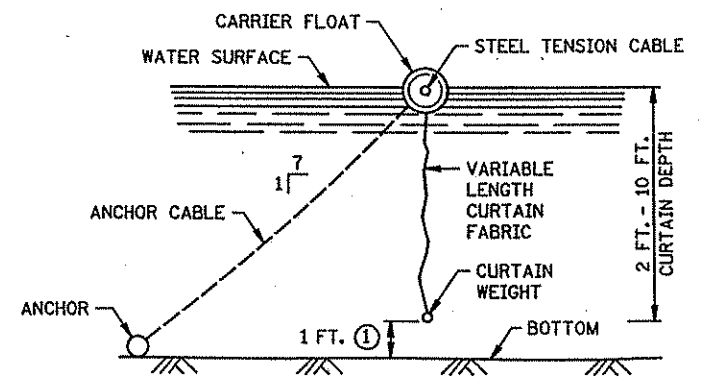


**PLAN VIEW**

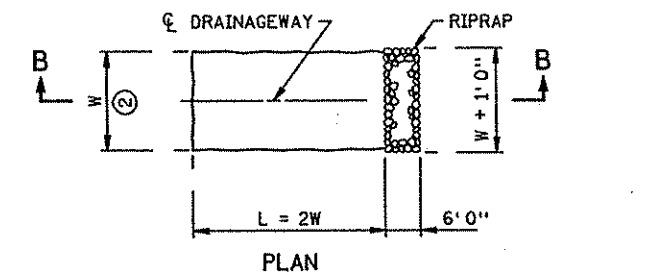


**SECTION A-A**  
**SEDIMENT MAT**  
(SPEC. 3894)  
TYPICAL STREAMBED INSTALLATION

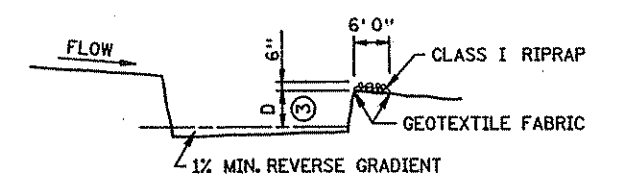
**DESIGN GUIDELINES:**  
MAXIMUM FLOW VELOCITY: 5 FT./SEC.  
MAXIMUM FLOW DEPTH: 2 FT.



**SECTION X-X**  
**FLOTATION SILT CURTAINS**  
(SPEC. 3887)



**PLAN**



**SECTION B-B**  
**SEDIMENT TRAP DETAIL**  
(SPEC. 2573)

- NOTES:**  
SEE SPECS. 2573, 3887 & 3894.
- ① CURTAIN 1 FT. FROM BOTTOM
  - ② W = 10 FT. MIN., 20 FT. MAX.
  - ③ D = 2 FT.
  - ④ 100 FT. MAX. SPACING BETWEEN ANCHORS, MIN. 40 LBS.
  - ⑤ USE ENOUGH ANCHORS TO HOLD SILT CURTAIN IN PLACE.

STANDARD SHEET NO.  
**5-297.405 (1 OF 4)**  
STANDARD APPROVED:  
July 30, 2001

TITLE  
**TEMPORARY EROSION CONTROL**

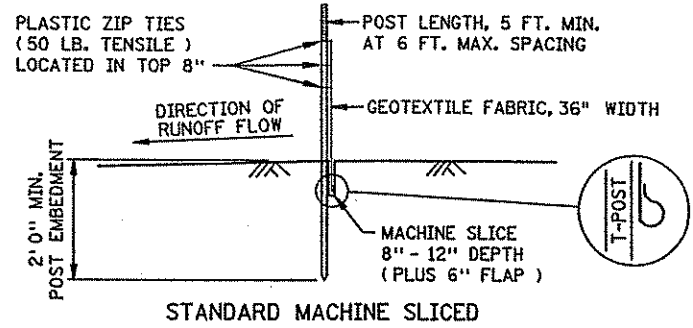
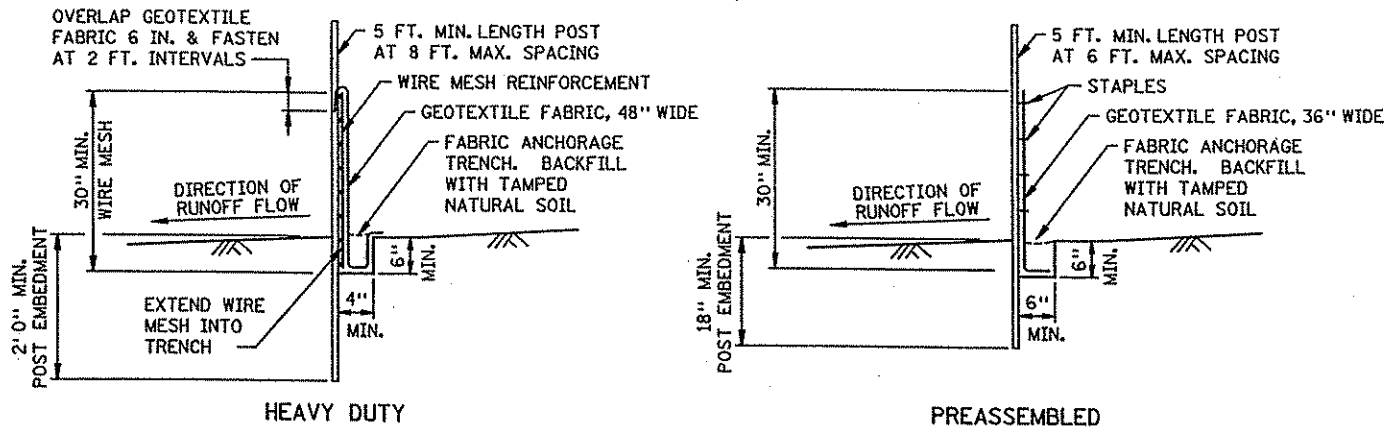
S.P. 02-614-23, S.P. 82-608-07

SHEET NO. 29 OF 296 SHEETS

PLOTTED/REVISED: \$\$\$DATE\$\$\$

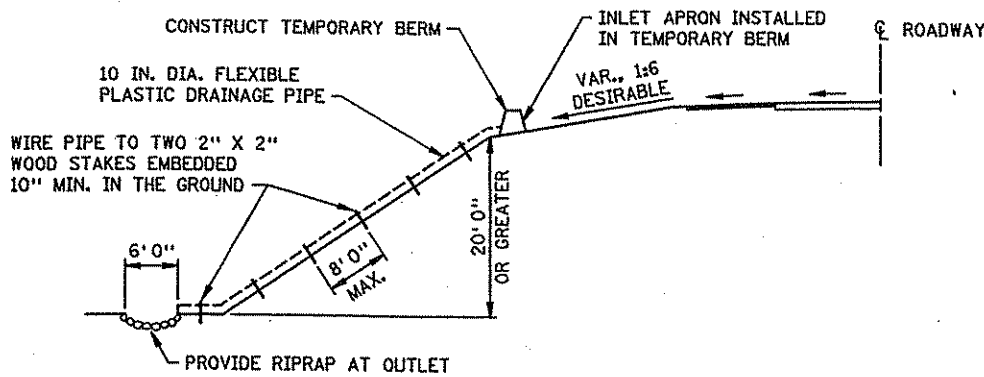
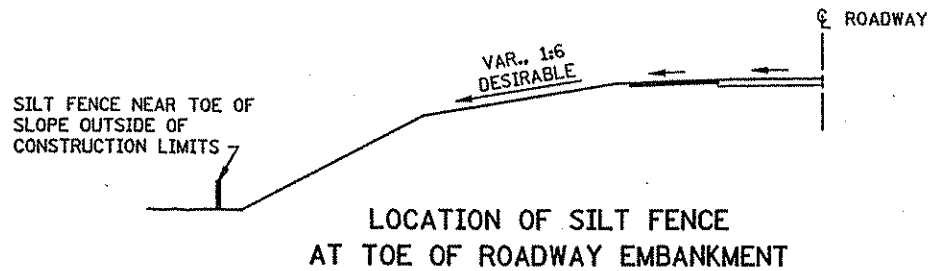
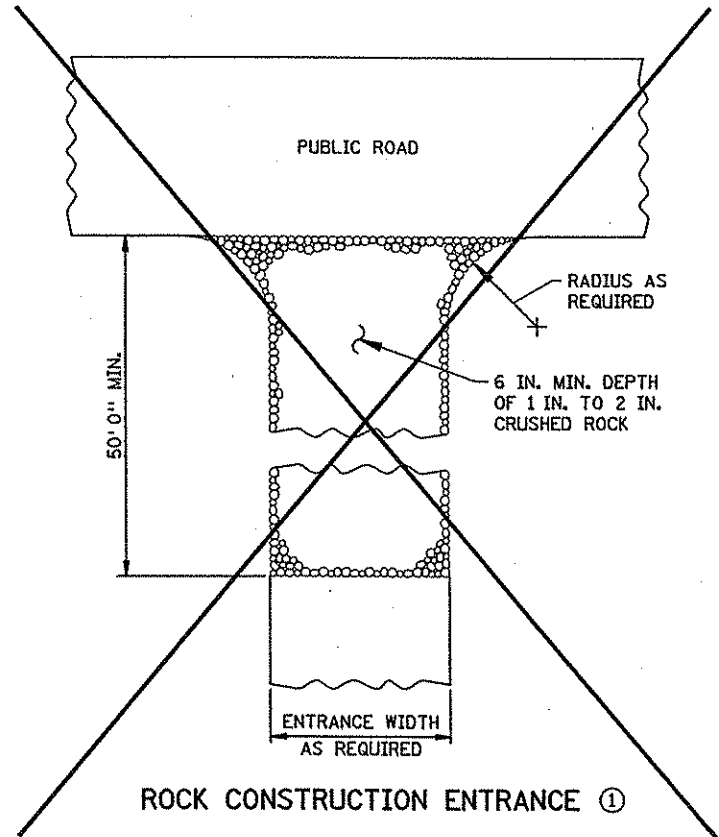
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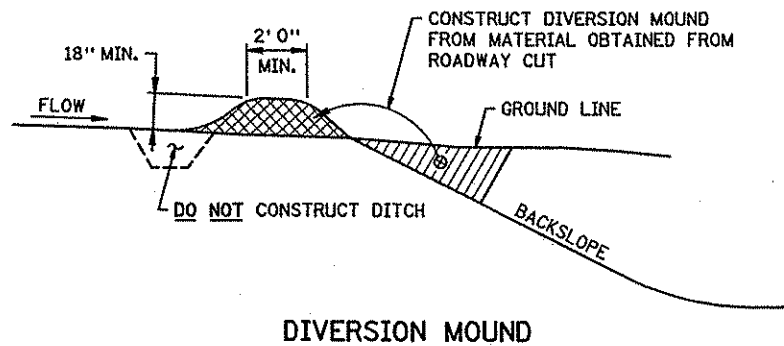


DESIGN GUIDELINES:  
MAXIMUM CONTRIBUTING AREA: 3 ACRES

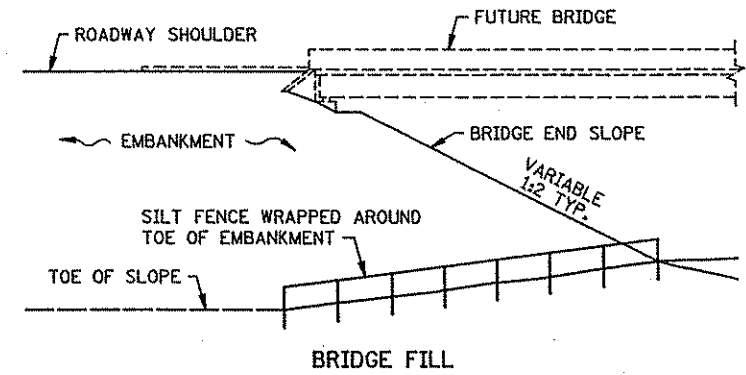
**SILT FENCE DETAILS**  
TO PROTECT AREAS FROM SHEET FLOW  
(SEE SPEC. 3886)



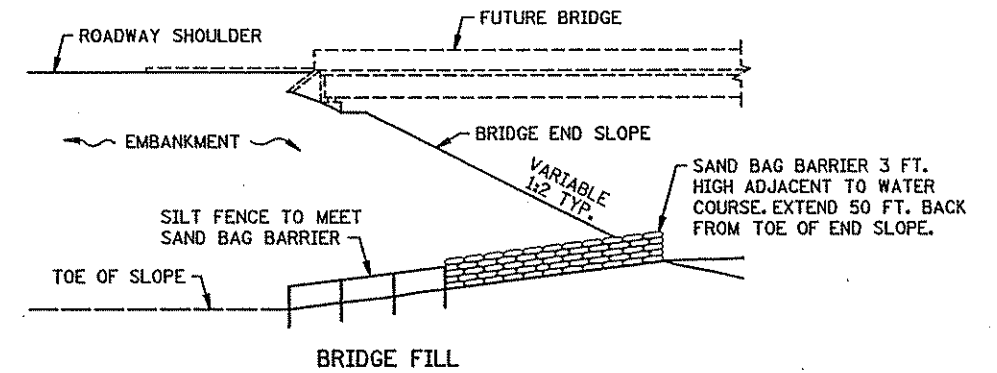
DESIGN GUIDELINES:  
STORM FREQUENCY: 2 YEAR - 24 HOUR  
MAXIMUM DRAINAGE AREA: 3 ACRES



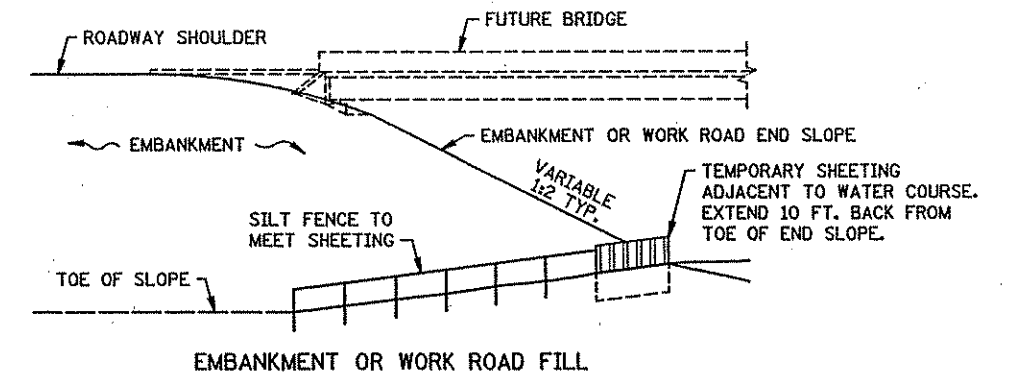
DESIGN GUIDELINES:  
STORM FREQUENCY: 10 YEAR - 24 HOUR  
MAXIMUM DRAINAGE AREA: 5 ACRES  
MAXIMUM DIVERSION: GRADE 5%



DESIGN GUIDELINES:  
WATER COURSE FLOW VELOCITY: STAGNANT  
CONTRIBUTING SLOPE AREA: 1/2 ACRE



DESIGN GUIDELINES:  
MAX. WATER COURSE FLOW VELOCITY: 7 FT./SEC.  
CONTRIBUTING SLOPE AREA: 1 ACRE



DESIGN GUIDELINES:  
MAX. WATER COURSE FLOW VELOCITY: 15 FT./SEC.  
CONTRIBUTING SLOPE AREA: 3 ACRES

**SILT FENCE AT BRIDGE EMBANKMENT**

NOTES:  
SEE SPECS. 2573 & 3886.

① ROCKS AT ENTRANCE CLEAN WORKSITE MUD OFF OF TRUCK TIRES BEFORE DRIVING ON MAIN ROAD. THIS WILL PREVENT AUTO DAMAGE. WE NEED TO KEEP CONSTRUCTION SEDIMENT OUT OF DRAINAGE SYSTEMS AND WETLANDS.

DRAWN BY: SJS  
CHECKED BY: MAW

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT 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.

SIGNATURE: Brent D. Paulsen  
PRINTED NAME: Brent D. Paulsen  
DATE: 8/15 2005 LIC. NO. 26830

MODIFIED FOR CROSS OUT

STANDARD SHEET NO. 5-297-405 (2 OF 4)

STANDARD APPROVED JULY 30, 2001

S.P. 02-614-23, S.P. 82-608-07

TEMPORARY EROSION CONTROL

SHEET NO. 30 OF 296 SHEETS

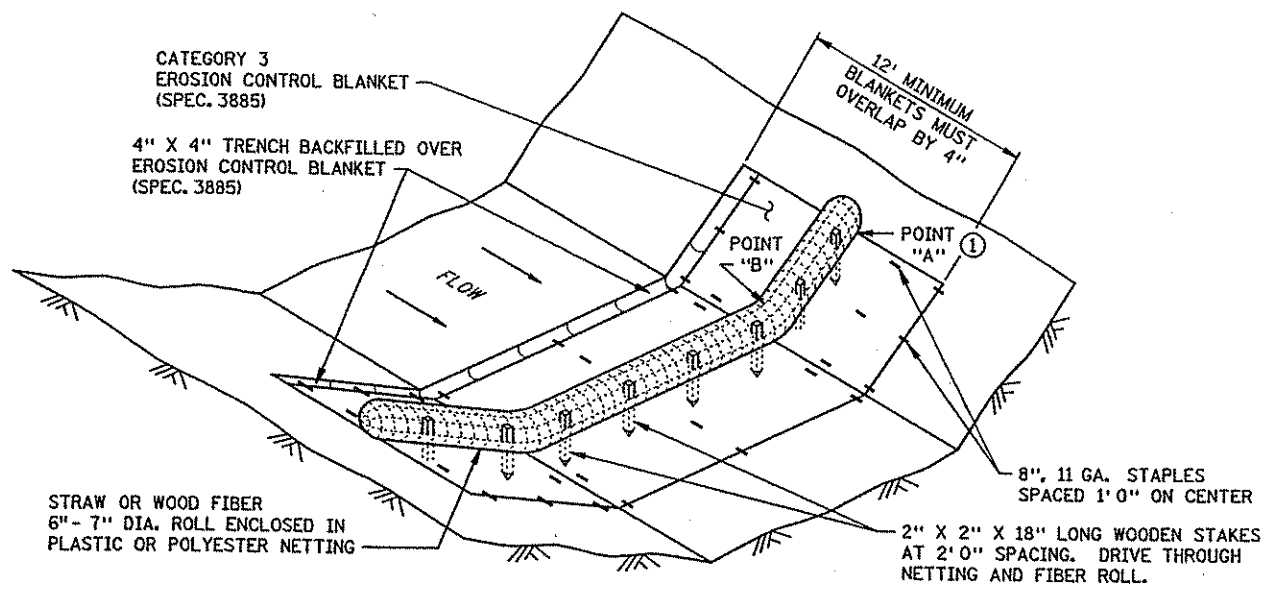
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PLOTTED/REVISED: \$\$\$@DATE\$\$\$

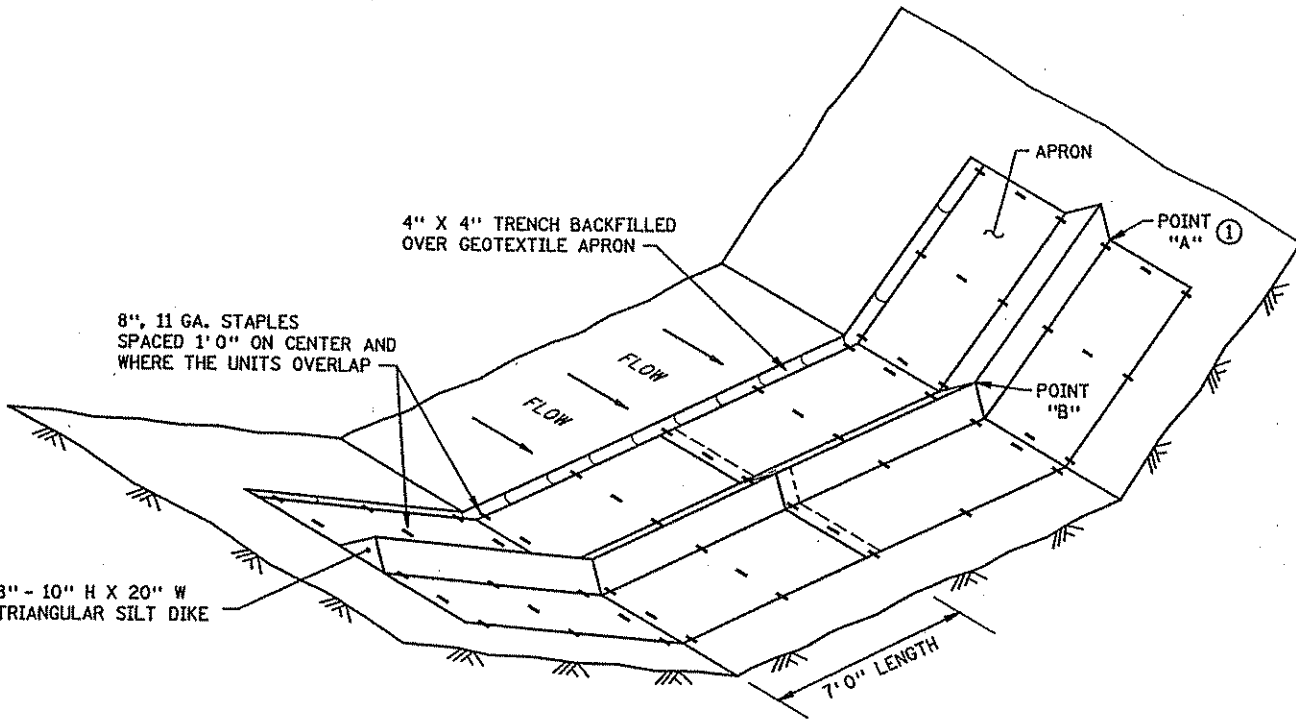
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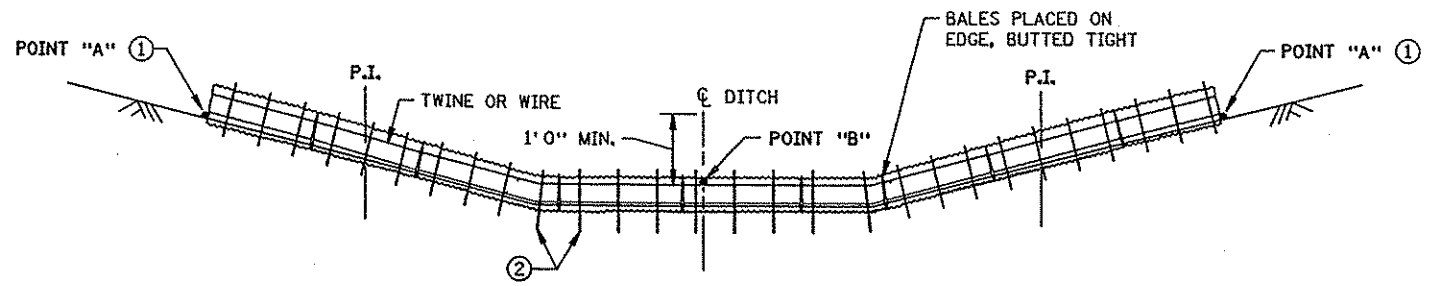
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FILE NAME S4053K02.SPN



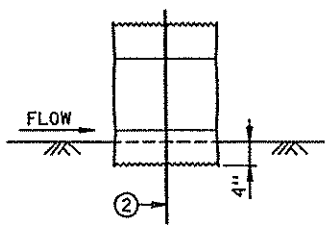
**BIOROLL BLANKET SYSTEM**  
(TYPE 3 SPEC. 3889)



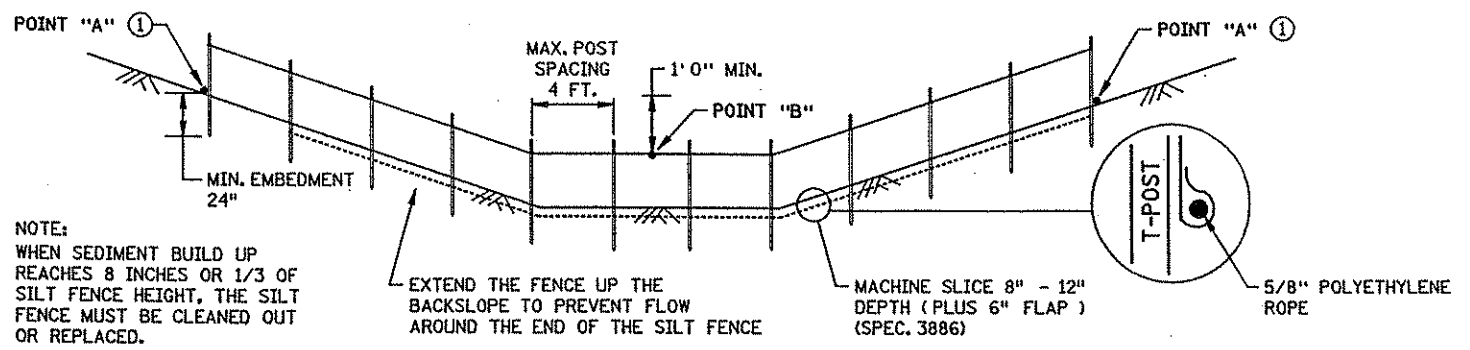
**GEOTEXTILE TRIANGULAR DIKE**  
(TYPE 6 SPEC. 3889)



**BALE DITCH CHECK**  
(USED ON ROUGH GRADED SOIL. REMOVE AFTER ROUGH GRADING IS COMPLETED. CAN BE USED AT WETLAND PERIMETERS ANYTIME)

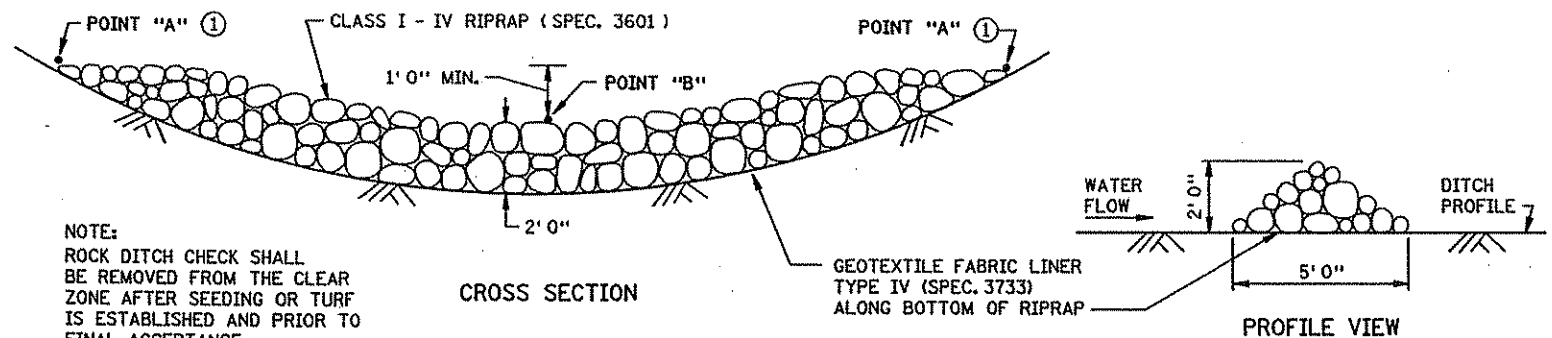


**EMBEDMENT METHOD  
BALE CHECK DETAIL**



NOTE:  
WHEN SEDIMENT BUILD UP REACHES 8 INCHES OR 1/3 OF SILT FENCE HEIGHT, THE SILT FENCE MUST BE CLEANED OUT OR REPLACED.

**MACHINE SLICED SILT FENCE**  
(TYPE 1 SPEC. 3889)



NOTE:  
ROCK DITCH CHECK SHALL BE REMOVED FROM THE CLEAR ZONE AFTER SEEDING OR TURF IS ESTABLISHED AND PRIOR TO FINAL ACCEPTANCE.

**ROCK CHECK**  
(TYPE 7 SPEC. 3889)

- NOTES:**  
SEE SPECS. 2573, 3882, 3885, 3886 & 3889.  
SPACING BETWEEN EACH DITCH CHECK SHOULD BE DETERMINED FROM SPACING FORMULA:  
SPACING OF DITCH CHECKS (FT) =  $\frac{\text{HEIGHT OF DITCH CHECK (FT)} \times 100}{\text{DITCH GRADE IN PERCENT}}$
- ① POINT A MUST BE 1'0" MIN. HIGHER THAN POINT B TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.
  - ② TWO 2 IN. X 2 IN. WOOD STAKES OR REINFORCING BARS IN EACH BALE AND EMBEDDED IN THE GROUND 10 IN. MINIMUM.

STANDARD SHEET NO. 5-297.405 (3 OF 4)	TITLE: <b>TEMPORARY EROSION CONTROL DITCH CHECKS</b>
STANDARD APPROVED: NOVEMBER 5, 2002	
S.P. 02-614-23, S.P. 82-608-07	SHEET NO. 31 OF 296 SHEETS

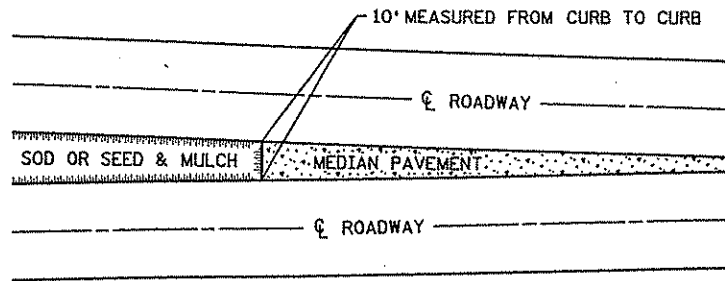
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PLOTTED/REVISED: \$\$\$@DATE\$\$\$

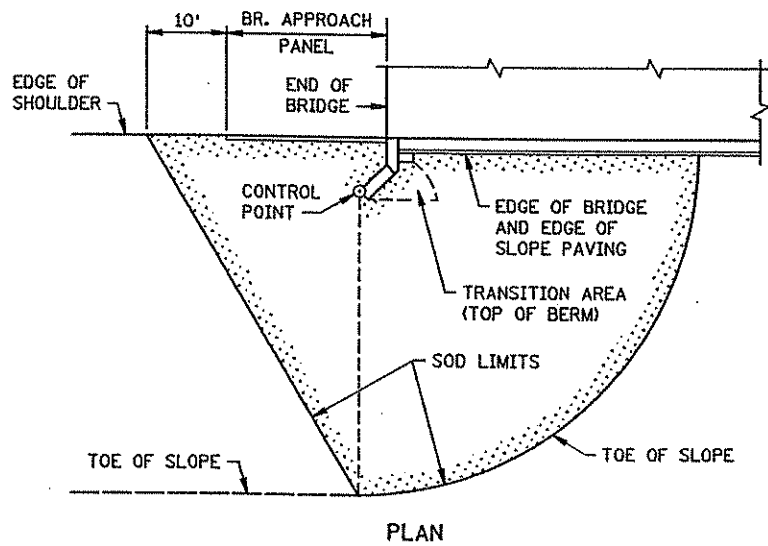
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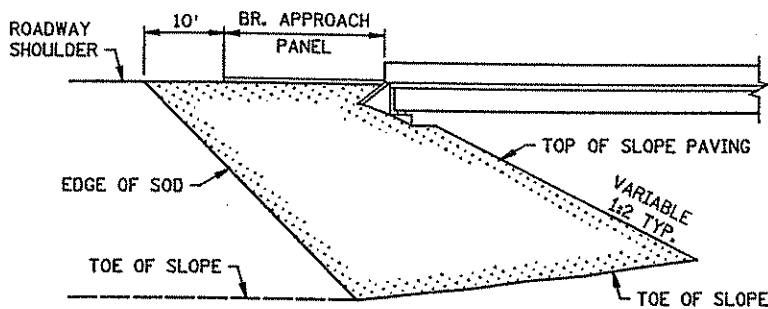
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FILE NAME S406A85.SPN



SODDING LIMITS AT GORE AREA

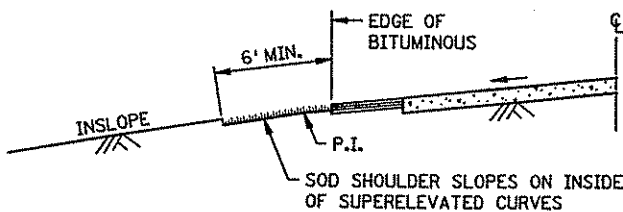


PLAN

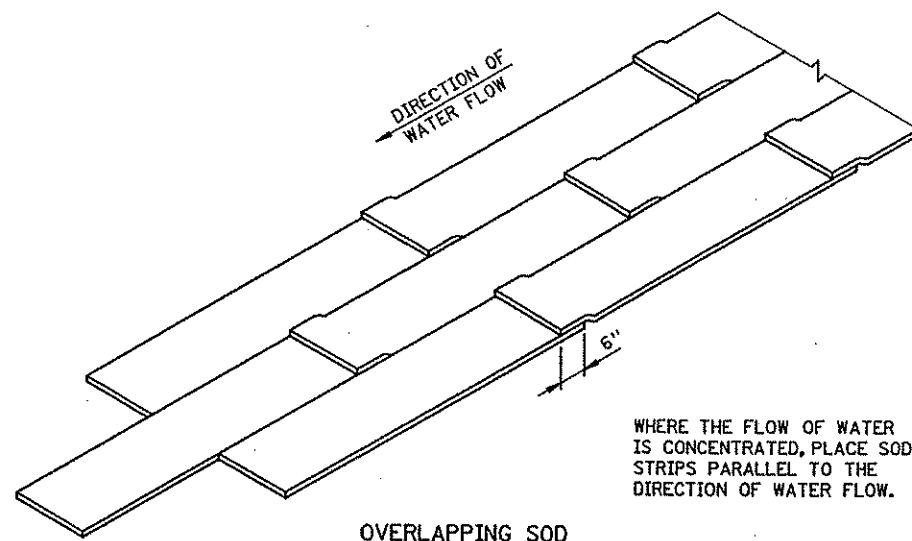


ELEVATION

SODDING LIMITS AT BRIDGE APPROACH FILLS

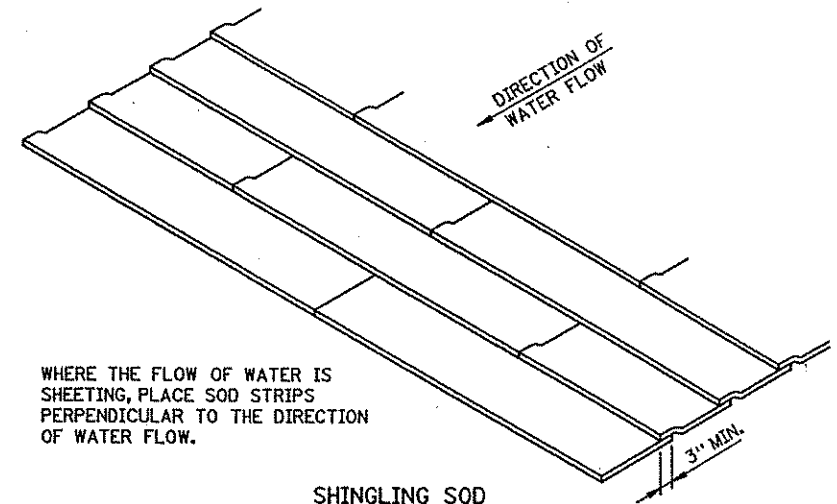


SODDING INSLOPES OF SUPERELEVATED CURVES



OVERLAPPING SOD

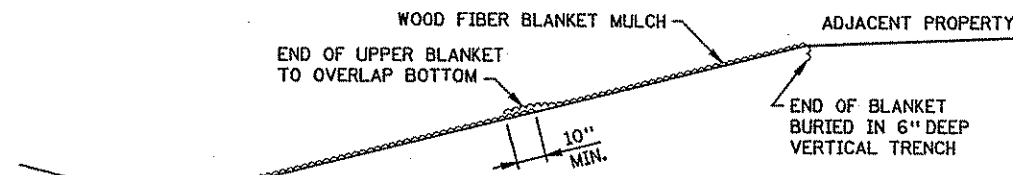
WHERE THE FLOW OF WATER IS CONCENTRATED, PLACE SOD STRIPS PARALLEL TO THE DIRECTION OF WATER FLOW.



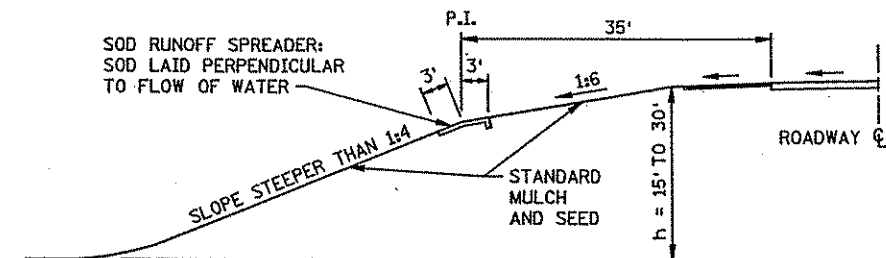
SHINGLING SOD

WHERE THE FLOW OF WATER IS SHEETING, PLACE SOD STRIPS PERPENDICULAR TO THE DIRECTION OF WATER FLOW.

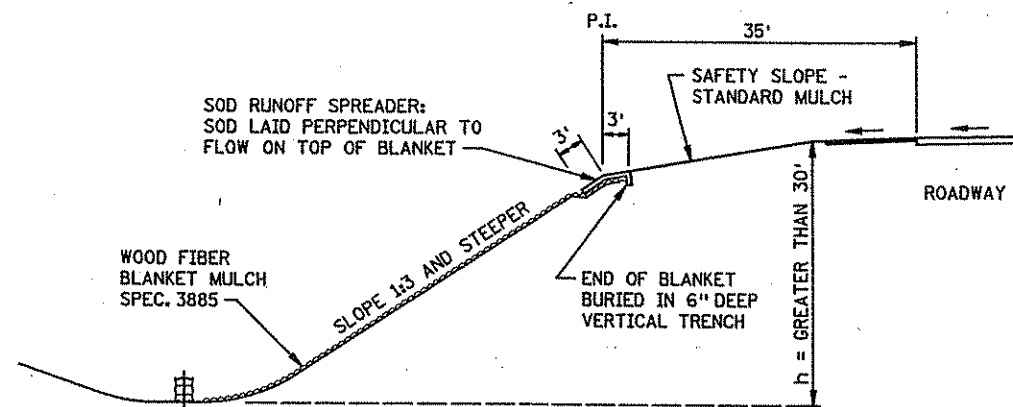
SPECIAL SOD PLACEMENT TECHNIQUES



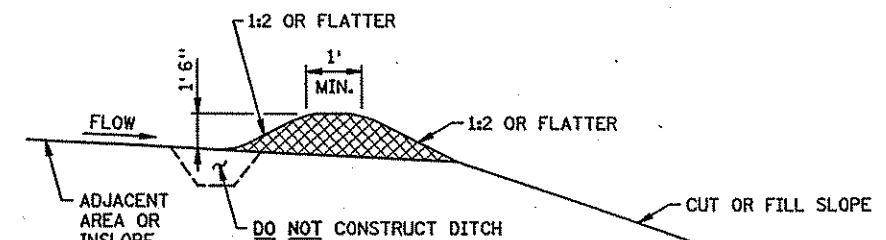
WOOD FIBER BLANKET INSTALLATION ON A CUT SLOPE



BROKEN-BACK SAFETY FILL SLOPE



WOOD FIBER BLANKET INSTALLATION ON AN INSLOPE (WHEN REQUIRED)



PERMANENT SLOPE PROTECTION DIKE

STANDARD SHEET NO. 5-297.406	TITLE: PERMANENT EROSION CONTROL ALONG ROADWAYS AND AT GORE AREAS & BRIDGE APPROACH FILLS
STANDARD APPROVED: JANUARY 31, 1985	
REVISION DATE 10-26-2000	S.P. 02-614-23, S.P. 82-608-07
	SHEET NO. 32 OF 296 SHEETS



**STAGE 1A - TRAFFIC**

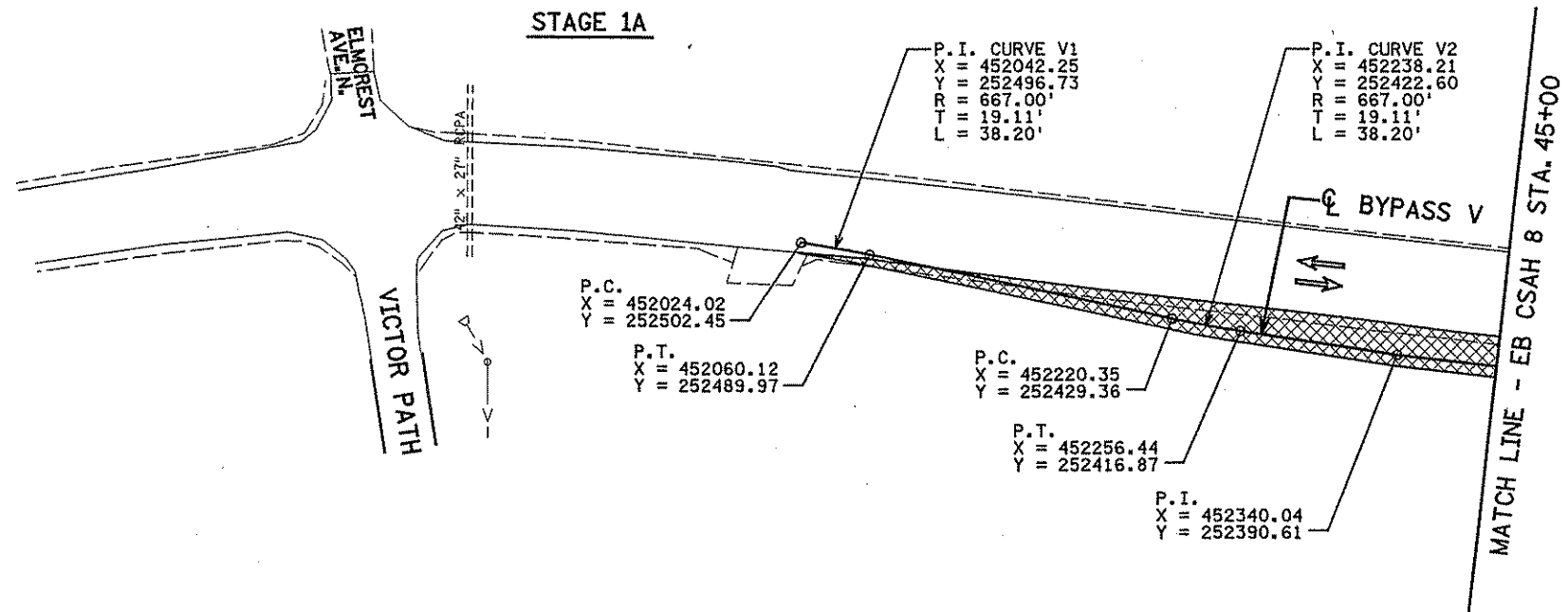
CLOSE EB CSAH 8 SHOULDER. SEE THE "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS", 6K-65, LAYOUT 56.

UTILIZE THE EXISTING CSAH 14 AND CSAH 8 E.B. AND W.B. LANES FOR 2-WAY TRAFFIC OPERATIONS.

MAINTAIN TRAFFIC ON ALL INPLACE ROADWAYS.

**STAGE 1A- CONSTRUCTION**

CONSTRUCT TEMPORARY WIDENING, BYPASS V, CONSISTING OF 3" OF BITUMINOUS PAVEMENT AND 6" OF AGGREGATE BASE CL.5.



**STAGE 1B - TRAFFIC**

TRAFFIC CONTROL DEVICES AND TEMPORARY STRIPING SHOWN FOR STAGE 1C SHALL BE INSTALLED FOR STAGE 1B. DEVICES SHOWN IN STAGE 1B SHALL BE REMOVED AT THE END OF STAGE 1B.

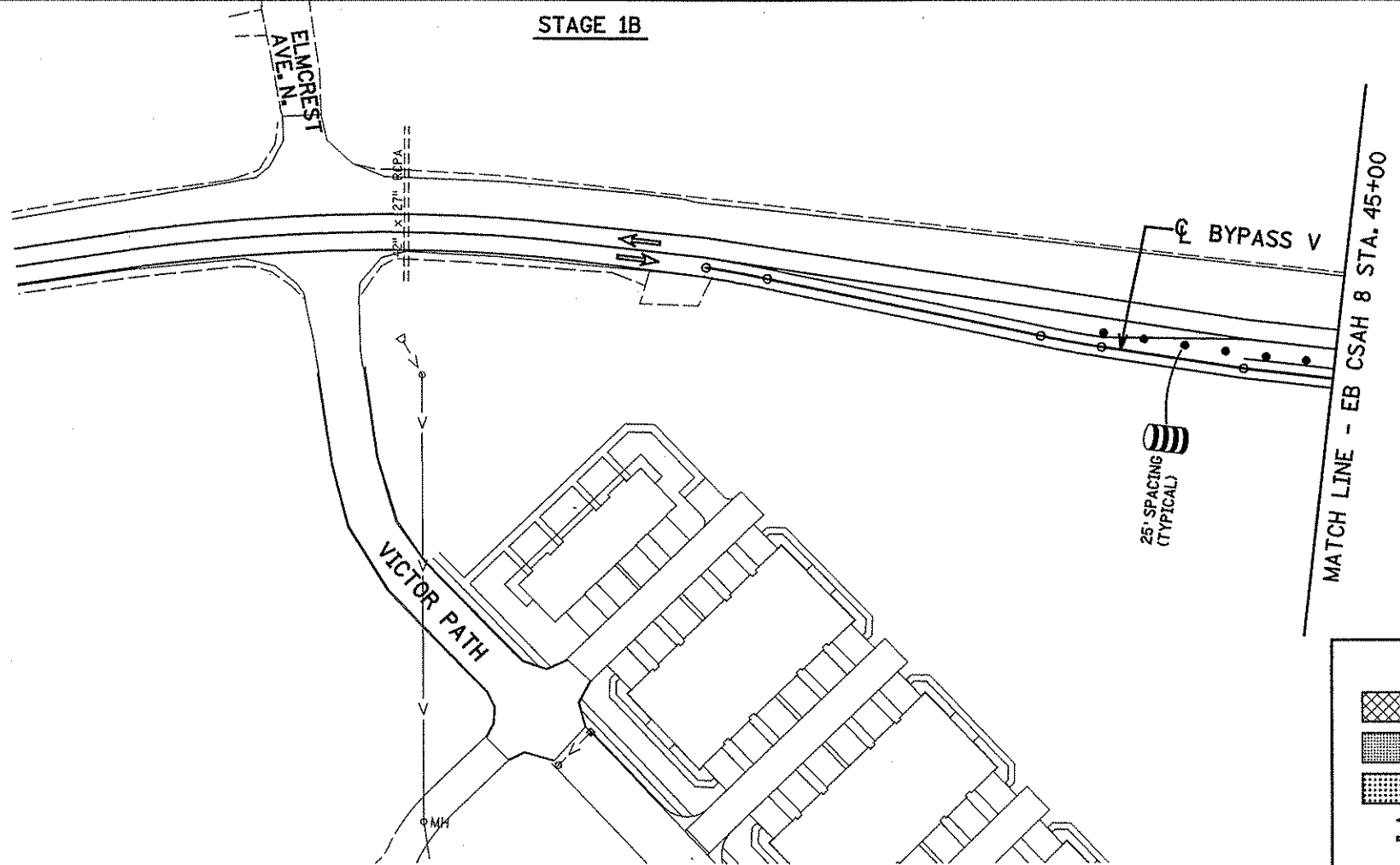
UTILIZE THE EXISTING CSAH 14 AND CSAH 8 E.B. LANE AND SHOULDER AND BYPASS V FOR 2-WAY TRAFFIC OPERATIONS.

MAINTAIN TRAFFIC ON ALL INPLACE ROADWAYS.

**STAGE 1B- CONSTRUCTION**

CONSTRUCT NORTH LEG OF VICTOR HUGO BOULEVARD AND A PORTION OF CSAH 8 W.B. AS SHOWN ON THE PLANS.

INSTALL TEMPORARY TRAFFIC SIGNAL SYSTEM.



ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

**LEGEND**

- TEMPORARY CONSTRUCTION IN THIS STAGE
- PERMANENT CONSTRUCTION IN THIS STAGE
- PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE
- TRAFFIC FLOW IN THIS STAGE
- RETROREFLECTIVE DRUM
- TUBE DELINEATOR
- TYPE A FLASHING WARNING LIGHT
- SEWER (STORM)

DATE: 8/22/2005 TIME: 3:07:52 PM FILENAME: K:\r-z\wustch\124390\hwy-brdg\hwy-pln-sit-e200802.dwg

DRAWN BY: SJS

CHECKED BY: BDP

CERTIFIED BY *Scott D. Paul* LIC. NO. 26880 DATE 8/23/05  
LICENSED PROFESSIONAL ENGINEER

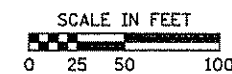
**TKDA**  
ENGINEERS · ARCHITECTS · PLANNERS

CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN  
STAGE 1A AND 1B - STA. 33+00 TO STA. 45+00

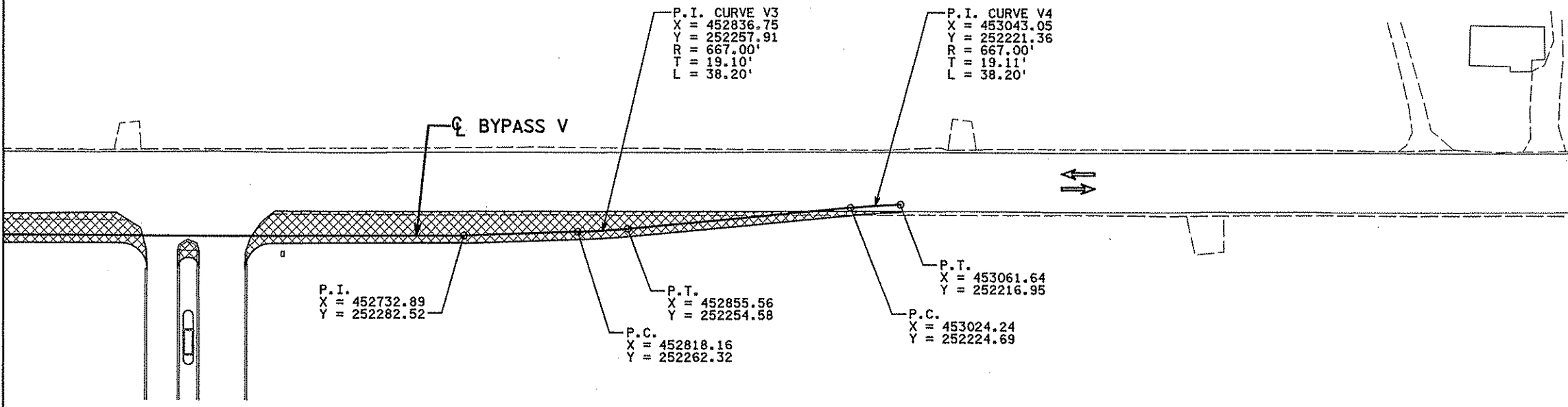
S.P. 02-614-23 S.P. 82-608-07

Sheet No. 33 of 296 Sheets

STAGE 1A



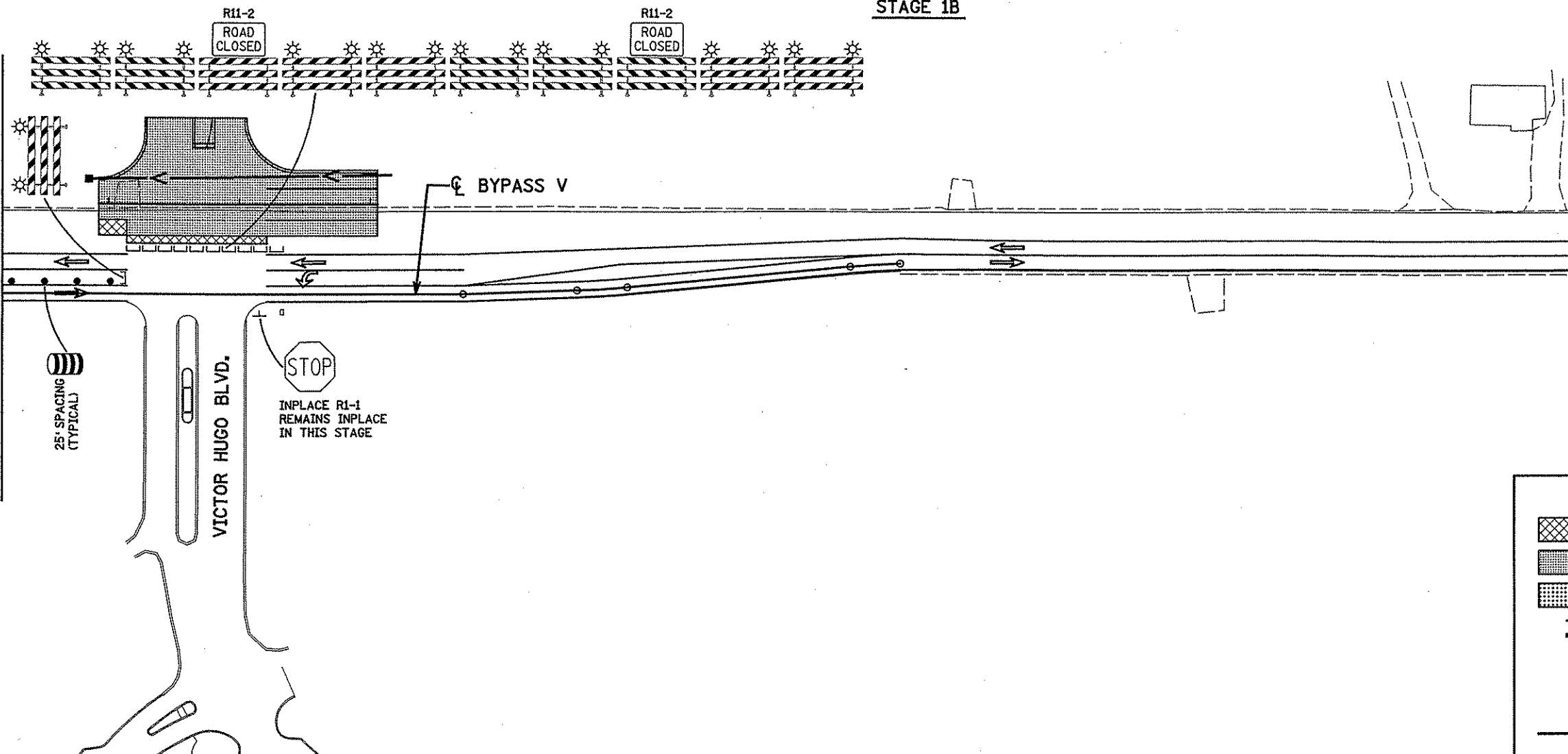
MATCH LINE - EB CSAH 8 STA. 45+00



NOTE:  
CLOSE EB CSAH 8 SHOULDER. SEE THE "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS", 6K-65, LAYOUT 56.

STAGE 1B

MATCH LINE - EB CSAH 8 STA. 45+00



NOTE:  
TRAFFIC CONTROL DEVICES AND TEMPORARY STRIPING SHOWN FOR STAGE 1C SHALL BE INSTALLED FOR STAGE 1B. DEVICES SHOWN IN STAGE 1B SHALL BE REMOVED AT THE END OF STAGE 1B.

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

LEGEND	
	TEMPORARY CONSTRUCTION IN THIS STAGE
	PERMANENT CONSTRUCTION IN THIS STAGE
	PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE
	TRAFFIC FLOW IN THIS STAGE
	RETROREFLECTIVE DRUM
	TUBE DELINEATOR
	TYPE A FLASHING WARNING LIGHT
	SEWER (STORM)

DATE: 8/10/2005 TIME: 3:58:07 PM FILENAME: K:\r2\wastcy\124390\hwy-brdg\hwy\pln-sht\c200802.csd

DRAWN BY: SJS  
CHECKED BY: BDP

CERTIFIED BY *Paul J. Paulk* LIC. NO. 20880 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

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CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN  
STAGE 1A AND 1B - STA. 45+00 TO STA. 57+00

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 33A of 296 Sheets

**STAGE 1 - TRAFFIC**

UTILIZE THE EXISTING CSAH 14 AND CSAH 8 E.B. LANE AND SHOULDER FOR 2-WAY TRAFFIC OPERATIONS.

MAINTAIN TRAFFIC ON ALL INPLACE ROADWAYS.

**STAGE 1 - CONSTRUCTION**

CONSTRUCT PORTIONS OF W.B. CSAH 14 AND CSAH 8 FROM THE I-35E EAST RAMP TO STA. 88+75 AS SHOWN ON THE PLANS.

CONSTRUCT ELMCREST AVENUE AND EVERTON AVENUE.

CONSTRUCT TEMPORARY CONNECTIONS TO ELMCREST AVE. N. AND EVERTON AVE. N. WHICH CONNECT THE PROPOSED CONSTRUCTION AND THE INPLACE ROADWAY AND WILL CONSIST OF 3" OF BITUMINOUS PAVEMENT AND 6" OF AGGREGATE BASE CL.5.

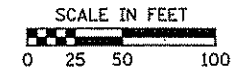
CONSTRUCT BYPASS C LATE IN STAGE 1.

CONSTRUCT OTTER POND, ELMCREST POND, EVERTON POND, CLEARWATER WEST POND, AND CLEARWATER EAST POND.

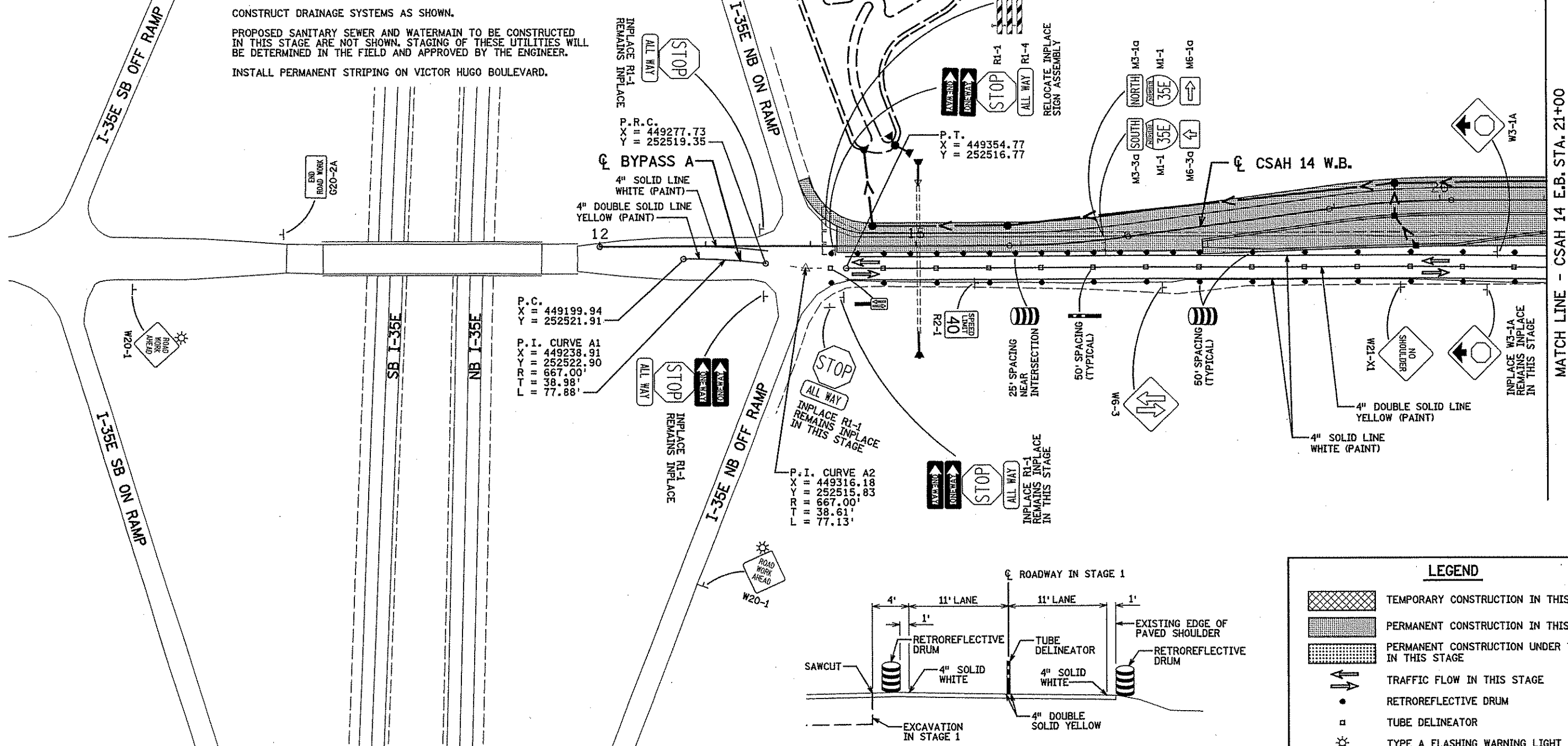
CONSTRUCT DRAINAGE SYSTEMS AS SHOWN.

PROPOSED SANITARY SEWER AND WATERMAIN TO BE CONSTRUCTED IN THIS STAGE ARE NOT SHOWN. STAGING OF THESE UTILITIES WILL BE DETERMINED IN THE FIELD AND APPROVED BY THE ENGINEER.

INSTALL PERMANENT STRIPING ON VICTOR HUGO BOULEVARD.



ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".



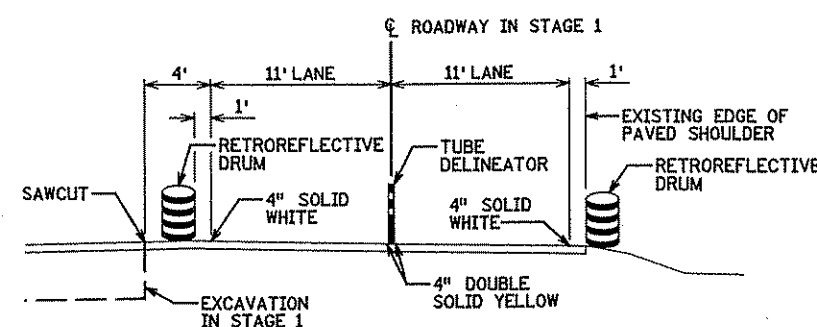
P.R.C.  
X = 449277.73  
Y = 252519.35

BYPASS A  
4" SOLID LINE WHITE (PAINT)  
4" DOUBLE SOLID LINE YELLOW (PAINT)  
12

P.C.  
X = 449199.94  
Y = 252521.91

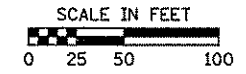
P.I. CURVE A1  
X = 449238.91  
Y = 252522.90  
R = 667.00'  
T = 38.98'  
L = 77.88'

P.I. CURVE A2  
X = 449316.18  
Y = 252519.83  
R = 667.00'  
T = 38.61'  
L = 77.13'

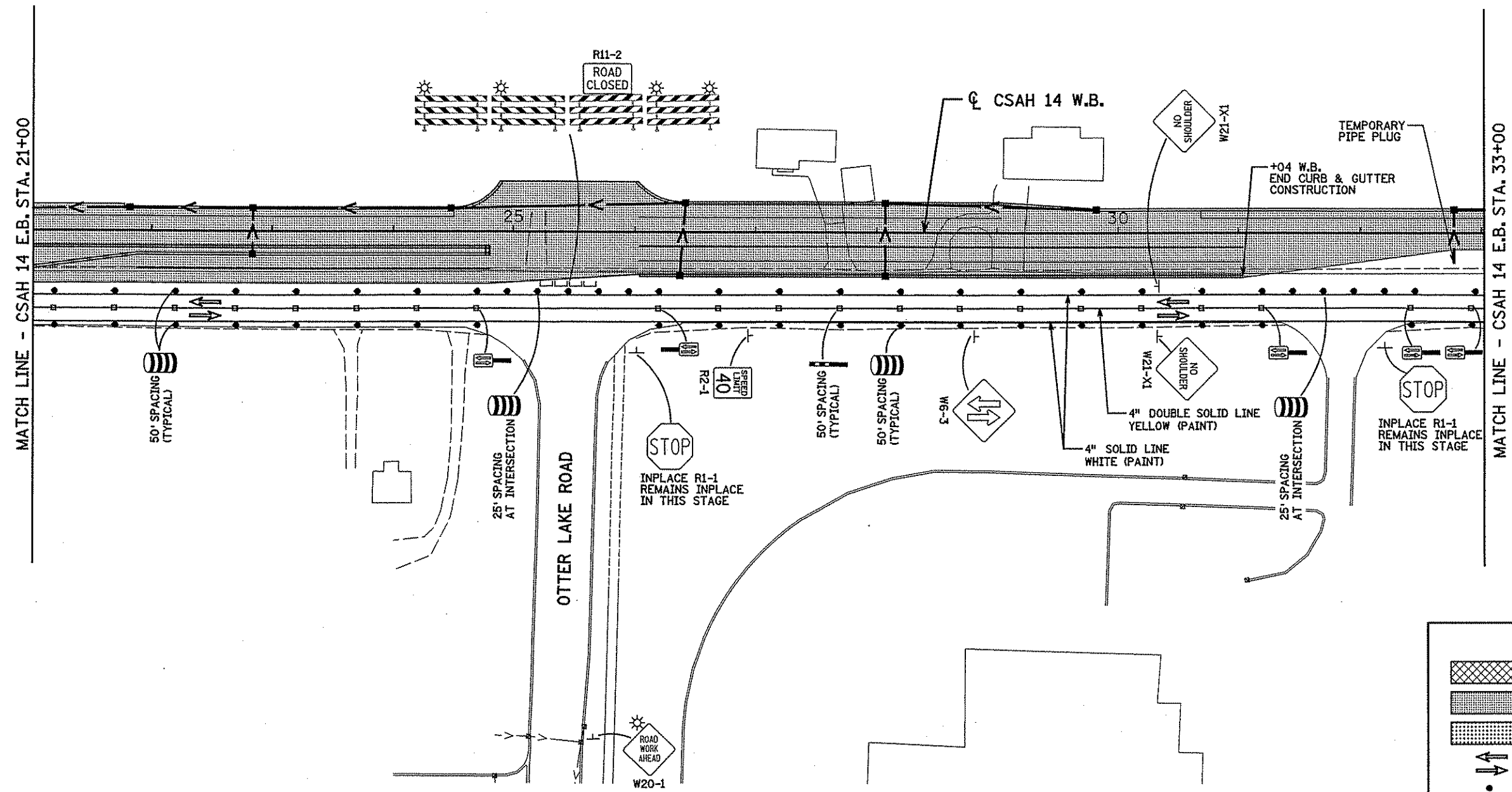


LEGEND	
	TEMPORARY CONSTRUCTION IN THIS STAGE
	PERMANENT CONSTRUCTION IN THIS STAGE
	PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE
	TRAFFIC FLOW IN THIS STAGE
	RETROREFLECTIVE DRUM
	TUBE DELINEATOR
	TYPE A FLASHING WARNING LIGHT
	SEWER (STORM)

DATE: 8/22/2005 TIME: 3:08:09 PM  
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ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".



LEGEND	
	TEMPORARY CONSTRUCTION IN THIS STAGE
	PERMANENT CONSTRUCTION IN THIS STAGE
	PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE
	TRAFFIC FLOW IN THIS STAGE
	RETROREFLECTIVE DRUM
	TUBE DELINEATOR
	TYPE A FLASHING WARNING LIGHT
	SEWER (STORM)

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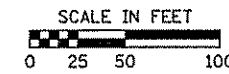
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CHECKED BY: BDP

CERTIFIED BY Brent J. Pank LIC. NO. 70880 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

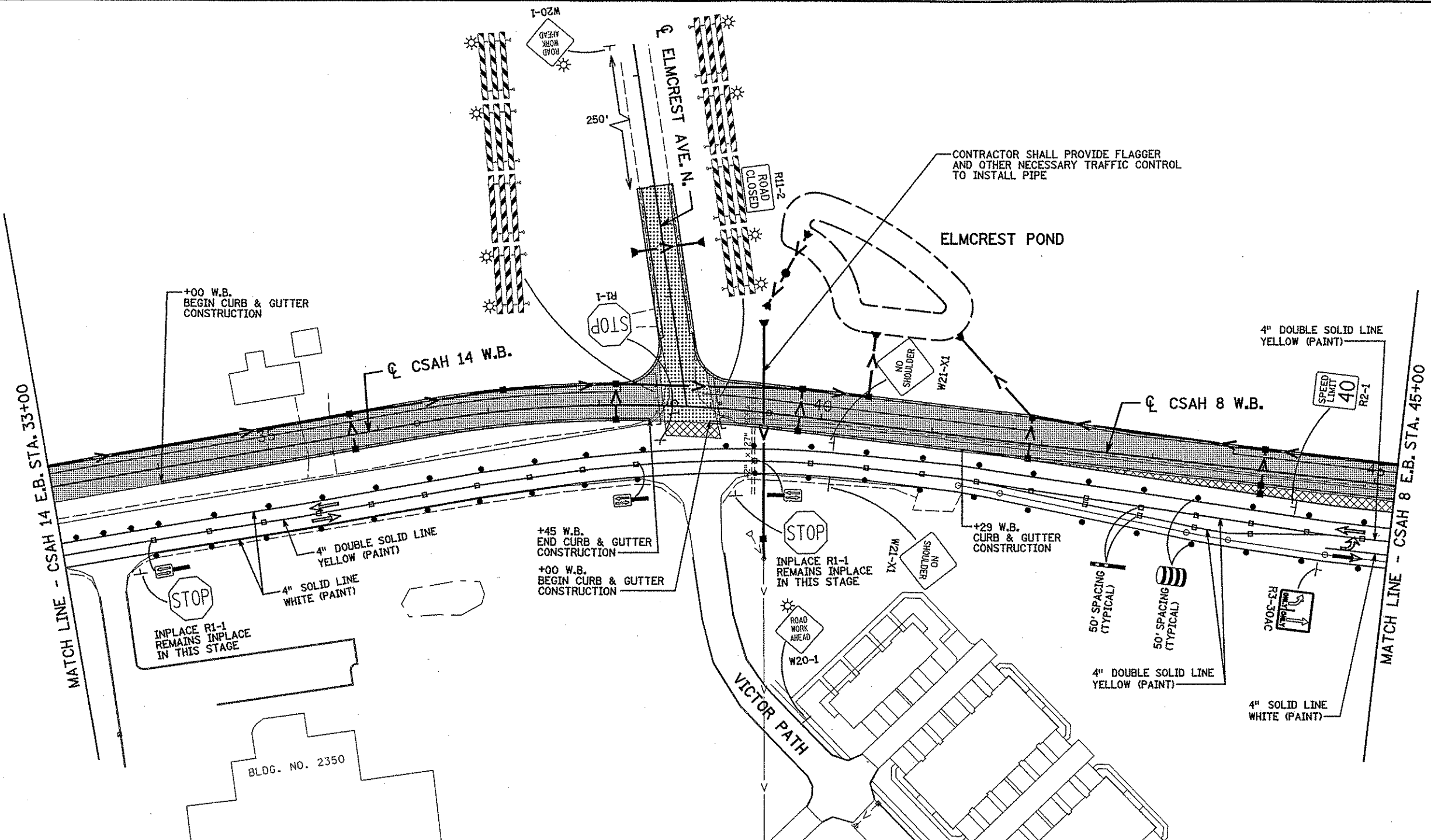
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CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN  
STAGE 1C - STA. 21+00 TO STA. 33+00

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 34 of 296 Sheets



ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".



LEGEND	
	TEMPORARY CONSTRUCTION IN THIS STAGE
	PERMANENT CONSTRUCTION IN THIS STAGE
	PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE
	TRAFFIC FLOW IN THIS STAGE
	RETROREFLECTIVE DRUM
	TUBE DELINEATOR
	TYPE A FLASHING WARNING LIGHT
	SEWER (STORM)

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CHECKED BY: BDP

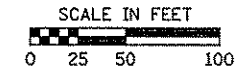
CERTIFIED BY *Scott D. Paul* LIC. NO. 26880 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

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ENGINEERS - ARCHITECTS - PLANNERS

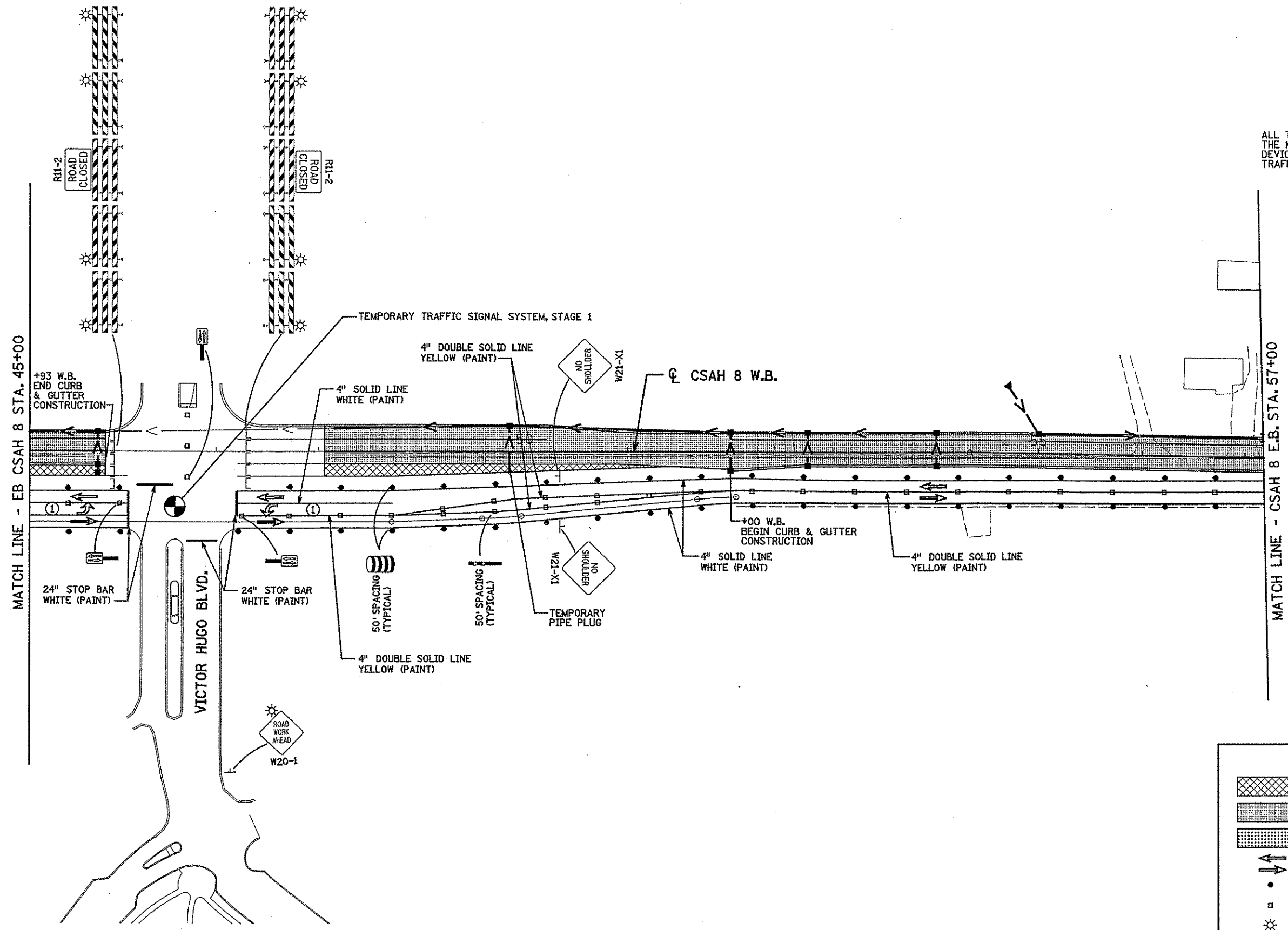
CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN  
STAGE 1C - STA. 33+00 TO STA. 45+00

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 35 of 296 Sheets





ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".



LEGEND	
	TEMPORARY CONSTRUCTION IN THIS STAGE
	PERMANENT CONSTRUCTION IN THIS STAGE
	PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE
	TRAFFIC FLOW IN THIS STAGE
	RETROREFLECTIVE DRUM
	TUBE DELINEATOR
	TYPE A FLASHING WARNING LIGHT
	SEWER (STORM)
	LEFT TURN ARROW (PAINT).....

DATE: 8/22/2005 TIME: 3:07:57 PM  
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CHECKED BY: BDP

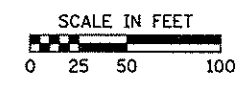
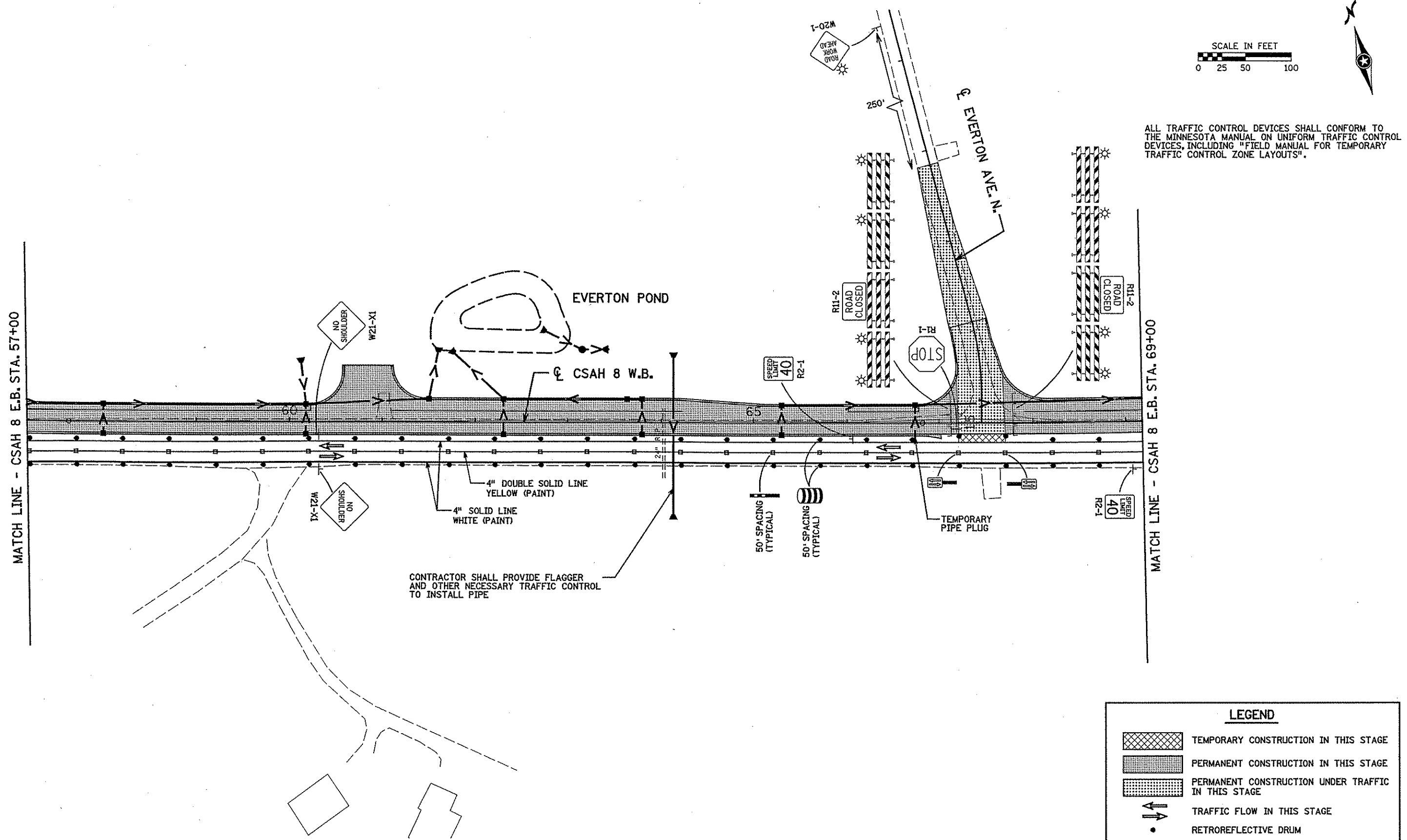
CERTIFIED BY Brent O. Paulin LIC. NO. 26880 DATE 8/22/05  
LICENSED PROFESSIONAL ENGINEER

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ENGINEERS-ARCHITECTS-PLANNERS

CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN  
STAGE 1C - STA. 45+00 TO STA. 57+00

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 36 of 296 Sheets

DATE: 8/5/2005 TIME: 11:25 PM  
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ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

CONTRACTOR SHALL PROVIDE FLAGGER AND OTHER NECESSARY TRAFFIC CONTROL TO INSTALL PIPE

LEGEND	
	TEMPORARY CONSTRUCTION IN THIS STAGE
	PERMANENT CONSTRUCTION IN THIS STAGE
	PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE
	TRAFFIC FLOW IN THIS STAGE
	RETROREFLECTIVE DRUM
	TUBE DELINEATOR
	TYPE A FLASHING WARNING LIGHT
	SEWER (STORM)

DRAWN BY: SJS  
 CHECKED BY: BDP

CERTIFIED BY *Brent J. Pauls* LIC. NO. 20880 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

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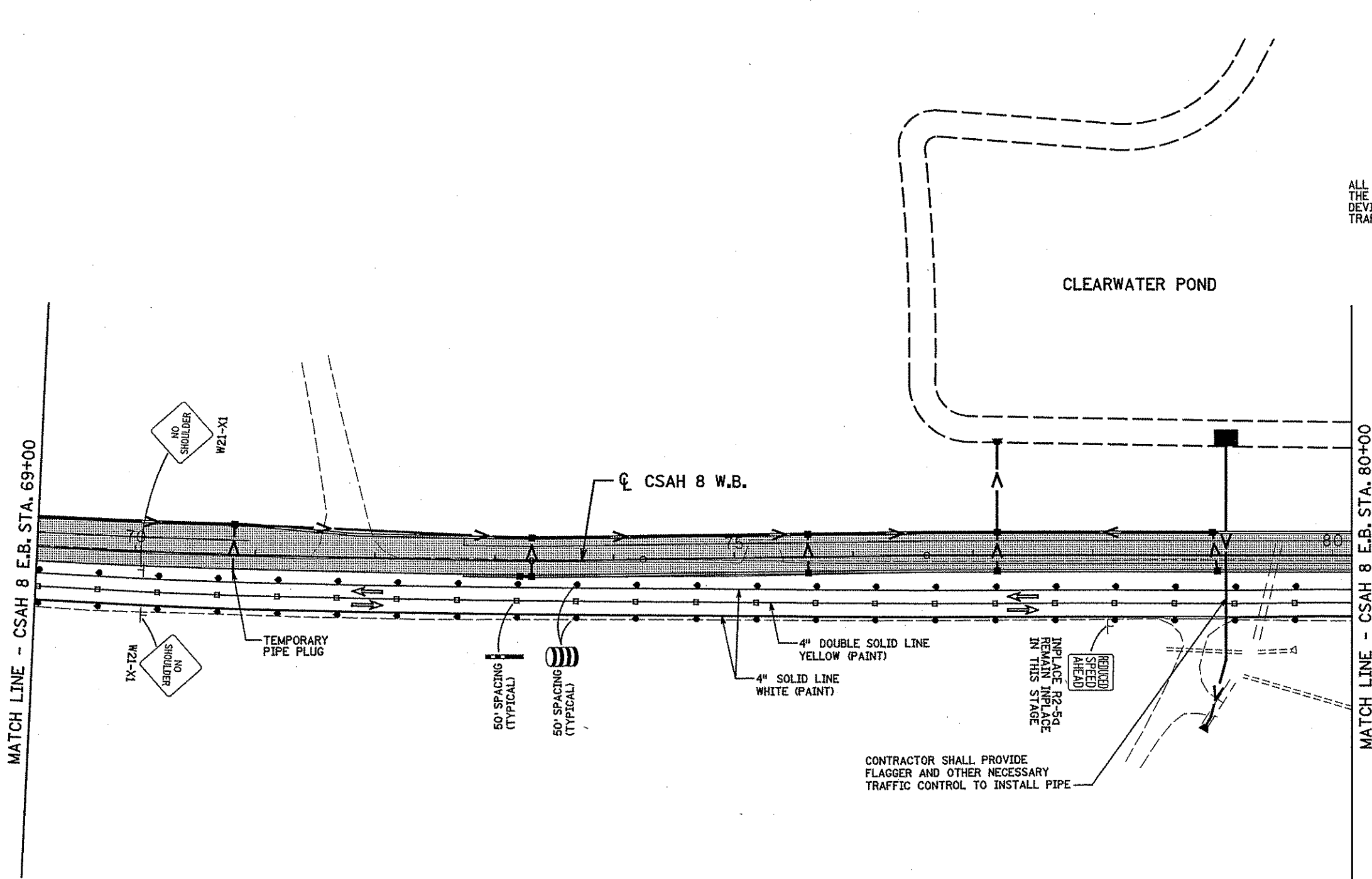
CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN  
 STAGE 1C - STA. 57+00 TO STA. 69+00

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 37 of 296 Sheets

SCALE IN FEET  
0 25 50 100



ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".



CONTRACTOR SHALL PROVIDE FLAGGER AND OTHER NECESSARY TRAFFIC CONTROL TO INSTALL PIPE

LEGEND	
	TEMPORARY CONSTRUCTION IN THIS STAGE
	PERMANENT CONSTRUCTION IN THIS STAGE
	PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE
	TRAFFIC FLOW IN THIS STAGE
	RETROREFLECTIVE DRUM
	TUBE DELINEATOR
	TYPE A FLASHING WARNING LIGHT
	SEWER (STORM)

DATE: 8/5/2005 TIME: 11:29 PM  
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DRAWN BY: SJS  
CHECKED BY: BDP

CERTIFIED BY Brent O. Paulin LIC. NO. 26880 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

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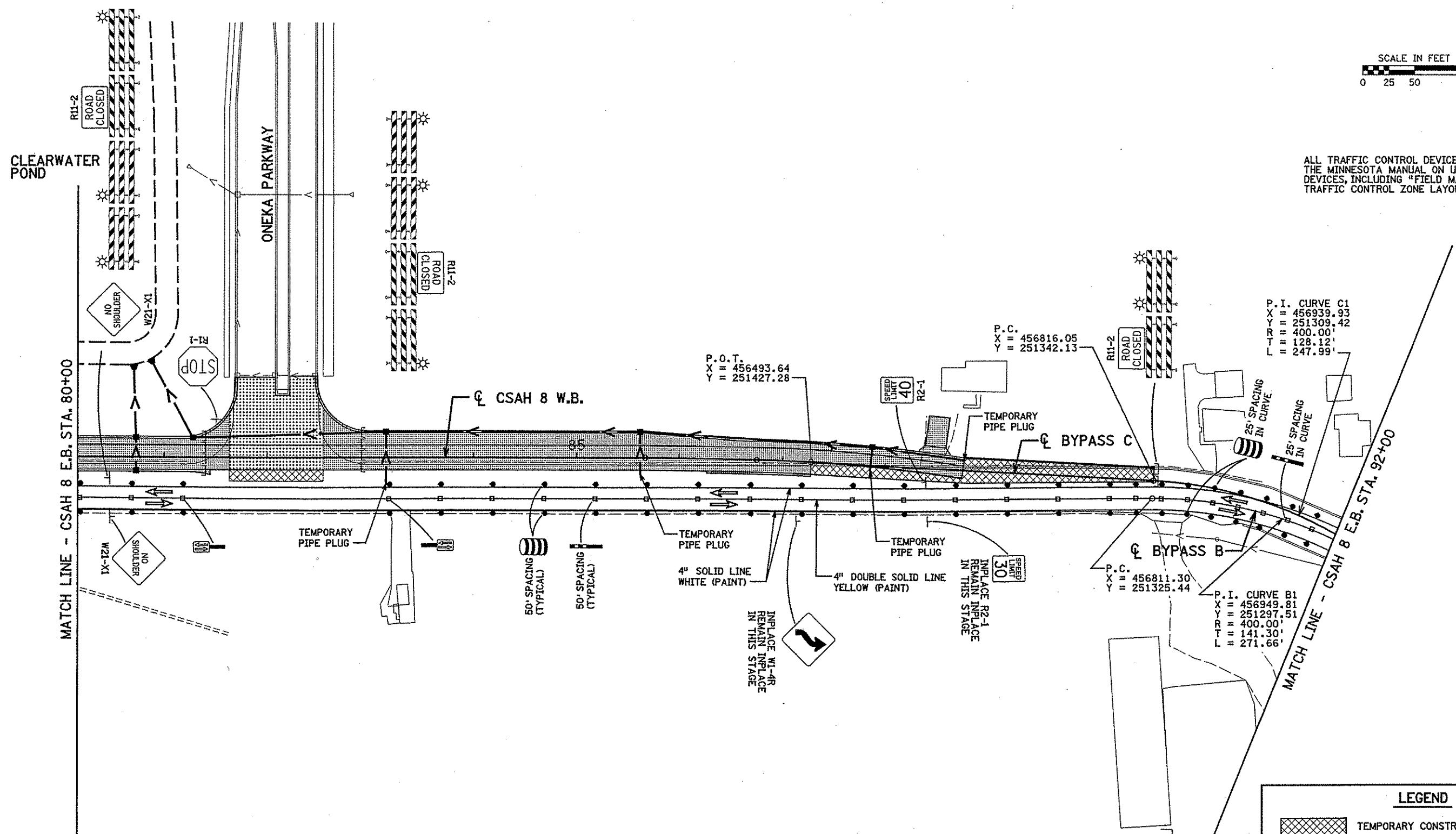
CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN  
STAGE 1C - STA. 69+00 TO STA. 80+00

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 38 of 296 Sheets

SCALE IN FEET  
0 25 50 100



ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".



LEGEND	
	TEMPORARY CONSTRUCTION IN THIS STAGE
	PERMANENT CONSTRUCTION IN THIS STAGE
	PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE
	TRAFFIC FLOW IN THIS STAGE
	RETROREFLECTIVE DRUM
	TUBE DELINEATOR
	TYPE A FLASHING WARNING LIGHT
	SEWER (STORM)

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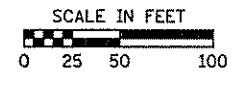
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CERTIFIED BY Brent O. Pauls LIC. NO. 26820 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

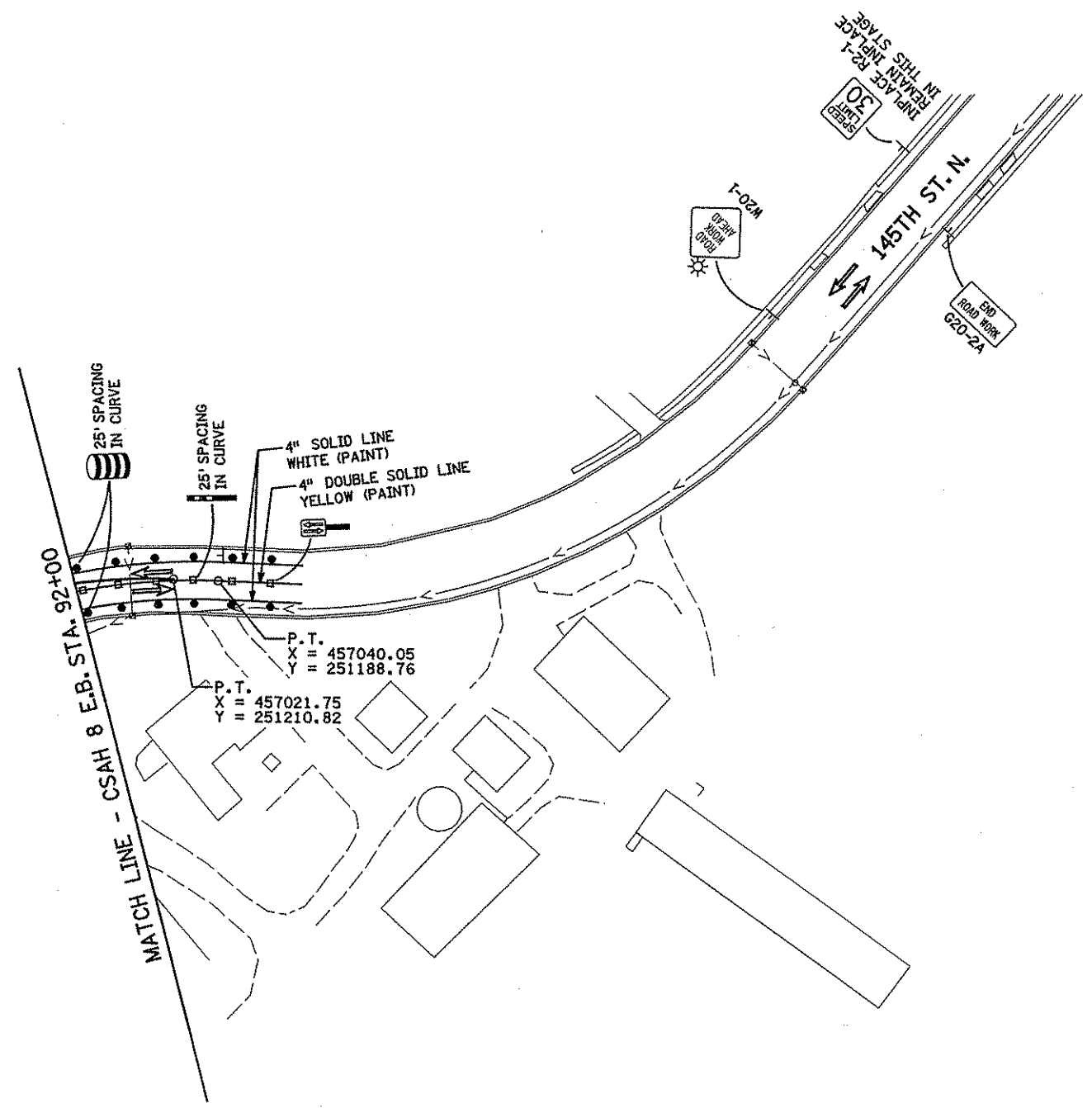
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CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN  
STAGE 1C - STA. 80+00 TO STA. 92+00

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 39 of 296 Sheets



ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".



LEGEND	
	TEMPORARY CONSTRUCTION IN THIS STAGE
	PERMANENT CONSTRUCTION IN THIS STAGE
	PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE
	TRAFFIC FLOW IN THIS STAGE
	RETROREFLECTIVE DRUM
	TUBE DELINEATOR
	TYPE A FLASHING WARNING LIGHT
	SEWER (STORM)

DATE: 8/5/2005 TIME: 11:37 PM FILENAME: K:\r-z\wastcy\24390\hwy-brdg\hwy\p1r-sh\c200802.csh

DRAWN BY: SJS  
CHECKED BY: BDP

CERTIFIED BY *Brent J. Paulk* LIC. NO. 20820 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

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ENGINEERS - ARCHITECTS - PLANNERS

CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN  
STAGE 1C - STA. 92+00 TO STA. 94+00

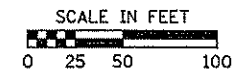
S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 40 of 296 Sheets



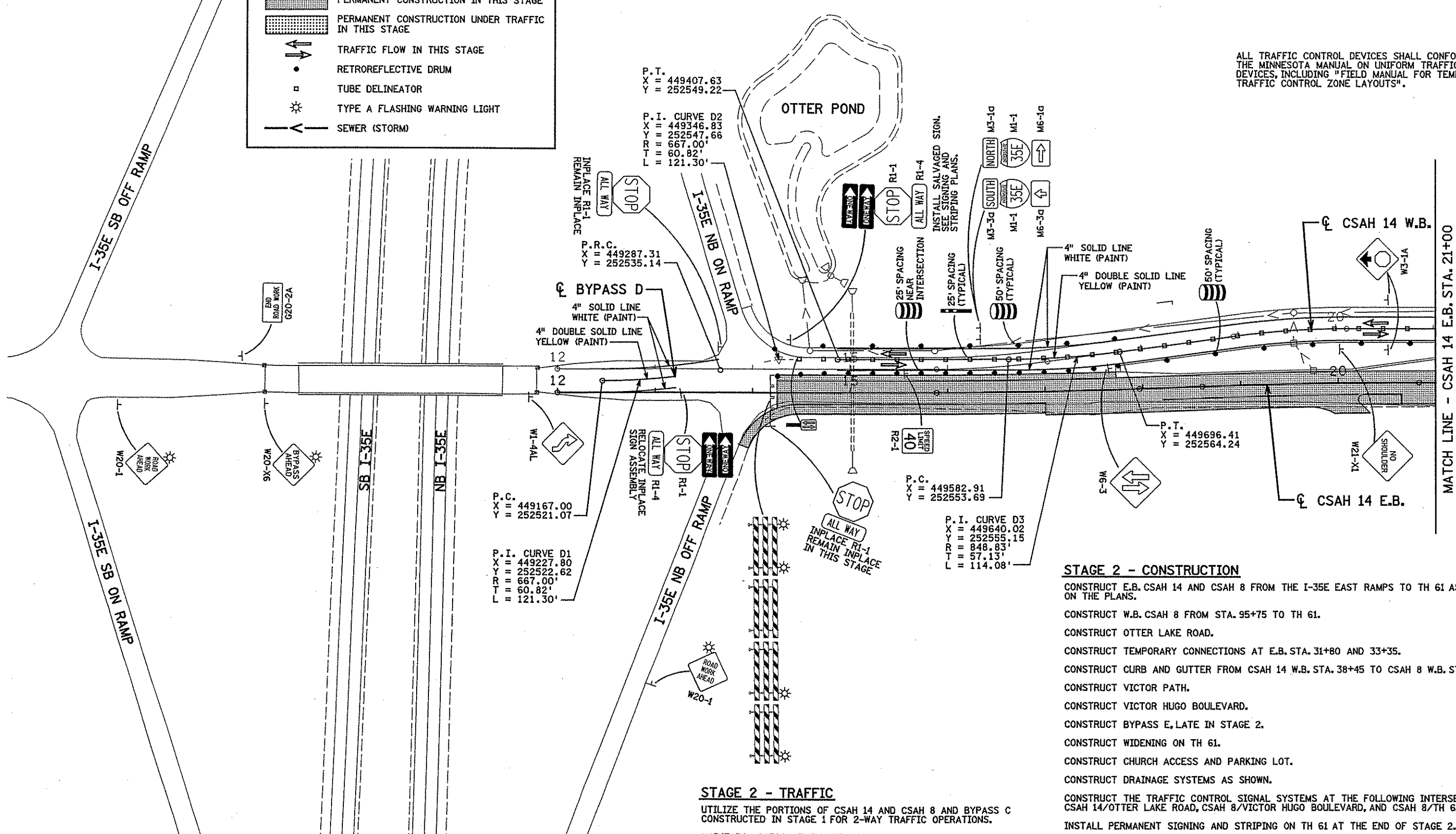
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**LEGEND**

- TEMPORARY CONSTRUCTION IN THIS STAGE
- PERMANENT CONSTRUCTION IN THIS STAGE
- PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE
- TRAFFIC FLOW IN THIS STAGE
- RETROREFLECTIVE DRUM
- TUBE DELINEATOR
- TYPE A FLASHING WARNING LIGHT
- SEWER (STORM)



ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".



P.T. X = 449407.63  
 Y = 252549.22

P.I. CURVE D2  
 X = 449346.83  
 Y = 252547.66  
 R = 667.00'  
 T = 60.82'  
 L = 121.30'

P.R.C. X = 449287.31  
 Y = 252535.14

P.I. CURVE D1  
 X = 449227.80  
 Y = 252522.62  
 R = 667.00'  
 T = 60.82'  
 L = 121.30'

P.I. CURVE D3  
 X = 449640.02  
 Y = 252555.15  
 R = 848.83'  
 T = 57.13'  
 L = 114.08'

**STAGE 2 - CONSTRUCTION**

- CONSTRUCT E.B. CSAH 14 AND CSAH 8 FROM THE I-35E EAST RAMPS TO TH 61 AS SHOWN ON THE PLANS.
- CONSTRUCT W.B. CSAH 8 FROM STA. 95+75 TO TH 61.
- CONSTRUCT OTTER LAKE ROAD.
- CONSTRUCT TEMPORARY CONNECTIONS AT E.B. STA. 31+80 AND 33+35.
- CONSTRUCT CURB AND GUTTER FROM CSAH 14 W.B. STA. 38+45 TO CSAH 8 W.B. STA. 39+00.
- CONSTRUCT VICTOR PATH.
- CONSTRUCT VICTOR HUGO BOULEVARD.
- CONSTRUCT BYPASS E, LATE IN STAGE 2.
- CONSTRUCT WIDENING ON TH 61.
- CONSTRUCT CHURCH ACCESS AND PARKING LOT.
- CONSTRUCT DRAINAGE SYSTEMS AS SHOWN.
- CONSTRUCT THE TRAFFIC CONTROL SIGNAL SYSTEMS AT THE FOLLOWING INTERSECTIONS: CSAH 14/OTTER LAKE ROAD, CSAH 8/VICTOR HUGO BOULEVARD, AND CSAH 8/TH 61.
- INSTALL PERMANENT SIGNING AND STRIPING ON TH 61 AT THE END OF STAGE 2.
- PROPOSED SANITARY SEWER AND WATERMAIN TO BE CONSTRUCTED IN THIS STAGE ARE NOT SHOWN. STAGING OF THESE UTILITIES WILL BE DETERMINED IN THE FIELD AND APPROVED BY THE ENGINEER.
- REVISE TEMPORARY SIGNAL SYSTEM.

**STAGE 2 - TRAFFIC**

- UTILIZE THE PORTIONS OF CSAH 14 AND CSAH 8 AND BYPASS C CONSTRUCTED IN STAGE 1 FOR 2-WAY TRAFFIC OPERATIONS.
- MAINTAIN ACCESS AT E.B. STA. 31+80 AND 33+35.
- CLOSE ACCESS TO VICTOR PATH.
- MAINTAIN TRAFFIC ON OTHER INPLACE ROADWAYS.

DRAWN BY: SJS  
 CHECKED BY: BDP

CERTIFIED BY *[Signature]* LIC. NO. 20880 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER


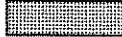
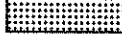





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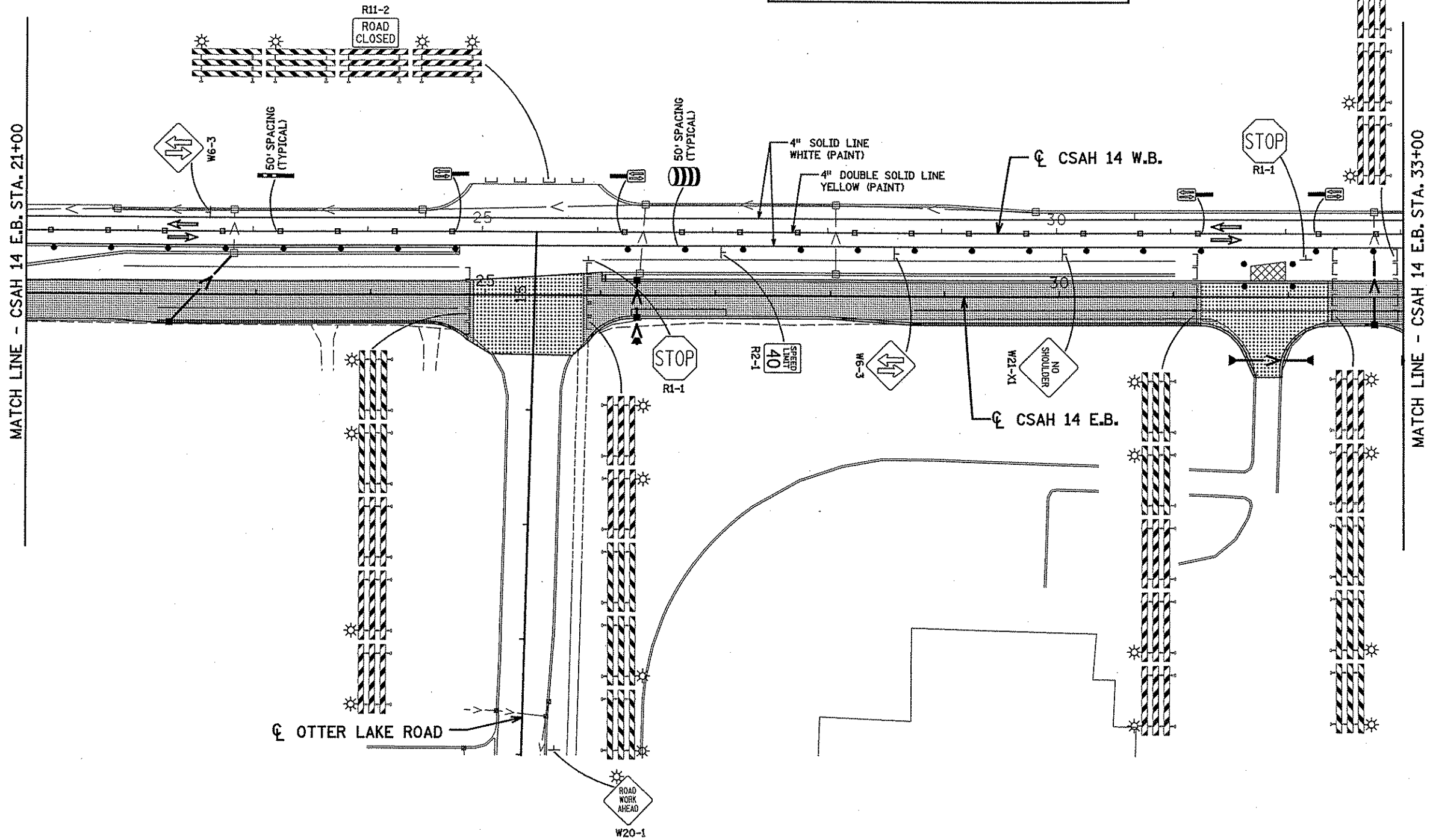
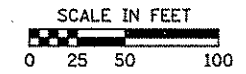
CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN  
 STAGE 2 - STA. 12+00 TO STA. 21+00

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 41 of 296 Sheets

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

**LEGEND**

-  TEMPORARY CONSTRUCTION IN THIS STAGE
-  PERMANENT CONSTRUCTION IN THIS STAGE
-  PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE
-  TRAFFIC FLOW IN THIS STAGE
-  RETROREFLECTIVE DRUM
-  TUBE DELINEATOR
-  TYPE A FLASHING WARNING LIGHT
-  SEWER (STORM)



DATE: 8/5/2005 TIME: 1:17:45 PM FILENAME: K:\r-2\wastch\24390\hwy-brdg\hwy\pln-stf\c200802.csj

DRAWN BY: SJS  
CHECKED BY: BDP

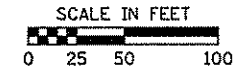
CERTIFIED BY *Scott O. Paulk* LIC. NO. 26880 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

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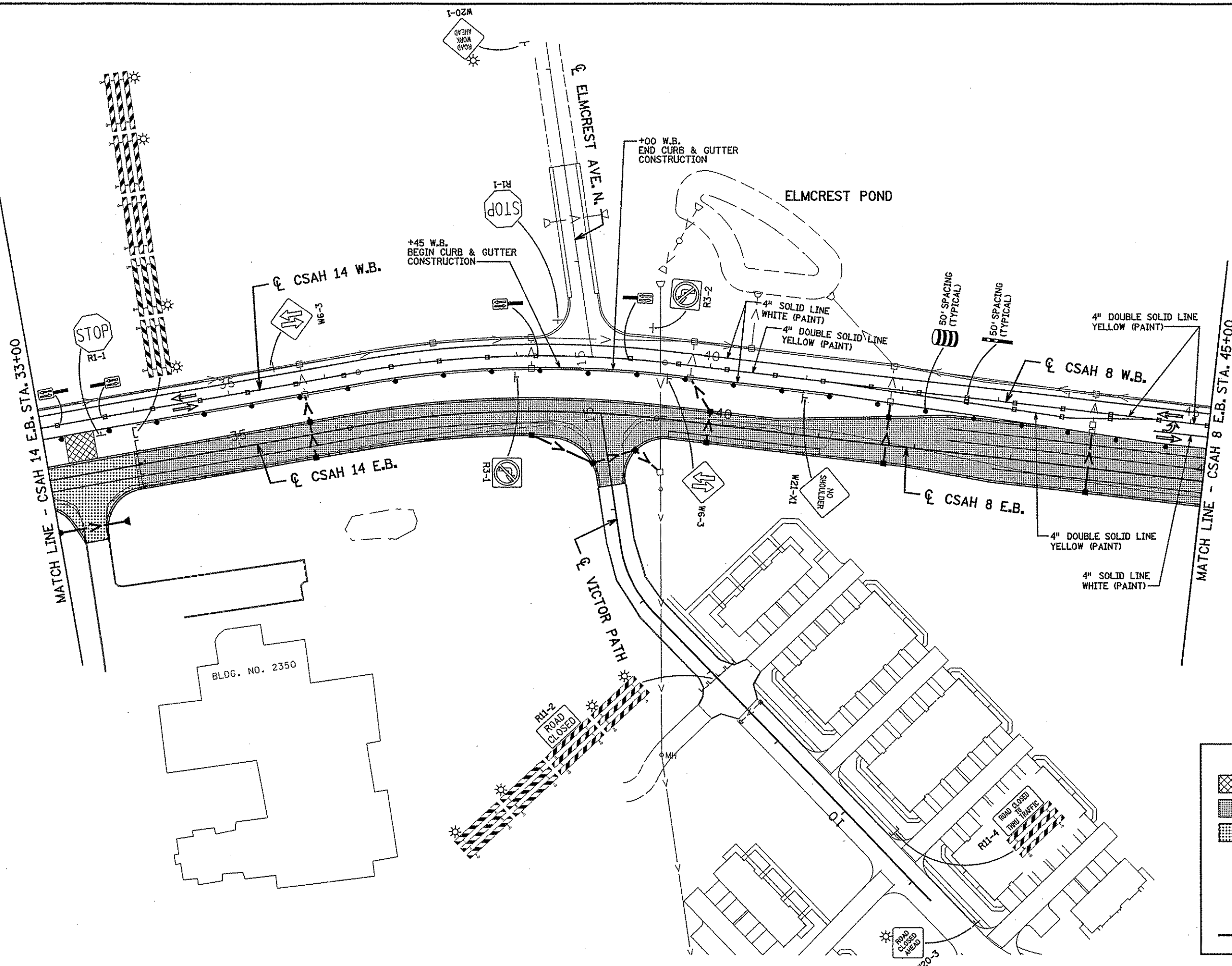
CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN  
STAGE 2 - STA. 21+00 TO STA. 33+00

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 42 of 296 Sheets

DATE: 8/5/2005 TIME: 11:50 PM  
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ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".



LEGEND	
	TEMPORARY CONSTRUCTION IN THIS STAGE
	PERMANENT CONSTRUCTION IN THIS STAGE
	PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE
	TRAFFIC FLOW IN THIS STAGE
	RETROREFLECTIVE DRUM
	TUBE DELINEATOR
	TYPE A FLASHING WARNING LIGHT
	SEWER (STORM)

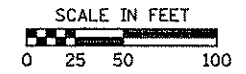
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CERTIFIED BY *Grant J. Pawlik* LIC. NO. 20880 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

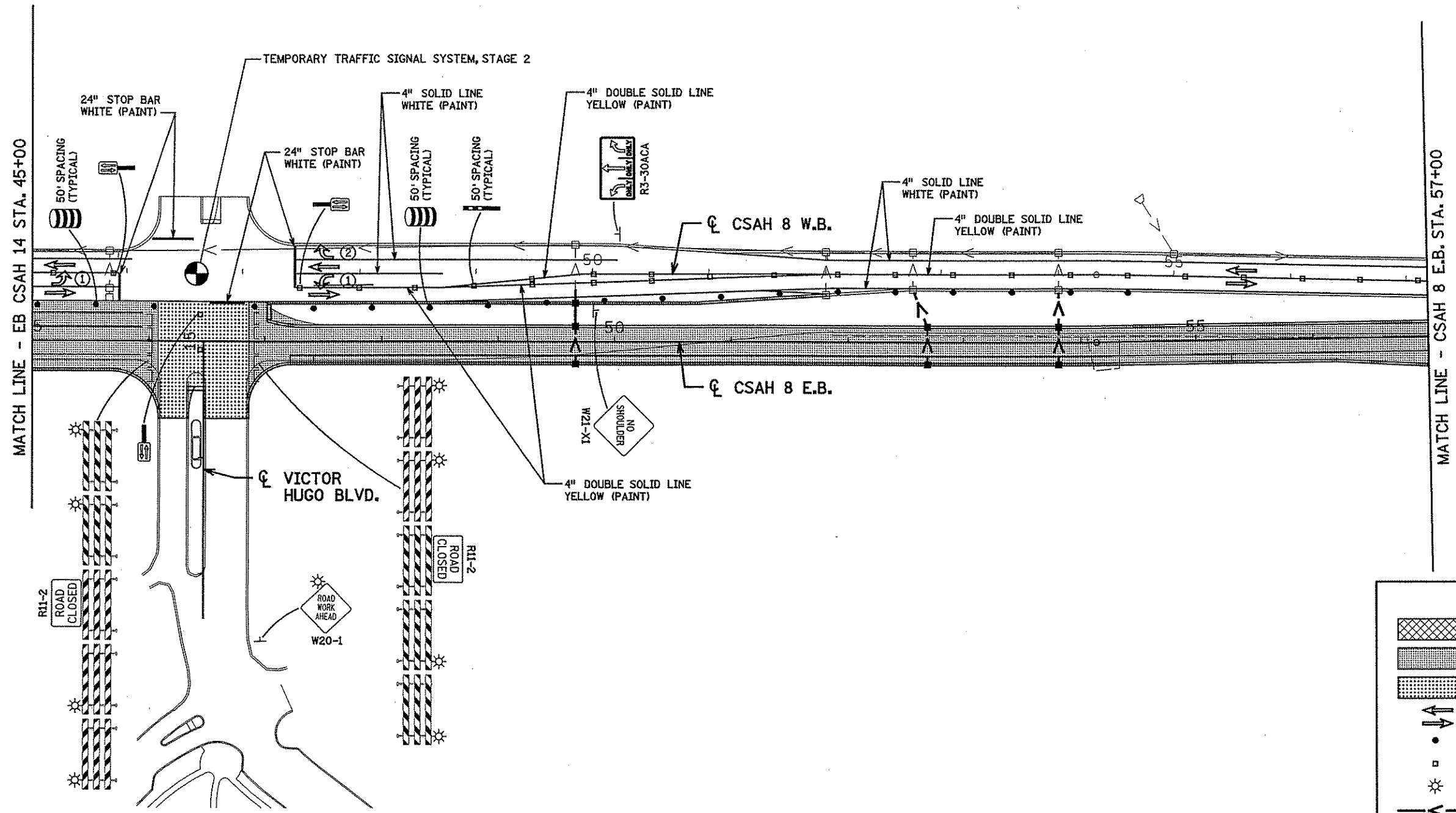
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CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN  
 STAGE 2 - STA. 33+00 TO STA. 45+00

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 43 of 296 Sheets



ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".



LEGEND	
	TEMPORARY CONSTRUCTION IN THIS STAGE
	PERMANENT CONSTRUCTION IN THIS STAGE
	PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE
	TRAFFIC FLOW IN THIS STAGE
	RETROREFLECTIVE DRUM
	TUBE DELINEATOR
	TYPE A FLASHING WARNING LIGHT
	SEWER (STORM)
①	LEFT TURN ARROW (PAINT)..... ↶
②	RIGHT TURN ARROW (PAINT)..... ↷

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DRAWN BY: SJS  
CHECKED BY: BDP

CERTIFIED BY *Brent D. Paulin* LIC. NO. 26880 DATE 8/22/05  
LICENSED PROFESSIONAL ENGINEER

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ENGINEERS - ARCHITECTS - PLANNERS

CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN  
STAGE 2 - STA. 45+00 TO STA. 57+00

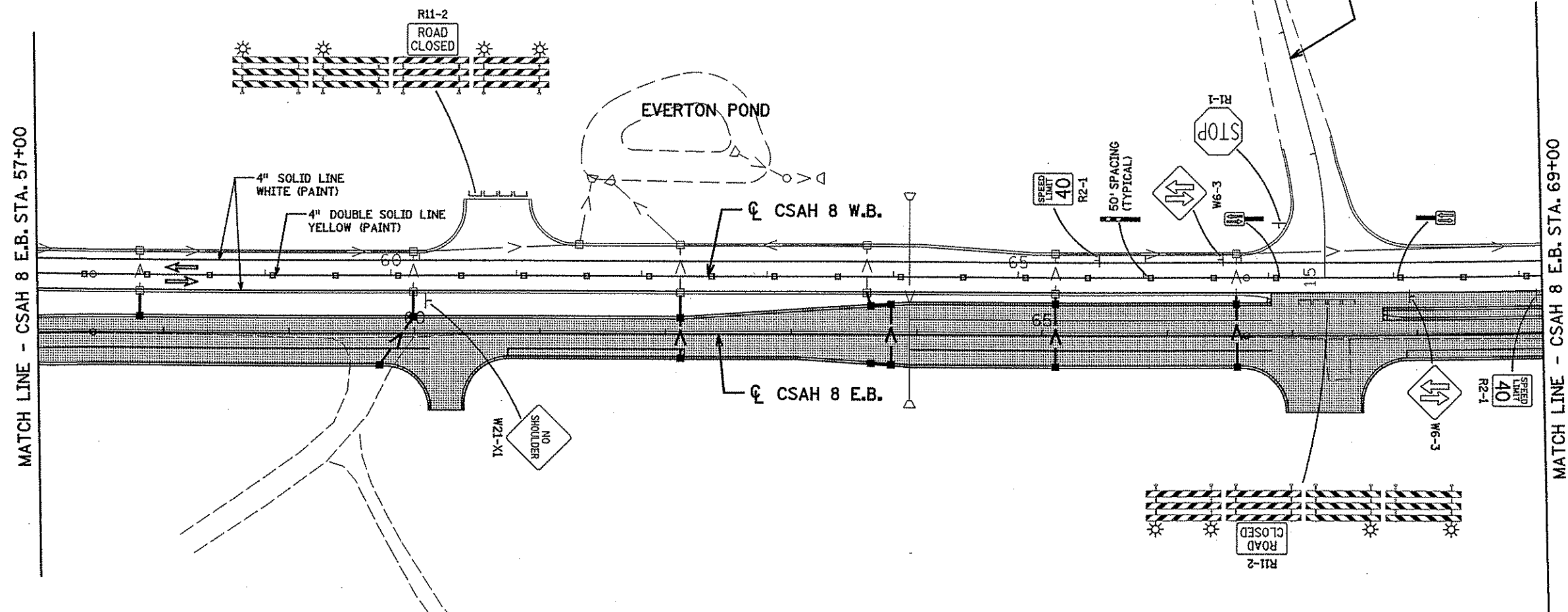
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Sheet No. 44 of 296 Sheets

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SCALE IN FEET  
 0 25 50 100



ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".



LEGEND	
	TEMPORARY CONSTRUCTION IN THIS STAGE
	PERMANENT CONSTRUCTION IN THIS STAGE
	PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE
	TRAFFIC FLOW IN THIS STAGE
	RETROREFLECTIVE DRUM
	TUBE DELINEATOR
	TYPE A FLASHING WARNING LIGHT
	SEWER (STORM)

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 CHECKED BY: BDP

CERTIFIED BY *Grant J. Parker* LIC. NO. 16880 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

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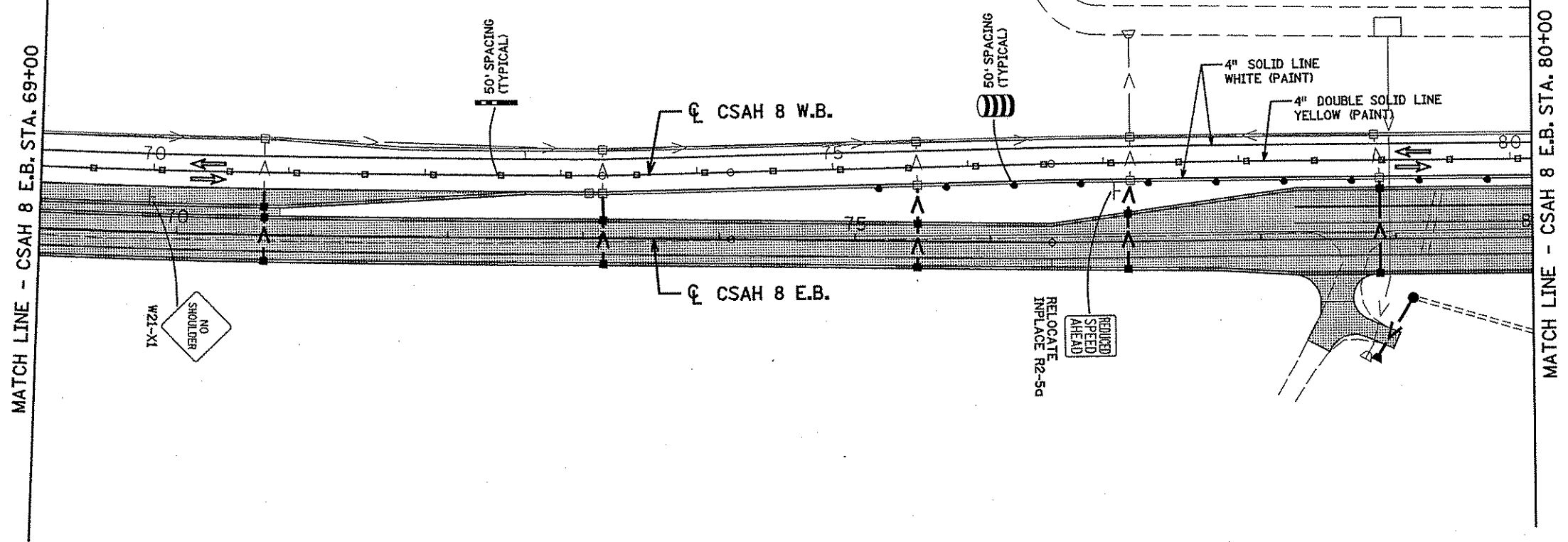
CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN  
 STAGE 2 - STA. 57+00 TO STA. 69+00

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 45 of 296 Sheets

SCALE IN FEET  
0 25 50 100



ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".



LEGEND	
	TEMPORARY CONSTRUCTION IN THIS STAGE
	PERMANENT CONSTRUCTION IN THIS STAGE
	PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE
	TRAFFIC FLOW IN THIS STAGE
	RETROREFLECTIVE DRUM
	TUBE DELINEATOR
	TYPE A FLASHING WARNING LIGHT
	SEWER (STORM)

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CHECKED BY: BDP

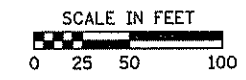
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LICENSED PROFESSIONAL ENGINEER

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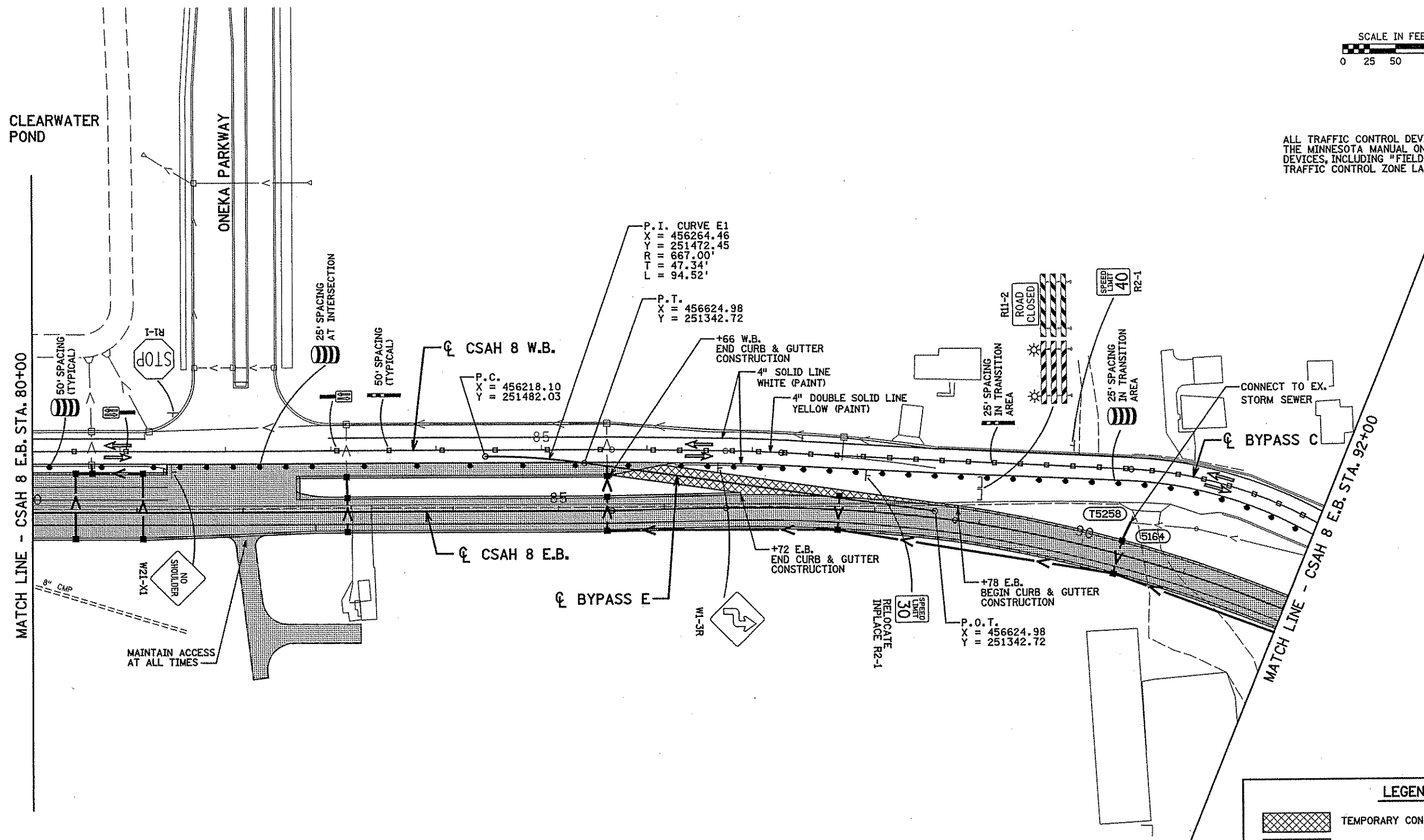
CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN  
STAGE 2 - STA. 69+00 TO STA. 80+00

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 46 of 296 Sheets





ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".



LEGEND	
	TEMPORARY CONSTRUCTION IN THIS STAGE
	PERMANENT CONSTRUCTION IN THIS STAGE
	PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE
	TRAFFIC FLOW IN THIS STAGE
	RETROREFLECTIVE DRUM
	TUBE DELINEATOR
	TYPE A FLASHING WARNING LIGHT
	SEWER (STORM)

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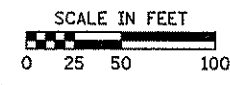
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LICENSED PROFESSIONAL ENGINEER

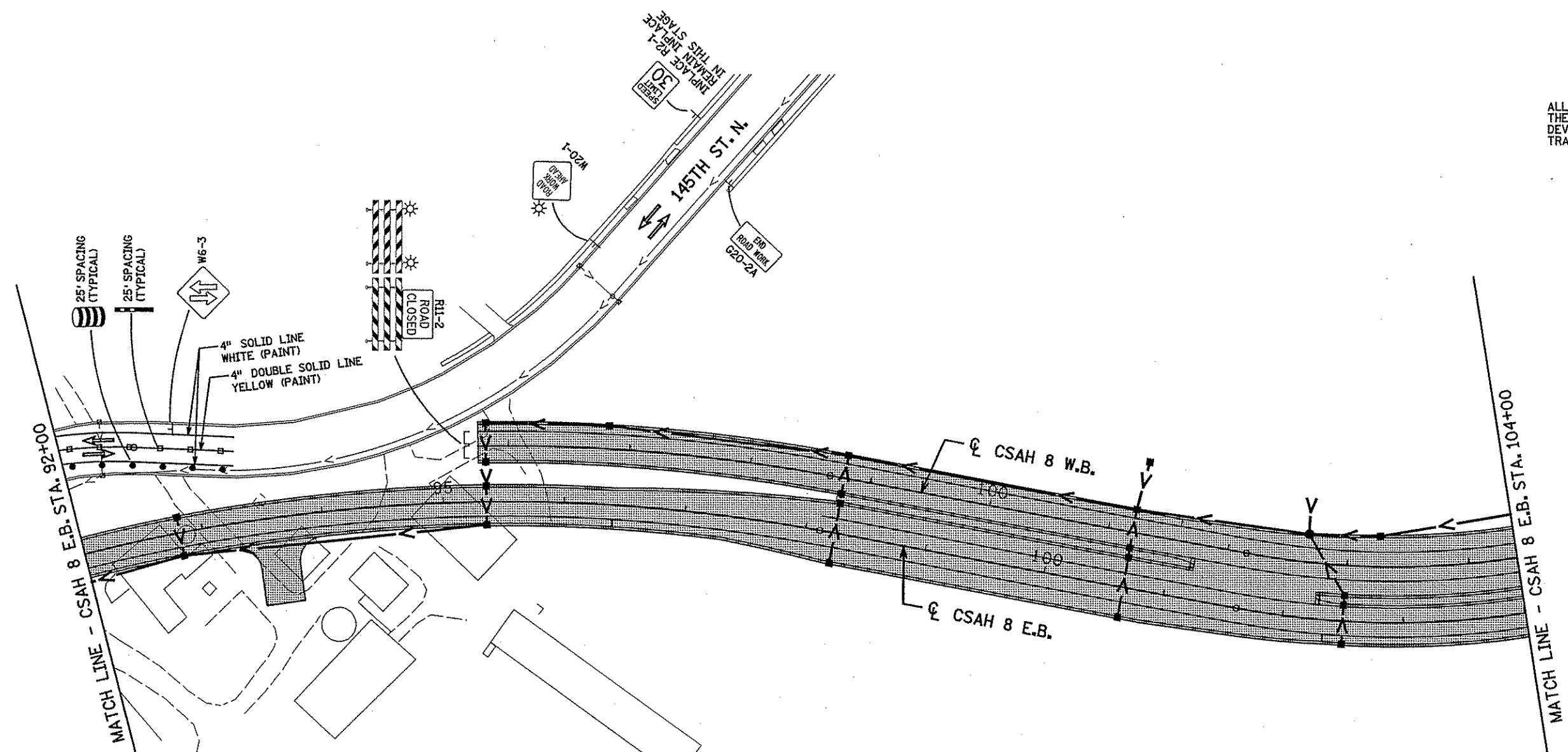
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CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN  
STAGE 2 - STA. 80+00 TO STA. 92+00

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 47 of 296 Sheets



ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".



LEGEND	
	TEMPORARY CONSTRUCTION IN THIS STAGE
	PERMANENT CONSTRUCTION IN THIS STAGE
	PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE
	TRAFFIC FLOW IN THIS STAGE
	RETROREFLECTIVE DRUM
	TUBE DELINEATOR
	TYPE A FLASHING WARNING LIGHT
	SEWER (STORM)

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DRAWN BY: SJS  
CHECKED BY: BDP

CERTIFIED BY *Grant O. Pugh* LIC. NO. 20880 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

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CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN  
STAGE 2 - STA. 92+00 TO STA. 104+00

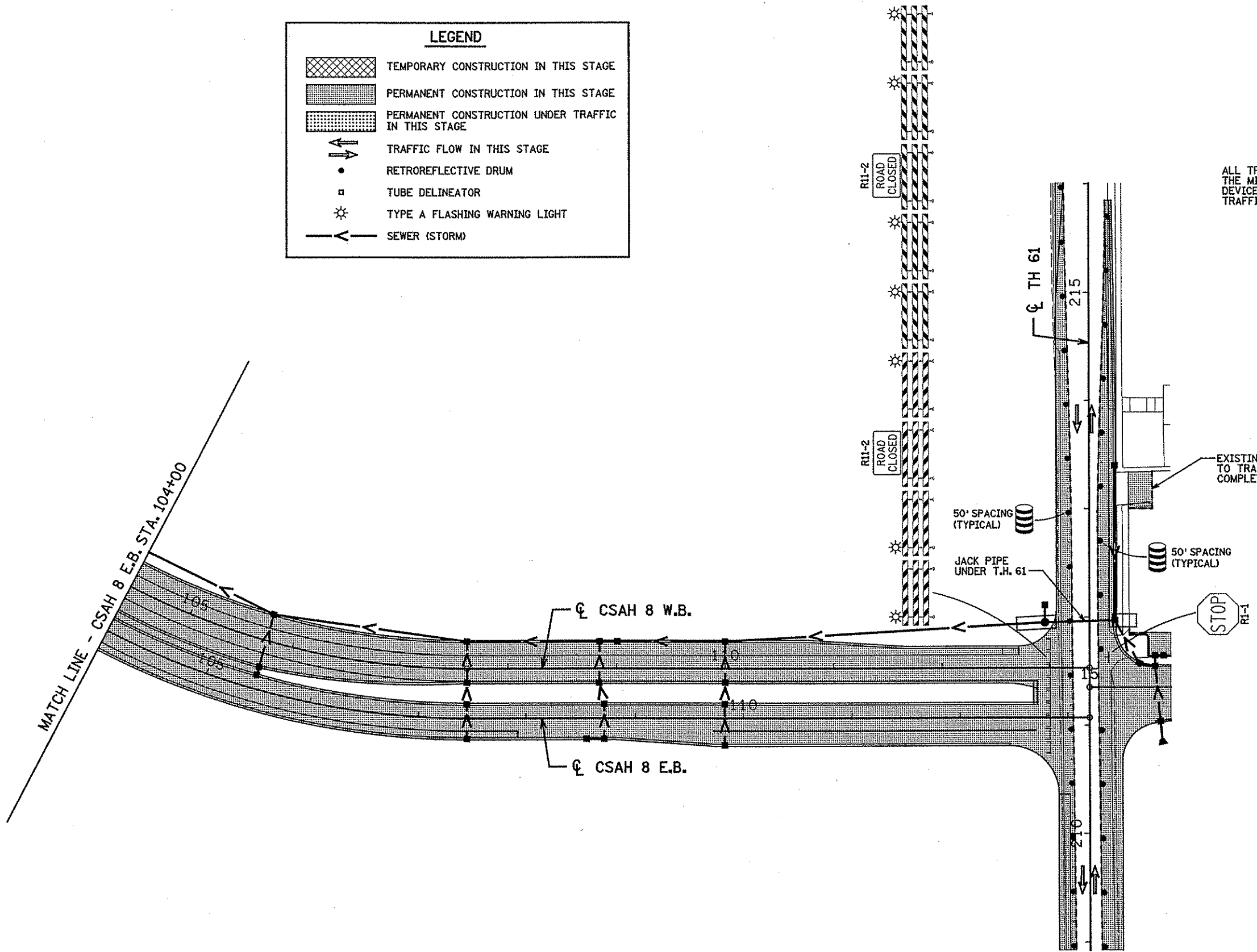
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Sheet No. 48 of 296 Sheets

LEGEND	
	TEMPORARY CONSTRUCTION IN THIS STAGE
	PERMANENT CONSTRUCTION IN THIS STAGE
	PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE
	TRAFFIC FLOW IN THIS STAGE
	RETROREFLECTIVE DRUM
	TUBE DELINEATOR
	TYPE A FLASHING WARNING LIGHT
	SEWER (STORM)

SCALE IN FEET  
0 25 50 100



ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".



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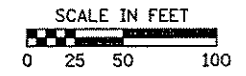
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CERTIFIED BY *Grant J. Pank* LIC. NO. 26880 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

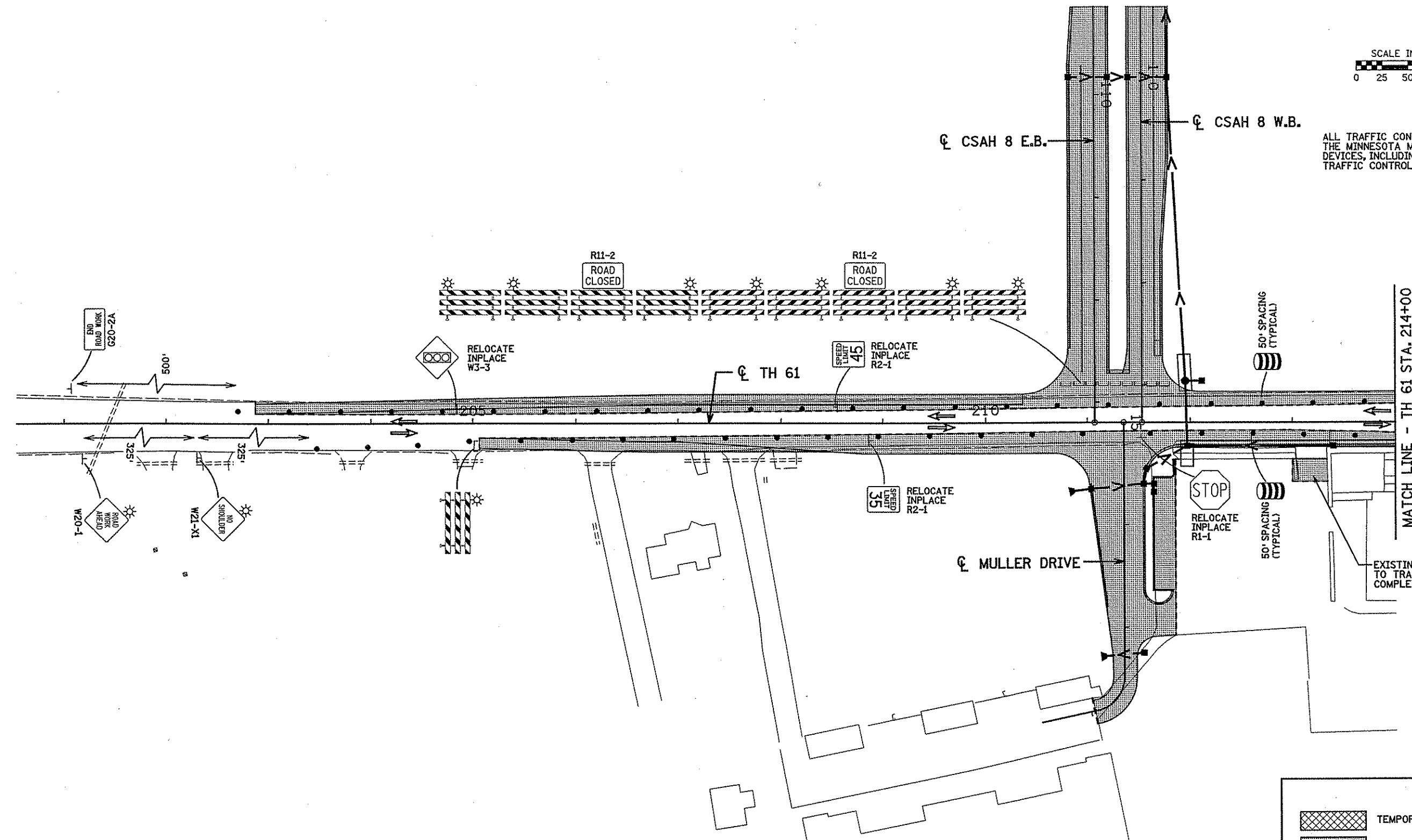
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CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN  
STAGE 2 - STA. 104+00 TO STA. 113+04.20

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 49 of 296 Sheets



ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".



MATCH LINE - TH 61 STA. 214+00

EXISTING ACCESS SHALL REMAIN OPEN TO TRAFFIC UNTIL MULLER DRIVE IS COMPLETED AND OPEN TO TRAFFIC.

LEGEND	
	TEMPORARY CONSTRUCTION IN THIS STAGE
	PERMANENT CONSTRUCTION IN THIS STAGE
	PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE
	TRAFFIC FLOW IN THIS STAGE
	RETROREFLECTIVE DRUM
	TUBE DELINEATOR
	TYPE A FLASHING WARNING LIGHT
	SEWER (STORM)

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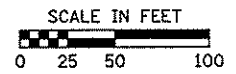
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CERTIFIED BY *Paul O. Paulin* LIC. NO. 210820 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

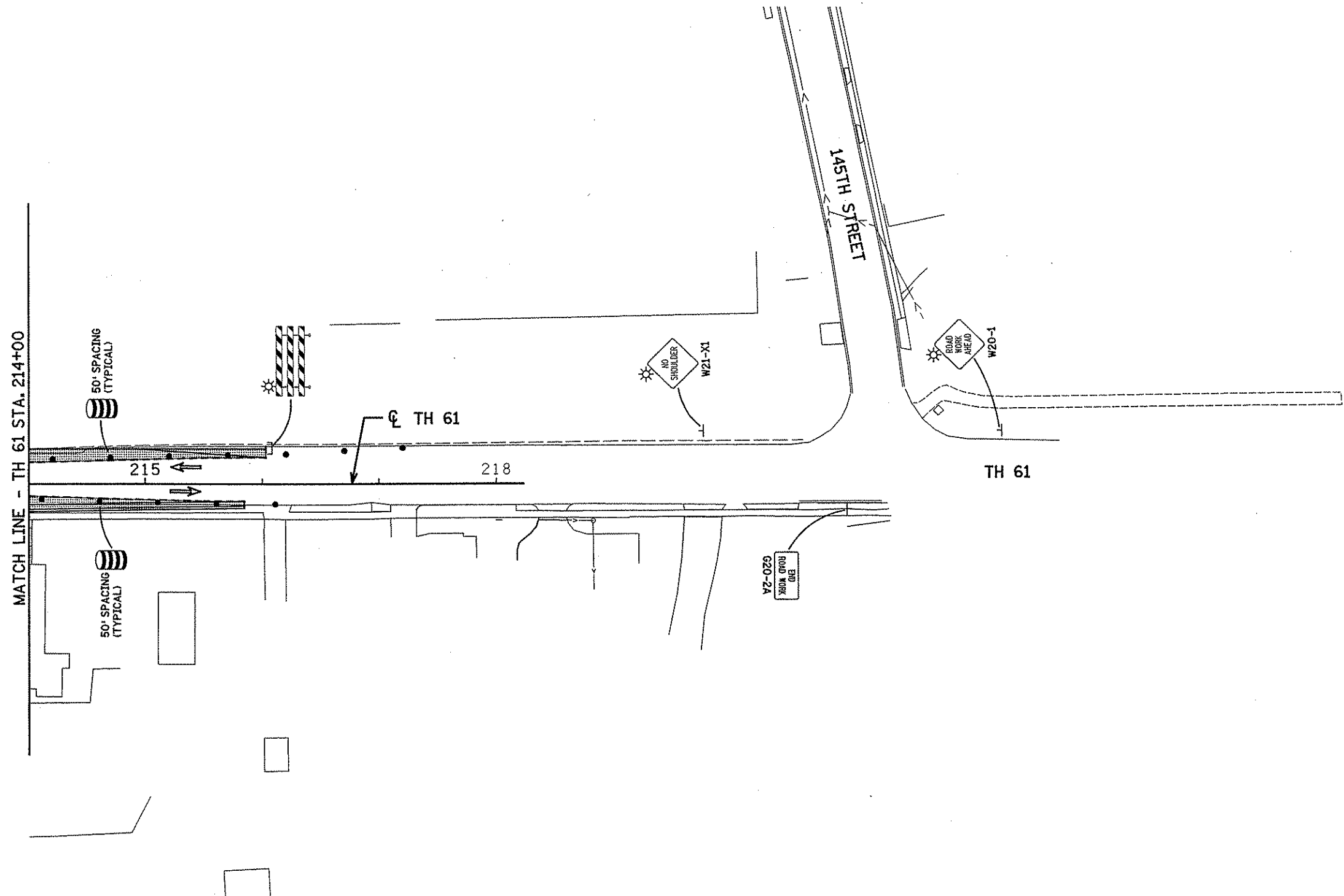
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CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN  
 STAGE 2 - STA. 202+00 TO STA. 214+00

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 50 of 296 Sheets



ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".



LEGEND	
	TEMPORARY CONSTRUCTION IN THIS STAGE
	PERMANENT CONSTRUCTION IN THIS STAGE
	PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE
	TRAFFIC FLOW IN THIS STAGE
	RETROREFLECTIVE DRUM
	TUBE DELINEATOR
	TYPE A FLASHING WARNING LIGHT
	SEWER (STORM)

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DRAWN BY: SJS  
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CERTIFIED BY *Brent O. Pank* LIC. NO. 20890 DATE 8/14/05  
LICENSED PROFESSIONAL ENGINEER









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CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN  
STAGE 2 - STA. 214+00 TO STA. 218+00

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 51 of 296 Sheets

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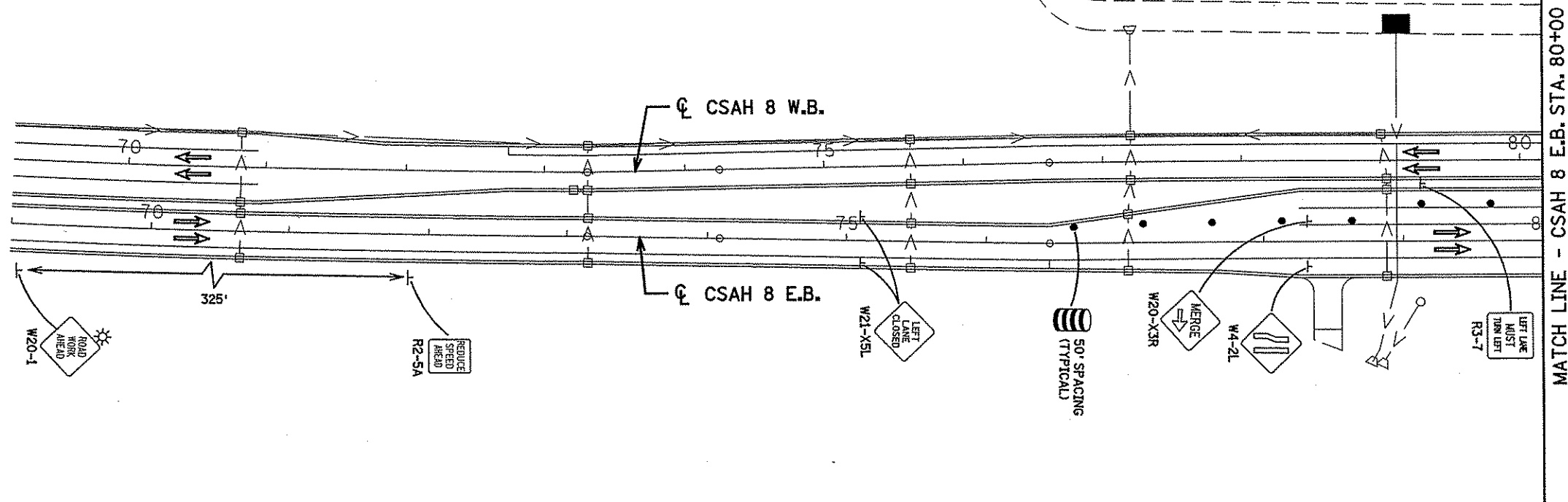
**LEGEND**

-  TEMPORARY CONSTRUCTION IN THIS STAGE
-  PERMANENT CONSTRUCTION IN THIS STAGE
-  PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE
-  TRAFFIC FLOW IN THIS STAGE
-  RETROREFLECTIVE DRUM
-  TUBE DELINEATOR
-  TYPE A FLASHING WARNING LIGHT
-  SEWER (STORM)

SCALE IN FEET  
 0 25 50 100



ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".



**STAGE 3 - TRAFFIC**

UTILIZE THE PORTIONS OF CSAH 14 AND CSAH 8 CONSTRUCTED IN STAGES 1 AND 2 AND BYPASSES E AND F FOR TRAFFIC OPERATIONS.

CLOSE 145TH STREET TO THRU TRAFFIC.

MAINTAIN TRAFFIC ON OTHER INPLACE ROADWAYS.

**STAGE 3 - CONSTRUCTION**

CONSTRUCT CURB AND GUTTER, MEDIAN, AND LEFT TURN LANE FROM CSAH 8 W.B. STA. 41+29 TO 45+93.

CONSTRUCT THE REMAINDER OF W.B. CSAH 8 AS SHOWN ON THE PLANS.

CONSTRUCT CURB AND GUTTER FROM CSAH 14 W.B. STA. 31+04 TO 34+00

CONSTRUCT THE CUL-DE-SAC ON 145TH STREET.

CONSTRUCT DRAINAGE SYSTEMS AS SHOWN.

REMOVE THE TRAFFIC CONTROL SIGNAL SYSTEM AT THE INTERSECTION OF 145TH STREET AND TH 61.

AT THE END OF STAGE 3, REMOVE BYPASS E AND CONSTRUCT CURB AND GUTTER FROM CSAH 8 W.B. STA. 85+66 TO 87+28 AND FROM CSAH 8 E.B. STA. 86+72 TO 88+78.

DRAWN BY: SJS

CHECKED BY: BDP

CERTIFIED BY

*Paul D. Pauler*  
 LICENSED PROFESSIONAL ENGINEER

LIC. NO. 20800

DATE 8/16/05

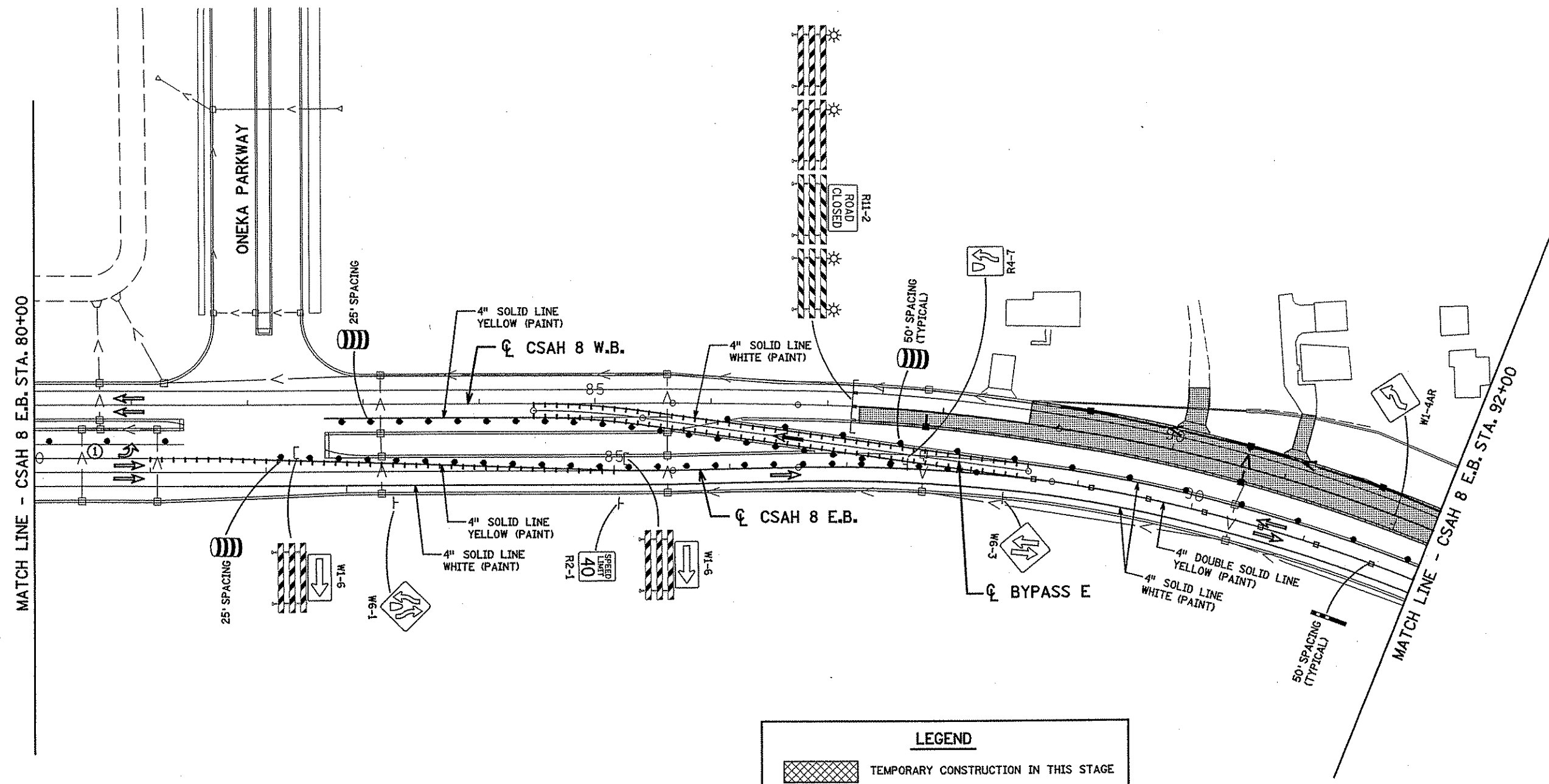
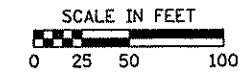
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CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN  
 STAGE 3 - STA. 69+00 TO STA. 80+00

S.P. 02-614-23 S.P. 82-608-07

Sheet No. 52 of 296 Sheets

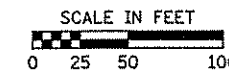




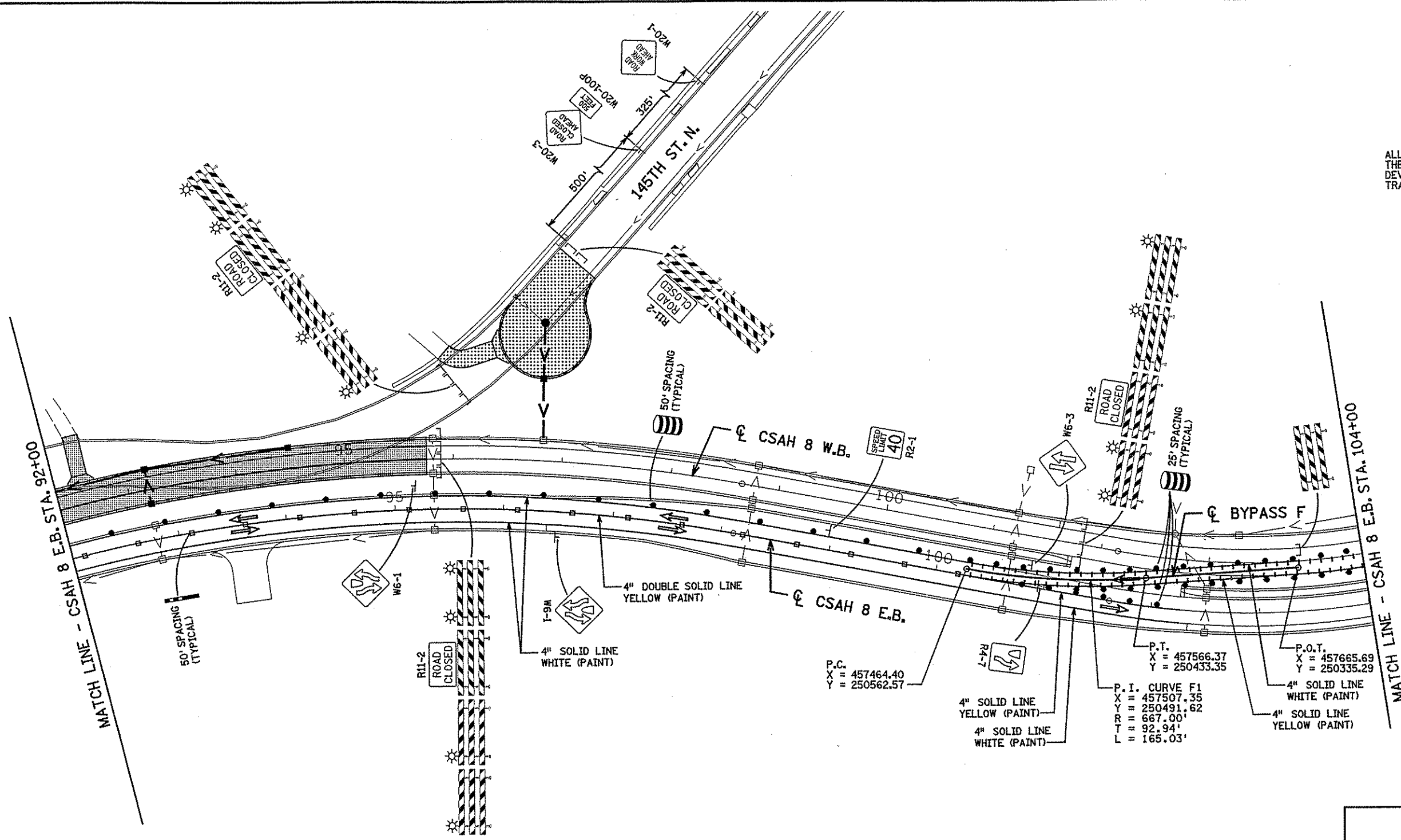
LEGEND	
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	PERMANENT CONSTRUCTION IN THIS STAGE
	PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE
	TRAFFIC FLOW IN THIS STAGE
	RETROREFLECTIVE DRUM
	TUBE DELINEATOR
	TYPE A FLASHING WARNING LIGHT
	SEWER (STORM)
	TRPM (10' SPACING)
	LEFT TURN ARROW (PAINT).....

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

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ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".



LEGEND	
	TEMPORARY CONSTRUCTION IN THIS STAGE
	PERMANENT CONSTRUCTION IN THIS STAGE
	PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE
	TRAFFIC FLOW IN THIS STAGE
	RETROREFLECTIVE DRUM
	TUBE DELINEATOR
	TYPE A FLASHING WARNING LIGHT
	SEWER (STORM)
	TRPM (10' SPACING)

DATE: 8/15/2005 TIME: 10:49 PM FILENAME: K:\r-2\Wkst\CT\N24390\hwy-br-dg\hwy-plr-stf-c200802.dwg

DRAWN BY: SJS  
CHECKED BY: BDP

CERTIFIED BY *Grant O. Paul* LIC. NO. 210820 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER









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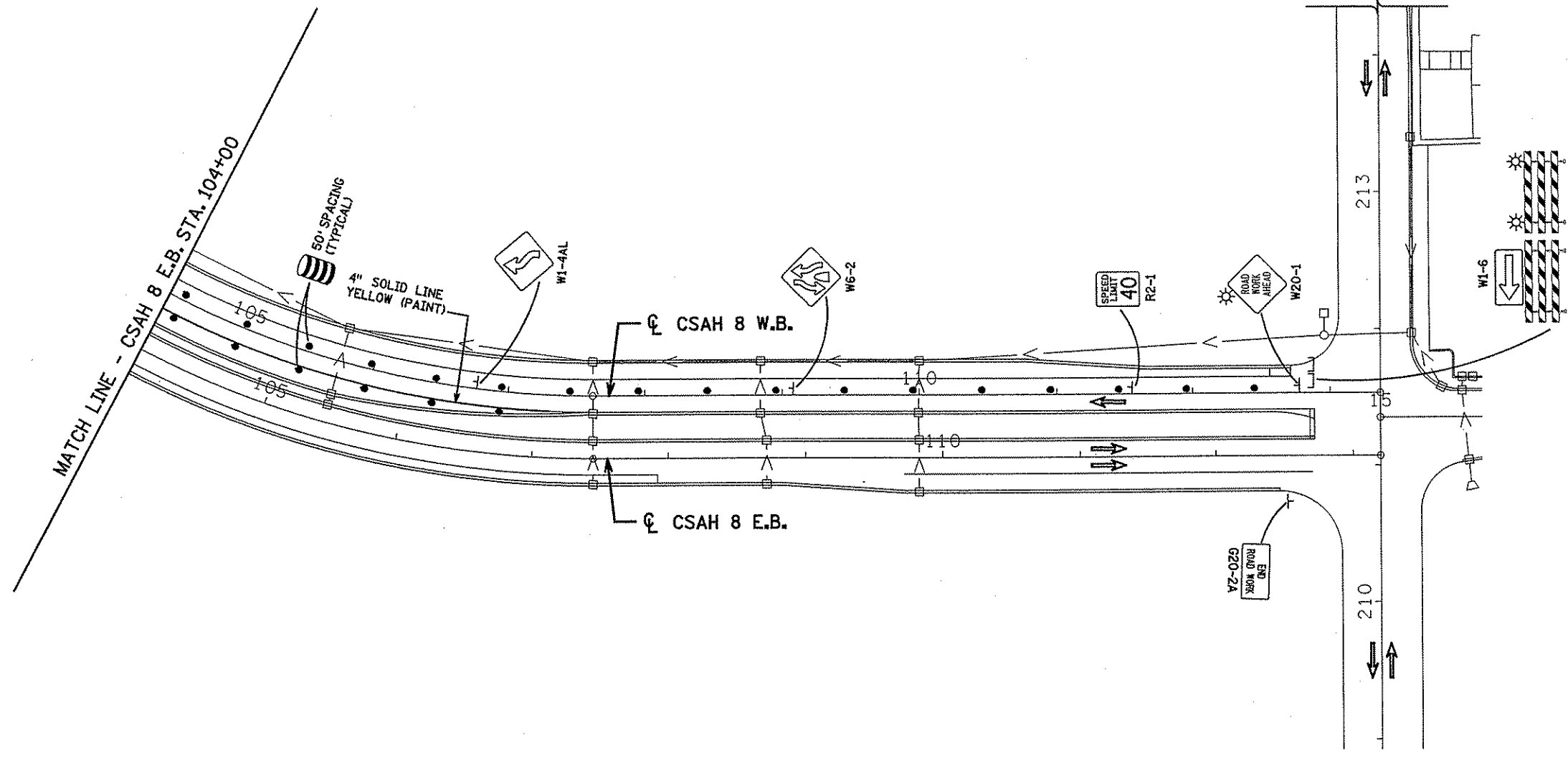
CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN  
STAGE 3 - STA. 92+00 TO STA. 104+00

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 54 of 296 Sheets

DATE: 8/5/2005 TIME: 11:52 PM  
 FILENAME: K:\r-z\wastch\N24390\hwy-brdg\hwy\p1r-s\c200802.csw

**LEGEND**

-  TEMPORARY CONSTRUCTION IN THIS STAGE
-  PERMANENT CONSTRUCTION IN THIS STAGE
-  PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE
-  TRAFFIC FLOW IN THIS STAGE
-  RETROREFLECTIVE DRUM
-  TUBE DELINEATOR
-  TYPE A FLASHING WARNING LIGHT
-  SEWER (STORM)



ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

DRAWN BY: SJS  
 CHECKED BY: BDP

CERTIFIED BY *Grant O. Pauls* LIC. NO. 20880 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

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CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN  
 STAGE 3 - STA. 104+00 TO STA. 113+04.20

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 55 of 296 Sheets

DATE: 8/10/2005 TIME: 4:02:58 PM  
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TRAFFIC CONTROL DEVICES						
SIGN OR DEVICE	SIGN NO.	COLOR	SIZE	STAGES 1A, 1B, 1C	STAGE 2	STAGE 3
				EACH	EACH	EACH
	G20-2A	BLACK ON ORANGE	48" x 24"	2	4	1
	R1-1	WHITE ON RED	30" x 30"	3	7	0
	R1-4	WHITE ON RED	18" x 6"	5	4	0
	R2-1	BLACK ON WHITE	24" x 30"	6	5	3
	R2-5A	BLACK ON WHITE	24" x 30"	0	0	1
	R3-1	BLACK & RED ON WHITE	36" x 36"	0	1	0
	R3-2	BLACK & RED ON WHITE	36" x 36"	0	1	0
	R3-7	BLACK ON WHITE	30" x 30"	0	0	1
	R3-30AC	BLACK ON WHITE	36" x 30"	1	0	0
	R3-30ACA	BLACK ON WHITE	54" x 30"	0	1	0
	R4-7	BLACK ON WHITE	24" x 30"	0	0	2
	R6-1R	BLACK ON WHITE	36" x 12"	4	0	0
	R11-2	BLACK ON WHITE	48" x 30"	8	10	5
	R11-4	BLACK ON WHITE	60" x 30"	0	1	1
	TC-1	BLACK ON ORANGE	SEE DETAIL	0	0	1
	W1-3	BLACK ON ORANGE	48" x 48"	0	1	0
	W1-4AL	BLACK ON ORANGE	48" x 48"	0	1	1
	W1-4AR	BLACK ON ORANGE	48" x 48"	0	0	1
	W1-6	BLACK ON ORANGE	48" x 24"	0	0	3

TRAFFIC CONTROL DEVICES						
SIGN OR DEVICE	SIGN NO.	COLOR	SIZE	STAGES 1A, 1B, 1C	STAGE 2	STAGE 3
				EACH	EACH	EACH
	W3-1A	RED, WHITE ON YELLOW	48" x 48"	1	1	0
	W4-2L	BLACK ON ORANGE	48" x 48"	0	0	1
	W6-1	BLACK ON ORANGE	48" x 48"	0	0	4
	W6-3	BLACK ON ORANGE	48" x 48"	2	7	2
	W20-1	BLACK ON ORANGE	48" x 48"	8	9	3
	W20-3	BLACK ON ORANGE	48" x 48"	0	1	1
	W20-100P	BLACK ON ORANGE	42" x 24"	0	0	1
	W20-X3R	BLACK ON ORANGE	48" x 48"	0	0	1
	W20-X6	BLACK ON ORANGE	48" x 48"	0	1	0
	W21-X1	BLACK ON ORANGE	48" x 48"	12	9	0
	W21-X5L	BLACK ON ORANGE	48" x 48"	0	0	1
	TYPE III BARRICADE	ORANGE ON WHITE	8 FOOT	30	76	24
	FLASHER TYPE A (LOW INTENSITY)	AMBER		37	78	20
	REFLECTOR DRUM	ORANGE ON WHITE		344	209	138
	TUBE DELINEATOR			160	179	24
	OPPOSING TRAFFIC LANE DIVIDER	BLACK ON ORANGE	12" x 18"	17	16	0
	TRPM'S	YELLOW	EACH	0	0	151

**GENERAL NOTES:**

- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE INSTALLED IN ACCORDANCE WITH THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MNMUTCD) AND "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
- FIELD CONDITIONS MAY REQUIRE MODIFICATIONS OF LAYOUTS AS DEEMED NECESSARY BY THE ENGINEER.
- ALL DISTANCES ARE APPROXIMATE.
- BARRICADES ARE 8 FOOT TYPE III AND SHALL BE REFLECTORIZED ON BOTH SIDES.
- OBLITERATING ANY CONFLICTING PAVEMENT MARKINGS SHALL BE INCIDENTAL TO TEMPORARY STRIPING.
- ALL TRAFFIC CONTROL DEVICES ON ROADS OPEN TO TRAFFIC THAT ARE NOT CONSISTENT WITH TRAFFIC OPERATIONS SHALL BE COVERED, REMOVED, OR REVISED (INCIDENTAL TO TRAFFIC CONTROL).
- THE CONTRACTOR IS RESPONSIBLE FOR EXTRA SIGNING NEEDED TO FACILITATE TRAFFIC SWITCHES OR FOR TRANSITIONING TRAFFIC FROM ONE STAGE TO ANOTHER.
- THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ANY WORK AREAS NEAR TRAFFIC IN ACCORDANCE WITH THE MNMUTCD INCLUDING THE "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
- THE CONTRACTOR SHALL COORDINATE THE PERMANENT SIGNING SO THAT THE INSTALLATION OF THE PERMANENT SIGNS IS COMPLETED BEFORE THE ROADWAYS ARE OPEN TO TRAFFIC.
- IF THE CONTRACTOR DESIRES TO PERFORM WORK IN A SEQUENCE OTHER THAN SHOWN IN THE PLANS, THE CONTRACTOR SHALL SUBMIT THE PROPOSED CHANGES, IN WRITING, TO THE ENGINEER FOR APPROVAL AT LEAST 10 WORKING DAYS PRIOR TO THE COMMENCEMENT OF THE WORK. IF THE SEQUENCE OF CONSTRUCTION CHANGES ARE APPROVED AND THE CHANGES RESULT IN CHANGES TO THE TRAFFIC CONTROL, THE CONTRACTOR SHALL SUBMIT, IN WRITING, REVISED TRAFFIC CONTROL PLANS TO THE ENGINEER FOR APPROVAL AT LEAST 14 DAYS PRIOR TO IMPLEMENTING THE TRAFFIC CONTROL.
- SEE SIGNING DETAIL SHEETS FOR TYPICAL ERECTION DETAILS (FOR SIGNS TYPES "C & D").
- ALL DRUMS, BARRICADES, AND SIGNS SHALL BE RETRO-REFLECTIVE.
- THE DEVICES IN THIS TRAFFIC CONTROL PLAN SHALL BE FURNISHED, INSTALLED AND MAINTAINED UNLESS OTHERWISE NOTED.

**SIGNING:**

- WHEN SIGNS ARE INSTALLED, THEY SHALL BE MOUNTED AT THE PROPER HEIGHT AND LATERAL OFFSET AS DETAILED IN THE MNMUTCD.
- ALL ORANGE SIGNS SHALL BE MADE OF DIAMOND GRADE ORANGE REFLECTIVE SHEETING OR AN APPROVED SUBSTITUTE.
- LONGITUDINAL DROP OFFS SHALL BE SIGNED AS SHOWN ON PAGES 6K-100 THROUGH 6K-102 OF THE "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS" UNLESS OTHERWISE SPECIFIED IN THESE PLANS.
- REMOVAL OF EXISTING SIGNS SHALL BE COORDINATED WITH THE REMOVAL PLANS. ANY CONFLICTING SIGNS SHALL BE REMOVED.
- THE REMOVAL OF THE TEMPORARY SIGNS WILL BE COORDINATED TO ASSURE THAT THE FINAL SIGNS ARE INSTALLED AS NEEDED, OR TEMPORARY SIGNING WILL BE PROVIDED UNTIL THE FINAL SIGNING IS INSTALLED.
- EXISTING SIGNS MAY BE RE-USED FOR CONSTRUCTION SIGNING.

**NOTES:**

- QUANTITIES SHOWN ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE NOT TO BE USED FOR PAY ITEMS.
- ALL TRAFFIC CONTROL ITEMS SHALL BE INCLUDED IN THE LUMP SUM BID FOR TRAFFIC CONTROL.

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

DRAWN BY: SJS

CHECKED BY: BDP

CERTIFIED BY *Scott D. Paul* LIC. NO. 70800 DATE 8/10/05  
 LICENSED PROFESSIONAL ENGINEER

**TKDA**  
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CONSTRUCTION STAGING AND TRAFFIC CONTROL  
 TABULATION AND NOTES

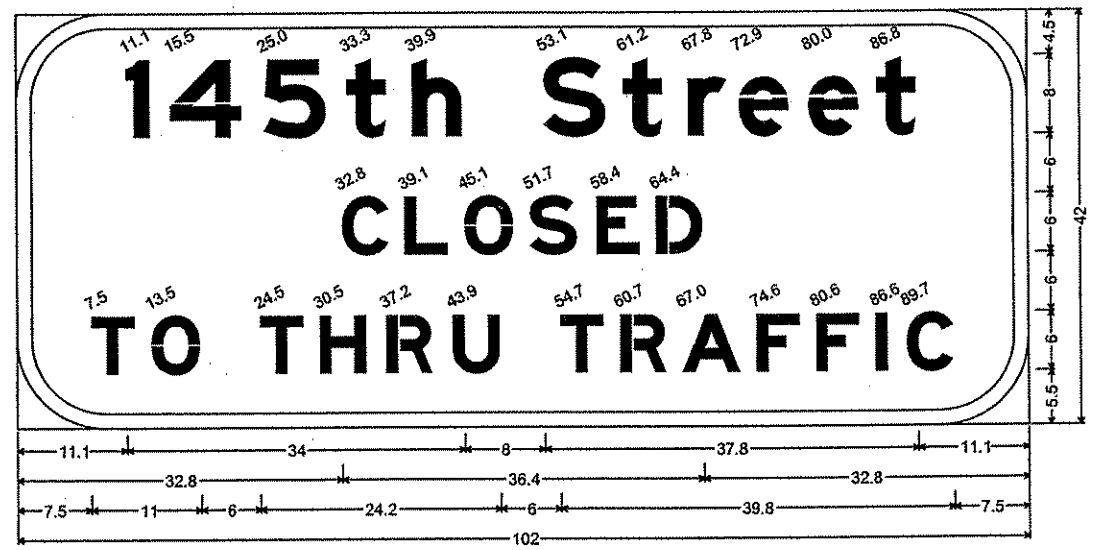
S.P. 02-614-23 S.P. 82-608-07

Sheet No. 56 of 296 Sheets

TEMPORARY STRIPING - TAB O																		
COST PARTICIPATION	STATION TO STATION	4" SOLID LINE WHITE (PAINT)			4" SOLID LINE YELLOW (PAINT)			4" DOUBLE LINE YELLOW (PAINT)			PAVEMENT MESSAGE (LEFT ARROW) (PAINT)			PAVEMENT MESSAGE (RIGHT ARROW) (PAINT)				
		STAGE			STAGE			STAGE			STAGE			STAGE				
		1A,1B,1C	2	3	1A,1B,1C	2	3	1A,1B,1C	2	3	1A,1B,1C	2	3	1A,1B,1C	2	3		
		LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	EACH	EACH	EACH	EACH	EACH
(A)	CSAH 14 EB 12+00 TO 21+00	1411	1423							1488	1378							
(A)	CSAH 14 EB 21+00 TO 33+00	2400	2400							2400	2400							
(A)	CSAH 14 EB 33+00 TO 38+74.71	1256	1116							1256	1152							
(W)	CSAH 8 EB 38+74.71 TO 45+00	1146	1283							1146	1282							
(W)	CSAH 8 EB 45+00 TO 57+00	2400	1921							2400	2400	2	2				1	
(W)	CSAH 8 EB 57+00 TO 69+00	2400	2184							2400	2400							
(W)	CSAH 8 EB 69+00 TO 80+00	2200	1840							2200	2200							
(W)	CSAH 8 EB 80+00 TO 92+00	2450	1806	1845				1378	2450	2452	648							
(W)	CSAH 8 EB 92+00 TO 104+00	287	290	2155				367	286	288	2050							
(W)	CSAH 8 EB 104+00 TO 113+04.20							295										
<b>TOTALS</b>		15950	14243	4000				2040	16026	15962	2698	2	2				1	

SUMMARY																			
ANOKA COUNTY S.P. 02-614-23		10006									10074								
WASHINGTON COUNTY S.P. 82-608-07		24187						2040			24612			4			1		
<b>PROJECT TOTAL</b>		34193						2040			34686			4			1		

**COST PARTICIPATION NOTES:**  
 (A) 100% ANOKA COUNTY S.P. 02-614-23 QUANTITY.  
 (W) 100% WASHINGTON COUNTY S.P. 82-608-08 QUANTITY.



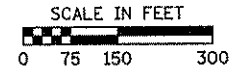
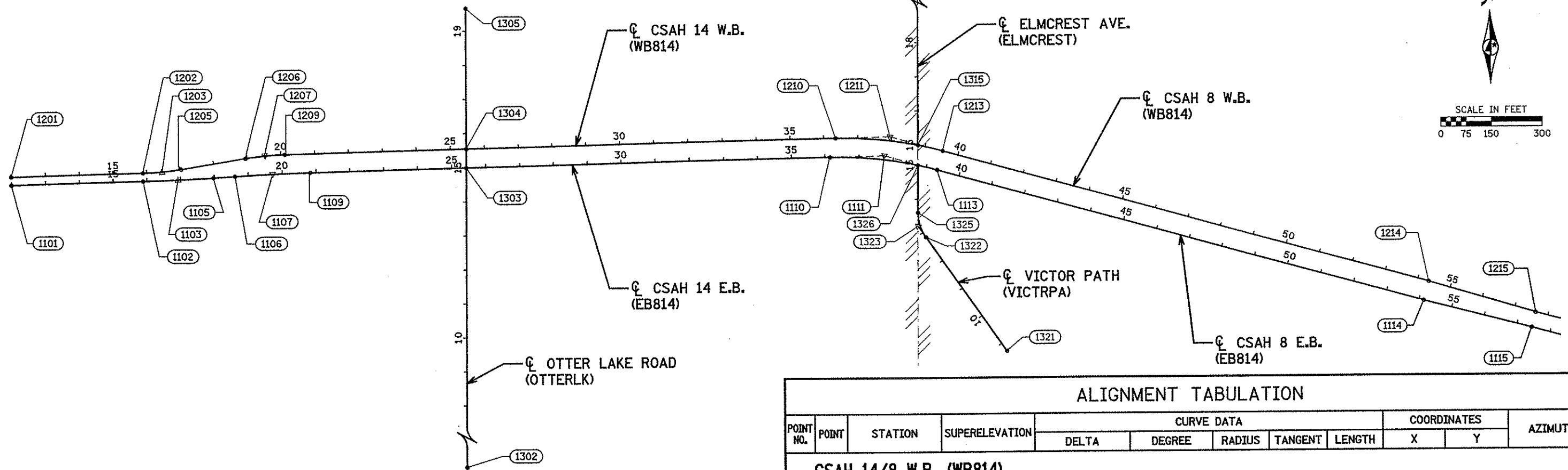
76; 9.0" Radius, 1.5" Border, Black on Orange;  
 [145th Street] E Mod; [CLOSED] E Mod; [TO THRU TRAFFIC] E Mod;

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

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ANOKA COUNTY

WASHINGTON COUNTY



ALIGNMENT TABULATION

POINT NO.	POINT	STATION	SUPERELEVATION	CURVE DATA					COORDINATES		AZIMUTH
				DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
<b>CSAH 14/8 E.B. (EB814)</b>											
1101	POT	12+00.00							449,121.156	252,507.893	88° 32' 16.58"
1102	PC	15+88.80						449,509.828	252,517.813		
1103	PI	16+92.80	0.020	2° 04' 47.46" LT	1° 00' 00.00"	5,729.578'	104.004'	207.985'	449,613.798	252,520.467	
1104	CC								449,363.638	258,245.526	86° 27' 29.12"
1105	PT	17+96.78							449,717.603	252,526.892	
1106	PC	18+60.79							449,781.485	252,530.846	
1107	PI	19+71.85	0.020	2° 13' 15.71" RT	1° 00' 00.00"	5,729.578'	111.065'	222.103'	449,892.338	252,537.708	
1108	CC								450,135.451	246,812.212	88° 40' 44.83"
1109	PT	20+82.89							450,003.374	252,540.268	
1110	PC	36+14.05							451,534.125	252,575.563	
1111	PI	37+74.28	0.060	16° 42' 18.23" RT	5° 15' 00.00"	1,091.348'	160.233'	318.192'	451,694.315	252,579.257	
1112	CC								451,559.283	251,484.505	105° 23' 03.06"
1113	PT	39+32.24							451,848.806	252,536.749	
1114	POT	54+13.64							453,277.130	252,143.747	
1115	POT	57+43.70							453,596.897	252,061.987	104° 20' 33.06"
<b>OTTER LAKE ROAD (OTTERLK)</b>											
1302	POT	1+70.48							450,458.409	251,221.364	0° 12' 35.20"
1303	POT	15+00.00							450,463.276	252,550.872	
1304	POT	15+55.02							450,463.478	252,605.891	
1305	POT	19+66.47							450,464.984	253,017.335	

ALIGNMENT TABULATION

POINT NO.	POINT	STATION	SUPERELEVATION	CURVE DATA					COORDINATES		AZIMUTH
				DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
<b>CSAH 14/8 W.B. (WB814)</b>											
1201	POT	12+00.00							449,120.544	252,531.885	88° 32' 16.58"
1202	PC	15+88.81							449,509.229	252,541.806	
1203	PI	16+45.94	0.060	7° 42' 01.95" LT	6° 45' 00.00"	848.826'	57.127'	114.082'	449,566.337	252,543.263	
1204	CC								449,487.571	253,390.356	80° 50' 14.63"
1205	PT	17+02.89							449,622.736	252,552.360	
1206	PC	18+94.92							449,812.309	252,582.937	
1207	PI	19+53.09	0.060	7° 50' 30.20" RT	6° 45' 00.00"	848.826'	58.178'	116.174'	449,869.744	252,592.201	
1208	CC								449,947.473	251,744.941	88° 40' 44.83"
1209	PT	20+11.09							449,927.906	252,593.542	
1210	PC	36+34.98							451,551.364	252,630.976	
1211	PI	37+95.21	0.060	16° 42' 18.23" RT	5° 15' 00.00"	1,091.348'	160.233'	318.192'	451,711.554	252,634.669	
1212	CC								451,576.522	251,539.917	105° 23' 03.06"
1213	PT	39+53.17							451,866.045	252,592.161	
1214	POT	54+32.66							453,292.517	252,199.669	
1215	POT	57+62.71							453,609.101	252,106.338	106° 25' 32.92"
<b>ELMCREST AVE. (ELMCREST)</b>											
1315	POT	15+00.00							451,793.355	252,609.508	0° 23' 02.18"
1316	POT	27+71.43							451,801.875	253,880.906	
<b>VICTOR PATH (VICTRPA)</b>											
1321	POT	8+72.74							452,051.523	252,002.897	324° 53' 08.06"
1322	PC	12+84.32							451,814.780	252,339.568	
1323	PI	13+24.33	N/A	35° 29' 54.12" RT	45° 50' 11.84"	125.000'	40.011'	77.445'	451,791.766	252,372.297	
1324	CC								451,917.031	252,411.470	
1325	PT	13+61.76							451,792.034	252,412.307	0° 23' 02.18"
1326	POT	15+00.00							451,792.960	252,550.543	

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CERTIFIED BY *Brent O. Pauls* LICENSED PROFESSIONAL ENGINEER

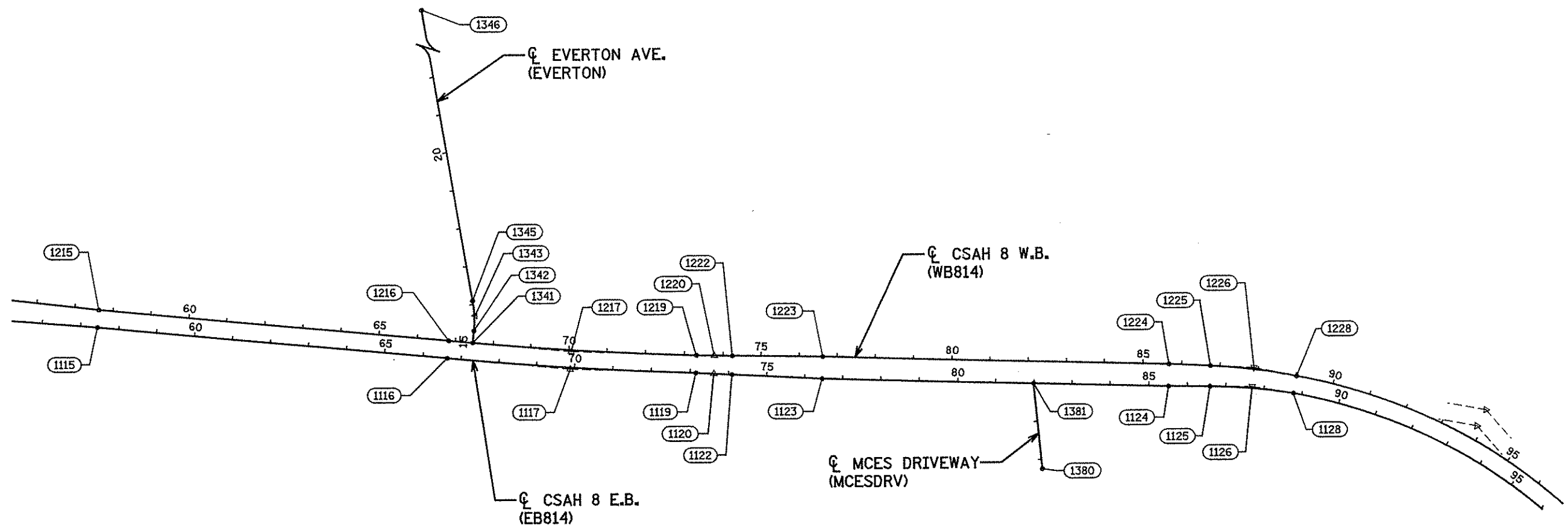
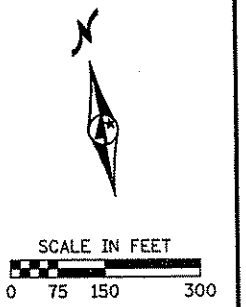
LIC. NO. 26880 DATE 8/15/05

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ALIGNMENT PLAN AND TABULATIONS  
STA. 12+00 TO STA. 58+00

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 58 of 296 Sheets





ALIGNMENT TABULATION

POINT NO.	POINT	STATION	SUPERELEVATION	CURVE DATA					COORDINATES		AZIMUTH
				DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
<b>CSAH 8 E.B. (EB814)</b>											
1115	POT	57+43.70							453,596.897	252,061.987	105° 23' 03.06"
1116	PC	66+63.16							454,483.410	251,818.064	105° 23' 03.06"
1117	PI	69+89.30	NORMAL CROWN	3° 14' 51.13" LT	0° 29' 52.80"	11,505.156'	326.145'	652.115'	454,797.869	251,731.541	102° 08' 11.93"
1118	CC								457,535.613	262,910.975	102° 08' 11.93"
1119	PCC	73+15.27							455,116.724	251,662.971	103° 10' 34.58"
	PCC	73+15.27							455,116.724	251,662.971	103° 10' 34.58"
1120	PI	73+61.92	NORMAL CROWN	0° 27' 53.41" LT	0° 29' 53.62"	11,499.886'	46.649'	93.298'	455,162.145	251,652.337	102° 42' 41.16"
1121	CC								457,738.096	262,860.104	102° 42' 41.16"
1122	PT	74+08.57							455,207.651	251,642.072	102° 42' 49.53"
1123	POT	76+45.52							455,438.791	251,589.924	101° 40' 19.68"
1124	POT	85+50.80							456,325.352	251,406.776	100° 37' 49.81"
1125	PC	86+58.35							456,431.058	251,386.936	100° 36' 44.95"
1126	PI	87+67.87	NORMAL CROWN	8° 56' 52.47" RT	4° 05' 36.00"	1,399.734'	109.521'	218.597'	456,538.706	251,366.765	109° 33' 37.42"
1127	CC								456,173.275	250,011.144	109° 33' 37.42"
1128	PCC	88+76.95							456,641.906	251,330.098	
<b>MCES DRIVEWAY (MCESDRV)</b>											
1380	POT	12+75.00							455,962.724	251,253.719	4° 32' 01.11"
1381	POT	15+00.00							455,980.509	251,478.015	4° 32' 01.11"

ALIGNMENT TABULATION

POINT NO.	POINT	STATION	SUPERELEVATION	CURVE DATA					COORDINATES		AZIMUTH
				DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
<b>CSAH 8 W.B. (WB814)</b>											
1215	POT	57+62.71							453,609.101	252,106.338	105° 23' 03.06"
1216	PC	66+82.17							454,495.614	251,862.415	105° 23' 03.06"
1217	PI	70+07.01	NORMAL CROWN	3° 14' 51.13" LT	0° 30' 00.00"	11,459.156'	324.841'	649.507'	454,808.815	251,776.238	102° 08' 11.93"
1218	CC								457,535.613	262,910.975	102° 08' 11.93"
1219	PCC	73+31.68							455,126.395	251,707.943	101° 05' 34.26"
	PCC	73+31.68							455,126.395	251,707.943	101° 05' 34.26"
1220	PI	73+78.13	NORMAL CROWN	0° 27' 52.19" LT	0° 29' 59.77"	11,460.636'	46.456'	92.911'	455,171.983	251,699.005	100° 37' 42.07"
1221	CC								457,331.416	262,954.456	100° 37' 42.07"
1222	PT	74+24.59							455,217.642	251,690.436	100° 37' 49.82"
1223	POT	76+61.54							455,450.525	251,646.725	101° 40' 19.68"
1224	POT	85+66.82							456,337.086	251,463.577	102° 42' 49.55"
1225	PC	86+74.37							456,442.001	251,439.907	102° 41' 32.21"
1226	PI	87+87.80	NORMAL CROWN	8° 56' 51.50" RT	3° 57' 07.16"	1,449.796'	113.435'	226.409'	456,552.664	251,414.983	111° 38' 23.71"
1227	CC								456,123.459	250,025.538	111° 38' 23.71"
1228	PCC	89+00.78							456,658.104	251,373.152	
<b>EVERTON AVE. (EVERTON)</b>											
1341	POT	15+00.00							454,556.515	251,845.839	15° 23' 02.74"
1342	PC	15+31.45							454,564.858	251,876.160	15° 23' 02.74"
1343	PI	15+70.81	NORMAL CROWN	14° 56' 58.95" LT	19° 05' 54.94"	300.000'	39.362'	78.276'	454,575.300	251,914.111	0° 26' 03.79"
1344	CC								454,275.607	251,955.746	0° 26' 03.79"
1345	PT	16+09.72							454,575.599	251,953.472	0° 26' 03.79"
1346	POT	34+17.10							454,589.301	253,760.798	

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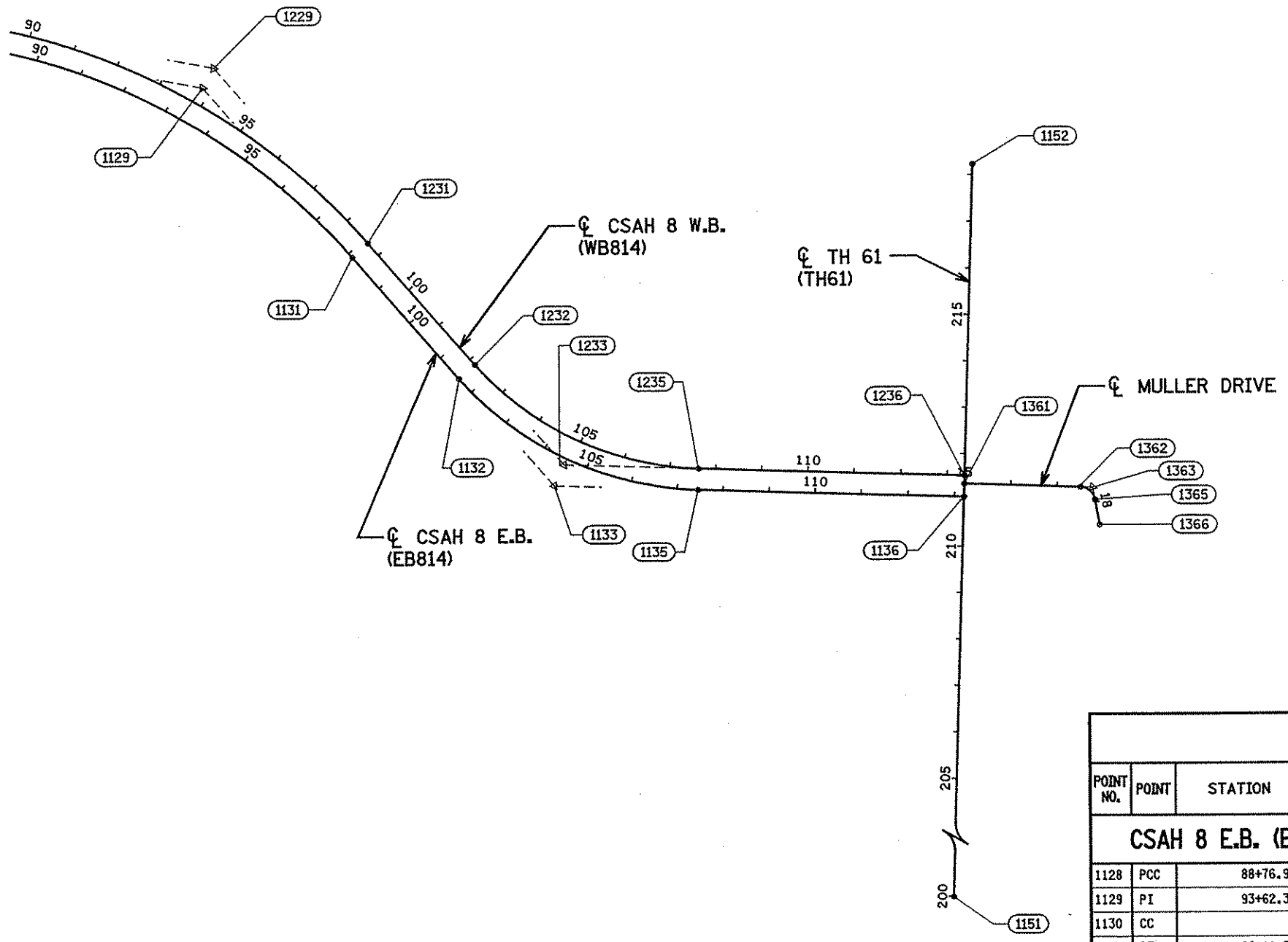
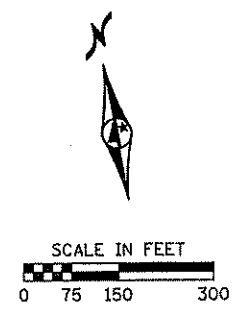
DRAWN BY: TJV  
CHECKED BY: BDP

CERTIFIED BY: *[Signature]* LIC. NO. 20880 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

**TKDA**  
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ALIGNMENT PLAN AND TABULATIONS  
STA. 58+00 TO STA. 94+00

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 59 of 296 Sheets



ALIGNMENT TABULATION

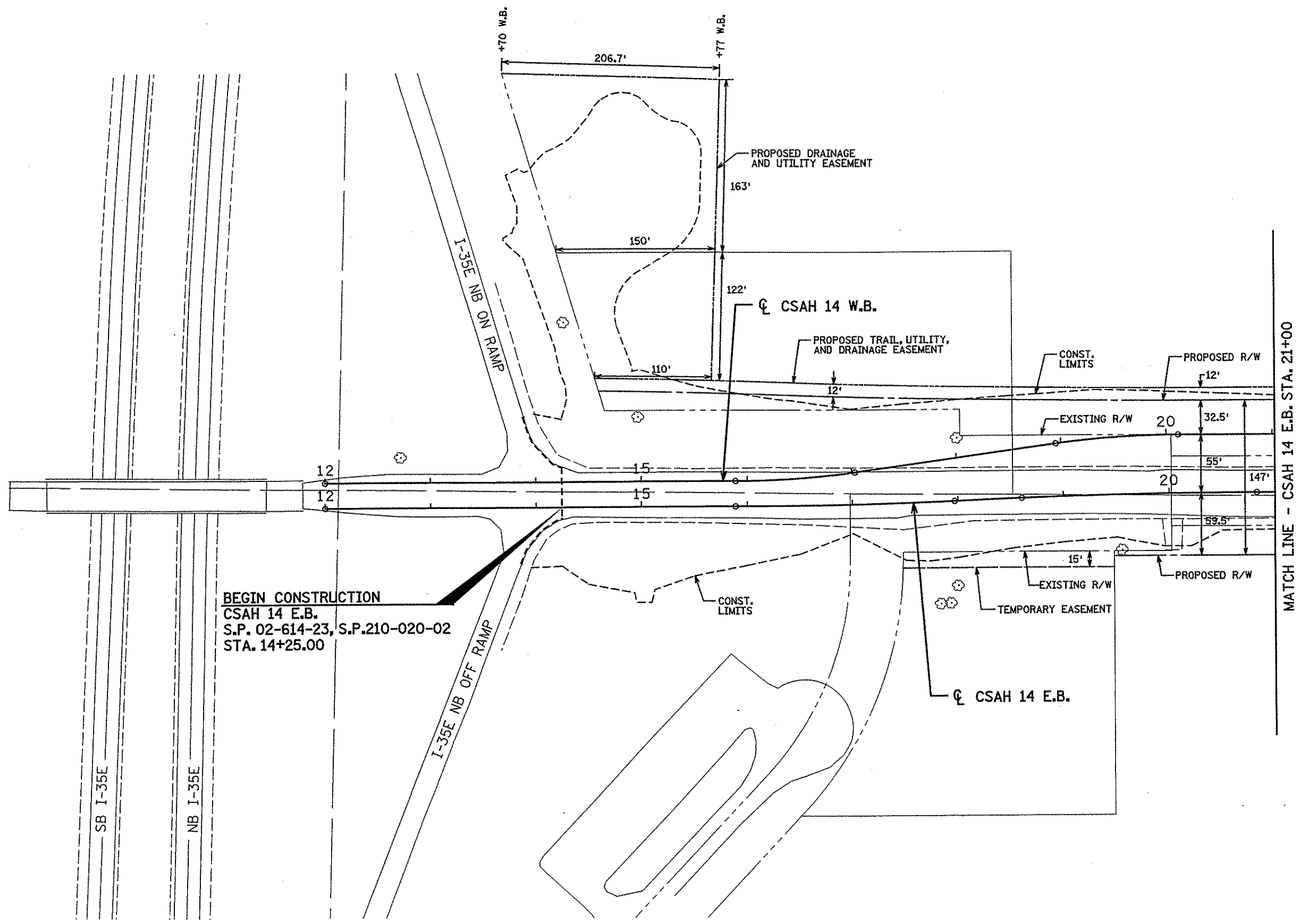
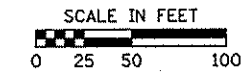
POINT NO.	POINT	STATION	SUPERELEVATION	CURVE DATA					COORDINATES		AZIMUTH
				DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
<b>TH 61 (TH61)</b>											
1151	POT	200+00.00							458,326.259	248,914.634	110° 52' 41.22"
1152	POT	218+23.30							458,701.549	250,698.890	
<b>MULLER DRIVE</b>											
1361	POT	15+00.00							458,559.928	250,025.577	101° 52' 41.50"
1362	PC	17+49.16							458,803.753	249,974.292	
1363	PI	17+75.96	NORMAL CROWN	78° 09' 38.24" RT	173° 37' 24.87"	33.000'	26.800'	45.017'	458,829.978	249,968.776	
1364	CC								458,796.960	249,941.999	180° 02' 19.74"
1365	PT	17+94.18							458,829.960	249,941.977	
1366	POT	18+49.08							458,829.923	249,887.075	

ALIGNMENT TABULATION

POINT NO.	POINT	STATION	SUPERELEVATION	CURVE DATA					COORDINATES		AZIMUTH	
				DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y		
<b>CSAH 8 E.B. (EB814)</b>												
1128	PCC	88+76.95								456,641.906	251,330.098	110° 37' 00.96"
1129	PI	93+62.35	NORMAL CROWN	38° 11' 36.83" RT	4° 05' 12.18"	1,402.000'	485.398'	934.578'	457,096.217	251,159.180		
1130	CC								456,148.237	250,017.888	148° 48' 37.79"	
1131	PT	98+11.53							457,347.590	250,743.942		
1132	PC	101+61.03							457,528.586	250,444.960		
1133	PI	104+70.55	NORMAL CROWN	46° 55' 56.29" LT	8° 02' 09.15"	713.000'	309.520'	584.035'	457,688.877	250,180.178		
1134	CC								458,138.528	250,814.201	101° 52' 41.50"	
1135	PT	107+45.06							457,991.770	250,116.468		
1136	POT	113+19.76							458,554.165	249,998.177		
<b>CSAH 8 W.B. (WB814)</b>												
1228	PCC	89+00.78								456,658.104	251,373.152	110° 37' 00.96"
1229	PI	94+02.10	NORMAL CROWN	38° 11' 36.83" RT	3° 57' 24.81"	1,448.000'	501.324'	965.242'	457,127.321	251,196.626		
1230	CC								456,148.237	250,017.888	148° 48' 37.79"	
1231	PT	98+66.02							457,386.941	250,767.764		
1232	PC	102+15.52							457,567.937	250,468.782		
1233	PI	105+05.07	NORMAL CROWN	46° 55' 56.29" LT	8° 35' 24.26"	667.000'	289.551'	546.355'	457,717.887	250,221.082		
1234	CC								458,138.528	250,814.201	101° 52' 41.50"	
1235	PT	107+61.87							458,001.238	250,161.483		
1236	POT	113+36.58							458,563.633	250,043.192		

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DATE: 8/15/2005 TIME: 10:45:04 AM  
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LEGEND	
	EXISTING R/W
	PROPOSED R/W
	TEMPORARY EASEMENT
	PROPOSED TRAIL, UTILITY, AND DRAINAGE EASEMENT

MATCH LINE - CSAH 14 E.B. STA. 21+00

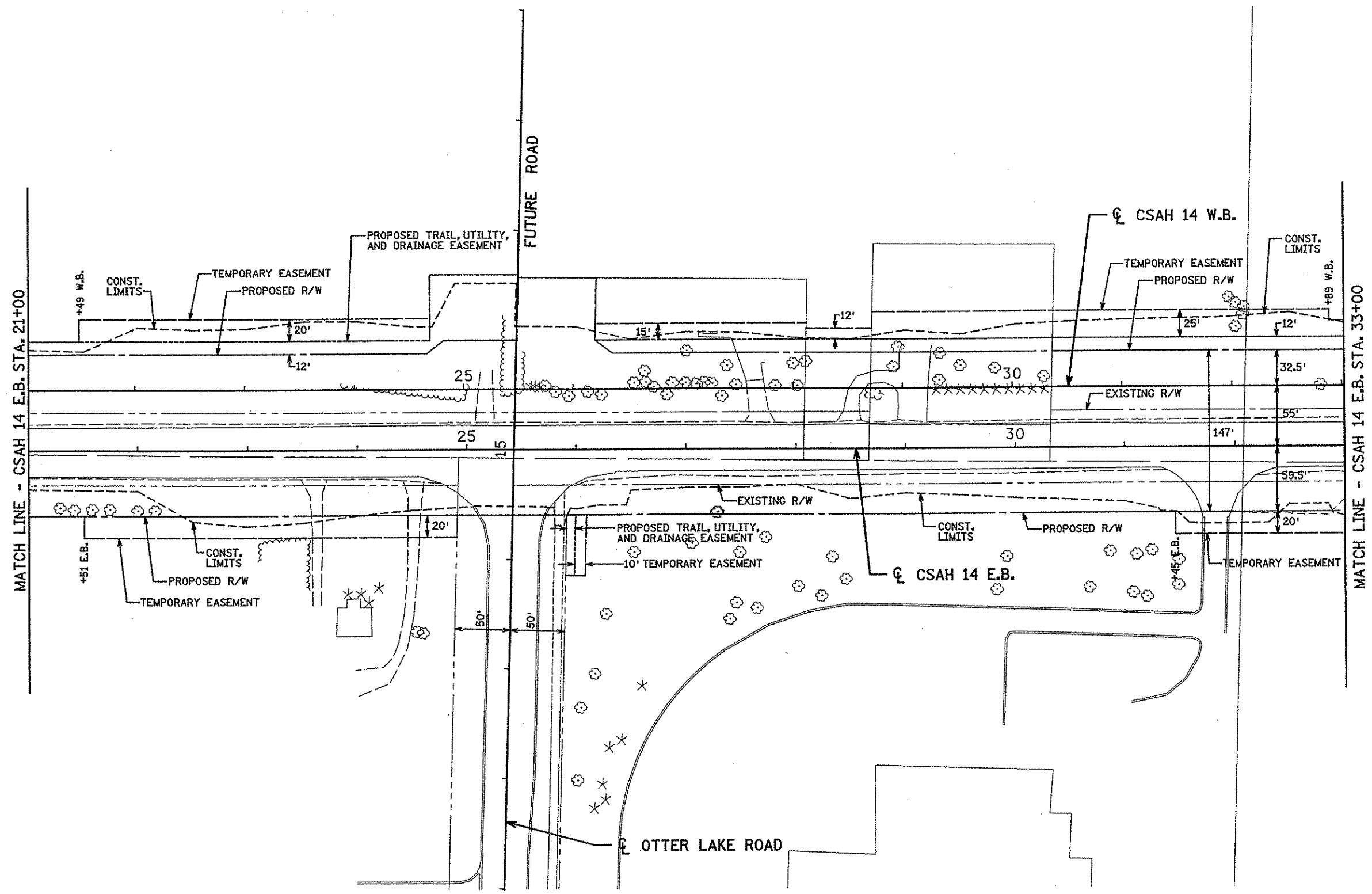
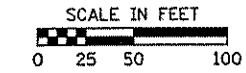
DRAWN BY: TJV  
 CHECKED BY: BDP

CERTIFIED BY *Scott D. Paulk* LIC. NO. 20880 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

**TKDA**  
 ENGINEERS · ARCHITECTS · PLANNERS

RIGHT OF WAY PLAN  
 STA. 12+00 TO STA. 21+00

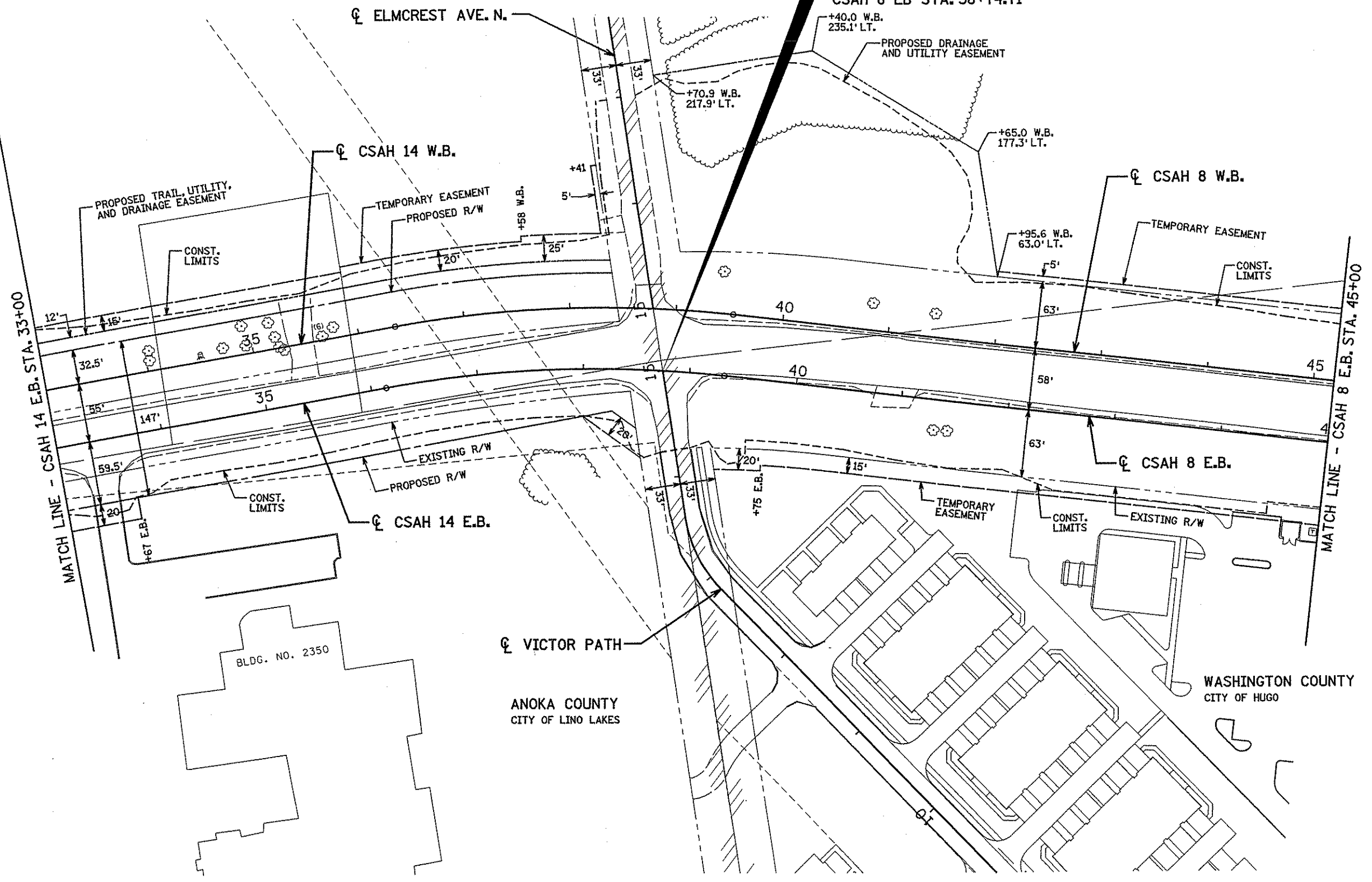
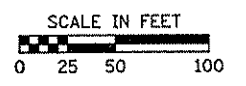
S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 61 of 296 Sheets



LEGEND	
	EXISTING R/W
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	TEMPORARY EASEMENT
	PROPOSED TRAIL, UTILITY, AND DRAINAGE EASEMENT

DATE: 8/5/2005 TIME: 10:45:08 AM  
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END S.P. 02-614-23, S.P. 210-020-02  
 BEGIN S.P. 82-608-07, S.P. 224-020-01  
 CSAH 8 EB STA. 38+74.71



LEGEND	
	EXISTING R/W
	PROPOSED R/W
	TEMPORARY EASEMENT
	PROPOSED DRAINAGE AND UTILITY EASEMENT

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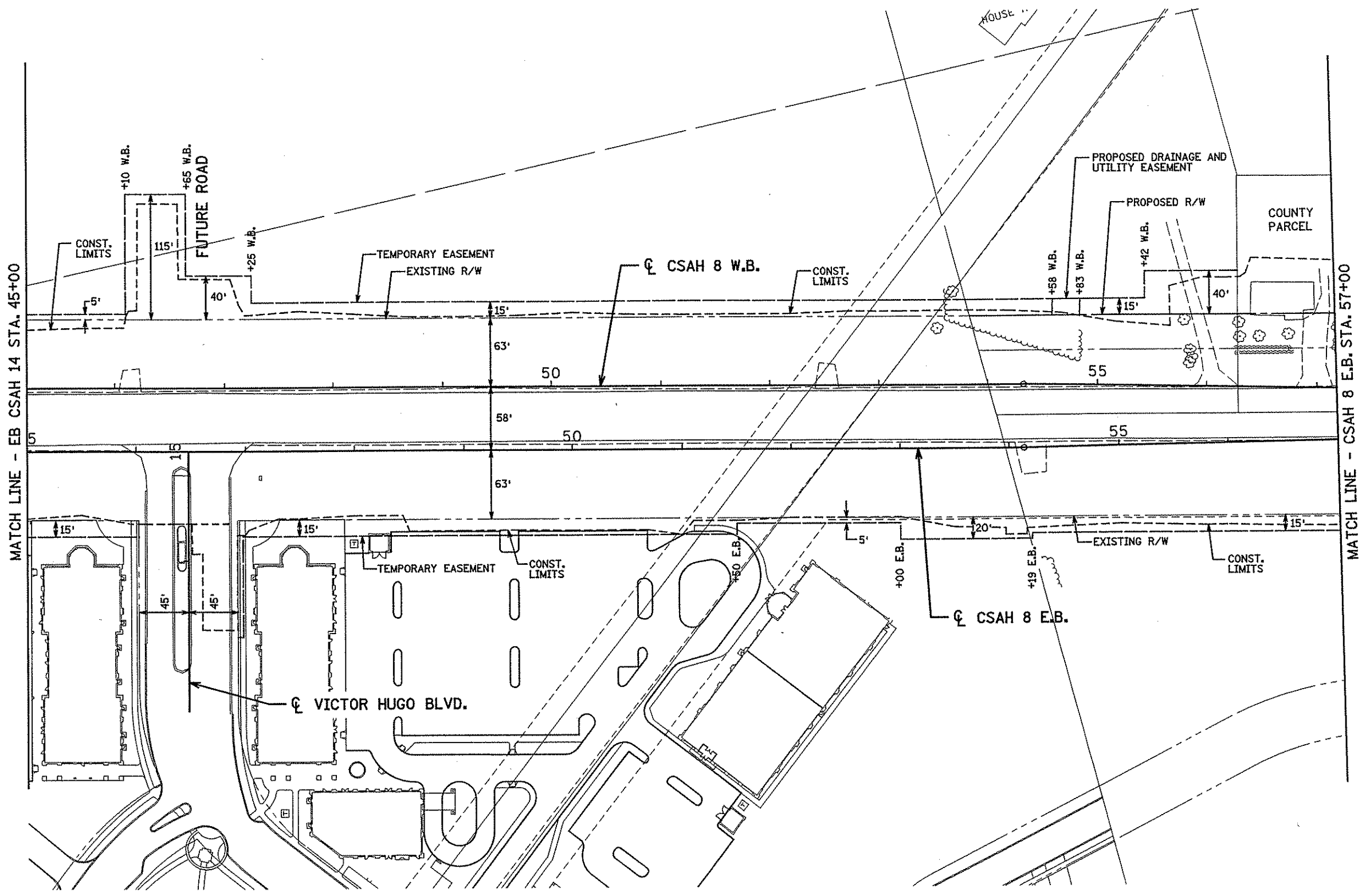
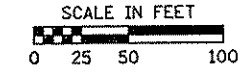
DRAWN BY: TJV  
 CHECKED BY: BDP

CERTIFIED BY *Scott O. Paul* LIC. NO. 20880 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

**TKDA**  
 ENGINEERS · ARCHITECTS · PLANNERS

RIGHT OF WAY PLAN  
 STA. 33+00 TO STA. 45+00

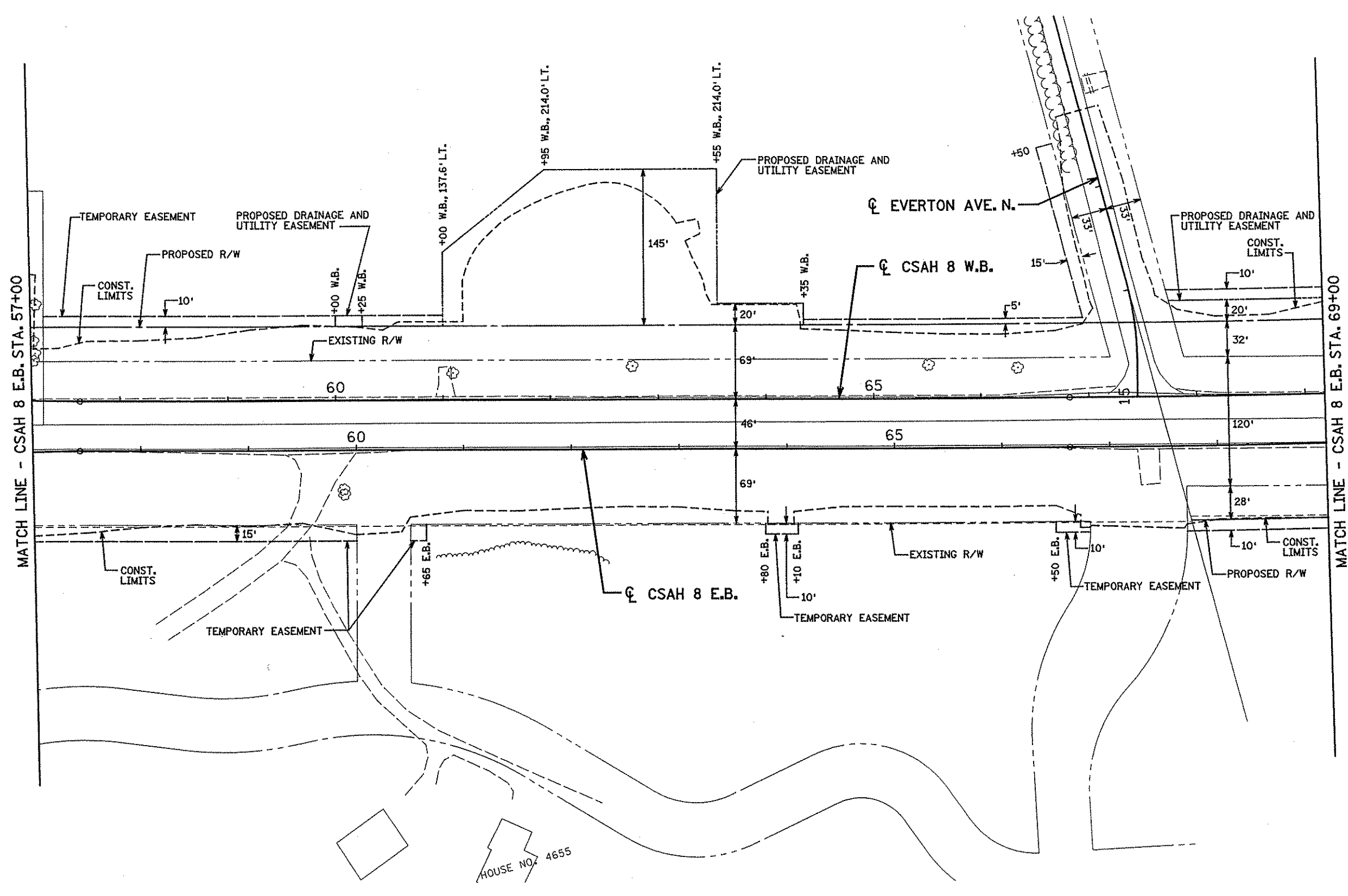
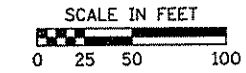
S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 63 of 296 Sheets



LEGEND	
	EXISTING R/W
	PROPOSED R/W
	TEMPORARY EASEMENT
	PROPOSED DRAINAGE AND UTILITY EASEMENT

DATE: 8/15/2005 TIME: 10:45:17 AM  
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LEGEND	
	EXISTING R/W
	PROPOSED R/W
	TEMPORARY EASEMENT
	PROPOSED DRAINAGE AND UTILITY EASEMENT

DATE: 8/5/2005 TIME: 10:45:21 AM  
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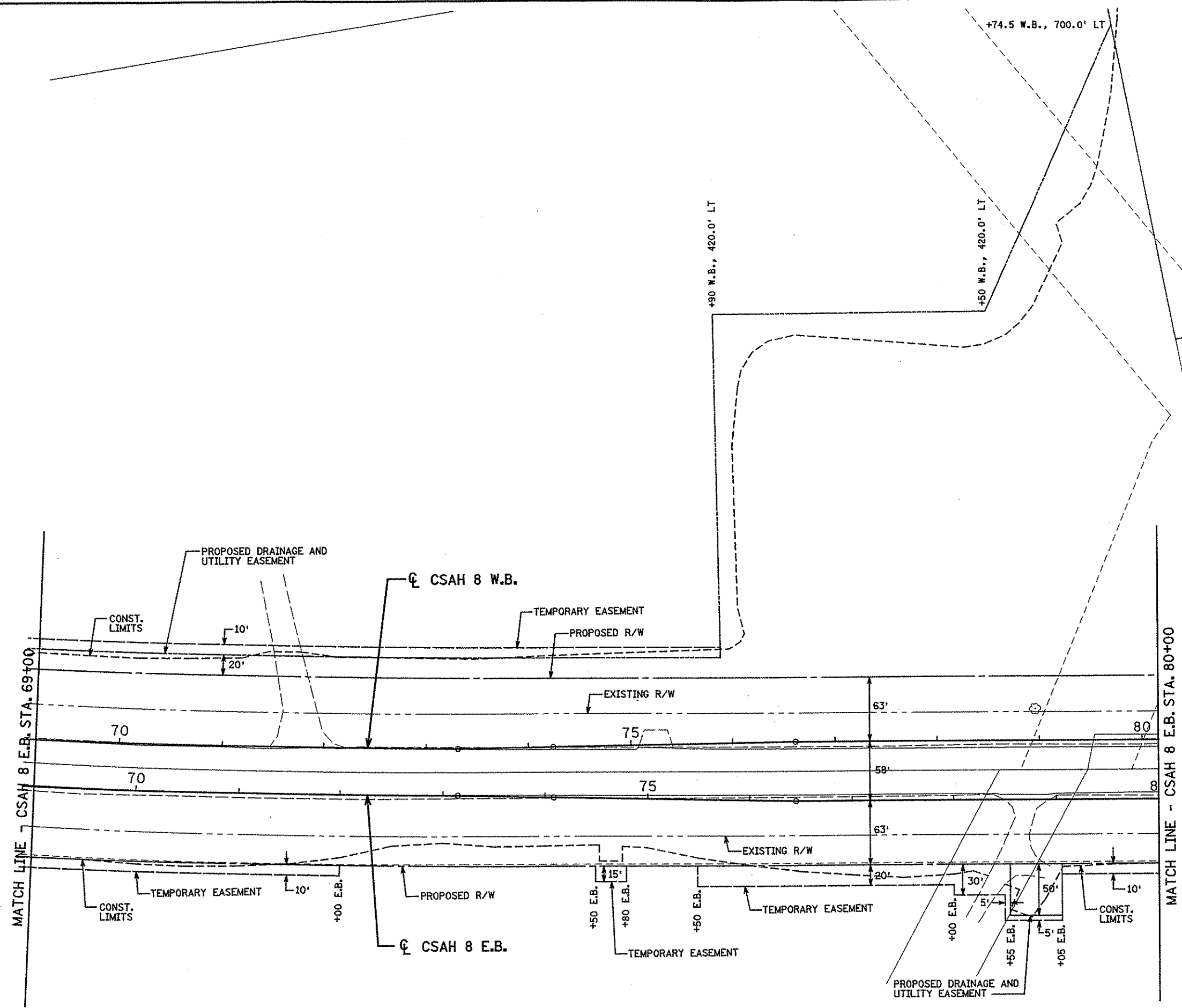
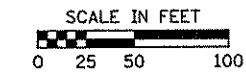
CERTIFIED BY *Grant J. Paulk* LIC. NO. 20820 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

**TKDA**  
 ENGINEERS · ARCHITECTS · PLANNERS

RIGHT OF WAY PLAN  
 STA. 57+00 TO STA. 69+00

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 65 of 296 Sheets

DATE: 8/5/2005 TIME: 10:45:24 AM  
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LEGEND	
---	EXISTING R/W
---	PROPOSED R/W
---	TEMPORARY EASEMENT
---	PROPOSED DRAINAGE AND UTILITY EASEMENT

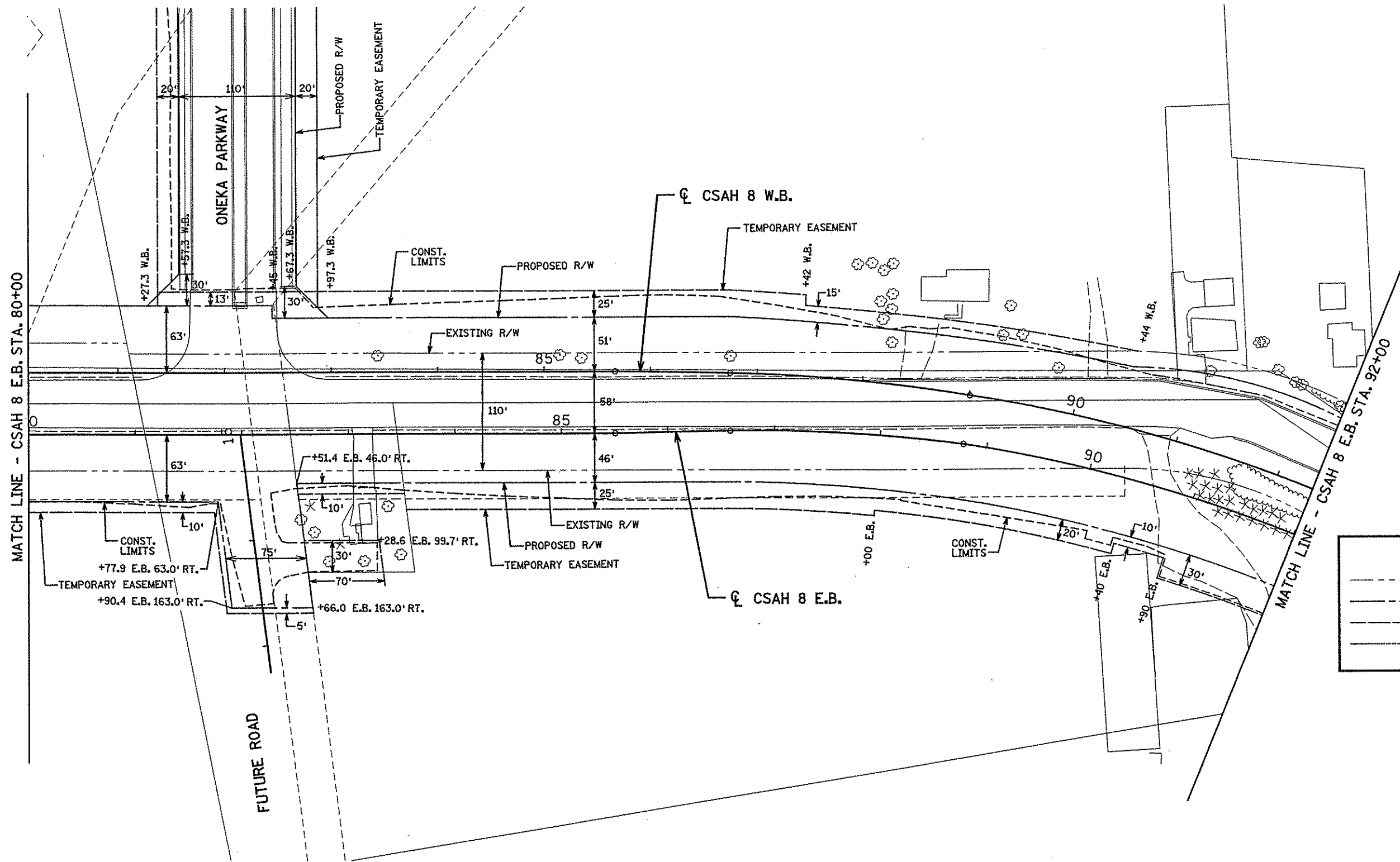
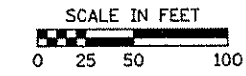
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CERTIFIED BY *Scott D. Pawler* LIC. NO. 26880 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

**TKDA**  
 ENGINEERS · ARCHITECTS · PLANNERS

RIGHT OF WAY PLAN  
 STA. 69+00 TO STA. 80+00

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 66 of 296 Sheets



LEGEND	
	EXISTING R/W
	PROPOSED R/W
	TEMPORARY EASEMENT
	PROPOSED DRAINAGE AND UTILITY EASEMENT

DATE: 8/5/2005 TIME: 10:45:28 AM  
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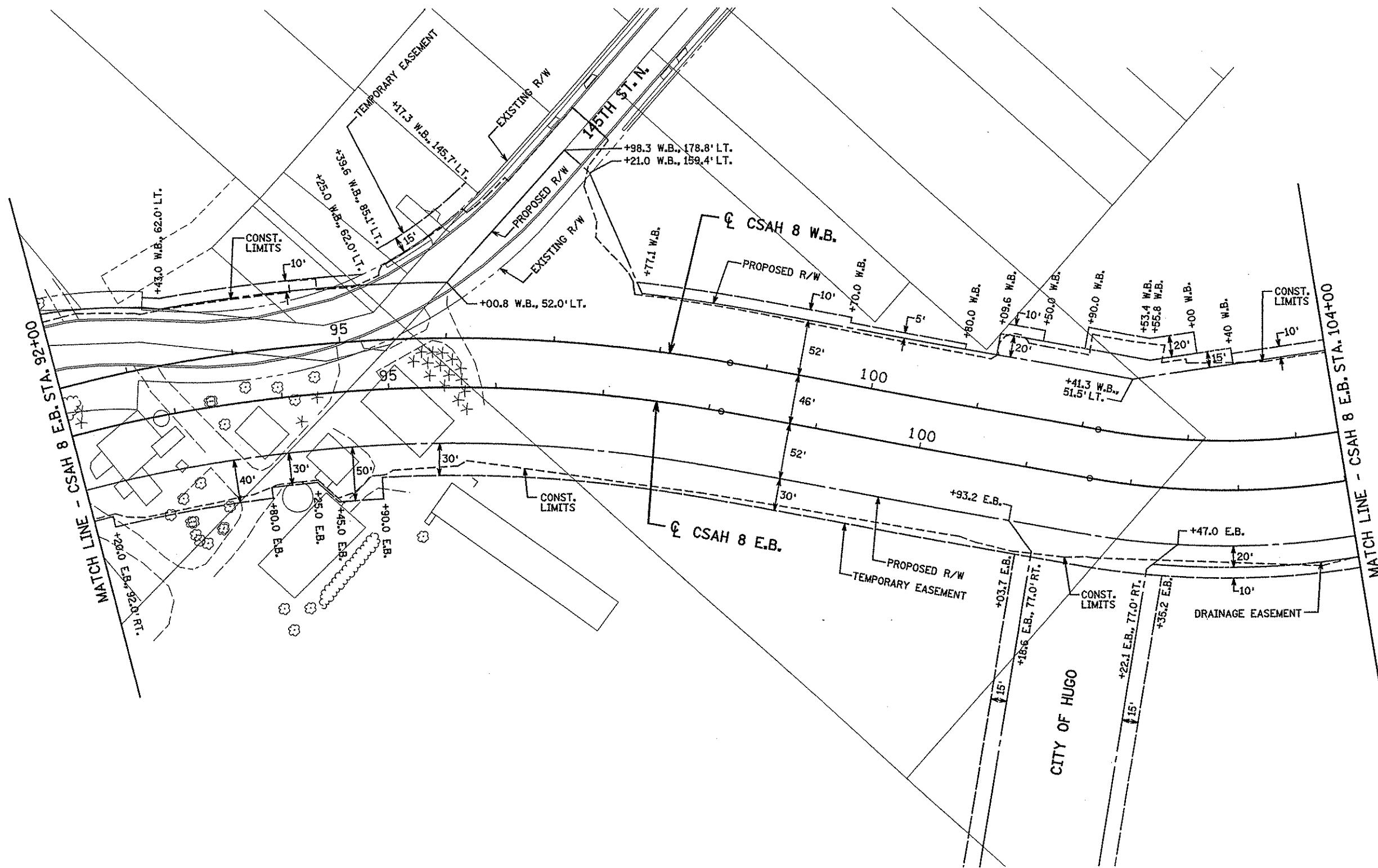
CERTIFIED BY *Brent J. Pauls* LIC. NO. 20890 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

**TKDA**  
ENGINEERS · ARCHITECTS · PLANNERS

RIGHT OF WAY PLAN  
 STA. 80+00 TO STA. 92+00

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 67 of 296 Sheets

SCALE IN FEET  
0 25 50 100



LEGEND	
	EXISTING R/W
	PROPOSED R/W
	TEMPORARY EASEMENT
	PROPOSED DRAINAGE AND UTILITY EASEMENT

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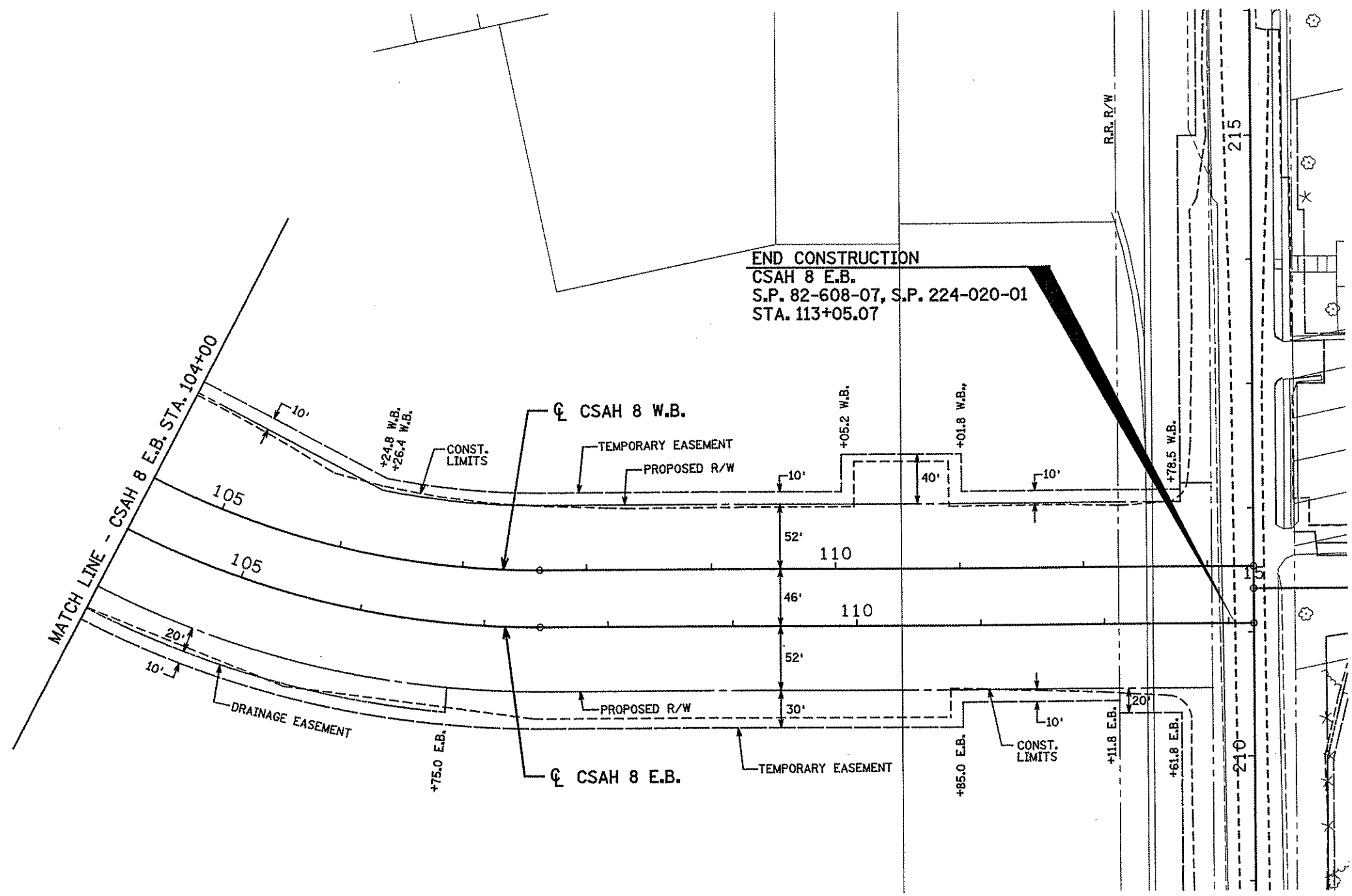
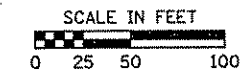
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CERTIFIED BY *Scott J. Paul* LIC. NO. 20880 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

**TKDA**  
ENGINEERS · ARCHITECTS · PLANNERS

RIGHT OF WAY PLAN  
STA. 92+00 TO STA. 104+00

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 68 of 296 Sheets



LEGEND	
---	EXISTING R/W
---	PROPOSED R/W
---	TEMPORARY EASEMENT
---	PROPOSED DRAINAGE AND UTILITY EASEMENT

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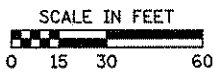
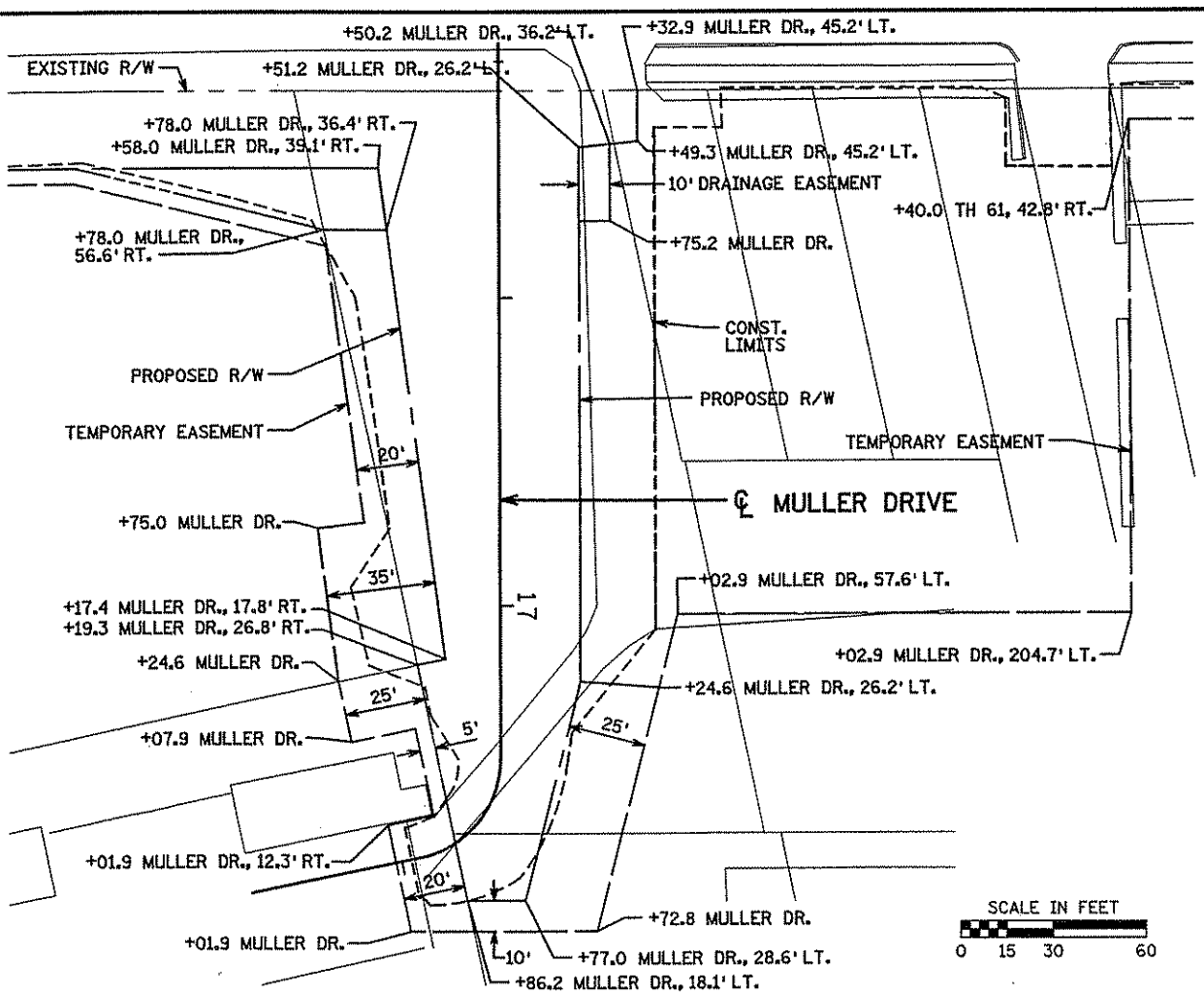
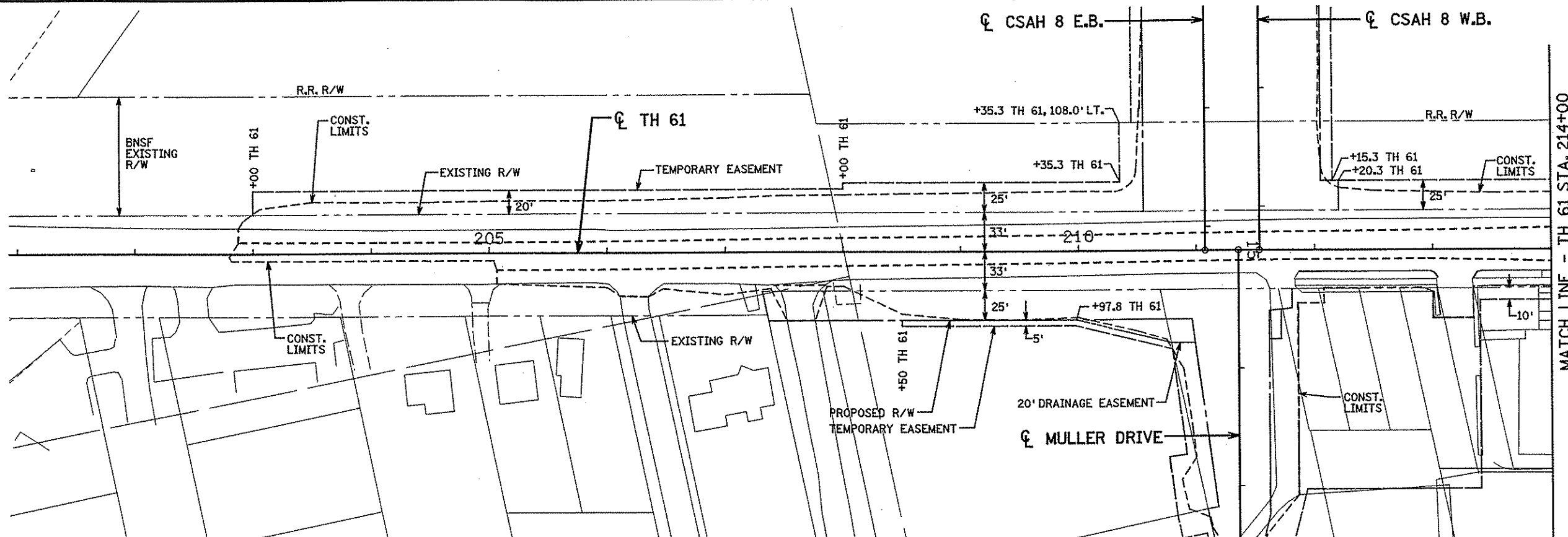
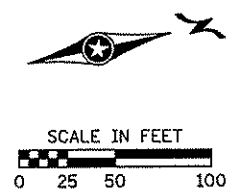
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CERTIFIED BY *Scott J. Paulk* LIC. NO. 200820 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

**TKDA**  
 ENGINEERS · ARCHITECTS · PLANNERS

RIGHT OF WAY PLAN  
 STA. 104+00 TO STA. 113+05.07

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 69 of 296 Sheets



LEGEND	
	EXISTING R/W
	PROPOSED R/W
	TEMPORARY EASEMENT
	PROPOSED DRAINAGE AND UTILITY EASEMENT

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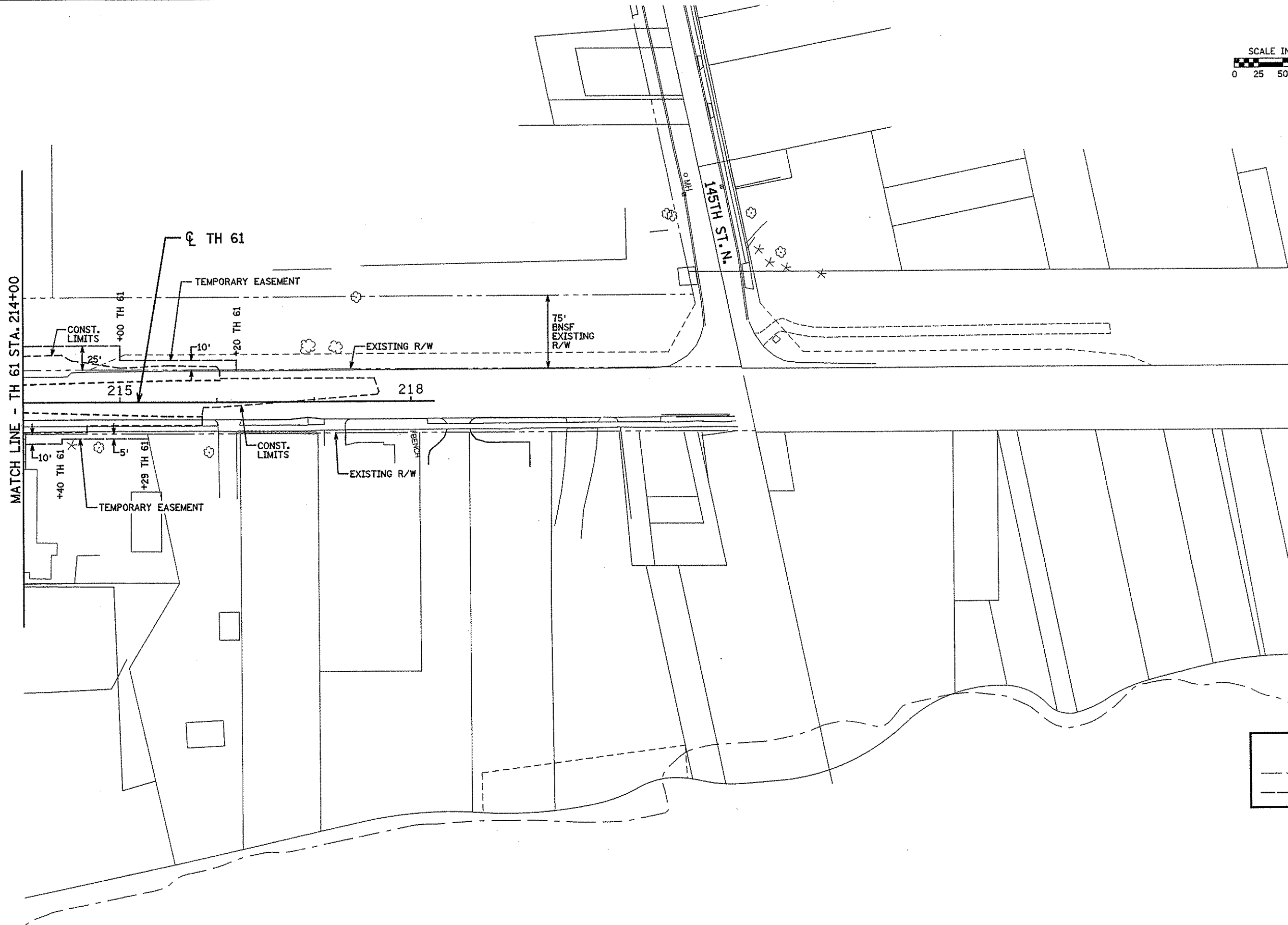
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LICENSED PROFESSIONAL ENGINEER

**TKDA**  
ENGINEERS · ARCHITECTS · PLANNERS

RIGHT OF WAY PLAN  
TH 61 STA. 202+00 TO STA. 214+00

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 70 of 296 Sheets

SCALE IN FEET  
0 25 50 100



LEGEND	
	EXISTING R/W
	TEMPORARY EASEMENT

DATE: 8/5/2005 TIME: 10:45:00 AM  
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CERTIFIED BY *Grant O. Paulk* LIC. NO. 20880 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

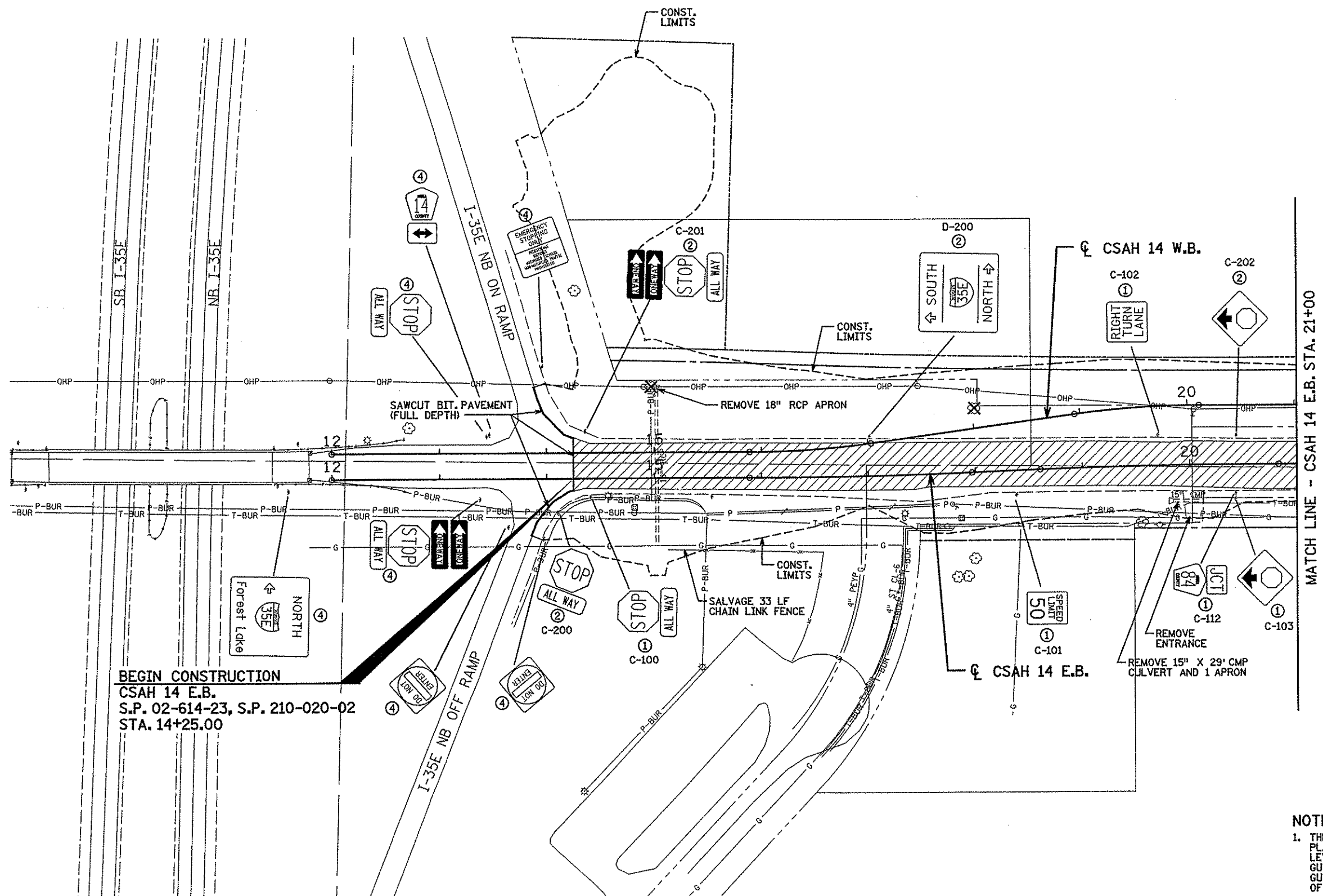
**TKDA**  
ENGINEERS · ARCHITECTS · PLANNERS

RIGHT OF WAY PLAN  
STA. 214+00 TO STA. 218+00

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 71 of 296 Sheets



SCALE IN FEET  
0 25 50 100



**BEGIN CONSTRUCTION**  
CSAH 14 E.B.  
S.P. 02-614-23, S.P. 210-020-02  
STA. 14+25.00

MATCH LINE - CSAH 14 E.B. STA. 21+00

LEGEND	
	REMOVE BITUMINOUS PAVEMENT
	CLEAR AND GRUB (ACRE)
	CLEAR AND GRUB (TREE)
	REMOVE CURB & GUTTER
①	REMOVE SIGN
②	SALVAGE SIGN - TO BE INSTALLED BY CONTRACTOR PER SIGNING AND STRIPING PLAN
③	SALVAGE SIGN - TO BE DELIVERED TO THE OWNER
④	SIGN TO REMAIN INPLACE

- NOTES:**
1. THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL C. 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".
  2. REMOVAL OF ALL BITUMINOUS PAVEMENT AND AGGREGATE SURFACING REGARDLESS OF THICKNESS SHALL BE INCIDENTAL TO COMMON EXCAVATION.
  3. THE EXACT LIMITS OF CLEARING AND GRUBBING WILL BE STAKED IN THE FIELD.
  4. ALL REMOVAL ITEMS SHALL BE DISPOSED OF OFF THE PROJECT SITE.

DATE: 8/15/2005 TIME: 10:44:17 AM FILENAME: K:\r-2\WastCity\24390N\wry-brdg\wry\p1r-sit\c200802.rmg

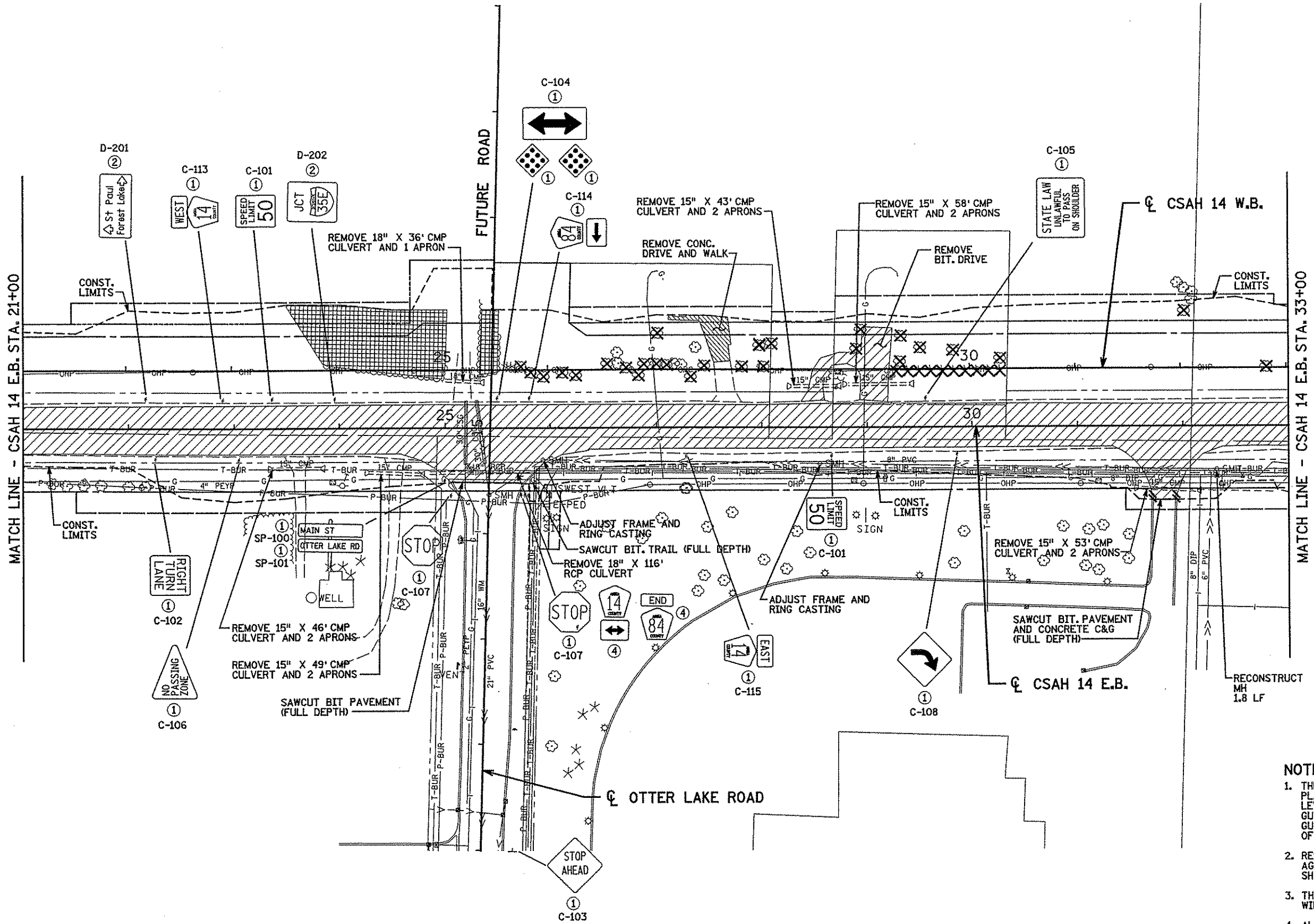
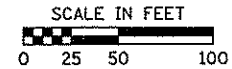
DRAWN BY: TJV  
CHECKED BY: BDP

CERTIFIED BY *Grant O. Pauls* LIC. NO. 20880 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

**TKDA**  
ENGINEERS - ARCHITECTS - PLANNERS

INPLACE TOPOGRAPHY AND REMOVAL PLAN  
STA. 12+00 TO STA. 21+00

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 72 of 296 Sheets



LEGEND	
	REMOVE BITUMINOUS PAVEMENT
	CLEAR AND GRUB (ACRE)
	CLEAR AND GRUB (TREE)
	REMOVE CURB & GUTTER
①	REMOVE SIGN
②	SALVAGE SIGN - TO BE INSTALLED BY CONTRACTOR PER SIGNING AND STRIPING PLAN
③	SALVAGE SIGN - TO BE DELIVERED TO THE OWNER
④	SIGN TO REMAIN INPLACE

- NOTES:**
1. THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL C. 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".
  2. REMOVAL OF ALL BITUMINOUS PAVEMENT AND AGGREGATE SURFACING REGARDLESS OF THICKNESS SHALL BE INCIDENTAL TO COMMON EXCAVATION.
  3. THE EXACT LIMITS OF CLEARING AND GRUBBING WILL BE STAKED IN THE FIELD.
  4. ALL REMOVAL ITEMS SHALL BE DISPOSED OF OFF THE PROJECT SITE.

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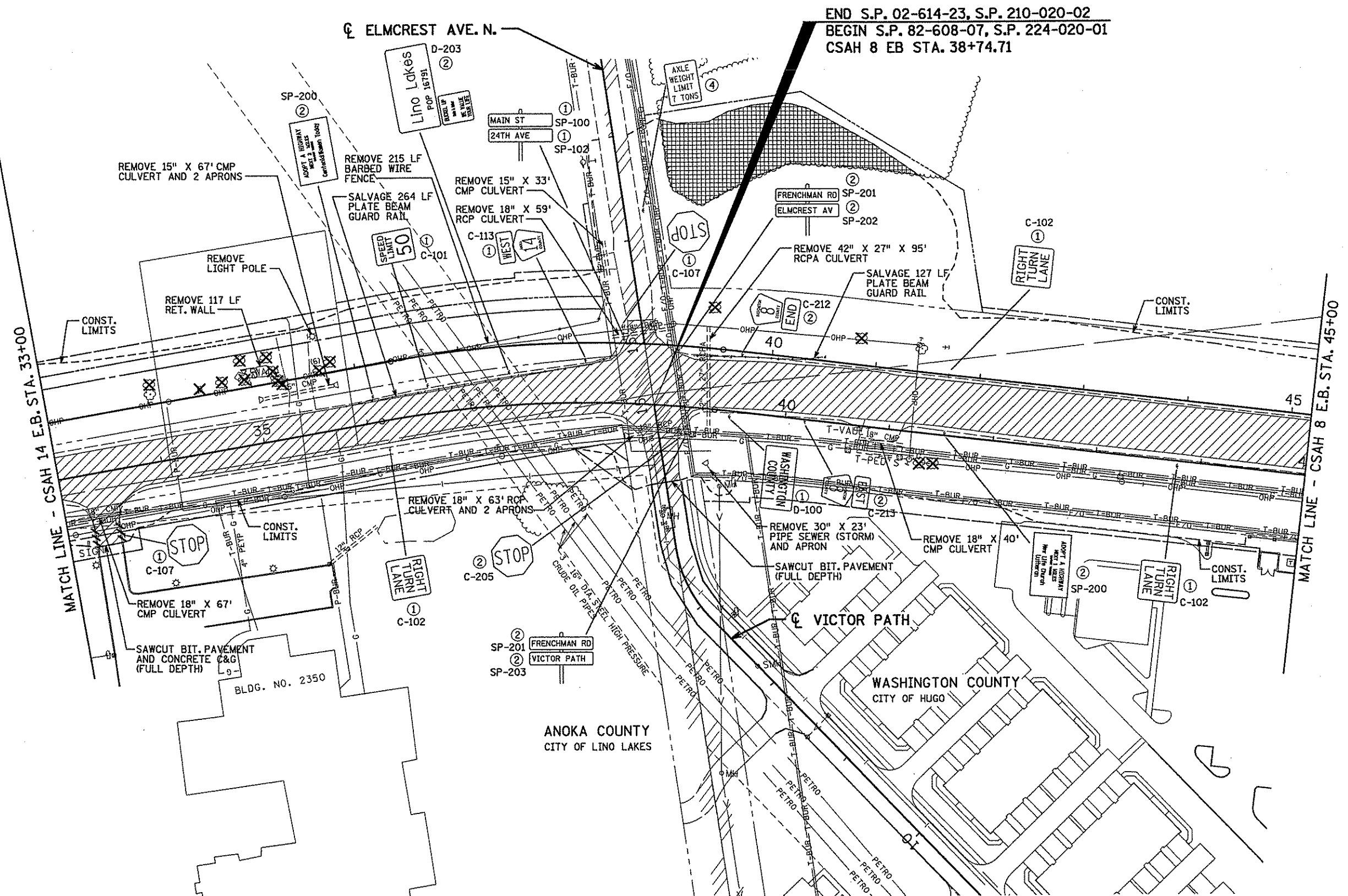
CERTIFIED BY *Grant O. Paulin* LIC. NO. 20880 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

**TKDA**  
 ENGINEERS - ARCHITECTS - PLANNERS

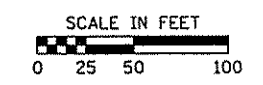
INPLACE TOPOGRAPHY AND REMOVAL PLAN  
 STA. 21+00 TO STA. 33+00

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 73 of 296 Sheets

DATE: 9/1/2005 TIME: 9:02:54 AM  
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END S.P. 02-614-23, S.P. 210-020-02  
 BEGIN S.P. 82-608-07, S.P. 224-020-01  
 CSAH 8 EB STA. 38+74.71



LEGEND	
	REMOVE BITUMINOUS PAVEMENT
	CLEAR AND GRUB (ACRE)
	CLEAR AND GRUB (TREE)
	REMOVE CURB & GUTTER
①	REMOVE SIGN
②	SALVAGE SIGN - TO BE INSTALLED BY CONTRACTOR PER SIGNING AND STRIPING PLAN
③	SALVAGE SIGN - TO BE DELIVERED TO THE OWNER
④	SIGN TO REMAIN INPLACE

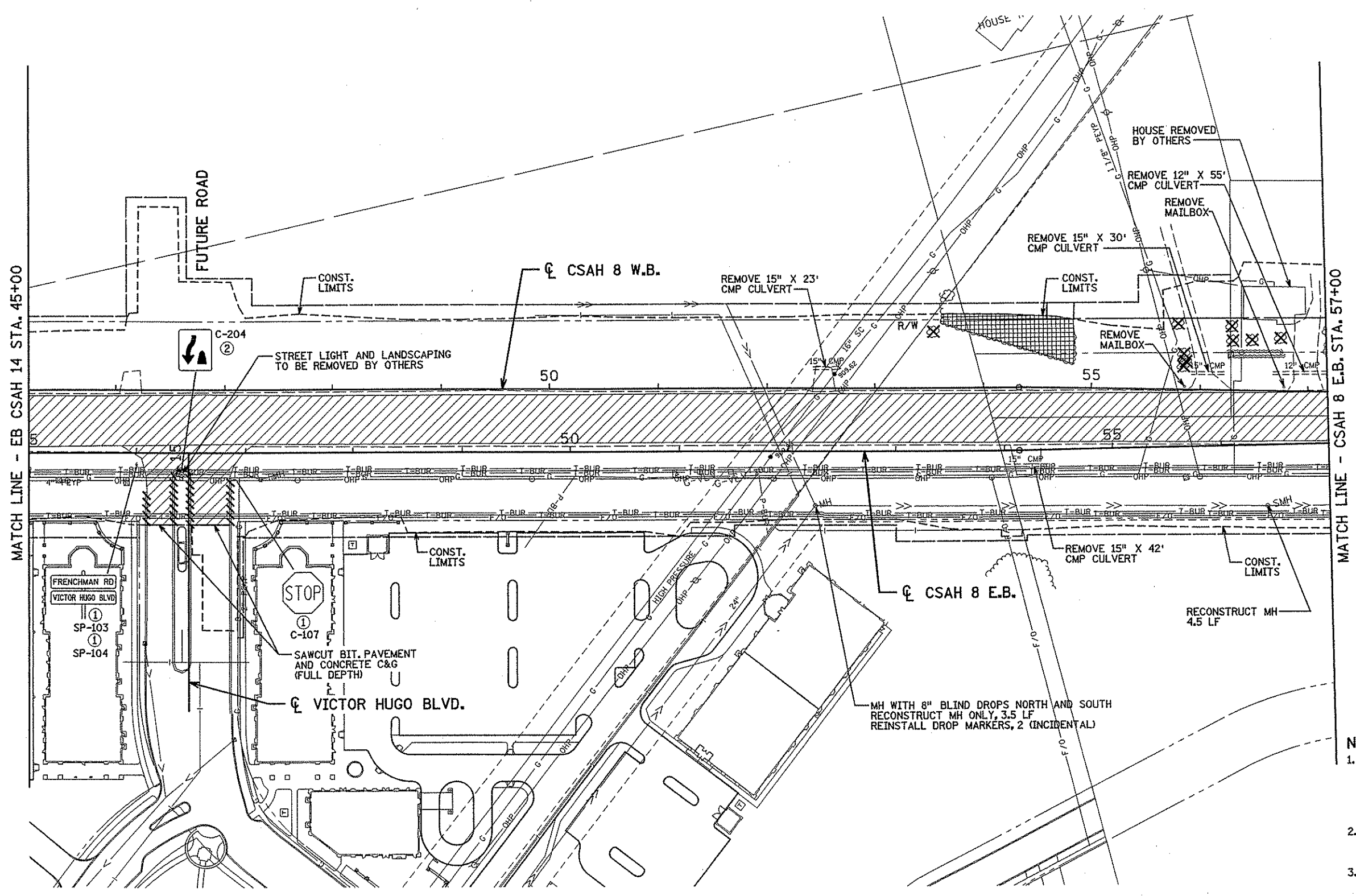
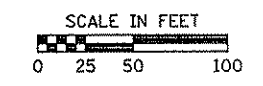
- NOTES:**
1. THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL C. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA".
  2. REMOVAL OF ALL BITUMINOUS PAVEMENT AND AGGREGATE SURFACING REGARDLESS OF THICKNESS SHALL BE INCIDENTAL TO COMMON EXCAVATION.
  3. THE EXACT LIMITS OF CLEARING AND GRUBBING WILL BE STAKED IN THE FIELD.
  4. ALL REMOVAL ITEMS SHALL BE DISPOSED OF OFF THE PROJECT SITE.

DRAWN BY: TJV  
 CHECKED BY: BDP  
 CERTIFIED BY: *[Signature]* LIC. NO. 26880 DATE 9/2/05  
 LICENSED PROFESSIONAL ENGINEER

**TKDA**  
 ENGINEERS · ARCHITECTS · PLANNERS

INPLACE TOPOGRAPHY AND REMOVAL PLAN  
 STA. 33+00 TO STA. 45+00

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 74 of 296 Sheets



LEGEND	
	REMOVE BITUMINOUS PAVEMENT
	CLEAR AND GRUB (ACRE)
	CLEAR AND GRUB (TREE)
	REMOVE CURB & GUTTER
①	REMOVE SIGN
②	SALVAGE SIGN - TO BE INSTALLED BY CONTRACTOR PER SIGNING AND STRIPING PLAN
③	SALVAGE SIGN - TO BE DELIVERED TO THE OWNER
④	SIGN TO REMAIN INPLACE

- NOTES:**
1. THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL C. 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".
  2. REMOVAL OF ALL BITUMINOUS PAVEMENT AND AGGREGATE SURFACING REGARDLESS OF THICKNESS SHALL BE INCIDENTAL TO COMMON EXCAVATION.
  3. THE EXACT LIMITS OF CLEARING AND GRUBBING WILL BE STAKED IN THE FIELD.
  4. ALL REMOVAL ITEMS SHALL BE DISPOSED OF OFF THE PROJECT SITE.
  5. SEE SPECIAL PROVISIONS FOR MISC. REMOVALS RELATED TO BUILDING REMOVAL AND REQUIREMENTS FOR HAZARDOUS MATERIAL REMOVAL AND DISPOSAL.

DATE: 10/25/2005 TIME: 11:04:01 AM  
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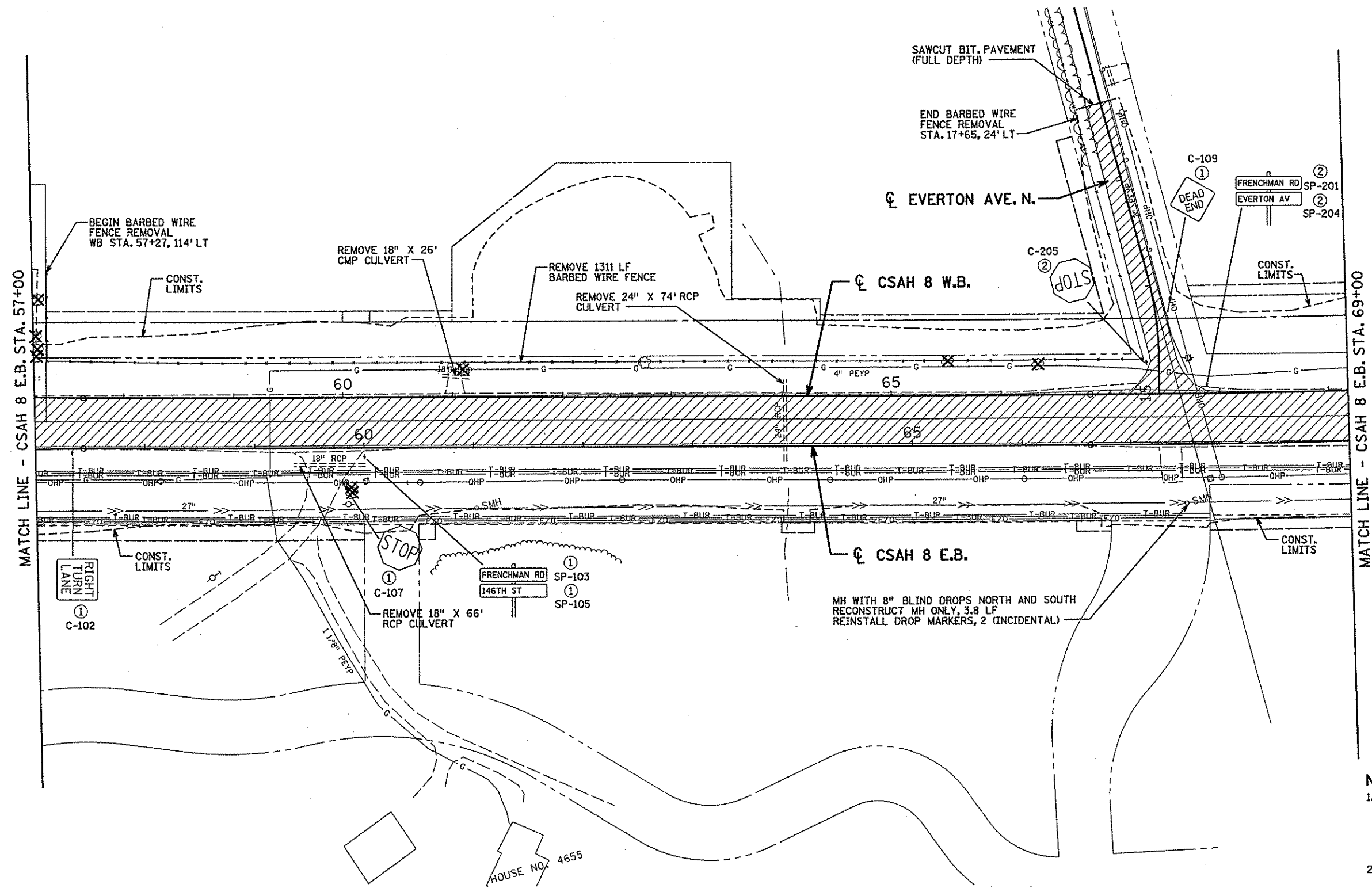
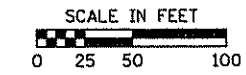
DRAWN BY: TJV  
 CHECKED BY: BDP

CERTIFIED BY *Brent O. Paulm* LIC. NO. 26880 DATE 10/25/05  
 LICENSED PROFESSIONAL ENGINEER

**TKDA**  
 ENGINEERS · ARCHITECTS · PLANNERS

INPLACE TOPOGRAPHY AND REMOVAL PLAN  
 STA. 45+00 TO STA. 57+00

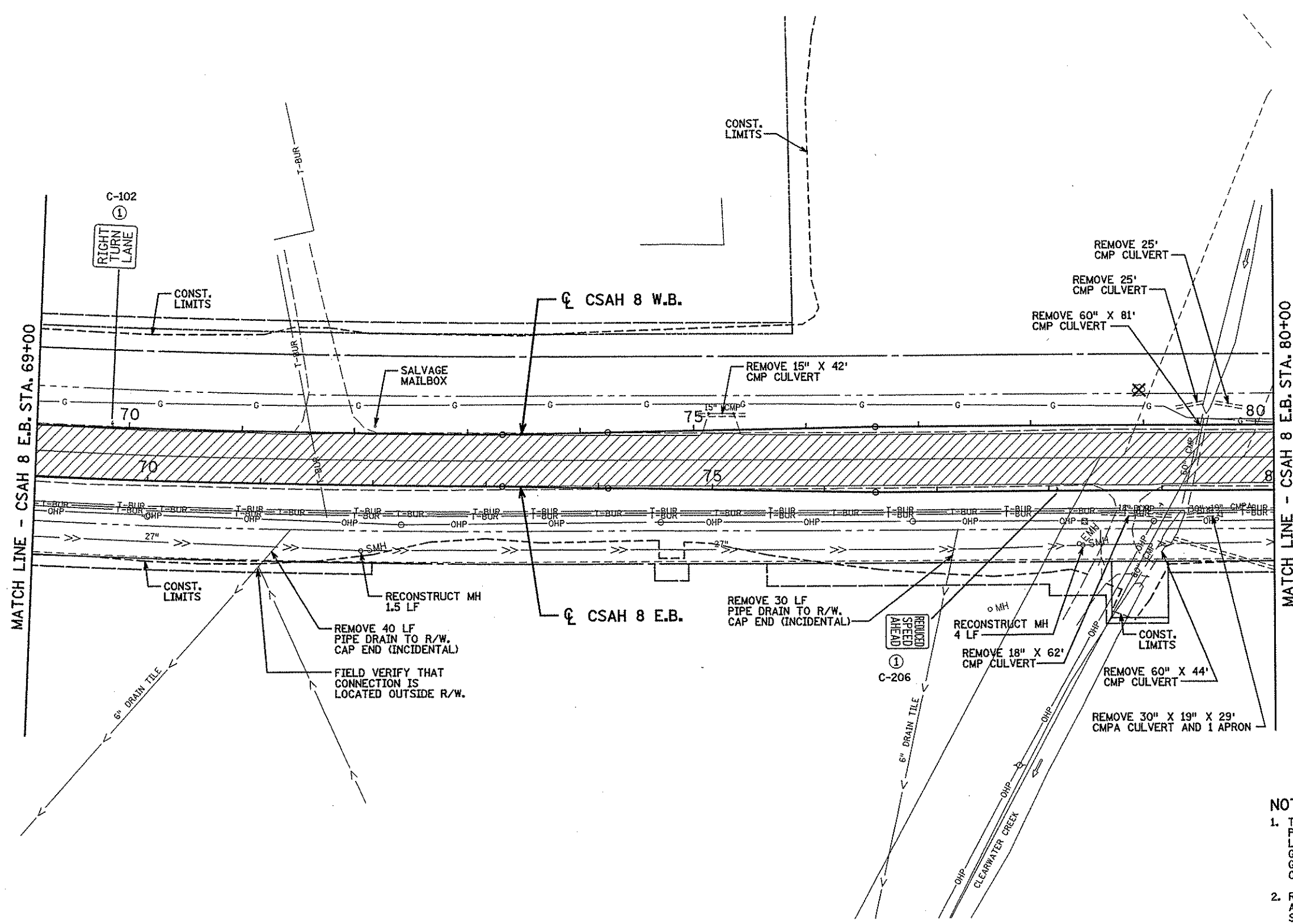
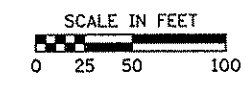
S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 75 of 296 Sheets



LEGEND	
	REMOVE BITUMINOUS PAVEMENT
	CLEAR AND GRUB (ACRE)
	CLEAR AND GRUB (TREE)
	REMOVE CURB & GUTTER
①	REMOVE SIGN
②	SALVAGE SIGN - TO BE INSTALLED BY CONTRACTOR PER SIGNING AND STRIPING PLAN
③	SALVAGE SIGN - TO BE DELIVERED TO THE OWNER
④	SIGN TO REMAIN INPLACE

- NOTES:**
1. THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL C. 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".
  2. REMOVAL OF ALL BITUMINOUS PAVEMENT AND AGGREGATE SURFACING REGARDLESS OF THICKNESS SHALL BE INCIDENTAL TO COMMON EXCAVATION.
  3. THE EXACT LIMITS OF CLEARING AND GRUBBING WILL BE STAKED IN THE FIELD.
  4. ALL REMOVAL ITEMS SHALL BE DISPOSED OF OFF THE PROJECT SITE.

DATE: 9/1/2005 TIME: 9:02:55 AM  
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LEGEND	
	REMOVE BITUMINOUS PAVEMENT
	CLEAR AND GRUB (ACRE)
	CLEAR AND GRUB (TREE)
	REMOVE CURB & GUTTER
①	REMOVE SIGN
②	SALVAGE SIGN - TO BE INSTALLED BY CONTRACTOR PER SIGNING AND STRIPING PLAN
③	SALVAGE SIGN - TO BE DELIVERED TO THE OWNER
④	SIGN TO REMAIN INPLACE

- NOTES:**
1. THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL C. 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".
  2. REMOVAL OF ALL BITUMINOUS PAVEMENT AND AGGREGATE SURFACING REGARDLESS OF THICKNESS SHALL BE INCIDENTAL TO COMMON EXCAVATION.
  3. THE EXACT LIMITS OF CLEARING AND GRUBBING WILL BE STAKED IN THE FIELD.
  4. ALL REMOVAL ITEMS SHALL BE DISPOSED OF OFF THE PROJECT SITE.

DATE: 8/15/2005 TIME: 10:44:40 AM  
 FILENAME: K:\v-z\wastcy\24390\Nwy-brdg\Nwy\pfr-sta\c200802.rmf

DRAWN BY: TJV  
 CHECKED BY: BDP

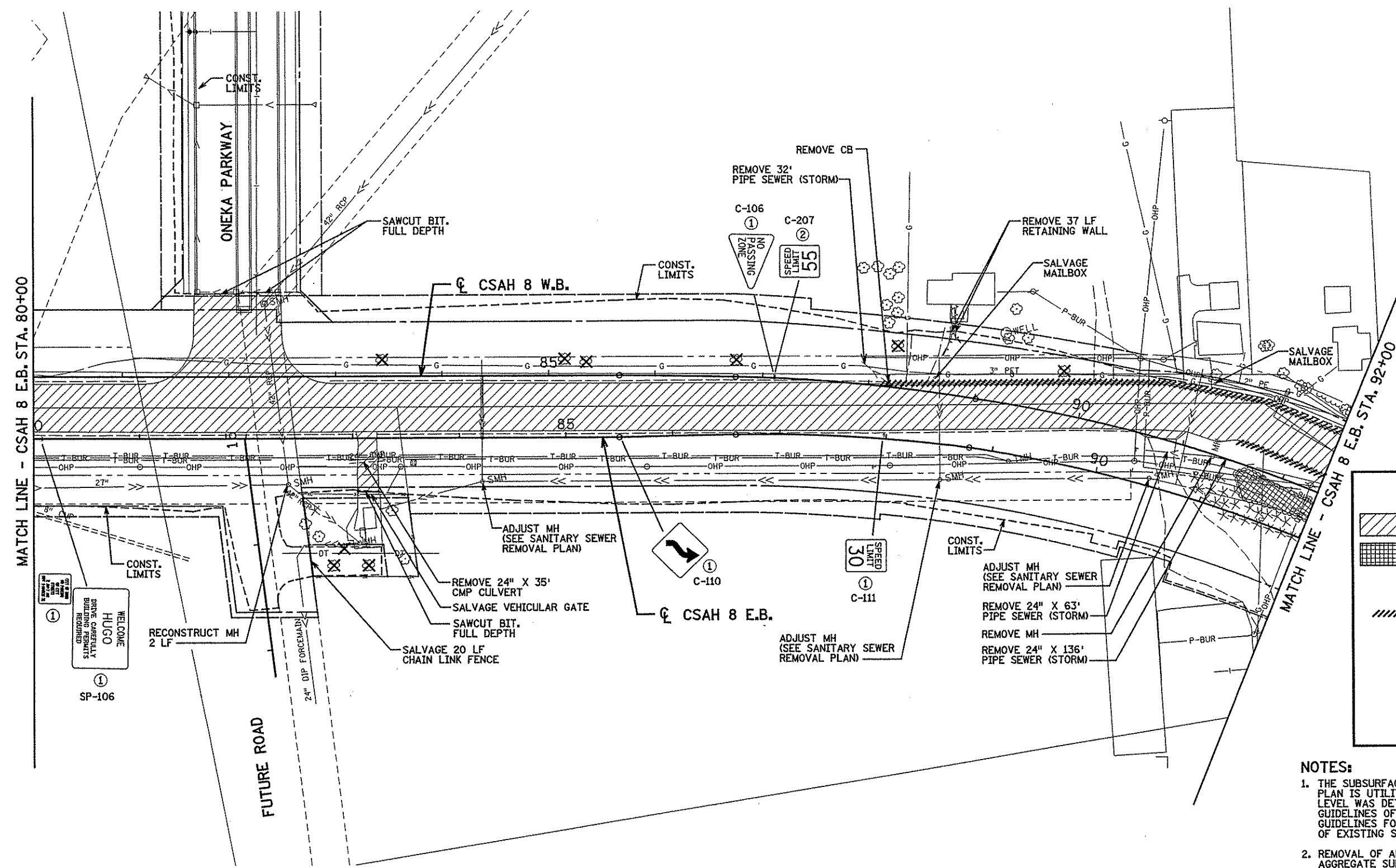
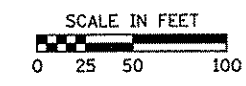
CERTIFIED BY *Scott O. Paul* LIC. NO. 10880 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

**TKDA**  
 ENGINEERS - ARCHITECTS - PLANNERS

INPLACE TOPOGRAPHY AND REMOVAL PLAN  
 STA. 69+00 TO STA. 80+00

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 77 of 296 Sheets





LEGEND	
	REMOVE BITUMINOUS PAVEMENT
	CLEAR AND GRUB (ACRE)
	CLEAR AND GRUB (TREE)
	REMOVE CURB & GUTTER
①	REMOVE SIGN
②	SALVAGE SIGN - TO BE INSTALLED BY CONTRACTOR PER SIGNING AND STRIPING PLAN
③	SALVAGE SIGN - TO BE DELIVERED TO THE OWNER
④	SIGN TO REMAIN INPLACE

- NOTES:**
1. THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL C. 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".
  2. REMOVAL OF ALL BITUMINOUS PAVEMENT AND AGGREGATE SURFACING REGARDLESS OF THICKNESS SHALL BE INCIDENTAL TO COMMON EXCAVATION.
  3. THE EXACT LIMITS OF CLEARING AND GRUBBING WILL BE STAKED IN THE FIELD.
  4. ALL REMOVAL ITEMS SHALL BE DISPOSED OF OFF THE PROJECT SITE.

DATE: 8/15/2005 TIME: 10:44:44 AM  
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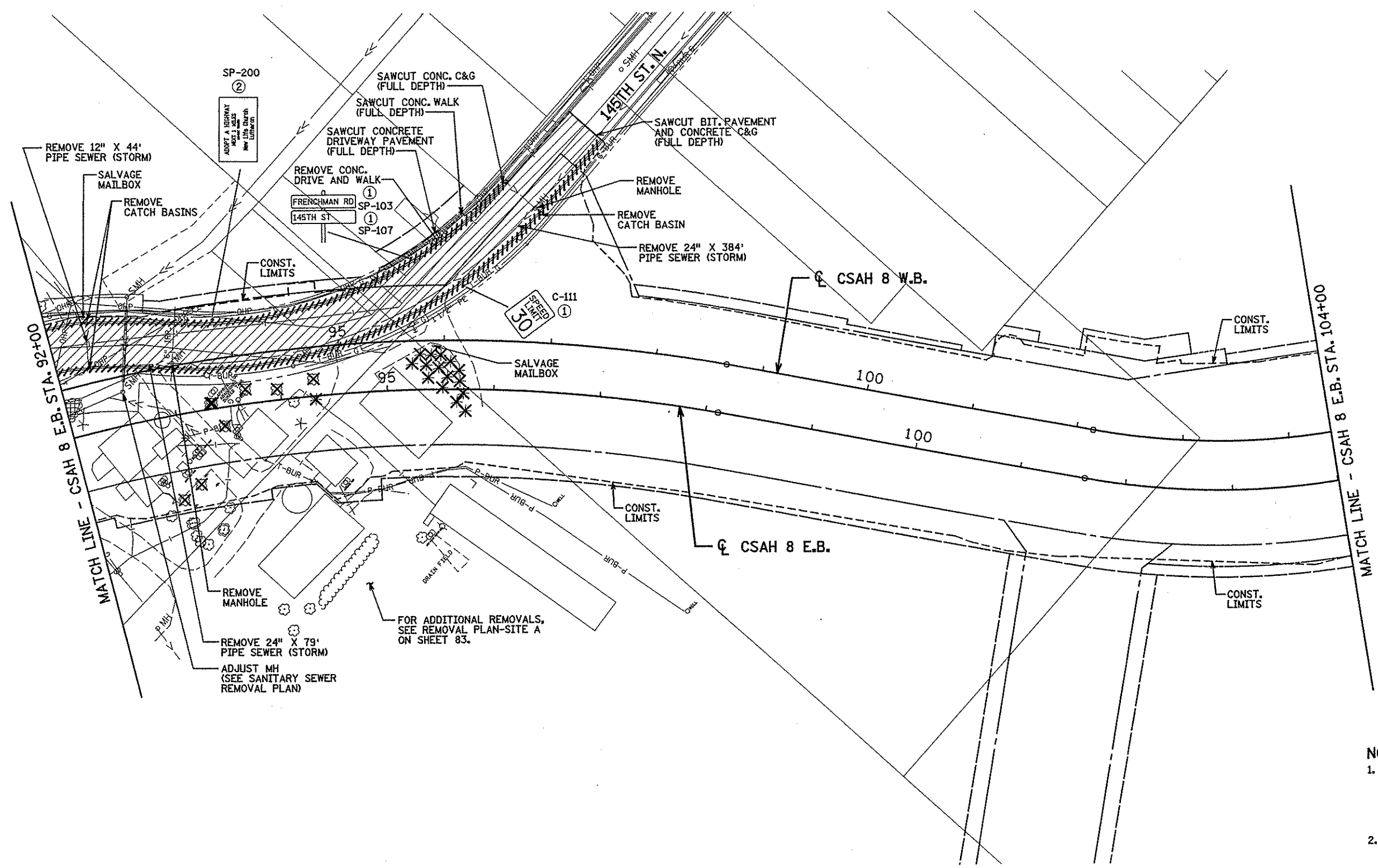
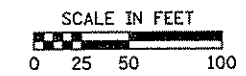
CERTIFIED BY *Brent J. Paulin* LIC. NO. 26880 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

**TKDA**  
 ENGINEERS · ARCHITECTS · PLANNERS

INPLACE TOPOGRAPHY AND REMOVAL PLAN  
 STA. 80+00 TO STA. 92+00

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 78 of 296 Sheets





LEGEND	
	REMOVE BITUMINOUS PAVEMENT
	CLEAR AND GRUB (ACRE)
	CLEAR AND GRUB (TREE)
	REMOVE CURB & GUTTER
①	REMOVE SIGN
②	SALVAGE SIGN - TO BE INSTALLED BY CONTRACTOR PER SIGNING AND STRIPING PLAN
③	SALVAGE SIGN - TO BE DELIVERED TO THE OWNER
④	SIGN TO REMAIN INPLACE

- NOTES:**
1. THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL C. 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".
  2. REMOVAL OF ALL BITUMINOUS PAVEMENT AND AGGREGATE SURFACING REGARDLESS OF THICKNESS SHALL BE INCIDENTAL TO COMMON EXCAVATION.
  3. THE EXACT LIMITS OF CLEARING AND GRUBBING WILL BE STAKED IN THE FIELD.
  4. ALL REMOVAL ITEMS SHALL BE DISPOSED OF OFF THE PROJECT SITE.

DATE: 8/5/2005 TIME: 10:44:48 AM  
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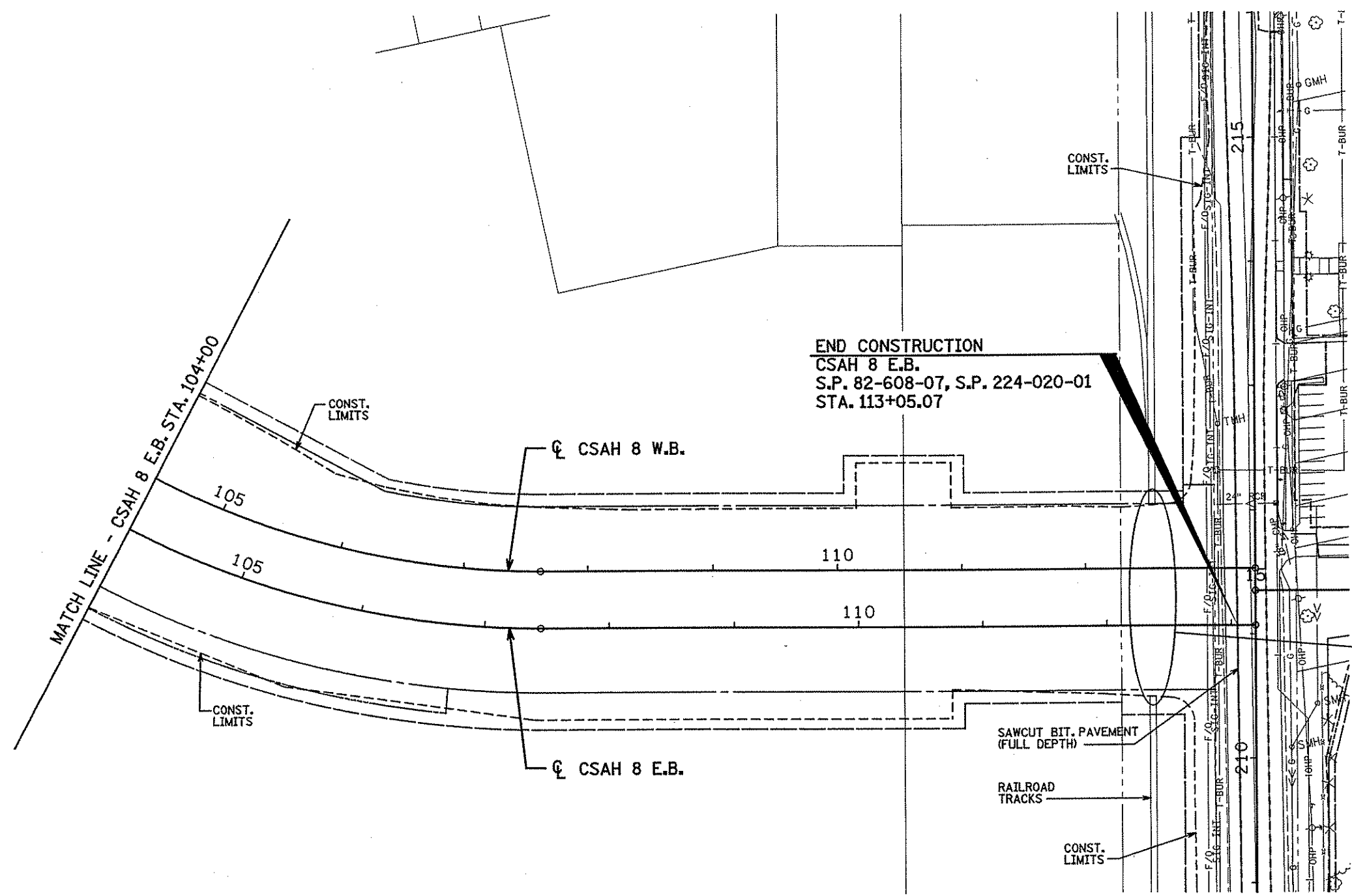
CERTIFIED BY *Scott O. Pauls* LIC. NO. 26890 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

**TKDA**  
 ENGINEERS · ARCHITECTS · PLANNERS

INPLACE TOPOGRAPHY AND REMOVAL PLAN  
 STA. 92+00 TO STA. 104+00

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 79 of 296 Sheets

SCALE IN FEET  
0 25 50 100



LEGEND	
	REMOVE BITUMINOUS PAVEMENT
	CLEAR AND GRUB (ACRE)
	CLEAR AND GRUB (TREE)
	REMOVE CURB & GUTTER
①	REMOVE SIGN
②	SALVAGE SIGN - TO BE INSTALLED BY CONTRACTOR PER SIGNING AND STRIPING PLAN
③	SALVAGE SIGN - TO BE DELIVERED TO THE OWNER
④	SIGN TO REMAIN INPLACE

TRACK REMOVAL AND EXCAVATION TO APPROX. FINISHED GROUND ELEVATION BY OTHERS BETWEEN APPROX. 47' LT. (W.B.) AND 53' RT. (E.B.). BALLAST WILL BE PLACED BY OTHERS NORTH OF 47' LT. (W.B.) AND SOUTH OF 53' RT. (E.B.). BALLAST DISTURBED BY THE CONTRACTOR SHALL BE REPLACED TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.

- NOTES:**
1. THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL C. 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".
  2. REMOVAL OF ALL BITUMINOUS PAVEMENT AND AGGREGATE SURFACING REGARDLESS OF THICKNESS SHALL BE INCIDENTAL TO COMMON EXCAVATION.
  3. THE EXACT LIMITS OF CLEARING AND GRUBBING WILL BE STAKED IN THE FIELD.
  4. ALL REMOVAL ITEMS SHALL BE DISPOSED OF OFF THE PROJECT SITE.
  5. SEE SHEET 81 FOR TH61 INPLACE TOPOGRAPHY AND REMOVALS.

DATE: 8/5/2005 TIME: 10:44:52 AM  
FILENAME: K:\2\WastCity\24390\Nwy-brag\Nwy\br-sfr\0200802.rml

DRAWN BY: TJV  
CHECKED BY: BDP

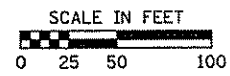
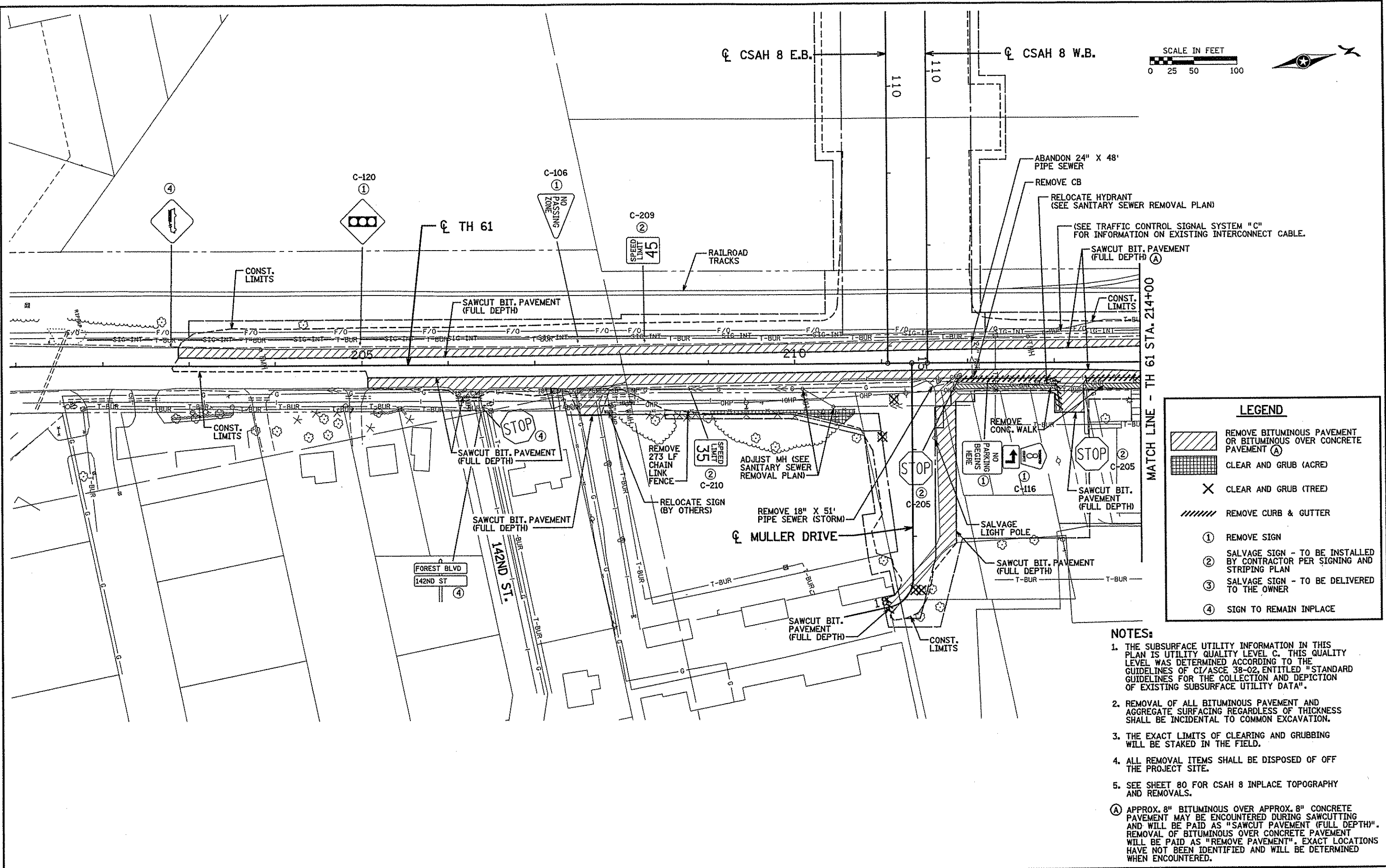
CERTIFIED BY *Grant O. Paulin* LIC. NO. 20880 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

**TKDA**  
ENGINEERS · ARCHITECTS · PLANNERS

INPLACE TOPOGRAPHY AND REMOVAL PLAN  
STA. 104+00 TO STA. 113+05.07

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 80 of 296 Sheets

DATE: 8/12/2005 TIME: 4:31:14 PM  
 FILENAME: K:\2\11\asf\cy\124390\Nwy-brdg\Nwy\brdg\200802.rmj



LEGEND	
	REMOVE BITUMINOUS PAVEMENT OR BITUMINOUS OVER CONCRETE PAVEMENT (A)
	CLEAR AND GRUB (ACRE)
	CLEAR AND GRUB (TREE)
	REMOVE CURB & GUTTER
①	REMOVE SIGN
②	SALVAGE SIGN - TO BE INSTALLED BY CONTRACTOR PER SIGNING AND STRIPING PLAN
③	SALVAGE SIGN - TO BE DELIVERED TO THE OWNER
④	SIGN TO REMAIN INPLACE

- NOTES:**
1. THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL C. 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".
  2. REMOVAL OF ALL BITUMINOUS PAVEMENT AND AGGREGATE SURFACING REGARDLESS OF THICKNESS SHALL BE INCIDENTAL TO COMMON EXCAVATION.
  3. THE EXACT LIMITS OF CLEARING AND GRUBBING WILL BE STAKED IN THE FIELD.
  4. ALL REMOVAL ITEMS SHALL BE DISPOSED OF OFF THE PROJECT SITE.
  5. SEE SHEET 80 FOR CSAH 8 INPLACE TOPOGRAPHY AND REMOVALS.
- (A) APPROX. 8" BITUMINOUS OVER APPROX. 8" CONCRETE PAVEMENT MAY BE ENCOUNTERED DURING SAWCUTTING AND WILL BE PAID AS "SAWCUT PAVEMENT (FULL DEPTH)". REMOVAL OF BITUMINOUS OVER CONCRETE PAVEMENT WILL BE PAID AS "REMOVE PAVEMENT". EXACT LOCATIONS HAVE NOT BEEN IDENTIFIED AND WILL BE DETERMINED WHEN ENCOUNTERED.

DRAWN BY: TJV  
 CHECKED BY: BDP

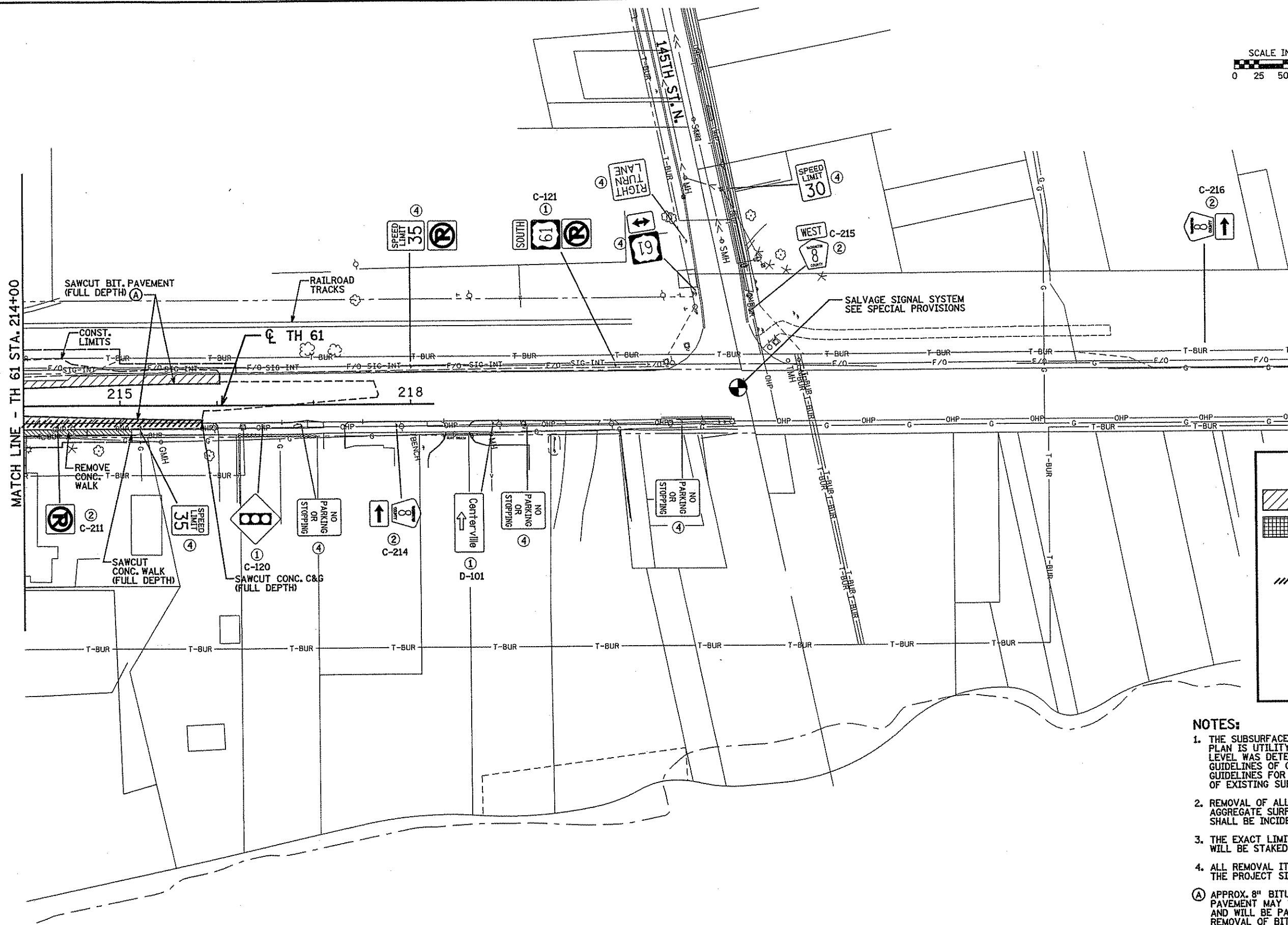
CERTIFIED BY *B. Paul* LIC. NO. 26880 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

**TKDA**  
 ENGINEERS - ARCHITECTS - PLANNERS

INPLACE TOPOGRAPHY AND REMOVAL PLAN  
 STA. 202+00 TO STA. 214+00

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 81 of 296 Sheets

SCALE IN FEET  
0 25 50 100



**LEGEND**

- REMOVE BITUMINOUS PAVEMENT OR BITUMINOUS OVER CONCRETE PAVEMENT (A)
- CLEAR AND GRUB (ACRE)
- CLEAR AND GRUB (TREE)
- REMOVE CURB & GUTTER
- ① REMOVE SIGN
- ② SALVAGE SIGN - TO BE INSTALLED BY CONTRACTOR PER SIGNING AND STRIPING PLAN
- ③ SALVAGE SIGN - TO BE DELIVERED TO THE OWNER
- ④ SIGN TO REMAIN INPLACE

- NOTES:**
1. THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL C. 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".
  2. REMOVAL OF ALL BITUMINOUS PAVEMENT AND AGGREGATE SURFACING REGARDLESS OF THICKNESS SHALL BE INCIDENTAL TO COMMON EXCAVATION.
  3. THE EXACT LIMITS OF CLEARING AND GRUBBING WILL BE STAKED IN THE FIELD.
  4. ALL REMOVAL ITEMS SHALL BE DISPOSED OF OFF THE PROJECT SITE.
- (A) APPROX. 8" BITUMINOUS OVER APPROX. 8" CONCRETE PAVEMENT MAY BE ENCOUNTERED DURING SAWCUTTING AND WILL BE PAID AS "SAWCUT PAVEMENT (FULL DEPTH)". REMOVAL OF BITUMINOUS OVER CONCRETE PAVEMENT WILL BE PAID AS "REMOVE PAVEMENT". EXACT LOCATIONS HAVE NOT BEEN IDENTIFIED AND WILL BE DETERMINED WHEN ENCOUNTERED.

DATE: 8/12/2005 TIME: 4:32:41 PM  
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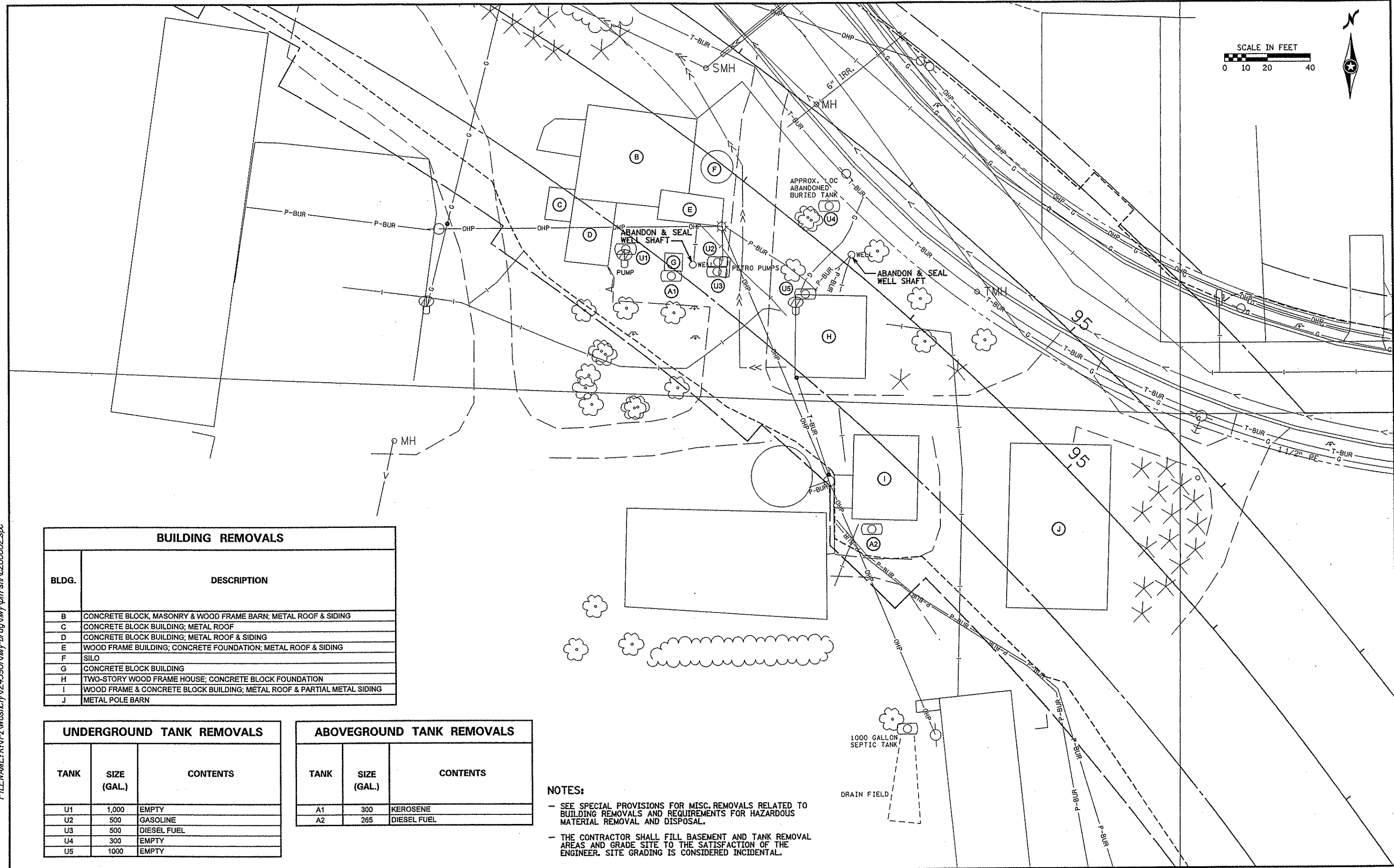
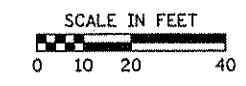
DRAWN BY: TJV  
CHECKED BY: BDP

CERTIFIED BY *Dont O. Pauls* LIC. NO. 26880 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

**TKDA**  
ENGINEERS - ARCHITECTS - PLANNERS

INPLACE TOPOGRAPHY AND REMOVAL PLAN  
STA. 214+00 TO STA. 218+00

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 82 of 296 Sheets



BUILDING REMOVALS	
BLDG.	DESCRIPTION
B	CONCRETE BLOCK, MASONRY & WOOD FRAME BARN; METAL ROOF & SIDING
C	CONCRETE BLOCK BUILDING; METAL ROOF
D	CONCRETE BLOCK BUILDING; METAL ROOF & SIDING
E	WOOD FRAME BUILDING; CONCRETE FOUNDATION; METAL ROOF & SIDING
F	SILO
G	CONCRETE BLOCK BUILDING
H	TWO-STORY WOOD FRAME HOUSE; CONCRETE BLOCK FOUNDATION
I	WOOD FRAME & CONCRETE BLOCK BUILDING; METAL ROOF & PARTIAL METAL SIDING
J	METAL POLE BARN

UNDERGROUND TANK REMOVALS		
TANK	SIZE (GAL.)	CONTENTS
U1	1,000	EMPTY
U2	500	GASOLINE
U3	500	DIESEL FUEL
U4	300	EMPTY
U5	1000	EMPTY

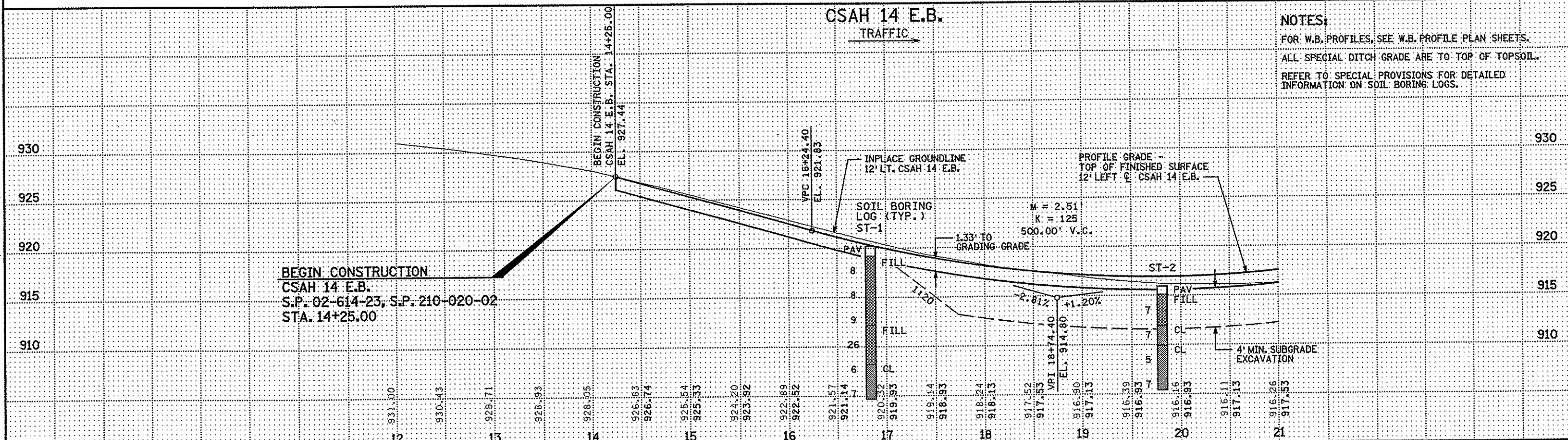
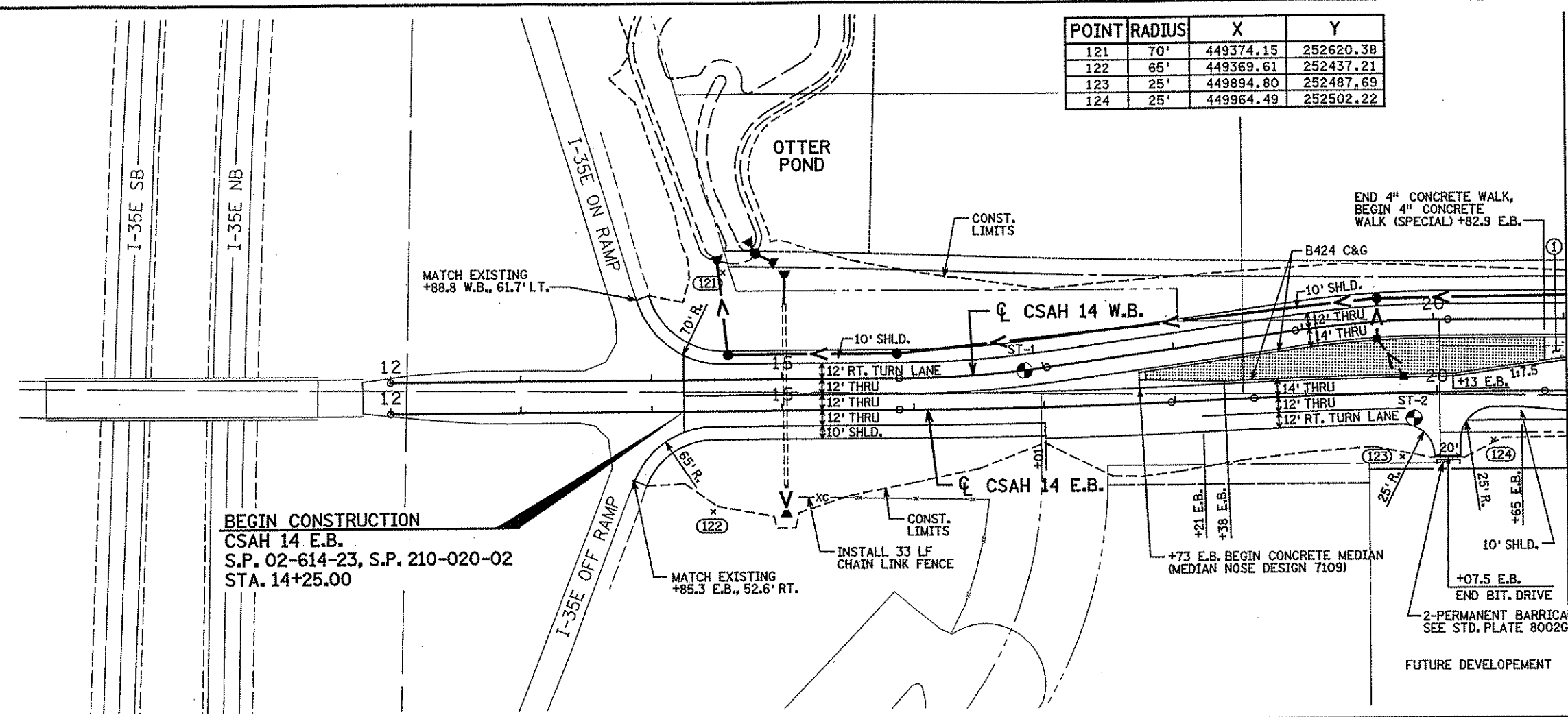
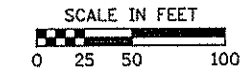
ABOVEGROUND TANK REMOVALS		
TANK	SIZE (GAL.)	CONTENTS
A1	300	KEROSENE
A2	265	DIESEL FUEL

**NOTES:**

- SEE SPECIAL PROVISIONS FOR MISC. REMOVALS RELATED TO BUILDING REMOVALS AND REQUIREMENTS FOR HAZARDOUS MATERIAL REMOVAL AND DISPOSAL.
- THE CONTRACTOR SHALL FILL BASEMENT AND TANK REMOVAL AREAS AND GRADE SITE TO THE SATISFACTION OF THE ENGINEER. SITE GRADING IS CONSIDERED INCIDENTAL.

DATE: 8/15/2005 TIME: 1:45:35 PM FILENAME: K:\r-z\wgs\cny\24390\Navy-brdg\wxy\p\tr-sit\c200802.spc

POINT	RADIUS	X	Y
121	70'	449374.15	252620.38
122	65'	449369.61	252437.21
123	25'	449894.80	252487.69
124	25'	449964.49	252502.22



DATE: 8/15/2005 TIME: 10:40:54 AM FILENAME: K:\v2\wgst\cy\24390\Nwy-brdg\Nwy-plr-sht\c200802.cpl

DRAWN BY: TJV  
CHECKED BY: BDP

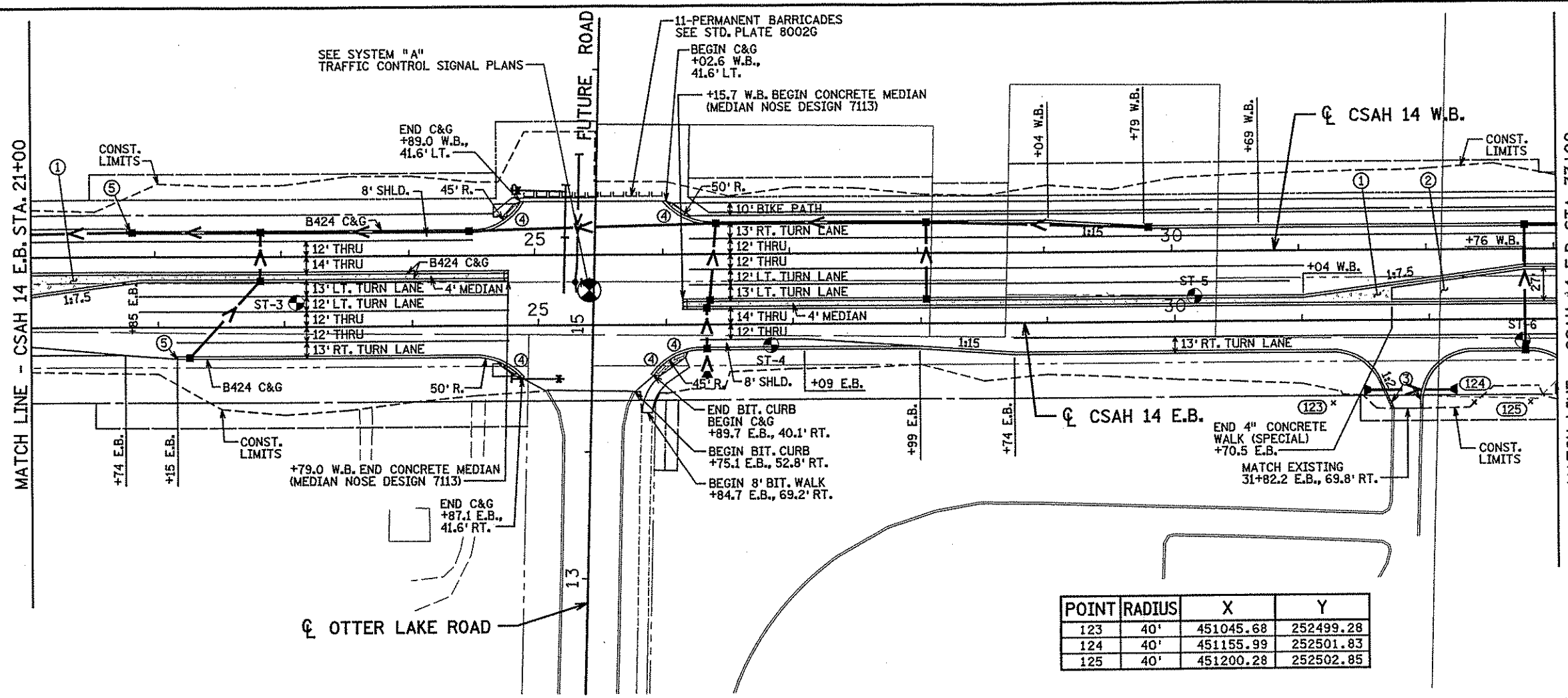
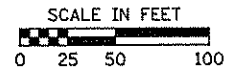
CERTIFIED BY *Brent J. Paulin* LIC. NO. 20800 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

**TKDA**  
ENGINEERS - ARCHITECTS - PLANNERS

CONSTRUCTION PLAN AND PROFILE  
STA. 12+00 TO STA. 21+00

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 84 of 296 Sheets

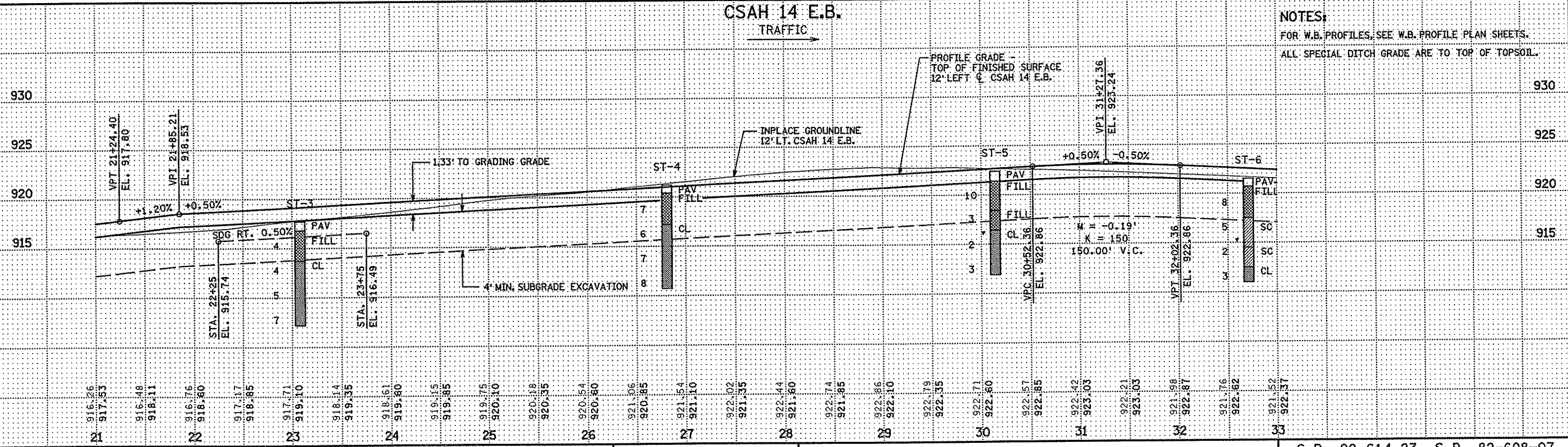




- NOTES:**
1. ALL DIMENSIONS ARE TO FACE OF CURB.
  2. SEE RIGHT OF WAY PLANS FOR R/W AND EASEMENT DIMENSIONS.
  3. SEE BIKE PATH PLAN AND PROFILES FOR CONSTRUCTION DETAILS.
  4. SEE INTERSECTION DETAILS FOR RADII POINTS.

- LEGEND:**
- 4" CONCRETE WALK (SPECIAL)
  - 4" CONCRETE WALK
  - ① 4" CONCRETE (SPECIAL) SEE TYPICAL SECTIONS, DETAIL C.
  - ② TURF W/ 4" CONC. (SPECIAL) SEE TYPICAL SECTIONS, DETAIL D.
  - ③ 10' TRANSITION CURB FROM B424 C&G TO B618 C&G SEE MISCELLANEOUS DETAILS.
  - ④ CONSTRUCT CONCRETE PEDESTRIAN CURB RAMP SEE MISCELLANEOUS DETAILS.
  - ⑤ 10' TRANSITION CURB HEIGHT.

POINT	RADIUS	X	Y
123	40'	451045.68	252499.28
124	40'	451155.99	252501.83
125	40'	451200.28	252502.85



- NOTES:**
- FOR W.B. PROFILES, SEE W.B. PROFILE PLAN SHEETS.
  - ALL SPECIAL DITCH GRADE ARE TO TOP OF TOPSOIL.

DATE: 8/5/2005 TIME: 10:41:04 AM FILENAME: K:\r-z\wast\cy\24390\Nwy-brdg\pwy\pfr-sit\c200802.cbp

DRAWN BY: TJV  
CHECKED BY: BDP

CERTIFIED BY *Paul O. Paul* LIC. NO. 20890 DATE 8/5/05  
LICENSED PROFESSIONAL ENGINEER

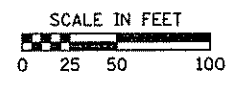
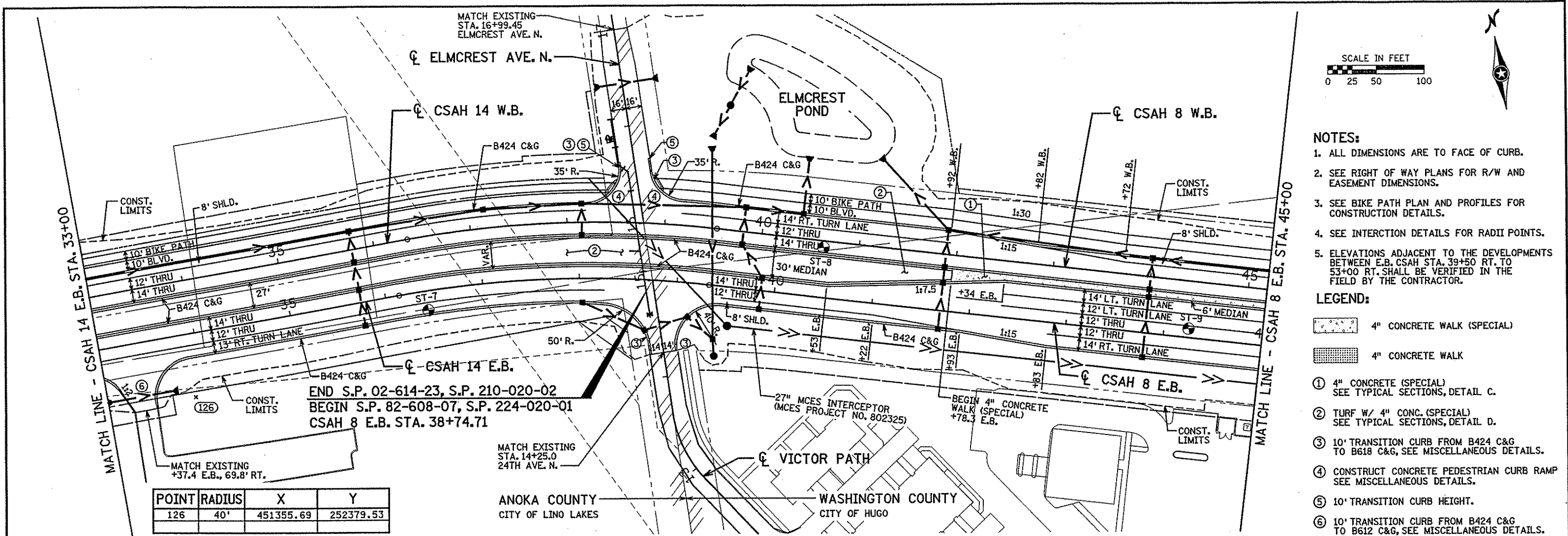
**TKDA**  
ENGINEERS - ARCHITECTS - PLANNERS

CONSTRUCTION PLAN AND PROFILE  
STA. 21+00 TO STA. 33+00

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 85 of 296 Sheets



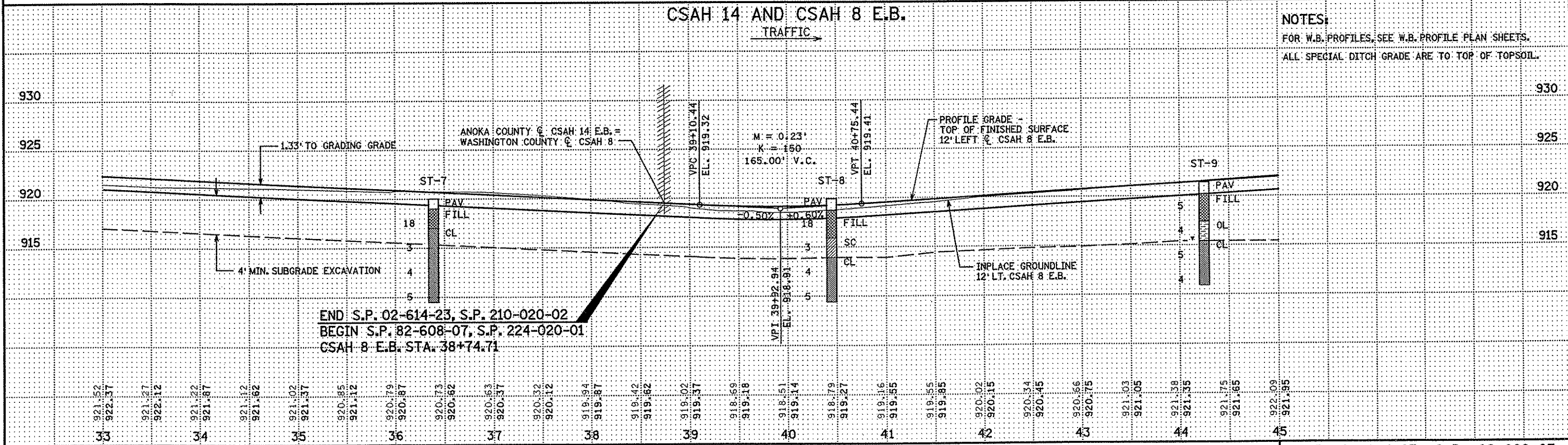
DATE: 10/26/2005 TIME: 2:02:13 PM  
 FILENAME: K:\P2\WastCity\24390\W\brdg\hwy\air\stf\c200802.cpg



- NOTES:**
- ALL DIMENSIONS ARE TO FACE OF CURB.
  - SEE RIGHT OF WAY PLANS FOR R/W AND EASEMENT DIMENSIONS.
  - SEE BIKE PATH PLAN AND PROFILES FOR CONSTRUCTION DETAILS.
  - SEE INTERSECTION DETAILS FOR RADII POINTS.
  - ELEVATIONS ADJACENT TO THE DEVELOPMENTS BETWEEN E.B. CSAH STA. 39+50 RT. TO 53+00 RT. SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR.
- LEGEND:**
- 4" CONCRETE WALK (SPECIAL)
  - 4" CONCRETE WALK
  - ① 4" CONCRETE (SPECIAL) SEE TYPICAL SECTIONS, DETAIL C.
  - ② TURF W/ 4" CONC. (SPECIAL) SEE TYPICAL SECTIONS, DETAIL D.
  - ③ 10' TRANSITION CURB FROM B424 C&G TO B618 C&G, SEE MISCELLANEOUS DETAILS.
  - ④ CONSTRUCT CONCRETE PEDESTRIAN CURB RAMP SEE MISCELLANEOUS DETAILS.
  - ⑤ 10' TRANSITION CURB HEIGHT.
  - ⑥ 10' TRANSITION CURB FROM B424 C&G TO B612 C&G, SEE MISCELLANEOUS DETAILS.

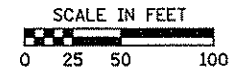
POINT	RADIUS	X	Y
126	40'	451355.69	252379.53

CSAH 14 AND CSAH 8 E.B.  
 TRAFFIC



- NOTES:**
- FOR W.B. PROFILES, SEE W.B. PROFILE PLAN SHEETS.
  - ALL SPECIAL DITCH GRADE ARE TO TOP OF TOPSOIL.

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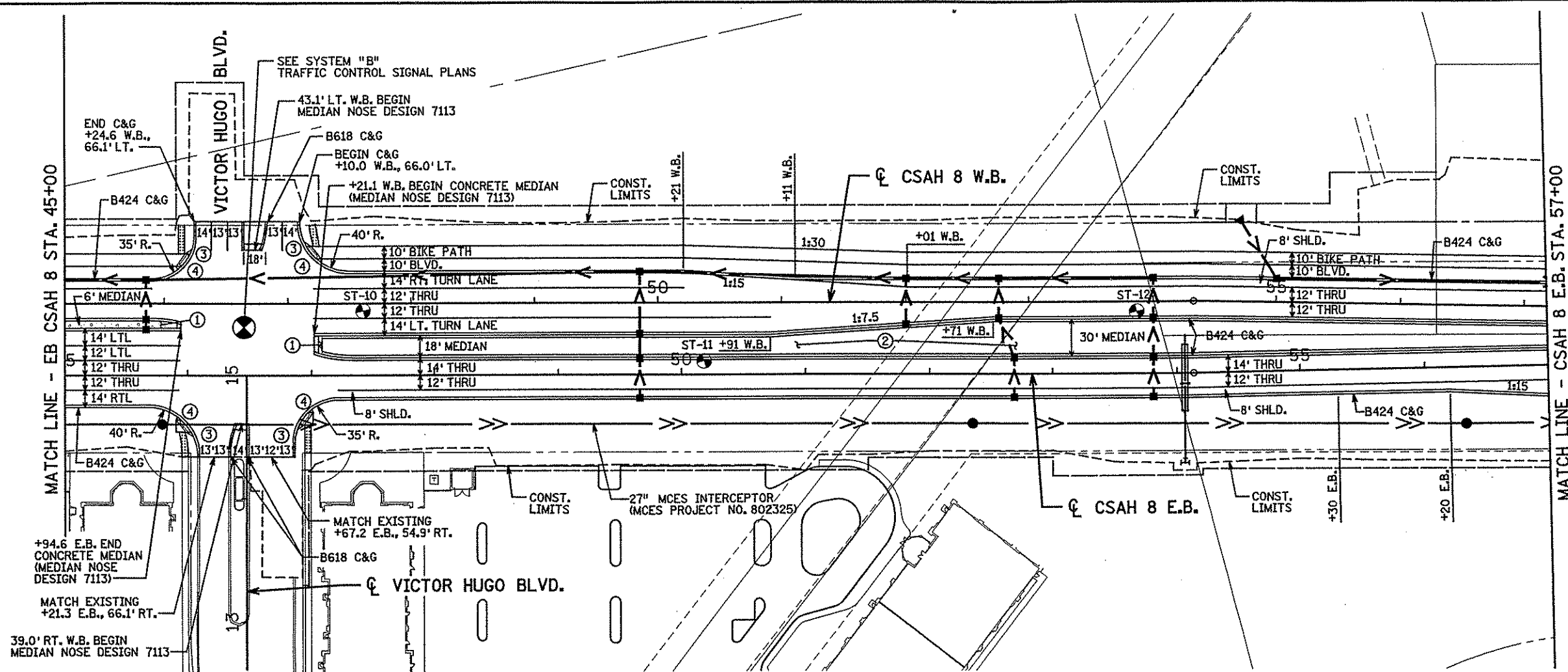


**NOTES:**

1. ALL DIMENSIONS ARE TO FACE OF CURB.
2. SEE RIGHT OF WAY PLANS FOR R/W AND EASEMENT DIMENSIONS.
3. SEE BIKE PATH PLAN AND PROFILES FOR CONSTRUCTION DETAILS.
4. SEE INTERSECTION DETAILS FOR RADII POINTS.
5. ELEVATIONS ADJACENT TO THE DEVELOPMENTS BETWEEN E.B. CSAH STA. 39+50 RT. TO 53+00 RT. SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR.

**LEGEND:**

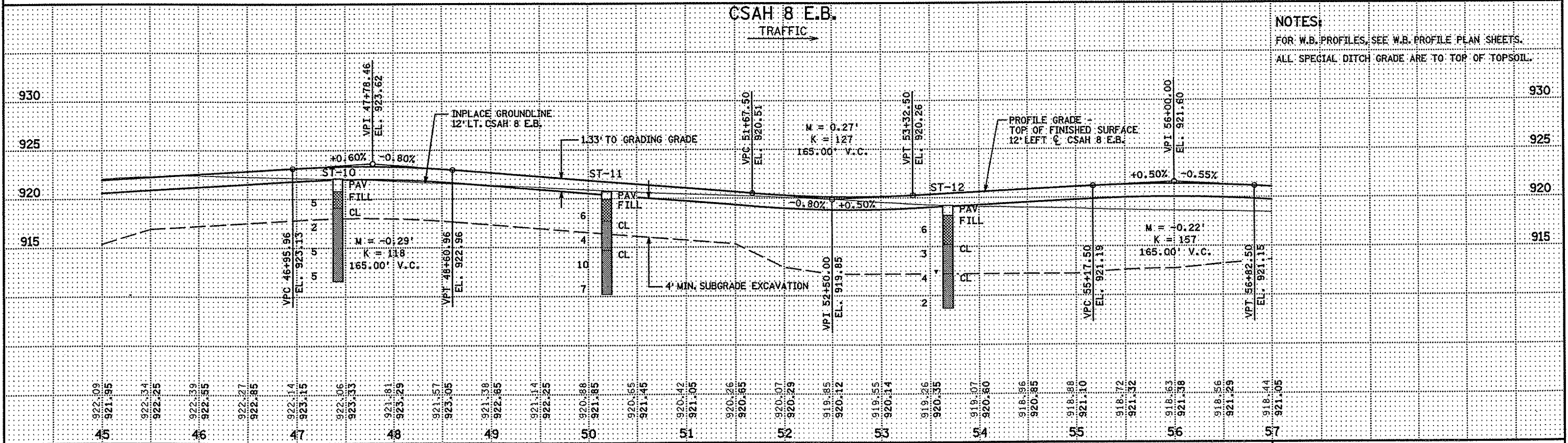
- 4" CONCRETE WALK (SPECIAL)
- 4" CONCRETE WALK
- ① 4" CONCRETE (SPECIAL) SEE TYPICAL SECTIONS, DETAIL C.
- ② TURF W/ 4" CONC. (SPECIAL) SEE TYPICAL SECTIONS, DETAIL D.
- ③ 10' TRANSITION CURB FROM B424 C&G TO B618 C&G SEE MISCELLANEOUS DETAILS.
- ④ CONSTRUCT CONCRETE PEDESTRIAN CURB RAMP SEE MISCELLANEOUS DETAILS.



**CSAH 8 E.B. TRAFFIC**

**NOTES:**

FOR W.B. PROFILES, SEE W.B. PROFILE PLAN SHEETS.  
 ALL SPECIAL DITCH GRADE ARE TO TOP OF TOPSOIL.



DRAWN BY: TJV  
 CHECKED BY: BDP

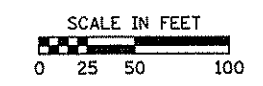
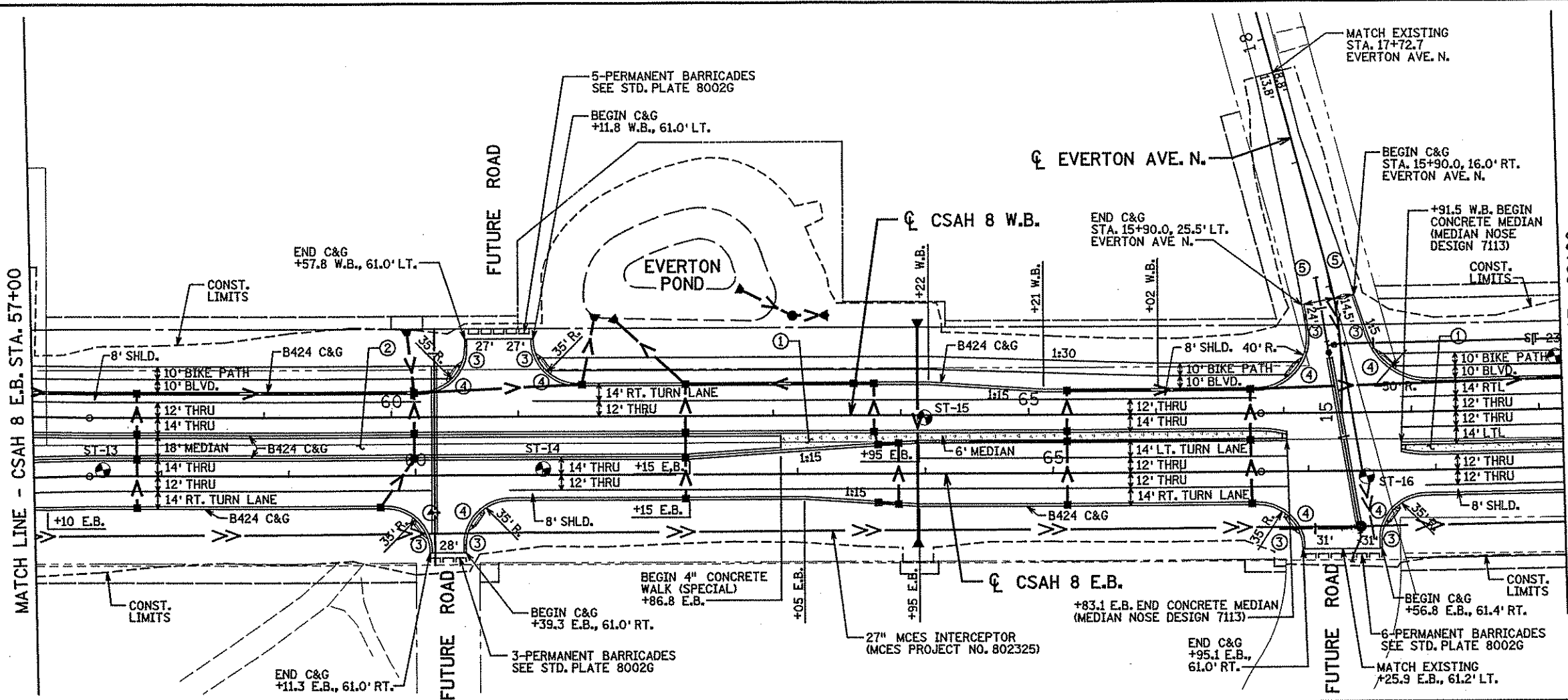
CERTIFIED BY: *[Signature]*  
 LICENSED PROFESSIONAL ENGINEER  
 LIC. NO. 20880 DATE 8/16/05

**TKDA**  
 ENGINEERS - ARCHITECTS - PLANNERS

CONSTRUCTION PLAN AND PROFILE  
 STA. 45+00 TO STA. 57+00

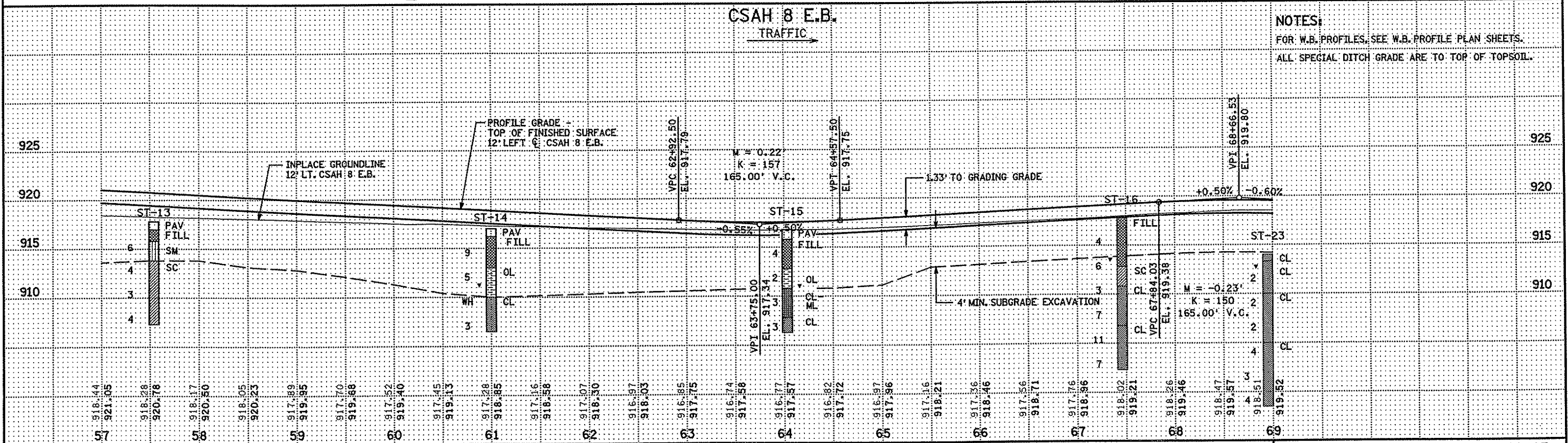
S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 87 of 296 Sheets

DATE: 8/16/2005 TIME: 8:44:09 AM  
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- NOTES:**
1. ALL DIMENSIONS ARE TO FACE OF CURB.
  2. SEE RIGHT OF WAY PLANS FOR R/W AND EASEMENT DIMENSIONS.
  3. SEE BIKE PATH PLAN AND PROFILES FOR CONSTRUCTION DETAILS.
  4. SEE INTERSECTION DETAILS FOR RADII POINTS.

- LEGEND:**
- 4" CONCRETE WALK (SPECIAL)
  - 4" CONCRETE WALK
  - ① 4" CONCRETE (SPECIAL) SEE TYPICAL SECTIONS, DETAIL C.
  - ② TURF W/ 4" CONC. (SPECIAL) SEE TYPICAL SECTIONS, DETAIL D.
  - ③ 10' TRANSITION CURB FROM B424 C&G TO B618 C&G SEE MISCELLANEOUS DETAILS.
  - ④ CONSTRUCT CONCRETE PEDESTRIAN CURB RAMP SEE MISCELLANEOUS DETAILS.
  - ⑤ 10' TRANSITION CURB HEIGHT.



- NOTES:**
- FOR W.B. PROFILES, SEE W.B. PROFILE PLAN SHEETS.
  - ALL SPECIAL DITCH GRADE ARE TO TOP OF TOPSOIL.

DRAWN BY: TJV  
 CHECKED BY: BDP

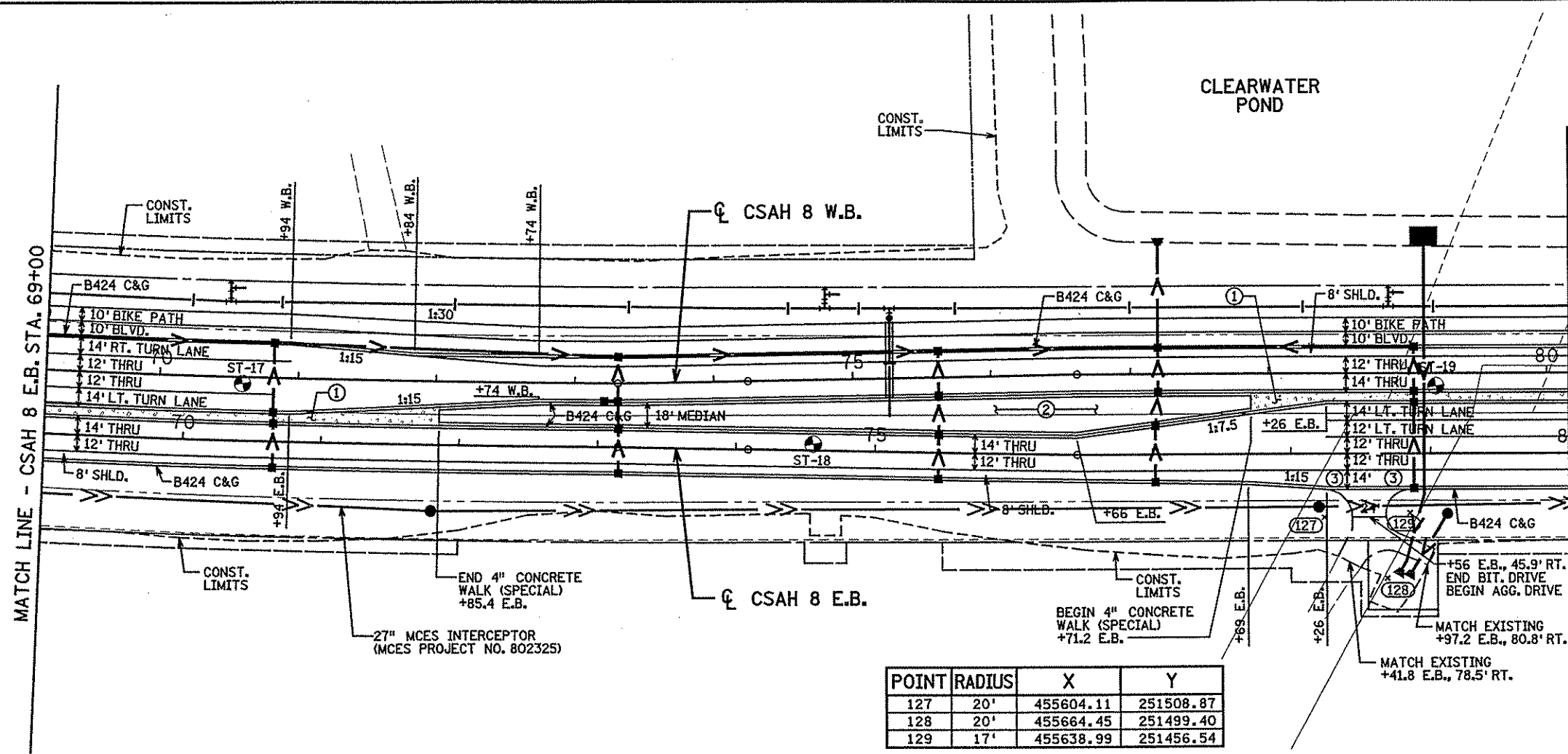
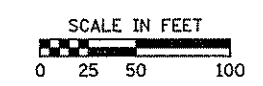
CERTIFIED BY *Scott O. Paul*  
 LICENSED PROFESSIONAL ENGINEER  
 LIC. NO. 20820 DATE 8/15/05

**TKDA**  
 ENGINEERS - ARCHITECTS - PLANNERS

CONSTRUCTION PLAN AND PROFILE  
 STA. 57+00 TO STA. 69+00

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 88 of 296 Sheets

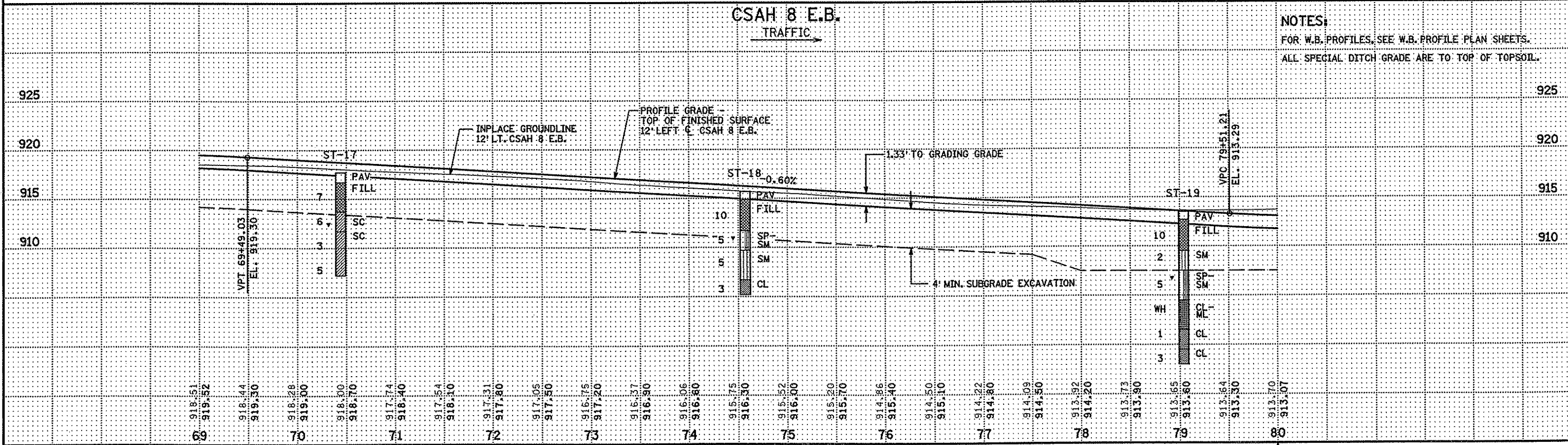




- NOTES:**
1. ALL DIMENSIONS ARE TO FACE OF CURB.
  2. SEE RIGHT OF WAY PLANS FOR R/W AND EASEMENT DIMENSIONS.
  3. SEE BIKE PATH PLAN AND PROFILES FOR CONSTRUCTION DETAILS.

- LEGEND:**
- 4" CONCRETE WALK (SPECIAL)
  - ① 4" CONCRETE (SPECIAL) SEE TYPICAL SECTIONS, DETAIL C.
  - ② TURF W/ 4" CONC. (SPECIAL) SEE TYPICAL SECTIONS, DETAIL D.
  - ③ 4' TRANSITION CURB HEIGHT.

POINT	RADIUS	X	Y
127	20'	455604.11	251508.87
128	20'	455664.45	251499.40
129	17'	455638.99	251456.54



- NOTES:**
- FOR W.B. PROFILES, SEE W.B. PROFILE PLAN SHEETS.
  - ALL SPECIAL DITCH GRADE ARE TO TOP OF TOPSOIL.

DATE: 8/16/2005 TIME: 8:44:18 AM FILENAME: K:\r2\wgs\cy\24390\Nwy\brdg\Nwy\brf\stf\c200802.cpl

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CHECKED BY: BDP

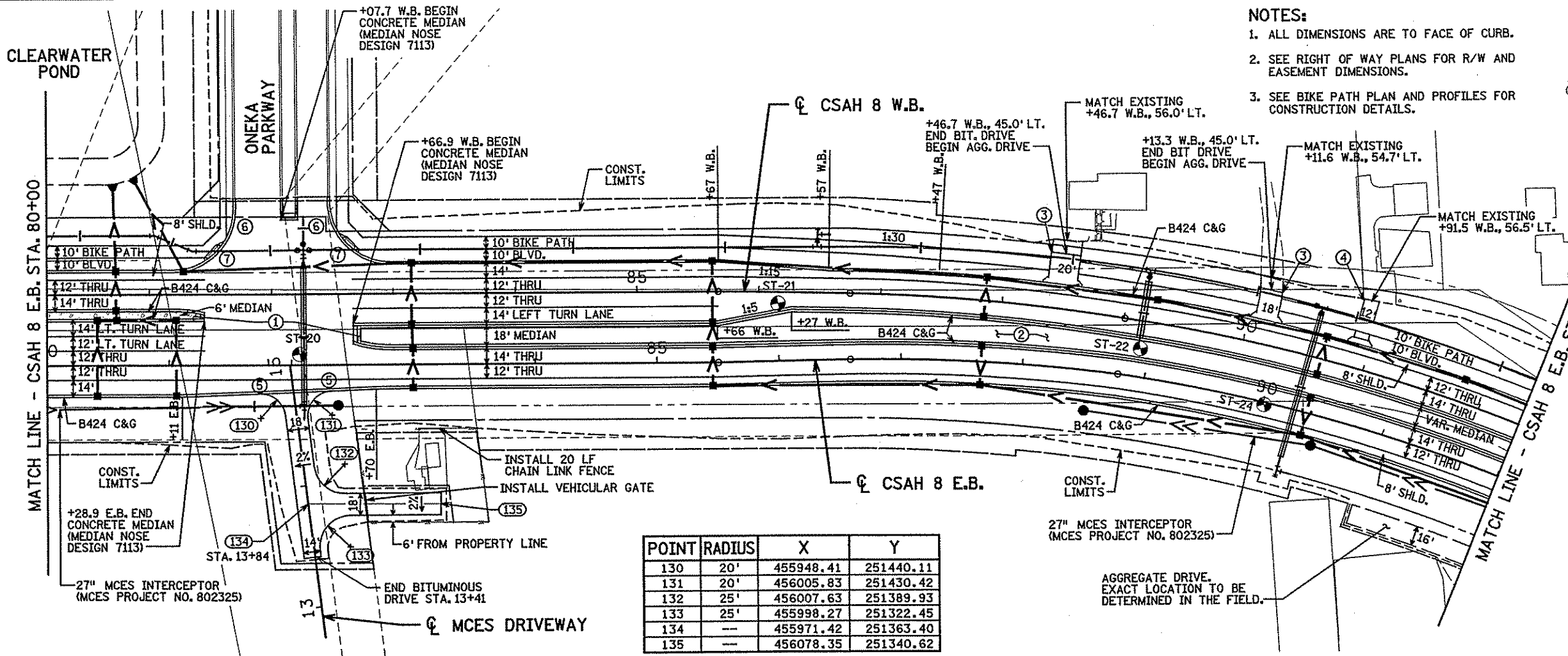
CERTIFIED BY *Grant J. Pauler* LIC. NO. 26880 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

**TKDA**  
ENGINEERS - ARCHITECTS - PLANNERS

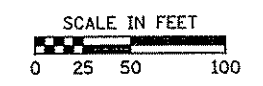
CONSTRUCTION PLAN AND PROFILE  
STA. 69+00 TO STA. 80+00

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 89 of 296 Sheets

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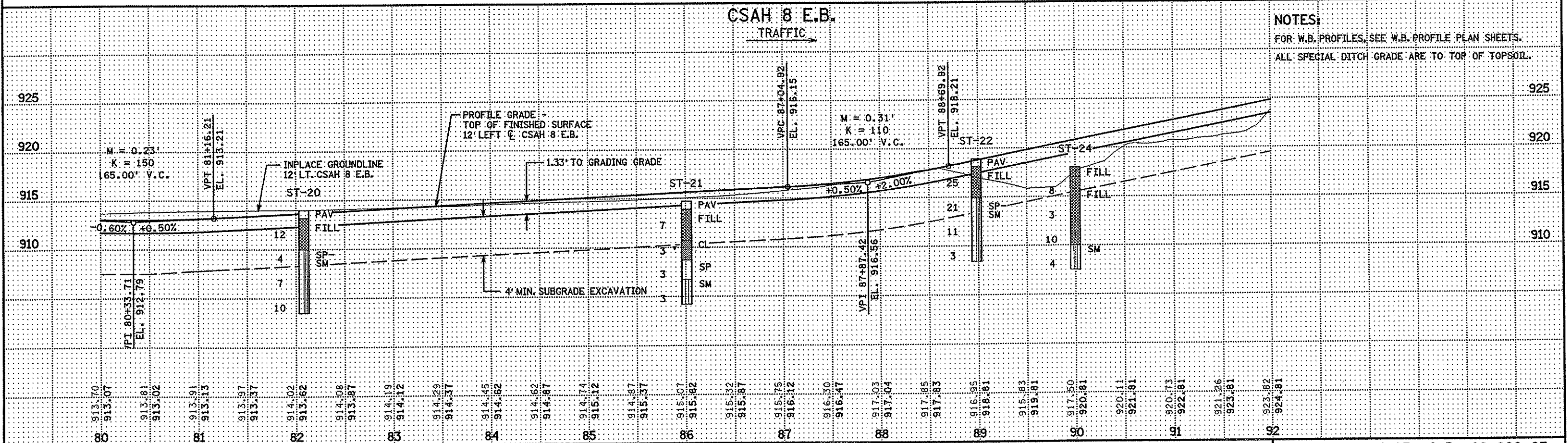


- NOTES:**
1. ALL DIMENSIONS ARE TO FACE OF CURB.
  2. SEE RIGHT OF WAY PLANS FOR R/W AND EASEMENT DIMENSIONS.
  3. SEE BIKE PATH PLAN AND PROFILES FOR CONSTRUCTION DETAILS.



- LEGEND:**
- 4" CONCRETE WALK (SPECIAL)
  - 4" CONCRETE (SPECIAL) SEE TYPICAL SECTIONS, DETAIL C.
  - TURF W/ 4" CONC. (SPECIAL) SEE TYPICAL SECTIONS, DETAIL D.
  - BITUMINOUS DRIVEWAY AND APRON. SEE DRIVEWAY DETAIL.
  - CONCRETE DRIVEWAY AND APRON. SEE DRIVEWAY DETAIL.
  - 4" TRANSITION CURB HEIGHT.
  - 10" TRANSITION CURB FROM B424 C&G TO B618 C&G. SEE MISCELLANEOUS DETAILS.
  - CONSTRUCT CONCRETE PEDESTRIAN CURB RAMP. SEE MISCELLANEOUS DETAILS.

POINT	RADIUS	X	Y
130	20'	455948.41	251440.11
131	20'	456005.83	251430.42
132	25'	456007.63	251389.93
133	25'	455998.27	251322.45
134	--	455971.42	251363.40
135	--	456078.35	251340.62



- NOTES:**
- FOR W.B. PROFILES, SEE W.B. PROFILE PLAN SHEETS.
  - ALL SPECIAL DITCH GRADE ARE TO TOP OF TOPSOIL.

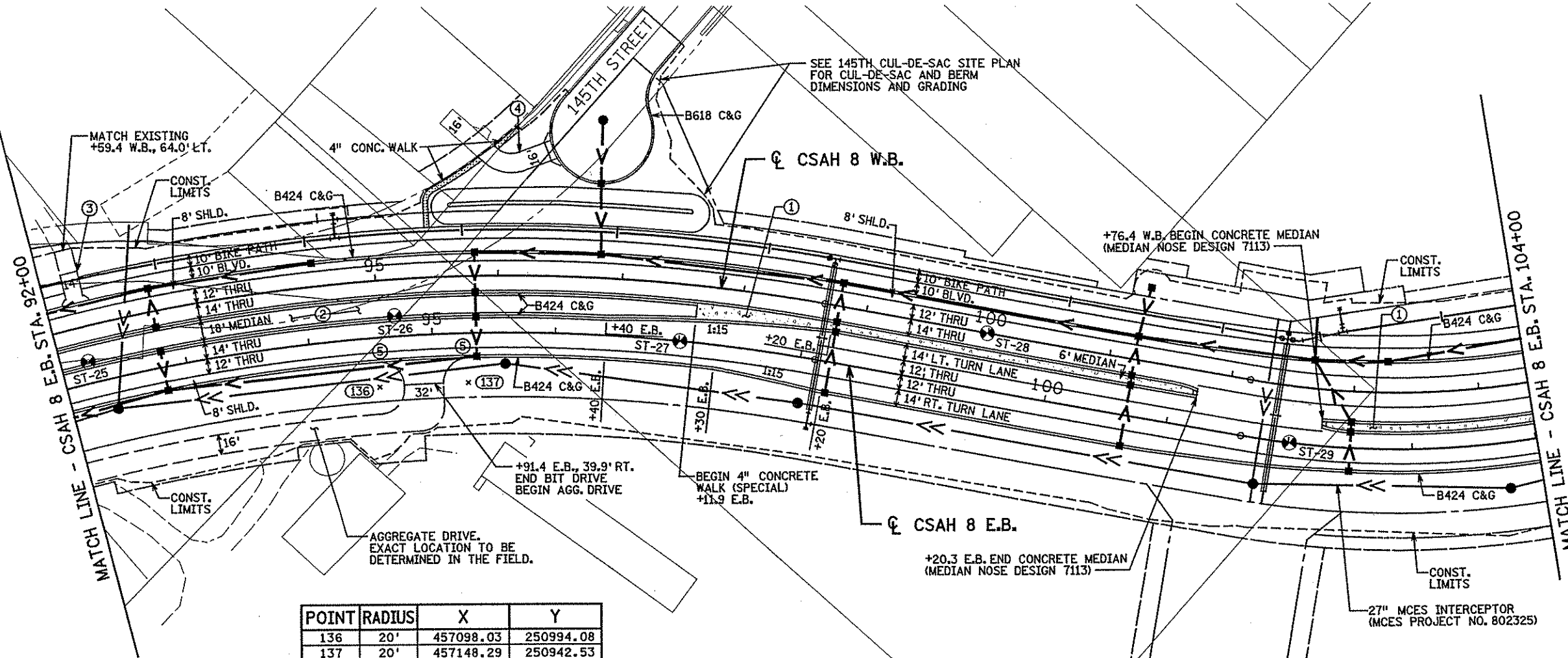
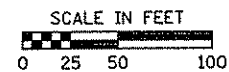
DRAWN BY: TJV  
 CHECKED BY: BDP

CERTIFIED BY *Scott O. Pauls*  
 LICENSED PROFESSIONAL ENGINEER  
 LIC. NO. 20880 DATE 8/16/05

**TKDA**  
 ENGINEERS - ARCHITECTS - PLANNERS

CONSTRUCTION PLAN AND PROFILE  
 STA. 80+00 TO STA. 92+00

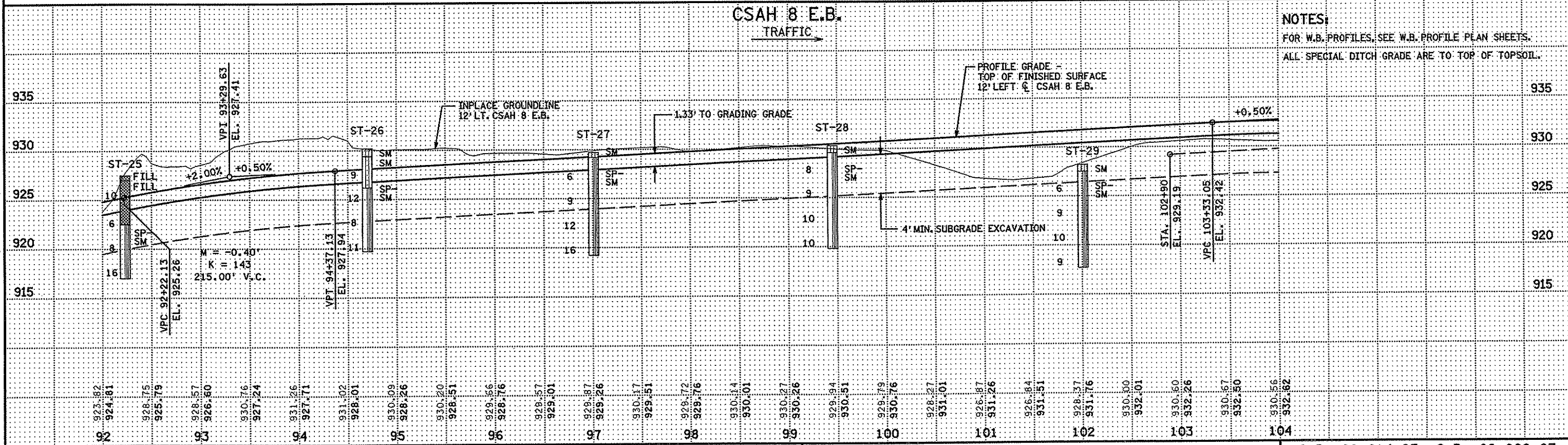
S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 90 of 296 Sheets



- NOTES:**
1. ALL DIMENSIONS ARE TO FACE OF CURB.
  2. SEE RIGHT OF WAY PLANS FOR R/W AND EASEMENT DIMENSIONS.
  3. SEE BIKE PATH PLAN AND PROFILES FOR CONSTRUCTION DETAILS.

- LEGEND:**
- 4" CONCRETE WALK (SPECIAL)
  - 4" CONCRETE WALK
  - ① 4" CONCRETE (SPECIAL) SEE TYPICAL SECTIONS, DETAIL C.
  - ② TURF W/ 4" CONC. (SPECIAL) SEE TYPICAL SECTIONS, DETAIL D.
  - ③ BITUMINOUS DRIVEWAY AND APRON SEE DRIVEWAY DETAIL.
  - ④ CONCRETE DRIVEWAY AND APRON SEE DRIVEWAY DETAIL.
  - ⑤ 4" TRANSITION CURB HEIGHT.

POINT	RADIUS	X	Y
136	20'	457098.03	250994.08
137	20'	457148.29	250942.53



- NOTES:**
- FOR W.B. PROFILES, SEE W.B. PROFILE PLAN SHEETS.
  - ALL SPECIAL DITCH GRADE ARE TO TOP OF TOPSOIL.

DATE: 8/16/2005 TIME: 8:53:16 AM FILENAME: K:\v2\WastCity\24390\Nwy-brdg\Nwy\plan\stf\c200802.dgn

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CHECKED BY: BDP

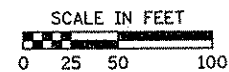
CERTIFIED BY *Scott O. Pauls*  
LIC. NO. 20880 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

**TKDA**  
ENGINEERS - ARCHITECTS - PLANNERS

CONSTRUCTION PLAN AND PROFILE  
STA. 92+00 TO STA. 104+00

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 91 of 296 Sheets



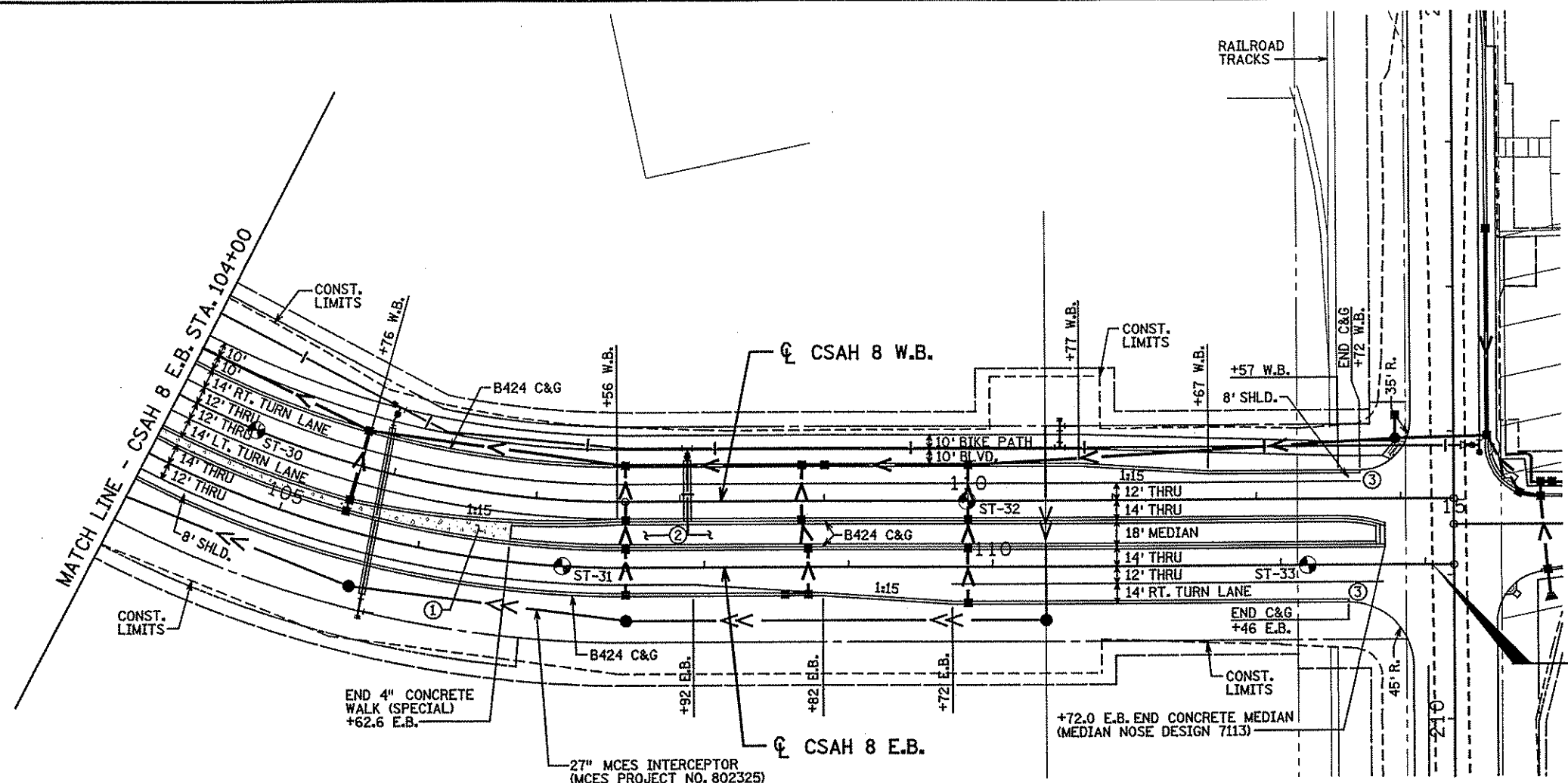


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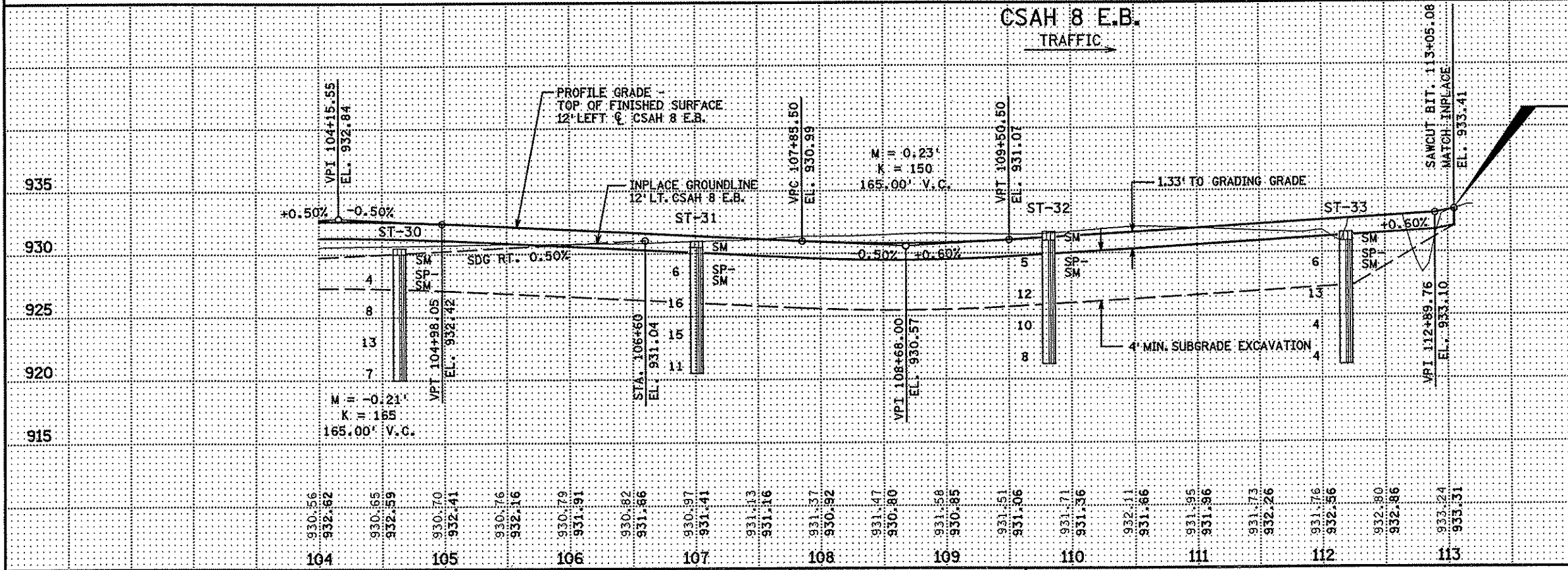
1. ALL DIMENSIONS ARE TO FACE OF CURB.
2. SEE RIGHT OF WAY PLANS FOR R/W AND EASEMENT DIMENSIONS.
3. SEE BIKE PATH PLAN AND PROFILES FOR CONSTRUCTION DETAILS.
4. SEE INTERSECTION DETAILS FOR RADII POINTS.

**LEGEND:**

- 4" CONCRETE WALK (SPECIAL)
- 4" CONCRETE WALK
- ① 4" CONCRETE (SPECIAL) SEE TYPICAL SECTIONS, DETAIL C.
- ② TURF W/ 4" CONC. (SPECIAL) SEE TYPICAL SECTIONS, DETAIL D.
- ③ 10' TRANSITION CURB HEIGHT.



**END CONSTRUCTION**  
 CSAH 8 E.B.  
 S.P. 82-608-07, S.P. 224-020-01  
 STA. 113+05.07



**NOTES:**  
 FOR W.B. PROFILES, SEE W.B. PROFILE PLAN SHEETS.  
 ALL SPECIAL DITCH GRADE ARE TO TOP OF TOPSOIL.

**END CONSTRUCTION**  
 CSAH 8 E.B.  
 S.P. 82-608-07, S.P. 224-020-01  
 STA. 113+05.07

DATE: 8/16/2005 TIME: 8:53:24 AM  
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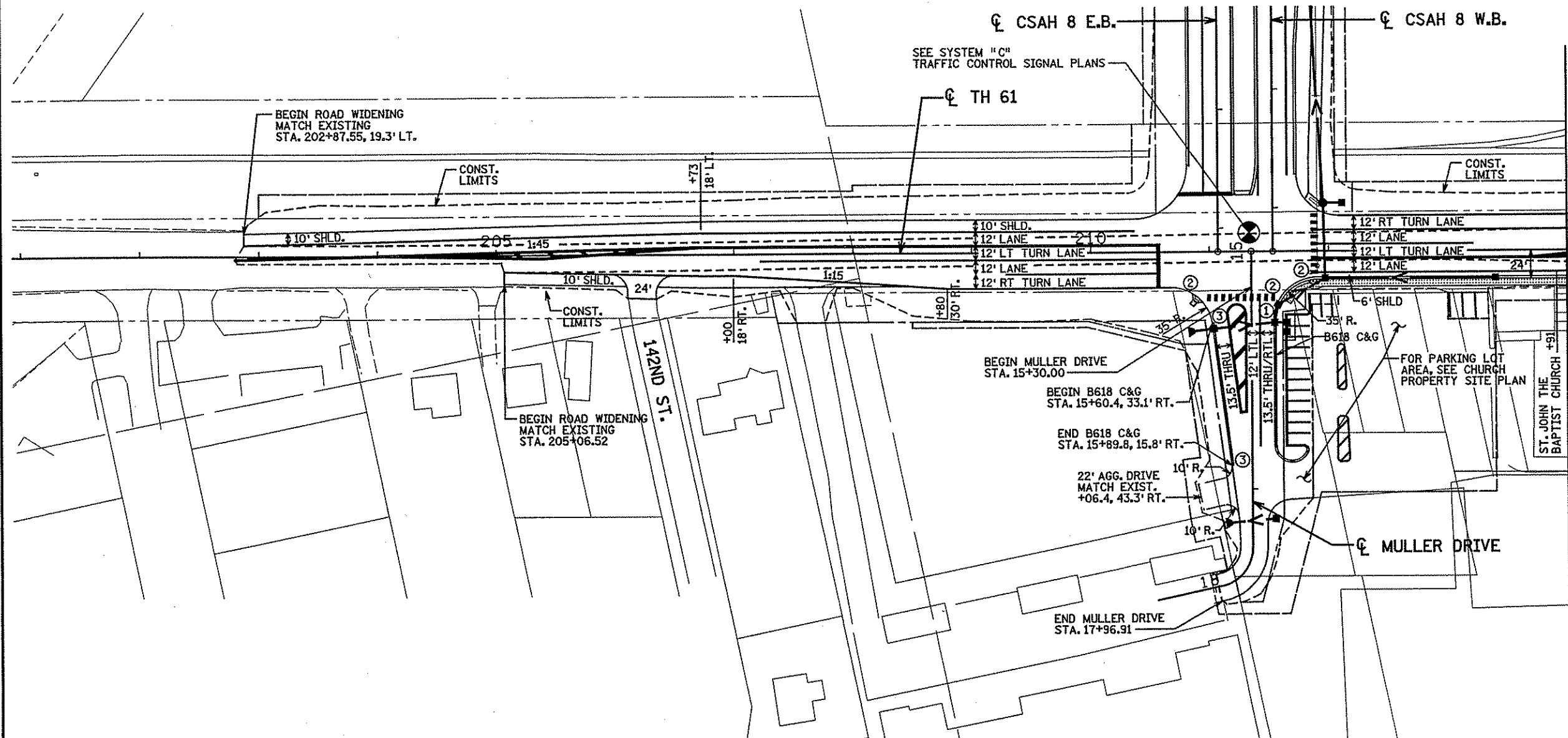
CERTIFIED BY *Brent D. Pauls* LIC. NO. 20880 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

**TKDA**  
 ENGINEERS - ARCHITECTS - PLANNERS

CONSTRUCTION PLAN AND PROFILE  
 STA. 104+00 TO STA. 113+05.07

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 92 of 296 Sheets





MATCH LINE - TH 61 STA. 214+00

- NOTES:**
1. ALL DIMENSIONS ARE TO FACE OF CURB.
  2. SEE RIGHT OF WAY PLANS FOR R/W AND EASEMENT DIMENSIONS.
  3. SEE CHURCH SITE PLAN FOR CONSTRUCTION DETAILS.
  4. SEE INTERSECTION DETAILS FOR RADII POINTS.

- LEGEND:**
- 4" CONCRETE WALK
  - ① 10' TRANSITION CURB FROM B424 C&G TO B618 C&G SEE MISCELLANEOUS DETAILS.
  - ② CONSTRUCT CONCRETE PEDESTRIAN CURB RAMP SEE MISCELLANEOUS DETAILS.
  - ③ 10' TRANSITION CURB HEIGHT.

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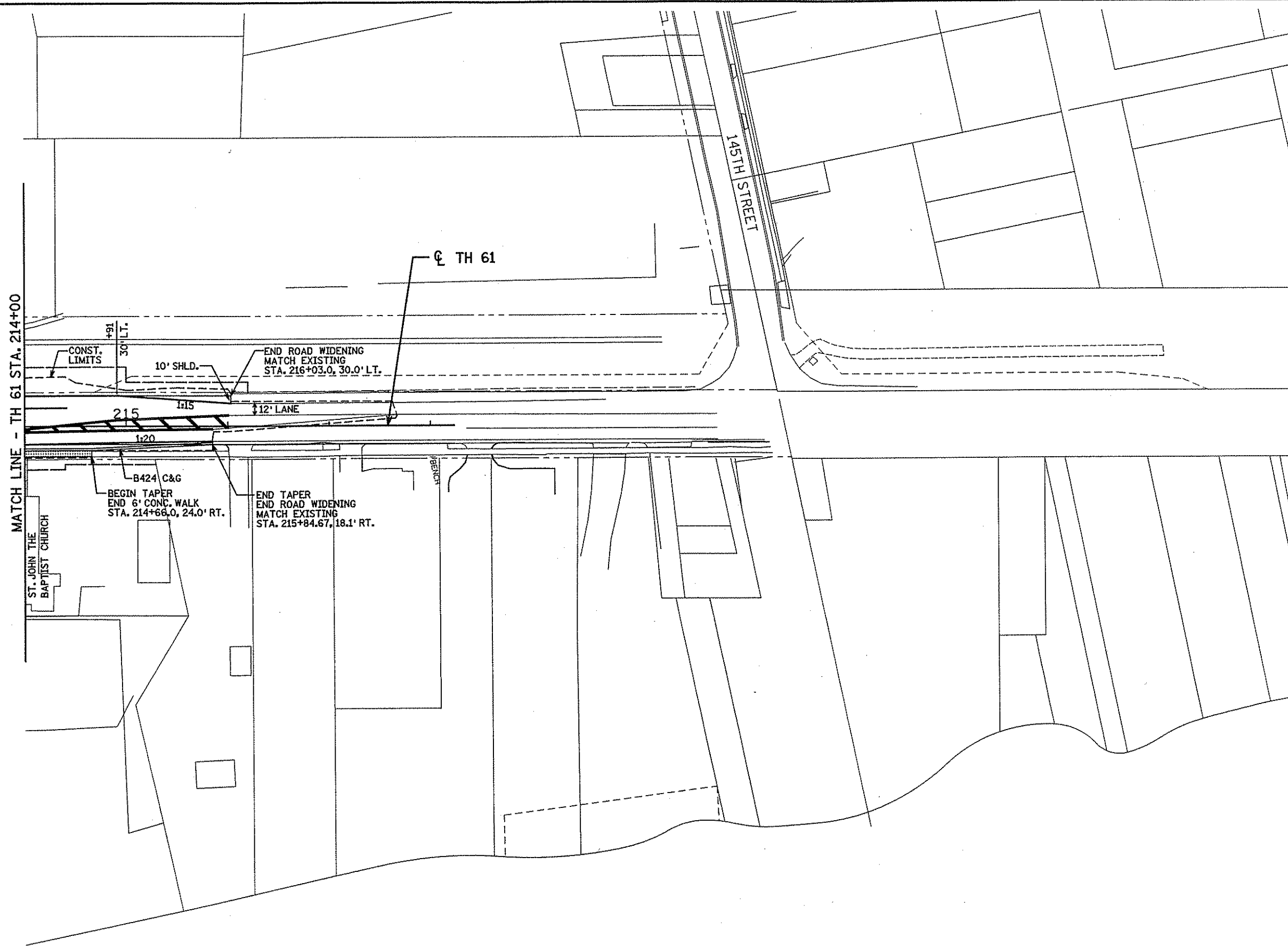
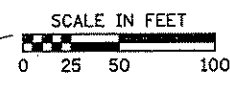
DRAWN BY: TJV  
CHECKED BY: BDP

CERTIFIED BY *Scott O. Paulin* LIC. NO. 26882 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

**TKDA**  
ENGINEERS · ARCHITECTS · PLANNERS

CONSTRUCTION PLAN  
TH 61 STA. 202+00 TO STA. 214+00

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 93 of 296 Sheets



**NOTES:**  
 1. SEE RIGHT OF WAY PLANS FOR R/W AND EASEMENT DIMENSIONS.

**LEGEND:**  
 4" CONCRETE WALK

DATE: 8/16/2005 TIME: 8:44:49 AM  
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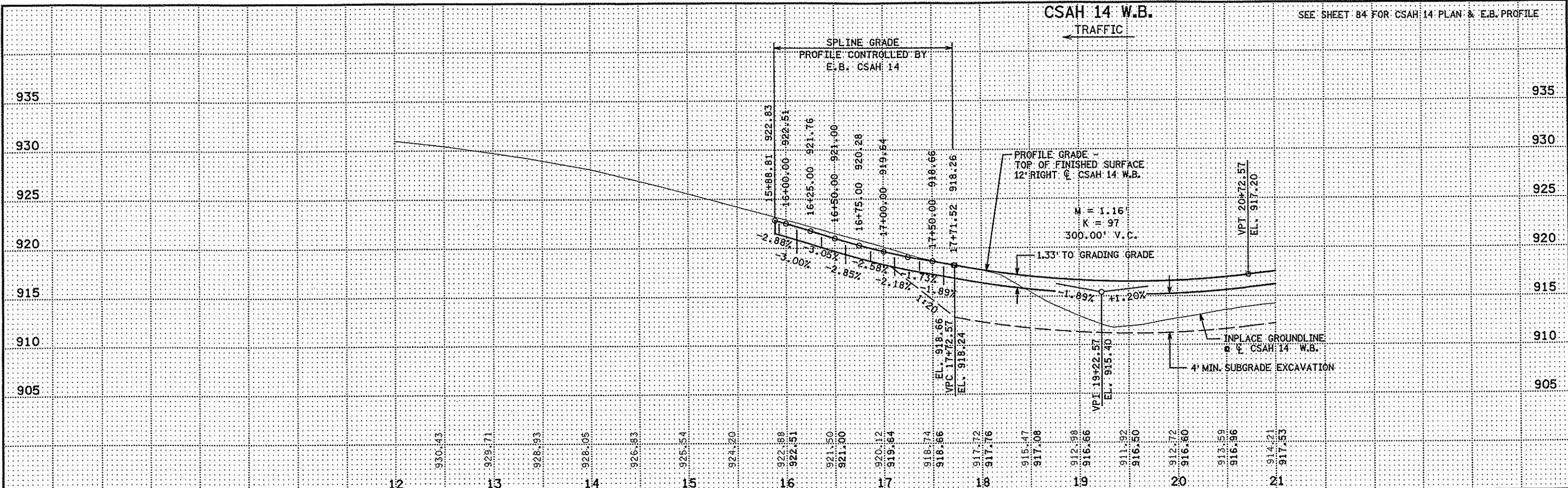
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 CHECKED BY: BDP

CERTIFIED BY *Scott O. Paul* LIC. NO. 2688 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

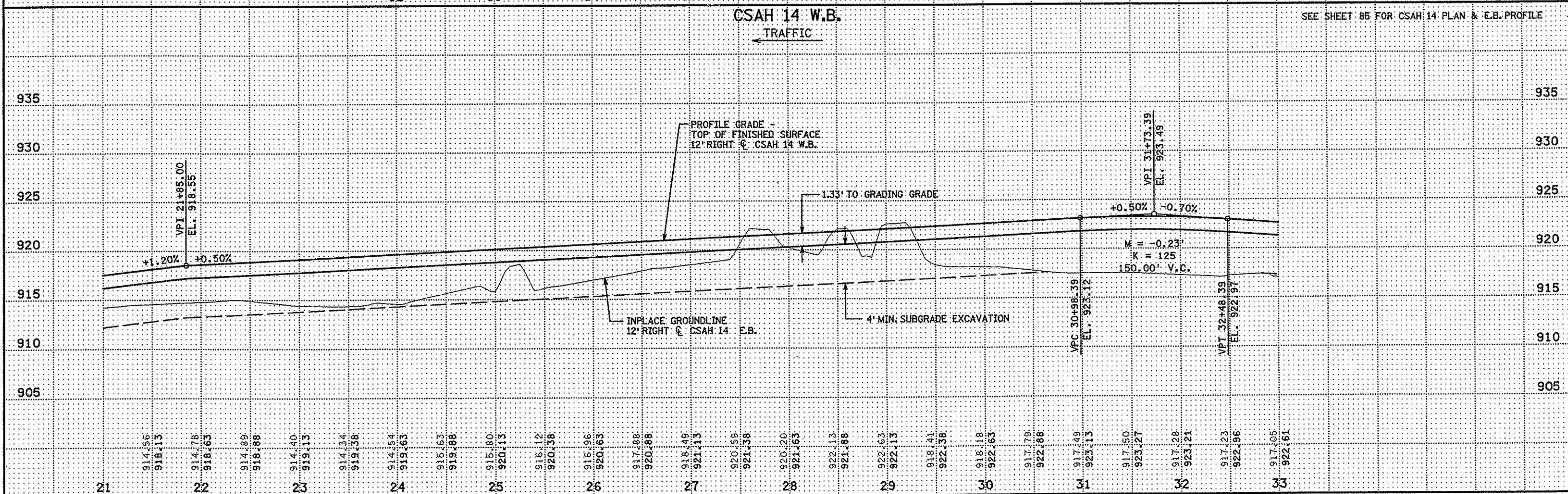
**TKDA**  
ENGINEERS · ARCHITECTS · PLANNERS

CONSTRUCTION PLAN  
 TH 61 STA. 214+00 TO STA. 218+00

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 94 of 296 Sheets



CSAH 14 W.B.



DATE: 8/15/2005 TIME: 10:42:59 AM  
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DRAWN BY: TJV  
CHECKED BY: BDP

CERTIFIED BY *Grant O. Pauler* LIC. NO. 26880 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

**TKDA**  
ENGINEERS - ARCHITECTS - PLANNERS

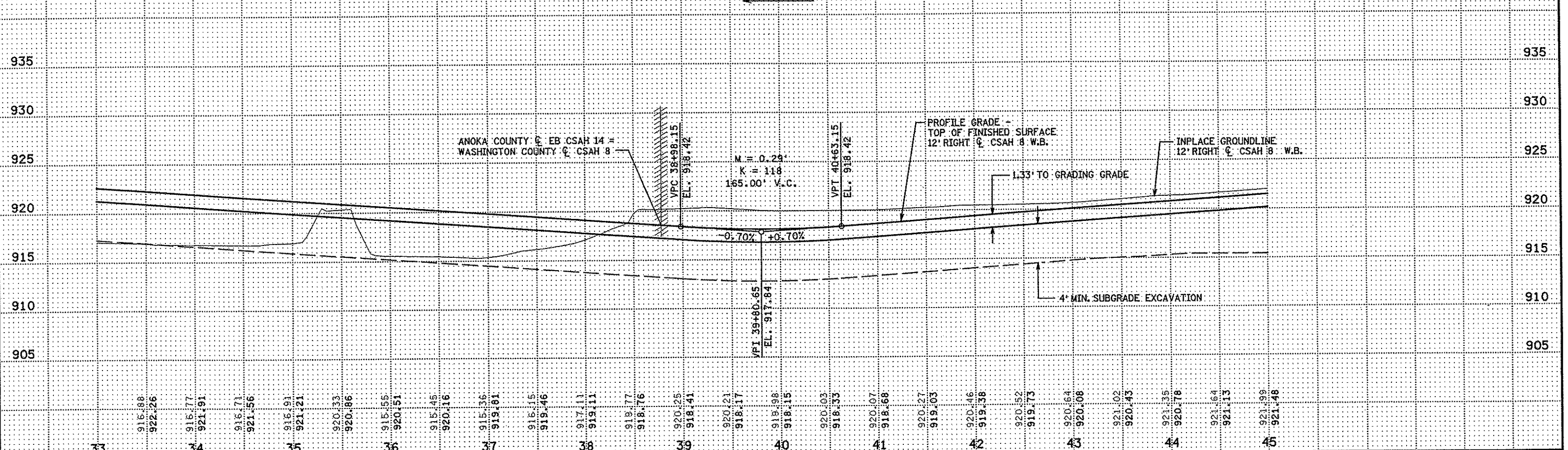
CSAH 14 W.B. PROFILE  
STA. 12+00 TO STA. 33+00

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 95 of 296 Sheets

CSAH 14 AND CSAH 8 W.B.

SEE SHEET 86 FOR CSAH 14 AND CSAH 8 PLAN & E.B. PROFILE

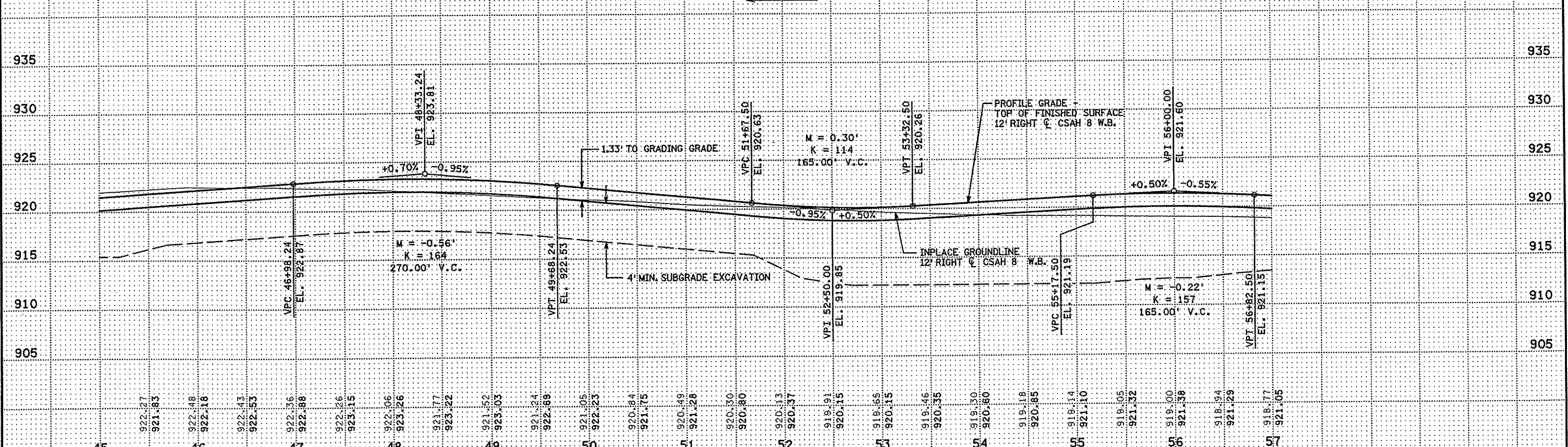
TRAFFIC ←



CSAH 8 W.B.

SEE SHEET 87 FOR CSAH 8 PLAN & E.B. PROFILE

TRAFFIC ←



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DRAWN BY: TJV  
CHECKED BY: BDP

CERTIFIED BY *[Signature]*  
LIC. NO. 20880 DATE 8/15/05

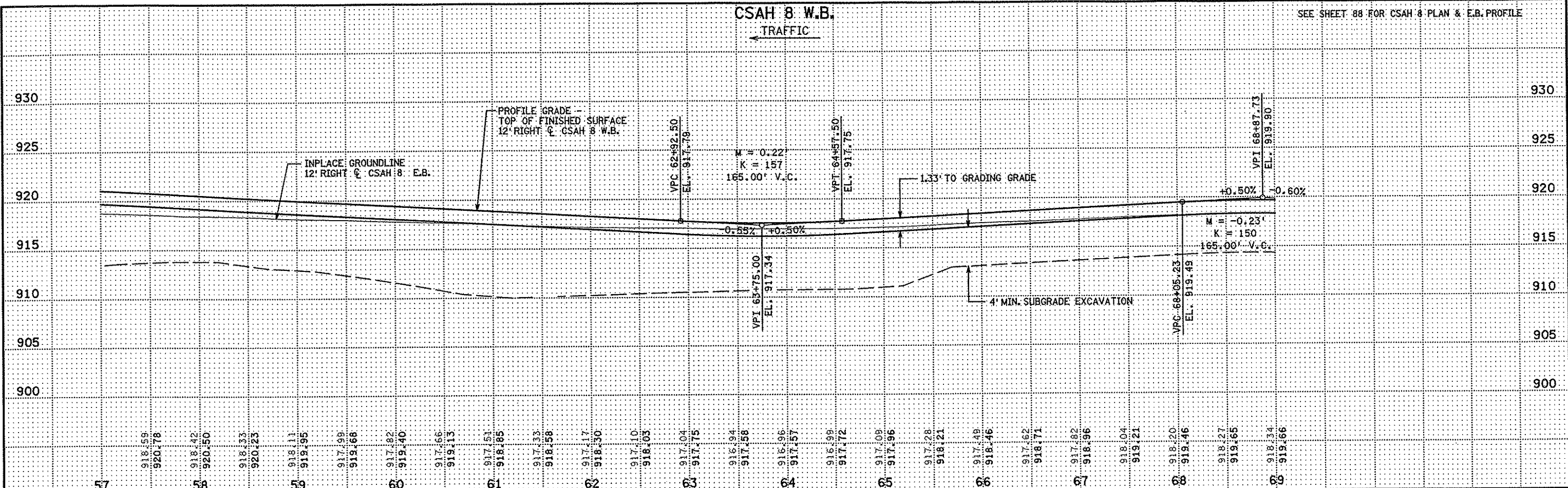
**TKDA**  
ENGINEERS · ARCHITECTS · PLANNERS

CSAH 14 W.B. PROFILE  
STA. 33+00 TO STA. 57+00

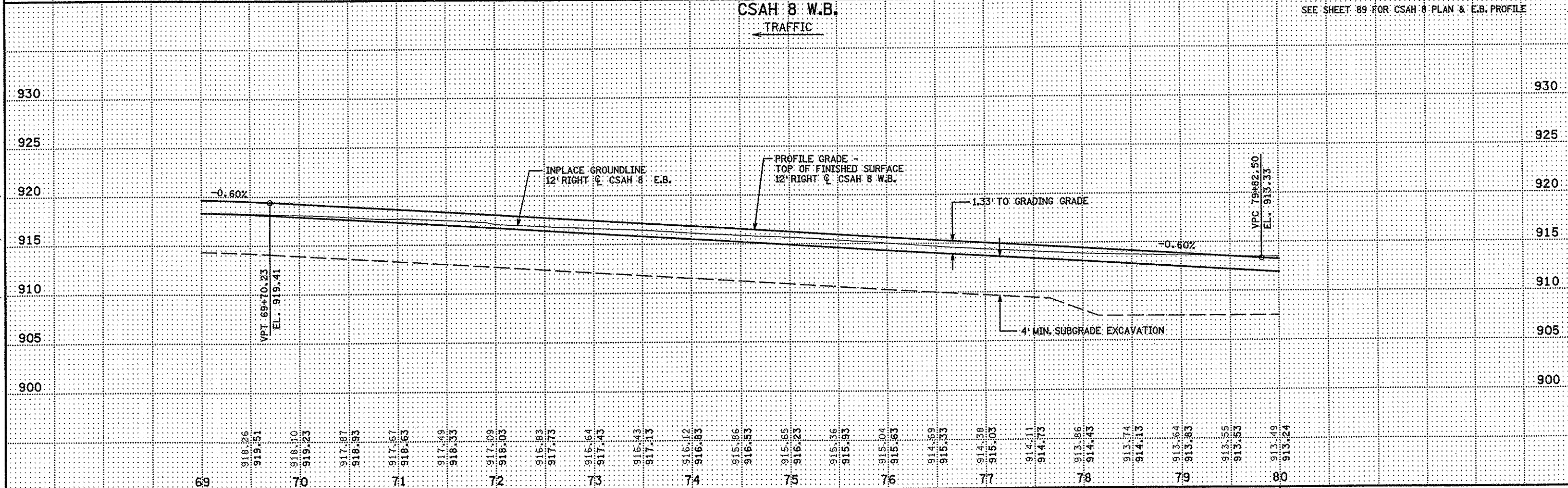
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Sheet No. 96 of 296 Sheets



DATE: 8/15/2005 TIME: 10:43:32 AM  
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SEE SHEET 88 FOR CSAH 8 PLAN & E.B. PROFILE



SEE SHEET 89 FOR CSAH 8 PLAN & E.B. PROFILE

DRAWN BY: TJV  
 CHECKED BY: BDP

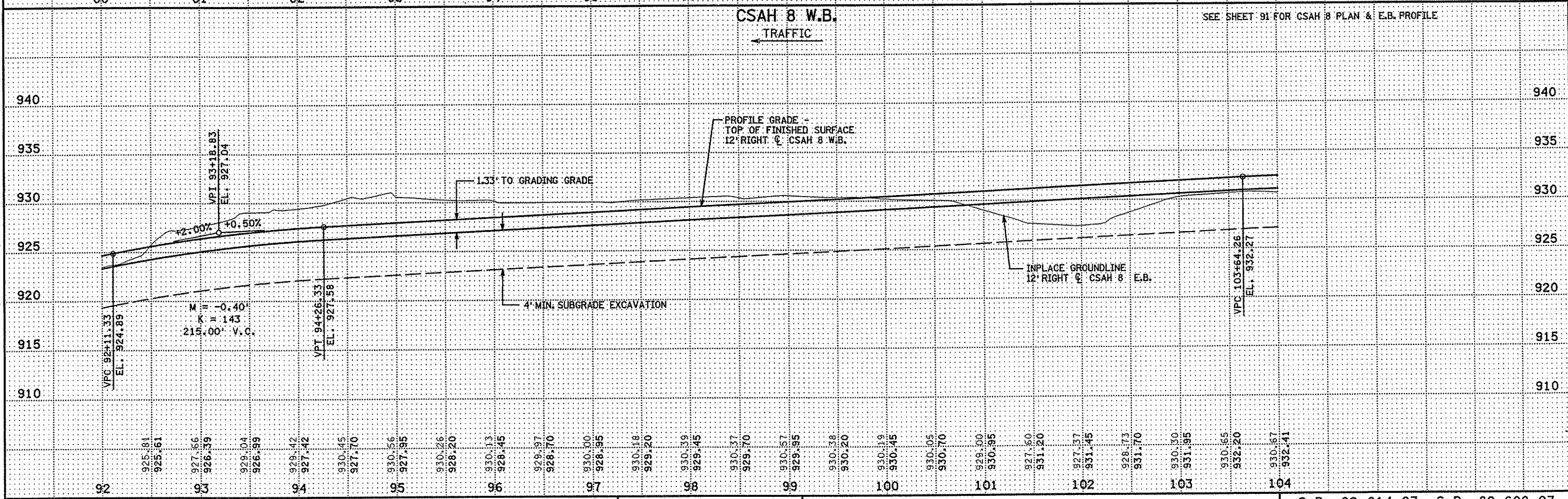
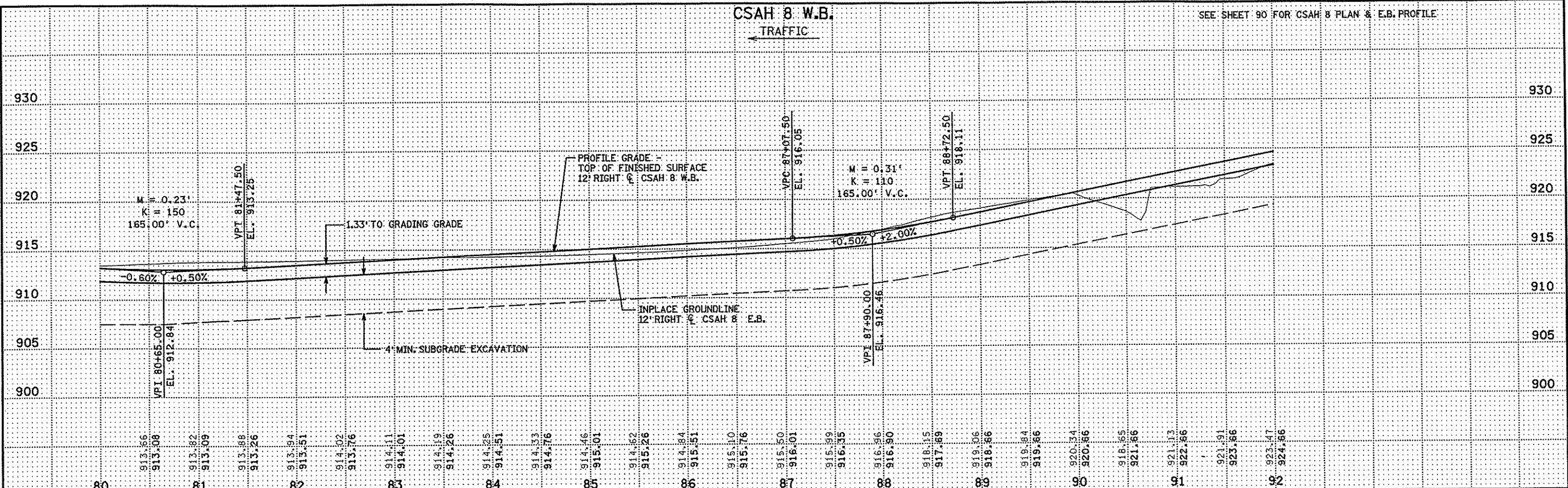
CERTIFIED BY *Grant J. Paul* LIC. NO. 20820 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

**TKDA**  
 ENGINEERS - ARCHITECTS - PLANNERS

CSAH 8 W.B. PROFILE  
 STA. 57+00 TO STA. 80+00

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 97 of 296 Sheets

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DRAWN BY: TJV  
 CHECKED BY: BDP

CERTIFIED BY *Grant Q. Paulin*  
 LICENSED PROFESSIONAL ENGINEER  
 LIC. NO. 20882 DATE 8/15/05

**TKDA**  
 ENGINEERS - ARCHITECTS - PLANNERS

CSAH 8 W.B. PROFILE  
 STA. 80+00 TO STA. 104+00

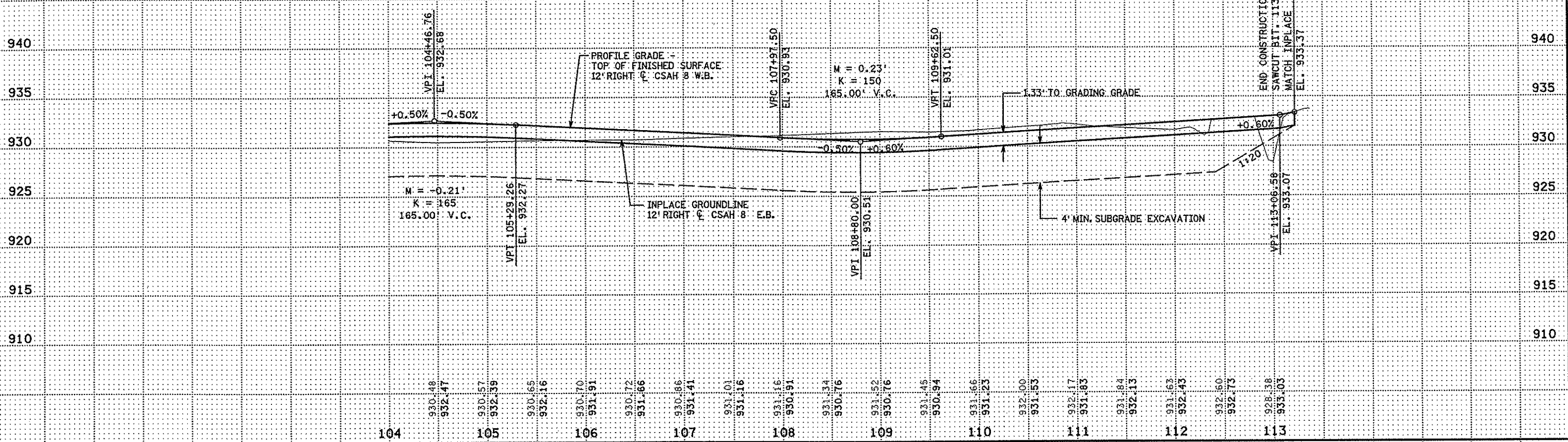
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 Sheet No. 98 of 296 Sheets



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CSAH 8 W.B.  
 TRAFFIC ←

SEE SHEET 92 FOR CSAH 8 PLAN & E.B. PROFILE



DRAWN BY: TJV

CHECKED BY: BDP

CERTIFIED BY

*Mont O. Paulin*  
 LICENSED PROFESSIONAL ENGINEER

LIC. NO. 20880

DATE 8/15/05

**TKDA**

ENGINEERS · ARCHITECTS · PLANNERS

CSAH 8 W.B. PROFILE  
 STA. 104+00 TO STA. 113+21.41

S.P. 02-614-23 S.P. 82-608-07

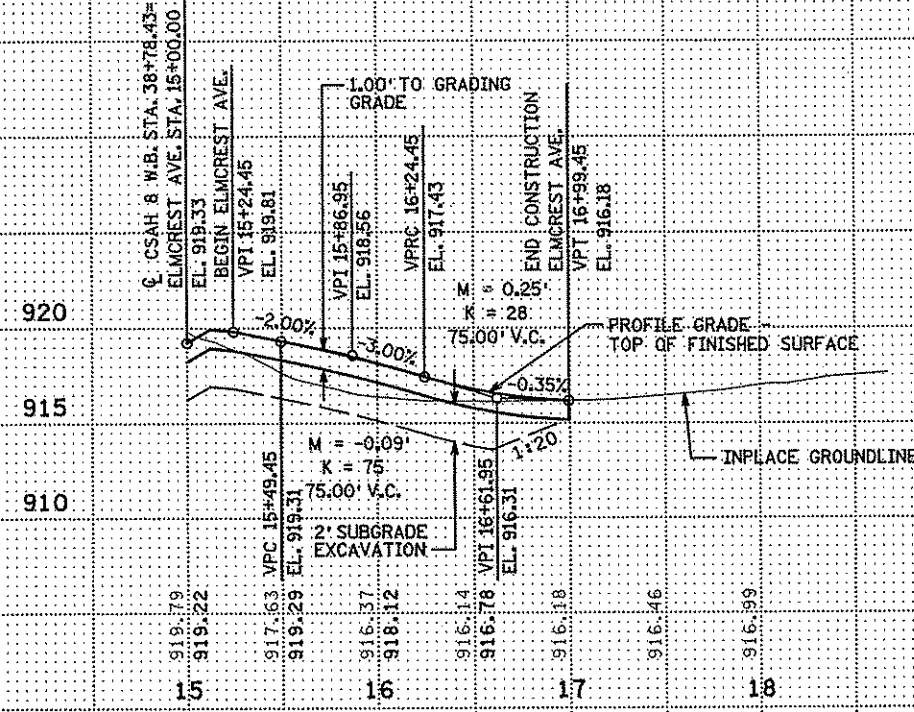
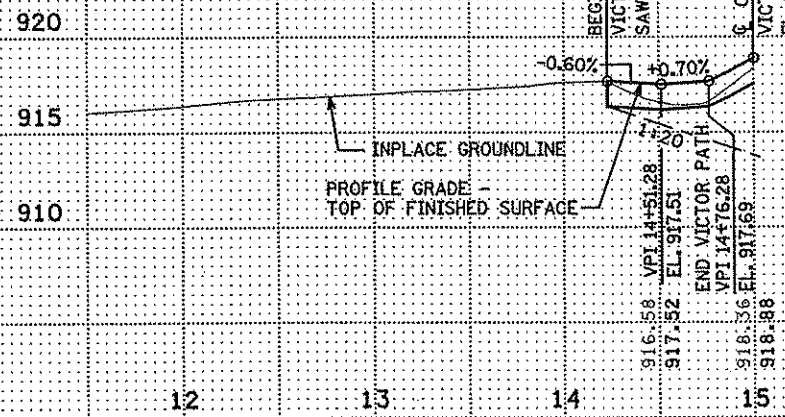
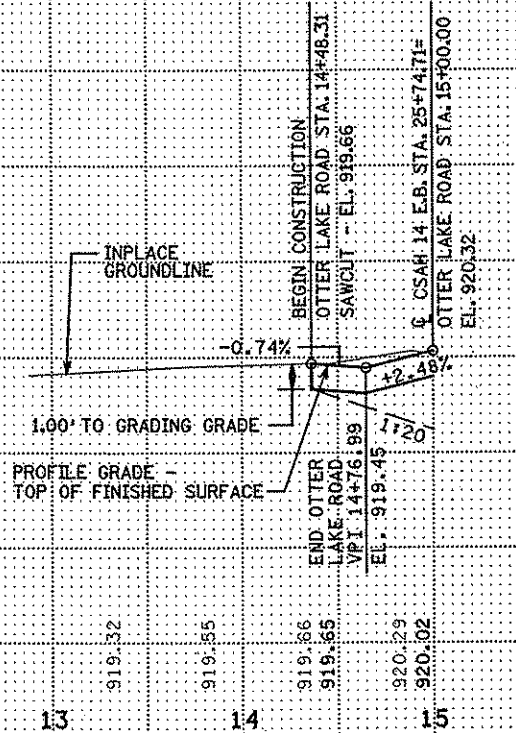
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OTTER LAKE ROAD

VICTOR PATH

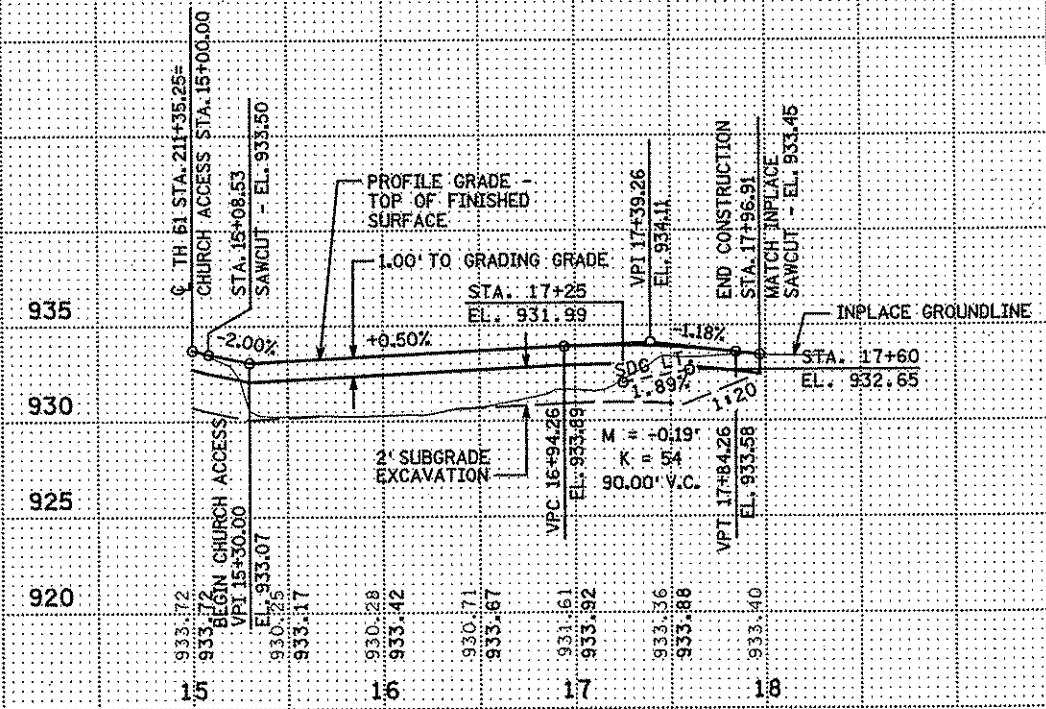
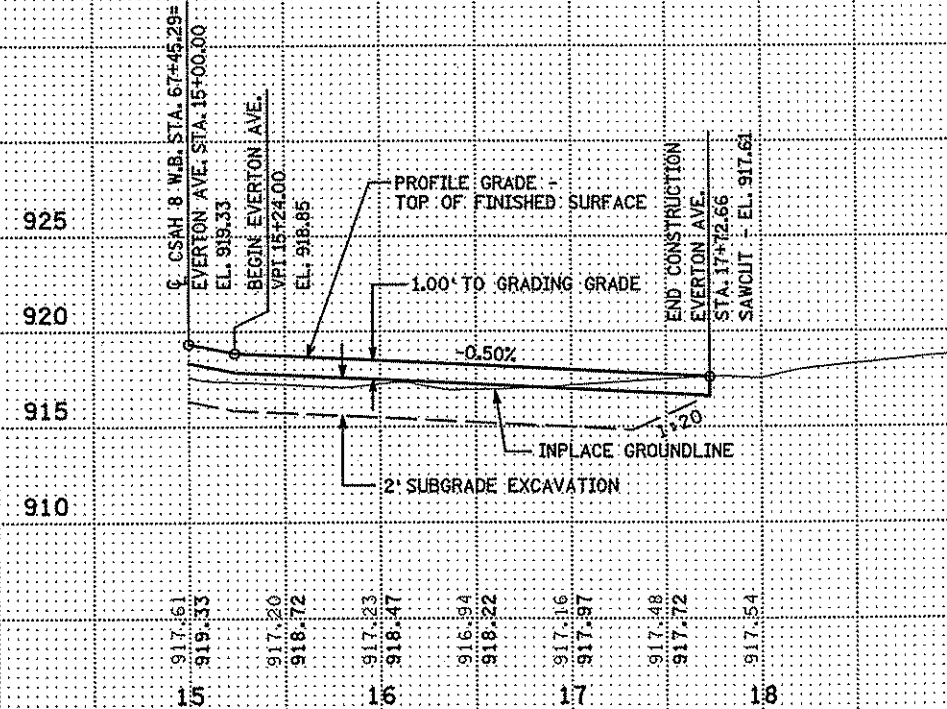
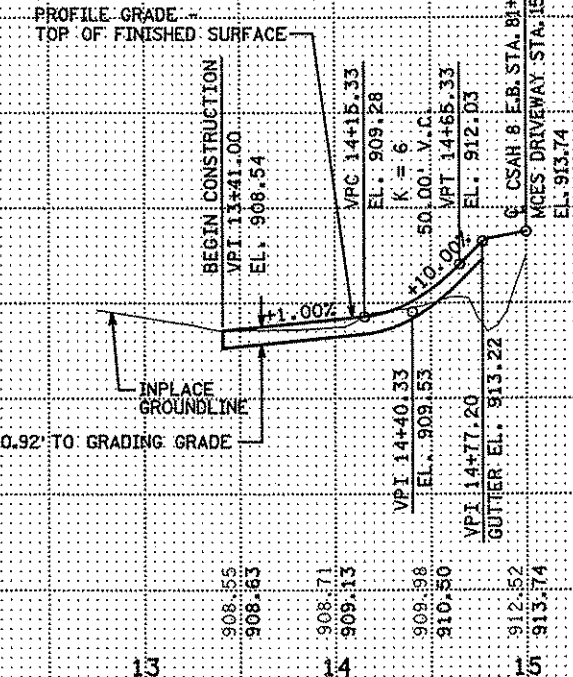
ELMCREST AVENUE



MCES DRIVEWAY

EVERTON AVENUE

MULLER DRIVE



DRAWN BY: TJV  
 CHECKED BY: BDP

CERTIFIED BY *Scott J. Pauls* LIC. NO. 20880 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

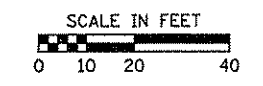
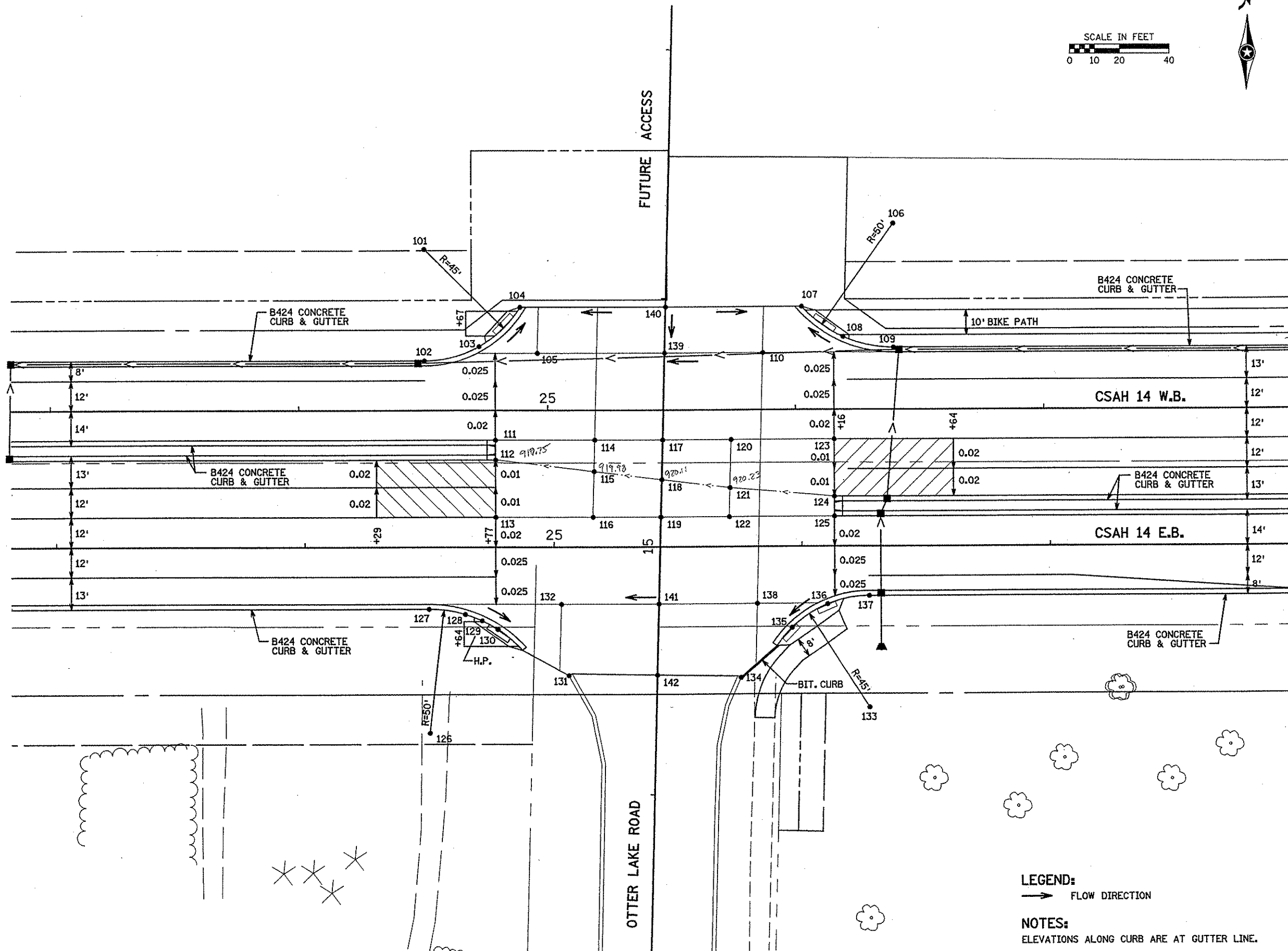
**TKDA**  
 ENGINEERS · ARCHITECTS · PLANNERS

CROSS ROAD PROFILES

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 100 of 296 Sheets

POINT	X	Y	ELEV.
101	450,365.71	252,668.65	--
102	450,366.74	252,623.67	919.06
103	450,388.65	252,629.95	918.94
104	450,404.68	252,646.15	918.71
105	450,412.06	252,627.71	919.29
106	450,554.76	252,683.02	--
107	450,518.33	252,648.77	919.15
108	450,535.44	252,636.90	919.76
109	450,555.91	252,633.03	919.88
110	450,503.07	252,629.81	919.75
111	450,395.97	252,592.33	920.02
112	450,396.15	252,584.33	919.75
113	450,396.68	252,561.34	919.98
114	450,435.93	252,593.25	920.24
115	450,435.89	252,580.57	919.98
116	450,435.82	252,562.24	920.20
117	450,463.43	252,593.89	920.36
118	450,463.38	252,577.88	920.11
119	450,463.32	252,562.88	920.32
120	450,490.94	252,594.52	920.59
121	450,490.87	252,575.18	920.23
122	450,490.82	252,563.51	920.44
123	450,532.63	252,595.48	920.70
124	450,533.16	252,572.49	920.47
125	450,533.35	252,564.49	920.67
126	450,371.99	252,473.75	--
127	450,370.57	252,523.73	918.91
128	450,385.19	252,521.98	918.97
129	450,392.02	252,519.56	918.99
130	450,398.43	252,516.19	918.96
131	450,427.29	252,498.21	*
132	450,423.69	252,526.95	919.30
133	450,549.05	252,487.83	--
134	450,496.71	252,498.82	*
135	450,516.92	252,519.34	919.65
136	450,531.15	252,529.12	919.74
137	450,548.01	252,532.82	919.92
138	450,502.70	252,528.77	919.70
139	450,463.56	252,628.90	919.55
140	450,463.63	252,647.51	919.64
141	450,463.19	252,572.86	919.45
142	450,463.09	252,499.18	*

\* MATCH EXISTING



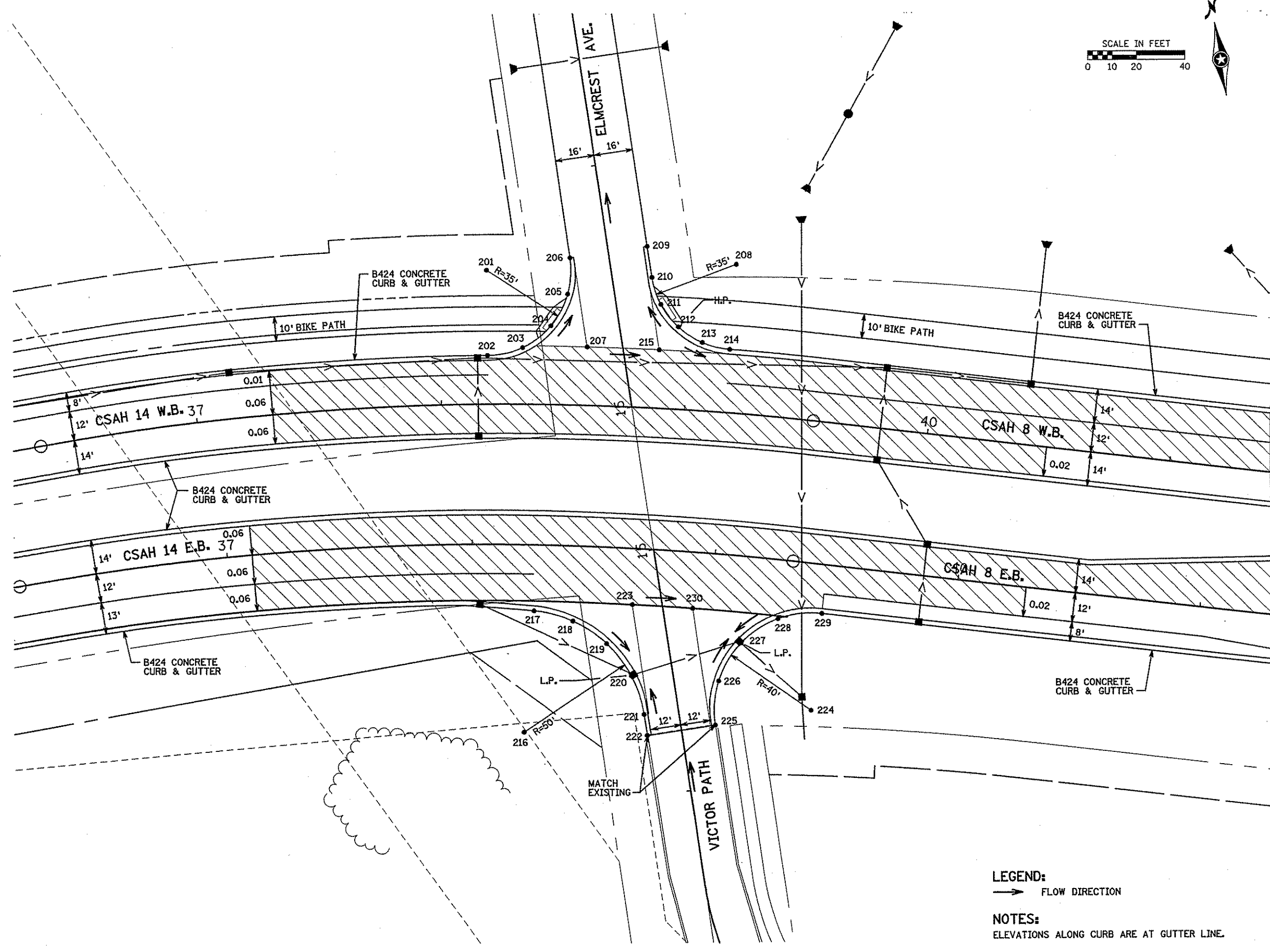
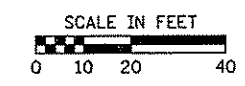
**LEGEND:**  
 FLOW DIRECTION

**NOTES:**  
 ELEVATIONS ALONG CURB ARE AT GUTTER LINE.

DATE: 8/15/2005 TIME: 2:07:02 PM  
 FILENAME: K:\r-z\wgst\cy\24350\Nwy-brdg\Nwy\p\tr-sh\c200802.dwg

POINT	X	Y	ELEV.
201	451,742.79	252,674.14	--
202	451,737.71	252,639.51	920.23
203	451,752.52	252,640.52	919.99
204	451,765.58	252,647.58	919.41
205	451,774.54	252,659.42	919.02
206	451,777.79	252,673.91	918.68
207	451,779.04	252,636.73	920.00
208	451,844.70	252,660.63	--
209	451,809.78	252,673.66	918.61
210	451,809.70	252,660.86	918.87
211	451,811.58	252,649.32	919.12
212	451,817.15	252,639.04	919.26
213	451,825.80	252,631.17	919.20
214	451,836.55	252,626.59	919.08
215	451,808.00	252,630.98	919.65
216	451,728.52	252,484.71	--
217	451,740.36	252,533.28	917.39
218	451,755.66	252,526.70	917.27
219	451,767.94	252,515.46	917.22
220	451,775.85	252,500.81	917.15
221	451,778.52	252,484.37	917.27
222	451,778.46	252,475.62	*
223	451,780.82	252,529.63	917.66
224	451,846.46	252,475.17	--
225	451,806.46	252,475.43	*
226	451,810.70	252,493.10	917.27
227	451,822.32	252,507.06	917.17
228	451,838.92	252,514.45	917.71
229	451,857.07	252,513.73	917.94
230	451,804.78	252,524.26	917.72

\* MATCH EXISTING



LEGEND:  
 FLOW DIRECTION

NOTES:  
 ELEVATIONS ALONG CURB ARE AT GUTTER LINE.

DATE: 8/5/2005 TIME: 2:07:06 PM FILENAME: K:\2-WASH\CY\2-43901\hwy-brdg\hwy\plan-sht\c200802.dwg

DRAWN BY: TJV  
 CHECKED BY: BDP

CERTIFIED BY *Scott O. Paulin* LIC. NO. 26820 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

**TKDA**  
 ENGINEERS · ARCHITECTS · PLANNERS

INTERSECTION DETAIL  
 CSAH 14/8 AND VICTOR PATH/ELMCREST AVE.

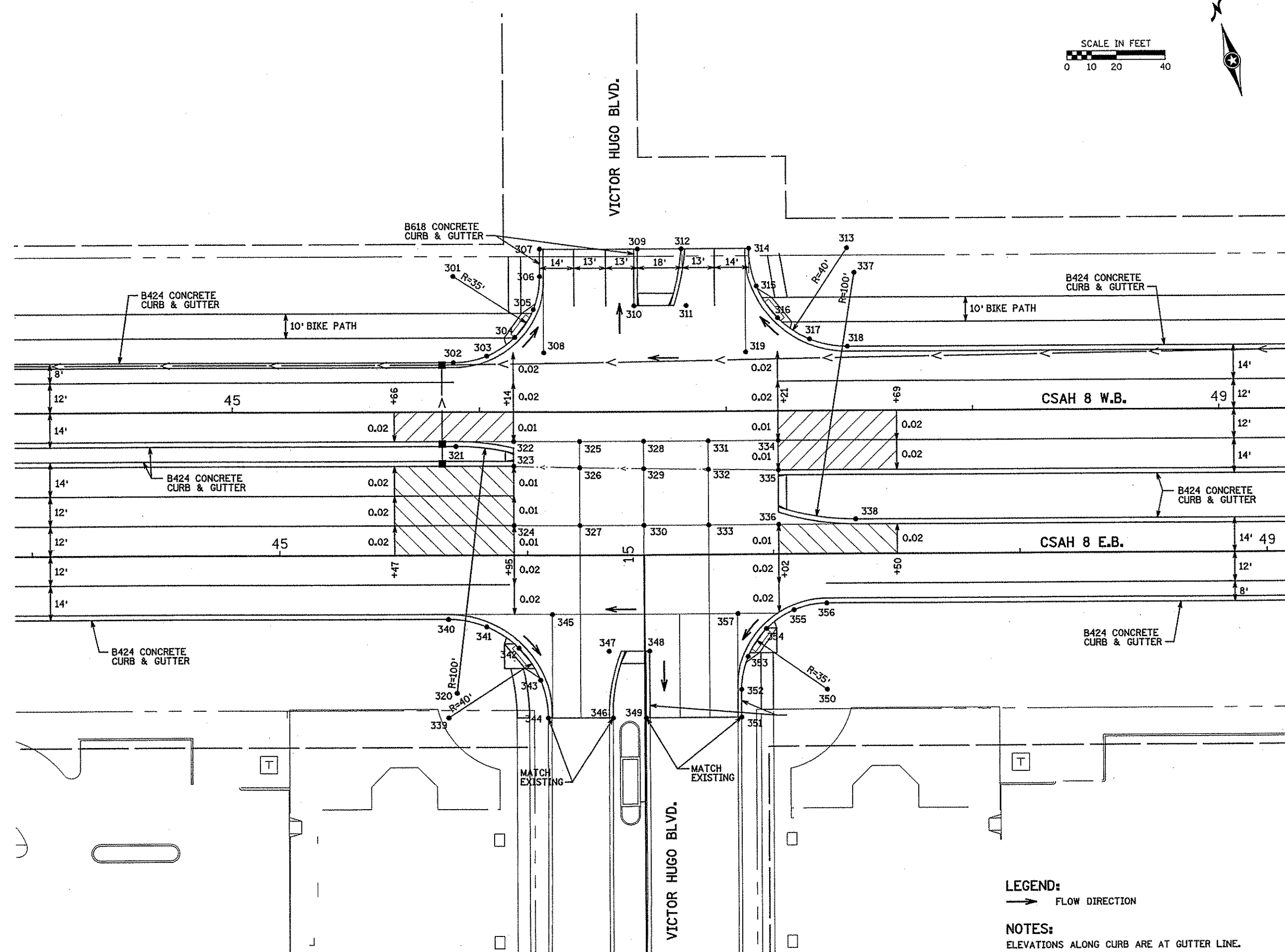
S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 102 of 296 Sheets



POINT	X	Y	ELEV.
301	452,494.21	252,476.38	--
302	452,485.19	252,443.58	921.79
303	452,498.54	252,441.63	921.80
304	452,511.50	252,445.93	921.36
305	452,521.83	252,454.86	920.91
306	452,527.96	252,467.08	920.73
307	452,530.90	252,477.75	920.54
308	452,521.16	252,436.80	922.00
309	452,569.44	252,467.07	921.28
310	452,561.89	252,445.34	921.83
311	452,582.15	252,439.75	922.03
312	452,586.46	252,462.38	921.46
313	452,651.40	252,444.52	--
314	452,612.84	252,455.16	921.00
315	452,611.71	252,439.59	921.52
316	452,616.62	252,424.77	922.04
317	452,626.83	252,412.96	922.56
318	452,640.79	252,405.96	922.73
319	452,600.22	252,415.05	922.57
320	452,450.22	252,313.19	--
321	452,476.74	252,409.61	921.98
322	452,499.67	252,405.37	922.47
323	452,497.02	252,395.73	922.28
324	452,490.66	252,372.59	922.52
325	452,525.57	252,398.25	922.55
326	452,522.73	252,387.98	922.50
327	452,516.53	252,365.47	922.75
328	452,550.63	252,391.35	922.64
329	452,547.69	252,380.66	922.57
330	452,541.59	252,358.58	922.84
331	452,575.75	252,384.44	922.83
332	452,572.69	252,373.33	922.73
333	452,566.73	252,351.66	922.99
334	452,603.28	252,376.87	923.01
335	452,600.09	252,365.30	922.89
336	452,594.26	252,344.08	923.16
337	452,651.53	252,434.12	--
338	452,625.00	252,337.70	923.16
339	452,444.33	252,304.44	--
340	452,454.94	252,343.01	921.91
341	452,468.90	252,336.00	921.84
342	452,479.12	252,324.18	921.51
343	452,484.03	252,309.35	921.00
344	452,482.88	252,293.77	*
345	452,495.87	252,333.82	922.25
346	452,508.42	252,286.74	*
347	452,514.14	252,313.24	922.08
348	452,529.93	252,308.89	922.10
349	452,521.33	252,283.20	*
350	452,595.15	252,274.35	--
351	452,558.42	252,272.99	*
352	452,561.46	252,283.82	921.11
353	452,567.62	252,295.96	921.73
354	452,577.94	252,304.82	922.35
355	452,590.87	252,309.08	922.78
356	452,604.44	252,308.09	922.93
357	452,568.35	252,313.88	922.70

\* MATCH EXISTING

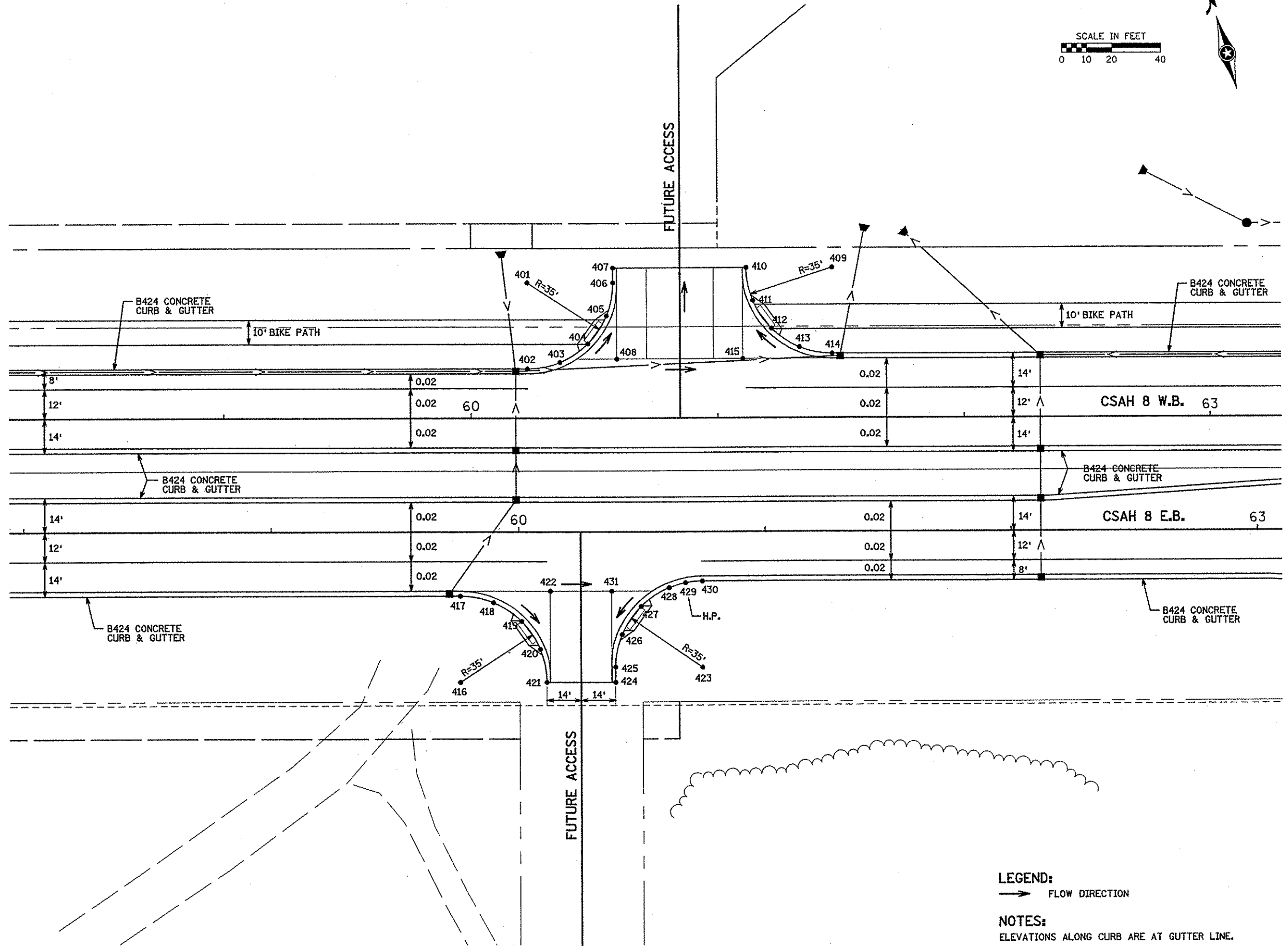
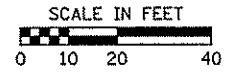
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**LEGEND:**  
 → FLOW DIRECTION

**NOTES:**  
 ELEVATIONS ALONG CURB ARE AT GUTTER LINE.

POINT	X	Y	ELEV.
401	453,874.45	252,090.37	--
402	453,885.17	252,056.63	919.03
403	453,878.78	252,055.64	918.89
404	453,891.74	252,059.94	918.48
405	453,902.07	252,068.87	918.03
406	453,908.19	252,081.07	917.59
407	453,909.78	252,086.85	917.36
408	453,901.90	252,050.67	918.83
409	453,995.60	252,063.26	--
410	453,981.85	252,072.55	917.36
411	453,960.87	252,058.92	917.54
412	453,965.17	252,045.96	918.04
413	453,974.11	252,035.64	918.29
414	453,986.31	252,029.52	918.23
415	453,950.11	252,037.40	918.56
416	453,804.98	251,941.47	--
417	453,814.27	251,975.21	919.16
418	453,826.48	251,969.09	919.00
419	453,835.41	251,958.76	918.62
420	453,839.72	251,945.80	918.26
421	453,838.73	251,932.18	917.95
422	453,849.99	251,967.46	919.09
423	453,901.07	251,921.25	--
424	453,865.73	251,924.75	917.95
425	453,867.32	251,930.54	918.07
426	453,873.44	251,942.74	918.30
427	453,883.77	251,951.68	918.55
428	453,896.73	251,955.98	918.72
429	453,903.61	251,956.16	918.77
430	453,910.35	251,955.00	918.74
431	453,874.10	251,960.82	918.95



LEGEND:  
 FLOW DIRECTION

NOTES:  
 ELEVATIONS ALONG CURB ARE AT GUTTER LINE.

DATE: 8/15/2005 TIME: 2:07:45 PM  
 FILENAME: K:\r-z\wast\cy\24390\wry-brdg\wry\pl-tr-stf\200802.dwg

DRAWN BY: TJV  
 CHECKED BY: BDP

CERTIFIED BY LIC. NO. 26880 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

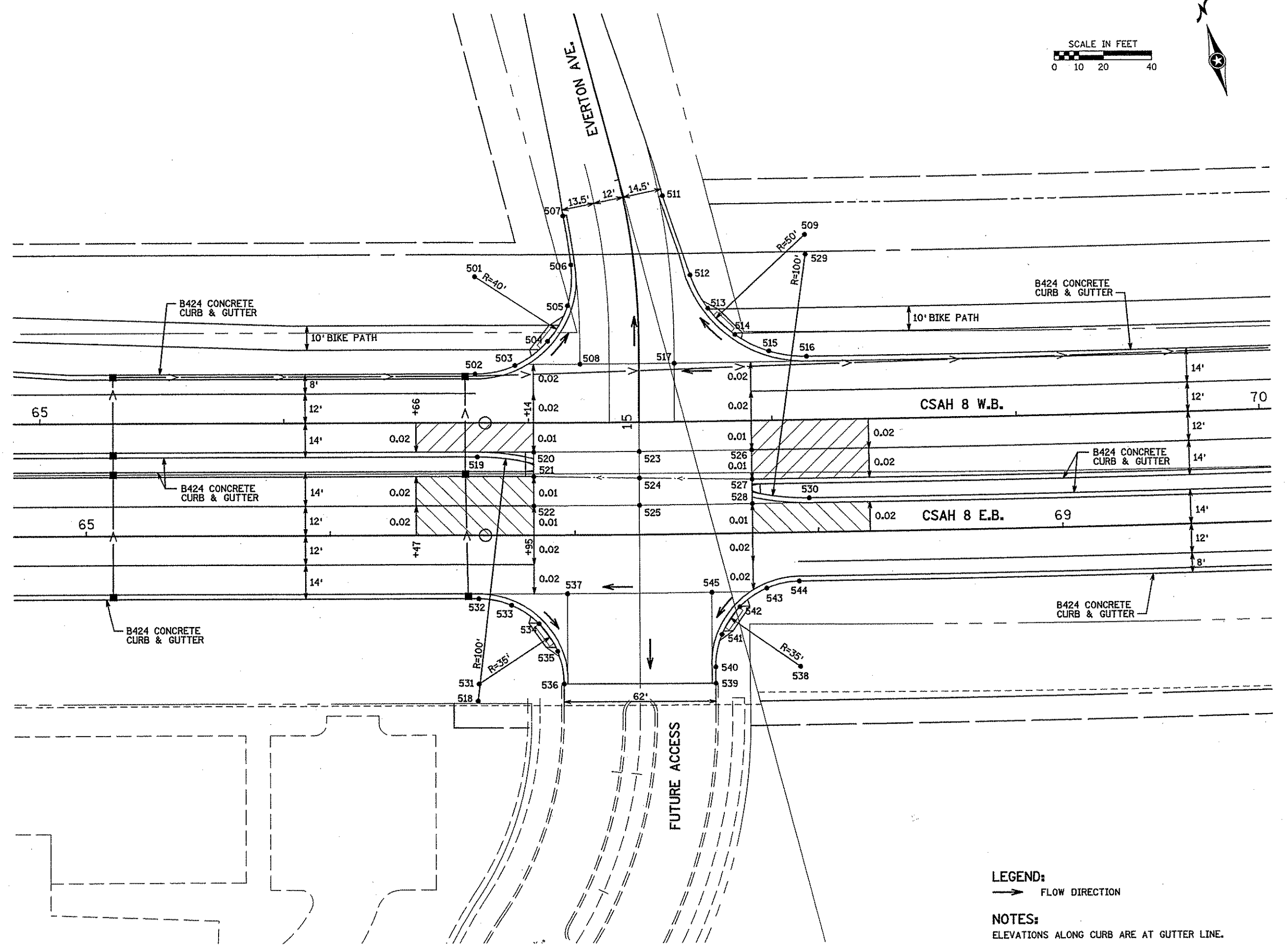
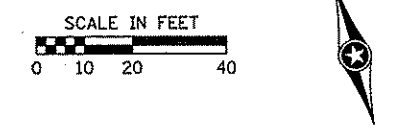
**TKDA**  
 ENGINEERS · ARCHITECTS · PLANNERS

INTERSECTION DETAIL  
 CSAH 8 AND FUTURE ACCESS

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 104 of 296 Sheets



POINT	X	Y	ELEV.
501	454,507.57	251,921.36	--
502	454,496.96	251,882.79	918.54
503	454,513.73	251,881.83	918.51
504	454,529.41	251,887.84	918.24
505	454,541.24	251,899.76	918.12
506	454,547.14	251,915.49	918.05
507	454,550.10	251,953.67	917.95
508	454,539.71	251,875.24	918.71
509	454,642.80	251,901.53	--
511	454,590.76	251,932.60	918.15
512	454,592.90	251,898.41	918.24
513	454,596.28	251,883.20	918.30
514	454,604.18	251,869.77	918.50
515	454,615.82	251,869.43	918.91
516	454,630.09	251,853.17	919.10
517	454,576.89	251,865.22	918.90
518	454,462.16	251,753.40	--
519	454,488.81	251,849.78	918.73
520	454,511.84	251,845.58	918.97
521	454,508.98	251,835.94	918.76
522	454,505.84	251,824.36	918.88
523	454,553.33	251,834.27	919.19
524	454,550.45	251,823.78	919.02
525	454,547.50	251,813.06	919.10
526	454,598.11	251,822.31	919.42
527	454,595.03	251,810.71	919.30
528	454,592.46	251,801.05	919.33
529	454,640.94	251,893.75	--
530	454,615.53	251,797.03	919.31
531	454,464.45	251,760.01	--
532	454,473.73	251,793.76	918.33
533	454,485.94	251,787.64	918.28
534	454,494.88	251,777.31	917.87
535	454,499.18	251,764.35	917.49
536	454,498.19	251,750.73	917.32
537	454,509.49	251,786.05	918.59
538	454,593.50	251,731.48	--
539	454,557.97	251,734.28	917.32
540	454,559.76	251,740.76	917.58
541	454,565.82	251,752.89	918.05
542	454,576.03	251,761.81	918.60
543	454,588.88	251,766.17	918.95
544	454,602.41	251,765.32	919.10
545	454,566.46	251,770.71	918.82

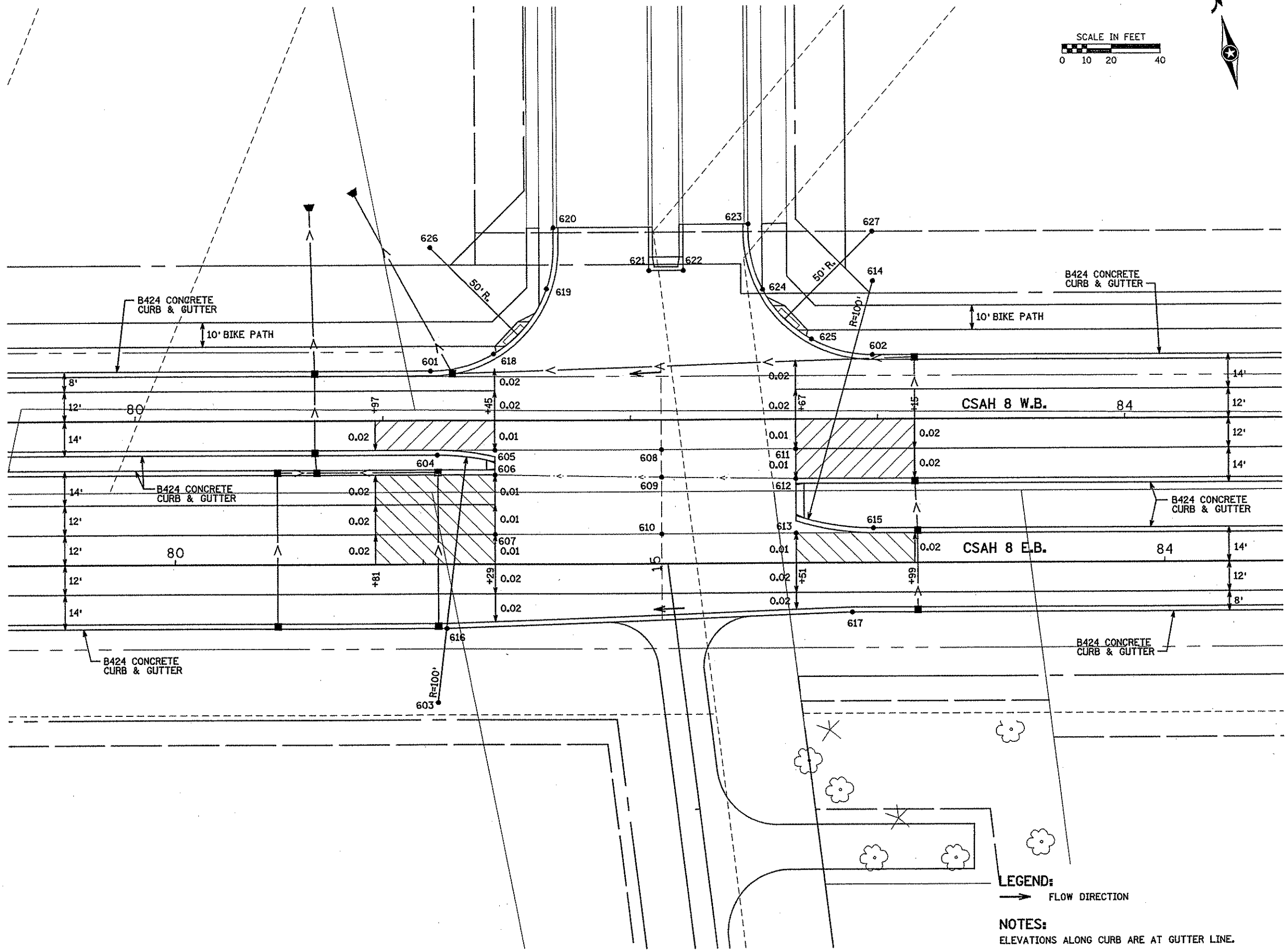


DATE: 8/5/2005 TIME: 2:07:23 PM  
FILENAME: K:\V-Z\Wast\CY\24390\hwy-brdg\hwy\pln-sha\c200802.dwg

**LEGEND:**  
 FLOW DIRECTION  
**NOTES:**  
 ELEVATIONS ALONG CURB ARE AT GUTTER LINE.

POINT	X	Y	ELEV.
601	455,902.73	251,573.73	912.84
602	456,079.08	251,543.43	913.81
603	455,878.12	251,441.98	--
604	455,898.35	251,539.92	913.02
605	455,921.51	251,537.17	913.24
606	455,919.48	251,527.38	913.03
607	455,914.63	251,503.88	913.27
608	454,489.43	251,851.84	913.58
609	455,970.68	251,515.94	913.42
610	455,968.43	251,492.77	913.81
611	456,040.91	251,512.51	913.85
612	456,038.48	251,500.76	913.73
613	456,034.03	251,479.21	913.88
614	456,085.35	251,572.76	--
615	456,065.13	251,474.83	913.90
616	455,889.09	251,470.35	912.73
617	456,045.88	251,444.09	913.68
618	455,929.03	251,575.39	912.69
619	455,955.65	251,596.85	912.35
620	455,963.43	251,620.44	*
621	455,997.59	251,595.49	--
622	456,011.14	251,592.69	--
623	456,040.85	251,605.54	*
624	456,041.18	251,578.43	912.63
625	456,056.35	251,554.69	913.21
626	455,912.84	251,622.70	--
627	456,089.19	251,592.39	--

\* MATCH EXISTING



LEGEND:  
 FLOW DIRECTION

NOTES:  
 ELEVATIONS ALONG CURB ARE AT GUTTER LINE.

DATE: 8/10/2005 TIME: 4:15:25 PM FILENAME: K:\v-z\wbs\c\2\4390\hwy-brdg\hwy\plm-sht\c200802.dwg

DRAWN BY: TJV  
 CHECKED BY: BDP

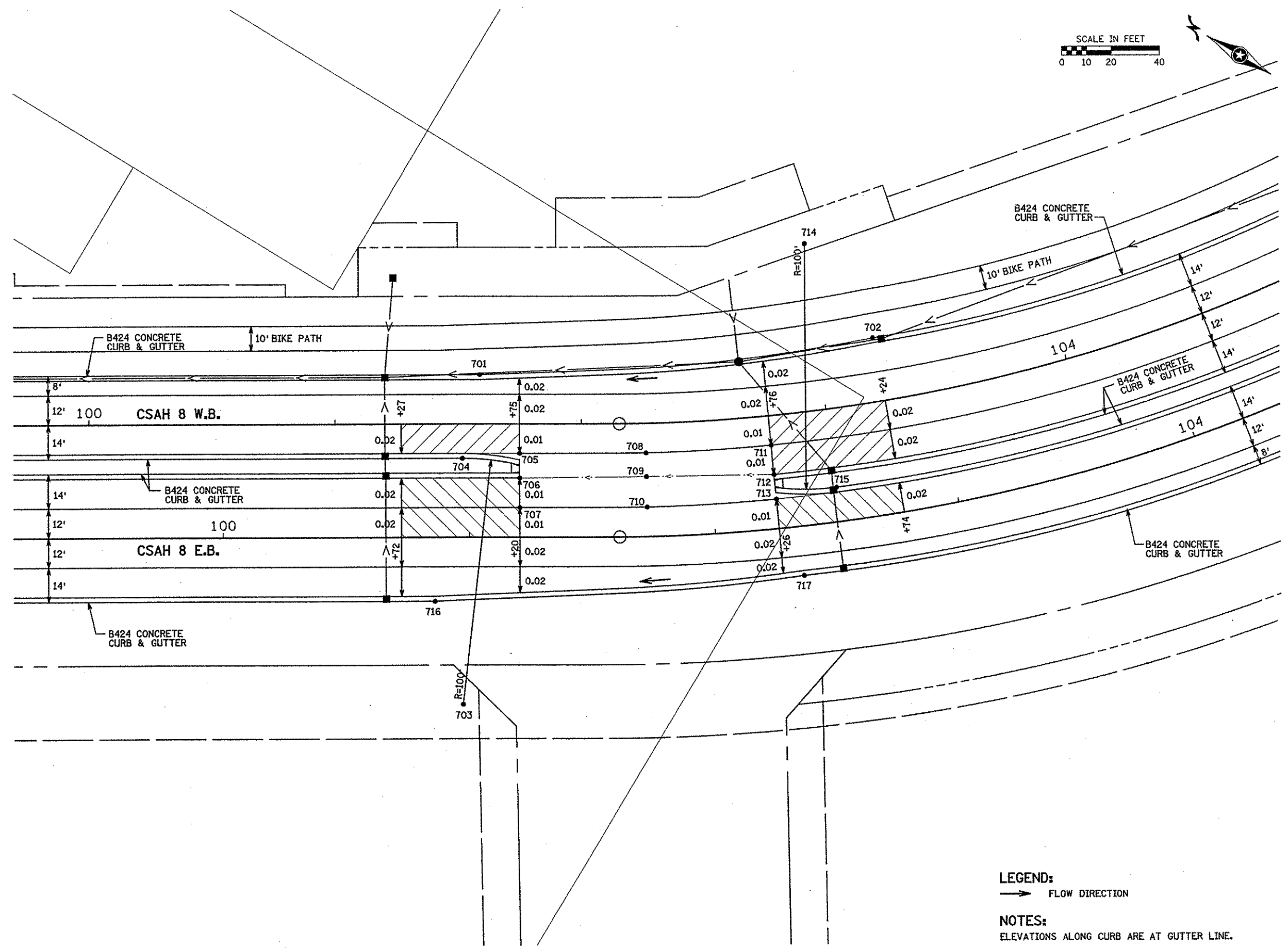
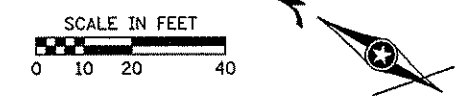
CERTIFIED BY *Brent J. Paul* LIC. NO. 20880 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

**TKDA**  
 ENGINEERS · ARCHITECTS · PLANNERS

INTERSECTION DETAIL  
 CSAH 8 AND ONEKA PARKWAY

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 106 of 296 Sheets

POINT	X	Y	ELEV.
701	457,555.65	250,527.69	930.91
702	457,650.85	250,398.20	931.69
703	457,437.31	250,464.43	--
704	457,522.86	250,516.22	931.07
705	457,536.60	250,497.38	931.32
706	457,528.04	250,492.20	931.24
707	457,517.78	250,485.99	931.36
708	457,563.35	250,453.36	931.58
709	457,555.17	250,448.23	931.47
710	457,544.71	250,441.67	931.62
711	457,592.11	250,411.13	931.83
712	457,582.45	250,404.01	931.71
713	457,574.40	250,398.07	931.89
714	457,689.44	250,441.70	--
715	457,591.13	250,379.51	931.89
716	457,467.37	250,495.87	930.78
717	457,553.67	250,372.36	931.58

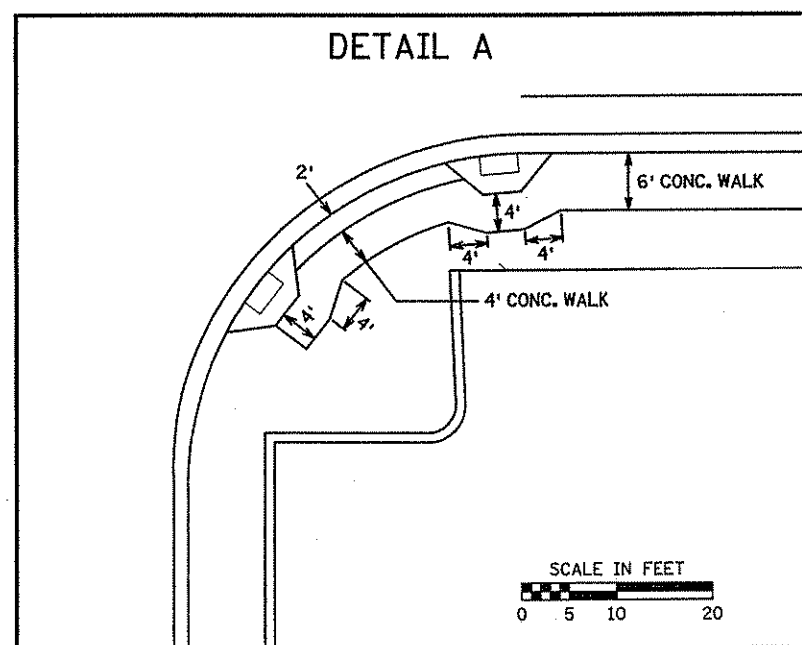
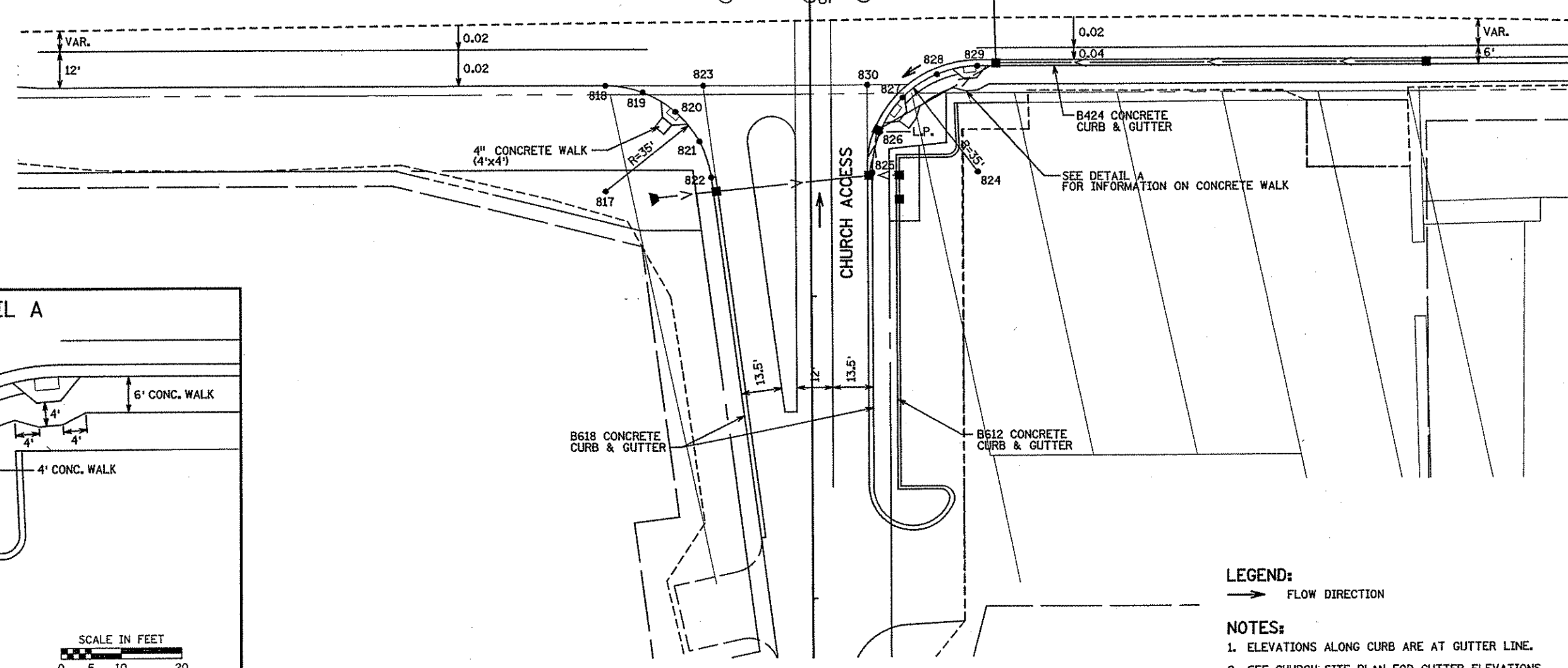
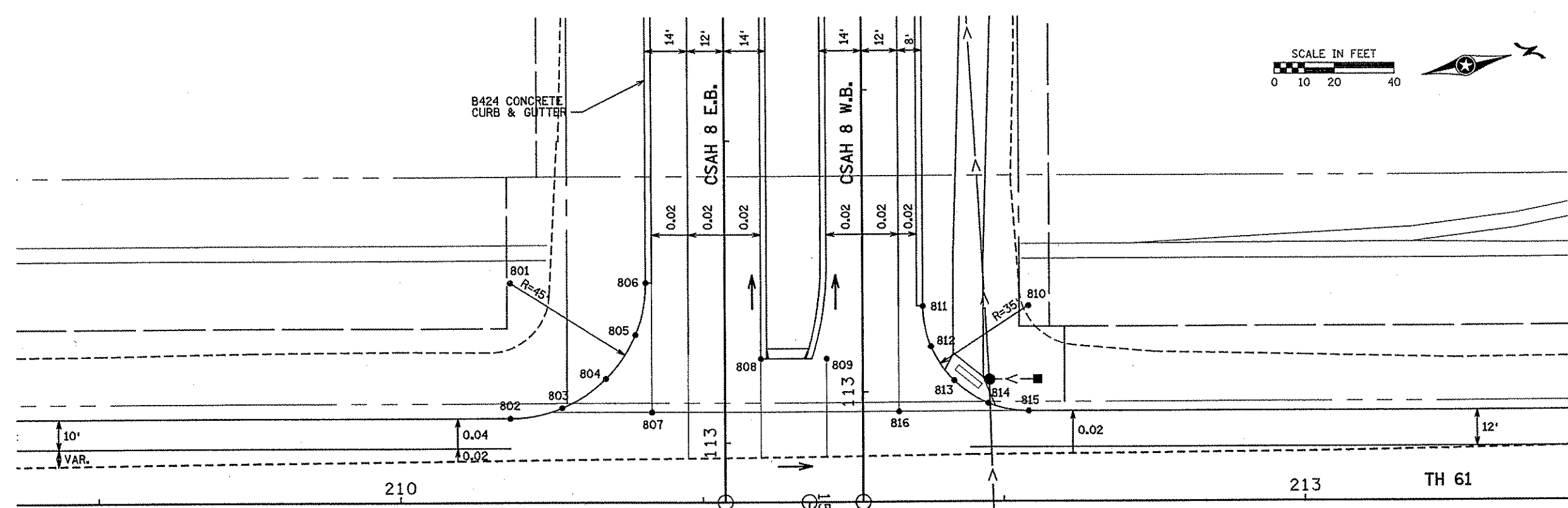
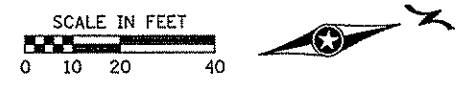


**LEGEND:**  
 → FLOW DIRECTION

**NOTES:**  
 ELEVATIONS ALONG CURB ARE AT GUTTER LINE.

DATE: 8/5/2005 TIME: 2:07:32 PM FILENAME: K:\r-z\washcy\24390\hwy-brdg\hwy\lfr-shf-g200802.dwg

POINT	X	Y	ELEV.
801	458,468.11	249,943.72	--
802	458,512.15	249,934.46	933.21
803	458,512.34	249,952.02	933.14
804	458,505.80	249,968.31	932.87
805	458,493.52	249,980.86	932.60
806	458,477.38	249,987.76	932.34
807	458,519.87	249,980.87	933.14
808	458,509.90	250,019.75	932.99
809	458,514.42	250,041.28	932.96
810	458,511.35	250,110.39	--
811	458,504.14	250,076.14	932.61
812	458,517.80	250,075.99	932.75
813	458,530.47	250,081.08	932.88
814	458,540.23	250,090.63	933.01
815	458,545.60	250,103.19	933.08
816	458,536.75	250,061.11	933.05
817	458,609.59	249,945.89	--
818	458,575.34	249,953.09	933.19
819	458,580.06	249,964.68	933.13
820	458,588.56	249,973.86	932.99
821	458,599.75	249,979.47	932.73
822	458,612.20	249,980.79	932.49
823	458,581.96	249,984.55	933.14
824	458,629.09	250,067.75	--
825	458,621.88	250,033.49	932.61
826	458,609.33	250,038.86	932.32
827	458,599.78	250,048.62	932.44
828	458,594.69	250,061.29	932.47
829	458,594.84	250,074.95	932.56
830	458,593.20	250,038.00	932.74



LEGEND:  
 FLOW DIRECTION

NOTES:  
 1. ELEVATIONS ALONG CURB ARE AT GUTTER LINE.  
 2. SEE CHURCH SITE PLAN FOR GUTTER ELEVATIONS.

DATE: 8/10/2005 TIME: 9:50:14 AM FILENAME: K:\r-z\wastcy\24390\hwy-brdg\hwy\lfr-shf\c200802.dth

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 CHECKED BY: BDP

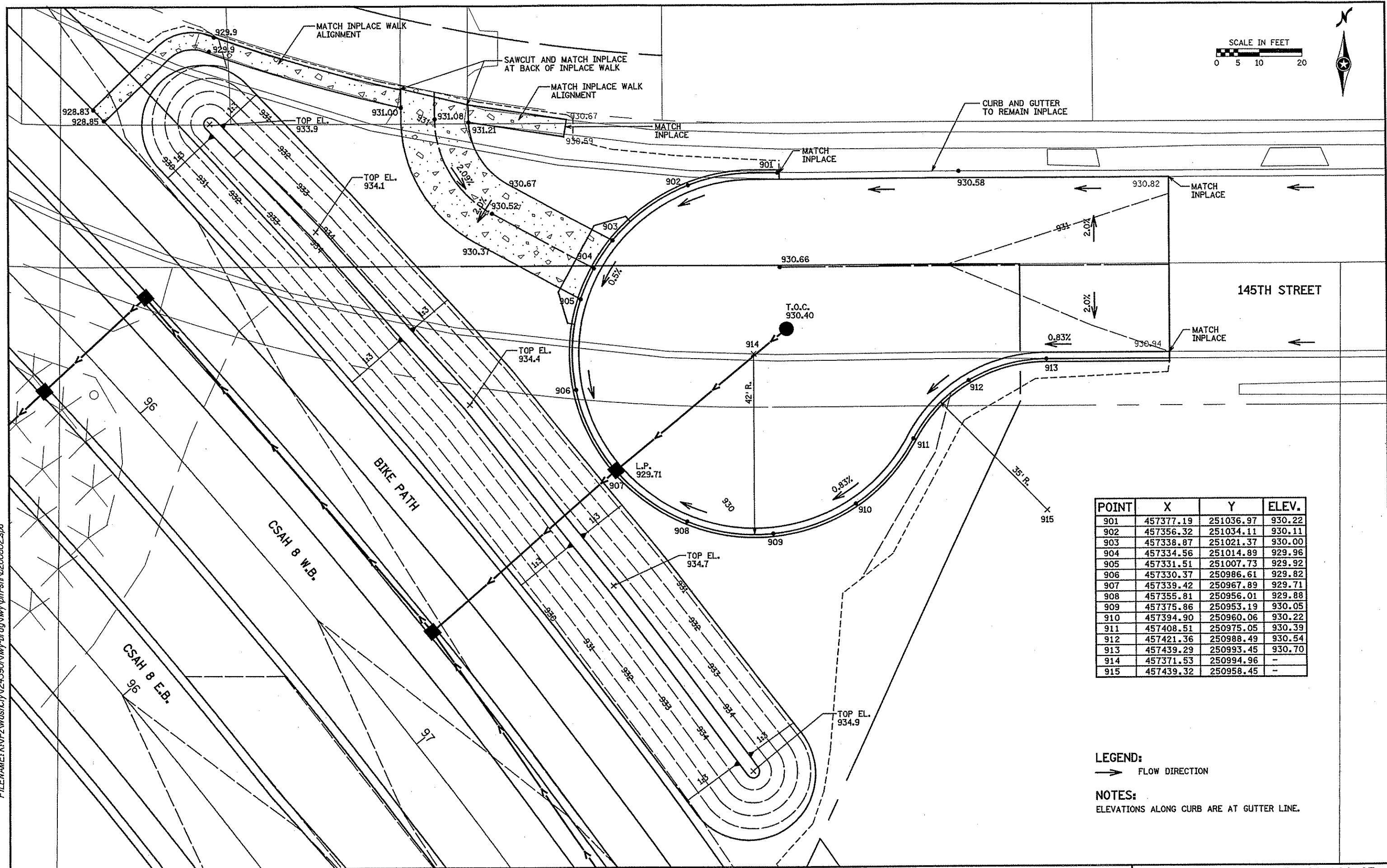
CERTIFIED BY *Scott O. Paulk* LIC. NO. 26880 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

**TKDA**  
 ENGINEERS · ARCHITECTS · PLANNERS

INTERSECTION DETAIL  
 CSAH 8 AND TH 61

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 108 of 296 Sheets

SCALE IN FEET  
0 5 10 20



POINT	X	Y	ELEV.
901	457377.19	251036.97	930.22
902	457356.32	251034.11	930.11
903	457338.87	251021.37	930.00
904	457334.56	251014.89	929.96
905	457331.51	251007.73	929.92
906	457330.37	250986.61	929.82
907	457339.42	250967.89	929.71
908	457355.81	250956.01	929.88
909	457375.86	250953.19	930.05
910	457394.90	250960.06	930.22
911	457408.51	250975.05	930.39
912	457421.36	250988.49	930.54
913	457439.29	250993.45	930.70
914	457371.53	250994.96	-
915	457439.32	250958.45	-

LEGEND:

→ FLOW DIRECTION

NOTES:

ELEVATIONS ALONG CURB ARE AT GUTTER LINE.

DATE: 8/5/2005 TIME: 1:45:40 PM  
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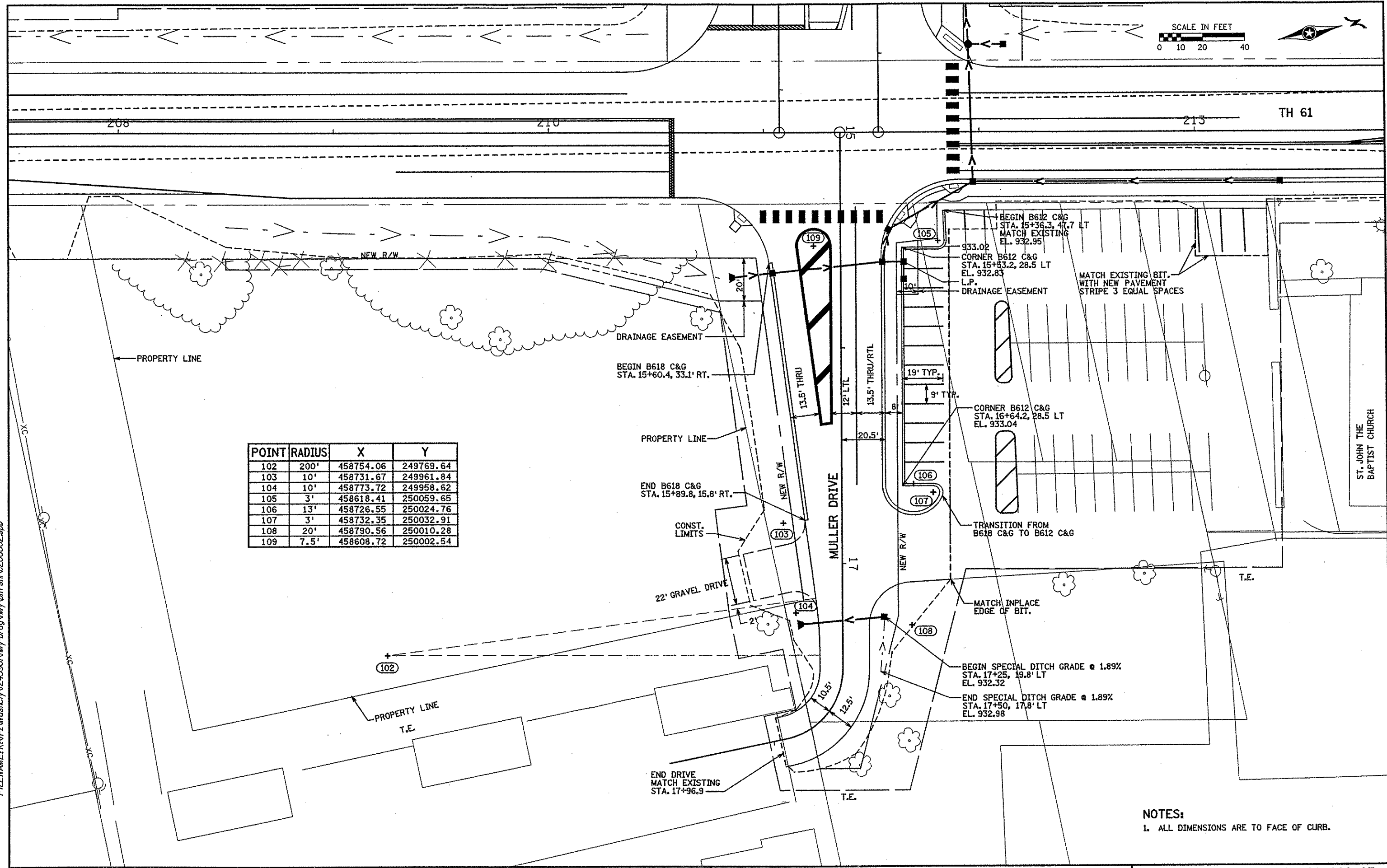
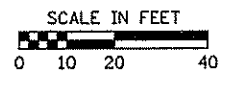
DRAWN BY: TJV  
CHECKED BY: BDP

CERTIFIED BY *Scott J. Paulin* LIC. NO. 20280 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

**TKDA**  
ENGINEERS · ARCHITECTS · PLANNERS

SITE PLAN  
145TH STREET CUL-DE-SAC

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 109 of 296 Sheets



POINT	RADIUS	X	Y
102	200'	458754.06	249769.64
103	10'	458731.67	249961.84
104	10'	458773.72	249958.62
105	3'	458618.41	250059.65
106	13'	458726.55	250024.76
107	3'	458732.35	250032.91
108	20'	458790.56	250010.28
109	7.5'	458608.72	250002.54

**NOTES:**  
 1. ALL DIMENSIONS ARE TO FACE OF CURB.

DATE: 8/15/2005 TIME: 1:45:44 PM  
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 CHECKED BY: BDP

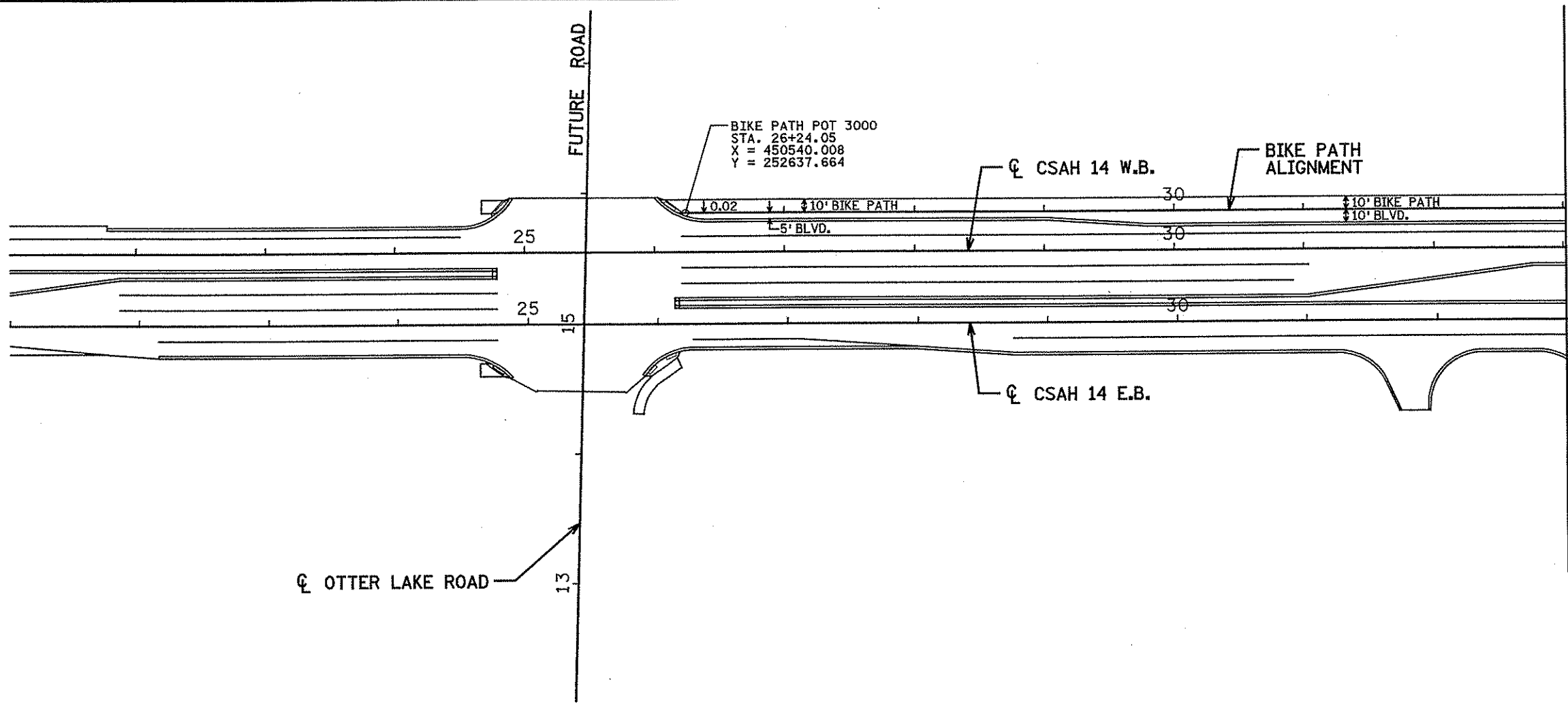
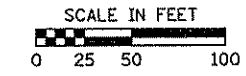
CERTIFIED BY *Brent D. Parker* LIC. NO. 20880 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

**TKDA**  
 ENGINEERS - ARCHITECTS - PLANNERS

SITE PLAN  
 MULLER DRIVE

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 110 of 296 Sheets



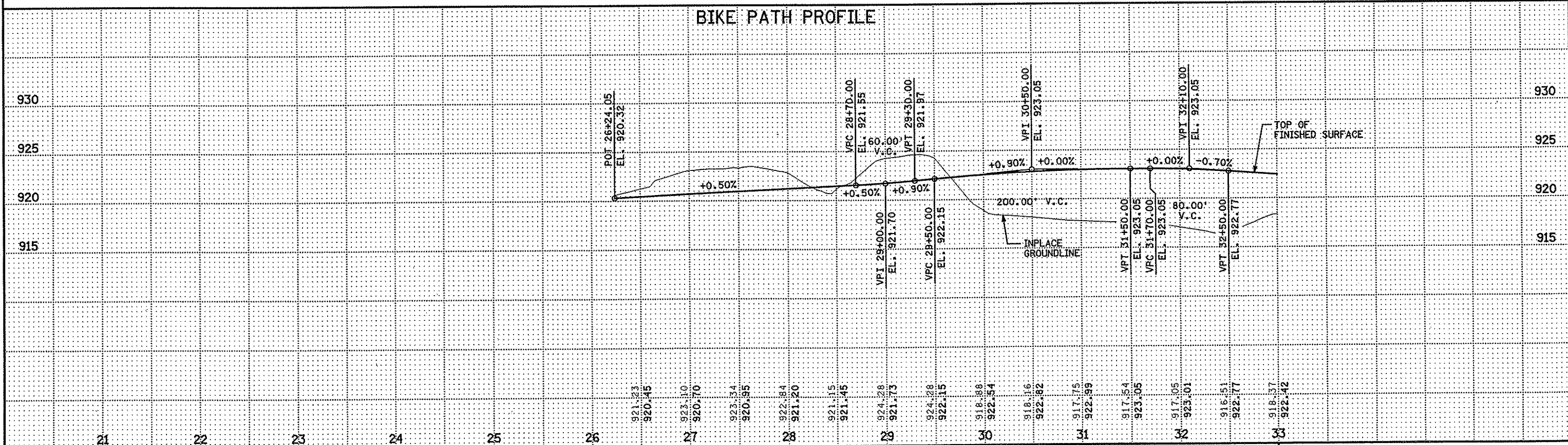


☉ OTTER LAKE ROAD

FUTURE ROAD

MATCH LINE - CSAH 14 E.B. STA. 33+00

BIKE PATH PROFILE



DATE: 8/15/2005 TIME: 10:39:48 AM  
FILENAME: K:\v2\WastCy\24390\Nwy-brdg\Nwy-pln-sht\c200802.dwg

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CHECKED BY: BDP

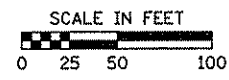
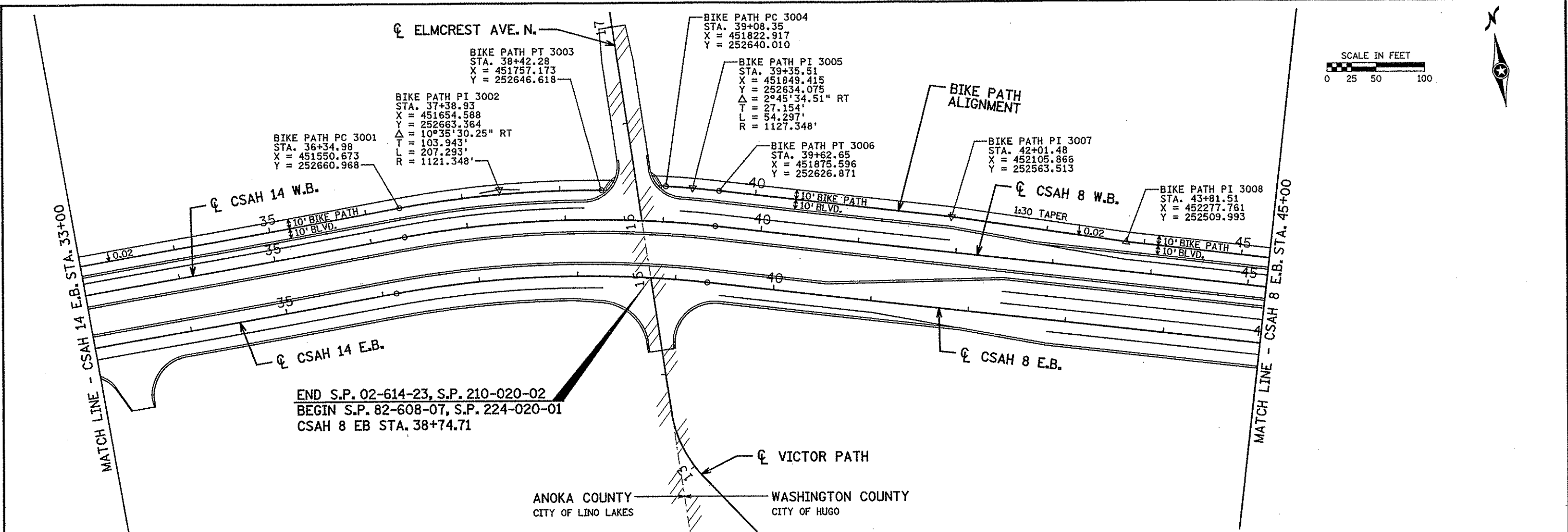
CERTIFIED BY *[Signature]* LIC. NO. 20880 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

**TKDA**  
ENGINEERS - ARCHITECTS - PLANNERS

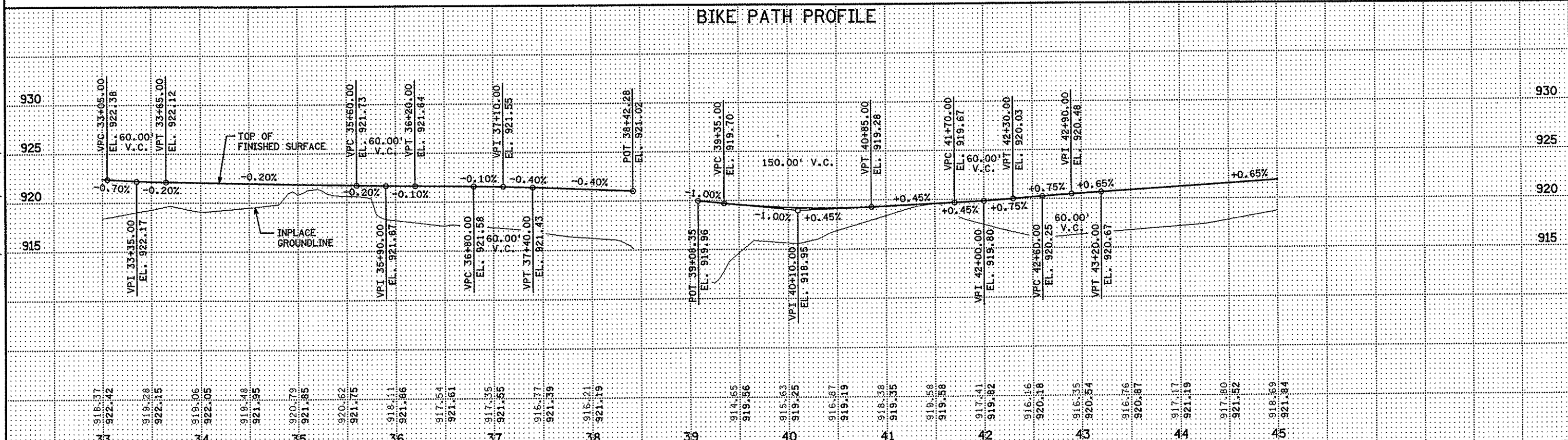
BIKE PATH PLAN AND PROFILE  
STA. 21+00 TO STA. 33+00

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 111 of 296 Sheets

DATE: 8/5/2005 TIME: 10:39:56 AM  
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BIKE PATH PROFILE



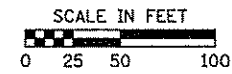
DRAWN BY: SFH  
 CHECKED BY: BDP

CERTIFIED BY *Scott J. Paulk*  
 LICENSED PROFESSIONAL ENGINEER  
 LIC. NO. 26880 DATE 8/15/05

**TKDA**  
 ENGINEERS - ARCHITECTS - PLANNERS

BIKE PATH PLAN AND PROFILE  
 STA. 33+00 TO STA. 45+00

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 112 of 296 Sheets



MATCH LINE - EB CSAH 8 STA. 45+00

BIKE PATH POT 3009  
 STA. 46+20.61  
 X = 452508.297  
 Y = 252446.561

FUTURE ROAD

BIKE PATH POT 3010  
 STA. 47+36.94  
 X = 452621.894  
 Y = 252421.528

BIKE PATH PI 3011  
 STA. 50+30.84  
 X = 452905.263  
 Y = 252343.560

BIKE PATH PI 3012  
 STA. 52+10.94  
 X = 453077.221  
 Y = 252290.022

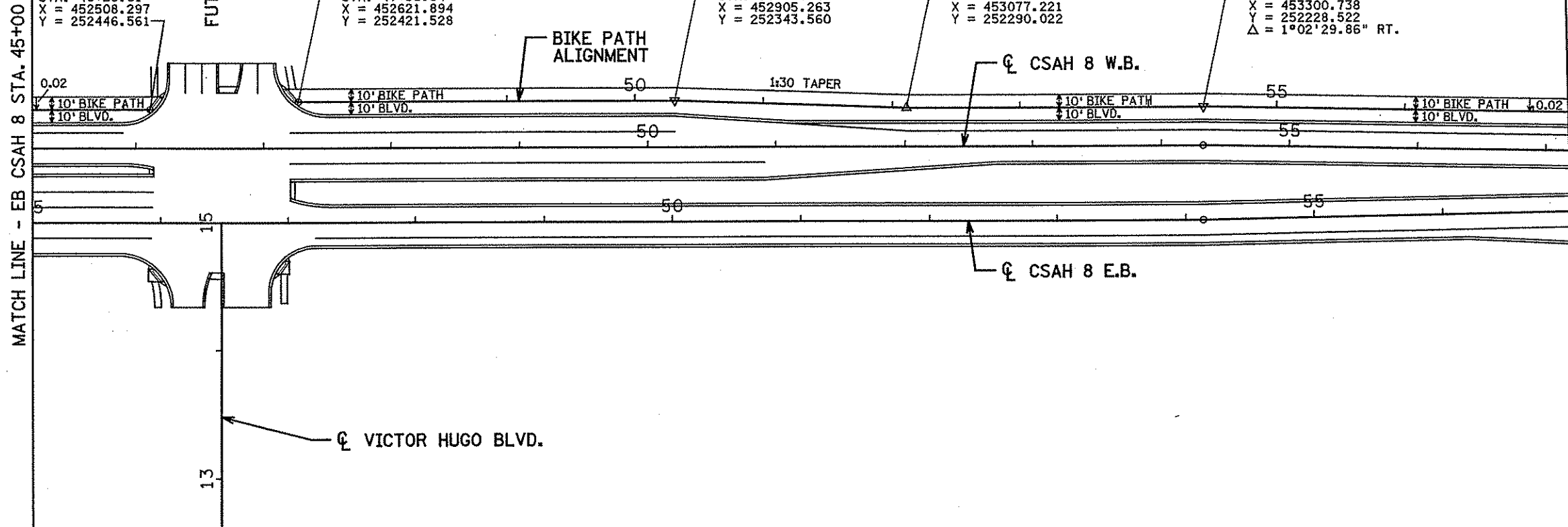
BIKE PATH PI 3013  
 STA. 54+42.76  
 X = 453300.738  
 Y = 252228.522  
 $\Delta = 1^{\circ}02'29.86''$  RT.

BIKE PATH ALIGNMENT

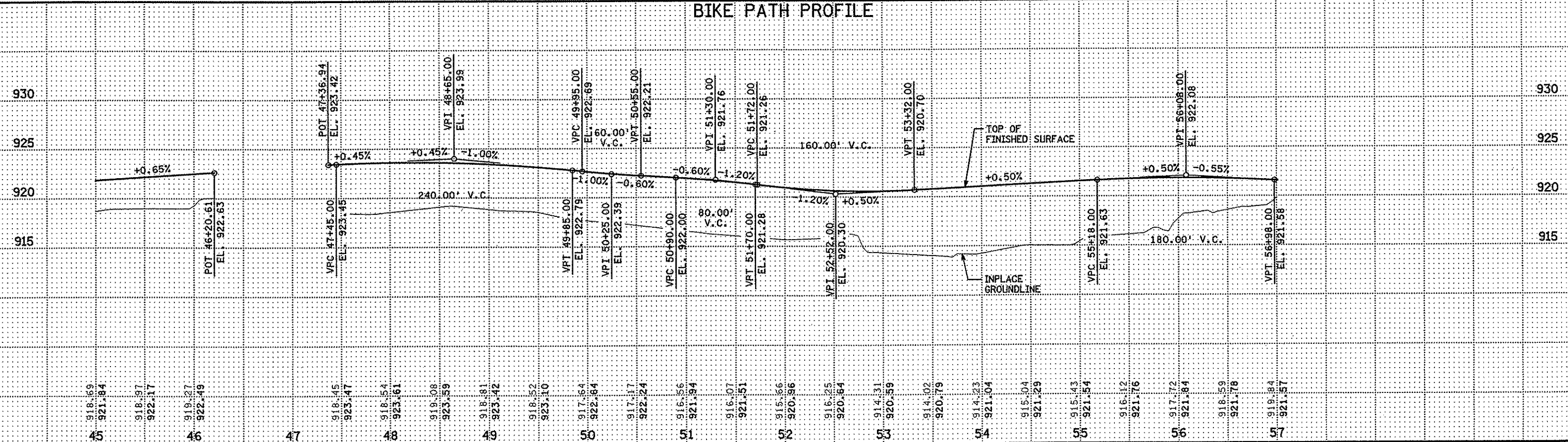
CSAH 8 W.B.

CSAH 8 E.B.

VICTOR HUGO BLVD.



BIKE PATH PROFILE



DATE: 8/5/2005 TIME: 10:40:05 AM  
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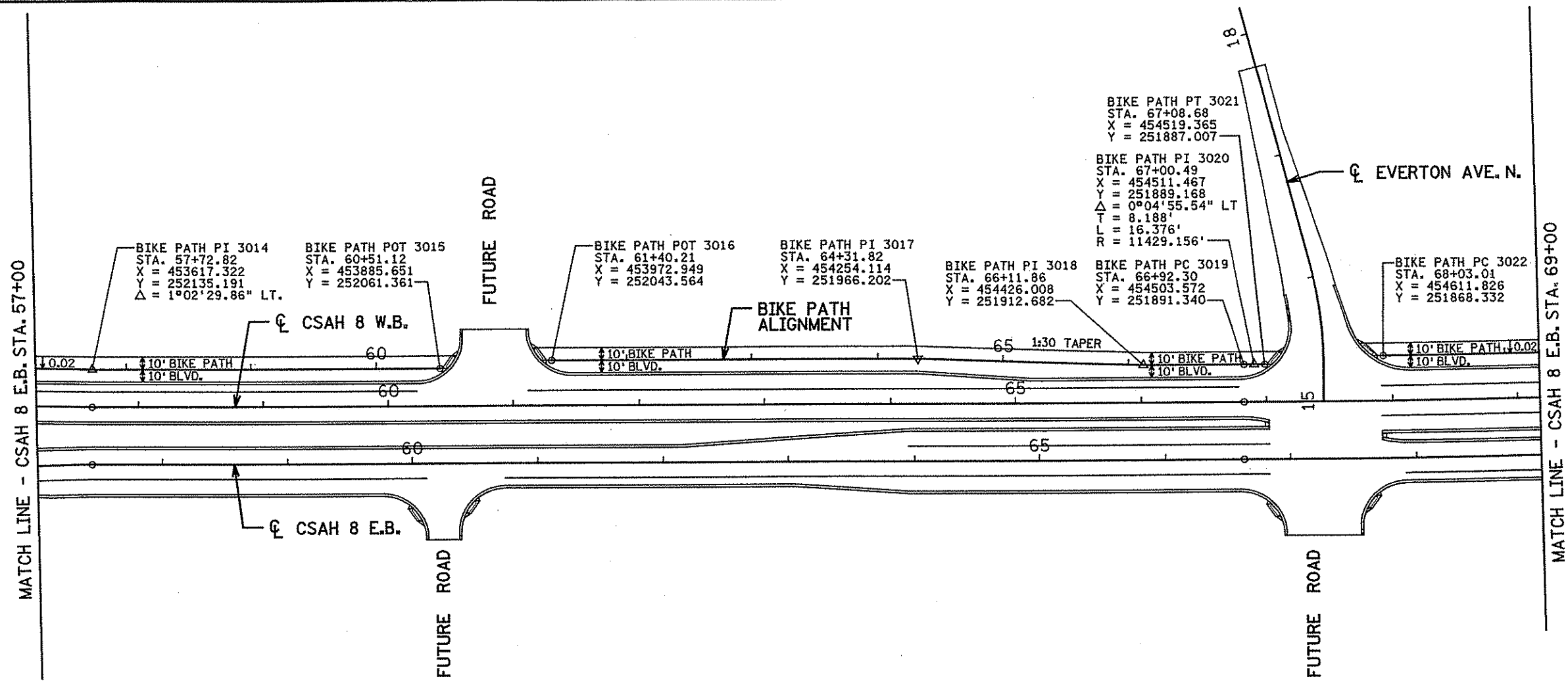
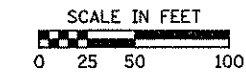
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 CHECKED BY: BDP

CERTIFIED BY *Scott J. Paul* LIC. NO. 20880 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

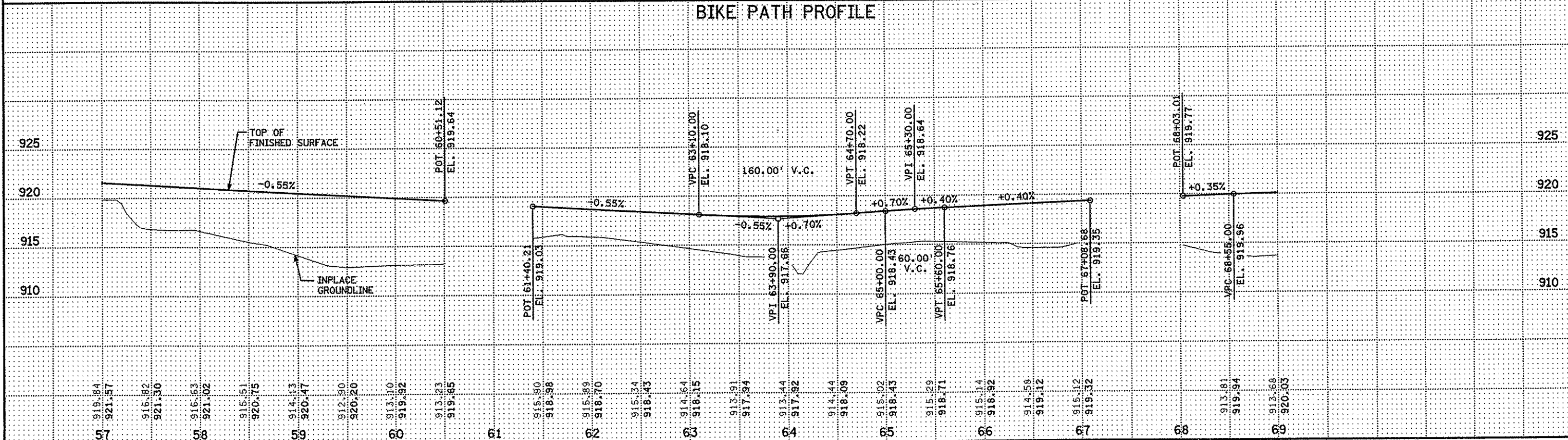
**TKDA**  
 ENGINEERS - ARCHITECTS - PLANNERS

BIKE PATH PLAN AND PROFILE  
 STA. 45+00 TO STA. 57+00

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 113 of 296 Sheets



**BIKE PATH PROFILE**



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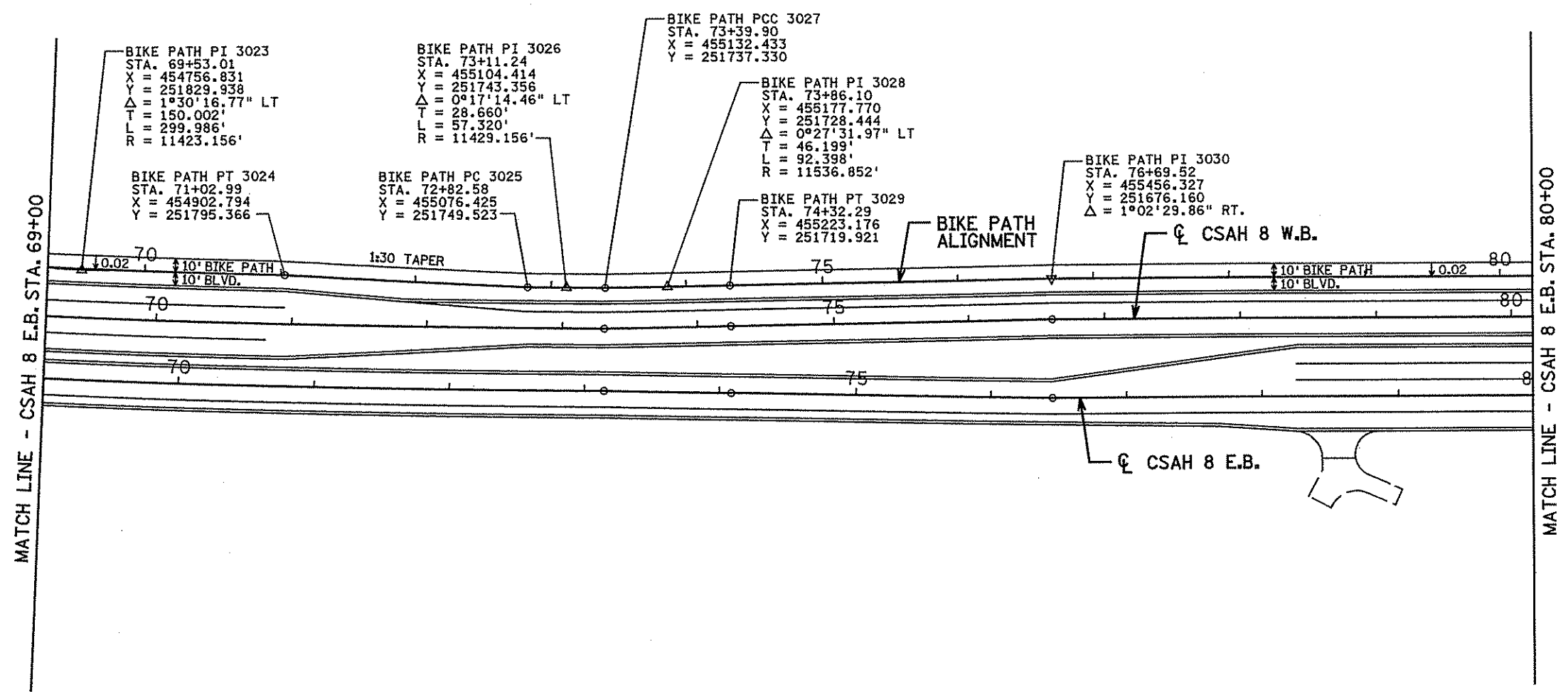
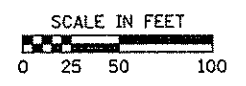
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CERTIFIED BY: *[Signature]*  
 LIC. NO. 20280 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

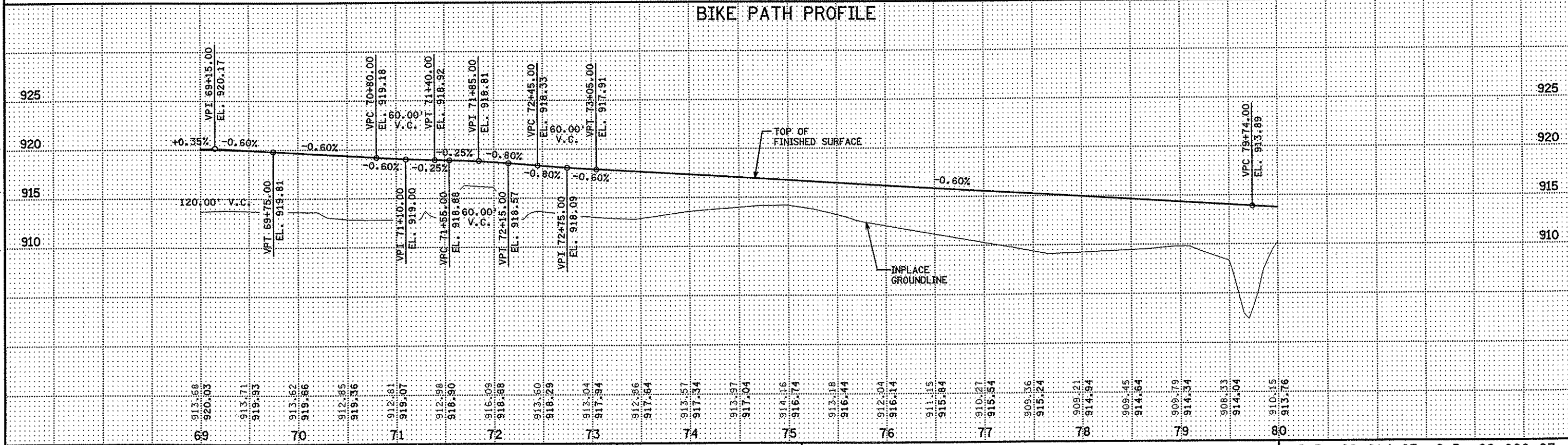
**TKDA**  
 ENGINEERS - ARCHITECTS - PLANNERS

**BIKE PATH PLAN AND PROFILE**  
 STA. 57+00 TO STA. 69+00

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 114 of 296 Sheets



### BIKE PATH PROFILE



DATE: 8/5/2005 TIME: 10:40:23 AM  
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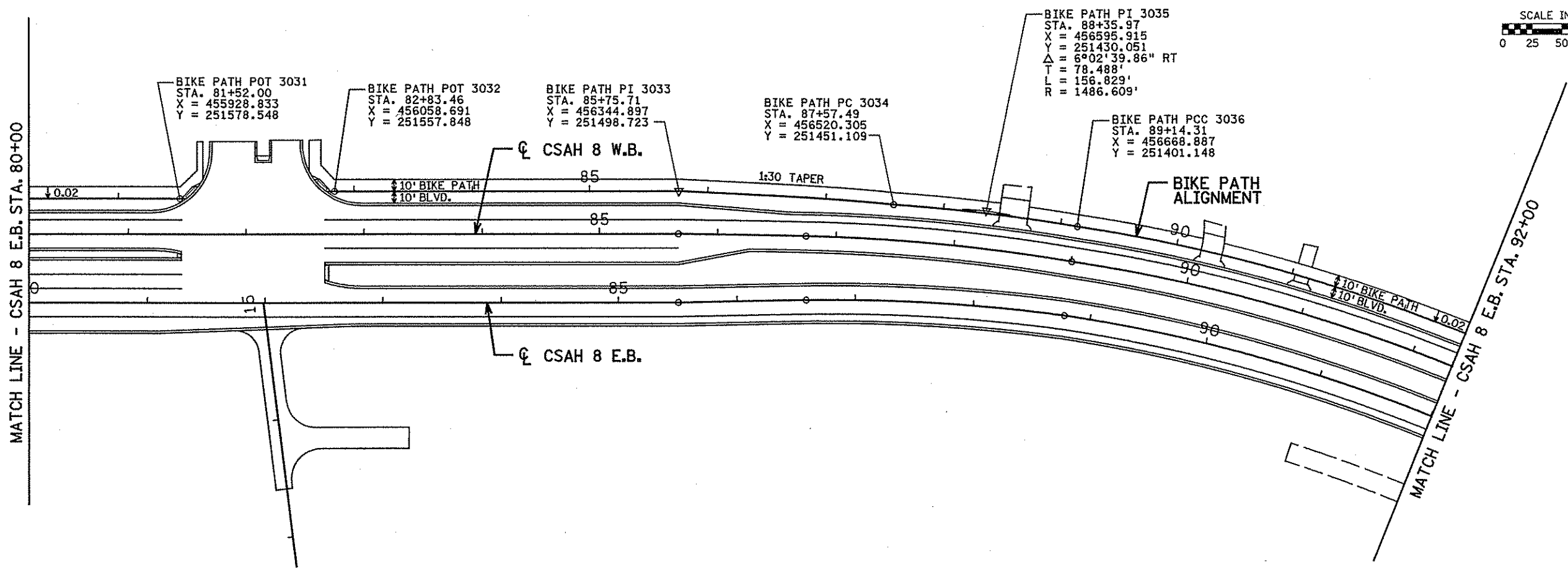
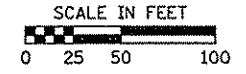
CERTIFIED BY *Scott O. Park*  
LIC. NO. 20880 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

**TKDA**  
ENGINEERS · ARCHITECTS · PLANNERS

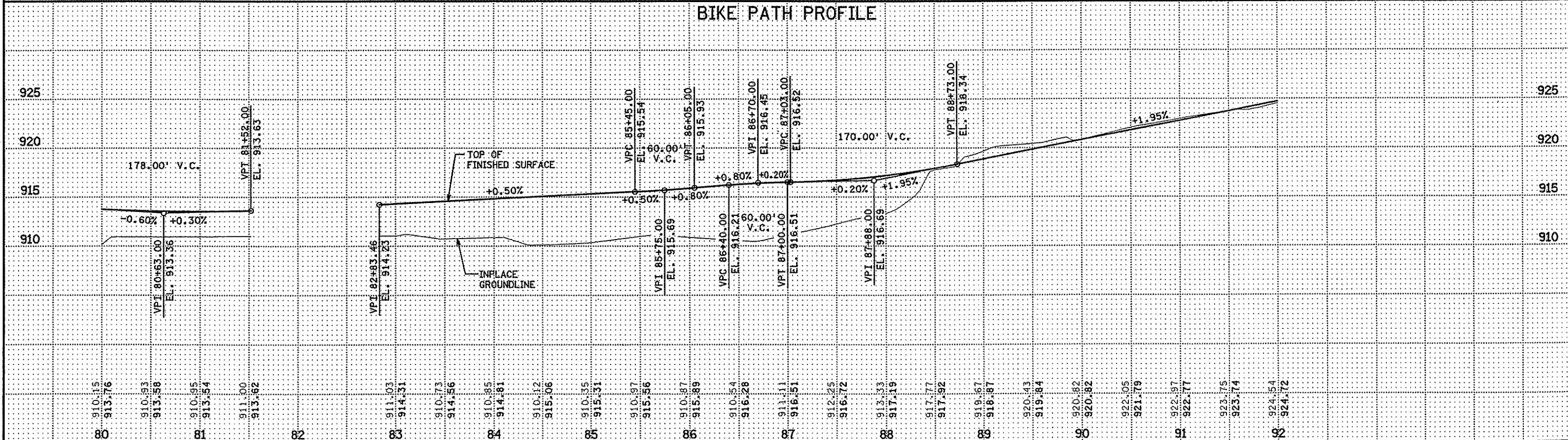
BIKE PATH PLAN AND PROFILE  
STA. 69+00 TO STA. 80+00

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 115 of 296 Sheets





**BIKE PATH PROFILE**



DATE: 8/15/2005 TIME: 10:40:32 AM  
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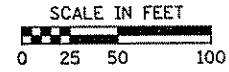
CERTIFIED BY *Scott J. Pank*  
 LICENSED PROFESSIONAL ENGINEER LIC. NO. 20820 DATE 8/15/05

**TKDA**  
 ENGINEERS - ARCHITECTS - PLANNERS

BIKE PATH PLAN AND PROFILE  
 STA. 80+00 TO STA. 92+00

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 116 of 296 Sheets





BIKE PATH PI 3037  
 STA. 94+25.90  
 X = 457147.676  
 Y = 251220.932  
 $\Delta = 38^{\circ}11'03.11''$  RT  
 T = 511.583'  
 L = 985.012'  
 R = 1478.021'

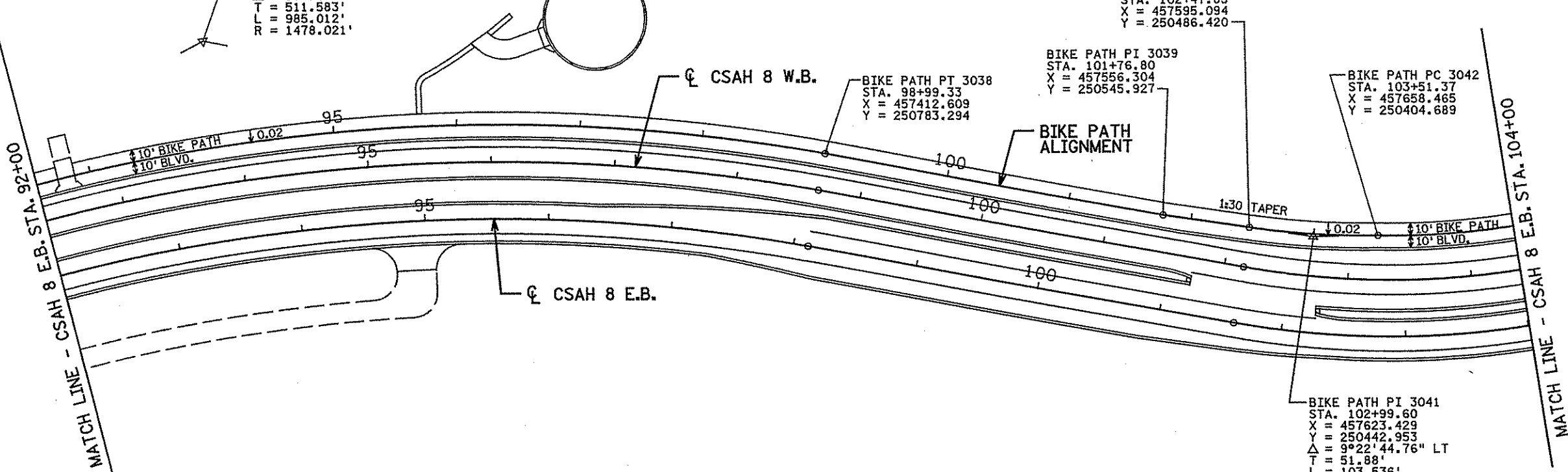
BIKE PATH PC 3040  
 STA. 102+47.83  
 X = 457595.094  
 Y = 250486.420

BIKE PATH PI 3039  
 STA. 101+76.80  
 X = 457556.304  
 Y = 250545.927

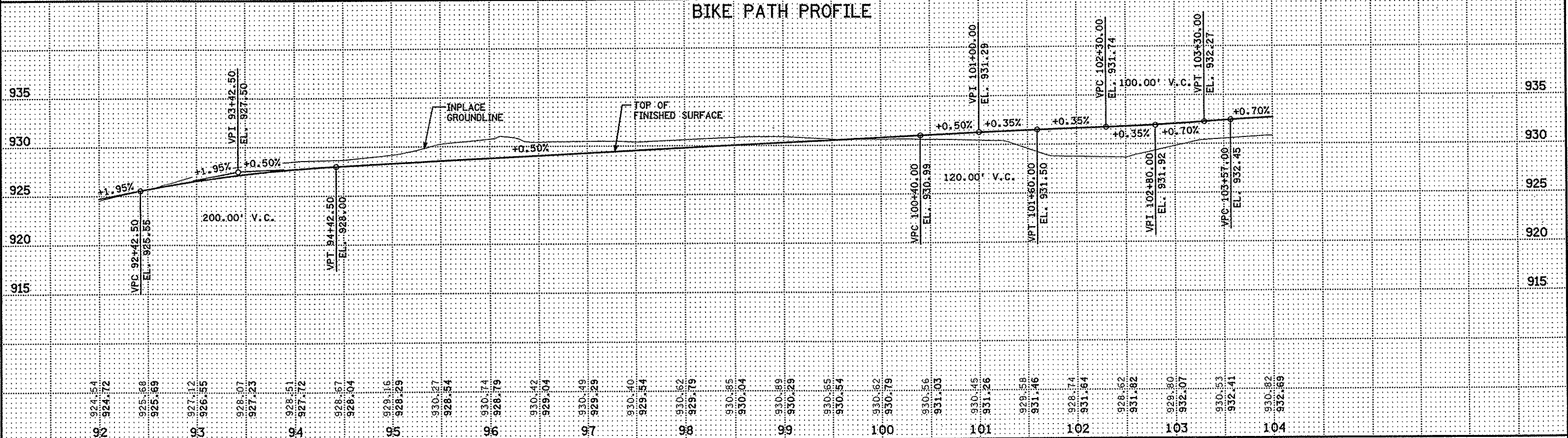
BIKE PATH PC 3042  
 STA. 103+51.37  
 X = 457658.465  
 Y = 250404.689

BIKE PATH PT 3038  
 STA. 98+99.33  
 X = 457412.609  
 Y = 250783.294

BIKE PATH PI 3041  
 STA. 102+99.60  
 X = 457623.429  
 Y = 250442.953  
 $\Delta = 9^{\circ}22'44.76''$  LT  
 T = 51.88'  
 L = 103.536'  
 R = 632.459'



BIKE PATH PROFILE



DATE: 8/5/2005 TIME: 10:40:41 AM  
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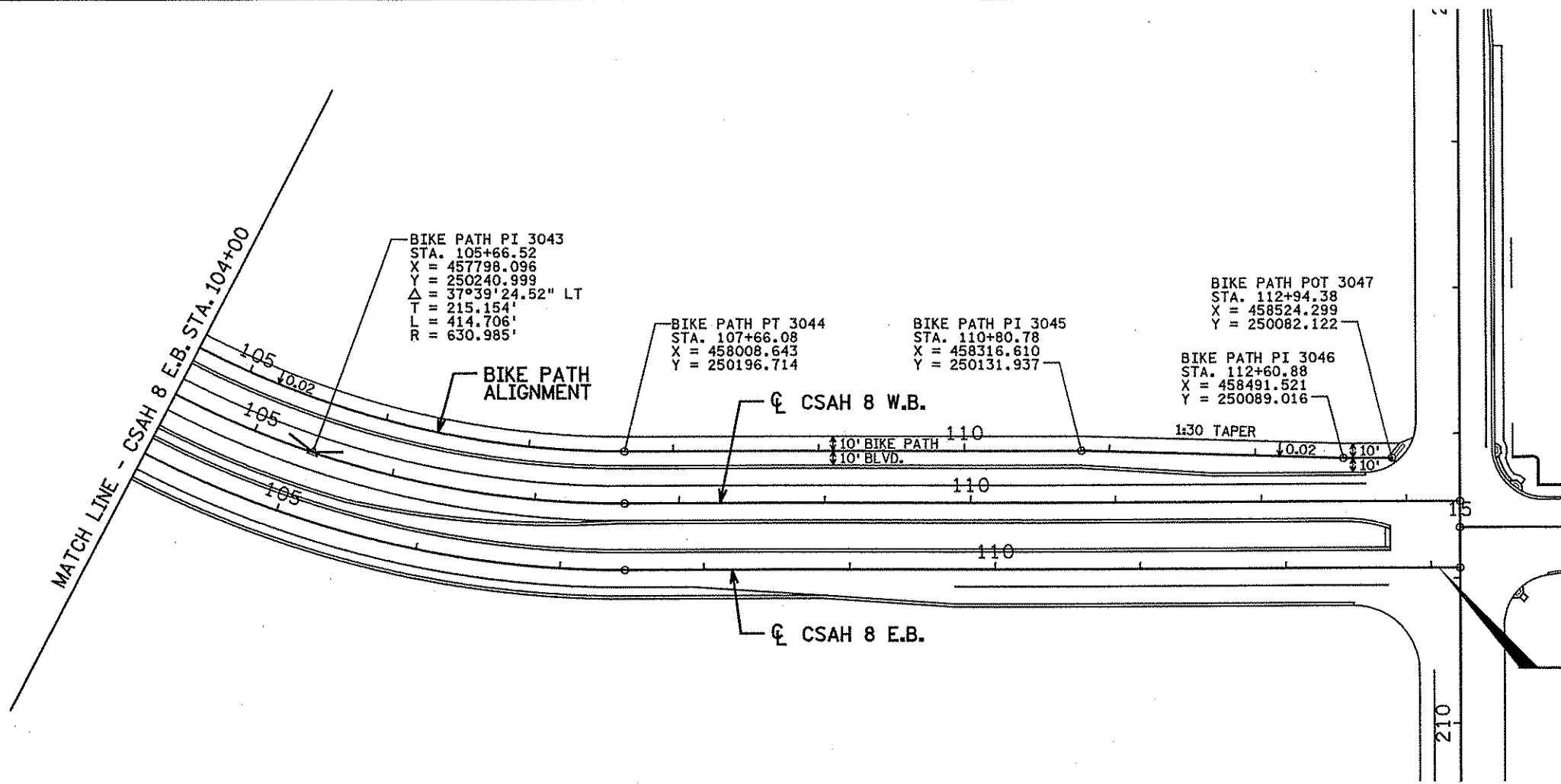
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 LICENSED PROFESSIONAL ENGINEER

**TKDA**  
 ENGINEERS - ARCHITECTS - PLANNERS

BIKE PATH PLAN AND PROFILE  
 STA. 92+00 TO STA. 104+00

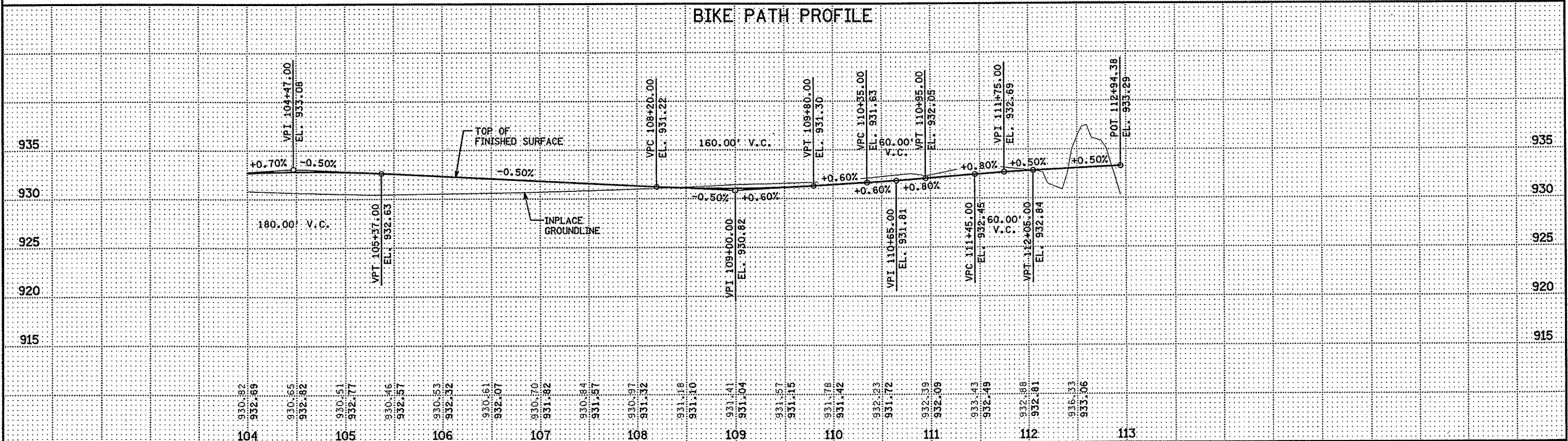
S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 117 of 296 Sheets

SCALE IN FEET  
0 25 50 100



END CONSTRUCTION  
CSAH 8 E.B.  
S.P. 82-608-07, S.P. 224-020-01  
STA. 113+05.07

BIKE PATH PROFILE



DATE: 8/15/2005 TIME: 10:39:25 AM  
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CERTIFIED BY *Mont O. Paul* LIC. NO. 70880 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

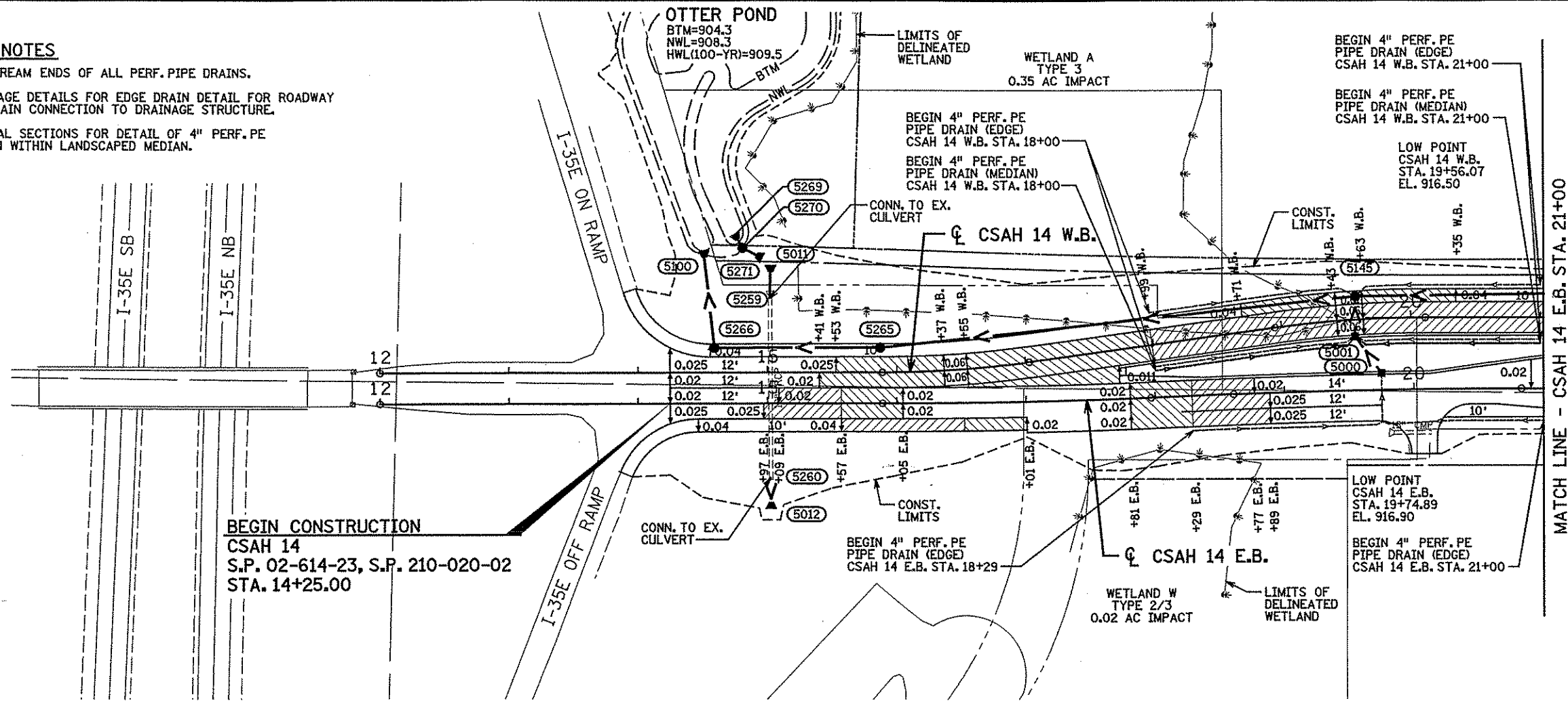
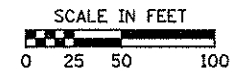
**TKDA**  
ENGINEERS · ARCHITECTS · PLANNERS

BIKE PATH PLAN AND PROFILE  
STA. 104+00 TO STA. 113+05.07

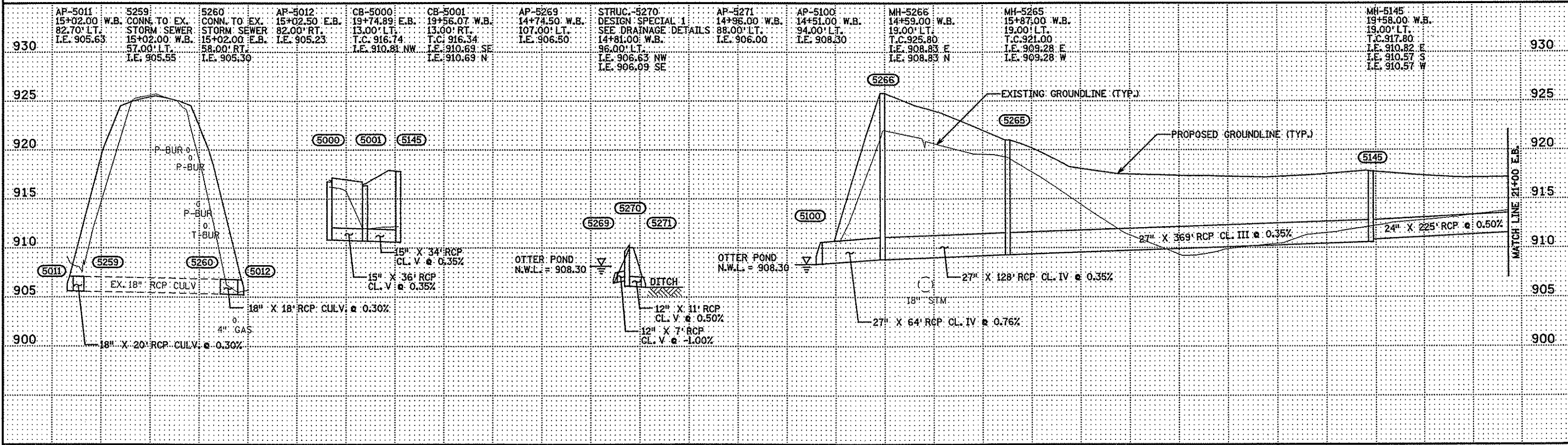
S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 118 of 296 Sheets

**GENERAL NOTES**

- PLUG UPSTREAM ENDS OF ALL PERF. PIPE DRAINS.
- SEE DRAINAGE DETAILS FOR EDGE DRAIN DETAIL FOR ROADWAY AND SUBDRAIN CONNECTION TO DRAINAGE STRUCTURE.
- SEE TYPICAL SECTIONS FOR DETAIL OF 4" PERF. PE PIPE DRAIN WITHIN LANDSCAPED MEDIAN.



**BEGIN CONSTRUCTION**  
 CSAH 14  
 S.P. 02-614-23, S.P. 210-020-02  
 STA. 14+25.00



DATE: 8/15/2005 TIME: 4:30:58 PM FILENAME: K:\p2\Wgs\c\p2\4390\Nwy\brdg\Nwy\p1r-st\c200802.dwg

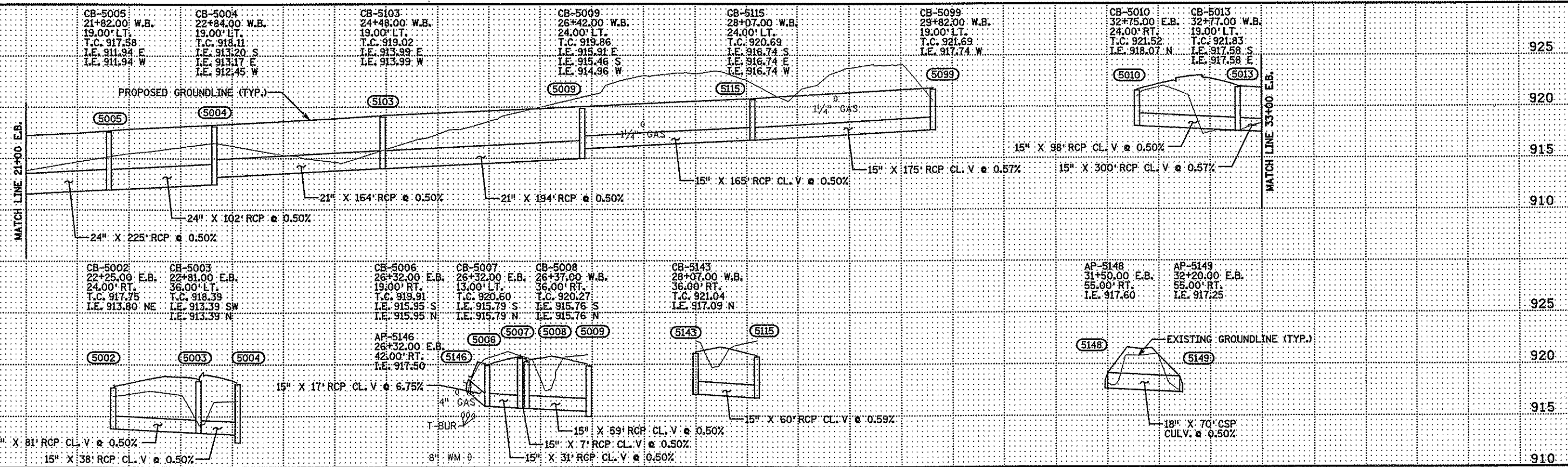
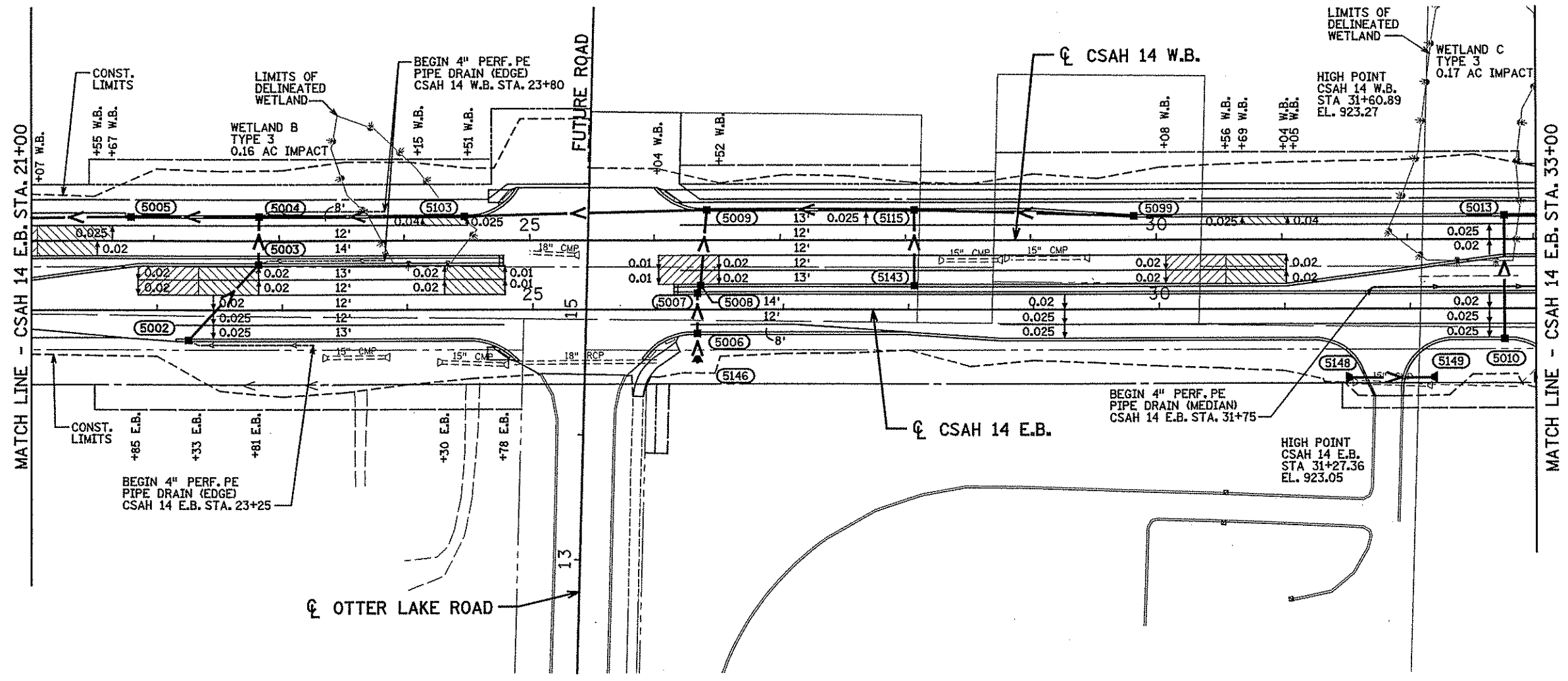
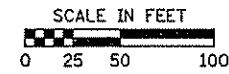
DRAWN BY: CEH  
 CHECKED BY: MAW

CERTIFIED BY *Matthew P. Wasson*  
 LICENSED PROFESSIONAL ENGINEER LIC. NO. 26883 DATE 8/15/05

**TKDA**  
 ENGINEERS - ARCHITECTS - PLANNERS

**DRAINAGE AND SUPERELEVATION PLAN**  
 STA. 12+00 TO STA. 21+00

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 119 of 296 Sheets



DATE: 8/5/2005 TIME: 1:31:05 PM  
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DRAWN BY: CEH  
 CHECKED BY: MAW

CERTIFIED BY *Matthew A. Wassman* LIC. NO. 26883 DATE: 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

**TKDA**  
 ENGINEERS · ARCHITECTS · PLANNERS

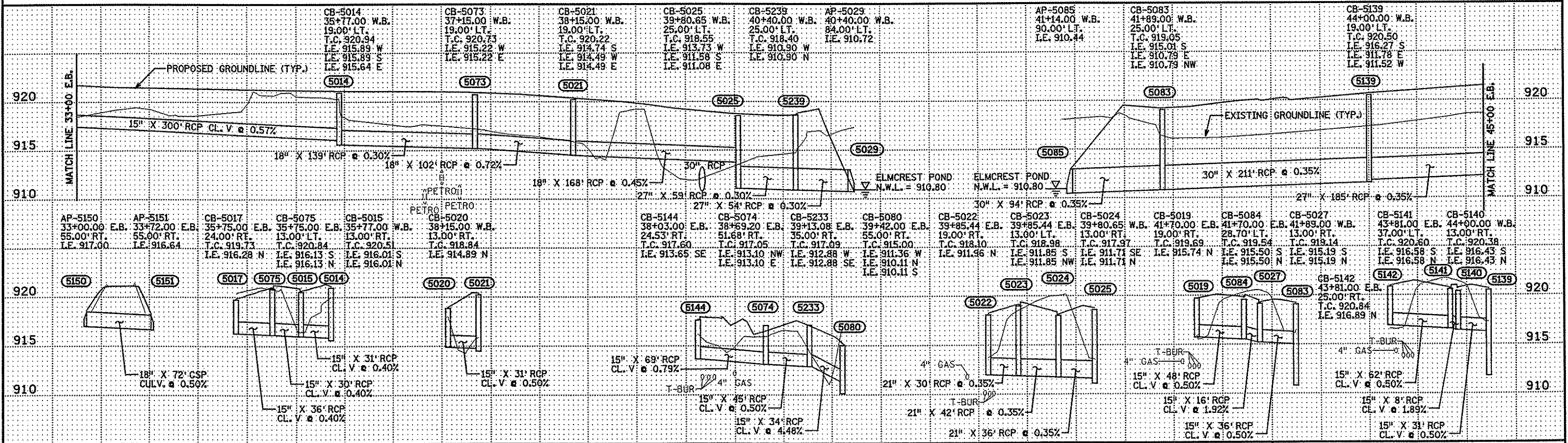
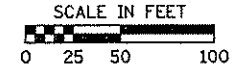
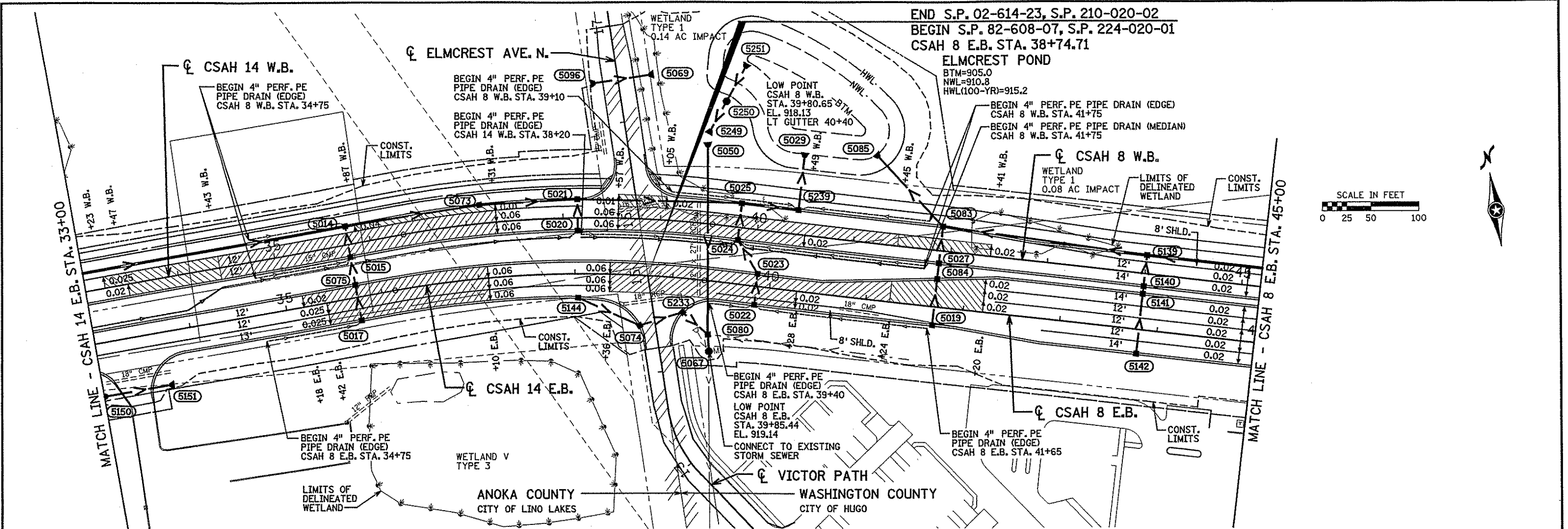
DRAINAGE AND SUPERELEVATION PLAN  
 STA. 21+00 TO STA. 33+00

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 120 of 296 Sheets

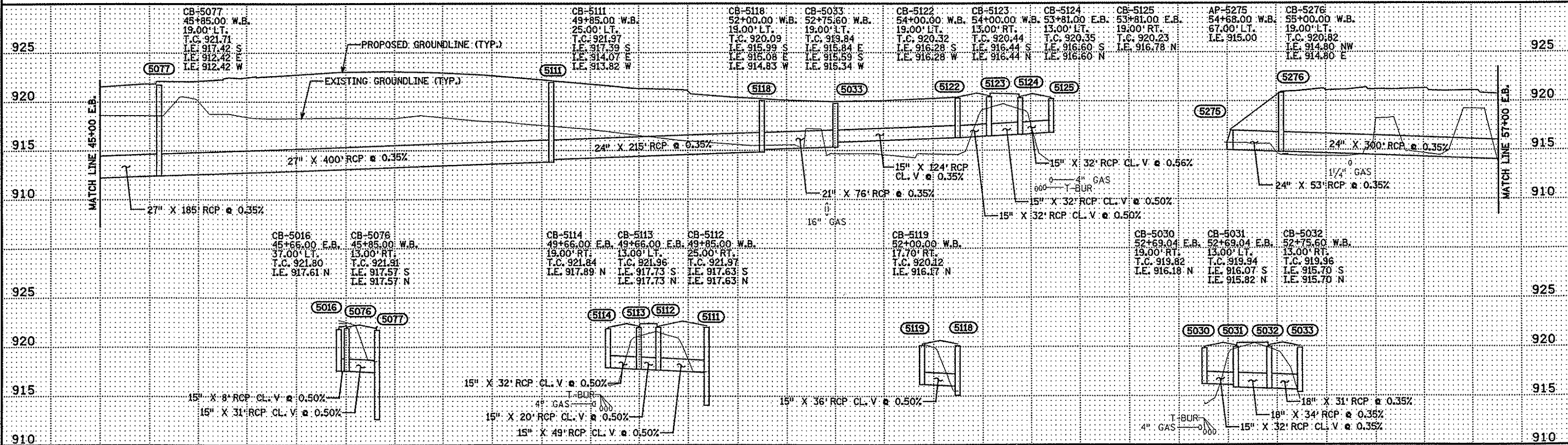
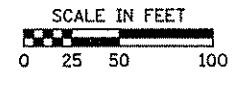
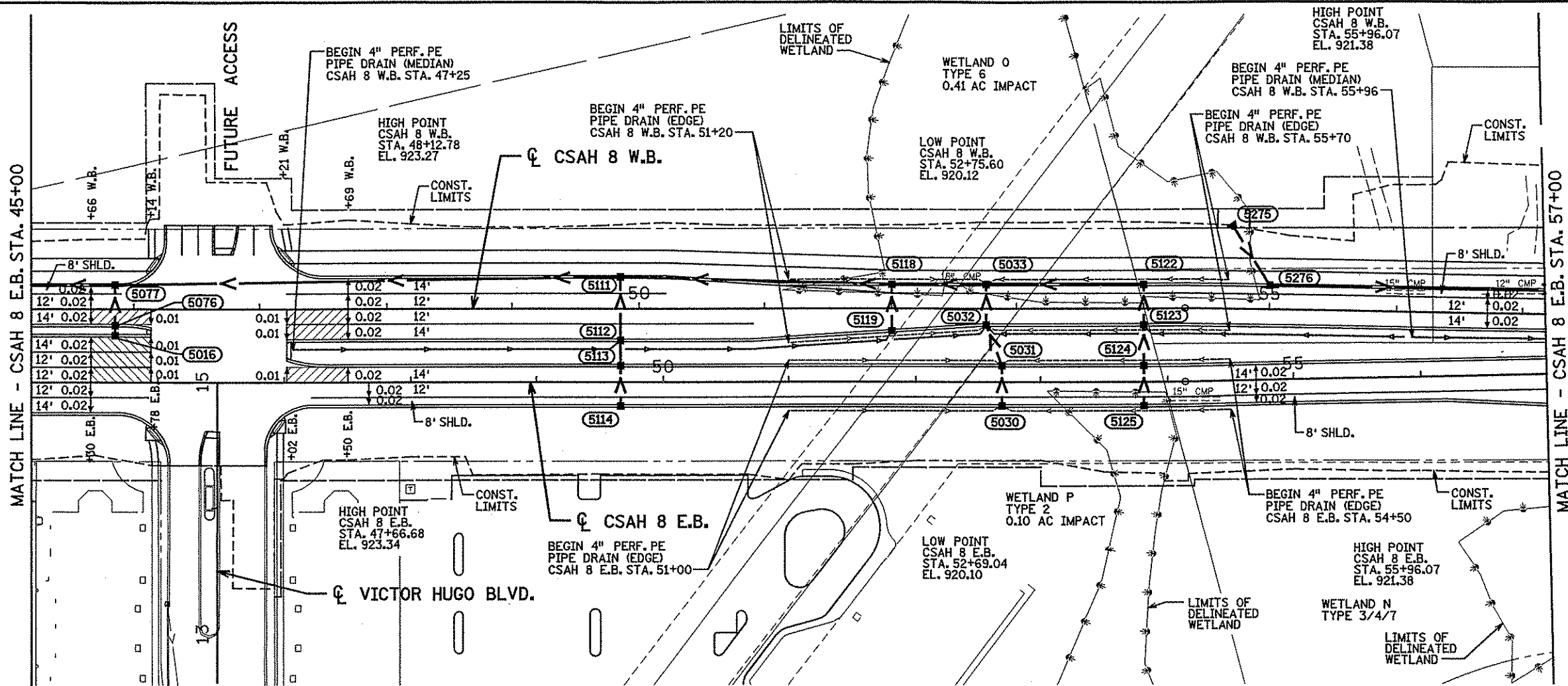


END S.P. 02-614-23, S.P. 210-020-02  
 BEGIN S.P. 82-608-07, S.P. 224-020-01  
 CSAH 8 E.B. STA. 38+74.71

ELMCREST POND  
 BTM=905.0  
 NWL=910.8  
 HWL(100-YR)=915.2



DATE: 8/5/2005 TIME: 1:31:12 PM  
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DATE: 8/5/2005 TIME: 1:31:20 PM  
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 CHECKED BY: MAW

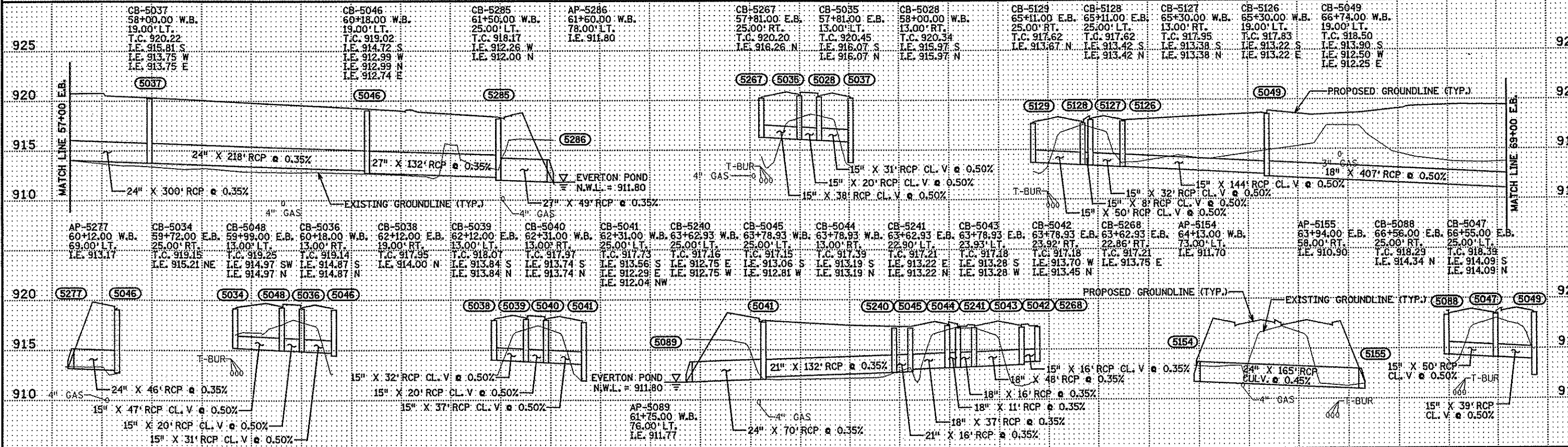
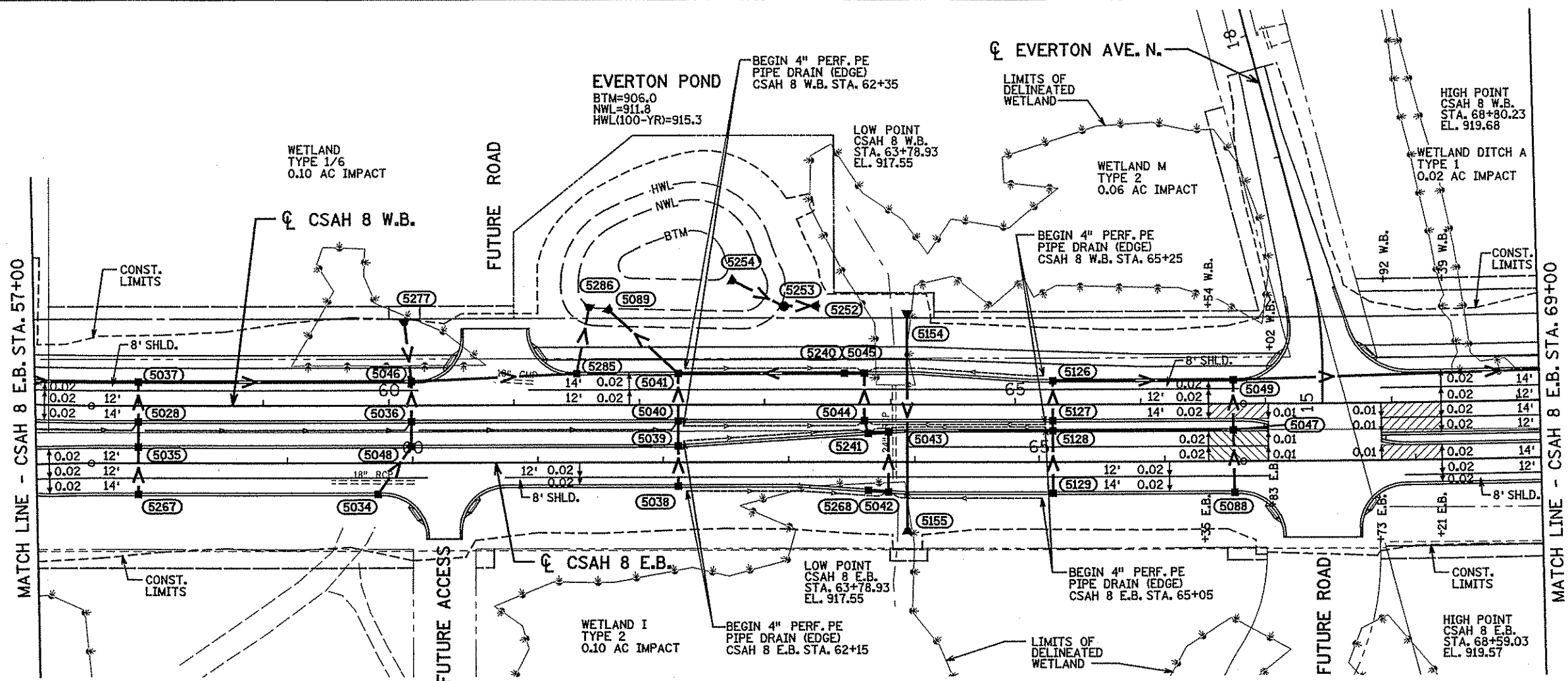
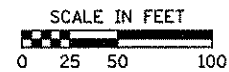
CERTIFIED BY: *Matthew A. Wasson*  
 LICENSED PROFESSIONAL ENGINEER LIC. NO. 26883 DATE 8/15/05

**TKDA**  
 ENGINEERS - ARCHITECTS - PLANNERS

DRAINAGE AND SUPERELEVATION PLAN  
 STA. 45+00 TO STA. 57+00

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 122 of 296 Sheets





DATE: 8/15/2005 TIME: 1:16:27 PM  
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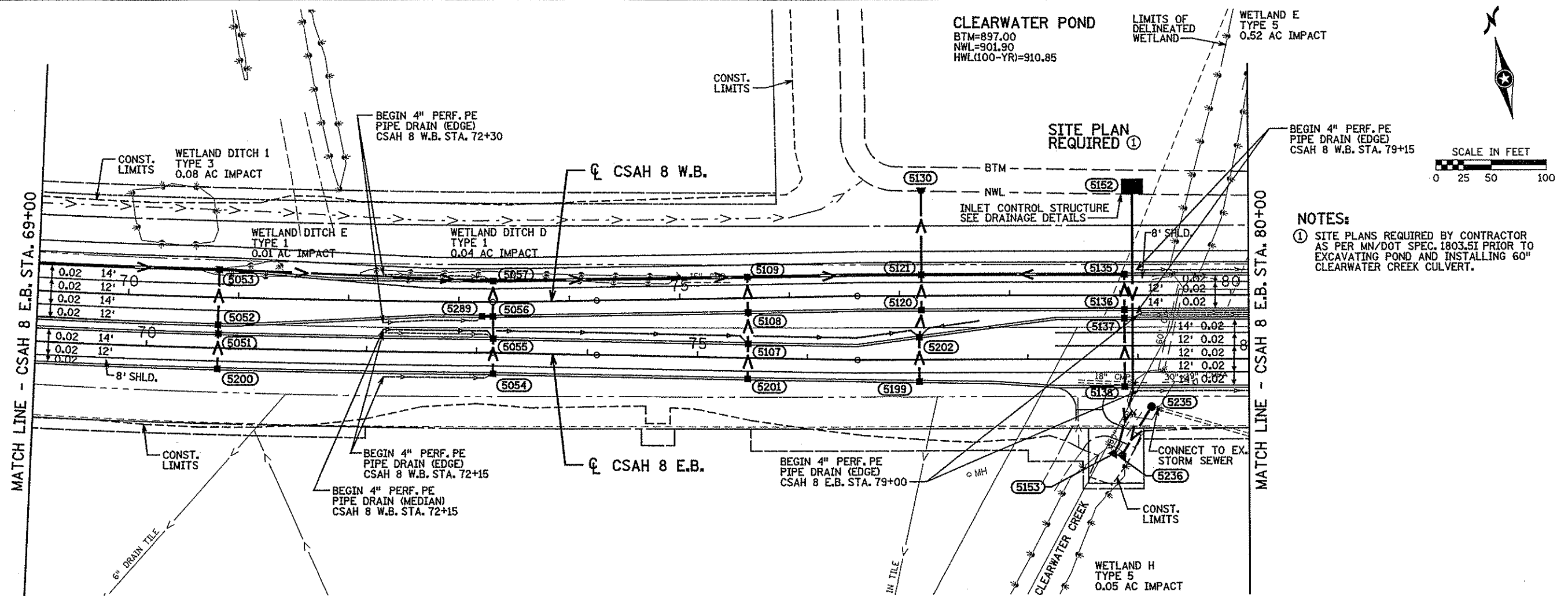
DRAWN BY: CEH  
CHECKED BY: MAW

CERTIFIED BY: *Matthew A. Warranan*  
LICENSED PROFESSIONAL ENGINEER  
LIC. NO. 20883 DATE 8/15/05

**TKDA**  
ENGINEERS · ARCHITECTS · PLANNERS

**DRAINAGE AND SUPERELEVATION PLAN**  
STA. 57+00 TO STA. 69+00

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 123 of 296 Sheets



CLEARWATER POND  
 BTM=897.00  
 NWL=901.90  
 HWL(100-YR)=910.85

LIMITS OF DELINEATED WETLAND  
 WETLAND E  
 TYPE 5  
 0.52 AC IMPACT

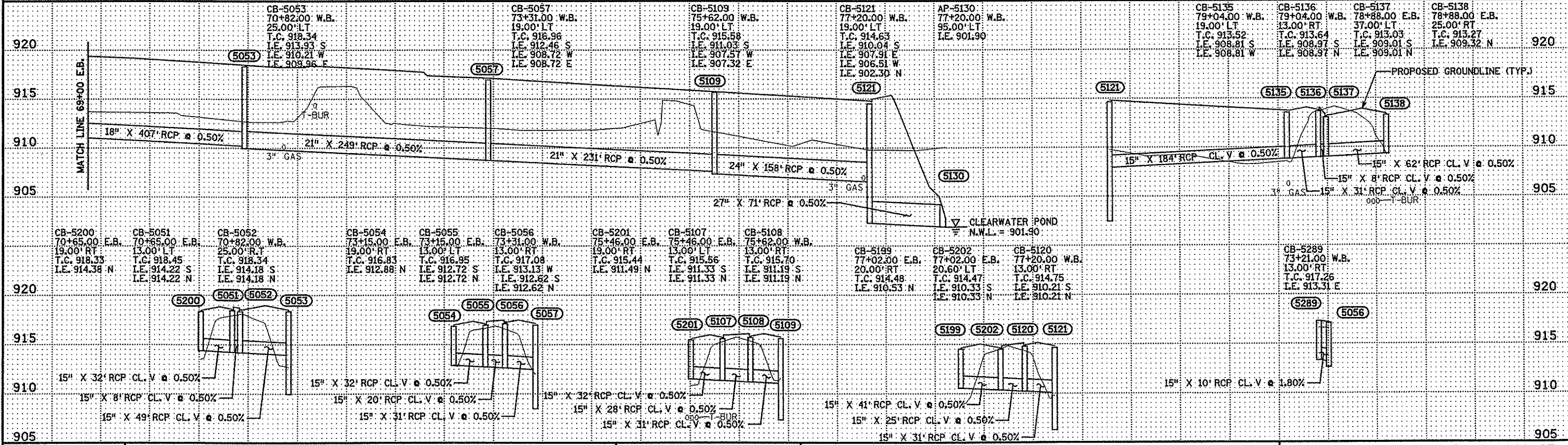
SITE PLAN REQUIRED ①

BEGIN 4" PERF. PE PIPE DRAIN (EDGE) CSAH 8 W.B. STA. 79+15

NOTES:  
 ① SITE PLANS REQUIRED BY CONTRACTOR AS PER MN/DOT SPEC. 1803.51 PRIOR TO EXCAVATING POND AND INSTALLING 60" CLEARWATER CREEK CULVERT.

MATCH LINE - CSAH 8 E.B. STA. 69+00

MATCH LINE - CSAH 8 E.B. STA. 80+00



DATE: 8/15/2005 TIME: 1:31:37 PM  
 FILENAME: K:\r-2\wastcy\24390\hwy-brdg\hwy\dr-sht\200802.dft

DRAWN BY: CEH  
 CHECKED BY: MAW

CERTIFIED BY *Matthew Wassman* LIC. NO. 26833 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

**TKDA**  
 ENGINEERS - ARCHITECTS - PLANNERS

DRAINAGE AND SUPERELEVATION PLAN  
 STA. 69+00 TO STA. 80+00

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 124 of 296 Sheets

CLEARWATER POND  
 BTM=897.00  
 NWL=901.90  
 HWL(100-YR)=910.85

BEGIN 4" PERF. PE  
 PIPE DRAIN (EDGE)  
 CSAH 8 W.B.  
 STA. 80+72.50  
 EL. 913.06

BEGIN 4" PERF. PE  
 PIPE DRAIN (EDGE)  
 CSAH 8 W.B.  
 STA. 81+21 & 81+45

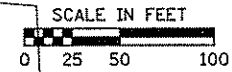
WETLAND Q  
 TYPE I  
 0.01 AC IMPACT

LIMITS OF  
 DELINEATED  
 WETLAND

BEGIN 4" PERF. PE  
 PIPE DRAIN (EDGE)  
 CSAH 8 W.B. STA. 86+60

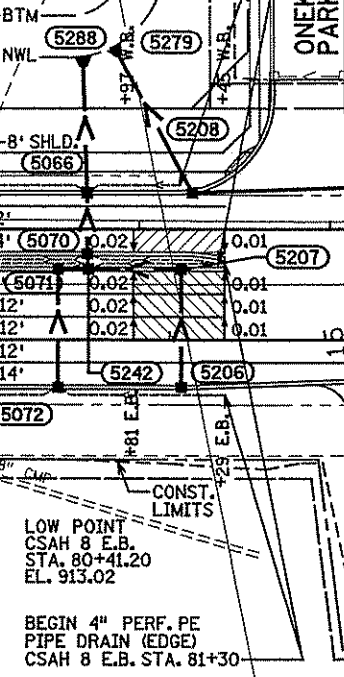
CSAH 8 W.B.

BEGIN 4" PERF. PE  
 PIPE DRAIN (EDGE)  
 CSAH 8 W.B. STA. 91+65  
 PLUG UPSTREAM END



MATCH LINE - CSAH 8 E.B. STA. 80+00

MATCH LINE - CSAH 8 E.B. STA. 92+00



LOW POINT  
 CSAH 8 E.B.  
 STA. 80+41.20  
 EL. 913.02

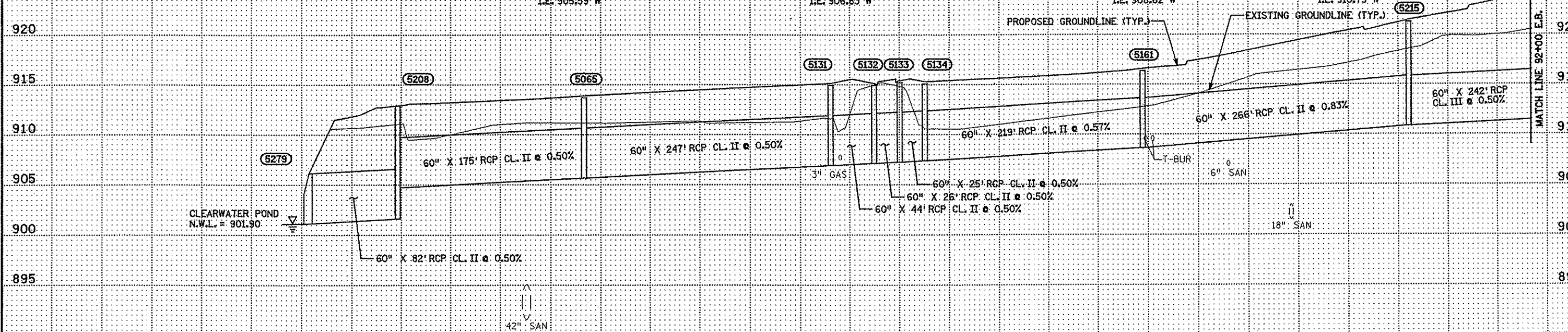
BEGIN 4" PERF. PE  
 PIPE DRAIN (EDGE)  
 CSAH 8 E.B. STA. 81+30

BEGIN 4" PERF. PE  
 PIPE DRAIN (EDGE)  
 CSAH 8 E.B. STA. 86+45

BEGIN 4" PERF. PE  
 PIPE DRAIN (EDGE)  
 CSAH 8 E.B. STA. 91+35

DATE: 8/15/2005 TIME: 1:31:46 PM FILENAME: K:\r2\wast\cy\24390\w\brdg\hwy\p1r-sit\200802.dwg

AP-5279 80+85.00 W.B. 95.00' LT I.E. 901.90	CB-5208 81+28.00 W.B. 19.00' LT T.C. 912.80 I.E. 904.66 E I.E. 902.35 N	CB-5065 83+15.00 W.B. 25.00' LT T.C. 913.68 I.E. 909.40 S I.E. 905.59 E I.E. 905.59 W	CB-5131 85+62.00 W.B. 25.00' LT T.C. 914.92 I.E. 910.47 E I.E. 906.83 S I.E. 906.83 W	CB-5132 85+62.00 W.B. 25.00' RT T.C. 914.92 I.E. 907.05 S I.E. 907.05 N	CB-5133 85+46.00 E.B. 13.00' LT T.C. 915.20 I.E. 907.21 S I.E. 907.21 N	CB-5134 85+46.00 E.B. 19.00' RT T.C. 915.08 I.E. 907.37 E I.E. 907.37 N	CB-5161 87+66.00 E.B. 19.00' RT T.C. 916.34 I.E. 912.37 N I.E. 908.62 E I.E. 908.62 W	CB-5215 90+36.00 E.B. 19.00' RT T.C. 921.25 I.E. 916.42 N I.E. 910.79 E I.E. 910.79 W
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DRAWN BY: CEH  
 CHECKED BY: MAW

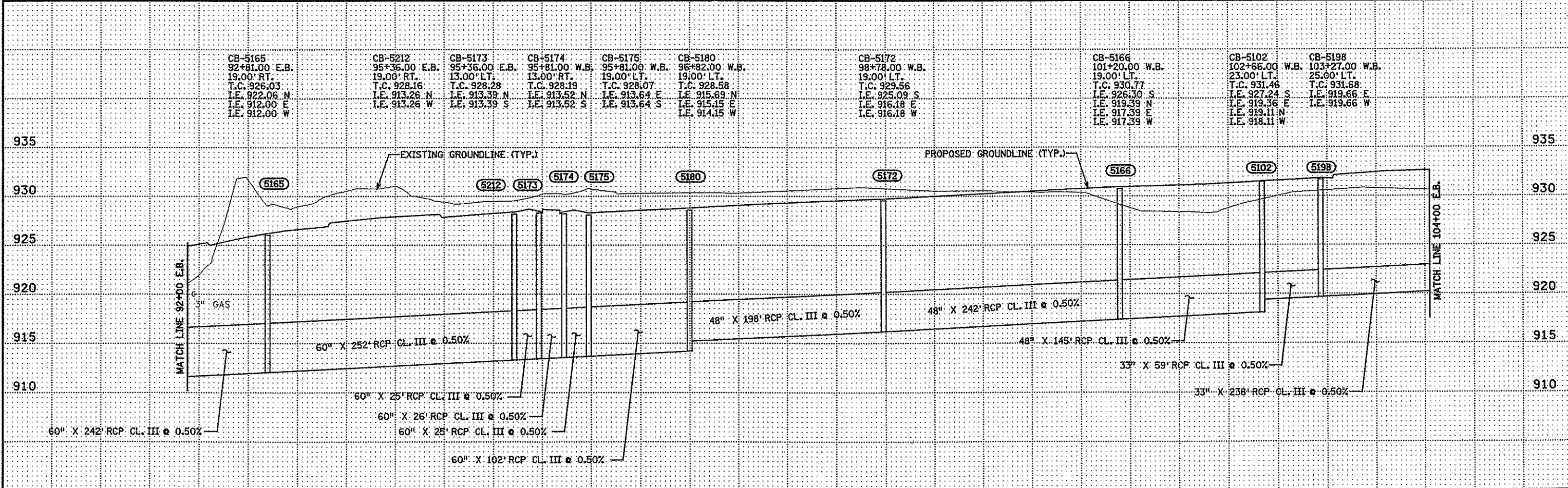
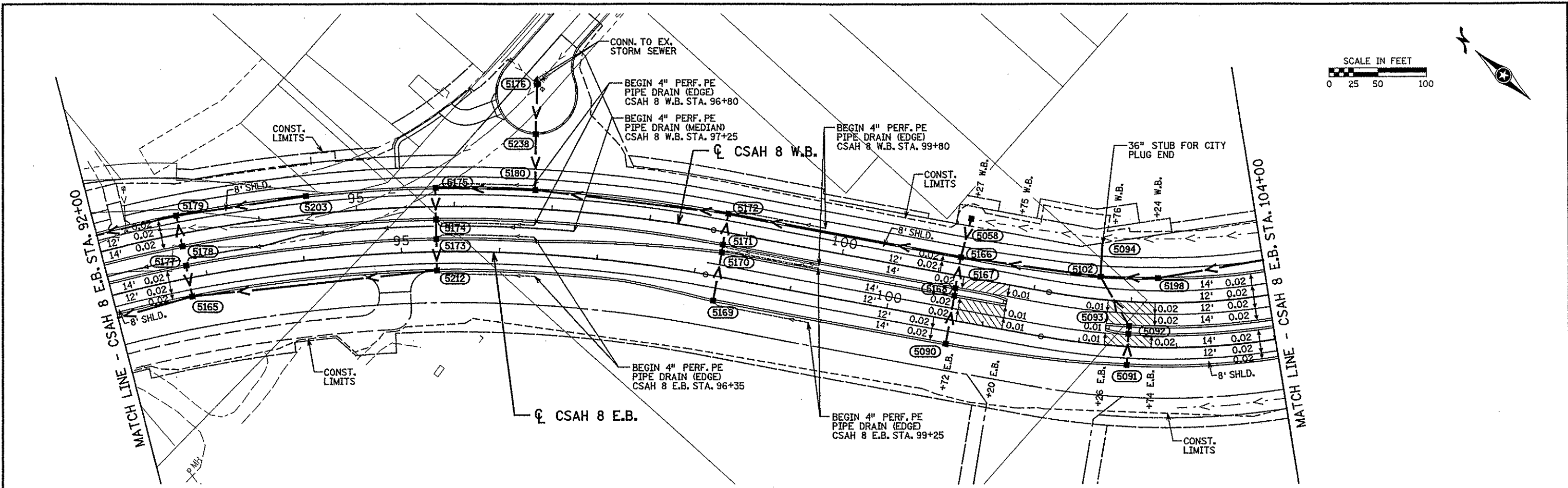
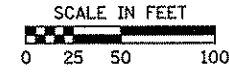
CERTIFIED BY *Matthew A. Worman* LIC. NO. 26883 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

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DRAINAGE AND SUPERELEVATION PLAN  
 STA. 80+00 TO STA. 92+00

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 125 of 296 Sheets





DATE: 8/15/2005 TIME: 1:31:55 PM  
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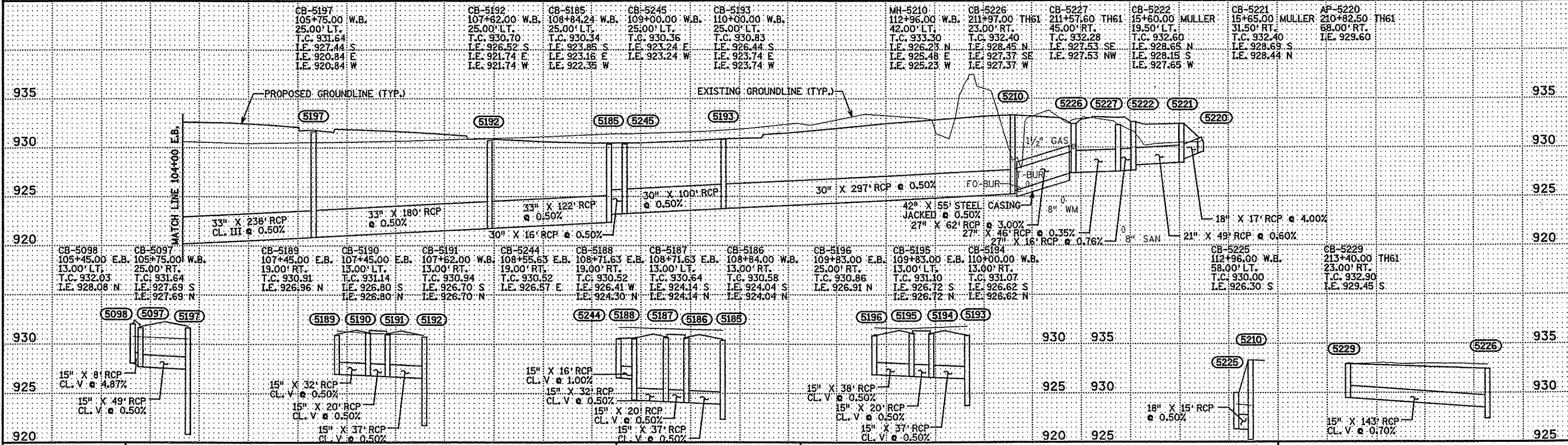
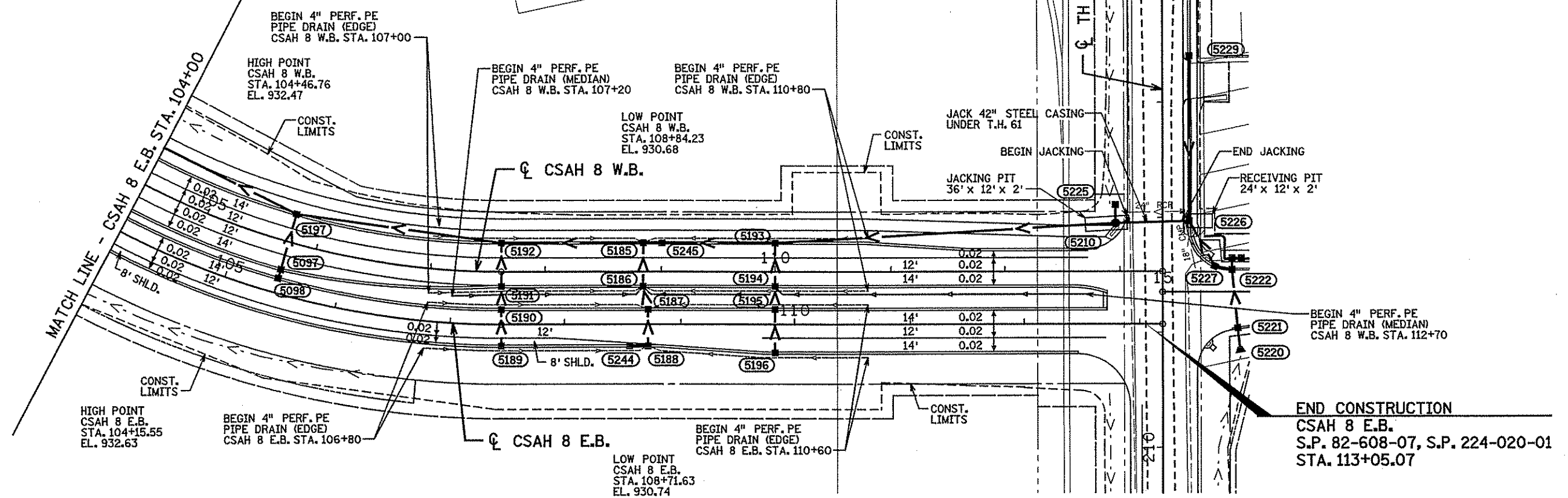
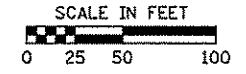
DRAWN BY: CEH  
 CHECKED BY: MAW

CERTIFIED BY *Math Anderson*  
 LICENSED PROFESSIONAL ENGINEER LIC. NO. 26883 DATE 8/15/05

**TKDA**  
 ENGINEERS · ARCHITECTS · PLANNERS

DRAINAGE AND SUPERELEVATION PLAN  
 STA. 92+00 TO STA. 104+00

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 126 of 296 Sheets



DATE: 8/15/2005 TIME: 1:32:03 PM  
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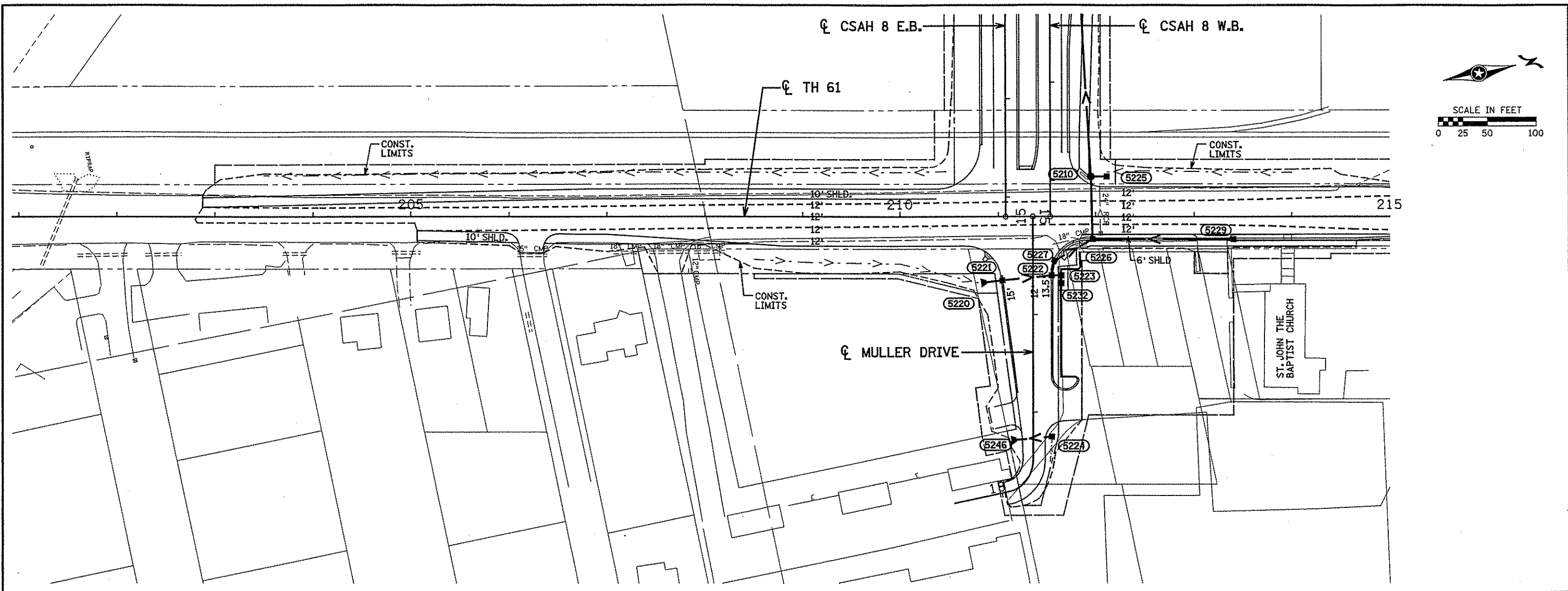
DRAWN BY: CEH  
CHECKED BY: MAW

CERTIFIED BY *Matthew A. Warron* LIC. NO. 20883 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

**TKDA**  
ENGINEERS - ARCHITECTS - PLANNERS

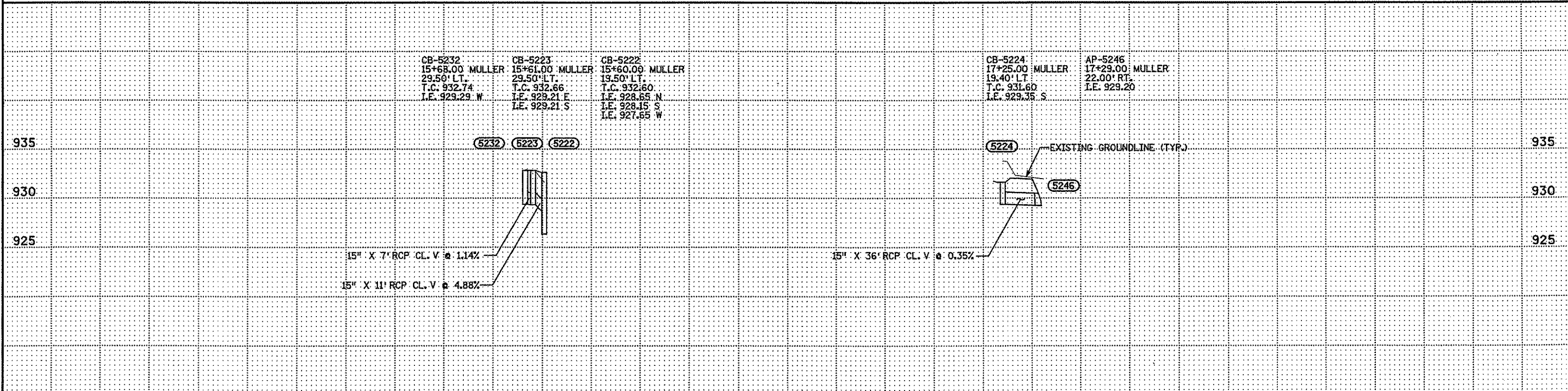
**DRAINAGE AND SUPERELEVATION PLAN**  
STA. 104+00 TO STA. 113+05.07

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 127 of 296 Sheets



CB-5232 15+68.00 MULLER 29.50' LT. T.C. 932.74 I.E. 929.29 W	CB-5223 15+61.00 MULLER 29.50' LT. T.C. 932.66 I.E. 929.21 E I.E. 929.21 S	CB-5222 15+60.00 MULLER 19.50' LT. T.C. 932.60 I.E. 928.65 N I.E. 928.15 S I.E. 927.65 W
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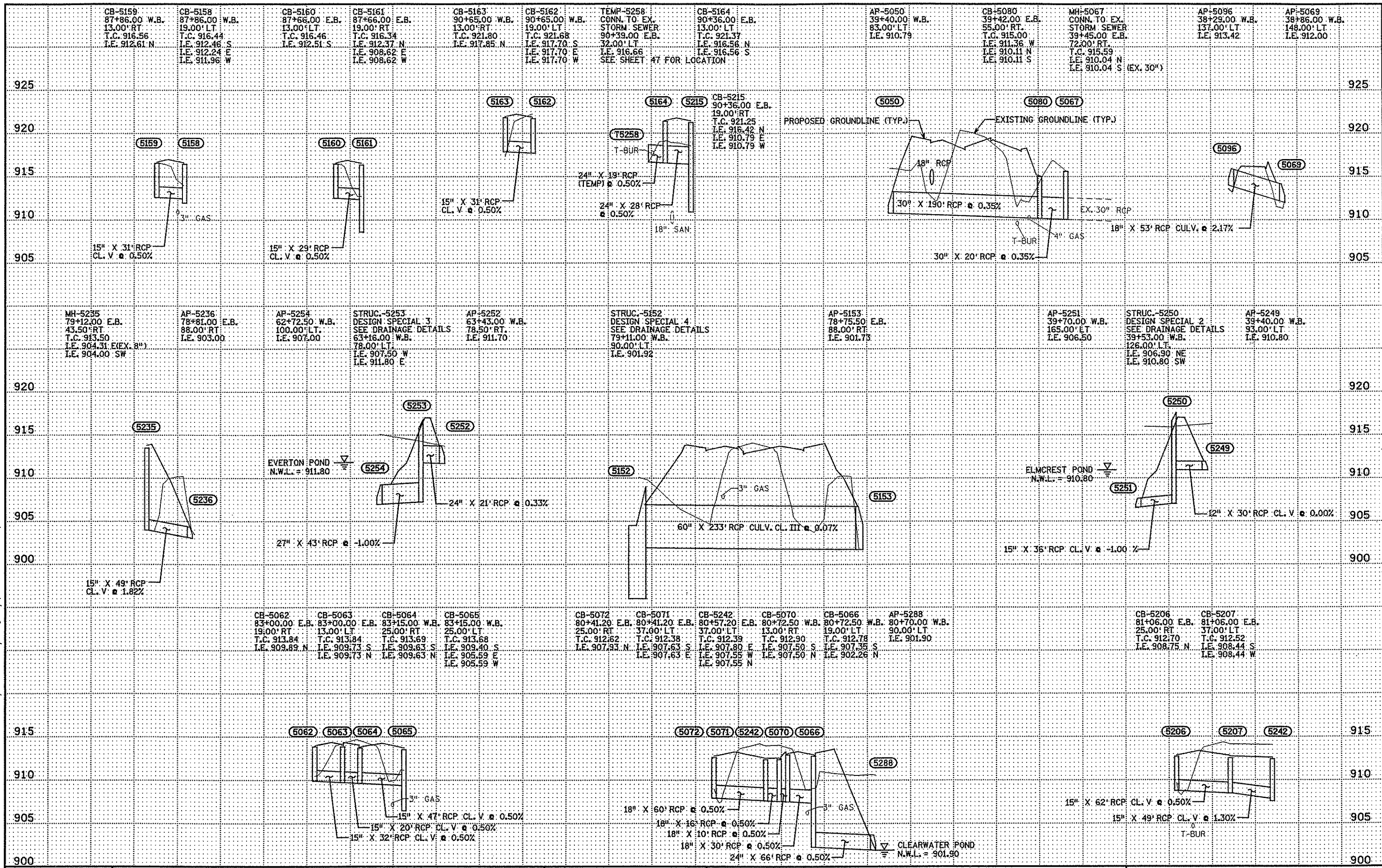
CB-5224 17+25.00 MULLER 19.40' LT. T.C. 931.60 I.E. 929.35 S	AP-5246 17+29.00 MULLER 22.00' RT. I.E. 929.20
--	---



DATE: 8/15/2005 TIME: 1:32:11 PM  
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DATE: 8/15/2005 TIME: 2:08:05 PM  
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DRAWN BY: CEH  
 CHECKED BY: MAW

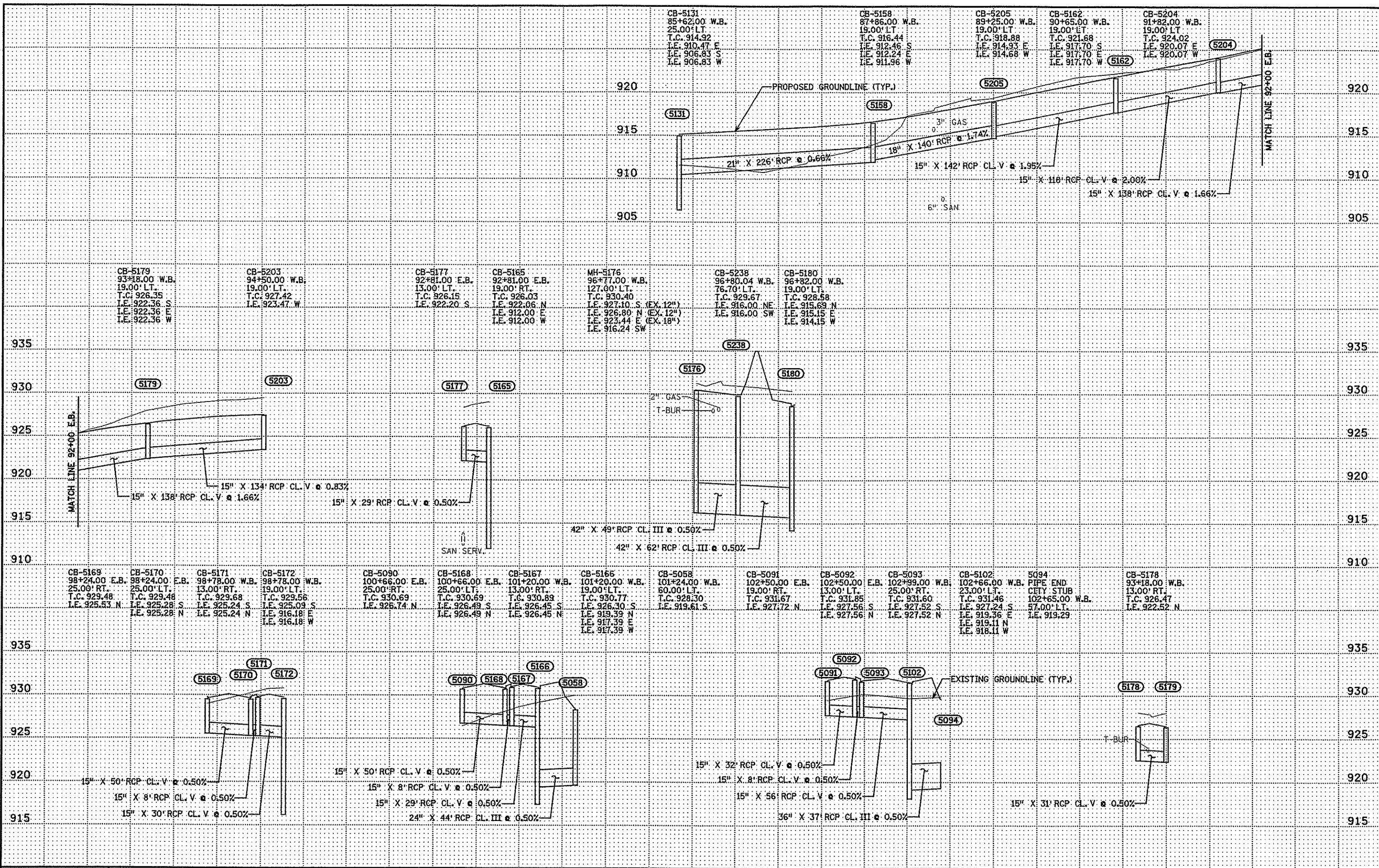
CERTIFIED BY *Matthew A. Hanson*  
 LICENSED PROFESSIONAL ENGINEER  
 LIC. NO. 26883 DATE 8/15/05

**TKDA**  
 ENGINEERS - ARCHITECTS - PLANNERS

MISCELLANEOUS DRAINAGE PROFILES

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 129 of 296 Sheets

DATE: 8/15/2005 TIME: 2:08:18 PM  
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DRAWN BY: CEH  
 CHECKED BY: MAW

CERTIFIED BY *Matthew A. Wasserman*  
 LICENSED PROFESSIONAL ENGINEER  
 LIC. NO. 26883 DATE 8/15/05

**TKDA**  
 ENGINEERS · ARCHITECTS · PLANNERS

MISCELLANEOUS DRAINAGE PROFILES

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 130 of 296 Sheets

STORM SEWER TABULATION - TAB G

Main data table with columns for structure location (UPSTREAM STRUCTURE LOCATION), new structure construction (NEW STRUCTURE CONSTRUCTION), pipe sewer design (PIPE SEWER DESIGN 3006 (K)), apron, trash guard, riprap, and drains to notes. Includes columns for structure number, alignment, station, offset, coordinates, casting elevation, outlet elevation, casting assembly, steps, pay height design, pipe sizes, bedding, and various engineering notes.

- NOTES:
(B) COORDINATES AT CENTER OF BASE FOR DESIGN 4020 STRUCTURE.
(C) IF STEPS REQUIRED, STRUCTURE TO INCLUDE MANHOLE STEPS 16" ON CENTER (CONSIDERED INCIDENTAL). SEE MN/DOT STANDARD PLATE 4180.
(D) GEOTEXTILE FILTER MATERIAL REQUIRED SHALL BE INCIDENTAL. SEE MN/DOT STANDARD PLATE 3133.
(E) TIE ALL JOINTS FROM LAST STRUCTURE TO APRON END. FURNISHING AND INSTALLING PIPE TIES CONSIDERED INCIDENTAL. SEE DRAINAGE DETAILS FOR CONCRETE PIPE BAR DETAIL.
(G) LENGTH GIVEN TO END OF BARREL (DOES NOT INCLUDE APRON LENGTH).
(H) COORDINATES AT CENTER OF STRUCTURE FOR TYPE B ECCENTRIC CONE.
(J) FOR CASTING ASSEMBLY SUMMARY, SEE SHEET NO. 137.
(K) CLASS "C" BEDDING FOR RC PIPE UNLESS OTHERWISE SPECIFIED. USE 12" CLASS "B" BEDDING FOR RC PIPE INSTALLED BELOW OR OUTSIDE OF SELECT GRANULAR BACKFILL AREAS (INCIDENTAL TO PIPE).

DATE: 10/27/2005 TIME: 6:03:50 AM
FILENAME: K:\r-z\wastcy\243901\wmy-brdg\wmy-vlr-shf-c200802.tbl

DRAWN BY: CEH
CHECKED BY: MAW

CERTIFIED BY: Matthew A. Wannan LIC. NO. 26883 DATE 10/27/05
LICENSED PROFESSIONAL ENGINEER

TKDA
ENGINEERS - ARCHITECTS - PLANNERS

STORM SEWER TABULATION

S.P. 02-614-23 S.P. 82-608-07
Sheet No. 131 of 296 Sheets



STORM SEWER TABULATION - TAB G

Table with columns for STRUC. OR APRON INLET POINT NO., ALIGN., STATION, OFFSET, COORDINATES (X, Y), TOP OF CASTING ELEV., OUTLET ELEV., F & I CASTING ASSEM., S T E P S, PAY HEIGHT DESIGN (F-G, 54-60, etc.), PIPE SEWER DESIGN (12-60 inch), APRON, TRASH GUARD, RIPRAP, DRAINS TO, and NOTES. The table contains numerous rows of data points for various sewer structures and pipe segments.

NOTES:

- (B) COORDINATES AT CENTER OF BASE FOR DESIGN 4020 STRUCTURE.
(C) IF STEPS REQUIRED, STRUCTURE TO INCLUDE MANHOLE STEPS 16" ON CENTER (CONSIDERED INCIDENTAL). SEE MN/DOT STANDARD PLATE 4180.
(D) GEOTEXTILE FILTER MATERIAL REQUIRED SHALL BE INCIDENTAL. SEE MN/DOT STANDARD PLATE 3133.
(E) TIE ALL JOINTS FROM LAST STRUCTURE TO APRON END. FURNISHING AND INSTALLING PIPE TIES CONSIDERED INCIDENTAL. SEE DRAINAGE DETAILS FOR CONCRETE PIPE BAR DETAIL.
(F) TIE ALL JOINTS. FURNISHING AND INSTALLING PIPE TIES CONSIDERED INCIDENTAL. SEE DRAINAGE DETAILS FOR CONCRETE PIPE BAR DETAIL.
(G) LENGTH GIVEN TO END OF BARREL (DOES NOT INCLUDE APRON LENGTH).
(H) COORDINATES AT CENTER OF STRUCTURE FOR TYPE B ECCENTRIC CONE.
(J) FOR CASTING ASSEMBLY SUMMARY, SEE SHEET NO. 137.
(K) CLASS "C" BEDDING FOR RC PIPE UNLESS OTHERWISE SPECIFIED. USE 12" CLASS "B" BEDDING FOR RC PIPE INSTALLED BELOW OR OUTSIDE OF SELECT GRANULAR BACKFILL AREAS (INCIDENTAL TO PIPE).

DATE: 10/27/2005 TIME: 6:04:02 AM
FILENAME: K:\r-z\wss\cy12-4390\Nwy-brdg\Nwy\prj-sht-c200802.tbl

DRAWN BY: CEH
CHECKED BY: MAW

CERTIFIED BY: [Signature: Matthew A. Warren] LIC. NO. 26883 DATE 10/27/05

TKDA ENGINEERS ARCHITECTS PLANNERS

STORM SEWER TABULATION

S.P. 02-614-23 S.P. 82-608-07

Sheet No. 132 of 296 Sheets



STORM SEWER TABULATION - TAB G

Table with columns: STRUC. OR APRON INLET POINT NO., ALIGN, STATION, OFFSET, COORDINATES (X, Y), TOP OF CASTING ELEV., OUTLET ELEV., F & I CASTING ASSEM. (J), TYPE, EA, S T E P S (C), PAY HEIGHT DESIGN (F-G, 4-12), PIPE SEWER DESIGN 3006 (K) (12-36 RC), AGG. BED DING, STEEL CASING JACKED, 42" CONN TO EX. ST. SEW., APRON (12-30), TRASH GUARD (12-30), RIPRAP (CL III, CL IV), DRAINS TO (SLOPE OF PIPE %, INLET ELEV.), NOTES. Row 5235: 5235, EB814, 79+12.00, 43.50' RT, 455890.96, 251493.41, 913.50, 904.00, A-7D, 1, YES, 9.7, YES, 49, (H).

- NOTES:
(B) COORDINATES AT CENTER OF BASE FOR DESIGN 4020 STRUCTURE.
(C) IF STEPS REQUIRED, STRUCTURE TO INCLUDE MANHOLE STEPS 16" ON CENTER (CONSIDERED INCIDENTAL). SEE MN/DOT STANDARD PLATE 4180.
(D) GEOTEXTILE FILTER MATERIAL REQUIRED SHALL BE INCIDENTAL. SEE MN/DOT STANDARD PLATE 3133.
(E) TIE ALL JOINTS FROM LAST STRUCTURE TO APRON END. FURNISHING AND INSTALLING PIPE TIES CONSIDERED INCIDENTAL. SEE DRAINAGE DETAILS FOR CONCRETE PIPE BAR DETAIL.
(F) TIE ALL JOINTS. FURNISHING AND INSTALLING PIPE TIES CONSIDERED INCIDENTAL. SEE DRAINAGE DETAILS FOR CONCRETE PIPE BAR DETAIL.
(G) LENGTH GIVEN TO END OF BARREL (DOES NOT INCLUDE APRON LENGTH).
(H) COORDINATES AT CENTER OF STRUCTURE FOR TYPE B ECCENTRIC CONE.
(J) FOR CASTING ASSEMBLY SUMMARY, SEE SHEET NO. 137.
(K) CLASS "C" BEDDING FOR RC PIPE UNLESS OTHERWISE SPECIFIED. USE 12" CLASS "B" BEDDING FOR RC PIPE INSTALLED BELOW OR OUTSIDE OF SELECT GRANULAR BACKFILL AREAS (INCIDENTAL TO PIPE).

DATE: 10/27/2005 TIME: 6:04:28 AM FILENAME: K:\p2\wgs\cry2\4390\Nwy-brdg\wv\p1r-sfm\c200802.rbb

DRAWN BY: CEH

CHECKED BY: MAW

CERTIFIED BY: Matthew A. Wassman LICENSED PROFESSIONAL ENGINEER

LIC. NO. 26883

DATE 10/27/05

TKDA ENGINEERS - ARCHITECTS - PLANNERS

STORM SEWER TABULATION

S.P. 02-614-23 S.P. 82-608-07

Sheet No. 134 of 296 Sheets







CULVERT TABULATION - TAB K																																
COST PARTICIPATION	UPSTREAM STRUCTURE LOCATION							PIPE CULVERT (K)				APRON						TRASH GUARD		RIPRAP	CONN. TO EX. CULVERT	GUIDE POST TYPE B	DRAINS TO			NOTES						
	STRUC. OR APRON INLET POINT NO.	ALIGN.	STATION	OFFSET	COORDINATES		OUTLET ELEV.	18" RC DES 3006	24" RC DES 3006	60" RC DES 3006 CL III (P)	18" CS	AGG. BEDDING	18" RC	24" RC	60" RC	18" GS	24"	60"	CL III (D)	EA			EA	EA								
					X	Y																			EA		EA	EA	EA	EA	EA	EA
(A)	5011	WB814	15+02.00	82.70' LT	449420.34	252622.26	905.63	20																1	1	5289	0.30	905.55	(F)(G)			
(A)	5259	WB814	15+02.00	57.00' LT	449420.99	252596.57	905.55																									
(A)	5260	EB814	15+02.00	58.00' RT	449424.54	252457.62	905.30	18																			5012	0.30	905.23	(F)(G)		
(A)	5012	EB814	15+02.50	82.00' RT	449425.65	252433.64	905.23																									
(A)	5148	EB814	31+50.00	55.00' RT	451071.47	252509.88	917.60																				5149	0.50	917.25	(I)(M)		
(A)	5149	EB814	32+20.00	55.00' RT	451141.45	252511.49	917.25																									
(A)	5150	EB814	33+00.00	55.00' RT	451221.43	252513.34	917.00																									
(A)	5151	EB814	33+72.00	55.00' RT	451293.41	252515.00	916.64																									
(A)	5096	WB814	38+29.00	137.00' LT	451765.82	252753.59	913.42	53																			5069	2.17	912.00	(F)(G)		
(A)	5069	WB814	38+86.00	148.00' LT	451831.18	252752.82	912.00																									
(W)	5154	WB814	04+13.00	73.00' LT	454255.46	252004.21	911.70																									
(W)	5155	EB814	63+94.00	58.00' RT	454208.51	251833.55	910.90																									
(W)	5152	WB814	79+11.00	90.00' LT	455713.04	251684.39	901.92																									
(W)	5153	EB814	78+75.50	88.00' RT	455646.21	251457.22	901.73																									
ANOKA COUNTY S.P. 02-614-23								91																								
WASHINGTON COUNTY S.P. 82-608-07																																
PROJECT TOTAL								91	165	233	142	308	4	2	1	4	2	1	43.1	2	10											

COST PARTICIPATION NOTES:  
(A) 100% ANOKA COUNTY S.P. 02-614-23 QUANTITY.  
(W) 100% WASHINGTON COUNTY S.P. 82-608-07 QUANTITY.

NOTES:  
(D) GEOTEXTILE FILTER MATERIAL REQUIRED SHALL BE INCIDENTAL. SEE MN/DOT STANDARD PLATE 3133.  
(F) TIE ALL JOINTS. FURNISHING AND INSTALLING PIPE TIES CONSIDERED INCIDENTAL. SEE DRAINAGE DETAILS FOR CONCRETE PIPE BAR DETAIL.  
(G) LENGTH GIVEN TO END OF BARREL (DOES NOT INCLUDE APRON LENGTH).  
(I) CSP COUPLING BANDS SHALL BE CONSIDERED INCIDENTAL.  
(K) CLASS "C" BEDDING FOR RC PIPE UNLESS OTHERWISE SPECIFIED. USE 12" CLASS "B" BEDDING FOR RC PIPE INSTALLED BELOW OR OUTSIDE OF SELECT GRANULAR BACKFILL AREAS (INCIDENTAL TO PIPE).  
(M) USE POSITIVE JOINTS ON ALL CORRUGATED STEEL PIPE. USE 12" MINIMUM CSP COUPLING BAND. SEE MN/DOT STANDARD PLATE 3221.  
(O) DRAINAGE STRUCTURE DESIGN SPECIAL 4. SEE DRAINAGE DETAILS.  
(P) LENGTH INCLUDES FOUR 7.5 DEGREE PIPE BENDS.

MISCELLANEOUS RIPRAP - TAB BB	
LOCATION	RIPRAP CL III (D) CY
ELMOREST POND EMERGENCY SPILLWAY	25
EVERTON POND EMERGENCY SPILLWAY	38
CLEARWATER POND	74
PROJECT TOTAL	137

CASTING ASSEMBLY SUMMARY						
ASSEMBLY	RING OR FRAME CASTING	COVER OR GRATE CASTING	CURB BOX	STANDARD PLATE NO.	QUANTITY	REMARKS
B-17	806			4125	173	CATCH BASIN
		816 (2)		4154		
			825	4134		
M-11	ROUND CONCRETE			4143	4	CATCH BASIN
		731		4143		
			N/A			
A-7D	700-7			4101	8	MANHOLE
		715		4110		
			N/A			
C-1	R-3067-V (3)				5	CATCH BASIN
		R-3067-V (3)				
			R-3067-V (3)			

NOTES:  
(2) USE BENT BOLT WITH 816 GRATE  
(3) NEENAH CASTING OR APPROVED EQUIVALENT

SUBSURFACE DRAINAGE - TAB J					
COST PARTICIPATION	STATION TO STATION	SUBGRADE		MEDIAN	
		4" PERF. PE PIPE DRAIN	4" PE PIPE DRAIN (1)	4" PERF. PE PIPE DRAIN	4" PE PIPE DRAIN (1)
		LIN FT	LIN FT	LIN FT	LIN FT
(A)	CSAH 14 EB 12+00 TO 21+00	920	25	(2) 305	(2) 10
(A)	CSAH 14 EB 21+00 TO 33+00	305	15	(2) 129	
(A)	CSAH 14 EB 33+00 TO 38+74.71	366	15	(2) 577	(2) 10
(W)	CSAH 8 EB 38+74.71 TO 45+00	789	30	296	10
(W)	CSAH 8 EB 45+00 TO 57+00	1407	40	999	25
(W)	CSAH 8 EB 57+00 TO 69+00	1158	40	546	10
(W)	CSAH 8 EB 69+00 TO 80+00	806	20	544	20
(W)	CSAH 8 EB 80+00 TO 92+00	1328	80	965	25
(W)	CSAH 8 EB 92+00 TO 104+00	809	40	482	10
(W)	CSAH 8 EB 104+00 TO 113+04.20	1536	40	556	15
ANOKA COUNTY S.P. 02-614-23		1591	55	1011	20
WASHINGTON COUNTY S.P. 82-608-07		7833	290	4388	115
PROJECT TOTAL		9424	345	5399	135

COST PARTICIPATION NOTES:  
(A) 100% ANOKA COUNTY S.P. 02-614-23 QUANTITY.  
(W) 100% WASHINGTON COUNTY S.P. 82-608-07 QUANTITY.

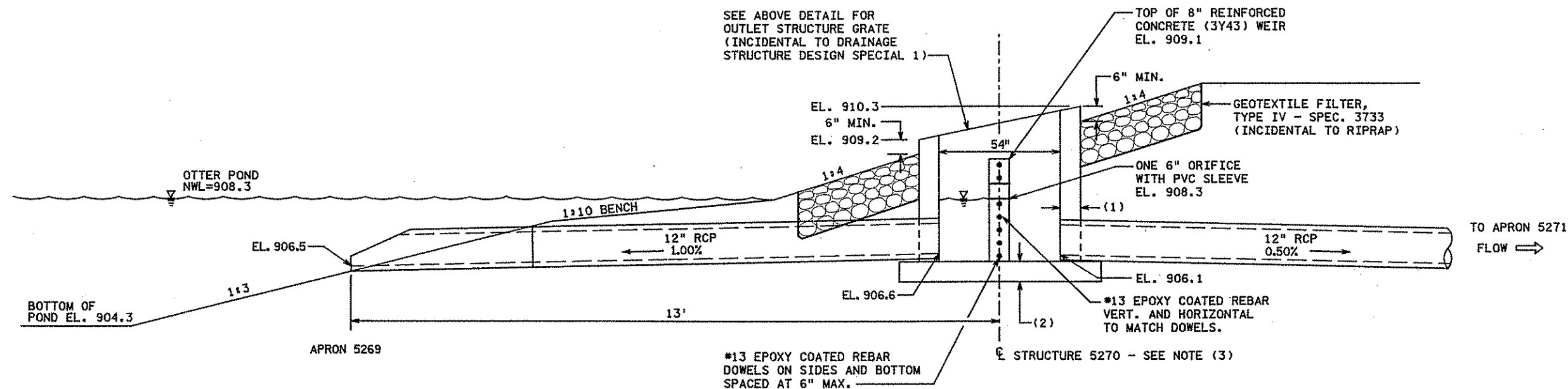
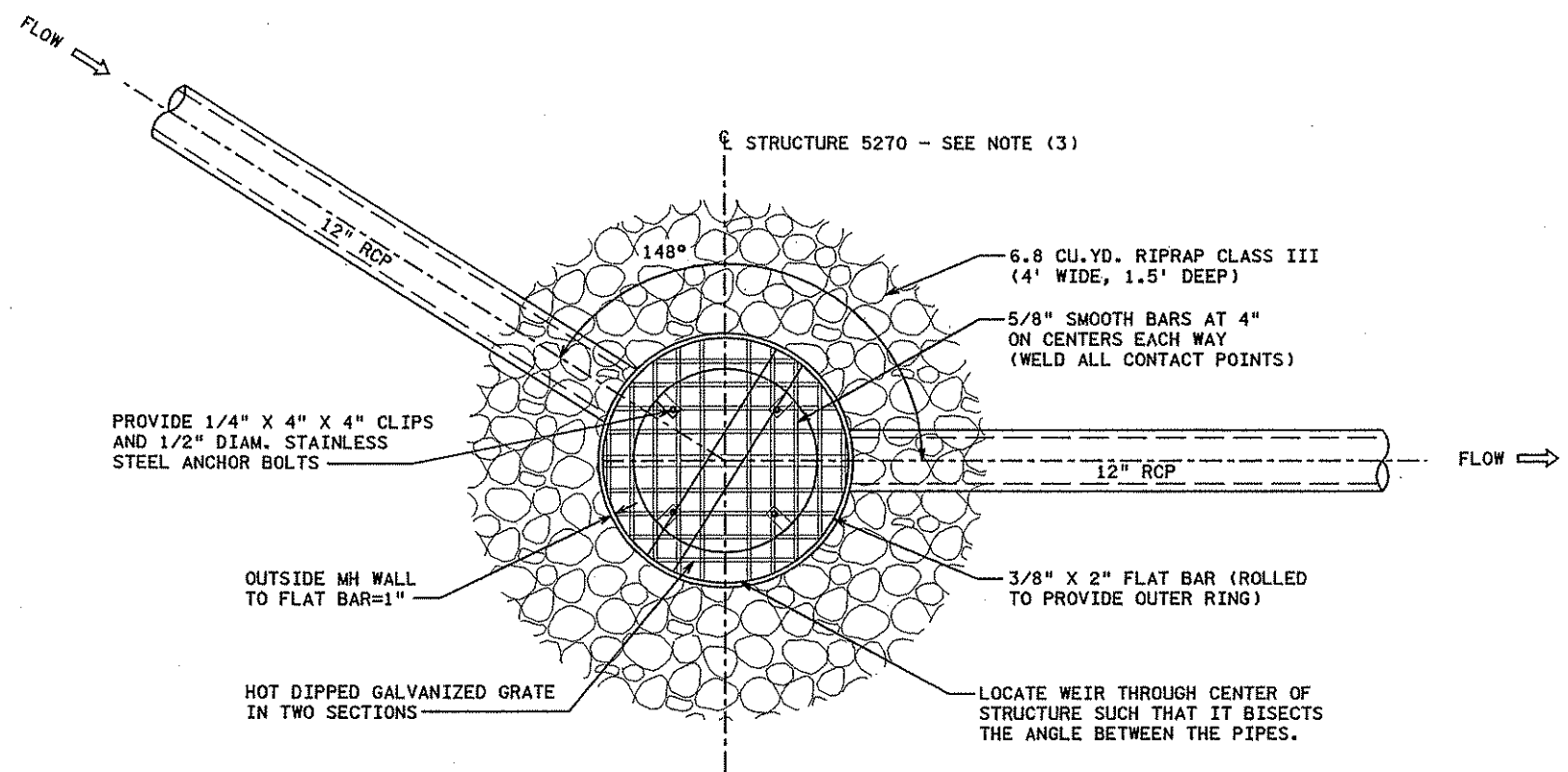
NOTES:  
(1) SEE SHEET NO. 143 FOR SUBDRAIN CONNECTION TO DRAINAGE STRUCTURE DETAIL.  
(2) 100% CITY OF LINO LAKES S.P. 210-020-02. FUNDING IS 8820.3100 SUBPART 10.

DATE: 10/27/2005 TIME: 6:04:55 AM FILENAME: K:\r2\wast\cy\24390\Nary-brdg\Nary\p1r-sfr\c2008021bb

DATE: 8/15/2005 TIME: 1:32:32 PM  
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**NOTES:**

- (1) 8" CAST IN PLACE CONCRETE MIX NO. 3Y43. WALL CONSTRUCTION MAY BE CLASS II PRECAST RC PIPE. SEE STD. PLATE 3000.
  - (2) 8" POURED CONCRETE BASE REINFORCEMENT IS 0.12 IN<sup>2</sup>/FT IN EACH DIRECTION. FOR ALTERNATE CONCRETE BASE SEE STANDARD PLATE 4011.
  - (3) PAID FOR AS CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 1. PAY ITEM CONSISTS OF CONCRETE STRUCTURE AND BASE, GRATE, STEPS, AND ALL HARDWARE REQUIRED FOR A COMPLETE INSTALLATION. PAY ITEM DOES NOT INCLUDE INLET AND OUTLET PIPE.
1. CONCRETE WEIR MUST BE CONSTRUCTED CONCURRENT WITH THE CONSTRUCTION OF THE OUTLET STRUCTURE.
  2. RIPRAP PLACED AROUND THE PERIMETER OF GRATE MUST BE FLUSH WITH FINISHED SOIL GRADE AS SHOWN IN DETAIL.



**DRAINAGE STRUCTURE DESIGN SPECIAL 1 - OTTER POND**

NO SCALE

DRAWN BY: SFH

CHECKED BY: MAW

CERTIFIED BY

*Matthew A. Wamm*  
 LICENSED PROFESSIONAL ENGINEER

LIC. NO. 26883

DATE 8/15/05

**TKDA**

ENGINEERS · ARCHITECTS · PLANNERS

DRAINAGE DETAILS  
 DRAINAGE STRUCTURE DESIGN SPECIAL 1

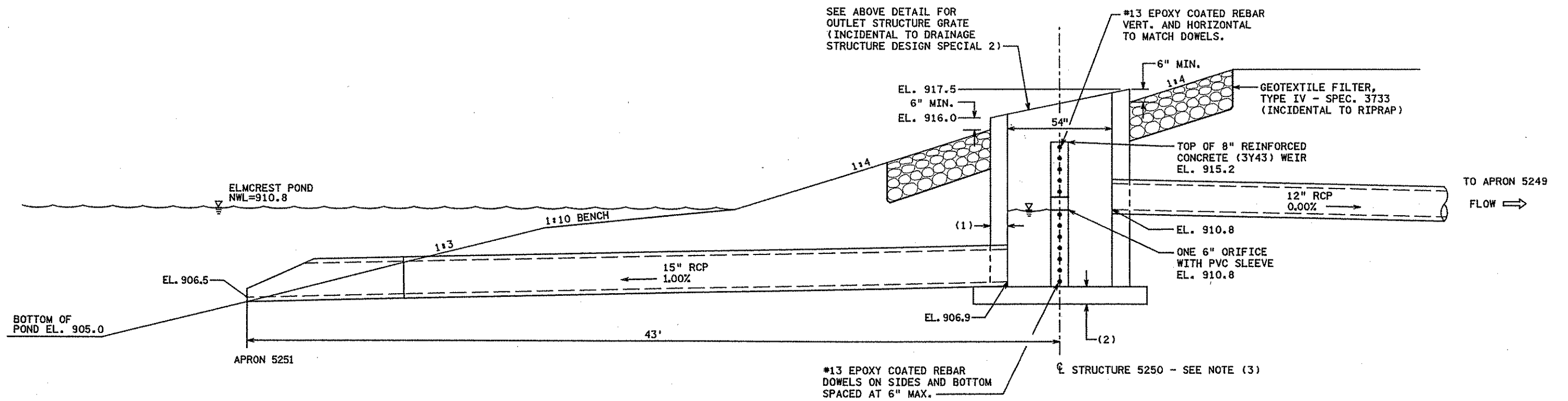
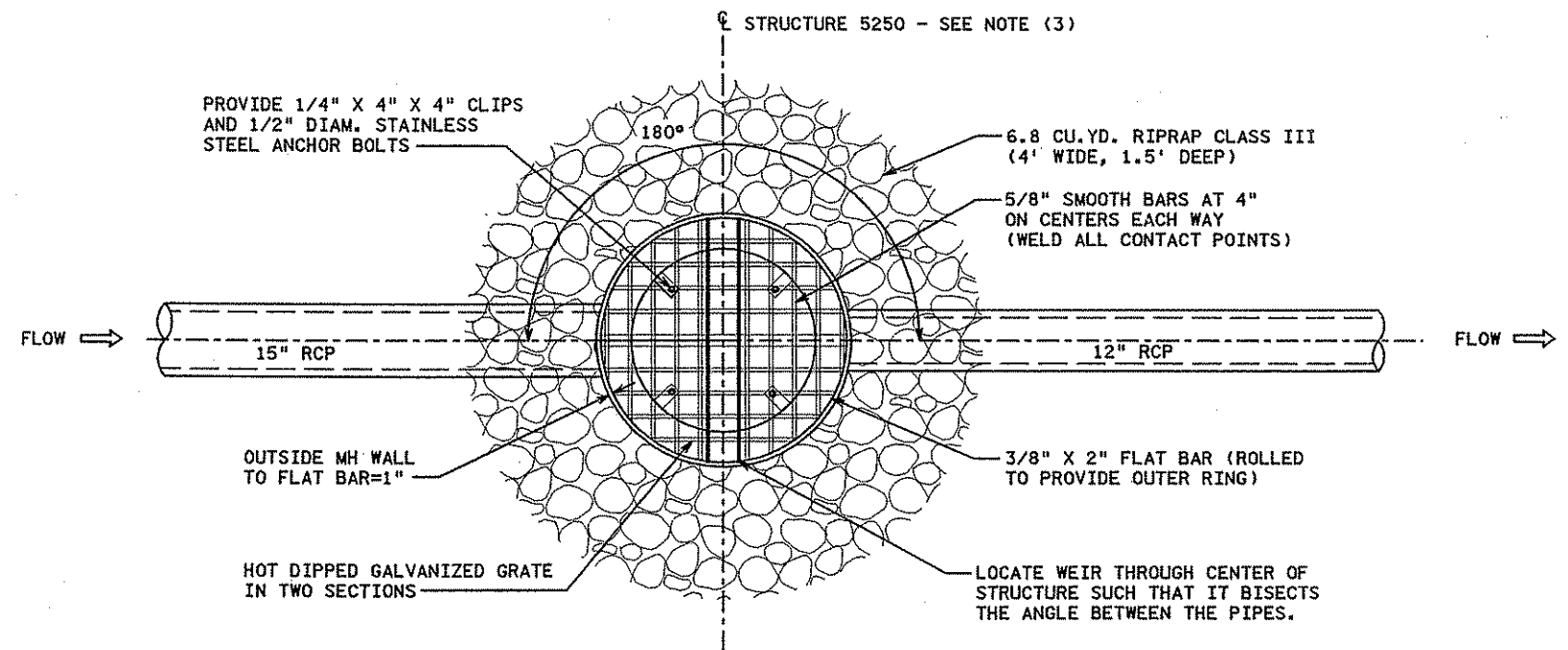
S.P. 02-614-23 S.P. 82-608-07

Sheet No. 138 of 296 Sheets

**NOTES:**

- (1) 8" CAST IN PLACE CONCRETE MIX NO. 3Y43. WALL CONSTRUCTION MAY BE CLASS II PRECAST RC PIPE. SEE STD. PLATE 3000.
- (2) 8" POURED CONCRETE BASE REINFORCEMENT IS 0.12 IN<sup>2</sup>/FT IN EACH DIRECTION. FOR ALTERNATE CONCRETE BASE SEE STANDARD PLATE 4011.
- (3) PAID FOR AS CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 2. PAY ITEM CONSISTS OF CONCRETE STRUCTURE AND BASE, GRATE, STEPS, AND ALL HARDWARE REQUIRED FOR A COMPLETE INSTALLATION. PAY ITEM DOES NOT INCLUDE INLET AND OUTLET PIPE.

- 1. CONCRETE WEIR MUST BE CONSTRUCTED CONCURRENT WITH THE CONSTRUCTION OF THE OUTLET STRUCTURE.
- 2. RIPRAP PLACED AROUND THE PERIMETER OF GRATE MUST BE FLUSH WITH FINISHED SOIL GRADE AS SHOWN IN DETAIL.



**DRAINAGE STRUCTURE DESIGN SPECIAL 2 - ELMCREST POND**

NO SCALE

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DRAWN BY: SFH  
CHECKED BY: MAW

CERTIFIED BY *Matthew A. Wassman* LIC. NO. 26883 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

**TKDA**  
ENGINEERS · ARCHITECTS · PLANNERS

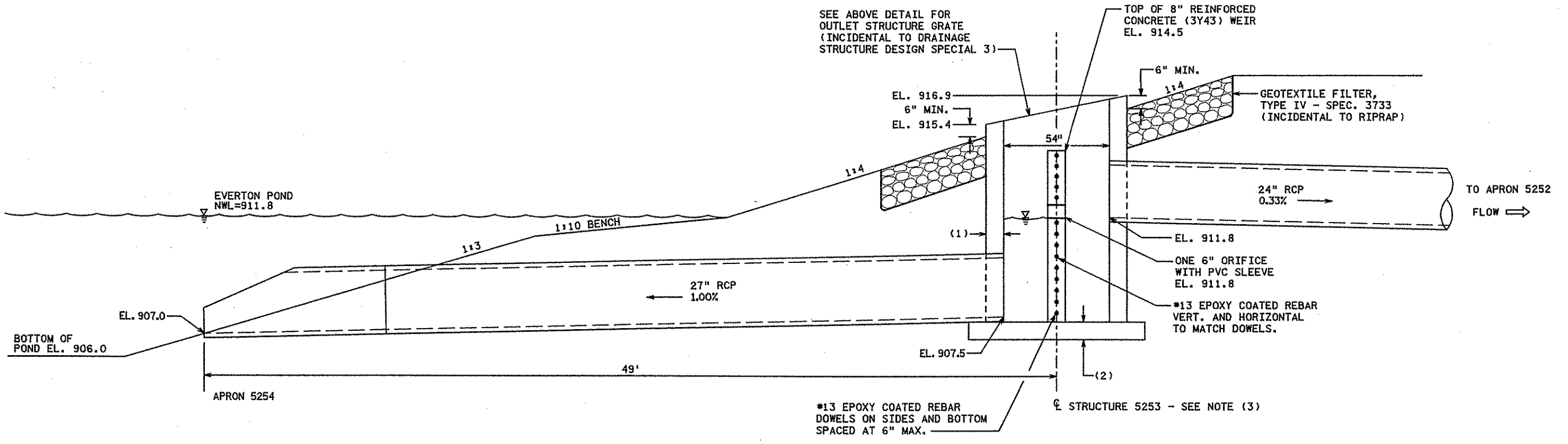
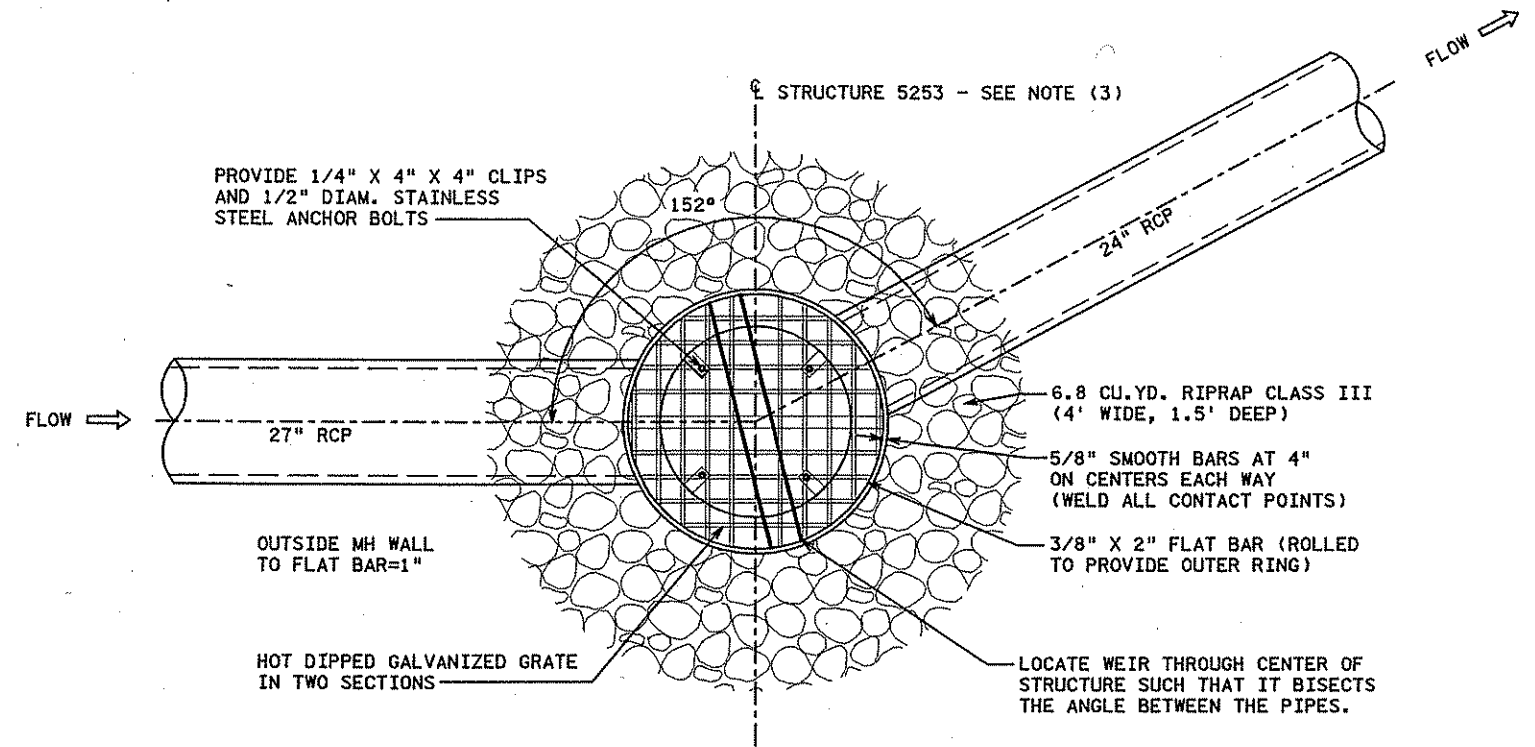
DRAINAGE DETAILS  
DRAINAGE STRUCTURE DESIGN SPECIAL 2

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 139 of 296 Sheets



**NOTES:**

- (1) 8" CAST IN PLACE CONCRETE MIX NO. 3Y43. WALL CONSTRUCTION MAY BE CLASS II PRECAST RC PIPE. SEE STD. PLATE 3000.
  - (2) 8" POURED CONCRETE BASE REINFORCEMENT IS 0.12 IN<sup>2</sup>/FT IN EACH DIRECTION. FOR ALTERNATE CONCRETE BASE SEE STANDARD PLATE 4011.
  - (3) PAID FOR AS CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 3. PAY ITEM CONSISTS OF CONCRETE STRUCTURE AND BASE, GRATE, STEPS, AND ALL HARDWARE REQUIRED FOR A COMPLETE INSTALLATION. PAY ITEM DOES NOT INCLUDE INLET AND OUTLET PIPE.
1. CONCRETE WEIR MUST BE CONSTRUCTED CONCURRENT WITH THE CONSTRUCTION OF THE OUTLET STRUCTURE.
  2. RIPRAP PLACED AROUND THE PERIMETER OF GRATE MUST BE FLUSH WITH FINISHED SOIL GRADE AS SHOWN IN DETAIL.



**DRAINAGE STRUCTURE DESIGN SPECIAL 3 - EVERTON POND**

NO SCALE

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DRAWN BY: SFH  
CHECKED BY: MAW

CERTIFIED BY *Matthew A. Warren* LIC. NO. 26883 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

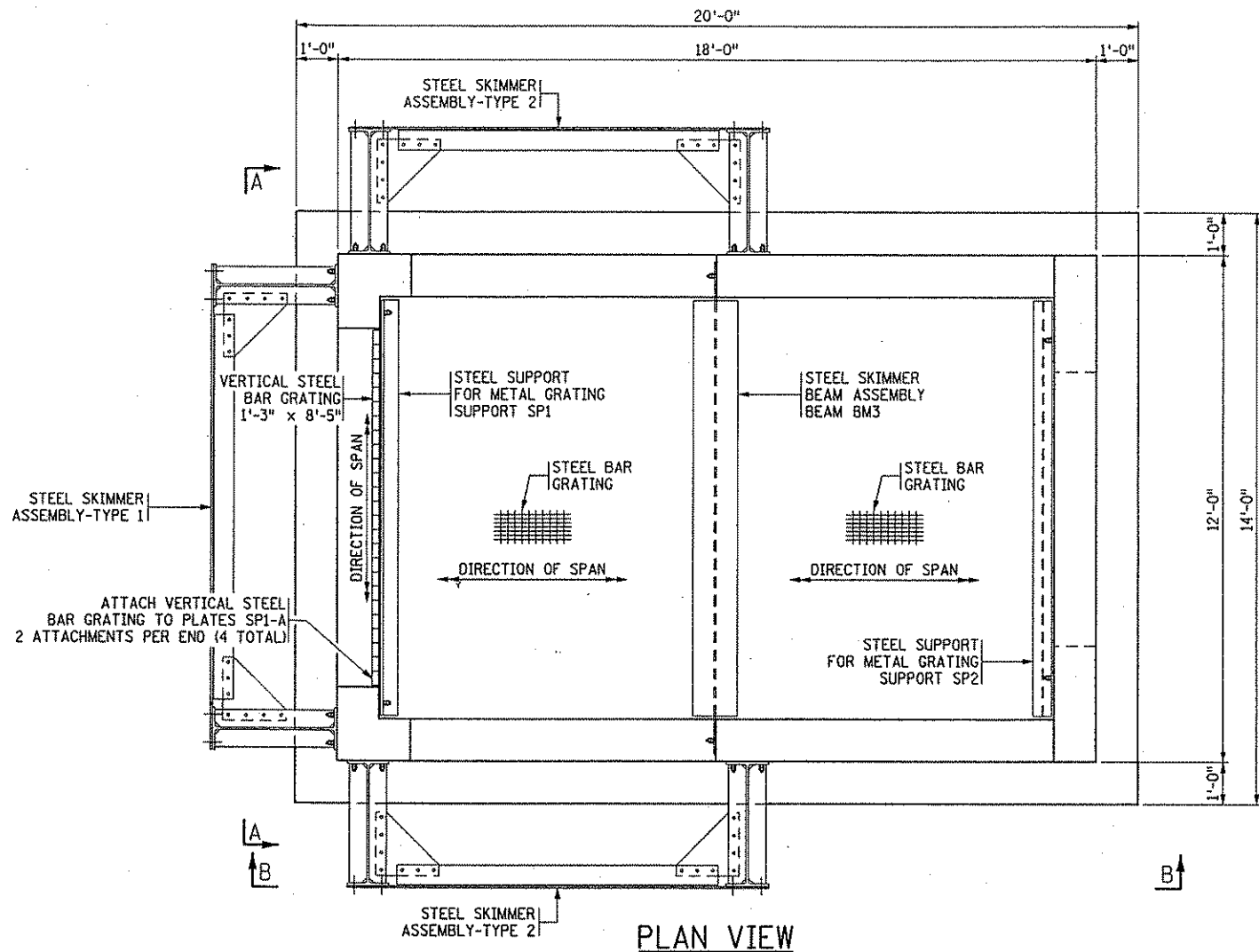
**TKDA**  
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DRAINAGE DETAILS  
DRAINAGE STRUCTURE DESIGN SPECIAL 3

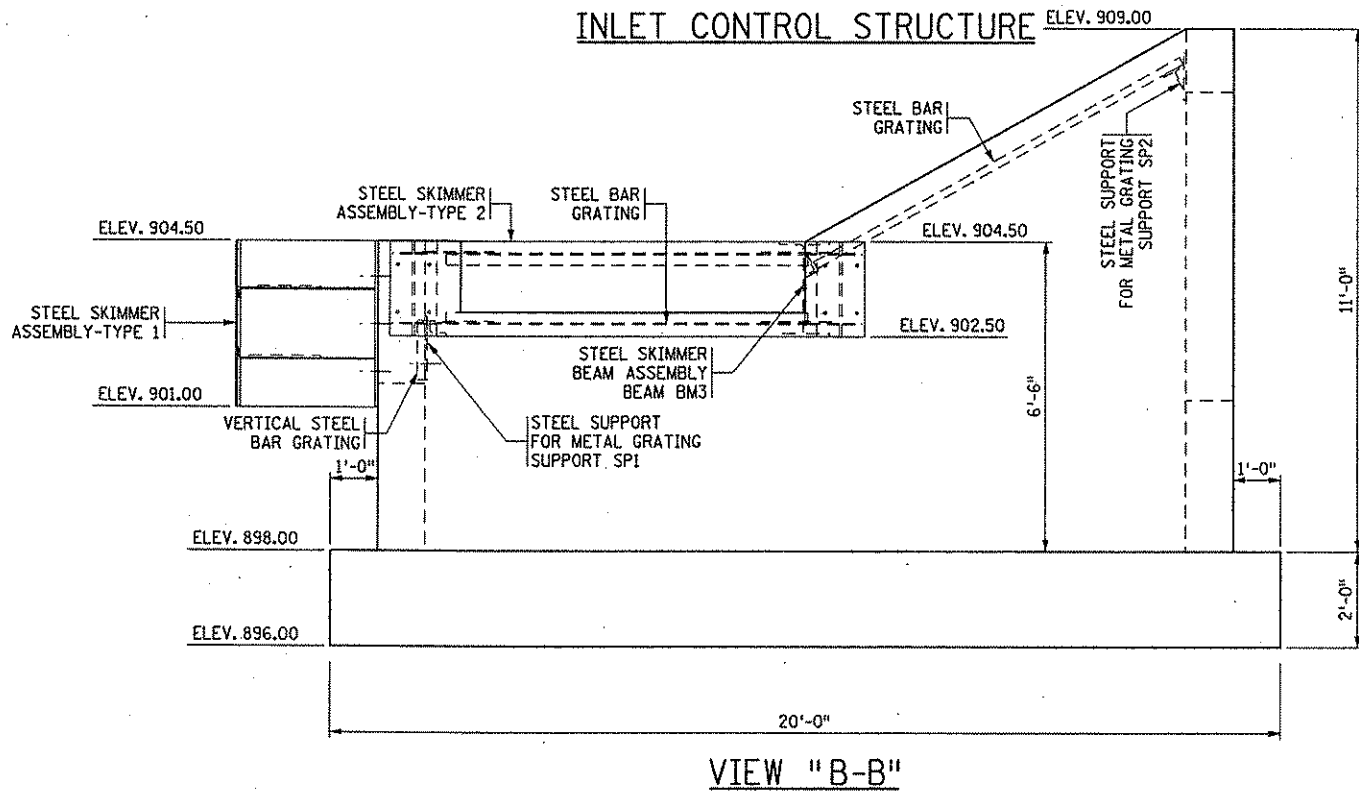
S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 140 of 296 Sheets



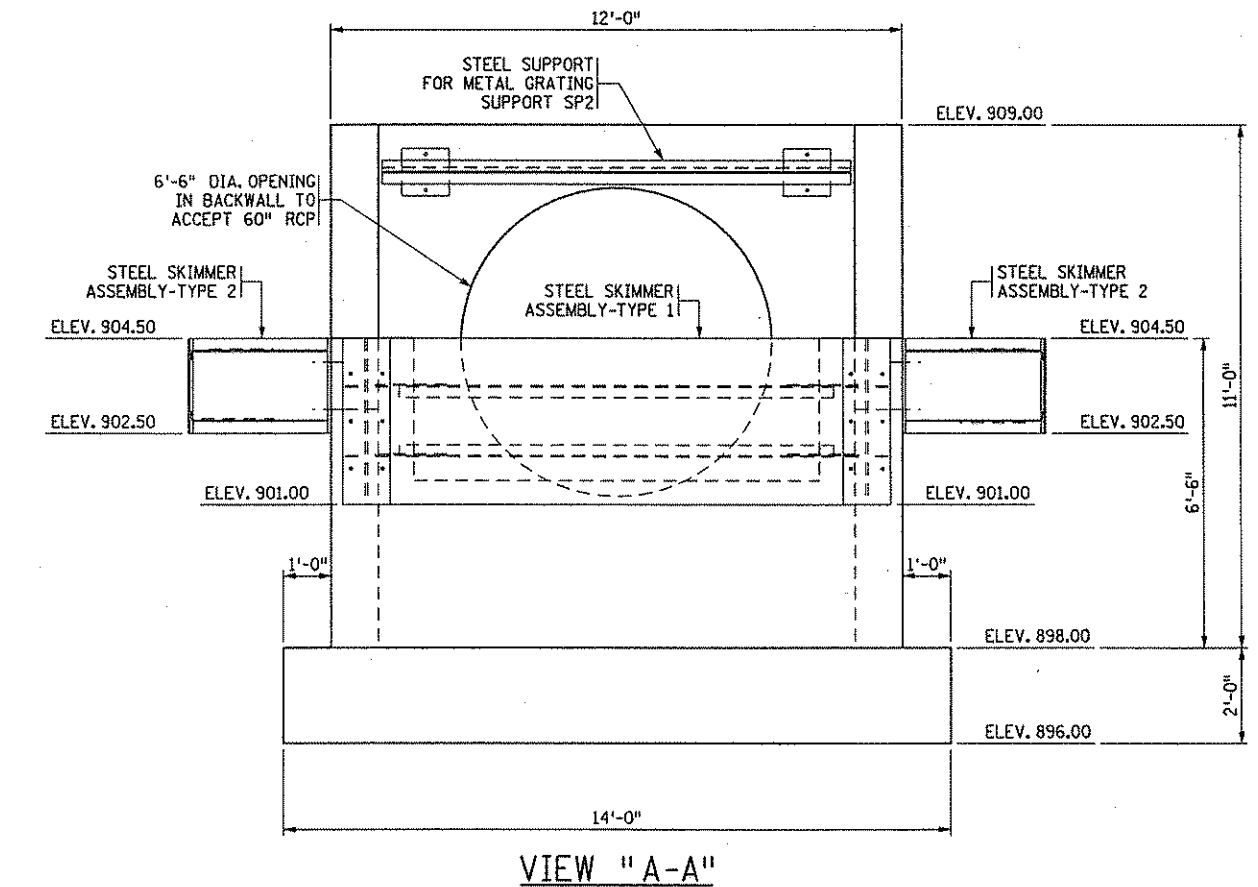
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**PLAN VIEW**  
**INLET CONTROL STRUCTURE** ELEV. 909.00



**VIEW "B-B"**



**VIEW "A-A"**

(FOR INFORMATION PURPOSES ONLY)

QUANTITIES		
ITEM	UNIT	QTY
SELECT GRANULAR BACKFILL	CU. YD.	58
STRUCTURAL CONCRETE 3Y43	CU. YD.	35
EXPOXY COATED REINFORCEMENT	LBS.	5070
ANCHOR BARS F1554, GR. 55, GALV.	EACH	40
1 STRUCTURAL STEEL A572	LBS.	6425
STEEL GRATING	SQ. FT.	176

1 DOES NOT INCLUDE WEIGHT OF WELD MATERIAL AND MECHANICAL FASTENERS.

**NOTES:**

THE MINNESOTA DEPARTMENT OF TRANSPORTATIONS "STANDARD SPECIFICATIONS FOR CONSTRUCTION, 2000 EDITION" SHALL GOVERN.

FOOTING SHALL BE FOUNDED ON A SELECT GRANULAR BACKFILL COMPACTED TO 100% DENSITY. THE FOOTPRINT OF THE BACKFILL SHALL EXTEND 18" BEYOND EDGE OF FOOTING (17' x 23') AND SHALL BE A MINIMUM OF 3'-0" IN DEPTH. SIDE SLOPES OF THE BACKFILL SHALL NOT BE GREATER THAN 2:1.

ALL CONCRETE SHALL BE 3Y43 AS PER MNDOT SPECIFICATION 2461

ANCHOR BOLTS ARE TO BE CAST IN PLACE.

ALL STRUCTURAL STEEL SHALL CONFORM TO CURRENT A.S.T.M. DESIGNATION A572, GRADE 50 AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A 123. WELDING OF STRUCTURAL STEEL SHALL CONFORM TO THE CURRENT A.W.S. STRUCTURAL WELDING CODE.

ALL SHOP AND FIELD CONNECTIONS SHALL BE BOLTED USING HIGH STRENGTH BOLTS CONFORMING TO THE MECHANICAL REQUIREMENTS OF A.S.T.M. A-325. BOLTS ARE TO BE TIGHTENED BY THE TURN OF NUT METHOD. BOLTS SHALL BE HEAVY SEMI-FINISHED STRUCTURAL BOLTS WITH HEAVY HEX NUT AND ONE HARDENED WASHER UNDER THE TURNED ELEMENT. ALL BOLTS, WASHERS, AND NUTS SHALL BE GALVANIZED BY THE HOT DIP METHOD IN ACCORDANCE WITH A.S.T.M. A 153. NUTS AND WASHERS SHALL BE LOCATED TOWARDS THE INTERIOR OF THE STRUCTURE WHERE POSSIBLE.

STEEL GRATING TO BE WELDFORGED WELDED RECTANGULAR DESIGN, TYPE W/B AS MANUFACTURED BY IKG INDUSTRIES. MAIN BEARING BARS TO BE 2" x 3/16" SPACED 1 3/8" CENTER-TO-CENTER. CROSS BARS TO BE RESISTANCE WELDED AT RIGHT ANGLES TO THE BEARING BARS. THEY SHALL BE SPACED AT 4" CENTER-TO-CENTER. NO NOTCHING OR CUTTING OF BEARING BARS BEFORE WELDING IS PERMISSABLE. SURFACE TO BE SERRATED (SLIP RESISTANT). FINISH TO BE GALVANIZED. STEEL GRATING TO BE ATTACHED TO STEEL SUPPORTS USING THE PLATE FASTENER METHOD AS SPECIFIED BY IKG INDUSTRIES.

INLET CONTROL STRUCTURE IS PAID FOR AS CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 4. PAY ITEM CONSISTS OF CONCRETE STRUCTURE AND BASE, EXCAVATION, BACKFILL, REINFORCEMENT, GRATE AND ALL HARDWARE REQUIRED FOR A COMPLETE INSTALLATION.

DRAWN BY: MJC

CHECKED BY: MJC

CERTIFIED BY *Matthew J. Christensen*  
 LICENSED PROFESSIONAL ENGINEER

LIC. NO. 43076 DATE 10/25/05

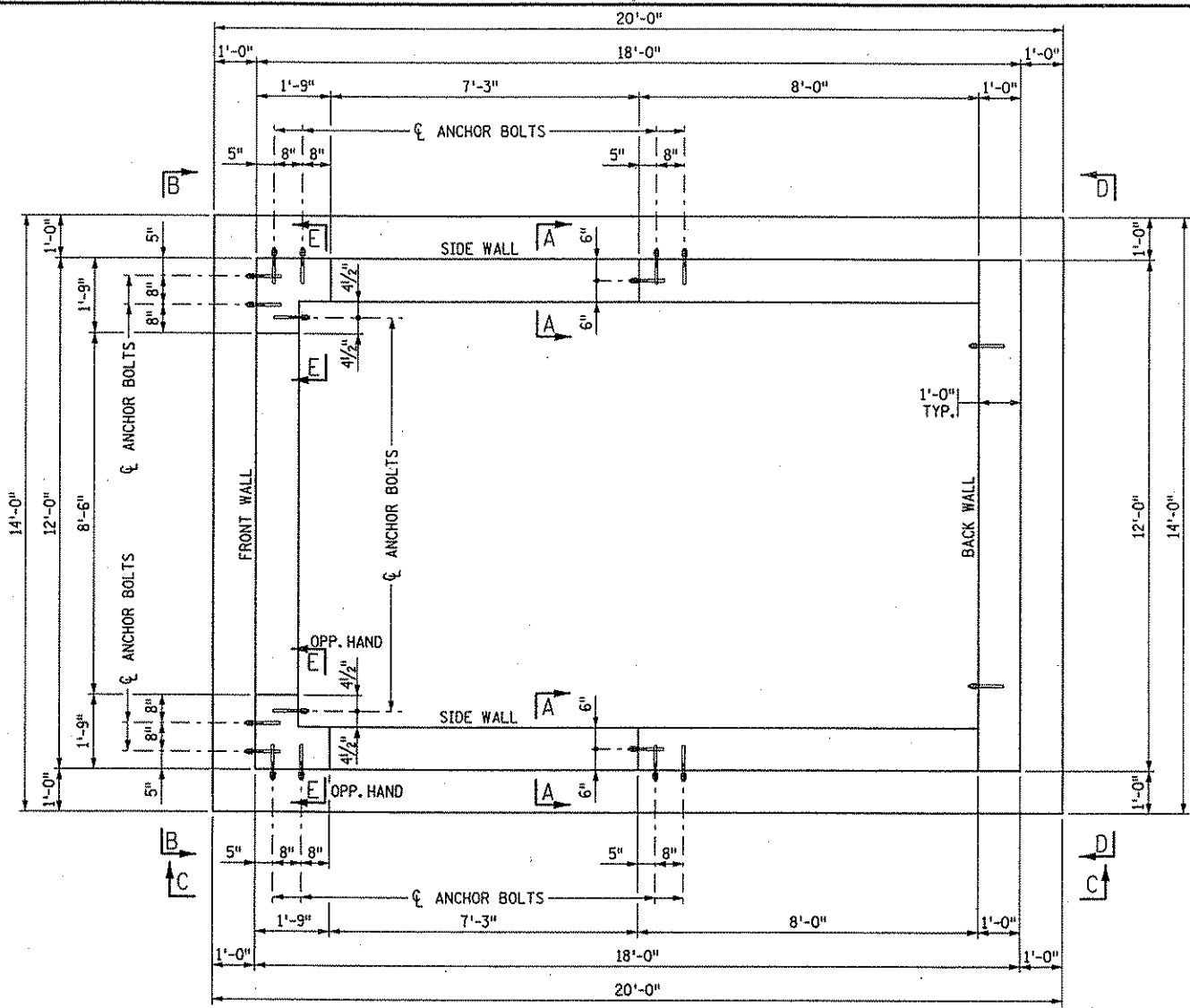
**TKDA**  
 ENGINEERS · ARCHITECTS · PLANNERS

**DRAINAGE DETAILS**  
 DRAINAGE STRUCTURE DESIGN SPECIAL 4

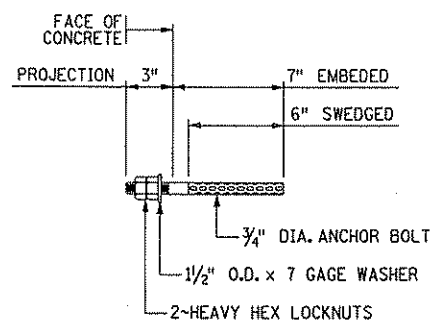
S.P. 02-614-23 S.P. 82-608-07

Sheet No. 141 of 296 Sheets

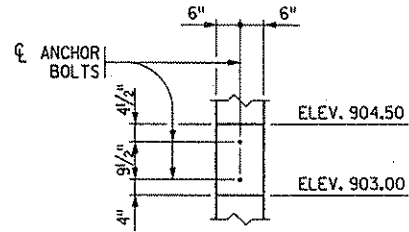
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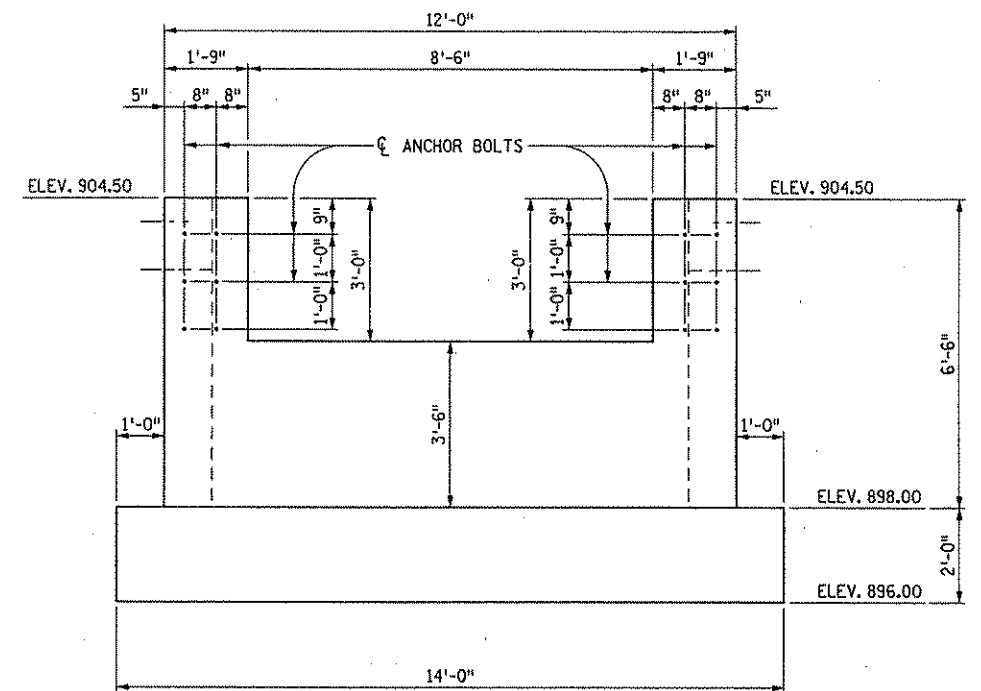
**PLAN VIEW**



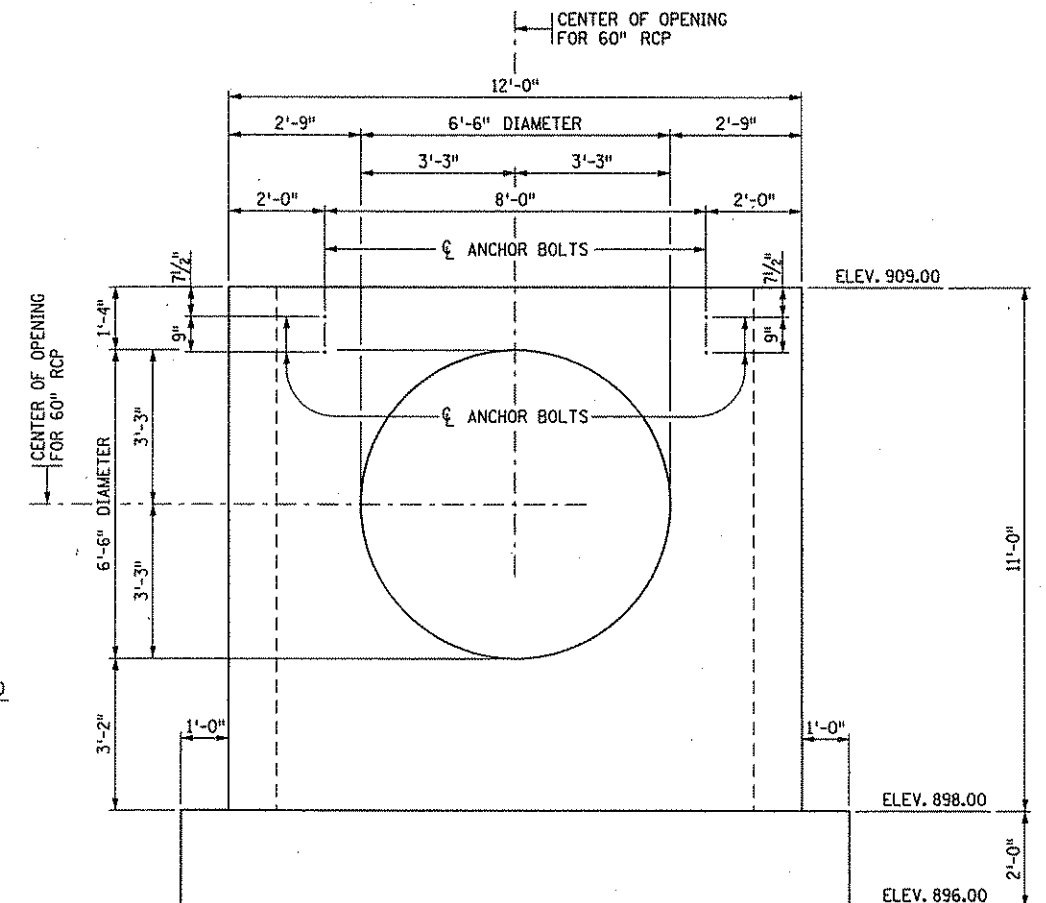
**ANCHOR BOLT**  
 40-ANCHOR BOLTS REQUIRED  
 ASTM 1554, GR. 55, GALV.



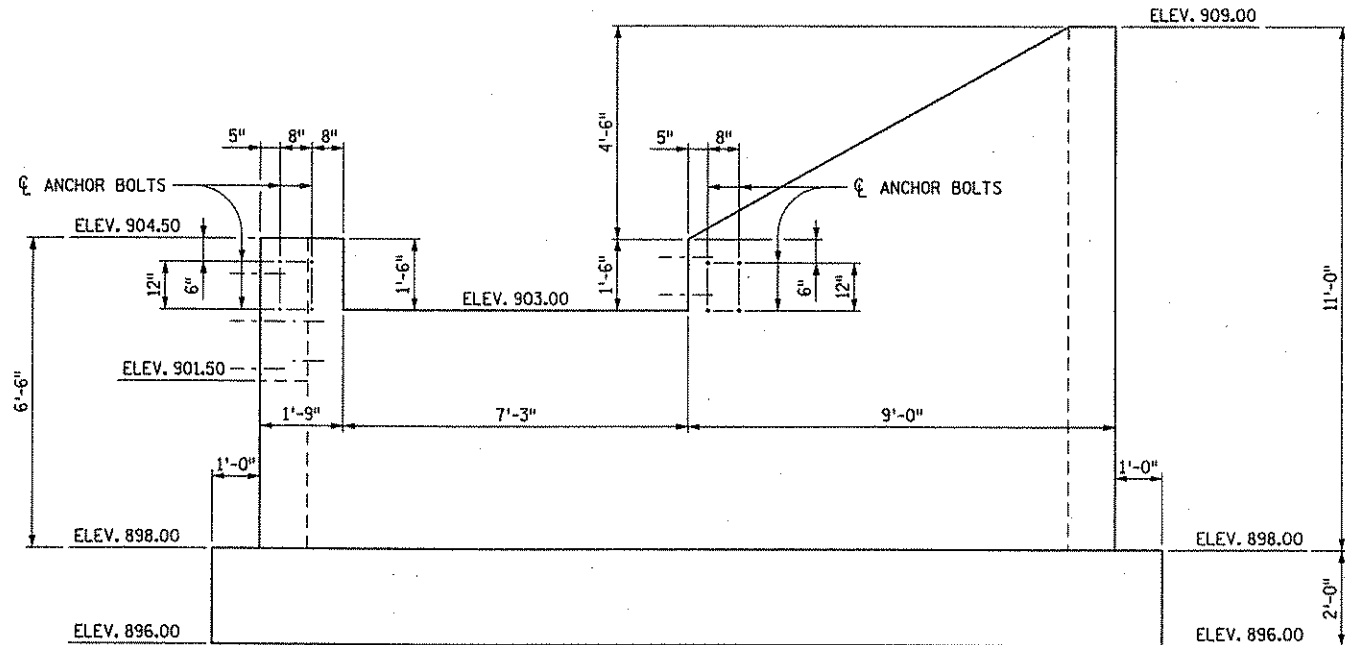
**SECTION "A-A"**



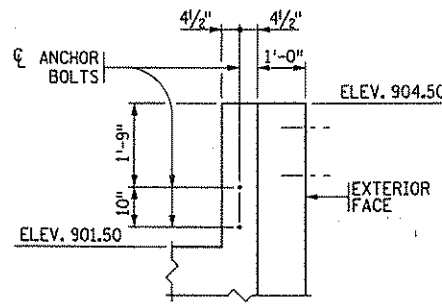
**ELEVATION VIEW "B-B"**



**ELEVATION VIEW "D-D"**



**ELEVATION VIEW "C-C"**



**SECTION "E-E"**

STEEL SKIMMERS NOT SHOWN FOR CLARITY

DRAWN BY: MJC

CHECKED BY: MJC

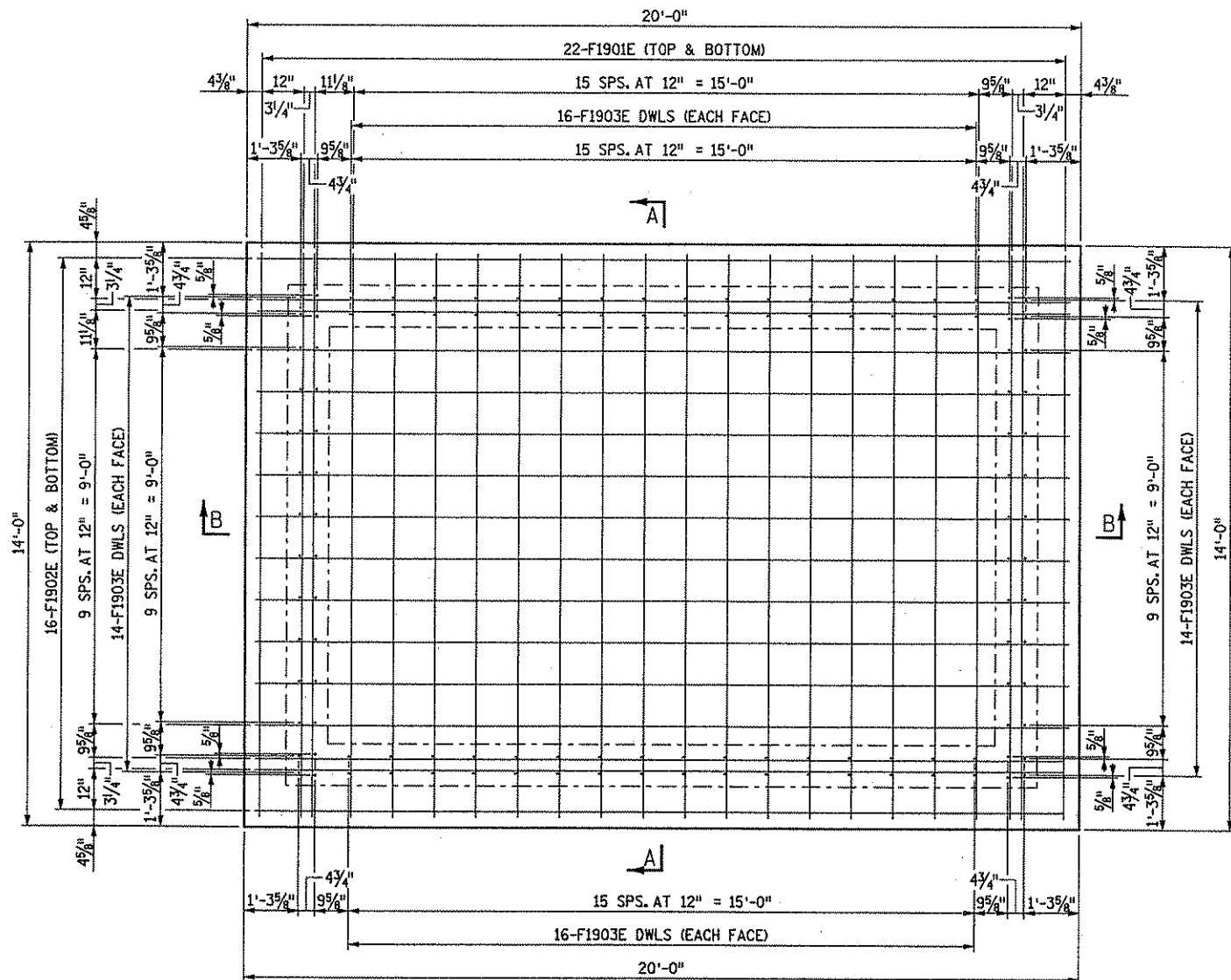
CERTIFIED BY *Matthew J. Christensen* LIC. NO. 43076 DATE 10/25/05  
 LICENSED PROFESSIONAL ENGINEER

**TKDA**  
 ENGINEERS - ARCHITECTS - PLANNERS

DRAINAGE DETAILS  
 DRAINAGE STRUCTURE DESIGN SPECIAL 4

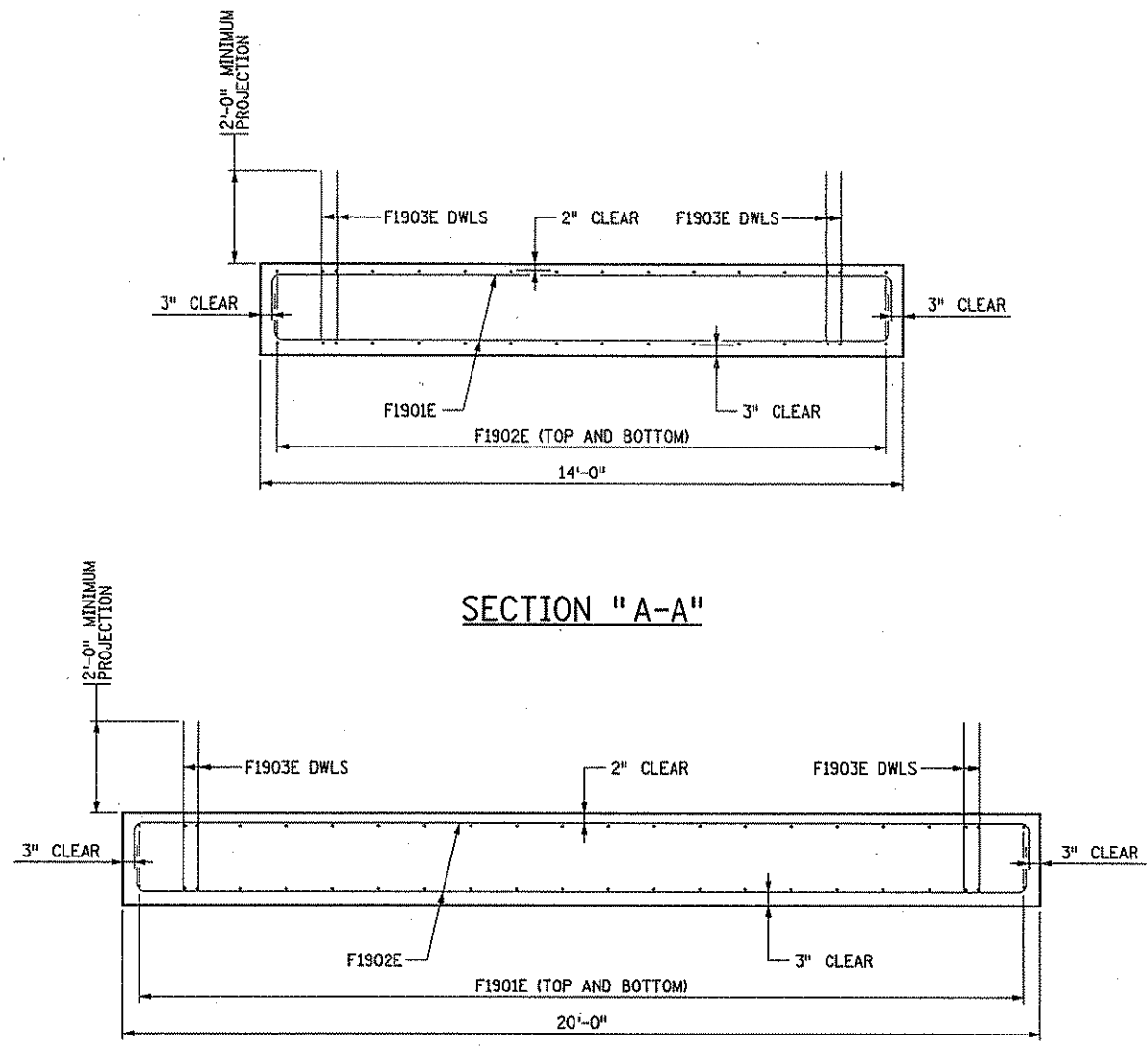
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 Sheet No. 141A of 296 Sheets

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**FOOTING PLAN**

NO VARIANCE ALLOWED ON PLACEMENT OF REINFORCEMENT.  
 HORIZONTAL REINFORCEMENT IN FOOTING IS DETAILED TO  
 FACILITATE PROPER PLACEMENT OF DOWELS.



**SECTION "A-A"**

**SECTION "B-B"**

DRAWN BY: MJC  
 CHECKED BY: MJC

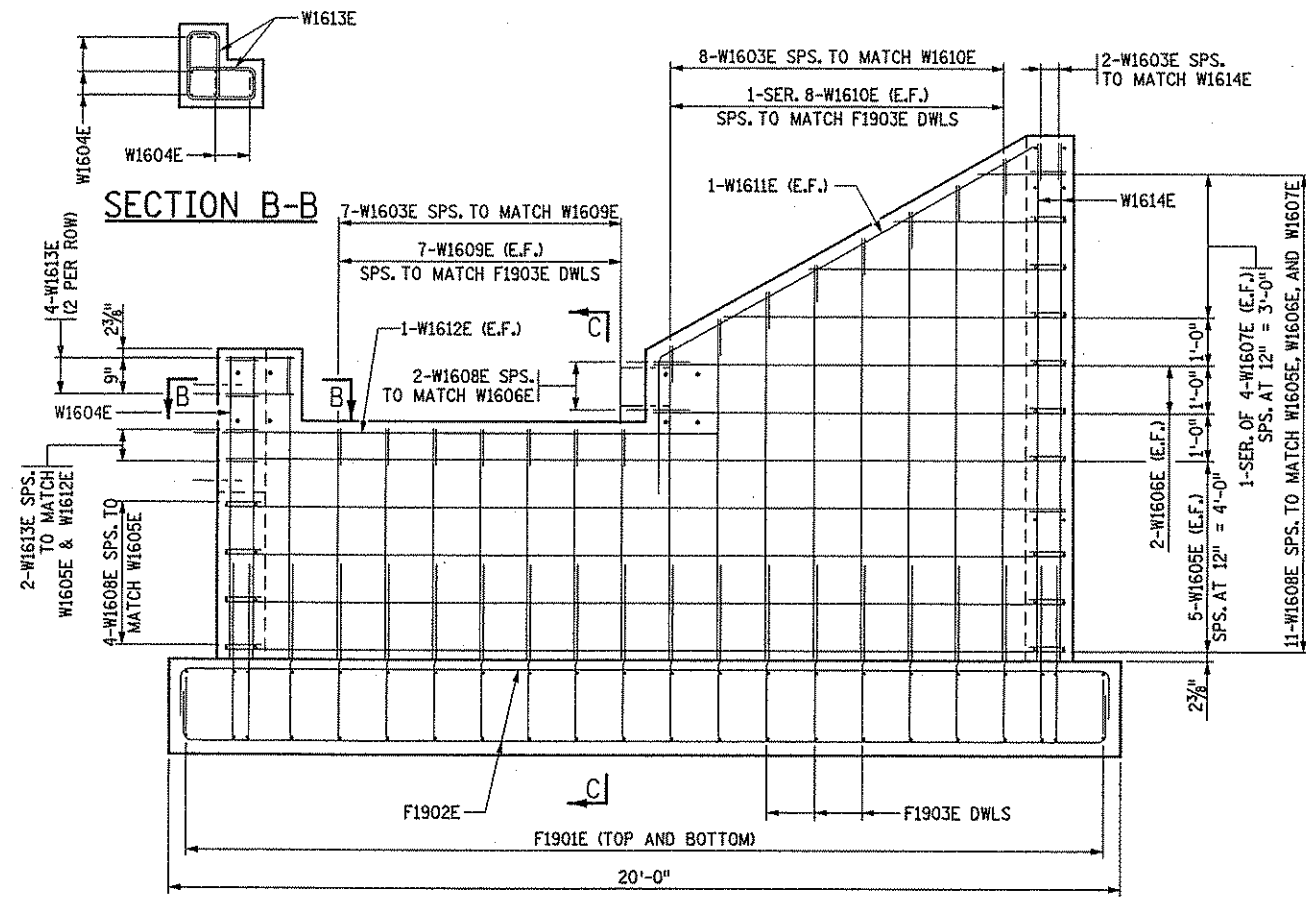
CERTIFIED BY *Matthew J. Christian*  
 LICENSED PROFESSIONAL ENGINEER LIC. NO. 43076 DATE 8/15/2005

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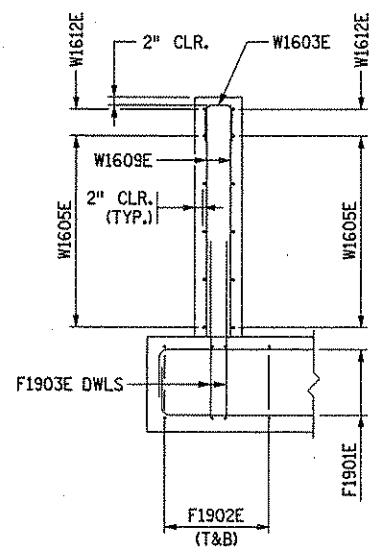
**DRAINAGE DETAILS**  
 DRAINAGE STRUCTURE DESIGN SPECIAL 4

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 141B of 296 Sheets

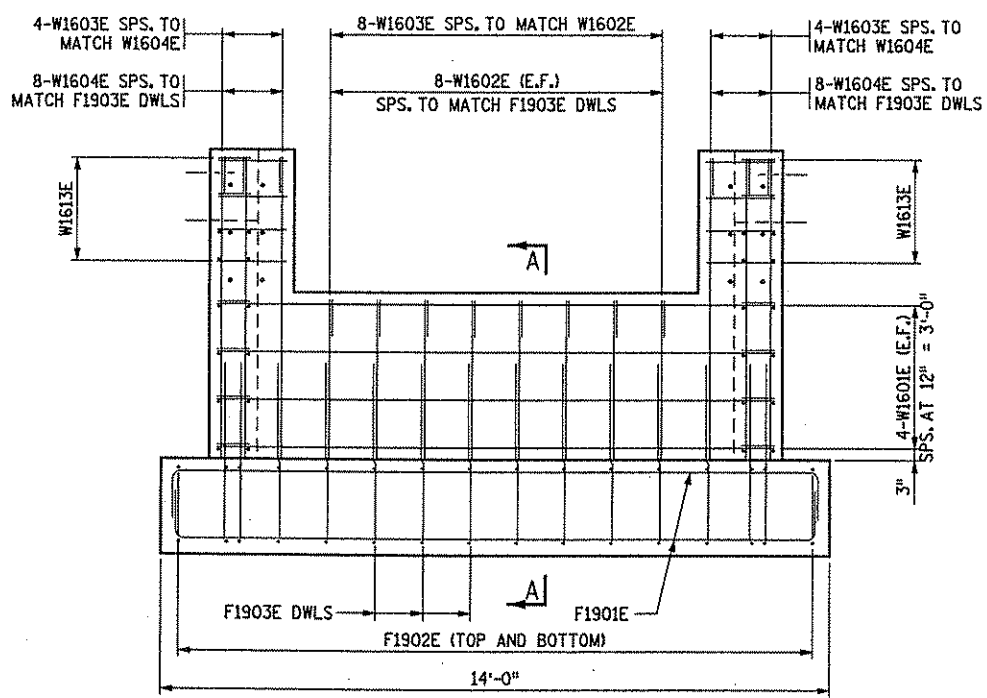
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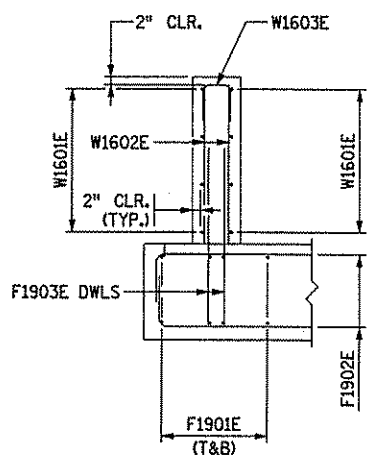
**ELEVATION-SIDE WALL**



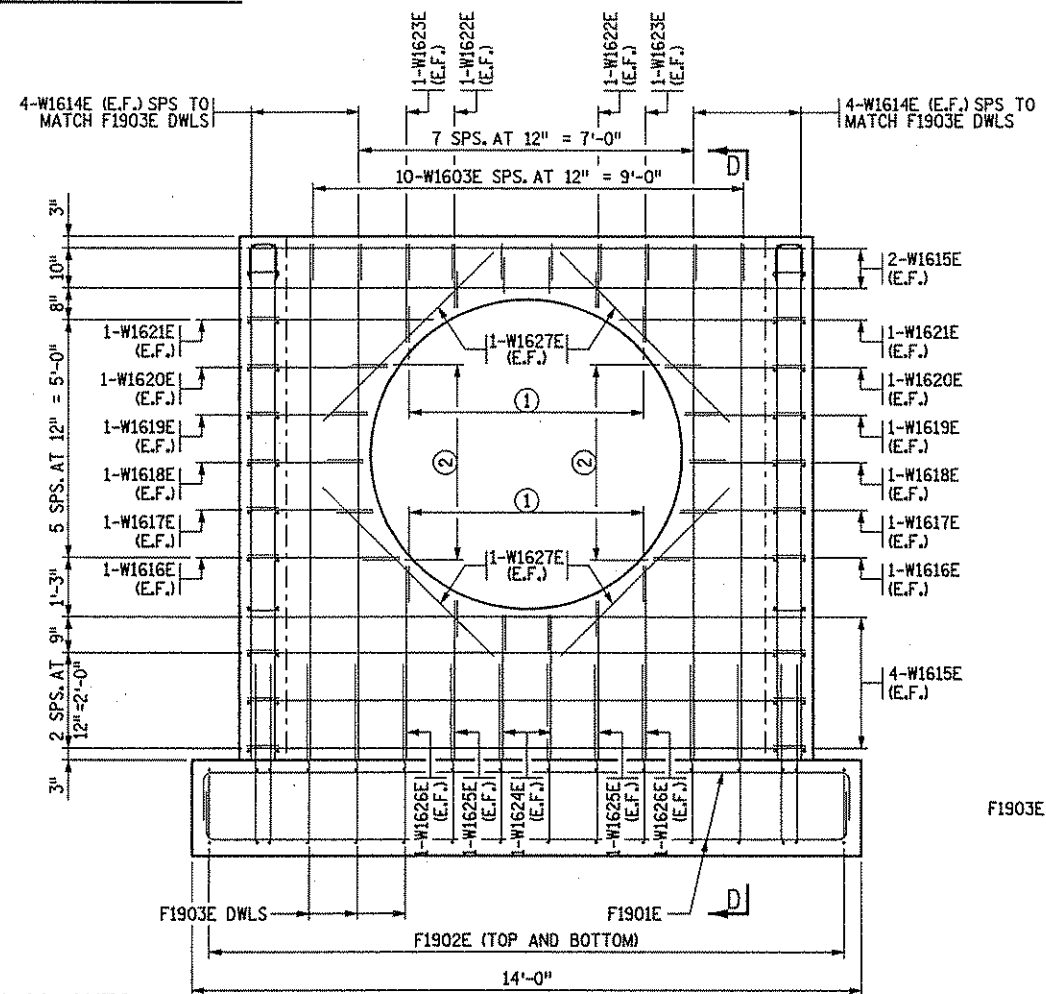
**SECTION "C-C"**



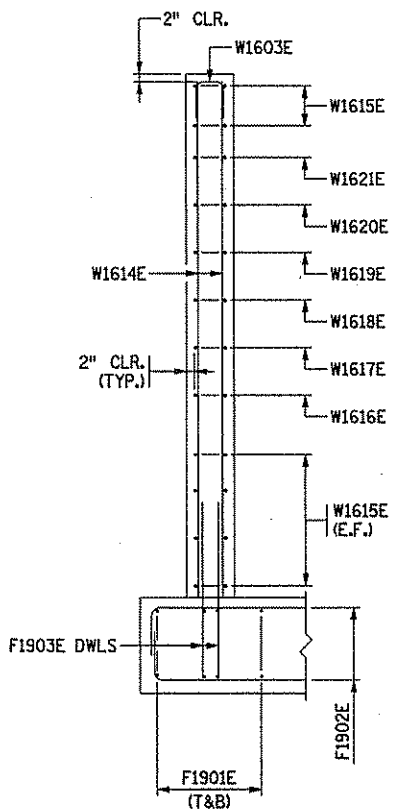
**ELEVATION-FRONT WALL**



**SECTION "A-A"**



**ELEVATION-BACK WALL**



**SECTION "D-D"**

- BAR CALL-OUTS:**
- ① 6-W1603E SPS. AT 12" = 5'-0"
  - ② 5-W1608E SPS. AT 12" = 4'-0"

DRAWN BY: MJC  
 CHECKED BY: MJC

CERTIFIED BY *Matthew J. Chestnut* LIC. NO. 43076 DATE 8/15/2005  
 LICENSED PROFESSIONAL ENGINEER

**TKDA**  
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**DRAINAGE DETAILS**  
 DRAINAGE STRUCTURE DESIGN SPECIAL 4

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 141C of 296 Sheets

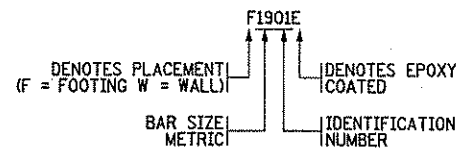
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FOOTING BAR LIST

MARK	NO.	SER.	OF	FT.	IN.	SIZE	TYPE	A	B	C	D	LOCATION
F1901 E	44			15	6	19	114	13'-6"	1'-0"			TRANS. FOOTING (T&B)
F1902 E	32			21	6	19	114	19'-6"	1'-0"			LONG. FOOTING (T&B)
F1903 E	120			4	9	19	111	3'-9"	1'-0"			FOOTING DOWEL

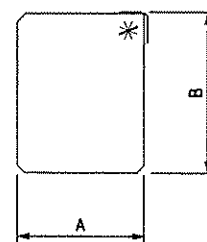
WALL BAR LIST

MARK	NO.	SER.	OF	FT.	IN.	SIZE	TYPE	A	B	C	D	LOCATION
W1601 E	8			11	8	16	STR					HORIZ. FRONT WALL
W1602 E	16			3	4	16	STR					VERT. FRONT WALL
W1603 E	72			2	1	16	114	6 1/2"	9"			TOP OF WALL
W1604 E	16			6	4	16	STR					VERT. FRONT WALL
W1605 E	20			17	8	16	STR					HORIZ. SIDE WALL
W1606 E	8			8	8	16	STR					HORIZ. SIDE WALL
W1607 E		4	SER	1	10	16	STR					HORIZ. SIDE WALL
			OF	4	7	2						
W1608 E	44			2	2	16	114	8"	9"			WALL ENDS
W1609 E	28			4	10	16	STR					VERT. SIDE WALL
W1610 E		4	SER	6	7	16	STR					VERT. SIDE WALL
			OF	8	10	6						
W1611 E	4			11	10	16	201	9'-0"	2'-10"	6.75		TOP FACE OF SIDE WALL
W1612 E	4			10	3	16	STR					HORIZ. SIDE WALL
W1613 E	12			4	9	16	105	1'-5"	8"			HORIZ. FRONT WALL
W1614 E	16			10	10	16	STR					VERT. BACK WALL
W1615 E	16			11	8	16	STR					HORIZ. BACK WALL
W1616 E	4			3	2	16	STR					HORIZ. BACK WALL
W1617 E	4			2	7	16	STR					HORIZ. BACK WALL
W1618 E	4			2	5	16	STR					HORIZ. BACK WALL
W1619 E	4			2	6	16	STR					HORIZ. BACK WALL
W1620 E	4			2	11	16	STR					HORIZ. BACK WALL
W1621 E	4			3	10	16	STR					HORIZ. BACK WALL
W1622 E	4			1	4	16	STR					VERT. BACK WALL
W1623 E	4			2	0	16	STR					VERT. BACK WALL
W1624 E	4			3	0	16	STR					VERT. BACK WALL
W1625 E	4			3	4	16	STR					VERT. BACK WALL
W1626 E	4			4	0	16	STR					VERT. BACK WALL
W1627 E	8			5	0	16	STR					FACE OF OPENING

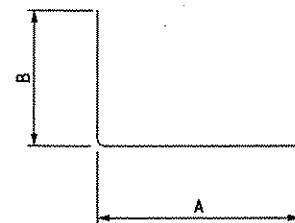


BAR CALL-OUTS

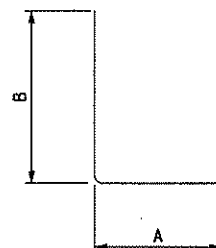
BAR BENDING DIAGRAMS:



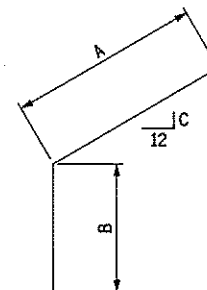
105



111



114



201

NOTE:

BENT BAR DIMENSIONS GIVEN ARE OUT-TO-OUT. ACTUAL BAR LENGTHS SHALL BE DETERMINED BASED ON THE DETAIL DIMENSIONS SHOWN IN THE BAR BENDING DIAGRAMS. TOTAL BAR LENGTHS ARE SHOWN FOR USE IN COMPUTING REINFORCEMENT BAR WEIGHTS FOR PAYMENT ONLY.

DRAWN BY: MJC

CHECKED BY: MJC

CERTIFIED BY *Matthew J. Christians* LIC. NO. 43076 DATE 8/15/2005  
 LICENSED PROFESSIONAL ENGINEER

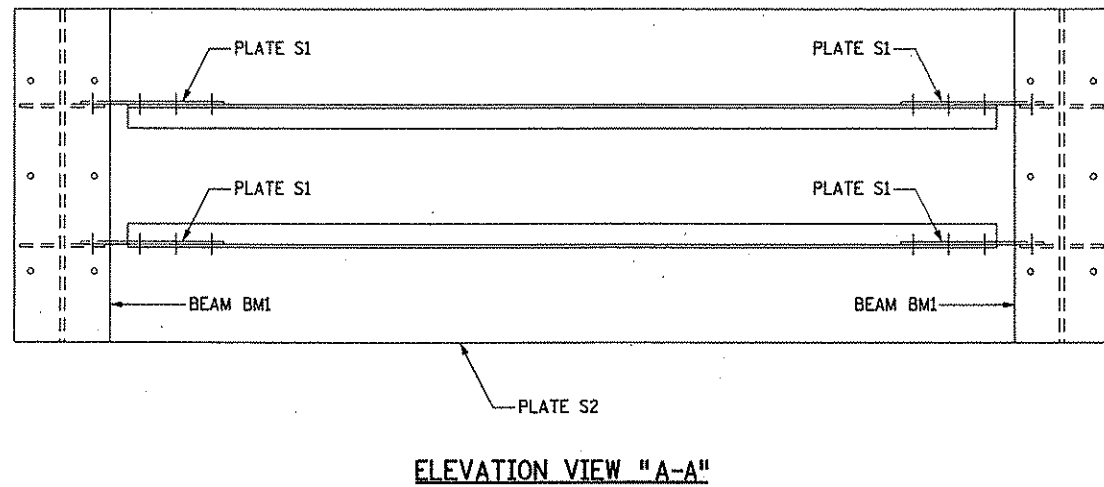
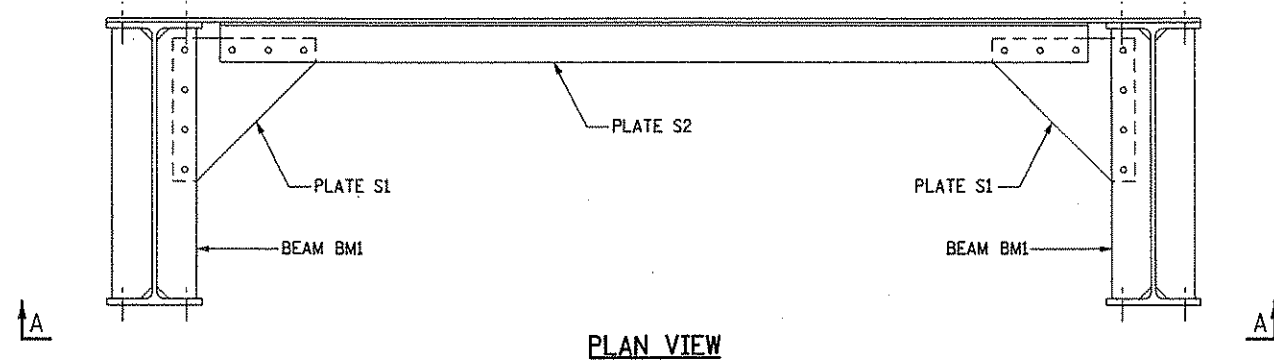
**TKDA**  
 ENGINEERS - ARCHITECTS - PLANNERS

DRAINAGE DETAILS  
 DRAINAGE STRUCTURE DESIGN SPECIAL 4

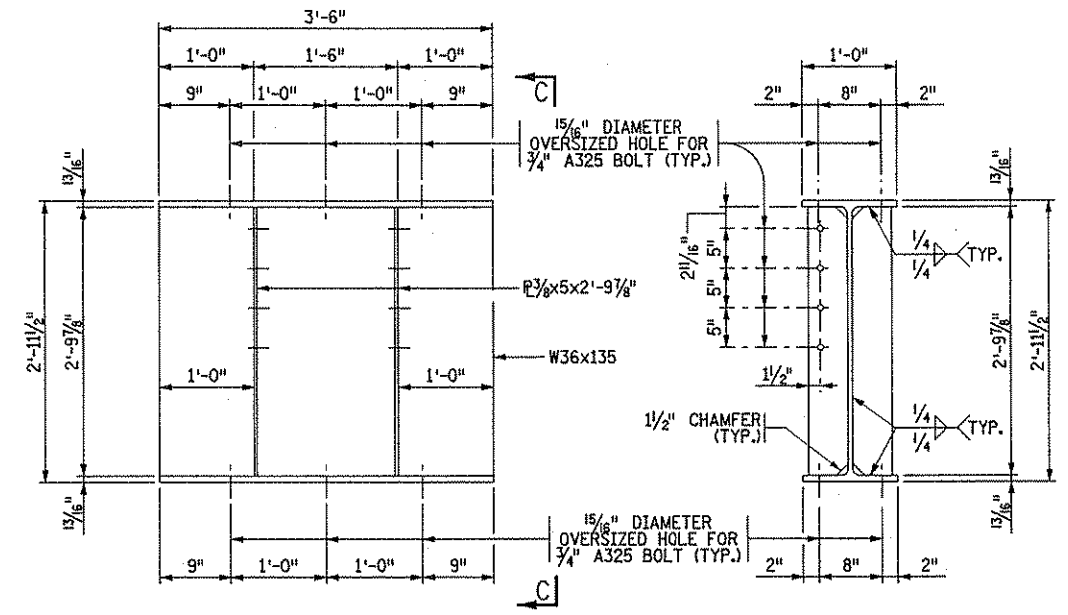
S.P. 02-614-23 S.P. 82-608-07

Sheet No. 141D of 296 Sheets



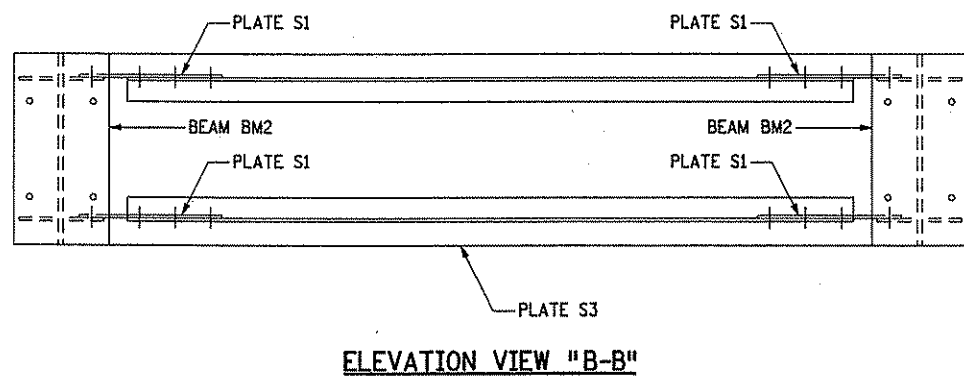
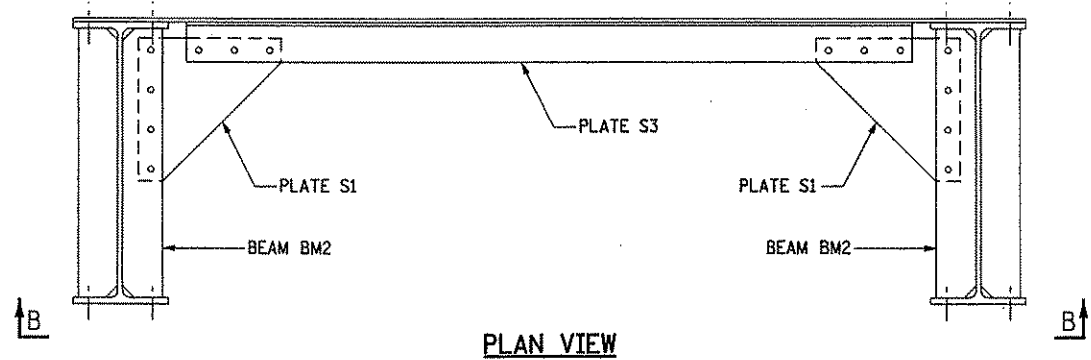


STEEL SKIMMER ASSEMBLY-TYPE 1



BEAM ASSEMBLY-BEAM BM1

VIEW "C-C"



STEEL SKIMMER ASSEMBLY-TYPE 2

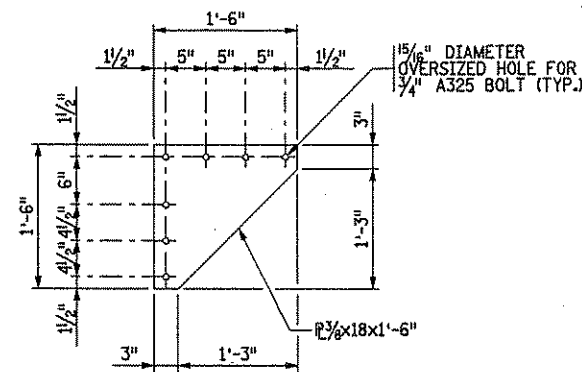
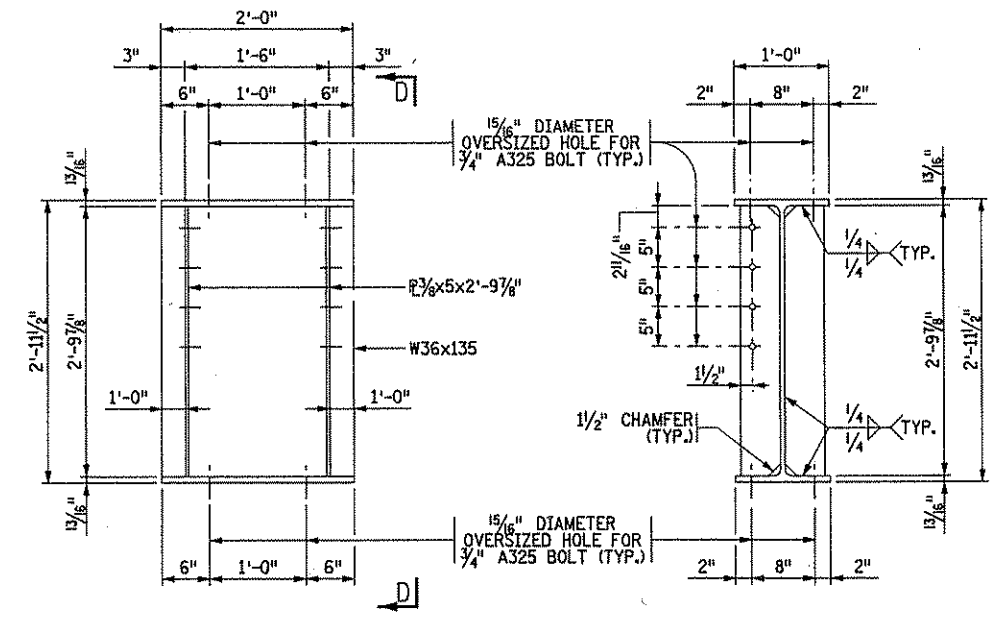


PLATE S1



BEAM ASSEMBLY-BEAM BM2

VIEW "D-D"

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FILENAME: K:\r2\wastcy\24390\hwy-brdg\hwy-plr-skr-200802.mcd

DRAWN BY: MJC  
CHECKED BY: MJC

CERTIFIED BY *Matthew J. Chestnut* LIC. NO. 43076 DATE 8/15/2005  
LICENSED PROFESSIONAL ENGINEER

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DRAINAGE DETAILS  
DRAINAGE STRUCTURE DESIGN SPECIAL 4

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 141E of 296 Sheets

DATE: 8/12/2005 TIME: 4:53:32 PM  
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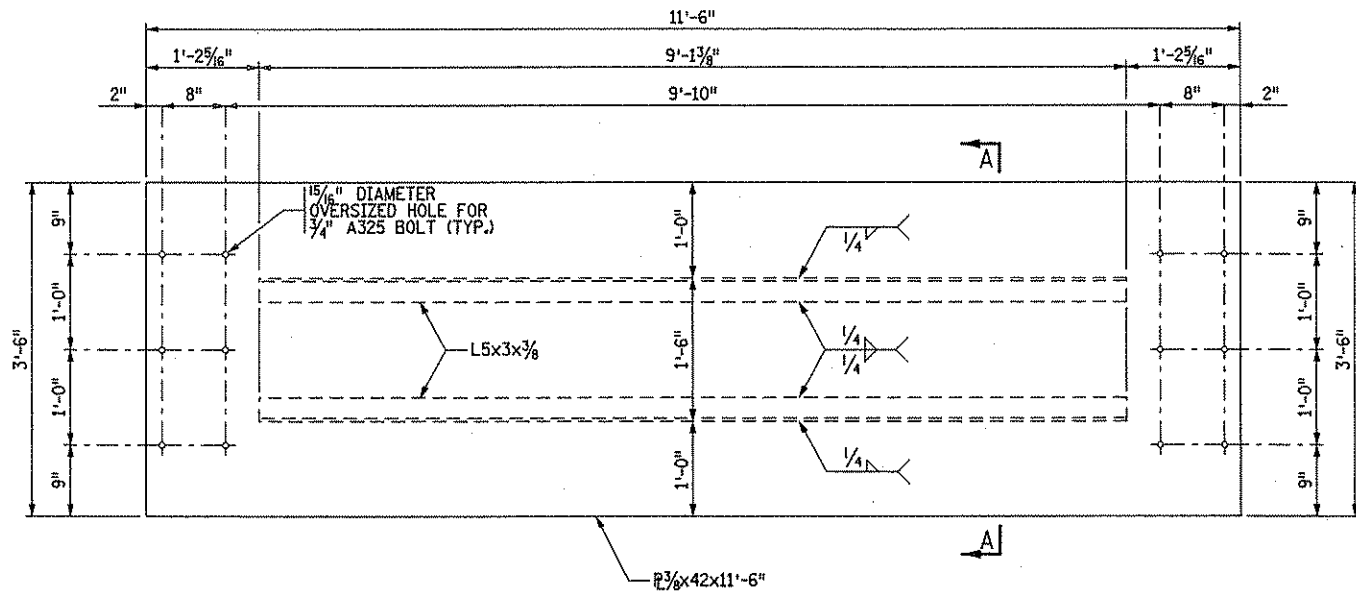
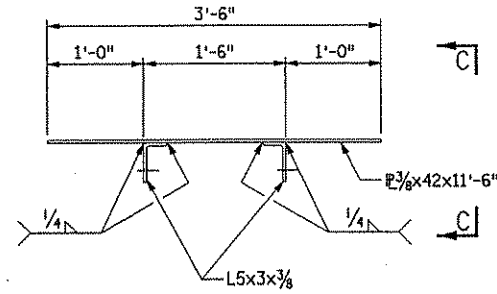
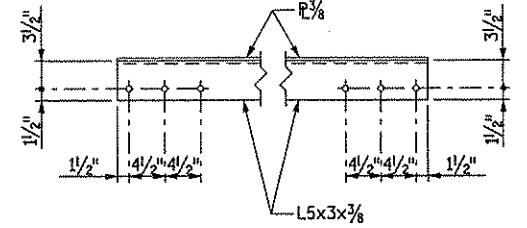


PLATE ASSEMBLY-PLATE S2



SECTION "A-A"



VIEW "C-C"

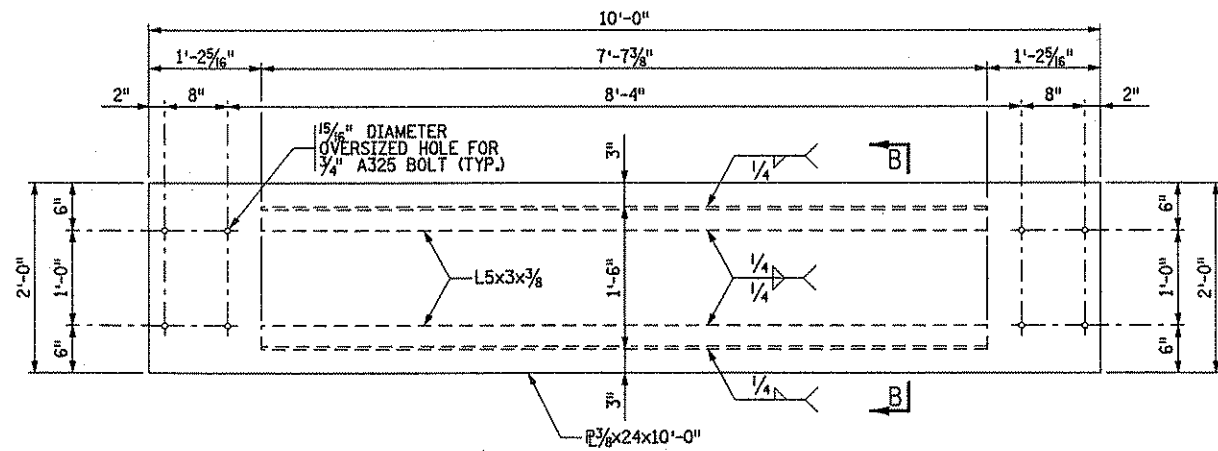
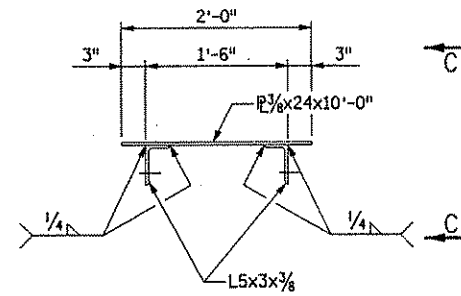


PLATE ASSEMBLY-PLATE S3



SECTION "B-B"

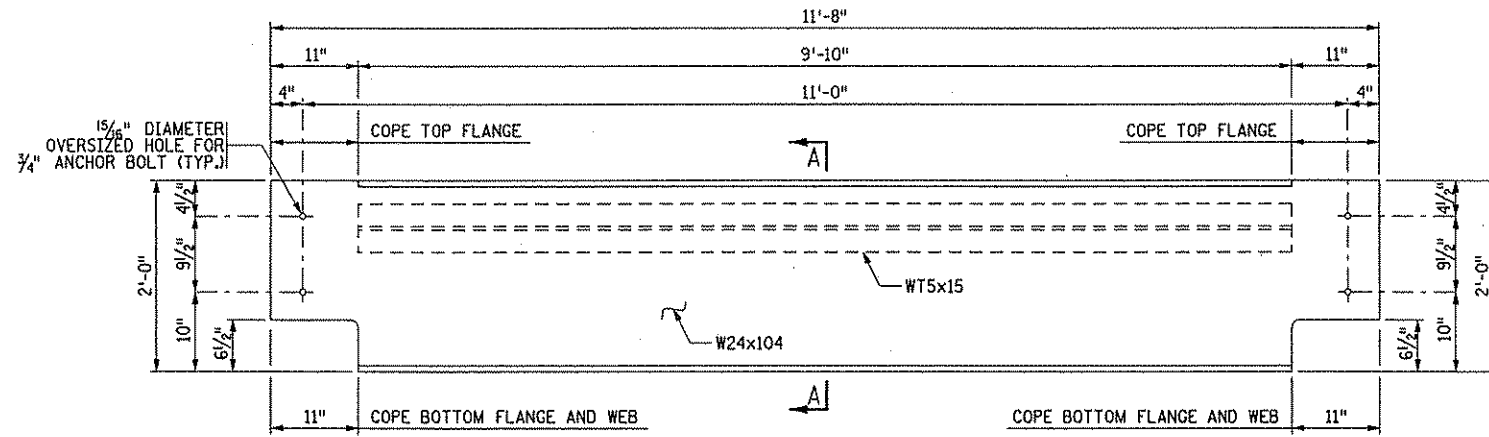
DRAWN BY: MJC  
 CHECKED BY: MJC

CERTIFIED BY *Matthew J. Christman* LIC. NO. 43576 DATE 8/15/2005  
 LICENSED PROFESSIONAL ENGINEER

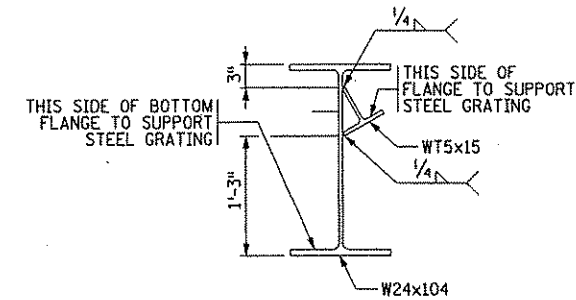
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DRAINAGE DETAILS  
 DRAINAGE STRUCTURE DESIGN SPECIAL 4

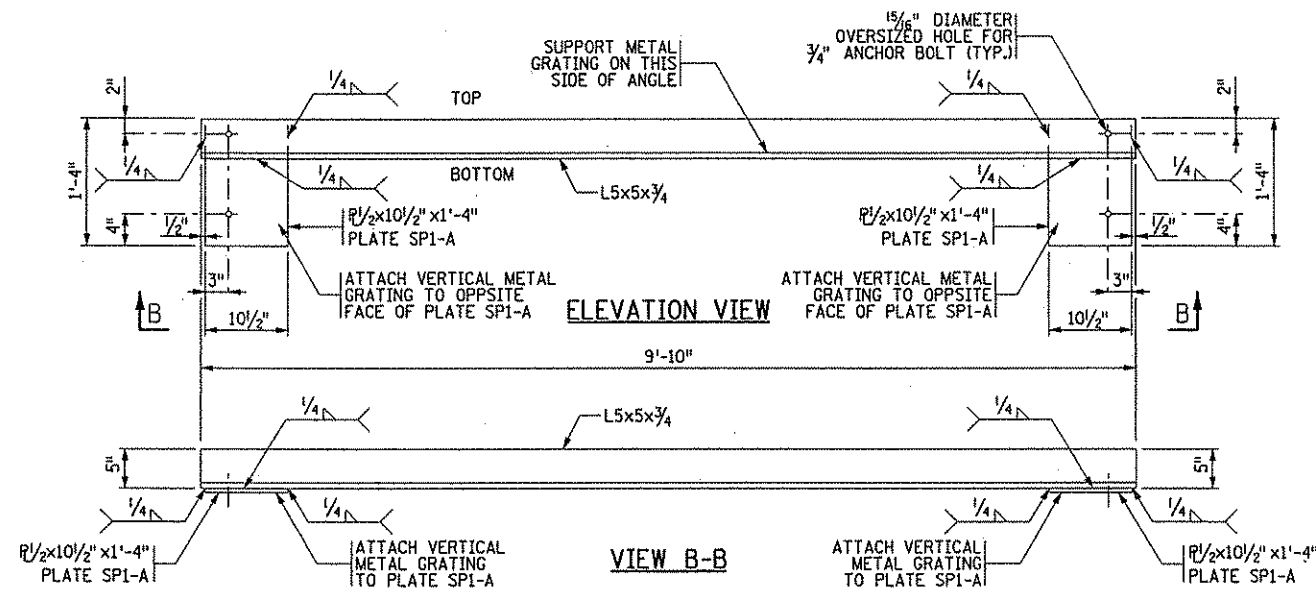
S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 141F of 296 Sheets



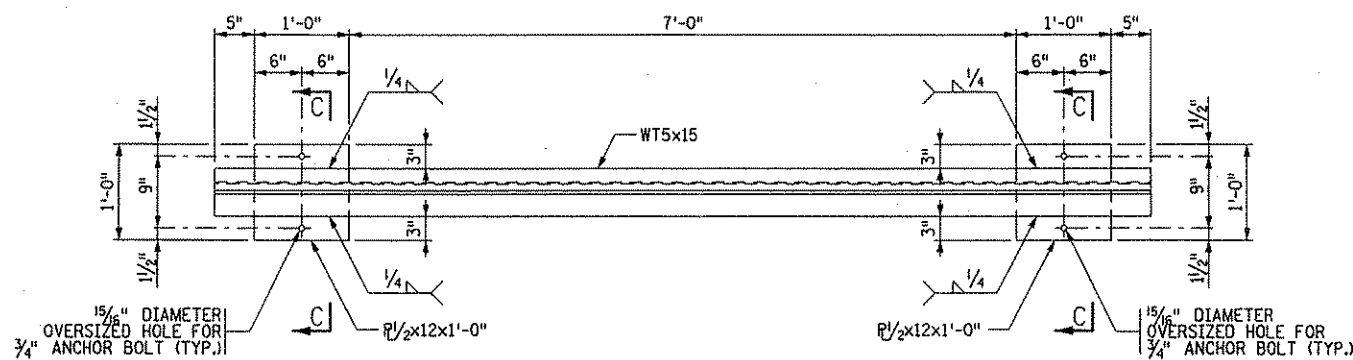
**BEAM ASSEMBLY-BEAM BM3**  
STEEL WEIGHT = 1078 LBS.



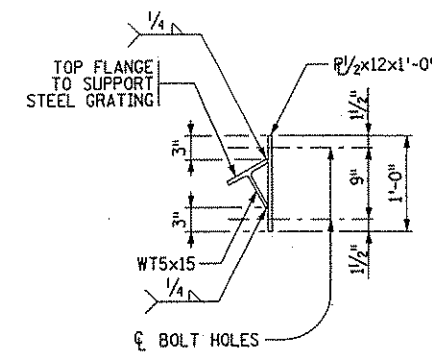
**SECTION "A-A"**



**STEEL SUPPORT-SUPPORT SP1**



**STEEL SUPPORT-SUPPORT SP2**



**SECTION "C-C"**

DATE: 10/24/2005 TIME: 7:48:59 AM  
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CHECKED BY: MJC

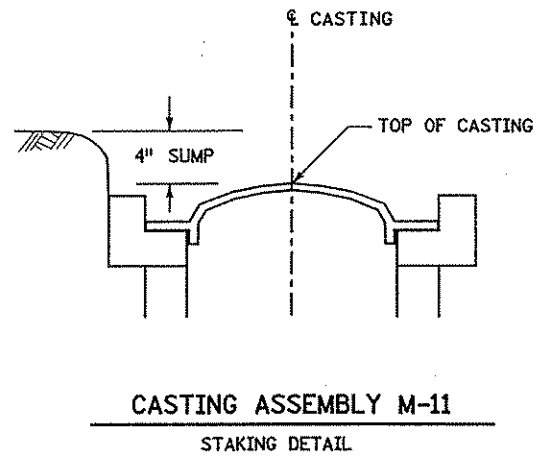
CERTIFIED BY *Matthew J. Christensen* LIC. NO. 43076 DATE 10/25/05  
LICENSED PROFESSIONAL ENGINEER

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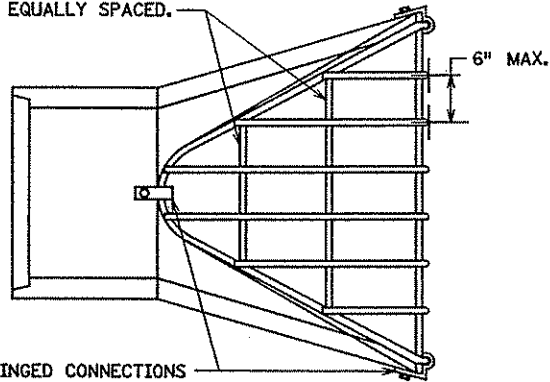
DRAINAGE DETAILS  
DRAINAGE STRUCTURE DESIGN SPECIAL 4

S.P. 02-614-23 S.P. 82-608-07

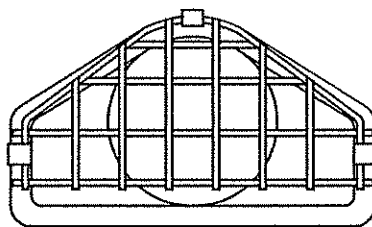
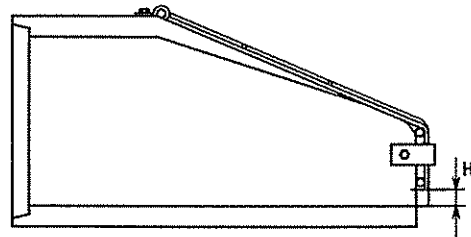
Sheet No. 141G of 296 Sheets



GUARDS FOR 12" TO 54" PIPE SHALL HAVE (1) CROSS BAR, GUARDS FOR 60" AND LARGER PIPE SHALL HAVE (2) CROSS BARS EQUALLY SPACED.



ROUND	
PIPE SIZE	H
12"	2 1/2"
15"	3"
18"-24"	4"
27"-36"	5"
42"-54"	6"
60"-72"	7"
78"-90"	8"

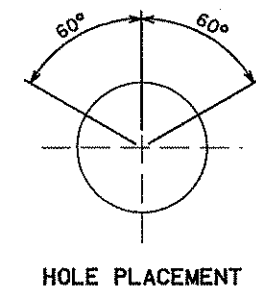
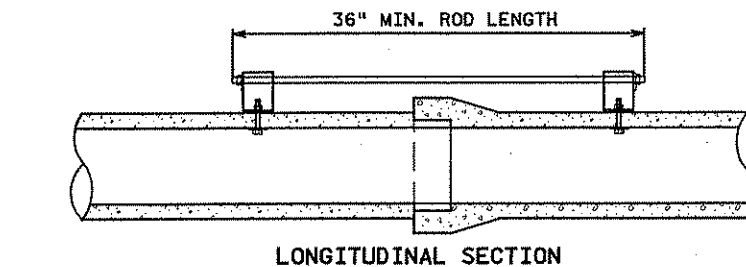
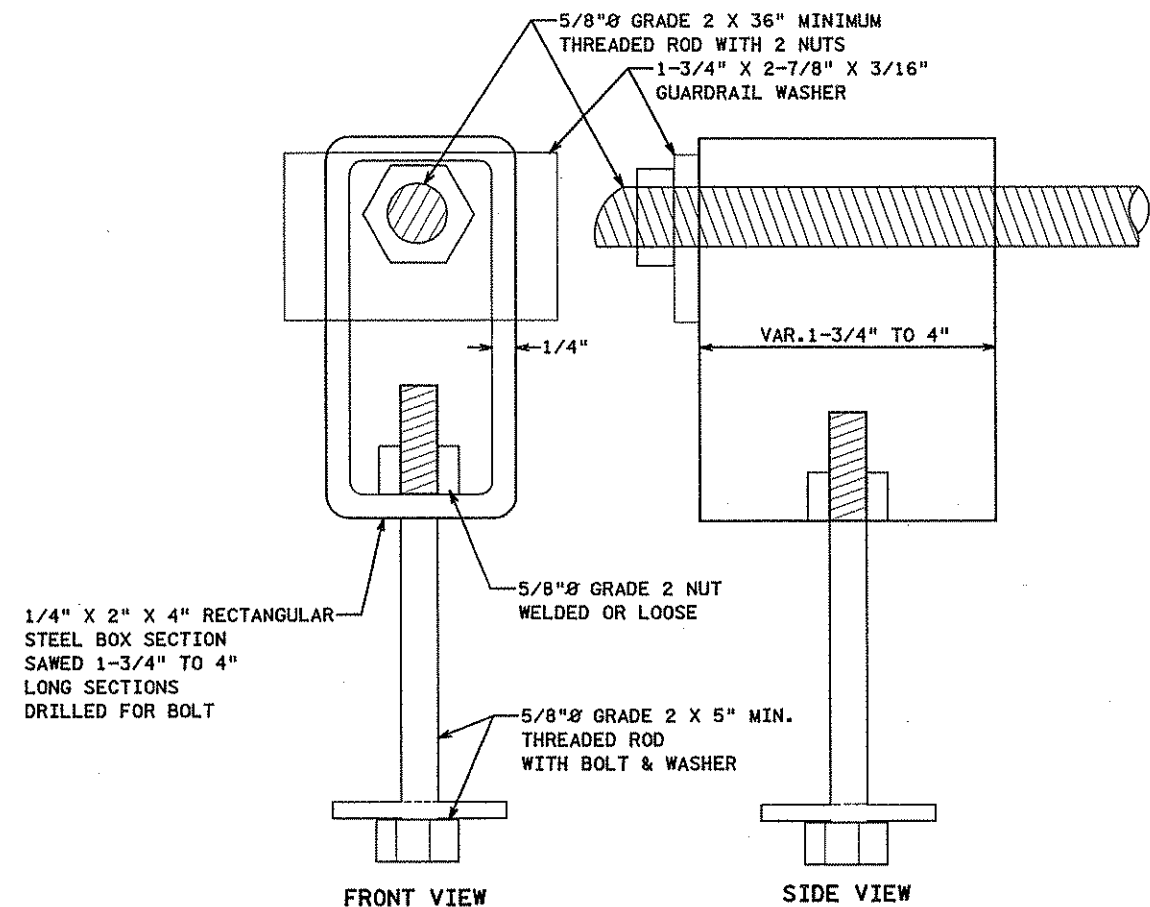


BAR SIZES							
STANDARD DESIGN				HEAVY DESIGN			
PIPE SIZE	HOLE DIA. REQ'D	BOLT DIA.	BAR SIZE	PIPE SIZE	HOLE DIA. REQ'D	BOLT DIA.	BAR SIZE
12"-24"	3/4"	5/8"	3/4"	12"-18"	3/4"	5/8"	3/4"
27"-48"	7/8"	3/4"	3/4"	21"-42"	7/8"	3/4"	1"
54"-90"	1 1/8"	1"	1"	48"-90"	1 1/8"	1"	1 1/4"

BOLT LENGTH = PIPE WALL THICKNESS + 2 1/2"

NOTE:  
HOT DIP GALVANIZED PER MN/DOT SPEC. 3392 OR ASTM A153.

TRASH GUARDS FOR RCP FLARED END SECTIONS  
NOT TO SCALE



1. INSTALL BRACKETS PRIOR TO LAYING PIPE.
2. CAN BE USED AS SLING POINTS.
3. INSTALL THREADED RODS, GUARDRAIL WASHERS AND NUTS.
4. TIGHTEN AS NEEDED FOR EVEN JOINT.
5. BOLT LENGTH, BRACKET WIDTH AND TIE BAR LENGTH ARE VARIABLE DEPENDING ON PIPE SIZE AND WALL THICKNESS.

CONCRETE PIPE TIE BAR  
NO SCALE

DATE: 8/12/2005 TIME: 4:43:08 PM FILENAME: K:\p2\Wgs\c\p2\4390\Nwy-brdg\Nwy-plr-st\c200802.dwg

DRAWN BY: SFH

CHECKED BY: MAW

CERTIFIED BY

*Matthew A. Wassman*  
LICENSED PROFESSIONAL ENGINEER

LIC. NO.

210883

DATE

8/15/05

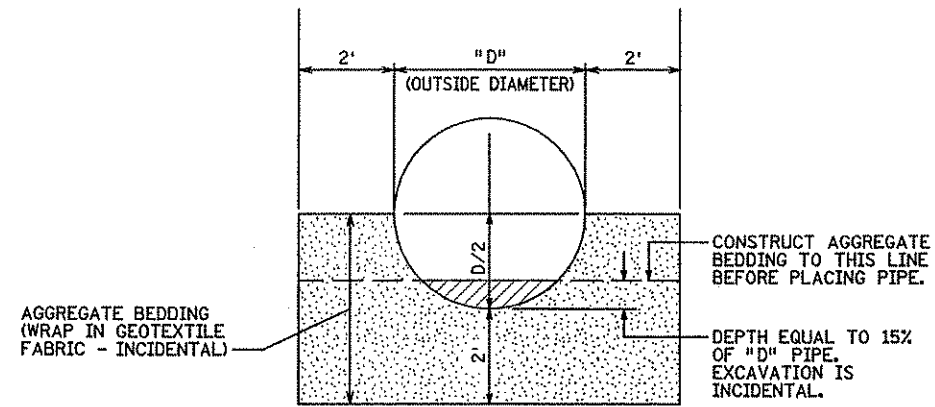
**TKDA**

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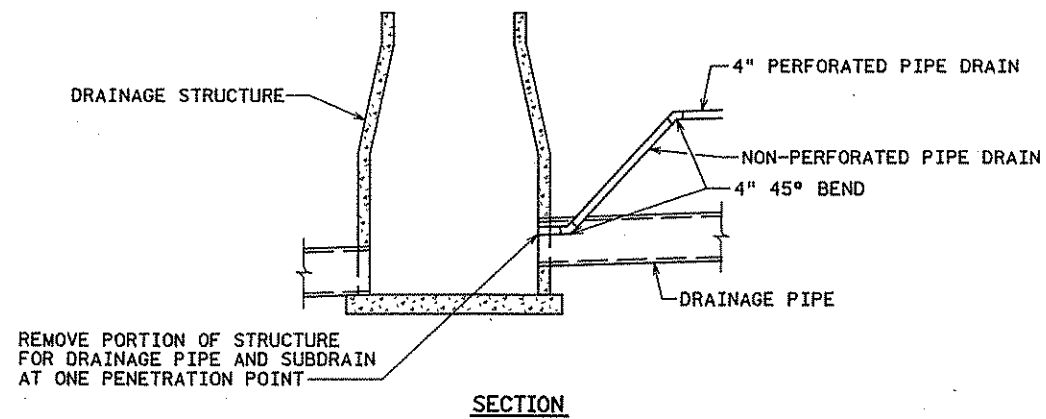
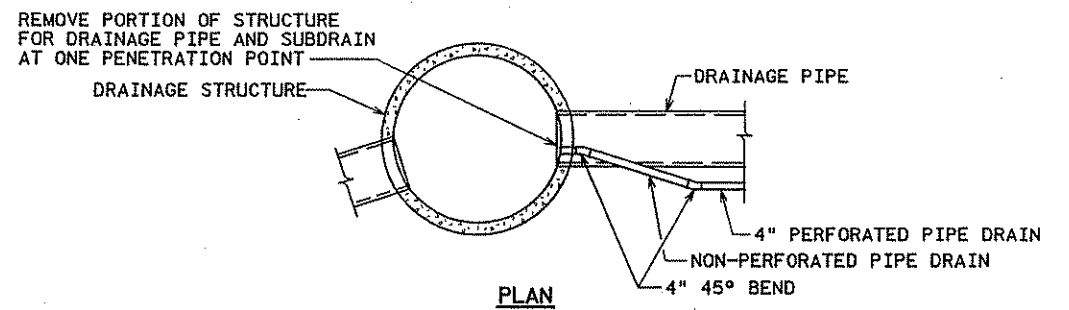
DRAINAGE DETAILS

S.P. 02-614-23 S.P. 82-608-07

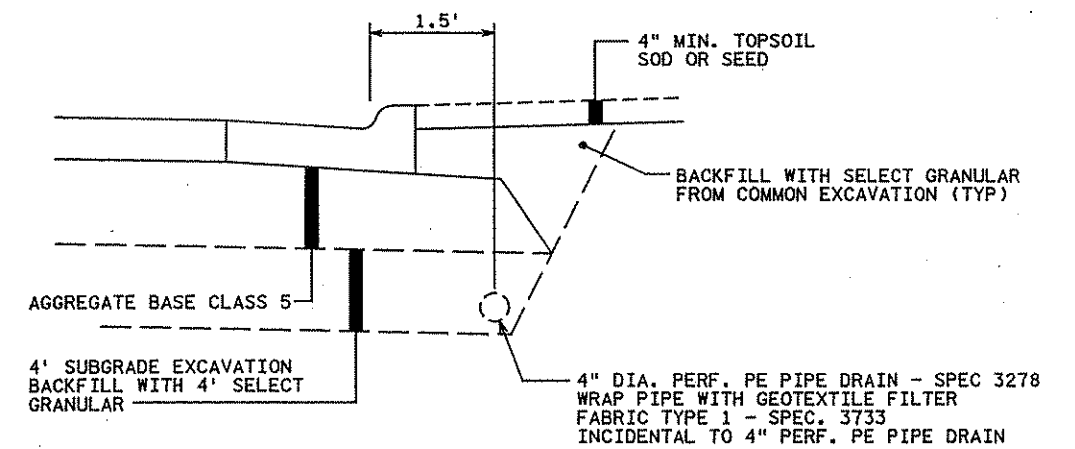
Sheet No. 142 of 296 Sheets



**AGGREGATE BEDDING DETAIL FOR 60" PIPE**



**SUBDRAIN CONNECTION TO DRAINAGE STRUCTURE**



**EDGE DRAIN DETAIL FOR ROADWAY**

NO SCALE

DATE: 10/27/2005 TIME: 5:58:27 AM  
FILENAME: K:\p2\Wgs\City\24390\Nwy-brdg\Nwy-plr-sf\200802.dwg

DRAWN BY: SFH

CHECKED BY: MAW

CERTIFIED BY Matthew A. Wanner LIC. NO. 26883 DATE 10/27/05  
LICENSED PROFESSIONAL ENGINEER

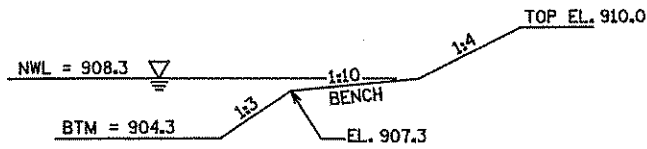
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DRAINAGE DETAILS

S.P. 02-614-23 S.P. 82-608-07

Sheet No. 143 of 296 Sheets





TYPICAL SECTION A-A

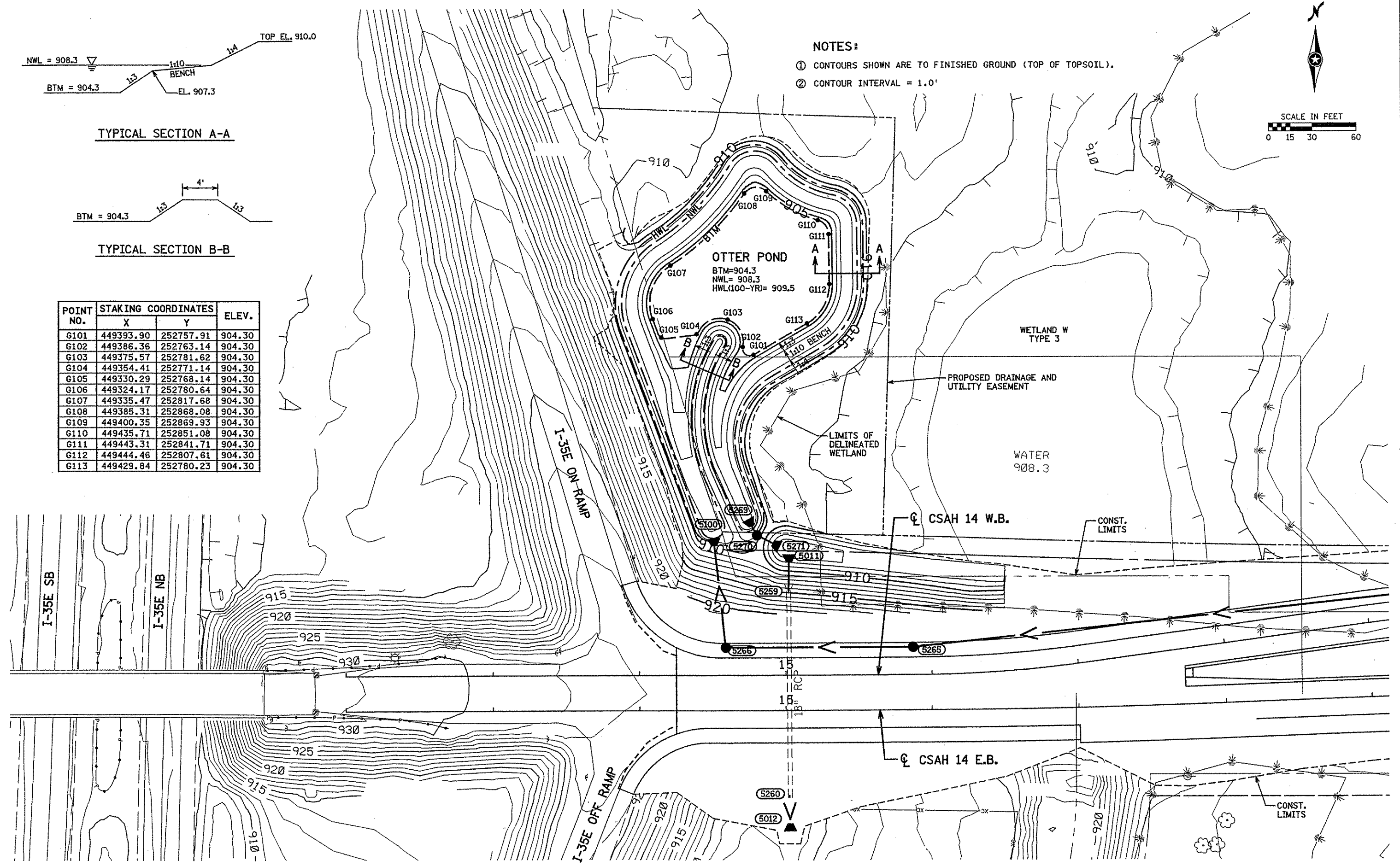
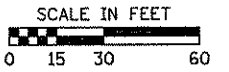


TYPICAL SECTION B-B

POINT NO.	STAKING COORDINATES		ELEV.
	X	Y	
G101	449393.90	252757.91	904.30
G102	449386.36	252763.14	904.30
G103	449375.57	252781.62	904.30
G104	449354.41	252771.14	904.30
G105	449330.29	252768.14	904.30
G106	449324.17	252780.64	904.30
G107	449335.47	252817.68	904.30
G108	449385.31	252868.08	904.30
G109	449400.35	252869.93	904.30
G110	449435.71	252851.08	904.30
G111	449443.31	252841.71	904.30
G112	449444.46	252807.61	904.30
G113	449429.84	252780.23	904.30

NOTES:

- ① CONTOURS SHOWN ARE TO FINISHED GROUND (TOP OF TOPSOIL).
- ② CONTOUR INTERVAL = 1.0'



DATE: 8/15/2005 TIME: 2:08:24 PM  
 FILENAME: K:\r-z\wast\cy\24390\Nwy-brdg\Nwy\p1-r-st\c200802.dwg

DRAWN BY: PJM  
 CHECKED BY: MAW

CERTIFIED BY: *Matthew A. Wannan*  
 LICENSED PROFESSIONAL ENGINEER LIC. NO. 26883 DATE 8/15/05

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POND GRADING PLAN  
 OTTER POND

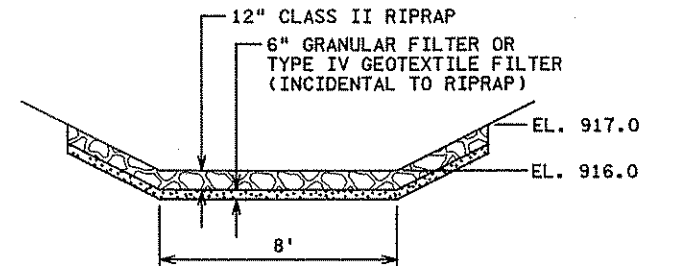
S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 144 of 296 Sheets

NWL=910.8  
BTM=905.0  
EL. 909.8

TYPICAL SECTION A-A

POINT NO.	X	Y	ELEV.
G120	451933.77	252757.04	905.00
G121	452036.27	252667.20	905.00
G122	452030.26	252658.45	905.00
G123	451966.79	252675.37	905.00
G124	451962.36	252680.76	905.00
G125	451929.55	252750.17	905.00
G126	451871.80	252729.65	917.00
G127	451886.76	252713.87	917.00
G128	451851.03	252701.75	911.00
G129	451877.53	252685.09	911.00
G130	451874.54	252675.87	911.00
G131	451844.38	252697.39	911.00

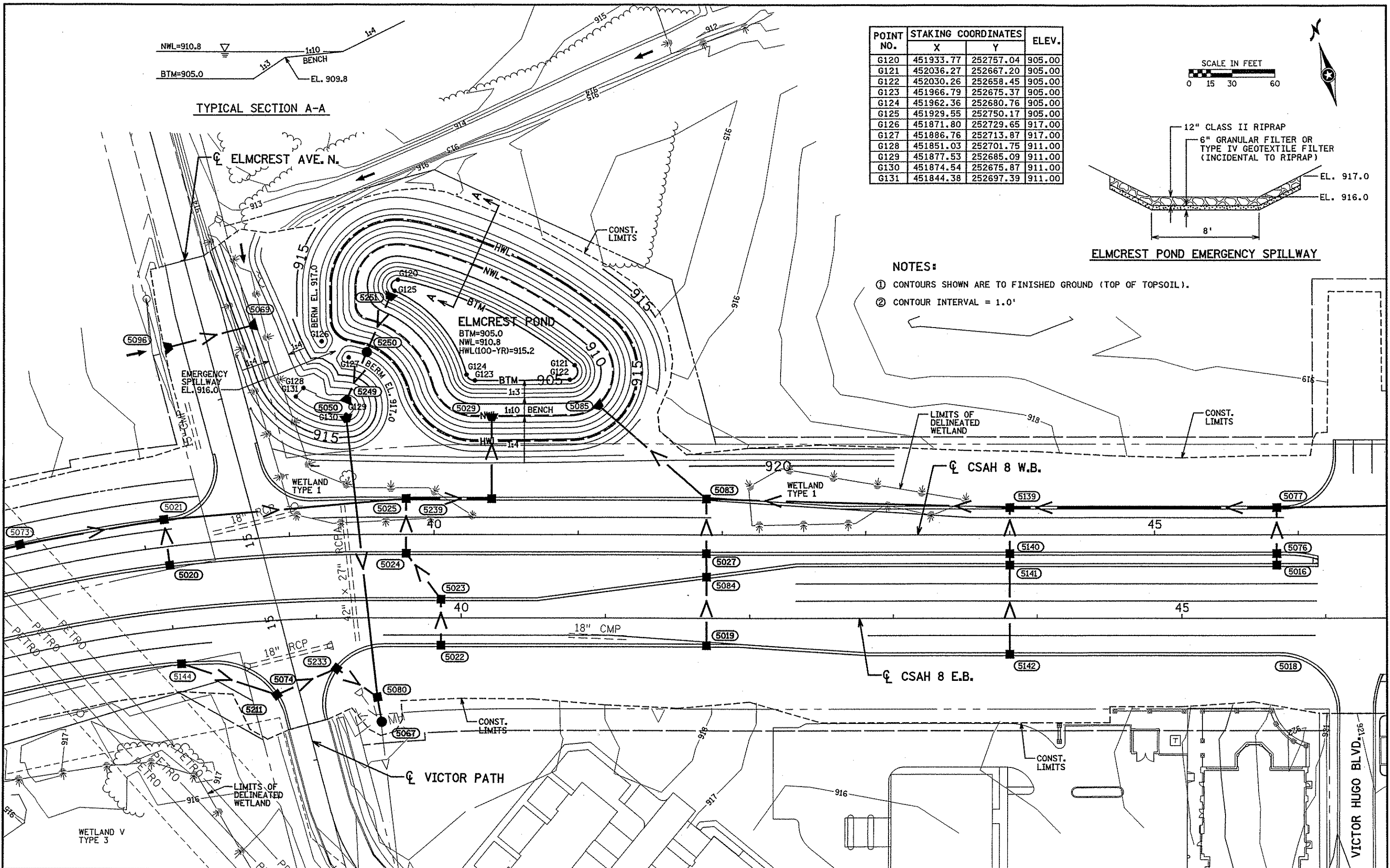
SCALE IN FEET  
0 15 30 60



ELMCREST POND EMERGENCY SPILLWAY

NOTES:

- ① CONTOURS SHOWN ARE TO FINISHED GROUND (TOP OF TOPSOIL).
- ② CONTOUR INTERVAL = 1.0'



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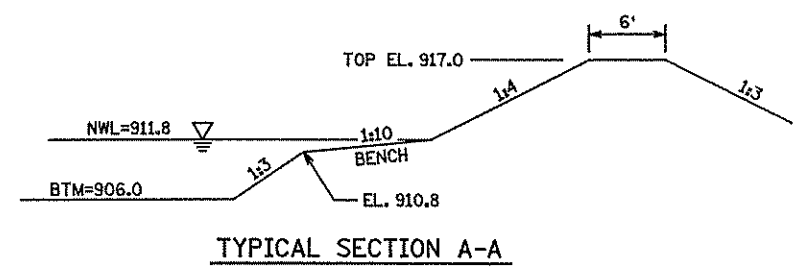
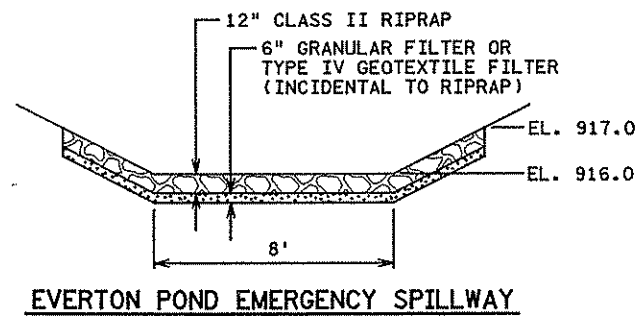
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CHECKED BY: MAW

CERTIFIED BY *Matthew D. Wanner* LIC. NO. 21883 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

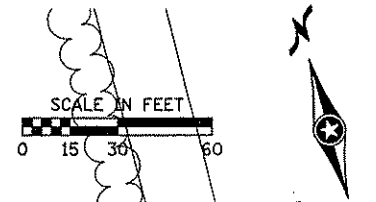
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POND GRADING PLAN  
ELMCREST POND

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 145 of 296 Sheets

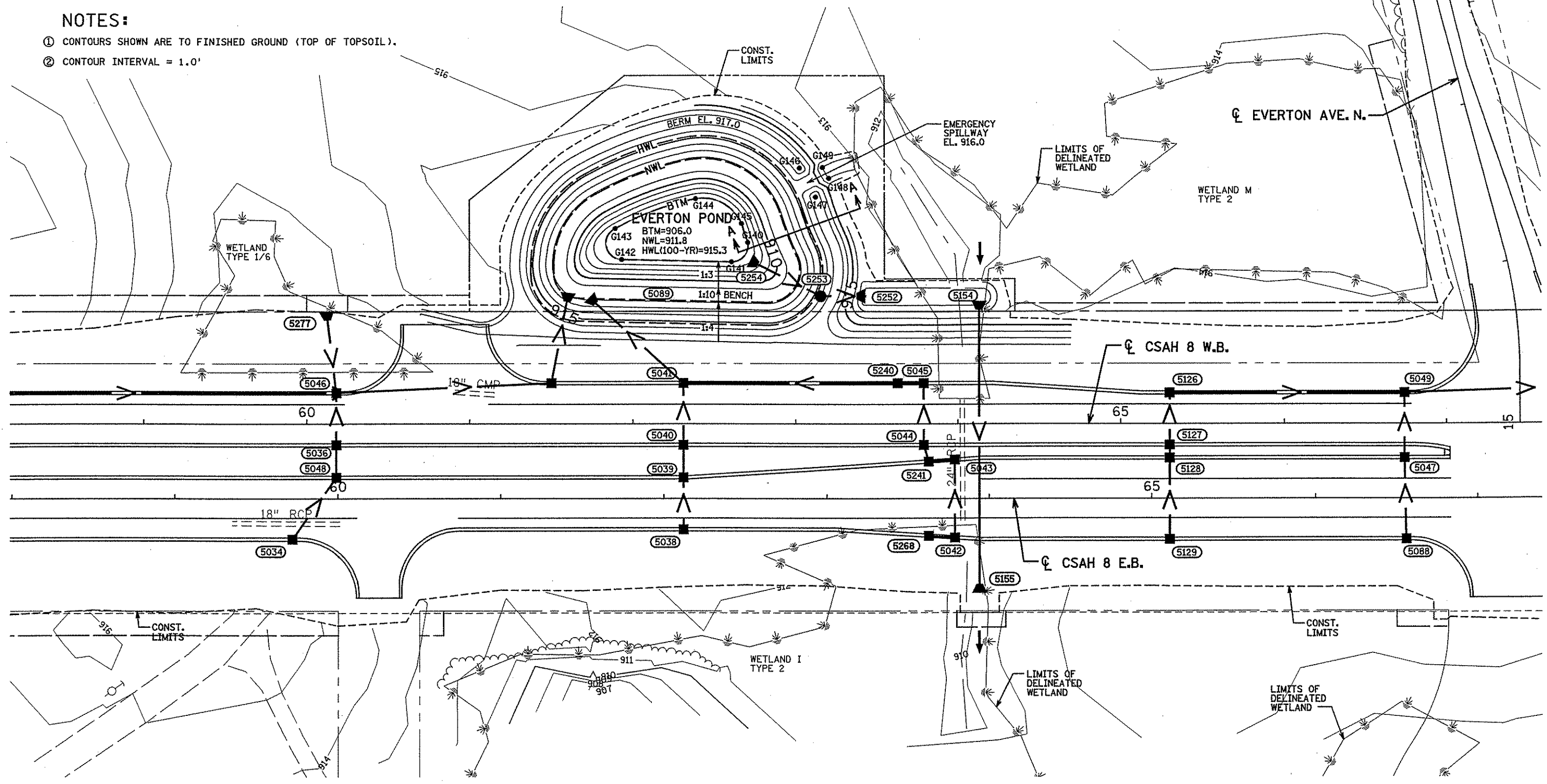


POINT NO.	STAKING COORDINATES		ELEV.
	X	Y	
G140	454128.30	252078.96	906.00
G141	454115.50	252070.05	906.00
G142	454050.90	252089.35	906.00
G143	454052.05	252108.80	906.00
G144	454104.59	252113.30	906.00
G145	454127.65	252091.15	906.00
G146	454171.08	252114.69	917.00
G147	454175.86	252094.84	917.00
G148	454186.74	252103.84	917.00
G149	454184.88	252111.28	917.00



**NOTES:**

- ① CONTOURS SHOWN ARE TO FINISHED GROUND (TOP OF TOPSOIL).
- ② CONTOUR INTERVAL = 1.0'



DATE: 8/15/2005 TIME: 2:08:31 PM  
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CHECKED BY: MAW

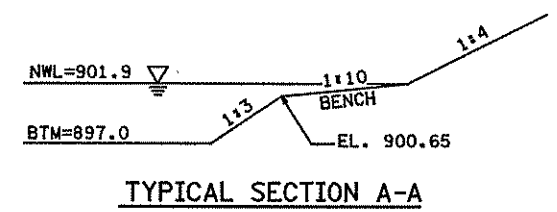
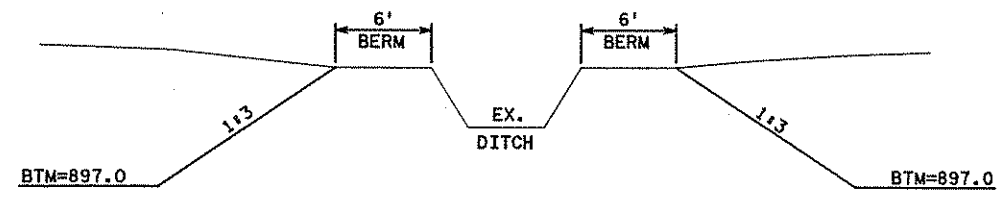
CERTIFIED BY *Math A. Worman* LIC. NO. 26883 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

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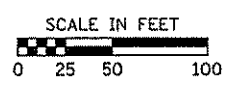
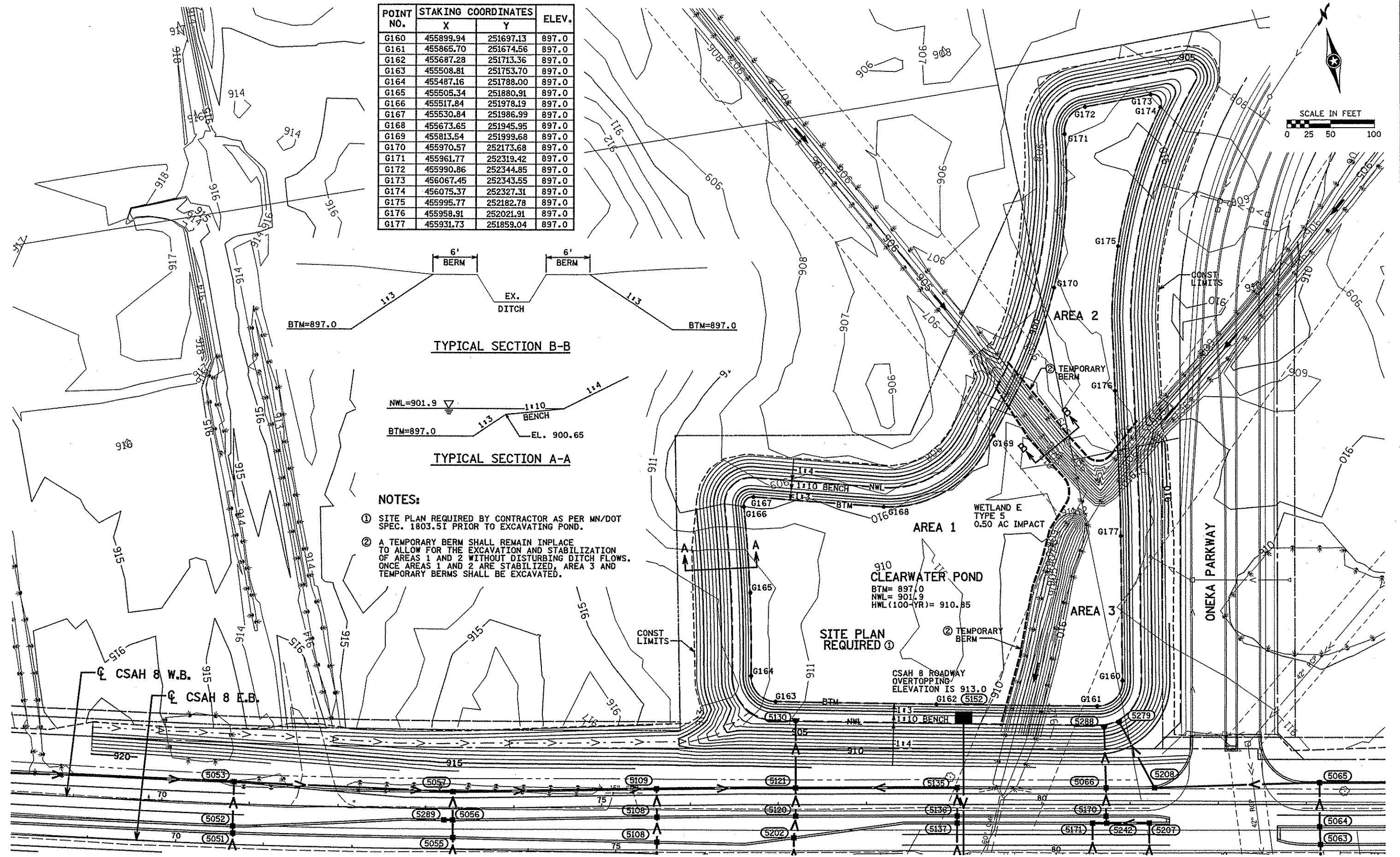
POND GRADING PLAN  
EVERTON POND

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 146 of 296 Sheets

POINT NO.	STAKING COORDINATES		ELEV.
	X	Y	
G160	455899.94	251697.13	897.0
G161	455865.70	251674.56	897.0
G162	455687.28	251713.36	897.0
G163	455508.81	251753.70	897.0
G164	455487.16	251788.00	897.0
G165	455505.34	251880.91	897.0
G166	455517.84	251978.19	897.0
G167	455530.84	251986.99	897.0
G168	455673.65	251945.95	897.0
G169	455813.54	251999.68	897.0
G170	455970.57	252173.68	897.0
G171	455961.77	252319.42	897.0
G172	455990.86	252344.85	897.0
G173	456067.45	252343.55	897.0
G174	456075.37	252327.31	897.0
G175	455995.77	252182.78	897.0
G176	455958.91	252021.91	897.0
G177	455931.73	251859.04	897.0

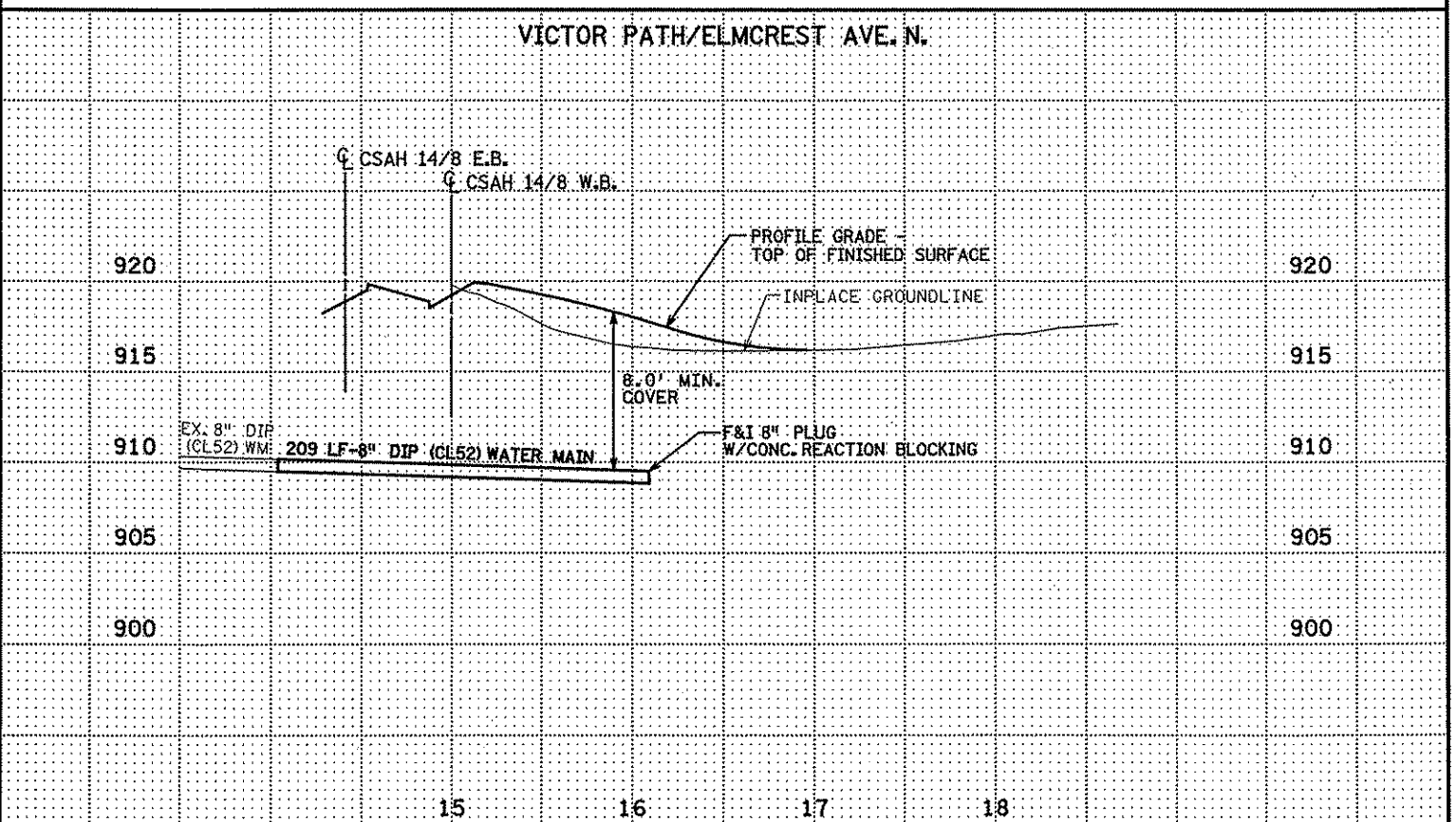
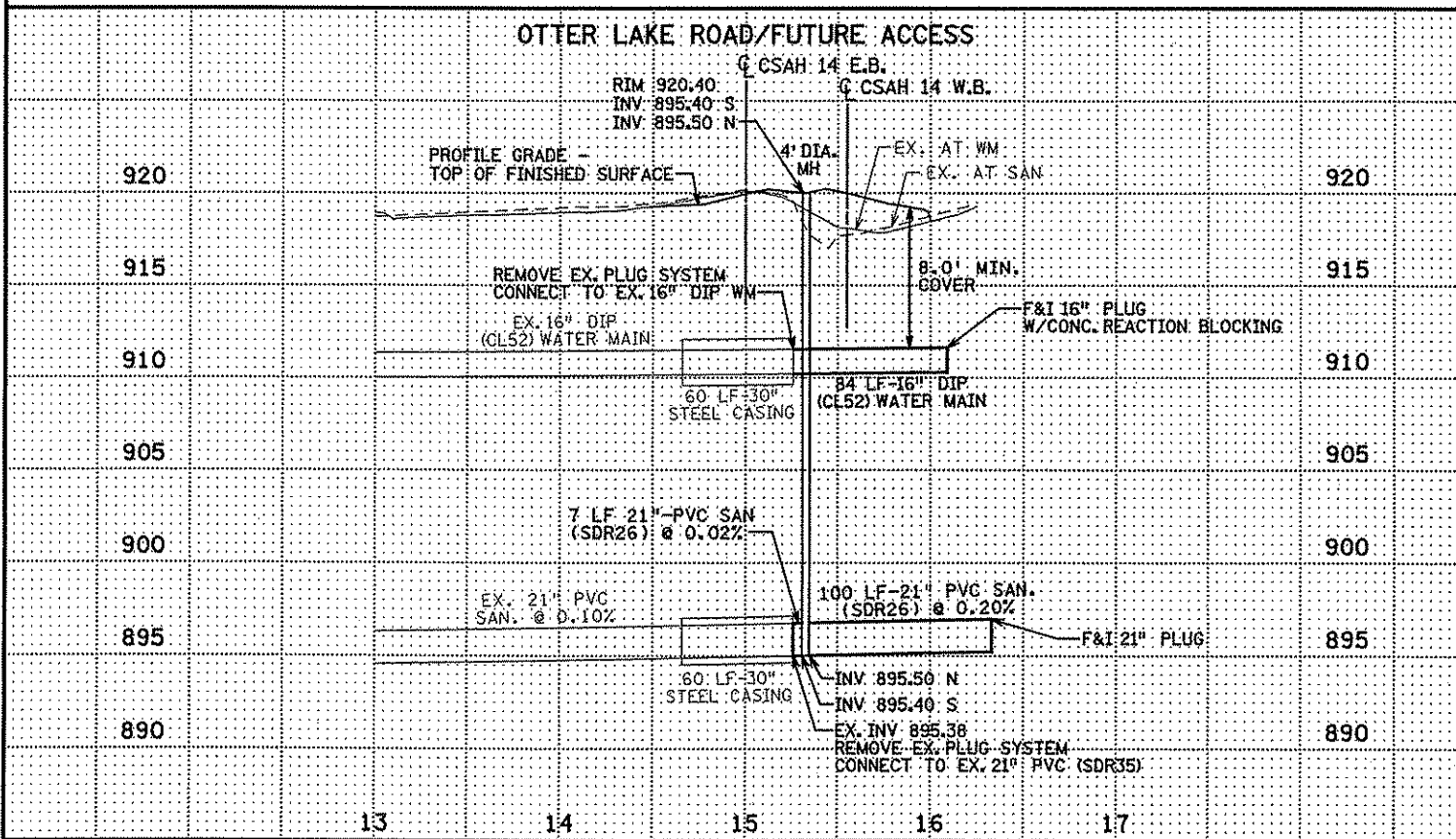
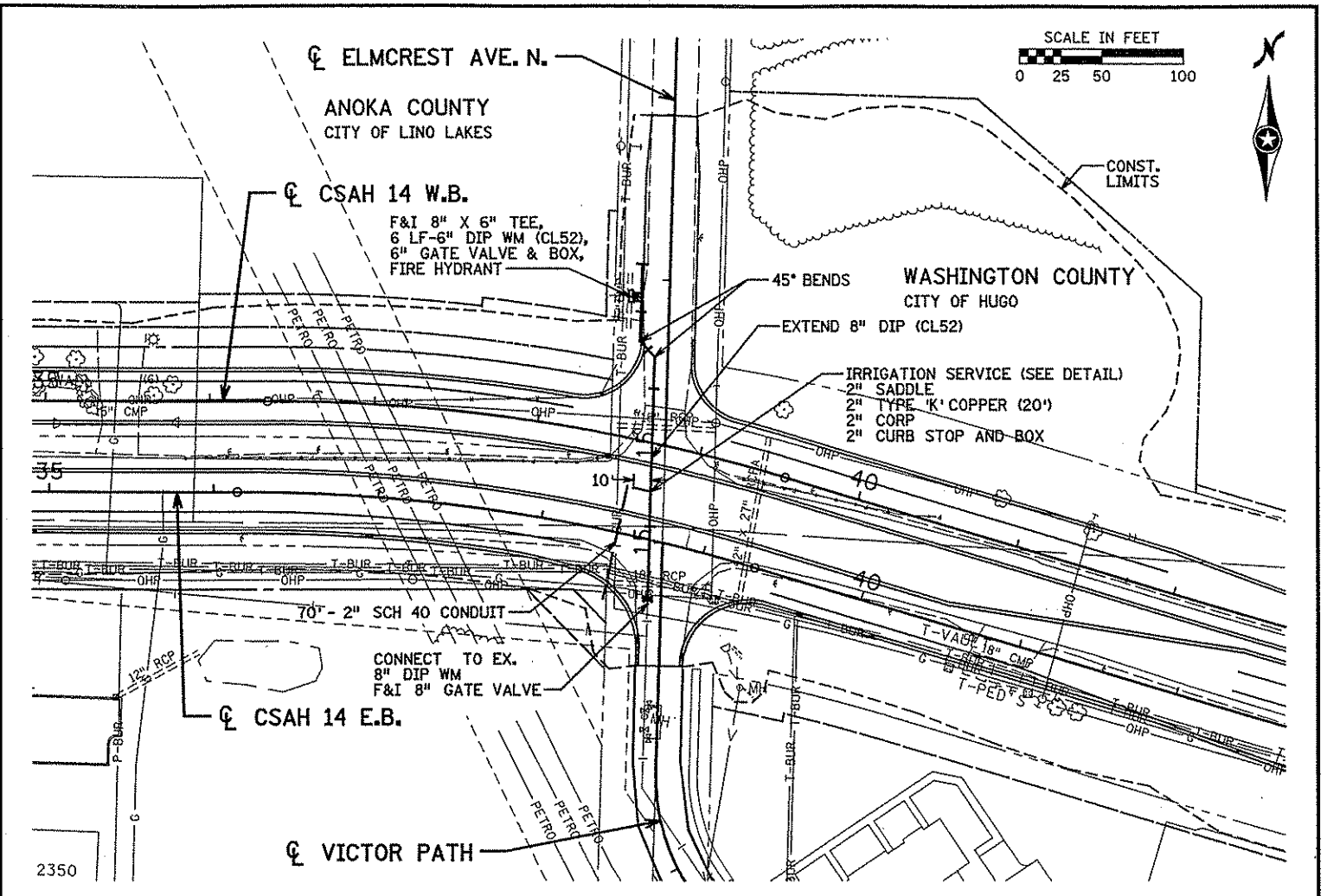
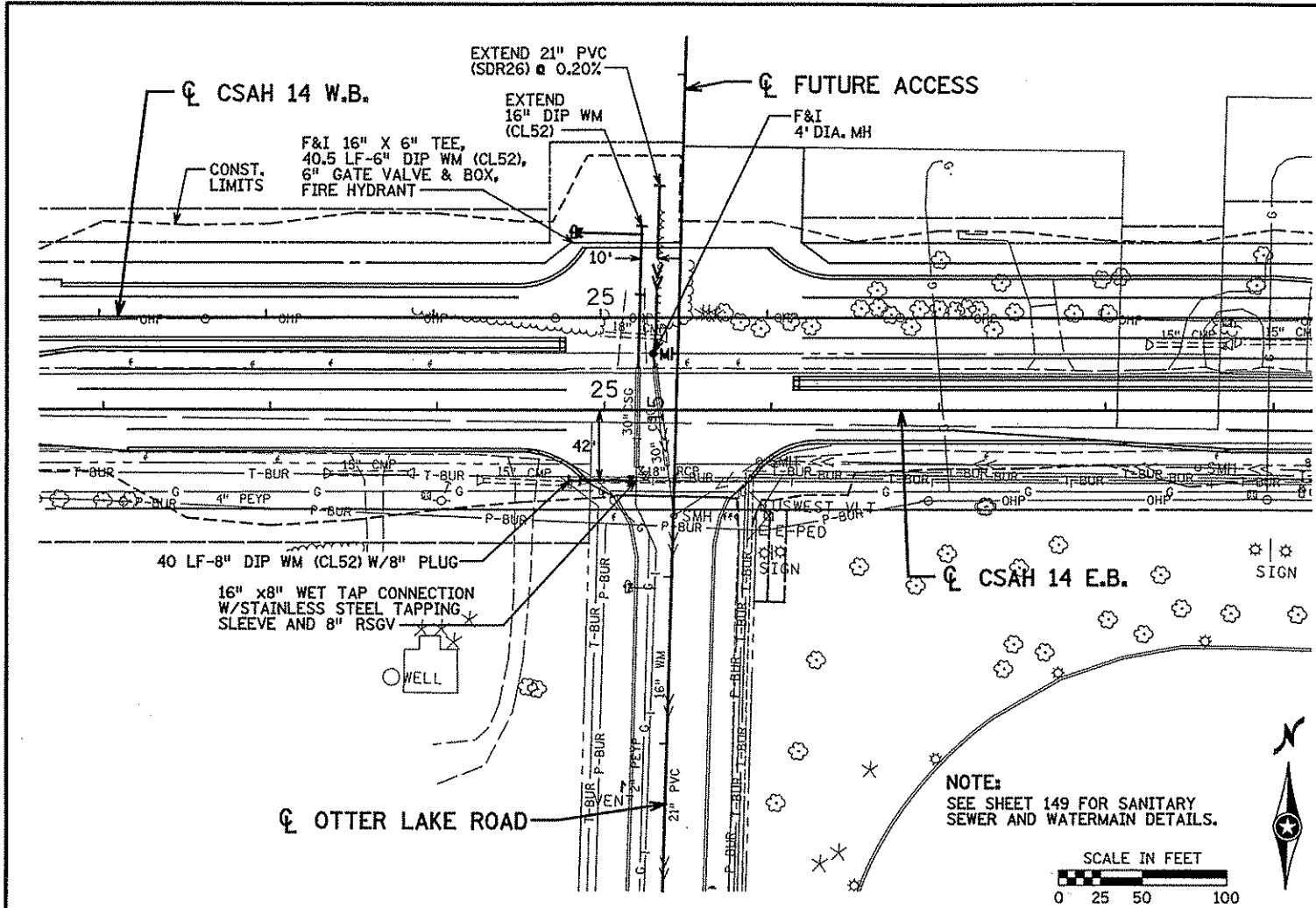


- NOTES:**
- ① SITE PLAN REQUIRED BY CONTRACTOR AS PER MN/DOT SPEC. 1803.5I PRIOR TO EXCAVATING POND.
  - ② A TEMPORARY BERM SHALL REMAIN INPLACE TO ALLOW FOR THE EXCAVATION AND STABILIZATION OF AREAS 1 AND 2 WITHOUT DISTURBING DITCH FLOWS. ONCE AREAS 1 AND 2 ARE STABILIZED, AREA 3 AND TEMPORARY BERMS SHALL BE EXCAVATED.



DATE: 8/5/2005 TIME: 2:08:36 PM  
FILENAME: K:\r-z\wastcy\24390\hwy-brdg\hwy\p1r-sit\c200802.pgd





DATE: 8/15/2005 TIME: 2:19:07 PM  
 FILENAME: K:\r-z\wast\cy\24390\wry-brdg\wry\p1r-sf\3205\lnotes-intersection2.dgn

DRAWN BY: SFH  
 CHECKED BY: PMW

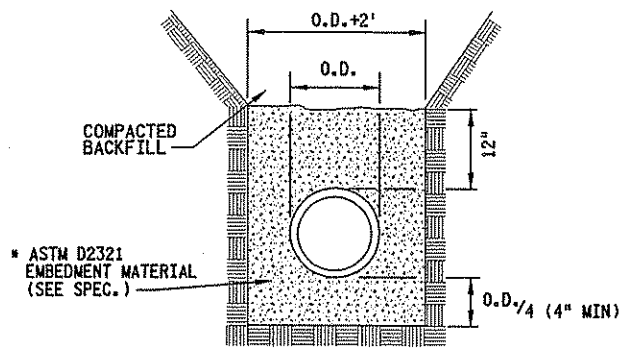
CERTIFIED BY: *Patrick M. Winkler* LIC. NO. 23381 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

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OTTER LAKE ROAD AND ELMCREST AVE. N.  
 LINO LAKES : SANITARY AND WATER MAIN EXTENSIONS

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 148 of 296 Sheets

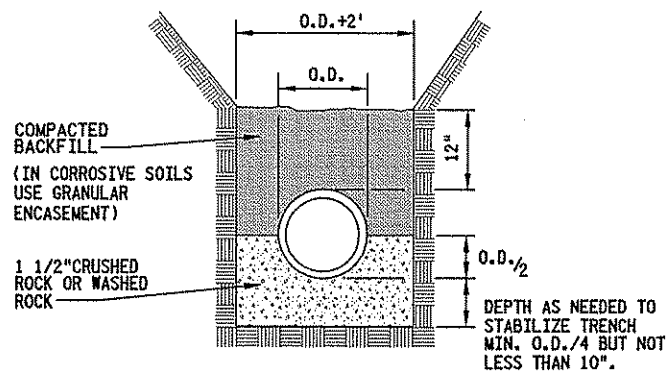




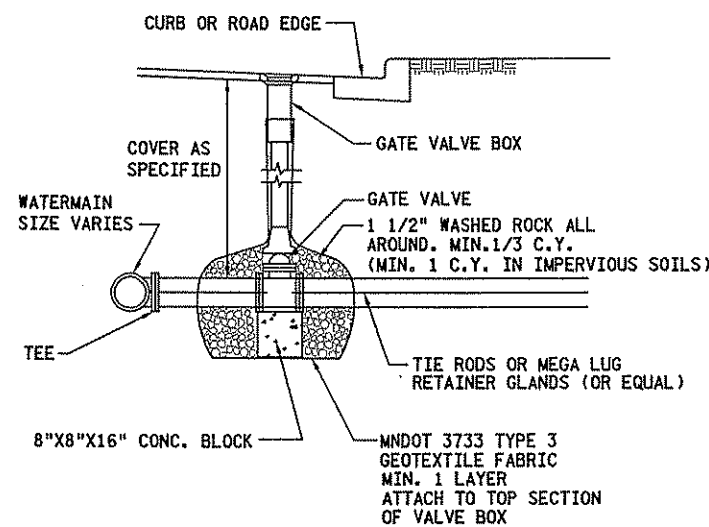
PIPE INSTALLATION IN ACCORDANCE WITH ASTM D 2321, TABLE 2.

\* EMBEDMENT MATERIAL SHALL CONFORM TO ASTM D2321, TABLE 1.

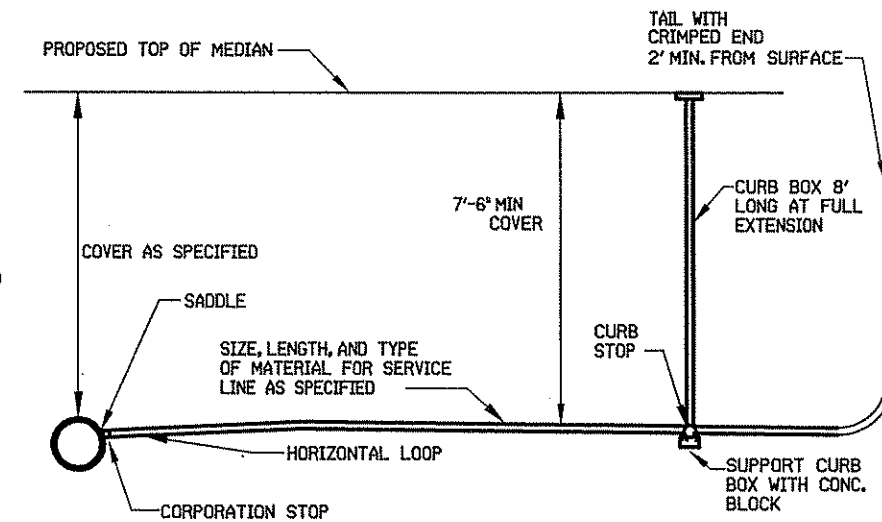
**GRANULAR MATERIAL BEDDING METHOD (FOR PVC PIPE)**



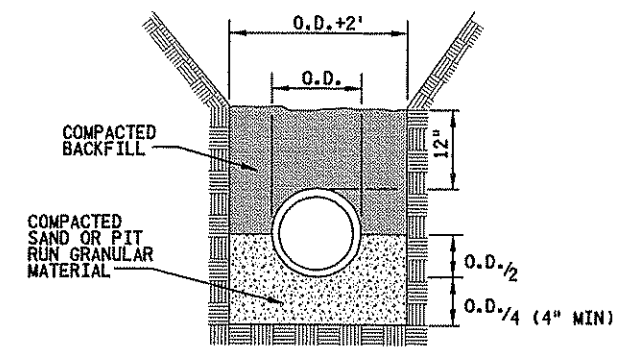
**SPECIAL FOUNDATION FOR STABILIZING OR DEWATERING OF TRENCH**



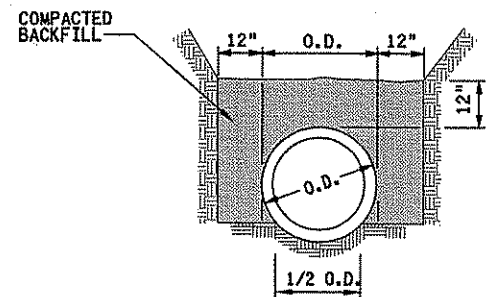
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**IRRIGATION SERVICE**

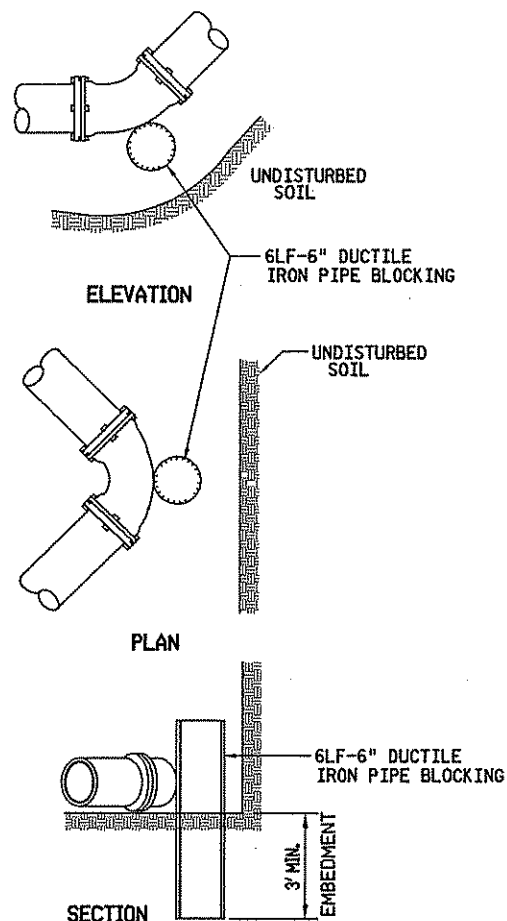


GRANULAR MATERIAL BEDDING

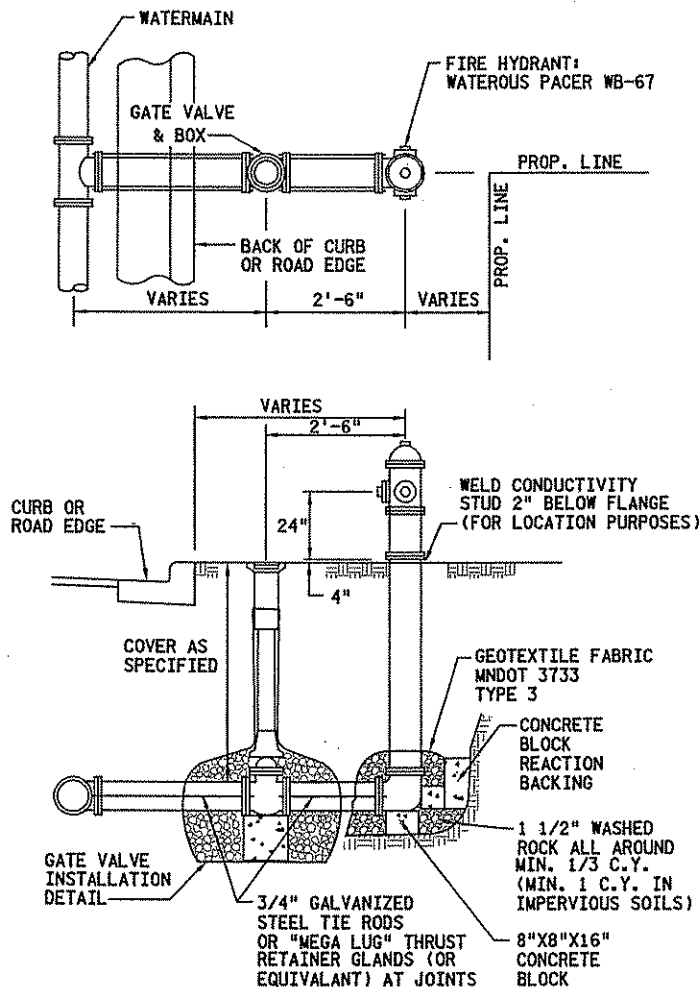


EARTH FOUNDATION

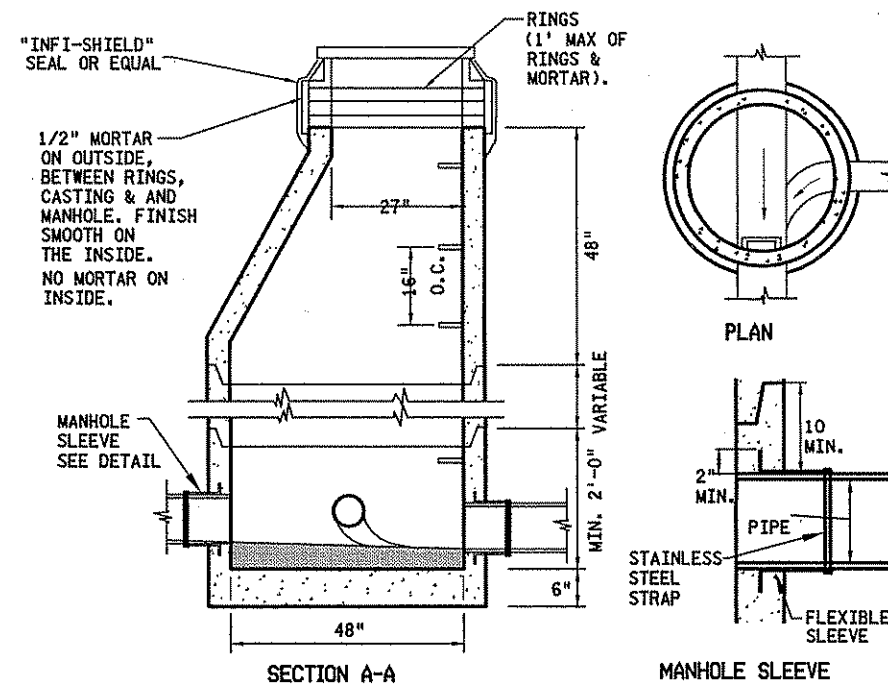
**PIPE FOUNDATION DETAILS**



**DUCTILE IRON PIPE REACTION BACKING (FOR BENDS)**



**TYPICAL HYDRANT LAYOUT WATEROUS PACER WB-67**



**SANITARY SEWER MANHOLE, TYPE 301 (PIPES 27" OR LESS)**

NO WOOD SHALL BE USED FOR ADJUSTING CASTING; CEMENT MORTAR ONLY. ADJUSTING RINGS MAY BE CONCRETE OR PLASTIC.  
 MANHOLE FRAME & COVER NEENAH R-1642-B OR APPROVED EQUIVALENT WITH TWO CONCEALED PICK HOLES.  
 MANHOLE STEPS SHALL BE CAST IRON, ALUMINUM OR STEEL REINFORCED PLASTIC, PER ASTM C478. STEP LOCATION SHALL BE AS NOTED IN THE SPECIFICATIONS.  
 PRECAST REINFORCED CONCRETE MANHOLE SECTIONS PER ASTM C478, FURNISHED WITH O-RING GASKETS AND LUBRICANT EXCEPT AS OTHERWISE SPECIFIED. A 12" OR 18" BARREL SECTION SHALL BE INSTALLED UNDER THE CONE WHENEVER POSSIBLE.  
 PIPE CONNECTIONS TO MANHOLE SHALL BE MADE WATER TIGHT BY CAST INPLACE RUBBER BOOT AND CEMENT MORTAR. INSIDE SURFACE SHALL BE FINISHED SMOOTH.

DATE: 8/15/2005 TIME: 2:19:11 PM  
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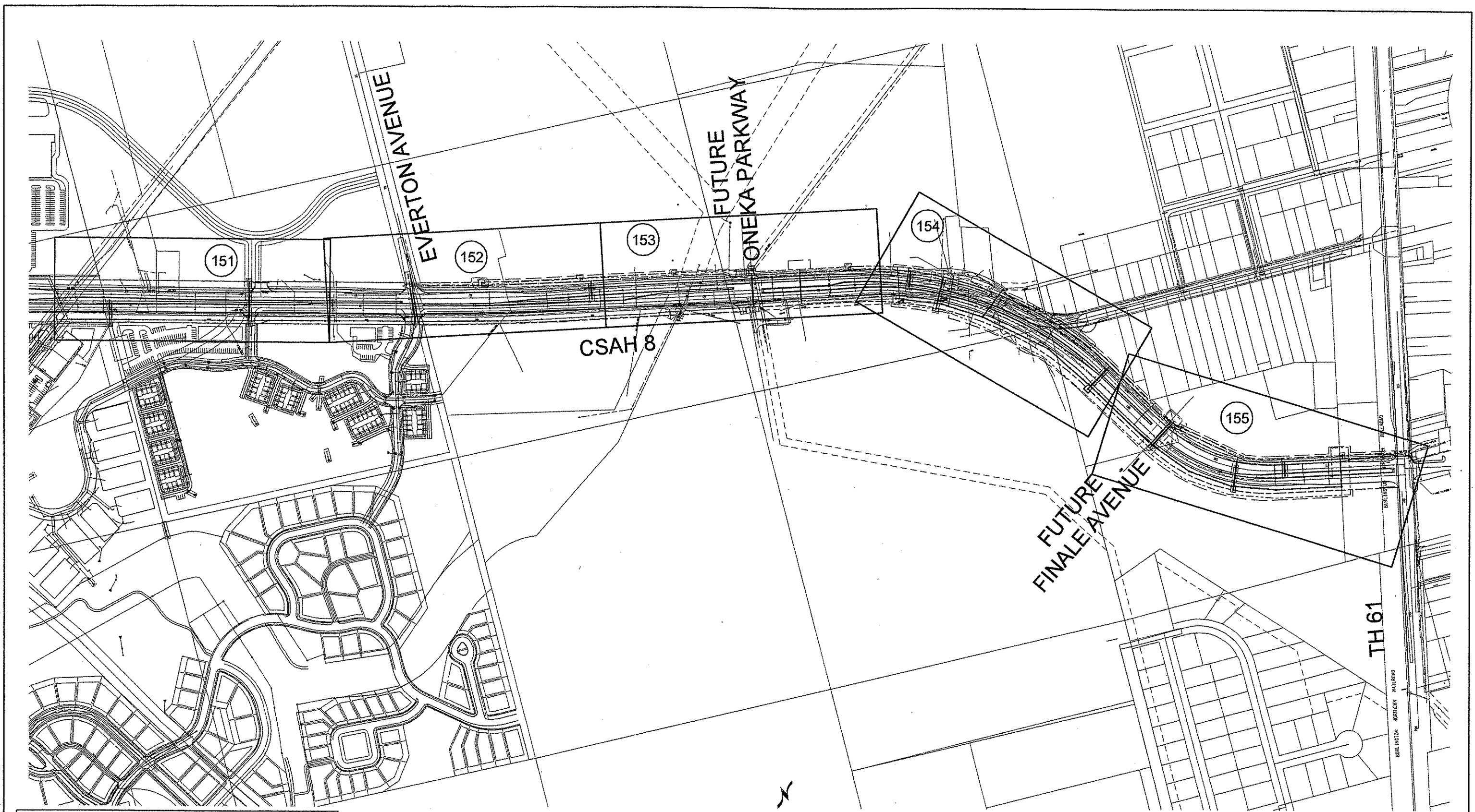
DRAWN BY: SFH  
 CHECKED BY: PMW

CERTIFIED BY *Pat M. Wondol* LIC. NO. 23381 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

**TKDA**  
 ENGINEERS · ARCHITECTS · PLANNERS

DETAILS  
 LINO LAKES : SANITARY SEWER AND WATER MAIN DETAILS

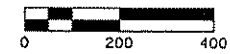
S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 149 of 296 Sheets



**EXCAVATION NOTICE SYSTEM**

A CALL TO GOPHER STATE ONE (651) 454-0002  
 REQUIRED A MINIMUM OF 48 HOURS PRIOR TO  
 PERFORMING ANY EXCAVATION

*THE INFORMATION SHOWN ON THESE DRAWINGS CONCERNING  
 TYPE AND LOCATION OF PRIVATE UTILITIES IS NOT GUARANTEED  
 TO BE ACCURATE OR ALL-INCLUSIVE. THE CONTRACTOR IS TO  
 DETERMINE THE TYPE AND LOCATION OF PRIVATE UTILITIES AS  
 MAY BE NECESSARY TO AVOID DAMAGE THERETO.*



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DRAWN BY: THC  
 CHECKED BY: MAE

CERTIFIED BY *Mark A. Ecker* LIC. NO. 40886 DATE 10/25/05  
 LICENSED PROFESSIONAL ENGINEER

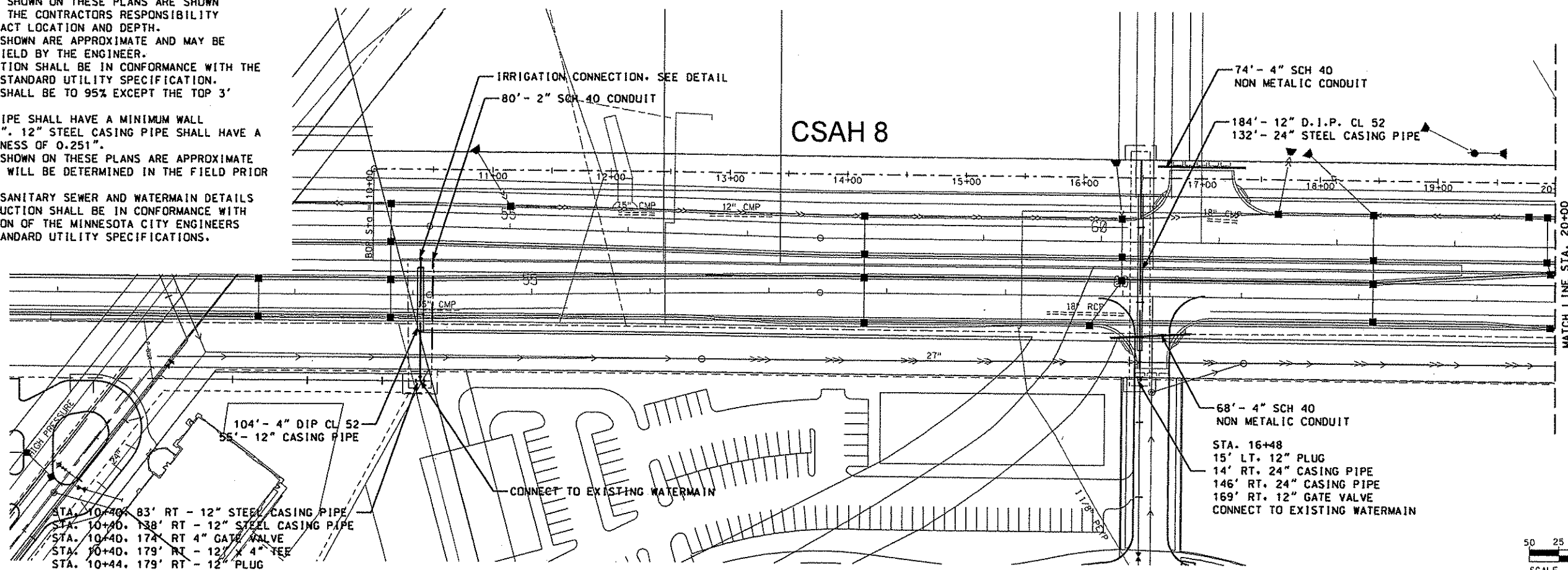


HUGO : SANITARY SEWER AND WATERMAIN  
 GENERAL LAYOUT

S.P. 224-020-01  
 Sheet No. 150 of 296 Sheets

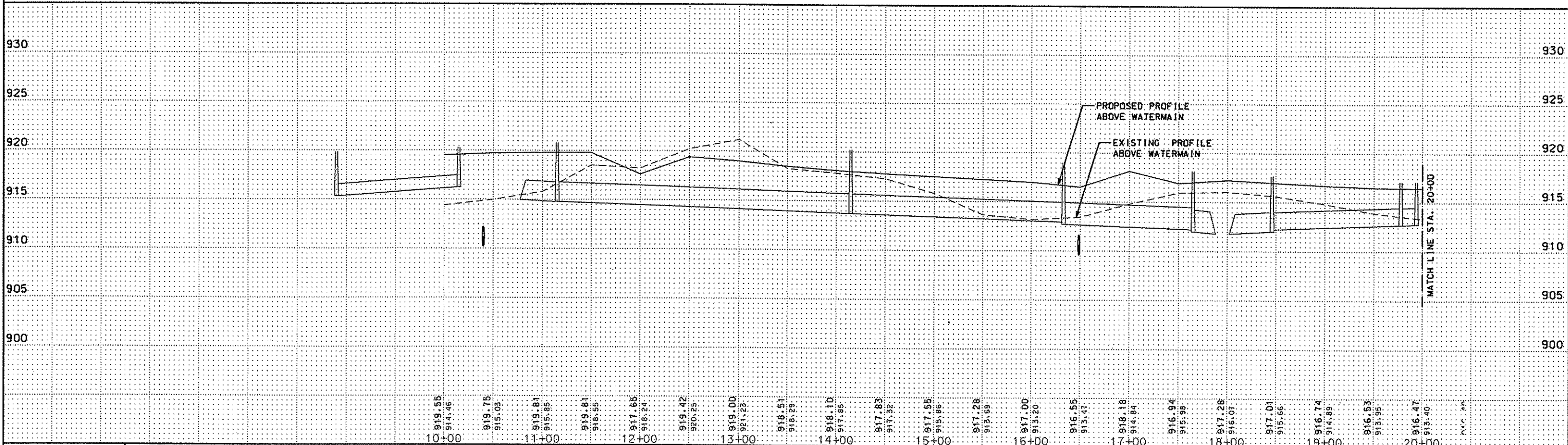
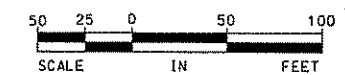
**NOTES:**

1. WATERMAIN LOWERING MAY BE REQUIRED AT UTILITY CROSSINGS. INSTALL 4" POLYSTYRENE INSULATION AND MAINTAIN 18" CLEARANCE BETWEEN UTILITIES.
2. EXISTING UTILITIES SHOWN ON THESE PLANS ARE SHOWN APPROXIMATE. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY THEIR EXACT LOCATION AND DEPTH.
3. SERVICE LOCATIONS SHOWN ARE APPROXIMATE AND MAY BE RELOCATED IN THE FIELD BY THE ENGINEER.
4. WATERMAIN CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE CURRENT MINNESOTA STANDARD UTILITY SPECIFICATION.
5. TRENCH COMPACTION SHALL BE TO 95% EXCEPT THE TOP 3" SHALL BE 100%.
6. 24" STEEL CASING PIPE SHALL HAVE A MINIMUM WALL THICKNESS OF 0.407". 12" STEEL CASING PIPE SHALL HAVE A MINIMUM WALL THICKNESS OF 0.251".
7. CONDUIT LOCATIONS SHOWN ON THESE PLANS ARE APPROXIMATE THE EXACT LOCATION WILL BE DETERMINED IN THE FIELD PRIOR TO CONSTRUCTION.
8. SEE SHEET 158 FOR SANITARY SEWER AND WATERMAIN DETAILS
9. ALL UTILITY CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE CURRENT ADDITION OF THE MINNESOTA CITY ENGINEERS ASSOCIATIONS OF STANDARD UTILITY SPECIFICATIONS.



- 104'-4" DIP CL 52  
55'-12" CASING PIPE
- STA. 10+40. 83' RT - 12" STEEL CASING PIPE
- STA. 10+40. 138' RT - 12" STEEL CASING PIPE
- STA. 10+40. 174' RT 4" GATE VALVE
- STA. 10+40. 179' RT - 12" X 4" TEE
- STA. 10+44. 179' RT - 12" PLUG

- 68'-4" SCH 40  
NON METALIC CONDUIT
- STA. 16+48  
15' LT. 12" PLUG  
14' RT. 24" CASING PIPE  
146' RT. 24" CASING PIPE  
169' RT. 12" GATE VALVE  
CONNECT TO EXISTING WATERMAIN



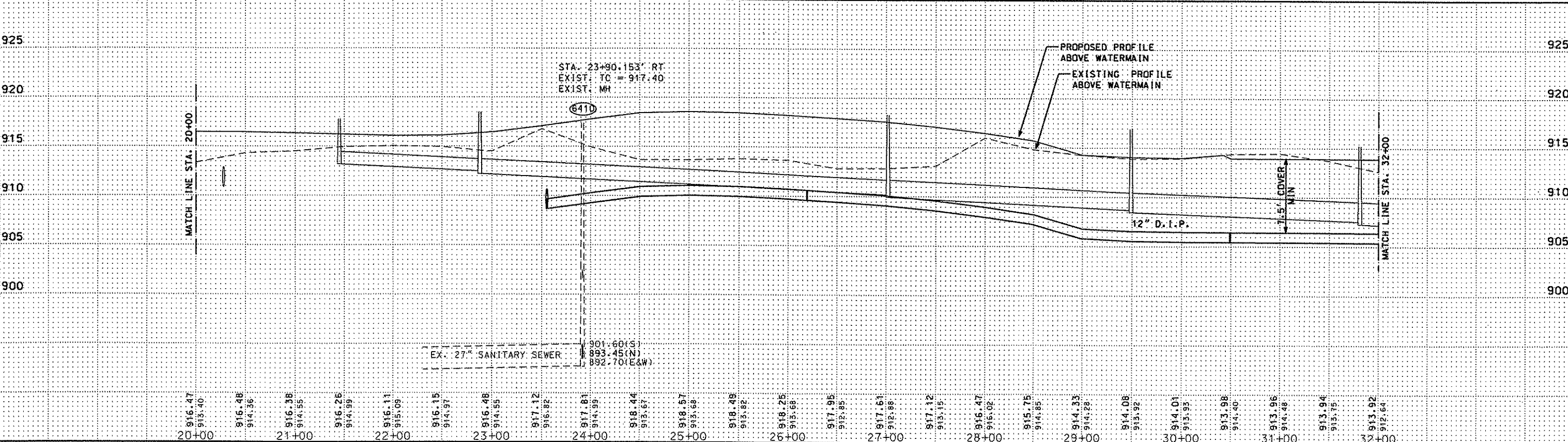
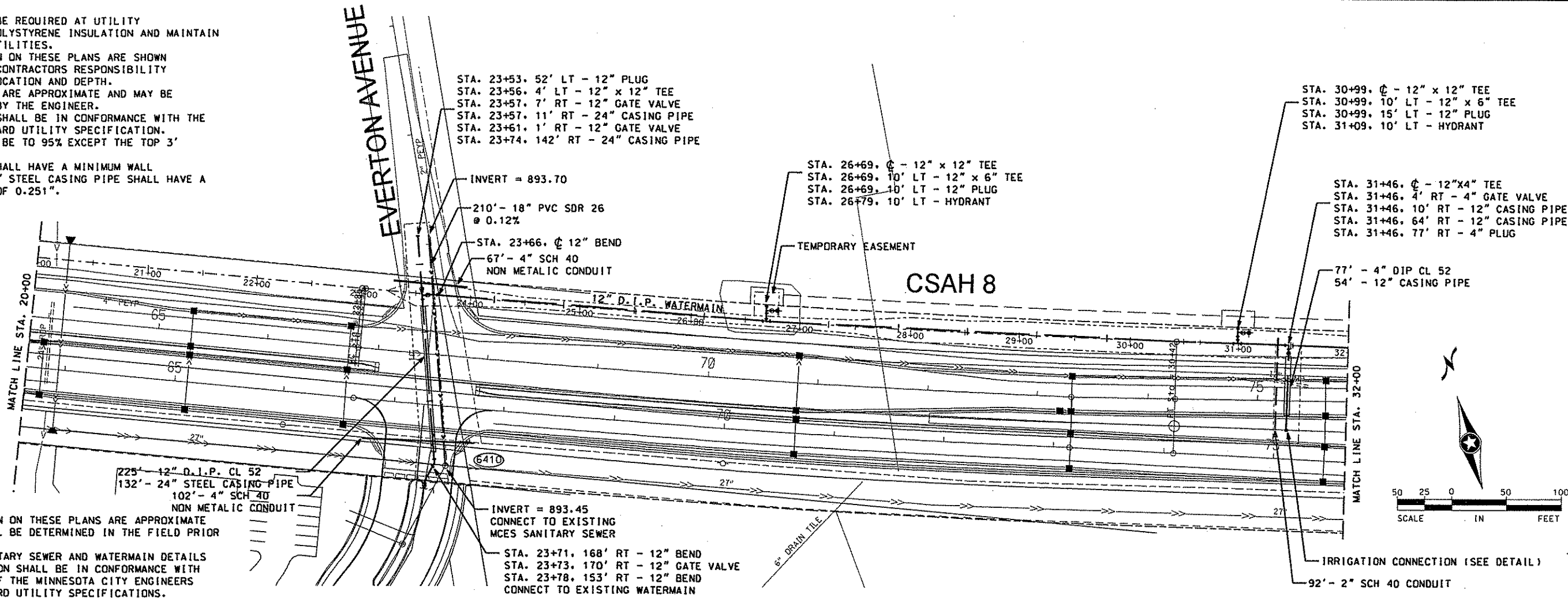
10+00	919.55 914.46	11+00	919.75 915.03	12+00	919.81 915.85	13+00	919.81 918.55	14+00	917.65 918.24	15+00	919.42 920.25	16+00	919.00 921.23	17+00	918.51 918.29	18+00	918.10 917.85	19+00	917.83 917.32	20+00	917.55 915.85	917.28 913.69	917.00 913.20	916.55 913.47	918.18 914.84	916.94 915.98	917.28 916.01	917.01 915.66	916.74 914.89	916.53 915.95	916.47 913.40
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**NOTES:**

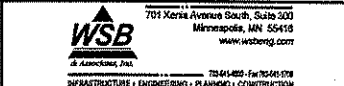
1. WATERMAIN LOWERING MAY BE REQUIRED AT UTILITY CROSSINGS. INSTALL 4" POLYSTYRENE INSULATION AND MAINTAIN 18" CLEARANCE BETWEEN UTILITIES.
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DRAWN BY: THC  
CHECKED BY: MAE

CERTIFIED BY *Mark A. Erickson* LIC. NO. 40886 DATE 10/25/05  
LICENSED PROFESSIONAL ENGINEER



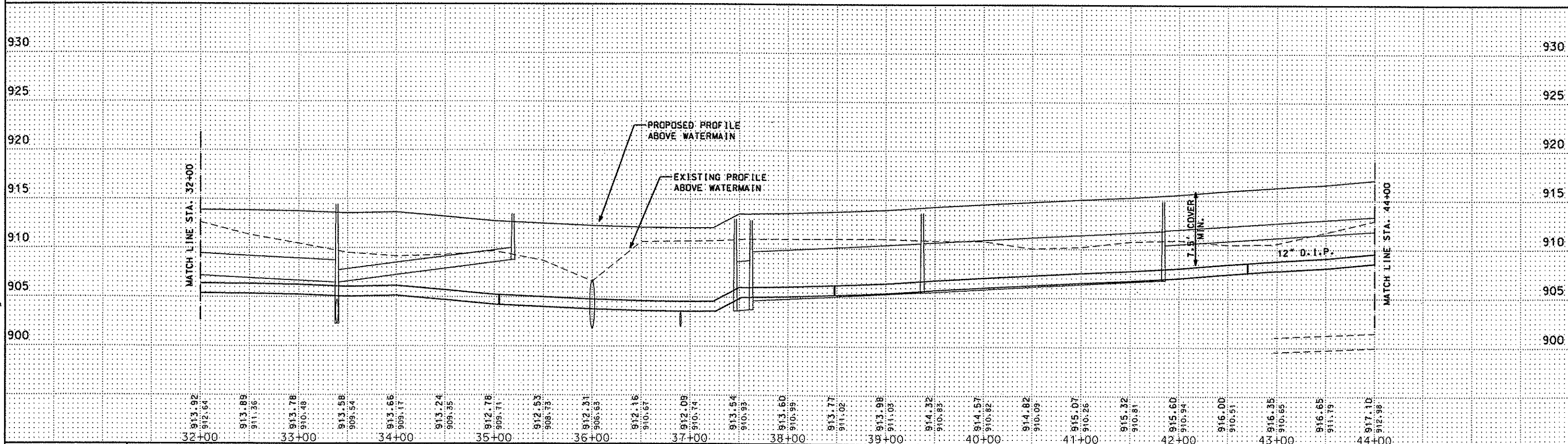
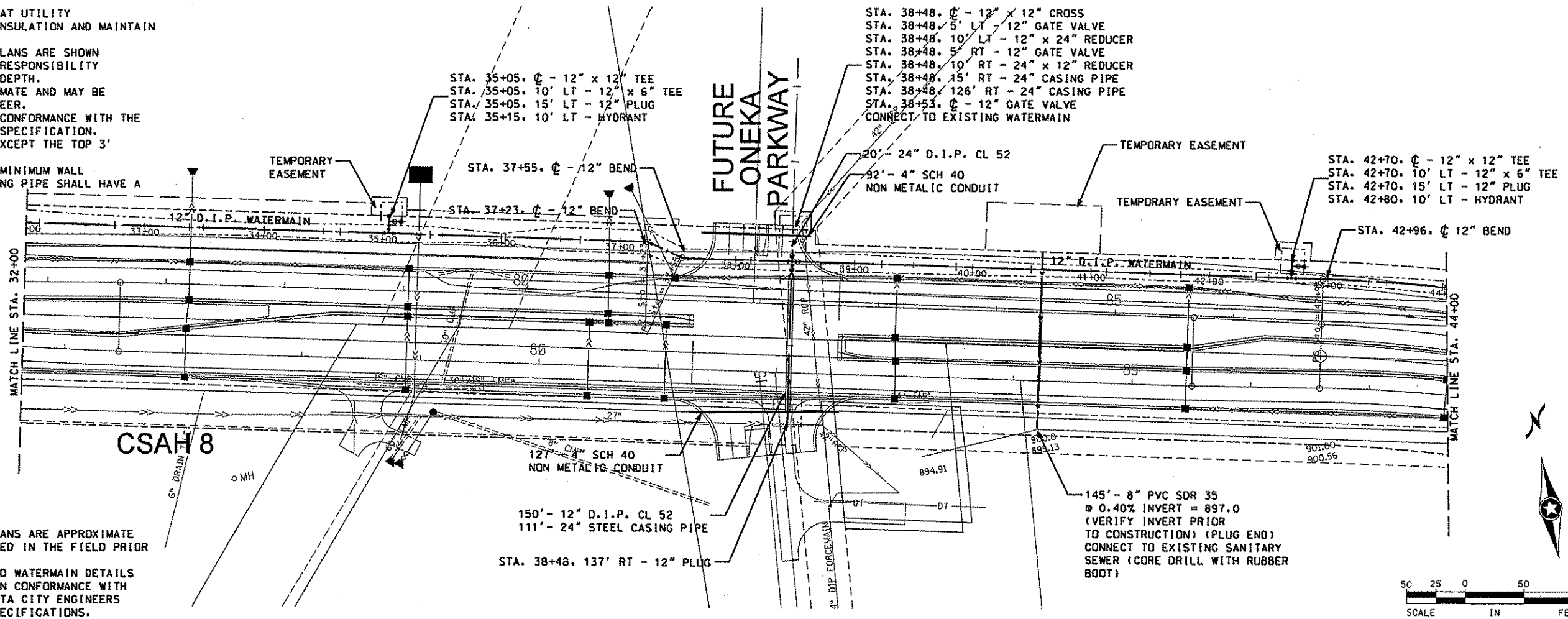
HUGO : SANITARY SEWER AND WATERMAIN CONSTRUCTION

S.P. 224-020-01  
Sheet No. 152 of 296 Sheets



**NOTES:**

1. WATERMAIN LOWERING MAY BE REQUIRED AT UTILITY CROSSINGS. INSTALL 4" POLYSTYRENE INSULATION AND MAINTAIN 18" CLEARANCE BETWEEN UTILITIES.
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DRAWN BY: THC  
 CHECKED BY: MAE

CERTIFIED BY *Mark A. Evershaw*  
 LIC. NO. 40886 DATE 10/25/05  
 LICENSED PROFESSIONAL ENGINEER



**HUGO : SANITARY SEWER AND WATERMAIN CONSTRUCTION**

S.P. 224-020-01  
 Sheet No. 153 of 296 Sheets



**NOTES:**

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140' - 4" PVC SDR 26 WITH 18" x 4" WYE. VERIFY EXACT LOCATION AND ELEVATION PRIOR TO INSTALLATION - CONNECT TO EXISTING SANITARY SEWER

STA. 46+83, C - 12" GATE VALVE  
 STA. 46+88, C - 12" x 12" TEE  
 STA. 46+88, 5' RT - 12" GATE VALVE  
 STA. 46+88, 6' RT - 24" CASING PIPE  
 STA. 46+88, 127' RT - 24" CASING PIPE  
 STA. 46+88, 139' RT - 10" x 6" TEE  
 STA. 46+88, 144' RT - 12" PLUG  
 STA. 46+98, 139' RT - HYDRANT

126' - 4" PVC SDR 26 WITH 18" x 4" WYE. VERIFY EXACT LOCATION AND ELEVATION PRIOR TO INSTALLATION - CONNECT TO EXISTING SANITARY SEWER

STA. 45+44, C - 12" x 4" TEE  
 STA. 45+44, 4' RT - 4" GATE VALVE  
 STA. 45+44, 10' RT - 12" CASING PIPE  
 STA. 45+44, 56' RT - 12" CASING PIPE  
 STA. 45+44, 65' RT - 4" PLUG

65' - 4" DIP CL 52  
 46' - 12" CASING PIPE  
 IRRIGATION CONNECTION (SEE DETAIL)  
 80' - 2" SCH 40 CONDUIT

STA. 49+54, 34' LT EXIST. MH INVERT = 911.25 (VERIFY PRIOR TO CONSTRUCTION) CONNECT TO EXISTING SANITARY SEWER

EX. 18" RCP SAN. SEWER

STA. 49+86, C 12" BEND

**CSAH 8**

TEMPORARY EASEMENT

STA. 51+14, C - 12" x 12" TEE  
 STA. 51+14, 15' LT - 12" PLUG  
 STA. 51+14, 28' LT - 12" PLUG  
 STA. 51+24, 15' LT - HYDRANT

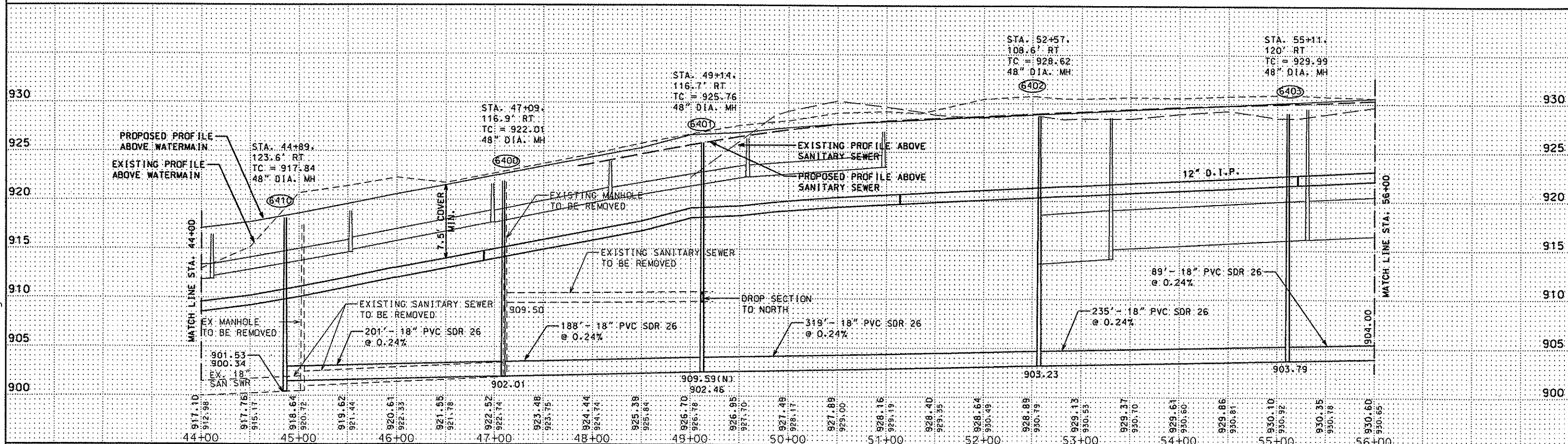
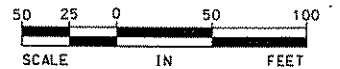
STA. 55+17, C - 12" GATE VALVE  
 STA. 55+22, C - 12" x 12" TEE  
 STA. 55+22, 5' RT - 12" GATE VALVE  
 STA. 55+22, 7' RT - 24" CASING PIPE  
 STA. 55+22, 124' RT - 24" CASING PIPE  
 STA. 55+22, 135' RT - 12" x 6" TEE  
 STA. 55+22, 140' RT - 12" PLUG  
 STA. 55+32, 135' RT - HYDRANT

135' - 12" D.I.P. CL 52  
 117' - 24" STEEL CASING PIPE

TEMPORARY EASEMENT

MATCH LINE STA. 44+00

MATCH LINE STA. 56+00



DRAWN BY: THC  
 CHECKED BY: MAE

CERTIFIED BY *Mark A. Emswiler* LIC. NO. 40886 DATE 10/25/05  
 LICENSED PROFESSIONAL ENGINEER



**HUGO : SANITARY SEWER AND WATERMAIN CONSTRUCTION**

S.P. 224-020-01  
 Sheet No. 154 of 296 Sheets

**NOTES:**

1. WATERMAIN LOWERING MAY BE REQUIRED AT UTILITY CROSSINGS. INSTALL 4" POLYSTYRENE INSULATION AND MAINTAIN 18" CLEARANCE BETWEEN UTILITIES.
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5. TRENCH COMPACTION SHALL BE TO 95% EXCEPT THE TOP 3" SHALL BE 100%.

- STA. 69+58, 1' LT - CONNECT TO EX. WM
- STA. 69+58, 0' - 12" x 8" REDUCER
- STA. 69+63, 0' - 8" GATE VALVE
- STA. 69+68, 0' - 8" TEE
- STA. 69+68, 5' RT - 8" GATE VALVE
- STA. 69+68, 6' RT - CONNECT TO EX. WM
- 70' - 4" SCH 40 NON METALIC CONDUIT

- STA. 58+88, 0' - 12" GATE VALVE
- STA. 58+93, 0' - 12" x 12" CROSS
- STA. 58+93, 5' LT - 12" GATE VALVE
- STA. 58+93, 15' LT - 12" PLUG
- STA. 58+93, 5' RT - 12" GATE VALVE
- STA. 58+93, 4' RT - 24" CASING PIPE
- STA. 58+93, 124' RT - 24" CASING PIPE
- STA. 58+93, 135' RT - 12" PLUG

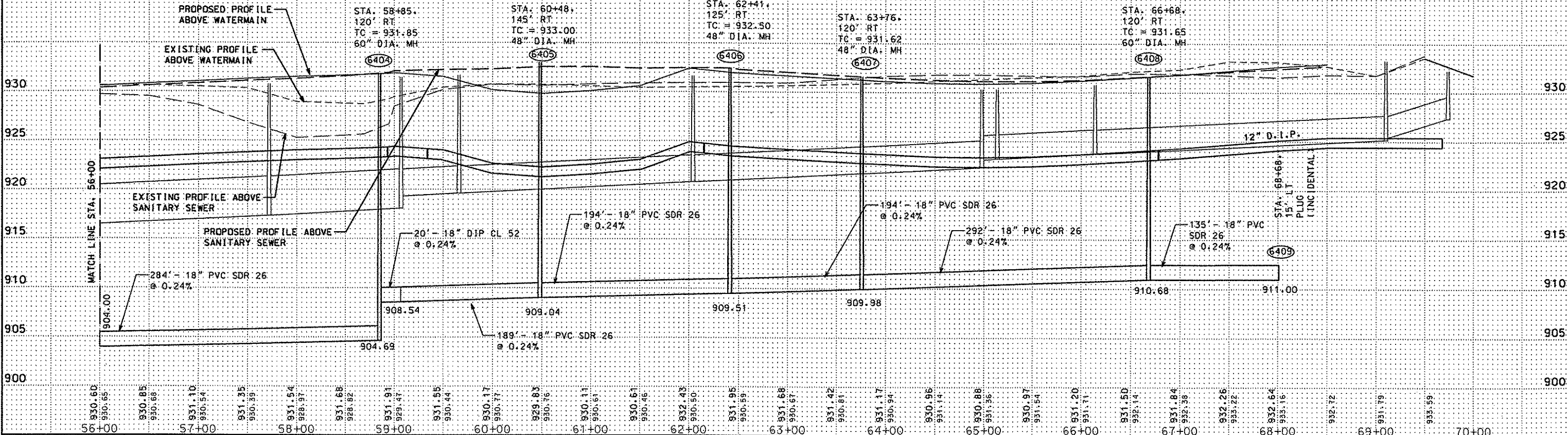
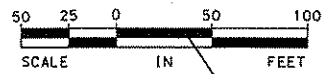
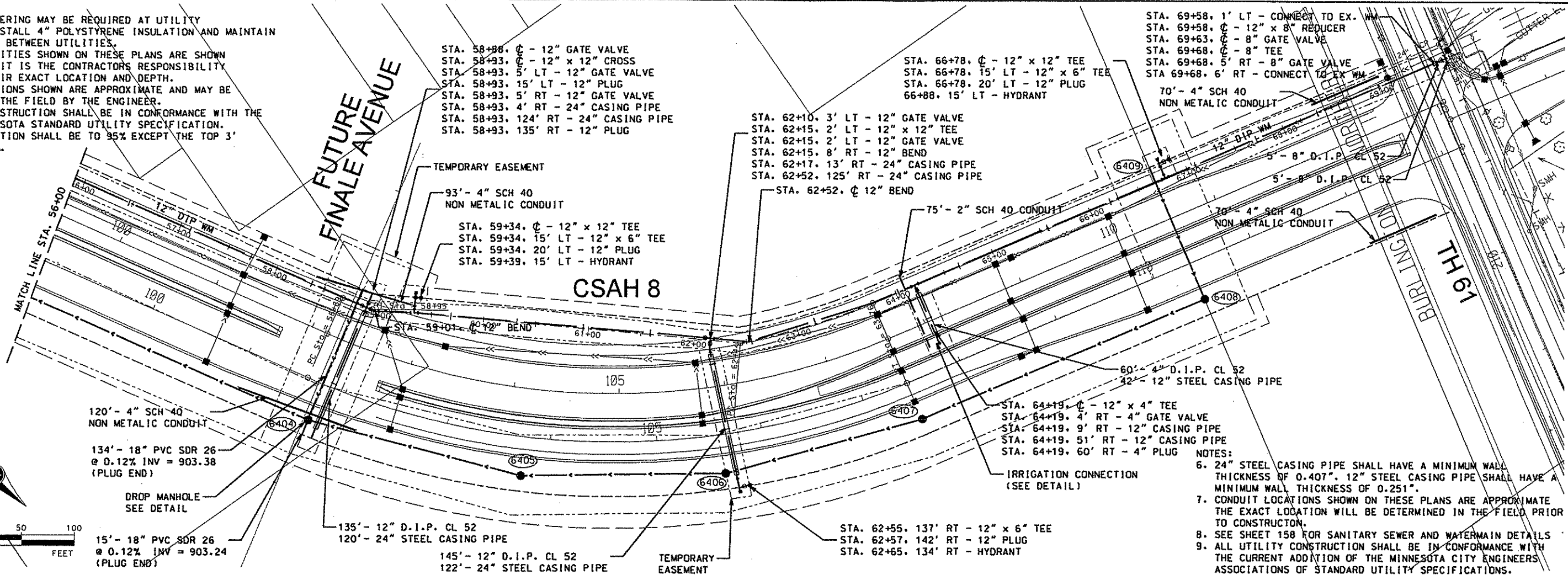
- STA. 66+78, 0' - 12" x 12" TEE
- STA. 66+78, 15' LT - 12" x 6" TEE
- STA. 66+78, 20' LT - 12" PLUG
- 66+88, 15' LT - HYDRANT

- STA. 62+10, 3' LT - 12" GATE VALVE
- STA. 62+15, 2' LT - 12" x 12" TEE
- STA. 62+15, 2' LT - 12" GATE VALVE
- STA. 62+15, 8' RT - 12" BEND
- STA. 62+17, 13' RT - 24" CASING PIPE
- STA. 62+52, 125' RT - 24" CASING PIPE
- STA. 62+52, 0' 12" BEND

- 93' - 4" SCH 40 NON METALIC CONDUIT
- STA. 59+34, 0' - 12" x 12" TEE
- STA. 59+34, 15' LT - 12" x 6" TEE
- STA. 59+34, 20' LT - 12" PLUG
- STA. 59+39, 15' LT - HYDRANT

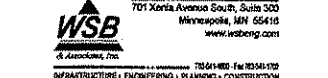
- STA. 64+19, 0' - 12" x 4" TEE
- STA. 64+19, 4' RT - 4" GATE VALVE
- STA. 64+19, 9' RT - 12" CASING PIPE
- STA. 64+19, 51' RT - 12" CASING PIPE
- STA. 64+19, 60' RT - 4" PLUG

- NOTES:**
6. 24" STEEL CASING PIPE SHALL HAVE A MINIMUM WALL THICKNESS OF 0.407". 12" STEEL CASING PIPE SHALL HAVE A MINIMUM WALL THICKNESS OF 0.251".
  7. CONDUIT LOCATIONS SHOWN ON THESE PLANS ARE APPROXIMATE THE EXACT LOCATION WILL BE DETERMINED IN THE FIELD PRIOR TO CONSTRUCTION.
  8. SEE SHEET 158 FOR SANITARY SEWER AND WATERMAIN DETAILS
  9. ALL UTILITY CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE CURRENT ADDITION OF THE MINNESOTA CITY ENGINEERS ASSOCIATIONS OF STANDARD UTILITY SPECIFICATIONS.



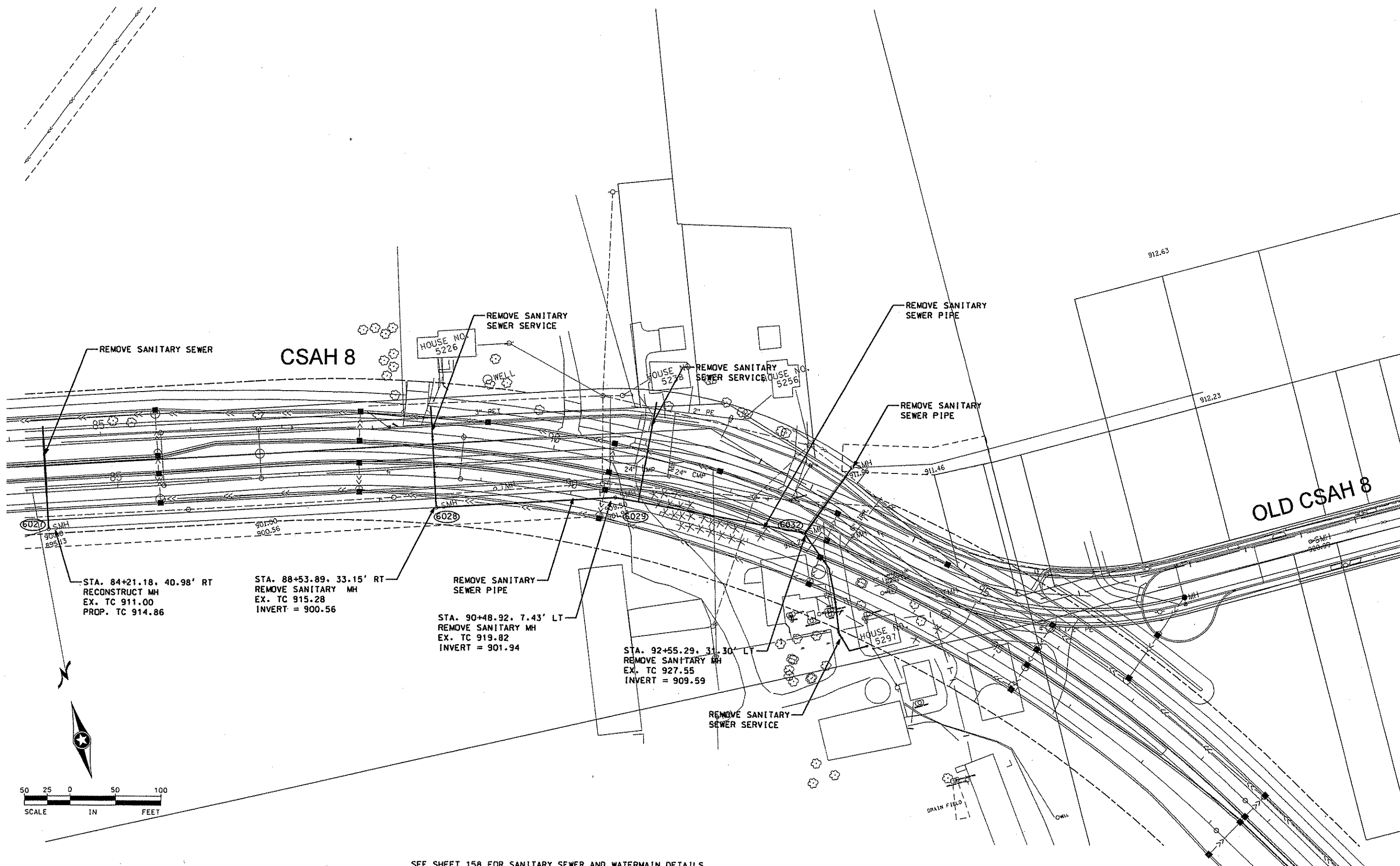
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CHECKED BY: MAE

CERTIFIED BY *Mark A. Evenson* LIC. NO. 40886 DATE 10/25/05  
LICENSED PROFESSIONAL ENGINEER



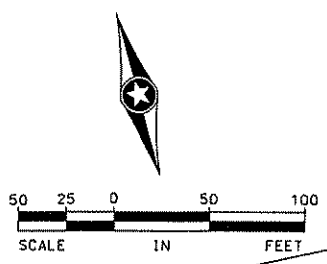
**HUGO : SANITARY SEWER AND WATERMAIN CONSTRUCTION**

S.P. 224-020-01  
Sheet No. 155 of 296 Sheets



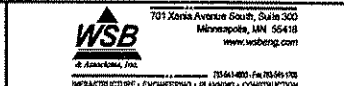
SEE SHEET 158 FOR SANITARY SEWER AND WATERMAIN DETAILS

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 CHECKED BY: MAE

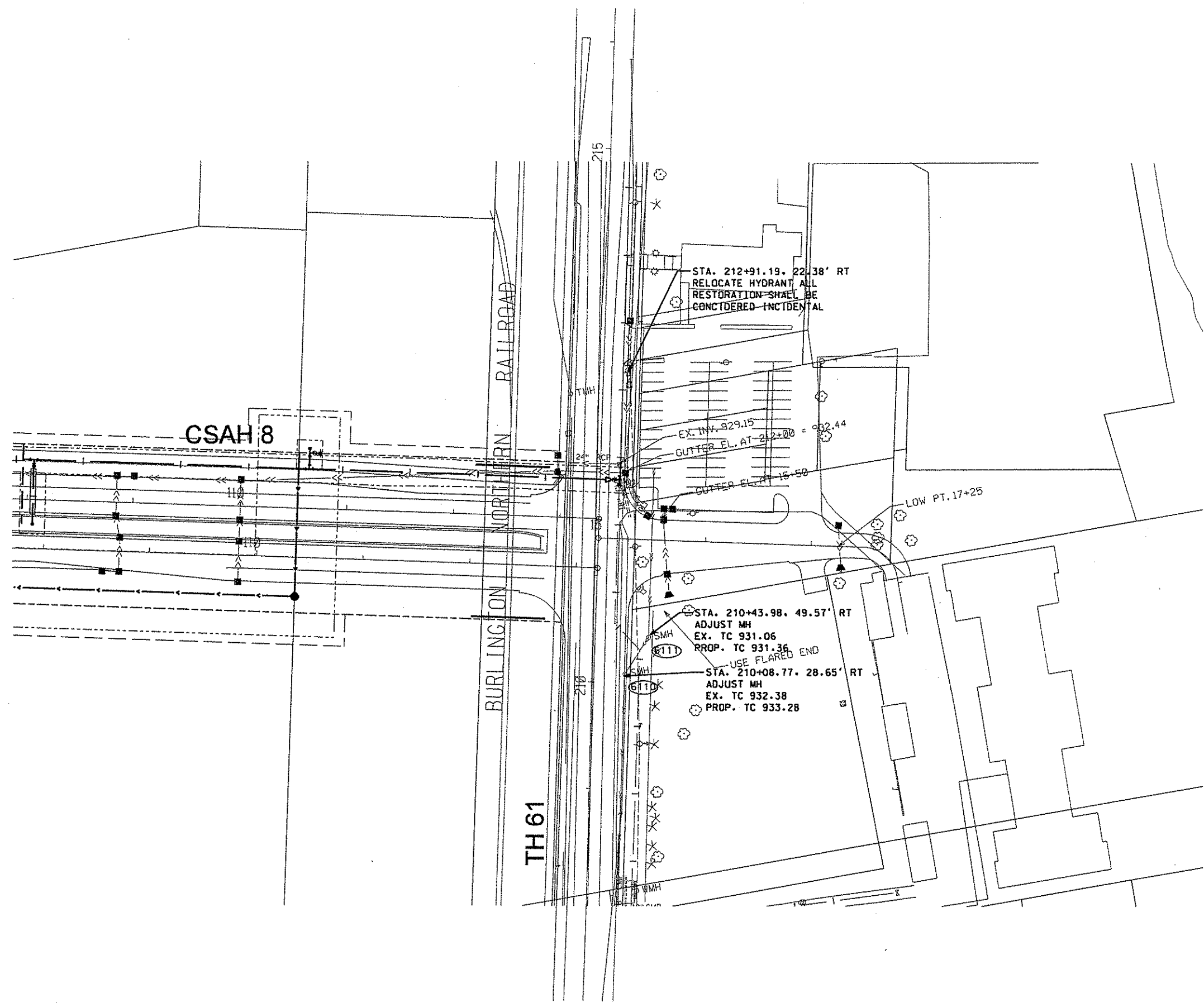
CERTIFIED BY *Mark A. Emch* LIC. NO. 40886 DATE 10/25/05  
 LICENSED PROFESSIONAL ENGINEER



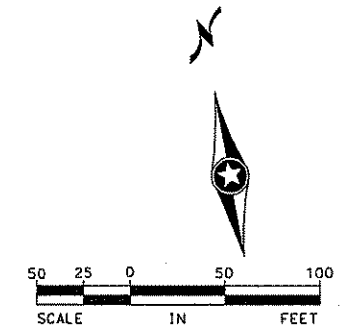
HUGO : SANITARY SEWER REMOVAL PLAN

S.P. 224-020-01  
 Sheet No. 156 of 296 Sheets

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SEE SHEET 158 FOR SANITARY SEWER AND WATERMAIN DETAILS



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CHECKED BY: MAE

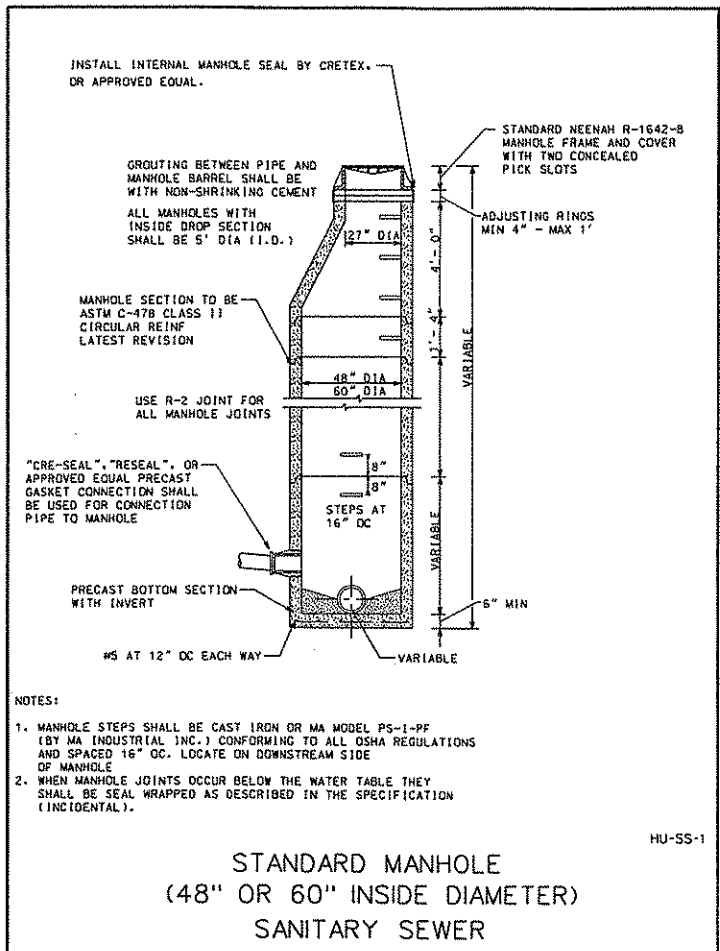
CERTIFIED BY *Mark A. Erickson* LIC. NO. 40886 DATE 10/25/05  
LICENSED PROFESSIONAL ENGINEER



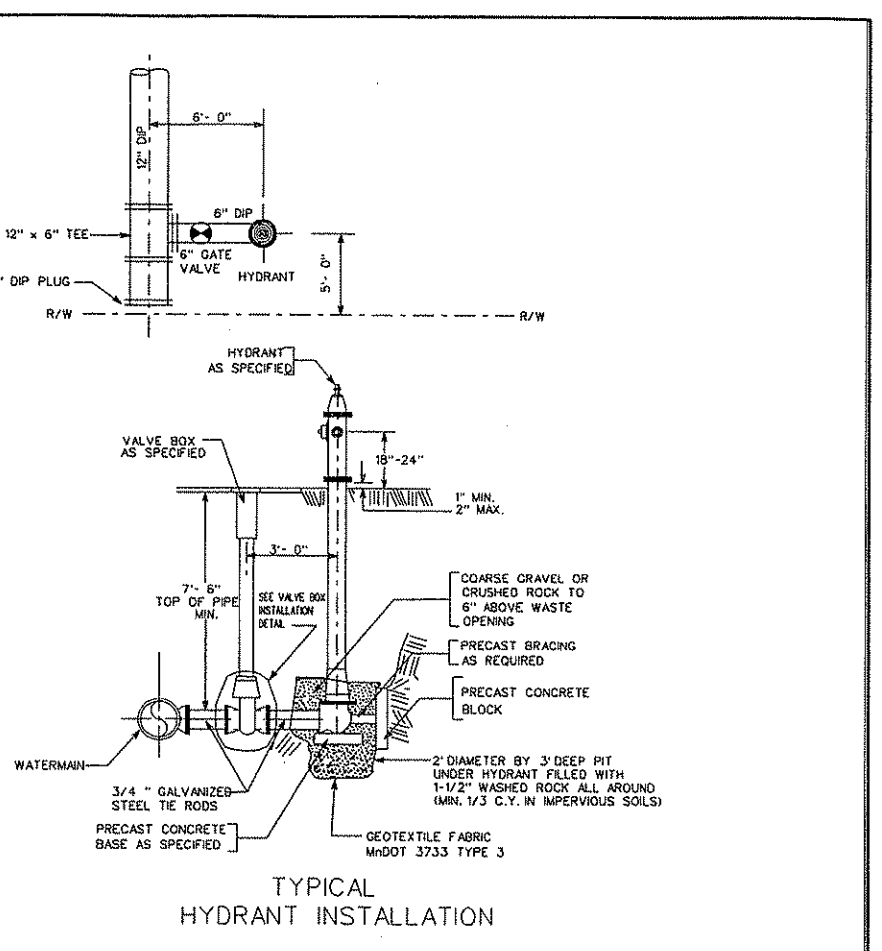
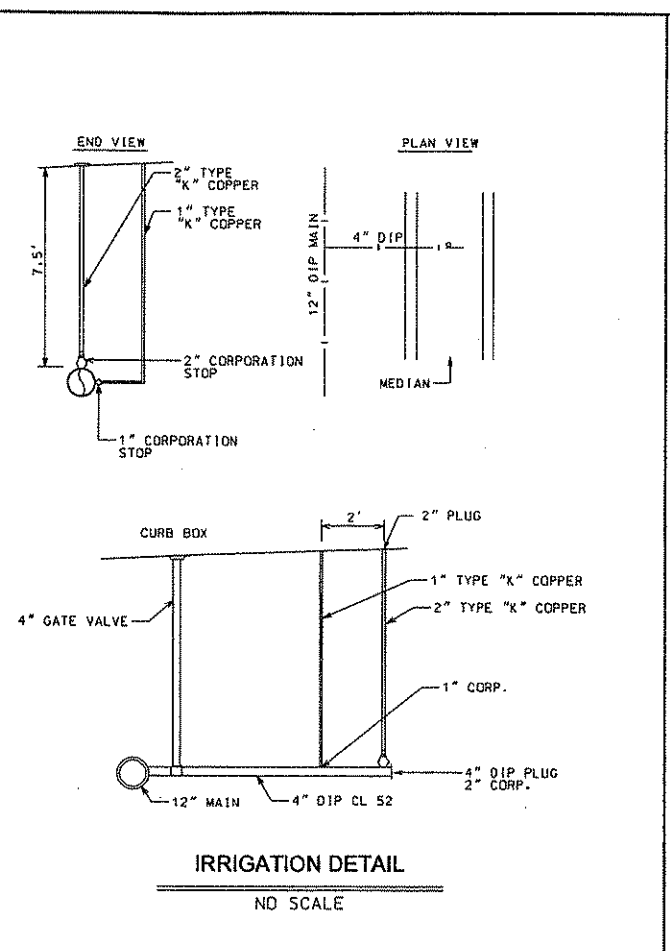
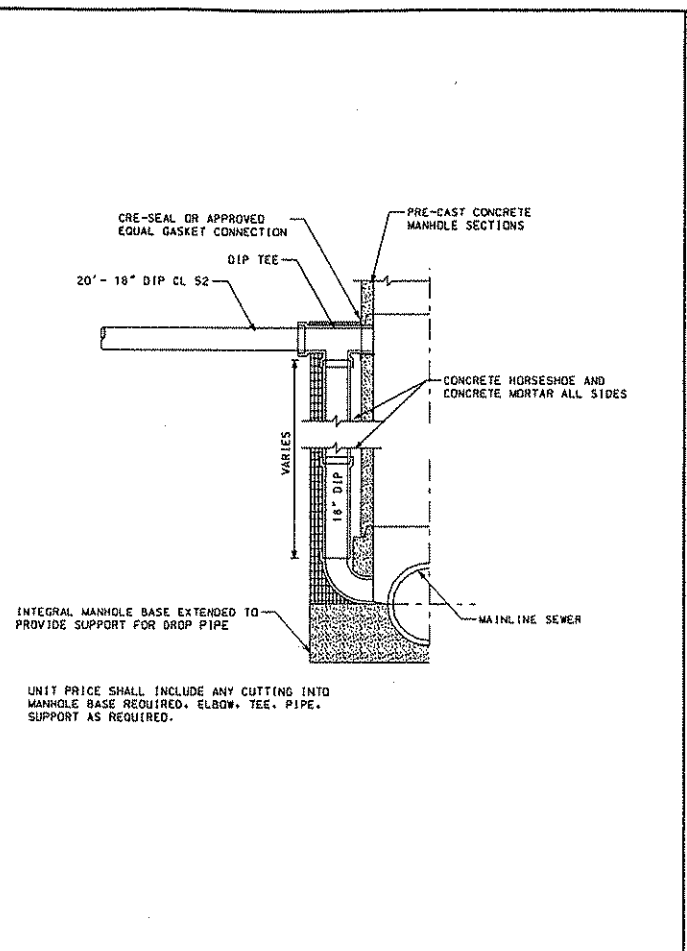
HUGO : SANITARY SEWER REMOVAL PLAN

S.P. 224-020-01  
Sheet No. 157 of 296 Sheets





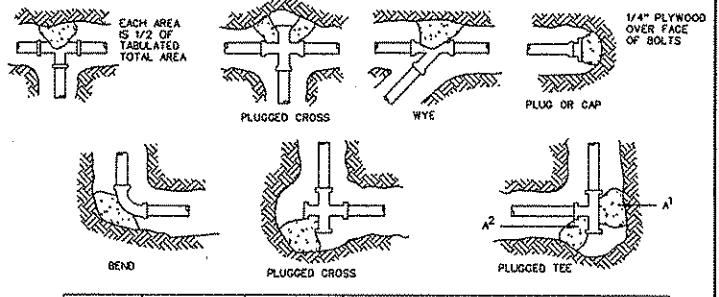
STANDARD MANHOLE  
(48" OR 60" INSIDE DIAMETER)  
SANITARY SEWER



- CONSTRUCTION NOTES:
- THE INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF PRIVATE UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL-INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATIONS AS TO THE TYPE AND LOCATION OF PRIVATE UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. THE CONTRACTOR SHALL PROTECT ALL IN PLACE UTILITIES AT NO ADDITIONAL COMPENSATION.
  - ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING FIELD MANUAL DATED JANUARY 2001.
  - CONTRACTOR MUST KEEP ALL WORK AND MATERIALS WITHIN THE CONSTRUCTION LIMITS (RIGHT OF WAY AND/OR EASEMENTS) AS DETAILED IN THIS PLAN SET.

- SOIL NOTES:
- SALVAGE ALL IN PLACE TOPSOIL IN AREAS TO BE DISTURBED BY CONSTRUCTION AND REUSE FOR TURF ESTABLISHMENT.

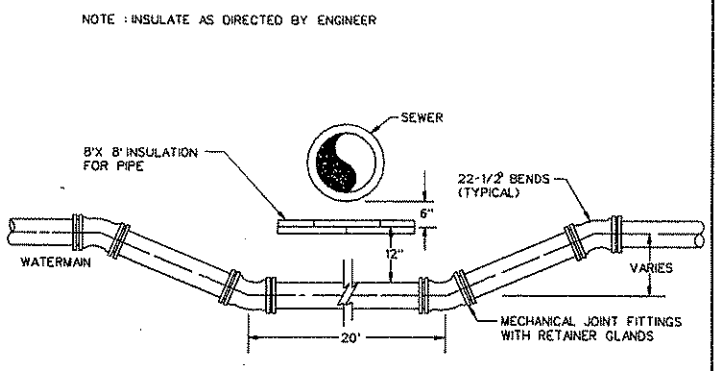
- UTILITY NOTES:
- CONTRACTOR SHALL PROTECT EXISTING UTILITIES DURING CONSTRUCTION AT NO ADDITIONAL COMPENSATION.
  - 4" POLYSTYRENE INSULATION SHALL BE PLACED WHERE 7.5' COVER OVER THE WATER SERVICE CANNOT BE MAINTAINED.
  - SANITARY SEWER MANHOLE TOP OF CASTINGS ARE DEPRESSED 0.04'
  - ALL GATE VALVE BOXES LOCATED IN BITUMINOUS STREET SECTION SHALL BE DEPRESSED .04'.
  - WATERMAIN SERVICES TO BE 12" DIP CL 52. CONNECTION SHALL BE AT THE PROPERTY LINE. VERIFY EXACT LOCATION IN FIELD PRIOR TO CONSTRUCTION.
  - ALL CASTINGS SHALL BE NEENAH OR APPROVED EQUAL.



NOMINAL FITTING SIZE, INCHES	TEE, WYE, PLUG OR CAP	90° BEND, PLUGGED CROSS	TEE PLUGGED ON RUN		45° BEND	22-1/2° BEND	11-1/4° BEND
			A <sup>1</sup>	A <sup>2</sup>			
4	1.0	1.4	1.9	1.4	1.0	-	-
6	2.1	3.0	4.3	3.0	1.6	1.0	-
8	3.8	5.3	7.6	5.4	2.9	1.5	1.0
10	5.9	8.4	11.8	8.4	4.6	2.6	1.2
12	8.5	12.0	17.0	12.0	6.6	3.4	1.7
14	11.5	16.3	23.0	16.3	8.9	4.6	2.3
16	15.0	21.3	30.0	21.3	11.6	6.0	3.0
18	19.0	27.0	38.0	27.0	14.6	7.6	3.8
20	23.5	33.3	47.0	33.3	18.1	9.4	4.7
24	34.0	48.0	68.0	48.0	26.2	13.6	6.8

- NOTES:
- CONCRETE THRUST BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH.
  - KEEP CONCRETE CLEAR OF JOINT AND ACCESSORIES.
  - REQUIRED BEARING AREAS AT FITTING SHALL BE AS NOTED ABOVE, UNLESS INDICATED OTHERWISE.
  - BEARING AREAS AND SPECIAL BLOCKING DETAILS SHOWN ON THE PLANS TAKE PRECEDENCE OVER BEARING AREAS AND BLOCKING DETAILS SHOWN ON THIS STANDARD TABLE.
  - ABOVE BEARING AREAS BASED ON TEST PRESSURES OF 150 PSI AND AN ALLOWABLE SOIL BEARING STRESS OF 2000 LBS. PER SQUARE FOOT. TO COMPUTE BEARING AREAS FOR DIFFERENT TEST PRESSURES AND SOIL BEARING STRESSES, USE THE FOLLOWING EQUATION: BEARING AREA = (TEST PRESSURE/150) x (2000/SOIL BEARING STRESS) x (TABLE VALUE).

POURED CONCRETE  
THRUST BLOCKING  
FOR  
WATERMAIN



WATERMAIN LOWERING  
WITH  
INSULATION DETAIL

DRAWN BY: THC  
CHECKED BY: MAE

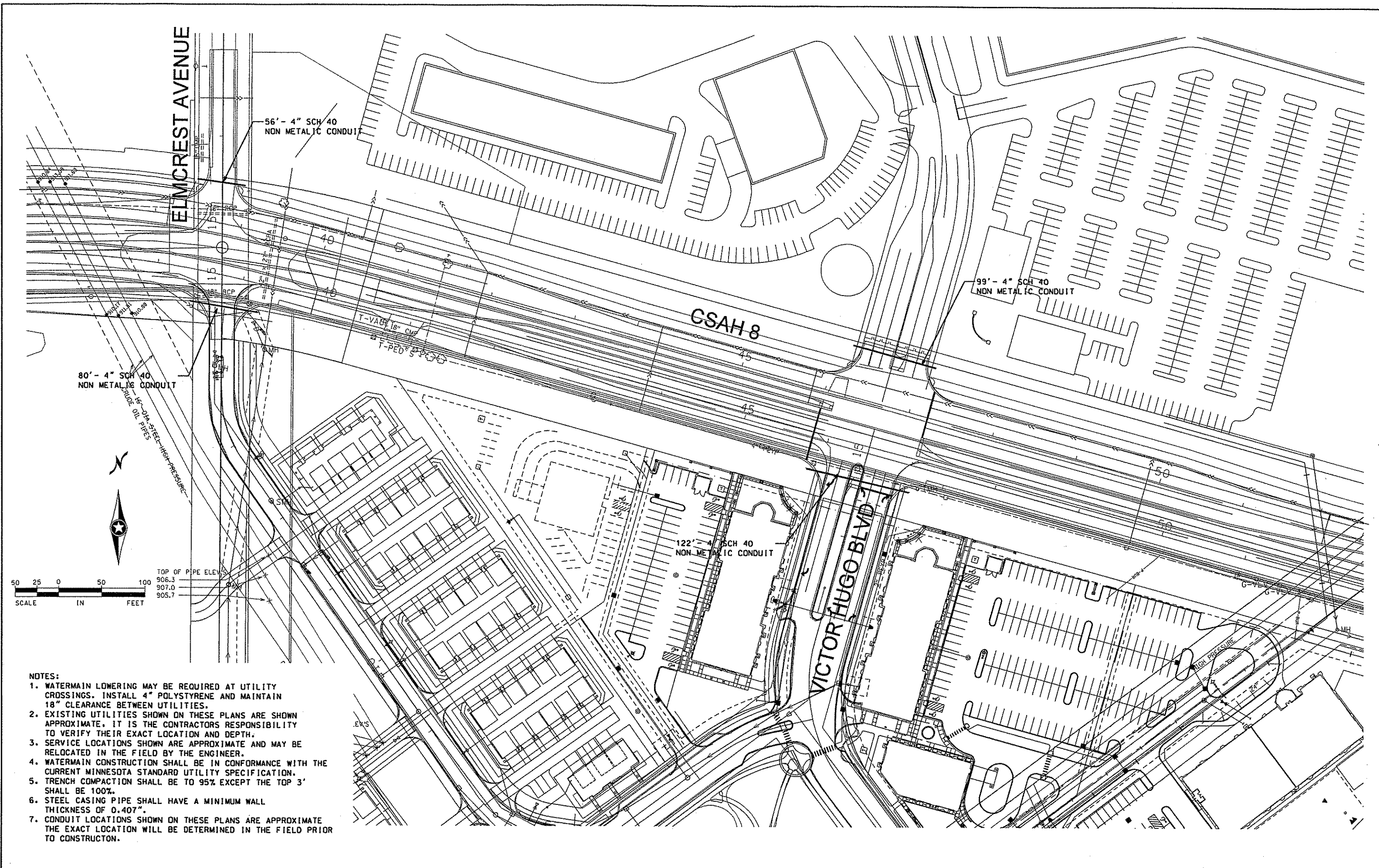
CERTIFIED BY *Mark A. Eveshaw* LIC. NO. 40886 DATE 10/25/05  
LICENSED PROFESSIONAL ENGINEER

**WSB**  
701 Xerox Avenue South, Suite 300  
Minneapolis, MN 55415  
www.wsbeng.com

HUGO : SANITARY SEWER - WATERMAIN DETAILS  
AND CONSTRUCTION, SOILS, AND UTILITY NOTES

S.P. 224-020-01  
Sheet No. 158 of 296 Sheets





80' - 4" SCH 40  
NON METALIC CONDUIT

56' - 4" SCH 40  
NON METALIC CONDUIT

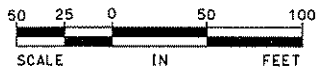
99' - 4" SCH 40  
NON METALIC CONDUIT

122' - 4" SCH 40  
NON METALIC CONDUIT

CSAH 8

VICTOR HUGO BLVD

ELMCREST AVENUE



TOP OF PIPE ELEV  
906.3  
907.0  
905.7

- NOTES:
1. WATERMAIN LOWERING MAY BE REQUIRED AT UTILITY CROSSINGS. INSTALL 4" POLYSTYRENE AND MAINTAIN 18" CLEARANCE BETWEEN UTILITIES.
  2. EXISTING UTILITIES SHOWN ON THESE PLANS ARE SHOWN APPROXIMATE. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY THEIR EXACT LOCATION AND DEPTH.
  3. SERVICE LOCATIONS SHOWN ARE APPROXIMATE AND MAY BE RELOCATED IN THE FIELD BY THE ENGINEER.
  4. WATERMAIN CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE CURRENT MINNESOTA STANDARD UTILITY SPECIFICATION.
  5. TRENCH COMPACTION SHALL BE TO 95% EXCEPT THE TOP 3' SHALL BE 100%.
  6. STEEL CASING PIPE SHALL HAVE A MINIMUM WALL THICKNESS OF 0.407".
  7. CONDUIT LOCATIONS SHOWN ON THESE PLANS ARE APPROXIMATE THE EXACT LOCATION WILL BE DETERMINED IN THE FIELD PRIOR TO CONSTRUCTION.

k:\01574-35\Cad\1574-wr-e.dgn

DRAWN BY: THC

CHECKED BY: MAE

CERTIFIED BY *Mark A. Ervickson*  
LICENSED PROFESSIONAL ENGINEER

LIC. NO. 40886 DATE 10/25/05



HUGO : LIGHTING CONDUIT CROSSINGS

S.P. 224-020-01  
Sheet No. 159 of 296 Sheets

ESTIMATED QUANTITY TABULATION

LINE NUMBER	Mn/DOT SPECIFICATION NUMBER	DESCRIPTION	NOTES	UNIT	TOTAL ESTIMATED QUANTITY
1	2104.501	REMOVE SEWER PIPE (SANITARY)		LIN FT	1.040
2	2104.509	REMOVE MANHOLE (SANITARY)		EACH	3
3	2105.601	DEWATERING		LUMP SUM	1
4	2503.511	18" DUCTILE IRON PIPE SEWER CL 52		LIN FT	40
5	2503.602	CONNECT TO EXISTING SANITARY SEWER		EACH	1
6	2503.602	CONNECT TO EXISTING SANITARY SEWER SERVICE		EACH	2
7	2503.602	18" X 4" PVC WYE		EACH	2
8	2503.603	4" PVC PIPE SEWER - SDR 26		LIN FT	266
9	2503.603	8" PVC PIPE SEWER - SDR 35		LIN FT	145
10	2503.603	18" PVC PIPE SEWER - SDR 35		LIN FT	128
11	2503.603	18" PVC PIPE SEWER - SDR 26		LIN FT	2,679
12	2503.603	TELEWISE SANITARY SEWER		LIN FT	2,807
13	2504.602	HYDRANT ASSEMBLY		EACH	10
14	2504.602	RELOCATE HYDRANT AND VALVE		EACH	1
15	2504.602	1" CORPORATION STOP		EACH	4
16	2504.602	2" CORPORATION STOP		EACH	4
17	2504.602	4" GATE VALVE AND BOX		EACH	4
18	2504.602	8" GATE VALVE AND BOX		EACH	2
19	2504.602	12" GATE VALVE AND BOX		EACH	15
20	2504.602	CONNECT TO EXISTING WATER MAIN		EACH	6
21	2504.603	1" TYPE K COPPER PIPE		LIN FT	32
22	2504.603	2" TYPE K COPPER PIPE		LIN FT	32
23	2504.603	4" WATER MAIN - DUCT IRON CL 52		LIN FT	306
24	2504.603	6" WATER MAIN - DUCT IRON CL 52		LIN FT	90
25	2504.603	8" WATER MAIN - DUCT IRON CL 52		LIN FT	10
26	2504.603	12" WATER MAIN - DUCT IRON CL 52		LIN FT	5,700
27	2504.603	24" WATER MAIN - DUCT IRON CL 52		LIN FT	20
28	2504.603	12" STEEL CASING PIPE		LIN FT	198
29	2504.603	24" STEEL CASING PIPE		LIN FT	745
30	2504.604	4" POLYSTYRENE INSULATION		SQ YD	100
31	2504.608	DUCTILE IRON FITTINGS		POUND	14,000
32	2506.603	RECONSTRUCT SANITARY MANHOLES		LIN FT	3.9
33	2506.516	CASTING ASSEMBLY		EACH	10
34	2506.522	ADJUST FRAME AND RING CASTING		EACH	2
35	2506.602	CONNECT TO EXISTING MANHOLES		EACH	3
36	2506.603	CONSTRUCT 48" DIA SAN MANHOLE		LIN FT	181.0
37	2506.603	CONSTRUCT 60" DIA SAN MANHOLE		LIN FT	48.1
38	2506.603	CONSTRUCT 18" OUTSIDE DROP		LIN FT	11.0
39	2545.603	2" SCHEDULE 40 PVC CONDUIT		LIN FT	330
40	2545.603	4" SCHEDULE 40 PVC CONDUIT		LIN FT	1,240

FOR INFORMATIONAL PURPOSE ONLY

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DRAWN BY: THC

CHECKED BY: MAE

CERTIFIED BY

*Mark A. Esscher*  
 LICENSED PROFESSIONAL ENGINEER

LIC. NO. 40886

DATE 10/25/05



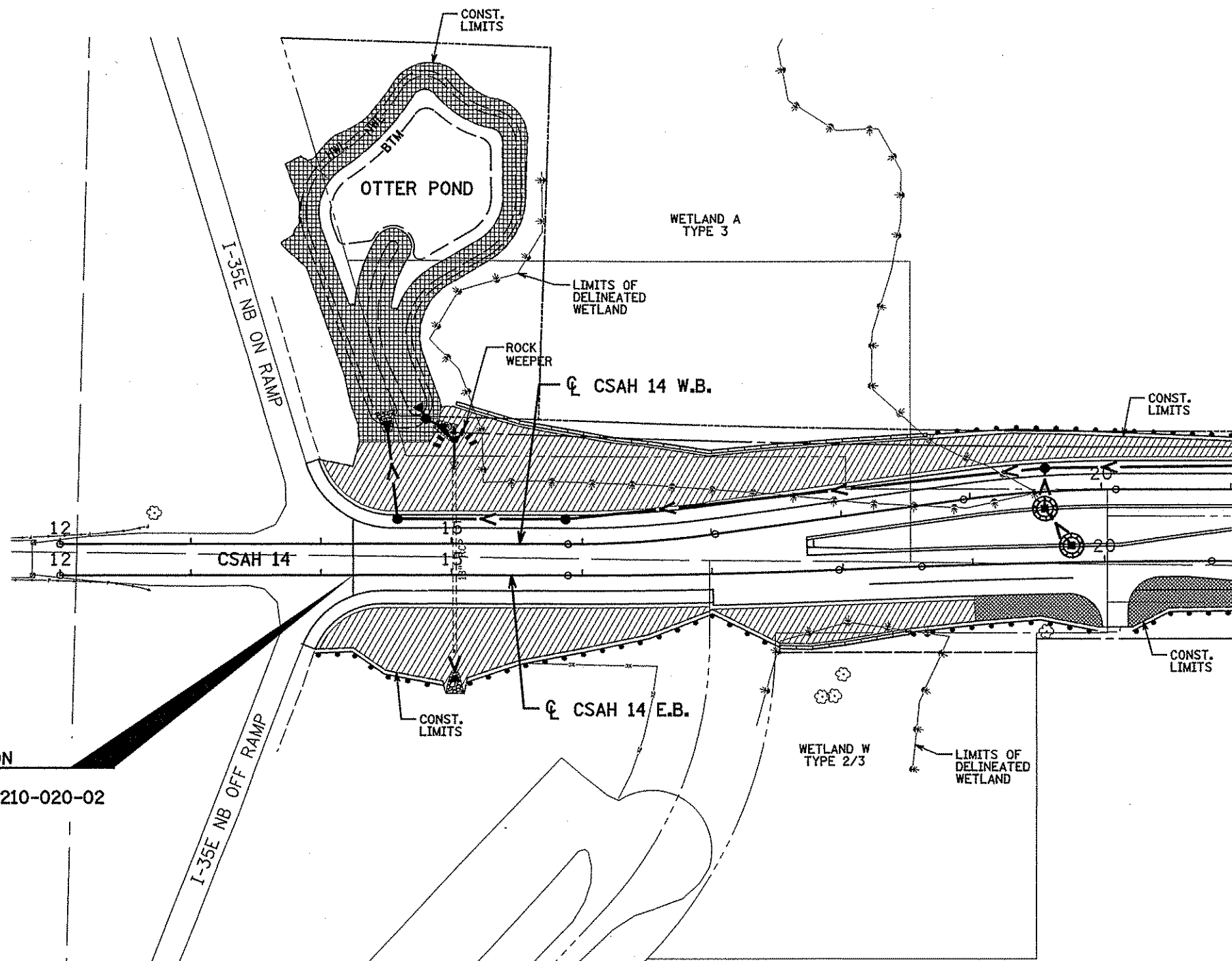
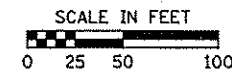
HUGO : ESTIMATED QUANTITY TABULATION

S.P. 224-020-01

Sheet No. 160 of 296 Sheets

**GENERAL EROSION CONTROL NOTES**

1. SILT FENCE SHALL FOLLOW, AS CLOSELY AS POSSIBLE, TO A SINGLE CONTOUR LINE AND SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF ANY GRADING ACTIVITIES.
2. THE QUANTITIES INCLUDE SILT FENCE (MACHINE SLICED) TO BE USED AS PERIMETER CONTROL AS SHOWN IN THE PLANS. IN AREAS WHERE THE SILT FENCE CANNOT EFFECTIVELY CONTROL EROSION, SUPER DUTY SILT FENCE SHALL BE INSTALLED. INSTALLATION OF SUPER DUTY SILT FENCE FOR EROSION CONTROL SHALL BE CONSIDERED INCIDENTAL.
3. ALL PONDS MUST BE SURVEYED AND CLEANED OUT AT THE END OF CONSTRUCTION TO MATCH THE PLAN CONTOURS. ALL MATERIAL EXCAVATED FROM THE PONDS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OUTSIDE THE RIGHT-OF-WAY.
4. ALL EROSION CONTROL BLANKETS SHALL BE STAPLED AS PER THE DETAILS ON SHEET NO. 176.
5. RIPRAP AT PIPE APRON OUTLETS MUST BE PLACED PRIOR TO APRON INSTALLATION. RIPRAP SHALL BE INSTALLED UNDER THE LIP OF THE APRON AS PER DETAIL ON SHEET NO. 173
6. ALL TEMPORARY EROSION CONTROL DEVICES SHALL BE REMOVED AS DIRECTED BY THE EROSION CONTROL SUPERVISOR OR THE PROJECT ENGINEER AFTER TURF IS SUFFICIENTLY ESTABLISHED IN ACCORDANCE WITH PART IV, G OF THE NPDES PERMIT.
7. ALL TEMPORARY PIPE PLUGS SHOWN ON THE CONSTRUCTION STAGING AND TRAFFIC CONTROL PLANS ARE REQUIRED FOR STAGED DRAINAGE CONSTRUCTION. THE CONTRACTOR SHALL DEVELOP AN APPROPRIATE MEANS FOR CONSTRUCTING THE TEMPORARY PIPE PLUGS TO PREVENT SEDIMENT FROM ENTERING THE PIPE. TEMPORARY PIPE PLUGS SHALL BE INCIDENTAL FOR WHICH NO DIRECT PAYMENT WILL BE MADE.
8. SILT FENCE MAY BE USED IN PLACE OF BALE CHECKS WITH STRAW COCONUT BLANKET IF NO STANDING WATER EXISTS.
9. IF THE PERMANENT EROSION CONTROL AND TURF ESTABLISHMENT WITHIN 200 LIN FT OF A SURFACE WATER IS NOT IN PLACE ACCORDING TO THE TABLE OF SLOPES AND TIME FRAMES SHOWN IN THE SWPPP NOTES, NOTE 6, THE AREA MUST HAVE TEMPORARY EROSION PROTECTION AS DIRECTED BY THE EROSION CONTROL SUPERVISOR OR THE PROJECT ENGINEER. TEMPORARY EROSION PROTECTION WILL CONSIST OF SEED MIXTURE 150, TYPE 1 MULCH DISK ANCHORED, AND 10-10-20 FERTILIZER.



**BEGIN CONSTRUCTION**  
 CSAH 14 E.B.  
 S.P. 02-614-23, S.P. 210-020-02  
 STA. 14+25.00

MATCH LINE - CSAH 14 E.B. STA. 21+00

**LAND FEATURE CHANGES (ACRES)**

TOTAL PROJECT SURFACE AREA	53.0 ACRES
TOTAL EXISTING IMPERVIOUS SURFACE AREA OF PROJECT	13.7 ACRES
TOTAL EXISTING PERVIOUS SURFACE AREA OF PROJECT	39.3 ACRES
TOTAL POST-CONSTRUCTION IMPERVIOUS SURFACE AREA OF PROJECT	27.6 ACRES
TOTAL POST-CONSTRUCTION PERVIOUS SURFACE AREA OF PROJECT	25.4 ACRES

**LEGEND**

RIPRAP	DITCH CHECK TYPE 3	SEED MIXTURE 260 TYPE 3 MULCH, DISK ANCHOR 22-5-10 80% WIN FERTILIZER
INLET PROTECTION TYPE A	DITCH CHECK TYPE 7	SEED MIXTURE 310 STRAW BLANKET (CAT 3) 22-5-10 80% WIN FERTILIZER
INLET PROTECTION TYPE C	SEED MIXTURE 250 TYPE 1 MULCH, DISK ANCHOR 22-5-10 80% WIN FERTILIZER	SEED MIXTURE 350 TYPE 3 MULCH, DISK ANCHOR 22-5-10 80% WIN FERTILIZER
ROCK WEEPER	SEED MIXTURE 250 STRAW COCONUT BLANKET (CAT 4) 22-5-10 80% WIN FERTILIZER	SOD TYPE SALT RESISTANT 22-5-10 80% WIN FERTILIZER
SILT FENCE (MACHINE SLICED)	BALE CHECK WITH STRAW COCONUT BLANKET (CAT 4)	SEED MIXTURE 350 STRAW COCONUT BLANKET (CAT 4) 22-5-10 80% WIN FERTILIZER
SEDIMENT TRAP		

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DRAWN BY: SFH

CHECKED BY: MAW

CERTIFIED BY

*Matthew A. Wynn*  
 LICENSED PROFESSIONAL ENGINEER

LIC. NO. 26883

DATE 8/15/05

**TKDA**

ENGINEERS · ARCHITECTS · PLANNERS

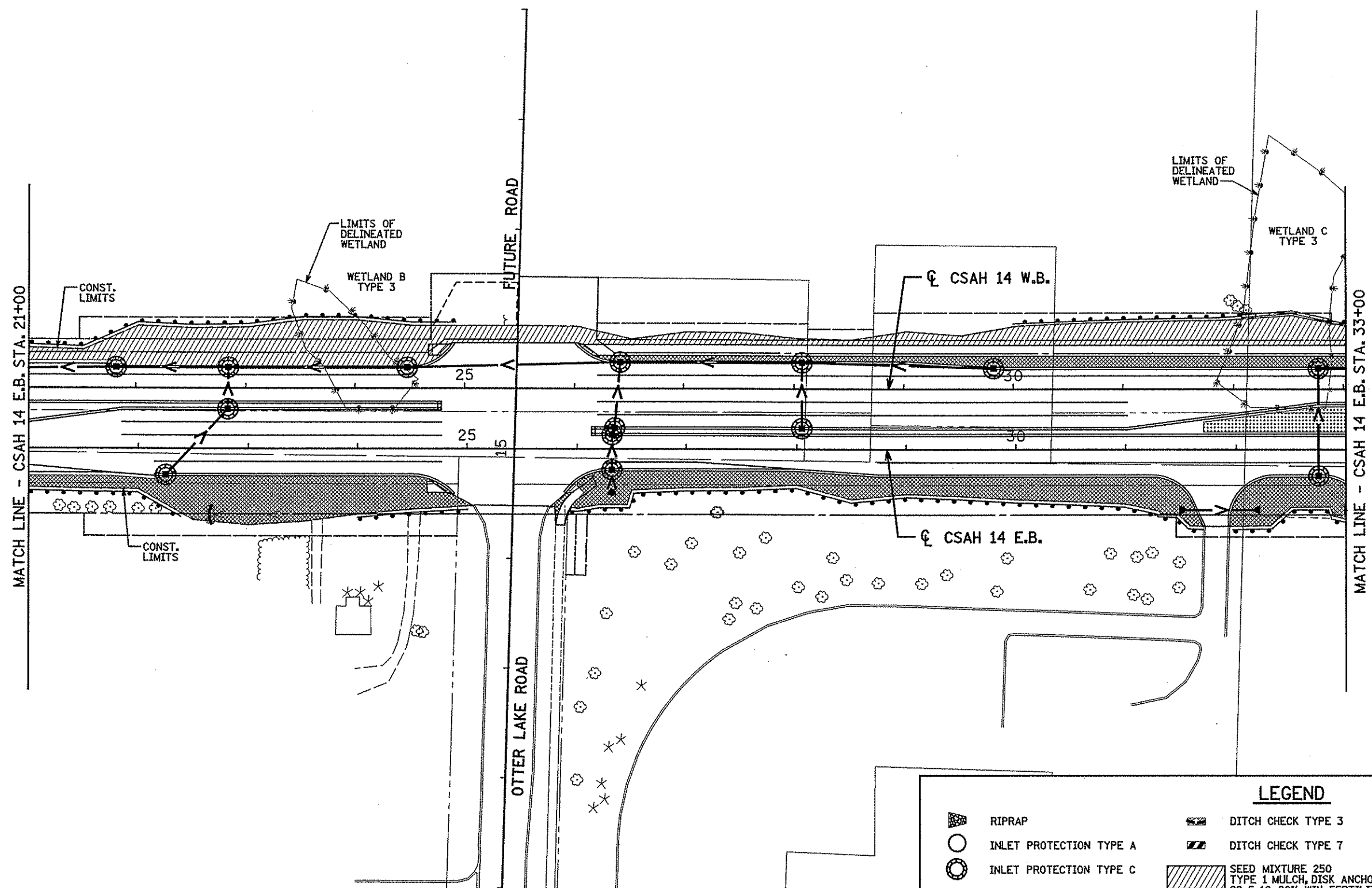
TURF ESTABLISHMENT AND EROSION CONTROL PLAN

STA. 12+00 TO STA. 21+00

S.P. 02-614-23 S.P. 82-608-07

Sheet No. 161 of 296 Sheets

SCALE IN FEET  
0 25 50 100



LEGEND					
	RIPRAP		DITCH CHECK TYPE 3		SEED MIXTURE 260 TYPE 3 MULCH, DISK ANCHOR 22-5-10 80% WIN FERTILIZER
	INLET PROTECTION TYPE A		DITCH CHECK TYPE 7		SEED MIXTURE 310 STRAW BLANKET (CAT 3) 22-5-10 80% WIN FERTILIZER
	INLET PROTECTION TYPE C		SEED MIXTURE 250 TYPE 1 MULCH, DISK ANCHOR 22-5-10 80% WIN FERTILIZER		SEED MIXTURE 350 TYPE 3 MULCH, DISK ANCHOR 22-5-10 80% WIN FERTILIZER
	ROCK WEEPER		SEED MIXTURE 250 STRAW COCONUT BLANKET (CAT 4) 22-5-10 80% WIN FERTILIZER		SOD TYPE SALT RESISTANT 22-5-10 80% WIN FERTILIZER
	SILT FENCE (MACHINE SLICED)		SEED MIXTURE 350 STRAW COCONUT BLANKET (CAT 4) 22-5-10 80% WIN FERTILIZER		
	BALE CHECK WITH STRAW COCONUT BLANKET (CAT 4)				
	SEDIMENT TRAP				

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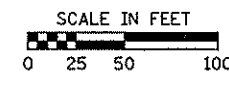
DRAWN BY: SFH  
CHECKED BY: MAW

CERTIFIED BY Matthew A. Wasson LIC. NO. 26883 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

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TURF ESTABLISHMENT AND EROSION CONTROL PLAN  
STA. 21+00 TO STA. 33+00

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 162 of 296 Sheets



END S.P. 02-614-23, S.P. 210-020-02  
 BEGIN S.P. 82-608-07, S.P. 224-020-01  
 CSAH 8 EB STA. 38+74.71

ELMCREST AVE. N.

ELMCREST POND

ROCK WEEPER

BTM  
 ROCK WEEPER

MATCH LINE - CSAH 14 E.B. STA. 33+00

MATCH LINE - CSAH 8 E.B. STA. 45+00

CONST. LIMITS

CONST. LIMITS

CONST. LIMITS

CONST. LIMITS

WETLAND V  
 TYPE 3

ANOKA COUNTY  
 CITY OF LINO LAKES

WASHINGTON COUNTY  
 CITY OF HUGO

WASHINGTON COUNTY  
 CITY OF HUGO

BLDG. NO. 2350

LIMITS OF  
 DELINEATED  
 WETLAND

ANOKA COUNTY  
 CITY OF LINO LAKES

VICTOR PATH

DATE: 8/5/2005 TIME: 1:37:44 PM  
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LEGEND					
	RIPRAP		DITCH CHECK TYPE 3		SEED MIXTURE 260 TYPE 3 MULCH, DISK ANCHOR 22-5-10 80% WIN FERTILIZER
	INLET PROTECTION TYPE A		DITCH CHECK TYPE 7		SEED MIXTURE 310 STRAW BLANKET (CAT 3) 22-5-10 80% WIN FERTILIZER
	INLET PROTECTION TYPE C		SEED MIXTURE 250 TYPE 1 MULCH, DISK ANCHOR 22-5-10 80% WIN FERTILIZER		SEED MIXTURE 350 TYPE 3 MULCH, DISK ANCHOR 22-5-10 80% WIN FERTILIZER
	ROCK WEEPER		SEED MIXTURE 250 STRAW COCONUT BLANKET (CAT 4) 22-5-10 80% WIN FERTILIZER		SOD TYPE SALT RESISTANT 22-5-10 80% WIN FERTILIZER
	SILT FENCE (MACHINE SLICED)		SEED MIXTURE 350 STRAW COCONUT BLANKET (CAT 4) 22-5-10 80% WIN FERTILIZER		
	BALE CHECK WITH STRAW COCONUT BLANKET (CAT 4)				
	SEDIMENT TRAP				

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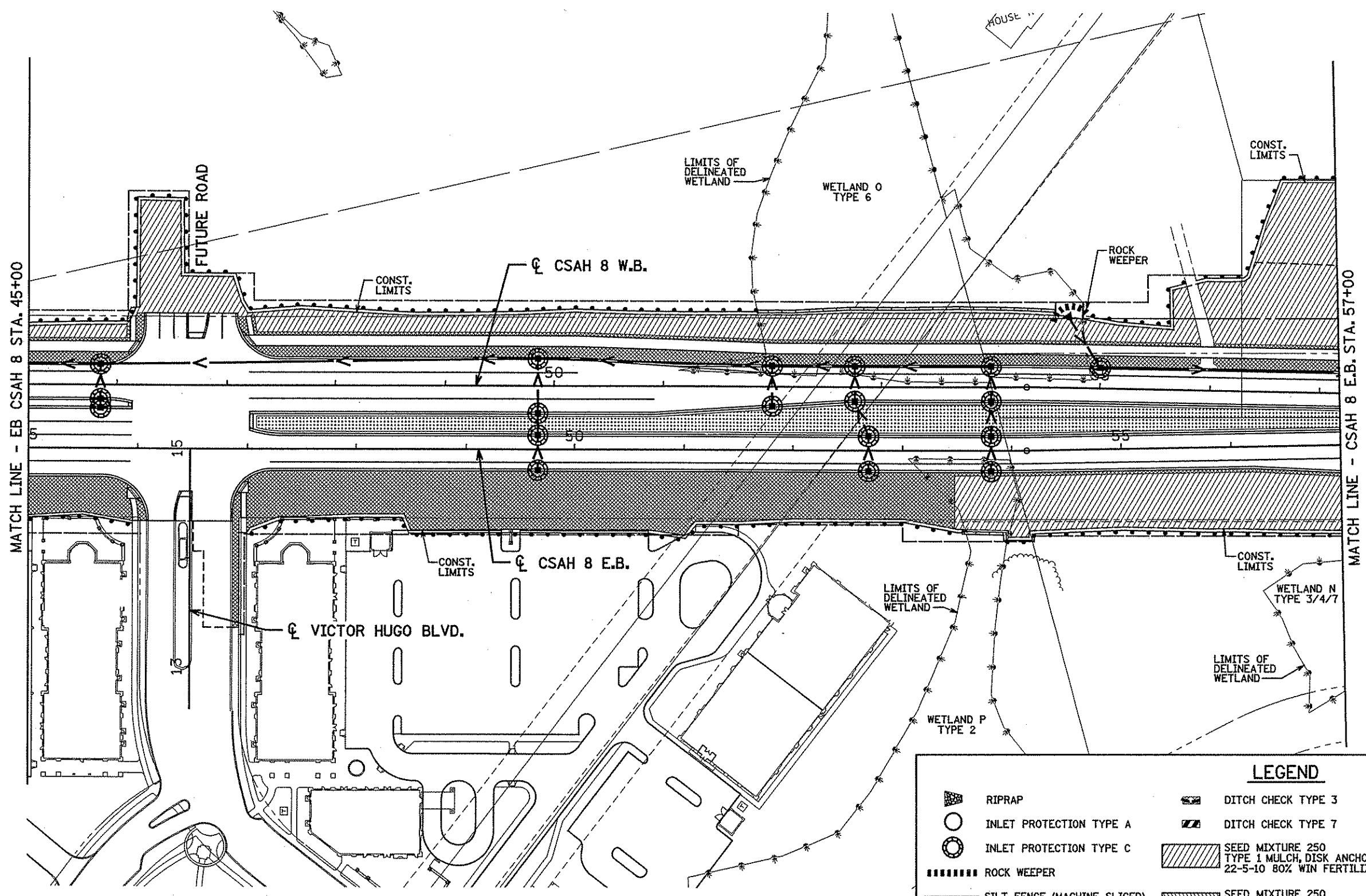
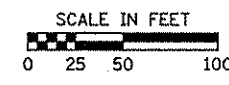
CERTIFIED BY *Matthew A. Wanner*  
 LICENSED PROFESSIONAL ENGINEER  
 LIC. NO. 26883 DATE 8/15/05

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TURF ESTABLISHMENT AND EROSION CONTROL PLAN  
 STA. 33+00 TO STA. 45+00

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 163 of 296 Sheets





LEGEND					
	RIPRAP		DITCH CHECK TYPE 3		SEED MIXTURE 260 TYPE 3 MULCH, DISK ANCHOR 22-5-10 80% WIN FERTILIZER
	INLET PROTECTION TYPE A		DITCH CHECK TYPE 7		SEED MIXTURE 310 STRAW BLANKET (CAT 3) 22-5-10 80% WIN FERTILIZER
	INLET PROTECTION TYPE C		SEED MIXTURE 250 TYPE 1 MULCH, DISK ANCHOR 22-5-10 80% WIN FERTILIZER		SEED MIXTURE 350 TYPE 3 MULCH, DISK ANCHOR 22-5-10 80% WIN FERTILIZER
	ROCK WEEPER		SEED MIXTURE 250 STRAW COCONUT BLANKET (CAT 4) 22-5-10 80% WIN FERTILIZER		SOD TYPE SALT RESISTANT 22-5-10 80% WIN FERTILIZER
	SILT FENCE (MACHINE SLICED)		SEED MIXTURE 350 STRAW COCONUT BLANKET (CAT 4) 22-5-10 80% WIN FERTILIZER		
	BALE CHECK WITH STRAW COCONUT BLANKET (CAT 4)				
	SEDIMENT TRAP				

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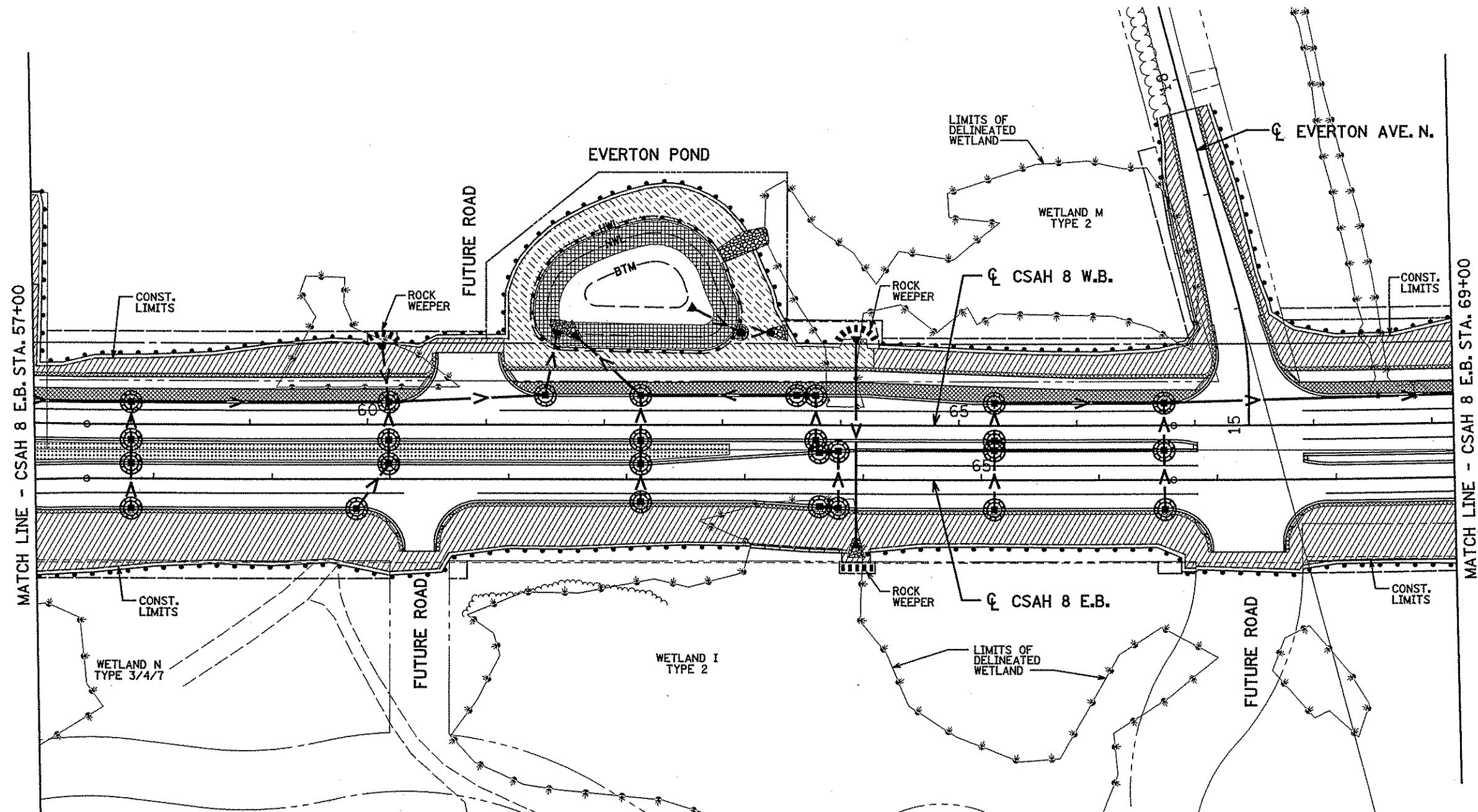
CERTIFIED BY *Matthew A. Warner* LIC. NO. 26883 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

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TURF ESTABLISHMENT AND EROSION CONTROL PLAN  
STA. 45+00 TO STA. 57+00

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 164 of 296 Sheets

SCALE IN FEET  
0 25 50 100



LEGEND					
	RIPRAP		DITCH CHECK TYPE 3		SEED MIXTURE 260 TYPE 3 MULCH, DISK ANCHOR 22-5-10 80% WIN FERTILIZER
	INLET PROTECTION TYPE A		DITCH CHECK TYPE 7		SEED MIXTURE 310 STRAW BLANKET (CAT 3) 22-5-10 80% WIN FERTILIZER
	INLET PROTECTION TYPE C		SEED MIXTURE 250 TYPE 1 MULCH, DISK ANCHOR 22-5-10 80% WIN FERTILIZER		SEED MIXTURE 350 TYPE 3 MULCH, DISK ANCHOR 22-5-10 80% WIN FERTILIZER
	ROCK WEEPER		SEED MIXTURE 250 STRAW COCONUT BLANKET (CAT 4) 22-5-10 80% WIN FERTILIZER		SOD TYPE SALT RESISTANT 22-5-10 80% WIN FERTILIZER
	SILT FENCE (MACHINE SLICED)		SEED MIXTURE 350 STRAW COCONUT BLANKET (CAT 4) 22-5-10 80% WIN FERTILIZER		SEDIMENT TRAP
	BALE CHECK WITH STRAW COCONUT BLANKET (CAT 4)				

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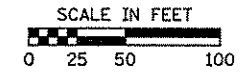
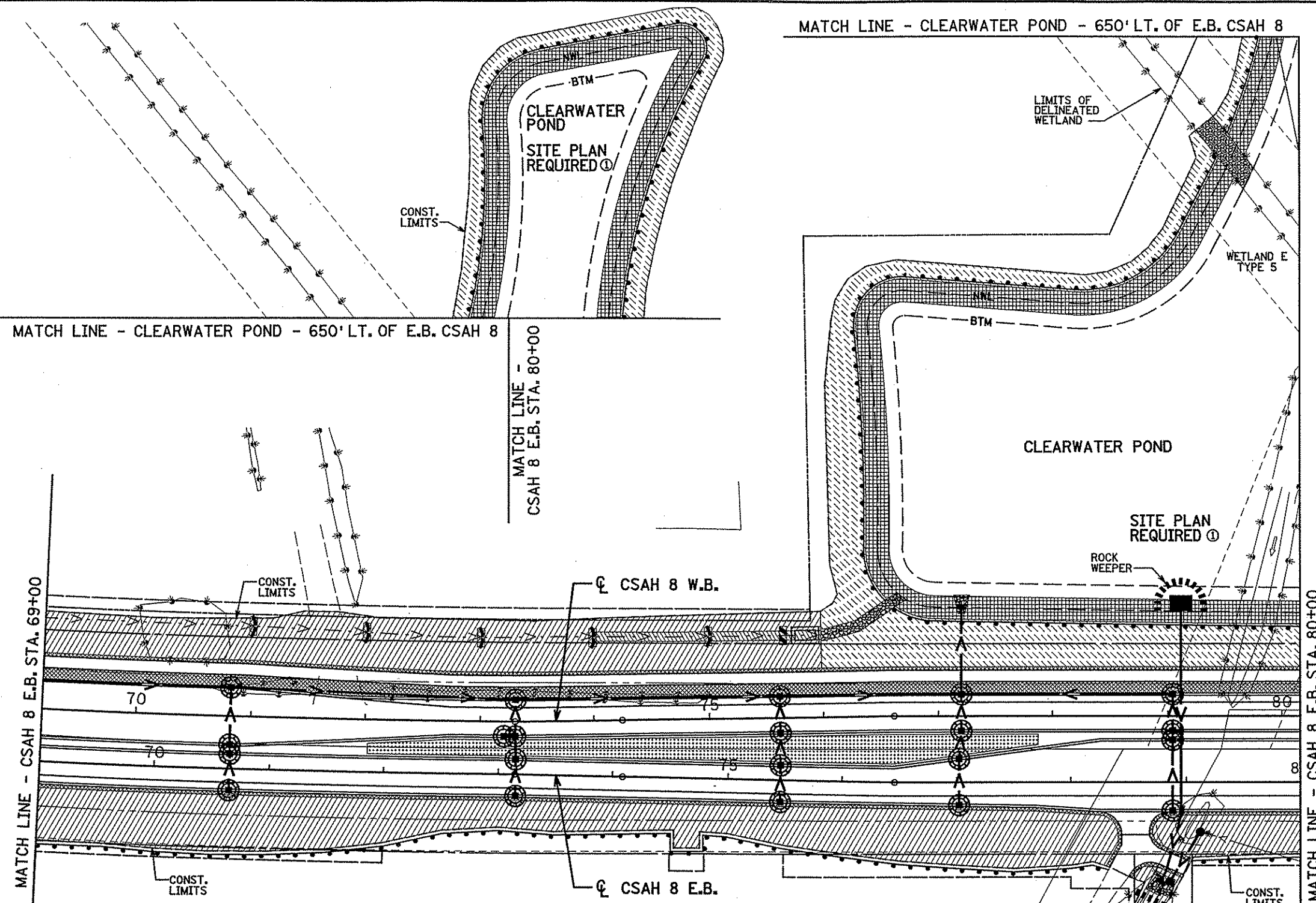
CERTIFIED BY Matthew A. Wannan LIC. NO. 26883 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

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TURF ESTABLISHMENT AND EROSION CONTROL PLAN  
STA. 57+00 TO STA. 69+00

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 165 of 296 Sheets

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NOTES:  
 ① SITE PLAN REQUIRED BY CONTRACTOR AS PER MN/DOT SPEC. 1803.51 PRIOR TO EXCAVATING POND AND INSTALLING 60" CLEARWATER CREEK CULVERT.

LEGEND			
	RIPRAP		SEED MIXTURE 260 TYPE 3 MULCH, DISK ANCHOR 22-5-10 80% WIN FERTILIZER
	INLET PROTECTION TYPE A		DITCH CHECK TYPE 3
	INLET PROTECTION TYPE C		DITCH CHECK TYPE 7
	ROCK WEEPER		SEED MIXTURE 250 TYPE 1 MULCH, DISK ANCHOR 22-5-10 80% WIN FERTILIZER
	SILT FENCE (MACHINE SLICED)		SEED MIXTURE 310 STRAW BLANKET (CAT 3) 22-5-10 80% WIN FERTILIZER
	BALE CHECK WITH STRAW COCONUT BLANKET (CAT 4)		SEED MIXTURE 350 TYPE 3 MULCH, DISK ANCHOR 22-5-10 80% WIN FERTILIZER
	SEDIMENT TRAP		SOD TYPE SALT RESISTANT 22-5-10 80% WIN FERTILIZER
			SEED MIXTURE 350 STRAW COCONUT BLANKET (CAT 4) 22-5-10 80% WIN FERTILIZER

DRAWN BY: SFH  
 CHECKED BY: MAW

CERTIFIED BY *Matthew A. Whisman* LIC. NO. 26883 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

**TKDA**  
 ENGINEERS · ARCHITECTS · PLANNERS

TURF ESTABLISHMENT AND EROSION CONTROL PLAN  
 STA. 69+00 TO STA. 80+00

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 166 of 296 Sheets

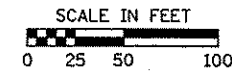
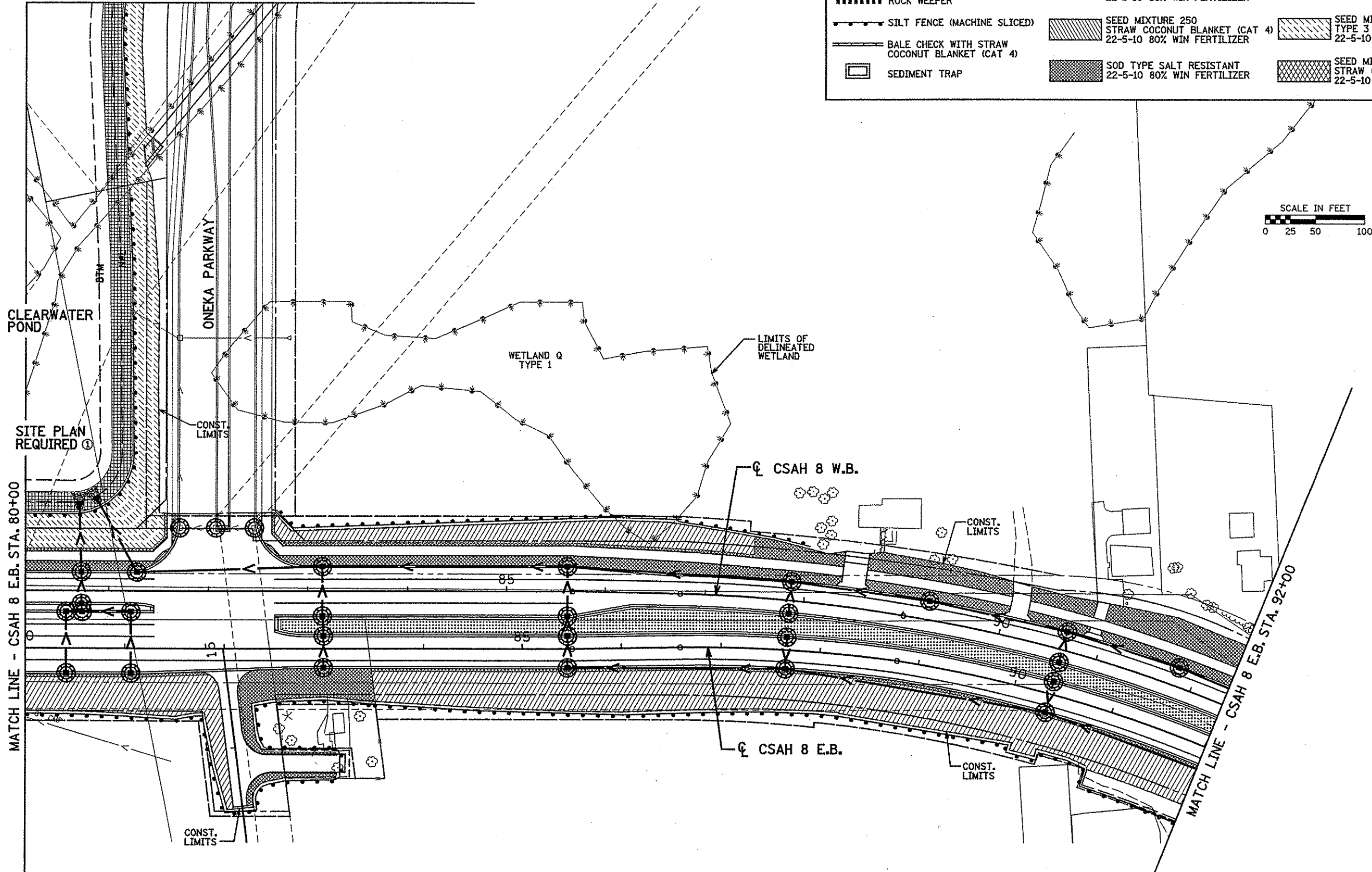
**NOTES:**

① SITE PLAN REQUIRED BY CONTRACTOR AS PER MN/DOT SPEC. 1803.51 PRIOR TO EXCAVATING POND AND INSTALLING 60" CLEARWATER CREEK CULVERT.

**LEGEND**

	RIPRAP		DITCH CHECK TYPE 3		SEED MIXTURE 260 TYPE 3 MULCH, DISK ANCHOR 22-5-10 80% WIN FERTILIZER
	INLET PROTECTION TYPE A		DITCH CHECK TYPE 7		SEED MIXTURE 310 STRAW BLANKET (CAT 3) 22-5-10 80% WIN FERTILIZER
	INLET PROTECTION TYPE C		SEED MIXTURE 250 TYPE 1 MULCH, DISK ANCHOR 22-5-10 80% WIN FERTILIZER		SEED MIXTURE 350 TYPE 3 MULCH, DISK ANCHOR 22-5-10 80% WIN FERTILIZER
	ROCK WEEPER		SEED MIXTURE 250 STRAW COCONUT BLANKET (CAT 4) 22-5-10 80% WIN FERTILIZER		SOD TYPE SALT RESISTANT 22-5-10 80% WIN FERTILIZER
	SILT FENCE (MACHINE SLICED)		SEED MIXTURE 350 STRAW COCONUT BLANKET (CAT 4) 22-5-10 80% WIN FERTILIZER		BALE CHECK WITH STRAW COCONUT BLANKET (CAT 4)
	SEDIMENT TRAP				

MATCH LINE - CLEARWATER POND - 650' LT. OF E.B. CSAH 8



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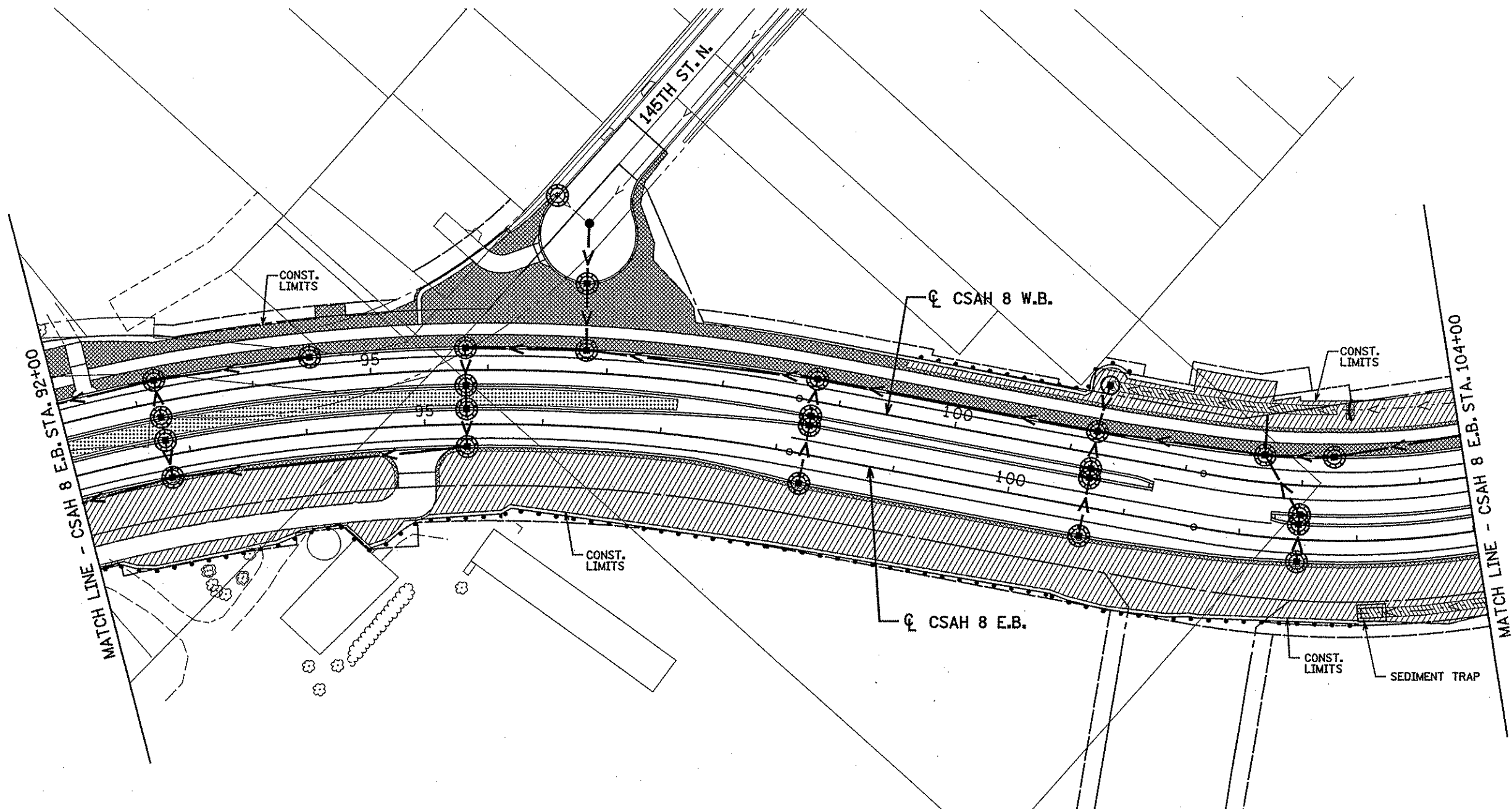
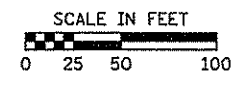
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CHECKED BY: MAW

CERTIFIED BY *Matthew A. Wasserman* LIC. NO. 26883 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

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TURF ESTABLISHMENT AND EROSION CONTROL PLAN  
STA. 80+00 TO STA. 92+00

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 167 of 296 Sheets



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LEGEND					
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	INLET PROTECTION TYPE A		DITCH CHECK TYPE 7		SEED MIXTURE 310 STRAW BLANKET (CAT 3) 22-5-10 80% WIN FERTILIZER
	INLET PROTECTION TYPE C		SEED MIXTURE 250 TYPE 1 MULCH, DISK ANCHOR 22-5-10 80% WIN FERTILIZER		SEED MIXTURE 350 TYPE 3 MULCH, DISK ANCHOR 22-5-10 80% WIN FERTILIZER
	ROCK WEEPER		SEED MIXTURE 250 STRAW COCONUT BLANKET (CAT 4) 22-5-10 80% WIN FERTILIZER		SEED MIXTURE 350 STRAW COCONUT BLANKET (CAT 4) 22-5-10 80% WIN FERTILIZER
	SILT FENCE (MACHINE SLICED)		SOD TYPE SALT RESISTANT 22-5-10 80% WIN FERTILIZER		
	BALE CHECK WITH STRAW COCONUT BLANKET (CAT 4)				
	SEDIMENT TRAP				

DRAWN BY: SFH  
CHECKED BY: MAW

CERTIFIED BY *Matthew A. Wanner* LIC. NO. 26883 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER








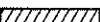






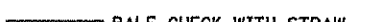

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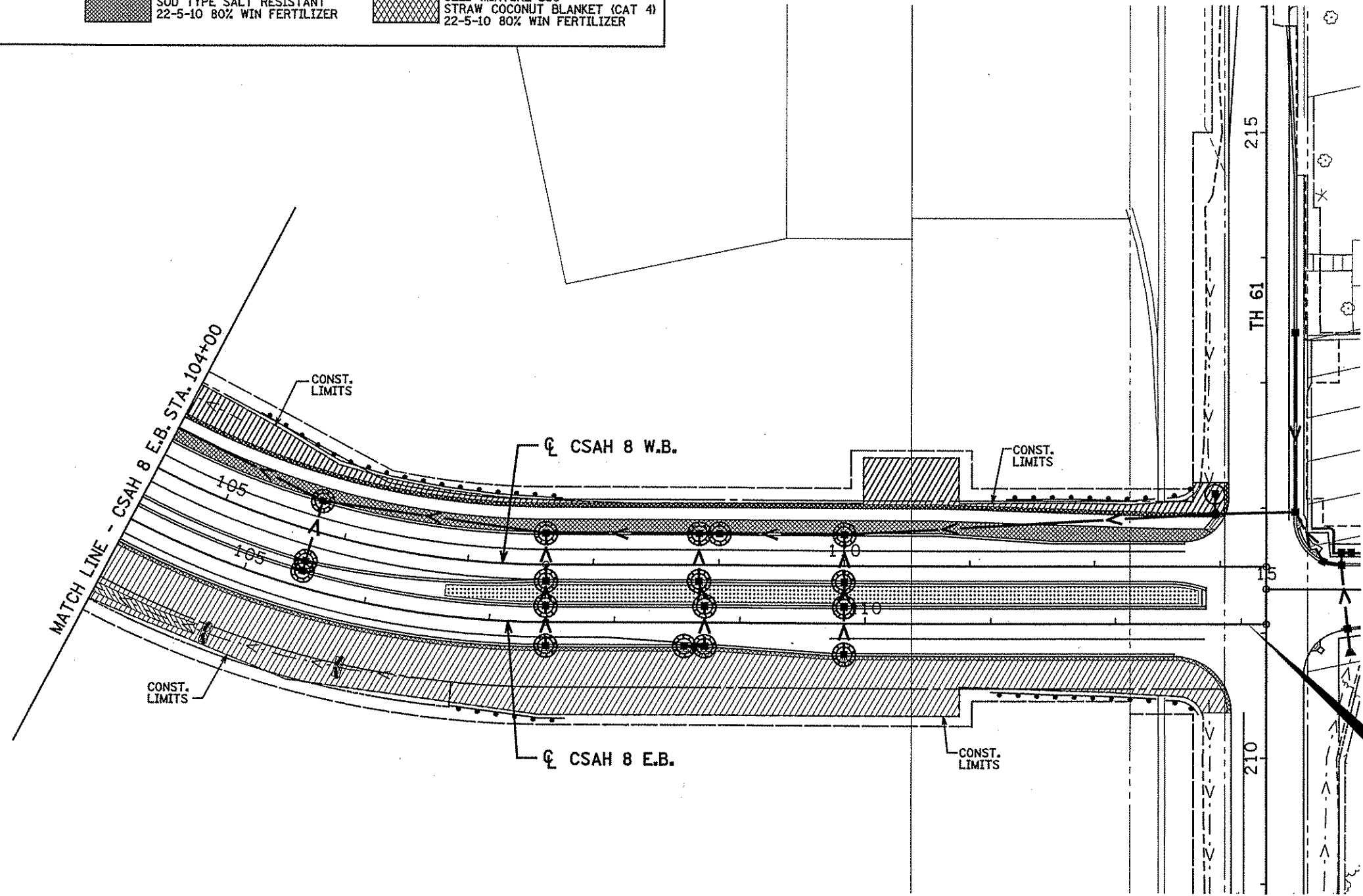
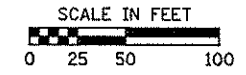
TURF ESTABLISHMENT AND EROSION CONTROL PLAN  
STA. 92+00 TO STA. 104+00

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 168 of 296 Sheets



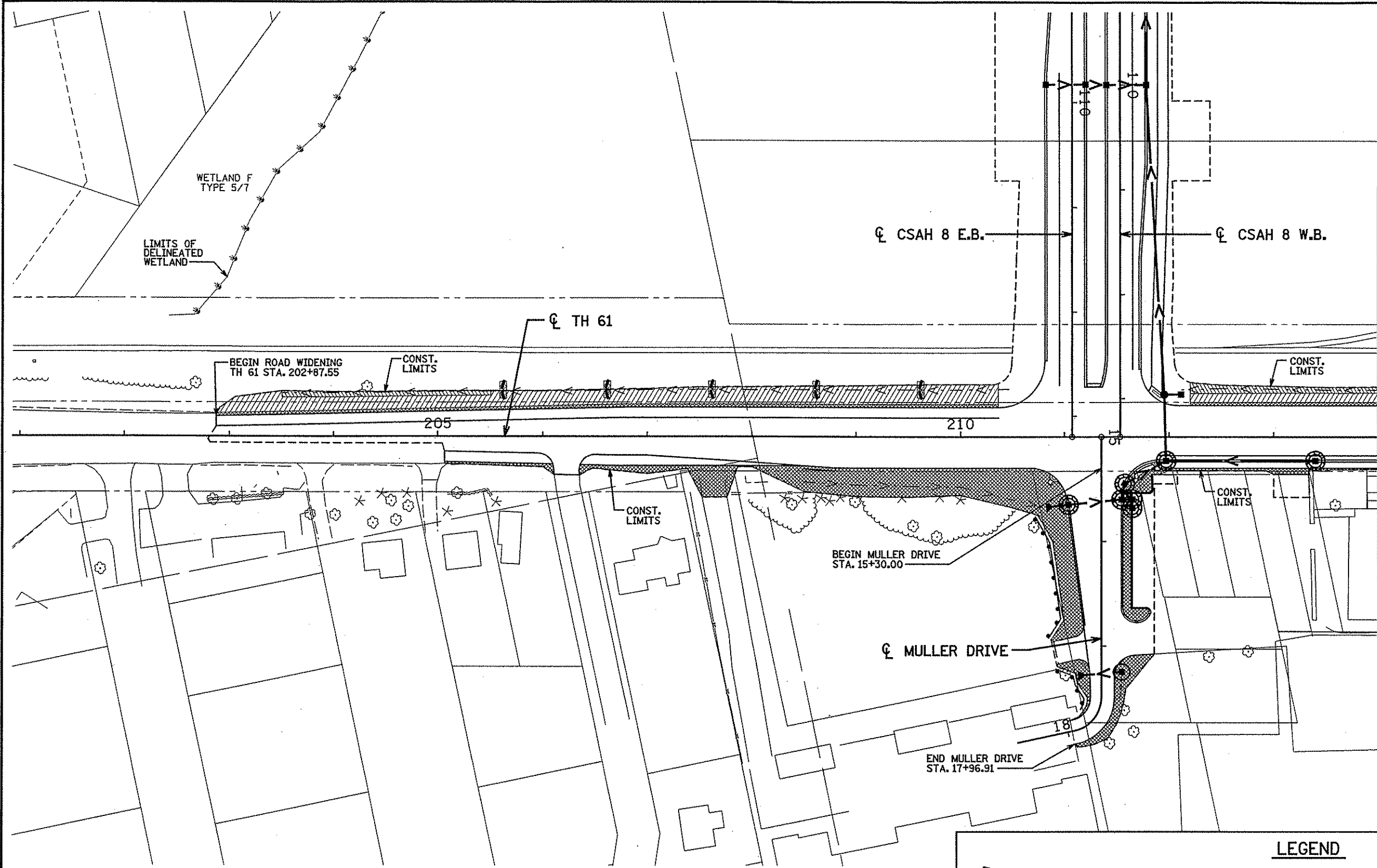
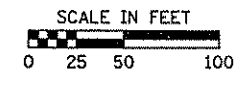
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- |  |   |  |
|--|---|--|
|  RIPRAP  |  DITCH CHECK TYPE 3  |  SEED MIXTURE 260<br>TYPE 3 MULCH, DISK ANCHOR<br>22-5-10 80% WIN FERTILIZER     |
|  INLET PROTECTION TYPE A                          |  DITCH CHECK TYPE 7  |  SEED MIXTURE 310<br>STRAW BLANKET (CAT 3)<br>22-5-10 80% WIN FERTILIZER         |
|  INLET PROTECTION TYPE C                          |  SEED MIXTURE 250<br>TYPE 1 MULCH, DISK ANCHOR<br>22-5-10 80% WIN FERTILIZER     |  SEED MIXTURE 350<br>TYPE 3 MULCH, DISK ANCHOR<br>22-5-10 80% WIN FERTILIZER     |
|  ROCK WEEPER                                      |  SEED MIXTURE 250<br>STRAW COCONUT BLANKET (CAT 4)<br>22-5-10 80% WIN FERTILIZER |  SEED MIXTURE 350<br>STRAW COCONUT BLANKET (CAT 4)<br>22-5-10 80% WIN FERTILIZER |
|  SILT FENCE (MACHINE SLICED)                      |  SOD TYPE SALT RESISTANT<br>22-5-10 80% WIN FERTILIZER                           |  |
|  BALE CHECK WITH STRAW<br>COCONUT BLANKET (CAT 4) |   |  |
|  SEDIMENT TRAP                                    |   |  |



END CONSTRUCTION  
 CSAH 8 E.B.  
 S.P. 82-608-07, S.P. 224-020-01  
 STA. 113+05.07

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MATCH LINE - TH 61 STA. 214+00

LEGEND			
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	INLET PROTECTION TYPE A		DITCH CHECK TYPE 7
	INLET PROTECTION TYPE C		SEED MIXTURE 250 TYPE 1 MULCH, DISK ANCHOR 22-5-10 80% WIN FERTILIZER
	ROCK WEEPER		SEED MIXTURE 310 STRAW BLANKET (CAT 3) 22-5-10 80% WIN FERTILIZER
	SILT FENCE (MACHINE SLICED)		SEED MIXTURE 250 STRAW COCONUT BLANKET (CAT 4) 22-5-10 80% WIN FERTILIZER
	BALE CHECK WITH STRAW COCONUT BLANKET (CAT 4)		SEED MIXTURE 350 TYPE 3 MULCH, DISK ANCHOR 22-5-10 80% WIN FERTILIZER
	SEDIMENT TRAP		SOD TYPE SALT RESISTANT 22-5-10 80% WIN FERTILIZER
			SEED MIXTURE 350 STRAW COCONUT BLANKET (CAT 4) 22-5-10 80% WIN FERTILIZER

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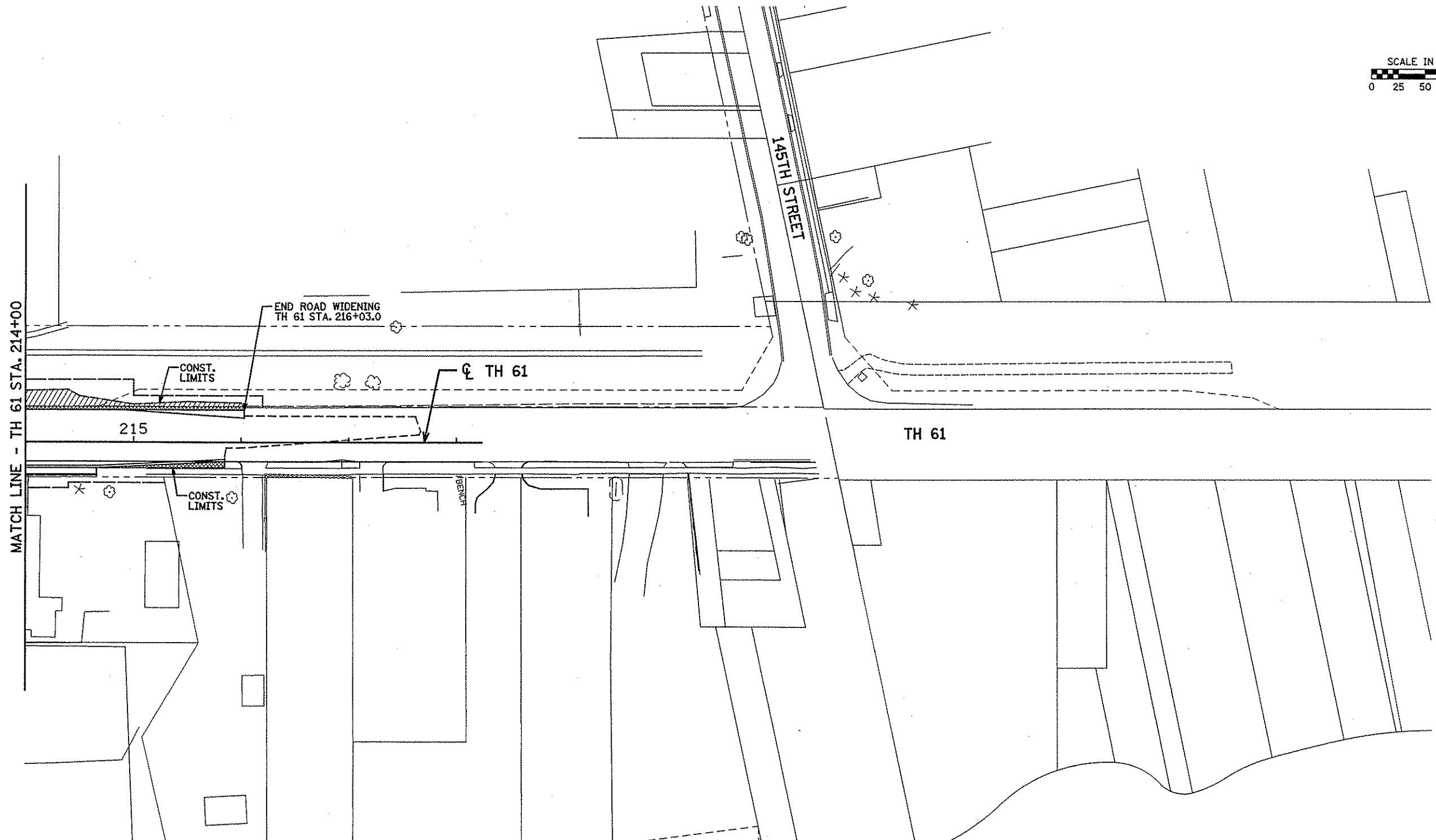
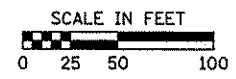
DRAWN BY: SFH  
CHECKED BY: MAW

CERTIFIED BY Matthew A. Warriner LIC. NO. 26883 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

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TURF ESTABLISHMENT AND EROSION CONTROL PLAN  
STA. 202+00 TO STA. 214+00

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 170 of 296 Sheets



LEGEND					
	RIPRAP		DITCH CHECK TYPE 3		SEED MIXTURE 260 TYPE 3 MULCH, DISK ANCHOR 22-5-10 80% WIN FERTILIZER
	INLET PROTECTION TYPE A		DITCH CHECK TYPE 7		SEED MIXTURE 310 STRAW BLANKET (CAT 3) 22-5-10 80% WIN FERTILIZER
	INLET PROTECTION TYPE C		SEED MIXTURE 250 TYPE 1 MULCH, DISK ANCHOR 22-5-10 80% WIN FERTILIZER		SEED MIXTURE 350 TYPE 3 MULCH, DISK ANCHOR 22-5-10 80% WIN FERTILIZER
	ROCK WEEPER		SEED MIXTURE 250 STRAW COCONUT BLANKET (CAT 4) 22-5-10 80% WIN FERTILIZER		SOD TYPE SALT RESISTANT 22-5-10 80% WIN FERTILIZER
	SILT FENCE (MACHINE SLICED)		SEDIMENT TRAP		
	BALE CHECK WITH STRAW COCONUT BLANKET (CAT 4)				

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STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NOTES

1. THE CONTRACTOR MUST IDENTIFY A PERSON (EROSION CONTROL SUPERVISOR) KNOWLEDGEABLE AND EXPERIENCED IN THE APPLICATION OF EROSION PREVENTION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES (BMPs). PROVIDING THE EROSION CONTROL SUPERVISOR SHALL BE CONSIDERED INCIDENTAL FOR WHICH NO DIRECT PAYMENT WILL BE MADE.
2. THE EROSION CONTROL SUPERVISOR WILL WORK WITH THE PROJECT ENGINEER TO OVERSEE THE IMPLEMENTATION OF THE SWPPP, AND THE INSTALLATION, INSPECTION, AND MAINTENANCE OF THE EROSION PREVENTION AND SEDIMENT CONTROL BMPs BEFORE AND DURING CONSTRUCTION.
3. THE CONTRACTOR MUST KEEP THE SWPPP, ALL CHANGES TO IT, AND INSPECTION AND MAINTENANCE RECORDS AT THE SITE DURING CONSTRUCTION.
4. THE CONTRACTOR SHALL DEVELOP A CHAIN OF RESPONSIBILITY WITH ALL OPERATORS ON THE SITE TO ENSURE THAT THE SWPPP WILL BE IMPLEMENTED AND STAY IN EFFECT UNTIL THE CONSTRUCTION PROJECT IS COMPLETE, THE ENTIRE SITE HAS UNDERGONE FINAL STABILIZATION, AND A NOTICE OF TERMINATION HAS BEEN SUBMITTED TO THE MPCA.
5. THE CONTRACTOR SHALL PROVIDE FOR TEMPORARY AND PERMANENT EROSION PREVENTION AND SEDIMENT CONTROL BMPs AS SHOWN IN THE PLANS AND THEY SHALL BE KEPT IN A FUNCTIONAL CONDITION AT ALL TIMES THROUGHOUT CONSTRUCTION. THESE MEASURES MAY BE MODIFIED AS APPROPRIATE FOR CONSTRUCTION STAGING AS DIRECTED BY THE EROSION CONTROL SUPERVISOR OR THE PROJECT ENGINEER. THE CONTRACTOR SHALL REMAIN IN COMPLIANCE WITH ALL NPDES AND OTHER PERMIT REQUIREMENTS AT ALL TIMES.
6. ALL EXPOSED SOIL AREAS WITH A CONTINUOUS POSITIVE SLOPE WITHIN 200 LINEAL FEET OF A SURFACE WATER MUST HAVE TEMPORARY OR PERMANENT COVER FOR THE EXPOSED SOIL AREAS YEAR ROUND, ACCORDING TO THE FOLLOWING TABLE OF SLOPES AND TIME FRAMES:
 

TYPE OF SLOPE	TIME *	* MAXIMUM TIME AN AREA CAN REMAIN OPEN WHEN THE AREA IS NOT ACTIVELY BEING WORKED.
STEEPER THAN 1:3	7 DAYS	
FROM 1:10 TO 1:3	14 DAYS	
FLATTER THAN 1:10	21 DAYS	

THESE AREAS INCLUDE ANY EXPOSED SOIL AREAS WITH A POSITIVE SLOPE TO A STORM WATER CONVEYANCE SYSTEM, SUCH AS A CURB AND GUTTER SYSTEM, STORM SEWER INLET, TEMPORARY OR PERMANENT DRAINAGE DITCH, OR OTHER NATURAL OR MAN MADE SYSTEMS THAT DISCHARGE TO A SURFACE WATER. THESE AREAS MUST BE KEPT STABILIZED AT ALL TIMES.
7. ALL EXPOSED SOIL AREAS WILL BE STABILIZED PRIOR TO THE ONSET OF WINTER. ANY WORK STILL BEING PERFORMED WILL BE SNOW MULCHED OR SNOW BLANKETED AND SNOW SEEDING.
8. THE NORMAL WETTED PERIMETER OF ANY TEMPORARY OR PERMANENT DRAINAGE DITCH THAT DRAINS WATER FROM A CONSTRUCTION SITE, OR DIVERTS WATER AROUND A SITE, MUST BE STABILIZED WITHIN 200 LINEAL FEET FROM THE PROPERTY EDGE, OR FROM THE POINT OF DISCHARGE TO ANY SURFACE WATER. STABILIZATION MUST BE COMPLETED WITHIN 24 HOURS OF CONNECTING TO A SURFACE WATER. THESE AREAS MUST BE KEPT STABILIZED AT ALL TIMES.
9. PIPE OUTLETS MUST BE PROVIDED WITH TEMPORARY OR PERMANENT ENERGY DISSIPATION WITHIN 24 HOURS OF CONNECTION TO A SURFACE WATER.
10. SEDIMENT CONTROL DEVICES MUST BE ESTABLISHED ON ALL DOWN GRADIENT PERIMETERS BEFORE ANY UPGRADIENT LAND DISTURBING ACTIVITIES BEGIN. THESE DEVICES SHALL REMAIN IN PLACE UNTIL FINAL STABILIZATION HAS BEEN ESTABLISHED IN ACCORDANCE WITH PART IV.G OF THE NPDES PERMIT. THE TIMING OF THE INSTALLATION OF SEDIMENT CONTROL DEVICES MAY BE ADJUSTED TO ACCOMMODATE SHORT-TERM ACTIVITIES SUCH AS CLEARING AND GRUBBING, OR PASSAGE OF VEHICLES. ANY SHORT-TERM ACTIVITY MUST BE COMPLETED AS QUICKLY AS POSSIBLE AND THE SEDIMENT CONTROL DEVICES MUST BE INSTALLED IMMEDIATELY AFTER THE ACTIVITY IS COMPLETED. HOWEVER, SEDIMENT CONTROL DEVICES MUST BE INSTALLED BEFORE THE NEXT PRECIPITATION EVENT EVEN IF THE ACTIVITY IS NOT COMPLETE.
11. TEMPORARY SOIL STOCKPILES MUST HAVE SILT FENCE OR OTHER EFFECTIVE SEDIMENT CONTROLS, AND CANNOT BE PLACED IN SURFACE WATERS.
12. VEHICLE TRACKING OF SEDIMENT FROM THE CONSTRUCTION SITE MUST BE MINIMIZED BY BMPs SUCH AS A SLASH MULCH PAD, CONCRETE OR STEEL WASH RACKS, OR EQUIVALENT SYSTEMS. STREET SWEEPING MUST BE USED IF SUCH BMPs ARE NOT ADEQUATE TO PREVENT SEDIMENT FROM BEING TRACKED ONTO THE STREET.
13. DEWATERING AND CONCRETE TRUCK WASHING RELATED TO THE CONSTRUCTION ACTIVITY THAT MAY HAVE TURBID OR SEDIMENT LADEN DISCHARGE WATER MUST BE DISCHARGED TO A TEMPORARY SEDIMENTATION BASIN ON THE PROJECT SITE WHENEVER POSSIBLE. IF THE WATER CANNOT BE DISCHARGED TO A SEDIMENTATION BASIN PRIOR TO ENTERING THE SURFACE WATER, IT MUST BE TREATED WITH THE APPROPRIATE BMPs, SUCH THAT THE DISCHARGE DOES NOT ADVERSELY AFFECT THE RECEIVING WATER DOWNSTREAM LANDOWNERS. THE CONTRACTOR MUST ENSURE THAT DISCHARGE POINTS ARE ADEQUATELY PROTECTED FROM EROSION AND SCOUR. THE DISCHARGE MUST BE DISPERSED OVER NATURAL ROCK RIPRAP, SAND BAGS, PLASTIC SHEETING OR OTHER ENERGY DISSIPATION MEASURES APPROVED BY THE EROSION CONTROL SUPERVISOR OR THE PROJECT ENGINEER. ADEQUATE SEDIMENTATION CONTROL MEASURES ARE REQUIRED FOR DISCHARGE WATER THAT CONTAINS SUSPENDED SOLIDS.
14. ANY FUEL OR CHEMICAL TANK STORED ON THE PROJECT AREA MUST BE PROTECTED BY A SOIL BERM OR HAVE A NEGATIVE GRADIENT TO ANY WATER RESOURCE AREA. A CONTINGENCY PLAN MUST BE CREATED BY THE CONTRACTOR IN THE EVENT OF A SPILL OR LEAK OF ANY CHEMICAL, INCLUDING PETROCHEMICALS, DEEMED HARMFUL TO THE ENVIRONMENT, AND HAVE ON HAND THE MATERIALS NECESSARY TO CAPTURE AND CONTAIN SAID CHEMICALS.
15. THE CONTRACTOR WILL USE CONTINUOUS AND PROGRESSIVE SEEDING PROCESSES. DORMANT SEEDING WILL NOT ALLOW THE NOTICE OF TERMINATION TO BE FILED WITH THE MPCA UNTIL 70 PERCENT OF THE PERENNIAL VEGETATIVE COVER IS ACHIEVED.
16. THE EROSION CONTROL SUPERVISOR MUST ROUTINELY INSPECT THE ENTIRE CONSTRUCTION SITE ONCE EVERY SEVEN DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS. THE EROSION CONTROL SUPERVISOR SHALL BE AVAILABLE TO BE ON THE PROJECT WITHIN 24 HOURS AT ALL TIMES FROM INITIAL DISTURBANCE TO FINAL STABILIZATION AS WELL AS PERFORM THE DUTIES LISTED IN SPEC. 2573.
17. ALL INSPECTIONS AND MAINTENANCE CONDUCTED DURING CONSTRUCTION MUST BE RECORDED IN WRITING AND THESE RECORDS MUST BE RETAINED WITH THE SWPPP IN ACCORDANCE WITH PART III.D OF THE NPDES PERMIT.
18. WHERE PARTS OF THE CONSTRUCTION SITE HAVE UNDERGONE FINAL STABILIZATION, BUT WORK REMAINS ON OTHER PARTS OF THE SITE, INSPECTIONS OF THE STABILIZED AREAS MAY BE REDUCED TO ONCE PER MONTH. WHERE WORK HAS BEEN SUSPENDED DUE TO FROZEN GROUND CONDITIONS, THE REQUIRED INSPECTIONS AND MAINTENANCE MUST TAKE PLACE AS SOON AS RUNOFF OCCURS AT THE SITE OR PRIOR TO RESUMING CONSTRUCTION, WHICHEVER COMES FIRST.
19. ALL EROSION PREVENTION AND SEDIMENT CONTROL BMPs MUST BE INSPECTED BY THE CONTRACTOR TO ENSURE INTEGRITY AND EFFECTIVENESS. ALL NONFUNCTIONAL BMPs MUST BE REPAIRED, REPLACED, OR SUPPLEMENTED WITH FUNCTIONAL BMPs AS DIRECTED BY THE EROSION CONTROL SUPERVISOR OR THE PROJECT ENGINEER.
20. ALL SILT FENCE MUST BE REPAIRED, REPLACED, OR SUPPLEMENTED WHEN THEY BECOME NONFUNCTIONAL OR THE SEDIMENT REACHES 1/3 OF THE HEIGHT OF THE FENCE. THESE REPAIRS MUST BE MADE WITHIN 24 HOURS OF DISCOVERY, OR AS SOON AS FIELD CONDITIONS ALLOW ACCESS.
21. TEMPORARY SEDIMENT TRAPS MUST BE DRAINED AND THE SEDIMENT REMOVED WHEN THE DEPTH OF SEDIMENT COLLECTED REACHES 1/2 THE STORAGE VOLUME. DRAINAGE AND REMOVAL MUST BE COMPLETED WITH 72 HOURS OF DISCOVERY, OR AS SOON AS FIELD CONDITIONS ALLOW ACCESS.
22. SURFACE WATERS, INCLUDING DRAINAGE DITCHES AND CONVEYANCE SYSTEMS, MUST BE INSPECTED FOR EVIDENCE OF SEDIMENT BEING DEPOSITED BY EROSION. THE CONTRACTOR MUST REMOVE ALL SEDIMENT DEPOSITED IN SURFACE WATERS AND RESTABILIZE THE AREAS WHERE SEDIMENT REMOVAL RESULTS IN EXPOSED SOIL. THE REMOVAL AND STABILIZATION MUST TAKE PLACE WITHIN 7 DAYS OF DISCOVERY.
23. THE CONTRACTOR IS RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF TEMPORARY AND PERMANENT WATER QUALITY MANAGEMENT BMPs, AS WELL AS ALL EROSION PREVENTION AND SEDIMENT CONTROL BMPs, FOR THE DURATION OF THE CONSTRUCTION WORK AT THE SITE.
24. SOLID WASTE SUCH AS COLLECTED SEDIMENT, ASPHALT AND CONCRETE MILLINGS, FLOATING DEBRIS, PAPER, PLASTIC, FABRIC, CONSTRUCTION AND DEMOLITION DEBRIS, AND OTHER WASTES MUST BE DISPOSED OF PROPERLY AND MUST COMPLY WITH MPCA DISPOSAL REQUIREMENTS.
25. HAZARDOUS MATERIALS SUCH AS OIL, GASOLINE, AND PAINT MUST BE PROPERLY STORED, INCLUDING SECONDARY CONTAINMENT, TO PREVENT SPILLS, LEAKS OR OTHER DISCHARGE. RESTRICTED ACCESS TO STORAGE AREAS MUST BE PROVIDED TO PREVENT VANDALISM. STORAGE AND DISPOSAL OF HAZARDOUS WASTE MUST BE IN COMPLIANCE WITH MPCA REGULATIONS.
26. ALL DITCHES AND SLOPES SHALL BE KEPT IN A SMOOTH ROUGH GRADED CONDITION FOR CORRECT APPLICATION OF EROSION CONTROL MULCHES AND BLANKETS.
27. REGULATORY AGENCY CONTACT NAMES:
 

MPCA - BRIAN GOVE	(651) 296-7036
COE (WASHINGTON CO.) - DANIEL SEEMON	(651) 290-5380
RCWD - KEN POWELL	(763) 398-3078
COE (ANOKA CO.) - TIM FELL	(651) 290-5360

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DRAWN BY: SFH

CHECKED BY: MAW

CERTIFIED BY

*Matthew J. Wamm*  
LICENSED PROFESSIONAL ENGINEER

LIC. NO. 26883

DATE 8/15/05

**TKDA**

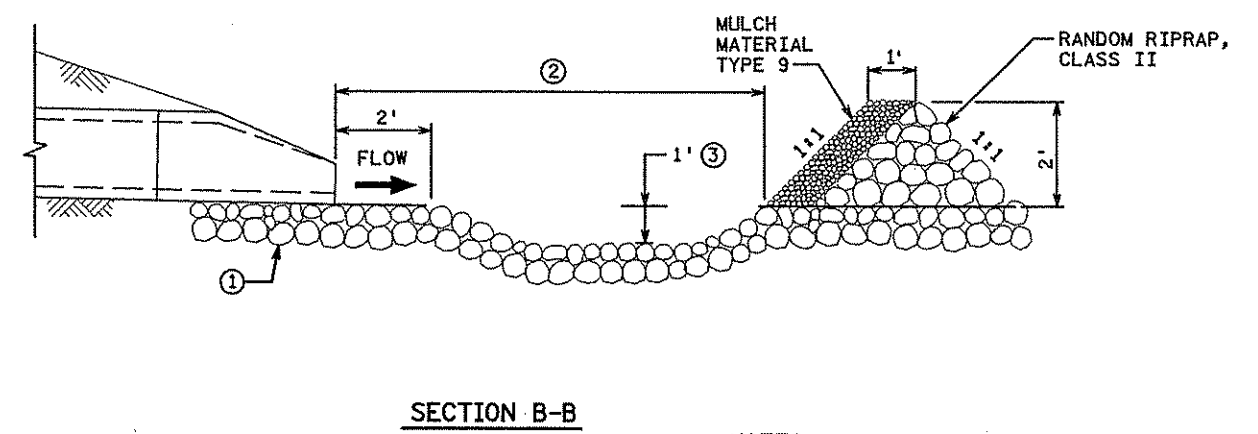
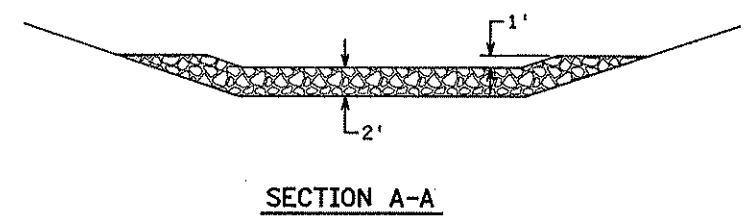
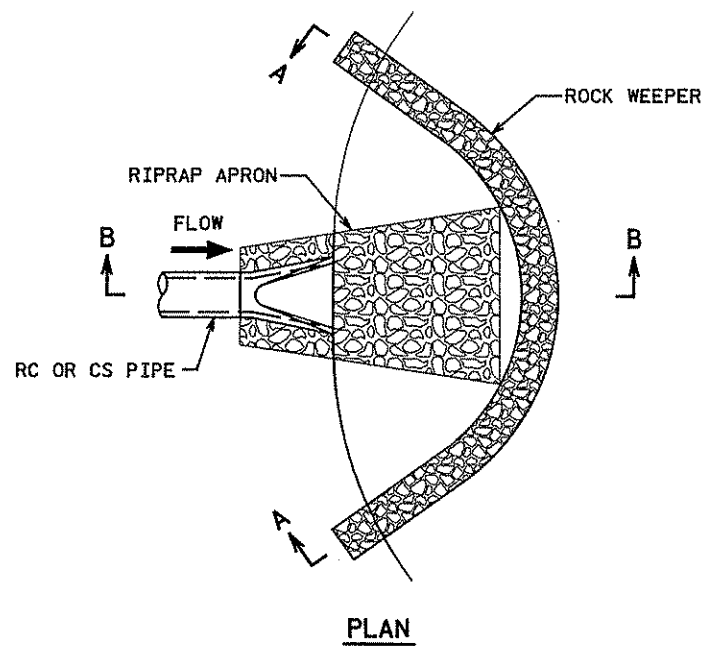
ENGINEERS - ARCHITECTS - PLANNERS

EROSION CONTROL DETAILS

STORM WATER POLLUTION PREVENTION PLAN NOTES

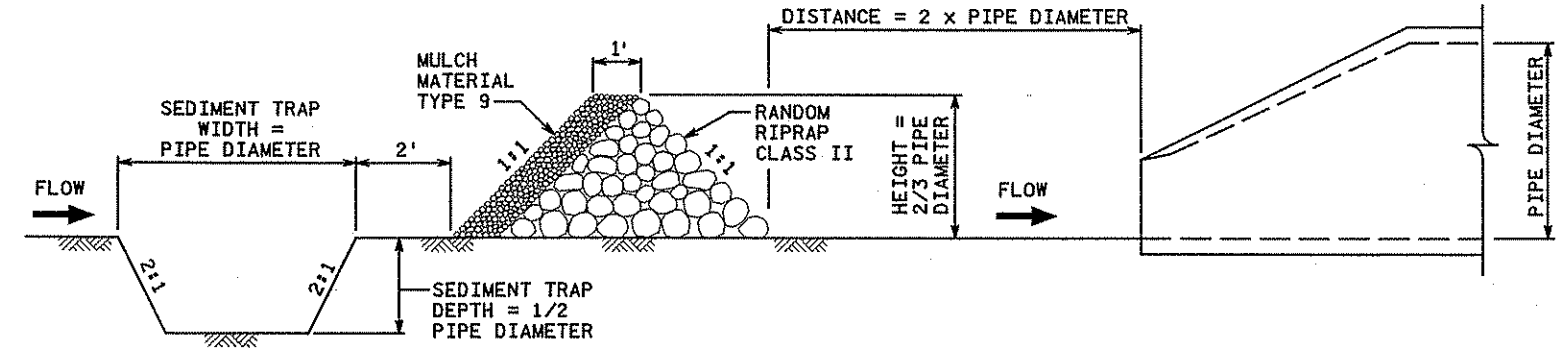
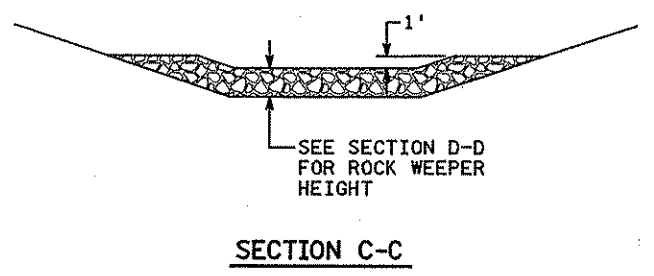
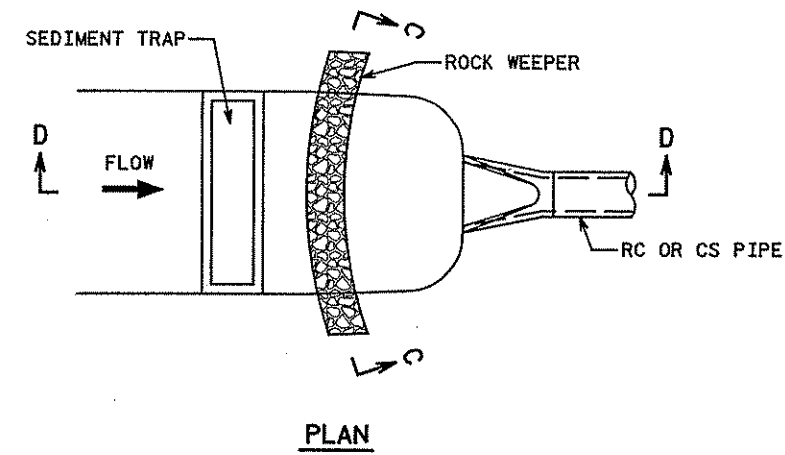
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Sheet No. 172 of 296 Sheets

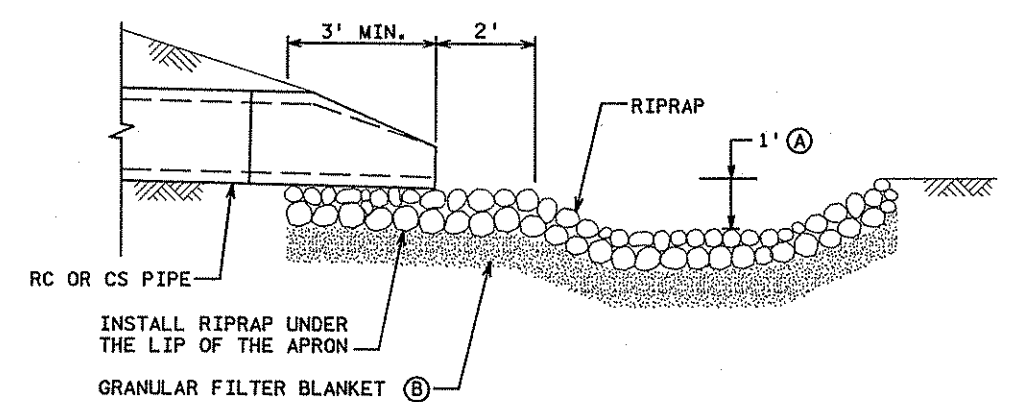


**ROCK WEEPER FORE-BAY SYSTEM**

- NOTES:**
- ① INSTALL RIPRAP UNDER LIP OF APRON AS PER DETAIL ON THIS SHEET PRIOR TO APRON INSTALLATION.
  - ② LENGTH OF RIPRAP APRON DETERMINED BY MN/DOT STANDARD PLATE 3133.
  - ③ FOR PIPES GREATER THAN OR EQUAL TO 30", USE 1.5' FOR PIPES GREATER THAN OR EQUAL TO 48", USE 2.0'



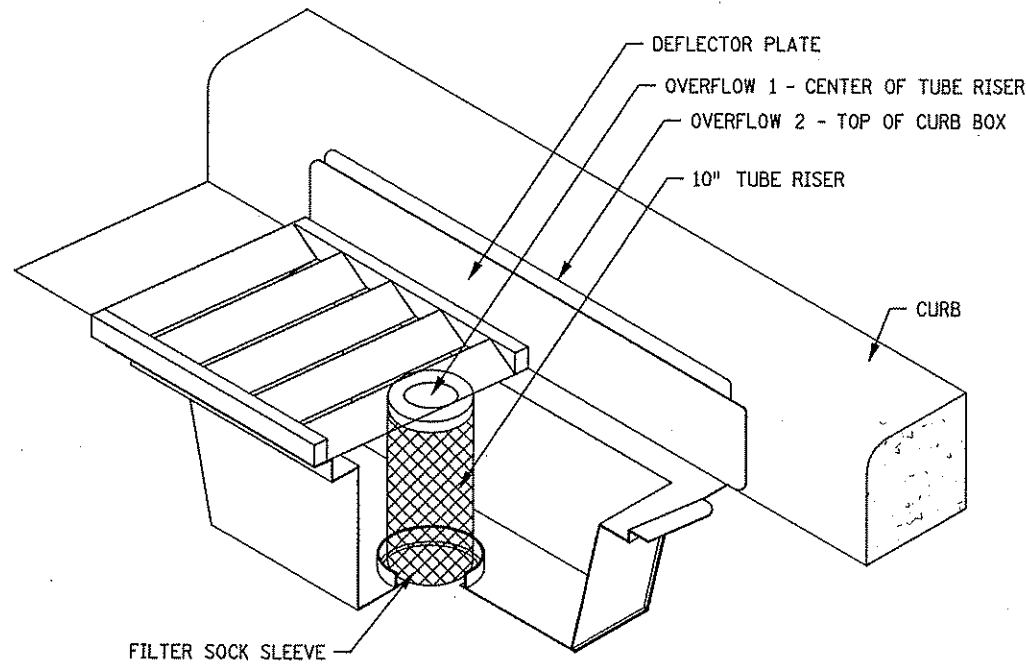
**ROCK WEEPER EXIT SYSTEM**



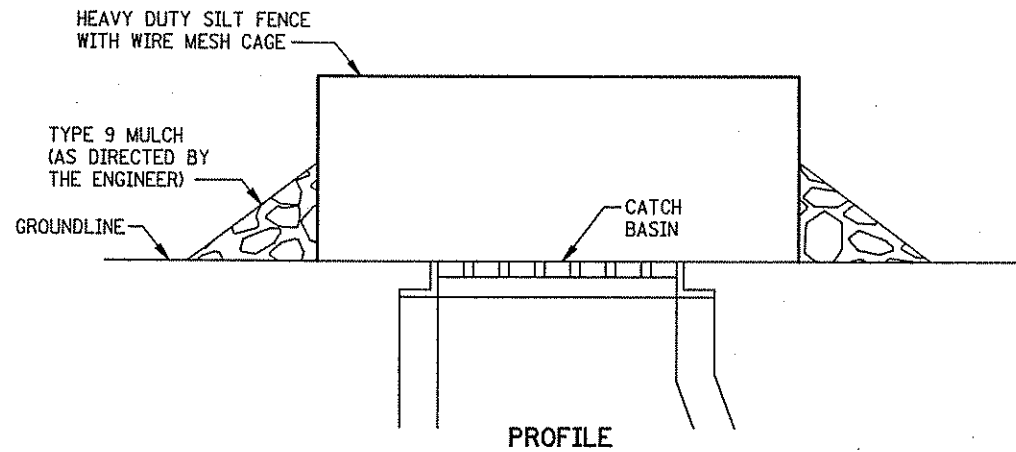
- NOTES:**
- RIPRAP MUST BE PLACED PRIOR TO APRON INSTALLATION.
  - Ⓐ FOR PIPES GREATER THAN OR EQUAL TO 30", USE 1.5'. FOR PIPES GREATER THAN OR EQUAL TO 48", USE 2.0'.
  - Ⓑ THE CONTRACTOR, AT HIS OPTION, MAY SUBSTITUTE A GEOTEXTILE FABRIC, SPEC. 3733, FOR THE GRANULAR FILTER BLANKET UNLESS OTHERWISE SPECIFIED IN THE PLANS. THE FABRIC SHOULD COVER THE AREA OF THE RIPRAP AND EXTEND UNDER THE CULVERT APRON 3 FT.

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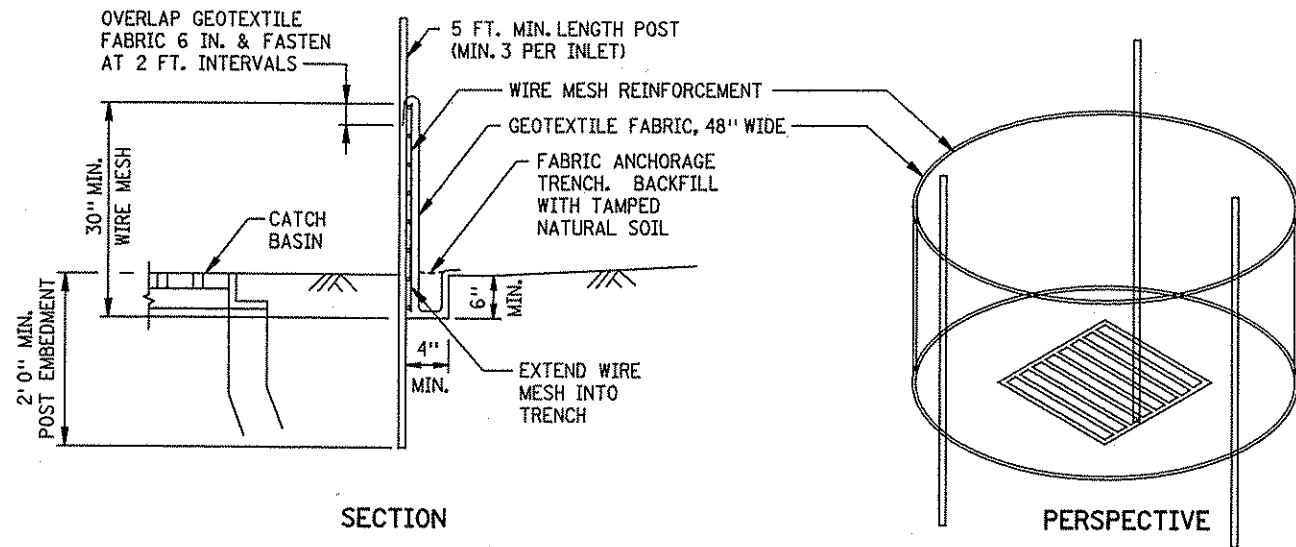




**INLET PROTECTION TYPE C**  
(POP-UP HEAD INSERT)



**PROFILE**

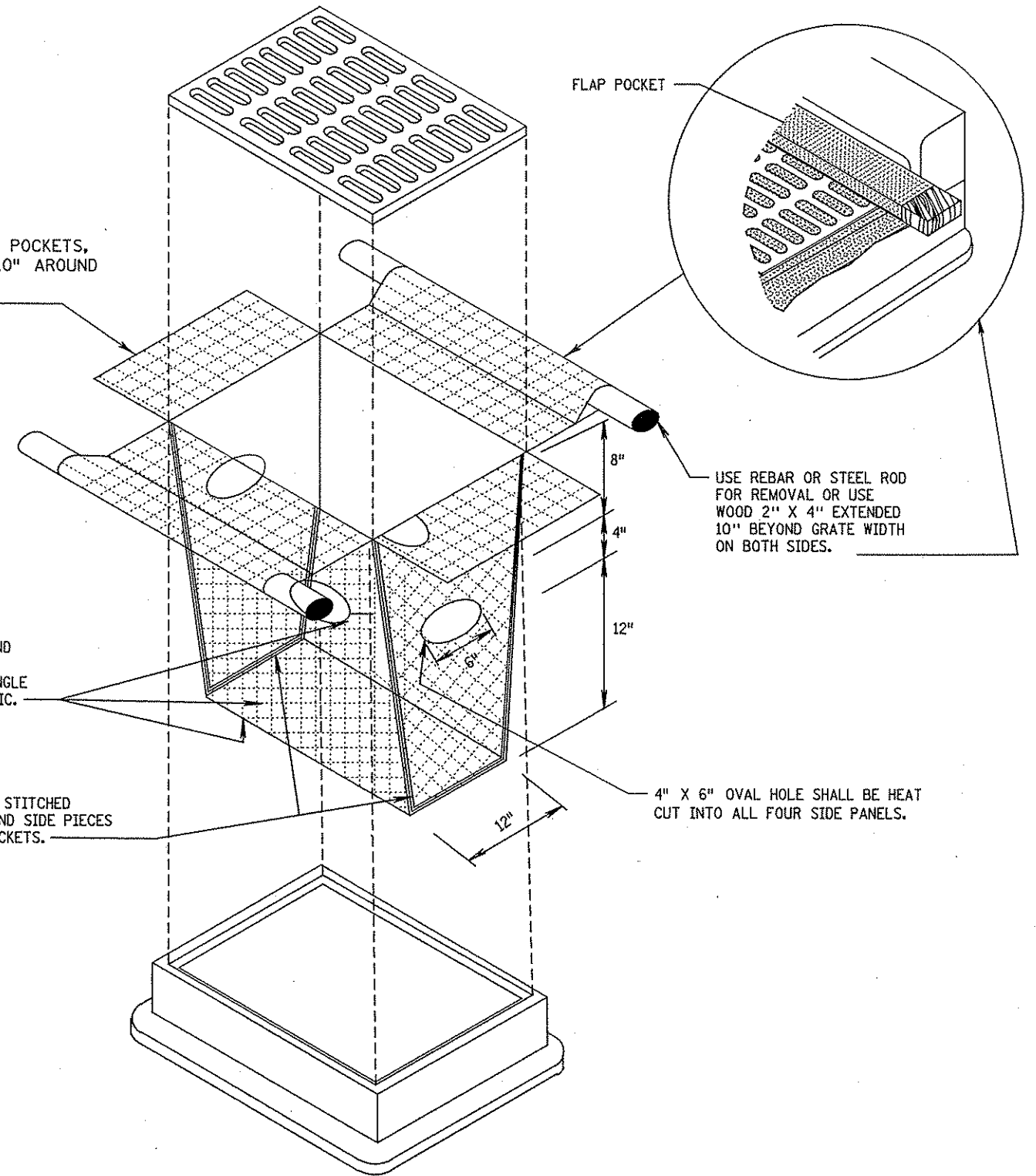


**SECTION**

**PERSPECTIVE**

**INLET PROTECTION TYPE A**  
(HEAVY DUTY SILT FENCE)

FINISHED SIZE, INCLUDING FLAP POCKETS, SHALL EXTEND A MINIMUM OF 10\"/>



**INLET PROTECTION TYPE C**  
(SILT SAC)

NOTE:  
CONTRACTOR MAY USE EITHER POP-UP HEAD INSERT OR SILT SAC WHEREVER INLET PROTECTION TYPE C IS CALLED FOR IN THE PLANS

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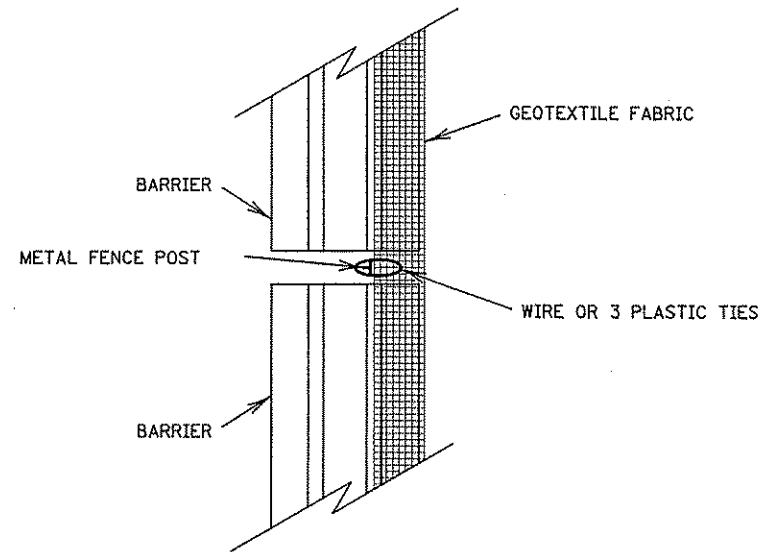
CERTIFIED BY *Matthew A. Warren* LIC. NO. 26883 DATE 8/5/05  
LICENSED PROFESSIONAL ENGINEER

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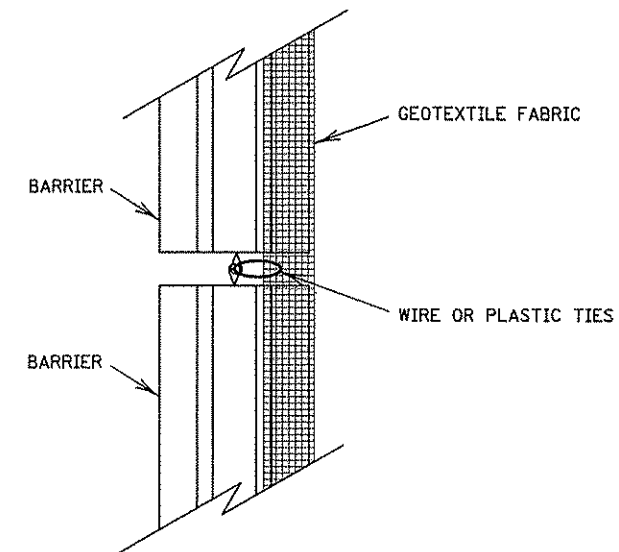
EROSION CONTROL DETAILS  
INLET PROTECTION TYPES A & C

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 174 of 296 Sheets

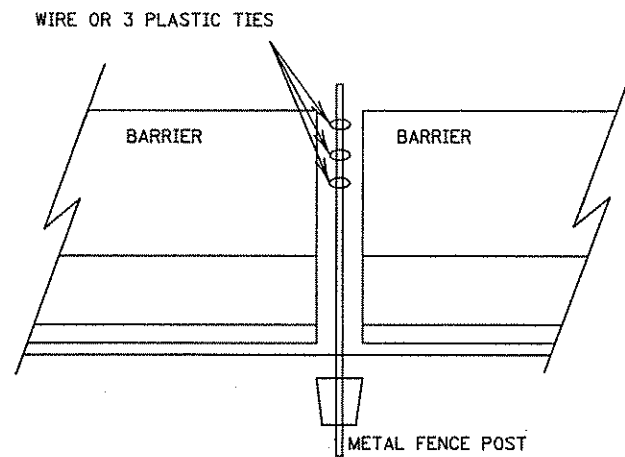
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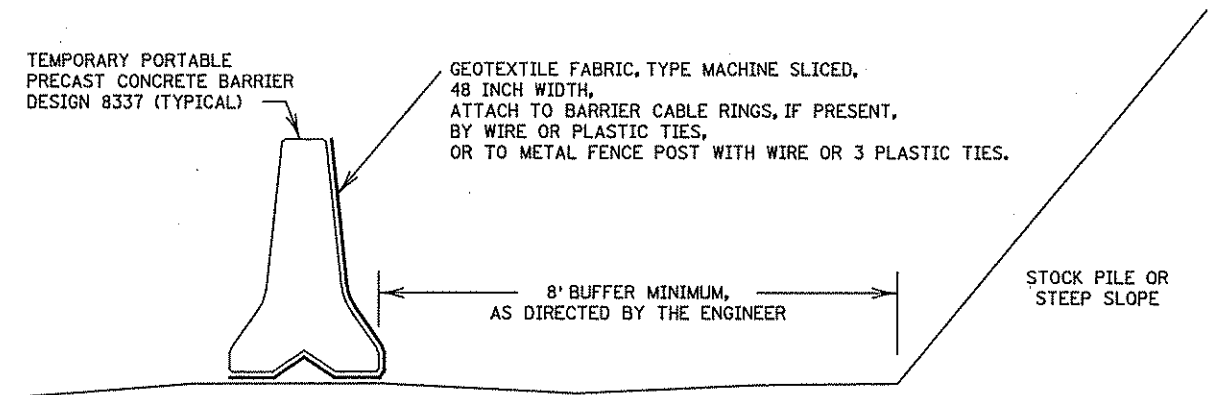
**BARRIER WITHOUT CABLE RINGS**  
 TOP VIEW



**BARRIER WITH CABLE RINGS**  
 TOP VIEW



**BARRIER WITHOUT CABLE RINGS**  
 SIDE VIEW



**SUPER DUTY SILT FENCE**

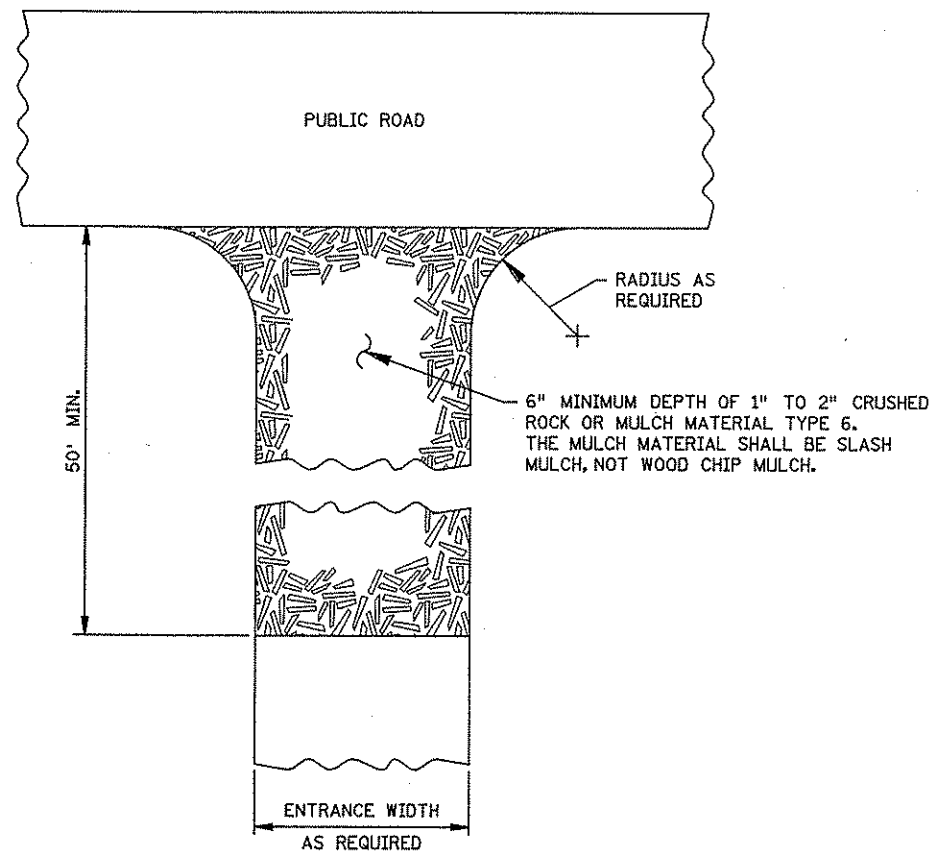
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CERTIFIED BY Matthew D. Wasson LIC. NO. 26883 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

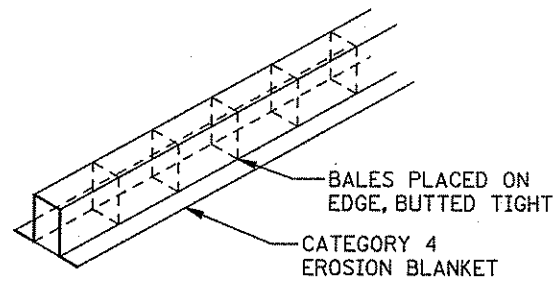
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EROSION CONTROL DETAILS  
 SUPER DUTY SILT FENCE

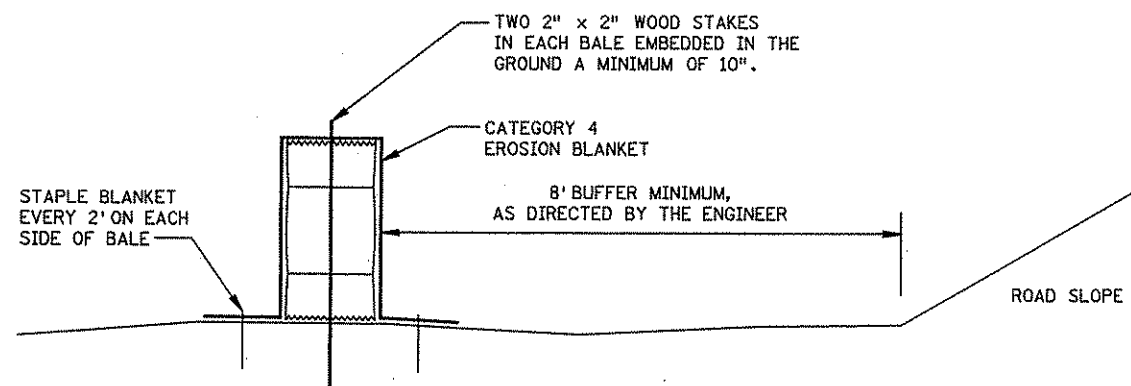
S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 175 of 296 Sheets



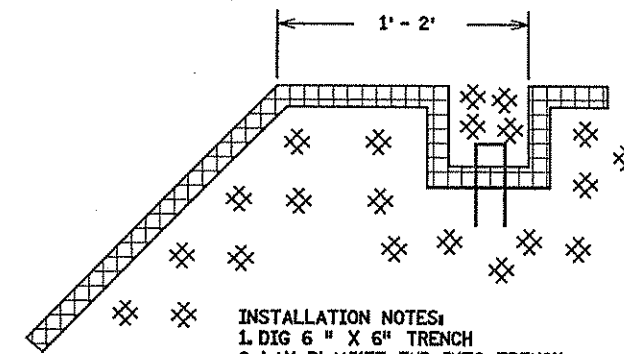
**STABILIZED CONSTRUCTION ENTRANCE**



**PERSPECTIVE**



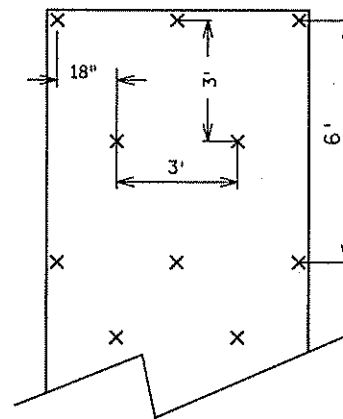
**SECTION  
BALE BARRIER**



- INSTALLATION NOTES:**  
 1. DIG 6" X 6" TRENCH  
 2. LAY BLANKET END INTO TRENCH  
 3. STAPLE BLANKET IN BOTTOM OF TRENCH EVERY 18".  
 4. BACKFILL TRENCH WITH SOIL AND COMPACT.

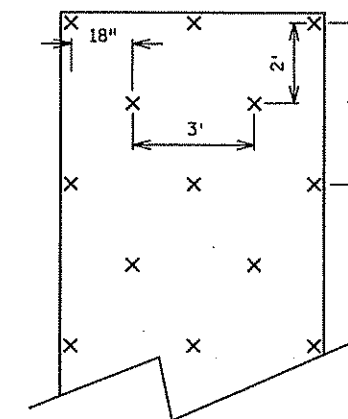
**CHECK TRENCH**

SLOPES FLATTER THAN 1:2  
(1.2 STAPLES PER SQ. YD.)



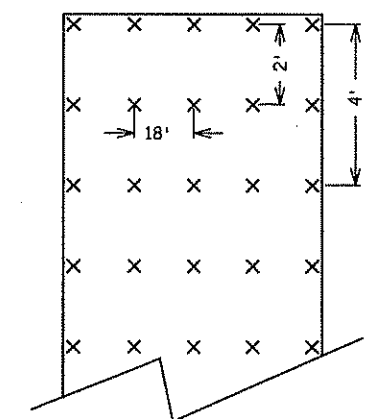
**STANDARD 6' BLANKET**

SLOPES 1:2 TO 1:1  
(1.7 STAPLES PER SQ. YD.)



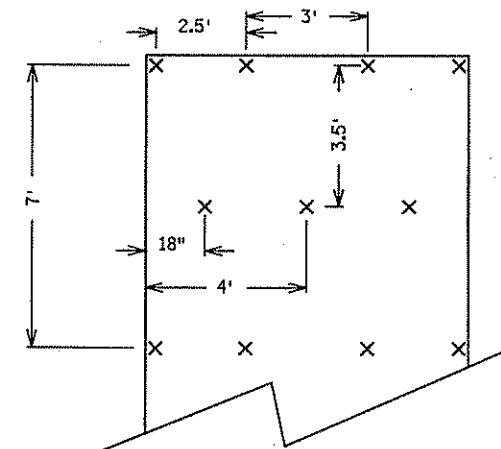
**STANDARD 6' BLANKET**

CHANNEL AND DITCH APPLICATIONS  
(3.5 STAPLES PER SQ. YD.)



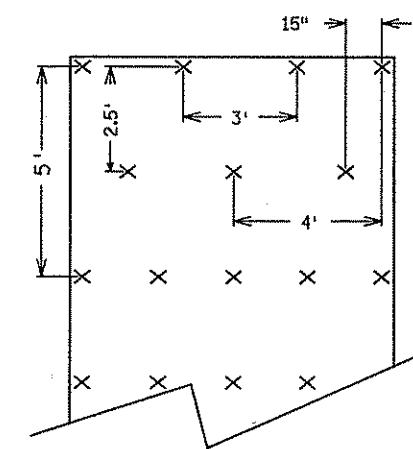
**STANDARD 6' BLANKET**

SLOPES FLATTER THAN 1:2  
(1.2 STAPLES PER SQ. YD.)



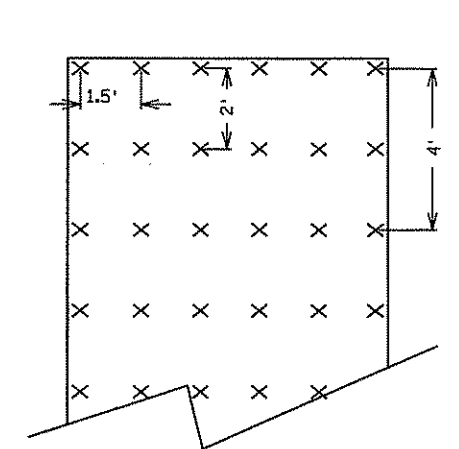
**STANDARD 8' BLANKET**

SLOPES 1:2 TO 1:1  
(1.7 STAPLES PER SQ. YD.)



**STANDARD 8' BLANKET**

CHANNEL AND DITCH APPLICATIONS  
(3.5 STAPLES PER SQ. YD.)



**STANDARD 8' BLANKET**

**BLANKET STAPLING PATTERN**

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EROSION CONTROL DETAILS  
 CONSTRUCTION EXIT PAD, BALE BARRIER, CHECK TRENCH AND BLANKET STAPLING PATTERN

S.P. 02-614-23 S.P. 82-608-07

Sheet No. 176 of 296 Sheets

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**LEGEND OF SYMBOLS**

CONTROLLER AND SERVICE EQUIP. NO'S _____	
SIGNAL BASE NO. _____	
SIGNAL FACE NO. _____	
LUMINAIRE NO. _____	
CONTROLLER AND CABINET _____	
CONTROLLER AND CABINET - IN PLACE _____	
HANDHOLE _____	
HANDHOLE - IN PLACE _____	
RIGID STEEL CONDUIT (RSC) _____	
RIGID STEEL CONDUIT (RSC) - IN PLACE _____	
SIGNAL FACE _____	
SIGNAL FACE - IN PLACE _____	
PEDESTRIAN INDICATORS _____	
PEDESTRIAN INDICATORS - IN PLACE _____	
PEDESTRIAN PUSH BUTTONS ON PEDESTAL OR POLE _____	
PEDESTRIAN PUSH BUTTON STATION _____	
TRAFFIC SIGNAL PEDESTAL _____	
TRAFFIC SIGNAL PEDESTAL - INPLACE _____	
TRAFFIC SIGNAL POLE AND MAST ARM _____	
TRAFFIC SIGNAL POLE AND MAST ARM - IN PLACE _____	
STREET LIGHT POLE AND LUMINAIRE _____	
STREET LIGHT POLE AND LUMINAIRE - IN PLACE _____	
MAST ARM AND LUMINAIRE _____	
MAST ARM AND LUMINAIRE - INPLACE _____	
WOOD POLE _____	
WOOD POLE - IN PLACE _____	
SOURCE OF POWER _____	
EMERGENCY VEHICLE PREEMPTION DETECTOR _____	
RAILROAD SIGNAL - IN PLACE _____	
RIGHT OF WAY LINE _____	
CENTERLINE _____	
EDGE OF ROADWAY _____	
SHOULDERLINE _____	

**ABBREVIATIONS**

3-1(EG) SIGNAL HEAD PHASE "3" - NO "1"	P2-1(EG) PEDESTRIAN INDICATION PHASE "2" - NO. "1"
BR. GR. BARE GROUND	PB PUSH BUTTON
CH. SW. CHECK SWITCH	PB2-1(EG) PUSH BUTTON PHASE "2" - NO. "1"
CLR CLEAR	PEC PHOTOELECTRIC CELL
D2-1(EG) DETECTOR PHASE "2" - NO. "1"	PED PEDESTRIAN
DWK DON'T WALK	R RED
EQG EQUIPMENT GROUND	R&S REMOVE AND SALVAGE
EVP EMERGENCY VEHICLE PRE-EMPTION	RLTA RED LEFT TURN ARROW
F&I FURNISH AND INSTALL	RRTA RED RIGHT TURN ARROW
FL FLASH/FLASHING	RSC RIGID STEEL CONDUIT
G GREEN	SOP SOURCE OF POWER
GLTA GREEN LEFT TURN ARROW	SPR SPARE
GRN GREEN	ST. LHT STREET LIGHT
GR. R GROUND ROD	STA STATION
GRTA GREEN RIGHT TURN ARROW	SW SWITCH
GTHA GREEN THRU ARROW	SWD SWITCHED
HH HANDHOLE	S&R SALVAGE AND REINSTALL
HPS HIGH PRESSURE SODIUM	TDW TELEPHONE DROP WIRE
JB JUNCTION BOX	WLK WALK
LUM LUMINAIRE	YEL YELLOW
NEU NEUTRAL	YLTA YELLOW LEFT TURN ARROW
NMC NONMETALLIC CONDUIT	YRTA YELLOW RIGHT TURN ARROW
	YTHA YELLOW THRU ARROW

**CONDUCTOR COLOR CODE**

R	RED
O	ORANGE
BL	BLUE
WH	WHITE
R/BLK	RED WITH BLACK TRACER
O/BLK	ORANGE WITH BLACK TRACER
BL/BLK	BLUE WITH BLACK TRACER
WH/BLK	WHITE WITH BLACK TRACER
BLK	BLACK
BLK/WH	BLACK WITH WHITE TRACER
G/BLK	GREEN WITH BLACK TRACER
G	GREEN

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 CHECKED BY: BDP

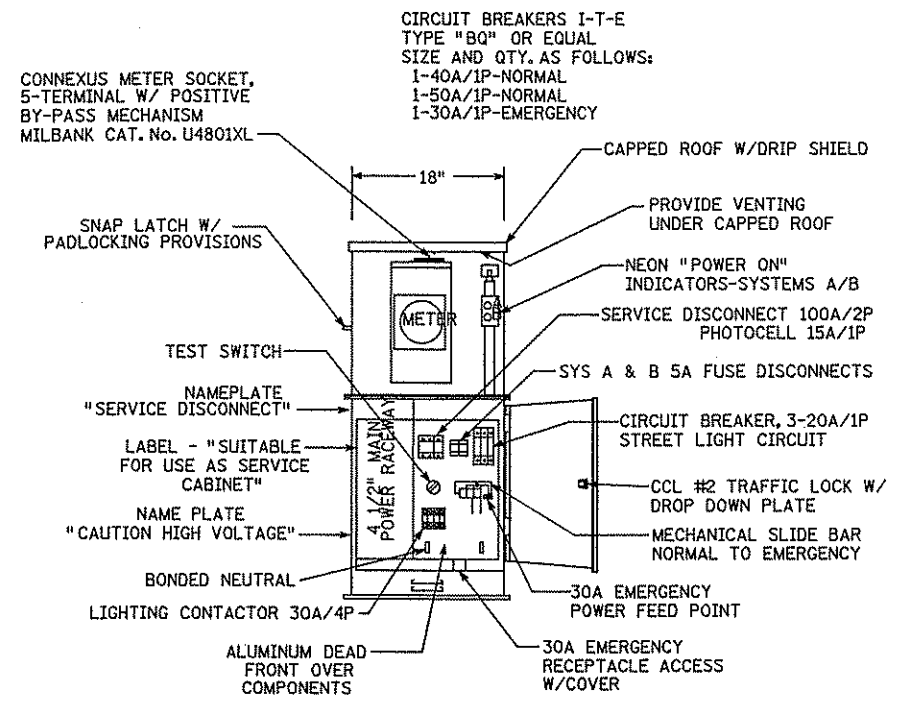
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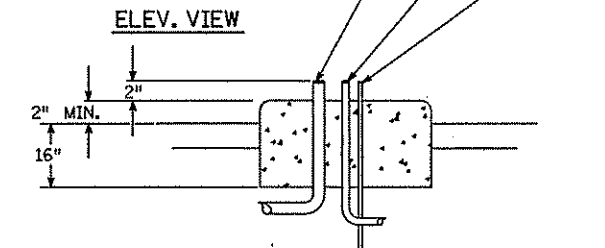
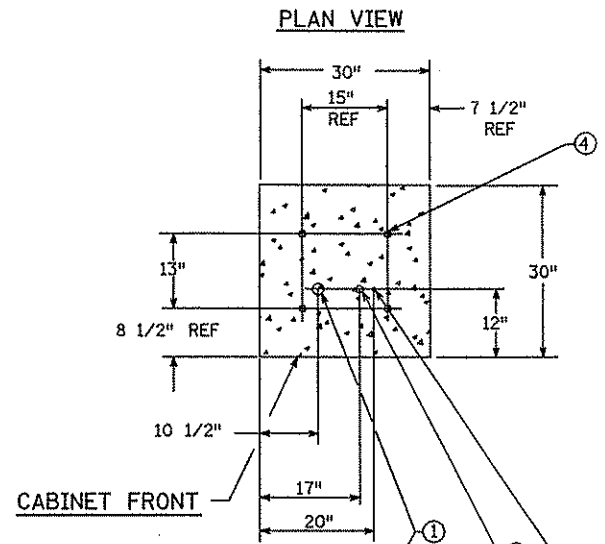
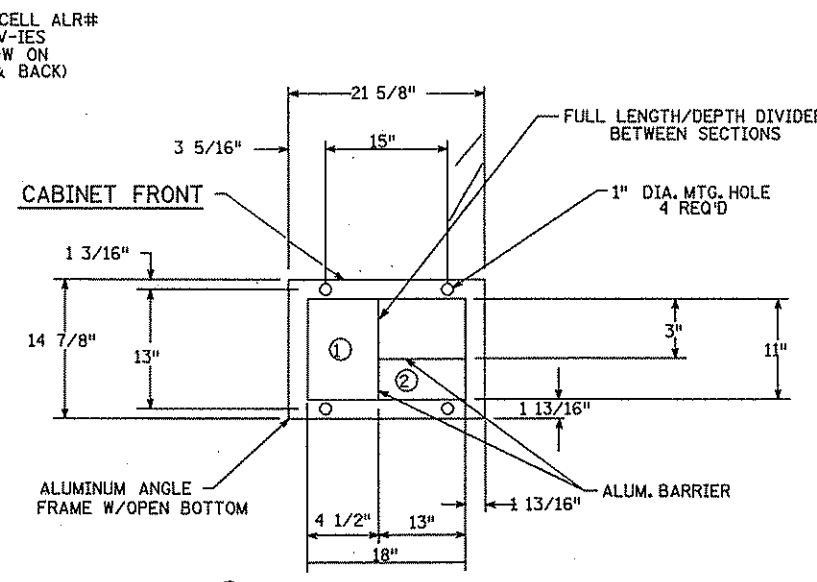
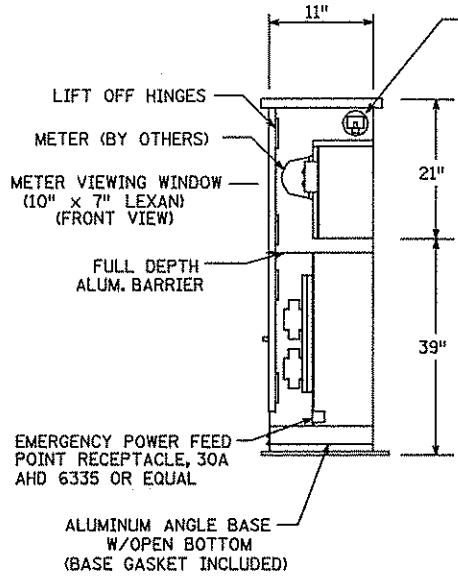
TRAFFIC CONTROL SIGNAL SYSTEM DETAILS  
 SYMBOLS AND ABBREVIATIONS

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 177 of 296 Sheets

**SERVICE CABINET FOUNDATION  
SYSTEM "A"-CSAH 14/OTTER LAKE ROAD**



**SIGNAL SERVICE CABINET  
SYSTEM "A"-CSAH 14/OTTER LAKE ROAD**

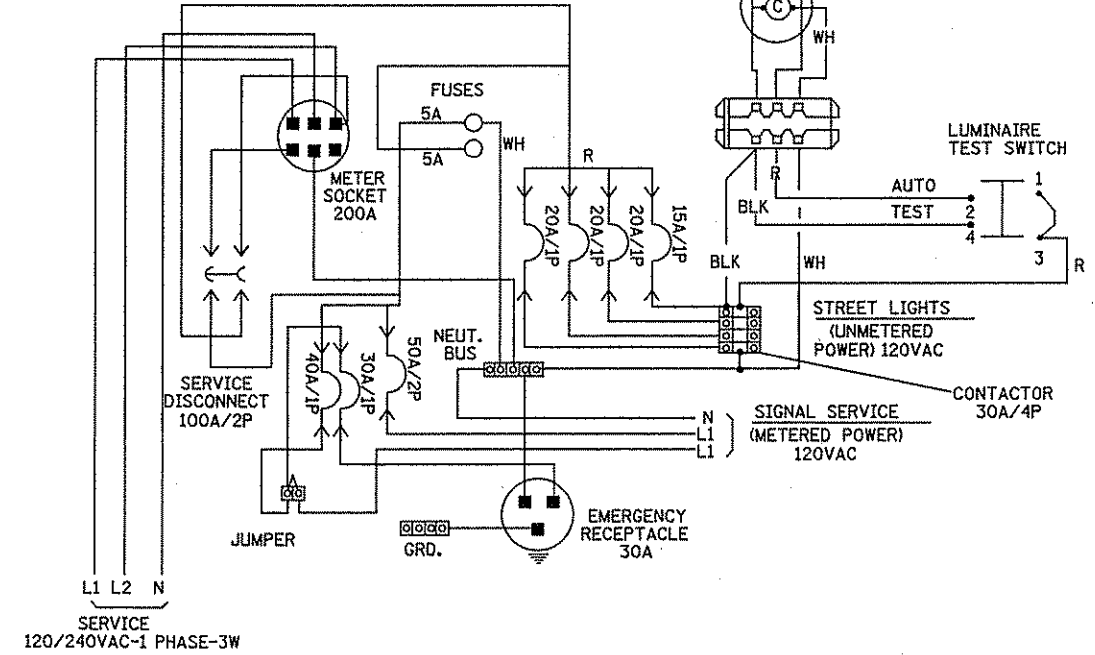


- ① MAIN POWER CONDUIT SPACE
- ② LIGHTING & SIGNAL CONDUIT SPACE
- ① 2" RSC STUB OUT (FOR SOP)
- ② 2" RSC TO HANDHOLE (SIGNAL/LIGHTING SERVICE)
- ③ GROUNDING ROD
- ④ ANCHOR BOLT LOCATIONS (4 REQUIRED)

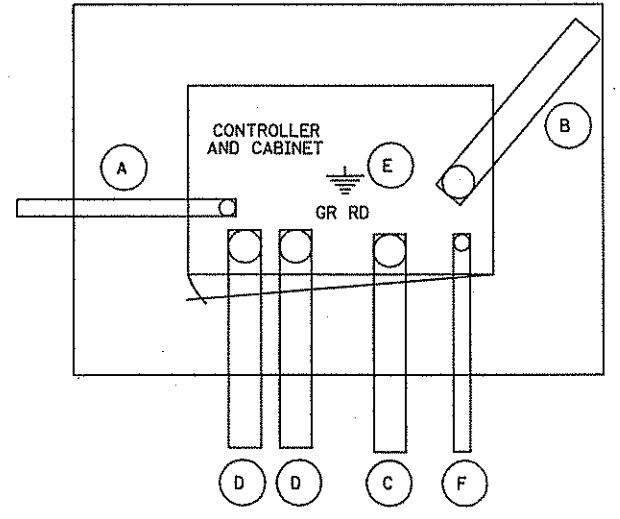
**CONSTRUCTION NOTES**

ENCLOSURE SHALL BE FABRICATED FROM 1/8" ALUMINUM FOR OUTDOOR WEATHERPROOF SERVICE.  
 DOORS TO BE NEOPRENE GASKETED. ALL HINGES, PINS AND LOCKS TO BE OF NON-CORRODING CONSTRUCTION.  
 CABINET SHALL HAVE ANODIC COATING FOR ALL ALUMINUM SURFACES. SEE SPECIAL PROVISIONS.  
 NEMA 3R ENCLOSURE SHALL BE "UL" APPROVED.  
 CABINET SHALL HAVE BASE GASKET INCLUDED.

**FEED POINT WIRING DIAGRAM**



- A 2" R.S.C. FOR SERVICE CONNECTION (VIA HH 16)
- B 4" R.S.C. TO HH 15
- C 4" R.S.C. TO HH 14
- D 3" R.S.C. STUBOUT, THREAD & CAP BOTH ENDS (FOR FUTURE USE).
- E 5/8" DIA X 15' GROUND ROD
- F 1" R.S.C. STUBOUT, THREAD & CAP BOTH ENDS (FOR FUTURE PHONE LINE).



SEE INTERSECTION LAYOUT FOR CONDUIT & CABLE INFORMATION

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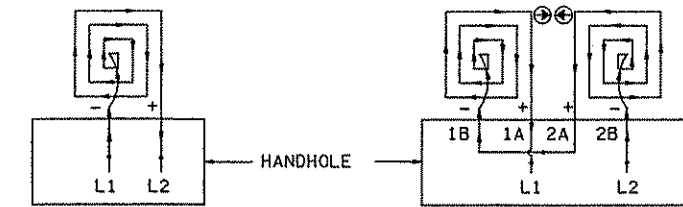
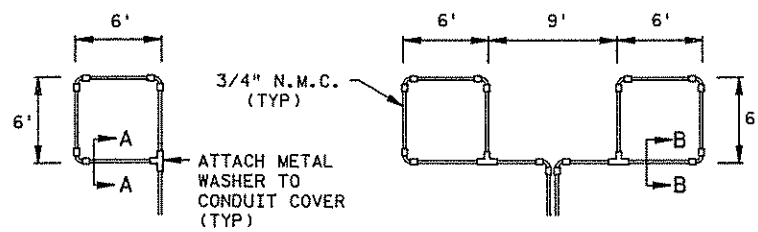
CERTIFIED BY *[Signature]* LIC. NO. 26880 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

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TRAFFIC CONTROL SIGNAL SYSTEM DETAILS  
 SYSTEM "A"

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 178 of 296 Sheets



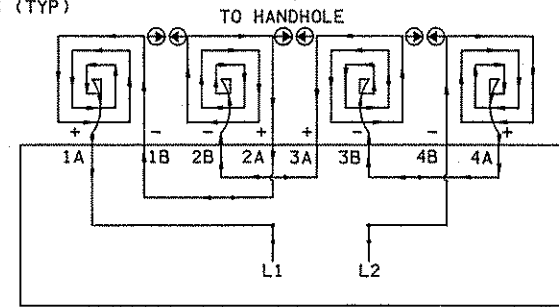
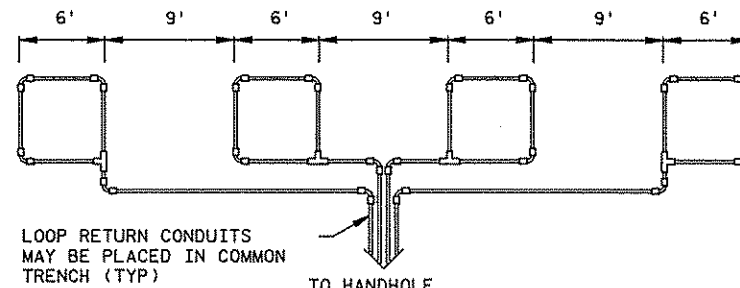


**LOOP DETECTOR  
DETAIL 'A'**  
(LOOP PHASING FOR  
SINGLE CONNECTION)

LOOP CONNECTIONS SHALL BE  
LABELED AND SPLICED IN THE  
HANDHOLE AS FOLLOWS:

- L1 TO 1A
- 1B TO 2A
- 2B TO L2

**LOOP DETECTOR  
DETAIL 'B'**  
(LOOP PHASING FOR  
SERIES CONNECTION)

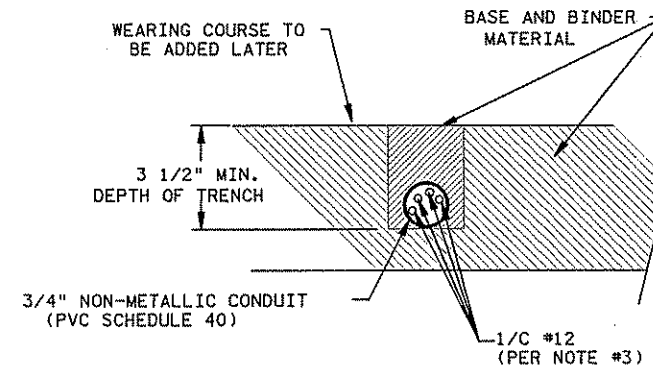


LOOP CONNECTIONS SHALL BE LABELED AND SPLICED  
IN THE HANDHOLE AS FOLLOWS:

- L1 TO 1A      3B TO 4A
- 1B TO 2A      4B TO L2
- 2B TO 3A

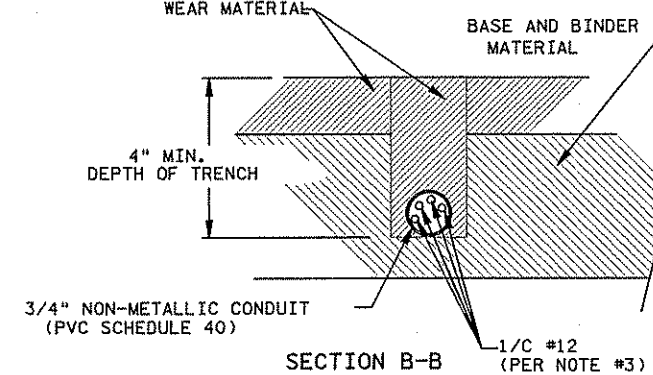
SPLICE CONTROL CABLE TO L1 & L2 IN HANDHOLE.  
ALL CONDUCTORS SHALL BE TAGGED IN HANDHOLE  
(1A, 1B, ETC.)

**LOOP DETECTOR  
DETAIL 'C'**  
(LOOP PHASING FOR  
SERIES CONNECTION)



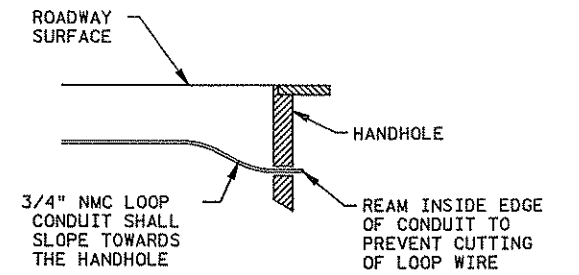
**SECTION A-A**

DETAIL FOR LOOP INSTALLATION  
IN NEW ROADWAY



**SECTION B-B**

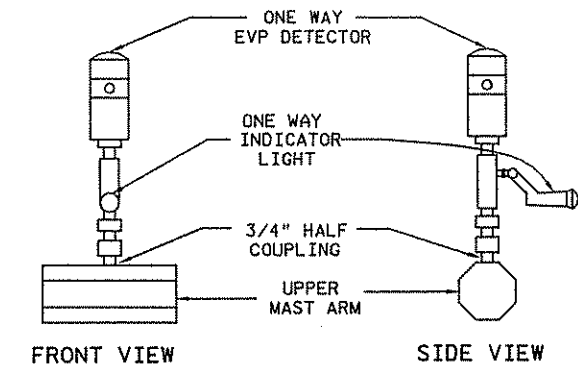
DETAIL FOR LOOP INSTALLATION  
IN EXISTING ROADWAY



**DRAINAGE DETAIL**

**LOOP DETECTOR WIRING**

- 1) ALL CORNERS SHALL BE 90° CONDUIT BENDS.
- 2) CONNECT WIRES IN HANDHOLES USING SPLICE KIT METHOD DESCRIBED IN THE SPECIAL PROVISIONS.
- 3) LOOP DETECTOR WIRES SHALL BE #12 AWG CROSSED LINKED POLYETHYLENE (XLP). SEE SPECIAL PROVISIONS.
- 4) LOOP LEAD IN WIRES SHALL BE TWISTED A MIN. OF (5) TURNS PER FOOT THROUGH THE CONDUIT TO THE HANDHOLE.
- 5) NMC DESIGNATES NON-METALLIC CONDUIT (SPEC. 3803)
- 6) LOOPS 6' x 6' THRU 6' x 14' SHALL HAVE (4) TURNS.



**EVP DETECTOR AND LIGHT  
MOUNTING DETAIL ON MAST ARM**

DATE: 8/15/2005 TIME: 2:46:13 PM FILENAME: K:\r-z\wast\cy\24350\Nwy-brdg\Nwy\pfr-stf\c200802.sgu2

DRAWN BY: SFH  
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CERTIFIED BY *Scott J. Paulk* LIC. NO. 20880 DATE 8/15/05  
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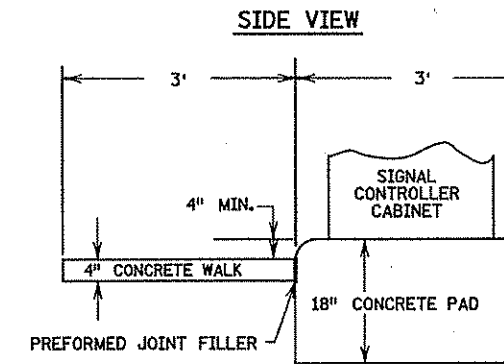
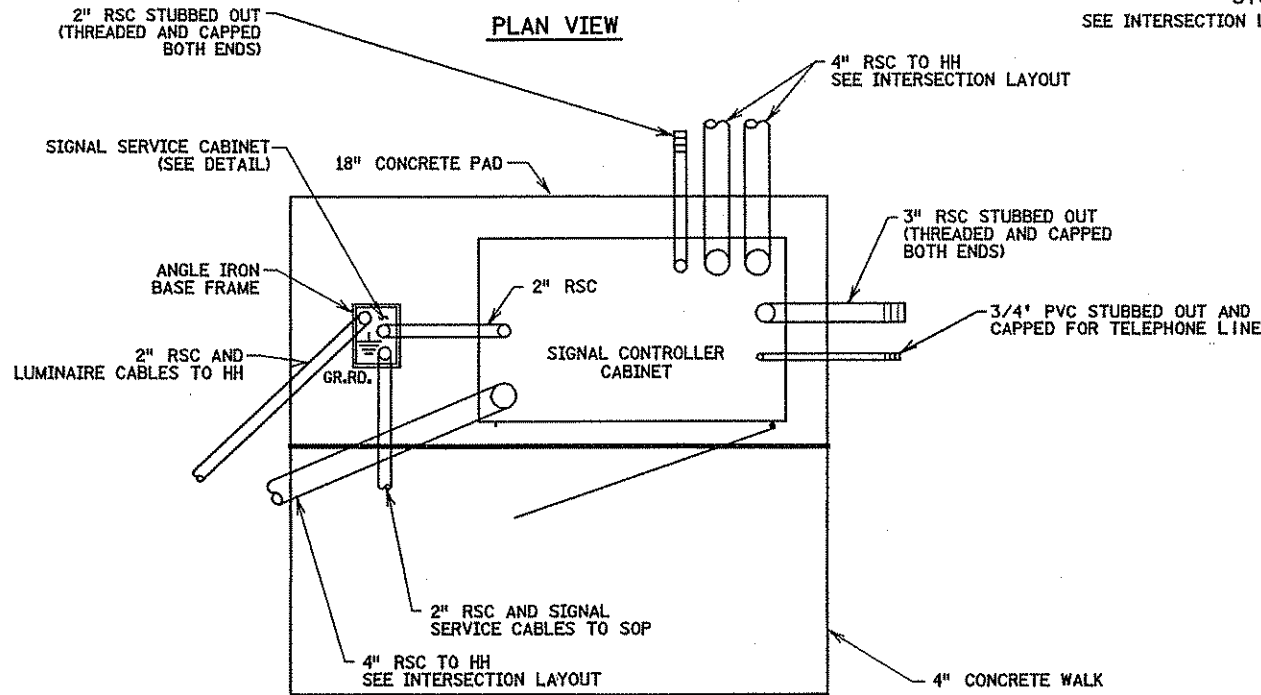
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TRAFFIC CONTROL SIGNAL SYSTEM DETAILS  
SYSTEM "A"

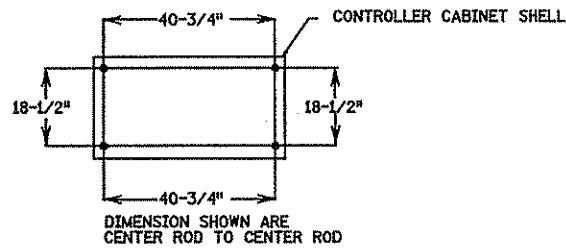
S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 179 of 296 Sheets

**TYPICAL PAD WITH CONTROLLER CABINET AND SERVICE CABINET**

SYSTEM "B" - CSAH 8 / VICTOR HUGO BOULEVARD  
 SYSTEM "C" - TH 61 / CSAH 8  
 SEE INTERSECTION LAYOUT FOR CABLE INFORMATION (NOT TO SCALE)

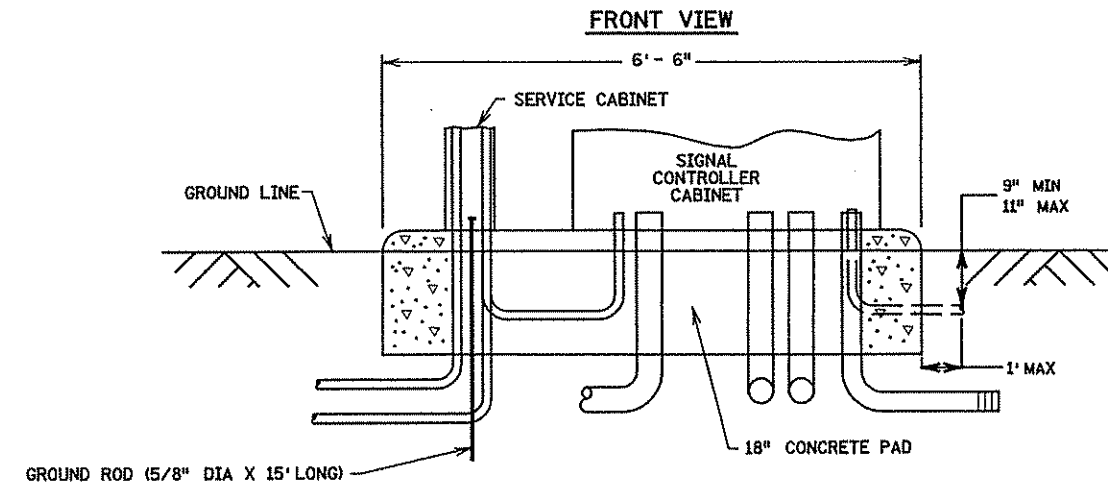


**CONTROLLER CABINET  
 TYPE "P" & "R"  
 BOLT PATTERN**



**NOTES:**

1. THE ANCHOR RODS, NUTS AND WASHERS FOR THE CONTROLLER CABINET SHALL BE FURNISHED BY WASHINGTON COUNTY.
2. THE UPPER PART OF THE EQUIPMENT PAD SHALL BE BEVELLED OR CHAMFERED IN A NEAT MANNER AS DIRECTED BY THE ENGINEER.
3. THE TOP OF THE CONDUITS SHALL BE THREADED AND CAPPED AFTER INSTALLATION (UNTIL CABLES ARE INSTALLED).
4. CONDUIT SHALL PROJECT A MINIMUM OF 2" ABOVE THE CONCRETE AND SHALL BE LOCATED INSIDE THE CABINET WHERE DIRECTED BY THE ENGINEER, BUT SHALL NOT INTERFERE WITH THE CABINET FUNCTIONS (SUPPORTING MEMBERS, ETC.).
5. CONCRETE MIX 3A32 OR EQUAL SHALL BE USED FOR THE EQUIPMENT PAD AND SIDEWALK.
6. CONDUITS WITH BOTH ENDS TERMINATING WITHIN THE PAD SHALL NOT BE INSTALLED BELOW THE CONCRETE.
7. THE EXACT LOCATION OF CONDUITS WITHIN THE PAD SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.



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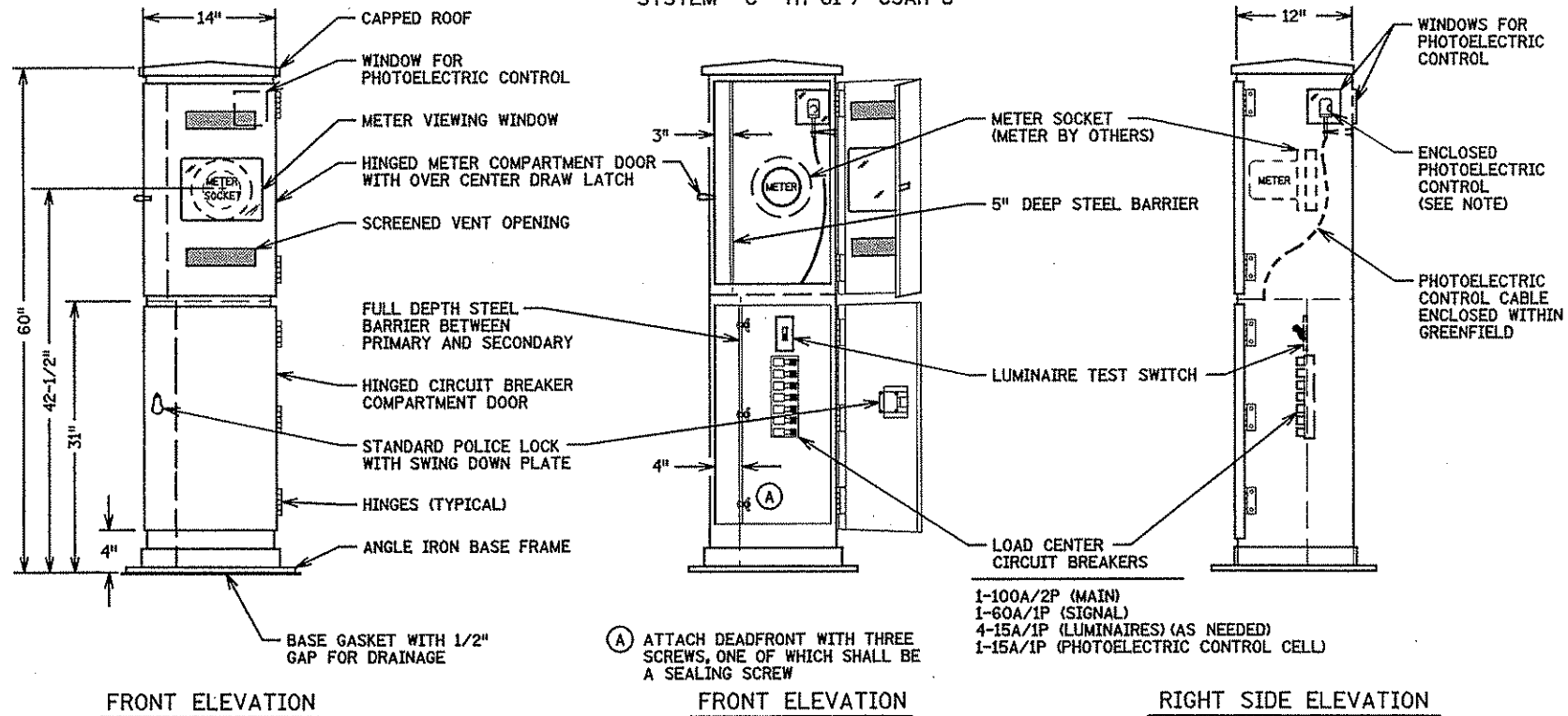
CERTIFIED BY *Scott O. Paul* LIC. NO. 20880 DATE 8/15/05  
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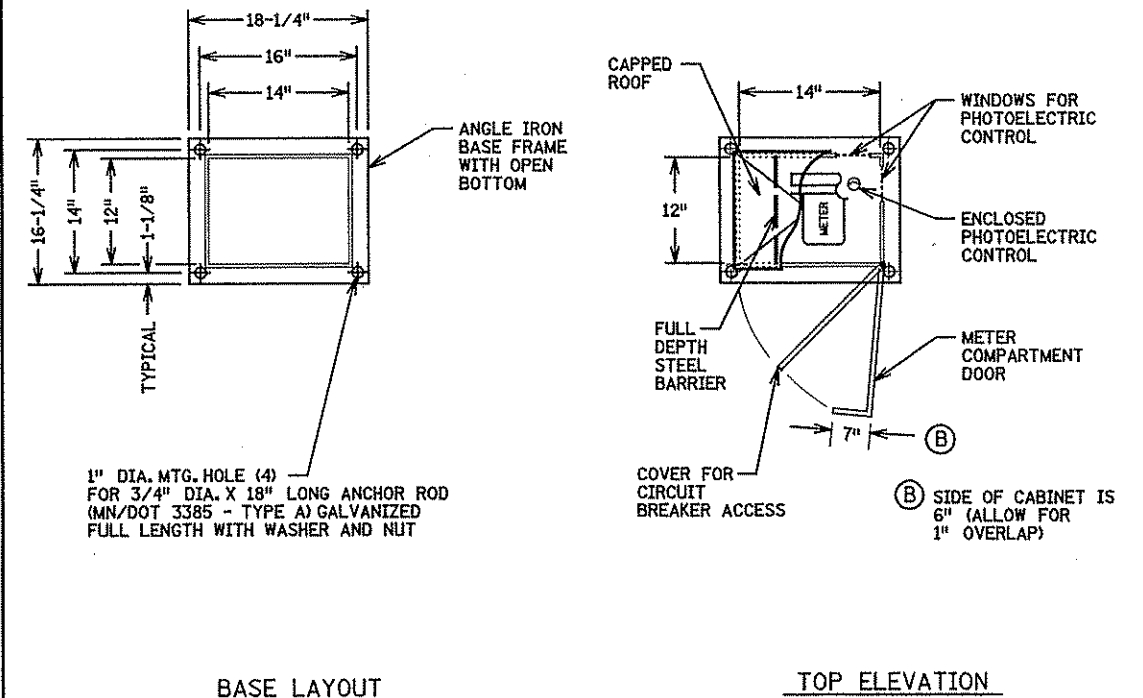
TRAFFIC CONTROL SIGNAL SYSTEM DETAILS  
 SYSTEM "B" AND SYSTEM "C"

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 180 of 296 Sheets

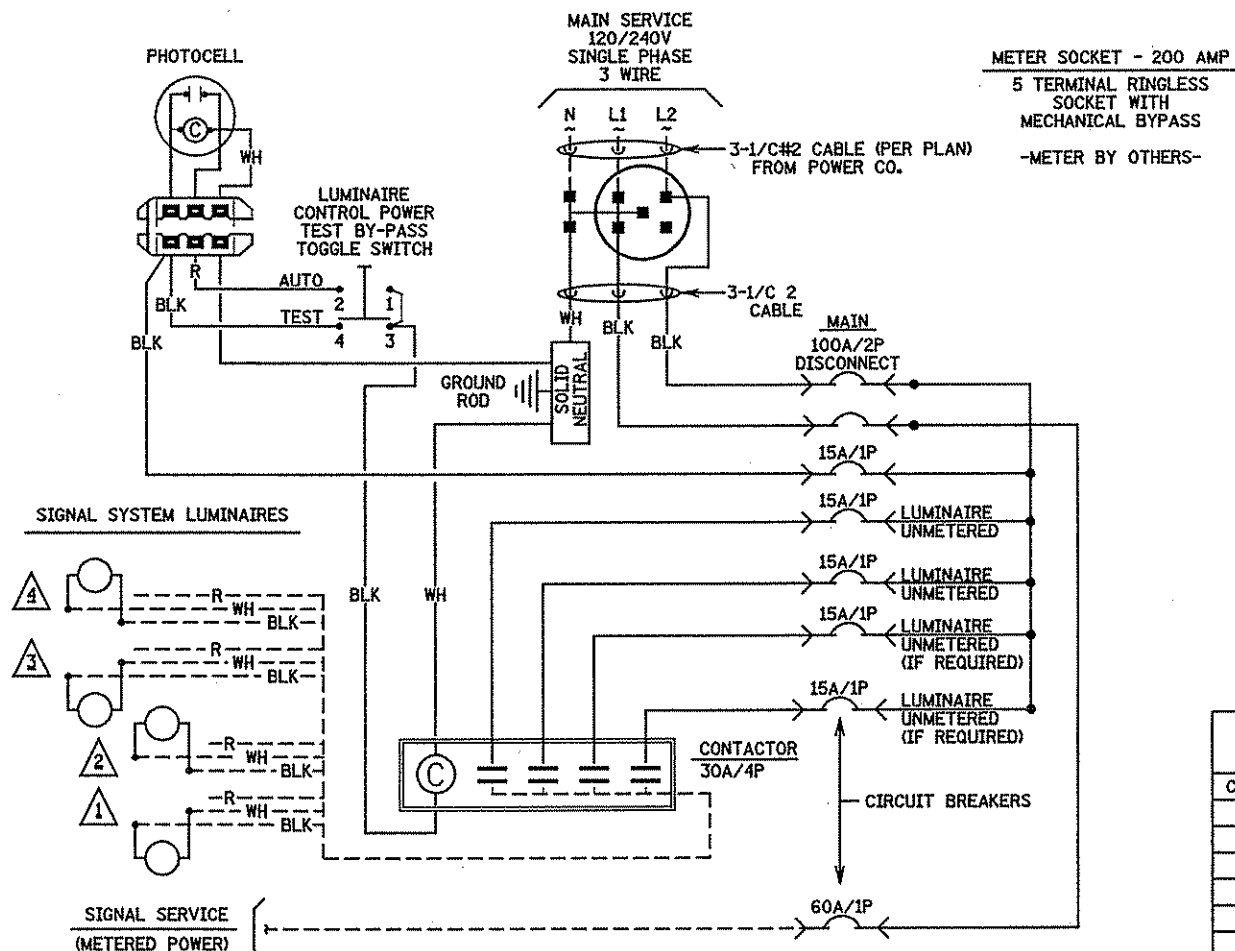
**SERVICE CABINET DETAILS**  
 SYSTEM "B"-CSAH 8 / VICTOR HUGO BOULEVARD  
 SYSTEM "C"-TH 61 / CSAH 8



**CABINET BASE DETAILS**  
 SYSTEM "B"-CSAH 8 / VICTOR HUGO BOULEVARD  
 SYSTEM "C"-TH 61 / CSAH 8



**FEED POINT WIRING DIAGRAM**



**FIELD WIRING DIAGRAM CABLE NUMBERS**

CABLE NO.	CABLE	USE
1	3-1/C#2	INPUT POWER
2	2-1/C#6	SIGNAL SERVICE
3	3/C#12	LUMINAIRE - 1
4	3/C#12	LUMINAIRE - 2
5	3/C#12	LUMINAIRE - 3
6	3/C#12	LUMINAIRE - 4

**CONSTRUCTION NOTES**

1. THE SERVICE CABINET SHALL BE FABRICATED FROM FORMED AND WELDED 0.125" ANNOZIDIZED ALUMINUM.
2. ALL HINGES, HINGE PINS, AND LOCKS SHALL BE OF NON-CORRODING MATERIALS.
3. THE SERVICE CABINET DOORS SHALL BE ATTACHED TO THE ENCLOSURE WITH LIFT-OFF NON CORRODING HINGES. THE METER COMPARTMENT DOOR SHALL BE SECURED WITH AN OVER-CENTER DRAW LATCH AND DUAL LOCKING FIXTURE WITH LOCK. THE CIRCUIT BREAKER COMPARTMENT DOOR SHALL BE SECURED WITH A STANDARD POLICE LOCK EQUIPPED WITH A SWING DOWN PLATE WITH TWO (2) KEYS.
4. BOTH DOOR OPENINGS SHALL BE SEALED WITH NEOPRENE GASKETS TO FORM A COMPLETE SEAL WITH THE ENCLOSURE.
5. THE VIEWING AND PHOTOELECTRIC CONTROL WINDOWS SHALL BE CLEAR LEXAN MATERIAL, SEVEN INCH X SEVEN INCH MINIMUM FOR VIEWING WINDOW AND FOUR INCH X FOUR INCH FOR PHOTOELECTRIC CONTROL CELL WINDOW.
6. THE CIRCUIT BREAKERS SHALL BE 120/240 VOLT AC, 60 HZ, AND SHALL BE CLEARLY MARKED WITH THE "ON" AND "OFF" POSITIONS AND IDENTIFIED WITH THE LOAD WHICH IT IS CARRYING (E.G. "SIGNALS" OR "LIGHTING"). ALL CIRCUIT BREAKERS SHALL BE CLEARLY MARKED IN A MANNER THAT WILL NOT DETERIORATE WITH MOISTURE OR AGE.
7. SHORT CIRCUIT RATING - 10,000 AIC SYMMETRICAL.
8. PROVIDE CLEARANCE TO INSTALL OR REMOVE THE PHOTOELECTRIC CONTROL CELL.
9. THE PHOTOELECTRIC CONTROL LENS SHALL BE ORIENTED TO ELIMINATE INTERFERENCE BY MANMADE LIGHT SOURCES. THE PHOTOELECTRIC CONTROL LENS SHALL NORMALLY FACE NORTH AND EAST.
10. ALL CONDUIT ENTERING THE FOUNDATION SHALL BE SEALED WITH AN APPROVED DUCT SEALER.
11. THE SERVICE CABINET SHALL BE U.L. LISTED AND APPROVED FOR USE AS AN OUTDOOR WEATHER PROOF SERVICE ENTRANCE EQUIPMENT.
12. THE SERVICE CABINET SHALL BE WELDED TO THE BASE IN ACCORDANCE WITH U.L. STANDARDS.
13. SEE THE INTERSECTION LAYOUT FOR THE REQUIRED NUMBER OF LUMINAIRES AT EACH INTERSECTION.
14. THE BASE GASKET SHALL CONSIST OF:
  - FOUR (4) STRIPS, SIZED TO FIT BASE
  - INCLUDE CORNER HOLE/SLOTS TO ACCOMMODATE THE 0.75 INCH ANCHOR RODS
  - GASKET MATERIAL 0.5 INCH THICK SOLID BUTYL RUBBER
  - PROVIDE 0.5 INCH GAP FOR WATER DRAINAGE

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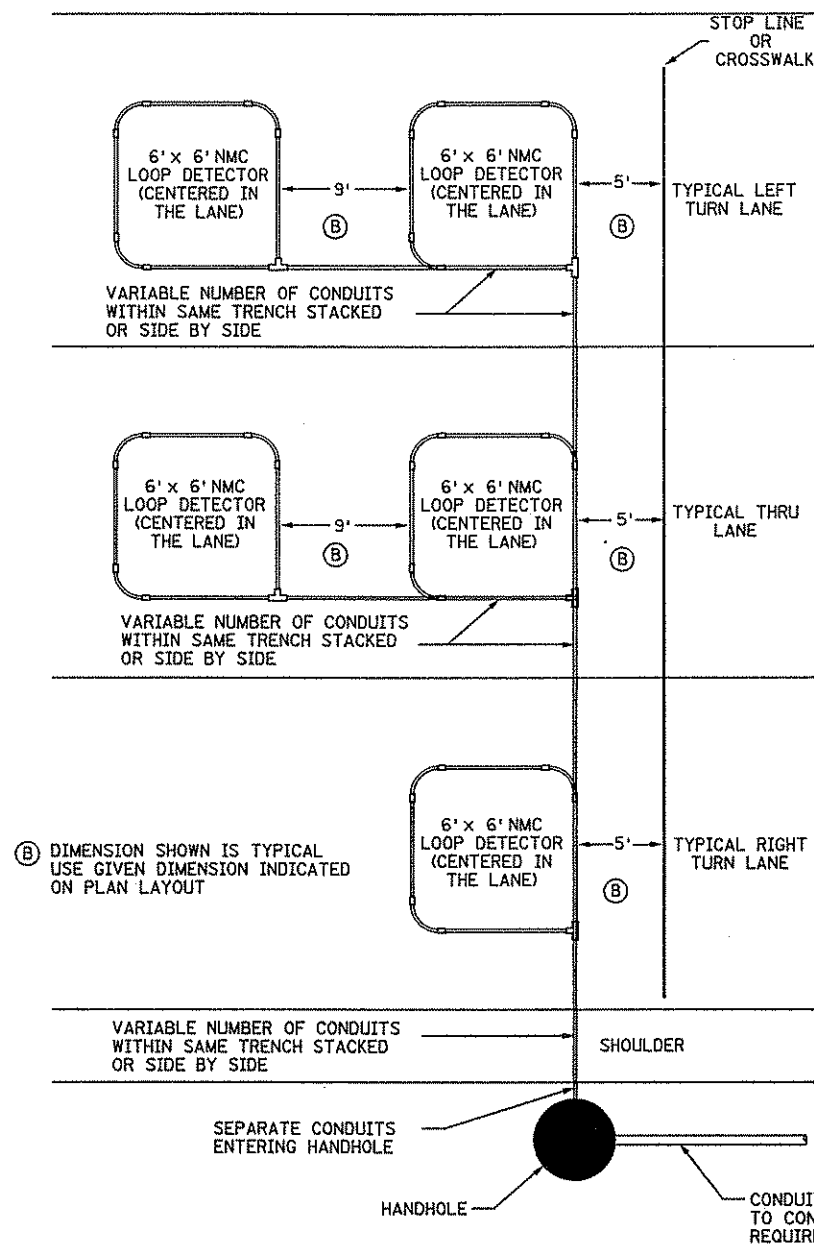
CERTIFIED BY *Scott O. Paulm* LIC. NO. 20880 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

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TRAFFIC CONTROL SIGNAL SYSTEM DETAILS  
 SYSTEM "B" AND SYSTEM "C"

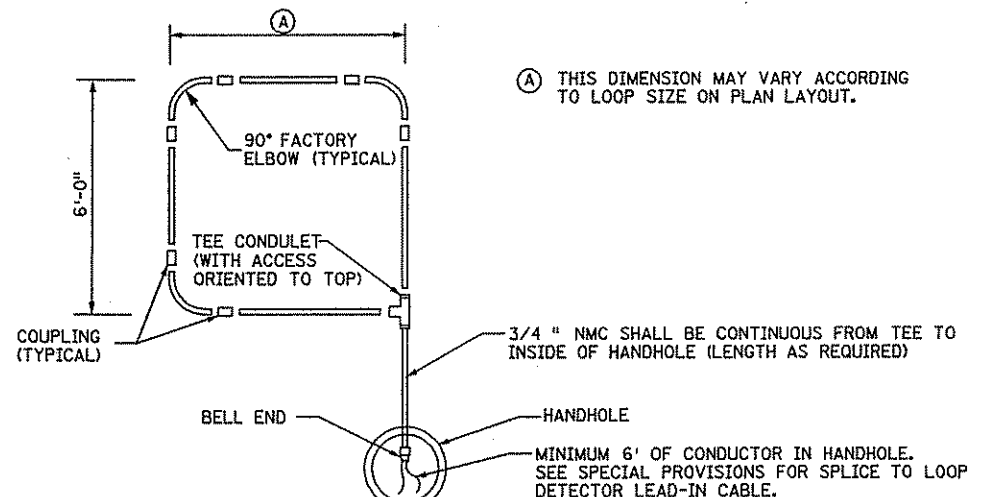
S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 181 of 296 Sheets

**TYPICAL CROSS STREET NMC LOOP  
DETECTOR LAYOUT**



(B) DIMENSION SHOWN IS TYPICAL  
USE GIVEN DIMENSION INDICATED  
ON PLAN LAYOUT

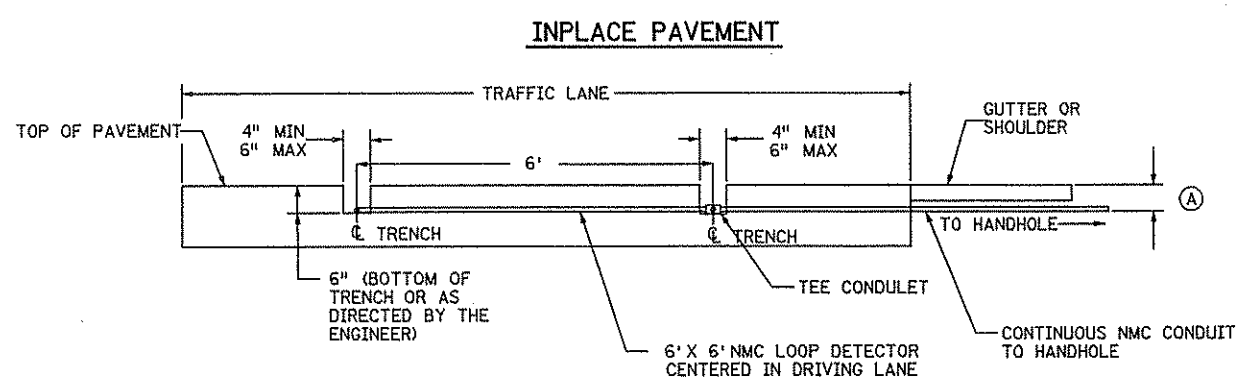
**TYPICAL NMC LOOP DETECTOR DETAIL**



**NOTES:**

- ROADWAY LOOP DETECTOR CONDUCTORS AND LOOP DETECTOR LEAD IN CABLES SHALL BE IN ACCORDANCE WITH MN/DOT SPEC 3815.
- THE 3/4" NON-METALLIC CONDUIT (NMC) AND FITTINGS SHALL BE SCHEDULE 40 HEAVY WALL RIGID POLYVINYL CHLORIDE (PVC). SEE SPEC. 3803.
- THREE CORNERS OF EACH LOOP DETECTOR SHALL BE A 90° FACTORY ELBOW (6" RADIUS). THE FOURTH SHALL BE AN NMC TEE CONDULET.
- APPROVED PVC PRIMER AND CEMENT SHALL BE USED FOR THE PVC JOINTS.
- ALL SLACK MUST BE REMOVED FROM LOOP DETECTOR CONDUCTORS WITHIN THE NMC.
- THE ROADWAY LOOP DETECTOR CONDUCTORS (1/C#14) SHALL BE TWISTED THREE TURNS PER FOOT FROM THE NMC TEE CONDULET TO THE HANDHOLE.
- ATTACH A FERROUS METAL ITEM IN OR ADJACENT TO THE TEE CONDULET COVER OR AS DIRECTED BY THE ENGINEER.
- EACH LOOP DETECTOR CONDUIT TO THE HANDHOLE SHALL BE SLOPED TOWARDS THE HANDHOLE.
- LOOP DETECTOR CONDUITS TO THE HANDHOLE MAY BE PLACED WITHIN THE SAME TRENCH.
- THE LOOP DETECTOR ROADWAY CONDUCTORS SHALL EXTEND 6' TO 10' INTO THE HAND HOLE FOR SPLICING.
- NO SPLICES ALLOWED IN CONDUIT.
- THE LOOP DETECTOR ROADWAY CONDUCTORS AND THE LOOP DETECTOR LEAD-IN CABLE CONDUCTORS SHALL BE PROPERLY PREPARED AND CLEANED BEFORE SPLICING.
- SPLICE KITS SHALL BE INSTALLED IN HANDHOLES IN SUCH A MANNER AS TO ENSURE THAT EACH SPLICE KIT IS SUSPENDED AND/OR SECURED NEAR THE TOP OF THE HANDHOLE TO THE SATISFACTION OF THE ENGINEER. (PLACING SPLICE KITS ON TOP OF THE ELECTRICAL CABLES AND CONDUCTORS IS NOT ACCEPTABLE).
- TYPICAL SIZE OF LOOP DETECTORS ARE 6' x 6' AND 6' x 10'. REFER TO INTERSECTION LAYOUT FOR SPECIFIC LOOP DETECTORS TO BE PLACED.
- ALL LOOP DETECTORS SHALL HAVE 4 TURNS OF CONDUCTORS.
- SEE SPECIAL PROVISIONS FOR APPROVED SPLICE KITS.
- PRIOR TO INSTALLING THE APPROVED SPLICE KIT, THE CONTRACTOR SHALL SOLDER THE ENDS OF THE LOOP DETECTOR LEAD IN CONDUCTOR AND SHALL FURNISH AND INSTALL AN APPROPRIATE SIZED WIRE NUT TO THE SOLDERED ENDS PRIOR TO THE INSTALLATION OF THE SPLICE KITS.
- IF BENDING OF THE NMC LOOP LEAD-IN IS REQUIRED, AN APPROPRIATE HEATING BLANKET OR DEVICE APPROVED BY THE ENGINEER SHALL BE USED. EXPOSED FLAME OR TORCHES ARE NOT ALLOWED.

**TYPICAL NMC LOOP DETECTOR INSTALLATION**



(A) VARIABLE DEPTH; MAINTAIN DRAINAGE TO HAND HOLE

**NOTES:**

- USE THE LOOP DETECTOR TO BE INSTALLED FOR THE PURPOSE OF MARKING THE PAVEMENT LOCATION FOR THE MILLING OPERATION.
- TO ACHIEVE FULL TRENCH DEPTH FOR CONDUIT PLACEMENT, MILL BEYOND THE DESIRED PAVEMENT MARKING.
- PROVIDE A MINIMUM 5" CLEARANCE, MEASURED FROM THE TOP OF THE FINISHED PAVEMENT TO HIGHEST POINT OF N.M.C. CONDUIT.
- AN AIR COMPRESSOR UNIT (50 HP) IS REQUIRED FOR REMOVING ALL LOOSE MATERIAL FROM TRENCH PRIOR TO TACK COAT APPLICATION.
- APPLY A TACK COAT AT A UNIFORM RATE TO THE BOTTOM AND EDGES OF THE MILLED AREA. USE AN EMULSIFIED ASPHALT PER SPEC. 2357.2A
- MIXTURE USED TO FILL THE RETROFIT LOOP DETECTOR TRENCHES SHALL MEET THE REQUIREMENTS OF MNDOT SPECIFICATION 2350 OR 2360. AGGREGATE SIZE 3 OR 4 WILL BE ALLOWED WHEN 2350 IS UTILIZED AND AGGREGATE SIZE A OR B WILL BE ALLOWED WHEN 2360 IS UTILIZED. OTHER WEARING COURSE MIXTURE TYPES ARE ALLOWED WHEN APPROVED BY THE ENGINEER.
- THE USE OF PETROLEUM DISTILLATES AS AN ANTI-ADHESIVE AGENT IS NOT ALLOWED. REFER TO MN/DOT TECH. MEMO NO. 94-16-MRE-05 DATED 3/10/94 FOR ADDITIONAL INFORMATION.
- COMPACTION SHALL BE OBTAINED BY THE ORDINARY COMPACTION METHOD. BACKFILL THE TRENCH WITH A MINIMUM OF TWO LIFTS AND COMPACT EACH LIFT. BEFORE COMPACTING THE FIRST LIFT ENSURE THAT THERE IS ADEQUATE MIXTURE ON EACH SIDE AND ABOVE THE CONDUIT SO THAT THE CONDUIT IS NOT DAMAGED DURING COMPACTION OPERATIONS.
- THE COMPACTED MIXTURE IN THE TRENCH SHOULD BE LEFT 1/4" TO 1/2" ABOVE THE ADJACENT PAVEMENT SURFACE TO PROVIDE FOR ADDITIONAL COMPACTION BY TRAFFIC.
- APPLY A BITUMINOUS FOG SEAL ON THE NEWLY COMPACTED MIXTURE TO PROVIDE AN ADDITIONAL SURFACE SEAL (EMULSIFIED ASPHALT 2355.2A). DRY SAND SHALL BE SPREAD ON THE FOG SEAL TO PREVENT MATERIAL PICKUP AND TRACKING.
- WHEN INSTALLING NMC LOOPS INTO PRE-ROADWAY AGGREGATE BASE, DEPTH OF TOP OF CONDUIT TO TOP OF AGGREGATE SHALL NOT EXCEED 2".
- WHEN LOOP DETECTORS ARE MILLED INTO CONCRETE SURFACES, THE TRENCHES SHALL BE FILLED USING A GROUTING MATERIAL WHICH MEETS MN/DOT SPEC 2520 OR OTHER MATERIAL AS APPROVED BY THE ENGINEER. BITUMINOUS FILL IS ACCEPTABLE WHEN OVERLAYING CONCRETE TRENCHES.
- MILLING IS REQUIRED FOR ALL NMC LOOP INSTALLATIONS. WHEN LOOPS ARE MILLED INTO EXISTING MILLED SURFACE THAT WILL BE OVERLAYED WITH BITUMINOUS, THE MINIMUM TRENCH DEPTH SHALL BE NO LESS THAN THE HIGHEST CONDUIT IN THE TRENCH.

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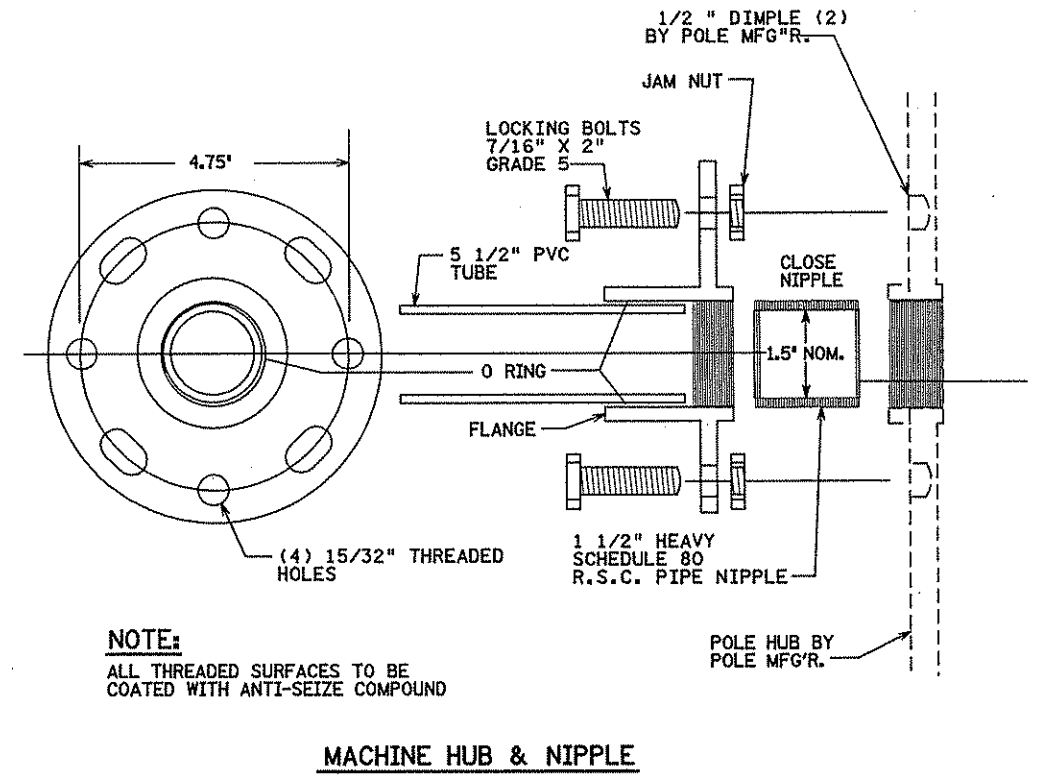
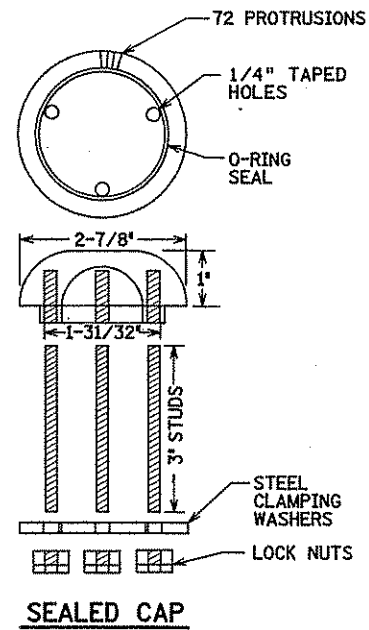
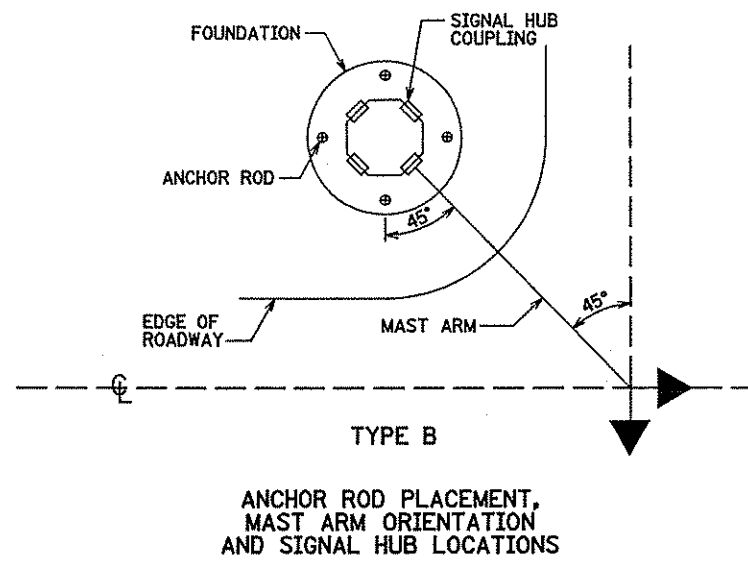
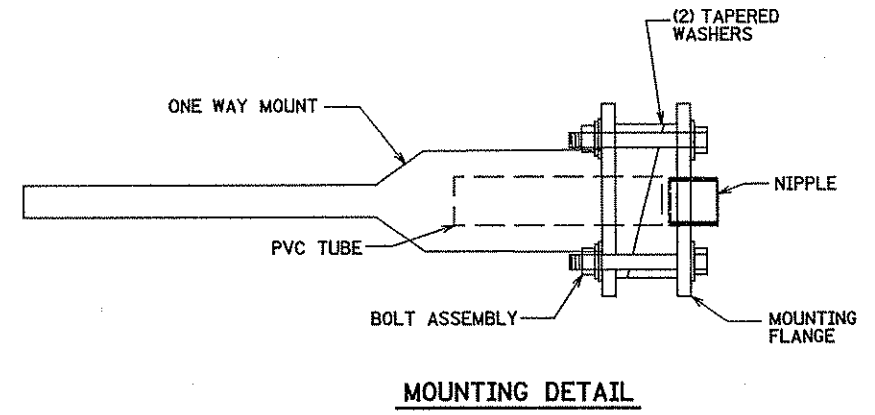
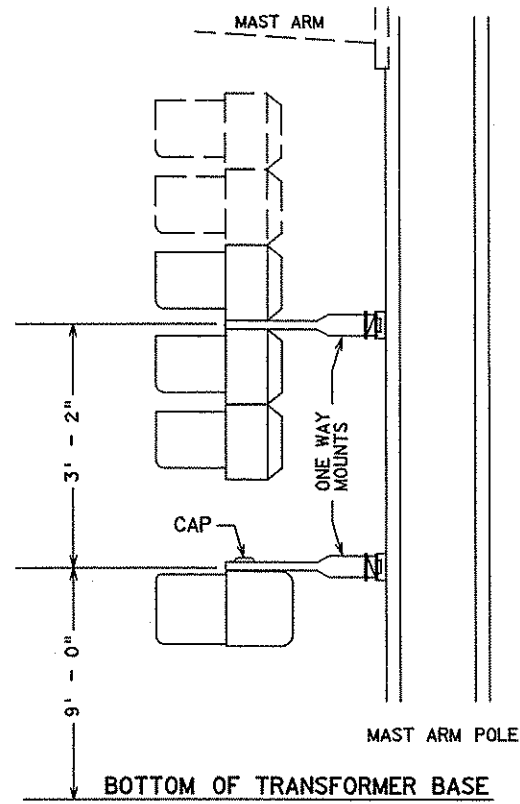
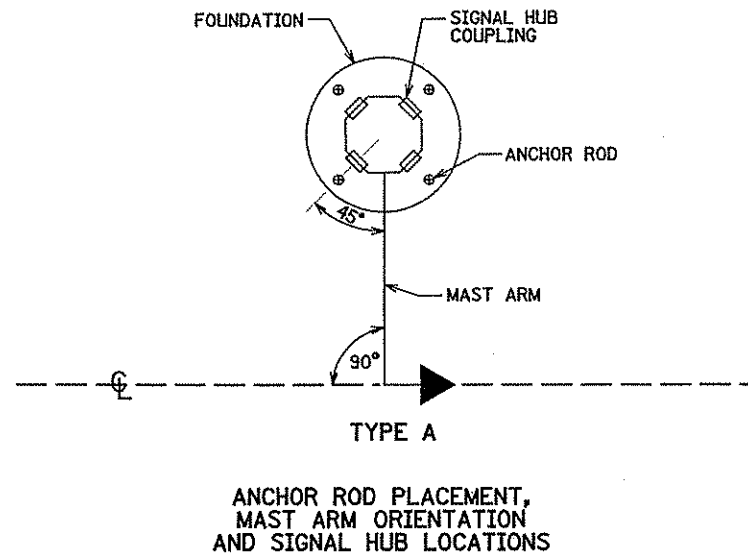
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TRAFFIC CONTROL SIGNAL SYSTEM DETAILS  
SYSTEM "B" AND SYSTEM "C"

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 182 of 296 Sheets

**POLE MOUNTED ONE WAY SIGNAL AND PEDESTRIAN INDICATION DETAILS**

SYSTEM "B" - CSAH 8 / VICTOR HUGO BOULEVARD  
 SYSTEM "C" - TH 61 / CSAH 8



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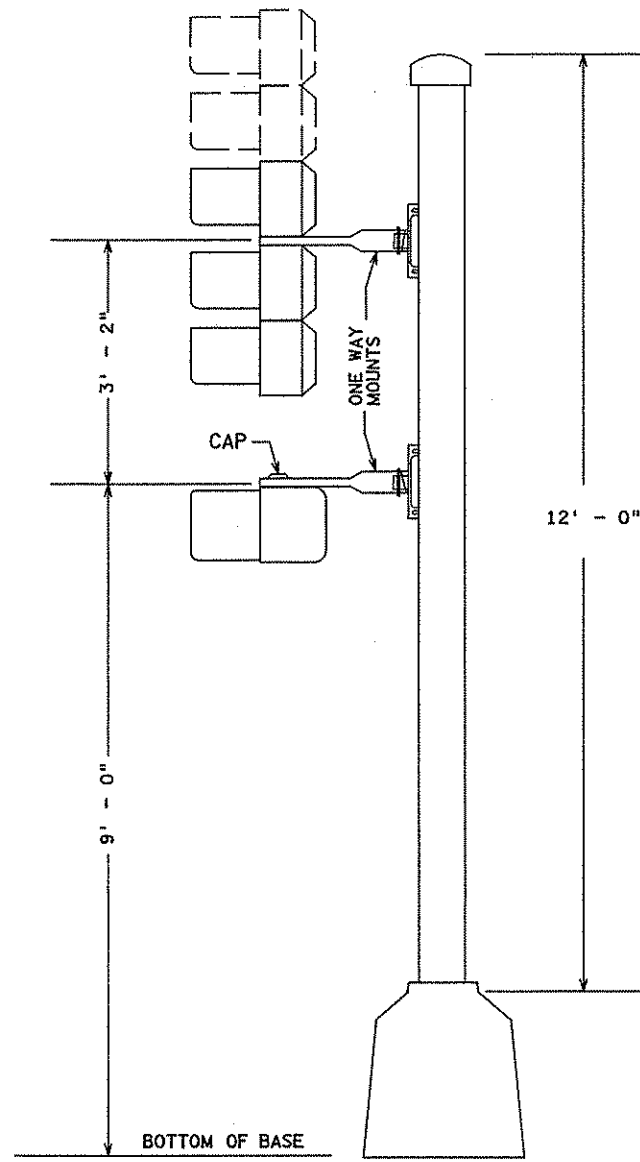
TRAFFIC CONTROL SIGNAL SYSTEM DETAILS  
 SYSTEM "B" AND SYSTEM "C"

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 183 of 296 Sheets

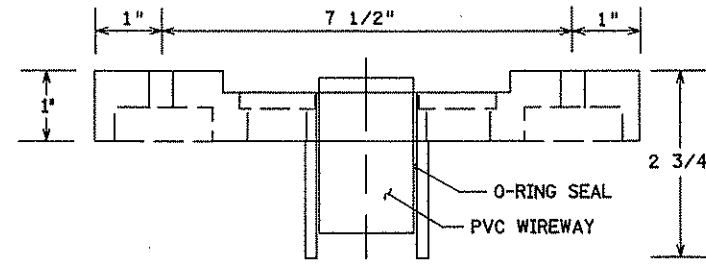


**PEDESTAL MOUNTED ONE WAY SIGNAL AND PEDESTRIAN DETAILS**

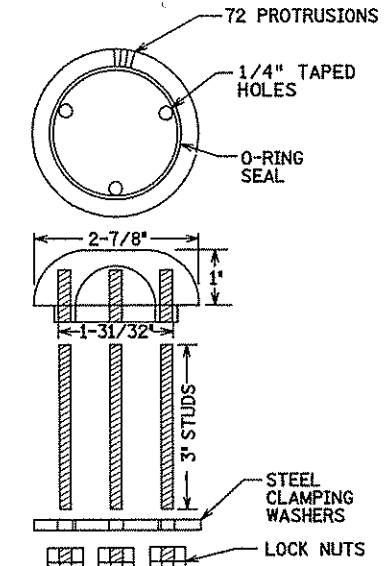
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 SYSTEM "C" - TH 61 / CSAH 8



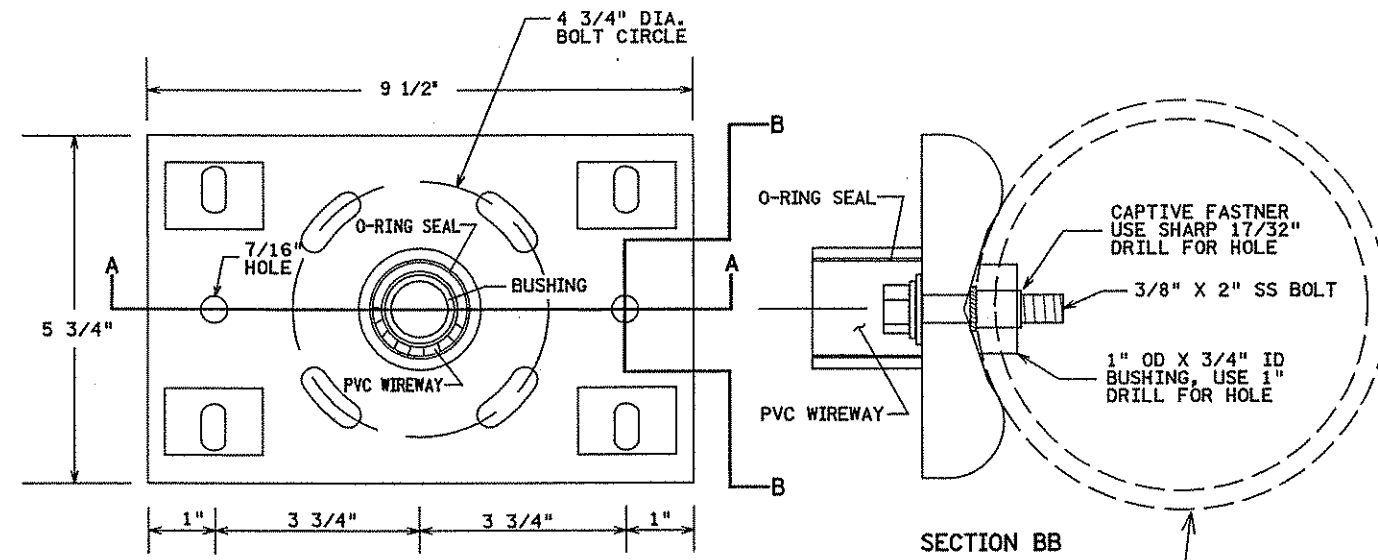
**TYPICAL MOUNTING ELEVATION**



**SECTION AA**



**SEALED CAP**



**UNIVERSAL HUB - BOLTED**

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CERTIFIED BY

*Don J. Paul*  
 LICENSED PROFESSIONAL ENGINEER

LIC. NO. 26220

DATE 8/15/05

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TRAFFIC CONTROL SIGNAL SYSTEM DETAILS  
 SYSTEM "B" AND SYSTEM "C"

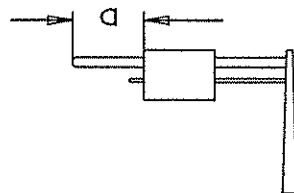
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Sheet No. 184 of 296 Sheets

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MAST ARM MOUNTED SIGNS								
SIGN PANEL OR SIGN NO.	SIGNAL SYSTEM	POLE NO.	a (FEET)	SIZE (INCHES)	MOUNTING BRACKET		AREA SIGN (SQ. FT.)	NO. REQ.
					NUMBER	SPACING (1)		
D-1	A	4	28'	90x24	4		15.00	1
D-2	A	1	32'	102x24	4		17.00	1
D-2	A	3	32'	102x24	4		17.00	1
D-3	B	2,5	2'	42x54	2		12.00	2
D-4	B	2	16'	108x18	4		11.25	1
D-4	B	5	18'	108x18	4		11.25	1
D-5	B	1	32'	126x24	5		21.00	1
D-5	B	4	28'	126x24	5		21.00	1
D-6	C	1,4	2'	42x54	2		15.75	2
D-7	C	5	7'	48x66	2		22.00	1
D-8	C	5	12'	120x36	5		30.00	1
D-9	C	2	12'	120x36	5		30.00	1
D-10	C	2	7'	48x66	2		22.00	1
① R6-1L	A	1,2,3,4	-	36x12			3.00	4
① R6-1R	A	1,3	-	36x12			3.00	2
① R9-3a	A	1,2,3,4	-	18x18			2.25	6
① R10-4bL	A	1	-	6x10			0.42	1
① R10-4bR	A	4	-	6x10			0.42	1
① R6-1L	B	1,2,4,5	-	36x12			3.00	4
① R6-1R	B	1,4	-	36x12			3.00	2
① R10-4bDH	B	3,6	-	6x10			0.42	2
① R10-4bL	B	1,2,4,5	-	6x10			0.42	4
① R10-4bR	B	1,2,4,5	-	6x10			0.42	4
① R10-12	B	2,5	2'	24x30	2		5.00	2
① R9-3a	C	1,2,4	-	18x18			2.25	4
① R10-4bL	C	1,5	-	6x10			0.42	2
① R10-4bR	C	4,5	2'	6x10			0.42	2
① R10-12	C	2,5	2'	36x48	2		12.00	2
TOTAL								57

**MAST ARM MOUNTED SIGNING**

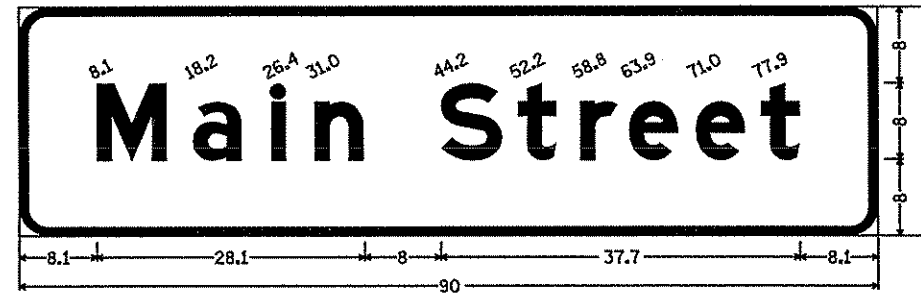


**SPECIFIC NOTES:**

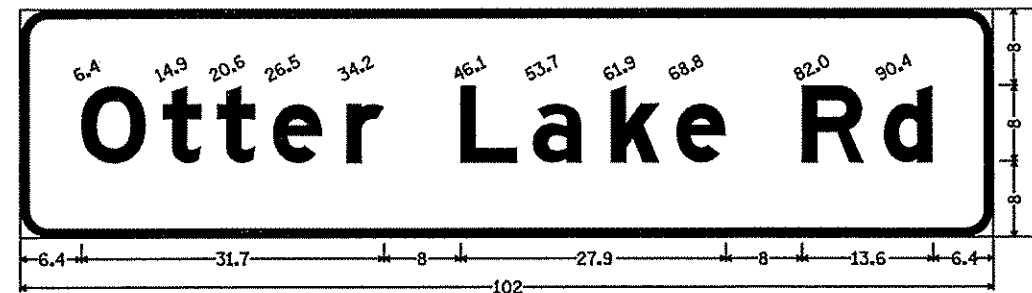
(1) SPACING BETWEEN STIFFENERS SHALL NOT EXCEED 36 INCHES AND SHALL BE UNIFORMLY SPACED. SEE STANDARD SIGNS MANUAL, PAGE 105A (REVISION DATE 1/1/03) FOR BRACKET SPACING REQUIREMENTS.

**GENERAL NOTES:**

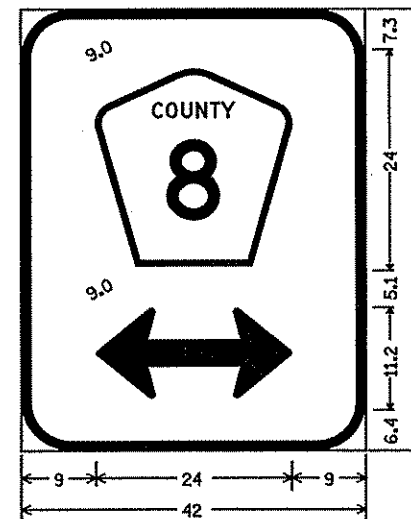
- 1) TYPE "D" SIGN PANELS EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
- 2) CORNERS OF STANDARD SIGN PANELS WITH MARGINS SHALL BE TRIMMED.
- 3) FOR STRUCTURAL DETAILS OF MAST ARM MOUNTED SIGNS, SEE STANDARD SIGNS MANUAL, PAGE 105A (REVISED DATE 1/1/03).
- 4) FOR TYPE "D" STRINGER AND PANEL-JOINT DETAIL, SEE STANDARD SIGNS MANUAL, PAGE 105.
- 5) MAST ARM MOUNTED SIGNS ARE INCIDENTAL TO THE SIGNAL SYSTEM PAY ITEM.
- 6) SEE STANDARD SIGNS MANUAL FOR ARROW AND OVERLAY DETAILS.
- 7) ① = MOUNT SIGN PANEL ON TRAFFIC SIGNAL MAST ARM POLE.



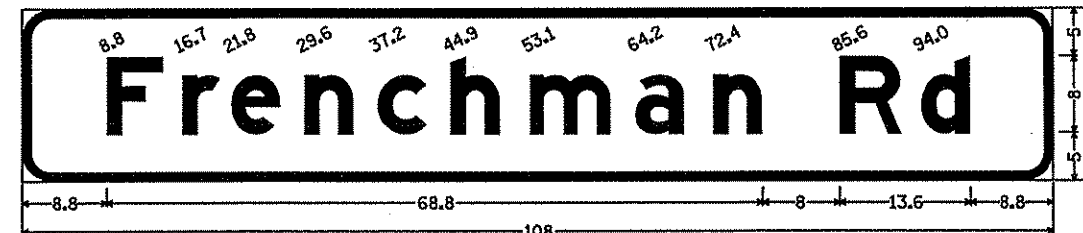
D-1; 3.0" Radius, 1.0" Border, White on Green; [Main Street] E Mod;



D-2; 3.0" Radius, 1.0" Border, White on Green; [Otter Lake Rd] E Mod;



D-3; 6.0" Radius, 1.3" Border, White on Green; Double Headed Arrow 5 - 24.0" 0";



D-4; 3.0" Radius, 1.0" Border, White on Green; [Frenchman Rd] E Mod;

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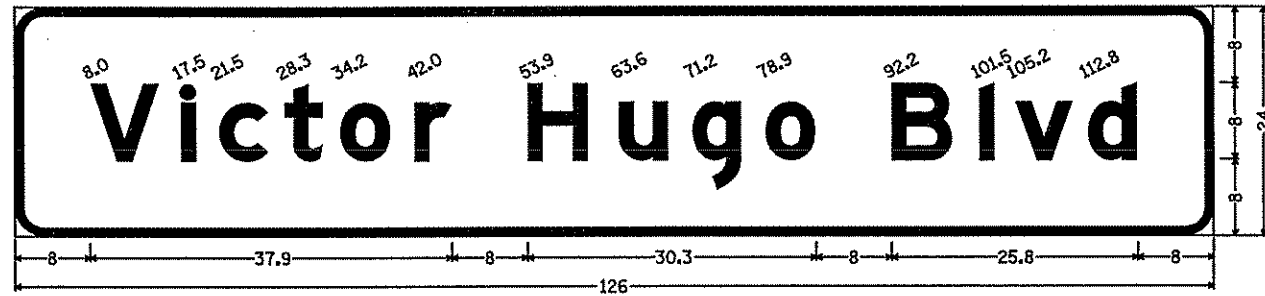
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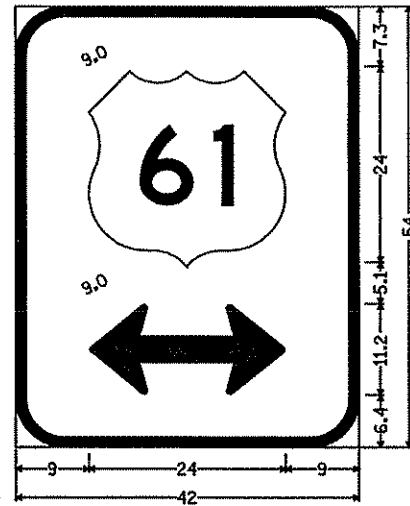
TRAFFIC SIGNAL SYSTEM "A-C"  
 TRAFFIC SIGNAL SIGNING DETAILS

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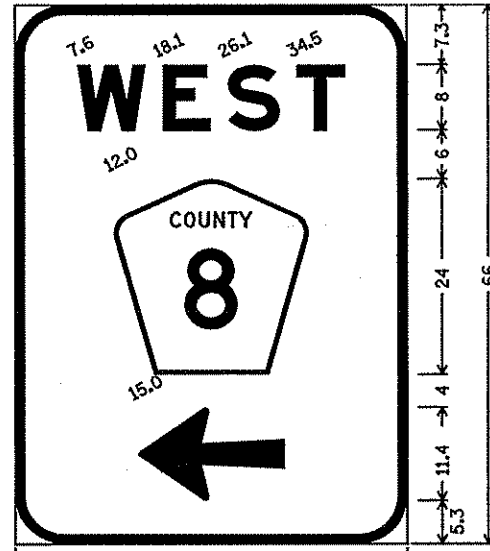
Sheet No. 185 of 296 Sheets



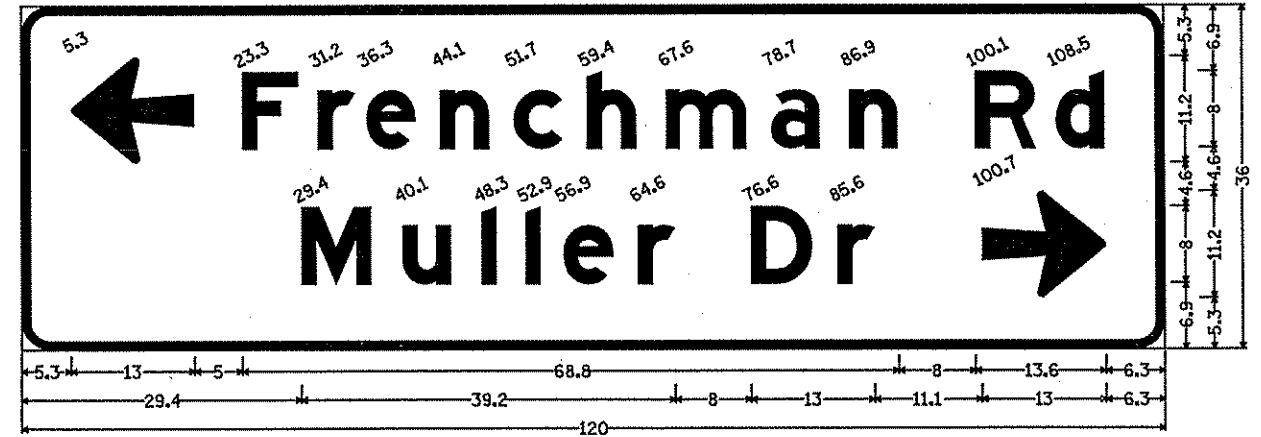
D-5; 3.0" Radius, 1.0" Border, White on Green;  
[Victor Hugo Blvd] E Mod;



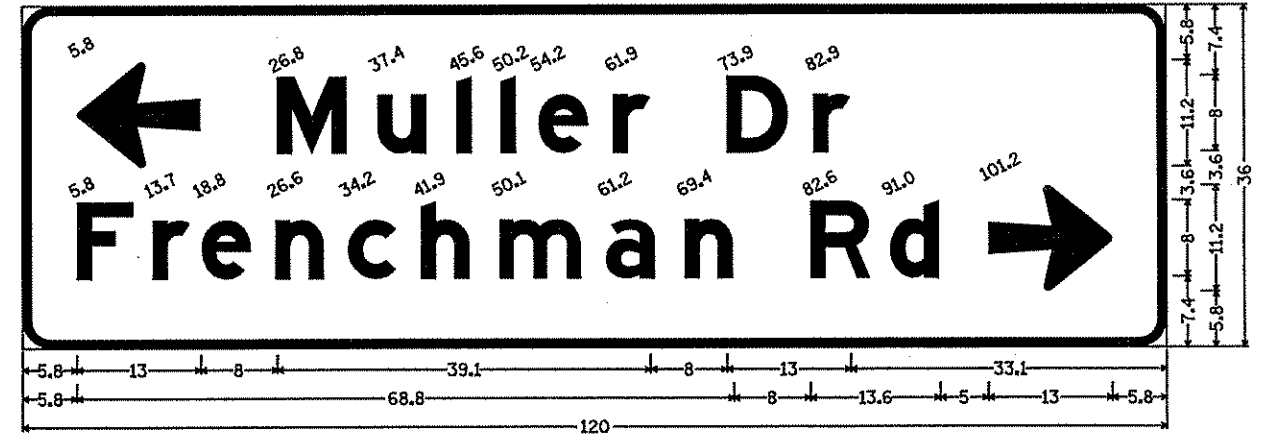
D-6; 6.0" Radius, 1.3" Border, White on Green;  
Double Headed Arrow 5 - 24.0" OD;



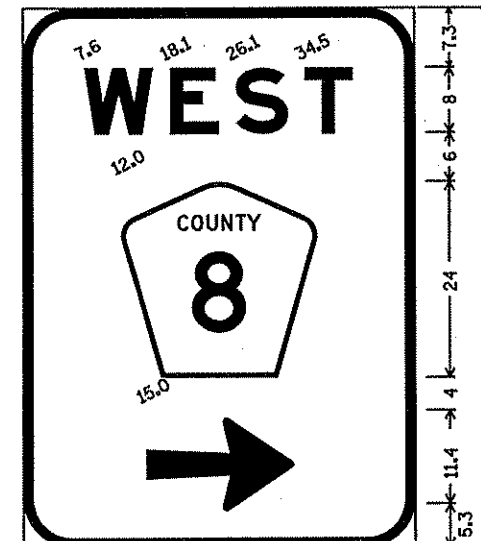
D-7; 6.0" Radius, 1.3" Border, White on Green;  
[WEST] E Mod; Arrow 14 - 18.0" 180D;



D-8; 3.0" Radius, 1.0" Border, White on Green;  
Arrow 5 - 13.0" 180D; [Frenchman Rd] E Mod; [Muller Dr] E Mod; Arrow 5 - 13.0" OD;



D-9; 3.0" Radius, 1.0" Border, White on Green;  
Arrow 5 - 13.0" 180D; [Muller Dr] E Mod; [Frenchman Rd] E Mod; Arrow 5 - 13.0" OD;



D-10; 6.0" Radius, 1.3" Border, White on Green;  
[WEST] E Mod; Arrow 14 - 18.0" OD;

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TRAFFIC SIGNAL SYSTEM "A-C"  
TRAFFIC SIGNAL SIGNING DETAILS

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 186 of 296 Sheets

**LOOP DETECTORS**

NUMBER	SIZE (FEET)	FUNCTION	LOCATION
D1-1, D1-3	2-6 x 6	1	40'
D1-2, D1-4	2-6 x 6	1	10'
D2-1, D2-2	6 x 6	1	400'
D5-1, D5-3	2-6 x 6	1	40'
D5-2, D5-4	2-6 x 6	1	10'
D6-1, D6-2	6 x 6	1	400'
D8-1	6 x 6	3,8	250' *
D8-2	6 x 6, 6 x 10	7	-5' & 4'
D8-3	2-6 x 6	1	0' & 15'

\* LOOP DETECTOR PLACEMENT ASSUMES 40 MPH DUE TO 35 MPH ADVISORY CURVE APPROACHING INTERSECTION.

**LOOP DETECTORS FUNCTIONS**

- 1) CALL AND EXTEND
- 3) EXTEND ONLY
- 7) DELAY CALL/IMMEDIATE EXTEND
- 8) CARRY OVER (STRETCH)

NOTE:  
LOCATION = DISTANCE FROM STOP BAR TO FRONT OF LOOP DETECTOR

**SIGNAL INDICATIONS**

ALL INDICATIONS SHALL BE 12" LED

FACE	R	Y	G	RLTA	YLTA	GLTA
1-1, 1-2, 5-1, 5-2				←	←	←
2-1, 2-2, 2-3	●	●	●			
6-1, 6-2, 6-3	●	●	●			
8-1, 8-2, 8-3	●	●	●			

③ PA100 POLE FOUNDATION  
TYPE PA100-A-55-D40-9 (DAVIT @ 350")  
LUMINAIRE-200 WATT H.P.S.  
3-ONE WAY SIGNALS-OVERHEAD (0', 17' AND 29'  
FROM LEFT END OF MAST ARM)  
1-TYPE 10A-POLE MOUNTED 90"  
1-TYPE 10B-POLE MOUNTED 180"  
1-PEDESTRIAN PUSH BUTTON AND SIGN (R10-4b)  
TYPE "D" SIGN PANEL OVERHEAD (D-2)  
2-R6-1 SIGN PANEL (36"x12")-POLE MOUNTED 0° AND 180°  
1-R9-3a SIGN PANEL-FACING POLE 2  
ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (Ø6,1)  
EXTEND INTO H.H. 8  
3" R.S.C.  
2-12/C #12  
4-3/C #12  
1-3/C #12 (LUMINAIRE)  
1-3/C #20

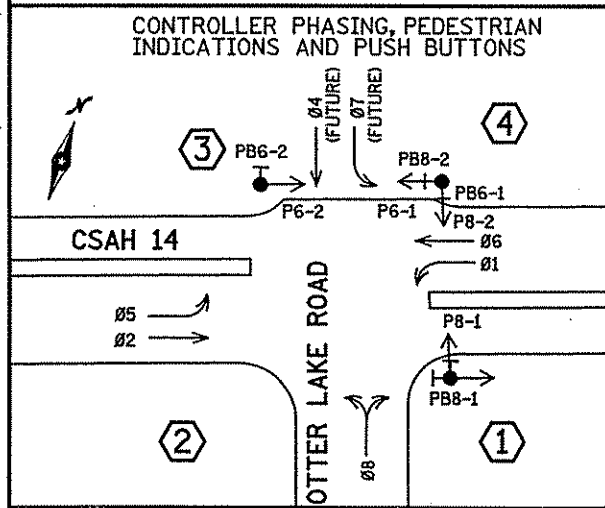
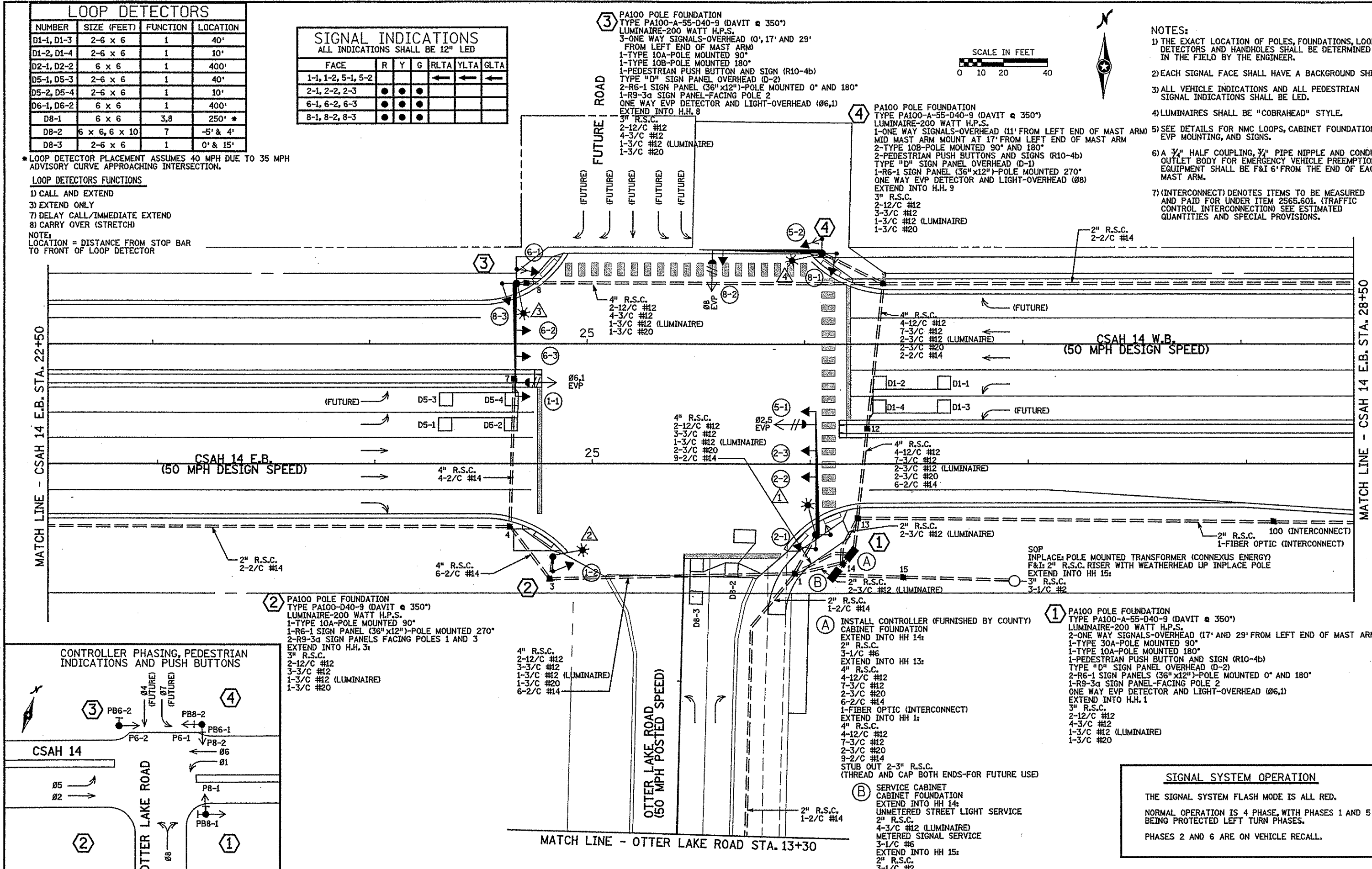
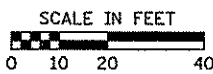
④ PA100 POLE FOUNDATION  
TYPE PA100-A-55-D40-9 (DAVIT @ 350")  
LUMINAIRE-200 WATT H.P.S.  
1-ONE WAY SIGNALS-OVERHEAD (11' FROM LEFT END OF MAST ARM)  
MID MAST ARM MOUNT AT 17' FROM LEFT END OF MAST ARM  
2-TYPE 10B-POLE MOUNTED 90° AND 180°  
2-PEDESTRIAN PUSH BUTTONS AND SIGNS (R10-4b)  
TYPE "D" SIGN PANEL OVERHEAD (D-1)  
1-R6-1 SIGN PANEL (36"x12")-POLE MOUNTED 270°  
ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (Ø8)  
EXTEND INTO H.H. 9  
3" R.S.C.  
2-12/C #12  
3-3/C #12  
1-3/C #12 (LUMINAIRE)  
1-3/C #20

② PA100 POLE FOUNDATION  
TYPE PA100-D40-9 (DAVIT @ 350")  
LUMINAIRE-200 WATT H.P.S.  
1-TYPE 10A-POLE MOUNTED 90"  
1-R6-1 SIGN PANEL (36"x12")-POLE MOUNTED 270°  
2-R9-3a SIGN PANELS FACING POLES 1 AND 3  
EXTEND INTO H.H. 3  
3" R.S.C.  
2-12/C #12  
3-3/C #12  
1-3/C #12 (LUMINAIRE)  
1-3/C #20

① PA100 POLE FOUNDATION  
TYPE PA100-A-55-D40-9 (DAVIT @ 350")  
LUMINAIRE-200 WATT H.P.S.  
2-ONE WAY SIGNALS-OVERHEAD (17' AND 29' FROM LEFT END OF MAST ARM)  
1-TYPE 10A-POLE MOUNTED 90"  
1-TYPE 10B-POLE MOUNTED 180"  
1-PEDESTRIAN PUSH BUTTON AND SIGN (R10-4b)  
TYPE "D" SIGN PANEL OVERHEAD (D-2)  
2-R6-1 SIGN PANELS (36"x12")-POLE MOUNTED 0° AND 180°  
1-R9-3a SIGN PANEL-FACING POLE 2  
ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (Ø6,1)  
EXTEND INTO H.H. 1  
3" R.S.C.  
2-12/C #12  
4-3/C #12  
1-3/C #12 (LUMINAIRE)  
1-3/C #20

① PA100 POLE FOUNDATION  
TYPE PA100-A-55-D40-9 (DAVIT @ 350")  
LUMINAIRE-200 WATT H.P.S.  
2-ONE WAY SIGNALS-OVERHEAD (17' AND 29' FROM LEFT END OF MAST ARM)  
1-TYPE 10A-POLE MOUNTED 90"  
1-TYPE 10B-POLE MOUNTED 180"  
1-PEDESTRIAN PUSH BUTTON AND SIGN (R10-4b)  
TYPE "D" SIGN PANEL OVERHEAD (D-2)  
2-R6-1 SIGN PANELS (36"x12")-POLE MOUNTED 0° AND 180°  
1-R9-3a SIGN PANEL-FACING POLE 2  
ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (Ø6,1)  
EXTEND INTO H.H. 1  
3" R.S.C.  
2-12/C #12  
4-3/C #12  
1-3/C #12 (LUMINAIRE)  
1-3/C #20

- NOTES:**
- 1) THE EXACT LOCATION OF POLES, FOUNDATIONS, LOOP DETECTORS AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
  - 2) EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
  - 3) ALL VEHICLE INDICATIONS AND ALL PEDESTRIAN SIGNAL INDICATIONS SHALL BE LED.
  - 4) LUMINAIRES SHALL BE "COBRAHEAD" STYLE.
  - 5) SEE DETAILS FOR NMC LOOPS, CABINET FOUNDATIONS, EVP MOUNTING, AND SIGNS.
  - 6) A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE AND CONDUIT OUTLET BODY FOR EMERGENCY VEHICLE PREEMPTION EQUIPMENT SHALL BE F&I 6' FROM THE END OF EACH MAST ARM.
  - 7) (INTERCONNECT) DENOTES ITEMS TO BE MEASURED AND PAID FOR UNDER ITEM 2565.601. (TRAFFIC CONTROL INTERCONNECTION) SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.



**SIGNAL SYSTEM OPERATION**

THE SIGNAL SYSTEM FLASH MODE IS ALL RED.

NORMAL OPERATION IS 4 PHASE, WITH PHASES 1 AND 5 BEING PROTECTED LEFT TURN PHASES.

PHASES 2 AND 6 ARE ON VEHICLE RECALL.

DATE: 9/1/2005 TIME: 11:32:51 AM FILENAME: K:\p2\WastCity\24390\Wwy-brdg\Wwy-plr-sh\c200802.sga

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CHECKED BY: BDP

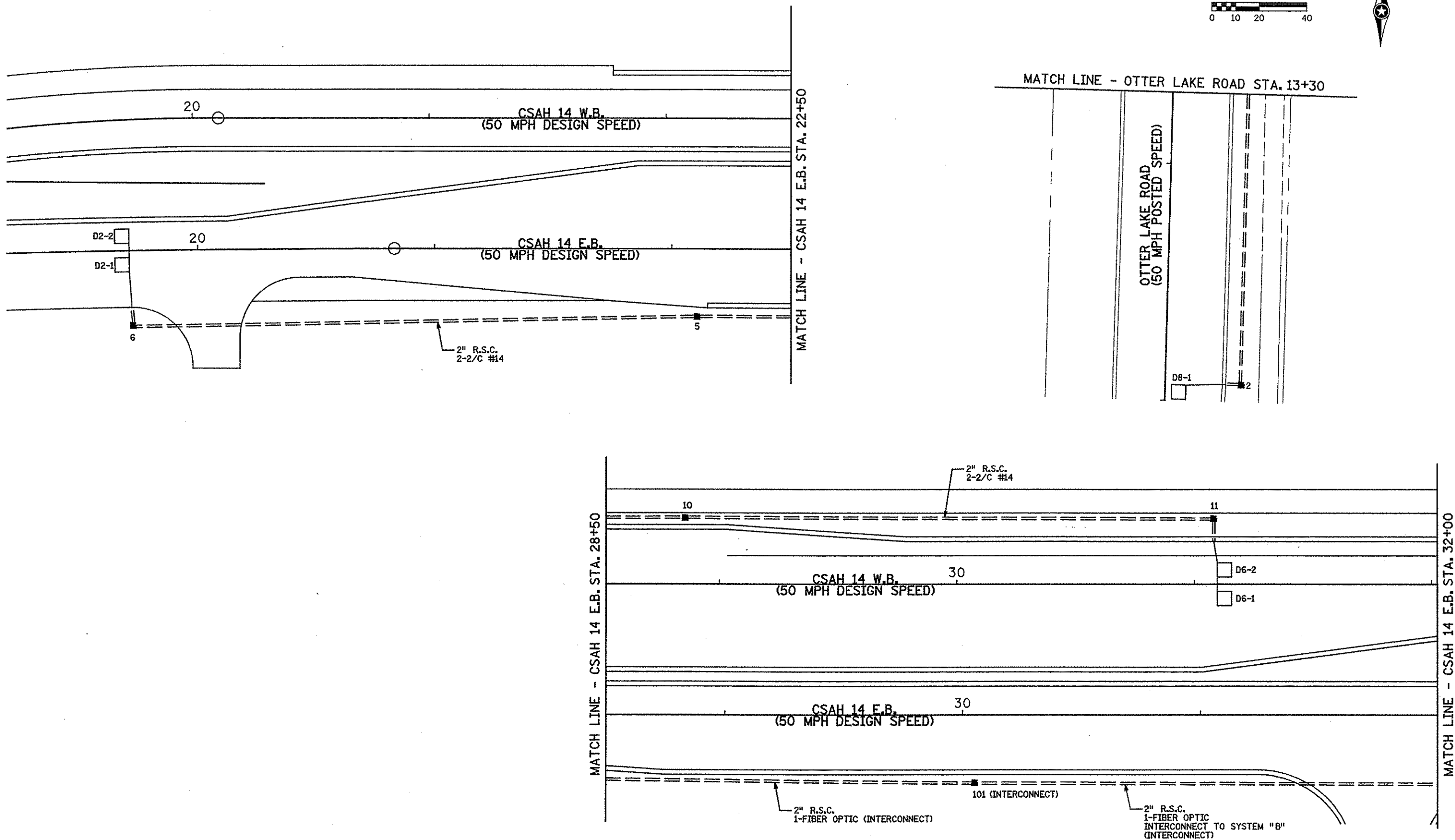
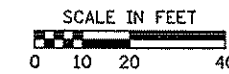
CERTIFIED BY: *Scott O. Parker*  
LIC. NO. 26820 DATE 9/2/05

**TKDA**  
ENGINEERS · ARCHITECTS · PLANNERS

INTERSECTION LAYOUT - SYSTEM "A"  
CSAH 14 (MAIN STREET) / CR 84 (OTTER LAKE ROAD)

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 187 of 296 Sheets

DATE: 8/15/2005 TIME: 2:44:02 PM  
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DRAWN BY: TJV  
 CHECKED BY: BDP

CERTIFIED BY *Dont O. Paulin* LIC. NO. 20880 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

**TKDA**  
 ENGINEERS · ARCHITECTS · PLANNERS

MATCH LINE LAYOUT - SYSTEM "A"  
 CSAH 14 (MAIN STREET) / CR 84 (OTTER LAKE ROAD)

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 188 of 296 Sheets

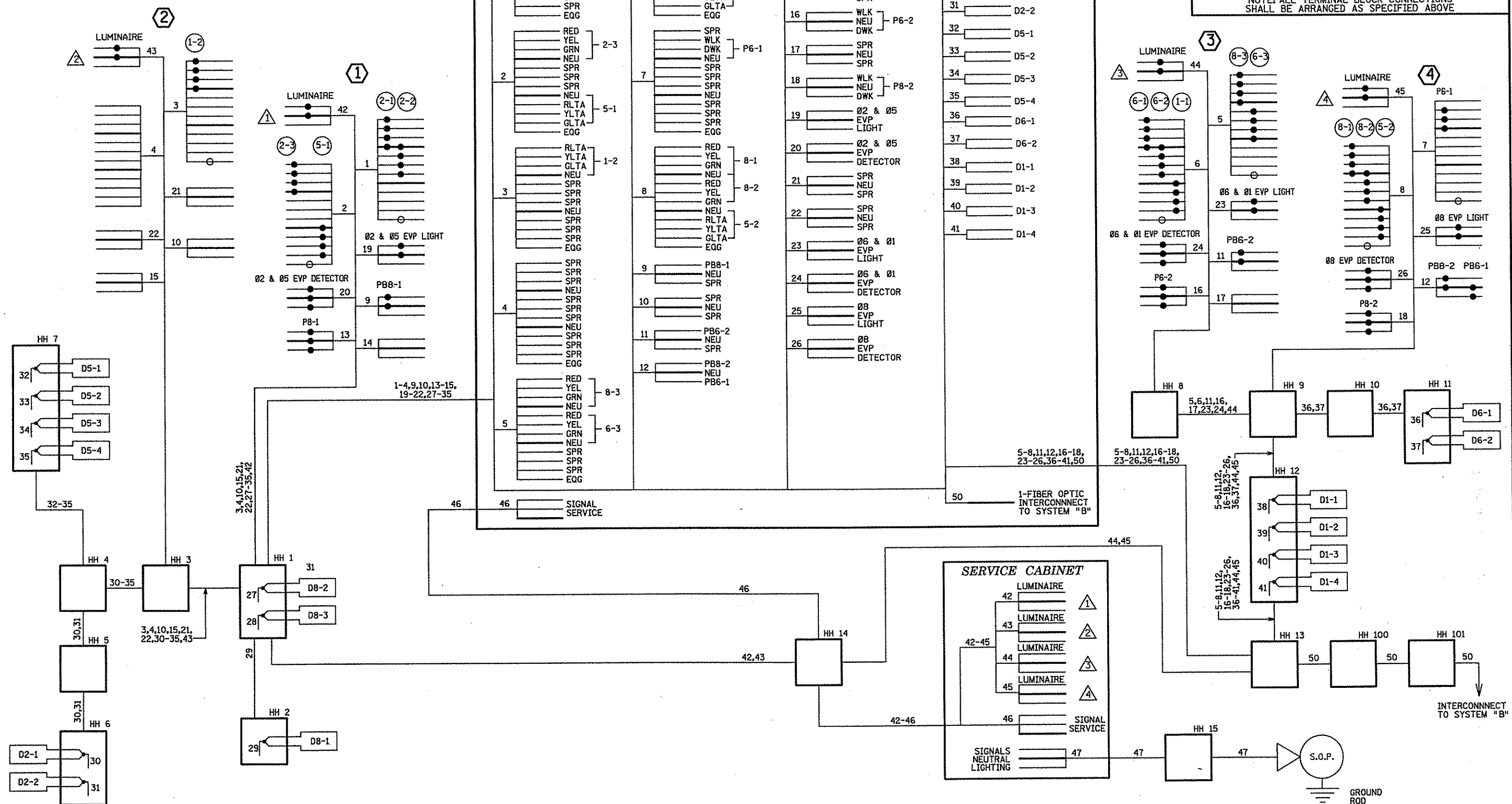


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### CONTROLLER CABINET

CONDUCTOR COLOR CODING			
R	3-1/C #2	BLK	R
O		WH	5/C #12
BL		BLK	
WH		WH	
R/BLK	2-1/C #6	BLK	
O/BLK		WH	BLK CLEAR 2/C #14
BL/BLK		WH	
WH/BLK		R	R 3/C #20
BLK	3/C #12	WH	
BLK/WH		BLK	
G/BLK		G	

NOTE: ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE



**LOOP DETECTORS**

NUMBER	SIZE (FEET)	FUNCTION	LOCATION
D1-1	2-6 x 6	1	25' & 55'
D1-2	2-6 x 6	1	10' & 40'
D2-1	6 x 6	1	475'
D2-2	6 x 6	1	475'
D4-1	6 x 6	1	120'
D4-2	2-6 x 6	7	AS SHOWN
D4-3	2-6 x 6	1	5' & 20'
D4-4	2-6 x 6	1	20' & 50'
D4-5	2-6 x 6	1	5' & 35'
D5-1	2-6 x 6	1	25' & 55'
D5-2	2-6 x 6	1	25' & 55'
D5-3	2-6 x 6	1	10' & 40'
D5-4	2-6 x 6	1	10' & 40'
D6-1	6 x 6	1	475'
D6-2	6 x 6	1	475'
D8-1	6 x 6	1	120'
D8-2	2-6 x 6	7	AS SHOWN
D8-3	2-6 x 6	1	5' & 20'
D8-4	2-6 x 6	1	20' & 50'
D8-5	2-6 x 6	1	5' & 35'

**SIGNAL INDICATIONS**  
ALL INDICATIONS SHALL BE 12" LED

FACE	R	Y	G	RLTA	YLTA	GLTA
1-1, 1-2				←	←	←
2-1, 2-2, 2-3	●	●	●			
4-1, 4-2	●	●	●			
4-3, 4-4	●	●	●	←	←	
5-1, 5-2				←	←	
6-1, 6-2, 6-3	●	●	●			
8-1, 8-2	●	●	●			
8-3, 8-4	●	●	●	←	←	

4 PA100 POLE FOUNDATION  
TYPE PA100-A-45-D40-9 (DAVIT @ 350°)  
3-ONE WAY SIGNALS-OVERHEAD (0', 11', AND 23' FROM LEFT END OF MAST ARM)  
2-POLE MOUNTED ONE WAY SIGNALS AT 45° AND 225°  
2-POLE MOUNTED PEDESTRIAN INDICATION AT 45° AND 225°  
INSTALL ONE WAY EVP DETECTOR AND LIGHT  
LUMINAIRE - 250 WATT HPS  
2- PEDESTRIAN PUSH BUTTONS AND SIGNS (R10-4b)  
2-R6-1 SIGN PANELS-OVERHEAD (D-3, D-4)  
TYPE "D" SIGN PANEL OVERHEAD (D-5)  
EXTEND INTO H.H. 8  
3" R.S.C.  
2-12/C #12  
4-3/C #12  
1-3/C #20  
1-3/C #12 (LUMINAIRE)

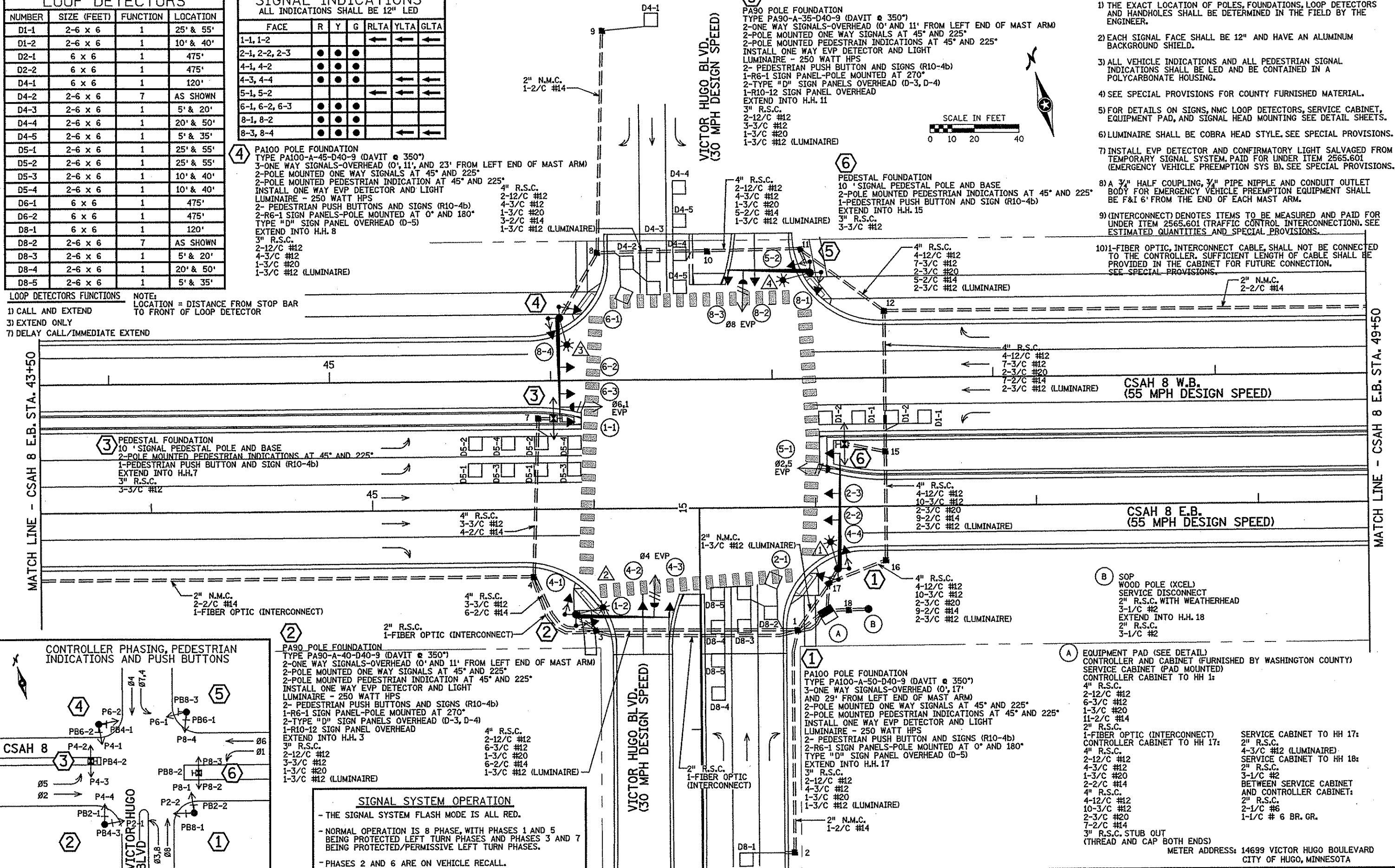
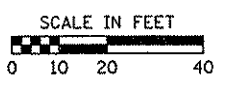
**LOOP DETECTORS FUNCTIONS**

- 1) CALL AND EXTEND
- 2) EXTEND ONLY
- 3) DELAY CALL/IMMEDIATE EXTEND

NOTE:  
LOCATION = DISTANCE FROM STOP BAR TO FRONT OF LOOP DETECTOR

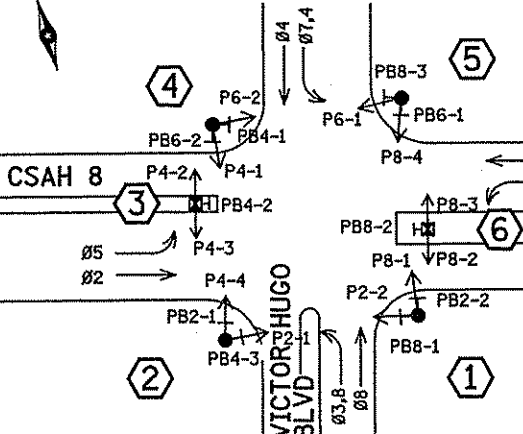
**NOTES:**

- 1) THE EXACT LOCATION OF POLES, FOUNDATIONS, LOOP DETECTORS AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- 2) EACH SIGNAL FACE SHALL BE 12" AND HAVE AN ALUMINUM BACKGROUND SHIELD.
- 3) ALL VEHICLE INDICATIONS AND ALL PEDESTRIAN SIGNAL INDICATIONS SHALL BE LED AND BE CONTAINED IN A POLYCARBONATE HOUSING.
- 4) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIAL.
- 5) FOR DETAILS ON SIGNS, NMC LOOP DETECTORS, SERVICE CABINET, EQUIPMENT PAD, AND SIGNAL HEAD MOUNTING SEE DETAIL SHEETS.
- 6) LUMINAIRE SHALL BE COBRA HEAD STYLE. SEE SPECIAL PROVISIONS.
- 7) INSTALL EVP DETECTOR AND CONFIRMATORY LIGHT SALVAGED FROM TEMPORARY SIGNAL SYSTEM. PAID FOR UNDER ITEM 2565.601 (EMERGENCY VEHICLE PREEMPTION SYS B). SEE SPECIAL PROVISIONS.
- 8) A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE AND CONDUIT OUTLET BODY FOR EMERGENCY VEHICLE PREEMPTION EQUIPMENT SHALL BE F&I 6' FROM THE END OF EACH MAST ARM.
- 9) (INTERCONNECT) DENOTES ITEMS TO BE MEASURED AND PAID FOR UNDER ITEM 2565.601 (TRAFFIC CONTROL INTERCONNECTION). SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- 10) FIBER OPTIC, INTERCONNECT CABLE, SHALL NOT BE CONNECTED TO THE CONTROLLER. SUFFICIENT LENGTH OF CABLE SHALL BE PROVIDED IN THE CABINET FOR FUTURE CONNECTION. SEE SPECIAL PROVISIONS.



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**CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS**



2 PA90 POLE FOUNDATION  
TYPE PA90-A-40-D40-9 (DAVIT @ 350°)  
2-ONE WAY SIGNALS-OVERHEAD (0' AND 11' FROM LEFT END OF MAST ARM)  
2-POLE MOUNTED ONE WAY SIGNALS AT 45° AND 225°  
2-POLE MOUNTED PEDESTRIAN INDICATION AT 45° AND 225°  
INSTALL ONE WAY EVP DETECTOR AND LIGHT  
LUMINAIRE - 250 WATT HPS  
2- PEDESTRIAN PUSH BUTTONS AND SIGNS (R10-4b)  
1-R6-1 SIGN PANEL-OVERHEAD (D-3)  
2-TYPE "D" SIGN PANELS OVERHEAD (D-3, D-4)  
1-R10-12 SIGN PANEL OVERHEAD  
EXTEND INTO H.H. 3  
3" R.S.C.  
2-12/C #12  
3-3/C #12  
1-3/C #20  
1-3/C #12 (LUMINAIRE)

**SIGNAL SYSTEM OPERATION**

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 8 PHASE, WITH PHASES 1 AND 5 BEING PROTECTED LEFT TURN PHASES AND PHASES 3 AND 7 BEING PROTECTED/PERMISSIVE LEFT TURN PHASES.
- PHASES 2 AND 6 ARE ON VEHICLE RECALL.

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CHECKED BY: BDP

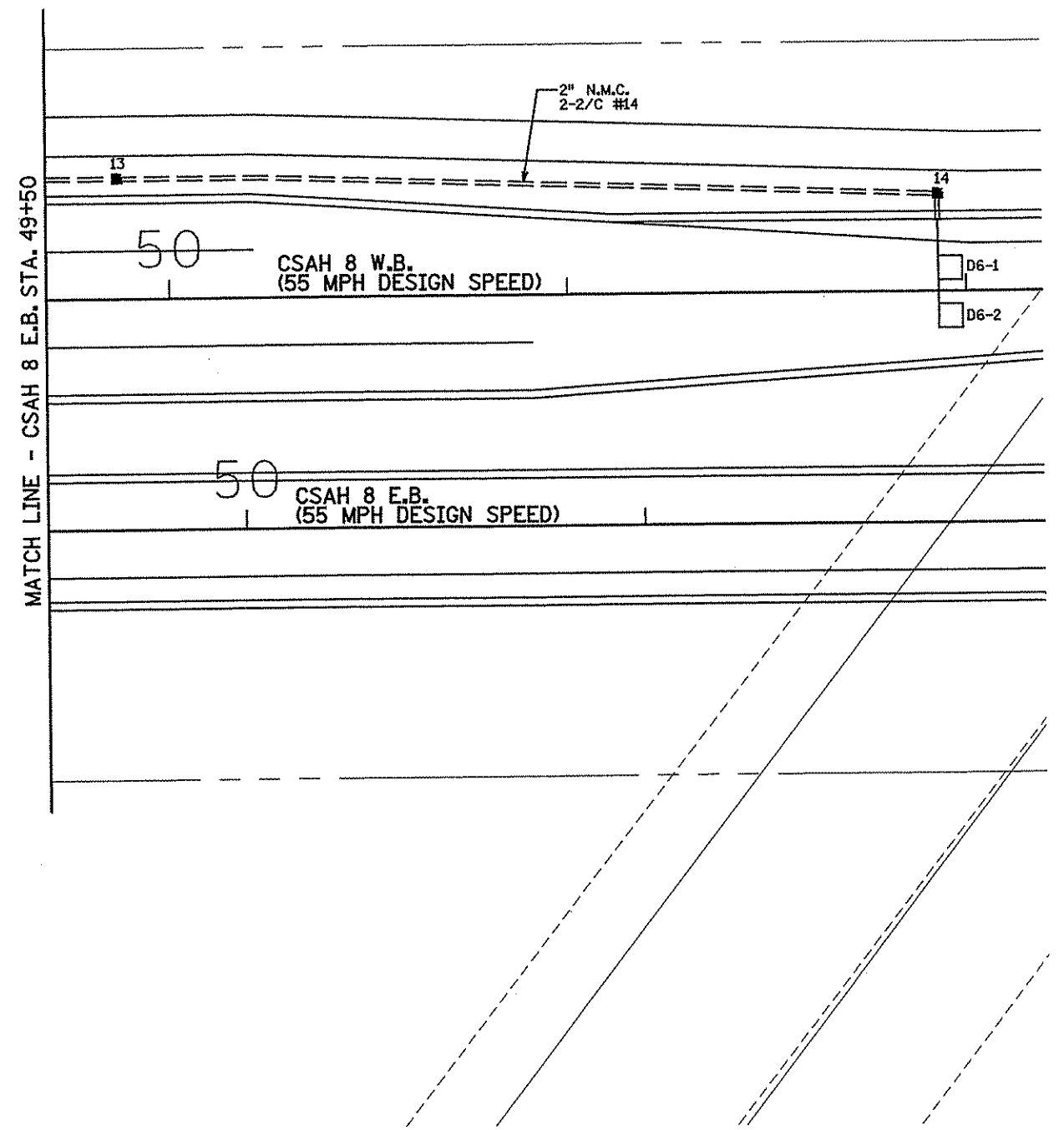
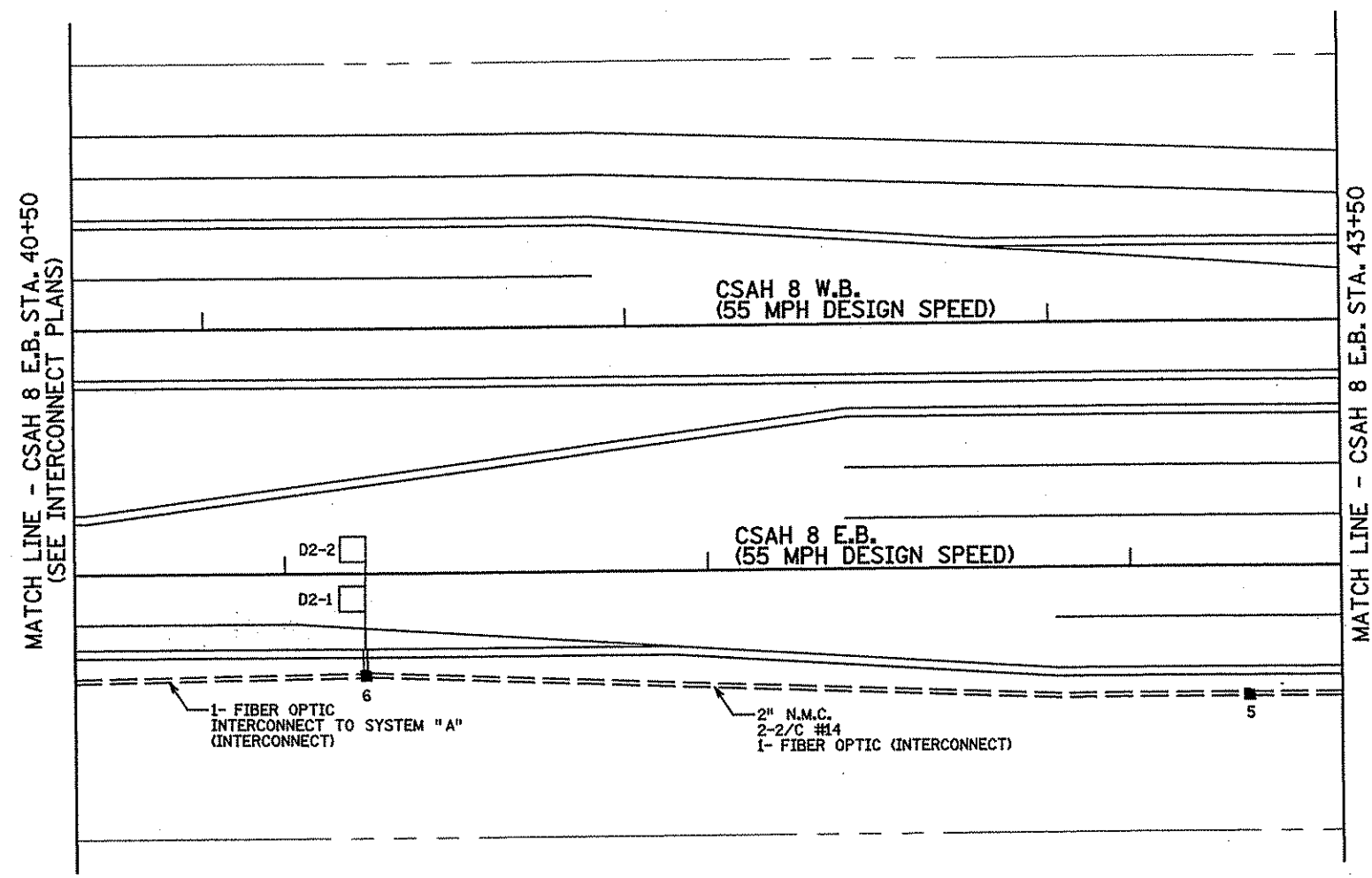
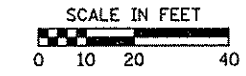
CERTIFIED BY *Scott O. Paulin* LIC. NO. 26880 DATE 10/15/05  
LICENSED PROFESSIONAL ENGINEER

**TKDA**  
ENGINEERS - ARCHITECTS - PLANNERS

**INTERSECTION LAYOUT - SYSTEM "B"**  
CSAH 8 (FRENCHMAN ROAD) / VICTOR HUGO BLVD.

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 190 of 296 Sheets

METER ADDRESS: 14699 VICTOR HUGO BOULEVARD  
CITY OF HUGO, MINNESOTA



DATE: 8/15/2005 TIME: 2:41:12 PM  
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CERTIFIED BY *Scott J. Paulin* LIC. NO. 20880 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

**TKDA**  
ENGINEERS - ARCHITECTS - PLANNERS

MATCH LINE LAYOUT - SYSTEM "B"  
CSAH 8 (FRENCHMAN ROAD) / VICTOR HUGO BLVD.

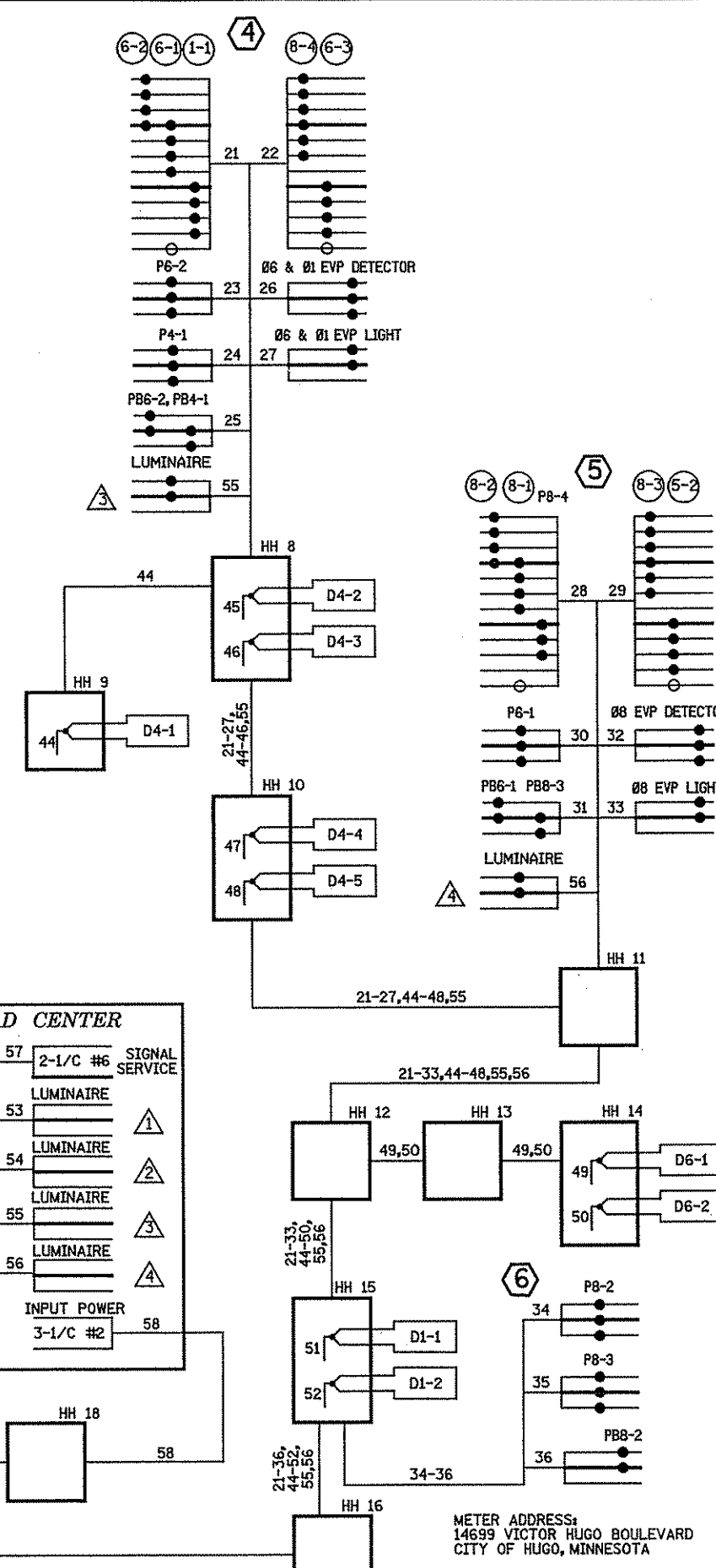
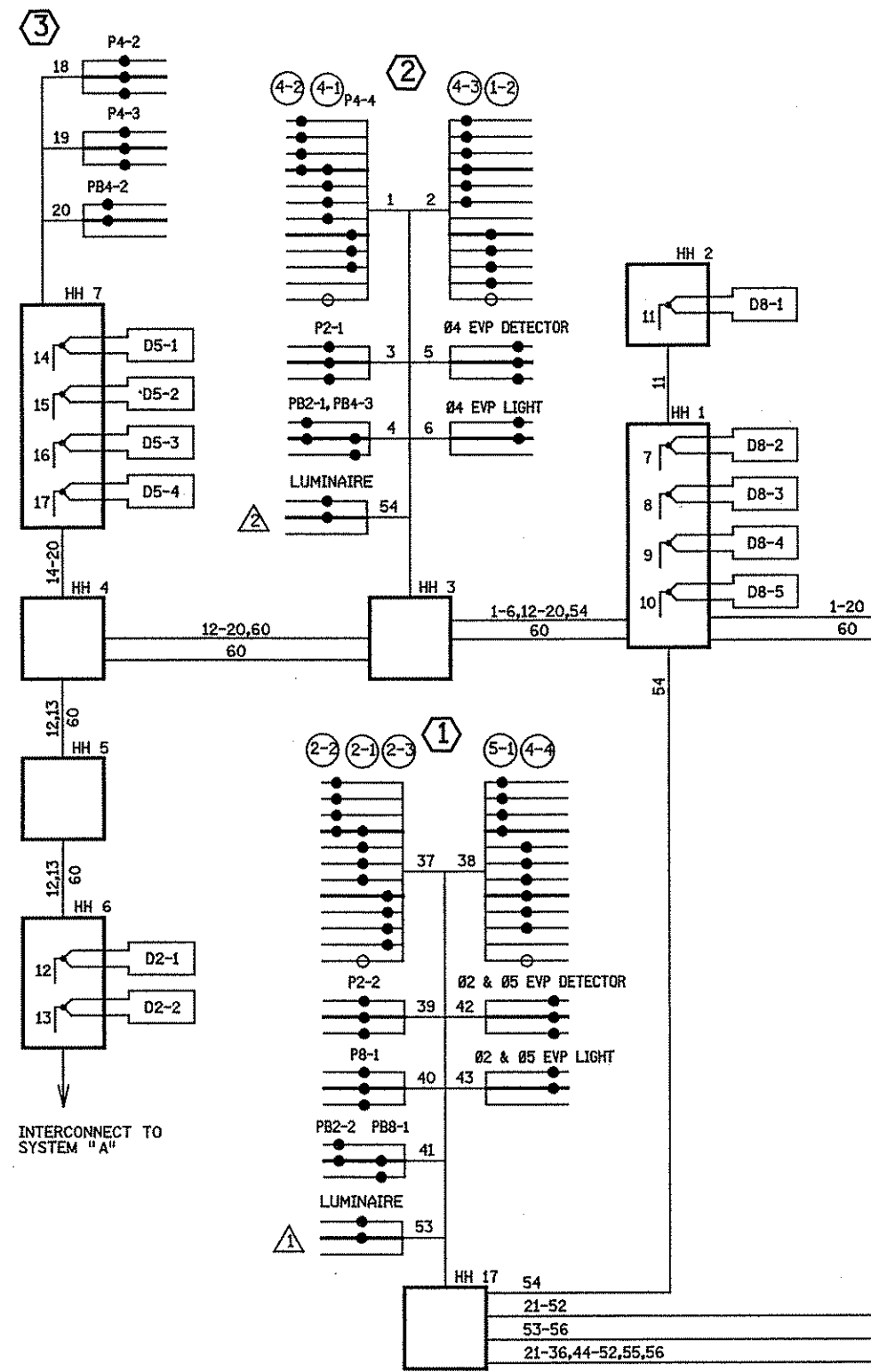
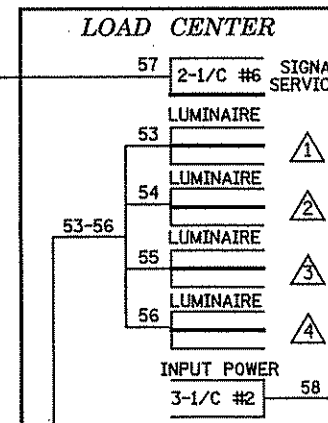
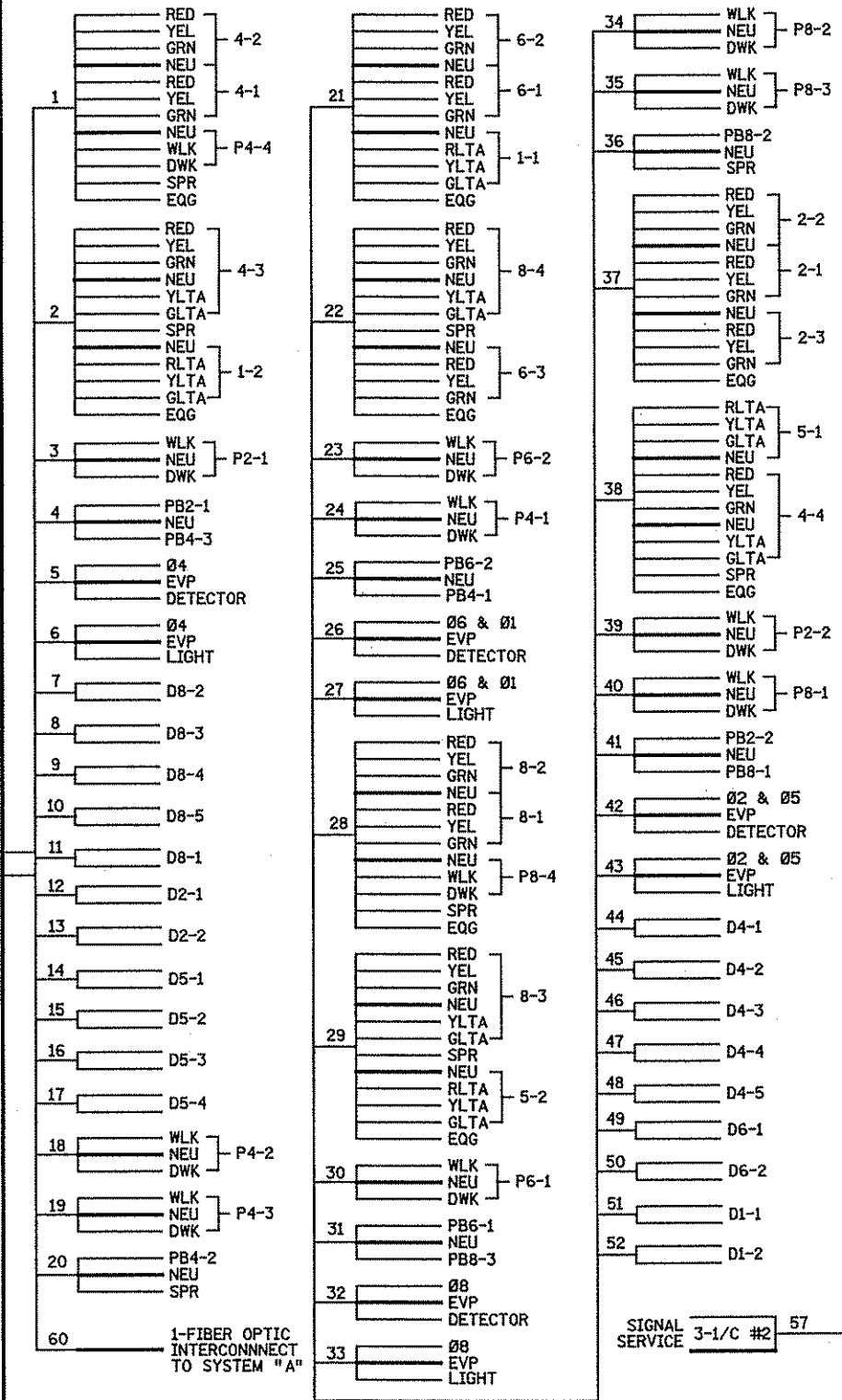
S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 191 of 296 Sheets

**CONDUCTOR COLOR CODING**

R	3-1/C #2	R	5/C #12
BL		BLK	
WH		WH	
R/BLK	2-1/C #6	BLK	2/C #14
O/BLK		WH	
BL/BLK		BLK	3/C #20
WH/BLK		R	
BLK	3/C #12	WH	
BLK/WH		BLK	
G		G	

NOTE: ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE

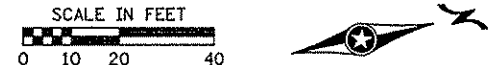
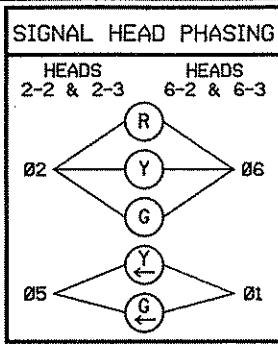
**CONTROLLER CABINET**



DATE: 9/28/2005 TIME: 8:55:24 AM FILENAME: K:\v-2\WastCity\24350\Navy-brdg\wry\pfr-stk\200802.sgp

LOOP DETECTORS		
NUMBER	SIZE (FEET)	LOCATION
D1-1	6 x 6	40'
D1-2	6 x 6	10'
D2-1	6 x 6	180'
D3-1	6 x 6	250'
D3-2	2-6 x 6	20' & 50'
D3-3	2-6 x 6	5' & 35'
D3-4	2-6 x 6	5' & 20'
D3-5	2-6 x 6	5' & 20'
D4-1	2-6 x 6	5' & 20'
D4-2	2-6 x 6	20' & 50'
D4-3	2-6 x 6	5' & 35'
D5-1	6 x 6	40'
D5-2	6 x 6	10'
D6-1	6 x 6	180'

SIGNAL INDICATIONS						
ALL INDICATIONS SHALL BE 12" LED						
FACE	R	Y	G	RLTA	YLTA	GLTA
2-1	●	●	●			
2-2, 2-3	●	●	●	←	←	←
3-1	●	●	●			
3-2, 3-3				←	←	←
4-1	●	●	●			
4-2	●	●	●			←
4-3				←	←	←
6-1	●	●	●			
6-2, 6-3	●	●	●	←	←	←



MATCH LINE - CSAH 8 E.B. STA. 111+30

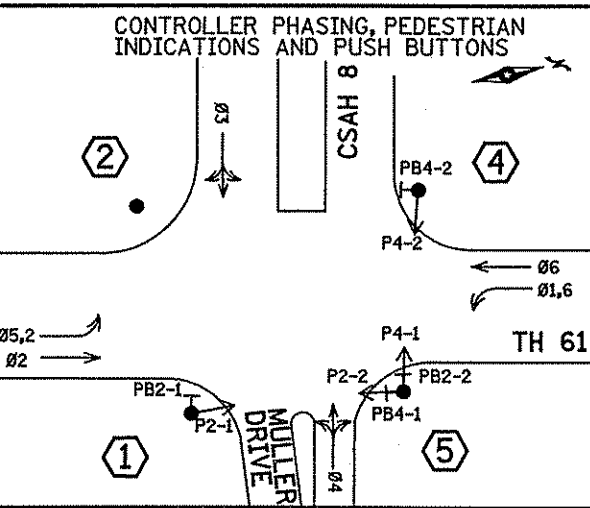
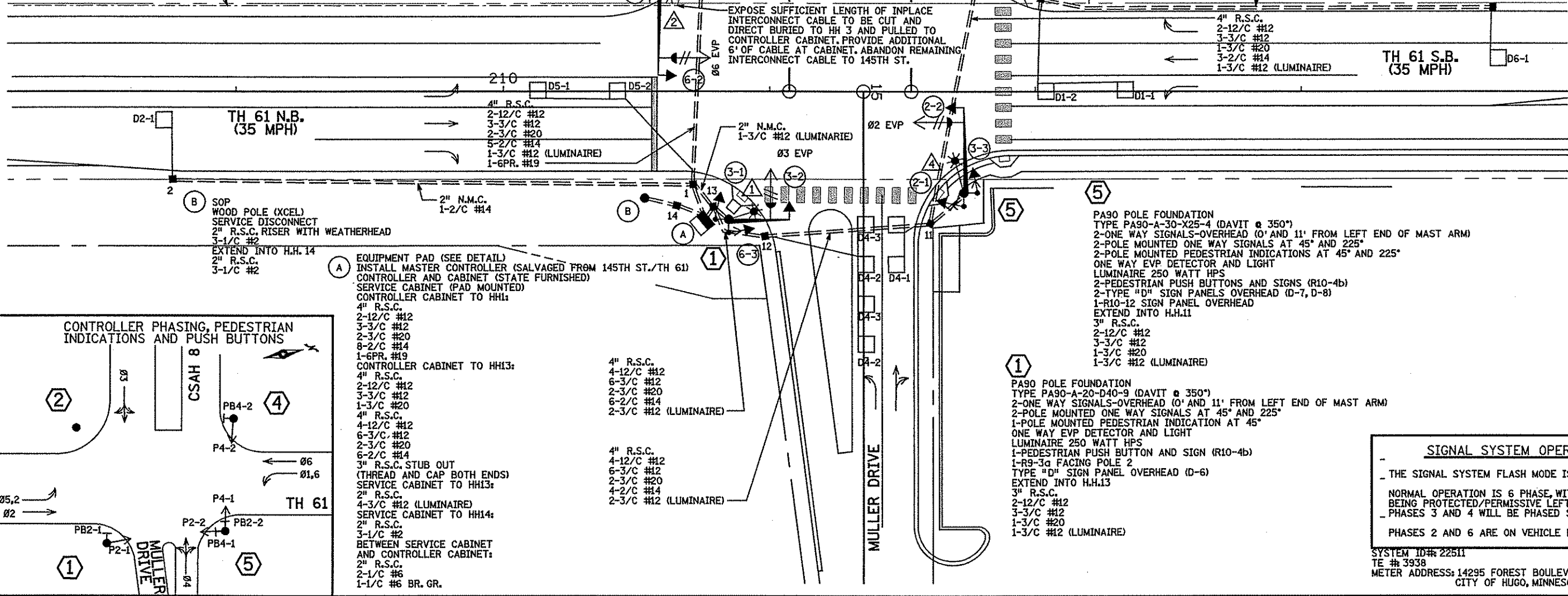
- NOTES:
- 1) THE EXACT LOCATION OF POLES, FOUNDATIONS, LOOP DETECTORS AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
  - 2) EACH SIGNAL FACE SHALL BE 12" AND HAVE AN ALUMINUM BACKGROUND SHIELD.
  - 3) ALL VEHICLE INDICATIONS AND ALL PEDESTRIAN SIGNAL INDICATIONS SHALL BE LED AND BE CONTAINED IN A POLYCARBONATE HOUSING.
  - 4) SEE SPECIAL PROVISIONS FOR STATE FURNISHED MATERIALS.
  - 5) FOR DETAILS ON SIGNS, NMC LOOP DETECTORS, SERVICE CABINET, EQUIPMENT PAD, AND SIGNAL HEAD MOUNTING SEE DETAIL SHEETS.
  - 6) LUMINAIRE SHALL BE COBRA HEAD STYLE. SEE SPECIAL PROVISIONS.
  - 7) A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE AND CONDUIT OUTLET BODY FOR EMERGENCY VEHICLE PREEMPTION EQUIPMENT SHALL BE F&I 6' FROM THE END OF THE MAST ARM.

NOTE:  
LOCATION = DISTANCE FROM STOP BAR TO FRONT OF LOOP DETECTOR

② PA90 POLE FOUNDATION  
TYPE PA90-A-40-D40-9 (DAVIT @ 350°)  
2-ONE WAY SIGNALS-OVERHEAD (0' AND 11' FROM LEFT END OF MAST ARM)  
2-POLE MOUNTED ONE WAY SIGNALS AT 45° AND 225°  
ONE WAY EVP DETECTOR AND LIGHT  
LUMINAIRE 250 WATT HPS  
2-R9-3a FACING POLES 1 AND 4  
2-TYPE "D" SIGN PANELS OVERHEAD (D-9, D-10)  
1-R10-12 SIGN PANEL OVERHEAD  
EXTEND INTO H.H.3  
3" R.S.C.  
2-12/C #12  
3-3/C #12  
1-3/C #20  
1-3/C #12 (LUMINAIRE)

④ PA90 POLE FOUNDATION  
TYPE PA90-A-35-D40-9 (DAVIT @ 350°)  
1-ONE WAY SIGNAL-OVERHEAD  
2-POLE MOUNTED ONE WAY SIGNALS AT 45° AND 225°  
1-POLE MOUNTED PEDESTRIAN INDICATION AT 225°  
ONE WAY EVP DETECTOR AND LIGHT  
LUMINAIRE 250 WATT HPS  
1-PEDESTRIAN PUSH BUTTON AND SIGN (R10-4b)  
1-R9-3a FACING POLE 2  
TYPE "D" SIGN PANEL OVERHEAD (D-6)  
EXTEND INTO H.H.8  
3" R.S.C.  
2-12/C #12  
3-3/C #12  
1-3/C #20  
1-3/C #12 (LUMINAIRE)

INPLACE 1-6PR#19 DIRECTED BURIED INTERCONNECT TO 140TH STREET



① EQUIPMENT PAD (SEE DETAIL)  
INSTALL MASTER CONTROLLER (SALVAGED FROM 145TH ST./TH 61)  
CONTROLLER AND CABINET (STATE FURNISHED)  
SERVICE CABINET (PAD MOUNTED)  
CONTROLLER CABINET TO H.H.1:  
4" R.S.C.  
2-12/C #12  
3-3/C #12  
2-3/C #20  
8-2/C #14  
1-6PR #19  
CONTROLLER CABINET TO H.H.3:  
4" R.S.C.  
2-12/C #12  
3-3/C #12  
2-3/C #20  
1-3/C #20  
4" R.S.C.  
4-12/C #12  
6-3/C #12  
2-3/C #20  
6-2/C #14  
2-3/C #12 (LUMINAIRE)  
4" R.S.C.  
4-12/C #12  
6-3/C #12  
2-3/C #20  
4-2/C #14  
2-3/C #12 (LUMINAIRE)  
3" R.S.C. STUB OUT (THREAD AND CAP BOTH ENDS)  
SERVICE CABINET TO H.H.13:  
2" R.S.C.  
4-3/C #12 (LUMINAIRE)  
SERVICE CABINET TO H.H.14:  
2" R.S.C.  
3-1/C #2  
BETWEEN SERVICE CABINET AND CONTROLLER CABINET:  
2" R.S.C.  
2-1/C #6  
1-1/C #6 BR. GR.

⑤ PA90 POLE FOUNDATION  
TYPE PA90-A-30-X25-4 (DAVIT @ 350°)  
2-ONE WAY SIGNALS-OVERHEAD (0' AND 11' FROM LEFT END OF MAST ARM)  
2-POLE MOUNTED ONE WAY SIGNALS AT 45° AND 225°  
2-POLE MOUNTED PEDESTRIAN INDICATIONS AT 45° AND 225°  
ONE WAY EVP DETECTOR AND LIGHT  
LUMINAIRE 250 WATT HPS  
2-PEDESTRIAN PUSH BUTTONS AND SIGNS (R10-4b)  
2-TYPE "D" SIGN PANELS OVERHEAD (D-7, D-8)  
1-R10-12 SIGN PANEL OVERHEAD  
EXTEND INTO H.H.11  
3" R.S.C.  
2-12/C #12  
3-3/C #12  
1-3/C #20  
1-3/C #12 (LUMINAIRE)

**SIGNAL SYSTEM OPERATION**

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.

- NORMAL OPERATION IS 6 PHASE, WITH PHASES 1 AND 5 BEING PROTECTED/PERMISSIVE LEFT TURN PHASES.

- PHASES 3 AND 4 WILL BE PHASED SEQUENTIALLY.

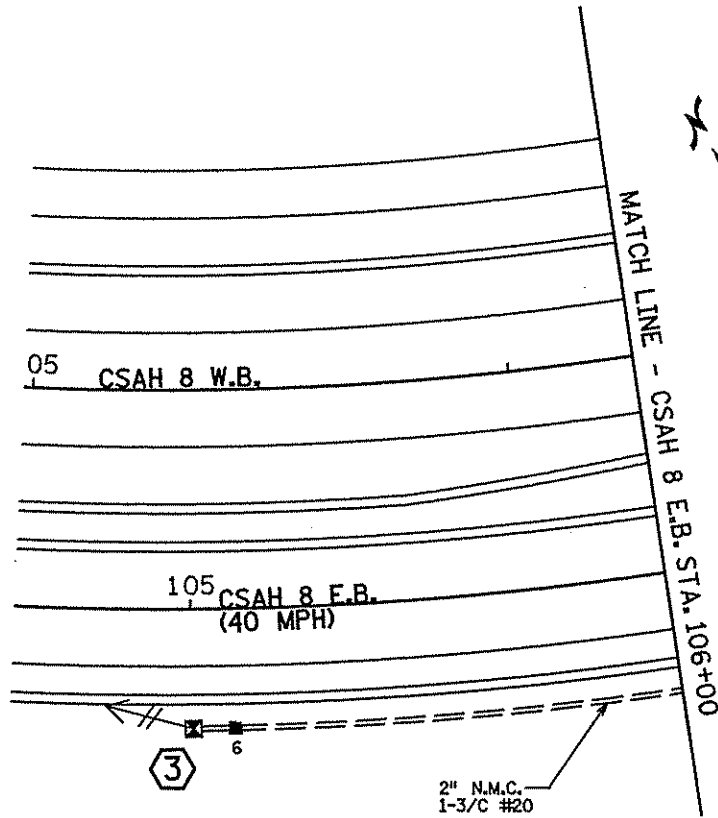
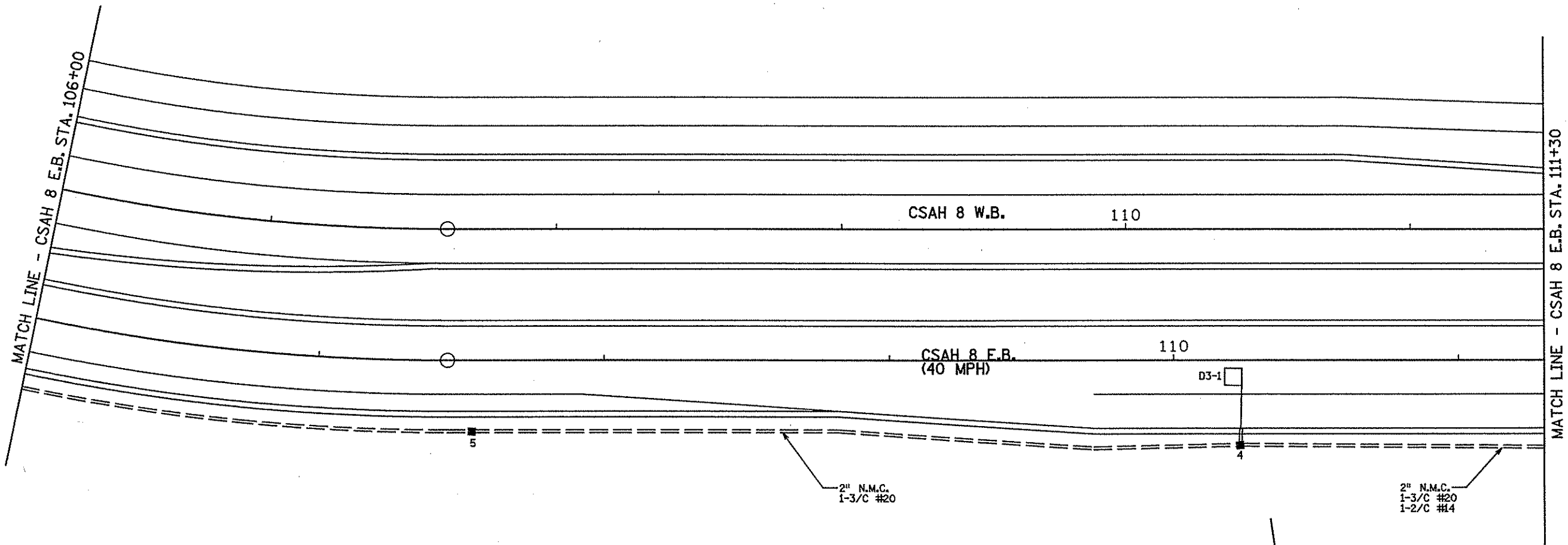
- PHASES 2 AND 6 ARE ON VEHICLE RECALL.

SYSTEM ID# 22511  
TE # 3938  
METER ADDRESS: 14295 FOREST BOULEVARD NORTH  
CITY OF HUGO, MINNESOTA

DATE: 8/11/2005 TIME: 9:03:07 AM FILENAME: K:\p2\WastCity\24390\New\p1r-sif\200802.sg



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3 PEDESTAL FOUNDATION  
10' PEDESTAL POLE AND BASE  
TYPE 4A  
Ø3 SUPPLEMENTAL ONE WAY EVP DETECTOR  
EXTEND INTO H.H. 6  
3" R.S.C.  
1-3/C #20

SYSTEM ID# 22511  
TE # 3938  
METER ADDRESS: 14295 FOREST BOULEVARD NORTH  
CITY OF HUGO, MINNESOTA

DRAWN BY: SFH  
CHECKED BY: BDP

CERTIFIED BY *Scott O. Paulin* LIC. NO. 20880 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

**TKDA**  
ENGINEERS · ARCHITECTS · PLANNERS

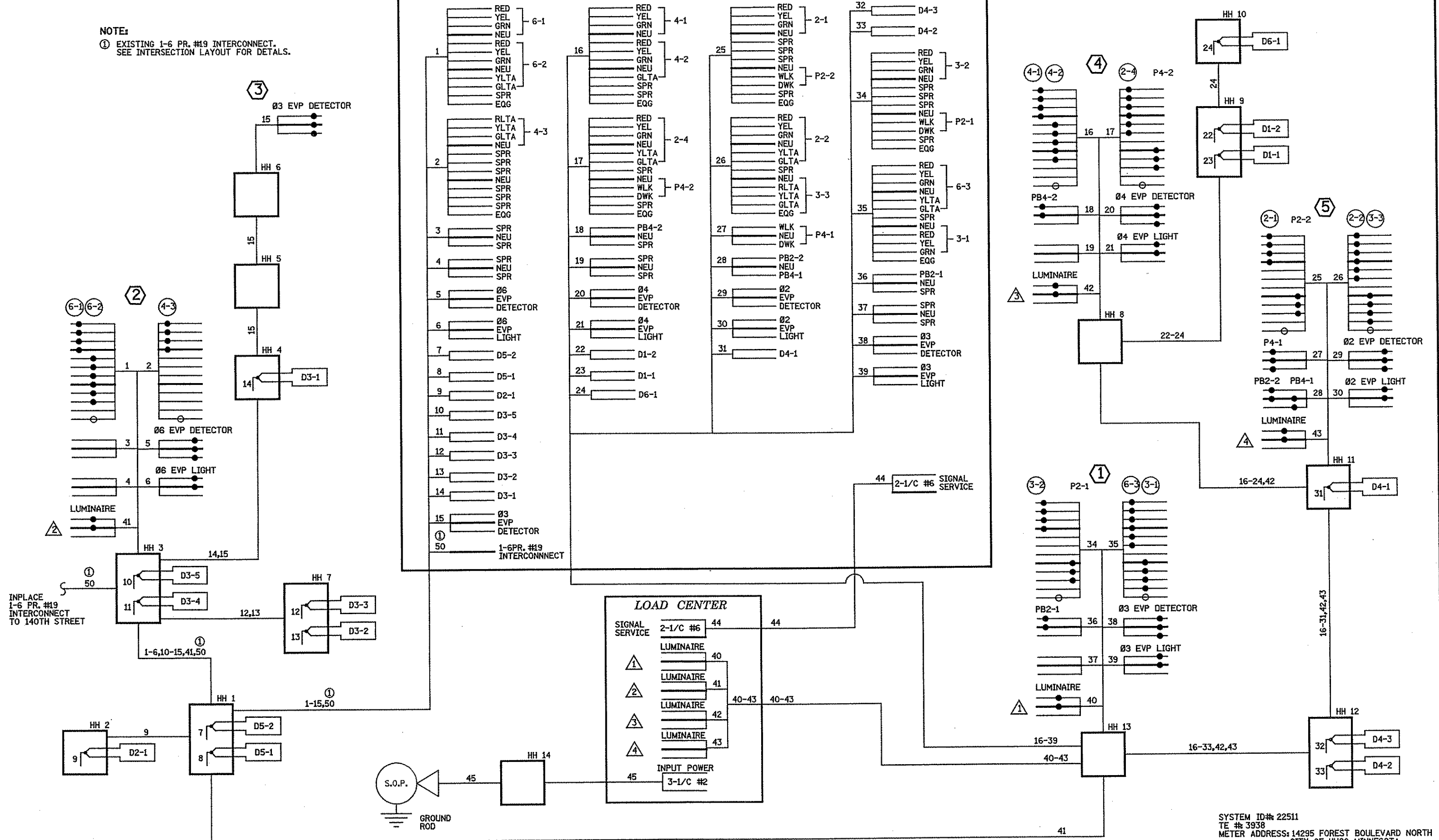
MATCH LINE LAYOUT - SYSTEM "C"  
TH 61 / CSAH 8 (FRENCHMAN ROAD)

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 194 of 296 Sheets

DATE: 8/5/2005 TIME: 2:16:48 PM  
 FILENAME: K:\r-z\wast\cy124390\wry\p1r-gff\2008022.sgt

**NOTE:**  
 ① EXISTING 1-6 PR. #19 INTERCONNECT.  
 SEE INTERSECTION LAYOUT FOR DETAILS.

### CONTROLLER CABINET



SYSTEM ID# 22511  
 TE # 3938  
 METER ADDRESS: 14295 FOREST BOULEVARD NORTH  
 CITY OF HUGO, MINNESOTA

DRAWN BY: SFH  
 CHECKED BY: BDP

CERTIFIED BY: *[Signature]*  
 LICENSED PROFESSIONAL ENGINEER  
 P.E. NO. 8943 DATE 15/10/05

**TKDA**  
 ENGINEERS · ARCHITECTS · PLANNERS

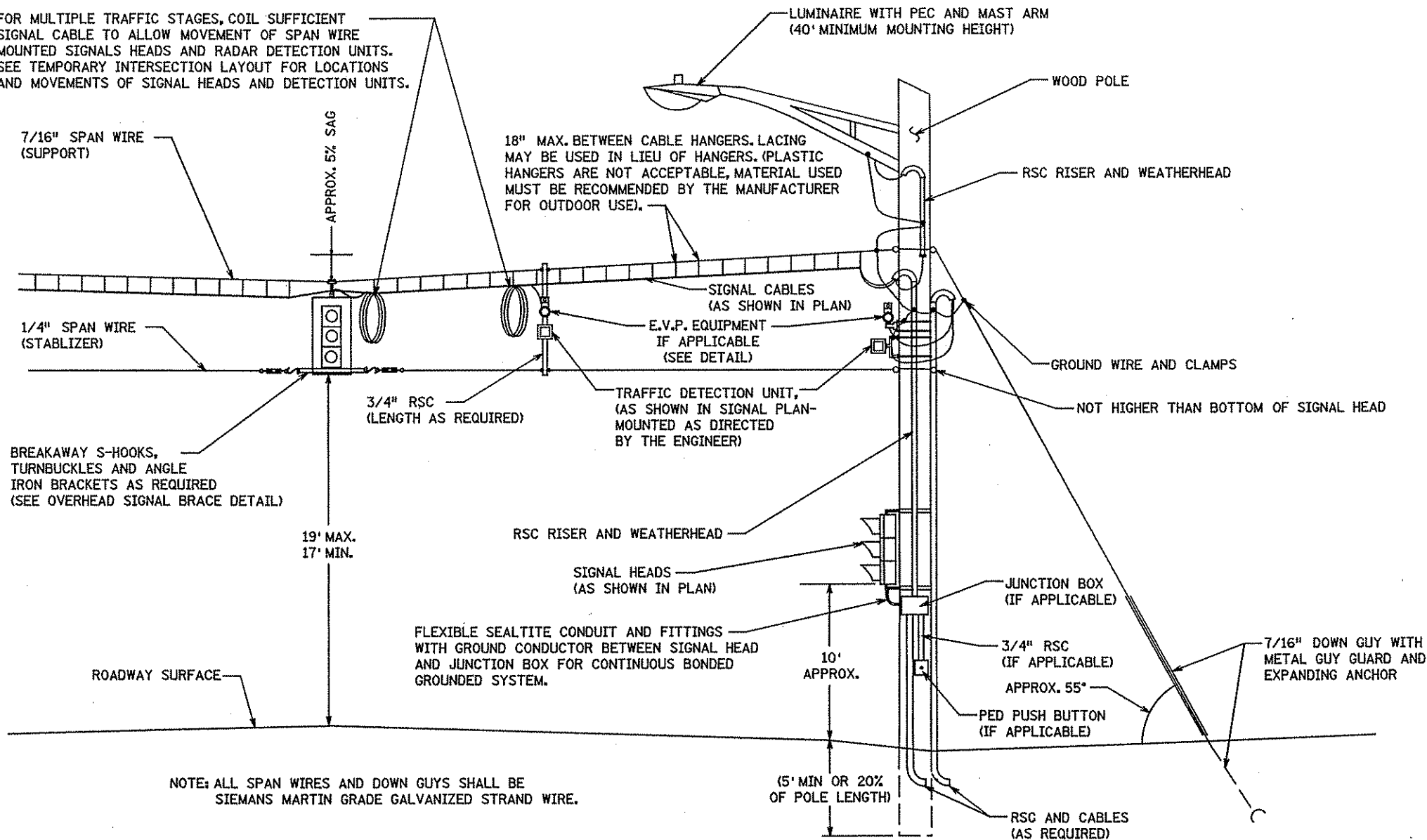
WIRING DIAGRAM - SYSTEM "C"  
 TH 61 / CSAH 8 (FRENCHMAN ROAD)

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 195 of 296 Sheets

TYPICAL WOOD POLE AND SPAN WIRE MOUNTED TRAFFIC SIGNALS

(NOT TO SCALE)

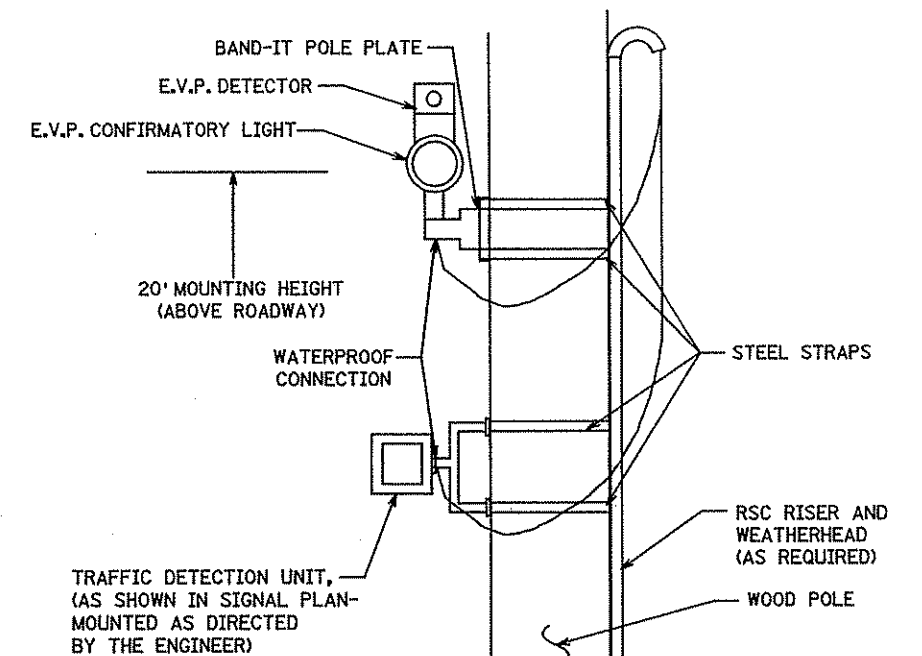
FOR MULTIPLE TRAFFIC STAGES, COIL SUFFICIENT SIGNAL CABLE TO ALLOW MOVEMENT OF SPAN WIRE MOUNTED SIGNALS HEADS AND RADAR DETECTION UNITS. SEE TEMPORARY INTERSECTION LAYOUT FOR LOCATIONS AND MOVEMENTS OF SIGNAL HEADS AND DETECTION UNITS.



NOTE: ALL SPAN WIRES AND DOWN GUYS SHALL BE SIEMANS MARTIN GRADE GALVANIZED STRAND WIRE.

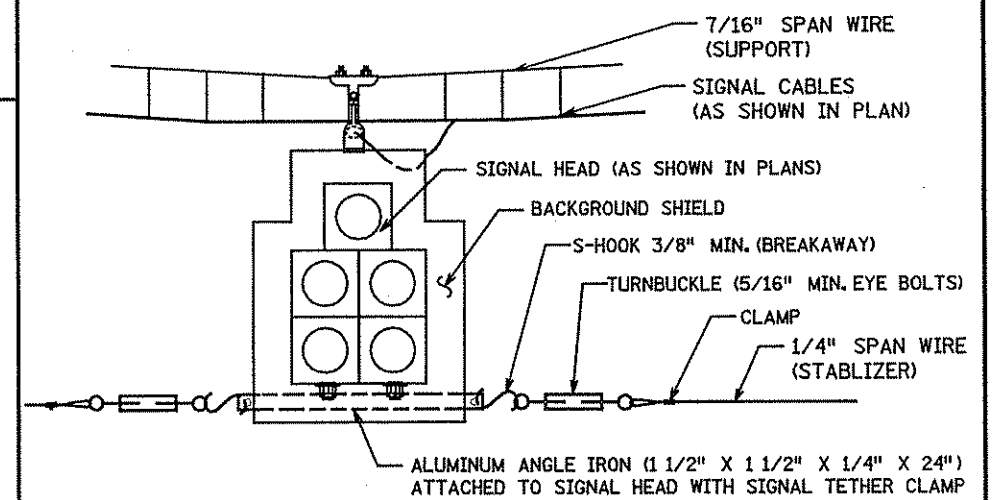
E.V.P. OR TRAFFIC DETECTOR WOOD POLE MOUNT

(NOT TO SCALE)



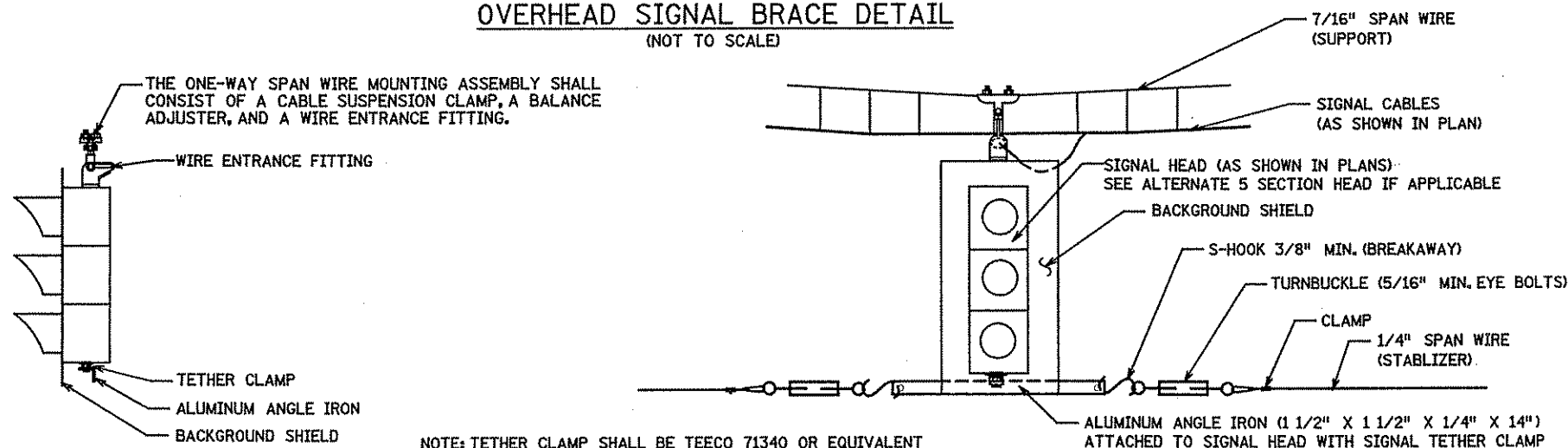
ALTERNATE FOR 5 SECTION HEAD OVERHEAD SIGNAL BRACE DETAIL

(NOT TO SCALE)



OVERHEAD SIGNAL BRACE DETAIL

(NOT TO SCALE)



NOTE: TETHER CLAMP SHALL BE TEEECO 71340 OR EQUIVALENT

DATE: 8/5/2005 TIME: 2:13:55 PM FILENAME: K:\vtr-2\wasc\cy\24390\hwy-brdg\hwy-plr-s\c200802.sgz

DRAWN BY:

CHECKED BY:

CERTIFIED BY *Brent J. Paulin* LICENSED PROFESSIONAL ENGINEER

LIC. NO. 20880 DATE 8/15/05

**TKDA**  
ENGINEERS · ARCHITECTS · PLANNERS

TYPICAL WOOD POLE/SPAN WIRE SIGNAL SYSTEM DETAIL WITH LOWER BREAKAWAY STABILIZER WIRE

S.P. 02-614-23 S.P. 82-608-07

Sheet No. 195A of 296 Sheets

**MICROWAVE DETECTOR CHART**

NUMBER	MOUNTING TYPE	FUNCTION	LOCATION
M1-1	SPAN WIRE	1	25'
M2-1	WOOD POLE 3	3	250'
M4-1	SPAN WIRE	1	120'
M5-1	SPAN WIRE	1	25'
M6-1	WOOD POLE 8	3	250'
M8-1	SPAN WIRE	1	120'

NOTE:  
LOCATION = DISTANCE FROM STOP BAR  
TO FRONT OF DETECTOR AREA.

**LOOP DETECTORS FUNCTIONS**

- 1) CALL AND EXTEND
- 2) EXTEND ONLY

**SIGNAL INDICATIONS**

ALL INDICATIONS SHALL BE 12" INCANDESCENT  
ALL SIGNAL FACES SHALL HAVE A BACKGROUND SHIELD

FACE	R	Y	G	RLTA	YLTA	GLTA
2-1	●	●	●			
2-2, 2-3	●	●	●	←	←	
4-1, 4-2, 4-3	●	●	●			
6-1	●	●	●			
6-2, 6-3	●	●	●	←	←	
8-1, 8-2 8-3	●	●	●			

**WP 5** 55' WOOD POLE  
1-DOWN GUY, GUARD AND ANCHOR  
1-TYPE 10A MOUNTED AT 90°  
2-R9-3a SIGNS (NO PED) FACING POLES 4 AND 6  
METAL JUNCTION BOX WITH TERMINAL BLOCK  
ABOVE JUNCTION BOX:  
FLEXIBLE SEALTITE CONDUIT  
1-5/C #12

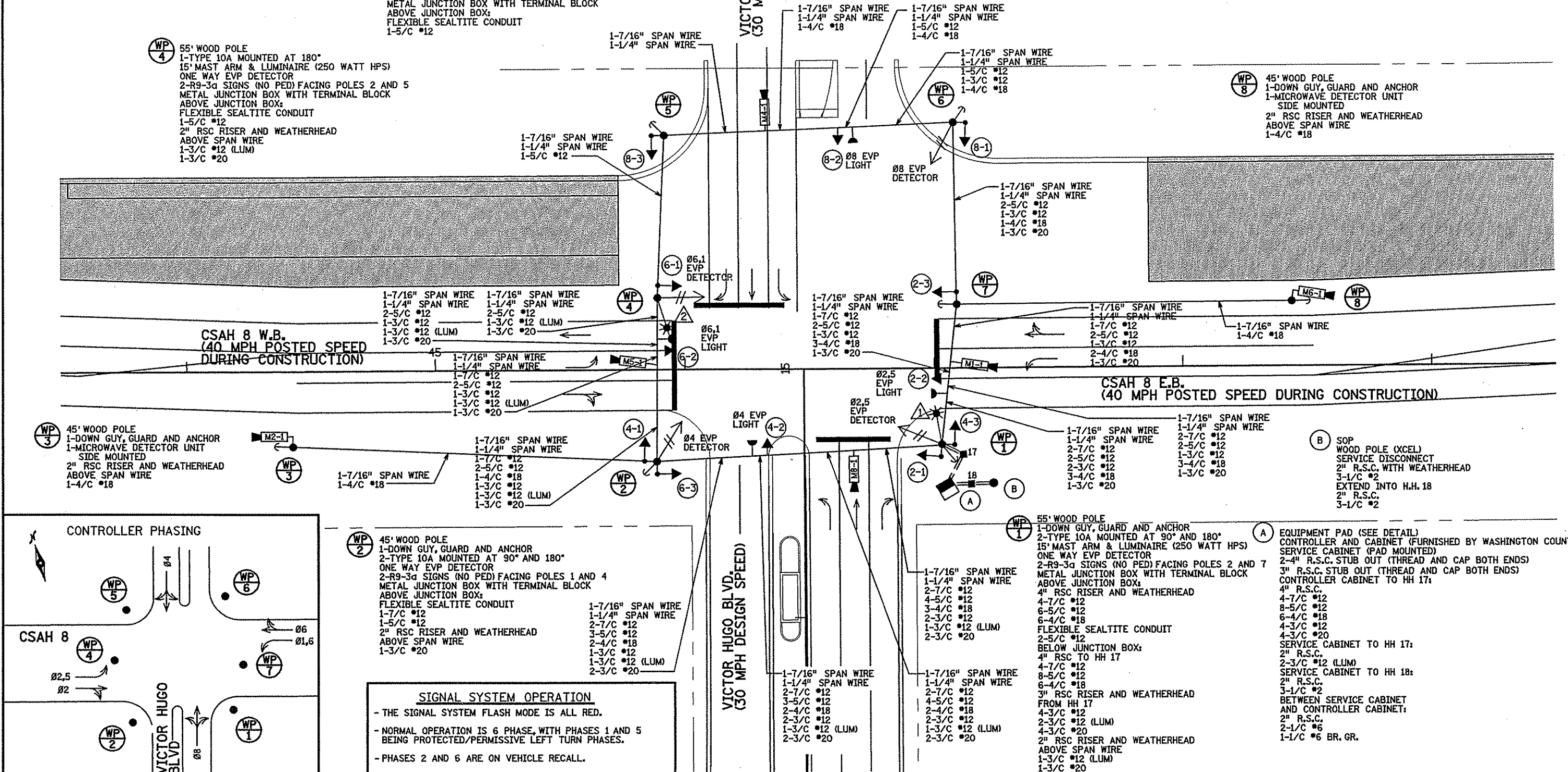
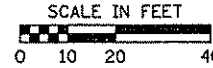
**WP 4** 55' WOOD POLE  
1-TYPE 10A MOUNTED AT 180°  
15' MAST ARM & LUMINAIRE (250 WATT HPS)  
ONE WAY EVP DETECTOR  
2-R9-3a SIGNS (NO PED) FACING POLES 2 AND 5  
METAL JUNCTION BOX WITH TERMINAL BLOCK  
ABOVE JUNCTION BOX:  
FLEXIBLE SEALTITE CONDUIT  
1-5/C #12  
2" RSC RISER AND WEATHERHEAD  
ABOVE SPAN WIRE  
1-3/C #12 (LUM)  
1-3/C #20

**WP 6** 45' WOOD POLE  
1-DOWN GUY, GUARD AND ANCHOR  
1-TYPE 10A MOUNTED AT 180°  
ONE WAY EVP DETECTOR  
2-R9-3a SIGNS (NO PED) FACING POLES 5 AND 7  
METAL JUNCTION BOX WITH TERMINAL BLOCK  
ABOVE JUNCTION BOX:  
FLEXIBLE SEALTITE CONDUIT  
1-5/C #12  
2" RSC RISER AND WEATHERHEAD  
ABOVE SPAN WIRE  
1-3/C #20

**WP 7** 55' WOOD POLE  
1-DOWN GUY, GUARD AND ANCHOR  
1-TYPE 10A MOUNTED AT 180°  
2-R9-3a SIGNS (NO PED) FACING POLES 1 AND 6  
METAL JUNCTION BOX WITH TERMINAL BLOCK  
ABOVE JUNCTION BOX:  
FLEXIBLE SEALTITE CONDUIT  
1-7/C #12

**NOTES:**

- 1) THE EXACT LOCATION OF POLES, FOUNDATIONS, LOOP DETECTORS AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
  - 2) THE EQUIPMENT PAD, CONTROLLER, AND SERVICE CABINET SHALL BE INSTALLED AT THE LOCATION PROPOSED FOR SYSTEM "B". SEE SHEET 190 FOR THE LOCATIONS OF FUTURE CONDUIT TO BE STUBBED OUT. SEE SHEET 180 FOR THE TYPICAL PAD WITH CONTROLLER CABINET AND SERVICE CABINET DETAILS. SEE SHEET 181 FOR SERVICE CABINET DETAILS.
  - 3) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
  - 4) MOVEMENT OF HEADS, EVP DETECTORS AND CONFIRMATORY LIGHTS, AND DETECTORS IS INCIDENTAL.
  - 5) LUMINAIRES SHALL BE COBRA HEAD STYLE. SEE SPECIAL PROVISIONS.
  - 6) SEE SPECIAL PROVISIONS FOR MICROWAVE DETECTORS.
- PERMANENT CONSTRUCTION IN THIS STAGE

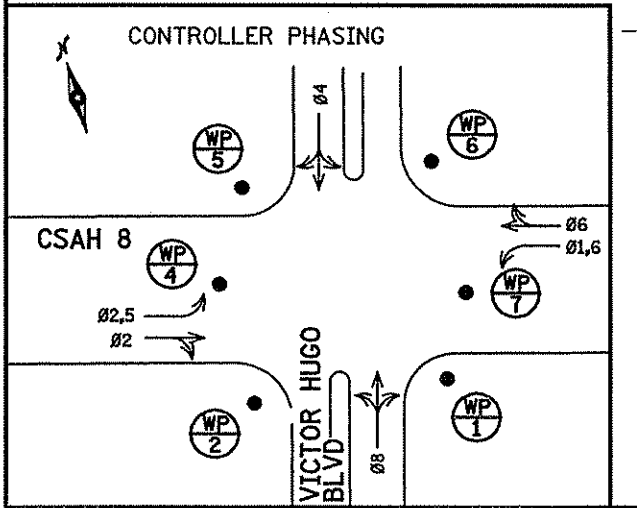


**WP 2** 45' WOOD POLE  
1-DOWN GUY, GUARD AND ANCHOR  
2-TYPE 10A MOUNTED AT 90° AND 180°  
ONE WAY EVP DETECTOR  
2-R9-3a SIGNS (NO PED) FACING POLES 1 AND 4  
METAL JUNCTION BOX WITH TERMINAL BLOCK  
ABOVE JUNCTION BOX:  
FLEXIBLE SEALTITE CONDUIT  
1-7/C #12  
1-5/C #12  
2" RSC RISER AND WEATHERHEAD  
ABOVE SPAN WIRE  
1-3/C #20

1-7/16" SPAN WIRE  
1-1/4" SPAN WIRE  
2-7/C #12  
3-5/C #12  
2-4/C #18  
1-3/C #12  
1-3/C #12 (LUM)  
2-3/C #20

**SIGNAL SYSTEM OPERATION**

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 6 PHASE, WITH PHASES 1 AND 5 BEING PROTECTED/PERMISSIVE LEFT TURN PHASES.
- PHASES 2 AND 6 ARE ON VEHICLE RECALL.



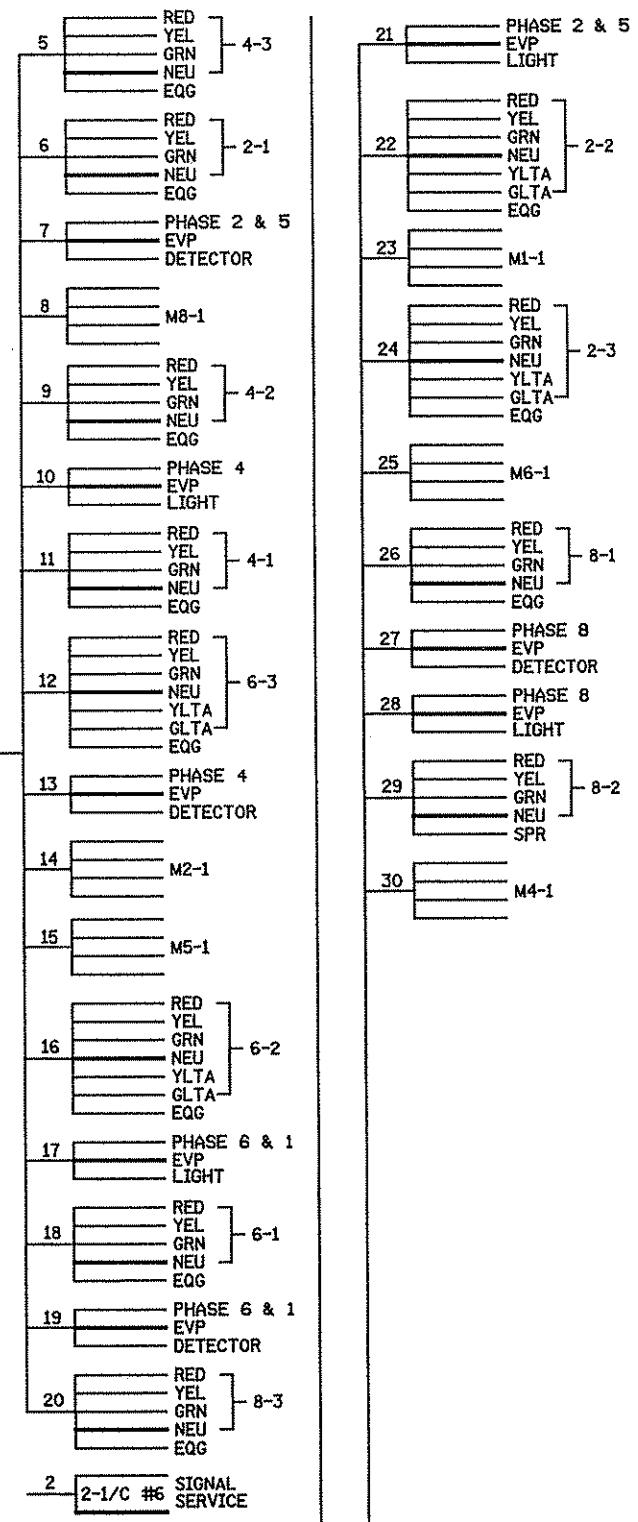
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**CONDUCTOR COLOR CODING**

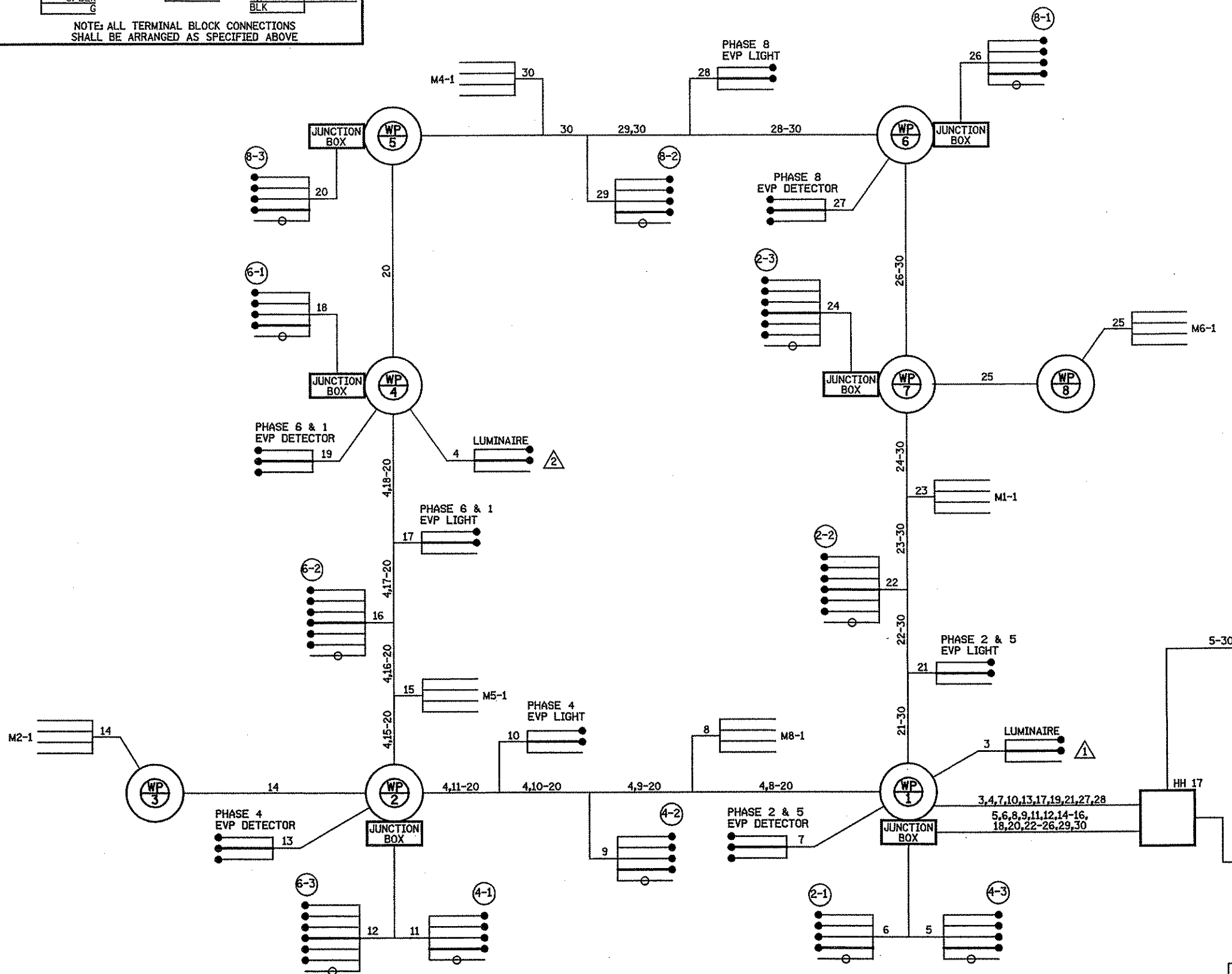
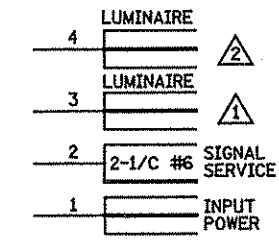
R	3-1/C #2	BLK	R	5/C #12
BL		WH	BL	
WH			WH	
R/BLK	2-1/C #6	BLK		
O/BLK		WH	BLK	2/C #14
BL/BLK			CLEAR	
WH/BLK				
BLK	3/C #12	R		
BLK/WH		WH		
G/BLK		BLK		
G				

NOTE: ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE

**CONTROLLER CABINET**



**SERVICE CABINET**



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**MICROWAVE DETECTOR CHART**

NUMBER	MOUNTING TYPE	FUNCTION	LOCATION
M1-1	SPAN WIRE	1	25'
M2-1	WOOD POLE 3	3	250'
M4-1	SPAN WIRE	1	120'
M5-1	SPAN WIRE	1	25'
M6-1	WOOD POLE 8	3	250'
M8-1	SPAN WIRE	1	120'

**SIGNAL INDICATIONS**

ALL INDICATIONS SHALL BE 12" INCANDESCENT  
ALL SIGNAL FACES SHALL HAVE A BACKGROUND SHIELD

FACE	R	Y	G	RLTA	YLTA	GLTA
2-1	●	●	●			
2-2, 2-3	●	●	●	←	←	
4-1, 4-2, 4-3	●	●	●			
6-1	●	●	●			
6-2, 6-3	●	●	●	←	←	
8-1, 8-2 8-3	●	●	●			

NOTE:  
LOCATION = DISTANCE FROM STOP BAR  
TO FRONT OF DETECTOR AREA.

**LOOP DETECTORS FUNCTIONS**

- 1) CALL AND EXTEND
- 2) CALL AND EXTEND
- 3) EXTEND ONLY

WP 5

INPLACE  
55' WOOD POLE  
1-DOWN GUY, GUARD AND ANCHOR  
1-TYPE 10A MOUNTED AT 90°  
2-R9-3a SIGNS (NO PED) FACING POLES 4 AND 6  
INSTALL  
1-TYPE 10A MOUNTED AT 180°  
15' MAST ARM & LUMINAIRE (250 WATT HPS)  
INPLACE  
FLEXIBLE SEALTITE CONDUIT  
1-5/C #12  
EXTEND  
1-5/C #12  
F&I  
2" RSC RISER AND WEATHERHEAD  
ABOVE SPAN WIRE  
EXTEND  
1-3/C #12 (LUM)  
1-3/C #20

WP 4  
INPLACE  
55' WOOD POLE  
2-R9-3a SIGNS (NO PED) FACING POLES 2 AND 5  
INSTALL  
1-TYPE 10A MOUNTED AT 180°  
INPLACE  
FLEXIBLE SEALTITE CONDUIT  
EXTEND  
1-7/C #12

INPLACE  
1-7/16" SPAN WIRE  
1-1/4" SPAN WIRE  
1-5/C #12  
EXTEND  
1-5/C #12  
1-3/C #12  
1-3/C #12 (LUM)  
1-3/C #20

INPLACE  
1-7/16" SPAN WIRE  
1-1/4" SPAN WIRE  
1-5/C #12  
EXTEND  
1-5/C #12  
1-3/C #12 (LUM)  
1-3/C #20

INPLACE  
1-7/16" SPAN WIRE  
1-1/4" SPAN WIRE

VICTOR HUGO BLVD.  
(30 MPH DESIGN SPEED)

WP 6  
INPLACE  
45' WOOD POLE  
1-DOWN GUY, GUARD AND ANCHOR  
1-TYPE 10A MOUNTED AT 180°  
ONE WAY EVP DETECTOR  
2-R9-3a SIGNS (NO PED) FACING POLES 5 AND 7  
INSTALL  
1-TYPE 10A MOUNTED AT 90°  
INPLACE  
FLEXIBLE SEALTITE CONDUIT  
1-5/C #12  
EXTEND  
1-7/C #12  
INPLACE  
2" RSC RISER AND WEATHERHEAD  
ABOVE SPAN WIRE  
1-3/C #20

WP 8

INPLACE  
45' WOOD POLE  
1-DOWN GUY, GUARD AND ANCHOR  
1-MICROWAVE DETECTOR UNIT  
INPLACE  
2" RSC RISER AND WEATHERHEAD  
ABOVE SPAN WIRE  
1-4/C #18

WP 7

INPLACE  
55' WOOD POLE  
1-DOWN GUY, GUARD AND ANCHOR  
2-R9-3a SIGNS (NO PED) FACING POLES 1 AND 6  
INSTALL  
1-TYPE 10A MOUNTED AT 180°  
15' MAST ARM & LUMINAIRE (250 WATT HPS)  
INPLACE  
FLEXIBLE SEALTITE CONDUIT  
1-5/C #12  
EXTEND  
1-7/C #12  
F&I  
2" RSC RISER AND WEATHERHEAD  
ABOVE SPAN WIRE  
EXTEND  
1-3/C #12 (LUM)  
1-3/C #20

CSAH 8 W.B.  
(40 MPH POSTED SPEED)

CSAH 8 E.B.  
(40 MPH POSTED SPEED)

INPLACE  
1-7/16" SPAN WIRE  
1-1/4" SPAN WIRE  
1-5/C #12  
EXTEND  
1-5/C #12  
1-3/C #12  
1-3/C #12 (LUM)  
1-4/C #18  
1-3/C #20

INPLACE  
1-7/16" SPAN WIRE  
1-1/4" SPAN WIRE  
1-7/C #12  
EXTEND  
1-5/C #12  
1-3/C #12  
1-3/C #12 (LUM)  
1-4/C #18  
1-3/C #20  
EXTEND  
1-7/C #12

INPLACE  
1-7/16" SPAN WIRE  
1-1/4" SPAN WIRE  
1-5/C #12  
EXTEND  
1-7/C #12  
1-5/C #12  
1-3/C #12  
1-3/C #12 (LUM)  
1-3/C #20

INPLACE  
1-7/16" SPAN WIRE  
1-1/4" SPAN WIRE  
2-5/C #12  
1-3/C #12  
1-4/C #18  
1-3/C #20  
EXTEND  
2-7/C #12  
1-3/C #12  
1-4/C #18

INPLACE  
1-7/16" SPAN WIRE  
1-1/4" SPAN WIRE  
2-5/C #12  
1-3/C #12  
1-4/C #18  
1-3/C #20  
EXTEND  
1-3/C #12  
1-4/C #18

INPLACE  
1-7/16" SPAN WIRE  
1-1/4" SPAN WIRE  
1-3/C #12  
1-4/C #18  
1-3/C #20  
EXTEND  
1-3/C #12  
1-4/C #18

WP 3  
INPLACE  
45' WOOD POLE  
1-DOWN GUY, GUARD AND ANCHOR  
1-MICROWAVE DETECTOR UNIT  
INPLACE  
2" RSC RISER AND WEATHERHEAD  
ABOVE SPAN WIRE  
1-4/C #18

INPLACE  
1-7/16" SPAN WIRE  
1-4/C #18

INPLACE  
1-7/16" SPAN WIRE  
1-1/4" SPAN WIRE  
2-7/C #12  
2-4/C #18  
1-3/C #12  
1-3/C #12 (LUM)  
2-3/C #20

INPLACE  
1-7/16" SPAN WIRE  
1-1/4" SPAN WIRE  
2-7/C #12  
2-4/C #18  
1-3/C #12  
1-3/C #12 (LUM)  
2-3/C #20

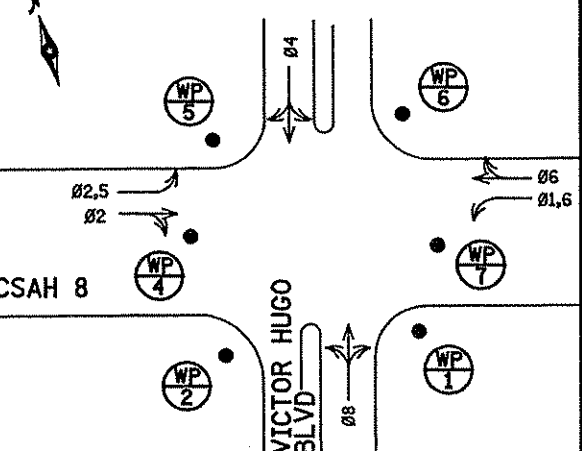
INPLACE  
1-7/16" SPAN WIRE  
1-1/4" SPAN WIRE  
2-7/C #12  
2-4/C #18  
1-3/C #12 (LUM)  
2-3/C #20

WP 1  
INPLACE  
55' WOOD POLE  
1-DOWN GUY, GUARD AND ANCHOR  
1-TYPE 10A MOUNTED AT 90°  
2-R9-3a SIGNS (NO PED) FACING POLES 2 AND 7  
INPLACE  
4" RSC RISER AND WEATHERHEAD  
4-7/C #12  
4-5/C #12  
6-5/C #12  
6-4/C #18  
2-3/C #12  
FLEXIBLE SEALTITE CONDUIT  
2-5/C #12  
BELOW JUNCTION BOX  
4" RSC TO HH 17  
4-7/C #12  
8-5/C #12  
6-4/C #18  
3" RSC RISER AND WEATHERHEAD  
FROM HH 17  
2-7/C #12  
4-5/C #12  
2-4/C #18  
2-3/C #12 (LUM)  
1-3/C #12 (LUM)  
2-3/C #20

B  
INPLACE  
SOP  
WOOD POLE (XCEL)  
SERVICE DISCONNECT  
2" R.S.C. WITH WEATHERHEAD  
3-1/C #2  
EXTEND INTO H.H. 18  
2" R.S.C.  
3-1/C #2

A  
INPLACE  
EQUIPMENT PAD (SEE DETAIL)  
CONTROLLER AND CABINET (FURNISHED BY WASHINGTON COUNTY)  
SERVICE CABINET (PAD MOUNTED)  
2-4" R.S.C. STUB OUT (THREAD AND CAP BOTH ENDS)  
3" R.S.C. STUB OUT (THREAD AND CAP BOTH ENDS)  
CONTROLLER CABINET TO HH 17:  
INPLACE  
4" R.S.C.  
4-7/C #12  
8-5/C #12  
6-4/C #18  
4-3/C #12  
4-3/C #20  
SERVICE CABINET TO HH 17:  
2" R.S.C.  
2-3/C #12 (LUM)  
SERVICE CABINET TO HH 18:  
2" R.S.C.  
3-1/C #2  
BETWEEN SERVICE CABINET  
AND CONTROLLER CABINET:  
2" R.S.C.  
2-1/C #6  
1-1/C # 6 BR. GR.

**CONTROLLER PHASING**



**SIGNAL SYSTEM OPERATION**

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 6 PHASE, WITH PHASES 1 AND 5 BEING PROTECTED/PERMISSIVE LEFT TURN PHASES.
- PHASES 2 AND 6 ARE ON VEHICLE RECALL.

**TKDA**  
ENGINEERS - ARCHITECTS - PLANNERS

TEMPORARY SIGNAL SYSTEM - STAGE 2  
INTERSECTION LAYOUT  
CSAH 8 (FRENCHMAN ROAD) / VICTOR HUGO BLVD.

S.P. 02-614-23 S.P. 82-608-07

Sheet No. 195D of 296 Sheets

DATE: 8/16/2005 TIME: 9:33:50 AM  
FILENAME: K:\p2\wsc\cy\24350\Nwy\brdg\Nwy\p1r\str\c200802.sgw

DRAWN BY: TJV

CHECKED BY: BDP

CERTIFIED BY *Scott O. Paul*  
LICENSED PROFESSIONAL ENGINEER

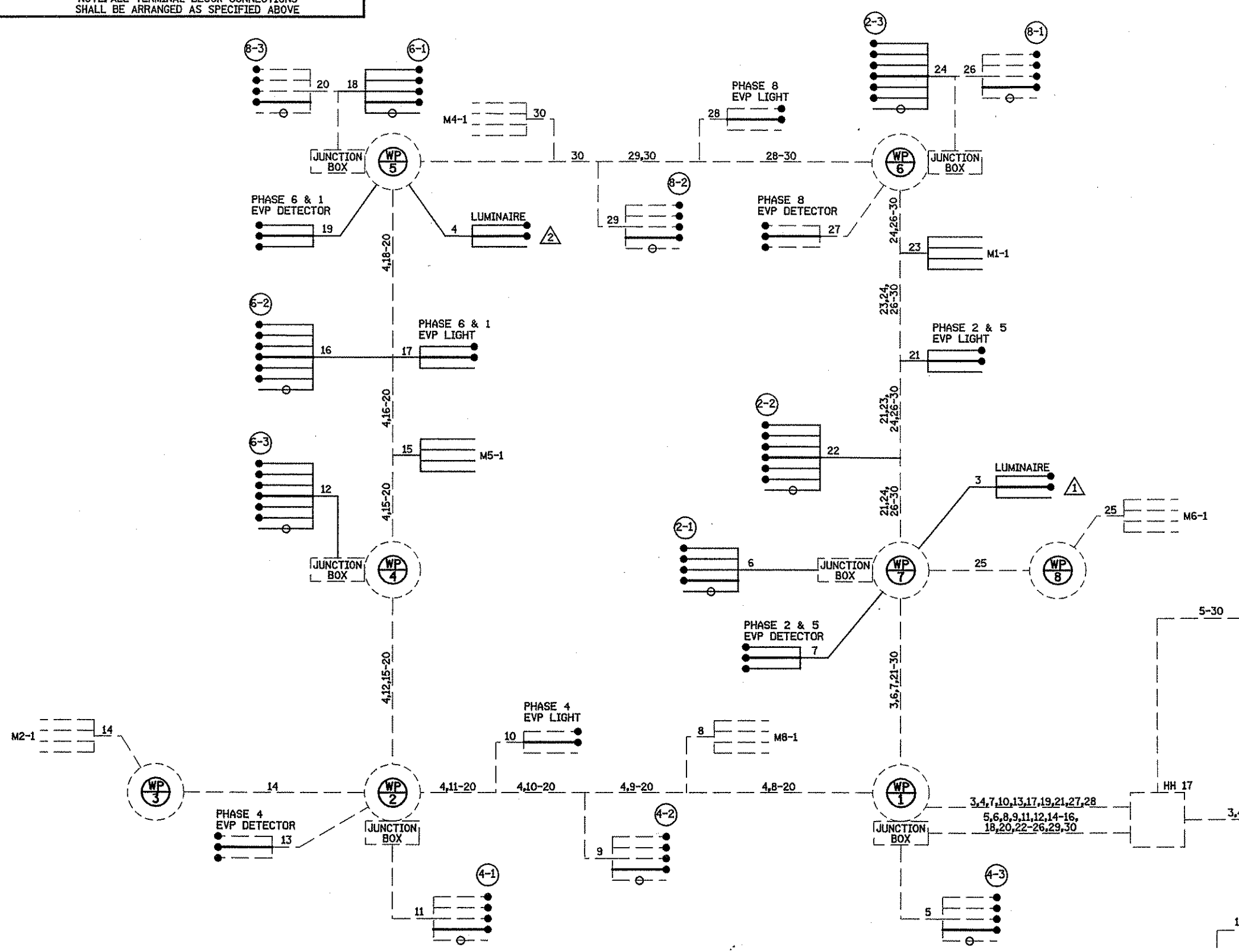
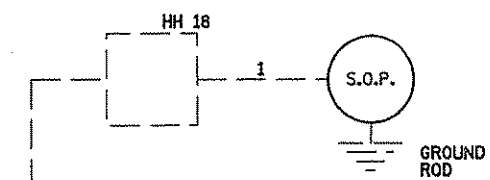
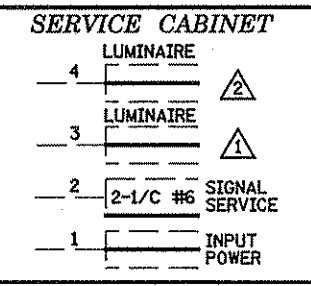
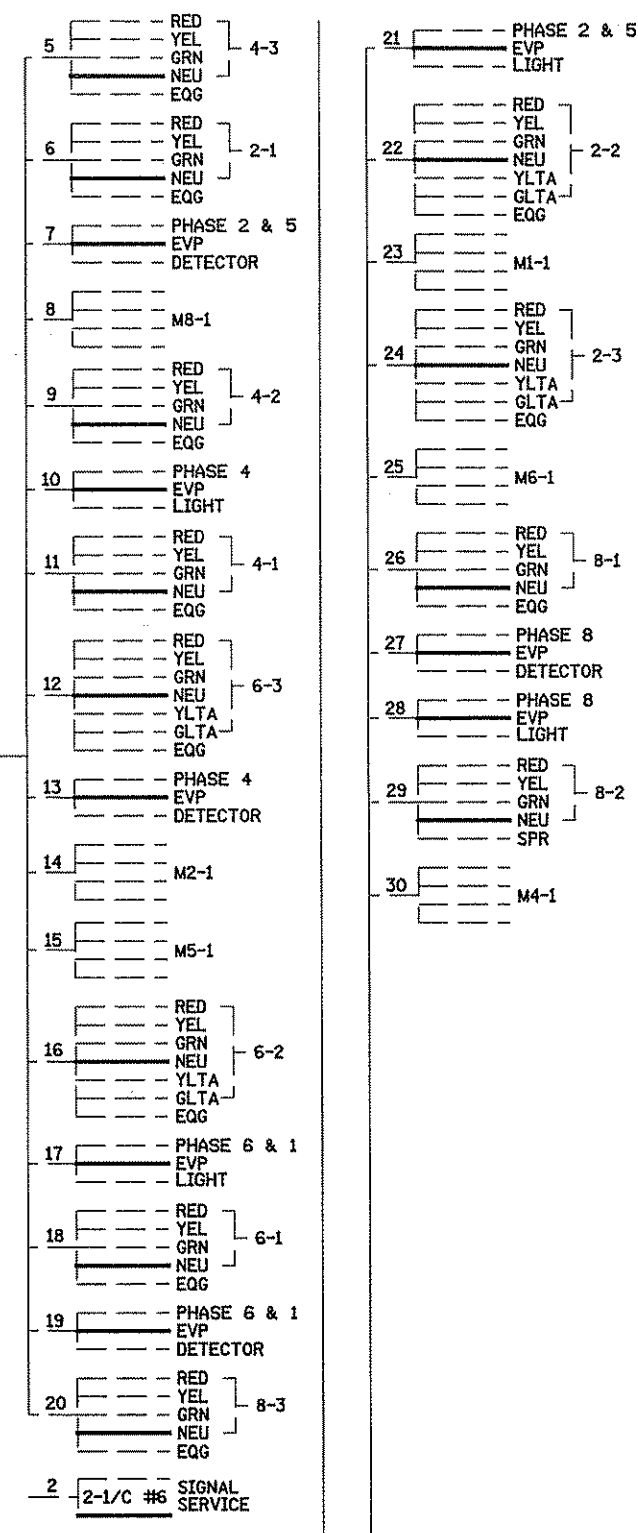
LIC. NO. 26880 DATE 8/16/05

**CONDUCTOR COLOR CODING**

R	3-1/C #2	R	5/C #12
BL		BLK	
WH		WH	
R/BLK	2-1/C #6	BLK	
O/BLK		WH	
BL/BLK		BLK	2/C #14
WH/BLK		CLEAR	
BLK	3/C #12	R	
BLK/WH		WH	3/C #20
G/BLK		BLK	
G			

NOTE: ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE

**CONTROLLER CABINET**



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CHECKED BY: BDP

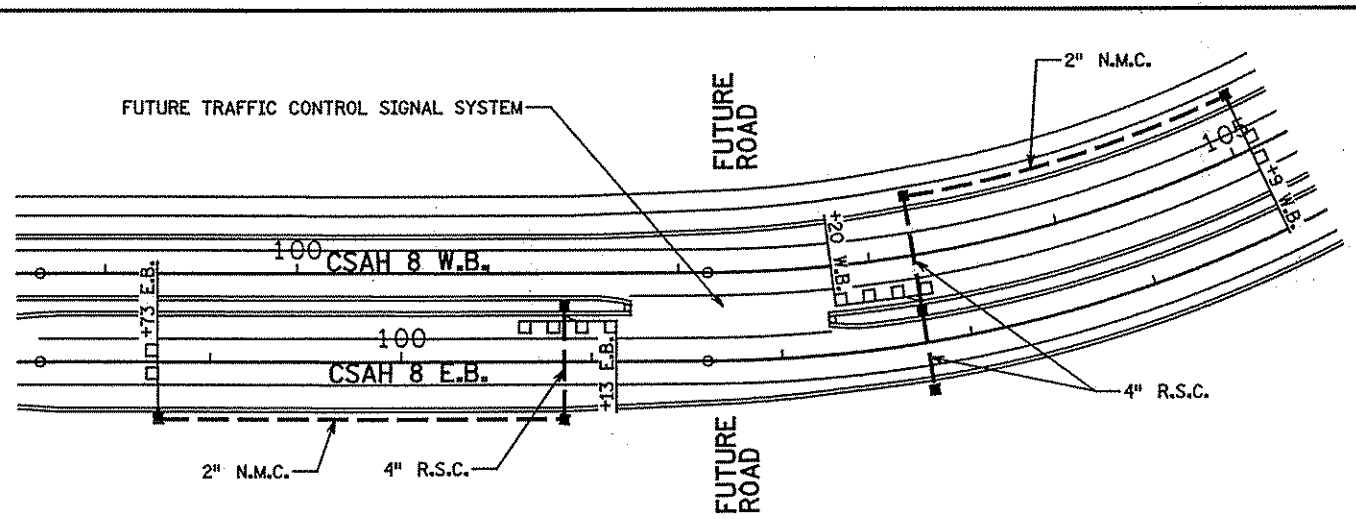
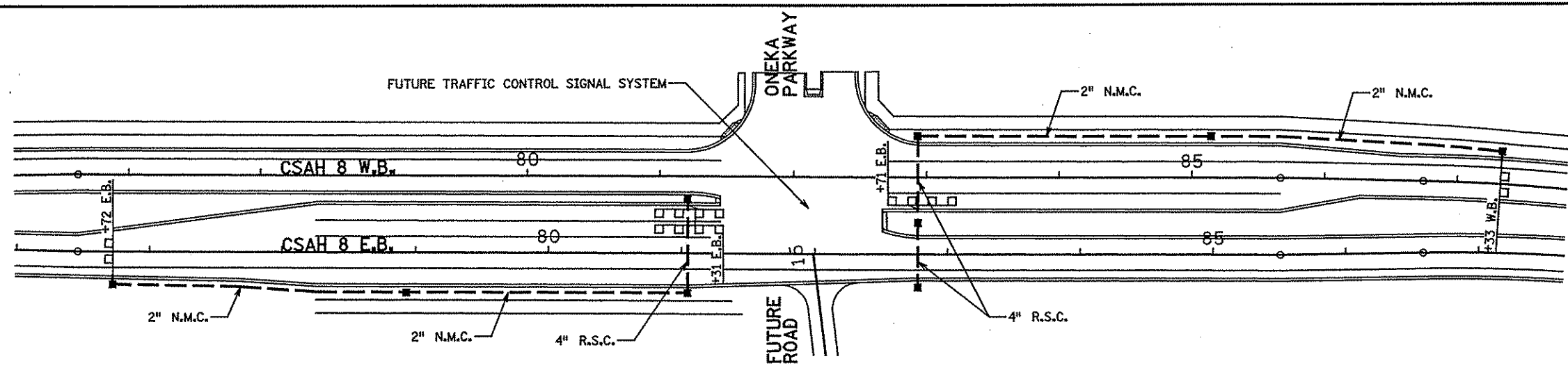
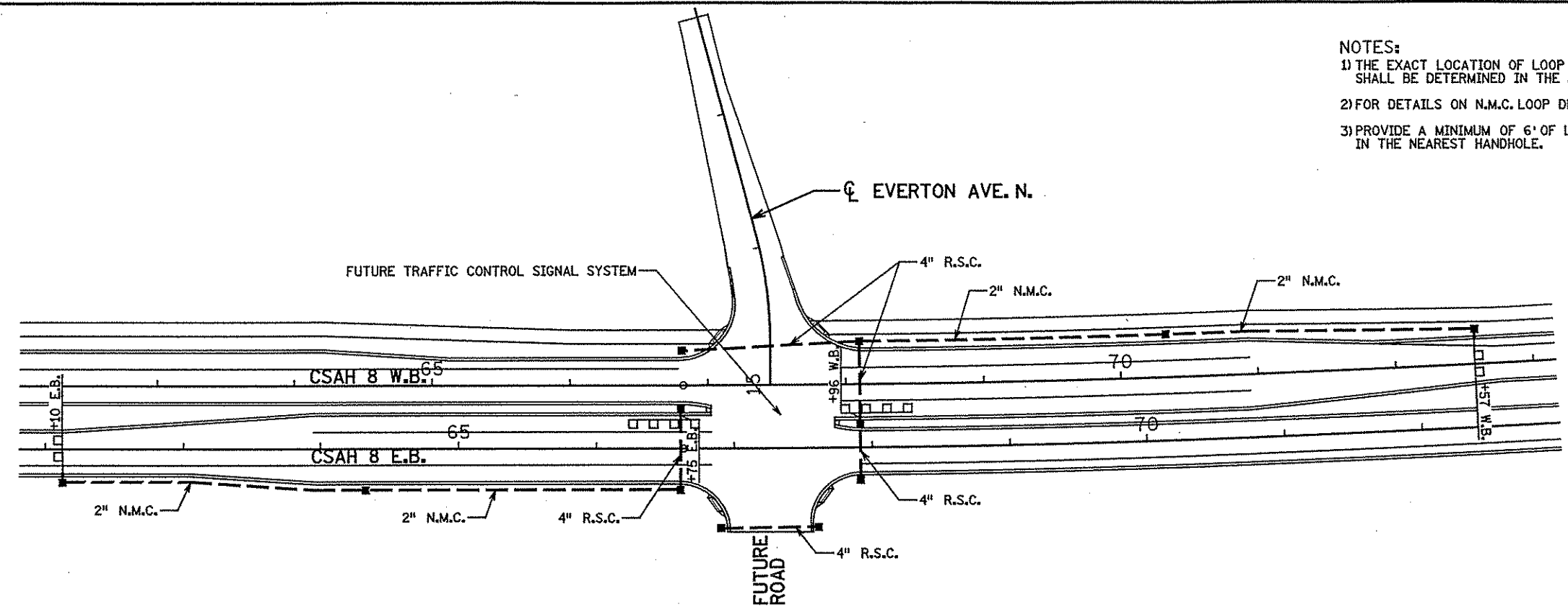
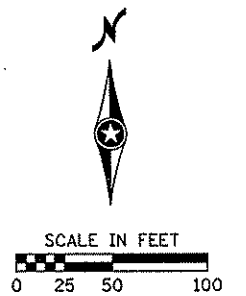
CERTIFIED BY: *[Signature]* LIC. NO. 8943 DATE 8-15-05  
LICENSED PROFESSIONAL ENGINEER

**TKDA**  
ENGINEERS - ARCHITECTS - PLANNERS

TEMPORARY SIGNAL SYSTEM - STAGE 2  
WIRING DIAGRAM  
CSAH 8 (FRENCHMAN ROAD) / VICTOR HUGO BLVD.

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 195E of 296 Sheets

- NOTES:
- 1) THE EXACT LOCATION OF LOOP DETECTORS AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
  - 2) FOR DETAILS ON N.M.C. LOOP DETECTORS SEE DETAIL SHEETS.
  - 3) PROVIDE A MINIMUM OF 6' OF LOOP DETECTOR CONDUCTOR IN THE NEAREST HANDHOLE.



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 CHECKED BY: BDP

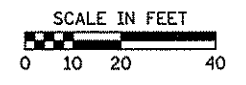
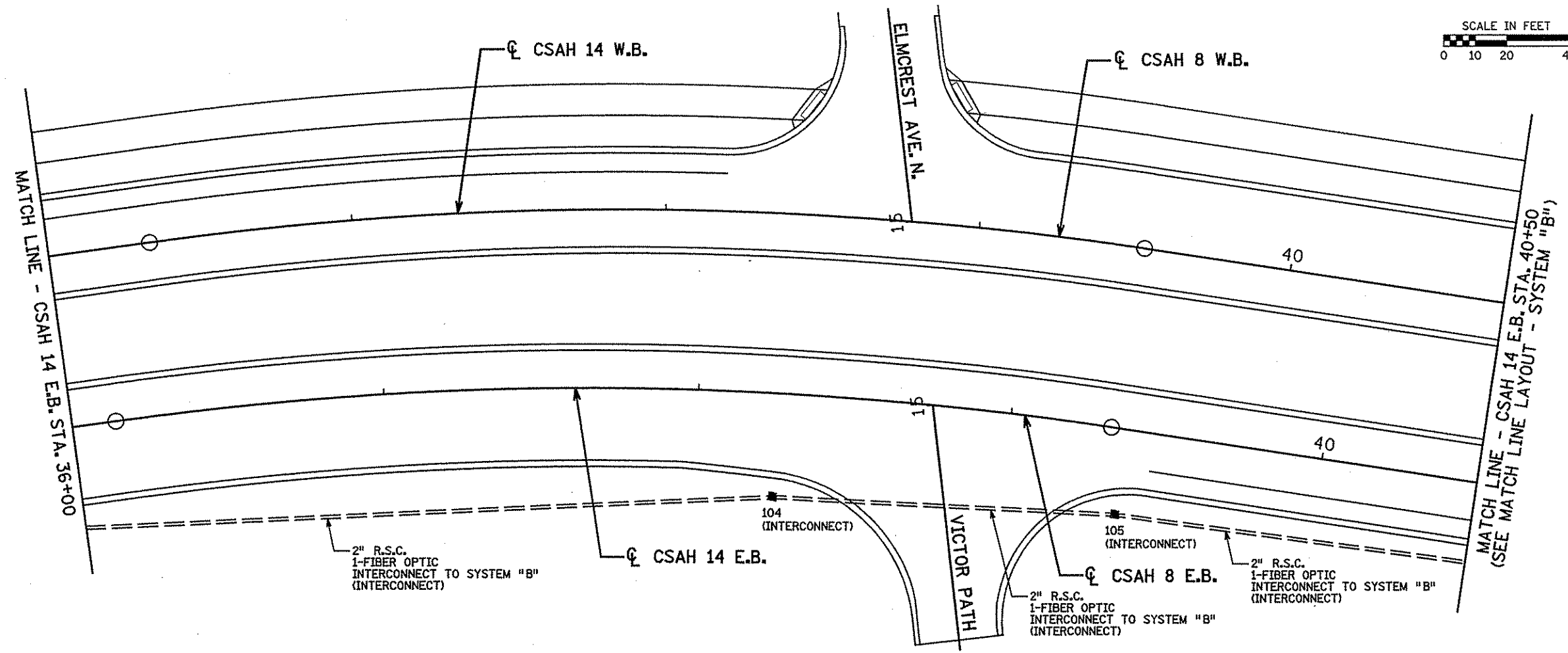
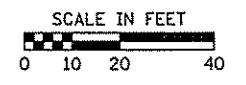
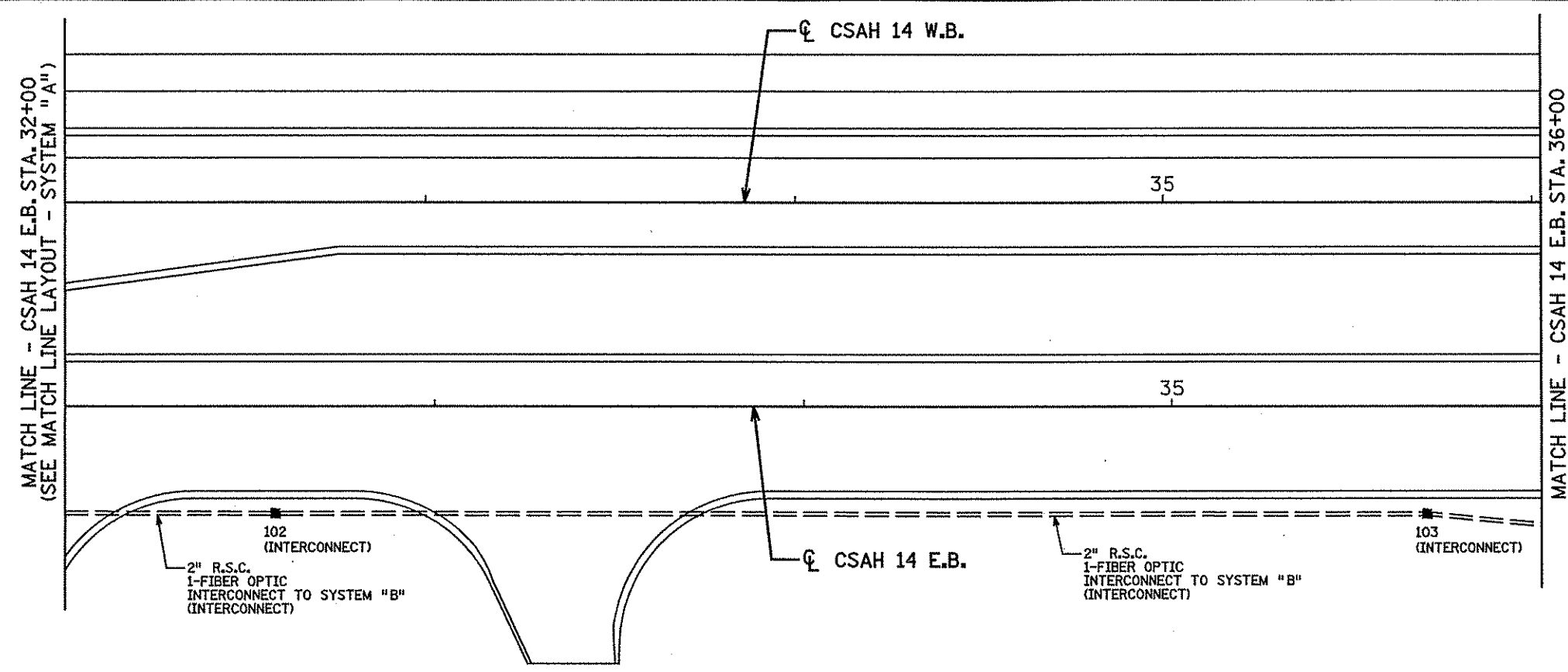
CERTIFIED BY *Mont J. Paulin* LIC. NO. 20820 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

**TKDA**  
 ENGINEERS - ARCHITECTS - PLANNERS

LOOP DETECTOR, HANDHOLE, AND CONDUIT LAYOUT  
 FUTURE TRAFFIC CONTROL SIGNAL SYSTEMS

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 196 of 296 Sheets

DATE: 8/15/2005 TIME: 2:405 PM  
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CHECKED BY: BDP

CERTIFIED BY *Scott J. Paulin* LIC. NO. 26880 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

**TKDA**  
ENGINEERS · ARCHITECTS · PLANNERS

INTERCONNECT PLAN  
CSAH 14 STA. 32+00 CSAH 8 STA. 40+50

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 197 of 296 Sheets

DATE: 8/5/2005 TIME: 2:01:04 PM  
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F&I SIGN PANELS TYPE 'C' - TAB M

SIGN NO.	QUANT.		POSTS			MTG. HT. (FT.) (1)	PANEL			CODE	PANEL LEGEND	
			NO. & TYPE	KNEE BRACES QUANT.	LEN (FT.)		SIZE (IN.)	AREA (SQ. FT.)	TOTAL AREA (SQ. FT.)			
	(A)	(W1)							(A)			(W1)
(1) C-1	6	1	2U		15	7	30 X 30	6.25	37.50	6.25	R3-7	RIGHT LANE MUST TURN RIGHT
C-3	1		2U		15	7	24 X 30	5.00	5.00		R2-1	SPEED LIMIT 50
(1) C-4A	3		2U		15	7	24 X 30	5.00	15.00		R4-7	KEEP RIGHT
(2) C-4		11	2U		15	7	18 X 18	2.25		50.00	X4-2	HAZARD MARKER
(5) C-5	6	39	2U		15	7	24 X 30	5.00			R4-7	KEEP RIGHT
C-6	1		2U		15	7	18 X 18	2.25			X4-2	HAZARD MARKER
(3) C-7	2	3	2U		15	7	24 X 24	4.00	24.00	156.00	R8-3a	NO PARKING
(1) C-8A	6		2U		15	7	36 X 36	9.00	9.00		W9-1R	RIGHT LANE ENDS
(2) C-8		11	2U		15	7	24 X 18	3.00	3.00		W120-100p	800 FEET
(1) C-9A	2		2U		15	7	48 X 24	8.00	16.00	24.00	W1-7	TWO DIRECTION ARROW
(2) C-9		6	2U		15	7	30 X 30	6.25	12.50		R5-1	DO NOT ENTER
C-10	3		2U		15	7	30 X 30	6.25	37.50		R3-7	LEFT LANE MUST TURN LEFT
(1) C-11A	3		2U		15	7	30 X 30	6.25	37.50		R3-7	LEFT LANE MUST TURN LEFT
(2) C-11	2	4	2U		15	7	36 X 12	3.00	9.00		R6-1R	ONE WAY
C-12	1		2U		15	7	30 X 30	6.25	18.75		R1-1	STOP
(4) C-13		1	2U		15	7	36 X 12	3.00	9.00		R6-1R	ONE WAY
C-14		2	2U		15	7	36 X 12	3.00	6.00	12.00	R6-1	ONE WAY
C-16	1	3	2U		15	7	24 X 30	5.00	5.00		R2-1	SPEED LIMIT 50
C-17		1	2U		15	7	24 X 24	4.00	4.00		R8-3a	NO PARKING
C-18		1	2U		15	7	24 X 30	5.00	5.00		R2-1	SPEED LIMIT 55
C-19	2		2U		15	7	24 X 30	5.00	10.00		R2-1	SPEED LIMIT XX
C-20		3	2U		15	7	36 X 36	9.00	27.00		W3-3	SIGNAL AHEAD
C-21		1	2U		15	7	54 X 30	11.25	11.25		R3-30ACA	LANE USE CONTROL
C-22		1	2U		15	7	54 X 30	11.25	11.25		R3-30ACA	LANE USE CONTROL
C-23	2		2U		15	7	24 X 24	4.00	4.00		R8-3a	NO PARKING
C-24		1	2U		15	7	24 X 12	2.00	4.00		M3-2a	EAST
C-25	2		2U		15	7	24 X 24	4.00	8.00		M1-6	COUNTY ROUTE MARKER (14)
C-26		1	2U		15	7	21 X 15	2.19	4.38		M2-1a	JCT
C-27		2	2U		15	7	24 X 24	4.00	8.00		M1-6	COUNTY ROUTE MARKER (84)
C-28		1	2U		15	7	21 X 15	2.19	4.38		M6-1a	ARROW
C-29		2	2U		15	7	24 X 12	2.00	4.00		M3-4a	WEST
C-30		2	2U		15	7	24 X 24	4.00	8.00		M1-6	COUNTY ROUTE MARKER (14)
C-31		1	2U		15	7	24 X 12	2.00	2.00		M4-6a	END
C-32		1	2U		15	7	24 X 24	4.00	4.00		M1-6	COUNTY ROUTE MARKER (14)
C-33		1	2U		15	7	24 X 24	4.00	4.00		M1-6	COUNTY ROUTE MARKER (14)
C-34		1	2U		15	7	21 X 15	2.19	2.19		M2-1a	JCT
C-35		1	2U		15	7	24 X 24	4.00	4.00		M1-4	TH ROUTE MARKER (TH61)
C-36		1	2U		15	7	24 X 12	2.00	2.00		M3-4a	WEST
C-37		1	2U		15	7	24 X 24	4.00	4.00		M1-6	COUNTY ROUTE MARKER (8)
C-38		1	2U		15	7	21 X 15	2.19	2.19		M1-6	COUNTY ROUTE MARKER (8)
C-39		1	2U		15	7	24 X 24	4.00	4.00		M1-4	TH ROUTE MARKER (TH61)
C-40		2	2U		15	7	21 X 15	2.19	2.19		M6-4	DUAL ARROW
C-41		2	2U		15	7	24 X 12	2.00	4.00		M3-3	SOUTH
C-42		2	2U		15	7	24 X 24	4.00	8.00		M1-4	TH ROUTE MARKER (TH61)
C-43		1	2U		15	7	21 X 15	2.19	2.19		M2-1a	JCT
C-44		1	2U		15	7	24 X 24	4.00	4.00		M1-6	COUNTY ROUTE MARKER (8)
<b>TOTAL</b>	<b>48</b>	<b>107</b>							<b>288.01</b>	<b>577.67</b>		

F&I SIGN PANELS TYPE 'C' - TAB M

SIGN NO.	QUANT.		POSTS			MTG. HT. (FT.) (1)	PANEL			CODE	PANEL LEGEND	
			NO. & TYPE	KNEE BRACES QUANT.	LEN (FT.)		SIZE (IN.)	AREA (SQ. FT.)	TOTAL AREA (SQ. FT.)			
	(A)	(W1)							(A)			(W1)
C-29		1	2U		15	7	24 X 24	4.00	4.00		M1-6	COUNTY ROUTE MARKER (8)
C-30		1	2U		15	7	21 X 15	2.19	2.19		M6-1a	ARROW
C-31		1	2U		15	7	24 X 12	2.00	2.00		M3-1	NORTH
C-32		1	2U		15	7	24 X 24	4.00	4.00		M1-4	TH ROUTE MARKER (TH61)
C-33		1	2U		15	7	24 X 12	2.00	2.00		M3-4a	WEST
C-34		1	2U		15	7	24 X 24	4.00	4.00		M1-6	COUNTY ROUTE MARKER (8)
C-35		1	2U		15	7	21 X 15	2.19	2.19		M6-1a	ARROW
C-36		1	2U		15	7	24 X 12	2.00	2.00		M3-2a	EAST
C-37		1	2U		15	7	24 X 24	4.00	4.00		M1-6	COUNTY ROUTE MARKER (8)
C-38		1	2U		15	7	21 X 15	2.19	2.19		M6-3a	ARROW
C-39		1	2U		15	7	21 X 15	2.19	2.19		M2-1a	JCT
C-40		1	2U		15	7	24 X 24	4.00	4.00		M1-6	COUNTY ROUTE MARKER (8)
C-41		1	2U		15	7	21 X 15	2.19	2.19		M6-3a	ARROW
C-42		1	2U		15	7	36 X 36	9.00	9.00		W6-1	DIVIDED HIGHWAY
C-43		3	2U		15	7	24 X 24	4.00	4.00	12.00	R3-1	NO RIGHT TURN
C-44		4	2U		15	7	24 X 24	4.00		16.00	R3-2	NO LEFT TURN
C-45		1	2U		15	7	36 X 30	7.50	7.50		R3-30AA	LANE USE CONTROL
C-46		1	2U		15	7	36 X 36	9.00	9.00		W9-1L	LEFT LANE ENDS
C-47		1	2U		15	7	24 X 18	3.00	3.00		W20-100P	1000 FEET (YELLOW ON ORANGE)
C-48		2	2U		15	7	24 X 12	2.00	4.00		M4-5a	TO
C-49		2	2U		15	7	24 X 24	4.00	8.00		M1-1	INTERSTATE ROUTE MARKER (35E)
C-50		1	2U		15	7	21 X 15	2.20	4.40		M6-1a	ARROW
C-51		1	2U		15	7	24 X 12	2.00	2.00		M3-1a	WEST
C-52		1	2U		15	7	30 X 30	6.25	6.25		W14-1	DEAD END
<b>TOTAL</b>	<b>48</b>	<b>107</b>							<b>288.01</b>	<b>577.67</b>		

GENERAL NOTES:

1. MOUNTING HEIGHT IS MINIMUM. SEE SIGN DETAILS FOR TYPICAL MOUNTING.
2. POST LENGTHS ARE APPROXIMATE AND INCLUDE EMBEDMENT, BUT DO NOT INCLUDE ADDITIONAL LENGTH REQUIRED FOR SPLICE.
3. SEE STANDARD SIGNS MANUAL FOR PUNCHING CODE AND DETAILED DRAWINGS OF TYPE "C" SIGN PANELS.
4. SHEETING FOR ALL SIGNS SHALL BE WIDE ANGLE PRISMATIC RETROREFLECTIVE SHEETING FOR VISUAL IMPACT PERFORMANCE (VIP).
5. SEE STRUCTURAL DETAILS.

SPECIFIC NOTES:

- (1) SEE CSAH 14 MEDIAN SIGNING DETAILS IF MOUNTED IN CONCRETE.
- (2) SEE CSAH 8 MEDIAN SIGNING DETAILS IF MOUNTED IN CONCRETE.
- (3) MOUNT ON PERMANENT TYPE III BARRICADE.
- (4) SPEED LIMIT TO BE DETERMINED.
- (5) 9 R8-3a SIGN PANELS MOUNTED WITH ADDITIONAL SIGN PANELS. SEE SIGNING AND STRIPING PLAN.
- (6) 3 R3-2 SIGN PANELS MOUNTED WITH R8-3a SIGN PANEL.
- (7) MOUNT WITH C-216 ASSEMBLY.

COST PARTICIPATION NOTES:

- (A) 100% ANOKA COUNTY S.P. 02-614-23 QUANTITY.  
 (W1) 100% WASHINGTON COUNTY S.P. 82-608-07.

DRAWN BY: SFH

CHECKED BY: BDP

CERTIFIED BY

*Scott O. Paulsen*  
 LICENSED PROFESSIONAL ENGINEER

LIC. NO. 20880

DATE 8/15/05

**TKDA**

ENGINEERS - ARCHITECTS - PLANNERS

SIGNING TABULATIONS  
 SIGNING TABULATIONS

S.P. 02-614-23 S.P. 82-608-07

Sheet No. 199 of 296 Sheets



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REMOVE SIGN TYPE 'C' - TAB Q				
SIGN NO.	TYPE	QUANT.		PANEL LEGEND
		(A)	(W1)	
C-100	C	1		STOP ALL WAY
C-101	C	4		SPEED LIMIT 50
C-102	C	3	4	RIGHT TURN LANE
C-103	C	2		STOP AHEAD
C-104	C	1		TWO DIRECTION ARROW
C-105	C	1		STATE LAW UNLAWFUL TO PASS ON SHOULDER
C-106	C	2	1	NO PASSING ZONE
C-107	C	3	3	STOP
C-108	C	1		CURVE
C-109	C		1	DEAD END
C-110	C		1	REVERSE CURVE
C-111	C		2	SPEED LIMIT 30
C-112	C	1		JCT COUNTY ROUTE MARKER (84)
C-113	C	2		WEST COUNTY ROUTE MARKER (14)
C-114	C	1		COUNTY ROUTE MARKER (84) AUXILARY LEFT ARROW
C-115	C	1		EAST COUNTY ROUTE MARKER (14)
C-116	C		1	AUXILARY LEFT ARROW COUNTY ROUTE MARKER (8)
C-117	C		1	WEST COUNTY ROUTE MARKER (8)
C-118	C		1	COUNTY ROUTE MARKER (8) AUXILARY RIGHT ARROW
C-119	C		1	COUNTY ROUTE MARKER (8) AUXILARY LEFT ARROW
C-120	C		2	SIGNAL AHEAD
C-121	C		1	SOUTH TH ROUTE MARKER (61) NO PARKING
<b>TOTAL</b>		<b>23</b>	<b>19</b>	

SALVAGE & INSTALL SIGN TYPE 'C' - TAB R								
SIGN NO.	QUANT.		POSTS			MTG. HT. (FT.) (1)	PANEL SIZE (IN.)	PANEL LEGEND
	(A)	(W1)	NO. & TYPE	KNEE BRACES QUANT.	LEN. (FT.)			
C-200	1		2-U		15	7	30 X 30 18 X 6	STOP ALL WAY
C-201	1		2-U	1	16.5	7	36 X 12 30 X 30 18 X 6	ONE WAY (BACK TO BACK) STOP ALL WAY
C-202	1		2-U	1	15	7	36 X 36	STOP AHEAD
C-204		1	2-U		15	7	24 X 30	KEEP RIGHT
C-205		5	2-U		15	7	30 X 30	STOP
C-206		1	2-U		15	7	24 X 30	REDUCE SPEED AHEAD
C-207		1	2-U		15	7	24 X 30	SPEED LIMIT 55
C-209		1	2-U		15	7	24 X 30	SPEED LIMIT 45
C-210		1	2-U		15	7	24 X 30	SPEED LIMIT 35
C-211		1	1-U		15	7	24 X 24	NO PARKING
C-212		1	2-U		15	7	24 X 12 24 X 24	END COUNTY ROUTE MARKER (8)
C-213		1	2-U		15	7	24 X 12 24 X 24	EAST COUNTY ROUTE MARKER (8)
C-214		1	2-U		15	7	24 X 24 21 X 15	COUNTY ROUTE MARKER (8) ARROW
C-215		1	2-U		15	7	24 X 12 24 X 24	WEST COUNTY ROUTE MARKER (8)
C-216		1	2-U		15	7	24 X 24 21 X 15	COUNTY ROUTE MARKER (8) ARROW
<b>TOTAL</b>	<b>3</b>	<b>16</b>						

(1)  
(2)

**SPECIFIC NOTES:**

- (1) F&I X4-2 WITH C-204 ASSEMBLY. PAID FOR AS HAZARD MARKER X4-2.
- (2) F&I R8-3a WITH C-213 ASSEMBLY. PAID FOR AS SIGN PANEL TYPE C.

**GENERAL NOTES:**

1. MOUNTING HEIGHT IS MINIMUM. SEE SIGN DETAILS FOR TYPICAL MOUNTING.
2. POST LENGTHS ARE APPROXIMATE AND INCLUDE EMBEDMENT, BUT DO NOT INCLUDE ADDITIONAL LENGTH REQUIRED FOR SPLICE.
3. SEE STANDARD SIGNS MANUAL FOR PUNCHING CODE AND DETAILED DRAWINGS OF TYPE 'C' SIGN PANELS.
4. SHEETING FOR ALL SIGNS SHALL BE WIDE ANGLE PRISMATIC RETROREFLECTIVE SHEETING FOR VISUAL IMPACT PERFORMANCE (VIP).
5. SEE STRUCTURAL DETAILS.
6. SEE SIGN DETAILS FOR TYPE 'D' SIGN PANEL LAYOUTS.
7. SALVAGED SIGNS TO BE REINSTALLED SHALL BE DONE AS INDICATED IN SIGNING AND STRIPING PLANS WITH 3"/FT POST. THE NEW POSTS SHALL BE INCIDENTAL.
8. ANY SALVAGED SIGN DAMAGED OR LOST BY THE CONTRACTOR SHALL BE REPLACED WITH A NEW SIGN WITH VIP SHEETING AT NO ADDITIONAL COMPENSATION THERETO.

**COST PARTICIPATION NOTES:**

- (A) 100% ANOKA COUNTY S.P. 02-614-23 QUANTITY.
- (W1) 100% WASHINGTON COUNTY S.P. 82-608-07.

DRAWN BY: SFH

CHECKED BY: BDP

CERTIFIED BY

*Scott J. Paulsen*  
 LICENSED PROFESSIONAL ENGINEER

LIC. NO. 20880

DATE 8/15/05

**TKDA**  
 ENGINEERS · ARCHITECTS · PLANNERS

SIGNING TABULATIONS  
 SIGNING TABULATIONS


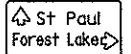

S.P. 02-614-23 S.P. 82-608-07

Sheet No. 200 of 296 Sheets

DATE: 8/5/2005 TIME: 2:01:07 PM  
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F&I SIGN PANELS TYPE 'D' - TAB S										
SIGN NO.	QUANT.		POSTS			MTG. HT. (FT.) (1)	PANEL			PANEL LEGEND
			NO. & TYPE	KNEE BRACES QUANT.	LEN. (FT.)		SIZE (IN.)	AREA (SQ. FT.)	TOTAL AREA (SQ. FT.)	
	(A)	(W1)								
D-1		1	2-U	1	17	7	66 X 54	24.75	24.75	WASHINGTON COUNTY
D-2		1	2-U	2	15	7	72 X 48	24.00	24.00	VICTOR HUGO BLVD.
D-3		1	2-U	1	15	7	66 X 36	16.50	16.50	EVERTON AVENUE
<b>TOTAL</b>		<b>3</b>							<b>65.25</b>	

DELINEATORS & MARKERS - TAB V			
TYPE	QUANT.		LOCATION
	(A)	(W1)	
X4-2	3	11	MOUNTED WITH TYPE 'C'
X4-4L		9	MOUNTED WITH TYPE 'C'
X4-5	2	2	GROUND MOUNTED
X4-11	2		MOUNTED WITH TYPE 'C'
X4-11		3	GROUND MOUNTED
CYLINDER	3		MOUNTED WITH STOP SIGN

SALVAGE & INSTALL SIGN TYPE 'D' - TAB T										
SIGN NO.	QUANT.		POSTS			MTG. HT. (FT.) (1)	PANEL SIZE (IN.)	PANEL LEGEND		
			NO. & TYPE	KNEE BRACES QUANT.	LEN. (FT.)					
	(A)	(W1)								
D-200	1		2-U	2	18	7	78 X 78			
D-201	1		2-U	2	17		132 X 60			
D-202	1		2-U	2	17		48 X 54			
<b>TOTAL</b>	<b>3</b>	<b>0</b>								

REMOVE SIGN TYPE 'SPECIAL' - TAB W			
SIGN NO.	QUANT.		PANEL LEGEND
	(A)	(W1)	
SP-100	2		MAIN ST.
SP-101	1		OTTER LAKE RD
SP-102	1		24th AVE.
SP-103		3	FRENCHMAN ROAD
SP-104		1	VICTOR HUGO BLVD.
SP-105		1	146th STREET
SP-106		1	WELCOME HUGO
SP-107		1	146th STREET
<b>TOTAL</b>	<b>4</b>	<b>7</b>	

REMOVE SIGN TYPE 'D' - TAB U				
SIGN NO.	TYPE	QUANT.		PANEL LEGEND
		(A)	(W1)	
D-100	D		1	WASHINGTON COUNTY
D-101	D		1	CENTERVILLE
D-102	D		2	MASTARM 35E
<b>TOTAL</b>			<b>4</b>	

SALVAGE & INSTALL SIGN TYPE 'SPECIAL' - TAB X				
SIGN NO.	QUANT.		PANEL LEGEND	POSTS
	(A)	(W1)		
SP-200	1	1	ADOPT A HIGHWAY	2-U
SP-201		3	FRENCHMAN ROAD	ROUND TUBULAR
SP-202		1	ELMCREST AVE.	ROUND TUBULAR
SP-203		1	VICTOR PATH	ROUND TUBULAR
SP-204		1	EVERTON AVE.	ROUND TUBULAR
<b>TOTAL</b>	<b>1</b>	<b>7</b>		

**GENERAL NOTES:**

- SHEETING FOR ALL SIGNS SHALL BE WIDE ANGLE PRISMATIC RETROREFLECTIVE SHEETING FOR VISUAL IMPACT PERFORMANCE (VIP).
- SIGN POSTS FOR STREET NAME PLATES, SIGN TYPE SPECIAL, SHALL BE ROUND TUBULAR ALUMINUM OF HOT DIPPED GALVANIZED STEEL, OUTSIDE DIAMETER 2-3/8 INCHES, WALL THICKNESS 0.109 INCHES.
- SALVAGED SIGNS TO BE REINSTALLED SHALL BE DONE AS INDICATED IN SIGNING AND STRIPING PLANS WITH 3"/FT POST. THE NEW POSTS SHALL BE INCIDENTAL.
- ANY SALVAGED SIGN DAMAGED OR LOST BY THE CONTRACTOR SHALL BE REPLACED WITH A NEW SIGN WITH VIP SHEETING AT NO ADDITIONAL COMPENSATION THERETO.
- SEE STANDARD SIGNS MANUAL FOR DELINEATORS AND MARKERS.
- LEFT AND RIGHT DESIGNATIONS ARE SHOWN LOOKING IN THE DIRECTION OF TRAFFIC FLOW.

**COST PARTICIPATION NOTES:**

- (A) 100% ANOKA COUNTY S.P. 02-614-23 QUANTITY.  
 (W1) 100% WASHINGTON COUNTY S.P. 82-608-07.

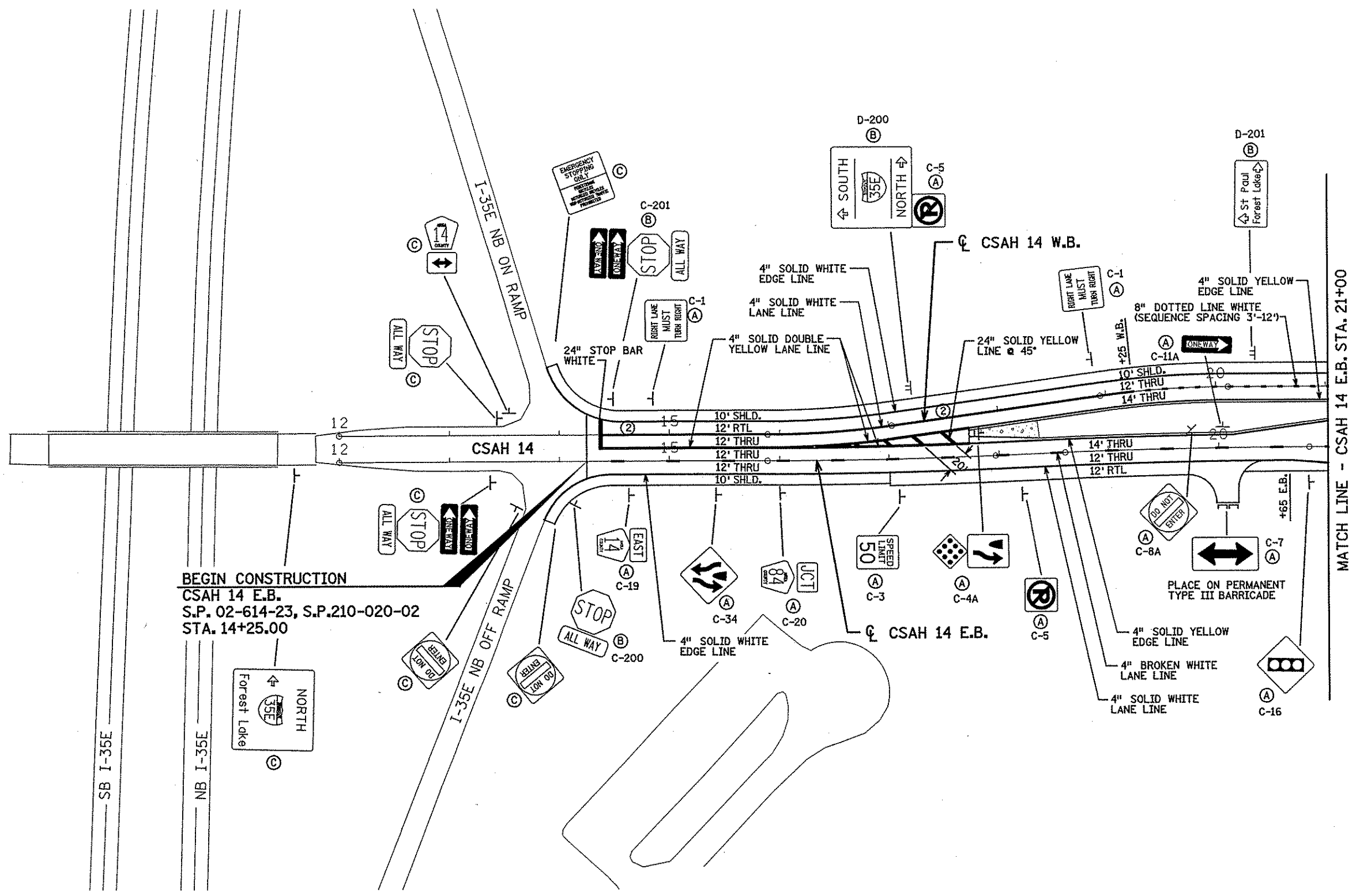
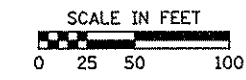
DRAWN BY: SFH  
 CHECKED BY: BDP

CERTIFIED BY Brent O. Paulin LIC. NO. 26880 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

**TKDA**  
 ENGINEERS · ARCHITECTS · PLANNERS

SIGNING TABULATIONS  
 SIGNING TABULATIONS

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 201 of 296 Sheets



**BEGIN CONSTRUCTION**  
 CSAH 14 E.B.  
 S.P. 02-614-23, S.P.210-020-02  
 STA. 14+25.00

**LEGEND:**

- ① LEFT TURN ARROW
- ② RIGHT TURN ARROW
- (A) FURNISH & INSTALL
- (B) INSTALL SALVAGED SIGN
- (C) SIGN TO REMAIN INPLACE

**NOTES:**

1. UNLESS OTHERWISE NOTED ALL SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.
2. ALL STRIPING SHALL BE EPOXY UNLESS OTHERWISE NOTED.
3. ALL CROSSWALKS AND PAVEMENT MESSAGES SHALL BE POLY-PREFORM.
4. SIGNS IN MEDIAN SHALL HAVE 2 POSTS. (SEE DETAILS)
5. ALL DIMENSIONS ARE TO FACE OF CURB.

DATE: 8/5/2005 TIME: 2:00:13 PM  
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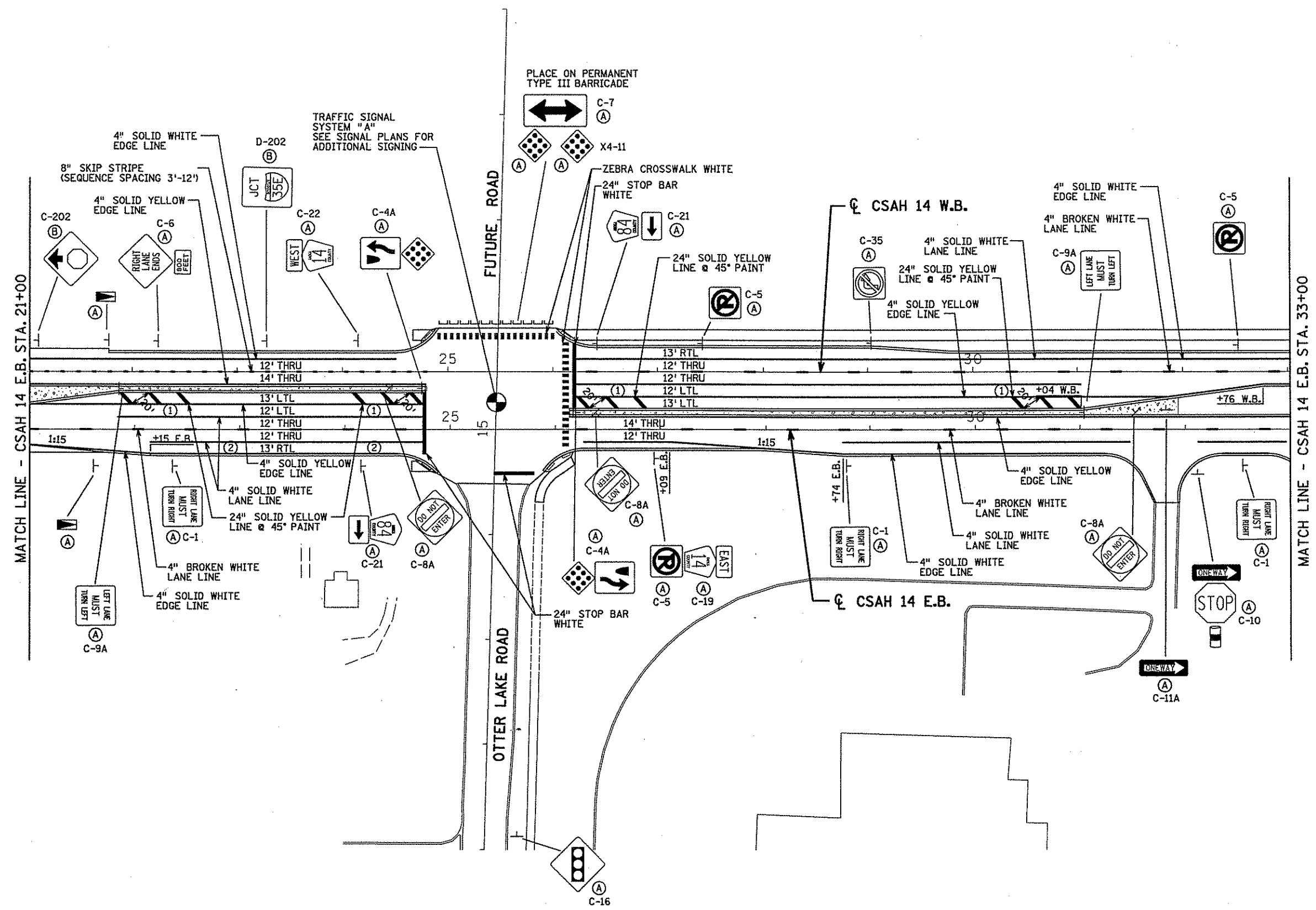
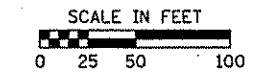
DRAWN BY: TJV  
 CHECKED BY: BDP

CERTIFIED BY *Brent O. Paulm* LIC. NO. 20820 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

**TKDA**  
 ENGINEERS · ARCHITECTS · PLANNERS

SIGNING AND STRIPING PLAN  
 STA. 12+00 TO STA. 21+00

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 202 of 296 Sheets



- LEGEND:**
- ① LEFT TURN ARROW
  - ② RIGHT TURN ARROW
  - (A) FURNISH & INSTALL
  - (B) INSTALL SALVAGED SIGN
  - (C) SIGN TO REMAIN IN PLACE

- NOTES:**
1. UNLESS OTHERWISE NOTED ALL SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.
  2. ALL STRIPING SHALL BE EPOXY UNLESS OTHERWISE NOTED.
  3. ALL CROSSWALKS AND PAVEMENT MESSAGES SHALL BE POLY-PREFORM.
  4. SIGNS IN MEDIAN SHALL HAVE 2 POSTS. (SEE DETAILS)
  5. ALL DIMENSIONS ARE TO FACE OF CURB.

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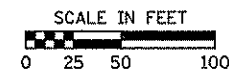
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 CHECKED BY: BDP

CERTIFIED BY *Scott J. Paul* LIC. NO. 26880 DATE 9/2/05  
LICENSED PROFESSIONAL ENGINEER

**TKDA**  
ENGINEERS · ARCHITECTS · PLANNERS

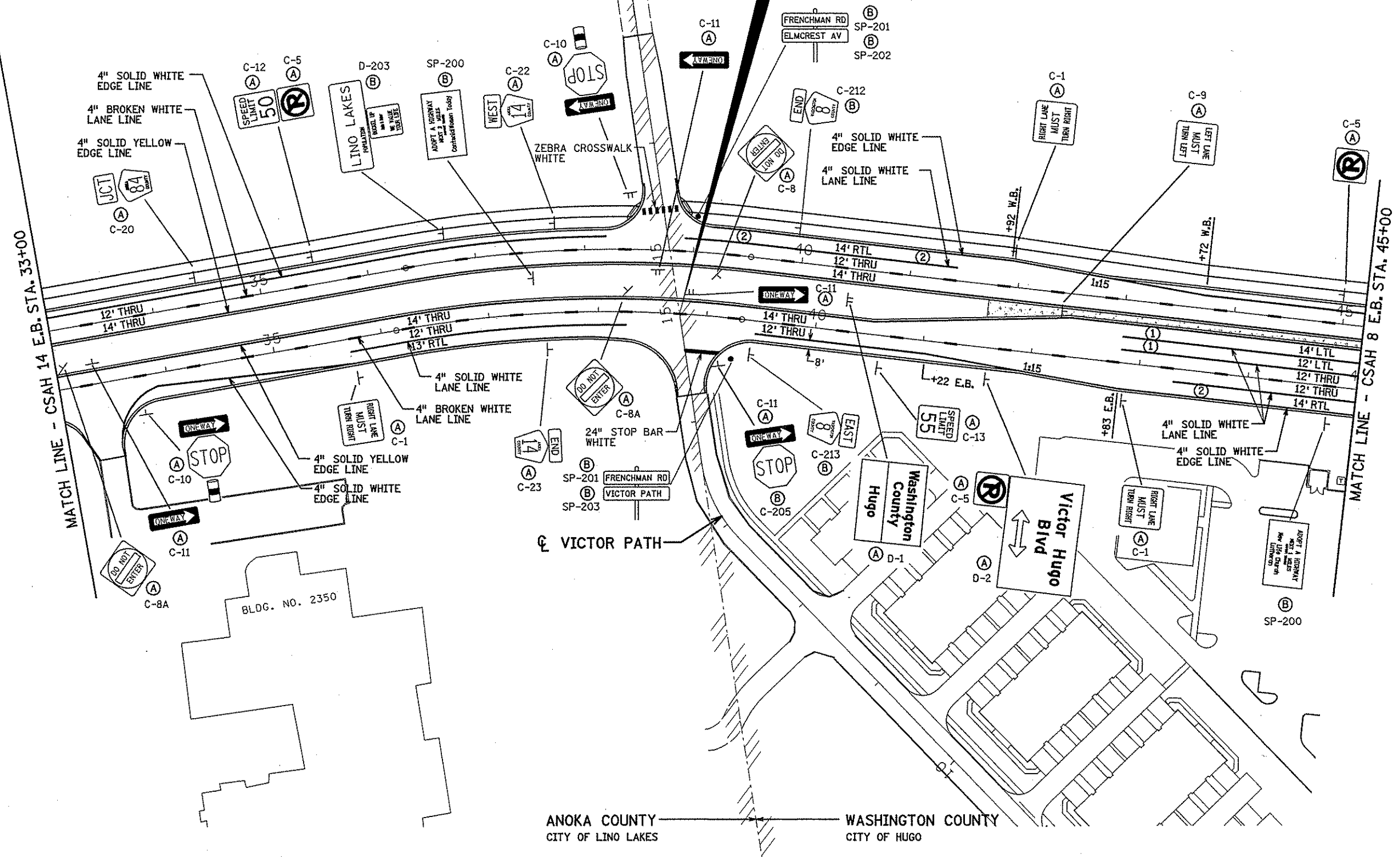
**SIGNING AND STRIPING PLAN**  
 STA. 21+00 TO STA. 33+00

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 203 of 296 Sheets



END S.P. 02-614-23, S.P. 210-020-02  
 BEGIN S.P. 82-608-07, S.P. 224-020-01  
 CSAH 8 E.B. STA. 38+74.71

ELMCREST AVE. N.



37' x 50'  
 32' x 70'

MATCH LINE - CSAH 14 E.B. STA. 33+00

MATCH LINE - CSAH 8 E.B. STA. 45+00

- LEGEND:**
- ① LEFT TURN ARROW
  - ② RIGHT TURN ARROW
  - (A) FURNISH & INSTALL
  - (B) INSTALL SALVAGED SIGN
  - (C) SIGN TO REMAIN INPLACE

- NOTES:**
1. UNLESS OTHERWISE NOTED ALL SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.
  2. ALL STRIPING SHALL BE EPOXY UNLESS OTHERWISE NOTED.
  3. ALL CROSSWALKS AND PAVEMENT MESSAGES SHALL BE POLY-PREFORM.
  4. SIGNS IN MEDIAN SHALL HAVE 2 POSTS. (SEE DETAILS)
  5. ALL DIMENSIONS ARE TO FACE OF CURB.

DATE: 8/15/2005 TIME: 2:00:21 PM  
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 CHECKED BY: BDP

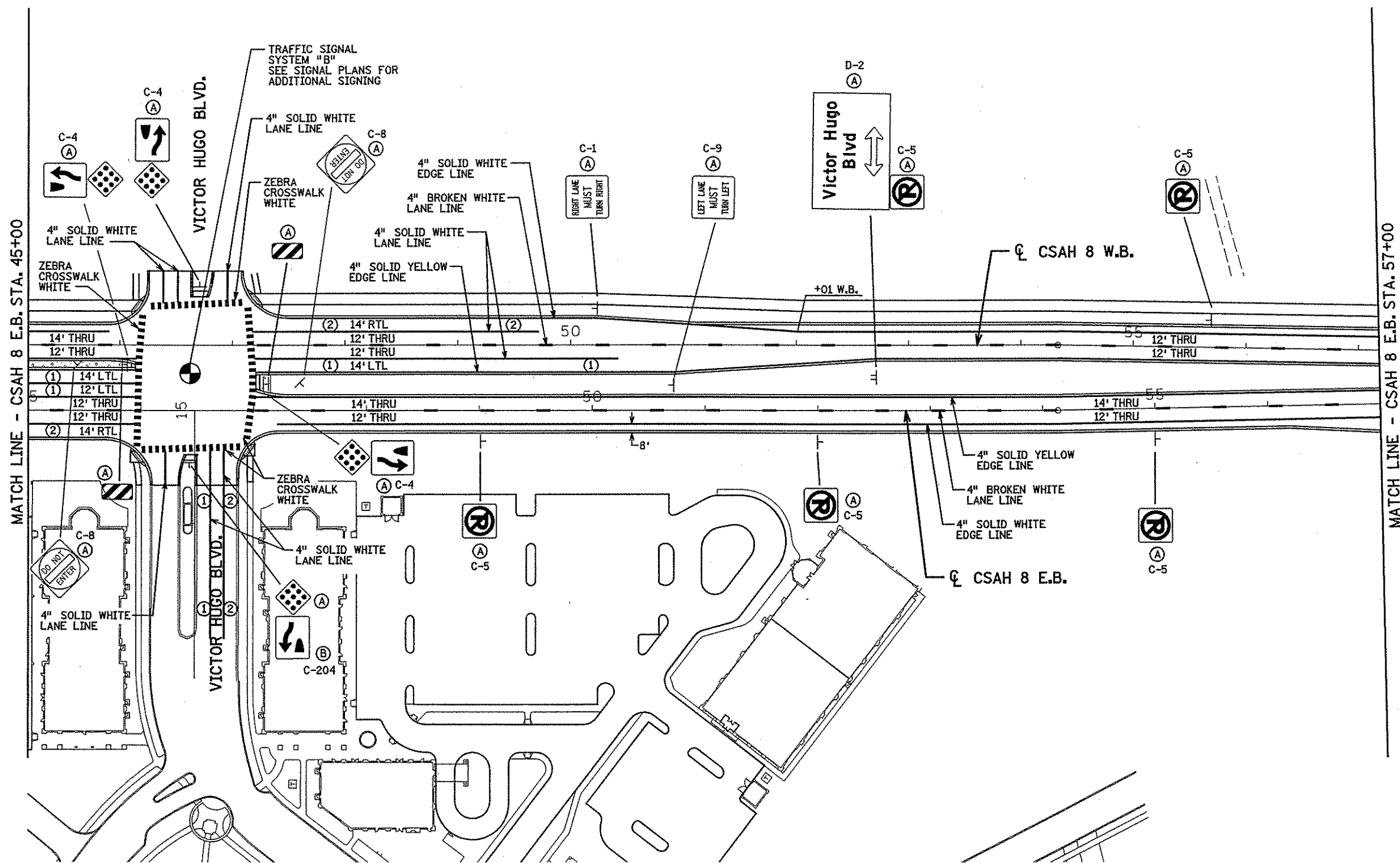
CERTIFIED BY *Don O. Paulsen* LIC. NO. 20880 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

**TKDA**  
 ENGINEERS - ARCHITECTS - PLANNERS

SIGNING AND STRIPING PLAN  
 STA. 33+00 TO STA. 45+00

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 204 of 296 Sheets





- LEGEND:**
- ① LEFT TURN ARROW
  - ② RIGHT TURN ARROW
  - (A) FURNISH & INSTALL
  - (B) INSTALL SALVAGED SIGN
  - (C) SIGN TO REMAIN INPLACE

- NOTES:**
1. UNLESS OTHERWISE NOTED ALL SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.
  2. ALL STRIPING SHALL BE EPOXY UNLESS OTHERWISE NOTED.
  3. ALL CROSSWALKS AND PAVEMENT MESSAGES SHALL BE POLY-PREFORM.
  4. SIGNS IN MEDIAN SHALL HAVE 2 POSTS. (SEE DETAILS)
  5. ALL DIMENSIONS ARE TO FACE OF CURB.

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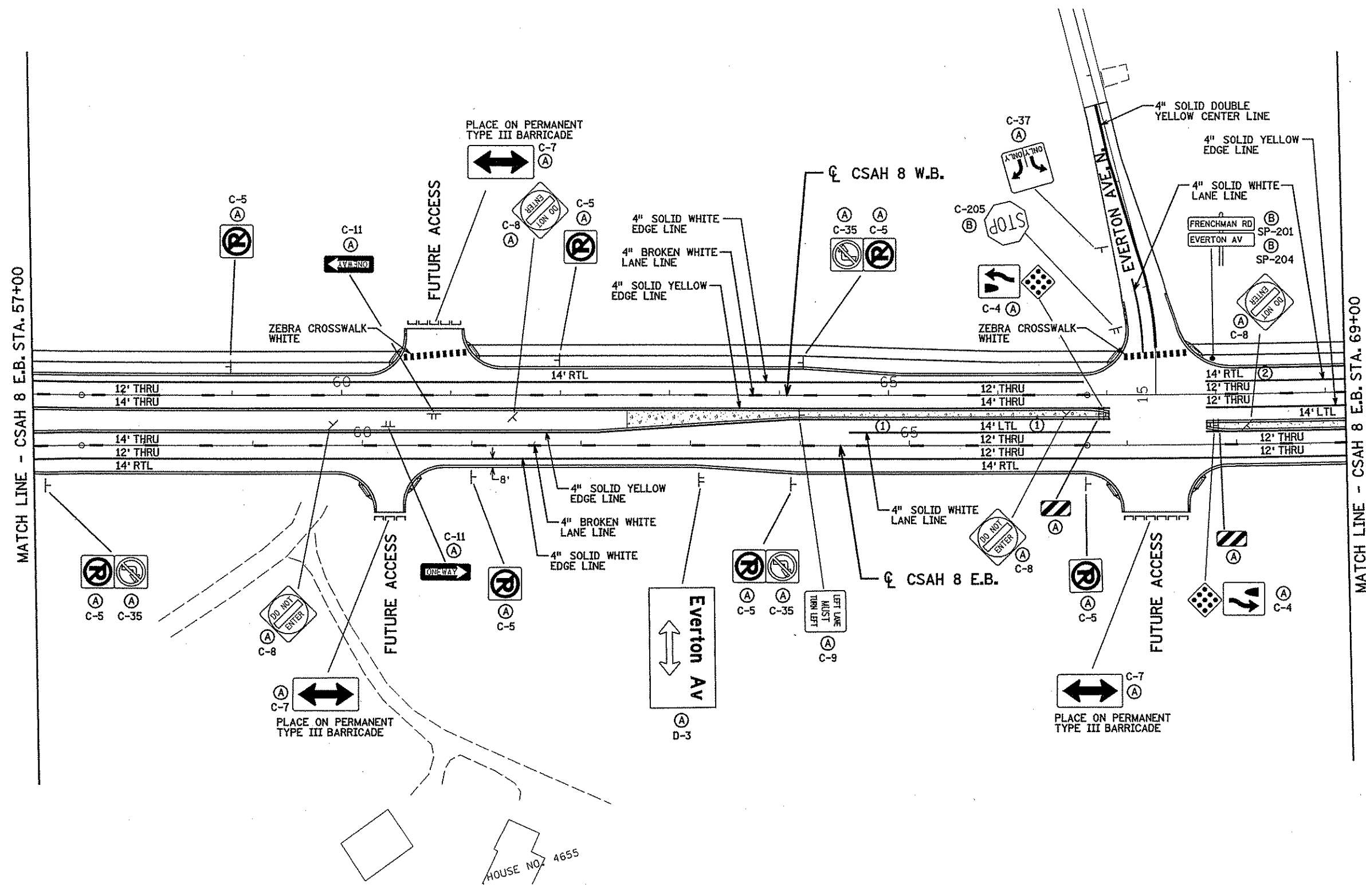
DRAWN BY: TJV  
CHECKED BY: BDP

CERTIFIED BY *Paul O. Paulm* LIC. NO. 20880 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

**TKDA**  
ENGINEERS · ARCHITECTS · PLANNERS

SIGNING AND STRIPING PLAN  
STA. 45+00 TO STA. 57+00

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 205 of 296 Sheets



- LEGEND:**
- ① LEFT TURN ARROW
  - ② RIGHT TURN ARROW
  - (A) FURNISH & INSTALL
  - (B) INSTALL SALVAGED SIGN
  - (C) SIGN TO REMAIN INPLACE

- NOTES:**
1. UNLESS OTHERWISE NOTED ALL SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.
  2. ALL STRIPING SHALL BE EPOXY UNLESS OTHERWISE NOTED.
  3. ALL CROSSWALKS AND PAVEMENT MESSAGES SHALL BE POLY-PREFORM.
  4. SIGNS IN MEDIAN SHALL HAVE 2 POSTS. (SEE DETAILS)
  5. ALL DIMENSIONS ARE TO FACE OF CURB.

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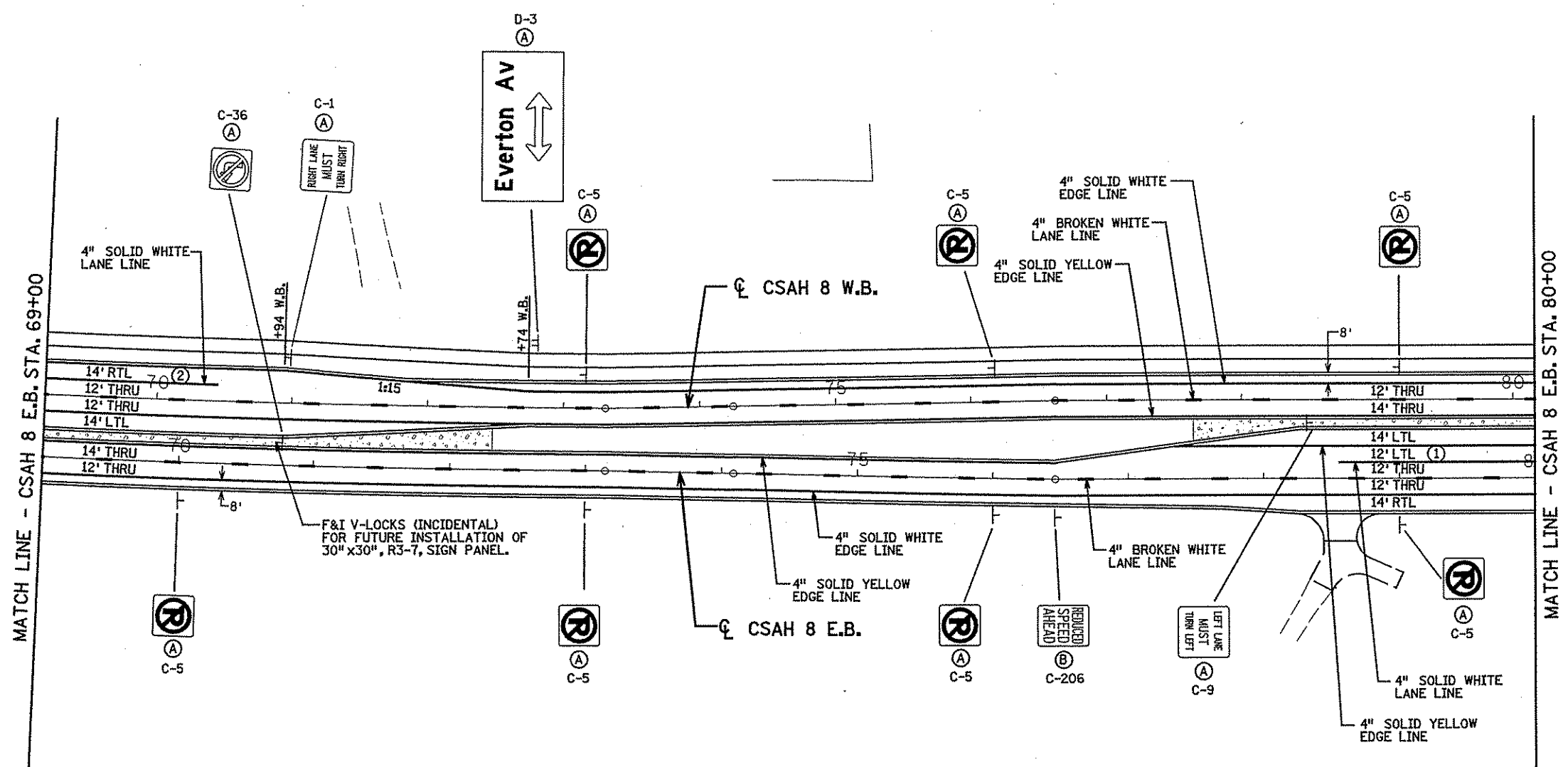
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CHECKED BY: BDP

CERTIFIED BY *Grant O. Paulsen* LIC. NO. 20880 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

**TKDA**  
ENGINEERS · ARCHITECTS · PLANNERS

SIGNING AND STRIPING PLAN  
STA. 57+00 TO STA. 69+00

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 206 of 296 Sheets



- LEGEND:**
- ① LEFT TURN ARROW
  - ② RIGHT TURN ARROW
  - (A) FURNISH & INSTALL
  - (B) INSTALL SALVAGED SIGN
  - (C) SIGN TO REMAIN IN PLACE

- NOTES:**
1. UNLESS OTHERWISE NOTED ALL SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.
  2. ALL STRIPING SHALL BE EPOXY UNLESS OTHERWISE NOTED.
  3. ALL CROSSWALKS AND PAVEMENT MESSAGES SHALL BE POLY-PREFORM.
  4. SIGNS IN MEDIAN SHALL HAVE 2 POSTS. (SEE DETAILS)
  5. ALL DIMENSIONS ARE TO FACE OF CURB.

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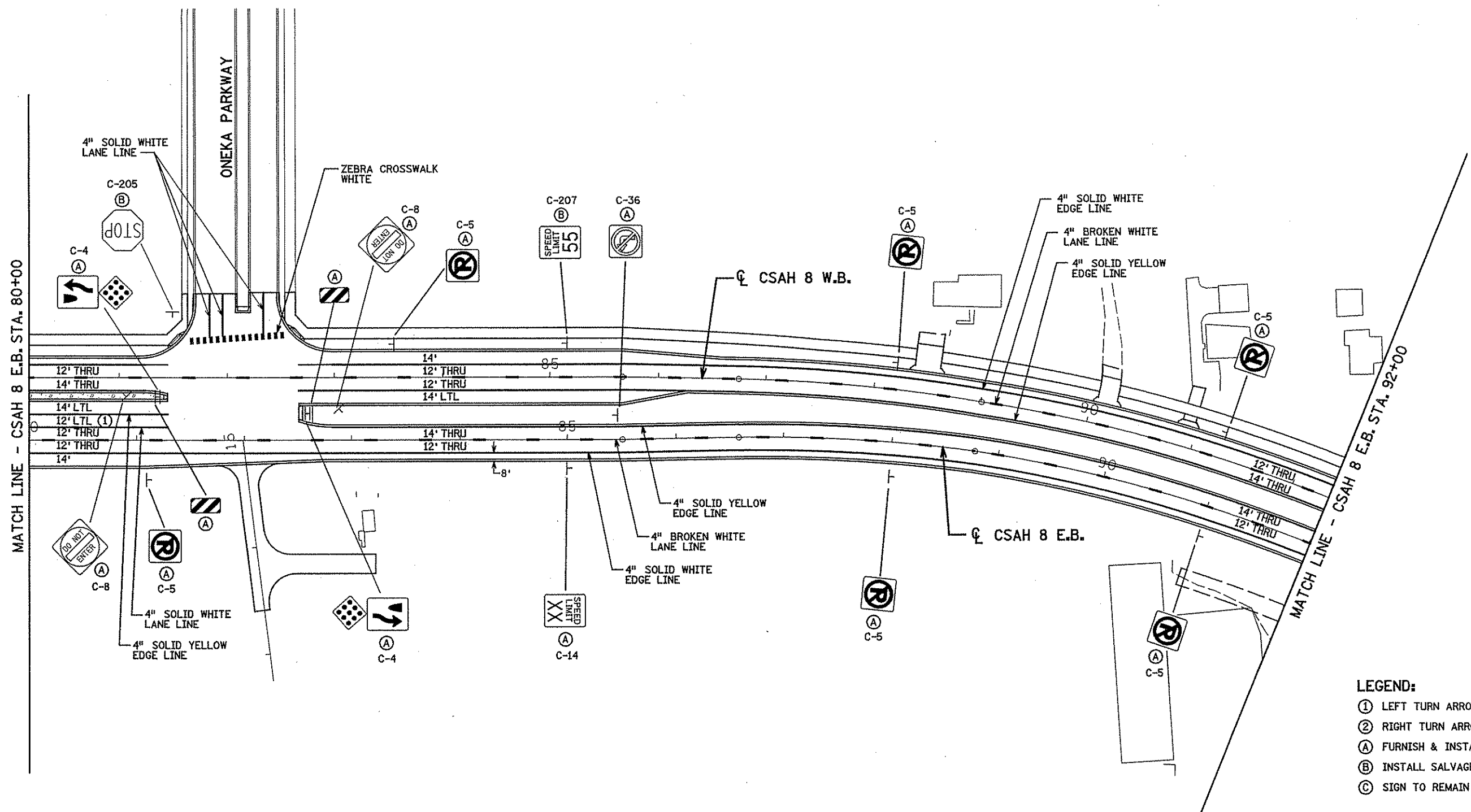
DRAWN BY: TJV  
CHECKED BY: BDP

CERTIFIED BY *Paul O. Pauler* LIC. NO. 26882 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

**TKDA**  
ENGINEERS · ARCHITECTS · PLANNERS

SIGNING AND STRIPING PLAN  
STA. 69+00 TO STA. 80+00

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 207 of 296 Sheets



- LEGEND:**
- ① LEFT TURN ARROW
  - ② RIGHT TURN ARROW
  - (A) FURNISH & INSTALL
  - (B) INSTALL SALVAGED SIGN
  - (C) SIGN TO REMAIN INPLACE

- NOTES:**
1. UNLESS OTHERWISE NOTED ALL SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.
  2. ALL STRIPING SHALL BE EPOXY UNLESS OTHERWISE NOTED.
  3. ALL CROSSWALKS AND PAVEMENT MESSAGES SHALL BE POLY-PREFORM.
  4. SIGNS IN MEDIAN SHALL HAVE 2 POSTS. (SEE DETAILS)
  5. ALL DIMENSIONS ARE TO FACE OF CURB.

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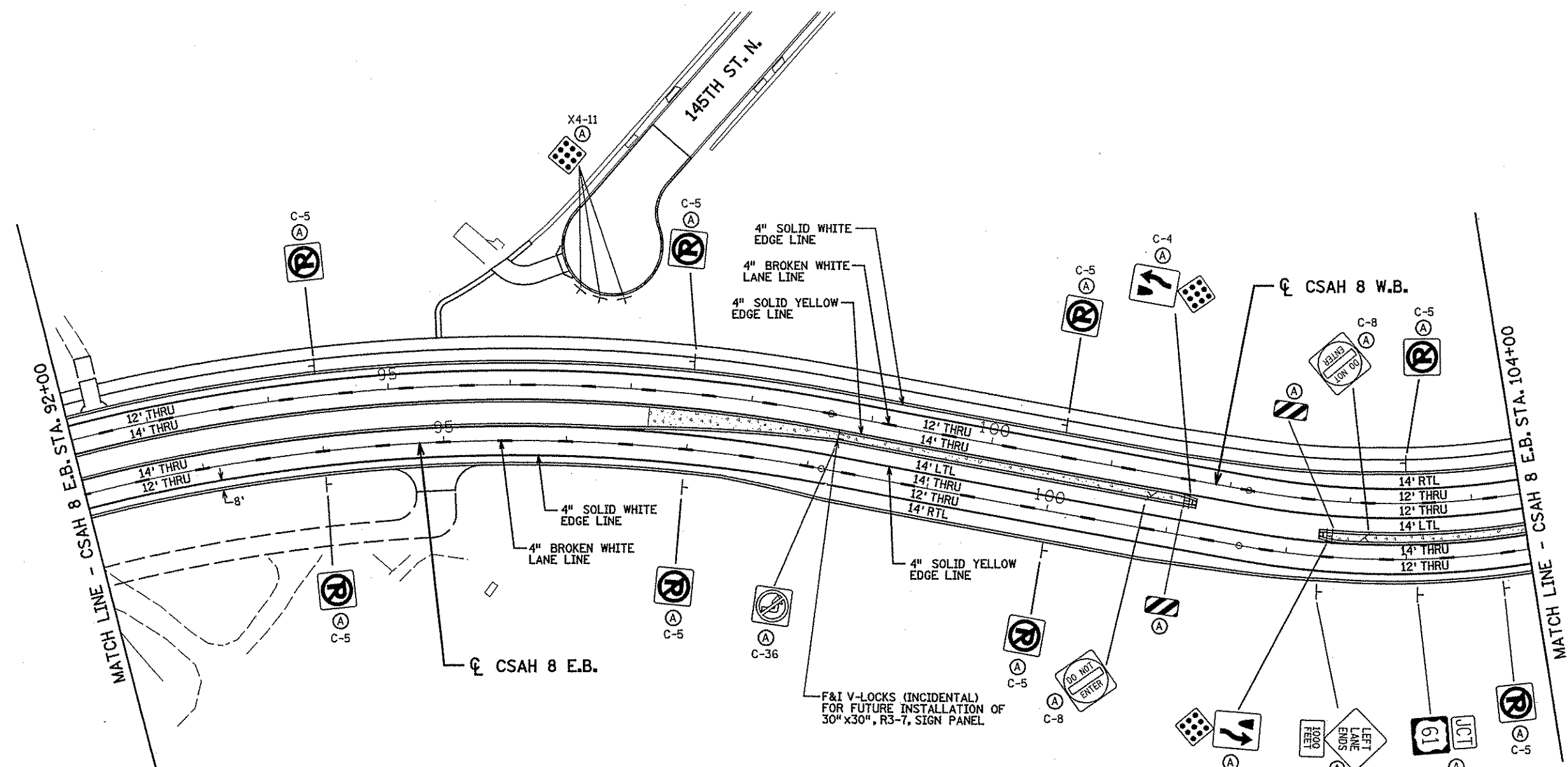
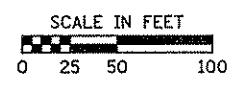
DRAWN BY: TJV  
CHECKED BY: BDP

CERTIFIED BY *Brent J. Paulina* LIC. NO. 210880 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

**TKDA**  
ENGINEERS · ARCHITECTS · PLANNERS

SIGNING AND STRIPING PLAN  
STA. 80+00 TO STA. 92+00

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 208 of 296 Sheets



- LEGEND:**
- ① LEFT TURN ARROW
  - ② RIGHT TURN ARROW
  - Ⓐ FURNISH & INSTALL
  - Ⓑ INSTALL SALVAGED SIGN
  - Ⓒ SIGN TO REMAIN INPLACE

- NOTES:**
1. UNLESS OTHERWISE NOTED ALL SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.
  2. ALL STRIPING SHALL BE EPOXY UNLESS OTHERWISE NOTED.
  3. ALL CROSSWALKS AND PAVEMENT MESSAGES SHALL BE POLY-PREFORM.
  4. SIGNS IN MEDIAN SHALL HAVE 2 POSTS. (SEE DETAILS)
  5. ALL DIMENSIONS ARE TO FACE OF CURB.

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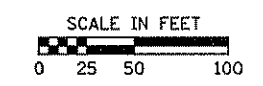
CERTIFIED BY *Grant O. Paulin* LIC. NO. 26820 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

**TKDA**  
 ENGINEERS · ARCHITECTS · PLANNERS

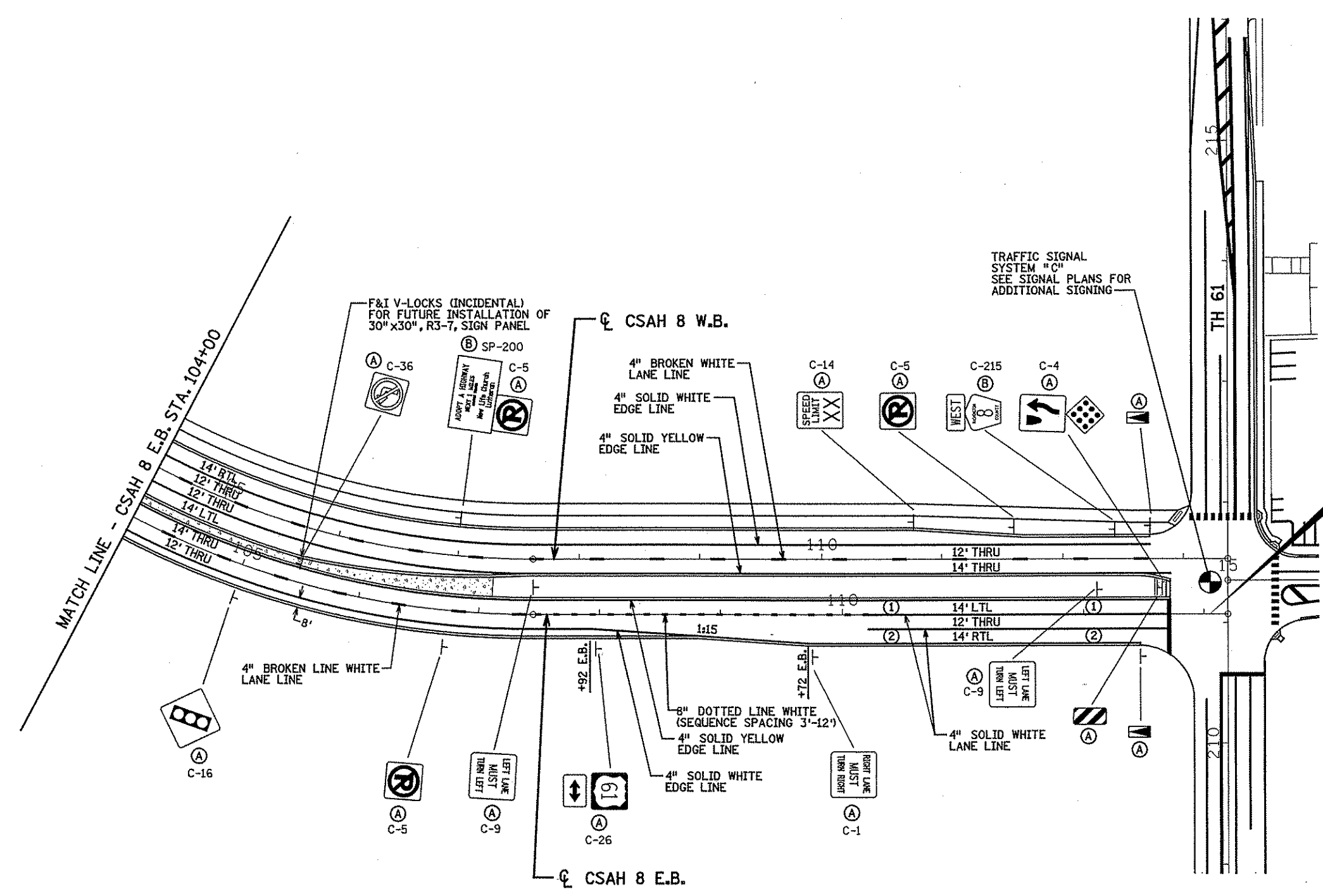
SIGNING AND STRIPING PLAN  
 STA. 92+00 TO STA. 104+00

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 209 of 296 Sheets





SEE TH 61 SIGNING AND STRIPING PLANS FOR ADDITIONAL INFORMATION.



**END CONSTRUCTION**  
 CSAH 8 E.B.  
 S.P. 82-608-07, S.P. 224-020-01  
 STA. 113+05.07

- LEGEND:**
- ① LEFT TURN ARROW
  - ② RIGHT TURN ARROW
  - (A) FURNISH & INSTALL
  - (B) INSTALL SALVAGED SIGN
  - (C) SIGN TO REMAIN IN PLACE

- NOTES:**
1. UNLESS OTHERWISE NOTED ALL SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.
  2. ALL STRIPING SHALL BE EPOXY UNLESS OTHERWISE NOTED.
  3. ALL CROSSWALKS AND PAVEMENT MESSAGES SHALL BE POLY-PREFORM.
  4. SIGNS IN MEDIAN SHALL HAVE 2 POSTS. (SEE DETAILS)
  5. ALL DIMENSIONS ARE TO FACE OF CURB.

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 CHECKED BY: BDP

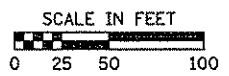
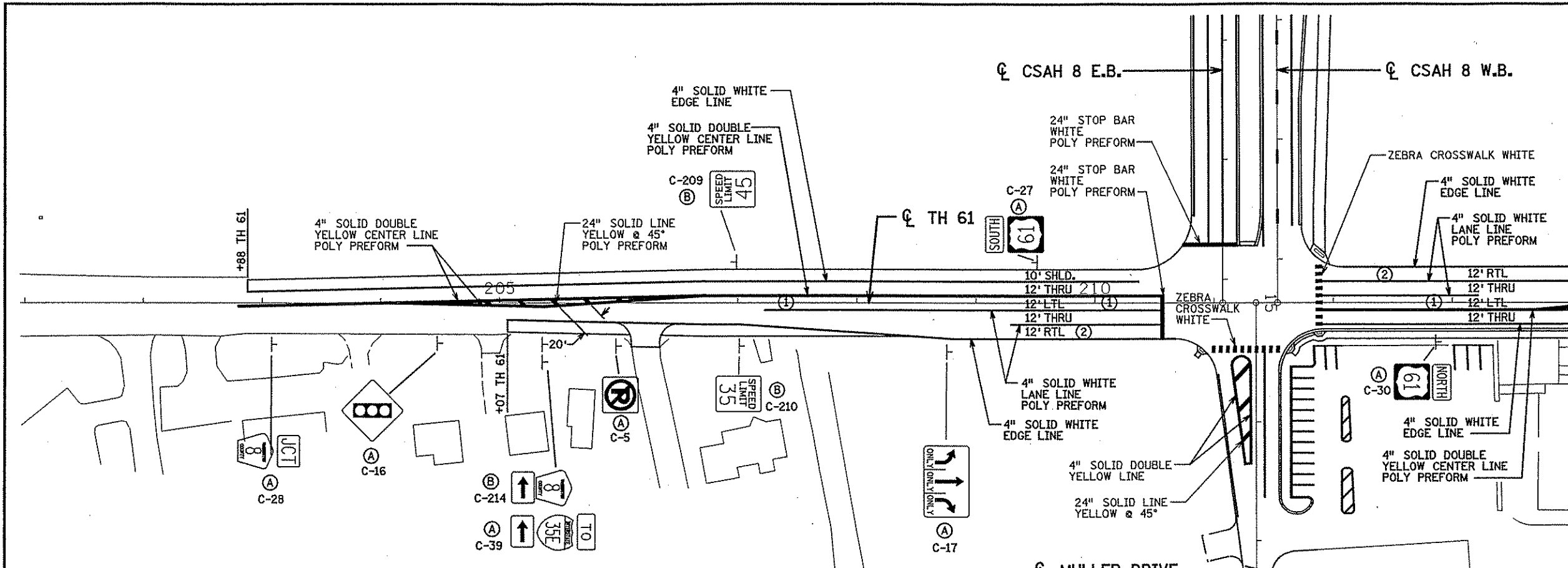
CERTIFIED BY *Grant O. Parker* LIC. NO. 20880 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

**TKDA**  
 ENGINEERS - ARCHITECTS - PLANNERS

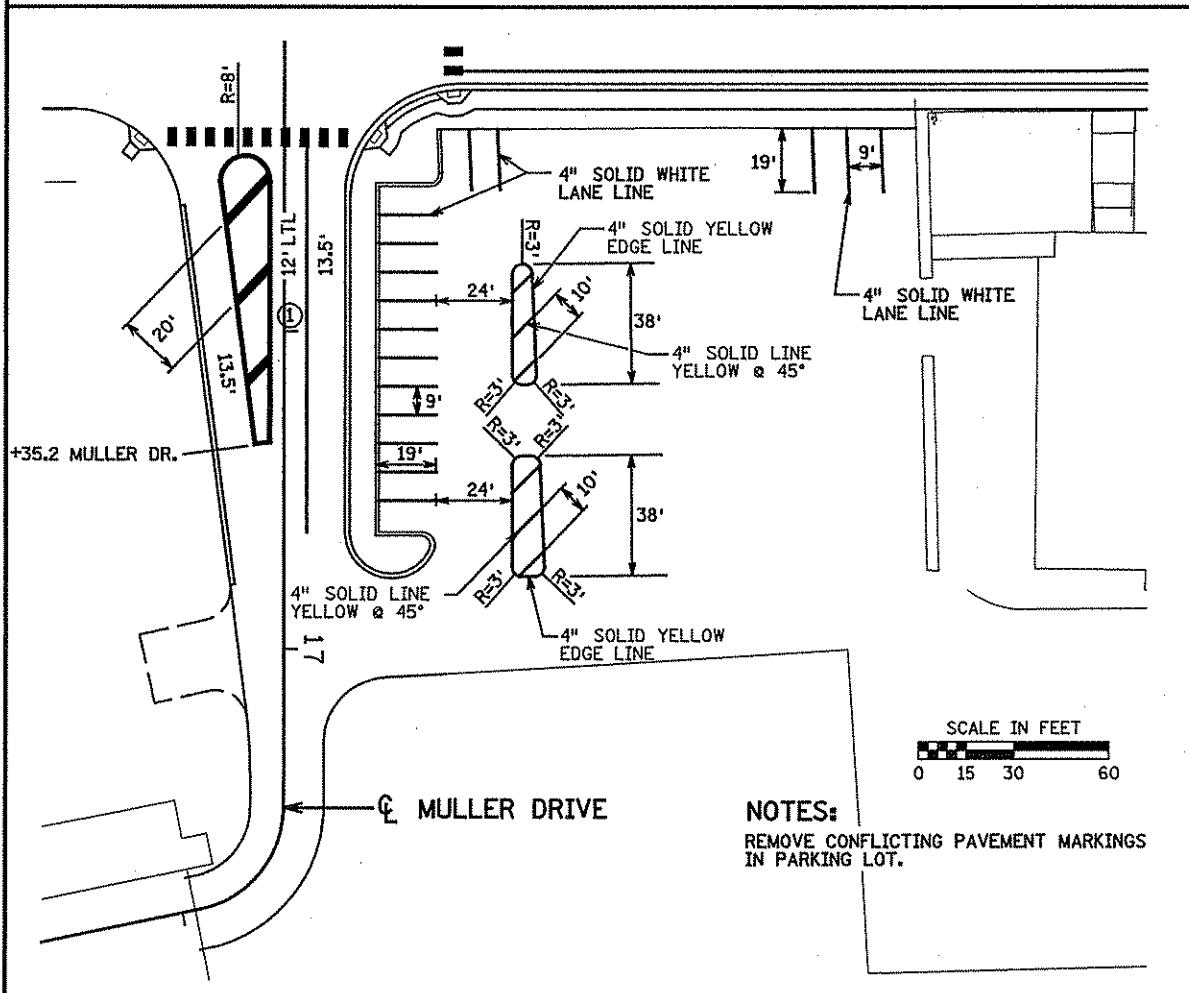
**SIGNING AND STRIPING PLAN**  
 STA. 104+00 TO STA. 113+05.07

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 210 of 296 Sheets

DATE: 8/11/2005 TIME: 9:03:11 AM  
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MATCH LINE - TH 61 STA. 214+00



**LEGEND:**

- ① LEFT TURN ARROW
- ② RIGHT TURN ARROW
- (A) FURNISH & INSTALL
- (B) INSTALL SALVAGED SIGN
- (C) SIGN TO REMAIN INPLACE

**NOTES:**

1. UNLESS OTHERWISE NOTED ALL SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.
2. ALL STRIPING SHALL BE EPOXY UNLESS OTHERWISE NOTED.
3. ALL CROSSWALKS AND PAVEMENT MESSAGES SHALL BE POLY-PREFORM.
4. SIGNS IN MEDIAN SHALL HAVE 2 POSTS. (SEE DETAILS)
5. ALL DIMENSIONS ARE TO FACE OF CURB.

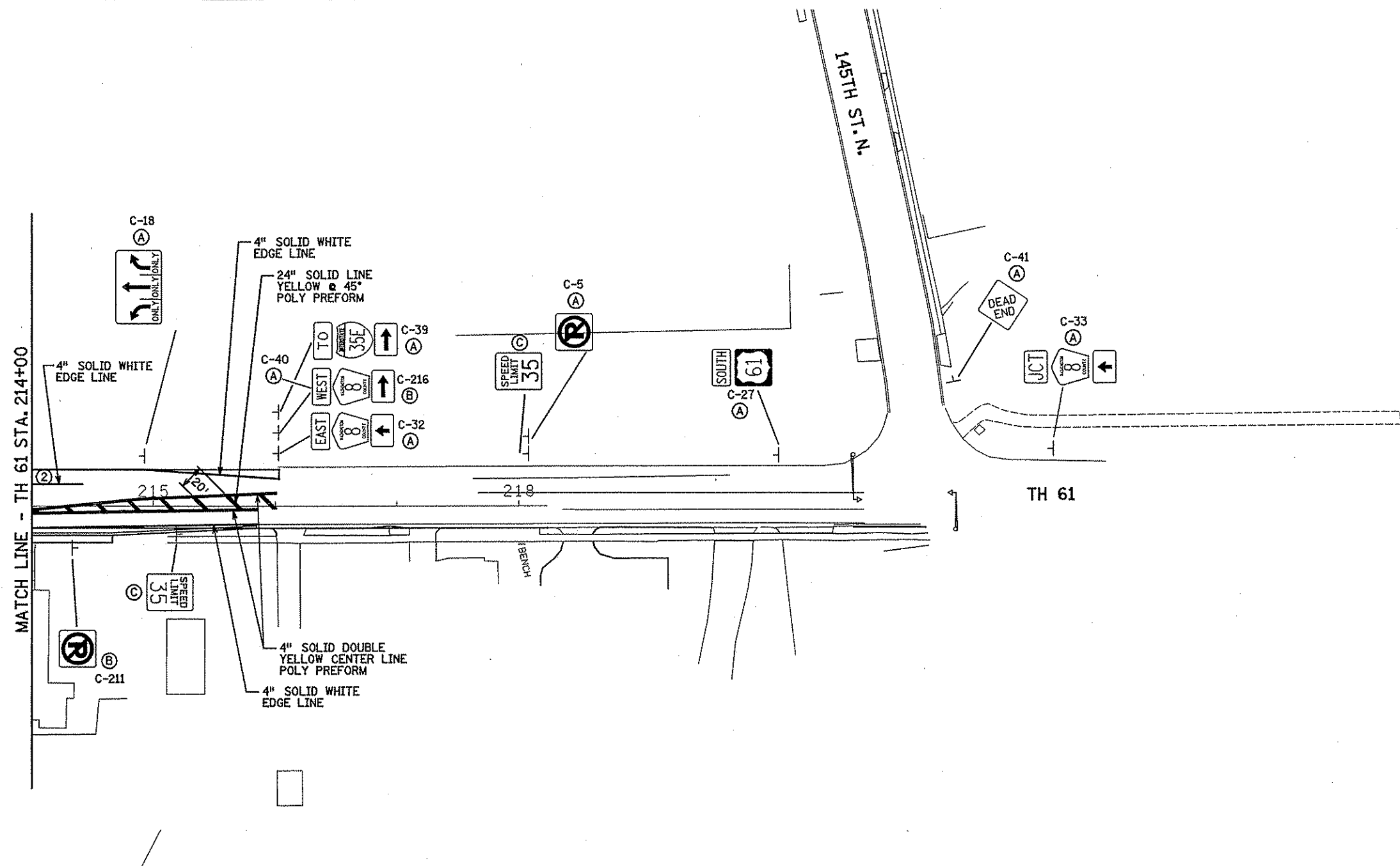
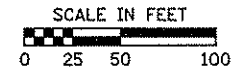
DRAWN BY: TJV  
 CHECKED BY: BDP

CERTIFIED BY *Grant O. Paulm* LIC. NO. 26880 DATE 8/11/05  
 LICENSED PROFESSIONAL ENGINEER

**TKDA**  
 ENGINEERS · ARCHITECTS · PLANNERS

**SIGNING AND STRIPING PLAN**  
 STA. 202+00 TO STA. 214+00

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 211 of 296 Sheets



**LEGEND:**

- ① LEFT TURN ARROW ..... ↶
- ② RIGHT TURN ARROW ..... ↷
- (A) FURNISH & INSTALL
- (B) INSTALL SALVAGED SIGN
- (C) SIGN TO REMAIN INPLACE

**NOTES:**

1. UNLESS OTHERWISE NOTED ALL SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.
2. ALL STRIPING SHALL BE EPOXY UNLESS OTHERWISE NOTED.
3. ALL CROSSWALKS AND PAVEMENT MESSAGES SHALL BE POLY-PREFORM.
4. SIGNS IN MEDIAN SHALL HAVE 2 POSTS. (SEE DETAILS)
5. ALL DIMENSIONS ARE TO FACE OF CURB.

DATE: 8/5/2005 TIME: 2:00:58 PM  
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DRAWN BY: TJV  
 CHECKED BY: BDP

CERTIFIED BY *Brent J. Paulin* LIC. NO. 20880 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

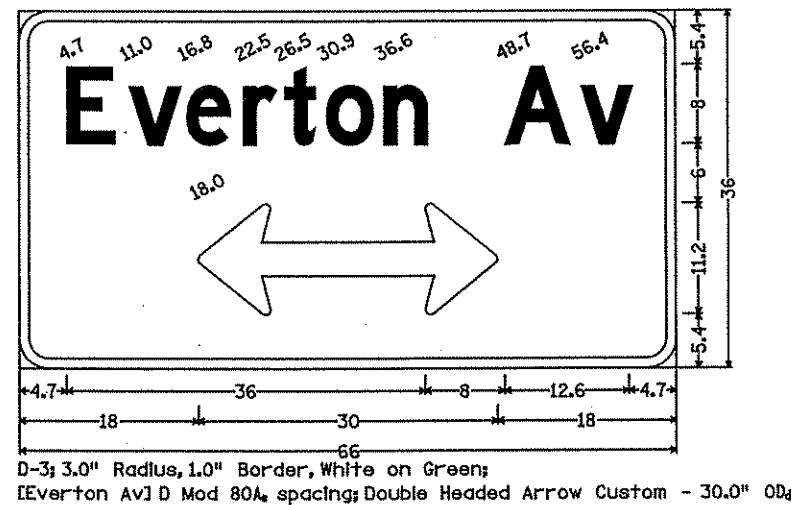
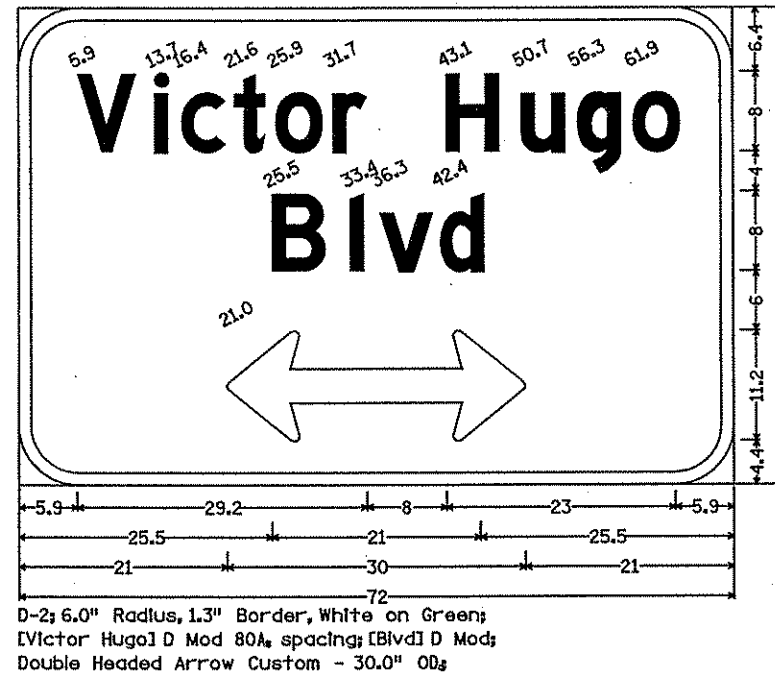
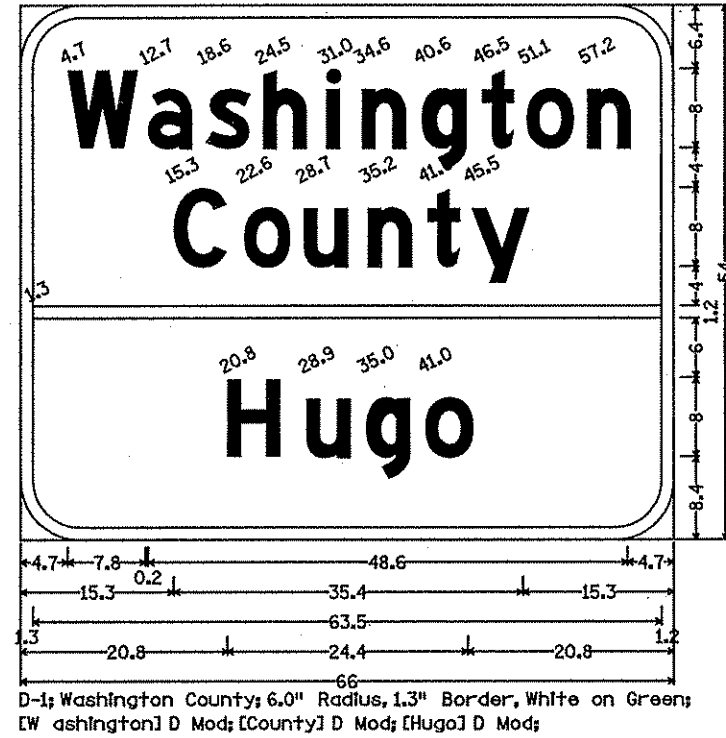
**TKDA**  
 ENGINEERS · ARCHITECTS · PLANNERS

SIGNING AND STRIPING PLAN  
 STA. 214+00 TO STA. 218+00

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 212 of 296 Sheets

**NOTES:**

1. CORNERS OF THE SIGN PANELS EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
2. SEE STANDARD SIGNS MANUAL FOR ARROW DETAILS.



DATE: 8/5/2005 TIME: 2:01:26 PM  
FILENAME: K:\r-z\wasc\cy\24390\hwy-brdg\hwy\p1r-s1f\c200002.ssp

DRAWN BY: TJV  
CHECKED BY: BDP

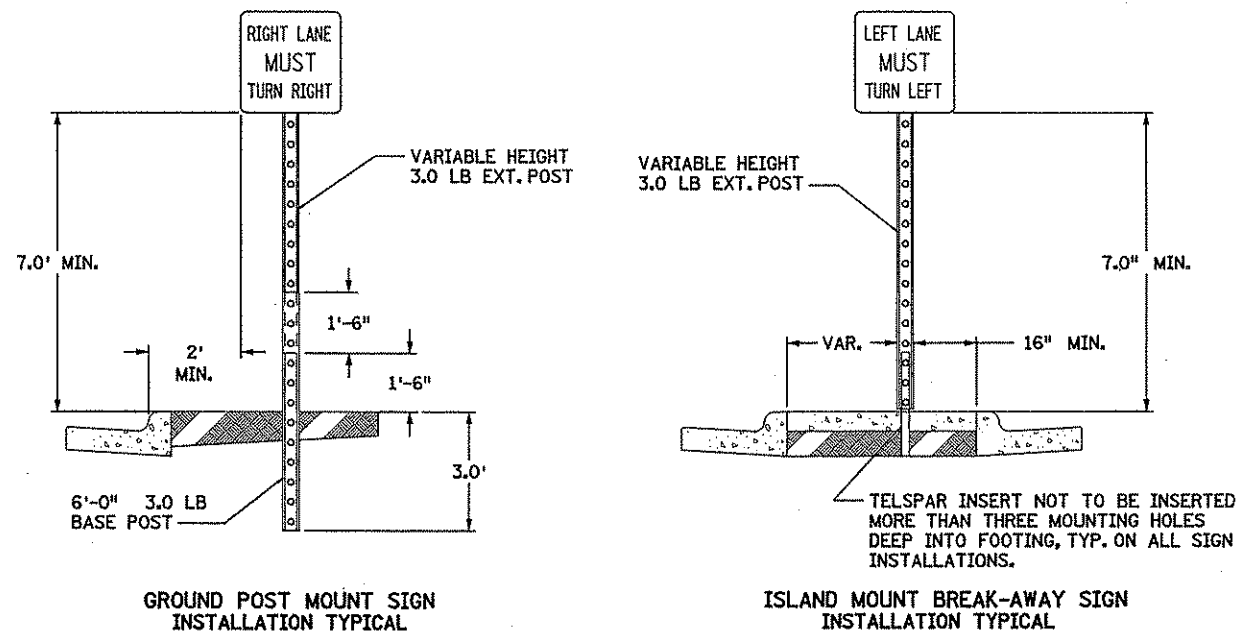
CERTIFIED BY Paul J. Paulin LIC. NO. 26880 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

**TKDA**  
ENGINEERS · ARCHITECTS · PLANNERS

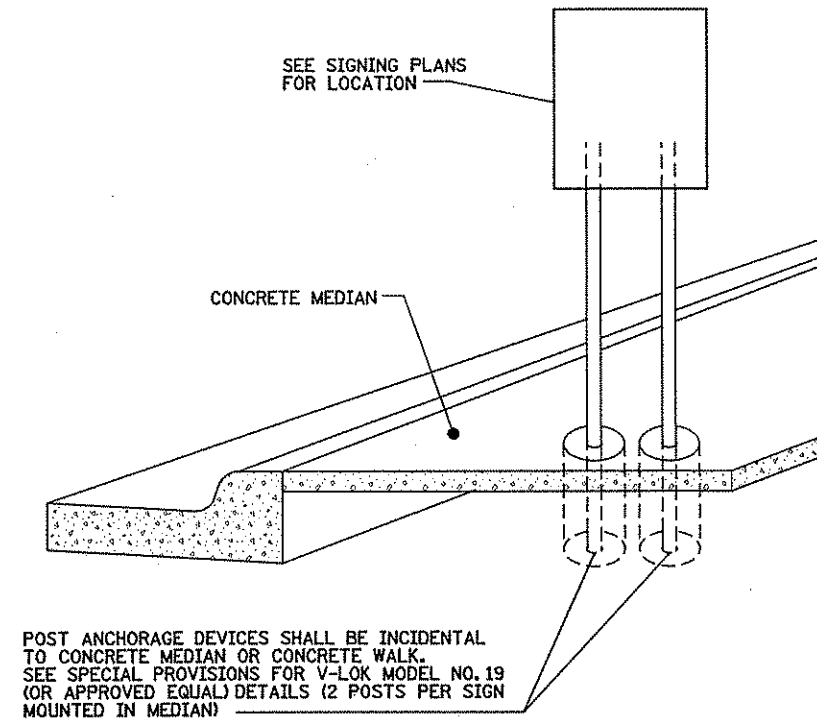
SIGNING DETAILS  
TYPE "D" SIGN DETAILS

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 213 of 296 Sheets

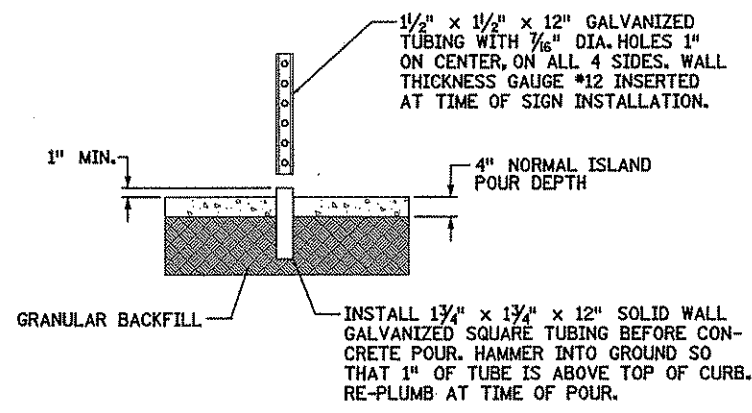
### CSAH 14 MEDIAN SIGNING DETAILS



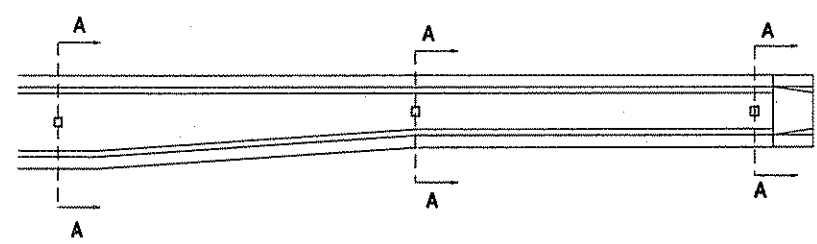
### CSAH 8 MEDIAN SIGNING DETAILS



CHANNEL POST MOUNTED THROUGH CONCRETE MEDIAN  
NO SCALE



SECTION A-A



DATE: 8/5/2005 TIME: 2:01:11 PM  
FILENAME: K:\r-z\wastch\24390\hwy\brdg\hwy\p1r-sht\c200802.ssn

DRAWN BY: SFH  
CHECKED BY: BDP

CERTIFIED BY *Robert O. Pauler* LIC. NO. 26880 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

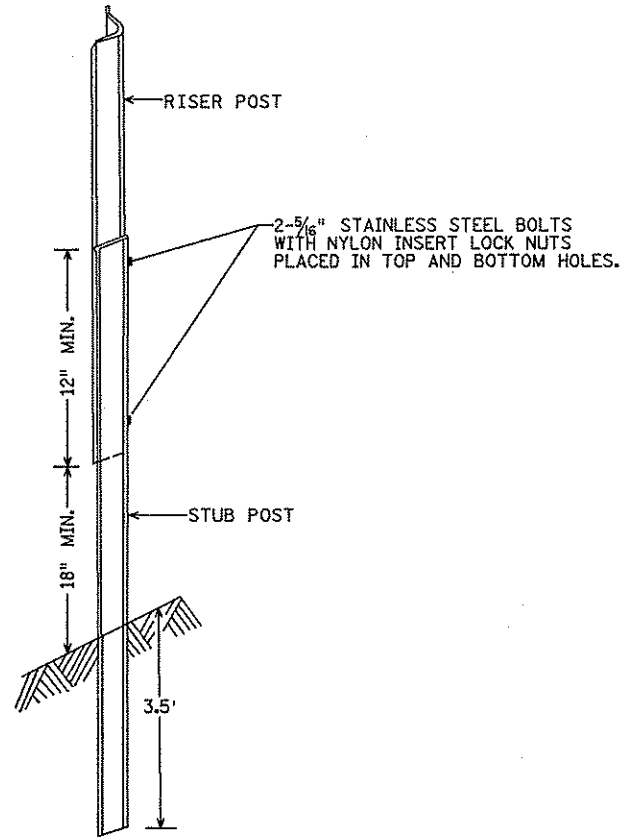
**TKDA**  
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SIGNING DETAILS  
MEDIAN SIGNING

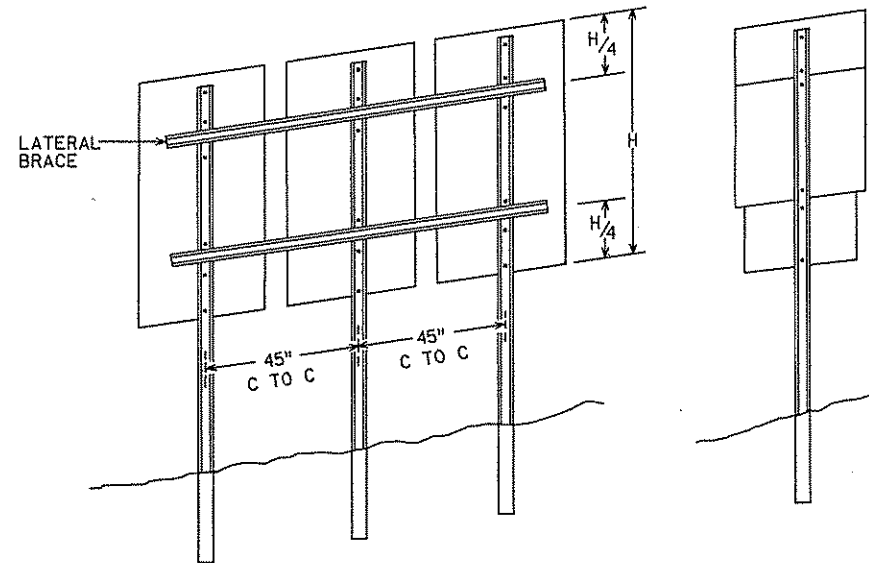
S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 214 of 296 Sheets



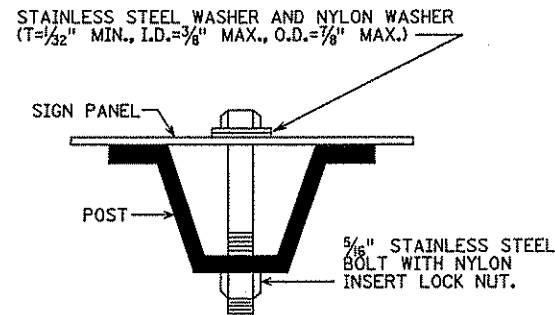
TYPE "C" & "D" POST



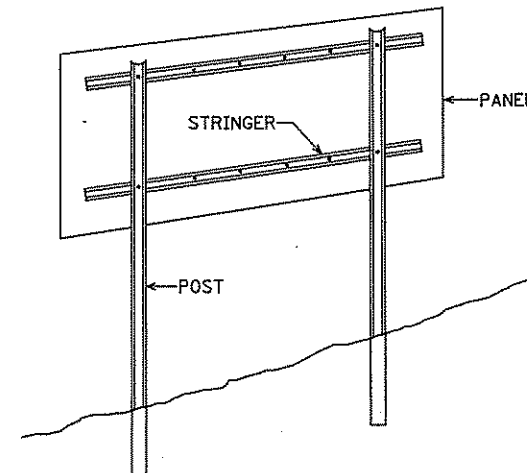
"U POST" SPLICE



TYPICAL TYPE "C" INSTALLATIONS



"U POST" MOUNTING  
TYPE "C" SIGNS



TYPICAL TYPE "D" INSTALLATION

NOTES:

1. USE 3" STUB POSTS, RISER POSTS, STRINGERS, KNEE BRACES, LATERAL BRACES AND KNEE BRACE STUB POSTS. ALL SHALL CONFORM TO MN/DOT 3401.
2. FOR TYPE "D" SIGN POSTS LENGTHS AND SPACINGS, SEE SIGN DATA SHEET.
3. TYPE "D" SIGN PANELS SHALL BE BOLTED TO STRINGERS AT 24" MAXIMUM INTERVALS IN ACCORDANCE WITH TYPE "D" STRINGER AND PANEL-JOINT DETAIL (SEE STANDARD SIGNS MANUAL).
4. MOUNTING (PUNCHING CODE) FOR TYPE "C" SIGN PANELS SHALL BE AS INDICATED IN THE STANDARD SIGNS MANUAL UNLESS OTHERWISE SPECIFIED.
5. ALL RISER (VERTICAL) "U POSTS" SHALL BE SPLICED. DRIVEN STUB POSTS SHALL BE AT LEAST 7' LONG.
6. USE STAINLESS STEEL 5/16" BOLTS, WASHERS, AND NYLON INSERT LOCK NUTS AS SHOWN FOR ALL GROUND MOUNTED AND OVERHEAD MOUNTED SIGNS.
7. STAINLESS STEEL WASHER WITH SAME DIMENSIONS SHALL BE PROVIDED BETWEEN ALL NYLON WASHERS AND BOLT HEADS.
8. BRACING STUBS SHALL BE NO MORE THAN 4" ABOVE GROUND AND EMBEDDED AT LEAST 3 1/2'.
9. A-FRAME BRACKET SHALL BE STEEL CONFORMING TO MN/DOT 3306 AND GALVANIZED IN ACCORDANCE WITH MN/DOT 3394.
10. COLLARS SHALL BE USED TO SHIM OVERLAYS AND DEMOUNTABLE LEGEND AWAY FROM PANEL WHERE INTERFERENCE WITH BOLT HEADS IS ENCOUNTERED. MN/DOT 3352.2A5.
11. 2 AND 3 POST TYPE "C" SIGNS SHALL BE REINFORCED WITH AT LEAST ONE LATERAL BRACE. INSTALLATIONS WHERE THE TOTAL PANEL HEIGHT IS 60" OR MORE SHALL HAVE TWO LATERAL BRACES LOCATED APPROXIMATELY AT THE QUARTER POINTS.
12. WHERE 2 OR MORE SINGLE POST SIGNS (TYPE "C") ARE MOUNTED SIDE BY SIDE, THEY SHALL BE REINFORCED Laterally BY AT LEAST 2 POST SECTIONS, BOLTED AT EACH POST AND LOCATED APPROXIMATELY AT THE QUARTER POINTS AS SHOWN IN SKETCH.

TYPE C & D SIGN  
STRUCTURAL DETAILS

Sheet 1 of 3

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CHECKED BY: BDP

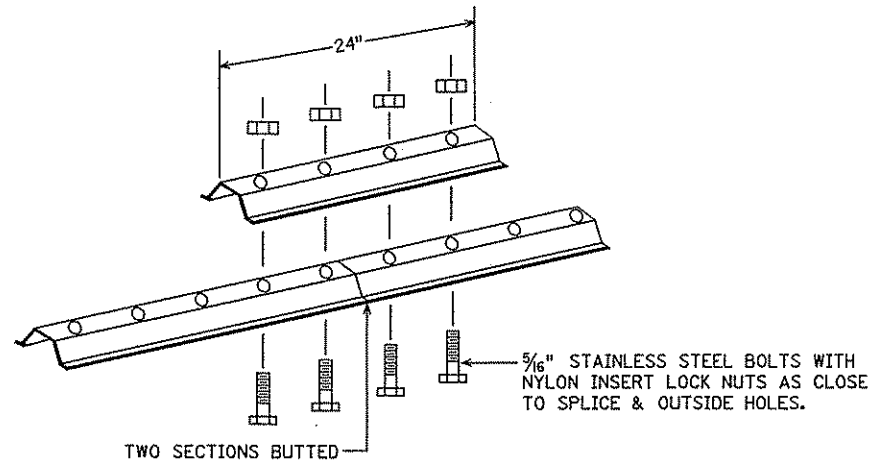
CERTIFIED BY *Grant D. Parker* LIC. NO. 20880 DATE 8/15/05  
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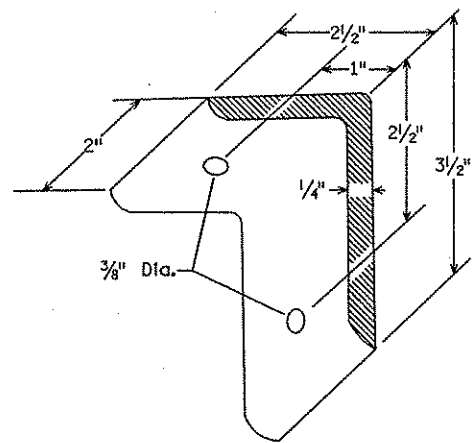
TYPE C & D SIGN  
STRUCTURAL DETAILS

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 215 of 296 Sheets

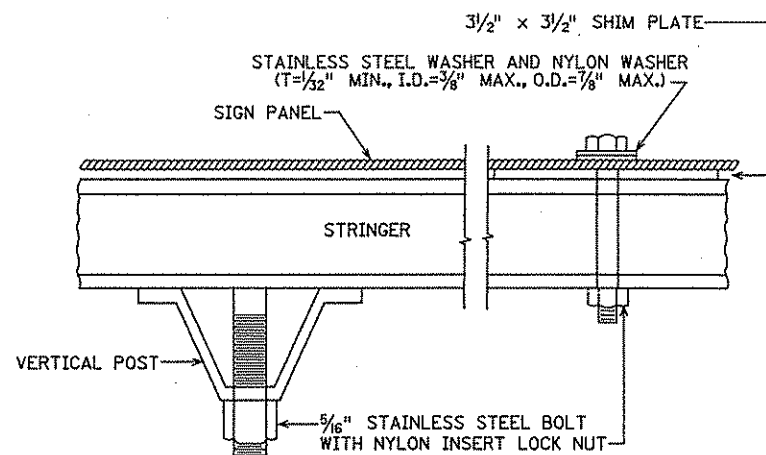
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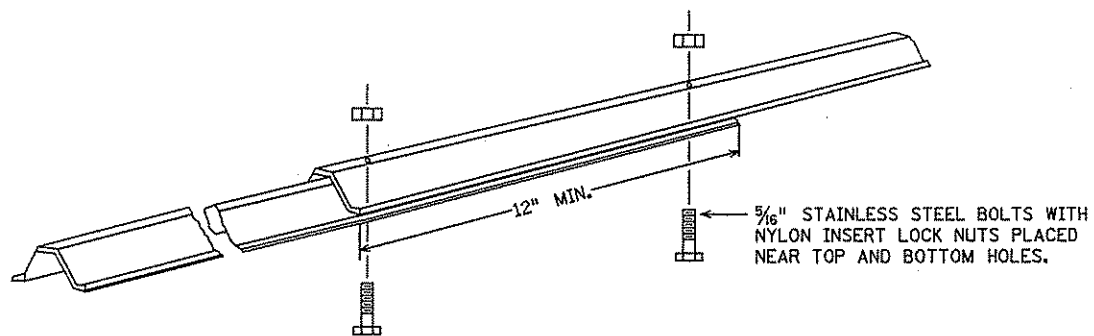
**LATERAL BRACE OR STRINGER  
SPLICE DETAIL (EXPLODED VIEW)**



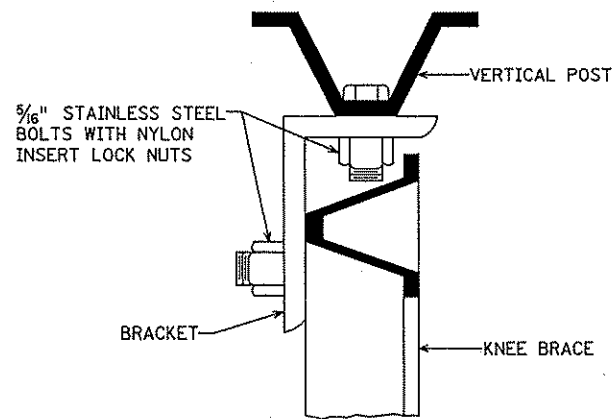
**A-FRAME BRACKET**  
(STEEL MN/DOT 3306 GALVANIZED PER MN/DOT 3394)



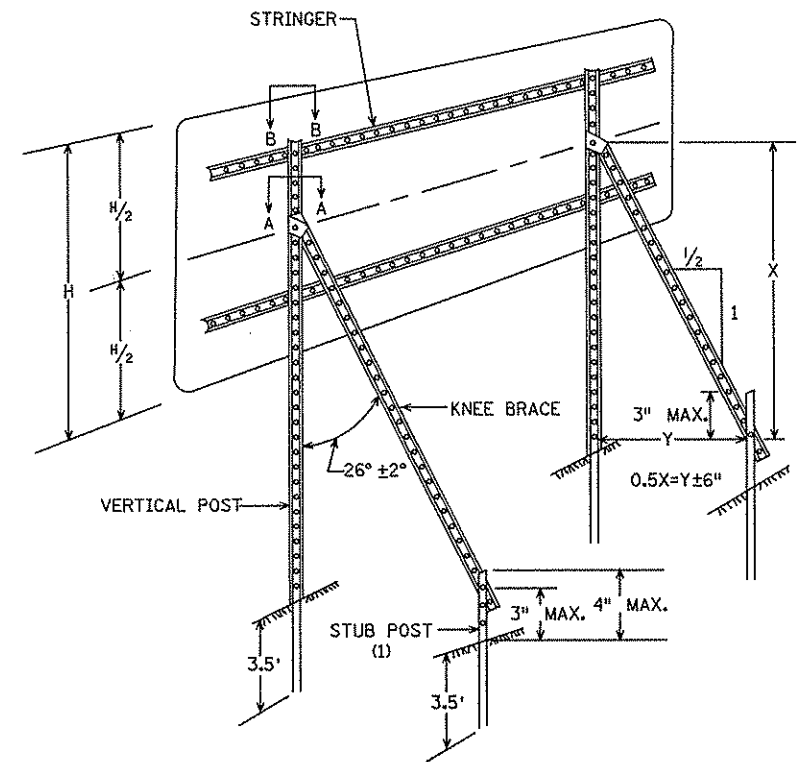
**SECTION B-B**



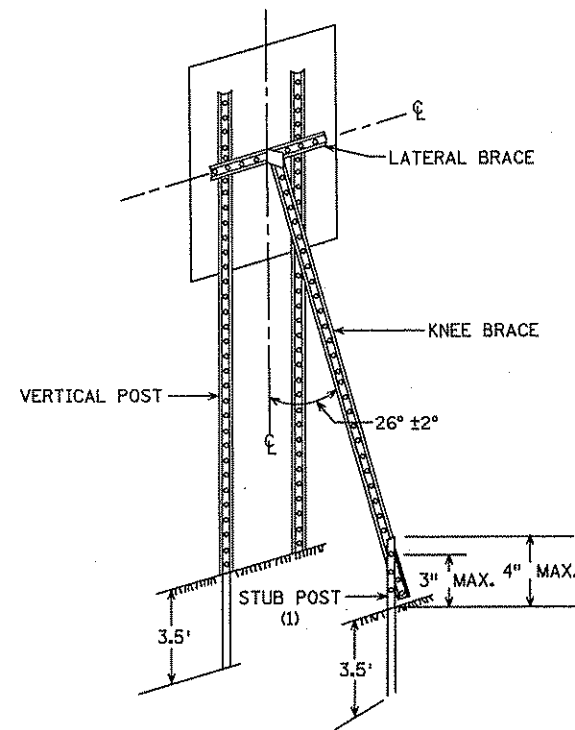
**KNEE BRACE SPLICE**



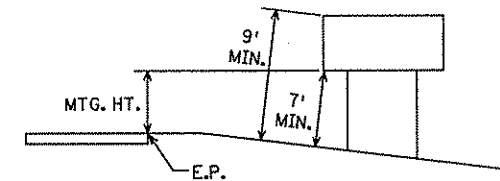
**SECTION A-A**



**TYPICAL "A-FRAME" INSTALLATION  
TYPE "D" SIGNS**



**TYPICAL "A-FRAME" INSTALLATION  
TYPE "C" SIGNS**



**TYPICAL MOUNTING**

(1) OFFSET STUB POST 1' TOWARD ROADWAY  
RELATIVE TO VERTICAL POST.

**TYPE C & D SIGN  
STRUCTURAL DETAILS**

Sheet 2 of 3

DRAWN BY: SFH

CHECKED BY: BDP

CERTIFIED BY *Grant J. Pauler*  
LICENSED PROFESSIONAL ENGINEER

LIC. NO. 20880 DATE 8/15/05

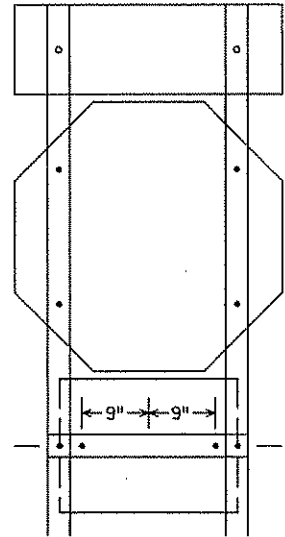
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TYPE C & D SIGN  
STRUCTURAL DETAILS

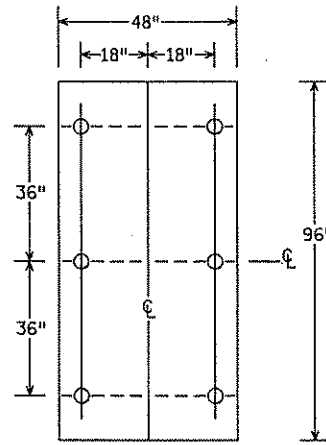
S.P. 02-614-23 S.P. 82-608-07

Sheet No. 216 of 296 Sheets

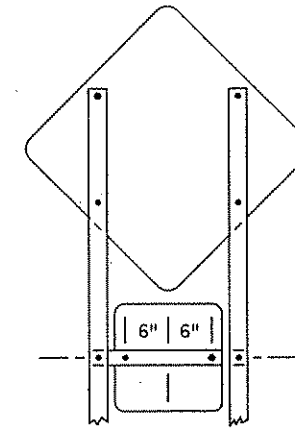
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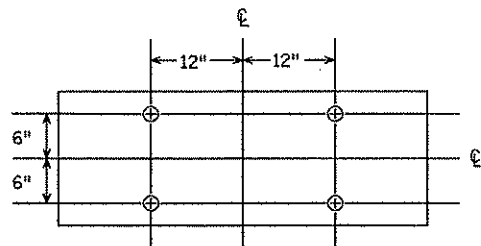
R6-1, R1-1 & (R6-3 OR R6-3a)  
MOUNTING



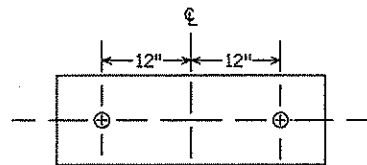
PUNCHING FOR R2-4b  
SPEED LIMIT



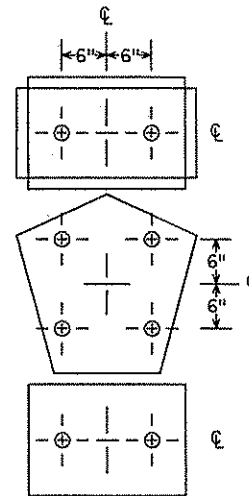
(W1-1, W1-2, W1-3, W1-4 OR W1-5) & W13-1  
MOUNTING



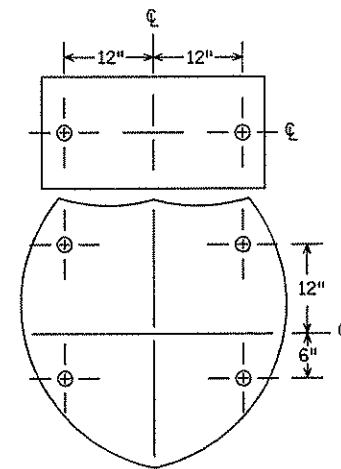
PUNCHING FOR R6-1(48" x 18")



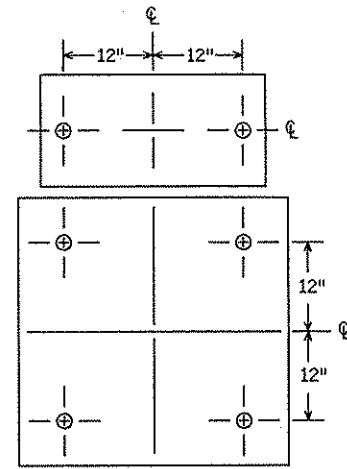
PUNCHING FOR R6-1(36" x 12")



M2-1A [21" x 15"] OR  
 (M3-1A, M3-2A, M3-3A OR M3-4A) [24" x 12"] AND  
 M1-6 [24" x 24"] AND  
 (M5-1A, M5-2A, M6-1A, M6-2A, M6-3A M6-4A, M6-5A OR M6-6A) [21" x 15"]  
 PUNCHING



(M3-1A, M3-2A, M3-3A OR M3-4A) [30" x 15"] AND  
 M1-1 [45" x 36" OR 36" x 36"]  
 PUNCHING



(M3-1, M3-1A, M3-2, M3-2A, M3-3, M3-3A M3-4 OR  
 M3-4A) [30" x 15"] AND (M1-4 OR M1-5A) [36" x 36"]  
 PUNCHING

**TYPE C & D SIGN  
 STRUCTURAL DETAILS**

Sheet 3 of 3

DRAWN BY: SFH

CHECKED BY: BDP

CERTIFIED BY *Grant J. Paul* LIC. NO. 20820 DATE 8/15/05  
 LICENSED PROFESSIONAL ENGINEER

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TYPE C & D SIGN  
 STRUCTURAL DETAILS

S.P. 02-614-23 S.P. 82-608-07

Sheet No. 217 of 296 Sheets

**GENERAL REQUIREMENTS**

THE ENGINEER'S INVOLVEMENT IN THE APPLICATION OF THE MATERIAL SHALL BE LIMITED TO FIELD SPOTTING, LOCATION AND INSPECTION. THE ENGINEER WILL PLACE NECESSARY "SPOTTING" AT APPROPRIATE POINTS TO PROVIDE HORIZONTAL CONTROL FOR STRIPING AND TO DETERMINE NECESSARY STARTING AND CUTOFF POINTS. BROKEN LINE INTERVALS WILL NOT BE MARKED. LONGITUDINAL JOINTS, PAVEMENT EDGES, AND EXISTING MARKINGS SHALL SERVE AS HORIZONTAL CONTROL WHEN SO DIRECTED.

EDGE LINES AND LANE LINES ARE TO BE BROKEN ONLY AT INTERSECTIONS WITH PUBLIC ROADS AND AT PRIVATE ENTRANCES IF THEY ARE CONTROLLED BY A YIELD SIGN, STOP SIGN, OR TRAFFIC SIGNAL. THE BREAK POINT IS TO BE AT THE START OF THE RADIUS FOR THE INTERSECTION OR AT MARKED STOP LINES OR CROSSWALKS.

A TOLERANCE OF 1/4" OVER OR UNDER THE SPECIFIED WIDTH WILL BE ALLOWED FOR STRIPING PROVIDED THE VARIATION IS GRADUAL AND DOES NOT DETRACT FROM THE GENERAL APPEARANCE. BROKEN LINE SEGMENTS MAY VARY UP TO 6" FROM THE SPECIFIED LENGTHS PROVIDED THE OVER AND UNDER VARIATIONS ARE REASONABLY COMPENSATORY. ALIGNMENT DEVIATIONS FROM THE CONTROL GUIDE SHALL NOT EXCEED 2". MATERIAL SHALL NOT BE APPLIED OVER LONGITUDINAL JOINT. ESTABLISHMENT OF APPLICATION TOLERANCES SHALL NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY TO COMPLY AS CLOSELY AS PRACTICABLE WITH THE PLANNED DIMENSIONS.

**IF OVERLAY APPLICATION FOR POLY PREFORM MARKINGS ARE SPECIFIED OR AUTHORIZED BY THE ENGINEER**

1. TEMPERATURE REQUIREMENTS
  - . MINIMUM AIR TEMPERATURE 60°F (16°C) AND RISING
  - . MINIMUM PAVEMENT TEMPERATURE 70°F (21°C) AND RISING
  - . MINIMUM OVERNIGHT TEMPERATURE 60°F (16°C) AND RISING
2. SURFACE PREPARATION
  - A. ASPHALT-LESS THAN 11 DAYS OLD
    1. ALL - SWEEP OR BLOW CLEAN
    2. 0 - 3 DAYS OLD - NO PRIMER
    3. 4 - 10 DAYS OLD - STAMARK™ SP44 ONLY
    4. 11+ DAYS - STAMARK™ E44 OR SP44 DEPENDING ON APPLICATION. SEE MANUFACTURERS SPECIFICATION
3. OLD MARKINGS
  - A. DO NOT APPLY OVER PAINT, EPOXY, OR THERMOPLASTIC UNLESS VERY WELL WORN AND WELL ADHERED TO THE ROAD. OLD MARKINGS MUST BE AT LEAST 75%-80% WORN AWAY
  - B. GRIND OR SANDBLAST OLD MARKINGS AND SWEEP OR BLOW SURFACE CLEAN
  - C. APPLY REQUIRED PRIMER
3. WORN STAMARK™ MARKINGS
  - A. OK TO APPLY NEW MATERIAL OVER WORN STAMARK™. REMOVE ALL LOOSE MATERIAL WITH SCRAPER OR KNIFE.
  - B. SWEEP OR BLOW SURFACE CLEAN.
  - C. APPLY REQUIRED PRIMER

**PAINT**

AT THE TIME OF APPLYING THE MARKING MATERIAL, THE APPLICATION AREA SHALL BE FREE OF CONTAMINATION. THE CONTRACTOR SHALL CLEAN THE ROADWAY SURFACE PRIOR TO THE LINE APPLICATION IN A MANNER AND TO EXTENT REQUIRED BY THE ENGINEER.

GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE PAINT LINE.

EXCEPT WHEN USED AS A TEMPORARY MARKING, PAVEMENT MARKINGS SHALL ONLY BE APPLIED IN SEASONABLE WEATHER WHEN AIR TEMPERATURE IS 50 DEGREES OR HIGHER AND SHALL NOT BE APPLIED WHEN THE WIND OR OTHER CONDITIONS CAUSE A FILM OF DUST TO BE DEPOSITED ON THE PAVEMENT SURFACE AFTER CLEANING AND BEFORE THE MARKING MATERIAL CAN BE APPLIED.

THE FILLING OF TANKS, POURING OF MATERIALS OR CLEANING OF EQUIPMENT SHALL NOT BE PERFORMED ON UNPROTECTED PAVEMENT SURFACES UNLESS ADEQUATE PROVISIONS ARE MADE TO PREVENT SPILLAGE OF MATERIAL.

**EPOXY**

THE ROAD SURFACE SHALL BE CLEANED AT THE DIRECTION OF THE ENGINEER JUST PRIOR TO APPLICATION. PAVEMENT CLEANING SHALL CONSIST OF AT LEAST BRUSHING WITH A ROTARY BROOM (NONMETALLIC), OR AS RECOMMENDED BY THE MATERIAL MANUFACTURER AND ACCEPTABLE TO THE ENGINEER. NEW PORTLAND CEMENT CONCRETE SURFACES SHALL BE SANDBLAST CLEANED TO REMOVE ANY SURFACE TREATMENTS AND/OR LAITANCE. ON LOW SPEED (SPEED LIMIT 35 MPH OR LESS) URBAN PORTLAND CEMENT CONCRETE ROADWAYS, SANDBLAST CLEANING SHALL BE USED FOR ALL EPOXY PAVEMENT MARKINGS.

THE EPOXY MARKING APPLICATION SHALL IMMEDIATELY FOLLOW THE PAVEMENT CLEANING. GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE EPOXY RESIN LINE TO PROVIDE AN IMMEDIATE NO-TRACK SYSTEM.

AN EPOXY RESIN LINE 4 INCHES WIDE AND 15 MIL THICKNESS (WET), REQUIRES AN APPLICATION RATE OF (1) GAL OF COMPONENTS FOR 320 FT OF LINE. GLASS BEADS SHALL BE APPLIED AT A POUND PER GALLON RATE SUFFICIENT TO ACHIEVE AN ACCEPTABLE NO-TRACK SYSTEM.

OPERATIONS SHALL BE CONDUCTED ONLY WHEN THE ROAD PAVEMENT SURFACE TEMPERATURES ARE 50°F OR GREATER.

PERMANENT PAVEMENT MARKINGS SHALL NOT BE PLACED OVER TEMPORARY MARKINGS.

**POLY PREFORM**

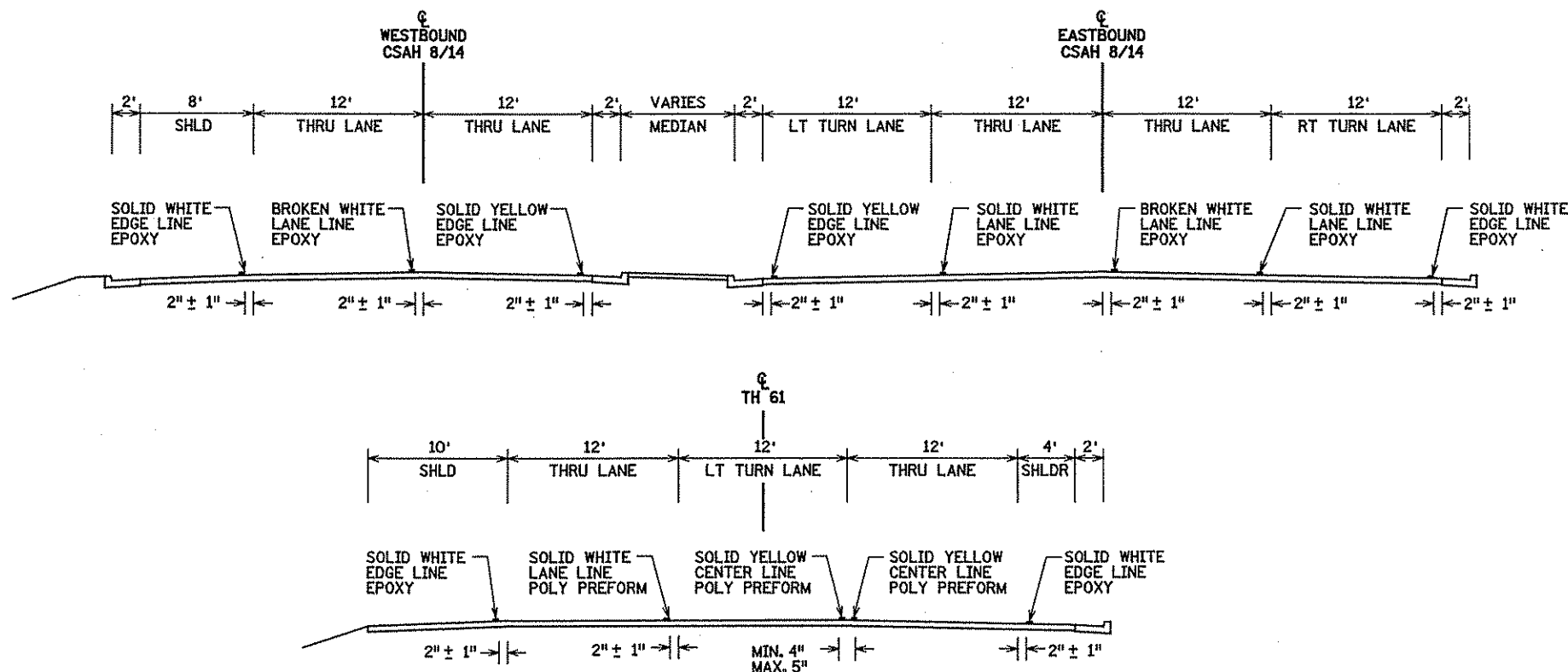
1. THE INSTALLERS OF THIS MATERIAL MUST CARRY A CARD CERTIFYING THAT THEY HAVE ATTENDED A TRAINING SESSION THAT ADDRESSES SURFACE PREPARATIONS AND ALL APPLICATION REQUIREMENTS AND TECHNIQUES NECESSARY FOR SUCCESSFUL APPLICATION.
2. ALL MARKINGS SHALL BE OF THE "INLAY" METHOD UNLESS THE "OVERLAY" PROCEDURE IS SPECIFIED.

**INLAY APPLICATION**

MAT TEMPERATURE SHALL BE CHECKED USING A THERMOMETER TO MAKE SURE THE INLAY IS BEING DONE IN THE PROPER TEMPERATURE RANGE. THE TEMPERATURE SHOULD MEASURE BETWEEN 150°F (ASPHALT FIRM ENOUGH TO WALK ON) AND 118°F. APPLICATION BELOW 118°F MAY NOT GET A PROPER INLAY. INLAYS ARE NOT RECOMMENDED AFTER SEPTEMBER 15 AS THE ASPHALT COOLS TOO FAST AT THIS TIME OF THE YEAR.

1. NO PRIMERS ARE USED FOR INLAY APPLICATION.
2. DO NOT INSTALL LANE LINES ON AN ASPHALT SEAM.
3. ROLLING OF ALL THE MARKINGS SHOULD BE LENGTHWISE IN THE DIRECTION THEY WERE LAID.
4. FOR CROSSWALKS AND STOP BARS, INITIAL TAMPING WITH THE TAMPING CART IS RECOMMENDED USING ONLY 45.4 kg OF MASS

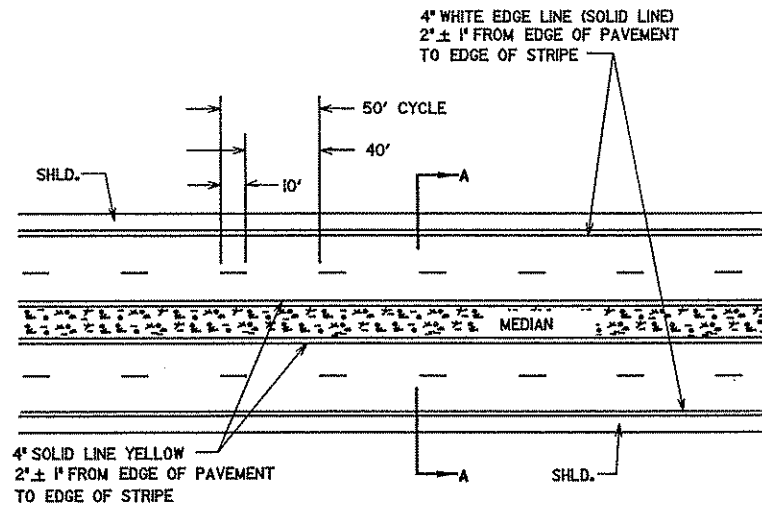
USE COMPACTION ROLLER TO EMBED (INLAY) MARKINGS INTO PAVEMENT SURFACE. USE MINIMUM SPEED AND WATER ON ROLLER. DO NOT USE VIBRATOR. IF MARKING BUCKLES OR DISTORTS SEVERELY IN FRONT OF ROLLER, MAT TEMPERATURE OR ROLLER SPEED MAY BE TOO HIGH.



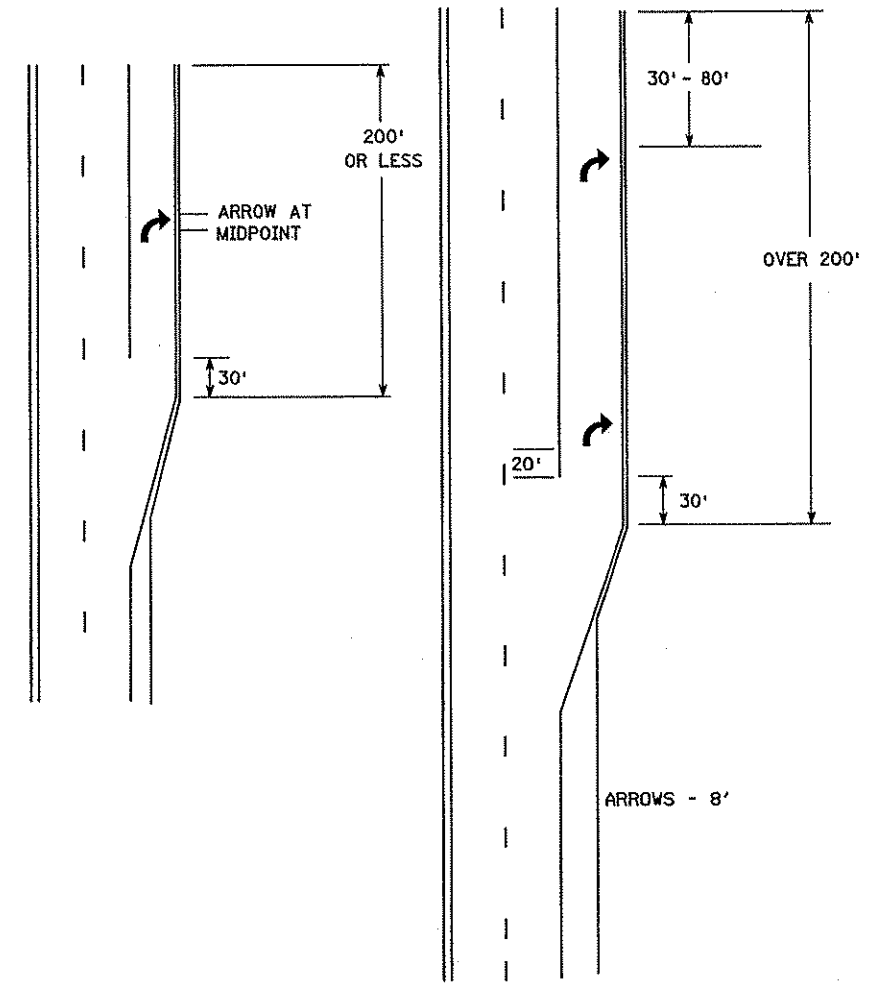
**TYPICAL STRIPING DETAILS**

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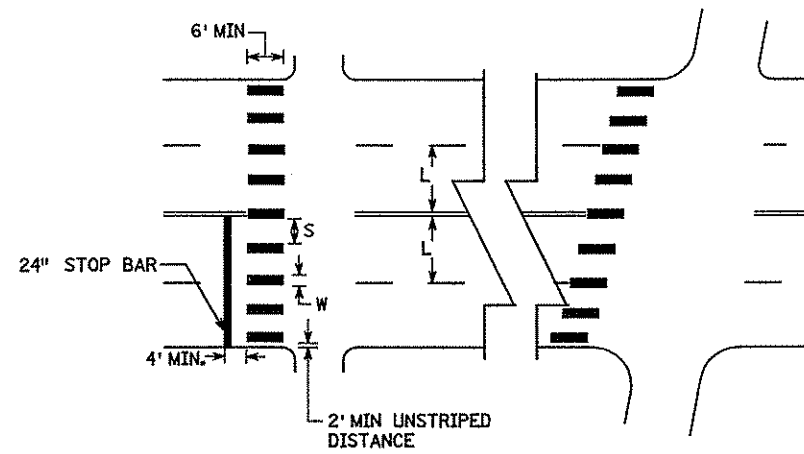
(L) WIDTH OF INSIDE LANE	(W) WIDTH OF PAINTED AREA	(S) WIDTH OF SPACE
9'	2.0'	2.5'
10'	2.5'	2.5'
11'	2.5'	3.0'
12'	3.0'	3.0'
13'	3.0'	3.5'



TYPICAL FOUR-LANE DIVIDED LANE MARKINGS



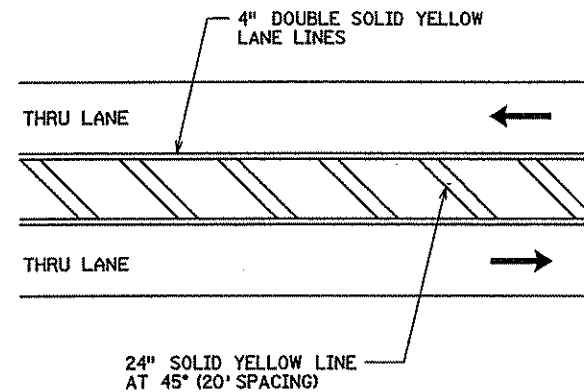
TYPICAL MESSAGE PLACEMENT FOR TURN LANES



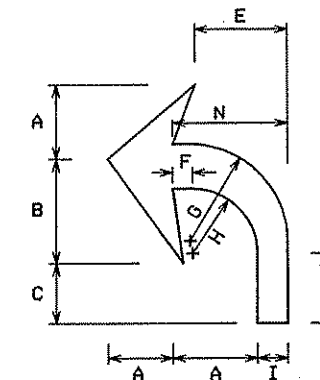
NOTES:

1. PAINTED AREAS TO BE CENTERED ON CENTERLINE AND LANE LINES.
2. A MINIMUM OF 2' CLEAR DISTANCE SHALL BE LEFT ADJACENT TO THE CURB. IF LAST PAINTED AREA FALLS INTO THIS DISTANCE IT MUST BE OMITTED.
3. FOR DIVIDED ROADWAYS, ADJUSTMENTS IN SPACING OF THE BLOCKS SHOULD BE MADE IN THE MEDIAN SO THAT THE BLOCKS ARE MAINTAINED IN THEIR PROPER LOCATION ACROSS THE TRAVELED PORTION OF THE ROADWAY.
4. AT SKEWED CROSSWALKS, THE BLOCKS ARE TO REMAIN PARALLEL TO THE LANE LINES AS SHOWN.

MARKINGS FOR PEDESTRIAN CROSSINGS  
(POLY-PREFORM)



STRIPED MEDIAN DETAIL



SIZE 6' X 8'

DIMENSION TABLE	
A	2'- 6"
B	3'- 6"
C	2'- 0"
D	2'- 6"
E	3'- 1"
F	0'- 8"
G	3'- 3"
H	2'- 2"
I	1'- 0"
J	1'- 0"
K	1'- 3"
L	5'- 0"
M	7'- 8"
N	3'- 10"
P	4'- 6"

PAVEMENT MARKING DETAILS  
(POLY-PREFORM)

DATE: 8/5/2005 TIME: 2:01:23 PM FILENAME: K:\P2\WASHCY\24390\WY-BDQ\WY-STR-SHLD\200802.SSD

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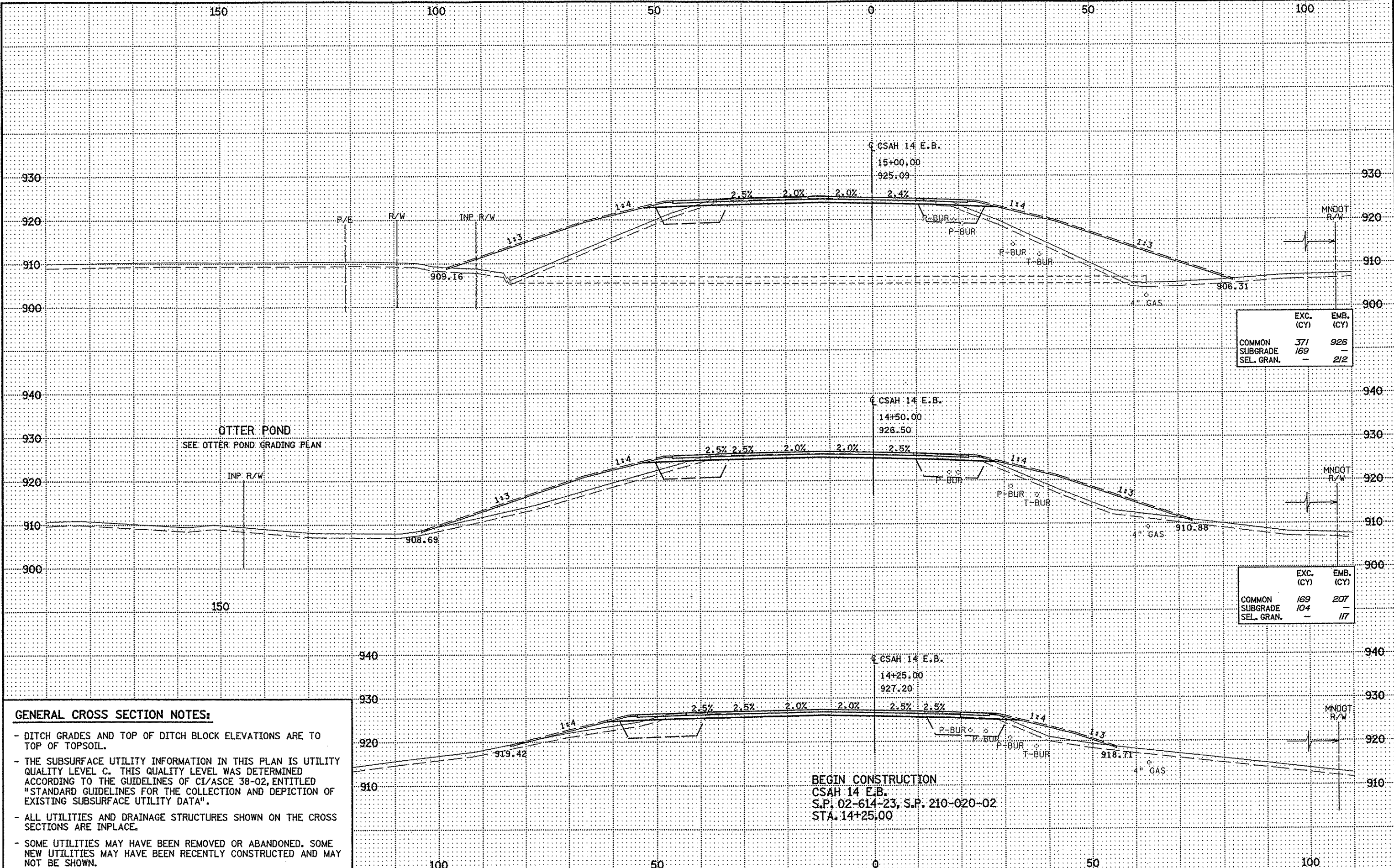
CERTIFIED BY *Grant O. Paulin* LIC. NO. 210820 DATE 8/15/05  
LICENSED PROFESSIONAL ENGINEER

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SIGNING AND STRIPING PLAN  
STRIPING DETAILS

S.P. 02-614-23 S.P. 82-608-07  
Sheet No. 219 of 296 Sheets

DATE: 8/4/2005 TIME: 12:21:19 PM  
 FILENAME: K:\r-z\was\c\124390\hwy-82\p1r-s\c200802.dwg



	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	371	926
SEL. GRAN.	-	212

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	169	207
SEL. GRAN.	-	117

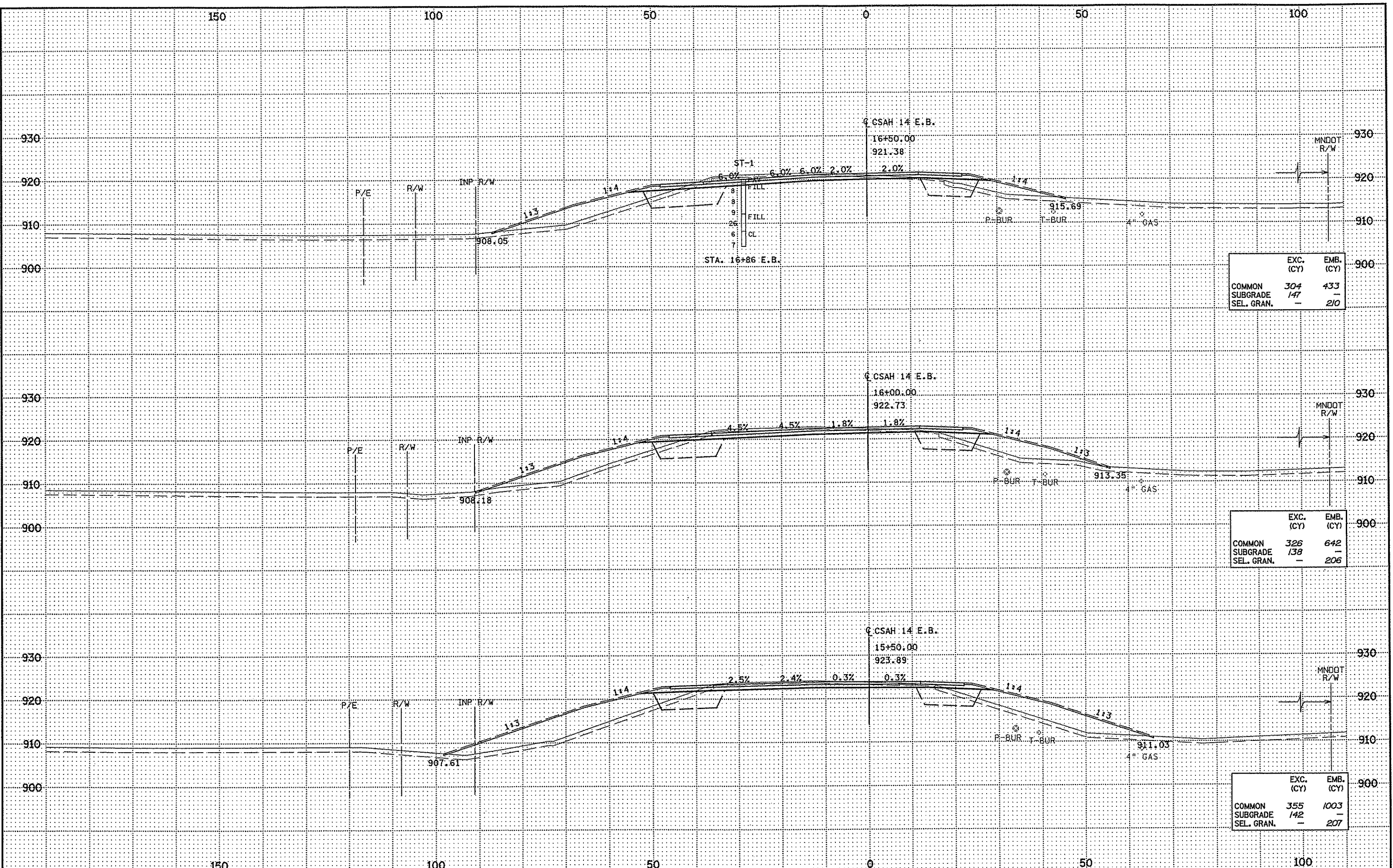
**GENERAL CROSS SECTION NOTES:**

- DITCH GRADES AND TOP OF DITCH BLOCK ELEVATIONS ARE TO TOP OF TOPSOIL.
- THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL C. 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".
- ALL UTILITIES AND DRAINAGE STRUCTURES SHOWN ON THE CROSS SECTIONS ARE INPLACE.
- SOME UTILITIES MAY HAVE BEEN REMOVED OR ABANDONED. SOME NEW UTILITIES MAY HAVE BEEN RECENTLY CONSTRUCTED AND MAY NOT BE SHOWN.
- FOR ADDITIONAL SLOPE OR DITCH DETAILS, SEE TYPICAL SECTIONS.
- SPECIAL DITCH GRADES ARE IDENTIFIED ON THE CROSS SECTIONS AND PROFILES.

**BEGIN CONSTRUCTION**  
 CSAH 14 E.B.  
 S.P. 02-614-23, S.P. 210-020-02  
 STA. 14+25:00



DATE: 8/4/2005 TIME: 12:24:45 PM  
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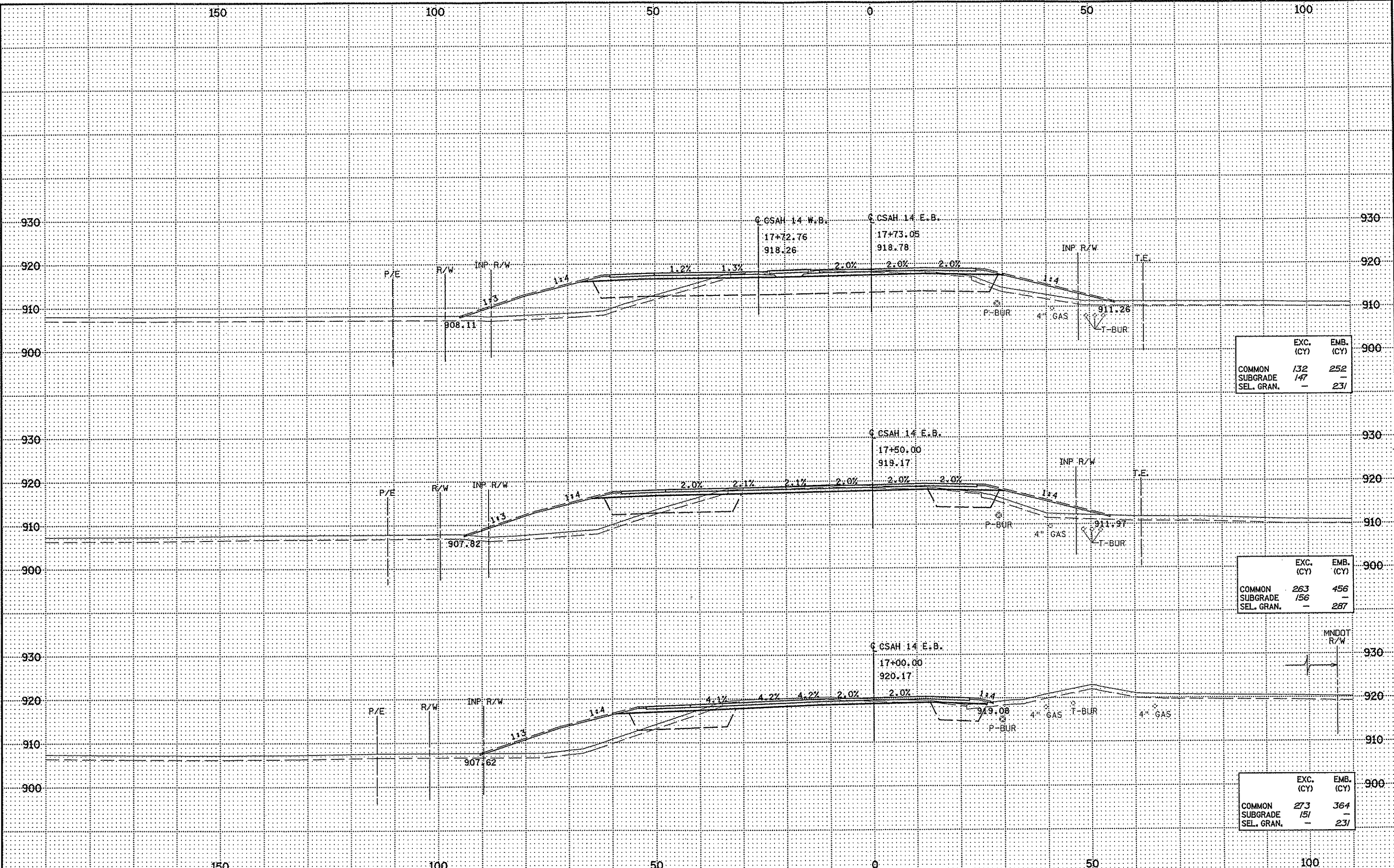


	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	304	433
SEL. GRAN.	147	210

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	326	642
SEL. GRAN.	138	206

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	355	1003
SEL. GRAN.	142	207

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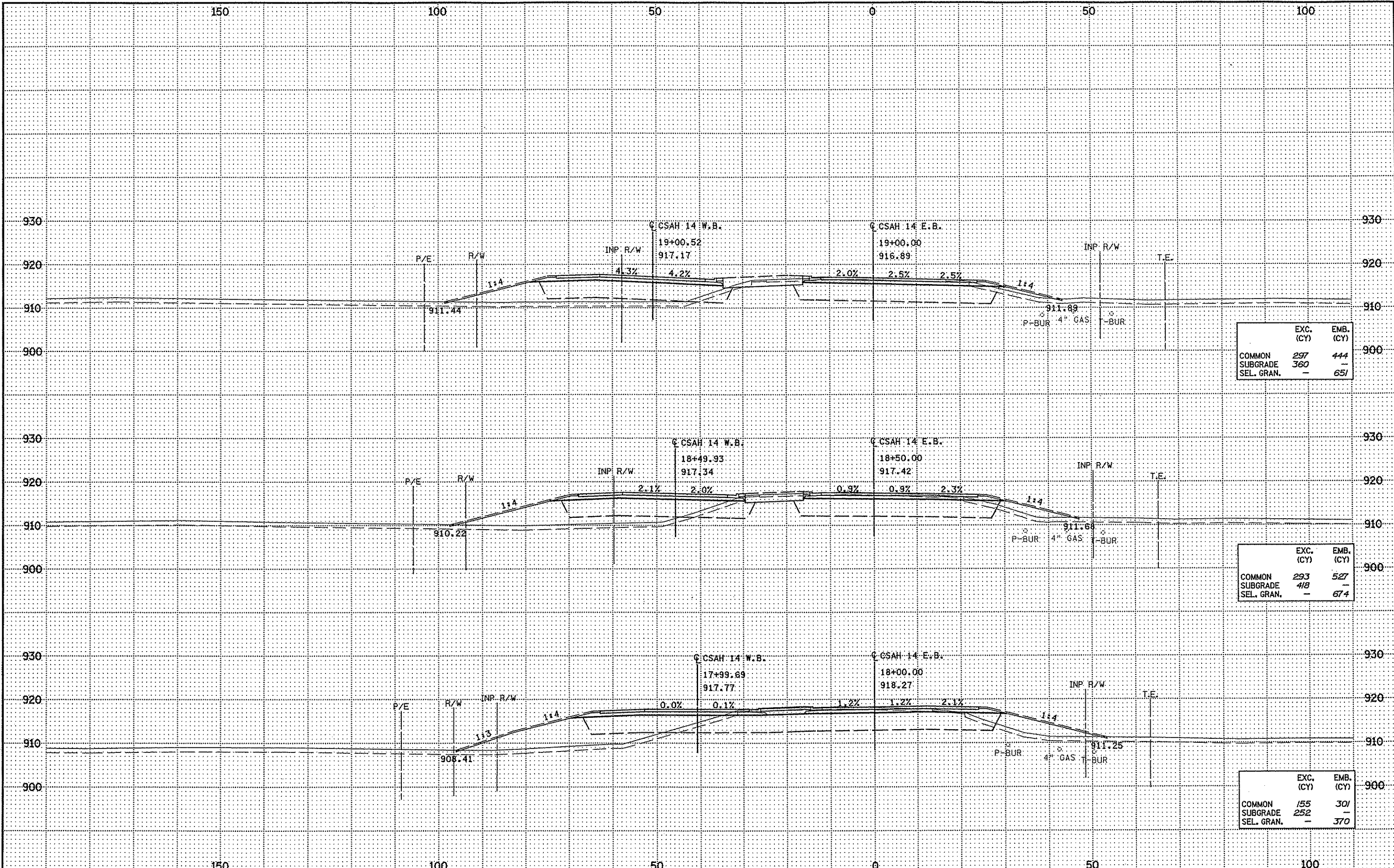


	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	132	252
SEL. GRAN.	147	-
	-	231

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	263	456
SEL. GRAN.	156	-
	-	287

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	273	364
SEL. GRAN.	151	-
	-	231

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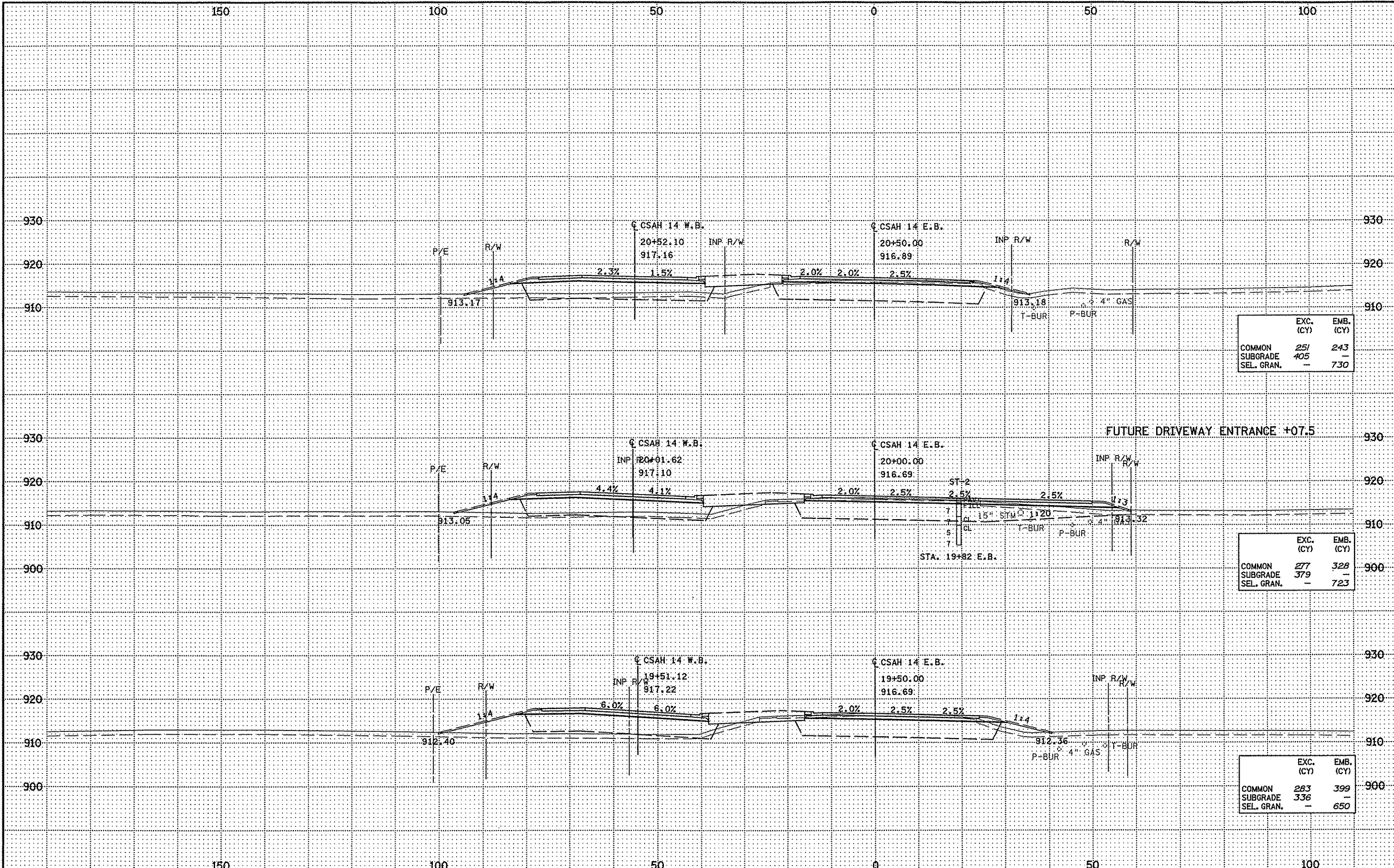
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CROSS SECTIONS  
 STA. 18+00 TO STA. 19+00

S.P. 02-614-23 S.P. 82-608-07  
 Sheet No. 223 of 296 Sheets



DATE: 8/4/2005 TIME: 12:13:27 PM  
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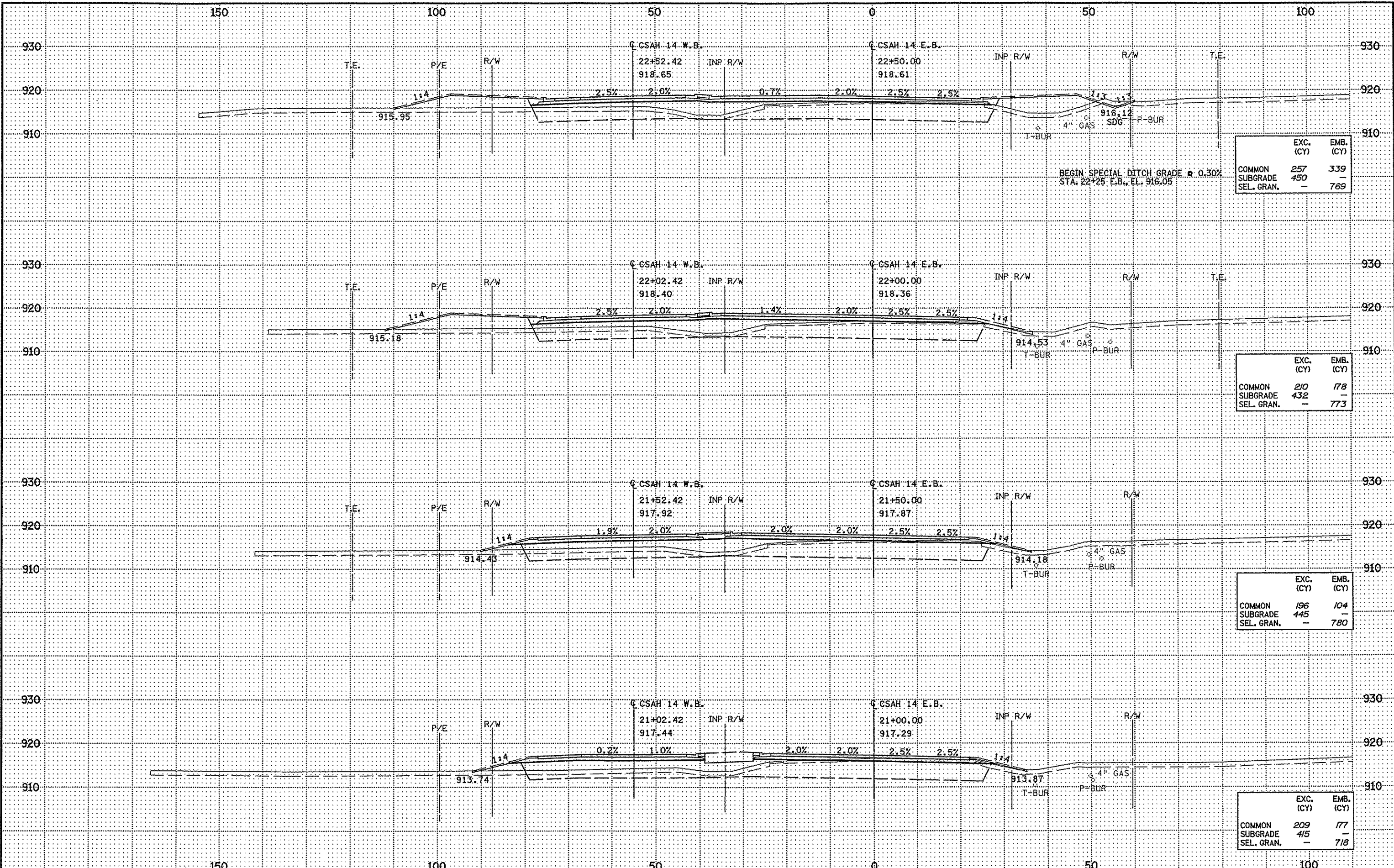


	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	251	243
SEL. GRAN.	405	730

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	277	328
SEL. GRAN.	379	723

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	283	399
SEL. GRAN.	336	650

DATE: 8/4/2005 TIME: 12:13:39 PM  
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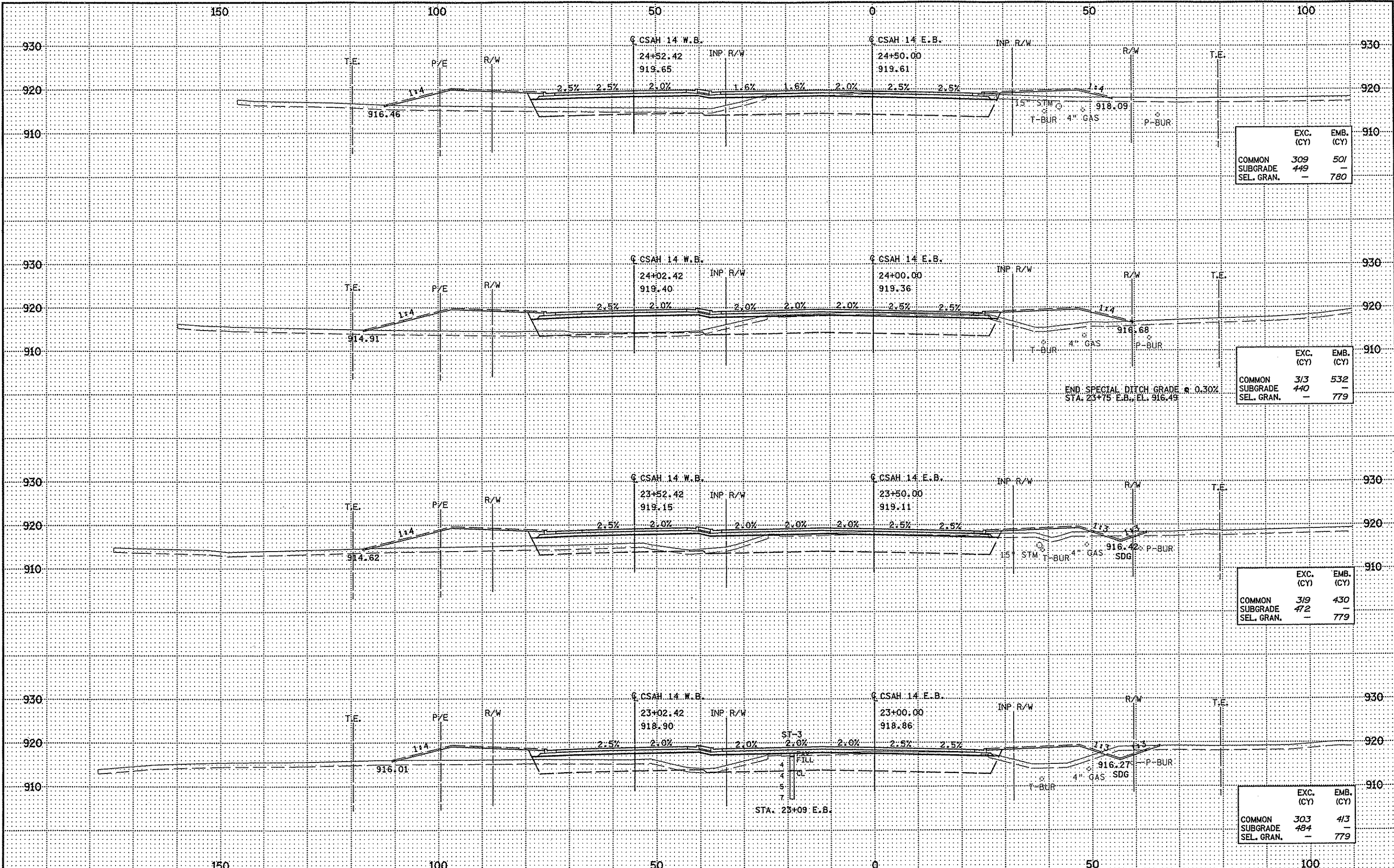
	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	257	339
SEL. GRAN.	450	-
	-	769

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	210	178
SEL. GRAN.	432	-
	-	773

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	196	104
SEL. GRAN.	445	-
	-	780

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	209	177
SEL. GRAN.	415	-
	-	718

DATE: 8/4/2005 TIME: 12:13:52 PM  
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	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	309	501
SEL. GRAN.	-	780

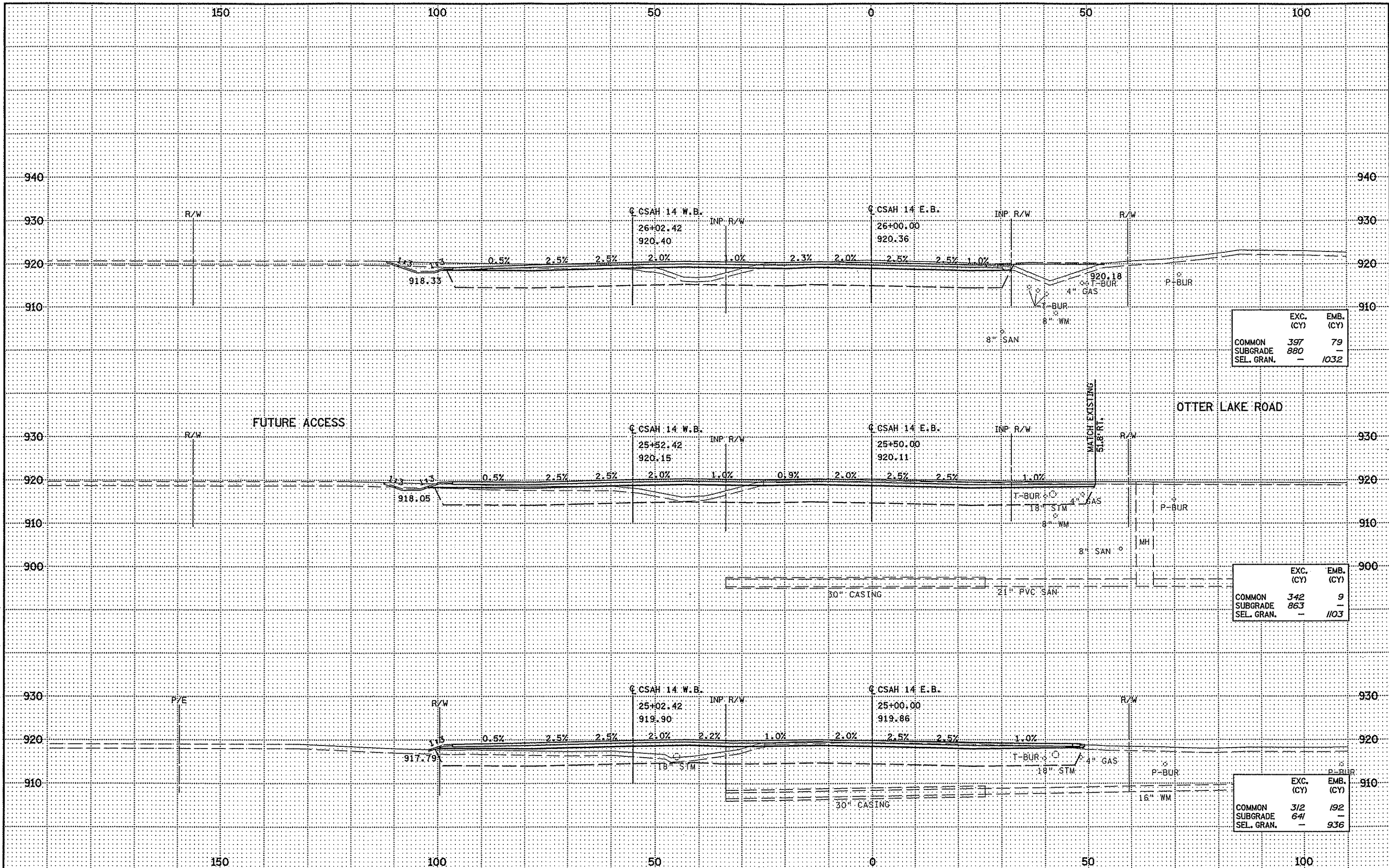
	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	313	532
SEL. GRAN.	-	779

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	319	430
SEL. GRAN.	-	779

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	303	413
SEL. GRAN.	-	779



DATE: 8/11/2005 TIME: 9:29:08 AM  
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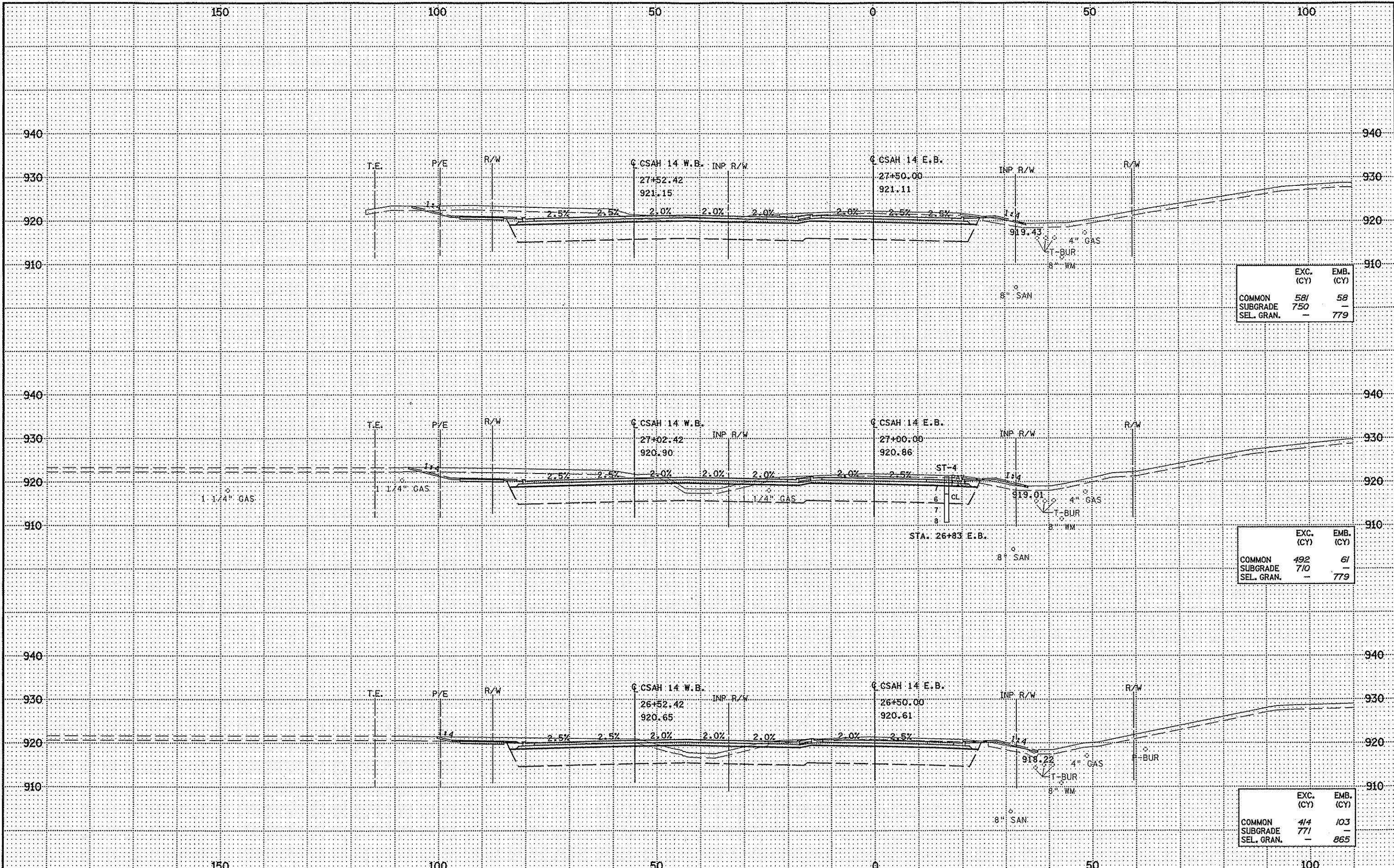


	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	397	79
SEL. GRAN.	—	1032

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	342	9
SEL. GRAN.	—	1103

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	312	192
SEL. GRAN.	—	936

DATE: 8/4/2005 TIME: 12:14:17 PM  
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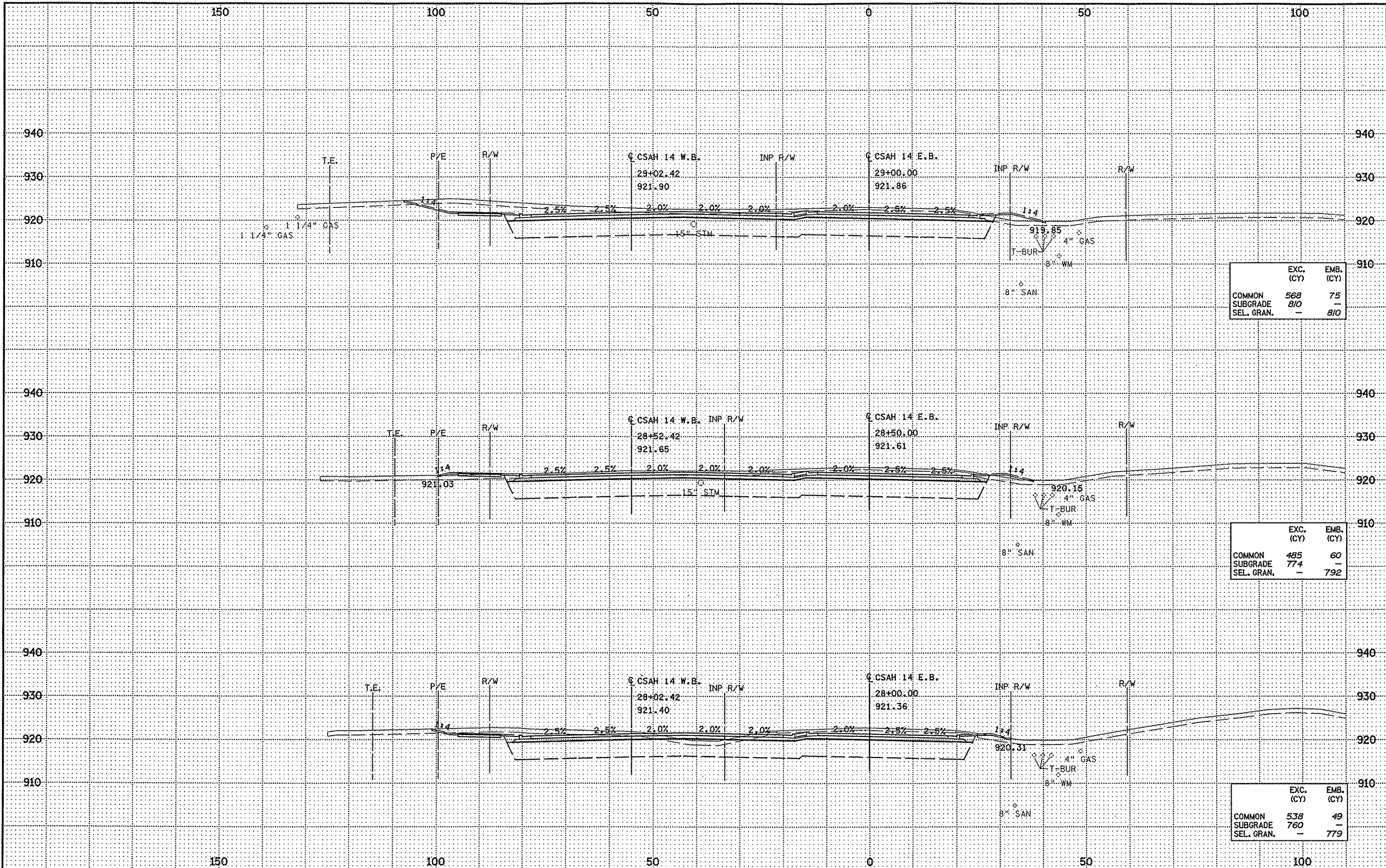


	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	581	58
SEL. GRAN.	-	779

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	492	61
SEL. GRAN.	-	779

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	414	103
SEL. GRAN.	-	865

DATE: 8/4/2005 TIME: 12:44:29 PM  
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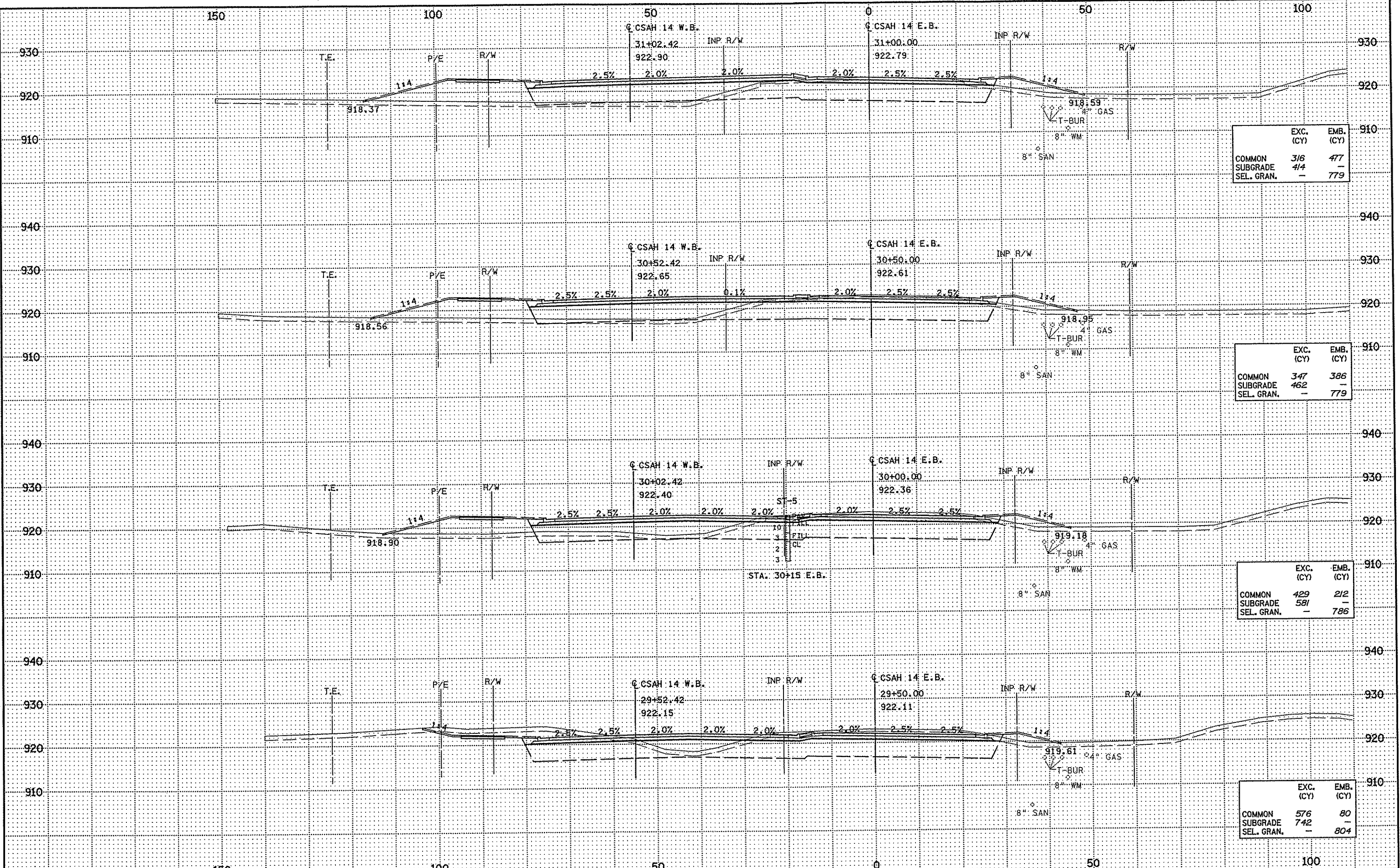
	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	568	75
SEL. GRAN.	810	810

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	485	60
SEL. GRAN.	774	792

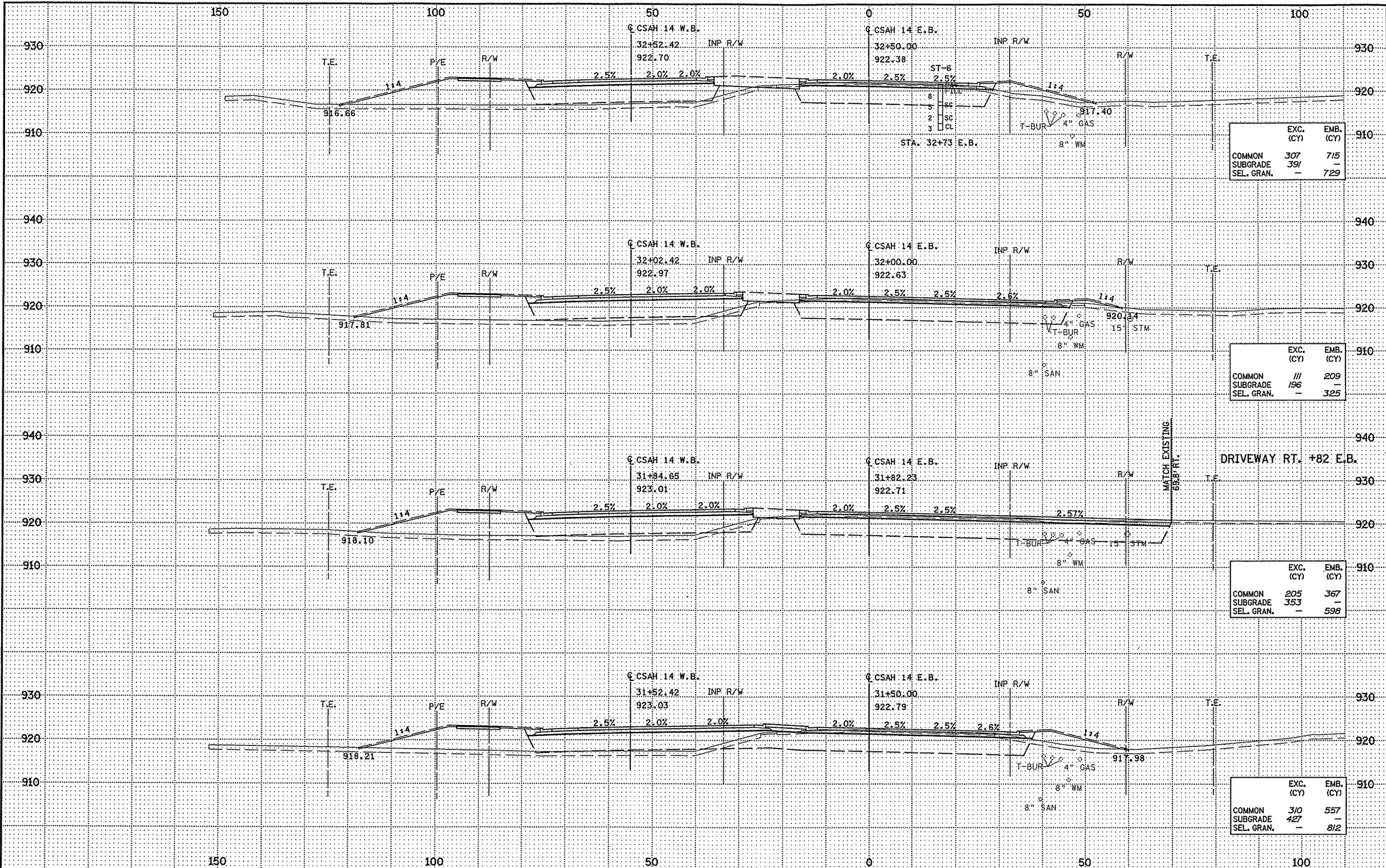
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COMMON SUBGRADE	538	49
SEL. GRAN.	760	779



DATE: 8/4/2005 TIME: 12:44:43 PM  
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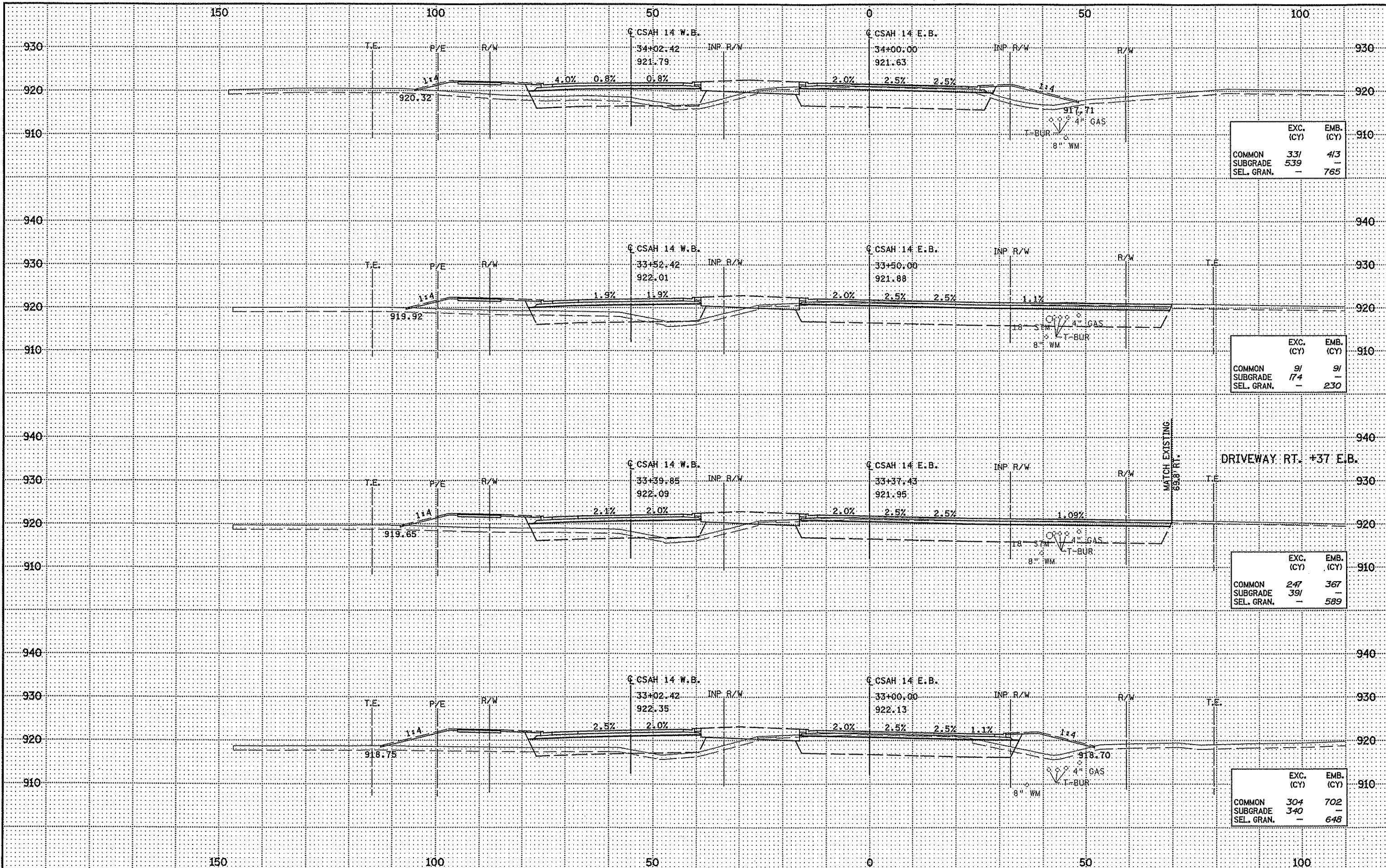


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DATE: 8/4/2005 TIME: 12:16:05 PM  
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	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	331	413
SEL. GRAN.	-	765

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	91	91
SEL. GRAN.	-	230

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	247	367
SEL. GRAN.	-	589

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	304	702
SEL. GRAN.	-	648

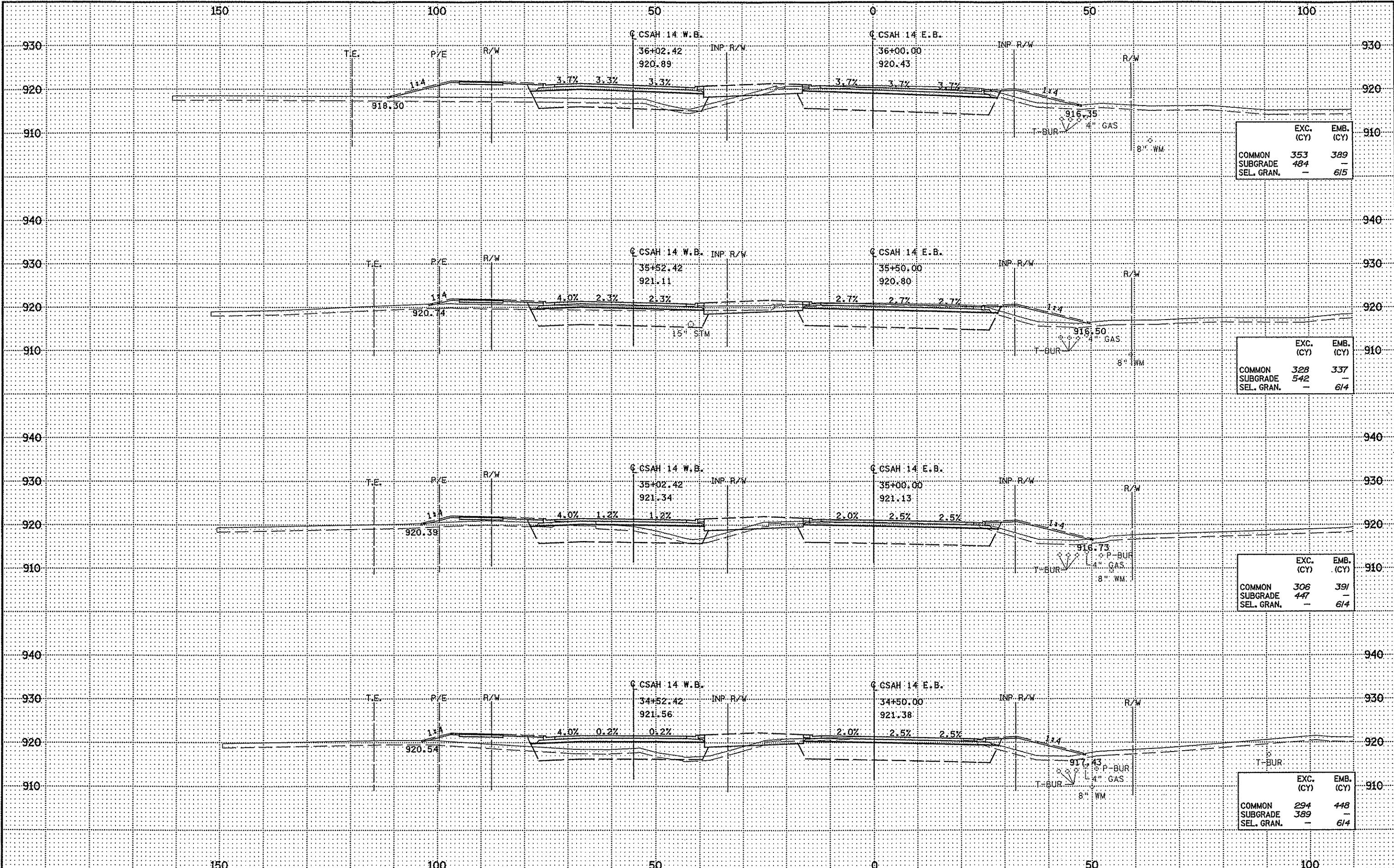
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CROSS SECTIONS  
 STA. 33+00 TO STA. 34+00

S.P. 02-614-23 S.P. 82-608-07

Sheet No. 232 of 296 Sheets

DATE: 8/4/2005 TIME: 12:16:17 PM  
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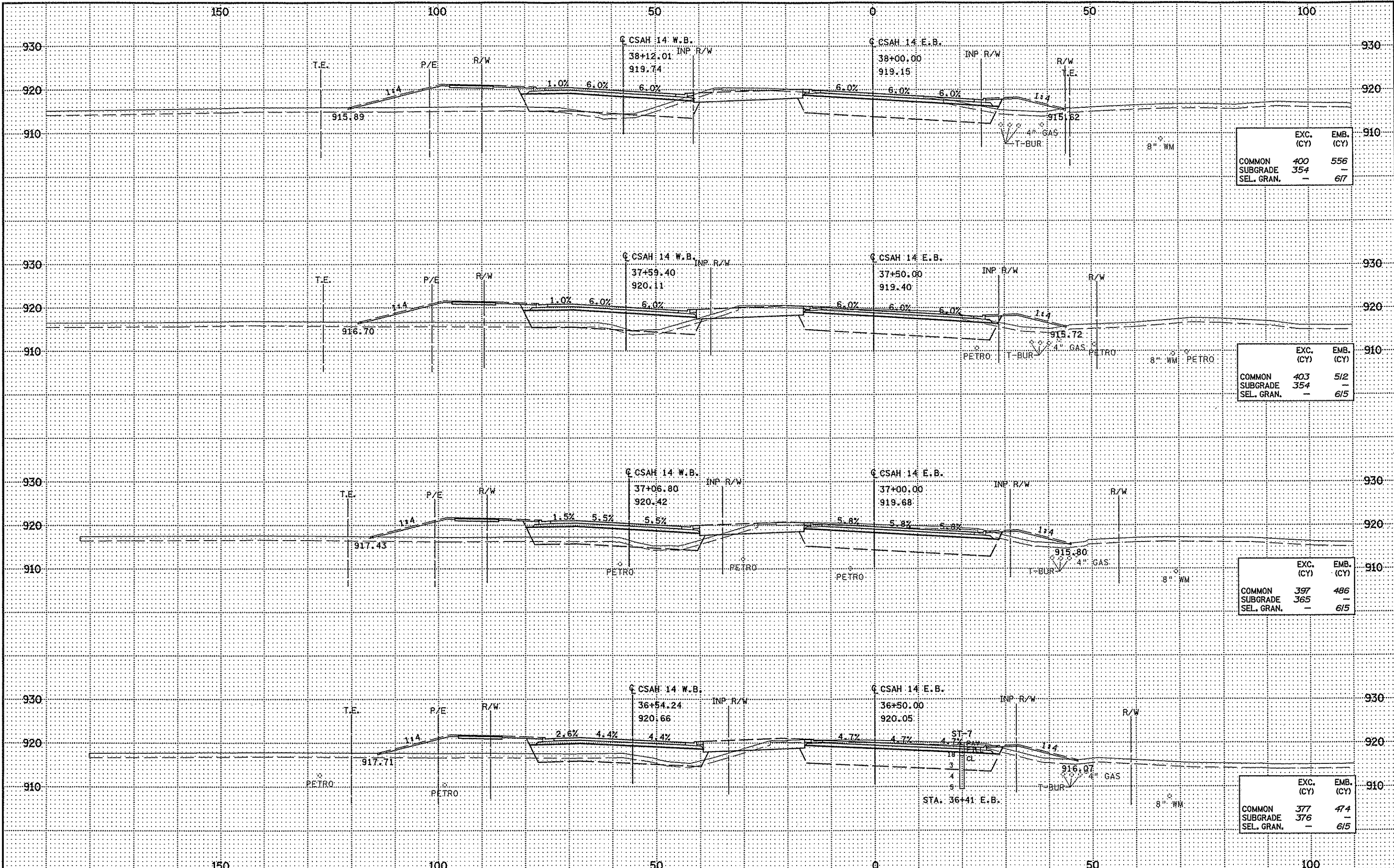
	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	353	389
SEL. GRAN.	-	6/5

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	328	337
SEL. GRAN.	-	6/4

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	306	391
SEL. GRAN.	-	6/4

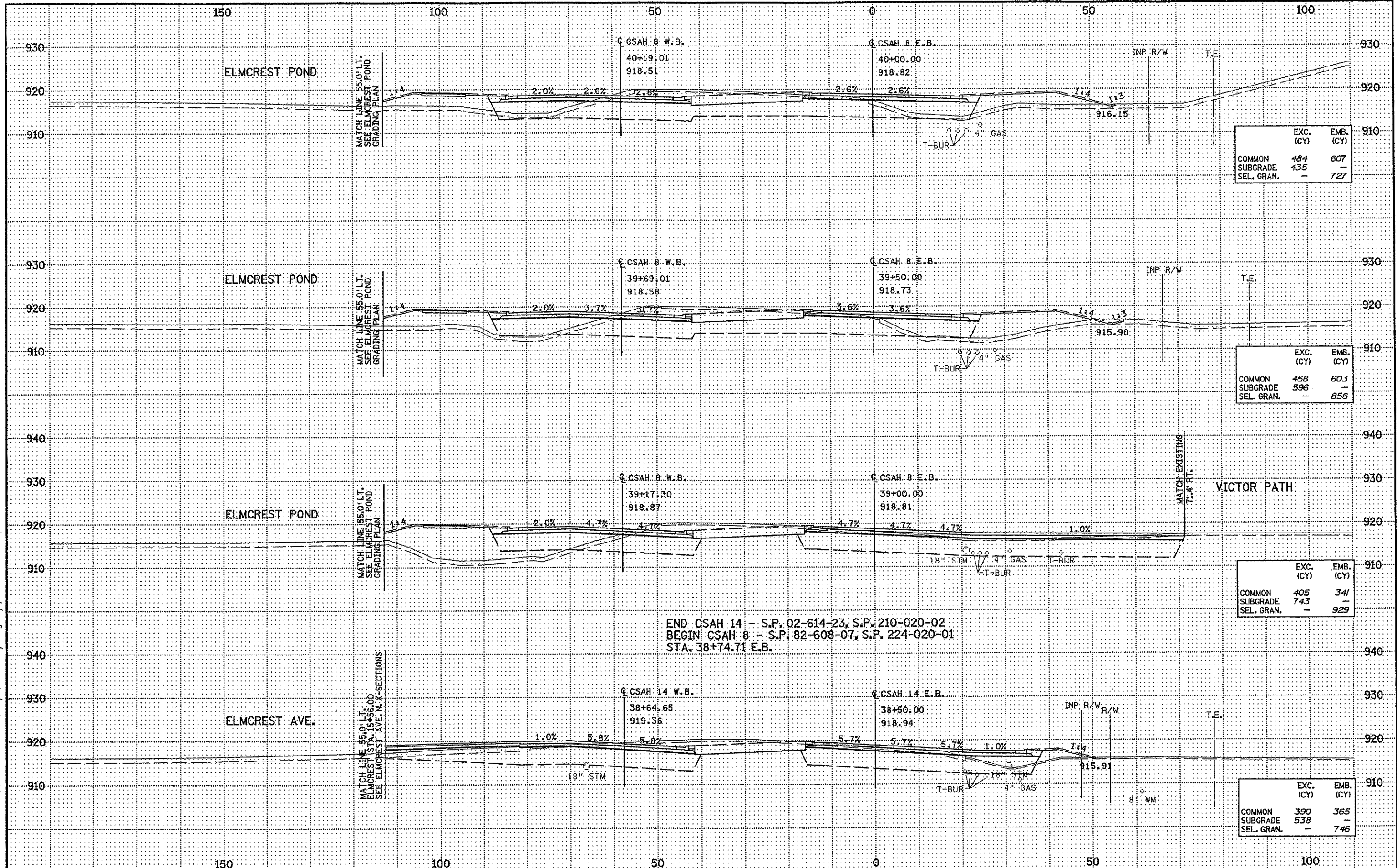
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COMMON SUBGRADE	294	448
SEL. GRAN.	-	6/4

DATE: 8/4/2005 TIME: 12:16:30 PM  
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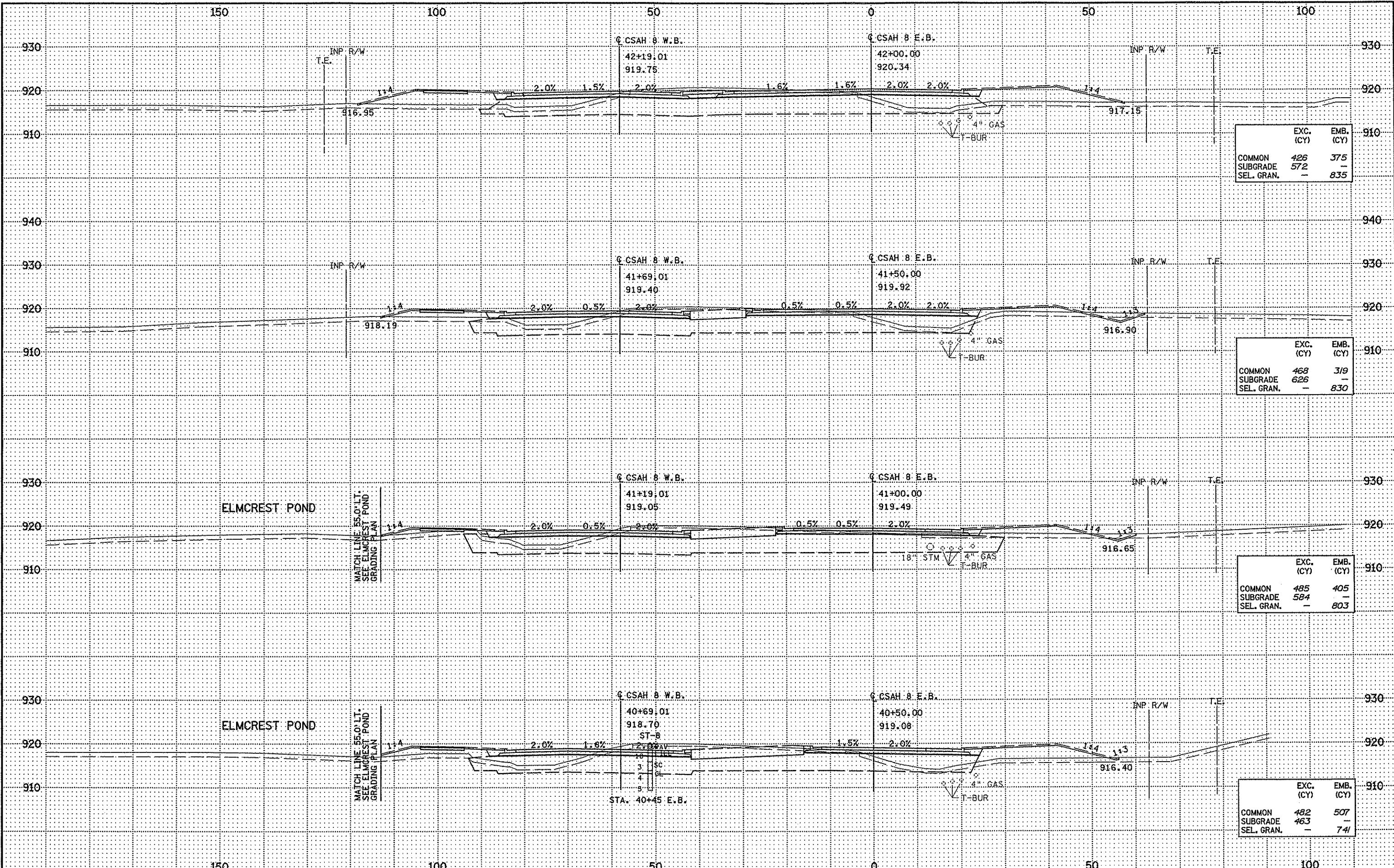


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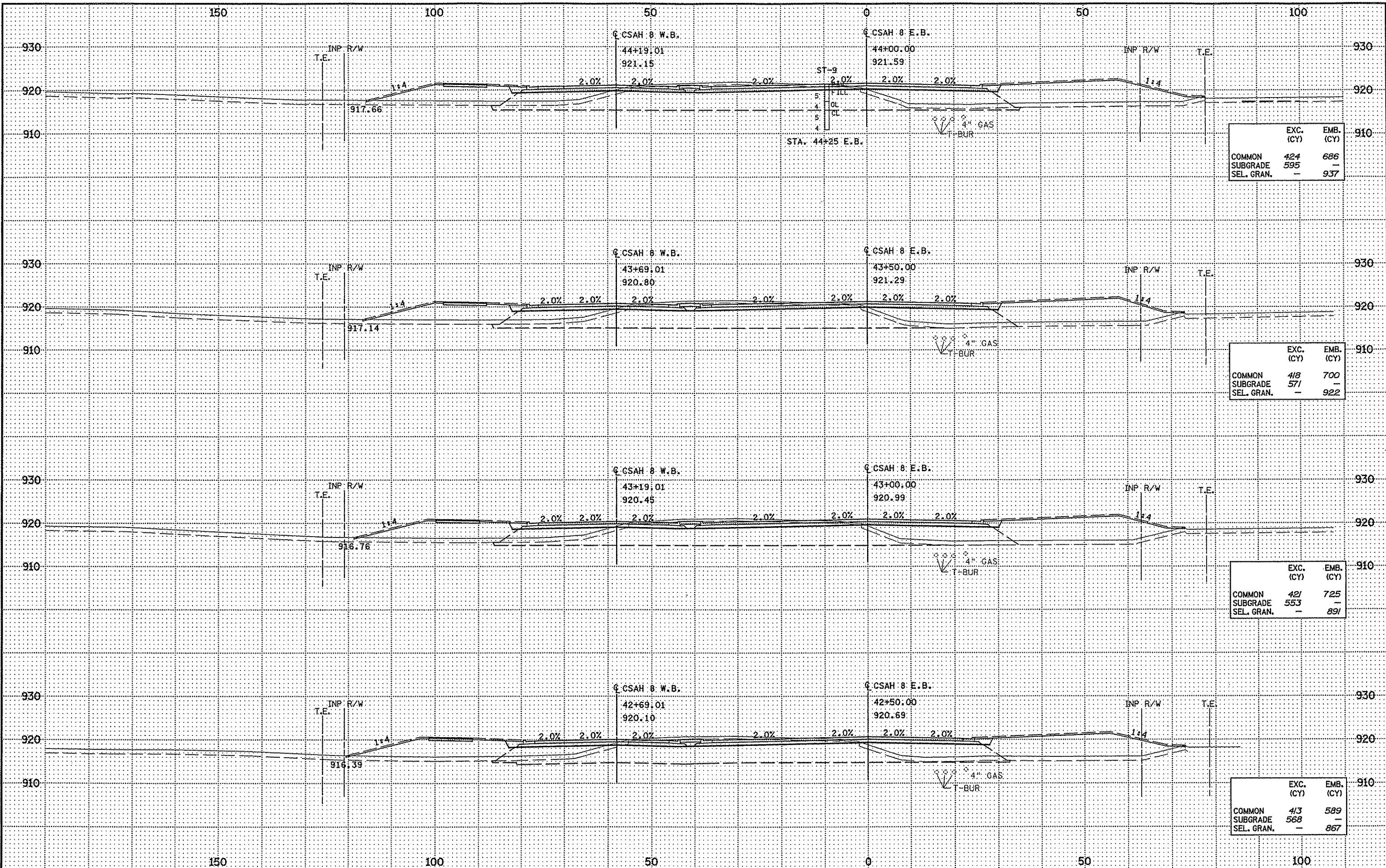
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 BEGIN CSAH 8 - S.P. 82-608-07, S.P. 224-020-01  
 STA. 38+74.71 E.B.

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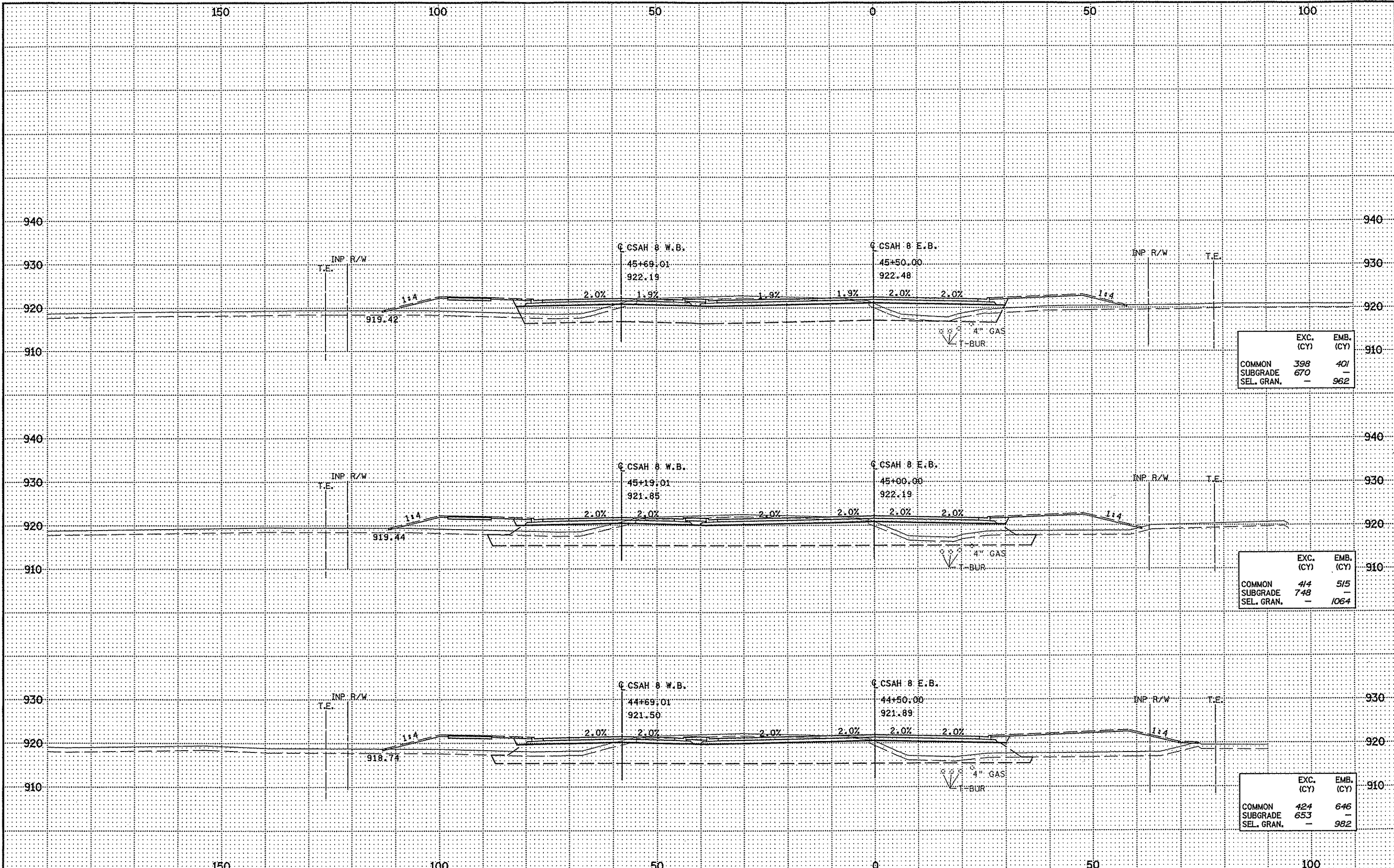




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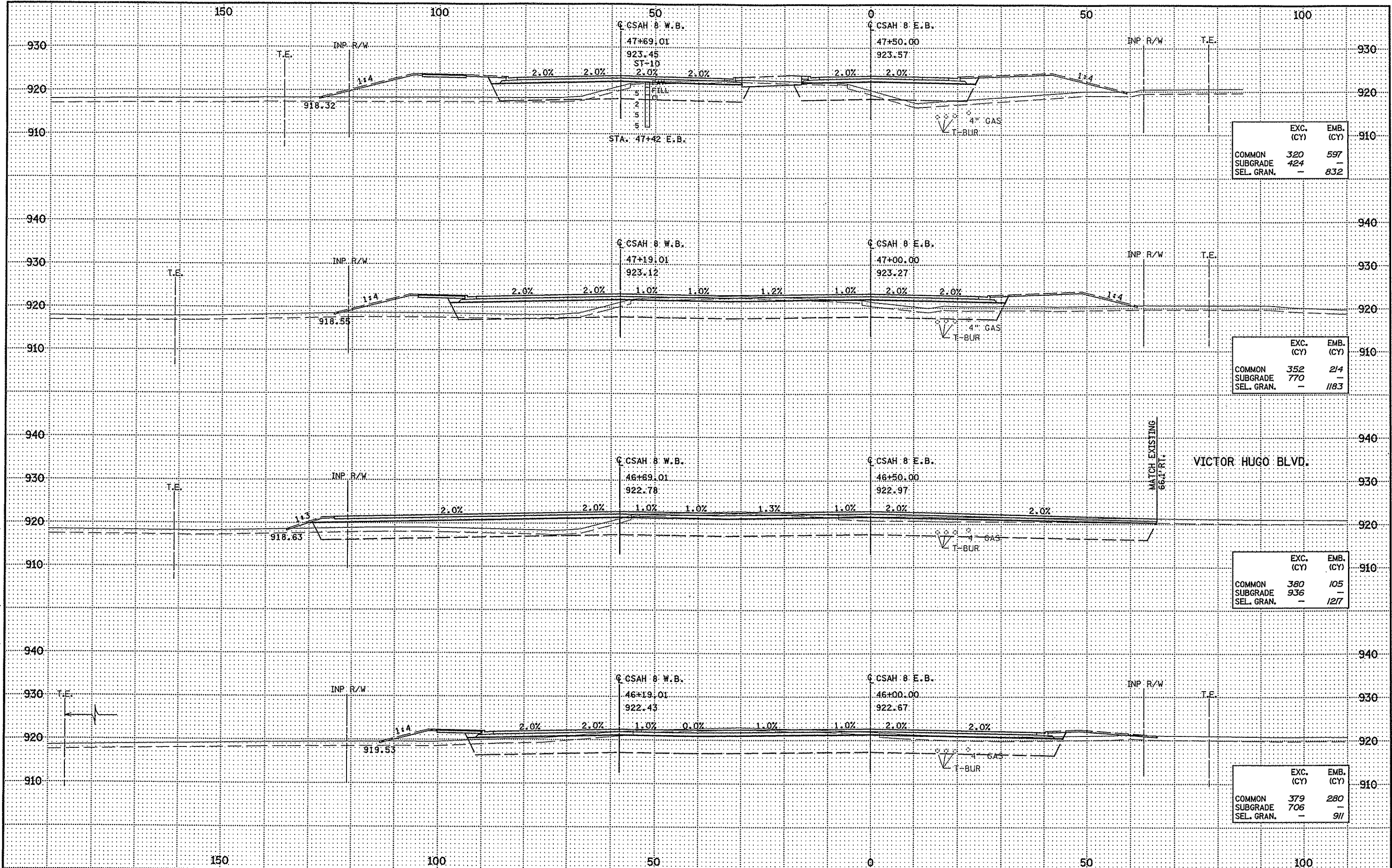


	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	398	401
SEL. GRAN.	-	962

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	414	515
SEL. GRAN.	-	1064

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	424	646
SEL. GRAN.	-	982

DATE: 8/4/2005 TIME: 12:17:35 PM  
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	EXC. (CY)	EMB. (CY)
COMMON	320	597
SUBGRADE	424	-
SEL. GRAN.	-	832

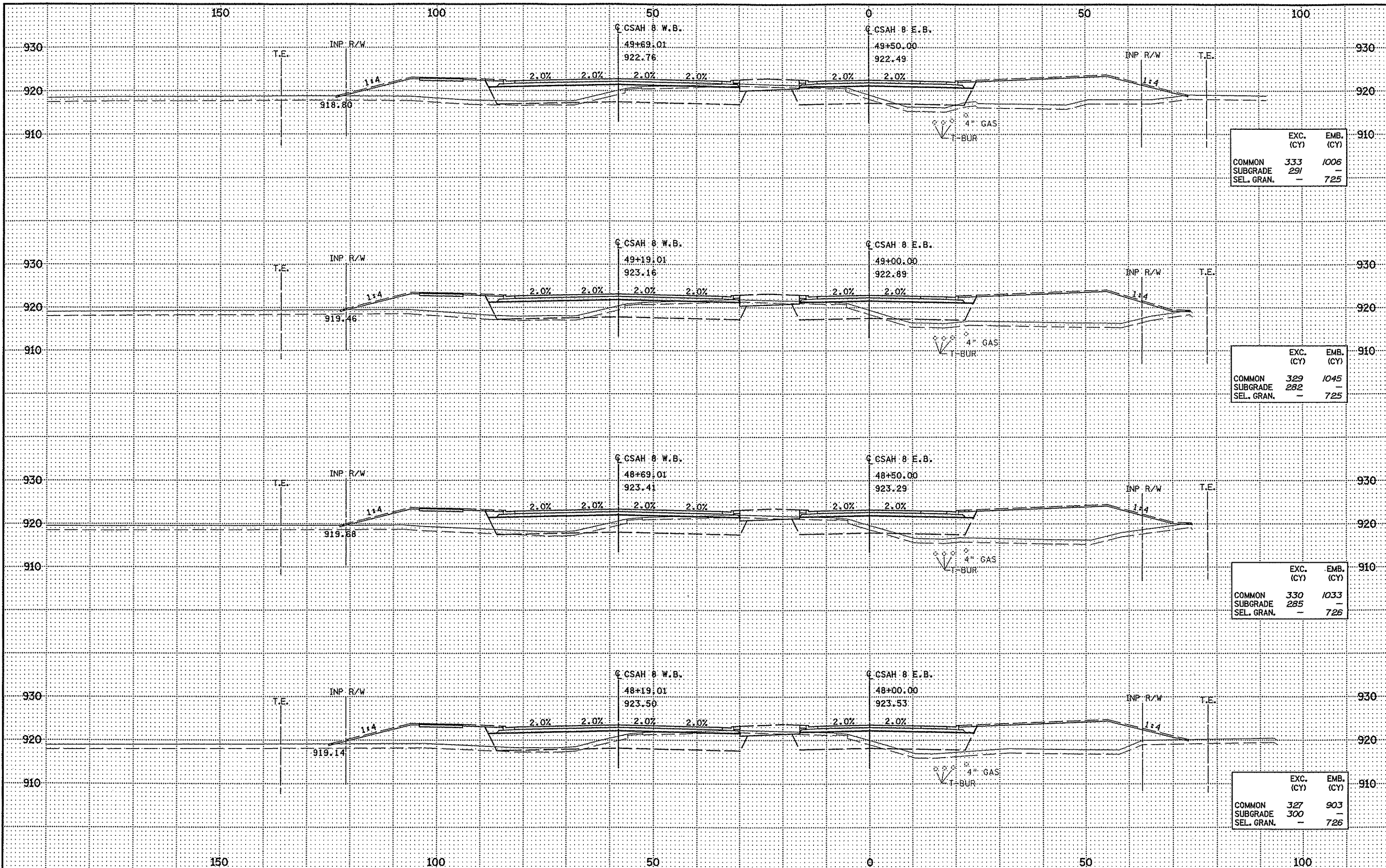
	EXC. (CY)	EMB. (CY)
COMMON	352	214
SUBGRADE	770	-
SEL. GRAN.	-	1183

	EXC. (CY)	EMB. (CY)
COMMON	380	105
SUBGRADE	936	-
SEL. GRAN.	-	1217

	EXC. (CY)	EMB. (CY)
COMMON	379	280
SUBGRADE	706	-
SEL. GRAN.	-	911



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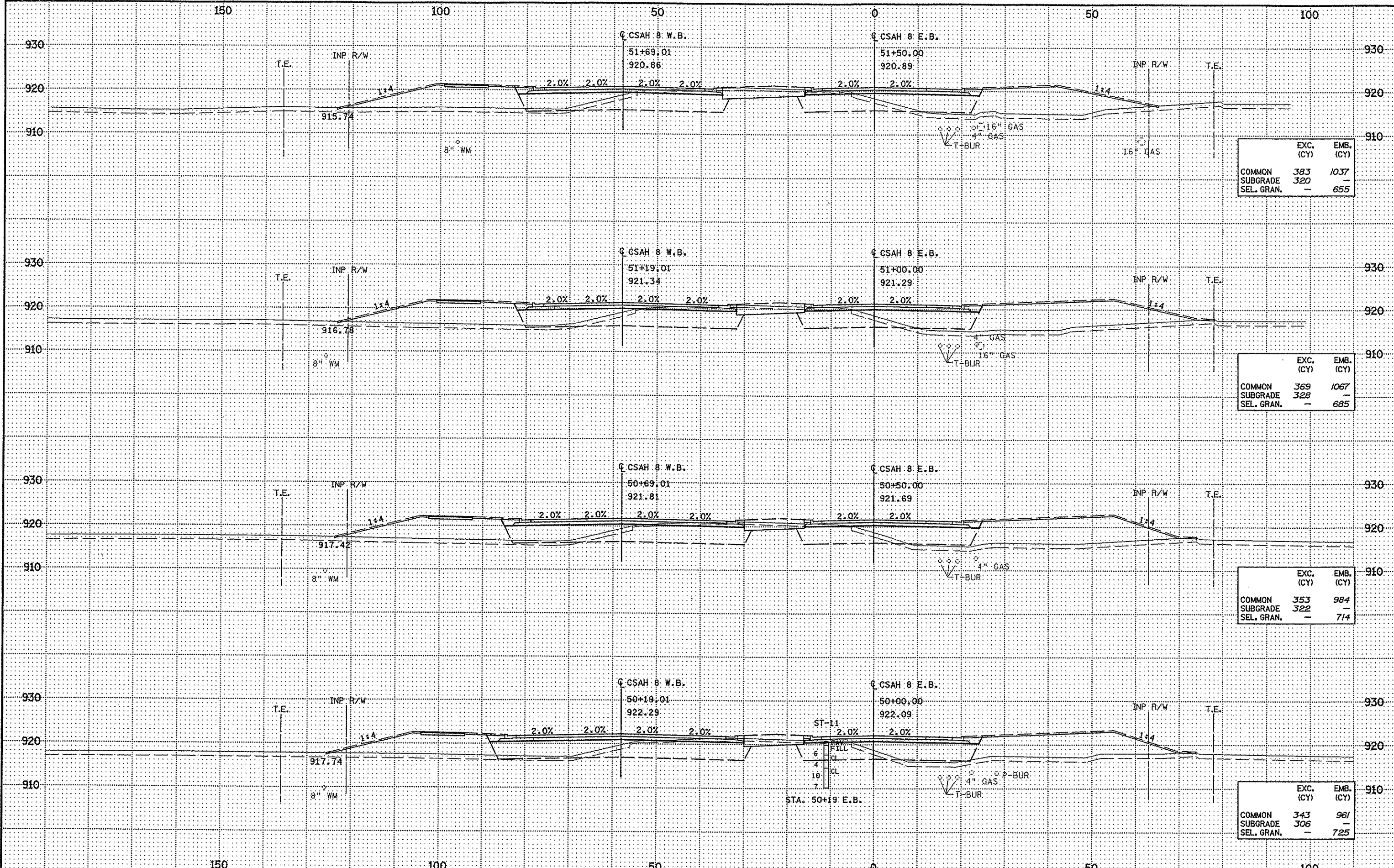
	EXC. (CY)	EMB. (CY)
COMMON	333	1006
SUBGRADE	291	-
SEL. GRAN.	-	725

	EXC. (CY)	EMB. (CY)
COMMON	329	1045
SUBGRADE	282	-
SEL. GRAN.	-	725

	EXC. (CY)	EMB. (CY)
COMMON	330	1033
SUBGRADE	285	-
SEL. GRAN.	-	726

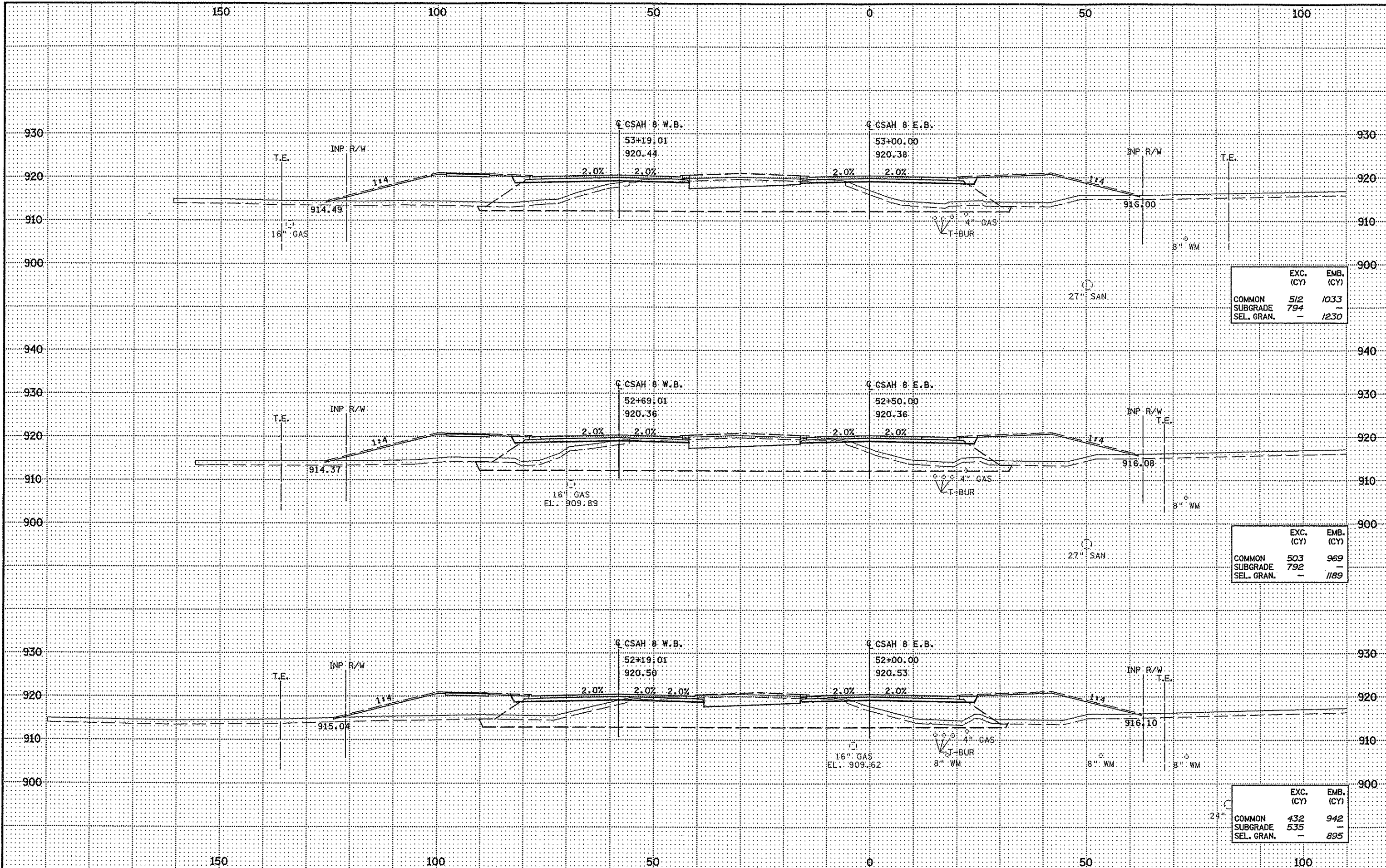
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COMMON	327	903
SUBGRADE	300	-
SEL. GRAN.	-	726

DATE: 8/4/2005 TIME: 12:21:49 PM  
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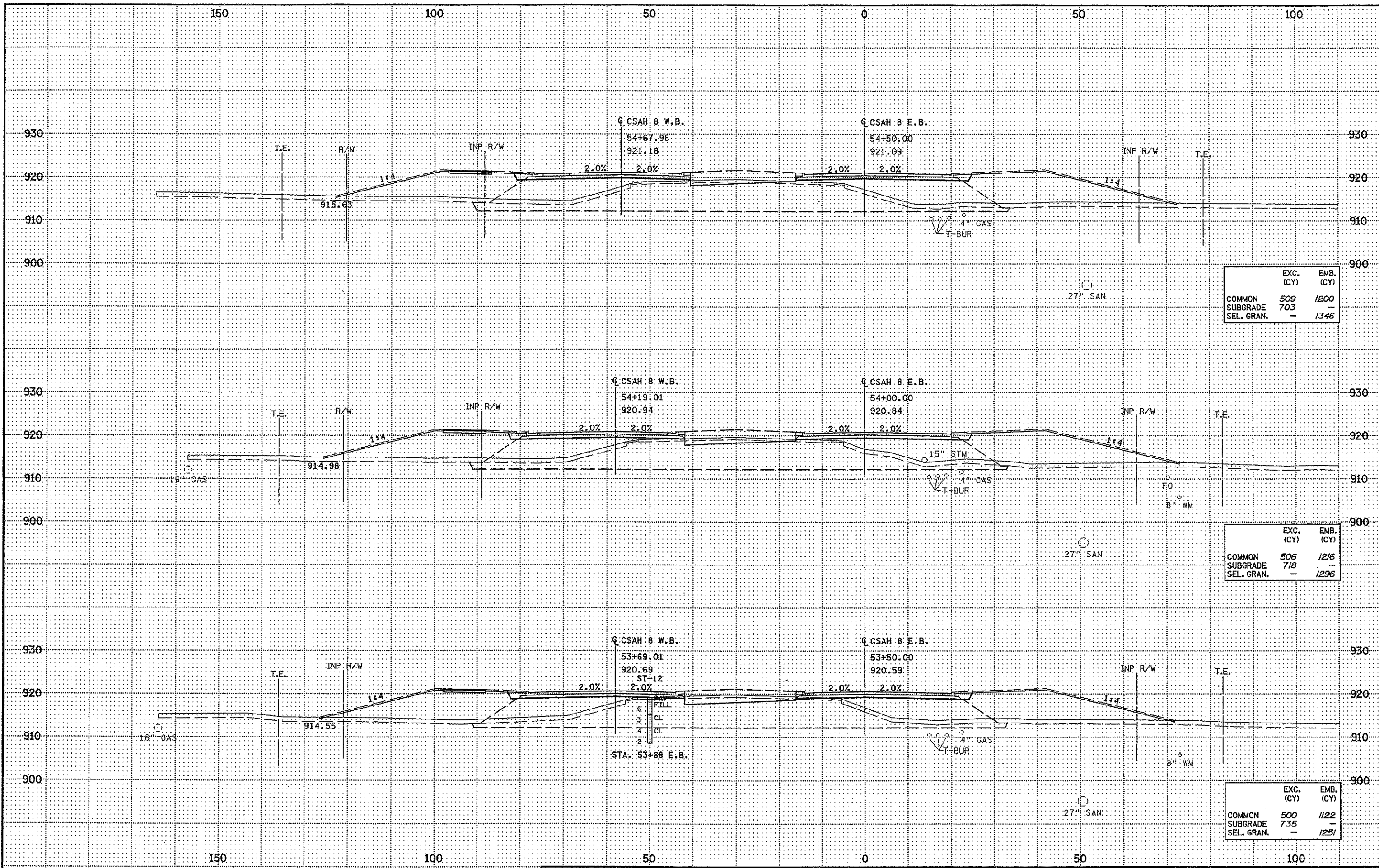




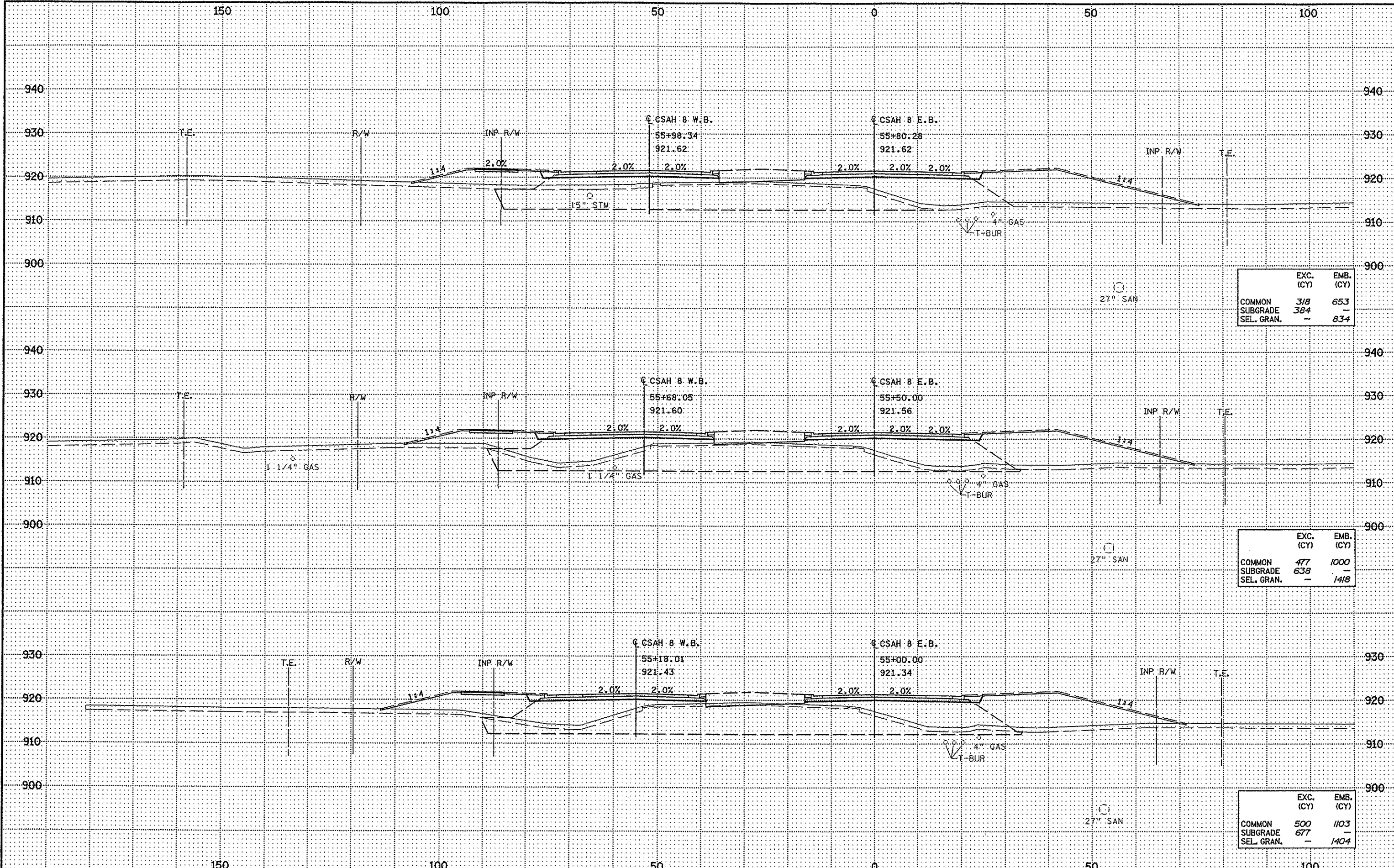
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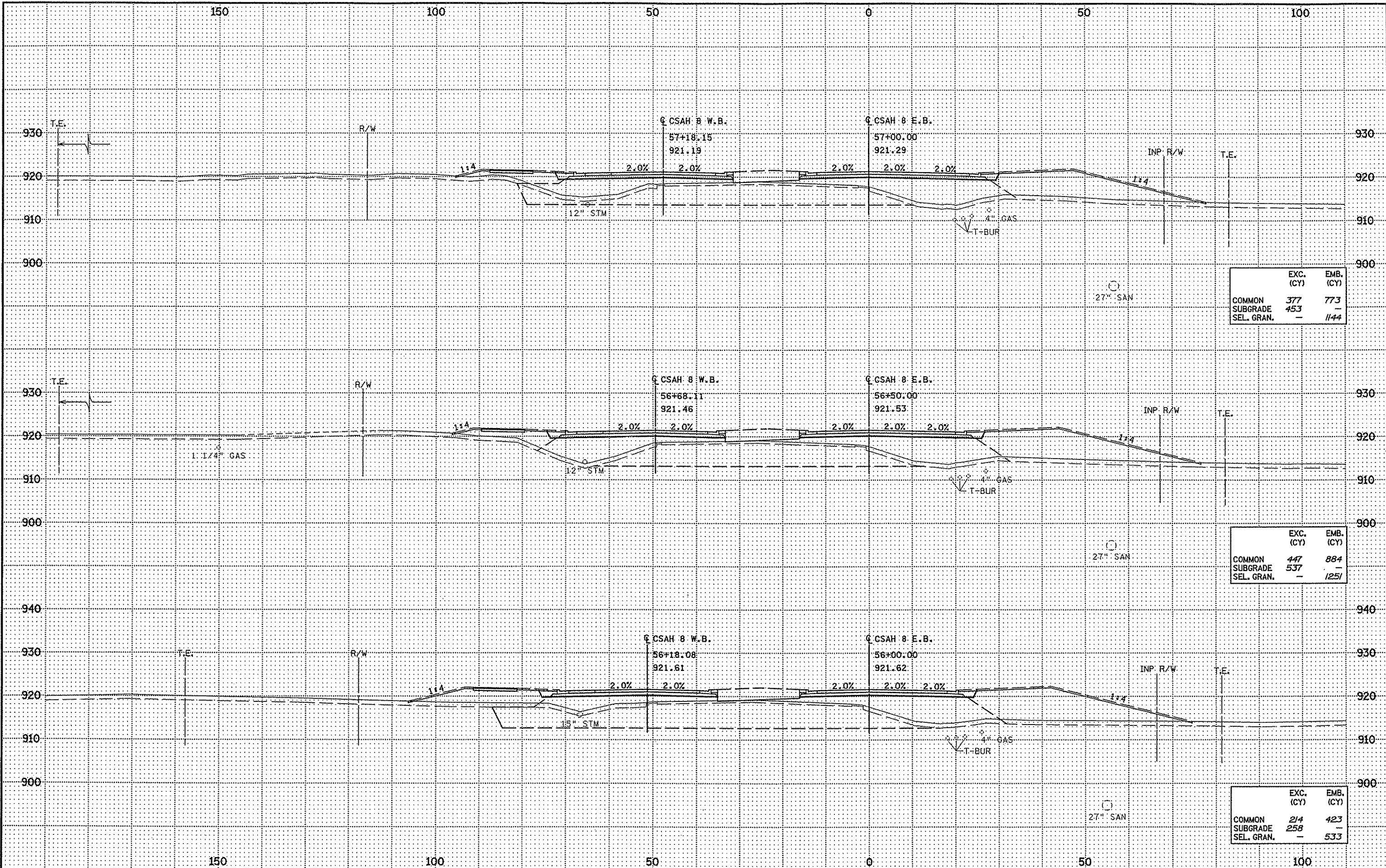


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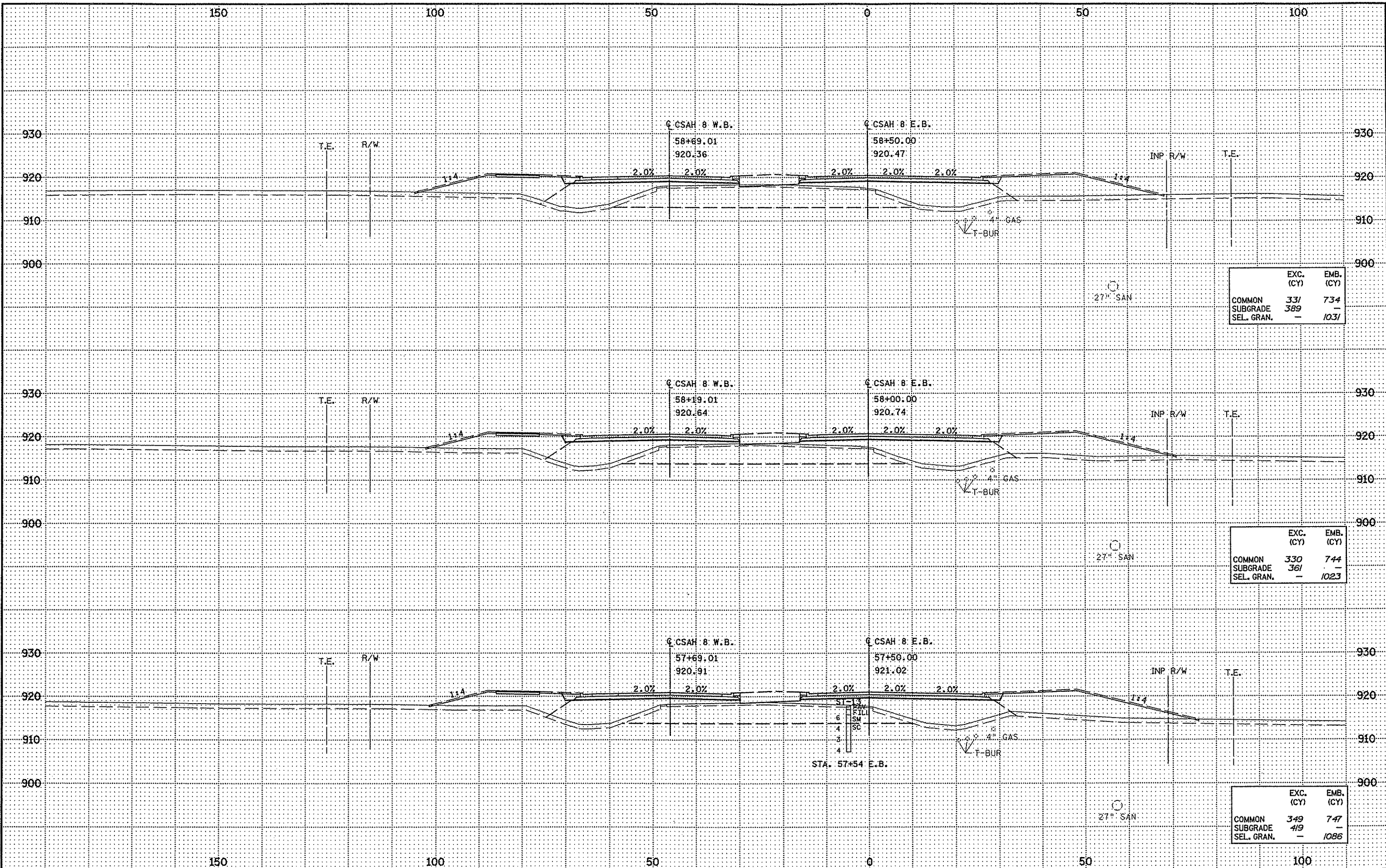


	EXC. (CY)	EMB. (CY)
COMMON	377	773
SUBGRADE	453	-
SEL. GRAN.	-	1144

	EXC. (CY)	EMB. (CY)
COMMON	447	884
SUBGRADE	537	-
SEL. GRAN.	-	1251

	EXC. (CY)	EMB. (CY)
COMMON	214	423
SUBGRADE	258	-
SEL. GRAN.	-	533

DATE: 8/4/2005 TIME: 12:22:56 PM  
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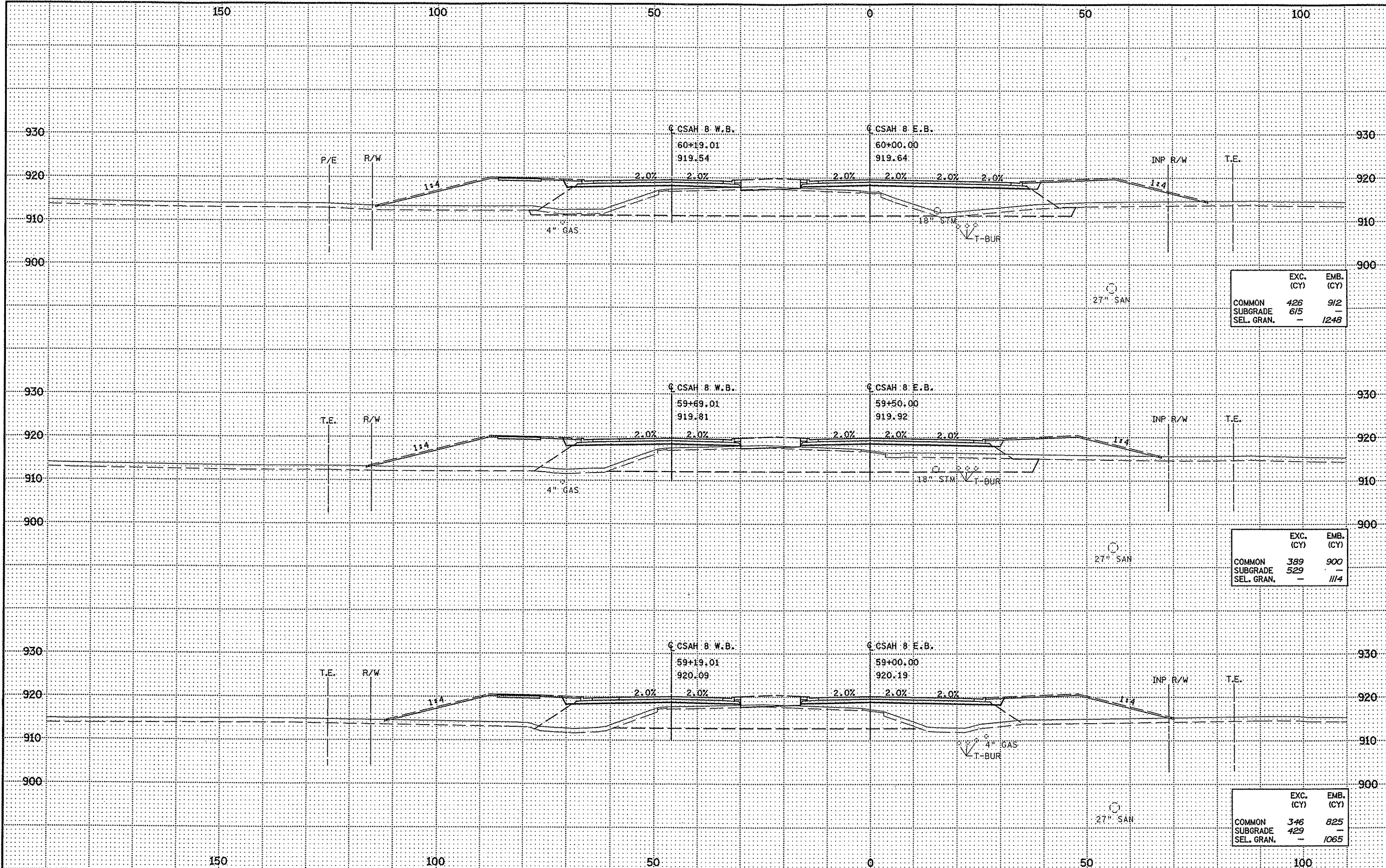
	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	331	734
SEL. GRAN.	-	1031

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	330	744
SEL. GRAN.	-	1023

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	349	747
SEL. GRAN.	-	1086



DATE: 8/4/2005 TIME: 12:23:09 PM  
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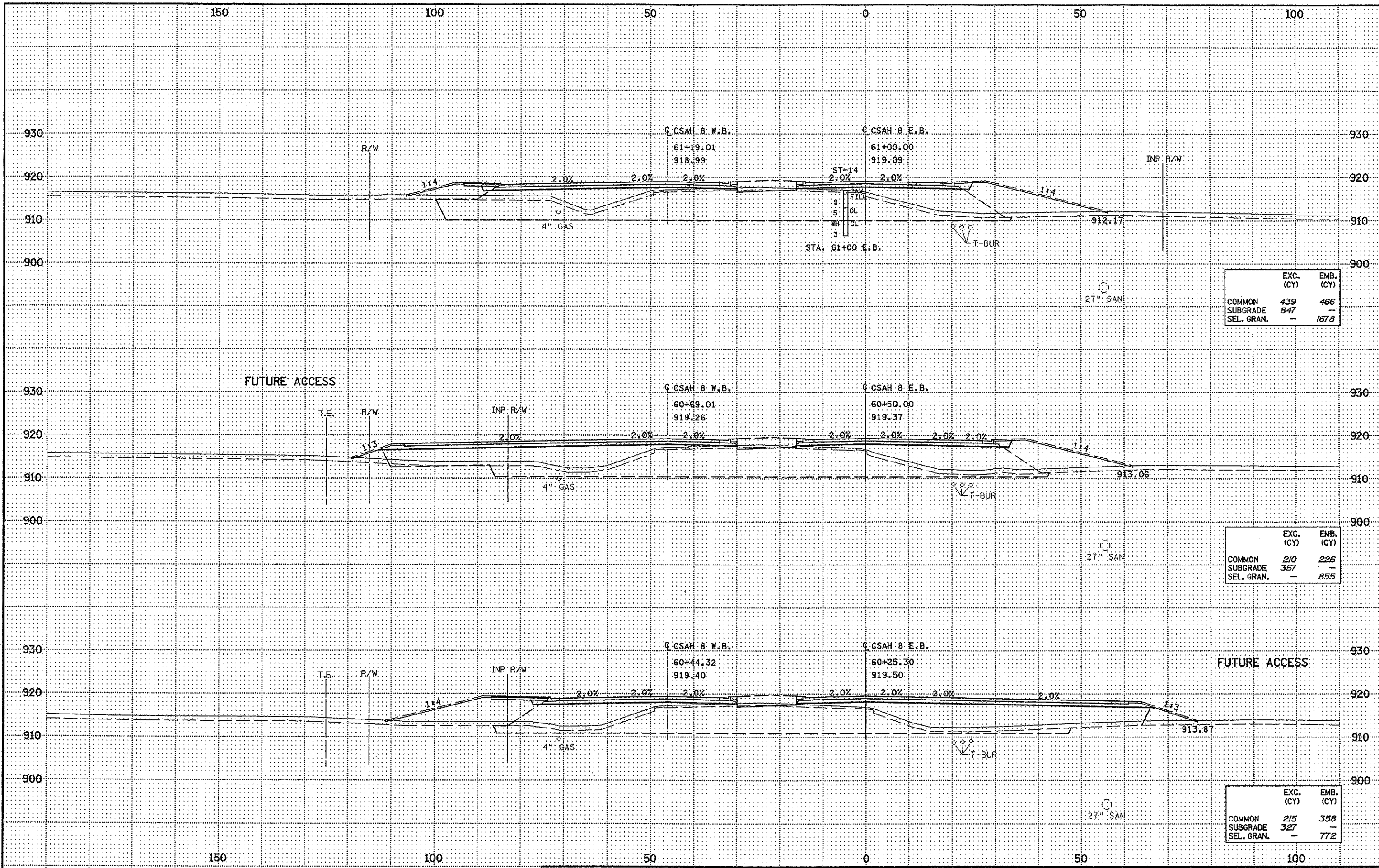


	EXC. (CY)	EMB. (CY)
COMMON	426	912
SUBGRADE	615	-
SEL. GRAN.	-	1248

	EXC. (CY)	EMB. (CY)
COMMON	389	900
SUBGRADE	529	-
SEL. GRAN.	-	1114

	EXC. (CY)	EMB. (CY)
COMMON	346	825
SUBGRADE	429	-
SEL. GRAN.	-	1065

DATE: 8/4/2005 TIME: 12:35:21 PM  
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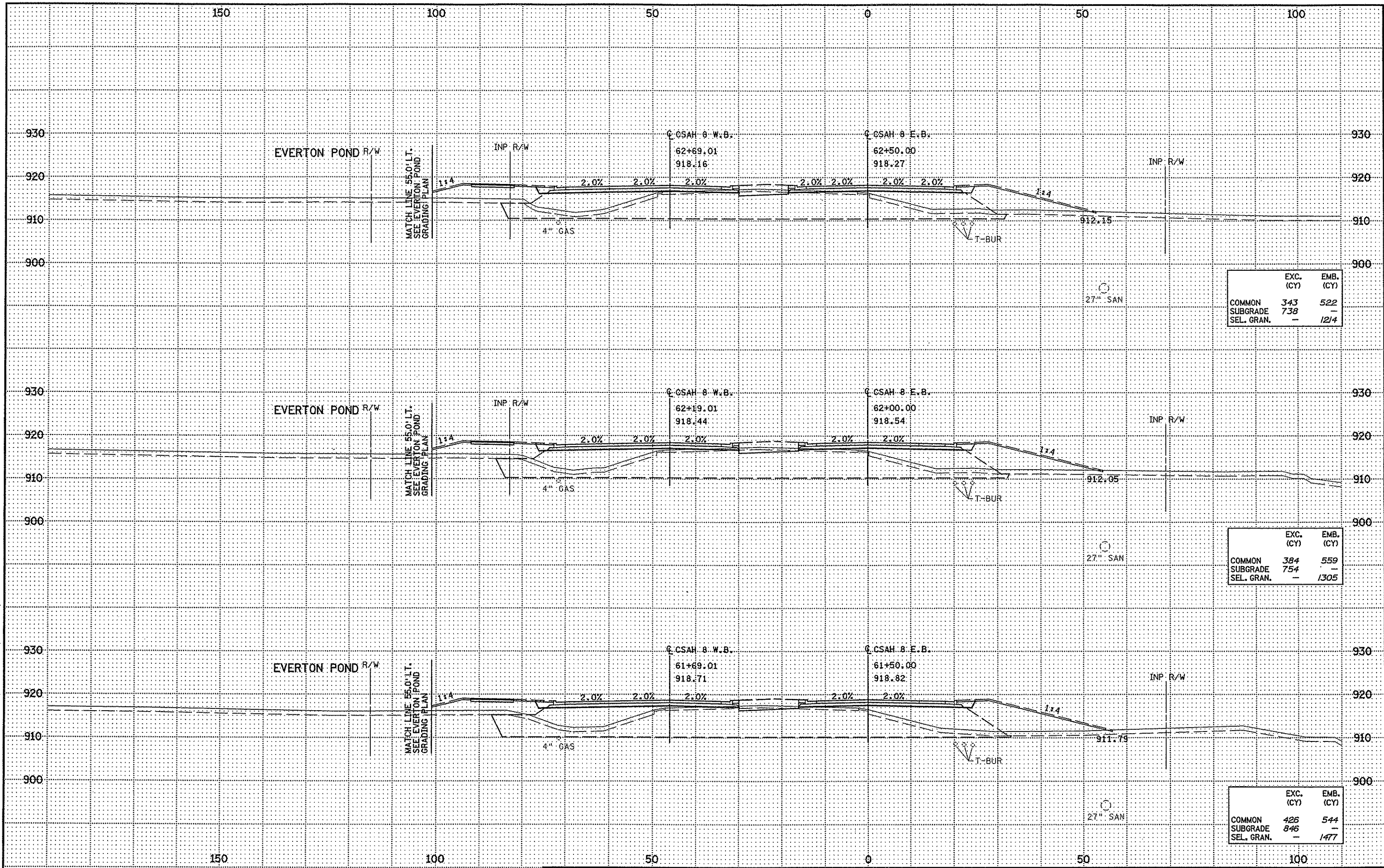


	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	439	466
SEL. GRAN.	-	1678

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	210	226
SEL. GRAN.	-	855

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	215	358
SEL. GRAN.	-	772

DATE: 8/4/2005 TIME: 12:23:34 PM  
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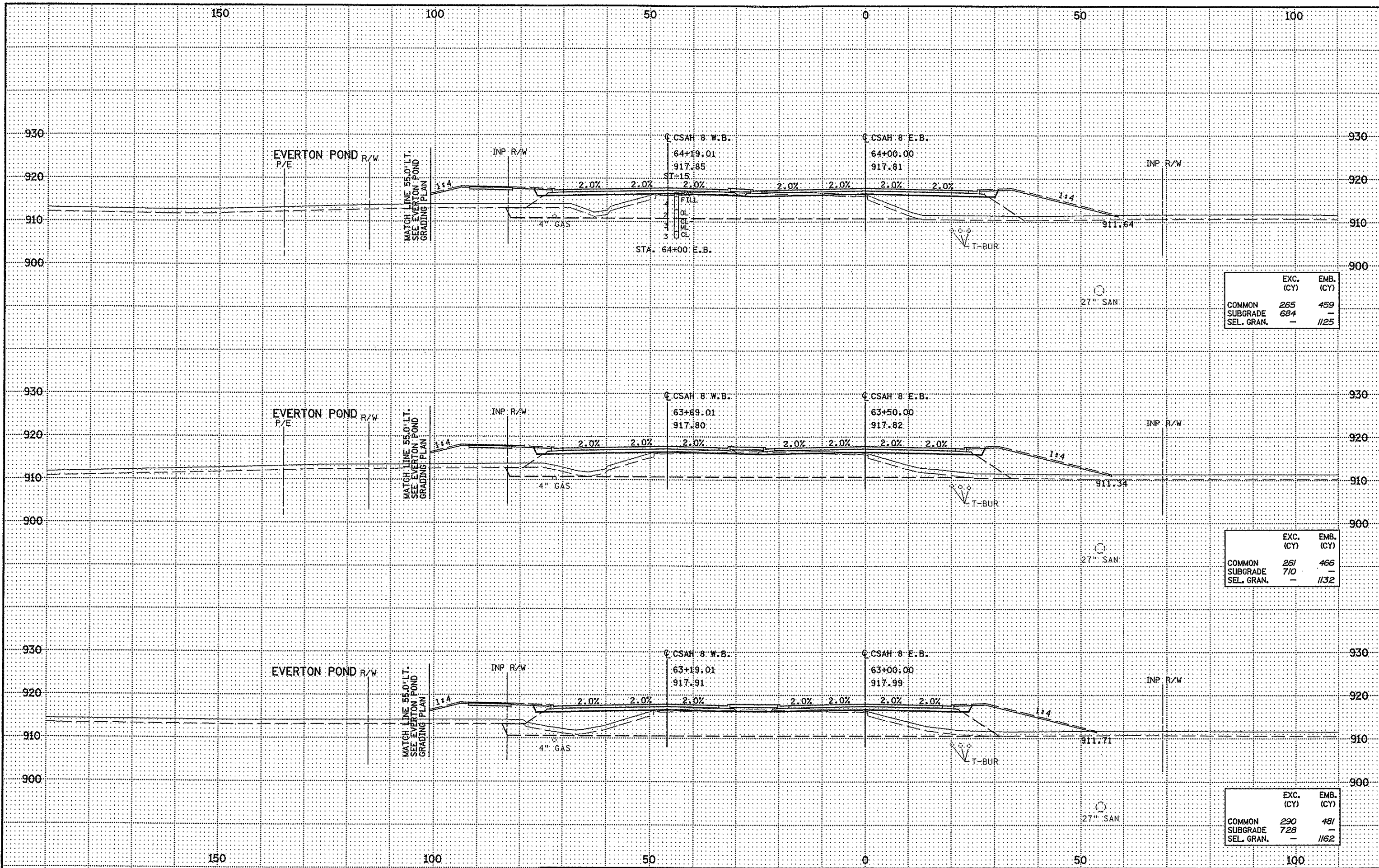
	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	343	522
SEL. GRAN.	-	1214

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	384	559
SEL. GRAN.	-	1305

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	426	544
SEL. GRAN.	-	1477



DATE: 8/4/2005 TIME: 12:23:48 PM  
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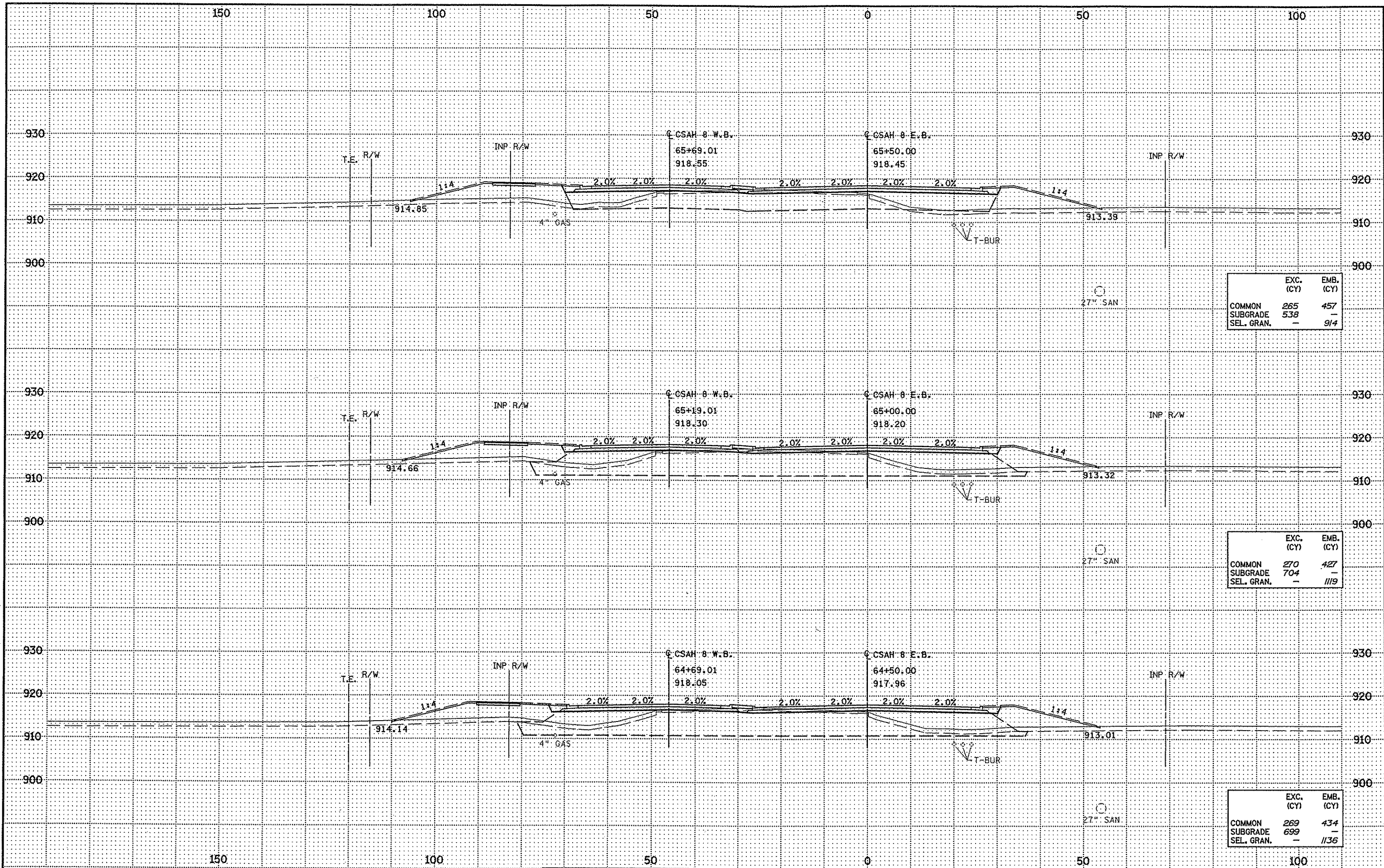


	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	265	459
SEL. GRAN.	—	1125

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	261	466
SEL. GRAN.	—	1132

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	290	481
SEL. GRAN.	—	1162

DATE: 8/14/2005 TIME: 12:25:34 PM  
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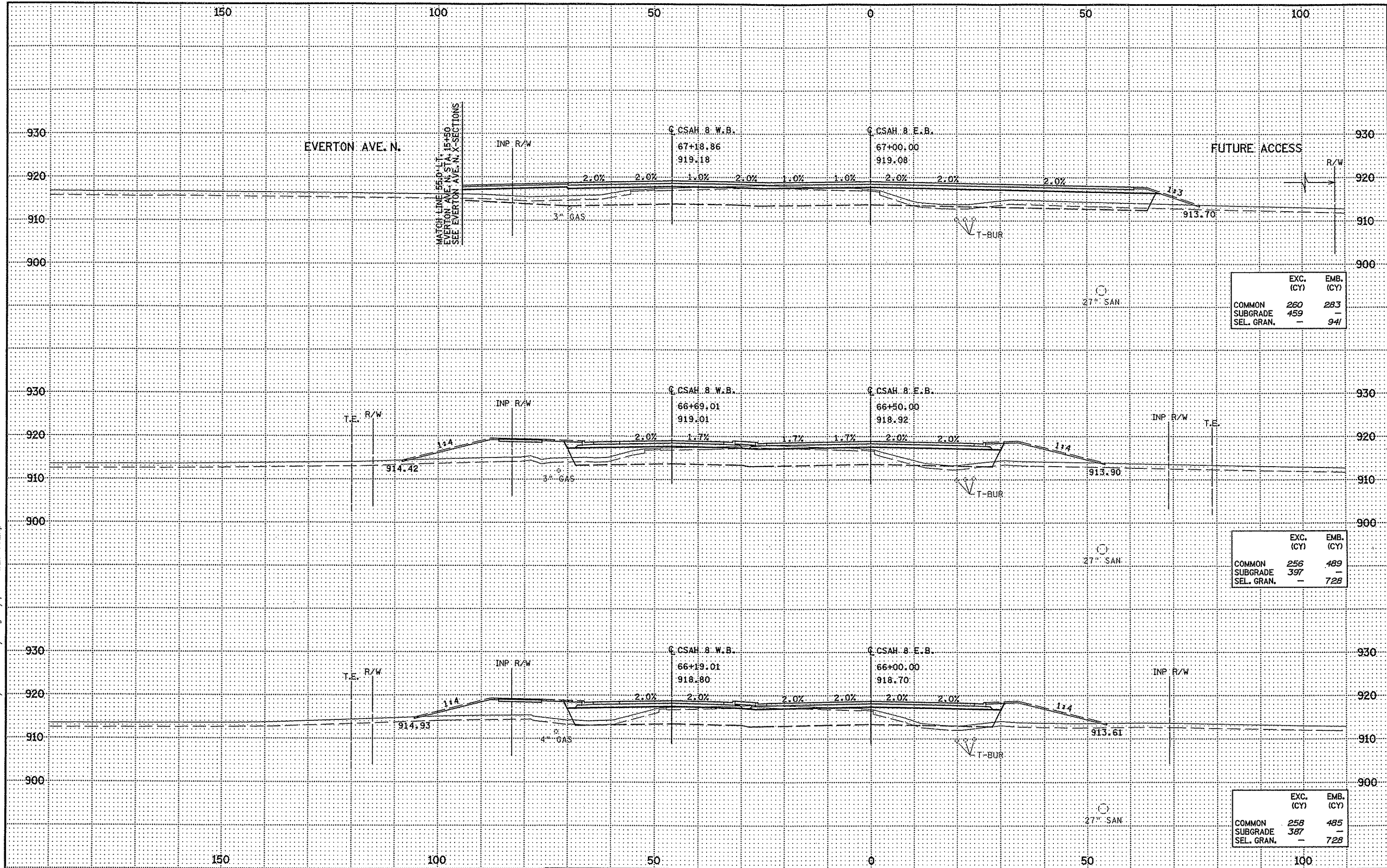
	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	265	457
SEL. GRAN.	-	914

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	270	427
SEL. GRAN.	-	1119

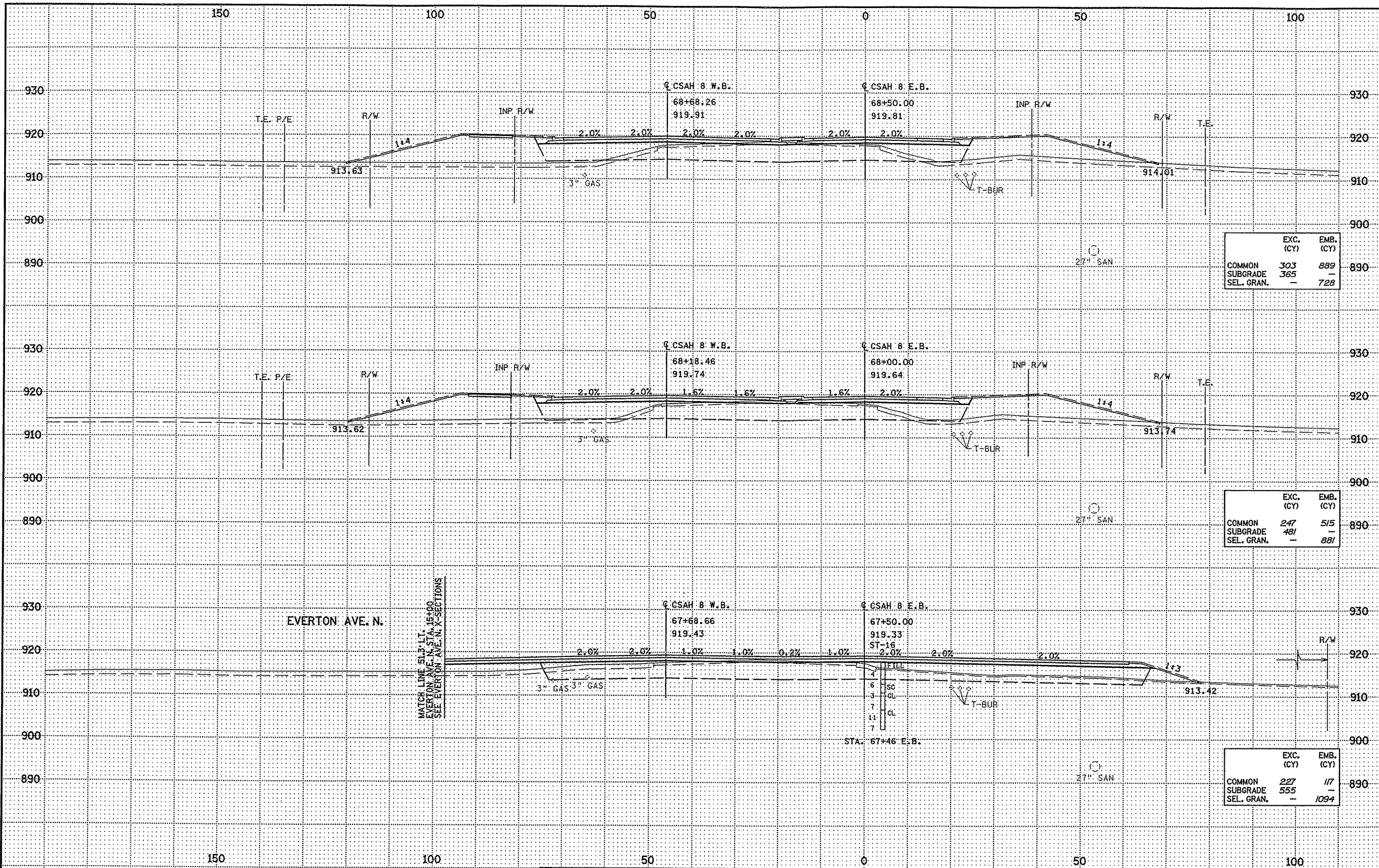
	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	269	434
SEL. GRAN.	-	1136



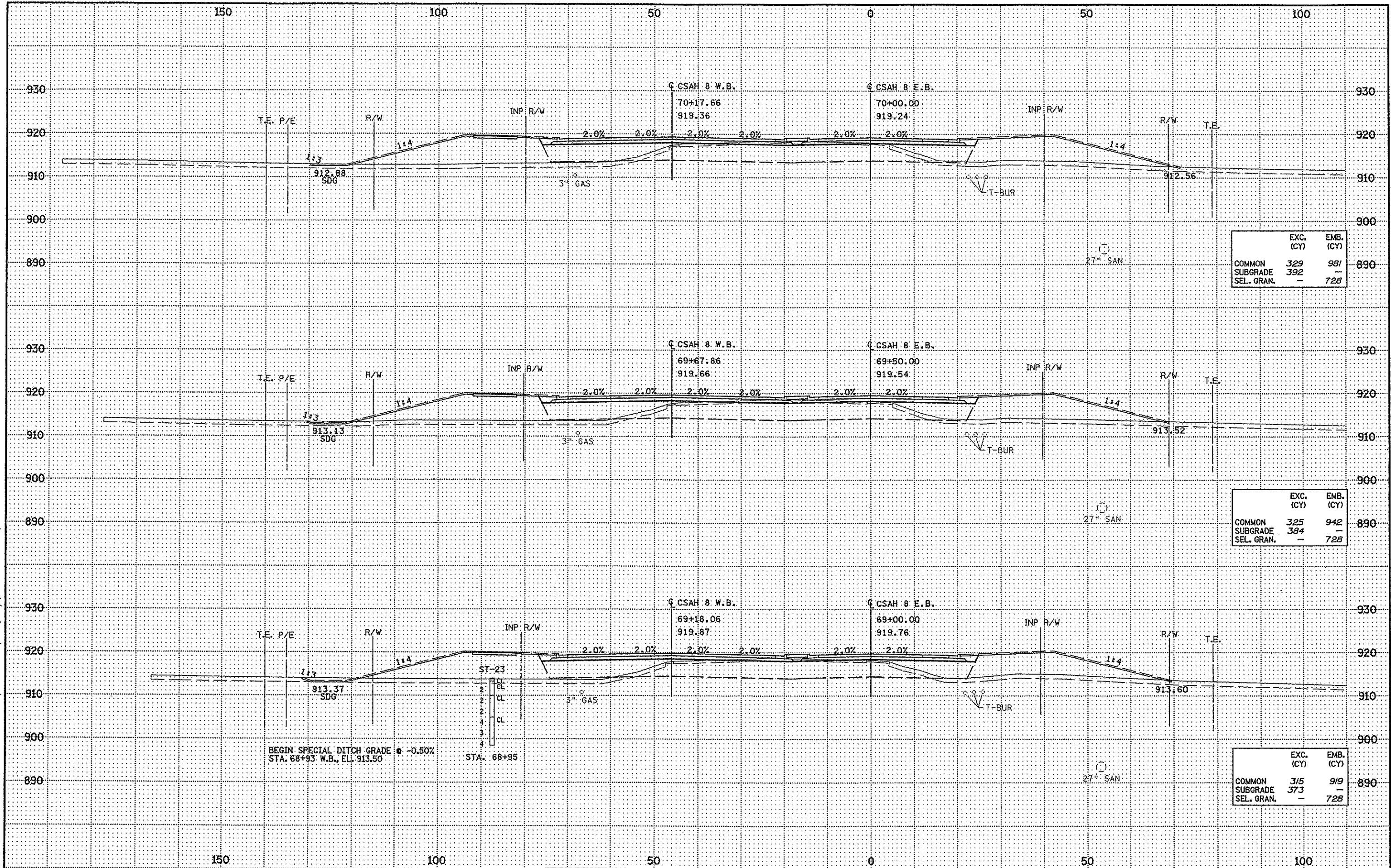
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DATE: 8/4/2005 TIME: 12:26:13 PM  
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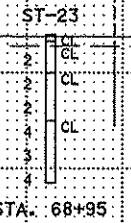


	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	329	981
SEL. GRAN.	-	728

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	325	942
SEL. GRAN.	-	728

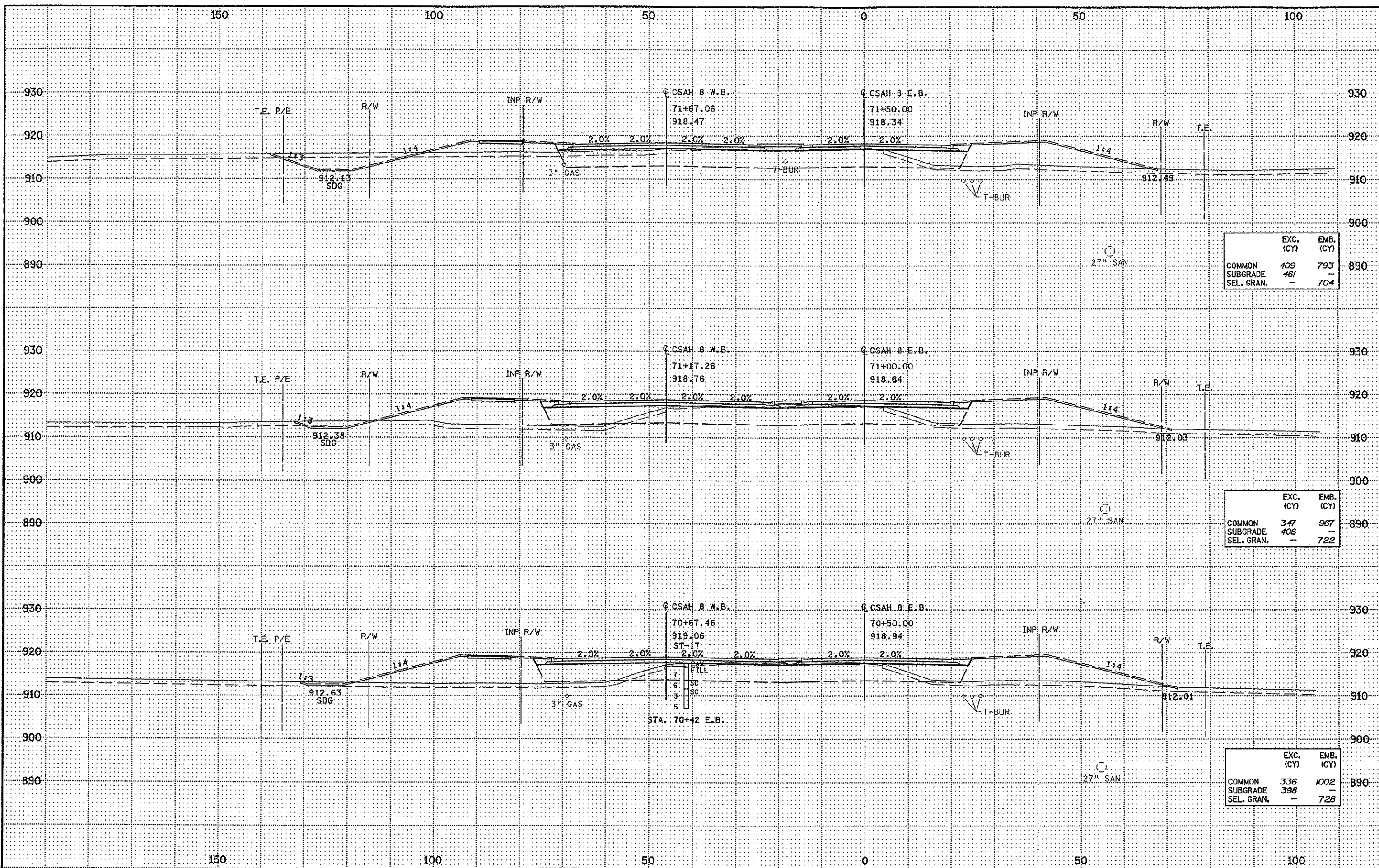
	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	315	919
SEL. GRAN.	-	728

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 STA. 68+93 W.B., EL. 913.50





DATE: 8/14/2005 TIME: 12:26:25 PM  
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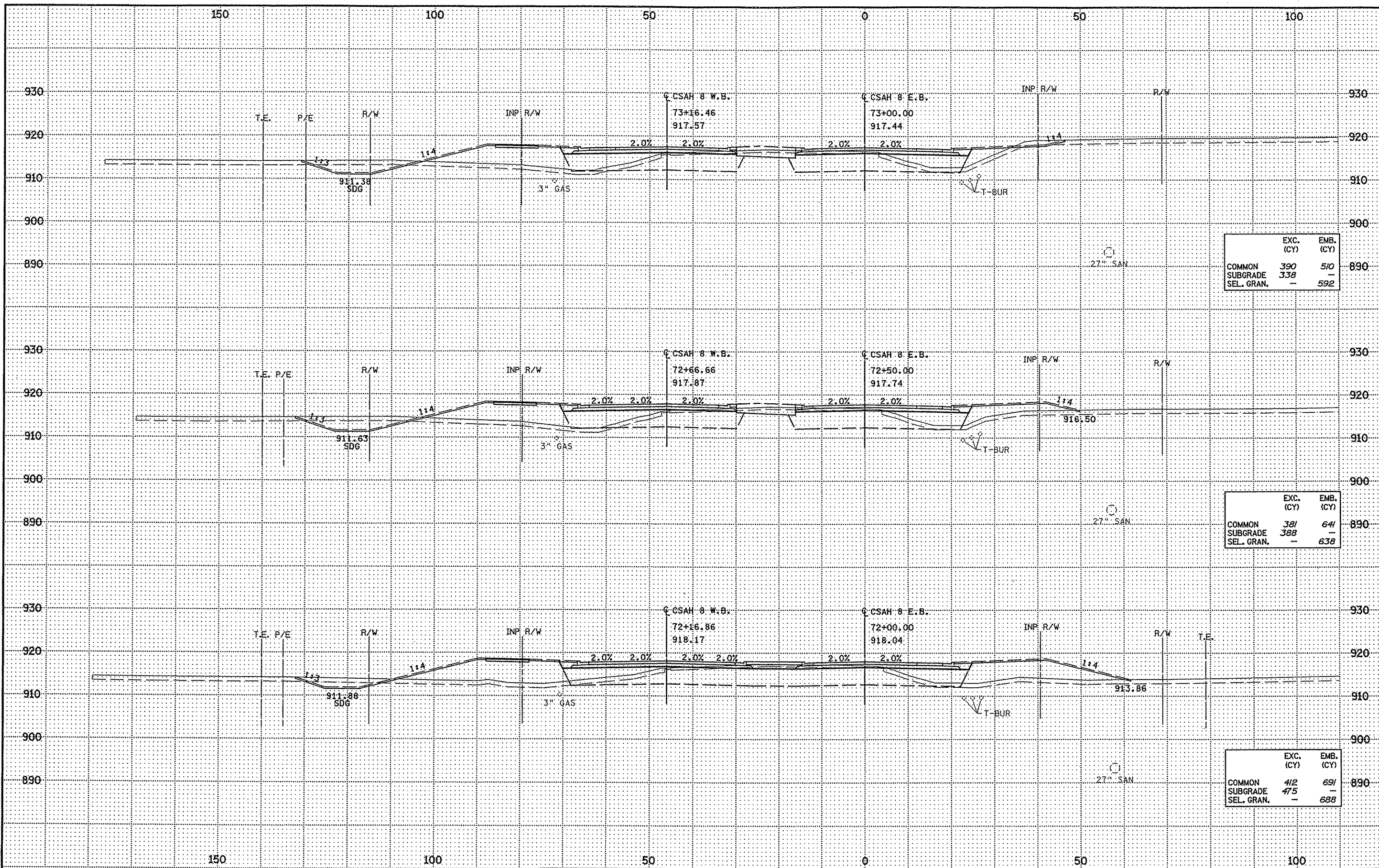


	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	409	793
SEL. GRAN.	-	704

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	347	967
SEL. GRAN.	-	722

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	336	1002
SEL. GRAN.	-	728

DATE: 8/4/2005 TIME: 12:26:38 PM  
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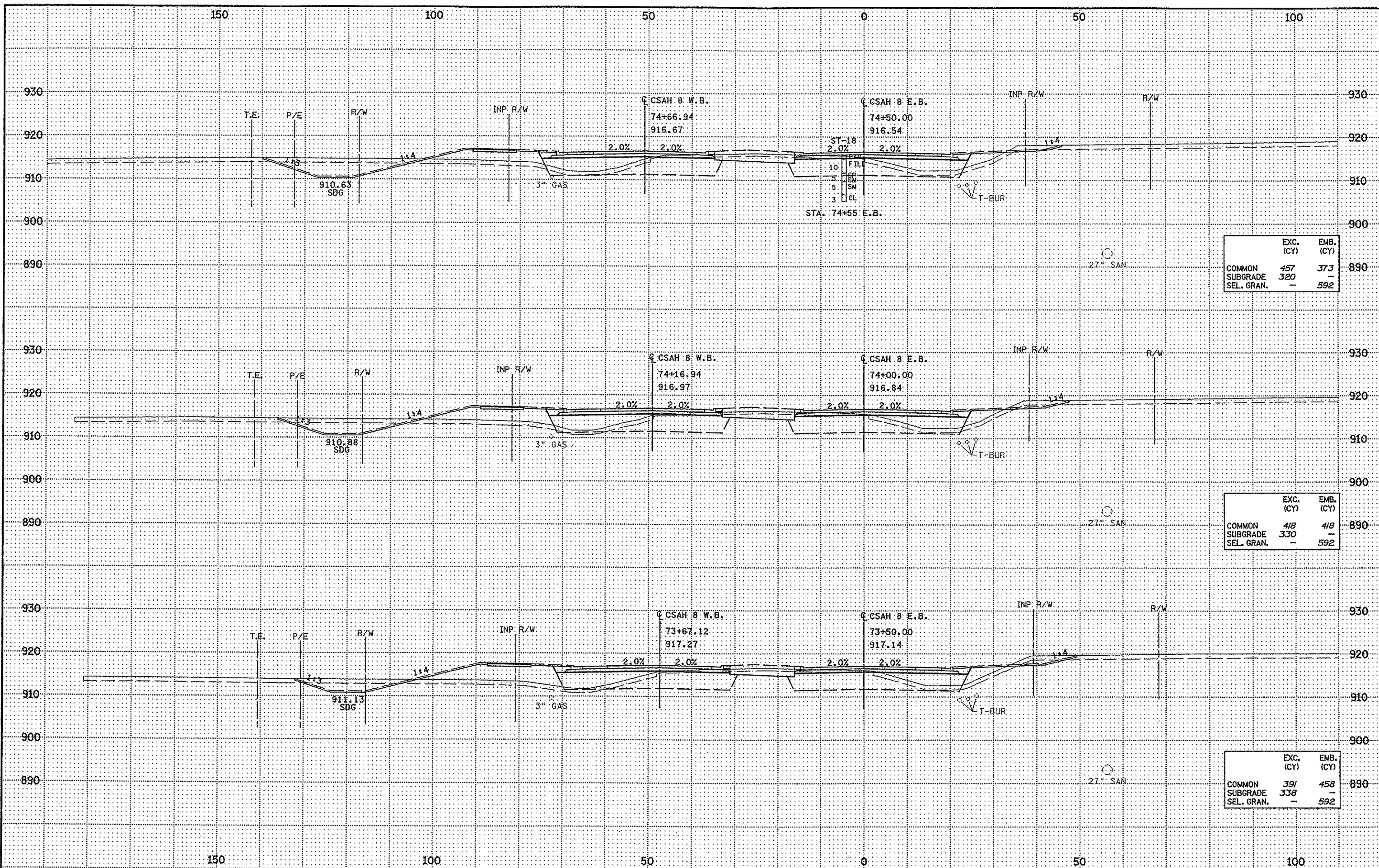
	EXC. (CY)	EMB. (CY)
COMMON	390	510
SUBGRADE	338	-
SEL. GRAN.	-	592

	EXC. (CY)	EMB. (CY)
COMMON	381	641
SUBGRADE	388	-
SEL. GRAN.	-	638

	EXC. (CY)	EMB. (CY)
COMMON	412	691
SUBGRADE	475	-
SEL. GRAN.	-	688



DATE: 8/14/2005 TIME: 12:26:53 PM  
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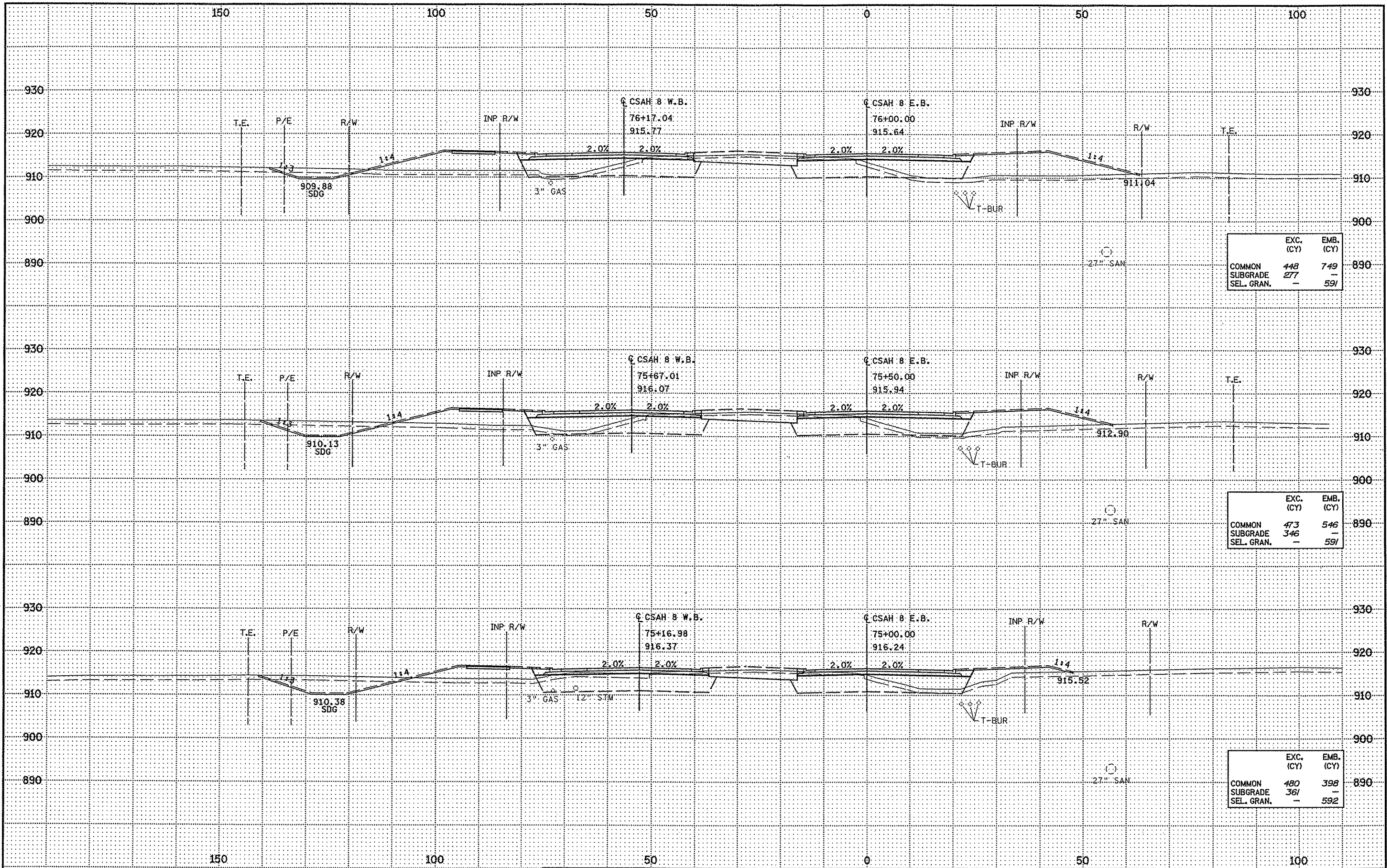


	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	457	373
SEL. GRAN.	-	592

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	418	418
SEL. GRAN.	-	592

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	391	458
SEL. GRAN.	-	592

DATE: 8/14/2005 TIME: 12:27:05 PM  
 FILENAME: K:\r-z\wast\cy\24390\hwy-brdg\hwy-plr-stf\c200802.dwg

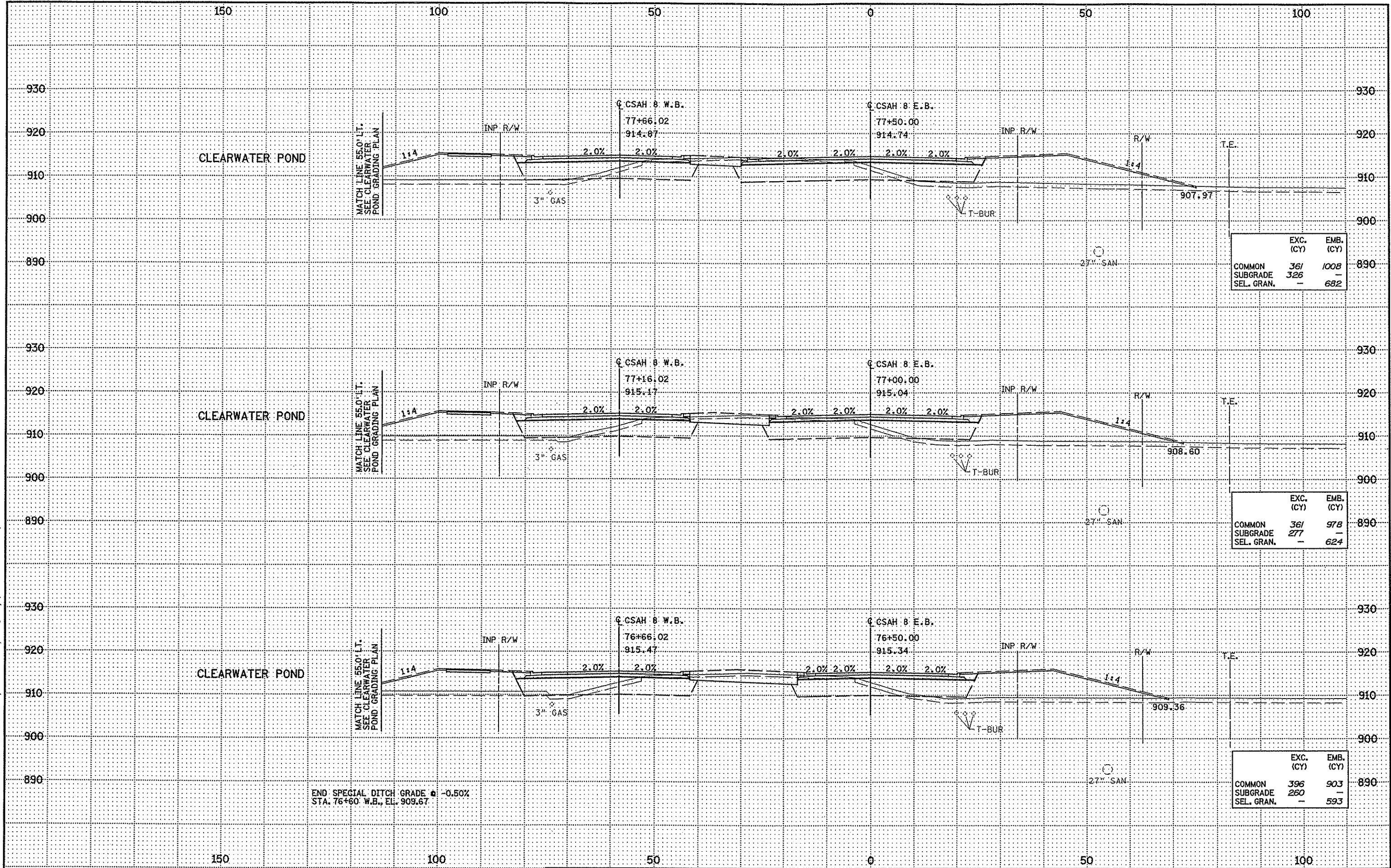


	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	448	749
SEL. GRAN.	-	591

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	473	546
SEL. GRAN.	-	591

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	480	398
SEL. GRAN.	-	592

DATE: 8/14/2005 TIME: 12:27:17 PM  
 FILENAME: K:\r-z\wastcy\24390\hwy-brdg\hwy\p1r-sit\200802.rpl



	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	361	1008
SEL. GRAN.	-	682

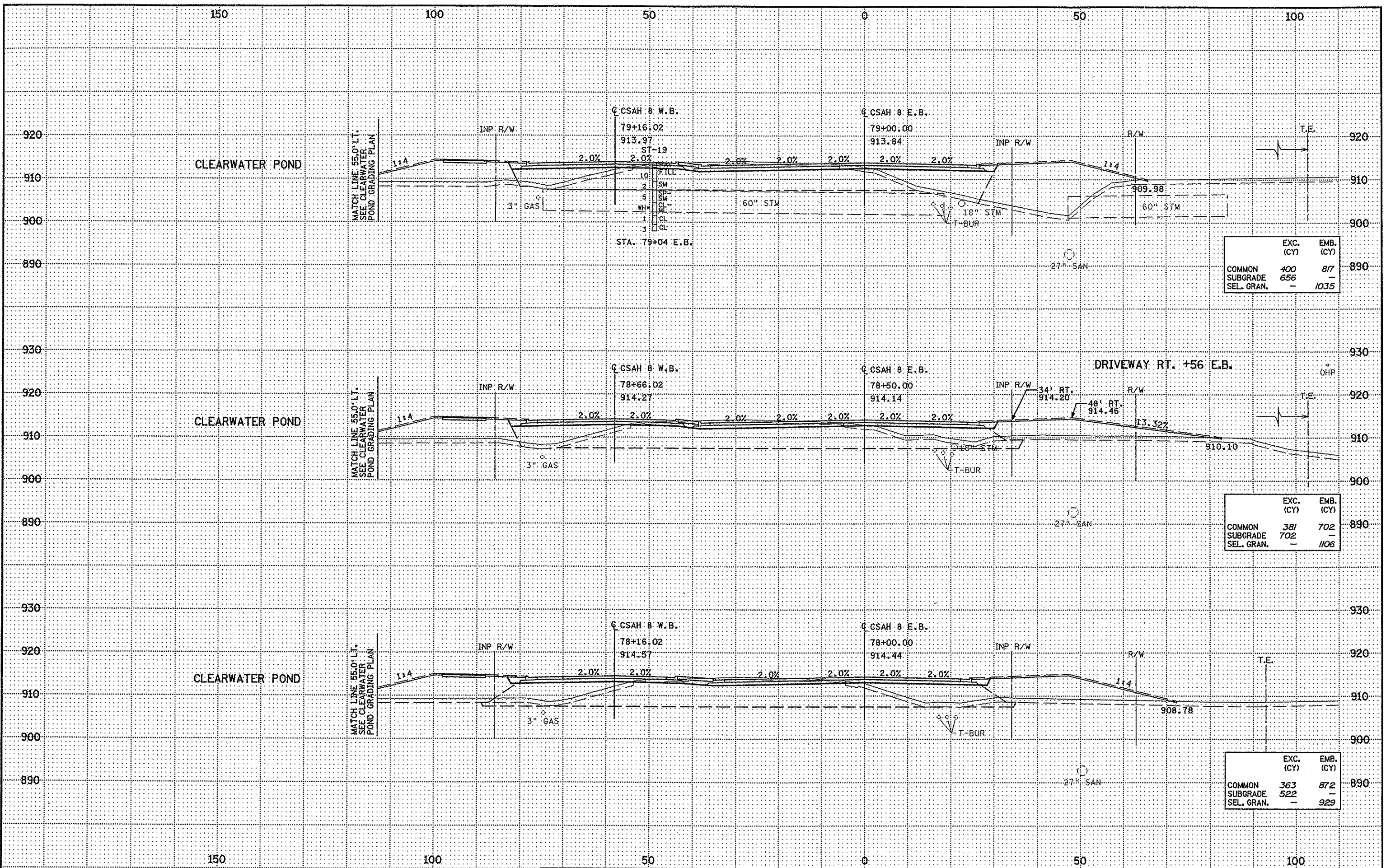
	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	361	978
SEL. GRAN.	-	624

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	396	903
SEL. GRAN.	-	593

END SPECIAL DITCH GRADE @ -0.50%  
 STA. 76+60 W.B., EL. 909.67



DATE: 8/4/2005 TIME: 12:27:29 PM  
 FILENAME: K:\r-z\wgst\cy\24390\hwy-brdg\hwy\p\tr-s\tr-s\h\c200802.rpl

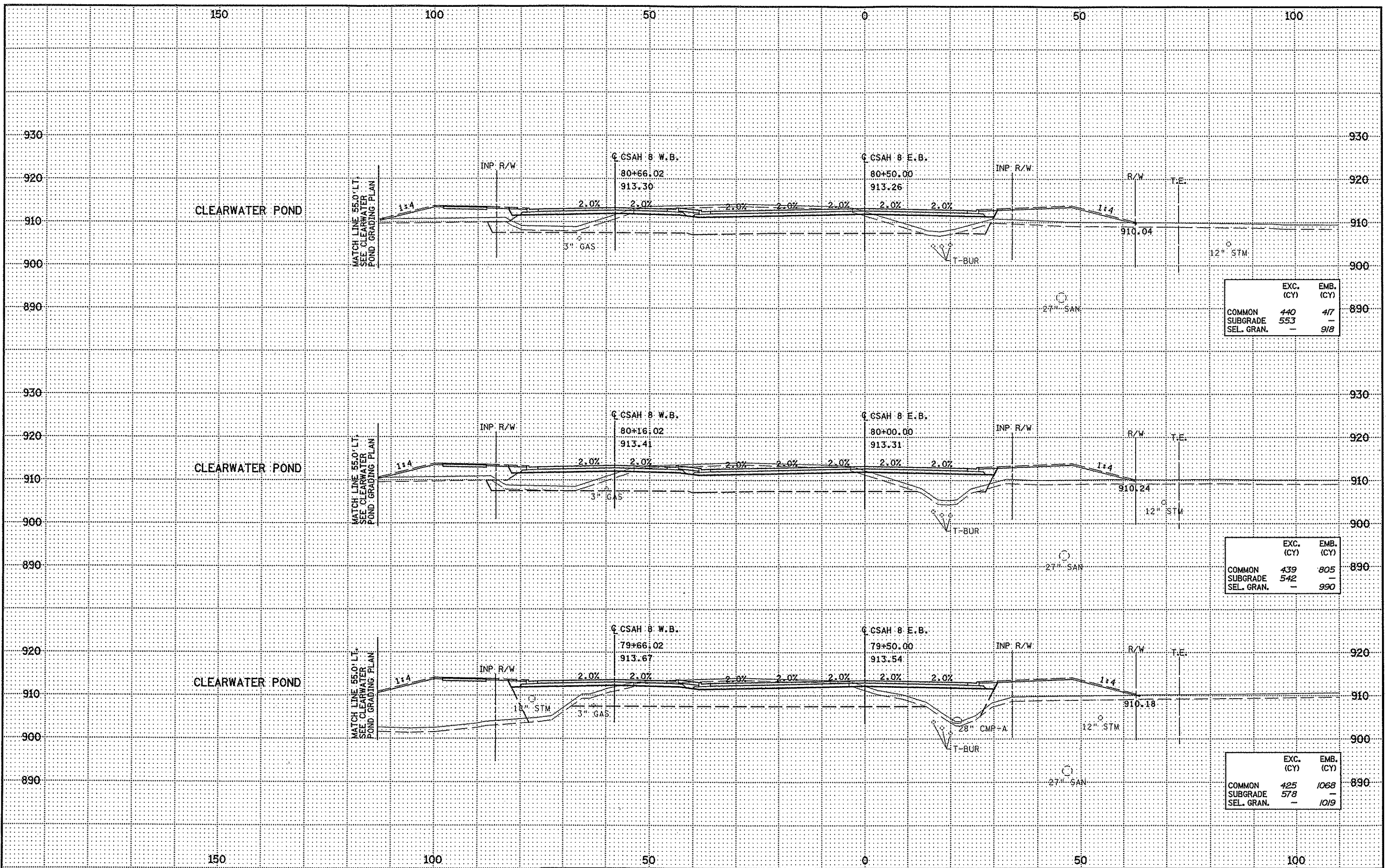


	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	400	877
SEL. GRAN.	-	1035

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	381	702
SEL. GRAN.	-	1106

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	363	872
SEL. GRAN.	-	929

DATE: 8/4/2005 TIME: 12:30:26 PM  
 FILENAME: K:\r2\wastcy\24390\wmy-brdg\wmy-plr-st\c200802.rpt



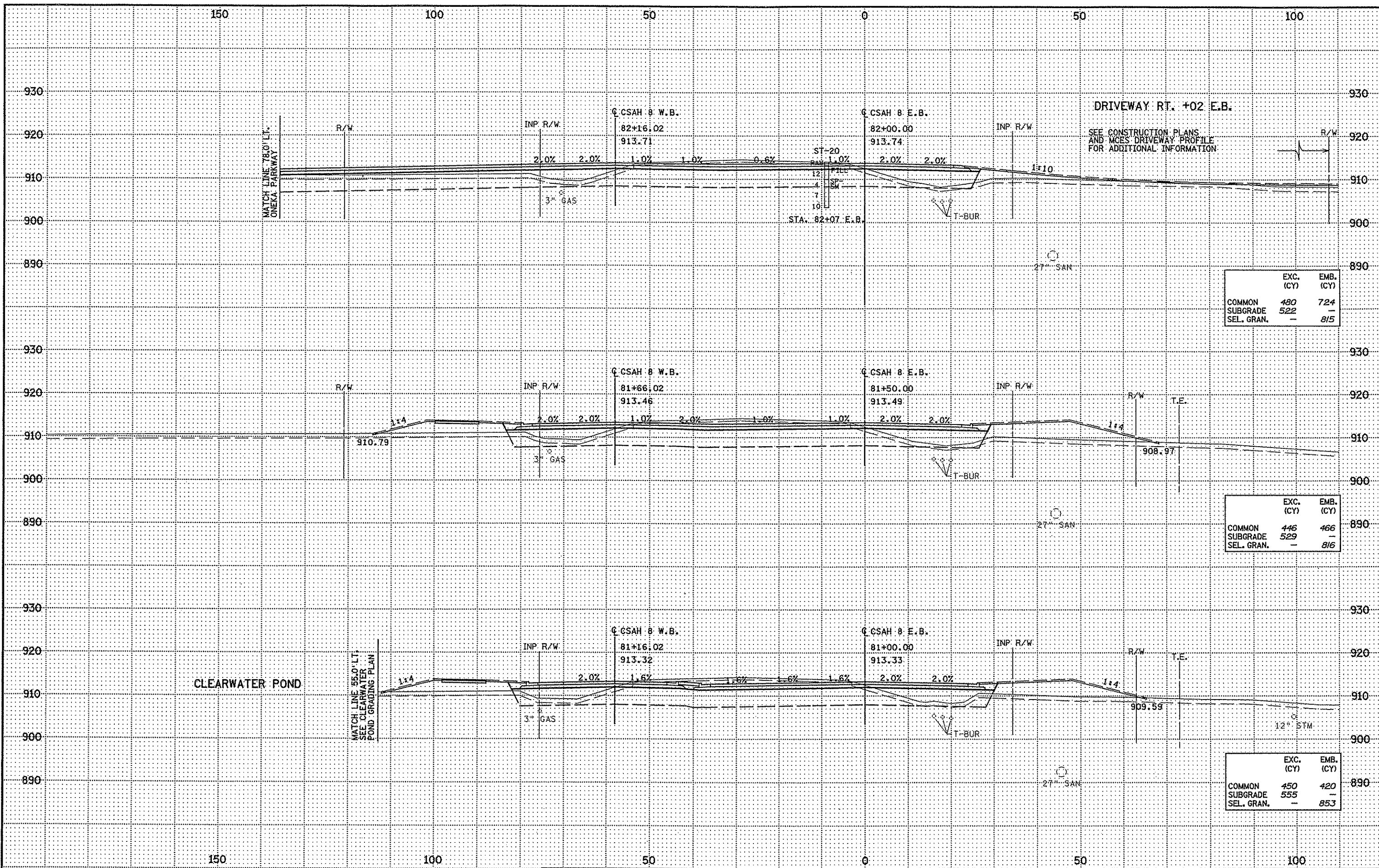
	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	440	417
SEL. GRAN.	—	918

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	439	805
SEL. GRAN.	—	990

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	425	1068
SEL. GRAN.	—	1019



DATE: 8/14/2005 TIME: 12:30:38 PM  
 FILENAME: K:\r-z\wast\cy\24390\wty-brdg\wty\p\tr-s\c200802.dwg

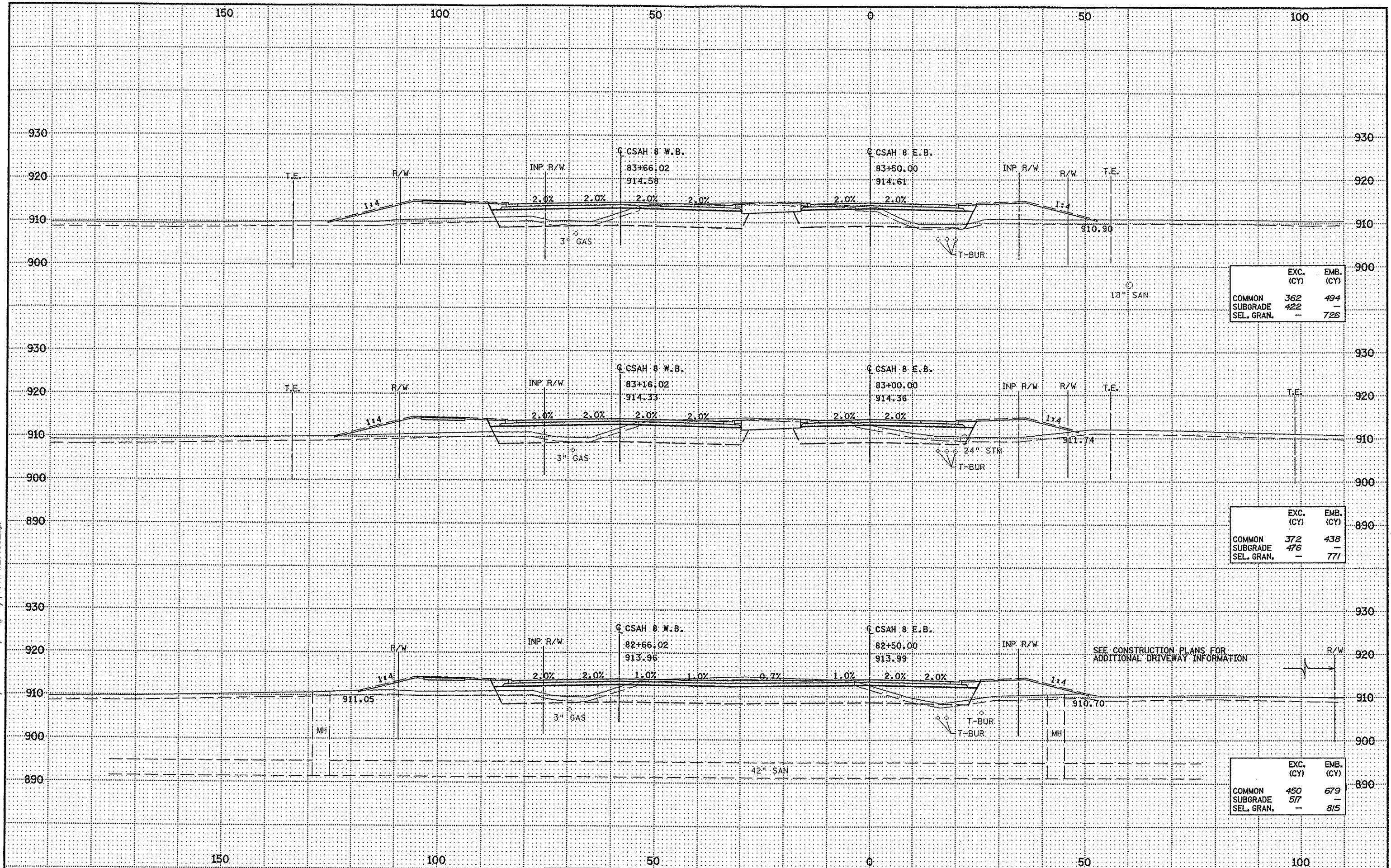


	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	480	724
SEL. GRAN.	-	815

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	446	466
SEL. GRAN.	-	816

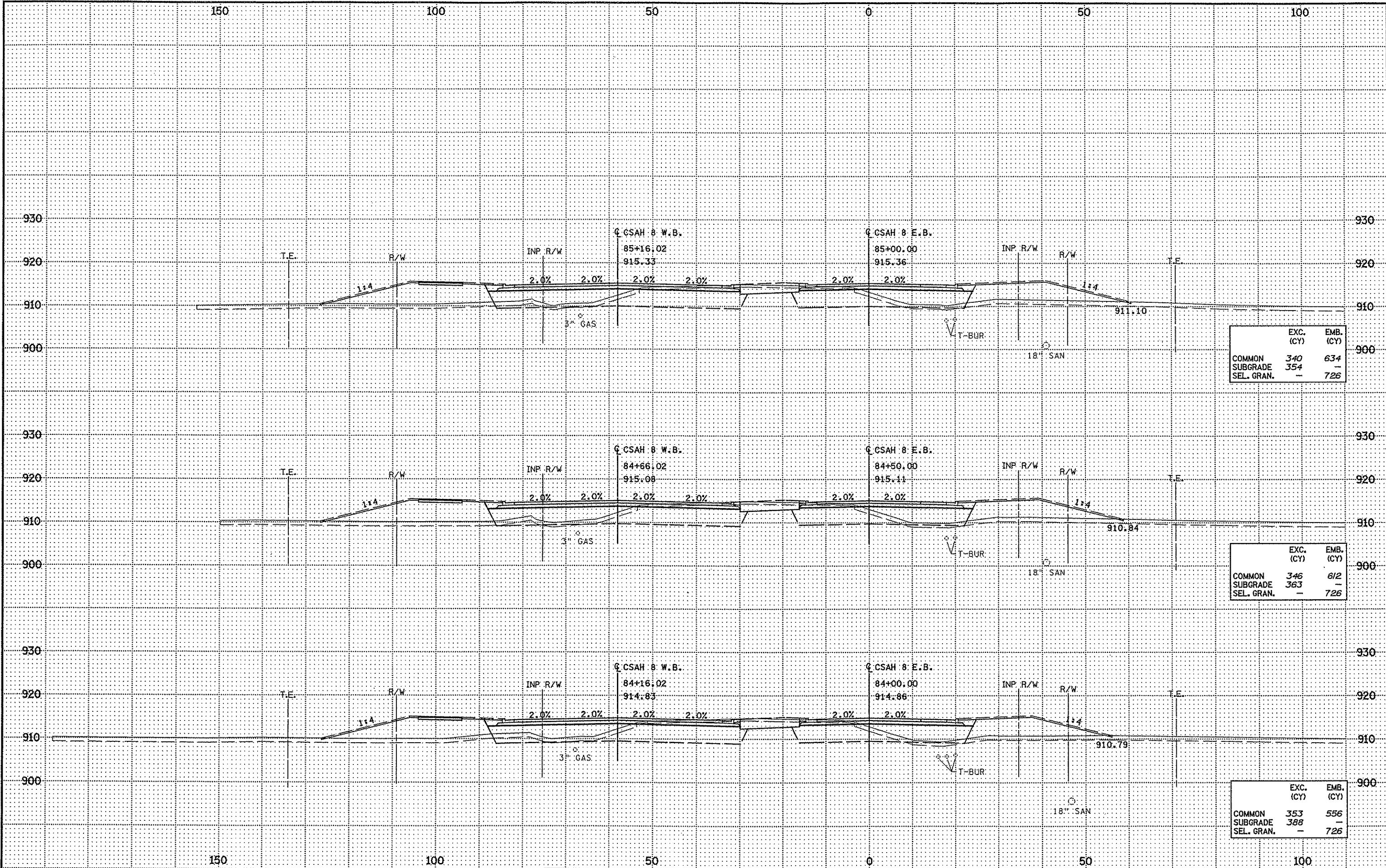
	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	450	420
SEL. GRAN.	-	853

DATE: 8/4/2005 TIME: 12:38:46 PM  
 FILENAME: K:\r-z\wost\c\y\124390\hwy-brdg\hwy\p1r-sht\c200602.dwg



SEE CONSTRUCTION PLANS FOR  
 ADDITIONAL DRIVEWAY INFORMATION

DATE: 8/4/2005 TIME: 12:30:51 PM  
 FILENAME: K:\p2\Wgs\CY\24390\Nwy\brdg\Nwy\p1r-st\c200802.dwg



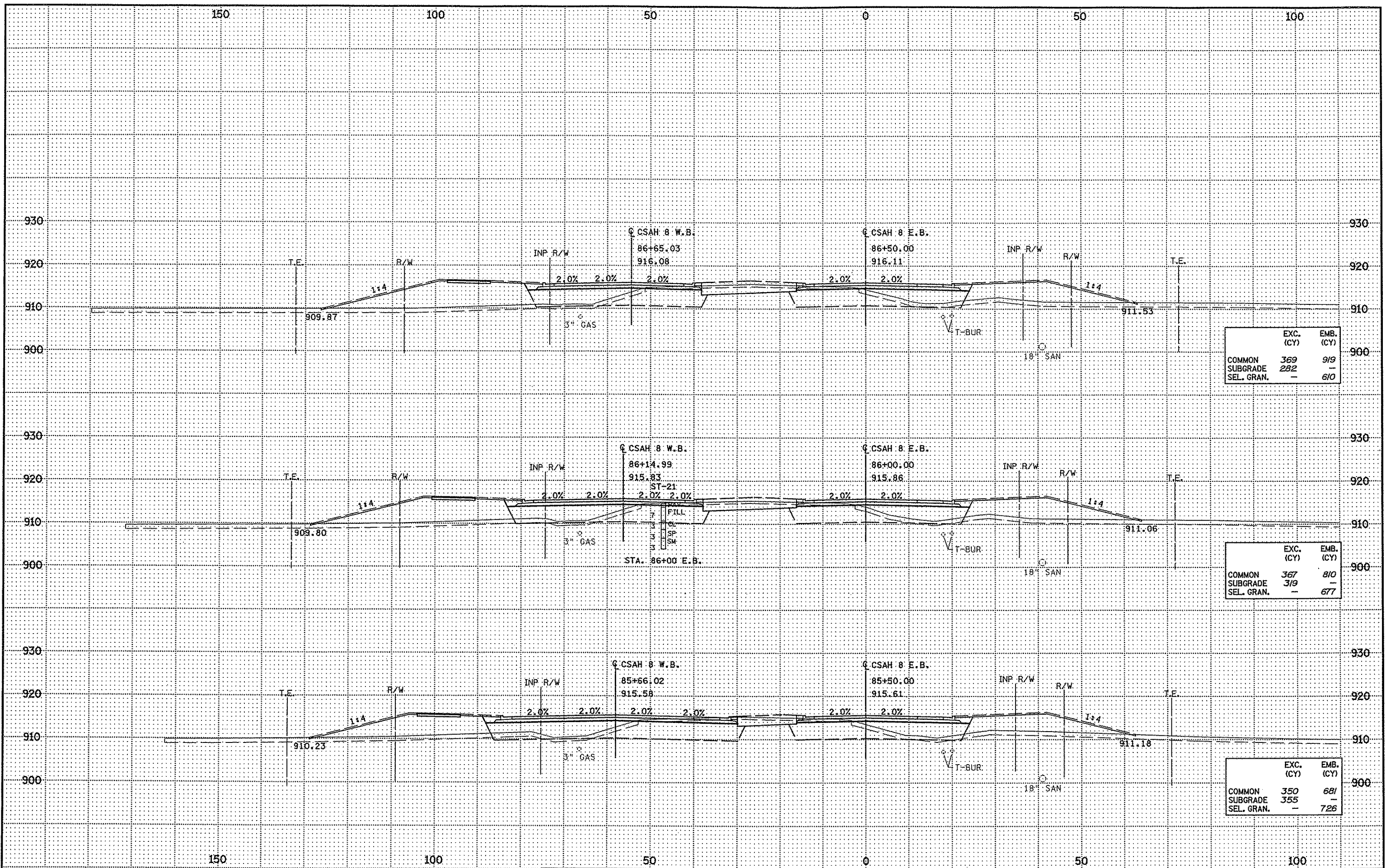
	EXC. (CY)	EMB. (CY)
COMMON	340	634
SUBGRADE	354	-
SEL. GRAN.	-	726

	EXC. (CY)	EMB. (CY)
COMMON	346	612
SUBGRADE	363	-
SEL. GRAN.	-	726

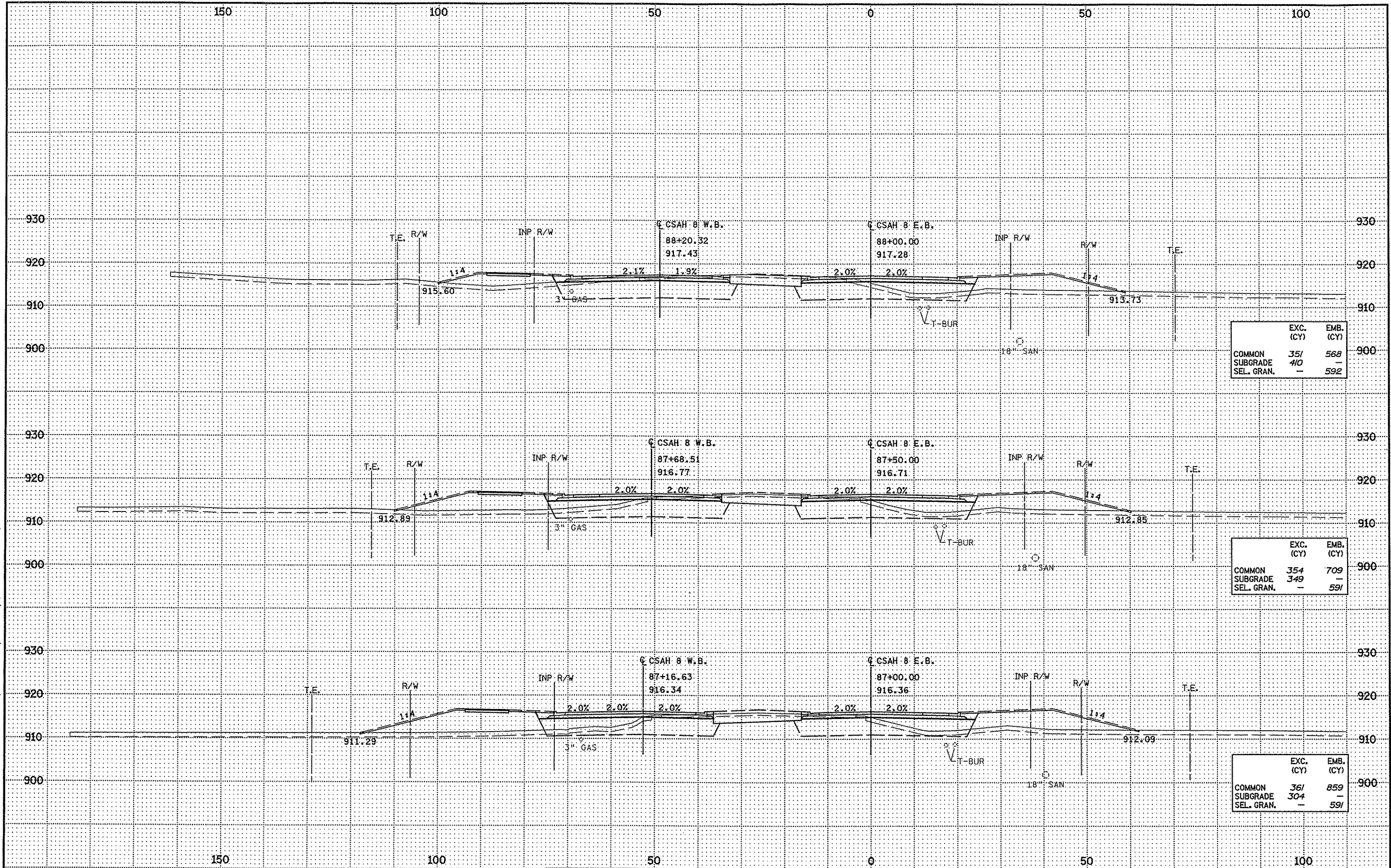
	EXC. (CY)	EMB. (CY)
COMMON	353	556
SUBGRADE	388	-
SEL. GRAN.	-	726



DATE: 8/4/2005 TIME: 12:31:03 PM  
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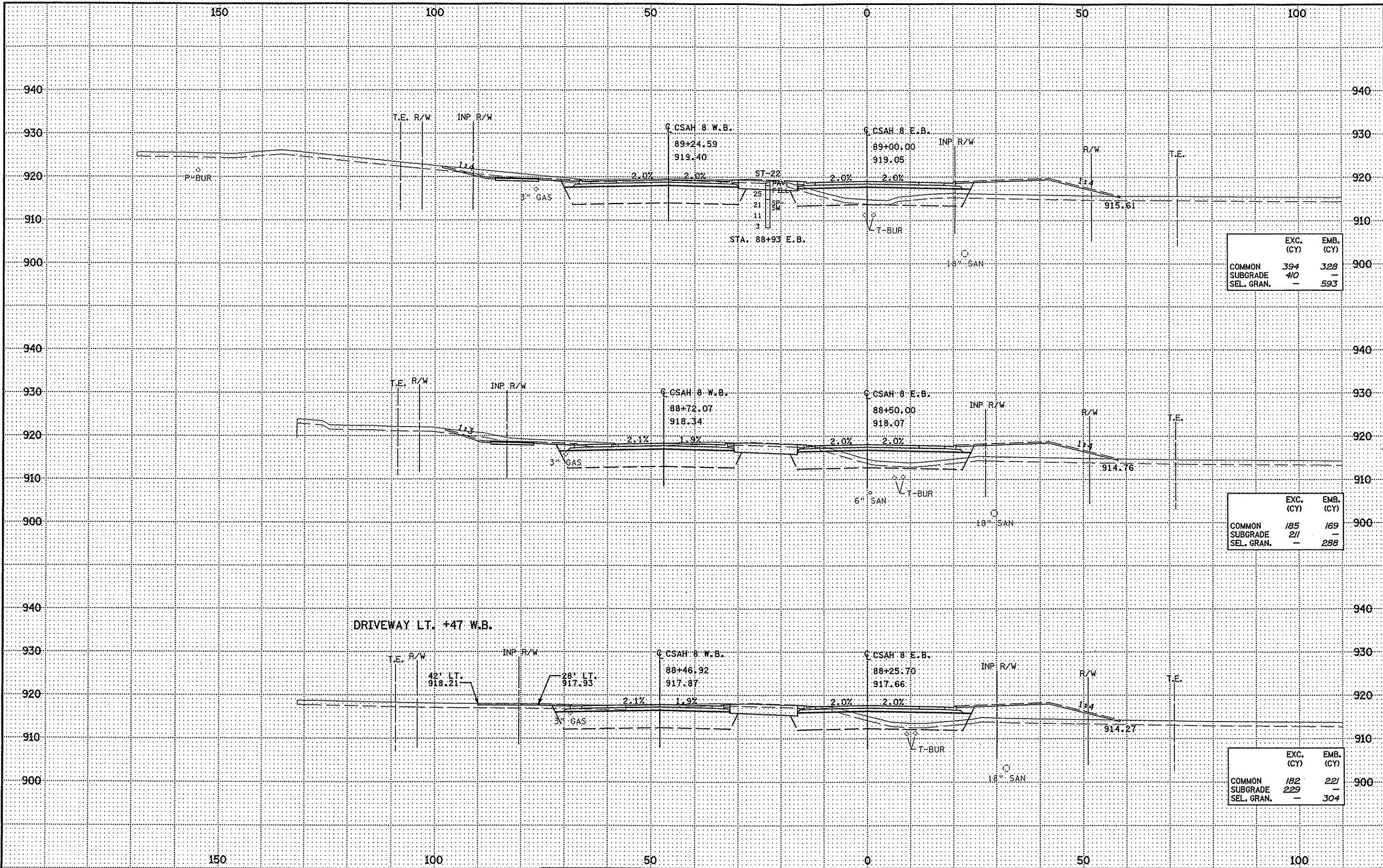


DATE: 8/4/2005 TIME: 12:31:19 PM  
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DATE: 8/4/2005 TIME: 12:31:32 PM  
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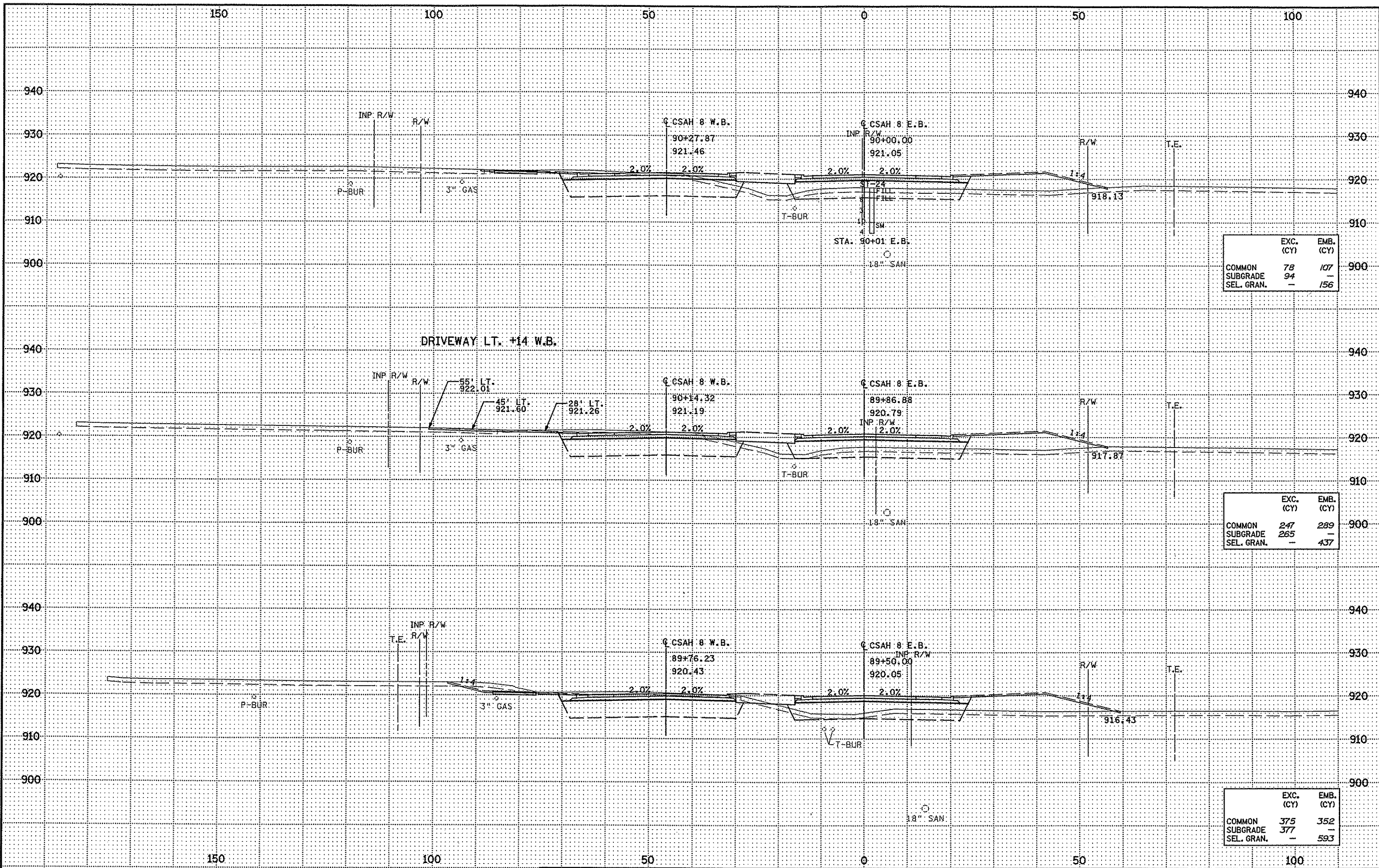


	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	394	328
SEL. GRAN.	410	593

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	185	169
SEL. GRAN.	211	288

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	182	221
SEL. GRAN.	229	304

DATE: 8/14/2005 TIME: 12:31:48 PM  
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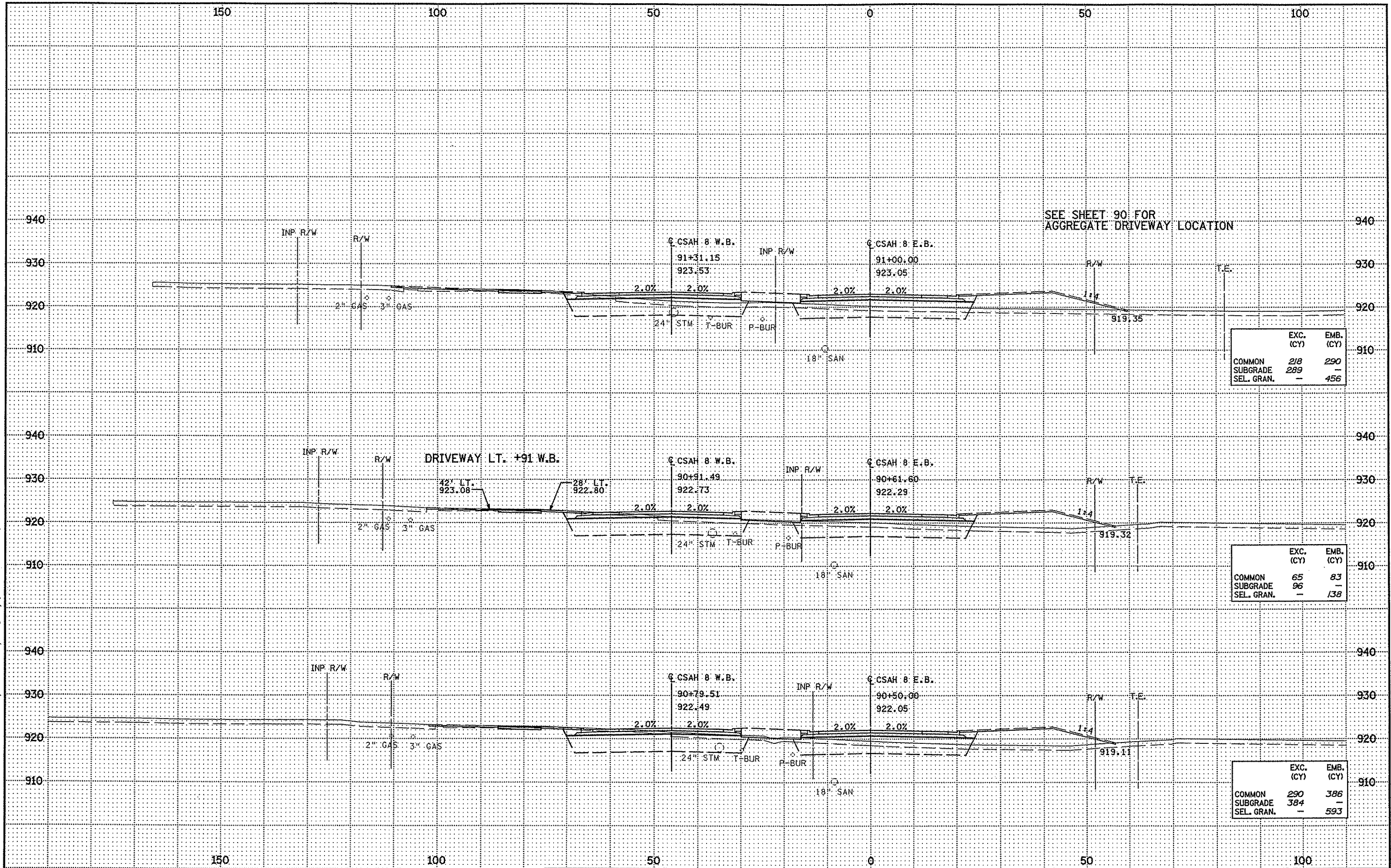


	EXC. (CY)	EMB. (CY)
COMMON	78	107
SUBGRADE	94	-
SEL. GRAN.	-	156

	EXC. (CY)	EMB. (CY)
COMMON	247	289
SUBGRADE	265	-
SEL. GRAN.	-	437

	EXC. (CY)	EMB. (CY)
COMMON	375	352
SUBGRADE	377	-
SEL. GRAN.	-	593

DATE: 8/11/2005 TIME: 9:29:18 AM  
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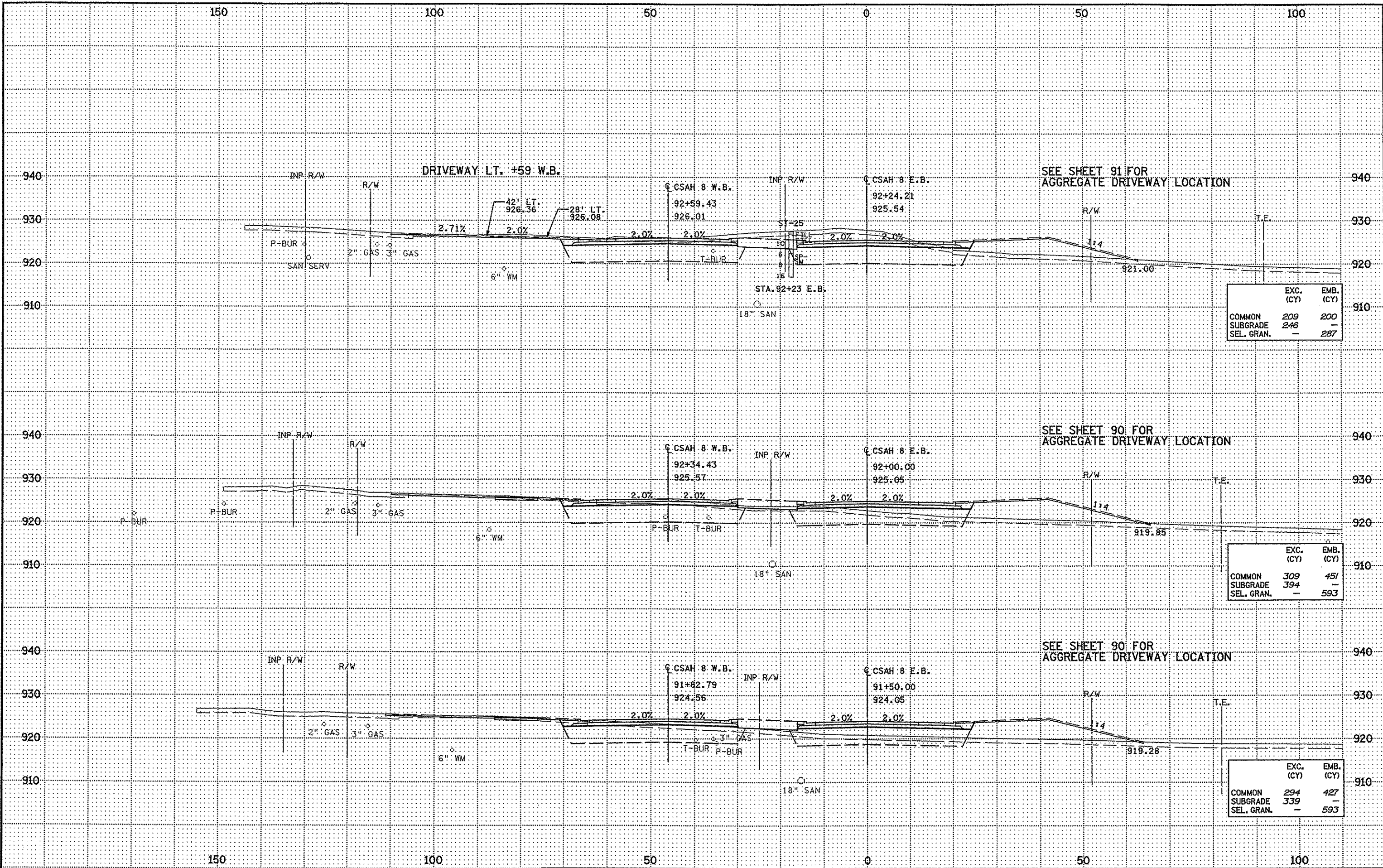


SEE SHEET 90 FOR  
 AGGREGATE DRIVEWAY LOCATION

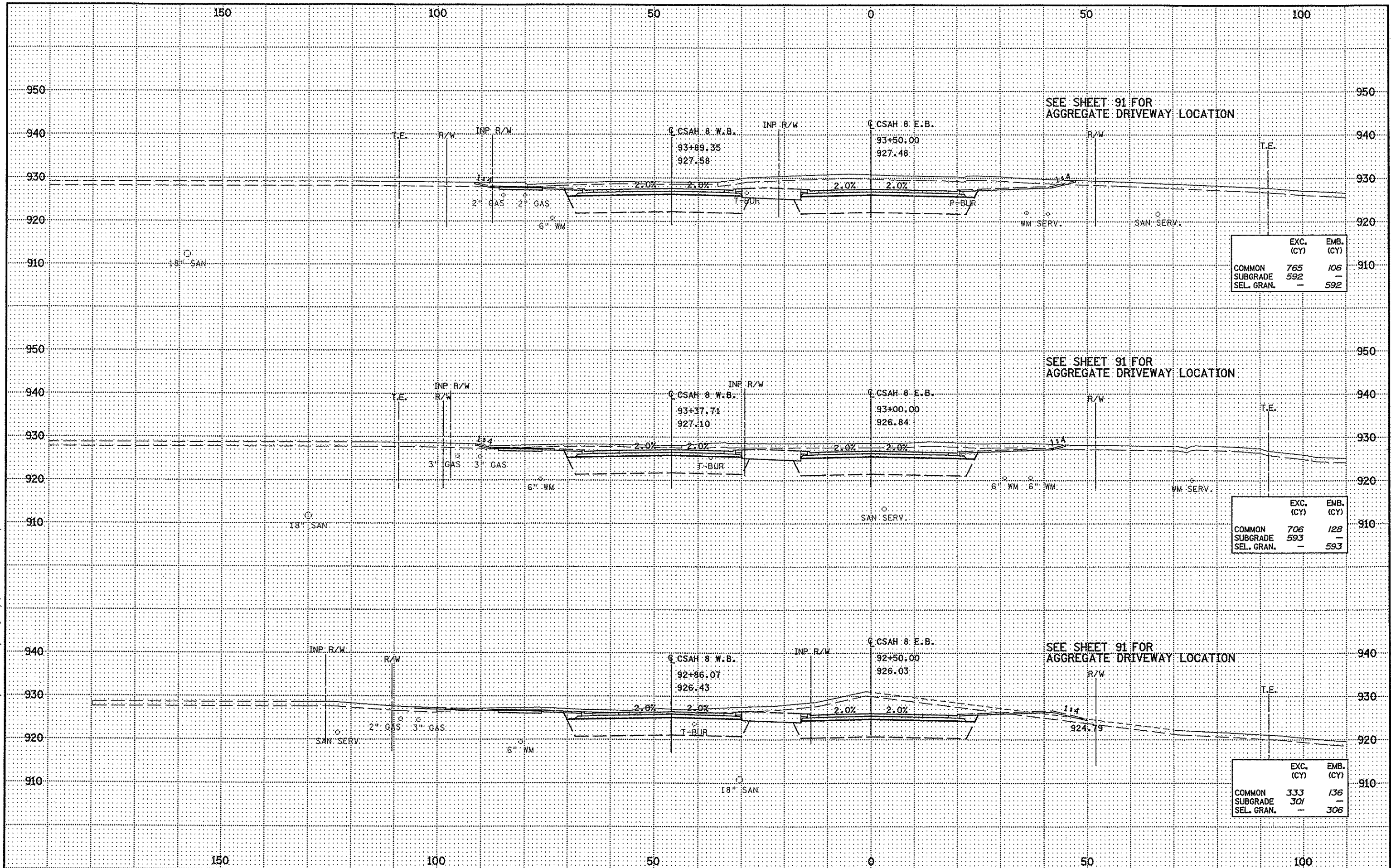
DRIVEWAY LT. +91 W.B.



DATE: 8/11/2005 TIME: 9:29:29 AM  
 FILENAME: K:\r-2\wgst\cy\24390\w\w\brdg\w\w\p\tr-st\200802.dwg

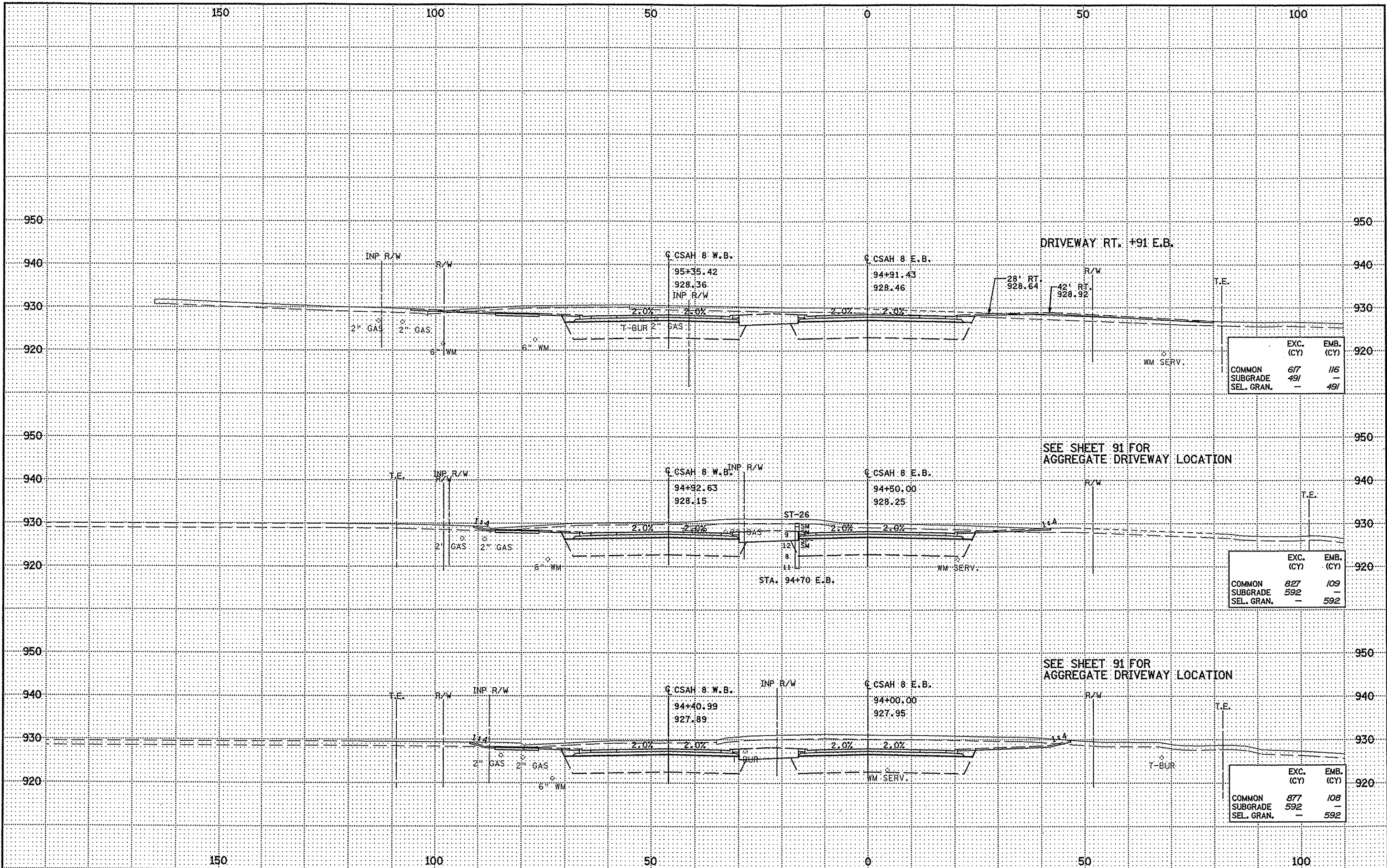


DATE: 8/11/2005 TIME: 9:29:40 AM  
 FILENAME: K:\p2\Wgs\CY\24390\Nwy\brdg\Nwy\pln-sf\c200802.dwg





DATE: 8/11/2005 TIME: 9:29:50 AM  
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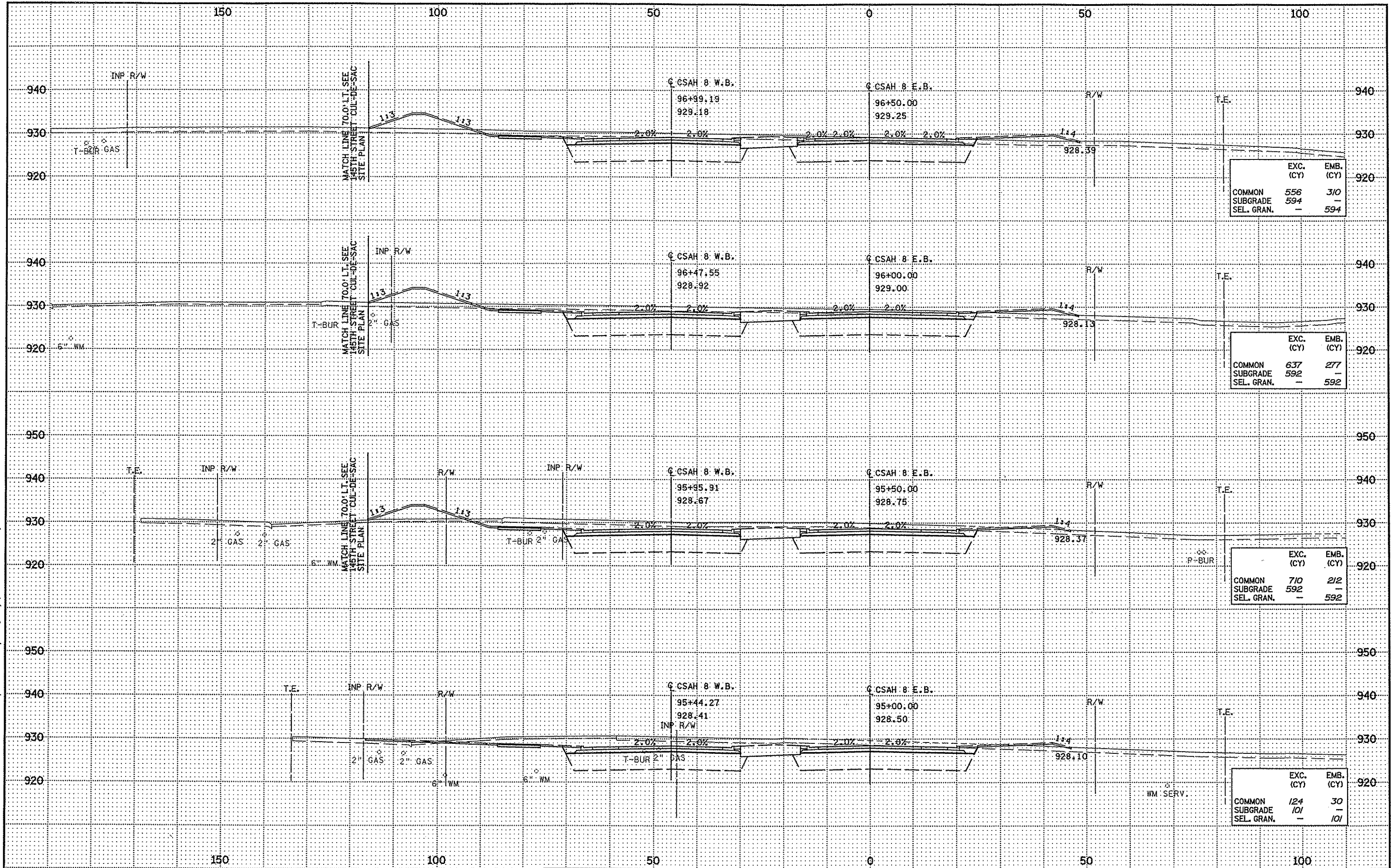


	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	677	116
SEL. GRAN.	491	491

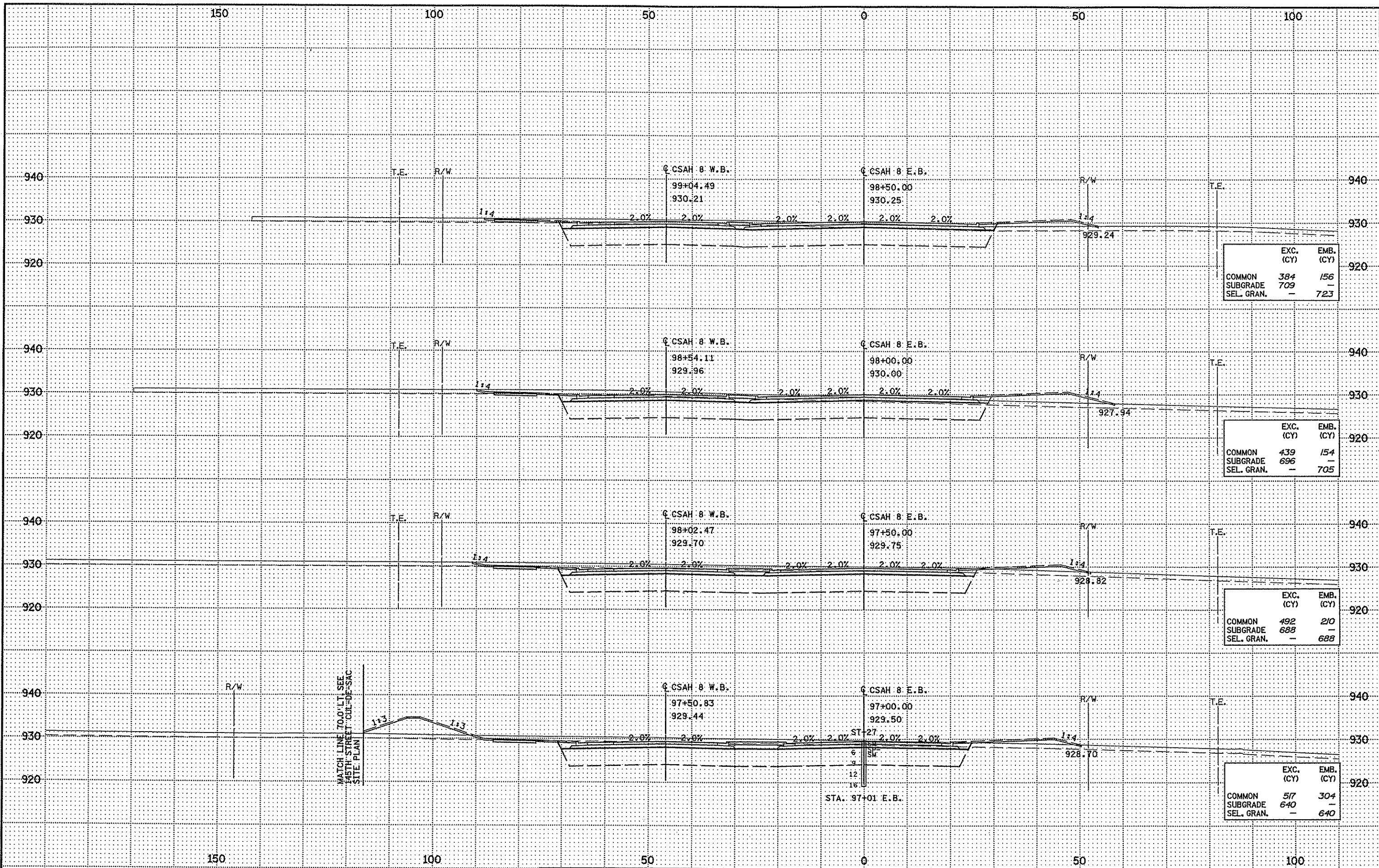
	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	827	109
SEL. GRAN.	592	592

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	877	108
SEL. GRAN.	592	592

DATE: 8/4/2005 TIME: 12:33:29 PM  
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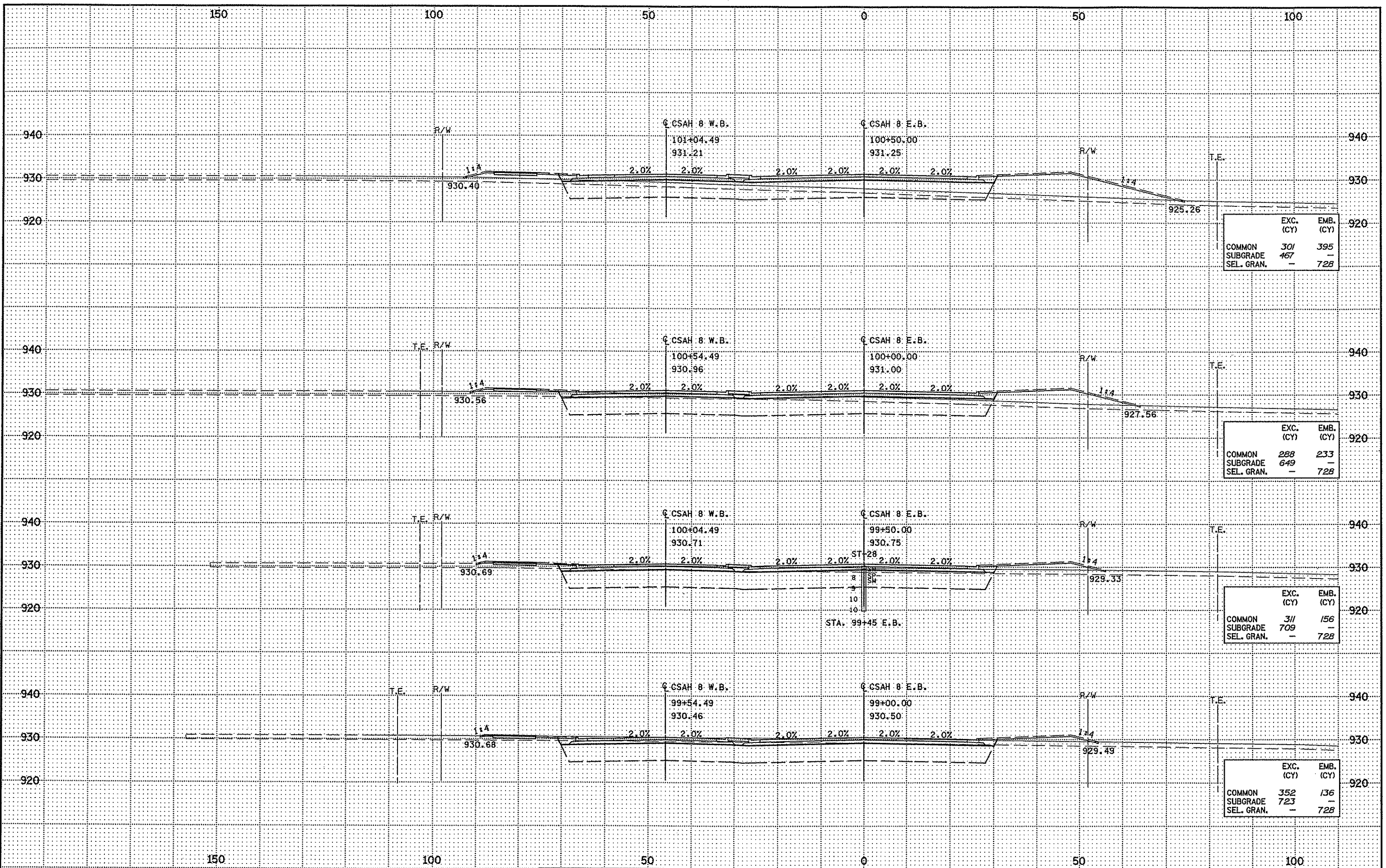


DATE: 8/4/2005 TIME: 12:33:41 PM  
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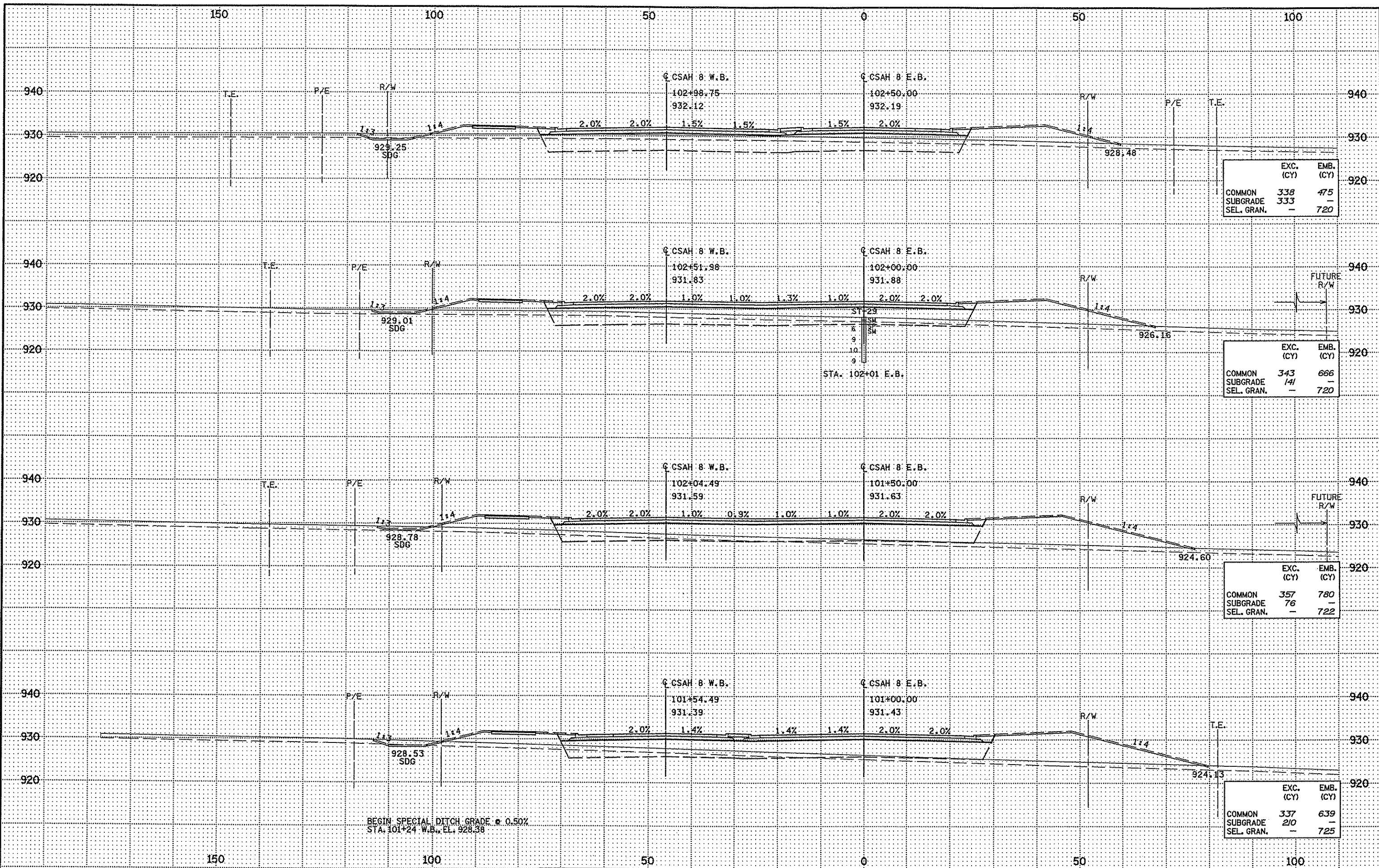




DATE: 8/4/2005 TIME: 12:33:54 PM  
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DATE: 8/14/2005 TIME: 12:34:06 PM  
 FILENAME: K:\r-2\wost\cy\24390\hwy\brdg\hwy\p1r-sit\c200802.rpl



	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	338	475
SEL. GRAN.	-	720

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	343	666
SEL. GRAN.	-	720

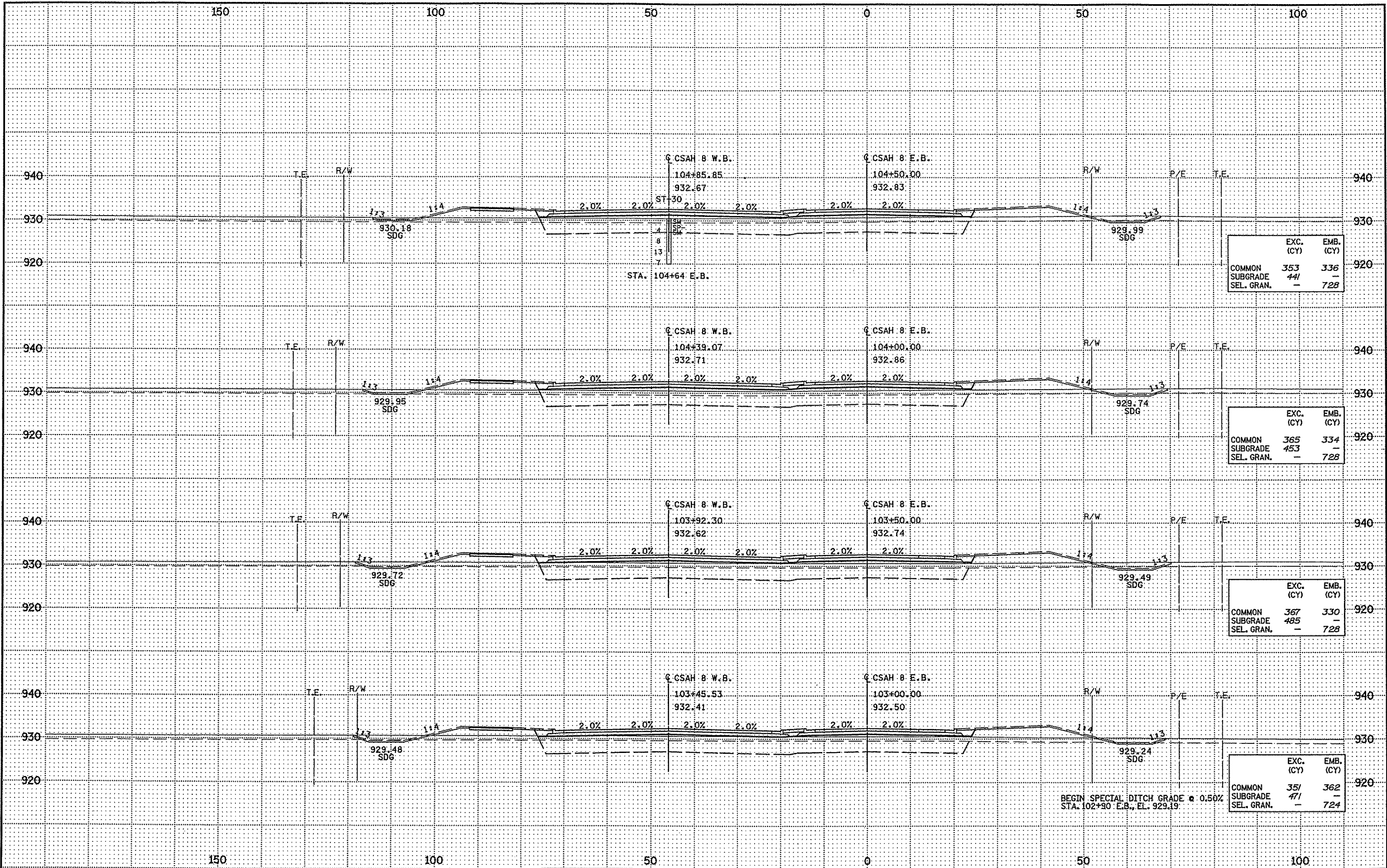
	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	357	780
SEL. GRAN.	76	722

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	337	639
SEL. GRAN.	210	725

BEGIN SPECIAL DITCH GRADE @ 0.50%  
 STA. 101+24 W.B., EL. 928.38

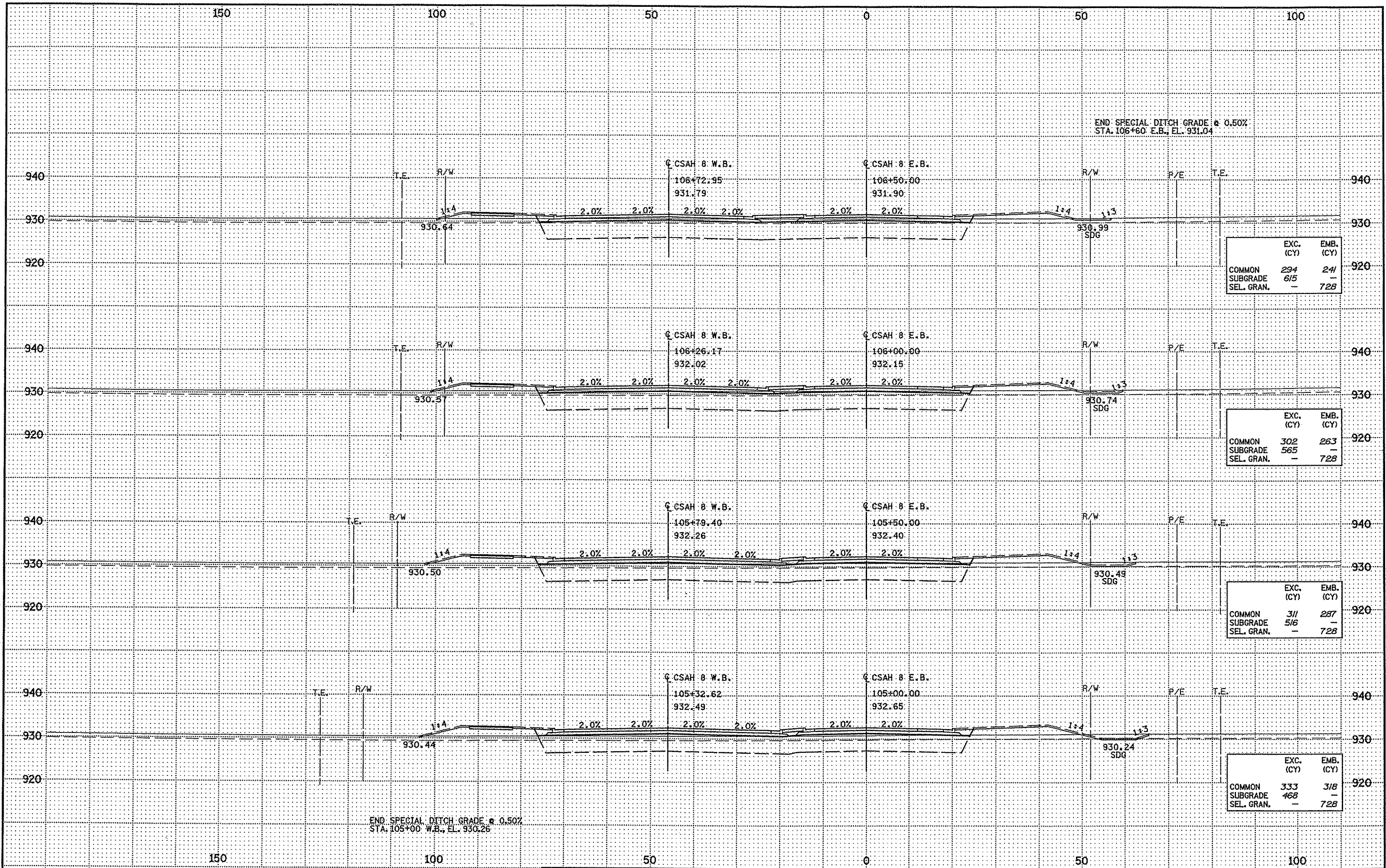


DATE: 8/14/2005 TIME: 12:34:18 PM  
 FILENAME: K:\r2\wgs\cy\24390\hwy-brdg\hwy\p1r-st\c200802.dwg



BEGIN SPECIAL DITCH GRADE @ 0.50%  
 STA. 102+90 E.B., EL. 929.19

DATE: 8/4/2005 TIME: 12:34:31 PM  
 FILENAME: K:\r-z\w\sh\124390\hwy-br\dwg\hwy-pln-sh\c200802.dwg



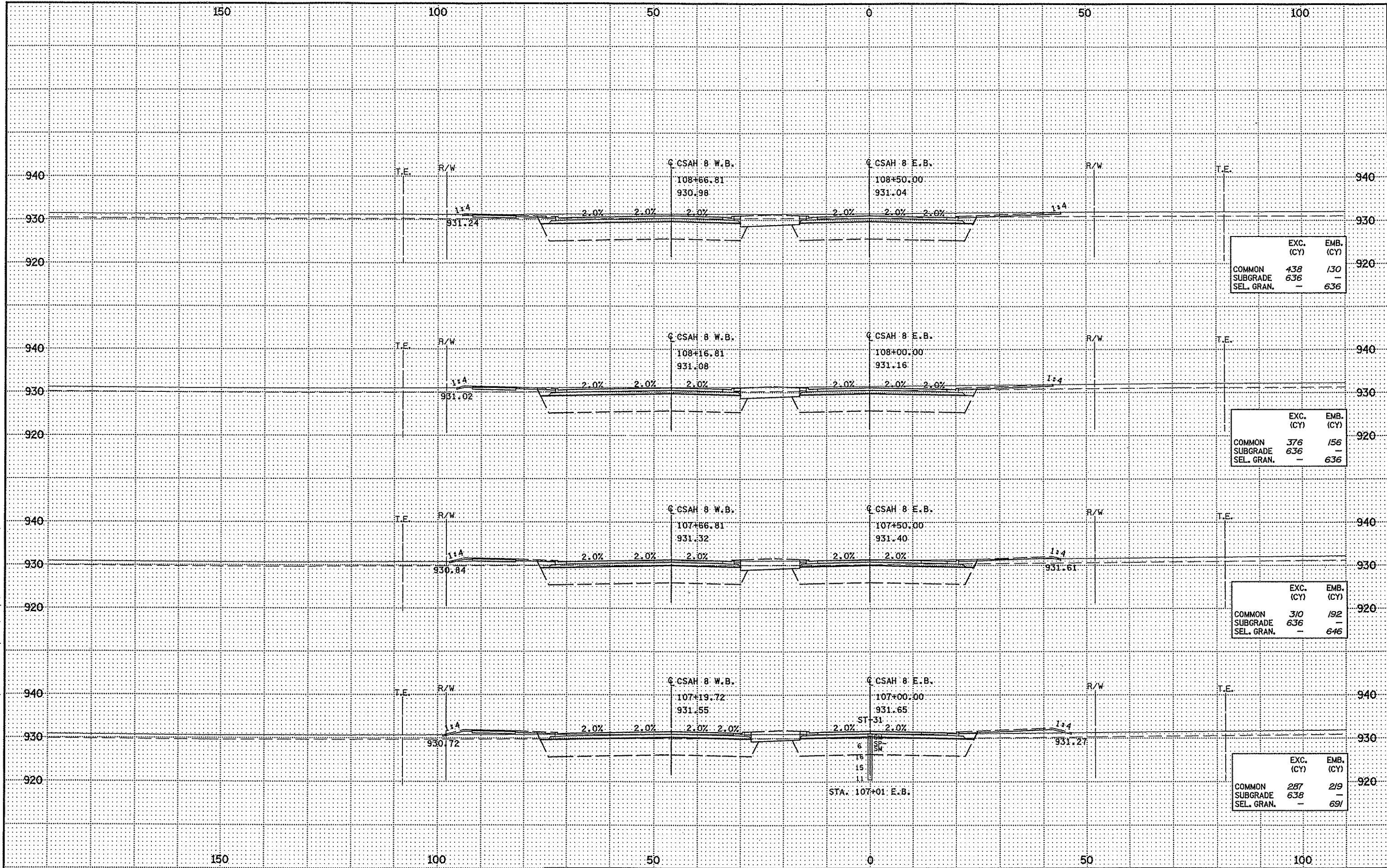
	EXC. (CY)	EMB. (CY)
COMMON	294	241
SUBGRADE	615	-
SEL. GRAN.	-	728

	EXC. (CY)	EMB. (CY)
COMMON	302	263
SUBGRADE	565	-
SEL. GRAN.	-	728

	EXC. (CY)	EMB. (CY)
COMMON	311	287
SUBGRADE	516	-
SEL. GRAN.	-	728

	EXC. (CY)	EMB. (CY)
COMMON	333	318
SUBGRADE	468	-
SEL. GRAN.	-	728

DATE: 8/14/2005 TIME: 12:34:43 PM  
 FILENAME: K:\r-2\wastcy\24390\hwy-brdg\hwy\p1r-s1\c200802.dwg



	EXC. (CY)	EMB. (CY)
COMMON	438	130
SUBGRADE	636	-
SEL. GRAN.	-	636

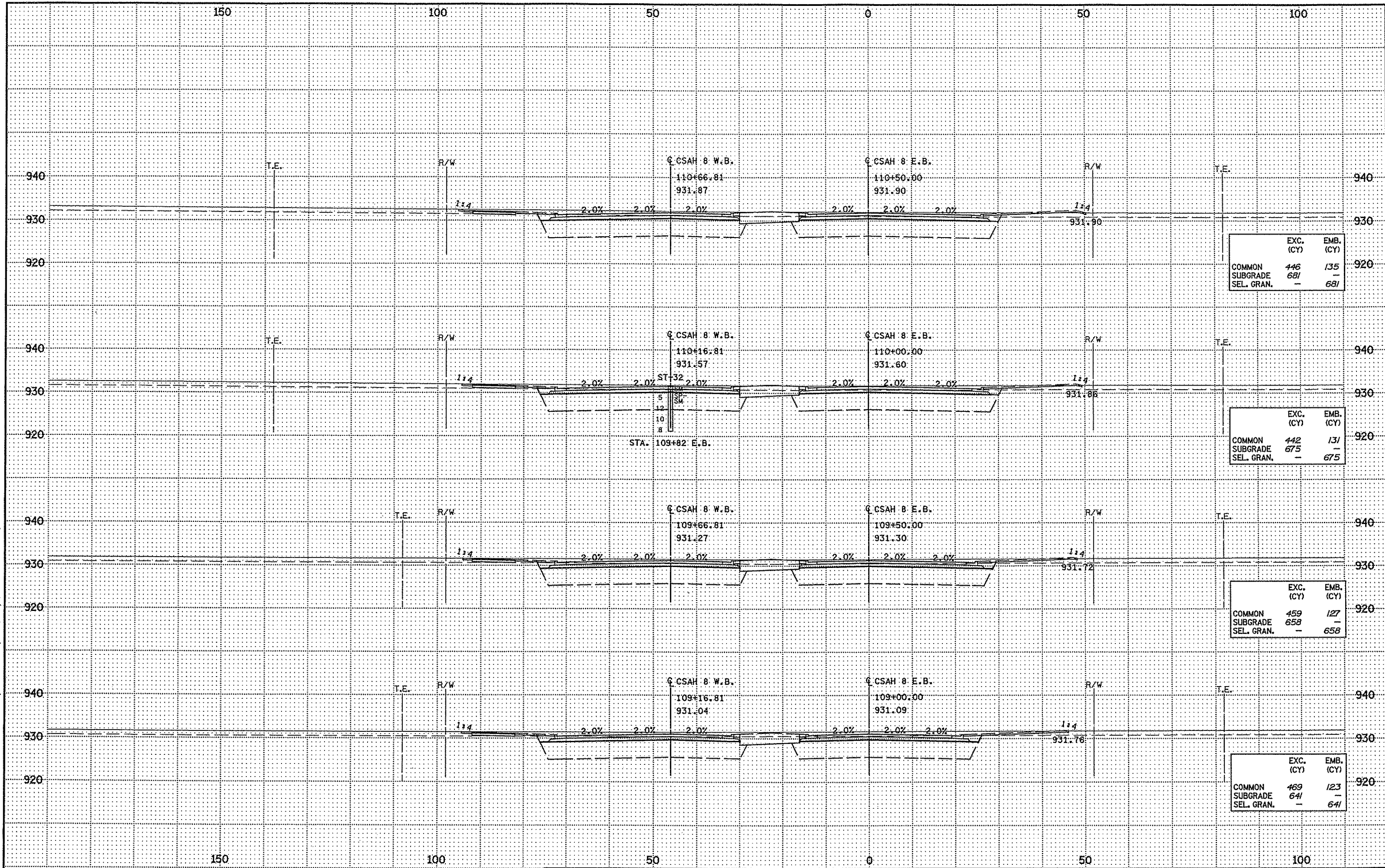
	EXC. (CY)	EMB. (CY)
COMMON	376	156
SUBGRADE	636	-
SEL. GRAN.	-	636

	EXC. (CY)	EMB. (CY)
COMMON	310	192
SUBGRADE	636	-
SEL. GRAN.	-	646

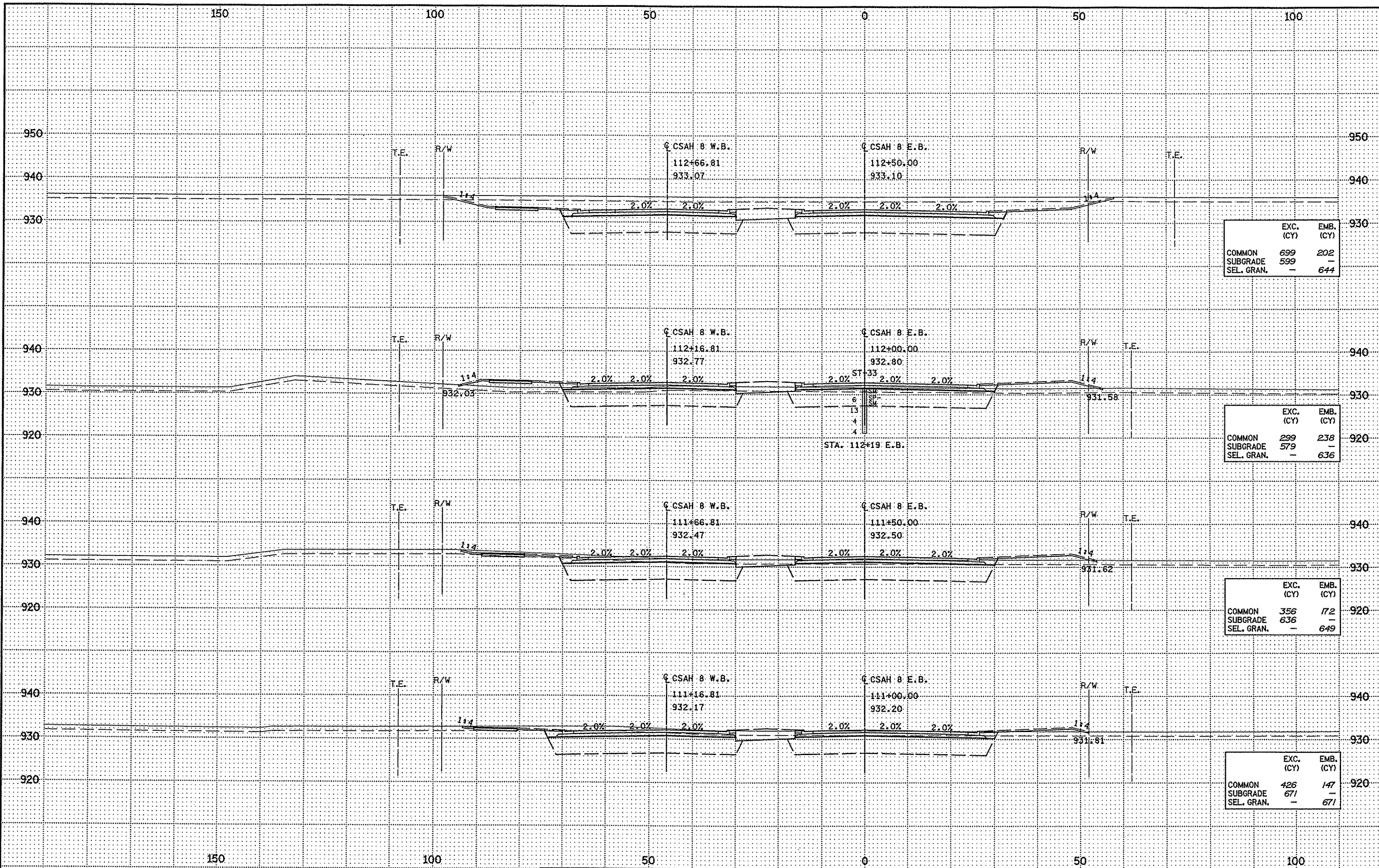
	EXC. (CY)	EMB. (CY)
COMMON	287	219
SUBGRADE	638	-
SEL. GRAN.	-	691



DATE: 8/14/2005 TIME: 12:34:55 PM  
 FILENAME: K:\r-2\wastcy\124390\hwy-brdg\hwy\p1r-sit\c200802.dwg



DATE: 8/14/2005 TIME: 12:35:08 PM  
 FILENAME: K:\r-z\wastcy\124390\hwy-brdg\hwy\p1r-sit\cs000802.rpl



	EXC. (CY)	EMB. (CY)
COMMON	699	202
SUBGRADE	599	-
SEL. GRAN.	-	644

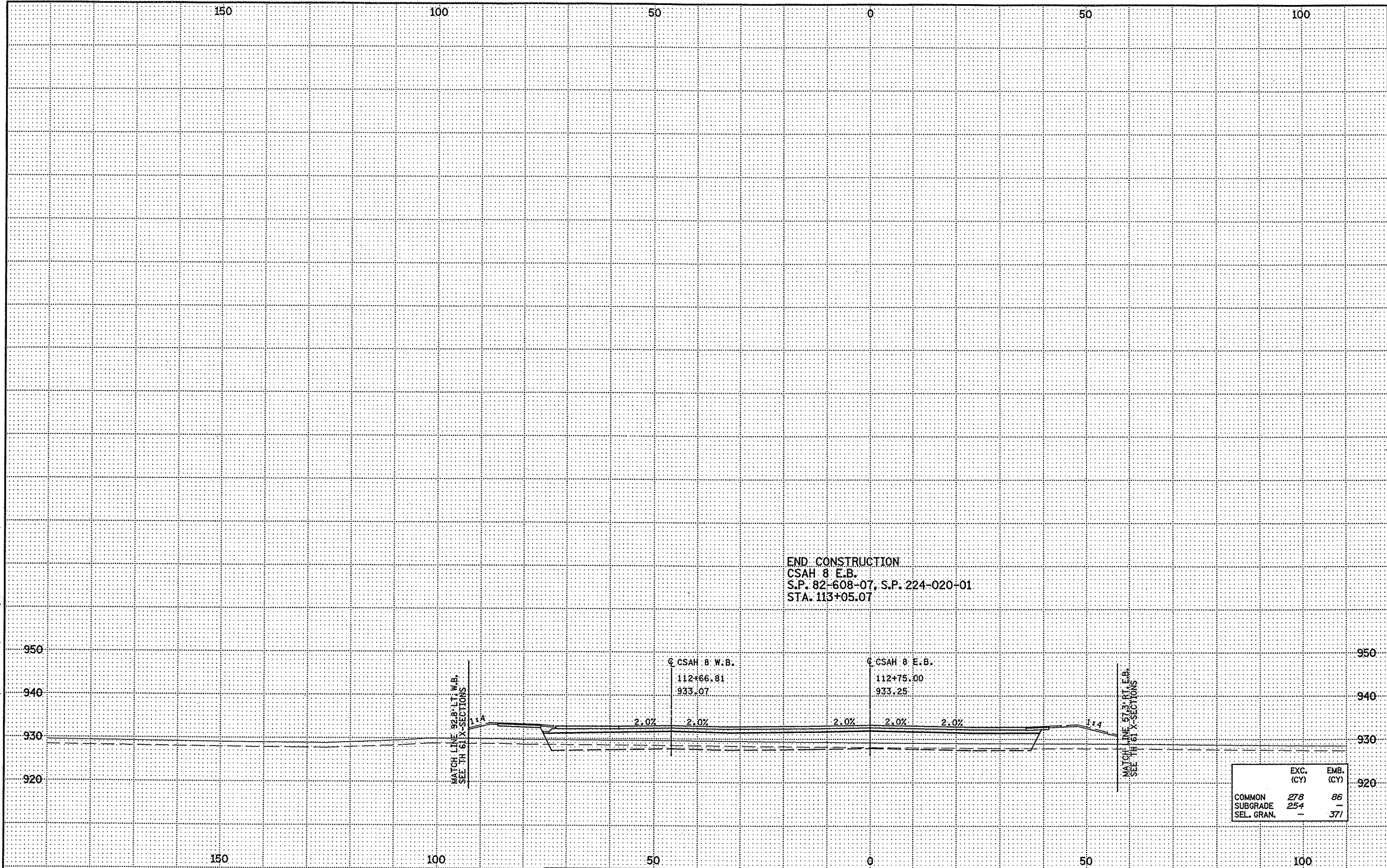
	EXC. (CY)	EMB. (CY)
COMMON	299	238
SUBGRADE	579	-
SEL. GRAN.	-	636

	EXC. (CY)	EMB. (CY)
COMMON	356	172
SUBGRADE	636	-
SEL. GRAN.	-	649

	EXC. (CY)	EMB. (CY)
COMMON	426	147
SUBGRADE	671	-
SEL. GRAN.	-	671



DATE: 8/4/2005 TIME: 12:36:30 PM  
 FILENAME: K:\r-z\WastCity\24390\hwy-brdg\hwy\p1r-s\12200802.dwg



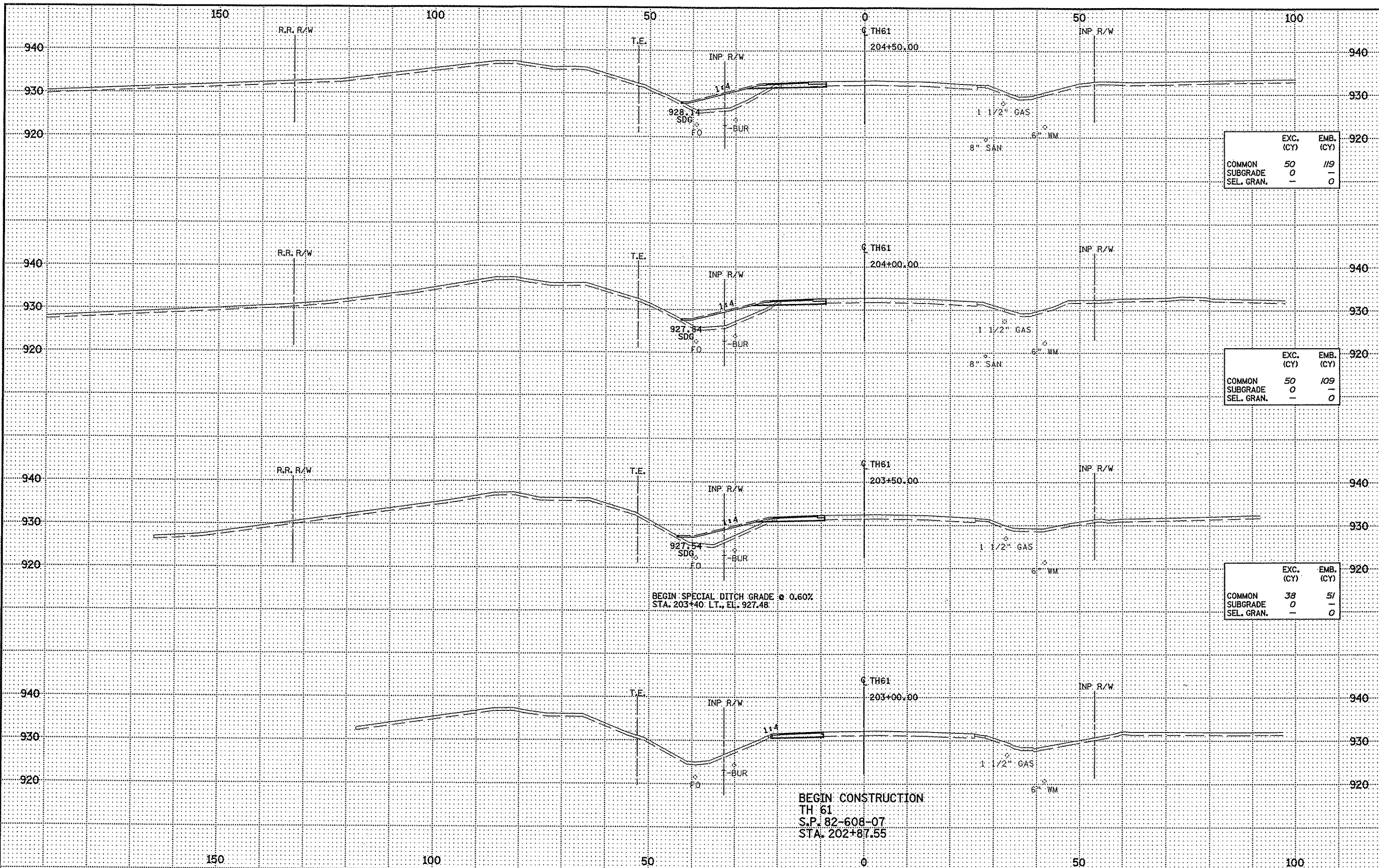
END CONSTRUCTION  
 CSAH 8 E.B.  
 S.P. 82-608-07, S.P. 224-020-01  
 STA. 113+05.07

MATCH LINE 98+81.17 W.B.  
 SEE TH 61 X SECTIONS

MATCH LINE 113+05.07 E.B.  
 SEE TH 61 X SECTIONS

	EXC. (CY)	EMB. (CY)
COMMON	278	86
SUBGRADE	254	-
SEL. GRAN.	-	371

DATE: 8/14/2005 TIME: 12:40:58 PM  
 FILENAME: K:\r-z\wostcy\24390\hwy-brdg\hwy\tr-sht\0200602.rpl



	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	50	119
SEL. GRAN.	0	0

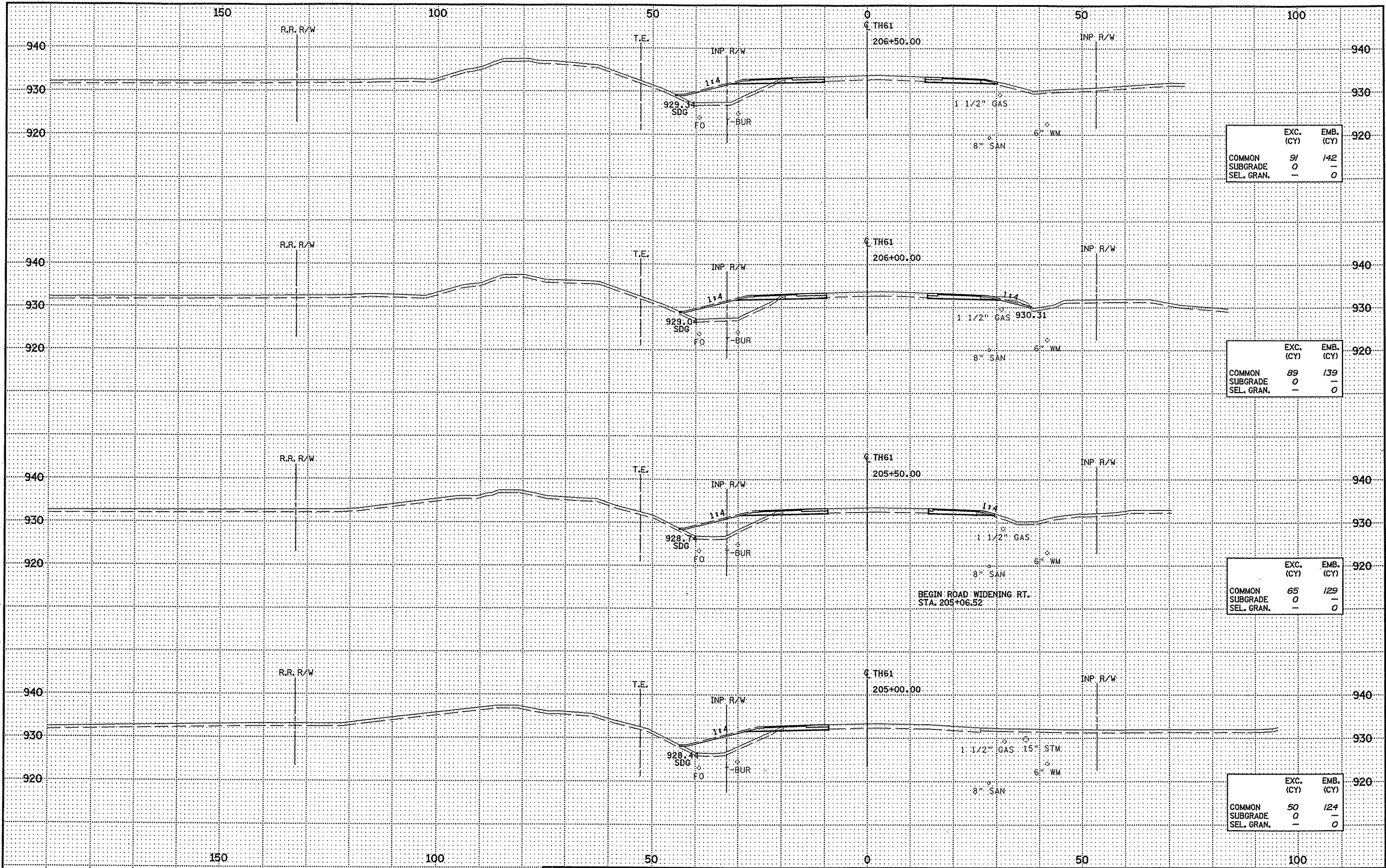
	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	50	109
SEL. GRAN.	0	0

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	38	51
SEL. GRAN.	0	0

BEGIN SPECIAL DITCH GRADE @ 0.60%  
 STA. 203+40. LT. EL. 927.48

BEGIN CONSTRUCTION  
 TH 61  
 S.P. 82-608-07  
 STA. 202+87.55

DATE: 8/4/2005 TIME: 12:41:11 PM  
 FILENAME: K:\V-Z\WASHDC\124390\HWY\brdg\hwyp\tr-sht\c200802.sp1



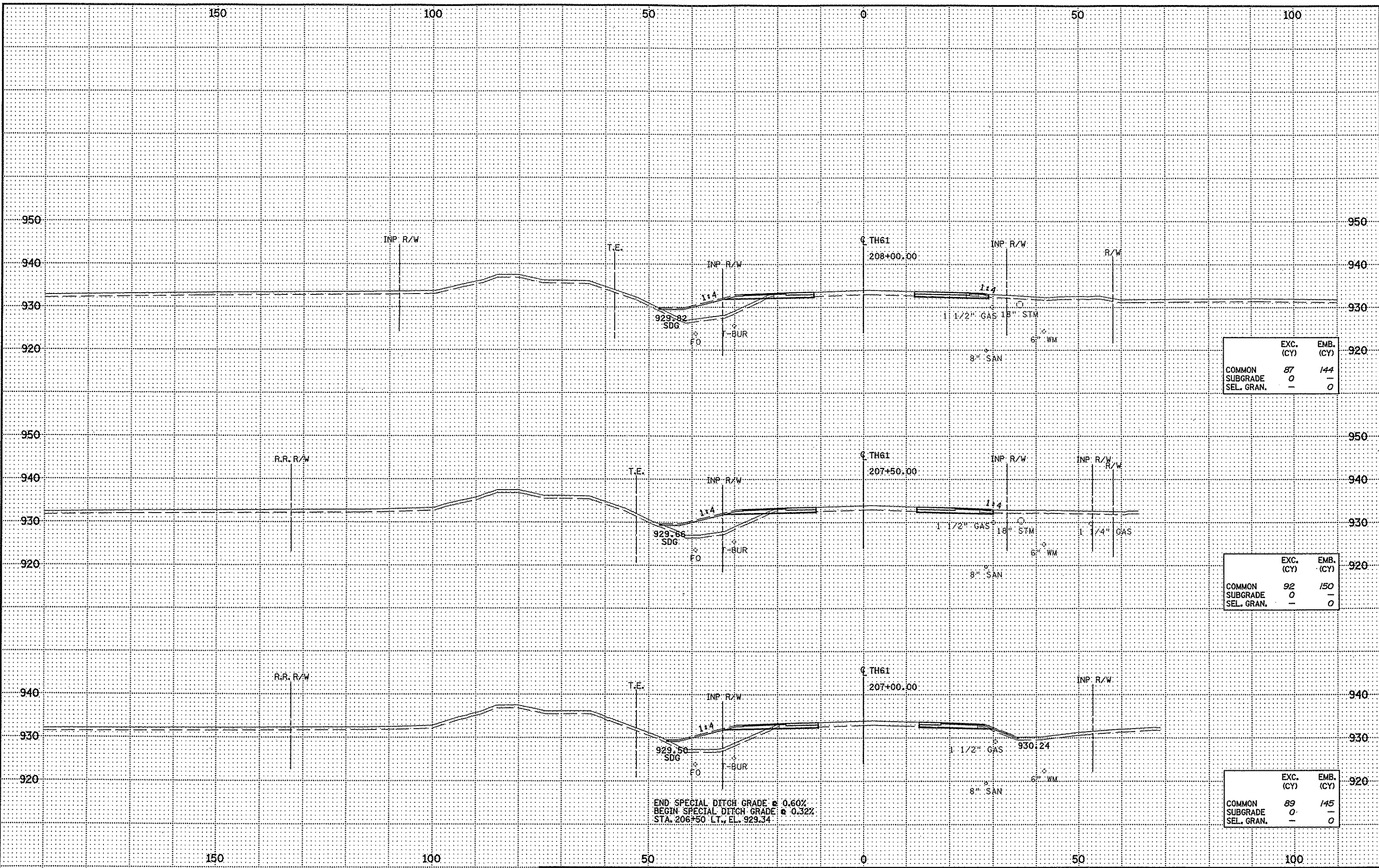
	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	91	142
SEL. GRAN.	-	0

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	89	139
SEL. GRAN.	-	0

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	65	129
SEL. GRAN.	-	0

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	50	124
SEL. GRAN.	-	0

DATE: 8/4/2005 TIME: 12:41:24 PM  
 FILENAME: K:\r-z\w\as\c\y\24390\hwy\p\tr-sh\c200602.dwg



	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	87	144
SEL. GRAN.	0	0

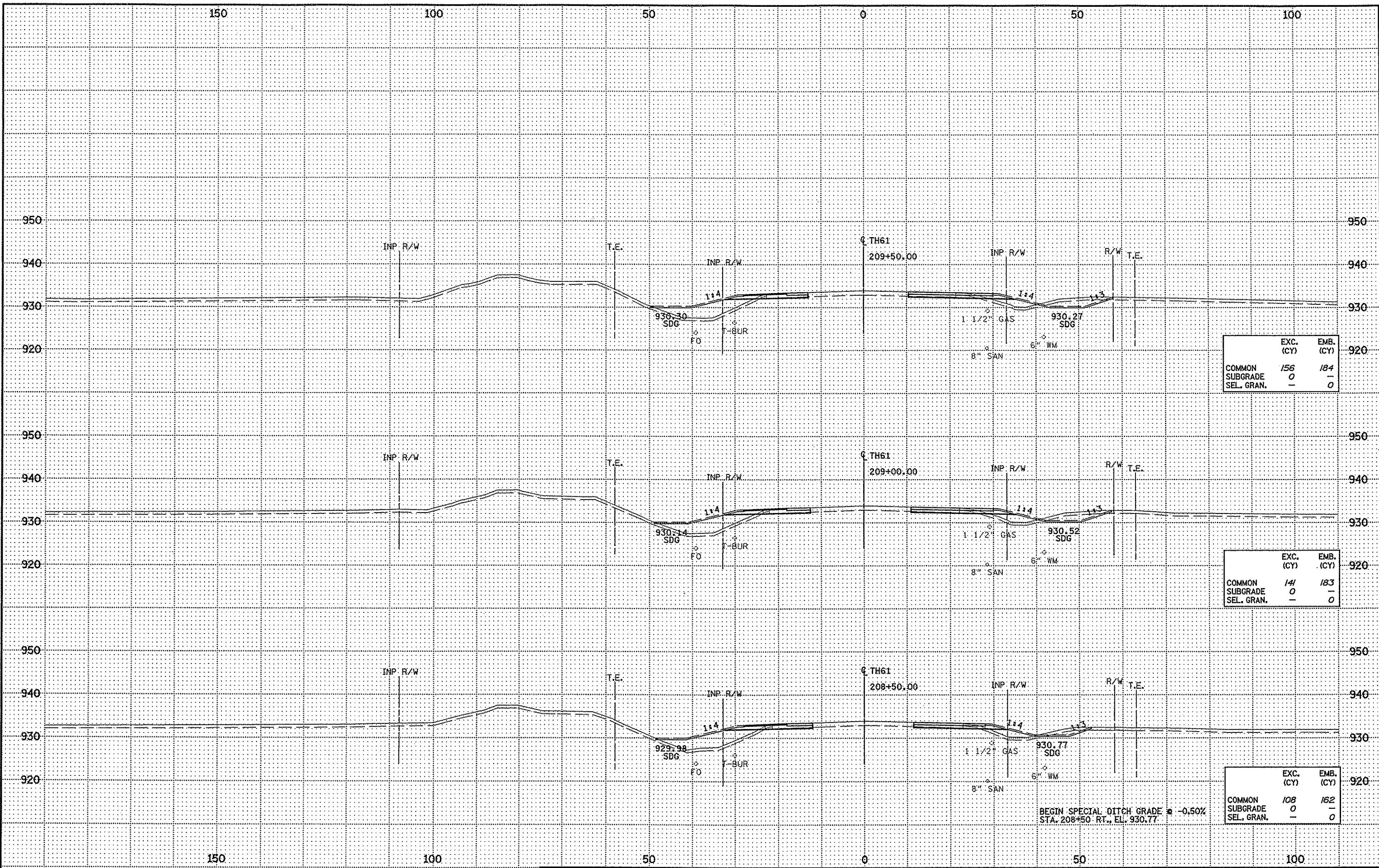
	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	92	150
SEL. GRAN.	0	0

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	89	145
SEL. GRAN.	0	0

END SPECIAL DITCH GRADE @ 0.60%  
 BEGIN SPECIAL DITCH GRADE @ 0.32%  
 STA. 206+50 L.T., EL. 929.34



DATE: 8/4/2005 TIME: 12:41:40 PM  
 FILENAME: K:\r-z\wast\cy\24390\hwy-br\dg\hwy\p\tr-s\h\c200802.dwg



	EXC. (CY)	EMB. (CY)
COMMON	156	184
SUBGRADE	0	—
SEL. GRAN.	—	0

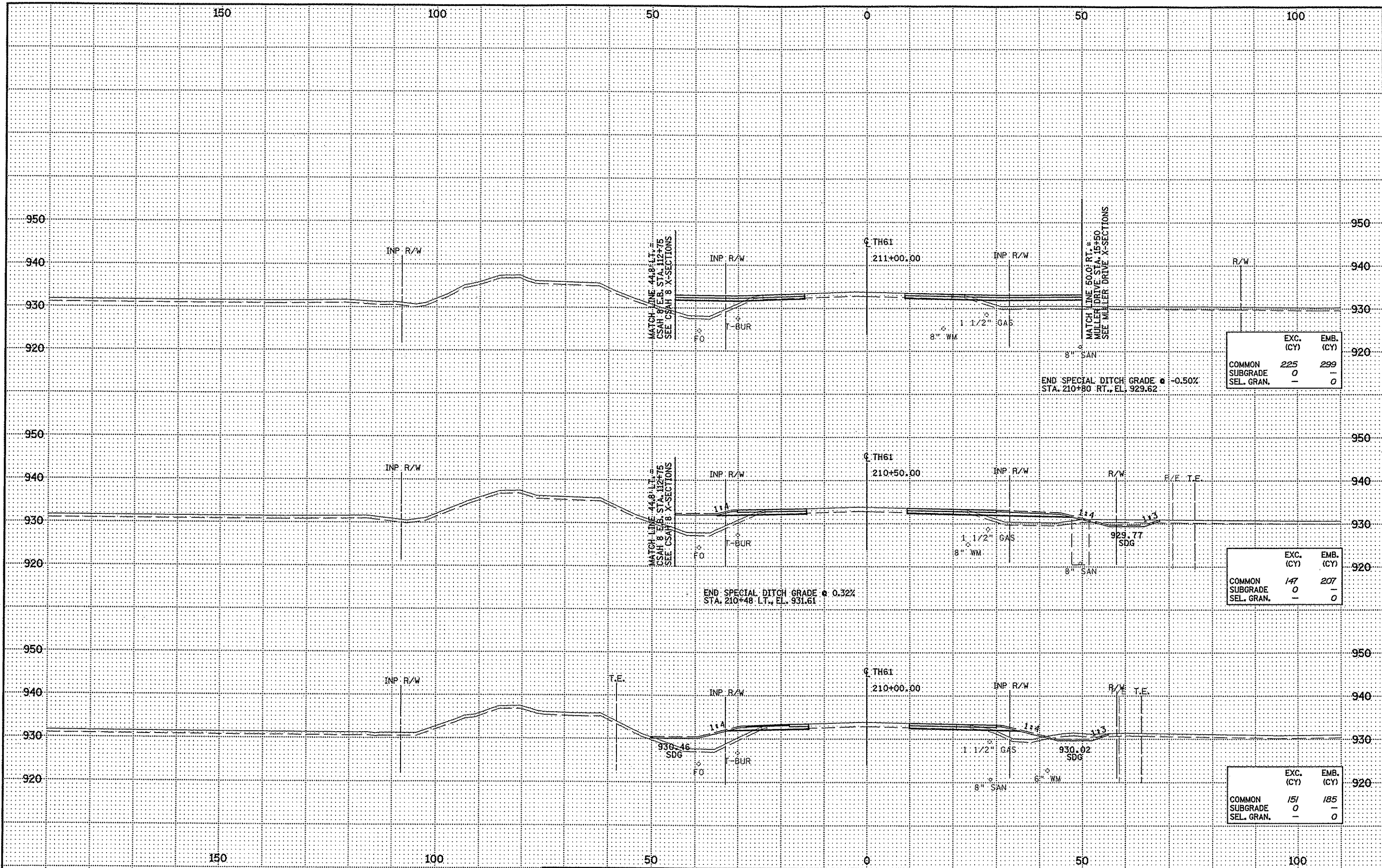
	EXC. (CY)	EMB. (CY)
COMMON	141	183
SUBGRADE	0	—
SEL. GRAN.	—	0

	EXC. (CY)	EMB. (CY)
COMMON	108	162
SUBGRADE	0	—
SEL. GRAN.	—	0

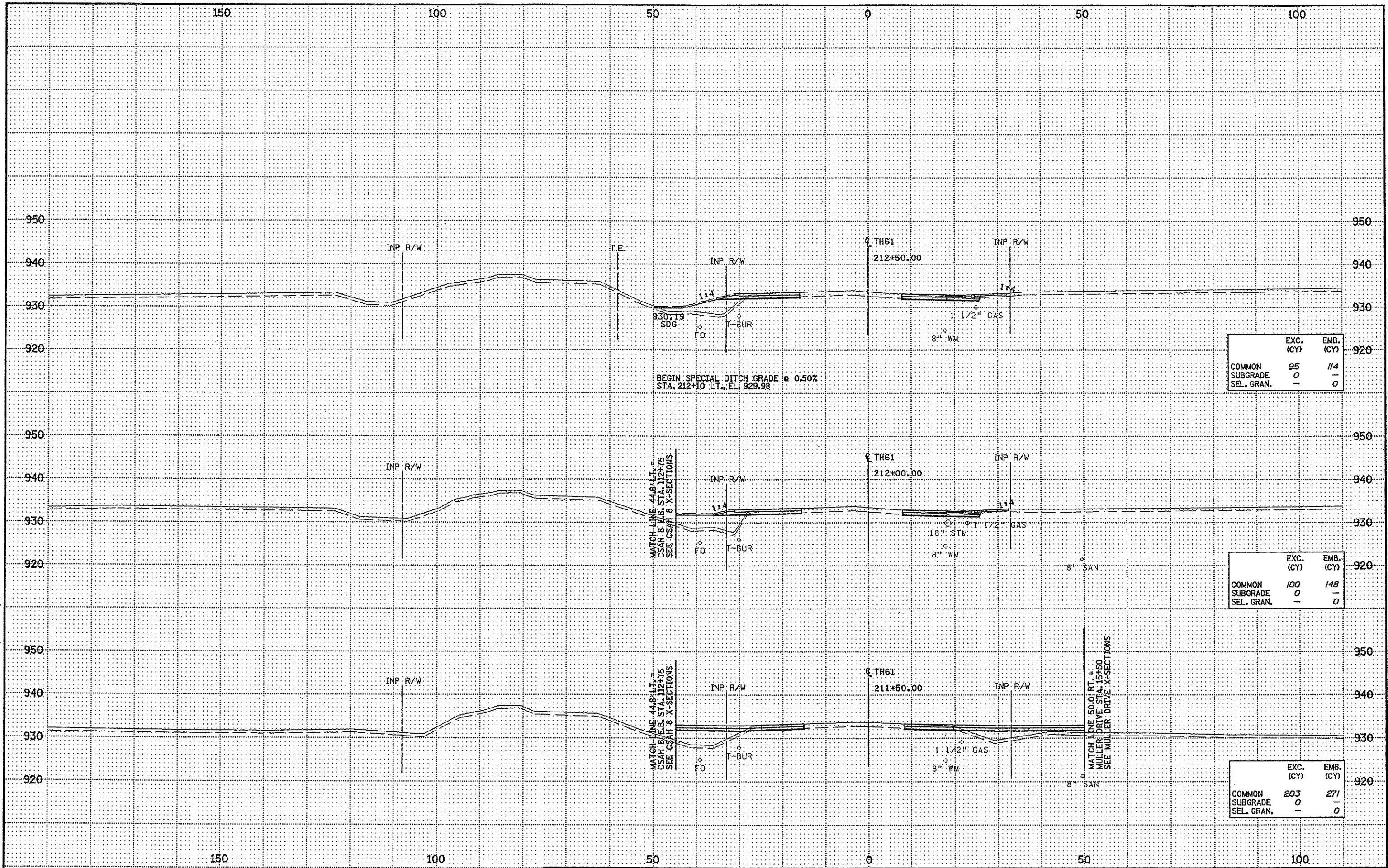
BEGIN SPECIAL DITCH GRADE @ -0.50%  
 STA. 208+50 RT., EL. 930.77



DATE: 8/4/2005 TIME: 12:41:56 PM  
 FILENAME: K:\V-Z\WASHDC\N24390\WY-br-dg\WY-pl-tr-sh\c200802.dwg



DATE: 8/4/2005 TIME: 12:42:11 PM  
 FILENAME: K:\r-z\wastcy\24390\hwy-brdg\hwy\p1r-sit\c200802.dwg



BEGIN SPECIAL DITCH GRADE @ 0.50%  
 STA. 212+10 LT., EL. 929.98

MATCH LINE 448 LT. =  
 CSAH 8 T/B. STA. 112+75  
 SEE CSAH 8 X-SECTIONS

MATCH LINE 448 LT. =  
 CSAH 8 T/B. STA. 112+75  
 SEE CSAH 8 X-SECTIONS

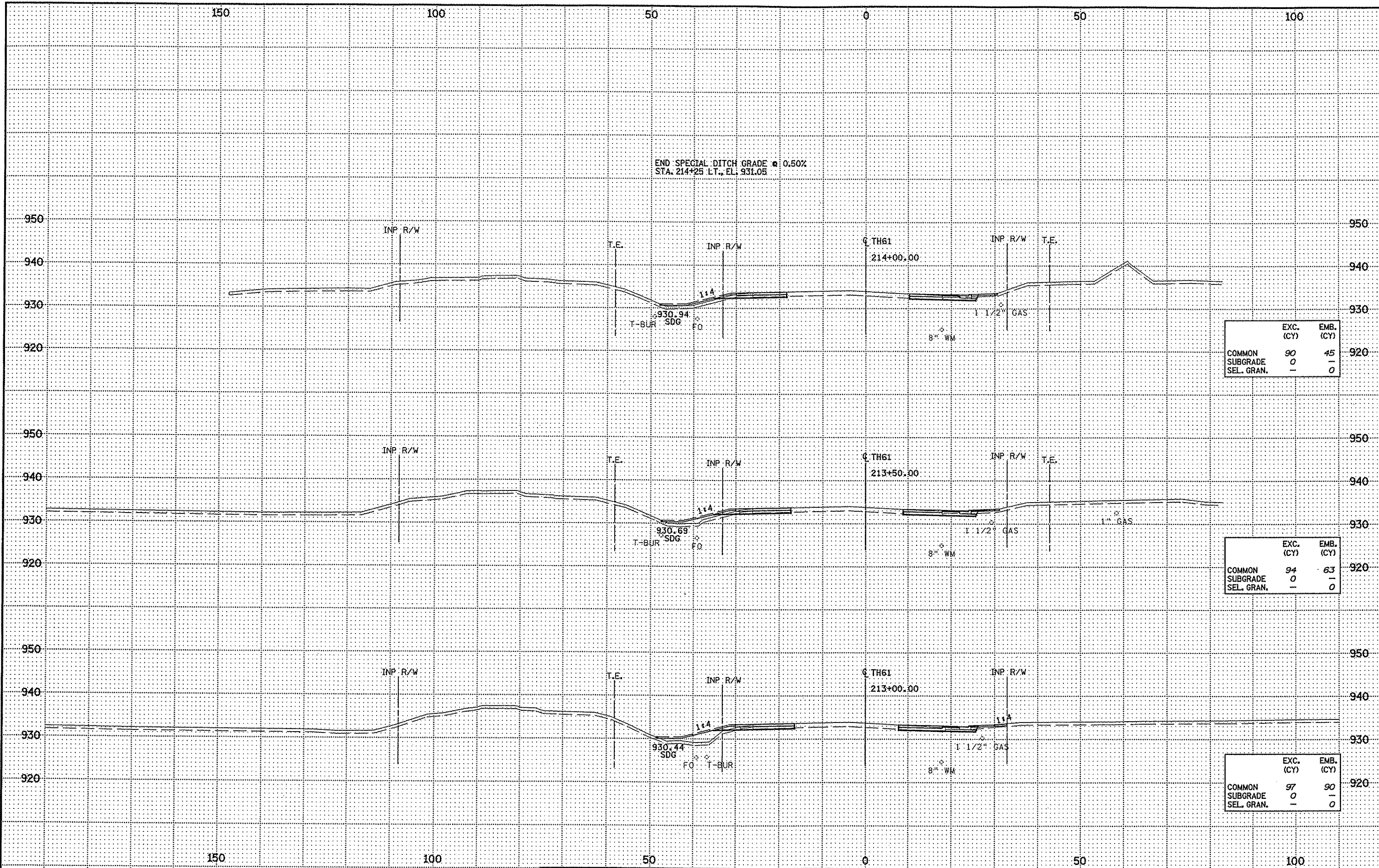
MATCH LINE 50.0 RT. =  
 MULLER DRIVE STA. 15+50  
 SEE MULLER DRIVE X-SECTIONS

	EXC. (CY)	EMB. (CY)
COMMON	95	114
SUBGRADE	0	-
SEL. GRAN.	-	0

	EXC. (CY)	EMB. (CY)
COMMON	100	148
SUBGRADE	0	-
SEL. GRAN.	-	0

	EXC. (CY)	EMB. (CY)
COMMON	203	271
SUBGRADE	0	-
SEL. GRAN.	-	0

DATE: 8/4/2005 TIME: 12:42:25 PM  
 FILENAME: K:\r-z\washed\24390\hwy-brdg\hwy\plan-sta\c200802.dwg



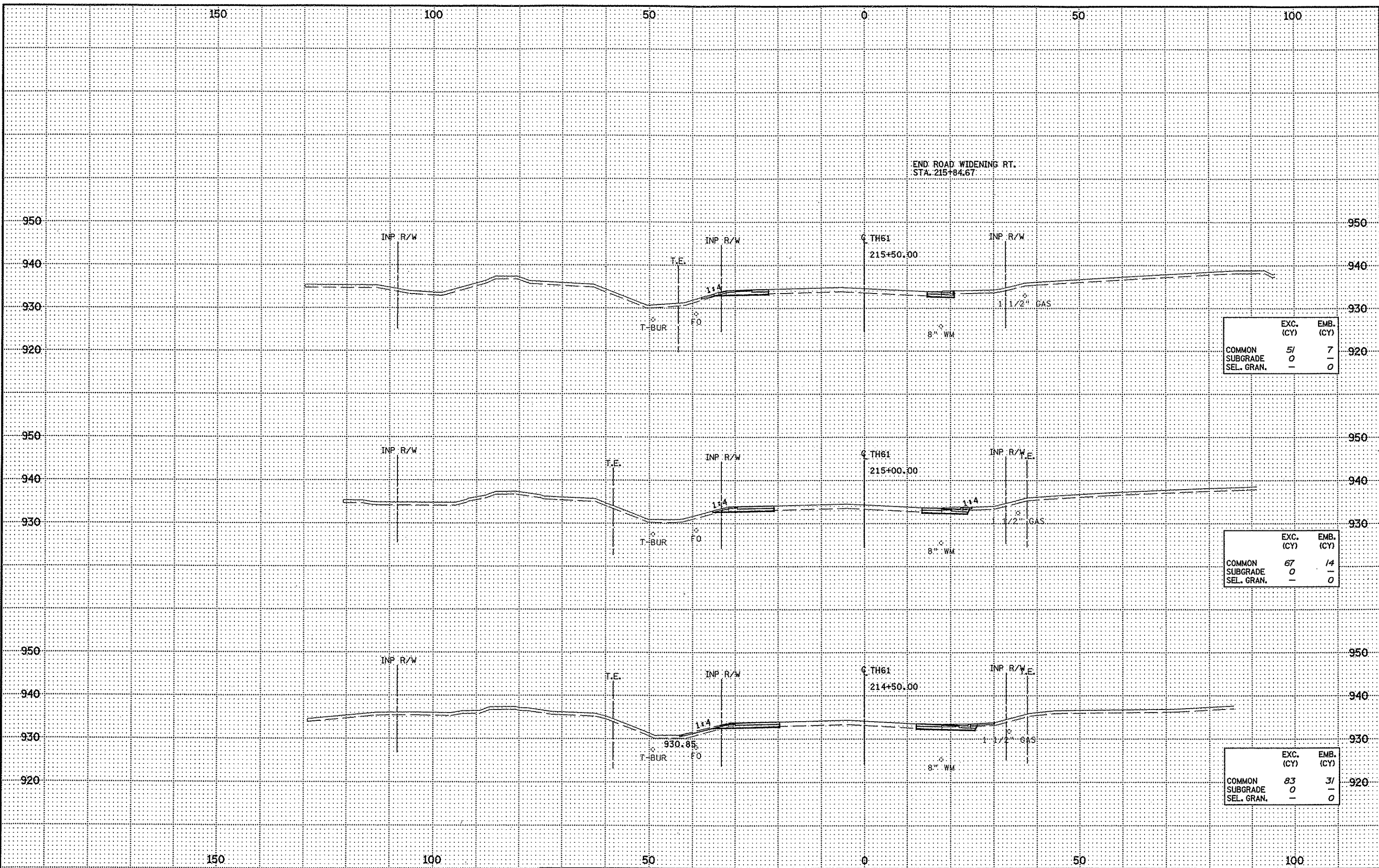
END SPECIAL DITCH GRADE @ 0.50%  
 STA. 214+25 LT., EL. 931.05

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	90	45
SEL. GRAN.	0	0

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	94	63
SEL. GRAN.	0	0

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	97	90
SEL. GRAN.	0	0

DATE: 8/4/2005 TIME: 12:42:39 PM  
 FILENAME: K:\r-2\Wasi\24390\hwy-24390\hwy-brdg\hwy\p1r-s\c200802.dwg



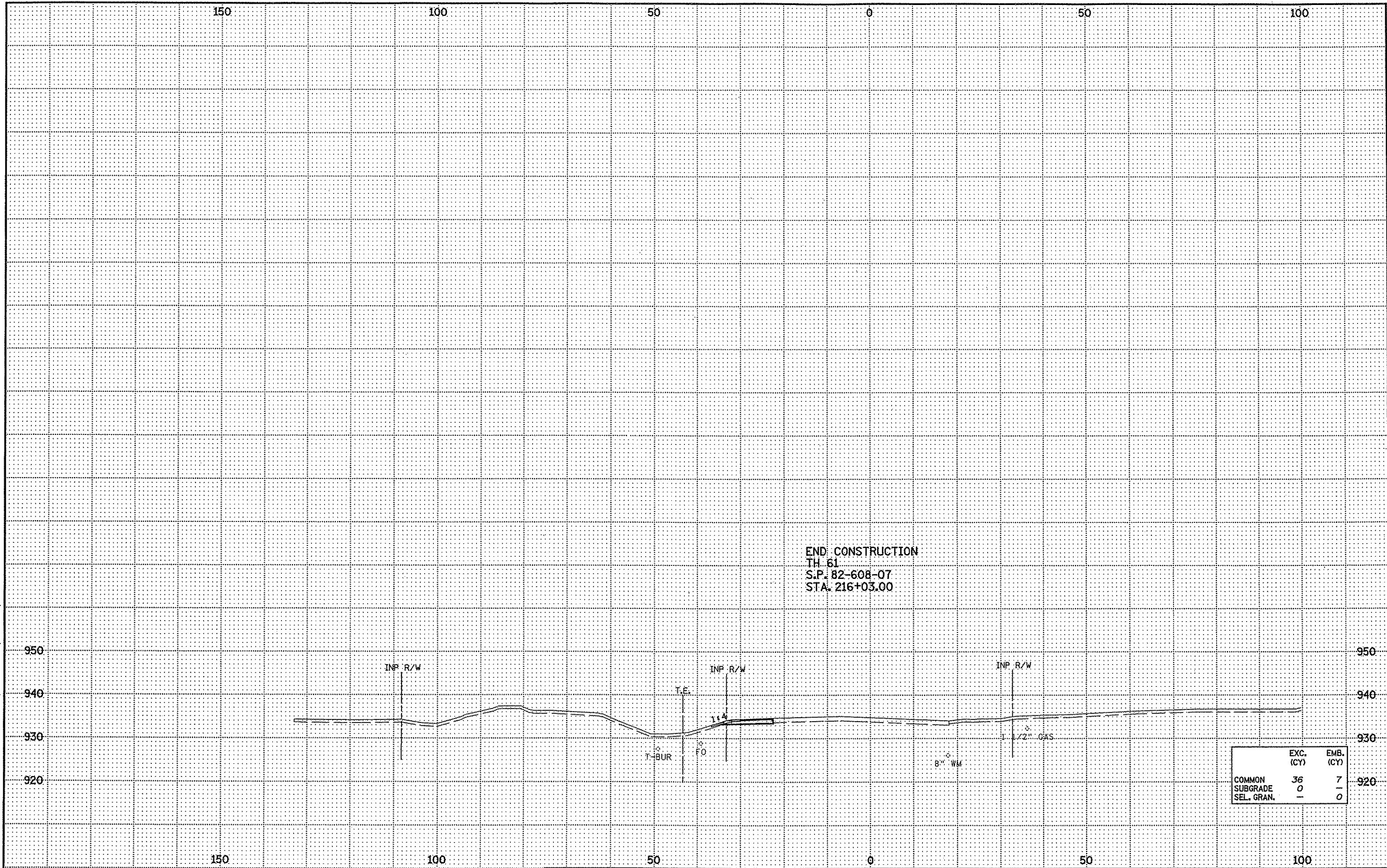
	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	51	7
SEL. GRAN.	0	0

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	67	14
SEL. GRAN.	0	0

	EXC. (CY)	EMB. (CY)
COMMON SUBGRADE	83	31
SEL. GRAN.	0	0



DATE: 8/4/2005 TIME: 12:42:57 PM  
FILENAME: K:\r-2\wast\cy\24390\hwy-brdg\hwy\p1r-sit\c200802.dwg

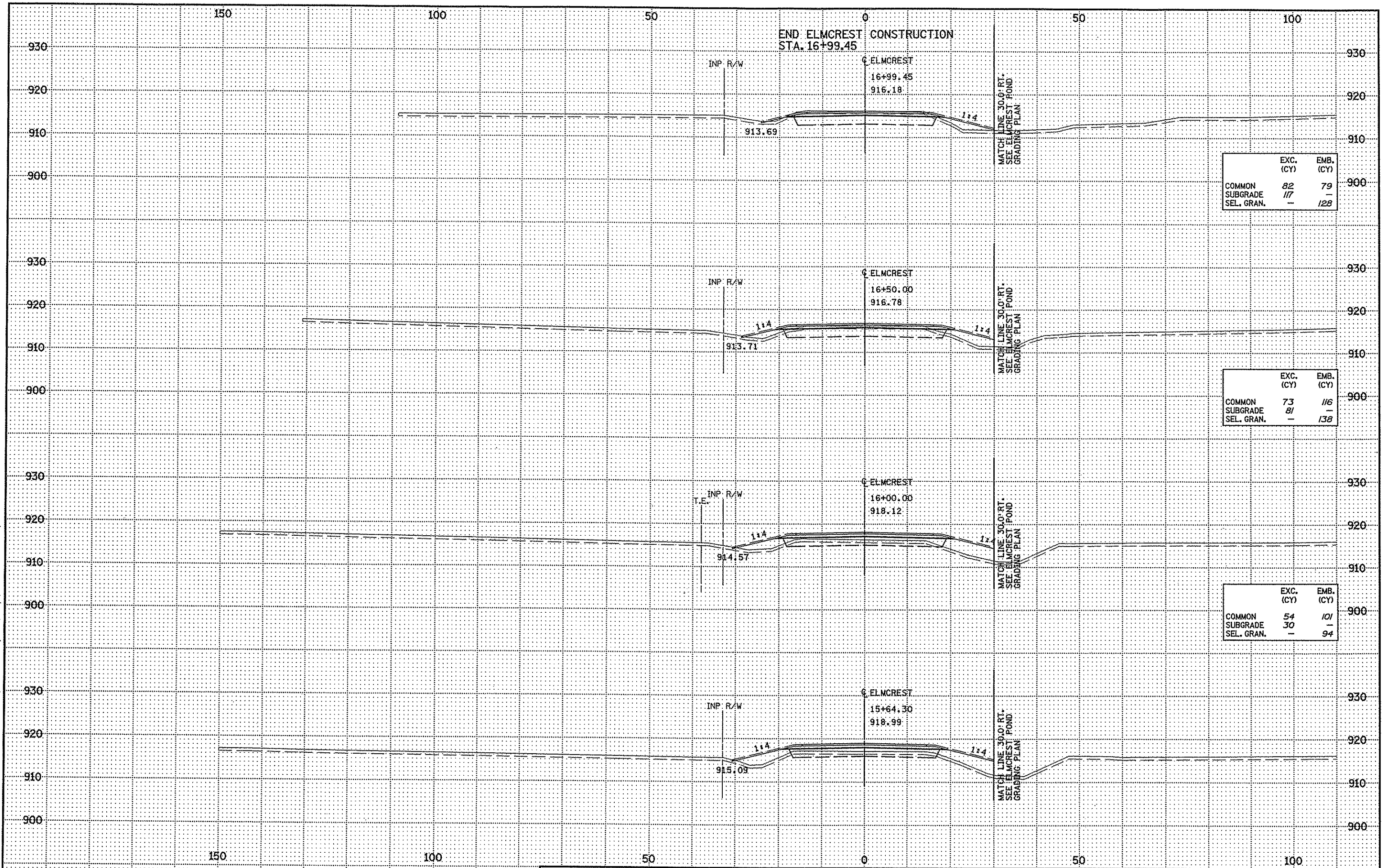


END CONSTRUCTION  
TH. 61  
S.P. 82-608-07  
STA. 216+03.00

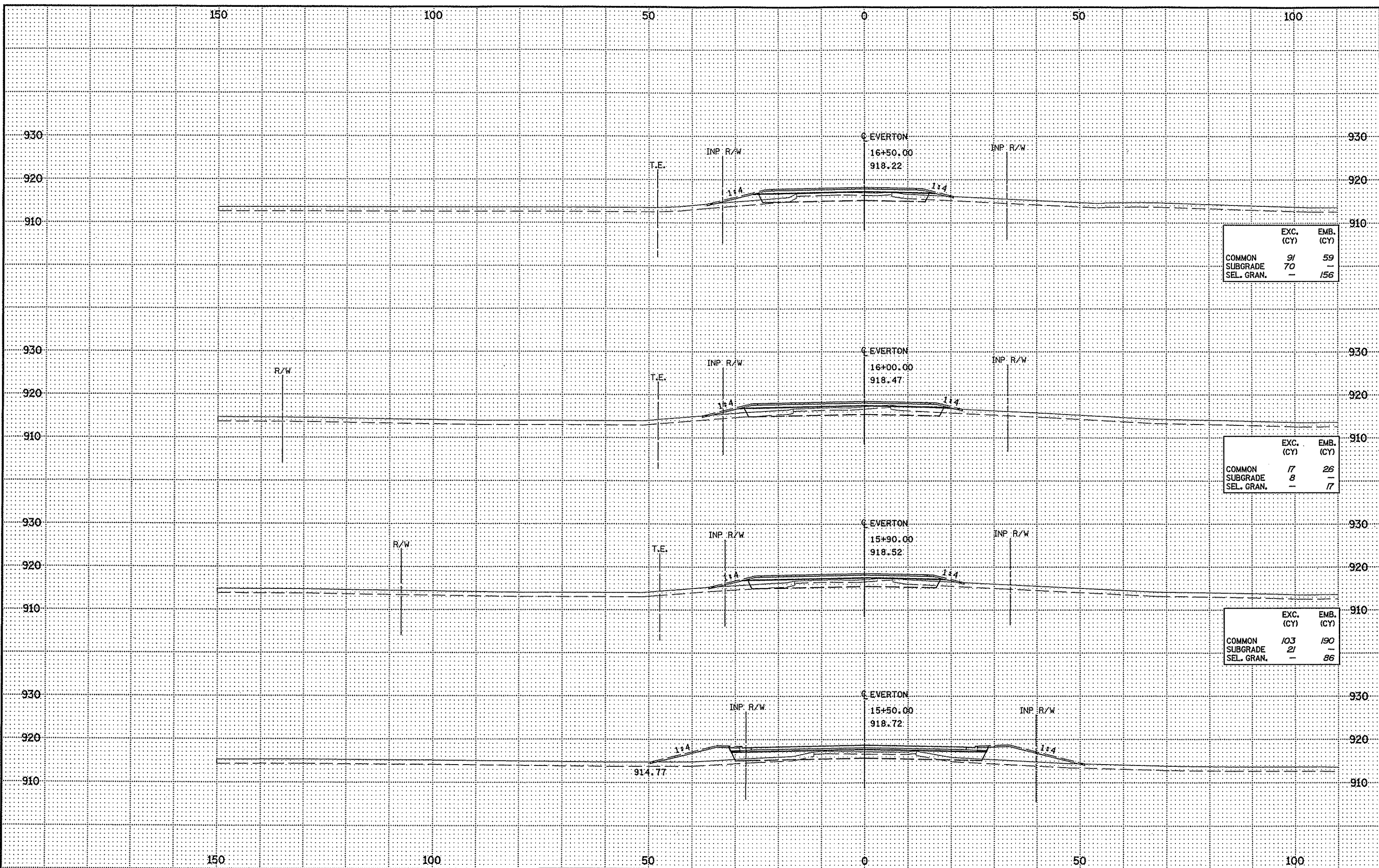
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COMMON	36	7
SUBGRADE	0	-
SEL. GRAN.	-	0



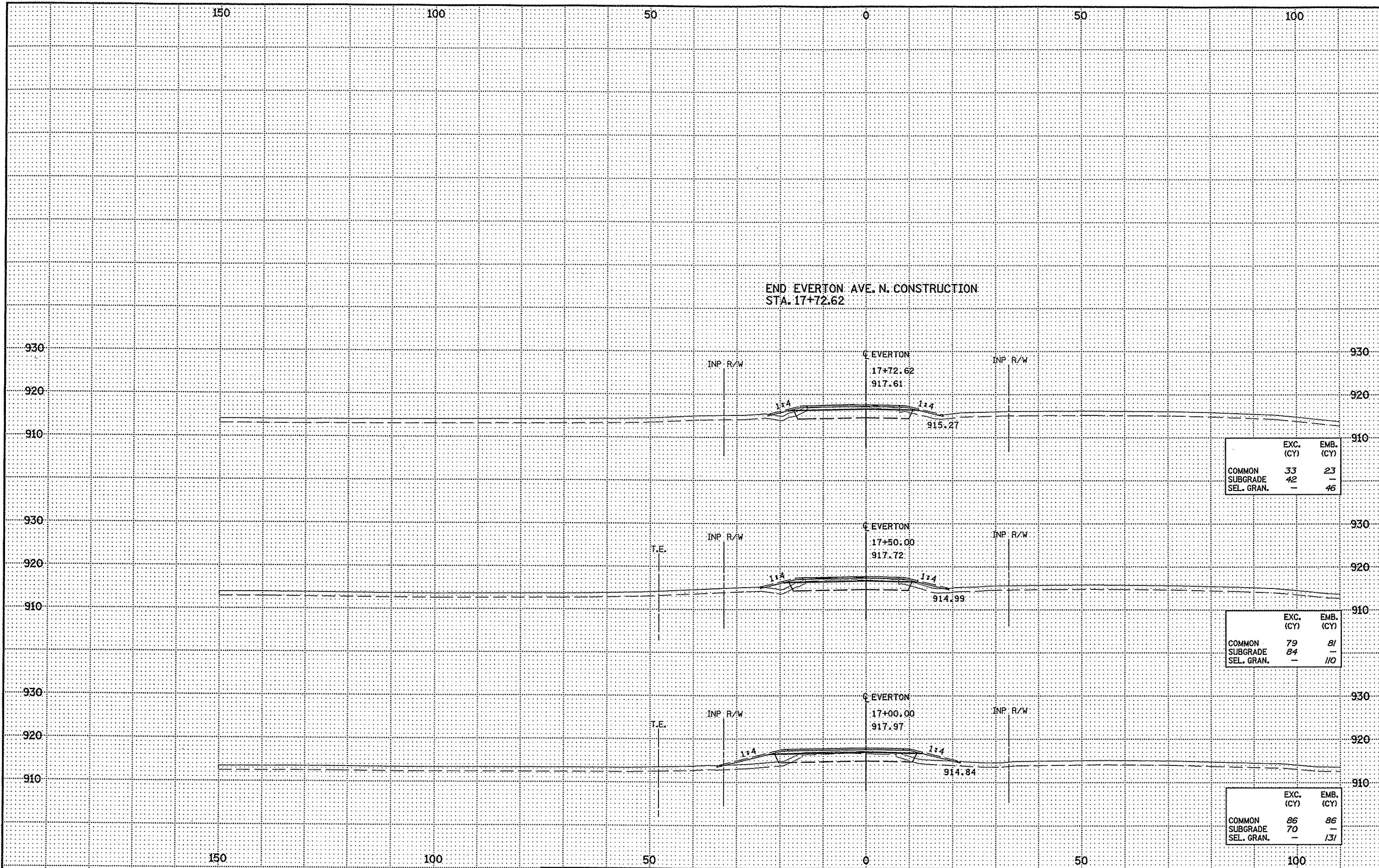
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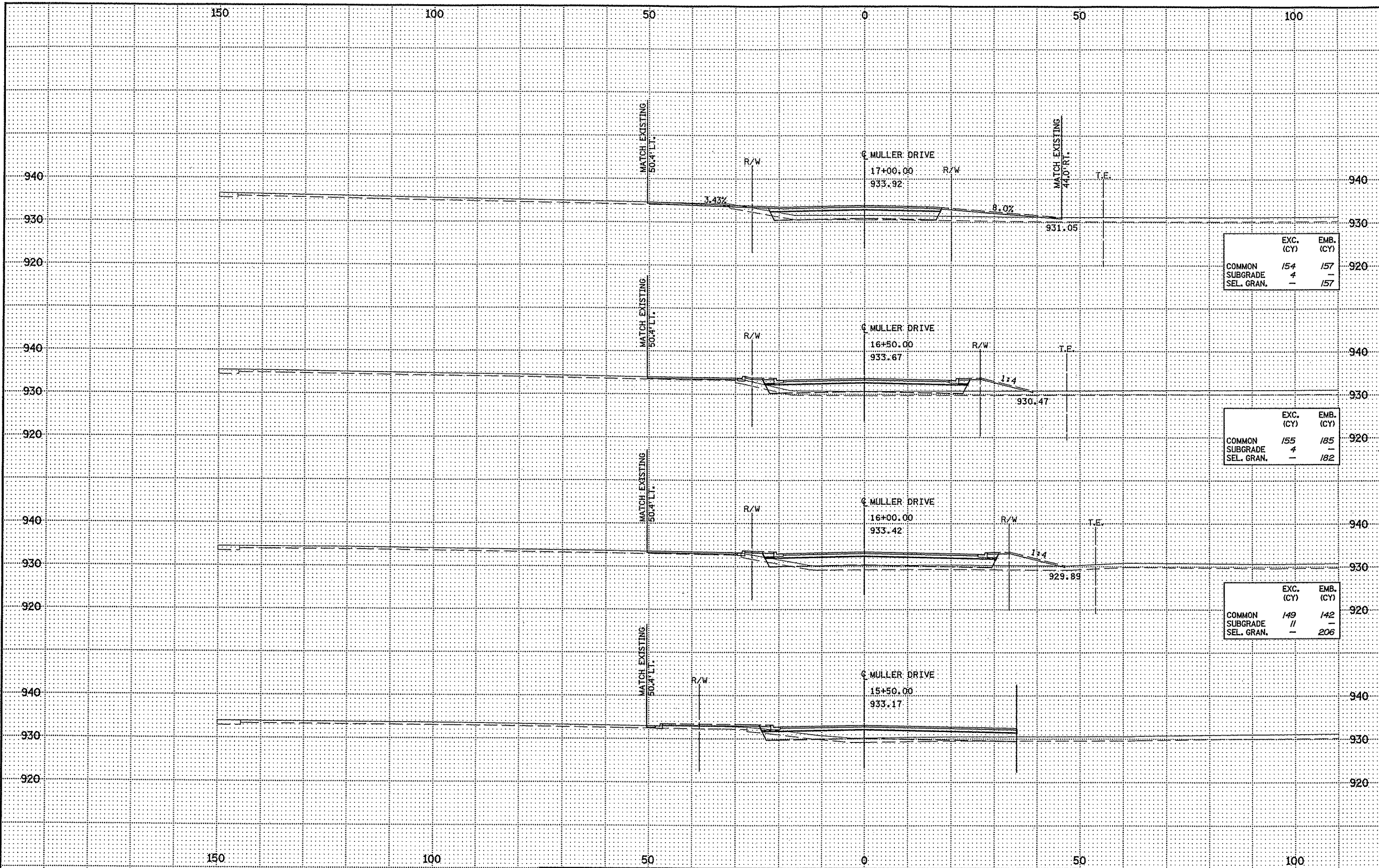
	EXC. (CY)	EMB. (CY)
COMMON	33	23
SUBGRADE	42	-
SEL. GRAN.	-	46

	EXC. (CY)	EMB. (CY)
COMMON	79	81
SUBGRADE	84	-
SEL. GRAN.	-	110

	EXC. (CY)	EMB. (CY)
COMMON	86	86
SUBGRADE	70	-
SEL. GRAN.	-	131



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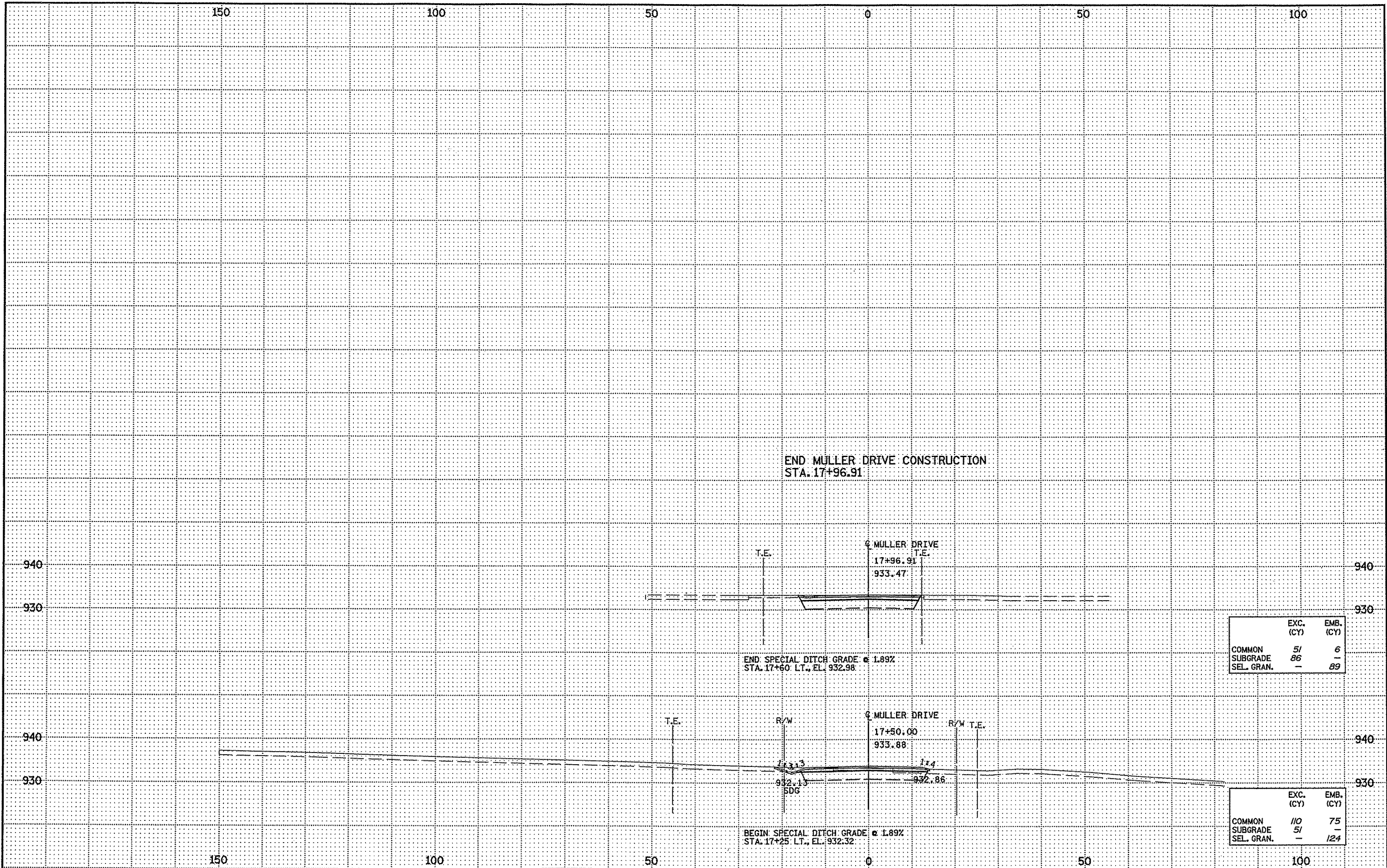


	EXC. (CY)	EMB. (CY)
COMMON	154	157
SUBGRADE	4	-
SEL. GRAN.	-	157

	EXC. (CY)	EMB. (CY)
COMMON	155	185
SUBGRADE	4	-
SEL. GRAN.	-	182

	EXC. (CY)	EMB. (CY)
COMMON	149	142
SUBGRADE	11	-
SEL. GRAN.	-	206

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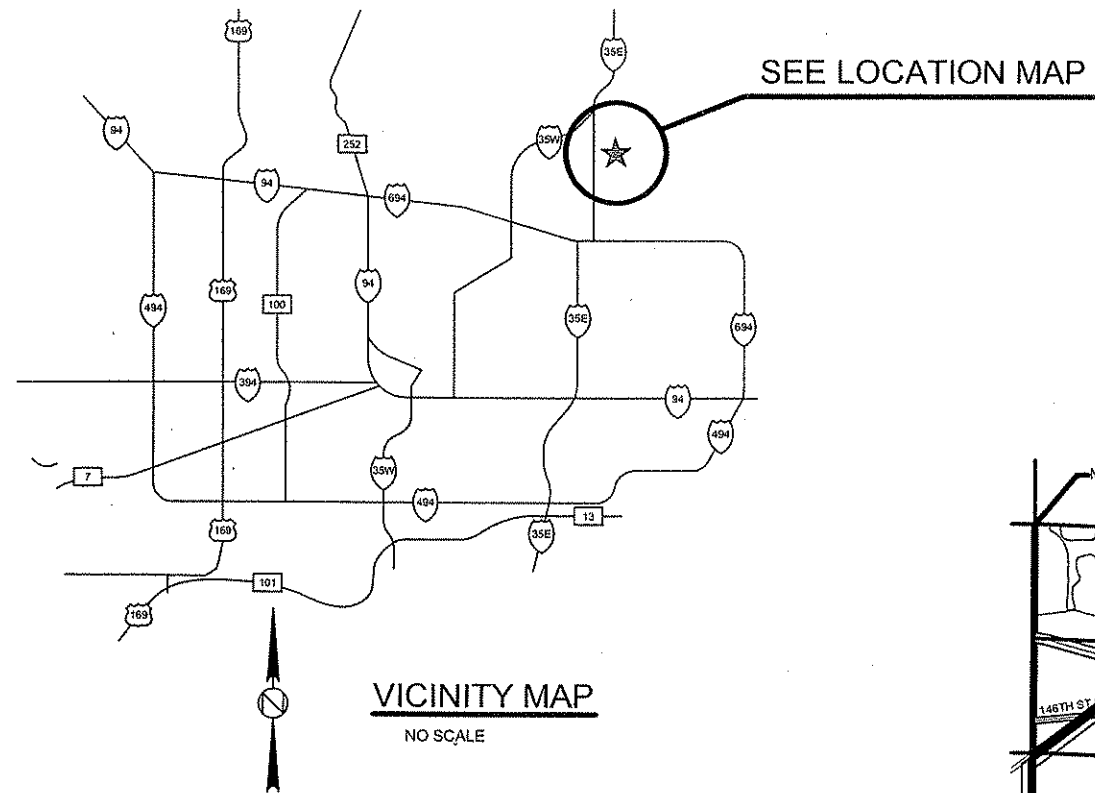
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COMMON	51	6
SUBGRADE	86	-
SEL. GRAN.	-	89

	EXC. (CY)	EMB. (CY)
COMMON	110	75
SUBGRADE	51	-
SEL. GRAN.	-	124



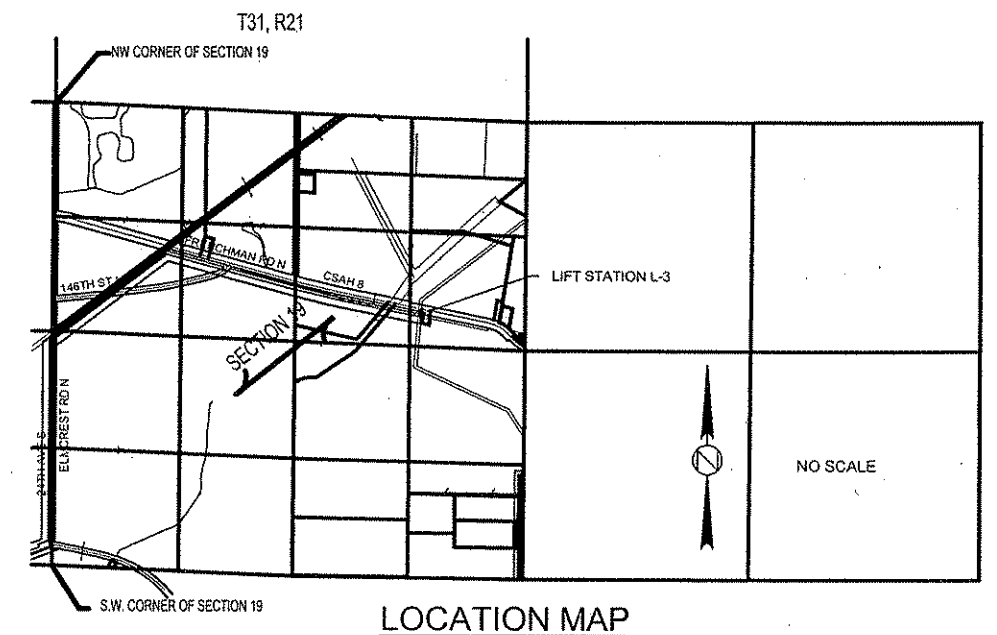
MODIFIED: 19-Oct-2005

# LINO LAKES INTERCEPTOR EXTENSION MCES PROJECT 802325



**VICINITY MAP**  
NO SCALE

THIS PROJECT CONSTRUCTED IN CONJUNCTION WITH:  
ANOKA COUNTY S.P. 02-814-23  
AND  
WASHINGTON COUNTY S.P. 82-608-07



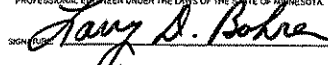
**LOCATION MAP**  
NO SCALE

## INDEX OF DRAWINGS

DISCIPLINE	DRAWING NO	DRAWING TITLE
GENERAL	TD	TITLE DRAWING
	G1	CIVIL SYMBOLS, ABBREVIATIONS, SURVEY INFORMATION & STATEMENT OF ESTIMATED QUANTITIES
CIVIL	C1	<u>PLAN &amp; PROFILE</u> MISCELLANEOUS DETAILS - 1
	C2	MISCELLANEOUS DETAILS - 2
	C3	PLAN & PROFILE STATION 36+00 TO STATION 50+00
	C4	PLAN & PROFILE STATION 50+00 TO STATION 64+00
	C5	PLAN & PROFILE STATION 64+00 TO STATION 78+00
	C6	PLAN & PROFILE STATION 78+00 TO STATION 83+00
C7-C36	CROSS-SECTIONS	TRENCH CROSS SECTIONS

TOTAL NO. OF DRAWINGS = 38

PLOTTED: 19-Oct-2005

DESIGNED LOB		CHECKED JMP		<small>THESEY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT 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.</small>  TYPE OR PRINTED NAME: LARRY D. BOHRER DATE: OCT. 19, 2005 REG NO: 12120		APPROVED RECORD DRAWING DATE: _____ CONSULTING ENGR REP: _____ MCES CONSTRUCTION DEPT REP: _____ MCES ENGR DEPT REP: _____		PROJECT NO: 802325 CONTRACT: SP 82-608-07 FILE NAME: 2300TD010.dwg LINO LAKES / HUGO		LINO LAKES INTERCEPTOR EXTENSION TITLE DRAWING		TD 1 of 38	
NO. DATE BY REVISIONS 10-19-05 LDB ISSUED FOR BIDDING		DATE: 10-19-05 COMM: 13407											

MODIFIED: 10-04-2005  
 PLOTTED: 10-04-2005

### LEGEND

EXISTING	PROPOSED	DESCRIPTION
PARCEL 33 9 119 21 11 0001		PARCEL DESCRIPTION NUMBER
CONIFEROUS DECIDUOUS		PROPERTY DESCRIPTION NUMBER
		TREES
		WOOD LINE
		CONTOUR
		CONTOUR DEPRESSION
X 888.4	885.03 +	SPOT ELEVATION
X-X		FENCE
PATH		PATH
		EXISTING ROADS
MAILBOX		MAILBOX
ROCK		ROCK
SIGN		SIGN
POST		POST
PROPERTY CORNER MONUMENT		PROPERTY CORNER MONUMENT
SOIL BORING INDICATOR		SOIL BORING INDICATOR
MONITORING WELL		MONITORING WELL
CONTROL HORIZONTAL/VERTICAL		CONTROL HORIZONTAL/VERTICAL
SECTION CORNER		SECTION CORNER
1/4 SECTION CORNER		1/4 SECTION CORNER
STORM MAINTENANCE HOLE		STORM MAINTENANCE HOLE
CATCH BASIN		CATCH BASIN
CULVERT		CULVERT
SANITARY MAINTENANCE HOLE		SANITARY MAINTENANCE HOLE
POWER POLE		POWER POLE
GUY WIRE		GUY WIRE
ELECTRIC TRANSMISSION TOWER		ELECTRIC TRANSMISSION TOWER
GAS VENT		GAS VENT
BUILDING STRUCTURE		BUILDING STRUCTURE
SPECIAL STRUCTURAL SUPPORT		SPECIAL STRUCTURAL SUPPORT
TRENCH DAM		TRENCH DAM

### LEGEND

EXISTING	PROPOSED	DESCRIPTION
		SANITARY SEWER
		STORM SEWER
		JACKED/TUNNELED PIPE
		OVERHEAD ELECTRIC
		UNDERGROUND ELECTRIC
		TELEPHONE (BURIED)
		UNDERGROUND GAS
		TELEPHONE PEDESTAL
		CABLE TV PEDESTAL
		SECTION LINE OR EASEMENT
		ASSUMED RIGHT OF WAY (RW)
		PROPERTY LINE
		PERMANENT EASEMENT
		TEMPORARY EASEMENT
		CONSTRUCTION LIMITS
		WETLAND BOUNDRY (NWI MAPPING)
		DETAIL INDICATOR
		SECTION INDICATOR
		KEYNOTE

- GENERAL NOTES:**
- EXISTING UTILITIES ARE LOCATED FROM BEST INFORMATION AVAILABLE. IT IS THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE EXACT LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY "GOPHER STATE ONE CALL-UNDERGROUND FACILITY SERVICE" TELEPHONE (612) 454-0002 PRIOR TO ANY CONSTRUCTION.
  - CONTRACTOR SHALL RELOCATE AND/OR PROTECT ALL UTILITIES WITHIN CONSTRUCTION LIMITS. THIS SHALL INCLUDE, BUT IS NOT LIMITED TO, TELEPHONE, ELECTRICAL, GAS, CABLE TV, TOWERS, POWER POLES, WATER, DRAIN TILE, OVERHEAD LINES ETC.
  - TREES, SHRUBS, AND LANDSCAPING MATERIALS SHALL BE REMOVED WHEN REQUIRED TO ACCOMPLISH INTERCEPTOR FACILITY INSTALLATION WORK. THE CONTRACTOR SHALL PERFORM ALL NECESSARY REMOVALS WHETHER OR NOT THE REMOVAL IS INDICATED ON THE DRAWINGS.

### BENCHMARK:

**VERTICAL CONTROL:**  
 STATION NAME: 0282 D      NGS QUAD/STA # 45093221/  
 COUNTY: ANOKA      MAP SHT/INDEX # 1/145      NGS ACRN # Q00764  
 1/4 SEC TWP RNG      LATITUDE      LONGITUDE      GPS      USGS QUAD MAP  
 NW 24 31N 22W 450950.04 930151.11      CENTERVILLE  
 AGENCY YR-SET YR-REC COND PHYS BRDG NO  
 MNDT 1969 1995 G BWW 02803  
 DESCRIPTION: (1995) STAMPING: 0282 D 1969  
 1.25 MI EAST OF CENTERVILLE, WEST OF HUGO, AT JCT OF FAI 35 AND CO RD 14 (MAIN ST), IN SE COR OF SE WINGWALL OF BRDG 02803 (CO RD 14 OVER FAI 35), 40.01 FT SOUTH OF STA CENTERVILLE MNDT  
 THE USGS QUAD MAP IS RECOMMENDED AS AN AID WHEN RECOVERING THIS STATION.

**ELEVATION:**  
 NGVD 29 ELEV 931.90

**HORIZONTAL CONTROL:**

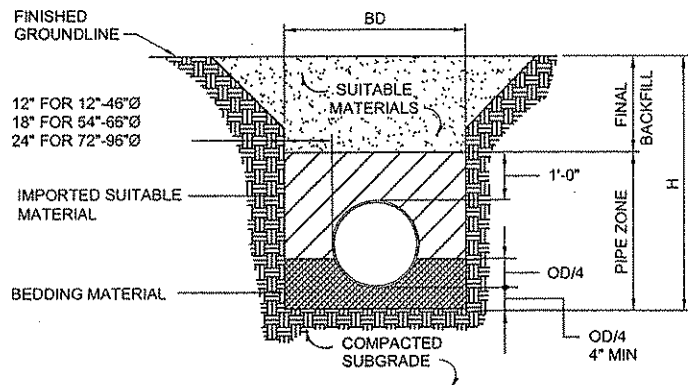
NORTHING	EASTING	DESCRIPTION
251239.8504	451784.1770	WEST QUARTER CORNER - SECTION 19
253880.9064	451801.8747	NORTHWEST CORNER - SECTION 19

ITEM NO.	SPEC. REF.	DESCRIPTION	UNITS	ESTIMATED QUANTITY
1	01400	TESTING AND INSPECTION ALLOWANCE	LS	1
2	02225	BEDDING MATERIAL	LF	4488
3	02225	IMPORTED SUITABLE MATERIAL	LF	4488
4	02225	ROCK STABILIZATION	TONS	1687
5	02605	5' DIAMETER MAINTENANCE HOLE W/ CASTING	EA	8
6	02605	7' DIAMETER MAINTENANCE HOLE W/ CASTING	EA	1
7	02700	27" DIAMETER GRAVITY SEWER	LF	4488
8	01025	REMAINDER OF WORK	LS	1

DESIGNED: LOB CHECKED: JMP DRAWN: RRC APPROVED: LOB DATE: 10-19-05 13407		I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT 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. SIGNATURE: <i>Larry D. Bohrer</i> TYPE OR PRINTED NAME: LARRY D BOHRER DATE: OCT. 19, 2005      REG NO.: 12120		APPROVED RECORD DRAWING PROJECT NO: 802325 CONSULTING ENGR REP: DATE: _____ MCES CONSTRUCTION DEPT REP: DATE: _____ MCES ENGR DEPT REP: DATE: _____		PROJECT NO: 802325 CONTRACT: SP 82-608-07 FILE NAME: 2300G010.dwg LINO LAKES / HUGO      MINNESOTA		LINO LAKES INTERCEPTOR EXTENSION CIVIL SYMBOLS, ABBREVIATIONS, SURVEY INFORMATION & STATEMENT OF ESTIMATED QUANTITIES G1	
REVISIONS NO.      DATE      BY      REMARKS		REVISIONS NO.      DATE      BY      REMARKS							

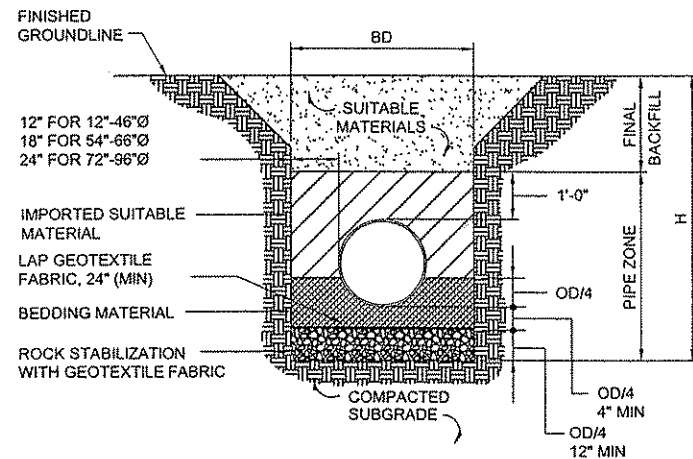
MODIFIED: 19-04-2005

NOTE:  
CONTRACTOR SHALL CONSTRUCT TRENCH AND PROVIDE PROTECTIVE MEASURES AS REQUIRED TO COMPLY WITH OSHA REGULATIONS.

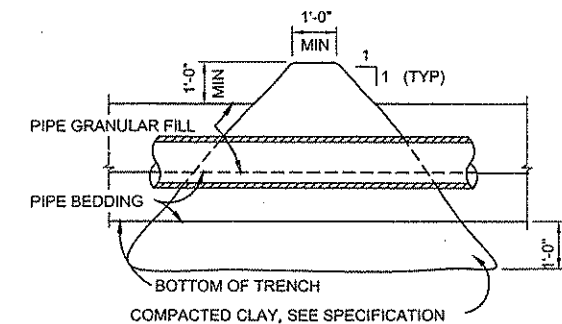
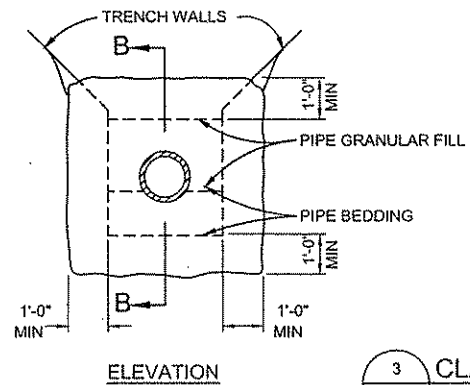


1  
C1 PIPE BEDDING/TRENCH BACKFILL DETAIL

NOTE:  
CONTRACTOR SHALL CONSTRUCT TRENCH AND PROVIDE PROTECTIVE MEASURES AS REQUIRED TO COMPLY WITH OSHA REGULATIONS.

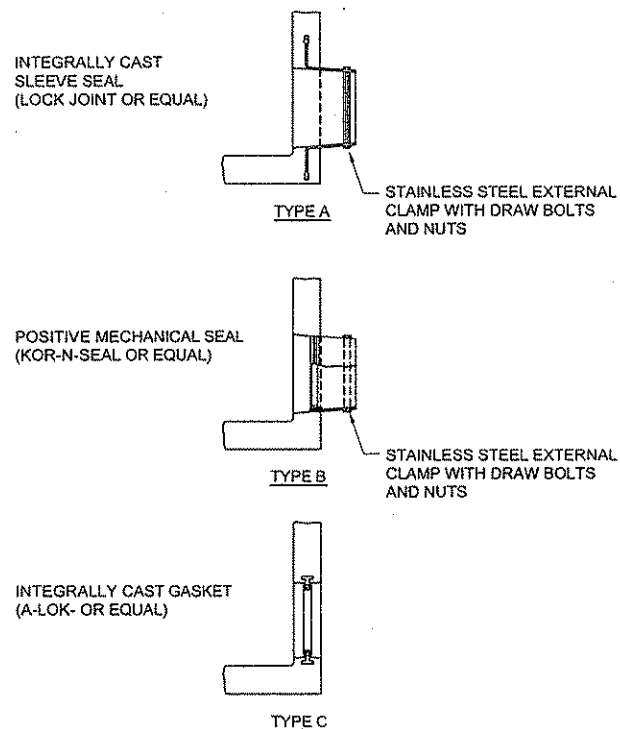


2  
C1 PIPE BEDDING/TRENCH BACKFILL DETAIL WITH ROCK STABILIZATION/TRENCH DEWATERING



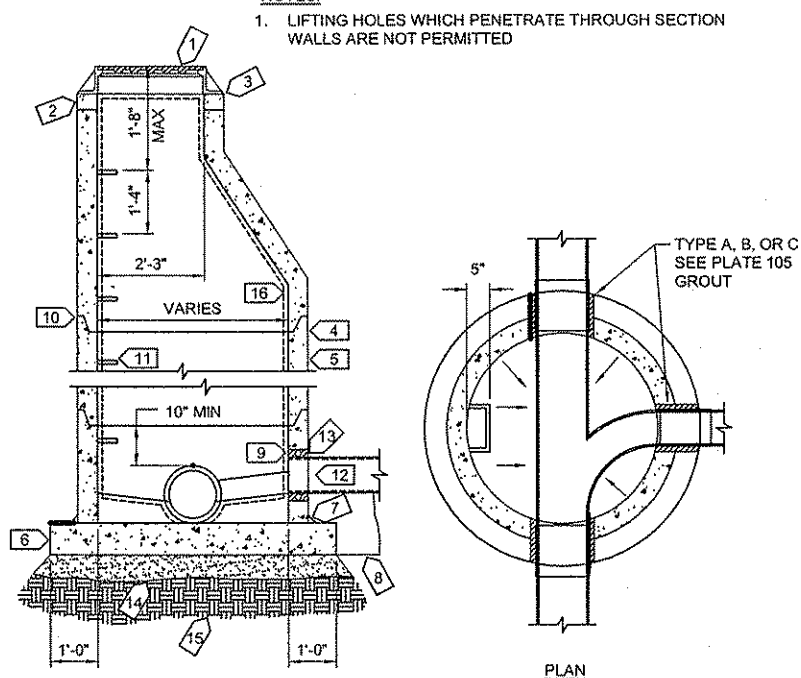
3  
C1 CLAY TRENCH DAM

NOTES:  
1. SPACING BETWEEN TRENCH DAMS AS SHOWN ON PLAN & PROFILE DRAWINGS  
2. PIPE GRANULAR FILL AND PIPE BEDDING ARE DISCONTINUED THROUGH TRENCH DAM.



4  
C1 WATERTIGHT PIPE CONNECTIONS

NOTES:  
1. LIFTING HOLES WHICH PENETRATE THROUGH SECTION WALLS ARE NOT PERMITTED



5  
C1 GRAVITY SEWER MH

KEY NOTES:

1. FRAME AND COVER WITH CONCEALED PICK HOLES FOR ROADWAY MAINTENANCE HOLES
2. ONE (MAXIMUM) REINFORCED CONCRETE ADJUSTING RING 2", 4" OR 6" THICK WITH FULL 3/8" BED OF MORTAR
3. PROVIDE 2 RINGS OF GASKET MATERIAL UNDER CASTING
4. PRECAST REINFORCED ECCENTRIC CONE AND RISER SECTIONS AS REQUIRED
5. USE ONLY PRECAST SECTIONS. NO BRICK OR BLOCK
6. 6" PRECAST REINFORCED CONCRETE, OR MONOLITHIC WITH BARREL.
7. CEMENT MORTAR ALL AROUND
8. LEAN CONCRETE TO BEAR AGAINST FIRM UNDISTURBED SOIL
9. PROVIDE WATER TIGHT SLEEVE OR CAST-IN GASKET ALL PIPES SEE 4 C1
10. O-RING GASKET
11. 12" WIDE POLYPROPYLENE ENCASED STEPS
12. FIRST LENGTH OF PIPE SHALL BE DUCTILE IRON PIPE OR SDR 26 PVC FOR NEW CONNECTIONS
13. FOR CONNECTION TO EXISTING MH'S, CORE DRILL OPENING AND PROVIDE TYPE B WATER TIGHT CONNECTOR
14. 4" MINIMUM - SAND CUSHION
15. UNDISTURBED SOIL OR COMPACTED SUBGRADE
16. CAST IN GSE POLYETHYLENE STUDLINER AND BOTTOM PAN.

PLOTTED: 19-04-2005

NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS
10-19-05	LDB		ISSUED FOR BIDDING				

DESIGNED	LDB	CHECKED	JMP
DRAWN	RRC	APPROVED	LOB
DATE	10-19-2005	CONV.	13407

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ENGINEERS • ARCHITECTS • PLANNERS

APPROVED RECORD DRAWING

CONSULTING ENGR REP DATE  
ACES CONSTRUCTION DEPT REP DATE  
ACES ENGR DEPT REP DATE

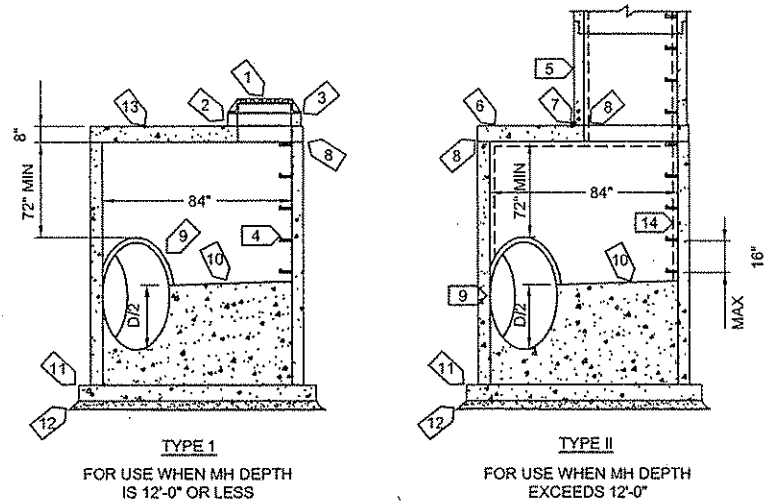
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CONTRACT	SP 82-608-07
FILE NAME	2300C010.dwg

LINO LAKES INTERCEPTOR EXTENSION  
MISCELLANEOUS DETAILS-1

LINO LAKES / HUGO MINNESOTA

C1

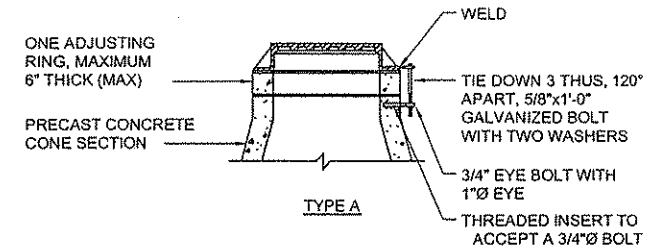
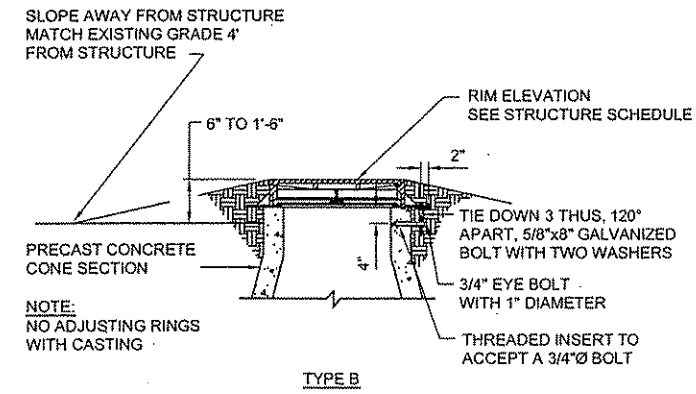
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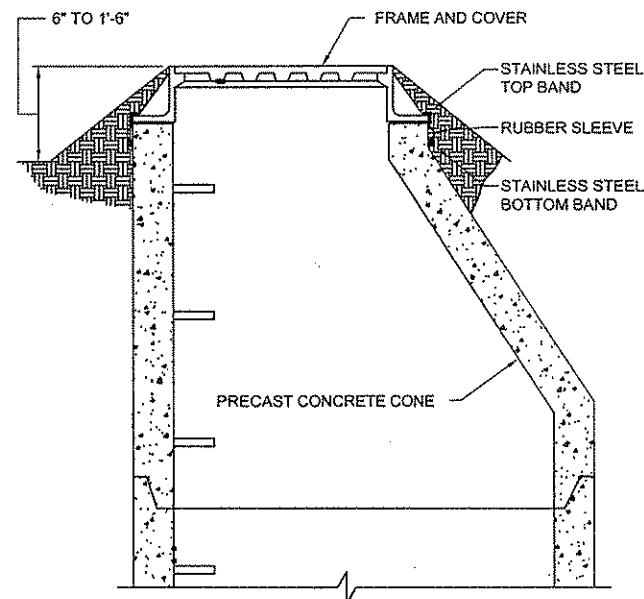
1 C2 MH BASES FOR PIPE SIZES LARGER THAN 36"

- NOTES:
1. TONGUE AND GROOVE PRECAST RISER SECTION
  2. SAWCUT PIPES FLUSH WITH INTERIOR WALL OF ACCESS STRUCTURE.

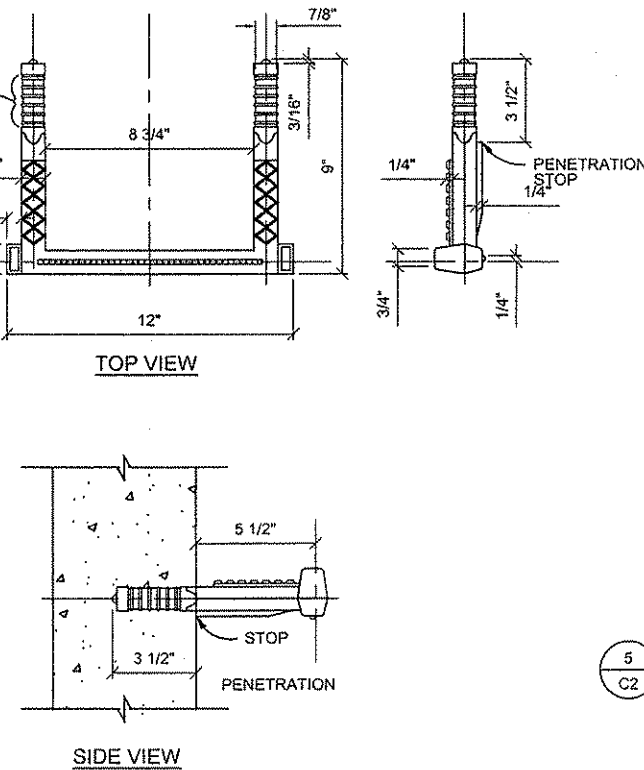
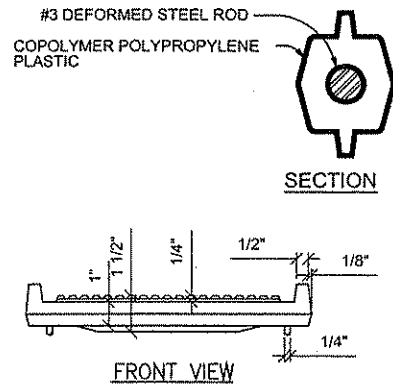
- KEY NOTES:
1. FRAME AND COVER WITH CONCEALED PICK HOLES FOR ROADWAY MAINTENANCE HOLE
  2. ONE (MAXIMUM) REINFORCED CONCRETE ADJUSTING RING 2", 4" OR 6" THICK WITH FULL 3/8" BED OF MORTAR
  3. PROVIDE 2 RINGS OF GASKET MATERIAL UNDER CASTING
  4. POLYPROPYLENE ENCASED STEPS
  5. 48" DIAMETER PRECAST RISER SECTION AS REQUIRED
  6. PRECAST SLAB WITH ECCENTRIC 48" OPENING. DESIGN HS-25 PLUS EARTH LOAD
  7. MORTAR FILLET
  8. 2 STRIPS OF GASKET MATERIAL UNDER RISER
  9. PROVIDE FACTORY INSTALLED WATERTITE BOOT FOR NEW PIPE, SEE PROVIDE HORSESHOE BLOCKOUTS AND NON-SHRINK GROUT FOR EXISTING PIPE. SEE 5 C2
  10. LEAN CONCRETE
  11. PRECAST BASE AS REQUIRED
  12. 4" MINIMUM SAND CUSHION
  13. PRECAST COVER SLAB
  14. CAST IN GSE POLYETHYLENE STUDLINER.



2 C2 MH CASTING ANCHORING



3 C2 OFF-ROADWAY MH EXTERNAL CHIMNEY SEAL



5 C2 PIPE CONNECTION FOR CONSTRUCTING MH OVER EXISTING PIPE

4 C2 MAINTENANCE HOLE STEP NO SCALE

PLOTTED: 19-04-2005

NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS
10-19-05	LDB		ISSUED FOR BIDDING				

DESIGNED	LDB	CHECKED	JMP
DRAWN	RRC	APPROVED	LDB
DATE	10-19-2005	CONTRACT	13407

INHERBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT 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

SIGNATURE: *Larry D. Bohrer*

TYPE OR PRINTED NAME: LARRY D BOHRER

DATE: OCT. 19, 2005 REG. NO. 12120

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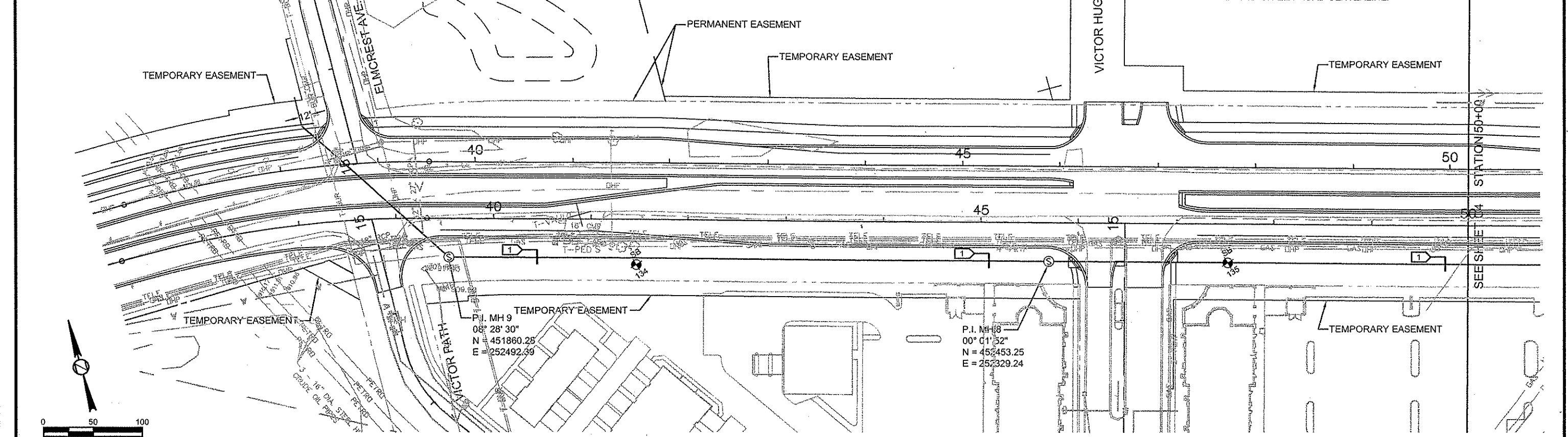
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CONSULTING ENGR REP	DATE	CONTRACT	SP 82-608-07
MCS CONSTRUCTION DEPT REP	DATE	FILE NAME	2300C020.dwg
MCS ENGR DEPT REP	DATE		

LINO LAKES INTERCEPTOR EXTENSION  
MISCELLANEOUS DETAILS - 2

LINO LAKES / HUGO

MINNESOTA

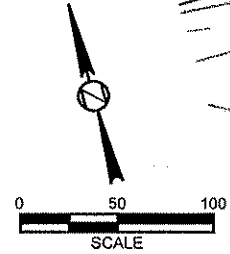
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KEYNOTE: 

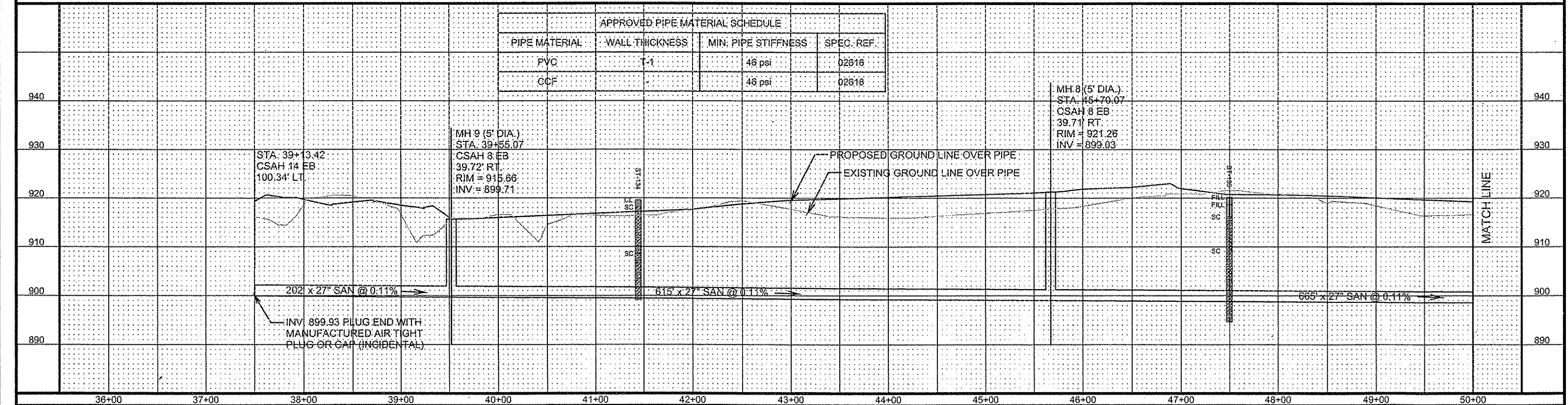
1. INSTALL TRENCH DAM. SEE 

STAKING NOTES:  
1. SANITARY SEWER STATIONING AND OFFSETS BASED ON E.B. ROAD CENTERLINE.



CSAH 14

CSAH 8



NO.	DATE	BY	REVISIONS
10-19-05	LDB		ISSUED FOR BIDDING

DESIGNED	CHECKED	DRAWN	APPROVED
LDB	JMP	RRC	LDB
DATE: 10-19-05	DATE: 10-19-05	DATE: 10-19-05	DATE: 10-19-05

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SIGNATURE: *Larry D. Bohrer*  
TYPE OR PRINTED NAME: LARRY D BOHRER  
DATE: OCT. 19, 2005 REG NO: 12120

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APPROVED RECORD DRAWING	
CONSULTING ENGR REP	DATE
ACES CONSTRUCTION DEPT REP	DATE
ACES ENGR DEPT REP	DATE

PROJECT NO. 802325  
CONTRACT SP 82-608-07  
FILE NAME 2325C00030.dwg

LINO LAKES INTERCEPTOR EXTENSION  
PLAN AND PROFILE  
CSAH 8 STATION 36+00 TO CSAH 8 STATION 50+00  
LINO LAKES / HUGO MINNESOTA


**C3**  
5 of 38


PROJECTED: 19-04-2005



MODIFIED: 19-03-2005

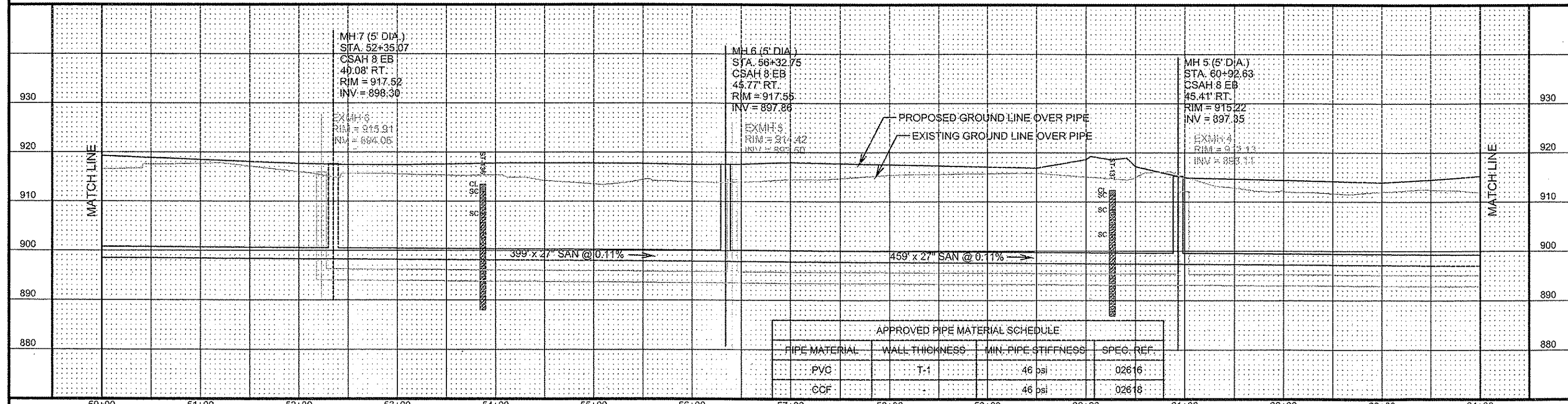
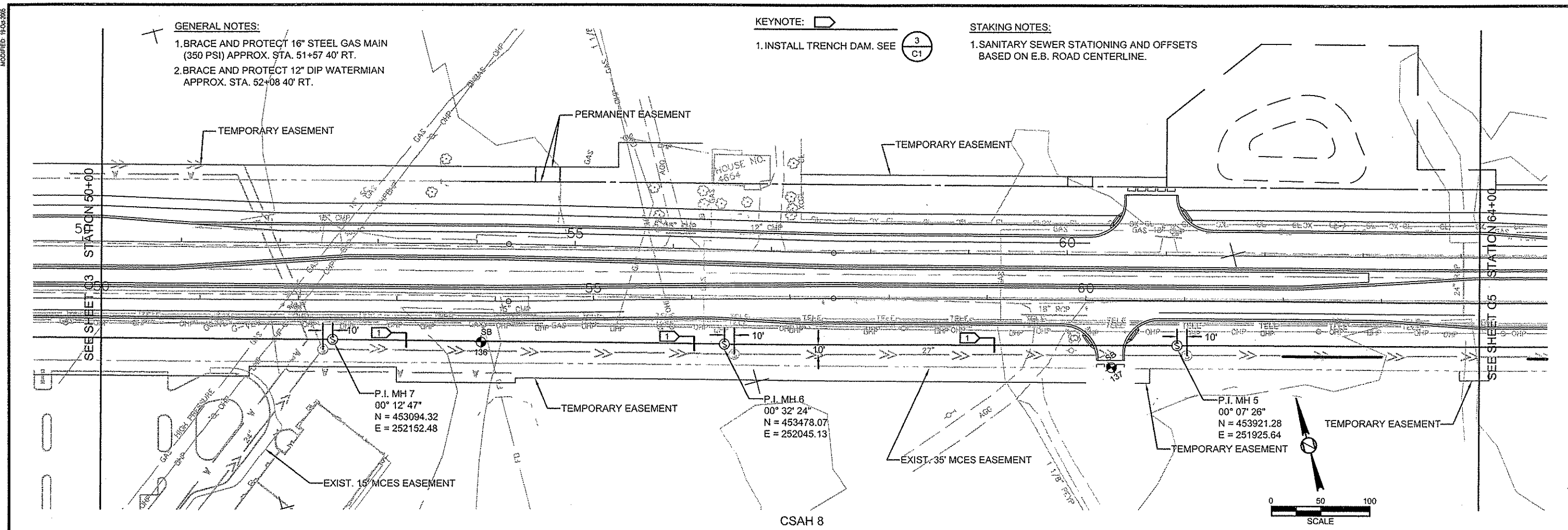
- GENERAL NOTES:**
- BRACE AND PROTECT 16" STEEL GAS MAIN (350 PSI) APPROX. STA. 51+57 40' RT.
  - BRACE AND PROTECT 12" DIP WATERMAIN APPROX. STA. 52+08 40' RT.

**KEYNOTE:** 

1. INSTALL TRENCH DAM. SEE 

**STAKING NOTES:**

1. SANITARY SEWER STATIONING AND OFFSETS BASED ON E.B. ROAD CENTERLINE.



APPROVED PIPE MATERIAL SCHEDULE			
PIPE MATERIAL	WALL THICKNESS	MIN. PIPE STIFFNESS	SPEC. REF.
PVC	T-1	46 psi	02616
CCF		46 psi	02618

DESIGNED: LDB		CHECKED: JMP		I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT 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. SIGNATURE: <i>Larry D Bohrer</i> TYPE OR PRINTED NAME: LARRY D BOHRER DATE: OCT. 19, 2005 REG. NO. 12120		APPROVED RECORD DRAWING		PROJECT NO. 802325	
DRAWN: RRC		APPROVED: LDB				CONSULTING ENGR REP		CONTRACT SP 82-608-07	
DATE: 10-19-05		CONTR. NO. 13407		DATE:		DATE:		DATE:	
REVISIONS		REVISIONS		DATE:		DATE:		DATE:	

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APPROVED RECORD DRAWING

PROJECT NO. 802325

CONTRACT SP 82-608-07

FILE NAME: 2325C00040.dwg

MINNESOTA

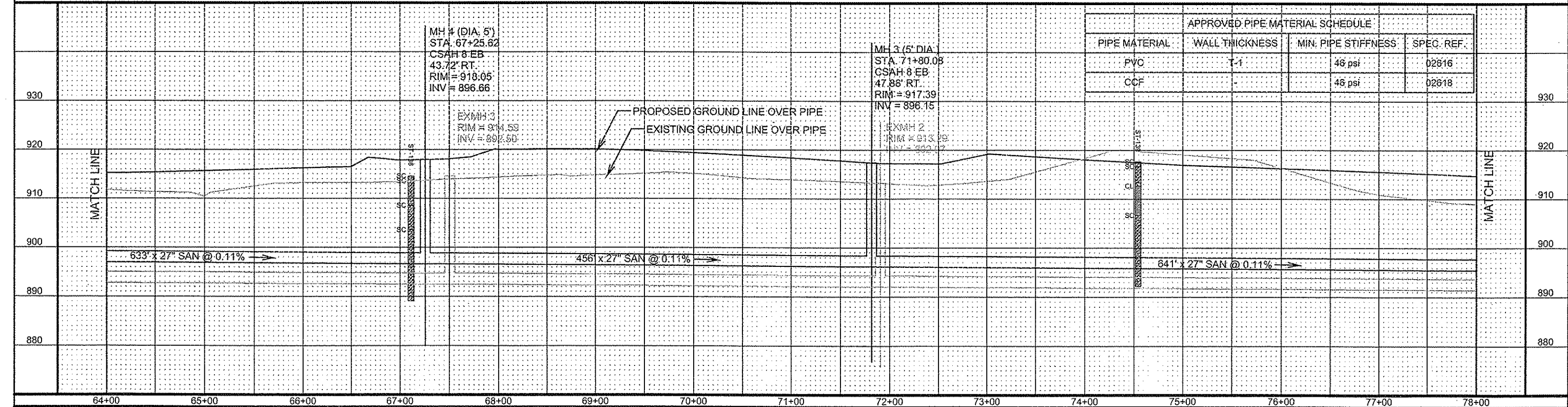
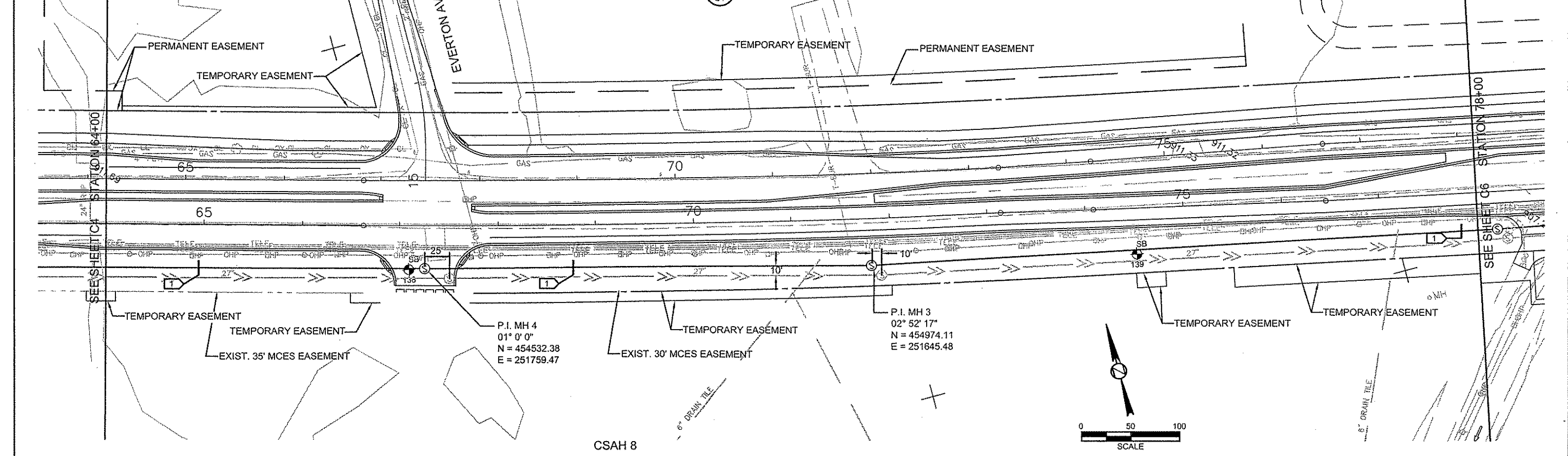
LINO LAKES INTERCEPTOR EXTENSION  
PLAN AND PROFILE  
CSAH 8 STATION 50+00 TO CSAH 8 STATION 64+00

LINO LAKES / HUGO

**C4**

6 of 38

MODIFIED: 19-04-2005



DESIGNED: LDB				CHECKED: JMP				PROJECT NO.: 802325			
DRAWN: RRC				APPROVED: LDB				CONTRACT: SP 82-608-07			
DATE: 10-19-2005				DATE: 13407				DATE: 2325C00050.dwg			
ISSUED FOR BIDDING				APPROVED RECORD DRAWING				LINO LAKES INTERCEPTOR EXTENSION PLAN AND PROFILE			
REVISIONS				REVISIONS				CSAH 8 STATION 64+00 TO CSAH 8 STATION 78+00			
								LINO LAKES / HUGO			
								MINNESOTA			
								7 of 38			

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APPROVED RECORD DRAWING

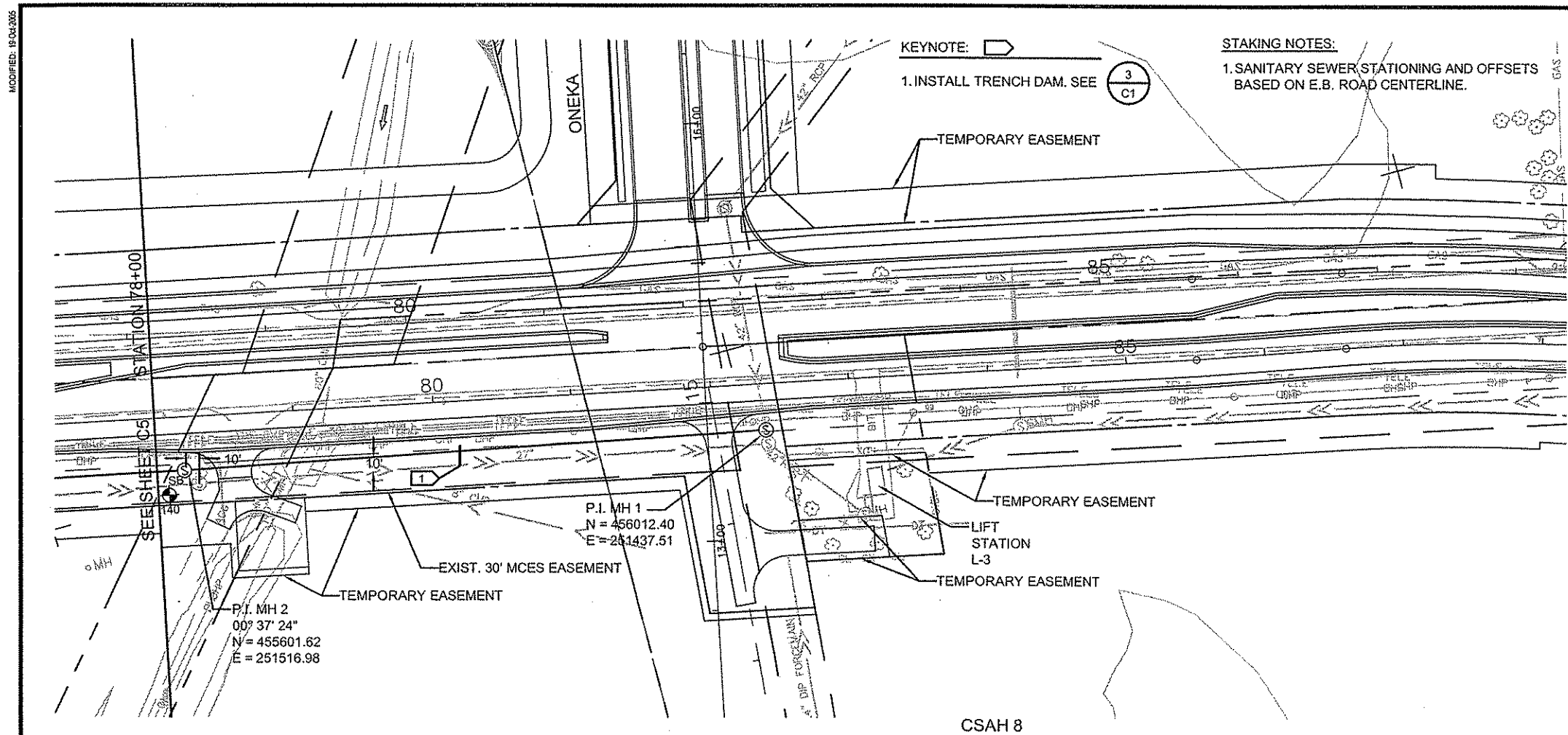
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 CONTRACT: SP 82-608-07  
 FILE NAME: 2325C00050.dwg

LINO LAKES INTERCEPTOR EXTENSION  
 PLAN AND PROFILE  
 CSAH 8 STATION 64+00 TO CSAH 8 STATION 78+00  
 LINO LAKES / HUGO  
 MINNESOTA

C5

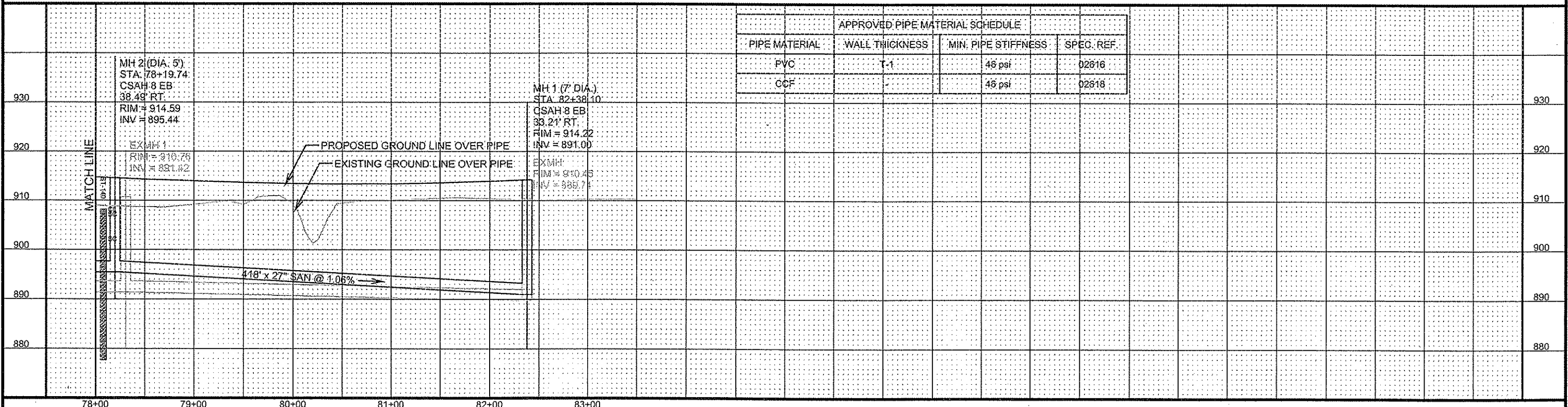
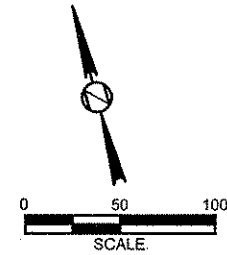
PLOTTED: 19-04-2005

MODIFIED: 18-04-2005



**GENERAL NOTES:**

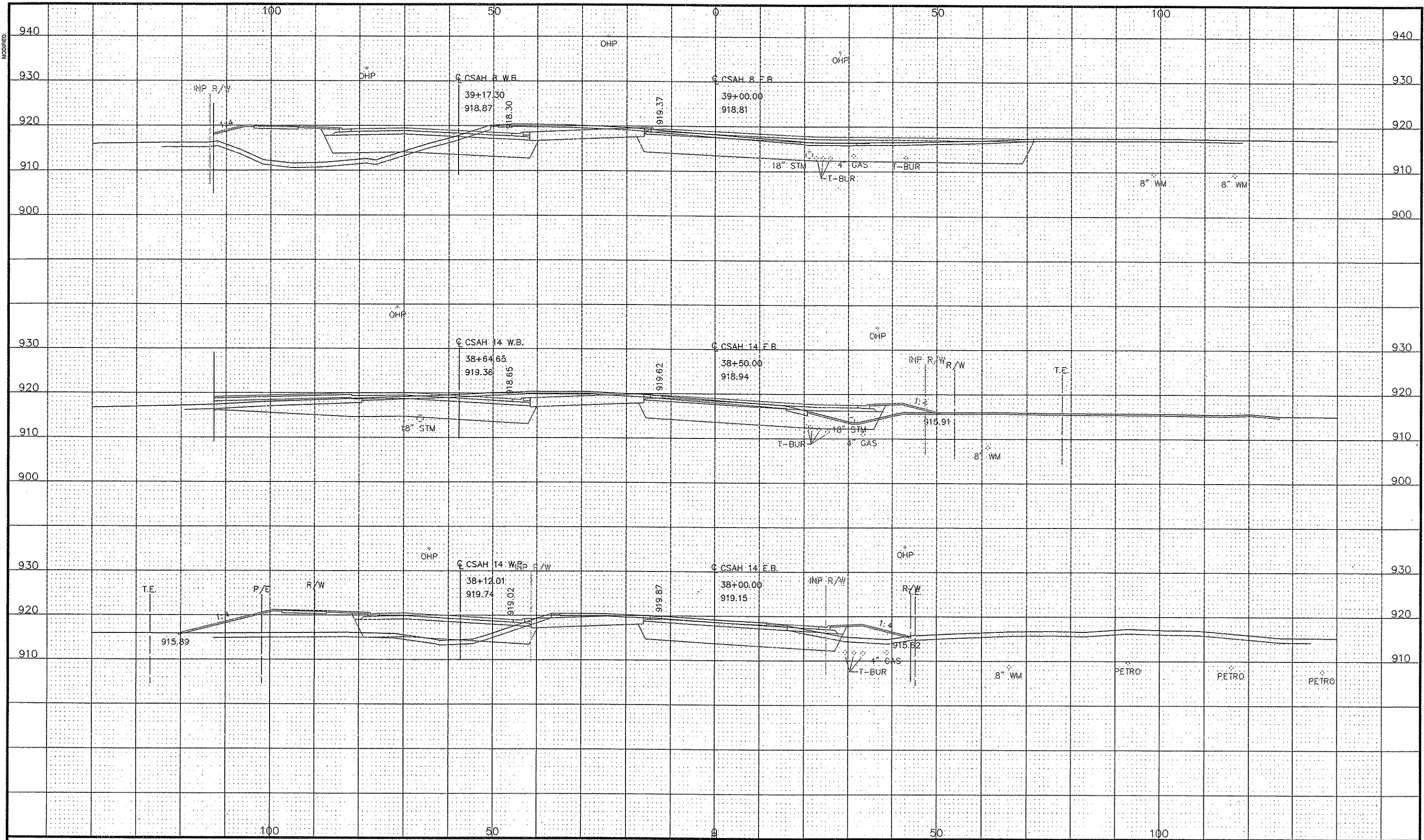
1. CONSTRUCT MH1 OVER EXISTING 42" RCP.
2. EXPOSE 42" RCP BUT KEEP PIPE INTACT.
3. SLIDE PRECAST BASE SLAB UNDER 42" RCP.
4. PLACE FIRST BARREL SECTION OVER 42" RCP.
5. GROUT EXISTING PIPE TO BARREL WITH NON-SHINK GROUT.
6. CONSTRUCT 27" SAN WEST FROM MH 1, MATCHING CROWN WITH 42" RCP.
7. DURING NON-PEAK FLOW CONDITION, SAW OFF AND REMOVE TOP HALF OF RCP THROUGH MH.
8. CONSTRUCT BENCHES UP TO SPRINGLINE OF 42" RCP.
9. PLACE INTERMEDIATE SLAB AND CONSTRUCT 48" RISER SECTIONS.



DESIGNED		CHECKED		APPROVED RECORD DRAWING		PROJECT NO.	
LDB	JMP	LDB	JMP	DATE	DATE	802325	
DRWN	APPR	CONSLTNG ENGR REP				CONTRACT	
RRC	LOB	DATE				SP 82-608-07	
DATE	COM.	MCES CONSTRUCTION DEPT REP				FILE NAME	
10-19-2005	13407	DATE				2325C00060.dwg	
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT 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.				<b>TKDA</b> ENGINEERS-ARCHITECTS-PLANNERS		LINO LAKES INTERCEPTOR EXTENSION PLAN AND PROFILE CSAH 8 STATION 78+00 TO CSAH 8 STATION 83+00	
SIGNATURE: <i>Larry D. Bohrer</i> TYPE OR PRINTED NAME: LARRY D BOHRER DATE: OCT. 19, 2005 REG. NO. 12120				APPROVED RECORD DRAWING DATE: _____ DATE: _____ DATE: _____		LINO LAKES / HUGO MINNESOTA	

PLOTTED: 18-04-2005

C6



NO.	DATE	BY	REVISIONS
10-19-05	LD8		ISSUED FOR BIDDING

DESIGNED LD8	CHECKED JMP
DRAWN RRC	APPROVED LD8
DATE 10-19-05	CDMAL 13407

10-19-05 13407

INTEGRITY CERTIFICATION: I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT 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.

SIGNATURE: *Larry D. Bohrer*  
 TYPE OR PRINTED NAME: LARRY D. BOHRER  
 DATE: OCT. 19, 05 REG. NO. 12120

APPROVED RECORD DRAWING

CONSULTING ENGR REP	DATE
MCS CONSTRUCTION DEPT REP	DATE
MCS ENGR DEPT REP	DATE

PROJECT NO.  
802325

CONTRACT  
S.P. 82-608-07

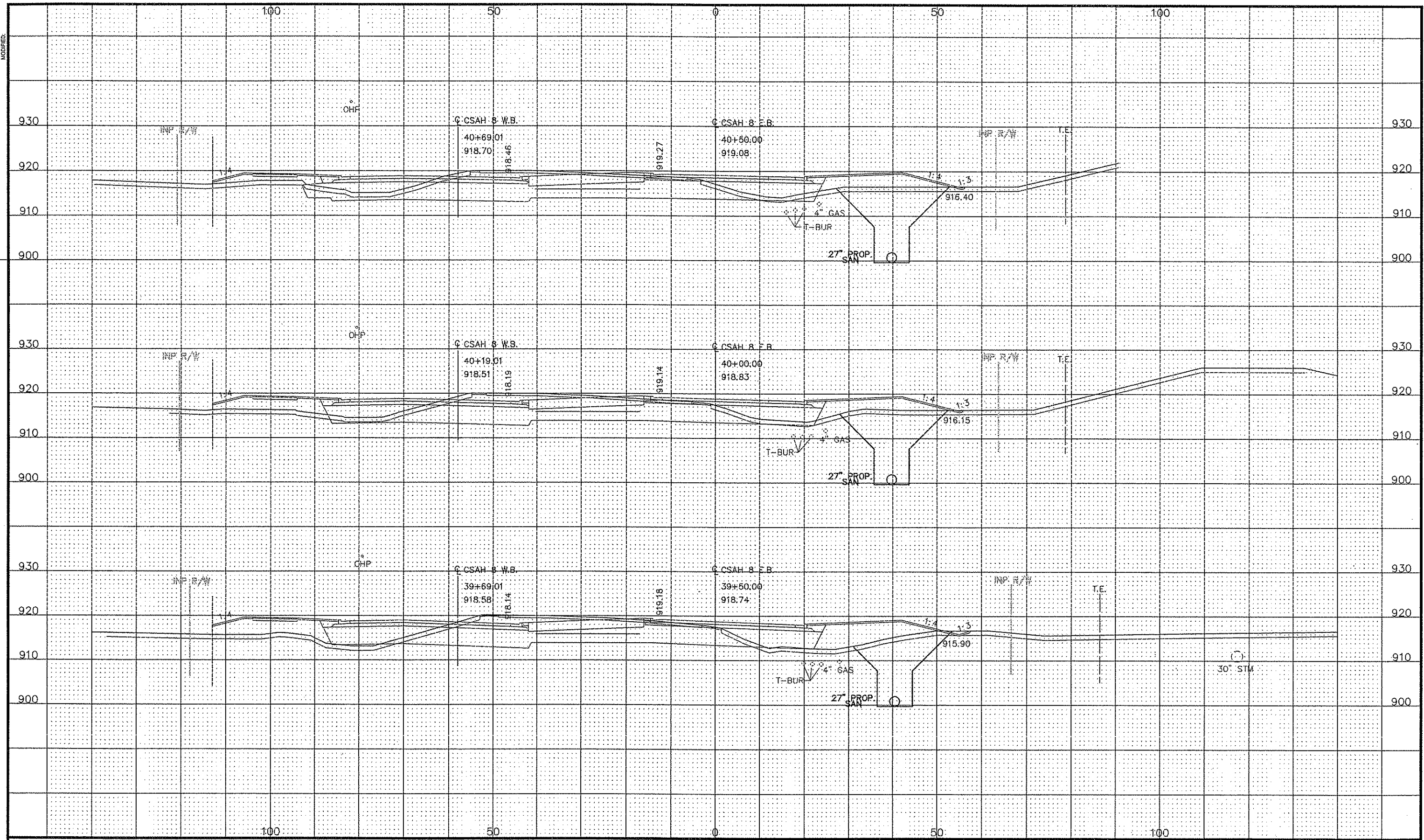
FILE NAME  
2325C00030.dwg

LINO LAKES / HUGO

LINO LAKES INTERCEPTOR EXTENSION  
TRENCH CROSS SECTIONS

MINNESOTA





NO.	DATE	BY	REVISIONS	REMARKS
10-19-05	LDB		ISSUED FOR BIDDING	

DESIGNED	LDB	CHECKED	JMP
DRAWN	RRC	APPROVED	LDB
DATE	10-19-05	CONAL	13407

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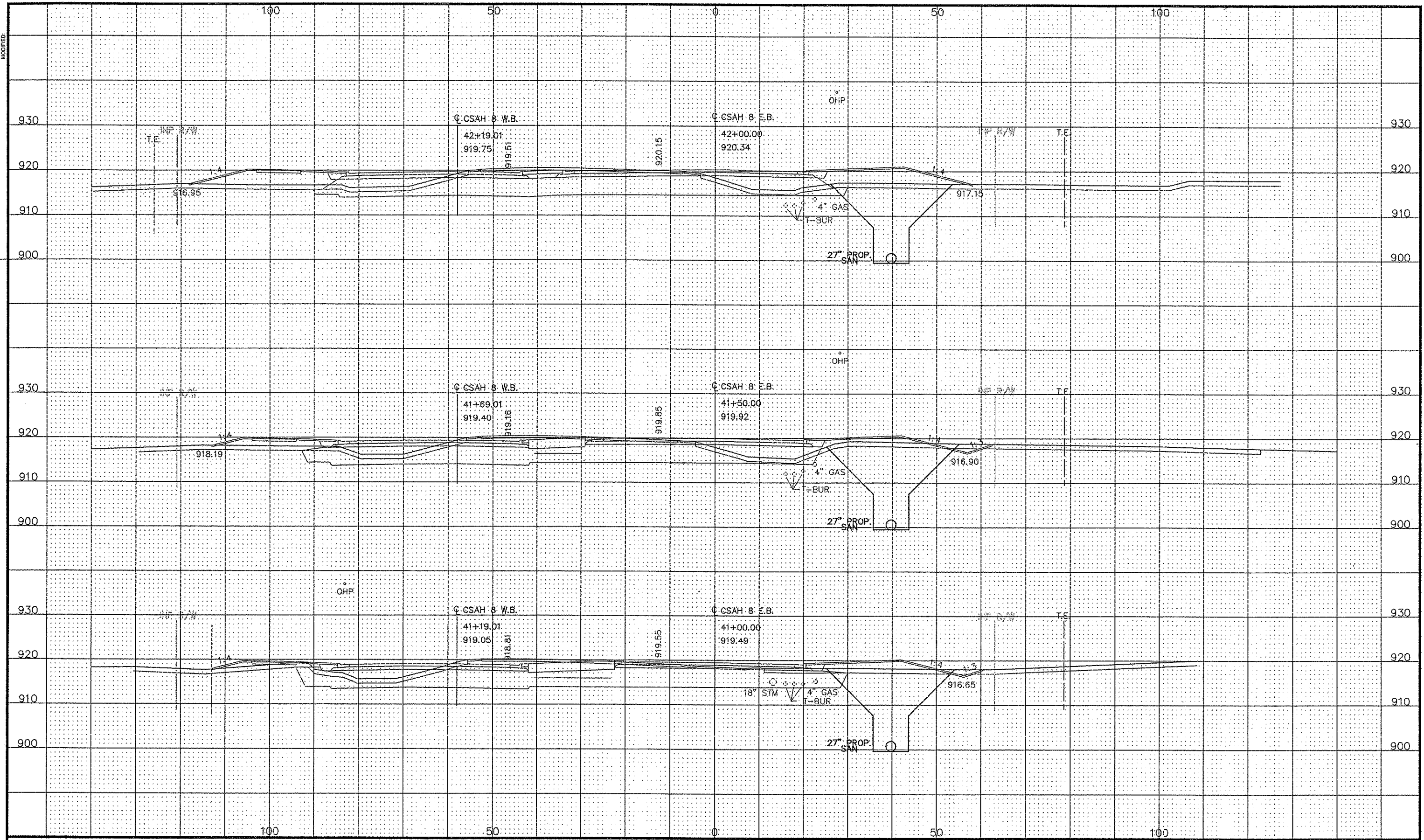
Signature: *Larry D. Bohrer*  
TYPE OR PRINTED NAME: LARRY D. BOHRER  
DATE: OCT. 19, 05 REG. NO. 12120

APPROVED RECORD DRAWING	
CONSULTING ENGR REP	DATE
ACES CONSTRUCTION DEPT REP	DATE
ACES ENGR DEPT REP	DATE

PROJECT NO.	802325
CONTRACT	S.P. 82-608-07
FILE NAME	2325C00030.dwg
LINO LAKES / HUGO	

LINO LAKES INTERCEPTOR EXTENSION  
TRENCH CROSS SECTIONS





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DESIGNED LDB	CHECKED JMP	<small>           I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT 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.         </small>
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DATE 10-19-05	CONTRACT NO. 13467	
DATE OCT. 19, 05	REG. NO. 12120	

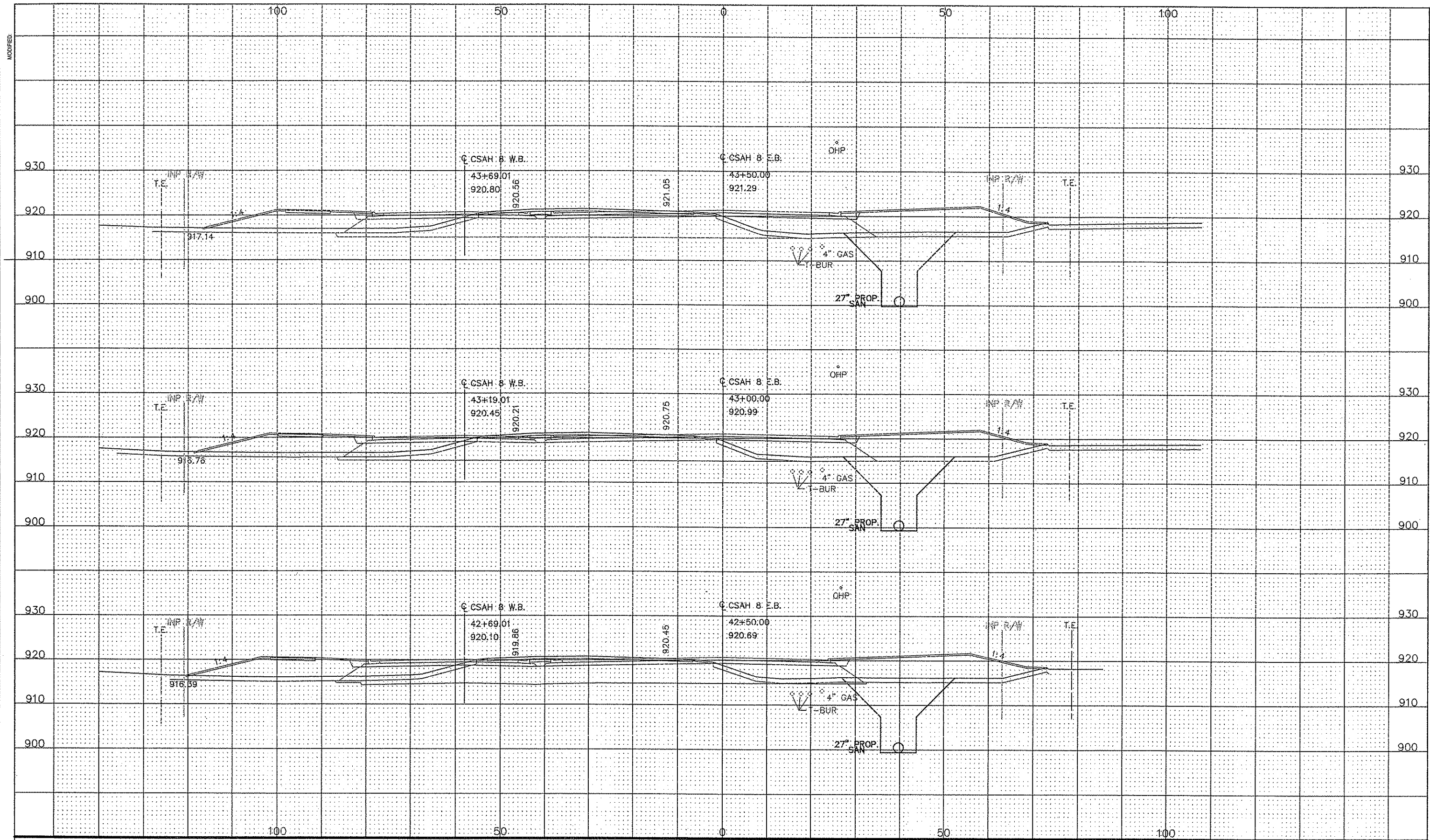
  
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APPROVED RECORD DRAWING	
CONSULTING ENGR REP	DATE
MCS CONSTRUCTION DEPT REP	DATE
MCS ENGR DEPT REP	DATE

PROJECT NO. 802325
CONTRACT S.P. 82-608-07
FILE NAME 2325C00030.dwg

LINO LAKES INTERCEPTOR EXTENSION  
 TRENCH CROSS SECTIONS

LINO LAKES / HUGO



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DRAWN RRC	APPROVED LDB
DATE 10-19-05	CON. NO. 13407

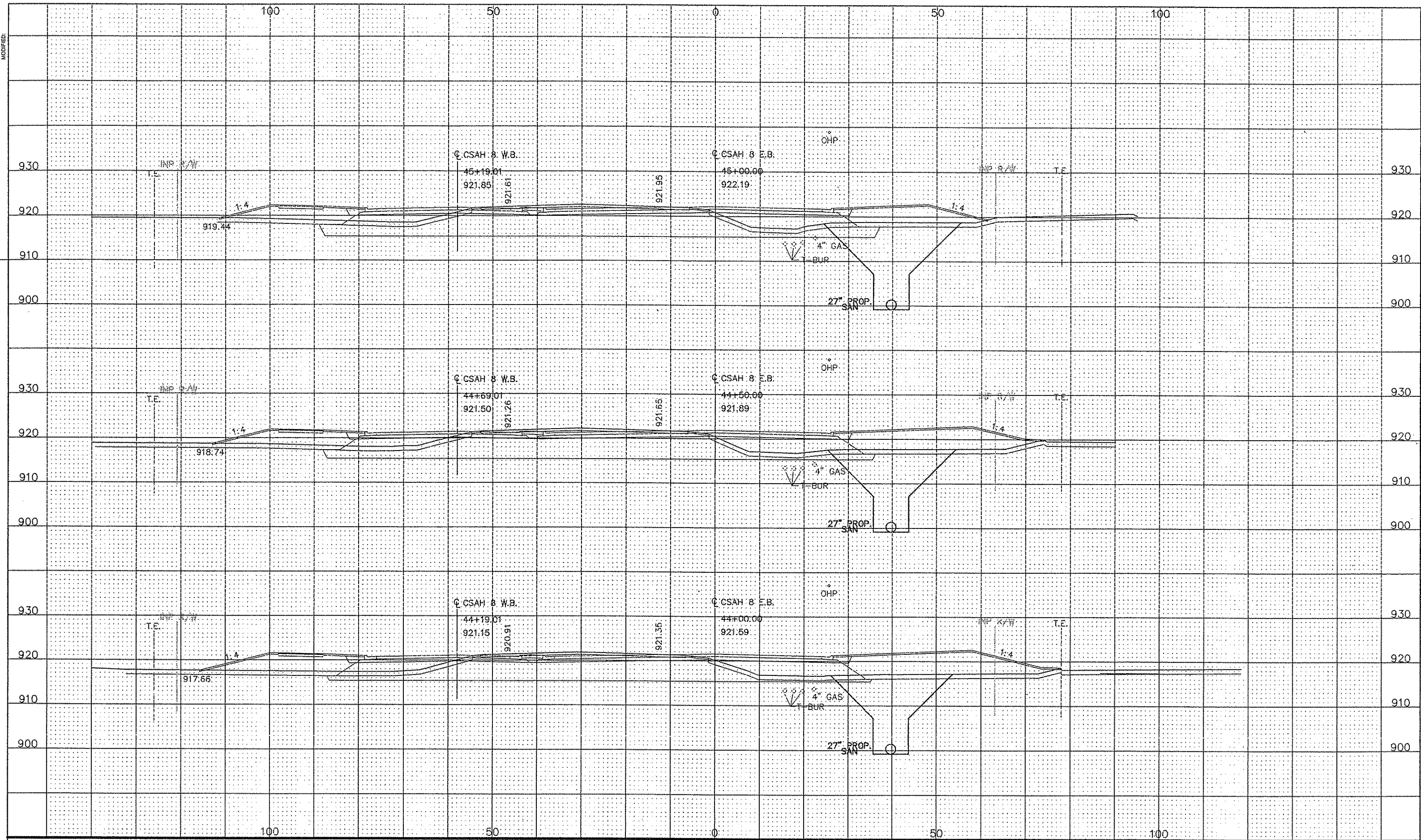
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APPROVED RECORD DRAWING	
CONSULTING ENGR REP	DATE
MCS CONSTRUCTION DEPT REP	DATE
MCS ENGR DEPT REP	DATE

PROJECT NO. 802325	LINO LAKES INTERCEPTOR EXTENSION TRENCH CROSS SECTIONS
CONTRACT S.P. 82-608-07	
FILE NAME 2325C00030.dwg	

PLOTTED: 10/24/05



NO.	DATE	BY	REVISIONS
10-19-05	LDB	ISSUED FOR BIDDING	

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DRAWN	RRC	APPROVED	LDB
DATE	10-19-05	CON.	13407

10-19-05 13407

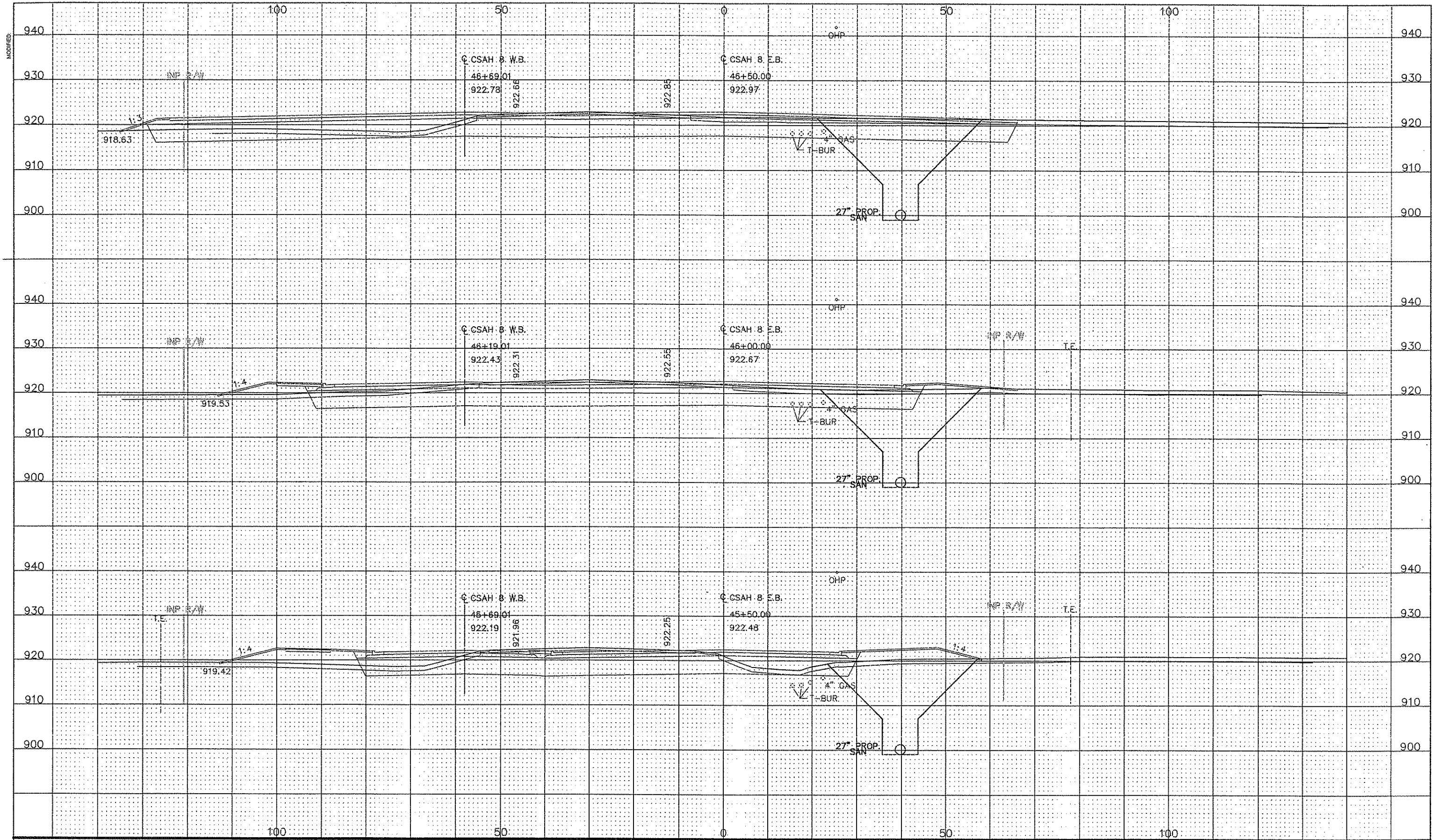
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PROJECT NO. 802325  
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LINO LAKES INTERCEPTOR EXTENSION  
TRENCH CROSS SECTIONS





NO.	DATE	BY	REMARKS
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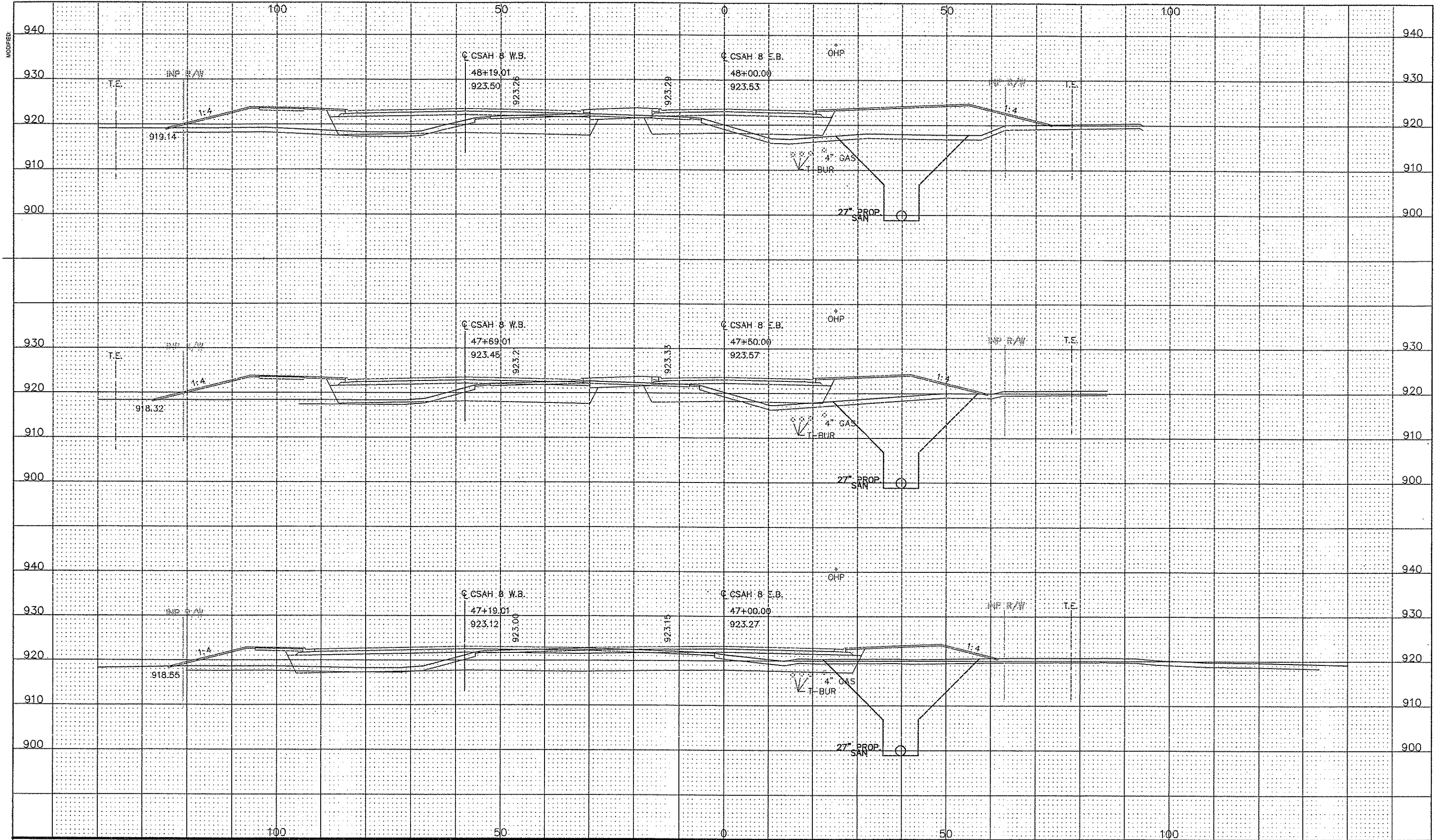
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DRAWN RRC	APPROVED LDB	
DATE 10-19-05	COMM. 13407	



APPROVED RECORD DRAWING	
CONSULTING ENGR REP	DATE
MCES CONSTRUCTION DEPT REP	DATE
MCES ENGR DEPT REP	DATE

PROJECT NO 802325	LINO LAKES INTERCEPTOR EXTENSION TRENCH CROSS SECTIONS
CONTRACT S.P. 82-608-07	
FILE NAME 2325C00030.dwg	

C12



NO.	DATE	BY	REVISIONS
10-19-05	LOB		ISSUED FOR BIDDING

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DRAWN	RRC	APPROVED	LDB
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APPROVED RECORD DRAWING	
CONSULTING ENGR REP	DATE
MCS CONSTRUCTION DEPT REP	DATE
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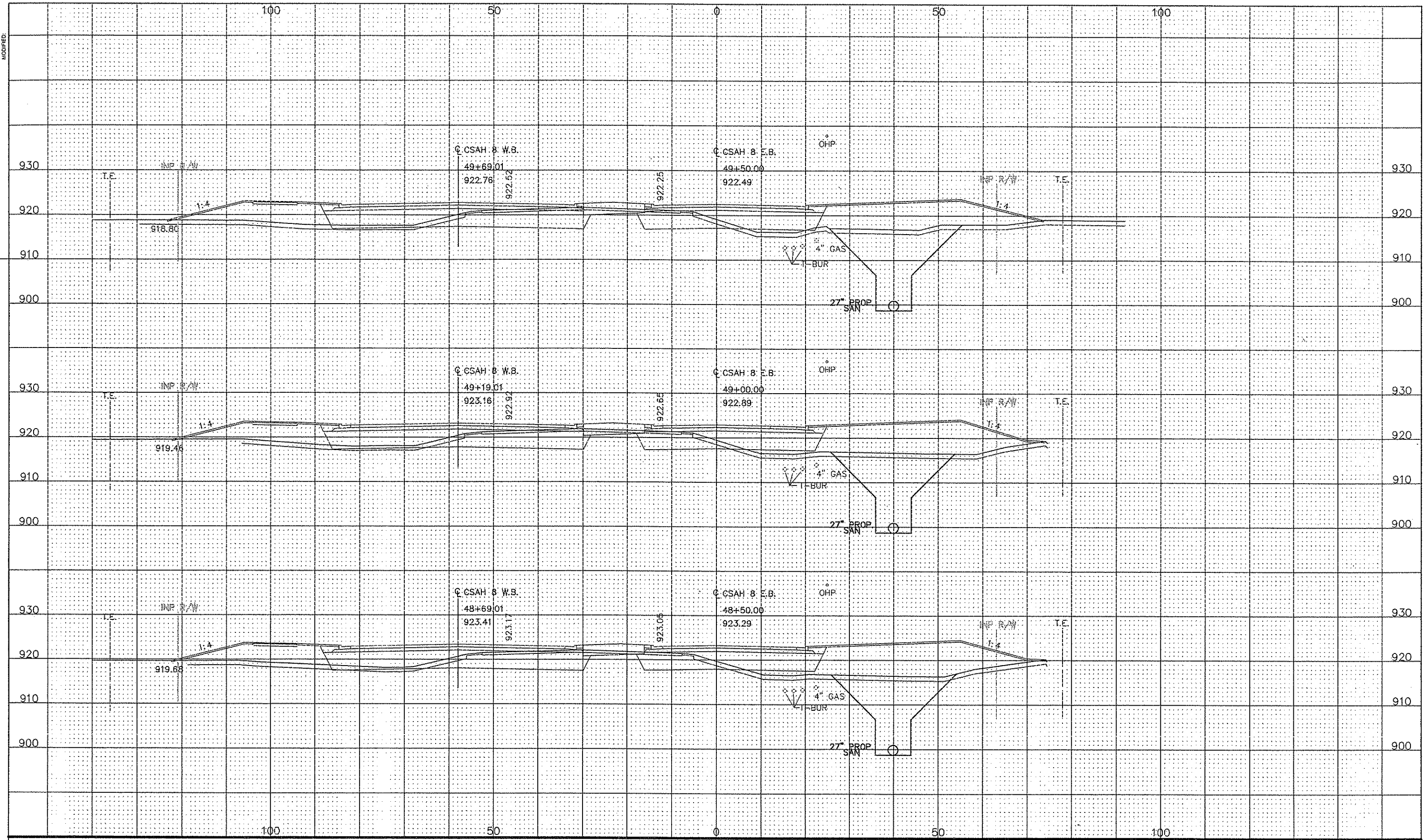
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LINO LAKES / HUGO	
MINNESOTA	

LINO LAKES INTERCEPTOR EXTENSION  
TRENCH CROSS SECTIONS

C13  
15 of 38

PLOTTED: 10/19/05





NO.	DATE	BY	REMARKS
10-19-05	LDB		ISSUED FOR BIDDING

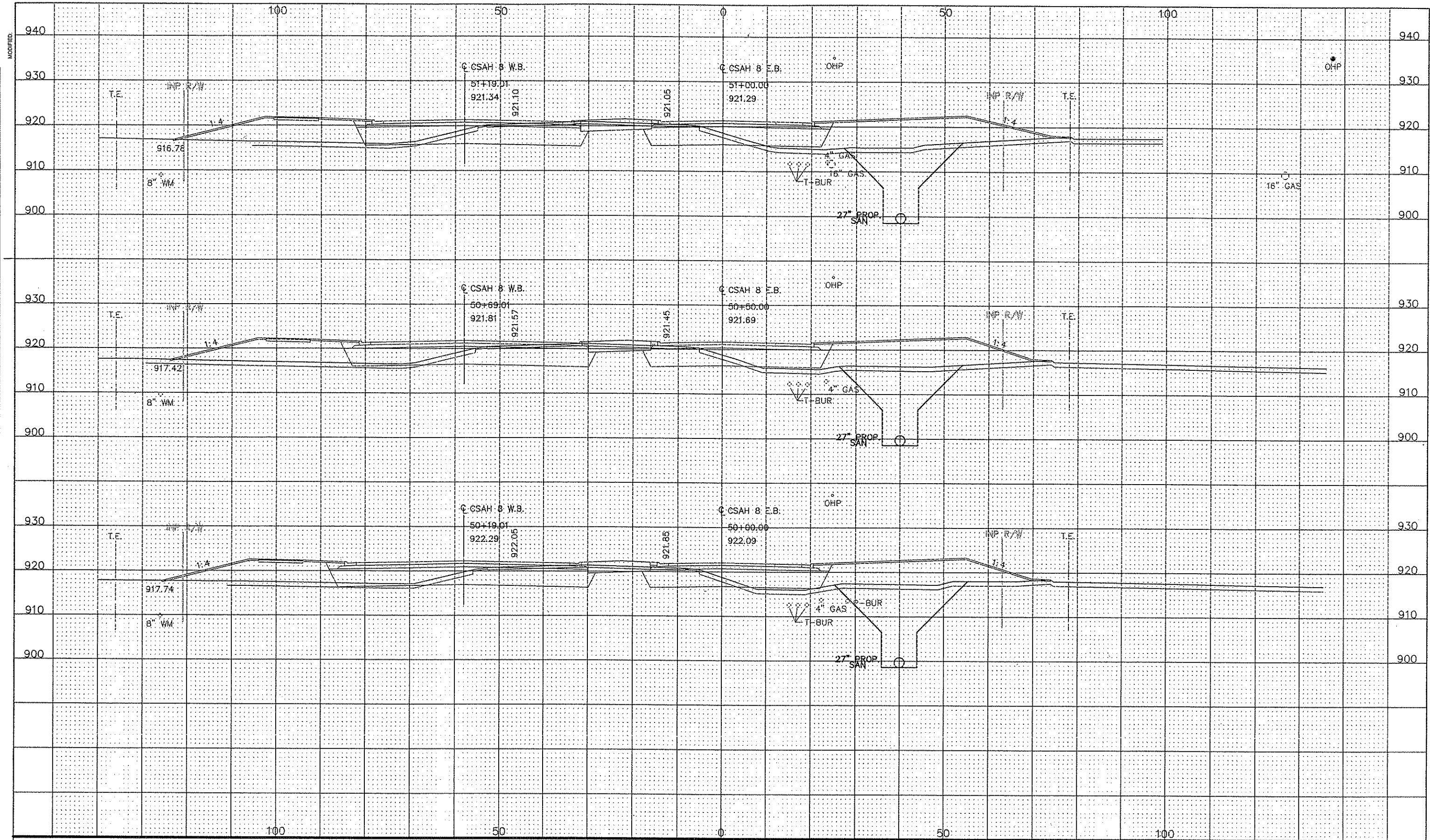
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APPROVED RECORD DRAWING	
CONSULTING ENGR REP	DATE
MCS CONSTRUCTION DEPT REP	DATE
MCS ENGR DEPT REP	DATE

PROJECT NO. 802325	LINO LAKES INTERCEPTOR EXTENSION TRENCH CROSS SECTIONS
CONTRACT S.P. 82-608-07	
FILE NAME 2325C00030.dwg	



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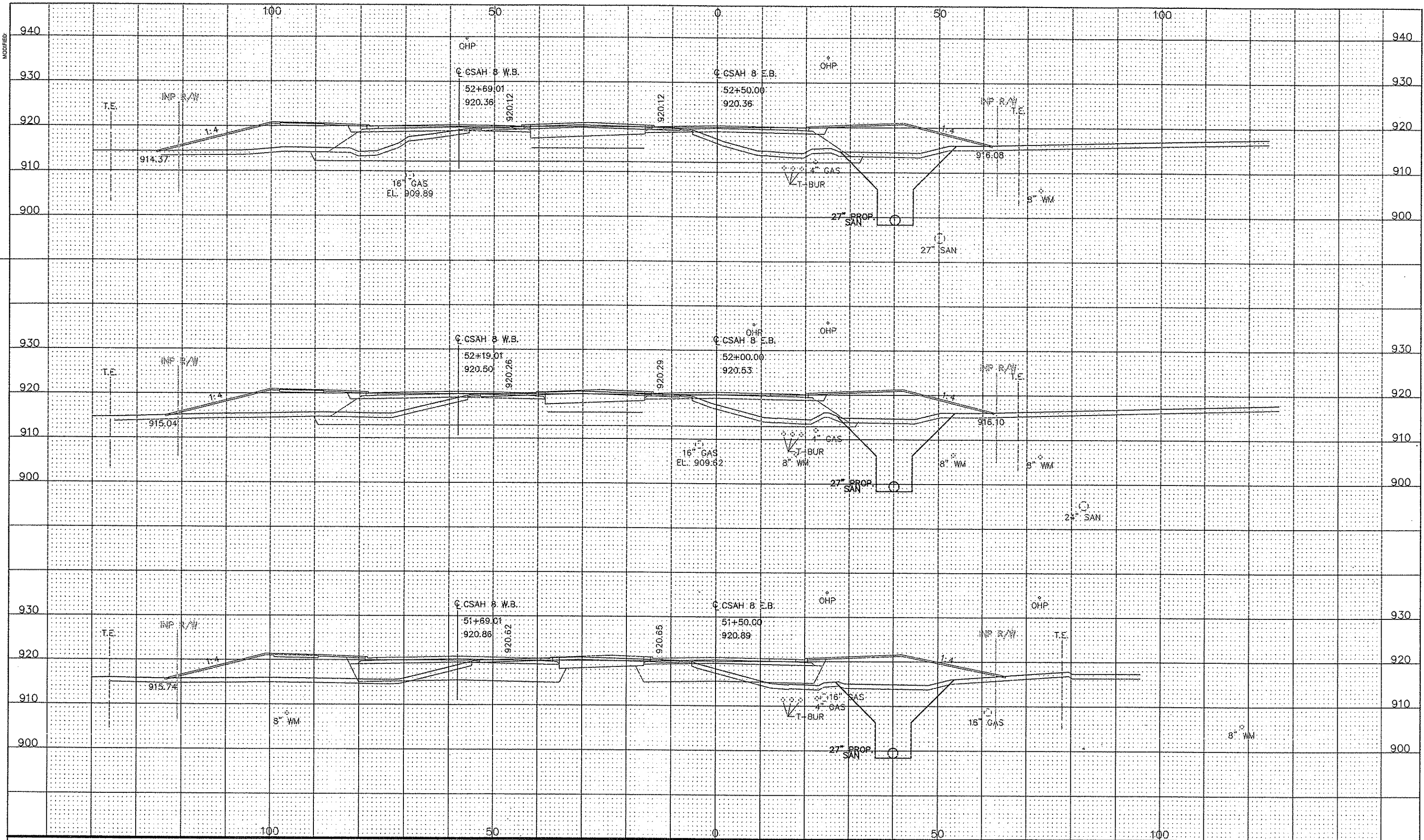
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APPROVED RECORD DRAWING	
CONSULTING ENGR REP	DATE
ACES CONSTRUCTION DEPT 1 REP	DATE
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PROJECT NO	802325
CONTRACT	S.P. 82-608-07
FILE NAME	2325C00030.dwg
LINO LAKES / HUGO	

LINO LAKES INTERCEPTOR EXTENSION  
 TRENCH CROSS SECTIONS



NO.	DATE	BY	REVISIONS
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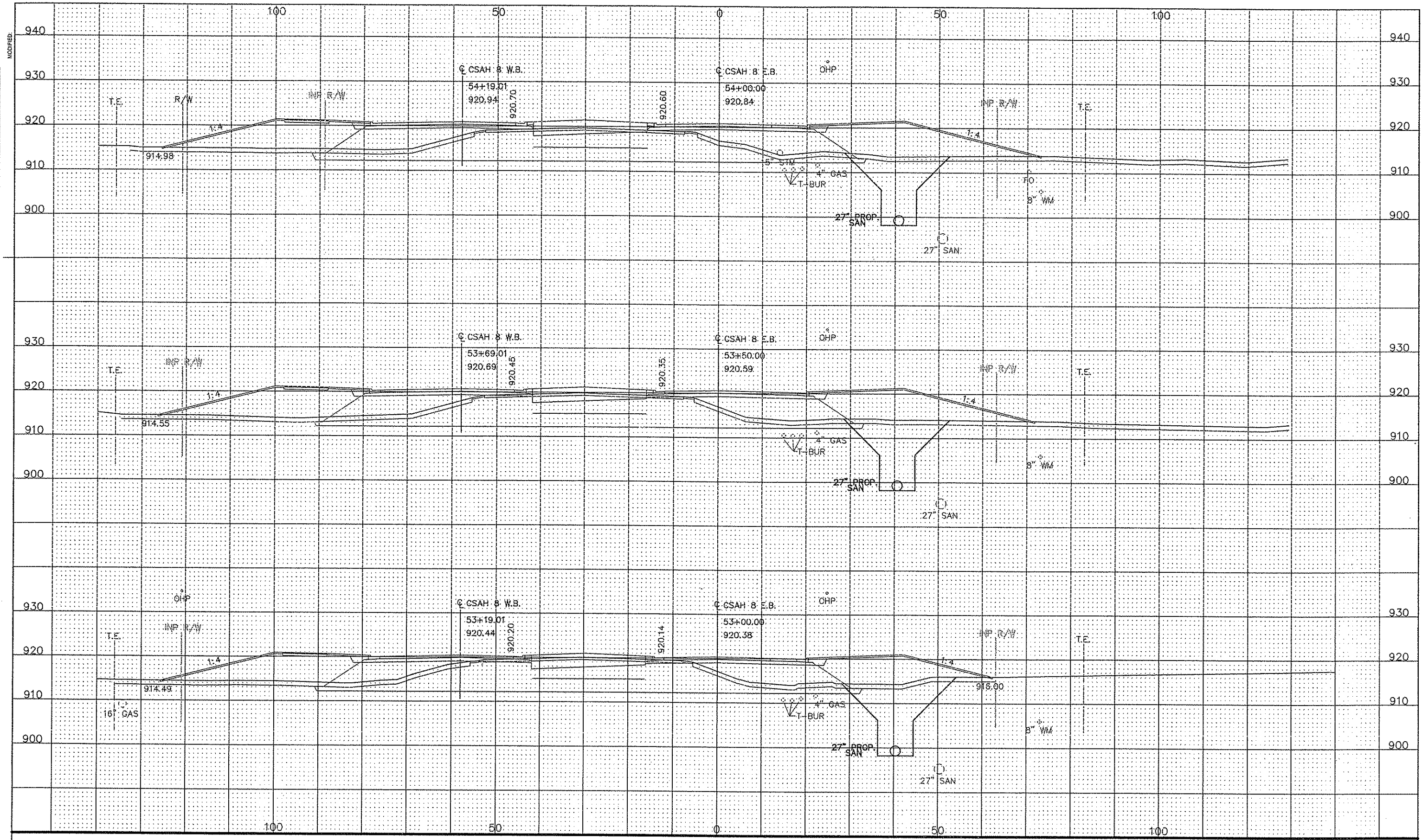
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ACES ENGR DEPT REP	DATE		

LINO LAKES INTERCEPTOR EXTENSION  
 TRENCH CROSS SECTIONS

LINO LAKES / HUGO

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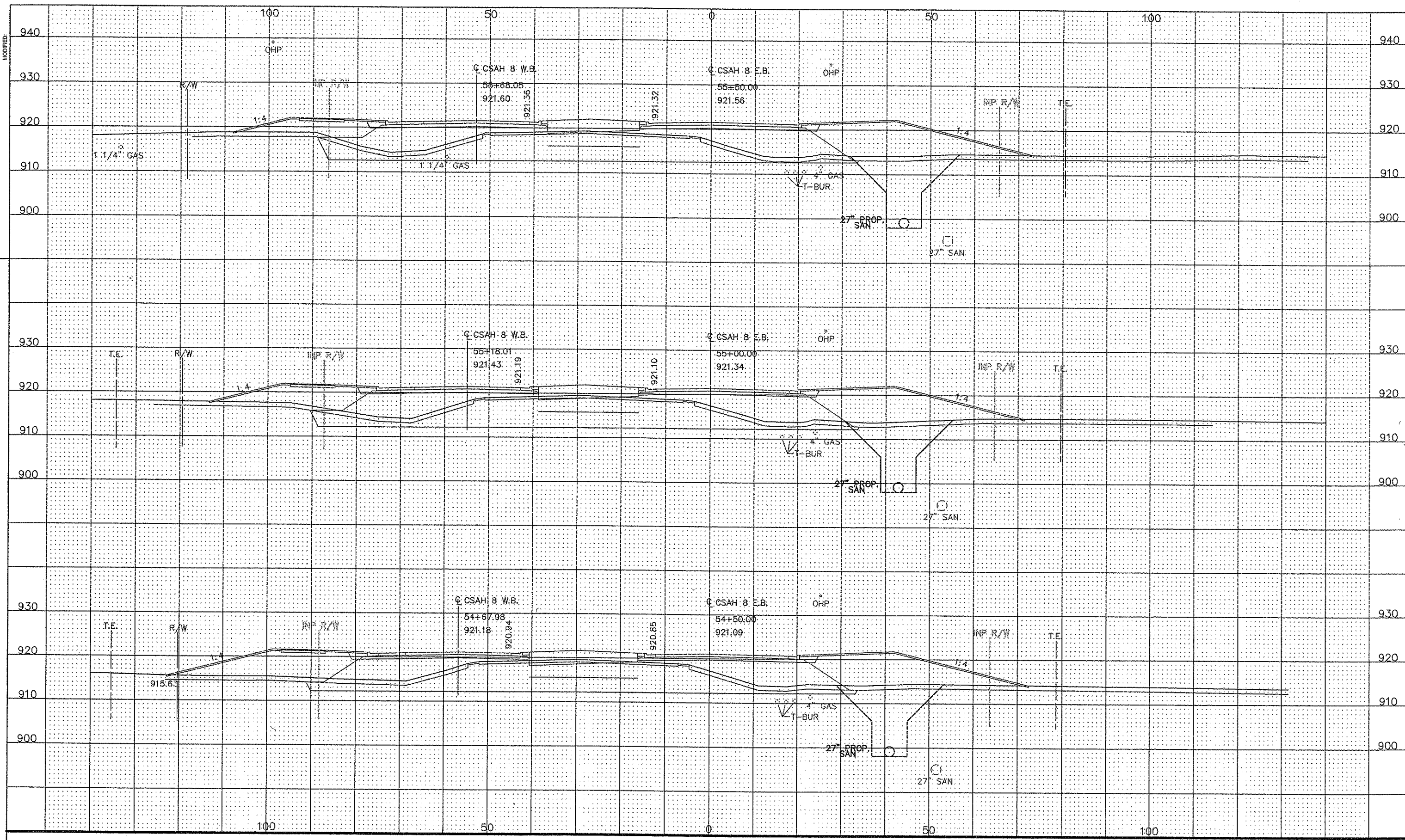
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PROJECT NO. 802325  
 CONTRACT S.P. 82-608-07  
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LINO LAKES / HUGO  
 MINNESOTA



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APPROVED RECORD DRAWING	
DATE	
CONSULTING ENGR REP	
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DATE	
MCES ERROR DEPT REP	
DATE	

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FILE NAME 2325C00030.dwg

LINO LAKES INTERCEPTOR EXTENSION  
TRENCH CROSS SECTIONS

LINO LAKES / HUGO

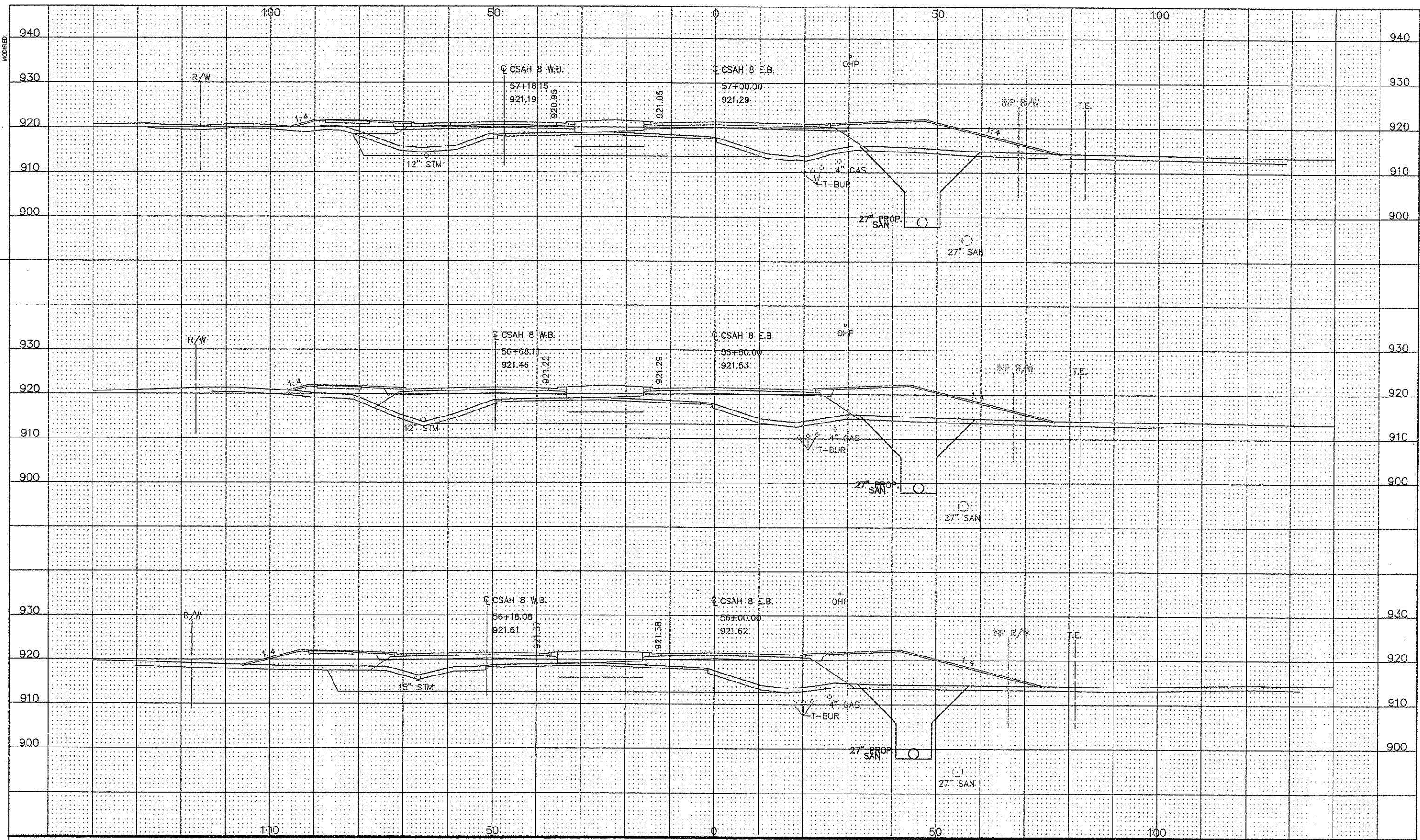
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C18

20 of 38

PLOTTED: 10/20/05





NO.	DATE	BY	REVISIONS
10-19-05	LDB		ISSUED FOR BIDDING

DESIGNED LDB	CHECKED JMP
DRAWN PRC	APPROVED LOB
DATE 10-19-05	CON. NO. 13407

10-19-05 13407

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*Larry D. Bohrer*  
LARRY D. BOHRER  
DATE: OCT. 19, 05 REG. NO. 12120

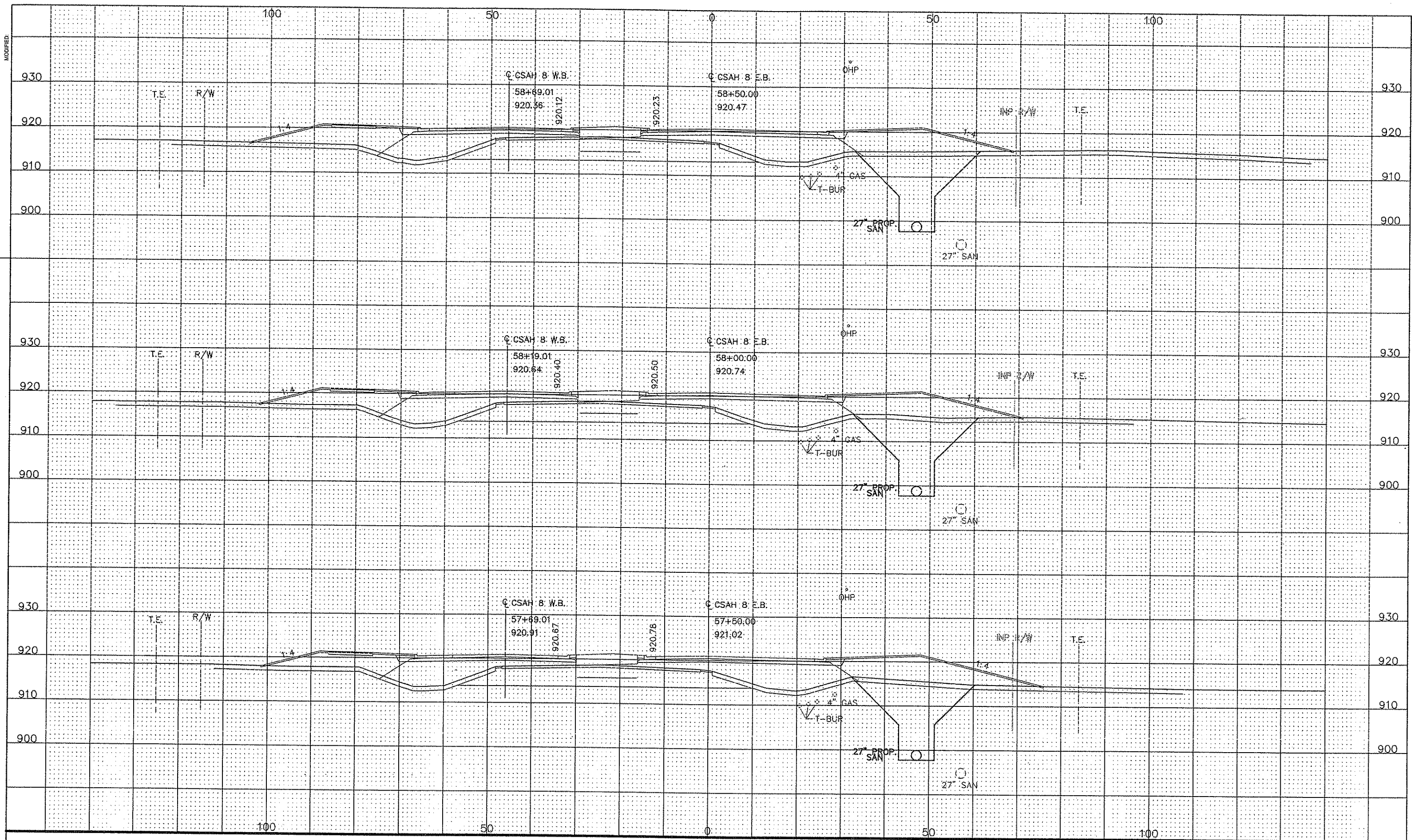
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CONSULTING ENGR. REP.	DATE
MGES CONSTRUCTION DEPT. REP.	DATE
MGES ENGR. DEPT. REP.	DATE

PROJECT NO. 802325
CONTRACT S.P. 82-608-07
FILE NAME 2325C00030.dwg

LINO LAKES INTERCEPTOR EXTENSION  
TRENCH CROSS SECTIONS

LINO LAKES / HUGO MINNESOTA



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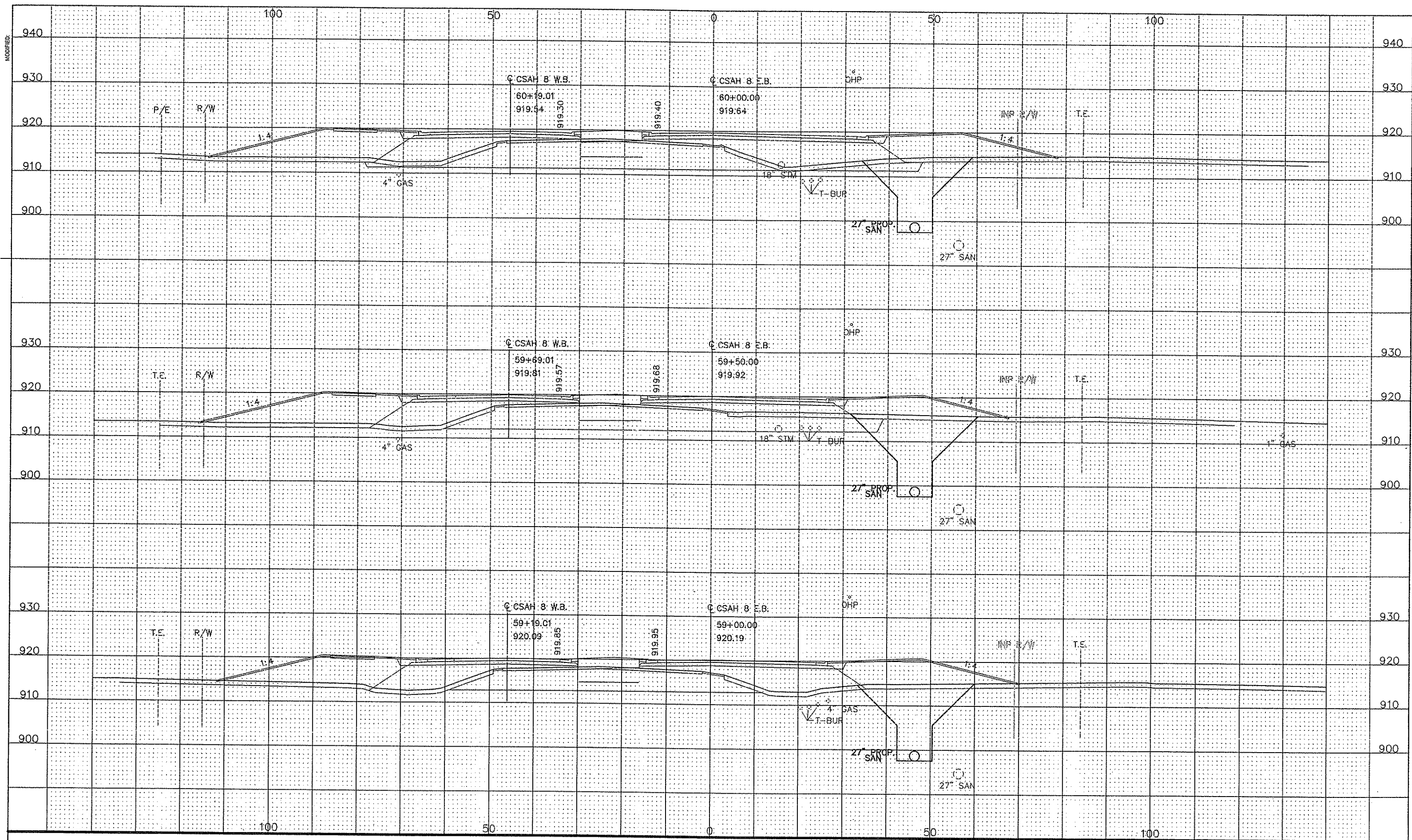
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APPROVED RECORD DRAWING	
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DATE	
MCS CONSTRUCTION DEPT REP	
DATE	
MCS ENGR DEPT REP	

PROJECT NO.	802325
CONTRACT	S.P. 82-608-07
FILE NAME	2325C00030.dwg

LINO LAKES INTERCEPTOR EXTENSION  
 TRENCH CROSS SECTIONS

C20



NO.	DATE	BY	REMARKS	NO.	DATE	BY	REMARKS
1	10-19-05	LDB	ISSUED FOR BIDDING				

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CONTRACT	S.P. 82-608-07
FILE NAME	2325C00030.dwg
LINO LAKES / HUGO	
MINNESOTA	

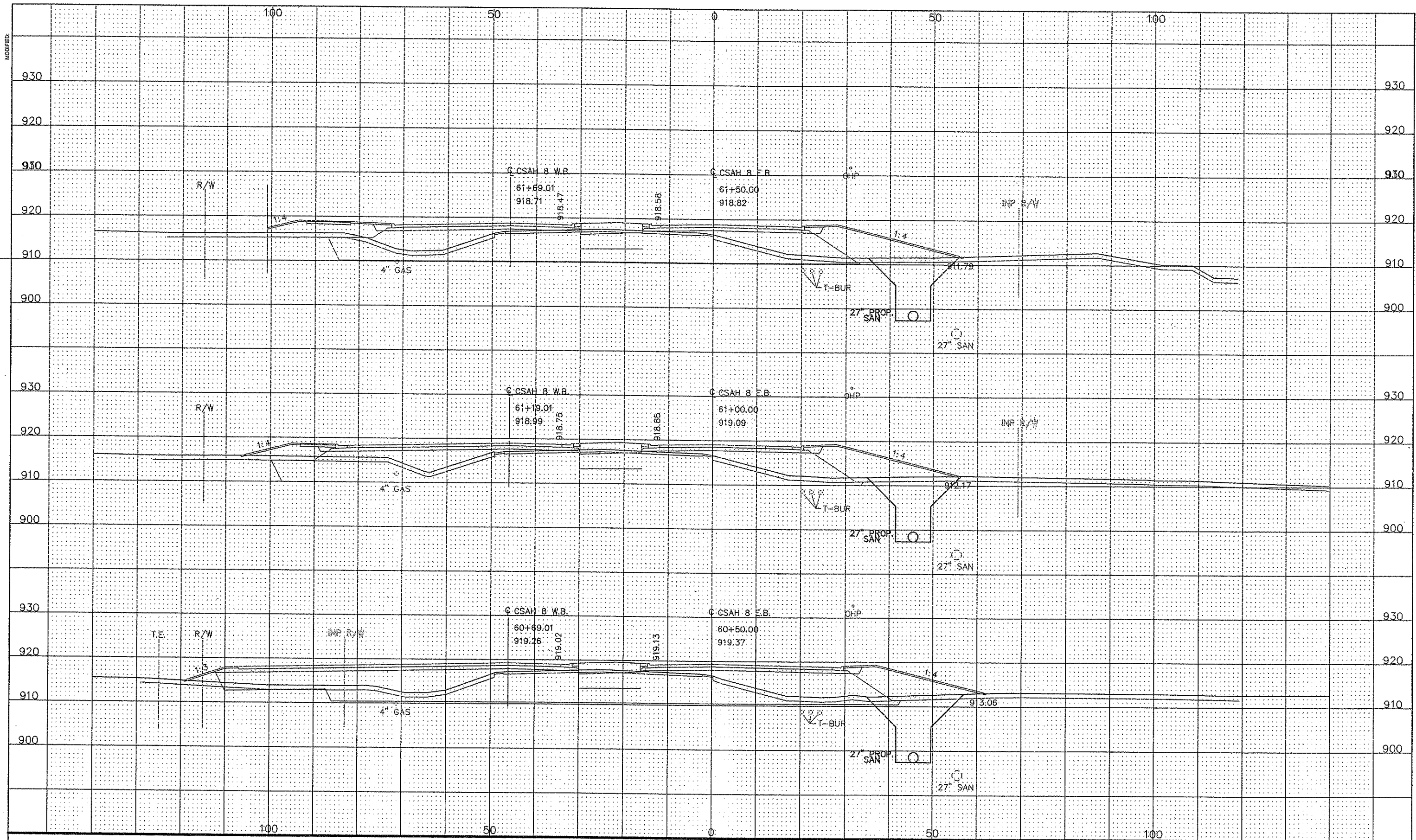
LINO LAKES INTERCEPTOR EXTENSION  
TRENCH CROSS SECTIONS

C21

23 of 38

PLOTTED: 10/20/05





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 TYPE ON PRINTED NAME: LARRY D. BOHRER  
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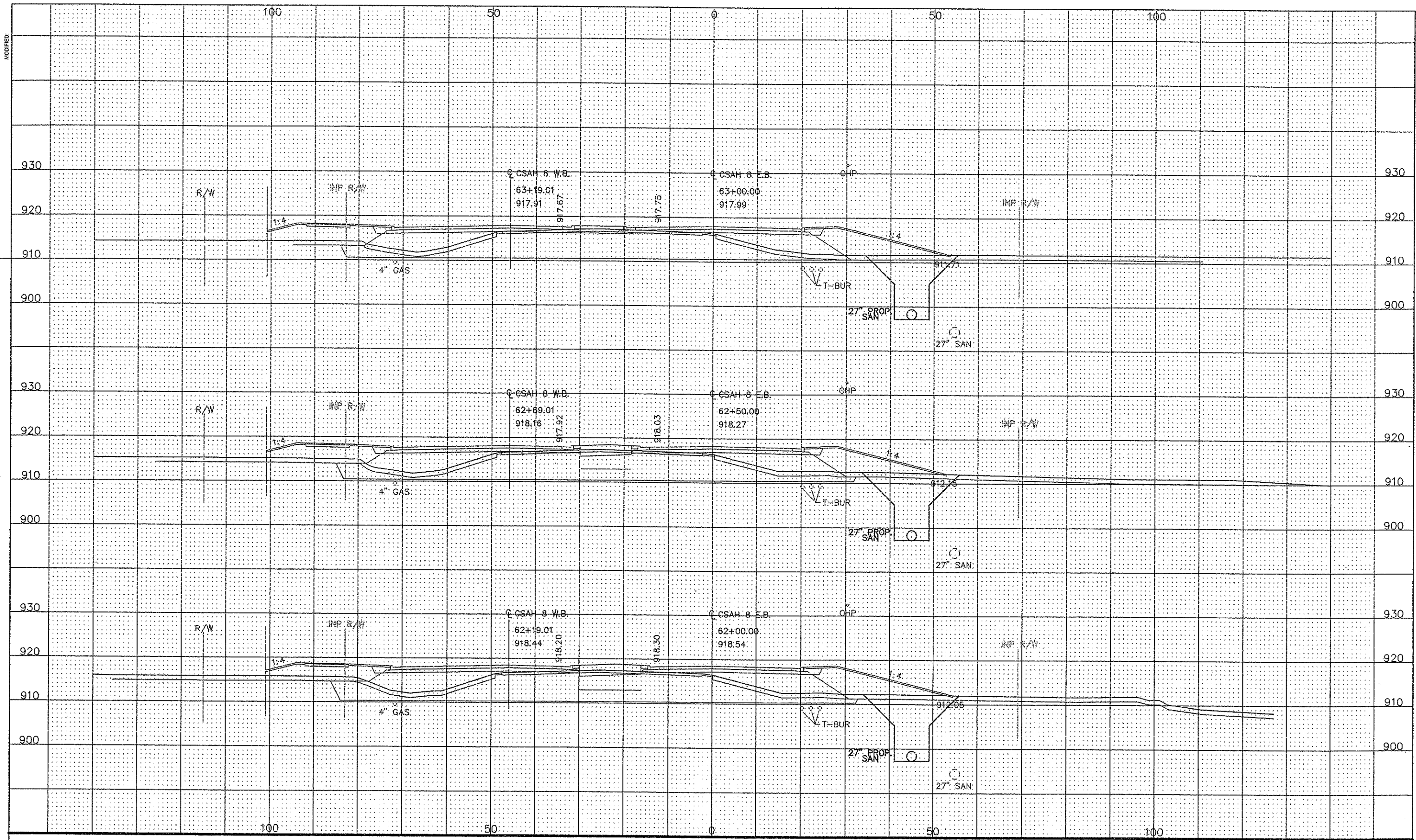
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APPROVED RECORD DRAWING	
CONSULTING ENGR REP	DATE
MCS CONSTRUCTION DEPT REP	DATE
MCS ENGR/DEPT REP	DATE

PROJECT NO.	802325
CONTRACT	S.P. 82-608-07
FILE NAME	2325C00030.dwg
LINO LAKES / HUGO	

LINO LAKES INTERCEPTOR EXTENSION  
 TRENCH CROSS SECTIONS

C22



NO.	DATE	BY	REVISIONS
10-19-05	LDB		ISSUED FOR BIDDING

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LDB	JMP
DRAWN	APPROVED
RRC	LDB
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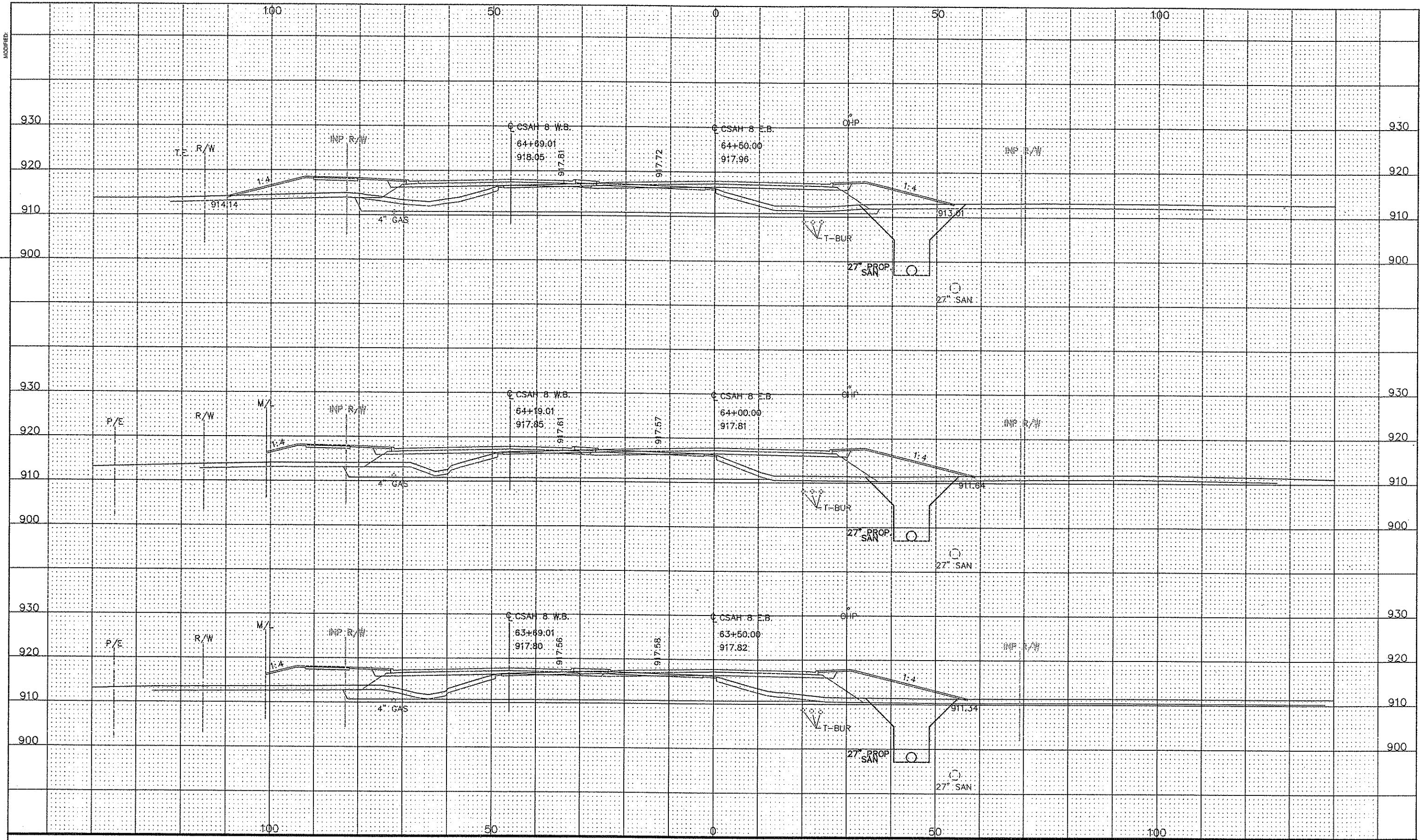
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MINNESOTA

LINO LAKES INTERCEPTOR EXTENSION  
TRENCH CROSS SECTIONS

C23





NO.	DATE	BY	REVISIONS
10-19-05	LOB		ISSUED FOR BIDDING

DESIGNED	DRAWN	CHECKED	APPROVED
LOB	RRC	JMP	LOB

DATE: 10-19-05    CDWA: 13407

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SIGNATURE: *Larry D. Bohrer*  
 TYPE OR PRINTED NAME: LARRY D. BOHRER  
 DATE: OCT. 19, 05    REG. NO.: 12120

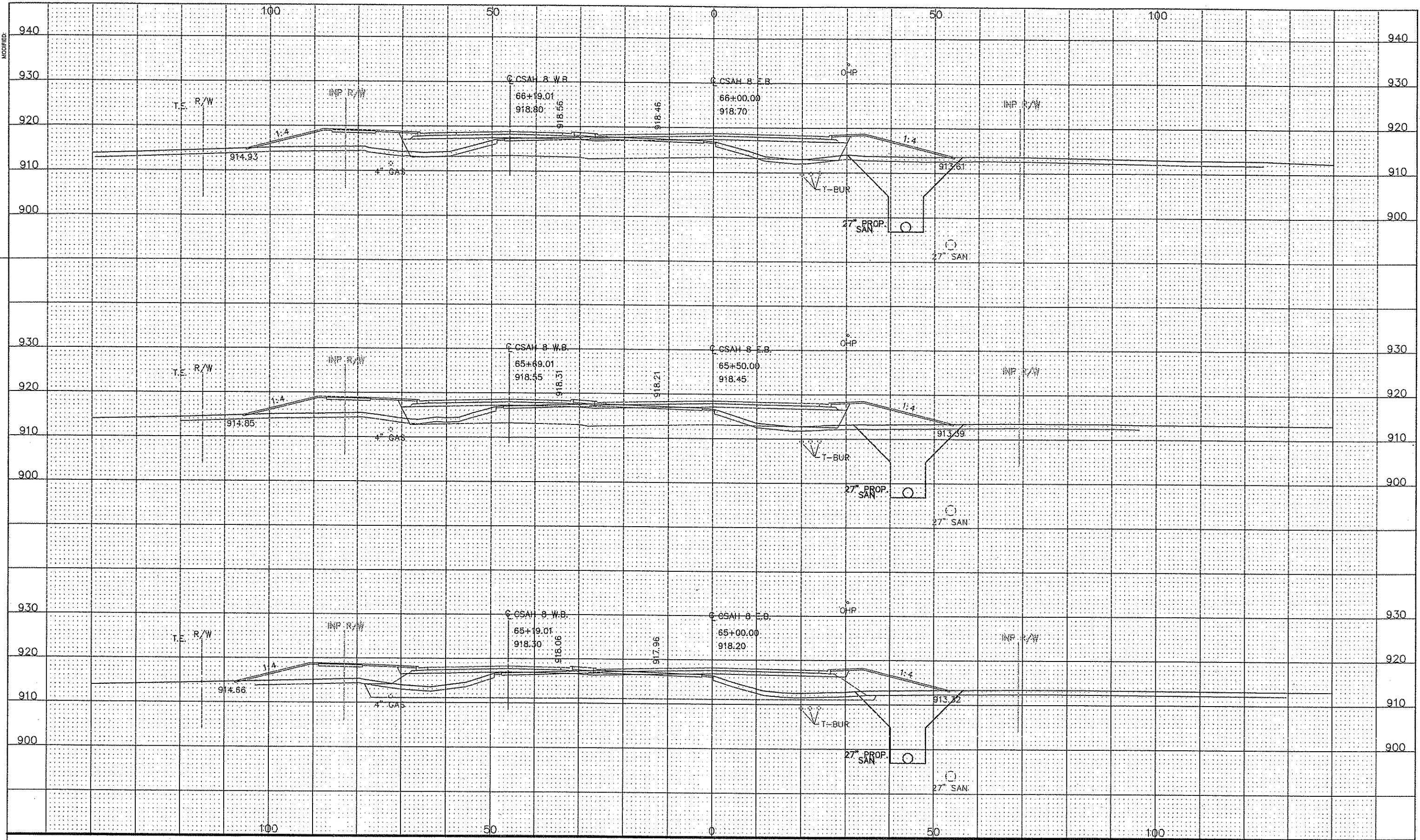


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CONSULTING ENGR REP	DATE
MCS CONSTRUCTION DEPT REP	DATE
MCS ENGR DEPT REP	DATE

PROJECT NO.	802325
CONTRACT	S.P. 82-608-07
FILE NAME	2325C00030.dwg

LINO LAKES INTERCEPTOR EXTENSION  
 TRENCH CROSS SECTIONS

LINO LAKES / HUGO    MINNESOTA



NO.	DATE	BY	REVISIONS
10-19-05	LDB		ISSUED FOR BIDDING

DESIGNED	LDB	CHECKED	JMP
DRAWN	RRC	APPROVED	LDB
DATE	10-19-05	EDMAL	13407

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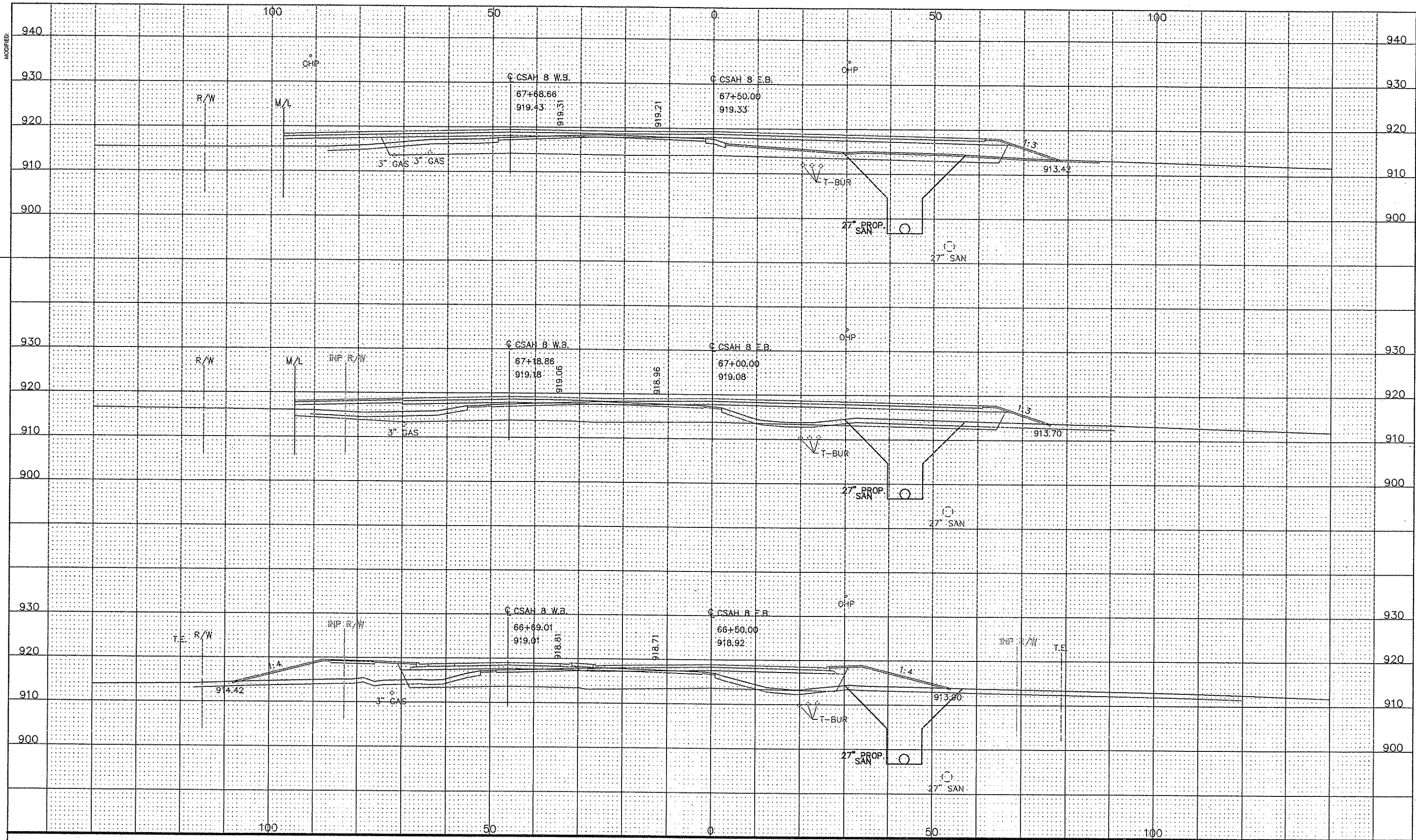
Signature: *Larry D. Bohrer*  
LARRY D. BOHRER  
DATE: OCT. 19, 05 REG. NO. 12120

APPROVED RECORD DRAWING	
DATE	PROJECT NO. 802325
DATE	CONTRACT S.P. 82-608-07
DATE	FILE NAME 2325C00030.dwg
DATE	LINO LAKES / HUGO

LINO LAKES INTERCEPTOR EXTENSION  
TRENCH CROSS SECTIONS

**C25**

MINNESOTA 27 of 38



NO.	DATE	BY	REVISIONS
1	10-19-05	LDB	ISSUED FOR BIDDING

DESIGNED	LDB	CHECKED	JMP
DRAWN	RRC	APPROVED	LDB
DATE	10-19-05	CONR.	13407

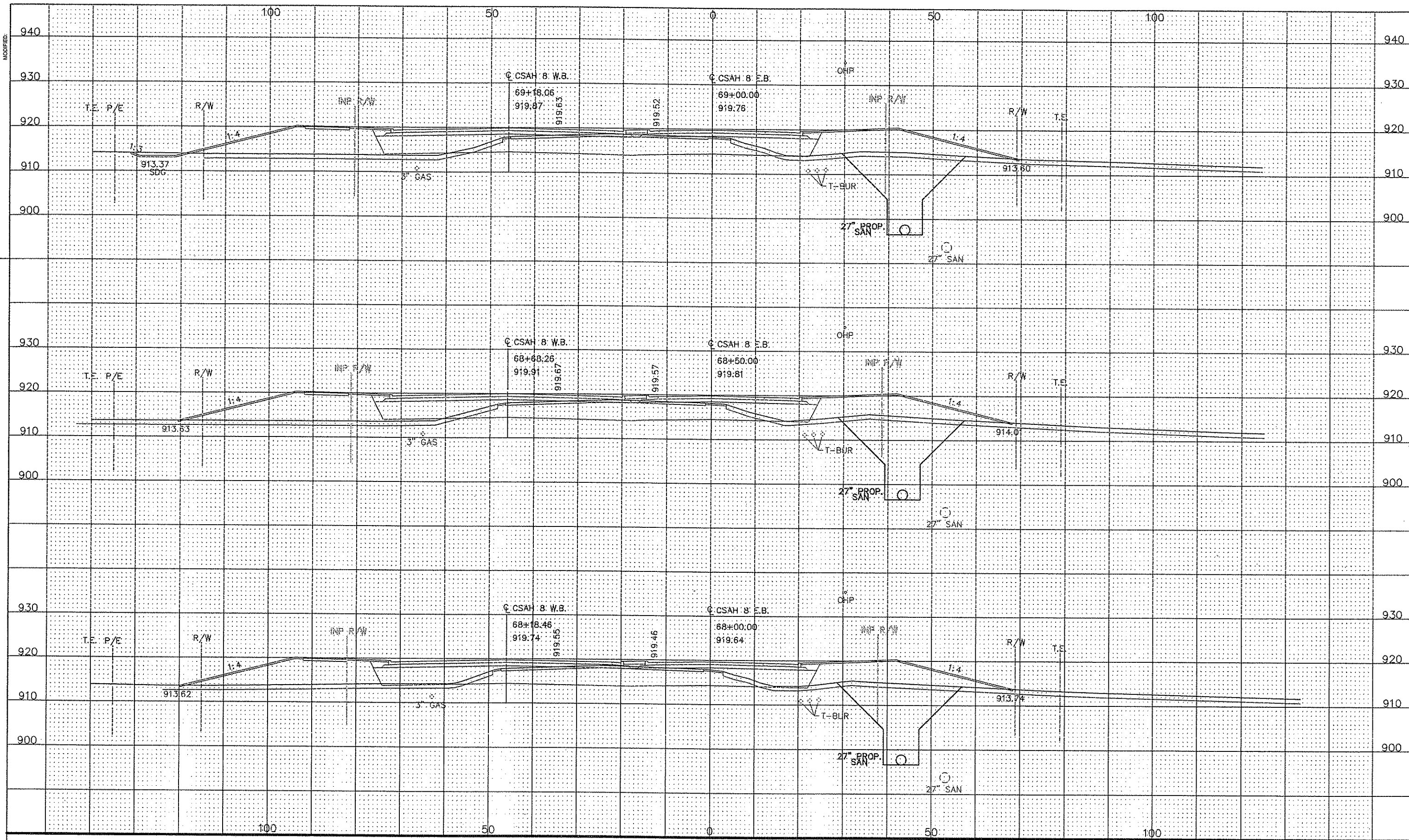
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CONSULTING ENGR REP	DATE	CONTRACT	S.P. 82-608-07
ACES CONSTRUCTION DEPT REP	DATE	FILE NAME	2325C00030.dwg
ACES ENGR DEPT REP	DATE		

LINO LAKES INTERCEPTOR EXTENSION  
 TRENCH CROSS SECTIONS  
 LINO LAKES / HUGO  
 MINNESOTA





NO.	DATE	BY	REMARKS
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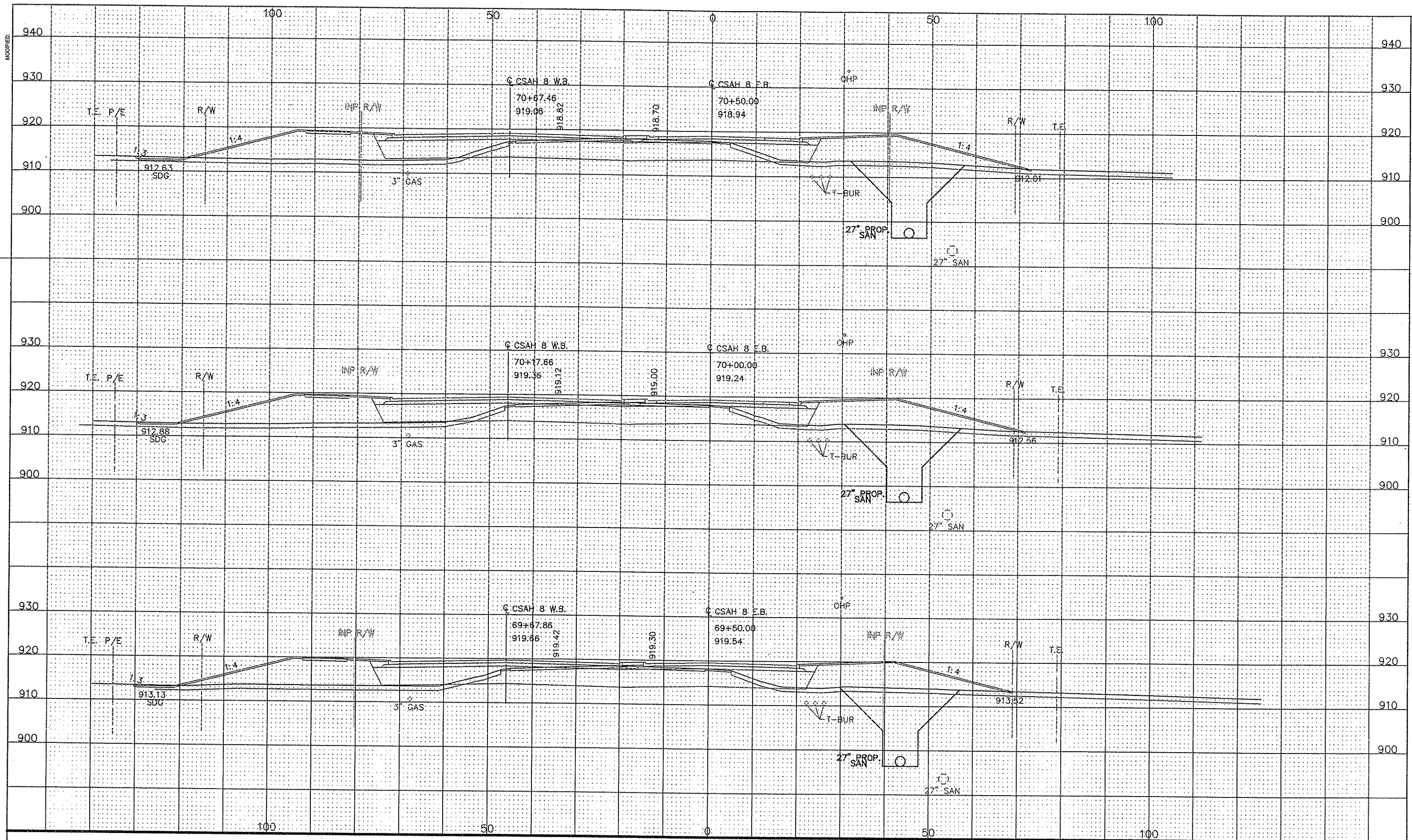
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LINO LAKES INTERCEPTOR EXTENSION  
 TRENCH CROSS SECTIONS

C27

LINO LAKES / HUGO MINNESOTA 29 of 38



NO.	DATE	BY	REVISIONS
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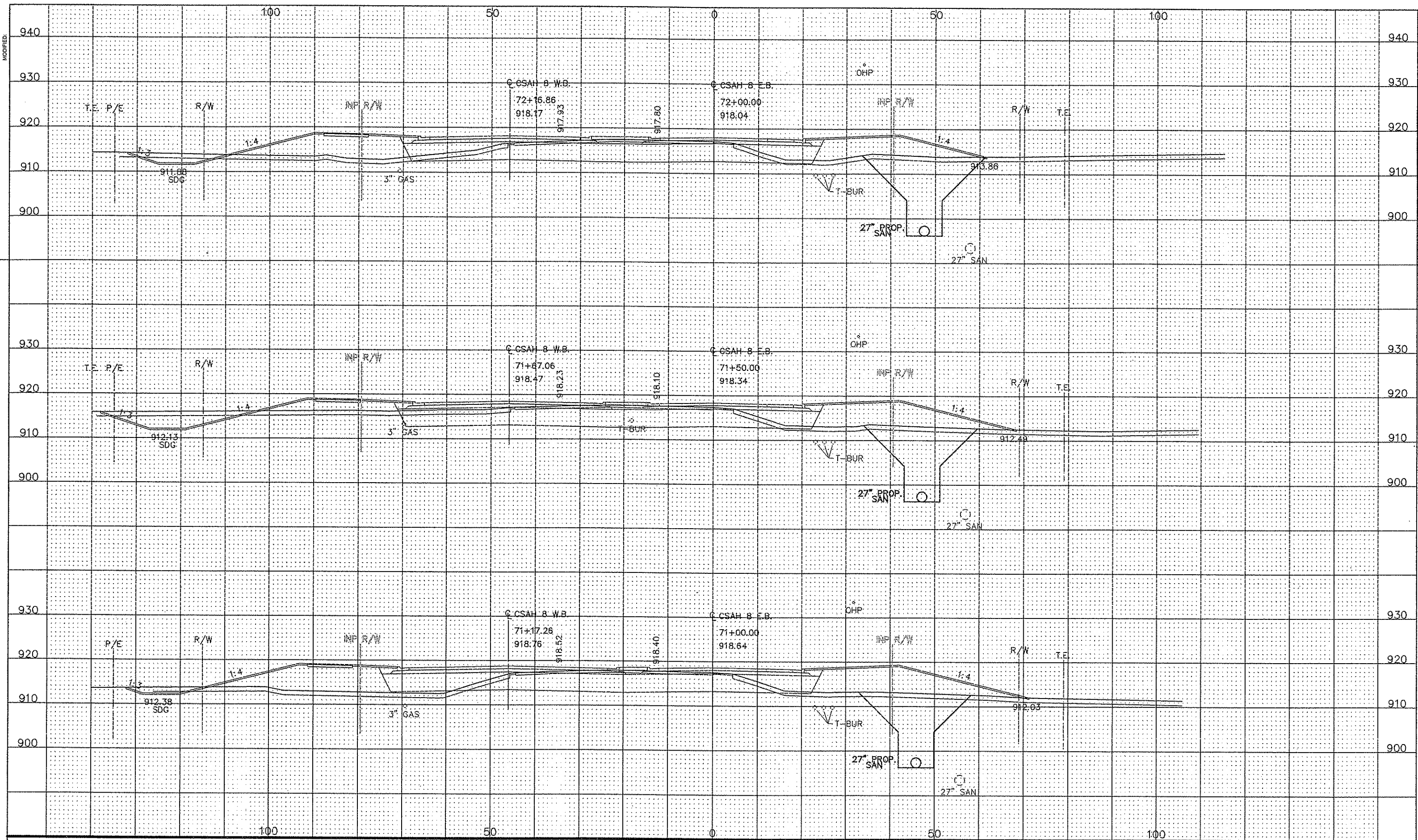
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DRAWN	APPROVED
RRC	LDB
DATE	CON.
10-19-05	13407

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 DATE: OCT. 19, 05 REG. NO. 12120

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 DATE: \_\_\_\_\_  
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 CONTRACT S.P. 82-608-07  
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*Larry D. Bohrer*  
 TYPE OR PRINTED NAME: LARRY D. BOHRER  
 DATE: OCT. 19, 05 REG. NO. 12120

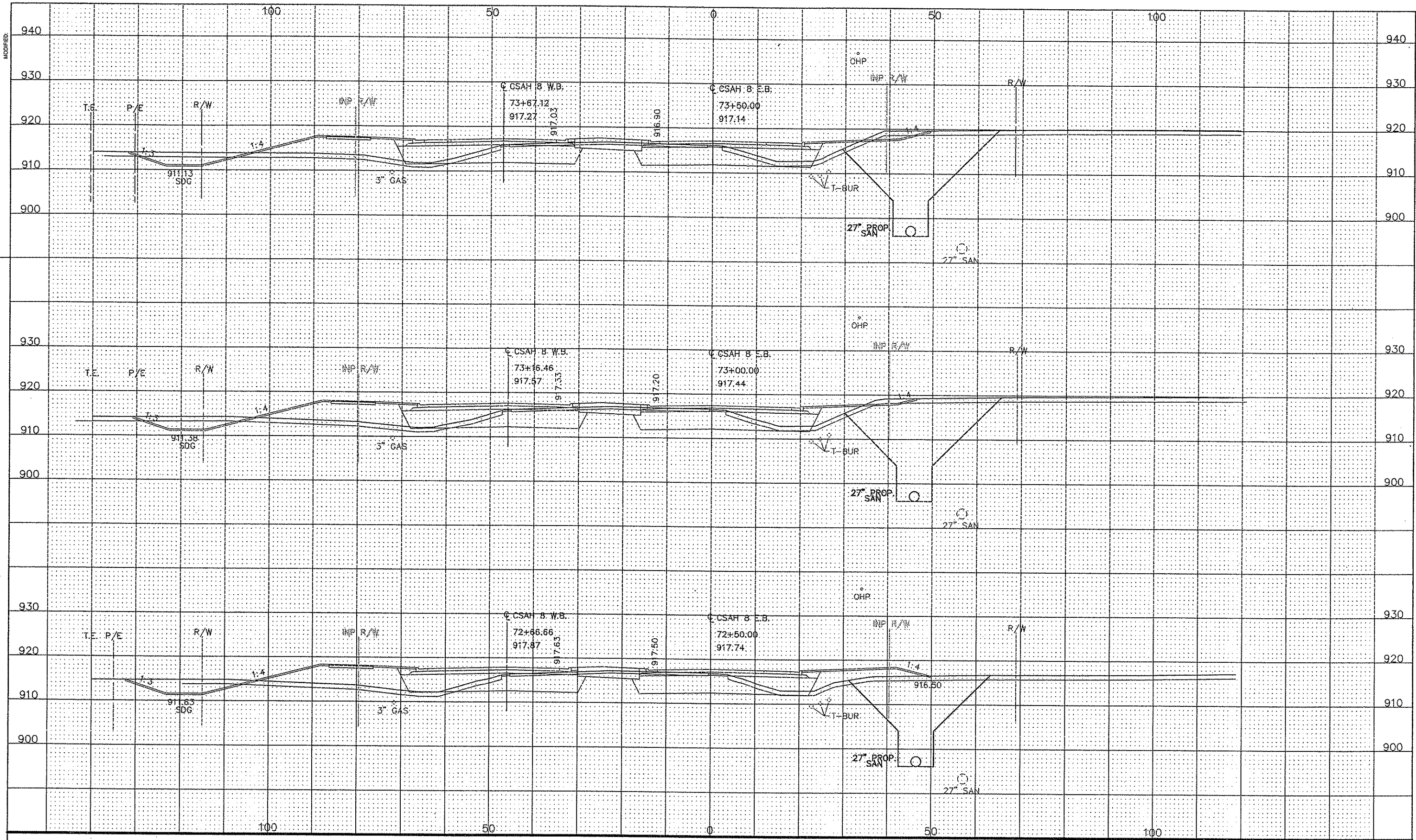
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LINO LAKES INTERCEPTOR EXTENSION  
 TRENCH CROSS SECTIONS

LINO LAKES / HUGO  
 MINNESOTA



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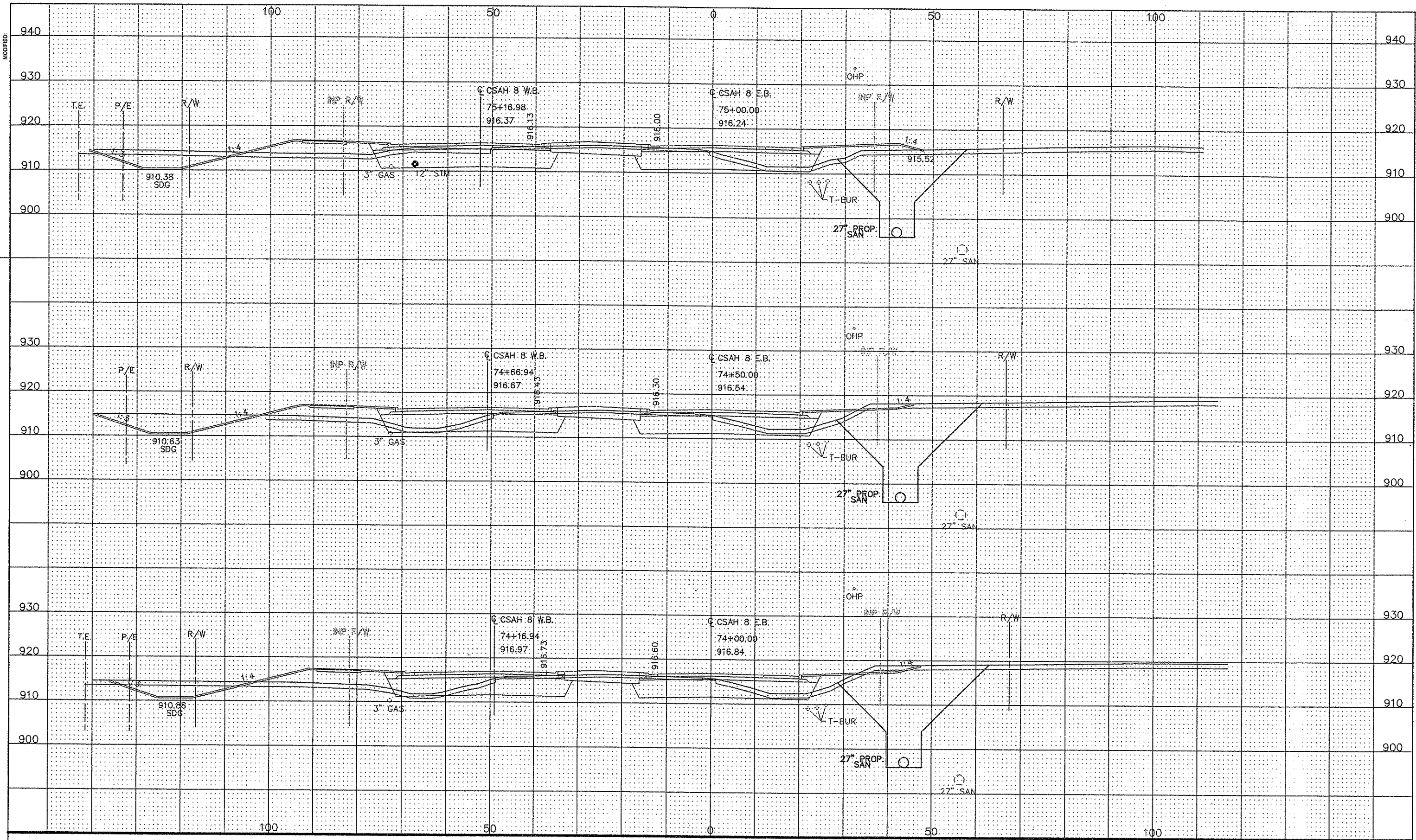
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MCES CONSTRUCTION DEPT REP	DATE
MCES ENGR DEPT REP	DATE

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LINO LAKES / HUGO	

LINO LAKES INTERCEPTOR EXTENSION  
TRENCH CROSS SECTIONS

C30



NO.	DATE	BY	REVISIONS
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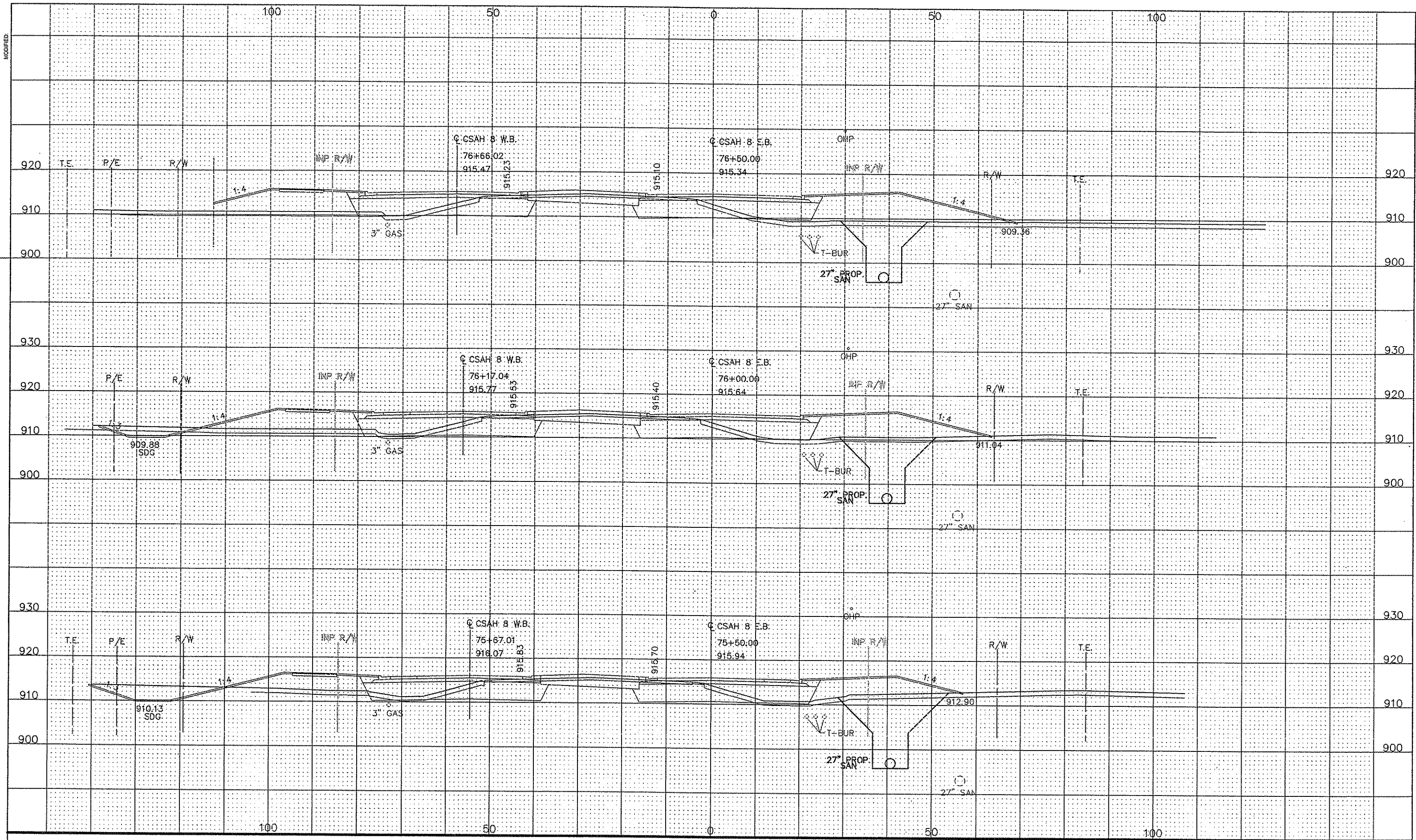
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 TYPE OR PRINTED NAME: LARRY D. BOHRER  
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PROJECT NO. 802325  
 CONTRACT S.P. 82-608-07  
 FILE NAME 2325C00030.dwg

LINO LAKES INTERCEPTOR EXTENSION  
 TRENCH CROSS SECTIONS  
 LINO LAKES / HUGO  
 MINNESOTA





NO.	DATE	BY	REVISIONS
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RRC	LDB
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SIGNATURE: *Larry D. Bohrer*  
 TYPE OR PRINTED NAME: LARRY D. BOHRER  
 DATE: OCT. 19, 05 REG NO. 1212D



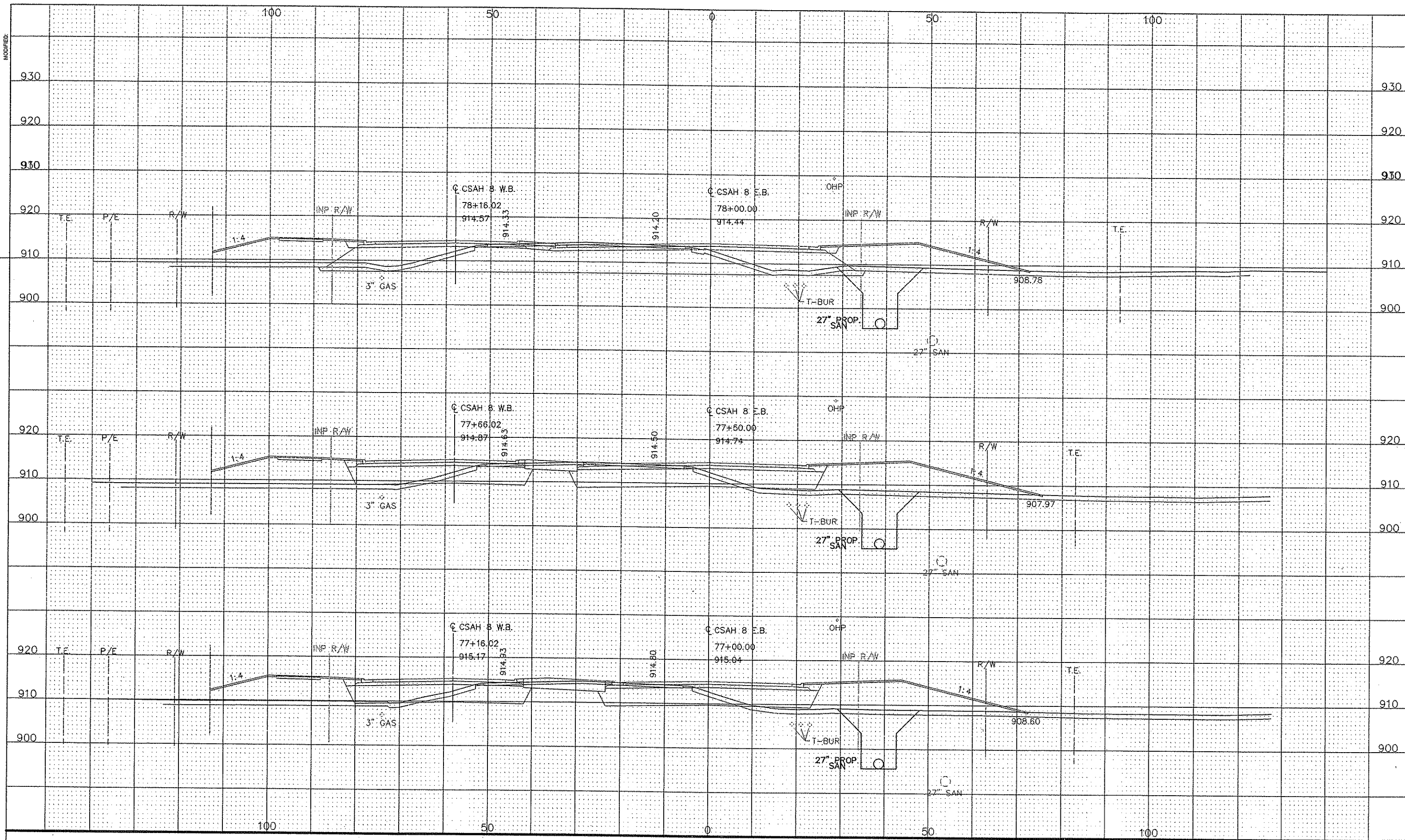
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PROJECT NO.	802325
CONTRACT	S.P. 82-608-07
FILE NAME	2325C00030.dwg

LINO LAKES INTERCEPTOR EXTENSION  
 TRENCH CROSS SECTIONS

LINO LAKES / HUGO  
 MINNESOTA

C32



NO.	DATE	BY	REVISIONS
10-19-05	LDB		ISSUED FOR BIDDING

DESIGNED	LDB	CHECKED	JMP
DRAWN	RRC	APPROVED	LDB
DATE	10-19-05	CON. NO.	13407

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SIGNATURE: *Larry O. Bohrer*

TYPE OR PRINTED NAME: LARRY O. BOHRER

DATE: OCT. 19, 05 REG. NO. 12120

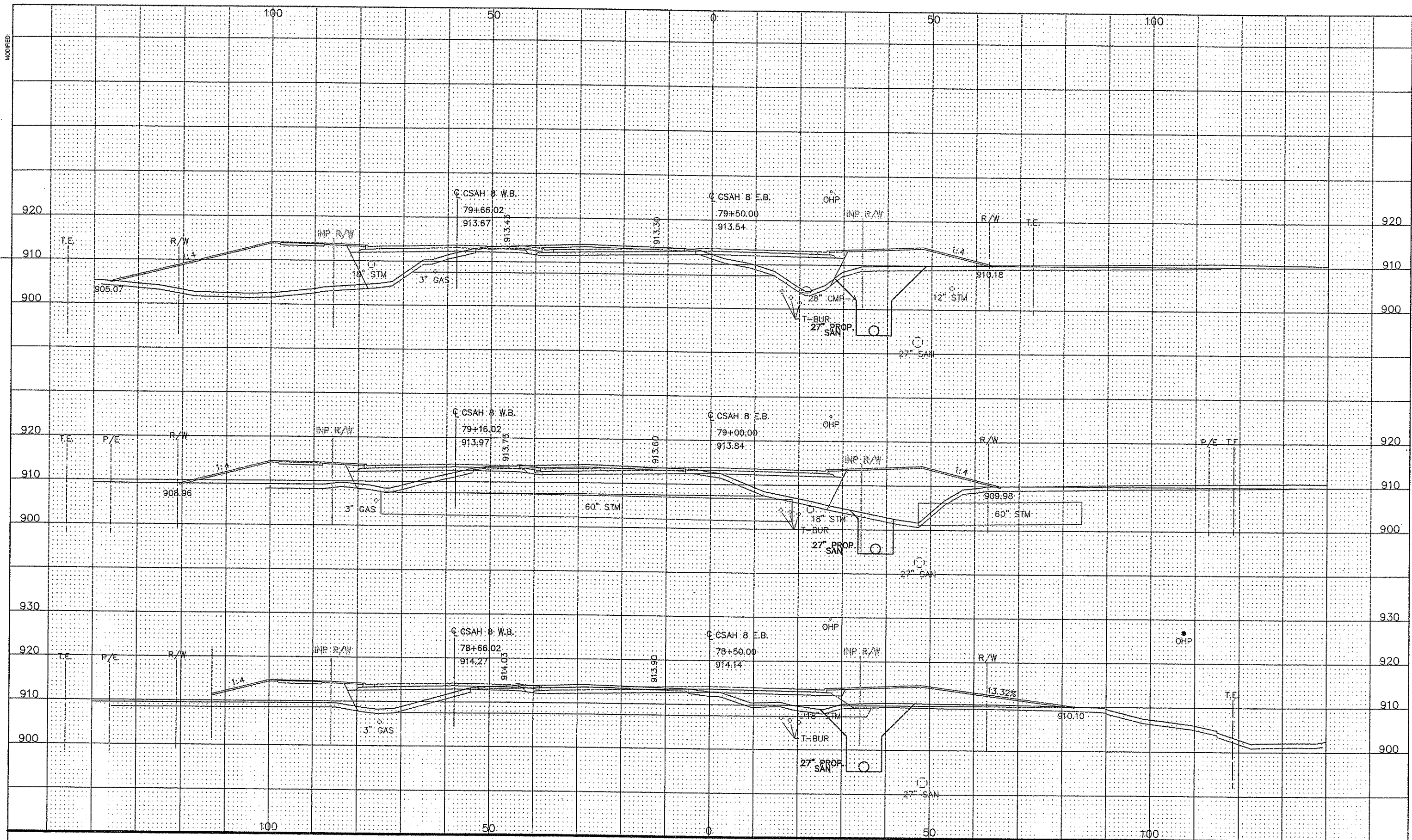


APPROVED RECORD DRAWING	
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PROJECT NO.	802325
CONTRACT	S.P. 82-608-07
FILE NAME	2325C00030.dwg

LINO LAKES INTERCEPTOR EXTENSION  
TRENCH CROSS SECTIONS





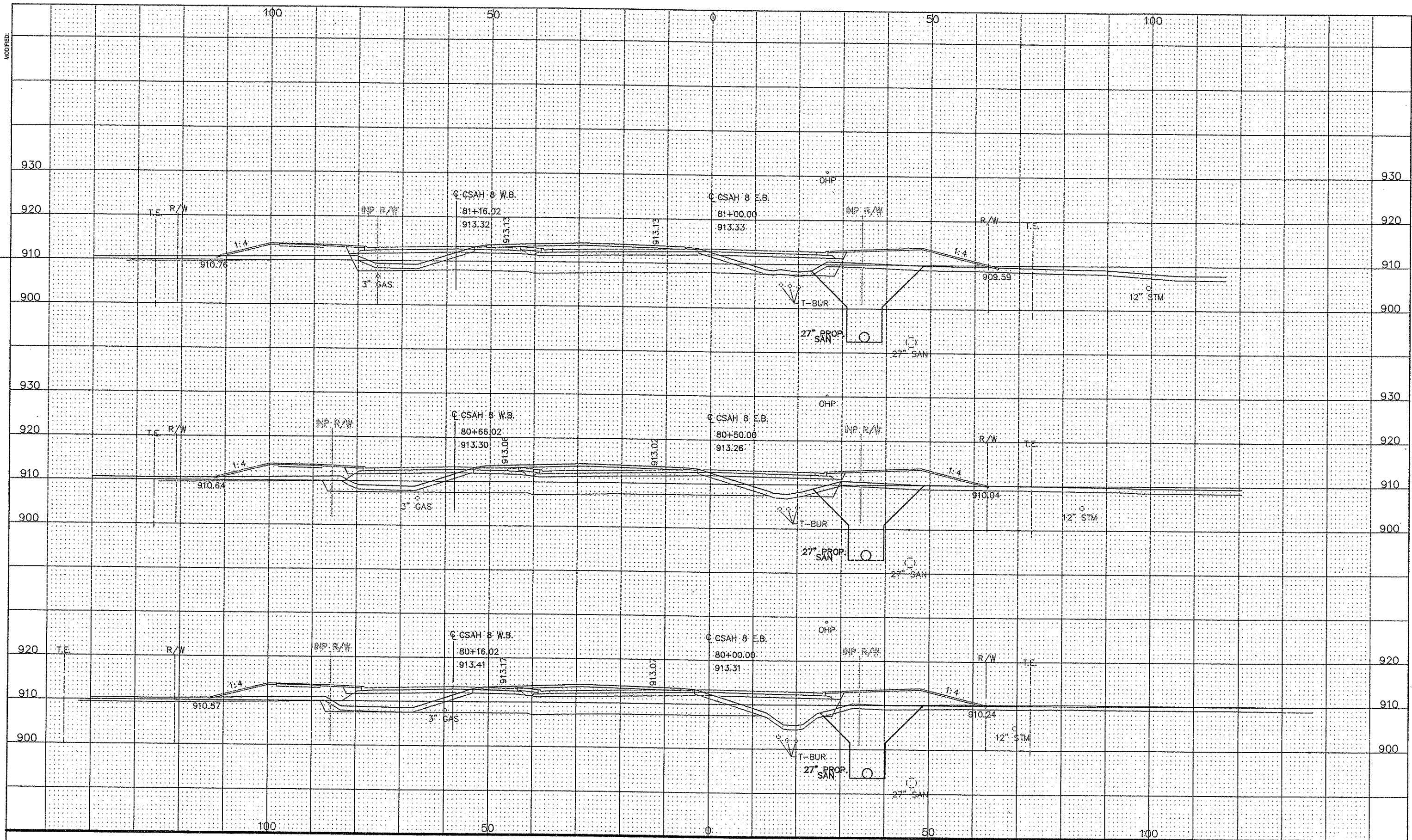
NO.	DATE	BY	REMARKS
10-19-05	LDB	ISSUED FOR BIDDING	

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APPROVED RECORD DRAWING		PROJECT NO.	802325
CONSULTING ENGR REP	DATE	CONTRACT	S.P. 82-608-07
MCS CONSTRUCTION DEPT REP	DATE	FILE NAME	2325C00030.dwg
MCS ENGR DEPT REP	DATE		

LINCOLN LAKES INTERCEPTOR EXTENSION  
 TRENCH CROSS SECTIONS  
 LINCOLN LAKES / HUGO  
 MINNESOTA  
**C34**  
 36 of 38



NO.	DATE	BY	REMARKS	NO.	DATE	BY	REMARKS
10-19-05	LDB		ISSUED FOR BIDDING				
REVISIONS				REVISIONS			

DESIGNED	CHECKED	IN CHARGE
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DRAWN	APPROVED	
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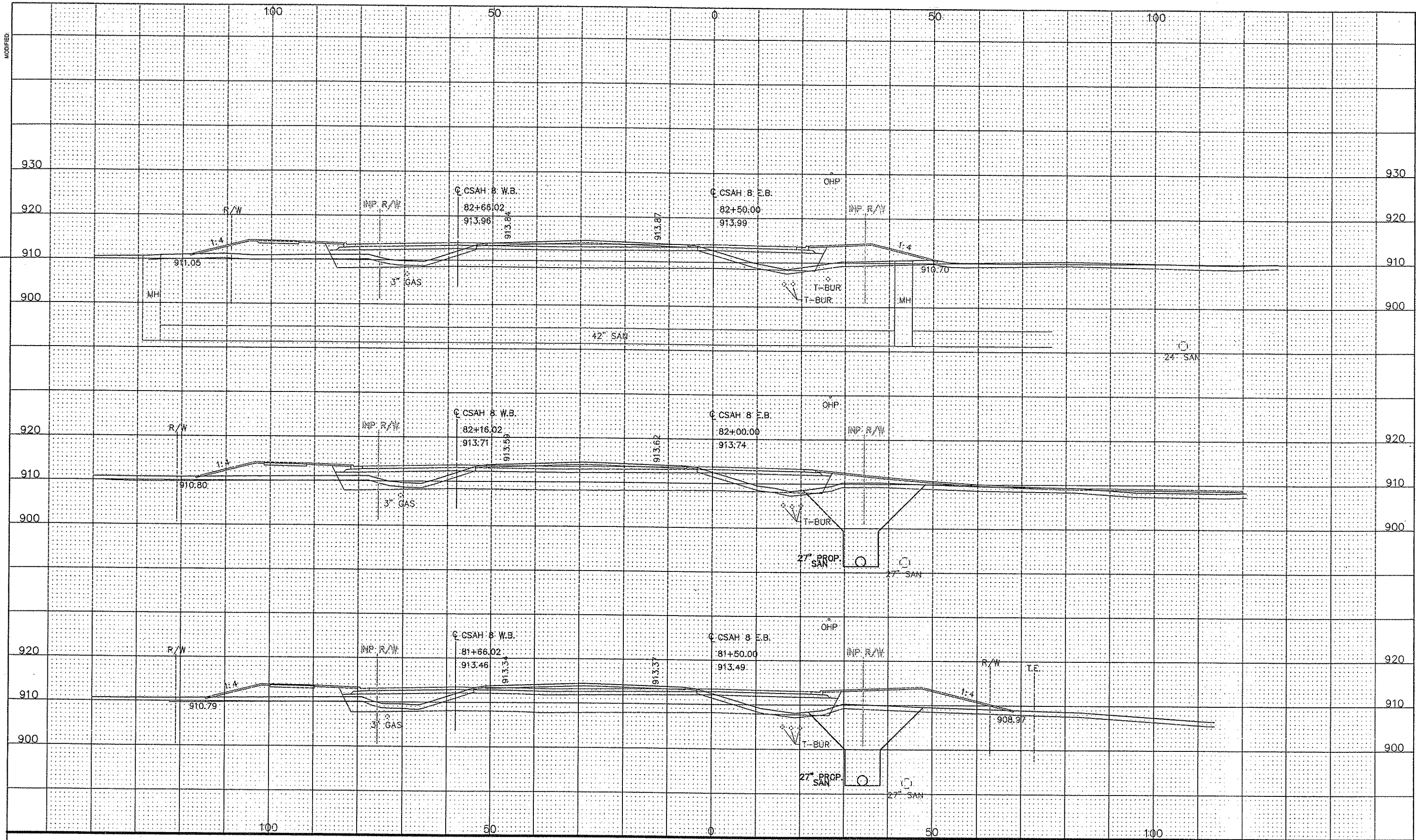
SIGNATURE: *Larry D. Bohrer*  
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APPROVED RECORD DRAWING	
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LINO LAKES INTERCEPTOR EXTENSION TRENCH CROSS SECTIONS	
PROJECT NO.	802325
CONTRACT	S.P. 82-608-07
DATE	DATE
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NO.	DATE	BY	REMARKS
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*Larry D. Bohrer*

LARRY D. BOHRER

DATE OCT. 19, 05 REG. NO. 12120



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LINO LAKES INTERCEPTOR EXTENSION  
TRENCH CROSS SECTIONS

LINO LAKES / HUGO

MINNESOTA

C36

38 of 38

PLOTTED: 10/24/05