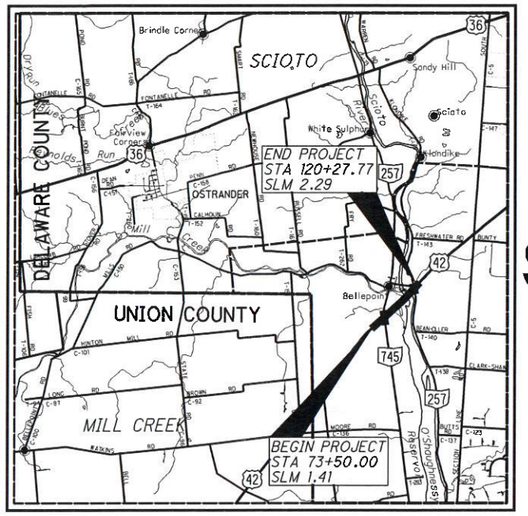


LOCATION MAP

LATITUDE: 40° 14' 35" N LONGITUDE: 83° 08' 55" W

SCALE IN MILES

0 1 2 3 4

N

PORTION TO BE IMPROVED

FEDERAL ROUTES 42

STATE ROUTES 257 745

COUNTY & TOWNSHIP ROADS C-241

OTHER ROADS KLONDIKE RD.

DESIGN DESIGNATION

CURRENT ADT (2020)	13,220
DESIGN YEAR ADT (2040)	19,340
DESIGN HOURLY VOLUME (2040)	806
DIRECTIONAL DISTRIBUTION	51%
TRUCKS (24 HOUR B&C)	15%
DESIGN SPEED	60 MPH
LEGAL SPEED	55 MPH
DESIGN FUNCTIONAL CLASSIFICATION:	
RURAL PRINCIPAL ARTERIAL	
NHS PROJECT	YES

DESIGN EXCEPTIONS

NONE

UNDERGROUND UTILITIES

OHIO811.org Before You Dig

PLAN PREPARED BY:
IBI GROUP
8101 North High Street
Columbus OH 43235
tel 614 818 4900 fax 614 818 4901

ENGINEERS SEAL:

STATE OF OHIO
JENNIFER MARIE KELLEY
E-79592
REGISTERED PROFESSIONAL ENGINEER

SIGNED: Jennifer Kelley

DATE: 10/14/2019

STATE OF OHIO

DEPARTMENT OF TRANSPORTATION

DEL-42-1.41 SAFETY IMPROVEMENTS

CONCORD TOWNSHIP

DELAWARE COUNTY

INDEX OF SHEETS:

PROJECT DESCRIPTION

IMPROVEMENT OF 0.9 MILES OF US 42 INCLUDING: THE ADDITION OF DESIGNATED LEFT TURN LANES AT THE INTERSECTIONS OF US 42/DUBLIN RD/SR 745/SR 257 AND US 42/SR 257/KLONDIKE RD, RESURFACING AND UPGRADING GUARDRAIL RUNS ALONG US 42 INCLUDING BRIDGE TERMINAL ASSEMBLIES.

EARTH DISTURBED AREAS

PROJECT EARTH DISTURBED AREA:	6.58 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA:	0.13 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA:	6.71 ACRES

2019 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PLANS AND CHANGES LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

STANDARD CONSTRUCTION DRAWINGS

BP-3.1	7/18/14	DM-1.1	7/21/17	HL-10.11	7/19/19	TC-21.20	7/19/19	TC-85.10	1/18/19	800	10/18/19
BP-3.2	1/18/19	DM-1.2	1/18/13	HL-10.12	1/20/17	TC-41.20	10/18/13	TC-85.21	1/20/17	809	7/19/19
BP-4.1	7/19/13	DM-3.1	1/18/13	HL-20.11	4/21/17	TC-42.20	10/18/13	TC-85.22	1/19/18	832	10/19/18
BP-5.1	1/18/19	DM-4.3	1/15/16	HL-30.11	7/19/19	TC-52.10	10/18/13			878	1/18/19
		DM-4.4	1/15/16	HL-30.21	1/17/14	TC-52.20	7/20/18	MT-97.10	4/19/19		
CB-1.1	7/19/19			HL-30.22	1/17/14	TC-61.30	7/19/19	MT-97.11	1/20/17		
CB-4.2	1/18/13	MGS-1.1	1/19/18	HL-40.10	1/20/17	TC-64.10	7/19/19	MT-97.12	1/20/17		
		MGS-2.1	1/19/18			TC-65.10	1/17/14	MT-99.20	4/19/19		
HW-1.1	7/20/18	MGS-3.1	1/19/18			TC-65.11	7/21/17	MT-101.60	1/20/17		
HW-2.1	7/20/18	MGS-4.1	1/20/17			TC-71.10	1/19/18	MT-101.70	7/20/18		
HW-2.2	7/20/18	MGS-4.2	7/19/13			TC-81.10	7/15/16	MT-101.75	7/15/16		
		MGS-4.3	1/18/13			TC-83.10	1/19/18	MT-101.90	7/21/17		
MH-1.2	1/15/16	MGS-4.5	1/18/13			TC-83.20	7/21/17	MT-105.10	7/19/13		
		MGS-5.3	7/15/16			TC-84.20	10/18/13				
		MGS-6.1	1/19/18			TC-84.21	10/18/13				

SUPPLEMENTAL SPECIFICATIONS		SPECIAL PROVISIONS
800	10/18/19	WATERWAY PERMIT
809	7/19/19	CONDITIONS
832	10/19/18	
878	1/18/19	

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY EXCEPT FOR THE SIDE ROADS AS DESCRIBED ON SHEETS 9, 16, 18, AND 20-22 AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

APPROVED Matthew 12 Bloyd

DATE 10/15/19 DISTRICT DEPUTY DIRECTOR

APPROVED _____

DATE _____ DIRECTOR, DEPARTMENT OF TRANSPORTATION

FEDERAL PROJECT NO. E180 (862)

PID NO. 108685

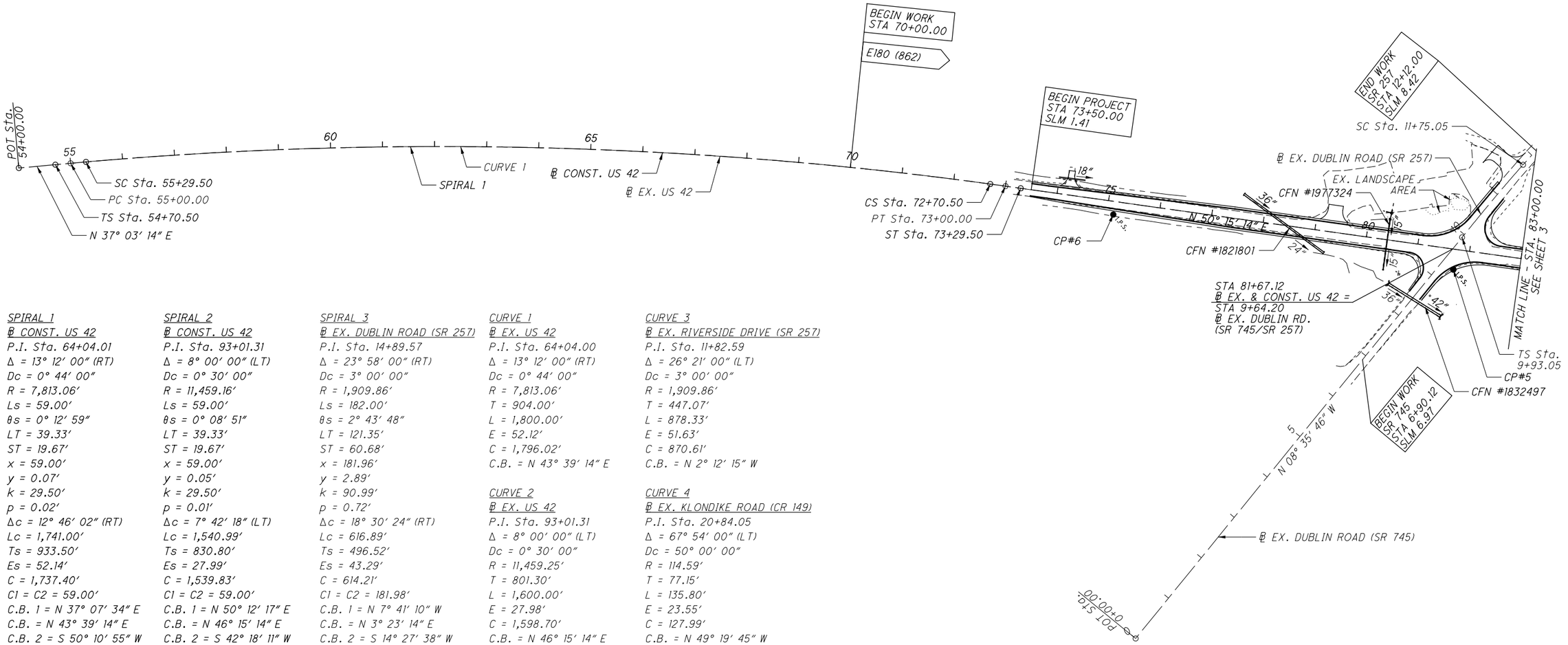
CONSTRUCTION PROJECT NO.

RAILROAD INVOLVEMENT NONE

DEL-42-1.41

PRIMARY PROJECT CONTROL INFORMATION						
POINT NUMBER	GRID COORDINATES U.S. SURVEY FEET		SCALED COORDINATES U.S. SURVEY FEET		ORTHOMETRIC HEIGHT (ELEVATION)	DESCRIPTION
	NORTHING	EASTING	NORTHING	EASTING		
CP#1	212,151.2846	1,788,831.7387	212,160.2798	1,788,907.5852	888.97	IRON PIN CAPPED "IBIGROUP"
CP#2	211,872.3823	1,788,582.2464	211,881.3657	1,788,658.0823	884.16	IRON PIN CAPPED "IBIGROUP"
CP#3	211,406.1853	1,788,157.1164	211,415.1489	1,788,232.9343	877.00	IRON PIN CAPPED "IBIGROUP"
CP#4	209,920.8631	1,786,729.9325	209,929.7637	1,786,805.6898	881.65	IRON PIN CAPPED "IBIGROUP"
CP#5	209,400.0703	1,786,147.6988	209,408.9489	1,786,223.4315	896.13	IRON PIN CAPPED "IBIGROUP"
CP#6	208,987.7746	1,785,630.3386	208,996.6357	1,785,706.0493	909.17	IRON PIN CAPPED "IBIGROUP"

PARTICIPATION SPLIT SUMMARY	
PARTICIPATION CODE	ITEMS INCLUDED
01/SAF/PV	ALL PLAN ITEMS WITH THE EXCEPTION OF ITEMS LISTED IN PARTICIPATION SPLITS BELOW
02/SAF/PV	SHOULDER WIDENING BETWEEN STA. 89+73.21 AND STA. 102+88.03
03/NHS/CV	CFN #1832497, CFN # 1874858
04/SAF/CV	CFN #1821801, CFN #1977324, CFN # 1875647



SPIRAL 1
℄ CONST. US 42
P.I. Sta. 64+04.01
Δ = 13° 12' 00" (RT)
Dc = 0° 44' 00"
R = 7,813.06'
Ls = 59.00'
θs = 0° 12' 59"
LT = 39.33'
ST = 19.67'
x = 59.00'
y = 0.07'
k = 29.50'
p = 0.02'
Δc = 12° 46' 02" (RT)
Lc = 1,741.00'
Ts = 933.50'
Es = 52.14'
C = 1,737.40'
C1 = C2 = 59.00'
C.B. 1 = N 37° 07' 34" E
C.B. = N 43° 39' 14" E
C.B. 2 = S 50° 10' 55" W

SPIRAL 2
℄ CONST. US 42
P.I. Sta. 93+01.31
Δ = 8° 00' 00" (LT)
Dc = 0° 30' 00"
R = 11,459.16'
Ls = 59.00'
θs = 0° 08' 51"
LT = 39.33'
ST = 19.67'
x = 59.00'
y = 0.05'
k = 29.50'
p = 0.01'
Δc = 7° 42' 18" (LT)
Lc = 1,540.99'
Ts = 830.80'
Es = 27.99'
C = 1,539.83'
C1 = C2 = 59.00'
C.B. 1 = N 50° 12' 17" E
C.B. = N 46° 15' 14" E
C.B. 2 = S 42° 18' 11" W

SPIRAL 3
℄ EX. DUBLIN ROAD (SR 257)
P.I. Sta. 14+89.57
Δ = 23° 58' 00" (RT)
Dc = 3° 00' 00"
R = 1,909.86'
Ls = 182.00'
θs = 2° 43' 48"
LT = 121.35'
ST = 60.68'
x = 181.96'
y = 2.89'
k = 90.99'
p = 0.72'
Δc = 18° 30' 24" (RT)
Lc = 616.89'
Ts = 496.52'
Es = 43.29'
C = 614.21'
C1 = C2 = 181.98'
C.B. 1 = N 7° 41' 10" W
C.B. = N 3° 23' 14" E
C.B. 2 = S 14° 27' 38" W

CURVE 1
℄ EX. US 42
P.I. Sta. 64+04.00
Δ = 13° 12' 00" (RT)
Dc = 0° 44' 00"
R = 7,813.06'
T = 904.00'
L = 1,800.00'
E = 52.12'
C = 1,796.02'
C.B. = N 43° 39' 14" E

CURVE 2
℄ EX. US 42
P.I. Sta. 93+01.31
Δ = 8° 00' 00" (LT)
Dc = 0° 30' 00"
R = 11,459.25'
T = 801.30'
L = 1,600.00'
E = 27.98'
C = 1,598.70'
C.B. = N 46° 15' 14" E

CURVE 3
℄ EX. RIVERSIDE DRIVE (SR 257)
P.I. Sta. 11+82.59
Δ = 26° 21' 00" (LT)
Dc = 3° 00' 00"
R = 1,909.86'
T = 447.07'
L = 878.33'
E = 51.63'
C = 870.61'
C.B. = N 2° 12' 15" W

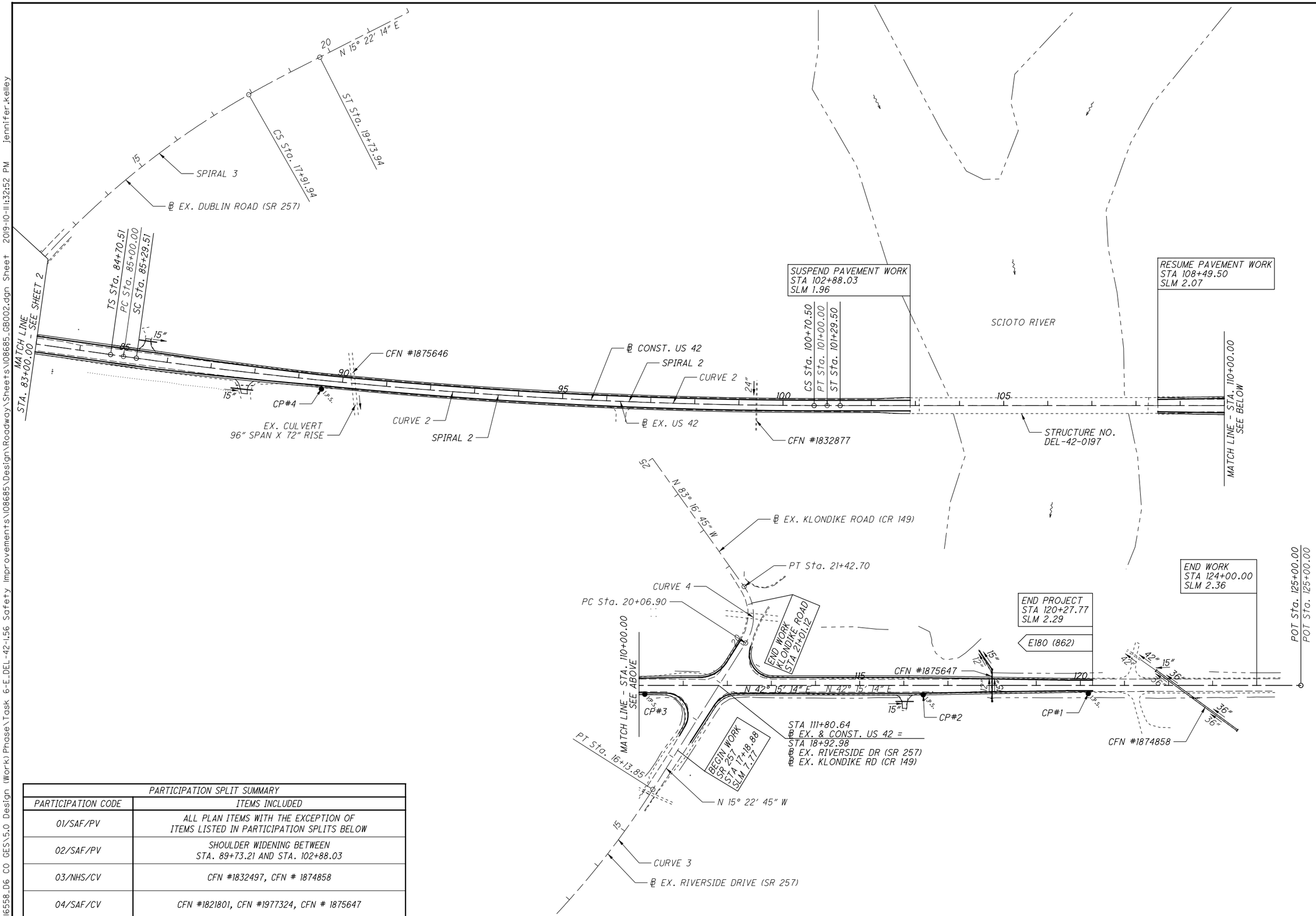
CURVE 4
℄ EX. KLONDIKE ROAD (CR 149)
P.I. Sta. 20+84.05
Δ = 67° 54' 00" (LT)
Dc = 50° 00' 00"
R = 114.59'
T = 77.15'
L = 135.80'
E = 23.55'
C = 127.99'
C.B. = N 49° 19' 45" W

J:\I16558.06 CO GES\5.0 Design (Work) Phase\Task 6-E_DEL-42-1.56 Safety Improvements\108685_GB001.dgn Sheet 2019-10-11 11:32:47 PM jennifer.kelley

HORIZONTAL SCALE IN FEET
0 50 100 200
CALCULATED JMK
CHECKED KMK

SCHEMATIC PLAN

DEL-42-1.41



PARTICIPATION SPLIT SUMMARY	
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01/SAF/PV	ALL PLAN ITEMS WITH THE EXCEPTION OF ITEMS LISTED IN PARTICIPATION SPLITS BELOW
02/SAF/PV	SHOULDER WIDENING BETWEEN STA. 89+73.21 AND STA. 102+88.03
03/NHS/CV	CFN #1832497, CFN # 1874858
04/SAF/CV	CFN #1821801, CFN #1977324, CFN # 1875647

HORIZONTAL SCALE IN FEET
0 50 100 200

CALCULATED JMK
CHECKED KMK

SCHEMATIC PLAN

DEL-42-1.41

3
107

J:\116558_D6 CO GES\5.0 Design (Work) Phase\Task 6-E_DEL-42-1.56 Safety Improvements\108685\Design\Roadway\Sheets\108685_GB002.dgn Sheet 2019-10-11 11:32:52 PM Jennifer.Kelley

LEGEND

(1) ITEM 442 - 1 ½" ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A (446)
(2) ITEM 407 - NON-TRACKING TACK COAT (REFER TO CMS TABLE 407.06-1 FOR APPLICATION RATES)
(3) ITEM 442 - 1 ¾" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446)
(4) ITEM 301 - 9" ASPHALT CONCRETE BASE, PG64-22 (TO BE PLACED IN TWO 4.5" LIFTS)
(5) ITEM 304 - VAR. DEPTH AGGREGATE BASE (6" TYP., SEE NOTE 1)
(6) ITEM 254 - 1 ½" PAVEMENT PLANING, ASPHALT CONCRETE
(7) ITEM 606 - GUARDRAIL, TYPE MGS (LONG POSTS)
(8) ITEM 411 - 8" STABILIZED CRUSHED AGGREGATE
(9) ITEM 605 - 6" BASE PIPE UNDERDRAIN (18" DEPTH)
(10) ITEM 659 - SEEDING AND MULCHING
(11) ITEM 204 - SUBGRADE COMPACTION AND PROOF ROLLING

(A) VARIES 3"-9" AGGREGATE SHOULDER
(B) VARIES 10"-12" ASPHALT CONCRETE
(C) VARIES 6"-12" AGGREGATE BASE
(D) EX GUARDRAIL

NOTES:

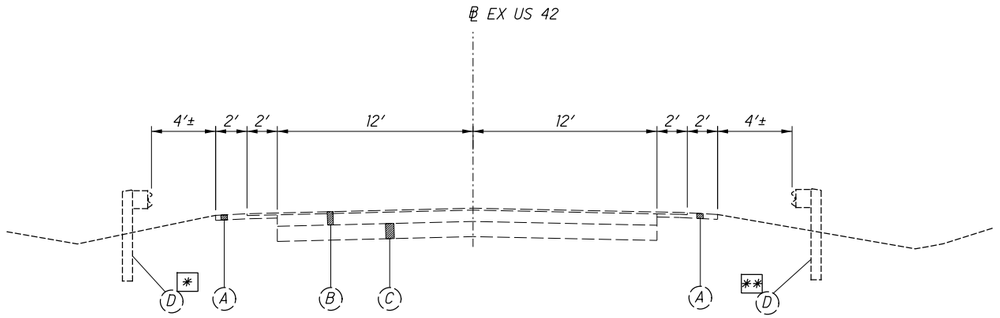
1. THE EXISTING PAVEMENT AND THE WIDENING SHOULD MEET AT THE SAME SUBGRADE ELEVATION. IF NECESSARY, THE BASE UNDER THE WIDENING SHOULD BE THICKENED SO THAT THE SUBGRADE ELEVATIONS WILL MATCH. IF THE WIDENING IS THICKER THAN THE EXISTING, THE SUBGRADE SHOULD BE SLOPED AWAY FROM THE EXISTING AND DRAINAGE PROVIDED.

[*] EX GUARDRAIL FROM STA 87+97 TO STA 102+96
AND FROM STA 108+41 TO STA 110+01

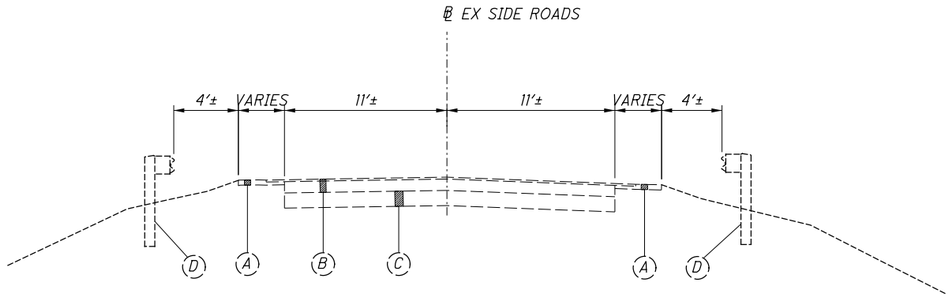
[**] EX GUARDRAIL FROM STA 78+86 TO STA 82+66,
STA 88+13 TO STA 102+96 AND
STA 108+49 TO STA 110+10

[A] APPLIES FROM
STA 77+16.50 (℄ CONST. US 42) TO STA 6+97.42
STA 19+50.01 TO STA 20+93.10 - ℄ CONST. KLONDIKE RD (CR 149)

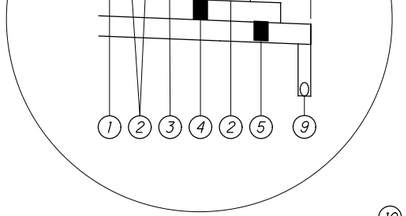
[B] APPLIES FROM
STA 7+27.66 TO STA 83+62.50 (℄ CONST. US 42)

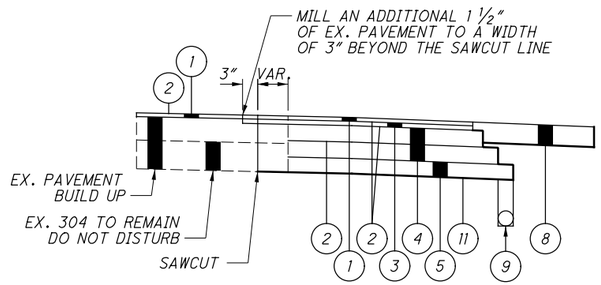


EXISTING SECTION - US 42



EXISTING SECTION - SIDE ROADS



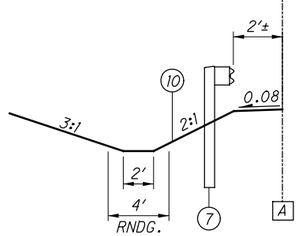


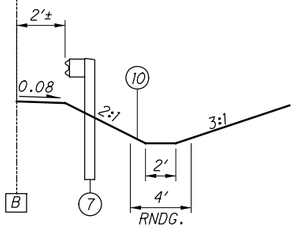
WIDENING DETAIL
(AT SAWCUT JOINT)

N.T.S.

FULL DEPTH SECTION - SIDE ROADS

STA 8+50.00 TO STA 11+00.00- ℄ CONST. DUBLIN RD (SR 745)
STA 17+50.00 TO STA 18+92.98- ℄ CONST. RIVERSIDE DR (SR 257)
STA 18+92.98 TO STA 20+06.90- ℄ CONST. KLONDIKE RD





TYPICAL SECTIONS

DEL-42-1.41

LEGEND

(1) ITEM 442 - 1 ½" ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A (446)
(2) ITEM 407 - NON-TRACKING TACK COAT (REFER TO CMS TABLE 407.06-1 FOR APPLICATION RATES)
(3) ITEM 442 - 1 ¾" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446)
(4) ITEM 301 - 9" ASPHALT CONCRETE BASE, PG64-22 (TO BE PLACED IN TWO 4.5" LIFTS)
(5) ITEM 304 - VAR. DEPTH AGGREGATE BASE (6" TYP., SEE NOTE 1)
(6) ITEM 254 - 1 ½" PAVEMENT PLANING, ASPHALT CONCRETE
(7) ITEM 606 - GUARDRAIL, TYPE MGS (LONG POSTS)
(8) ITEM 411 - 8" STABILIZED CRUSHED AGGREGATE
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(A) VARIES 3"-9" AGGREGATE SHOULDER
(B) VARIES 10"-12" ASPHALT CONCRETE
(C) VARIES 6"-12" AGGREGATE BASE
(D) EX GUARDRAIL

NOTES:

1. THE EXISTING PAVEMENT AND THE WIDENING SHOULD MEET AT THE SAME SUBGRADE ELEVATION. IF NECESSARY, THE BASE UNDER THE WIDENING SHOULD BE THICKENED SO THAT THE SUBGRADE ELEVATIONS WILL MATCH. IF THE WIDENING IS THICKER THAN THE EXISTING, THE SUBGRADE SHOULD BE SLOPED AWAY FROM THE EXISTING AND DRAINAGE PROVIDED.

[C] 0.0' FROM STA 73+50.00 TO STA 73+82.00
TAPERS FROM 0.0' AT STA 73+82.00 TO 12.0' AT STA 77+42.00
12.0' FROM STA 77+42.00 TO STA 85+83.83
TAPERS FROM 12.0' AT STA 85+83.83 TO 0.0' AT STA 89+44.01
0.0' FROM STA 89+44.01 TO STA 89+73.21
TAPERS FROM 0.00' AT STA 107+35.00 TO 12.0' AT STA 110+95.00
12.0' FROM STA 110+95.00 TO STA 116+11.42
TAPERS FROM 12.0' AT STA 116+11.42 TO 0.0' AT STA 119+71.21
0.0' FROM STA 119+71.21 TO STA 120+27.77

[D] APPLIES FROM:
STA 87+37.39 TO 89+73.21
STA 108+42.73 TO STA 110+35.31
STA 115+00.00 TO STA 118+93.71

[E] APPLIES FROM:
STA 77+16.50 TO STA 6+97.42 (℄ CONST. DUBLIN RD.)
STA 7+27.66 (℄ CONST. DUBLIN RD.) TO STA 83+62.50
STA 87+93.22 TO STA 89+73.21
STA 108+42.73 TO STA 110+35.31

[F] APPLIES FROM:
STA 89+73.21 TO STA 102+95.25 (LT)
STA 89+73.21 TO STA 96+21.97 (RT)
STA 96+46.11 TO STA 102+95.25 (RT)

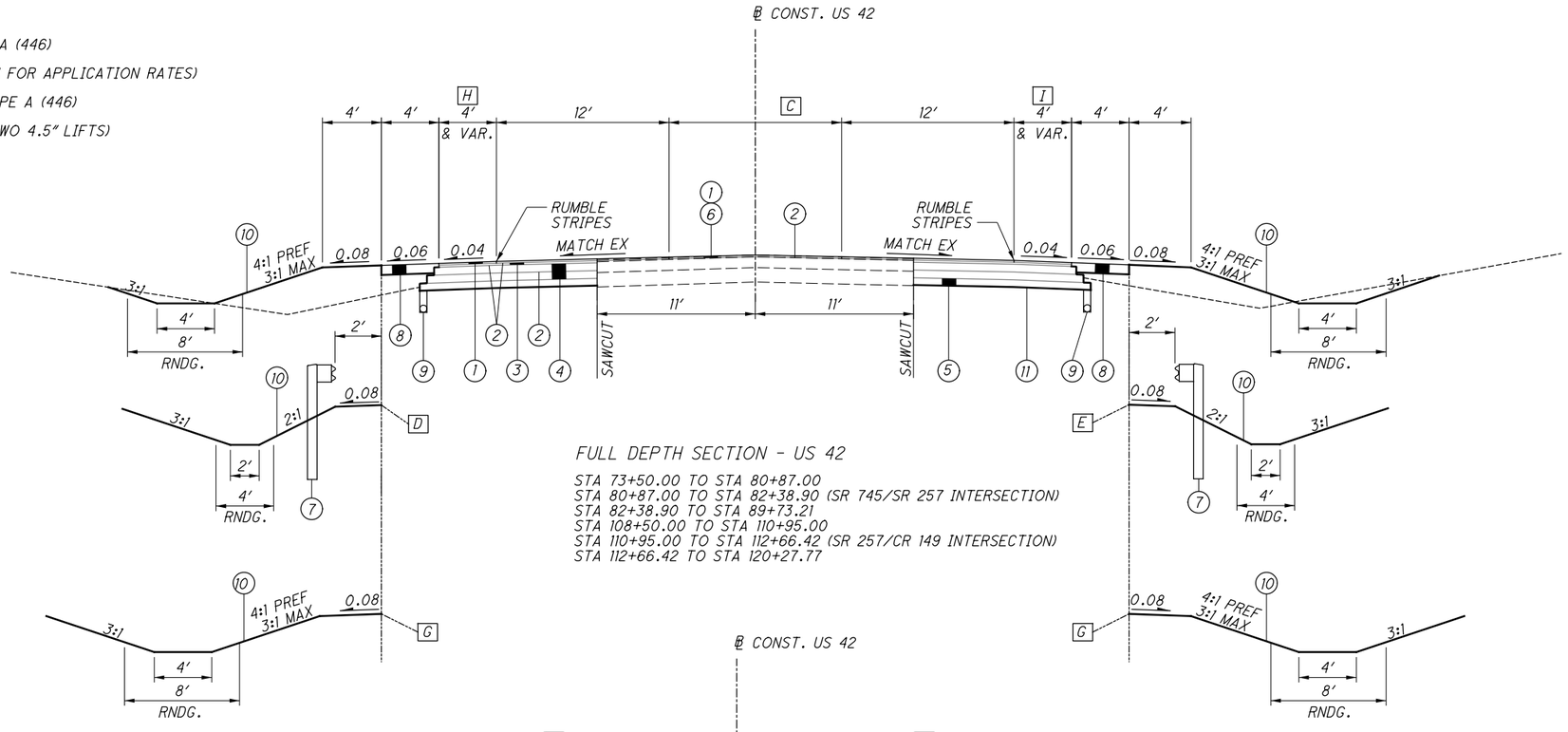
[G] VEGETATED BIOFILTER DETAIL:
APPLIES TO STA 83+00 TO STA 87+50 RT
STA 118+00 TO STA 120+00 LT
STA 118+00 TO STA 127+27.77 RT

[H] TAPERS FROM 2.98' AT STA 73+50.00 TO 4.0' AT STA 74+20.00
4.0' FROM STA 74+20.00 TO STA 80+87.00
4.0' FROM STA 82+38.90 TO STA 89+73.21
4.0' FROM STA 108+50.00 TO STA 110+95.00
4.0' FROM STA 112+66.42 TO STA 119+72.77
TAPERS FROM 4.0' AT STA 119+72.77 TO 2.68' AT STA 120+27.77

[I] TAPERS FROM 1.40' AT STA 73+50.00 TO 4.0' AT STA 74+20.00
4.0' FROM STA 74+20.00 TO STA 80+87.00
4.0' FROM STA 82+38.90 TO STA 89+73.21
4.0' FROM STA 108+50.00 TO STA 110+95.00
4.0' FROM STA 112+66.42 TO STA 119+72.77
TAPERS FROM 4.0' AT STA 119+72.77 TO 1.82' AT STA 120+27.77

[J] 4.0' FROM STA 89+73.21 TO STA 102+18.00
TAPERS FROM 4.0' AT STA 102+18.00 TO 6.0' AT STA 120+68.00
6.2' FROM STA 120+68.00 TO STA 102+88.03

[K] 4.0' FROM STA 89+73.21 TO STA 102+18.00
TAPERS FROM 4.0' AT STA 102+18.00 TO 6.0' AT STA 120+68.00
6.2' FROM STA 120+68.00 TO STA 102+88.03

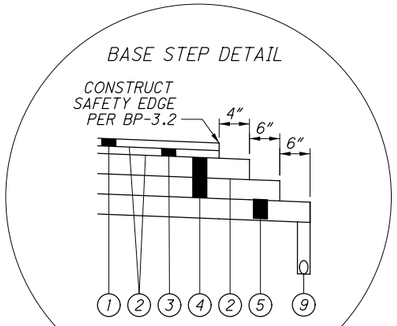


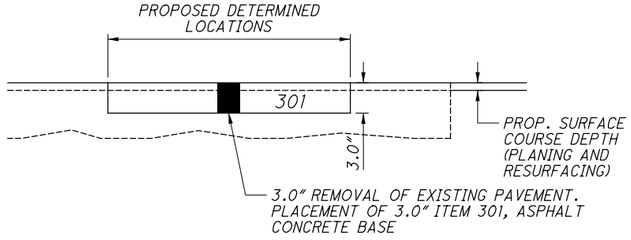
FULL DEPTH SECTION - US 42

STA 73+50.00 TO STA 80+87.00
STA 80+87.00 TO STA 82+38.90 (SR 745/SR 257 INTERSECTION)
STA 82+38.90 TO STA 89+73.21
STA 108+50.00 TO STA 110+95.00
STA 110+95.00 TO STA 112+66.42 (SR 257/CR 149 INTERSECTION)
STA 112+66.42 TO STA 120+27.77

RESURFACING SECTION - US 42

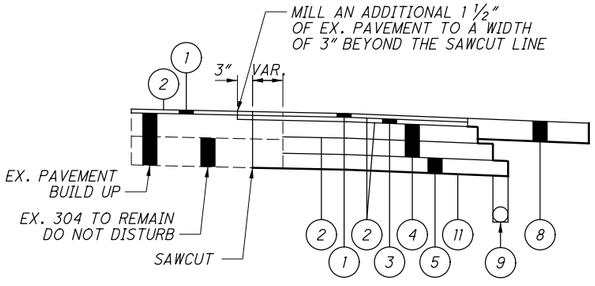
STA 89+73.21 TO STA 102+88.03





ITEM 251 - PARTIAL DEPTH PAVEMENT REPAIR (ASPHALT CONCRETE BASE) DETAIL

SEE GENERAL NOTES FOR MORE INFORMATION REGARDING ITEM 251 - PARTIAL DEPTH PAVEMENT REPAIR, AS PER PLAN



WIDENING DETAIL (AT SAWCUT JOINT)

N.T.S.

TYPICAL SECTIONS

DEL-42-1.41

UTILITIES
LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS:

DEL-CO WATER COMPANY
6773 OLENTANGY RIVER RD
DELAWARE, OH 43015
CONTACT: MR. RUSTY GRIFFITH
PHONE: (740) 548-7746, EXT. 2403
EMAIL: RGRIFFITH@DELCOWATER.COM

CHARTER COMMUNICATIONS
3760 INTERCHANGE DR
COLUMBUS, OH 43204
CONTACT: MR. SAM LUTZ
OFFICE PHONE: (614) 481-5047
CELL PHONE: (614) 348-2994
EMAIL: SAMUEL.LUTZ@CHARTER.COM

OHIO EDISON
420 SOUTH YORK ST
SPRINGFIELD, OH 45505
CONTACT: MR. CHRIS HARPER
PHONE: (937) 327-1283
EMAIL: HARPERC@FIRSTENERGYCORP.COM

AEP
700 MORRISON RD
GAHANNA, OH 43230
PETER JONES
OFFICE PHONE: (614) 552-1180
EMAIL: PGJONES@AEP.COM

ODOT DISTRICT 6 TRAFFIC
400 E WILLIAM ST
DELAWARE, OH 43015
CONTACT: MR. KEN GREENE
PHONE: (740) 833-8198
EMAIL: KEN.GREENE@DOT.OHIO.GOV

FRONTIER COMMUNICATIONS
1300 COLUMBUS-SANDUSKY RD
MARION, OH 43302
CONTACT: MR. CHRIS AVERY
OFFICE PHONE: (740) 383-0551
CELL PHONE: (740) 360-8001
EMAIL: IRA.AVERY@FTR.COM

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS AS REQUIRED BY SECTION 153.64 O.R.C.

WORK LIMITS
THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. PROVIDE THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

ROUNDING
THE ROUNDING AT SLOPE BREAKPOINTS SHOWN ON THE TYPICAL SECTIONS APPLIES TO ALL CROSS-SECTIONS EVEN THOUGH OTHERWISE SHOWN.

EXISTING PLANS
EXISTING PLANS ENTITLED "S.H. 241 SEC. D (PT.) & E-2 (PT.) DELAWARE-LONDON ROAD. 1946" MAY BE INSPECTED IN THE ODOT DISTRICT 6 OFFICE IN DELAWARE, OH.

PART-WIDTH CONSTRUCTION
BECAUSE OF THE NECESSITY TO BUILD THIS PROJECT UNDER TRAFFIC AND TO CONSTRUCT THE FULL PAVEMENT WIDTH IN STAGES, EXERCISE CARE TO PREVENT THE CONSTRUCTION OF A BUTT JOINT IN THE BASE COURSES. LAP LONGITUDINAL JOINTS AS SHOWN ON STANDARD CONSTRUCTION DRAWING BP-3.1.

ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE
THE CONTRACTOR SHALL BE TOTALLY RESPONSIBLE FOR ANY AND ALL DAMAGE TO THE CONTRACTORS EQUIPMENT THAT MAY RESULT FROM THE PLANING OPERATION, INCLUDING DAMAGE CAUSED BY CASTINGS AND LOOP DETECTORS. THE DEPTH OF PLANING CLOSE TO THE CASTINGS SHALL BE AS DIRECTED; TO ACHIEVE A SMOOTH RIDING FINISHED PAVEMENT. GREAT CARE SHALL BE TAKEN TO PREVENT THE REMOVAL OF THE EXISTING PAVEMENT CROSS-SLOPE (CROWN) DURING THE PLANING OPERATIONS.

THE CONTRACTOR SHALL LIMIT THE PLANING OPERATION TO ONE LANE AT A TIME AS TO ENSURE THAT THE PROPOSED SURFACE COURSE IS BUTTING UP TO EITHER PROPOSED OR EXISTING ASPHALT.

PLANED PAVEMENT SHALL NOT BE EXPOSED TO TRAFFIC FOR MORE THAN 7 CALENDAR DAYS OF THE PLANING OPERATION. FAILURE TO MEET THIS REQUIREMENT WILL SUBJECT THE CONTRACTOR TO A DISINCENTIVE OF $900/DAY FOR EACH DAY THE PLANED SURFACE IS NOT RESURFACED.

ITEM 204 - PROOF ROLLING
THE FOLLOWING QUANTITY IS PROVIDED IN THE GENERAL SUMMARY TO ADDRESS LOCATIONS REQUIRING PROOF ROLLING. SEE PLAN SHEETS NO. 4 & 5 FOR ADDITIONAL INFORMATION.

ITEM 204 - PROOF ROLLING 5 HOUR
(TOTAL CARRIED TO GENERAL SUMMARY FROM SHEET 27A)

ITEM 204 - SUBGRADE COMPACTION AND PROOF ROLLING
CONSTRUCT THE SUBGRADE AS FOLLOWS AND IN THE FOLLOWING SEQUENCE:

1. SHAPE THE SUBGRADE TO WITHIN 0.2 FEET OF THE PLAN SUBGRADE ELEVATION.
2. EXCAVATE AND REPLACE UNSUITABLE SUBGRADE BEFORE PROOF ROLLING. THE EXCAVATION LIMITS ARE SHOWN AND LABELED ON THE CROSS SECTIONS AS UNSUITABLE SUBGRADE. UNSUITABLE SUBGRADE INCLUDES UNSUITABLE SOIL (A-4B, A-2-5, A-5, A-7-5, AND SOIL WITH A LIQUID LIMIT GREATER THAN 65) AND ANY COAL, SHALE, OR ROCK WHICH NEEDS TO BE REMOVED ACCORDING TO 204.05. IF THERE IS UNSUITABLE SUBGRADE IN A SHALLOW FILL LOCATION, EXCAVATE AND REPLACE THE UNSUITABLE SUBGRADE BEFORE CONSTRUCTING THE SHALLOW FILL AND SHAPING THE SUBGRADE.
3. COMPACT THE SUBGRADE ACCORDING TO 204.03.
4. APPROXIMATE LIMITS FOR EXCAVATION OF UNSTABLE SUBGRADE ARE SHOWN AND LABELED ON THE CROSS SECTIONS AS UNSTABLE SUBGRADE. THE ENGINEER WILL IDENTIFY THE ACTUAL LIMITS OF EXCAVATION FOR UNSTABLE SUBGRADE BASED ON THE PROOF ROLLING RESULTS AND VISUAL OBSERVATIONS. PROOF ROLL THE COMPACTED SUBGRADE ACCORDING TO 204.06.
5. EXCAVATE UNSTABLE SUBGRADE AS DIRECTED BY THE ENGINEER AND STABILIZE BY REPLACING WITH THE SPECIFIED MATERIALS ACCORDING TO 204.07. EXCAVATIONS WILL EXTEND 18 INCHES BEYOND THE EDGE OF THE SURFACE OF THE PAVEMENT, PAVED SHOULDERS, OR PAVED MEDIANS.
6. PROOF ROLL THE STABILIZED AREAS ACCORDING TO 204.06 TO VERIFY STABILITY.
7. FINE GRADE THE SUBGRADE TO THE SPECIFIED GRADE.

THE QUANTITIES FOR EXCAVATING THE UNSUITABLE SUBGRADE AND UNSTABLE SUBGRADE ARE BOTH PAID UNDER ITEM 204 EXCAVATION OF SUBGRADE.

ITEM 251 - PARTIAL DEPTH PAVEMENT REPAIR, AS PER PLAN
ALL REPAIR AREAS SHALL BE DETERMINED BY THE PROJECT ENGINEER BEFORE THE BEGINNING OF WORK. THE REPAIR AREAS SHALL BE OF VARYING LENGTH AND THE AVERAGE WIDTH SHALL NOT BE LESS THAN 4 FEET. THE DEPTH OF EACH REPAIR SHALL BE 3 INCHES. ALL AREAS SHALL BE REFILLED WITH AN EQUAL AMOUNT OF ITEM 301 - ASPHALT CONCRETE BASE. FOR MORE INFORMATION SEE DETAIL ON SHEET 5. NO MORE PARTIAL PAVEMENT REPAIR, AS PER PLAN SHALL BE STARTED AND PERFORMED THAN CAN BE COMPLETED IN THE SAME WORKING DAY. THIS ITEM SHALL BE USED AS DIRECTED BY THE ENGINEER.

THE FOLLOWING QUANTITY HAS BEEN PROVIDED AND THE TOTAL HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 251 - PARTIAL DEPTH PAVEMENT REPAIR 680 SQ YD
(ASPHALT CONCRETE BASE), AS PER PLAN

PAVEMENT RESTORATION FOR DRAINAGE STRUCTURE INSTALLATIONS
THE FOLLOWING QUANTITY HAS BEEN PROVIDED FOR PAVEMENT RESTORATION FOLLOWING INSTALLATION OF ITEM 611 DRAINAGE STRUCTURES AT THE FOLLOWING LOCATIONS:

STA. 78+45.69 - 39 SY
STA. 80+40.39 - 10 SY
STA. 118+00.14 - 8 SY
STA. 122+16.80 - 31 SY
STA. 8+41.13 (S.R. 745) - 18 SY
TOTAL = 106 SY

THE ABOVE QUANTITY IS BASED ON A 301 THICKNESS OF 15.25 INCHES. PAVEMENT REPAIR AREAS ARE BASED ON A MINIMUM TRENCH WIDTH OF 1.3 TIMES THE OUTSIDE DIAMETER OF THE CONDUITS. THE TRENCH SHALL BE FILLED WITH 301 TO MATCH THE ADJACENT ROADWAY SURFACE.

PROVIDE ANY MATERIALS USED OUTSIDE THE LIMITS STATED ABOVE AT NO ADDITIONAL COST.

THE FOLLOWING QUANTITIES HAVE BEEN PROVIDED AND THE TOTAL HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 301 - ASPHALT CONCRETE BASE, PG64-22 45 CY

ITEM 606 - ANCHOR ASSEMBLY, MGS TYPE E
THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY OF THE GUARDRAIL END TERMINALS FOR TYPE MGS GUARDRAIL AS LISTED ON ROADWAY ENGINEERING'S WEB PAGE UNDER ROADSIDE SAFETY DEVICES FOR APPROVED GUARDRAIL END TREATMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE FACE OF THE TYPE E IMPACT HEAD SHALL BE COVERED WITH A SHEET OF TYPE G REFLECTIVE SHEETING, PER CMS 730.19.

REFER TO THE MANUFACTURER'S INSTRUCTIONS REGARDING THE INSTALLATION OF, AND THE GRADING AROUND THE FOUNDATION TUBES AND GROUND STRUT. THE TOP OF ANY FOUNDATION TUBE SHOULD BE LESS THAN 4 INCHES ABOVE THE GROUND. THE PLACEMENT OF THE FOUNDATION TUBES SHOULD BE AN APPROPRIATE DEPTH BELOW THE LEVEL LINE IN ORDER TO MAINTAIN THE FINISHED GUARDRAIL HEIGHT OF 31 INCHES FROM THE EDGE OF THE SHOULDER.

ON-SITE GRADING IS REQUIRED IF THE TOP OF THE FOUNDATION TUBES OR TOP OF THE GROUND STRUT DOES PROJECT MORE THAN 4 INCHES ABOVE THE GROUND LINE.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, ANCHOR ASSEMBLY, MGS TYPE E, EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING ALL RELATED TRANSITIONS, REFLECTIVE SHEETING, HARDWARE, GRADING, EMBANKMENT AND EXCAVATION NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

CONNECTION BETWEEN EXISTING AND PROPOSED GUARDRAIL
WHEN IT IS NECESSARY TO SPLICE PROPOSED GUARDRAIL TO EXISTING GUARDRAIL, ONLY THE EXISTING GUARDRAIL SHALL BE CUT, DRILLED, OR PUNCHED. THE CONNECTION SHALL BE MADE USING A W-BEAM, BEAM SPLICE AS SHOWN IN AASHTO M 180-12, EXCEPT THE BEAM WASHERS ARE NOT TO BE USED. PAYMENT SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE RESPECTIVE GUARDRAIL ITEMS.

SURVEYING PARAMETERS
PRIMARY PROJECT CONTROL MONUMENTS GOVERN ALL POSITIONING ON ODOT PROJECTS. SEE SHEET 2 OF THE PLANS FOR A TABLE CONTAINING PROJECT CONTROL INFORMATION.

USE THE FOLLOWING PROJECT CONTROL, VERTICAL POSITIONING, AND HORIZONTAL POSITIONING PARAMETERS FOR ALL SURVEYING:

PROJECT CONTROL

POSITIONING METHOD:	STATIC GNSS
MONUMENT TYPE:	(B)

VERTICAL POSITIONING

ORTHOMETRIC HEIGHT DATUM:	NAVD88
GEOID MODEL:	GEOID12B

HORIZONTAL POSITIONING

REFERENCE FRAME:	NAD83(2011)(EPOCH:2010.0000)
ELLIPSOID:	GRS80
MAP PROJECTION:	LAMBERT CONFORMAL CONIC
COORDINATE SYSTEM:	OHIO STATE PLANE (NORTH) ZONE
COMBINED SCALE FACTOR:	1.00004240
ORIGIN OF COORDINATE SYSTEM:	0,0

USE THE POSITIONING METHODS AND MONUMENT TYPE USED IN THE ORIGINAL SURVEY TO RESTORE ALL MONUMENTS RELATED TO PRIMARY PROJECT CONTROL THAT ARE DAMAGED OR DESTROYED BY CONSTRUCTION ACTIVITIES. RESTORE THE DAMAGED OR DESTROYED MONUMENTS IN ACCORDANCE WITH CMS 623.

UNITS ARE IN U.S. SURVEY FEET.

AIRWAY/HIGHWAY CLEARANCE FOR AIRPORTS AND HELIPORTS
THIS PROJECT HAS BEEN IDENTIFIED AS BEING WITHIN THE INFLUENCE AREA OF A PUBLIC USE AIRPORT OR HELIPORT. NO TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT AT MAXIMUM OPERATING HEIGHT SHALL EXCEED A HEIGHT OF 208 FT. IF ANY TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT WILL EXCEED THIS HEIGHT, FURTHER COORDINATION WITH THE FEDERAL AVIATION ADMINISTRATION (FAA), AND ODOT OFFICE OF AVIATION, WILL BE NECESSARY PRIOR TO ERECTING SUCH TEMPORARY STRUCTURES OR OPERATING SUCH EQUIPMENT ON THE PROJECT. THE CONTRACTOR WILL BE REQUIRED TO SUBMIT FORM 7460-1 TO THE FAA. NOTIFY THE ODOT OFFICE OF AVIATION WHEN SUBMITTING FAA FORM 7460-1.

NO TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT SHALL EXCEED THE PERMISSIBLE HEIGHT, UNTIL A COPY OF THE FAA APPROVAL AND THE ODOT OFFICE OF AVIATION PERMIT HAS BEEN FURNISHED TO THE PROJECT ENGINEER.

EXPRESS PROCESSING CENTER
THE FEDERAL AVIATION ADMINISTRATION
SOUTHWEST REGIONAL OFFICE
AIR TRAFFIC AIRSPACE BRANCH ASW-520
2601 MEACHAM BLVD.
FORT WORTH, TX 76137-4298

OHIO DEPTARTMENT OF TRANSPORTATION
OFFICE OF AVIATION
2829 WEST DUBLIN-GRANVILLE ROAD
COLUMBUS, OHIO 43235-2786
614-387-2358

CALCULATED ZTW CHECKED BSB

GENERAL NOTES

DEL-42-1.41

REVIEW OF DRAINAGE FACILITIES
BEFORE ANY WORK IS STARTED ON THE PROJECT AND AGAIN BEFORE FINAL ACCEPTANCE BY THE STATE, REPRESENTATIVES OF THE STATE AND THE CONTRACTOR, ALONG WITH LOCAL REPRESENTATIVES, SHALL MAKE AN INSPECTION OF ALL EXISTING SEWERS WHICH ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCE SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTION SHALL BE KEPT IN WRITING BY THE STATE.

ALL NEW CONDUITS, INLETS, CATCH BASINS, AND MANHOLES CONSTRUCTED AS A PART OF THE PROJECT SHALL BE FREE OF ALL FOREIGN MATTER AND IN A CLEAN CONDITION BEFORE THE PROJECT WILL BE ACCEPTED BY THE STATE.

ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 611 CONDUIT ITEMS.

CROSSINGS AND CONNECTIONS TO EXISTING PIPES AND UTILITIES
WHERE PLANS PROVIDE FOR A PROPOSED CONDUIT TO BE CONNECTED TO, OR CROSS OVER OR UNDER AN EXISTING SEWER OR UNDERGROUND UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING PIPES OR UTILITIES BOTH AS TO LINE AND GRADE BEFORE STARTING TO LAY THE PROPOSED CONDUIT.

IF IT IS DETERMINED THAT THE ELEVATION OF THE EXISTING CONDUIT, OR EXISTING APPURTENANCE TO BE CONNECTED, DIFFERS FROM THE PLAN ELEVATION OR RESULTS IN A CHANGE IN THE PLAN CONDUIT SLOPE, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WILL BE AFFECTED BY THE VARIANCE IN THE EXISTING ELEVATIONS.

IF IT IS DETERMINED THAT THE PROPOSED CONDUIT WILL INTERSECT AN EXISTING SEWER OR UNDERGROUND UTILITY IF CONSTRUCTED AS SHOWN ON THE PLAN, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WOULD BE AFFECTED BY THE INTERFERENCE WITH AN EXISTING FACILITY.

PAYMENT FOR ALL THE OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 611 CONDUIT ITEM.

POST CONSTRUCTION STORM WATER TREATMENT
THIS PLAN UTILIZES STRUCTURAL BEST MANAGEMENT PRACTICES (BMP'S) FOR POST CONSTRUCTION STORM WATER TREATMENT.

VEGETATED BIOFILTER
THIS PLAN UTILIZES VEGETATED BIOFILTER(S) FOR POST CONSTRUCTION STORM WATER TREATMENT. PLACE ITEM 659 SEEDING AND MULCHING WITH A 4-INCH LIFT OF TOPSOIL AS SHOWN IN THE PLANS TO ANY DISTURBED AREA ON THE SHOULDER AND FORESLOPE DRAINING TO A VEGETATED BIOFILTER. THE DITCH FOR EACH VEGETATED BIOFILTER SHALL BE TRAPEZOIDAL, AS SHOWN IN THE PLAN CROSS SECTIONS.

FARM DRAINS
ALL FARM DRAINS, WHICH ARE ENCOUNTERED DURING CONSTRUCTION, SHALL BE PROVIDED WITH UNOBSTRUCTED OUTLETS. EXISTING COLLECTORS WHICH ARE LOCATED BELOW THE ROADWAY DITCH ELEVATIONS, AND WHICH CROSS THE ROADWAY, SHALL BE REPLACED WITHIN THE (RIGHT OF WAY) (CONSTRUCTION) LIMITS BY ITEM 611 CONDUIT, TYPE B, ONE COMMERCIAL SIZE LARGER THAN THE EXISTING CONDUIT.

FARM DRAINS (CONT.)
EXISTING COLLECTORS AND ISOLATED FARM DRAINS, WHICH ARE ENCOUNTERED ABOVE THE ELEVATION OF ROADWAY DITCHES, SHALL BE OUTLETTED INTO THE ROADWAY DITCH BY 611 TYPE F CONDUIT. THE OPTIMUM OUTLET ELEVATION SHALL BE ONE FOOT ABOVE THE FLOWLINE ELEVATION OF THE DITCH. LATERAL FIELD TILES WHICH CROSS THE ROADWAY SHALL BE INTERCEPTED BY 611, TYPE E CONDUIT, AND CARRIED IN A LONGITUDINAL DIRECTION TO AN ADEQUATE OUTLET OR ROADWAY CROSSING.

THE LOCATION, TYPE, SIZE AND GRADE OF REPLACEMENTS SHALL BE DETERMINED BY THE ENGINEER AND PAYMENT SHALL BE MADE ON FINAL MEASUREMENTS.

EROSION CONTROL PADS SHALL BE PROVIDED AT THE OUTLET END OF ALL FARM DRAINS AS PER STANDARD CONSTRUCTION DRAWING DM-1.1, EXCEPT WHEN THEY OUTLET INTO A DRAINAGE STRUCTURE. PAYMENT FOR THE EROSION CONTROL PADS AND ANY NECESSARY BENDS OR BRANCHES SHALL BE INCLUDED FOR PAYMENT IN THE PERTINENT CONDUIT ITEMS.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE WORK NOTED ABOVE:

ITEM 611 - 8" CONDUIT, TYPE B	50 FT
ITEM 611 - 10" CONDUIT, TYPE E	50 FT
ITEM 611 - 12" CONDUIT, TYPE F	50 FT
ITEM 601 - ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	3 CY

DRAINAGE DISCHARGE CONTINUANCE
FURNISH A DRAINAGE DISCHARGE CONTINUANCE FOR ANY DRAINAGE DISCHARGE DISTURBED BY THE WORK AND NOT SHOWN IN THE PLANS. THE LOCATION, TYPE (CONDUIT OR SWALE), SIZE AND GRADE OF THE DRAINAGE DISCHARGE CONTINUANCE WILL BE AGREED TO BY THE ENGINEER.

FURNISH AN INSPECTION WELL AT THE RIGHT OF WAY LINE IN ACCORDANCE WITH SCD DM-3.1 FOR EACH DRAINAGE DISCHARGE THAT OUTLETS THROUGH A CURB OPENING, OR INTO A STORM SEWER OR DRAINAGE STRUCTURE. THE COST IS INCLUDED IN ITEM 611, INSPECTION WELL.

FURNISH A WELL GRADED TRANSITION BETWEEN THE DITCH AND THE SWALE WHEN OUTLETTING A SWALE TO A DITCH. THE COST FOR THE GRADED TRANSITION IS INCLUDED IN ITEM 203, EMBANKMENT AS PER PLAN.

FURNISH AN EROSION CONTROL PAD AS SHOWN IN SCD DM-1.1 WHEN OUTLETTING A CONDUIT TO A DITCH. THE COST FOR THE EROSION CONTROL PAD IS INCLUDED IN ITEM 611, CONDUIT, MISC TYPE X FOR DRAINAGE DISCHARGE CONTINUANCE.

FURNISH A DRILLED HOLE OR A CURB SECTION WITH A HOLE WHEN OUTLETTING A CONDUIT THROUGH A CURB OPENING. THE COST OF DRILLING, OR FURNISHING THE CURB SECTION WITH HOLE IS INCLUDED IN ITEM 611, CONDUIT, MISC TYPE X FOR DRAINAGE DISCHARGE CONTINUANCE.

FURNISH A DRILLED CORE HOLE WHEN OUTLETTING INTO A STORM SEWER OR DRAINAGE STRUCTURE. THE COST OF THE DRILLED CORE HOLE IS INCLUDED IN ITEM 611, CONDUIT, MISC TYPE X FOR DRAINAGE DISCHARGE CONTINUANCE.

DRAINAGE DISCHARGE CONTINUANCE (CONT.)
DOCUMENTATION
THE CONTRACTOR SHALL FURNISH WRITTEN DOCUMENTATION TO THE ENGINEER AND TO THE DISTRICT R/W PERMIT OFFICE. THE DOCUMENTATION INCLUDES THE CONSTRUCTION PROJECT NUMBER, PID, COUNTY, ROUTE, SECTION, LATITUDE AND LONGITUDE OF THE DRAINAGE DISCHARGE AT THE R/W, THE NAME OF PROPERTY OWNER WITH ADDRESS, THE DATE THE DRAINAGE DISCHARGE WAS LOCATED, THE DATE THE DRAINAGE DISCHARGE CONTINUANCE WAS FURNISHED, A DETAILED DESCRIPTION OF THE WORK AND PICTURES OF THE DRAINAGE DISCHARGE CONTINUANCE (IN PDF OR JPEG FORMAT). THE DOCUMENTATION IS INCLUDED IN ITEM 611, CONDUIT, MISC TYPE X FOR DRAINAGE DISCHARGE CONTINUANCE OR ITEM 203, EMBANKMENT AS PER PLAN

DRAINAGE DISCHARGE CONTINUANCE REMOVAL THE ENGINEER MAY REQUIRE THE NEWLY INSTALLED DRAINAGE DISCHARGE CONTINUANCE TO BE REMOVED.

REMOVE THE NEWLY INSTALLED CONDUIT AND ANY EXISTING CONDUIT TO THE RIGHT OF WAY LINE. FOR CONDUIT THAT OUTLETS THROUGH THE CURB RESTORE THE CURB BY FILLING THE HOLE WITH CLASS QC 1 CONCRETE OR REPLACE THE CURB SECTION. FOR CONDUIT THAT OUTLETS TO A STORM SEWER OR DRAINAGE STRUCTURE LEAVE 6 INCHES PROTRUDING OUTSIDE OF THE CONDUIT. PLUG THE PROTRUDING CONDUIT WITH EITHER A MANUFACTURED CAP OR CLASS QC 1 CONCRETE. FOR CONDUIT THAT OUTLETS TO THE DITCH REMOVE THE EROSION CONTROL PAD. RESTORE ALL AREAS AS REQUIRED. PLUG THE EXISTING CONDUIT REGARDLESS OF SIZE AT THE RIGHT OF WAY LINE WITH CLASS QC 1 CONCRETE AND RESTORE ALL AREAS AS REQUIRED. ALL COSTS ARE INCLUDED IN ITEM 202, REMOVAL MISC. CONDUIT.

DAM THE SWALE THAT OUTLETS TO THE DITCH AT THE R/W AS DIRECTED BY THE ENGINEER. ALL COSTS ARE INCLUDED IN ITEM 203, EMBANKMENT AS PER PLAN REMOVE THE INSPECTION WELL AND RESTORE ALL AREAS AS REQUIRED. THE COST IS INCLUDED IN ITEM 202, REMOVAL MISC. INSPECTION WELL. CONDUIT MATERIAL TYPES THE FOLLOWING CONDUIT MATERIAL TYPES MAY BE USED: 707.33, 707.41 NON-PERFORATED, 707.42, 707.43, 707.45, 707.46, 707.47, 707.51, AND 707.52 SDR35.

PAY ITEMS
EACH OF THE PAY ITEMS LISTED BELOW FOR CONDUIT MISCELLANEOUS TYPES B, C, E AND F FOR DRAINAGE DISCHARGE CONTINUANCE INCLUDE CONDUIT SIZES 2 INCH TO 10 INCH. THERE IS NO COST DIFFERENTIATION FOR SIZE IN THESE PAY ITEMS.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER IN MAKING THE ABOVE DRAINAGE DISCHARGE CONTINUANCE:

ITEM 611 - INSPECTION WELL	1 EACH
ITEM 611 - CONDUIT, MISC.: 6" TYPE B FOR DRAINAGE DISCHARGE CONTINUANCE	10 FT
ITEM 611 - CONDUIT, MISC.: 6" TYPE C FOR DRAINAGE DISCHARGE CONTINUANCE	10 FT
ITEM 611 - CONDUIT, MISC.: 6" TYPE E FOR DRAINAGE DISCHARGE CONTINUANCE	10 FT
ITEM 611 - CONDUIT, MISC.: 6" TYPE F FOR DRAINAGE DISCHARGE CONTINUANCE	10 FT
ITEM 202 - REMOVAL MISC.: CONDUIT	15 FT
ITEM 202 - REMOVAL MISC.: INSPECTION WELL	1 EACH
ITEM 203 - EMBANKMENT, AS PER PLAN	50 CY

EXISTING SUBSURFACE DRAINAGE
PROVIDE UNOBSTRUCTED OUTLETS FOR ALL EXISTING UNDERDRAINS OR AGGREGATE DRAINS ENCOUNTERED DURING CONSTRUCTION.

PROVIDE AN OUTLET PER STANDARD CONSTRUCTION DRAWING DM-1.1 FOR ALL UNDERDRAINS THAT OUTLET TO A SLOPE.

UNDERDRAINS THAT CAN BE CONNECTED TO THE NEW OR EXISTING UNDERDRAINS AT THE END OF THE PROJECT LIMITS AS WELL AS ALL NECESSARY BENDS OR BRANCHES REQUIRED FOR CONNECTION ARE INCLUDED IN THE BASIS OF PAYMENT FOR UNCLASSIFIED PIPE UNDERDRAINS.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE WORK NOTED ABOVE:

601, TIED CONCRETE BLOCK MAT, TYPE 1	10 SQ. YD.
605, AGGREGATE DRAINS	100 FT.
611 6" CONDUIT, TYPE F	50 FT.
611, PRECAST REINFORCED CONCRETE OUTLET	5 EACH
605 6" UNCLASSIFIED PIPE UNDERDRAINS	100 FT.

ITEM 202 - REMOVAL, MISC.: PRIVATE SIGN SUPPORT
THIS ITEM SHALL CONSIST OF THE REMOVAL OF TWO PRIVATE SIGN SUPPORTS LOCATED AT THE TAVERN 42 PROPERTY. REMOVE SIGN SUPPORTS IN A MANNER TO AVOID DAMAGE. REMOVE SIGN SERVICE TO THE SUPPORT BY DISCONNECTING AND REMOVING CABLES AT THE SERVICE PULL-BOX. ENXURE THAT CONNECTION OF REMAINING CABLES CONFORMS TO 625.18. REMOVE SUPPORT FOUNDATIONS TO AT LEAST 1 FOOT BELOW SUBGRADE OR FINISHED GROUNDLINE. BACKFILL AND RESTORE SURFACES TO A CONDITION EQUAL TO THAT EXISTING BEFORE THE WORK STARTED AND DISPOSE OF SURPLUS MATERIAL ACCORDING TO 105.16, 105.17 AND 611.15 AT NO COST TO THE DEPARTMENT.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 202, REMOVAL, MISC.: PRIVATE SIGN SUPPORT AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY FOR SIGN SUPPORT REMOVAL.

CLEARING AND GRUBBING
REMOVE ALL TREES AND STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE CONSTRUCTION LIMITS UNDER THE LUMP SUM BID FOR ITEM 201, CLEARING AND GRUBBING. THE FOLLOWING IS AN APPROXIMATE ESTIMATE OF THE NUMBER OF TREES AND STUMPS TO BE REMOVED.

SIZES	NO. TREES	NO. STUMPS	TOTAL
10"	1		1
14"	1		1

THE CONTRACTOR SHALL TRIM VEGETATION AS DIRECTED BY THE ENGINEER WITHIN THE RIGHT OF WAY ALONG THE LIMITS OF THE KLONDIKE DETOUR TO MAINTAIN A CLEAR SIGHT DISTANCE WHILE THE DETOUR IS IN USE.

ENDANGERED BAT HABITAT REMOVAL
THE PROJECT IS LOCATED WITHIN THE KNOWN HABITAT RANGES OF THE FEDERALLY LISTED AND PROTECTED INDIANA BAT AND NORTHERN LONG-EARED BAT. THE CONTRACTOR SHALL NOT REMOVE TREES UNDER THIS PROJECT FROM APRIL 1 THROUGH SEPTEMBER 30. ALL NECESSARY TREE REMOVAL SHALL OCCUR FROM OCTOBER 1 THROUGH MARCH 31. THIS REQUIREMENT IS NECESSARY TO AVOID AND MINIMIZE IMPACTS TO THESE SPECIES AS REQUIRED BY THE ENDANGERED SPECIES ACT. FOR THE PURPOSES OF THIS NOTE, A TREE IS DEFINED AS A LIVE, DYING, OR DEAD WOODY PLANT, WITH A TRUNK THREE INCHES OR GREATER IN DIAMETER AT A HEIGHT OF 4.5 FEET ABOVE THE GROUND SURFACE, AND WITH A MINIMUM HEIGHT OF 13 FEET.

CALCULATED ZTW CHECKED BSB

GENERAL NOTES

DEL-42-1.41

SEQUENCE OF CONSTRUCTION

PRE PHASE 1

TRAFFIC MAINTAINED: EXISTING US 42 TO REMAIN OPEN WITH A MINIMUM OF 1 LANE FLAGGED FOR TWO WAY TRAFFIC. CONTRACTOR SHALL FOLLOW ODOT STANDARD CONSTRUCTION DRAWING MT-97.10 WITH A MINIMUM OF AN 11' LANE AND 2' SHOULDERS.

WORK PERFORMED:
- REPLACE EXISTING CULVERT CROSSING AT STA. 78+50
- REPLACE EXISTING CULVERT CROSSING AT STA. 80+40
- REPLACE EXISTING CULVERT CROSSING AT STA. 118+00
- REPLACE EXISTING CULVERT CROSSING AT STA. 122+00
- INSTALL PAVEMENT FOR MAINTAINING TRAFFIC SHOWN ON PHASE 1 PLANS

EACH CULVERT IS TO BE CONSTRUCTED SEPARATELY. ALL LANES OF TRAFFIC SHALL BE REOPENED AND TRENCHES TO BE PROTECTED AT THE END OF WORKING HOURS WITH PLATES AND BACK FILLED.

TRAFFIC MAINTAINED: EXISTING US 42 TO REMAIN OPEN AT ALL TIMES WITH A MINIMUM OF 1 LANE IN EACH DIRECTION.

WORK PREFORMED:
- INSTALL PAVEMENT FOR MAINTAINING TRAFFIC SHOWN ON THE PHASE 1 PLANS.

PHASE 1

TRAFFIC MAINTAINED: EXISTING TWO WAY TWO LANE TRAFFIC SHALL BE MAINTAINED ON ALL ROADS.

WORK PERFORMED:
- TEMPORARY STRIPING WITH TEMPORARY AND PERMANENT SIGNS
- CONSTRUCT ROADWAY WITHIN LIMITS DETAILED ON THE PHASE 1 PLANS UP TO INTERMEDIATE COURSE
- INSTALL PAVEMENT FOR MAINTAINING TRAFFIC SHOWN ON THE PHASE 2 PLAN

PHASE 1A

TRAFFIC MAINTAINED: EXISTING TWO WAY TWO LANE TRAFFIC SHALL BE MAINTAINED ON US 42. SR 745 WILL BE CLOSED AND TRAFFIC DETOURED.

WORK PERFORMED:
- WORK ZONE PAVEMENT MARKING AND SIGNS
- CONSTRUCT ROADWAY WITHIN LIMITS DETAILED ON THE PHASE 1A PLANS UP TO INTERMEDIATE COURSE
- REPLACE EXISTING 36" CULVERT CROSSING ON SR-745

PHASE 1A CANNOT BE CONSTRUCTED CONCURRENTLY WITH PHASE 1B. SEE TIME LIMITATION NOTE FOR ADDITIONAL LIMITATIONS ON PHASE 1A.

PHASE 1B

TRAFFIC MAINTAINED: EXISTING TWO WAY TWO LANE TRAFFIC SHALL BE MAINTAINED ON US 42. SR 257 WILL BE CLOSED AND TRAFFIC DETOURED.

WORK PERFORMED:
- WORK ZONE PAVEMENT MARKING AND SIGNS
- CONSTRUCT ROADWAY WITHIN LIMITS DETAILED ON THE PHASE 1B PLANS UP TO INTERMEDIATE COURSE

PHASE 1B CANNOT BE CONSTRUCTED CONCURRENTLY WITH PHASE 1A. SEE TIME LIMITATION NOTE FOR ADDITIONAL LIMITATIONS ON PHASE 1B.

PRIOR TO THE START OF PHASE 2, CONTRACTOR SHALL REMOVE EXISTING SIGNAL AND INSTALL PROPOSED SIGNAL

PHASE 2

TRAFFIC MAINTAINED: EXISTING US 42 TO REMAIN OPEN AT ALL TIMES WITH A MINIMUM OF 1 LANE IN EACH DIRECTION.

WORK PERFORMED:
- WORK ZONE PAVEMENT MARKING AND SIGNS
- CONSTRUCT ROADWAY WITHIN LIMITS DETAILED ON THE PHASE 2 PLANS UP TO INTERMEDIATE COURSE

CONTRACTOR SHALL CONSTRUCT PROPOSED PAVEMENT UP TO INTERMEDIATE COURSE WITHIN THE LIMITS NEEDED FOR THE TRAFFIC SHIFT PROPOSED IN PHASE 2A.

PHASE 2A

WORK PERFORMED:
- PRIOR TO THE START OF PHASE 2A CONTRACTOR SHALL INSTALL PAVEMENT FOR MAINTAINING TRAFFIC SHOWN ON THE PHASE 2A PLAN
- WORK ZONE PAVEMENT MARKING AND SIGNS
- CONSTRUCT ROADWAY WITHIN LIMITS DETAILED ON THE PHASE 2A PLANS UP TO INTERMEDIATE COURSE

PHASE 3

WORK PERFORMED:
- CONSTRUCT SURFACE COURSE FOR PROJECT LIMITS
- FINAL PAVEMENT MARKINGS
- FINAL SIGNING

THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING, MAINTAINING AND REMOVAL OF ALL TEMPORARY TRAFFIC ON EXISTING ROADWAYS, TEMPORARY ROADWAY SURFACES, ROAD CLOSURES, DETOURS, SIGNAL TIMING CHANGES, VARIABLE MESSAGE SIGNS, AND OTHER PERTINENT INCIDENTAL ACTIVITIES INCLUDING BUT NOT LIMITED TO ADVANCE COORDINATION AND NOTIFICATION OF PROJECT SCHEDULES WITH STATE AND LOCAL AGENCIES INCLUDING EMERGENCY SERVICE AGENCIES SUCH AS POLICE, FIRE, MEDICAL, SCHOOL DISTRICTS AND ALL BUSINESS AND PROPERTY OWNERS WITHIN AND ALONG THE PROJECT LIMITS.

ITEM 615 - PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A

ITEM 615 - PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A SHALL BE INSTALLATED WITHIN DAYTIME WORKING HOURS. AT THE END OF WORKING HOURS ANY DROP OFF'S EXCEEDING 1.5" SHALL BE FILLED IN ALONG THE EDGE OF PAVEMENT. ALL TEMPORARY TRAFFIC CONTROL SHALL BE REMOVED AND TRAFFIC RESTORED TO EXISTING CONDITION AT THE END OF THE DAY. DURING INSTALLATION EXISTING TRAFFIC SHALL BE MAINTAINED WITH A MINIMUM 10 FOOT LANES AND 2 FOOT SHOULDERS SEPARATED FROM THE CONSTRUCTION ZONE WITH BARRELS.

LANE VALUE CONTRACT TABLE

Section (SLM)	Existing Number of Through Lanes per Direction	Lane Closures are NOT permitted: Lane Reduction	Mon to Fri	Sat	Sun	Disincentive Amounts per minute per lane
DEL-36						
Union County Line (0.00) to South Section Line Road (3.25)	1	1 Shared Lane	6AM-9AM & 2PM-7PM	No Restriction	No Restriction	$120
Short term shoulder closures are not permitted 6AM-9AM and 2PM-7PM Monday-Friday						

CALCULATED SJB
CHECKED CO

MAINTENANCE OF TRAFFIC NOTES CONSTRUCTION SEQUENCE

DEL-42-1.41

ITEM 614, MAINTAINING TRAFFIC

A MINIMUM OF 1 LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES BY USE OF THE EXISTING PAVEMENT, THE COMPLETED PAVEMENT, ITEM 615 PAVEMENT FOR MAINTAINING TRAFFIC, AND TEMPORARY SURFACES USING ITEMS 410 AND 614.

A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED ON SR 745 AT ALL TIMES, EXCEPT FOR A PERIOD NOT TO EXCEED 14 CONSECUTIVE CALENDAR DAYS, WHEN THE INTERSECTION AT SR 745 MAY BE CLOSED AND DETOURED AS SHOWN IN PHASE 1A. A DISINCENTIVE SHALL BE ASSESSED IN THE AMOUNT OF $3,500 PER DAY FOR EACH CALENDAR DAY THE ROADWAY REMAINS CLOSED TO TRAFFIC BEYOND THE SPECIFIED LIMIT.

A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED ON SR 257 AT ALL TIMES, EXCEPT FOR A PERIOD NOT TO EXCEED 7 CONSECUTIVE CALENDAR DAYS, WHEN THE INTERSECTION AT SR 257 MAY BE CLOSED AND DETOURED AS SHOWN IN PHASE 1B. A DISINCENTIVE SHALL BE ASSESSED IN THE AMOUNT OF $4,000 PER DAY FOR EACH CALENDAR DAY THE ROADWAY REMAINS CLOSED TO TRAFFIC BEYOND THE SPECIFIED LIMIT.

A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED ON KLONDIKE ROADAT ALL TIMES, EXCEPT FOR A PERIOD NOT TO EXCEED 28 CONSECUTIVE CALENDAR DAYS, WHEN THE INTERSECTION AT KLONDIKE ROAD MAY BE CLOSED AND DETOURED AS SHOWN IN PHASE 2. A DISINCENTIVE SHALL BE ASSESSED IN THE AMOUNT OF $2,400 PER DAY FOR EACH CALENDAR DAY THE ROADWAY REMAINS CLOSED TO TRAFFIC BEYOND THE SPECIFIED LIMIT.

ALL TRAFFIC CONTROL DEVICES SHALL BE FURNISHED, ERECTED, MAINTAINED, AND REMOVED BY THE CONTRACTOR IN ACCORDANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (CURRENT EDITION). COPIES ARE AVAILABLE FROM:

THE OHIO DEPARTMENT OF TRANSPORTATION
BUREAU OF TRAFFIC,
1980 WEST BROAD STREET
COLUMBUS, OHIO 43223.

LENGTH AND DURATION OF LANE CLOSURES AND RESTRICTIONS SHALL BE AT THE APPROVAL OF THE ENGINEER. IT IS THE INTENT TO MINIMIZE THE IMPACT TO THE TRAVELING PUBLIC. LANE CLOSURES OR RESTRICTIONS OVER SEGMENTS OF THE PROJECT IN WHICH NO WORK IS ANTICIPATED WITHIN A REASONABLE TIME FRAME, AS DETERMINED BY THE ENGINEER, SHALL NOT BE PERMITTED. THE LEVEL OF UTILIZATION OF MAINTENANCE OF TRAFFIC DEVICES SHALL BE COMMENSURATE WITH THE WORK IN PROGRESS.

NO WORK SHALL BE PERFORMED AND ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC DURING THE FOLLOWING DESIGNATED HOLIDAYS OR EVENTS:

CHRISTMAS	FOURTH OF JULY
NEW YEARS	LABOR DAY
MEMORIAL DAY	THANKSGIVING
MEMORIAL TOURNAMENT	THE LITTLE BROWN JUG

SPECIAL EVENTS

MEMORIAL GOLF TOURNAMENT - LANE OR SHOULDER CLOSURES ARE NOT PERMITTED DURING THE WEEK OF THE GOLF TOURNAMENT 5AM-10PM DAILY ON THE FOLLOWING ROUTES:
I-270 BETWEEN I-70 (WEST SIDE) AND I-71 (NORTH SIDE)
SR 257 BETWEEN SR 161 AND US 42
SR 745 BETWEEN SR 161 AND US 42
SR 161 BETWEEN US 42 AND I-71
US 33 BETWEEN US 42 AND I-70
SR 750 BETWEEN SR 257 AND US 23

ITEM 614 - MAINTAINING TRAFFIC (CONTINUED)

DELAWARE COUNTY FAIR - LANE OR SHOULDER CLOSURES ARE NOT PERMITTED DURING THE DELAWARE COUNTY FAIR 6AM-10PM DAILY ON THE FOLLOWING ROUTES:
US 23 BETWEEN SR 750 AND SR 98
US 36 BETWEEN SR 257 AND I-71
SR 37 BETWEEN SR 257 AND I-71
US 42 BETWEEN SR 229 AND SR 745
SR 521 BETWEEN US 36 AND SR 61

THE PERIOD OF TIME THAT THE LANES ARE TO BE OPEN DEPENDS ON THE DAY OF THE WEEK ON WHICH THE HOLIDAY OR EVENT FALLS. THE FOLLOWING SCHEDULE SHALL BE USED TO DETERMINE THIS PERIOD:

DAY OF HOLIDAY OR EVENT	TIME ALL LANES MUST BE OPEN TO TRAFFIC
SUNDAY	12:00N FRIDAY THROUGH 6:00AM MONDAY
MONDAY	12:00N FRIDAY THROUGH 6:00AM TUESDAY
TUESDAY	12:00N MONDAY THROUGH 6:00AM WEDNESDAY
WEDNESDAY	12:00N TUESDAY THROUGH 6:00AM THURSDAY
THURSDAY	12:00N WEDNESDAY THROUGH 6:00AM FRIDAY
THURSDAY	(THANKSGIVING ONLY) 6:00AM WEDNESDAY THROUGH 6:00AM MONDAY
FRIDAY	12:00N THURSDAY THROUGH 6:00AM MONDAY
SATURDAY	12:00N FRIDAY THROUGH 6:00AM MONDAY

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THESE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED A DISINCENTIVE PER THE LANE VALUE CONTRACT (PN 127).

LENGTH AND DURATION OF LANE CLOSURES AND RESTRICTIONS SHALL BE AT THE APPROVAL OF THE ENGINEER. IT IS THE INTENT TO MINIMIZE THE IMPACT TO THE TRAVELING PUBLIC. LANE CLOSURES OR RESTRICTIONS OVER SEGMENTS OF THE PROJECT IN WHICH NO WORK IS ANTICIPATED WITHIN A REASONABLE TIME FRAME, AS DETERMINED BY THE ENGINEER, SHALL NOT BE PERMITTED. THE LEVEL OF UTILIZATION OF MAINTENANCE OF TRAFFIC DEVICES SHALL BE COMMENSURATE WITH THE WORK IN PROGRESS.

NOTICE OF CLOSURE SIGNS, AS DETAILED IN THE PLANS, SHALL BE ERECTED BY THE CONTRACTOR AT LEAST ONE WEEK IN ADVANCE OF THE SCHEDULED ROAD CLOSURE. THE SIGNS SHALL BE ERECTED ON THE RIGHT HAND SIDE OF THE ROAD FACING TRAFFIC. THEY SHALL BE PLACED SO AS TO NOT INTERFEREN WITH THE VIVIBILITY OF ANY OTHER TRAFFIC CONTROL SIGNS. ON ROADWAYS, THEY SHOULD BE ERECTED AT THE POINT OF CLOSURE.

NOTICE OF CLOSURE SIGN TIME TABLE ITEM DURATION SIGN DISPLAYED OF CLOSURE TO PUBLIC

ITEM	DURATION OF CLOSURE	SIGN DISPLAYED TO PUBLIC
ROAD CLOSURES	>= 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
	> 12 HOURS & < 2 WEEKS	7 CALENDAR DAYS PRIOR TO CLOSURE
	< 12 HOURS	2 BUSINESS DAYS PRIOR TO CLOSURE

THE SIGN SHALL DISPLAY THE DATE OF THE CLOSURE IN MMM-DD FORMAT AND THE NUMBER OF DAYS OF THE CLOSURE. THE LAST LINE OF THE W20-H13 SIGN LISTS A PHONE NUMBER WHICH A MOTORIST MAY CALL FOR ADDITIONAL INFORMATION. THIS IS TO BE A SPECIFIC OFFICE WITHIN THE DISTRICT RATHER THAN THE GENERAL SWITCHBOARD NUMBER.

ITEM 614 - MAINTAINING TRAFFIC (CONTINUED)

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR DRIVEWAYS OR AS DETERMINED BY THE ENGINEER FOR THE MAINTENANCE OF TRAFFIC.

ITEM 410, TRAFFIC COMPACTED SURFACE, TYPE A OR B 150 CU. YD.

ITEM 616, WATER 50 M. GAL.

THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN STANDARD 48 X 30 INCH ROAD CLOSED SIGNS, SIGN SUPPORTS, BARRICADES AND LIGHTS, AS DETAILED IN SCD MT-101.60 AT THE FOLLOWING LOCATIONS DURING PERIODS IN WHICH THE AFFECTED ROADS ARE CLOSED TO TRAFFIC.

ROAD	LOCATION
SR 745	SEE SR 745 DETOUR PLAN
SR 257	SEE SR 257 DETOUR PLAN
KLONDIKE RD.	SEE KLONDIKE RD. DETOUR PLAN

ALL PERMANENT TRAFFIC CONTROLS NOT IN CONFLICT WITH THE TEMPORARY TRAFFIC CONTROLS SHALL BE MAINTAINED THROUGHOUT THIS PROJECT BY THE CONTRACTOR. PERMANENT TRAFFIC CONTROLS MAY BE TEMPORARILY RELOCATED BY THE ENGINEER. THE CONTRACTOR SHALL ASSUME ALL LIABILITY FOR MISSING, DAMAGED, AND PROPERLY PLACED SIGNS.

THE CONTRACTOR SHALL NOTIFY OFFICIALS AND AFFECTED PROPERTY OWNERS 10 WORKING DAYS IN ADVANCE OF THE START OF THIS PROJECT. THE CONTRACTOR SHALL NOTIFY PROPERTY OWNERS/OCCUPANTS 48 HOURS IN ADVANCE OF CHANGES IN ACCESS TO THEIR PROPERTIES. ACCESS SHALL BE MAINTAINED AT ALL TIMES.

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH C&MS 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

PLACEMENT OF ASPHALT CONCRETE

TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES EXCEPT THAT ONE-WAY TRAFFIC WILL BE PERMITTED FOR MINIMUM PERIODS OF TIME CONSISTENT WITH THE REQUIREMENTS OF THE SPECIFICATIONS FOR PROTECTION OF COMPLETED ASPHALT CONCRETE COURSES.

TRENCH FOR WIDENING

TRENCH EXCAVATION FOR BASE WIDENING SHALL BE ONLY ON ONE SIDE OF THE PAVEMENT AT A TIME. THE OPEN TRENCH SHALL BE ADEQUATELY MAINTAINED AND PROTECTED WITH DRUMS OR BARRICADES AT ALL TIMES. PLACEMENT OF PROPOSED SUBBASE AND BASE MATERIAL SHALL FOLLOW AS CLOSELY AS POSSIBLE BEHIND EXCAVATION OPERATIONS. THE LENGTH OF WIDENING TRENCH WHICH IS OPEN AT ANY ONE TIME SHALL BE HELD TO A MINIMUM AND SHALL AT ALL TIMES BE SUBJECT TO APPROVAL OF THE ENGINEER.

DRUM REQUIREMENTS

IN ADDITION TO THE REQUIREMENTS OF THE PLANS, SPECIFICATION AND PROPOSAL, DRUMS FURNISHED BY THE CONTRACTOR SHALL BE NEW AND UNUSED AT THE TIME OF ARRIVAL ON THE PROJECT. ANY DRUMS BROUGHT ON THE PROJECT, WHICH HAVE PREVIOUSLY BEEN USED ELSEWHERE, WILL NOT BE ACCEPTED.

PAYMENT FOR DRUMS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR MAINTAINING TRAFFIC UNLESS SEPARATELY ITEMIZED.

DUST CONTROL

THE CONTRACTOR SHALL FURNISH AND APPLY WATER FOR DUST CONTROL AS DIRECTED BY THE ENGINEER. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED FOR DUST CONTROL PURPOSES:

ITEM 616, WATER 15 M. GAL.

NOTIFICATION OF TRAFFIC RESTRICTIONS

THROUGHOUT THE DURATION OF THE PROJECT, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IN WRITING OF ALL TRAFFIC RESTRICTIONS AND UPCOMING MAINTENANCE OF TRAFFIC CHANGES. THE CONTRACTOR SHALL ENSURE THE WRITING OF ALL TRAFFIC RESTRICTIONS AND UPCOMING MAINTENANCE OF TRAFFIC CHANGES. THE CONTRACTOR SHALL ENSURE THE WRITTEN NOTIFICATION IS SUBMITTED IN A TIMELY MANNER TO ALLOW THE PROJECT ENGINEER TO MEET THE REQUIRED TIME FRAMES SET FORTH IN THE TABLE BELOW TO INFORM THE SPECIAL HAULING PERMITS SECTION (HAULING.PERMITS@DOT.OHIO.GOV) AND THE DISTRICT PUBLIC INFORMATION OFFICE (PIO) D06.PIO@DOT.OHIO.GOV. THIS NOTIFICATION SHALL BE RECEIVED BY THE PROJECT ENGINEER PRIOR TO THE PHYSICAL SETUP OF ANY APPLICABLE SIGNS OR MESSAGE BOARDS.

INFORMATION SHOULD INCLUDE, BUT IS NOT LIMITED TO, ALL CONSTRUCTION ACTIVITIES THAT IMPACT OR INTERFERE WITH TRAFFIC AND SHALL LIST THE SPECIFIC LOCATION, TYPE OF WORK, ROAD STATUS, DATE AND TIME OF RESTRICTION, DURATION OF RESTRICTION, NUMBER OF LANES MAINTAINED, NUMBER OF LANES CLOSED, MINIMUM VERTICAL CLEARANCE, MINIMUM WIDTH OF DRIVABLE PAVEMENT, DETOUR ROUTES, IF APPLICABLE, AND ANY OTHER INFORMATION REQUESTED BY THE PROJECT ENGINEER.

NOTIFICATION TIME TABLE

ITEM	DURATION OF CLOSURE	NOTICE DUE TO PERMITS & PIO
ROAD CLOSURES	>= 2 WEEKS	21 CALENDAR DAYS PRIOR TO CLOSURE
	>12 HOURS & < 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
	<= 12 HOURS	4 BUSINESS DAYS PRIOR TO CLOSURE
LANE CLOSURES & RESTRICTIONS	>= 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
	< 2 WEEKS	5 BUSINESS DAYS PRIOR TO CLOSURE
START OF CONSTRUCTION & TRAFFIC PATTERN CHANGES		14 CALENDAR DAYS PRIOR TO IMPLEMENTATION

ANY UNFORESEEN CONDITIONS NOT SPECIFIED IN THE PLANS REQUIRING TRAFFIC RESTRICTIONS SHALL ALSO BE REPORTED TO THE PROJECT ENGINEER USING THE NOTIFICATION TIME TABLE.

CALCULATED CO CHECKED SJB

MAINTENANCE OF TRAFFIC GENERAL NOTES

DEL-42-1.41

DETOUR SIGNING

SIZE AND PLACEMENT OF DETOUR SIGNS (M4-9) SHOULD FOLLOW THE REQUIREMENTS OF THE OMUTCD SECTION 6F.03, SECTION 2A.11 AND TABLE 6F.01.

DETOUR SIGNING SHALL PROVIDE DRIVERS ADEQUATE TIME TO CLEARLY READ THE SIGNS AND MAKE THE PROPER DECISIONS AT EACH REQUIRED TURNING MOVEMENT. THE DESIGNATED DETOUR ROUTE SHALL BE SIGNED IN ACCORDANCE WITH THE REQUIREMENTS BELOW:

- APPROXIMATELY 1500 FEET PRIOR TO TIP OF THE PAINTED GORE AT AN INTERCHANGE WHEN EXITING A HIGH SPEED (45 MPH OR HIGHER) FACILITY.
- AT OR NEAR THE FIRST EXISTING LANE ASSIGNMENT SIGN ON AN INTERCHANGE EXIT RAMP.
- AT OR NEAR THE EXISTING LANE ASSIGNMENT SIGN OR EXISTING ROUTE MARKER AT THE END OF AN EXIT RAMP.
- APPROXIMATELY 500 FEET PRIOR TO A REQUIRED TURN AT AN INTERSECTION NOT CONTROLLED BY A STOP SIGN (FOR 45 MPH OR HIGHER ONLY).
- AT OR NEAR THE EXISTING LANE ASSIGNMENT SIGN OR EXISTING ROUTE MARKER AT AN INTERSECTION.
- EVERY TWO MILES ALONG A TANGENT SECTION BETWEEN TURNING MOVEMENTS OUTSIDE A CITY.
- EVERY TWO BLOCKS ALONG A TANGENT SECTION BETWEEN TURNING MOVEMENTS WITHIN A CITY.
- AT ANY OTHER INTERSECTION OR DECISION POINT WHERE THE DETOUR ROUTE IS CONTRARY TO THE NORMAL, EXPECTED TURNING MANEUVER OR OTHERWISE UNCLEAR.

DETOUR SIGNS SHALL BE PLACED, WHEN POSSIBLE, NEXT TO BUT NOT BLOCKING EXISTING ROUTE MARKERS OR LANE ASSIGNMENT SIGNS. DETOUR SIGNS SHALL NOT OBSCURE OR BE OBSCURED BY OTHER EXISTING OR TEMPORARY SIGNS.

DETOUR SIGNS SHALL BE ERECTED AND/OR UNCOVERED PRIOR TO THE ROAD OR RAMP BEING CLOSED TO TRAFFIC BUT NO EARLIER THAN FOUR HOURS PRIOR TO THE CLOSURE. DETOUR SIGNS SHALL BE COVERED AND/OR REMOVED NO LATER THAN FOUR HOURS FOLLOWING THE ROAD OR RAMP RE-OPENING TO TRAFFIC.

PAYMENT FOR ACCEPTED QUANTITIES WILL BE MADE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL BE FOR ALL MATERIALS, LABOR, INCIDENTALS AND EQUIPMENT FOR FURNISHING, PROPER SIGN PLACEMENT AND SIZING, TIMELY ERECTING AND/OR UNCOVERING OF SIGNS, MAINTAINING SIGNS, AND TIMELY COVERING AND/OR REMOVING SIGNS AND SUPPORTS.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY. ITEM 614 - DETOUR SIGNING = LUMP SUM

DELINEATION OF PORTABLE AND PERMANENT BARRIER

BARRIER REFLECTORS AND OBJECT MARKERS SHALL BE INSTALLED ON ALL PORTABLE BARRIER (PB) USED FOR TRAFFIC CONTROL AND ON PERMANENT CONCRETE BARRIER (INCLUDING BRIDGE PARAPETS) LOCATED WITHIN 5 FEET OF THE EDGE OF THE ADJACENT TRAVEL LANE.

DELINEATION OF PORTABLE AND PERMANENT BARRIER (CONTINUED)

BARRIER REFLECTORS SHALL CONFORM TO C&MS 626, EXCEPT THAT THE SPACING SHALL BE AS PER TRAFFIC SCD MT-101.70. OBJECT MARKERS AND THEIR INSTALLATION SHALL CONFORM TO C&MS 614.03 AND SCD MT-101.70. WHEN THE PB CONTAINS GLARE SCREEN, ONE SET OF THREE VERTICAL STRIPES OF SHEETING SHALL BE CONSIDERED EQUIVALENT TO AN OBJECT MARKER, ONE-WAY.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE PLANS AND CARRIED TO THE GENERAL SUMMARY:

ITEM 614, BARRIER REFLECTOR, TYPE 1 (ONE-WAY) = 120 EACH
ITEM 614, OBJECT MARKER, 1-WAY = 120 EACH

ITEM 614, WORK ZONE IMPACT ATTENUATOR FOR 24" WIDE HAZARDS UNIDIRECTIONAL

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING A NONGATING IMPACT ATTENUATOR. FURNISH AN IMPACT ATTENUATOR FROM THE OFFICE OF ROADWAY ENGINEERING'S APPROVED LIST FOR WORK ZONE IMPACT ATTENUATORS, FROM THE ROADWAY STANDARDS APPROVED PRODUCTS WEB PAGE.

INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE CONTRACTOR SHALL REPAIR OR REPLACE A DAMAGED UNIT WITHIN 24 HOURS OF A DAMAGING IMPACT.

WHEN GATING IMPACT ATTENUATORS ARE DESIRED, THE CONTRACTOR SHALL SUBMIT DOCUMENTATION TO THE ENGINEER FOR ACCEPTANCE.

THE COST FOR THE ADDITIONAL BARRIER REQUIRED FOR A GATING IMPACT ATTENUATOR SHALL BE INCLUDED IN THE COST OF THE GATING IMPACT ATTENUATOR.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT AND MAINTAIN A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED BACKUPS, TRANSITIONS, LEVELING PADS, HARDWARE AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

FLOODLIGHTING

FLOODLIGHTING OF THE WORK SITE FOR OPERATIONS CONDUCTED DURING NIGHTTIME PERIODS SHALL BE ACCOMPLISHED SO THAT THE LIGHTS DO NOT CAUSE GLARE TO THE DRIVERS ON THE ROADWAY. TO ENSURE THE ADEQUACY OF THE FLOODLIGHT PLACEMENT, THE CONTRACTOR AND THE ENGINEER SHALL DRIVE THROUGH THE WORK SITE EACH NIGHT WHEN THE LIGHTING IS IN PLACE AND OPERATIVE PRIOR TO COMMENCING ANY WORK. IF GLARE IS DETECTED, THE LIGHT PLACEMENT AND SHIELDING SHALL BE ADJUSTED TO THE SATISFACTION OF THE ENGINEER BEFORE WORK PROCEEDS.

PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC.

ITEM 614 - LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS

USE OF LAW ENFORCEMENT OFFICERS (LEOS) BY CONTRACTORS OTHER THAN THE USES SPECIFIED BELOW WILL NOT BE PERMITTED AT PROJECT COST. LEOS SHOULD NOT BE USED WHERE THE OMUTCD INTENDS THAT FLAGGERS BE USED.

IN ADDITION TO THE REQUIREMENTS OF C&MS 614 AND THE OMUTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHALL BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS:

- DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED.
- DURING A TRAFFIC SIGNAL INSTALLATION WHEN IMPACTING THE NORMAL FUNCTION OF THE SIGNAL OR THE FLOW OF TRAFFIC, OR WHEN TRAFFIC NEEDS TO BE DIRECTED THROUGH AN ENERGIZED TRAFFIC SIGNAL CONTRARY TO THE SIGNAL DISPLAY (E.G., DIRECTING MOTORISTS THROUGH A RED LIGHT).

IN ADDITION TO THE REQUIREMENT OF C&MS 614 AND THE OMUTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHOULD BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS AS APPROVED BY THE ENGINEER:

- FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN A NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED FOR LONG-TERM LANE CLOSURES/SHIFTS (FOR THE FIRST AND LAST DAY OF MAJOR CHANGES IN TRAFFIC CONTROL SETUP).

IN GENERAL, LEOS SHOULD BE POSITIONED IN ADVANCE OF AND ON THE SAME SIDE AS THE LANE RESTRICTION OR AT THE POINT OF ROAD CLOSURE, AND TO MANUALLY CONTROL TRAFFIC MOVEMENTS THROUGH SIGNALIZED INTERSECTIONS IN WORK ZONES.

LEOS SHOULD NOT FORGO THEIR TRAFFIC CONTROL RESPONSIBILITIES TO APPREHEND MOTORISTS FOR ROUTINE TRAFFIC VIOLATIONS. HOWEVER, IF A MOTORIST'S ACTIONS ARE CONSIDERED TO BE RECKLESS, THEN PURSUIT OF THE MOTORIST IS APPROPRIATE.

THE LEOS WORK AT THE DIRECTION OF THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR SECURING THE SERVICES OF THE LEOS WITH THE APPROPRIATE AGENCIES AND COMMUNICATING THE INTENTIONS OF THE PLANS WITH RESPECT TO DUTIES OF THE LEOS. THE ENGINEER SHALL HAVE FINAL CONTROL OVER THE LEOS' DUTIES AND PLACEMENT, AND WILL RESOLVE ANY ISSUES THAT MAY ARISE BETWEEN THE TWO PARTIES.

ENSURE PROVIDED LEOS HAVE BEEN TRAINED APPROPRIATE TO THE JOB DECISIONS THEY ARE REQUIRED TO MAKE WHILE ON THE PROJECT, IN ACCORDANCE WITH C&MS 614.03.

ITEM 614 - LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS (CONTINUED)

THE LEO SHALL REPORT IN TO THE CONTRACTOR PRIOR TO THE START OF THE SHIFT, IN ORDER TO RECEIVE INSTRUCTIONS REGARDING THE SPECIFIC WORK ASSIGNMENTS DURING HIS/HER SHIFT. THE LEO IS EXPECTED TO STAY AT THE PROJECT SITE FOR THE ENTIRE DURATION OF HIS/HER SHIFT. THE LEO SHALL REPORT TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT. SHOULD IT BE NECESSARY TO LEAVE THE PROJECT SITE, THE LEO SHALL NOTIFY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE THE LEO WITH A TWO-WAY COMMUNICATION DEVICE WHICH SHALL BE RETURNED TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT.

LEOS (WITH PATROL CAR) REQUIRED BY THE TRAFFIC MAINTENANCE TASKS ABOVE SHALL BE PAID FOR ON A UNIT PRICE (HOURLY) BASIS UNDER ITEM 614, LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE 50 HOURS

THE HOURS PAID SHALL INCLUDE ANY MINIMUM SHOW-UP TIME REQUIRED BY THE LAW ENFORCEMENT AGENCY INVOLVED.

ANY ADDITIONAL COSTS (ADMINISTRATIVE OR OTHERWISE) INCURRED BY THE CONTRACTOR TO OBTAIN THE SERVICES OF A LEO ARE INCLUDED WITH THE BID UNIT PRICE FOR ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE.

PART-WIDTH CONSTRUCTION

BECAUSE OF THE NECESSITY TO BUILD THIS PROJECT UNDER TRAFFIC AND TO CONSTRUCT THE FULL PAVEMENT WIDTH IN STAGES, EXERCISE CARE TO PREVENT THE CONSTRUCTION OF A BUTT JOINT IN THE BASE COURSES. LAP LONGITUDINAL JOINTS AS SHOWN ON STANDARD CONSTRUCTION DRAWING BP-3.1.

DESIGNATED MAINTENANCE OF TRAFFIC ROUTE

PRIOR TO INSTALLING TEMPORARY TRAFFIC CONTROL AND THROUGHOUT THE DURATION OF CONSTRUCTION THE CONTRACTOR SHALL REPAIR THE ROAD ALONG DETOUR ROUTE TO A CONDITION WHICH IS REASONABLY SMOOTH AND FREE FROM HOLES, RUTS, RIDGES, BUMPS, DUST AND STANDING WATER WITHIN THE LIMITS OF THE MOT. ALL SUCH WORK SHALL BE PERFORMED WHEN AND AS DETERMINED BY THE ENGINEER INCLUDING LONGITUDINAL JOINT FAILURE AND SHOULDER FAILURE.

THE FOLLOWING ESTIMATED QUANTITIES ARE PROVIDED FOR USE AS DETERMINED BY THE ENGINEER TO MAINTAIN AND SUBSEQUENTLY RESTORE THE DESIGNATED LOCAL DETOUR ROUTE.

ITEM 614, ASPHALT CONCRETE FOR MAINTAINING TRAFFIC 30 CU. YD.

CALCULATED CO CHECKED SJB

MAINTENANCE OF TRAFFIC GENERAL NOTES

DEL-42-1.41

TRUCK MOUNTED ATTENUATOR (TMA) - TWO LANE ROADS

WHEN WORKING IN A CLOSED LANE OR SHOULDER ON A TWO-LANE HIGHWAY WITHOUT TEMPORARY OR PERMANENT TRAFFIC BARRIERS SEPARATING THE WORK AREA FROM THE TRAVELED LANE, A TRUCK MOUNTED ATTENUATOR (TMA) SHALL BE PROVIDED TO PROTECT EACH WORK AREA IN ACCORDANCE WITH OMUTCD TYPICAL APPLICATION (TA) 4, TA-6 AND TA-17, ALONG WITH STANDARD CONSTRUCTION DRAWING (SCD) MT-97.10. THE TMA SHALL BE PLACED IN SUCH A WAY TO ADEQUATELY PROTECT THE WORKERS INSIDE THE WORK ZONE. THE TMA IS NOT INTENDED TO BE USED AS OR SUBSTITUTED FOR THE FLAGGERS AND/OR WARNING SIGNS AND DEVICES. THE TMA SHALL MEET NCHRP 350 TEST LEVEL 3 CRITERIA FOR STANDARD AND OPTIONAL TESTS AT 100 KM/H (62 MPH) FOR DESIGN IMPACTS. THE COST FOR PROVIDING THE TMA SHALL INCLUDE ALL MATERIAL, LABOR, EQUIPMENT, AND HARDWARE REPLACEMENT AND IS TO BE INCLUDED IN THE LUMP SUM BID PRICE FOR ITEM 614 MAINTAINING TRAFFIC.

PUBLIC OUTREACH AND NOTIFICATION (ROAD CLOSURE)

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE DISTRICT 6 PUBLIC INFORMATION OFFICE VIA EMAIL AT D06.PIO@DOT.OHIO.GOV TO COORDINATE EFFORTS TO NOTIFY ALL LOCAL COUNTY, STATE AND FEDERAL EMERGENCY SERVICES, SCHOOL DISTRICTS AND ADJACENT RESIDENTS AND BUSINESSES OF THE UPCOMING CLOSURE. ADVANCE NOTIFICATION SHALL OCCUR NO LATER THAN TWENTY-ONE (21) DAYS PRIOR TO CLOSING THE ROAD. IF, SUBSEQUENT TO THE ADVANCE NOTIFICATION, THE START DATE IS CHANGED, THEN A NEW SEVEN (7) DAY NOTIFICATION WILL BE REQUIRED. THE ROAD CANNOT BE CLOSED UNLESS PRIOR NOTIFICATION HAS BEEN ACCOMPLISHED. THE SAME PARTIES SHALL BE NOTIFIED WHEN THE CLOSURE HAS CONCLUDED AND THE ROAD IS BACK OPEN TO TRAFFIC. ALL NOTIFICATIONS SHALL BE MADE UTILIZING THE TEMPLATE PROVIDED BY THE DISTRICT 6 PUBLIC INFORMATION OFFICE.

COOPERATION BETWEEN CONTRACTORS:

THE CONTRACTOR WILL BE REQUIRED TO COORDINATE WORK WITH OTHER ODOT PROJECTS IDENTIFIED BELOW. IT IS IMPERATIVE THAT THE CONTRACTORS COOPERATE FULLY WITH EACH OTHER AS OUTLINED IN SECTION 105.08 OF ODOT 2016 CONSTRUCTION AND MATERIAL SPECIFICATIONS. ALL MAINTENANCE OF TRAFFIC SHALL BE COORDINATED BETWEEN PROJECTS AND NOT BE IN CONFLICT WITH ONE ANOTHER.

PID 107780, DEL-745-0.85

MAINTENANCE OF TRAFFIC FOR MARKING PAVEMENT REPAIRS

PROVIDE LANE CLOSURES AS PER THE MAINTENANCE OF TRAFFIC NOTES IN THESE PLANS A MINIMUM OF 24 HOURS PRIOR TO PERFORMING PAVEMENT REPAIRS TO ALLOW THE ENGINEER TO IDENTIFY AND MARK THE AREAS OF THE PAVEMENT IN NEED OF REPAIRS.

PAYMENT FOR ALL LABOR, EQUIPMENT, LAW ENFORCEMENT OFFICERS AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC.

DESIGNATED LOCAL DETOUR ROUTE

IN ADDITION TO THE OFFICIAL, SIGNED DETOUR ROUTE, A LOCAL ROUTE HAS BEEN DETERMINED TO BE THE SECONDARY, UNSIGNED DETOUR ROUTE OR "DESIGNATED LOCAL DETOUR ROUTE." THIS ROUTE IS SHOWN ON THE DETOUR MAP. DURING THE TIME THAT TRAFFIC IS DETOURED, THE CONTRACTOR SHALL MAINTAIN THIS ROUTE IN A CONDITION WHICH IS REASONABLY SMOOTH AND FREE FROM HOLES, RUTS, RIDGES, BUMPS, DUST AND STANDING WATER. ONCE THE DETOUR IS REMOVED AND TRAFFIC RETURNED TO ITS NORMAL PATTERN, THE DESIGNATED LOCAL DETOUR ROUTE SHALL BE RESTORED TO A CONDITION THAT IS EQUIVALENT TO THAT WHICH EXISTED PRIOR TO ITS USE FOR THIS PURPOSE. ALL SUCH WORK SHALL BE PERFORMED WHEN AND AS DETERMINED BY THE ENGINEER.

THE FOLLOWING ESTIMATED QUANTITIES ARE PROVIDED FOR USE AS DETERMINED BY THE ENGINEER TO MAINTAIN AND SUBSEQUENTLY RESTORE THE DESIGNATED LOCAL DETOUR ROUTE.

ITEM 614,	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC	20 CU. YD.

CALCULATED CO
CHECKED SJB

MAINTENANCE OF TRAFFIC GENERAL NOTES

DEL-42-1.41

ESTIMATED QUANTITIES

REF NO.	STATION TO STATION	SIDE	614 WORK ZONE IMPACT ATTENUATOR	614 WORK ZONE CENTER LINE, CLASS I, 642 PAINT	614 WORK ZONE CENTER LINE, CLASS III, 642 PAINT	614 WORK ZONE EDGELINE, CLASS I, 4", 642 PAINT	614 WORK ZONE EDGELINE, CLASS III, 4", 642 PAINT	614 WORK ZONE STOP LINE, CLASS I, 642 PAINT	614 WORK ZONE STOP LINE, CLASS III, 642 PAINT	615 PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A	622 PORTABLE BARRIER, 32"
			EACH	MILE	MILE	MILE	MILE	FT	FT	SY	FT
	PRE PHASE 1- BEGIN TO END			0.97							
	PHASE 1- BEGIN TO STA 104										
IA-1	71+76	RT	1								
IA-2	80+71	RT	1								
IA-3	82+80	RT	1								
IA-4	87+61	RT	1								
IA-5	87+96	RT	1								
CL-1	70+00 TO 80+86			0.21							
CL-2	82+39 TO 93+04			0.41							
SL-1	80+86	RT						12			
SL-2	82+39	LT						14			
EL-1	70+00 TO 81+09	LT				0.21					
EL-2	70+00 TO 8+50	RT				0.23					
EL-3	8+50 TO 104+00	RT				0.47					
EL-4	82+39 TO 104+00	LT				0.41					
PB-1	71+86 TO 80+60	RT									876
PB-2	82+90TO 87+51	RT									462
PB-3	88+06 TO 104+00	RT									1594
PV-1	71+78 TO 81+28	LT								716	
PV-2	82+39 TO 104+00	LT								1528	
	PHASE 1- STA 104 TO END										
IA-1	110+86	RT	1								
IA-2	112+75	RT	1								
IA-3	115+81	RT	1								
IA-4	116+21	RT	1								
IA-5	121+08	RT	1								
CL-1	104+00 TO 111+56			0.14							
CL-2	112+56 TO 123+58			0.21							
SL-1	110+68	RT						11			
SL-2	112+67	LT						22			
EL-1	104+00 TO 111+71	LT				0.15					
EL-2	104+00 TO 17+50	RT				0.16					
EL-3	112+79 TO 121+55	LT				0.16					
EL-4	17+50 TO 123+58	RT				0.24					
PB-1	104+00 TO 110+76	RT									676
PB-2	112+85 TO 115+71	RT									286
PB-3	116+31 TO 120+98	RT									467
PV-1	108+50 TO 111+71	LT								246	
PV-2	112+79 TO 123+00	LT								228	
	PHASE 1A & PHASE 1B										
PB-1	80+52 TO 83+00	RT									249
PB-2	109+78 TO 111+95	RT									230
	PHASE 2- BEGIN TO STA 104										
IA-1	72+73	LT	1								
IA-2	74+06	LT	1								
IA-3	84+41	LT	1								
IA-4	79+17	LT	1								
IA-5	79+52	LT	1								
IA-6	SR-257	LT	1								
IA-7	82+44	LT	1								
IA-8	85+33	LT	1								
IA-9	85+68	LT	1								
CL-1	70+00 TO 80+86			0.21							
CL-2	10+24 TO 12+84			0.05							
CL-3	7+00 TO 9+07			0.04							
CL-4	82+39 TO 93+04			0.20							
SL-1	80+86	RT						12			
SL-2	10+24	LT						11			
SL-3	82+39	LT						12			
SL-4	9+07	RT						15			

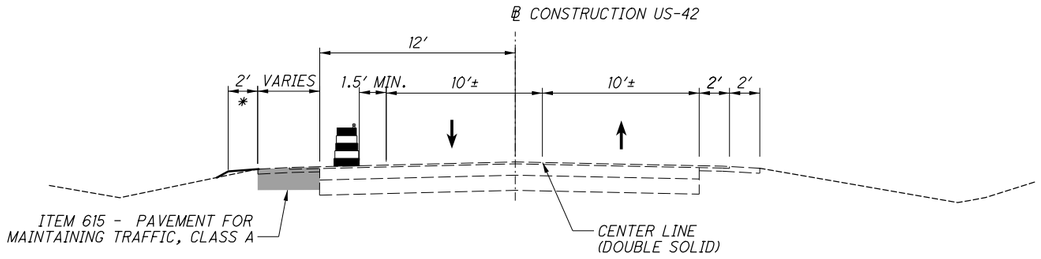
ESTIMATED QUANTITIES

REF NO.	STATION TO STATION	SIDE	614 WORK ZONE IMPACT ATTENUATOR	614 WORK ZONE CENTER LINE, CLASS I, 642 PAINT	614 WORK ZONE CENTER LINE, CLASS III, 642 PAINT	614 WORK ZONE EDGELINE, CLASS I, 4", 642 PAINT	614 WORK ZONE EDGELINE, CLASS III, 4", 642 PAINT	614 WORK ZONE STOP LINE, CLASS I, 642 PAINT	614 WORK ZONE STOP LINE, CLASS III, 642 PAINT	615 PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A	622 PORTABLE BARRIER, 32"
			EACH	MILE	MILE	MILE	MILE	FT	FT	SY	FT
	PHASE 2- BEGIN TO STA 104 (CONTINUED)										
EL-1	70+00 TO 12+84	LT				0.28					
EL-2	70+00 TO 80+86	RT				0.21					
EL-3	12+47 TO 104+00	LT				0.46					
EL-4	7+00 TO 104+00	RT				0.47					
PB-1	72+83 TO 73+96	LT									113
PB-2	84+51 TO 79+07	LT									456
PB-3	79+62 TO 11+45	LT									362
PB-4	82+55 TO 85+23	LT									213
PB-5	85+78 TO 104+00	LT									1822
PV-1	71+35 TO 75+61	RT								107	
PV-2	10+50 TO 12+47	RT								87	
PV-3	87+98 TO 102+37	RT								439	
PV-4	7+00 TO 8+32	RT								29	
	PHASE 2- STA 104 TO END										
IA-1	121+03	LT	1								
IA-2	121+37	LT	1								
IA-3	122+50	LT	1								
CL-1	104+00 TO 123+67			0.37							
CL-3	17+02 TO 18+45			0.02							
SL-1	18+45	RT						16			
EL-1	104+00 TO 124+22	LT				0.38					
EL-2	104+00 TO SR-257	RT				0.14					
EL-3	SR-257 TO 123+67	RT				0.10					
PB-1	104+00 TO 120+93	LT									1693
PB-2	121+47 122+40	LT									93
PV-1	117+90 TO 123+67	LT								240	
	PHASE 2A- BEGIN TO STA 104										
IA-1	10+44	LT	1								
CL-1	10+24 TO 13+00			0.01							
SL-1	10+24	LT						11			
SL-2	82+39	LT						12			
EL-1	81+00 TO 13+00	LT				0.07					
EL-2	13+00 TO 82+50	LT				0.06					
PB-1	81+00 TO 10+44	LT									117
PV-1	10+24 TO 13+00	RT								144	
	PHASE 3 - BEGIN TO END										
	BEGIN TO END	RT/LT			2.44		3.38		376		
	TOTALS CARRIED TO GENERAL SUBSUMMARY		**23**	**2.84**	**2.44**	**4.21**	**3.38**	**148**	**376**	**3765**	**9709**

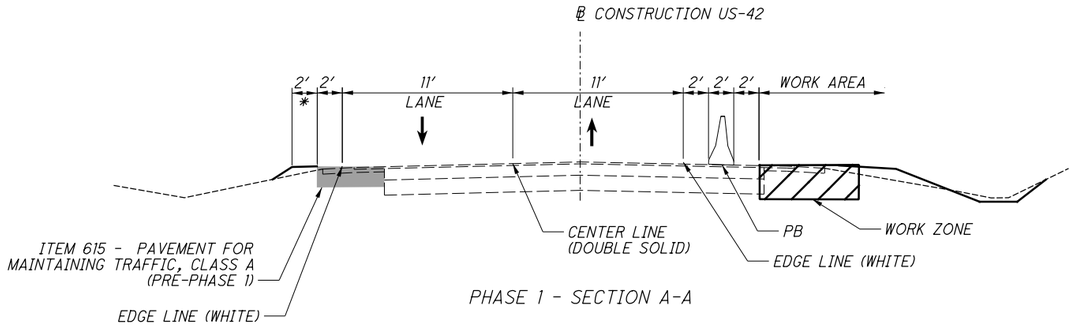
CALCULATED CO CHECKED SJB

MAINTENANCE OF TRAFFIC SUBSUMMARY

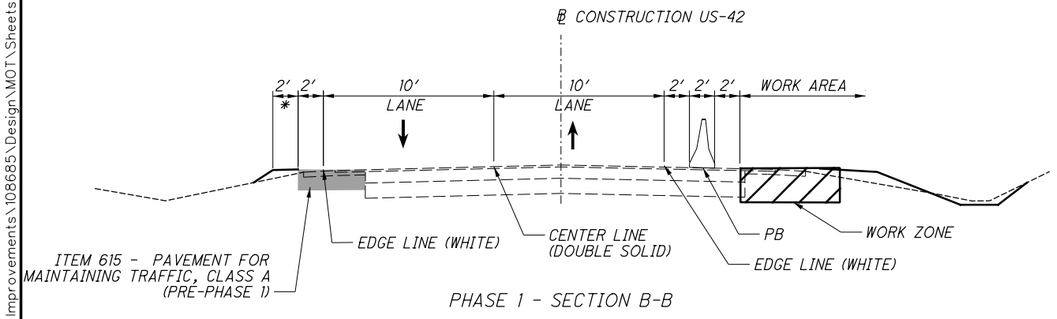
DEL-42-1.41



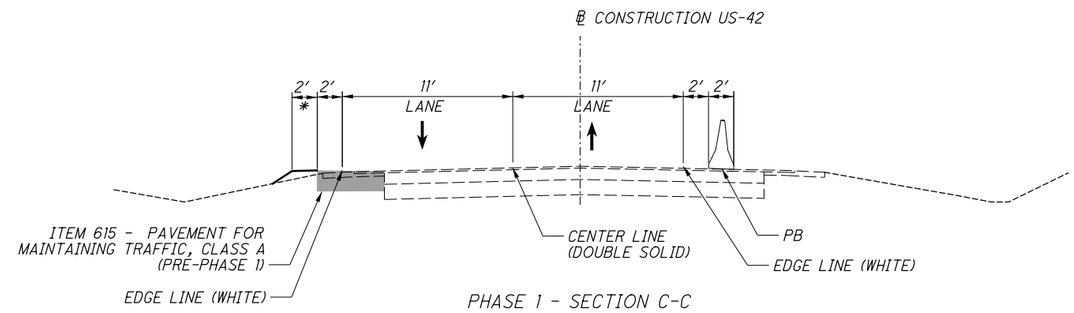
PRE PHASE 1 - TEMPORARY PAVEMENT INSTALLATION



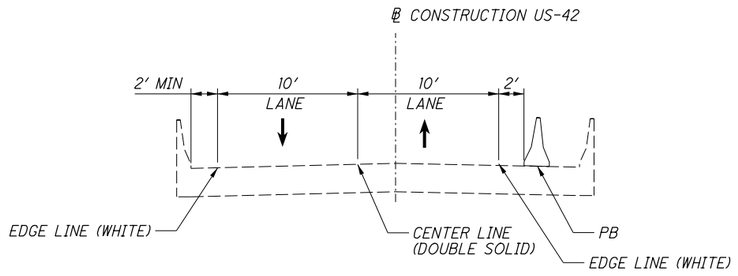
PHASE 1 - SECTION A-A



PHASE 1 - SECTION B-B



PHASE 1 - SECTION C-C



PHASE 1 - SECTION D-D

NOTES

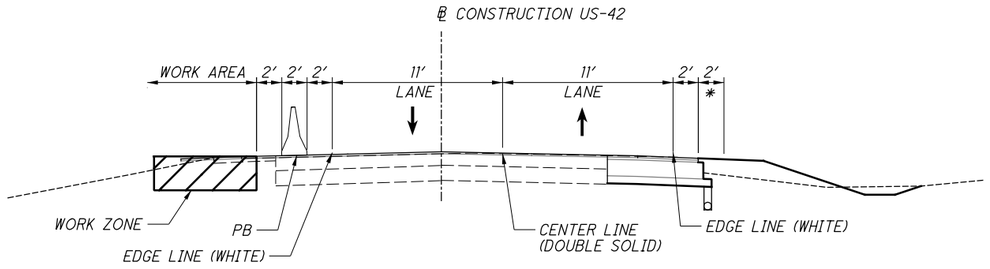
*A 2' GRADED SHOULDER SHALL BE PROVIDED ALONG THE PAVED SHOULDER WHEN THE PAVED SHOULDER IS AT A MINIMUM 2' FROM THE EDGE OF TRAVEL WAY. THE GRADED SHOULDER SHALL BE CONSTRUCTED OF ITEM 411 AGGREGATE PLACED A MINIMUM WITH 6 INCHES DEEP.

CALCULATED CO
CHECKED SJB

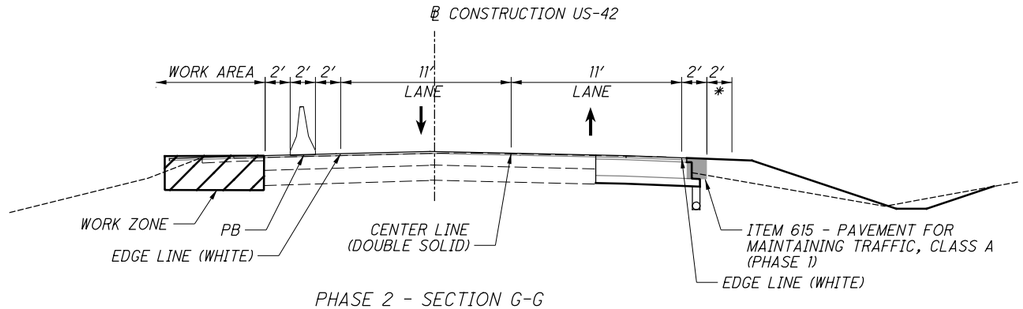
MAINTENANCE OF TRAFFIC
PRE PHASE 1 AND PHASE 1 TYPICAL SECTIONS

DEL-42-1.41

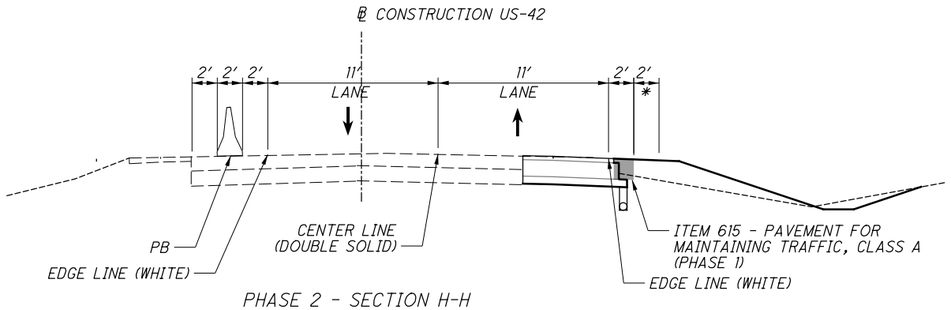
12
107



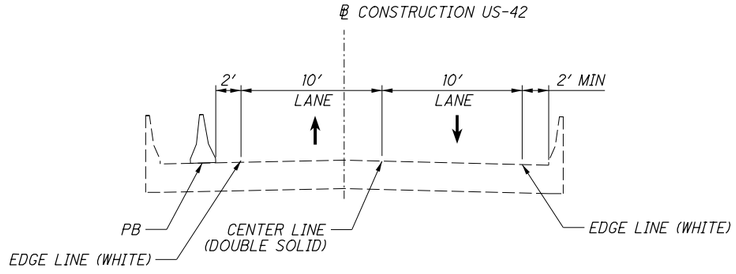
PHASE 2 - SECTION F-F



PHASE 2 - SECTION G-G



PHASE 2 - SECTION H-H



PHASE 2 - SECTION I-I

NOTES

*A 2′ GRADED SHOULDER SHALL BE PROVIDED ALONG THE PAVED SHOULDER WHEN THE PAVED SHOULDER IS AT A MINIMUM 2′ FROM THE EDGE OF TRAVEL WAY. THE GRADED SHOULDER SHALL BE CONSTRUCTED OF ITEM 411 AGGREGATE PLACED A MINIMUM WITH 6 INCHES DEEP.

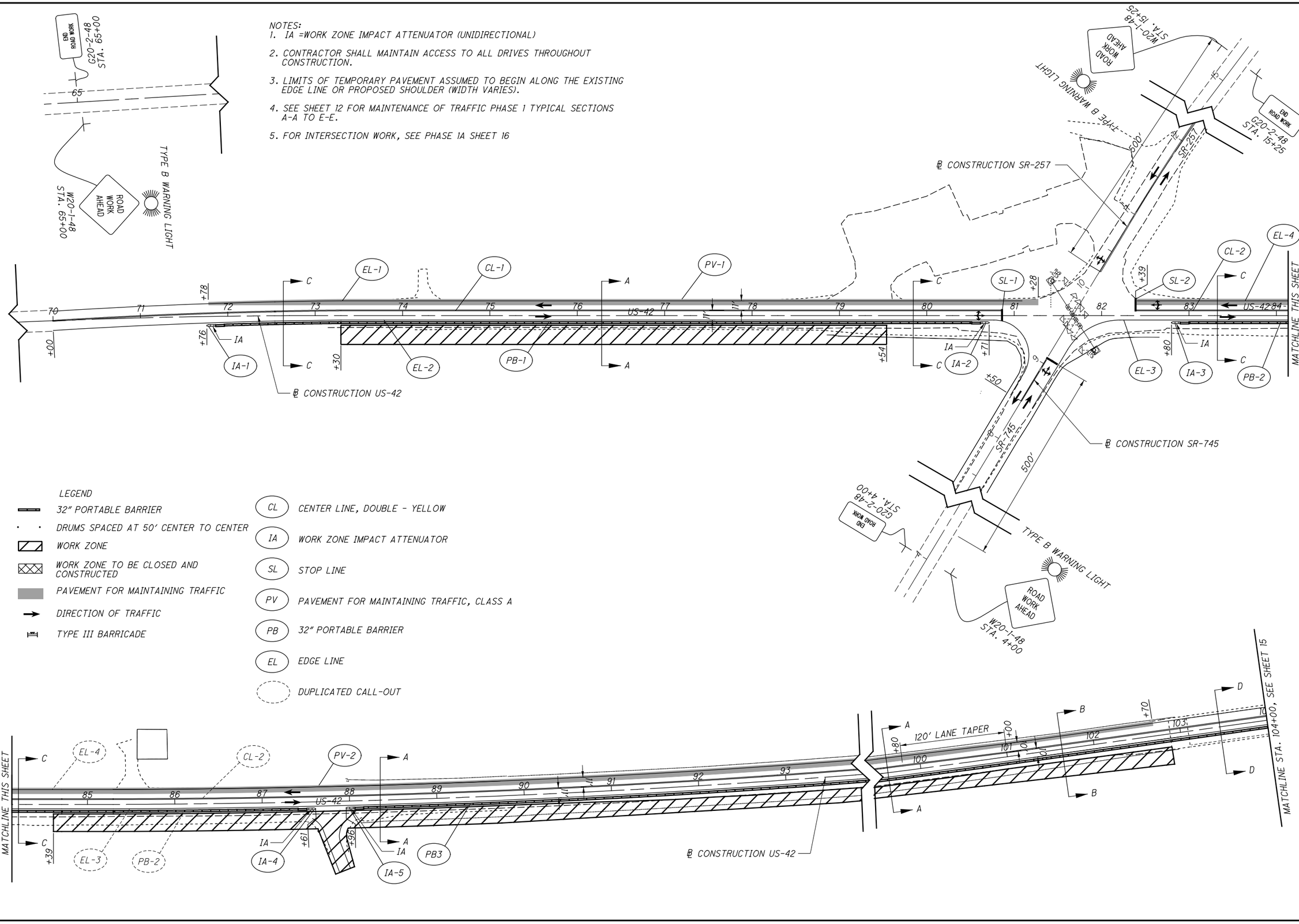
MAINTENANCE OF TRAFFIC PHASE 2 TYPICAL SECTIONS

DEL-42-1.41

13
107

CALCULATED CO
CHECKED SJB

NOTES:
1. IA =WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)
2. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL DRIVES THROUGHOUT CONSTRUCTION.
3. LIMITS OF TEMPORARY PAVEMENT ASSUMED TO BEGIN ALONG THE EXISTING EDGE LINE OR PROPOSED SHOULDER (WIDTH VARIES).
4. SEE SHEET 12 FOR MAINTENANCE OF TRAFFIC PHASE 1 TYPICAL SECTIONS A-A TO E-E.
5. FOR INTERSECTION WORK, SEE PHASE 1A SHEET 16

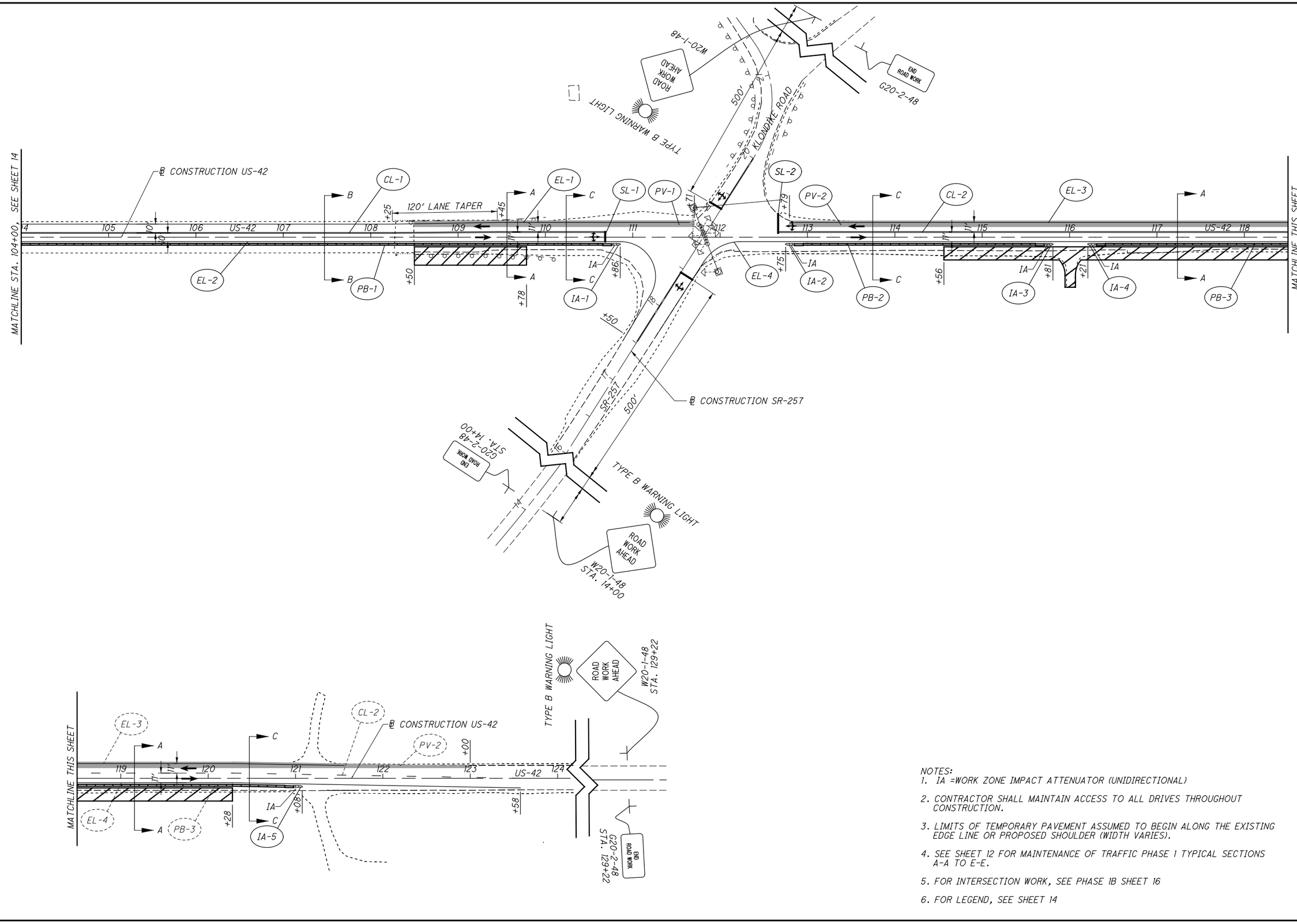


HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED SJB
CHECKED CO

MAINTENANCE OF TRAFFIC PHASE 1
BEGIN TO STA. 104+00

DEL-42-1.41



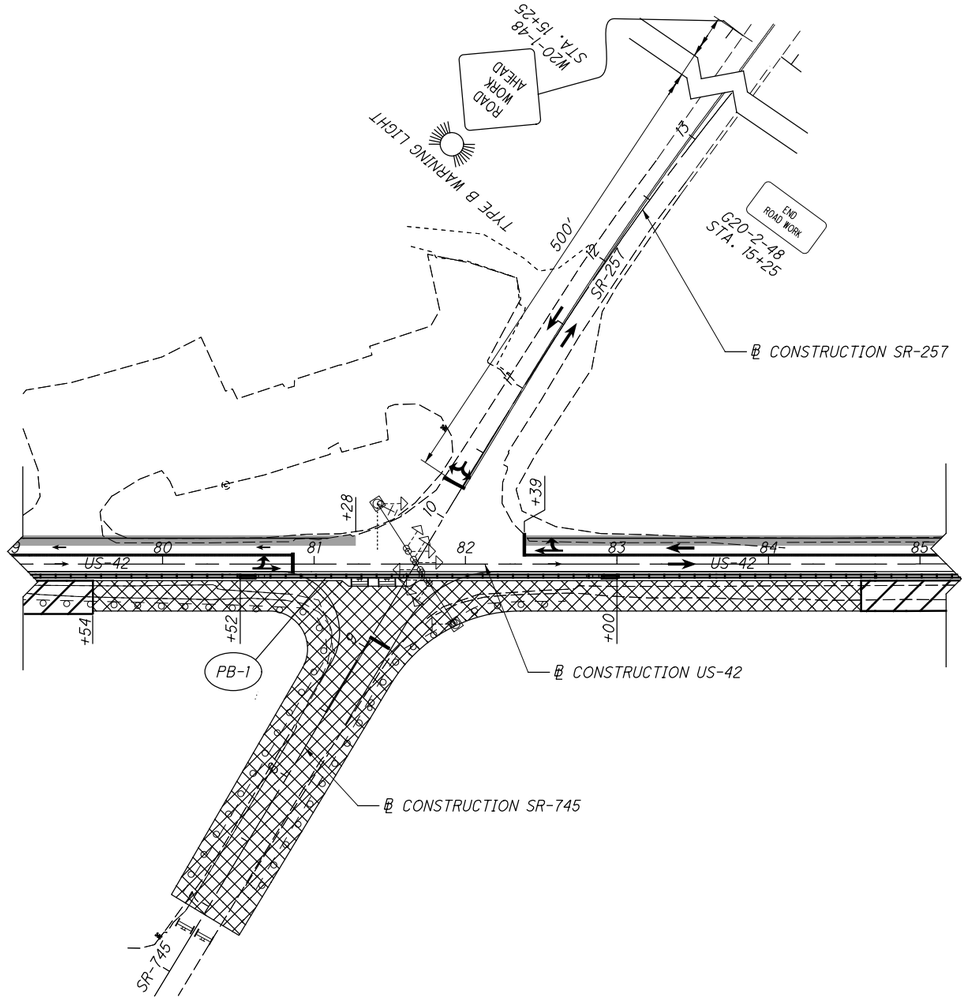
NOTES:
1. IA =WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)
2. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL DRIVES THROUGHOUT CONSTRUCTION.
3. LIMITS OF TEMPORARY PAVEMENT ASSUMED TO BEGIN ALONG THE EXISTING EDGE LINE OR PROPOSED SHOULDER (WIDTH VARIES).
4. SEE SHEET 12 FOR MAINTENANCE OF TRAFFIC PHASE 1 TYPICAL SECTIONS A-A TO E-E.
5. FOR INTERSECTION WORK, SEE PHASE 1B SHEET 16
6. FOR LEGEND, SEE SHEET 14

HORIZONTAL SCALE IN FEET
0 25 50 100

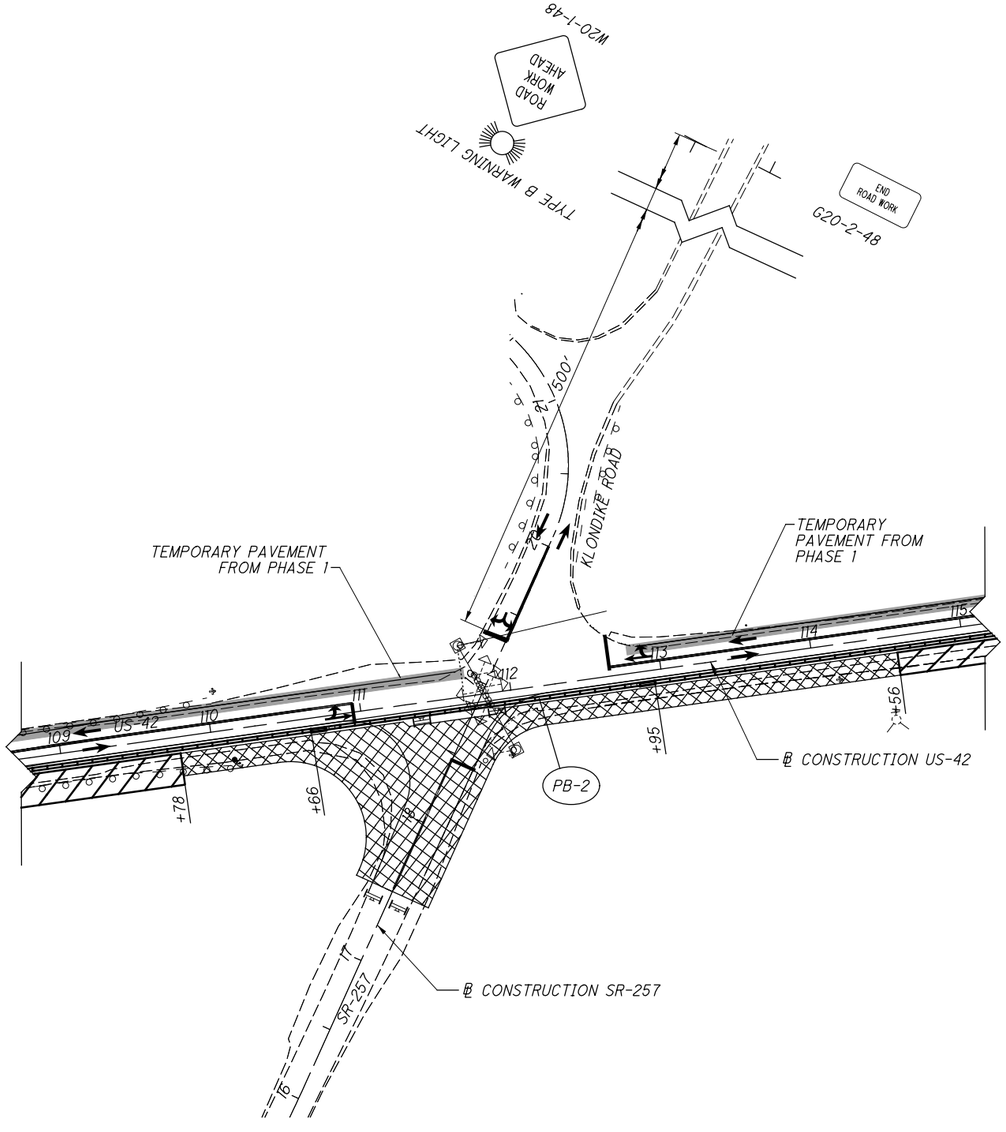
CALCULATED SJB
CHECKED CO

MAINTENANCE OF TRAFFIC PHASE 1
STA. 104+00 TO END

DEL-42-1.41



PHASE 1A



PHASE 1B

NOTES:
1. IA =WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)
2. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL DRIVES THROUGHOUT CONSTRUCTION.
3. LIMITS OF TEMPORARY PAVEMENT ASSUMED TO BEGIN ALONG THE EXISTING EDGE LINE OR PROPOSED SHOULDER (WIDTH VARIES).
4. IN PHASE 1A TYPE III BARRICADES ARE ADDED TO THE MAINTENANCE OF TRAFFIC IN PHASE 1 TO CLOSE THE INTERSECTION, SEE SHEET 14.
5. SEE PHASE 1A DETOUR PLAN FOR ADDITIONAL INFORMATION SHEET 20.
6. IN PHASE 1B TYPE III BARRICADES ARE ADDED TO THE MAINTENANCE OF TRAFFIC IN PHASE 1 TO CLOSE THE INTERSECTION, SEE SHEET 15.
7. SEE PHASE 1B DETOUR PLAN FOR ADDITIONAL INFORMATION SHEET 21.
8. FOR LEGEND, SEE SHEET 14

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED SJB
CHECKED CO

MAINTENANCE OF TRAFFIC PHASE 1A & PHASE 1B

DEL-42-1.41

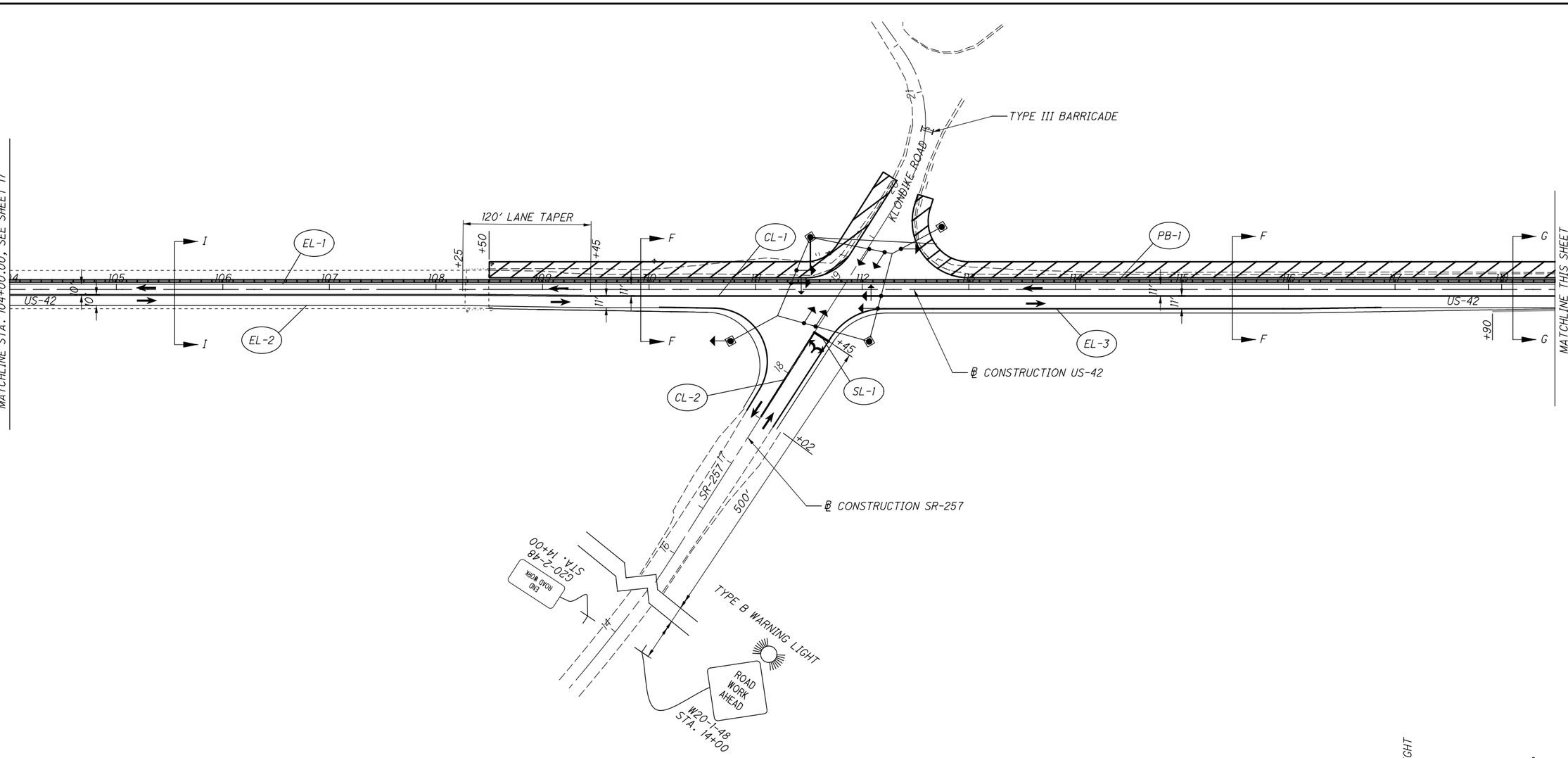
NOTES:
1. IA =WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)
2. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL DRIVES THROUGHOUT CONSTRUCTION.
3. LIMITS OF TEMPORARY PAVEMENT ASSUMED TO BEGIN ALONG THE EXISTING EDGE LINE OR PROPOSED SHOULDER (WIDTH VARIES).
4. SEE SHEET 13 FOR MAINTENANCE OF TRAFFIC PHASE 1 TYPICAL SECTIONS F-F TO I-I.
5. FOR LEGEND, SEE SHEET 14

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED SJB
CHECKED CO

MAINTENANCE OF TRAFFIC PHASE 2
BEGIN TO STA. 104+00

DEL-42-1.41



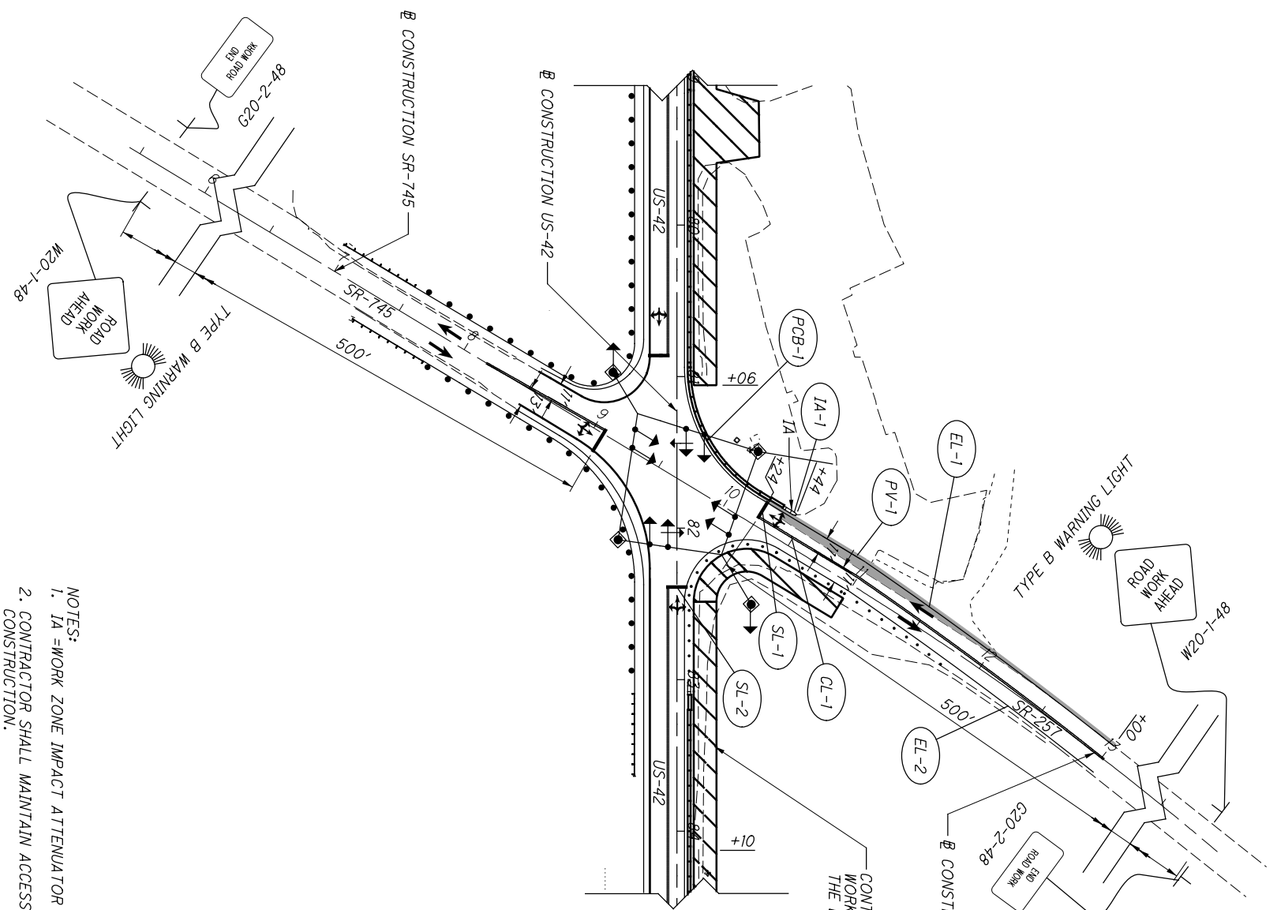
NOTES:
1. IA =WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)
2. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL DRIVES THROUGHOUT CONSTRUCTION.
3. LIMITS OF TEMPORARY PAVEMENT ASSUMED TO BEGIN ALONG THE EXISTING EDGE LINE OR PROPOSED SHOULDER (WIDTH VARIES).
4. SEE SHEET 13 FOR MAINTENANCE OF TRAFFIC PHASE 1 TYPICAL SECTIONS F-F TO J-J.
5. SEE SHEET 22 FOR KLONDIKE RD. DETOUR DETAILS.
6. FOR LEGEND, SEE SHEET 14

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED SJB
CHECKED CO

MAINTENANCE OF TRAFFIC PHASE 2
STA. 104+00 TO END

DEL-42-1.41



NOTES:
1. IA =WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)
2. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL DRIVES THROUGHOUT CONSTRUCTION.
3. LIMITS OF TEMPORARY PAVEMENT ASSUMED TO BEGIN ALONG THE EXISTING EDGE LINE OR PROPOSED SHOULDER (WIDTH VARIES).
4. FOR LEGEND, SEE SHEET 14

107 / 191	DEL-42-1.41	MAINTENANCE OF TRAFFIC PHASE 2A	CALCULATED SJB / CHECKED CO	0 50 25 100 HORIZONTAL SCALE IN FEET

1 — DETOUR AHEAD — W20-2-36

2 — M1-5-24-3 — DETOUR ↑ — M4-9C-30

3 — M1-5-24-3 — DETOUR ← — M4-9L-30

4 — M1-5-24-3 — DETOUR → — M4-9R-30

5 — M1-5-24-3 — DETOUR ↰ — M4-9LT-30

6 — M1-5-24-3 — DETOUR ↱ — M4-9RT-30

10 — M1-5-24-3 — DETOUR — M4-8-12 — ↰ — M5-3-30

7 — ROAD CLOSED AHEAD — W20-3-36 — 500 FEET — W16-2P-18

8 — ROAD CLOSED AHEAD — W20-3-36 — 1000 FEET — W16-2P-18

9 — END DETOUR — M4-8A-12

10 — SR-745 NORTH — D3-1-48 (ORANGE/BLACK) — CLOSED AHEAD — (SPECIAL) W20-2-36 — FOLLOW DETOUR — (SPECIAL) M4-8A-12

11 — SR-745 SOUTH — D3-1-48 (ORANGE/BLACK) — CLOSED AHEAD — (SPECIAL) W20-2-36 — FOLLOW DETOUR — (SPECIAL) M4-8A-12

A — NORTH — M3-1-24

B — SOUTH — M3-3-24

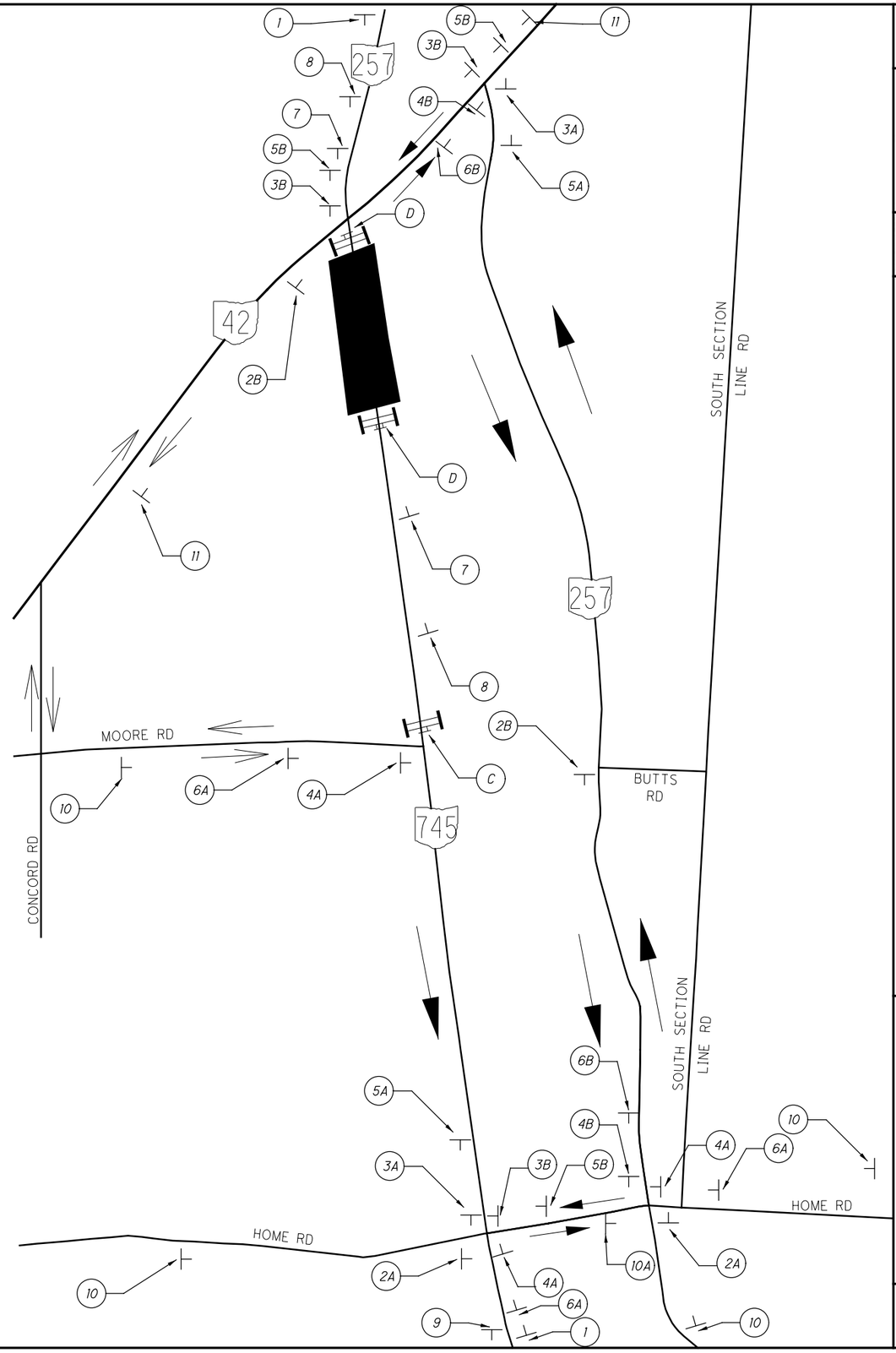
C — TYPE B YELLOW LIGHTS — ROAD CLOSED AHEAD / NO ACCESS TO 42 / LOCAL TRAFFIC ONLY — SPECIAL (60"X30") BLACK ON ORANGE — TYPE III BARRICADE 72" PORTABLE

D — TYPE B YELLOW LIGHTS — ROAD CLOSED — R11-2-48 — TYPE III BARRICADE 72" PORTABLE

NOTE
DETOUR SIGNS SHALL NOT BE ATTACHED TO LIGHT POLES LOCATED ALONG EXISTING BRIDGE.

LEGEND:

- TYPE III BARRICADE, PER SCD MT-101.60
- WORK ZONE
- DETOUR SIGN LOCATION
- SIGNED DETOUR ROUTE
- UNSIGNED LOCAL DETOUR ROUTE



HORIZONTAL SCALE IN FEET: 0, 10, 20, 40

CALCULATED CO
CHECKED SJB

MAINTENACE OF TRAFFIC
PHASE 1A - SR 745 DETOUR MAP

DEL-42-1.41

20
107

(1) DETOUR AHEAD — W20-2-36

(2) 257 — M1-5-24-3 — DETOUR ↑ — M4-9C-30

(3) 257 — M1-5-24-3 — DETOUR ← — M4-9L-30

(4) 257 — M1-5-24-3 — DETOUR → — M4-9R-30

(5) 257 — M1-5-24-3 — DETOUR ↰ — M4-9LT-30

(6) 257 — M1-5-24-3 — DETOUR ↱ — M4-9RT-30

(10) 257 — M1-5-24-3 — DETOUR — M4-8-12 ↰ — M5-3-30

(11) 257 — M1-5-24-3 — DETOUR — M4-8-12 ↑ — M5-3(MOD)-30

(7) ROAD CLOSED AHEAD — W20-3-36 — 500 FEET — W16-2P-18

(8) ROAD CLOSED AHEAD — W20-3-36 — 1000 FEET — W16-2P-18

(9) END DETOUR — M4-8A-12

(10) SR-257 NORTH — D3-1-48 (ORANGE/BLACK) — CLOSED AHEAD — (SPECIAL) W20-2-36 — FOLLOW DETOUR — (SPECIAL) M4-8A-12

(11) SR-257 SOUTH — D3-1-48 (ORANGE/BLACK) — CLOSED AHEAD — (SPECIAL) W20-2-36 — FOLLOW DETOUR — (SPECIAL) M4-8A-12

(A) NORTH — M3-1-24

(B) SOUTH — M3-3-24

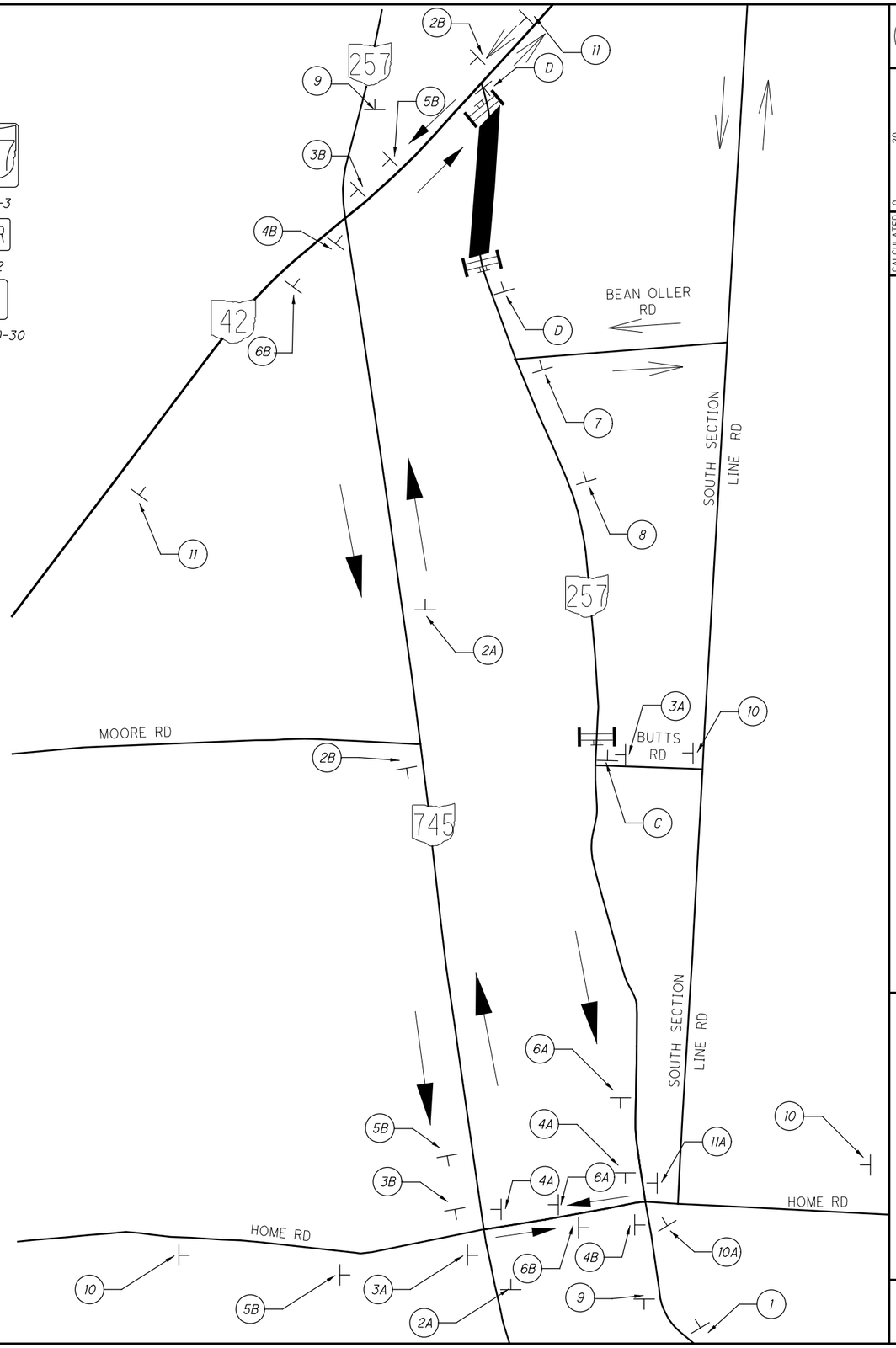
(C) TYPE B YELLOW LIGHTS — ROAD CLOSED AHEAD / NO ACCESS TO 42 / LOCAL TRAFFIC ONLY — SPECIAL (60"X30") BLACK ON ORANGE — TYPE III BARRICADE 72" PORTABLE

(D) TYPE B YELLOW LIGHTS — ROAD CLOSED — R11-2-48 — TYPE III BARRICADE 72" PORTABLE

NOTE
DETOUR SIGNS SHALL NOT BE ATTACHED TO LIGHT POLES LOCATED ALONG EXISTING BRIDGE.

LEGEND:

- TYPE III BARRICADE, PER SCD MT-101.60
- WORK ZONE
- DETOUR SIGN LOCATION
- SIGNED DETOUR ROUTE
- UNSIGNED LOCAL DETOUR ROUTE



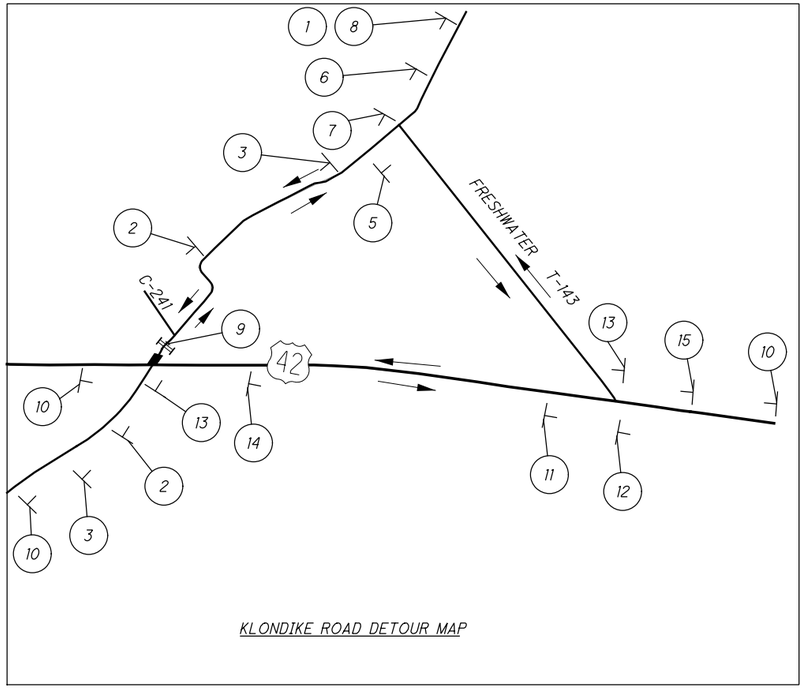
HORIZONTAL SCALE IN FEET: 0, 10, 20, 40

CALCULATED CO
CHECKED SJB

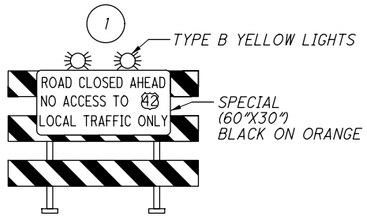
MAINTENACE OF TRAFFIC
PHASE 1B - SR 257 DETOUR MAP

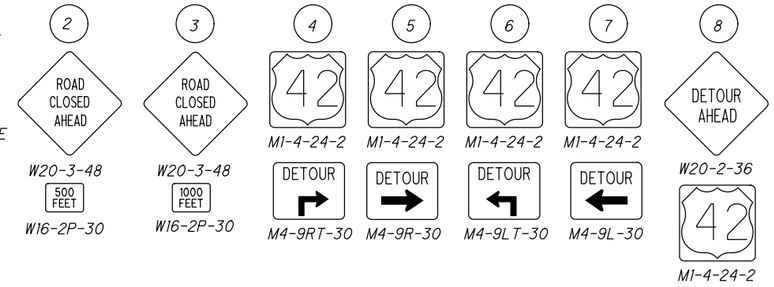
DEL-42-1.41

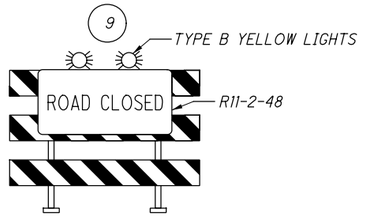
21
107

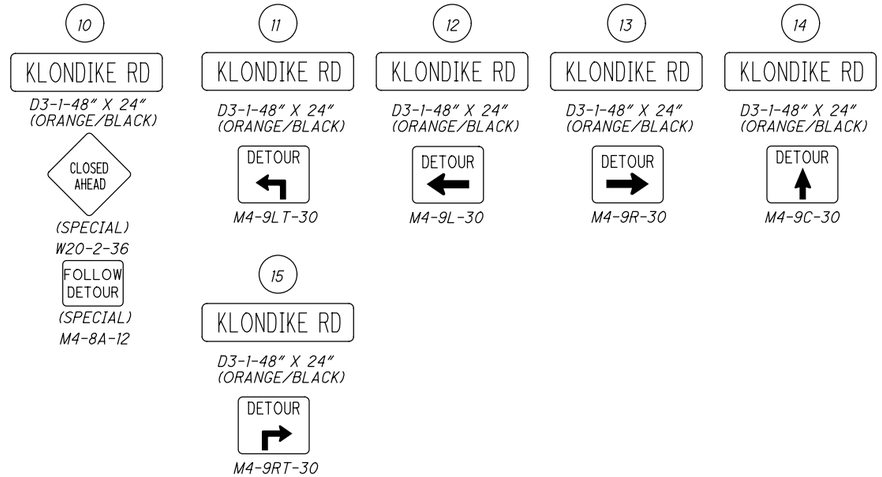


KLONDIKE ROAD DETOUR MAP









LEGEND:

- TYPE III BARRICADE, PER SCD MT-101.60
- WORK ZONE
- DETOUR SIGN LOCATION
- SIGNED DETOUR ROUTE

HORIZONTAL SCALE IN FEET: 0, 25, 50, 100

CALCULATED: C.O
CHECKED: S.J.B

MAINTENANCE OF TRAFFIC PHASE 2
KLONDIKE RD DETOUR

DEL-42-1.41

SHEET NUM.										PART.				ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
7	26	27	27A	76	78	79				01/SAF/PV	02/SAF/PV	03/NHS/CV	04/SAF/CV						
																		ROADWAY	
LS										LS				201	11000	LS		CLEARING AND GRUBBING	
	5				2	2				1		4	4	202	20010	9	EACH	HEADWALL REMOVED	
	729									729				202	23000	729	SY	PAVEMENT REMOVED	
	328									328				202	32000	328	FT	CURB REMOVED	
						3						3		202	32800	3	SY	CONCRETE SLOPE PROTECTION REMOVED	
	312				140					163			289	202	35100	452	FT	PIPE REMOVED, 24" AND UNDER	
	230					106						336		202	35200	336	FT	PIPE REMOVED, OVER 24"	
	4,120									4,120				202	38000	4,120	FT	GUARDRAIL REMOVED	
	1									1				202	58000	1	EACH	MANHOLE REMOVED	
	3											1	2	202	58100	3	EACH	CATCH BASIN REMOVED	
	379									379				202	75000	379	FT	FENCE REMOVED	
	2									2				202	98100	2	EACH	REMOVAL MISC.: PRIVATE SIGN SUPPORT	7
1										1				202	98100	1	EACH	REMOVAL MISC.: INSPECTION WELL	7
15										15				202	98200	15	FT	REMOVAL MISC.: CONDUIT	7
	5,952									5,138	814			203	10000	5,952	CY	EXCAVATION	
	2,736									2,346	390			203	20000	2,736	CY	EMBANKMENT	
50										50				203	20001	50	CY	EMBANKMENT, AS PER PLAN	7
			9,007	536						7,672	1,871			204	10000	9,543	SY	SUBGRADE COMPACTION	
			5							4	1			204	45000	5	HOUR	PROOF ROLLING	
			1.43							0.93	0.5			209	72050	1.43	MILE	PREPARING SUBGRADE FOR SHOULDER PAVING	
	4,175									2,562.5	1,312.5		300	606	15100	4,175	FT	GUARDRAIL, TYPE MGS WITH LONG POSTS	
	50									50				606	15150	50	FT	GUARDRAIL, TYPE MGS HALF POST SPACING	
	112.5									112.5				606	15250	112.5	FT	GUARDRAIL, TYPE MGS QUARTER POST SPACING	
	10									8			2	606	26150	10	EACH	ANCHOR ASSEMBLY, MGS TYPE E	
	4									4				606	26550	4	EACH	ANCHOR ASSEMBLY, MGS TYPE T	
	4									2	2			606	35002	4	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1	
										LS				878	25000	LS		INSPECTION AND COMPACTION TESTING OF UNBOUND MATERIALS	
																		EROSION CONTROL	
		228								228				601	32000	228	CY	ROCK CHANNEL PROTECTION, TYPE A WITH FILTER	
		13			9	16						16	22	601	32100	38	CY	ROCK CHANNEL PROTECTION, TYPE B WITH FILTER	
3		2								5				601	32200	5	CY	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	
	2									2				659	00100	2	EACH	SOIL ANALYSIS TEST	
	1,524									1,338	186			659	00300	1,524	CY	TOPSOIL	
	13,724									12,034	1,690			659	10000	13,724	SY	SEEDING AND MULCHING	
	687									602	85			659	14000	687	SY	REPAIR SEEDING AND MULCHING	
	687									602	85			659	15000	687	SY	INTER-SEEDING	
	1.91									1.67	0.24			659	20000	1.91	TON	COMMERCIAL FERTILIZER	
	2.84									2.49	0.35			659	31000	2.84	ACRE	LIME	
	76									66	10			659	35000	76	MGAL	WATER	
		1,552								1,552				670	00700	1,552	SY	DITCH EROSION PROTECTION	
		437								437				670	00710	437	SY	DITCH EROSION PROTECTION MAT, TYPE A	
										LS				832	15000	LS		STORM WATER POLLUTION PREVENTION PLAN	
										LS				832	15002	LS		STORM WATER POLLUTION PREVENTION INSPECTIONS	
										LS				832	15010	LS		STORM WATER POLLUTION PREVENTION INSPECTION SOFTWARE	
										66,300				832	30000	66,300	EACH	EROSION CONTROL	
																		DRAINAGE	
						7						7		601	11000	7	SY	RIPRAP, TYPE D	
10		40								50				601	21050	50	SY	TIED CONCRETE BLOCK MAT, TYPE 1	
		2.1			2	18				0.3		19.5	2.3	602	20000	22.1	CY	CONCRETE MASONRY	
100										100				605	13300	100	FT	6" UNCLASSIFIED PIPE UNDERDRAINS	
		8,121								8,121				605	14000	8,121	FT	6" BASE PIPE UNDERDRAINS	
100										100				605	31100	100	FT	AGGREGATE DRAINS	
		212								212				611	00510	212	FT	6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS	
		28								28				611	01100	28	FT	6" CONDUIT, TYPE C	
50										50				611	01500	50	FT	6" CONDUIT, TYPE F	
50										50				611	01800	50	FT	8" CONDUIT, TYPE B	

CALCULATED JMK
CHECKED KMK

GENERAL SUMMARY

DEL-42-1.41

SHEET NUM.											PART.				ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
6	7	26	27	27A	76	78	79	80	82	97	01/SAF/PV	02/SAF/PV	03/NHS/CV	04/SAF/CV						
																			DRAINAGE (CONT.)	
			10										10		611	02000	10	FT	8" CONDUIT, TYPE C	
	50										50				611	03600	50	FT	10" CONDUIT, TYPE E	
	50										50				611	05200	50	FT	12" CONDUIT, TYPE F	
			171											171	611	05900	171	FT	15" CONDUIT, TYPE B	
			51								51				611	06100	51	FT	15" CONDUIT, TYPE C	
			131								131				611	06400	131	FT	15" CONDUIT, TYPE D	
			50								50				611	07900	50	FT	18" CONDUIT, TYPE D	
						190								190	611	16200	190	FT	36" CONDUIT, TYPE A, 706.02; OR 42" 707.02 (0.064) ALUMINIZED, 42" 707.04 (0.064),	
																			42" 707.21, 36" 707.33 (WITH A WELDED BELL)	
			105										105		611	16400	105	FT	36" CONDUIT, TYPE B	
			125										125		611	16600	125	FT	36" CONDUIT, TYPE C	
							119						119		611	19200	119	FT	42" CONDUIT, TYPE A, 706.02; OR 707.02 (0.064) ALUMINIZED, 707.04 (0.064),	
																			707.21, 707.33 (WITH A WELDED BELL)	
	10										10				611	97400	10	FT	CONDUIT, MISC.: 6" TYPE B FOR DRAINAGE DISCHARGE CONTINUANCE	7
	10										10				611	97400	10	FT	CONDUIT, MISC.: 6" TYPE C FOR DRAINAGE DISCHARGE CONTINUANCE	7
	10										10				611	97400	10	FT	CONDUIT, MISC.: 6" TYPE E FOR DRAINAGE DISCHARGE CONTINUANCE	7
	10										10				611	97400	10	FT	CONDUIT, MISC.: 6" TYPE F FOR DRAINAGE DISCHARGE CONTINUANCE	7
			3								1			2	611	98470	3	EACH	CATCH BASIN, NO. 2-2B	
			1										1		611	98700	1	EACH	INLET, SIDE DITCH	
			1								1				611	99574	1	EACH	MANHOLE, NO. 3	
	5		20								25				611	99710	25	EACH	PRECAST REINFORCED CONCRETE OUTLET	
	1										1				611	99720	1	EACH	INSPECTION WELL	
																			PAVEMENT	
680											680				251	01041	680	SY	PARTIAL DEPTH PAVEMENT REPAIR (ASPHALT CONCRETE BASE), AS PER PLAN	6
				12,484							9,269	3,215			254	01000	12,484	SY	PAVEMENT PLANING, ASPHALT CONCRETE (1.5")	
45				2,073	49						1,709	413	21	24	301	46000	2,167	CY	ASPHALT CONCRETE BASE, PG64-22	
				1,502	41						1,231	312			304	20000	1,543	CY	AGGREGATE BASE	
				2,587	22						2,030	579			407	20000	2,609	GAL	NON-TRACKING TACK COAT	
				842							582	260			411	10000	842	CY	STABILIZED CRUSHED AGGREGATE	
				1,323	13						973	363			442	10000	1,336	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446)	
				376							304	72			442	10100	376	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (446)	
		76									38	38			609	24510	76	FT	CURB, TYPE 4-C	
				1.63							1.13	0.5			618	41000	1.63	MILE	RUMBLE STRIPES, EDGE LINE (ASPHALT CONCRETE)	
																			TRAFFIC CONTROL	
								206			206				621	00100	206	EACH	RPM	
								136			136				621	54000	136	EACH	RAISED PAVEMENT MARKER REMOVED	
		58									36	18		4	626	00110	58	EACH	BARRIER REFLECTOR, TYPE 2 (BI-DIRECTIONAL)	
									240		240				630	02100	240	FT	GROUND MOUNTED SUPPORT, NO. 2 POST	
									480		480				630	03100	480	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	
									15		15				630	08520	15	FT	STREET NAME SIGN SUPPORT, NO. 3 POST	
									303.7		303.7				630	80100	303.7	SF	SIGN, FLAT SHEET	
									61		61				630	84900	61	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
									44		44				630	86002	44	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
								1.7			1.7				644	00104	1.7	MILE	EDGE LINE, 6"	
								1.13			1.13				644	00300	1.13	MILE	CENTER LINE	
								841			841				644	00400	841	FT	CHANNELIZING LINE, 8"	
								188			188				644	00500	188	FT	STOP LINE	
								10			10				644	01300	10	EACH	LANE ARROW	
								0.21			0.21				646	10010	0.21	MILE	EDGE LINE, 6"	
								0.13			0.13				646	10200	0.13	MILE	CENTER LINE	
																			TRAFFIC SIGNALS	
										1	1				625	18510	1	EACH	BRACKET ARM, 30'	
										41	41				625	25400	41	FT	CONDUIT, 2", 725.04	
										32	32				625	25600	32	FT	CONDUIT, 4", 725.04	
										73	73				625	29000	73	FT	TRENCH	
										2	2				625	30706	2	EACH	PULL BOX, 725.08, 24"	
										6	6				625	31510	6	EACH	PULL BOX REMOVED	
										10	10				625	32000	10	EACH	GROUND ROD	
										8	8				630	97700	8	EACH	SIGNING, MISC.: "SIGNAL OPERATION CHANGED" SIGN	95
										16	16				632	05007	16	EACH	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN	95
										4	4				632	05087	4	EACH	VEHICULAR SIGNAL HEAD, (LED), 5-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN	95

REV. BY	DATE	DESCRIPTION
AMP	12/30/19	ITEM 621 - RPM AND RPM REMOVED ADDED
DATE COMPLETED		

CALCULATED JMK
CHECKED KMK

GENERAL SUMMARY

DEL-42-1.41

SHEET NUM.										PART.				ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
9	10	10A	11	97						01/SAF/PV	02/SAF/PV	03/NHS/CV	04/SAF/CV						
																		TRAFFIC SIGNALS (CONT.)	
				20						20				632	25000	20	EACH	COVERING OF VEHICULAR SIGNAL HEAD	
				170						170				632	29900	170	FT	MESSENGER WIRE, 7 STRAND, 1/4" DIAMETER WITH ACCESSORIES	
				760						760				632	30300	760	FT	MESSENGER WIRE, 7 STRAND, 7/16" DIAMETER WITH ACCESSORIES	
				760						760				632	30600	760	FT	TETHER WIRE, WITH ACCESSORIES	
				2,070						2,070				632	40700	2,070	FT	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG	
				8						8				632	64000	8	EACH	STRAIN POLE FOUNDATION	
				70						70				632	68300	70	FT	POWER CABLE, 3 CONDUCTOR, NO. 6 AWG	
				250						250				632	69800	250	FT	SERVICE CABLE, 3 CONDUCTOR, NO. 6 AWG	
				2						2				632	70001	2	EACH	POWER SERVICE, AS PER PLAN	96
				4						4				632	83201	4	EACH	STRAIN POLE, TYPE TC-81.10, DESIGN 12, AS PER PLAN	95
				3						3				632	83301	3	EACH	STRAIN POLE, TYPE TC-81.10, DESIGN 13, AS PER PLAN	95
				1						1				632	85321	1	EACH	COMBINATION STRAIN POLE, TYPE TC-81.10, DESIGN 13, AS PER PLAN	95
				2						2				632	90100	2	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION	95
				3						3				632	90104	3	EACH	REUSE OF TRAFFIC CONTROL ITEM, WIRELESS COMMUNICATIONS EQUIPMENT	96
				2						2				633	01551	2	EACH	CONTROLLER UNIT, TYPE TS2/A2, WITH CABINET, TYPE TS2, AS PER PLAN	96
				2						2				633	67101	2	EACH	CABINET FOUNDATION, AS PER PLAN	96
				2						2				633	67201	2	EACH	CONTROLLER WORK PAD, AS PER PLAN	96
				2						2				633	75001	2	EACH	UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN	96
				4						4				809	69000	4	EACH	ADVANCE RADAR DETECTION	96A
				8						8				809	69100	8	EACH	STOP LINE RADAR DETECTION	96A
																		MAINTENANCE OF TRAFFIC	
150										150				410	12000	150	CY	TRAFFIC COMPACTED SURFACE, TYPE A OR B	
	50									50				614	11110	50	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	
			23							23				614	12350	23	EACH	WORK ZONE IMPACT ATTENUATOR	
	LS									LS				614	12420	LS		DETOUR SIGNING	
	30	20								50				614	13000	50	CY	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC	
	120									120				614	13310	120	EACH	BARRIER REFLECTOR, TYPE 1 (ONE-WAY)	
	120									120				614	13350	120	EACH	OBJECT MARKER, ONE WAY	
			2.84							2.84				614	21100	2.84	MILE	WORK ZONE CENTER LINE, CLASS I, 642 PAINT	
			2.44							2.44				614	21550	2.44	MILE	WORK ZONE CENTER LINE, CLASS III, 642 PAINT	
			4.21							4.21				614	22100	4.21	MILE	WORK ZONE EDGE LINE, CLASS I, 4", 642 PAINT	
			3.38							3.38				614	22350	3.38	MILE	WORK ZONE EDGE LINE, CLASS III, 4", 642 PAINT	
			148							148				614	26200	148	FT	WORK ZONE STOP LINE, CLASS I, 642 PAINT	
			376							376				614	26610	376	FT	WORK ZONE STOP LINE, CLASS III, 642 PAINT	
										LS				615	10000	LS		ROADS FOR MAINTAINING TRAFFIC	
			3,765							3,765				615	20000	3,765	SY	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A	
65										65				616	10000	65	MGAL	WATER	
			9,709							9,709				622	41000	9,709	FT	PORTABLE BARRIER, 32"	
																		INCIDENTALS	
										LS				614	11000	LS		MAINTAINING TRAFFIC	
										7				619	16010	7	MNTH	FIELD OFFICE, TYPE B	
										LS				623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING	
										LS				624	10000	LS		MOBILIZATION	

CALCULATED JMK CHECKED KMK

GENERAL SUMMARY

DEL-42-1.41

REV. BY	DATE	DESCRIPTION
AMP	12/30/19	ITEM 615 - ROADS FOR MAINTAINING PAVEMENT - ADDED

DATE COMPLETED _____

REF. NO.	SHEET NO.	STATION FROM	STATION TO	SIDE	606 GUARDRAIL, TYPE MGS WITH LONG POSTS	606 GUARDRAIL, TYPE MGS HALF POST SPACING	606 GUARDRAIL, TYPE MGS QUARTER POST SPACING	606 ANCHOR ASSEMBLY, MGS TYPE E	606 ANCHOR ASSEMBLY, MGS TYPE T	606 MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1	609 CURB, TYPE 4-C	626 BARRIER REFLECTOR, TYPE 2 (BI-DIRECTIONAL)
					FT	FT	FT	EACH	EACH	EACH	FT	EACH
GR-1	31-32, 41	77+16.50	6+97.42 (DUBLIN RD.)	RT	325	50	112.5	2				5
GR-2	32, 41	7+27.66 (DUBLIN RD.)	83+62.50	RT	287.5			2				6
GR-3	33-36	87+37.39	102+95.25	LT	1475			1		1	19	16
GR-4	33-35	87+93.22	96+21.97	RT	862.5				3			10
GR-5	35-36	96+46.11	102+95.25	RT	637.5				1	1	19	8
GR-6	37-38	108+42.73	110+35.31	LT	112.5			1		1	19	3
GR-7	37-38	108+42.73	110+35.31	RT	112.5			1		1	19	3
GR-8	38, 42	19+50.01 (KLONDIKE RD.)	20+93.10 (KLONDIKE RD)	LT	75			1				3
GR-9	39	115+00.00	118+93.71	LT	287.5			2				4
TOTALS CARRIED TO GENERAL SUMMARY					4175	50	112.5	10	4	4	76	58

REF. NO.	SHEET NO.	STATION FROM	STATION TO	SIDE	202 HEADWALL REMOVED	202 PAVEMENT REMOVED	202 CURB REMOVED	202 PIPE REMOVED, 24" AND UNDER	202 PIPE REMOVED, OVER 24"	202 GUARDRAIL REMOVED	202 MANHOLE REMOVED	202 CATCH BASIN REMOVED	202 FENCE REMOVED	202 REMOVAL, MISC.: PRIVATE SIGN SUPPORT
					EACH	SY	FT	FT	FT	FT	EACH	EACH	FT	EACH
R-1	31	74+07.32	74+39.01	LT				32						
R-2	31	76+48.76	77+18.84	LT		8								
R-3	31-32	NOT USED												
R-4	31-32	77+91.56	79+07.38	LT									116	
R-5	31-32	77+65.95	79+02.36	RT		16								
R-6	31-32, 41	78+85.57	6+99.52 (DUBLIN RD.)	RT						428				
R-7	32	80+41.85		LT				25			1			
R-8	32	80+40.37	80+40.43	LT/RT	1			91						
R-9	32	79+71.05	81+86.61	LT									223	
R-10	32, 41	7+25.58 (DUBLIN RD.)	82+66.11	RT						302				
R-11	33	87+56.81	88+00.10	RT				44						
R-12	33-36	87+97.22	102+95.89	LT						1496				
R-13	33-35	88+12.53	96+21.97	RT						815				
R-14	35-36	96+46.11	102+95.84	RT						653				
R-15	37-38	108+41.46	110+00.66	LT						160				
R-16	37-38	108+48.91	110+10.14	RT						162				
R-17	39	117+69.88	117+99.43	LT				62						
R-18	39	117+99.43		LT								1		
R-19	39	117+99.43	117+99.42	LT/RT				58						
R-20	39	117+99.42		RT								1		
R-21	40	121+71.43	122+55.88	LT/RT					105					
R-22	40	122+55.88		RT								1		
R-23	40	122+55.88	123+56.23	RT					125					
R-24	41	11+03.50 (DUBLIN RD.)	11+42.83 (DUBLIN RD.)	LT									40	
R-25	38, 42	19+75.01 (KLONDIKE RD.)	20+93.10 (KLONDIKE RD.)	LT						104				
R-26	31-32	78+92.05	79+20.11	LT		23								
R-27	32	79+48.11	79+95.19	LT		77								
R-28	32	80+00.67	80+71.18	LT		59								
R-29	32, 41	80+96.90	81+10.79	LT		3								
R-30	32, 41	81+16.36	81+48.96	LT		38								
R-31	32, 41	10+38.15 (DUBLIN RD.)	11+43.28 (DUBLIN RD.)	LT		484								
R-32	41	11+71.22 (DUBLIN RD.)	12+05.23 (DUBLIN RD.)	LT		21								
R-33		NOT USED												
R-34	33	84+24.50	87+50.32	RT			328							
R-35	32, 41	81+13.34	81+16.74	LT										2
R-36	32	80+40.37		LT	1									
R-37	39	117+69.88		LT	1									
R-38	40	121+71.43		LT	1									
R-39	40	123+56.23		RT	1									
TOTALS CARRIED TO GENERAL SUMMARY					5	729	328	312	230	4120	1	3	379	2

NOTE:
SEEDING AND MULCHING QUANTITIES FOR PAVEMENT REMOVAL AREAS R-26 THROUGH R-32 ARE INCLUDED IN THE NOTE ON THIS SHEET.

EARTHWORK AND SEEDING			
SHEET NO.	203 EXCAVATION	203 EMBANKMENT	659 SEEDING AND MULCHING
	CY	CY	SY
43	201	21	534
44	381	74	931
45	421	122	895
46	300	104	791
47	470	350	475
48	584	454	520
49	25	4	44
50	138	53	205
51	178	58	439
52	305	76	704
53	334	59	731
54	285	66	694
55	73	19	127
56	61	119	294
57	98	28	168
58	94	35	178
59	92	42	198
60	94	35	175
61	100	27	161
62	92	39	186
63	93	32	167
64	90	33	163
65	112	125	346
66	200	143	583
67	72	7	89
68	267	100	738
69	232	202	739
70	203	122	503
71	191	119	611
72	166	68	630
73	0	0	0
TOTALS CARRIED TO GENERAL SUMMARY	5,952	2,736	13,019 *

* TOTAL CARRIED TO SEEDING/MULCHING NOTE - SEE THIS SHEET

SEEDING AND MULCHING

THE FOLLOWING QUANTITIES ARE PROVIDED TO PROMOTE GROWTH AND CARE OF PERMANENT SEEDED AREAS:

ITEM 659 - SEEDING AND MULCHING 13,724 SY
(13,019 SY FROM CROSS SECTIONS)
+ (705 SY FROM PAVEMENT REMOVAL AREAS R-26 THROUGH R-32)

ITEM 659 - TOPSOIL 1,524 CY
(13,724 SY) X (111 CY/1000 SY OF SEEDING AND MULCHING)

ITEM 659 - SOIL ANALYSIS TEST 2 EACH
(1,524 CY) X (1 TEST/10000 CY OF TOPSOIL) (2 TEST MIN.)

ITEM 659 - REPAIR SEEDING AND MULCHING 687 SY
(13,724 SY) X (0.05 OF SEEDING AND MULCHING)

ITEM 659 - INTER-SEEDING 687 SY
(13,724 SY) X (0.05 OF SEEDING AND MULCHING)

ITEM 659 - COMMERCIAL FERTILIZER 1.91 TON
(13,724 SY) X (1 TON/7410 SY OF SEEDING AND MULCHING)
+ (687 SY) X (1 TON/11110 SY OF INTER-SEEDING)

ITEM 659 - LIME 2.84 ACRE
(13,724 SY) X (1 ACRE/4840 SY OF SEEDING AND MULCHING)

ITEM 659 - WATER 76 MGAL
(13,724 SY) X (2 X 0.0027 MGAL/SY OF SEEDING AND MULCHING)
+ (687 SY) X (0.0027 MGAL/SY OF INTER-SEEDING)

SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL BETWEEN THE RIGHT-OF-WAY LINES, AND WITHIN THE CONSTRUCTION LIMITS FOR AREAS OUTSIDE THE RIGHT-OF-WAY LINES COVERED BY WORK AGREEMENT OR SLOPE EASEMENT. QUANTITY CALCULATIONS FOR SEEDING AND MULCHING ARE BASED ON THESE LIMITS.

CALCULATED JMK
CHECKED KMK

SUBSUMMARIES

DEL-42-1.41

REF. NO.	SHEET NO.	STATION FROM	STATION TO	SIDE	601 ROCK CHANNEL PROTECTION, TYPE A WITH FILTER	601 ROCK CHANNEL PROTECTION, TYPE B WITH FILTER	601 ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	602 CONCRETE MASONRY	611 6" CONDUIT, TYPE C	611 8" CONDUIT, TYPE C	611 15" CONDUIT, TYPE B	611 15" CONDUIT, TYPE C	611 15" CONDUIT, TYPE D	611 18" CONDUIT, TYPE D	611 36" CONDUIT, TYPE B	611 36" CONDUIT, TYPE C	611 CATCH BASIN, NO. 2-2B	611 INLET, SIDE DITCH	611 MANHOLE, NO. 3	670 DITCH EROSION PROTECTION MAT, TYPE A
					CY	CY	CY	CY	FT	FT	FT	FT	FT	FT	FT	FT	EACH	EACH	EACH	SY
D-1	31	74+00.00	74+50.00	LT										50						
D-2	32	80+41.85	80+40.36	LT					28										1	
D-3	32, 41	80+40.36	80+40.44	LT/RT		12.10		0.27			99						1			
D-4	33	85+30.61	85+70.76	LT									40							
D-5	33	87+50.04	88+00.00	RT									51							
D-6	39	115+81.83	116+21.83	RT									40							
D-7	39	117+71.57	118+00.10	LT			1.78	0.27				51					1			
D-8	39	118+00.10	118+00.17	LT/RT							72						1			
D-9		NOT USED																		
D-10	40	122+55.88	123+56.23	RT				0.76		10						125		1		
D-11		NOT USED																		
D-12	40	121+71.43	122+55.88	LT/RT				0.76							105					
D-13	31	74+50.00	77+56.05	LT																137
D-14	31-32	74+00.00	79+21.66	RT																233
D-15	32	79+70.47	80+40.36	LT																21
D-16	38	108+98.97	110+90.24	RT																46
D-17	39	116+56.70	117+43.30	LT	227.85															
TOTALS CARRIED TO GENERAL SUMMARY					228	13	2	2.1	28	10	171	51	131	50	105	125	3	1	1	437

REF. NO.	SHEET NO.	STATION FROM	SIDE	OFFSET	STATION TO	SIDE	OFFSET	601 TIED CONCRETE BLOCK MAT, TYPE 1	605 6" BASE PIPE UNDERDRAINS (18" DEPTH)	611 6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS	611 PRECAST REINFORCED CONCRETE OUTLET	BENDS AND BRANCHES FOR INFORMATION ONLY: PLUG	6" X 6" TEE	6" X 45° WYE	6" X 6" CROSS	6" X 90° ELL	6" X 45° ELL	6" X 22.5° ELL
								SY	FT	FT	EACH	NO.	NO.	NO.	NO.	NO.	NO.	NO.
UD-1	30-31	73+50.00	LT	16.06	77+50.00	LT	23.08	2	401	13	1	2	1					1
UD-2	30-31	73+50.00	RT	14.48	78+50.00	RT	28.53	2	501	6	1	1				1		1
UD-3	31-32	78+14.00	LT	23.08	80+40.36	LT	39.76		222	20		1				1	1	
UD-4	31-32	78+99.00	RT	23.08	08+61.37 (DUBLIN RD.)	LT	34.85	2	242	20	1	1					1	
UD-5		NOT USED																
UD-6	32, 41	9+49.64 (DUBLIN RD.)	RT	38.40	8+55.00 (DUBLIN RD.)	RT	26.08	2	100	9	1	1				1		
UD-7	32-34	82+38.00	RT	23.08	89+73.20	RT	26.08	2	737	9	1	1				1		
UD-8	32-33	11+00.00 (DUBLIN RD.)	RT	19.50	86+00.00	LT	31.82	2	436	9	1	1				1		
UD-9	33-34	86+05.00	LT	22.74	89+73.20	LT	26.08	2	368	9	1	1				1		
UD-10	34-35	89+78.00	LT	17.08	94+75.00	LT	26.08	2	497	9	1	1				1		
UD-11	34-35	89+78.00	RT	17.08	94+75.00	RT	26.08	2	498	9	1	1				1		
UD-12	35	94+80.00	LT	17.08	97+75.00	LT	26.08	2	295	9	1	1				1		
UD-13	35	94+80.00	RT	17.08	97+75.00	RT	26.08	2	296	9	1	1				1		
UD-14	36	102+93.00	LT	19.08	99+91.38	LT	17.08		302			1						1
UD-15	36	102+93.00	RT	19.08	99+91.38	RT	17.08		302			1						1
UD-16	37-38	111+60.72	LT	27.80	108+50.00	LT	29.00	2	312	10	1	1				1		
UD-17	37-38	110+92.15	RT	40.75	108+50.00	RT	29.00	2	248	10	1	1				1		
UD-18	38, 42	18+10.39 (RIVERSIDE DR.)	LT	50.76	17+50.34 (RIVERSIDE DR.)	LT	25.45	2	73	6	1	1				1		
UD-19	38, 42	19+07.77 (KLONDIKE RD.)	LT	30.31	20+07.42 (KLONDIKE RD.)	LT	28.02	2	102	10	1	1				1		
UD-20	38-40	120+27.77	RT	14.90	17+49.92 (RIVERSIDE DR.)	RT	26.62	2	961	7	1	1				1		1
UD-21	38-39	115+20.00	LT	23.08	20+10.51 (KLONDIKE RD.)	RT	28.12	2	314	10	1	1				1		
UD-22	39-40	120+27.77	LT	15.76	115+25.00	LT	33.08	2	503	10	1	1				1		1
UD-23	35-36	97+91.00	LT	17.08	99+91.38	LT	26.08	2	200	9	1	1	1					
UD-24	35-36	97+80.00	RT	17.08	99+91.38	RT	26.08	2	212	9	1	1	1					
TOTALS CARRIED TO GENERAL SUMMARY								40	8121	212	20							

AREA	STATION FROM	STATION TO	SIDE	670 DITCH EROSION PROTECTION
				SY
1	83+00.00	87+50.00	RT	851
2	118+00.00	120+00.00	LT	327
3	118+00.00	120+27.69	RT	373
TOTALS CARRIED TO GENERAL SUMMARY				1552

CALCULATED JMK
CHECKED KMK

SUBSUMMARIES

DEL-42-1.41

PAVEMENT CALCULATIONS

CALCULATED JMK | CHECKED KMK

STATION RANGE			ROUTE	SIDE	LENGTH L (FT)	AVERAGE WIDTH W (FT)	SURFACE AREA A (SF) A=LxW	EDGE COURSE AREAS				204	204	209	254	301	304	407	411	442	442	618			
								4" BEYOND	10" BEYOND	16" BEYOND	SAFETY EDGE	SUBGRADE COMPACTION	PROOF ROLLING	PREPARING SUBGRADE FOR SHOULDER PAVING	PAVEMENT PLANING, ASPHALT CONCRETE (1.5")	ASPHALT CONCRETE BASE, PG64-22	AGGREGATE BASE	NON-TRACKING TACK COAT	STABILIZED CRUSHED AGGREGATE	ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A (446)	ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446)	RUMBLE STRIPES, EDGE LINE (ASPHALT CONCRETE)			
											CY	SY	HOUR	MILE	SY	CY	CY	GAL	CY	CY	CY	MILES			
73+50	TO	74+20	US 42 PAVED SHOULDER (FULL DEPTH)	LT	70.00	3.49	244.30	23.33	58.33	93.33	4.45	37.51	0.02	0.013		7.92	6.25	5.49		5.58	1.32	70.00			
73+50	TO	74+20	US 42 PAVED SHOULDER (FULL DEPTH)	RT	70.00	2.70	189.00	23.33	58.33	93.33	4.45	31.37	0.02	0.013		6.38	5.23	4.39		5.32	1.02	70.00			
74+20	TO	80+87	US 42 PAVED SHOULDER (FULL DEPTH)	LT	667.00	4.00	2668.00	222.33	555.83	889.33	42.38	395.26	0.20	0.126		84.92	65.88	59.15		54.73	14.41	667.00			
74+20	TO	80+75.35	US 42 PAVED SHOULDER (FULL DEPTH)	RT	655.35	4.00	2621.40	218.45	546.13	873.80	41.64	388.36	0.19	0.124		83.44	64.73	58.12		53.77	14.16	655.35			
73+50	TO	80+87	US 42 AGGREGATE SHOULDER	LT	737.00	4.00	2948.00												72.79						
73+50	TO	80+75.35	US 42 AGGREGATE SHOULDER	RT	725.35	4.00	2901.40												71.64						
73+50	TO	73+82	US 42 MAINLINE (FULL DEPTH)	LT	32.00	1.00	32.00					3.56	0.00			0.89	0.59	0.64		0.15	0.17				
73+82	TO	77+42	US 42 MAINLINE (FULL DEPTH)	LT	360.00	4.00	1440.00					160.00	0.08			40.00	26.67	28.80		6.67	7.78				
77+42	TO	80+87	US 42 MAINLINE (FULL DEPTH)	LT	345.00	7.00	2415.00					268.33	0.13			67.08	44.72	48.30		11.18	13.04				
73+50	TO	73+82	US 42 MAINLINE (FULL DEPTH)	RT	32.00	1.00	32.00					3.56	0.00			0.89	0.59	0.64		0.15	0.17				
73+82	TO	77+42	US 42 MAINLINE (FULL DEPTH)	RT	360.00	4.00	1440.00					160.00	0.08			40.00	26.67	28.80		6.67	7.78				
77+42	TO	80+87	US 42 MAINLINE (FULL DEPTH)	RT	345.00	7.00	2415.00					268.33	0.13			67.08	44.72	48.30		11.18	13.04				
82+73.53	TO	102+18	US 42 PAVED SHOULDER (FULL DEPTH)	LT	1944.47	4.00	7777.88	648.16	1620.39	2592.63	123.54	1152.28	0.58	0.368		247.56	192.05	172.44		159.55	42.01	1944.47			
82+38.90	TO	102+18	US 42 PAVED SHOULDER (FULL DEPTH)	RT	1979.10	4.00	7916.40	659.70	1649.25	2638.80	125.74	1172.80	0.59	0.375		251.97	195.47	175.51		162.39	42.76	1979.10			
102+18	TO	102+68	US 42 PAVED SHOULDER (FULL DEPTH)	LT	50.00	5.00	250.00	16.67	41.67	66.67	3.18	35.19	0.02	0.009		7.75	5.86	5.43		4.33	1.35	50.00			
102+18	TO	102+68	US 42 PAVED SHOULDER (FULL DEPTH)	RT	50.00	5.00	250.00	16.67	41.67	66.67	3.18	35.19	0.02	0.009		7.75	5.86	5.43		4.33	1.35	50.00			
102+68	TO	102+88.03	US 42 PAVED SHOULDER (FULL DEPTH)	LT	20.03	6.00	120.18	6.68	16.69	26.71	1.27	16.32	0.01	0.004		3.66	2.72	2.58		1.83	0.65	20.03			
102+68	TO	102+88.03	US 42 PAVED SHOULDER (FULL DEPTH)	RT	20.03	6.00	120.18	6.68	16.69	26.71	1.27	16.32	0.01	0.004		3.66	2.72	2.58		1.83	0.65	20.03			
82+73.53	TO	102+88.03	US 42 AGGREGATE SHOULDER	LT	2014.50	4.00	8058.00												198.96						
82+38.90	TO	102+88.03	US 42 AGGREGATE SHOULDER	RT	2049.13	4.00	8196.52												202.38						
82+57.58	TO	85+84.03	US 42 MAINLINE (FULL DEPTH)	LT	326.45	7.00	2285.15					253.91	0.13			63.48	42.32	45.70		10.58	12.34				
85+84.03	TO	89+44.48	US 42 MAINLINE (FULL DEPTH)	LT	360.45	4.00	1441.80					160.20	0.08			40.05	26.70	28.84		6.67	7.79				
89+44.48	TO	102+88.03	US 42 MAINLINE (FULL DEPTH)	LT	1343.55	1.00	1343.55					149.28	0.07			37.32	24.88	26.87		6.22	7.26				
82+38.90	TO	85+83.77	US 42 MAINLINE (FULL DEPTH)	RT	344.87	7.00	2414.09					268.23	0.13			67.06	44.71	48.28		11.18	13.04				
85+83.77	TO	89+43.54	US 42 MAINLINE (FULL DEPTH)	RT	359.77	4.00	1439.08					159.90	0.08			39.97	26.65	28.78		6.66	7.77				
89+43.54	TO	102+88.03	US 42 MAINLINE (FULL DEPTH)	RT	1344.49	1.00	1344.49					149.39	0.07			37.35	24.90	26.89		6.22	7.26				
108+50	TO	110+95	US 42 PAVED SHOULDER (FULL DEPTH)	LT	245.00	4.00	980.00	81.67	204.17	326.67	15.57	145.19	0.07	0.046		31.19	24.20	21.73		20.10	5.29	245.00			
108+50	TO	110+54.86	US 42 PAVED SHOULDER (FULL DEPTH)	RT	204.86	4.00	819.44	68.29	170.72	273.15	13.02	121.40	0.06	0.039		26.08	20.23	18.17		16.81	4.43	204.86			
108+50	TO	110+95	US 42 AGGREGATE SHOULDER	LT	245.00	4.00	980.00												24.20						
108+50	TO	110+54.86	US 42 AGGREGATE SHOULDER	RT	204.86	4.00	819.44												20.23						
108+50	TO	110+95	US 42 MAINLINE (FULL DEPTH)	LT	245.00	4.95	1212.75					134.75	0.07			33.69	22.46	24.26		5.61	6.55				
108+50	TO	110+60.67	US 42 MAINLINE (FULL DEPTH)	RT	210.67	4.65	979.62					108.85	0.05			27.21	18.14	19.59		4.54	5.29				
113+03.09	TO	119+72.77	US 42 PAVED SHOULDER (FULL DEPTH)	LT	669.68	4.00	2678.72	223.23	558.07	892.91	42.55	396.85	0.20	0.127		85.26	66.14	59.39		54.95	14.47	669.68			
112+66.42	TO	119+72.77	US 42 PAVED SHOULDER (FULL DEPTH)	RT	706.35	4.00	2825.40	235.45	588.63	941.80	44.88	418.58	0.21	0.134		89.93	69.76	62.64		57.96	15.26	706.35			
119+72.77	TO	120+27.77	US 42 PAVED SHOULDER (FULL DEPTH)	LT	55.00	3.34	183.70	18.33	45.83	73.33	3.49	28.56	0.01	0.010		5.99	4.76	4.15		4.34	0.99	55.00			
119+72.77	TO	120+27.77	US 42 PAVED SHOULDER (FULL DEPTH)	RT	55.00	2.91	160.05	18.33	45.83	73.33	3.49	25.93	0.01	0.010		5.34	4.32	3.68		4.24	0.86	55.00			
113+03.09	TO	120+27.77	US 42 AGGREGATE SHOULDER	LT	724.68	4.00	2898.72												71.57						
112+66.42	TO	120+27.77	US 42 AGGREGATE SHOULDER	RT	761.35	4.00	3045.40												75.20						
113+03.09	TO	116+11.42	US 42 MAINLINE (FULL DEPTH)	LT	308.33	7.00	2158.31					239.81	0.12			59.95	39.97	43.17		9.99	11.66				
116+11.42	TO	119+71.41	US 42 MAINLINE (FULL DEPTH)	LT	359.99	4.00	1439.96					160.00	0.08			40.00	26.67	28.80		6.67	7.78				
119+71.41	TO	120+27.77	US 42 MAINLINE (FULL DEPTH)	LT	56.36	1.00	56.36					6.26	0.00			1.57	1.04	1.13		0.26	0.30				
112+66.42	TO	116+11.42	US 42 MAINLINE (FULL DEPTH)	RT	345.00	7.00	2415.00					268.33	0.13			67.08	44.72	48.30		11.18	13.04				
116+11.42	TO	119+71.41	US 42 MAINLINE (FULL DEPTH)	RT	359.99	4.00	1439.96					160.00	0.08			40.00	26.67	28.80		6.67	7.78				
119+71.41	TO	120+27.77	US 42 MAINLINE (FULL DEPTH)	RT	56.36	1.00	56.36					6.26	0.00			1.57	1.04	1.13		0.26	0.30				
73+50	TO	80+87	US 42 MAINLINE (RESURFACING)	LT/RT	737.00	22.00	16214.00								1801.56			162.14		75.06					
82+38.90	TO	89+73.21	US 42 MAINLINE (RESURFACING)	LT/RT	734.31	22.00	16154.82								1794.98			161.55		74.79					
89+73.21	TO	102+88.03	US 42 MAINLINE (RESURFACING)	LT/RT	1314.82	22.00	28926.04								3214.00			289.26		133.92					
108+50	TO	110+95	US 42 MAINLINE (RESURFACING)	LT/RT	245.00	22.00	5390.00								598.89			53.90		24.95					
112+66.42	TO	120+27.77	US 42 MAINLINE (RESURFACING)	LT/RT	761.35	22.00	16749.70								1861.08			167.50		77.54					
80+75.35	TO	82+73.53	INTERSECTION AREA PAVED SHOULDER (FULL DEPTH)	LT/RT			2985.59	158.47	396.17	633.87		402.16	0.20			90.64	67.03	62.35		13.82	16.13	475.40			
80+87	TO	82+57.58	INTERSECTION AREA (FULL DEPTH)	LT/RT			2250.82					250.09	0.13			62.52	41.68	45.02		10.42	12.16				
80+87	TO	82+38.90	INTERSECTION AREA (RESURFACING)	LT/RT			15184.08								1687.12			151.84		70.30					
80+75.35	TO	82+73.53	INTERSECTION AREA AGGREGATE SHOULDER	LT/RT	475.42	4.00	1901.67												46.95						
110+54.86	TO	113+03.09	INTERSECTION AREA PAVED SHOULDER (FULL DEPTH)	LT/RT			2701.77	195.50	488.74	781.99		387.08	0.19			84.55	64.51	57.29		12.51	14.59	586.49			
110+60.67	TO	113+03.09	INTERSECTION AREA (FULL DEPTH)	LT/RT			3329.07					369.90	0.18			92.47	61.65	66.58		15.41	17.98				
110+95.00	TO	112+66.42	INTERSECTION AREA (RESURFACING)	LT/RT			13733.83								1525.98			137.34		63.58					
110+54.86	TO	113+03.09	INTERSECTION AREA AGGREGATE SHOULDER	LT/RT	586.49	4.00	2345.96												57.92						
10+36.61	TO	11+95.09	DUBLIN RD. MAINLINE (FULL DEPTH)	LT	158.48	2.00	316.96					35.22	0.02			8.80	5.87	6.34		1.47	1.71				
10+36.61	TO	11+31.98	DUBLIN RD. PAVED SHOULDER (FULL DEPTH)	LT	95.37	4.00	381.48	31.79	79.48	127.16	6.06	56.52	0.03	0.018		12.14	9.42	8.46		7.83	2.06	95.37			
																						SUBTOTAL			
																						8619.13			
																						FT			
TOTALS CARRIED TO GENERAL SUMMARY												9,007	5	1.43	12,484	2,073	1,502	2,587	842	1,323	376	1.63			

PAVEMENT SUBSUMMARY

DEL-42-1.41

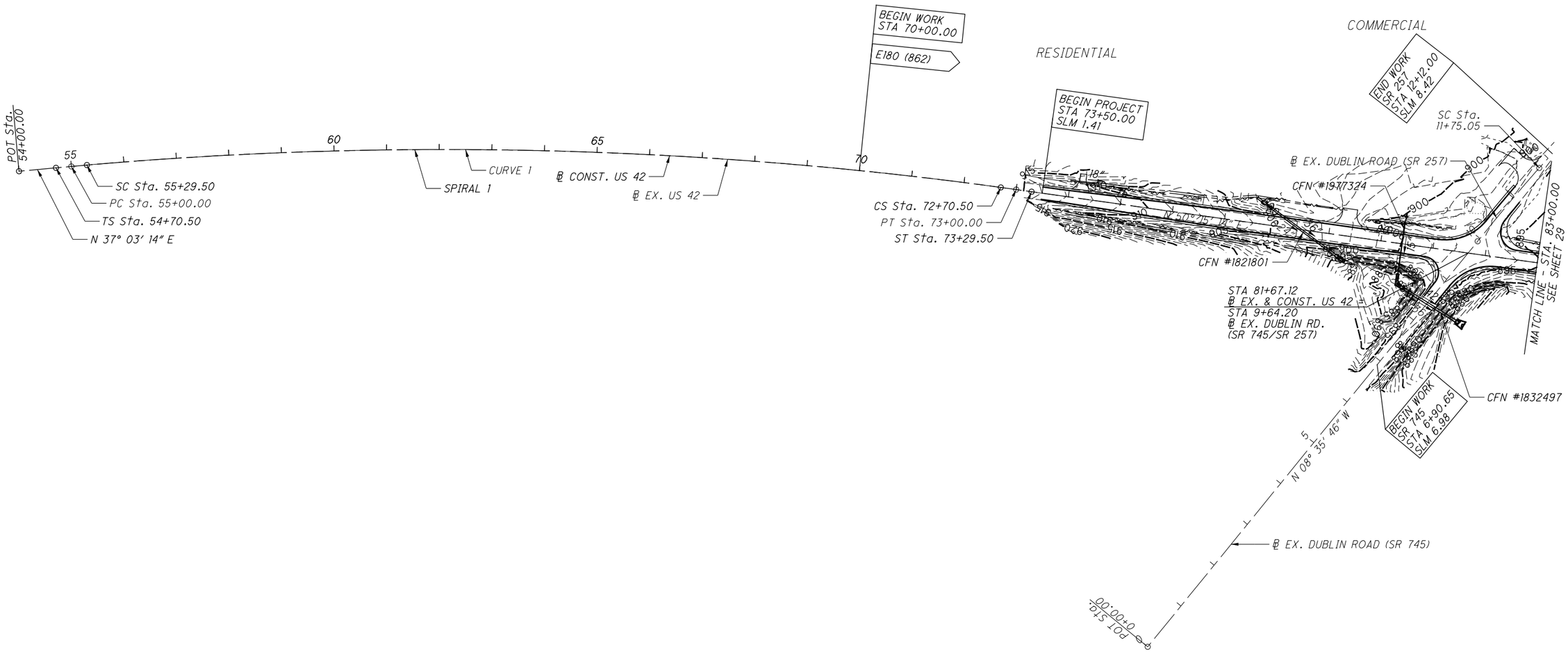
PROJECT DATA	
TOTAL AREA (RIGHT-OF-WAY):	15.11 ACRES
PROJECT EARTH DISTURBED AREA:	6.58 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA:	0.13 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA:	6.71 ACRES
IMPERVIOUS (PAVED) AREA FOR PRE-CONSTRUCTION SITE:	4.34 ACRES
IMPERVIOUS (PAVED) AREA FOR POST-CONSTRUCTION SITE:	4.51 ACRES
RUNOFF COEFFICIENT FOR PRE-CONSTRUCTION SITE:	0.45
RUNOFF COEFFICIENT FOR POST-CONSTRUCTION SITE:	0.56
POST CONSTRUCTION BMP:	VEGETATED BIOFILTER
IMMEDIATE RECEIVING WATERS:	SCIOTO RIVER
SUBSEQUENT RECEIVING WATERS:	OHIO RIVER

USGS MAP: SHAWNEE HILLS QUADRANGLE, SHAWNEE HILLS, OHIO
LATITUDE: 40° 14′ 35″ N
LONGITUDE: 83° 08′ 55″ W

BMP TYPE	BMP LOCATIONS								EDA TREATMENT CREDIT (ACRES)
	STATIONING		SIDE	WIDTH (FT)	LATITUDE/LONGITUDE				
	BEGIN	END			BEGIN		END		
VEGETATED BIOFILTER 1	83+00	87+50	RT	4	40.2398	-83.1525	40.2406	-83.1513	0.59
VEGETATED BIOFILTER 2	120+27.77	118+00	RT	4	40.2472	-83.1433	40.2467	-83.1438	0.39
VEGETATED BIOFILTER 3	120+00	118+00	LT	4	40.2472	-83.1435	40.2468	-83.1440	0.5
							TREATMENT PROVIDED		1.48
							TREATMENT REQUIRED		1.30

PROJECT DESCRIPTION

IMPROVEMENT OF 0.9 MILES OF US 42 INCLUDING: THE ADDITION OF DESIGNATED LEFT TURN LANES AT THE INTERSECTIONS OF US 42/DUBLIN RD AND US 42/SR 257/KLONDIKE RD, RESURFACING AND UPGRADING GUARDRAIL RUNS ALONG US 42 INCLUDING BRIDGE TERMINAL ASSEMBLIES.



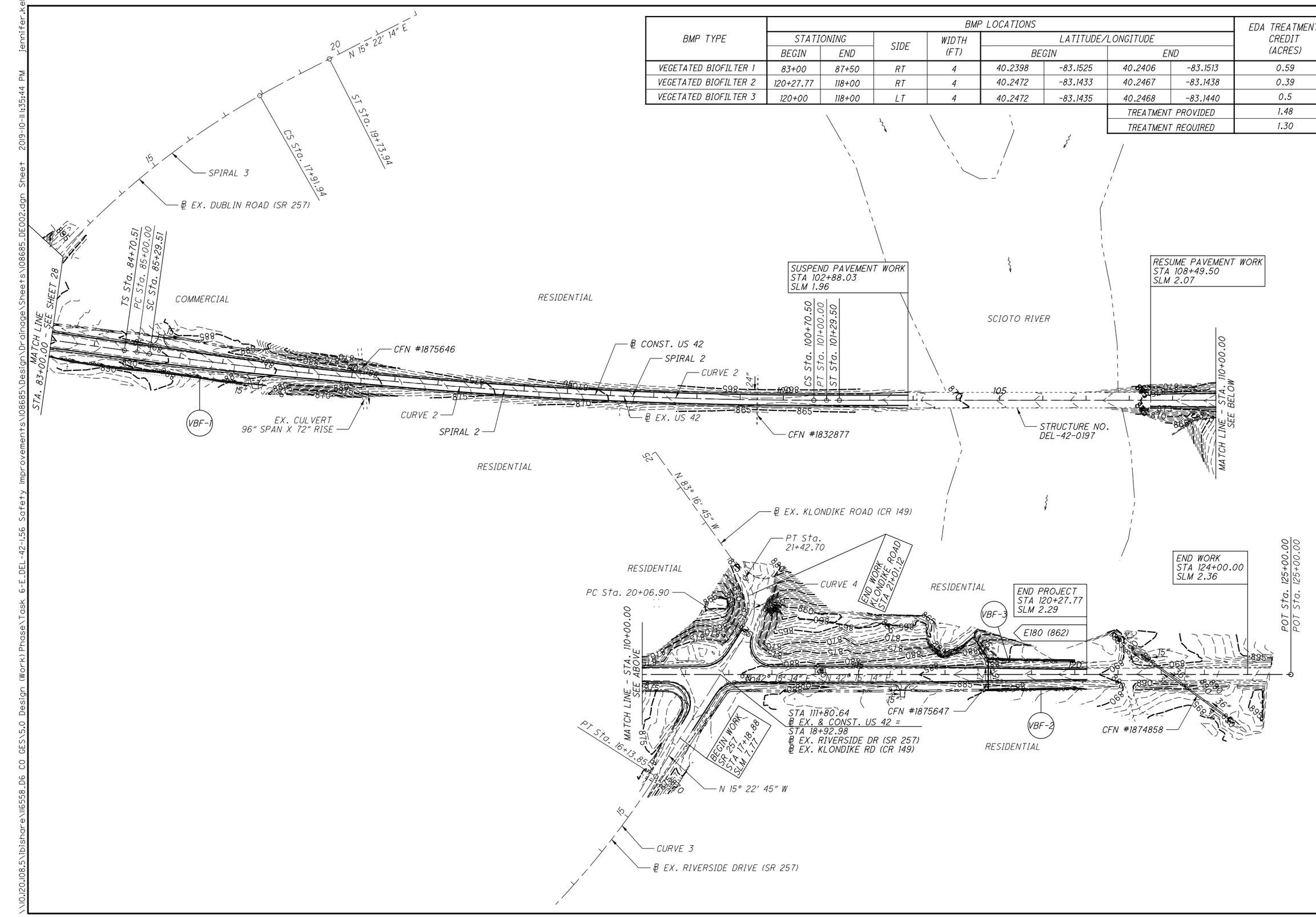
0 50 100 200 HORIZONTAL SCALE IN FEET

CALCULATED JMK CHECKED KMK

PROJECT SITE PLAN STA. 70+00 TO STA. 83+00

DEL-42-1.41

BMP TYPE	BMP LOCATIONS								EDA TREATMENT CREDIT (ACRES)
	STATIONING		SIDE	WIDTH (FT)	LATITUDE/LONGITUDE				
	BEGIN	END			BEGIN		END		
VEGETATED BIOFILTER 1	83+00	87+50	RT	4	40.2398	-83.1525	40.2406	-83.1513	0.59
VEGETATED BIOFILTER 2	120+27.77	118+00	RT	4	40.2472	-83.1433	40.2467	-83.1438	0.39
VEGETATED BIOFILTER 3	120+00	118+00	LT	4	40.2472	-83.1435	40.2468	-83.1440	0.5
							TREATMENT PROVIDED		1.48
							TREATMENT REQUIRED		1.30



HORIZONTAL SCALE IN FEET
0 50 100 200

CALCULATED JMK
CHECKED KMK

PROJECT SITE PLAN
STA. 83+00T TO STA. 124+00

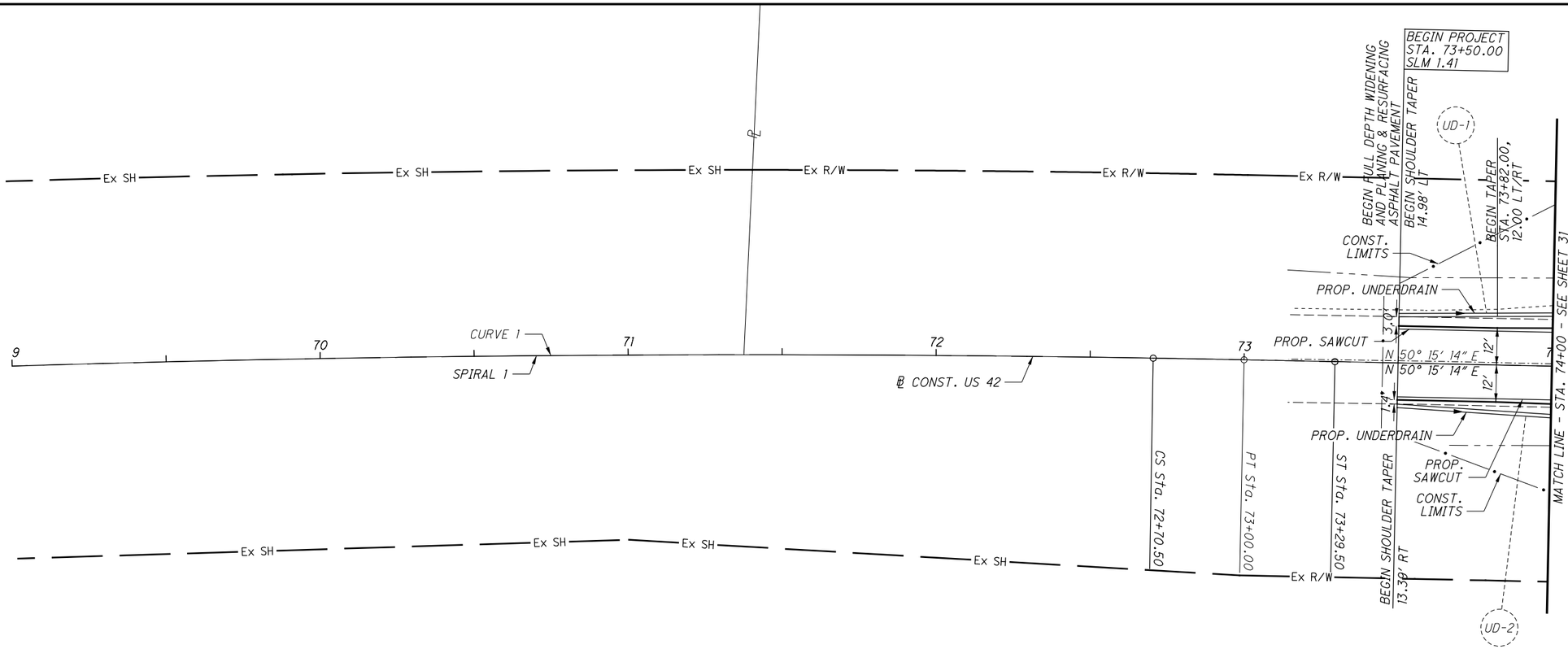
DEL-42-1.41

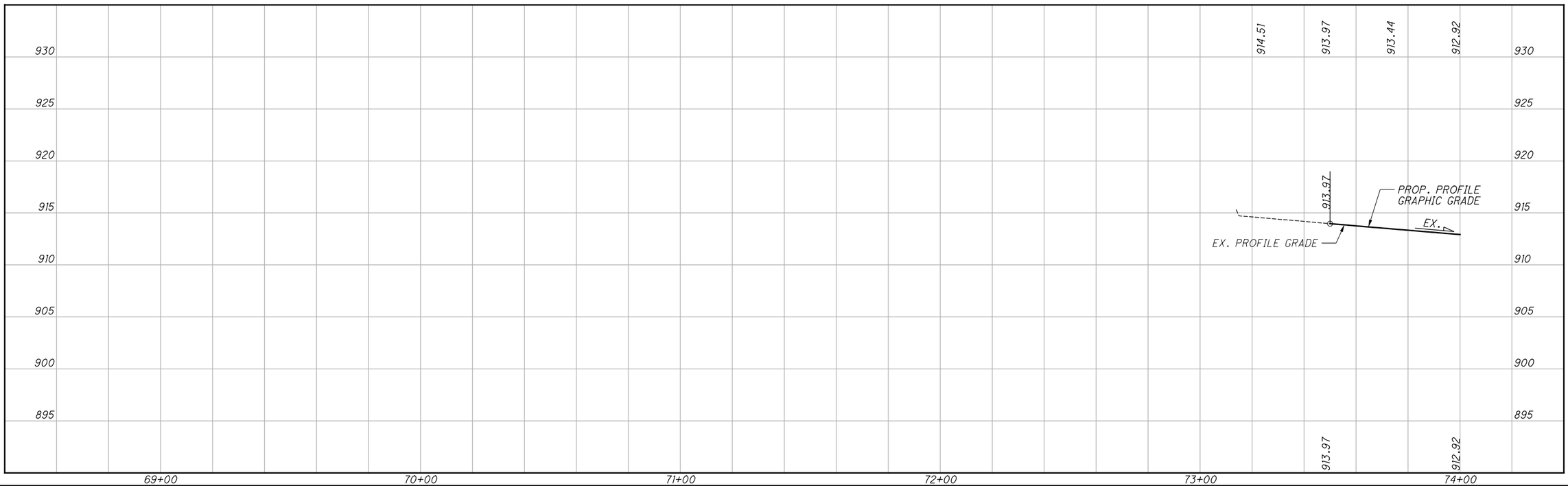
29
107

\\10.120.108.5\ibishare\116558_D6 CO GES\5.0 Design (Work) Phase\Task 6-E_DEL-42-1.56 Safety Improvements\108685\Design\Drainage\Sheets\108685_DE002.dgn Sheet 2019-10-11 11:35:44 PM jennifer.kelley

CURVE 1
℄ EX. US 42
P.I. Sta. 64+04.00
Δ = 13° 12′ 00″ (RT)
Dc = 0° 44′ 00″
R = 7,813.06′
T = 904.00′
L = 1,800.00′
E = 52.12′
C = 1,796.02′
C.B. = N 43° 39′ 14″ E

SPIRAL 1
℄ CONST. US 42
P.I. Sta. 64+04.01
Δ = 13° 12′ 00″ (RT)
Dc = 0° 44′ 00″
R = 7,813.06′
Ls = 59.00′
θs = 0° 12′ 59″
LT = 39.33′
ST = 19.67′
x = 59.00′
y = 0.07′
k = 29.50′
p = 0.02′
Δc = 12° 46′ 02″ (RT)
Lc = 1,741.00′
Ts = 933.50′
Es = 52.14′
C = 1,737.40′
C1 = C2 = 59.00′
C.B. 1 = N 37° 07′ 34″ E
C.B. = N 43° 39′ 14″ E
C.B. 2 = S 50° 10′ 55″ W





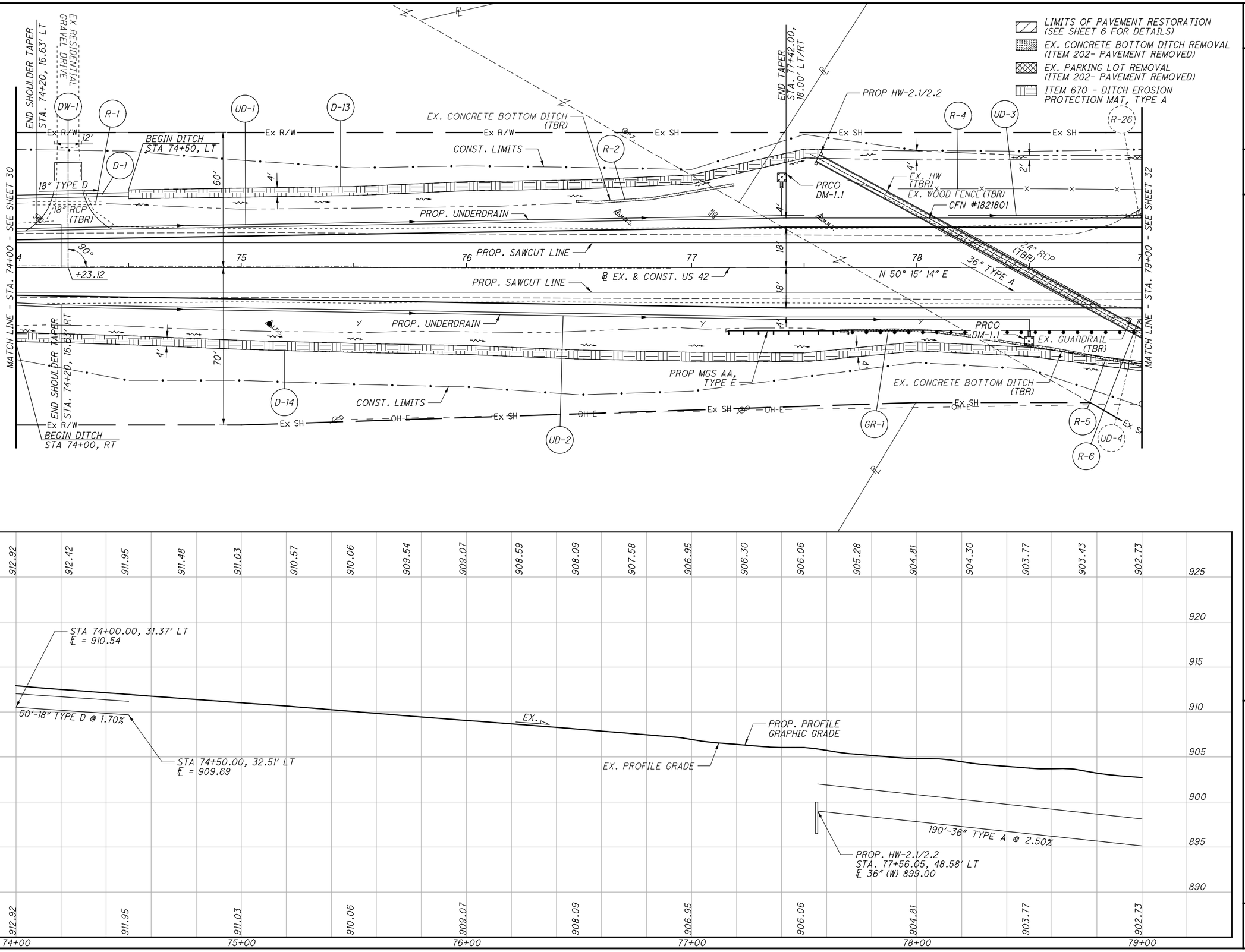
HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JMK
CHECKED KMK

PLAN AND PROFILE - U.S. 42
STA. 69+00 TO STA. 74+00

DEL-42-1.41

30
107

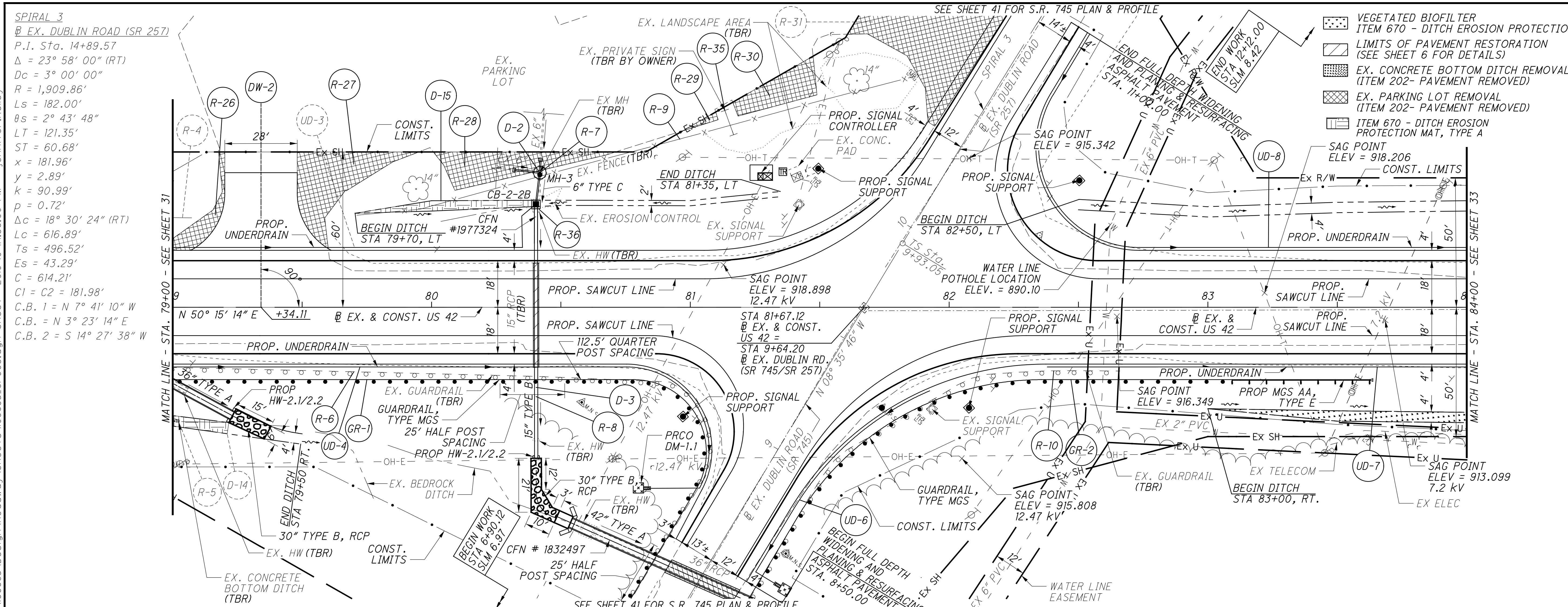


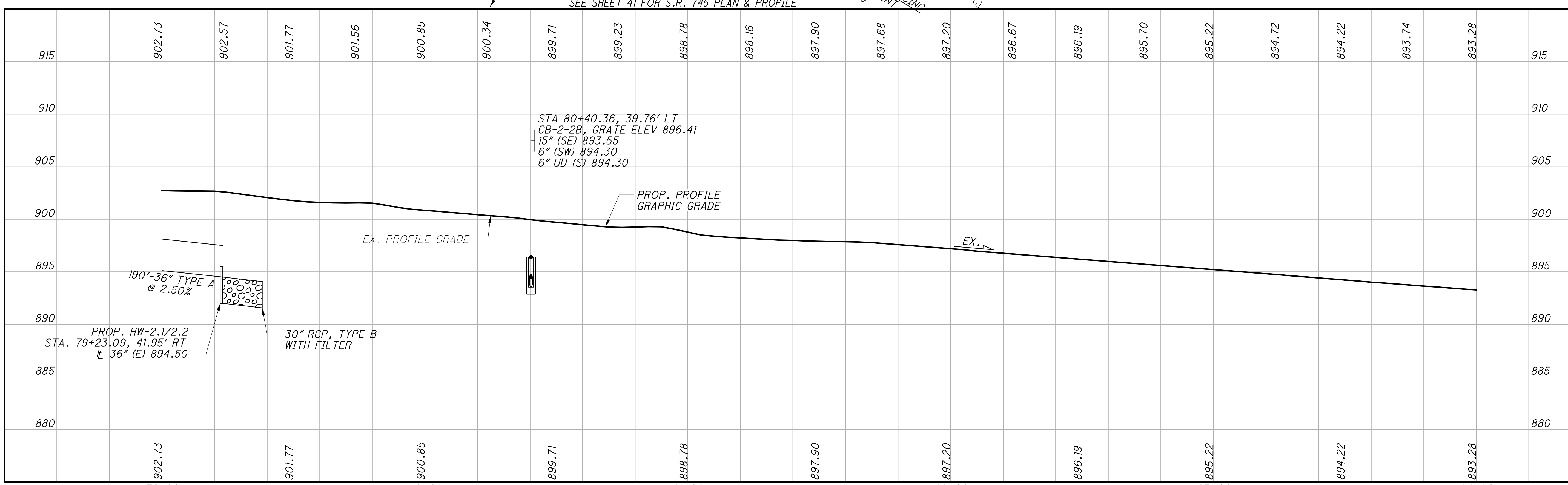
HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JMK
CHECKED KMK

PLAN AND PROFILE - U.S. 42
STA. 74+00 TO STA. 79+00

DEL-42-1.41


SPIRAL 3
℄ EX. DUBLIN ROAD (SR 257)
P.I. Sta. 14+89.57
Δ = 23° 58′ 00″ (RT)
Dc = 3° 00′ 00″
R = 1,909.86′
Ls = 182.00′
θs = 2° 43′ 48″
LT = 121.35′
ST = 60.68′
x = 181.96′
y = 2.89′
k = 90.99′
p = 0.72′
Δc = 18° 30′ 24″ (RT)
Lc = 616.89′
Ts = 496.52′
Es = 43.29′
C = 614.21′
C1 = C2 = 181.98′
C.B. 1 = N 7° 41′ 10″ W
C.B. = N 3° 23′ 14″ E
C.B. 2 = S 14° 27′ 38″ W
VEGETATED BIOFILTER
ITEM 670 - DITCH EROSION PROTECTION
LIMITS OF PAVEMENT RESTORATION
(SEE SHEET 6 FOR DETAILS)
EX. CONCRETE BOTTOM DITCH REMOVAL
(ITEM 202- PAVEMENT REMOVED)
EX. PARKING LOT REMOVAL
(ITEM 202- PAVEMENT REMOVED)
ITEM 670 - DITCH EROSION
PROTECTION MAT, TYPE A
HORIZONTAL SCALE IN FEET
0 10 20 40
SEE SHEET 41 FOR S.R. 745 PLAN & PROFILE
MATCH LINE - STA. 79+00 - SEE SHEET 31
MATCH LINE - STA. 84+00 - SEE SHEET 33
N 50° 15′ 14″ E
+34.11
℄ EX. & CONST. US 42
STA 81+67.12
℄ EX. & CONST. US 42 =
STA 9+64.20
℄ EX. DUBLIN RD. (SR 745/SR 257)
N 08° 35′ 46″ W
EX. LANDSCAPE AREA (TBR)
EX. PRIVATE SIGN (TBR BY OWNER)
EX. PARKING LOT
CONST. LIMITS
EX MH (TBR)
MH-3
CB-2-2B
6″ TYPE C
END DITCH STA 81+35, LT
BEGIN DITCH STA 79+70, LT
CFN #1977324
EX. EROSION CONTROL
EX. HW (TBR)
PROP. SIGNAL CONTROLLER
EX. CONC. PAD
PROP. SIGNAL SUPPORT
EX. SIGNAL SUPPORT
BEGIN DITCH STA 82+50, LT
SAG POINT ELEV = 915.342
SAG POINT ELEV = 918.206
SAG POINT ELEV = 918.898 12.47 kV
WATER LINE POTHOLE LOCATION ELEV. = 890.10
PROP. UNDERDRAIN
PROP. SAWCUT LINE
TS Sta. 9+93.05
END FULL DEPTH WIDENING AND PLANING & RESURFACING ASPHALT PAVEMENT STA. 11+00.00
END WORK STA 12+12.00 SLM 8.42
112.5′ QUARTER POST SPACING
EX. GUARDRAIL (TBR)
GUARDRAIL, TYPE MGS
25′ HALF POST SPACING
PROP HW-2.1/2.2
PRCO DM-1.1
30″ TYPE B RCP
42″ TYPE A
36″ RCP
CFN # 1832497
BEGIN WORK STA 6+90.12 SLM 6.97
EX. BEDROCK DITCH
END DITCH STA 79+50 RT.
30″ TYPE B, RCP
EX. CONCRETE BOTTOM DITCH (TBR)
BEGIN FULL DEPTH WIDENING AND PLANING & RESURFACING ASPHALT PAVEMENT STA. 8+50.00
SAG POINT ELEV = 916.349
PROP MGS AA, TYPE E
SAG POINT ELEV = 915.808 12.47 kV
SAG POINT ELEV = 913.099 7.2 kV
EX TELECOM
EX ELEC
BEGIN DITCH STA 83+00, RT.
WATER LINE EASEMENT
EX 6″ PVC
EX 2″ PVC


915 910 905 900 895 890 885 880
902.73 902.57 901.77 901.56 900.85 900.34 899.71 899.23 898.78 898.16 897.90 897.68 897.20 896.67 896.19 895.70 895.22 894.72 894.22 893.74 893.28
STA 80+40.36, 39.76′ LT
CB-2-2B, GRATE ELEV 896.41
15″ (SE) 893.55
6″ (SW) 894.30
6″ UD (S) 894.30
PROP. PROFILE GRAPHIC GRADE
EX. PROFILE GRADE
EX.
190′-36″ TYPE A @ 2.50%
PROP. HW-2.1/2.2
STA. 79+23.09, 41.95′ RT
℄ 36″ (E) 894.50
30″ RCP, TYPE B WITH FILTER
79+00 80+00 81+00 82+00 83+00 84+00

CALCULATED JMK
CHECKED KMK

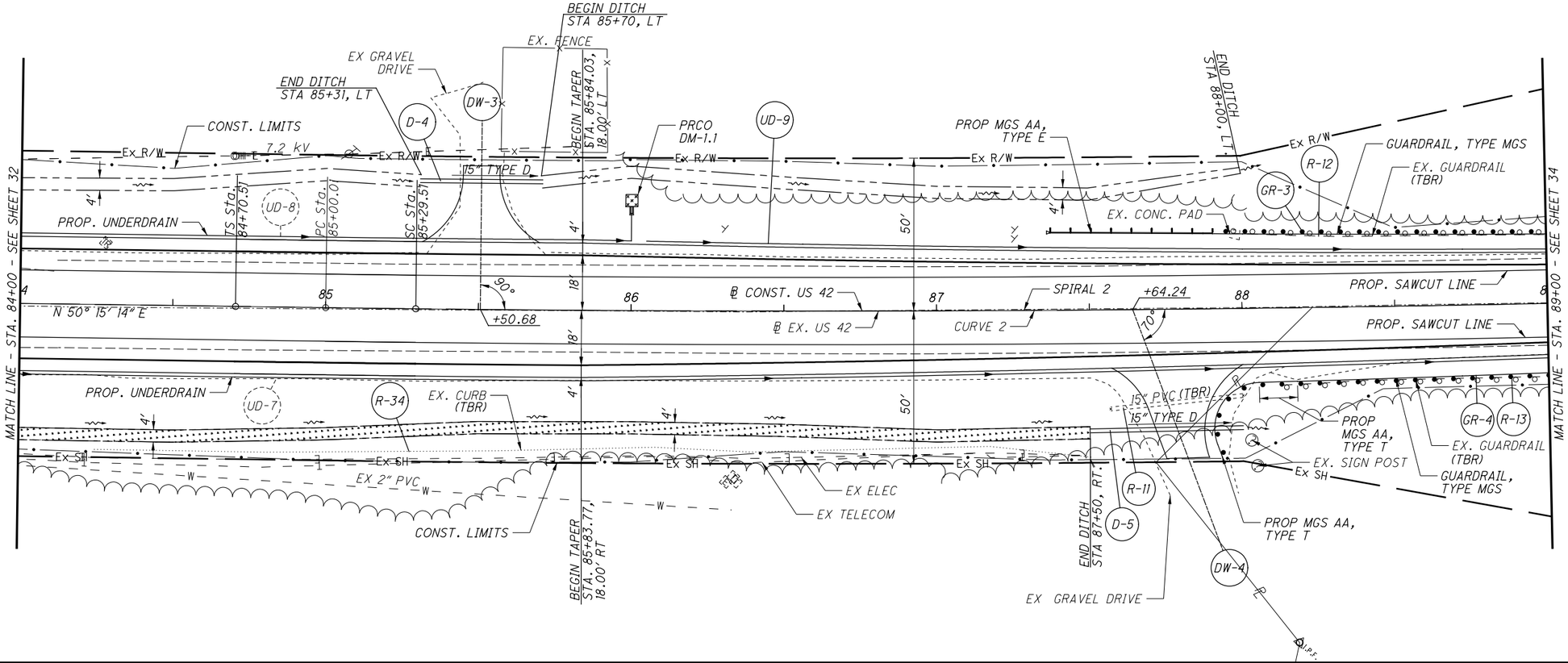
PLAN AND PROFILE - U.S. 42
STA. 79+00 TO STA. 84+00

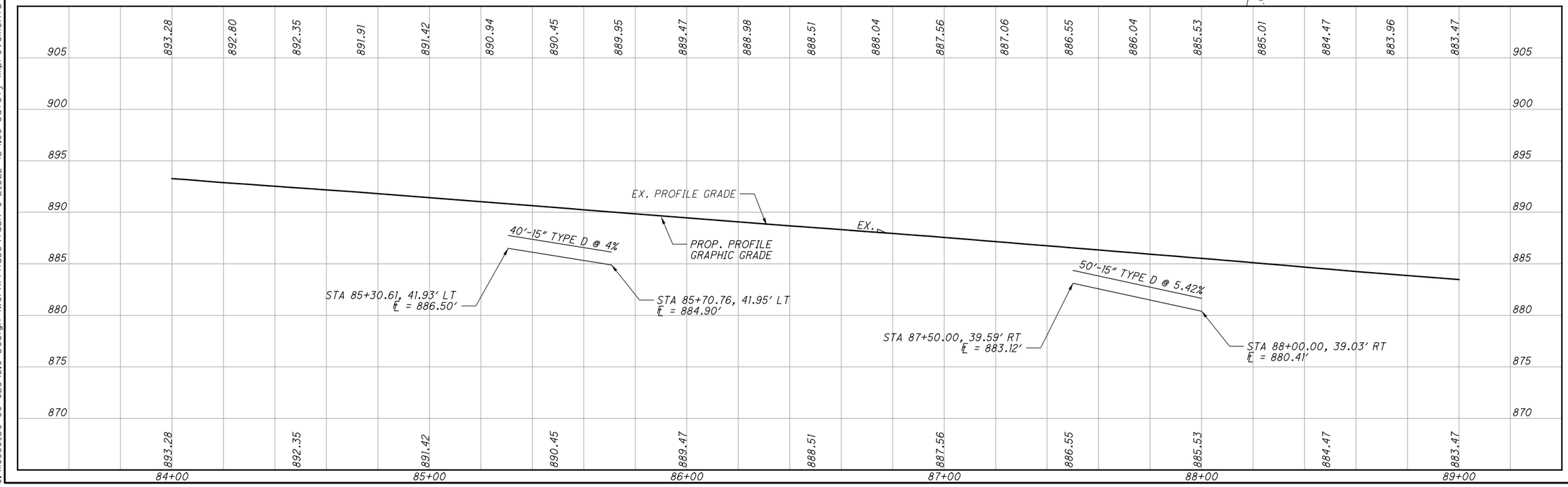
DEL-42-1.41

SPIRAL 2
℄ CONST. US 42
P.I. Sta. 93+01.31
Δ = 8° 00′ 00″ (LT)
Dc = 0° 30′ 00″
R = 11,459.16′
Ls = 59.00′
θs = 0° 08′ 51″
LT = 39.33′
ST = 19.67′
x = 59.00′
y = 0.05′
k = 29.50′
p = 0.01′
Δc = 7° 42′ 18″ (LT)
Lc = 1,540.99′
Ts = 830.80′
Es = 27.99′
C = 1,539.83′
C1 = C2 = 59.00′
C.B. 1 = N 50° 12′ 17″ E
C.B. = N 46° 15′ 14″ E
C.B. 2 = S 42° 18′ 11″ W

CURVE 2
℄ EX. US 42
P.I. Sta. 93+01.31
Δ = 8° 00′ 00″ (LT)
Dc = 0° 30′ 00″
R = 11,459.25′
T = 801.30′
L = 1,600.00′
E = 27.98′
C = 1,598.70′
C.B. = N 46° 15′ 14″ E

VEGETATED BIOFILTER
ITEM 670 - DITCH EROSION PROTECTION





HORIZONTAL SCALE IN FEET
0 10 20 40
CALCULATED JMK
CHECKED KMK

PLAN AND PROFILE - U.S. 42
STA. 84+00 TO STA. 89+00

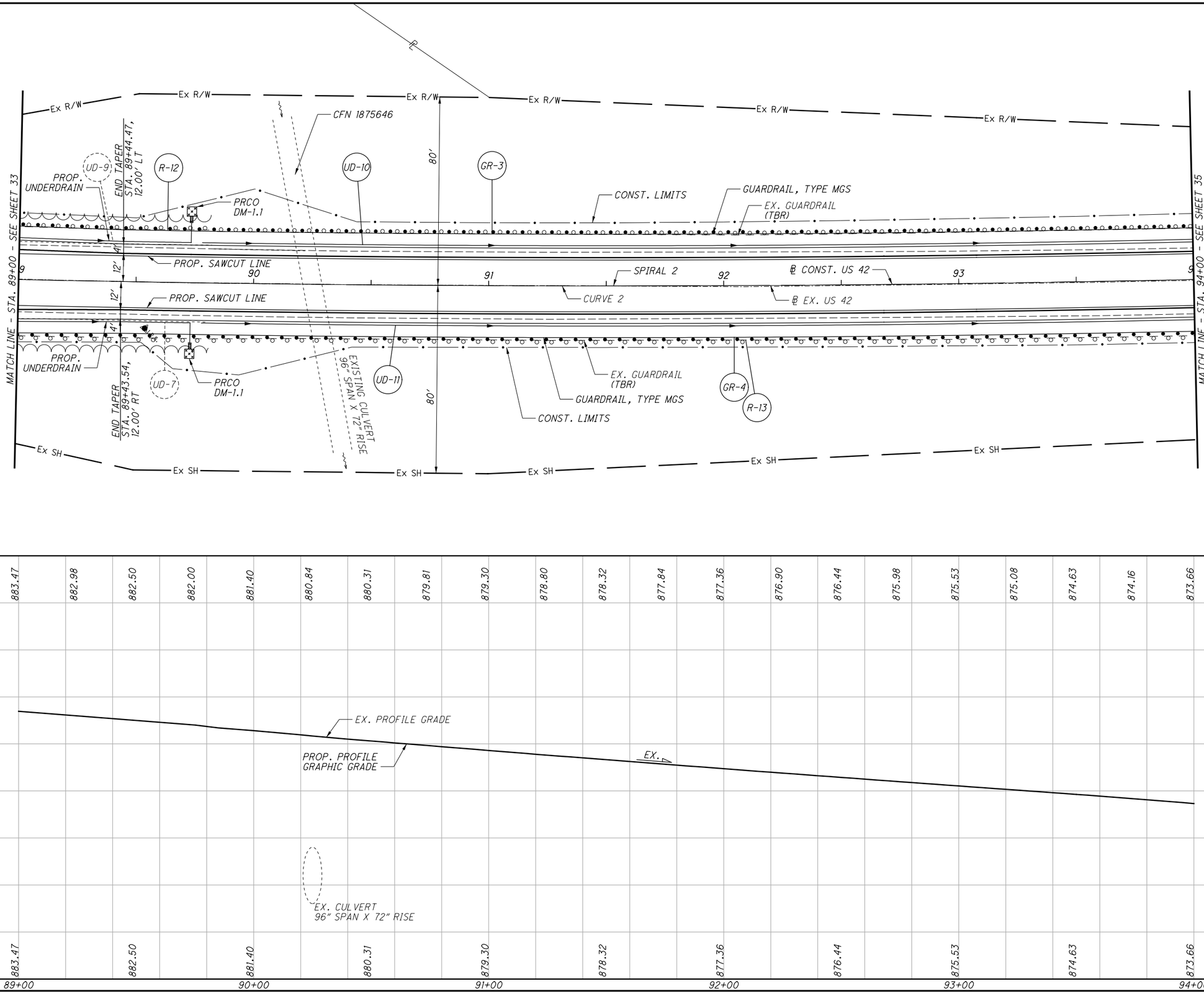
DEL-42-1.41

33
107

J:\16558.06 CO GES\5.0 Design (Work) Phase\Task 6-E_DEL-42-1.56 Safety Improvements\108685\Design\Roadway\Sheets\108685_GP004.dgn Sheet 2019-10-11 11:36:12 PM Jennifer.kelley

SPIRAL 2
℄ CONST. US 42
P.I. Sta. 93+01.31
Δ = 8° 00′ 00″ (LT)
Dc = 0° 30′ 00″
R = 11,459.16′
Ls = 59.00′
θs = 0° 08′ 51″
LT = 39.33′
ST = 19.67′
x = 59.00′
y = 0.05′
k = 29.50′
p = 0.01′
Δc = 7° 42′ 18″ (LT)
Lc = 1,540.99′
Ts = 830.80′
Es = 27.99′
C = 1,539.83′
C1 = C2 = 59.00′
C.B. 1 = N 50° 12′ 17″ E
C.B. = N 46° 15′ 14″ E
C.B. 2 = S 42° 18′ 11″ W

CURVE 2
℄ EX. US 42
P.I. Sta. 93+01.31
Δ = 8° 00′ 00″ (LT)
Dc = 0° 30′ 00″
R = 11,459.25′
T = 801.30′
L = 1,600.00′
E = 27.98′
C = 1,598.70′
C.B. = N 46° 15′ 14″ E



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HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JMK
CHECKED KMK

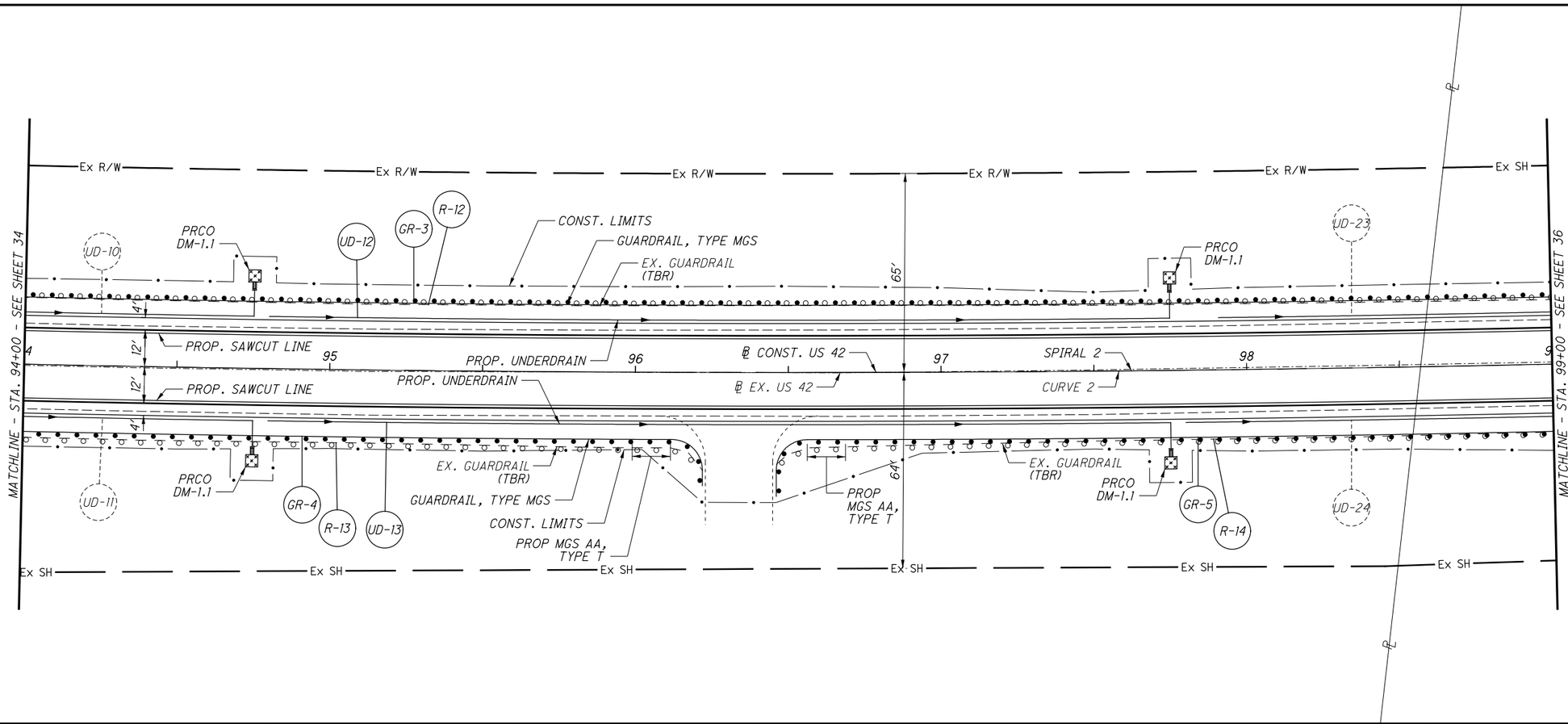
PLAN AND PROFILE - U.S. 42
STA. 89+00 TO STA. 94+00

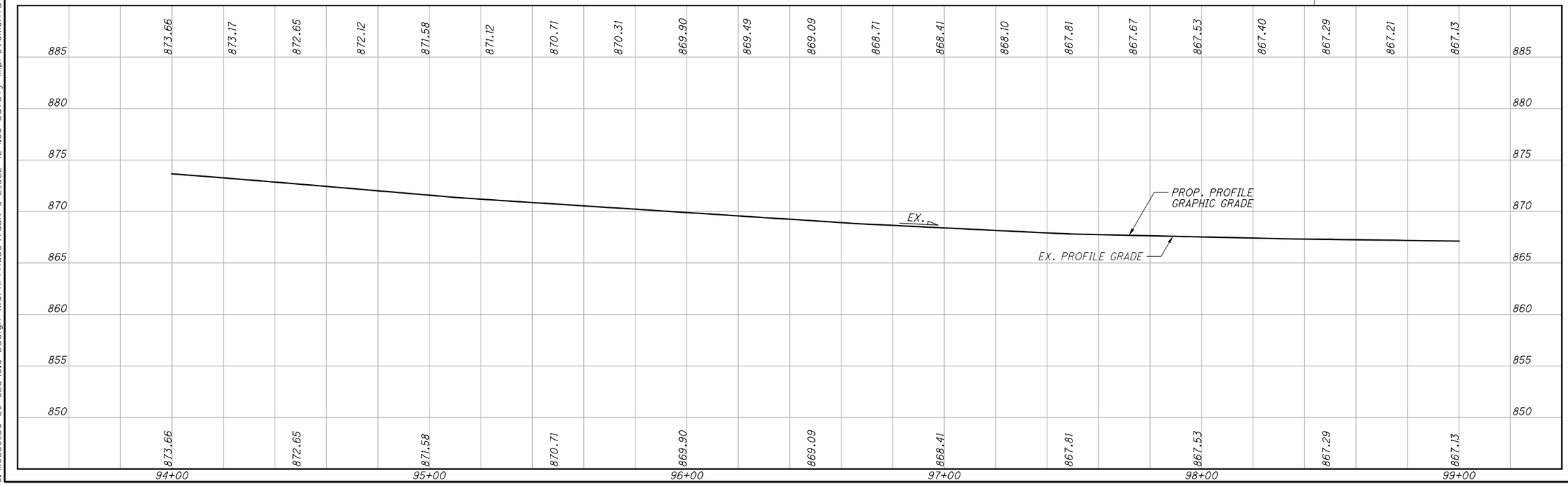
DEL-42-1.41

34
107

SPIRAL 2
℄ CONST. US 42
P.I. Sta. 93+01.31
Δ = 8° 00′ 00″ (LT)
Dc = 0° 30′ 00″
R = 11,459.16′
Ls = 59.00′
θs = 0° 08′ 51″
LT = 39.33′
ST = 19.67′
x = 59.00′
y = 0.05′
k = 29.50′
p = 0.01′
Δc = 7° 42′ 18″ (LT)
Lc = 1,540.99′
Ts = 830.80′
Es = 27.99′
C = 1,539.83′
C1 = C2 = 59.00′
C.B. 1 = N 50° 12′ 17″ E
C.B. = N 46° 15′ 14″ E
C.B. 2 = S 42° 18′ 11″ W

CURVE 2
℄ EX. US 42
P.I. Sta. 93+01.31
Δ = 8° 00′ 00″ (LT)
Dc = 0° 30′ 00″
R = 11,459.25′
T = 801.30′
L = 1,600.00′
E = 27.98′
C = 1,598.70′
C.B. = N 46° 15′ 14″ E





HORIZONTAL SCALE IN FEET
0 10 20 40
CALCULATED JMK
CHECKED KMK

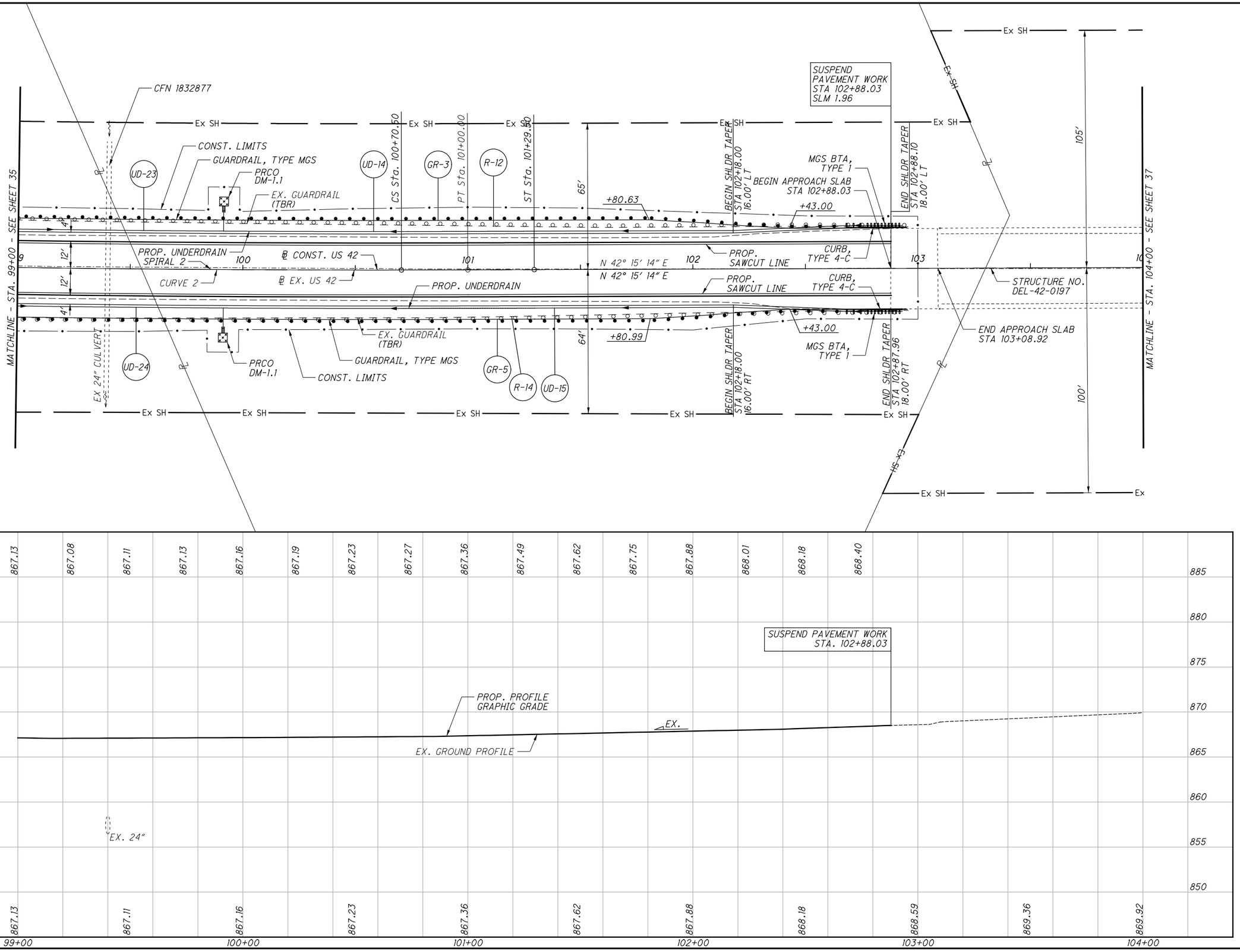
PLAN AND PROFILE - U.S. 42
STA. 94+00 TO STA. 99+00

DEL-42-1.41

35
107

SPIRAL 2
℄ CONST. US 42
P.I. Sta. 93+01.31
Δ = 8° 00′ 00″ (LT)
Dc = 0° 30′ 00″
R = 11,459.16′
Ls = 59.00′
θs = 0° 08′ 51″
LT = 39.33′
ST = 19.67′
x = 59.00′
y = 0.05′
k = 29.50′
p = 0.01′
Δc = 7° 42′ 18″ (LT)
Lc = 1,540.99′
Ts = 830.80′
Es = 27.99′
C = 1,539.83′
C1 = C2 = 59.00′
C.B. 1 = N 50° 12′ 17″ E
C.B. = N 46° 15′ 14″ E
C.B. 2 = S 42° 18′ 11″ W

CURVE 2
℄ EX. US 42
P.I. Sta. 93+01.31
Δ = 8° 00′ 00″ (LT)
Dc = 0° 30′ 00″
R = 11,459.25′
T = 801.30′
L = 1,600.00′
E = 27.98′
C = 1,598.70′
C.B. = N 46° 15′ 14″ E



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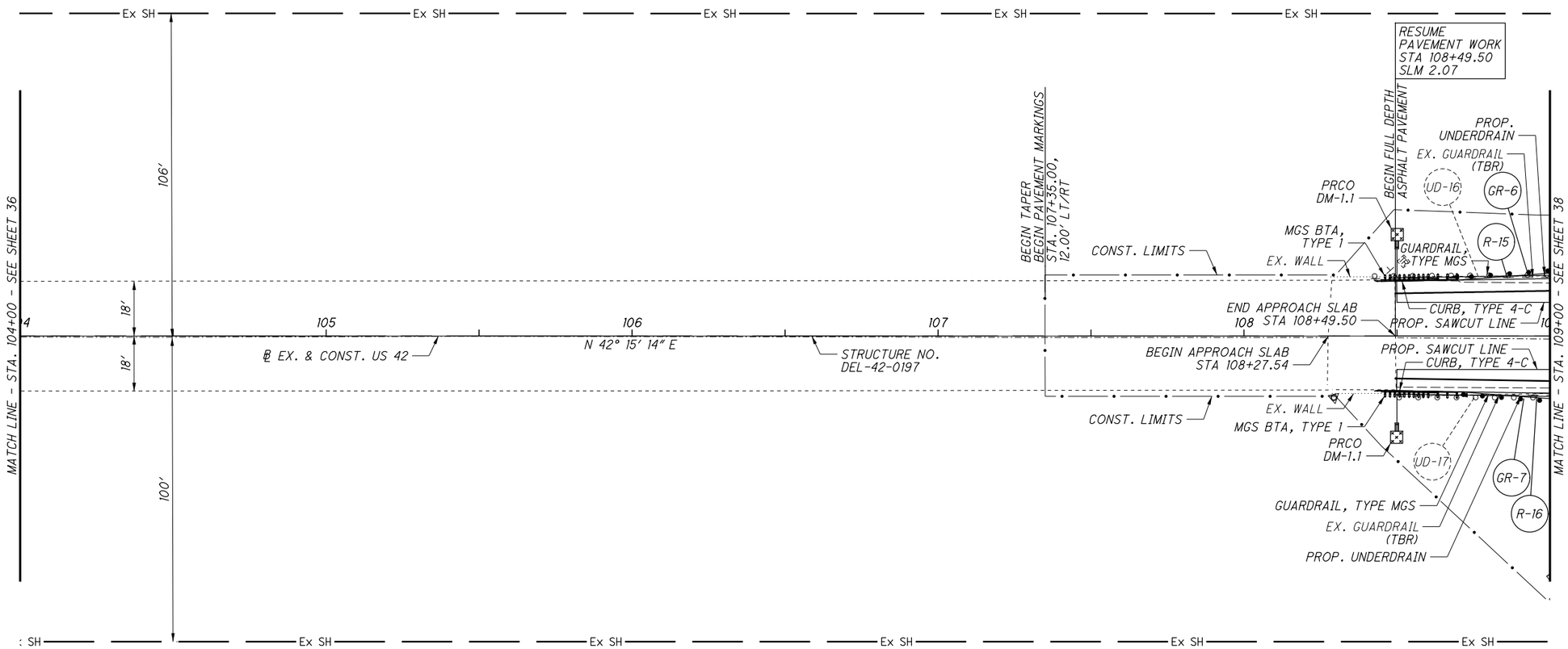
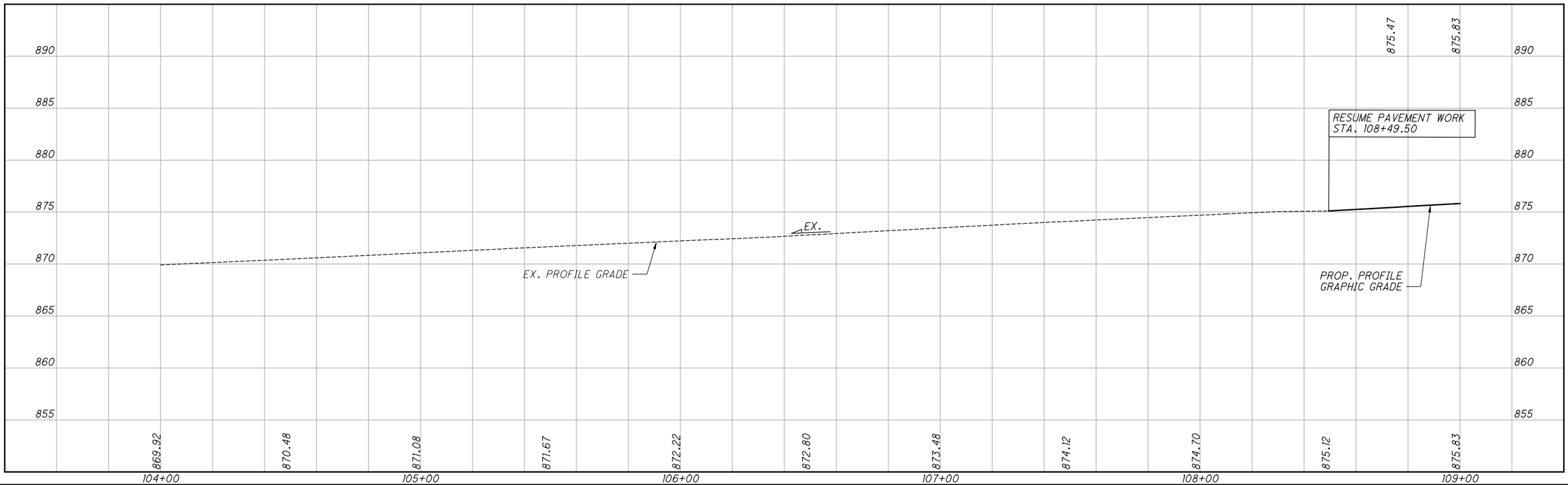
HORIZONTAL SCALE IN FEET
0 10 20 40
CALCULATED JMK
CHECKED KMK

PLAN AND PROFILE - U.S. 42
STA. 99+00 TO STA. 104+00

DEL-42-1.41

36
107





HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JMK
CHECKED KMK

PLAN AND PROFILE - U.S. 42
STA. 104+00 TO STA. 109+00

DEL-42-1.41

CURVE 4
℄ EX. KLONDIKE ROAD (CR 149)
P.I. Sta. 20+84.05
Δ = 67° 54' 00" (LT)
Dc = 50° 00' 00"
R = 114.59'
T = 77.15'
L = 135.80'
E = 23.55'
C = 127.99'
C.B. = N 49° 19' 45" W

END FULL DEPTH WIDENING AND PLANING & RESURFACING ASPHALT PAVEMENT STA. 20+06.90

PRCO DM-1.1

SEE SHEET 42 FOR S.R. 257 PLAN & PROFILE

CURVE 4

END WORK STA 21+01.12

Ex SH

Ex R/W

CONST. LIMITS

EX. GUARDRAIL (TBR)

GUARDRAIL, TYPE MGS

R-15

GR-6

PROP MGS AA, TYPE E

PROP. UNDERDRAIN

PROP. SAWCUT LINE

PROP. SIGNAL CONTROLLER

EX. SIGNAL SUPPORT

PROP. SIGNAL SUPPORT

UD-16

END TAPER STA 110+95.00, 18.00' LT/RT

EX. CONC. PAD

UD-19

(R-25)

EX. GUARDRAIL

PROP MGS AA, (TBR) TYPE E

GR-8

OH-T

OH-E

7.6 kV

℄ EX. KLONDIKE ROAD (CR 149)

SAG POINT ELEV = 898.270

SAG POINT ELEV = 899.502 7.6 kV

PRCO DM-1.1

PROP. SIGNAL SUPPORT

CONST. LIMITS

UD-21

PROP. UNDERDRAIN

PROP. SAWCUT LINE

MATCH LINE - STA. 109+00 - SEE SHEET 37

MATCH LINE - STA. 114+00 - SEE SHEET 39

109 110 111 112 113

℄ EX. & CONST. US 42

STA 111+80.64
℄ EX. & CONST./US 42 =
STA 18+92.98
℄ EX. RIVERSIDE DR (SR 257)
℄ EX. KLONDIKE RD (CR 149)

N 42° 15' 14" E

PROP. SIGNAL SUPPORT

SAG POINT ELEV = 899.524

PROP. UNDERDRAIN

EX. GUARDRAIL (TBR)

GUARDRAIL, TYPE MGS

R-16

UD-17

PROP MGS AA, TYPE E

GR-7

D-16

STA. 110+14.40
37.23' RT
ELEV = 870.44

STA. 110+60.96
38.41' RT
ELEV = 873.86

DITCH HIGH POINT
STA. 110+90.24
55.73' RT
ELEV = 876.47

STA. 109+50.00
45.53' RT
ELEV = 865.68

STA. 110+89.99
88.38' RT
ELEV = 876.03

UD-18

CONST. LIMITS

BEGIN DITCH
STA 108+99
78.59' RT
ELEV = 861.20

BEGIN FULL DEPTH WIDENING AND PLANING & RESURFACING ASPHALT PAVEMENT STA. 17+50.00

PRCO DM-1.1

BEGIN WORK STA 17+18.88

SEE SHEET 42 FOR S.R. 257 PLAN & PROFILE

N 15° 22' 45" W

℄ EX. RIVERSIDE DRIVE (SR 257)

UD-20

EX. APPLE TREES

EX. SIGNAL SUPPORT

SAG POINT ELEV = 895.743 7.6 kV

VEGETATED BIOFILTER
ITEM 670 - DITCH EROSION PROTECTION
ITEM 670 - DITCH EROSION PROTECTION MAT, TYPE A

	875.83	876.23	876.65	877.00	877.35	877.28	877.56	877.78	878.06	878.35	878.70	878.77	879.41	879.96	880.23	880.52	880.85	881.15	881.44	881.75	882.07	
895																						895
890																						890
885																						885
880																						880
875																						875
870																						870
865																						865
860																						860
	875.83		876.65		877.35		877.56		878.06		878.70		879.41		880.23		880.85		881.44		882.07	

PROP. PROFILE GRAPHIC GRADE

EX. PROFILE GRADE

EX.

109+00 110+00 111+00 112+00 113+00 114+00

HORIZONTAL SCALE IN FEET
0 10 20 40

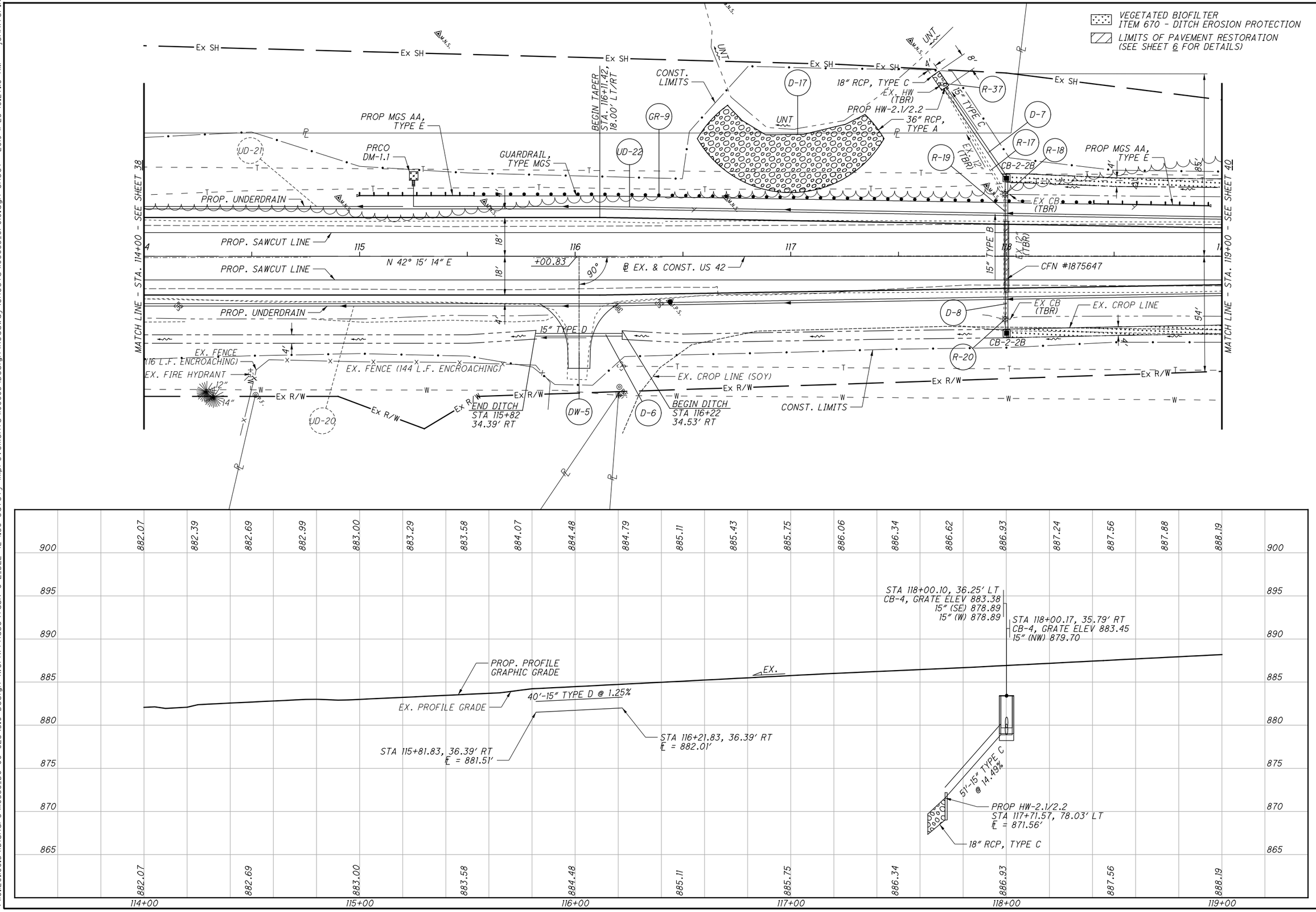
CALCULATED JMK
CHECKED KMK

PLAN AND PROFILE - U.S. 42
STA. 109+00 TO STA. 114+00

DEL-42-1.41

38
107

J:\16558.D6 CO GES\5.0 Design (Work) Phase\Task 6-E_DEL-42-1.56 Safety Improvements\108685\Design\Roadway\Sheets\108685_GP009.dgn Sheet 2019-10-11 11:36:33 PM jennifer.kelley



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HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JMK
CHECKED KMK

PLAN AND PROFILE - U.S. 42
STA. 114+00 TO STA. 119+00

DEL-42-1.41

39
107

PLAN AND PROFILE - U.S. 42
STA. 119+00 TO STA. 124+00

DEL-42-1.41

40
107

CALCULATED JMK
CHECKED KMK

HORIZONTAL SCALE IN FEET
0 10 20 40

VEGETATED BIOFILTER
ITEM 670 - DITCH EROSION PROTECTION
LIMITS OF PAVEMENT RESTORATION
(SEE SHEET 6 FOR DETAILS)

END PROJECT
STA. 120+27.77
SLM 2.29

END WORK
STA. 124+00
SLM 2.36

MATCH LINE - STA. 119+00 - SEE SHEET 39

END TAPER
STA. 119+71.42,
12.00' LT/RT

BEGIN SHOULDER TAPER
STA. 119+72.77, 16' LT

END DITCH
STA 120+00, LT

END FULL DEPTH WIDENING
AND PLANING & RESURFACING
ASPHALT PAVEMENT

END SHOULDER TAPER
STA. 120+27.77, 14.68' LT

EX. CHANNEL EASEMENT

30'

EX. 42"

R-38

(DND)

EX. HW (TBR)

PROP
HW-2.1/2.2

EX. 36"
(TBR)

105'-36" TYPE B

R-21

Ex SH

CONST. LIMITS

UD-22

PROP. UNDERDRAIN

PROP. SAWCUT LINE

PROP. SAWCUT LINE

PROP. UNDERDRAIN

CONST. LIMITS

UD-20

WATER LINE
EASEMENT

4'
12'
60'
50'

120
N 42° 15' 14" E

℄ EX. & CONST. US 42

121

122

123

D-12

EX. CB (TBR)
8" TYPE C

EX. 8"

R-23

R-22

124'-36" TYPE C

WATER LINE POTHOLE LOCATION
ELEV. = 890.7108

Ex R/W

Ex U

W

OH-E

EX. CROP
LINE (SOY)

STA 122+55.88, 28.55' RT
Side Ditch Inlet, GRATE ELEV 889.27
36" (E) 885.27
36" (W) 885.27

D-10

CFN #1874858

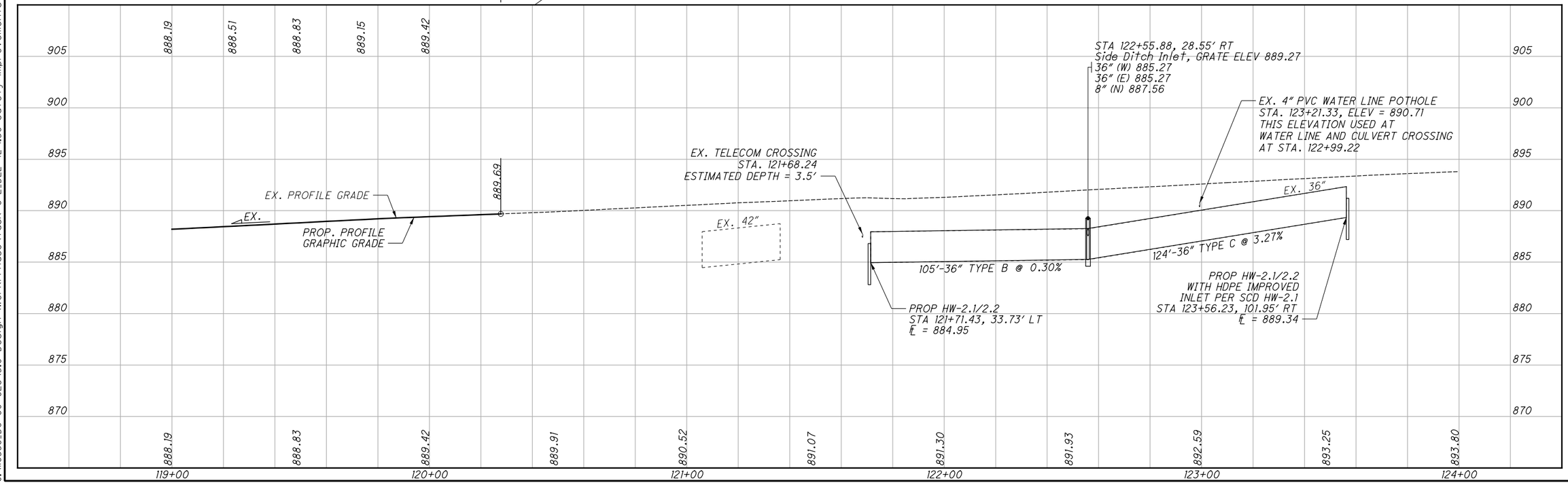
CONST. LIMITS

EX. HW
(TBR)

R-39

PROP HW-2.1/2.2
WITH HDPE IMPROVED
INLET PER SCD HW-2.1

10'



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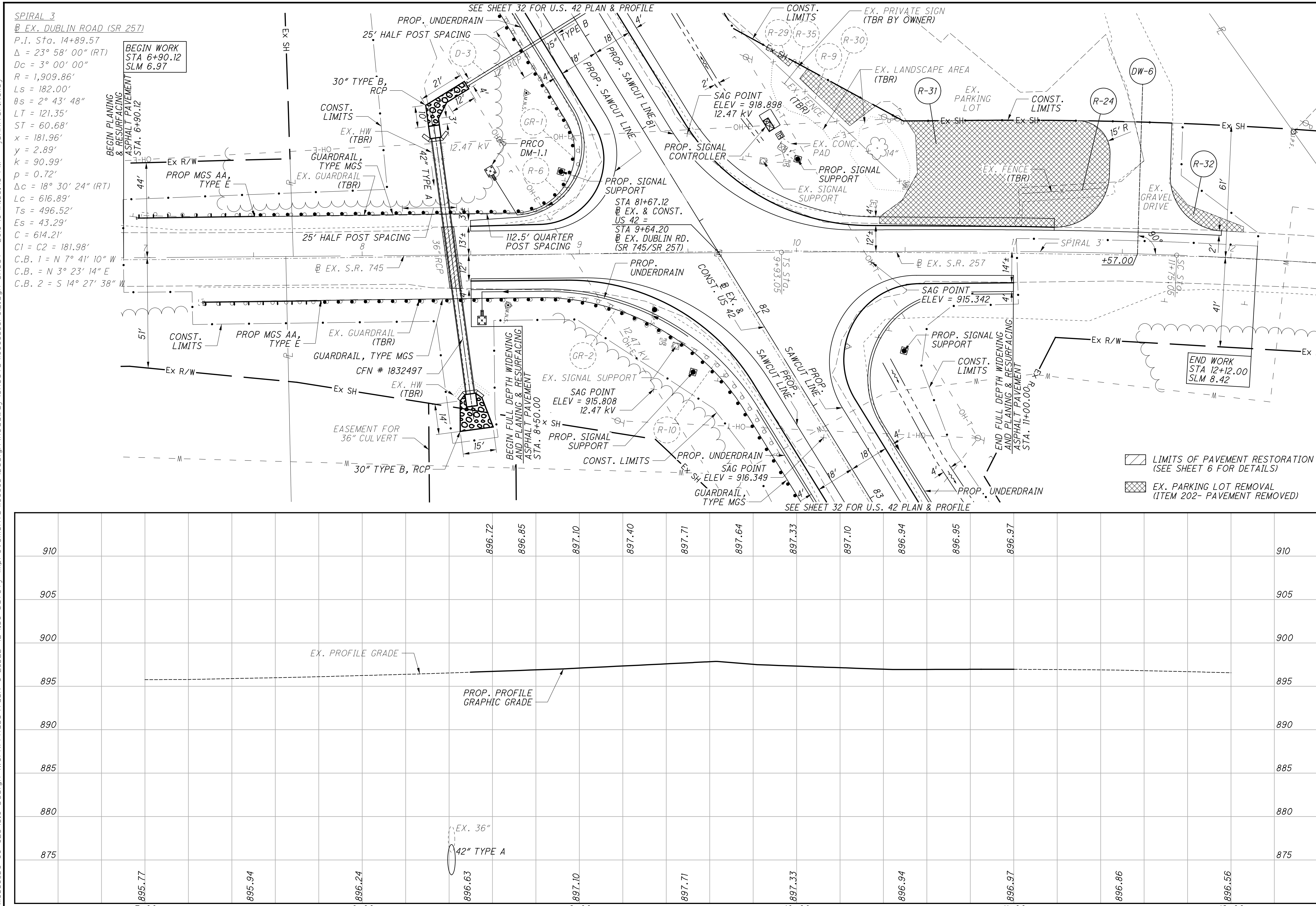
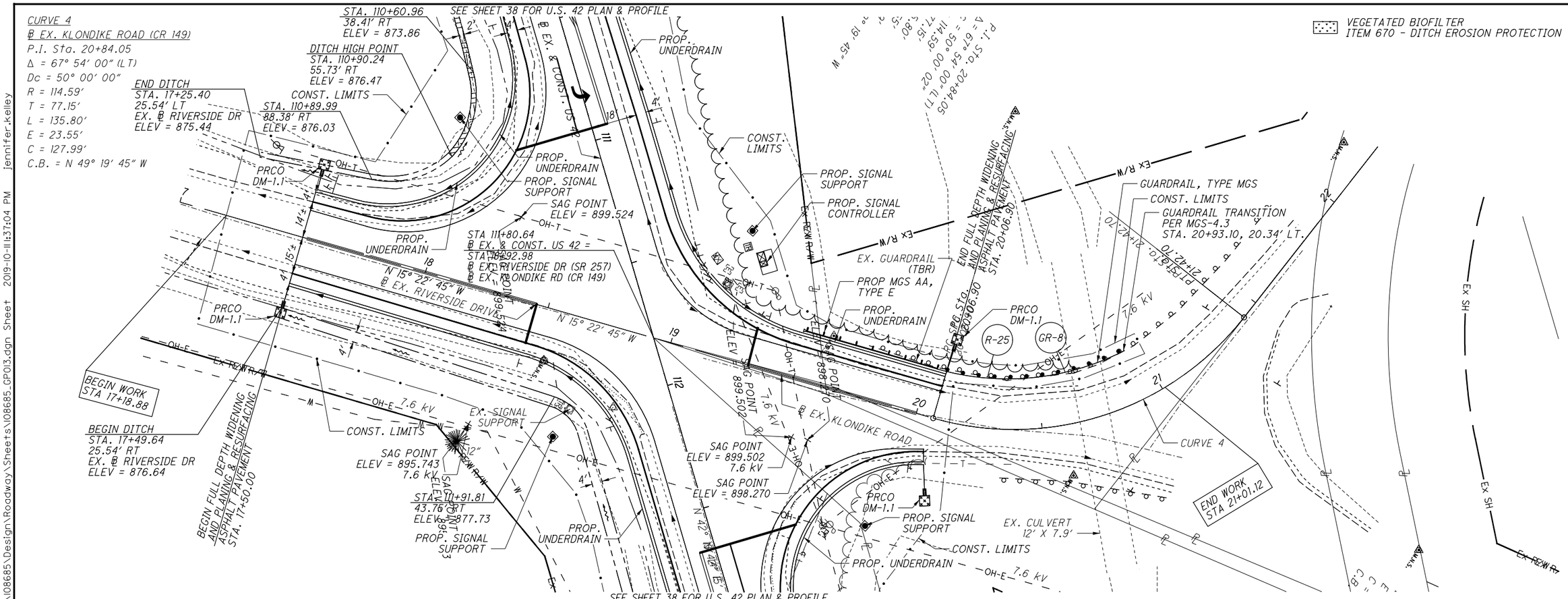


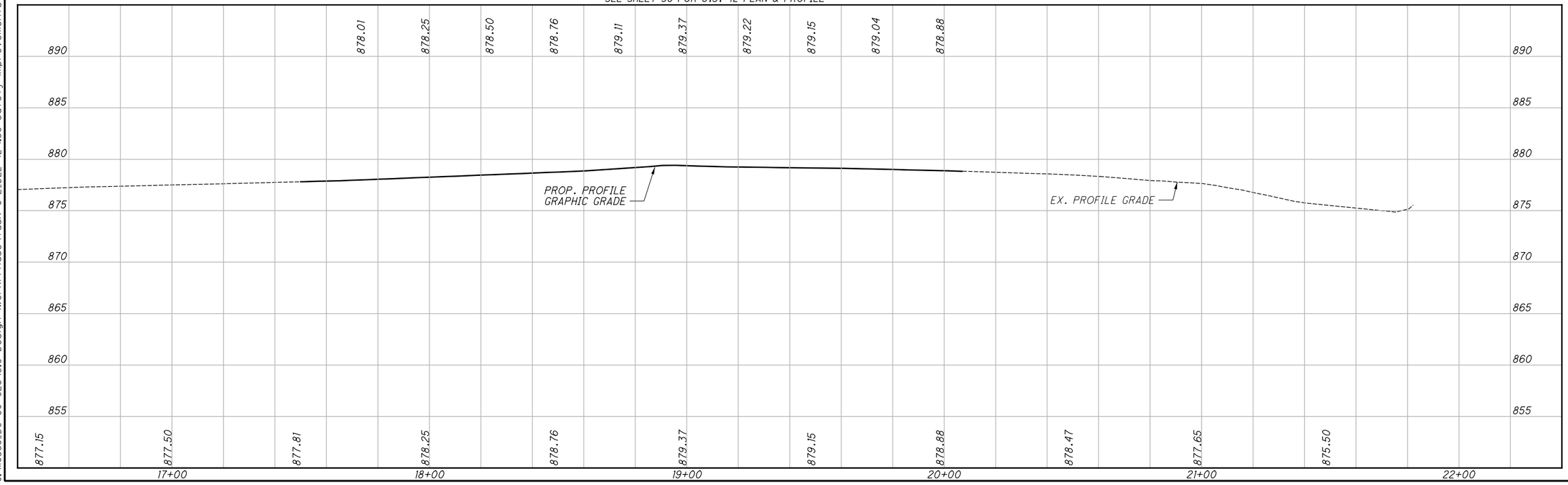
SPIRAL 3
℄ EX. DUBLIN ROAD (SR 257)
P.I. Sta. 14+89.57
Δ = 23° 58′ 00″ (RT)
Dc = 3° 00′ 00″
R = 1,909.86′
Ls = 182.00′
θs = 2° 43′ 48″
LT = 121.35′
ST = 60.68′
x = 181.96′
y = 2.89′
k = 90.99′
p = 0.72′
Δc = 18° 30′ 24″ (RT)
Lc = 616.89′
Ts = 496.52′
Es = 43.29′
C = 614.21′
C1 = C2 = 181.98′
C.B. 1 = N 7° 41′ 10″ W
C.B. = N 3° 23′ 14″ E
C.B. 2 = S 14° 27′ 38″ W
BEGIN WORK
STA 6+90.12
SLM 6.97
BEGIN PLANING & RESURFACING ASPHALT PAVEMENT STA. 6+90.12
SEE SHEET 32 FOR U.S. 42 PLAN & PROFILE
PROP. UNDERDRAIN
25′ HALF POST SPACING
30″ TYPE B, RCP
CONST. LIMITS
EX. HW (TBR)
GUARDRAIL, TYPE MGS
EX. GUARDRAIL (TBR)
PROP MGS AA, TYPE E
42″ TYPE A
12.47 kV
PRCO DM-1.1
PROP. SIGNAL SUPPORT
STA 81+67.12
℄ EX. & CONST. US 42 =
STA 9+64.20
℄ EX. DUBLIN RD. (SR 745/SR 257)
112.5′ QUARTER POST SPACING
℄ EX. S.R. 745
36″ RCP
PROP. SAWCUT LINE
PROP. SIGNAL CONTROLLER
SAG POINT
ELEV = 918.898
12.47 kV
EX. FENCE (TBR)
EX. CONC. PAD
EX. SIGNAL SUPPORT
CONST. LIMITS
EX. PRIVATE SIGN (TBR BY OWNER)
EX. LANDSCAPE AREA (TBR)
EX. PARKING LOT
EX. GRAVEL DRIVE
SPIRAL 3′
+57.00
PROP. UNDERDRAIN
CONST. US 42
SAG POINT
ELEV = 915.342
CFN # 1832497
EASEMENT FOR 36″ CULVERT
BEGIN FULL DEPTH WIDENING AND PLANING & RESURFACING ASPHALT PAVEMENT STA. 8+50.00
SAG POINT
ELEV = 915.808
12.47 kV
CONST. LIMITS
SAG POINT
ELEV = 916.349
GUARDRAIL, TYPE MGS
END FULL DEPTH WIDENING AND PLANING & RESURFACING ASPHALT PAVEMENT STA. 11+00.00
END WORK
STA 12+12.00
SLM 8.42
SEE SHEET 32 FOR U.S. 42 PLAN & PROFILE
LIMITS OF PAVEMENT RESTORATION (SEE SHEET 6 FOR DETAILS)
EX. PARKING LOT REMOVAL (ITEM 202- PAVEMENT REMOVED)
EX. PROFILE GRADE
PROP. PROFILE GRAPHIC GRADE
EX. 36″
42″ TYPE A
896.72 896.85 897.10 897.40 897.71 897.64 897.33 897.10 896.94 896.95 896.97
895.77 895.94 896.24 896.63 897.10 897.71 897.33 896.94 896.97 896.86 896.56
910 905 900 895 890 885 880 875
7+00 8+00 9+00 10+00 11+00 12+00
HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JMK
CHECKED KMK

PLAN AND PROFILE - S.R. 745
STA. 7+00 TO STA. 12+00

DEL-42-1.41





HORIZONTAL SCALE IN FEET
0 10 20 40
CALCULATED JMK
CHECKED KMK

PLAN AND PROFILE - S.R. 257
STA. 17+00 TO STA. 22+00

DEL-42-1.41

42
107

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SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	328			120	15
56		66	6		
	192			75	6
13		15	1		
	14			6	0
0		0	0		
	534			201	21

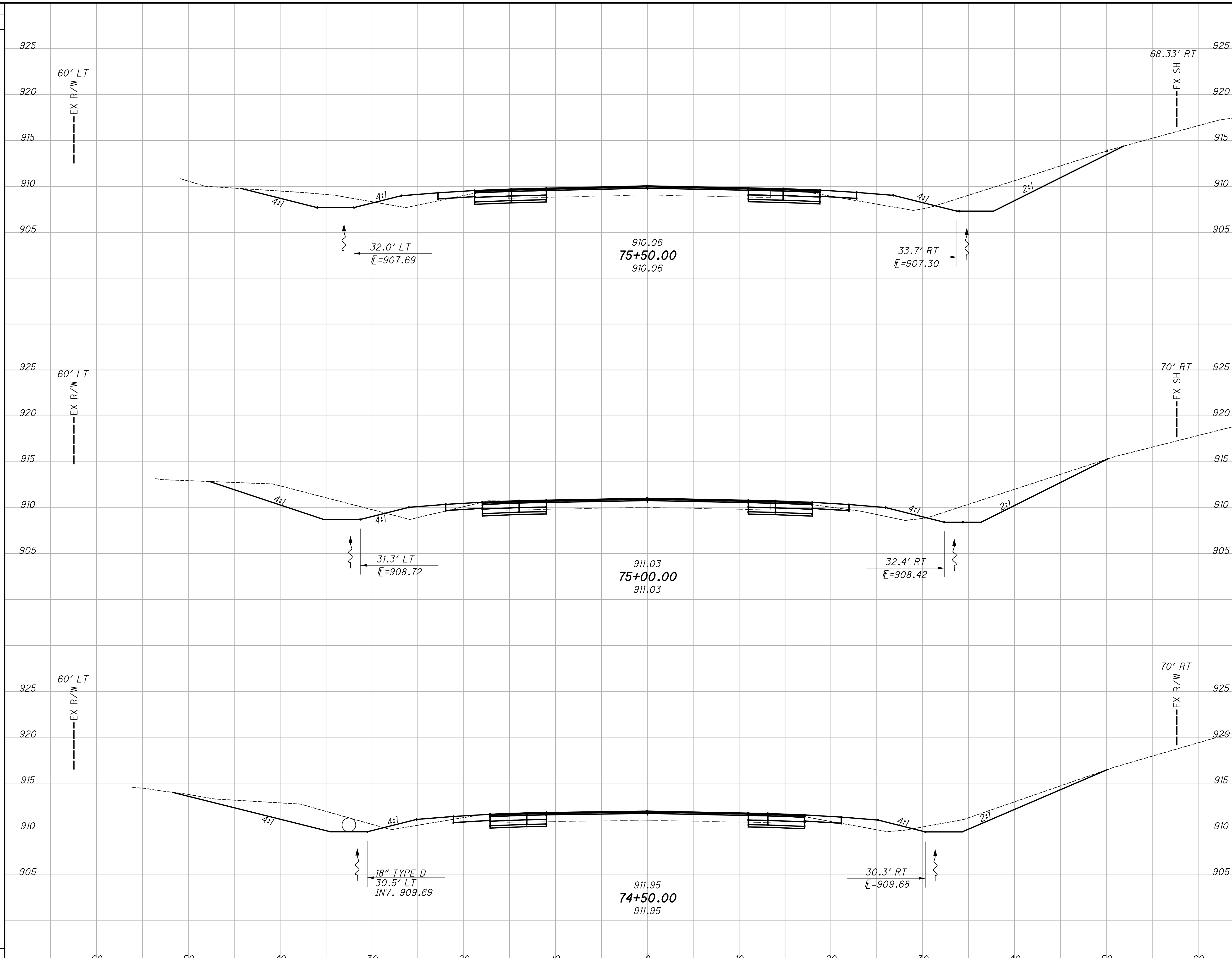
60′ LT
EX R/W
70′ RT
EX R/W
925
920
915
910
905
4:1
4:1
4:1
2:1
18″ TYPE D
30.4′ LT
INV. 910.54
28.9′ RT
℄=910.67
912.92
74+00.00
912.92
912.61
912.70
913.97
73+50.00
913.97
914.40
73+30.00
914.40
60 50 40 30 20 10 0 10 20 30 40 50 60

CALCULATED BSB
CHECKED KMK

CROSS SECTIONS US-42
STA. 73+30.00 TO STA. 74+00.00

DEL-42-1.41

SEEDING			Station	END AREA		VOLUME	
END WIDTH	SQ. YDS.			CUT	FILL	CUT	FILL
	294					121	29
53			75+50.00	64	15		
	306					130	25
57			75+00.00	76	12		
	331					130	20
62			74+50.00	64	10		
	931					381	74

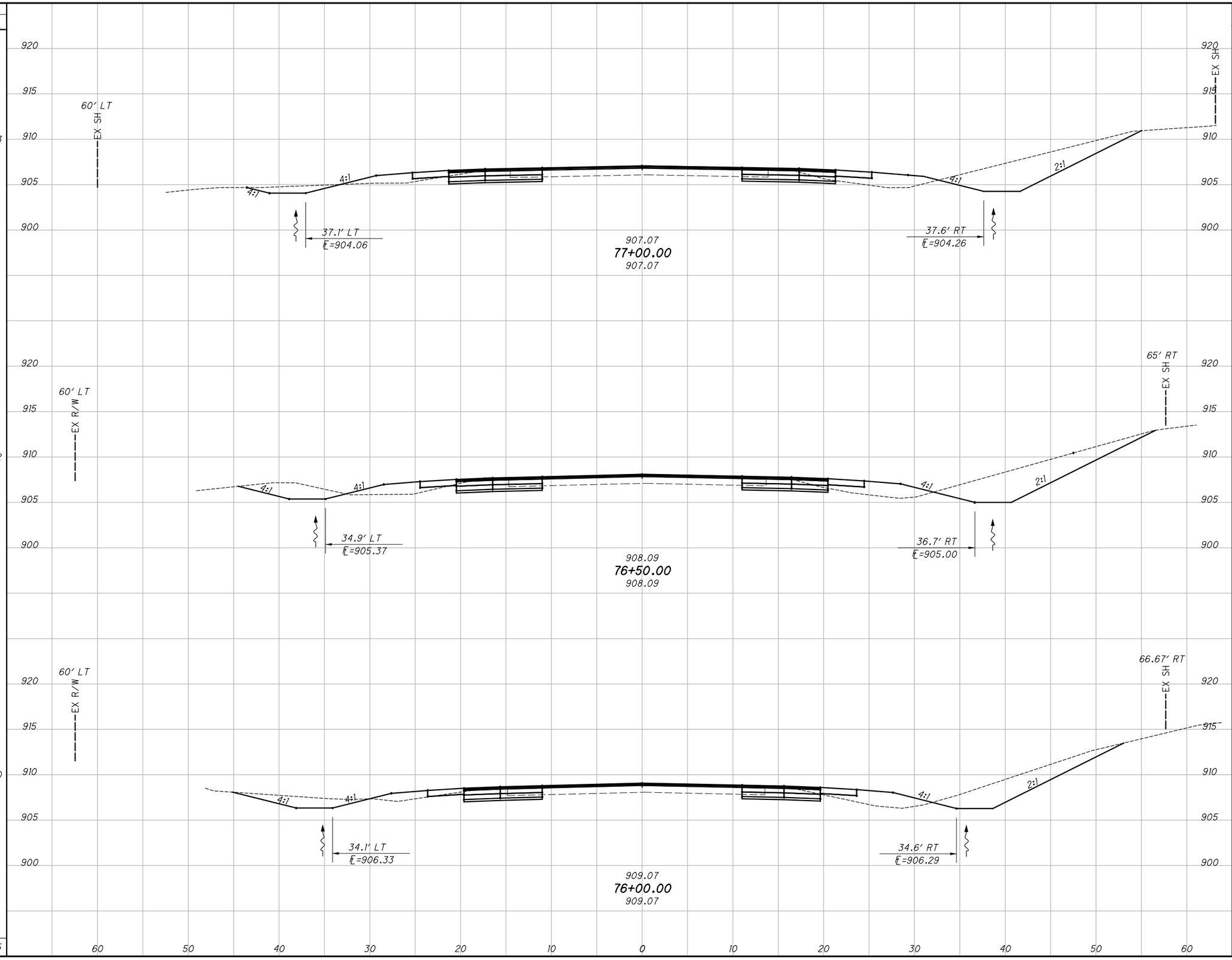


CALCULATED BSB
CHECKED KMK

CROSS SECTIONS US-42
STA. 74+50.00 TO STA. 75+50.00

DEL-42-1.41

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
50	303	74	18	135	54
55	292	84	20	146	35
53	300	67	16	140	33
	895			421	122

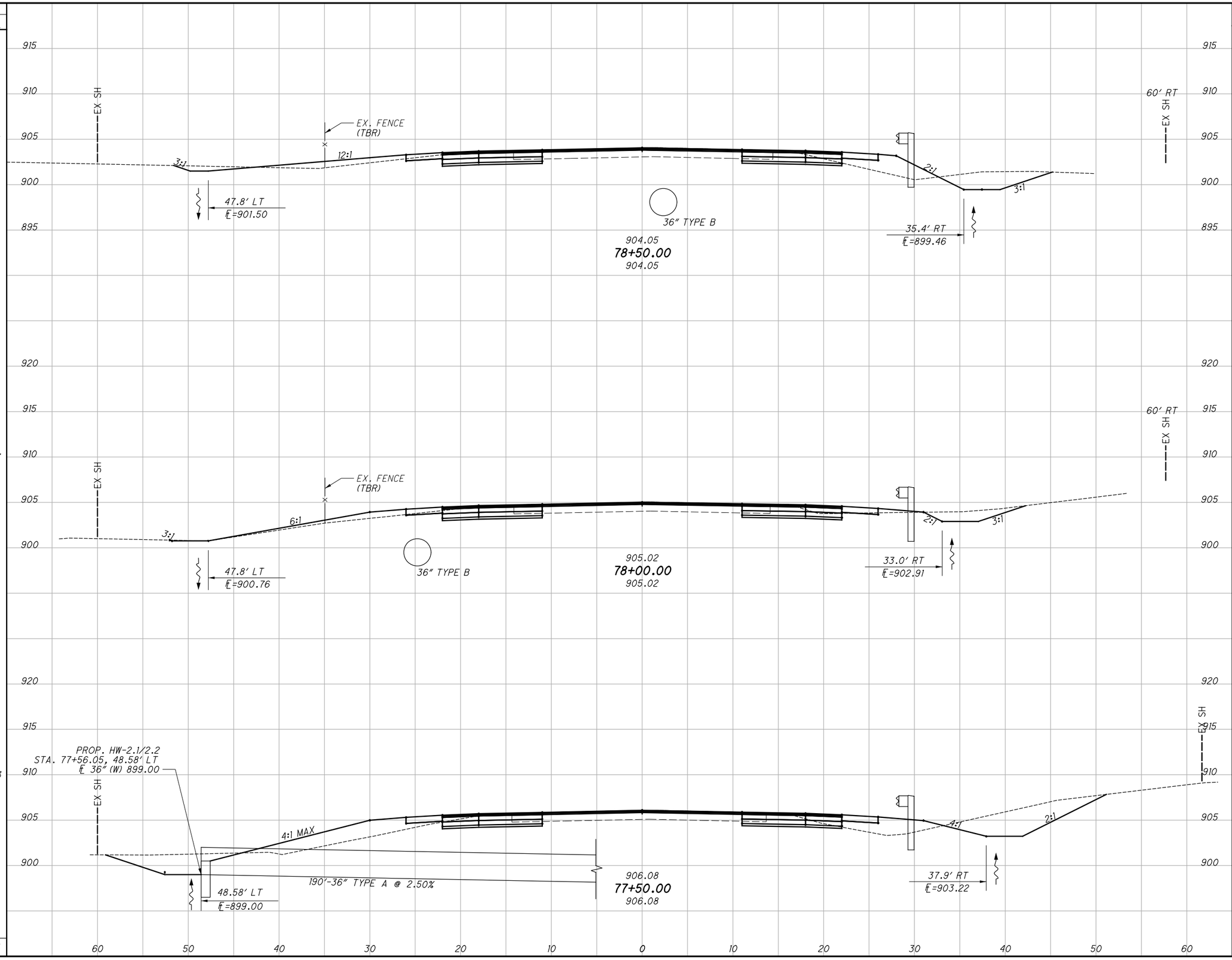


CALCULATED BSB
CHECKED KMK

CROSS SECTIONS US-42
STA. 76+00.00 TO STA. 77+00.00

DEL-42-1.41

SEEDING	
END WIDTH	SQ. YDS.
	261
46	
	247
43	
	283
59	
	791



END AREA	
CUT	FILL
49	22
38	9
72	40

VOLUME	
CUT	FILL
117	30
81	29
102	45
300	104

CALCULATED BSB
CHECKED KMK

CROSS SECTIONS US-42
STA. 77+50.00 TO STA. 78+50.00

DEL-42-1.41

SEEDING	
END WIDTH	SQ. YDS.
	247
	228
	475

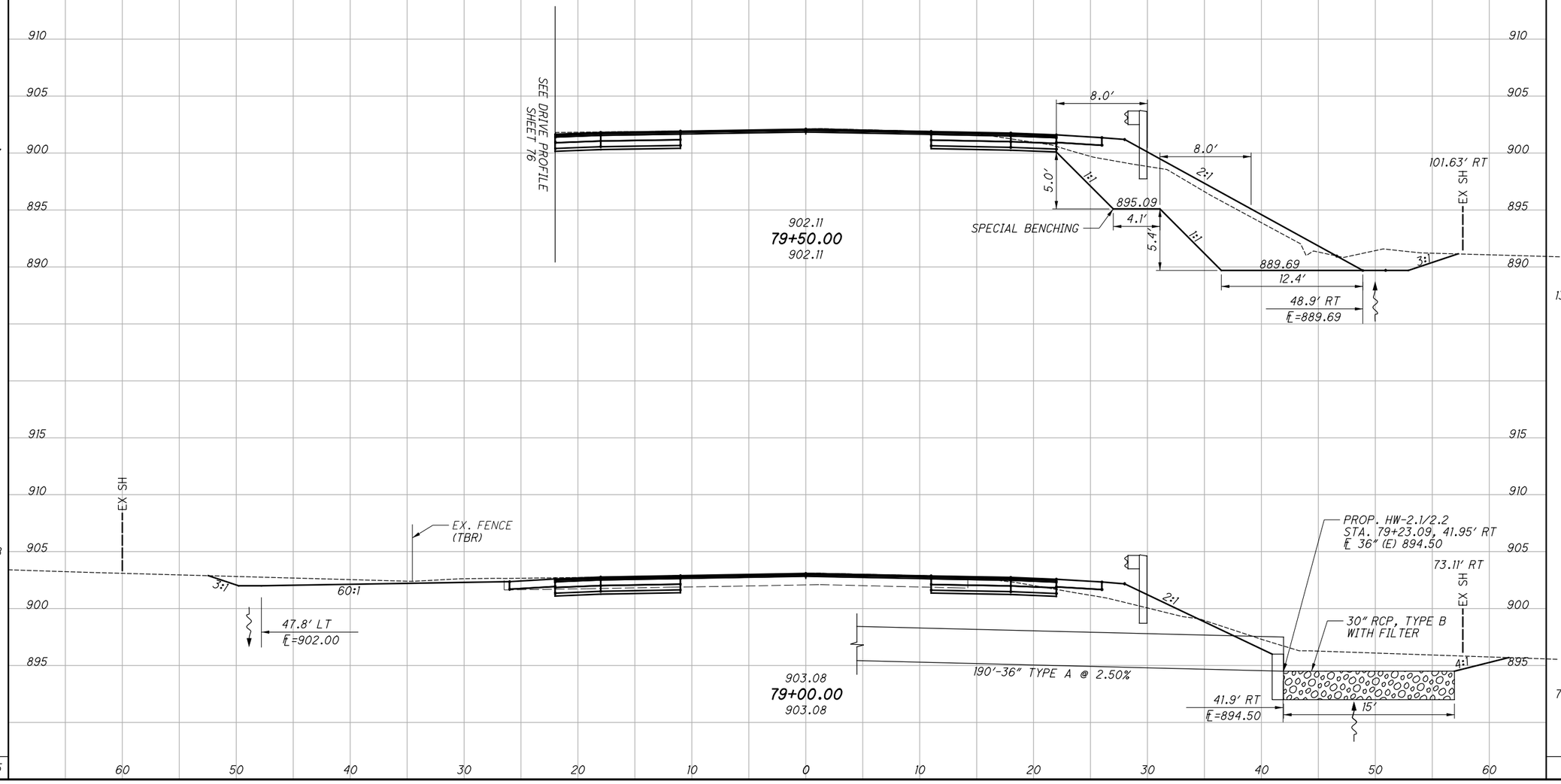
END AREA	
CUT	FILL

VOLUME	
CUT	FILL
277	237
193	113
470	350

CALCULATED BSB
CHECKED KMK

CROSS SECTIONS US-42
STA. 79+00.00 TO STA. 79+50.00

DEL-42-1.41



SEEDING	
END WIDTH	SQ. YDS.
	206
	58
	314
	55
	520

NOTE:
THE CONTRACTOR SHALL REMAIN WITHIN THE RIGHT OF WAY WHILE PERFORMING GRADING AND PAVEMENT REMOVAL WORK.

EX SH

STA 80+41.85, 51.95' LT
MH-3, RIM ELEV 899.57
6" (SE) 896.47
6" (W) 896.17
6" (NE) 896.07

STA 80+40.36, 39.76' LT
CB-2-2B, GRATE ELEV 896.41
15" (SE) 893.55
6" (SW) 894.30
6" UD (S) 894.30

EX. FENCE (TBR)

EX. PARKING LOT (TBR)

5'-6" TYPE C

12'-6" TYPE C @ 19.09%

39.3' LT
℄=896.41

900.10
80+50.00
900.10

98'-15" TYPE B @ 8.96%

SPECIAL BENCHING

8.2'
2:1
8.0'
5.0'
1:1
892.96
5.3'
887.96
4.6'
883.34
12.7'

PROP HW-2.1/2.2
STA 80+40.44, 58.36' RT
℄ = 884.76'
8'
30" RCP, TYPE B

EX SH

EX. FENCE (TBR)

37.2' LT
℄=898.60

901.13
80+00.00
901.13

8.0'
2:1
5.0'
1:1
894.09
4.1'
889.09
3.5'
885.57
10.9'

SPECIAL BENCHING

130.15' RT
EX SH
885.05

910 / 905 / 900 / 895 / 890 / 885

60 50 40 30 20 10 0 10 20 30 40 50 60

END AREA		VOLUME	
CUT	FILL	CUT	FILL
		225	162
		220	171
		359	292
		168	144
		584	454

CALCULATED BSB
CHECKED KMK

CROSS SECTIONS US-42
STA. 80+00.00 TO STA. 80+50.00

DEL-42-1.41

SEEDING	
END WIDTH	SQ. YDS.
	0
	44

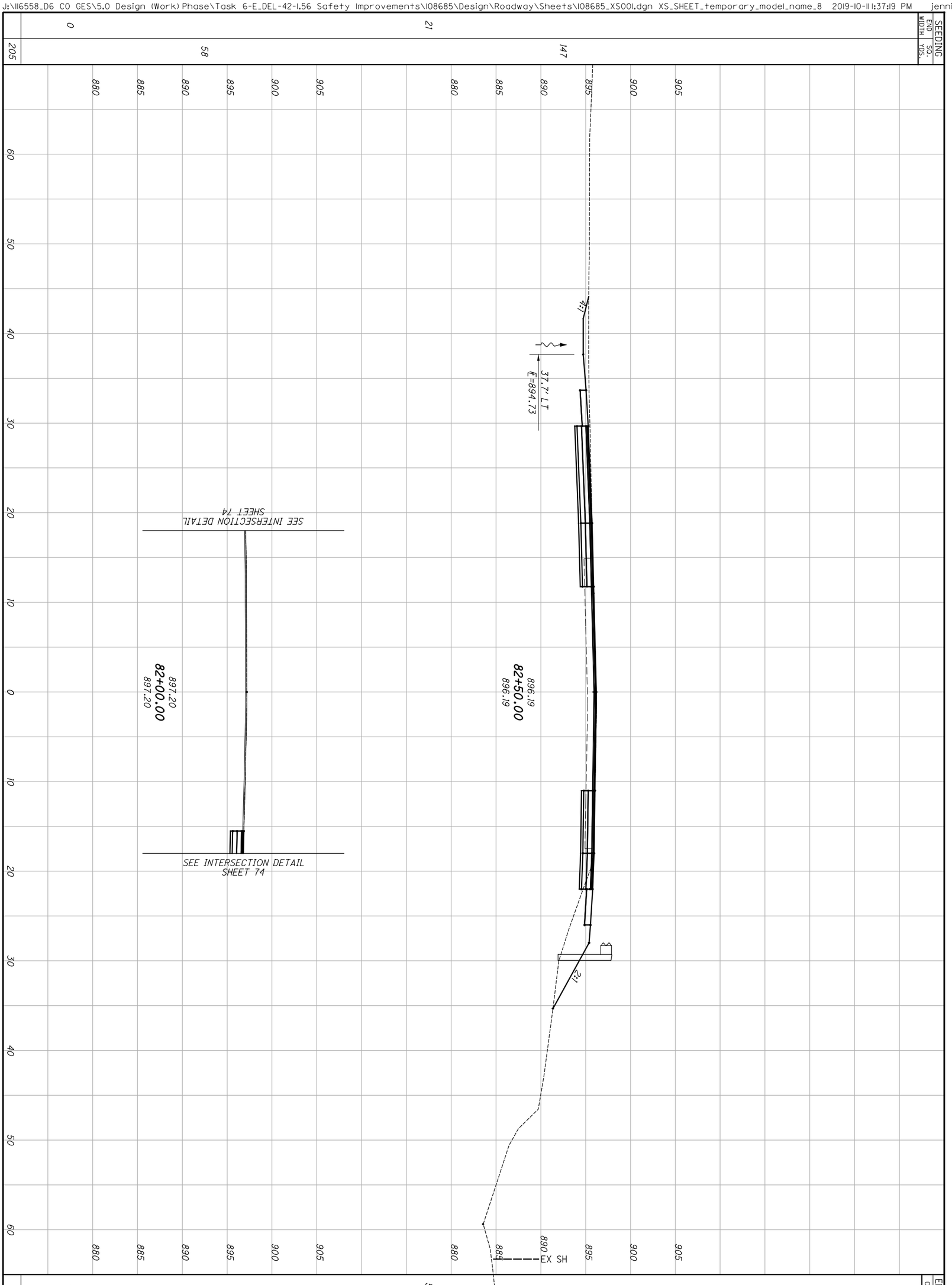
END AREA	
CUT	FILL
0	0
0	0
23	4

VOLUME	
CUT	FILL
4	0
21	4
25	4

CALCULATED BSB
CHECKED KMK

CROSS SECTIONS US-42
STA. 81+00.00 TO STA. 81+50.00

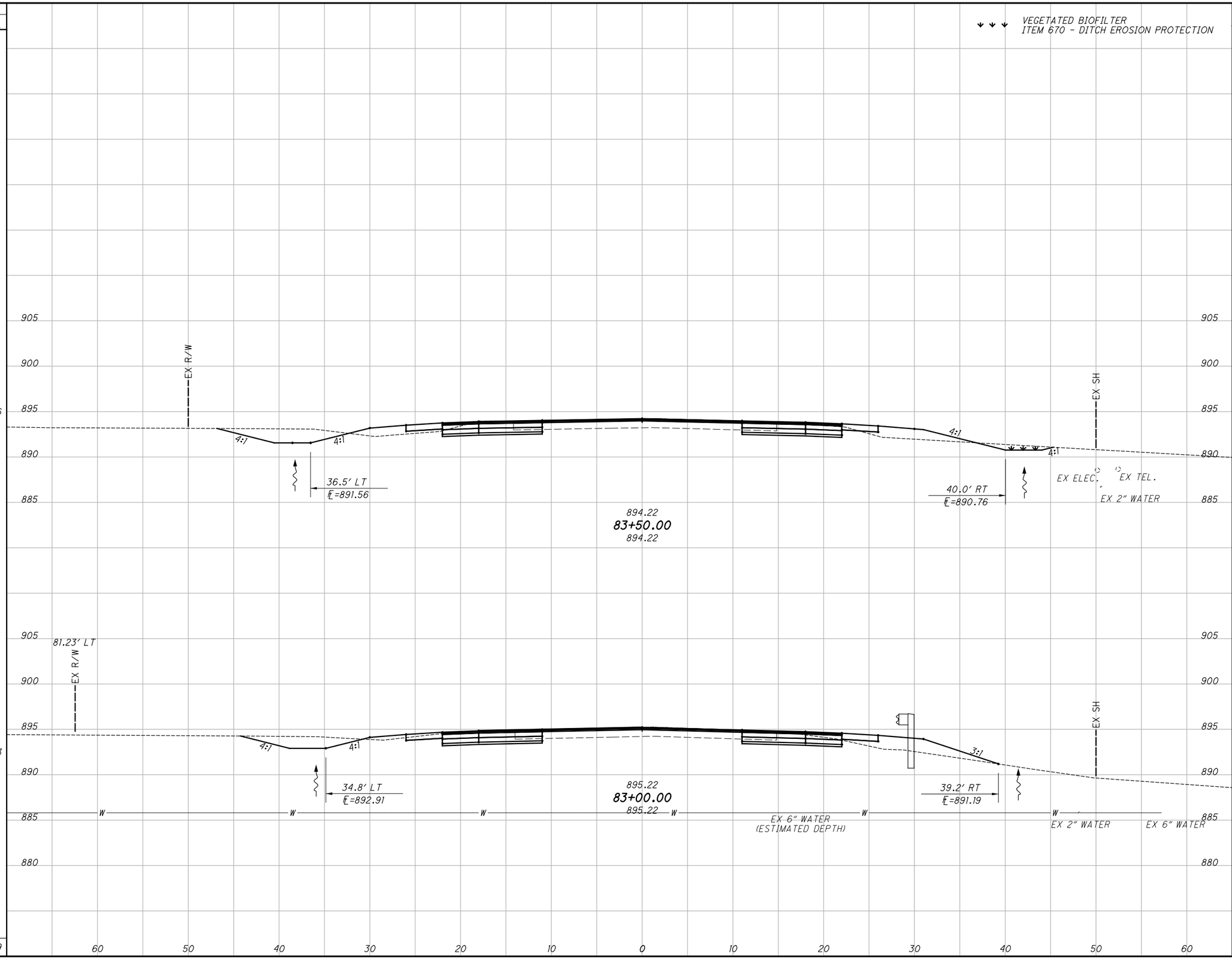
DEL-42-1.41



50 / 107	DEL-42-1.41	CROSS SECTIONS US-42 STA. 82+00.00 TO STA. 82+50.00

CALCULATED BSB
CHECKED KMK

SEEDING	
END WIDTH	SQ. YDS.
	236
41	
	203
32	
	439



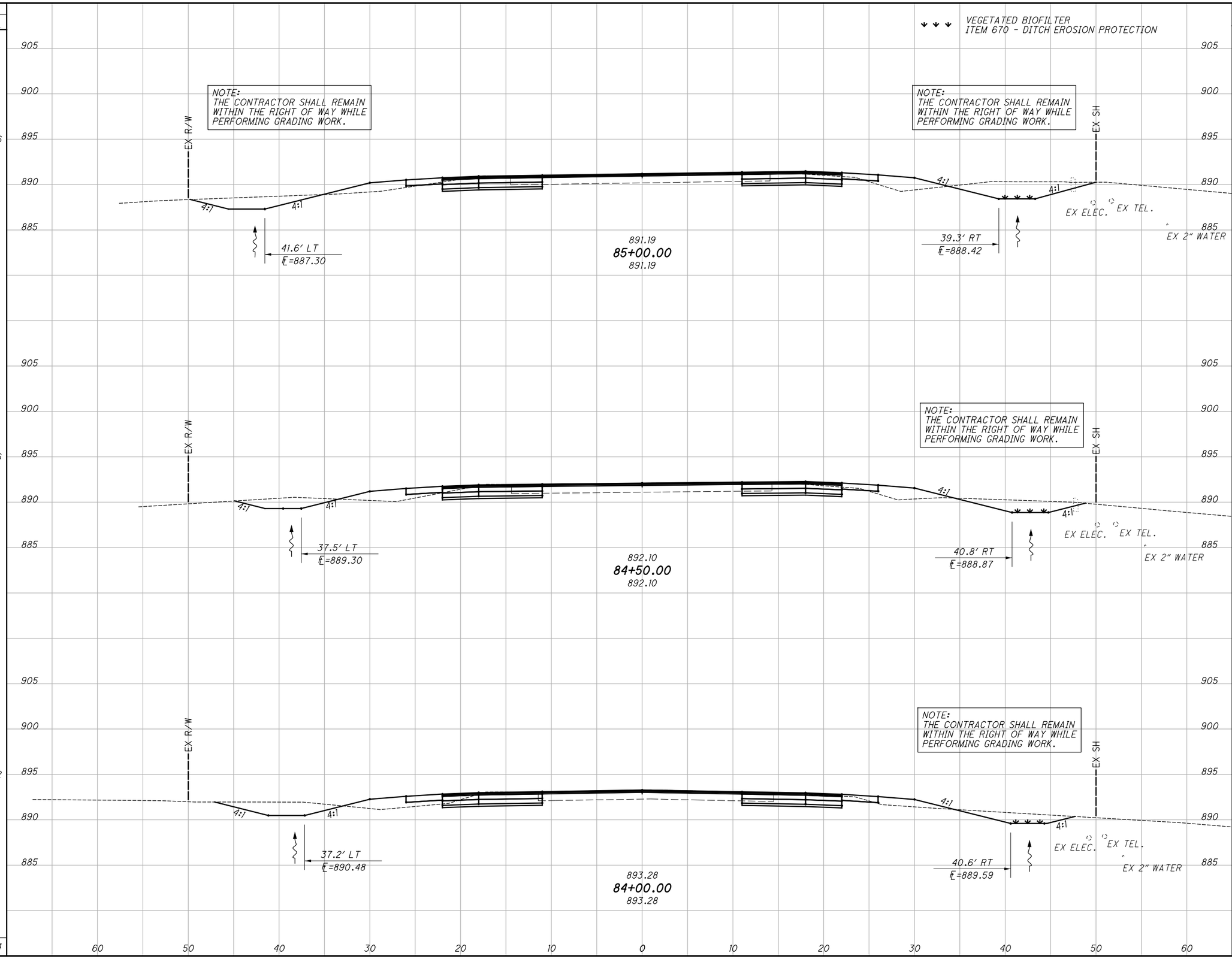
END AREA		VOLUME	
CUT	FILL	CUT	FILL
		94	27
48	16		
		84	31
43	17		
		178	58

CALCULATED BSB
CHECKED KMK

CROSS SECTIONS US-42
STA. 83+00.00 TO STA. 83+50.00

DEL-42-1.41

SEEDING	
END WIDTH	SQ. YDS.
	206
49	
	256
43	
	242
44	
	704



END AREA	
CUT	FILL
62	15
51	16
53	13

VOLUME	
CUT	FILL
104	20
105	29
96	27
305	76

CALCULATED BSB
CHECKED KMK

CROSS SECTIONS US-42
STA. 84+00.00 TO STA. 85+00.00

DEL-42-1.41

SEEDING	
END WIDTH	SQ. YDS.
	261
46	
	264
49	
	206
25	
	731

VEGETATED BIOFILTER
ITEM 670 - DITCH EROSION PROTECTION

NOTE:
THE CONTRACTOR SHALL REMAIN WITHIN THE RIGHT OF WAY WHILE PERFORMING GRADING WORK.

EX R/W — 4:1 — 4:1 — 39.9' LT — ℄=884.50

888.28
86+50.00
888.28

4:1 — 4:1 — EX SH — EX ELEC. EX TEL. — 37.1' RT — ℄=885.82

NOTE:
THE CONTRACTOR SHALL REMAIN WITHIN THE RIGHT OF WAY WHILE PERFORMING GRADING WORK.

EX R/W — 4:1 — 4:1 — 43.3' LT — ℄=884.75

889.22
86+00.00
889.22

4:1 — 4:1 — EX SH — EX ELEC. — EX TEL. — 36.4' RT — ℄=887.20 — EX 2" WATER

NOTE:
THE CONTRACTOR SHALL REMAIN WITHIN THE RIGHT OF WAY WHILE PERFORMING GRADING WORK.

SEE DRIVE PROFILE SHEET 76

890.23
85+50.00
890.23

4:1 — 4:1 — EX SH — EX ELEC. — EX TEL. — 36.7' RT — ℄=888.17 — EX 2" WATER

END AREA	
CUT	FILL
62	11
64	10
50	7

VOLUME	
CUT	FILL
111	24
117	19
106	16
334	59

CALCULATED BSB
CHECKED KMK

CROSS SECTIONS US-42
STA. 85+50.00 TO STA. 86+50.00

DEL-42-1.41

53
107

SEEDING	
END WIDTH	SQ. YDS.
48	156
49	269
48	269
	694

VEGETATED BIOFILTER
ITEM 670 - DITCH EROSION PROTECTION

NOTE:
THE CONTRACTOR SHALL REMAIN WITHIN THE RIGHT OF WAY WHILE PERFORMING GRADING WORK.

EX R/W

EX SH

5:1

2.4:1

3:1

879.64

885.36
88+00.00
885.36

37.0' RT
℄=880.41

4:1

35.9' LT
℄=883.20

886.55
87+50.00
886.55

38.2' RT
℄=883.12

EX ELEC.
EX TEL.

36.8' LT
℄=884.18

887.47
87+00.00
887.47

39.0' RT
℄=884.11

EX TEL.
EX ELEC.

900 895 890 885 880

60 50 40 30 20 10 0 10 20 30 40 50 60

END AREA		VOLUME	
CUT	FILL	CUT	FILL
54	13	70	16
60	13	106	24
58	15	109	26
		285	66

CALCULATED BSB
CHECKED KMK

CROSS SECTIONS US-42
STA. 87+00.00 TO STA. 88+00.00

DEL-42-1.41

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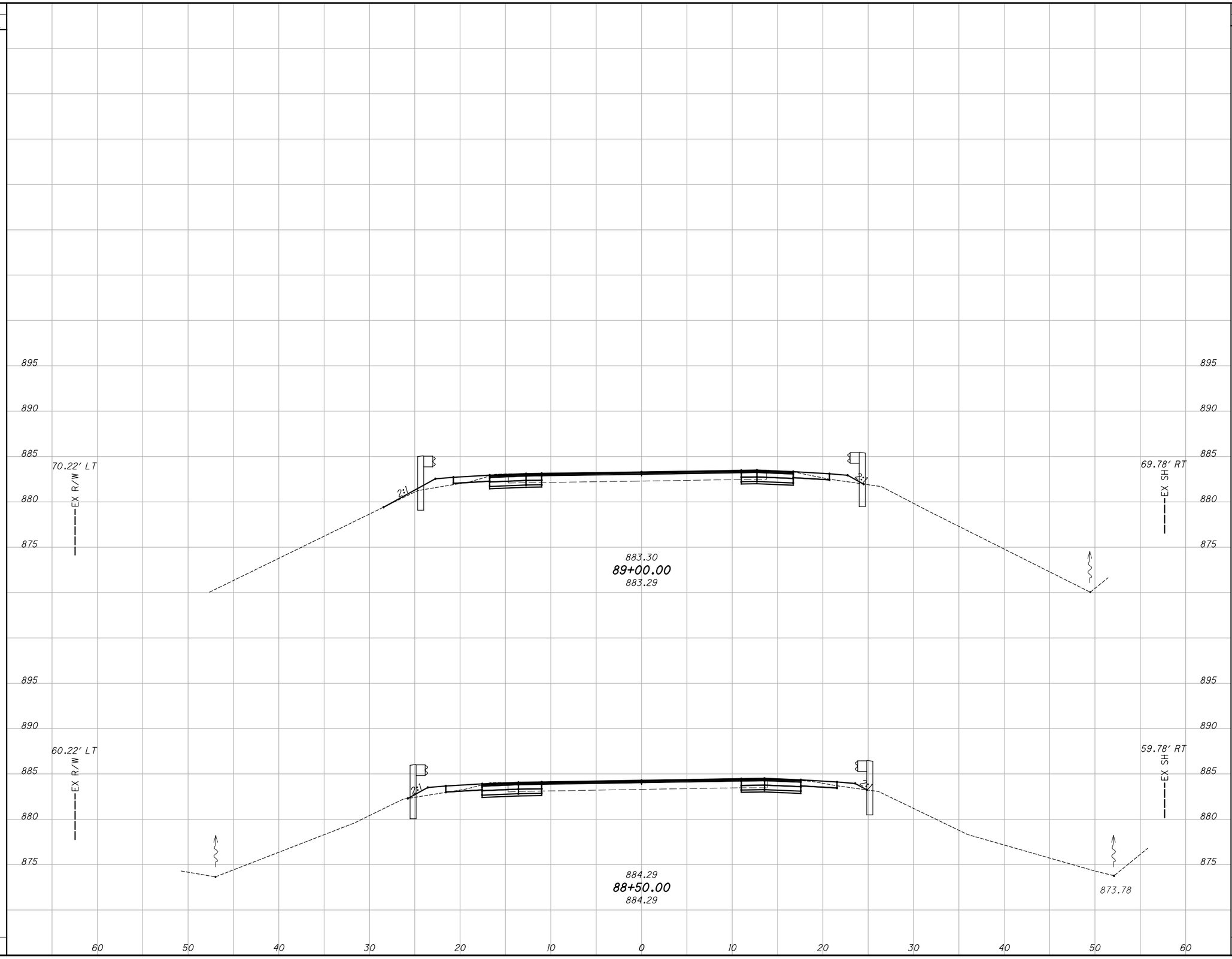
SEEDING	
END WIDTH	SQ. YDS.
	69
	58
	127



END AREA	
CUT	FILL
13	
8	
19	6
22	4

VOLUME	
CUT	FILL
35	10
38	9
73	19

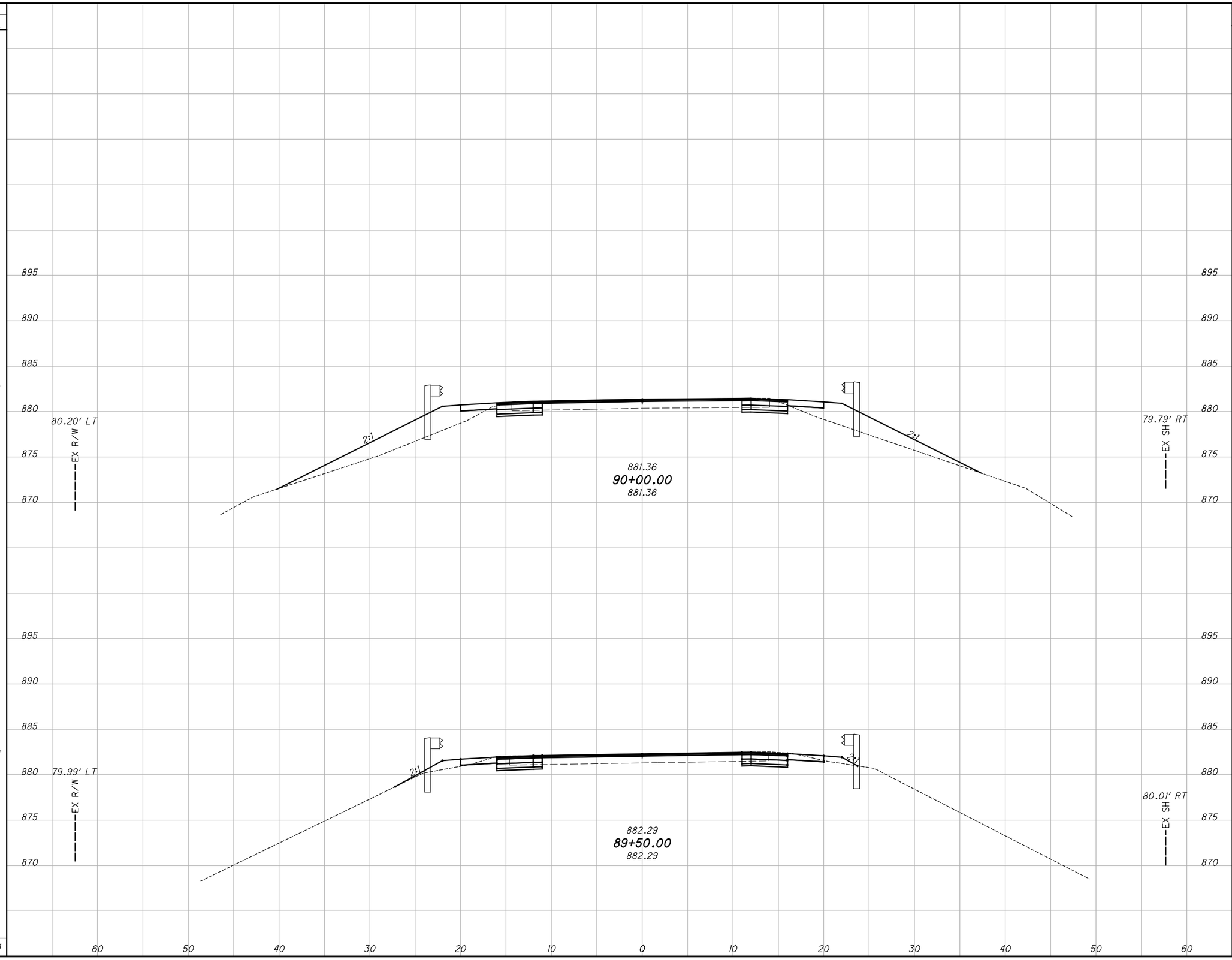
CALCULATED BSB
CHECKED KMK

CROSS SECTIONS US-42
STA. 88+50.00 TO STA. 89+00.00

DEL-42-1.41

55
107

SEEDING	
END WIDTH	SQ. YDS.
	144
	42
	150
	12
	294



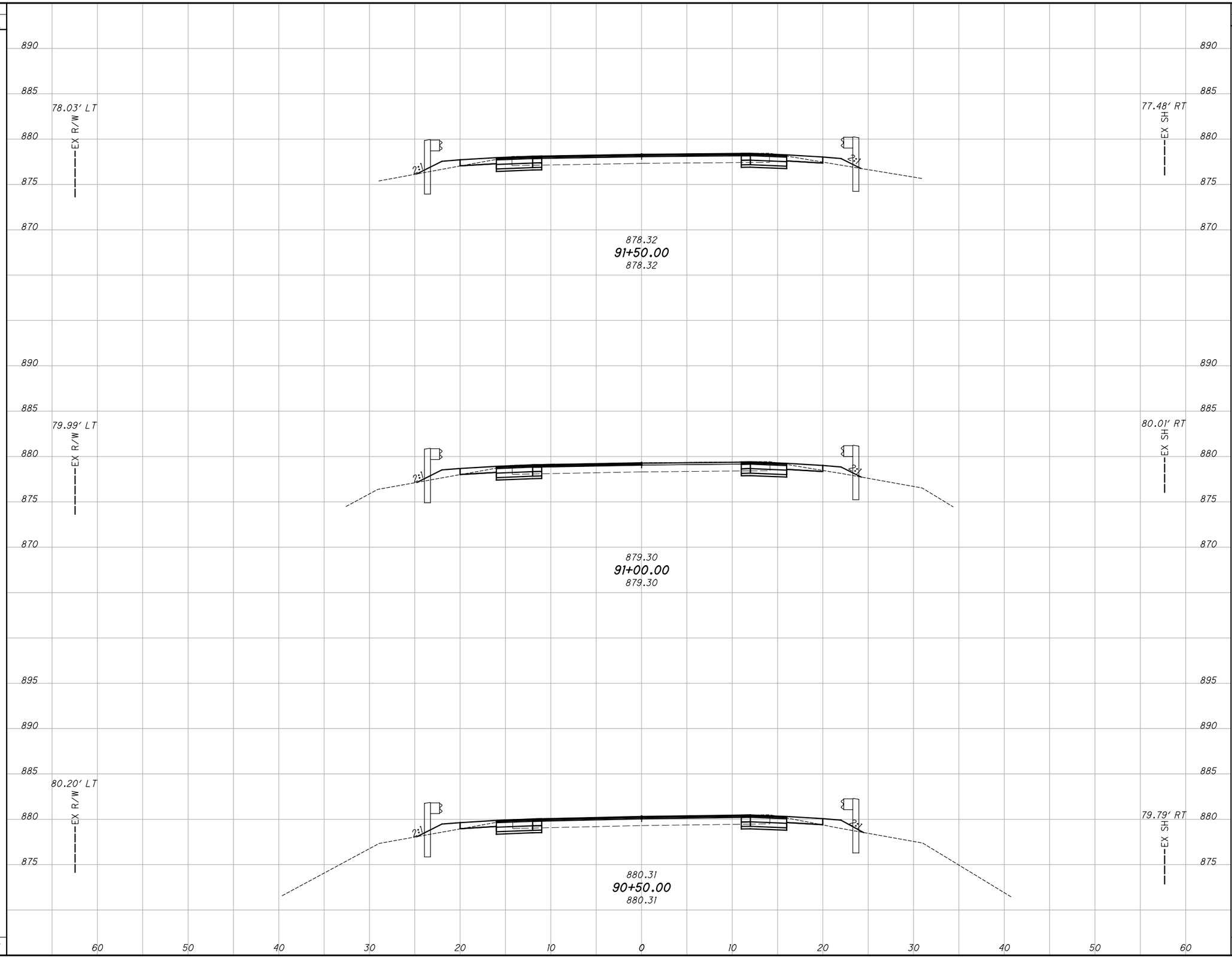
END AREA		VOLUME	
CUT	FILL	CUT	FILL
		30	60
15	59		
		31	59
19	5		
		61	119

CALCULATED BSB
CHECKED KMK

CROSS SECTIONS US-42
STA. 89+50.00 TO STA. 90+00.00

DEL-42-1.41

SEEDING END WIDTH	SEEDING SQ. YDS.
10	56
10	56
10	56
10	56
168	



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		33	9
18	5		
		33	9
18	5		
		32	10
17	6		
		98	28

CALCULATED BSB
CHECKED KMK

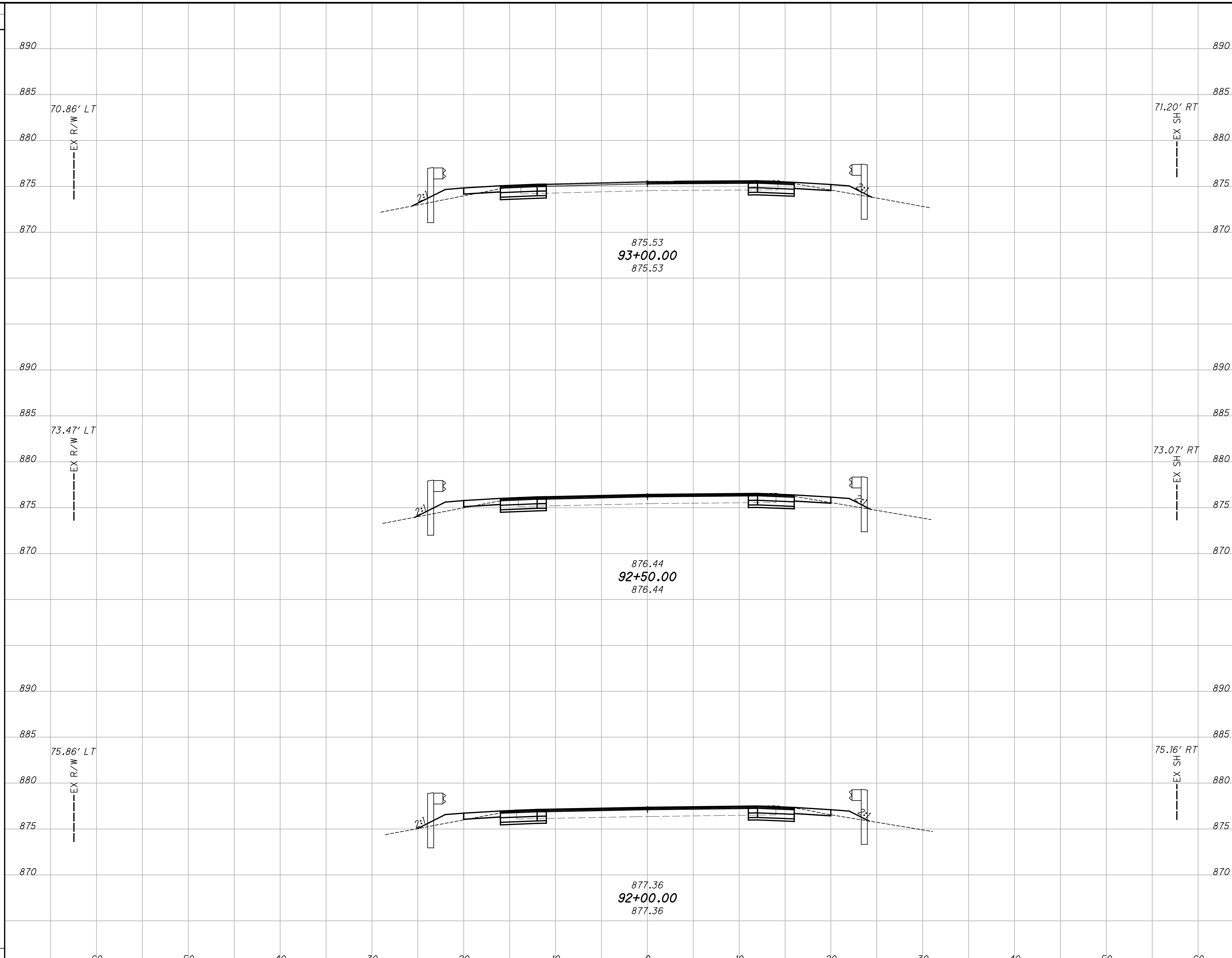
CROSS SECTIONS US-42
STA. 90+50.00 TO STA. 91+50.00

DEL-42-1.41

CROSS SECTIONS US-42
STA. 92+00.00 TO STA. 93+00.00

DEL-42-1.41

SEEDING END WIDTH	SEEDING SQ. YDS.	STATION	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	64				31	13
11		93+00.00	17	7		
	58				31	12
10		92+50.00	17	6		
	56				32	10
10		92+00.00	18	5		
	178				94	35



CALCULATED BSB
CHECKED KMK

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
12	64	16	8	31	13
12	67	16	8	30	15
12	67	16	8	31	14
12	67	17	7	31	14
	198			92	42

CALCULATED BSB
CHECKED KMK

65' LT EX R/W

66.89' RT EX SH

872.65
94+50.00
872.65

65' LT EX R/W

68.11' RT EX SH

873.66
94+00.00
873.66

68.03' LT EX R/W

69.54' RT EX SH

874.63
93+50.00
874.63

885 880 875 870 865

2:1

60 50 40 30 20 10 0 10 20 30 40 50 60

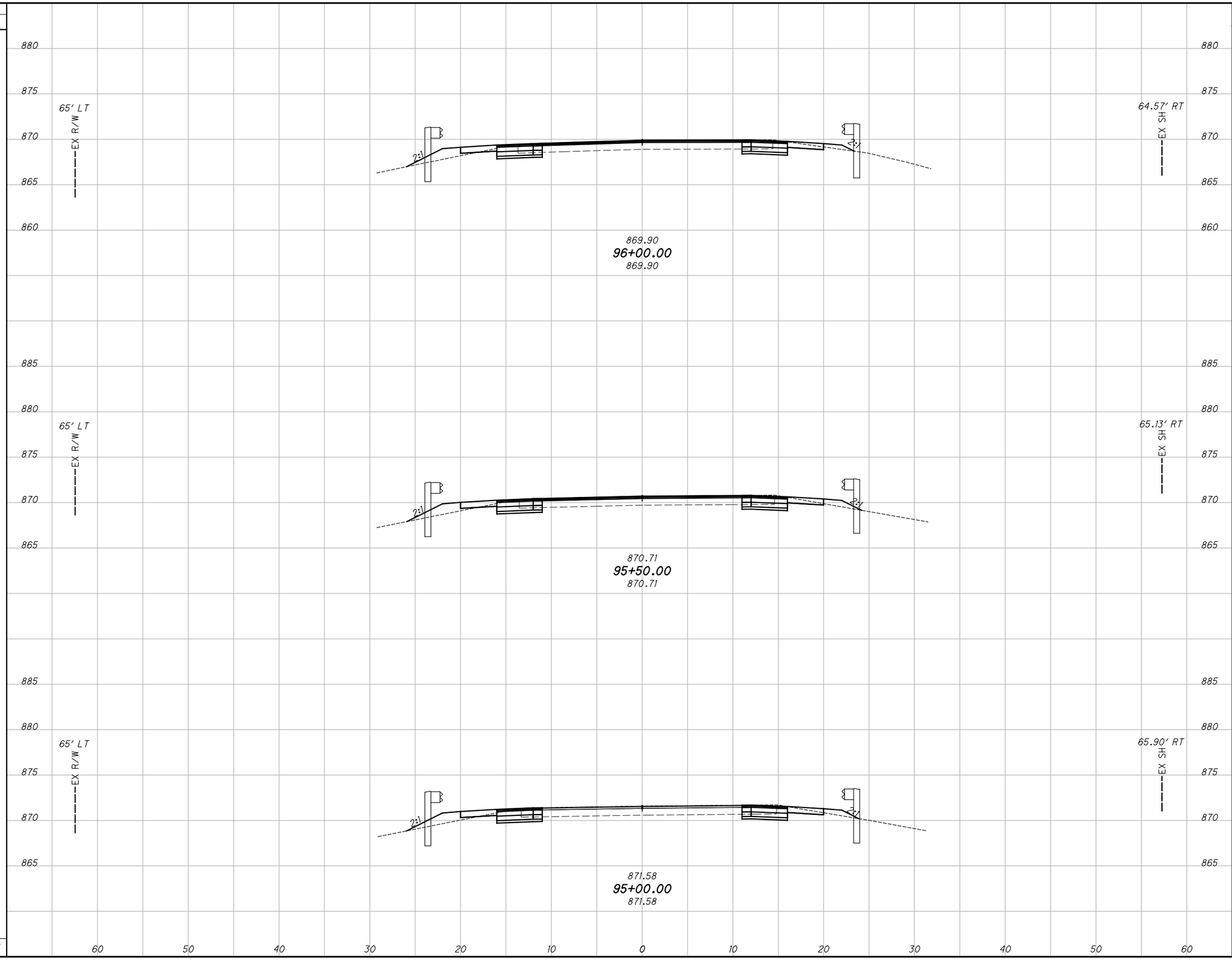
CROSS SECTIONS US-42
STA. 93+50.00 TO STA. 94+50.00

DEL-42-1.41

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
10	56	17	6	32	11
11	58	17	7	31	12
11	61	17	6	31	12
	175			94	35

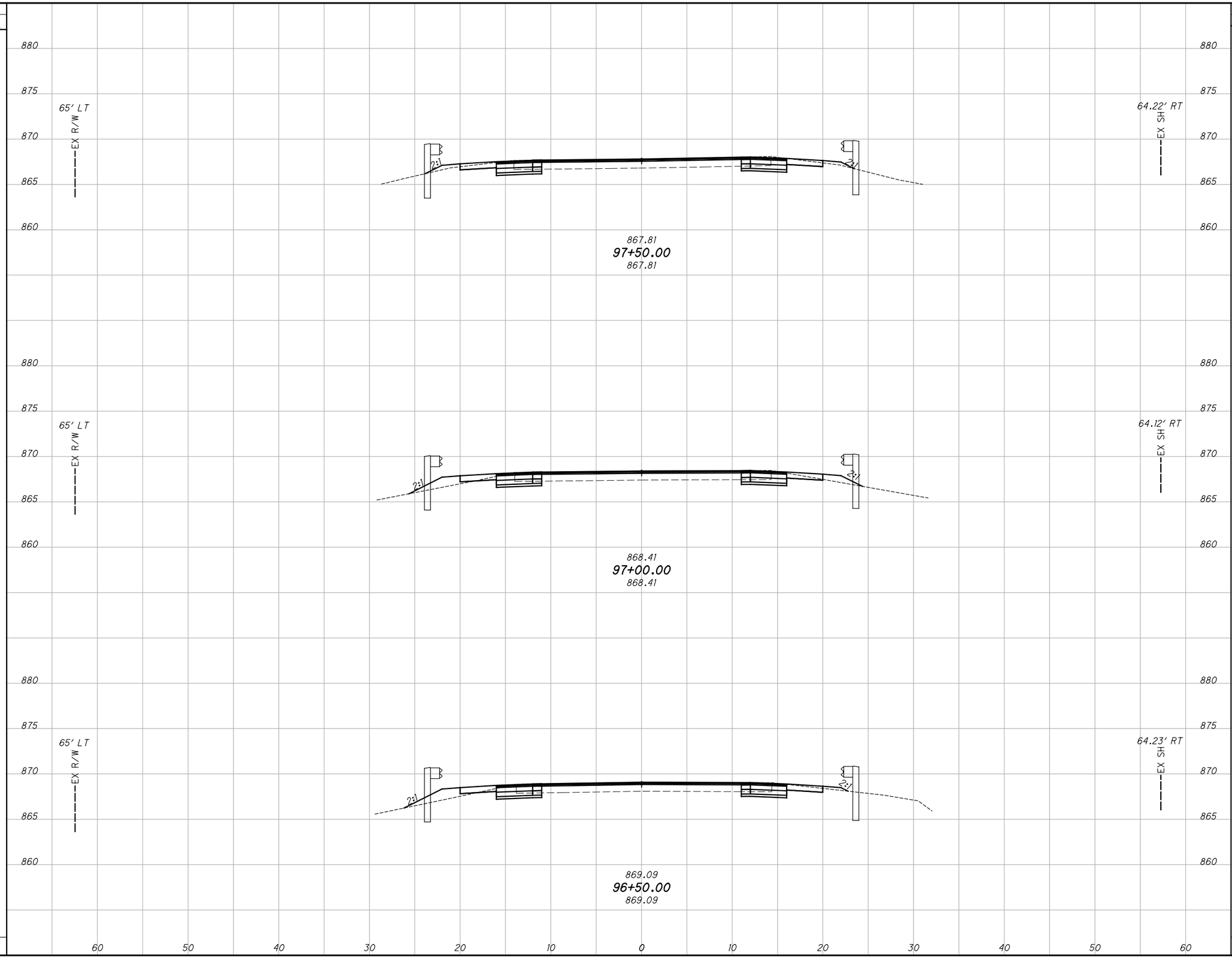
CALCULATED BSB
CHECKED KMK

CROSS SECTIONS US-42
STA. 95+00.00 TO STA. 96+00.00



DEL-42-1.41

SEEDING END WIDTH	SEEDING SQ. YDS.
	50
8	
	53
11	
	58
10	
	161



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		34	7
20	2		
		34	8
17	7		
		32	12
18	6		
		100	27

CALCULATED BSB
CHECKED KMK

CROSS SECTIONS US-42
STA. 96+50.00 TO STA. 97+50.00

DEL-42-1.41

SEEDING END WIDTH	SEEDING SQ. YDS.	STA.	65′ LT	64.25′ RT	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		880						
		875						
	64	870	EX SH	EX SH			30	15
		865						
		860						
12		867.13 **99+00.00** 867.13			16	8		
		880						
		875						
	64	870	EX R/W	EX SH			31	13
		865						
		860						
11		867.29 **98+50.00** 867.29			17	6		
		880						
		875						
	58	870	EX R/W	EX SH			31	11
		865						
		860						
10		867.53 **98+00.00** 867.53			17	6		
	186		60 50 40 30 20 10 0 10 20 30 40 50 60				92	39

CALCULATED BSB
CHECKED KMK

CROSS SECTIONS US-42
STA. 98+00.00 TO STA. 99+00.00

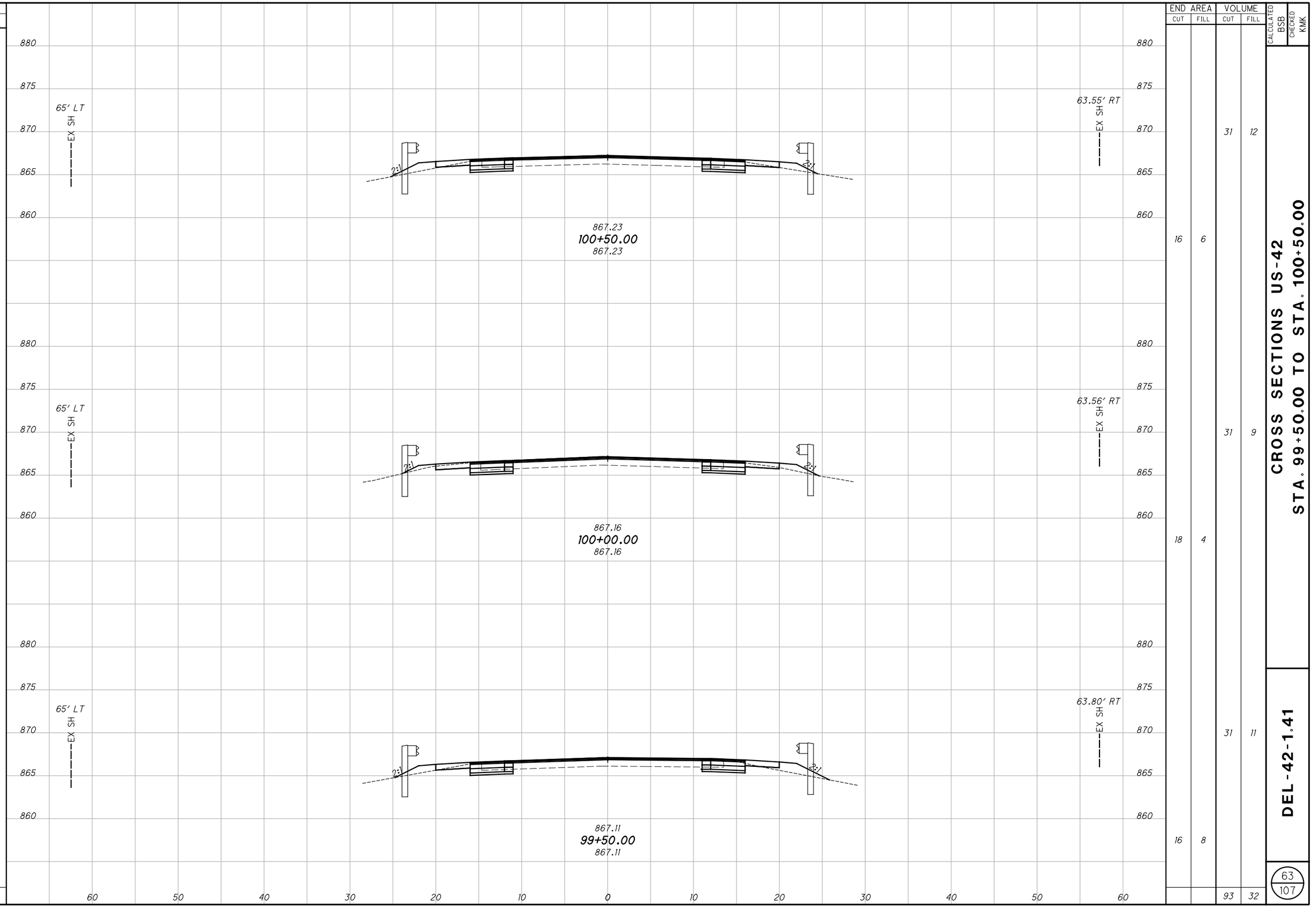
DEL-42-1.41

SEEDING	
END WIDTH	SQ. YDS.
10	58
9	53
11	56
	167

END AREA	
CUT	FILL
16	6
18	4
16	8

VOLUME	
CUT	FILL
31	12
31	9
31	11
93	32

CALCULATED BSB
CHECKED KMK



CROSS SECTIONS US-42
STA. 99+50.00 TO STA. 100+50.00

DEL-42-1.41

SEEDING END WIDTH	SEEDING SQ. YDS.	STATION	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
10	49	102+00.00	17	6	28	10
10	56	101+50.00	16	6	31	11
11	58	101+00.00	17	7	31	12
	163				90	33

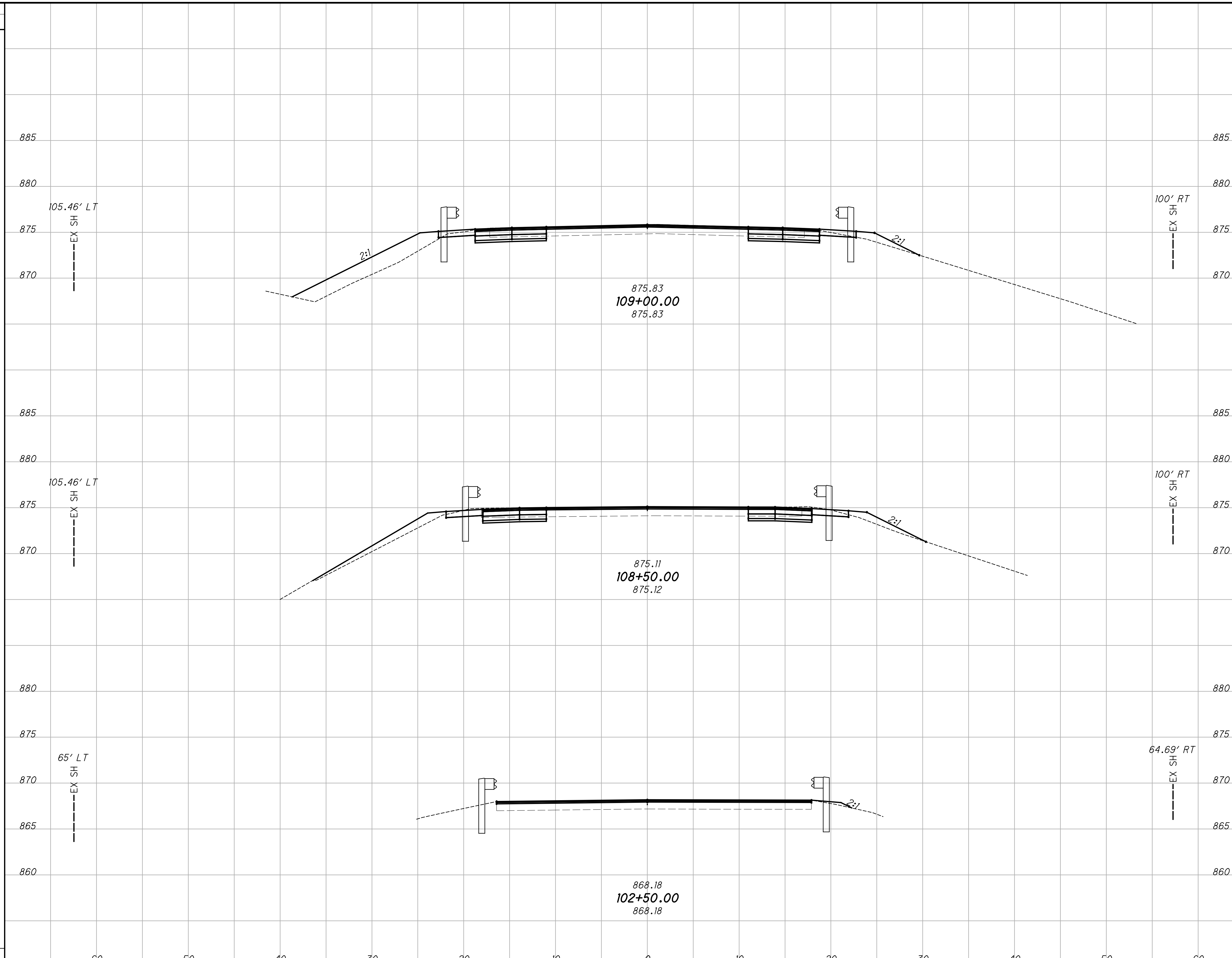
CALCULATED BSB
CHECKED KMK

CROSS SECTIONS US-42
STA. 101+00.00 TO STA. 102+00.00

DEL-42-1.41

J:\116558_D6 CO GES\5.0 Design (Work) Phase\Task 6-E_DEL-42-1.56 Safety Improvements\108685\Design\Roadway\Sheets\108685_XS001.dgn XS_SHEET_temporary_model_name_23 2019-10-11:37:34 PM jennif

SEEDING	
END WIDTH	SQ. YDS.
	203
25	
	143
26 AH	
BK 0	
	346



END AREA		VOLUME	
CUT	FILL	CUT	FILL
		63	84
26	30		
		49	41
26 AH	14 AH		
BK 0	BK 0		
		112	125

CALCULATED BSB
CHECKED KMK

CROSS SECTIONS US-42
STA. 102+50.00 TO STA. 109+00.00

DEL-42-1.41

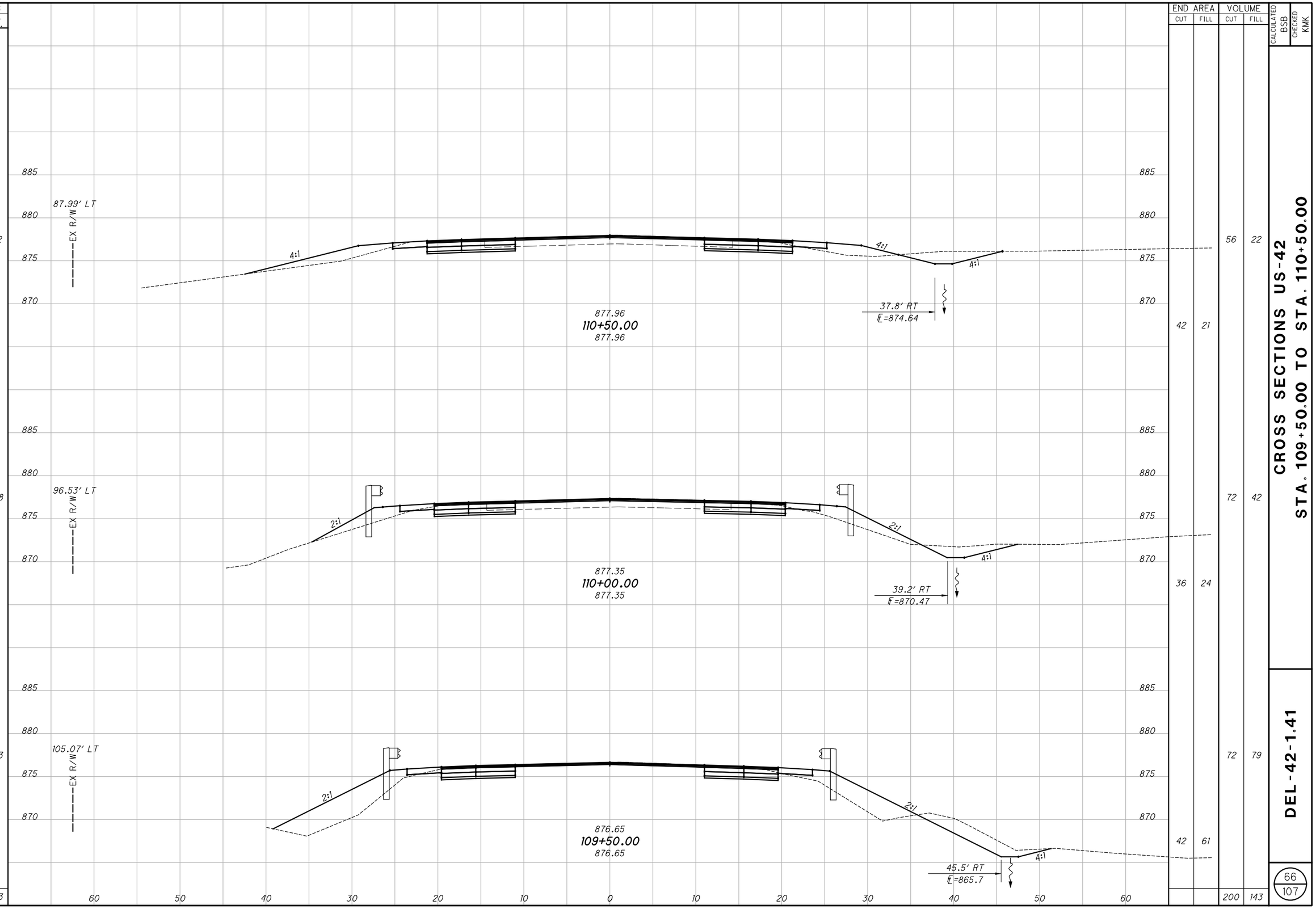
SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
39	142	42	21	56	22
36	208	36	24	72	42
48	233	42	61	72	79
	583			200	143

CALCULATED BSB
CHECKED KMK

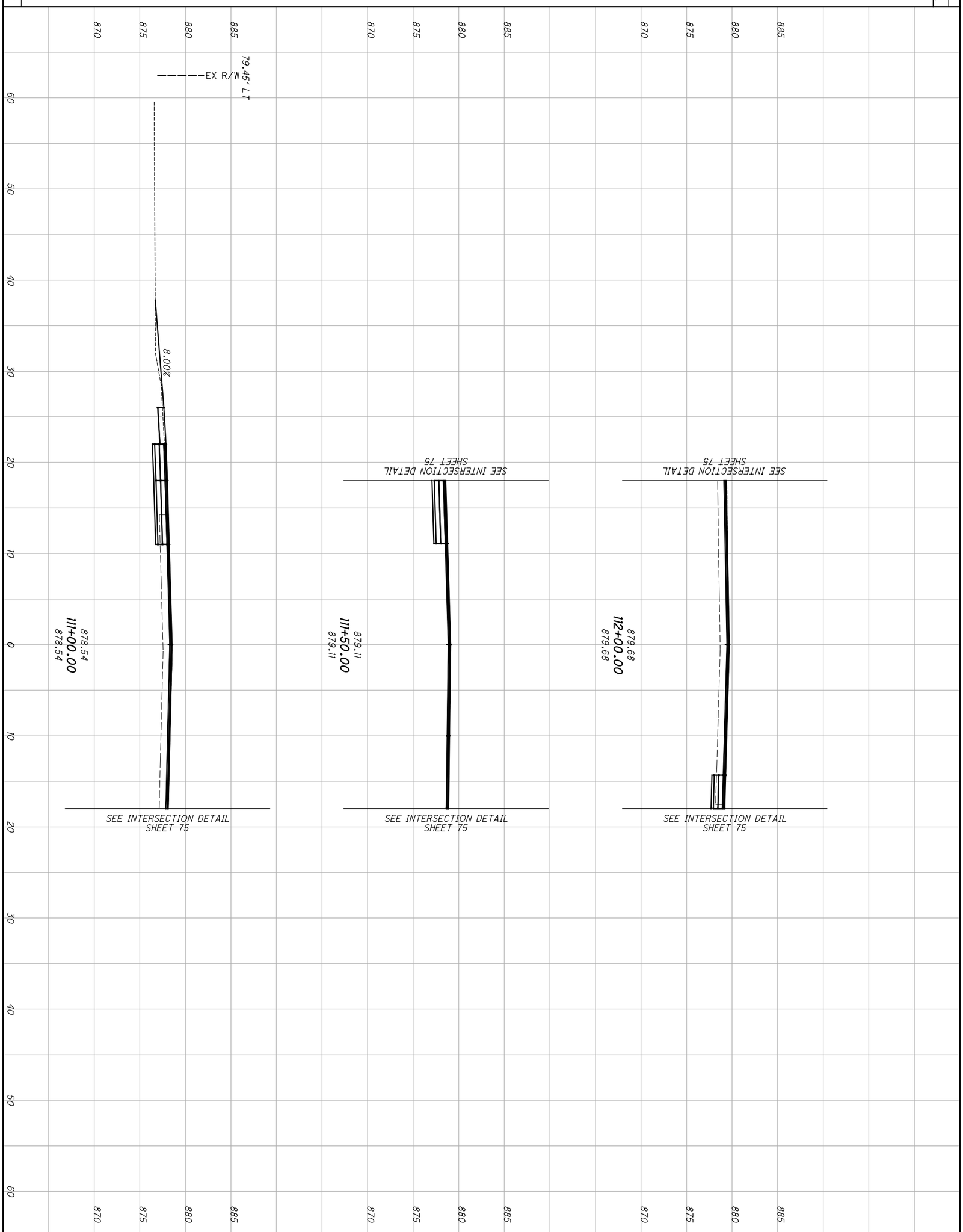
CROSS SECTIONS US-42
STA. 109+50.00 TO STA. 110+50.00

DEL-42-1.41

66
107



SEEDING		
	END WIDTH	SQ. YDS.
	12	33
	0	0
	0	56



END AREA		
	CUT	FILL
	18	3
	10	0
	6	0
VOLUME	CUT	FILL
	72	7
	26	3
	15	0
	31	4

DEL-42-1.41

CROSS SECTIONS US-42
STA. 111+00.00 TO STA. 112+00.00

CALCULATED BSB
CHECKED KMK

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	261			93	51
42		56	15		
	269			100	30
55		52	17		
	208			74	19
20		28	4		
	738			267	100

890
885
880
875

98.98' LT
EX SH

877.46
EX TEL.

881.44
113+50.00
881.44

36.4' RT
℄=878.65

EX 8" WATER
EX 8" WATER

EX R/W

4:1
4:1
4:1

872.92
EX TEL.

880.85
113+00.00
880.85

36.4' RT
℄=878.02

EX 8" WATER
EX 8" WATER

SEE INTERSECTION DETAIL
SHEET 75

880.23
112+50.00
880.23

35.4' RT
℄=877.72

EX 8" WATER

60 50 40 30 20 10 0 10 20 30 40 50 60

CALCULATED BSB
CHECKED KMK

CROSS SECTIONS US-42
STA. 112+50.00 TO STA. 113+50.00

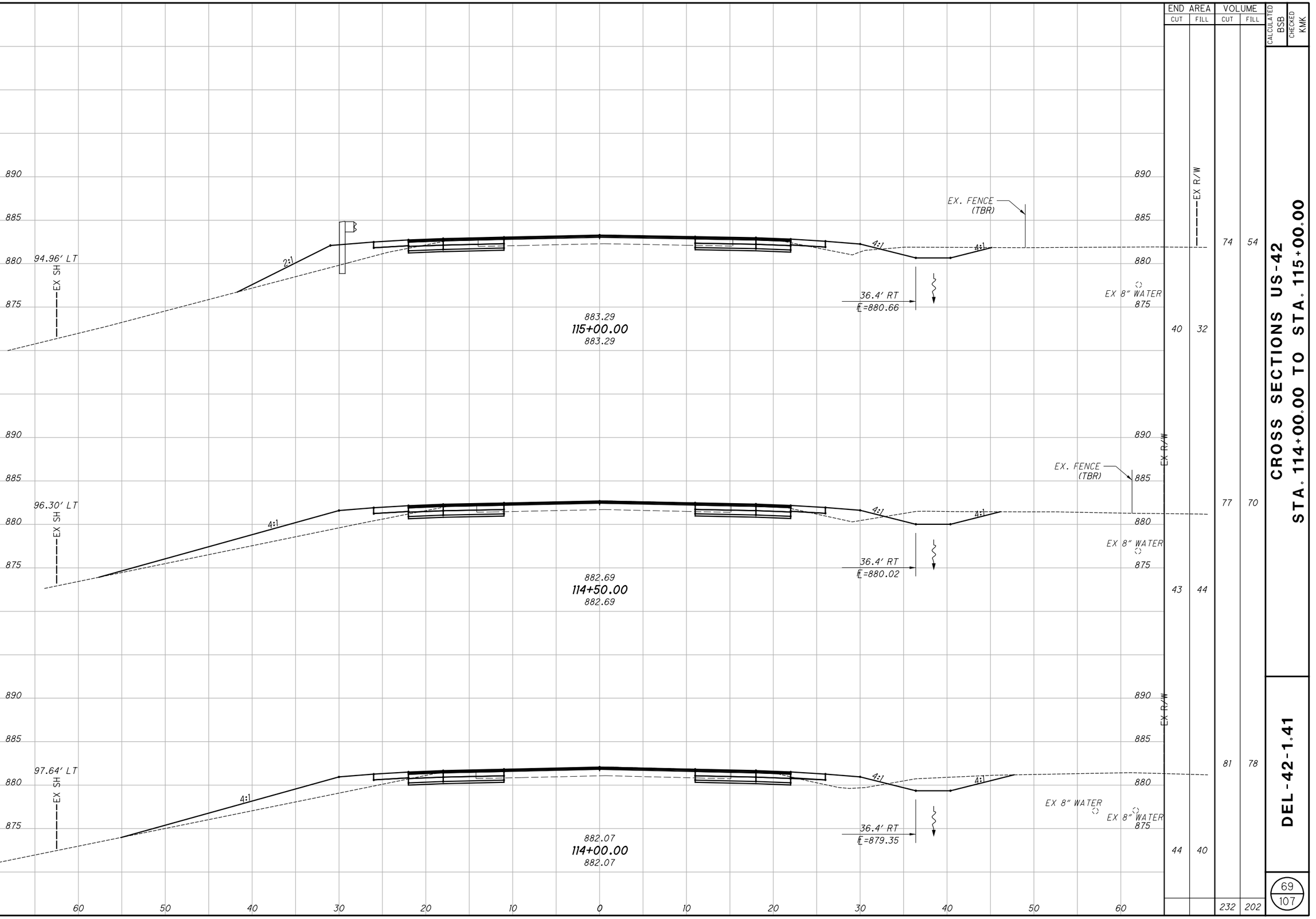
DEL-42-1.41

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
	197		EX R/W	74	54
	250			77	70
	292			81	78
	739			232	202

CALCULATED BSB
CHECKED KMK

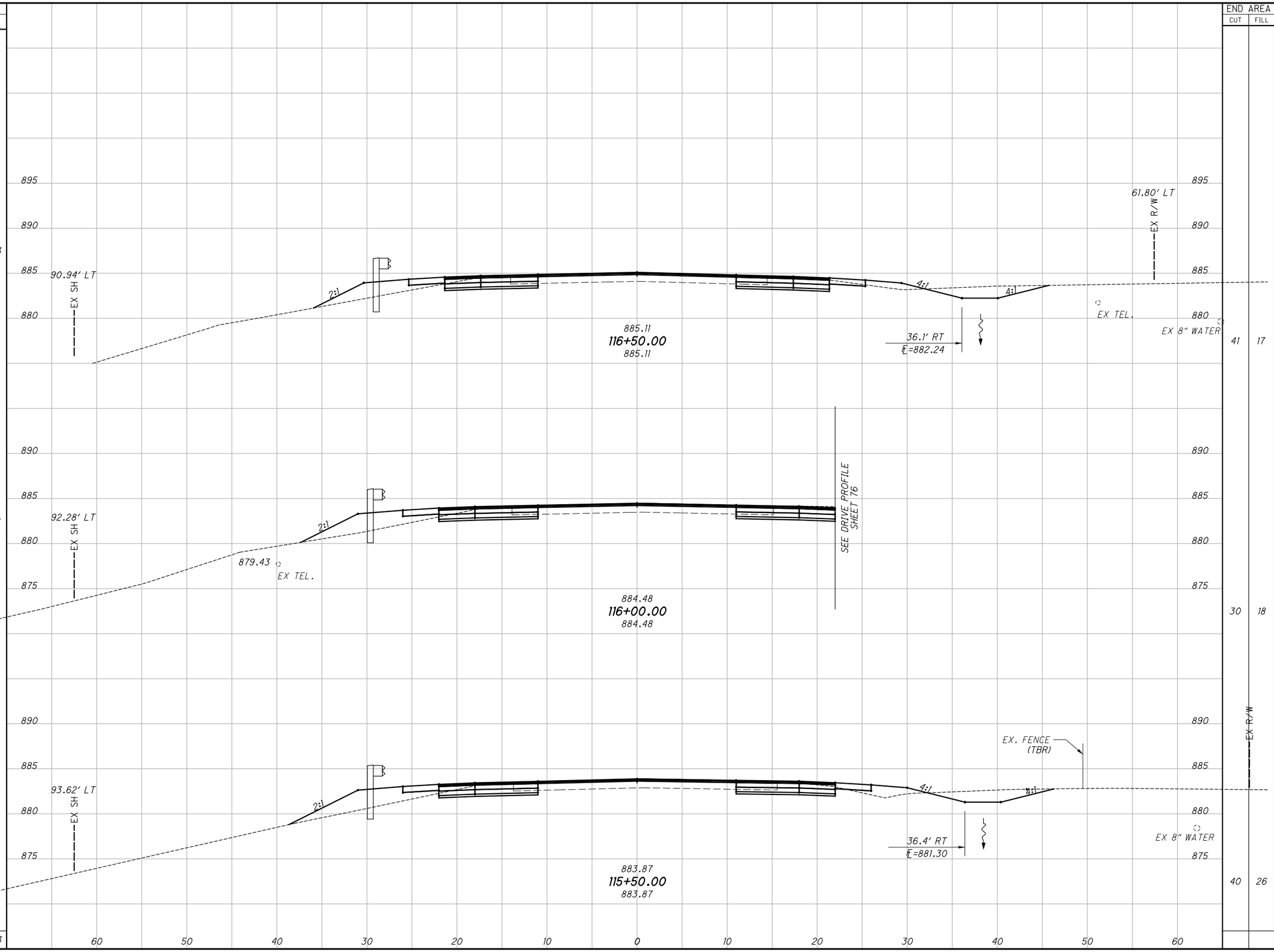
CROSS SECTIONS US-42
STA. 114+00.00 TO STA. 115+00.00

DEL-42-1.41



SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
32	253	41	17	72	49
12	122	30	18	66	32
34	128	40	26	65	41
	503			203	122

CALCULATED BSB
CHECKED KMK



CROSS SECTIONS US-42
STA. 115+50.00 TO STA. 116+50.00

DEL-42-1.41

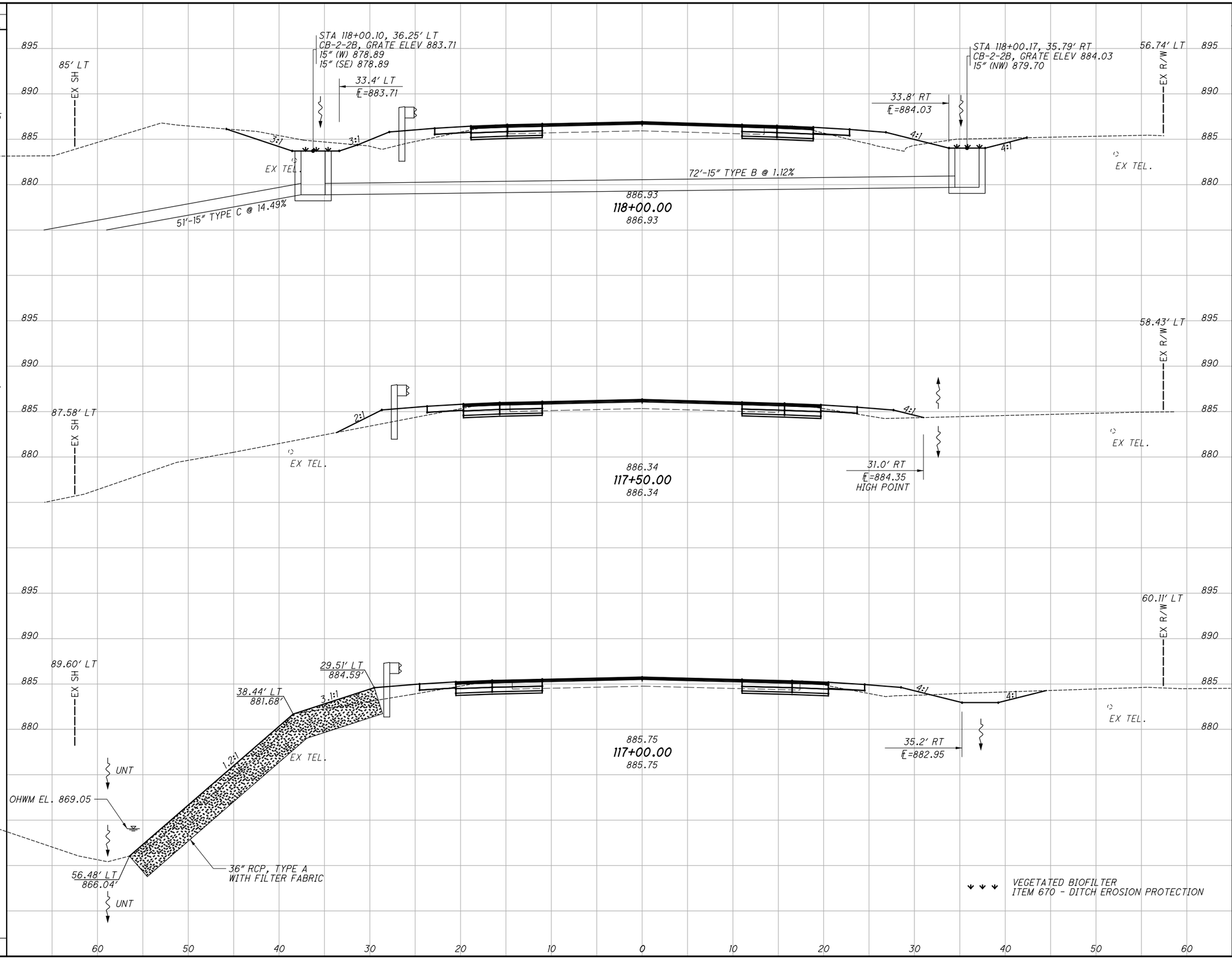
SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
44	225	43	22	69	36
18	172	26	16	64	35
59	214	37	36	58	48
·	611	·	·	191	119

CALCULATED BSB
CHECKED KMK

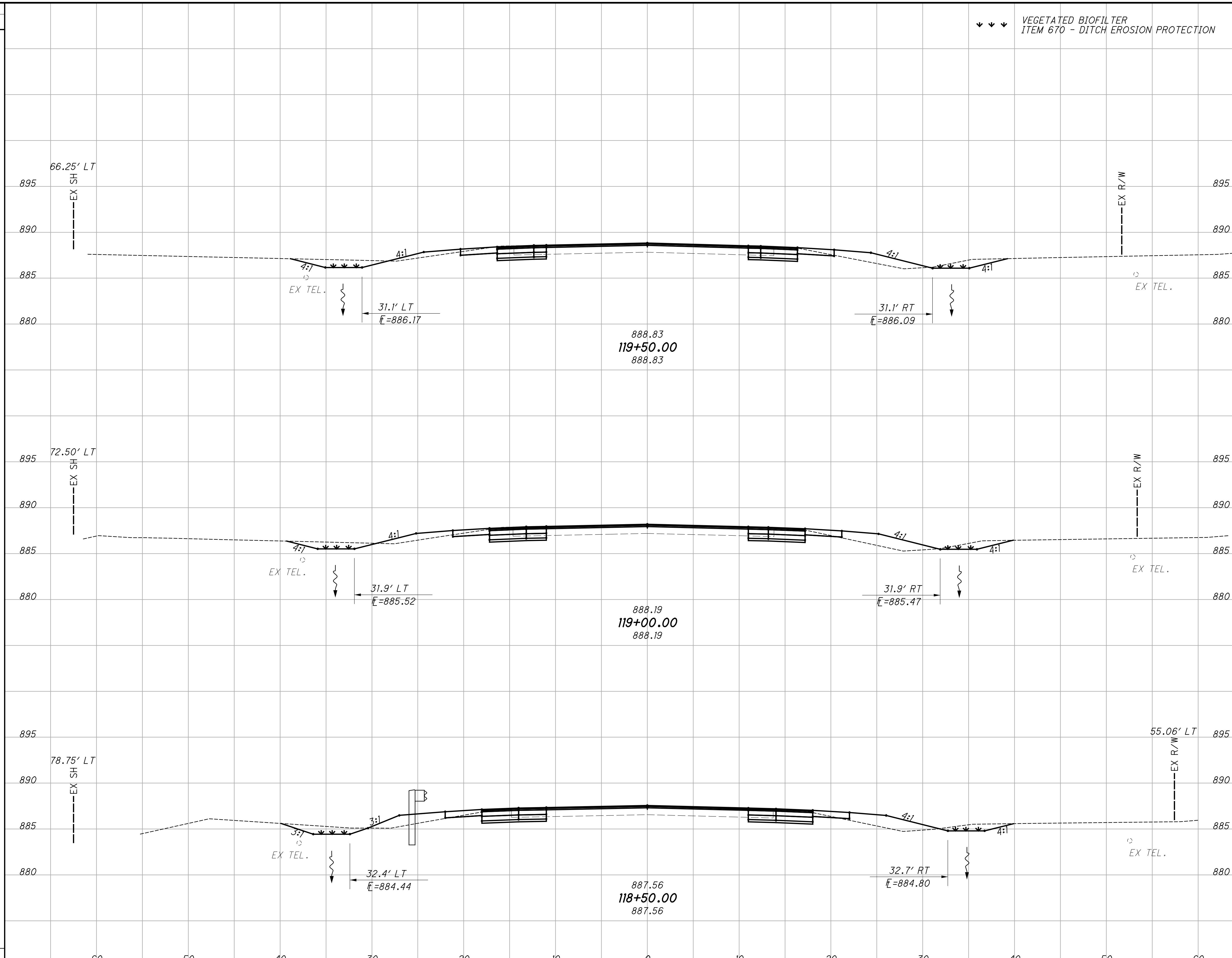
CROSS SECTIONS US-42
STA. 117+00.00 TO STA. 118+00.00

DEL-42-1.41

7.1
107



SEEDING END WIDTH	SEEDING SQ. YDS.
	211
38	
	211
38	
	208
37	
	630



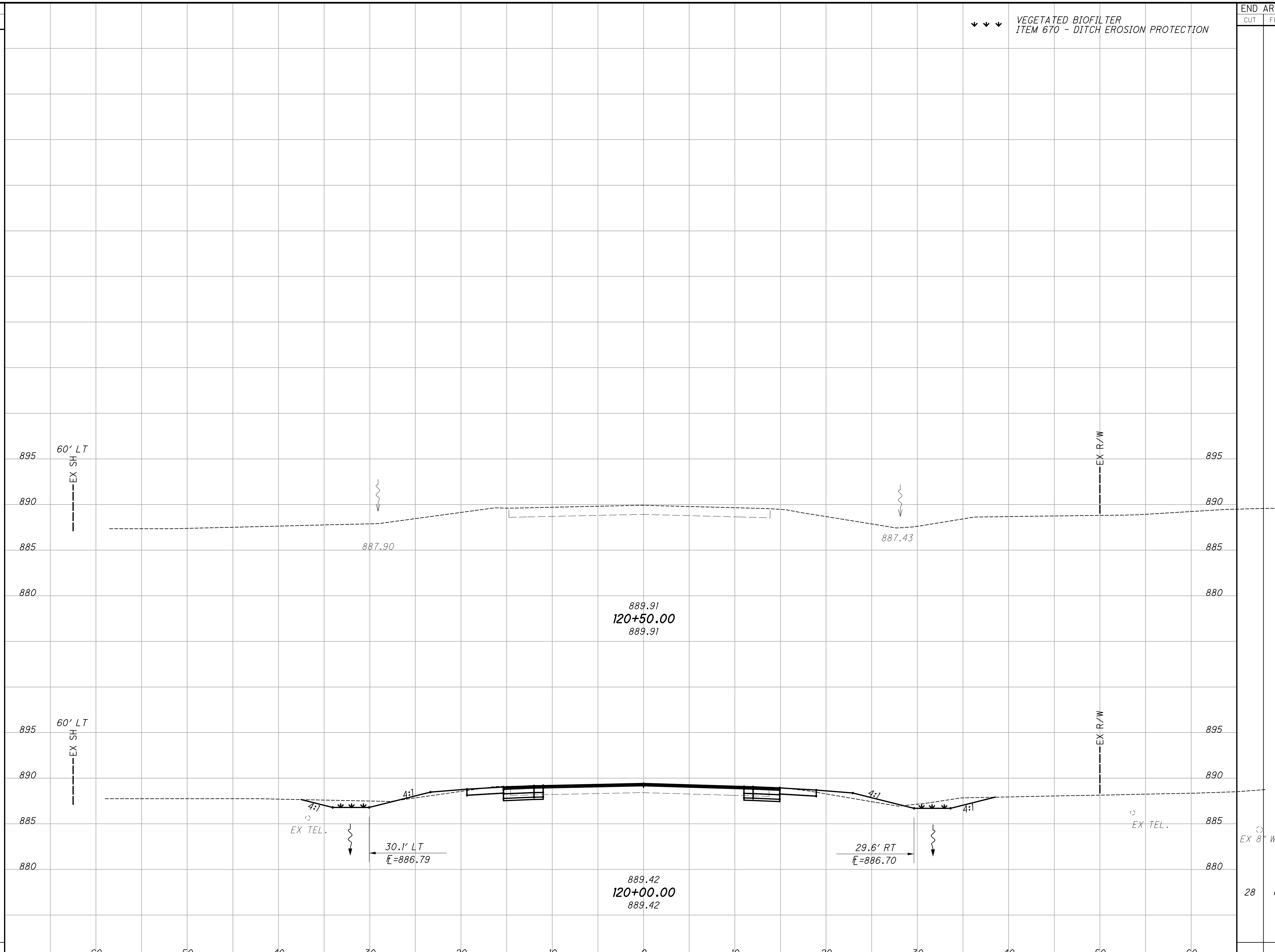
END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		54	16
30	11		
		56	23
30	14		
		56	29
31	17		
		166	68

CALCULATED BSB
CHECKED KMK

CROSS SECTIONS US-42
STA. 118+50.00 TO STA. 119+50.00

DEL-42-1.41

SEEDING	
END WIDTH	SQ. YDS.
38	
	0

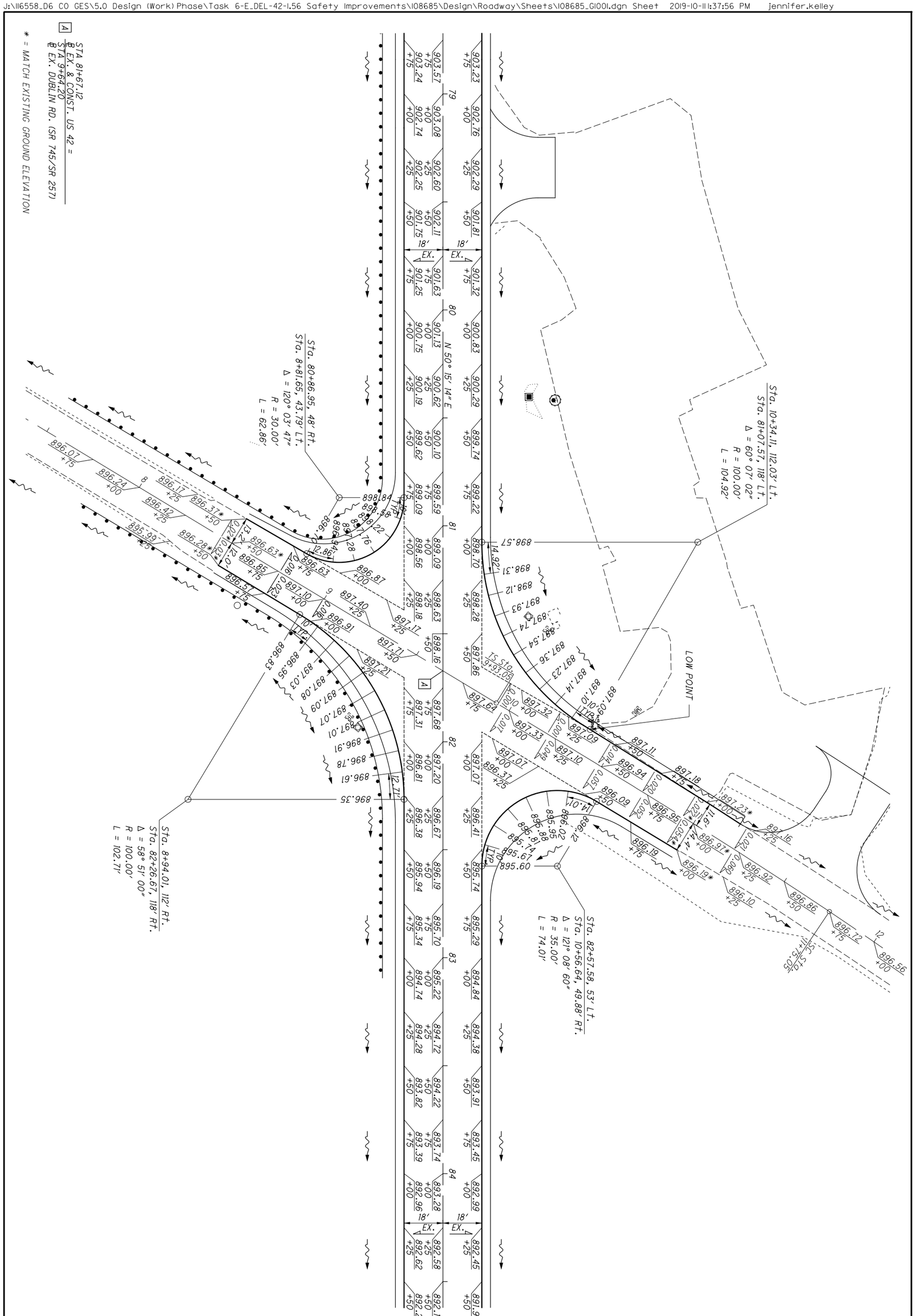


END AREA		VOLUME	
CUT	FILL	CUT	FILL
28	6		
		0	0

CALCULATED BSB
CHECKED KMK

CROSS SECTIONS US-42
STA. 120+00.00 TO STA. 120+50.00

DEL-42-1.41



74 / 107	DEL-42-1.41	INTERSECTION DETAIL US-42 & SR-745	CALCULATED JMK CHECKED KMK	0 20 10 40 HORIZONTAL SCALE IN FEET

J:\16558.06 CO CES\5.0 Design (Work) Phase\Task 6-E_DEL-42-1.56 Safety Improvements\108685\Design\Roadway\Sheets\108685_GI002.dgn Sheet 2019-10-11 11:38:00 PM jennifer.kelley

Sta. 19+47.35, 87.94' Lt.
Sta. 111+35.46, 93' Lt.
Δ = 57° 38' 06"
R = 75.00'
L = 75.44'

Sta. 113+03.09, 71' Lt.
Sta. 20+14.28, 65.79' Rt.
Δ = 107° 16' 10"
R = 53.00'
L = 99.23'

Sta. 110+60.96, 67.44' Rt.
Sta. 17+71.95, 64.98' Lt.
Δ = 120° 00' 34"
R = 50.00'
L = 104.73'

Sta. 18+48.61, 75.7' Rt.
Sta. 112+20.82, 78' Rt.
Δ = 57° 03' 46"
R = 60.00'
L = 59.76'

PC Sta. 20+06.90

N 42° 15' 14" E

[A] STA 111+80.64 ℄ EX. & CONST. US 42 = STA 18+92.98 ℄ EX. RIVERSIDE DR (SR 257) ℄ EX. KLONDIKE RD (CR 149)

* = MATCH EXISTING GROUND ELEVATION

HORIZONTAL SCALE IN FEET
0 10 20 40

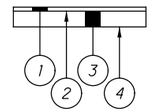
CALCULATED ZTW
CHECKED KMK

INTERSECTION DETAIL
US 42 & KLONDIKE RD / CR 149

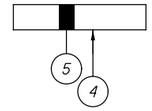
DEL-42-1.41

SHEET NO.	REFERENCE NO.	STATION	SIDE	DRIVE TYPE	DRIVEWAY LENGTH "L"	WIDTH "W"	R1 (LEFT SIDE RADII OF DRIVE LOOKING FROM CL)	R2 (RIGHT SIDE RADII OF DRIVE LOOKING FROM CL)	DRIVEWAY AREA	204 SUBGRADE COMPACTION	301 5" ASPHALT CONCRETE BASE, PG64-22	304 8" AGGREGATE BASE	407 NON-TRACKING TACK COAT	441 1.25" ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446)
							FT	FT	SF	SY	CY	CY	GAL	CY
31	DW-1	74+23.12	LT	RES.	30	12	25	25	528	58.67		13.04		
32	DW-2	79+34.11	LT	COMM.	30	28	25	25	1007	111.89	15.54		6.71	3.89
33	DW-3	85+50.68	LT	COMM.	25	12	25	25	468	52.00	7.22		3.12	1.81
33	DW-4	87+64.24	RT	RES.	31.73	13.92	25	25	647	71.89		15.98		
39	DW-5	116+01.83	RT	RES.	30	10	25	25	480	53.33		11.85		
41	DW-6	11+57.00	LT	COMM.	49.17	28	25	25	1689	187.67	26.06		11.26	6.52
TOTALS CARRIED TO GENERAL SUMMARY										536	49	41	22	13

1. ITEM 441 - 1 1/4" ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446)
2. ITEM 407 - NON-TRACKING TACK COAT (APPLIED AT 0.06 GAL/SY)
3. ITEM 301 - 5" ASPHALT CONCRETE BASE, PG64-22
4. ITEM 204 - SUBGRADE COMPACTION
5. ITEM 304 - 8" AGGREGATE BASE

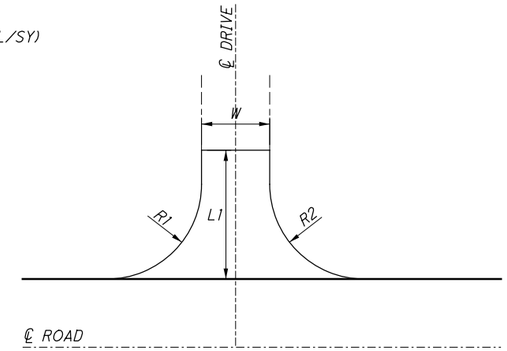


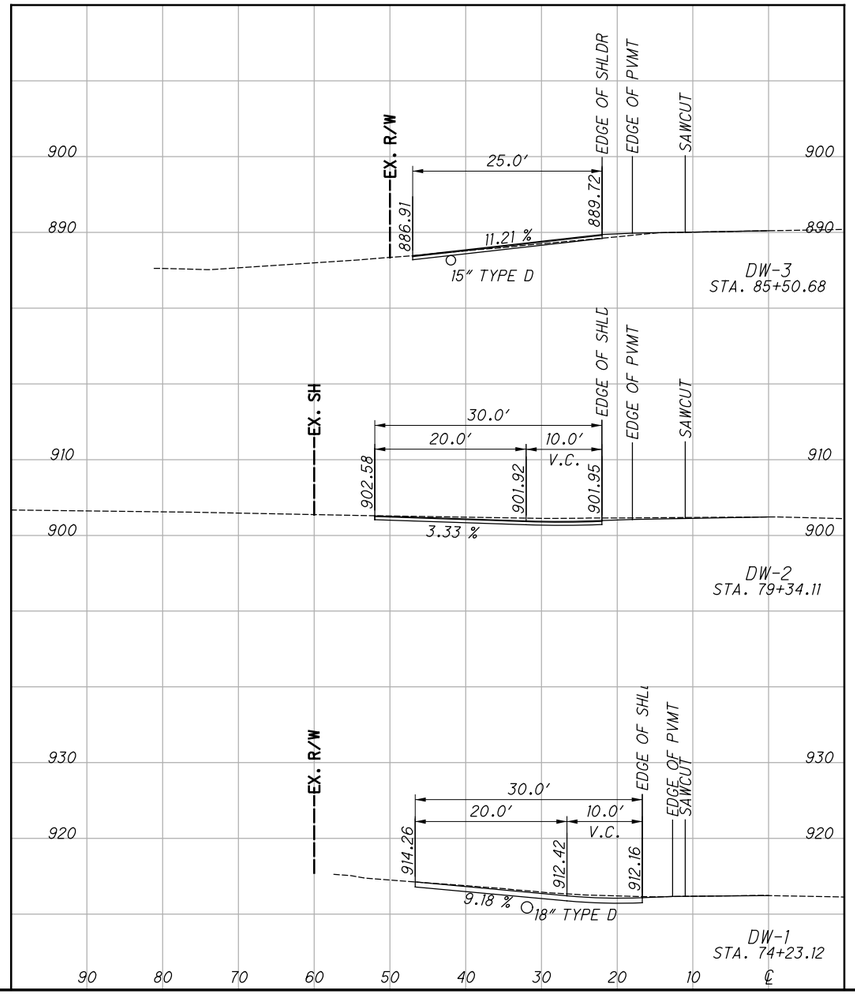
COMMERCIAL DRIVE BUILD-UP

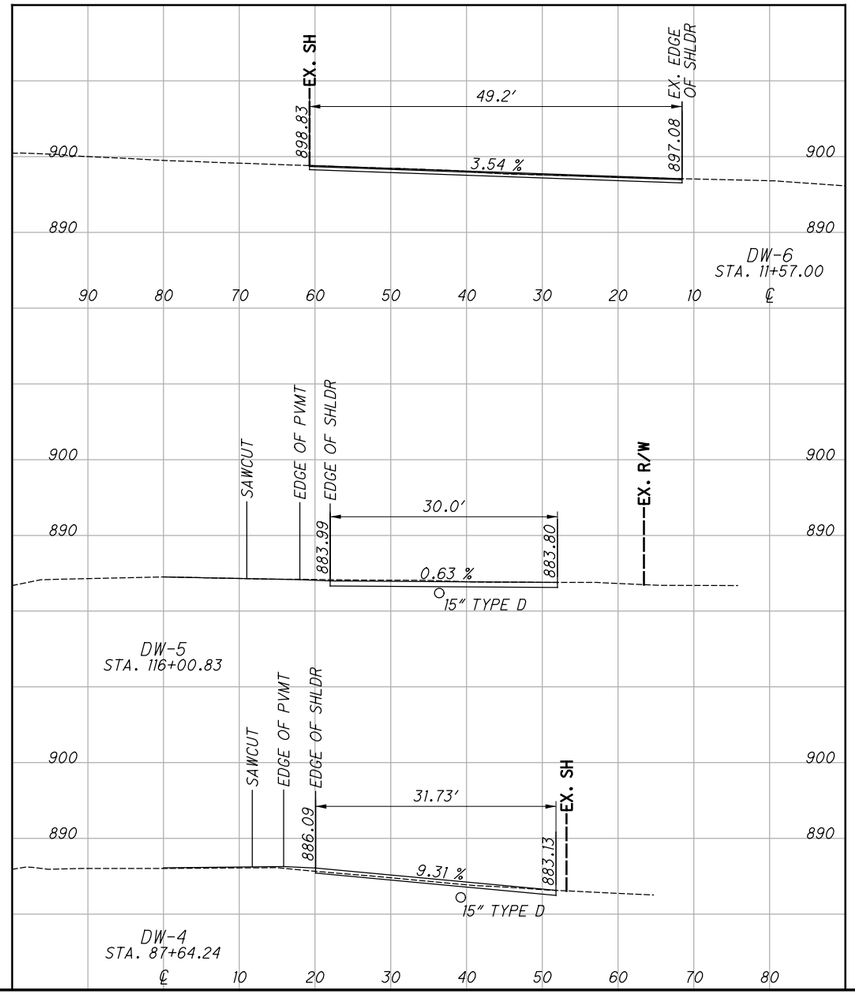


RESIDENTIAL DRIVE BUILD-UP

TYPE 1 DRIVEWAY PLAN VIEW (TYPICAL)





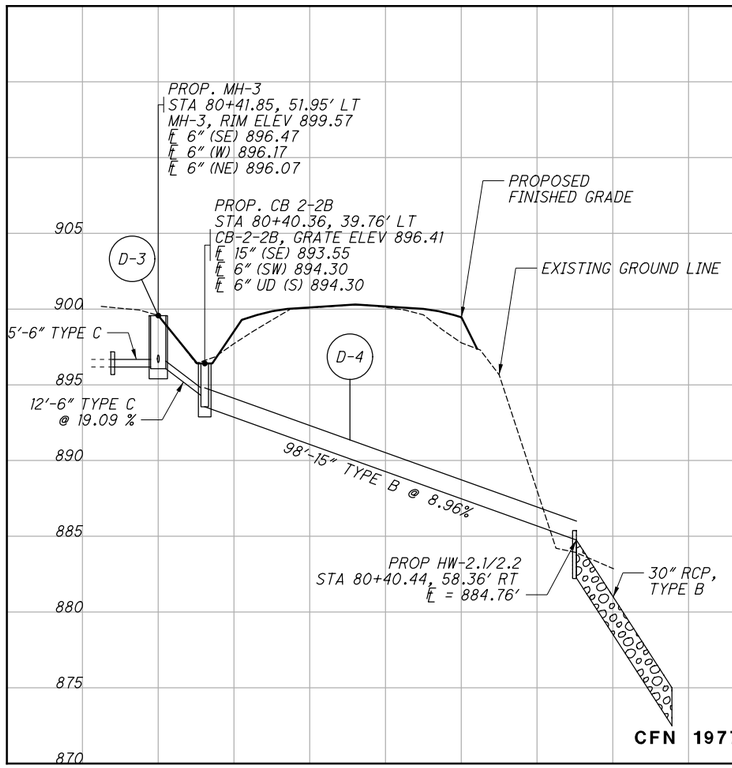


CALCULATED JMK
CHECKED KMK

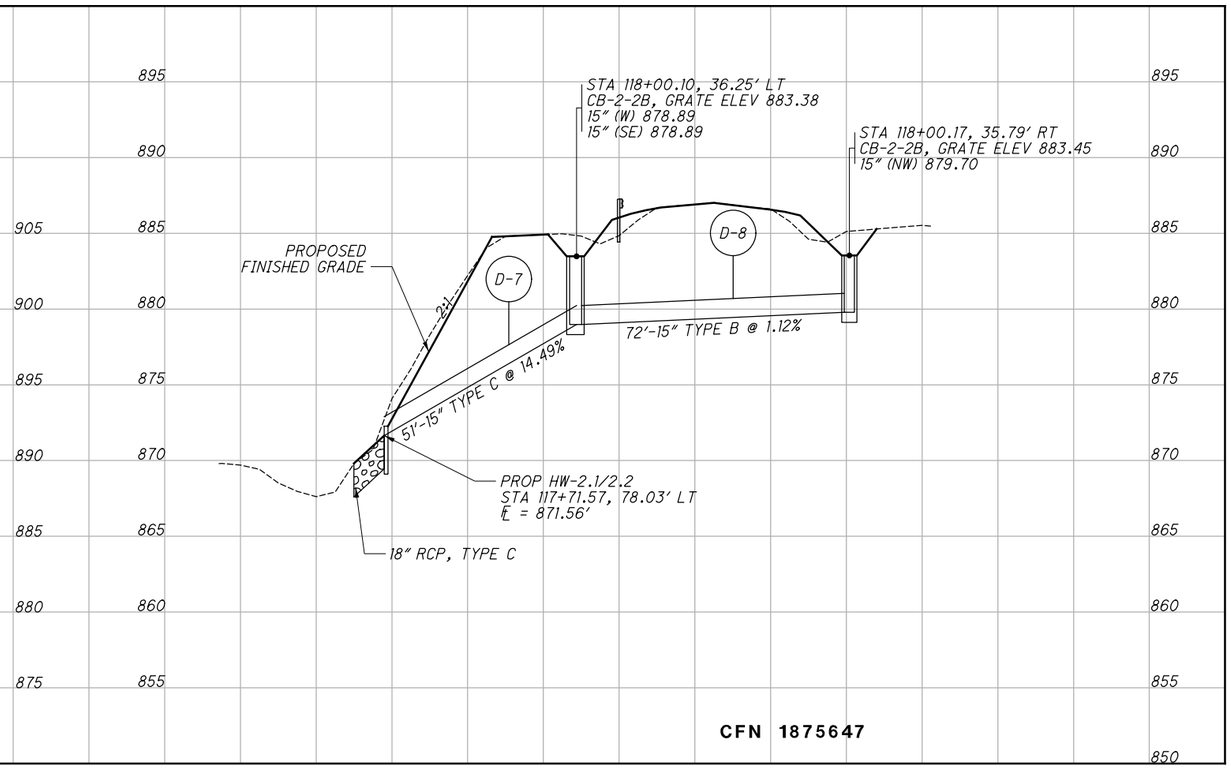
DRIVE DETAILS

DEL-42-1.41

76
107



CFN 1977324



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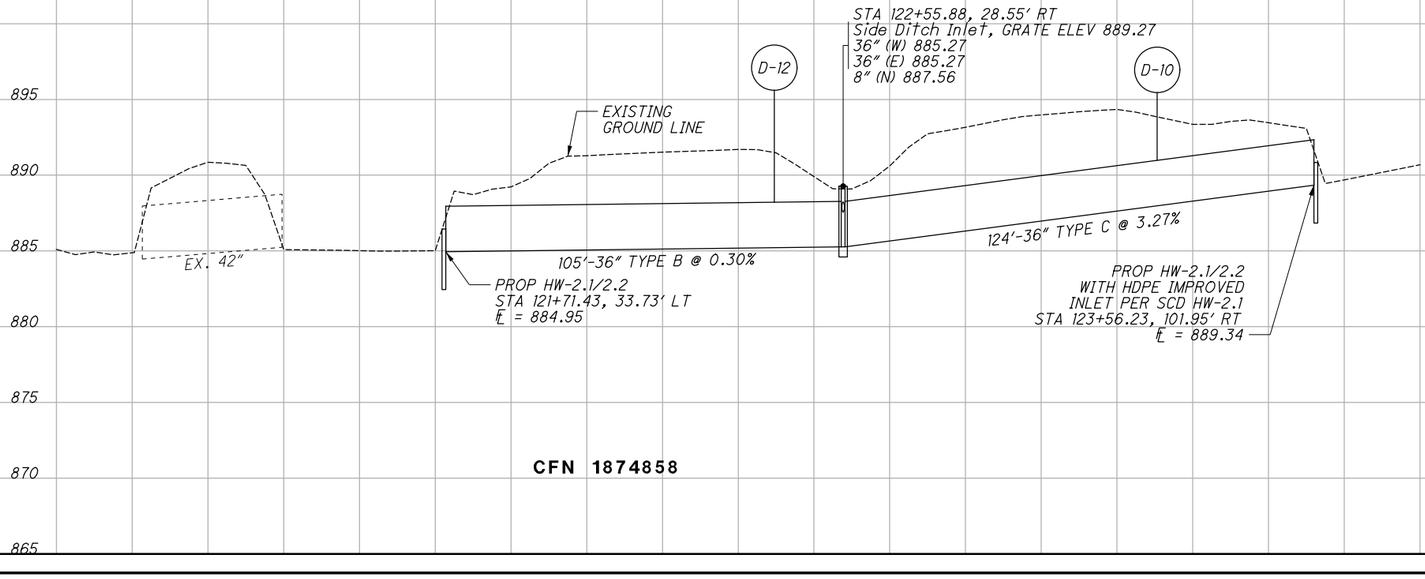

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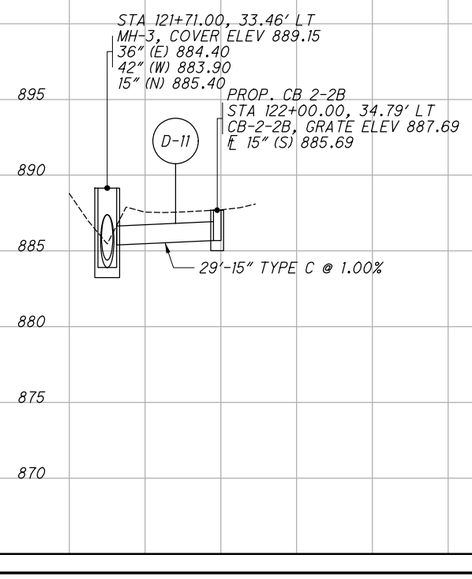


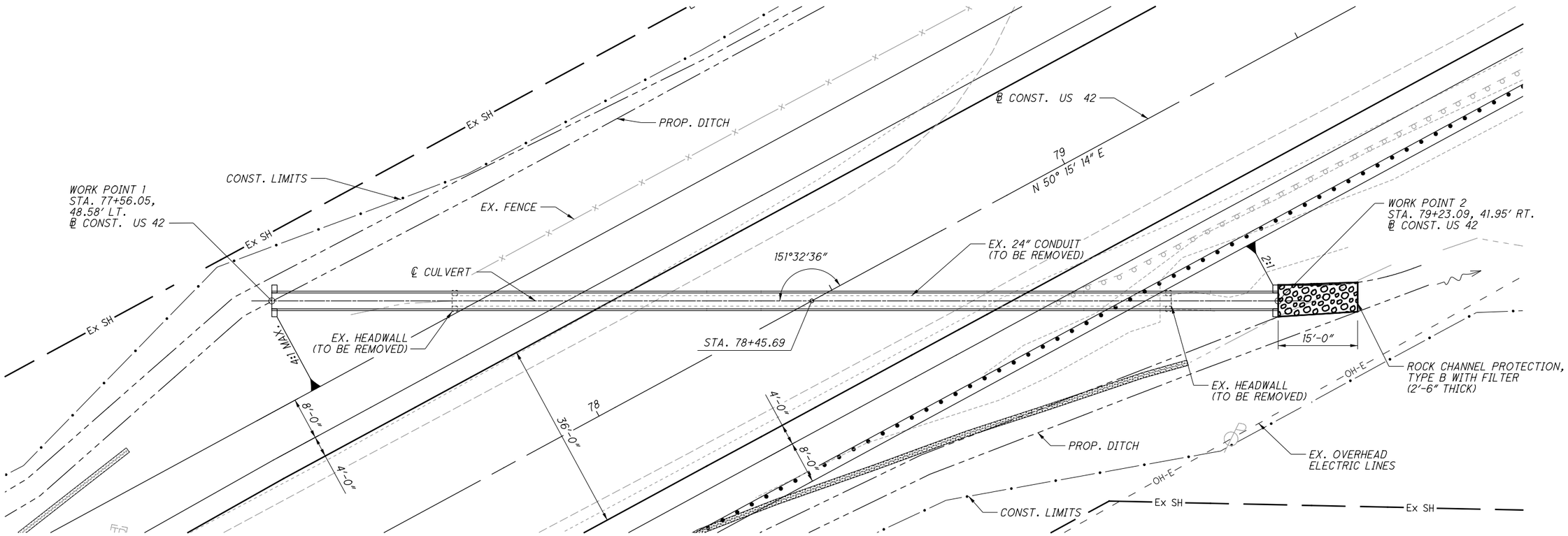
CALCULATED ZTW
CHECKED BSB

STORM SEWER PROFILES

DEL-42-1.41

77
107

J:\16558_D6 CO GES\5.0 Design (Work) Phase\Task 6-E_DEL-42-1.56 Safety Improvements\08685\Design\Drainage\Sheets\08685_DF101.dgn Sheet 2019-10-14 5:22:18 PM Jennifer.Kelley



PLAN

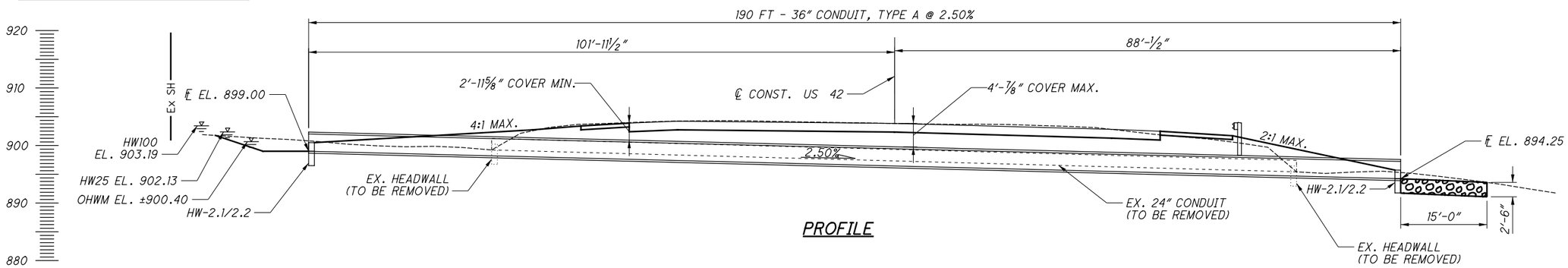
HYDRAULIC DESIGN DATA	
DRAINAGE AREA	= 26 AC.
Q_{25}	= 38 CFS
Q_{100}	= 53 CFS
HW_{25}	= 902.13'
HW_{100}	= 903.19'
V_{25}	= 13.51 FPS
V_{100}	= 14.65 FPS
ORDINARY HIGH WATER MARK	= 900.40'
DESIGN SERVICE LIFE	= 75 YR
pH	= 8.0
ABRASION LEVEL: 2	
CFN	=

EXISTING STRUCTURE
TYPE: REINFORCED CONCRETE PIPE
SIZE: 2'-0"
SKEW: 61°32'36" RIGHT FORWARD
ALIGNMENT: TANGENT
DATE BUILT: UNKNOWN
CONDITION: POOR
CFN: 1821801

ESTIMATED QUANTITIES

ITEM	QUAN	UNIT	DESCRIPTION
202	140	FT	PIPE REMOVED, 24' AND UNDER
202	2	EA	HEADWALL REMOVED
601	9	CY	ROCK CHANNEL PROTECTION, TYPE B WITH FILTER
602	2.0	CY	CONCRETE MASONRY
611	190	FT	36" CONDUIT, TYPE A, 706.02; OR 42" 707.02 (0.064) ALUMINIZED, 42" 707.04 (0.064), 42" 707.21, 36" 707.33 (WITH A WELDED BELL)

QUANTITIES CARRIED TO GENERAL SUMMARY



PROFILE

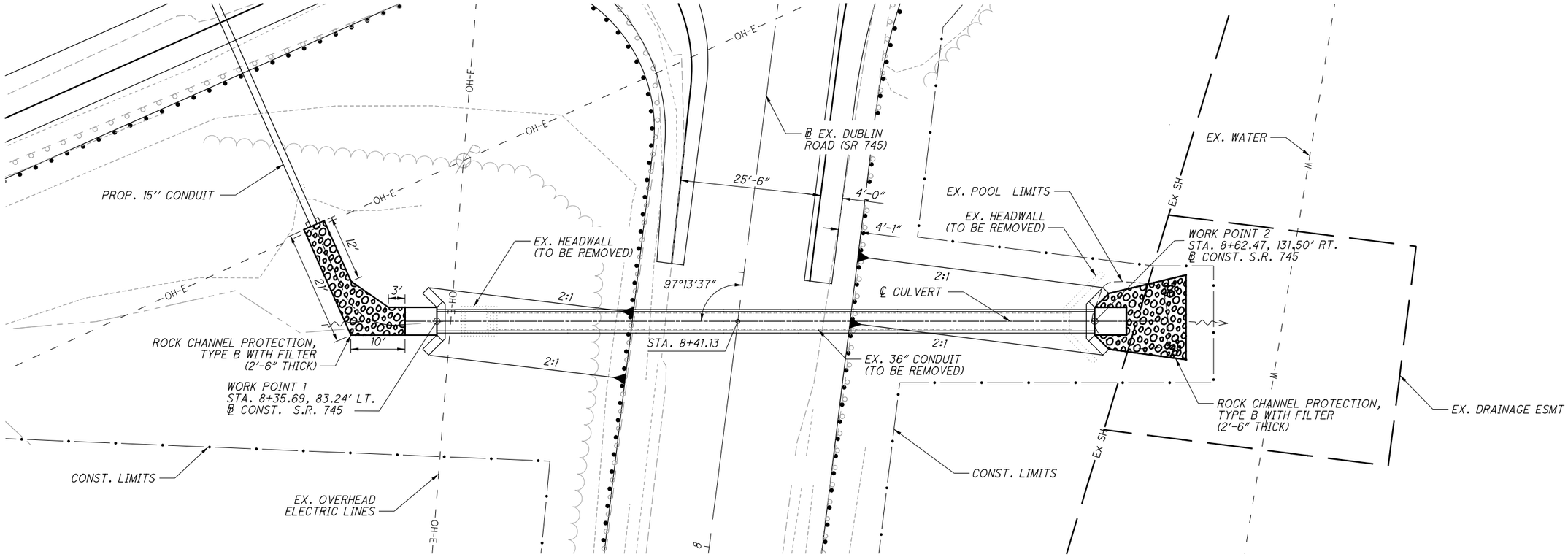
HORIZONTAL SCALE IN FEET
0 5 10 20

CALCULATED AIS
CHECKED BSB

CULVERT DETAIL
U.S. 42 STA. 78+45.69

DEL-42-1.41

78
107



PLAN

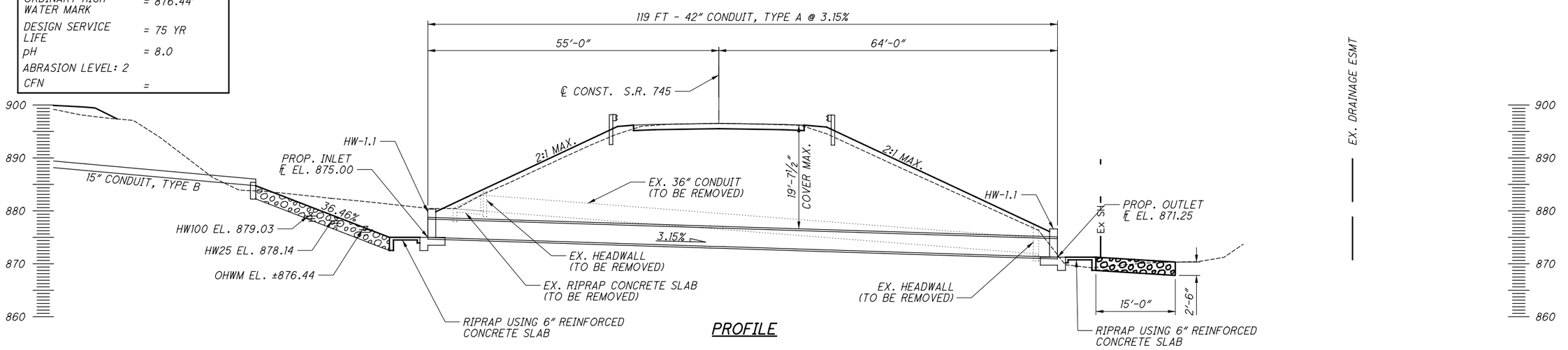
HYDRAULIC DESIGN DATA	
DRAINAGE AREA	= 32 AC.
Q_{25}	= 45 CFS
Q_{100}	= 63 CFS
HW_{25}	= 878.14'
HW_{100}	= 879.03'
V_{25}	= 14.39 FPS
V_{100}	= 15.45 FPS
ORDINARY HIGH WATER MARK	= 876.44'
DESIGN SERVICE LIFE	= 75 YR
pH	= 8.0
ABRASION LEVEL: 2	
CFN	=

EXISTING STRUCTURE
TYPE: REINFORCED CONCRETE PIPE
SIZE: 3'-0"
SKEW: 7°13'37" RIGHT FORWARD
ALIGNMENT: TANGENT
DATE BUILT: UNKNOWN
CONDITION: POOR
CFN: 1832497

ESTIMATED QUANTITIES

ITEM	QUAN	UNIT	DESCRIPTION
202	106	FT	PIPE REMOVED, OVER 24"
202	2	EA	HEADWALL REMOVED
202	3	SY	CONCRETE SLOPE PROTECTION REMOVED
601	16	CY	ROCK CHANNEL PROTECTION, TYPE B WITH FILTER
601	7	SY	RIPRAP, TYPE D
602	18.0	CY	CONCRETE MASONRY
611	119	FT	42" CONDUIT, TYPE A, 706.02; OR 707.02 (0.064) ALUMINIZED, 707.04 (0.064), 707.21, 707.33 (WITH A WELDED BELL)

QUANTITIES CARRIED TO GENERAL SUMMARY



PROFILE

CULVERT DETAIL
S.R. 745 STA. 8+41.13

CALCULATED AIS
CHECKED BSB

HORIZONTAL SCALE IN FEET
0 5 10 20

DEL-42-1.41

SHEET NO.	REFERENCE NO.	LOCATION	STATION FROM	STATION TO	SIDE	621 RPM	621 RAISED PAVEMENT MARKER REMOVED	644 EDGE LINE, 6"	644 CENTER LINE	644 CHANNELIZING LINE, 8"	644 STOP LINE	644 LANE ARROW	646 EDGE LINE, 6"	646 CENTER LINE
						EACH	EACH	MILE	MILE	FT	FT	EACH	MILE	MILE
83-89	CL-1	US 42	73+50	102+88	LT/RT	37	37		2938					
83-84	CL-2	US 42	73+82	77+92	RT	5			410					
83-85	EW-1	US 42	73+50	11+00 (DUBLIN RD)	LT			929						
83-85	EW-2	US 42	73+50	6+90 (DUBLIN RD)	RT	16	16	993						
85-89	EW-3	US 42	11+00 (DUBLIN RD)	102+88.10	LT	16	16	2147						
85-89	EW-4	US 42	6+90 (DUBLIN RD)	102+88.10	RT	16		2370						
90-91	EW-5	US 42	108+49	20+06.90 (KLONDIKE RD)	LT			422						
90-91	EW-6	US 42	108+49	17+50 (RIVERSIDE DR)	RT	16	16	341						
91-93	EW-7	US 42	20+06.90 (KLONDIKE RD)	120+27.77	LT	16	16	827						
91-93	EW-8	US 42	17+50 (RIVERSIDE DR)	120+27.77	RT	3	3	966						
84	A-1	US 42	78+81		℄							1		
84-85	CH-1	US 42	78+17	80+87	RT	8				270				
85	A-2	US 42	79+69		℄							1		
85	A-3	US 42	80+57		℄							1		
85	A-4	US 42	82+69		℄							1		
85	A-5	US 42	83+57		℄							1		
85-86	CH-2	US 42	82+39	85+09	LT	8				270				
85	SL-1	US 42	80+87		LT/RT						25			
85	SL-2	DUBLIN ROAD	10+24		LT						13			
85	SL-3	US 42	82+39		LT/RT						30			
85	SL-4	DUBLIN ROAD	9+07		RT						13			
85	CL-3	DUBLIN ROAD	10+24	10+64	℄	2	2		40					
85	CL-4	DUBLIN ROAD	6+90	9+07	℄	4	4		217					
86	A-6	US 42	84+45		℄							1		
	A-7		NOT USED											
86-87	CL-5	US 42	85+34	89+44	LT	7			410					
89-90	CL-10	US 42	102+88	108+49	℄	8	8							561
89-90	EW-9	US 42	102+88	108+49	LT								561	
89-90	EW-10	US 42	102+88	108+49	RT								561	
90	CL-11	US 42	107+35	108+49	RT	2	2							114
90-93	CL-12	US 42	108+49	120+00	LT/RT	14	14		1151					
90-91	CL-6	US 42	108+49	110+55	RT	6			206					
91	CH-3	US 42	110+65	110+95	RT	3				30				
91-92	CH-4	US 42	112+66	115+37	LT	8				271				
91	SL-5	US 42	110+95		LT/RT						37			
91	SL-6	US 42	19+32		LT						15			
91	SL-7	US 42	112+66		LT/RT						39			
91	SL-8	US 42	18+45		RT						16			
91	A-8	US 42	110+85		℄							1		
91	A-9	US 42	112+96		℄							1		
91	A-10	US 42	113+84		℄							1		
91	CL-7	KLONDIKE ROAD	19+32	20+00	℄	2			68					
91	CL-8	RIVERSIDE DRIVE	17+52	18+45	℄	2	2		93					
92-93	CL-9	US 42	115+62	119+71	LT	7			409					
92	A-11	US 42	114+72		℄							1		
								SUBTOTAL	SUBTOTAL				SUBTOTAL	SUBTOTAL
								8995	5942				1122	675
								FT	FT				FT	FT
TOTALS CARRIED TO GENERAL SUMMARY						206	136	1.70	1.13	841	188	10	0.21	0.13

CALCULATED JAW
CHECKED BSS

TRAFFIC CONTROL SUBSUMMARY

REV. BY	DATE	DESCRIPTION
AMP	12/30/19	ITEM 621 - RPM AND RPM REMOVED ADDED
DATE COMPLETED		

DEL-42-1.41

8.0
107

SHEET NO.	REFERENCE NO.	LOCATION	STATION	SIDE	CODE	SIZE (INCHES)	630 GROUND MOUNTED SUPPORT, NO. 2 POST FT	630 GROUND MOUNTED SUPPORT, NO. 3 POST FT		630 SIGN, FLAT SHEET SF	630 REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL EACH	630 REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL EACH									
83	S-1	US 42	75+49	RT	M2-1-21	21 X 15	5.0	10.0		2.2											
					M1-5-24-3	30 X 24				5.0											
					M1-5-24-3	30 X 24				5.0											
84	R-1	US 42	75+52	RT							3	1									
84	R-2	US 42	77+05	RT							1	2									
84	S-2	US 42	75+00	RT	D1-H1a-72	72 X 12	5.0 | 5.0	10.0 | 10.0		6.0											
					D1-H1a-72	72 X 12				6.0											
84	S-3	US 42	77+92	RT	R3-H8bh-36	36 X 30	5.0	10.0		7.5											
84	R-3	US 42	78+02	RT							1	2									
85	R-4	US 42	80+02	LT							2	1									
84	S-4	US 42	78+75	LT	M3-3-24	24 X 12	5.0	10.0		2.0											
					M1-4-24-2	24 X 24				4.0											
84	S-41	US 42	76+00	LT	R2-1-24	24 X 30	5.0	10.0		5.0											
85	S-5	US 42	80+88	RT	M1-5-24-3	30 X 24	5.0	10.0		5.0											
					M6-1-21	21 X 15				2.2											
85	S-6	US 42	80+92	RT	M1-4-24-2	24 X 24	5.0	10.0		4.0											
					M6-4-21	21 X 15				2.2											
85	R-5	US 42	81+02	RT							2	1									
85	R-6	US 42	81+05	RT							2	1									
85	R-7	US 42	81+36	LT							2	1									
85	R-8	US 42	81+37	LT							2	1									
85	S-7	US 42	81+38	LT	M1-5-24-3	30 X 24	5.0	10.0		5.0											
					M6-1-21	21 X 15				2.2											
85	S-8	US 42	81+38	LT	M1-5-24-3	30 X 24	5.0	10.0		5.0											
					M6-1-21	21 X 15				2.2											
85	S-9	US 42	82+25	RT	M1-5-24-3	30 X 24	5.0	10.0		5.0											
					M6-1-21	21 X 15				2.2											
85	S-10	US 42	82+25	RT	M1-5-24-3	30 X 24	5.0	10.0		5.0											
					M6-6-21	21 X 15				2.2											
85	R-9	US 42	82+17	RT							2	1									
85	R-10	US 42	82+17	RT							2	1									
85	R-11	US 42	82+39	LT							2	1									
85	R-12	US 42	82+39	LT							2	1									
85	S-11	US 42	82+42	LT	M1-4-24-2	24 X 24	5.0	10.0		4.0											
					M6-4-21	21 X 15				2.2											
85	S-12	US 42	82+42	LT	M1-5-24-3	30 X 24	5.0	10.0		5.0											
					M6-6-21	21 X 15				2.2											
85	R-13	US 42	83+21	RT							1	2									
86	S-13	US 42	84+12	RT	D14-H4-48	48 X 30	5.0 | 5.0	10.0 | 10.0		10.0											
86	S-14	US 42	86+12	RT	M3-1-24	24 X 12	5.0	10.0		2.0											
					M1-4-24-2	24 X 24				4.0											
85	R-14	US 42	83+94	RT							2	1									
86	S-15	US 42	85+09	LT	R3-H8bh-36	36 X 30	5.0	10.0		7.5											
86	R-15	US 42	86+31	LT							2	2									
86	S-16	US 42	87+09	LT	D1-H1a-72	72 X 12	5.0 | 5.0	10.0 | 10.0		6.0											
					D1-H1a-72	72 X 12				6.0											
86	R-16	US 42	87+26	LT							2	1									
86	R-17	US 42	87+26	LT							2	1									
87	S-17	US 42	89+09	LT	M2-1-21	21 X 15	5.0	10.0		2.2											
					M1-5-24-3	30 X 24				5.0											
87	S-18	US 42	89+09	LT	M1-5-24-3	30 X 24	5.0	10.0		5.0											
					M5-1-21	21 X 15				2.2											
87	R-18	US 42	93+08	RT							1	1									
88	S-19	US 42	97+00	RT	W8-13-36	36 X 36	5.0	10.0		9											
89	R-19	US 42	99+13	RT							2	2									
89	S-20	US 42	99+18	RT	D7-H1a-72	72 X 12	5.0 | 5.0	10.0 | 10.0		6.0											
					D7-H1a-72	72 X 12				6.0											
SUBTOTALS CARRIED TO SHEET 82							125.0	250.0		169.1	35	24									

CALCULATED JAW
CHECKED BSS

TRAFFIC CONTROL SUBSUMMARY

DEL-42-1.41

SHEET NO.	REFERENCE NO.	LOCATION	STATION	SIDE	CODE	SIZE (INCHES)	630 GROUND MOUNTED SUPPORT, NO. 2 POST FT	630 GROUND MOUNTED SUPPORT, NO. 3 POST FT	630 STREET NAME SIGN SUPPORT, NO. 3 POST FT	630 SIGN, FLAT SHEET SF	630 REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL EACH	630 REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL EACH
89	S-21	US 42	101+18	RT	M1-5-24-3	30 X 24	5.0	10.0		5.0		
					M5-1-21	21 X 15				2.2		
89	R-20	US 42	101+79	RT							2	1
89	S-22	US 42	102+90	RT	I-H25a-12	12 X 12	5.0	10.0		1.0		
		US 42			I-3-24	24 X 18				3.0		
89	R-21	US 42	102+85	RT							1	1
89	R-22	US 42	102+87	RT							1	1
	S-23	NOT USED										
90	R-23	US 42	108+48	LT							1	1
90	S-24	US 42	108+48	LT	I-3-24	24 X 18	5.0	10.0		3.0		
91	S-25	US 42	110+11	RT	D10-H8-12	12 X 12	5.0	10.0		1.0		
91	R-24	US 42	110+14	RT							1	1
91	S-26	US 42	110+45	RT	R3-H8bh-36	36 X 30	5.0	10.0		7.5		
91	S-27	US 42	110+86	RT	D14-H4-48	48 X 30	5.0 | 5.0	10.0 | 10.0		10.0		
				RT	D3-H1-48	48 X 12				4.0		
91	R-25	US 42	110+84	RT							1	2
91	R-26	US 42	110+88	RT							2	1
91	S-28	US 42	110+89	RT	M3-3-24	24 X 12	5.0	10.0		2.0		
					M1-5-24-3	30 X 24	5.0	10.0		5.0		
91	S-29	US 42	111+51	LT	M1-4-24-2	24 X 24	5.0	10.0		4.0		
					M6-4-21	21 X 15				2.2		
91	S-30	US 42	111+55	LT	M1-5-24-3	30 X 24	5.0	10.0		5.0		
					M6-1-21	21 X 15				2.2		
91	R-27	US 42	111+59	LT							2	1
91	R-28	US 42	111+63	LT							2	1
91	R-29	US 42	111+66	LT							2	1
91	S-31	US 42	111+78	LT	M1-5-24-3	30 X 24	5.0	10.0		5.0		
					M6-6-21	21 X 15				2.2		
91	R-30	US 42	111+84	LT							1	1
91	S-32	US 42	111+75	RT	R10-H6bL-24	24 X 30	5.0	10.0		5.0		
91	R-31	US 42	111+76	RT							1	1
91	R-32	US 42	112+07	RT							2	1
91	S-33	US 42	112+09	RT	M1-5-24-3	30 X 24	5.0	10.0		5.0		
					M6-1-21	21 X 15				2.2		
91	S-34	US 42	111+86	LT	R10-H6bL-24	24 X 30	5.0	10.0		5.0		
91	R-33	US 42	112+59	LT							1	1
91	S-35	US 42	112+58	LT	R5-H2b-24	24 X 24	5.0	10.0		4.0		
91	R-34	US 42	112+60	LT							1	1
91	S-36	US 42	112+71	LT	D3-1-54	54 X 12			15	4.5		
91	S-37	US 42	111+00	LT	W8-13-36	36 X 36	5.0	10.0		9.0		
92	S-38	US 42	115+62	LT	R3-H8bh-36	36 X 30	5.0	10.0		7.5		
92	R-35	US 42	116+55	LT							2	1
92	S-39	US 42	117+62	LT	M2-1-21	21 X 15	5.0	10.0		2.2		
					M1-5-24-3	30 X 24				5.0		
92	R-36	US 42	118+54	LT							2	2
92	S-41	US 42	114+50	RT	M1-4-24-2	24 X 24	5.0	10.0		4.0		
92	S-42	US 42	117+25	RT	R2-1-24	24 X 30	5.0	10.0		5.0		
93	S-40	US 42	119+62	LT	D7-H1a-72	72 X 12	5.0 | 5.0	10.0 | 10.0		6.0		
					D7-H1a-72	72 X 12				6.0		
93	R-37	US 42	120+39	LT							1	1
SUBTOTALS CARRIED FROM THIS SHEET							115.0	230.0	15	134.6	26	20
SUBTOTALS CARRIED FROM SHEET 81							125.0	250.0	0	169.1	35	24
TOTALS CARRIED TO GENERAL SUMMARY							240.0	480.0	15	303.7	61	44

CALCULATED JAW
CHECKED BSS

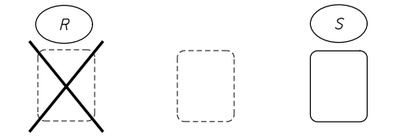
TRAFFIC CONTROL SUBSUMMARY

DEL-42-1.41

REV. BY	DATE	DESCRIPTION
AMP	12/30/19	RPM NOTE ADDED
DATE COMPLETED		

SIGN AND PAVEMENT MARKING LEGEND

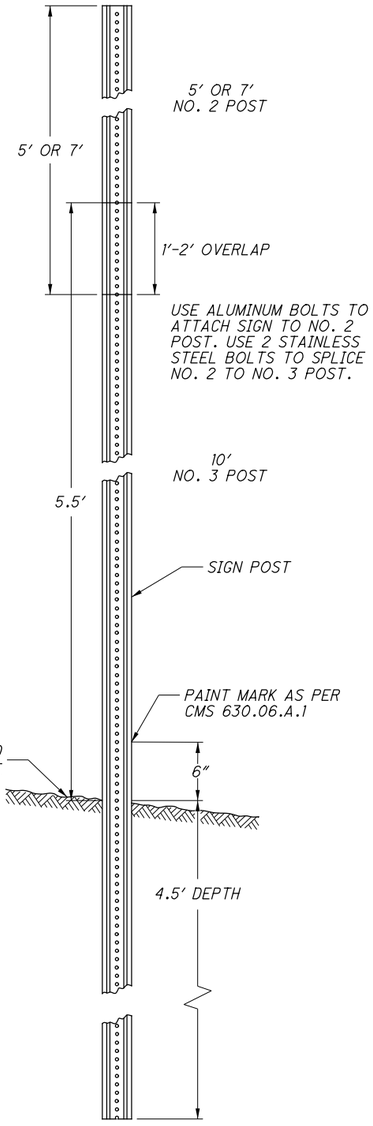
- EW — EDGE LINE, 6" WHITE
- CL — CENTER LINE
- CH — CHANNELIZING LINE
- SL — STOP LINE
- XW — CROSSWALK LINE
- TY — TRANSVERSE/DIAGONAL LINE
- A — LANE ARROW



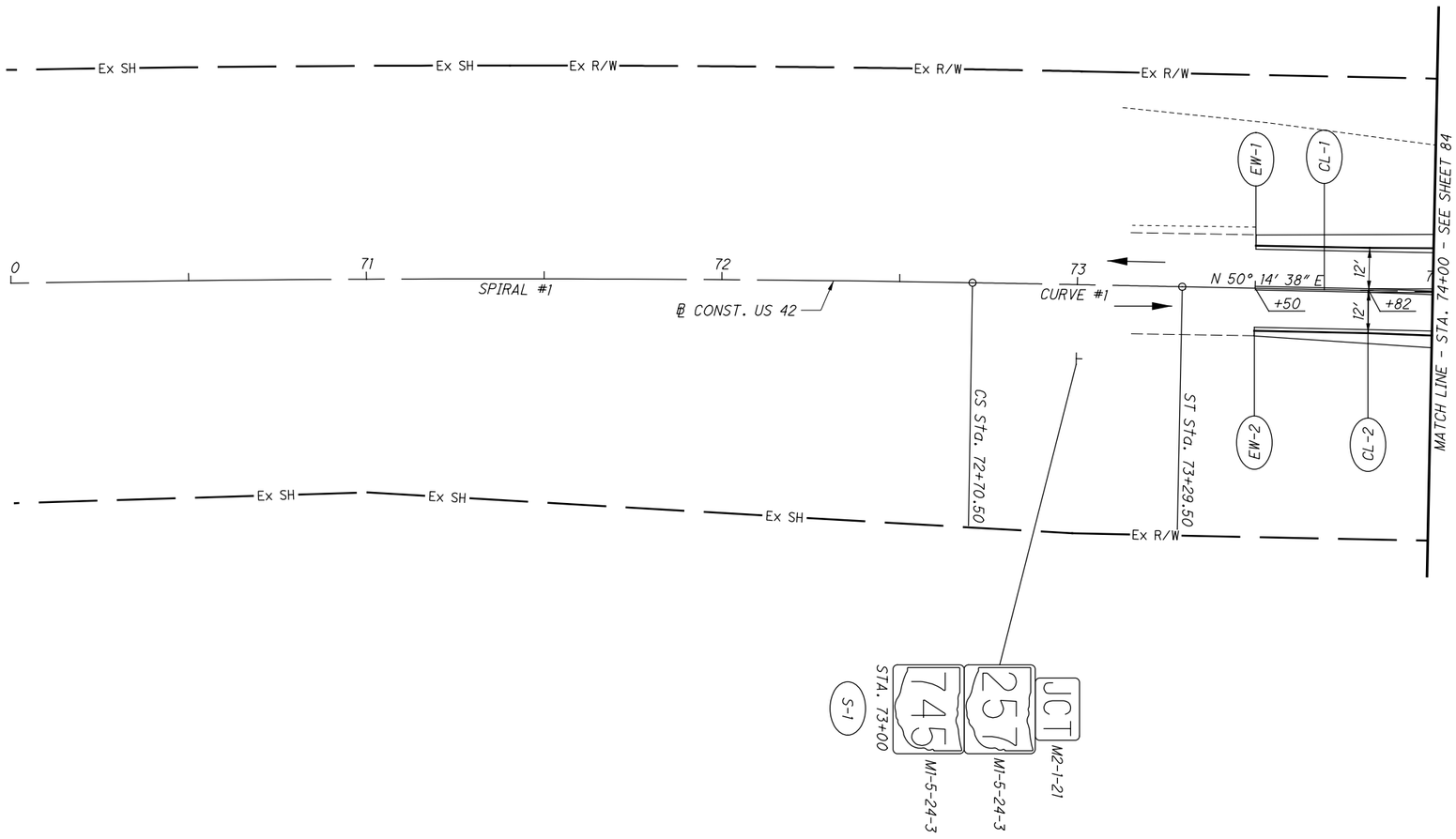
EXISTING SIGN TO BE REMOVED — EXISTING SIGN TO REMAIN — PROPOSED SIGN

DIRECTION OF TRAVEL

NOTE
RPM'S SHALL BE INSTALLED PER SCD TC-65.10 & TC-65.11



TYPICAL NO. 2 & NO. 3 U CHANNEL SPLICE WITH 10' DRIVEN SECTION INSTALLATION

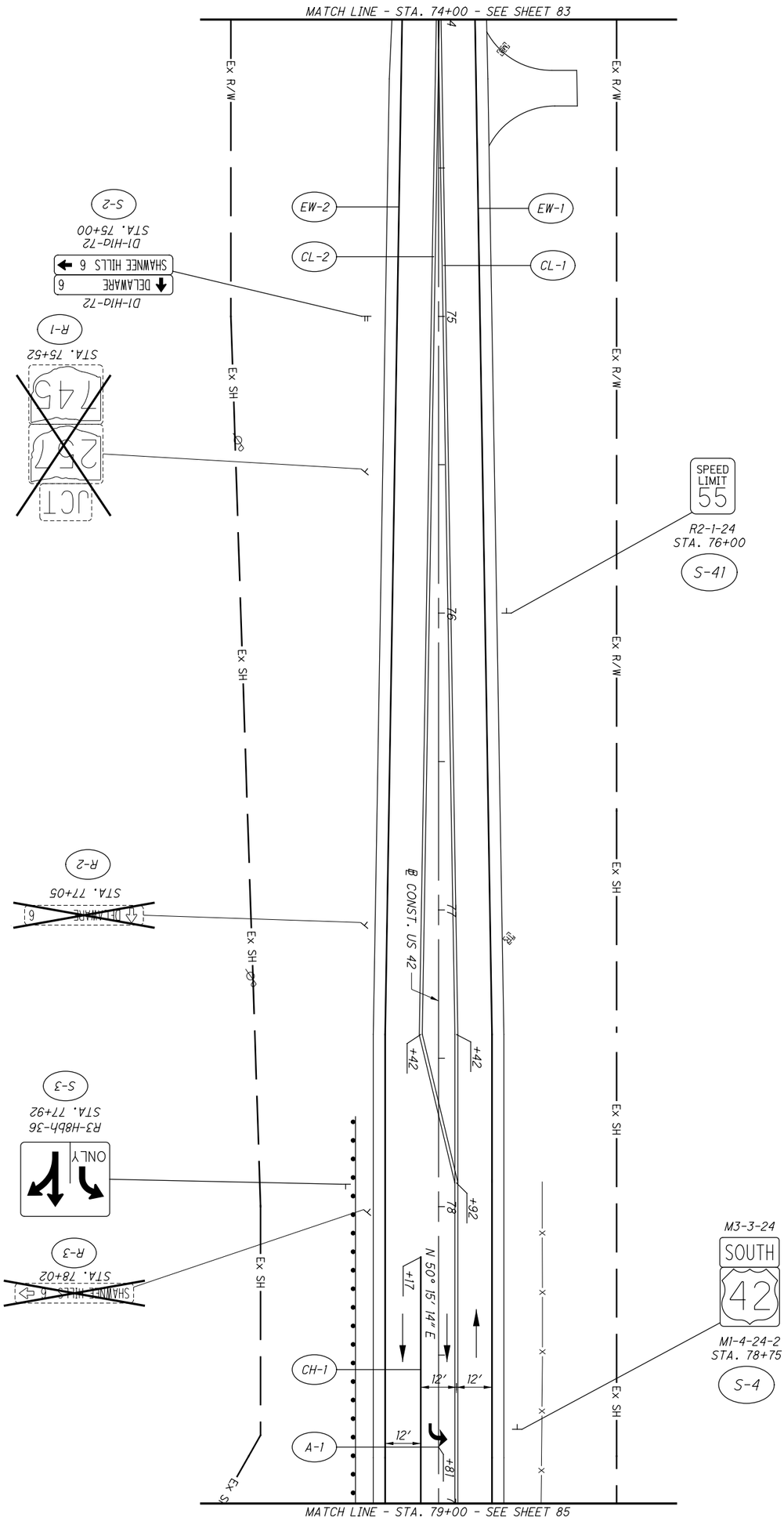


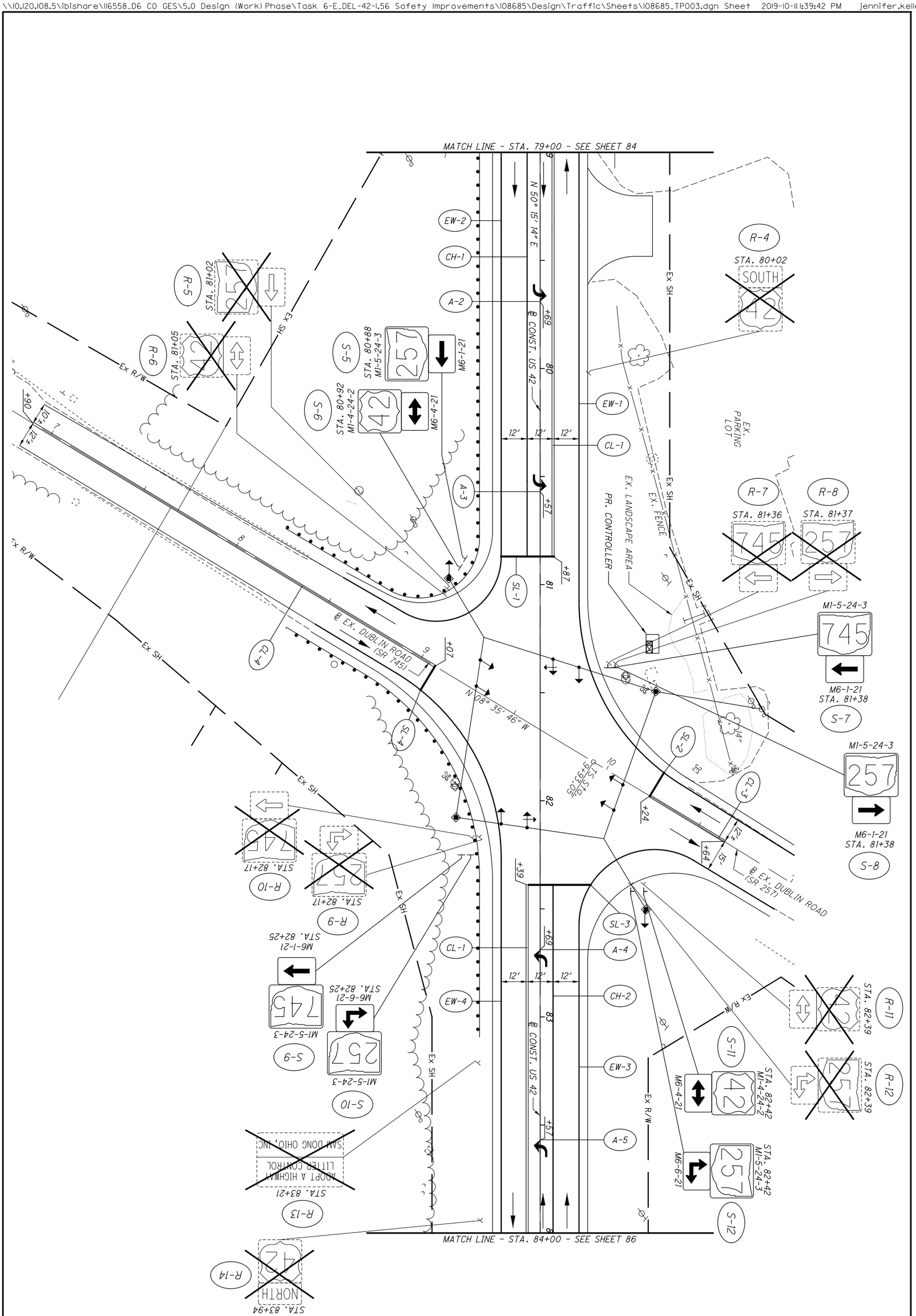
SIGN & PAVEMENT MARKING PLAN - US 42
STA. 70+00 TO STA. 74+00

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JMK
CHECKED KMK

DEL-42-1.41


MATCH LINE - STA. 74+00 - SEE SHEET 83
Ex R/W
Ex SH
EW-2
EW-1
CL-2
CL-1
S-2
STA. 75+00
DI-HIG-72
SHAWNEE HILLS 6
DELAWARE 6
DI-HIG-72
R-1
STA. 75+62
SPEED LIMIT 55
R2-1-24
STA. 76+00
S-41
℄ CONST. US 42
R-2
STA. 77+05
S-3
STA. 77+92
R3-H8bh-36
ONLY
R-3
STA. 78+02
SHAWNEE HILLS 6
M3-3-24
SOUTH
42
M1-4-24-2
STA. 78+75
S-4
N 50° 15' 14" E
CH-1
A-1
12'
MATCH LINE - STA. 79+00 - SEE SHEET 85

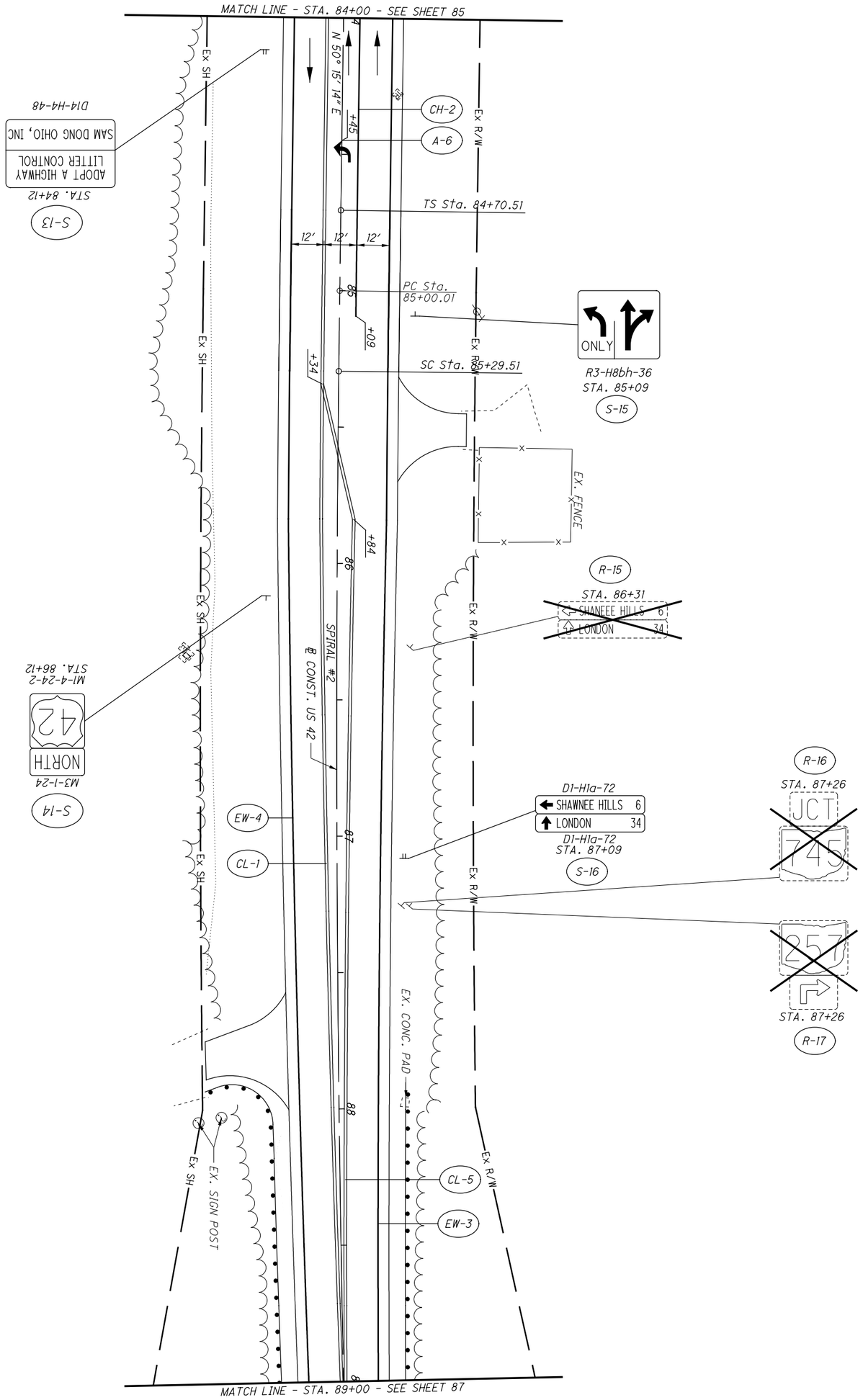


DEL-42-1.41

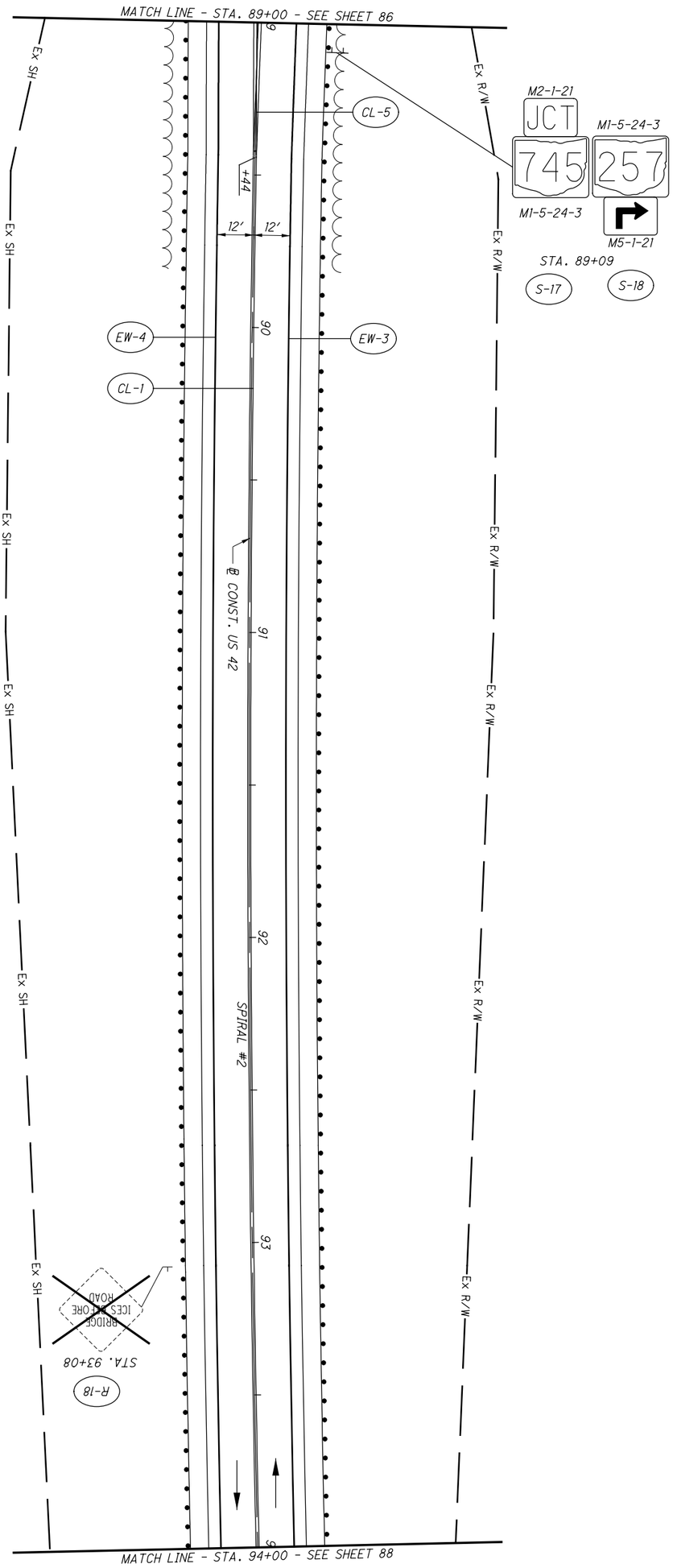
SIGN & PAVEMENT MARKING PLAN - US 42
STA. 79+00 TO STA. 84+00

CALCULATED JMK
CHECKED KMK

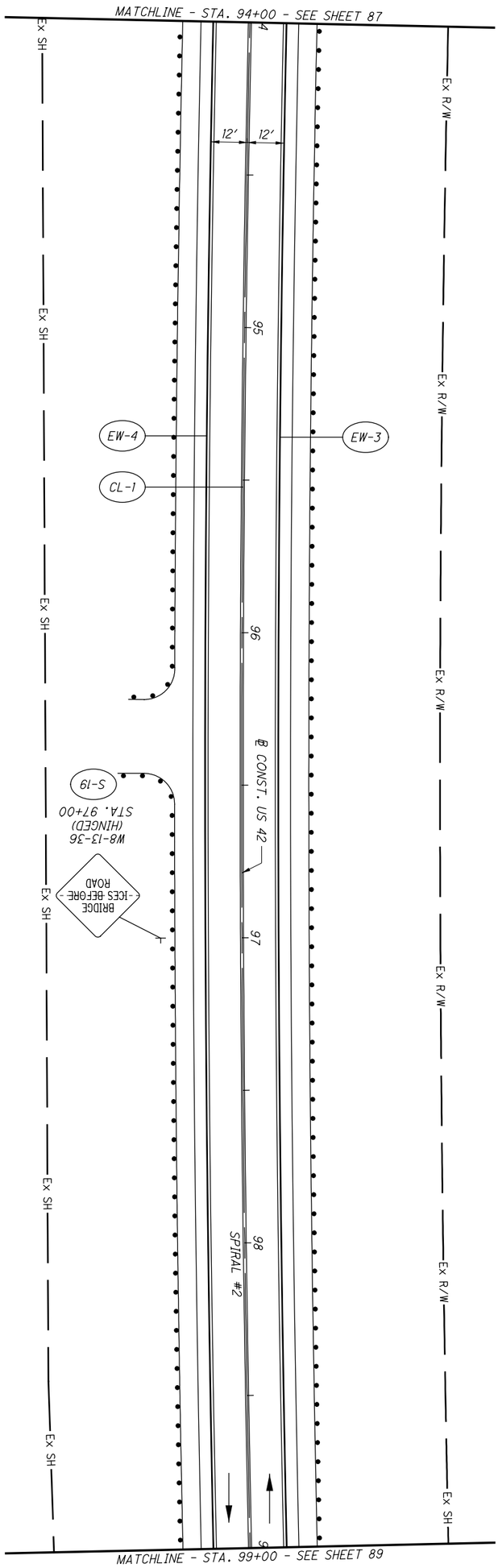
0 10 20 40
HORIZONTAL SCALE IN FEET

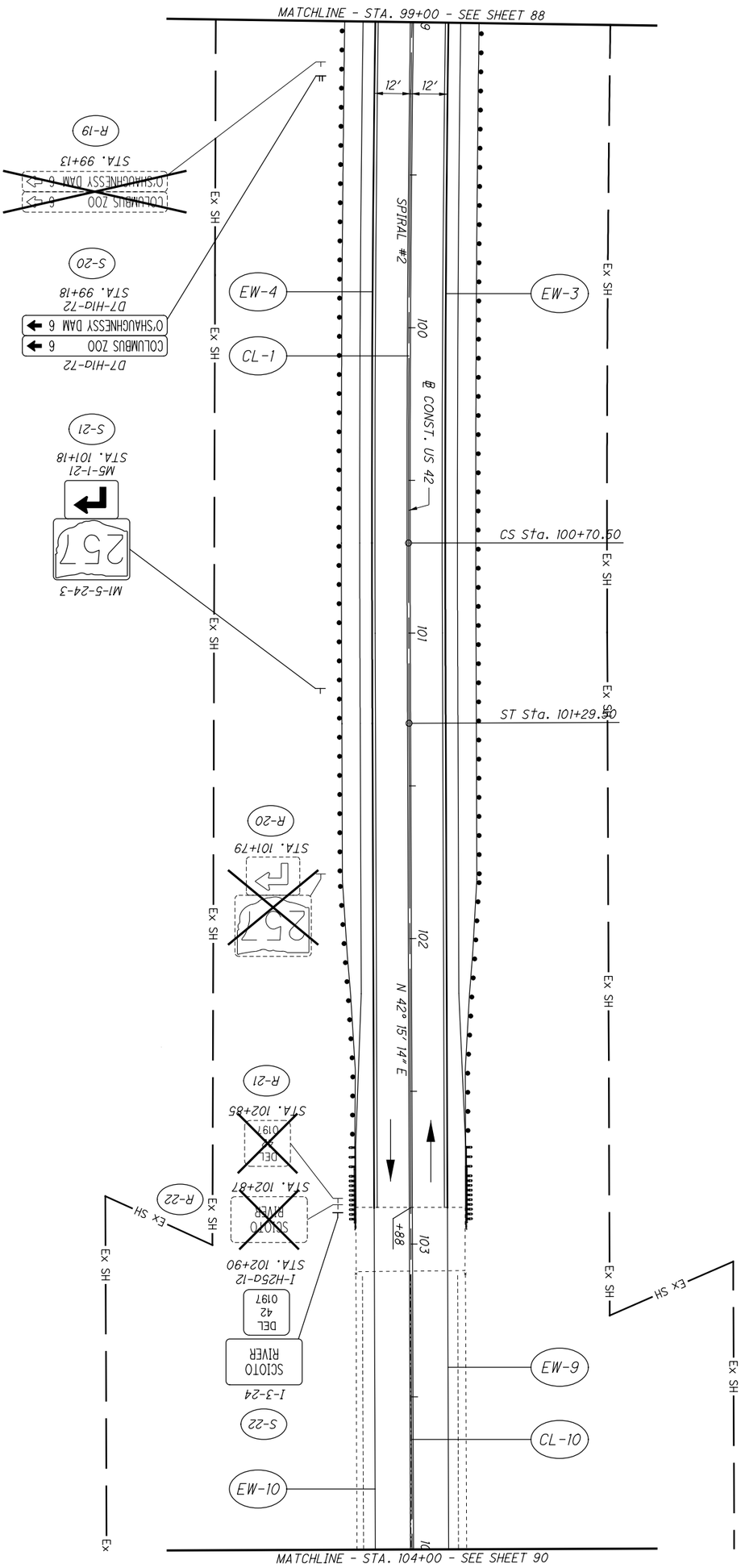


98 / 107	DEL-42-1.41	SIGN & PAVEMENT MARKING PLAN - US 42 STA. 84+00 TO STA. 89+00	CALCULATED JMK CHECKED KMK	0 20 10 40 HORIZONTAL SCALE IN FEET

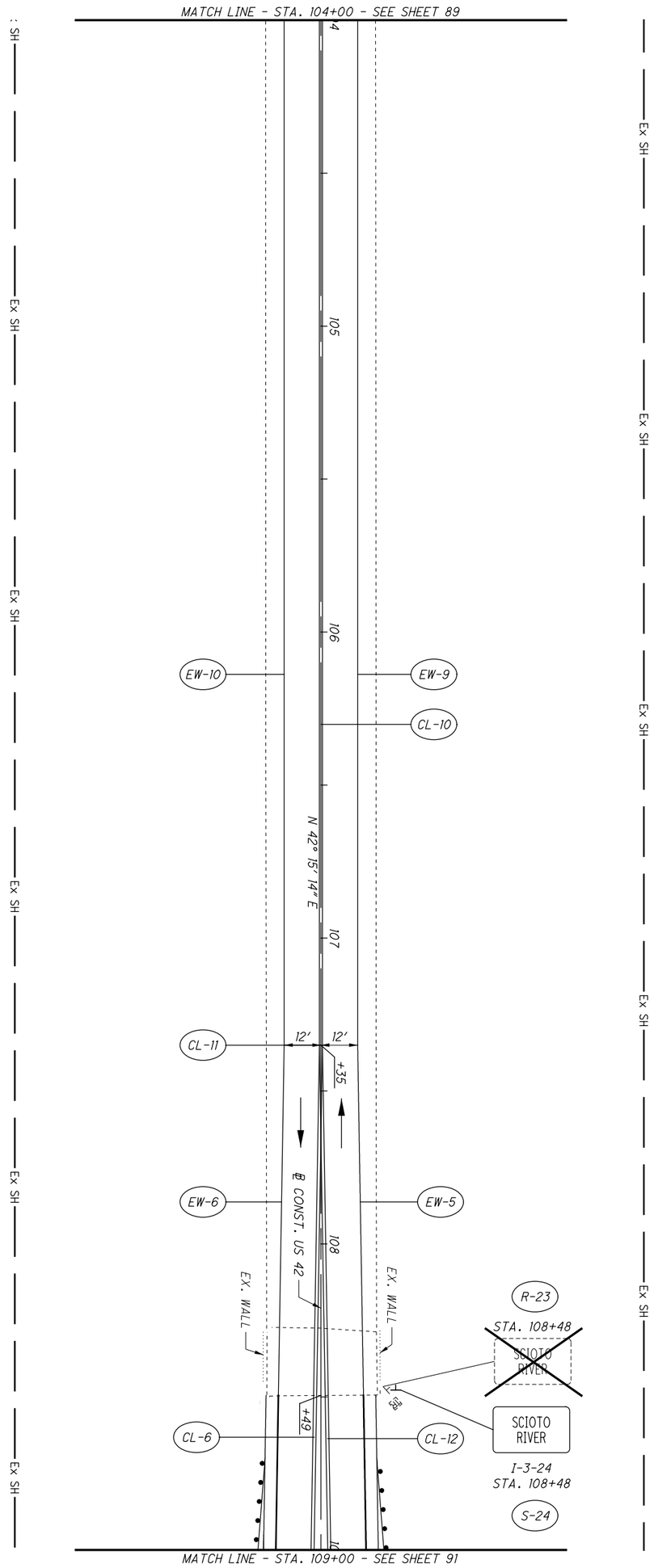


107 / 87	DEL-42-1.41	SIGN & PAVEMENT MARKING PLAN - US 42 STA. 89+00 TO STA. 94+00	CALCULATED JMK CHECKED KMK	0 20 10 40 HORIZONTAL SCALE IN FEET

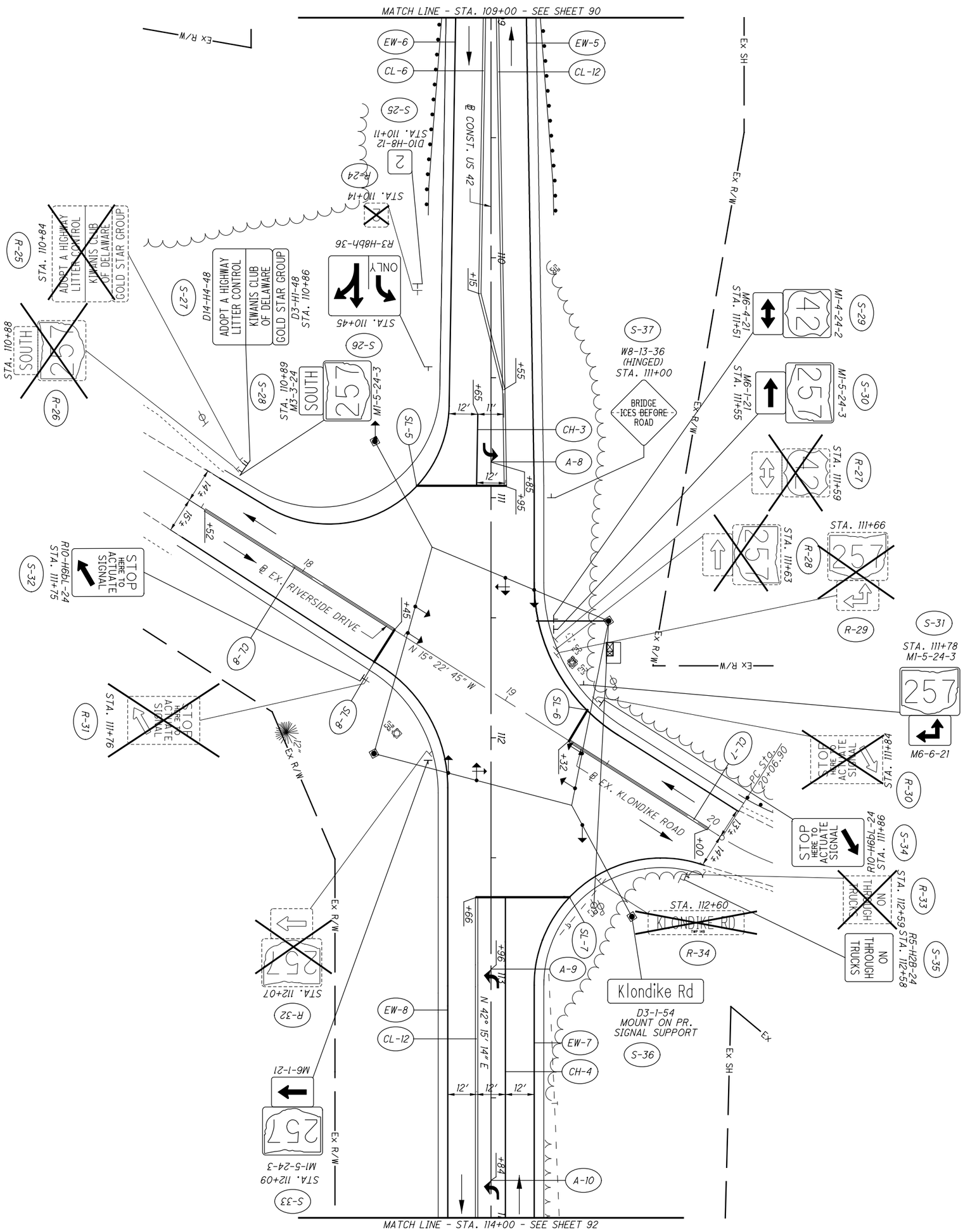

MATCHLINE - STA. 94+00 - SEE SHEET 87
Ex SH
Ex R/W
12'
12'
94
95
96
97
98
99
EW-4
EW-3
CL-1
S-19
W8-13-36
(HINGED)
STA. 97+00
BRIDGE
-ICES BEFORE
ROAD
℄ CONST. US 42
SPIRAL #2
MATCHLINE - STA. 99+00 - SEE SHEET 89



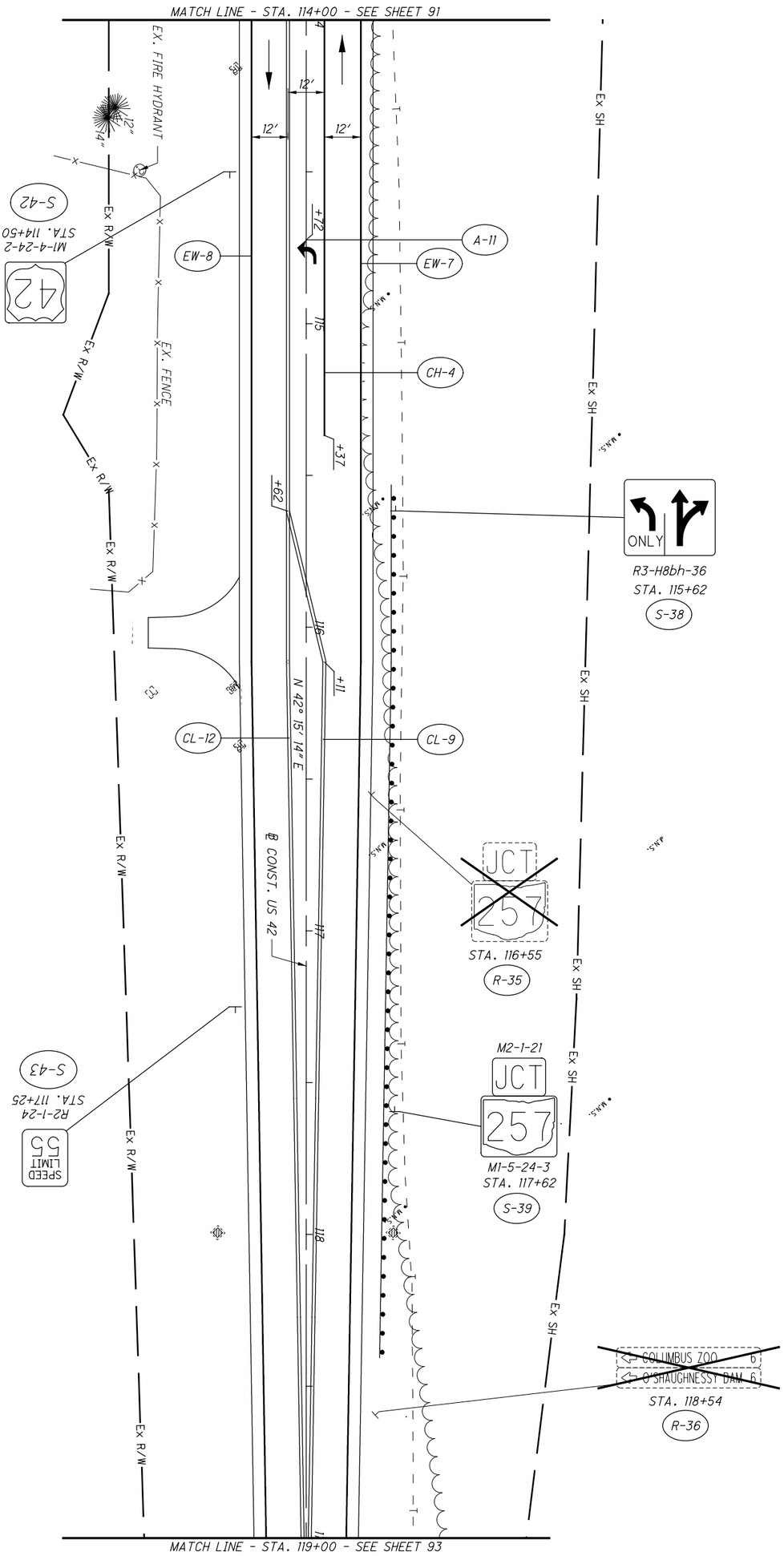
89 / 107	DEL-42-1.41	SIGN & PAVEMENT MARKING PLAN - US 42 STA. 99+00 TO STA. 104+00	CALCULATED JMK CHECKED KMK	0 10 20 40 HORIZONTAL SCALE IN FEET



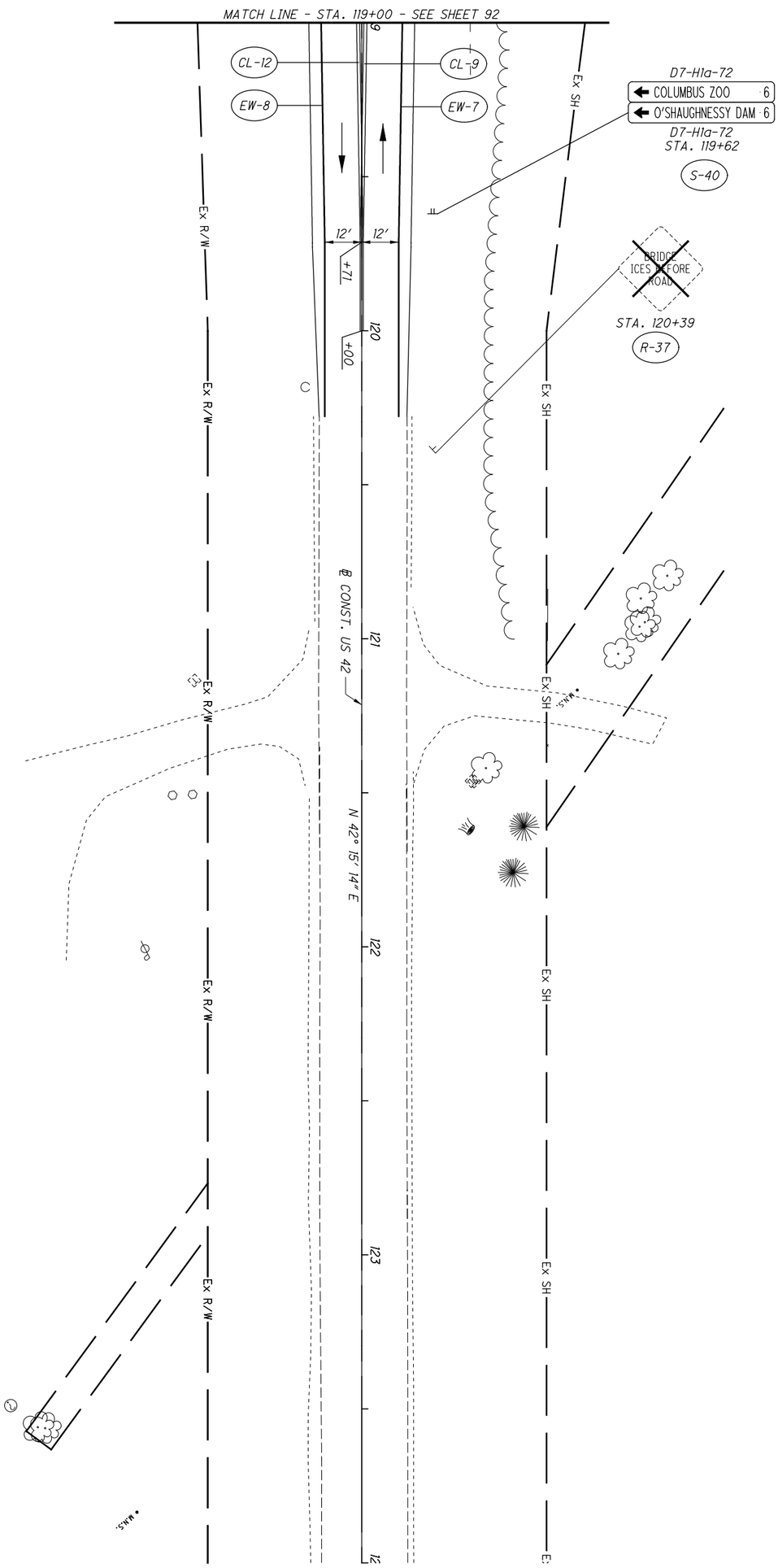
90 / 107	DEL-42-1.41	SIGN & PAVEMENT MARKING PLAN - US 42 STA. 104+00 TO STA. 109+00	CALCULATED JMK CHECKED KMK	0 20 10 40 HORIZONTAL SCALE IN FEET



91 / 107	DEL-42-1.41	SIGN & PAVEMENT MARKING PLAN - US 42 STA. 109+00 TO STA. 114+00	CALCULATED JMK CHECKED KMK	0 20 10 40 HORIZONTAL SCALE IN FEET



92 / 107	DEL-42-1.41	SIGN & PAVEMENT MARKING PLAN - US 42 STA. 114+00 TO STA. 119+00	CALCULATED JMK CHECKED KMK	0 20 10 40 HORIZONTAL SCALE IN FEET



93 / 107	DEL-42-1.41	SIGN & PAVEMENT MARKING PLAN - US 42 STA. 119+00 TO STA. 124+00	CALCULATED JMK CHECKED KMK	0 20 10 40 HORIZONTAL SCALE IN FEET

MAINTENANCE OF TRAFFIC SIGNAL/FLASHER INSTALLATION

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRAFFIC SIGNAL/FLASHER INSTALLATIONS WITHIN THE PROJECT UNDER THE FOLLOWING CONDITIONS:

1. EXISTING SIGNAL/FLASHER INSTALLATIONS WHICH THE PLANS REQUIRE THE CONTRACTOR TO ADJUST, MODIFY, ADD ONTO OR REMOVE, OR WHICH THE CONTRACTOR ACTUALLY ADJUSTS, MODIFIES OR OTHERWISE DISTURBS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ENTIRE INSTALLATION (AT AN INTERSECTION) FROM THE TIME HIS OPERATIONS FIRST DISTURB THE INSTALLATION UNTIL THE INSTALLATION HAS BEEN SUBSEQUENTLY REMOVED OR MODIFIED AND THE WORK ACCEPTED.

2. NEW OR REUSED SIGNAL/FLASHER INSTALLATIONS OR DEVICES, INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF THESE FROM THE TIME OF INSTALLATION UNTIL THE WORK IS ACCEPTED.

THE CONTRACTOR SHALL CORRECT AS QUICKLY AS POSSIBLE ALL OUTAGES OR MALFUNCTIONS. HE SHALL PROVIDE THE MAINTAINING AGENCY AND THE ENGINEER SUCH ADDRESSES AND PHONE NUMBERS WHERE HIS MAINTENANCE FORCES CAN BE CONTACTED. THE CONTRACTOR SHALL PROVIDE ONE OR MORE PERSONS TO RECEIVE ALL CALLS AND DISPATCH THE NECESSARY MAINTENANCE FORCES TO CORRECT OUTAGES. SUCH A PERSON OR PERSONS MAY BE USED TO PERFORM OTHER DUTIES AS LONG AS PROMPT ATTENTION IS GIVEN TO THESE CALLS AND A PERSON IS READILY AVAILABLE CONTINUOUSLY 24 HOURS A DAY, 7 DAYS A WEEK. ALL LAMP OUTAGES, CABLE OUTAGES, ELECTRICAL FAILURES, EQUIPMENT MALFUNCTIONS, AND MISALIGNED SIGNAL HEADS SHALL BE CORRECTED TO THE SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK TO SERVICE WITHIN FOUR HOURS AFTER THE CONTRACTOR HAS BEEN NOTIFIED OF THE OUTAGE.

IN THE EVENT NEW SIGNALS ARE DAMAGED PRIOR TO ACCEPTANCE, ALL DAMAGED EQUIPMENT EXCEPT POLES AND CONTROL EQUIPMENT SHALL BE REPLACED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK IN SERVICE WITHIN 8 HOURS AFTER THE CONTRACTOR'S NOTIFICATION OF THE OUTAGE. THE CONTRACTOR SHALL ARRANGE FOR FULL TRAFFIC CONTROL UNTIL THE SIGNAL IS BACK IN OPERATION.

IF POLES AND/OR CONTROL EQUIPMENT ARE DAMAGED AND MUST BE REPLACED, THE CONTRACTOR SHALL MAKE TEMPORARY REPAIRS AS NECESSARY TO BRING THE SIGNAL BACK INTO FULL OPERATION WITHIN THE ALLOWED 8-HOUR PERIOD, AND SHALL MAKE PERMANENT REPAIRS OR REPLACEMENT AS SOON THEREAFTER AS POSSIBLE.

NONE OF THE ABOVE SHALL BE CONSTRUED AS COLLECTIVE OR CONSECUTIVE OUTAGE TIME PERIODS AT ANY ONE LOCATION. THAT IS, WHERE MORE THAN ONE OUTAGE OCCURS AT ANY ONE LOCATION THEN THE ALLOTTED TIME LIMIT SHALL BE FOR THE WORST SINGLE OUTAGE.

WHERE OUTAGES ARE THE DIRECT RESULT OF A VEHICLE ACCIDENT, THE RESPONSE OF THE CONTRACTOR SHALL BE AS OUTLINED ABOVE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COLLECTION OF ANY COMPENSATION FOR THIS WORK FROM THOSE PARTIES RESPONSIBLE FOR THE DAMAGE.

MAINTENANCE OF TRAFFIC SIGNAL/FLASHER INSTALLATION (CONTINUED)

WHERE THE CONTRACTOR HAS FAILED TO, OR CANNOT RESPOND TO, AN OUTAGE OR SIGNAL EQUIPMENT MALFUNCTION, AT THESE LOCATIONS WITHIN HIS RESPONSIBILITY, WITHIN PERIODS AS SPECIFIED ABOVE, THE ENGINEER MAY INVOKE THE PROVISIONS OF SECTION 105.15 AND ANY SUBSEQUENT BILLINGS TO THE STATE FOR POLICE SERVICES AND MAINTENANCE SERVICES BY STATE FORCES SHALL BE DEDUCTED FROM MONIES DUE OR TO BECOME DUE THE CONTRACTOR IN ACCORDANCE WITH PROVISIONS OF SECTION 105.15.

THE CONTRACTOR SHALL PROVIDE THE MAINTENANCE SERVICE ENTIRELY WITH HIS FORCES OR HE MAY CHOOSE TO ENTER INTO A COOPERATIVE UNDERSTANDING WITH THE LOCAL MAINTAINING AGENCY TO PROVIDE THE MAINTENANCE. THE CONTRACTOR SHALL INFORM THE ENGINEER, IN WRITING, OF THE MAINTENANCE METHOD SELECTED.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ANY TRAFFIC SIGNAL COMPONENTS REQUIRED TO BE HANDLED DURING THE RELOCATION OF POLES AND REVISIONS TO THE SIGNAL SYSTEM.

WHEN A TRAFFIC SIGNAL MUST BE TAKEN OUT OF SERVICE BY THE CONTRACTOR, DUE TO CONSTRUCTION PROCEDURES, THIS OUTAGE SHALL NOT EXCEED 4 HOURS AND SHALL NOT INCLUDE THE HOURS OF 7 AM TO 6 PM. ANY SIGNALIZED INTERSECTION, WHERE THE SIGNAL IS OUT OF SERVICE DUE TO CONSTRUCTION PROCEDURES, OR DUE TO AN OUTAGE OR MALFUNCTION OF EQUIPMENT AS DESCRIBED ABOVE, SHALL BE PROTECTED, BY THE CONTRACTOR, BY OFF-DUTY STATE OF OHIO POLICE, HIRED BY THE CONTRACTOR.

ANY VEHICULAR TRAFFIC SIGNAL HEAD, EITHER NEW OR EXISTING WHICH WILL BE OUT OF OPERATION SHALL BE COVERED IN THE MANNER DESCRIBED IN 632.25.

THE CONTRACTOR SHALL MAINTAIN COMPLETE RECORDS OF MALFUNCTIONS INCLUDING:

1. TIME OF NOTIFICATION OF MALFUNCTION;
2. TIME OF WORK CREWS ARRIVAL TO CORRECT THE MALFUNCTION;
3. ACTIONS TAKEN TO CORRECT THE MALFUNCTION, INCLUDING A LIST OF PARTS REPAIRED OR REPLACED;
4. A DIAGNOSIS OF REASON FOR THE MALFUNCTION AND PROBABILITY OF REOCCURRENCE;
5. TIME OF COMPLETION OF THE REPAIR AND SYSTEM RESTORED TO FULL SERVICE.

A COPY OF THESE RECORDS SHALL BE PROVIDED TO THE ENGINEER WITHIN THREE (3) WORKING DAYS FOLLOWING COMPLETION OF EACH REPAIR.

ALL COSTS RESULTING FROM THE ABOVE REQUIREMENTS SHALL BE CONSIDERED TO BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614, MAINTAINING TRAFFIC.

GROUNDING AND BONDING

THE REQUIREMENTS OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS (CMS) AND THE TC SERIES OF STANDARD CONSTRUCT/ON DRAWINGS ARE MODIFIED AS FOLLOWS:

1. All METALLIC PARTS CONTAINING ELECTRICAL CONDUCTORS SHALL BE PERMANENTLY JOINED TO FORM AN EFFECTIVE GROUND FAULT CURRENT PATH BACK TO THE GROUNDED CONDUCTOR IN THE POWER SERVICE DISCONNECT SWITCH.
   - A. PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR IN METALLIC CONDUITS (725.04) IN ADDITION TO THE CONDUCTORS SPECIFIED AND BOND THE CONDUIT TO THIS GROUNDING CONDUCTOR.
   - B. WHEN AN EQUIPMENT GROUNDING CONDUCTOR IS REQUIRED IN PLASTIC CONDUIT (725.05), THE INSTALLATION SHALL INCLUDE A SEPARATE EQUIPMENT GROUNDING CONDUCTOR IN ADDITION TO THE CONDUCTORS SPECIFIED.
   - C. METALLIC CONDUIT CARRYING THE LOOP WIRES FROM IN THE PAVEMENT TO THE PULL BOX SPLICE LOCATION WILL ONLY BE BONDED AT THE PULL BOX END, AND WILL NOT CONTAIN AN EQUIPMENT GROUNDING CONDUCTOR.
   - D. IF MULTIPLE CONDUIT RUNS BEGIN AND END AT THE SAME POINTS, ONLY ONE EQUIPMENT GROUNDING CONDUCTOR IS REQUIRED.
   - E. IF AN EQUIPMENT GROUNDING CONDUCTOR IS NEEDED IN CONDUIT BETWEEN SIGNALIZED INTERSECTIONS FOR UNDERGROUND INTERCONNECT CABLE, THE GROUNDING SYSTEM FOR EACH SIGNALIZED INTERSECTION WILL BE SEPARATED ABOUT MIDWAY BETWEEN THE INTERSECTIONS.
   - F. THE MESSENGER WIRE AT SIGNALIZED INTERSECTIONS WILL BE USED AS THE CONDUCTIVE PATH FROM CORNER TO CORNER IF CONDUIT IS NOT PROVIDED UNDER THE ROADWAY. WHEN CONDUIT CONNECTS THE CORNERS OF AN INTERSECTION, AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE USED IN THE CONDUIT.
2. CONDUITS.
   - A. THE 725.04 CONDUIT SHALL HAVE GROUNDING BUSHINGS INSTALLED AT ALL TERMINATION POINTS. THE BUSHING MATERIAL SHALL BE COMPATIBLE WITH GALVANIZED STEEL CONDUIT AND THE GROUNDING LUG MATERIAL SHALL BE COMPATIBLE FOR USE WITH COPPER WIRE. THREADED OR COMPRESSION TYPE BUSHINGS MAY BE USED.
   - B. THE 725.05 CONDUIT SHALL HAVE THE INSIDE AND OUTSIDE DIAMETERS OF THE CONDUIT DEBURRED AT ALL TERMINATION POINTS.
   - C. BOTH ENDS OF METALLIC CONDUIT SHALL BE BONDED TO THE EQUIPMENT GROUNDING CONDUCTOR.
   - D. METALLIC CONDUIT MAY BE BONDED TO METALLIC BOXES THROUGH THE USE OF CONDUIT FITTINGS UL APPROVED FOR THIS TYPE OF CONNECTION, WITH THE BOX BONDED TO THE EQUIPMENT GROUNDING CONDUCTOR.
3. WIRE FOR GROUNDING AND BONDING.
   - A. USE INSULATED, COPPER WIRE FOR THE EQUIPMENT GROUNDING CONDUCTOR. BONDING JUMPERS IN BOXES AND ENCLOSURES MAY BE BARE OR INSULATED COPPER WIRE. WIRE SIZE SHALL BE AS FOLLOWS:
     - I. USE 4 AWG BETWEEN THE POWER SERVICE AND SUPPORTS, POLES, PEDESTALS, CONTROLLER OR FLASHER CABINETS.
     - II. USE A MINIMUM 8 AWG BETWEEN LOOP DETECTOR PULL BOXES AND THE FIRST CONDUIT THAT REQUIRES A LARGER SIZE AS SPECIFIED IN 3.A.I ABOVE.
     - III. USE A MINIMUM 8 AWG BETWEEN THE "PREPARE TO STOP WHEN FLASHING" INSTALLATION (INCLUDING SUPPORT) AND THE FIRST CONDUIT THAT REQUIRES A LARGER SIZE AS SPECIFIED IN 3.A.I ABOVE.
     - IV. THE INSULATION SHALL BE GREEN OR GREEN WITH YELLOW STRIPE(S). FOR 4 AWG OR LARGER, INSULATION MAY ALSO BE BLACK WITH GREEN TAPE/LABELS INSTALLED AT ALL ACCESS POINTS.

GROUNDING AND BONDING (CONTINUED)

   - B. IN A HIGHWAY LIGHTING SYSTEM, THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE THE SAME WIRE SIZE AS THE DUCT CABLE OR DISTRIBUTION CABLE CIRCUIT CONDUCTORS, WITH THE MINIMUM CONDUCTOR SIZE OF 4 AWG. BONDING JUMPERS WILL BE MINIMUM SIZE 4 AWG.
4. GROUND ROD.
   - A. A 3/4 INCH SCHEDULE 40 PVC CONDUIT WILL BE USED IN FOUNDATIONS AND CONCRETE WALLS FOR THE GROUNDING CONDUCTOR (GROUND WIRE) RACEWAY TO THE GROUND ROD. SHOULD METALLIC CONDUIT BE USED, BOTH ENDS OF THE CONDUIT SHALL BE BONDED TO THE GROUNDING CONDUCTOR.
   - B. THE TYPICAL GROUNDING CONDUCTOR (GROUND WIRE) SHALL BE 4 AWG INSULATED, COPPER.
5. THE GREEN CONDUCTOR IN SIGNAL CABLES (CONDUCTOR #4) SHALL NOT BE USED TO SUPPLY POWER TO A SIGNAL INDICATION. IT WILL BE CONNECTED TO THE SIGNAL BODY AS AN EQUIPMENT GROUND IN ALUMINUM HEADS AND IT WILL BE UNUSED IN PLASTIC HEADS. UNUSED CONDUCTORS SHALL BE GROUNDED IN THE CABINET. TYPICAL USE OF CONDUCTORS IS AS FOLLOWS:

COND. NO.	COLOR	VEHICLE SIGNAL	PEDESTRIAN SIGNAL
1	BLACK	GREEN BALL	#1 WALK
2	WHITE	AC NEUTRAL	AC NEUTRAL
3	RED	RED BALL	#1 DW/FDW
4	GREEN	EQUIPMENT GROUND	EQUIPMENT GROUND
5	ORANGE	YELLOW BALL	#2 DW/FDW
6	BLUE	GREEN ARROW	#2 WALK
7	WHITE/BLACK	YELLOW ARROW	NOT USED

6. POWER SERVICE AND DISCONNECT SWITCH.
   - A. AT THE POWER SERVICE LOCATION, THE GROUNDING CONDUCTOR (GROUND WIRE) FROM THE DISCONNECT SWITCH NEUTRAL (AC-) BAR TO THE GROUND ROD SHALL BE A CONTINUOUS, UNSPLICED CONDUCTOR. IF SPLICED, IT SHALL BE AN EXOTHERMIC WELD BUTT SPICE.
   - B. THE SERVICE NEUTRAL (AC-) SHALL ONLY BE CONNECTED TO GROUND AT THE PRIMARY POWER SERVICE DISCONNECT SWITCH.
     - I. NEMA CONTROLLER CABINETS: IF A POWER SERVICE DISCONNECT SWITCH IS LOCATED BEFORE THE CONTROLLER CABINET, THE NEUTRAL (AC-) AND THE GROUNDING BARS IN THE CONTROLLER CABINET SHALL NOT BE CONNECTED TOGETHER AS SHOWN IN NEMA TS-2, FIGURE 5-4.
     - II. IF SECONDARY DISCONNECT SWITCHES ARE CONNECTED AFTER THE PRIMARY DISCONNECT SWITCH, THE NEUTRAL (AC-) SHALL ONLY BE GROUNDED AT THE PRIMARY SWITCH. EQUIPMENT GROUNDING CONDUCTORS SHALL BE BROUGHT TO THE PRIMARY SWITCH, BUT SHALL BE GROUNDED AT BOTH SECONDARY AND PRIMARY SWITCHES.
7. PAYMENT - ALL MATERIALS AND WORK REQUIRED TO COMPLETE THE EFFECTIVE GROUND FAULT CURRENT PATH SYSTEM ARE INCIDENTAL TO THE CONDUCTORS INSTALLED BY CONTRACT.

CALCULATED NDE CHECKED ADL

TRAFFIC SIGNAL GENERAL NOTES

DEL-42-1.41

NEW TRAFFIC SIGNAL INSTALLATION

THIS WORK CONSISTS OF FURNISHING AND INSTALLING TRAFFIC SIGNAL EQUIPMENT, COMPLETE AND READY FOR SERVICE. THIS WORK ALSO INCLUDES NECESSARY EXCAVATION AND BACKFILL, DISPOSAL OF DISCARDED MATERIALS, RESTORATION OF DISTURBED FACILITIES AND SURFACES TO A CONDITION EQUAL TO THAT EXISTING BEFORE THE WORK STARTED, AND ELECTRICAL TESTING AS SPECIFIED.

PULL BOXES, CONDUITS, GROUND RODS, AND CABLE SPLICING KITS REQUIRED FOR TRAFFIC SIGNAL EQUIPMENT INSTALLATIONS ARE SPECIFIED IN ITEM 625.

BEFORE ANY WORK IS STARTED ON THE TRAFFIC SIGNAL, THE DISTRICT SIX TRAFFIC ENGINEER (740-833-8198) AND THE CONTRACTORS REPRESENTATIVE SHALL REVIEW AND RESOLVE ANY POTENTIAL PROBLEMS AT THE LOCATION WHERE THE NEW SIGNAL WILL BE CONSTRUCTED.

ALL OF THE REQUIRED PERMANENT SIGNS SHALL BE ERECTED AND THE REQUIRED PERMANENT PAVEMENT MARKINGS SHALL BE IN PLACE PRIOR TO THE FINAL ACCEPTANCE OF THE TRAFFIC SIGNAL.

PRIOR TO THE FINAL ACCEPTANCE OF THE COMPLETED TRAFFIC SIGNAL, THE DISTRICT SIX ROADWAY SERVICES REPRESENTATIVE AND THE CONTRACTORS REPRESENTATIVE, SHALL INSPECT AND RESOLVE ANY EXISTING PROBLEMS PRIOR TO THE ACCEPTANCE OF EACH NEW SIGNAL BY THE OHIO DEPARTMENT OF TRANSPORTATION.

DETECTION MAINTENANCE

IF VEHICLE DETECTION BECOMES UNEXPECTEDLY DISABLED, REQUIRES MODIFICATION, OR IS SCHEDULED TO BE TEMPORARILY REMOVED DURING THE CONSTRUCTION PROJECT, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE PROJECT ENGINEER AND DISTRICT TRAFFIC ENGINEER.

IF THE LOSS OF VEHICLE DETECTION IS KNOWN PRIOR TO THE START OF CONSTRUCTION, IT SHALL BE DISCUSSED AT THE PRECONSTRUCTION MEETING. AT SUCH TIME, THE DISTRICT TRAFFIC ENGINEER SHALL ADVISE THE PROJECT ENGINEER AND CONTRACTOR ON THE APPROPRIATE ACTION TO RECTIFY ANY LOSS OF VEHICLE DETECTION. THIS MAY INCLUDE PLACING THE TRAFFIC SIGNAL ON MINIMUM OR MAXIMUM RECALL, MODIFYING THE MINIMUM GREEN TIMES, AND REMOVING THE MALFUNCTIONING DETECTION FROM SERVICE. WHERE NON-INTRUSIVE DETECTION (I.E. VIDEO, RADAR) ALREADY EXISTS, THE CONTRACTOR SHALL INSURE THAT DETECTION IS OPERATING AND MAINTAINED BY RECONFIGURING THE DETECTION UNITS ACCORDINGLY DURING ALL CONSTRUCTION PHASES. THIS IS TO AVOID THE SIGNAL FROM MAXING OUT THE EFFECTED SIGNAL PHASE AND CREATING UNNECESSARY DELAYS.

LOCATIONS WHERE NON-INTRUSIVE DETECTION IS PROPOSED AND THE EXISTING VEHICLE DETECTION IS TO BE ABANDON, THE NON-INTRUSIVE VEHICLE DETECTION SHALL BE INSTALLED, CONFIGURED AND MADE FULLY FUNCTIONAL PRIOR TO THE EXISTING DETECTION BEING DISABLED. THE CONTRACTOR SHALL CONTINUE TO MAINTAIN AND MODIFY THE DETECTION UNTIL FINAL ACCEPTANCE OF THE TRAFFIC SIGNAL. THIS IS TO ENSURE VEHICLE DETECTION REMAINS FULLY FUNCTIONAL THROUGHOUT CONSTRUCTION.

WORK INSPECTION

THE CONTRACTOR SHALL PROVIDE THE PROJECT ENGINEER AND THE DISTRICT TRAFFIC ENGINEER WITH 72 HOUR NOTICE OF ANY SIGNAL WORK TO BE PERFORMED AT THE INTERSECTION SITE(S) SO THAT INSPECTION SERVICES CAN BE SUPPLIED.

SIGNAL ACTIVATION

PRIOR TO ACTIVATING THE NEW TRAFFIC SIGNAL TO STOP-AND-GO MODE AND/OR REMOVING THE EXISTING TRAFFIC SIGNAL FROM SERVICE, ALL ITEMS IN THE PROPOSED SIGNAL PLAN SHALL BE FULLY COMPLETED, (I.E., VEHICLE DETECTION, PEDESTRIAN SIGNAL HEADS, ETC). IF THERE ARE CONSTRUCTABILITY ISSUES (I.E., ROADWAY WIDENING, ETC.) THAT PREVENT THE SIGNAL FROM BEING COMPLETED PRIOR TO ACTIVATION, IT SHALL BE BROUGHT TO THE ATTENTION OF THE PROJECT ENGINEER AND DISTRICT TRAFFIC ENGINEER. THE DISTRICT TRAFFIC ENGINEER WILL THEN REVIEW, APPROVE OR REJECT PROPOSALS TO ACTIVATE THE TRAFFIC SIGNAL PRIOR TO COMPLETION.

THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER AND DISTRICT TRAFFIC ENGINEER AT LEAST 10 WORKING DAYS PRIOR TO SCHEDULING THE FINAL INSPECTION OF THE SIGNAL INSTALLATION. FINAL INSPECTION IS NOT CONSIDERED COMPLETE UNTIL DESIGNATED DISTRICT TRAFFIC PERSONNEL INSPECT THE TRAFFIC SIGNAL AND ISSUE WRITTEN APPROVAL. IF ISSUES ARE FOUND DURING THE FINAL INSPECTION THAT EFFECT THE SAFETY OF THE TRAVELING PUBLIC AND/OR THE EFFICIENCY OF THE INTERSECTION, THE SIGNAL SHALL NOT BE ACTIVATED ON THE PROPOSED DATE. ANY PUNCH LIST ITEMS THAT ARE FOUND SHALL BE CORRECTED AND REINSPECTED BY DISTRICT TRAFFIC PERSONNEL PRIOR TO FINAL ACCEPTANCE. ODOT FORCES SHALL ONLY ASSUME DAY TO DAY MAINTENANCE OF THE TRAFFIC SIGNAL AFTER FINAL WRITTEN ACCEPTANCE HAS BEEN ISSUED.

GUARANTEE

THE CONTRACTOR SHALL GUARANTEE THAT THE TRAFFIC CONTROL SYSTEM INSTALLED AS PART OF THIS CONTRACT SHALL OPERATE SATISFACTORILY FOR A PERIOD OF 180 DAYS FOLLOWING COMPLETION OF THE 10-DAY PERFORMANCE TEST. IN THE EVENT OF UNSATISFACTORY OPERATION THE CONTRACTOR SHALL CORRECT FAULTY INSTALLATIONS, MAKE REPAIRS AND REPLACE DEFECTIVE PARTS WITH NEW PARTS OF EQUAL OR BETTER QUALITY.

EQUIPMENT, MATERIAL, AND LABOR COSTS INCURRED IN CORRECTING AN UNSATISFACTORY OPERATION SHALL BE BORNE BY THE CONTRACTOR.

THE GUARANTEE SHALL COVER THE FOLLOWING NEW ITEMS OF THE TRAFFIC CONTROL SYSTEM: CONTROLLER, CABINET, UNINTERRUPTIBLE POWER SUPPLY, VEHICLE DETECTION EQUIPMENT, LED LAMP UNITS, NETWORK AND COMMUNICATION/INTERCONNECT EQUIPMENT.

CUSTOMARY MANUFACTURER'S GUARANTEES FOR THE FOREGOING ITEMS SHALL BE TURNED OVER TO THE STATE OR THE MAINTAINING AGENCY FOLLOWING ACCEPTANCE OF THE EQUIPMENT.

THE COST OF GUARANTEEING THE TRAFFIC CONTROL SYSTEM WILL BE INCIDENTAL TO AND INCLUDED IN THE CONTRACT UNIT PRICE OF THE VARIOUS ITEMS MAKING UP THE SYSTEM.

STRAIN POLE AND PEDESTAL FOUNDATION ELEVATIONS

ELEVATIONS SHOWN IN THE PLANS FOR STRAIN POLE AND PEDESTAL FOUNDATIONS ARE FOR COMPUTATIONAL PURPOSES ONLY. THE ACTUAL ELEVATION OF THE FOUNDATION SHALL BE IN ACCORDANCE WITH TRAFFIC SCD TC-21.20 PROVIDED THE EXISTING SLOPE IS LESS THAN 6:1.

AT LOCATIONS WHERE THE EXISTING SLOPE IS 6:1 OR GREATER, THE BURIED DEPTH OF FOUNDATION, AS SHOWN IN SCD TC-21.20 SHALL APPLY TO THE LOW SIDE OF THE SLOPE. THE TOP OF THE FOUNDATION SHALL BE SET 2 INCHES ABOVE THE EXISTING SURFACE ON THE HIGH SIDE OF THE SLOPE. THE ADDITIONAL DEPTH OF FOUNDATION NECESSARY TO MEET THESE REQUIREMENTS SHALL BE ADDED TO THE FORMED TOP.

630 SIGNING, MISC.: "SIGNAL OPERATION CHANGED" SIGN

THE CONTRACTOR SHALL INSTALL A W23-H2B (30" X 30", "SIGNAL OPERATION CHANGED") SIGN ON THE SPAN WIRE ADJACENT TO SIGNAL HEADS FOR EACH INTERSECTION APPROACH JUST PRIOR TO THE NEW SIGNAL PHASE SEQUENCE BEING ACTIVATED. THE SIGN SHALL BE COVERED UNTIL THE SIGNAL PHASING IS IN EFFECT AT WHICH TIME THE CONTRACTOR SHALL UNCOVER IT. THE CONTRACTOR SHALL REMOVED THESE SIGNS 30 DAYS AFTER THEY ARE UNCOVERED. FAILURE TO REMOVE THESE ITEMS SHALL RESULT IN THE STATE BILLING THE CONTRACTOR FOR ALL COSTS INVOLVED IN THEIR REMOVAL AND FORFEITURE OF REMOVED ITEMS.

PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE BID PER EACH OF ITEM 630 SIGNING, MISC.: "SIGNAL OPERATION CHANGED" FOR COMPLETE SIGN FURNISHED, INSTALLED, AND REMOVED, INCLUDING ALL LABOR, EQUIPMENT, MATERIALS, COVERING/UNCOVERING, AND ATTACHMENT HARDWARE.

632 STRAIN POLE (STANDARD AND COMBINATION), TYPE TC-81.10, AS PER PLAN

STRAIN POLE, INCLUDING COMBINATION TYPE, SHALL MEET THE REQUIREMENTS OF CMS 632 AND TC-81.10 EXCEPT IT SHALL BE PROVIDED AT THE HEIGHT SPECIFIED IN THE STRAIN POLE DESIGN DETAILS.

PAYMENT WILL BE AT THE CONTRACT UNIT PRICE AND WILL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS, TOOLS, EQUIPTMENT AND OTHER INCIDENTALS NECESSARY FOR EACH SUPPORT FURNISHED, IN PLACE, COMPLETE AND NECESSARY.

632 REMOVAL OF TRAFFIC SIGNAL INSTALLATION

TRAFFIC SIGNAL INSTALLATIONS, INCLUDING SIGNAL HEADS, CABLE, MESSENGER WIRE, STRAIN POLES, CABINET, CONTROLLER, ETC., SHALL BE REMOVED IN ACCORDANCE WITH C&MS 632.26 AND AS INDICATED ON THE PLANS. REMOVED ITEMS SHALL BE REUSED AS PART OF A NEW INSTALLATION ON THE PROJECT OR DELIVERED TO 400 E WILLIAM ST. DELAWARE OHIO IN ACCORDANCE WITH THE LISTING GIVEN HEREIN.

ITEMS TO BE REUSED:
-COMMUNICATIONS SYSTEMS

ITEMS TO BE SALVAGED:
-CONTROLLER CABINET AND COMPONENTS
UPS CABINET AND COMPONENTS
-RADAR DETECTION SYSTEM INCLUDING SENSORS, PIGTAILS AND JUNCTION BOXES

THE CONTRACTOR SHALL, WHEN DIRECTED BY THE ENGINEER IN WRITING, REMOVE AND DISPOSE OF THE ITEMS AT NO ADDITIONAL COST TO THE PROJECT.

632 VEHICULAR SIGNAL HEAD, (LED), (BY TYPE), 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF CMS 632 AND 732, THE FOLLOWING SHALL APPLY:

1. SIGNAL HEADS AND VISORS SHALL BE CONSTRUCTED OF BLACK POLYCARBONATE PLASTIC WITH VISORS AS SPECIFIED AND MEET ITE SPECIFICATIONS.

2. PROPER EXTERIOR COLORS SHALL BE OBTAINED BY USE OF COLORED PLASTIC MATERIAL RATHER THAN PAINTING.

3. ALL UPPER SIGNAL SUPPORT HARDWARE AND PIPING UP TO AND INCLUDING THE WIRE INLET FITTING SHALL BE FERROUS METAL.

4 THE ENTRANCE FITTING SHALL BE OF THE TRI-STUD DESIGN WITH SERRATED RINGS IN ORDER TO ACHIEVE POSITIVE LOCKING.

5. ALUMINUM BACKPLATES SHALL BE IN ACCORDANCE WITH CMS 732.22 AND INCLUDE A FLUORESCENT YELLOW REFLECTIVE BORDER.

6. THE LIGHT EMITTING DIODE (LED) SIGNAL LAMP UNITS SHALL MEET THE REQUIREMENTS OF CMS 732.04-C. THE CONTRACTOR SHALL PROVIDE ODOT, IN WRITING, WITH THE LED MANUFACTURER NAME, SERIAL NUMBER, PART NUMBER, DESCRIPTION OF LAMP, AND DATE OF MANUFACTURE FOR ALL LED UNITS THAT ARE TO BE USED IN THE SIGNAL HEAD PRIOR TO INSTALLATION, FOR ACCEPTANCE AND WARRANTY PURPOSES.

7. SIGNAL HEADS SHALL HAVE A MINIMUM WALL THICKNESS OF 0.117 INCHES.

8. SIGNAL HEADS SHALL INCLUDE CUTAWAY TYPE VISORS.

9. APPLY A BEAD OF SILICONE TO THE SIGNAL HEAD, WASHER, AND ENTRANCE ADAPTER SERRATIONS TO PREVENT WATER INTRUSION. ALSO, FILL THE SPACE BETWEEN CONCENTRIC SERRATION RINGS ON THE TOP OF THE SIGNAL HEAD TO COMPLETELY EXCLUDE WATER FROM THE SPACE BETWEEN THE CONCENTRIC RINGS.

PAYMENT FOR ITEM 632 VEHICULAR SIGNAL HEAD, (LED), (BY TYPE), 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN SHALL BE MADE FOR COMPLETE SIGNAL HEAD FURNISHED AND INSTALLED, INCLUDING ALL LABOR, EQUIPMENT, MATERIALS, AND NEW ATTACHMENT HARDWARE.

CALCULATED NDE
CHECKED ADL

TRAFFIC SIGNAL GENERAL NOTES

DEL-42-1.41

632 POWER SERVICE, AS PER PLAN

THE CONTRACTOR SHALL CONTACT THE METER SECTION OF FIRST ENERGY CORPORATION FOR INFORMATION REGARDING THE METER BASE INSTALLATION PRIOR TO ORDERING POLES. THE CONTRACTOR WILL BE RESPONSIBLE FOR REQUESTING AND SCHEDULING ANY INSPECTIONS THE POWER COMPANY MAY REQUIRE FOR THE POWER SERVICE HOOK UP. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT THE POWER COMPANY FOR THE ELECTRICAL SERVICE CONNECTION. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR SPLICE POWER CABLE INTO THE POWER COMPANY'S CIRCUITS.

THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS AND THE PAYING OF ALL FEES WITH THE EXCEPTION OF NORMAL MONTHLY ENERGY CHARGES. WHERE THERE IS AN EXISTING TRAFFIC SIGNAL THAT IS BEING REPLACED, THE CONTRACTOR SHALL COORDINATE WITH THE POWER COMPANY TO CONTINUE BILLING ON THE EXISTING DISTRICT 6 ACCOUNT.

POWER SUPPLIED SHALL BE 240 VOLTS (240 VOLTS TO DISCONNECT SWITCH AND 2-120 VOLTS INTO THE CABINET ALLOWING ONE TO BE USED FOR THE SIGNAL AND THE SECOND TO BE USE FOR THE LIGHTING (IF APPLICABLE OR FOR FUTURE USE).

632 REUSE OF TRAFFIC CONTROL ITEM, WIRELESS COMMUNICATIONS EQUIPMENT

THIS ITEM OF WORK INCLUDES THE REMOVAL & REINSTALLATION OF EXISTING RADIO INTERCONNECT SYSTEM COMPONENTS WHERE IMPACTED BY CONSTRUCTION AND/OR SHOWN IN THE PLANS. ANY DEVICE, WIRING, ATTACHMENT HARDWARE, OR MISCELLANEOUS EQUIPMENT NEEDED TO RENDER A FULLY FUNCTIONAL RELOCATED WIRELESS COMMUNICATIONS SYSTEM SHALL BE FURNISHED AND INSTALLED AND CONSIDERED INCIDENTAL TO THIS ITEM OF WORK. ALL NEWLY FURNISHED EQUIPMENT AND CABLING SHALL MEET THE REQUIREMENTS OF SUPPLEMENTAL SPECIFICATION 809.

PRIOR TO THE DEACTIVATION OR REMOVAL OF ANY EQUIPMENT, THE CONTRACTOR AND THE ENGINEER SHALL INSPECT THE EQUIPMENT FOR THE PURPOSE OF DOCUMENTING ANY EXISTING DAMAGE. ANY DAMAGE IDENTIFIED AFTER RELOCATION AND NOT DOCUMENTED PRIOR TO THE RELOCATION PROCESS WILL BE PRESUMED TO HAVE BEEN CAUSED BY THE CONTRACTOR . THE CONTRACTOR WILL BE REQUIRED TO REPAIR OR REPLACE THE DAMAGED EQUIPMENT AT THE OPTION OF THE ENGINEER. NO ADDITIONAL COMPENSATION WILL BE AWARDED.

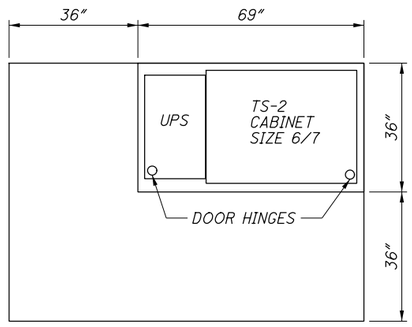
PAYMENT FOR THIS ITEM WILL INCLUDE ALL SUPPORT & MOUNTING HARDWARE, MATERIALS, AND LABOR REQUIRED TO REINSTALL THE COMMUNICATIONS EQUIPMENT.

633 CONTROLLER UNIT, TYPE TS2/A2, WITH CABINET, TYPE TS2, AS PER PLAN

THE ELECTRICAL TRAFFIC CONTROL EQUIPMENT PROVIDED SHALL MEET THE FOLLOWING SPECIFICATIONS AND BE MANUFACTURED BY ECONOLITE. THE EQUIPMENT PROVIDED AS PART OF THIS CONTRACT SHALL BE THE LATEST MODEL, CURRENTLY UNDER PRODUCTION AND NEW. THE CONTROLLER CABINET AND ACCESSORIES SHALL MEET THE NEMA TS-2, 1992 STANDARD FOR ACTUATED CONTROLLER UNITS. THE CATALOG NUMBER FOR THE GROUND MOUNTED CABINET SHALL BE EAGLE EL720 SIZE 7 (SIZE R) WITH A MINIMUM OF THREE SHELVES. THE CABINET SHALL BE ALUMINUM WITH THE NATURAL ALUMINUM FINISH INSIDE AND OUTSIDE. THE LOAD BAY SHALL BE THE TF5016 OR NEWER, WITH 16 LOAD SWITCH POSITIONS. PROVIDE ONLY THE EXACT NUMBER OF LOAD SWITCHES REQUIRED. EACH LOAD SWITCH SHALL HAVE LIGHT EMITTING DIODES (LEDS) FOR THE CONTROLLER OUTPUT AND LOAD SWITCH OUTPUT. ALSO PROVIDE 8 FLASH RELAY POSITIONS (BUT ONLY SUPPLY THE EXACT NUMBER OF

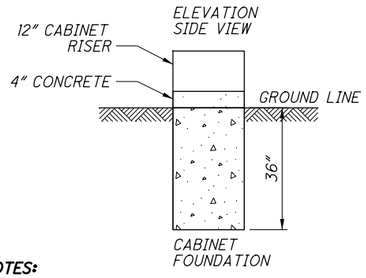
TS-2 SIZE 6/7 CABINET DETAIL (TYP.)

CABINET & WORK PAD DETAIL



PLAN VIEW

CABINET FOUNDATION DETAIL



NOTES:

1) THE SIZE OF THE UPS FOUNDATION MAY VARY BASED ON THE CABINET SIZE PROVIDED.

2) UPS FOUNDATION ELEVATION SHOULD MATCH CABINET FOUNDATION ELEVATION.

3) THE UPS CABINET SHALL BE MOUNTED FLUSH UP AGAINST THE SIGNAL CABINET AND SEALED.

4) CONDUIT AND WIRING FROM THE SIGNAL CABINET TO THE UPS SHALL BE INSTALLED THROUGH THE CABINET RISER.

633 CONTROLLER UNIT, TYPE TS2/A2, WITH CABINET, TYPE TS2, AS PER PLAN (CONTINUED)

RELAYS NEEDED FOR EACH SPECIFIC INTERSECTION), 1 NEMA 2-CIRCUIT FLASHER, AND AN MMU MONITOR. THE MALFUNCTION MANGEMENT UNIT (MMU) SHALL BE MANUFACTURED BY EDI AND BE ETHERNET CAPABLE. EACH CABINET SHALL COME EQUIPPED WITH TWO 16-CHANNEL CABINET DETECTOR RACKS (CDR) INCLUDING BUS INTERFACE UNITS (BIU). THE LOOP DETECTOR TERMINATION PANEL FOR THE SECOND DETECTOR RACK SHALL BE OMITTED. WHERE LOOP DETECTORS ARE SPECIFIED, THE CABINET SHALL INCLUDE THE EXACT NUMBER OF FOUR CHANNEL DETECTOR CARDS WITH SOFTWARE REQUIRED FOR EACH INTERSECTION. THE CABINET SHALL BE EQUIPPED WITH A CABINET POWER SUPPLY (CPS). THE POLICE PANEL ON THE OUTSIDE OF THE CABINET DOOR SHALL HAVE A FLASH SWITCH, A SWITCH FOR AUTOMATIC/MANUAL OPERATION, SIGNAL ON/OFF SWITCH AND A MANUAL PUSH BUTTON WITH A MINIMUM CORD LENGTH OF 10 FEET. THE TECHNICIAN PANEL ON THE INSIDE OF THE CABINET DOOR SHALL INCLUDE A FLASH SWITCH, A STOP TIME SWITCH, AND AN EQUIPMENT ON/OFF SWITCH. A CABINET DOOR OPEN SWITCH AND A CABINET LIGHT ON / OFF SWITCH SHALL ALSO BE SUPPLIED.

THE CONTROLLER CABINET SHALL ALSO INCLUDE:

A. SLIDE-OUT LAPTOP SHELF
B. INTERIOR, UNDERSHELF LED CABINET LIGHTING, INCLUDING A MINIMUM OF 2 PANELS OF 6 HIGH-INTENSITY LED'S EACH AND A DOOR-ACTIVATED SWITCH. THE LED PANELS SHALL BE MOUNTED IN LOCATIONS TO MAXIMIZE LIGHT ON THE CABINET EQUIPMENT.
C. A GOOSENECK/ADJUSTABLE LIGHT FIXTURE WITH AN LED LAMP. THE ADJUSTABLE LIGHT FIXTURE SHALL BE MOUNTED ON THE LOWER RIGHT SIDE OF THE CONTROLLER CABINET.
D. A MINIMUM OF TWO (2) GFCI PROTECTED RECEPTACLES
E. A MINIMUM OF SIX (6) SURGE PROTECTED (NON-GFCI) RECEPTACLES
F. THE MMU SHALL HAVE A RJ-45 PORT FOR PC/NETWORK COMMUNICATIONS

CONTROLLER CABINET LABELING TO IDENTIFY THE WIRING AND FUNCTION
DETECTOR LEAD-IN CABLE:
PHASE NUMBER SERVICE, DIRECTION, MOVEMENT TYPE, AND LOOP PLAN NUMBER.

SIGNAL HEAD FIELD WIRING:
PHASE NUMBER, DIRECTION, MOVEMENT TYPE, AND COLOR (RED, YELLOW, GREEN, YELLOW ARROW, GREEN ARROW) OR PEDESTRIAN MOVEMENT.

THE CONTROLLER TIMER SHALL BE THE ECONOLITE COBALT (OR MOST CURRENT MODEL) NEMA TS-2 TYPE 2 AND COME EQUIPPED WITH ALL INTERNAL COMPONENTS TO MAKE IT FULLY SYSTEM READY FOR THE CENTRAC (OR LATEST) SYSTEM, INCLUDING THE INTERNAL MODEM. EACH CONTROLLER TIMER SHALL HAVE 6 NODES OF COORDINATION, ADAPTIVE TRAFFIC CONTROL, REPORTS, PREEMPTION/PRIORITY, DIAGNOSTICS AND INTERNAL TIME BASE CONTROL.

EACH CONDUIT ENTRANCE TO THE CABINET SHALL BE SEALED WITH A RUBBER PIPE/CONDUIT SEAL GASKET. THE SEAL SHALL BE OF A MATERIAL AND TYPE TIGHTLY FITTING AND ABLE TO SEAL OUT WATER, INSECTS, RODENTS, AND DIRT. THE SEAL SHALL BE EASILY REMOVED FOR SERVICE INSTALLATIONS OR CABLE REPLACEMENTS.

THE CONTRACTOR SHALL PROVIDE THE CABINET WIRING DIAGRAM/PLANS IN .PDF FORMAT TO ODOT DISTRICT 6 TRAFFIC.

PAYMENT FOR ITEM 633 CONTROLLER UNIT, TYPE TS2/A2, WITH CABINET, TYPE TS2, AS PER PLAN, WILL BE AT THE CONTRACT BID PRICE COMPLETE AND IN PLACE AND CONNECTIONS TESTED AND ACCEPTED.

633 UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF C&MS 633 AND 733, POLE ATTACHMENT HARDWARE WILL BE INCLUDED FOR POLE-MOUNTED CABINETS, AND A CABINET RISER (8 INCH MINIMUM) AND ANCHOR BOLTS WILL BE PROVIDED FOR BASE-MOUNTED CABINETS. BEFORE PERFORMING THE WORK, THE CONTRACTOR, THE DISTRICT TRAFFIC ENGINEER AND THE PROJECT ENGINEER WILL PERFORM A SITE INSPECTION TO ESTABLISH THE LOCATION OF THE UPS CABINET AND FOUNDATION.

THE UPS CABINET SHALL INCLUDE A GENERATOR POWER PANEL WITH A HEAVY DUTY POWER RELAY VERSUS THE LINE VOLTAGE GENERATOR SWITCH. THE GENERATOR INLET SHALL BE A RECESSED PANEL WITH A DOOR THAT IS FLUSH WITH THE EXTERNAL SIDE OF THE UPS CABINET. IT SHALL INCLUDE A RECESSED PLUG, AUTOMATIC TRANSFER SWITCH AND A DOOR THAT SECURELY CLOSES OVER THE POWER CORD.

THE UPS OUTPUT NOTIFICATIONS FOR ON BATTERY, BATTERY 2-HOUR TIMER, AND LOW BATTERY SHALL BE WIRED INTO THE TRAFFIC SIGNAL CABINET BACK PANEL TO PROVIDE SPECIAL STATUS ALARMS FOR EACH OUTPUT INTO THE SIGNAL CONTROLLER.

THIS ITEM SHALL INCLUDE A RED LED STATUS INDICATOR LAMP TO ALLOW MAINTENANCE PERSONNEL AND LAW ENFORCEMENT TO QUICKLY ASSESS WHETHER A TRAFFIC SIGNAL CABINET IS BEING POWERED BY A UPS. THE LED HOUSING SHALL BE NEMA 4X, IP65 OR IP66, RATED FOR OUTDOOR USE AND BE TAMPER/SHATTER RESISTANT. IT SHALL BE A DOMED ENCLOSURE CONTAINING A RED LENS WITH LED THAT IS VISIBLE FROM 100 FOOT MINIMUM. THE ENCLOSURE AND LED MODULE SHOULD BE PLACED AND CENTERED ON THE TOP SURFACE OF THE UPS CABINET AND SEALED FROM WATER INTRUSION. IT SHOULD BE WIRED USING MINIMUM 20GA STRANDED, INSULATED HOOKUP WIRE TO THE STATUS RELAY OUTPUTS OF THE UPS. THE WIRES SHALL BE TERMINATED BY LUGS AT THE DISPLAY END AND PERMANENTLY LABELED "BACKUP POWER STATUS DISPLAY," WITH WIRE POLARITY INDICATED. THE RED LED SHALL ONLY ILLUMINATE TO INDICATE THE CABINET IS OPERATING UNDER UPS BACKUP POWER (THE "BACKUP" OPERATING CONDITION). THIS ITEM INCLUDES PROGRAMMING THE UPS STATUS RELAY OUTPUTS TO PRODUCE THE LAMP STATUS DISPLAYS. THESE STATUS DISPLAYS WILL BE SOLID 100% DUTY CYCLE (NOT FLASHING) DISPLAYS. THE OPERATING VOLTAGE OF THE LED LAMP SHALL BE 120V AC UNLESS OTHERWISE INDICATED.

A BATTERY BALANCER SHALL BE FURNISHED AND INSTALLED WITH THE SYSTEM.

CALCULATED NDE CHECKED ADL

TRAFFIC SIGNAL GENERAL NOTES

DEL-42-1.41

ITEM 809 STOP LINE RADAR DETECTION

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING A WAVETRONIX SMARTSENSOR MATRIX DETECTION UNIT. THE DETECTION UNIT SHALL INCLUDE THE FOLLOWING:

1. POWER SHALL BE PROVIDED FROM THE TRAFFIC CABINET.

2. ALL REQUIRED INPUTS CARDS SHALL BE INCLUDED IN THE TRAFFIC CABINET AND SHALL BE COMPATIBLE WITH CALTRANS, NEMA TS1 AND NEMA TS2 DETECTOR RACKS. THE CARDS SHALL PROVIDE TRUE PRESENCE DETECTOR CALLS OR CONTACT CLOSURE TO THE TRAFFIC CONTROLLER.

3. THE UNIT SHALL BE MOUNTED DIRECTLY TO A POLE OR MAST ARM, AS RECOMMENDED BY THE MANUFACTURER. CABLE(S) SHALL BE PROVIDED AS REQUIRED AND RECOMMENDED BY THE MANUFACTURER.

4. SURGE PROTECTION DEVICES, AS RECOMMENDED BY THE MANUFACTURER SHALL BE INCLUDED BOTH AT THE POLE WHERE THE UNIT IS LOCATED TO PROTECT THE UNIT AND IN THE TRAFFIC CABINET TO PROTECT THE CABINET ELECTRONICS.

5. THE MANUFACTURER'S REPRESENTATIVE SHALL BE ON SITE DURING INSTALLATION AND TESTING AND SHALL PROVIDE ONSITE TRAINING ON THE SETUP, OPERATION AND MAINTENANCE OF THE UNIT.

6. A SERIAL TO ETHERNET COMMUNICATIONS MODULE AND ETHERNET CABLE (MINIMUM 7 FEET).

7. THE POWER SUPPLY AND COMMUNICATION MODULES SHALL BE SECURED TO A SINGLE PANEL THAT CAN BE MOUNTED INTERIOR TO THE TRAFFIC CABINET. THE PANEL SHALL INCLUDE MODULAR-PLUG STYLE CONNECTIONS FOR UP TO FOUR (4) SENSOR CABLES. ADDITIONAL SENSORS MAY BE HARD-WIRED TO THE COMMUNICATION MODULES, AS NECESSARY.

PAYMENT FOR ITEM 809 STOP LINE RADAR DETECTION, AS PER PLAN SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR EACH UNIT, COMPLETE AND IN PLACE INCLUDING ALL REQUIRED CABINET HARDWARE, MOUNTING BRACKETS, CABLES, CONDUIT AND CONNECTIONS TESTED AND ACCEPTED.

ITEM 809 ADVANCE RADAR DETECTION

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING A WAVETRONIX SMARTSENSOR ADVANCE DETECTION UNIT (MODEL SS-200E). THE DETECTION UNIT SHALL INCLUDE THE FOLLOWING:

1. POWER SHALL BE PROVIDED FROM THE TRAFFIC CABINET.

2. ALL REQUIRED INPUTS CARDS SHALL BE INCLUDED IN THE TRAFFIC CABINET AND SHALL BE COMPATIBLE WITH CALTRANS, NEMA TS1 AND NEMA TS2 DETECTOR RACKS. THE CARDS SHALL PROVIDE TRUE PRESENCE DETECTOR CALLS OR CONTACT CLOSURE TO THE TRAFFIC CONTROLLER.

3. THE UNIT SHALL BE MOUNTED DIRECTLY TO A POLE OR MAST ARM, AS RECOMMENDED BY THE MANUFACTURER. CABLE(S) SHALL BE PROVIDED AS REQUIRED AND RECOMMENDED BY THE MANUFACTURER.

4. SURGE PROTECTION DEVICES, AS RECOMMENDED BY THE MANUFACTURER SHALL BE INCLUDED BOTH AT THE POLE WHERE THE UNIT IS LOCATED TO PROTECT THE UNIT AND IN THE TRAFFIC CABINET TO PROTECT THE CABINET ELECTRONICS.

5. THE MANUFACTURER'S REPRESENTATIVE SHALL BE ON SITE DURING INSTALLATION AND TESTING AND SHALL PROVIDE ONSITE TRAINING ON THE SETUP, OPERATION AND MAINTENANCE OF THE UNIT.

6. A SERIAL TO ETHERNET COMMUNICATIONS MODULE AND ETHERNET CABLE (MINIMUM 7 FEET)

7. THE POWER SUPPLY AND COMMUNICATION MODULES SHALL BE SECURED TO A SINGLE PANEL THAT CAN BE MOUNTED INTERIOR TO THE TRAFFIC CABINET. THE PANEL SHALL INCLUDE MODULAR-PLUG STYLE CONNECTIONS FOR UP TO FOUR (4) SENSOR CABLES. ADDITIONAL SENSORS MAY BE HARD-WIRED TO THE COMMUNICATION MODULES, AS NECESSARY.

PAYMENT FOR ITEM 809 ADVANCE RADAR DETECTION SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR EACH UNIT, COMPLETE AND IN PLACE INCLUDING ALL REQUIRED CABINET HARDWARE, MOUNTING BRACKETS, CABLES, CONDUIT, CONNECTIONS TESTED AND ACCEPTED, AND ANY OTHER NECESSARY HARDWARE TO ESTABLISH A FULLY FUNCTIONAL DETECTION SYSTEM.

CALCULATED NDE
CHECKED ADL

TRAFFIC SIGNAL GENERAL NOTES

DEL-42-1.41

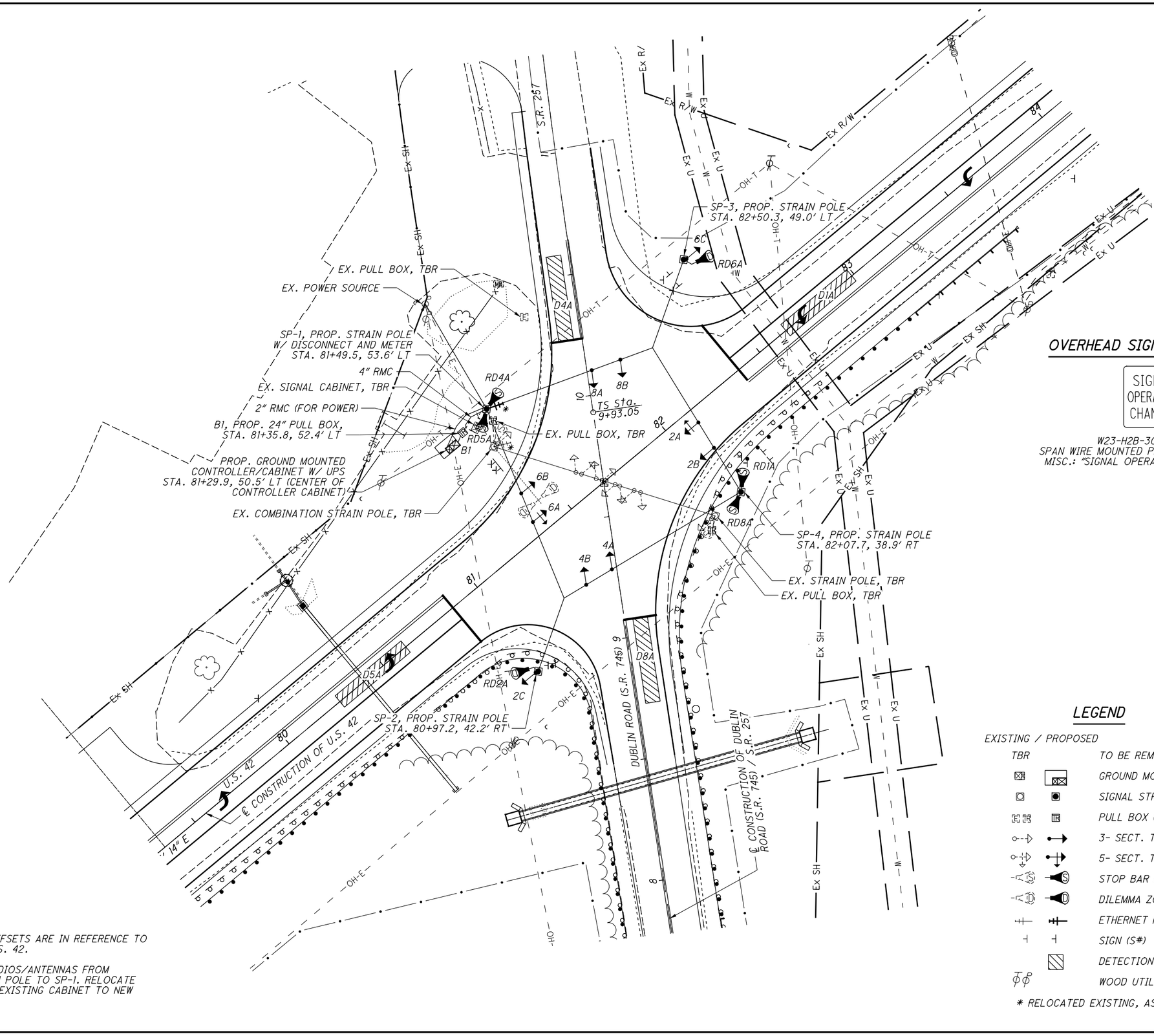
96A
107

SHEET NO.	FEATURES		625							630	632														633				809	
			BRACKET ARM, 30'	CONDUIT, 2", 725.04	CONDUIT, 4", 725.04	TRENCH	GROUND ROD	PULL BOX, 725.08, 24"	PULL BOX REMOVED	630 SIGNING, MISC.: "SIGNAL OPERATION CHANGED" SIGN	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN	VEHICULAR SIGNAL HEAD, (LED), 5-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN	COVERING OF VEHICULAR SIGNAL HEAD	MESSENGER WIRE, 7 STRAND, 1/4" DIAMETER WITH ACCESSORIES	MESSENGER WIRE, 7 STRAND, 7/16" DIAMETER WITH ACCESSORIES	TETHER WIRE, WITH ACCESSORIES	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG	POWER CABLE, 3 CONDUCTOR, NO. 6 AWG	SERVICE CABLE, 3 CONDUCTOR, NO. 6 AWG	POWER SERVICE, AS PER PLAN	STRAIN POLE FOUNDATION	STRAIN POLE, TYPE TC-81.10, DESIGN 12, AS PER PLAN	STRAIN POLE, TYPE TC-81.10, DESIGN 13, AS PER PLAN	COMBINATION STRAIN POLE, TYPE TC-81.10, DESIGN 13, AS PER PLAN	REMOVAL OF TRAFFIC SIGNAL INSTALLATION	REUSE OF TRAFFIC CONTROL ITEM, WIRELESS COMMUNICATIONS EQUIPMENT	UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN	CONTROLLER UNIT, TYPE TS2/A2, WITH CABINET, TYPE TS2, AS PER PLAN	CABINET FOUNDATION, AS PER PLAN	CONTROLLER WORK PAD, AS PER PLAN	STOP LINE RADAR DETECTION	ADVANCE RADAR DETECTION
	FROM	AT/TO	EACH	FT	FT	FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH	FT	FT	FT	FT	FT	FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
U.S. 42 & DUBLIN ROAD (S.R. 745) / S.R. 257																														
98		CONT./INT.					1		3	4					380	380									1	1	1	1	1	1	4	2
98		B1						1																								
98		SP-1					1														1	1	1								
98		SP-2					1															1	1								
98		SP-3					1															1	1								
98		SP-4					1															1	1								
98	POWER SRC.	SP-1												50					90												
98	CONT.	SP-1		25	22	47												40													
98	CONT.	2A, 2B									2		2				200														
98	CONT.	2C									1		1				220														
98	CONT.	4A, 4B									2		2				185														
98	CONT.	6A, 6B									1	1	2				115														
98	CONT.	6C									1		1				210														
98	CONT.	8A, 8B									1	1	2				140														
U.S. 42 & RIVERSIDE DR. (S.R. 257)/KLONDIKE RD.																														
102		CONT./INT.					1		3	4					380	380									1	2	1	1	1	1	4	2
102		B1						1																								
102		SP-1	1				1														1	1			1						
102		SP-2					1															1		1							
102		SP-3					1															1		1							
102		SP-4					1															1		1							
102	POWER SRC.	SP-1												120					160												
102	CONT.	SP-1		16	10	26												30													
102	CONT.	2A, 2B									2		2				190														
102	CONT.	2C									1		1				205														
102	CONT.	4A, 4B									2		2				190														
102	CONT.	6A, 6B									1	1	2				120														
102	CONT.	6C									1		1				150														
102	CONT.	8A, 8B									1	1	2				145														
TOTALS CARRIED TO GENERAL SUMMARY			1	41	32	73	10	2	6	8	16	4	20	170	760	760	2070	70	250	2	8	4	3	1	2	3	2	2	2	2	8	4

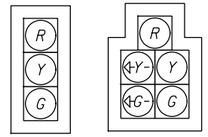
CALCULATED NDE
CHECKED ADL

SIGNAL SUBSUMMARY

DEL-42-1.41



SIGNAL HEADS



2B, 2C, 4A, 4B, 6B, 6C, 8A, 8B

2A, 6A

OVERHEAD SIGNS (TEMPORARY)

SIGNAL OPERATION CHANGED

W23-H2B-30 (4 EACH), SPAN WIRE MOUNTED PER ITEM 630 SIGNING, MISC.: "SIGNAL OPERATION CHANGED" SIGN

LEGEND

EXISTING / PROPOSED

TBR	TO BE REMOVED
	GROUND MOUNTED CONTROLLER/UPS
	SIGNAL STRAIN POLE/SUPPORT (SP#)
	PULL BOX (B#)
	3- SECT. TRAFFIC SIGNAL HEAD (#)
	5- SECT. TRAFFIC SIGNAL HEAD (#)
	STOP BAR RADAR DETECTION UNIT
	DILEMMA ZONE RADAR DETECTION UNIT
	ETHERNET RADIO/ANTENNA
	SIGN (S#)
	DETECTION ZONE (D#)
	WOOD UTILITY POLE

* RELOCATED EXISTING, AS NOTED

NOTES:

1. ALL STATIONING AND OFFSETS ARE IN REFERENCE TO ℄ CONSTRUCTION OF U.S. 42.
2. RELOCATE ETHERNET RADIOS/ANTENNAS FROM EXISTING SIGNAL STRAIN POLE TO SP-1. RELOCATE RELATED EQUIPMENT IN EXISTING CABINET TO NEW CABINET.

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED ADL
CHECKED NDE

TRAFFIC SIGNAL PLAN
U.S. 42 & DUBLIN ROAD (S.R. 745) / S.R. 257

DEL-42-1.41

98
107

SIGNAL TIMING CHART

INTERSECTION: U.S. 42 & DUBLIN ROAD (S.R. 745) / S.R. 257
MAINTAINING AGENCY: ODOT

START UP		DUAL ENTRY: YES	PHASES:		2 & 6, 4 & 8	
		REST IN RED:	RING 1	NO	RING 2	
START IN:	ALL RED	OVERLAP	-	-	-	-
TIME FOR FLASH OR ALL RED:	5					
FIRST PHASE(S):	2 & 6	PARENT PHASES	-	-	-	-
COLOR DISPLAYED:	GREEN					

INTERVAL OR FEATURE		CONTROLLER MOVEMENT NO.							
INTERSECTION MOVEMENT (PHASE)		1	2	3	4	5	6	7	8
DIRECTION		WB LT	EB	-	SB	EB LT	WB	-	NB
MINIMUM GREEN (INITIAL)	(SEC.)	7	30	-	10	7	30	-	10
ADDED INITIAL	*(SEC./ACTUATION)	-	-	-	-	-	-	-	-
MAXIMUM INITIAL	(SEC.)	-	-	-	-	-	-	-	-
PASSAGE TIME (PRESET GAP)	(SEC.)	3	1	-	3	3	1	-	3
TIME BEFORE REDUCTION	*(SEC.)	-	-	-	-	-	-	-	-
MINIMUM GAP	*(SEC.)	-	-	-	-	-	-	-	-
TIME TO REDUCE	*(SEC.)	-	-	-	-	-	-	-	-
MAXIMUM GREEN I	(SEC.)	15	45	-	20	15	45	-	20
MAXIMUM GREEN II	(SEC.)	15	45	-	20	15	45	-	20
YELLOW CHANGE	(SEC.)	4.7	5.6	-	5.6	4.7	5.6	-	5.6
ALL RED CLEARANCE	(SEC.)	2.8	1.0	-	1.0	2.3	1.0	-	1.0
WALK	(SEC.)	-	-	-	-	-	-	-	-
PEDESTRIAN CLEARANCE	(SEC.)	-	-	-	-	-	-	-	-
RECALL — MAXIMUM	(ON/OFF)	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
RECALL — MINIMUM	(ON/OFF)	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
RECALL — PEDESTRIAN	(ON/OFF)	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
MEMORY	(ON/OFF)	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

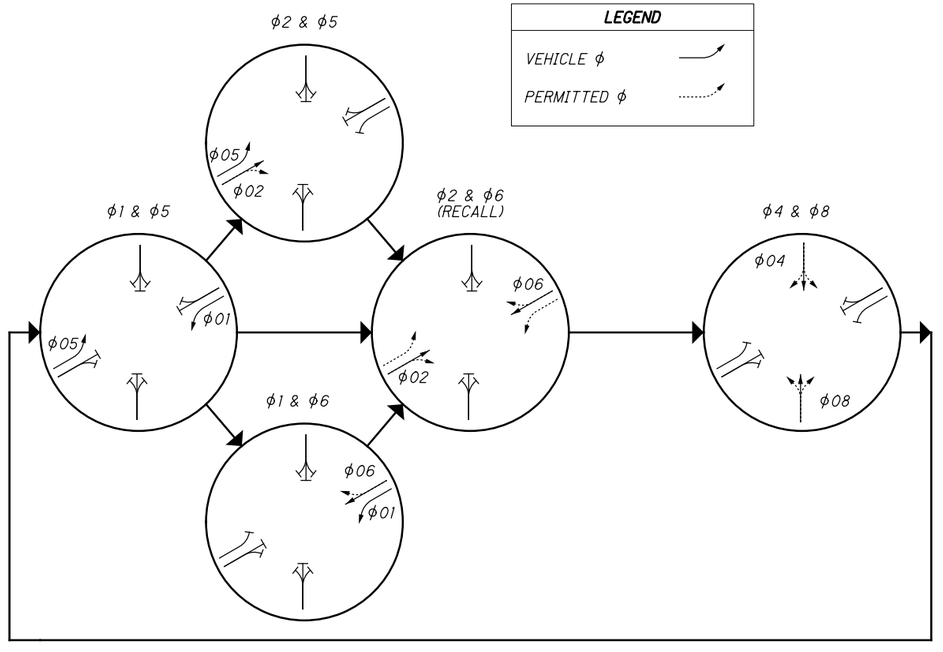
*VOLUME DENSITY CONTROLS

RADAR DETECTION CHART

DETECTION ZONE	MOVEMENT	FUNCTION	ASSOCIATED PHASE	DELAY IN CONTROLLER (SEC)	DELAY INHIBIT PHASE	PURPOSE	DETECTION ZONE LENGTH (FT)
D1A	WB LT	PRESENCE	1	-	-	CALL/EXTEND PHASE 1	35**
EB DZ	EB	PRESENCE	2	-	-	DILEMMA ZONE PHASE 2	*
D4A	SB	PRESENCE	4	6	4	CALL/EXTEND PHASE 4	35
D5A	EB LT	PRESENCE	5	-	-	CALL/EXTEND PHASE 5	35**
WB DZ	WB	PRESENCE	6	-	-	DILEMMA ZONE PHASE 6	*
D8A	NB	PRESENCE	8	6	8	CALL/EXTEND PHASE 8	35

NOTES:
1. DILEMMA ZONE SPEED THRESHOLD >35 MPH
* ADVANCE DETECTION ZONE LENGTH SHALL BE AS LONG AS DETECTOR CAN RELIABLY DETECT WITHIN LANE.
** 2ND CAR DETECTION (LEADING EDGE OF DETECTION ZONE APPROXIMATELY 25 FEET FROM STOP BAR).

PHASING DIAGRAM



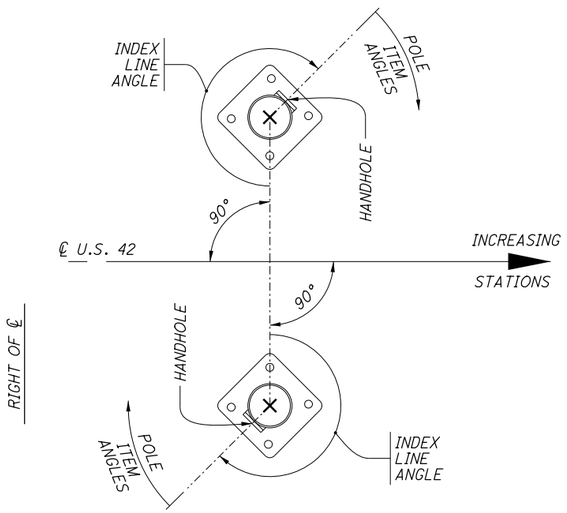
CALCULATED NDE
CHECKED ADL

TRAFFIC SIGNAL PLAN DETAILS
U.S. 42 & DUBLIN ROAD (S.R. 745) / S.R. 257

DEL-42-1.41

STRAIN POLE DESIGN DETAILS

REFERENCE SHEET NO.	STATION & OFFSET	POLE NO.	DESIGN NO.	POLE HEIGHT (FT.)	FOUNDATION ELEV.	APPROXIMATE SPAN WIRE ATTACHED HEIGHT RANGE (FT.)	CABLE ENTRANCE DISTANCE FROM TOP (IN.)	INDEX LINE ANGLE (DEG.)	ANGLES (DEG.) FROM INDEX LINE				
									CABLE ENTRANCE	LUMINAIRE BRACKET	VEHICULAR SIGNAL HEAD	DISCONNECT / POWER METER	2" CAPPED
98	STA. 81+49.5, 53.6' LT	SP-1	12	32	897.25	24.7 - 28.5	12	180	135	-	-	270	-
98	STA. 80+97.2, 42.2' RT	SP-2	12	32	896.17	27.3 - 29.6	12	180	180	-	90	-	0
98	STA. 82+50.3, 49.0' LT	SP-3	12	32	894.61	27.4 - 29.4	12	180	180	-	90	-	0
98	STA. 82+07.7, 38.9' RT	SP-4	12	34	893.06	28.9 - 32.7	12	180	135	-	-	-	0

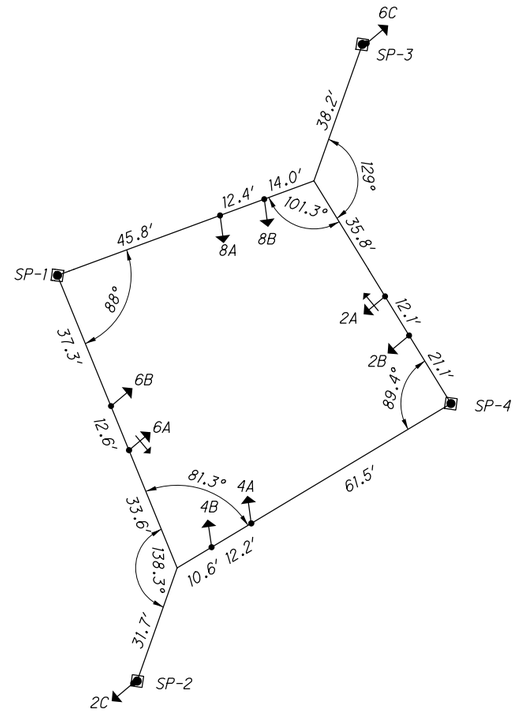


NOTES:

- ALL ANGLES ARE MEASURED CLOCKWISE.
- THE INDEX LINE GOES THROUGH THE CENTER OF THE HANDHOLE.

POLE DIAGRAM

TRAFFIC SIGNAL LAYOUT DETAIL



NOTE:

- TOP OF SIGNAL SUPPORT AND PEDESTAL FOUNDATIONS SHALL BE LEVEL WITH THE SIDEWALK ELEVATION WHERE ADA LANDINGS ARE ADJACENT; ELSEWHERE, FOUNDATIONS SHALL BE 2" (± 1") ABOVE GRADE PER TC-21.20

HORIZONTAL SCALE IN FEET
0 10 20 40

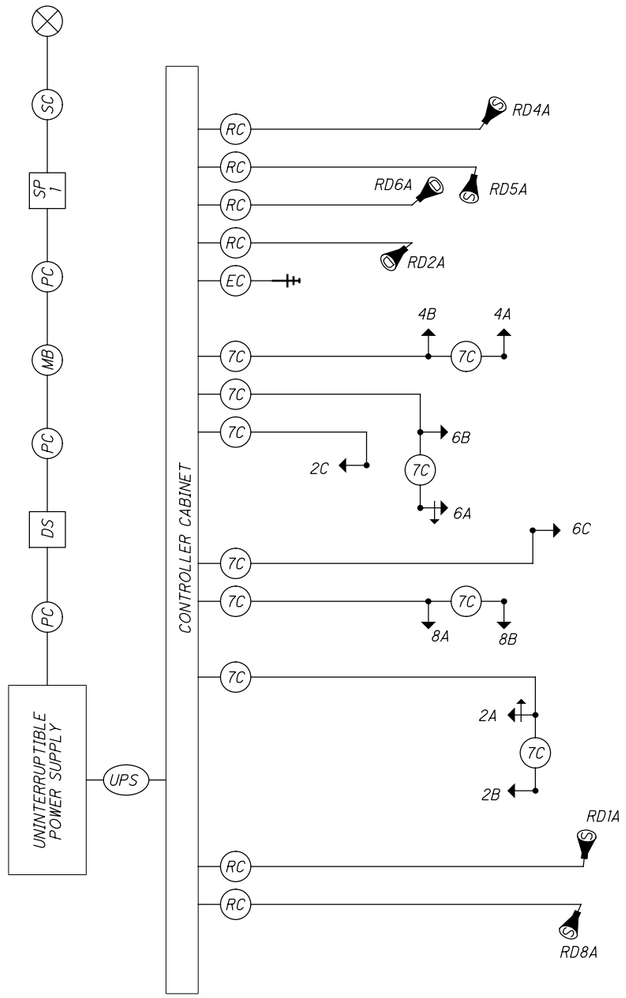
CALCULATED ADL
CHECKED NDE

TRAFFIC SIGNAL PLAN DETAILS
U.S. 42 & DUBLIN ROAD (S.R. 745) / S.R. 257

DEL-42-1.41

100
107

WIRING DIAGRAM



FIELD WIRING HOOK-UP CHART

SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
2A (EB LT)	R	ϕ2 R	R
	Y	ϕ2 Y	
	G	ϕ2 G	
	<--Y--	ϕ5 Y	
	<--G---	ϕ5 G	
2B, 2C (EB)	R	ϕ2 R	R
	Y	ϕ2 Y	
	G	ϕ2 G	
4A, 4B (SB)	R	ϕ4 R	R
	Y	ϕ4 Y	
	G	ϕ4 G	
6A (WB LT)	R	ϕ6 R	R
	Y	ϕ6 Y	
	G	ϕ6 G	
	<--Y--	ϕ1 Y	
	<--G---	ϕ1 G	
6B, 6C (WB)	R	ϕ6 R	R
	Y	ϕ6 Y	
	G	ϕ6 G	
8A, 8B (NB)	R	ϕ8 R	R
	Y	ϕ8 Y	
	G	ϕ8 G	

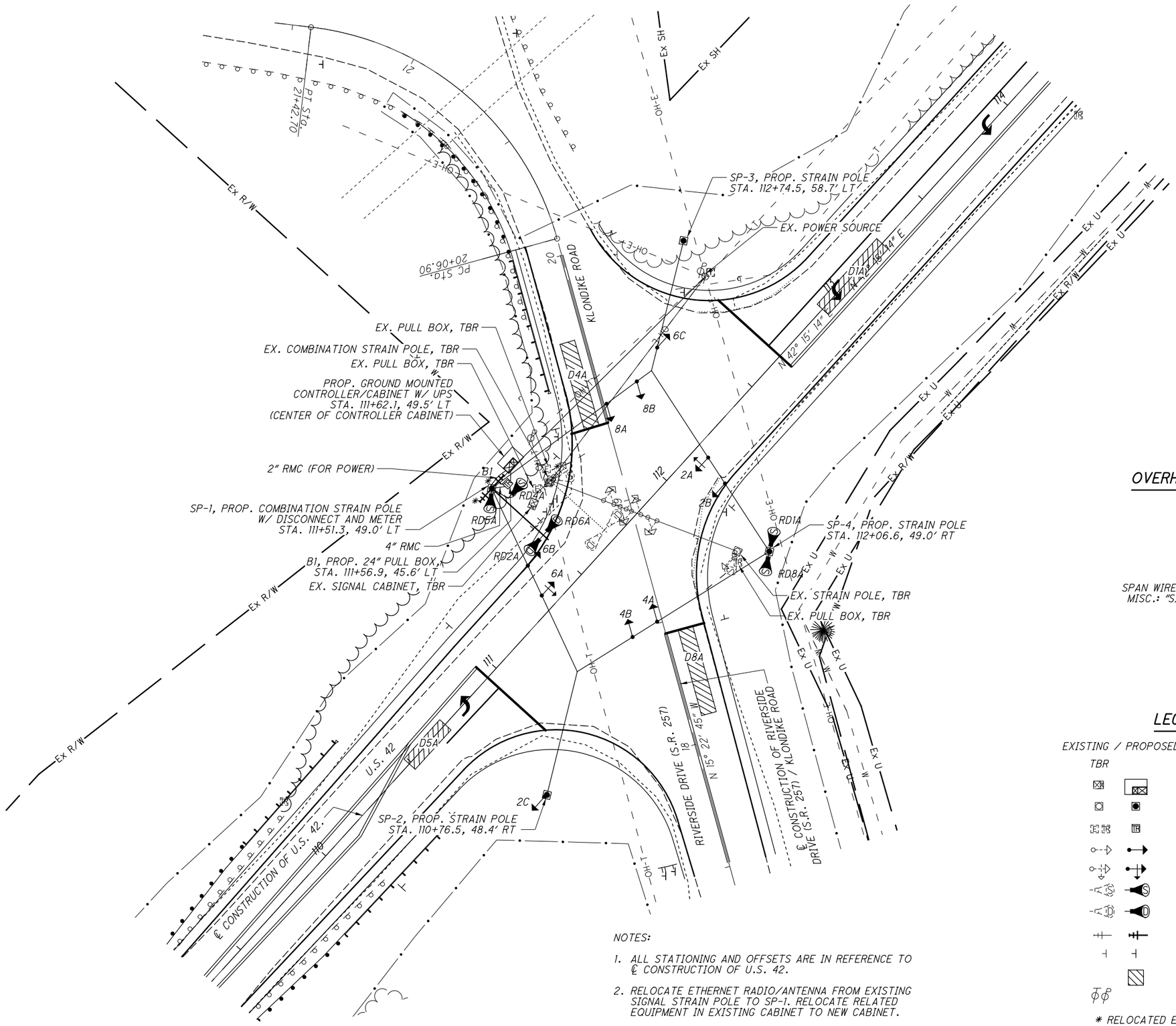
LEGEND

- 5 SECTION VEHICULAR SIGNAL HEAD, 1-WAY
- 3 SECTION VEHICULAR SIGNAL HEAD, 1-WAY
- DILEMMA ZONE RADAR DETECTION UNIT
- STOP BAR RADAR DETECTION UNIT
- ETHERNET RADIO
- 7C — SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG
- RC — RADAR DETECTION CABLE
- EC — OUTDOOR RATED ARMORED ETHERNET CABLE
- POWER SOURCE
- SC — SERVICE CABLE, 3 CONDUCTOR, NO. 6 AWG
- PC — POWER CABLE, 3 CONDUCTOR, NO. 6 AWG
- SP 1 — SIGNAL SUPPORT POLE NO. __
- MB — METER BASE
- DS — DUAL LIGHTING/SIGNAL DISCONNECT SWITCH
- UPS — UNINTERRUPTIBLE POWER SUPPLY CABLE

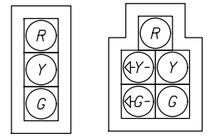
CALCULATED NDE
CHECKED ADL

TRAFFIC SIGNAL PLAN DETAILS
U.S. 42 & DUBLIN ROAD (S.R. 745) / S.R. 257

DEL-42-1.41



SIGNAL HEADS



2B, 2C, 4A, 4B, 6B, 6C, 8A, 8B

2A, 6A

OVERHEAD SIGNS (TEMPORARY)

SIGNAL OPERATION CHANGED

W23-H2B-30 (4 EACH),
SPAN WIRE MOUNTED PER ITEM 630 SIGNING,
MISC.: "SIGNAL OPERATION CHANGED" SIGN

LEGEND

EXISTING / PROPOSED

TBR	TO BE REMOVED
	GROUND MOUNTED CONTROLLER/UPS
	SIGNAL STRAIN POLE/SUPPORT (SP#)
	PULL BOX (B#)
	3- SECT. TRAFFIC SIGNAL HEAD (#)
	5- SECT. TRAFFIC SIGNAL HEAD (#)
	STOP BAR RADAR DETECTION UNIT
	DILEMMA ZONE RADAR DETECTION UNIT
	ETHERNET RADIO/ANTENNA
	SIGN (S#)
	DETECTION ZONE (D#)
	WOOD UTILITY POLE

* RELOCATED EXISTING, AS NOTED

NOTES:

1. ALL STATIONING AND OFFSETS ARE IN REFERENCE TO ℄ CONSTRUCTION OF U.S. 42.
2. RELOCATE ETHERNET RADIO/ANTENNA FROM EXISTING SIGNAL STRAIN POLE TO SP-1. RELOCATE RELATED EQUIPMENT IN EXISTING CABINET TO NEW CABINET.

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED ADL
CHECKED NDE

TRAFFIC SIGNAL PLAN
U.S. 42 & RIVERSIDE DR. (S.R. 257) / KLONDIKE RD.

DEL-42-1.41

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SIGNAL TIMING CHART

INTERSECTION: U.S. 42 & RIVERSIDE DRIVE (S.R. 257)/KLONDIKE ROAD
MAINTAINING AGENCY: ODOT

START UP

START IN: ALL RED
TIME FOR FLASH OR ALL RED: 5
FIRST PHASE(S): 2 & 6
COLOR DISPLAYED: GREEN

DUAL ENTRY: YES | PHASES: 2 & 6, 4 & 8
REST IN RED: RING 1 | NO | RING 2

OVERLAP			-	-	-	-		
PARENT PHASES			-	-	-	-		
INTERVAL OR FEATURE		CONTROLLER MOVEMENT NO.						
INTERSECTION MOVEMENT (PHASE)		1	2	3	4	5	6	7	8
DIRECTION		WB LT	EB	-	SB	EB LT	WB	-	NB
MINIMUM GREEN (INITIAL)	(SEC.)	7	30	-	10	7	30	-	10
ADDED INITIAL	*(SEC./ACTUATION)	-	-	-	-	-	-	-	-
MAXIMUM INITIAL	(SEC.)	-	-	-	-	-	-	-	-
PASSAGE TIME (PRESET GAP)	(SEC.)	3	1	-	3	3	1	-	3
TIME BEFORE REDUCTION	*(SEC.)	-	-	-	-	-	-	-	-
MINIMUM GAP	*(SEC.)	-	-	-	-	-	-	-	-
TIME TO REDUCE	*(SEC.)	-	-	-	-	-	-	-	-
MAXIMUM GREEN I	(SEC.)	15	45	-	20	15	45	-	20
MAXIMUM GREEN II	(SEC.)	15	45	-	20	15	45	-	20
YELLOW CHANGE	(SEC.)	4.7	5.6	-	4.5	4.7	5.6	-	4.5
ALL RED CLEARANCE	(SEC.)	2.5	1.0	-	1.0	2.5	1.0	-	1.0
WALK	(SEC.)	-	-	-	-	-	-	-	-
PEDESTRIAN CLEARANCE	(SEC.)	-	-	-	-	-	-	-	-
RECALL MAXIMUM	(ON/OFF)	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
RECALL MINIMUM	(ON/OFF)	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
RECALL PEDESTRIAN	(ON/OFF)	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
MEMORY	(ON/OFF)	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

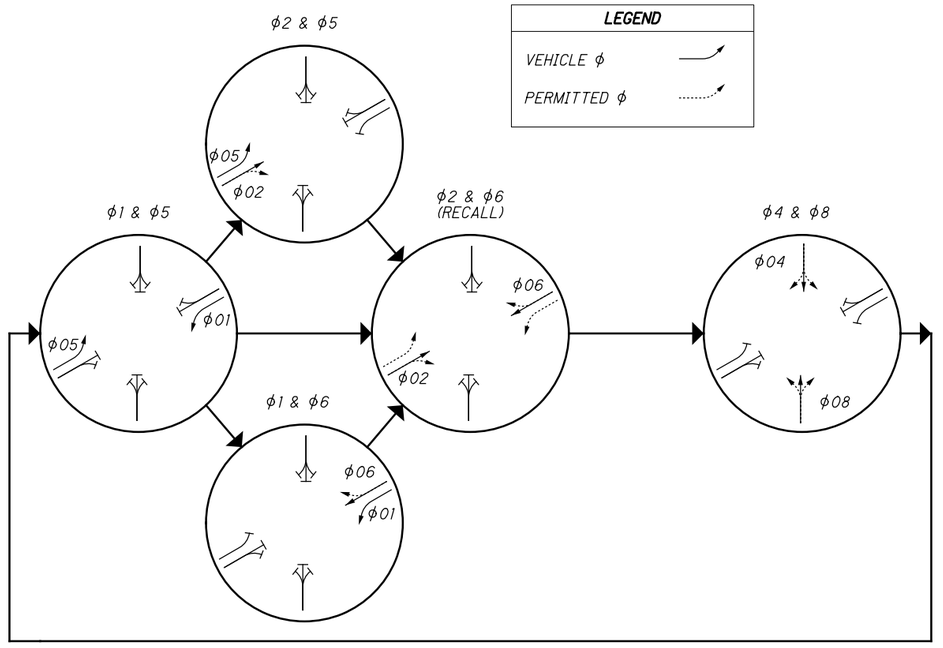
*VOLUME DENSITY CONTROLS

RADAR DETECTION CHART

DETECTION ZONE	MOVEMENT	FUNCTION	ASSOCIATED PHASE	DELAY IN CONTROLLER (SEC)	DELAY INHIBIT PHASE	PURPOSE	DETECTION ZONE LENGTH (FT)
D1A	WB LT	PRESENCE	1	-	-	CALL/EXTEND PHASE 1	35**
EB DZ	EB	PRESENCE	2	-	-	DILEMMA ZONE PHASE 2	*
D4A	SB	PRESENCE	4	6	4	CALL/EXTEND PHASE 4	35
D5A	EB LT	PRESENCE	5	-	-	CALL/EXTEND PHASE 5	25**
WB DZ	WB	PRESENCE	6	-	-	DILEMMA ZONE PHASE 6	*
D8A	NB	PRESENCE	8	6	8	CALL/EXTEND PHASE 8	35

NOTES:
1. DILEMMA ZONE SPEED THRESHOLD >35 MPH
* ADVANCE DETECTION ZONE LENGTH SHALL BE AS LONG AS DETECTOR CAN RELIABLY DETECT WITHIN LANE.
** 2ND CAR DETECTION (LEADING EDGE OF DETECTION ZONE APPROXIMATELY 25 FEET FROM STOP BAR).

PHASING DIAGRAM



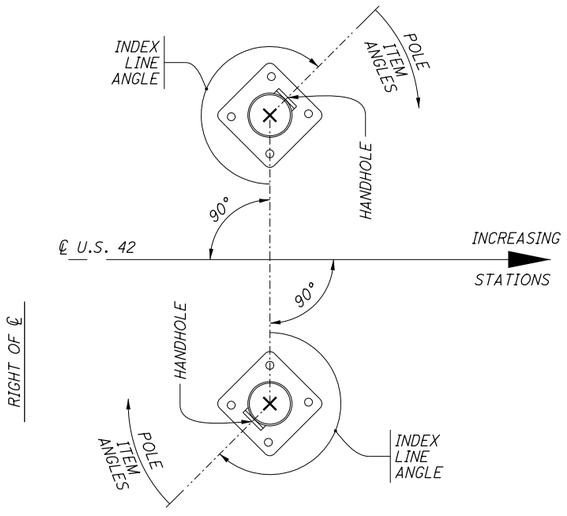
CALCULATED NDE | CHECKED ADL

TRAFFIC SIGNAL PLAN DETAILS
U.S. 42 & RIVERSIDE DR. (S.R. 257)/KLONDIKE RD.

DEL-42-1.41

STRAIN POLE DESIGN DETAILS

REFERENCE SHEET NO.	STATION & OFFSET	POLE NO.	DESIGN NO.	POLE HEIGHT (FT.)	FOUNDATION ELEV.	APPROXIMATE SPAN WIRE ATTACHED HEIGHT RANGE (FT.)	CABLE ENTRANCE DISTANCE FROM TOP (IN.)	INDEX LINE ANGLE (DEG.)	ANGLES (DEG.) FROM INDEX LINE				
									CABLE ENTRANCE	LUMINAIRE BRACKET	VEHICULAR SIGNAL HEAD	DISCONNECT / POWER METER	2" CAPPED
102	STA. 111+58.7, 49.5' LT	SP-1	13	36	879.01	25.5 - 29.0	12	180	135	180	-	270	-
102	STA. 110+76.5, 48.4' RT	SP-2	13	32	877.11	27.4 - 30.0	12	180	180	-	90	-	0
102	STA. 112+74.5, 58.7' LT	SP-3	13	34	876.34	29.1 - 31.7	12	180	180	-	-	-	0
102	STA. 112+06.6, 49.0' RT	SP-4	13	32	878.87	25.6 - 29.2	12	180	135	-	-	-	0



NOTES:

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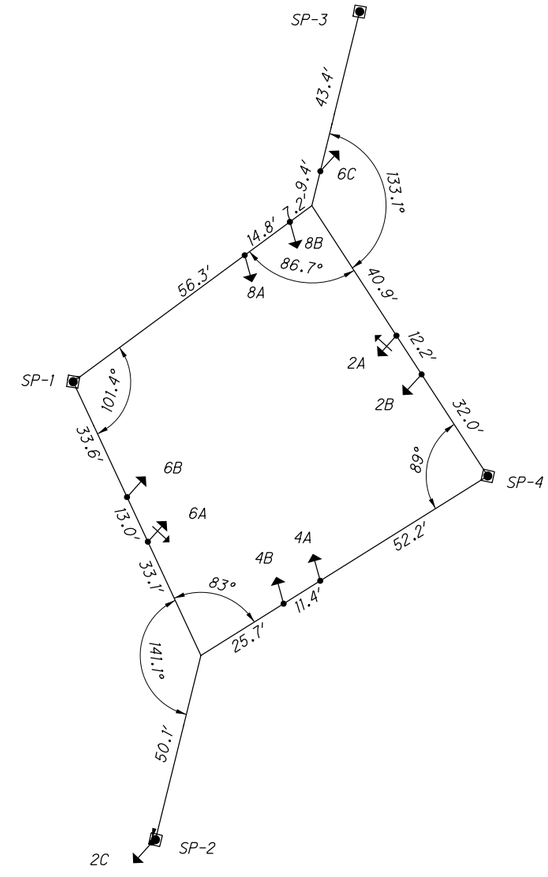
- THE INDEX LINE GOES THROUGH THE CENTER OF THE HANDHOLE.

POLE DIAGRAM

TRAFFIC SIGNAL LAYOUT DETAIL



NOTE:

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N

0 10 20 40 HORIZONTAL SCALE IN FEET

CALCULATED ADL CHECKED NDE

TRAFFIC SIGNAL PLAN DETAILS
U.S. 42 & RIVERSIDE DR. (S.R. 257) / KLONDIKE RD.

DEL-42-1.41

104
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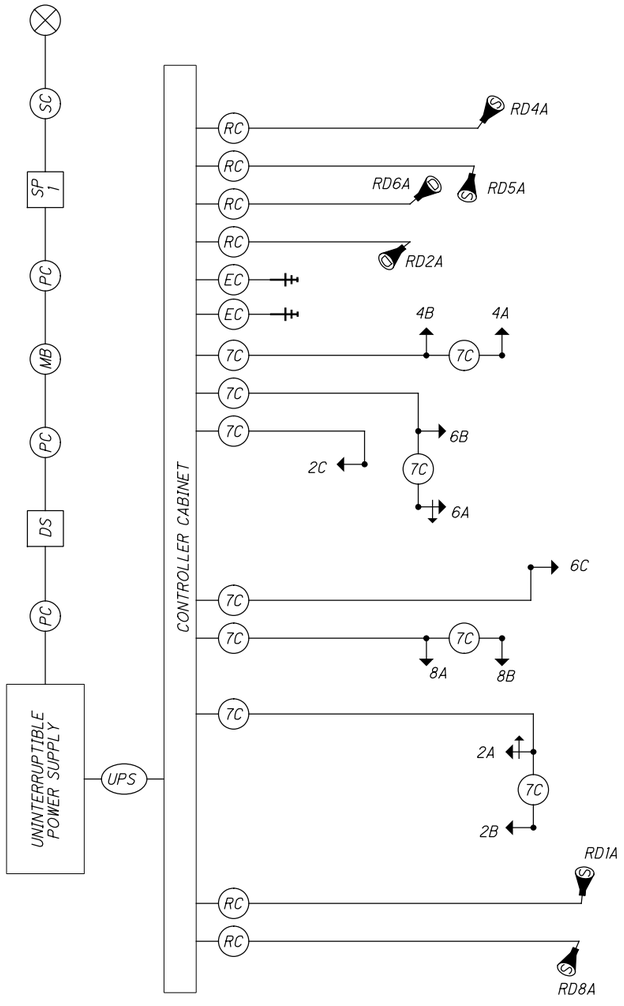
WIRING DIAGRAM



FIELD WIRING HOOK-UP CHART

SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
2A (EB LT)	R	ϕ2 R	R
	Y	ϕ2 Y	
	G	ϕ2 G	
	<--Y--	ϕ5 Y	X
	<--G---	ϕ5 G	
2B, 2C (EB)	R	ϕ2 R	R
	Y	ϕ2 Y	
	G	ϕ2 G	
4A, 4B (SB)	R	ϕ4 R	R
	Y	ϕ4 Y	
	G	ϕ4 G	
6A (WB LT)	R	ϕ6 R	R
	Y	ϕ6 Y	
	G	ϕ6 G	
	<--Y--	ϕ1 Y	X
	<--G---	ϕ1 G	
6B, 6C (WB)	R	ϕ6 R	R
	Y	ϕ6 Y	
	G	ϕ6 G	
8A, 8B (NB)	R	ϕ8 R	R
	Y	ϕ8 Y	
	G	ϕ8 G	

LEGEND

- 5 SECTION VEHICULAR SIGNAL HEAD, 1-WAY
- 3 SECTION VEHICULAR SIGNAL HEAD, 1-WAY
- DILEMMA ZONE RADAR DETECTION UNIT
- STOP BAR RADAR DETECTION UNIT
- ETHERNET RADIO
- 7C — SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG
- RC — RADAR DETECTION CABLE
- EC — OUTDOOR RATED ARMORED ETHERNET CABLE
- POWER SOURCE
- SC — SERVICE CABLE, 3 CONDUCTOR, NO. 6 AWG
- PC — POWER CABLE, 3 CONDUCTOR, NO. 6 AWG
- SP 1 — SIGNAL SUPPORT POLE NO. __
- MB — METER BASE
- DS — DUAL LIGHTING/SIGNAL DISCONNECT SWITCH
- UPS — UNINTERRUPTIBLE POWER SUPPLY CABLE

CALCULATED NDE
CHECKED ADL

TRAFFIC SIGNAL PLAN DETAILS
U.S. 42 & RIVERSIDE DR. (S.R. 257) / KLONDIKE RD.

DEL-42-1.41

MATERIAL SPECIFICATIONS FOR BBS GENERATOR POWER PANEL EQUIPMENT

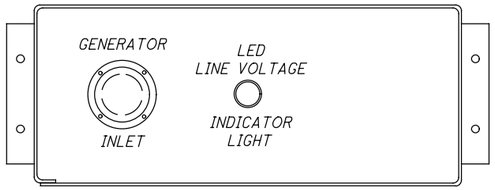
GENERATOR INLET - The inlet shall be 30 amp, 125/250V, locking, four (4) wire grounding and meet the NEMA configuration number L14-30-P 30A 125/250V specification. The inlet shall be a Hubbell catalog #2715.

LINE VOLTAGE GENERATOR SWITCH - The switch shall be 30 amp, 125/250V AC, two (2) pole, three (3) position (On, Off, On). The switch shall be a Hubbell catalog #1388.

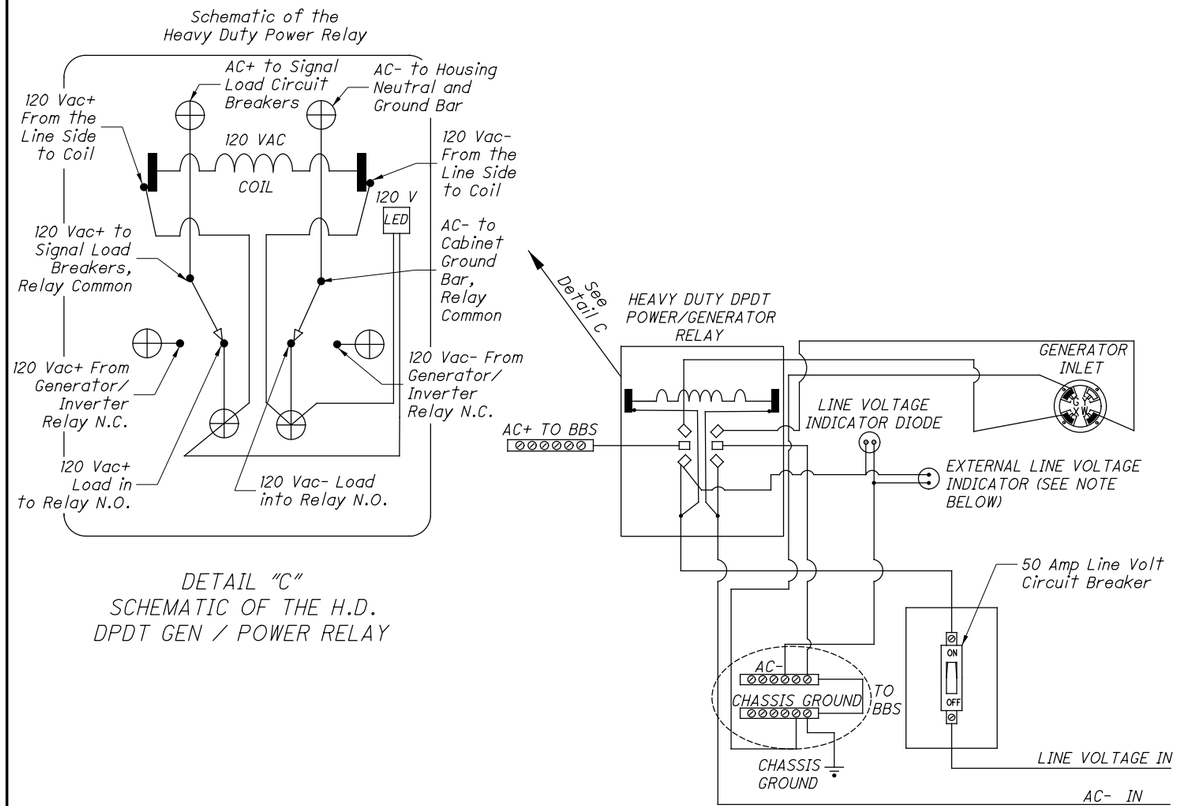
LINE VOLTAGE INDICATOR LIGHT - The indicator light shall be 125V AC light emitting diode with a red lens.

LINE VOLTAGE CIRCUIT BREAKER - The circuit breaker shall be single pole single throw and a minimum of 30 amps. The amperage shall be increased to accomodate greater loads, if necessary. The gauge of the power cable shall be of proper size per N.E.C.

EXTERNAL LINE VOLTAGE INDICATOR LIGHT - The indicator light shall be a 1" waterproof NEMA 4X or IP66 LED lamp with a green lens.



FRONT VIEW OF GENERATOR POWER PANEL

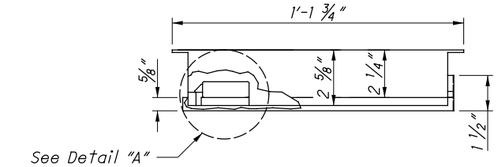


DETAIL "C"
SCHEMATIC OF THE H.D.
DPDT GEN / POWER RELAY

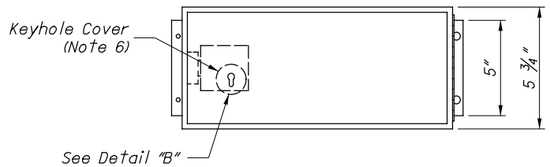
ELECTRICAL HOOKUP DETAIL FOR THE BBS GENERATOR POWER PANEL

NOTE: EXTERNAL LINE VOLTAGE INDICATOR LIGHT required when called for in the plans. EXTERNAL LINE VOLTAGE INDICATOR LIGHT shall be located on the enclosure exterior for visibility from the adjacent roadway when all cabinet, and generator panel doors are closed.

GENERATOR POWER PANEL ENCLOSURE



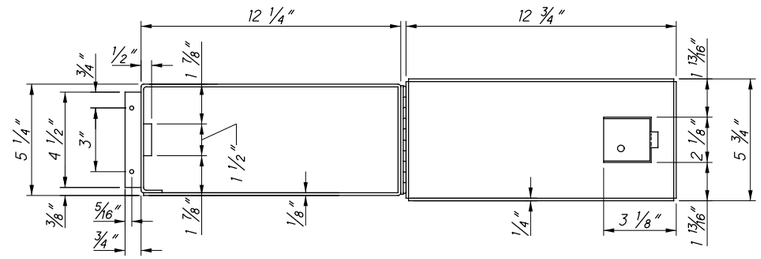
TOP VIEW



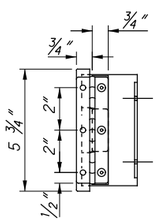
FRONT VIEW CLOSED DOOR

NOTES:

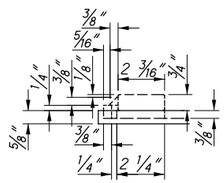
1. The enclosure shall be constructed of 1/8" thick alumimum.
2. The lock shall be the standard police door type, keyed with the standard flasher door skeleton key.
3. The door shall be sealed with a foam rubber gasket to prevent moisture from entering the enclosure.
4. The enclosure shall be mounted onto the outside of the controller cabinet with non-accessible bolts and sealed with a high quality silicon caulk at all surfaces touching the cabinet.
5. The hinge shall be of stainless steel or equivalent corrosive-resistant material.
6. Keyhole shall be covered with a movable circular aluminum or brass cover with top pivot pin.



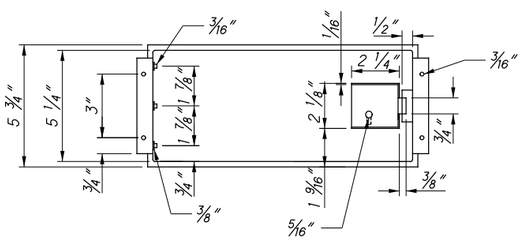
FRONT VIEW OPEN DOOR



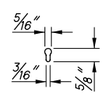
RIGHT SIDE VIEW
CLOSED DOOR



DETAIL "A"



BACK VIEW CLOSED DOOR



DETAIL "B"

THIS DRAWING REPLACES PIS 203012 DATED 04-20-2012.

OFFICE OF ROADWAY ENGINEERING

DESIGNED XXX
REVIEWED XXX
REVISION DATE 07-18-2014
CHECKED CHECKED

PLAN INSERT SHEET

BATTERY BACKUP SYSTEM (BBS)
GENERATOR POWER PANEL

PIS 203012

1 / 1

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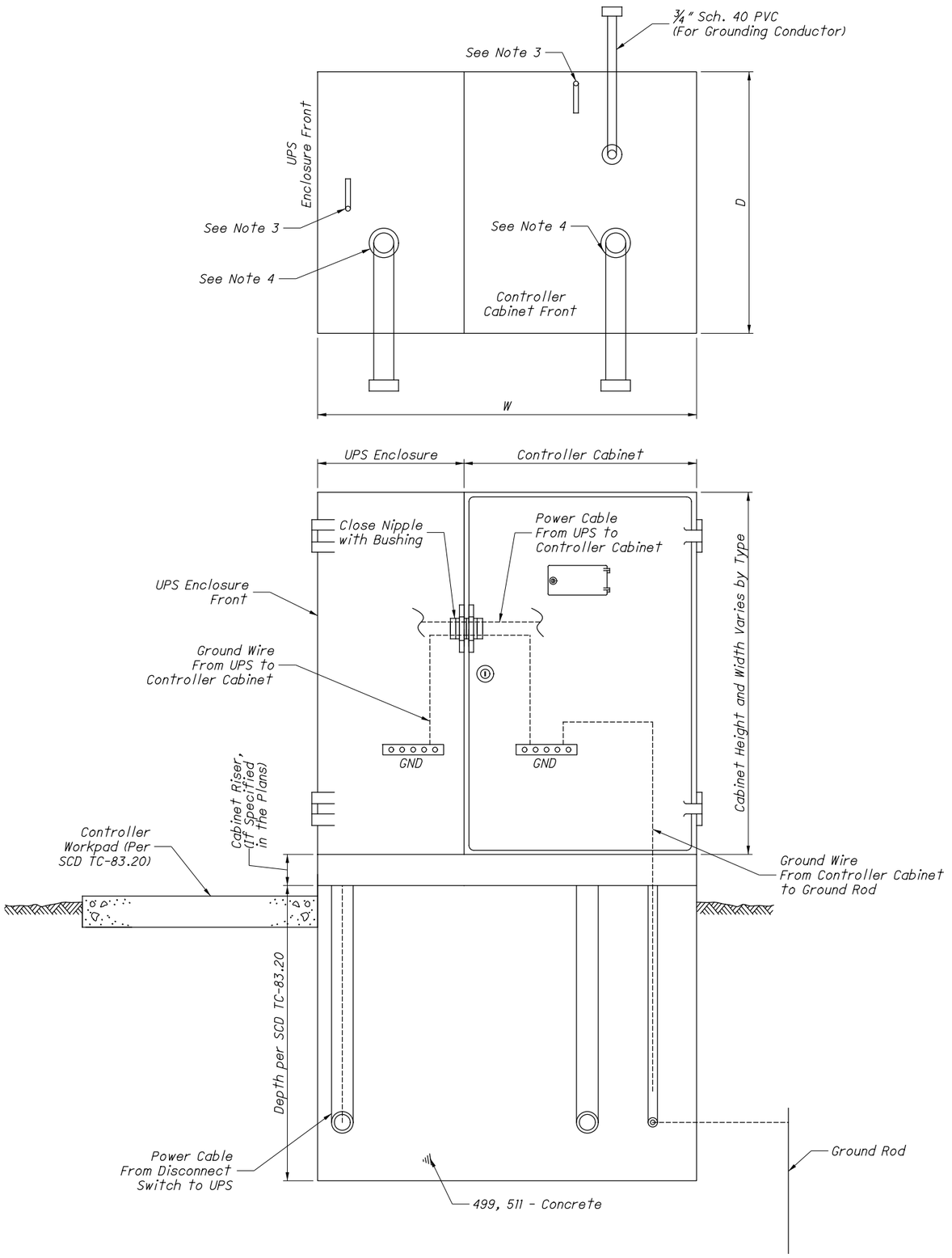

NOTES:

1. The Uninterruptible Power Supply (UPS) enclosure shall be mounted flush up against the traffic signal cabinet and sealed with silicone. The Contractor shall be responsible for providing the necessary power cable between the UPS unit and signal cabinet.
2. The UPS should be placed on the opposite side of the pull box on a 332/336 cabinet (per Standard Construction Drawing (SCD) TC-83.20). The UPS placement for a NEMA cabinet varies, placement should provide adequate access with respect to slope, guardrail spacing, etc.
3. The size, number, and location of anchor bolts shall be in accordance with the manufacturer's recommendations.
4. The size, number, and orientation of conduit ells shall be as shown in the plan, except that a ¾" schedule 40 PVC shall be installed in each foundation.
5. 1/2" preformed joint filler as per CMS 705.03 shall be used between foundations and adjacent paved areas.
6. See SCD TC-83.20 for further details.

TYPE	W (IN.)	D (IN.)	FOUNDATION CONCRETE (CU. YD.)
TS-1	60	24	1.23
TS-2	70	36	2.16
2070/170	50	36	1.54

THIS DRAWING REPLACES PIS 208320 DATED 04-20-2012.

OFFICE OF ROADWAY ENGINEERING

DESIGNED XXX
REVIEWED XXX
REVISION DATE 07-18-2014
CHECKED CHECKED

PLAN INSERT SHEET

UNINTERRUPTIBLE POWER SUPPLY (UPS) AND CONTROLLER CABINET FOUNDATION

PIS 208320

1 / 1

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