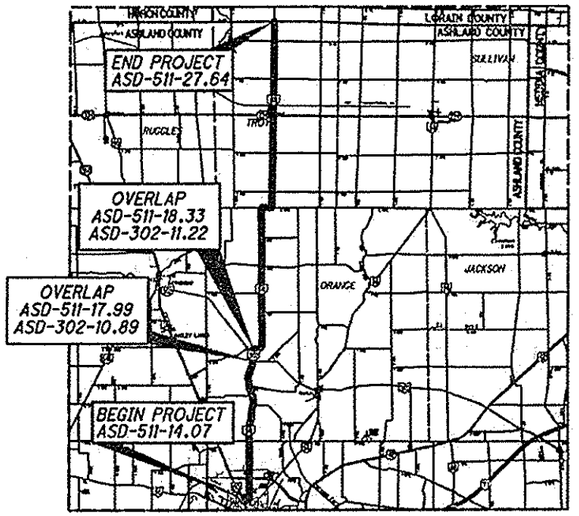
ASD - SR 511-14.07
150102 PID - 88811
Dist 3 3/5/2015

Contract Proposal Available @ www.contracts.dot.state.oh.us/home



LOCATION MAP

LATITUDE: N 40° 56' 15" LONGITUDE: W 82° 18' 54"

SCALE IN MILES

0 1 2 3 4

N

PORTION TO BE IMPROVED
INTERSTATE & DIVIDED HIGHWAY
UNDIVIDED STATE & FEDERAL ROUTES
OTHER ROADS

DESIGN DESIGNATION

SEE SHEET 2

DESIGN EXCEPTIONS

NONE

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

ASD-511-(14.07)(18.33)
ASD-302-10.89

CITY OF ASHLAND

MONTGOMERY TOWNSHIP
ORANGE TOWNSHIP
TROY TOWNSHIP

ASHLAND COUNTY

INDEX OF SHEETS:

TITLE SHEET	1	STRUCTURE NOTES	26-27
SCHEMATIC PLAN & DESIGN DESIGNATION	2	M.O.T. DETOUR PLAN	28
GENERAL NOTES	3-6	STRUCTURE ASD-511-1597 SFN 0305553	29-34
MAILBOX FACILITIES	7	STRUCTURE ASD-511-1715 SFN 0305561	35
GENERAL SUMMARY	8-9	STRUCTURE ASD-511-1854 SFN 0305618	36
PAVEMENT & SHOULDER DATA	10	STRUCTURE ASD-511-1957 SFN 0305642	37
TYPICAL SECTIONS	11	STRUCTURE ASD-511-2584 SFN 0305715	38
GUARDRAIL NOTES	12	PLAN INSERT SHEET GR 1.1	39-41
ROADWAY SUB-SUMMARY	13	PLAN INSERT SHEET GR 2.1	42-43
GUARDRAIL DETAILS	14-20	PLAN INSERT SHEET GR 3.4	44
PAVEMENT MARKING AND RPM SUB-SUMMARY	21	PLAN INSERT SHEET GR 3.6	45
CURB RAMP DETAILS	22	PLAN INSERT SHEET GR 4.1	46
STRUCTURE SUMMARY	23-24	PLAN INSERT SHEET GR 4.2	47-48
STRUCTURE TREATMENT	25		

PROJECT DESCRIPTION

THIS PROJECT WILL INCLUDE PAVEMENT REPAIR, RESURFACING WITH ASPHALT CONCRETE, GUARDRAIL WORK, PLACEMENT OF PAVEMENT MARKINGS, A SAFETY EDGE, AND STRUCTURE MAINTENANCE.

EARTH DISTURBED AREAS

PROJECT EARTH DISTURBED AREA: N/A (MAINTENANCE PROJECT)

ESTIMATED CONTRACTOR EARTH DISTURBED AREA: N/A (MAINTENANCE PROJECT)

NOTICE OF INTENT EARTH DISTURBED AREA: N/A (MAINTENANCE PROJECT)

2013 SPECIFICATIONS

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

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT DETOURS WILL BE PROVIDED AS INDICATED ON SHEET 28.

APPROVED _____
DATE 12-9-14 DISTRICT DEPUTY DIRECTOR

APPROVED _____
DATE 12-18-14 DIRECTOR, DEPARTMENT OF TRANSPORTATION

ENGINEER'S SEAL:

STATE OF OHIO
KARLA R. BOHMER
E-76834
REGISTERED PROFESSIONAL ENGINEER

SIGNED: Karla R. Bohmer
DATE: 12/9/14

STANDARD CONSTRUCTION DRAWINGS

BP-3.1	07/18/14	MT-97.10	07/18/14			
BP-4.1	07/19/13	MT-97.12	07/18/14			
BP-7.1	07/18/14	MT-99.20	07/19/13			
		MT-101.60	07/19/13			
DM-4.3	07/19/13	MT-101.90	07/18/14			
DM-4.4	07/20/12	MT-105.10	07/19/13			
RM-1.1	07/18/14	TC-41.20	10/18/13			
		TC-42.20	10/18/13			
AS-1-54	12/1/54	TC-52.10	10/18/13			
CSB-1-55	12/3/56	TC-52.20	07/18/14			
GSD-1-96	07/19/02	TC-61.30	07/18/14			
TST-1-99	01/17/14	TC-65.10	01/17/14			
DBR-2-73	07/19/02	TC-65.11	07/18/14			
DBR-3-11	07/15/11	TC-71.10	01/17/14			

SUPPLEMENTAL SPECIFICATIONS

800	01/16/15
832	01/17/14
848	04/18/14

SPECIAL PROVISIONS

UNDERGROUND UTILITIES
CONTACT BOTH SERVICES
CALL TWO WORKING DAYS
BEFORE YOU DIG
CALL
1-800-362-2764
(TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY
OIL & GAS PRODUCERS PROTECTIVE SERVICE CALL: 1-800-925-0988

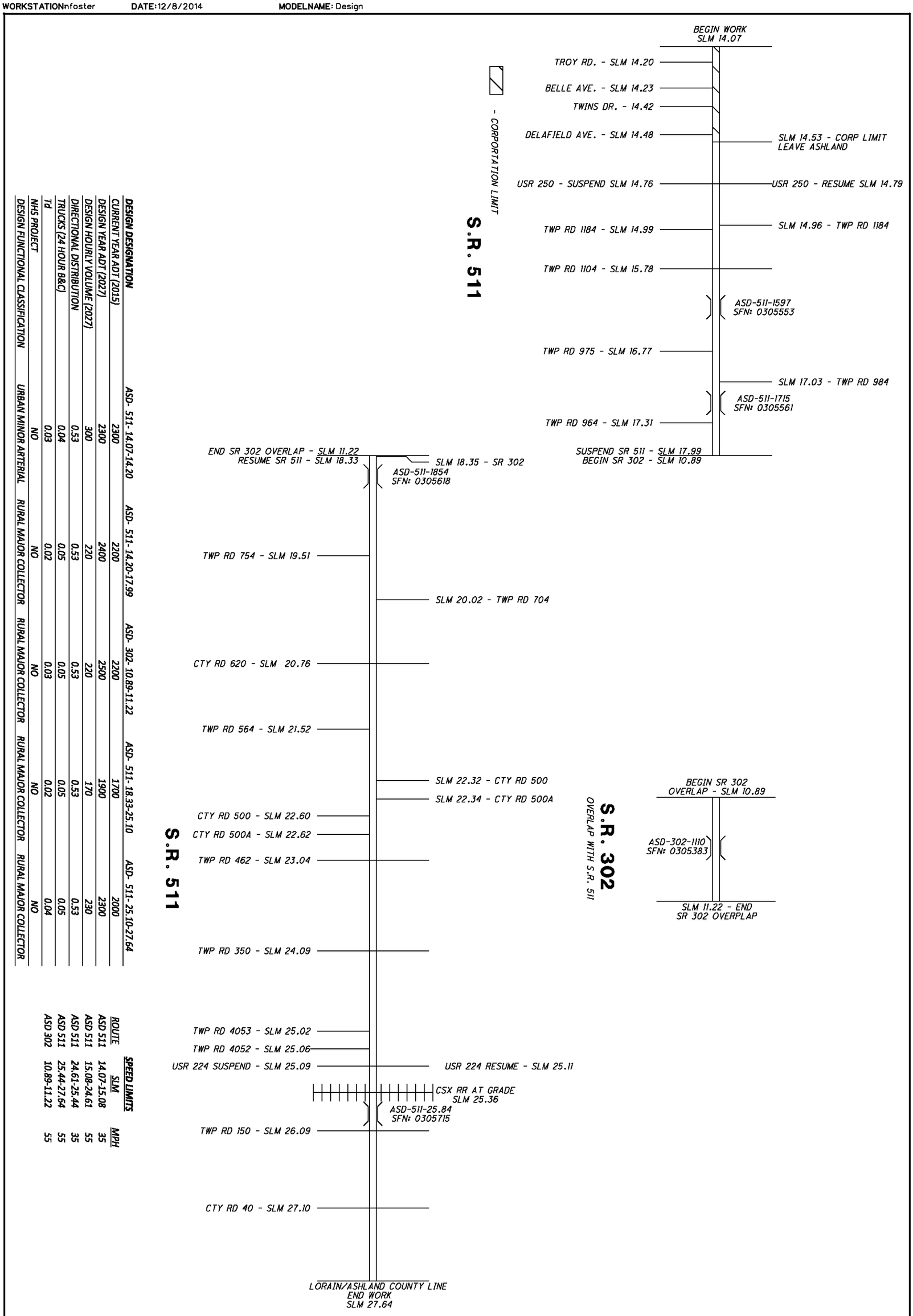
PLANS PREPARED BY:

ODOT DISTRICT THREE
PLANNING & ENGINEERING DEPT.

FEDERAL PROJECT NO. E101148
PID NO. 88811
CONSTRUCTION PROJECT NO.
RAILROAD INVOLVEMENT CSX TRANSPORTATION, INC.
ASD-511-(14.07)(18.33)
ASD-302-10.89
1 / 48

DESIGN FILE#: \projects\8881\roadway\sheets
WORKSTATION: ksaloy DATE: 12/9/2014

DESIGN FILE: I:\projects\88811\roadway\sheets\88811GB001.dgn
WORKSTATION nfoster DATE: 12/8/2014 MODELNAME: Design



DESIGN DESIGNATION	ASD- 511- 14.07-14.20	ASD- 511- 14.20-17.99	ASD- 302- 10.89-11.22	ASD- 511- 18.33-25.10	ASD- 511- 25.10-27.64
CURRENT YEAR ADT (2015)	2300	2200	2200	1700	2000
DESIGN YEAR ADT (2027)	2300	2400	2500	1900	2300
DESIGN HOURLY VOLUME (2027)	300	220	220	170	230
DIRECTIONAL DISTRIBUTION	0.53	0.53	0.53	0.53	0.53
TRUCKS (24 HOUR B&C)	0.04	0.05	0.05	0.05	0.05
Td	0.03	0.02	0.03	0.02	0.04
NHS PROJECT	NO	NO	NO	NO	NO
DESIGN FUNCTIONAL CLASSIFICATION	URBAN MINOR ARTERIAL	RURAL MAJOR COLLECTOR	RURAL MAJOR COLLECTOR	RURAL MAJOR COLLECTOR	RURAL MAJOR COLLECTOR

SPEED LIMITS		
ROUTE	SLM	MPH
ASD 511	14.07-15.08	35
ASD 511	15.08-24.61	55
ASD 511	24.61-25.44	35
ASD 511	25.44-27.64	55
ASD 302	10.89-11.22	55

ASD-511-(14.07)(18.33)
ASD-302-10.89

STRAIGHT LINE DIAGRAM & DESIGN DESIGNATION

CALCULATED KCK
CHECKED KRB

GENERAL

UTILITIES

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

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.

CABLE
ARMSTRONG UTILITIES
1141 LAFAYETTE RD.
MEDINA, OH 44256
330-722-3141

CABLE
MASSILLON CABLE TELEVISION
P.O. BOX 917
WOOSTER, OHIO 44691
330-345-5110

CABLE
TIME WARNER CABLE
1575 LEXINGTON AVENUE
MANSFIELD, OHIO 44901
419-756-6091

ELECTRIC
FIRELANDS ELECTRIC CO-OP
ONE ENERGY PLACE
NEW LONDON, OHIO 44851
419-929-1571

ELECTRIC
LORAIN-MEDINA RURAL ELECTRIC
P.O. BOX 158
WELLINGTON, OHIO 44090
800-222-5673

ELECTRIC
OHIO EDISON COMPANY
1717 ASHLAND ROAD
MANSFIELD, OHIO 44905
419-521-6219

GAS
COLUMBIA GAS OF OHIO
1021 N. MAIN ST.
MANSFIELD, OHIO 44903
419-529-1117

GAS
GATHERCO INC.
300 TRACY BRIDGE RD
ORRVILLE OH, 44667
330-498-9553

TELEPHONE
AT&T OF OHIO
130 N. ERIE STREET, ROOM 714
TOLEDO, OHIO 43604
419-245-5004

TELEPHONE
FRONTIER COMMUNICATIONS
1534 S.R. 511 SOUTH
ASHLAND, OHIO 44805
419-282-6551

TELEPHONE
NOVA TELEPHONE COMPANY
P.O. BOX 27
255 TWP. RD. 791
NOVA, OHIO 44859
419-652-3571

WATER
RURAL LORAIN COUNTY WATER AUTHORITY
P.O. BOX 567
LAGRANGE, OHIO 44050
440-355-6060

CITY
CITY OF ASHLAND
206 CLAREMONT AVENUE
ASHLAND, OHIO 44805
419-289-8622

THE AFOREMENTIONED UTILITY COMPANIES AND AGENCIES HAVE VARIOUS FACILITIES IN THE AREA THAT WILL REMAIN IN PLACE DURING CONSTRUCTION.

EXTREME CAUTION SHOULD BE EXERCISED IN AREAS WITH UTILITIES. SECTIONS 105.07 AND 107.16 OF THE DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIALS SPECIFICATIONS REQUIRE, AMONG OTHER THINGS, THAT THE CONTRACTOR COOPERATE WITH ALL UTILITIES LOCATED WITHIN THE LIMITS OF THIS CONSTRUCTION PROJECT AND TAKE RESPONSIBILITY FOR THE PROTECTION OF THE UTILITY PROPERTY AND SERVICES.

ROUTINE MAINTENANCE

BETWEEN THE TIME THAT BIDS ARE TAKEN AND THE START OF CONSTRUCTION, THE MAINTAINING AGENCY MAY ENTER UPON THE PROJECT AND PERFORM ROUTINE MAINTENANCE SUCH AS CRACK SEALING, PATCHING, AND BERM AND SHOULDER REPAIR. THE EFFECTS, IF ANY, OF THE PERFORMANCE OF ROUTINE MAINTENANCE SHALL BE CONSIDERED AS INHERENT IN WORK OF THE CHARACTER PROVIDED FOR IN THE PLAN AND THE RESULTING CONDITIONS SHALL NOT BE CONSIDERED AS DIFFERING MATERIALLY FROM THOSE EXISTING AT THE TIME BIDS WERE TAKEN.

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.

PROGRESSION OF WORK

GUARDRAIL SHALL BE REMOVED PRIOR TO ANY EMBANKMENT WORK AT THE GUARDRAIL RUN. GUARDRAIL WORK SHALL BE DONE AFTER RESURFACING AND BERM WORK SO AS TO ESTABLISH PROPER GRADES FROM WHICH TO CONSTRUCT THE RAIL.

CONSTRUCTION NOTIFICATION

THE CONTRACTOR SHALL ADVISE THE PROJECT ENGINEER A MINIMUM OF FOURTEEN (14) DAYS PRIOR TO THE FOLLOWING: THE START OF CONSTRUCTION ACTIVITIES, LANE RESTRICTIONS, LANE CLOSURES, AND OR ROAD CLOSURES. THE PROJECT ENGINEER WILL FORWARD THIS INFORMATION TO THE FOLLOWING:

DISTRICT PUBLIC INFORMATION OFFICER (PIO) BY FAX AT (614) 887-4305 OR EMAIL AT D03.PIO@DOT.STATE.OH.US

DISTRICT PERMIT SECTION BY FAX AT (614) 887-4318 OR EMAIL AT LOUIS.TUMBLIN@DOT.STATE.OH.US

CENTRAL OFFICE SPECIAL HAUL PERMITS SECTION BY FAX AT (614) 728-4099 OR EMAIL AT HAULING.PERMITS@DOT.STATE.OH.US

THE PIO WILL, IN TURN, NOTIFY THE PUBLIC, THE LOCAL EMERGENCY SERVICES, AFFECTED SCHOOLS AND BUSINESSES, AND ANY OTHER IMPACTED LOCAL PUBLIC AGENCY OF ANY OF THE ABOVE MENTIONED ITEMS, VIA MEDIA SOURCES.

ROADWAY

PAVING AT RAILROAD CROSSINGS

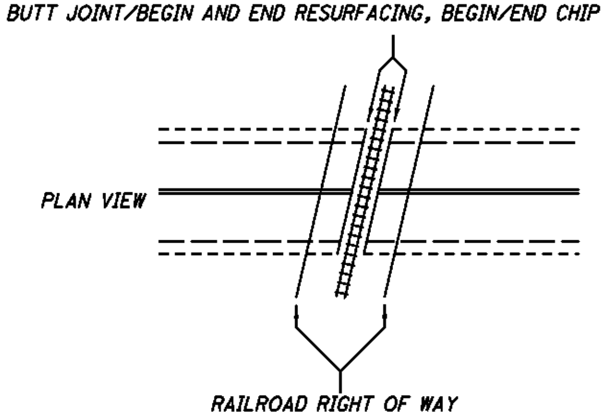
PRIOR TO ANY WORK AT RAILROAD CROSSINGS THE CONTRACTOR SHALL CONTACT THE AFFECTED RAILROAD AUTHORITY SO AS TO MAKE THEM AWARE OF THE PROGRESS AND SCHEDULE OF WORK. THE CONTRACTOR SHALL COOPERATE WITH THE RAILROAD SO AS TO ELIMINATE ANY SAFETY CONCERNS. FLAGGING WILL BE REQUIRED BY THE RAILROAD. ODOT WILL BE RESPONSIBLE FOR PAYING THE RAILROAD FOR ALL FLAGGING COSTS. REFER TO THE RAILROAD SPECIAL CLAUSES IN THE PROPOSAL.

THE CROWN SHALL BE WORKED OUT OF THE RESURFACED PAVEMENT ON EACH SIDE OF THE RAILROAD CROSSING, BEGINNING 50 FEET FROM THE NEAREST RAIL, BY RAISING THE EDGES OF THE RESURFACED PAVEMENT TO MEET THE PLATFORM ELEVATION.

SUSPEND AND RESUME RESURFACING AT THE EDGE OF THE EXISTING CROSSING SURFACE ON BOTH SIDES OF THE TRACK.

DETAIL - PAVING/CHIP SEALING AT RAILROAD CROSSING

BUTT JOINT/BEGIN AND END RESURFACING, BEGIN/END CHIP SEALING



NOTE:
1.) DO NOT DISTURB RAILROAD GATES

2.) RE-INSTALL PAVEMENT MARKINGS

3.) RAILROAD MAY DIRECT ENGINEER ON THE LOCATION OF BUTT JOINTS. OTHERWISE OMIT AND RESUME RESURFACING AT AT THE EDGE OF THE EXISTING CROSSING SURFACE ON BOTH SIDES OF THE TRACK.

ITEM 209 - PREPARING SUBGRADE FOR SHOULDER PAVING, AS PER PLAN

PREPARE THE SHOULDER FOR PAVING A CONSISTENT SAFETY EDGE IN BOTH THICKNESS AND WIDTH.

PRIOR TO PAVING THE SAFETY EDGE, GRADE AN AREA 10 INCHES WIDE, BEGINNING AT THE EDGE OF THE PAVED ROADWAY, TO PROVIDE A LEVEL SURFACE FREE OF VEGETATION FOR CONSTRUCTION OF THE SAFETY EDGE. IF NECESSARY, EXCAVATE THE GRADED AREA TO THE DEPTH NECESSARY TO CONSTRUCT THE SAFETY EDGE. COMPACT THE GRADED SHOULDER ACCORDING TO 617.05 OR AS DIRECTED BY THE ENGINEER. THE GRADED SHOULDER BEYOND THE 10 INCH WIDE AREA FOR THE SAFETY EDGE SHALL BE GRADED AT A 10:1 SLOPE, OR AS DIRECTED BY THE ENGINEER. THE INTENT IS TO PROVIDE AN UNOBSTRUCTED AND POSITIVE FLOW OF STORM WATER FROM THE PAVEMENT TO THE DITCH.

SAFETY EDGE

IN ADDITION TO THE REQUIREMENTS OF 401.12, ATTACH A DEVICE TO THE SCREED OF THE PAVER THAT CONFINES THE MATERIAL AT THE END GATE AND EXTRUDES THE ASPHALT MATERIAL IN SUCH A WAY THAT RESULTS IN A COMPACTED WEDGE SHAPE PAVEMENT EDGE OF APPROXIMATELY 30 DEGREES (NOT STEEPER THAN 40 DEGREES). ENSURE THE DEVICE MAINTAINS CONTACT WITH THE EXISTING SURFACE, AND ALLOW FOR AUTOMATIC TRANSITION TO CROSS ROADS, DRIVEWAYS AND OBSTRUCTIONS. DO NOT USE CONVENTIONAL SINGLE PLATE STRIKE OFF.

CONSTRUCTION OF SAFETY EDGE CAN BE OMITTED AT LOCATIONS WHERE EXISTING WIDTH OF GRADED SHOULDER OR BERM IS LESS THAN 12". PROJECTS WITH VARYING CONDITIONS SHOULD USE SAFETY EDGE WHERE POSSIBLE. PLAN PREPARATION HAS MADE EVERY REASONABLE ATTEMPT TO IDENTIFY POSSIBLE SAFETY EDGE LOCATIONS.

USE THE TRANSTECH SHOULDER WEDGE MAKER, THE CARLSON SAFETY EDGE END GATE, THE ADVANT-EDGER, THE TROXLER SAFETSLOPE OR A SIMILAR APPROVED-EQUAL DEVICE THAT PRODUCES THE SAME WEDGE CONSOLIDATION RESULTS. CONTACT INFORMATION FOR THESE WEDGE SHAPE COMPACTION DEVICES IS THE FOLLOWING:

TRANSTECH SYSTEMS, INC.
1594 STATE STREET
SCHENECTADY, NY 12304
1-800-724-6306
www.transtechsys.com

ADVANT-EDGE PAVING EQUIPMENT LLC
P.O. BOX 9163
NISKAYUNA, NY 12309-0163
518-280-6090
www.advantedgepaving.com

CARLSON SAFETY EDGE END GATE
18450 50TH AVENUE EAST
TACOMA, WA 98446
253-875-8000

TROXLER ELECTRONICS LABORATORIES INC.
3008 E. CORNWALLIS RD.
RESEARCH TRIANGLE PARK, NC 27709
1-877-TROXLER
www.troxlerlabs.com

IF ELECTING TO USE A SIMILAR DEVICE, PROVIDE PROOF THAT THE DEVICE HAS BEEN USED ON PREVIOUS PROJECTS WITH ACCEPTABLE RESULTS OR CONSTRUCT A TEST SECTION PRIOR TO THE BEGINNING OF WORK AND DEMONSTRATE WEDGE COMPACTION TO THE SATISFACTION OF THE ENGINEER. SHORT SECTIONS OF HANDWORK WILL BE ALLOWED WHEN NECESSARY FOR TRANSITIONS AND TURNOUTS OR OTHERWISE AUTHORIZED BY THE ENGINEER.

IN ADDITION TO THE REQUIREMENTS OF 401.16, MAKE THE FIRST ROLLER PASS 8 TO 12 INCHES AWAY FROM TAPERED EDGE. DO NOT ROLL THE TAPER.

ITEM 623 - MONUMENT BOX(ES) ADJUSTED TO GRADE

ALL WORK RELATED TO ADJUSTING MONUMENT BOXES TO GRADE WILL BE IN ACCORDANCE TO SECTION 623.04 & 623.05 OF THE 2013 ODOT CONSTRUCTION AND MATERIALS SPECIFICATIONS.

THE MONUMENT BOX TO BE ADJUSTED MAY OR MAY NOT HAVE AN EXISTING ADJUSTABLE FRAME. THE WORK SHALL CONSIST OF ADJUSTING THE EXISTING MONUMENT BOX TO THE SATISFACTION OF THE ENGINEER. THE CONTRACTOR IS REMINDED TO FIELD CHECK ALL ADJUSTMENT TO GRADE ITEMS PRIOR TO BIDDING, AS NO ADDITIONAL COMPENSATION WILL BE GRANTED FOR LABOR AND MATERIALS REQUIRED TO SATISFACTORILY ADJUST CASTINGS WITHOUT ADJUSTABLE FRAMES.

APPROXIMATE LOCATION OF KNOWN MONUMENT BOXES:
(02/STR/PV):

SLM 16.85
SLM 17.02
SLM 17.15
SLM 18.92
SLM 17.08
SLM 17.19

CALCULATED KCK
CHECKED KRB

GENERAL NOTES

ASD-511-(14.07)(18.33)
ASD-302-10.89

DESIGN FILE: i:\projects\88811\roadway\sheets\88811GN001.dgn MODELNAME: Design

DRAINAGE

ITEM 611 - CASTINGS ADJUSTED TO GRADE

THE CASTING TO BE ADJUSTED MAY OR MAY NOT HAVE AN EXISTING FRAME. THE WORK SHALL CONSIST OF ADJUSTING THE EXISTING CASTING TO THE SATISFACTION OF THE ENGINEER. IT IS NOT INTENDED TO PLACE NEW FRAMES WHERE NONE CURRENTLY EXIST. THE CONTRACTOR IS REMINDED TO FIELD CHECK ALL ADJUSTMENT TO GRADE ITEMS PRIOR TO BIDDING, AS NO ADDITIONAL COMPENSATION WILL BE GRANTED FOR LABOR AND MATERIALS REQUIRED TO SATISFACTORILY ADJUST CASTINGS WITHOUT FRAMES.

MANHOLES ADJUSTED TO GRADE: 6 EACH (04/S<2/PV) 1 EACH (02/STR/PV)

CATCH BASIN ADJUSTED TO GRADE: 3 EACH (04/S<2/PV)

APPROXIMATE LOCATIONS OF KNOWN CASTINGS

ASD-511: 14.07-18.00
ASD-302: 10.84-11.22
ASD-511: 18.33-27.64

MANHOLE
14.07
14.15
14.19
14.20
14.32
14.48
25.12

CATCH BASIN
14.07
14.14
14.19

WATER VALVE
14.19
14.21
14.23
14.32
14.33
14.48

PAVEMENT

PAVEMENT CORING INFORMATION

COUNTY	ROUTE	SLM	ASPHALT	CONCRETE	LOCATION	DIRECTION	YEAR
ASD	511	18.85	12.0	0.0	LWP	NB/SB	2013
ASD	511	18.85	13.0	0.0	RWP	NB/SB	2013
ASD	511	18.85	8.0	0.0	SH	NB/SB	2013
ASD	511	19.70	12.0	0.0	LWP	NB/SB	2013
ASD	511	19.70	13.0	0.0	RWP	NB/SB	2013
ASD	511	19.70	7.0	0.0	SH	NB/SB	2013
ASD	511	21.07	15.0	0.0	LWP	NB/SB	2013
ASD	511	21.07	14.0	0.0	RWP	NB/SB	2013
ASD	511	21.07	7.0	0.0	SH	NB/SB	2013
ASD	511	21.86	13.0	0.0	LWP	NB/SB	2013
ASD	511	21.86	13.0	0.0	RWP	NB/SB	2013
ASD	511	21.86	7.0	0.0	SH	NB/SB	2013
ASD	511	21.9	8.0	0.0	Crack	NB/SB	2013
ASD	511	23.09	11.0	0.0	LWP	NB/SB	2013
ASD	511	23.09	13.0	0.0	RWP	NB/SB	2013
ASD	511	23.09	6.0	0.0	SH	NB/SB	2013
ASD	511	23.2	5.0	0.0	Crack	NB/SB	2013
ASD	511	23.5	7.0	0.0	Crack	NB/SB	2013
ASD	511	24.33	13.0	0.0	LWP	NB/SB	2013
ASD	511	24.33	14.0	0.0	RWP	NB/SB	2013
ASD	511	24.33	8.0	0.0	SH	NB/SB	2013
ASD	511	24.6	8.0	0.0	Crack	NB/SB	2013
ASD	511	25.49	14.0	0.0	LWP	NB/SB	2013
ASD	511	25.49	13.0	0.0	RWP	NB/SB	2013
ASD	511	25.49	8.0	0.0	SH	NB/SB	2013
ASD	511	26.62	13.0	0.0	LWP	NB/SB	2013
ASD	511	26.62	14.0	0.0	RWP	NB/SB	2013
ASD	511	26.62	8.0	0.0	SH	NB/SB	2013
ASD	511	27.60	14.0	0.0	LWP	NB/SB	2013
ASD	511	27.60	14.0	0.0	RWP	NB/SB	2013
ASD	511	27.60	9.0	0.0	SH	NB/SB	2013

INTERSECTIONS AND DRIVES

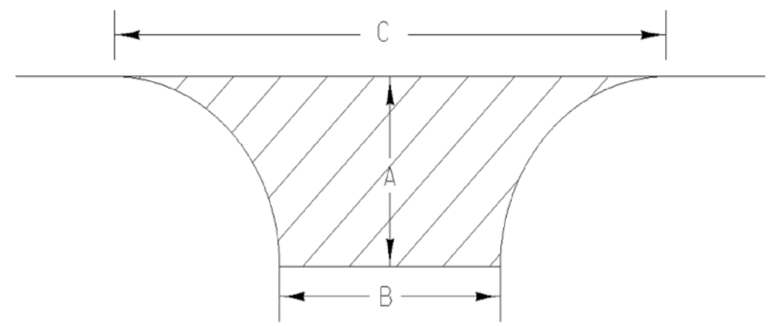
RURAL-INTERSECTIONS SHALL BE PLANED AND PAVED TO THE END OF THE RADII OR AS DIRECTED BY THE ENGINEER. (TO PROVIDE A SMOOTH TRANSITION BETWEEN THE TWO HIGHWAYS, AND TO ELIMINATE WATER POCKETS).

URBAN-INTERSECTIONS SHALL BE PLANED AND PAVED TO THE BACK OF CROSSWALKS OR AS DIRECTED BY THE ENGINEER. (TO PROVIDE A SMOOTH TRANSITION BETWEEN THE TWO HIGHWAYS, AND TO ELIMINATE WATER POCKETS).

EXISTING PAVED DRIVES SHALL BE PAVED SO AS TO PROVIDE A SMOOTH TRANSITION BETWEEN THE HIGHWAY AND THE DRIVE, (DISTANCE FROM EDGE OF ROADWAY MAY VARY AT EACH DRIVE) AS DIRECTED BY THE ENGINEER.

EXISTING AGGREGATE DRIVES SHALL BE PAVED WITH AN APRON AN AVERAGE WIDTH OF 4 FT. THE SLOPE OF THIS APRON SHALL BE THE SAME AS THE ADJACENT PAVEMENT SLOPE OR AS DIRECTED BY THE ENGINEER. ANY GRADING NEEDED TO PAVE THE APRON SHALL BE INCLUDED IN THE RELATED ASPHALT ITEM FOR PAYMENT. ITEM 617 COMPACTED AGGREGATE, AS PER PLAN SHALL BE PLACED ADJACENT TO THIS APRON TO PROVIDE A SMOOTH TRANSITION FROM THE APRON TO THE EXISTING DRIVE, (WIDTH OF THIS 617 APPLICATION MAY VARY) AS DIRECTED BY THE ENGINEER. AN ADDITIONAL QUANTITY OF ITEM 617 HAS BEEN ESTIMATED TO COMPLETE THIS WORK AND IS SHOWN AS AN EXTRA AREA ON THE PAVEMENT & SHOULDER DATA SHEET.

ANY HAZARD OR UNSAFE CONDITION RESULTING FROM THE ABOVE WORK MUST BE CORRECTED IMMEDIATELY. THE CONTRACTOR IS REMINDED OF SECTIONS 105.01, 107.07 & 614.02A OF THE CONSTRUCTION AND MATERIALS SPECIFICATIONS.



Intersection Name	A (ft.)	B (ft.)	C (ft.)	Area (sy)
TROY RD. (RT)	34	32	140	257
BELLE AVE. (RT)	8	20	26	20
TWINS DR. (RT)	8	38	54	39
DELAFIELD AVE. (RT)	NO TAPER			
USR 250	46	26	96	252
	SUSPEND & RESUME AT EXISTING JOINT			
USR 250	44	26	84	222
WESTLAKE DR.	12	62	110	104
EASTLAKE DR.	14	20	50	47
TWP RD. 1104 (LT)	12	35	64	60
TWP RD. 1104 (RT)	12	28	58	51
TWP RD. 975 (RT)	14	20	48	46
TWP RD. 984 (LT)	10	38	68	53
TWP RD. 964 (RT)	22	36	92	134
TWP RD. 754 (RT)	12	26	58	49
TWP RD. 704 (LT)	12	32	56	53
CO RD. 620 (L)	14	36	64	71
CO RD. 620 (R)	14	26	54	55
TWP RD. 564 (RT)	14	28	56	58
CO RD. 500 (LT)	26	18	42	75
CO RD. 500 (LT)	52	18	46	158
CO RD. 500 (RT)	16	18	34	41
CO RD. 500 (RT)	12	18	38	33
TWP RD. 462 (LT)	16	26	66	70
TWP RD. 462 (RT)	16	26	68	71
TWP RD. 350 (LT)	18	30	66	84
TWP RD. 350 (RT)	18	26	62	76
USR 224	16	46	82	103
	SUSPEND & RESUME AT EXISTING JOINT			
USR 224	16	46	88	107
TWP RD. 150 (LT)	16	28	64	71
TWP RD. 150 (RT)	16	28	68	73
CO RD. 40 (LT)	14	32	62	65
CO RD. 40 (RT)	14	40	68	77
Total Intersection Areas				2675

ITEM 251 - PARTIAL DEPTH PAVEMENT REPAIR
ITEM 253 - PAVEMENT REPAIR

THESE ITEMS OF WORK SHALL CONSIST OF THE REMOVAL OF THE EXISTING PAVEMENT OR PAVED BERM WHICH MAY BE ASPHALT, BRICK, CONCRETE, OR A COMBINATION OF EACH, IN AREAS OF EXISTING PAVEMENT FAILURE. CORING HAS BEEN PERFORMED TO HELP DETERMINE THE COMPONENTS THAT MAY BE ENCOUNTERED DURING THIS ITEM OF WORK. THE PAVEMENT CORING INFORMATION IS SHOWN ON THIS PLAN SHEET.

PAVEMENT REPAIR SHALL BE PERFORMED AFTER PAVEMENT PLANING AND BEFORE PLACEMENT OF THE INTERMEDIATE AND/OR SURFACE COURSE. THE DEPTH OF REMOVAL SHALL BE SUFFICIENT TO REMOVE ALL DETERIORATED PAVEMENT WITH A MAXIMUM DEPTH OF 12", BASED ON THE PAVEMENT DESIGN AND AN AVERAGE DEPTH OF 3" AND AN AVERAGE WIDTH OF 4 FT FOR ESTIMATING PURPOSES.

THE CONTRACTOR SHALL BE CAPABLE OF PERFORMING PAVEMENT REPAIRS 2 FEET WIDE.

REPLACEMENT MATERIAL SHALL BE ITEM 301, ITEM 448 TYPE 2, OR ITEM 442 19MM MATERIAL AND SHALL BE PLACED AND COMPACTED TO FINISH FLUSH WITH THE ADJACENT PAVEMENT SURFACE. ITEM 301 ASPHALT CONCRETE, PG64-22 CAN BE USED WHEN THE DEPTH OF THE REPAIR IS BETWEEN 3" AND 12" WITH A MAXIMUM PAVEMENT LIFT OF 6". ITEM 448 TYPE 2 OR ITEM 442 19MM CAN BE USED WHEN THE DEPTH OF THE REPAIR IS BETWEEN 1.5" AND 5" WITH A MAXIMUM PAVEMENT LIFT OF 3". THE CONTRACTOR HAS THE OPTION OF USING EITHER ITEM 301, ITEM 448 TYPE 2, OR ITEM 442 19MM MATERIAL WHEN THE PAVEMENT REPAIR IS BETWEEN 3" AND 5" DEEP. ITEM 448 TYPE 2 OR ITEM 442 19MM MATERIAL SHALL BE PG64-22 FOR MEDIUM MIX DESIGN PAVEMENTS AND PG64-28 FOR HEAVY MIX DESIGN PAVEMENTS.

PAYMENT SHALL INCLUDE ALL LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO COMPLETE THE PAVEMENT REPAIR. FOR PAYMENT PURPOSES ITEM 251 PARTIAL DEPTH PAVEMENT REPAIR IS TO BE A MAXIMUM OF 4" DEEP AND ITEM 253 PAVEMENT REPAIR IS FOR DEPTHS GREATER THAN 4". PAYMENT WILL BE MADE AT THE UNIT BID PRICE PER CUBIC YARD, (BY TICKET WEIGHT CONVERSION), OF ITEM 251 - PARTIAL DEPTH PAVEMENT REPAIR OR ITEM 253 - PAVEMENT REPAIR. THE FOLLOWING ESTIMATED QUANTITIES ARE PROVIDED IN THE GENERAL SUMMARY. LOCATIONS ARE PROVIDED FOR INFORMATION ONLY AND ARE TO BE USED AS DIRECTED BY THE ENGINEER:

THE MAJORITY (95%±) OF PARTIAL DEPTH REPAIRS ARE LONGITUDINAL.

SR 511 ITEM 251-PARTIAL DEPTH PAVEMENT REPAIR (01/S<2/PV) 51 CU YD
14.07-14.53 51 CU YD

SR 511 ITEM 251-PARTIAL DEPTH PAVEMENT REPAIR (03/S<2/PV) 83 CU YD
14.53-15.28 83 CU YD

SR 511 ITEM 251-PARTIAL DEPTH PAVEMENT REPAIR (02/STR/PV) 301 CU YD
15.28-16.00 80 CU YD
16.00-17.00 111 CU YD
17.00-17.99 110 CU YD

SR 302 OVERLAP WITH SR 511 ITEM 251-PARTIAL DEPTH PAVEMENT REPAIR (02/STR/PV) 36 CU YD
10.89-11.22 36 CU YD

SR 511 ITEM 251-PARTIAL DEPTH PAVEMENT REPAIR (02/STR/PV) 1029 CU YD
18.33-19.00 74 CU YD
19.00-20.00 110 CU YD
20.00-21.00 110 CU YD
21.00-22.00 112 CU YD
22.00-23.00 111 CU YD
23.00-24.00 110 CU YD
24.00-25.00 111 CU YD
25.00-26.00 110 CU YD
26.00-27.00 111 CU YD
27.00-27.64 70 CU YD

SR 511 ITEM 253-PAVEMENT REPAIR (01/S<2/PV) 2 CU YD
SR 511 ITEM 253-PAVEMENT REPAIR (03/S<2/PV) 1 CU YD
SR 511 & SR 302 OVERLAP ITEM 253-PAVEMENT REPAIR (02/STR/PV) 22 CU YD

CALCULATED CAG
CHECKED KRB

GENERAL NOTES

ASD-511-(14.07)(18.33)
ASD-302-10.89

ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (NON CURBED SECTION)

THE INTENT OF THE PLANING IS TO MILL THE SPECIFIED DEPTH AT THE CENTER OF PAVEMENT AT NON-CURBED AREAS. THE PAVEMENT SLOPE SHALL BE 0.010 MINIMUM AND 0.016 PREFERRED, CONTINUOUS BETWEEN THE CROWN AND THE PROPOSED EDGELINE/SHOULDER. THE MILLING DEPTH SHALL BE CONTROLLED FROM THE CENTER OF PAVEMENT IN CONFORMANCE WITH THE ABOVE GUIDELINES.

AT SLM 25.10 TO SLM 27.64, PLANE 1.5" AT THE CENTERLINE AND A DEPTH OF 2.5" MAX ON OUTSIDE EDGE.

SPECIAL ATTENTION SHALL BE GIVEN TO SUPERELEVATED CURVES. THE SUPERELEVATION SHALL BE MAINTAINED AND/OR RESTORED, IF NECESSARY, AS DIRECTED BY THE ENGINEER. IF THERE IS NO INFORMATION IN THE PLANS TO CHANGE THE SUPERELEVATION, THE INTENT IS TO MAINTAIN THE EXISTING SUPERELEVATION.

THE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE TO ALL CATCH BASINS AND INLETS.

THE PROGRESSION OF THE PLANING SHALL PROCEED IN SUCH A MANNER THAT NORMAL TRAFFIC WILL NOT BE REQUIRED TO RUN OVER THE PLANED ROADWAY SURFACE MORE THAN FOURTEEN (14) CALENDAR DAYS. FOR EACH CALENDAR DAY BEYOND THE 14 DAYS THAT THE ROADWAY REMAINS EXPOSED TO THE PLANED SURFACE, THE CONTRACTOR WILL BE ASSESSED A DISINCENTIVE FEE OF $1000 PER DAY.

PAYMENT SHALL INCLUDE ALL LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO COMPLETE THE PAVEMENT PLANING, ASPHALT CONCRETE. PAYMENT WILL BE MADE AT THE UNIT BID PRICE PER SQUARE YARD OF ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE.

ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (CURBED SECTION)

THE INTENT OF THE PLANING IS TO MILL THE SPECIFIED DEPTH ALONG THE CURB CONTINGENT ON THE FOLLOWING: THE MAXIMUM CROSS SLOPE SHALL BE 0.02 WHILE THE MINIMUM CROSS SLOPE SHALL BE 0.01. THE PAVEMENT SLOPE SHALL BE CONTINUOUS BETWEEN THE CROWN AND THE CURB WHILE TRYING TO ACHIEVE THE TYPICAL CROSS SLOPE OF 0.016. THE CROWN OF THE PAVEMENT SHALL BE LOCATED BETWEEN THE TRAVELED LANES, OR AS DIRECTED BY THE ENGINEER. THE MILLING DEPTH SHALL BE CONTROLLED FROM THE CURB, TO PRODUCE A CROSS SLOPE IN CONFORMANCE WITH THE ABOVE GUIDELINES.

SPECIAL ATTENTION SHALL BE GIVEN TO SUPERELEVATED CURVES. THE SUPERELEVATION SHALL BE MAINTAINED AND/OR RESTORED, IF NECESSARY, AS DIRECTED BY THE ENGINEER. IF THERE IS NO INFORMATION IN THE PLANS TO CHANGE THE SUPERELEVATION, THE INTENT IS TO MAINTAIN THE EXISTING SUPERELEVATION.

THE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE INTO ALL CATCH BASINS AND INLETS.

THE PROGRESSION OF THE PLANING SHALL PROCEED IN SUCH A MANNER THAT NORMAL TRAFFIC WILL NOT BE REQUIRED TO RUN OVER THE PLANED ROADWAY SURFACE MORE THAN FOURTEEN (14) CALENDAR DAYS. THE 14 CALENDAR DAYS SHALL BE CONSIDERED AN INTERIM COMPLETION DATE (SECTION 108) AND FOR EACH CALENDAR DAY BEYOND THE 14 DAYS THAT THE ROADWAY REMAINS EXPOSED TO THE PLANED SURFACE, THE CONTRACTOR WILL BE ASSESSED A DISINCENTIVE FEE OF $1000 PER DAY.

PAYMENT SHALL INCLUDE ALL LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO COMPLETE THE PAVEMENT PLANING, ASPHALT CONCRETE. PAYMENT WILL BE MADE AT THE UNIT BID PRICE PER SQUARE YARD OF PAVEMENT PLANING, ASPHALT CONCRETE.

ITEM 254 - PATCHING PLANED SURFACE

AN ESTIMATED QUANTITY OF ITEM 254 - PATCHING PLANED SURFACE HAS BEEN SET UP TO BE USED AS DIRECTED BY THE ENGINEER AS DESCRIBED IN CMS 254.04. THE LIMIT OF THE PATCHING DEPTH IS 0 TO 2.5 INCHES.

ITEM 442 - ASPHALT CONCRETE INTERMEDIATE COURSE, 9.5MM, TYPE A (448), AS PER PLAN

THIS ITEM SHALL BE USED FOR CORRECTION OF CROWN, PROFILE AND ANY OTHER IRREGULARITIES.

ALL OPEN TRANSVERSE JOINTS SHALL BE TAPERED TO MEET EXISTING PAVEMENT BEFORE INTRODUCING TRAFFIC. A "BUMP" SIGN (W8-1-36) SHALL BE ERECTED ON EACH SIDE OF TRANSVERSE JOINTS LEFT OPEN OVER NIGHT, INCLUDING A SPEED ADVISORY SIGN. THESE SIGNS SHALL BE REMOVED IMMEDIATELY AFTER JOINT HAS BEEN CLOSED. PLACEMENT OF SIGNS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 614 MAINTAINING TRAFFIC.

REQUIREMENTS OF 442 APPLY EXCEPT AS FOLLOWS:
MIX DESIGN: FOR Ndes USE 50 GYRATIONS, FOR Nmax USE 75 GYRATIONS.
MINIMUM TOTAL PG BINDER CONTENT IS 6.0 PERCENT.
USE A PG 64-22 BINDER.
MAXIMUM RECLAIMED ASPHALT CONCRETE PAVEMENT IS 20 PERCENT.
QUALITY CONTROL: DO NOT PERFORM Nmax IN QUALITY CONTROL TESTING. DO NOT TAKE EXTRA ASPHALT BINDER SAMPLES AS OUTLINED IN CMS 442.05.

ROLLER REQUIREMENTS WITHIN THE CITY OF ASHLAND

WITHIN THE CITY OF ASHLAND (APP. SLM 14.07 TO 14.53), THE CONTRACTOR SHALL NOT USE A VIBRATORY ROLLER TO COMPACT THE ASPHALT CONCRETE.

ITEM 442 - ASPHALT CONCRETE SURFACE COURSE, 9.5 MM, TYPE A (446), AS PER PLAN WITHIN THE CITY OF ASHLAND, ASD-511-14.07 TO 14.53

ALL OPEN TRANSVERSE JOINTS SHALL BE TAPERED TO MEET EXISTING PAVEMENT BEFORE INTRODUCING TRAFFIC. A "BUMP" SIGN (W8-1-36) SHALL BE ERECTED ON EACH SIDE OF TRANSVERSE JOINTS LEFT OPEN OVER NIGHT, INCLUDING A SPEED ADVISORY SIGN. THESE SIGNS SHALL BE REMOVED IMMEDIATELY AFTER JOINT HAS BEEN CLOSED. PLACEMENT OF SIGNS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 614 MAINTAINING TRAFFIC.

CARE SHALL BE TAKEN TO MATCH EXISTING PAVEMENT ELEVATIONS AT EXISTING PAVED BERMS, DRIVES, INTERSECTIONS, ETC.

REQUIREMENTS OF 442 APPLY EXCEPT AS FOLLOWS:
MIX DESIGN: FOR Ndes USE 50 GYRATIONS, FOR Nmax USE 75 GYRATIONS.
MINIMUM TOTAL PG BINDER CONTENT IS 6.0 PERCENT.
USE A PG 64-22 BINDER.
MAXIMUM RECLAIMED ASPHALT CONCRETE PAVEMENT IS 20 PERCENT.
WHEN AN AGGREGATE SOURCE IS SPECIALLY DESIGNATED WITH AN SR ON THE AGGREGATE GRAVITY LIST DO NOT USE THE AGGREGATE EXCEPT AS ALLOWED FOR MEDIUM TRAFFIC IN THE GUIDELINES FOR MAINTAINING ADEQUATE PAVEMENT FRICTION IN SURFACE PAVEMENT.
QUALITY CONTROL: DO NOT PERFORM Nmax IN QUALITY CONTROL TESTING. DO NOT TAKE EXTRA ASPHALT BINDER SAMPLES AS OUTLINED IN CMS 442.05.

THE CONTRACTOR IS REQUIRED TO COMPLETE A TEST STRIP OF THE ITEM 442: ASPHALT CONCRETE SURFACE COURSE, 9.5 MM TYPE A (446), AS PER PLAN. THE TEST STRIP SHALL CONSIST OF 50 TO 100 TONS OF THE CONTRACT SPECIFIED ASPHALT SURFACE COURSE PLACED AND COMPACTED WITHOUT THE USE OF VIBRATORY ROLLERS. ENSURE BASIC COMPACTION PRACTICES SUCH AS PROPER MIX TEMPERATURES, ROLLERS TIGHT TO THE PAVER AND ADEQUATE NUMBER OF ROLLERS VS. PAVER SPEED ARE FOLLOWED. THE CONTRACTOR SHALL OBTAIN AND TEST 3 RANDOM CORES OF THE COMPACTED TEST STRIP. IF THE AVERAGE OF THE CORE RESULTS ARE BELOW 92.0 PERCENT ADJUST THE MIX OR COMPACTION AS NECESSARY AND ALLOWABLE PER SPECIFICATION AND REPEAT THE TEST STRIP. DO NOT BEGIN FULL PRODUCTION OF THE ASPHALT SURFACE COURSE UNTIL THE ENGINEER HAS ACCEPTED THE TEST STRIP. THE TEST STRIP WILL BE INCLUDED IN THE FIRST LOT FOR DETERMINING DENSITY FOR PAYMENT. TEST STRIPS ARE INCIDENTAL TO THE PAY ITEM.

TABLE 446.05-1 FOR LOTS WITH 3 COLD JOINT CORES

Mean of Cores [1]	Pay Factor	
	Surface Course	Intermediate Course
98.0% or greater	[2]	[2]
97.0 to 97.9%	0.94	[2]
96.0 to 96.9%	1	0.94
93.4 to 95.9%	1.04 [4]	1
92.4 to 93.3%	1.02 [4]	1
91.4 to 92.3%	1	1
90.4 to 91.3%	0.9	0.94
89.4 to 90.3%	0.8	0.88
88.4 to 89.3%	[3]	[3]
Less than 88.4%	[2]	[2]

[1] Mean of cores as percent of average MSG for the production day.

[2] For surface courses, remove and replace. For other courses, the District will determine whether the material may remain in place. If the District determines the course should be removed and replaced, the Contractor will remove and replace this course and all courses paved on this course. The pay factor for material allowed to remain in place is 0.60.

[3] The District will determine whether the material may remain in place. If the District determines the course should be removed and replaced, the Contractor will remove and replace this course and all courses paved on this course. The pay factor for such material allowed to remain in place is 0.70.

[4] No incentive will be paid if any single cold joint core is less than 90.5%.

ITEM 442 - ASPHALT CONCRETE SURFACE COURSE, 9.5 MM, TYPE A (446), AS PER PLAN

ALL OPEN TRANSVERSE JOINTS SHALL BE TAPERED TO MEET EXISTING PAVEMENT BEFORE INTRODUCING TRAFFIC. A "BUMP" SIGN (W8-1-36) SHALL BE ERECTED ON EACH SIDE OF TRANSVERSE JOINTS LEFT OPEN OVER NIGHT, INCLUDING A SPEED ADVISORY SIGN. THESE SIGNS SHALL BE REMOVED IMMEDIATELY AFTER JOINT HAS BEEN CLOSED. PLACEMENT OF SIGNS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 614 MAINTAINING TRAFFIC.

CARE SHALL BE TAKEN TO MATCH EXISTING PAVEMENT ELEVATIONS AT EXISTING PAVED BERMS, DRIVES, INTERSECTIONS, ETC.

ITEM 442 - ASPHALT CONCRETE SURFACE COURSE, 9.5 MM, TYPE A (446), AS PER PLAN (CONTINUED)

REQUIREMENTS OF 442 APPLY EXCEPT AS FOLLOWS:
MIX DESIGN: FOR Ndes USE 50 GYRATIONS, FOR Nmax USE 75 GYRATIONS.
MINIMUM TOTAL PG BINDER CONTENT IS 6.0 PERCENT.
USE A PG 64-22 BINDER.
MAXIMUM RECLAIMED ASPHALT CONCRETE PAVEMENT IS 20 PERCENT.
WHEN AN AGGREGATE SOURCE IS SPECIALLY DESIGNATED WITH AN SR ON THE AGGREGATE GRAVITY LIST DO NOT USE THE AGGREGATE EXCEPT AS ALLOWED FOR MEDIUM TRAFFIC IN THE GUIDELINES FOR MAINTAINING ADEQUATE PAVEMENT FRICTION IN SURFACE PAVEMENT.
QUALITY CONTROL: DO NOT PERFORM Nmax IN QUALITY CONTROL TESTING. DO NOT TAKE EXTRA ASPHALT BINDER SAMPLES AS OUTLINED IN CMS 442.05.

WATER WORK

ITEM 638 - VALVE BOX ADJUSTED TO GRADE

THE CASTINGS TO BE ADJUSTED MAY OR MAY NOT HAVE AN EXISTING ADJUSTABLE FRAME. THE WORK SHALL CONSIST OF ADJUSTING THE EXISTING VALVE BOX TO THE SATISFACTION OF THE ENGINEER. THE CONTRACTOR IS REMINDED TO FIELD CHECK ALL ADJUSTMENT TO GRADE ITEMS PRIOR TO BIDDING, AS NO ADDITIONAL COMPENSATION WILL BE GRANTED FOR LABOR AND MATERIALS REQUIRED TO SATISFACTORILY ADJUST CASTINGS WITHOUT ADJUSTABLE FRAMES.

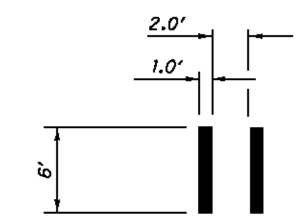
APPROXIMATE LOCATION OF KNOWN VALVE BOXES (SEE SHEET 4)

VALVE BOXES ADJUSTED TO GRADE: (04/S<2/PV) 6 EACH

TRAFFIC CONTROL

ITEM 644 - CROSSWALK LINE, AS PER PLAN

THE MARKING DETAIL SHOWN BELOW SHALL BE APPLIED TO ALL CROSSWALKS WITHIN THE ASHLAND CITY LIMITS TO IMPROVE DRIVER AWARENESS OF THE PEDESTRIAN CROSSINGS. SEE THE CURB RAMP DETAIL SHEET FOR GENERAL LOCATIONS.



MAINTENANCE OF TRAFFIC

ITEM 614 - WORK ZONE MARKING SIGN

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER FOR TEMPORARY WORK ZONE MARKING SIGNS PER THE REQUIREMENTS OF THE CONSTRUCTION AND MATERIALS SPECIFICATIONS, 614.04.

S.R. 511 (04/S<2/PV)
WORK ZONE MARKING SIGN: (W8-H12A-36) NO EDGE LINE = 2 EACH
WORK ZONE MARKING SIGN: (R4-1-24) DO NOT PASS = 2 EACH

S.R. 511 (03/S<2/PV)
WORK ZONE MARKING SIGN: (W8-H12A-36) NO EDGE LINE = 2 EACH
WORK ZONE MARKING SIGN: (R4-1-24) DO NOT PASS = 3 EACH
WORK ZONE MARKING SIGN: (R4-2-24) PASS WITH CARE = 2 EACH

S.R. 303 (02/STR/PV)
WORK ZONE MARKING SIGN: (W8-H12A-36) NO EDGE LINE = 27 EACH
WORK ZONE MARKING SIGN: (R4-1-24) DO NOT PASS = 23 EACH
WORK ZONE MARKING SIGN: (R4-2-24) PASS WITH CARE = 23 EACH

TOTAL = 84 EACH

ITEM 614 - ASPHALT CONCRETE FOR MAINTAINING TRAFFIC

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY TO CONSTRUCT A TEMPORARY ASPHALT WEDGE FROM THE EXISTING PAVEMENT TO THE PLANED SURFACE AT BUTT JOINTS AND OTHER LOCATIONS THAT RESULT IN A DROP-OFF. THIS QUANTITY SHALL ALSO BE USED AT PLANED SURFACES WHERE A TEMPORARY ASPHALT WEDGE IS NEEDED AROUND CASTINGS. BEFORE RESURFACING OF THE PAVEMENT, THE TEMPORARY WEDGE SHALL BE REMOVED AND THE COST SHALL BE CONSIDERED INCIDENTAL TO ITEM 614 - ASPHALT CONCRETE FOR MAINTAINING TRAFFIC.

ITEM 614 - ASPHALT CONCRETE FOR MAINTAINING TRAFFIC
(04/S<2/PV): 5 CU YD
(03/S<2/PV): 5 CU YD
(02/STR/PV): 40 CU YD

BUTT JOINTS

BUTT JOINTS SHALL NOT BE CUT AND LEFT OPEN TO TRAFFIC. THEY SHALL BE FILLED IN WITH A TEMPORARY ASPHALT CONCRETE WEDGE USING ITEM 614 ASPHALT CONCRETE FOR MAINTAINING TRAFFIC.

CONSTRUCTION "BUMP" (W8-1-36) AND "ADVISORY SPEED" (W13-1-24) SIGNS SHALL BE ERECTED AND MAINTAINED DURING THE PERIOD THE BUTT JOINT IS LEFT OPEN. THESE SIGNS SHALL BE PAID FOR UNDER THE LUMP SUM ITEM FOR ITEM 614 MAINTAINING TRAFFIC.

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.

446 DENSITY ACCEPTANCE WITH FLAGGER CLOSING OF A 2-LANE HIGHWAY FOR PAVING OPERATIONS

THIS PLAN NOTE APPLIES ONLY TO A FLAGGER CLOSURE OF ONE LANE OF A 2-LANE HIGHWAY DURING PAVING OPERATIONS WHEN USING STANDARD CONSTRUCTION DRAWING MT-97.11 OR MT-97.12, AND ALLOWS A PAVING OPERATION TO PROCEED CONCURRENTLY WITH THE MARKING AND CUTTING OF CORES REQUIRED FOR 446 DENSITY ACCEPTANCE.

IN ALL CASES THE CONTRACTOR SHOULD LENGTHEN THEIR LANE CLOSURES TO THE MAXIMUM PERMISSIBLE LENGTH DETAILED IN THE ABOVE REFERENCED STANDARD CONSTRUCTION DRAWINGS TO ALLOW THE ENGINEER ADEQUATE TIME TO MARK THE REQUIRED CORE LOCATIONS AND FOR CORE CUTTING OPERATIONS.

THE CONTRACTOR WILL PROVIDE TO THE ENGINEER THE PLANNED QUANTITY THAT WILL BE PLACED FOR THE DAY'S PRODUCTION. EACH DAY'S PRODUCTION WILL BE CONSIDERED ONE LOT AND INCLUDES SHOULDERS. TEN CORES WILL BE OBTAINED BY THE CONTRACTOR FOR EACH LOT AT RANDOM LOCATIONS DETERMINED BY THE ENGINEER. THE ENGINEER WILL DIVIDE A LOT INTO FIVE EQUAL SUBLOTS AND CALCULATE TWO RANDOM CORE LOCATIONS IN EACH SUBLOT AS DESCRIBED IN C&MS 446.05.

THE ENGINEER WILL MARK THE CORE LOCATIONS AFTER THE PAVING OPERATION (INCLUDING THE FINISH ROLLER) HAS COMPLETELY PASSED THE RANDOMLY SELECTED CORE LOCATION. THE CONTRACTOR SHOULD DETERMINE WHEN IT IS APPROPIATE TO START THE CORE DRILL OPERATION AND BEGIN CUTTING CORES WHEN THE NEWLY PLACED PAVEMENT SURFACE TEMPERATURE IS LESS THAN 140°F. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE LANE CLOSURE DURING ALL PAVING, CORE MARKING, AND CORING OPERATIONS PER THE REQUIREMENTS OF THE STANDARD CONSTRUCTION DRAWING USED FOR THE PAVING OPERATION.

ITEM SPECIAL. MAILBOX SUPPORT SYSTEM

THIS ITEM OF WORK SHALL CONSIST OF THE REMOVAL OF EXISTING NON-STANDARD MAILBOX SUPPORTS AND FURNISHING AND ERECTING MAILBOX SUPPORTS AND ANY ASSOCIATED HARDWARE IN ACCORDANCE WITH THE DETAILS SHOWN, AND ATTACHING AN OWNER SUPPLIED MAILBOX, AT LOCATIONS DETERMINED BY THE ENGINEER.

IN ABSENCE OF A NEW BOX SUPPLIED BY THE OWNER THE CONTRACTOR SHALL SALVAGE THE EXISTING BOX AND PLACE IT ON THE NEW SUPPORT. DUE CARE SHALL BE EXERCISED IN SUCH AN OPERATION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING OR REPLACING ANY BOX DAMAGED BY IMPROPER HANDLING, AS JUDGED AND DIRECTED BY THE ENGINEER.

THE BOX SHALL BE SECURELY AND NEATLY ATTACHED BY THE CONTRACTOR TO THE NEW SUPPORT. THE CONTRACTOR SHALL SUPPLY ALL NECESSARY ATTACHMENT HARDWARE (NUTS, BOLTS, PLATES, SPACERS AND WASHERS) AS NECESSARY TO ACCOMODATE THE COMPLETE INSTALLATION. SUPPORT HARDWARE SHALL ACCOMODATE EITHER A SINGLE OR A DOUBLE MAILBOX INSTALLATION, AND NO MORE THAN TWO MAILBOXES MAY BE MOUNTED ON A SINGLE POST. [HARDWARE SHALL BE COMMERCIAL GRADE GALVANIZED STEEL.]

WOOD POSTS SHALL BE NOMINAL 4 IN. x 4 IN. (S4S) OR 4½IN. DIAMETER ROUND, AND CONFORM TO 710.14. STEEL POSTS SHALL BE NOMINAL PIPE SIZE 2 IN. I.D., AND CONFORM TO AASHTO M 181.

POSTS SHALL BE SET AS PER THE FIRST PARAGRAPH OF 606.03, AND SHALL IN NO INSTANCE BE ENCASED IN CONCRETE.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WORK WITH THE LOCAL POST MASTER AND NOTIFYING THE PROPERTY OWNERS PRIOR TO WORK.

GROUP MAILBOX SUPPORTS SHALL BE PLACED ON 3 FT. CENTERS AND THE TURNOUT LENGTHENED TO ACCOMODATE THE GROUPING.

WHERE GUARDRAIL EXISTS, MAILBOXES AND THEIR SUPPORTS SHALL BE PLACED BEHIND THE GUARDRAIL. SUPPORTS MUST STILL MEET THE BREAKAWAY REQUIREMENTS LISTED ABOVE.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED AS DESCRIBED ABOVE.

ITEM SPECIAL-MAILBOX SUPPORT SYSTEM, SINGLE

TOTAL (02/STR/PV):_____11 SYSTEMS
TOTAL (03/S<2/PV):_____1 SYSTEMS

MAILBOX APPROACHES

THE MAILBOX APPROACHES SHALL BE PAVED WITH THE CORRESPONDING MAINLINE PAVEMENT TREATMENT AS DETAILED IN THE TYPICAL SECTIONS. THEY SHALL CONFORM AS MUCH AS PRACTICAL TO STANDARD DRAWING BP-4.1 OR AS DIRECTED BY THE ENGINEER.

GRADING SHALL BE PERFORMED IN THESE AREAS TO OBTAIN A BASE WHICH WILL ALLOW THE FINISHED GRADE TO BE FLUSH WITH ADJACENT PAVEMENT. A QUANTITY OF ITEM 617 COMPACTED AGGREGATE, AS PER PLAN HAS BEEN PROVIDED FOR AREAS WHERE THE SHOULDER IS LOW PRIOR TO GRADING AND/OR LOW AREAS CAUSED BY THE REMOVAL OF UNSUITABLE MATERIAL. QUANTITIES TO PERFORM THIS WORK HAVE BEEN INCLUDED IN THE GENERAL SUMMARY AND ARE ESTIMATED AS FOLLOWS.

ITEM 209 - GRADING MAILBOX APPROACHES:
S.R. 511 (02/STR/PV) = 16 EACH

S.R. 511 (03/S<2/PV) = 1 EACH

ITEM 617 - COMPACTED AGGREGATE
S.R. 511 (02/STR/PV) = 32 CU. YD.

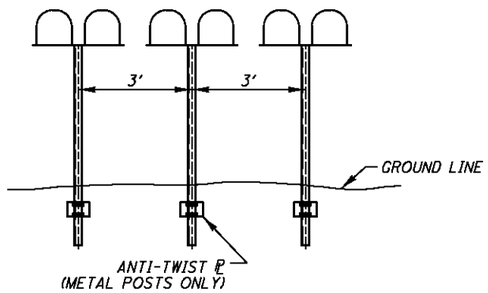
S.R. 511 (03/S<2/PV) = 2 CU. YD.

LOCATIONS OF MAILBOX SUPPORT SYSTEM TO BE REPLACED

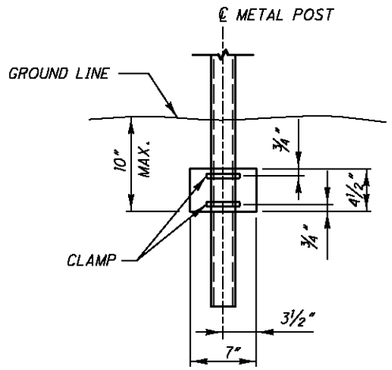
ADDRESSES AND/OR LOCATIONS OF MAILBOX SUPPORT SYSTEM TO BE REPLACED:

SINGLE SUPPORT SYSTEMS:

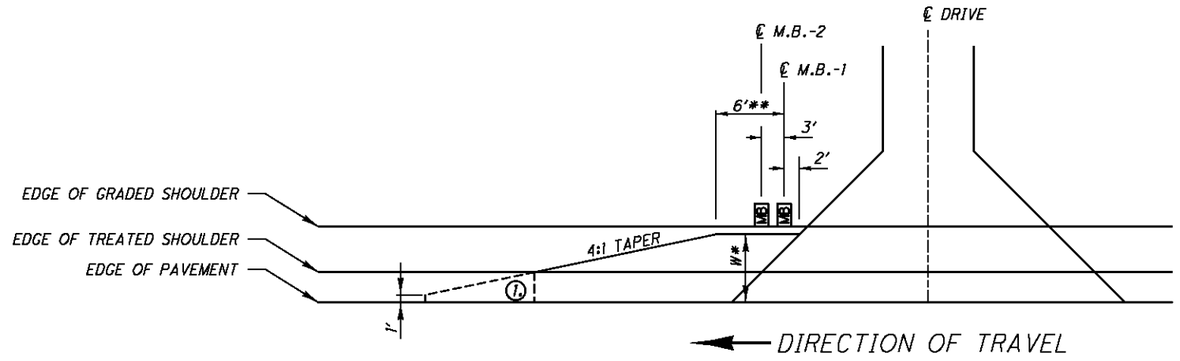
282 S.R. 511
284 S.R. 511
534 S.R. 511
580 S.R. 511
667 S.R. 511
715 S.R. 511
720 S.R. 511
723 S.R. 511
849 S.R. 511
848A S.R. 511
848B S.R. 511
1198 S.R. 511



GROUP MAILBOX INSTALLATION



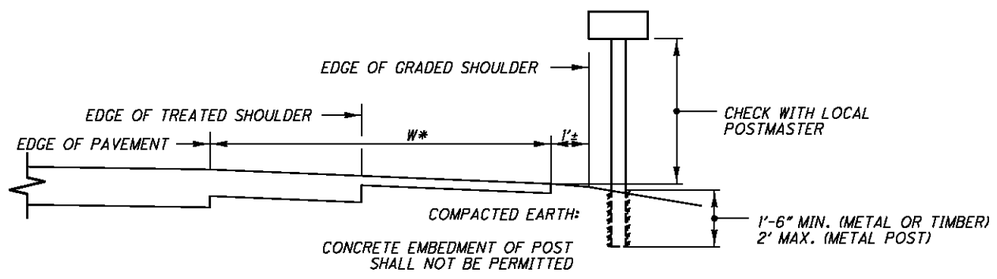
ANTI-TWIST PLATE



① END MAILBOX TURNOUT AT EDGE OF TREATED SHOULDER OR 1' WHICH EVER IS GREATER.

W* NOTES
1) WHERE EXISTING STANDARD MAILBOX POSTS ARE BEHIND GUARDRAIL AND ARE TO REMAIN IN PLACE, TURNOUT WIDTH SHALL EXTEND TO FACE OF GUARDRAIL.
2) WHERE NO GUARDRAIL IS REQUIRED, TURNOUT WIDTH SHALL EXTEND TO FACE OF EXISTING STANDARD MAILBOX WITH MAILBOX REMAINING IN PLACE.
3) IF THE MAILBOX SUPPORT IS SPECIFIED TO BE REMOVED AND REERECTED OR REPLACED, WHERE GUARDRAIL IS REQUIRED, TURNOUT WIDTH SHALL EXTEND TO FACE OF GUARDRAIL AND MAILBOX SHALL BE INSTALLED BEHIND THE GUARDRAIL.
4) IF THE MAILBOX SUPPORT IS SPECIFIED TO BE REMOVED AND REERECTED OR REPLACED, WHERE NO GUARDRAIL IS REQUIRED, TURNOUT WIDTH SHALL BE 6 FT. MINIMUM, EXCEPT WHERE FIELD CONDITIONS WILL NOT PERMIT.

** NOTE
1) 6' FOR SINGLE MAILBOX SUPPORT, ADD 3 FT. FOR EACH ADDITIONAL MAILBOX.



CROSS SECTION / ELEVATION VIEW

FOR DETAILS NOT SHOWN SEE STANDARD DRAWING BP-4.1

CALCULATED MKP CHECKED KRB

MAILBOX FACILITIES

ASD-511-(14.07)(18.33)
ASD-302-10.89

DESIGN FILE: i:\projects\8881\roadway\sheets\8881GM001.dgn MODEL NAME: Default
WORKSTATION nfoster DATE: 12/8/2014

SHEET NUMBER									PARTICIPATION					ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
3	4	5	7	10	13	21	23	24	01/S<2 /PV	02/STR /PV	03/S<2 /PV	04/S<2 /PV	05/STR /BR						
																		ROADWAY	
					225				225					202	30000	225	SF	WALK REMOVED	
					19				19					202	32000	19	FT	CURB REMOVED	
					112.5					112.5				202	38000	112.5	FT	GUARDRAIL REMOVED	
					1675					1675				202	38200	1675	FT	GUARDRAIL REMOVED FOR REUSE	
					2					2				202	42000	2	EACH	ANCHOR ASSEMBLY REMOVED, TYPE A	
					6					6				202	42040	6	EACH	ANCHOR ASSEMBLY REMOVED, TYPE T	
					4					4				202	47000	4	EACH	BRIDGE TERMINAL ASSEMBLY REMOVED	
					1					1				202	47200	1	EACH	BRIDGE TERMINAL ASSEMBLY REMOVED FOR REUSE	
					168.1					168.1				203	20001	168.1	CY	EMBANKMENT, AS PER PLAN	12
					21.92					21.92				209	15000	21.92	STA	RESHAPING UNDER GUARDRAIL	
			17							16	1			209	80000	17	EACH	GRADING MAILBOX APPROACHES	
					112.5					112.5				606	13000	112.5	FT	GUARDRAIL, TYPE 5	
					1625					1625				606	16500	1625	FT	GUARDRAIL REBUILT, TYPE 5	
					50					50				606	16550	50	FT	GUARDRAIL REBUILT, TYPE 5, USING 9 FOOT POSTS	
					225					225				606	17000	225	FT	RAISING TYPE 5 GUARDRAIL	
					2					2				606	25000	2	EACH	ANCHOR ASSEMBLY, TYPE A	
					6					6				606	26500	6	EACH	ANCHOR ASSEMBLY, TYPE T	
					4					4				606	32160	4	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE TST	
					1					1				606	35150	1	EACH	BRIDGE TERMINAL ASSEMBLY REBUILT, TYPE 4	
					150				150					608	52020	150	SF	CURB RAMP, TYPE A2	
					75				75					608	52031	75	SF	CURB RAMP, TYPE B1, AS PER PLAN	22
					94				94					608	52070	94	SF	CURB RAMP, TYPE D	
6										6				623	39500	6	EACH	MONUMENT BOX ADJUSTED TO GRADE	
					45					45				626	00100	45	EACH	BARRIER REFLECTOR	
			12							11	1			SPECIAL	69050100	12	EACH	MAILBOX SUPPORT SYSTEM, SINGLE	7
																		DRAINAGE	
	3											3		611	98630	3	EACH	CATCH BASIN ADJUSTED TO GRADE	
	7									1		6		611	99654	7	EACH	MANHOLE ADJUSTED TO GRADE	
																		PAVEMENT	
				27						25	1	1		209	72051	27	MILE	PREPARING SUBGRADE FOR SHOULDER PAVING, AS PER PLAN	3
	1500								51	1366	83			251	01010	1500	CY	PARTIAL DEPTH PAVEMENT REPAIR	
	25								2	22	1			253	02000	25	CY	PAVEMENT REPAIR	
				197650						179714	11006	6930		254	01000	197650	SY	PAVEMENT PLANING, ASPHALT CONCRETE	
				1967						1787	110	70		254	01600	1967	SY	PATCHING PLANED SURFACE	
				15941						14482	901	558		407	10000	15941	GAL	TACK COAT	
				1647						1647				407	14000	1647	GAL	TACK COAT FOR INTERMEDIATE COURSE	
				8424						7633	491	300		442	00201	8424	CY	ASPHALT CONCRETE SURFACE COURSE, 9.5 MM, TYPE A (446), AS PER PLAN	5
				856						856				442	20101	856	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, 9.5 MM, TYPE A (448), AS PER PLAN	5
			34	1391						1307	83	35		617	10100	1425	CY	COMPACTED AGGREGATE	
																		WATER WORK	
		6										6		638	10800	6	EACH	VALVE BOX ADJUSTED TO GRADE	
																		TRAFFIC CONTROL	
						1002				921	81			621	00100	1002	EACH	RPM	
						1002				921	81			621	54000	1002	EACH	RAISED PAVEMENT MARKER REMOVED	
						26.68				24.58	1.44	0.66		642	00104	26.68	MILE	EDGE LINE, 6", TYPE 1	
						13.47				12.29	0.72	0.46		642	00300	13.47	MILE	CENTER LINE, TYPE 1	
						28						28		642	00490	28	FT	STOP LINE	
						192						192		642	00591	192	FT	CROSSWALK LINE, AS PER PLAN	5
						537				435	102			644	00500	537	FT	STOP LINE	
						102				102				644	00600	102	FT	CROSSWALK LINE	
						2				2				644	01000	2	EACH	RAILROAD SYMBOL MARKING	
						0.1				0.1				646	10010	0.1	MILE	EDGE LINE, 6"	
						0.05				0.05				646	10200	0.05	MILE	CENTER LINE	

CALCULATED KCK
CHECKED KRB

GENERAL SUMMARY

ASD-511-(14.07)(18.33)
ASD-320-10.89

DESIGN FILE: i:\projects\88811\roadway\sheets\88811GG001.dgn
WORKSTATION: kknapp
MODELNAME: Design
DATE: 12/31/2014

SHEET NUMBER									PARTICIPATION					ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
3	4	5	7	10	13	21	23	24	01/S<2 /PV	02/STR /PV	03/S<2 /PV	04/S<2 /PV	05/STR /BR						
																		STRUCTURE 20 FOOT SPAN AND OVER ASD-511-1597 SFN 0305553	
							44.6						44.6	202	11301	44.6	CY	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	27
							257.33						257.33	202	38500	257.33	FT	BRIDGE RAILING REMOVED	
							84						84	202	98200	84	FT	REMOVAL MISC.: TYPE E EXTRUSION	26
							84						84	202	98200	84	FT	REMOVAL MISC.: STRIP SEAL	26
							3576						3576	509	10000	3576	LB	EPOXY COATED REINFORCING STEEL	
							6.2						6.2	511	45711	6.2	CY	CLASS QC1 CONCRETE, ABUTMENT, AS PER PLAN	27
							39.6						39.6	511	34411	39.6	CY	CLASS QC2 CONCRETE, SUPERSTRUCTURE, AS PER PLAN	27
							4.4						4.4	511	53012	4.4	CY	CLASS QC2 CONCRETE, MISC.: APPROACH SLAB REPAIR	27
							134						134	512	10100	134	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
							4.4						4.4	512	33300	4.4	SY	TYPE A WATERPROOFING	
							712						712	513	10201	712	LB	STRUCTURAL STEEL MEMBERS, LEVEL UF, AS PER PLAN	27
							136						136	516	31000	136	FT	JOINT SEALER	
							257.33						257.33	517	70000	257.33	FT	RAILING (TWIN STEEL TUBE)	
					7					7				630	03100	7	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	
					1					1				630	85100	1	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	
					1					1				630	86002	1	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
							428						428	848	10201	428	SY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN (2 3/4")	27
							428						428	848	20000	428	SY	SURFACE PREPARATION USING HYDRODEMOLITION	
							9						9	848	30201	9	CY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN	27
							50						50	848	50000	50	SY	HAND CHIPPING	
													LS	848	50100	LS		TEST SLAB	
							349						349	848	50320	349	SY	EXISTING CONCRETE OVERLAY REMOVED (2 1/4")	
																		STRUCTURE 20 FOOT SPAN AND OVER ASD-511-1715 SFN 0305561	
							235						235	512	10300	235	SY	SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN	
																		STRUCTURE 20 FOOT SPAN AND OVER ASD-511-1854 SFN 0305618	
								318					318	512	10300	318	SY	SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN	
																		STRUCTURE 20 FOOT SPAN AND OVER ASD-511-1957 SFN 0305942	
								71					71	512	10300	71	SY	SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN	
																		STRUCTURE 20 FOOT SPAN AND OVER ASD-511-2584 SFN 0305715	
								100					100	202	38603	100	FT	BRIDGE RAILING REMOVED FOR REUSE, AS PER PLAN	26
								13					13	407	10000	13	GAL	TACK COAT	
								68					68	409	30001	68	FT	SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS, AS PER PLAN	27
								6					6	442	00201	6	CY	ASPHALT CONCRETE SURFACE COURSE, 9.5 MM, TYPE A (446), AS PER PLAN	5
								100					100	517	75600	100	FT	DEEP BEAM BRIDGE RETROFIT RAILING	
																		MAINTENANCE OF TRAFFIC	
													LS	614	12420	LS		DETOUR SIGNING	
		84								73	7	4		614	12460	84	EACH	WORK ZONE MARKING SIGN	
		50								40	5	5		614	13000	50	CY	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC	
						29.5				27.14	1.44	0.92		614	20500	29.5	MILE	WORK ZONE LANE LINE, CLASS II, 642 PAINT	
						199				143		56		614	26200	199	FT	WORK ZONE STOP LINE, CLASS I, 642 PAINT	
									LS	LS	LS	LS	LS	614	11000	LS		MAINTAINING TRAFFIC	
									1	1	1	1	1	619	16010	5	MNTH	FIELD OFFICE, TYPE B	
									LS	LS	LS	LS	LS	623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING	
									LS	LS	LS	LS	LS	624	10000	LS		MOBILIZATION	

CALCULATED KCK CHECKED KRB

GENERAL SUMMARY

ASD-511-(14.07)(18.33)
ASD-302-10.89

DESIGN FILE: i:\projects\88811\roadway\sheets\88811GG001.dgn MODELNAME: Design
WORKSTATION: knapp DATE: 12/31/2014

* - FOR TYPICALS, SEE SHEET 11

COUNTY	ROUTE	LOG POINT TO LOG POINT (STRAIGHT LINE MILEAGE)	LENGTH MILE	LENGTH FEET	WIDTH FEET AVG.	*TYPICAL	PAVEMENT AREA (SQ YD)	254 PAVEMENT PLANING, ASPHALT CONCRETE (1.50") (SQ.YD)	254 PAVEMENT PLANING, ASPHALT CONCRETE 1.50" AT CENTERLINE (SQ. YD)	254 TAPER PLANING, 1.50" TO 0.75" AT CENTERLINE (SQ. YD)	254 PATCHING PLANED SURFACE (SQ.YD)	407 TACK COAT @ 0.08 GAL/SY (GALLON)	407 TACK COAT FOR INTERM. COURSE @ 0.04 GAL/SY (GALLON)	442 ASPHALT CONCRETE SURFACE COURSE, 9.5 MM, TYPE A (446), AS PER PLAN (1.25") INCH	442 ASPHALT CONCRETE SURFACE COURSE, 9.5 MM, TYPE A (446), AS PER PLAN (1.25") CU.YD.	442 ASPHALT CONCRETE SURFACE COURSE, 9.5 MM, TYPE A (446), AS PER PLAN (1.50") INCH	442 ASPHALT CONCRETE SURFACE COURSE, 9.5 MM, TYPE A (446), AS PER PLAN (1.50") CU.YD.	442 ASPHALT CONCRETE INTERMEDIATE COURSE, 9.5 MM, TYPE A (448), AS PER PLAN (0.75") INCH (AVG.)	442 ASPHALT CONCRETE INTERMEDIATE COURSE, 9.5 MM, TYPE A (448), AS PER PLAN (0.75") CU. YD.	442 ASPHALT CONCRETE SURFACE COURSE, 9.5mm, TYPE A (446), AS PER PLAN (SAFETY EDGE) (CU. YD.)	AGGREGATE SHOULDER PROPOSED WIDTH SL (FT)	AGGREGATE SHOULDER PROPOSED WIDTH SR (FT)	AGGREGATE SHOULDER AREA (SQ YD)	209 PREPARING SUBGRADE FOR SHOULDER PAVING, AS PER PLAN (MILE)	617 COMPACTED AGGREGATE 1.5 INCHES AVG. THICKNESS (CU YD)
(04/S<2/PV):																									
ASD	511	14.07	14.19	0.12	634	24.0	1	1,691	1,691			17	135					1.5	70								
ASD	511	14.19	14.53	0.34	1795	24.0	2	4,787	4,787			48	383					1.5	199			9.70	2.0	2.0	798	0.68	33
(03/S<2/PV):																									
ASD	511	14.53	14.76	0.23	1214	24.0	2	3,237	3,237			32	259					1.5	135			6.56	2.0	2.0	540	0.46	22
SUSPEND AND RESUME PAVEMENT TREATMENT AT USR 250																									
ASD	511	14.79	15.28	0.49	2587	24.0	2	6,899	6,899			69	552					1.5	287			13.97	2.0	2.0	1,150	0.98	48
(02/STR/PV):																									
ASD	511	15.28	15.97	0.69	3643	24.0	2	9,715	9,715			97	777					1.5	405			19.68	2.0	2.0	1,619	1.38	67
SUSPEND AND RESUME PAVEMENT TREATMENT AT STR. ASD-511-1597																									
ASD	511	15.99	17.15	1.16	6125	24.0	2	16,333	16,333			163	1,307					1.5	681			33.08	2.0	2.0	2,722	2.32	113
SUSPEND AND RESUME PAVEMENT TREATMENT AT STR. ASD-511-1715																									
ASD	511	17.16	17.99	0.83	4382	24.0	2	11,685	11,685			117	935					1.5	487			23.67	2.0	2.0	1,948	1.66	81
ASD	302	10.89	11.10	0.21	1109	25.0	2	3,081	3,081			31	246					1.5	128			5.99	2.0	2.0	493	0.42	21
SUSPEND AND RESUME PAVEMENT TREATMENT AT STR. ASD-302-1110																									
ASD	302	11.11	11.22	0.11	581	25.0	2	1,614	1,614			16	129					1.5	67			3.14	2.0	2.0	258	0.22	11
ASD	511	18.33	18.54	0.21	1109	24.0	2	2,957	2,957			30	237					1.5	123			5.99	2.0	2.0	493	0.42	21
SUSPEND AND RESUME PAVEMENT TREATMENT AT STR. ASD-511-1854																									
ASD	511	18.55	19.57	1.02	5386	24.0	2	14,363	14,363			144	1,149					1.5	598			29.09	2.0	2.0	2,394	2.04	100
SUSPEND AND RESUME PAVEMENT TREATMENT AT STR. ASD-511-1957																									
ASD	511	19.58	20.00	0.42	2218	24.0	2	5,915	5,915			59	473					1.5	246			11.98	2.0	2.0	986	0.84	41
ASD	511	20.00	21.00	1.00	5280	24.0	2	14,080	14,080			141	1,126					1.5	587			28.52	2.0	2.0	2,347	2.00	98
ASD	511	21.00	22.00	1.00	5280	24.0	2	14,080	14,080			141	1,126					1.5	587			28.52	2.0	2.0	2,347	2.00	98
ASD	511	22.00	23.00	1.00	5280	24.0	2	14,080	14,080			141	1,126					1.5	587			28.52	2.0	2.0	2,347	2.00	98
ASD	511	23.00	24.00	1.00	5280	24.0	2	14,080	14,080			141	1,126					1.5	587			28.52	2.0	2.0	2,347	2.00	98
ASD	511	24.00	25.09	1.09	5755	24.0	2	15,347	15,347			153	1,228					1.5	639			31.08	2.0	2.0	2,558	2.18	107
SUSPEND AND RESUME PAVEMENT TREATMENT AT USR 224																									
ASD	511	25.11	25.39	0.28	1478	24.0	3	3,941		3,941		39	315	158		1.25	137			0.75	82	7.98	2.0	2.0	657	0.56	27
ASD	511	25.39	25.76	0.37	1954	41.0	3	8,902		8,902		89	712	356		1.25	309			0.75	185	10.55	2.0	2.0	868	0.74	36
APPROACH TO ASD-511-2584 STRUCTURE				437.5	24.0			1,167			1,167	12	93	47		1.25	41			0.75	24	2.36	2.0	2.0	194	0.17	8
SUSPEND AND RESUME PAVEMENT TREATMENT AT STR. ASD-511-2584																									
APPROACH FROM ASD-511-2584 STRUCTURE				437.5	24.0			1,167			1,167	12	93	47		1.25	41			0.75	24	2.36	2.0	2.0	194	0.17	8
ASD	511	25.93	27.00	1.07	5650	24.0	3	15,067		15,067		151	1,205	603		1.25	523			0.75	314	30.52	2.0	2.0	2,511	2.14	105
ASD	511	27.00	27.64	0.64	3379	24.0	3	9,011		9,011		90	721	360		1.25	313			0.75	188	18.25	2.0	2.0	1,502	1.28	63
(04/S<2/PV):																									
	EXTRA AREA FOR INTERSECTIONS						316	316			3	25					1.5	13								
	EXTRA AREA FOR PAVED DRIVES						36	36			1	3					1.5	2								
	EXTRA AREA FOR AGGREGATE DRIVES						45					4					1.5	2						45		2
	EXTRA AREA FOR EX. & PR. MAILBOX APPROACHES						100	100			1	8					1.5	4								
(03/S<2/PV):																									
	EXTRA AREA FOR INTERSECTIONS						625	625			6	50					1.5	26								
	EXTRA AREA FOR PAVED DRIVES						45	45			1	4					1.5	2								
	EXTRA AREA FOR AGGREGATE DRIVES						252					20					1.5	11						252		11
	EXTRA AREA FOR EX. & PR. MAILBOX APPROACHES						210	200			2	16					1.5	9								
(02/STR/PV):																									
	EXTRA AREA FOR INTERSECTIONS						1734	1231	503		12	139	20		1.25	17	1.5	51	0.75	10						
	EXTRA AREA FOR PAVED DRIVES						216	145	71		1	17	3		1.25	2	1.5	6	0.75	1						
	EXTRA AREA FOR AGGREGATE DRIVES						1782					143	33		1.25	28	1.5	40	0.75	17				1782		74
	EXTRA AREA FOR EX. & PR. MAILBOX APPROACHES						1340	732	448		7	59	20		1.25	18	1.5	35	0.75	11						
	(04/S<2/PV):						6,975	6,930	0	0	70	558	0			0		290		0	10			843	1	35
	(03/S<2/PV):						11,268	11,006	0	0	110	901	0			0		470		0	21			1942	1	81
	(02/STR/PV):						181,656	139,438	37,943	2,333	1,787	14,482	1,647			1,429		5,854		856	350			30567	25	1275
	GRAND TOTAL		13.56	71597			199,899	157,374	37,943	2,333	1,987	15,941	1,647			1,429		6,614		856	381			33,352	27	1,391

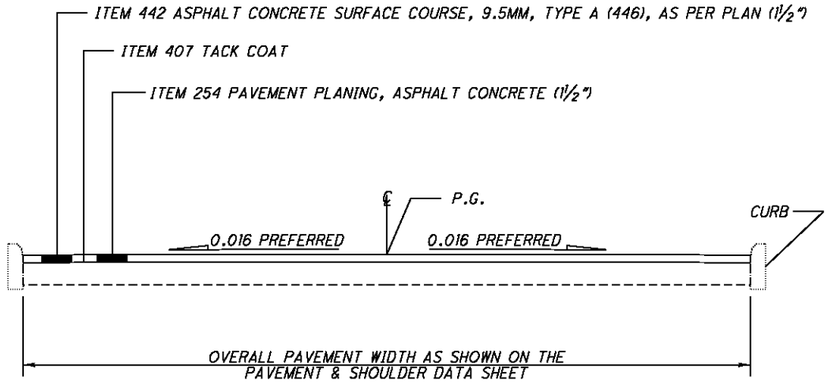
CALCULATED NRF CHECKED KCK

PAVEMENT AND SHOULDER DATA

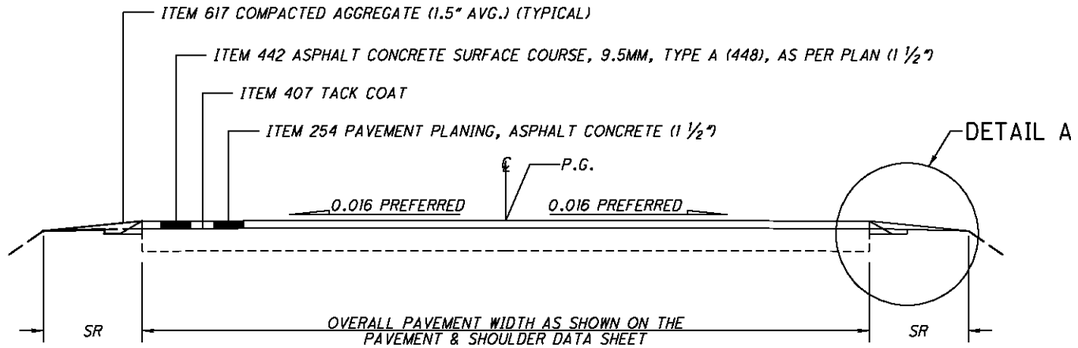
ASD-511-(14.07)(18.33)
ASD-302-10.89

10
48

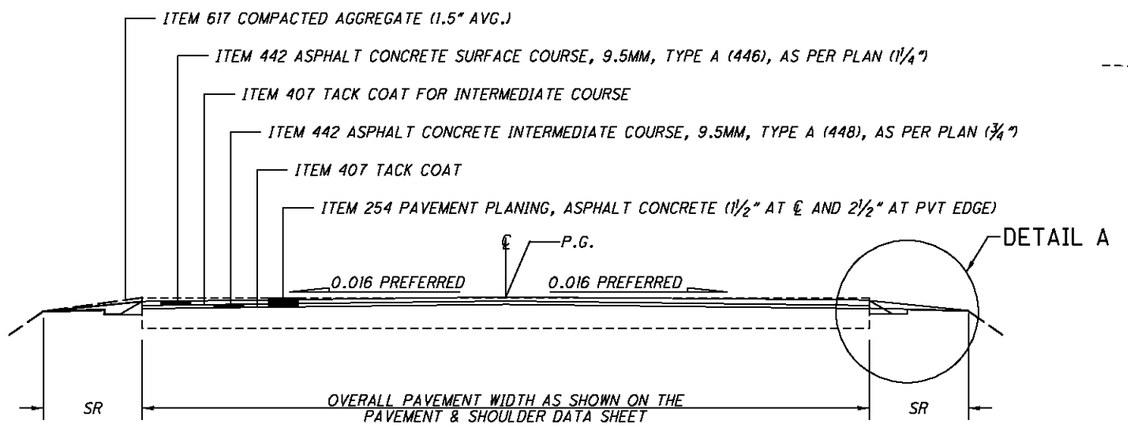
DESIGN FILE: i:\projects\88811\roadway\sheets\88811GQ001.dgn
WORKSTATION: nfoster
MODELNAME: Design
DATE: 12/8/2014



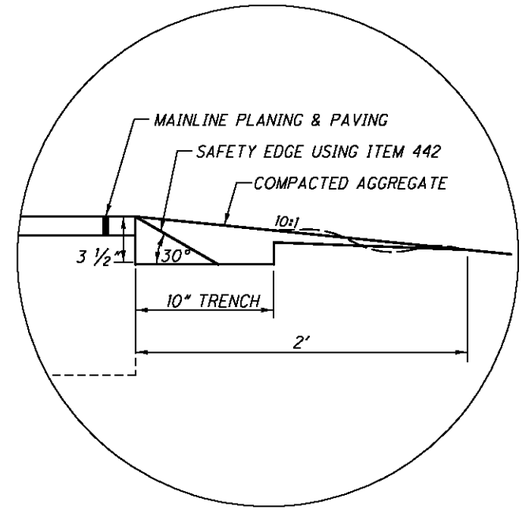
TYPICAL 1



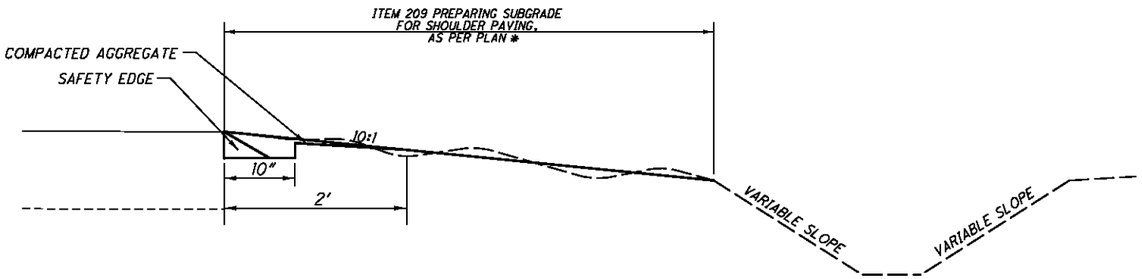
TYPICAL 2



TYPICAL 3



DETAIL A
SAFETY EDGE



ITEM 209 PREPARING SUBGRADE
FOR SHOULDER PAVING, AS PER PLAN

* SEE ITEM 209 PREPARING SUBGRADE FOR SHOULDER PAVING, AS PER PLAN NOTE FOR ADDITIONAL DETAILS

CALCULATED NRF
CHECKED KRB

TYPICAL SECTIONS

ASD-511-(14.07)(18.33)
ASD-302-10.89

11
48

DESIGN FILE: ii:\projects\88811\roadway\sheets\88811GY001.dgn
WORKSTATION: nfoster
DATE: 12/8/2014
MODEL NAME: Sheet

CONNECTING GUARDRAIL TO EXISTING RAIL

IN LOCATIONS WHERE TYPE 5 GUARDRAIL, TERMINAL ASSEMBLIES, ETC. ARE TO BE CONNECTED TO EXISTING RAIL SOME MODIFICATIONS MAY BE REQUIRED, INCLUDING EXTRA POSTS, DRILLING HOLES AND POSSIBLY PARTIAL SECTIONS OF ADDITIONAL RAIL ELEMENTS. THE COST OF THIS ADDITIONAL WORK SHALL BE INCLUDED IN THE UNIT BID PRICE FOR TYPE 5 GUARDRAIL. IF ADDITIONAL PORTIONS OF RAIL ELEMENT ARE USED THE LINEAL MEASUREMENT OF THIS ADDITIONAL PORTION SHALL BE ADDED FOR PAYMENT.

LOCATIONS OF GUARDRAIL

THE GUARDRAIL PROTECTION PROVIDED IN THIS PLAN SHALL BE LOCATED IN THE FIELD TO ASSURE THAT THE INSTALLATION WILL AFFORD THE MAXIMUM PROTECTION FOR TRAFFIC. THIS LOCATION SHALL BE POSITIONED AS FAR AS POSSIBLE FROM THE EDGE OF PAVEMENT WHILE MAINTAINING PROPER GRADE IN FRONT OF GUARDRAIL AS PER STANDARD DRAWINGS AND PLAN DETAILS.

SUGGESTED SEQUENCE OF GUARDRAIL WORK

1. GUARDRAIL WORK IS TO BEGIN AFTER THE SAFETY EDGE CONSTRUCTION IS COMPLETED AND THE 617 MATERIAL IS PLACED.
2. REMOVE THE GUARDRAIL.
3. PERFORM THE RESHAPING UNDER GUARDRAIL INCLUDING COMPLETING THE EMBANKMENT, AS PER PLAN.
4. REBUILD/CONSTRUCT THE GUARDRAIL RUN.
5. INSTALL BARRIER REFLECTORS.

ITEM 202 - ANCHOR ASSEMBLY REMOVED, TYPE A

THIS ITEM SHALL INCLUDE THE REMOVAL OF THE EXISTING TYPE A, ANCHOR ASSEMBLY INCLUDING ALL POSTS, HARDWARE, RAIL ELEMENTS, AND CONCRETE ANCHORS. ALL ITEMS REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALLBE PROPERLY DISPOSED OF.

THE EXISTING CONCRETE ANCHOR AND CONCRETE AT POSTS SHALL BE REMOVED ENTIRELY. ALL HOLES REMAINING AFTER REMOVAL SHALL BE FILLED WITH GRANULAR MATERIAL OR EXCESS MATERIAL RESULTING FROM GUARDRAIL CONSTRUCTION. ALL FILL MATERIAL SHALL BE THOROUGHLY COMPACTED AND LEVELED, AS DIRECTED BY THE ENGINEER.

PAYMENT FOR ALL OF THE ABOVE SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 202, ANCHOR ASSEMBLY REMOVED, TYPE A.

ITEM 203 - EMBANKMENT, AS PER PLAN

AT SPECIFIED LOCATIONS AND LOCATIONS AS DIRECTED BY THE ENGINEER, EMBANKMENT SHALL BE PLACED AS TO PROVIDE A SUITABLE AREA TO CONSTRUCT GUARDRAIL AND TO PROVIDE STRUCTURAL INTEGRITY OF THE ROADWAY SHOULDER.

AREAS WHERE EMBANKMENT MATERIAL IS TO BE PLACED SHALL BE SCALPED. THE REQUIREMENTS FOR BENCHING SHALL BE WAIVED. THE DEPTH OF LAYERS IN WHICH THE EMBANKMENT IS PLACED SHALL BE LIMITED TO EIGHT (8) INCHES IN THICKNESS. THE METHOD OF COMPACTION AND EQUIPMENT USED SHALL BE SUFFICIENT TO PROVIDE A MINIMUM OF 60 PERCENT OF RELATIVE COMPACTION.

AFTER THE EMBANKMENT HAS BEEN PLACED, THE AREAS SHALL BE FERTILIZED, SEEDED, MULCHED, AND WATERED AS PER ITEM 659. THE COST SHALL BE INCLUDED IN THIS ITEM FOR PAYMENT.

THE METHOD OF MEASUREMENT FOR EMBANKMENT MATERIAL SHALL BE BY THE NUMBER OF CUBIC YARDS MEASURED BY LOOSE VOLUME IN THE CARRIER AT THE WORK SITE, IN LIEU OF THE REQUIREMENTS OF 203.09. PAYMENT FOR ACCEPTED QUANTITIES WILL BE MADE AT THE CONTRACT UNIT BID PRICE PER CUBIC YARD FOR ITEM 203 - EMBANKMENT, AS PER PLAN AND SHALL INCLUDE ALL WORK DESCRIBED ABOVE.

ITEM 209 - RESHAPING UNDER GUARDRAIL

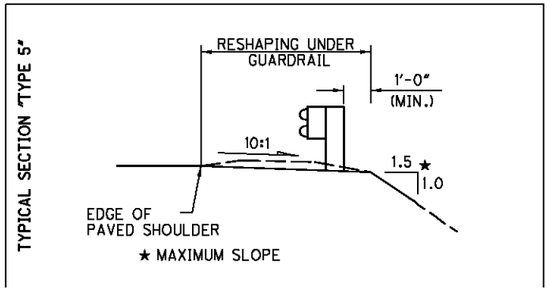
THIS ITEM SHALL BE USED AT LOCATIONS INDICATED IN THE PLANS.

THIS WORK SHALL BE COMPLETED AT LOCATIONS SPECIFIED FOR WORK AS WELL AS PER CMS 209.05 AND AS DESCRIBED HEREIN, AND SHALL AT ALL TIMES BE AS DIRECTED BY THE ENGINEER.

THE AREA IN FRONT OF, UNDER, AND BEHIND THE GUARDRAIL SHALL BE GRADED AND RESHAPED TO PROVIDE AN AREA THAT HAS A SLOPE OF 10:1 MAXIMUM FOR TYPE 5 AND 8:1 MAXIMUM FOR MGS (SEE DETAIL BELOW AS WELL AS THE GUARDRAIL DETAIL SHEETS FOR FURTHER DETAILS AND INFORMATION OF THE LIMITS OF THIS WORK).

EXCESS MATERIAL RESULTING SHALL BE USED ELSEWHERE FOR THIS ITEM IF SO DIRECTED OR DISPOSED OF PROPERLY. IF EXTRA MATERIAL IS REQUIRED IT SHALL BE PAID FOR WITH ITEM 203 - EMBANKMENT, AS PER PLAN. THIS WORK SHALL NOT BE STARTED UNTIL AFTER THE RESURFACING AND BERM WORK HAS BEEN COMPLETED.

THE ABOVE WORK SHALL BE PAID FOR PER STATION WITH ITEM 209, RESHAPING UNDER GUARDRAIL WITH THE EXCEPTION OF ANY EXTRA MATERIAL REQUIRED TO MEET THE SLOPE REQUIREMENTS WHICH SHALL BE PAID BY ITEM 203 - EMBANKMENT, AS PER PLAN.



ITEM 606 - GUARDRAIL REBUILT, TYPE 5

THIS ITEM SHALL BE USED WHEN GUARDRAIL REQUIRES REPAIRS IN WHICH THE RAIL ELEMENT IS REUSABLE. ALSO, THIS ITEM WILL BE USED TO RE-ALIGN GUARDRAIL RUNS, AS DIRECTED BY THE ENGINEER.

PAYMENT SHALL INCLUDE ALL LABOR, MATERIALS AND EQUIPMENT, AS DESCRIBED IN 606.05 FOR ITEM 606 GUARDRAIL REBUILT, TYPE 5.

ITEM 606 - RAISING TYPE 5 GUARDRAIL

WHERE DESIGNATED ON THE PLAN, THE EXISTING TYPE 5 GUARDRAIL SHALL BE RAISED ON THE EXISTING WOOD POSTS AS PER PLAN INSERT SHEET GR-2.1 SO AS TO OBTAIN THE STANDARD 29 IN. HEIGHT. THE RAIL SHALL BE RE-ATTACHED TO THE POSTS USING NEW POST BOLTS.

THE RAIL SHALL BE DISMANTLED ONLY TO THE EXTENT NECESSARY TO FIELD BORE NEW BOLT HOLES IN THE WOOD POSTS, AND TO RECONNECT THE RAIL AND BLOCK TO THE EXISTING POSTS.

THE EXISTING TYPE "A" ANCHOR ASSEMBLIES THAT ARE TO REMAIN SHALL NOT BE ADJUSTED. THE LAST RAIL ELEMENT SHALL BE TRANSITIONED TO MEET THESE ASSEMBLIES.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER FOOT OF ITEM 606 - RAISING TYPE 5 GUARDRAIL, WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

BRIDGE LOCATION MARKER SIGN (ASD-511-1597)

THE BRIDGE LOCATION MARKER SIGN INDICATES THE COUNTY, THE ROUTE, AND THE STRAIGHT LINE MILEAGE OF THE STRUCTURE. THE CONTRACTOR SHALL REMOVE THE EXISTING BRIDGE LOCATION MARKER SIGNS AND REERECT THE SIGNS IN KIND. IF THERE ARE ANY QUESTIONS ON THE LOCATION, PLEASE CONTACT THE DISTRICT BRIDGE ENGINEER.

ALL COSTS, INCLUDING THE SIGN REMOVAL, SIGN REERECTION, POST REMOVAL, AND POST INSTALLATION SHALL BE INCLUDED IN THE FOLLOWING PAY ITEMS:

ITEM 630 - GROUND MOUNTED SUPPORT, NO. 3 POST	7 FT
ITEM 630 - REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	1 EA
ITEM 630 - REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	1 EA

THE ABOVE QUANTITIES HAVE BEEN CARRIED TO THE ROADWAY SUB-SUMMARY.

CALCULATED NRF CHECKED KRB

GUARDRAIL GENERAL NOTES

ASD-511-(14.07)(18.33)
ASD-302-10.89

12
48

DESIGN FILE: i:\projects\8881\roadway\sheets\8881GR_GN.dgn MODELNAME: Design
WORKSTATION: nfoster DATE: 12/8/2014

SHEET	LOCATION	FUNDING SPLIT		F 202 GUARDRAIL REMOVED FOR REUSE FEET	B 202 ANCHOR ASSEMBLY REMOVED, TYPE A EACH	O 202 BRIDGE TERMINAL ASSEMBLY REMOVED EACH	R 202 ANCHOR ASSEMBLY REMOVED, TYPE T EACH	A 202 GUARDRAIL REMOVED FEET	P 202 BRIDGE TERMINAL ASSEMBLY REMOVED FOR REUSE EACH	202 WALK REMOVED SQ FT	202 CURB REMOVED FT	//////// 203 EMBANKMENT, AS PER PLAN CU YD	U 209 RESHAPING UNDER GUARDRAIL STATION	G 606 GUARDRAIL REBUILT, TYPE 5 FEET	L 606 GUARDRAIL REBUILT, TYPE 5, USING 9 FOOT POSTS FEET	Z 606 BRIDGE TERMINAL ASSEMBLY, TYPE TST EACH	X 606 ANCHOR ASSEMBLY, TYPE A EACH	V 606 ANCHOR ASSEMBLY, TYPE T EACH	M 606 GUARDRAIL, TYPE 5 FEET	Q 606 RAISING TYPE 5 GUARDRAIL FEET	Y 606 BRIDGE TERMINAL ASSEMBLY REBUILT, TYPE 4 EACH	608 CURB RAMP, TYPE A2 SQ FT	608 CURB RAMP, TYPE B1, AS PER PLAN SQ FT	608 CURB RAMP, TYPE D SQ FT	AA 626 BARRIER REFLECTOR EACH	630 GROUND MOUNTED SUPPORT, NO. 3 POST FT	630 REMOVAL OF GROUND MOUNTED SIGN AND REERECTION EACH	630 REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL EACH
14	ASD-511-15.33	02/STR/PV		112.50								7.0	1.13	62.50	50.00												4			
14	ASD-511-15.97	02/STR/PV		200.00	1	4						9.3	2.50	200.00		4	1										4	7.00	1.00	1.00
15	ASD-511-16.67	02/STR/PV		12.50			1						0.25	12.50				1									1			
15	ASD-511-17.15	02/STR/PV					1	25.00					0.38					1	25.00								1			
16	ASD-511-17.36	02/STR/PV		87.50								8.5	1.13	87.50													3			
16	ASD-511-17.87	02/STR/PV		287.50								40.0	2.88	287.50													5			
17	ASD-302-11.00	02/STR/PV											1.38							137.50							3			
17	ASD-302-11.10	02/STR/PV		25.00	1		2		1				1.63	25.00			1	2		87.50	1						5			
18	ASD-511-18.88	02/STR/PV		337.50								31.3	3.38	337.50													6			
18	ASD-511-19.57	02/STR/PV		87.50								8.0	0.88	87.50													2			
19	ASD-511-25.94	02/STR/PV					1	37.50					0.50					1	37.50								1			
19	ASD-511-26.66	02/STR/PV		237.50								22.0	2.38	237.50													4			
20	ASD-511-27.33	02/STR/PV		287.50			1	50.00				42.0	3.50	287.50				1	50.00								6			
22	SR 511 AND 13TH STREET	01/S<2/PV								152.60												79.97		93.19						
22	SR 511 AND BELLE AVE	01/S<2/PV								72.35	18.67											21.77	74.24							
22	SR 60 AND SR 511	01/S<2/PV																				47								
	TOTAL CARRIED TO GENERAL SUMMARY 02/STR/PV & 01/S<2/PV			***1675.00***	***2***	***4***	***6***	***112.50***	***1***	***224.95***	***18.67***	***168.1***	***21.92***	***1625.00***	***50.00***	***4***	***2***	***6***	***112.50***	***225.00***	***1***	***149.17***	***74.24***	***93.19***	***45***	***7***	***1***	***1***

CALCULATED KCK
CHECKED KRB

ROADWAY SUB-SUMMARY

ASD-511-(14.07)(18.33)
ASD-302-10.89

13
48

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WORKSTATION: kknapp
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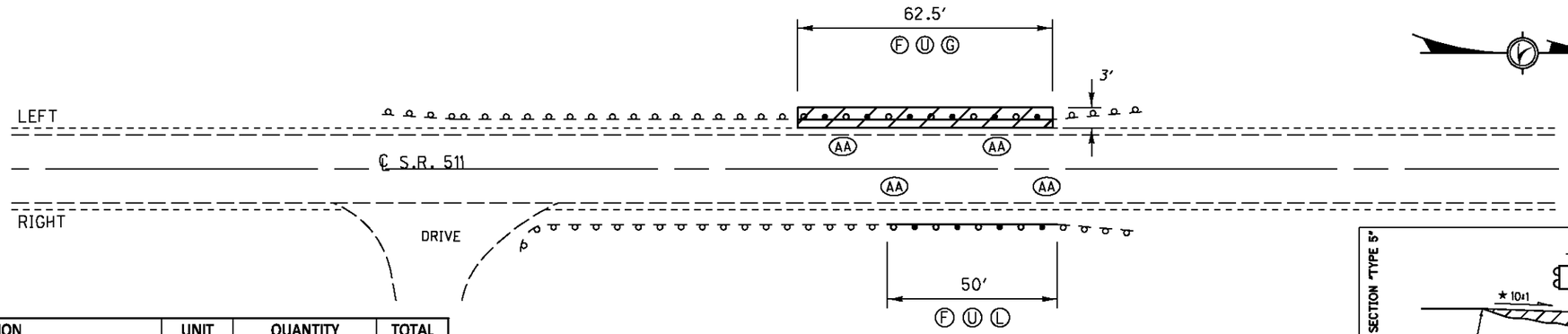
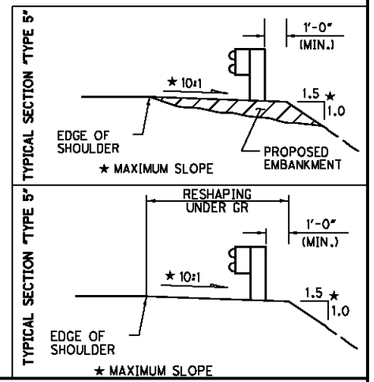
DATE: 12/11/2014

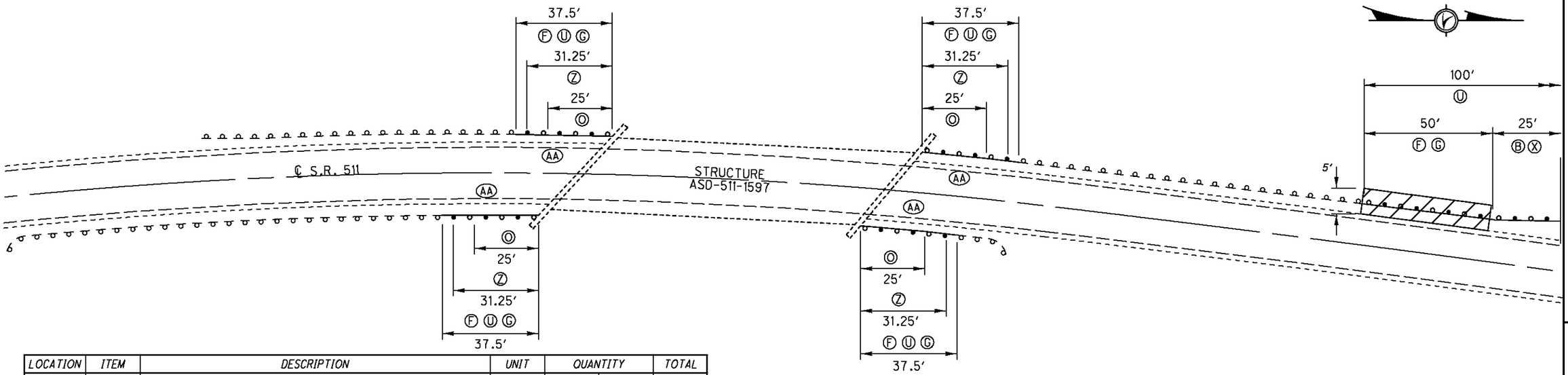


LOCATION	ITEM	DESCRIPTION	UNIT	QUANTITY		TOTAL
				LEFT	RIGHT	
Ⓕ	202	GUARDRAIL REMOVED FOR REUSE	FEET	62.5	50	112.5
	203	EMBANKMENT, AS PER PLAN	CU YD	7		7
Ⓤ	209	RESHAPING UNDER GUARDRAIL	STA	0.63	0.50	1.13
Ⓖ	606	GUARDRAIL REBUILT, TYPE 5	FEET	62.5		62.5
Ⓛ	606	GUARDRAIL REBUILT, TYPE 5, USING 9 FOOT POSTS	FEET		50	50
Ⓐⓐ	626	BARRIER REFLECTOR	EACH	2	2	4

ALL QUANTITIES CARRIED TO THE ROADWAY SUB-SUMMARY.

GUARDRAIL AT SLM 15.33



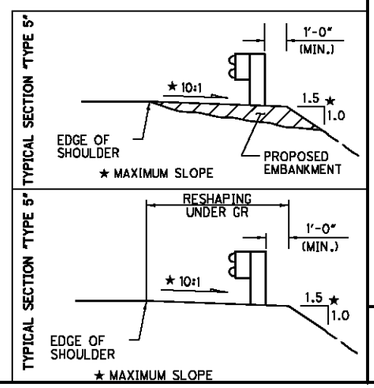


LOCATION	ITEM	DESCRIPTION	UNIT	QUANTITY		TOTAL
				LEFT	RIGHT	
Ⓕ	202	GUARDRAIL REMOVED FOR REUSE	FEET	125	75	200
Ⓑ	202	ANCHOR ASSEMBLY REMOVED, TYPE A	EACH	1		1
Ⓞ	202	BRIDGE TERMINAL ASSEMBLY REMOVED	EACH	2	2	4
	203	EMBANKMENT, AS PER PLAN	CU YD	9.3		9.3
Ⓤ	209	RESHAPING UNDER GUARDRAIL	STA	1.75	0.75	2.50
Ⓒ	606	GUARDRAIL REBUILT, TYPE 5	FEET	125	75	200
Ⓩ	606	BRIDGE TERMINAL ASSEMBLY, TYPE TST	EACH	2	2	4
Ⓧ	606	ANCHOR ASSEMBLY, TYPE A	EACH	1		1
Ⓐⓐ	626	BARRIER REFLECTOR	EACH	2	2	4
	630	GROUND MOUNTED SUPPORT, NO. 3 POST	FT		7	7
	630	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	EACH		1	1
	630	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	EACH		1	1

ALL QUANTITIES CARRIED TO THE ROADWAY SUB-SUMMARY.

GUARDRAIL AT STRUCTURE 1597

SEE ASD-511-1597 STRUCTURE SHEETS FOR BRIDGE RAILING DETAILS.



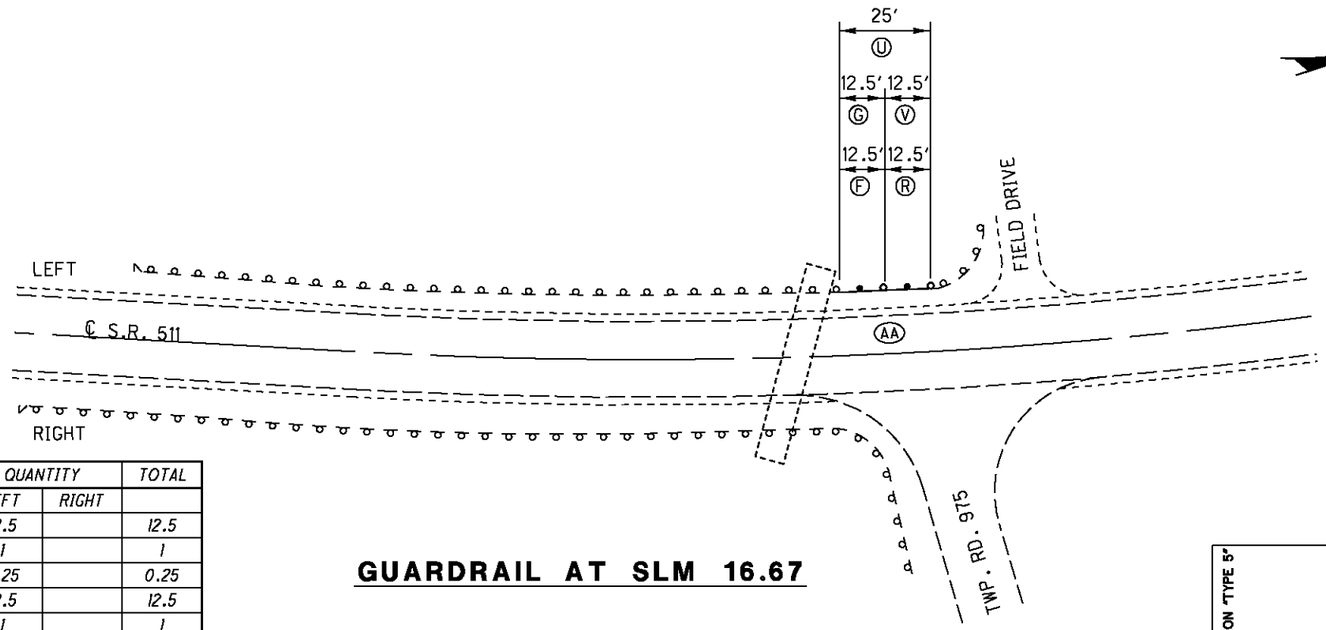
CALCULATED NRF CHECKED KRB

GUARDRAIL DETAILS

ASD-511-(14.07)(18.33)
ASD-302-10.89

14
48

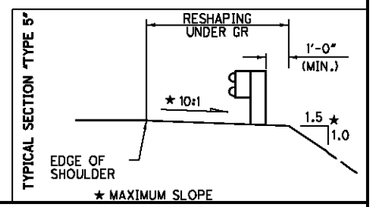
DESIGN FILE: i:\projects\88811\roadway\sheets\88811GR001.dgn MODELNAME: Design
WORKSTATION: nfoster DATE: 12/8/2014

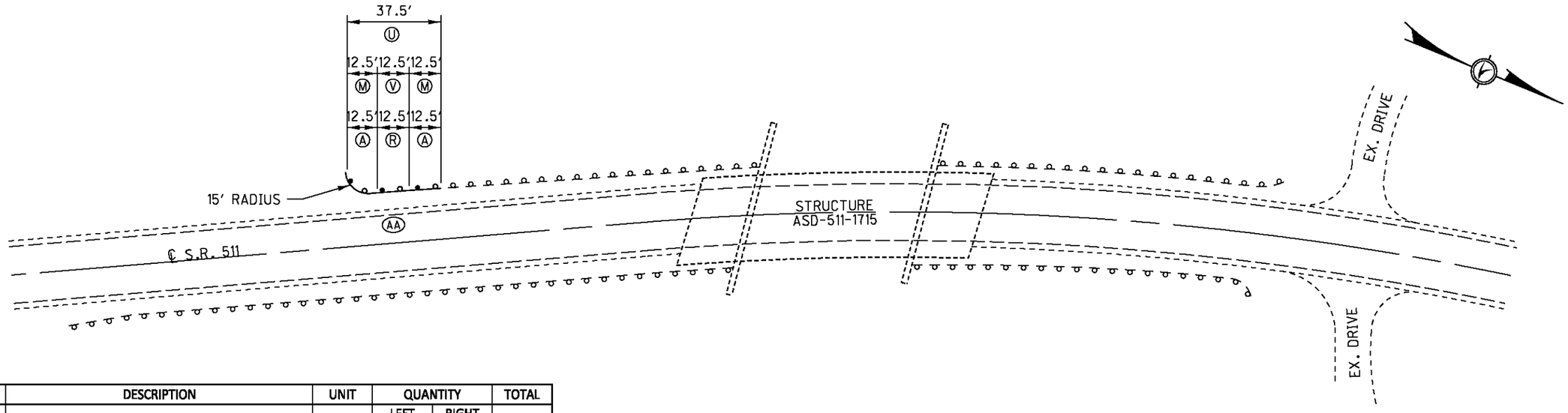


GUARDRAIL AT SLM 16.67

LOCATION	ITEM	DESCRIPTION	UNIT	QUANTITY		TOTAL
				LEFT	RIGHT	
Ⓕ	202	GUARDRAIL REMOVED FOR REUSE	FEET	12.5		12.5
Ⓡ	202	ANCHOR ASSEMBLY REMOVED, TYPE T	EACH	1		1
Ⓤ	209	RESHAPING UNDER GUARDRAIL	STA	0.25		0.25
Ⓖ	606	GUARDRAIL REBUILT, TYPE 5	FEET	12.5		12.5
Ⓥ	606	ANCHOR ASSEMBLY, TYPE T	EACH	1		1
Ⓐⓐ	626	BARRIER REFLECTOR	EACH	1		1

ALL QUANTITIES CARRIED TO THE ROADWAY SUB-SUMMARY.

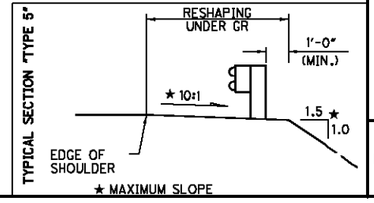




GUARDRAIL AT STRUCTURE 1715

LOCATION	ITEM	DESCRIPTION	UNIT	QUANTITY		TOTAL
				LEFT	RIGHT	
Ⓐ	202	GUARDRAIL REMOVED	FEET	25		25
Ⓡ	202	ANCHOR ASSEMBLY REMOVED, TYPE T	EACH	1		1
Ⓤ	209	RESHAPING UNDER GUARDRAIL	STA	0.38		0.38
Ⓜ	606	GUARDRAIL, TYPE 5	FEET	25		25
Ⓥ	606	ANCHOR ASSEMBLY, TYPE T	EACH	1		1
Ⓐⓐ	626	BARRIER REFLECTOR	EACH	1		1

ALL QUANTITIES CARRIED TO THE ROADWAY SUB-SUMMARY.



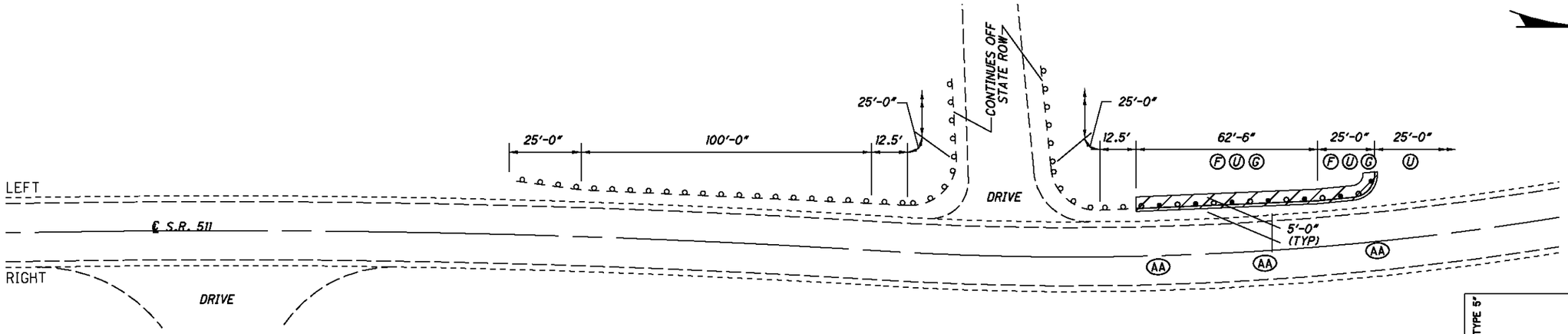
CALCULATED NRF
CHECKED KRB

GUARDRAIL DETAILS

ASD-511-(14.07)(18.33)
ASD-302-10.89

15
48

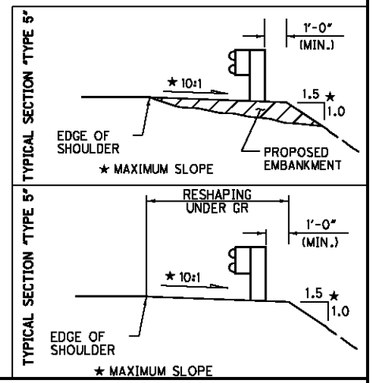
DESIGN FILE: i:\projects\88811\roadway\sheets\88811GR001.dgn
WORKSTATION: nfoster
DATE: 12/8/2014
MODELNAME: Design

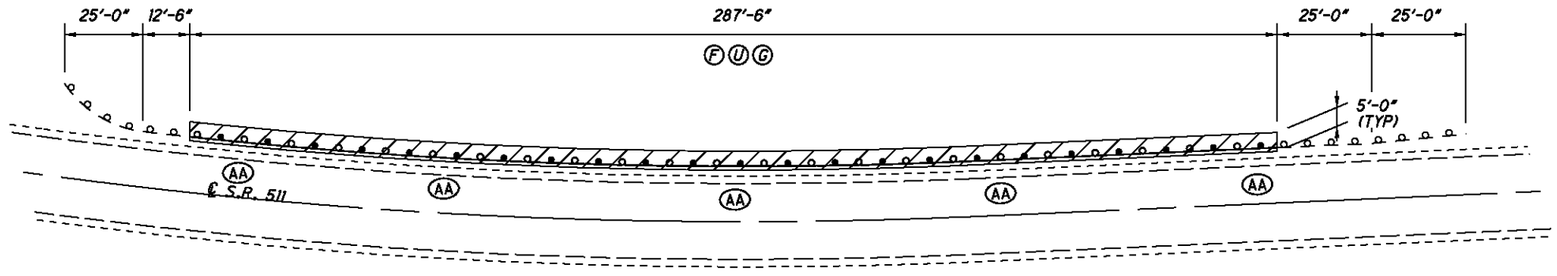


LOCATION	ITEM	UNIT	QUANTITY			DESCRIPTION
			LEFT	RIGHT	TOTAL	
(F)	202	FEET	87.50		87.50	GUARDRAIL REMOVED FOR REUSE
	203	CU YD	8.50		8.50	EMBANKMENT, AS PER PLAN
(U)	209	STA	1.13		1.13	RESHAPING UNDER GUARDRAIL
(G)	606	FEET	87.50		87.50	GUARDRAIL REBUILT, TYPE 5
(AA)	626	EACH	3.00		3.00	BARRIER REFLECTOR

ALL QUANTITIES CARRIED TO ROADWAY SUBSUMMARY

GUARDRAIL AT SLM 17.36

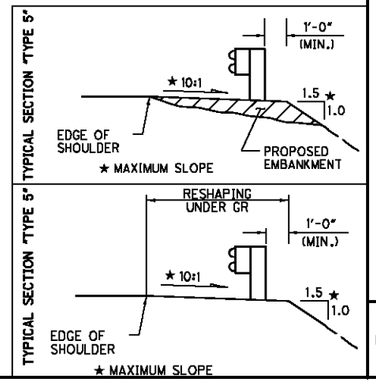




LOCATION	ITEM	UNIT	QUANTITY			DESCRIPTION
			LEFT	RIGHT	TOTAL	
(F)	202	FEET	287.50		287.50	GUARDRAIL REMOVED FOR REUSE
	203	CU YD	40.00		40.00	EMBANKMENT, AS PER PLAN
(U)	209	STA	2.88		2.88	RESHAPING UNDER GUARDRAIL
(G)	606	FEET	287.50		287.50	GUARDRAIL REBUILT, TYPE 5
(AA)	626	EACH	5.00		5.00	BARRIER REFLECTOR

ALL QUANTITIES CARRIED TO ROADWAY SUBSUMMARY

GUARDRAIL AT SLM 17.87



CALCULATED KCK
CHECKED KRB

GUARDRAIL DETAILS

ASD-511-(14.07)(18.33)
ASD-302-10.89

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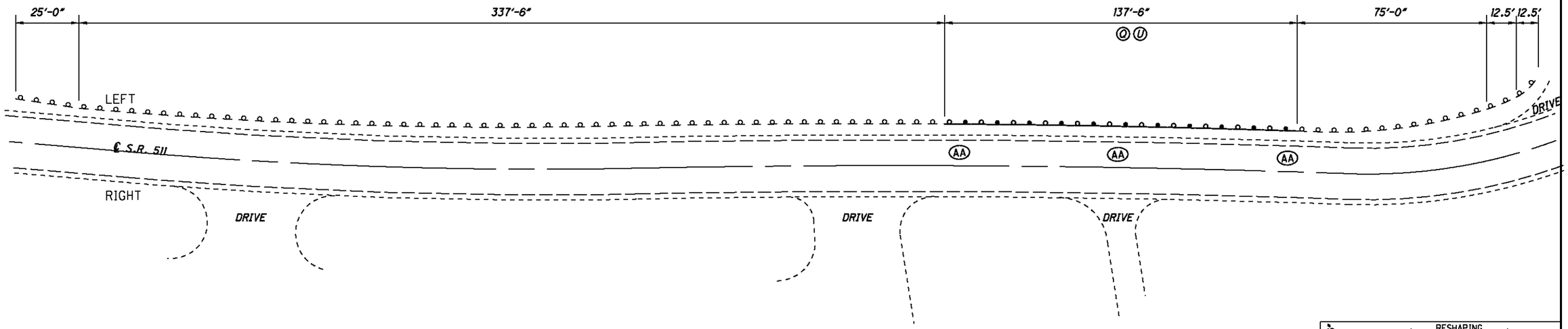
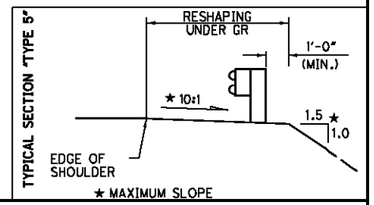
DESIGN FILE: i:\projects\88811\roadway\sheets\88811GR001.dgn
WORKSTATION: nfoster
DATE: 12/8/2014
MODELNAME: Design

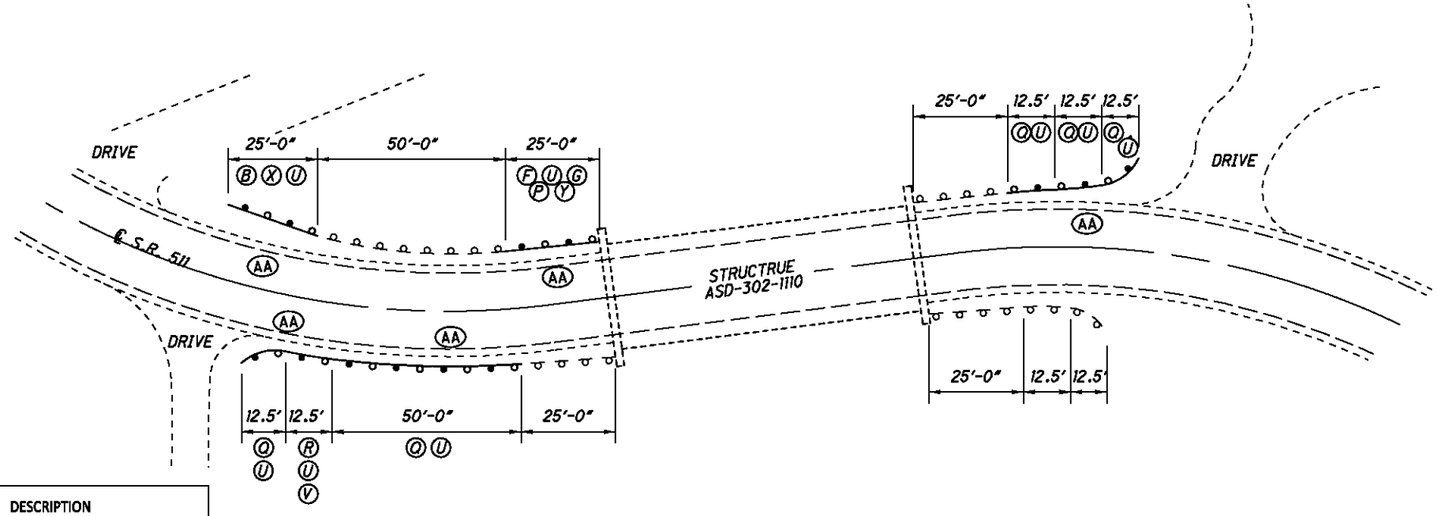


LOCATION	ITEM	UNIT	QUANTITY			DESCRIPTION
			LEFT	RIGHT	TOTAL	
U	209	STA	1.38		1.38	RESHAPING UNDER GUARDRAIL
Q	606	FEET	137.50		137.50	RAISING TYPE 5 GUARDRAIL
AA	626	EACH	3.00		3.00	BARRIER REFLECTOR

ALL QUANTITIES CARRIED TO ROADWAY SUBSUMMARY

GUARDRAIL AT SR 302 SLM 11.00

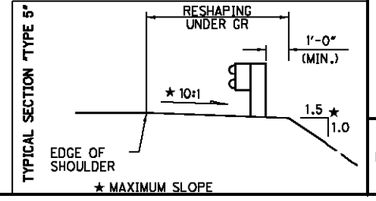




LOCATION	ITEM	UNIT	QUANTITY			DESCRIPTION
			LEFT	RIGHT	TOTAL	
B	202	EACH	1.00		1.00	ANCHOR ASSEMBLY REMOVED, TYPE A
F	202	FEET	25.00		25.00	GUARDRAIL REMOVED FOR REUSE
P	202	EACH	1.00		1.00	BRIDGE TERMINAL ASSEMBLY REMOVED FOR REUSE
R	202	EACH	1.00	1.00	2.00	ANCHOR ASSEMBLY REMOVED, TYPE T
U	209	STA	0.88	0.75	1.63	RESHAPING UNDER GUARDRAIL
X	606	EACH	1.00		1.00	ANCHOR ASSEMBLY, TYPE A
G	606	FEET	25.00		25.00	GUARDRAIL REBUILT, TYPE 5
Y	606	EACH	1.00		1.00	BRIDGE TERMINAL ASSEMBLY REBUILT, TYPE 4
Q	606	FEET	25.00	62.50	87.50	RAISING TYPE 5 GUARDRAIL
V	606	EACH	1.00	1.00	2.00	ANCHOR ASSEMBLY, TYPE T
AA	626	EACH	3.00	2.00	5.00	BARRIER REFLECTOR

ALL QUANTITIES CARRIED TO ROADWAY SUBSUMMARY

GUARDRAIL AT SR 302 SLM 11.10



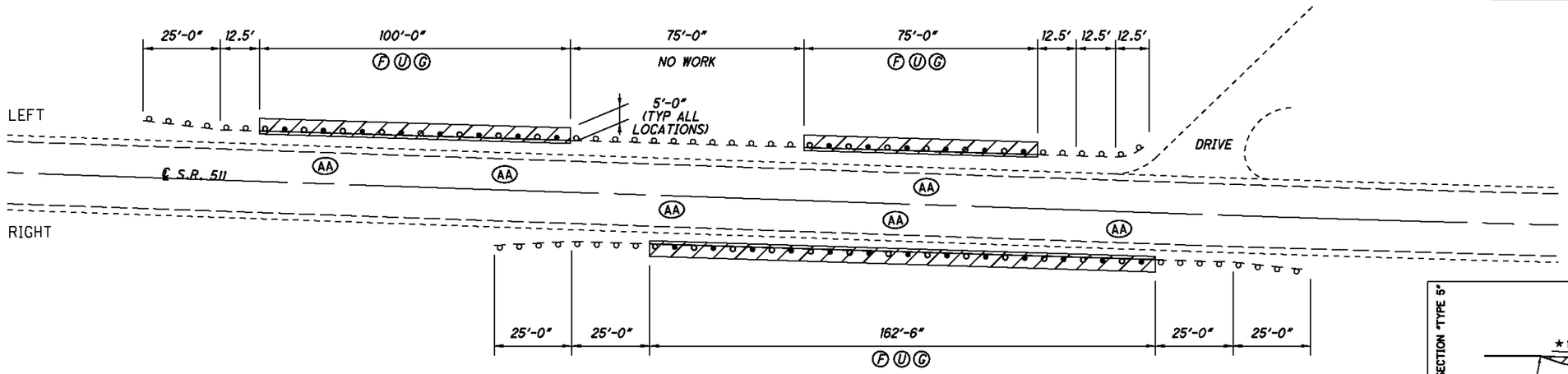
CALCULATED KCK
CHECKED KRB

GUARDRAIL DETAILS

ASD-511-(14.07)(18.33)
ASD-302-10.89

17
48

DESIGN FILE: i:\projects\88811\roadway\sheets\88811GR001.dgn
WORKSTATION: nfoster
DATE: 12/8/2014
MODELNAME: Design

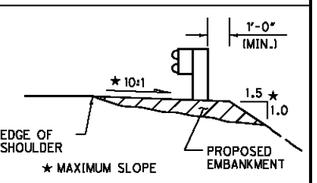


LOCATION	ITEM	UNIT	QUANTITY			DESCRIPTION
			LEFT	RIGHT	TOTAL	
(F)	202	FEET	175.00	162.50	337.50	GUARDRAIL REMOVED FOR REUSE
///	203	CU YD	16.20	15.05	31.25	EMBANKMENT, AS PER PLAN
(U)	209	STA	1.75	1.63	3.38	RESHAPING UNDER GUARDRAIL
(G)	606	FEET	175.00	162.50	337.50	GUARDRAIL REBUILT, TYPE 5
(AA)	626	EACH	3.00	3.00	6.00	BARRIER REFLECTOR

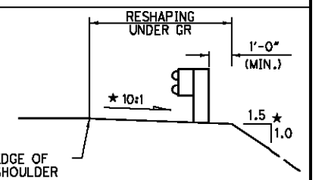
ALL QUANTITIES CARRIED TO ROADWAY SUBSUMMARY

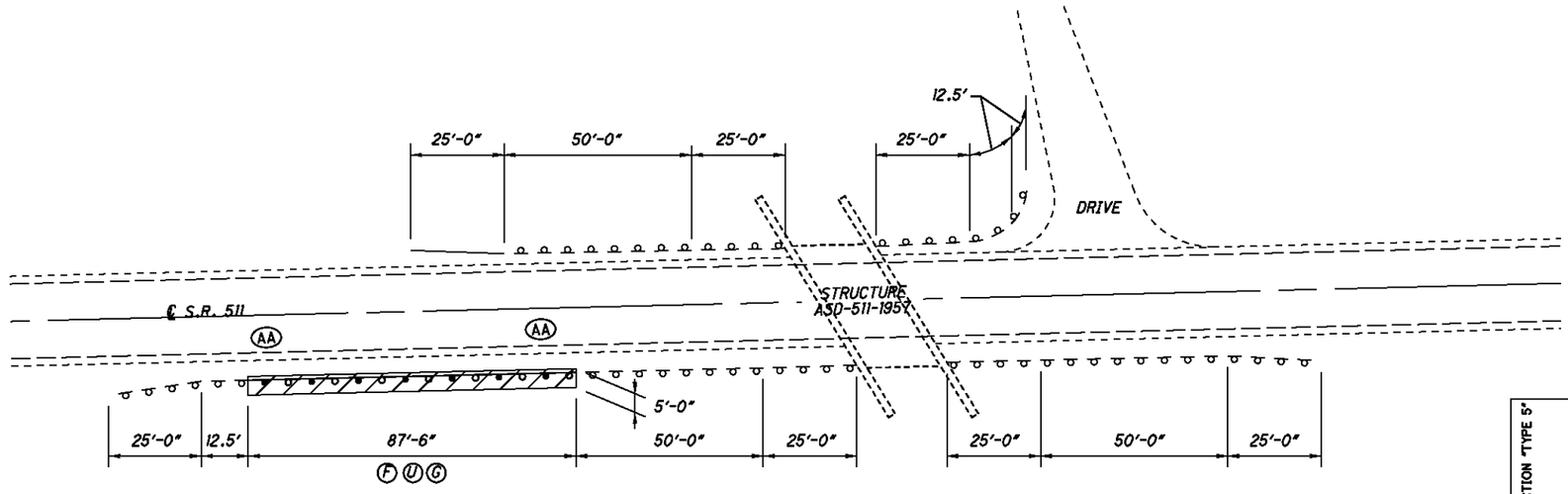
GUARDRAIL AT SLM 18.88

TYPICAL SECTION "TYPE 5"



TYPICAL SECTION "TYPE 5"



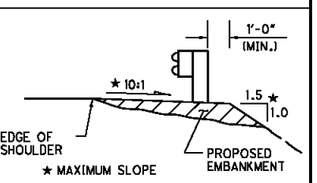


LOCATION	ITEM	UNIT	QUANTITY			DESCRIPTION
			LEFT	RIGHT	TOTAL	
(F)	202	FEET		87.50	87.50	GUARDRAIL REMOVED FOR REUSE
///	203	CU YD		8.00	8.00	EMBANKMENT, AS PER PLAN
(U)	209	STA		0.88	0.88	RESHAPING UNDER GUARDRAIL
(G)	606	FEET		87.50	87.50	GUARDRAIL REBUILT, TYPE 5
(AA)	626	EACH		2.00	2.00	BARRIER REFLECTOR

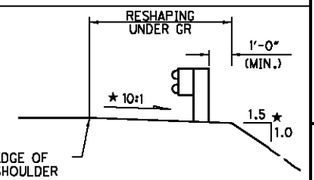
ALL QUANTITIES CARRIED TO ROADWAY SUBSUMMARY

GUARDRAIL AT STUCTURE ASD-511-1957

TYPICAL SECTION "TYPE 5"



TYPICAL SECTION "TYPE 5"



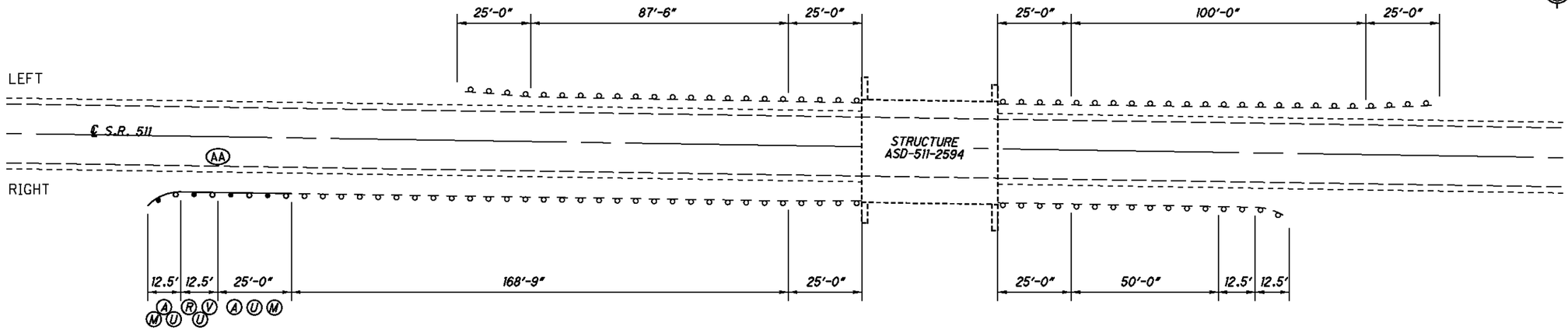
CALCULATED KCK
CHECKED KRB

GUARDRAIL DETAILS

ASD-511-(14.07)(18.33)
ASD-302-10.89

18
48

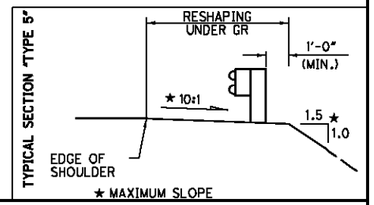
DESIGN FILE: i:\projects\88811\roadway\sheets\88811GR001.dgn
WORKSTATION: nfoster
DATE: 12/8/2014
MODEL NAME: Design

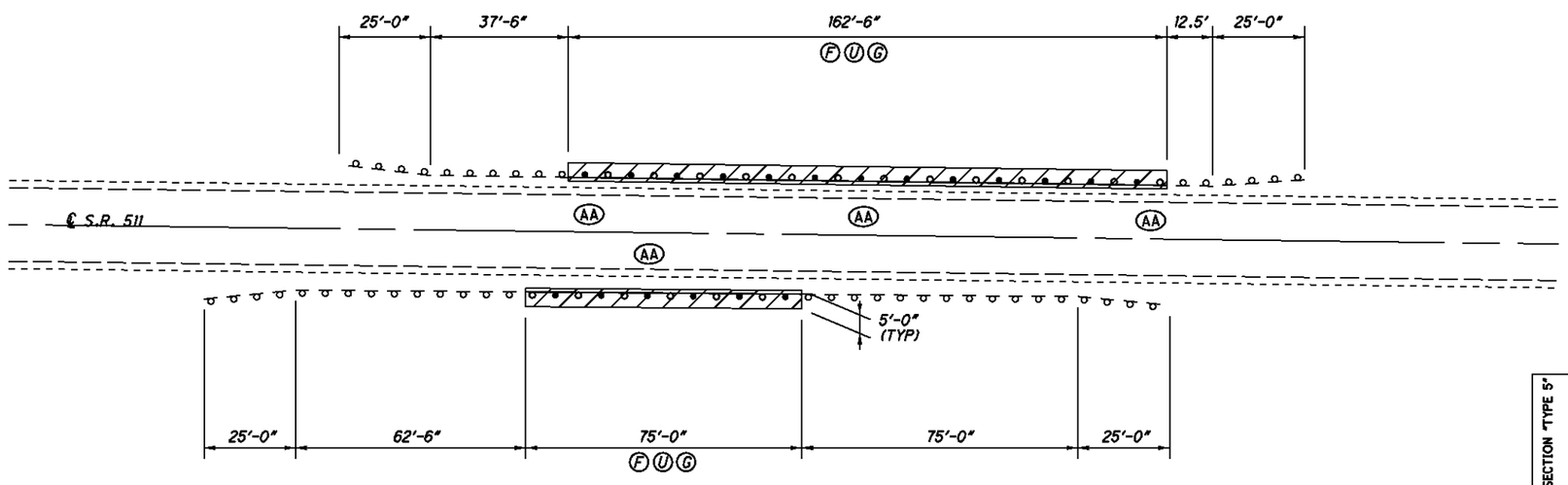


LOCATION	ITEM	UNIT	QUANTITY			DESCRIPTION
			LEFT	RIGHT	TOTAL	
(A)	202	FEET		37.50	37.50	GUARDRAIL REMOVED
(R)	202	EACH		1.00	1.00	ANCHOR ASSEMBLY REMOVED, TYPE T
(U)	209	STA		0.50	0.50	RESHAPING UNDER GUARDRAIL
(M)	606	FEET		37.50	37.50	GUARDRAIL, TYPE 5
(V)	606	EACH		1.00	1.00	ANCHOR ASSEMBLY, TYPE T
(AA)	626	EACH		1.00	1.00	BARRIER REFLECTOR

ALL QUANTITIES CARRIED TO ROADWAY SUBSUMMARY

GUARDRAIL AT STUCTURE ASD-511-2594

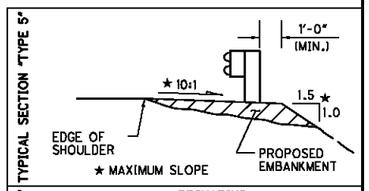


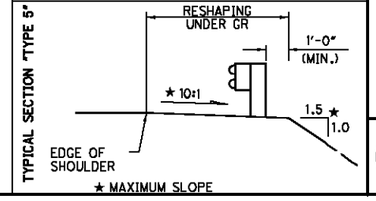


LOCATION	ITEM	UNIT	QUANTITY			DESCRIPTION
			LEFT	RIGHT	TOTAL	
(F)	202	FEET	162.50	75.00	237.50	GUARDRAIL REMOVED FOR REUSE
///	203	CU YD	15.00	7.00	22.00	EMBANKMENT, AS PER PLAN
(U)	209	STA	1.63	0.75	2.38	RESHAPING UNDER GUARDRAIL
(G)	606	FEET	162.50	75.00	237.50	GUARDRAIL REBUILT, TYPE 5
(AA)	626	EACH	3.00	1.00	4.00	BARRIER REFLECTOR

ALL QUANTITIES CARRIED TO ROADWAY SUBSUMMARY

GUARDRAIL AT SLM 26.66





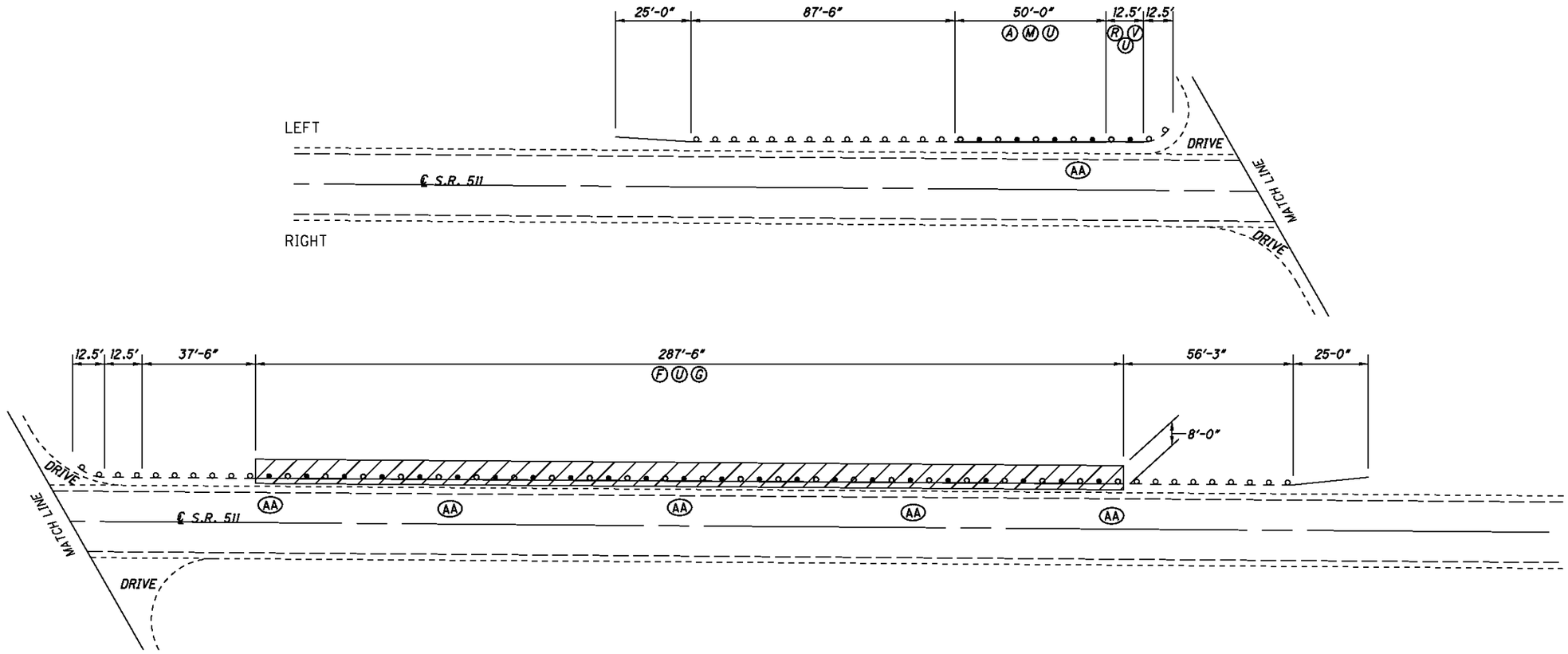
CALCULATED KCK
CHECKED KRB

GUARDRAIL DETAILS

ASD-511-(14.07)(18.33)
ASD-302-10.89

19
48

DESIGN FILE: i:\projects\88811\roadway\sheets\88811GR001.dgn
WORKSTATION: nfoster
DATE: 12/8/2014
MODEL NAME: Design

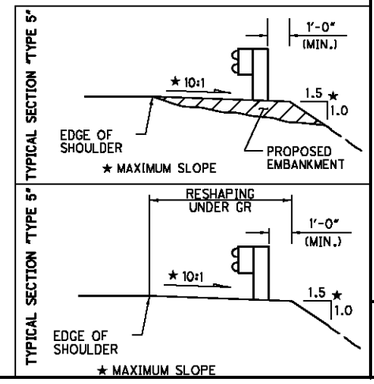


GUARDRAIL AT SLM 27.33

LOCATION	ITEM	UNIT	QUANTITY			DESCRIPTION
			LEFT	RIGHT	TOTAL	
A	202	FEET	50.00		50.00	GUARDRAIL REMOVED
F	202	FEET	287.50		287.50	GUARDRAIL REMOVED FOR REUSE
R	202	EACH	1.00		1.00	ANCHOR ASSEMBLY REMOVED, TYPE T
///	203	CU YD	42.00		42.00	EMBANKMENT, AS PER PLAN
U	209	STA	3.50		3.50	RESHAPING UNDER GUARDRAIL
G	606	FEET	287.50		287.50	GUARDRAIL REBUILT, TYPE 5
M	606	FEET	50.00		50.00	GUARDRAIL, TYPE 5
V	606	EACH	1.00		1.00	ANCHOR ASSEMBLY, TYPE T
AA	626	EACH	6.00		6.00	BARRIER REFLECTOR

ALL QUANTITIES CARRIED TO ROADWAY SUBSUMMARY

TYPICAL SECTION "TYPE 5" TYPICAL SECTION "TYPE 5"



CALCULATED KCK
CHECKED KRB

GUARDRAIL DETAILS

ASD-511-(14.07)(18.33)
ASD-302-10.89

20
48

DESIGN FILE: i:\projects\88811\roadway\sheets\88811GR001.dgn
WORKSTATION: nfoster
DATE: 12/8/2014
MODEL NAME: Design

AUXILIARY & LONG LINE MARKINGS

ROUTE	COUNTY	STATION / SLM FROM	STATION / SLM TO	HIGHWAY MILES	614 WORK ZONE LANE LINE, CLASS I, 642 PAINT MILE	614 WORK ZONE CENTER LINE, CLASS II, 642 PAINT MILE	614 WORK ZONE CHANNELIZING LINE, CLASS I, 642 PAINT FT	614 WORK ZONE STOP LINE, CLASS I, 642 PAINT FT	642, TYPE 1 EDGE LINE (6") TOTAL (PAY QUANTITY) (WHITE) MILE	642, TYPE 1 EDGE LINE (6") TOTAL (PAY QUANTITY) (YELLOW) MILE	642, TYPE 1 EDGE LINE (6") LANE LINE MILE	642, TYPE 1 CENTER LINE SOLID LINE EQUIVALENT MILE	642, TYPE 1 CENTER LINE TOTAL (PAY QUANTITY) MILE	642, TYPE 1 (740.04) STOP LINE 24" FT	642, TYPE 1 (740.04) CROSSWALK LINE, AS PER PLAN 12' FT	644 AUXILIARY MARKINGS (740.04) STOP LINE 24" FT	644 CROSSWALK LINE, AS PER PLAN 12" FT	644 CROSSWALK LINE 12" FT	644 TRANSVERSE/ DIAGONAL LINE (YELLOW) 24" FT	644 RAILROAD SYMBOL MARKING EACH	644 SCHOOL SYMBOL MARKING 72 INCH EACH	644 SCHOOL SYMBOL MARKING 96 INCH EACH	644 PARKING LOT STALL MARKING FT	644 LANE ARROW LEFT EACH	644 LANE ARROW RIGHT EACH	644 LANE ARROW THROUGH EACH	644 LANE ARROW COMBINATION EACH	646 (740.04) EDGE LINE (6") TOTAL (PAY QUANTITY) (WHITE) MILE	646 (740.04) EDGE LINE (6") TOTAL (PAY QUANTITY) (YELLOW) MILE	646 (740.04) LANE LINE MILE	646 (740.04) CENTER LINE SOLID LINE EQUIVALENT MILE	646 (740.04) CENTER LINE TOTAL (PAY QUANTITY) MILE
04/S<2/PV AND 01/S<2/PV																																
SR 511	ASD	14.07	14.53	0.46		0.92		56	0.66			0.92	0.46	28	192																	
	ADDITIONAL QUANTITY FOR SIDE ROADS																															
TOTAL						0.92		56	0.66			0.92	0.46	28	192																	
03/S<2/PV																																
SR 511	ASD	14.53	14.76	0.23		0.46			0.46			0.46	0.23			34																
	SUSPEND AND RESUME AT USR 250																															
SR 511	ASD	14.79	15.28	0.49		0.98			0.98			0.54	0.49			32																
	ADDITIONAL QUANTITY FOR SIDE ROADS															36																
TOTAL						1.44			1.44			1.00	0.72			102																
02/STR/PV																																
SR 511	ASD	15.28	17.99	2.71		5.42			5.42			4.41	2.71																			
SR 302	ASD	10.89	11.22	0.33		0.66			0.66			0.66	0.33																			
SR 511	ASD	18.33	25.09	6.76		13.52		68	13.52			9.78	6.76			34																
	SUSPEND AND RESUME AT USR 224																															
SR 511	ASD	25.11	27.64	2.53		7.59		75	5.06			3.43	2.53			47		102		2												
	ADDITIONAL QUANTITY FOR SIDE ROADS								0.02			0.01	0.01			354																
	DEDUCT QUANTITY FOR STRUCTURES					-0.05			-0.10			-0.05	-0.05																			
	ADDITIONAL QUANTITY FOR STRUCTURES																													0.10		0.05	0.05
TOTAL						27.14		143	24.58			18.24	12.29			435		102		2										0.10		0.05	0.05
TOTALS TO GENERAL SUMMARY						29.50		199	26.68			20.16	13.47	28	192	537		102		2										0.10		0.05	0.05

RAISED PAVEMENT MARKERS

ROUTE	COUNTY	STATION/SLM FROM	STATION/SLM TO	DETAIL	621 RAISED PAVEMENT MARKER REMOVED EACH	621 RPM EACH	PRISMATIC RETRO-REFLECTOR TYPES ONE-WAY WHITE EACH	PRISMATIC RETRO-REFLECTOR TYPES TWO-WAY YELLOW / YELLOW	PRISMATIC RETRO-REFLECTOR TYPES TWO-WAY WHITE / RED	PRISMATIC RETRO-REFLECTOR TYPES TWO-WAY YELLOW / RED	PRISMATIC RETRO-REFLECTOR TYPES TWO-WAY BLUE / BLUE	REMARKS
03/S<2/PV												
SR 511	ASD	14.53	14.69	6	42	42	30	12				STOP APPROACHES @ US 250 (FILL-IN TO CORP)
SR 511	ASD	14.69	15.28	GAP	39	39		39				CONTINUOUS ROUTE TREATMENT
02/STR/PV												
SR 511	ASD	15.28	17.99	GAP	179	179		179				CONTINUOUS ROUTE TREATMENT
SR 302	ASD	10.89	11.22	8/16	57	57		57				THRU APPROACHES @ SR 511/302 W/REVERSE CURVE
SR 511	ASD	18.33	18.48	17	32	32	16	16				STOP APPROACH @ SR 302 (NORTH JUNCTION)
SR 511	ASD	18.48	22.38	GAP	260	260		260				CONTINUOUS ROUTE TREATMENT
SR 511	ASD	22.38	22.91	16	46	46		46				2-CURVES @ 20 FT. SPACINGS
SR 511	ASD	22.91	25.15	GAP	147	147		147				CONTINUOUS ROUTE TREATMENT
SR 511	ASD	25.15	25.55	6	56	56	32	24				STOP APPROACHES @ US 224
SR 511	ASD	25.55	27.63	GAP	144	144		144				CONTINUOUS ROUTE TREATMENT
03/S<2/PV TOTAL					81	81						
02/STR/PV TOTAL					921	921						
TOTALS TO GENERAL SUMMARY					1,002	1,002						

DETAIL	DESCRIPTION
1	MULTILANE UNDIVIDED TYPICAL SPACING
2	TAPERED ACCEL. LANE
3	DECELERATION LANE
4	PARALLEL ACCEL LANE
5	MULTILANE DIVIDED/EXPRESSWAY
6	STOP APPROACH
7	2 LANE APPR. WITH TURN LANE
8	THROUGH APPROACH
9	3 LANE APPR. WITH TURN LANE
10	3 LANE DIVIDED TO 2 LANE TRANSITION
11	3 LANE UNDIVIDED TO 2 LANE TRANSITION
12	TWO LNAE NARROW BRIDGE
13	TWO WAY LEFT TURN LANE
14	ONE LANE BRIDGE
15	HORIZONTAL CURVE
16	HORIZONTAL CURVE ALT.
17	STOP APPROACH ALT.
18	FIRE HYDRANT
GAP	CENTER LINE AT 80 FT. TYP.

NOTES:

1) THRU LANES SHALL BE 11'-0" WIDE IN NON-CURBED SECTIONS AND STRIPED ACCORDING TO CMS 641.08A.

2) FOR ALL WORK ZONE MARKINGS, THE 642 PAINT USED SHALL BE TYPE 1.

4)STOP LINES & CENTER LINES SHALL BE STRIPED ALONG THE PROPOSED OVERLAY PORTIONS OF THE FOLLOWING SIDE ROADS:

04/S<2/PV:

N COTTAGE ST (SR 60) & W 13TH ST (SR 511)

W 13TH ST (SR 511) & TROY RD (SR 511)

02/STR/PV:

SR 511 & USR 224

CALCULATED NRF CHECKED KRB

PAVEMENT MARKING / RPM SUB-SUMMARY

ASD-511-(14.07)(18.33)
ASD-302-10.89

DESIGN FILE:i:\projects\88811\roadway\sheets\88811TS001.dgn
MODELNAME: Design
DATE:12/31/2014
WORKSTATIONkknopp

LOCATION (01/S<2/PV)	202 WALK REMOVED (SQ FT)		202 CURB REMOVED (FT)		608 CURB RAMP, TYPE A2 (SQ FT)		608 CURB RAMP, TYPE B1, AS PER PLAN (SQ FT)		608 CURB RAMP, TYPE D (SQ FT)	
	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT
S.R. 511 AND 13TH STREET	83.16	69.44				79.97			93.19	
S.R. 511 AND BELLE AVE	15.33	57.02	6.49	12.18	21.77			74.24		
S.R. 60 AND S.R. 511					47.43					
TOTAL (01/S<2/PV)	224.95		18.67		149.17		74.24		93.19	

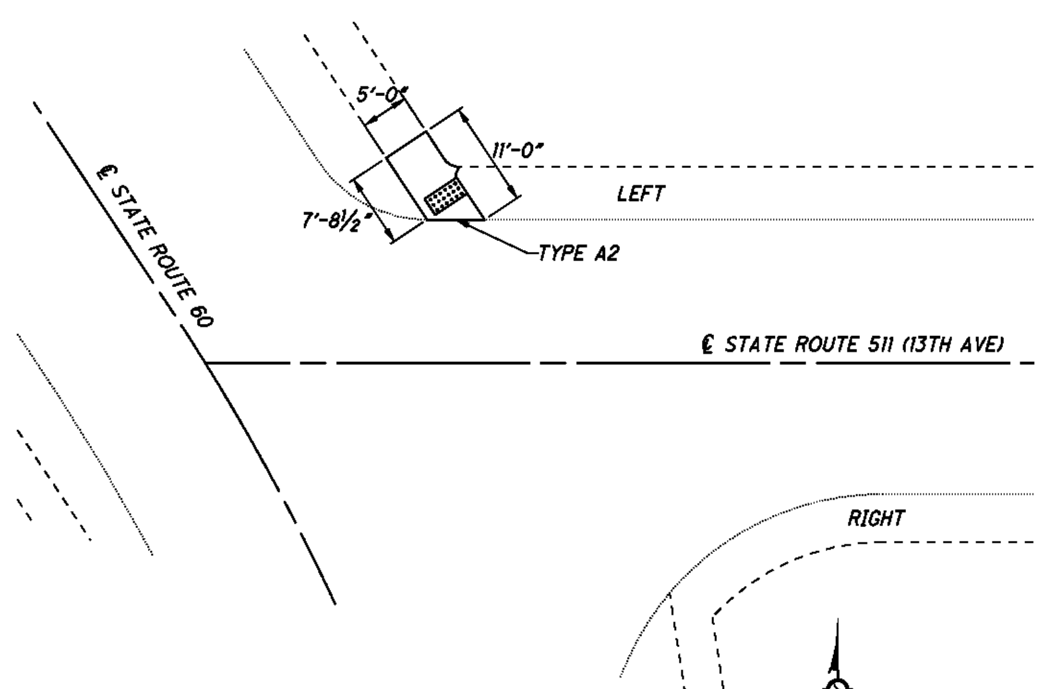
ALL QUANTITIES CARRIED TO THE ROADWAY SUB-SUMMARY

NOTES:

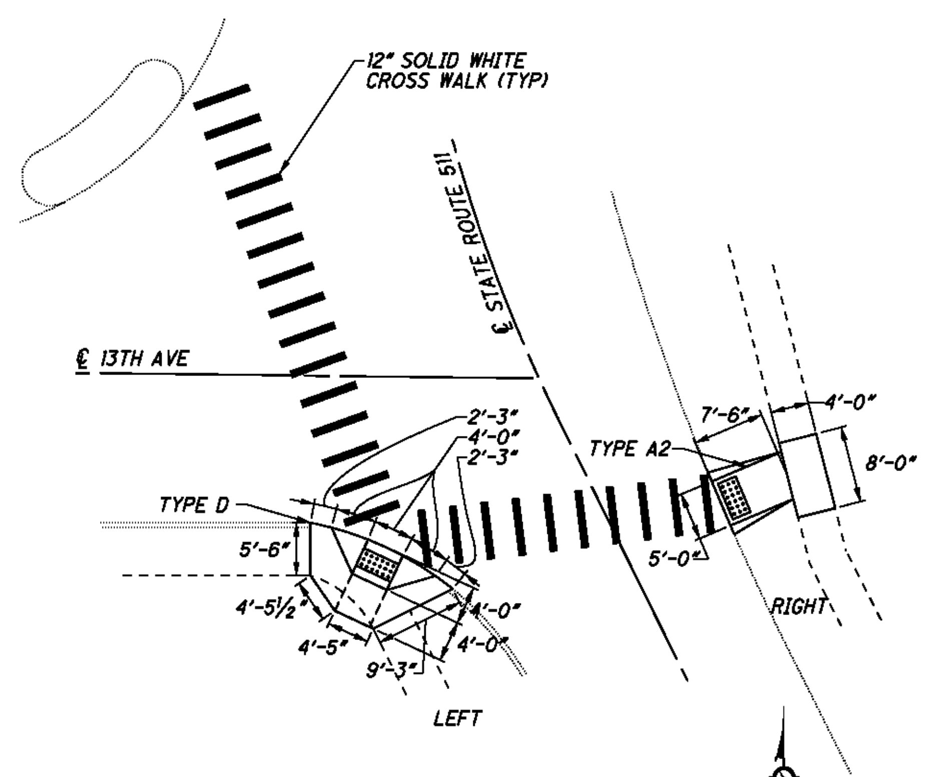
FOR ADDITIONAL DETAILS, SEE SCD BP-7.1, NEW CURB RAMPS.

AREAS CALCULATED ARE FOR ESTIMATING PURPOSES ONLY. ACTUAL AREAS SHALL BE VERIFIED BY THE PROJECT ENGINEER.

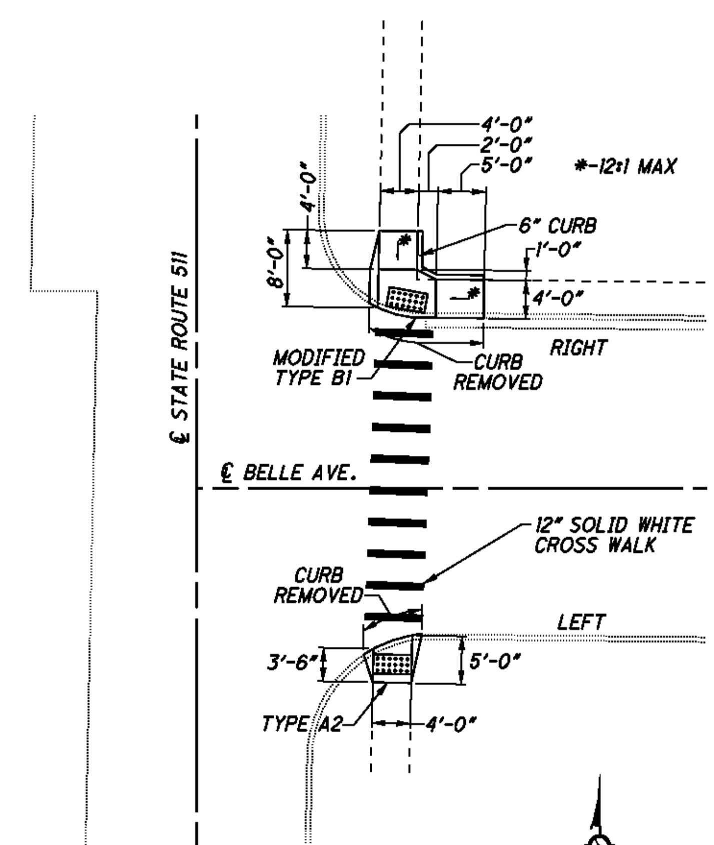
ALL QUANTITIES CARRIED TO THE GENERAL SUMMARY SHEET.



S.R. 60 AND 13TH STREET



S.R. 511 AND 13TH STREET



S.R. 511 AND BELLE AVE.

CALCULATED KCK
CHECKED NRF

CURB RAMP DETAILS

ASD-511-(14.07)(18.33)
ASD-302-10.89

DESIGN FILE:i:\projects\88811\roadway\sheets\88811GM002.dgn MODELNAME: Design

ASD-511-1597 S.F.N. 0305553 (05/STR/BR)

ITEM	EXTENSION	QUANTITY	UNIT	DESCRIPTION	REFERENCE SHEET
202	11301	44.6	CY	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	27
202	38500	257.33	FT	BRIDGE RAILING REMOVED	
202	98200	84	FT	REMOVAL MISC.: TYPE E EXTRUSION	26
202	98200	84	FT	REMOVAL MISC.: STRIP SEAL	26
509	10000	3576	LB	EPOXY COATED REINFORCING STEEL	
511	45711	6.2	CY	CLASS QC1 CONCRETE, ABUTMENT, AS PER PLAN (RECONSTRUCTION)	27
511	34411	39.6	CY	CLASS QC2 CONCRETE, SUPERSTRUCTURE, AS PER PLAN (RECONSTRUCTION)	27
511	53012	4.4	CY	CLASS QC2 CONCRETE, MISC.: APPROACH SLAB REPAIR	27
512	10100	134	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
512	33300	4.4	SY	TYPE A WATERPROOFING	
513	10201	712	LB	STRUCTURAL STEEL MEMBERS, LEVEL UF, AS PER PLAN	27
516	31000	136	FT	JOINT SEALER	
517	70000	257.33	FT	RAILING (TWIN STEEL TUBE)	
848	10201	428	SY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN (2¾" THICK)	27
848	20000	428	SY	SURFACE PREPARATION USING HYDRODEMOLITION	
848	30201	9	SY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN	27
848	50000	50	SY	HAND CHIPPING	
848	50100	LUMP		TEST SLAB	
848	50320	349	SY	EXISTING CONCRETE OVERLAY REMOVED, (2¼" NOMINAL THICKNESS)	

ASD-511-1715 S.F.N. 0305561 (05/STR/BR)

ITEM	EXTENSION	QUANTITY	UNIT	DESCRIPTION	REFERENCE SHEET
512	10300	235	SY	SEALING OF CONCRETE BRIDGE DECKS WITH HMWM RESIN	

DESIGN FILE:ii:\projects\88811\structures\88811GG001.dgn
WORKSTATION:nfoster
MODELNAME: Design
DATE:12/8/2014

DESIGN AGENCY
ODOT DISTRICT THREE OFFICE
OF PLANNING & ENGINEERING

DESIGNED NRF | DRAWN NRF | REVIEWED KCK | DATE 11/14
CHECKED KRB | REVISED

STRUCTURE SUMMARY

ASD-511-(14.07)(18.33)
ASD-302-10.89

ASD-511-1854 S.F.N. 0305618 (05/STR/BR)

ITEM	EXTENSION	QUANTITY	UNIT	DESCRIPTION	REFERENCE SHEET
512	10300	318	SY	SEALING OF CONCRETE BRIDGE DECKS WITH HMWM RESIN	

ASD-511-1957 S.F.N. 0305642 (05/STR/BR)

ITEM	EXTENSION	QUANTITY	UNIT	DESCRIPTION	REFERENCE SHEET
512	10300	71	SY	SEALING OF CONCRETE BRIDGE DECKS WITH HMWM RESIN	

ASD-511-2584 S.F.N. 0305715 (05/STR/BR)

ITEM	EXTENSION	QUANTITY	UNIT	DESCRIPTION	REFERENCE SHEET
202	38603	100	FT	BRIDGE RAILING REMOVED FOR REUSE, AS PER PLAN	26
407	10000	13	GALLON	TACK COAT	
409	30001	68	FT	SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS, AS PER PLAN	27
442	00201	6	CY	ASPHALT CONCRETE SURFACE COURSE, 9.5MM, TYPE A (446), AS PER PLAN	5
517	75600	100	FT	DEEP BEAM BRIDGE RETROFIT RAILING	

DESIGN FILE: ii:\projects\88811\structures\88811GG001.dgn
WORKSTATION nfoster
MODELNAME: Design
DATE: 12/8/2014

DESIGN AGENCY
ODOT DISTRICT THREE OFFICE
OF PLANNING & ENGINEERING

DESIGNED	DRAWN	REVIEWED	DATE
NRF	NRF	KCK	11/14
CHECKED	REVISED		
KRB			

STRUCTURE SUMMARY

ASD-511-(14.07)(18.33)
ASD-302-10.89

2 / 2

24
48

	BRIDGE DECK DATA								ROADWAY DATA		
	COUNTY, ROUTE, BRIDGE NO.	LOCATION	STRUCTURE TYPE	LENGTH (BRIDGE DECK)	WIDTH	BRIDGE DECK AREA	SKEW	EXISTING WEARING SURFACE	EXISTING PAVEMENT WIDTH	EXISTING APPROACH SLAB WIDTH	EXISTING APPROACH SLAB LENGTH
				FT.	FT.	SY.			FT.	FT.	FT.
	* ASD-511-1597	OVER LANG CREEK	3-SPAN STEEL BEAM	120.42±	32±	428±	40° L.F.	CONCRETE	25	20	20
	+ ASD-511-1715	OVER LEIDIGH MILL CREEK	SINGLE SPAN STEEL BEAM	62.02±	34±	234±	15° L.F.	CONCRETE	26	34	20
	** ASD-302-1110	OVER LEIDIGH MILL CREEK	2-SPAN PRESTRESSED CONCRETE BOX BEAM	78.75±	28±	245±	0°	ASPHALT	26	28	15
	++ ASD-511-1854	OVER LEIDIGH MILL CREEK	3-SPAN REINFORCED CONCRETE SLAB	79.54±	36±	318±	0° L.F.	CONCRETE	24	20	15
	++ ASD-511-1957	OVER TRIBUTARY OF LEIDIGH MILL CREEK	SINGLE SPAN REINFORCED CONCRETE SLAB	20.00±	32±	71±	30° R.F.	CONCRETE	24		
	*** ASD-511-2218	OVER TRIBUTARY OF LEIDIGH MILL CREEK	TWIN 72" x 44" PIPE ARCH CULVERT				5° L.F.	ASPHALT	24		
	*** ASD-511-2402	OVER TRIBUTARY OF BUCK CREEK	11'-5" x 7'-3" PIPE ARCH CULVERT				0°	ASPHALT	24		
	*** ASD-511-2548	OVER TRIBUTARY OF BUCK CREEK	TWIN 4' REINFORCED CONCRETE BOX CULVERT				0°	ASPHALT	24		
	+++ ASD-511-2584	OVER BOYD DITCH	SINGLE SPAN PRESTRESSED CONCRETE BOX BEAM	43.17±	34±	163±	0°	ASPHALT	24	34	15

* BUTT JOINT AT THE APPROACH SLAB REPAIR LOCATIONS TO THE STRUCTURE. OMIT RESURFACING OVER BRIDGE DECK. (SEE DETAILS IN THE PLAN FOR STRUCTURE WORK). (SEE ROADWAY PLANS FOR PLANING AND PAVING QUANTITIES).

\+ BUTT JOINT AT BRIDGE DECK ON SOUTH (REAR) END OF STRUCTURE AND BUTT JOINT AT APPROACH SLAB ON THE NORTH (FORWARD) END OF THE STRUCTURE. OMIT RESURFACING OVER BRIDGE DECK AND FORWARD APPROACH SLAB. (SEE DETAILS IN THE PLAN FOR STRUCTURE WORK). (SEE ROADWAY PLANS FOR PLANING AND PAVING QUANTITIES).

** BUTT JOINT AT THE POLYMER MODIFIED JOINTS. DO NOT DAMAGE EXISTING JOINTS. OMIT RESURFACING OVER BRIDGE DECK. NO STRUCTURE WORK. (SEE ROADWAY PLANS FOR PLANING AND PAVING QUANTITIES).

++ BUTT JOINT AT BRIDGE DECK. OMIT RESURFACING OVER BRIDGE DECK. (SEE DETAILS IN THE PLAN FOR STRUCTURE WORK). (SEE ROADWAY PLANS FOR PLANING AND PAVING QUANTITIES).

*** PLANE AND PAVE OVER STRUCTURE BASED ON MAIN LINE PAVEMENT TREATMENT. NO STRUCTURE WORK. (SEE ROADWAY PLANS FOR PLANING AND PAVING QUANTITIES).

+++ TAPER PLANING FROM 1½" TO ¾" DEEP AT THE CENTERLINE OF PAVEMENT AND FROM 2½" TO ¾" AT THE EDGE OF PAVEMENT IN 437.5 FEET AT THE APPROACHES TO THE STRUCTURE. PAVE 1¼" OF SURFACE COURSE OVER ENTIRE STRUCTURE FULL WIDTH FROM EDGE OF DECK TO EDGE OF DECK. PAVE OVER THE EXISTING POLYMER JOINTS AND DO NOT UPGRADE. (SEE ROADWAY PLANS FOR PLANING AND PAVING QUANTITIES UP TO THE STRUCTURE AND THE STRUCTURE PLANS FOR STRUCTURE PAVING QUANTITIES).

DESIGN AGENCY
ODOT DISTRICT THREE OFFICE OF PLANNING & ENGINEERING

DESIGNED NRF | DRAWN NRF | REVIEWED KCK | DATE 11/14 | CHECKED KRB | REVISED

STRUCTURE TREATMENT

ASD-511-(14.07)(18.33)
ASD-302-10.89

1 / 1

25
48

DESIGN FILE: i:\projects\88811\structures\88811MD001.dgn
WORKSTATION: nfoster
DATE: 12/8/2014
MODELNAME: Design

REFERENCES SHALL BE MADE TO SUPPLEMENTAL SPECIFICATIONS

SUPPLEMENTAL SPECIFICATIONS: 848 DATED 4/18/2014

REFERENCES SHALL BE MADE TO STANDARD BRIDGE DRAWINGS

STANDARD BRIDGE DRAWINGS:

AS-1-54	DATED 12/1/54
CSB-1-55	DATED 12/3/56
DBR-2-73	DATED 7/19/02
DBR-3-11	DATED 7/15/11
GSD-1-96	DATED 7/19/02
TST-1-99	DATED 1/17/14

DESIGN SPECIFICATIONS

DESIGN SPECIFICATIONS: THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2002, INCLUDING THE 2003-2007 INTERIM SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN DATA

CONCRETE CLASS QC1 - COMPRESSIVE STRENGTH 4,000 PSI
CONCRETE CLASS QC2 - COMPRESSIVE STRENGTH 4,500 PSI
REINFORCING STEEL - ASTM A615 OR A998, GRADE 60, MINIMUM YIELD STRENGTH 60,000 PSI
STRUCTURAL STEEL - ASTM A709 GRADE 36 - YIELD STRENGTH 36,000 PSI

EXISTING PLANS

THE FOLLOWING EXISTING PLANS MAY BE INSPECTED IN THE ODOT DISTRICT 3 OFFICE IN ASHLAND, OHIO.

STRUCTURE #:	PLAN NAME:	DATE:
ASD-511-1597	ASD-511-(16.00)(18.50)	1957
ASD-511-1715	ASD-511-17.35	1990
ASD-511-1854	ASD-511-(16.00)(18.50)	1957
ASD-511-1957	ASD-511-19.16	1962
ASD-511-2584	ASD-511-26.15	1989

EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURES HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURES AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURES AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02, AND 513.04.

BASE CONTRACT BID PRICES UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURES. HOWEVER, THE DEPARTMENT WILL PAY FOR ALL PROJECT WORK BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED IN THE FIELD.

PLACING ASPHALT CONCRETE FEATHERING ON APPROACHES TO BRIDGES

SPECIAL CARE SHALL BE TAKEN, WHEN PLACING THE ASPHALT CONCRETE BUTT JOINT TO EFFECT A SMOOTH TRANSITION FROM THE EXISTING APPROACH PAVEMENT TO THE BRIDGE DECK THE CONTRACTOR'S ATTENTION IS CALLED TO STANDARD DRAWING BP-3.1 FOR REQUIRED TOLERANCES.

DECK PROTECTION METHOD

SUPERPLASTICIZED DENSE CONCRETE OVERLAY
SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN
CONCRETE DRIP STRIP

IN-STREAM WORK RESTRICTION

THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS TO AVOID CONSTRUCTION IN AND/OR LIMIT DEMOLITION DEBRIS FROM ENTERING STREAMS OR WETLANDS. ANY MATERIAL THAT DOES FALL INTO STREAMS OR WETLANDS SHALL BE REMOVED AS SOON AS POSSIBLE.

ALL PROJECTS INVOLVING JURISDICTIONAL WATERS OF THE UNITED STATES (STREAMS, RIVERS, NON-ISOLATED WETLANDS) AND/OR ISOLATED WETLANDS ARE SUBJECT TO REGULATION UNDER SECTIONS 404 AND 401 OF THE CLEAN WATER ACT, AND POSSIBLY OHIO EPA ISOLATED WETLAND LAW. IT IS ANTICIPATED THAT NO IN-STREAM WORK, OR WORK UNDER THE STREAM'S ORDINARY HIGH WATER MARK (OHWM) WILL BE NEEDED. THEREFORE NO WATERWAY PERMITS HAVE BEEN GRANTED AND NO IN-STREAM WORK IS ALLOWED.

SHOULD WORK (EITHER TEMPORARY OR PERMANENT) IN THE STREAM BE NEEDED; IT WILL REQUIRE A PERMIT AND AUTHORIZATION BY THE UNITED STATES ARMY CORPS OF ENGINEERS (USACE). THE CONTRACTOR SHALL NOT UTILIZE FILLS BELOW OHWM UNTIL SUCH ACTIVITY IS AUTHORIZED BY THE USACE. DETAILS OF THIS REQUIREMENT ARE DESCRIBED IN ODOT'S SUPPLEMENTAL SPECIFICATION 832.09.

USACE DEFINITION OF OHWM - THE ORDINARY HIGH WATER MARK IS THE LINE ON THE SHORES ESTABLISHED BY THE FLUCTUATIONS OF WATER AND INDICATED BY PHYSICAL CHARACTERISTICS SUCH AS A CLEAR, NATURAL LINE IMPRESSED ON THE BANK; SHELVING; CHANGES IN THE CHARACTER OF THE SOIL; DESTRUCTION OF TERRESTRIAL VEGETATION; THE PRESENCE OF LITTER AND DEBRIS; OR THE APPROPRIATE MEANS THAT CONSIDER THE CHARACTERISTICS OF THE SURROUNDING AREAS.

ITEM 202 - REMOVAL MISC.: STRIP SEAL

THIS ITEM SHALL BE USED TO REMOVE THE EXISTING STRIP SEAL LOCATED BETWEEN THE APPROACH SLAB AND THE DECK OR BACKWALL.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER FOOT FOR THE ABOVE ITEM, WHICH WILL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM 202 - REMOVAL MISC.: TYPE E EXTRUSION

THIS ITEM SHALL BE USED TO REMOVE THE EXISTING STEEL TYPE E EXTRUSION AND TO PROVIDE A CLEAN SURFACE TO WELD THE PROPOSED BAR TO.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER FOOT FOR THE ABOVE ITEM, WHICH WILL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM 202 - BRIDGE RAILINIG REMOVED FOR REUSE, AS PER PLAN

THIS ITEM SHALL BE USED TO REMOVE AND REINSTALL THE EXISTING BRIDGE RAILING FOR WORK ON ASD-511-2584 IF NECESSARY. BRIDGE RAILING POSTS ARE TO REMAIN IN PLACE. GUARDRAIL MUST BE UP WHEN FLAGGERS ARE NOT PRESENT (SEE SCD MT-101.90).

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER FOOT FOR THE ABOVE ITEM, WHICH WILL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

DESIGN AGENCY
ODOT DISTRICT THREE OFFICE OF PLANNING & ENGINEERING

DESIGNED	DRAWN	REVIEWED	DATE
NRF	NRF	KCK	11/14
CHECKED	REVISED		
KRB			

STRUCTURE NOTES

ASD-511-(14.07)(18.33)
ASD-302-10.89

DESIGN FILE:i:\projects\88811\structures\88811GN001.dgn MODELNAME: Design
WORKSTATION:nfoster DATE:12/8/2014

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

THIS ITEM SHALL INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES. ITEMS TO BE REMOVED INCLUDE ALL EXISTING MATERIALS BEING REPLACED BY NEW CONSTRUCTION AND MISCELLANEOUS ITEMS THAT ARE NOT SHOWN TO BE INCORPORATED INTO THE FINAL CONSTRUCTION AND ARE DIRECTED TO BE REMOVED BY THE ENGINEER. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE-RAMS WILL NOT BE PERMITTED. THE METHOD OF REMOVAL SHALL BE APPROVED BY THE ENGINEER. PERFORM ALL WORK IN A MANNER THAT WILL NOT CUT, ELONGATE OR DAMAGE THE EXISTING REINFORCING STEEL TO BE PRESERVED. THE WEIGHT OF THE HAMMERS SHALL NOT BE MORE THAN 60 POUNDS. DO NOT PLACE PNEUMATIC HAMMERS IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE. SUBMIT CONSTRUCTION PLANS ACCORDING TO CMS 501.05.

CUT LINE CONSTRUCTION JOINT PREPARATION: SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. LEAVE THE EXISTING REINFORCING STEEL, IF REQUIRED IN THE PLANS, IN PLACE. PRIOR TO CONCRETE PLACEMENT, ABRASIVELY CLEAN JOINT SURFACES AND EXISTING EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THOROUGHLY CLEAN THE JOINT SURFACE AND EXPOSED REINFORCEMENT OF ALL DIRT, DUST, RUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH, BUT REMOVE ALL PACK AND LOOSE RUST. THOROUGHLY DRENCH EXISTING CONCRETE SURFACES WITH CLEAN WATER AND ALLOW TO DRY TO A DAMP CONDITION BEFORE PLACING CONCRETE.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER CUBIC YARD FOR THE ABOVE ITEMS WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM 409 - SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS, AS PER PLAN

THIS ITEM SHALL BE USED AT LOCATIONS INDICATED IN THE PLAN AND CONSISTS OF SAW CUTTING AND SEALING THE FINISHED SURFACE OF THE ASPHALT CONCRETE PAVEMENT.

PAYMENT FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS, NECESSARY TO COMPLETE THE ABOVE WORK SHALL BE INCLUDED IN THE UNIT PRICE BID PER FOOT FOR THE ABOVE ITEM.

ITEM 511 - CLASS QC1 CONCRETE, ABUTMENT, AS PER PLAN (RECONSTRUCTION)

THIS ITEM SHALL BE USED AT THE LOCATIONS INDICATED IN THE PLANS. ALL EXCAVATION AND EMBANKMENT SHALL BE CONSIDERED INCIDENTAL AND INCLUDED IN THE COST OF ITEM 511 - CLASS QC1 CONCRETE, ABUTMENT, AS PER PLAN (RECONSTRUCTION).

THE COARSE AGGREGATE SHALL BE LIMESTONE.

ALL EXISTING SURFACES TO WHICH THE CONCRETE IS TO BOND SHALL BE CLEANED BY ABRASIVE BLASTING. THESE SURFACES SHALL BE MADE FREE OF SPALLS, LAITANCE, PAINT, RUST AND OTHER CONTAMINANTS DETRIMENTAL TO ACHIEVING AN ADEQUATE BOND.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER CUBIC YARD FOR THE ABOVE ITEM WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM 511 - CLASS QC2 CONCRETE, SUPERSTRUCTURE, AS PER PLAN (RECONSTRUCTION)
ITEM 511 - CLASS QC2 CONCRETE, MISC.: APPROACH SLAB REPAIR

THIS ITEM SHALL BE USED AT LOCATIONS INDICATED IN THE PLAN.

THE CONCRETE SHALL BE CLASS QC2 WITH THE COARSE AGGREGATE BEING LIMESTONE.

ALL EXISTING SURFACES TO WHICH THE CONCRETE IS TO BOND SHALL BE CLEANED BY ABRASIVE BLASTING. THESE SURFACES SHALL BE MADE FREE OF SPALLS, LAITANCE, PAINT, RUST AND OTHER CONTAMINANTS DETRIMENTAL TO ACHIEVING AN ADEQUATE BOND.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER CUBIC YARD FOR THE ABOVE WHICH WILL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL UF, AS PER PLAN

ALL REQUIREMENTS OF 513 APPLY TO SHOP FABRICATED MEMBERS. PERFORM WORK FOR FIELD FABRICATED MEMBERS ACCORDING TO ITEM 513, EXCEPT AS MODIFIED HEREIN. THE DEPARTMENT WILL NOT REQUIRE THE CONTRACTOR PERFORMING FIELD FABRICATION TO BE PRE-QUALIFIED AS SPECIFIED IN SUPPLEMENT 1078. SUBMIT A WRITTEN LETTER OF MATERIAL ACCEPTANCE, 501.06, TO THE ENGINEER. PROVIDE SHOP DRAWINGS ACCORDING TO 513.06 OR SUPPLY THE ENGINEER WITH "AS-BUILT" DRAWINGS MEETING 513.06 AFTER COMPLETION OF FIELD FABRICATION. THE ENGINEER WILL REVIEW THE SUBMITTED DRAWINGS FOR CONCURRENCE WITH THE FINAL AS-BUILT CONDITION. IF NECESSARY, THE ENGINEER MAY CONTACT THE OFFICE OF STRUCTURAL ENGINEERING FOR TECHNICAL ASSISTANCE. IF THE ENGINEER IS SATISFIED WITH THE "AS-BUILT" DRAWINGS AND THE DELIVERED MATERIALS, SUPPLY A COPY OF THE DRAWINGS, STAMPED AND DATED, ALONG WITH MICROFILM, TO THE STRUCTURAL, WELDING AND METALS SECTION OF THE OFFICE OF MATERIAL MANAGEMENT FOR RECORD PURPOSES.

THE FOLLOWING MEMBERS ARE INCLUDED IN THIS ITEM: 2" x 1¼" BAR.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER POUND FOR THE ABOVE ITEMS WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM 848 - SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN
ITEM 848 - SUPERPLASTICIZED DENSE CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN

EACH ITEM SHALL BE USED AT THE LOCATIONS INDICATED IN THE PLANS.

THE COARSE AGGREGATE SHALL BE LIMESTONE.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID FOR EACH OF THE ABOVE ITEMS WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

DESIGN AGENCY
ODOT DISTRICT THREE OFFICE OF PLANNING & ENGINEERING

DESIGNED	DRAWN	REVIEWED	DATE
NRF	NRF	KCK	11/14
CHECKED	REVISED		
KRB			

STRUCTURE NOTES

ASD-511-(14.07)(18.33)
ASD-302-10.89

2 / 2

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48

DESIGN FILE: i:\projects\88811\structures\88811GN001.dgn
WORKSTATION: nfoster
DATE: 12/8/2014
MODELNAME: Design

ITEM 614 - MAINTAINING TRAFFIC

TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES EXCEPT THAT THROUGH TRAFFIC ON STRUCTURE ASD-511-1597 WILL BE DETOURED AS SHOWN ON THIS SHEET FOR A MAXIMUM OF 45 CONSECUTIVE CALENDAR DAYS. THE 45 DAYS SHALL BE CONSIDERED AS AN INTERIM COMPLETION DATE (SECTION 108), AND FOR EACH CALENDAR DAY BEYOND THE 45 DAYS THAT THE ROADWAY REMAINS CLOSED TO TRAFFIC, THE CONTRACTOR SHALL BE ASSESSED A DISINCENTIVE FEE OF $1000 PER DAY.

THE CONTRACTOR SHALL NOTIFY THE ROADWAY SERVICES MANAGER, IN WRITING, A MINIMUM OF 14 DAYS IN ADVANCE OF THE DETOUR BEING PLACED.

THE CONTRACTOR SHALL ALSO NOTIFY, IN WRITING, THE FOLLOWING AGENCIES AT LEAST 14 DAYS PRIOR TO THE TIME WHEN THE DETOUR WILL BE IMPLEMENTED:

ASHLAND COUNTY ENGINEER
TOWNSHIP TRUSTEES FOR TOWNSHIP ROADS ONLY
LOCAL FIRE, EMS, AND POLICE DEPARTMENT(S)
LOCAL SCHOOL DISTRICT(S)
ASHLAND COUNTY SHERIFF

THE CONTRACTOR SHALL PROVIDE, ERECT, MAINTAIN AND SUBSEQUENTLY REMOVE THE DETOUR SIGNING AS DETAILED ON THIS SHEET. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING, INSTALLING, MAINTAINING AND REMOVING THE GATES AND BARRICADES AT THE END OF THE WORK AREA AND THE ADVANCE WARNING SIGNS AS SHOWN ON STANDARD CONSTRUCTION DRAWING MT-101.60.

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATION, 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 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

ACCESS TO ADJACENT PROPERTIES SHALL BE MAINTAINED AT ALL TIMES, AS PER SECTION 614.02 (A).

PROJECT DETOUR LIMITATIONS

THE ROADWAY SHALL NOT BE CLOSED TO TRAFFIC FOR THE REMOVAL OR MODIFICATION OF THE EXISTING STRUCTURE, CONDUIT, OR PARTS OF THE STRUCTURE UNTIL PRECAST STRUCTURAL MATERIALS (EG.: CONDUIT, HEADWALLS, ETC.) NECESSARY TO PLACE THE ROADWAY BACK INTO SERVICE HAVE BEEN TESTED, APPROVED AND ARE READY FOR DELIVERY TO THE PROJECT SITE.

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THESE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED LIQUIDATED DAMAGES IN ACCORDANCE WITH CMS 108.07.

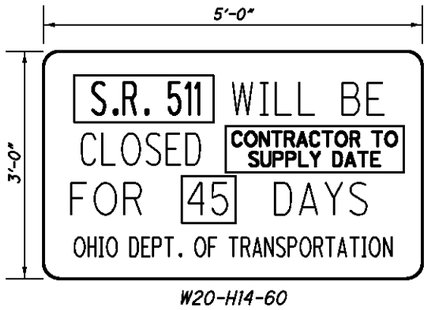
DETOUR SIGNING

THE FOLLOWING QUANTITY IS INCLUDED FOR THE CONTRACTOR TO PROVIDE THE DETOUR SIGNING AS SHOWN AS PER 614.06 (B):

(05/STR/BR)
ITEM 614, DETOUR SIGNING - LUMP

NOTICE OF CLOSURE SIGNS

THESE SIGNS 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 NOT TO INTERFERE WITH THE VISIBILITY OF ANY OTHER TRAFFIC CONTROL SIGNS. THEY SHOULD BE ERECTED AT THE POINT OF CLOSURE. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614, MAINTAINING TRAFFIC, AND IT SHALL INCLUDE FURNISHING, ERECTING, MAINTAINING AND REMOVING THE SIGNS AND SUPPORTS.



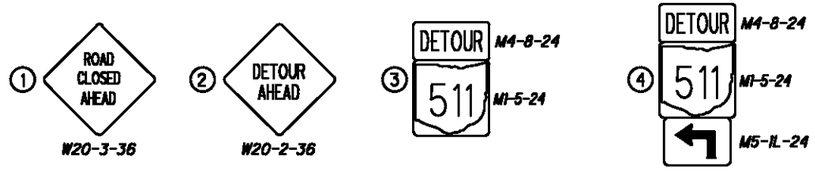
W20-H14-60

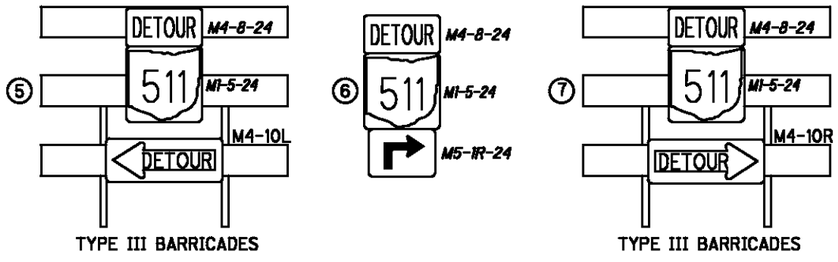
MAINTENANCE OF DETOUR ROUTE

DURING THE TIME THAT TRAFFIC IS DETOURED, THE CONTRACTOR SHALL MAINTAIN THE 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 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 DIRECTED BY THE ENGINEER. THE DESIGNATED DETOUR ROUTE IS TO BE REVIEWED AND REPAIRED PRIOR TO THE ASPHALT CONTRACTOR OR SUBCONTRACTOR LEAVING THE PROJECT.

PAYMENT FOR THE WORK NECESSARY TO REPAIR THE DETOUR ROUTE WILL BE PERFORMED BY CHANGE ORDER.

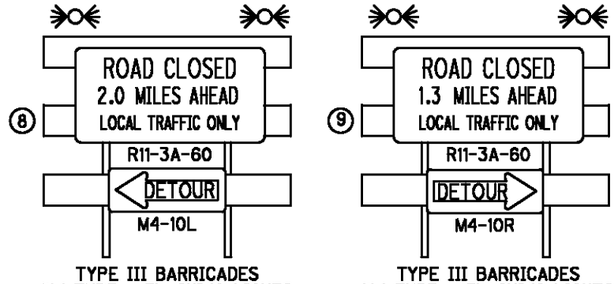
SIGN LEGEND





TYPE III BARRICADES

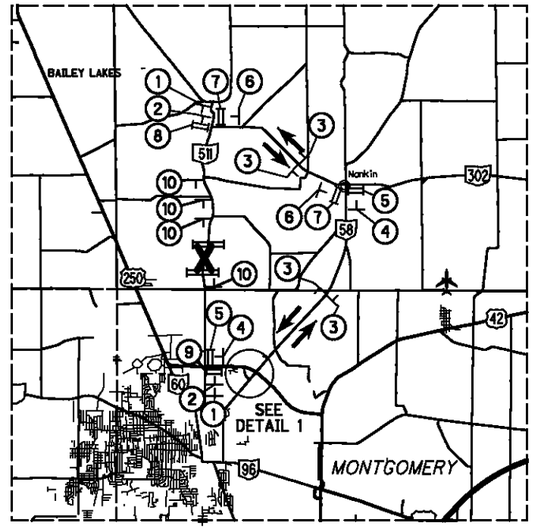
TYPE III BARRICADES

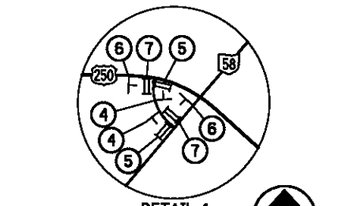


TYPE III BARRICADES W/ TYPE A FLASHING LIGHTS

TYPE III BARRICADES W/ TYPE A FLASHING LIGHTS

W20-H16-48





MAP LEGEND

X - PROJECT LOCATION
- OFFICIAL STATE SIGNED DETOUR
- GATES AND BARRICADES, AS PER MT-101.60

CALCULATED KCK
CHECKED NRF

MAINTENANCE OF TRAFFIC
DETOUR PLAN FOR STR. ASD-511-1597

ASD-511-(14.07)(18.33)
ASD-302-10.89

28
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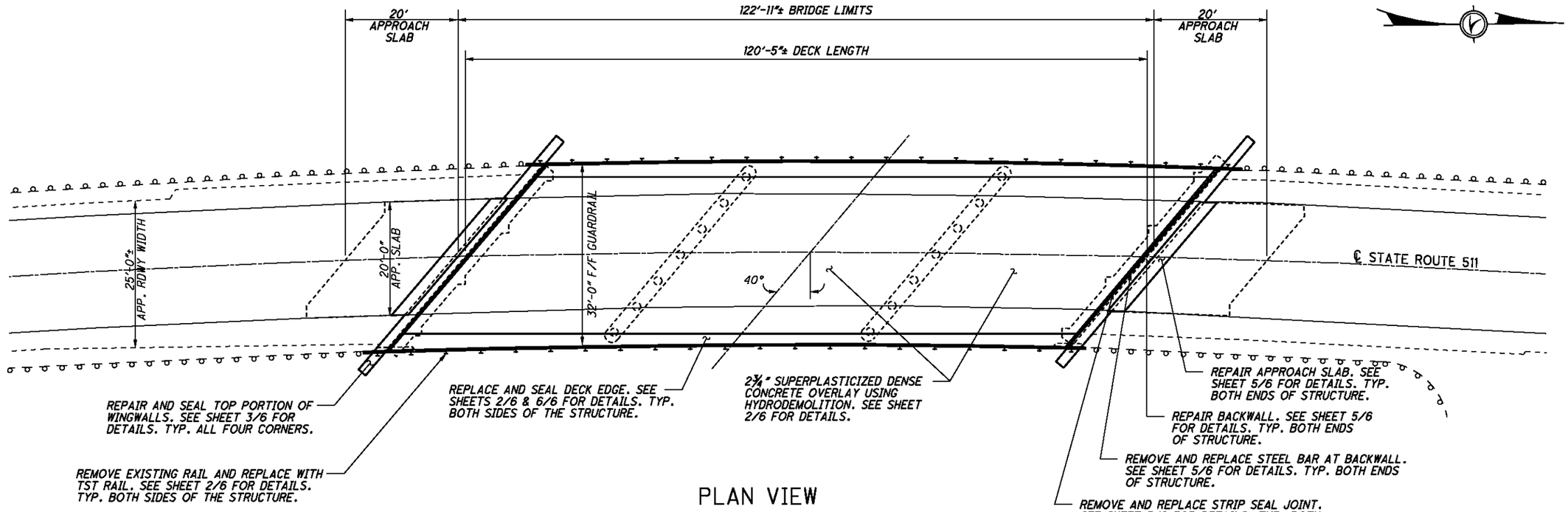
DESIGN FILE: ii:\projects\88811\roadway\sheets\88811MD001.dgn MODEL NAME: Design
WORKSTATION: ksalay DATE: 12/9/2014



PLAN VIEW

ESTIMATED QUANTITIES			
ITEM	QUANTITY	UNIT	DESCRIPTION
202	44.6	CY	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN
202	257.33	FT	BRIDGE RAILING REMOVED
202	84	FT	REMOVAL MISC.: TYPE E EXTRUSION
202	84	FT	REMOVAL MISC.: STRIP SEAL
509	3576	LB	EPOXY COATED REINFORCING STEEL
511	6.2	CY	CLASS QC1 CONCRETE, ABUTMENT, AS PER PLAN (RECONSTRUCTION)
511	39.6	CY	CLASS QC2 CONCRETE, SUPERSTRUCTURE, AS PER PLAN (RECONSTRUCTION)
511	4.4	CY	CLASS QC2 CONCRETE, MISC.: APPROACH SLAB REPAIR
512	134	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)
512	4.4	SY	TYPE A WATERPROOFING
513	712	LB	STRUCTURAL STEEL MEMBERS, LEVEL UF, AS PER PLAN
516	136	FT	JOINT SEALER
517	257.33	FT	RAILING (TWIN STEEL TUBE)
848	428	SY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN (2 3/4" THICK)
848	428	SY	SURFACE PREPARATION USING HYDRODEMOLITION
848	9	CY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN
848	50	SY	HAND CHIPPING
848	LUMP		TEST SLAB
848	349	SY	EXISTING CONCRETE OVERLAY REMOVED, (2 1/4" NOMINAL THICKNESS)

ALL QUANTITIES CARRIED TO THE STRUCTURE SUMMARY.

DESIGN AGENCY
ODOT DISTRICT THREE OFFICE
OF PLANNING AND ENGINEERING

DESIGNED	DRAWN	REVIEWED	DATE
NRF	NRF	KCK	11/14
CHECKED	REVISED	STRUCTURE FILE NUMBER	
KRB		0305553	

PLAN VIEW & DECK EDGE PLAN
ASD-511-1597
OVER LANG CREEK

ASD-511-(14.07)(18.33)
ASD-302-10.89

1 / 6

29
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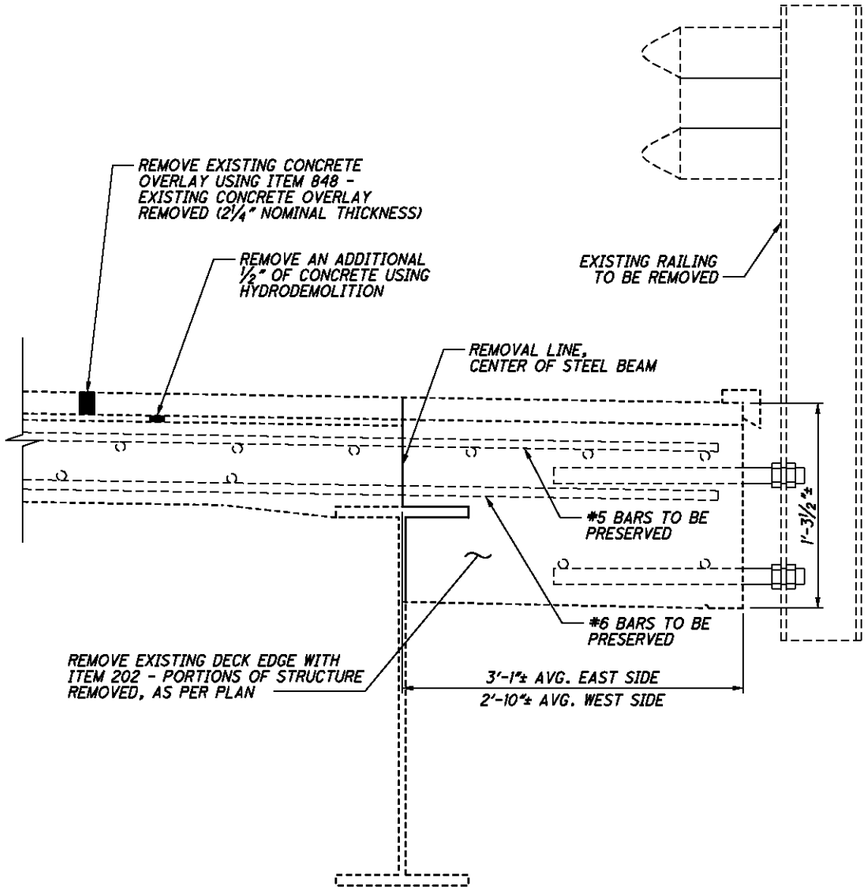
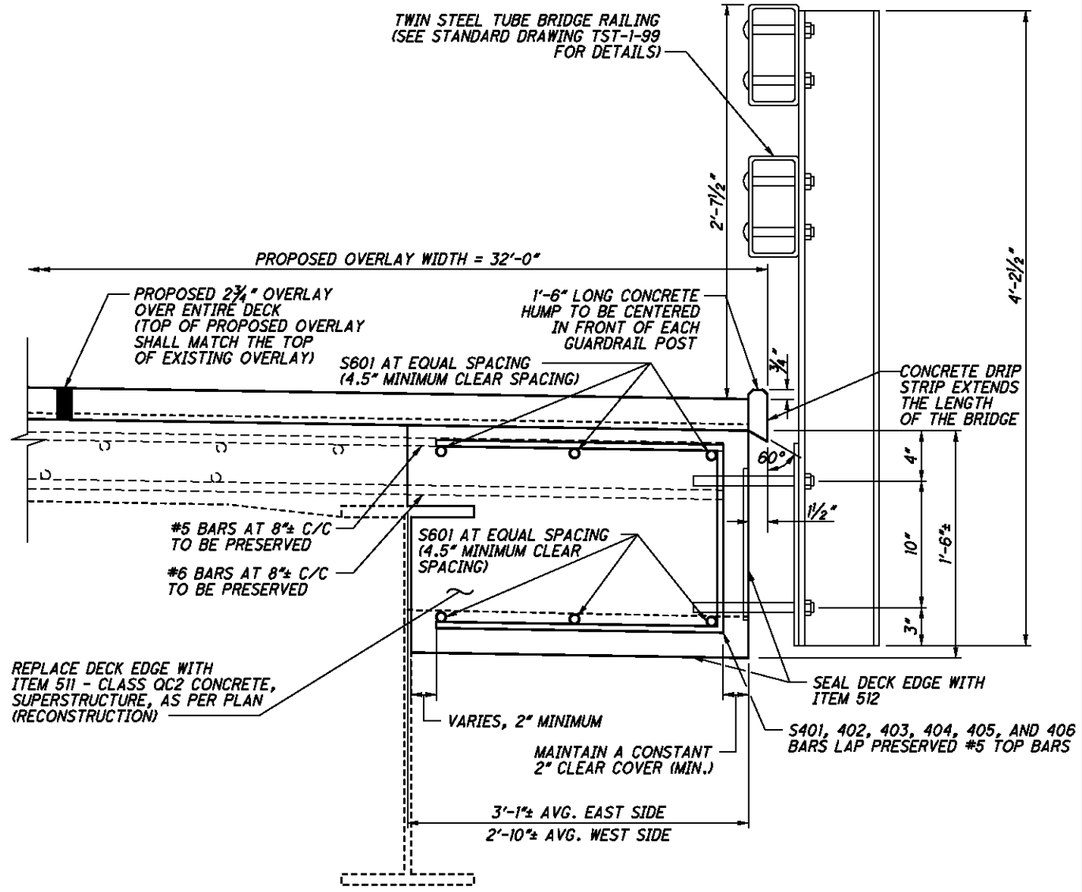
DESIGN FILE: i:\projects\88811\structures\ASD-511-1597\ASD-511-15.97.dgn
WORKSTATION: nfoster
DATE: 12/8/2014
MODELNAME: Design



EXISTING DECK EDGE



DECK EDGE REPLACEMENT

DECK LENGTH = 120'-5"
SKEW = 40°

NOTES:

1) S601 BARS SHALL HAVE A MINIMUM LAP LENGTH OF 4'-4".

2) ALL SEALING SHALL BE PERFORMED AFTER ALL REPAIRS ARE MADE.

3) SEE SHEET 6 OF 6 FOR ADDITIONAL DECK EDGE REPLACEMENT DETAILS AND THE DECK EDGE REPLACEMENT REINFORCING STEEL TABLE.

4) ACCORDING TO THE CORING DATA, THE TOP REINFORCING MAT IN THE DECK IS 4"± FROM THE TOP OF THE EXISTING CONCRETE OVERLAY. EXTREME CARE SHALL BE USED WHEN REMOVING THE DECK EDGE TO NOT DAMAGE ANY EXISTING STEEL IN THE DECK.

ESTIMATED QUANTITIES			
ITEM	QUANTITY	UNIT	DESCRIPTION
202	34	CY	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN
202	257.33	FT	BRIDGE RAILING REMOVED
509	3489	LB	EPOXY COATED REINFORCING STEEL
511	39.6	CY	CLASS QC2 CONCRETE, SUPERSTRUCTURE, AS PER PLAN (RECONSTRUCTION)
512	119	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)
517	257.33	FT	RAILING (TWIN STEEL TUBE)
848	428	SY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN (2 3/4" THICK)
848	428	SY	SURFACE PREPARATION USING HYDRODEMOLITION
848	9	CY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN
848	50	SY	HAND CHIPPING
848	LUMP		TEST SLAB
848	349	SY	EXISTING CONCRETE OVERLAY REMOVED, (2 1/4" NOMINAL THICKNESS)

ALL QUANTITIES CARRIED TO SHEET 1/6.

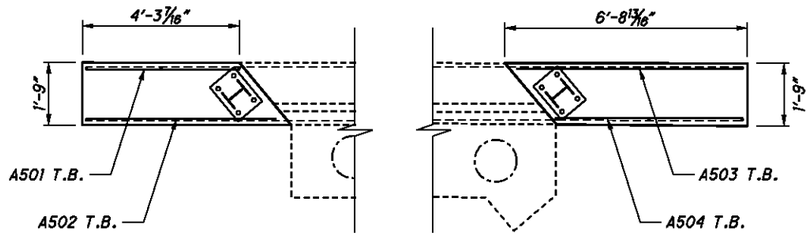
DESIGN AGENCY
ODOT DISTRICT THREE OFFICE
OF PLANNING & ENGINEERING

DESIGNED	DRAWN	REVIEWED	DATE
NRF	NRF	KCK	11/14
CHECKED	REVISED	STRUCTURE FILE NUMBER	
KRB		0305553	

DECK EDGE REPLACEMENT AND OVERLAY DETAILS
ASD-511-1597
OVER LANG CREEK

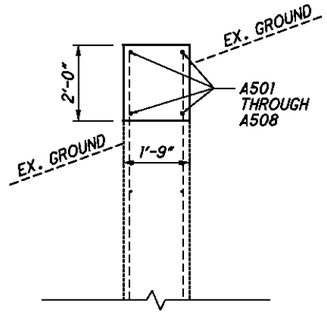
ASD-511-(14.07)(18.33)
ASD-302-10.89

DESIGN FILE: i:\projects\88811\structures\ASD-511-1597\ASD511_0511CMD001.dgn
WORKSTATION: nfoster
DATE: 12/8/2014
MODELNAME: Design

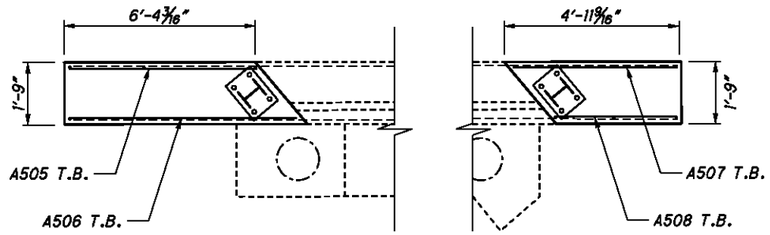


WINGWALL RECONSTRUCTION PLAN VIEW
(SOUTH WINGWALL)

ELEVATION VIEW

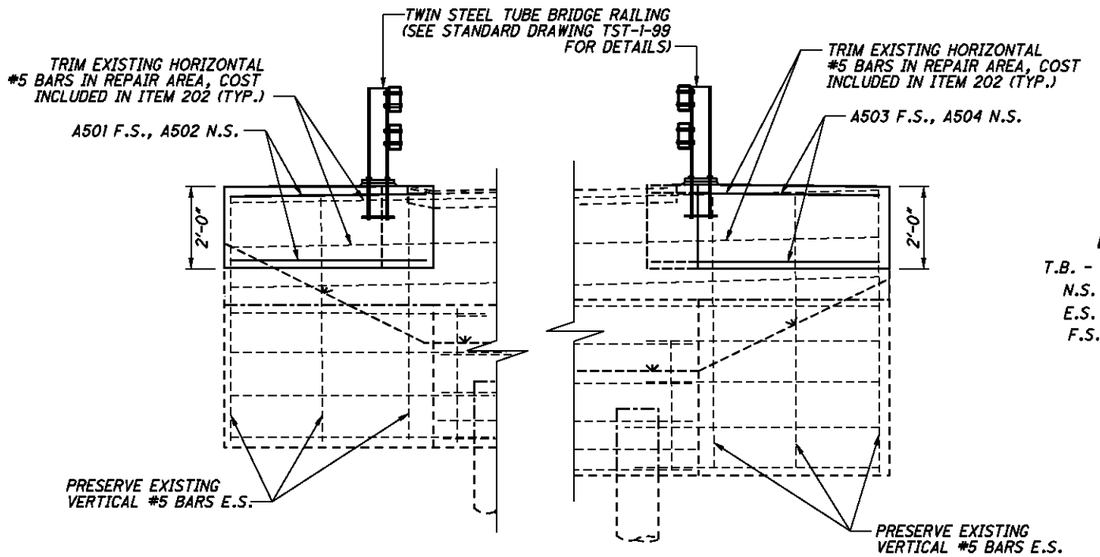


WINGWALL RECONSTRUCTION
(TYP. NORTH & SOUTH WINGWALL)



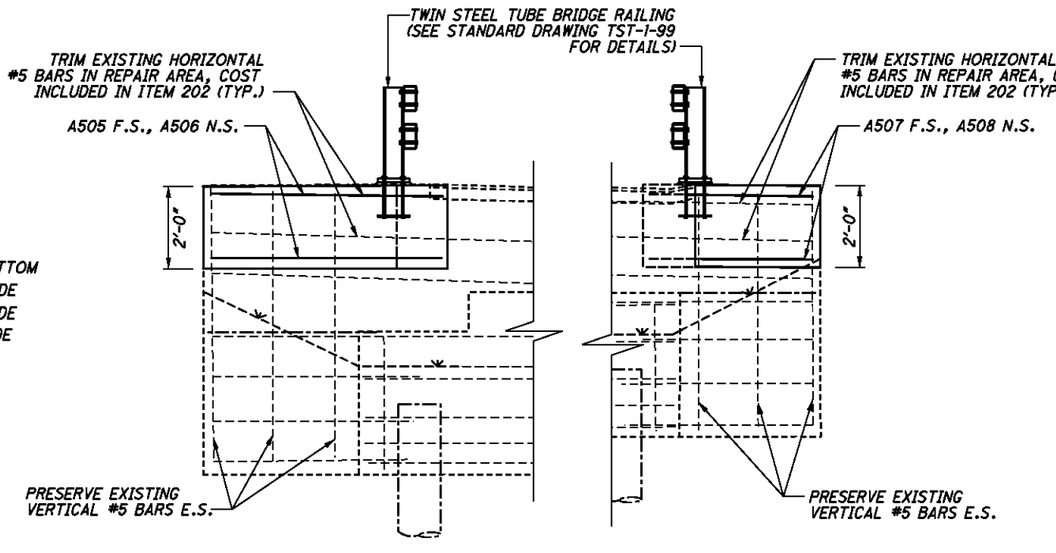
WINGWALL RECONSTRUCTION PLAN VIEW
(NORTH WINGWALL)

ELEVATION VIEW



WINGWALL RECONSTRUCTION ELEVATION VIEW
(SOUTH WINGWALL)

LEGEND
T.B. - TOP & BOTTOM
N.S. - NEAR SIDE
E.S. - EACH SIDE
F.S. - FAR SIDE



WINGWALL RECONSTRUCTION ELEVATION VIEW
(NORTH WINGWALL)

NOTES:

1) REPAIR THE TOP TWO FEET OF THE WINGWALLS WITH ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN AND ITEM 511 - CLASS QC1 CONCRETE, ABUTMENT, AS PER PLAN (RECONSTRUCTION). SEAL REPAIR AREA AFTER CURING WITH ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE).

2) ADJUST THE NEW #5 REINFORCING BARS TO AVOID THE PROPOSED TWIN STEEL TUBE BRIDGE RAILING ANCHOR BOLTS AND SPACER PLATE.

3) SEE SHEET 6 OF 6 FOR THE WINGWALL RECONSTRUCTION REINFORCING STEEL TABLE.

ESTIMATED QUANTITIES			
ITEM	QUANTITY	UNIT	DESCRIPTION
202	2.9	CY	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN
509	87	LB	EPOXY COATED REINFORCING STEEL
511	2.9	CY	CLASS QC1 CONCRETE, ABUTMENT, AS PER PLAN (RECONSTRUCTION)
512	15	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

ALL QUANTITIES CARRIED TO SHEET 1/6.

DESIGN AGENCY
ODOT DISTRICT THREE OFFICE
OF PLANNING & ENGINEERING

DESIGNED NRF | DRAWN NRF | REVIEWED KCK | DATE 11/14
CHECKED KRB | REVISED | STRUCTURE FILE NUMBER 0305553

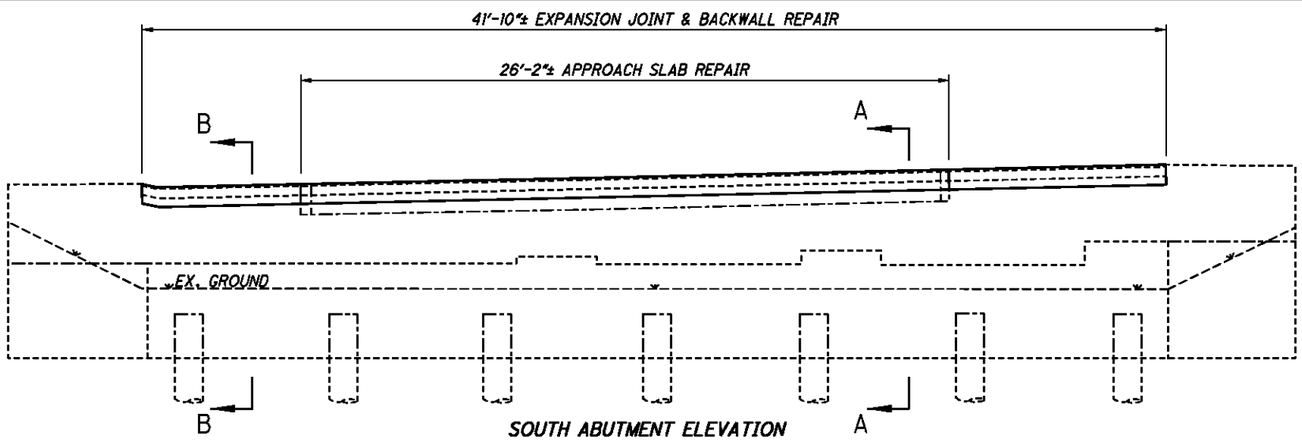
WINGWALL RECONSTRUCTION DETAILS
ASD-511-1597
OVER LANG CREEK

ASD-511-(14.07)(18.33)
ASD-302-10.89

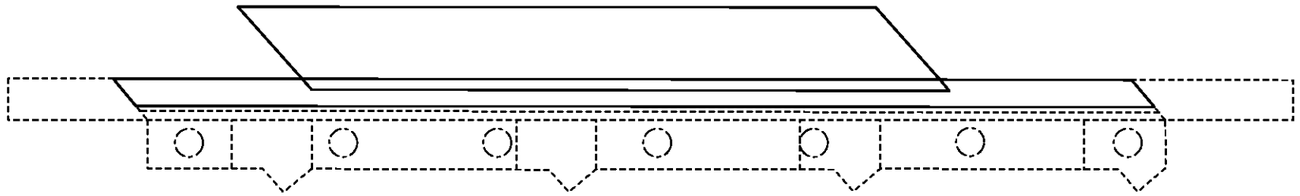
3 / 6

31
48

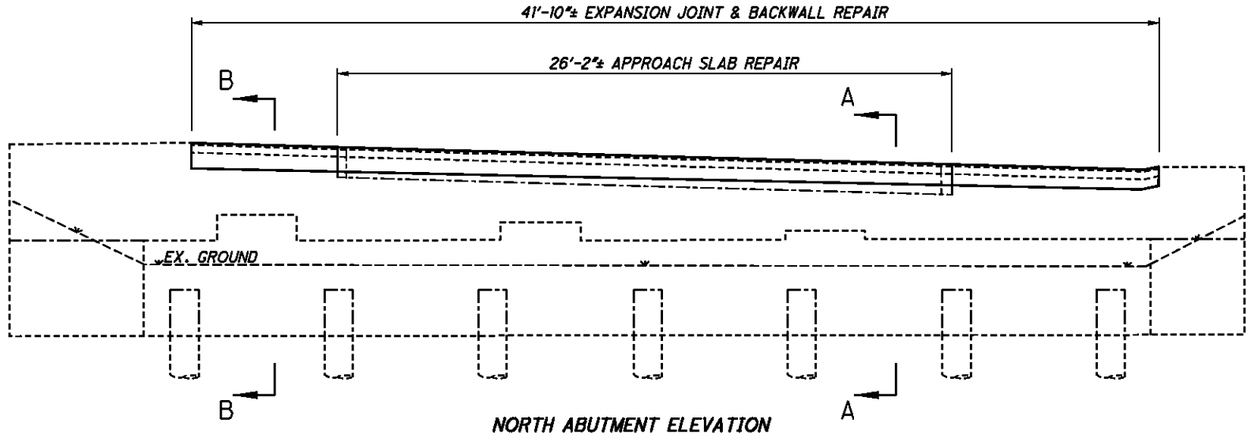
DESIGN FILE: ii:\projects\88811\structures\ASD-511-1597\ASD511_0511CMD001.dgn
WORKSTATION: nfoster
DATE: 12/8/2014
MODEL NAME: Design



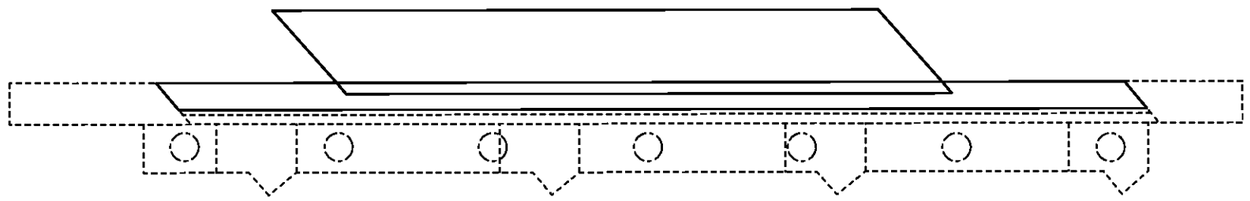
SOUTH ABUTMENT ELEVATION
EXPANSION JOINT, BACKWALL & APPROACH SLAB REPAIR



SOUTH ABUTMENT PLAN
EXPANSION JOINT, BACKWALL & APPROACH SLAB REPAIR



NORTH ABUTMENT ELEVATION
EXPANSION JOINT, BACKWALL & APPROACH SLAB REPAIR



NORTH ABUTMENT PLAN
EXPANSION JOINT, BACKWALL & APPROACH SLAB REPAIR

NOTES:

1) DIMENSIONS SHOWN ON THIS SHEET WERE MEASURED ALONG THE SKEWED (40°) CENTERLINE OF THE BRIDGE.

2) FOR SECTION A-A AND B-B VIEWS, SEE SHEET 5/6.

DESIGN FILE: i:\projects\88811\structures\ASD-511-1597\ASD511_0511CMD001.dgn
WORKSTATION: nfoster
DATE: 12/8/2014
MODEL NAME: Design

DESIGN AGENCY
ODOT DISTRICT THREE OFFICE
OF PLANNING & ENGINEERING

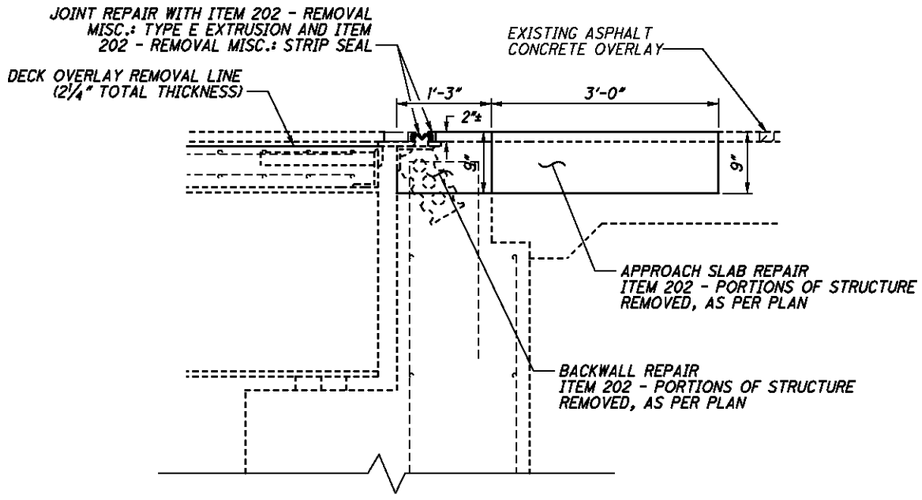
DESIGNED	DRAWN	REVIEWED	DATE
NRF	NRF	KCK	11/14
CHECKED	REVISED	STRUCTURE FILE NUMBER	
KRB		0305553	

EXPANSION JOINT, BACKWALL & APPROACH REPAIR DETAILS
ASD-511-1597
OVER LANG CREEK

ASD-511-(14.07)(18.33)
ASD-302-10.89

4 / 6

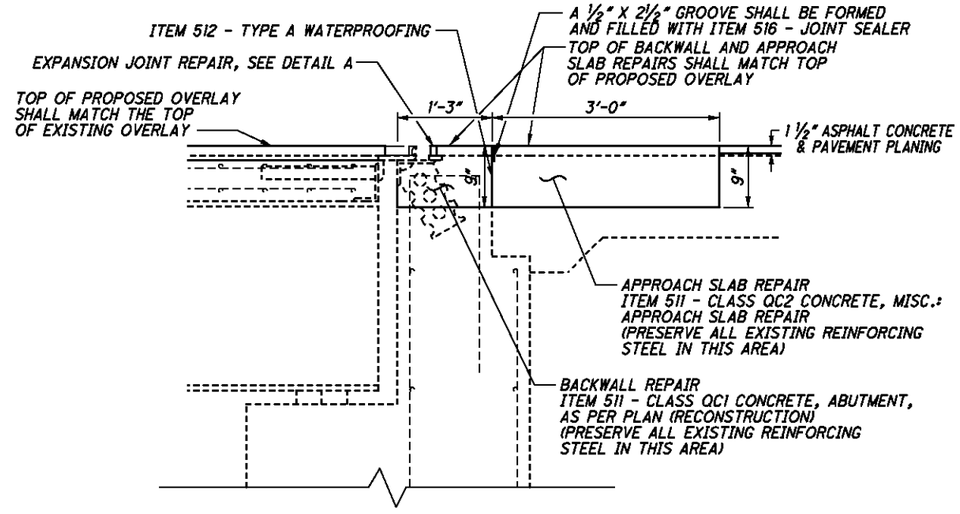
32
48



EXISTING SECTION A-A VIEW

EXPANSION JOINT, BACKWALL & APPROACH SLAB REPAIR

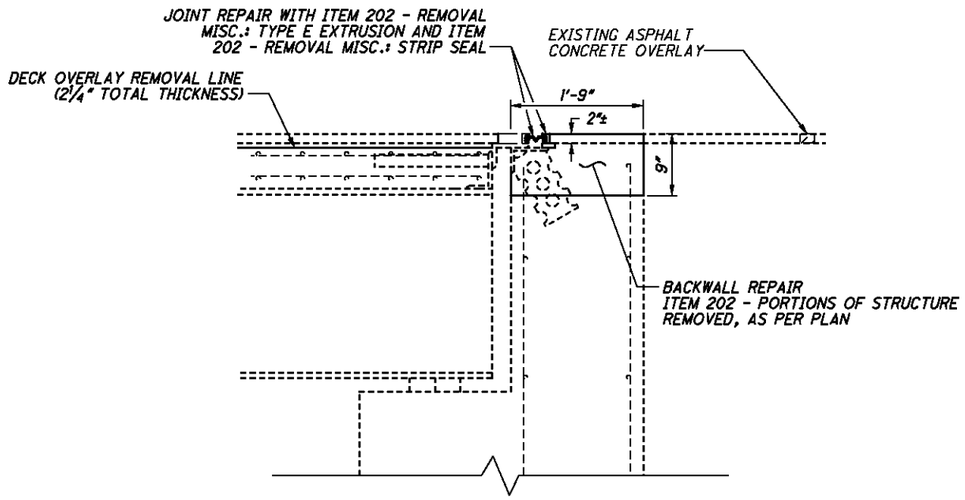
LENGTH = 26'-2"± (TYP. BOTH ENDS)



PROPOSED SECTION A-A VIEW

EXPANSION JOINT, BACKWALL & APPROACH SLAB REPAIR

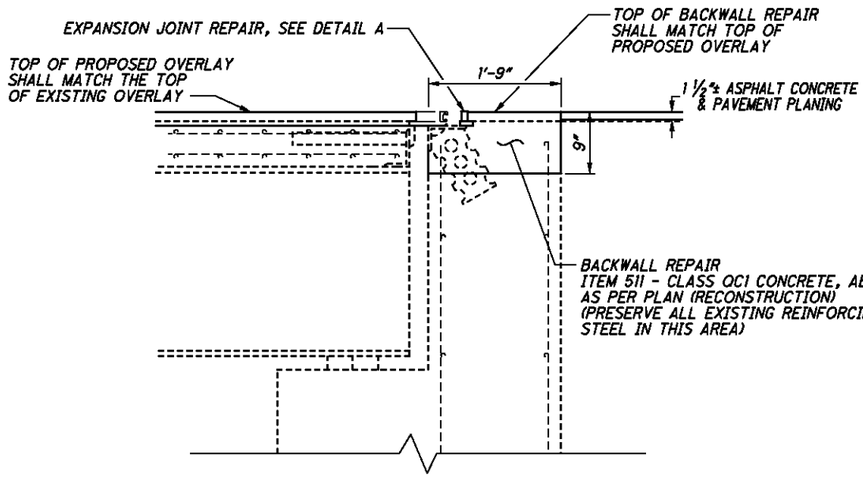
LENGTH = 26'-2"± (TYP. BOTH ENDS)



EXISTING SECTION B-B VIEW

EXPANSION JOINT & BACKWALL REPAIR

LENGTH = 7'-10"± (TYP. ALL FOUR CORNERS)



PROPOSED SECTION B-B VIEW

EXPANSION JOINT & BACKWALL REPAIR

LENGTH = 7'-10"± (TYP. ALL FOUR CORNERS)

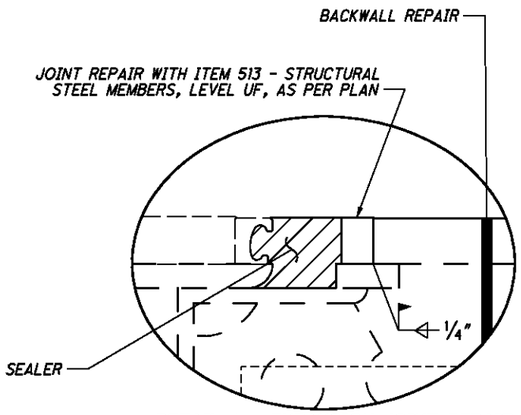
ESTIMATED QUANTITIES			
ITEM	QUANTITY	UNIT	DESCRIPTION
202	7.7	CY	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN
202	84	FT	REMOVAL MISC.: TYPE E EXTRUSION
202	84	FT	REMOVAL MISC.: STRIP SEAL
511	3.3	CY	CLASS QC1 CONCRETE, ABUTMENT, AS PER PLAN (RECONSTRUCTION)
511	4.4	CY	CLASS QC2 CONCRETE, MISC.: APPROACH SLAB REPAIR
512	4.4	SY	TYPE A WATERPROOFING
513	712	LB	STRUCTURAL STEEL MEMBERS, LEVEL UF, AS PER PLAN
516	136	FT	JOINT SEALER

ALL QUANTITIES CARRIED TO SHEET 1/6.

NOTES:

1) ALL EXISTING REINFORCING STEEL SHALL BE PRESERVED.

2) FOR DETAILS NOT SHOWN, SEE STANDARD DRAWING GSD-1-96.



DETAIL A - EXPANSION JOINT REPAIR

LENGTH = 41'-10"± (TYP. BOTH ENDS)

DESIGN FILE: i:\projects\88811\structures\ASD-511-1597\ASD511_0511CMD001.dgn MODELNAME: Design
WORKSTATION nfoster DATE: 12/8/2014

DESIGN AGENCY
ODOT DISTRICT THREE OFFICE
OF PLANNING & ENGINEERING

DESIGNED	DRAWN	REVIEWED	DATE
NRF	NRF	KCK	11/14
CHECKED	REVISED	STRUCTURE FILE NUMBER	
KRB		0305553	

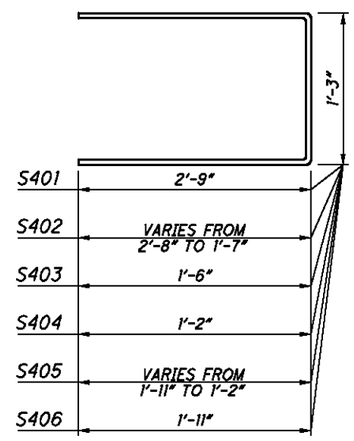
EXPANSION JOINT, BACKWALL & APPROACH REPAIR DETAILS
ASD-511-1597
OVER LANG CREEK

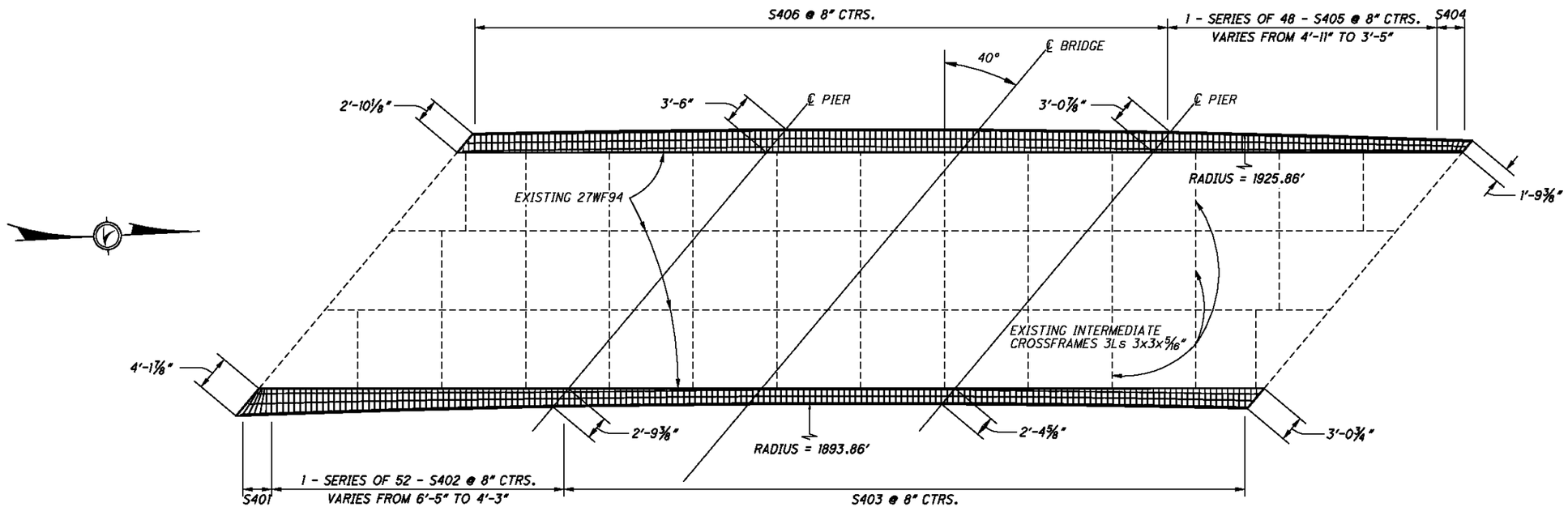
ASD-511-(14.07)(18.33)
ASD-302-10.89

REINFORCING STEEL TABLE

MARK	NO.	LENGTH	WEIGHT	SHAPE
WINGWALL RECONSTRUCTION				
A501	2	3'-11"	8.2 LB	STRAIGHT
A502	2	5'-5"	11.3 LB	STRAIGHT
A503	2	6'-4"	13.2 LB	STRAIGHT
A504	2	4'-11"	10.3 LB	STRAIGHT
A505	2	6'-0"	12.5 LB	STRAIGHT
A506	2	7'-5"	15.5 LB	STRAIGHT
A507	2	4'-7"	9.6 LB	STRAIGHT
A508	2	3'-2"	6.6 LB	STRAIGHT
TOTAL WEIGHT:			87 LB	
DECK EDGE REPLACEMENT				
S401	5	6'-7"	22 LB	BENT
	ONE SERIES OF 52	4'-3"		
S402		TO	186 LB	BENT
		6'-5"		
S403	119	4'-1"	326 LB	BENT
S404	5	3'-5"	12 LB	BENT
	ONE SERIES OF 48	3'-5"		
S405		TO	134 LB	BENT
		4'-11"		
S406	121	4'-11"	399 LB	BENT
S601	48	33'-5"	2410 LB	STRAIGHT
TOTAL WEIGHT:			3489 LB	

BENDING DIAGRAMS





DECK EDGE REPLACEMENT PLAN VIEW

DESIGN FILE: i:\projects\88811\structures\ASD-511-1597\ASD511_0511CMD001.dgn MODELNAME: Design
WORKSTATION nfoster DATE: 12/8/2014

DESIGN AGENCY
ODOT DISTRICT THREE OFFICE
OF PLANNING & ENGINEERING

DESIGNED	DRAWN	REVIEWED	DATE
NRF	NRF	KCK	11/14
CHECKED	REVISED	STRUCTURE FILE NUMBER	
KRB		0305553	

REINFORCING STEEL & DECK EDGE REPLACEMENT DETAILS
ASD-511-1597
OVER LANG CREEK

ASD-511-(14.07)(18.33)
ASD-302-10.89

6 / 6

34
48

NOTES:
1) PAVEMENT PLANING SHALL BE SUSPENDED OVER THE BRIDGE DECK AND FORWARD APPROACH SLAB. CARE SHOULD BE TAKEN TO NOT DAMAGE EXISTING JOINTS. SHOULD ANY JOINT(S) BE DAMAGED BY THE CONTRACTOR, THEY SHALL BE REPAIRED AT NO COST TO THE DEPARTMENT.

ITEM	QUANTITY	UNIT	DESCRIPTION
512	235	SY	SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN

**ALL QUANTITES CARRIED TO STRUCTURE SUMMARY

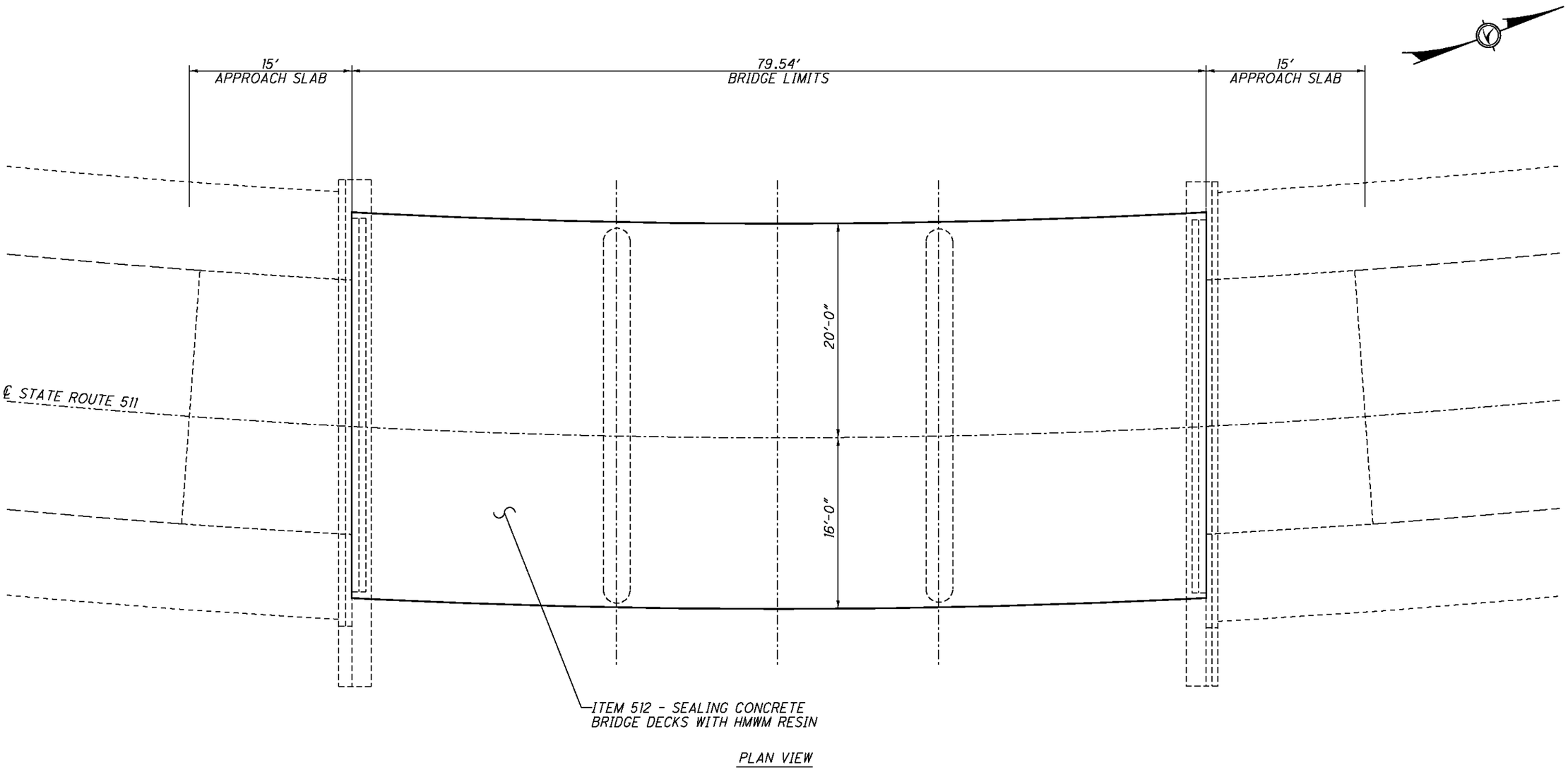
DESIGN FILE: I:\projects\88811\structures\ASD-511-1715 SFN 0305561\ASD-511-1715.dgn MODELNAME: Design
WORKSTATION nfoster DATE: 12/8/2014

DESIGN AGENCY
ODOT DISTRICT THREE OFFICE
OF PLANNING AND ENGINEERING

DESIGNED	DRAWN	REVIEWED	DATE
KCK	KCK	NRF	11/14
CHECKED	REVISED	STRUCTURE FILE NUMBER	
KRB	---	0305561	

STRUCTURE DETAILS
ASD-511-1715
STRUCTURE OVER LEIDIGH MILL CREEK

ASD-511-(14.07)(18.33)
ASD-302-10.89



PLAN VIEW

NOTES:
1) PAVEMENT PLANING SHALL BE SUSPENDED OVER THE BRIDGE DECK. CARE SHOULD BE TAKEN TO NOT DAMAGE JOINTS. SHOULD ANY JOINT(S) BE DAMAGED BY THE CONTRACTOR, THEY SHALL BE REPAIRED AT NO COST TO THE DEPARTMENT.

ITEM	QUANTITY	UNIT	DESCRIPTION
512	318	SY	SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN

**ALL QUANTITES CARRIED TO STRUCTURE SUMMARY

DESIGN AGENCY
ODOT DISTRICT THREE OFFICE
OF PLANNING AND ENGINEERING

DESIGNED	DRAWN	REVIEWED	DATE
KCK	KCK	NRF	11/14
CHECKED	REVISED	STRUCTURE FILE NUMBER	
KRB	---	0305618	

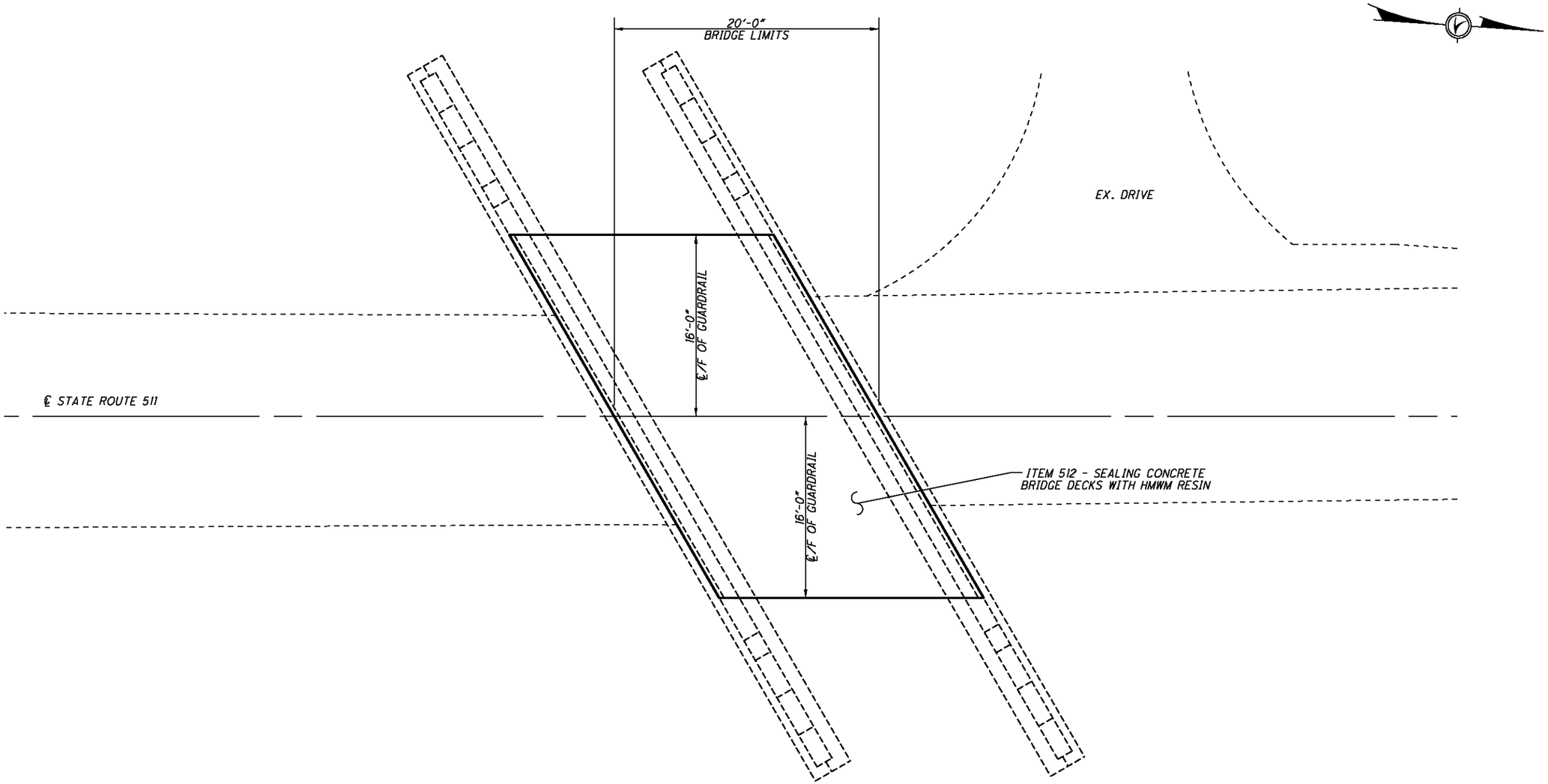
STRUCTURE DETAILS
ASD-511-1854
STRUCTURE OVER LEIDGH MILL CREEK

ASD-511-(14.07)(18.33)
ASD-302-10.89

1 / 1

36
48

DESIGN FILE: i:\projects\88811\structures\ASD-511-1854 SFN 0305618\ASD-511-1854.dgn
WORKSTATION: nfoster
DATE: 12/8/2014
MODEL NAME: Design



NOTES:
1) PAVEMENT PLANING SHALL BE SUSPENDED OVER THE BRIDGE DECK. CARE SHOULD BE TAKEN TO NOT DAMAGE JOINTS. SHOULD ANY JOINT(S) BE DAMAGED BY THE CONTRACTOR, THEY SHALL BE REPAIRED AT NO COST TO THE DEPARTMENT.
2) EXISTING GUARDRAIL NOT SHOWN FOR CLARITY.
3) INGRESS AND EGRESS ACCESS SHALL BE CONTINUOUSLY MAINTAINED TO THE DRIVE LOCATED IN THE NORTHWEST CORNER OF THE STRUCTURE.

ITEM	QUANTITY	UNIT	DESCRIPTION
512	235	SY	SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN

**ALL QUANTITES CARRIED TO STRUCTURE SUMMARY

DESIGN FILE: i:\projects\88811\structures\ASD-511-1957 SFN 0305642\ASD-511-1957.dgn
WORKSTATION: nfoster
DATE: 12/8/2014
MODELNAME: Design

DESIGN AGENCY
ODOT DISTRICT THREE OFFICE
OF PLANNING AND ENGINEERING

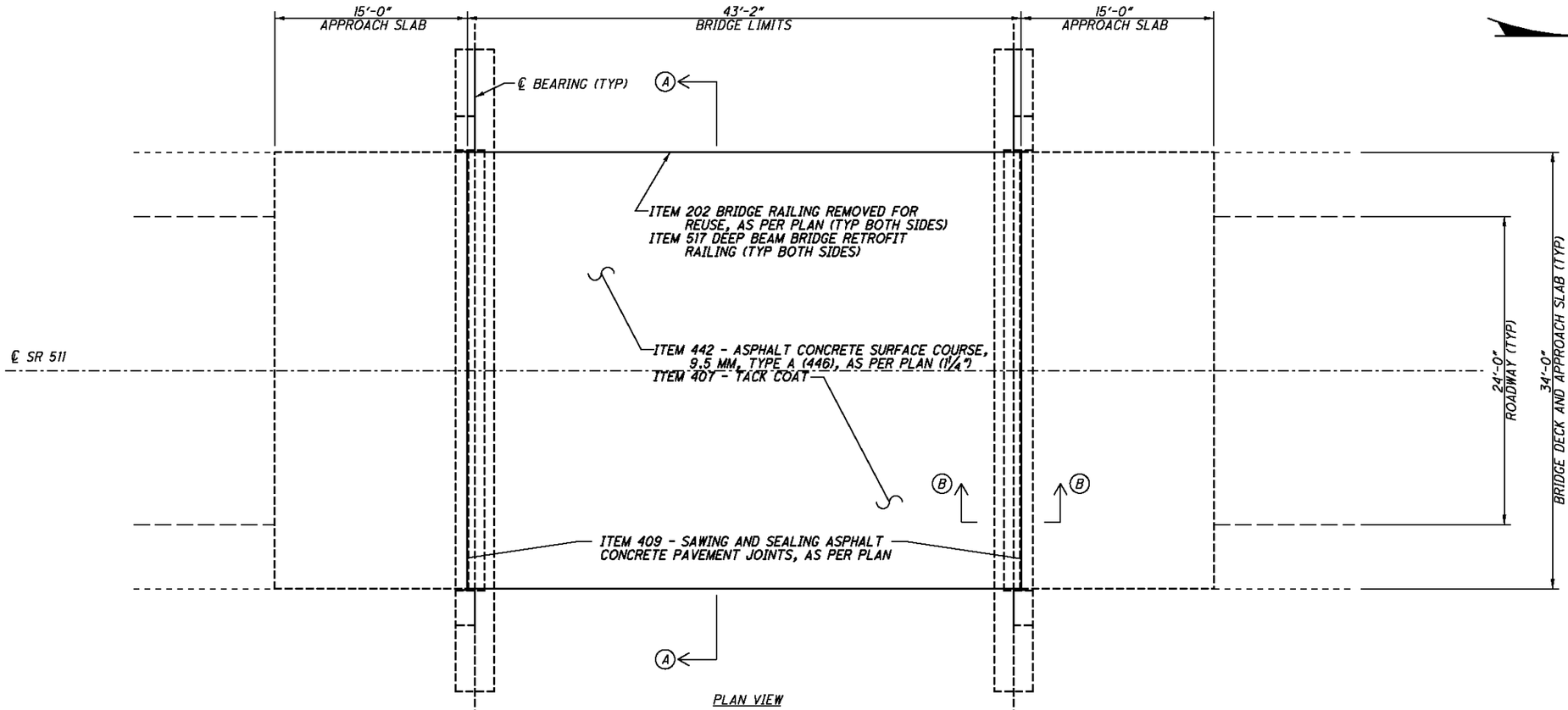
DESIGNED	DRAWN	REVIEWED	DATE
KCK	KCK	NRF	11/14
CHECKED	REVISED	STRUCTURE FILE NUMBER	
KRB	---	0305642	

STRUCTURE DETAILS
ASD-511-1957
STRUCTURE OVER TRIBUTARY OF LEIDIGH MILL CREEK

ASD-511-(14.07)(18.33)
ASD-302-10.89

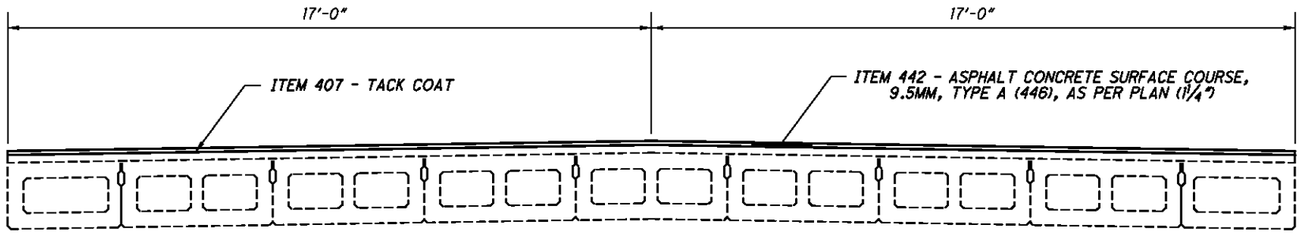
1 / 1

37
48



PLAN VIEW

GUARDRAIL NOT SHOWN FOR CLARITY



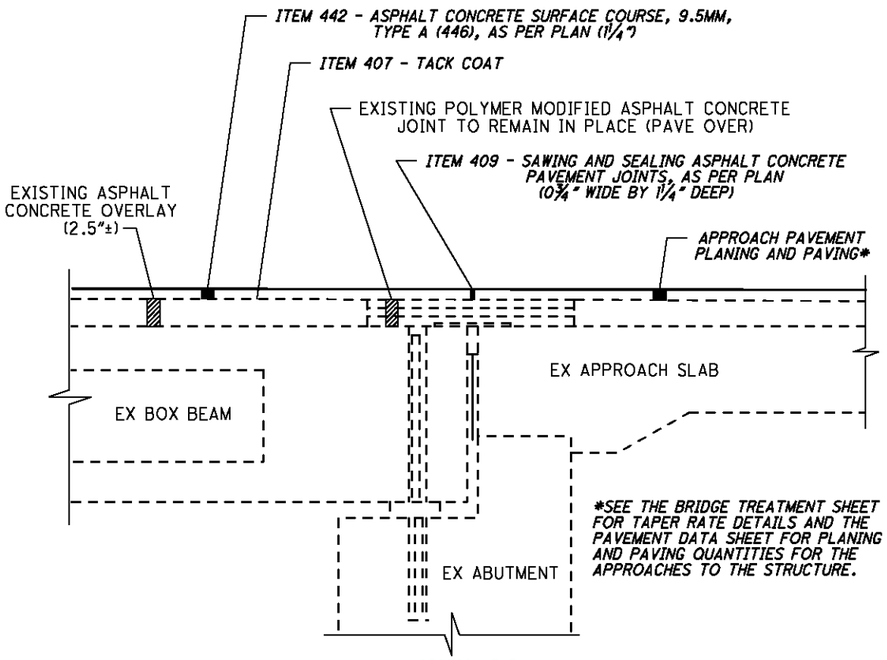
SECTION A-A

GUARDRAIL, DRIP EDGE, AND SUBSTRUCTURE NOT SHOWN FOR CLARITY

NOTES:
1) MAINLINE PLANING SHALL TAPER FROM 1½" TO ¾" AT THE CENTERLINE OF PAVEMENT AND FROM 2½" TO ¾" AT THE EDGE OF PAVEMENT IN 437.5 FEET TO AND FROM THE APPROACH OF THE STRUCTURE.
2) PAVE OVER THE EXISTING POLYMER MODIFIED JOINTS. DO NOT REMOVE OR UPGRADE.

ITEM	QUANTITY	UNIT	DESCRIPTION
202	100	FT	BRIDGE RAILING REMOVED FOR REUSE, AS PER PLAN
407	13	GALLON	TACK COAT
409	68	FT	SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS, AS PER PLAN
442	6	CY	ASPHALT CONCRETE SURFACE COURSE, 9.5 MM, TYPE A (446), AS PER PLAN
517	100	FT	DEEP BEAM BRIDGE RETROFIT RAILING

**ALL QUANTITES CARRIED TO STRUCTURE SUMMARY



SECTION B-B

JOINT DETAIL

DESIGN FILE: i:\projects\88811\structures\ASD-511-2584 SFN 0305715\ASD-511-2584.dgn MODELNAME: Design
WORKSTATION: nfoster DATE: 12/8/2014

DESIGN AGENCY
ODOT DISTRICT THREE OFFICE OF PLANNING AND ENGINEERING

DESIGNED	DRAWN	REVIEWED	DATE
KCK	KCK	NRF	11/14
CHECKED	REVISED	STRUCTURE FILE NUMBER	
KRB	---	0305715	

STRUCTURE DETAIL SHEET
ASD-511-2584
STRUCTURE OVER BOYD DITCH

ASD-511-(14.07)(18.33)
ASD-302-10.89

1 / 1

38
48

NOTES

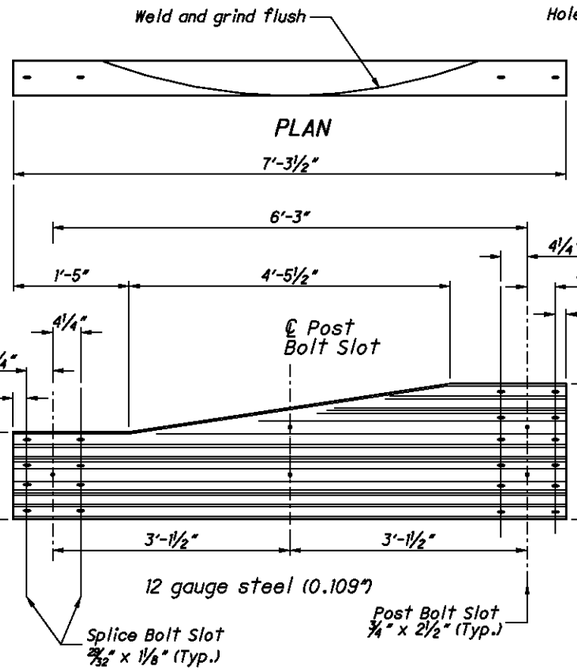
GENERAL: Components shown on this drawing are used in a variety of guardrail systems. See individual guardrail drawing for specific applications.

See CMS 606 for guardrail specifications not covered on these drawings.

Refer to AASHTO M 180 for dimensional details of W-Beam and Thrie-Beam rail elements, related buffer and end sections, beam splices, post and splice bolts, nuts, and Type 1 W-Beam to Thrie-Beam Transition sections.

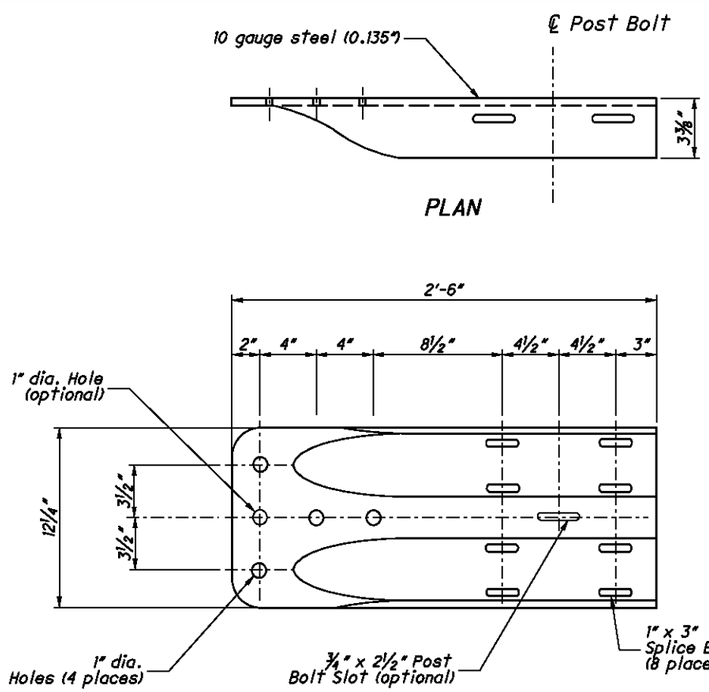
RAIL ELEMENTS: W-Beam Rail has an effective length of 12'-6" unless otherwise specified, with ¾" x 2½" post bolt slots on 6'-3" centers regardless of post spacing. Field punch or drill bolt holes or slots for irregularly spaced posts as specified in CMS 606.04.

RAIL SPLICES: Lap splices between two rail elements or between a rail and terminal connector in the direction of traffic. Lap the buffer or flared end sections in the direction of traffic.

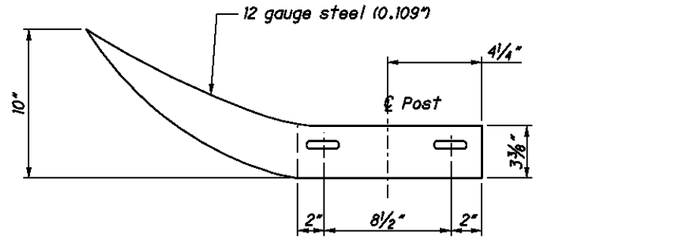


ELEVATION
TYPE 2 TRANSITION SECTION
(Asymmetric W to Thrie-Beam)

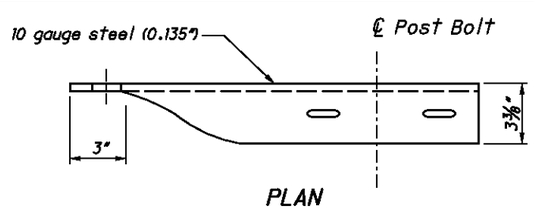
For details of Type 1 Transition Section (Symmetric), refer to AASHTO M 180, Figure 4.

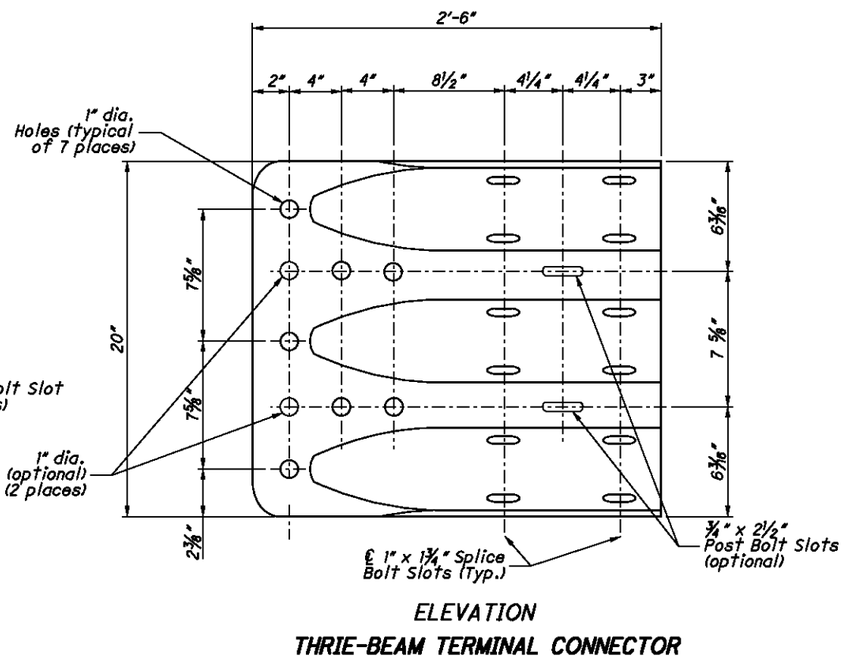


ELEVATION
W-BEAM TERMINAL CONNECTOR

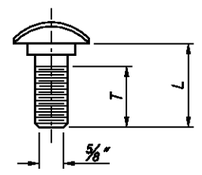


ELEVATION
W-BEAM FLARED END SECTION





ELEVATION
THRIE-BEAM TERMINAL CONNECTOR



GUARDRAIL BOLT (For Post and Splice Bolts)		
L	T min.	Bolt Use
18" (Standard Rail)	4"	Type 5: WP/WB, PB
26" (Barrier Rail)		
10"	4"	Type 5: SP/WB, PB
1¼	1⅛	Splice Bolt

WP = Wood Post WB = Wood Blockout
SP = Steel Post PB = Plastic Blockout

Longer Bolt may be needed for round Wood Post larger than 8" dia.

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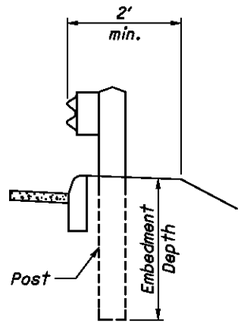
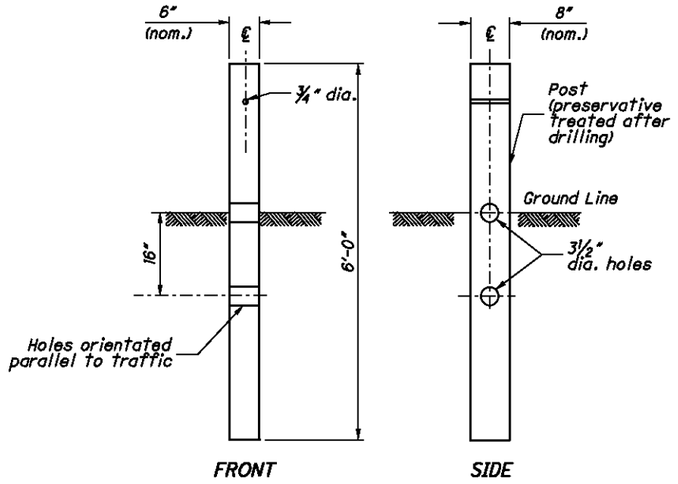
REVISION DATE | CHECKED
PIS NUMBER GR-1.1
PLAN INSERT SHEET
GUARDRAIL DETAILS (Rail Components)
ASD-511-(14.07)(18.33)
ASD-302-10.89
1 / 3
39 / 48

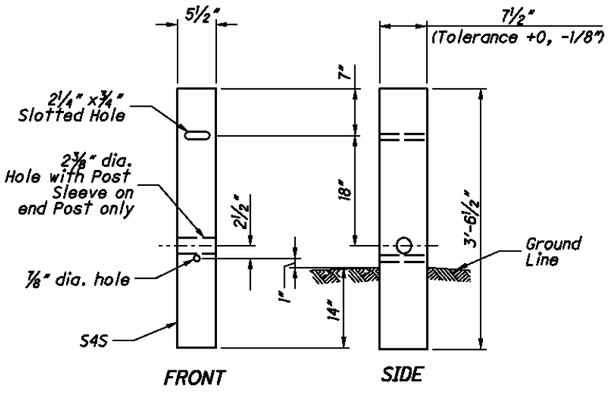


DETAIL A

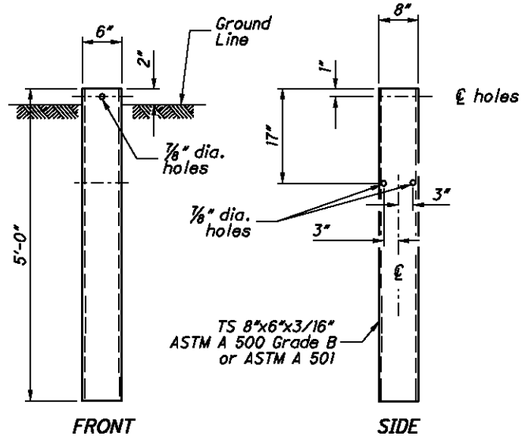
See POST EMBEDMENT DEPTH Note



TYPE 1 BREAKAWAY CRT POST



TYPE 2 BREAKAWAY CRT POST



STEEL GROUND TUBE

NOTES

GUARDRAIL HEIGHT: For initial installation, construct the guardrail within ± 1" of the standard height, h, or **29"** to the top of W-Beam rail. (See MEASURING GUARDRAIL HEIGHT Detail.)
When subsequent projects, such as resurfacings, affect the height of existing guardrail, the finished height is to be within ±2.5" of the standard height.

POST EMBEDMENT DEPTH: Standard embedment is 3'-5" min. Where less than 2' of graded shoulder width (10:1 or flatter) exists, measured from the face of the guardrail (see DETAIL "A"), use longer posts so that a minimum of 5'-5" embedment depth is provided. Payment for the longer posts will be made at the unit price bid for **ITEM 606 - GUARDRAIL POST, 9', Each.**

SPECIAL POST MOUNTINGS: Install posts located over a drainage inlet or structure as shown in the FOOTING ANCHOR Detail, or anchor per the details shown on **SCD GR-2.2.**

Install posts located over a footing with a cover of less than 2'-6" with a footing anchor as detailed here. (A plate, as detailed on SECTION B-B of **SCD GR-2.2**, may be used as an alternative attachment method.) Where the cover is between 2'-6" and 3'-5", the footing anchor may be omitted and the post encased instead with 4" (min.) of concrete.

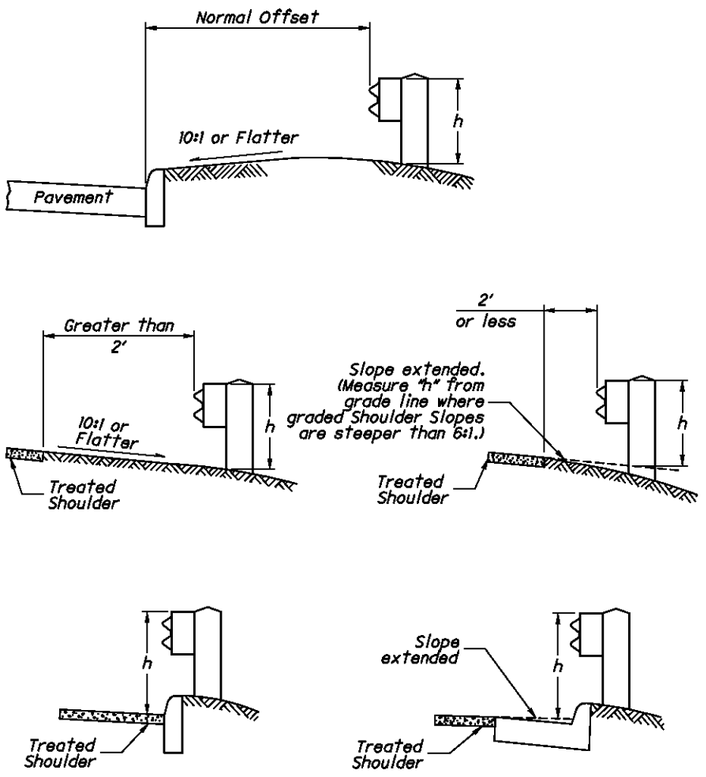
Do not drive posts located over a culvert with less than 4'-3" of cover; instead set in drilled or dug holes. Where the available post embedment depth is less than 3'-5", encase the post with a minimum of 4" concrete.

All costs associated with special post mountings are included in the unit price bid of Item 606 Guardrail of the type specified in the plans.

ANCHORS: Holes and grouting shall comply with CMS 510. Use either cement or non-shrink, nonmetallic grout.

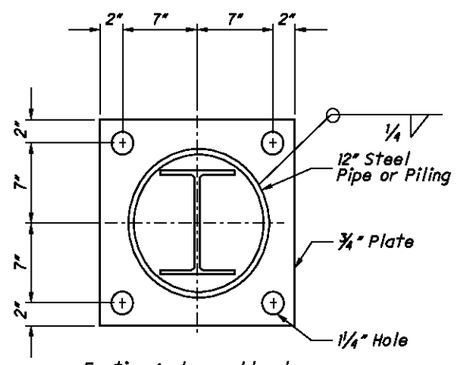
Expansion shield anchors as specified in CMS 712.01 may be substituted except where concrete deterioration has occurred, as determined by the Engineer. Where self-drilling anchors are used, drill the holes with the expansion shield (not by a drill bit) and install the shield flush with the concrete surface.

PROTECTIVE COATING: In lieu of the complying with CMS 710.06, coat expansion shields, anchors and concrete insert anchor assemblies embedded in concrete in accordance with ASTM A 153 or be of stainless steel. Any bolts screwed into these devices shall meet CMS 710.06. (See sheet 3 for Concrete Insert Anchor Assembly Detail.)



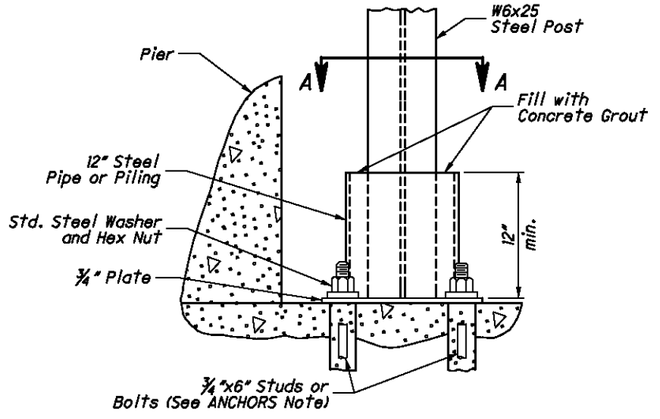
h = Standard Height (See GUARDRAIL HEIGHT Note)

MEASURING GUARDRAIL HEIGHT



Footing Anchor and hardware need not be galvanized

SECTION A-A



ELEVATION
FOOTING ANCHOR

See SPECIAL POST MOUNTINGS Note.

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PID NUMBER GR-1.1

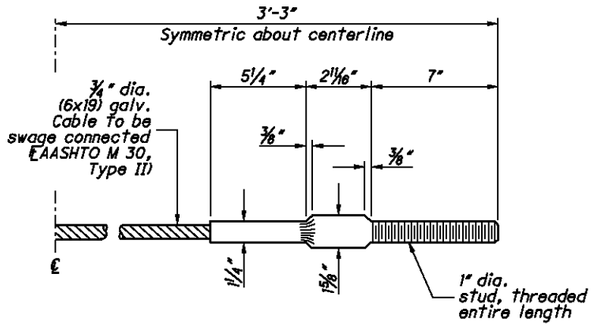
PLAN INSERT SHEET

GUARDRAIL DETAILS (Rail Components)

ASD-511-(14.07)(18.33)
ASD-302-10.89

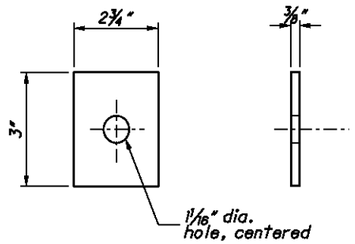
2 / 3

40 / 48

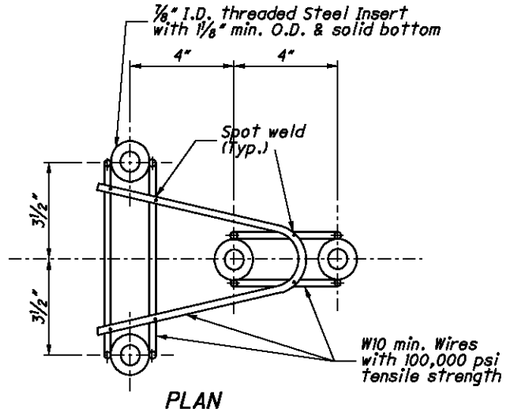


STANDARD SWAGED FITTING AND STUD

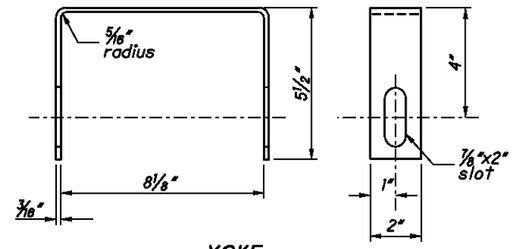
CABLE ANCHOR



END PLATE

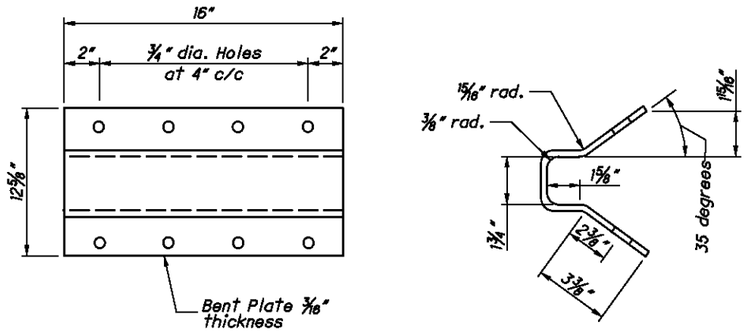


PLAN

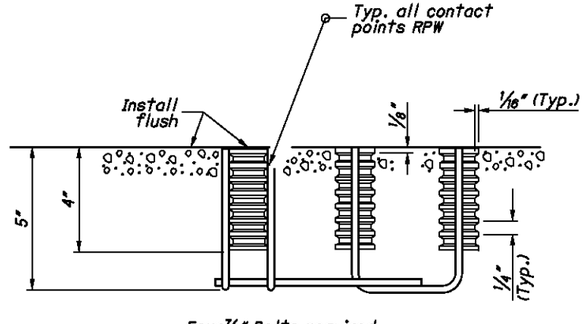


YOKE

Two required in Assembly



ANCHOR BRACKET

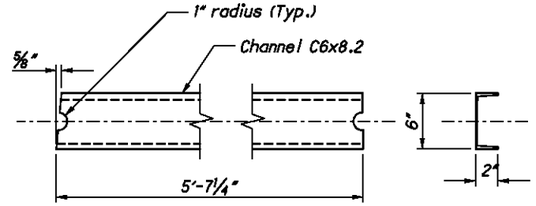


Four ⅞" Bolts required

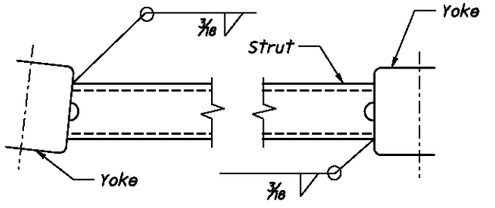
ELEVATION

CONCRETE INSERT ANCHOR ASSEMBLY (W-BEAM ONLY)

See ANCHORS and PROTECTIVE COATINGS Notes on Sheet 2

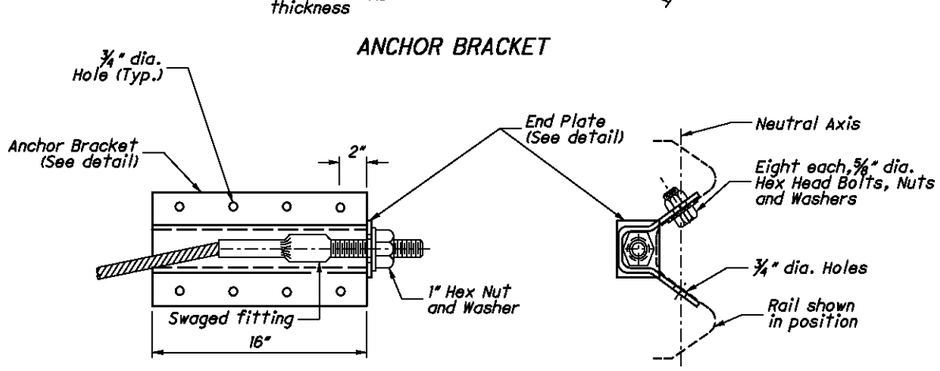


STRUT

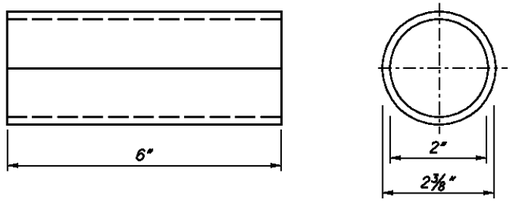


Channel legs shown down. For opposite hand, install Channel legs up.

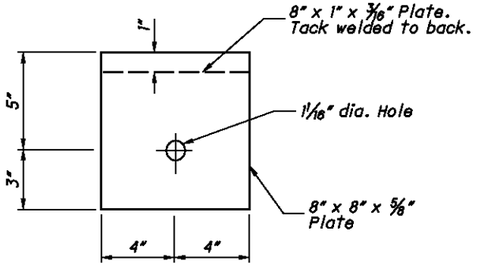
STRUT AND YOKE ASSEMBLY



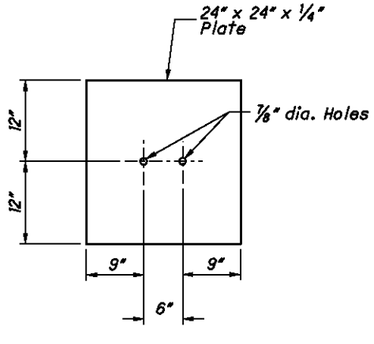
ANCHOR BRACKET ASSEMBLY DETAILS



POST SLEEVE



BEARING PLATE



SOIL PLATE

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REVISION DATE | CHECKED

PIS NUMBER GR-1.1

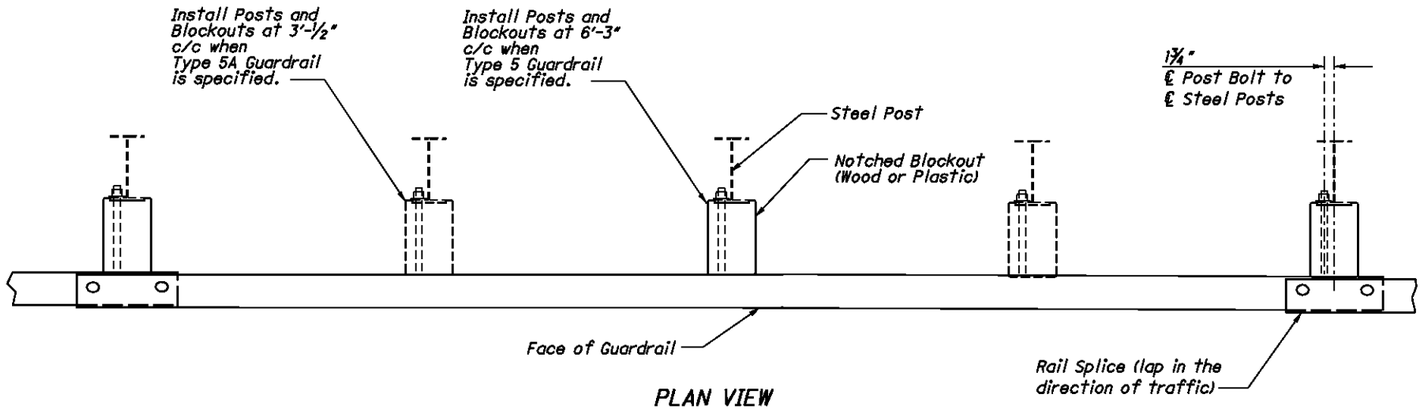
PLAN INSERT SHEET

GUARDRAIL DETAILS (Rail Components)

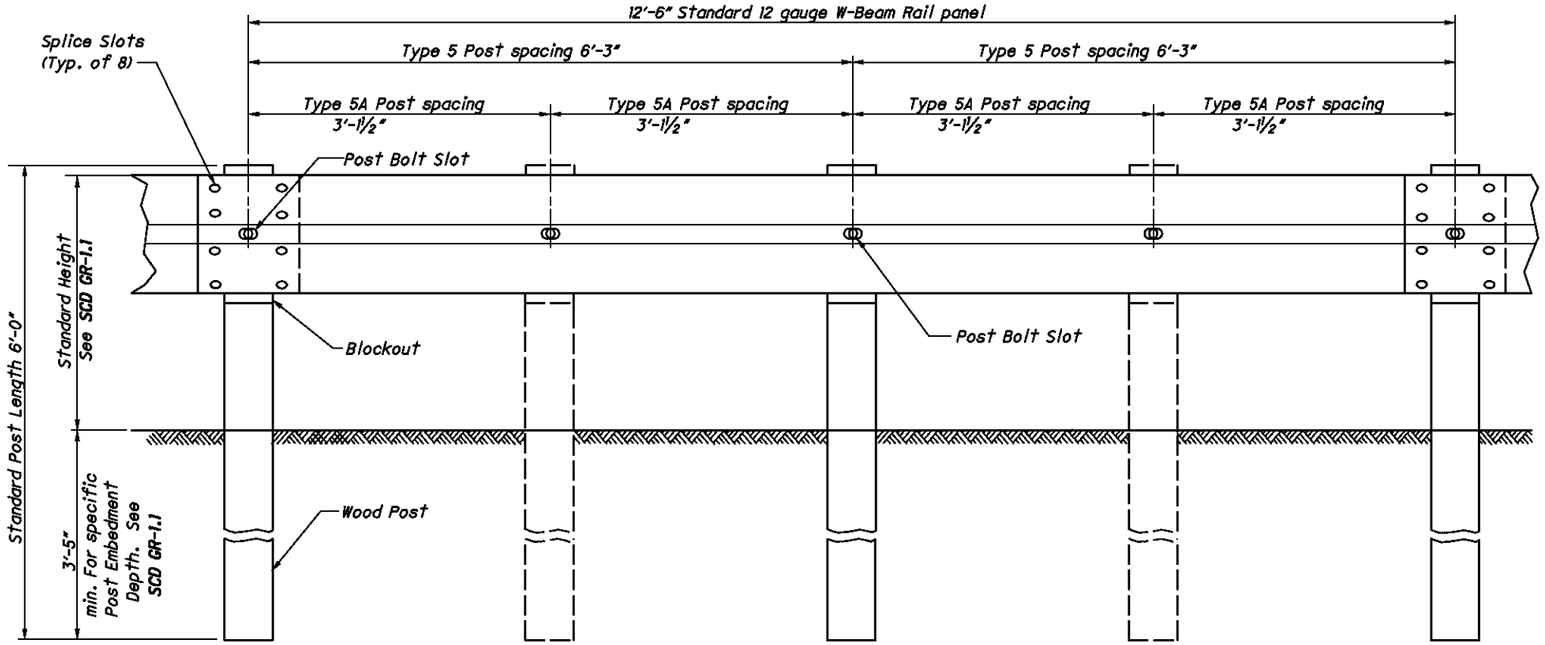
ASD-511-(14.07)(18.33)
ASD-302-10.89

3 / 3

41 / 48



PLAN VIEW
(Steel Posts shown)



ELEVATION
(Wood Posts shown)

NOTES

RAIL: Use W-Beam rail meeting AASHTO M 180 Type II Class A, as specified in CMS 606.

POSTS: Posts may be constructed of wood or steel. Wood posts may be round or 6"x8" square-sawed.

Use round wood posts on runs of single-sided rail. The round posts shall be 8"±1 in diameter at the top and not more than 3" larger at the butt with a uniform taper.

Fabricated wood posts with square ends. Posts shall be pressure-treated as per CMS 710.14. Bore bolt holes and, if required, trim the tops of posts after the posts are set.

Steel posts are to be W6x9 or W6x8.5 galvanized steel. Use the same type of post throughout the length of the project unless otherwise specified in the plans or permitted by the Engineer.

All posts are 6'-0" long unless specified otherwise in the Contract Document. Posts may be set in drilled holes or may be driven to grade.

WELDED BEAM POSTS: Welded beam guardrail posts may be used for Item 606, Guardrail, provided the web and flange sizes are as shown here. Welding of the web to the flanges must comply with ASTM A 769, Class 1, using Grade 36 steel [250 MPa yield point] with the following exceptions:

- Sec. 7.2 Test reports of tensile properties for each lot shall accompany each shipment.
- Sec. 12 Beams that have imperfections repaired by welding shall not be accepted for use in Item 606.
- Sec. 13 Random samples shall be tested by the Department from materials delivered to the project site, or other locations designated by the Laboratory.

ALTERNATE POSTS: Engineered guardrail posts having met NCHRP 350 criteria, and listed on the **Office of Materials Management's** Approved List are permitted as an equal alternate when installed according to the Manufacturer's instructions and within the limitations shown on the Approved List.

BLOCKOUTS: Blockout dimensions are dependent on post used. Wood Blockouts are to be pressure treated as specified in CMS 710.14. Bore bolt holes. Approved alternate blockouts may be used in lieu of the wood blockouts shown. The approved list is maintained by the **Office of Roadway Engineering.**

WASHERS: Install appropriate sized standard galvanized steel washers on the nut side of bolts installed on wood posts.

DELINEATION: For barrier reflectors, see CMS 626.

MISCELLANEOUS: For other guardrail details, see **SCD GR-1.1.**

STEEL BEAM POSTS (English)				
Size	Beam depth	Flange width	Flange thickness	Web thickness
Rolled W6x8.5	5.8"	3.94"	0.193"	0.170"
Rolled W6x9	5.9"	3.94"	0.215"	0.170"
Welded 6x8.5	6.0"	3.94"	0.193"	0.170"
Welded 6x9	6.0"	3.94"	0.215"	0.170"

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PID NUMBER GR-2.1

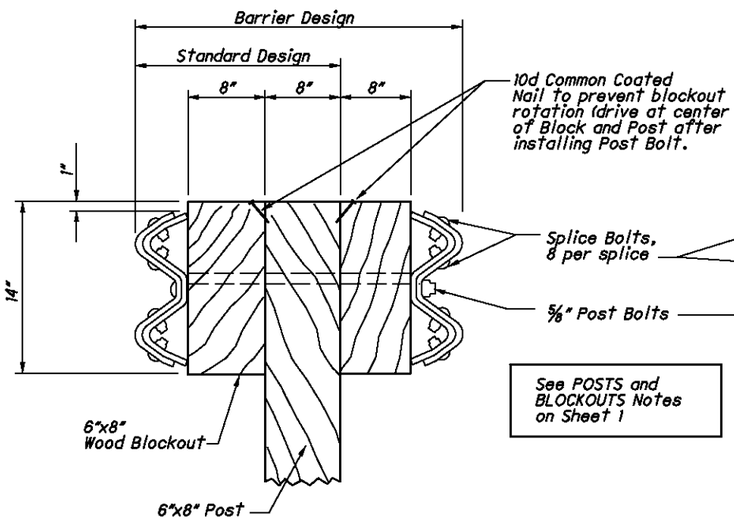
PLAN INSERT SHEET

TYPE 5 & 5A GUARDRAIL TYPE

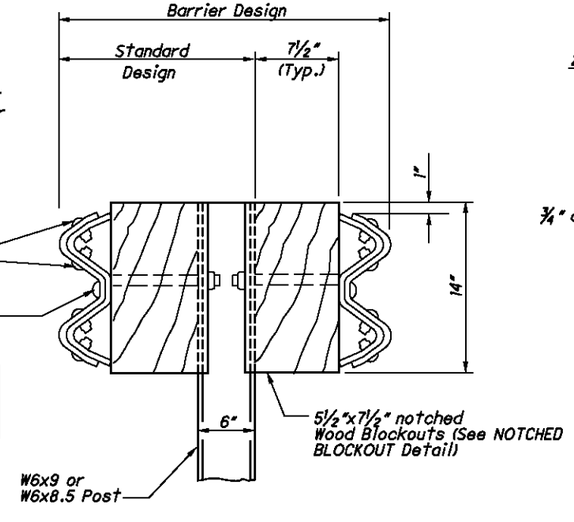
ASD-511-(14.07)(18.33)
ASD-302-10.89

1 / 2

42
48

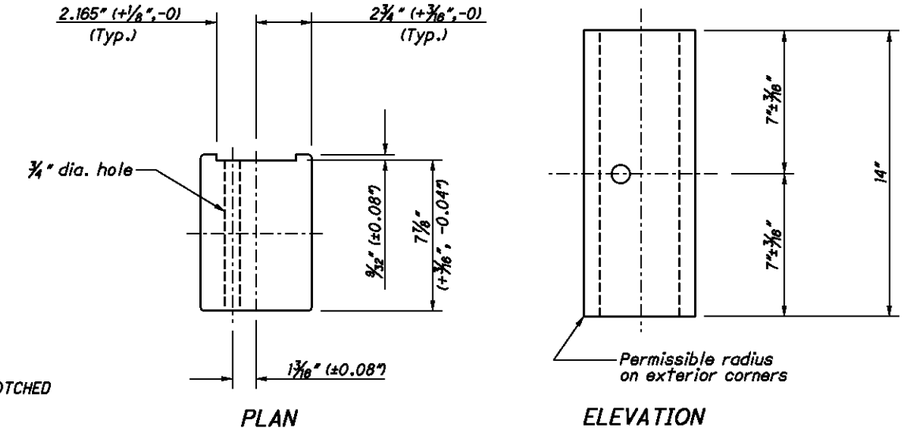


SQUARE WOOD POST



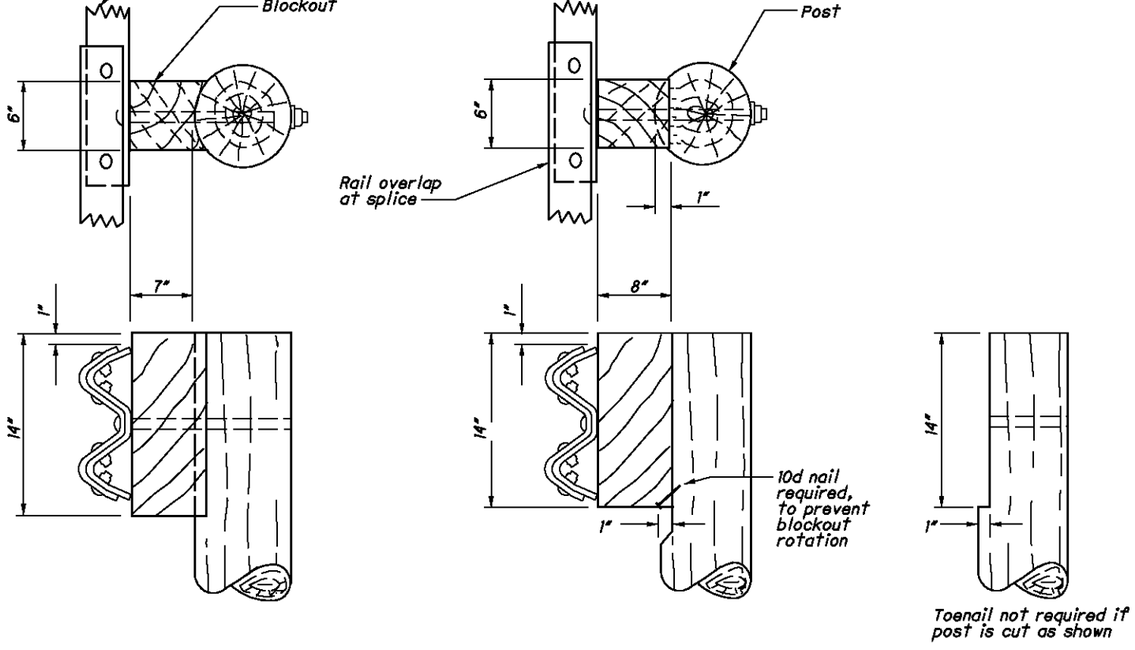
STEEL POST

See POSTS Note, Sheet 1



NOTCHED BLOCKOUTS FOR STEEL POSTS

See BLOCKOUTS Note on Sheet 1



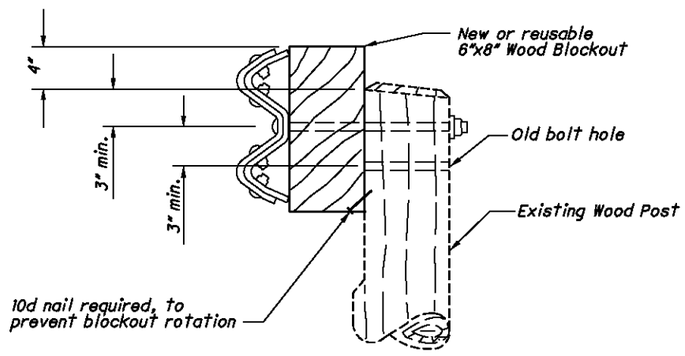
Method 1
Routed Blockout

Method 2
Notched Post

Alternate methods of placing the Blockouts on round Posts may be submitted for consideration and approved by the Engineer.

ROUND WOOD POSTS

Single Sided runs only (Standard Design)



WOOD POSTS WITH WOOD BLOCK RAISING EXISTING GUARDRAIL HEIGHT

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REVISION DATE | CHECKED

PTS NUMBER GR-2.1

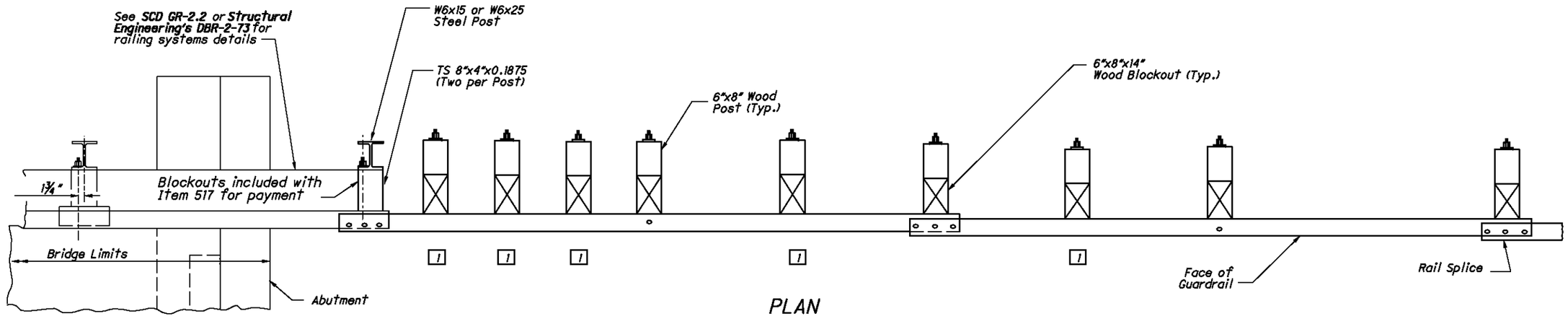
PLAN INSERT SHEET

GUARDRAIL TYPE 5 & 5A

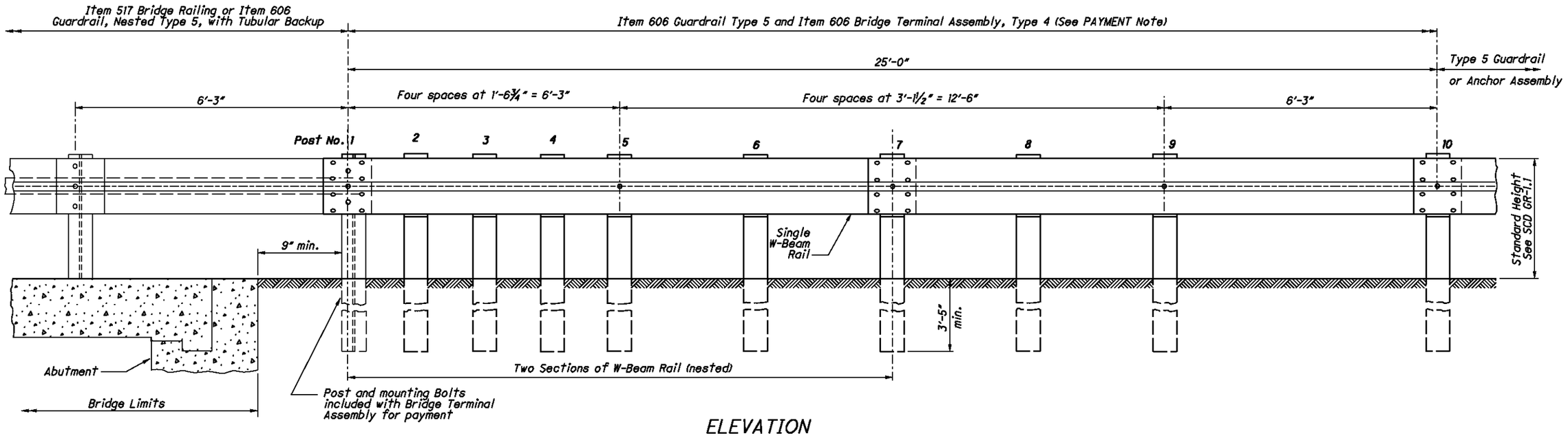
ASD-511-(14.07)(18.33)
ASD-302-10.89

2 / 2

43
48



PLAN



ELEVATION

NOTES

GENERAL: For additional details, see **SCD GR-1.1.**

APPLICATION: The Type 4 Bridge Terminal Assembly shall connect Type 5 Guardrail runs to Type 5 Guardrail with Tubular Backup or to Deep Beam Bridge Guardrail (as shown on **Structural Engineering SCD DBR-2-73**).

DETAIL INFORMATION: The first post off the bridge shall be steel (W6x15 or W6x25). All holes in the off-structure end of the approach panel rail section spanning the abutment are slotted ¾"x2½". Tighten the bolts as specified for expansion joints in Item 606.05.

POSTS: Posts may be set in drilled holes or driven to grade. See **SCD GR-1.1** for additional Post embedment details. Guardrail is not attached to certian posts (see LEGEND).

WOOD POSTS - Use square sawed pressure treated wood as specified in CMS 710.14 and fabricated with square ends. Bore bolt holes and trim the tops of posts, if required after the posts are set.

STEEL POSTS - are allowed as an alternate. Use W6x9 or W6x8.5 in lieu of the 6"x8" wood post. Use same post material through-out assembly.

BLOCKOUTS: Use wood blockouts only. Steel or plastic blockouts are not permitted. Notched wood blockouts are used with steel posts.

FLARED GUARDRAIL: Start Standard Guardrail Flares as shown on **SCD GR-5.1** at or beyond Post No. 10; however, the flare may begin at Post No. 7.

PAYMENT: Item 606 - Bridge Terminal Assembly, Type 4, Each, includes the cost of extra components in excess of normal guardrail, such as additional posts and other hardware. The TS 8"x4" spacers and tubular backup rail extending to the first post off the bridge is included with **Item 517 - Railing,** or **Item 606 - Guardrail, Nested Type 5 with Tubular Backup,** for payment.

LEGEND

1 Guardrail is not attached to posts at Posts 2, 3, 4, 6, and 8. Blockout is fastened to post with standard Post Bolt.

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PID NUMBER GR-3.4

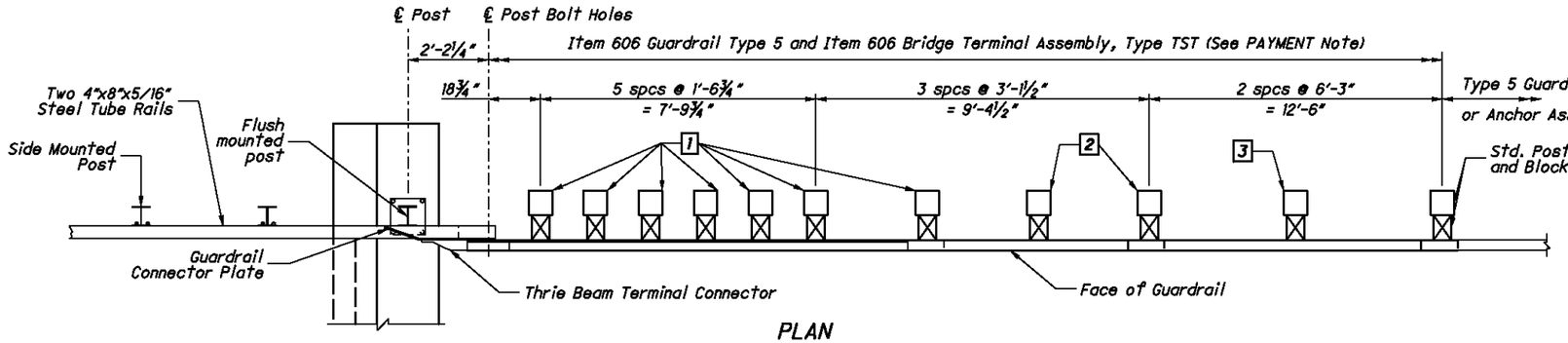
PLAN INSERT SHEET

BRIDGE TERMINAL ASSEMBLY, TYPE 4

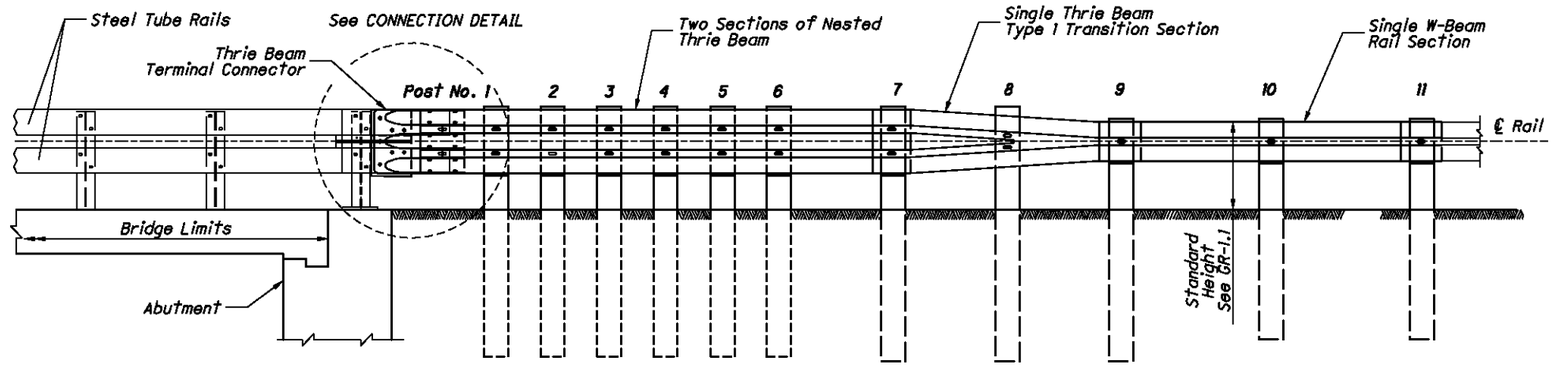
ASD-511-(14.07)(18.33)
ASD-302-10.89

1 / 1

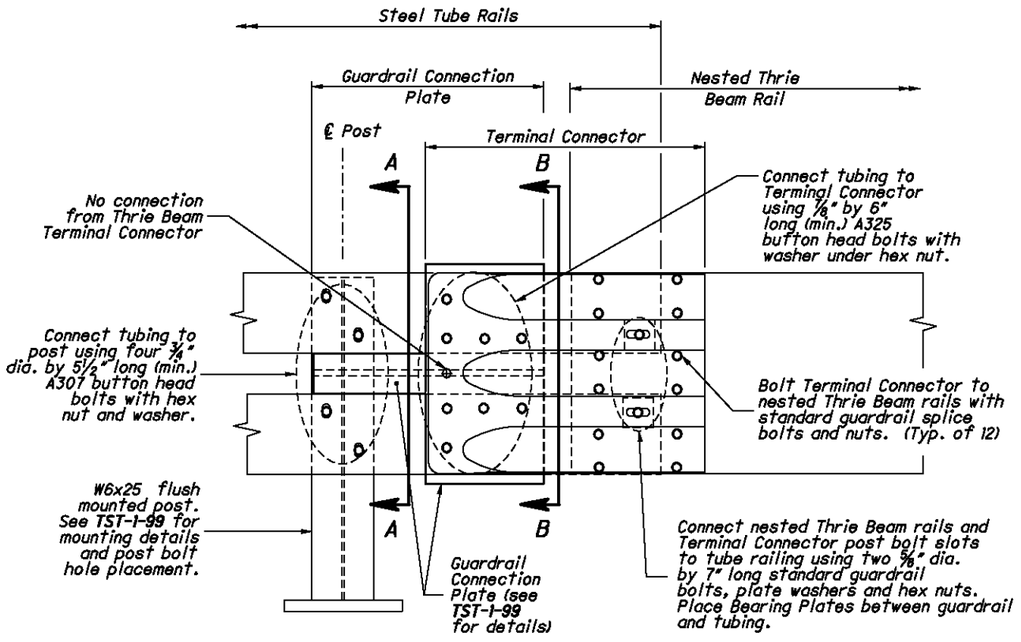
44
48



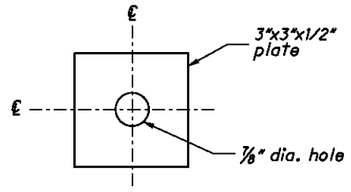
PLAN



ELEVATION

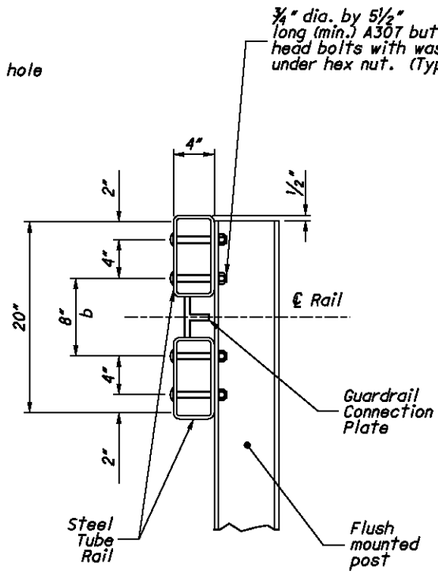


CONNECTION DETAILS

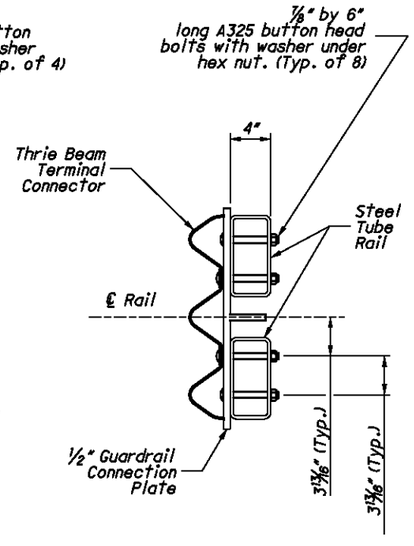


AASHTO/AGC/ARTBA
Standardized Hardware Guide part FWR09

BEARING PLATE



SECTION A-A
Section through Tubing at Post



SECTION B-B
Section through Tubing at Terminal Connector

NOTES

GENERAL: For additional guardrail details, including Thrie Beam Terminal Connector, see **SCD's GR-1.1.**

APPLICATION: The Type TST Bridge Terminal Assembly shall be used to connect guardrail runs to both the approach and trailing ends of twin steel tube bridge railings.

See **Structural Engineering's SCD TST-1-99** for Flush Mounted post and Guardrail Connection Plate and tubing details, (including tubing bolt hole placement).

POSTS: Posts may be set in drilled holes or driven to grade.

WOOD POSTS shall be square, sawed pressure treated wood per CMS 710.14 and fabricated with square ends. Bolt holes shall be bored and taps of posts trimmed, if required, after posts are set.

STEEL POSTS: W6x9 (or W6x8.5) posts may be substituted for 6x8 wood posts. Notched wood blockouts, as shown on **SCD GR-2.1** (except 22" long for posts 1 thru 7), are to be used with steel posts. Plastic blockouts are not permitted.

PAYMENT: Item 606 - Bridge Terminal Assembly, Type TST, Each, shall include the extra cost, in excess of normal guardrail costs, for additional and different type posts and blockouts, nested Thrie Beam sections, Transition sections, Terminal Connector, bearing plates, bolts, nuts, washers and other hardware.

LEGEND

1 Posts 1 thru 7:
6"x8"x6'-6" Wood Posts with
6"x8"22" Wood Blockouts

2 Posts 8 & 9:
6"x8"x6'-6" Wood Posts with
6"x8"x14" Wood Blockouts

3 Post 10:
6"x8"x6'-0" Wood Post with
6"x8"x14" Wood Blockout

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PLAN INSERT SHEET

BRIDGE TERMINAL ASSEMBLY, TYPE TST

ASD-511-(14.07)(18.33)
ASD-302-10.89

1 / 1

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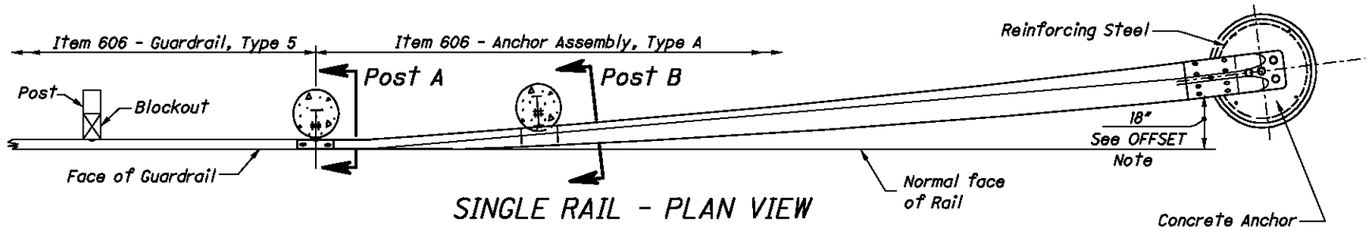
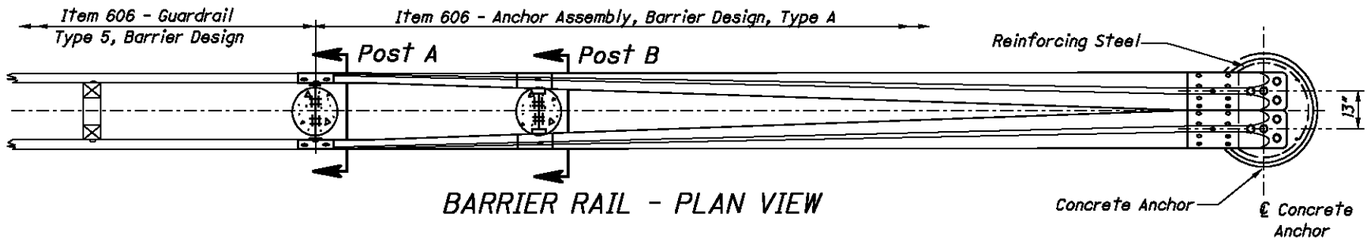
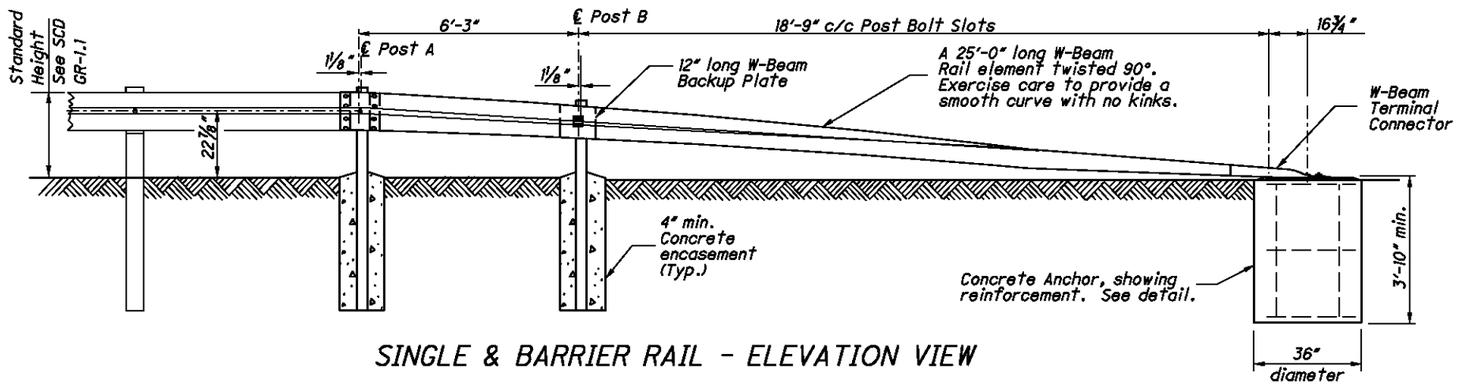


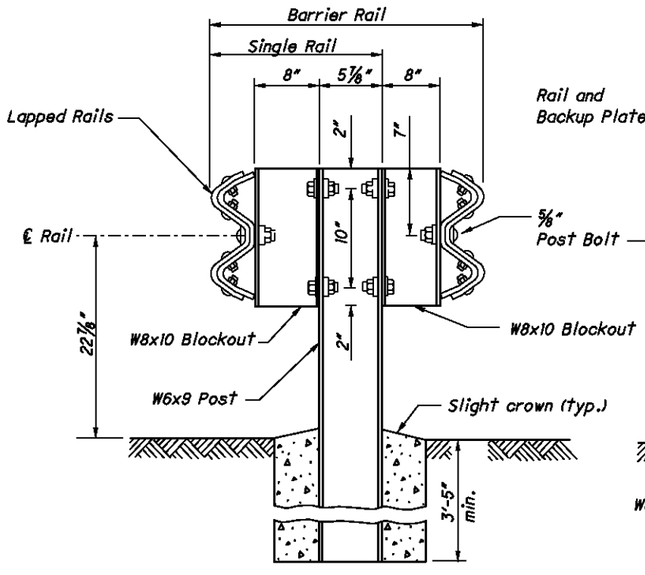
SINGLE RAIL - PLAN VIEW



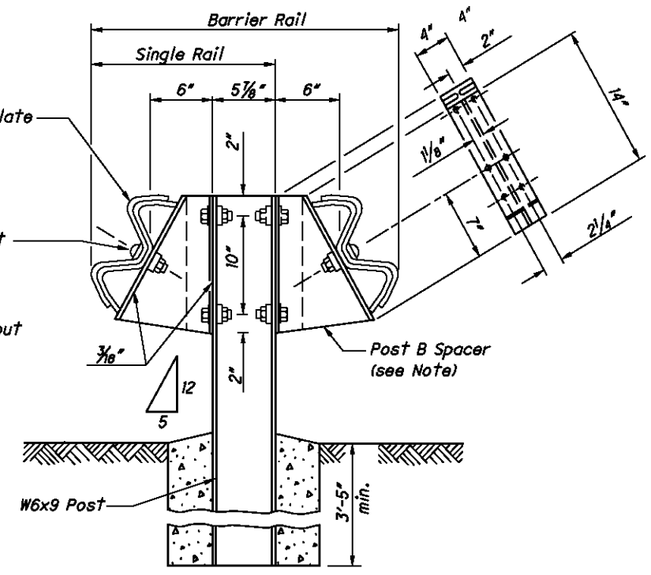
BARRIER RAIL - PLAN VIEW



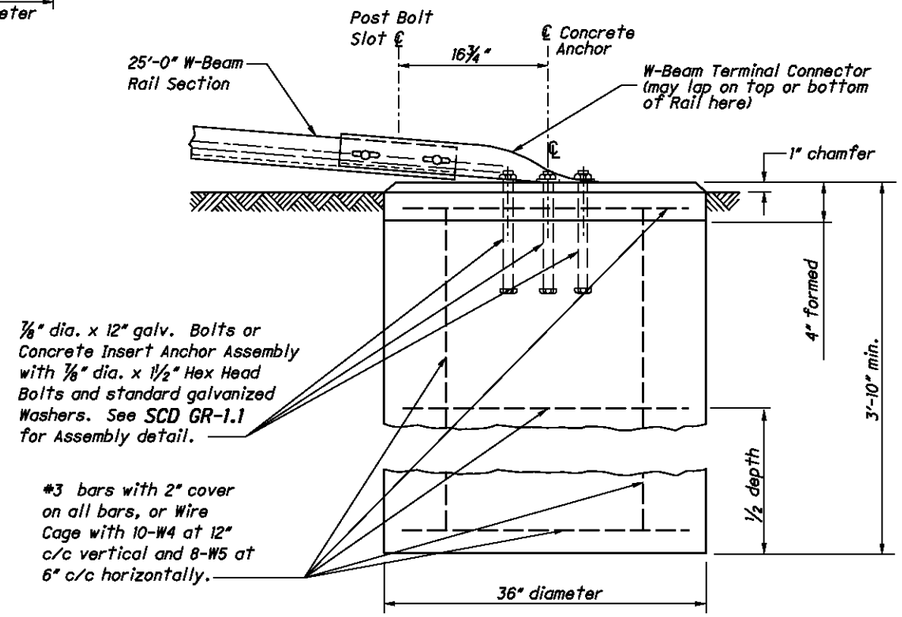
SINGLE & BARRIER RAIL - ELEVATION VIEW



POST A



POST B



CONCRETE ANCHOR

NOTES

APPLICATION: On Non-NHS roadways it may be used in the clear zone, with restrictions. See Section 603. **Location & Design Manual, Volume 1.**

GENERAL: For details not shown, see **SCD GR-1.1** and other Drawings pertaining to specific guardrail type. Galvanize all steel parts.

OFFSETS: See **SCD GR-5.1** for Standard Guardrail Flare. The 18" flare offset from normal face of rail, shown in the plan view (for single rail installations) will be utilized only where shoulder is insufficient for providing standard flares.

POSTS: Steel posts W6x9 are shown, but W6x8.5 posts are also permitted. See **SCD GR-1.1** for additional embedment details.

SPACERS: Post B Spacers shall be made of 3/16" Steel Plate as specified in CMS 710.15 or tow sections of W6x9 or W8x10 cut in the web (see dashed line on POST B Detail) and welded together on both sides.

All steel spacers and posts may be provided with additional bolt holes so that these items will not be required to be made right and left handed.

Spacers shall be fastened to Posts with two ⅝" hex head bolts and nuts with standard washers on both sides.

WASHERS: All washers indicated on this drawing are standard galvanized steel of the appropriate size.

CONCRETE ANCHOR: Form top 4" of anchor and slope the top to conform to slope of the adjacent ground. The 36" diameter anchor may be replaced by a 2'-6" square anchor at the contractor's option.

PAYMENT: include all materials and labor for the 25'-0" Single Rail, Type A Anchor Assembly in the unit price bid for **Item 606 - Anchor Assembly, Type A, Each.** Pay for all materials and labor for the 25'-0" Barrier Rail under the unit bid price **Item 606 - Anchor Assembly, Barrier Design, Type A, Each.**

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TYPE A ANCHOR ASSEMBLY

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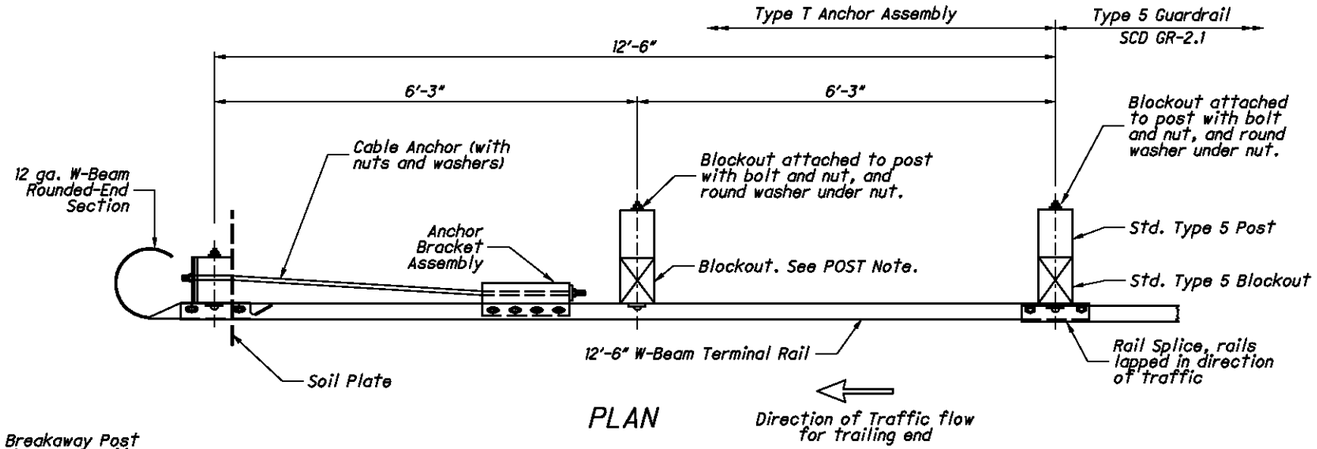
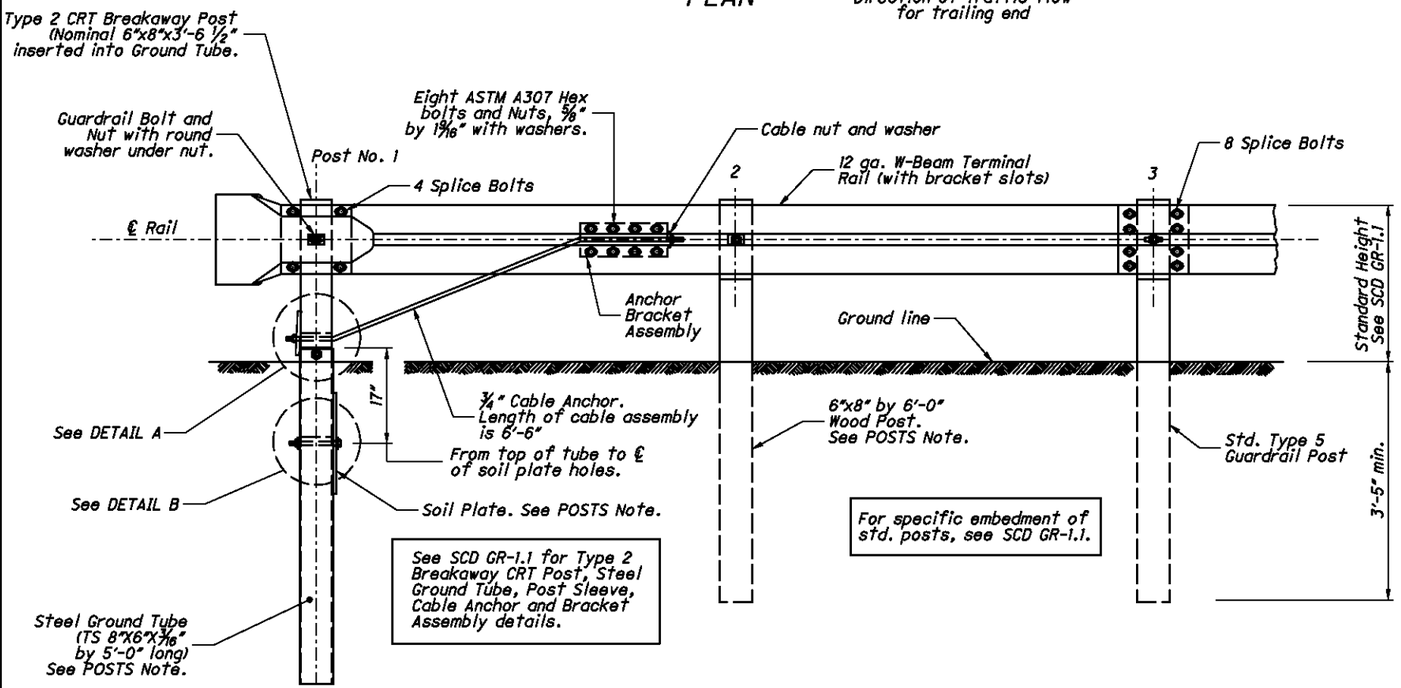
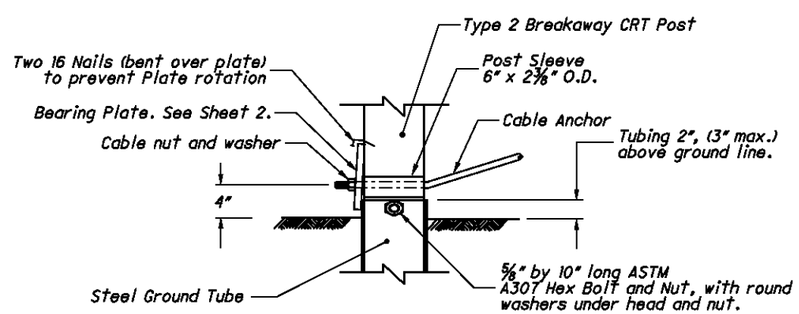
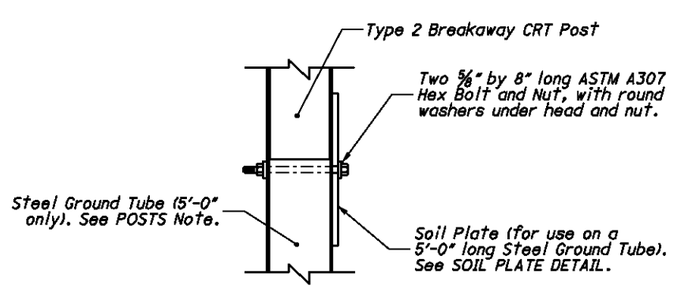




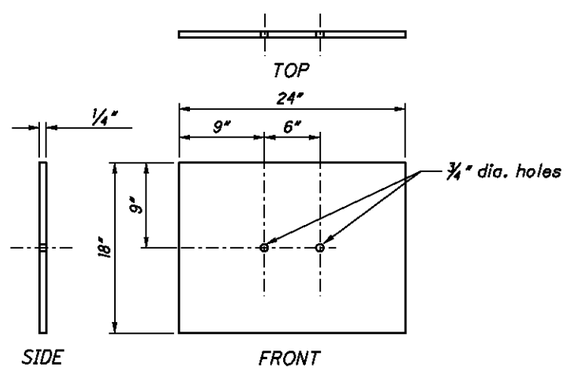
ELEVATION - FOUNDATION TUBE



DETAIL A



DETAIL B



SOIL PLATE DETAIL

NOTES

APPLICATION: Use Type T Anchor Assemblies on the trailing end of guardrail runs, located outside of the clear zone of opposing traffic. The assembly is 12'-6" long, none of which can be considered the Length of Need for the guardrail run.

For termination requirements at driveways, see DRIVEWAY OPENING Detail on Sheet 2. For side road approaches and Terminals at Structures, see Location & Design Manual, Volume 1, Figure 603-3.

ANCHORING OPTIONS: Contractor may choose either the foundation tube (shown on this Sheet) or the concrete footing option (Sheet 2) to construct this anchor assembly.

If the foundation tube option is chosen, the contractor will take proper care to insure that the Soil Plate fasteners are not broken during the driving process.

Concrete footings may be cast-in-place or precast. Compact fill after placing precast unit.

MATERIALS: See **SCD GR-1.1** for parts used on this anchor, including the CRT Breakaway Posts, Steel Ground Tube, Post Sleeve, Cable Anchor and Bracket Assembly.

Bearing Plate and Soil Plate is ASTM A709 Grade 36. Steel Ground Tube shall be ASTM A500, Grade B, and meet CMS 707.10. All angles, channels and plates shall meet CMS 711.01. All structural steel shall be galvanized as specified in CMS 711.02. All bolt washers indicated are standard galvanized steel of the appropriate size.

Concrete shall be class C.

Components on this anchor that are not detailed on SCD GR-1.1 include: 1) 12'-6" W-Beam Terminal Rail (standard part RWM14a), and 2) W-Beam Rounded End Section (RWE03a). For complete details and specifications, see part descriptions in the **AASHTO/AGC/ARTBA Standardized Hardware Guide.**

POSTS: Post No. 1 may be an 8'-0" long Steel Ground Tube without a Soil Plate in lieu of the 5'-0" tube with Soil Plate.

Post No. 2 can be W6x9 (or W6x8.5) with notched wood blockouts or a standard Type 5 post and blockout. Recycled plastic blockouts are permitted.

PAYMENT: All labor and materials, including the W-Beam Rounded End Section and the W-Beam Terminal Rail for the 12'-6" anchor assembly shall be included in the unit price bid for

Item 606 - Anchor Assembly, Type T, Each.

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TYPE T ANCHOR ASSEMBLY (Foundation Tube Option)

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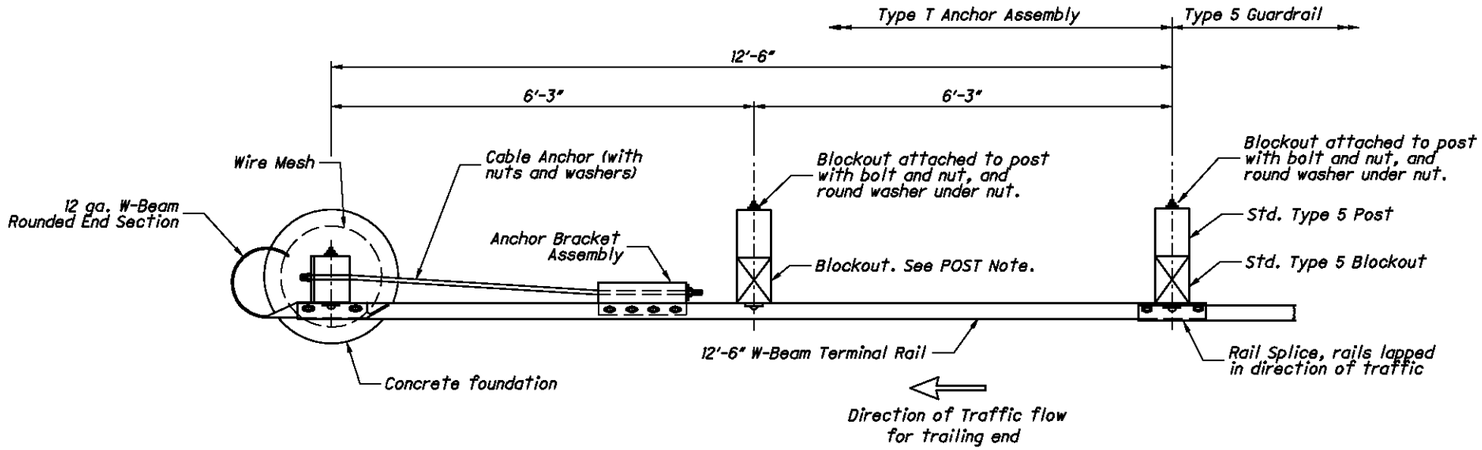
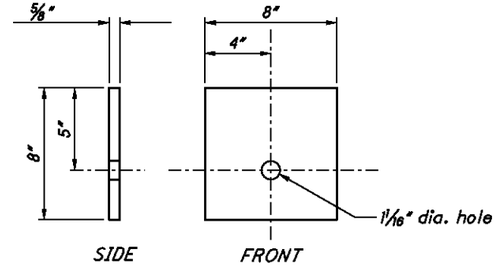
1 / 2

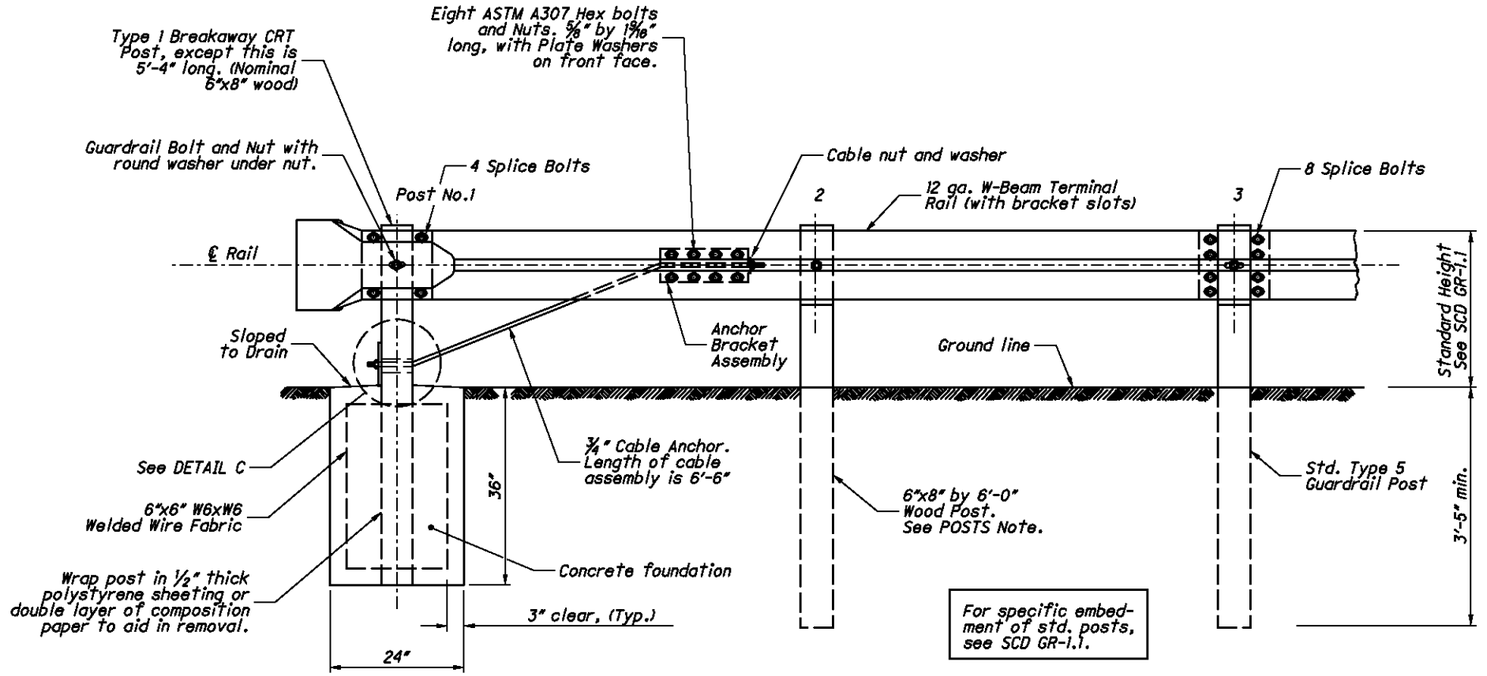
47 / 48



PLAN

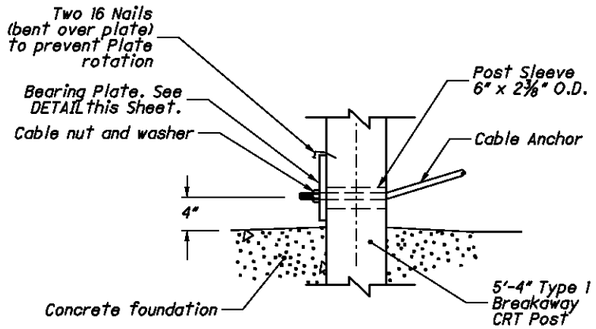


BEARING PLATE DETAIL

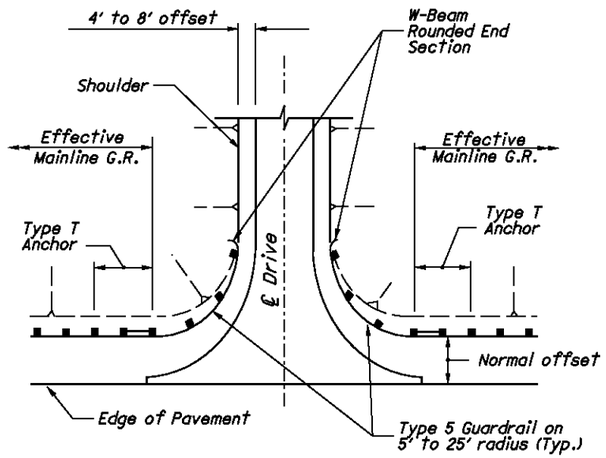


See SCD GR-1.1 for Type 1 Breakaway CRT Post, Steel Ground Tube, Post Sleeve, Cable Anchor and Bracket Assembly details.

ELEVATION - CONCRETE FOOTER



DETAIL C



DRIVEWAY OPENING

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PIS NUMBER GR-4.2

PLAN INSERT SHEET

TYPE T ANCHOR ASSEMBLY (Foundation Tube Option)

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ASD-302-10.89

2 / 2

48 / 48