Connell Rail Interchange

On-Track For Growth!

EASTERN WASHINGTON'S HARVESTLAND

DESIGN

CITY OF CONNELL Washington

CONNELL, WA MP 110 BNSF LAKESIDE SUBDIVISION
NEW INTERCHANGE TRACKS

LIST OF DRAWINGS

GENERAL DRAWING	TITLE
G001	COVER SHEET
G002	(NOT USED IN THIS SUBMITTAL)
G003	GENERAL NOTES, ABBREVIATIONS AND LEGEND
G004	SITE PLAN/KEY MAP AND ALIGNMENT TABLES

BRIDGE DRAWING	TITLE
B001	GENERAL PLAN AND ELEVATION
B002	TYPICAL SECTION

CIVIL DRAWING	TITLE
C001	PLAN AND PROFILE – TRACK 1457 EXTENSION
C002	PLAN AND PROFILE – TRACK 1457 EXTENSION, TRACK 2
C003	PLAN AND PROFILE – TRACKS 1 AND 2
C004	PLAN AND PROFILE – TRACKS 1 AND 2
C005	PLAN AND PROFILE – TRACKS 1, 2, AND 3
C006	PLAN AND PROFILE – TRACKS 1, 2, AND 3
C007	PLAN AND PROFILE – TRACKS 1, 2, AND 3
C008	PLAN AND PROFILE – TRACKS 1, 2, AND 3
C009	PROFILE – TRACK 3
C010	TYPICAL SECTIONS
C011	TYPICAL SECTIONS
C012	CROSS SECTIONS
C013	CROSS SECTIONS
C014	CROSS SECTIONS
C015	CROSS SECTIONS
C016	CROSS SECTIONS

SUMMARY OF WORK

TO BE DEVELOPED FOR NEXT SUBMITTAL

30% SUBMITTAL

NO.	DATE	BY	DESCRIPTION OF REVISIONS

HDR
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SPOKANE, WA 99202-2902
509-343-8500 (F)509-343-8501

DESIGN FIRM PROJ. NO. 259968 | REV A | DESIGN FIRM PROJ. MGR. PJW

DRWN. RAH
DES. PJW/RAH
CHKD. RHR
APPROVED XXXXXX

PROJ. DESC. CITY OF CONNELL BNSF/CBRW INTERCHANGE TRACKS
DRAWING DESC. COVER SHEET

STATION CONNELL- WA LAKESIDE SUB
PROJ. TYPE NEW TRACKS AND BRIDGE
STATE WA
PROJ. I.D. XXXXXX

CITY OF CONNELL Washington
FILENAME:

DRAWING NUMBER G001
DWG. DATE:
SHEET: OF XX

PROJECT CONSTRUCTION NOTES

EXCEPT WHERE NOTED, CONSTRUCTION WILL BE IN STRICT ACCORDANCE WITH: BNSF DESIGN GUIDELINES FOR MAINLINE TRACK PROJECTS, BNSF UTILITY ACCOMODATION POLICY, BNSF DESIGN GUIDELINES FOR INDUSTRIAL TRACK (DGITP), AND WITH THE 2010 AMERICAN RAILWAY ENGINEERING AND MAINTENANCE OF WAY ASSOCIATION (AREMA) MANUAL FOR RAILWAY ENGINEERING, IN THAT ORDER

TRACK:
TRACK SHALL BE CONSTRUCTED TO THE ALIGNMENT AND GRADE PRESCRIBED.

SUBMITTALS:
SUBMITTALS ARE REQUIRED FOR ALL PERMANENT MATERIALS TO BE INCORPORATED.

TESTING:
MATERIALS AND CONSTRUCTION TESTING RESULTS ARE REQUIRED.

CONSTRUCTION SURVEYING:
CONTRACTOR WILL PROVIDE VERTICAL AND HORIZONTAL CONTROL STAKES ON 25' INCREMENTS ON CURVES AND 50' ON TANGENTS. STAKING WILL ALSO BE PROVIDED FOR POINT OF CURVES AND TANGENTS, POINTS OF SWITCHES, AND AT TIE-INS. STAKING SHOULD BE MAINTAINED UNTIL FINAL ACCEPTANCE.

CONSTRUCTION OF ROADBED:
SUB-BALLAST AND GRADE/PROFILE WILL BE PLACED WITHIN PLUS OR MINUS 1 INCH FROM DESIGN GRADE/ PROFILES. CONTINUOUS HIGH OR LOW SUB-BALLAST WILL NOT BE ACCEPTABLE. PROFILE IS BASED ON 112# RAIL HEIGHT ON CONCRETE TIE CONSTRUCTION

DEVIATION FROM DESIGN ELEVATION WILL NOT BE ACCEPTABLE.

BEFORE CONSTRUCTION CAN BE CONSIDERED COMPLETE, BNSF AND THE CITY OF CONNELL WILL PERFORM INSPECTIONS AND RECEIVE TESTING INFORMATION TO EVIDENCE THE CONSTRUCTION IS IN STRICT ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.

SURVEY AND STATIONING

1. MAINLINE STATIONING FOR PROFILES AND ALIGNMENTS IS BASED ON PROVIDED INFORMATION
2. PROJECT BENCHMARKS WILL BE SET AND INFORMATION PROVIDED.

DESIGN CRITERIA

1. DISTANCE FROM TOP OF RAIL ELEVATION TO TOP OF SUBGRADE AT CENTERLINE OF TRACK = IS 3.36' ON TANGENT TRACK FOR 136# RAIL BASED ON BNSF MAINLINE CONCRETE TIE TRACK SECTION
2. REFER TO TYPICAL SECTIONS, SHEET C010 & C011 FOR SECTIONS TO BE CONSTRUCTED.

UTILITY LOCATION

WASHINGTON STATE LAW REQUIRES CONTRACTORS TO FOLLOW RULES ADOPTED BY THE WASHINGTON UTILITY AND TRANSPORTATION COMMISSION

UTILITY NOTE

UNDERGROUND UTILITIES ARE KNOWN TO EXIST AT THIS SITE. UTILITIES SHOWN ON THESE PLANS ARE BASED ON SURFACE OBSERVATIONS ONLY. ALL CONTRACTORS SHOULD CALL 1-800-424-5555 PRIOR TO ANY EXCAVATION WORK

ABBREVIATIONS

AHD	AHEAD
APPROX	APPROXIMATE
ARCH	ARCHEOLOGICAL
BK	BACK
BDY	BOUNDARY
BNSF	BNSF RAILWAY
BVC	BEGIN VERTICAL CURVE STATION
CBRW	COLUMBIA BASIN RAILROAD
CHK	CHECKED
CIP	CAST IRON PIPE
C/P	CLEAR POINT
CS	CIRCULAR CURVE TO SPIRAL CURVE
CLR	CLEAR
CMP	CORRUGATED METAL PIPE
CNTL	CONTROL
CONC.	CONCRETE
CONSTR	CONSTRUCTION
CNTL	CONTROL
CWR	CONTINUOUS WELDED RAIL
CBR	CONTINUOUS BOLTED RAIL
C	CURVE
DES	DESIGN
DRAWL	DR
DSP	DOUBLE SWITCH POINT
EA	EACH
E.B.	EAST BOUND
EL. ELEV	ELEVATION
EQ	EQUATION
EQ AHD	EQUATION AHEAD
EQ BK	EQUATION BACK
ESMT	EASEMENT
EVC	END VERTICAL CURVE STATION
EXIST. EX	EXISTING
EXT	EXTENSION
FT	FEET
GR	GRADE
HORZ	HORIZONTAL
HTTO	HAND THROW TURNOUT
INV.	INVERT
L	LENGTH
LH	LEFT HAND
LT	LEFT
MAX.	MAXIMUM
ML	MAINLINE
MP	MILE POST
MIN	MINIMUM
MTCE	MAINTENANCE
NO	NUMBER
NTS	NOT TO SCALE
OPRT	OPERATING
P SIDING	PROPOSED SIDING
P-ML	PROPOSED MAINLINE
PCC	PACIFIC COAST CANOLA
POTO	POWER OPERATED TURNOUT
P.S., PSW	POINT OF SWITCH
PROP	PROPOSED
PT	POINT OF TANGENT
PVC	POINT OF VERTICAL CURVE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
PI	POINT OF HORIZONTAL INTERSECTION
POB	POINT OF BEGINNING
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
RD.	ROAD
RR	RAILROAD
ROW	BNSF RIGHT OF WAY
RH	RIGHT HAND
RT	RIGHT
SHT	SHEET
SHTS.	SHEETS
SQ	SQUARE
STA	STATION
SC	SPIRAL CURVE TO CIRCULAR CURVE
ST	SPIRAL CURVE TO TANGENT
SW.	SWITCH
T	TANGENT LENGTH
TS	TANGENT TO SPIRAL CURVE
T.F.	TRACK FOOT
TO	TURNOUT
T/R	TOP OF RAIL
T/T	TOP OF TIE
TRK. TRK	TRACK
TYP.	TYPICAL
UTL	UTILITY
VPT	VERTICAL POINT OF TANGENT
VPC	VERTICAL POINT OF CURVE
VC	VERTICAL CURVE
XING	GRADE CROSSING
VERT	VERTICAL
WB	WEST BOUND
WLF	WETLAND FLAG
WSDOT	WASHINGTON STATE DEPARTMENT OF TRANSPORTATION

LEGEND

- EXISTING TRACK
- NEW OR REINSTALLED TRACK
- NEW TURNOUT
- EXISTING FENCELINE
- EXISTING ROW LINE
- EARTHWORK LIMIT - CUT
- EARTHWORK LIMIT - FILL
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR

30% SUBMITTAL

NO.	DATE	BY	DESCRIPTION OF REVISIONS

HDR
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DESIGN FIRM PROJ. NO. 259960 | KEY A | DESIGN FIRM PROJ. MGR. PJW

DRWN. | DES. | CHKD. | APPROVED

PROJ. DESC. CITY OF CONNELL BNSF/CBRW INTERCHANGE TRACKS

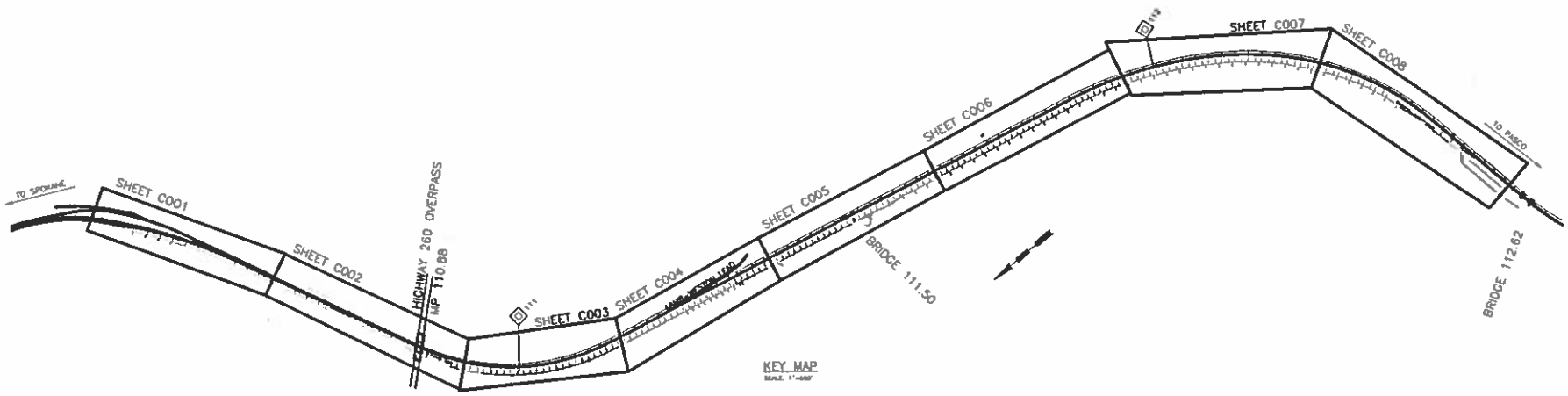
DRAWING DESC. NOTES, ABBREVIATIONS AND LEGEND

STATION CONNELL, WA LAMESTOE SUB
PROJ. TYPE NEW TRACKS AND BRIDGE
STATE WA
PROJ. I.D. 000000

CONNELL Washington

FILENAME:

DRAWING NUMBER G003
FINAL DATE:
SHEET: OF



KEY MAP

Track 1457 Extension Alignment Data									
NUMBER	D=	Δ	RADIUS	TANGENT	LENGTH	LINE/CHORD DIRECTION	CHORD LENGTH	START (N.E)	END (N.E)
L-1	N/A		N/A		182.36'				
C-1	1°35'		3618.80'		779.82'				
L-2	N/A		N/A		948.30'				

Track 1 Alignment Data									
NUMBER	D=	Δ	RADIUS	TANGENT	LENGTH	LINE/CHORD DIRECTION	CHORD LENGTH	START (N.E)	END (N.E)
L-6	N/A		N/A		121.59'				
C-11	3°09'26"		1111.75'		136.28'				
C-12	3°28'06"		1652.13'		948.30'				
C-13	2°39'07"		2160.77'		182.36'				
L-7	N/A		N/A		779.82'				
C-14	1°09'42"		4931.44'		948.30'				
C-15	2°01'07"		2838.77'		182.36'				
C-16	2°17'39"		2497.14'		779.82'				
C-17	2°47'		2056.92'		948.30'				
C-18	3°08'16"		1115.60'		182.36'				
L-8	N/A		N/A		779.82'				

Track 2 Alignment Data									
NUMBER	D=	Δ	RADIUS	TANGENT	LENGTH	LINE/CHORD DIRECTION	CHORD LENGTH	START (N.E)	END (N.E)
L-3	N/A		N/A		758.00'				
C-3	7°06'31"		805.88'		186.49'				
C-4	3°26'14"		1667.12		1017.37'				
C-5	2°38'01"		2175.85		174.10'				
L-4	N/A		N/A		3636.01'				
C-6	1°50'28"		3112.39		169.35'				
C-7	1°50'47"		3103.45		1077.42'				
C-8	2°48'34"		2035.49'		444.47'				
C-9	2°25'48"		2358.14		627.09'				
C-10	5°55'19"		967.96		137.81'				
L-5	N/A		3618.80'		234.96'				

Track 3 Alignment Data									
NUMBER	D=	Δ	RADIUS	TANGENT	LENGTH	LINE/CHORD DIRECTION	CHORD LENGTH	START (N.E)	END (N.E)
L-9	N/A		N/A		240.67'				
C-19	7°30'		764.49'		69.44'				
L-10	N/A		N/A		1323.53'				
C-20	1°51'26"		3085.01'		167.96'				
C-21	1°51'38"		3079.47'		1068.76'				
C-22	2°51'10"		2008.65		439.00'				
C-23	2°27'14"		2335.08		820.47'				
C-24	6°06'24"		938.68'		134.06'				
L-11	N/A		3618.80'		105.40'				
C-25	7°30'		768.49'		51.04'				
L-12	N/A		N/A		100.00'				
C-26	7°30'		768.49'		50.75'				
L-13	N/A		N/A		93.75'				

30% SUBMITTAL

NO.	DATE	BY	DESCRIPTION OF REVISIONS

HDR
E. 1401 TRENT
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509-343-8500 (F)509-343-8501

DESIGN FIRM PROJ. NO. 259968 | REV A | DESIGN FIRM PROJ. MGR. PJW

DRWN. RAH
DES. PJW/RAH
CHKD. RAH
APPROVED XXXXXX

PROJ. DESC. CITY OF CONNELL
BNSF/CBRW INTERCHANGE TRACKS

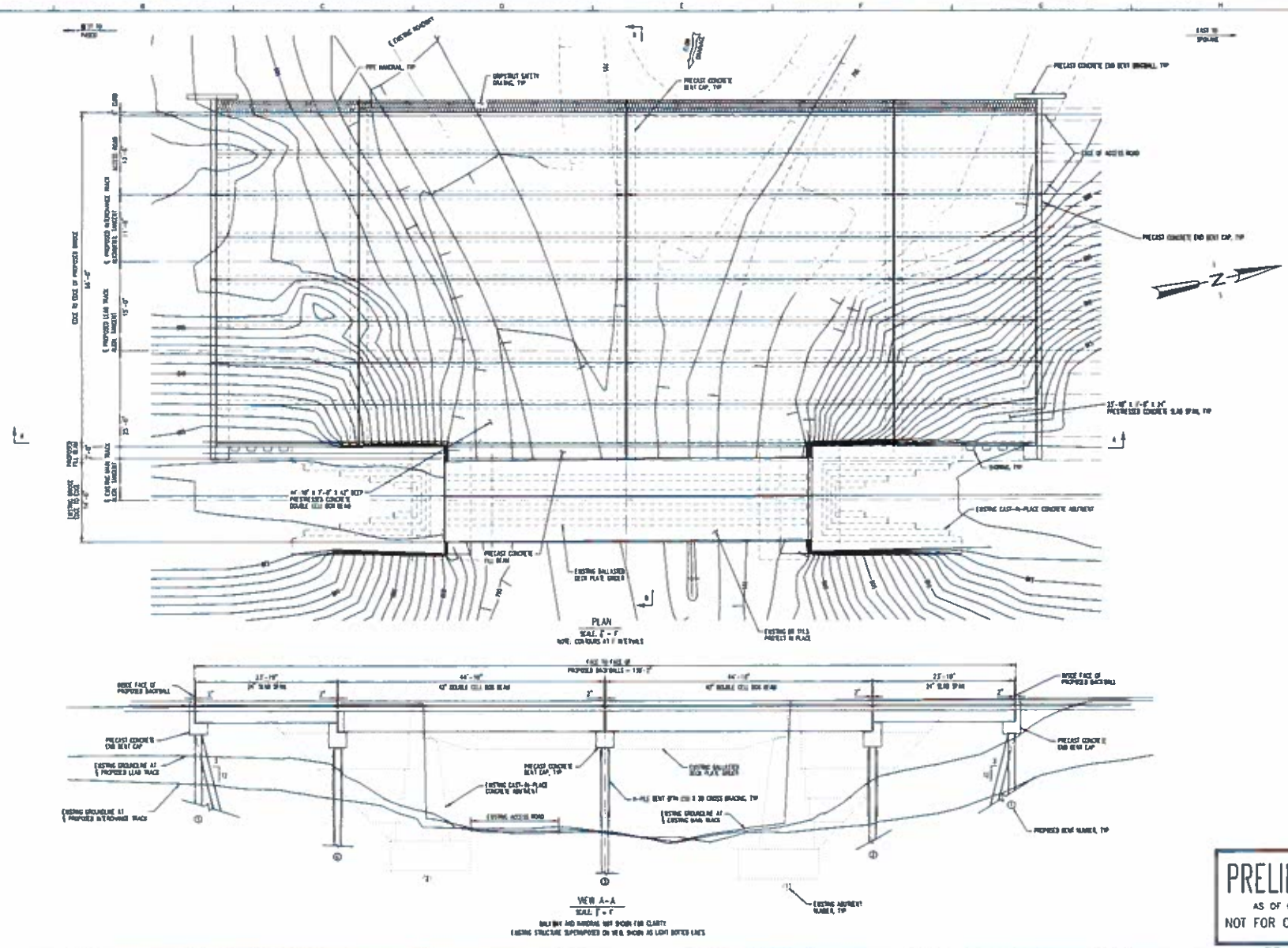
DRAWING DESC. SITE PLAN/KEY MAP AND ALIGNMENT TABLES

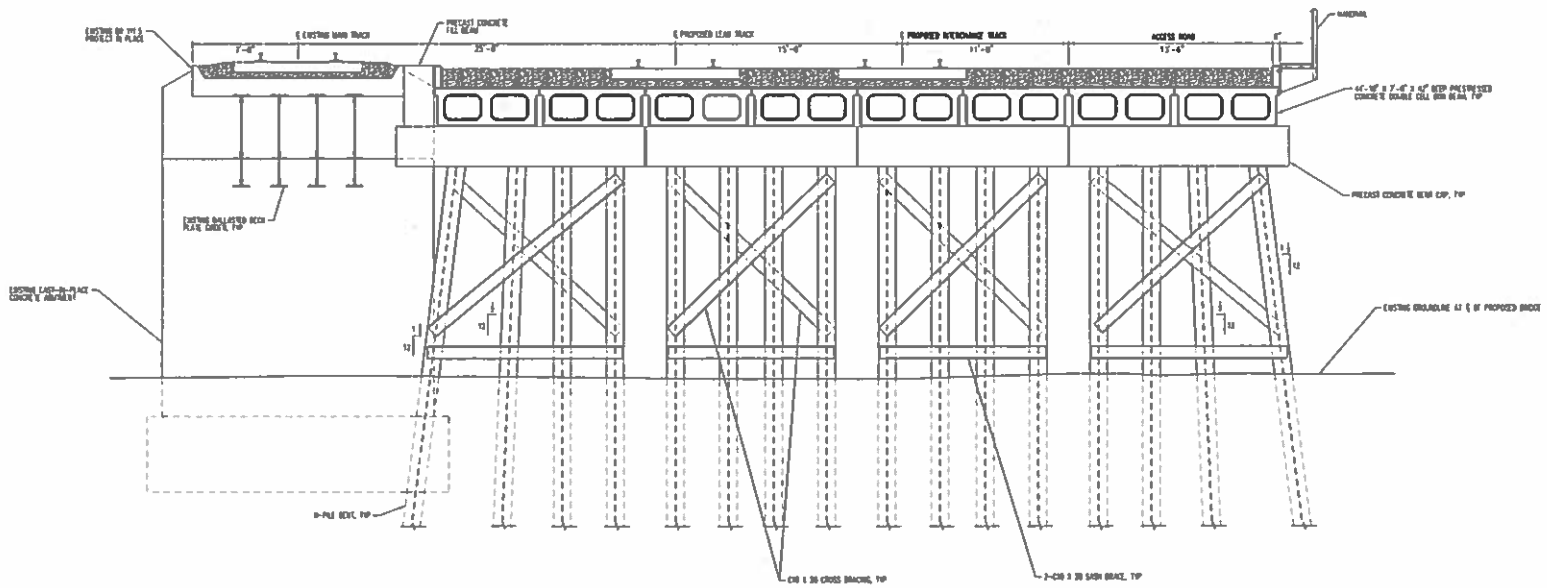
STATION CONNELL, WA LAKESIDE SUB
PROJ. TYPE NEW TRACKS AND BRIDGE
STATE WA
PROJ. I.D. XXXXXX

CITY OF CONNELL Washington

FILENAME:

DRAWING NUMBER G004
ENG. DATE:
SHEET: OF XX


PLAN
VIEW A-A
PRELIMINARY
AS OF 02/05/16
NOT FOR CONSTRUCTION
HDR
E. 1401 TRENT
SPOKANE, WA 99202-2902
509-343-8500 (F)509-343-8501
CITY OF CONNELL
BNSF/CBRW INTERCHANGE TRACKS
GENERAL PLAN AND ELEVATION
CONNELL Washington
B001
FEB 5, 2016
1 OF 2



VIEW B-B
SCALE: 1" = 1'

PRELIMINARY
AS OF 02/05/16
NOT FOR CONSTRUCTION

NO	DATE	BY	DESCRIPTION OF REVISIONS

HDR
E. 1401 FRONT
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DESIGN FIRM PROJ. NO. 259968 | REV A | DESIGN FIRM PROJ. MGR P.W

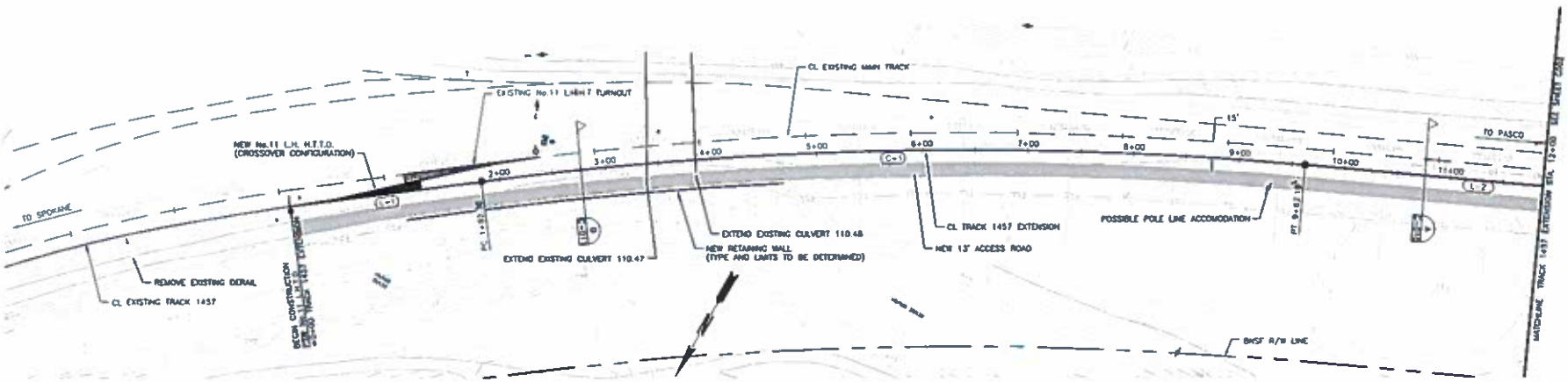
DRWN: DNC
DES: JLJ
CHKD: JLJ
APPROVED: XXXXXX

PROJ. DESC. CITY OF CONNELL BNSF/CBRW INTERCHANGE TRACKS
DRAWING DESC. TYPICAL SECTION

STATION: CONNELL, WA LAKESIDE SUB
PROJ. TYPE: NEW TRACKS AND BRIDGE
STATE: WA
PROJ. I.D.: XXXXXX
FILENAME:

CITY OF CONNELL Washington

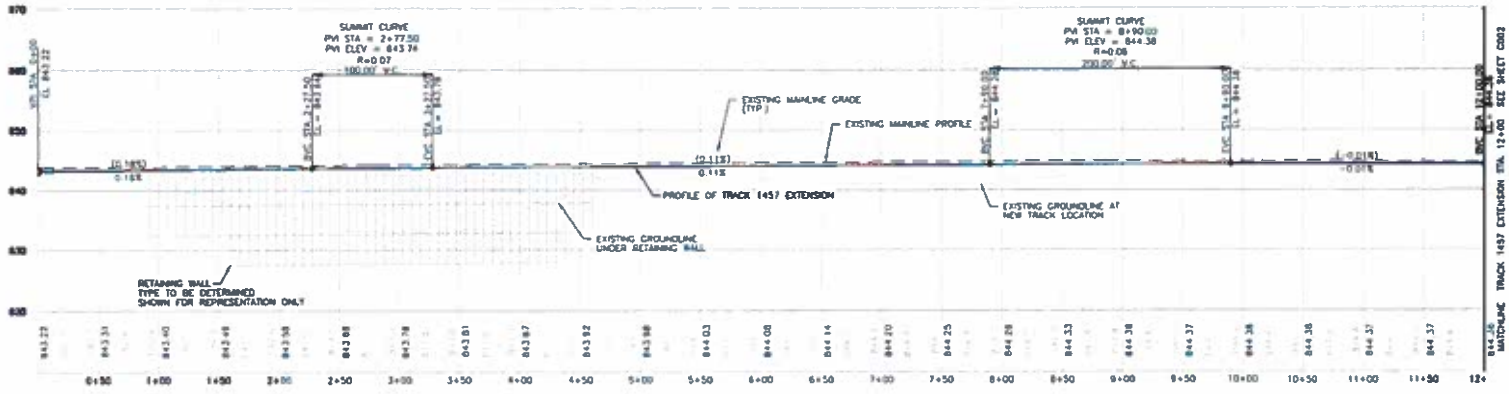
DRAWING NUMBER: B002
ENG. DATE: FEB 5, 2016
SHEET: 2 OF 2



PLAN VIEW NEW TRACK 1457 EXTENSION
STATION 0+00 TO 12+00

0 50 100 200

SCALE: 1" = 100'



PROFILE OF MAINLINE AND NEW TRACK 1457 EXTENSION
TRACK 1457 EXTENSION STA. 0+00 TO STA. 12+00

SCALE: 1" = 100' HORIZ.
SCALE: 1" = 10' VERT

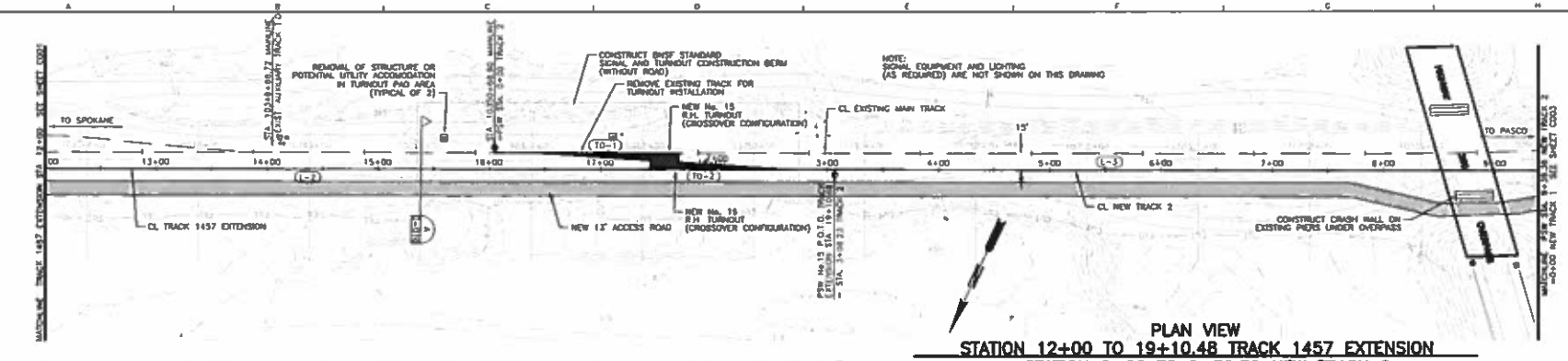
30% SUBMITTAL

HDR	E. 1401 TRENT SPOKANE, WA 99202-2902 509-343-8500 (F)509-343-8501	DRN. RAH DES. PJM/RAH CHKD. RJM APPROVED	PROJ. DESC. CITY OF CONNELL BNSF/CBRW INTERCHANGE TRACKS
DESIGN FIRM PROJ. NO. 259968	REV A	DESIGN FIRM PROJ. MGR. PJM	DRAWING DESC. PLAN AND PROFILE TRACK 1457 EXTENSION STA. 0+00 (TIE INTO EXISTING) TO 12+00

STATION CONNELL, WA LAKESIDE SUB
PROJ. TYPE NEW TRACKS AND BRIDGE
STATE WA
PROJ. I.D. XXXXXX

CONNELL Washington

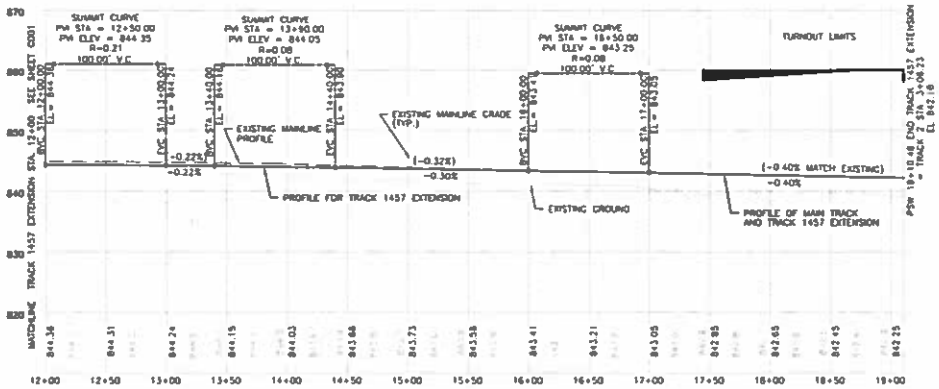
DRAWING NUMBER C001
DWG. DATE
SHEET OF



PLAN VIEW
STATION 12+00 TO 19+10.48 TRACK 1457 EXTENSION
STATION 0+00 TO 9+39.39 NEW TRACK 2

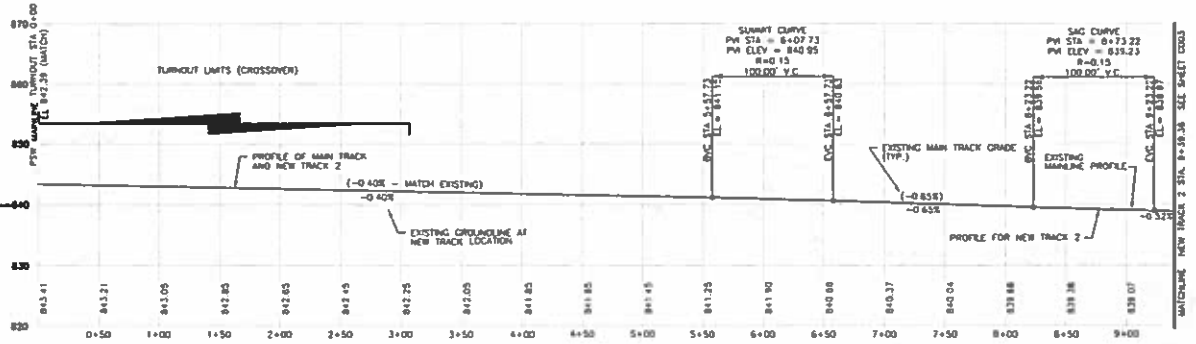
0 50 100 200

SCALE: 1" = 100'



PROFILE OF MAIN TRACK AND NEW TRACK 1457 EXTENSION
TRACK 1457 EXTENSION STA. 3+06.23 TO STA. 9+39.39

SCALE: 1" = 100' HORIZ.
SCALE: 1" = 10' VERT.



PROFILE MAINLINE AND NEW TRACK 2
TRACK 2 STA. 0+00 TO STA. 9+39.39

SCALE: 1" = 100' HORIZ.
SCALE: 1" = 10' VERT.

30% SUBMITTAL

NO.	DATE	BY	DESCRIPTION OF REVISIONS

HDR
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DESIGN FIRM PROJ. NO. 259968 | REV A | DESIGN FIRM PROJ. MGR. PJW

DRWN. RAN
DES. PJW/RAN
CHKD. RAN
APPROVED XXXXXX

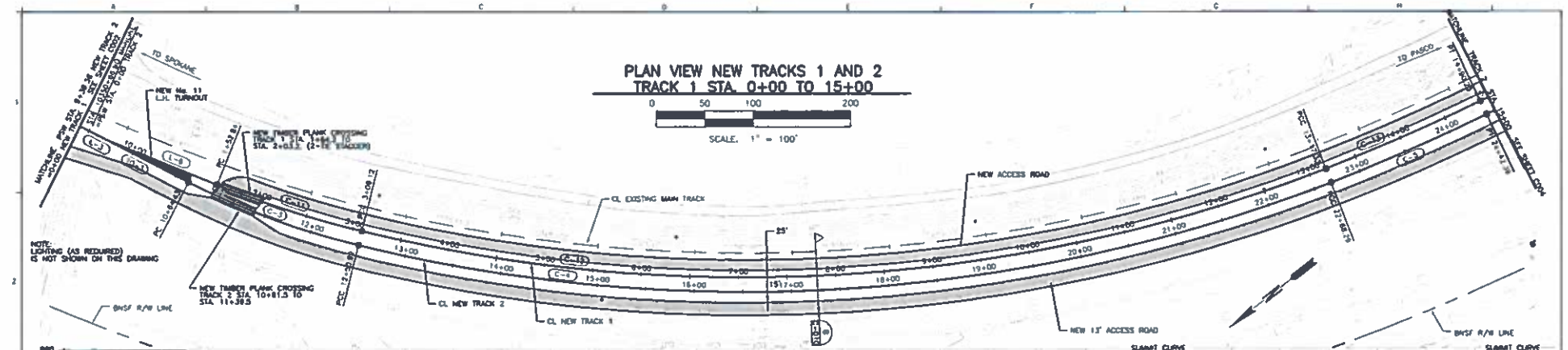
PROJ. DESC.
CITY OF CONNELL
BNSF/CBRW INTERCHANGE TRACKS
PLAN AND PROFILE TRACK 1457 EXTENSION AND NEW TRACK 1
TRACK 1457 EXT. STA. 12+00 TO 19+10.48
AND NEW TRACK 2 STA. 0+00 TO 9+39.39

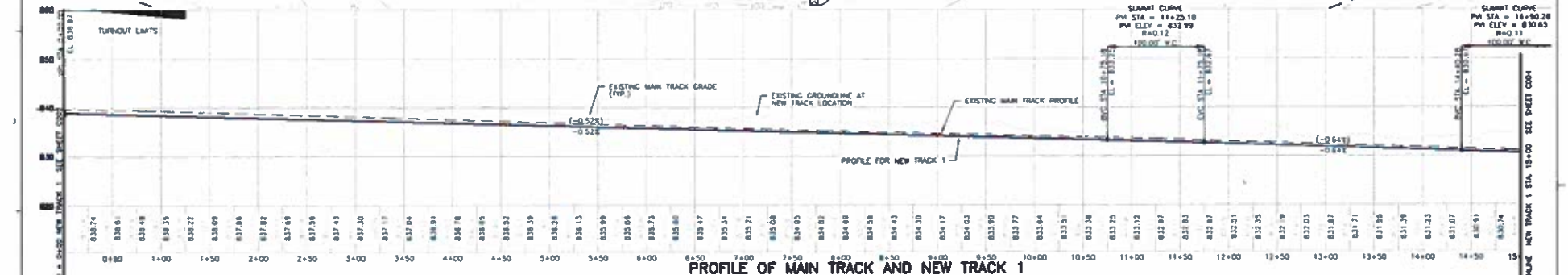
STATION CONNELL, WA LAKESIDE SUB
PROJ. TYPE NEW TRACKS AND BRIDGE
STATE WA
PROJ. I.D. XXXXXX

CITY OF CONNELL Washington

FILENAME:

DRAWING NUMBER C002
DWG. DATE:
SHEET: OF XX





PROFILE OF MAIN TRACK AND NEW TRACK 1
TRACK 1 STA. 0+00 TO STA. 15+00
SCALE: 1" = 100' HORIZ.
SCALE: 1" = 10' VERT.

PROFILE OF NEW TRACK 2
TRACK 2 STA. 9+39.36 TO STA. 24+40
SCALE: 1" = 100' HORIZ.
SCALE: 1" = 10' VERT.

30% SUBMITTAL

NO.	DATE	BY	DESCRIPTION OF REVISIONS

HDR
E. 1401 TRENT
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DESIGN FIRM PROJ. NO. 259968 | REV A | DESIGN FIRM PROJ. MGR. PJW

DRWN. RAH
DES. PJW/RAH
CHKD. RAH
APPROVED XXXXX

PROJ. DESC. CITY OF CONNELL
BNSF/CBRW INTERCHANGE TRACKS

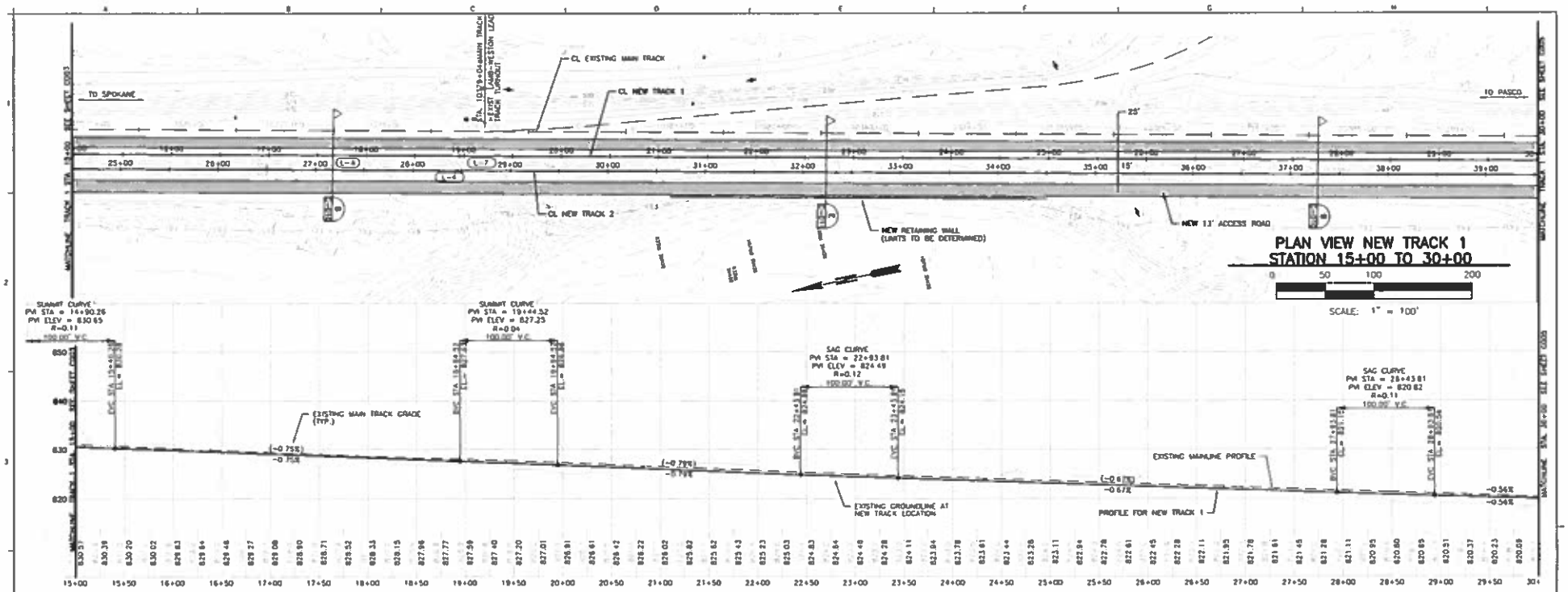
DRAWING DESC. PLAN AND PROFILE NEW TRACKS 1 AND 2
NEW TRACK 1 STA. 0+00 TO 15+00

STATION CONNELL - 66 LAKESIDE SUB
PROJ. TYPE NEW TRACKS AND BRIDGE
STATE WA
PROJ. I.D. XXXXX

CONNELL Washington

FILENAME:

DRAWING NUMBER C003
DWG. DATE:
SHEET: OF 38



30% SUBMITTAL

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DESIGN FIRM PROJ. NO. 259968
REV A
DESIGN FIRM PROJ. MGR. PJW

DRWN. MM
DES. PJW/MM
CHKD. MM
APPROVED XXXXXX

PROJ. DESC. CITY OF CONNELL
BNSF/CBRW INTERCHANGE TRACKS

DRAWING DESC. PLAN AND PROFILE NEW TRACKS 1, AND 2
NEW TRACK 1 STA. 15+00 TO 30+00

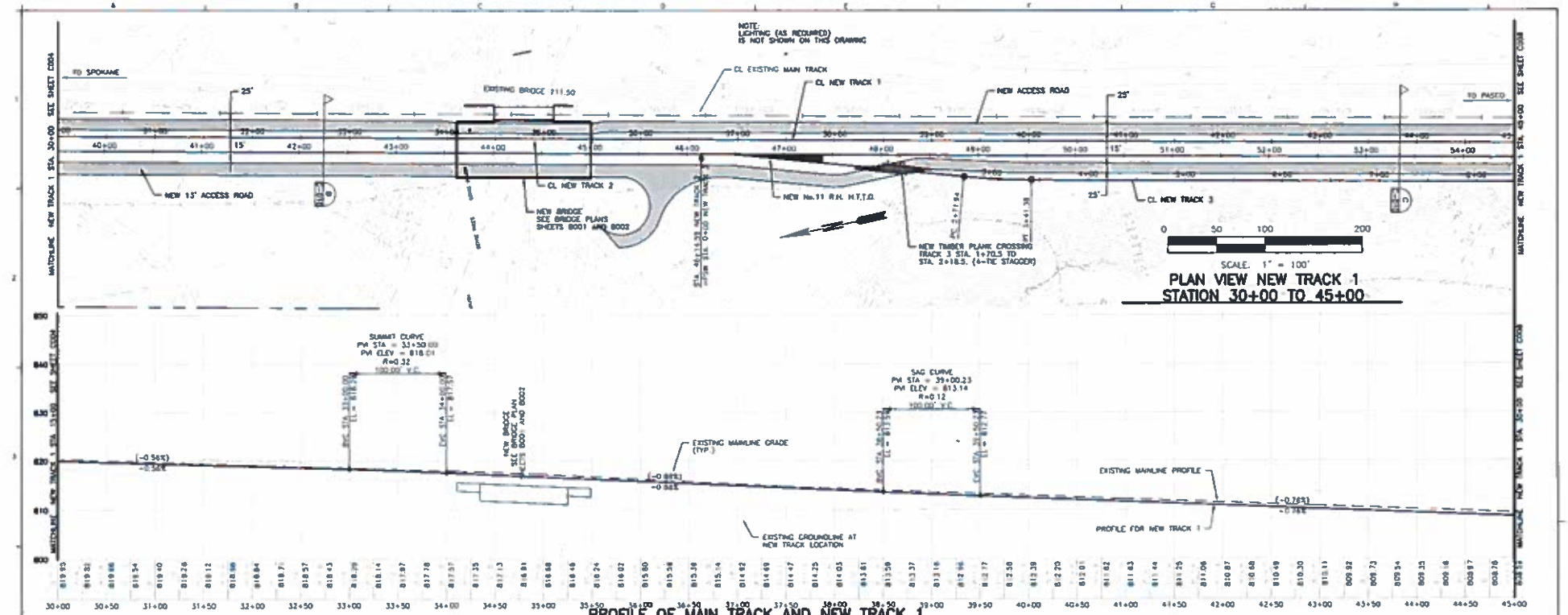
STATION CONNELL - 84 LAKESIDE SUB
PROJ. TYPE NEW TRACKS AND BRIDGE
STATE WA
PROJ. I.D. XXXXXX

CITY OF CONNELL Washington

FILENAME:

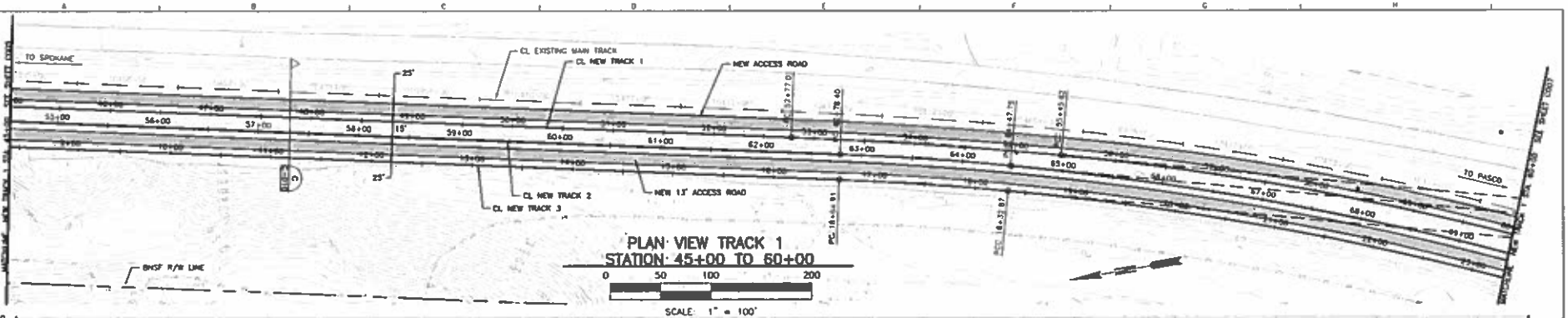
DRAWING NUMBER C004
ENG. DATE:
SHEET: OF 30

NO.	DATE	BY	DESCRIPTION OF REVISIONS



30% SUBMITTAL

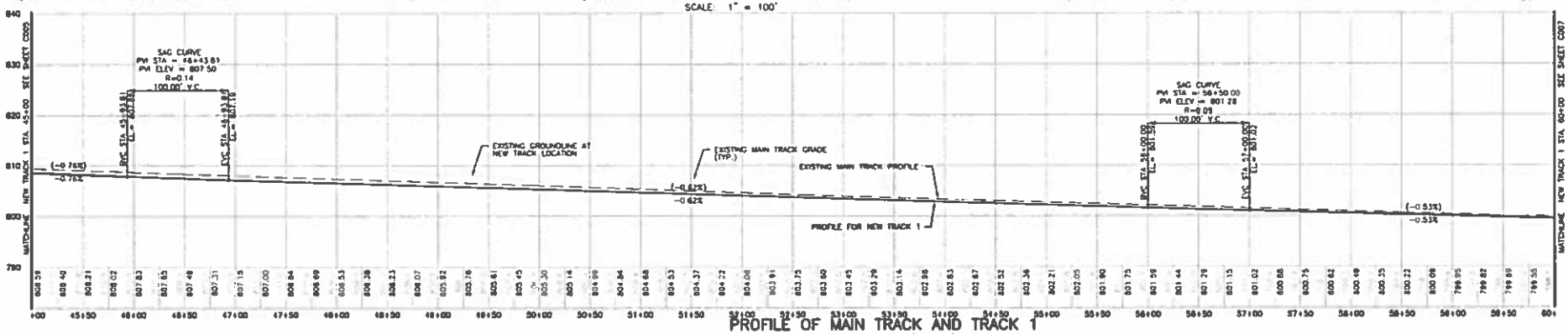
HDR	E. 1401 TRENT SPOKANE, WA 99202-2902 509-343-8500 (F)509-343-8501	DRWN. RAH DES. PJB/RAH CHKD. KBW APPROVED	PROJ. DESC.: CITY OF CONNELL BNSF/CBRW INTERCHANGE TRACKS	STATION: CONNELL, WA LAKESIDE SUB PROJ. TYPE: NEW TRACKS AND BRIDGE STATE: WA PROJ. I.D.: 000000	CONNELL Washington	DRAWING NUMBER: C005 DWG. DATE: SHEET: OF 00
NO. DATE BY DESCRIPTION OF REVISIONS	DESIGN FIRM PROJ. NO. 259968 REV A DESIGN FIRM PROJ. MGR. PJW		DRAWING DESC.: PLAN AND PROFILE TRACKS 1, 2 AND 3 TRACK 1 STA. 30+00 TO 45+00			FILENAME:



PLAN VIEW TRACK 1
STATION 45+00 TO 60+00

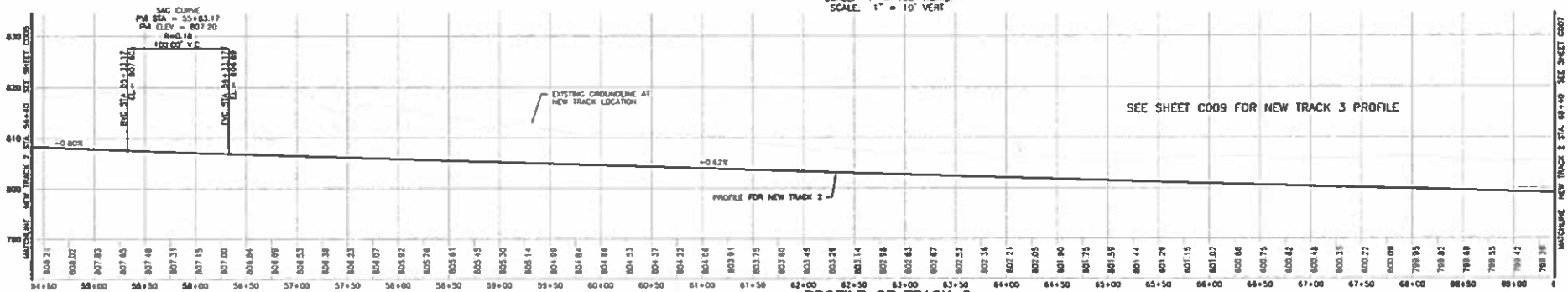
0 50 100 200

SCALE: 1" = 100'



PROFILE OF MAIN TRACK AND TRACK 1
TRACK 1 STA. 45+00 TO STA. 60+00

SCALE: 1" = 100' HORIZ.
SCALE: 1" = 10' VERT



PROFILE OF TRACK 2
TRACK 2 STA. 54+40 TO STA. 69+40

SCALE: 1" = 100' HORIZ.
SCALE: 1" = 10' VERT

30% SUBMITTAL

NO.	DATE	BY	DESCRIPTION OF REVISIONS

HDR
E. 1401 TRENT
SPOKANE, WA 99202-2902
509-343-8500 (F)509-343-8501

DESIGN FIRM PROJ. NO. 259968 | REV A | DESIGN FIRM PROJ. MGR. PJH

DRWN.
DES.
CHKD.
APPROVED

PROJ. DESC.: CITY OF CONNELL
BNSF/CBRW INTERCHANGE TRACKS

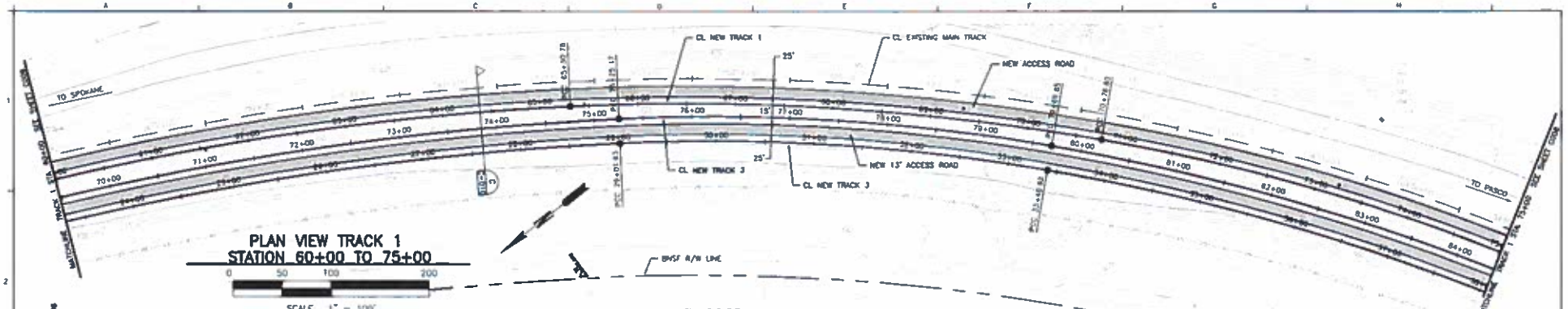
DRAWING DESC.: PLAN AND PROFILE NEW TRACKS 1, 2 AND 3
NEW TRACK 1 STA. 45+00 TO 60+00

STATION: CONNELL - WA LAKESIDE SUB
PROJ. TYPE: NEW TRACKS AND BRIDGE
STATE: WA
PROJ. I.D.:

FILENAME:

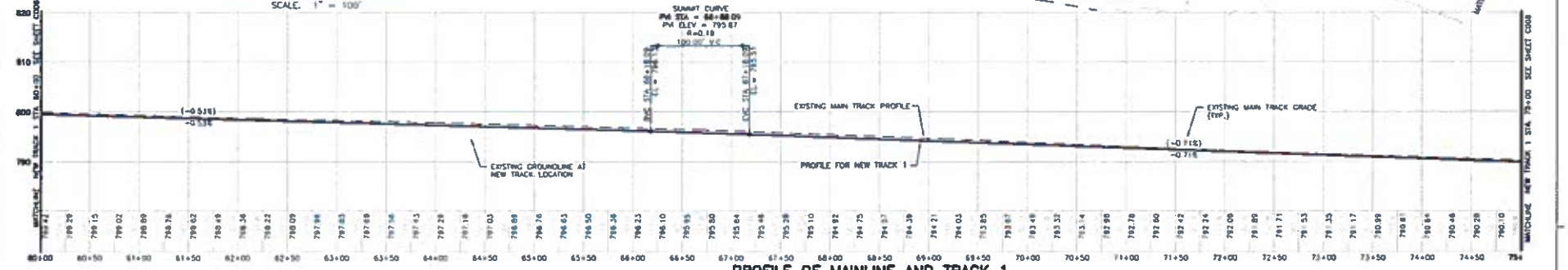
CONNELL Washington

DRAWING NUMBER: C006
DOC. RANGE:
SHEET: OF



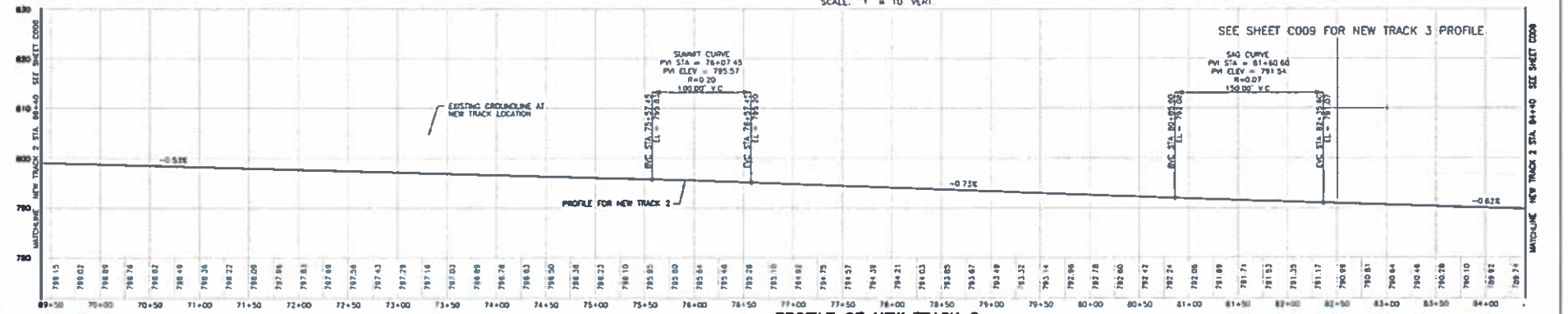
PLAN VIEW TRACK 1
STATION 60+00 TO 75+00

SCALE: 1" = 100'



PROFILE OF MAINLINE AND TRACK 1
TRACK 1 STA. 60+00 TO STA. 75+00

SCALE: 1" = 100' HORIZ.
SCALE: 1" = 10' VERT.



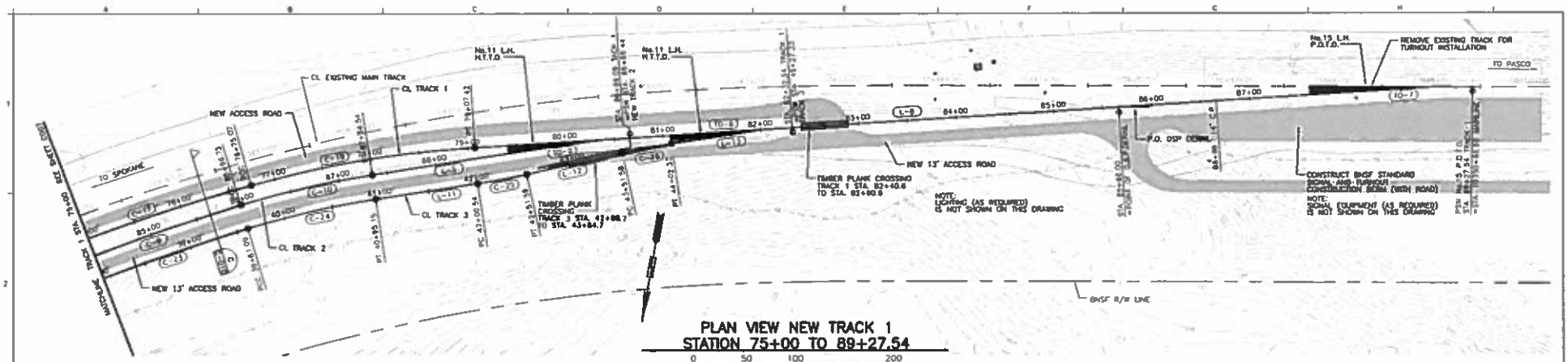
PROFILE OF NEW TRACK 2
TRACK 2 STA. 69+40 TO STA. 84+40

SCALE: 1" = 100' HORIZ.
SCALE: 1" = 10' VERT.

30% SUBMITTAL

HDR	E. 1401 TRENT SPOKANE, WA 99202-2902 509-343-8500 (F)509-343-8501	DRWN. RJH DES. PJB/RJH CHKD. RJH APPROVED	PROJ. DESC. CITY OF CONNELL BNSF/CBRW INTERCHANGE TRACKS	STATION CONNELL - WA LAKESIDE SUB PROJ. TYPE NEW TRACKS AND BRIDGE STATE XX PROJ. I.D. XXXXXX	CONNELL Washington	DRAWING NUMBER C007	
DESIGN FIRM PROJ. NO. 259968	REV A	DESIGN FIRM PROJ. NOR. PJB	DRAWING DESC. PLAN AND PROFILE TRACKS 1, 2 AND 3 TRACK 1 STA. 60+00 TO 75+00		FILENAME:	DWG. DATE:	SHEET: OF XX

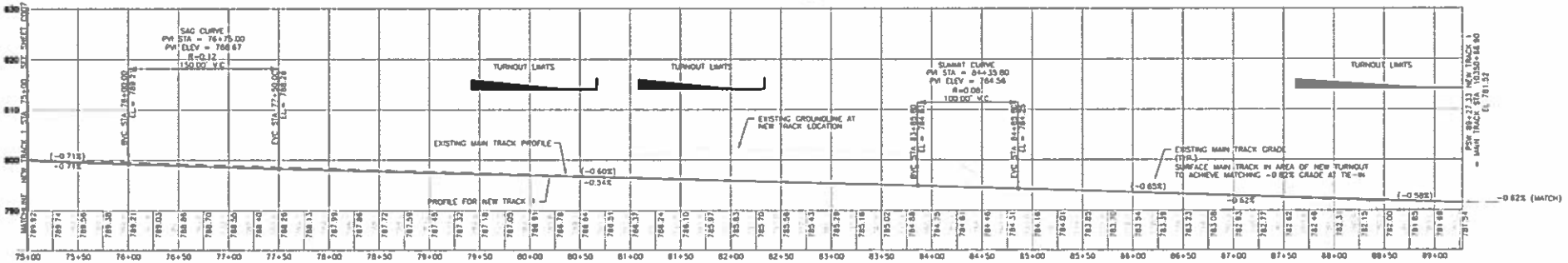
NO. DATE BY DESCRIPTION OF REVISIONS



PLAN VIEW NEW TRACK 1
STATION 75+00 TO 89+27.54

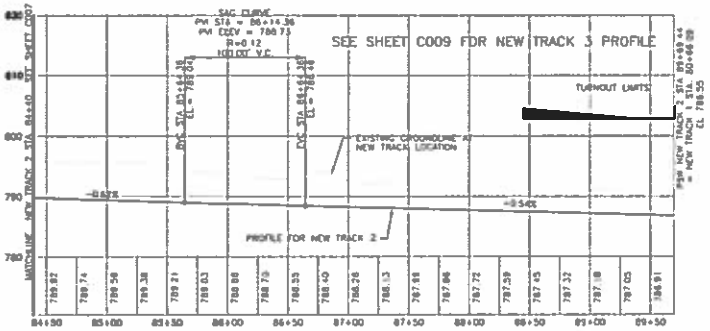
0 50 100 200

SCALE: 1" = 100'



PROFILE OF MAIN TRACK AND NEW TRACK 1
TRACK 1 STA. 75+00 TO STA. 89+27.54

SCALE: 1" = 100' HORIZ.
SCALE: 1" = 10' VERT.



PROFILE OF NEW TRACK 2
TRACK 2 STA. 84+40 TO STA. 89+69.44

SCALE: 1" = 100' HORIZ.
SCALE: 1" = 10' VERT.

30% SUBMITTAL

NO.	DATE	BY	DESCRIPTION OF REVISIONS

HDR
E. 1401 TRENT
SPOKANE, WA 99202-2902
509-343-8500 (F)509-343-8501

DESIGN FIRM PROJ. NO. 259968 | REV A | DESIGN FIRM PROJ. MGR. PJW

DRWN. RAN
DES. PJW/RAN
CHKD. RAN
APPROVED XXXXXX

PROJ. DESC.: CITY OF CONNELL
BNSF/CBRW INTERCHANGE TRACKS

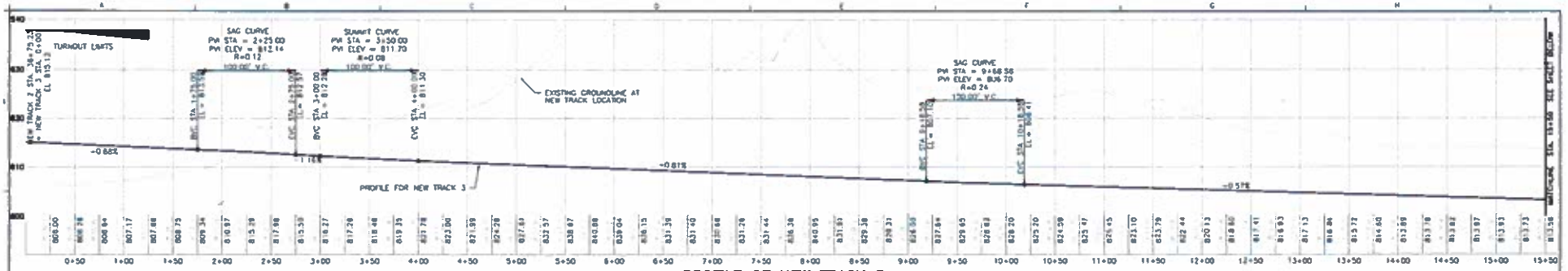
DRAWING DESC.: PLAN AND PROFILE NEW TRACKS 1, 2 AND 3
TRACK NEW 1 STA. 75+00 TO 89+27.54

STATION: CONNELL, WA LAKESIDE SUB
PROJ. TYPE: NEW TRACKS AND BRIDGE
STATE: WA
PROJ. I.D.: XXXXXX

CITY OF CONNELL Washington

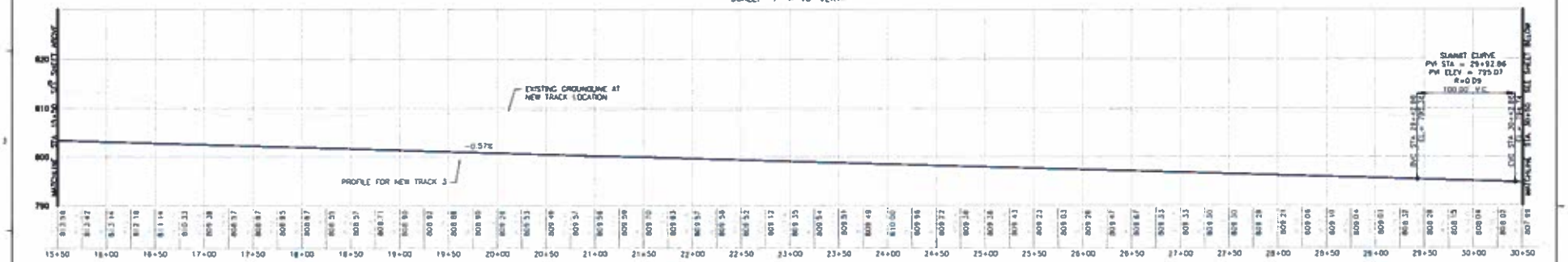
FILENAME:

DRAWING NUMBER: C008
DWG. DATE:
SHEET: OF XX



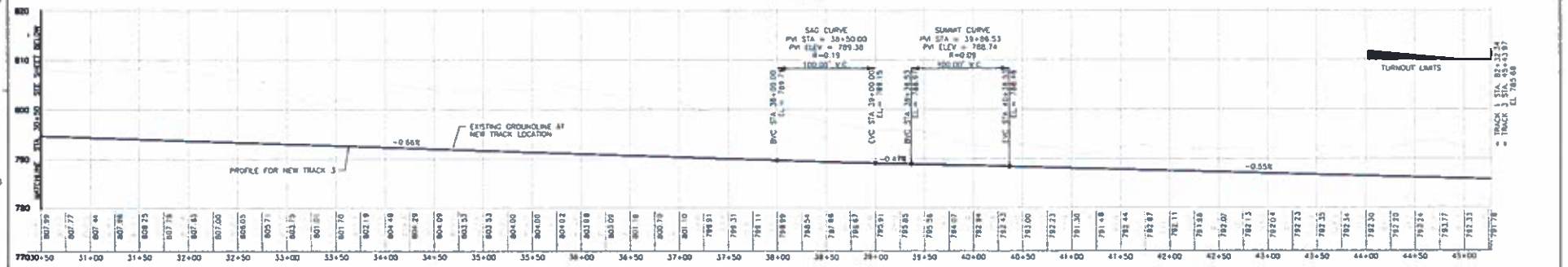
PROFILE OF NEW TRACK 3
STA. 0+00 TO STA. 15+50

SCALE: 1" = 100' HORIZ.
SCALE: 1" = 10' VERT.



PROFILE OF NEW TRACK 3
STA. 15+50 TO STA. 30+50

SCALE: 1" = 100' HORIZ.
SCALE: 1" = 10' VERT.



PROFILE OF NEW TRACK 3
STA. 30+50 TO STA. 45+43.97

SCALE: 1" = 100' HORIZ.
SCALE: 1" = 10' VERT.

30% SUBMITTAL

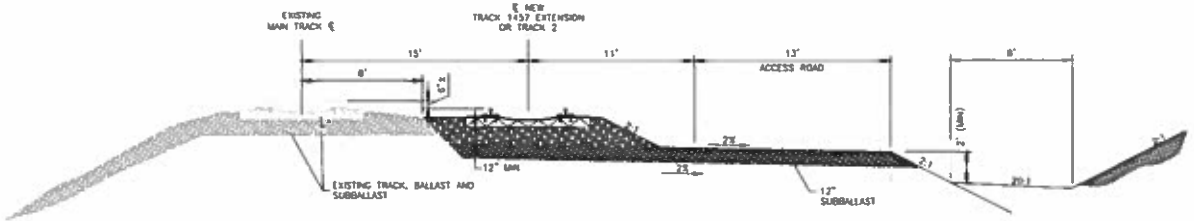
HDR	E. 1401 TRENT SPOKANE, WA 99202-2902 509-343-8500 (F)509-343-8501	DRWN. AMS DES. PJW/RAH CHKD. KWH APPROVED XXXXXX	PROJ. DESC. CITY OF CONNELL BNSF/CBRW INTERCHANGE TRACKS DRAWING DESC. PROFILE OF NEW TRACK 3
DESIGN FIRM PROJ. NO. 259968	REV A	DESIGN FIRM PROJ. MGR. PJW	

STATION CONNELL, WA LAKESIDE SUB
PROJ. TYPE NEW TRACKS AND BRIDGE
STATE WA
PROJ. I.D. XXXXXX

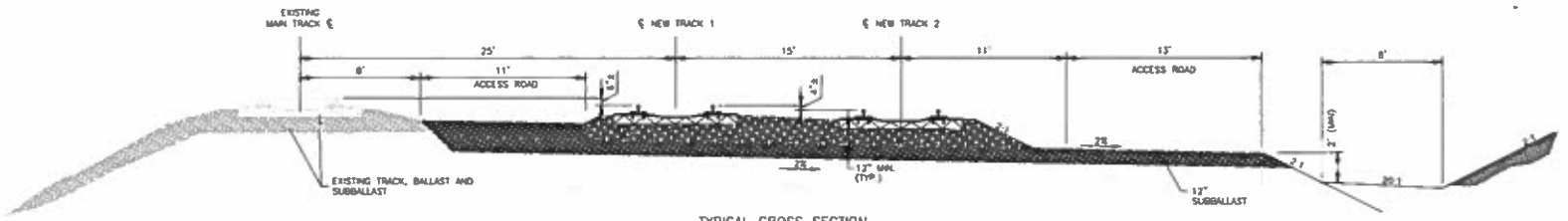
CONNELL Washington

DRAWING NUMBER C009
DWG. DATE:
SHEET: OF XX

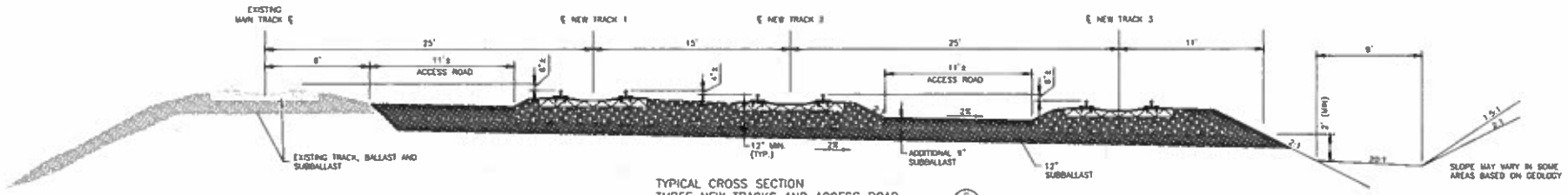
NO.	DATE	BY	DESCRIPTION OF REVISIONS



TYPICAL CROSS SECTION
SINGLE NEW TRACK AND ACCESS ROAD



TYPICAL CROSS SECTION
TWO NEW TRACKS AND ACCESS ROAD



TYPICAL CROSS SECTION
THREE NEW TRACKS AND ACCESS ROAD

30% SUBMITTAL

NO.	DATE	BY	DESCRIPTION OF REVISIONS

HDR
E. 1401 TRENT
SPOKANE, WA 99202-2902
509-343-8500 (F)509-343-8501

DESIGN FIRM PROJ. NO. 259968 | REV A | DESIGN FIRM PROJ. MGR. PJB

DRWN. BAH
DES. PJB/BAH
CHKD. BJR
APPROVED XXXXXX

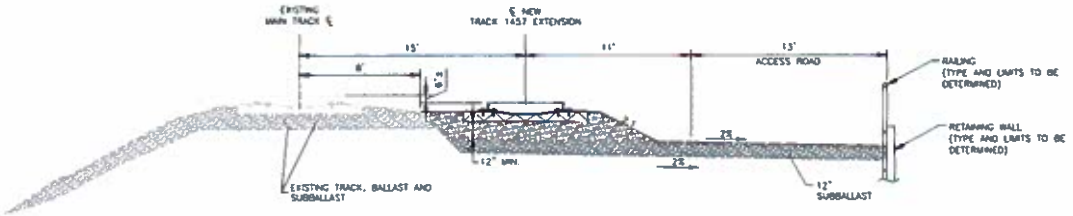
PROJ. DESC. CITY OF CONNELL BNSF/CBRW INTERCHANGE TRACKS
DRAWING DESC. TYPICAL CROSS SECTIONS

STATION CONNELL, WA KAMIOKE SUB
PROJ. TYPE NEW TRACKS AND BRIDGE
STATE WA
PROJ. I.D. XXXXXX

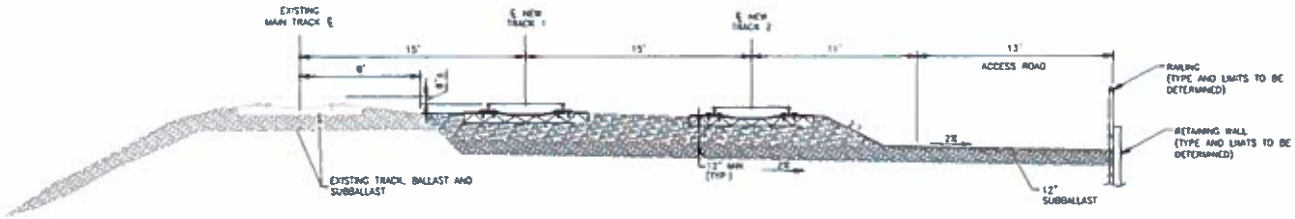
CITY OF CONNELL Washington

FILENAME:

DRAWING NUMBER C010
ORIG. DATE:
SHEET: ___ OF ___



TYPICAL CROSS SECTION
TRACK 1457 EXTENSION
(ADJACENT TO RETAINING WALL)



TYPICAL CROSS SECTION
NEW TRACKS 1 AND 2
(ADJACENT TO RETAINING WALL)

30% SUBMITTAL

HDR	E. 1401 TRENT SPOKANE, WA 99202-2902 509-343-8500 (F)509-343-8501	DRN. RAH DES. PJB/RAH CHKD. RAH APPROVED	PROJ. DESC.: CITY OF CONNELL BNSF/CBRW INTERCHANGE TRACKS
DESIGN FIRM PROJ. NO. 259968	REV A	DESIGN FIRM PROJ. MGR. PJB	DRAWING DESC.: TYPICAL CROSS SECTIONS

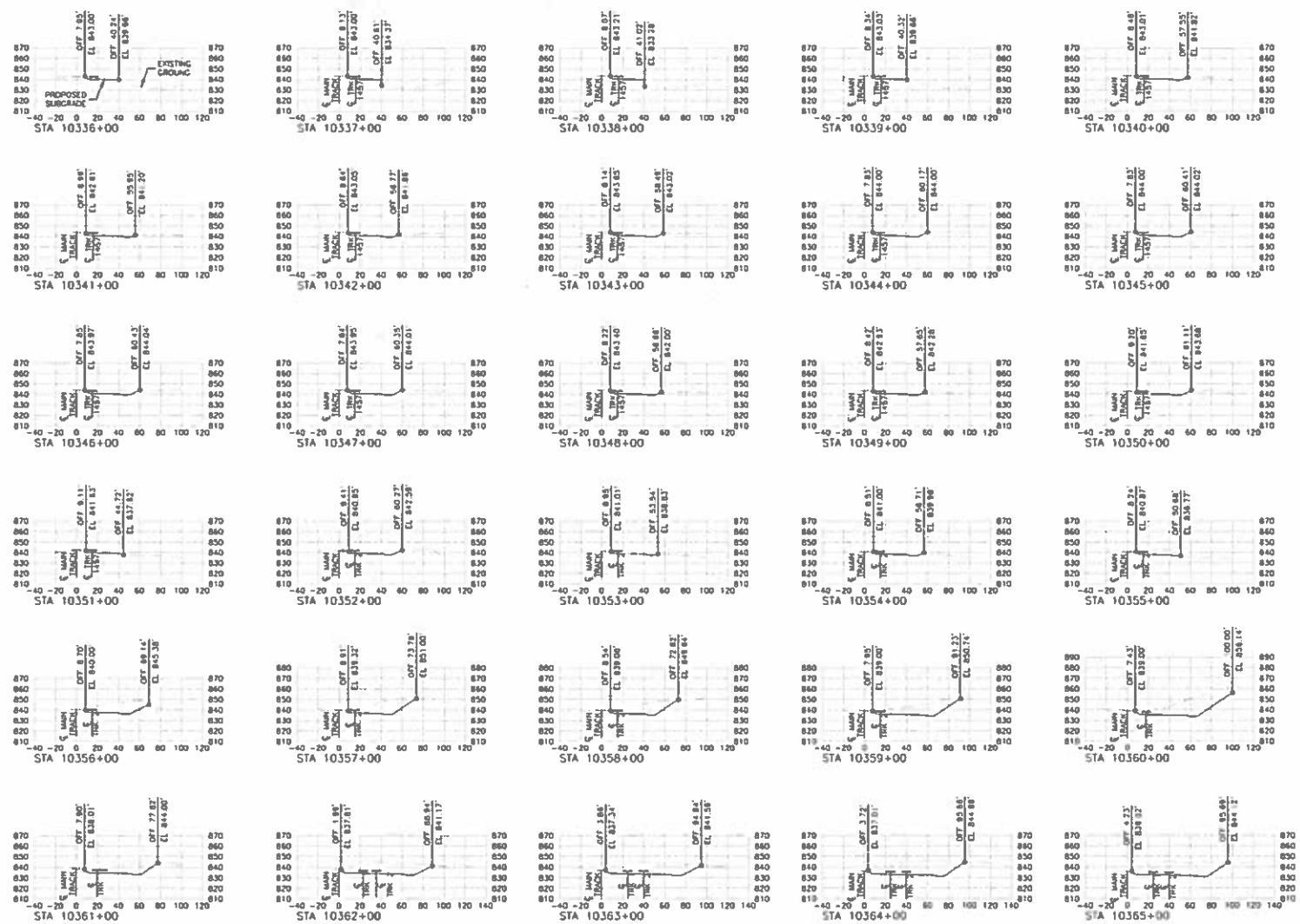
STATION: CONNELL - WA LAKESIDE SUB
PROJ. TYPE: NEW TRACKS AND BRIDGE
STATE: WA
PROJ. I.D.: 110000

CITY OF CONNELL Washington

FILENAME:

DRAWING NUMBER: C011
DWG. DATE:
SHEET: OF XX

NO.	DATE	BY	DESCRIPTION OF REVISIONS



NOTES:
1. RIGHT-OF-WAY IS 200 FEET FROM EXISTING MAINLINE TRACK AND IS NOT SHOWN ON CROSS SECTIONS.
2. EXCAVATION SLOPES ARE PERFORMED AT 2:1 FOR ALL EXCAVATIONS UNDER 10 FEET IN HEIGHT. ALL EXCAVATIONS OVER 10 FEET WILL BE PERFORMED AT 1.5:1 (EXCAVATIONS SLOPES WILL BE CONFIRMED UPON COMPLETION OF GEOTECHNICAL INVESTIGATION)

30% SUBMITTAL

NO	DATE	BY	DESCRIPTION OF REVISIONS

HDR
E. 1401 TRENT
SPOKANE, WA 99202-2902
509-343-8500 (F)509-343-8501

DESIGN FIRM PROJ NO. 259968 | REV A | DESIGN FIRM PROJ MGR PJW

DRWN RAH
DES PJW/RAH
CHKD KWR
APPROVED XXXXXX

PROJ DESC: CITY OF CONNELL
BNSF/CBRW INTERCHANGE TRACKS

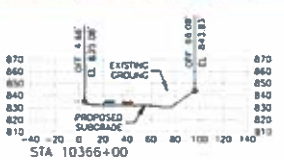
DRAWING DESC: CROSS SECTIONS

STATION: CONNELL, WA LAWESIDE SUB
PROJ TYPE: NEW TRACKS AND BRIDGE
STATE: WA
PROJ NO: XXXXXX

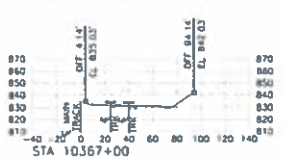
CITY OF CONNELL Washington

FILENAME:

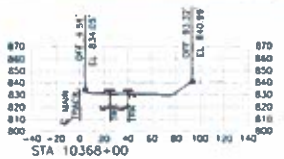
DRAWING NUMBER: C012
DWG DATE:
SHEET: OF XX



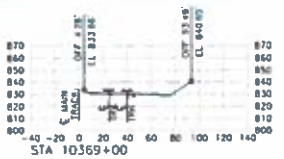
STA 10366+00



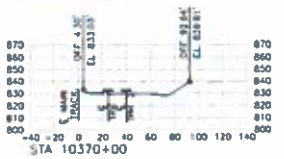
STA 10367+00



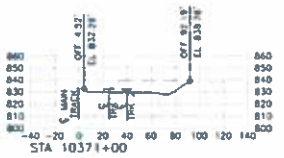
STA 10368+00



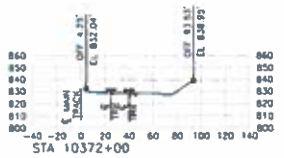
STA 10369+00



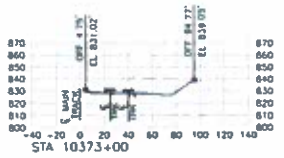
STA 10370+00



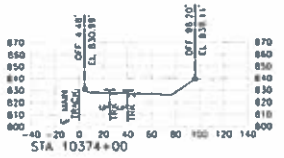
STA 10371+00



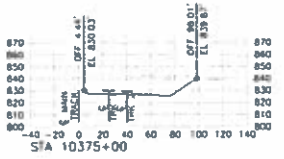
STA 10372+00



STA 10373+00



STA 10374+00



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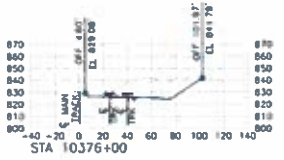
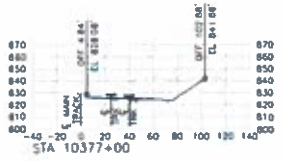


STA 10376+00



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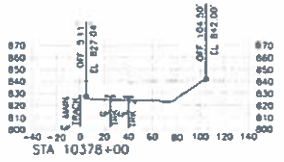

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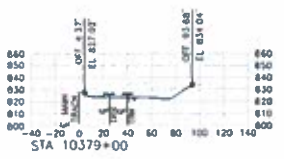

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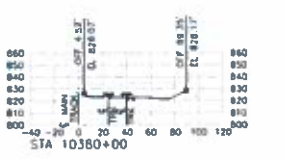

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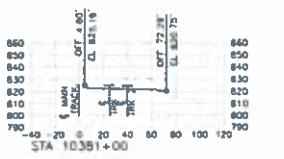

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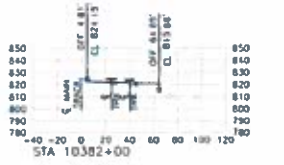

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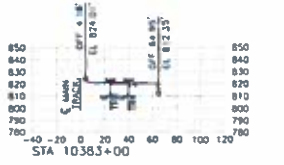

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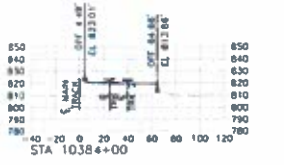

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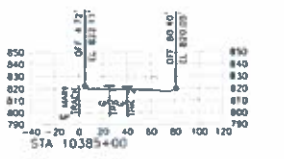

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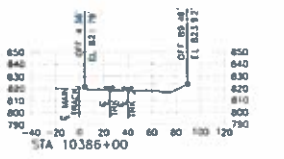

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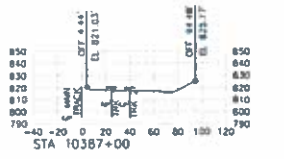

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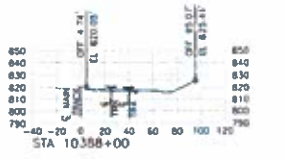

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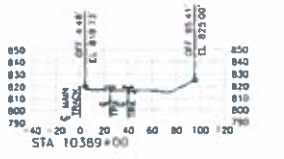

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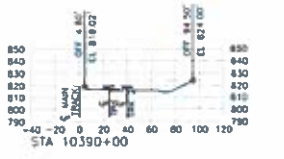

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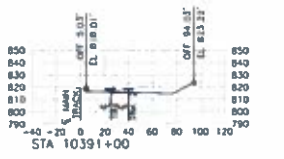
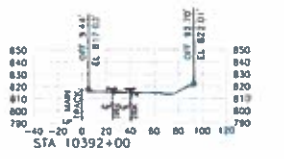


STA 10391+00



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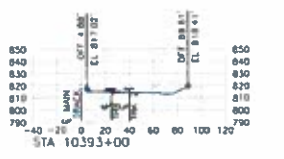

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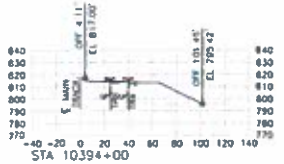

STA 10394+00

NOTES:
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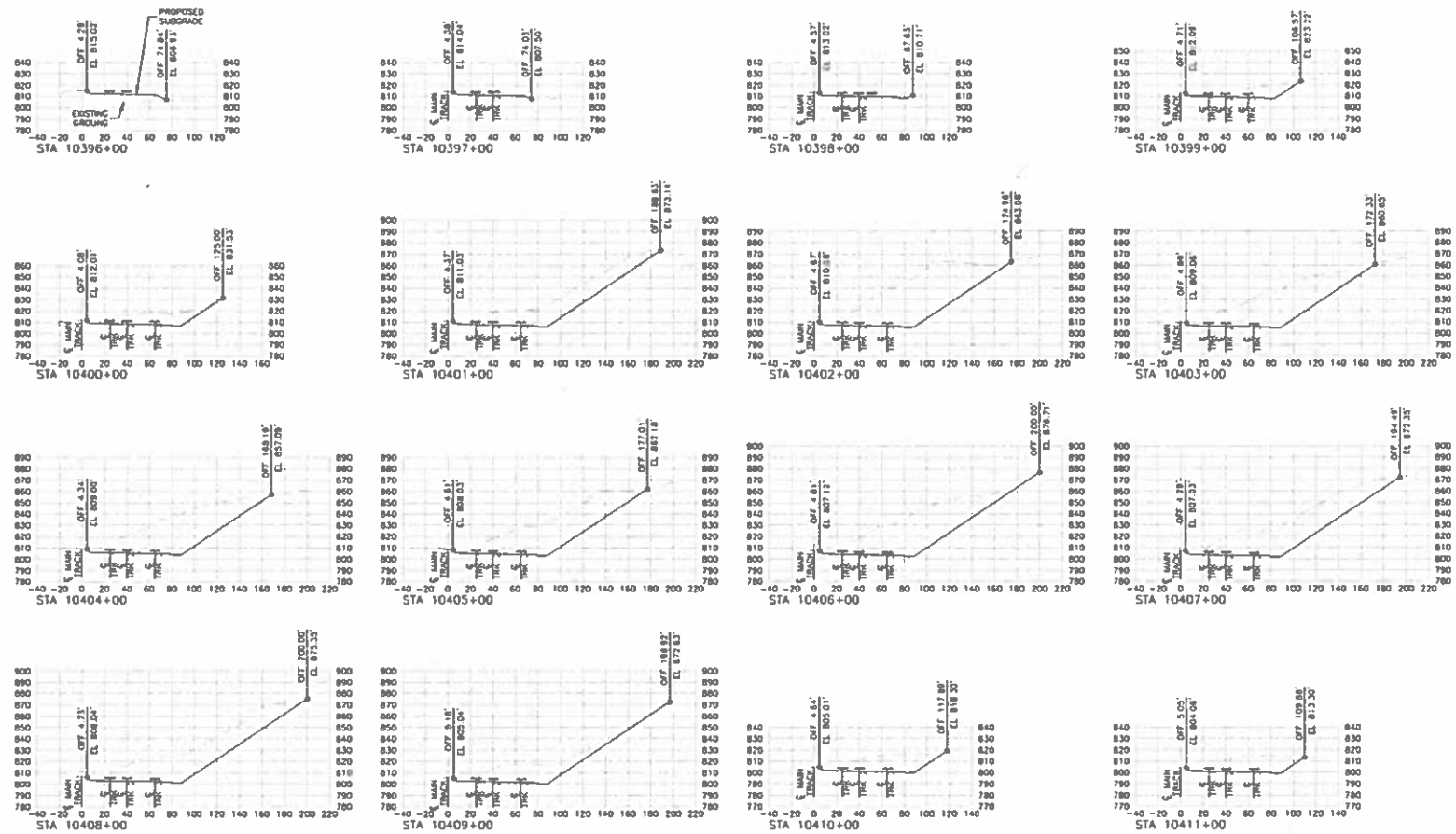
2. EXCAVATION SLOPES ARE PERFORMED AT 2:1 FOR ALL EXCAVATIONS UNDER 10 FEET IN HEIGHT. ALL EXCAVATIONS OVER 10 FEET WILL BE PERFORMED AT 3:1. (EXCAVATIONS SLOPES WILL BE CONFIRMED UPON COMPLETION OF GEOTECHNICAL INVESTIGATION)

30% SUBMITTAL

				HDR	E. 1401 TRENT SPOKANE, WA 99202-2902 509-343-6500 (F)509-343-6501	DRWN BAH DES P.W./BAH CHKD P.W. APPROVED XXXXXX	PROJ. DESC. CITY OF CONNELL BNSF/CBRW INTERCHANGE TRACKS DRAWING DESC. CROSS SECTIONS	STATION CONNELL, WA LAKESIDE SUB PROJ. TYPE NEW TRACKS AND BRIDGE STATE WA PROJ. NO. XXXXXX	CONNELL Washington FILENAME:	DRAWING NUMBER C013 DWG. DATE SHEET OF XX
NO.	DATE	BY	DESCRIPTION OF REVISIONS	DESIGN FIRM PROJ. NO. 259968	REV A	DESIGN FIRM PROJ. MGR P.W.				



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30% SUBMITTAL

NO.	DATE	BY	DESCRIPTION OF REVISIONS

HDR
E. 1401 TRENT
SPOKANE, WA 99202-2902
509-343-8500 (F)509-343-8501

DESIGN FIRM PROJ NO 259968 | REV A | DESIGN FIRM PROJ MGR PJW

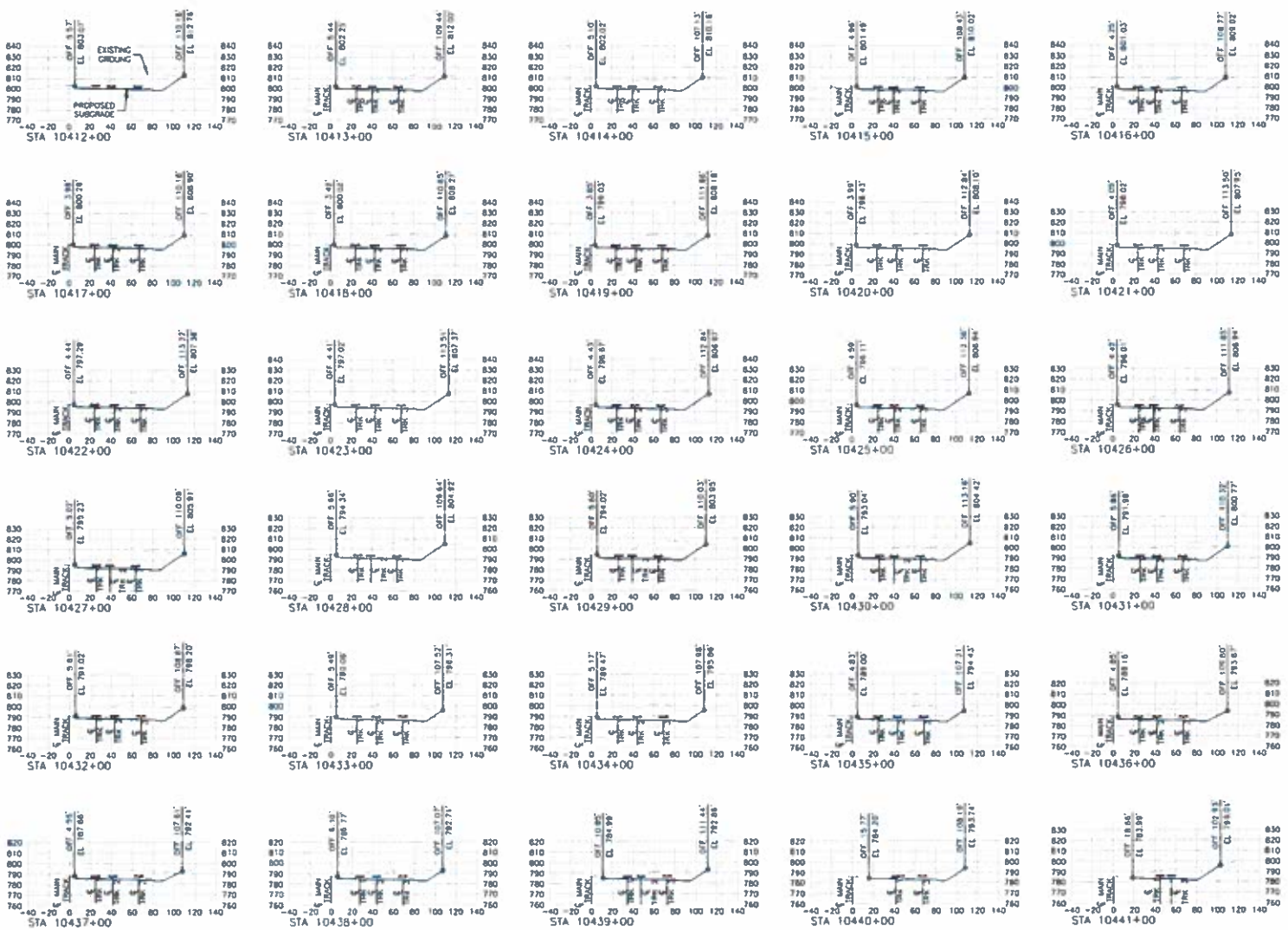
DRWN: BAH
DES: PJW/RJH
CHKD: KMM
APPROVED: XXXXXX

PROJ DESC: CITY OF CONNELL BNSF/CBRW INTERCHANGE TRACKS
DRAWING DESC: CROSS SECTIONS

STATION: CONNELL, WA LAKESIDE SUB
PROJ TYPE: NEW TRACKS AND BRIDGE
STATE: WA
PROJ NO: XXXXXX

CITY OF CONNELL Washington
FILENAME:

DRAWING NUMBER: C014
DWG DATE:
SHEET: OF XX



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30% SUBMITTAL

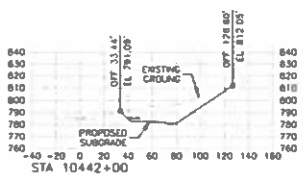
HDR	E. 1401 TRENT SPOKANE, WA 99202-2902 509-343-8500 (F)509-343-8501	DRWN: RAH DES: PJW/RAH CHKD: HDR APPROVED: XXXXXX	PROJ DESC: CITY OF CONNELL BNSF/CBRW INTERCHANGE TRACKS
DESIGN FIRM PROJ NO: 259968	REV: A	DESIGN FIRM PROJ MGR: PJW	DRAWING DESC: CROSS SECTIONS

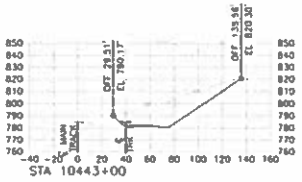
STATION: CONNELL, WA LAKESIDE SUB
PROJ TYPE: NEW TRACKS AND BRIDGE
STATE: WA
PROJ ID: XXXXXX

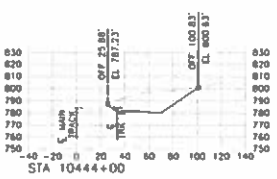
CONNELL Washington

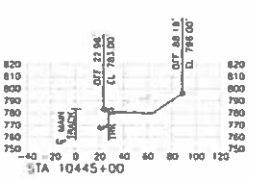
DRAWING NUMBER: C015
DWG DATE:
SHEET: OF XX
FILENAME:

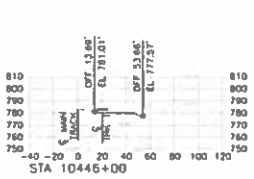
NO	DATE	BY	DESCRIPTION OF REVISIONS











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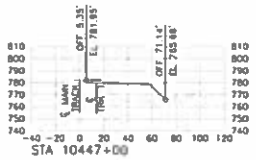

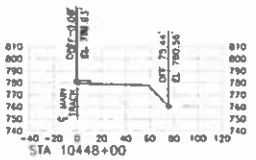

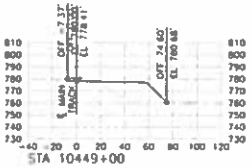

30% SUBMITTAL

NO	DATE	BY	DESCRIPTION OF REVISIONS

HDR
E. 1401 TRENT
SPOKANE, WA 99202-2902
509-343-8500 (F)509-343-8501

DESIGN FIRM PROJ NO: 259968 | REV: A | DESIGN FIRM PROJ NOR: PJW

DRWN:
DES:
CHKD:
APPROVED:

PROJ DESC: CITY OF CONNELL BNSF/CBRW INTERCHANGE TRACKS

DRAWING DESC: CROSS SECTIONS

STATION: CONNELL WA LAKESIDE SUB
PROJ TYPE: NEW TRACKS AND BRIDGE
STATE: WA
PROJ LD: XXXXXX

CITY OF CONNELL Washington

FILENAME:

DRAWING NUMBER: C016
PRC DATE:
SHEET: ____ OF XX

Connell Interchange 30% Opinion of Construction Cost Estimate

3/8/2016

WORKING DRAFT

Item #	Description	Unit	Unit Cost	Qty	Total	
Project Items						
1	Mobilization	LS	4%	1	$ 643,763.04	
2	Performance and Payment Bond	LS	1.5%	1	$ 241,411.14	
3	Construction Surveying	LS	$ 100,000.00	1	$ 100,000.00	
4	Material and Construction Testing	LS	$ 30,000.00	1	$ 30,000.00	
5	Temporary Water Pollution/Erosion Control	LS	$ 40,000.00	1	$ 40,000.00	
	SUBTOTAL OF PROJECT ITEMS (Excluding Mob and Bonds)				$170,000	
Roadway/Civil Items						
6	Project Temporary Traffic Control	LS	$ 7,500.00	1	$ 7,500.00	
7	Clearing and Grubbing	AC	$ 2,500.00	23	$ 57,500.00	Area of earthwork footprint, no deductions
8	Strip Topsoil	CY	$ 2.50	12987	$ 32,468.33	70% grub area top soil strip at 0.5'
9	Roadway Excavation Including Haul	CY	$ 5.50	258513	$ 1,421,819.67	
10	Rock Excavation	CY	$ 25.00	39500	$ 987,500.00	Assumes full volume but only 13% of overall excavation will be rock.
11	Embankment Compaction	CY	$ 2.50	14700	$ 36,750.00	
12	Common Borrow Including Haul	CY	$ 4.50	0	$ -	
13	Remove and Restore Borrow Area Overburden	CY	$ 4.00	0	$ -	
14	Dispose of Excess Materials	CY	$ 3.00	283313	$ 849,938.00	Borrow sources are assumed to be in close proximity and provided at limited cost
15	Geotextile Fabric	SY	$ 3.00	35700	$ 107,100.00	Based on 50% footprint of top of grade and includes adjacent to track access road.
16	Furnish and Install Subballast	CY	$ 28.00	28750	$ 805,000.00	Based on footprint of top of grade and includes access roads and turnout pads.
17	Furnish and Install Retaining Wall System	SF	$ 70.00	11300	$ 791,000.00	Wall area increased due to second access road.
18	36" Dia Steel Culvert Pipe	LF	$ 85.00	32	$ 2,720.00	
19	Riprap Slope Protection	SY	$ 30.00	12750	$ 382,500.00	Estimated max area of 1.5:1 embankment or cut slope w/ 1.5' cover depth.
20	Bridge	LF	$ 12,000.00	276	$ 3,312,000.00	Pile length and foudations are still in question. Width of bridge increased to accommodate second road.
21	Pier Protection and Access Rd Accom @ SR260	LS	$ 80,000.00	1	$ 80,000.00	
22	Permanent Mitigation and Erosion Control Features	LS	$ 100,000.00	1	$ 100,000.00	
23	Seeding, Fertilizing and Mulching	AC	$ 3,000.00	13.3	$ 39,900.00	
	SUBTOTAL OF ROADWAY / CIVIL ITEMS				$9,013,696	
Railroad Items						
24	BNSF Signalization	EA	$ 1,100,000.00	1	$ 1,100,000.00	
25	Furnish and Install Track BNSF	TF	$ 180.00	22241	$ 4,003,380.00	* Cost could possibly be reduced
26	Furnish and Install Track Other	TF	$ 160.00		$ -	
27	Common Standard #15 Turnout BNSF	EA	$ 220,000.00	3	$ 660,000.00	
28	Common Standard #11 Turnout BNSF	EA	$ 180,000.00	5	$ 900,000.00	* Cost could possibly be reduced
29	Common Standard Turnout Other	EA	$ 135,000.00		$ -	
30	Common Standard Derail BNSF	EA	$ 63,000.00	1	$ 63,000.00	
31	Common Standard Derail Other	EA	$ 35,000.00		$ -	
32	Furnish and Install Wood Panel Crossing	TF	$ 500.00	288	$ 144,000.00	* Cost could possibly be reduced
33	Furnish and Install Walkway	LF	$ 10.00	4000	$ 40,000.00	
	SUBTOTAL OF RAILROAD ITEMS				$6,910,380	
	SUBTOTAL OF BID ITEMS (EXCLUDING MOB and BOND)				$16,094,076	
	SUBTOTAL OF BID ITEMS (INCLUDING MOB and BOND)				$16,979,250	
Additional Required Items						
	Utility Accomodations Allowance				$ 20,000.00	
	Railroad Flagging Cost	DAY	$ 1,000.00	200.00	$ 200,000.00	
	Misc Access Road Extra Costs				$ 50,000.00	
	Approx Property Costs	AC	$ 10,000.00	0.10	$ 1,000.00	
	Agency Fees / Costs				$ 200,000.00	
	Construction Testing QA Allowance				$ 30,000.00	
	Agreements				$ 30,000.00	
	Engineering (Railroad/Rail related civil including geotech and survey)				$ 300,000.00	
	Partial Construction Management				$ 150,000.00	
	Enviromental Permiting and Mitigation				$ 150,000.00	
	SUBTOTAL OF ADDITIONAL ITEMS				$1,131,000	
	Tax (8.0% of bid items and additional items)		8.0%		$1,448,820	
	TOTAL (BID ITEMS, ADDITIONAL, TAX)				$19,559,070	
	Contingency		20%		$3,911,814.04	
	GRAND TOTAL				$23,470,884	

Unit Prices based on 2015 prices for similar projects where quantities are shown.
Stormwater treatment and disposal is assumed to be handled by track side ditches.
The estimate includes a limited utility accommodation allowance and is not based on specific known data or information.
Costs assume work provided within a public works project without Buy America

The estimate accounts for certain elements of work within BNSF Right of Way that must be performed by BNSF (such as track and signal work) due to union agreements*.
(* If the facility is owned by others, BNSF would only need to perform construction on items that it would own and maintain)